

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>
480001 2014 KW ₇₇	15.9 ^m	X	96.38757	68.41927	117.84536	17.41728	0.0739342	0.17948115	3.1126013	20	7 22.7	20.3
480002 2014 KS ₈₂	15.9	X	50.62224	146.33023	69.65391	21.36572	0.1763355	0.17699831	3.1416416	20	7 17.3	20.2
480003 2014 KY ₈₅	15.8	X	21.99604	132.65463	127.01629	18.67665	0.1821215	0.17823421	3.1271017	20	7 28.7	19.4
480004 2014 KD ₉₁	17.2	X	346.05687	234.32914	202.82210	32.23902	0.5457479	0.27300007	2.3533917	20	—	—
480005 2014 KN ₉₈	16.2	X	148.85836	123.31557	73.97198	18.64032	0.0735635	0.21081163	2.7960161	20	10 16.7	20.7
480006 2014 LZ ₇	16.6	X	294.38219	260.46935	89.66728	10.77929	0.1131396	0.17736978	3.1372537	20	6 29.2	20.8
480007 2014 LP ₁₁	16.5	X	147.43045	259.56122	214.86459	8.71353	0.0359889	0.17458251	3.1705570	20	6 17.8	21.2
480008 2014 LM ₂₆	16.9	X	229.20228	107.63537	68.96877	23.29815	0.2104062	0.26304088	2.4124253	20	12 2.3	20.0
480009 2014 MC ₁₀	16.2	X	139.72513	278.51767	220.11214	15.50147	0.0324824	0.17685893	3.1432919	20	7 6.3	21.0
480010 2014 MX ₂₈	15.3	X	208.16182	333.10911	92.91007	29.38571	0.1734072	0.17928467	3.1148750	20	6 20.8	20.3
480011 2014 MV ₅₉	16.3	X	111.40718	346.22813	204.92755	11.10245	0.0347912	0.18756366	3.0225274	20	8 8.4	20.9
480012 2014 NP ₃	16.4	X	311.20829	5.99854	105.91944	15.28256	0.0662680	0.24305852	2.5428973	20	—	—
480013 2014 OB ₅₁	16.3	X	117.97527	65.00836	120.68595	9.30694	0.1420962	0.17249095	3.1961355	20	8 23.1	21.3
480014 2014 OF ₂₃₅	16.3	X	150.25791	326.60775	210.32720	14.50748	0.1326033	0.21065659	2.7973878	20	9 10.1	20.9
480015 2014 OV ₂₃₈	16.5	X	221.30961	356.73195	136.03200	9.54795	0.0502095	0.19267348	2.9688488	20	10 10.6	20.8
480016 2014 OQ ₃₆₇	15.9	X	117.94619	59.04545	121.16907	18.68856	0.1712341	0.17247985	3.1962725	20	8 19.0	21.1
480017 2014 QB ₄₄₂	6.2	X	17.18927	269.14199	75.22283	7.29919	0.1511026	0.00181232	66.6264537	20	10 27.6	22.3
480018 2014 XK ₃₇	17.7	X	344.68365	228.24624	277.77481	19.40725	0.0594691	0.37542495	1.9030665	20	—	—
480019 2014 YV ₁₄	18.2	X	348.48205	307.21187	204.85598	23.26308	0.1256771	0.38270525	1.8788543	20	—	—
480020 2014 YQ ₂₁	18.3	X	319.33869	239.16759	303.70943	17.67928	0.0574810	0.37317376	1.9107124	20	—	—
480021 2014 YX ₃₀	16.8	X	95.71451	295.98814	311.08120	24.49365	0.1645140	0.29294880	2.2453027	20	10 16.9	20.9
480022 2014 YP ₄₉	17.7	X	270.11164	302.50829	282.16040	18.98237	0.0224386	0.37241372	1.9133111	20	—	—
480023 2015 AA ₁₇	18.2	X	239.54150	234.78737	353.02261	18.27717	0.0586260	0.36461673	1.9404911	20	—	—
480024 2015 AU ₁₂₀	17.8	X	155.10100	23.36652	294.37531	18.50735	0.0425046	0.36425579	1.9417728	20	—	—
480025 2015 AR ₂₆₄	18.6	X	99.50208	86.04092	353.89605	20.46585	0.0766756	0.38965213	1.8564561	20	2 25.2	20.1
480026 2015 AD ₂₈₀	17.5	X	23.34892	80.67615	137.45472	15.26214	0.2320952	0.22066735	2.7121310	20	6 12.3	20.3
480027 2015 BL ₂	18.6	X	88.96843	83.70645	308.58245	17.05852	0.0772436	0.36896870	1.9252023	20	—	—
480028 2015 BX ₄	17.2	X	95.28778	145.85811	285.75805	24.06618	0.0238951	0.39091671	1.8524503	20	1 14.6	18.5
480029 2015 BT ₂₀	18.2	X	110.96144	60.69770	300.92984	17.58188	0.0822276	0.35806682	1.9640837	20	—	—
480030 2015 BO ₃₆	16.7	X	15.39978	349.48256	283.98318	13.53881	0.1614469	0.23792201	2.5793660	20	8 5.6	19.5
480031 2015 BZ ₈₇	17.6	X	117.19044	94.66791	145.13715	4.66298	0.1433958	0.28853904	2.2681216	20	11 11.7	21.0
480032 2015 BG ₉₁	17.1	X	40.49933	95.43687	143.97262	25.37181	0.2332414	0.23945180	2.5683684	20	8 17.5	20.0
480033 2015 BY ₁₀₆	18.1	X	212.69203	351.09104	287.10439	11.79492	0.0640606	0.34997567	1.9942403	20	—	—
480034 2015 BB ₁₁₉	18.1	X	175.84588	104.09619	96.24210	3.21563	0.0842238	0.30143486	2.2029623	20	11 25.6	21.0
480035 2015 BG ₁₄₃	18.0	X	97.28100	149.70428	69.51065	5.45774	0.1881645	0.26704828	2.3882302	20	9 28.1	21.7
480036 2015 BT ₁₅₆	16.4	X	300.14571	260.95351	335.82635	23.28642	0.3468322	0.18021129	3.1041882	20	1 21.7	21.5
480037 2015 BU ₁₉₂	17.7	X	170.94868	89.50581	75.67203	2.91316	0.1151403	0.28484726	2.2876769	20	9 30.0	20.9
480038 2015 BK ₁₉₈	18.3	X	116.95497	268.48830	342.45305	1.97846	0.0983186	0.30055744	2.2072476	20	11 24.7	21.4
480039 2015 BK ₂₆₆	17.6	X	103.57324	271.88005	280.99994	2.30431	0.1369390	0.26198811	2.4188838	20	8 22.0	21.0
480040 2015 BT ₂₉₈	17.8	X	137.10759	140.37262	26.93034	1.52532	0.1273287	0.25858426	2.4400646	20	8 24.5	21.4
480041 2015 BQ ₃₀₂	17.1	X	97.44338	193.43723	81.40485	7.70660	0.1053887	0.28306364	2.2972768	20	12 2.6	20.3
480042 2015 BE ₄₂₅	18.9	X	168.08344	80.37785	140.88870	3.44482	0.0299505	0.30982549	2.1630071	20	12 21.9	21.4
480043 2015 BQ ₄₂₅	17.8	X	44.90956	124.62728	148.38171	1.78275	0.1834989	0.26445925	2.4037919	20	10 6.6	20.8
480044 2015 BK ₄₃₇	17.4	X	46.18947	146.74264	112.80880	3.11538	0.1826217	0.25634466	2.4542560	20	9 19.2	20.3
480045 2015 BF ₄₄₄	17.8	X	44.61302	309.93356	0.69405	6.27117	0.1008645	0.29046078	2.2581063	20	11 16.6	20.7
480046 2015 BX ₅₁₂	18.7	X	258.94073	139.58408	50.50528	12.69330	0.1273323	0.35063813	1.9917277	20	—	—
480047 2015 BO ₅₁₄	18.4	X	303.93729	243.98492	341.98911	19.26889	0.0599396	0.38779966	1.8623634	20	1 16.4	20.6
480048 2015 CN ₁	17.8	X	105.85173	121.24554	140.64278	6.22340	0.1202196	0.29390654	2.2404223	20	11 28.6	21.1
480049 2015 CH ₉	17.9	X	125.03449	37.89861	170.92617	5.46098	0.1652349	0.27850225	2.3222925	20	10 9.4	21.4
480050 2015 CY ₂₁	18.2	X	111.17407	109.17101	121.04527	2.63213	0.1588627	0.27985552	2.3148000	20	10 23.6	21.7
480051 2015 CV ₃₃	18.8	X	28.10840	120.90192	329.19647	19.36005	0.0766590	0.36594048	1.9358086	20	—	—
480052 2015 CV ₃₉	17.1	X	1.63351	262.85892	355.86376	16.63377	0.3069464	0.21415849	2.7668090	20	6 24.1	19.4
480053 2015 CA ₄₆	17.7	X	164.81259	230.20662	352.36531	6.03527	0.0973558	0.29991758	2.2103859	20	12 9.6	20.7
480054 2015 CL ₄₆	18.1	X	104.95530	38.22386	237.28118	2.62082	0.1566436	0.29232262	2.2485080	20	12 14.6	21.5
480055 2015 CQ ₄₆	16.9	X	328.02798	313.08796	336.93608	13.40771	0.1703941	0.22788142	2.6545858	20	5 19.9	20.1
480056 2015 CW ₅₁	18.3	X	37.96956	292.49859	170.64273	22.05431	0.0502916	0.36232229	1.9486747	20	—	—
480057 2015 CX ₅₄	17.0	X	28.54118	66.52686	175.45308	5.51397	0.1402856	0.22954830	2.6417193	20	7 13.6	19.9
480058 2015 CN ₅₇	18.0	X	149.38052	241.41696	166.74702	23.10247	0.0774497	0.39226748	1.8481952	20	3 16.4	19.6
480059 2015 DV ₃₂	17.8	X	174.40941	168.42183	9.88398	6.97229	0.0477041	0.28628608	2.2800055	20	10 23.4	20.7
480060 2015 DV ₆₄	18.4	X	226.40215	49.46306	127.68781	3.41106	0.0464821	0.31641940	2.1328517	20	—	—
480061 2015 DZ ₇₅	18.4	X	89.77769	274.36041	14.72443	3.13203	0.1617043	0.29658835	2.2268963	20	12 18.2	21.6
480062 2015 DH ₇₇	18.3	X	153.09517	251.73185	350.19977	5.73884	0.1469140	0.30334961	2.1936824	20	12 20.0	21.5
480063 2015 DF ₉₃	18.2	X	58.27256	186.88507	62.47943	1.86053	0.1407578	0.25773316	2.4454334	20	9 14.6	21.3
480064 2015 DN ₉₆	18.3	X	155.77479	209.32548	352.37249	6.03544	0.0458322	0.28424626	2.2909004	20	10 30.9	21.3
480065 2015 DC ₉₈	17.8	X	50.59411	185.40908	98.49818	3.84447	0.0933395	0.26833707	2.3805772	20	10 17.3	20.8
480066 2015 DR ₉₈	17.9	X	57.29706	185.90046	88.79460	2.92420	0.1775617	0.25753774	2.4466703	20	10 23.1	21.2
480067 2015 DM ₁₀₁	18.9	X	64.84964	106.12124	336.50850	15.77610	0.0916711	0.38140083	1.8831357	20	—	—
480068 2015 DU ₁₁₆	18.5	X	109.77073	206.69917	49.71339	7.45074	0.0746353	0.29801548	2.2197812	20	11 22.7	21.4
480069 2015 DZ ₁₃₅	16.9	X	48.47556	120.78808	90.48156	14.38942	0.1411264	0.22267391	2.6958134	20	7 3.6	20.1
480070 2015 DO ₁₃₈	15.7	X	154.56568	350.52284	117.33704	17.99838	0.0923122	0.22181246	2.7027886	20	6 23.2	19.9
480071 2015 DC ₁₅₃	17.9	X	112.49158	201.02692	3.37067	5.76346	0.1278739	0.25880118	2.4387010	20	9 16.4	21.5
480072 2015 DX ₁₅₃	17.7	X	322.17864	158.78993	1.68986	19.86187	0.0554733	0.35068612	1.9915459	20	—	—
480073 2015 DS ₁₈₀	18.4	X	212.05444	1.80574	289.90000	19.00045	0.0946173	0.36953477	1.9232357	20	—	—
480074 2015 DZ												

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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>		
480081	2015	DF ₂₁₀	15.9 ^m	X	274.24383	187.70228	96.76312	11.16453	0.1377980	0.17757558	3.1348293	20	3 14.8	20.7
480082	2015	DP ₂₁₀	17.0	X	23.30587	129.99551	111.00313	12.23331	0.1649145	0.21465608	2.7625316	20	7 5.5	19.9
480083	2015	DE ₂₁₃	16.6	X	355.62668	201.58341	64.57356	9.56853	0.2214908	0.20961007	2.8066911	20	6 14.5	19.0
480084	2015	DO ₂₁₄	17.2	X	49.04032	359.85697	262.94095	5.01344	0.2077806	0.23366262	2.6106174	20	9 23.5	20.7
480085	2015	DR ₂₁₄	17.9	X	182.77146	359.09582	189.36066	6.16951	0.1499451	0.27780412	2.3261815	20	11 7.9	21.2
480086	2015	DT ₂₁₄	18.6	X	15.89213	298.86807	219.73211	17.07502	0.0757604	0.38519889	1.8707368	20	1 12.8	20.5
480087	2015	DB ₂₂₀	17.4	X	218.38135	258.96344	252.49085	6.46306	0.0316058	0.28724441	2.2749315	20	11 16.8	20.2
480088	2015	DT ₂₂₁	17.8	X	187.61071	154.43496	352.65670	5.74726	0.0569338	0.27398076	2.3477725	20	9 25.3	20.9
480089	2015	EG ₉	16.9	X	61.75886	147.90651	122.94321	4.05530	0.1755723	0.26208557	2.4182840	20	10 24.5	20.2
480090	2015	EM ₁₀	16.9	X	329.77295	284.04039	349.09578	12.23159	0.2472873	0.22652373	2.6651823	20	4 15.3	19.8
480091	2015	EE ₁₄	17.8	X	39.16374	253.82590	347.53617	3.88698	0.2454521	0.24042058	2.5614642	20	8 21.2	20.5
480092	2015	EV ₄₁	19.1	X	85.30209	133.40965	333.58643	18.60174	0.0497609	0.39524002	1.8389169	20	2 28.4	20.4
480093	2015	EF ₄₆	18.0	X	78.92627	77.35372	172.98915	1.40042	0.1472642	0.26585240	2.3953868	20	10 12.5	21.3
480094	2015	EZ ₅₁	18.1	X	65.74000	87.77306	337.38443	18.55009	0.1654332	0.36897262	1.9251886	20	—	—
480095	2015	EA ₆₃	17.0	X	30.75044	167.64716	26.10230	1.23529	0.1578369	0.20967530	2.8061090	20	5 10.2	20.1
480096	2015	Ej ₆₃	17.7	X	151.73956	257.11893	321.05837	5.77152	0.1817801	0.28093020	2.3088928	20	11 11.4	21.5
480097	2015	EC ₆₄	16.4	X	9.31273	97.15277	137.46503	13.62135	0.0900407	0.21643539	2.7473703	20	5 29.1	19.9
480098	2015	EF ₆₄	17.9	X	132.59274	144.30252	68.91343	6.03462	0.1665541	0.27008847	2.3702747	20	10 21.9	21.6
480099	2015	FA ₁₁	16.6	X	316.95775	160.63809	165.46304	31.32690	0.1191214	0.23366612	2.6105913	20	7 5.1	20.4
480100	2015	FF ₃₃	17.9	X	187.78011	130.77139	206.70153	20.74074	0.0952667	0.37087970	1.9185834	20	1 19.6	20.8
480101	2015	FU ₃₆	18.7	X	160.10003	31.42357	311.92546	17.54990	0.0899638	0.36153741	1.9514940	20	1 2.1	20.9
480102	2015	FC ₃₉	17.9	X	160.23802	205.25641	38.10238	6.29634	0.1312758	0.29294220	2.2453364	20	12 28.2	21.1
480103	2015	FK ₄₂	16.3	X	313.96020	216.13512	26.36012	14.57510	0.2486565	0.17751284	3.1355678	20	2 26.5	20.6
480104	2015	FP ₄₂	17.4	X	275.11965	273.96338	195.88997	5.85382	0.0503408	0.28714631	2.2754496	20	12 9.5	19.9
480105	2015	FJ ₄₃	17.2	X	150.70222	25.89182	181.44062	6.44699	0.0858139	0.26948920	2.3737873	20	11 1.0	20.5
480106	2015	FX ₄₃	16.6	X	285.23541	85.43850	194.91556	24.88037	0.2195066	0.17547942	3.1597442	20	3 3.4	21.5
480107	2015	FL ₄₅	17.7	X	347.68534	254.48103	168.90168	7.37920	0.0680242	0.30113544	2.2044223	20	—	—
480108	2015	FS ₄₅	16.5	X	281.09437	241.07353	38.31106	10.32766	0.1293913	0.17498834	3.1656530	20	3 9.2	21.3
480109	2015	FT ₆₉	16.4	X	355.69686	136.09122	119.12322	17.57907	0.2903129	0.20469266	2.8514639	20	6 1.1	18.9
480110	2015	FE ₆₉	16.3	X	189.81092	347.80174	210.32205	15.61738	0.0376340	0.23826982	2.5768552	20	7 21.4	19.7
480111	2015	FW ₇₁	16.9	X	307.03106	64.09006	195.82107	11.60441	0.2121804	0.18300947	3.0724654	20	3 5.3	21.1
480112	2015	FF ₇₃	17.2	X	337.41863	112.01025	195.28830	5.71471	0.3109951	0.21377290	2.7701351	20	6 24.8	19.2
480113	2015	FY ₇₃	17.8	X	69.48911	61.37770	208.12639	5.85978	0.0520988	0.25915060	2.4365084	20	10 12.3	20.9
480114	2015	FJ ₇₅	16.9	X	283.46610	79.37368	201.56257	12.87192	0.2673054	0.17369232	3.1813807	20	2 25.8	22.0
480115	2015	FN ₇₆	17.3	X	26.98571	94.99992	187.84240	12.49474	0.1674641	0.23462958	2.6034398	20	9 12.9	20.3
480116	2015	FR ₈₁	17.6	X	49.39595	314.53199	311.01328	14.02819	0.1420160	0.25997128	2.4313779	20	9 16.8	20.9
480117	2015	FL ₈₅	17.4	X	113.86836	9.40817	227.76385	6.79580	0.2243779	0.27395208	2.3479363	20	11 4.1	21.3
480118	2015	FG ₉₀	17.8	X	124.52162	326.60480	288.59677	5.45225	0.2013895	0.28680968	2.2772297	20	12 6.1	21.6
480119	2015	FY ₉₀	17.9	X	136.25594	41.85298	199.55166	8.53859	0.1723940	0.28922809	2.2645178	20	11 30.9	21.5
480120	2015	FX ₉₈	17.7	X	110.37579	355.15946	234.78708	6.24802	0.0663487	0.26929999	2.3748990	20	10 12.3	21.0
480121	2015	FJ ₁₀₃	17.8	X	203.17981	245.16709	265.84828	5.88998	0.0515697	0.27953672	2.1655596	20	10 20.3	20.8
480122	2015	FQ ₁₀₇	17.1	X	132.07667	325.68474	236.68400	4.96333	0.1209988	0.26542968	2.3979294	20	10 2.1	20.7
480123	2015	FW ₁₀₇	17.9	X	238.59832	186.22244	331.66430	5.34070	0.0709100	0.30164021	2.2019624	20	12 23.2	20.3
480124	2015	FL ₁₀₉	17.3	X	163.46228	302.96940	235.54401	5.93615	0.0551234	0.27068470	2.3667929	20	10 6.5	20.6
480125	2015	FW ₁₁₄	17.6	X	141.56096	301.95393	343.53706	5.51311	0.1838435	0.30378388	2.1915913	20	—	—
480126	2015	FP ₁₂₃	17.7	X	139.58500	99.72764	132.91280	6.20407	0.0978596	0.28309648	2.2970991	20	11 24.2	21.1
480127	2015	FQ ₁₃₈	17.7	X	127.75725	114.72545	162.98689	7.52227	0.1442856	0.29550567	2.2323323	20	—	—
480128	2015	FA ₁₄₂	16.2	X	295.85029	257.83006	12.88506	25.98134	0.2431730	0.18435305	3.0575190	20	3 12.2	20.8
480129	2015	FR ₁₄₃	17.1	X	281.68669	102.73848	186.27688	20.47330	0.3279131	0.17989696	3.1078032	20	2 27.1	22.3
480130	2015	FD ₁₄₄	17.8	X	22.79872	192.45164	55.76982	3.13875	0.0278576	0.23016564	2.6369935	20	7 1.8	21.0
480131	2015	FQ ₁₄₇	17.6	X	56.20822	241.62472	36.94824	7.32511	0.1088568	0.25943814	2.4347077	20	10 17.2	20.8
480132	2015	FY ₁₅₀	17.9	X	116.24513	202.05939	128.95148	3.35689	0.1994261	0.31472873	2.1404830	20	—	—
480133	2015	FL ₁₅₂	17.9	X	81.87567	235.46797	22.20880	6.09588	0.1739781	0.25866025	2.4395867	20	10 25.9	21.6
480134	2015	FN ₁₅₂	18.1	X	144.07832	33.31615	164.85412	2.30799	0.1425513	0.26855900	2.3792655	20	10 11.8	21.7
480135	2015	FR ₁₅₃	17.3	X	23.76482	265.79919	52.25491	2.08773	0.1823912	0.25716147	2.4490564	20	11 5.4	20.1
480136	2015	FS ₁₅₆	16.9	X	341.44125	224.67585	56.10849	6.31540	0.0675343	0.22149702	2.7053542	20	6 13.5	20.1
480137	2015	FW ₁₅₆	17.5	X	81.78837	188.00793	79.73956	4.04134	0.1881457	0.26191599	2.4193277	20	11 10.8	21.1
480138	2015	FE ₁₅₈	16.9	X	22.52050	166.37768	120.72350	4.84418	0.1433368	0.24108943	2.5567245	20	9 12.5	19.7
480139	2015	FE ₁₆₂	17.0	X	322.45805	143.73356	162.17026	9.94250	0.1573977	0.21707897	2.7419374	20	6 9.7	20.3
480140	2015	FX ₁₆₆	18.2	X	182.46705	122.20013	97.63146	2.44206	0.1095601	0.29718813	2.2238991	20	12 25.2	21.2
480141	2015	FP ₁₆₈	18.0	X	272.58084	82.40524	39.81102	6.13876	0.0712353	0.29908670	2.2144777	20	12 24.7	20.3
480142	2015	FD ₁₇₀	17.0	X	21.26132	79.06473	175.71719	11.53017	0.1720006	0.22529146	2.6748919	20	7 21.8	20.0
480143	2015	FJ ₁₇₄	16.4	X	280.00630	217.67716	68.78663	11.53351	0.1215750	0.18564073	3.0433638	20	3 26.1	20.9
480144	2015	FP ₁₇₆	18.1	X	264.08571	181.82230	305.03776	4.47483	0.0761663	0.30441778	2.1885478	20	12 18.8	20.1
480145	2015	FA ₁₈₀	17.9	X	107.91737	284.76760	22.21181	5.40586	0.0549958	0.30898522	2.1669268	20	—	—
480146	2015	FL ₁₉₅	16.9	X	42.52137	327.52503	267.01492	3.30644	0.2004004	0.23380690	2.6095432	20	8 6.2	19.9
480147	2015	FZ ₂₁₅	17.4	X	92.27095	189.94556	35.24538	6.84152	0.0968380	0.25878202	2.4388213	20	9 20.3	20.7
480148	2015	FD ₂₃₆	18.1	X	112.93060	139.96037	149.18613	6.00487	0.1130763	0.29731190	2.2232819	20	—	—
480149	2015	FK ₂₄₆	16.5	X	312.17229	147.20400	131.40674	10.07755	0.1000385	0.20661544	2.8337457	20	4 27.2</	

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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>		
480161	2015	FK ₂₉₅	17.5	X	88.16778	249.37834	77.41067	8.71248	0.1823347	0.28836508	2.2690337	20	—	—
480162	2015	FZ ₂₉₇	17.8	X	174.97101	64.98905	106.65750	5.94746	0.1553647	0.26783633	2.3835434	20	10 9.9	21.5
480163	2015	FT ₂₉₈	16.8	X	36.79508	156.98613	128.99757	9.54507	0.1685208	0.23778013	2.5803920	20	10 9.5	20.1
480164	2015	FK ₃₀₀	16.7	X	298.29215	193.12661	109.23696	13.56097	0.2973833	0.18491722	3.0512969	20	4 12.5	21.2
480165	2015	FM ₃₀₀	16.2	X	13.36502	194.23898	103.17324	12.96041	0.1583886	0.23194742	2.6234715	20	9 16.5	19.3
480166	2015	FY ₃₀₀	16.1	X	342.85880	130.58369	164.80585	13.45107	0.2335640	0.21006598	2.8026287	20	6 28.5	18.9
480167	2015	FP ₃₀₂	17.9	X	165.29186	104.63450	132.19921	8.67086	0.0936361	0.28636294	2.2795975	20	12 26.9	21.2
480168	2015	FY ₃₀₂	16.3	X	303.71513	90.12589	173.32208	16.41691	0.2111303	0.17464114	3.1698473	20	3 8.3	20.7
480169	2015	FY ₃₀₃	17.3	X	40.23894	112.74792	144.96813	11.79601	0.1373518	0.22547664	2.6734271	20	8 25.7	20.5
480170	2015	FE ₃₀₄	16.6	X	47.80594	121.69744	151.26837	10.92916	0.1441319	0.23602558	2.5931641	20	10 1.7	20.0
480171	2015	FJ ₃₀₄	17.0	X	96.65136	48.81682	172.06137	12.92975	0.1983695	0.24163033	2.5529076	20	9 25.6	21.0
480172	2015	FT ₃₀₈	17.1	X	23.41557	111.47704	135.02544	6.11476	0.1211309	0.22662674	2.6643746	20	7 9.0	20.2
480173	2015	FZ ₃₁₀	17.4	X	82.14528	199.30994	105.21551	5.03961	0.1741233	0.28324464	2.2962980	20	12 28.6	20.7
480174	2015	FU ₃₁₄	17.6	X	98.06383	209.78090	74.25948	8.26869	0.1211179	0.28377016	2.2934621	20	12 15.3	21.0
480175	2015	FE ₃₁₇	17.3	X	165.81261	17.13092	144.95711	6.70273	0.0910929	0.26439307	2.4041930	20	9 18.8	20.7
480176	2015	FK ₃₁₇	17.9	X	111.44166	142.22077	113.69979	4.98607	0.1863540	0.27315475	2.3525031	20	11 24.9	21.7
480177	2015	FT ₃₁₇	18.0	X	269.87821	79.35656	51.17058	8.27031	0.0406957	0.30173155	2.2015180	20	—	—
480178	2015	FE ₃₁₈	17.5	X	146.22072	50.94202	132.33143	6.36064	0.0752046	0.26253817	2.4155040	20	9 25.5	20.9
480179	2015	FD ₃₁₉	17.2	X	74.34774	218.10671	59.95880	10.37200	0.0946260	0.26844922	2.3799141	20	11 8.0	20.3
480180	2015	FW ₃₂₂	16.7	X	344.34062	200.26406	50.72349	13.66718	0.1891225	0.20436663	2.8544957	20	5 2.9	19.5
480181	2015	FN ₃₂₃	17.1	X	47.11366	73.56369	154.07169	12.77789	0.0572013	0.22997805	2.6384273	20	7 11.6	20.6
480182	2015	FC ₃₃₁	18.1	X	158.91636	250.17013	301.61161	2.23753	0.1348257	0.27633075	2.3344428	20	10 17.6	21.7
480183	2015	FY ₃₃₁	17.9	X	121.33122	40.08877	222.94610	5.80296	0.1310447	0.27993131	2.3143821	20	12 11.8	21.4
480184	2015	FG ₃₃₂	18.0	X	264.49536	312.52763	288.49681	16.60870	0.0647874	0.35901844	1.9606115	20	—	—
480185	2015	FT ₃₃₂	17.9	X	103.45050	32.32625	62.12235	22.64453	0.1141535	0.38728343	1.8640180	20	4 16.5	20.1
480186	2015	FY ₃₃₂	16.8	X	40.08258	57.35461	151.40574	12.33845	0.1447437	0.21441323	2.7646171	20	6 17.5	20.3
480187	2015	FW ₃₃₃	17.0	X	355.60779	91.12673	206.67467	10.92996	0.0405930	0.22540371	2.6740037	20	7 27.5	20.6
480188	2015	FZ ₃₃₃	16.3	X	297.31669	86.78931	200.95904	13.92276	0.1723230	0.18148454	3.0896524	20	4 4.2	20.5
480189	2015	FW ₃₃₆	16.8	X	33.23017	34.28062	162.65949	9.99844	0.1376618	0.19572080	2.9379522	20	5 20.4	20.4
480190	2015	FF ₃₃₇	16.8	X	323.55131	167.65636	207.97914	15.59164	0.1927263	0.23798010	2.5789462	20	9 22.6	19.2
480191	2015	FR ₃₃₇	16.2	X	94.70282	137.00607	86.76627	14.79407	0.1002804	0.23840284	2.5758967	20	9 24.8	20.2
480192	2015	FS ₃₃₇	16.2	X	315.70882	228.50040	95.82079	16.26757	0.1523160	0.20618267	2.8377096	20	6 23.4	19.4
480193	2015	FA ₃₃₉	16.8	X	71.04125	121.65843	113.31789	12.06279	0.0634035	0.22956639	2.6415804	20	8 29.8	20.4
480194	2015	FG ₃₃₉	17.1	X	35.84568	339.06670	290.52357	2.30373	0.1812501	0.23469923	2.6029247	20	9 11.2	20.1
480195	2015	FZ ₃₃₉	16.0	X	264.58469	352.17007	301.56402	15.94613	0.4882212	0.16374511	3.3089521	20	2 8.8	22.3
480196	2015	FC ₃₄₀	16.4	X	356.80724	329.39945	322.17762	11.44063	0.1381823	0.22376870	2.6870134	20	7 29.0	19.2
480197	2015	FH ₃₄₀	17.1	X	54.89534	285.07827	278.26957	6.36770	0.1661982	0.21739030	2.7393190	20	7 6.3	20.5
480198	2015	FE ₃₄₂	16.0	X	306.93695	207.91526	35.06151	18.68510	0.2079034	0.18140597	3.0905445	20	2 26.5	20.6
480199	2015	FB ₃₄₃	15.7	X	288.68245	255.88541	17.14360	26.49563	0.2389031	0.17830970	3.1262191	20	3 10.5	20.6
480200	2015	FR ₃₄₄	16.0	X	22.79931	302.79704	18.35806	15.04328	0.3212939	0.24397907	2.5364969	20	11 23.0	19.4
480201	2015	FY ₃₄₅	17.5	X	82.86735	278.29174	353.21618	25.03555	0.1363553	0.28889943	2.2662349	20	11 2.9	21.3
480202	2015	FP ₃₅₃	17.4	X	92.15450	236.74423	355.53965	3.70919	0.0959741	0.25258294	2.4785635	20	9 25.6	20.9
480203	2015	FL ₃₆₃	18.2	X	96.90964	105.26463	153.44441	3.45039	0.0670986	0.28976676	2.2617104	20	11 10.3	21.1
480204	2015	FY ₃₆₃	17.5	X	110.09870	24.58892	217.39836	3.74572	0.1032358	0.28445207	2.2897953	20	11 3.5	20.7
480205	2015	FF ₃₇₃	16.1	X	305.73793	182.16278	109.19995	16.10923	0.1322288	0.20139551	2.8825014	20	5 3.3	20.1
480206	2015	GP	18.2	X	351.61020	151.83069	37.65078	25.80282	0.1329160	0.37439206	1.9065650	20	1 28.8	20.6
480207	2015	GW ₃	17.7	X	340.89258	216.83056	203.12809	4.53614	0.0734571	0.30350894	2.1929146	20	—	—
480208	2015	GM ₅	17.7	X	167.47007	3.93166	203.48821	5.07184	0.1040386	0.27743701	3.3282331	20	11 19.2	20.9
480209	2015	GG ₆	16.3	X	304.27644	240.44423	10.91202	17.70596	0.2758673	0.18006027	3.1059237	20	2 21.6	20.9
480210	2015	GU ₁₂	18.0	X	138.89081	244.41069	159.65933	23.41654	0.1275242	0.38148753	1.8828504	20	3 3.1	19.6
480211	2015	GP ₁₈	18.2	X	206.98498	160.68513	6.53314	5.92011	0.0601492	0.28985091	2.2612727	20	11 18.2	21.0
480212	2015	GW ₁₉	17.7	X	47.89467	229.66539	81.00208	2.47173	0.1895986	0.26715810	2.3875757	20	11 30.2	20.8
480213	2015	GB ₂₂	17.3	X	19.81761	95.00065	168.09073	4.43799	0.2271326	0.22241901	2.6978727	20	8 9.6	19.8
480214	2015	GP ₂₃	17.3	X	352.39721	172.90501	127.23769	13.09679	0.2021405	0.21934528	2.7230180	20	8 1.8	19.5
480215	2015	GL ₂₆	16.5	X	292.94540	123.00822	165.28778	13.07090	0.1761081	0.18974198	2.9993496	20	3 31.8	20.8
480216	2015	GS ₂₈	18.6	X	84.56272	79.55603	208.05457	5.69244	0.1918206	0.27586414	2.3370745	20	12 9.9	22.2
480217	2015	GW ₂₈	17.9	X	122.91375	221.89764	9.33888	2.53316	0.1758419	0.27278934	2.3546035	20	11 2.6	21.6
480218	2015	GU ₂₉	17.8	X	95.92480	234.73771	25.63652	4.58978	0.1249726	0.27034303	2.3687865	20	11 10.3	21.2
480219	2015	GO ₃₁	18.1	X	78.98155	267.56164	192.75692	22.12619	0.0656086	0.38116246	1.8839208	20	2 6.3	20.2
480220	2015	GR ₃₁	17.1	X	358.43205	277.33299	14.76830	14.37690	0.1191261	0.23654897	2.5893376	20	8 8.1	20.2
480221	2015	GH ₃₂	16.6	X	280.43413	212.41973	98.47101	12.28510	0.3435397	0.18600754	3.0393614	20	3 28.9	21.6
480222	2015	GX ₃₃	16.8	X	342.86744	237.07391	84.43456	14.08164	0.2790647	0.22513189	2.6761557	20	8 20.1	18.9
480223	2015	GC ₃₄	17.9	X	167.36255	135.49625	102.21827	7.03534	0.1108205	0.29528150	2.2334619	20	12 30.8	20.8
480224	2015	GS ₃₄	17.8	X	191.29076	312.53479	270.47114	2.01720	0.1269870	0.29629494	2.2283662	20	—	—
480225	2015	GO ₃₆	16.2	X	349.07479	121.93116	170.15877	13.85093	0.2501727	0.21086413	2.7955520	20	7 8.4	18.8
480226	2015	GP ₄₁	17.8	X	189.88304	71.68883	131.12705	9.00212	0.0901868	0.29408939	2.2394935	20	12 14.1	20.8
480227	2015	GU ₄₂	18.2	X	179.49861	136.44308	105.20107	5.26422	0.0655352	0.30601928	2.1809055	20	—	—
480228	2015	GS ₄₃	17.3	X	27.51155	129.75449	169.22071	10.92110	0.2604993	0.24082328	2.5586079	20	10 27.8	20.4
480229	2015	GP ₄₇	17.8	X	203.89538	110.97865	68.23739	6.09832	0.0819231	0.29124420	2.2540551	20	11 29.4	

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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>
480241 2015 <i>HS</i> ₂₆	16.9	X	243.30360	233.35422	110.49287	3.17587	0.0775608	0.19937586	2.9019349	20	4 23.9	21.1
480242 2015 <i>HN</i> ₂₇	17.1	X	58.45668	256.36078	50.94315	7.35605	0.0795720	0.27175055	2.3606001	20	11 24.1	20.2
480243 2015 <i>HA</i> ₂₉	17.1	X	53.05135	209.32504	130.35466	6.36028	0.1903886	0.28226097	2.3016299	20	—	—
480244 2015 <i>HG</i> ₃₀	17.6	X	107.87651	224.08550	64.92242	8.23318	0.1097342	0.28703041	2.2760621	20	—	—
480245 2015 <i>HT</i> ₃₃	17.6	X	20.17724	238.35488	64.17495	5.09473	0.2612239	0.23682539	2.5873223	20	10 19.3	20.3
480246 2015 <i>HD</i> ₃₅	16.6	X	299.74100	103.55281	157.43525	6.46478	0.1358471	0.18076753	3.0978170	20	3 11.6	20.9
480247 2015 <i>HZ</i> ₃₆	17.9	X	160.83530	128.23364	81.27706	7.43628	0.0572423	0.27715623	2.3298053	20	11 18.0	20.9
480248 2015 <i>HB</i> ₃₉	16.3	X	275.50742	194.47222	91.08593	12.33478	0.1002719	0.17958385	3.1114144	20	3 23.4	21.0
480249 2015 <i>HL</i> ₄₀	17.1	X	28.59515	204.76715	71.48882	8.78573	0.0316480	0.23874460	2.5734378	20	8 24.1	20.5
480250 2015 <i>HT</i> ₄₀	17.5	X	117.45839	35.36125	181.28026	6.81307	0.0786272	0.25810445	2.4430877	20	10 4.3	20.9
480251 2015 <i>HA</i> ₅₆	17.8	X	125.12247	280.91240	311.48430	4.01837	0.1925780	0.26403332	2.4063764	20	11 4.1	21.8
480252 2015 <i>HS</i> ₅₆	16.5	X	316.57912	290.18981	23.30410	15.17689	0.1608374	0.20624428	2.8371444	20	6 4.6	20.1
480253 2015 <i>HW</i> ₅₇	17.5	X	10.06508	109.38328	309.19892	6.77531	0.0655022	0.30251352	2.1977225	20	—	—
480254 2015 <i>HT</i> ₆₀	16.1	X	286.63975	129.73675	189.90004	16.97941	0.2347911	0.17991636	3.1075797	20	4 24.2	20.6
480255 2015 <i>HZ</i> ₆₀	16.4	X	1.62553	37.78867	187.21514	18.81002	0.1686302	0.18529708	3.0471254	20	5 1.6	19.9
480256 2015 <i>HB</i> ₆₁	16.4	X	285.77271	144.51625	166.98618	14.72930	0.2815025	0.17516689	3.1635014	20	4 8.1	21.2
480257 2015 <i>HZ</i> ₆₁	17.6	X	7.82374	202.86748	104.36007	6.95066	0.2822910	0.23191674	2.6237029	20	10 7.4	20.0
480258 2015 <i>HL</i> ₆₂	18.0	X	114.61278	116.03928	144.85481	1.74650	0.1706375	0.27208845	2.3586454	20	12 2.4	21.7
480259 2015 <i>HW</i> ₆₂	17.1	X	81.61625	179.06032	75.41654	13.21171	0.1418652	0.25408444	2.4687892	20	10 23.9	20.8
480260 2015 <i>HR</i> ₆₄	16.8	X	297.84458	59.90210	216.51206	9.57464	0.0695701	0.19025182	2.9939887	20	4 4.0	20.9
480261 2015 <i>HA</i> ₇₁	16.5	X	328.11165	332.70402	42.32356	10.26533	0.2734837	0.25596303	2.4566949	20	10 16.4	17.8
480262 2015 <i>HR</i> ₇₁	16.5	X	279.18121	244.10058	42.52555	13.51302	0.0953089	0.18372569	3.0644753	20	3 28.3	21.0
480263 2015 <i>HE</i> ₇₅	17.3	X	251.75831	217.07576	190.35850	1.73243	0.0839901	0.23896522	2.5718536	20	7 25.4	20.7
480264 2015 <i>HB</i> ₇₆	17.2	X	74.67644	165.17343	44.06118	4.05000	0.1300592	0.23042445	2.6350186	20	8 8.2	20.8
480265 2015 <i>HP</i> ₇₈	17.9	X	289.97278	1.63447	11.68800	2.46588	0.0474382	0.23897429	2.5717886	20	8 8.4	21.2
480266 2015 <i>HQ</i> ₇₈	17.9	X	111.21029	11.89649	224.86305	5.29801	0.1119154	0.26216200	2.4178140	20	10 25.2	21.5
480267 2015 <i>HY</i> ₇₈	17.3	X	24.83464	330.54994	292.29850	1.15196	0.1620263	0.22507122	2.6766366	20	8 10.2	20.0
480268 2015 <i>HP</i> ₈₁	16.8	X	352.83730	234.61566	34.95589	8.04840	0.1847952	0.20909287	2.8113175	20	6 13.3	19.6
480269 2015 <i>HZ</i> ₈₁	18.5	X	139.45452	25.28171	212.95159	6.03319	0.0782687	0.27788550	2.3257273	20	11 29.4	21.7
480270 2015 <i>HS</i> ₈₂	18.2	X	171.31286	171.52951	45.81472	6.84569	0.0460741	0.28520927	2.2857407	20	12 11.9	21.1
480271 2015 <i>HF</i> ₈₃	17.7	X	287.61102	33.74324	46.79728	5.84151	0.0940234	0.27790768	2.3256036	20	11 10.3	19.9
480272 2015 <i>HH</i> ₈₇	17.2	X	223.99597	320.84294	110.88200	4.91415	0.0834611	0.23795239	2.5791465	20	7 23.8	20.7
480273 2015 <i>HD</i> ₈₈	18.4	X	126.03469	217.63359	70.49655	4.66189	0.0933371	0.29343817	2.2428057	20	—	—
480274 2015 <i>HZ</i> ₈₈	17.4	X	349.79583	135.16243	193.64169	7.22793	0.2136215	0.23340629	2.6125284	20	9 12.7	19.6
480275 2015 <i>HJ</i> ₈₉	17.9	X	83.19780	89.09496	208.53375	7.10531	0.1105781	0.27374821	2.3491019	20	12 14.6	21.3
480276 2015 <i>HM</i> ₉₀	17.9	X	201.53316	350.78897	209.79548	6.96789	0.0668606	0.29271291	2.2465088	20	12 27.3	20.7
480277 2015 <i>HT</i> ₉₂	17.2	X	46.82384	153.41358	82.09805	3.30090	0.1347768	0.22473473	2.6793077	20	8 4.6	20.4
480278 2015 <i>HT</i> ₉₄	17.1	X	310.77682	163.15287	156.40654	5.57489	0.1581209	0.20934603	2.8090506	20	6 7.9	20.5
480279 2015 <i>HJ</i> ₉₉	17.7	X	301.93481	268.16054	153.08198	2.46484	0.1680212	0.27628481	2.3347016	20	11 3.1	19.5
480280 2015 <i>HL</i> ₁₀₁	17.6	X	53.91803	310.98493	19.30575	6.86313	0.1353211	0.27626335	2.3348225	20	12 27.6	20.9
480281 2015 <i>HW</i> ₁₀₈	17.1	X	341.61873	131.90583	172.63068	15.11813	0.0804546	0.22595892	2.6696217	20	7 16.2	20.6
480282 2015 <i>HL</i> ₁₁₀	17.0	X	336.95011	227.38211	91.31499	14.87980	0.0709904	0.23169882	2.6253478	20	8 3.0	20.2
480283 2015 <i>HC</i> ₁₁₄	16.8	X	332.31759	272.41210	87.32377	16.09137	0.2336535	0.24663342	2.5182650	20	10 6.9	19.1
480284 2015 <i>HN</i> ₁₂₅	17.4	X	19.54811	303.59539	26.75082	7.01393	0.1216798	0.25805246	2.4434158	20	11 5.2	20.3
480285 2015 <i>HR</i> ₁₂₈	17.1	X	266.43923	205.39574	193.95538	7.49708	0.0992724	0.24089397	2.5581074	20	7 30.4	20.5
480286 2015 <i>HV</i> ₁₃₉	17.7	X	79.55269	133.42575	140.77629	6.69142	0.1201266	0.25593894	2.4568491	20	11 10.6	21.3
480287 2015 <i>HH</i> ₁₄₀	17.9	X	45.74828	189.76555	203.16252	1.36990	0.1424107	0.31185537	2.1536109	20	—	—
480288 2015 <i>HK</i> ₁₄₅	18.0	X	191.27654	299.65454	294.29382	3.47889	0.1082185	0.30358025	2.1925712	20	—	—
480289 2015 <i>HP</i> ₁₄₅	17.6	X	73.64372	351.69332	241.29769	7.96776	0.1712021	0.23920003	2.5701703	20	9 8.7	21.3
480290 2015 <i>HS</i> ₁₄₇	17.8	X	86.40322	228.18141	359.88229	2.90252	0.0827253	0.24487375	2.5303148	20	9 10.9	21.1
480291 2015 <i>HZ</i> ₁₄₈	17.5	X	133.47941	323.64884	266.73324	4.66267	0.1118719	0.26988184	2.3714844	20	11 9.8	21.0
480292 2015 <i>HW</i> ₁₄₉	17.5	X	73.06582	16.66428	257.93151	1.94098	0.2185291	0.25536987	2.4604976	20	11 11.6	21.2
480293 2015 <i>HL</i> ₁₅₀	17.6	X	105.43646	344.42209	316.11323	1.22820	0.1223495	0.28522788	2.2856412	20	—	—
480294 2015 <i>HR</i> ₁₅₀	18.0	X	150.66038	340.72573	245.56240	5.91155	0.0703954	0.27663712	2.3327189	20	11 25.9	21.3
480295 2015 <i>HA</i> ₁₅₂	17.2	X	342.65324	26.29019	16.37115	8.34667	0.1442275	0.28482515	2.2877953	20	12 31.5	19.5
480296 2015 <i>HS</i> ₁₅₄	15.8	X	307.91838	26.53341	211.67489	22.26114	0.1652629	0.17007270	3.2263612	20	2 13.2	20.7
480297 2015 <i>HB</i> ₁₅₅	17.1	X	30.02586	240.04823	326.48573	7.07223	0.1319834	0.21304317	2.7764572	20	5 22.6	20.3
480298 2015 <i>HF</i> ₁₅₆	17.7	X	117.29461	255.85187	347.02106	5.23724	0.1317782	0.26576442	2.3959154	20	11 8.2	21.3
480299 2015 <i>HR</i> ₁₆₄	17.2	X	69.61276	98.46418	77.82576	5.09645	0.1325382	0.21325346	2.7746316	20	6 15.1	20.8
480300 2015 <i>HJ</i> ₁₆₆	16.7	X	342.23600	73.66385	167.79240	4.00137	0.1224502	0.19248166	2.9708210	20	4 19.4	20.3
480301 2015 <i>HM</i> ₁₆₆	17.9	X	189.48569	128.54521	59.26186	7.67402	0.1152926	0.28126719	2.3070482	20	11 17.3	20.8
480302 2015 <i>HQ</i> ₁₆₈	17.3	X	17.23780	198.00630	141.05424	2.78259	0.1394828	0.25889868	2.4380886	20	11 18.8	20.0
480303 2015 <i>HW</i> ₁₆₉	18.5	X	165.64798	188.40681	69.04170	2.18083	0.1399407	0.29796955	2.2200093	20	—	—
480304 2015 <i>HA</i> ₁₇₀	17.3	X	14.91462	85.85604	219.63720	12.12672	0.2934503	0.22987082	2.6392477	20	10 14.8	20.0
480305 2015 <i>HB</i> ₁₇₀	16.7	X	56.68831	117.41944	114.20519	3.71543	0.0346528	0.22866288	2.6485343	20	7 28.6	20.2
480306 2015 <i>HL</i> ₁₇₂	17.5	X	136.72008	194.39208	358.59079	14.29302	0.2041894	0.26199515	2.4188404	20	9 26.9	21.6
480307 2015 <i>HN</i> ₁₇₂	16.7	X	99.68104	336.04241	269.34700	9.64717	0.1269478	0.26213202	2.4179983	20	10 22.1	20.4
480308 2015 <i>HO</i> ₁₇₃	17.6	X	197.45612	304.34160	262.59101	2.21925	0.1044122	0.29760491	2.2218223	20	12 27.0	20.1
480309 2015 <i>HT</i> ₁₇₃	16.8	X	0.74286	112.99190	179.08948	13.26244	0.2207050	0.22242331	2.6978379	20	8 8.0	19.4
480310 2015 <i>HV</i> ₁₇₃	16.4	X	347.04718	44.37390	210.35899	13.21133	0.1132964	0.20041771	2.8918692	20	5 16.1	19.8
480311 2015 <i>HQ</i> ₁₇₄	17.7	X	92.68300	25.71787	245.14584	1.88131	0.1883517	0.26772501				

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>
480321 2015 HR ₁₇₈	17.4	X	25.78552	145.20248	150.26466	3.52753	0.0838588	0.24745852	2.5126641	20	9 20.9	20.2
480322 2015 HC ₁₇₉	16.8	X	357.39933	302.51680	325.09818	3.04352	0.0585988	0.21843217	2.7306014	20	6 21.1	20.0
480323 2015 HJ ₁₇₉	17.0	X	72.17350	101.84517	110.42908	7.01300	0.1052070	0.22829529	2.6513766	20	8 4.1	20.5
480324 2015 HU ₁₇₉	16.5	X	251.40184	218.92260	150.71211	6.17383	0.0458551	0.21967386	2.7203020	20	6 9.4	20.4
480325 2015 HA ₁₈₀	17.5	X	140.50037	220.10639	35.70630	7.68791	0.1819500	0.27964416	2.3159662	20	12 19.2	21.2
480326 2015 HC ₁₈₀	17.5	X	134.50907	129.69153	96.10008	5.18715	0.1659152	0.26583528	2.3954897	20	11 7.3	21.3
480327 2015 HD ₁₈₀	16.0	X	302.87840	189.97522	103.45914	15.82726	0.1846807	0.18835526	3.0140529	20	4 25.0	20.3
480328 2015 HV ₁₈₀	17.3	X	125.91087	271.80343	348.45402	6.85572	0.0859643	0.28181712	2.3040459	20	12 12.5	20.7
480329 2015 HM ₁₈₁	16.8	X	46.22294	176.15920	63.35248	9.16843	0.2460838	0.22387492	2.6861634	20	8 31.8	20.3
480330 2015 HW ₁₈₁	17.8	X	265.54312	350.58556	166.25825	6.39160	0.0769753	0.30492933	2.1860995	20	—	—
480331 2015 JB	17.0	X	73.88138	152.47045	145.15738	17.38919	0.2974091	0.26176765	2.4202417	20	12 19.5	21.4
480332 2015 JL ₃	16.4	X	4.19936	56.02140	270.48930	12.55565	0.2074977	0.23950633	2.5679785	20	10 7.1	19.3
480333 2015 JZ ₃	16.0	X	5.21296	184.62026	8.85851	15.46341	0.0940582	0.18218283	3.0817525	20	3 26.3	19.7
480334 2015 JH ₆	17.7	X	78.28935	313.99857	7.44230	7.40117	0.1315858	0.27849213	2.3223487	20	—	—
480335 2015 JC ₁₀	16.6	X	225.95952	195.78356	253.41438	11.54594	0.1356765	0.23775122	2.5806011	20	8 7.4	20.7
480336 2015 KU	16.8	X	171.16994	357.24120	235.88266	22.19726	0.1883308	0.28583505	2.2824033	20	12 18.0	20.5
480337 2015 KA ₃	17.9	X	107.66573	104.04511	149.53448	7.29096	0.1652669	0.26162917	2.4211096	20	11 17.2	21.8
480338 2015 KN ₆	16.9	X	236.78932	220.72939	215.53323	21.63995	0.0994011	0.23625909	2.5914551	20	8 4.9	21.1
480339 2015 KH ₇	17.2	X	65.92749	217.63237	90.03504	17.12107	0.1351126	0.26047984	2.4282122	20	12 9.4	20.6
480340 2015 KV ₇	16.9	X	9.50768	207.36555	102.46493	13.12396	0.1892918	0.22648107	2.6655170	20	10 1.8	20.0
480341 2015 KX ₇	16.8	X	330.50787	296.72870	52.31382	11.79039	0.0734688	0.23926421	2.5697106	20	9 11.2	20.0
480342 2015 KE ₈	16.5	X	296.26132	130.45557	146.45589	10.07566	0.0288840	0.17854202	3.1235065	20	4 14.3	20.9
480343 2015 KM ₈	17.5	X	352.28942	40.06707	252.22462	3.29435	0.2219983	0.21031440	2.8004213	20	7 18.2	20.0
480344 2015 KV ₈	17.3	X	50.84254	5.50921	270.27054	0.95399	0.1640548	0.23741113	2.5830650	20	10 9.4	20.5
480345 2015 KA ₁₀	16.8	X	317.16633	233.25834	130.09701	12.36927	0.2036749	0.22768496	2.6561126	20	8 20.5	19.2
480346 2015 KP ₁₀	17.4	X	7.46608	217.76294	122.75859	13.13481	0.2015295	0.24227219	2.5483965	20	11 14.8	20.4
480347 2015 KE ₁₁	16.7	X	44.69133	193.12453	103.19644	15.22696	0.1363381	0.24405018	2.5360042	20	11 2.3	20.3
480348 2015 KJ ₁₂	15.9	X	176.01998	257.23541	138.42254	11.69842	0.1148081	0.17522870	3.1627575	20	4 20.4	21.1
480349 2015 KK ₁₃	15.8	X	245.68390	179.25682	141.06982	14.55039	0.1987133	0.16427589	3.3018208	20	3 21.9	21.2
480350 2015 KU ₁₃	16.5	X	292.67634	144.17044	153.01420	12.00961	0.1905392	0.17932118	3.1144521	20	4 11.7	20.9
480351 2015 KJ ₁₄	15.7	X	284.38460	184.50903	100.64088	17.37508	0.0553984	0.17537132	3.1610425	20	4 11.6	20.5
480352 2015 KA ₁₅	16.7	X	268.32316	178.00425	161.85312	9.96399	0.0726788	0.19231837	2.9725023	20	5 20.8	21.1
480353 2015 KD ₁₈	16.7	X	57.15414	133.58391	156.57641	13.21398	0.2643757	0.24315165	2.5422480	20	11 21.9	20.8
480354 2015 KP ₁₉	17.3	X	133.38141	348.98007	256.85605	4.81664	0.0720737	0.27099238	2.3650010	20	11 30.5	20.5
480355 2015 KR ₁₉	18.0	X	35.54221	16.67216	40.63308	4.27746	0.1257459	0.31020048	2.1612636	20	—	—
480356 2015 KS ₂₀	16.9	X	47.42646	231.32902	71.27582	5.46145	0.2057791	0.24289359	2.5440482	20	11 17.1	20.2
480357 2015 KM ₂₁	17.4	X	41.06912	97.80139	162.23156	3.32450	0.1221259	0.22395830	2.6854966	20	8 26.7	20.7
480358 2015 KE ₂₂	17.5	X	355.74924	268.74866	60.07299	14.63558	0.2506878	0.24392688	2.5368587	20	10 26.5	19.8
480359 2015 KS ₂₂	16.0	X	309.94604	130.33252	155.85471	17.26890	0.2113140	0.18075270	3.0979865	20	4 19.0	20.2
480360 2015 KH ₂₃	18.2	X	15.16778	91.34035	299.02096	4.97123	0.0320722	0.28930482	2.2641174	20	—	—
480361 2015 KL ₂₃	17.1	X	173.59769	267.80296	256.52449	8.77907	0.0464833	0.25600202	2.4564454	20	9 25.5	20.7
480362 2015 KR ₂₄	16.2	X	252.05152	265.18945	62.48979	18.95054	0.1054784	0.17788395	3.1312052	20	4 17.9	21.1
480363 2015 KR ₂₅	17.1	X	317.58821	258.40342	45.65387	7.30596	0.1038421	0.20632229	2.8364292	20	6 3.4	20.5
480364 2015 KF ₂₇	17.6	X	267.84107	202.79322	278.33920	7.34877	0.0663884	0.28860205	2.2677914	20	12 12.5	20.0
480365 2015 KZ ₂₇	18.0	X	68.93495	110.59383	270.90259	4.49240	0.1027931	0.31407975	2.1434306	20	—	—
480366 2015 KK ₂₉	16.8	X	82.80778	131.98479	35.96250	13.85795	0.1200706	0.21356012	2.7719748	20	6 18.4	20.8
480367 2015 KR ₃₀	17.7	X	305.34024	207.71861	243.54934	3.97651	0.1082820	0.29158851	2.2522803	20	—	—
480368 2015 KN ₃₁	17.1	X	118.74735	87.03842	49.25632	5.02640	0.0159236	0.21050456	2.7987346	20	6 8.8	21.0
480369 2015 KD ₃₂	18.5	X	250.65414	144.66225	33.80563	5.19454	0.0867323	0.30728995	2.1748893	20	—	—
480370 2015 KT ₃₃	18.1	X	46.06015	104.19361	254.21780	5.96906	0.0920484	0.28452924	2.2893812	20	—	—
480371 2015 KC ₃₄	17.7	X	37.39449	266.95215	31.68591	5.63657	0.1162527	0.24538943	2.5267687	20	10 16.8	20.9
480372 2015 KA ₃₆	15.7	X	297.41821	175.25548	106.14490	16.53191	0.1722781	0.17480618	3.1678518	20	4 5.8	20.4
480373 2015 KC ₃₆	16.2	X	7.76790	210.75921	86.09156	14.24335	0.1482722	0.20975767	2.8053743	20	8 31.1	19.6
480374 2015 KL ₃₆	16.0	X	332.52639	285.05556	97.95364	22.51145	0.0322596	0.23750669	2.5823721	20	11 4.5	19.8
480375 2015 KL ₃₇	16.8	X	274.57096	246.35758	132.38310	7.00104	0.0505929	0.21947108	2.7219774	20	7 21.2	20.2
480376 2015 KW ₃₇	17.7	X	148.41613	162.35408	117.19478	6.67918	0.1257258	0.29205232	2.2498951	20	—	—
480377 2015 KR ₃₈	17.0	X	227.77238	275.61608	131.68079	6.88803	0.0133137	0.21284030	2.7782211	20	7 2.3	20.8
480378 2015 KV ₃₈	15.9	X	126.90389	347.14877	97.57030	11.11343	0.0230174	0.17965078	3.1106416	20	4 20.9	20.5
480379 2015 KJ ₃₉	17.5	X	355.82196	306.52113	20.88810	1.25425	0.0711050	0.23595689	2.5936673	20	9 14.4	20.5
480380 2015 KP ₄₀	18.0	X	44.73953	75.19756	220.39803	7.59623	0.1318035	0.24362826	2.5389312	20	10 23.9	21.3
480381 2015 KA ₄₁	17.0	X	357.66791	129.20311	208.18992	2.73469	0.1856560	0.23484965	2.6018132	20	10 12.6	19.4
480382 2015 KJ ₄₄	17.1	X	118.08215	130.11321	61.64992	4.55819	0.0580116	0.23460827	2.6035975	20	8 30.4	20.7
480383 2015 KC ₄₅	16.6	X	294.55930	230.22187	66.16314	11.90785	0.1200863	0.18279447	3.0748742	20	4 23.6	20.8
480384 2015 KD ₄₅	18.5	X	257.56872	284.38181	242.30395	1.90409	0.0757699	0.29846999	2.2175271	20	—	—
480385 2015 KK ₄₆	17.2	X	186.64092	121.16554	84.50558	6.73741	0.0535561	0.27951917	2.3166565	20	12 14.0	20.2
480386 2015 KC ₄₇	17.2	X	321.74678	129.38537	226.68910	11.75747	0.1820887	0.22470681	2.6795296	20	8 13.8	20.2
480387 2015 KS ₄₈	16.4	X	14.45643	68.55843	238.92583	26.79788	0.1384054	0.23001954	2.6381100	20	9 11.9	20.1
480388 2015 KM ₄₉	16.4	X	316.49527	32.22199	233.80532	16.64417	0.1266355	0.18043405	3.1016328	20	4 6.9	20.7
480389 2015 KW ₄₉	17.1	X	331.45247	133.70508	213.08505	2.30038	0.0767497	0.23049156	2.6345070	20	8 30.6	20.0
480390 2015 KO ₅₀	17.4	X	277.28938	57.43928	63.12279	4.55648	0.0796279	0.28326830	2.2961702	20	12 24.0	19.8
480391 2015 KE ₅₁	14.8	X	195.05207	223.00255	70.67036	3.89499	0.2058889	0.12298660	4.0046465	20	1 13.7	21.3
480392 2015 KS ₅₁	17.0	X	0.83671	41.52037	238.93524	3.04285	0.1168636	0.21036256	2.7999939	20	7 15.6	20.1
480393 2015 KW ₅₁	16.6	X	57.79576	206.69783	69.58816	10.83212	0.1834944	0.23821057	2.5772825	20	10 25.9	20.3
480394 2015 KX												

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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>
480401 2015 <i>KM</i> ₆₇	17.7	X	260.98762	322.66252	115.46956	6.98794	0.1007394	0.25713950	2.4491959	20	9 22.7	20.7
480402 2015 <i>KC</i> ₆₉	16.8	X	34.87715	62.85593	175.81853	11.47284	0.0711686	0.21833371	2.7314224	20	7 9.2	20.5
480403 2015 <i>KU</i> ₇₁	17.7	X	83.83296	45.81888	188.67203	10.68607	0.0771727	0.24157001	2.5533325	20	9 13.4	21.2
480404 2015 <i>KK</i> ₇₇	17.2	X	59.95284	118.23616	130.58725	6.91637	0.1222552	0.23372319	2.6101663	20	9 10.9	20.6
480405 2015 <i>KN</i> ₇₇	16.6	X	89.36206	117.34911	85.92027	13.90017	0.0960328	0.22965530	2.6408987	20	8 16.4	20.5
480406 2015 <i>KZ</i> ₈₀	16.7	X	307.23067	136.83489	178.49282	11.41269	0.1067327	0.20340161	2.8635172	20	6 4.5	20.5
480407 2015 <i>KL</i> ₈₁	16.8	X	37.88530	155.96465	102.34110	12.98547	0.1364393	0.22552055	2.6730800	20	8 26.3	20.2
480408 2015 <i>KQ</i> ₈₂	17.0	X	155.33202	0.56281	167.23102	11.28992	0.0653297	0.24608428	2.5220100	20	9 11.0	20.5
480409 2015 <i>KR</i> ₈₃	17.2	X	346.94058	160.17087	165.45448	11.26754	0.1735731	0.22742630	2.6581262	20	8 28.9	19.8
480410 2015 <i>KK</i> ₉₀	16.2	X	289.61664	198.72450	89.19991	8.66695	0.1922043	0.17580252	3.1558716	20	3 28.7	20.8
480411 2015 <i>KN</i> ₉₁	18.1	X	125.10517	101.72830	170.10006	3.39409	0.0988935	0.27785121	2.3259187	20	12 25.9	21.6
480412 2015 <i>KT</i> ₉₂	17.0	X	352.92158	266.42008	113.37535	6.96844	0.1380731	0.26151741	2.4217854	20	12 7.3	19.5
480413 2015 <i>KS</i> ₉₄	16.7	X	61.54540	79.53163	119.89837	9.18377	0.0550930	0.20937240	2.8088147	20	6 23.3	20.4
480414 2015 <i>KY</i> ₉₄	17.2	X	188.51656	266.52776	206.01763	12.38632	0.0293843	0.22976987	2.6400207	20	8 3.8	21.1
480415 2015 <i>KB</i> ₉₅	16.1	X	300.87140	155.91508	109.65683	10.49752	0.0113264	0.17741227	3.1367527	20	4 10.2	20.7
480416 2015 <i>KW</i> ₉₇	16.8	X	19.54992	228.79019	82.76754	14.28636	0.1980191	0.23354485	2.6114949	20	10 24.9	20.0
480417 2015 <i>KZ</i> ₉₈	16.4	X	249.44717	270.50438	77.79532	14.75242	0.0554727	0.19084971	2.9877325	20	5 11.7	20.7
480418 2015 <i>KN</i> ₉₉	17.2	X	160.71812	350.17541	233.41589	24.46476	0.1599422	0.27626555	2.3348101	20	11 28.3	20.8
480419 2015 <i>KB</i> ₁₀₇	17.5	X	112.08397	51.55437	161.63228	3.44190	0.1604396	0.24396902	2.5365665	20	9 27.9	21.5
480420 2015 <i>KL</i> ₁₁₁	16.5	X	49.46958	56.91965	163.87931	9.07465	0.1378877	0.21181177	2.7872076	20	7 16.3	20.1
480421 2015 <i>KD</i> ₁₁₂	17.1	X	279.24603	278.99507	187.99816	9.68047	0.0613798	0.27355836	2.3501886	20	12 7.3	19.9
480422 2015 <i>KY</i> ₁₁₂	17.0	X	193.22677	284.86995	212.36761	11.83635	0.0881183	0.24649727	2.5191922	20	9 9.5	20.8
480423 2015 <i>KZ</i> ₁₁₃	16.5	X	315.04887	59.09467	201.19326	9.93153	0.2062501	0.17602079	3.1532621	20	3 19.1	20.7
480424 2015 <i>KK</i> ₁₁₄	16.4	X	253.39995	249.35832	78.19886	12.49933	0.0851571	0.17983575	3.1085083	20	4 19.3	21.1
480425 2015 <i>KL</i> ₁₁₇	17.0	X	34.21256	145.64586	99.47801	12.54103	0.1274285	0.21299749	2.7768541	20	7 26.7	20.3
480426 2015 <i>KC</i> ₁₂₂	16.6	X	87.68971	26.73217	147.18428	34.06818	0.1897439	0.23361376	2.6109814	20	7 16.6	20.8
480427 2015 <i>KR</i> ₁₂₂	17.0	X	312.31422	321.80921	354.86305	1.64648	0.0740098	0.20654660	2.8343752	20	6 17.2	20.6
480428 2015 <i>KZ</i> ₁₂₂	16.2	X	348.43760	210.19558	106.94317	15.26034	0.1561943	0.22651557	2.6652463	20	8 23.3	19.0
480429 2015 <i>KE</i> ₁₂₃	16.7	X	15.66860	196.12631	112.44492	17.29624	0.1978519	0.22783838	2.6549202	20	10 14.9	20.1
480430 2015 <i>KL</i> ₁₂₅	17.3	X	299.42922	138.51254	199.78470	5.94031	0.0719116	0.21952350	2.7215440	20	6 27.9	20.9
480431 2015 <i>KD</i> ₁₂₆	16.5	X	318.04673	231.50071	71.80982	9.22291	0.1364342	0.20585046	2.8407619	20	5 30.8	20.0
480432 2015 <i>KC</i> ₁₂₈	17.8	X	277.87438	350.95360	109.43132	5.55407	0.1060833	0.28281150	2.2986420	20	11 24.3	20.1
480433 2015 <i>KS</i> ₁₂₈	17.5	X	12.15849	97.09737	206.78254	11.85386	0.1843612	0.23175033	2.6249587	20	9 17.7	20.4
480434 2015 <i>KU</i> ₁₂₈	16.4	X	296.89494	95.56625	192.88137	8.33202	0.1585250	0.18564134	3.0433572	20	4 7.0	20.5
480435 2015 <i>KU</i> ₁₂₉	17.6	X	66.20795	157.12983	163.06107	5.30269	0.2061124	0.26746176	2.3857682	20	—	—
480436 2015 <i>KZ</i> ₁₃₁	16.5	X	345.31083	243.32020	82.75080	13.56962	0.1075464	0.21094942	2.7947984	20	8 29.2	20.0
480437 2015 <i>KA</i> ₁₃₂	17.3	X	201.13559	154.63881	70.72820	7.74215	0.0622009	0.28323552	2.2963473	20	—	—
480438 2015 <i>KH</i> ₁₃₂	15.7	X	279.01873	254.13553	84.54155	26.92946	0.2270013	0.17320123	3.1873915	20	5 16.9	20.6
480439 2015 <i>KC</i> ₁₃₄	16.7	X	99.02735	89.80617	119.83633	12.56145	0.2043298	0.24137824	2.5546847	20	9 17.9	20.9
480440 2015 <i>KY</i> ₁₃₄	17.0	X	302.07740	271.42746	30.70380	8.57663	0.3082216	0.18499358	3.0504572	20	4 9.5	21.2
480441 2015 <i>KR</i> ₁₃₆	16.9	X	10.37190	250.31577	59.21323	6.56082	0.2242733	0.22927552	2.6438141	20	10 4.6	19.5
480442 2015 <i>KE</i> ₁₃₈	16.7	X	331.46920	236.78029	52.82938	18.57293	0.1261147	0.20311854	2.8661770	20	6 2.1	20.1
480443 2015 <i>KC</i> ₁₄₁	18.3	X	222.85213	102.97577	101.05238	2.68560	0.0754182	0.30109030	2.2046427	20	—	—
480444 2015 <i>KA</i> ₁₄₂	16.6	X	354.58634	323.67545	273.85208	1.73051	0.0245321	0.19229441	2.9727492	20	5 7.0	20.6
480445 2015 <i>KF</i> ₁₄₃	17.9	X	121.73594	327.33647	279.06917	1.86478	0.1660596	0.26431420	2.4046713	20	11 18.9	21.6
480446 2015 <i>KK</i> ₁₄₄	15.9	X	269.24377	256.37808	62.12792	26.28262	0.2844948	0.17324650	3.1868361	20	4 11.5	21.3
480447 2015 <i>KY</i> ₁₄₄	18.1	X	237.45873	262.81434	277.00284	2.22721	0.0965933	0.29970683	2.2114220	20	—	—
480448 2015 <i>KY</i> ₁₄₆	16.5	X	14.41811	142.67798	196.68164	13.99853	0.1194882	0.24260765	2.5460468	20	11 8.5	19.5
480449 2015 <i>KV</i> ₁₄₉	17.2	X	28.70394	204.50412	94.22607	6.66049	0.2809128	0.23521654	2.5991069	20	10 31.2	20.4
480450 2015 <i>KO</i> ₁₅₆	16.0	X	271.19563	157.91281	134.14146	27.98846	0.1524068	0.17149717	3.2084707	20	3 19.4	21.1
480451 2015 <i>KR</i> ₁₅₈	16.7	X	111.15261	179.04614	330.50566	8.62796	0.1383156	0.21832183	2.7315214	20	7 3.4	20.8
480452 2015 <i>KC</i> ₁₅₈	16.7	X	319.86806	11.35315	302.77654	4.84543	0.0563169	0.21005998	2.8026821	20	6 27.6	20.3
480453 2015 <i>KT</i> ₁₅₉	16.3	X	295.62387	116.74010	174.02428	14.26956	0.2438742	0.17626363	3.1503652	20	3 28.6	20.7
480454 2015 <i>KX</i> ₁₅₉	16.1	X	301.29984	180.34278	94.84123	16.47193	0.2188936	0.17506020	3.1647866	20	3 27.6	20.8
480455 2015 <i>KZ</i> ₁₅₉	16.6	X	60.50539	94.02559	173.88505	8.37983	0.1298683	0.23804279	2.5784934	20	10 8.2	20.0
480456 2015 <i>LS</i>	17.2	X	13.15352	137.20401	157.86852	16.07737	0.1774209	0.22799044	2.6537395	20	9 8.7	19.8
480457 2015 <i>LB</i> ₁	17.3	X	17.48678	138.52958	180.42609	13.83120	0.2050064	0.23754629	2.5820851	20	10 29.2	20.3
480458 2015 <i>LP</i> ₁	16.8	X	346.76896	162.87731	160.18168	15.64261	0.1661652	0.22349912	2.6891736	20	8 23.4	19.4
480459 2015 <i>LP</i> ₂	16.5	X	285.31617	76.19310	203.32532	25.47131	0.3058355	0.17367273	3.1816199	20	2 19.6	21.9
480460 2015 <i>LN</i> ₃	16.7	X	26.74018	263.69773	5.35400	8.63577	0.1883499	0.22455393	2.6807456	20	8 29.9	19.6
480461 2015 <i>LP</i> ₃	16.3	X	31.57168	247.19200	6.17080	10.89939	0.1681045	0.22160450	2.7044793	20	8 13.8	19.5
480462 2015 <i>LA</i> ₄	16.3	X	274.38082	274.43946	30.77298	25.59707	0.2367951	0.17579723	3.1559348	20	3 31.4	21.3
480463 2015 <i>LA</i> ₅	15.9	X	295.32758	350.88694	276.04741	9.29387	0.0493859	0.17807828	3.1289269	20	3 20.2	20.5
480464 2015 <i>LR</i> ₇	16.1	X	323.91363	50.41336	200.90256	16.29321	0.1875150	0.17856004	3.1232964	20	3 23.4	20.0
480465 2015 <i>LS</i> ₇	16.3	X	280.38719	153.44028	174.71632	10.92721	0.1319584	0.18755222	3.0226503	20	5 12.4	20.6
480466 2015 <i>LC</i> ₈	17.1	X	31.29613	99.19575	194.09163	13.79942	0.1038901	0.23082430	2.6319746	20	9 24.2	20.4
480467 2015 <i>LE</i> ₈	16.3	X	278.92843	103.16853	220.33018	17.31684	0.1788754	0.17859031	3.1229434	20	4 25.6	20.8
480468 2015 <i>LO</i> ₈	16.6	X	333.59369	199.68592	170.55576	12.75876	0.1338223	0.23614927	2.5922585	20	10 12.1	19.2
480469 2015 <i> LX</i> ₈	16.8	X	271.64519	0.52275	53.44056	13.63110	0.1042130	0.24461616	2.5320909	20	9 6.9	20.2
480470 2015 <i>LO</i> ₉	17.6	X	85.81685	183.41808	91.80572	4.12273	0.0714556	0.25926093	2.4358171	20	11 13.2	20.9
480471 2015 <i>LC</i> ₁₀	17.7	X	121.33065	2.30386	281.01308	4.752						

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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>
480481 2015 LV ₂₂	15.5 ^m	X	313.05415	166.93596	82.42078	17.28214	0.1363391	0.17076663	3.2176148	20	3 24.9	20.1
480482 2015 LD ₂₄	15.9	X	24.44195	195.31277	56.08211	12.44501	0.0693129	0.19984235	2.8974171	20	7 11.8	19.7
480483 2015 LS ₂₅	18.1	X	351.18706	302.14530	114.88381	6.49790	0.1261949	0.28024537	2.3126527	20	—	—
480484 2015 LY ₂₆	16.7	X	196.49515	251.44938	165.36312	5.75345	0.0873690	0.19415146	2.9537628	20	6 2.2	21.2
480485 2015 LC ₂₇	16.9	X	334.52382	186.20197	150.29922	5.55100	0.1199695	0.21998391	2.7177454	20	8 19.1	19.6
480486 2015 LT ₂₈	15.9	X	258.95490	244.05718	118.28253	9.09456	0.0738524	0.17955243	3.1117774	20	6 5.7	20.4
480487 2015 LU ₂₈	16.7	X	212.17962	354.92772	109.97151	5.49933	0.0244278	0.21477347	2.7615249	20	8 28.7	20.6
480488 2015 LD ₃₀	15.7	X	196.16465	315.78133	107.73665	28.18394	0.0862887	0.17708529	3.1406127	20	6 13.8	20.7
480489 2015 LH ₃₀	16.7	X	223.74557	166.67805	295.04849	2.35465	0.0288281	0.21837005	2.7311193	20	9 5.4	20.5
480490 2015 LB ₃₁	15.8	X	256.28062	70.23274	296.47406	10.37904	0.0927471	0.17685519	3.1433362	20	6 3.6	20.4
480491 2015 LG ₃₁	16.0	X	341.39711	330.99987	281.82874	15.23440	0.1763866	0.17386846	3.1792317	20	4 22.4	20.0
480492 2015 LO ₃₁	17.0	X	19.71029	315.41237	118.47593	9.01234	0.1332524	0.28338483	2.2955406	20	—	—
480493 2015 LR ₃₁	16.4	X	334.62934	12.90876	278.41063	7.15322	0.0655412	0.18368273	3.0649531	20	6 17.1	20.4
480494 2015 LY ₃₁	17.5	X	157.80630	150.72154	71.70642	2.66933	0.1398214	0.25726885	2.4483748	20	11 22.2	21.2
480495 2015 LS ₃₂	17.1	X	120.66659	286.92090	301.95268	11.43191	0.1489262	0.24047020	2.5611118	20	10 18.2	21.4
480496 2015 LB ₃₃	16.6	X	60.60918	143.45749	87.47356	7.24423	0.0281665	0.19887905	2.9067657	20	7 30.7	20.5
480497 2015 LU ₃₃	15.4	X	276.09260	229.32612	111.88903	16.72145	0.0514660	0.17443330	3.1723647	20	6 5.2	20.0
480498 2015 LR ₃₄	16.6	X	15.85343	232.29239	98.79262	8.54702	0.1183541	0.22605814	2.6688405	20	10 28.7	19.9
480499 2015 LO ₃₅	17.3	X	10.62340	69.09887	208.64352	11.18310	0.1739556	0.21654718	2.7464247	20	8 1.2	20.4
480500 2015 LZ ₃₅	16.8	X	117.37459	77.48203	140.29203	13.55706	0.1441614	0.23315134	2.6144325	20	10 10.4	21.1
480501 2015 LO ₃₆	17.2	X	30.51554	70.18285	219.94207	6.88995	0.1790476	0.23254242	2.6189945	20	9 30.1	20.3
480502 2015 LU ₃₆	17.3	X	96.19199	206.64384	86.30035	5.64182	0.1553967	0.27089432	2.3655717	20	12 23.9	21.0
480503 2015 LK ₃₈	17.4	X	339.14394	192.82086	140.33402	3.78391	0.1142921	0.22631504	2.6668204	20	8 24.5	20.2
480504 2015 LN ₃₈	17.3	X	12.47077	133.84815	165.79934	5.41994	0.1646068	0.22327496	2.6909732	20	9 10.7	20.0
480505 2015 MM	17.2	X	128.77385	152.07657	124.15483	5.87992	0.2035422	0.27977726	2.3152316	20	—	—
480506 2015 MN	16.5	X	294.07960	82.90126	195.92418	9.62231	0.2112095	0.17400002	3.1776289	20	3 14.3	21.0
480507 2015 MR	15.8	X	282.47092	228.77823	93.25053	8.25406	0.1184862	0.19080392	2.9882105	20	5 9.2	20.0
480508 2015 MT	16.5	X	294.65311	115.55219	229.30777	8.27128	0.1501951	0.20660020	2.8338850	20	6 17.6	20.2
480509 2015 MY	16.1	X	302.21903	143.88260	163.26560	7.84777	0.2427939	0.18296172	3.0730000	20	4 27.5	20.2
480510 2015 MV ₁	17.6	X	81.36816	348.94771	320.91173	7.12840	0.1223481	0.27710031	2.3301187	20	12 30.4	21.0
480511 2015 MQ ₂	16.1	X	290.63930	290.85647	34.08117	9.99575	0.2833006	0.17563535	3.1578737	20	4 26.8	20.6
480512 2015 ML ₅	16.5	X	46.01427	27.47883	230.65545	7.57149	0.1065747	0.21110067	2.7934634	20	8 23.9	20.3
480513 2015 MS ₅	17.5	X	177.46499	33.28692	185.76525	7.10107	0.0369633	0.26109488	2.4243974	20	12 17.7	20.8
480514 2015 ME ₆	16.3	X	317.21467	30.90993	264.91135	9.54189	0.2089973	0.17776958	3.1325481	20	5 7.0	20.2
480515 2015 MJ ₆	16.9	X	78.33918	144.73413	133.45860	5.97408	0.0775248	0.23828167	2.5767698	20	11 6.2	20.6
480516 2015 MK ₆	15.7	X	271.76661	91.45274	258.66922	7.43003	0.0252912	0.18159675	3.0883795	20	6 11.9	19.9
480517 2015 MP ₆	16.4	X	287.59259	102.69917	272.41747	10.82846	0.1562907	0.19567913	2.9383693	20	7 15.6	20.3
480518 2015 MJ ₇	16.5	X	40.55372	325.10547	269.19671	9.78245	0.0575426	0.19089452	2.9872649	20	7 8.8	20.5
480519 2015 MZ ₇	17.1	X	340.48780	111.43322	228.25308	4.84544	0.0549969	0.21050869	2.7986980	20	8 31.0	20.6
480520 2015 MP ₈	16.7	X	315.91547	73.56030	265.02221	10.95830	0.1025107	0.19316051	2.9638564	20	7 16.9	20.5
480521 2015 MC ₉	16.0	X	282.16275	70.79140	281.93220	15.67410	0.1091293	0.17988879	3.1078973	20	6 16.9	20.3
480522 2015 MN ₉	17.1	X	259.31501	218.22712	197.33369	4.86824	0.0302100	0.21061057	2.7977953	20	8 20.1	20.9
480523 2015 MS ₉	17.0	X	210.85312	347.56351	145.30965	7.11215	0.0709181	0.22908149	2.6453068	20	9 29.7	20.7
480524 2015 MV ₉	17.4	X	114.12368	31.83291	210.57735	3.35351	0.0926046	0.23952821	2.5678222	20	10 31.3	21.1
480525 2015 MJ ₁₀	16.3	X	302.07743	56.12253	262.69437	10.05907	0.1725477	0.17841742	3.1249606	20	5 20.5	20.5
480526 2015 MD ₁₁	16.4	X	340.05092	58.38149	219.72345	9.04271	0.0490720	0.18115781	3.0933662	20	6 8.6	20.6
480527 2015 ME ₁₁	16.5	X	253.74204	113.12287	246.42670	9.51759	0.0858081	0.17071421	3.2182734	20	5 23.9	21.1
480528 2015 MM ₁₃	15.8	X	314.47382	186.82136	98.95282	28.67750	0.1377577	0.17324187	3.1868930	20	5 14.7	20.4
480529 2015 MN ₁₃	16.3	X	37.23044	180.31400	85.92170	10.12625	0.0873610	0.21024451	2.8010419	20	8 27.1	20.0
480530 2015 MT ₁₄	16.3	X	313.21528	141.16830	167.74153	13.53152	0.0754517	0.18223322	3.0811843	20	6 9.1	20.6
480531 2015 MV ₁₉	17.1	X	336.13427	335.93454	341.65779	3.08645	0.1725922	0.21887433	2.7269227	20	7 23.3	19.6
480532 2015 MP ₂₀	17.0	X	316.40188	102.04581	249.21351	7.65699	0.1215697	0.22457914	2.6805450	20	7 23.8	19.7
480533 2015 MW ₂₀	18.0	X	253.58454	277.90095	260.65757	3.25268	0.0280983	0.30610299	2.1805079	20	—	—
480534 2015 MQ ₂₅	16.5	X	292.21484	7.16476	269.64295	5.21749	0.1040998	0.17866348	3.1220907	20	3 22.9	20.9
480535 2015 MK ₂₇	16.3	X	197.33338	105.53362	271.66589	9.87335	0.0304219	0.18464017	3.0543485	20	4 11.2	20.9
480536 2015 MQ ₃₅	17.4	X	117.49669	107.12277	145.10548	6.74844	0.0695103	0.26709936	2.3879257	20	11 22.1	20.8
480537 2015 MK ₄₀	16.6	X	345.13440	216.71220	116.49525	15.83171	0.1214707	0.23201835	2.6229368	20	9 11.5	19.7
480538 2015 MH ₄₃	16.9	X	55.68108	29.15543	212.47643	13.84546	0.0698390	0.23024372	2.6363973	20	8 10.2	20.6
480539 2015 MV ₄₄	15.8	X	13.03114	183.59429	95.11353	11.06150	0.0752694	0.19226822	2.9730191	20	7 31.8	19.6
480540 2015 MH ₄₅	16.3	X	51.51230	141.86387	92.36336	10.88385	0.0409305	0.18773581	3.0206794	20	7 23.3	20.4
480541 2015 MS ₄₅	16.4	X	318.64509	240.27558	103.89037	10.68238	0.0519095	0.19297077	2.9657989	20	8 6.2	20.3
480542 2015 MU ₄₆	15.9	X	280.78478	240.29958	111.66371	13.64631	0.0923962	0.17443839	3.1723031	20	6 17.0	20.4
480543 2015 MW ₄₉	15.7	X	353.48325	210.83224	94.22419	13.15838	0.1349957	0.19108078	2.9853233	20	8 8.2	19.2
480544 2015 MG ₅₀	15.8	X	230.73256	319.67050	108.46023	15.10541	0.0738230	0.18114492	3.0935129	20	7 24.9	20.3
480545 2015 MJ ₅₂	15.5	X	249.70649	261.42593	105.89494	22.90029	0.1003838	0.17608238	3.1525268	20	6 1.6	20.4
480546 2015 MR ₅₅	16.3	X	319.30817	57.83962	196.31447	16.37725	0.1028849	0.17607531	3.1526112	20	4 2.6	20.3
480547 2015 MY ₅₅	16.2	X	46.80799	7.41924	288.40179	11.70683	0.2488955	0.23823294	2.5771212	20	11 8.9	20.0
480548 2015 MF ₅₆	17.0	X	133.21618	101.88615	114.22368	6.43162	0.1669347	0.24379063	2.5378038	20	10 23.6	21.2
480549 2015 MH ₅₆	16.5	X	344.25618	332.95506	281.81691	10.76385	0.2112577	0.17837545	3.1254507	20	4 29.2	20.1
480550 2015 MV ₅₆	16.6	X	357.43326	238.76631	97.72906	3.22576	0.0774521	0.22053405	2.7132238	20	9 28.9	19.8
480551 2015 MJ ₅₇	16.3	X	312.97649	206.07981	112.77102	11.37425	0.0343138	0.18655566	3.0334052	20	6 25.5	20.4
480552 2015 MM ₅₇	16.4	X	321.10178	22.36932	296.94015	8.87561	0.0945173	0.18985538	2.9981552	20	7 2.1	20.1
480553 2015 MD ₅₈	16.2	X	258.35124	88.10289	298.32213	9.28452	0.1463021	0.18539706	3.0460299	20	6 25.1	20.7

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>
480561 2015 <i>MH</i> ₆₇	16.8	X	81.18534	66.60059	181.10021	8.69710	0.1196145	0.23753039	2.5822003	20	10 4.6	20.4
480562 2015 <i>MJ</i> ₆₈	17.5	X	79.42948	211.16206	97.14162	7.55573	0.1051332	0.25395194	2.4696478	20	12 19.3	20.9
480563 2015 <i>ME</i> ₆₉	17.2	X	180.18998	353.51957	237.74485	5.79267	0.0653360	0.27195036	2.3594438	20	—	—
480564 2015 <i>MH</i> ₆₉	16.9	X	296.68272	178.23767	223.70584	5.08955	0.0284894	0.22525195	2.6752046	20	9 24.4	20.4
480565 2015 <i>MK</i> ₆₉	16.5	X	294.86855	88.37621	264.47304	7.94986	0.1221003	0.19146300	2.9813490	20	7 2.4	20.3
480566 2015 <i>MQ</i> ₆₉	16.1	X	212.53200	285.90873	134.33795	11.15210	0.2025697	0.17763261	3.1341582	20	6 16.4	21.4
480567 2015 <i>MT</i> ₆₉	17.9	X	280.08642	289.40547	241.35944	4.90821	0.1267696	0.29722071	2.2237365	20	—	—
480568 2015 <i>MV</i> ₆₉	16.9	X	331.31707	144.09975	199.99128	3.91499	0.0801743	0.20952639	2.8074384	20	8 22.9	20.3
480569 2015 <i>MD</i> ₇₀	16.0	X	233.68306	205.17344	200.16753	6.01837	0.1378528	0.18375542	3.0641447	20	6 22.0	20.7
480570 2015 <i>MK</i> ₇₀	15.9	X	311.31933	68.08369	217.94670	7.33005	0.0569993	0.16984190	3.2292834	20	5 8.9	20.3
480571 2015 <i>MD</i> ₇₁	17.0	X	77.22387	61.65946	176.46449	9.07928	0.1012091	0.21828908	2.7317946	20	9 11.1	20.7
480572 2015 <i>MO</i> ₇₂	15.8	X	40.56143	298.40606	263.65666	9.78132	0.1648066	0.18251174	3.0780489	20	6 9.9	19.6
480573 2015 <i>MO</i> ₇₄	17.1	X	316.69605	164.05083	210.87178	3.16970	0.1061026	0.21516897	2.7581399	20	9 10.3	20.2
480574 2015 <i>MP</i> ₇₅	16.5	X	299.27492	218.08741	122.70313	14.59386	0.1427130	0.18617192	3.0375721	20	6 21.1	20.5
480575 2015 <i>MB</i> ₇₆	16.5	X	42.30457	299.62424	261.97998	8.68507	0.0718444	0.17592976	3.1543497	20	5 30.9	20.7
480576 2015 <i>MM</i> ₇₆	15.8	X	79.38868	250.30321	273.92160	16.37507	0.1770481	0.17887135	3.1196714	20	6 18.5	20.3
480577 2015 <i>MY</i> ₇₇	17.1	X	214.57937	358.23739	132.82928	16.42311	0.1607736	0.22871716	2.6481153	20	10 12.9	21.0
480578 2015 <i>ME</i> ₇₉	17.4	X	265.31402	352.43144	152.18295	6.60631	0.0841485	0.26747173	2.3857089	20	—	—
480579 2015 <i>ML</i> ₇₉	16.3	X	207.52212	164.80714	274.40581	9.96995	0.0889032	0.18996042	2.9970499	20	7 10.6	20.7
480580 2015 <i>MP</i> ₇₉	16.6	X	278.22851	142.01959	213.33626	2.71423	0.0564492	0.18408278	3.0605110	20	6 22.5	20.7
480581 2015 <i>MH</i> ₈₀	16.6	X	317.24597	160.39947	166.45760	3.12678	0.1103687	0.18978304	2.9989171	20	7 3.6	20.3
480582 2015 <i>MU</i> ₈₀	16.4	X	237.72530	285.00366	124.18133	17.06129	0.2358842	0.17832410	3.1260507	20	6 22.9	21.6
480583 2015 <i>MB</i> ₈₁	15.6	X	122.04669	212.20827	288.43295	14.91667	0.0494909	0.18062611	3.0994338	20	6 23.2	20.1
480584 2015 <i>MP</i> ₈₁	15.8	X	187.47852	308.03077	133.83557	17.47982	0.2031796	0.17411796	3.1761939	20	6 22.0	21.4
480585 2015 <i>MT</i> ₈₁	17.0	X	330.07973	112.89906	235.01729	5.02818	0.0209705	0.21008774	2.8024352	20	8 27.3	20.9
480586 2015 <i>MV</i> ₈₁	16.7	X	236.47687	160.45168	275.09517	10.42678	0.1144753	0.20124062	2.8839802	20	8 3.2	21.0
480587 2015 <i>MF</i> ₈₂	16.7	X	40.68322	306.84223	265.68429	11.00985	0.0781487	0.17920072	3.1158477	20	6 12.9	20.7
480588 2015 <i>MK</i> ₈₂	16.9	X	346.84422	111.40363	235.47318	5.81426	0.0322890	0.21848772	2.7301386	20	9 19.7	20.4
480589 2015 <i>MS</i> ₈₂	16.9	X	68.52536	326.82481	263.50146	9.94983	0.0889815	0.20465701	2.8517950	20	8 13.6	21.0
480590 2015 <i>MB</i> ₈₄	16.9	X	213.59098	349.56034	142.55616	10.16513	0.1219016	0.22753107	2.6573101	20	9 26.7	20.9
480591 2015 <i>MF</i> ₈₄	16.6	X	65.71416	286.38208	275.73027	9.95226	0.0817158	0.18650751	3.0339273	20	7 5.1	20.7
480592 2015 <i>MJ</i> ₈₅	16.8	X	349.80776	62.31936	234.17220	0.38959	0.0538416	0.19232110	2.9724742	20	7 17.7	20.6
480593 2015 <i>MZ</i> ₈₅	16.0	X	273.83065	183.41242	156.97337	9.77523	0.0967760	0.17454843	3.1709697	20	5 24.9	20.6
480594 2015 <i>MG</i> ₈₆	16.4	X	244.46260	152.51761	237.54717	9.22515	0.0552381	0.18586642	3.0408997	20	6 24.1	20.8
480595 2015 <i>MK</i> ₈₆	16.6	X	337.15490	57.13393	241.16748	8.91471	0.1214432	0.18958467	3.0010086	20	6 26.4	20.2
480596 2015 <i>MD</i> ₈₇	16.5	X	226.18229	136.15602	271.70834	9.07024	0.1102701	0.18196244	3.0842403	20	6 20.0	21.0
480597 2015 <i>MS</i> ₈₇	16.5	X	129.43786	224.94040	253.10499	9.94127	0.1022359	0.17212658	3.1006444	20	5 29.4	21.1
480598 2015 <i>MQ</i> ₉₁	16.9	X	290.71473	101.36149	211.37242	9.25529	0.2351775	0.17539583	3.2607480	20	4 18.7	21.4
480599 2015 <i>MX</i> ₉₂	16.7	X	22.69833	237.14911	117.21907	4.95904	0.1138689	0.26248507	2.4158297	20	12 13.8	19.6
480600 2015 <i>MG</i> ₉₃	15.9	X	279.03859	53.69008	247.61057	25.79769	0.1760887	0.17171133	3.2058024	20	3 21.9	21.2
480601 2015 <i>MR</i> ₉₃	16.9	X	44.95518	142.92011	171.66232	5.75304	0.1345195	0.24726004	2.5140086	20	11 21.1	20.2
480602 2015 <i>MY</i> ₉₃	16.8	X	352.04655	237.74088	98.36345	14.24017	0.1390300	0.23363677	2.6108099	20	10 3.5	19.9
480603 2015 <i>MH</i> ₉₇	17.3	X	64.26477	127.90921	139.46512	5.55172	0.1414730	0.22584552	2.6705152	20	10 12.8	21.0
480604 2015 <i>MB</i> ₉₈	16.9	X	152.96521	29.33742	135.62426	4.33200	0.0312683	0.21286947	2.7779673	20	9 1.0	20.7
480605 2015 <i>MK</i> ₁₀₃	16.7	X	346.28763	297.95778	348.16135	2.73830	0.1180796	0.18713754	3.0271140	20	6 26.5	20.3
480606 2015 <i>MT</i> ₁₀₃	16.4	X	44.29373	115.75307	117.66651	11.62619	0.0623984	0.19063687	2.9899559	20	7 14.3	20.3
480607 2015 <i>MB</i> ₁₀₄	16.8	X	157.24871	52.35878	126.55515	4.35553	0.0295957	0.22736695	2.6585887	20	9 27.5	20.6
480608 2015 <i>MG</i> ₁₀₄	15.6	X	221.15109	294.53837	111.21115	23.16119	0.0785589	0.18149309	3.0895554	20	6 17.4	20.4
480609 2015 <i>MP</i> ₁₀₄	17.0	X	358.92057	33.35405	292.72965	1.48087	0.0910740	0.21622272	2.7491715	20	9 14.5	20.3
480610 2015 <i>MB</i> ₁₀₆	16.1	X	8.22400	109.45924	119.61907	16.12212	0.0886241	0.17414143	3.1759085	20	5 21.9	20.4
480611 2015 <i>MF</i> ₁₀₇	16.8	X	165.07952	261.75930	284.29451	11.65974	0.1196387	0.23866385	2.5740183	20	10 6.8	21.1
480612 2015 <i>ML</i> ₁₀₇	15.9	X	257.62607	56.46581	289.78411	7.45568	0.0427333	0.16864604	3.2445312	20	5 16.2	20.6
480613 2015 <i>MX</i> ₁₀₈	16.6	X	179.37236	167.46382	326.94242	4.01382	0.1028882	0.20996331	2.8035422	20	8 24.1	20.4
480614 2015 <i>MD</i> ₁₁₀	17.3	X	87.30460	247.66151	336.25074	1.12781	0.0496155	0.21117459	2.7928114	20	8 28.7	21.2
480615 2015 <i>MP</i> ₁₁₀	15.8	X	210.38710	311.05694	99.81980	7.24904	0.1184048	0.17115936	3.2126910	20	6 7.2	20.9
480616 2015 <i>MP</i> ₁₁₂	16.8	X	307.54952	226.12778	99.60611	10.56302	0.2048403	0.18201093	3.0836925	20	6 4.1	20.6
480617 2015 <i>MU</i> ₁₁₂	17.2	X	29.15989	211.66055	83.30942	0.90894	0.0465840	0.21488058	2.7606072	20	9 14.4	20.8
480618 2015 <i>MV</i> ₁₁₂	16.3	X	227.83648	274.57654	123.05382	10.12937	0.0885631	0.17452571	3.1712448	20	6 12.0	21.1
480619 2015 <i>MC</i> ₁₁₃	16.1	X	318.75113	172.38050	119.80051	10.57717	0.0545073	0.17549961	3.1595018	20	5 29.3	20.5
480620 2015 <i>MO</i> ₁₁₅	17.0	X	70.20417	160.97041	108.75133	14.76214	0.0851227	0.22582162	2.6707036	20	10 20.5	21.0
480621 2015 <i>MF</i> ₁₂₃	16.4	X	308.62569	121.45631	207.66143	9.05835	0.1065273	0.18250074	3.0781726	20	6 23.0	20.5
480622 2015 <i>MA</i> ₁₂₇	17.1	X	9.09373	242.87354	86.55230	7.00906	0.1809899	0.22024104	2.7156297	20	10 3.5	20.7
480623 2015 <i>MH</i> ₁₂₇	16.3	X	289.62754	232.11807	114.13400	11.93441	0.0627495	0.18197896	3.0840537	20	6 25.4	20.5
480624 2015 <i>ML</i> ₁₂₈	16.4	X	306.12888	248.33108	93.89705	6.45311	0.1662996	0.18519773	3.0482151	20	6 28.9	20.2
480625 2015 <i>MA</i> ₁₃₀	16.3	X	320.84105	340.35155	310.00251	13.94815	0.2583321	0.17605527	3.1528504	20	4 22.9	20.3
480626 2015 <i>NX</i> ₁	16.9	X	58.83484	80.88927	205.99686	14.52206	0.1013872	0.24041650	2.5614931	20	10 26.5	20.4
480627 2015 <i>NX</i> ₃	16.0	X	341.92794	143.39402	101.81013	11.47692	0.1732237	0.17447288	3.1718850	20	4 25.0	19.8
480628 2015 <i>NR</i> ₄	16.5	X	326.46733	297.68251	54.11161	6.70657	0.0428860	0.21256367	2.7806310	20	9 2.1	20.1
480629 2015 <i>NZ</i> ₅	16.1	X	285.22769	259.29543	81.39821	11.40902	0.1090644	0.17910609	3.1169450	20	6 5.3	20.3
480630 2015 <i>NG</i> ₇	16.5	X	220.54791	238.96395	170.48711	9.87142	0.0760246	0.18088091	3.0965224	20	6 19.2	21.3
480631 2015 <i>NL</i> ₇	17.0	X	15.42169	67.91814	244.48							

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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>
480641 2015 <i>NJ</i> ₁₄	16.1	X	332.41075	194.65289	77.61732	6.56224	0.1144947	0.17498079	3.1657440	20	5 16.0	20.0
480642 2015 <i>NT</i> ₁₄	16.7	X	272.88740	245.21328	79.25720	10.93774	0.2301208	0.17476134	3.1683937	20	4 18.8	21.6
480643 2015 <i>NQ</i> ₁₆	16.5	X	5.02813	153.38725	129.20204	3.37680	0.1062995	0.18824931	3.0151837	20	7 24.1	20.0
480644 2015 <i>NX</i> ₁₆	16.0	X	316.55799	173.35510	132.05388	14.47767	0.0225269	0.16962097	3.2320868	20	6 15.1	20.7
480645 2015 <i>NP</i> ₂₀	16.1	X	283.78484	228.91835	78.83793	11.73664	0.1302035	0.17834546	3.1258011	20	4 23.8	20.6
480646 2015 <i>NM</i> ₂₁	16.4	X	50.51360	176.49991	97.05615	15.07537	0.1317835	0.23496948	2.6009285	20	10 9.8	20.2
480647 2015 <i>NU</i> ₂₁	16.5	X	313.65688	73.51259	231.37696	12.69765	0.2259330	0.18956869	3.0011772	20	5 12.0	19.8
480648 2015 <i>NG</i> ₂₃	16.1	X	217.00829	263.12019	240.53662	12.59850	0.0437989	0.23201284	2.6229783	20	10 20.4	19.8
480649 2015 <i>OG</i> ₁	16.7	X	167.66427	281.07722	280.33615	11.93174	0.2110911	0.24314807	2.5422729	20	10 31.6	20.8
480650 2015 <i>OB</i> ₇	16.3	X	340.92919	31.84809	240.64668	7.78031	0.0514706	0.17529423	3.1619692	20	6 2.3	20.4
480651 2015 <i>OK</i> ₁₀	16.7	X	357.82577	241.55077	105.26298	5.86776	0.0761789	0.22168753	2.7038040	20	10 15.1	20.0
480652 2015 <i>OY</i> ₁₁	16.1	X	333.67635	179.35651	118.80741	11.65433	0.0714655	0.18342892	3.0677797	20	6 24.8	20.1
480653 2015 <i>OX</i> ₁₂	16.1	X	80.93774	108.49162	109.80823	15.91892	0.1022452	0.20443988	2.8538139	20	8 23.4	20.3
480654 2015 <i>OG</i> ₁₃	16.9	X	332.50292	341.16538	77.39371	5.38795	0.1885338	0.23764585	2.5813639	20	12 21.0	19.1
480655 2015 <i>OZ</i> ₁₄	16.2	X	256.98296	45.20322	328.65400	8.71758	0.0951432	0.17417236	3.1755325	20	6 13.4	20.9
480656 2015 <i>OP</i> ₁₅	15.8	X	253.39869	296.74431	103.83081	11.30051	0.1039554	0.18581816	3.0414262	20	7 12.7	20.1
480657 2015 <i>OE</i> ₁₇	16.1	X	346.72506	293.95652	338.49782	11.97486	0.1640995	0.17679133	3.1440932	20	6 4.9	20.0
480658 2015 <i>OC</i> ₂₄	16.1	X	308.47095	182.13642	131.10166	18.34314	0.1990997	0.17567458	3.1574037	20	5 25.2	20.4
480659 2015 <i>OW</i> ₃₄	16.2	X	102.85068	75.31657	111.29790	11.32880	0.0448059	0.18825901	3.0150802	20	7 28.4	20.5
480660 2015 <i>OV</i> ₃₅	15.5	X	327.52378	352.92675	266.62113	18.88219	0.2168933	0.18281399	3.0746553	20	3 27.8	19.7
480661 2015 <i>OL</i> ₃₇	17.9	X	284.97186	332.79491	229.26845	6.02192	0.0367204	0.29915974	2.2141173	20	—	—
480662 2015 <i>OA</i> ₄₀	16.1	X	218.00559	75.58237	308.17763	3.62944	0.1047764	0.15013131	3.5060804	20	5 12.4	21.5
480663 2015 <i>OW</i> ₄₃	16.7	X	342.09995	244.14844	34.57477	6.03956	0.1350592	0.18380832	3.0635568	20	6 6.8	20.3
480664 2015 <i>OC</i> ₄₅	16.3	X	150.68073	29.45354	85.72027	11.21319	0.0628935	0.18170915	3.0871058	20	6 24.3	20.8
480665 2015 <i>OS</i> ₄₆	17.3	X	127.65635	219.55838	5.10011	4.38731	0.1095425	0.23888443	2.5724334	20	10 22.7	21.2
480666 2015 <i>OQ</i> ₅₁	16.8	X	35.75188	191.06172	58.03206	9.87135	0.2681722	0.20017766	2.8941807	20	8 29.7	20.4
480667 2015 <i>OU</i> ₆₆	17.0	X	74.80325	56.16215	184.72278	3.92940	0.0185173	0.21270432	2.7794051	20	8 29.6	20.6
480668 2015 <i>ON</i> ₆₈	17.1	X	85.97534	83.47626	188.44160	3.18997	0.0869632	0.23549390	2.5970657	20	11 5.9	20.8
480669 2015 <i>OG</i> ₇₁	16.2	X	69.45086	301.74404	297.45657	7.28242	0.1021583	0.20920238	2.8103363	20	8 30.5	20.1
480670 2015 <i>OL</i> ₇₁	16.0	X	300.31934	217.63905	133.35251	9.95587	0.1264438	0.18775273	3.0204979	20	7 7.5	20.0
480671 2015 <i>OB</i> ₇₃	17.0	X	320.14455	17.25071	280.72226	4.16191	0.1539994	0.17578694	3.1560580	20	5 24.0	20.8
480672 2015 <i>OC</i> ₇₃	16.3	X	266.36857	94.19560	296.51772	8.41520	0.0698524	0.19126602	2.9833956	20	7 21.4	20.2
480673 2015 <i>OQ</i> ₇₃	16.1	X	309.68753	145.89715	167.60451	18.04008	0.2369467	0.17810793	3.1285797	20	5 19.5	20.3
480674 2015 <i>PN</i> ₁	16.0	X	322.80968	57.56264	246.91060	3.72909	0.1616244	0.17886547	3.1197398	20	6 6.0	19.7
480675 2015 <i>PC</i> ₃	16.4	X	344.11770	199.13101	115.40475	12.16496	0.1400617	0.19287636	2.9667666	20	8 2.2	19.6
480676 2015 <i>PJ</i> ₅	16.3	X	281.99607	218.49961	115.85437	17.16390	0.1691576	0.18014859	3.1049085	20	6 21.2	20.8
480677 2015 <i>PZ</i> ₁₂	15.8	X	345.75672	8.11390	267.71014	14.80273	0.1448744	0.17863008	3.1224800	20	6 9.8	19.5
480678 2015 <i>PT</i> ₂₅	17.2	X	53.10080	244.03962	23.06816	4.09444	0.0597514	0.21253207	2.7809066	20	9 12.9	20.8
480679 2015 <i>PB</i> ₃₅	16.9	X	337.26739	148.08625	158.07377	3.04428	0.1302107	0.18881094	3.0092016	20	7 7.4	20.4
480680 2015 <i>PT</i> ₃₉	15.8	X	194.29634	291.12136	130.50469	15.04132	0.0770364	0.15893858	3.3753320	20	6 7.7	21.1
480681 2015 <i>PJ</i> ₄₁	15.1	X	140.30784	318.66438	104.73931	10.58743	0.1490553	0.12493854	3.9628269	20	4 23.5	21.3
480682 2015 <i>PQ</i> ₄₂	16.3	X	291.61012	256.05612	78.70751	8.25553	0.1072452	0.16944521	3.2343215	20	6 6.2	20.7
480683 2015 <i>PS</i> ₄₃	15.7	X	290.22299	210.44453	129.17580	23.01863	0.0847784	0.16979306	3.2299026	20	6 17.4	20.5
480684 2015 <i>PE</i> ₄₅	15.9	X	335.21093	200.26166	96.23121	10.32341	0.0777329	0.17394925	3.1782472	20	6 23.7	19.9
480685 2015 <i>PV</i> ₄₅	15.7	X	42.33594	119.08638	117.09367	10.77509	0.0242435	0.17656277	3.1468060	20	7 9.7	20.1
480686 2015 <i>PA</i> ₄₉	16.8	X	63.66182	149.56634	129.88788	19.64968	0.1817293	0.22329106	2.6908438	20	11 6.7	21.1
480687 2015 <i>PB</i> ₄₉	16.9	X	251.57809	12.66609	78.58881	5.47602	0.0355039	0.21309004	2.7760500	20	9 30.1	20.7
480688 2015 <i>PR</i> ₅₁	16.2	X	69.94800	229.78499	43.72263	14.10227	0.1601604	0.22058638	2.7127947	20	10 27.8	20.2
480689 2015 <i>PJ</i> ₈₇	16.8	X	285.50583	304.16942	102.40560	4.69111	0.0909902	0.21197888	2.7857426	20	9 8.7	20.3
480690 2015 <i>PP</i> ₉₃	16.8	X	358.86626	335.99796	335.23062	5.33577	0.0569254	0.20359711	2.8616838	20	8 22.1	20.3
480691 2015 <i>PP</i> ₉₄	17.2	X	127.10907	266.39945	299.96849	3.89261	0.0506974	0.22029717	2.7151684	20	9 22.6	21.1
480692 2015 <i>PB</i> ₉₆	16.6	X	106.85320	282.82836	311.24748	11.32121	0.0723510	0.22542329	2.6738489	20	10 2.8	20.7
480693 2015 <i>PK</i> ₁₀₁	17.2	X	151.58122	151.17992	29.50548	2.20331	0.0394068	0.21793958	2.7347144	20	9 20.4	20.9
480694 2015 <i>PK</i> ₁₁₀	16.7	X	270.30243	332.05460	51.46784	2.72791	0.1063267	0.18741530	3.0241224	20	7 11.9	20.8
480695 2015 <i>PZ</i> ₁₁₆	16.5	X	40.63152	232.92038	54.75453	3.30656	0.0628691	0.21487224	2.7606785	20	9 24.1	20.1
480696 2015 <i>PS</i> ₁₂₀	16.6	X	346.65064	302.65979	353.04542	5.08221	0.0908468	0.18737955	3.0245070	20	7 12.0	20.3
480697 2015 <i>PY</i> ₁₂₅	16.0	X	246.02808	268.12437	132.43717	16.33879	0.0838481	0.18293324	3.0733189	20	7 6.4	20.6
480698 2015 <i>PP</i> ₁₂₇	16.8	X	285.52085	94.51244	138.45274	4.18588	0.0217753	0.21655896	2.7463251	20	9 22.9	20.5
480699 2015 <i>PH</i> ₁₂₈	16.4	X	146.18693	356.60891	313.78326	9.08311	0.0228527	0.18186237	3.0853716	20	7 6.0	20.9
480700 2015 <i>PW</i> ₁₃₁	17.4	X	86.50919	55.24443	315.88119	5.36285	0.0584167	0.28183413	2.3039532	20	—	—
480701 2015 <i>PT</i> ₁₆₁	17.1	X	238.40987	76.11963	54.70291	4.72293	0.1657305	0.22927657	2.6438061	20	10 16.6	20.8
480702 2015 <i>PX</i> ₁₇₃	15.8	X	272.16319	263.36374	91.38509	9.06463	0.0510954	0.17161692	3.2069780	20	6 14.6	20.3
480703 2015 <i>PE</i> ₂₁₂	16.4	X	84.44614	21.45846	223.18315	16.00873	0.1971848	0.21702527	2.7423898	20	10 6.7	20.8
480704 2015 <i>PL</i> ₂₅₈	16.8	X	299.74352	180.88026	160.48025	1.57095	0.0363205	0.18738945	3.0244004	20	7 6.2	20.9
480705 2015 <i>PY</i> ₂₆₄	15.7	X	172.84074	150.37721	298.83221	18.41378	0.1342163	0.17477872	3.1681836	20	6 18.4	21.0
480706 2015 <i>PX</i> ₂₈₄	16.0	X	28.07202	187.89475	60.03963	6.96833	0.0862475	0.17621395	3.1509573	20	7 12.6	20.1
480707 2015 <i>PO</i> ₂₈₈	15.9	X	106.50164	127.44264	73.28423	9.95448	0.0526297	0.18957405	3.0011207	20	8 24.9	20.4
480708 2015 <i>PX</i> ₃₀₂	15.5	X	340.58950	294.55796	354.61901	26.19651	0.1706933	0.17329586	3.1862310	20	6 15.1	19.8
480709 2015 <i>PC</i> ₃₀₇	17.1	X	34.11745	199.71556	140.38219	7.90170	0.2119003	0.22192089	2.7019082	20	12 14.9	20.9
480710 2015 <i>RL</i> ₈	16.3	X	338.93113	324.38841	315.43771	9.86307	0.1732710	0.17734752	3.1375162	20	5 29.6	20.1
480711 2015 <i>RT</i> ₁₂	16.8	X	20.98226	105.82498	146.22453							

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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>
480721 2015 TG ₃₄₈	16.3	X	40.51398	238.88261	53.19279	9.66672	0.0823315	0.18649121	3.0341041	20	9 30.9	20.4
480722 2015 UE ₂₆	15.7	X	187.78648	77.15941	58.47999	10.13728	0.0436101	0.17458399	3.1705390	20	9 5.1	20.5
480723 2015 UT ₂₆	16.5	X	144.60639	154.85589	80.64344	4.96715	0.0416212	0.21198745	2.7856676	20	11 19.3	20.4
480724 2015 UG ₃₃	15.9	X	280.49957	205.19086	198.49614	9.64106	0.0711486	0.17475010	3.1685296	20	8 21.6	20.3
480725 2015 VU ₁₁₄	16.0	X	278.84499	338.53712	98.03726	11.18876	0.0379123	0.19210404	2.9747129	20	10 16.2	20.2
480726 2015 VS ₁₂₅	15.9	X	334.68643	248.93503	108.99372	10.33716	0.1381787	0.18481488	3.0524232	20	9 17.5	19.5
480727 2016 JK ₁₈	16.6	X	45.78539	22.63293	289.61294	22.70894	0.1468825	0.28717204	2.2753137	20	11 27.4	19.9
480728 2016 JG ₃₄	16.2	X	259.79676	52.52228	258.00269	15.59722	0.3329578	0.18053325	3.1004965	20	2 28.9	21.9
480729 2016 MN ₁	16.5	X	312.43572	132.45249	216.29699	7.51292	0.1410614	0.24552891	2.5258116	20	7 25.2	19.3
480730 2016 NK ₁	17.2	X	318.87513	136.37670	176.69796	12.63723	0.3480128	0.23100403	2.6306093	20	5 12.8	20.0
480731 2016 NB ₂	17.7	X	24.75397	165.27677	155.82439	6.44887	0.1487152	0.28294410	2.2979238	20	11 13.8	20.4
480732 2016 NM ₃	17.3	X	27.55279	202.67609	129.51303	7.72593	0.1552334	0.28900853	2.2656645	20	12 4.9	20.1
480733 2016 NB ₄	17.8	X	30.19811	162.48450	121.06395	3.38725	0.1843071	0.26749632	2.3855627	20	10 1.7	20.3
480734 2016 NC ₄	17.5	X	345.49710	202.65959	120.61721	4.64075	0.1868063	0.25465863	2.4650768	20	8 30.5	19.3
480735 2016 NO ₅	16.1	X	193.73570	94.65629	314.70280	10.99413	0.0557043	0.19777286	2.9175944	20	5 17.8	20.6
480736 2016 NP ₅	16.6	X	251.39197	68.38330	313.55692	13.46573	0.1209527	0.21645595	2.7471964	20	6 15.1	20.7
480737 2016 NJ ₈	16.3	X	338.68231	181.95373	84.50122	10.47491	0.1850500	0.21726738	2.7403521	20	5 17.5	19.4
480738 2016 NQ ₈	17.4	X	53.12672	228.50943	66.20843	8.15507	0.1651348	0.28664275	2.2781138	20	11 16.7	20.5
480739 2016 NZ ₉	17.1	X	48.04395	345.22750	297.53716	5.72647	0.1369850	0.27545892	2.3393659	20	10 15.1	20.1
480740 2016 NA ₁₀	16.9	X	337.41097	170.33518	131.32244	2.76847	0.0527488	0.23355084	2.6114502	20	7 8.4	20.1
480741 2016 NO ₁₀	16.4	X	13.25835	43.37253	228.09300	13.86560	0.0528776	0.24042377	2.5614415	20	7 18.5	19.9
480742 2016 NE ₁₂	16.1	X	296.91369	0.83363	288.22027	7.49785	0.1345733	0.20246990	2.8722951	20	4 5.9	20.1
480743 2016 NV ₁₄	17.0	X	340.24161	169.48574	133.91678	15.96273	0.1263685	0.24202612	2.5501235	20	7 13.5	19.7
480744 2016 NY ₁₆	16.5	X	308.49897	33.58702	253.66336	9.42754	0.2567022	0.21360807	2.7715600	20	3 30.5	20.3
480745 2016 NN ₂₁	16.3	X	326.76674	209.69662	92.23473	16.49251	0.1908002	0.23392142	2.6086915	20	6 8.2	19.0
480746 2016 NM ₂₃	16.9	X	3.66486	224.61235	133.28446	14.09307	0.1732337	0.27517594	2.3409694	20	12 6.1	19.7
480747 2016 NZ ₂₃	15.3	X	302.16810	65.03065	268.15027	27.31217	0.1672556	0.21785574	2.7354160	20	6 11.7	18.5
480748 2016 NQ ₂₆	16.3	X	254.74132	70.32132	252.62420	16.51121	0.0388728	0.19112204	2.9848937	20	4 9.7	20.9
480749 2016 NM ₂₉	16.0	X	358.17059	308.38755	253.78046	15.17801	0.0623861	0.18196700	3.0841889	20	3 20.2	20.4
480750 2016 NK ₃₀	17.0	X	45.46933	7.80813	254.30481	7.54486	0.1388107	0.25641805	2.4537877	20	9 8.4	20.1
480751 2016 NV ₃₇	17.4	X	1.69740	96.76069	145.09526	6.73965	0.2439204	0.23062025	2.6335269	20	5 24.6	19.4
480752 2016 NJ ₄₀	16.9	X	259.22297	216.95357	146.05606	6.83627	0.0382262	0.21957249	2.7211392	20	6 11.9	20.6
480753 2016 NS ₄₀	16.5	X	191.96669	248.58431	132.76287	12.84680	0.1536037	0.17596854	3.1538863	20	4 18.9	21.8
480754 2016 NV ₄₀	17.1	X	297.49247	199.26276	153.91982	8.65759	0.1246913	0.23632023	2.5910082	20	7 8.9	20.3
480755 2016 NY ₄₁	16.5	X	259.24762	164.92767	142.12227	9.56694	0.2860186	0.18216915	3.0819067	20	3 8.1	21.7
480756 2016 NQ ₄₃	17.5	X	55.53428	67.30367	142.62994	6.33673	0.1180706	0.23272396	2.6176323	20	7 9.3	20.8
480757 2016 NR ₄₃	16.9	X	349.12191	108.27154	151.16792	4.82599	0.0204060	0.21207785	2.7848759	20	5 29.9	20.7
480758 2016 NW ₄₃	17.1	X	284.04716	216.87757	128.39125	5.90649	0.0675253	0.22366146	2.6878722	20	6 16.8	20.7
480759 2016 NJ ₄₅	15.9	X	281.04537	142.71790	136.57459	6.30404	0.1008091	0.17886397	3.1197573	20	3 17.6	20.3
480760 2016 NU ₄₅	17.2	X	292.16276	240.17730	119.52474	4.18781	0.0752917	0.23634270	2.5908439	20	7 18.1	20.4
480761 2016 NF ₄₆	16.1	X	310.60891	337.54584	282.22863	5.29423	0.1312854	0.19012253	2.9953459	20	3 20.6	20.2
480762 2016 NH ₄₆	17.0	X	156.94806	323.54469	168.29847	3.47650	0.0471911	0.23721680	2.5844755	20	7 24.9	20.6
480763 2016 NQ ₄₇	16.4	X	272.91477	29.34546	323.44974	5.40811	0.0347907	0.21847941	2.7302078	20	6 16.2	20.1
480764 2016 NB ₅₂	18.3	X	85.97868	92.46776	167.09698	2.30837	0.1487842	0.29225107	2.2488750	20	11 5.9	21.6
480765 2016 NZ ₅₃	15.7	X	262.96904	48.13223	282.15676	14.68452	0.0766306	0.17630396	3.1498848	20	4 24.5	20.5
480766 2016 NF ₅₅	17.9	X	45.91069	182.80733	115.30936	5.11649	0.2230472	0.27417378	2.3466704	20	11 18.9	21.1
480767 2016 OG ₃	16.3	X	267.48941	59.79332	269.36838	11.19092	0.1343847	0.18747284	3.0235035	20	4 21.8	20.9
480768 2016 PX ₂	17.0	X	151.92127	143.23963	349.54608	12.54409	0.0943462	0.23230476	2.6207805	20	7 25.9	21.1
480769 2016 PS ₆	17.0	X	248.59823	92.26498	259.61912	13.44353	0.2417349	0.18572257	3.0424697	20	4 18.9	22.2
480770 2016 PX ₆	16.6	X	227.69308	252.88229	118.39955	6.92316	0.1290754	0.19190372	2.9767826	20	5 7.9	21.3
480771 2016 PF ₉	17.0	X	58.42680	138.11769	113.29391	5.87879	0.0813670	0.25496440	2.4631055	20	9 9.3	20.1
480772 2016 PR ₉	16.3	X	296.90235	163.74278	128.37771	11.35764	0.0898026	0.19335132	2.9619061	20	4 26.2	20.5
480773 2016 PR ₁₁	17.3	X	294.73829	350.73235	337.92550	1.54833	0.1996003	0.21816224	2.7328533	20	5 18.2	20.8
480774 2016 PF ₁₂	16.1	X	289.09787	347.05922	292.59887	13.57760	0.2464917	0.18180183	3.0860565	20	2 28.7	21.0
480775 2016 PG ₁₂	15.9	X	38.68436	336.86217	247.22199	11.13918	0.0935909	0.21166279	2.7885153	20	6 27.5	19.4
480776 2016 PA ₁₃	16.2	X	146.65161	355.97479	71.76823	11.16424	0.0729808	0.17660016	3.1463617	20	4 26.2	21.0
480777 2016 PL ₁₃	15.8	X	267.00835	245.40931	48.90244	11.88772	0.0522682	0.17557390	3.1586105	20	3 29.3	20.4
480778 2016 PC ₁₄	16.8	X	30.87238	193.52398	69.55947	14.31955	0.1350004	0.23759188	2.5817548	20	8 26.4	20.1
480779 2016 PO ₁₇	16.8	X	319.86107	171.60416	117.52808	16.52390	0.0727611	0.21836696	2.7311450	20	5 26.9	20.5
480780 2016 PR ₁₇	17.8	X	57.78126	209.93269	107.41659	5.34509	0.2064762	0.30354090	2.1927607	20	12 28.2	20.8
480781 2016 PY ₂₀	17.1	X	335.83062	244.30597	95.11583	4.82217	0.2364131	0.25256577	2.4786758	20	9 3.3	18.7
480782 2016 PS ₂₅	18.5	X	347.79803	323.21199	66.20285	5.70881	0.1280140	0.29002741	2.2603552	20	12 19.4	20.6
480783 2016 PX ₂₅	15.9	X	242.05902	199.91715	124.16413	22.62040	0.1299807	0.17477187	3.1682664	20	4 1.5	21.2
480784 2016 PK ₂₆	17.3	X	293.12768	330.84226	6.91148	6.35716	0.0318740	0.22115558	2.7081379	20	6 24.5	20.9
480785 2016 PW ₂₇	16.1	X	37.31786	91.85512	75.55927	11.71057	0.0398062	0.17637379	3.1490534	20	4 12.8	20.5
480786 2016 PF ₂₈	17.4	X	29.63525	235.11173	72.72363	7.66597	0.1225902	0.27275148	2.3548214	20	10 27.3	20.2
480787 2016 PU ₂₈	15.9	X	290.18438	183.71649	99.60357	17.17896	0.0884078	0.18461394	3.0546378	20	4 11.3	20.5
480788 2016 PH ₃₀	16.7	X	300.82501	294.33313	87.54949	12.92640	0.2082614	0.24412726	2.5354703	20	8 20.0	19.4
480789 2016 PJ ₃₀	15.8	X	249.75368	275.70052	41.82848	12.99454	0.0904847	0.17521945	3.1628688	20	4 1.8	20.6
480790 2016 PS ₃₅	15.7	X	129.06109	357.43824	84.73126	10.56937	0.0659224	0.17512108	3.1640531	20	4 24.4	20.4
480791 2016 PA ₃₇	16.4	X	245.82538	258.75826	80.52810	14.42268	0.0695975	0.17867974	3.1219014	20	4 27.2	21.1
480792 2016 PE ₄₀	17.9	X	111.24057	264.73922	115.09137	26.26242	0.1508177	0.37165413	1.9159172	20	—	—
480793 2016 PV ₄₅	16.6	X	289.10478	260.20543	113.45973	13.28307	0.2081690	0				

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Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>		
480801	2016	PX ₅₈	17.7	X	307.17099	259.64773	119.19764	14.84700	0.0989751	0.24675152	2.5174614	20	9 12.2	20.7
480802	2016	PV ₅₉	16.9	X	341.97684	208.82253	56.57221	8.81598	0.1779426	0.21038139	2.7998268	20	5 15.6	19.7
480803	2016	PJ ₆₂	15.9	X	229.25179	263.64682	64.28248	11.96920	0.1983918	0.17312637	3.1883102	20	3 19.1	21.3
480804	2016	PF ₆₅	16.0	X	70.37561	24.41733	126.36292	28.63199	0.1054129	0.18130162	3.0917302	20	5 20.3	20.8
480805	2687	P-L	17.2	X	316.77500	187.05658	185.16536	6.25478	0.3141906	0.22907390	2.6453653	20	8 14.1	19.2
480806	1083	T-1	16.7	X	190.09898	187.40349	358.63248	6.79725	0.3021170	0.23108775	2.6299739	20	10 22.9	21.4
480807	1994	SK ₇	18.3	X	15.54434	205.67164	166.00208	2.35030	0.2329668	0.27072201	2.3665754	20	—	—
480808	1994	XL ₁	20.9	X	329.34062	356.57003	252.66094	28.16390	0.5263313	1.79390020	0.6708167	20	—	—
480809	1995	SW ₅	17.9	X	55.90227	192.38718	172.62121	10.07961	0.1589138	0.28652505	2.2787376	20	—	—
480810	1995	TF ₃	17.3	X	320.49846	25.52696	19.89888	4.79303	0.2332827	0.23741877	2.5830095	20	11 2.9	19.2
480811	1995	UK ₃₁	17.3	X	320.91352	87.45396	322.60116	2.26435	0.1684790	0.23890139	2.5723117	20	11 12.2	19.6
480812	1995	WV ₂₃	16.6	X	256.24046	9.12342	34.26810	11.29018	0.2586043	0.18778469	3.0201552	20	6 30.1	21.4
480813	1995	WN ₂₄	17.4	X	281.83218	91.52899	38.37590	12.31525	0.1879288	0.23874202	2.5734564	20	12 16.6	20.2
480814	1995	XO ₄	16.9	X	232.92981	295.53763	84.13410	14.11065	0.1787557	0.22374288	2.6872201	20	5 19.3	21.3
480815	1996	AC ₁₀	16.3	X	244.46764	135.95261	289.87487	10.27879	0.0864693	0.18324188	3.0698670	20	8 3.5	20.8
480816	1997	ND	17.6	X	116.95273	14.17741	272.44630	3.69357	0.1569768	0.27079205	2.3661673	20	—	—
480817	1998	SJ ₂	18.2	X	43.20083	332.83600	8.69621	10.39055	0.5020001	0.27721696	2.3294650	20	—	—
480818	1998	SJ ₆₀	16.0	X	261.07466	350.44094	20.22794	6.73325	0.3511866	0.16920212	3.2374185	20	5 14.3	21.4
480819	1998	SJ ₈₄	18.2	X	36.11417	211.08748	150.12333	3.20451	0.2870817	0.27731481	2.3289170	20	—	—
480820	1998	VF ₃₂	21.1	X	54.81324	320.91897	236.27969	23.74502	0.4437099	1.25552085	0.8509815	20	—	—
480821	1998	WA ₄	17.4	X	311.67184	289.83728	132.54316	12.49335	0.4828591	0.22362187	2.6881894	20	9 25.8	18.7
480822	1998	YM ₄	19.7	X	17.31683	344.53388	341.75915	3.43357	0.1796658	0.54926272	1.4766672	20	—	—
480823	1998	YW ₅	20.1	X	131.74292	355.12391	219.80213	8.33740	0.6203036	0.71359288	1.2402304	20	11 22.9	21.3
480824	1999	JO ₆	16.7	X	356.81858	250.85700	64.37149	27.86547	0.4972712	0.23802020	2.5786566	20	11 12.9	18.7
480825	1999	PL ₁	16.8	X	25.28974	311.04524	40.64012	14.23428	0.3130662	0.24263985	2.5458216	20	—	—
480826	1999	TJ ₇₇	18.1	X	318.87294	214.20976	223.56029	3.77010	0.2794757	0.23728409	2.5839869	20	12 24.0	19.7
480827	1999	TK ₁₃₃	18.2	X	82.78053	330.46786	359.89229	2.55738	0.2654047	0.29400015	2.2399467	20	—	—
480828	1999	TS ₁₉₁	17.8	X	345.28635	91.92563	293.91780	4.74891	0.3405895	0.23656320	2.5892337	20	12 23.4	19.7
480829	1999	TG ₂₁₈	17.8	X	316.14297	189.36186	213.53680	4.50816	0.2736850	0.23481668	2.6020567	20	10 14.4	19.5
480830	1999	TQ ₃₀₁	17.5	X	340.76474	351.46457	23.00623	3.65020	0.1837063	0.23452925	2.6041823	20	11 1.1	19.8
480831	1999	TC ₃₂₈	17.1	X	348.29393	308.25036	61.14192	6.09029	0.3402901	0.23657263	2.5891650	20	12 4.6	19.0
480832	1999	VF	17.4	X	307.75874	244.37992	220.02905	10.79765	0.3058339	0.23781290	2.5801549	20	—	—
480833	1999	VC ₁	17.5	X	338.56945	237.95438	151.51736	2.68564	0.3752832	0.23627968	2.5913046	20	12 17.8	18.8
480834	1999	VH ₄₁	16.1	X	258.56146	331.10254	58.63611	24.45320	0.2141209	0.17536250	3.1611485	20	6 16.9	21.1
480835	1999	VL ₈₈	16.0	X	250.08576	353.53671	47.44591	15.02641	0.2997436	0.17539462	3.1607625	20	6 14.9	21.3
480836	1999	VC ₁₁₆	17.4	X	0.55162	149.31919	192.05682	3.04316	0.1500461	0.23236707	2.6203119	20	10 19.4	19.9
480837	1999	VS ₁₂₃	19.2	X	28.74033	324.03009	88.76735	2.17752	0.2007148	0.29159677	2.2522378	20	—	—
480838	1999	VE ₁₉₉	17.7	X	41.90121	28.40322	8.85668	5.91014	0.2601018	0.29449931	2.2374149	20	—	—
480839	2000	AR ₁₄₉	16.7	X	310.46356	187.00113	220.84123	6.19739	0.3216838	0.23080872	2.6320931	20	9 25.2	18.5
480840	2000	AX ₂₂₄	17.6	X	162.69166	153.71389	109.38272	11.69247	0.0338779	0.28317891	2.2966534	20	—	—
480841	2000	BY ₁₈	15.9	X	162.94035	228.21164	313.41159	24.75939	0.2212956	0.22030167	2.7151314	20	9 17.5	21.1
480842	2000	CO ₁₃	17.0	X	285.86886	343.83546	140.28215	12.50277	0.2038147	0.23202201	2.6229092	20	12 14.8	19.8
480843	2000	KM ₄₀	16.4	X	355.20537	247.19780	57.69951	15.66310	0.1499185	0.20383361	2.8594698	20	8 18.8	19.9
480844	2000	PM ₆	16.4	X	292.58235	16.80439	327.71329	17.32598	0.4417521	0.19083726	2.9878625	20	4 22.9	21.3
480845	2000	QV ₂₂₉	18.6	X	73.81029	224.46549	148.44655	8.29130	0.2873011	0.31174928	2.1540994	20	—	—
480846	2000	SF ₈₃	16.2	X	242.64071	27.70364	2.20069	11.15513	0.2627882	0.18553563	3.0445130	20	5 28.6	21.4
480847	2000	SF ₂₄₇	17.3	X	54.25504	313.87827	44.75261	3.28426	0.2114614	0.25736034	2.4477945	20	—	—
480848	2000	SH ₂₄₇	17.0	X	26.26480	329.77220	47.27111	4.28142	0.1778009	0.25526864	2.4611481	20	—	—
480849	2000	SO ₃₀₆	16.8	X	354.90561	143.83905	261.34820	6.06443	0.1776815	0.25295686	2.4761203	20	—	—
480850	2000	TM ₁₁	17.5	X	12.86071	344.23075	41.17367	1.38947	0.2365745	0.25317198	2.4747175	20	—	—
480851	2000	WH ₇₁	16.5	X	247.06683	135.64773	261.65990	12.17391	0.2573325	0.18418582	3.0593694	20	6 13.6	21.4
480852	2000	WK ₁₉₂	17.3	X	231.34834	310.18943	115.21298	28.43960	0.4077672	0.17926166	3.1151415	20	6 26.1	23.2
480853	2000	YH ₈	16.5	X	233.68342	339.23934	97.00198	15.88200	0.2718013	0.18170734	3.0871263	20	7 18.2	21.7
480854	2001	AO ₂	18.1	X	204.09516	77.68564	104.05606	19.87946	0.6106736	0.18423106	3.0588685	20	10 19.2	24.7
480855	2001	GF ₃	16.5	X	216.35959	122.30368	67.40786	31.88382	0.3006469	0.23567005	2.5957714	20	11 22.3	20.7
480856	2001	NZ ₁	17.9	X	227.57919	359.73893	253.87099	24.60785	0.4041475	0.34413292	2.0167492	20	—	—
480857	2001	OC ₇₉	16.8	X	75.22996	354.85446	347.37112	12.28060	0.1520873	0.27389437	2.3482661	20	—	—
480858	2001	PT ₉	20.8	X	245.52692	261.54489	330.04418	7.18248	0.4549568	0.55392553	1.4683687	20	—	—
480859	2001	QR ₁₁₈	16.5	X	300.86842	141.43715	235.35862	6.08283	0.3353474	0.20220388	2.8748139	20	7 9.4	20.0
480860	2001	QG ₁₆₆	17.2	X	39.62047	264.80892	127.09529	10.34685	0.2588813	0.27383893	2.3485831	20	—	—
480861	2001	RV ₁₄₁	18.4	X	153.99543	76.75025	358.90459	19.10697	0.1609854	0.40105916	1.8210859	20	5 1.3	21.0
480862	2001	RM ₁₄₅	17.3	X	41.73167	49.73780	321.03638	12.27013	0.1728110	0.27203491	2.3589548	20	—	—
480863	2001	SU ₅	17.8	X	157.31693	69.31690	359.10974	25.21316	0.1453343	0.39923165	1.8266391	20	4 19.4	20.5
480864	2001	SR ₃₅	18.1	X	27.76959	310.28211	51.92100	2.75726	0.2576617	0.26719586	2.3873507	20	—	—
480865	2001	SF ₁₃₆	18.1	X	334.67649	49.15785	339.94881	4.08893	0.2454720	0.26212840	2.4180206	20	11 26.4	19.8
480866	2001	SE ₁₈₅	18.2	X	56.80364	328.56957	4.68570	2.21307	0.2189439	0.27056866	2.3674695	20	—	—
480867	2001	SX ₂₁₃	17.8	X	61.32656	309.58783	38.07673	3.13205	0.2204607	0.27129368	2.3632496	20	—	—
480868	2001	SC ₂₂₉	17.9	X	14.60008	220.68707	162.95937	5.06056	0.1943248	0.26716747	2.3875199	20	—	—
480869	2001	SO ₂₃₂	17.9	X	50.54261	308.63508	26.44734	5.64175	0.1676759	0.26704269	2.3882636	20	12 31.8	21.3
480870	2001	SC ₂₃₅	17.6	X	37.79638	351.77462	17.50496	3.64759	0.2044107	0.26867910	2.3785564	20	—	—
480871	2001	SU ₂₄₅	18.2	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>		
480881	2001	XT ₁₀₂	17.2	X	305.39357	240.15167	260.10525	22.09146	0.3779177	0.26248137	2.4158524	20	—	—
480882	2001	XE ₁₃₄	17.9	X	25.65633	314.74861	88.22195	5.60434	0.2625362	0.26785280	2.3834457	20	—	—
480883	2001	YE ₄	20.7	X	253.19748	318.84560	305.48899	4.84537	0.5404344	1.77006954	0.6768241	20	—	—
480884	2002	AN ₇	18.8	X	109.96785	319.47965	130.84943	24.01974	0.1033712	0.38817481	1.8611633	20	4 7.8	21.2
480885	2002	AC ₂₉	17.7	X	190.75708	129.67550	85.10422	26.60496	0.5030994	0.46861750	1.6415611	20	12 14.9	19.4
480886	2002	CR ₆₇	18.0	X	330.41997	27.52777	88.83612	3.84432	0.2077803	0.26354219	2.4093651	20	—	—
480887	2002	CQ ₁₂₃	16.6	X	191.76739	352.93747	152.99671	13.73235	0.2038218	0.19125913	2.9834672	20	9 11.1	21.5
480888	2002	EH ₁₆₁	17.1	X	291.22856	211.37662	306.28562	10.01974	0.1711709	0.26003819	2.4309608	20	—	—
480889	2002	FM ₂₁	17.3	X	283.04244	148.08424	355.38935	10.98582	0.1939474	0.25537679	2.4604532	20	—	—
480890	2002	FB ₂₇	17.0	X	232.11497	110.68473	112.04153	10.72145	0.1867752	0.25786810	2.4445803	20	—	—
480891	2002	JH ₁₁₄	17.7	X	290.96556	181.48591	72.98137	24.11639	0.0667179	0.37443812	1.9064087	20	2 13.9	20.4
480892	2002	NR ₇₃	17.9	X	57.17236	91.74990	279.91515	9.59224	0.1677731	0.29230764	2.2485848	20	—	—
480893	2002	OV ₇	17.4	X	288.85418	330.87540	299.15857	19.00319	0.0610221	0.36981325	1.9222701	20	2 18.4	19.7
480894	2002	PO ₇	18.2	X	265.36933	9.98706	308.71614	17.31433	0.0739176	0.37287711	1.9117257	20	3 24.4	20.7
480895	2002	PW ₁₁₁	18.3	X	87.83352	197.29282	121.94855	2.27203	0.2416609	0.29022033	2.2593534	20	—	—
480896	2002	PW ₁₁₂	17.3	X	354.68026	217.44254	159.35691	18.72735	0.2707087	0.22511619	2.6762801	20	12 15.1	20.4
480897	2002	QA ₇	18.0	X	58.31476	114.92821	267.55519	5.42934	0.3026198	0.28966111	2.2622604	20	—	—
480898	2002	QP ₁₅	17.5	X	173.72000	280.81772	335.62034	7.66253	0.1295829	0.29473811	2.2362062	20	—	—
480899	2002	QG ₇₆	17.1	X	346.72313	196.60393	162.80917	12.47951	0.1992233	0.22401385	2.6850526	20	10 24.9	19.7
480900	2002	QA ₁₂₉	18.6	X	71.34560	294.25611	38.98215	1.38347	0.2360645	0.28963388	2.2624021	20	—	—
480901	2002	QX ₁₃₂	18.8	X	28.99896	122.70851	278.92144	2.97850	0.2149373	0.28938864	2.2636802	20	—	—
480902	2002	RV ₅₉	17.8	X	70.81977	34.54357	306.21640	5.59495	0.1739477	0.28805689	2.2706518	20	—	—
480903	2002	RF ₂₁₃	17.2	X	334.17586	200.40000	147.05899	12.82037	0.3175794	0.21810403	2.7332395	20	8 28.1	18.7
480904	2002	RQ ₂₄₂	17.8	X	40.14571	86.48221	339.06326	21.91263	0.2906593	0.29206568	2.2498265	20	—	—
480905	2002	RS ₂₅₇	18.2	X	52.08487	339.33908	27.58028	7.44047	0.2330541	0.28848539	2.2684028	20	—	—
480906	2002	SD ₂₉	18.3	X	43.37744	349.18454	27.26047	6.69251	0.1778548	0.28646008	2.2790821	20	—	—
480907	2002	SB ₆₅	17.3	X	303.26346	309.65351	48.34196	8.70479	0.2527051	0.21510790	2.7586619	20	7 4.1	20.5
480908	2002	TB ₃₁	16.8	X	329.94669	342.43006	40.26775	14.09531	0.2817079	0.21823610	2.7322367	20	10 19.4	18.6
480909	2002	TB ₆₄	17.3	X	303.46945	33.26748	354.87510	5.74277	0.2272861	0.21540857	2.7560942	20	8 23.6	20.1
480910	2002	TT ₁₈₂	18.0	X	59.52597	113.98116	269.97475	5.09425	0.1668423	0.28983894	2.2613349	20	—	—
480911	2002	TN ₁₈₆	17.0	X	289.86337	205.68499	206.52061	8.52685	0.2804754	0.21569130	2.7536852	20	8 18.9	20.5
480912	2002	TV ₂₂₁	15.9	X	340.05614	89.87877	263.69329	12.13650	0.2911284	0.21970204	2.7200694	20	9 20.2	18.1
480913	2002	TF ₃₀₆	17.0	X	308.46471	222.64175	151.15201	7.40084	0.1353119	0.21478209	2.7614510	20	8 23.5	20.0
480914	2002	UA ₆₃	16.8	X	338.39258	347.19857	2.26751	14.33435	0.1964958	0.21861188	2.7291047	20	9 16.8	19.3
480915	2002	VT ₇	17.4	X	34.76963	170.88419	251.24161	9.93449	0.1718536	0.28888850	2.2662921	20	—	—
480916	2002	VD ₅₉	16.5	X	262.12460	235.10903	228.82139	32.08696	0.1696904	0.21593041	2.7516520	20	10 3.2	20.6
480917	2002	VU ₉₈	19.1	X	34.58748	321.58249	48.12864	5.25842	0.2625623	0.28303918	2.2974091	20	—	—
480918	2002	VF ₁₁₈	17.1	X	57.87540	80.44865	295.22037	23.90778	0.3329775	0.28669867	2.2778175	20	—	—
480919	2002	WA	18.0	X	297.54255	103.30418	276.65006	8.39766	0.3293873	0.21205639	2.7850638	20	7 10.6	21.0
480920	2002	WE ₂₆	17.8	X	347.38505	12.33449	87.64694	6.73142	0.1501449	0.28406276	2.2918869	20	—	—
480921	2002	XL ₃₁	16.6	X	308.07990	178.62178	261.80928	16.37743	0.2115380	0.21851415	2.7299184	20	11 19.9	19.2
480922	2002	XP ₃₇	20.4	X	142.91763	317.62337	265.90113	21.53118	0.3593124	1.05610121	0.9549904	20	—	—
480923	2002	XH ₄₉	16.9	X	259.08102	357.86768	78.93031	10.39909	0.2385791	0.20992665	2.8038686	20	8 22.6	21.0
480924	2002	XA ₅₃	16.5	X	321.78494	55.88935	91.98037	23.32266	0.3237848	0.28090219	2.3090462	20	—	—
480925	2002	XT ₆₀	16.6	X	286.57177	269.41015	252.73860	23.17252	0.1462717	0.28141201	2.3062566	20	—	—
480926	2002	XE ₁₂₀	17.7	X	16.04336	301.63590	89.94766	6.93318	0.1410563	0.27971510	2.3155746	20	—	—
480927	2002	YZ ₃	18.1	X	170.87516	358.76278	350.14048	19.92704	0.7960117	0.36376629	1.9435143	20	3 3.2	22.8
480928	2003	AT ₅₅	16.7	X	303.73492	253.06762	304.40835	22.01914	0.2518988	0.28257247	2.2999381	20	—	—
480929	2003	BM ₂₄	17.1	X	316.34987	211.84224	296.45241	23.42604	0.2111814	0.27849855	2.3223130	20	—	—
480930	2003	BD ₈₇	16.9	X	323.74608	189.89385	297.13119	12.09456	0.1360524	0.27695161	2.3309527	20	—	—
480931	2003	GY ₅₅	17.8	X	304.09656	333.20277	212.00600	10.15103	0.2492211	0.27679804	2.3318147	20	—	—
480932	2003	HE ₃₃	17.9	X	264.39691	328.36230	204.90298	11.30651	0.1586765	0.26918815	2.3755568	20	—	—
480933	2003	JO ₂	17.6	X	229.57158	208.24696	64.25446	4.48409	0.2743041	0.27233936	2.3568814	20	—	—
480934	2003	LX ₅	17.5	X	249.32125	148.87723	38.62610	1.26209	0.5415188	0.21206443	2.7849934	20	11 15.0	22.1
480935	2003	OO ₂₀	16.6	X	47.33720	309.18447	8.42603	5.04248	0.1982985	0.24363712	2.5388697	20	12 3.6	20.2
480936	2003	QH ₅	20.1	X	352.30618	321.20301	299.24301	17.61380	0.2205350	0.69666001	1.2602464	20	2 22.5*	19.8
480937	2003	QY ₃₅	17.2	X	14.27088	13.99017	340.12638	13.58443	0.2709486	0.23875350	2.5733738	20	12 19.8	20.6
480938	2003	QO ₈₀	16.8	X	46.21785	320.04551	341.31795	11.21614	0.2503725	0.23928916	2.5695320	20	11 14.8	20.7
480939	2003	RB ₂₁	18.4	X	101.78205	322.21222	14.13020	1.69246	0.2161025	0.31001531	2.1621241	20	—	—
480940	2003	SP ₁₀₂	16.2	X	9.56372	340.43205	352.67779	32.58746	0.1536699	0.23439271	2.6051935	20	10 7.4	19.6
480941	2003	SO ₁₀₃	17.0	X	17.12413	322.25273	12.73900	3.33065	0.2433094	0.23566214	2.5958295	20	11 22.1	20.0
480942	2003	SO ₁₂₂	16.5	X	33.88585	5.94068	308.50175	12.10757	0.2579331	0.23827706	2.5768030	20	11 18.9	20.1
480943	2003	SP ₁₆₃	17.1	X	329.54960	234.93205	155.05552	4.86552	0.1315214	0.23495394	2.6010432	20	11 1.2	19.7
480944	2003	SX ₁₉₉	16.7	X	332.77540	8.10153	5.02308	7.31095	0.2902272	0.23055783	2.6340022	20	10 12.6	18.2
480945	2003	SD ₂₁₇	17.2	X	307.36758	203.19778	194.38006	7.48789	0.2866362	0.22896998	2.6461656	20	9 4.9	19.5
480946	2003	SR ₂₃₇	17.0	X	349.52523	8.48425	20.20860	13.72603	0.2778413	0.23578615	2.5949193	20	12 24.8	19.7
480947	2003	SG ₂₇₈	16.9	X	324.29368	86.08476	301.98036	6.89058	0.1736775	0.23168545	2.6254487	20	10 11.4	19.5
480948	2003	SD ₂₉₂	17.6	X	318.69840	99.88440	283.10479	5.12275	0.2645146	0.23030134	2.6359575	20	9 13.9	19.7
480949	2003	SY ₂₉₄	16.2	X	339.79515	325.83104	47.50890	30.93656	0.2871703	0.23088180	2.6315376	20	11 7.6	17.7
480950	2003	SU ₃₂₂	17.1	X	39.62996	330.44687	336.37282	11.58945	0.2117710	0.23815213	2.5777041	20	11 7.5	20.7
480951	2003	SE ₃₂₄	18											

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>		
480961	2003	US ₃₂	18.3	X	340.00704	6.91271	29.47607	2.72621	0.1701515	0.23522608	2.5990366	20	11 30.9	20.7
480962	2003	UP ₈₇	17.0	X	292.19154	100.82308	348.74789	27.73633	0.3861165	0.23225353	2.6211659	20	9 24.9	19.6
480963	2003	UH ₉₀	17.3	X	301.69527	337.78735	73.87652	5.91480	0.2009146	0.23073735	2.6326358	20	10 3.6	19.9
480964	2003	UH ₁₄₆	17.2	X	318.99769	344.51691	67.47558	8.47646	0.2843469	0.23194779	2.6234687	20	11 8.9	18.7
480965	2003	UV ₁₅₉	17.4	X	320.88346	75.69129	316.76552	12.17272	0.2142405	0.23337267	2.6127793	20	10 5.8	20.0
480966	2003	UP ₂₀₆	17.0	X	328.19622	342.72118	45.14019	15.67445	0.2878107	0.23024640	2.6363769	20	10 27.8	18.6
480967	2003	UB ₂₀₇	17.0	X	347.68987	306.53587	31.16892	12.29512	0.1971139	0.23020089	2.6367243	20	9 26.5	19.4
480968	2003	UB ₂₅₆	16.9	X	273.28208	225.15273	229.52212	11.36037	0.2605292	0.22932945	2.6433997	20	9 25.5	20.3
480969	2003	UQ ₂₉₉	17.4	X	295.77235	71.08223	32.57795	13.33497	0.2180374	0.23555137	2.5966433	20	11 30.9	19.8
480970	2003	UD ₃₀₈	17.2	X	300.30612	233.48350	189.26024	9.50030	0.2686982	0.23000045	2.6382560	20	10 3.5	19.4
480971	2003	UN ₃₁₇	17.1	X	28.40533	31.71324	294.96264	7.92260	0.1713144	0.23858470	2.5745875	20	11 15.3	20.5
480972	2003	UW ₃₄₄	18.2	X	302.05788	98.67695	345.04795	4.17215	0.2622078	0.23633321	2.5909133	20	11 11.9	20.1
480973	2003	UH ₃₆₆	17.3	X	323.16867	147.28671	251.10557	1.96802	0.1870070	0.23067647	2.6330990	20	10 27.9	19.7
480974	2003	WZ ₂	16.9	X	344.56666	130.63303	267.21773	12.72386	0.1828599	0.23415394	2.6069642	20	12 13.4	19.5
480975	2003	WL ₁₂	18.1	X	161.07899	148.31115	241.97156	20.03410	0.0925830	0.38128979	1.8835013	20	2 24.9	20.9
480976	2003	WX ₆₃	17.8	X	341.54597	331.05377	53.43729	3.71391	0.2954297	0.23210669	2.6222712	20	11 30.8	19.5
480977	2003	WN ₁₀₅	18.5	X	46.69663	145.73399	267.35279	3.92894	0.1486250	0.30449549	2.1881754	20	—	—
480978	2003	WR ₁₄₉	16.9	X	268.25971	252.27215	222.18350	10.79179	0.2552423	0.22906271	2.6454514	20	10 18.5	19.9
480979	2003	WC ₁₅₄	16.5	X	325.17526	345.12349	80.15091	35.65903	0.2205572	0.23377004	2.6098176	20	12 14.5	18.6
480980	2003	WR ₁₅₄	17.4	X	319.16663	311.31085	106.65508	7.25942	0.2840722	0.23204021	2.6227721	20	11 20.6	19.0
480981	2003	XY ₈	16.2	X	280.69386	214.34773	270.48597	31.96444	0.2061604	0.23236179	2.6203517	20	12 5.8	19.2
480982	2003	YR ₂	18.0	X	111.60409	356.66570	82.77353	23.85828	0.0708678	0.37731059	1.8967207	20	3 25.8	20.7
480983	2003	YL ₂₆	16.7	X	305.09848	166.22584	286.17043	11.91685	0.2470193	0.22908839	2.6452537	20	12 3.4	18.9
480984	2003	YR ₇₀	20.1	X	80.74721	222.96451	301.30958	2.65527	0.4304938	0.37732380	1.8966764	20	7 29.9	23.0
480985	2003	YY ₈₀	16.8	X	282.27697	194.96617	305.44819	12.64255	0.1850018	0.23024066	2.6364207	20	—	—
480986	2004	BL ₂₈	17.5	X	42.69916	201.25395	311.27857	18.51228	0.0737670	0.37204938	1.9145601	20	2 25.3	19.1
480987	2004	BJ ₄₁	17.8	X	45.19074	76.61772	103.66523	24.21465	0.0564325	0.37711729	1.8973688	20	5 11.0	20.1
480988	2004	BX ₅₂	16.8	X	297.30946	348.66657	127.98639	15.81162	0.0265402	0.22931833	2.6434851	20	—	—
480989	2004	BR ₈₅	18.4	X	152.87060	107.16077	331.55883	19.13539	0.1171326	0.37998785	1.8878011	20	4 30.6	21.3
480990	2004	BV ₁₁₄	17.8	X	275.24412	358.16237	135.60524	10.59202	0.3854498	0.22560672	2.6723994	20	11 7.1	20.8
480991	2004	BB ₁₃₈	17.3	X	247.62262	102.38919	0.89444	1.78449	0.0340375	0.21883645	2.7272374	20	10 8.5	20.7
480992	2004	BD ₁₄₄	17.2	X	358.24737	349.74042	311.84855	11.40184	0.0677546	0.20938659	2.8086878	20	8 8.2	20.7
480993	2004	CC ₁	16.2	X	262.69000	68.52021	94.68245	30.15385	0.3032435	0.22660651	2.6645332	20	12 11.1	19.4
480994	2004	CQ ₂₇	16.6	X	260.41966	151.30176	322.87507	10.20093	0.0817214	0.22294933	2.6935928	20	10 28.9	20.3
480995	2004	CW ₁₂₇	17.1	X	289.39315	51.45892	31.62938	9.44017	0.2093597	0.22075420	2.7114196	20	10 18.5	19.7
480996	2004	DU ₁₄	16.4	X	207.20821	208.86343	326.34480	11.93517	0.1177050	0.21941070	2.7224768	20	11 4.0	20.7
480997	2004	DE ₃₉	16.9	X	296.83197	265.22032	167.57076	28.71633	0.4805124	0.22388754	2.6860624	20	8 25.9	19.8
480998	2004	DT ₄₆	17.0	X	229.26906	234.74187	294.12062	7.58246	0.1670626	0.22232547	2.6986293	20	11 18.5	20.9
480999	2004	EL ₇₀	17.2	X	225.14091	317.75120	189.54882	3.96047	0.1670586	0.21717675	2.7411144	20	10 19.4	21.1
481000	2004	FL ₈₉	16.7	X	189.70158	151.97297	13.79859	8.24745	0.1531386	0.21400165	2.7681607	20	10 6.9	21.2
481001	2004	FX ₉₇	18.1	X	109.58931	72.18383	24.39795	20.70580	0.1402820	0.37205787	1.9145309	20	4 14.3	19.7
481002	2004	GR ₂₅	16.9	X	235.09891	264.30765	207.32636	11.17886	0.1141314	0.20916850	2.8106398	20	9 18.3	20.9
481003	2004	HV ₂₄	17.0	X	200.86199	144.11913	0.13935	8.86562	0.0902013	0.21094281	2.7948568	20	9 25.8	21.2
481004	2004	JU ₃₀	16.3	X	318.52446	231.57297	67.63288	26.24697	0.4115151	0.18192365	3.0846788	20	4 23.8	20.3
481005	2004	PX ₈₂	16.1	X	324.16232	60.21004	272.29517	8.54440	0.0751163	0.18208072	3.0829045	20	7 23.8	20.1
481006	2004	RV ₇	15.9	X	267.78243	187.42197	177.00617	15.90364	0.2805348	0.17513468	3.1638893	20	5 23.9	21.0
481007	2004	RS ₈₆	16.4	X	293.77487	198.20299	169.88003	11.60540	0.0902234	0.17914681	3.1164727	20	7 23.7	20.7
481008	2004	RS ₉₉	17.0	X	128.83922	325.97928	329.92993	12.40231	0.1916018	0.26677996	2.3898313	20	—	—
481009	2004	RQ ₁₂₃	16.6	X	283.12193	72.72614	293.54610	14.91542	0.2679773	0.17602630	3.1531994	20	6 11.7	21.1
481010	2004	RU ₁₄₉	18.2	X	356.04022	79.56857	292.12273	0.63767	0.2778328	0.25172728	2.4841769	20	12 19.5	20.4
481011	2004	RS ₁₅₁	17.6	X	11.44690	236.00390	182.38620	6.13308	0.1091461	0.26331902	2.4107263	20	—	—
481012	2004	RV ₁₆₁	15.7	X	348.00308	15.06401	280.28639	16.16079	0.1936962	0.17885169	3.1199001	20	7 9.3	19.0
481013	2004	RB ₂₀₆	16.3	X	92.44921	325.00052	346.98080	23.95170	0.2436618	0.26125243	2.4234226	20	—	—
481014	2004	RG ₂₀₈	17.3	X	172.91036	59.81143	308.96712	14.82984	0.0871802	0.34605302	2.0092823	20	2 19.2	19.9
481015	2004	RK ₂₄₆	16.9	X	258.50985	354.62957	4.05865	6.52554	0.3463262	0.16953816	3.2331392	20	4 28.3	22.4
481016	2004	RE ₂₆₀	16.7	X	242.93272	217.10697	179.09882	8.22608	0.1619301	0.17250387	3.1959759	20	6 17.9	21.8
481017	2004	TF ₃₅	17.7	X	56.70307	95.98123	235.98842	1.83694	0.1932012	0.25597190	2.4566382	20	—	—
481018	2004	TK ₆₂	17.0	X	239.75802	209.33141	222.31596	6.11258	0.2852945	0.17060055	3.2197026	20	7 14.6	22.4
481019	2004	TO ₈₅	16.4	X	257.98032	57.02702	11.49142	9.23331	0.0463905	0.17969440	3.1101382	20	9 2.9	20.8
481020	2004	TZ ₁₀₅	15.4	X	307.19369	308.38037	16.00950	26.16826	0.1130717	0.17346271	3.1841875	20	6 7.6	20.1
481021	2004	TH ₁₆₈	17.3	X	356.51422	211.89618	191.32354	12.30068	0.1696673	0.25444356	2.4664656	20	—	—
481022	2004	TL ₂₈₇	17.1	X	43.99094	268.12320	96.73704	2.47539	0.2003393	0.25735986	2.4477976	20	—	—
481023	2004	TJ ₃₇₀	16.3	X	203.00116	82.26344	28.45681	8.15012	0.1675038	0.17172634	3.2056156	20	8 12.0	21.6
481024	2004	UH ₆	15.6	X	288.19409	318.42812	49.38336	28.44885	0.2019633	0.17170571	3.2058724	20	6 25.9	20.4
481025	2004	VA ₁	20.5	X	238.37453	20.87640	250.74231	14.90509	0.5123696	0.91430313	1.0513385	20	—	—
481026	2004	VL ₅₆	15.9	X	231.62497	49.74304	55.69510	20.12920	0.1781961	0.17402865	3.1772805	20	9 9.2	21.2
481027	2004	XN ₄₄	18.5	X	64.21211	83.77794	178.18961	2.76459	0.5755415	0.26033949	2.4290848	20	11 19.3	23.2
481028	2004	XB ₇₃	15.7	X	227.18587	230.51386	238.66165	13.26649	0.2583782	0.17380613	3.1799917	20	8 15.9	21.2
481029	2004	XB ₇₆	17.3	X	344.15675	127.58741	269.24959	4.45249	0.1782005	0.24717350	2.5145954	20	12 15.4	19.7

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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>		
481041	2005	EC ₁₈₄	17.9	X	271.59588	151.33067	358.79277	11.93996	0.1362000	0.23892119	2.5721696	20	—	—
481042	2005	EK ₁₉₀	17.7	X	204.54336	344.97153	180.65146	3.67721	0.1247587	0.23354827	2.6114694	20	10 27.7	21.6
481043	2005	ER ₁₉₂	17.2	X	229.20499	315.83708	176.22969	13.22870	0.0976949	0.22963998	2.6410161	20	10 17.4	20.9
481044	2005	EG ₂₂₅	16.9	X	235.79720	82.17828	80.52213	28.00702	0.4077103	0.23386360	2.6091215	20	11 4.8	21.5
481045	2005	EW ₂₈₃	17.4	X	224.97569	198.69441	323.73456	3.81535	0.1746945	0.23482472	2.6019973	20	11 7.1	21.1
481046	2005	FE ₄	17.0	X	206.67980	24.57448	154.27254	14.33892	0.1893110	0.23078319	2.6322872	20	11 11.6	21.3
481047	2005	FT ₈	17.0	X	200.40570	77.45121	86.29214	21.95524	0.1973113	0.22861199	2.6489274	20	10 24.5	21.6
481048	2005	GA ₁₀	16.2	X	102.72246	1.90197	224.37743	27.52342	0.2420013	0.21893403	2.7264270	20	10 4.1	21.1
481049	2005	GS ₁₂	16.8	X	203.97080	152.27000	11.36786	13.90152	0.2011718	0.22804656	2.6533041	20	10 14.2	21.1
481050	2005	GV ₃₂	18.3	X	261.75187	354.68870	191.12824	5.17450	0.3751482	0.24071529	2.5593731	20	12 27.8	20.8
481051	2005	GU ₁₀₉	17.2	X	239.57607	281.31011	194.06761	11.20796	0.1152741	0.22499520	2.6772394	20	10 2.8	20.8
481052	2005	HD ₄	20.7	X	260.83530	349.67525	224.71367	22.47385	0.2623213	0.57010317	1.4404574	20	—	—
481053	2005	JP ₄₅	18.1	X	174.62234	339.34463	79.96622	20.64911	0.0638497	0.39797595	1.8304793	20	5 13.5	20.2
481054	2005	JV ₅₇	17.0	X	182.51820	323.32616	234.67347	11.85230	0.1180385	0.22541607	2.6739060	20	11 12.0	21.0
481055	2005	JP ₁₀₂	16.1	X	337.70859	203.77777	103.04059	11.74594	0.0967873	0.20305486	2.8667762	20	7 12.4	19.4
481056	2005	LH ₃₁	16.5	X	210.28478	310.39448	282.07435	12.14741	0.2198900	0.23010890	2.6374270	20	—	—
481057	2005	LS ₄₁	16.1	X	301.11565	82.12740	86.25299	17.37081	0.2292600	0.19669545	2.9282390	20	7 13.5	19.5
481058	2005	MM ₂₄	18.2	X	317.71988	312.73195	299.12086	20.40954	0.0385462	0.38072893	1.8853506	20	3 3.2	20.4
481059	2005	MW ₂₉	16.5	X	324.46659	56.85236	282.23532	10.85541	0.1615884	0.19563751	2.9387860	20	7 26.8	19.8
481060	2005	MX ₃₆	16.5	X	231.29792	291.64282	301.28604	27.26696	0.1292498	0.23101855	2.6304990	20	—	—
481061	2005	NA ₁₄	17.5	X	89.86720	42.21441	309.48985	6.35436	0.1422275	0.28512352	2.2861989	20	—	—
481062	2005	NG ₈₀	17.6	X	82.14054	351.64454	330.09942	8.63833	0.2613155	0.28288979	2.2982179	20	—	—
481063	2005	OC ₃	17.7	X	48.86662	239.68823	90.50511	9.59200	0.3607109	0.27496105	2.3421889	20	—	—
481064	2005	QU ₄	17.7	X	80.44282	319.69978	30.36018	7.08102	0.2395504	0.28567546	2.2832533	20	—	—
481065	2005	QY ₂₃	18.5	X	67.17584	222.00657	102.41079	1.76098	0.2314960	0.27682731	2.3316503	20	—	—
481066	2005	QW ₅₄	18.2	X	28.33627	46.83334	344.44533	3.36987	0.2485038	0.27818664	2.3240486	20	—	—
481067	2005	QA ₅₉	17.8	X	3.59653	296.32847	102.33789	3.41127	0.1985405	0.27423532	2.3463194	20	—	—
481068	2005	QV ₁₃₃	18.4	X	41.14319	239.06805	155.05030	1.19829	0.1882849	0.28072013	2.3100445	20	—	—
481069	2005	QU ₁₃₉	17.2	X	265.96339	293.85736	60.78289	1.45374	0.2620021	0.18341403	3.0679458	20	5 9.9	22.0
481070	2005	QM ₁₄₀	17.8	X	34.68925	10.41070	22.25638	1.50012	0.2686837	0.27863638	2.3215471	20	—	—
481071	2005	QJ ₁₆₃	18.1	X	37.10406	266.10546	136.94633	4.67281	0.1508013	0.28148067	2.3058816	20	—	—
481072	2005	QM ₁₈₇	16.9	X	249.20873	11.73724	359.21201	1.69134	0.2284928	0.18183141	3.0857219	20	5 16.8	21.8
481073	2005	RK	16.4	X	228.27333	184.31757	190.55728	25.99986	0.3593855	0.17848675	3.1241513	20	4 28.5	22.3
481074	2005	SL ₁₁	16.7	X	261.82658	39.15644	20.21386	8.34341	0.1627876	0.18879114	3.0094120	20	8 11.5	21.0
481075	2005	ST ₁₄	16.3	X	290.45248	4.33288	350.83867	11.04793	0.2128381	0.18623380	3.0368992	20	6 14.4	20.5
481076	2005	SV ₁₉	16.5	X	286.71910	356.99114	0.59357	11.26493	0.2255859	0.18592499	3.0402610	20	6 9.7	20.9
481077	2005	SC ₃₅	17.9	X	30.69961	242.54927	134.46194	2.88737	0.2258018	0.27479383	2.3431391	20	—	—
481078	2005	SB ₃₇	16.7	X	264.24741	23.64094	12.92899	9.58898	0.1083000	0.18712696	3.0272280	20	7 23.3	21.1
481079	2005	SC ₈₅	15.9	X	29.13218	236.36750	13.78487	16.67477	0.0226264	0.18400075	3.0614205	20	7 14.3	20.4
481080	2005	SE ₉₂	16.5	X	249.47299	214.50388	204.25104	11.37872	0.0695597	0.18649663	3.0340453	20	8 1.5	21.0
481081	2005	SX ₉₅	17.9	X	66.36087	347.06194	19.84997	7.12542	0.1450653	0.28067365	2.3102995	20	—	—
481082	2005	SA ₉₈	18.3	X	11.69709	61.22109	325.88586	4.82373	0.2273563	0.27239759	2.3568605	20	—	—
481083	2005	SQ ₁₃₁	16.2	X	303.40532	286.07025	18.11195	14.21210	0.0589574	0.17777107	3.1325306	20	5 16.6	20.6
481084	2005	SV ₁₃₄	18.3	X	43.08225	350.00212	37.85911	1.07882	0.2229598	0.27755275	2.3264683	20	—	—
481085	2005	SA ₁₃₅	16.9	X	7.51162	98.97560	340.48567	21.79932	0.2996219	0.27660840	2.3328804	20	—	—
481086	2005	SL ₁₄₁	17.0	X	245.31786	43.34993	28.27207	8.83587	0.2005504	0.18701910	3.0283919	20	8 2.8	21.7
481087	2005	SC ₁₅₀	18.0	X	53.53833	224.32867	116.01868	2.00129	0.2114535	0.27423605	2.3463152	20	—	—
481088	2005	SV ₁₆₈	16.6	X	266.43064	101.89625	337.33507	8.28175	0.0419651	0.19632292	2.9319420	20	9 25.1	20.7
481089	2005	SB ₁₇₂	17.1	X	252.17993	56.02872	319.23072	3.11157	0.1983158	0.18187207	3.0852620	20	5 27.9	21.9
481090	2005	SY ₁₇₃	18.1	X	26.31912	154.37730	210.03897	2.97384	0.3359872	0.27401270	2.3475900	20	—	—
481091	2005	SU ₁₇₄	16.9	X	223.91377	93.85561	332.65451	7.30566	0.0533280	0.18455625	3.0552743	20	7 18.2	21.4
481092	2005	SB ₁₈₆	18.3	X	346.47391	52.74385	24.27360	1.23287	0.1572839	0.27599036	2.3363619	20	—	—
481093	2005	SO ₂₀₇	17.3	X	150.71891	81.17365	237.03494	5.75398	0.1529888	0.28864982	2.2675412	20	—	—
481094	2005	SU ₂₃₀	16.6	X	153.85013	303.63462	195.43588	10.93158	0.0289203	0.18572419	2.0424520	20	7 24.6	21.2
481095	2005	SX ₂₃₃	16.7	X	233.54192	173.52424	213.17657	9.48708	0.1947176	0.17692017	3.1425666	20	5 25.6	21.8
481096	2005	SN ₂₃₅	18.3	X	5.98304	115.29594	284.64588	2.02955	0.1824971	0.27235369	2.3571137	20	—	—
481097	2005	SW ₂₃₅	18.2	X	359.96658	80.22809	2.46063	4.55351	0.1839486	0.27699541	2.3307069	20	—	—
481098	2005	SE ₂₆₃	18.1	X	74.31804	260.54373	55.22207	3.06247	0.2195647	0.27552924	2.3389678	20	—	—
481099	2005	ST ₂₈₉	15.8	X	250.92046	339.84968	78.75642	19.28106	0.1917905	0.18604542	3.0389488	20	7 22.6	20.6
481100	2005	SJ ₂₉₀	18.7	X	353.74188	75.90260	27.57062	4.54307	0.2330653	0.27803750	2.3248796	20	—	—
481101	2005	TL ₂	18.0	X	74.73072	5.34516	353.63835	2.80797	0.2079797	0.28168716	2.3047546	20	—	—
481102	2005	TG ₃	17.9	X	40.90868	190.95522	191.90121	12.58390	0.2909823	0.27616185	2.3353945	20	—	—
481103	2005	TY ₂₀	18.2	X	299.67608	286.37835	209.65652	2.33156	0.1361999	0.27947950	2.3168758	20	—	—
481104	2005	TD ₅₄	18.0	X	21.17367	210.68313	176.54275	5.34009	0.1945579	0.27461348	2.3441648	20	—	—
481105	2005	TK ₇₈	16.3	X	229.94957	10.05949	37.41693	12.63650	0.1615011	0.18026984	3.1035161	20	6 17.6	21.4
481106	2005	TK ₉₅	16.3	X	195.91082	271.85454	208.79204	25.50668	0.2051279	0.18582514	3.0413500	20	8 6.8	21.9
481107	2005	TH ₁₀₂	16.1	X	294.18281	339.54718	3.61347	6.41624	0.1930018	0.18387596	3.0628055	20	6 6.6	20.2
481108	2005	TA ₁₀₃	18.1	X	352.10867	228.68494	197.57739	8.09037	0.0672563	0.27484759	2.3428335	20	—	—
481109	2005	TT ₁₁₁	18.2	X	41.52643	81.53159	325.85099	2.31547	0.1869254	0.28116104	2.3076288	20	—	—
481110	2005	TY ₁₁₉	16.8	X	310.31671	310.89710	19.10626	2.51557	0.1764621	0.18577996	3.0418431	20	6 17.5	20.5
481111	2005	TG ₁₂₁	16.5	X	220.56679									

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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>
481121 2005 TU ₁₅₃	17.2	X	206.11591	183.17611	250.10682	3.12001	0.2377248	0.17744234	3.1363983	20	6 24.0	22.5
481122 2005 TL ₁₆₃	18.1	X	339.18883	55.71726	343.55555	2.34745	0.1762330	0.26752272	2.3854058	20	12 16.9	20.3
481123 2005 TR ₁₇₁	17.0	X	76.80272	80.84323	278.76719	6.30584	0.1509310	0.28006204	2.3136618	20	—	—
481124 2005 TX ₁₈₆	16.6	X	225.91153	73.98575	9.61052	9.82633	0.0822887	0.18652888	3.0336955	20	8 10.7	21.2
481125 2005 TL ₁₉₀	18.1	X	33.41160	240.34970	121.17558	4.90399	0.2092820	0.27244590	2.3565819	20	—	—
481126 2005 UV ₂	17.0	X	104.80572	265.12116	80.07611	22.97101	0.2239107	0.28511015	2.2862704	20	—	—
481127 2005 UJ ₆	21.5	X	334.60247	131.36117	42.38573	18.99633	0.4160715	0.89242979	1.0684479	20	—	—
481128 2005 UA ₈	18.0	X	34.09126	124.87826	237.58030	2.30675	0.2792185	0.27301591	2.3533006	20	—	—
481129 2005 UV ₁₀	16.1	X	249.26275	334.32306	42.92277	10.50575	0.0682789	0.17788886	3.1311477	20	6 11.1	20.7
481130 2005 UF ₁₁	17.7	X	28.00057	313.76510	48.89680	2.32297	0.2001198	0.27146795	2.3622381	20	—	—
481131 2005 UB ₂₁	18.3	X	22.87576	133.18265	278.24872	1.87029	0.1984917	0.27653719	2.3332808	20	—	—
481132 2005 UU ₂₄	17.2	X	34.77342	319.75090	28.16609	6.71362	0.1389182	0.26950262	2.3737085	20	12 26.5	20.4
481133 2005 UE ₂₅	17.9	X	57.08019	313.83601	24.59941	3.57499	0.2564416	0.27404539	2.3474033	20	—	—
481134 2005 UC ₃₉	18.2	X	328.73760	30.33655	73.40544	2.73092	0.1376074	0.27227645	2.3575595	20	—	—
481135 2005 UO ₄₃	18.4	X	158.09385	154.71232	224.16418	21.22288	0.0821653	0.36415127	1.9421443	20	2 6.7	21.3
481136 2005 UG ₅₇	18.0	X	29.22903	344.68974	66.38883	5.70167	0.2180351	0.27753754	2.3276708	20	—	—
481137 2005 UJ ₅₉	16.0	X	252.43855	165.76251	203.01782	10.74977	0.1069633	0.17793748	2.3750772	20	6 1.2	20.7
481138 2005 UJ ₆₃	16.0	X	327.41594	281.97514	56.05241	13.02010	0.0649817	0.18364578	3.0653642	20	8 13.1	20.2
481139 2005 UM ₆₇	17.9	X	20.23699	331.70981	74.92943	2.30995	0.1814670	0.27558824	2.3386340	20	—	—
481140 2005 UN ₇₉	16.6	X	242.94246	351.03272	86.12172	5.13532	0.2320229	0.18370401	3.0647163	20	8 1.3	21.3
481141 2005 UZ ₈₃	16.5	X	334.00782	90.85745	214.35091	10.80760	0.0978603	0.18237666	3.0795685	20	7 1.0	20.5
481142 2005 UL ₉₂	17.8	X	45.36448	10.58875	355.43366	4.52580	0.1333099	0.27338672	2.3511722	20	—	—
481143 2005 UE ₁₀₃	18.0	X	93.58941	185.85227	219.18390	20.35001	0.0891302	0.35526296	1.9744043	20	—	—
481144 2005 UM ₁₀₄	17.6	X	328.01471	32.12792	61.92740	8.14755	0.0513426	0.27193547	2.3595298	20	—	—
481145 2005 UX ₁₁₃	16.6	X	227.94872	31.77877	46.68721	4.81810	0.1227548	0.18083696	3.0970241	20	7 30.5	21.3
481146 2005 UJ ₁₁₉	17.9	X	249.69749	85.20623	358.31848	1.35122	0.1880251	0.18833654	3.0142527	20	8 21.2	22.2
481147 2005 UM ₁₂₁	17.6	X	238.31681	129.42020	298.25523	0.43333	0.1563157	0.18271109	3.0758096	20	7 23.1	22.2
481148 2005 UT ₁₂₉	18.0	X	311.63357	75.01960	39.57957	6.91054	0.0837001	0.27286635	2.3541605	20	—	—
481149 2005 UA ₁₃₁	16.1	X	283.29783	148.56784	237.10204	13.96235	0.0652368	0.18335920	3.0685573	20	8 1.3	20.6
481150 2005 UQ ₁₄₇	16.7	X	217.20399	92.79905	30.30332	9.46299	0.0615723	0.18958106	3.0010467	20	9 21.5	21.1
481151 2005 UQ ₁₅₂	17.8	X	16.22431	138.03411	249.52906	1.48932	0.2098597	0.27107169	2.3645397	20	—	—
481152 2005 UH ₁₆₀	18.0	X	42.19714	277.69893	123.72568	3.65559	0.2095633	0.27935254	2.3175777	20	—	—
481153 2005 UH ₁₆₂	17.2	X	256.99561	101.89799	288.16597	1.75995	0.1873491	0.18179470	3.0861373	20	6 22.3	21.7
481154 2005 UT ₁₆₇	17.0	X	176.55385	251.26879	221.72936	9.23987	0.2377820	0.17685256	3.1433674	20	7 16.6	22.6
481155 2005 UD ₁₇₄	16.0	X	230.88732	1.66378	34.09178	12.37614	0.1228568	0.17560466	3.1582416	20	6 6.7	21.0
481156 2005 UU ₁₈₂	16.7	X	257.94043	325.91493	56.17342	8.86694	0.1995089	0.17898548	3.1183451	20	6 11.2	21.4
481157 2005 UT ₁₈₃	17.6	X	107.99575	291.65871	44.83684	12.01873	0.0910208	0.27948003	2.3168728	20	—	—
481158 2005 UY ₁₈₈	18.7	X	318.90715	84.34249	12.37928	2.25988	0.1674241	0.27099335	2.3649954	20	—	—
481159 2005 UO ₁₉₁	18.5	X	1.50707	45.55326	35.61555	4.19078	0.0727205	0.27651528	2.3334041	20	—	—
481160 2005 UJ ₁₉₄	16.9	X	254.56500	348.40712	73.99318	3.47319	0.2039100	0.18380634	3.0635788	20	7 29.2	21.5
481161 2005 UW ₁₉₆	16.5	X	290.48510	123.87247	225.54323	6.38925	0.0774200	0.17990526	3.1077075	20	6 27.6	20.8
481162 2005 UJ ₂₀₂	18.3	X	7.95849	274.18357	146.20432	1.41709	0.1769585	0.27414086	2.3468583	20	—	—
481163 2005 UF ₂₀₃	18.4	X	321.38914	18.56504	77.71270	2.16991	0.1481362	0.27064246	2.3670391	20	—	—
481164 2005 UF ₂₁₀	16.5	X	89.05379	115.18859	112.21204	5.12270	0.0837416	0.18626724	3.0365357	20	9 7.9	20.9
481165 2005 UZ ₂₁₁	16.7	X	227.87781	245.15688	149.27646	1.23500	0.1767678	0.17560450	3.1582436	20	5 30.7	21.9
481166 2005 UO ₂₁₂	17.1	X	212.64357	355.65166	70.84506	4.95281	0.1719517	0.17613375	3.1519138	20	6 24.8	22.2
481167 2005 UE ₂₂₁	17.8	X	62.84221	135.10211	242.78218	5.54497	0.1445767	0.27901892	2.3194247	20	—	—
481168 2005 UK ₂₂₁	17.6	X	142.61853	356.29458	275.93360	3.69178	0.0987788	0.27463470	2.3440441	20	—	—
481169 2005 UB ₂₂₉	16.8	X	85.73175	77.69374	217.24567	11.36972	0.0166685	0.19816102	2.9137832	20	11 19.1	20.8
481170 2005 UJ ₂₃₀	16.0	X	88.87162	133.03085	55.25621	12.89417	0.0781576	0.17700541	3.1415575	20	7 18.4	20.7
481171 2005 UM ₂₃₁	17.4	X	202.17183	45.69262	51.97114	1.30454	0.1361918	0.18007934	3.1057044	20	7 25.7	22.3
481172 2005 UF ₂₃₂	18.3	X	305.98070	78.56996	50.28680	4.89761	0.1505808	0.27276106	2.3547662	20	—	—
481173 2005 UF ₂₃₇	17.0	X	256.04581	261.01344	139.95480	4.15676	0.1238504	0.18094209	3.0958243	20	7 13.0	21.4
481174 2005 UQ ₂₃₉	16.4	X	226.75681	0.84621	72.88234	13.25506	0.1078965	0.18069767	3.0986154	20	7 25.2	21.2
481175 2005 UB ₂₄₆	17.5	X	51.92592	236.26419	132.83257	2.95560	0.1925701	0.27575400	2.3376967	20	—	—
481176 2005 UP ₂₆₁	16.9	X	310.02124	296.93945	38.62928	8.13760	0.1018973	0.18529750	3.0471208	20	7 5.9	20.9
481177 2005 UO ₂₆₄	18.4	X	306.20207	97.17761	52.02816	5.78146	0.1658341	0.27781170	2.3261392	20	—	—
481178 2005 UM ₂₆₇	16.2	X	288.85513	297.73654	63.25859	11.02445	0.0586004	0.18067553	3.0988685	20	7 14.9	20.5
481179 2005 UD ₂₇₇	16.6	X	276.33253	337.25282	35.76344	5.15823	0.1883808	0.18274050	3.0754796	20	6 23.2	20.9
481180 2005 UX ₂₇₉	16.6	X	210.56488	232.67345	216.87726	9.38512	0.1232737	0.18096873	3.0955206	20	7 21.9	21.6
481181 2005 UY ₂₉₁	17.9	X	305.28671	278.86312	230.65422	21.27752	0.2824293	0.27359690	2.3499679	20	—	—
481182 2005 UK ₃₀₇	16.9	X	230.03196	32.63453	38.99958	2.77112	0.0499669	0.18162052	3.0881101	20	7 31.8	21.3
481183 2005 UP ₃₁₆	18.0	X	319.26464	69.10256	28.27062	5.44118	0.0658177	0.26973136	2.3723663	20	—	—
481184 2005 UO ₃₂₃	16.4	X	230.12379	182.06458	241.98157	9.78680	0.1036676	0.17917754	3.1161164	20	7 13.2	21.2
481185 2005 UG ₃₂₇	16.4	X	246.50212	144.81386	251.67797	10.09806	0.1299012	0.17782167	3.1319363	20	6 25.2	21.1
481186 2005 UU ₃₃₃	16.3	X	300.37636	125.32690	222.51135	15.39390	0.0444784	0.17963018	3.1108795	20	7 10.7	20.8
481187 2005 UR ₃₃₆	18.0	X	30.07061	281.03456	74.68874	3.66012	0.2628560	0.27065534	2.3669640	20	—	—
481188 2005 US ₃₃₈	17.1	X	244.20613	65.22017	16.98795	10.35045	0.0920653	0.18709214	3.0276036	20	8 29.7	21.5
481189 2005 UP ₃₄₇	16.4	X	316.34719	310.08708	52.44690	14.32663	0.1437186	0.18828832	3.0147673	20	8 24.7	20.2
481190 2005 UU ₃₅₃	17.9	X	4.01443	79.09635	352.68534	4.29485	0.2750258	0.27433082	2.3457748	20	—	—
481191 2005 UA ₃₇₄	16.4	X	174.20197	266.06794	239.55190	15.27216	0.1880286	0.18149123	3.0895765	20	8 18.9	22.0
481192 2005 UB ₃₉₉	16.3	X	315.79276	76.36283	220.29013	8.27520	0.1124764	0.17566240	3.1575496	20	5 21.9	20.3
481193 2005 UW ₄₀₂	18.3	X	298.06042	186.63119	294.10702	1.44038	0.1599419	0.26939321	2.3743512	20	—	—
481194 2005 UT ₄₂₄	18.4	X	347.50248	218.82738	225.30083	3.46085	0.1227577	0.27516491	2.3410320	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>
481201 2005 UA ₄₈₃	17.9	X	25.93188	223.59333	130.10554	3.08713	0.1817919	0.27015775	2.3698695	20	12 29.3	20.8
481202 2005 US ₄₈₇	18.2	X	47.69186	61.09103	291.45008	8.25855	0.2559677	0.27517553	2.3409718	20	—	—
481203 2005 UB ₄₉₀	17.2	X	54.92104	335.44382	26.33840	24.99541	0.1499717	0.27556040	2.3387915	20	—	—
481204 2005 UG ₅₁₅	16.4	X	276.26754	274.33125	89.34812	15.56243	0.0482290	0.18013756	3.1050352	20	7 1.7	20.6
481205 2005 UH ₅₁₇	16.7	X	287.20634	210.38910	174.08054	10.62735	0.1180018	0.18831501	3.0144825	20	8 1.4	20.8
481206 2005 UE ₅₂₇	18.3	X	3.32752	175.69058	227.01447	4.64946	0.1802306	0.27008537	2.3702928	20	—	—
481207 2005 UC ₅₂₉	18.1	X	316.46373	304.72438	154.52859	2.38168	0.1543893	0.26972327	2.3724138	20	—	—
481208 2005 VY	17.7	X	133.83341	202.50637	240.18327	18.80265	0.0810873	0.36925249	1.9242157	20	4 14.4	20.0
481209 2005 VH ₃	17.6	X	41.55282	173.94313	232.83514	7.52190	0.1764889	0.27979000	2.3151613	20	—	—
481210 2005 VA ₃₂	17.7	X	326.34527	203.20205	225.21481	5.42825	0.1231786	0.26602996	2.3943209	20	12 28.6	20.0
481211 2005 VK ₃₂	17.2	X	241.12737	350.23394	74.14345	2.48902	0.1466973	0.18028298	3.1033653	20	7 23.4	21.8
481212 2005 VZ ₃₂	15.8	X	281.93430	310.06017	68.54648	12.20518	0.0987797	0.18091137	2.3724157	20	7 23.4	20.1
481213 2005 VB ₃₆	16.5	X	234.18267	173.66614	238.04517	16.23505	0.2691027	0.18042996	3.1016797	20	6 17.9	21.8
481214 2005 VP ₃₇	16.4	X	214.26404	240.86538	221.02489	25.82124	0.2153017	0.18363770	3.0654542	20	7 28.5	22.0
481215 2005 VC ₄₀	17.3	X	84.28940	65.62961	236.40163	3.89655	0.1115737	0.26987254	2.3715389	20	12 20.4	20.6
481216 2005 VK ₄₁	17.6	X	97.94425	129.61926	210.37465	5.80056	0.1672206	0.27802733	2.3249363	20	—	—
481217 2005 VP ₄₅	17.7	X	27.08857	357.59487	47.84191	10.80929	0.1055230	0.27565923	2.3382325	20	—	—
481218 2005 VY ₄₉	17.8	X	347.35864	171.65985	275.69287	3.88886	0.2053603	0.27458470	2.3443286	20	—	—
481219 2005 VA ₅₀	16.7	X	208.61157	179.80602	228.30040	26.69848	0.1450527	0.17554093	3.1590060	20	5 30.4	21.9
481220 2005 VR ₈₀	16.7	X	262.36332	191.82337	201.20929	11.76928	0.2487011	0.18233840	3.0799994	20	6 23.5	21.6
481221 2005 VE ₉₆	18.0	X	36.14270	42.55081	344.38888	2.12429	0.1996227	0.27525166	2.3405401	20	—	—
481222 2005 VS ₁₀₃	18.3	X	36.98194	201.60801	203.22545	4.95844	0.2084068	0.27655271	2.3331936	20	—	—
481223 2005 WK ₅	16.9	X	249.72555	340.26714	85.54556	15.26382	0.2945972	0.18147910	3.0897141	20	7 17.7	22.0
481224 2005 WV ₁₅	16.3	X	150.93800	280.21260	246.78639	14.68001	0.1844925	0.17981543	3.1087425	20	8 24.7	21.8
481225 2005 WR ₂₄	16.2	X	272.29437	149.81012	256.41167	11.30017	0.1449166	0.18377708	3.0639040	20	8 2.5	20.6
481226 2005 WU ₂₄	18.1	X	13.07358	157.91242	275.48519	2.88306	0.1761995	0.27517922	2.3409508	20	—	—
481227 2005 WP ₂₉	15.6	X	95.47011	320.08105	254.72429	12.79550	0.0833658	0.18079249	3.0975319	20	8 21.7	20.4
481228 2005 WT ₂₉	16.5	X	225.54088	149.81032	288.91198	4.29328	0.0236596	0.17962107	3.1109846	20	8 5.6	20.9
481229 2005 WN ₄₀	16.6	X	200.55232	69.89471	76.48212	9.97265	0.0878690	0.18571466	3.0425560	20	9 30.7	21.3
481230 2005 WP ₄₈	18.0	X	33.42121	319.50785	65.17239	5.95849	0.2176736	0.27207463	2.3587252	20	—	—
481231 2005 WN ₅₅	16.8	X	257.62181	310.90582	66.50101	12.75141	0.3425592	0.17917000	3.1162038	20	5 22.0	21.8
481232 2005 WM ₆₇	17.9	X	282.62247	289.08265	219.53343	2.15808	0.1367371	0.26970848	2.3725005	20	—	—
481233 2005 WJ ₈₀	16.8	X	252.06467	3.24695	73.89315	9.68813	0.1475196	0.18371621	3.0645807	20	8 24.8	21.4
481234 2005 WS ₈₆	17.4	X	3.91476	4.61322	75.92430	7.03655	0.0894535	0.27476838	2.3432838	20	—	—
481235 2005 WU ₈₆	18.3	X	300.22872	354.16088	105.03986	1.88266	0.1963344	0.26488704	2.4012032	20	12 22.9	20.0
481236 2005 WN ₉₁	15.9	X	275.84364	292.68195	76.25352	18.69236	0.3023022	0.18070775	3.0985002	20	6 2.2	20.4
481237 2005 WM ₁₀₅	17.8	X	11.07864	130.08601	290.31266	1.50276	0.1983872	0.27348660	2.3505997	20	—	—
481238 2005 WG ₁₀₈	17.2	X	198.88138	84.09846	275.14317	18.31677	0.0839902	0.36192033	1.9501173	20	2 27.9	20.2
481239 2005 WS ₁₁₀	16.2	X	258.93094	340.99451	76.63270	9.38232	0.0696796	0.18271127	3.0758076	20	8 18.8	20.6
481240 2005 WT ₁₂₀	18.5	X	118.86514	338.28628	53.88163	12.51933	0.2320656	0.35960855	1.9584660	20	2 12.4	20.8
481241 2005 WD ₁₃₀	16.9	X	229.44985	350.51197	65.59610	2.00495	0.1770809	0.17772403	3.1330833	20	6 27.5	21.9
481242 2005 WM ₁₃₅	16.5	X	181.31305	188.74335	284.69494	9.61093	0.1844054	0.17124210	3.2116560	20	7 22.5	21.8
481243 2005 WW ₁₄₀	17.9	X	293.54095	23.42176	92.74357	10.04580	0.2201042	0.26201292	2.4187310	20	12 31.2	19.4
481244 2005 WZ ₁₄₄	18.3	X	2.37499	37.37298	32.85499	1.10820	0.1745927	0.27238554	2.3569300	20	—	—
481245 2005 WD ₁₄₆	18.6	X	329.44751	154.30328	299.42845	1.57061	0.1973536	0.26940703	2.3742700	20	—	—
481246 2005 WJ ₁₄₆	16.5	X	279.78410	86.08088	256.17753	14.84985	0.0948941	0.17401273	3.1774742	20	6 1.8	20.8
481247 2005 WB ₁₅₀	17.5	X	40.85642	84.56815	285.93766	4.83962	0.1246531	0.27011279	2.3701325	20	—	—
481248 2005 WR ₁₅₃	16.4	X	254.39348	321.54580	82.36006	11.60667	0.1669306	0.18171907	3.0869942	20	7 9.7	21.1
481249 2005 WP ₁₅₄	16.9	X	243.29976	327.73533	74.21959	11.58356	0.2160139	0.17629747	3.1499621	20	6 19.3	22.0
481250 2005 WA ₁₅₅	17.4	X	7.67871	144.50949	260.71716	5.61614	0.1245078	0.26862319	2.3788865	20	—	—
481251 2005 WU ₁₆₀	15.9	X	144.60561	95.63439	52.59444	10.42645	0.0356557	0.17651443	3.1473805	20	7 30.5	20.6
481252 2005 WW ₁₆₈	18.6	X	3.59845	229.50303	167.29875	1.20330	0.1114824	0.26695441	2.3887900	20	—	—
481253 2005 WY ₁₇₂	18.3	X	292.65256	44.65600	86.06336	3.70117	0.1641259	0.26808088	2.3820936	20	—	—
481254 2005 WO ₁₈₀	17.6	X	253.26746	270.68248	60.88314	22.49007	0.0834264	0.37513397	1.9040505	20	4 18.9	20.0
481255 2005 WL ₁₈₁	16.2	X	221.22461	231.00388	211.24252	14.69223	0.2238063	0.17751243	3.1355727	20	7 14.9	21.7
481256 2005 WK ₁₈₄	16.3	X	216.86915	34.68698	69.13055	13.06414	0.2604937	0.17796305	3.1302774	20	8 10.8	21.8
481257 2005 WV ₂₀₃	15.5	X	205.21115	77.90701	33.37117	21.96960	0.2359158	0.17519830	3.1631234	20	8 18.5	21.2
481258 2005 WR ₂₀₅	17.2	X	199.94403	19.10390	142.69259	2.15939	0.2911657	0.18693234	3.0293288	20	9 30.7	22.4
481259 2005 XM ₆	17.5	X	67.19849	355.17315	31.13872	4.77221	0.1868179	0.27860739	2.3217082	20	—	—
481260 2005 XD ₃₆	18.4	X	335.25457	167.92114	312.48183	1.45058	0.1624925	0.27188169	2.3598410	20	—	—
481261 2005 XB ₄₃	18.3	X	14.61812	352.41935	28.50833	2.73989	0.2213944	0.26850674	2.3795742	20	—	—
481262 2005 XR ₅₂	17.9	X	349.57754	19.92175	43.41603	4.13492	0.1134875	0.26645007	2.3918035	20	—	—
481263 2005 XH ₆₂	16.1	X	220.03384	228.60558	263.35354	12.78496	0.2234407	0.18570453	3.0426668	20	9 8.9	21.3
481264 2005 XO ₆₂	18.5	X	347.38618	113.52724	305.36283	1.70067	0.1789651	0.26768645	2.3844330	20	—	—
481265 2005 XV ₇₂	17.4	X	345.54540	87.24707	287.98857	7.10708	0.2234607	0.26005245	2.4308720	20	11 26.3	19.5
481266 2005 XU ₇₃	16.7	X	290.97997	85.20907	302.62794	10.23729	0.1384463	0.18098233	3.0953654	20	8 8.3	20.8
481267 2005 XG ₈₁	16.4	X	207.84789	182.11165	273.70401	10.51566	0.0438441	0.17725100	3.1386551	20	8 1.6	21.0
481268 2005 XQ ₈₂	16.2	X	221.52169	127.11125	287.30340	7.64443	0.0744210	0.17339225	3.1850500	20	6 26.3	20.9
481269 2005 XG ₉₂	15.5	X	200.85905	233.79026	268.74859	25.60025	0.3463493	0.17787488	3.1313117	20	8 22.8	21.7
481270 2005 YF ₅	16.5	X	265.95354	154.33910	270.97495	9.31618	0.1091887	0.18440187	3.0569793	20	8 23.9	20.9
481271 2005 YR ₅	16.7	X	298.47059	285.24827	79.41919	15.50764	0.2579446	0.18276759	3.0751756	20	7 1.8	20.5
481272 2005 YC ₁₈	18.3	X	350.67137	59.54849	40.58106	3.06875	0.1777254	0.27431179	2.3458833	20	—	—
481273 2005 YL ₁₈	16.9	X	233.71334	48.49772	75.56354	25.28641	0.3301913	0.18642798	3.0347901	20	9 22.6	22.4
481274 2005 YN ₁₉	16.6	X	229.01256	121.36675	308.56343	3.85933	0.1340552	0.17582099	3			

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>
481281 2005 YK ₄₇	15.5 ^m	X	227.70798	123.62849	296.49827	25.84093	0.2599188	0.17288900	3.1912278	20	6 27.2	21.0
481282 2005 YE ₄₉	16.5	X	274.79271	277.31086	118.89907	15.87221	0.1891676	0.17691217	3.1426613	20	7 20.8	20.7
481283 2005 YP ₆₃	18.0	X	338.04263	343.71280	89.60806	3.55981	0.1625245	0.26520049	2.3993107	20	—	—
481284 2005 YB ₆₅	17.7	X	89.30087	354.92885	99.63018	24.90767	0.0653034	0.35749549	1.9661758	20	3 8.2	20.2
481285 2005 YM ₇₉	17.0	X	343.58964	299.65660	100.95354	7.66940	0.1011243	0.25993636	2.4315957	20	12 15.2	19.7
481286 2005 YQ ₈₁	18.2	X	270.56536	331.57722	149.25545	0.85992	0.1770778	0.25841257	2.4411453	20	11 22.6	20.6
481287 2005 YB ₈₆	16.2	X	291.19940	282.81128	103.36868	12.27324	0.0860512	0.17832975	3.1259847	20	8 17.8	20.5
481288 2005 YN ₈₆	16.0	X	339.26694	190.98931	103.82942	11.28785	0.0257281	0.16852180	3.2461256	20	6 29.9	20.5
481289 2005 YX ₈₈	18.2	X	342.12692	328.85981	132.83997	2.65617	0.1691506	0.26892233	2.3771220	20	—	—
481290 2005 YF ₉₁	17.7	X	282.24591	348.90709	124.66674	8.38057	0.0671924	0.25853642	2.4403656	20	12 15.9	20.6
481291 2005 YL ₁₀₄	17.7	X	336.93350	306.12600	101.57862	8.11723	0.1813511	0.26193949	2.4191831	20	12 23.7	19.8
481292 2005 YK ₁₂₀	16.4	X	241.13827	329.60816	113.40469	21.07539	0.2620725	0.18016385	3.1047332	20	8 3.2	21.4
481293 2005 YT ₁₃₂	16.0	X	180.91644	66.34438	89.24668	18.69052	0.1946640	0.17881802	3.1202916	20	9 20.8	21.6
481294 2005 YR ₁₄₉	15.8	X	37.47914	158.85826	102.02140	17.31899	0.0904709	0.17030519	3.2234243	20	8 14.9	20.2
481295 2005 YO ₁₅₃	17.0	X	298.75228	235.70659	300.96332	21.87333	0.2507041	0.26992700	2.3712199	20	—	—
481296 2005 YP ₁₆₇	15.8	X	301.20584	80.54627	287.97098	23.06727	0.1070200	0.17563074	3.1579290	20	7 29.3	20.1
481297 2005 YM ₂₀₁	15.8	X	147.31036	264.58513	282.27994	14.84703	0.2111651	0.17779402	3.1232610	20	9 13.4	21.4
481298 2005 YG ₂₀₃	16.7	X	250.68483	124.55249	270.71876	7.43685	0.2673766	0.17459993	3.1703461	20	6 13.3	21.7
481299 2005 YM ₂₁₄	16.9	X	280.26298	232.47539	320.07069	19.49298	0.2984326	0.26777841	2.3838871	20	—	—
481300 2005 YC ₂₁₈	16.1	X	126.18074	267.60367	246.25231	14.47431	0.1764335	0.17360605	3.1824345	20	7 20.3	21.4
481301 2005 YM ₂₁₈	16.8	X	243.65052	105.98651	311.57577	8.89364	0.2061308	0.17518376	3.1632984	20	7 11.1	21.7
481302 2005 YY ₂₁₈	16.4	X	203.19901	18.89730	82.04866	12.12107	0.1590238	0.17657499	3.1466607	20	7 30.8	21.6
481303 2005 YD ₂₂₂	16.3	X	175.56410	205.39031	277.92871	14.71596	0.1502088	0.17462319	3.1700645	20	7 27.8	21.6
481304 2005 YA ₂₂₃	16.6	X	245.35757	327.91765	64.96155	12.08369	0.1593654	0.17692922	3.1424594	20	6 15.8	21.4
481305 2005 YB ₂₂₃	16.4	X	169.54569	53.27593	71.45829	11.03757	0.1045944	0.17663987	3.1458902	20	7 29.5	21.5
481306 2005 YX ₂₂₇	16.5	X	162.53719	235.40773	286.40245	5.81629	0.2284743	0.17531268	3.1617473	20	9 1.3	22.0
481307 2005 YW ₂₄₆	16.8	X	206.45406	174.15595	323.94133	10.14366	0.1283128	0.17893307	3.1189540	20	9 14.3	21.8
481308 2005 YA ₂₄₈	16.9	X	222.03765	344.24303	77.05857	5.52774	0.2253902	0.17443585	3.1723338	20	6 23.3	22.1
481309 2005 YS ₂₆₉	15.9	X	302.27701	55.33842	305.72582	14.25381	0.0661814	0.17282827	3.1919754	20	7 30.7	20.0
481310 2005 YE ₂₇₃	15.9	X	284.27705	92.17461	289.06706	23.92306	0.2940275	0.17764424	3.1340214	20	6 29.7	20.4
481311 2006 AN ₅	15.7	X	169.88672	62.85327	99.27552	26.77607	0.1350533	0.17455051	3.1709445	20	9 22.1	21.3
481312 2006 AQ ₁₄	16.4	X	215.10829	355.45895	126.01408	14.19954	0.1838020	0.17853977	3.1235328	20	9 4.0	21.5
481313 2006 AY ₁₆	17.7	X	321.68248	35.17646	124.44258	2.39623	0.2393319	0.27267384	2.3552684	20	—	—
481314 2006 AG ₁₇	17.0	X	238.56788	125.68086	285.05268	8.96274	0.1695230	0.17273701	3.1930995	20	6 30.6	21.8
481315 2006 AU ₂₃	17.3	X	277.55406	249.21322	317.96085	3.81551	0.3104941	0.26540261	2.3980924	20	—	—
481316 2006 AR ₃₀	16.1	X	280.47826	95.63875	314.31713	11.45292	0.0692014	0.17798005	3.1300781	20	8 30.1	20.4
481317 2006 AV ₃₄	17.7	X	327.16167	132.16720	298.70592	3.98592	0.0452807	0.26049711	2.4281049	20	12 26.3	20.6
481318 2006 AB ₆₈	17.5	X	302.85234	222.39291	298.84022	10.90318	0.1824142	0.26806630	2.3821800	20	—	—
481319 2006 AG ₇₄	15.6	X	188.20021	162.84707	326.52206	25.73581	0.0786764	0.17414498	3.1758653	20	8 21.0	20.3
481320 2006 AU ₈₅	17.0	X	327.61912	175.07148	324.04346	25.63379	0.2145489	0.27176321	2.3605268	20	—	—
481321 2006 AF ₈₆	17.6	X	288.28470	338.19333	301.98120	17.54683	0.0682869	0.35995283	1.9572170	20	3 2.5	20.0
481322 2006 BT	18.0	X	303.76402	152.93858	333.60406	5.39273	0.1861453	0.26604560	2.3942270	20	—	—
481323 2006 BX ₁₀	17.1	X	335.99187	300.74355	128.01139	10.71668	0.1702073	0.26133419	2.4229172	20	—	—
481324 2006 BO ₁₄	16.6	X	204.81478	211.12656	304.79196	8.10165	0.2144700	0.18095938	3.0956272	20	9 27.0	21.9
481325 2006 BD ₂₅	18.8	X	5.85539	282.70167	147.22434	2.77665	0.1660215	0.26836076	2.3804371	20	—	—
481326 2006 BC ₂₆	16.0	X	213.47334	345.45338	131.42088	18.48351	0.1998858	0.17687659	3.1430828	20	8 25.5	21.2
481327 2006 BB ₂₇	20.0	X	254.92900	144.66793	132.18776	27.15707	0.2457429	0.61983778	1.3623353	20	—	—
481328 2006 BS ₃₅	16.1	X	261.99378	326.77315	85.57930	23.60707	0.1694800	0.18181990	3.0858521	20	7 30.8	20.8
481329 2006 BT ₄₈	17.9	X	351.10397	305.81903	105.40373	4.59027	0.0267118	0.25933339	2.4353633	20	12 31.8	20.8
481330 2006 BY ₅₁	18.3	X	299.22710	126.97091	338.49069	1.24452	0.1367453	0.25937774	2.4350857	20	12 29.6	20.4
481331 2006 BK ₅₈	16.2	X	234.04675	110.90699	332.16111	16.15474	0.2255819	0.17531055	3.1617729	20	8 2.6	21.3
481332 2006 BJ ₇₆	15.9	X	299.09134	257.58070	119.30754	12.75289	0.0809550	0.17323879	3.1869307	20	8 15.8	20.1
481333 2006 BV ₈₈	16.6	X	245.24794	314.50171	120.25034	5.42544	0.1183812	0.17480974	3.1678089	20	8 13.3	21.2
481334 2006 BX ₉₂	16.4	X	165.63929	37.14446	149.36116	10.36898	0.2201692	0.17408743	3.1765652	20	10 7.5	21.9
481335 2006 BH ₁₁₄	18.4	X	350.95274	108.91559	333.43640	1.42153	0.1350786	0.26552018	2.3973845	20	—	—
481336 2006 BN ₁₅₃	16.9	X	218.03594	3.74641	131.58529	12.43843	0.2094254	0.17941541	3.1133615	20	9 22.1	22.0
481337 2006 BG ₁₉₀	18.3	X	290.35699	141.03961	20.94032	2.47230	0.1402875	0.26344998	2.4099272	20	—	—
481338 2006 BH ₂₁₈	15.9	X	268.62007	75.00174	276.30280	17.92667	0.2210692	0.17501968	3.1652751	20	5 10.9	21.0
481339 2006 BM ₂₂₃	18.1	X	270.67829	346.17378	145.13974	2.81655	0.1570432	0.25685463	2.4510064	20	12 10.4	20.5
481340 2006 BK ₂₄₀	13.5	X	298.79699	317.96513	326.42728	29.75903	0.0311438	0.08417783	5.1562925	20	4 10.2	20.7
481341 2006 BA ₂₄₂	18.1	X	245.22658	144.19229	55.59505	2.15063	0.1125093	0.26252894	2.4155605	20	—	—
481342 2006 BL ₂₆₅	18.1	X	286.60980	25.24691	146.30575	2.71873	0.1513687	0.26393519	2.4069728	20	—	—
481343 2006 BM ₂₆₅	16.4	X	196.93649	348.97059	152.89724	16.02625	0.2103885	0.17441573	3.1725778	20	9 8.7	21.7
481344 2006 CM ₁₃	16.9	X	80.40843	307.29975	319.23716	11.10258	0.1652096	0.24304902	2.5429635	20	10 27.7	21.0
481345 2006 CE ₁₉	16.4	X	195.39279	208.54096	298.41548	7.48642	0.1377652	0.17737416	3.1372020	20	9 13.0	21.5
481346 2006 CQ ₂₄	18.2	X	1.24493	117.47980	325.89389	3.05102	0.1990987	0.26913707	2.3758574	20	—	—
481347 2006 CM ₅₈	18.0	X	4.82526	61.24197	328.99901	0.89326	0.1821594	0.25993377	2.4316118	20	—	—
481348 2006 DN ₄₄	16.6	X	217.56010	297.96202	157.31386	9.35057	0.2860047	0.17383993	3.1795795	20	7 25.4	22.2
481349 2006 DV ₄₇	18.2	X	308.68832	291.29294	167.18335	2.29402	0.1395098	0.25803226	2.4435433	20	—	—
481350 2006 DK ₄₈	16.8	X	115.93734	87.20744	155.15191	9.81519	0.0486293	0.17583590	3.1554721	20	10 22.8	21.5
481351 2006 DG ₆₂	17.1	X	324.57511	293.96535	169.32465	21.93475	0.2684346	0.26320020	2.4114517	20	—	—
481352 2006 DP ₆₅	17.7	X	308.83534	40.52389	111.60245	8.30491	0.2339302	0.26568402	2.3963988	20	—	—
481353 2006 DL ₆₈	16.4	X	249.32795	102.24029	334.52659	15.18131	0.0516090	0.17308165	3.1888593	20	8 28.8	21.0
481354 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>
481361 2006 FH ₄₁	17.1	X	322.62686	245.92670	169.14289	4.42114	0.1368359	0.24410963	2.5355924	20	11 26.5	19.7
481362 2006 FT ₅₀	15.9	X	174.50220	262.37498	300.04562	21.15575	0.2679079	0.17424316	3.1746723	20	10 18.7	21.9
481363 2006 GS ₄₉	16.7	X	225.56903	118.71821	26.18734	24.87184	0.4281332	0.17983695	3.1084944	20	9 27.3	22.5
481364 2006 HN ₁₉	17.4	X	236.15366	100.23599	109.01977	4.46496	0.0924204	0.25465041	2.4651298	20	—	—
481365 2006 HJ ₃₃	17.3	X	35.77621	226.23735	77.14105	1.12071	0.0974772	0.23197558	2.6232592	20	10 15.3	20.6
481366 2006 HY ₇₀	16.7	X	76.13879	208.18547	58.01373	15.25560	0.0861338	0.23221618	2.6214469	20	10 22.1	20.5
481367 2006 HQ ₁₂₉	18.4	X	289.25406	49.83065	111.92622	3.36285	0.1262209	0.26417071	2.4055420	20	—	—
481368 2006 HQ ₁₃₂	16.8	X	149.89072	57.46318	109.64060	0.66567	0.2208548	0.16717434	3.2635453	20	8 30.8	22.2
481369 2006 HN ₁₄₂	17.9	X	27.07488	226.92543	163.17460	2.09423	0.2353664	0.26179178	2.4200930	20	—	—
481370 2006 JD ₂₀	16.9	X	338.30063	269.66159	81.97050	15.52441	0.1525305	0.22645365	2.6657321	20	9 29.8	20.0
481371 2006 JY ₄₉	17.7	X	307.98912	75.37064	57.01679	2.92169	0.1653652	0.25757100	2.4464597	20	—	—
481372 2006 KP ₅	17.6	X	274.60656	99.12653	70.56047	3.34225	0.1181947	0.25352026	2.4724505	20	—	—
481373 2006 KJ ₁₂	16.4	X	18.42098	193.75650	124.77523	11.83460	0.1999310	0.22830195	2.6513250	20	10 30.1	19.7
481374 2006 KD ₂₄	16.9	X	324.92220	294.44417	64.11963	13.74415	0.2328389	0.22240588	2.6979789	20	9 4.5	19.6
481375 2006 KG ₃₃	16.7	X	9.28919	127.60979	228.88440	11.87582	0.2844550	0.22949102	2.6421588	20	12 14.3	19.7
481376 2006 KO ₄₈	16.9	X	48.89507	229.75882	77.44881	11.08020	0.0791522	0.23255881	2.6188715	20	11 7.1	20.4
481377 2006 KS ₅₄	16.8	X	8.29274	242.45743	73.86456	14.85844	0.2781185	0.22180712	2.7028321	20	10 21.9	19.7
481378 2006 KD ₈₇	17.2	X	204.90714	49.57910	154.87765	10.69606	0.0873780	0.24720288	2.5143961	20	12 22.8	20.8
481379 2006 KE ₁₀₂	17.3	X	261.94722	338.92089	99.18935	15.87297	0.0428464	0.22990206	2.6390086	20	10 4.2	21.1
481380 2006 MP ₈	16.9	X	346.51861	64.62158	267.33090	7.65354	0.2456140	0.21404222	2.7678109	20	9 2.6	19.3
481381 2006 OS ₅	18.3	X	299.06092	58.25328	293.16927	26.46359	0.5917337	0.20366767	2.8610228	20	4 15.4	23.5
481382 2006 PM ₁₉	16.9	X	325.98844	135.69112	212.56450	1.02474	0.2346538	0.21016101	2.8017838	20	8 8.9	19.5
481383 2006 PX ₂₆	16.3	X	307.74693	69.29017	317.50690	12.82268	0.2254190	0.20987200	2.8043554	20	8 25.4	19.2
481384 2006 QZ ₂₉	16.5	X	100.57506	162.70486	141.77225	18.56226	0.2167640	0.23152382	2.6266705	20	—	—
481385 2006 QG ₄₃	18.1	X	124.11437	352.44192	342.83099	6.22028	0.2663212	0.31074648	2.1587312	20	—	—
481386 2006 QM ₆₅	17.3	X	312.87876	207.04546	166.49044	9.19892	0.1728807	0.21008336	2.8024741	20	8 25.1	20.3
481387 2006 QD ₈₉	18.3	X	77.97422	213.31578	145.22854	3.79348	0.2015288	0.30360159	2.1924685	20	—	—
481388 2006 RD ₁	16.9	X	9.00824	97.17094	256.96034	21.54536	0.2638808	0.28841771	2.2687576	20	12 23.7	19.5
481389 2006 RX ₃₈	17.1	X	306.14439	201.44728	140.66676	9.95987	0.2738780	0.20352683	2.8623425	20	6 12.9	20.5
481390 2006 RV ₆₄	17.5	X	302.47251	191.65620	232.04424	6.73856	0.2149301	0.21646164	2.7471482	20	10 11.8	20.2
481391 2006 RE ₇₈	17.4	X	295.84678	255.97878	133.33763	2.88905	0.1086830	0.20677344	2.8323019	20	8 26.9	20.9
481392 2006 RG ₉₀	18.6	X	53.64134	33.07489	357.67538	2.60247	0.1731973	0.30170877	2.2016288	20	—	—
481393 2006 RO ₁₂₂	17.2	X	264.64374	345.76902	81.71461	1.71767	0.0527635	0.20928581	2.8095894	20	9 11.1	20.8
481394 2006 SF ₆	19.9	X	119.12403	305.53516	227.98225	5.83884	0.2805254	1.06422188	0.9501261	20	—	—
481395 2006 SP ₃₈	17.5	X	313.24365	108.05380	277.81868	3.58536	0.0623677	0.20981216	2.8048886	20	9 21.1	21.0
481396 2006 SB ₅₉	16.7	X	13.50639	66.84673	241.02273	12.01750	0.2198178	0.21212737	2.7844424	20	9 24.7	19.9
481397 2006 SS ₅₉	16.8	X	9.00678	18.44186	297.00783	8.35992	0.1918993	0.21200067	2.7855518	20	9 23.0	19.9
481398 2006 SP ₆₁	17.8	X	303.41914	105.58894	238.40585	5.55503	0.3298303	0.20249775	2.8720318	20	5 31.1	21.1
481399 2006 SA ₈₀	19.0	X	248.39020	125.69267	185.78942	22.21773	0.0665409	0.40043987	1.8229629	20	2 25.1	21.2
481400 2006 SC ₁₁₅	16.6	X	341.02594	129.94207	187.64472	14.89310	0.1653313	0.20484163	2.8500812	20	7 28.1	20.0
481401 2006 SY ₁₅₄	16.6	X	244.38650	231.66422	307.96764	14.22092	0.1026280	0.23370267	2.6103191	20	—	—
481402 2006 SJ ₁₈₅	18.9	X	112.16627	352.98957	336.48721	3.16018	0.1196603	0.30272484	2.1966997	20	—	—
481403 2006 SU ₂₀₀	17.4	X	346.44120	357.98107	21.19854	6.21811	0.0517106	0.21309037	2.7760471	20	11 2.3	20.9
481404 2006 SO ₂₄₁	17.8	X	295.91865	265.97240	171.74005	7.52993	0.2069020	0.21482157	2.7611126	20	10 23.4	20.6
481405 2006 SB ₂₇₅	18.3	X	86.92418	306.83464	41.52125	4.07557	0.1812380	0.30179415	2.2012135	20	—	—
481406 2006 SJ ₂₉₁	16.2	X	0.95229	242.67518	65.53855	16.06682	0.2723807	0.21135827	2.7911932	20	9 22.3	19.1
481407 2006 SS ₂₉₇	17.8	X	281.46967	213.67574	188.04827	3.34956	0.1995855	0.20449423	2.8533081	20	8 5.8	21.5
481408 2006 SL ₃₂₃	17.1	X	320.65485	315.70142	27.39722	11.30005	0.1512386	0.20330608	2.8639014	20	8 3.2	20.5
481409 2006 SV ₃₉₆	17.0	X	316.99841	41.38738	20.58775	6.73476	0.0359252	0.21698455	2.7427329	20	11 16.3	20.7
481410 2006 SG ₄₀₅	16.7	X	296.60658	230.40678	235.79230	11.61478	0.1144591	0.21293636	2.7773855	20	12 10.1	19.9
481411 2006 TJ ₈	18.0	X	57.28132	174.06964	204.83836	7.36734	0.2075675	0.29917263	2.2140537	20	—	—
481412 2006 TL ₁₁	17.8	X	63.10906	282.79275	27.05201	6.41613	0.2322042	0.28940917	2.2635731	20	12 23.2	21.3
481413 2006 TX ₅₃	17.9	X	53.39849	337.82831	48.92040	6.83732	0.1449700	0.29815898	2.2190689	20	—	—
481414 2006 TK ₈₂	17.3	X	297.91523	90.82415	336.94373	3.82429	0.0378621	0.21072354	2.7967953	20	10 26.7	21.1
481415 2006 TW ₉₈	16.7	X	239.59167	115.53834	34.18071	17.42890	0.2255928	0.21204808	2.7851365	20	10 29.1	20.5
481416 2006 TS ₁₁₅	16.9	X	172.10350	161.99173	133.47762	12.79542	0.1880475	0.23527162	2.5987012	20	—	—
481417 2006 UX ₂₃	18.6	X	355.63452	218.94226	219.93407	5.23243	0.1401479	0.29652996	2.2271886	20	—	—
481418 2006 UM ₄₉	18.2	X	110.88074	311.88129	359.14815	4.56560	0.2188689	0.30284708	2.1961085	20	—	—
481419 2006 UJ ₅₄	18.4	X	57.78074	62.97539	314.29388	3.80285	0.2206894	0.29997070	2.2101250	20	—	—
481420 2006 UH ₆₀	17.4	X	5.47423	75.21202	290.96770	5.14963	0.0570835	0.21417221	2.7666909	20	11 12.8	21.0
481421 2006 UX ₉₄	17.3	X	271.97180	295.31438	85.96592	4.28672	0.1178941	0.19663239	2.9288649	20	7 9.8	21.4
481422 2006 UK ₉₆	18.2	X	36.48440	338.27962	89.32909	2.84565	0.1336629	0.30229497	2.1987817	20	—	—
481423 2006 UC ₁₀₁	16.9	X	322.02757	250.03875	147.23042	4.29515	0.0991550	0.20961309	2.8066642	20	10 22.4	20.1
481424 2006 UA ₁₂₉	17.4	X	314.89574	22.33806	344.46807	1.41681	0.0805201	0.20285960	2.8686155	20	8 28.5	21.0
481425 2006 UB ₁₃₀	17.4	X	320.76116	15.38234	338.59133	1.23481	0.0773716	0.20192645	2.8774464	20	8 20.3	20.7
481426 2006 UU ₁₃₂	18.3	X	36.83490	202.01064	208.29011	3.39883	0.1578861	0.29938039	2.2130292	20	—	—
481427 2006 UG ₁₄₂	18.6	X	62.50576	73.15214	339.50713	3.37149	0.1568435	0.30428227	2.1891976	20	—	—
481428 2006 UQ ₁₄₇	18.2	X	59.23238	150.65229	243.94004	3.80494	0.1532896	0.30250035	2.1977863	20	—	—
481429 2006 UF ₁₆₄	17.1	X	283.53157	199.92527	196.29329	11.92627	0.0868716	0.20251003	2.8719157	20	8 16.4	21.1
481430 2006 UR ₁₆₄	17.2	X	246.85474	47.20596	40.98498	15.54308	0.1173221	0.20388131	2.8590238	20	9 12.3	21.5
481431 2006 UR ₁₈₅	18.1	X	46.07087	341.17388	73.00004	6.23782	0.1945273	0.30286556	2.1960191	20	—	—
481432 2006 UD ₁₉₁	16.7	X	290.13198	45.05078	333.59177	7.33779	0.1881823	0.20082200	2.8879867	20	7 22.5	20.3
481433 2006 UF ₂₇₂	16.2	X	285.25562	126.14846	231.77917	8.96105	0.1151527	0.19242393	2.9714151	20	6 26.2	20.3
481434 2006 UE ₃₂₈	16.9	X	271.17523	73.06719	56.36194	8.97948						

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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>
481441 2006 VZ ₁₃₆	18.9	X	24.08297	183.63248	240.47536	6.10690	0.1595484	0.29660576	2.2268092	20	—	—
481442 2006 WO ₃	21.6	X	109.47296	9.68170	252.62665	21.21299	0.4474633	1.37819378	0.7997039	20	—	—
481443 2006 WA ₇	17.3	X	243.52393	8.71391	77.17699	10.74784	0.2176443	0.19850392	2.9104266	20	8 18.4	21.9
481444 2006 WV ₁₄₅	16.6	X	215.93531	215.21438	270.34878	6.50612	0.1684792	0.19855733	2.9099047	20	9 6.7	21.4
481445 2006 WW ₁₄₇	18.3	X	54.83033	3.44513	49.33191	4.15226	0.1102129	0.30066061	2.2067427	20	—	—
481446 2006 WH ₁₆₂	16.6	X	281.87992	354.58527	71.44572	6.79290	0.0621832	0.20377377	2.8600296	20	10 3.3	20.4
481447 2006 WR ₁₆₆	18.4	X	53.51641	171.42614	255.70294	2.44537	0.1426449	0.30281053	2.1962852	20	—	—
481448 2006 WQ ₁₇₂	18.0	X	261.17756	328.32066	74.44050	9.51632	0.3232843	0.19490200	2.9461748	20	6 26.4	22.7
481449 2006 WV ₁₇₃	18.6	X	7.20034	343.53658	89.31965	3.63177	0.1625988	0.29339087	2.2430467	20	—	—
481450 2006 WT ₁₈₈	18.4	X	346.16336	42.36522	66.71445	6.64288	0.1058105	0.29510654	2.2343446	20	—	—
481451 2006 WV ₁₉₉	16.3	X	158.06761	130.45010	83.75288	11.57631	0.0372640	0.20672702	2.8327259	20	11 10.1	20.4
481452 2006 WE ₂₀₀	18.9	X	23.22093	125.53160	287.43734	3.34505	0.2275474	0.29251802	2.2475066	20	—	—
481453 2006 WK ₂₀₁	16.8	X	209.38623	166.61278	297.16032	8.94796	0.0671547	0.18832263	3.0144011	20	8 13.2	21.3
481454 2006 WL ₂₀₄	17.6	X	51.77995	113.77482	295.81350	6.49657	0.1650368	0.29554818	2.2321182	20	—	—
481455 2006 WX ₂₀₄	16.3	X	288.34132	135.74142	275.52052	7.06992	0.2069688	0.20103002	2.8859941	20	8 25.4	20.0
481456 2006 WV ₂₀₅	17.3	X	239.08164	337.92444	87.96783	4.32642	0.0595043	0.19286627	2.9668701	20	8 4.2	21.5
481457 2006 XD ₂	21.0	X	110.87814	109.48011	65.62581	3.56073	0.4250529	0.69131417	1.2667349	20	9 24.6	22.3
481458 2006 XT ₂₇	17.7	X	262.26791	191.02405	81.90135	23.17177	0.0290795	0.38625962	1.8673104	20	1 28.1	19.9
481459 2006 XN ₃₈	17.9	X	5.14408	186.47512	293.81499	4.78951	0.0882690	0.29706875	2.2249499	20	—	—
481460 2006 XF ₄₁	17.7	X	267.55077	256.07812	278.36806	2.58002	0.0935458	0.28757832	2.2731702	20	—	—
481461 2006 XV ₅₅	15.8	X	125.37908	256.78056	295.64665	14.62539	0.1672701	0.18372532	3.0644794	20	9 1.8	21.0
481462 2006 XO ₆₅	16.0	X	275.77890	308.91525	276.33933	25.64148	0.1813985	0.29536811	2.2330253	20	—	—
481463 2006 XJ ₇₂	17.7	X	268.70241	175.43310	346.94042	4.59133	0.0810416	0.28460850	2.2889561	20	—	—
481464 2006 YA ₆	15.8	X	306.25240	38.25308	264.78259	11.84739	0.1547794	0.18239568	3.0793545	20	5 7.3	19.9
481465 2006 YB ₃₅	16.4	X	210.13864	359.43019	91.06999	10.77945	0.1159710	0.18551697	3.0447171	20	7 27.3	21.2
481466 2006 YQ ₃₈	18.9	X	0.38262	118.95055	318.95905	3.87424	0.1726000	0.28884523	2.2665184	20	—	—
481467 2006 AN ₉	18.5	X	302.48360	242.72860	265.07364	2.90193	0.2686146	0.28687762	2.2768697	20	—	—
481468 2007 AE ₁₄	16.4	X	245.92378	309.16364	120.74591	13.15939	0.1025493	0.18987971	2.9979001	20	8 11.8	20.7
481469 2007 BT ₁₀	16.5	X	171.87214	153.30913	336.94965	7.85149	0.1305640	0.18304413	3.0720776	20	8 7.1	21.4
481470 2007 BA ₂₉	18.3	X	15.65999	317.26169	138.91946	9.77231	0.2491945	0.29453016	2.2372587	20	—	—
481471 2007 BB ₂₉	18.3	X	12.04007	183.32460	265.63383	2.05073	0.1920102	0.29212522	2.2495208	20	—	—
481472 2007 BT ₃₃	17.3	X	217.54492	286.73798	142.61167	0.55746	0.1720302	0.18371631	3.0645796	20	7 2.9	22.1
481473 2007 BO ₄₆	17.7	X	352.08597	321.93474	120.92702	6.65608	0.0986689	0.28400989	2.2921713	20	—	—
481474 2007 BS ₄₆	16.4	X	62.71027	116.78204	131.57344	12.51973	0.0411159	0.18131749	3.0915498	20	8 25.7	20.7
481475 2007 BO ₇₃	17.6	X	316.92758	267.00547	322.97156	18.83833	0.0555422	0.37859156	1.8924399	20	2 8.3	19.2
481476 2007 BN ₇₆	16.9	X	254.76181	76.04763	318.35118	7.78437	0.2946877	0.18831201	3.0145144	20	6 13.2	21.8
481477 2007 BX ₇₉	17.8	X	298.08582	157.80259	334.52020	6.38945	0.0534592	0.28169905	2.3046897	20	—	—
481478 2007 BY ₁₀₀	16.5	X	254.91145	107.89128	312.18280	14.89221	0.1159436	0.18693763	3.0292717	20	8 6.6	20.9
481479 2007 CO ₆	16.6	X	163.55544	32.57513	110.00159	9.65907	0.0604952	0.18571466	3.0425561	20	8 14.3	21.1
481480 2007 CZ ₈	16.6	X	156.59791	9.96553	130.65663	14.40635	0.1045809	0.18257379	3.0773514	20	8 3.3	21.3
481481 2007 CP ₁₈	18.5	X	275.91956	126.23757	19.61525	2.79882	0.1536834	0.27933535	2.3176728	20	—	—
481482 2007 CA ₁₉	17.6	X	281.02523	102.51115	170.02322	9.59372	0.8213729	0.20918660	2.8104777	20	1 6.1	24.0
481483 2007 CQ ₂₇	17.3	X	160.03498	279.79572	120.89236	2.89090	0.0615804	0.23957699	2.5674735	20	3 31.7	21.0
481484 2007 CT ₃₇	17.2	X	241.31957	128.26712	325.03258	7.99389	0.1745317	0.19179203	2.9779382	20	8 25.3	21.7
481485 2007 CV ₃₇	17.9	X	284.85616	140.95990	2.48693	1.37098	0.1260547	0.28196329	2.3032496	20	—	—
481486 2007 CX ₄₁	17.7	X	345.26571	231.68629	333.38327	18.28063	0.0327298	0.37998278	1.8878179	20	2 18.7	19.2
481487 2007 CD ₄₃	17.4	X	237.34231	144.69823	307.26281	0.55620	0.1944433	0.19209716	2.9747838	20	8 17.7	22.0
481488 2007 CZ ₅₃	18.1	X	288.17211	4.87647	158.70227	2.52661	0.1380332	0.28201497	2.3029682	20	—	—
481489 2007 CK ₅₇	17.6	X	247.93338	66.51096	92.44567	6.37214	0.1245842	0.27702166	2.3305597	20	12 22.9	20.1
481490 2007 DB ₁₅	16.3	X	104.05557	108.61332	80.57104	10.90327	0.1705178	0.17684432	3.1434651	20	8 18.6	21.3
481491 2007 DD ₁₅	17.3	X	138.14995	226.64324	65.61915	4.26563	0.0242733	0.28035473	2.3120512	20	—	—
481492 2007 DB ₃₄	18.2	X	314.90795	160.70233	19.75515	2.03193	0.1564852	0.28993806	2.2608195	20	—	—
481493 2007 DM ₃₅	16.6	X	146.38588	232.59876	343.79508	17.78387	0.2000169	0.18623999	3.0368319	20	10 17.8	22.1
481494 2007 DG ₄₇	15.9	X	171.63424	356.32594	155.29660	17.40736	0.2520857	0.18318170	3.0705393	20	8 30.1	21.2
481495 2007 DP ₄₇	15.9	X	96.57565	47.75846	163.09318	13.91070	0.1016810	0.17722195	3.1389981	20	8 25.4	20.6
481496 2007 DV ₆₂	17.9	X	205.79121	260.80541	354.12439	8.18824	0.0813816	0.28469865	2.2884729	20	—	—
481497 2007 DE ₈₈	16.9	X	157.97765	15.02766	128.65336	4.43337	0.1465647	0.17919568	3.1159060	20	8 9.1	21.8
481498 2007 DM ₈₉	16.6	X	114.44579	218.17989	336.99199	2.47672	0.1443406	0.17941446	3.1133725	20	8 30.3	21.3
481499 2007 DO ₈₉	15.7	X	116.44848	256.24163	333.09117	25.80563	0.1873581	0.18437564	3.0572693	20	10 2.2	21.1
481500 2007 DA ₁₁₄	16.9	X	166.02448	22.88056	170.93866	12.35503	0.0476905	0.18842063	3.0133558	20	10 20.9	21.4
481501 2007 EC ₂₂	18.2	X	286.54198	177.17092	340.91720	2.14288	0.1616671	0.28076089	2.3098209	20	—	—
481502 2007 EJ ₂₇	16.6	X	198.96258	113.63838	9.52482	9.79244	0.1332513	0.18436280	3.0574112	20	8 26.4	21.5
481503 2007 ED ₅₃	16.4	X	178.02139	162.99639	349.06710	14.36421	0.0861874	0.18218461	3.0817324	20	9 8.9	20.9
481504 2007 EL ₆₂	12.9	X	333.70305	97.24386	158.23956	17.63639	0.0391940	0.08535410	5.1088103	20	5 9.3	19.7
481505 2007 EN ₆₄	16.6	X	165.10823	179.75677	327.19638	11.84672	0.1096101	0.18285437	3.0742026	20	8 19.7	21.2
481506 2007 ES ₆₇	18.5	X	275.52031	98.20840	172.43056	23.77351	0.0683756	0.37315620	1.9107723	20	2 4.7	21.0
481507 2007 EK ₈₀	15.7	X	133.96437	198.13319	5.90718	17.15503	0.1787377	0.17946618	3.1127743	20	9 29.6	20.7
481508 2007 EW ₈₇	15.8	X	150.59130	265.05821	253.93207	14.86292	0.2105825	0.17973655	3.1096519	20	8 15.6	21.4
481509 2007 EP ₁₄₃	16.2	X	138.28499	220.16128	351.52607	16.83179	0.1623539	0.18215840	3.0820280	20	10 7.3	21.5
481510 2007 ED ₁₅₉	18.0	X	328.87477	121.08404	324.55866	2.23572	0.1531632	0.27544316	2.3394551	20	—	—
481511 2007 ED ₁₆₀	18.4	X	329.33243	95.52170	357.14550	6.52801	0.1540407	0.27797352	2.3252363	20	—	—
481512 2007 EP ₁₇₂	17.6	X	137.88527	91.99499	186.83433	13.36679	0.0428766	0.27048450	2.3679605	20	—	—
481513 2007 EM ₂₀₂	16.4	X	200.85931	105.17086	0.15646	7.58530	0.1494728	0.17881452	3.1203324	20	8 4.0	21.4
481514 2007 EL ₂₁₂	16.6	X	193.16756	24.58086	152.16872	7.57198	0.1694297	0.19074413	2.9888349	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>
481521 2007 FV ₄₈	15.9 ^m	X	201.81835	260.85011	194.37481	11.85964	0.0406566	0.17170384	3.2058957	20	7 24.7	20.8
481522 2007 FS ₄₉	15.9	X	122.18764	171.84545	43.38905	18.31508	0.1572413	0.17894685	3.1187939	20	10 8.2	21.1
481523 2007 GF ₄₅	16.5	X	177.26632	105.45308	60.40769	5.83532	0.0952012	0.17776335	3.1326213	20	9 26.3	21.4
481524 2007 HO ₁₈	16.1	X	119.51828	44.67661	209.38700	16.67054	0.1727261	0.18108056	3.0942460	20	11 15.4	21.3
481525 2007 HG ₅₃	15.8	X	139.78283	103.03439	62.78381	18.42653	0.2173196	0.17120171	3.2121611	20	8 30.1	21.6
481526 2007 HK ₆₈	15.6	X	287.62239	356.85724	29.73270	22.81676	0.0384724	0.17320447	3.1873517	20	8 29.7	20.4
481527 2007 HC ₇₁	16.2	X	150.06460	134.30819	51.82116	28.16146	0.1867018	0.17649353	3.1476289	20	10 7.3	21.9
481528 2007 HX ₇₉	15.7	X	183.59940	88.28550	42.06307	26.22804	0.1821928	0.17717486	3.1395542	20	8 29.8	21.4
481529 2007 HY ₈₂	17.1	X	11.99843	309.65936	90.29888	7.33218	0.1223530	0.26286759	2.4134855	20	—	—
481530 2007 HV ₉₂	17.7	X	3.29852	99.88976	127.44916	24.04996	0.1068206	0.37854148	1.8926068	20	5 9.3	19.8
481531 2007 JP ₃₅	15.9	X	121.21606	103.33634	90.29728	26.78432	0.2763492	0.17451086	3.1714247	20	9 24.6	21.9
481532 2007 LE	19.7	X	91.63495	120.16014	73.72215	29.52649	0.5165872	0.39539722	1.8384295	20	10 8.2	24.1
481533 2007 LH ₄	16.0	X	107.67709	22.91263	220.45655	10.33918	0.0434132	0.17347847	3.1839946	20	10 9.3	20.6
481534 2007 LX ₁₆	17.5	X	10.08199	98.16259	230.76325	4.27636	0.3001293	0.24164606	2.5527967	20	11 18.8	19.9
481535 2007 MY ₁₉	17.1	X	3.48299	195.27444	123.68266	15.34397	0.2660254	0.23276996	2.6172875	20	10 17.1	19.8
481536 2007 MH ₂₄	13.7	X	244.05924	243.51394	90.69065	37.95932	0.0501218	0.08471903	5.1343099	20	5 8.5	21.1
481537 2007 NK ₆	16.4	X	26.96757	342.26847	11.13492	13.19498	0.2743165	0.24232698	2.5480124	20	—	—
481538 2007 OP ₄	16.3	X	233.77916	307.45968	290.07323	21.78796	0.2946789	0.26964502	2.3728727	20	—	—
481539 2007 PG ₂₀	16.4	X	23.36066	185.02203	143.42262	14.43821	0.2566353	0.23608852	2.5927032	20	11 29.2	19.9
481540 2007 PT ₂₁	16.8	X	18.42864	170.58767	158.87516	15.50273	0.2875864	0.23396904	2.6083375	20	11 27.7	20.3
481541 2007 QF ₈	17.7	X	340.79512	248.15614	114.49783	5.27275	0.3358511	0.22932348	2.6434455	20	10 30.5	19.1
481542 2007 RF ₅	18.4	X	296.52830	221.45123	12.68156	31.91777	0.3834447	0.89776146	1.0642135	20	—	—
481543 2007 RN ₇	21.7	X	189.02530	232.54597	152.60100	9.83913	0.1119201	0.66703133	1.2972945	20	3 7.7	20.9
481544 2007 RN ₃₁	17.7	X	327.06200	139.15618	228.35768	6.29770	0.3117170	0.22733156	2.6588646	20	9 7.1	19.5
481545 2007 RJ ₈₄	16.8	X	348.52020	335.82033	18.70350	9.54199	0.2363861	0.22779834	2.6552313	20	10 21.5	18.9
481546 2007 RU ₁₃₄	16.6	X	338.90241	161.51722	173.58930	13.87830	0.2593483	0.22585679	2.6704264	20	8 22.9	18.6
481547 2007 RW ₁₄₅	17.0	X	335.92833	47.23056	335.02093	3.35402	0.3032997	0.22757574	2.6569624	20	11 7.7	18.5
481548 2007 RW ₁₄₈	17.7	X	354.52080	315.00373	51.55467	5.13446	0.3013019	0.23220038	2.6215658	20	12 5.3	20.0
481549 2007 RU ₁₅₅	17.8	X	306.42811	88.69106	342.88877	14.81333	0.1153693	0.23642902	2.5902133	20	11 10.1	21.0
481550 2007 RH ₁₇₁	17.4	X	357.38313	322.13392	37.21812	3.95840	0.1408411	0.23330141	2.6133113	20	11 6.7	20.3
481551 2007 RA ₁₇₇	17.3	X	318.49938	32.33240	355.12274	6.42465	0.1893095	0.22778087	2.6553670	20	9 29.2	19.5
481552 2007 RA ₁₇₉	17.2	X	324.71750	181.29795	203.08980	11.66938	0.1938301	0.22382271	2.6865811	20	10 7.5	19.7
481553 2007 RC ₁₈₉	16.9	X	346.80102	46.88844	297.23879	11.07353	0.3104952	0.22895948	2.6462465	20	10 1.9	18.9
481554 2007 RF ₂₁₅	17.6	X	310.34706	50.53332	334.68544	3.72687	0.1235467	0.22584971	2.6704822	20	9 14.7	20.6
481555 2007 RE ₂₃₃	17.0	X	353.30752	298.83055	80.82599	4.25816	0.2028409	0.23435233	2.6054927	20	12 7.0	19.3
481556 2007 RH ₂₃₉	15.8	X	199.82525	1.49110	36.34810	11.39456	0.3453295	0.12495229	3.9625361	20	5 6.1	22.8
481557 2007 RG ₂₅₈	17.4	X	336.54317	322.55499	57.83466	3.20170	0.1270711	0.23236309	2.6203419	20	10 29.3	19.9
481558 2007 RC ₂₈₀	16.6	X	339.16313	113.96801	261.14841	12.36880	0.1643727	0.23216179	2.6218563	20	10 23.9	19.4
481559 2007 RE ₂₉₂	17.4	X	284.82933	60.27110	17.85553	4.52487	0.0537557	0.23066987	2.6331492	20	10 25.5	20.7
481560 2007 RA ₃₁₄	17.0	X	320.50104	106.71963	307.28725	11.98461	0.2630706	0.23116371	2.6293977	20	11 9.7	19.2
481561 2007 RK ₃₁₆	16.6	X	310.42976	199.14117	218.38642	12.03524	0.2922348	0.22899875	2.6459440	20	10 16.7	18.6
481562 2007 RU ₃₂₄	16.9	X	359.03061	354.07981	18.62582	15.65688	0.1427193	0.23476069	2.6024704	20	11 24.3	20.1
481563 2007 RV ₃₂₄	16.6	X	34.00420	349.77807	349.55299	12.88726	0.1730477	0.23485771	2.6017536	20	12 8.9	20.3
481564 2007 RY ₃₂₅	17.1	X	336.18945	305.41457	39.20586	9.61278	0.1786084	0.21834364	2.7313395	20	9 8.0	19.9
481565 2007 SC	16.8	X	340.71379	172.61388	197.86722	7.13349	0.3671912	0.22974673	2.6401979	20	11 17.1	18.1
481566 2007 SV	17.2	X	324.65532	298.86160	86.44196	9.13756	0.1952253	0.22498604	2.6773121	20	10 15.5	19.8
481567 2007 SB ₁₃	18.0	X	359.86327	185.18950	208.16023	6.96330	0.1821361	0.23666543	2.5884881	20	—	—
481568 2007 TB ₁₂	16.7	X	342.14954	161.93677	208.66674	15.61003	0.1760954	0.22768371	2.6561223	20	10 27.4	19.3
481569 2007 TK ₁₃	16.4	X	324.75308	347.55001	31.38170	14.21740	0.3064588	0.22469779	2.6796013	20	9 30.1	18.1
481570 2007 TF ₂₅	17.9	X	325.25171	223.57313	187.11449	4.77346	0.2560915	0.23212511	2.6221325	20	11 24.9	19.7
481571 2007 TZ ₂₇	15.3	X	204.72044	336.40274	51.16253	9.67904	0.2779950	0.12544392	3.9521764	20	4 30.9	22.1
481572 2007 TR ₄₀	16.4	X	339.86046	283.44003	38.76943	13.00129	0.2162167	0.21829791	2.7317209	20	8 13.0	19.1
481573 2007 TX ₅₀	17.0	X	18.53933	305.25272	10.61695	4.25378	0.2281963	0.22796367	2.6539472	20	10 24.6	19.9
481574 2007 TV ₅₃	17.2	X	305.04395	172.49218	202.76869	4.62604	0.1261580	0.21928357	2.7235289	20	8 19.5	20.3
481575 2007 TS ₇₄	16.9	X	13.28809	303.75124	15.90427	7.80820	0.1195111	0.22503007	2.6769628	20	10 5.1	20.0
481576 2007 TV ₉₃	16.8	X	282.36807	337.83106	52.42972	7.42264	0.0599407	0.21588996	2.7519957	20	8 19.3	20.5
481577 2007 TN ₁₀₃	16.2	X	267.00912	237.77449	214.75526	21.07672	0.0957149	0.22344707	2.6895912	20	10 10.7	19.7
481578 2007 TM ₁₁₁	16.5	X	19.32684	316.90253	356.40619	14.08008	0.2674380	0.22974240	2.6402311	20	10 24.6	19.6
481579 2007 TS ₁₁₄	16.9	X	351.04547	144.52564	231.57003	4.86513	0.2971330	0.23076757	2.6324060	20	12 11.2	19.1
481580 2007 TR ₁₃₀	17.1	X	292.44219	224.97167	199.95313	12.34480	0.2112103	0.22450410	2.6811423	20	9 26.4	20.1
481581 2007 TA ₁₃₂	17.4	X	240.94795	87.58116	46.90185	7.39361	0.2055913	0.22472238	2.6794058	20	10 18.3	21.1
481582 2007 TP ₁₃₂	17.9	X	310.95101	341.17778	45.87157	2.84349	0.2113371	0.22250842	2.6971499	20	9 10.6	20.3
481583 2007 TF ₁₃₇	16.9	X	347.79834	2.61573	17.14965	13.81685	0.1792335	0.22989702	2.6390472	20	11 17.4	19.7
481584 2007 TA ₁₄₅	17.5	X	337.16602	195.78593	205.77508	4.96342	0.2899486	0.23135928	2.6279157	20	12 15.6	19.4
481585 2007 TX ₁₄₉	16.7	X	293.33092	173.11000	203.92391	13.83668	0.2130296	0.22091761	2.7100824	20	7 17.7	20.3
481586 2007 TD ₁₅₅	16.9	X	323.26500	144.09045	228.54577	6.81442	0.2544496	0.22467847	2.6797549	20	9 8.5	19.0
481587 2007 TE ₁₆₀	16.7	X	307.28629	31.00821	23.75082	13.96191	0.2503130	0.22501443	2.6770869	20	10 10.6	18.8
481588 2007 TN ₁₆₄	17.7	X	291.27919	218.35780	194.65421	3.64907	0.2744488	0.22272532	2.6953985	20	8 26.9	20.7
481589 2007 TT ₁₆₅	17.4	X	43.99053	103.11522	32.40844	20.77308	0.0384712	0.34294687	2.0213964	20	2 26.9	19.9
481590 2007 TJ ₁₆₉	16.9	X	293.85273	186.91090	220.85127	8.95523	0.1972939	0.22180425	2.7028554	20	9 3.4	20.1
481591 2007 TN ₂₀₂	16.7	X	58.37491	284.13206	43.55038	22.59856	0.0290844	0.23214995	2.6219454	20	11 30.3	20.4
481592 2007 TS ₂₀₅	17.8	X	341.05062	23.07902	17.58845	3.80516	0.2283012	0.23655756	2.5892749	20	12 16.9	20.2
481593 2007 TD ₂₀₈	17.3	X	320.49826	250.18337	111.14112	9.74993	0.					

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>	
481601	2007 TU ₃₁₉	17.4	X	331.75712	170.46010	204.06644	6.11772	0.1534827	0.22319364	2.6916267	20	10 8.6	19.9
481602	2007 TN ₃₃₅	17.3	X	307.32008	327.09875	30.59410	2.82481	0.1022523	0.21389036	2.7691209	20	8 3.7	20.6
481603	2007 TF ₃₃₇	17.7	X	307.89573	244.59860	143.02201	3.46563	0.1995789	0.22692774	2.6620180	20	9 6.5	20.3
481604	2007 TP ₃₆₄	16.7	X	337.94081	329.07116	34.73778	12.54825	0.1880749	0.22533840	2.6745204	20	10 10.8	19.1
481605	2007 TH ₃₉₈	16.7	X	95.53706	216.96058	46.21032	15.25420	0.0507004	0.22897405	2.6461342	20	11 1.5	20.3
481606	2007 TA ₄₀₆	16.5	X	354.20209	268.23565	45.60466	14.26723	0.1806848	0.21953050	2.7214862	20	9 4.9	19.5
481607	2007 TB ₄₂₈	16.6	X	5.01485	258.51260	78.14782	10.84020	0.2230395	0.22675307	2.6633849	20	11 2.5	19.4
481608	2007 TN ₄₄₃	16.7	X	318.48269	135.84952	237.85143	8.83244	0.1198047	0.22375249	2.6871431	20	9 8.8	19.8
481609	2007 TD ₄₄₅	17.4	X	359.36848	244.84845	104.75563	4.47111	0.2241034	0.22923256	2.6441445	20	11 8.8	19.9
481610	2007 TY ₄₄₅	17.2	X	33.73425	297.02282	50.68560	13.70277	0.2739145	0.23688464	2.5868909	20	—	—
481611	2007 TF ₄₄₆	17.3	X	301.42563	305.93145	71.28377	2.73480	0.0858846	0.21585723	2.7522739	20	8 24.1	20.6
481612	2007 TX ₄₅₂	16.9	X	312.76659	207.46715	215.26017	13.08266	0.2378297	0.22538503	2.6741515	20	11 6.7	19.1
481613	2007 UD ₂	16.7	X	339.29977	69.45791	288.34778	8.94823	0.2261657	0.22547442	2.6734447	20	9 26.6	19.2
481614	2007 UJ ₅	16.6	X	289.41267	147.29096	238.89955	5.67873	0.0771486	0.21850068	2.7300306	20	8 15.4	20.2
481615	2007 UN ₅	17.4	X	278.62938	298.52175	151.79931	2.61095	0.2345477	0.22600995	2.6692199	20	10 6.8	20.5
481616	2007 UX ₁₀	16.9	X	311.81816	181.29673	233.21783	13.00548	0.2382102	0.22704205	2.6611244	20	10 19.8	19.1
481617	2007 UT ₂₈	16.9	X	358.21295	331.73487	47.11225	15.64708	0.0921667	0.22970271	2.6405353	20	11 26.0	20.2
481618	2007 UM ₃₆	17.4	X	297.90952	356.70094	49.33786	7.98524	0.2583522	0.22368392	2.6876922	20	9 7.7	20.2
481619	2007 UG ₄₂	17.4	X	237.68663	133.57593	341.97916	4.48230	0.1165531	0.22142253	2.7059609	20	9 29.2	21.1
481620	2007 UR ₆₅	16.7	X	330.89237	300.50992	121.73372	31.39061	0.3616222	0.23337613	2.6127534	20	—	—
481621	2007 UD ₈₀	17.1	X	18.13906	105.81043	223.76572	5.56983	0.0394872	0.22486451	2.6782766	20	10 14.3	20.6
481622	2007 UR ₈₄	17.1	X	80.25461	188.30179	54.04205	10.09895	0.0642388	0.21644832	2.7472609	20	9 21.0	21.0
481623	2007 UF ₈₅	17.2	X	316.28338	336.98083	58.36640	5.67746	0.0441352	0.22355517	2.6911322	20	10 15.9	20.6
481624	2007 UD ₉₃	17.6	X	276.98522	50.06175	28.19030	4.02740	0.1125969	0.22354705	2.6887892	20	10 6.1	20.9
481625	2007 UA ₉₅	17.5	X	259.65152	110.07213	11.94882	2.66493	0.0509588	0.22920480	2.6443580	20	11 17.1	20.8
481626	2007 UV ₉₇	16.6	X	37.09031	67.86563	217.01394	3.13055	0.0757607	0.21826808	2.7319698	20	9 14.9	20.1
481627	2007 UZ ₁₁₂	17.2	X	307.54315	15.74858	45.87292	14.66825	0.1449818	0.22559771	2.6724706	20	11 1.0	19.9
481628	2007 UY ₁₂₃	16.7	X	338.40220	246.94306	112.37965	14.55850	0.2407947	0.22397930	2.6853287	20	10 12.5	19.3
481629	2007 US ₁₃₃	17.3	X	284.65635	354.25730	72.43069	6.30523	0.1394667	0.22047128	2.7137387	20	9 30.7	20.5
481630	2007 UK ₁₃₆	17.7	X	302.62209	303.61637	93.31819	8.91760	0.2648306	0.22231763	2.6986928	20	9 2.0	20.4
481631	2007 UM ₁₄₁	17.0	X	247.80522	288.36947	232.09239	12.02490	0.1585574	0.22803533	2.6533913	20	12 5.3	20.5
481632	2007 VY ₅	16.8	X	308.16966	356.03984	65.37188	9.67807	0.2841772	0.22532374	2.6746364	20	10 22.2	18.8
481633	2007 VT ₇	16.7	X	290.49206	128.08024	245.07492	10.94488	0.1531657	0.21642701	2.7474412	20	7 17.8	20.3
481634	2007 VE ₃₃	17.8	X	301.19740	130.18030	244.39157	5.75419	0.2278625	0.21808828	2.7334712	20	7 26.8	20.9
481635	2007 VO ₃₈	16.3	X	340.15294	107.10778	264.94188	10.74411	0.1826670	0.22619899	2.6677324	20	10 20.5	19.0
481636	2007 VJ ₅₆	16.6	X	299.98094	25.80272	61.22705	22.75365	0.0406797	0.22940464	2.6428220	20	11 28.3	19.8
481637	2007 VM ₇₄	17.8	X	250.74332	49.97883	60.47066	4.79725	0.0691890	0.22441562	2.6818470	20	10 19.5	21.2
481638	2007 VO ₈₃	16.8	X	262.58188	4.30874	85.66999	11.58963	0.1950478	0.21422003	2.7662791	20	9 22.6	20.7
481639	2007 VQ ₈₅	17.0	X	336.64601	136.77829	230.19633	13.28442	0.1985279	0.22607888	2.6686772	20	10 6.2	19.6
481640	2007 VJ ₉₁	16.9	X	12.75684	333.54165	22.38391	8.15251	0.1717931	0.22935240	2.6432233	20	11 29.3	20.0
481641	2007 VY ₉₇	17.5	X	259.37985	80.93766	41.00077	13.58713	0.2628686	0.22303112	2.6929342	20	10 17.5	21.1
481642	2007 VC ₁₁₄	17.4	X	308.09602	299.94483	90.56640	5.04528	0.1146637	0.21868696	2.7284801	20	9 21.6	20.5
481643	2007 VD ₁₁₆	17.2	X	273.91677	208.16069	224.28164	11.47587	0.1577237	0.21822868	2.7322986	20	9 10.4	20.8
481644	2007 VT ₁₂₆	17.1	X	352.95434	61.48355	295.86040	3.49228	0.3503541	0.22774417	2.6556522	20	11 25.0	19.2
481645	2007 VT ₁₃₅	16.9	X	287.56793	323.55372	80.97073	15.25921	0.2592467	0.21735939	2.7395787	20	8 16.9	20.4
481646	2007 VH ₁₄₂	17.5	X	292.88208	200.88784	189.93984	3.40687	0.2007494	0.21695986	2.7429409	20	8 9.8	20.6
481647	2007 VS ₁₄₄	16.8	X	326.23905	147.68600	220.96596	9.08357	0.2133663	0.22058940	2.7127699	20	9 11.4	19.3
481648	2007 VZ ₁₅₄	17.9	X	261.56633	183.80131	281.85736	4.52290	0.1976024	0.22232594	2.6986255	20	10 3.6	21.5
481649	2007 VA ₁₅₇	18.1	X	190.17542	333.04233	127.09624	2.72922	0.1143872	0.28499783	2.2868711	20	7 23.1	21.2
481650	2007 VK ₁₆₅	16.4	X	47.25573	58.93840	238.80117	15.24042	0.1813689	0.22268482	2.6957254	20	11 1.4	20.1
481651	2007 VJ ₁₇₅	17.2	X	114.14743	168.37664	70.57152	5.63705	0.1074188	0.22497489	2.6774006	20	10 27.2	21.3
481652	2007 VR ₁₈₁	18.1	X	301.53579	121.79753	311.84859	1.91708	0.1866302	0.22754874	2.6571726	20	11 1.2	20.6
481653	2007 VA ₁₉₃	16.3	X	271.76928	200.51063	273.01492	12.55197	0.1183017	0.21959484	2.7209546	20	11 9.7	19.8
481654	2007 VS ₁₉₇	16.7	X	245.09341	249.63276	226.82823	21.08976	0.0685898	0.22569327	2.6717161	20	10 16.4	20.5
481655	2007 VX ₂₂₃	17.1	X	349.98590	208.09886	100.65181	9.48124	0.2013727	0.21595706	2.7514256	20	8 11.3	19.6
481656	2007 VL ₂₂₄	16.8	X	355.02149	118.21559	254.64648	10.46192	0.3133913	0.22897072	2.6461599	20	12 16.7	19.3
481657	2007 VJ ₂₂₆	16.9	X	1.66720	211.94479	151.27048	6.19717	0.2557375	0.22926208	2.6439175	20	12 6.9	19.7
481658	2007 VU ₂₃₂	17.3	X	4.78014	285.25050	67.77845	5.96859	0.0640555	0.22373034	2.6873205	20	10 31.5	20.6
481659	2007 VR ₂₇₀	17.3	X	293.76783	12.52031	80.59717	6.98521	0.2778226	0.22459402	2.6804266	20	11 3.3	19.7
481660	2007 VO ₂₇₂	17.5	X	282.57442	255.51268	233.76645	6.51242	0.1441404	0.23252243	2.6191446	20	12 21.2	20.3
481661	2007 VG ₂₇₇	17.2	X	257.77391	172.12405	250.60296	7.35939	0.1967244	0.21556335	2.7547748	20	8 2.1	21.2
481662	2007 VE ₂₈₂	16.5	X	334.93820	358.25541	62.22282	19.37402	0.0887720	0.23005025	2.6378752	20	12 15.3	19.7
481663	2007 VM ₂₉₂	17.5	X	316.61531	320.18661	74.95629	10.33202	0.3107584	0.22253671	2.6969213	20	10 1.7	19.5
481664	2007 VU ₂₉₈	17.2	X	323.28718	239.57362	128.67420	13.07405	0.3165877	0.22229080	2.6989100	20	8 31.1	18.9
481665	2007 VX ₃₀₀	16.8	X	332.75302	277.15172	103.10823	13.69349	0.2868861	0.22538677	2.6741377	20	11 1.7	18.9
481666	2007 VJ ₃₁₀	17.3	X	301.90657	359.82615	62.95703	5.26005	0.2004927	0.21810406	2.7333393	20	10 15.8	20.0
481667	2007 VD ₃₁₃	17.2	X	286.57996	156.17471	270.54788	3.74148	0.1068107	0.22037789	2.7145053	20	10 2.6	20.5
481668	2007 VJ ₃₁₆	16.9	X	316.11198	319.53569	80.28469	17.00302	0.1629043	0.21673946	2.7448001	20	10 22.1	20.1
481669	2007 VF ₃₁₇	17.6	X	284.46125	87.89928	14.14781	2.70939	0.2245627	0.21975831	2.7196051	20	11 1.1	20.4
481670	2007 VZ ₃₁₈	18.2	X	315.29234	60.47139	348.96029	1.71802	0.2035966	0.22604705	2.6689277	20	10 24.4	20.5
481671	2007 VP ₃₂₄	17.2	X	294.96021	55.82047	30.41062	13.4						

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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>
481681 2007 YG ₅₃	16.4	X	259.37529	134.73528	311.64121	12.24108	0.1803994	0.21123200	2.7923054	20	9 4.3	20.4
481682 2007 YJ ₅₃	16.8	X	265.94027	153.35900	306.16859	13.26680	0.2797751	0.21647004	2.7470771	20	9 13.4	20.7
481683 2007 YT ₆₂	17.0	X	277.01199	155.77127	303.17434	3.66382	0.0592280	0.21598343	2.7512017	20	11 6.1	20.7
481684 2008 AP ₇	17.0	X	288.90234	162.49469	272.03877	2.52431	0.2977453	0.21847408	2.7302522	20	9 17.3	20.1
481685 2008 AU ₈	17.8	X	253.54911	333.94266	123.56699	4.03069	0.2345827	0.21191041	2.7863426	20	9 9.7	21.7
481686 2008 AJ ₁₇	18.3	X	88.32526	239.34957	138.79620	2.85179	0.1970701	0.31936619	2.1197115	20	—	—
481687 2008 AT ₁₈	17.5	X	200.76540	212.58045	337.21284	3.44204	0.1430583	0.21423951	2.7661114	20	11 15.6	21.8
481688 2008 AX ₂₁	18.0	X	81.85601	333.29326	62.36375	2.31631	0.0880825	0.31729467	2.1289274	20	—	—
481689 2008 AE ₃₅	16.6	X	220.39491	207.10581	299.50233	11.03668	0.0934518	0.21302907	2.7765796	20	10 15.3	20.9
481690 2008 AO ₃₉	17.4	X	306.20529	319.75738	106.79052	5.30712	0.2175985	0.21781942	2.7357200	20	10 28.9	19.9
481691 2008 AF ₅₆	17.5	X	310.87338	133.77990	251.89125	1.32722	0.2280909	0.21306273	2.7762872	20	9 1.6	20.1
481692 2008 AD ₆₂	16.8	X	310.22436	311.96891	122.62056	10.57091	0.1424324	0.21927977	2.7235604	20	11 24.4	19.9
481693 2008 AL ₇₄	17.7	X	327.54018	270.11998	115.49080	12.90503	0.2746302	0.21737415	2.7394547	20	10 21.5	20.0
481694 2008 AZ ₈₀	16.5	X	295.16468	109.00034	303.88704	11.96550	0.1763564	0.21122105	2.7924019	20	9 11.9	19.9
481695 2008 AN ₁₀₉	17.4	X	292.20702	139.83530	293.27165	13.49831	0.2164870	0.21710217	2.7417421	20	9 27.9	20.9
481696 2008 AE ₁₁₅	16.6	X	190.68734	229.38328	318.86836	13.84639	0.1438601	0.21282412	2.7783619	20	10 29.4	21.2
481697 2008 AD ₁₃₆	16.5	X	264.97257	343.24796	136.36625	10.31391	0.1591463	0.21873218	2.7281041	20	11 7.9	20.1
481698 2008 BM ₉	17.4	X	214.45594	93.54723	86.84158	6.96098	0.2388888	0.21347862	2.7726803	20	11 10.9	21.8
481699 2008 BY ₁₂	16.7	X	176.33205	218.76632	308.20897	14.09602	0.1092276	0.20562116	2.8428733	20	9 19.5	21.3
481700 2008 BL ₃₄	17.0	X	242.78813	342.39941	157.50240	9.87356	0.1463184	0.21188351	2.7865784	20	11 3.9	21.0
481701 2008 BC ₄₉	16.6	X	309.86346	7.77074	108.22233	22.55471	0.0456538	0.22926904	2.6438640	20	—	—
481702 2008 CF ₈	16.7	X	325.01669	316.94657	120.86464	13.64581	0.1194627	0.22230240	2.6988161	20	12 24.2	19.8
481703 2008 CH ₁₂	17.4	X	218.19704	110.01773	59.49435	2.80658	0.1333291	0.21275461	2.7789671	20	11 11.2	21.4
481704 2008 CJ ₂₈	17.1	X	266.58119	139.91339	332.64290	13.07567	0.2276389	0.21582791	2.7525231	20	10 9.9	20.8
481705 2008 CY ₃₁	17.0	X	221.74826	109.07518	330.67516	9.97815	0.1465720	0.19520876	2.9430875	20	8 2.3	21.2
481706 2008 CT ₃₅	17.0	X	209.41725	139.45456	331.06552	10.16741	0.1044612	0.19968626	2.8989269	20	8 21.7	21.3
481707 2008 CM ₅₃	18.6	X	64.50529	13.66768	17.83314	1.70086	0.0826597	0.31585915	2.1353730	20	—	—
481708 2008 CY ₁₃₉	17.1	X	221.83058	230.98391	306.35557	1.78710	0.1351404	0.21327655	2.7744313	20	11 24.1	21.1
481709 2008 CU ₁₄₉	17.1	X	210.18522	358.97430	168.26405	9.63581	0.0963408	0.20954876	2.8072385	20	11 5.6	21.3
481710 2008 CT ₁₇₇	17.2	X	242.42476	66.62243	125.26285	7.66932	0.1801250	0.21625755	2.7488763	20	11 1.2	21.0
481711 2008 CF ₁₈₄	17.0	X	270.69005	11.95843	124.50958	11.43912	0.2484043	0.21860845	2.7291333	20	11 24.3	20.3
481712 2008 CD ₂₀₂	18.4	X	31.39335	208.66997	228.81059	2.22464	0.0184071	0.31105391	2.1573086	20	—	—
481713 2008 CZ ₂₀₅	18.5	X	32.68722	299.50316	121.56617	4.65183	0.0876778	0.31029526	2.1608235	20	—	—
481714 2008 DT	17.4	X	298.99187	282.81667	147.59322	10.81023	0.1093147	0.21297627	2.7770386	20	10 31.8	20.8
481715 2008 EY ₁₁	16.8	X	252.66075	109.28964	15.26547	15.08433	0.1609282	0.21000724	2.8031513	20	10 19.9	20.6
481716 2008 EZ ₄₆	17.0	X	224.46765	342.02219	169.44701	10.91403	0.0796250	0.20333995	2.8640960	20	11 3.6	21.2
481717 2008 EF ₇₀	17.2	X	211.99530	163.28289	13.16044	12.96337	0.1357763	0.21093106	2.7949606	20	11 8.6	21.5
481718 2008 EV ₉₆	17.5	X	292.49004	104.66442	331.98444	6.96977	0.2128415	0.21430473	2.7655502	20	10 8.9	20.5
481719 2008 EA ₉₇	17.8	X	187.60476	233.85057	28.12594	4.95766	0.1178542	0.29960006	2.2119473	20	—	—
481720 2008 EP ₁₁₇	16.4	X	213.67274	45.07771	134.14830	26.08495	0.0881325	0.21697954	2.7427751	20	12 1.6	20.9
481721 2008 ER ₁₅₄	16.5	X	223.86664	248.22136	218.81286	8.84351	0.0774268	0.19600278	2.9351338	20	9 1.3	20.9
481722 2008 EO ₁₆₀	16.9	X	90.29912	38.26974	170.67506	10.22956	0.0635364	0.18744814	3.0237691	20	8 10.8	21.2
481723 2008 EO ₁₆₇	16.6	X	154.70471	8.72696	114.44014	10.24763	0.0017207	0.18145540	3.0899832	20	7 6.4	20.9
481724 2008 EU ₁₆₇	17.0	X	213.98559	282.03697	186.96524	10.27139	0.1243133	0.19581887	2.9369712	20	8 19.9	21.6
481725 2008 ER ₁₆₈	16.0	X	162.41783	100.26135	17.83692	11.51928	0.1252555	0.18370699	3.0646832	20	7 15.1	21.0
481726 2008 FW ₂₂	16.2	X	191.84514	88.39503	44.90650	11.46436	0.0738199	0.19280366	2.9675124	20	9 7.6	20.8
481727 2008 FE ₂₃	17.6	X	147.82325	225.96112	61.29434	5.85591	0.1520952	0.29266262	2.2467662	20	—	—
481728 2008 FM ₂₆	15.5	X	40.32853	219.30487	30.26816	28.56142	0.1278146	0.17814985	3.1280888	20	8 24.9	20.2
481729 2008 FP ₇₀	16.0	X	88.97211	345.24326	217.24869	27.64162	0.1106881	0.17947886	3.1126277	20	7 30.5	21.1
481730 2008 FJ ₁₀₀	16.8	X	182.71159	330.08539	174.82794	10.59147	0.0873910	0.19153859	2.9805645	20	9 4.5	21.4
481731 2008 FU ₁₀₁	15.8	X	336.18122	225.80375	73.21716	9.91288	0.0733383	0.17441115	3.1726334	20	6 28.7	20.0
481732 2008 FD ₁₀₇	16.7	X	201.00007	85.00771	32.87342	13.72522	0.0626916	0.19084783	2.9877521	20	8 31.0	21.3
481733 2008 GJ ₂	16.3	X	271.05729	174.43764	286.21628	29.97332	0.2421254	0.22289738	2.6940113	20	9 15.2	20.6
481734 2008 GS ₁₉	15.9	X	295.52077	297.11682	94.82729	11.11779	0.1114310	0.18838780	3.0137058	20	8 31.2	19.9
481735 2008 GP ₂₁	15.6	X	95.33952	153.40785	51.85868	31.11593	0.2937314	0.18313853	3.0710218	20	9 27.0	21.3
481736 2008 GS ₂₂	17.5	X	203.81817	58.37683	168.46803	8.16804	0.1718088	0.21307446	2.7761853	20	12 30.5	21.8
481737 2008 GX ₂₂	18.3	X	240.61366	64.58246	149.48388	4.43291	0.0677872	0.30107029	2.2047404	20	—	—
481738 2008 GP ₂₃	16.4	X	143.10230	98.48978	39.56312	11.43295	0.0770369	0.18286170	3.0741204	20	7 17.9	21.2
481739 2008 GB ₅₁	16.8	X	113.32376	161.79594	30.10698	8.49416	0.0988422	0.18729736	3.0253917	20	8 25.7	21.4
481740 2008 GK ₈₀	16.5	X	263.86371	262.68940	125.93735	7.48864	0.0781992	0.18342564	3.0678163	20	7 13.6	20.7
481741 2008 GL ₁₀₃	15.9	X	299.61977	302.68338	46.46616	18.07993	0.1359996	0.17887082	3.1196776	20	7 2.0	20.2
481742 2008 GH ₁₁₅	16.2	X	296.78199	280.03018	53.76998	16.75226	0.0942646	0.17388987	3.1789707	20	6 11.9	20.6
481743 2008 GC ₁₂₀	17.9	X	183.94199	181.02916	47.83672	7.44021	0.0564819	0.28945836	2.2633167	20	—	—
481744 2008 GT ₁₂₆	14.0	X	323.73766	126.20539	126.35981	11.00625	0.1214066	0.08356071	5.1816487	20	4 16.3	20.5
481745 2008 GN ₁₃₀	16.3	X	47.66188	128.97877	33.61030	11.43084	0.0326250	0.18172276	3.0869517	20	8 13.9	20.7
481746 2008 GX ₁₃₂	16.0	X	40.62137	140.29740	126.26127	10.93395	0.0536241	0.17974442	3.1095612	20	8 21.2	20.1
481747 2008 GD ₁₄₀	13.8	X	7.90843	358.56256	218.04132	9.73952	0.1009716	0.08297377	5.2060558	20	5 4.1	20.1
481748 2008 GE ₁₄₄	16.7	X	199.46157	65.08569	79.46311	10.01669	0.0441287	0.19280977	2.9674496	20	10 2.0	21.1
481749 2008 HP ₁₉	16.1	X	91.62459	354.72745	207.65477	29.36702	0.1526577	0.17915022	3.1164332	20	8 9.1	21.3
481750 2008 HN ₂₃	16.0	X	260.52984	306.95159	100.57843	13.64714	0.1009502	0.18363439	3.0654909	20	8 1.0	20.3
481751 2008 HQ ₃₇	15.6	X	52.54786	4.28005	230.86888	14.16399	0.1289572	0.17763063	3.1341815	20	7 31.7	20.1
481752 2008 HE ₅₃	16.1	X	68.69496	128.10733	111.54617	10.52531	0.0376127	0.18133092	3.0913972	20	8 22.6	20.4
481753 2008 HU ₅₇	16.6	X	53.86985	152.88302	131.33305	11.53059	0.0743249	0.18736821	3.0246290			

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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>
481761 2008 KQ ₂₇	18.1	X	286.70128	61.06670	101.18560	6.08796	0.0688348	0.29735389	2.2230725	20	—	—
481762 2008 LB ₁₂	16.5	X	153.83374	100.76764	94.01545	11.69549	0.1217582	0.19067690	2.9895374	20	10 12.5	21.4
481763 2008 MD	17.8	X	126.64200	105.10583	201.40651	6.69259	0.1294685	0.28626865	2.2800980	20	—	—
481764 2008 MB ₂	16.1	X	9.00931	158.93571	130.79647	10.13929	0.0693244	0.17528123	3.1621256	20	8 5.9	20.2
481765 2008 ON ₃	17.4	X	13.98617	165.01369	209.66766	6.49127	0.3809642	0.25905539	2.4371053	20	—	—
481766 2008 PD ₉	17.4	X	35.23528	224.04733	158.48610	6.58383	0.2367286	0.26789915	2.3831707	20	—	—
481767 2008 QN ₈	18.0	X	25.72256	169.30515	176.39920	1.25959	0.2050940	0.25892218	2.4379411	20	12 19.1	20.9
481768 2008 QZ ₃₄	18.0	X	13.59736	22.29618	350.24839	1.78937	0.2207913	0.26034895	2.4290260	20	—	—
481769 2008 RL ₃₇	18.1	X	2.31393	243.32238	185.96009	2.64399	0.1758060	0.26568973	2.3963644	20	—	—
481770 2008 RY ₄₀	17.9	X	46.51858	171.35782	175.14005	6.83525	0.1652241	0.26107245	2.4245363	20	—	—
481771 2008 RY ₇₆	17.6	X	127.92438	126.61154	153.25290	7.56931	0.1962412	0.26966831	2.3727361	20	—	—
481772 2008 RC ₈₉	17.4	X	39.23310	117.79194	233.57955	5.68036	0.1396392	0.25926558	2.4357879	20	—	—
481773 2008 SO ₄	17.4	X	35.82957	3.72549	29.73291	5.80101	0.3254727	0.26481343	2.4016481	20	—	—
481774 2008 SW ₄	17.3	X	3.36610	350.50572	66.07277	5.62349	0.1725330	0.26252022	2.4156140	20	—	—
481775 2008 SX ₇	18.4	X	22.79946	6.04493	347.95625	6.48712	0.4832763	0.25929366	2.4356121	20	—	—
481776 2008 SB ₃₂	17.2	X	108.08105	308.38624	320.62599	5.93305	0.1528705	0.25817680	2.4426312	20	12 2.3	21.1
481777 2008 RC ₈₉	17.9	X	19.67523	164.35002	235.86353	2.40999	0.1699466	0.26365795	2.4086598	20	—	—
481778 2008 SW ₉₈	17.5	X	11.52994	273.27665	104.61210	2.62382	0.1235420	0.25544104	2.4600405	20	12 28.7	20.2
481779 2008 SR ₁₁₄	18.7	X	327.15976	280.75512	143.82789	4.33141	0.2389786	0.25317767	2.4746804	20	12 30.9	20.4
481780 2008 SL ₁₁₆	17.8	X	351.85015	18.36380	66.01162	3.76273	0.1892584	0.26221684	2.4174769	20	—	—
481781 2008 SM ₁₃₁	17.7	X	30.74871	18.00403	10.62785	6.66845	0.1553656	0.26130172	2.4231178	20	—	—
481782 2008 SM ₁₃₈	17.6	X	17.24756	191.70710	186.14480	4.50603	0.2899957	0.25562525	2.4588586	20	—	—
481783 2008 SD ₁₆₄	17.7	X	37.66239	225.34755	157.43807	1.62142	0.1876688	0.26400758	2.4065328	20	—	—
481784 2008 ST ₁₇₂	17.6	X	337.89733	285.66040	125.73353	2.92297	0.2085550	0.25335790	2.4735066	20	12 31.0	19.7
481785 2008 SE ₂₈₉	18.5	X	303.47020	105.47502	297.41577	1.77859	0.2449218	0.24357076	2.5393308	20	9 15.9	20.7
481786 2008 SD ₂₉₁	17.8	X	45.99848	179.34863	143.99169	3.71501	0.1538673	0.25412997	2.4684943	20	12 7.1	21.1
481787 2008 SF ₂₉₈	17.9	X	175.06947	332.10059	20.20650	21.07069	0.0765380	0.37640138	1.8997739	20	2 8.9	20.6
481788 2008 SD ₃₀₀	17.8	X	335.20914	156.47004	219.21074	8.58873	0.0714342	0.24550991	2.5259419	20	10 19.9	20.6
481789 2008 SF ₃₀₄	17.9	X	5.89859	309.42240	67.42882	2.28394	0.1996840	0.25416122	2.4682919	20	12 30.8	20.6
481790 2008 TF ₄	19.2	X	194.35980	113.22535	213.38831	24.06191	0.3195879	0.37806390	1.8942003	20	1 22.9	23.0
481791 2008 TZ ₂₁	15.8	X	150.35971	205.12534	220.41277	5.29122	0.2947695	0.12379592	3.9871738	20	5 7.2	22.5
481792 2008 TZ ₂₅	17.9	X	159.70361	78.66866	344.04635	19.00227	0.1509873	0.38287816	1.8782886	20	4 17.2	20.7
481793 2008 TT ₃₅	17.6	X	343.60023	195.83060	219.86630	1.89906	0.1692227	0.25762015	2.4461486	20	—	—
481794 2008 TC ₄₂	17.3	X	314.71039	97.47299	346.90590	13.23909	0.2072597	0.25390742	2.4699365	20	12 31.7	19.6
481795 2008 TO ₆₁	17.9	X	334.80940	188.80323	234.92456	1.79968	0.2018530	0.25473265	2.4645992	20	—	—
481796 2008 TC ₆₆	17.8	X	15.98290	347.26121	52.83954	3.13138	0.2145735	0.25992043	2.4316950	20	—	—
481797 2008 TL ₆₆	17.9	X	18.74486	305.29534	102.22033	1.88397	0.2064034	0.26172303	2.4205167	20	—	—
481798 2008 TY ₆₆	18.2	X	343.64381	285.84559	138.08538	1.83621	0.1695678	0.25638103	2.4540239	20	—	—
481799 2008 TT ₉₀	18.0	X	283.74979	260.07696	190.34292	6.94485	0.2497996	0.24498833	2.5295258	20	10 18.2	20.2
481800 2008 TO ₉₁	17.6	X	6.21928	307.80046	81.98111	2.49696	0.1909363	0.25590817	2.4570460	20	—	—
481801 2008 TS ₉₇	17.2	X	254.62917	265.61081	251.01139	5.57954	0.0906266	0.26112890	2.4241868	20	12 29.5	19.9
481802 2008 TU ₁₀₂	17.8	X	356.68815	349.82721	29.26994	3.91809	0.2027498	0.25299302	2.4758843	20	12 18.7	20.2
481803 2008 TW ₁₀₈	17.8	X	342.96218	348.57482	57.88024	5.77912	0.1732928	0.25508550	2.4623259	20	12 29.6	20.1
481804 2008 TP ₁₁₂	17.5	X	305.21703	62.77783	310.57016	3.90335	0.2554208	0.23959826	2.5673216	20	8 1.8	19.7
481805 2008 TE ₁₃₅	17.9	X	356.17968	124.20581	284.89474	1.57249	0.1920759	0.25659204	2.4526783	20	—	—
481806 2008 TV ₁₆₉	18.1	X	337.03123	13.36381	49.98020	2.05453	0.1730532	0.25596268	2.4566971	20	—	—
481807 2008 TT ₁₇₃	16.0	X	151.71665	11.91395	53.24769	3.63997	0.1907323	0.12676266	3.9247183	20	5 3.4	22.2
481808 2008 TY ₁₇₆	18.6	X	332.48720	189.69353	530.52994	3.77450	0.2269698	0.25230322	2.4803950	20	—	—
481809 2008 TL ₁₈₂	17.9	X	310.82304	15.15035	68.87313	7.07266	0.1297349	0.25157053	2.4852088	20	12 17.2	20.1
481810 2008 UB ₄₉	17.6	X	304.30211	40.32709	28.08381	4.80389	0.1323859	0.24495643	2.5297455	20	11 9.2	20.0
481811 2008 UN ₅₁	17.7	X	337.77992	148.39876	248.80449	2.86428	0.1931910	0.24759478	2.5117422	20	12 5.2	19.9
481812 2008 UU ₅₃	17.1	X	69.57423	279.90344	54.82987	14.99315	0.1869450	0.25770448	2.4456149	20	—	—
481813 2008 UP ₅₄	17.7	X	266.57255	226.38174	54.15052	21.98369	0.0657528	0.37321897	1.9105581	20	2 24.0	20.5
481814 2008 US ₅₇	18.3	X	335.30593	30.64086	60.05002	2.95477	0.2252967	0.25780742	2.4449638	20	—	—
481815 2008 UK ₅₈	17.5	X	52.93235	130.87166	202.17313	14.03463	0.1700717	0.25628681	2.4546254	20	12 27.8	21.3
481816 2008 UD ₆₆	16.8	X	212.74031	244.45269	244.07878	14.32226	0.0996017	0.23640324	2.5904016	20	9 15.1	20.9
481817 2008 UL ₉₀	18.6	X	160.93712	183.64724	81.14149	24.30964	0.3798674	1.70092746	0.6950438	20	—	—
481818 2008 UL ₁₁₄	17.4	X	30.04066	64.25144	297.17140	2.92685	0.1333577	0.25545111	2.4599759	20	—	—
481819 2008 UK ₁₁₂	17.2	X	71.14025	65.09916	242.55211	5.97919	0.0871093	0.25212433	2.4815681	20	12 6.9	20.7
481820 2008 UV ₁₁₄	17.1	X	46.44839	52.85542	279.94659	5.34110	0.1308779	0.25278013	2.4772743	20	12 15.8	20.5
481821 2008 UE ₁₈₀	15.7	X	178.47351	133.56464	264.93244	4.75710	0.2199071	0.12520238	3.9572575	20	4 23.1	22.2
481822 2008 UR ₁₈₄	17.8	X	353.69182	338.92130	230.31730	24.91335	0.0445351	0.37551479	1.9027629	20	2 25.4	20.4
481823 2008 UY ₁₉₄	17.4	X	331.73364	196.83785	256.68528	1.58225	0.1638501	0.25562546	2.4588572	20	—	—
481824 2008 UU ₂₂₆	17.8	X	304.78526	137.62232	346.40476	2.31677	0.1556922	0.25483129	2.4639632	20	—	—
481825 2008 UD ₂₃₅	19.1	X	310.35787	175.53824	233.74701	6.35300	0.2873587	0.24580435	2.5239244	20	10 8.7	20.6
481826 2008 UK ₂₆₃	17.9	X	21.81482	3.32896	25.34619	2.64166	0.2354987	0.25611904	2.4556972	20	—	—
481827 2008 UY ₃₀₀	17.8	X	312.16308	3.87908	241.86773	17.90360	0.0545341	0.37601357	1.9010799	20	2 14.6	20.2
481828 2008 UU ₃₄₃	18.1	X	293.26842	22.73757	40.64393	7.61526	0.1917828	0.24035383	2.5619384	20	10 6.7	20.7
481829 2008 UW ₃₅₀	17.6	X	296.63270	113.77588	31.21505	5.60211	0.0541136	0.26637422	2.3922575	20	—	—
481830 2008 UC ₃₆₈	17.5	X	1.04427	316.40048	81.31729	7.95299	0.1576909	0.25414566	2.4683927	20	—	—
481831 2008 VE ₃₃	17.9	X	323.18882	341.65348	123.06273	3.35304	0.1575874	0.25669325	2.4520336	20	—	—
481832 2008 VG ₅₇	17.1	X	359.58778	337.06534	63.52042	5.73994	0.1814321	0.25384425	2.4703463	20	—	—
481833 2008 VY ₆₅	17.9	X	5.14064	309.49757	104.02590	2.52454	0.1780368	0.25756736	2.4464828	20	—	—
481834 2008 VS ₇₂	17.0	X	43.11009	330.38661	340.83742	2.10824	0.2085544	0.24444922	2.5332435	20	11 22.5	20.4
481835 2008 VS ₇₆	17.4	X	340.24377	269.86098	1							

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>
481841 2008 <i>WS</i> ₄₈	17.4	X	349.17798	256.76481	140.27900	1.64090	0.1634544	0.25107789	2.4884585	20	12 24.3	19.9
481842 2008 <i>WV</i> ₇₃	16.7	X	315.55616	351.93306	81.51838	14.49786	0.1631242	0.24409502	2.5356936	20	12 9.1	18.8
481843 2008 <i>WE</i> ₈₂	16.1	X	167.57605	217.28789	205.48233	6.57158	0.2520817	0.12460491	3.9698973	20	5 15.1	22.7
481844 2008 <i>WH</i> ₉₄	16.1	X	243.21166	243.40948	263.00807	27.40807	0.4016585	0.23394873	2.6084884	20	9 29.4	20.9
481845 2008 <i>WG</i> ₉₈	16.7	X	279.94861	353.99915	80.57743	18.52939	0.2980051	0.23521254	2.5991364	20	9 17.9	20.1
481846 2008 <i>WO</i> ₁₁₂	17.5	X	290.89628	23.56276	63.38170	3.37765	0.1119792	0.24363489	2.5388852	20	11 14.0	20.3
481847 2008 <i>WN</i> ₁₃₃	17.5	X	173.48654	88.35605	268.99413	20.07290	0.1425352	0.37367266	1.9090113	20	1 31.9	20.3
481848 2008 <i>WV</i> ₁₃₃	17.9	X	85.31204	200.09305	251.81768	19.19230	0.0710591	0.36781572	1.9292234	20	2 2.5	20.1
481849 2008 <i>WU</i> ₁₃₈	17.7	X	335.37527	346.10693	94.01366	6.20474	0.2145308	0.25343213	2.4730236	20	—	—
481850 2008 <i>WU</i> ₁₃₉	16.7	X	258.30139	40.46533	90.19016	17.70122	0.1098062	0.24454502	2.5325819	20	11 26.2	20.0
481851 2008 <i>XR</i>	18.2	X	120.13540	28.52795	58.14710	23.55162	0.1564155	0.37430807	1.9068503	20	4 25.6	20.5
481852 2008 <i>XY</i> ₅	15.5	X	176.57263	41.09736	2.95309	8.22909	0.3351433	0.12519448	3.9574241	20	4 28.2	22.5
481853 2008 <i>XK</i> ₁₅	17.8	X	128.13689	209.44727	255.78609	18.12053	0.0574429	0.37999021	1.8877931	20	5 10.6	19.9
481854 2008 <i>XW</i> ₁₆	17.4	X	282.36322	202.43202	245.03606	9.59457	0.0866994	0.24100281	2.5573371	20	11 1.2	20.4
481855 2008 <i>XR</i> ₃₆	16.5	X	2.54852	13.12695	262.07189	11.76531	0.0784649	0.22115986	2.7081030	20	7 9.3	19.8
481856 2008 <i>XX</i> ₄₁	17.5	X	240.56067	211.04334	292.28164	9.31968	0.2252524	0.23713581	2.5850639	20	10 22.6	21.3
481857 2008 <i>XE</i> ₄₇	17.5	X	89.95912	137.21275	287.15683	21.86326	0.0962152	0.35670345	1.9690852	20	1 12.8	18.7
481858 2008 <i>XQ</i> ₄₇	18.0	X	284.35088	113.62267	349.75771	0.37229	0.0828209	0.24074144	2.5591878	20	11 27.7	20.7
481859 2008 <i>YB</i> ₈	17.1	X	318.12662	267.52015	153.03732	3.63358	0.1787319	0.24074133	2.5591885	20	11 24.7	19.4
481860 2008 <i>YB</i> ₂₄	16.8	X	295.33040	345.46617	113.49681	25.38111	0.2147525	0.24125262	2.5555714	20	12 6.3	19.6
481861 2008 <i>YZ</i> ₃₄	16.9	X	228.87955	35.53494	89.34239	14.58020	0.2160104	0.23029678	2.6359923	20	9 28.9	21.2
481862 2008 <i>YQ</i> ₄₀	17.2	X	266.61741	37.54576	68.36008	4.58899	0.1567093	0.23415320	2.6069697	20	10 24.3	20.3
481863 2008 <i>YZ</i> ₄₈	16.9	X	203.16382	210.67950	317.18039	6.64342	0.1188679	0.23095362	2.6309920	20	10 25.3	21.0
481864 2008 <i>YH</i> ₅₀	16.5	X	152.25755	240.23501	315.53793	12.56406	0.1166625	0.22405376	2.6847338	20	10 3.9	21.0
481865 2008 <i>YB</i> ₅₂	17.5	X	357.43118	29.30674	0.15777	2.00491	0.2119578	0.24313225	2.5423832	20	—	—
481866 2008 <i>YE</i> ₅₄	17.1	X	246.86103	133.70465	311.96294	21.35911	0.0431100	0.22398723	2.6852654	20	9 4.2	21.1
481867 2008 <i>YD</i> ₅₇	16.8	X	7.42201	55.85525	325.01203	3.24280	0.1969865	0.24586065	2.5235391	20	—	—
481868 2008 <i>YE</i> ₇₈	16.7	X	203.71057	235.73656	289.66213	12.55822	0.0876722	0.23081372	2.6320550	20	10 23.8	20.8
481869 2008 <i>YB</i> ₉₀	16.9	X	31.71040	26.34846	275.53983	7.11453	0.1195468	0.22885438	2.6470566	20	10 5.8	20.4
481870 2008 <i>YQ</i> ₉₁	17.5	X	306.57560	77.97201	323.79988	1.52493	0.0376996	0.23147458	2.6270430	20	10 8.9	20.6
481871 2008 <i>YR</i> ₉₂	18.2	X	299.64113	86.07767	351.43238	1.22835	0.1713511	0.23972813	2.5663943	20	11 8.9	20.5
481872 2008 <i>YD</i> ₁₀₅	17.3	X	356.70507	246.86532	127.58121	4.15705	0.2575591	0.24102487	2.5571811	20	12 17.4	19.7
481873 2008 <i>YU</i> ₁₁₀	17.6	X	219.87778	93.52242	71.58641	5.82287	0.2021156	0.24022778	2.5628345	20	11 5.3	21.4
481874 2008 <i>YY</i> ₁₁₄	17.9	X	314.39320	303.56799	101.75272	5.38518	0.2639584	0.23904223	2.5713013	20	10 20.1	19.6
481875 2008 <i>YN</i> ₁₁₈	17.7	X	320.42103	165.10872	300.16097	13.63891	0.0453251	0.24636653	2.5200834	20	—	—
481876 2008 <i>YF</i> ₁₂₅	17.5	X	254.18593	75.52250	98.54890	4.18103	0.1231600	0.24586753	2.5234920	20	—	—
481877 2008 <i>YH</i> ₁₃₇	17.2	X	140.74587	330.70284	264.94062	2.30430	0.1722210	0.23415155	2.6069819	20	11 18.2	21.1
481878 2008 <i>YA</i> ₁₄₃	17.8	X	308.54912	101.67144	299.91272	5.81771	0.1961080	0.23471869	2.6027809	20	9 27.2	20.4
481879 2008 <i>YP</i> ₁₄₇	17.7	X	313.36846	141.83945	295.33439	12.61684	0.1407798	0.24312143	2.5424586	20	12 9.1	20.3
481880 2008 <i>YU</i> ₁₅₃	18.0	X	272.62260	141.68703	328.86681	1.89573	0.1554056	0.23729172	2.5839315	20	11 7.8	20.8
481881 2008 <i>YH</i> ₁₅₉	16.6	X	358.64563	46.95509	310.13054	31.36063	0.1997574	0.23375096	2.6099596	20	10 29.1	20.2
481882 2008 <i>YY</i> ₁₅₉	17.8	X	341.12707	91.33878	301.59553	2.70713	0.2823195	0.24056009	2.5604738	20	12 15.4	19.7
481883 2008 <i>YD</i> ₁₆₂	17.4	X	265.04746	10.17599	104.13220	10.80818	0.1516962	0.23799316	2.5788519	20	11 7.1	20.6
481884 2008 <i>YS</i> ₁₆₆	17.4	X	292.04427	314.23067	280.43269	17.54031	0.0641204	0.35612304	1.9712241	20	1 10.3	19.6
481885 2008 <i>YW</i> ₁₇₂	17.3	X	227.22634	67.96398	128.55131	5.64802	0.1687396	0.24343361	2.5402845	20	12 27.1	20.5
481886 2008 <i>YZ</i> ₁₇₂	17.6	X	278.39795	132.05615	312.17667	5.87894	0.0730335	0.23269898	2.6178197	20	10 19.9	20.9
481887 2009 <i>AG</i> ₁₃	16.2	X	179.19296	284.99918	145.58543	4.10080	0.2620631	0.12362369	3.9908762	20	6 1.1	22.9
481888 2009 <i>AO</i> ₁₅	16.8	X	337.64838	83.51713	299.61561	15.69970	0.2767628	0.24166617	2.5526552	20	11 15.4	19.1
481889 2009 <i>AO</i> ₂₄	17.6	X	249.50425	346.28517	125.29069	5.55761	0.1043686	0.23149570	2.6268832	20	10 16.5	21.1
481890 2009 <i>AW</i> ₂₆	18.1	X	307.95958	157.98823	279.51478	2.59319	0.2172685	0.24139485	2.5545675	20	11 24.9	20.1
481891 2009 <i>AN</i> ₂₇	16.9	X	16.95764	250.73632	115.90007	3.38780	0.2724585	0.24344618	2.5401970	20	—	—
481892 2009 <i>AR</i> ₂₇	17.2	X	215.76548	49.71871	113.06661	7.82036	0.2427715	0.23092309	2.6312239	20	10 25.8	21.5
481893 2009 <i>AA</i> ₃₂	17.7	X	296.73597	120.71040	120.33716	24.03343	0.0699362	0.35814814	1.9637864	20	1 26.2	19.6
481894 2009 <i>AX</i> ₃₉	17.4	X	324.12623	141.19426	290.37482	5.84390	0.1474437	0.24271801	2.5452750	20	12 22.2	19.8
481895 2009 <i>AF</i> ₄₂	17.9	X	205.77842	296.98283	218.42388	2.60218	0.1087751	0.23262217	2.6183959	20	10 16.6	21.8
481896 2009 <i>AF</i> ₄₄	17.0	X	243.31487	338.55920	142.60403	7.99614	0.0886340	0.22975476	2.6401365	20	10 23.5	20.6
481897 2009 <i>AR</i> ₄₄	17.8	X	294.37847	357.83368	128.33265	1.24358	0.0985633	0.24308234	2.5427312	20	—	—
481898 2009 <i>AC</i> ₄₅	17.0	X	246.77887	341.00018	151.11194	14.33215	0.1904872	0.23011668	2.6373675	20	10 28.6	20.8
481899 2009 <i>AR</i> ₄₈	16.9	X	271.48737	326.88137	134.32143	14.83328	0.1225129	0.23318547	2.6141774	20	11 4.1	20.4
481900 2009 <i>AJ</i> ₄₉	17.5	X	333.79188	165.58030	252.23726	4.21637	0.2505943	0.24397155	2.5365490	20	—	—
481901 2009 <i>BS</i> ₁	17.6	X	200.95287	195.52876	107.72172	25.34126	0.1929597	0.35708260	1.9676911	20	1 2.2	20.3
481902 2009 <i>BK</i> ₇	17.4	X	307.21320	257.52328	163.59521	5.70299	0.2920383	0.23956538	2.5675565	20	10 21.5	19.0
481903 2009 <i>BL</i> ₉	17.7	X	116.71974	130.12391	298.94874	17.99558	0.0888449	0.36399857	1.9426874	20	2 23.9	19.9
481904 2009 <i>BB</i> ₁₁	19.5	X	84.97045	293.59571	121.30063	19.47609	0.1842426	0.61156347	1.3745958	20	—	—
481905 2009 <i>BO</i> ₁₃	17.4	X	238.24414	233.19861	307.60002	10.37491	0.1851315	0.23898131	2.5717382	20	12 17.8	20.8
481906 2009 <i>BS</i> ₁₈	17.4	X	275.48121	135.56036	282.57657	7.54667	0.0937349	0.22868118	2.6483930	20	9 5.2	20.9
481907 2009 <i>BC</i> ₂₆	17.1	X	323.11376	345.27031	56.22953	2.70834	0.2126314	0.23741863	2.5830106	20	11 4.9	19.1
481908 2009 <i>BA</i> ₂₉	17.0	X	354.94117	6.64837	346.61366	1.71923	0.1302769	0.23050794	2.6343823	20	10 22.5	19.8
481909 2009 <i>BH</i> ₃₂	17.9	X	268.94042	141.77112	319.01276	0.86302	0.0367407	0.23267742	2.6179814	20	11 4.9	21.3
481910 2009 <i>BE</i> ₄₂	17.8	X	321.02013	273.48294	119.69973	2.75730	0.3124461	0.23493531	2.6011807	20	10 12.9	19.0
481911 2009 <i>BW</i> ₄₄	17.1	X	164.49021	76.82211	142.88611	12						

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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>
481921 2009 BT ₈₀	17.1	X	229.58273	90.63182	69.08240	6.59371	0.1891954	0.23381309	2.6094972	20	11 9.4	20.7
481922 2009 BW ₈₁	17.4	X	250.77563	100.44477	45.46095	10.04984	0.2449218	0.23677323	2.5877023	20	11 8.9	20.5
481923 2009 BA ₈₂	17.6	X	286.94394	43.44422	102.71398	4.85757	0.1600557	0.24476705	2.5310501	20	—	—
481924 2009 BC ₈₃	17.2	X	329.29373	53.54309	37.25633	9.84510	0.1684214	0.24506082	2.5290270	20	—	—
481925 2009 BE ₈₄	17.3	X	342.97132	78.26721	318.17639	5.21664	0.2396065	0.24054640	2.5605709	20	12 18.4	19.5
481926 2009 BW ₈₅	18.0	X	323.42703	284.49600	158.56653	3.13506	0.1817621	0.24387101	2.5372461	20	—	—
481927 2009 BG ₈₉	17.1	X	339.09972	236.70878	138.74190	10.06957	0.1251795	0.23054425	2.6341056	20	10 30.2	20.1
481928 2009 BL ₉₅	16.4	X	61.22362	325.97906	318.60365	7.20179	0.0420354	0.22772677	2.6557875	20	10 11.3	20.1
481929 2009 BH ₉₆	16.4	X	122.57638	89.61258	129.59920	10.41023	0.1117292	0.21881672	2.7274013	20	10 13.5	20.7
481930 2009 BZ ₉₈	17.5	X	254.29712	65.06969	55.98344	3.83087	0.1288511	0.23485054	2.6018066	20	10 30.3	20.6
481931 2009 BB ₁₀₉	17.8	X	309.46916	326.88629	124.87421	3.63197	0.1407024	0.24222982	2.5486937	20	12 22.5	20.3
481932 2009 BQ ₁₂₀	17.7	X	314.82672	60.49122	143.68165	25.42028	0.1543159	0.34922195	1.9971087	20	—	—
481933 2009 BJ ₁₂₃	17.8	X	302.65508	276.05077	160.66062	4.43161	0.2550454	0.23739961	2.5831486	20	11 7.2	19.7
481934 2009 BR ₁₂₃	17.6	X	265.45900	195.43722	286.96923	2.66768	0.2009440	0.23504805	2.6003488	20	11 4.5	20.7
481935 2009 BT ₁₅₂	18.3	X	293.23702	151.91704	326.92299	6.65761	0.1620455	0.24287917	2.5441489	20	12 29.9	20.7
481936 2009 BM ₁₅₃	17.7	X	262.54942	120.49307	322.26246	5.61845	0.1689546	0.22893864	2.6464071	20	9 10.8	21.1
481937 2009 BC ₁₅₅	16.9	X	14.76790	200.27890	108.35138	7.56993	0.0417283	0.21928935	2.7234810	20	9 15.4	20.5
481938 2009 BL ₁₈₅	16.7	X	327.60688	237.57475	178.92603	8.13145	0.2804805	0.24262058	2.5459564	20	12 18.4	18.5
481939 2009 BL ₁₈₆	17.2	X	64.96170	130.58002	152.44272	3.75380	0.0474847	0.22467950	2.6797468	20	10 19.4	20.7
481940 2009 BS ₁₈₇	17.3	X	287.58496	132.75878	335.09992	13.85556	0.0498727	0.23208719	2.6224181	20	12 7.6	20.9
481941 2009 BZ ₁₈₈	16.6	X	285.21347	212.16855	265.69448	11.51110	0.2016842	0.23840290	2.5758962	20	12 5.4	19.1
481942 2009 CB ₄	17.4	X	233.92635	159.88267	27.63071	5.69549	0.1757219	0.23938085	2.5688759	20	12 21.9	20.8
481943 2009 CH ₁₅	18.3	X	234.01365	233.10653	135.89097	23.72134	0.0728790	0.37553140	1.9027068	20	5 19.8	21.1
481944 2009 CM ₂₈	17.0	X	224.26919	221.07210	332.90268	12.75612	0.1855834	0.23659279	2.5890178	20	12 16.3	20.9
481945 2009 CL ₄₉	17.0	X	255.93689	108.30282	354.30160	15.82746	0.1141132	0.22578812	2.6709678	20	10 4.1	20.6
481946 2009 CM ₅₀	17.9	X	61.03229	209.96352	322.00358	18.88170	0.0655574	0.37061485	1.9194973	20	5 2.0	20.2
481947 2009 CC ₅₉	17.0	X	225.66751	318.89360	185.25654	12.14242	0.2069007	0.22422151	2.6833945	20	10 12.9	21.0
481948 2009 CQ ₆₁	17.8	X	244.12870	339.52046	202.42394	5.42236	0.2069468	0.24066684	2.5597166	20	12 24.0	21.0
481949 2009 DV ₉	18.0	X	108.47848	119.79545	338.34718	17.99114	0.1110367	0.36400600	1.9426610	20	3 31.7	20.3
481950 2009 DC ₁₄	17.7	X	213.59664	281.12740	279.99023	1.29703	0.1486170	0.23245840	2.6196255	20	12 16.9	21.5
481951 2009 DU ₄₉	17.1	X	235.43594	122.67176	15.27423	3.76229	0.2117885	0.22638597	2.6662634	20	10 14.0	21.0
481952 2009 DF ₇₅	17.0	X	209.38860	349.96385	186.69039	1.74453	0.2294502	0.22814218	2.6525627	20	11 3.5	21.2
481953 2009 DF ₈₄	17.7	X	215.84289	165.19482	22.12036	4.06522	0.1153316	0.23136831	2.6278473	20	12 5.8	21.5
481954 2009 DX ₈₆	18.0	X	288.33078	284.73588	187.80555	4.05176	0.1927098	0.23592639	2.5938909	20	12 4.8	20.5
481955 2009 DA ₉₈	16.5	X	111.83553	279.09149	357.32244	10.97131	0.1806024	0.22419617	2.6835968	20	12 9.3	21.1
481956 2009 DZ ₁₁₀	16.6	X	232.66843	84.10121	96.02411	13.93964	0.1128010	0.23630600	2.5911122	20	12 19.8	19.9
481957 2009 DS ₁₁₅	16.6	X	126.95620	58.03423	151.86728	14.13929	0.0377465	0.21801851	2.7340544	20	10 1.1	20.6
481958 2009 DY ₁₁₅	17.6	X	301.06513	78.88236	3.64711	4.27025	0.1900866	0.23517336	2.5994251	20	11 14.6	20.0
481959 2009 DM ₁₁₇	17.3	X	268.47789	355.04806	153.20670	5.25800	0.1854558	0.23763255	2.5814601	20	12 19.5	20.0
481960 2009 DL ₁₂₃	17.5	X	99.92236	97.23303	9.72887	20.36873	0.1066999	0.36274856	1.9471478	20	4 7.2	19.3
481961 2009 DS ₁₃₆	16.8	X	257.99863	57.89302	88.20912	8.76605	0.1384815	0.23478291	2.6023062	20	12 6.3	20.0
481962 2009 DN ₁₃₉	17.3	X	219.11946	165.75844	11.13046	14.21364	0.1170831	0.22843385	2.6503043	20	11 22.1	21.3
481963 2009 DM ₁₄₁	18.0	X	284.70758	263.56868	169.31083	6.61363	0.1114158	0.22604487	2.6689450	20	10 12.3	21.1
481964 2009 DU ₁₄₁	16.7	X	299.67829	46.36067	20.41781	13.32376	0.0718458	0.22127373	2.7071738	20	10 26.9	20.1
481965 2009 EB ₁	20.7	X	70.02734	187.53424	151.33847	12.50650	0.4542486	0.84687177	1.1064309	20	—	—
481966 2009 EV ₆	17.5	X	266.27629	101.34669	50.27625	5.81394	0.1648234	0.23977876	2.5660330	20	12 23.8	20.4
481967 2009 EO ₉	17.8	X	287.96841	229.79260	224.01057	1.57498	0.1487951	0.23702347	2.5858807	20	11 12.4	20.5
481968 2009 ED ₁₉	17.5	X	272.52743	351.71779	148.05517	5.23508	0.0459337	0.23933255	2.5692214	20	12 31.8	20.7
481969 2009 EM ₂₀	16.3	X	133.31364	261.89250	5.89627	15.45276	0.2328634	0.22451313	2.6810704	20	12 17.7	21.3
481970 2009 EV ₂₉	16.6	X	220.74608	10.59992	175.90418	12.81517	0.0945044	0.22901009	2.6458566	20	12 14.2	20.5
481971 2009 FH ₅	17.9	X	301.21995	291.06367	173.63756	1.20544	0.2349510	0.23757194	2.5818992	20	12 18.5	19.6
481972 2009 FG ₂₀	17.9	X	274.33829	322.67639	146.71807	7.74966	0.2872435	0.23291501	2.6162007	20	10 21.0	20.8
481973 2009 FP ₂₂	16.9	X	147.47660	54.37060	141.63008	9.37094	0.1853301	0.21387422	2.7692601	20	10 8.6	21.6
481974 2009 FY ₃₆	17.4	X	277.23543	329.50737	127.06357	5.95217	0.2284319	0.22750097	2.6575445	20	10 16.7	20.5
481975 2009 FS ₆₃	17.0	X	191.06188	172.42371	37.79235	11.49941	0.1418281	0.22535862	2.6743604	20	12 1.9	21.2
481976 2009 FQ ₆₄	17.4	X	235.37764	87.11478	40.19539	11.33439	0.1805864	0.21860775	2.7291391	20	10 7.1	21.5
481977 2009 FG ₆₆	16.5	X	170.74260	161.36149	12.79194	14.92169	0.0710177	0.21571653	2.7534705	20	10 3.1	20.5
481978 2009 FY ₆₆	16.6	X	251.45087	96.19342	52.24956	27.46020	0.2734446	0.22984186	2.6394694	20	11 9.5	20.0
481979 2009 GX ₁	17.5	X	279.14840	13.58677	112.11106	4.60306	0.2203998	0.23379131	2.6096593	20	12 1.2	20.0
481980 2009 HL ₄₇	16.8	X	15.18300	270.23165	90.06232	7.24698	0.0562885	0.22122276	2.7075897	20	11 22.9	20.3
481981 2009 HA ₅₀	17.5	X	318.73280	351.00902	120.18523	4.68392	0.1619810	0.23902161	2.5714491	20	—	—
481982 2009 HT ₈₂	16.5	X	162.60449	326.85862	233.42081	10.49939	0.1403449	0.21549147	2.7553874	20	10 22.9	21.0
481983 2009 HR ₁₀₅	17.4	X	290.74268	347.35697	140.69036	12.84462	0.1721132	0.22960502	2.6412842	20	12 31.1	20.2
481984 Cernunnos	18.0	X	97.96117	165.77962	173.72203	9.45497	0.4694858	0.30203371	2.2000494	20	—	—
481985 2009 KM ₇	17.6	X	99.90726	90.41150	212.69989	17.92446	0.4869040	0.29402025	2.2398446	20	—	—
481986 2009 KF ₃₃	17.2	X	274.57415	313.37644	59.26103	11.61217	0.1956413	0.18325930	3.0696725	20	6 18.7	21.7
481987 2009 MY ₁	13.4	X	195.93816	268.93476	128.93755	28.74908	0.0123477	0.08568748	5.0955508	20	5 21.8	20.6
481988 2009 PS ₁₀	18.1	X	81.31758	186.60044	157.89292	7.83258	0.1891309	0.29801680	2.2197746	20	—	—
481989 2009 QB ₃₅	19.9	X	31.47245	157.47702	226.21036	5.04575	0.4976175	0.28517007	2.2859502	20	—	—
481990 2009 QU ₄₀	15.6	X	25.90310	313.67863	350.58228	13.75778	0.0316728	0.17828090	3.1265557	20	9 14.2	19.9
481991 2009 QX ₆₀	18.0	X	77.14448	237.80427	133.04963	5.04551	0.1921362	0.30000523	2.2099554	20	—	—
481992 2009 RY ₁₁	18.5	X	59.71564	350.30020	25.02524	1.11391	0.1745580	0.29340966	2.2429510	20	—	—
481993 Melaniezander	17.8	X	50.16867	63.93425	338.48682	3.94021	0.1438236	0.29478553	2.2359664	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>
482001 2009 SR ₁₂₅	17.8	X	229.83692	298.38717	277.86822	3.48645	0.0648518	0.29540405	2.2328442	20	—	—
482002 2009 SL ₁₄₁	18.0	X	25.82217	76.31445	358.36605	3.13893	0.1573967	0.29539012	2.2329144	20	—	—
482003 2009 SZ ₁₅₀	18.2	X	14.88540	123.73178	272.40274	1.48198	0.1462738	0.28654924	2.2786093	20	—	—
482004 2009 SL ₁₅₁	18.3	X	81.81809	359.65338	306.91969	1.20696	0.2301426	0.28787985	2.2715826	20	—	—
482005 2009 SN ₁₅₈	18.1	X	50.93382	108.61493	294.70431	3.13659	0.1334768	0.29461534	2.2368274	20	—	—
482006 2009 SA ₁₈₀	18.5	X	44.71524	181.52682	201.19546	1.29789	0.1637542	0.28941286	2.2635539	20	—	—
482007 2009 SN ₁₈₆	18.2	X	30.10576	301.34186	80.45916	2.45768	0.2133050	0.28541200	2.2846582	20	—	—
482008 2009 SY ₂₂₈	18.3	X	88.26822	305.06658	27.64025	2.01338	0.1911196	0.29046129	2.2581037	20	—	—
482009 2009 SS ₂₃₄	18.5	X	17.71597	230.24290	180.42778	2.92412	0.2456604	0.28517078	2.2859463	20	—	—
482010 2009 SL ₂₆₇	17.8	X	57.01223	17.60491	7.89643	5.33687	0.1256999	0.29177972	2.2512963	20	—	—
482011 2009 SK ₂₉₈	17.6	X	70.57047	64.74979	323.03310	4.93132	0.1592577	0.29757801	2.2219562	20	—	—
482012 2009 TB ₂₁	17.5	X	69.22705	359.58176	54.84808	7.49981	0.1340910	0.30233703	2.1985777	20	—	—
482013 2009 TN ₃₆	17.8	X	78.83371	321.47425	61.74280	6.31715	0.1779062	0.29784754	2.2206155	20	—	—
482014 2009 TA ₄₇	17.8	X	21.73637	39.17449	294.25663	3.57432	0.2463284	0.27525798	2.3405042	20	12 7.9	20.5
482015 2009 UJ ₁₃	18.3	X	20.06188	160.23457	288.83295	1.40680	0.2117121	0.29235664	2.2485336	20	—	—
482016 2009 UT ₂₄	18.1	X	81.82346	301.04647	30.21972	2.78003	0.1174510	0.28542949	2.2845649	20	—	—
482017 2009 UW ₂₈	17.7	X	281.08975	123.39248	45.36270	6.33557	0.0741509	0.28961059	2.2625234	20	—	—
482018 2009 UB ₉₉	17.9	X	51.95811	131.03180	198.42975	4.50462	0.2309806	0.27983356	2.3149210	20	—	—
482019 2009 UQ ₁₂₁	17.6	X	54.06178	14.97943	29.96690	7.22765	0.1299700	0.29473721	2.2362108	20	—	—
482020 2009 UU ₁₂₇	18.1	X	345.91294	31.64230	29.38812	5.21832	0.2050688	0.27853005	2.3221379	20	—	—
482021 2009 UR ₁₄₇	17.9	X	94.47431	308.23243	11.86032	3.39478	0.2023553	0.28474056	2.2882483	20	—	—
482022 2009 UX ₁₅₂	17.7	X	15.11130	357.89500	53.94979	4.63657	0.1115120	0.28228730	2.3014868	20	—	—
482023 2009 VY	18.6	X	201.43612	37.54879	53.18041	28.41392	0.0482648	0.43582898	1.7228943	20	9 6.6	21.2
482024 2009 VM ₃	17.2	X	346.59880	238.24191	221.87234	23.05720	0.2536691	0.28596680	2.2817023	20	—	—
482025 2009 VP ₇	17.6	X	45.89720	7.83012	40.35741	8.57656	0.1727642	0.29151224	2.2526732	20	—	—
482026 2009 VX ₄₃	17.6	X	36.64460	355.29407	66.14058	8.25376	0.1622356	0.29202106	2.2500557	20	—	—
482027 2009 VS ₄₅	18.0	X	350.81193	34.39436	41.70330	4.99949	0.1092712	0.28313593	2.2968858	20	—	—
482028 2009 VN ₅₄	18.4	X	42.06816	247.55624	209.22577	4.70580	0.0738524	0.30220820	2.1992025	20	—	—
482029 2009 VK ₇₁	17.6	X	345.69154	181.79009	256.09707	1.94693	0.1965831	0.27902294	2.3194025	20	—	—
482030 2009 VE ₉₄	17.6	X	54.97518	337.41364	58.38414	6.35610	0.1050685	0.29079146	2.2563941	20	—	—
482031 2009 VK ₉₅	17.7	X	301.84854	62.46434	76.17693	6.13887	0.0979090	0.28347275	2.2950660	20	—	—
482032 2009 VH ₁₁₅	17.4	X	328.43966	2.54113	56.19097	7.56056	0.2542319	0.27131372	2.3631333	20	—	—
482033 2009 WB ₁₇	18.1	X	295.54119	269.88300	246.82760	4.41674	0.1031382	0.29015247	2.2597056	20	—	—
482034 2009 WA ₂₃	17.7	X	85.86500	281.60873	41.44998	7.88412	0.1415411	0.28295283	2.2978765	20	—	—
482035 2009 WL ₂₃	17.8	X	76.48427	98.07470	281.05468	6.74680	0.1301640	0.28996860	2.2606608	20	—	—
482036 2009 WZ ₂₆	18.1	X	305.64183	224.57656	244.65552	4.73415	0.1109840	0.27766291	2.3269701	20	—	—
482037 2009 WO ₃₆	17.9	X	350.84426	46.57584	41.81770	8.36643	0.1221316	0.28459676	2.2890191	20	—	—
482038 2009 WR ₇₁	17.7	X	19.68610	5.17885	74.09680	6.98066	0.1188640	0.28960890	2.2625323	20	—	—
482039 2009 WH ₇₈	17.7	X	18.84237	331.81751	22.85744	3.47463	0.2943840	0.27474678	2.3434066	20	—	—
482040 2009 WZ ₈₄	17.5	X	33.06866	150.16734	281.25559	7.16847	0.0892772	0.29158887	2.2522785	20	—	—
482041 2009 WT ₁₀₅	18.2	X	7.69408	23.20851	37.25144	2.96251	0.1832216	0.28214986	2.3022341	20	—	—
482042 2009 WO ₁₄₂	17.7	X	59.73811	88.85820	263.97160	7.86820	0.1988069	0.28401563	2.2921404	20	—	—
482043 2009 WF ₁₆₅	18.3	X	344.50441	198.24553	256.93716	4.02517	0.1538646	0.28172510	2.3045476	20	—	—
482044 2009 WJ ₂₂₃	17.8	X	62.04294	273.67211	75.85111	7.45321	0.1460777	0.28060659	2.3106676	20	—	—
482045 2009 WL ₂₃₄	17.6	X	32.68687	348.56174	60.93647	3.98301	0.0259930	0.29110908	2.2547525	20	—	—
482046 2009 WD ₂₃₆	17.8	X	354.75235	331.00666	87.47996	4.07885	0.1599287	0.27735584	2.3286873	20	—	—
482047 2009 WB ₂₅₆	18.2	X	359.07898	124.47295	274.58466	4.84064	0.2304794	0.27536623	2.3398908	20	—	—
482048 2009 WT ₂₅₉	17.5	X	38.28352	268.01409	73.99517	3.61200	0.3153743	0.27709795	2.3301319	20	—	—
482049 2009 XG ₈	18.8	X	266.75365	151.30174	50.91827	59.90205	0.1897248	0.57769834	1.4278041	20	—	—
482050 2009 XF ₁₅	18.2	X	9.42820	347.14046	85.88368	3.91462	0.1478526	0.28000228	2.3139910	20	—	—
482051 2009 XH ₁₉	18.2	X	276.20339	29.36919	107.82901	6.40924	0.1719500	0.26647128	2.3916765	20	12 31.1	20.2
482052 2009 YB ₃	17.5	X	50.41030	283.77673	110.45835	7.56632	0.1383518	0.28254181	2.3001045	20	—	—
482053 2009 YK ₉	17.8	X	50.27928	130.49220	263.58663	3.40580	0.1436722	0.28222650	2.3018173	20	—	—
482054 2010 AE	19.4	X	212.32919	270.71115	294.54073	15.97617	0.3769406	0.54260942	1.4887136	20	—	—
482055 2010 AH ₃₀	18.4	X	308.05583	118.88921	104.43008	43.34566	0.5495419	0.28447668	2.2896632	20	—	—
482056 2010 AG ₆₄	18.7	X	342.39210	161.65982	321.40355	3.53570	0.1830348	0.28169520	2.3047107	20	—	—
482057 2010 AM ₇₀	17.2	X	337.98239	133.15877	316.72239	18.38336	0.0745954	0.27213087	2.3584002	20	—	—
482058 2010 AF ₈₀	15.6	X	166.79769	262.46922	160.76465	9.86642	0.2644360	0.12594918	3.9415994	20	5 16.9	22.3
482059 2010 BF ₂	17.8	X	238.61784	239.20945	306.46915	1.60122	0.1030109	0.26578140	2.3958134	20	—	—
482060 2010 BA ₄	17.9	X	351.66109	125.98281	312.78924	10.65281	0.2573158	0.27518718	2.3409057	20	—	—
482061 2010 BN ₆₂	16.4	X	130.92145	146.71175	105.19014	29.47453	0.1298157	0.23950781	2.5679679	20	12 6.7	20.8
482062 2010 CF ₄	18.0	X	19.48502	322.04522	149.51041	5.11575	0.1074713	0.28444293	2.2898443	20	—	—
482063 2010 CA ₁₂	17.8	X	320.89208	346.25947	171.23305	7.87241	0.2037261	0.27924664	2.3181636	20	—	—
482064 2010 CR ₃₁	17.6	X	340.09762	12.18687	147.75266	6.86671	0.1431737	0.28165512	2.3049293	20	—	—
482065 2010 CO ₆₈	18.3	X	309.43033	317.97014	160.68758	5.20523	0.1746777	0.26809420	2.3820147	20	—	—
482066 2010 CV ₇₃	18.2	X	266.53453	252.53072	271.23643	1.32514	0.1497163	0.26610782	2.3938538	20	—	—
482067 2010 CH ₉₉	18.1	X	263.77999	124.49181	67.50619	2.10210	0.1285476	0.26774091	2.3841096	20	—	—
482068 2010 CU ₁₁₁	17.7	X	166.90775	99.72102	134.07127	5.73060	0.0312020	0.25810993	2.4430531	20	12 23.5	21.0
482069 2010 CV ₁₁₃	18.1	X	338.74081	315.98520	113.57846	3.14658	0.1625905	0.26565838	2.3965530	20	—	—
482070 2010 CD ₁₃₄	16.7	X	56.52061	191.23439	71.10317	11.72654	0.1325378	0.21744608	2.7388505	20	9 28.4	20.6
482071 2010 CT ₁₃₉	18.2	X	290.72435	27.31549	134.03982	5.70419	0.0693480	0.27252454	2.3561285	20	—	—
482072 2010 CR ₂₄₉	17.3	X	349.85603	287.02132	134.21396	9.33849	0.1239852	0.26839506	2.3802342	20	—	—
482073 2010 DJ ₂₃	16.9	X	73.48941	147.07362	96.55068	10.34597	0.0915164	0.21776687	2.7361601	20	9 18.2	20.9
482074 2010 DV ₃₄	18.0	X	301.18980	99.55860	346.49614	2.12068	0.1622811	0.26058958	2.4275305	20	12 3.4	20.1
482075 2010 DR ₇₉	17.0	X	259.26816	70.04774	136.91134	10.78930	0.2116422	0.26230543	2.4169325	20	—	—
482076 2010 EH ₃₂	18.4	X	329.70041	23.92567	102.53162	2.26644	0.1222140	0.27150962	2.3619964	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>
482081 2010 EG ₁₀₉	17.7	X	215.79957	19.98189	182.12867	15.04958	0.0883757	0.25664899	2.4523155	20	—	—
482082 2010 EM ₁₂₇	16.5	X	104.75779	200.31088	41.50349	14.66531	0.2127896	0.23049631	2.6344708	20	10 28.4	20.7
482083 2010 EB ₁₃₂	17.7	X	239.10585	184.09819	29.35475	5.51486	0.1170103	0.26195117	2.4191111	20	—	—
482084 2010 FL ₆	18.5	X	323.52997	74.55503	67.44216	7.81817	0.2959834	0.27484841	2.3428288	20	—	—
482085 2010 GV ₁₂₈	18.1	X	289.50440	55.68316	93.07552	2.38641	0.1322552	0.25953354	2.4341111	20	—	—
482086 2010 HG ₈	17.5	X	221.17059	264.30619	277.66695	3.81961	0.1697887	0.26029229	2.4293785	20	12 4.7	20.8
482087 2010 HP ₂₁	13.5	X	314.09348	352.17641	291.98572	29.38098	0.0474129	0.08326481	5.1939178	20	5 8.3	20.6
482088 2010 HW ₂₂	13.1	X	316.11982	134.13785	150.56346	27.38680	0.0259980	0.08383834	5.1702033	20	5 24.6	20.2
482089 2010 HM ₁₀₃	17.2	X	101.40526	212.33780	53.57678	10.24438	0.0773311	0.23271960	6.1766551	20	11 13.9	21.0
482090 2010 JD ₄₈	18.3	X	107.19501	24.88472	61.64366	22.99856	0.0526669	0.38229231	1.8802070	20	3 26.5	20.8
482091 2010 JS ₅₇	17.8	X	284.22544	118.04686	116.62060	3.67727	0.1327894	0.28694491	2.2765142	20	1 5.6	20.8
482092 2010 JF ₁₁₈	17.1	X	153.27475	130.98889	53.38575	11.21399	0.0838371	0.22746740	2.6578060	20	10 2.9	21.2
482093 2010 JZ ₁₅₇	17.0	X	282.32706	324.99632	146.72605	6.64123	0.1801262	0.24314274	2.5423100	20	11 27.2	19.6
482094 2010 LD ₄₆	16.5	X	254.75330	18.02747	347.37201	14.72288	0.2844974	0.17535151	3.1612806	20	5 4.5	21.9
482095 2010 LM ₁₀₁	15.9	X	276.46022	68.36319	300.13207	20.58727	0.1644590	0.18182226	3.0858254	20	6 23.4	20.4
482096 2010 LV ₁₁₄	16.8	X	286.00156	61.23710	504.06343	9.48502	0.1574758	0.18401033	3.0613143	20	7 1.6	20.8
482097 2010 LF ₁₃₂	16.7	X	268.59756	291.74582	308.82810	10.58566	0.3208690	0.17613288	3.1519242	20	5 3.8	21.7
482098 2010 MV ₁	15.7	X	259.20738	122.56680	244.02755	25.70018	0.2511555	0.17484732	3.1673549	20	5 19.2	20.8
482099 2010 MM ₁₁	16.5	X	280.51163	208.21089	131.09305	5.73527	0.2622343	0.17752153	3.1354655	20	5 8.3	21.2
482100 2010 MR ₂₈	16.2	X	281.82462	191.46645	153.87566	11.53233	0.2352458	0.17841137	3.1250313	20	5 21.8	20.8
482101 2010 MB ₄₃	16.3	X	77.87806	168.22676	36.41233	36.06366	0.1017649	0.21893190	2.7264446	20	8 21.8	21.0
482102 2010 MX ₄₅	16.5	X	281.79816	127.15832	215.38609	24.93866	0.3597612	0.17861156	3.1226958	20	4 29.4	21.4
482103 2010 MG ₅₉	16.4	X	252.07579	21.55774	4.42112	10.17078	0.2254514	0.17633352	3.1495327	20	6 6.0	21.5
482104 2010 MU ₇₁	15.8	X	254.95974	289.52823	95.19784	16.28981	0.0799050	0.17843909	3.1247076	20	6 27.2	20.3
482105 2010 MS ₇₄	16.3	X	255.66738	9.85934	357.91543	14.11223	0.1529245	0.17451162	3.1714155	20	5 24.2	21.3
482106 2010 MX ₇₉	16.7	X	244.23935	46.32138	2.96409	7.12625	0.1765932	0.17874015	3.1211979	20	7 4.9	21.6
482107 2010 MD ₈₀	16.5	X	301.44484	289.71800	38.74958	10.32722	0.2218161	0.18015886	3.1047905	20	5 23.6	20.5
482108 2010 MC ₈₃	15.8	X	303.36521	308.48480	1.77683	19.17604	0.1740525	0.17655130	3.1469423	20	5 3.7	20.2
482109 2010 MG ₁₀₀	16.0	X	274.60258	357.71172	358.46583	19.18516	0.2369557	0.17715110	3.1398349	20	5 16.9	21.0
482110 2010 MX ₁₀₈	15.8	X	243.63459	40.35298	0.08248	24.09336	0.1507873	0.17723714	3.1388186	20	6 26.8	21.1
482111 2010 NT ₁	19.4	X	242.63170	306.31359	283.27345	39.52373	0.2181013	0.55966665	1.4583097	20	—	—
482112 2010 NN ₁₇	16.2	X	244.45181	33.94575	4.12399	14.37412	0.2853599	0.17429784	3.1740082	20	6 7.3	21.7
482113 2010 NF ₂₀	15.9	X	273.87286	90.71568	294.12281	23.01133	0.3122199	0.17994897	3.1072043	20	6 20.3	20.7
482114 2010 NZ ₃₂	16.8	X	301.50456	6.44662	10.04289	7.27408	0.1922377	0.18715962	3.0268758	20	8 6.3	20.5
482115 2010 NM ₅₂	16.8	X	283.63995	144.06182	228.06560	5.23619	0.2374530	0.18085586	3.0968083	20	6 23.8	21.0
482116 2010 NC ₆₇	15.9	X	289.93477	71.77566	264.47501	15.69025	0.3097954	0.17772059	3.1331237	20	5 4.0	20.6
482117 2010 NQ ₇₇	16.3	X	235.69736	40.92621	31.02277	28.82478	0.3863908	0.17476096	3.1683983	20	7 6.4	22.4
482118 2010 NH ₉₈	15.8	X	291.40482	276.90991	77.55374	25.48380	0.3248659	0.18117735	3.0931438	20	5 28.8	20.2
482119 2010 OW ₂₁	16.2	X	200.88671	65.98174	24.84753	27.10666	0.0681035	0.17691250	3.1426574	20	7 29.4	21.5
482120 2010 OQ ₂₄	16.6	X	290.19756	213.65690	169.91796	16.11095	0.3716041	0.18288278	3.0738842	20	6 26.8	21.1
482121 2010 OZ ₄₂	16.4	X	250.68372	80.30671	310.12491	11.70852	0.1512580	0.17360502	3.1824471	20	6 20.8	21.2
482122 2010 OF ₈₀	16.6	X	253.40528	254.01564	183.57025	7.80829	0.2145064	0.18335789	3.0685720	20	8 11.9	21.2
482123 2010 OG ₁₁₀	16.0	X	259.43788	334.43267	54.19639	10.18491	0.0810538	0.17458118	3.1705731	20	7 8.0	20.6
482124 2010 OD ₁₂₄	16.0	X	279.78506	12.13093	34.58693	16.12589	0.1405383	0.18427994	3.0583277	20	8 27.1	20.4
482125 2010 PX ₂	15.5	X	296.05456	302.65848	55.98575	28.03295	0.1609446	0.17951378	3.1122241	20	7 3.6	20.0
482126 2010 PJ ₆₃	16.0	X	254.06400	72.14856	305.77971	13.75149	0.3222220	0.17892174	3.1190857	20	5 18.4	21.5
482127 2010 PR ₇₀	15.9	X	264.97423	356.85552	60.10939	13.20711	0.1835684	0.18068135	3.0988020	20	8 9.8	20.5
482128 2010 RY ₁	17.6	X	186.34886	72.33509	304.67684	17.68850	0.1879986	0.36295152	1.9446218	20	3 14.3	20.8
482129 2010 RC ₅	16.9	X	333.92103	217.50922	156.85077	9.55431	0.1428427	0.20045816	2.8914802	20	10 10.1	20.1
482130 2010 RN ₅₀	16.6	X	251.94301	64.96660	12.34093	12.25089	0.2201705	0.18528707	3.0472352	20	8 16.3	21.3
482131 2010 RS ₈₁	16.0	X	311.59198	317.47546	10.63615	13.86202	0.1411256	0.18060182	3.0997117	20	6 21.8	20.1
482132 2010 RF ₁₀₀	17.2	X	232.22915	112.67886	350.93323	9.24450	0.1750044	0.18840769	3.0134938	20	8 30.2	21.7
482133 2010 RG ₁₁₆	16.5	X	190.14419	325.76869	147.11603	5.08866	0.0802125	0.17980135	3.1089047	20	8 3.3	21.2
482134 2010 RB ₁₅₄	16.3	X	333.06632	320.39517	338.17062	8.02312	0.0581187	0.17672425	3.1448888	20	6 25.1	20.5
482135 2010 RU ₁₅₅	15.8	X	200.91968	22.07138	38.24774	10.43968	0.0500024	0.17012586	3.2256890	20	6 10.7	20.6
482136 2010 RB ₁₇₂	16.6	X	209.87151	268.02625	184.97032	14.22537	0.2156463	0.17686048	3.1432735	20	7 19.6	22.1
482137 2010 RT ₁₇₄	16.5	X	265.56731	200.36783	190.36746	13.81471	0.0644053	0.18130146	3.0917320	20	7 18.0	21.1
482138 2010 RL ₁₇₆	16.6	X	280.61198	152.13504	199.13503	9.65576	0.1161461	0.17614442	3.1517865	20	6 11.6	21.1
482139 2010 RP ₁₈₂	16.4	X	267.72840	336.84103	44.47645	11.26739	0.1088422	0.17896249	3.1186122	20	7 5.2	20.9
482140 2010 RC ₁₈₃	16.5	X	290.73498	83.42304	321.08769	8.65219	0.1273062	0.18917140	3.0053777	20	9 1.2	20.3
482141 2010 RR ₁₈₃	16.5	X	214.24896	239.42883	210.01271	15.72814	0.1791469	0.17749148	3.1358194	20	7 19.9	21.9
482142 2010 SE ₁₃	15.8	X	300.51043	86.59730	265.22075	8.94733	0.1087961	0.18269886	3.0759469	20	7 10.4	19.7
482143 2010 SE ₂₀	16.6	X	273.94472	199.83768	199.09135	12.71873	0.1155596	0.18499570	3.0504340	20	7 31.4	21.0
482144 2010 SJ ₂₆	16.3	X	263.27901	218.75262	132.09372	3.57510	0.2302373	0.17365010	3.1818964	20	5 7.6	21.2
482145 2010 TP ₈	16.4	X	164.73164	139.84873	358.97570	8.77668	0.0769887	0.18377528	3.0639240	20	8 12.0	21.1
482146 2010 TD ₉	17.0	X	263.44112	160.97004	200.09061	3.09693	0.1116462	0.17460031	3.1703414	20	6 3.3	21.5
482147 2010 TD ₁₀	17.1	X	285.06898	13.39380	349.52379	2.22688	0.1204670	0.18130945	3.0916412	20	7 2.2	21.2
482148 2010 TA ₁₃	16.9	X	194.16454	234.70268	209.24624	14.16178	0.1262791	0.17238021	3.1975041	20	6 29.2	22.2
482149 2010 TF ₁₄	16.6	X	183.08548	236.89093	214.29567	9.77750	0.0602481	0.17356829	3.1828960	20	6 29.1	21.5
482150 2010 TL ₂₃	17.0	X	276.36472	320.81819	34.45989	1.78653	0.2097381	0.17631609	3.1497403	20	5 28.3	21.6
482151 2010 TP ₃₀	16.9	X	237.88033	89.07155	326.01402	1.21894	0.0581943	0.17935396	3.1140726	20	7 18.3	21.4
482152 2010 TT ₃₂	16.9	X	202.04716	53.33564	27.52517	7.04610	0.1347088	0.17199717	3.2022497	20	7 5.0	22.1
482153 2010 TB ₃₄	16.7	X	268.97513	187.31103	191.85839	10.75361	0.0748917	0.17690534				

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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>
482161 2010 TG ₈₆	16.2	X	276.19422	176.18535	171.02784	9.60494	0.0833450	0.17434252	3.1734660	20	6 6.4	20.8
482162 2010 TN ₉₂	16.4	X	295.46802	95.62900	231.33915	8.63284	0.2407703	0.17796005	3.1303125	20	5 11.9	20.4
482163 2010 TC ₁₀₀	16.7	X	223.57608	225.31485	186.90311	15.77448	0.0875166	0.17410673	3.1763305	20	6 23.9	21.8
482164 2010 TD ₁₀₁	16.4	X	198.79719	104.80539	15.82298	11.76179	0.1748629	0.18228793	3.0805678	20	8 22.1	21.5
482165 2010 TL ₁₂₀	17.3	X	267.12933	116.18010	249.44744	3.99305	0.1797101	0.17829959	3.1263372	20	6 3.9	21.8
482166 2010 TP ₁₂₁	16.7	X	288.52064	306.96419	30.84217	8.17928	0.1808552	0.17751442	3.1355492	20	5 24.2	21.0
482167 2010 TQ ₁₅₂	16.2	X	124.48513	141.61573	32.73860	8.74320	0.0804753	0.18186696	3.0853197	20	8 13.8	20.9
482168 2010 TS ₁₅₃	16.8	X	272.09771	170.28389	210.59918	16.80796	0.1711901	0.18103477	3.0947677	20	6 28.3	21.5
482169 2010 TU ₁₅₉	17.1	X	242.71768	247.85436	144.59611	2.11163	0.2479922	0.17310107	3.1886208	20	6 4.9	22.3
482170 2010 TH ₁₇₂	16.6	X	245.18593	221.17145	200.61995	9.31411	0.0504699	0.18003043	3.1062669	20	8 2.9	21.2
482171 2010 TU ₁₇₂	16.0	X	250.34472	188.42212	212.81404	14.73378	0.1139822	0.17589155	3.1548065	20	7 5.5	20.9
482172 2010 TU ₁₇₆	15.5	X	198.16280	238.52416	237.10402	14.55546	0.1449347	0.17703361	3.1412240	20	8 6.1	20.8
482173 2010 TG ₁₇₈	16.2	X	299.00716	144.17077	183.48130	13.05413	0.0210642	0.17440895	3.1726601	20	6 19.1	20.9
482174 2010 TH ₁₈₃	16.7	X	336.82740	110.84711	209.57314	8.68947	0.1057144	0.18843823	3.0131682	20	7 25.4	20.5
482175 2010 TC ₁₈₆	15.8	X	204.30043	24.53478	71.15064	17.14299	0.0389460	0.17719865	3.1392732	20	8 4.4	20.6
482176 2010 TQ ₁₈₉	16.2	X	240.17411	41.96098	357.91183	15.36706	0.1281907	0.17401002	3.1775072	20	6 23.6	21.3
482177 2010 UA ₈	17.1	X	64.33480	80.69214	81.72388	24.24867	0.0613574	0.36175072	1.9507268	20	5 13.2	19.2
482178 2010 UV ₁₀	17.1	X	220.82540	208.10001	232.12830	4.23509	0.2338372	0.17351030	3.1836052	20	7 13.7	22.4
482179 2010 UN ₃₀	16.2	X	346.74406	311.44080	31.95258	13.75931	0.1892888	0.18922050	3.0048578	20	9 23.3	19.4
482180 2010 UT ₃₁	16.4	X	272.78604	327.26397	47.36930	9.97229	0.1351362	0.17651587	3.1473633	20	6 28.4	21.0
482181 2010 UQ ₃₂	16.1	X	300.10039	348.71956	10.61627	10.59516	0.1114671	0.17914257	3.1165219	20	7 23.6	20.3
482182 2010 UJ ₃₆	15.8	X	215.98503	41.96924	51.04827	27.51742	0.1849663	0.17054136	3.2204476	20	8 6.4	21.5
482183 2010 UY ₃₇	16.6	X	222.53411	140.73056	339.64316	9.23862	0.0614837	0.19113001	2.9848107	20	9 19.4	20.8
482184 2010 UN ₄₄	15.7	X	201.89274	197.96701	259.45173	8.99126	0.0346704	0.17584966	3.1553076	20	7 28.4	20.4
482185 2010 UN ₅₁	15.6	X	183.93443	92.00013	50.33195	19.42861	0.0656572	0.17837916	3.1254075	20	9 14.3	20.6
482186 2010 UC ₅₇	16.3	X	335.33521	59.66941	255.34358	8.60427	0.0394595	0.17599033	3.1536259	20	7 18.6	20.7
482187 2010 UW ₆₂	15.6	X	297.03983	124.33072	252.65997	14.42489	0.1016950	0.17750151	3.1357013	20	8 3.3	20.0
482188 2010 UD ₆₃	15.7	X	276.18144	124.73977	255.02264	8.21751	0.0843863	0.17462052	3.1700969	20	7 15.4	20.1
482189 2010 UL ₇₅	16.0	X	280.38701	255.37990	122.42161	8.17240	0.2532499	0.17870458	3.1216121	20	6 24.9	20.4
482190 2010 US ₇₅	16.1	X	154.97106	258.15598	262.48368	9.64898	0.0415658	0.17760074	3.1345332	20	8 20.1	20.8
482191 2010 UR ₈₆	16.9	X	237.21160	230.61315	168.74707	4.43065	0.1749255	0.17085746	3.2164743	20	6 14.8	22.0
482192 2010 UL ₉₀	15.7	X	212.52756	227.83327	226.34494	19.50468	0.1294733	0.17352156	3.1834674	20	7 24.9	21.1
482193 2010 UO ₁₀₁	17.5	X	244.46392	24.83408	26.44171	0.92390	0.1695535	0.17556063	3.1587698	20	7 7.4	22.3
482194 2010 VN ₄₀	16.5	X	329.09098	62.24683	250.43730	7.93443	0.0758185	0.17568722	3.1572522	20	7 5.1	20.6
482195 2010 UV ₅₉	16.3	X	163.45159	150.69411	357.56724	11.92016	0.1217791	0.17652250	3.1472845	20	8 22.6	21.3
482196 2010 VL ₆₄	17.1	X	224.13175	348.06060	130.33638	4.79039	0.1001506	0.18394690	3.0620180	20	9 16.8	21.7
482197 2010 VG ₇₁	16.2	X	173.88489	347.84599	101.09138	8.49364	0.1447466	0.16004051	3.3598206	20	6 17.7	21.7
482198 2010 VO ₉₁	16.2	X	209.57379	24.27325	61.23223	8.04789	0.1305377	0.16670194	3.2697079	20	7 18.5	21.4
482199 2010 VX ₉₃	16.1	X	278.34851	142.46618	226.25941	15.27205	0.0838001	0.17201775	3.2019943	20	7 2.9	20.8
482200 2010 VA ₁₀₃	16.4	X	286.93167	78.69597	319.13764	8.84311	0.0829486	0.18346325	3.0673970	20	8 24.0	20.5
482201 2010 VV ₁₁₅	16.2	X	350.76297	308.56465	27.83969	12.82913	0.1224167	0.18514640	3.0487785	20	9 17.3	19.9
482202 2010 VW ₁₁₈	16.0	X	230.31097	185.16628	265.94972	8.82633	0.0820326	0.17688822	3.1429449	20	8 16.8	20.8
482203 2010 VV ₁₆₀	16.1	X	255.77513	17.84205	42.22877	11.82177	0.0539520	0.17829825	3.1263529	20	8 21.9	20.7
482204 2010 VU ₁₇₀	16.1	X	262.26760	324.78669	57.78890	10.24404	0.0435489	0.16769493	3.2567876	20	7 8.9	20.8
482205 2010 VF ₁₇₃	15.8	X	158.38035	115.70164	70.85541	17.05280	0.1074212	0.17939798	3.1135632	20	10 8.7	21.0
482206 2010 VR ₁₇₅	16.1	X	257.52563	130.88698	267.52156	15.43518	0.2259431	0.17595675	3.1540271	20	6 27.9	21.0
482207 2010 VU ₁₈₀	16.6	X	230.86598	250.09308	236.21245	7.63455	0.0601281	0.18767467	3.0213355	20	10 5.9	21.1
482208 2010 VQ ₁₉₉	16.3	X	231.83588	43.81803	58.12249	28.23812	0.2990180	0.17857010	3.1231791	20	8 27.2	22.0
482209 2010 VB ₂₁₃	16.0	X	309.39781	34.49656	288.05232	11.65495	0.0961211	0.17439558	3.1728222	20	6 17.5	20.2
482210 2010 VW ₂₁₄	16.6	X	224.52952	45.14559	14.69742	10.63327	0.1219102	0.17198473	3.2024040	20	7 2.8	21.7
482211 2010 VA ₂₁₅	16.0	X	61.24713	336.57503	258.39767	9.76176	0.0295694	0.17829714	3.1263658	20	7 30.9	20.4
482212 2010 WM ₁₁	16.2	X	193.04433	101.56710	26.58645	16.30186	0.2143015	0.17369537	3.1813435	20	8 26.8	21.8
482213 2010 WP ₁₁	16.2	X	338.65885	349.38279	320.02880	8.99765	0.0373420	0.17088226	3.2161631	20	7 18.9	20.6
482214 2010 WG ₃₁	16.2	X	196.71228	114.26560	69.58185	13.75929	0.2802087	0.18495225	3.0509117	20	10 27.7	21.7
482215 2010 WY ₄₀	16.8	X	228.50826	190.99979	265.11307	9.27292	0.1819317	0.17635040	3.1493318	20	8 10.7	21.8
482216 2010 WX ₄₄	16.4	X	215.42400	201.39560	277.61592	8.72321	0.0953597	0.17911907	3.1167944	20	9 2.0	21.2
482217 2010 WO ₅₂	15.9	X	271.49965	5.04073	64.26149	16.84005	0.1044233	0.18238068	3.0795233	20	9 20.4	20.4
482218 2010 WM ₇₄	15.4	X	187.76741	10.41659	101.89660	28.28018	0.1387499	0.16900294	3.2399617	20	7 29.2	20.8
482219 2010 XS ₁	15.9	X	35.61587	8.67728	263.93320	8.70728	0.0654934	0.17905635	3.1175222	20	8 18.1	20.3
482220 2010 XC ₂₁	15.5	X	213.96227	43.60155	72.95629	26.25604	0.2323644	0.17362106	3.1822511	20	9 1.8	21.3
482221 2010 XF ₂₁	15.5	X	331.44644	263.98229	65.04507	29.26033	0.0195472	0.17548405	3.1596886	20	8 11.9	20.4
482222 2010 XW ₂₇	16.8	X	291.75140	92.49928	294.10399	2.63000	0.1544624	0.17830815	3.1262372	20	8 6.0	20.9
482223 2010 XJ ₃₀	16.0	X	216.67027	23.95740	74.26621	17.91093	0.1723600	0.17462325	3.1700638	20	8 10.8	21.3
482224 2010 XF ₆₆	16.3	X	148.93954	100.91480	114.99747	12.01710	0.0724242	0.17646614	3.1479546	20	10 29.8	21.3
482225 2010 XS ₇₄	16.4	X	282.48107	356.26003	36.03567	11.07413	0.0886944	0.17584088	3.1554126	20	8 15.3	20.8
482226 2011 AP ₂₁	15.3	X	218.39538	289.10813	106.09896	11.03763	0.1066885	0.14705830	3.5547552	20	5 29.4	20.9
482227 2011 AB ₄₇	17.9	X	269.18799	258.60894	289.67734	3.40682	0.0763264	0.30339362	2.1934703	20	—	—
482228 2011 BH ₁₀	17.9	X	250.12537	81.01475	323.86284	12.45775	0.3723916	0.49484078	1.5830418	20	6 20.5	19.7
482229 2011 BG ₂₃	17.8	X	35.03821	268.49650	270.58497	16.75255	0.0734797	0.35035374	1.9928053	20	3 27.2	20.1
482230 2011 BW ₇₉	16.6	X	204.51607	54.35689	122.66030	7.04361	0.0811766	0.17855915	3.1233068	20	11 7.7	21.3
482231 2011 BZ ₉₁	17.4	X	175.36085	335.48841	286.20838	5.87170	0.1694853	0.29542081	2.2327597	20	—	—
482232 2011 CO ₂₅	17.9	X	359.38338	159.24438	315.62314	6.65858	0.0842183	0.31137761	2.1558132	20	—	—
482233 2011 CR ₅₀	15.4	X	216.76107	176.99023	347.18111							

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>
482241 2011 <i>FV</i> ₉₉	17.8	X	142.02200	52.74898	219.11641	4.78789	0.0778441	0.27942095	2.3171994	20	—	—
482242 2011 <i>GH</i> ₇₂	17.9	X	162.46800	171.31468	75.02334	8.44861	0.1376829	0.27454995	2.3445264	20	12 29.6	21.3
482243 2011 <i>GO</i> ₇₄	17.5	X	58.34730	270.94793	61.92489	6.63498	0.1382589	0.26448729	2.4036221	20	—	—
482244 2011 <i>HR</i>	19.8	X	189.73743	294.81470	98.40391	16.20604	0.0518601	0.65357814	1.3150362	20	4 6.2	20.5
482245 2011 <i>HN</i> ₂₉	17.4	X	146.42715	145.63654	86.19732	4.89654	0.1243252	0.26455924	2.4031863	20	11 25.1	21.1
482246 2011 <i>HB</i> ₆₆	18.0	X	318.47275	111.38650	35.49560	4.42809	0.0982950	0.29795983	2.2200576	20	—	—
482247 2011 <i>HZ</i> ₉₂	18.0	X	217.52536	192.87730	28.23718	7.32016	0.0349006	0.28683918	2.2770736	20	—	—
482248 2011 <i>JS</i> ₂₅	17.8	X	225.44476	80.73279	108.35364	5.95891	0.0885601	0.27482781	2.3429459	20	—	—
482249 2011 <i>KT</i> ₂₁	13.7	X	271.91270	26.50691	291.04649	26.71399	0.0685598	0.08075209	5.3011108	20	4 19.9	21.1
482250 2011 <i>LL</i> ₂	19.9	X	172.98973	163.57996	68.25249	24.67634	0.0964013	0.81619049	1.1339877	20	—	—
482251 2011 <i>MW</i> ₄	16.9	X	31.84207	183.19012	115.43415	8.68802	0.1903602	0.23268605	2.6179167	20	10 22.0	20.2
482252 2011 <i>NO</i> ₃	16.1	X	357.46800	53.24262	297.97773	23.86178	0.3851859	0.22571631	2.6715343	20	12 3.1	19.0
482253 2011 <i>OA</i> ₁₁	17.6	X	331.94446	99.65932	285.63759	11.52323	0.2686300	0.22942744	2.6426469	20	10 25.1	19.8
482254 2011 <i>OK</i> ₂₂	17.1	X	333.71137	75.68915	267.80003	6.36325	0.1845162	0.22275338	2.6951722	20	8 22.9	19.7
482255 2011 <i>OD</i> ₄₁	16.9	X	25.64943	219.91570	123.28215	13.43609	0.1131119	0.24071762	2.5593565	20	11 30.3	20.3
482256 2011 <i>PC</i> ₁	16.3	X	22.90122	238.62349	107.85326	28.77160	0.2613436	0.23296260	2.6158445	20	12 21.3	19.8
482257 2011 <i>PM</i> ₁	16.7	X	10.76837	11.28816	301.17350	11.18299	0.1945362	0.22978519	2.6399033	20	9 24.6	19.7
482258 2011 <i>PV</i> ₉	17.0	X	7.84830	197.30553	138.02783	15.15402	0.2629165	0.23017763	2.6369019	20	11 15.3	20.1
482259 2011 <i>QO</i> ₂₆	16.9	X	0.30812	151.98955	174.25397	9.88793	0.3248346	0.22328833	2.6908658	20	10 22.6	19.1
482260 2011 <i>QV</i> ₂₇	16.7	X	18.79111	88.28135	229.48926	10.77588	0.0954048	0.22581861	2.6707274	20	10 4.8	20.1
482261 2011 <i>QP</i> ₃₂	17.3	X	340.93575	231.46023	97.70500	1.57457	0.0757683	0.21412133	2.7671292	20	8 20.6	20.4
482262 2011 <i>QJ</i> ₄₅	16.7	X	16.79391	19.71342	318.11087	11.04524	0.0980258	0.23082167	2.6319946	20	10 27.8	20.3
482263 2011 <i>QR</i> ₅₄	17.3	X	284.69011	129.93711	258.64317	6.60987	0.2285129	0.20993924	2.8037566	20	7 19.0	21.0
482264 2011 <i>QW</i> ₇₃	17.4	X	52.32459	37.03658	238.42174	3.25276	0.1432170	0.22557038	2.6726864	20	10 5.0	21.0
482265 2011 <i>QQ</i> ₈₉	17.6	X	336.18653	115.58676	203.35056	3.40169	0.2088790	0.21368690	2.7708783	20	7 20.7	20.0
482266 2011 <i>QK</i> ₉₉	14.2	X	281.77545	104.07164	199.30006	16.55695	0.1470489	0.08238243	5.2309390	20	4 14.6	21.1
482267 2011 <i>RC</i> ₃	17.0	X	150.49804	254.58022	305.90676	11.74721	0.1175039	0.23256042	2.6188594	20	10 9.3	21.3
482268 2011 <i>RG</i> ₄	16.8	X	339.73650	192.25258	165.66992	9.42178	0.1965538	0.21886009	2.7270410	20	10 3.0	19.2
482269 2011 <i>RM</i> ₁₆	16.1	X	10.00388	3.13366	350.09659	15.41764	0.2654392	0.22906825	2.6454088	20	12 5.1	19.5
482270 2011 <i>RR</i> ₁₇	18.1	X	299.27781	231.38883	185.54168	9.46171	0.1250028	0.22315915	2.6919012	20	10 11.3	21.0
482271 2011 <i>RR</i> ₁₉	17.4	X	304.16211	93.88897	290.70281	16.54639	0.2933627	0.21459558	2.7630508	20	8 2.5	20.3
482272 2011 <i>SX</i> ₆	17.7	X	326.19880	162.90806	201.57991	4.68220	0.1259280	0.21845258	2.7304313	20	9 11.7	20.6
482273 2011 <i>SX</i> ₁₉	15.8	X	248.43762	51.55569	284.57702	17.80616	0.1332194	0.18510066	3.0492807	20	4 4.7	20.9
482274 2011 <i>SU</i> ₆₃	16.4	X	24.10358	302.87116	44.51470	18.04314	0.2458354	0.22779301	2.6552727	20	12 14.6	20.0
482275 2011 <i>SU</i> ₁₀₃	16.8	X	300.80330	245.04730	214.34795	12.23861	0.2280969	0.22580863	2.6708061	20	12 4.6	19.2
482276 2011 <i>SY</i> ₁₁₇	16.7	X	320.66562	12.08485	10.09960	9.82463	0.1876667	0.21760951	2.7374791	20	9 25.4	19.3
482277 2011 <i>SJ</i> ₁₂₁	16.9	X	346.32218	18.51472	15.04611	13.17428	0.1615837	0.22731829	2.6589681	20	12 2.3	20.0
482278 2011 <i>SS</i> ₁₂₂	17.1	X	311.87116	9.87628	65.60932	3.28377	0.1821873	0.22446602	2.6816049	20	11 25.9	19.7
482279 2011 <i>SO</i> ₁₃₅	17.4	X	45.40674	130.67025	186.70927	11.42236	0.1823368	0.23052132	2.6342803	20	11 28.5	21.2
482280 2011 <i>SX</i> ₁₄₆	17.3	X	113.92853	230.37891	13.52944	4.65517	0.0825909	0.22751148	2.6574627	20	10 29.4	21.1
482281 2011 <i>SC</i> ₂₁₃	17.0	X	267.10944	62.05931	10.82926	7.51509	0.2087529	0.20965163	2.8063202	20	8 30.3	20.7
482282 2011 <i>SJ</i> ₂₁₅	17.2	X	276.37142	117.69084	7.31524	11.75165	0.0211324	0.23680292	2.5874860	20	12 19.1	20.8
482283 2011 <i>SH</i> ₂₂₇	17.1	X	261.26643	180.69581	257.31549	5.20858	0.0941082	0.21215914	2.7841644	20	9 10.7	20.9
482284 2011 <i>SF</i> ₂₃₁	16.9	X	83.35899	317.92974	357.78291	12.82443	0.1731401	0.24033253	2.5620898	20	—	—
482285 2011 <i>SM</i> ₂₄₅	17.1	X	339.82406	356.95447	346.98417	4.31135	0.1677334	0.21155856	2.7894311	20	9 7.8	20.0
482286 2011 <i>SU</i> ₂₅₆	17.3	X	343.11797	176.77896	168.80279	4.54987	0.0821197	0.21035204	2.8008873	20	9 15.0	20.6
482287 2011 <i>SL</i> ₂₆₈	17.2	X	322.02186	12.05286	10.22592	6.53963	0.0623045	0.21869129	2.7284441	20	10 3.3	20.5
482288 2011 <i>TL</i> ₁	17.7	X	81.65240	209.02504	125.76274	3.57364	0.1612622	0.24389197	2.5371008	20	—	—
482289 2011 <i>TU</i> ₂	16.8	X	57.97542	58.87091	279.49554	12.32226	0.2096473	0.23720107	2.5845898	20	—	—
482290 2011 <i>TQ</i> ₇	17.3	X	291.09450	97.26784	337.71012	1.87707	0.1708120	0.21683940	2.7439567	20	10 13.3	20.3
482291 2011 <i>TT</i> ₈	18.3	X	225.29541	42.80807	355.46923	7.04518	0.2034949	0.30271768	2.1967343	20	5 29.2	21.8
482292 2011 <i>TV</i> ₁₁	16.5	X	313.74029	30.21217	29.14862	13.53727	0.1646130	0.22301047	2.6931004	20	11 4.5	19.3
482293 2011 <i>TO</i> ₁₃	16.8	X	291.47454	250.16027	154.57434	9.84503	0.2150975	0.21312405	2.7757546	20	8 25.3	20.0
482294 2011 <i>TH</i> ₁₅	16.6	X	281.89380	244.71905	165.37140	9.58731	0.2264090	0.20999018	2.8033031	20	8 13.7	20.2
482295 2011 <i>TS</i> ₁₅	16.6	X	314.99691	34.52812	21.24518	13.86469	0.2572588	0.22271196	2.6955063	20	10 26.9	18.8
482296 2011 <i>UM</i> ₁	16.2	X	212.98572	137.04423	259.16316	4.28496	0.1851784	0.18247594	3.0784515	20	5 18.4	21.3
482297 2011 <i>UJ</i> ₆	16.9	X	240.58059	94.06709	46.94272	9.84098	0.0848821	0.21859672	2.7292310	20	11 9.6	20.4
482298 2011 <i>UG</i> ₅₃	16.6	X	293.46090	317.27498	3.99529	2.66073	0.2149321	0.18825493	3.0151238	20	5 4.8	20.6
482299 2011 <i>UH</i> ₆₈	16.9	X	266.55205	296.10452	7.96894	15.52058	0.2001226	0.18177493	3.0863610	20	3 19.4	21.7
482300 2011 <i>UC</i> ₈₀	17.6	X	321.48492	124.57069	274.67007	2.25926	0.2004794	0.21678424	2.7444221	20	10 19.8	20.0
482301 2011 <i>UR</i> ₈₅	16.9	X	283.09221	307.48829	110.38863	5.52006	0.0607648	0.21191203	2.7863284	20	9 25.1	20.5
482302 2011 <i>UR</i> ₈₇	16.9	X	229.84014	239.53712	234.13596	14.06406	0.1061032	0.20288081	2.8684156	20	9 11.6	21.4
482303 2011 <i>UJ</i> ₉₂	17.4	X	293.89787	50.38957	343.27835	3.84849	0.0721389	0.20877862	2.8141379	20	9 3.6	20.9
482304 2011 <i>UF</i> ₉₅	17.0	X	7.32878	274.76139	36.94925	4.84917	0.0646309	0.20910905	2.8111725	20	9 7.9	20.6
482305 2011 <i>UC</i> ₉₇	17.4	X	306.11687	55.45312	336.98521	3.40309	0.0807389	0.21335979	2.7737097	20	9 19.5	20.6
482306 2011 <i>UL</i> ₁₂₆	15.8	X	354.79598	260.64189	9.34037	10.37392	0.0577572	0.18658329	3.0331057	20	6 18.8	19.9
482307 2011 <i>UT</i> ₁₂₈	17.4	X	3.11644	115.34557	251.59902	11.46377	0.2803204	0.22225862	2.6991704	20	12 15.2	20.2
482308 2011 <i>UA</i> ₁₃₃	17.0	X	222.69188	334.88052	233.39946	11.04634	0.1124843	0.23726630	2.5841160	20	—	—
482309 2011 <i>UF</i> ₁₄₆	16.4	X	140.39114	240.98742	250.95909	9.21055	0.0662589	0.17989401	3.1078371	20	7 3.3	21.0
482310 2011 <i>UR</i> ₁₆₁	17.2	X	18.16994	146.04268	268.23532	4.95037	0.1382546	0.23567601	2.5957277	20	—	—
482311 2011 <i>UV</i> ₁₈₀	17.1	X	143.20281	167.60398	20.29580	4.39793	0.0844732	0.20429265	2.8551848	20	9 19.7	21.3

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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>		
482321	2011	UE ₂₄₄	17.2	X	4.75035	309.27832	50.80874	6.02619	0.0404275	0.21507386	2.7589530	20	11 4.3	20.8
482322	2011	UC ₂₄₉	17.4	X	299.99095	10.22219	65.84111	2.79115	0.0547968	0.21669898	2.7451420	20	11 11.4	20.8
482323	2011	UJ ₂₅₁	17.1	X	335.91291	309.98849	78.31787	8.88602	0.1669840	0.21566700	2.7538921	20	11 7.3	19.9
482324	2011	UT ₂₆₂	17.5	X	292.85530	36.02182	356.84383	3.48521	0.1129855	0.20199125	2.8768310	20	8 26.2	21.1
482325	2011	UA ₂₆₃	16.8	X	41.94365	270.85661	57.17387	17.62445	0.1470734	0.21948696	2.7218461	20	11 27.7	20.4
482326	2011	UU ₂₇₃	17.9	X	27.26802	71.24112	295.45998	7.58393	0.1795493	0.23779150	2.5803097	20	—	—
482327	2011	UG ₂₈₄	17.1	X	306.11368	58.69119	28.10587	2.65933	0.1451240	0.22017679	2.7161579	20	11 30.3	19.9
482328	2011	UH ₂₉₇	17.1	X	262.99485	206.28674	177.80214	2.97276	0.0423109	0.19328854	2.9625475	20	7 12.2	21.1
482329	2011	UM ₃₀₆	17.5	X	320.48688	163.77411	239.89468	12.55241	0.2288917	0.21763221	2.7372887	20	10 21.7	19.9
482330	2011	UC ₃₁₄	17.0	X	250.23957	248.30603	149.75878	3.15193	0.1222806	0.19261589	2.9694406	20	7 3.2	21.3
482331	2011	UX ₃₂₇	16.2	X	301.94635	10.24910	57.69153	13.90346	0.0560679	0.21487229	2.7606781	20	11 5.0	19.7
482332	2011	UX ₃₂₉	16.7	X	291.24644	191.20605	246.80910	7.46847	0.0871530	0.21500581	2.7595351	20	10 26.7	20.2
482333	2011	UL ₃₃₅	16.4	X	295.08605	25.96922	20.27033	13.27177	0.1604211	0.21190961	2.7863497	20	9 16.2	19.7
482334	2011	UE ₃₄₃	17.0	X	262.82471	64.80520	48.16435	9.12547	0.1314961	0.21585501	2.7522928	20	10 27.9	20.6
482335	2011	UC ₃₅₁	17.0	X	284.66220	13.62944	80.66727	5.19836	0.0893907	0.21748642	2.7385118	20	11 10.5	20.3
482336	2011	UT ₃₅₃	16.3	X	242.88125	118.61421	34.41666	17.11666	0.0501393	0.22458839	2.6804714	20	11 30.7	20.1
482337	2011	UR ₃₉₀	17.9	X	289.41532	206.36156	232.85495	10.01462	0.2919595	0.21045099	2.7992095	20	9 8.8	21.2
482338	2011	UO ₃₉₁	16.5	X	285.90753	323.25321	97.37979	14.71987	0.1756451	0.21004869	2.8027825	20	9 21.3	20.2
482339	2011	UF ₄₀₂	18.6	X	92.45733	254.99012	233.45214	20.77636	0.0740850	0.39495454	1.8398030	20	4 23.0	20.1
482340	2011	VC ₁₀	17.5	X	311.16842	332.73703	44.90562	3.68868	0.1149578	0.20860038	2.8157406	20	9 5.9	20.8
482341	2011	VP ₁₆	17.1	X	51.96963	96.45247	252.46110	10.91875	0.0904558	0.22816328	2.6523992	20	12 30.3	20.8
482342	2011	WX ₂₁	16.8	X	268.19511	313.69134	58.46110	16.02063	0.2049599	0.19296363	2.9658720	20	6 8.5	21.3
482343	2011	VT ₂₂	16.9	X	303.14563	134.07037	207.65643	0.82571	0.1607209	0.19169429	2.9789504	20	6 24.6	20.5
482344	2011	WL ₁₅	19.7	X	311.46153	170.68765	72.92919	18.38853	0.2819070	0.62694847	1.3520149	20	—	—
482345	2011	WH ₁₇	16.4	X	239.20834	156.16780	243.24171	16.23068	0.1312405	0.18491447	3.0513273	20	6 20.3	21.1
482346	2011	WX ₁₇	17.2	X	289.36794	268.49127	214.90465	11.76858	0.2201034	0.22915775	2.6447199	20	12 15.9	19.9
482347	2011	WU ₂₂	17.3	X	247.39407	357.00899	80.15469	3.23884	0.0658518	0.19832689	2.9121583	20	8 29.4	21.3
482348	2011	WH ₄₄	16.5	X	191.48159	278.85895	260.33433	11.81730	0.0740240	0.21580970	2.7526780	20	10 28.7	20.6
482349	2011	WE ₅₈	16.4	X	275.23996	287.80755	81.24224	11.57694	0.1176266	0.18930036	3.0040126	20	6 27.3	20.6
482350	2011	WN ₆₀	17.3	X	191.06054	5.64117	112.59175	3.12168	0.1380349	0.18988944	2.9977967	20	8 9.9	21.9
482351	2011	WW ₇₀	16.4	X	288.85894	170.48614	269.48709	7.08782	0.0343672	0.21245120	2.7816122	20	10 30.2	20.1
482352	2011	WS ₇₆	17.1	X	48.55394	263.96818	54.86988	15.56515	0.1446912	0.21927819	2.7235734	20	11 24.1	20.9
482353	2011	WH ₇₉	17.3	X	261.86822	78.77892	328.27457	1.06135	0.0796994	0.19627092	2.9324599	20	8 5.1	21.3
482354	2011	WE ₈₇	17.2	X	310.09272	126.52455	236.74336	11.11133	0.0745195	0.19831514	2.9122734	20	8 11.0	21.1
482355	2011	WS ₉₈	16.2	X	66.21409	150.85835	64.17972	28.34536	0.0585114	0.18490182	3.0514664	20	7 21.3	20.9
482356	2011	WU ₁₀₅	16.0	X	206.54976	5.49248	57.76029	18.82984	0.1969230	0.18072568	3.0982953	20	6 12.2	21.3
482357	2011	WF ₁₁₈	17.8	X	246.86709	348.96402	106.65642	4.05342	0.2882524	0.20307064	2.8666276	20	8 23.3	22.2
482358	2011	WS ₁₁₈	16.3	X	207.72161	145.49478	271.02578	11.34511	0.1203476	0.17841630	3.1249736	20	6 10.9	21.1
482359	2011	WQ ₁₁₉	16.7	X	328.92999	267.59479	81.28681	13.21168	0.2860844	0.21043817	2.7993232	20	8 18.8	19.1
482360	2011	WH ₁₃₀	16.4	X	339.48717	295.22930	53.03697	17.80633	0.1593221	0.21023601	2.8011174	20	9 24.8	19.7
482361	2011	WF ₁₅₀	17.0	X	290.79704	163.62565	307.99774	12.28416	0.1373964	0.22526618	2.6750920	20	12 9.3	20.1
482362	2011	WH ₁₅₂	18.0	X	302.37025	70.50594	326.14330	7.30538	0.2137591	0.20905449	2.8116616	20	9 1.2	20.9
482363	2011	XP ₁	16.7	X	296.62055	252.84894	124.63453	9.50530	0.1605459	0.19666319	2.9285592	20	8 2.9	20.2
482364	2011	YZ ₁₀	16.4	X	244.35389	149.28613	276.06020	10.40435	0.1209446	0.18647637	3.0342651	20	7 29.0	21.0
482365	2011	YN ₁₂	16.2	X	215.90840	343.26138	113.26850	13.01242	0.1571186	0.18470104	3.0536774	20	8 6.2	21.1
482366	2011	YP ₁₃	16.4	X	203.43618	14.86122	103.77987	14.95957	0.1056920	0.18587980	3.0407537	20	8 28.1	21.2
482367	2011	YL ₁₄	16.0	X	165.60228	239.12790	305.96558	11.54094	0.0837127	0.18593228	3.0401816	20	9 30.1	20.9
482368	2011	YB ₁₇	15.9	X	141.36687	57.14080	118.43134	17.90692	0.1852679	0.17598809	3.1536527	20	9 6.7	21.3
482369	2011	YO ₂₀	15.9	X	159.23506	24.42107	118.44359	13.86092	0.1011695	0.17690238	3.1427772	20	8 9.3	20.8
482370	2011	YL ₂₄	15.9	X	103.65705	96.08639	105.73054	17.85349	0.0746190	0.17725098	3.1386553	20	8 23.8	20.7
482371	2011	YH ₃₅	16.0	X	130.38532	219.90739	303.65723	15.23954	0.0636780	0.17324285	3.1868810	20	7 31.4	20.6
482372	2011	YB ₄₄	16.3	X	189.88757	98.40312	50.55586	11.24675	0.2468724	0.18516030	3.0486259	20	9 14.6	21.7
482373	2011	YC ₄₇	16.5	X	256.31167	328.36014	87.68990	9.96805	0.0724714	0.18254605	3.0776632	20	8 12.0	20.9
482374	2011	YJ ₅₃	17.6	X	349.43267	309.62197	285.03349	22.46495	0.0364719	0.38796690	1.8618282	20	3 26.4	20.1
482375	2011	YJ ₆₀	15.8	X	275.13073	103.41698	290.02920	15.80724	0.1204075	0.18205561	3.0831880	20	7 26.4	20.1
482376	2011	YC ₆₆	16.2	X	244.27319	307.82838	94.22701	12.05668	0.1675539	0.17812552	3.1283737	20	6 25.9	21.0
482377	2011	YF ₆₉	16.0	X	181.34370	353.38259	121.25076	11.86605	0.1701634	0.17572875	3.1567547	20	7 25.4	21.2
482378	2011	YS ₇₅	17.9	X	129.43470	270.39213	128.08084	23.10454	0.1219539	0.36927027	1.9241540	20	2 11.7	19.7
482379	2011	YC ₇₆	17.7	X	85.59885	318.67032	133.65551	24.61881	0.0427848	0.36712059	1.9316579	20	2 11.2	19.2
482380	2011	YS ₇₇	15.8	X	185.01265	346.12278	107.10738	28.70256	0.1204075	0.16965990	3.2315924	20	7 3.9	20.9
482381	2012	AN ₃	16.4	X	123.65939	250.06108	291.65680	4.53235	0.1137898	0.17711292	3.1402861	20	8 19.2	21.2
482382	2012	AQ ₃	15.6	X	241.68857	309.86157	107.52777	17.42648	0.0445574	0.17980617	3.1088492	20	7 28.2	20.1
482383	2012	AZ ₃	16.0	X	146.50332	29.84394	109.91458	11.13733	0.0961249	0.17263357	3.1943749	20	7 22.2	20.8
482384	2012	AT ₇	15.7	X	247.97616	160.23719	275.39500	10.70007	0.0956794	0.18134847	3.0911977	20	8 16.3	20.3
482385	2012	AT ₈	16.8	X	233.12829	343.64799	106.89565	3.27422	0.1993126	0.18766169	3.0214747	20	8 11.6	21.4
482386	2012	AP ₁₃	15.8	X	97.75878	264.49140	295.74350	14.82805	0.0759782	0.17301432	3.1896866	20	8 7.8	20.6
482387	2012	AD ₁₄	15.9	X	275.75061	75.84038	312.11545	20.53769	0.1462209	0.17853601	3.1235766	20	7 20.7	20.2
482388	2012	AW ₁₆	17.9	X	3.12684	276.77338	310.53642	19.80656	0.0219666	0.38718955	1.8643193	20	4 11.4	20.2
482389	2012	AT ₁₈	17.8	X	78.76596	329.19883	130.15351	24.56523	0.0598476					

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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>		
482401	2012	BO ₂₈	18.3	X	122.49852	131.84920	281.99511	18.81856	0.1441854	0.37562919	1.9023766	20	2 15.9	20.6
482402	2012	BR ₃₁	16.1	X	192.17997	136.20072	322.29773	16.25486	0.1861922	0.17570669	3.1570189	20	7 17.8	21.5
482403	2012	BD ₃₂	16.4	X	231.78774	10.79860	90.47399	11.64489	0.0612191	0.18930704	3.0039420	20	9 13.9	20.9
482404	2012	BO ₃₇	16.6	X	146.42875	173.76232	342.33711	4.16514	0.1442157	0.17139529	3.2097420	20	8 13.5	21.7
482405	2012	BY ₄₆	16.5	X	269.82722	94.02330	308.63714	12.96973	0.1284037	0.18430895	3.0580067	20	8 1.3	20.6
482406	2012	BD ₆₀	16.5	X	246.27491	291.60424	106.83213	10.38166	0.1971253	0.17802044	3.1296046	20	6 20.6	21.3
482407	2012	BS ₆₈	15.4	X	43.39787	317.84329	312.58422	26.36390	0.1828898	0.17361872	3.1822797	20	9 3.0	19.9
482408	2012	BZ ₆₉	16.5	X	257.78417	121.54718	117.19012	17.80553	0.1173819	0.18930697	3.0039427	20	8 29.7	20.8
482409	2012	BO ₇₃	15.7	X	141.04979	25.06714	142.61893	16.65729	0.0414816	0.17690318	3.1427678	20	8 17.4	20.3
482410	2012	BY ₇₃	16.5	X	213.38694	165.52625	296.05577	8.44040	0.1217959	0.18151645	3.0892903	20	8 9.9	21.2
482411	2012	BL ₇₄	16.1	X	156.24713	348.04912	147.11220	13.21734	0.1264228	0.17175015	3.2053193	20	7 26.3	21.3
482412	2012	BJ ₇₇	17.8	X	321.61649	120.07278	109.19373	23.87876	0.0297815	0.37114477	1.9176698	20	2 25.6	20.0
482413	2012	BL ₈₂	16.6	X	214.62696	304.51463	116.69582	7.62081	0.1094188	0.16976301	3.2302837	20	6 24.4	21.6
482414	2012	BK ₉₃	17.1	X	199.48099	95.54157	51.22041	3.41314	0.1332121	0.18816176	3.0161190	20	9 23.1	21.8
482415	2012	BB ₉₄	16.6	X	212.97687	127.52496	326.81191	11.09282	0.0953634	0.17654833	3.1469775	20	8 5.3	21.4
482416	2012	BA ₁₀₆	16.1	X	169.18179	209.88278	293.43095	16.13975	0.1813883	0.17555784	3.1588031	20	8 13.7	21.5
482417	2012	BH ₁₀₉	16.5	X	261.07200	273.48776	121.45658	9.68914	0.0776043	0.17379201	3.1801639	20	7 17.8	21.0
482418	2012	BN ₁₂₁	16.1	X	236.12212	153.14949	291.79934	8.51885	0.0851951	0.18201645	3.0836301	20	8 17.2	20.7
482419	2012	BB ₁₂₆	15.7	X	160.38164	1.23795	149.69448	19.32373	0.1400026	0.17423911	3.1747215	20	8 19.3	20.7
482420	2012	BK ₁₃₂	16.3	X	220.85775	24.21229	76.68017	17.70499	0.3008421	0.18400602	3.0613621	20	8 8.0	21.8
482421	2012	BP ₁₃₃	15.3	X	187.46264	209.98941	263.14169	21.36613	0.1107620	0.17497868	3.1657695	20	7 24.1	20.5
482422	2012	BT ₁₃₆	16.7	X	159.13056	16.34055	113.61691	2.29534	0.1334848	0.17171832	3.2057154	20	7 23.7	21.8
482423	2012	BN ₁₃₇	16.7	X	173.91821	70.52249	42.93397	1.99125	0.1054225	0.16812180	3.2512724	20	7 17.8	21.8
482424	2012	CS ₅	16.1	X	123.75171	213.55960	0.92617	15.38549	0.0370435	0.18343672	3.0676928	20	9 24.7	20.6
482425	2012	CB ₈	16.6	X	252.18774	132.76218	308.44283	8.98649	0.2097504	0.18926713	3.0043642	20	8 16.7	21.1
482426	2012	CG ₉	16.0	X	84.31297	302.41684	318.52375	24.71303	0.1541144	0.18038766	3.1021646	20	10 4.8	21.2
482427	2012	CZ ₁₆	16.6	X	239.30667	320.29308	143.45068	11.43611	0.0920140	0.18636684	3.0354538	20	9 18.2	21.0
482428	2012	CT ₁₈	15.3	X	207.94128	295.47905	166.87362	28.40592	0.0645575	0.17485876	3.1672168	20	8 9.2	20.2
482429	2012	CK ₂₉	15.9	X	137.68890	239.07094	311.05344	24.89768	0.1726059	0.17522977	3.1627446	20	9 4.7	21.4
482430	2012	CV ₃₂	16.6	X	229.58927	119.81249	306.08140	12.07639	0.2331713	0.17593172	3.1543263	20	7 5.9	21.8
482431	2012	CH ₃₇	15.6	X	197.06546	128.42854	277.67345	8.38222	0.0659621	0.15622797	3.4142621	20	5 19.5	20.9
482432	2012	CN ₄₁	16.6	X	234.71998	269.42331	135.71705	8.75493	0.2286091	0.17302767	3.1895225	20	6 15.3	21.9
482433	2012	CV ₅₁	16.4	X	180.54757	187.06258	329.66251	10.15234	0.1610792	0.17957578	3.1115076	20	9 11.5	21.5
482434	2012	CD ₅₃	16.3	X	192.31047	135.80253	354.28703	15.73082	0.2531593	0.18192797	3.0846299	20	8 23.9	21.7
482435	2012	CS ₅₄	16.1	X	188.64325	180.62045	344.92029	13.20778	0.1519567	0.18607409	3.0386367	20	9 29.1	21.0
482436	2012	CC ₅₆	16.5	X	259.35048	160.29649	303.35457	12.53653	0.0956412	0.19455227	2.9497045	20	10 4.1	20.8
482437	2012	DC ₄	16.7	X	187.56531	105.45666	74.06665	6.87697	0.2358463	0.18524170	3.0477327	20	10 16.6	22.0
482438	2012	DK ₅	16.1	X	205.78695	309.52009	149.31338	14.79222	0.1773210	0.17413984	3.1759278	20	7 26.6	21.4
482439	2012	DM ₈	17.9	X	140.28547	61.48651	338.64194	17.91895	0.1193620	0.37168614	1.9158072	20	2 27.8	19.8
482440	2012	DS ₁₂	15.6	X	157.23867	213.03026	349.81114	16.50929	0.1726808	0.17771054	3.1332419	20	10 11.9	21.0
482441	2012	DZ ₁₄	15.6	X	171.61958	77.67608	84.76799	17.82150	0.2100476	0.17807486	3.1289670	20	9 20.8	21.2
482442	2012	DS ₂₆	15.7	X	135.85297	125.64979	91.60373	16.27550	0.1273731	0.17902979	3.1178306	20	10 22.9	20.9
482443	2012	DG ₂₈	17.9	X	155.42752	74.02000	3.05032	20.78429	0.0901814	0.38374478	1.8754597	20	4 29.5	20.4
482444	2012	DV ₂₉	16.3	X	212.84503	53.55680	44.75674	17.27197	0.2840017	0.17884860	3.1199360	20	7 31.9	22.0
482445	2012	DG ₃₆	18.2	X	189.17363	64.28907	309.79695	18.33451	0.0792768	0.37496635	1.9046179	20	3 8.4	20.8
482446	2012	DH ₃₈	16.3	X	182.00578	86.96712	114.34844	16.98559	0.2460151	0.18460547	3.0547313	20	11 9.4	21.9
482447	2012	DD ₃₉	17.8	X	161.09552	107.81297	318.24005	19.94300	0.0975827	0.38354086	1.8761244	20	4 17.8	20.6
482448	2012	DR ₅₅	16.2	X	187.35162	180.39423	340.41661	17.10220	0.1520409	0.18022357	3.1040473	20	9 20.9	21.3
482449	2012	DV ₅₈	17.6	X	270.54876	305.41544	156.86667	9.31539	0.2941381	0.19670609	2.9281333	20	9 26.5	21.5
482450	2012	DR ₆₁	15.8	X	135.52102	260.15026	297.00341	17.83068	0.1352478	0.17400680	3.1775464	20	9 11.3	21.2
482451	2012	DY ₆₂	16.2	X	238.86630	126.03760	326.57922	8.47093	0.0569633	0.18344358	3.0676164	20	9 4.1	20.6
482452	2012	DF ₇₉	15.9	X	175.49785	75.21864	105.64310	26.57013	0.2510812	0.18014701	3.1049267	20	10 18.1	21.8
482453	2012	ES ₈	16.5	X	98.77574	263.43876	340.56640	19.38263	0.0748258	0.17594816	3.1541298	20	9 28.3	21.3
482454	2012	EY ₉	17.7	X	330.99628	225.94069	30.90397	22.72922	0.0766162	0.37533621	1.9033664	20	4 15.4	18.9
482455	2012	FZ ₁	16.6	X	233.57672	277.05258	196.47311	8.78338	0.0614355	0.18429794	3.0581285	20	9 23.9	21.0
482456	2012	FL ₃	16.8	X	228.25835	165.45203	311.47079	8.23094	0.1351951	0.18346979	3.0673242	20	9 10.8	21.5
482457	2012	FH ₄₄	15.6	X	148.16487	233.74054	29.16339	20.61433	0.1309269	0.18403147	3.0610799	20	12 15.9	20.9
482458	2012	FA ₇₂	16.5	X	238.11820	39.91234	110.64543	12.17176	0.0664235	0.18732298	3.0251158	20	11 18.5	20.9
482459	2012	FK ₇₂	15.1	X	175.39683	151.47329	42.66231	28.40428	0.1393176	0.17853162	3.1236278	20	10 27.7	20.2
482460	2012	GD ₁₂	17.7	X	120.49446	7.62146	101.46011	24.12404	0.0844432	0.37725789	1.8968974	20	5 21.5	20.2
482461	2012	GP ₂₉	16.9	X	208.37363	330.27976	193.93309	3.78355	0.2225129	0.18387835	3.0627790	20	10 13.6	21.9
482462	2012	HB ₅₇	18.0	X	39.33532	311.48481	198.58409	21.48528	0.0698163	0.35894330	1.9608851	20	2 18.9	20.2
482463	2012	JL	17.7	X	116.64190	15.73037	85.26790	24.38917	0.0632133	0.36789172	1.9289577	20	5 3.3	20.3
482464	2012	JL ₆₂	17.4	X	49.72276	290.25389	252.82594	18.87127	0.0957384	0.37234652	1.9135414	20	5 15.5	18.8
482465	2012	KH ₄₇	13.8	X	224.88240	93.84154	254.29028	7.32187	0.0950970	0.08303769	5.2033838	20	4 9.8	21.1
482466	2012	KM ₄₈	17.7	X	128.12693	269.95041	52.85243	6.96223	0.1349227	0.31095113	2.1577839	20	—	—
482467	2012	LK ₉	17.9	X	314.32171	314.48767	61.89665	10.13476	0.6196009	0.24751629	2.5122731	20	6 7.8	20.6
482468	2012	OG ₃	17.1	X	112.09004	164.81450	129.25759	23.87296	0.2161630	0.28571118	2.2830630	20	—	—
482469	2012	OM ₃	17.8	X	105.89349	5.67765	297.51897	3.44696	0.2327303	0.28742776	2.2739639	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>
482481 2012 RU ₂₂	17.8	X	16.80354	152.31342	182.24050	3.11900	0.2196300	0.25571460	2.4582858	20	11 23.9	20.6
482482 2012 RY ₂₃	17.2	X	310.52603	33.71995	35.70467	15.04982	0.0712720	0.25451326	2.4660153	20	11 24.2	20.1
482483 2012 RC ₃₂	17.6	X	102.24074	323.73822	15.43796	8.37716	0.1894981	0.28907925	2.2652950	20	—	—
482484 2012 RU ₄₀	17.6	X	34.54820	334.04419	33.27767	6.31126	0.2207342	0.27115638	2.3640473	20	—	—
482485 2012 RC ₄₃	17.7	X	43.21308	222.46332	128.97305	7.48254	0.1340207	0.26995826	2.3710369	20	—	—
482486 2012 SP ₉	17.6	X	40.35412	239.08536	124.98703	2.14404	0.1894574	0.27055520	2.3675480	20	—	—
482487 2012 SY ₁₂	17.5	X	341.70147	61.77243	18.50464	6.59586	0.1219995	0.27143130	2.3624508	20	—	—
482488 2012 SW ₂₀	19.7	X	15.18185	62.30767	209.64323	10.17081	0.6793827	0.25564537	2.4587296	20	11 11.9	23.1
482489 2012 SF ₂₆	18.3	X	9.11544	46.20518	345.10008	3.20566	0.1335801	0.26588734	2.3951770	20	—	—
482490 2012 SW ₂₇	18.1	X	346.29298	49.66992	1.66171	3.14212	0.1870441	0.26240953	2.4162933	20	—	—
482491 2012 SW ₃₈	18.2	X	358.84465	70.31574	333.07153	2.37469	0.1694898	0.26670939	2.3902529	20	—	—
482492 2012 SX ₅₄	17.9	X	41.37520	197.32719	194.35106	6.41953	0.1179609	0.27257599	2.3558320	20	—	—
482493 2012 SD ₅₆	18.0	X	13.58794	105.88977	324.78001	3.81464	0.2523931	0.27425789	2.3461906	20	—	—
482494 2012 SJ ₆₆	17.4	X	34.52303	198.49108	150.53248	5.76182	0.2439335	0.26427996	2.4048790	20	—	—
482495 2012 TM ₁	18.1	X	70.64760	26.78451	3.94718	3.72949	0.1422663	0.28898840	2.2657698	20	—	—
482496 2012 TV ₂	18.2	X	41.07608	19.07330	324.76481	0.48412	0.1974715	0.26332673	2.4106792	20	—	—
482497 2012 TN ₆	17.9	X	17.47079	310.08952	66.23051	2.38251	0.2042885	0.26446914	2.4037320	20	—	—
482498 2012 TO ₁₂	18.0	X	35.26031	347.42898	42.27548	4.78028	0.1797176	0.27094795	2.3652595	20	—	—
482499 2012 TR ₁₂	17.9	X	342.88591	40.01383	37.40849	2.96075	0.1642808	0.26479256	2.4017743	20	—	—
482500 2012 TQ ₂₁	18.0	X	39.44698	332.48411	7.56896	1.62994	0.1944287	0.26210288	2.4181776	20	12 27.7	21.2
482501 2012 TQ ₂₅	18.1	X	358.27520	269.28729	158.62150	1.27304	0.1635190	0.27056262	2.3675047	20	—	—
482502 2012 TX ₃₃	18.0	X	36.06907	336.99229	8.32944	5.69263	0.2175174	0.26336270	2.4104597	20	—	—
482503 2012 TA ₃₅	18.2	X	357.17819	74.76757	292.00307	4.44195	0.1741031	0.25527291	2.4611206	20	11 27.7	20.6
482504 2012 TW ₆₈	18.0	X	340.03845	345.41780	58.27425	2.91421	0.1712333	0.25387735	2.4701316	20	12 19.1	20.2
482505 2012 TQ ₇₈	19.5	X	167.33677	118.95518	51.94847	11.38299	0.3835673	0.74873576	1.2011124	20	—	—
482506 2012 TE ₈₆	17.5	X	120.41486	261.13373	17.73192	5.88058	0.0398063	0.26485767	2.4013807	20	12 26.9	20.9
482507 2012 TE ₁₀₄	18.4	X	313.29868	221.61629	263.20371	2.71176	0.1484183	0.27312968	2.3526471	20	—	—
482508 2012 TM ₁₀₄	17.5	X	279.63920	289.93969	209.49900	8.37288	0.1707209	0.26534334	2.3984495	20	—	—
482509 2012 TT ₁₁₅	17.4	X	80.56372	322.01533	331.57499	6.95294	0.1087079	0.25946653	2.4345301	20	12 2.2	21.0
482510 2012 TP ₁₃₁	17.9	X	14.85477	238.21880	138.13319	2.04190	0.2236808	0.26195529	2.4190858	20	—	—
482511 2012 TH ₁₃₄	17.7	X	134.22968	292.94324	340.11607	2.59562	0.1617058	0.28043445	2.3116131	20	—	—
482512 2012 TO ₁₃₄	18.5	X	54.90821	87.81486	235.09428	0.46558	0.1976045	0.26324567	2.4111740	20	12 23.2	22.0
482513 2012 TV ₁₄₈	17.2	X	10.61810	276.11884	46.27820	15.08279	0.1315743	0.24080727	2.5587213	20	10 14.5	20.1
482514 2012 TH ₁₅₄	14.2	X	287.44719	118.60140	190.60067	23.94235	0.0950863	0.08276538	5.2147911	20	5 5.8	21.2
482515 2012 TE ₁₅₅	18.0	X	76.68080	168.36038	133.26426	2.09400	0.1938724	0.26632106	2.3925758	20	12 18.2	21.6
482516 2012 TC ₁₅₉	17.9	X	43.38498	279.30784	50.39761	2.48093	0.1937705	0.26184859	2.4197429	20	12 18.6	21.1
482517 2012 TC ₁₆₂	17.7	X	66.33041	275.20325	34.49624	2.46005	0.1711246	0.26236712	2.4165537	20	12 15.2	21.3
482518 2012 TX ₁₆₅	18.4	X	353.06250	24.13417	60.80312	5.31948	0.1596915	0.27212601	2.3584283	20	—	—
482519 2012 TB ₁₆₇	16.5	X	268.35784	232.64511	180.68165	12.00765	0.1621136	0.23133318	2.6281134	20	8 10.1	20.0
482520 2012 TR ₁₈₉	18.3	X	61.98604	276.61652	42.09499	2.01925	0.1918357	0.26886589	2.3774547	20	12 25.6	21.9
482521 2012 TU ₁₉₆	16.5	X	357.85857	310.46460	28.21755	13.98891	0.1420699	0.23778118	2.5803843	20	10 12.5	19.1
482522 2012 TR ₂₀₆	17.8	X	335.05735	219.13720	268.55601	5.29737	0.1918159	0.27644963	2.3337735	20	—	—
482523 2012 TK ₂₁₉	17.5	X	47.70740	286.17389	45.80035	16.39928	0.2203423	0.26256659	2.4153296	20	12 28.9	21.3
482524 2012 TE ₂₂₄	18.1	X	22.49565	341.10485	32.61868	3.81896	0.1373080	0.26521150	2.3992444	20	—	—
482525 2012 TT ₂₂₆	17.6	X	31.76270	352.16950	43.78348	7.67527	0.1289692	0.27406704	2.3472797	20	—	—
482526 2012 TF ₂₆₇	18.0	X	43.49297	254.05969	61.48742	3.74615	0.1787394	0.25488087	2.4636436	20	11 27.1	21.0
482527 2012 TE ₂₈₈	17.8	X	151.44808	331.01409	331.46923	10.52173	0.0822508	0.28644543	2.2791598	20	—	—
482528 2012 TF ₃₀₁	17.6	X	1.76118	274.80192	138.75013	7.38973	0.1042523	0.26961325	2.3730591	20	—	—
482529 2012 TK ₃₁₀	16.7	X	15.37837	82.72090	280.29133	13.22341	0.1354614	0.25816399	2.4427120	20	12 17.3	19.5
482530 2012 TG ₃₁₄	17.3	X	22.67223	301.24077	81.40081	3.88726	0.2149648	0.26362117	2.4088839	20	—	—
482531 2012 TB ₃₂₂	17.6	X	349.68308	61.85126	11.44797	5.61085	0.0985552	0.26359907	2.4090185	20	—	—
482532 2012 UQ	18.3	X	3.37976	359.14562	33.99379	1.28708	0.2434572	0.26194645	2.4191402	20	—	—
482533 2012 UA ₃₄	19.7	X	116.54016	222.36906	19.02441	19.79958	0.8016174	1.41456869	0.7859351	20	—	—
482534 2012 UL ₃₅	17.9	X	59.88114	21.10653	356.39719	0.97664	0.1970272	0.27568007	2.3381146	20	—	—
482535 2012 UR ₄₃	18.4	X	356.17867	296.82953	140.92795	2.61328	0.1472570	0.26589017	2.3951600	20	—	—
482536 2012 UQ ₄₅	18.4	X	26.94628	354.84160	61.55674	2.47964	0.1751442	0.27497576	2.3421054	20	—	—
482537 2012 UB ₅₂	17.6	X	299.31385	274.70018	175.47515	9.85553	0.1318157	0.25333753	2.4736393	20	12 6.5	20.3
482538 2012 UG ₅₅	17.5	X	37.35188	99.07846	238.78816	7.13441	0.1923698	0.25751647	2.4468051	20	12 20.8	20.8
482539 2012 UZ ₆₆	18.2	X	338.10628	3.07209	79.09610	3.40199	0.1921064	0.26073837	2.4266068	20	—	—
482540 2012 UA ₇₀	16.9	X	27.78214	135.71951	249.95104	9.38435	0.1991654	0.26466418	2.4025509	20	—	—
482541 2012 UR ₇₆	17.4	X	11.15692	335.90579	60.89716	3.64887	0.1693275	0.26311472	2.4119740	20	—	—
482542 2012 UF ₈₄	17.5	X	326.83121	286.87539	108.67269	5.95050	0.1534748	0.24581870	2.5238261	20	11 8.5	19.9
482543 2012 UU ₁₀₇	18.5	X	347.37418	58.33410	25.67505	1.71725	0.1642850	0.26712661	2.3877633	20	—	—
482544 2012 UZ ₁₃₀	18.1	X	342.62971	1.49269	69.71894	3.33398	0.2075910	0.26428254	2.4048633	20	—	—
482545 2012 UV ₁₃₁	17.3	X	55.85510	63.63042	296.10554	4.38387	0.2374551	0.26890090	2.3772483	20	—	—
482546 2012 UY ₁₃₂	16.8	X	52.99508	301.59386	74.72231	13.85764	0.2538983	0.27249389	2.3563052	20	—	—
482547 2012 UP ₁₃₃	17.6	X	350.38119	19.25214	51.10896	5.35167	0.1354481	0.26572414	2.3961576	20	—	—
482548 2012 UF ₁₄₁	17.9	X	339.93093	340.62066	74.12896	2.35574	0.2249673	0.25713029	2.4492544	20	—	—
482549 2012 UK ₁₆₈	18.0	X	25.40776	166.37451	232.49113	4.99711	0.2091375	0.26851263	2.3795394	20	—	—
482550 2012 UV ₁₇₁	18.2	X	16.00287	63.01318	324.07359	3.64239	0.2169864	0.26206508	2.4184101	20	—	—
482551 2012 VH ₉	17.8	X	60.81248	42.60031	265.11671	2.32304	0.2331022	0.26231118	2.4168972	20	12 13.7	21.5
482552 2012 VV ₁₀	17.1	X	58.74990	68.38061	274.29889	10.97677	0.2235765	0.26626913	2.3928869	20	—	—
482553 2012 VE ₂₅	17.8	X	61.55938	211.07411	112.20642	3.29758	0.2360437	0.26532753	2.3985448	20	—	—
482554 2012 VW ₃₆	18.7	X	259.25008	219.28401	257.45668	20.70502	0.0351773	0.50906952	1.5533408	20	—	—
482555 2012 VP ₄₃	16.9	X	293.57599	137.74797	250.40107	11.04777	0.3209374	0.23125195	2.6287288	20	7 16.5	20.1
482556												

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>
482561 2012 VZ ₇₉	18.4	X	7.00526	221.70927	188.59705	2.29018	0.1810757	0.26407925	2.4060973	20	—	—
482562 2012 VN ₈₂	20.0	X	243.66698	331.20387	228.63880	9.71177	0.5065913	0.51031528	1.5508757	20	—	—
482563 2012 VR ₈₄	17.7	X	345.37732	131.73784	279.16244	1.86261	0.1690160	0.25522816	2.4614083	20	—	—
482564 2012 VE ₉₀	18.1	X	31.10975	195.14403	203.23557	2.10919	0.1820488	0.26784319	2.3835027	20	—	—
482565 2012 VN ₉₈	18.1	X	13.27384	356.01696	52.06240	3.38062	0.1861953	0.26683914	2.3894780	20	—	—
482566 2012 WK ₄	21.5	X	312.75245	161.88964	151.02274	4.29046	0.3075138	0.74509865	1.2050180	20	3 26.1*	20.5
482567 2012 WH ₆	17.7	X	322.03587	313.86737	72.97076	1.84980	0.1185142	0.23791839	2.5793922	20	10 13.2	20.3
482568 2012 WL ₇	17.6	X	332.31139	218.30334	242.85827	5.67567	0.0602246	0.26602217	2.3943676	20	—	—
482569 2012 WO ₇	17.9	X	330.86972	135.33155	243.72797	5.87959	0.1701894	0.24117987	2.5560853	20	10 17.4	20.4
482570 2012 WP ₁₆	17.6	X	313.60782	118.08493	303.62503	3.02490	0.2646424	0.24440455	2.5335522	20	11 12.6	19.2
482571 2012 WT ₁₆	17.0	X	225.42904	59.19227	92.78099	13.51317	0.1292507	0.23483389	2.6019296	20	11 7.1	20.8
482572 2012 WW ₂₃	16.9	X	280.02659	325.50270	85.99450	7.70501	0.1865607	0.22869120	2.6483156	20	8 26.7	20.2
482573 2012 WL ₂₄	17.1	X	20.60904	354.76877	50.41309	7.17547	0.1613433	0.26535550	2.3983763	20	—	—
482574 2012 WE ₂₇	17.7	X	302.07602	30.88205	6.98673	2.37993	0.1360477	0.23250993	2.6192385	20	9 19.1	20.3
482575 2012 WY ₃₂	16.2	X	358.34531	67.90942	280.55937	10.43238	0.3693855	0.24296924	2.5435201	20	12 3.8	18.5
482576 2012 XO ₂₈	18.0	X	278.20082	125.18805	308.00244	1.67743	0.1232952	0.23430175	2.6058677	20	9 29.9	21.0
482577 2012 XV ₃₆	17.3	X	295.01990	187.01573	247.80697	4.64110	0.1936909	0.24022688	2.5628409	20	10 23.1	19.7
482578 2012 XP ₃₈	18.2	X	286.50083	294.60666	163.25801	1.24935	0.1565944	0.24281070	2.5446272	20	11 16.6	20.9
482579 2012 XR ₄₀	17.5	X	269.59761	222.59044	258.84683	9.40284	0.1537207	0.24247778	2.5469559	20	11 19.6	20.3
482580 2012 XH ₄₃	16.4	X	28.78503	226.06102	76.22414	15.45427	0.1505372	0.22881319	2.6473743	20	10 19.0	19.9
482581 2012 XO ₄₃	17.3	X	227.06477	250.94792	261.25930	12.47326	0.1088971	0.23809976	2.5780821	20	11 5.4	21.1
482582 2012 XA ₄₆	16.3	X	300.18308	88.16458	346.64155	10.30013	0.1080185	0.24247644	2.5469652	20	11 8.1	19.3
482583 2012 XM ₄₈	18.0	X	313.55343	103.52396	307.80074	3.62952	0.2433101	0.24149527	2.5538593	20	10 24.7	19.9
482584 2012 XA ₅₃	17.0	X	218.50230	35.54204	102.05366	13.93441	0.1627202	0.22113496	2.7083062	20	10 8.1	21.4
482585 2012 XC ₅₃	17.2	X	261.25007	22.03810	97.60832	14.87914	0.1847892	0.23301758	2.6154329	20	11 4.4	20.7
482586 2012 XH ₅₇	18.0	X	282.63559	43.39282	88.95618	3.43746	0.1386517	0.25528444	2.4610465	20	—	—
482587 2012 XE ₈₄	17.4	X	234.58423	203.38904	281.23177	4.89005	0.2355977	0.22387481	2.6861642	20	9 20.6	21.5
482588 2012 XP ₈₈	16.9	X	287.91652	167.77806	239.41245	9.28926	0.0251900	0.23033017	2.6357376	20	9 17.8	20.6
482589 2012 XX ₉₃	17.9	X	311.62154	130.59414	318.17461	2.92559	0.1383510	0.25397844	2.4694760	20	12 27.1	20.1
482590 2012 XP ₉₄	16.7	X	347.35463	272.46356	86.70271	11.20746	0.1406573	0.23620912	2.5918207	20	10 25.9	19.6
482591 2012 XL ₁₀₅	16.3	X	167.91453	271.00300	290.88051	27.55097	0.1284422	0.22263407	2.6961350	20	10 21.8	21.2
482592 2012 XE ₁₀₆	16.3	X	333.20556	292.12645	98.02148	16.06881	0.1791067	0.23376842	2.6098296	20	11 14.8	19.0
482593 2012 XJ ₁₀₉	17.6	X	246.20972	221.36839	277.80569	3.03475	0.1511703	0.23909515	2.5709219	20	11 8.2	20.8
482594 2012 XJ ₁₁₇	16.7	X	279.15902	22.86256	89.17933	32.36650	0.2085143	0.23844809	2.5755707	20	11 25.4	19.8
482595 2012 XH ₁₁₉	16.6	X	204.77677	223.21458	296.87795	11.09590	0.1998305	0.22327686	2.6909579	20	10 5.9	21.2
482596 2012 XZ ₁₁₉	17.5	X	280.09760	12.06583	67.30434	7.91456	0.1441550	0.22733547	2.6588341	20	10 11.8	20.7
482597 2012 XB ₁₃₀	18.1	X	300.41279	114.58574	315.53483	3.43728	0.2459256	0.24116092	2.5562192	20	10 20.5	20.1
482598 2012 XN ₁₃₅	16.7	X	266.92352	355.35418	81.23039	15.37315	0.1304004	0.23126722	2.6286130	20	9 26.4	20.4
482599 2012 XN ₁₄₅	16.7	X	232.71463	212.02291	287.01268	16.38699	0.0902091	0.22860075	2.6490142	20	10 22.5	20.7
482600 2012 XV ₁₄₅	17.2	X	223.40683	347.34585	190.65426	4.59491	0.2008835	0.24205359	2.5499306	20	11 25.2	20.9
482601 2012 XO ₁₅₂	17.0	X	249.82988	197.18833	289.68231	12.31814	0.1923137	0.23119593	2.6291534	20	10 14.4	20.9
482602 2012 YL ₄	16.9	X	322.69272	270.11798	103.19538	10.38995	0.1328005	0.22318745	2.6916765	20	9 25.9	20.0
482603 2012 YQ ₄	17.3	X	308.60046	107.58070	302.48177	3.60010	0.1656455	0.23209850	2.6223329	20	10 13.9	19.9
482604 2013 AL ₃	16.0	X	240.93585	40.36716	111.98301	33.05104	0.1998835	0.23031967	2.6358176	20	11 24.0	20.3
482605 2013 AT ₃	17.4	X	327.88421	78.43105	354.44928	7.19078	0.1782445	0.24222536	2.5487250	20	—	—
482606 2013 AQ ₅	16.9	X	351.39119	94.81833	270.03665	12.28283	0.2255062	0.24227792	2.5483564	20	11 15.9	19.4
482607 2013 AJ ₉	16.6	X	194.84446	109.66011	65.70437	5.71555	0.0932916	0.22073526	2.7115747	20	10 30.9	20.5
482608 2013 AB ₁₂	16.8	X	248.60850	208.83657	290.52650	12.42818	0.2045838	0.23224237	2.6212498	20	10 28.9	20.5
482609 2013 AE ₁₃	17.4	X	242.21437	22.23988	120.73225	5.06037	0.1664152	0.23138092	2.6277518	20	11 6.9	21.0
482610 2013 AW ₁₈	16.6	X	232.72810	256.28601	297.68113	27.11990	0.3522613	0.23480969	2.6021083	20	12 4.4	21.0
482611 2013 AT ₁₉	17.0	X	351.48563	61.93384	339.02578	6.14503	0.3186822	0.24385786	2.5373373	20	—	—
482612 2013 AB ₂₁	18.0	X	285.99300	100.10166	23.18372	3.42323	0.1660102	0.24125338	2.5555661	20	12 20.1	20.4
482613 2013 AY ₂₁	17.9	X	308.75505	145.60053	282.84112	2.66951	0.2008251	0.24210070	2.5495998	20	11 13.4	20.0
482614 2013 AB ₂₂	17.2	X	314.43175	318.57676	45.79585	8.70703	0.0610310	0.21303790	2.7765029	20	9 1.2	20.8
482615 2013 AB ₂₃	18.2	X	302.08011	149.90289	301.60928	3.08467	0.2415124	0.23787808	2.5796835	20	11 28.7	20.0
482616 2013 AM ₂₆	15.5	X	151.80682	315.86857	264.99306	31.20744	0.2234145	0.23144889	2.6272374	20	11 7.2	20.4
482617 2013 AK ₃₅	17.8	X	256.53473	66.87144	61.80530	3.74350	0.2708817	0.23202227	2.6229073	20	10 21.2	21.1
482618 2013 AQ ₃₅	16.8	X	344.20674	343.50852	338.92806	6.01867	0.0675909	0.20585277	2.8407405	20	8 15.8	20.3
482619 2013 AE ₃₆	16.6	X	221.68676	200.34069	326.07611	6.56712	0.2320286	0.22777027	2.6554493	20	10 30.2	20.7
482620 2013 AZ ₃₈	17.2	X	333.15316	276.37343	120.76180	8.17090	0.1900530	0.23422121	2.6064650	20	11 22.2	19.7
482621 2013 AJ ₄₃	17.7	X	328.12619	28.99833	19.90190	3.21463	0.3119460	0.23885292	2.5726597	20	12 7.3	18.9
482622 2013 AU ₄₈	16.9	X	327.89506	171.03067	224.96239	8.13284	0.1807511	0.24063823	2.5599194	20	11 7.9	18.8
482623 2013 AK ₅₃	17.0	X	220.11588	38.50426	118.95978	9.95946	0.1922889	0.22343355	2.6896997	20	10 28.6	21.2
482624 2013 AR ₅₃	17.0	X	278.06261	104.24060	326.05687	13.17934	0.1758350	0.22272928	2.6953666	20	9 11.9	20.4
482625 2013 AM ₅₆	16.8	X	346.17021	263.88939	91.25040	13.22884	0.1408467	0.22216142	2.6999577	20	10 16.5	20.0
482626 2013 AD ₅₇	16.7	X	357.80576	270.03600	110.24260	15.01457	0.1593933	0.23581353	2.5947184	20	12 11.9	19.7
482627 2013 AK ₆₁	17.0	X	330.27837	295.83692	79.82346	11.16296	0.0566292	0.22441519	2.6818504	20	10 14.3	20.5
482628 2013 AM ₆₉	17.3	X	323.88625	316.11273	119.46368	14.91889	0.1490256	0.23950673	2.5679757	20	12 26.9	20.0
482629 2013 AX ₆₉	16.9	X	276.05760	139.69585	293.18268	4.13991	0.0477547	0.21831150	2.7316075	20	10 2.7	20.5
482630 2013 AN ₇₃	15.6	X	95.26081	41.53423	87.31936	25.16297	0.1367798	0.17211156	3.2008306	20	5 23.9	20.4
482631 2013 AM ₇₅	16.8	X	316.01713	39.74446	48.56424	15.90856	0.1175600	0.24253105	2.5465829	20	12 28.9	19.7
482632 2013 AN ₇₉	17.6	X	329.92648	131.35782	298.24566	4.70504	0.2096799	0.24394453	2.5367363	20	—	—
482633 2013 AE ₈₀	17.9	X	320.08662	296.55485	147.81745	9.30817	0.2145047	0.24432207				

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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>
482641 2013 AR ₁₁₅	17.4	X	199.27280	72.80987	52.09891	3.22167	0.1511132	0.21113461	2.7931639	20	8 28.1	21.9
482642 2013 AV ₁₁₅	17.0	X	328.34566	218.47339	192.49640	7.09927	0.2122595	0.24032553	2.5621395	20	12 4.5	19.2
482643 2013 AB ₁₁₈	17.8	X	326.44730	336.76833	95.28489	8.70931	0.2688080	0.24435301	2.5339084	20	—	—
482644 2013 AO ₁₂₃	17.5	X	318.25621	155.41867	242.47878	10.70296	0.3246069	0.23427135	2.6060931	20	10 1.9	19.1
482645 2013 AZ ₁₂₅	16.5	X	228.41570	246.44273	272.94489	11.77178	0.2048726	0.22552034	2.6730817	20	10 30.9	20.6
482646 2013 AK ₁₂₆	17.2	X	6.81149	108.45800	319.09367	22.29451	0.2956325	0.25922346	2.4360518	20	—	—
482647 2013 AV ₁₂₉	17.3	X	232.14053	247.78075	302.55805	12.29059	0.1691532	0.23737053	2.5833595	20	12 24.7	20.8
482648 2013 BA ₄	17.1	X	223.33300	338.90545	149.46718	11.87142	0.1274774	0.22041976	2.7141616	20	10 1.4	21.1
482649 2013 BF ₁₃	17.7	X	293.36039	340.29251	79.87057	7.68965	0.2310797	0.23044197	2.6348850	20	9 25.9	20.5
482650 2013 BK ₁₈	19.5	X	177.61573	64.63016	137.73971	28.89448	0.4944366	0.47516522	1.6264459	20	11 28.1	22.6
482651 2013 BT ₃₉	18.0	X	303.85757	338.83735	131.90390	7.14778	0.1932908	0.24278461	2.5448095	20	—	—
482652 2013 BE ₄₀	17.2	X	265.62985	140.59066	300.97053	3.66506	0.0375706	0.21614980	2.7497897	20	10 1.3	20.9
482653 2013 BB ₄₉	17.1	X	86.43070	149.81466	99.60690	3.87568	0.0427981	0.21293708	2.7773793	20	10 1.2	20.9
482654 2013 BF ₅₂	16.6	X	152.42075	278.68337	342.47623	8.99421	0.2263212	0.23536672	2.5980012	20	12 27.7	21.1
482655 2013 BH ₅₆	17.2	X	252.75654	340.03816	126.27851	8.49714	0.0615878	0.22356636	2.6886344	20	10 20.2	20.9
482656 2013 BD ₅₇	17.1	X	41.72702	222.22695	117.11463	10.28071	0.1455311	0.23526382	2.5987587	20	12 17.0	20.6
482657 2013 BJ ₅₇	17.1	X	347.45338	235.75183	117.65704	7.44457	0.0298983	0.21718085	2.7410799	20	10 5.4	20.7
482658 2013 BK ₅₈	17.2	X	334.15245	238.76975	128.18924	12.40581	0.2046454	0.22391434	2.6858480	20	10 10.0	19.8
482659 2013 BV ₅₈	17.5	X	263.99562	197.66532	287.27840	2.69715	0.1319056	0.23374598	2.6099967	20	11 16.5	20.8
482660 2013 BM ₆₄	17.7	X	275.39192	61.52322	41.79583	2.55410	0.1443259	0.23115255	2.6294823	20	11 3.2	20.7
482661 2013 BT ₆₄	18.0	X	243.32872	215.38588	319.11274	12.75895	0.1796310	0.23739509	2.5831814	20	12 16.9	21.6
482662 2013 BT ₆₆	17.2	X	277.85158	128.36822	287.52394	7.37479	0.1026562	0.21712724	2.7415311	20	9 3.0	20.8
482663 2013 BJ ₇₃	16.7	X	269.29687	186.59388	283.81688	35.65098	0.2696569	0.22915086	2.6447729	20	9 18.8	21.1
482664 2013 BV ₇₈	16.8	X	293.19866	294.34983	134.36751	13.29388	0.1778186	0.22528813	2.6749182	20	10 16.2	19.9
482665 2013 BT ₈₀	17.1	X	303.06374	84.96476	77.04862	8.20078	0.2024783	0.256142396	2.4555379	20	—	—
482666 2013 CV ₅	17.6	X	244.52328	202.11398	257.23514	4.28821	0.1073707	0.21607055	2.7504621	20	9 15.9	21.5
482667 2013 CQ ₁₀	16.5	X	181.23520	113.51719	350.39984	9.50369	0.0636527	0.19037671	2.9926793	20	7 17.2	21.1
482668 2013 CW ₁₁	17.9	X	282.66232	108.25367	354.54741	5.24482	0.1465049	0.23046185	2.6347335	20	11 12.1	20.9
482669 2013 CQ ₁₆	16.2	X	231.61745	236.66764	323.78579	30.47192	0.2505651	0.23329355	2.6133700	20	12 30.6	20.3
482670 2013 CM ₁₉	17.0	X	192.60940	70.30747	111.52280	11.99101	0.1911926	0.22282511	2.6945938	20	11 1.8	21.5
482671 2013 CX ₂₂	17.0	X	342.54936	8.44992	30.23874	5.13126	0.3022461	0.24028847	2.5624030	20	12 31.6	19.0
482672 2013 CQ ₂₄	16.8	X	324.96653	57.66229	333.99837	30.31439	0.3213229	0.23558249	2.5964146	20	9 26.9	19.1
482673 2013 CQ ₂₇	17.4	X	219.02649	197.59469	295.22840	3.59092	0.0723490	0.21750636	2.7383444	20	10 3.3	21.3
482674 2013 CT ₄₈	17.6	X	332.06553	305.24197	118.30934	12.90067	0.1649367	0.23699742	2.5860701	20	12 25.6	20.3
482675 2013 CX ₅₀	17.5	X	262.84307	286.32694	156.07462	5.17749	0.1361301	0.21902201	2.7256968	20	9 16.9	21.1
482676 2013 CW ₅₂	17.7	X	263.18916	70.47954	58.55568	12.42841	0.2934223	0.22573824	2.6713613	20	10 28.1	21.0
482677 2013 CS ₅₄	17.1	X	294.26648	1.53290	127.21123	12.11332	0.1750946	0.24040565	2.5615702	20	—	—
482678 2013 CV ₆₃	17.0	X	246.93900	203.95664	254.25090	5.00282	0.0721373	0.21314107	2.7756069	20	9 22.0	20.9
482679 2013 CC ₆₅	17.4	X	210.73319	355.67418	204.01031	2.75819	0.1487354	0.22987843	2.6391894	20	12 11.6	21.2
482680 2013 CW ₆₅	16.3	X	8.60826	7.67667	321.45618	14.75621	0.1437659	0.20648675	2.8349230	20	9 30.8	19.9
482681 2013 CW ₆₆	17.2	X	228.12349	20.88018	160.58924	11.78995	0.0702423	0.23110480	2.6298445	20	12 20.8	20.9
482682 2013 CD ₆₇	17.2	X	302.97947	289.36755	159.90515	12.59494	0.1345759	0.23168652	2.6254407	20	12 5.2	20.3
482683 2013 CN ₆₇	17.9	X	336.12213	257.05871	166.92748	7.53874	0.2637008	0.24148782	2.5539118	20	—	—
482684 2013 CD ₆₈	17.6	X	269.04715	313.68420	159.35564	13.07417	0.1694939	0.22775451	2.6555719	20	11 5.7	21.0
482685 2013 CN ₆₈	17.9	X	326.37721	243.40693	195.85870	4.80493	0.2339264	0.24148218	2.5539516	20	—	—
482686 2013 CB ₇₁	17.6	X	293.50287	69.45093	64.36897	4.58092	0.1361892	0.24257344	2.5462862	20	—	—
482687 2013 CG ₇₁	17.4	X	282.60692	326.84827	137.44232	4.15387	0.1731271	0.23016522	2.6369967	20	11 13.8	20.3
482688 2013 CU ₇₇	17.6	X	282.88967	98.57328	23.95662	3.24375	0.1344541	0.23559916	2.5962921	20	12 14.5	20.5
482689 2013 CO ₇₉	16.1	X	156.61082	296.31614	312.69663	24.62054	0.1505628	0.22746329	2.6578380	20	12 20.5	20.7
482690 2013 CZ ₉₀	16.9	X	189.15525	94.68756	91.35685	4.58446	0.0566980	0.21771725	2.7365758	20	11 9.5	20.8
482691 2013 CX ₁₀₁	17.1	X	279.67024	341.95066	145.73038	14.68703	0.1774519	0.23349067	2.6118989	20	12 12.6	20.2
482692 2013 CP ₁₁₂	16.2	X	120.02021	282.24573	345.31168	12.77483	0.0858076	0.22252923	2.6991655	20	12 1.4	20.5
482693 2013 CJ ₁₁₄	16.8	X	194.18899	106.94070	60.89434	4.19931	0.1297702	0.217114352	2.7413940	20	10 17.3	21.1
482694 2013 CN ₁₂₁	17.9	X	296.22576	310.57388	162.78040	3.78793	0.1755478	0.23709712	2.5853451	20	12 23.8	20.4
482695 2013 CK ₁₂₄	17.0	X	235.50368	349.06307	126.92639	6.68805	0.0102621	0.22033402	2.7148657	20	10 16.5	20.7
482696 2013 CL ₁₂₄	17.8	X	266.23664	127.25766	324.07384	3.20212	0.2199507	0.22641607	2.6660271	20	9 19.6	21.1
482697 2013 CB ₁₃₄	16.5	X	303.02014	76.18917	0.91671	25.49030	0.2212393	0.22593044	2.6698460	20	10 23.9	19.5
482698 2013 CF ₁₃₅	16.2	X	120.12821	27.53031	138.73377	7.43214	0.0901467	0.18099365	3.0952364	20	7 26.4	20.9
482699 2013 CO ₁₃₆	17.2	X	269.19474	37.50107	58.35038	5.43207	0.0898971	0.21939502	2.7226064	20	10 21.6	20.6
482700 2013 CT ₁₃₇	16.2	X	96.12452	274.84415	345.11829	14.39589	0.1259670	0.20298606	2.8674239	20	10 24.6	20.8
482701 2013 CV ₁₄₀	16.1	X	140.77396	279.71974	315.62210	14.48680	0.1051466	0.22063025	2.7124350	20	11 11.2	20.6
482702 2013 CC ₁₅₅	16.7	X	252.55423	124.64179	336.33585	8.15830	0.1726634	0.21550552	2.7552676	20	9 18.9	20.4
482703 2013 CQ ₁₈₄	16.9	X	202.08239	110.24090	103.88456	14.41697	0.2212359	0.22834076	2.6510245	20	12 13.3	21.2
482704 2013 CL ₁₈₆	16.3	X	108.46251	333.59481	301.06089	8.58848	0.1672001	0.21620774	2.7492984	20	12 3.2	20.9
482705 2013 CX ₁₉₀	16.9	X	255.74445	254.30889	212.42071	12.47010	0.1648226	0.21864357	2.7288411	20	10 2.2	20.6
482706 2013 CG ₁₉₃	17.8	X	277.89637	57.60881	67.54587	4.14813	0.1833874	0.23562274	2.5961189	20	12 3.3	20.5
482707 2013 CV ₂₀₂	17.3	X	342.34234	284.77803	144.51007	21.78323	0.0224858	0.23452274	2.6042304	20	—	—
482708 2013 CU ₂₀₃	16.5	X	63.58589	228.85781	27.03552	5.66974	0.1061554	0.19529963	2.9421746	20	9 17.2	20.6
482709 2013 CF ₂₀₈	17.8	X	293.25190	82.45759	29.63871	2.46569	0.1395422	0.23200370	2.6230472	20	12 16.7	20.7
482710 2013 CS ₂₁₄	16.8	X	129.39489	261.75526	253.28080	2.84422	0.0967605	0.18462209	3.0545479	20	7 23.0	21.4
482711 2013 DJ	17.2	X	277.70727	325.13316	116.25518	5.31112	0.1475003	0.22151971	2.7051694	20	10 8.1	20.5
482712 2013 DX ₂	17.4	X	237.23196	310.44942	207.68599	6.42191	0.2400839	0.22645554	2.6657172	20	11 7.5	21.0
482713 2013 DE ₈	17.2	X	224.98879	39.41670	81.04064	5.64599	0.0639904					

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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>
482721 2013 EA ₂₂	16.6 ^m	X	269.02206	202.81545	173.80553	18.55914	0.0887819	0.18154886	3.0889227	20	7 2.5	21.3
482722 2013 EN ₃₀	17.3	X	247.30159	303.83327	169.45568	7.97114	0.1829312	0.21361390	2.7715095	20	9 29.6	21.1
482723 2013 ES ₃₀	16.1	X	78.51037	182.04197	2.14949	22.94382	0.0387429	0.16867565	3.2441515	20	6 22.2	21.1
482724 2013 EO ₃₂	17.0	X	162.06688	341.05789	166.02061	5.39722	0.1587062	0.19005735	2.9960307	20	8 16.9	22.0
482725 2013 EW ₃₅	17.2	X	286.81427	349.36745	145.38016	15.51383	0.0640229	0.24015656	2.5633412	20	—	—
482726 2013 EM ₄₀	17.1	X	237.31933	202.09369	0.38641	11.46443	0.1666089	0.24509141	2.5288166	20	—	—
482727 2013 EJ ₅₇	16.9	X	214.34448	74.41214	357.18524	6.25514	0.0852750	0.18285148	3.0742350	20	7 10.3	21.5
482728 2013 EE ₆₄	17.4	X	282.95012	342.90334	141.58946	2.26578	0.1536142	0.23038470	2.6353216	20	12 13.8	20.2
482729 2013 EG ₇₉	17.6	X	289.46267	91.16984	2.15437	12.43675	0.2403600	0.22681098	2.6629316	20	10 24.9	20.4
482730 2013 EA ₈₄	16.3	X	144.51853	18.68240	156.22820	12.75828	0.0119788	0.18976986	2.9990558	20	8 30.5	20.3
482731 2013 EB ₈₄	17.1	X	290.33478	319.56178	122.36203	6.19681	0.2804583	0.22278607	2.6949085	20	10 10.1	19.8
482732 2013 EV ₈₆	16.2	X	149.11217	107.95630	62.59210	8.81321	0.0834417	0.18856211	3.0118483	20	9 6.2	20.9
482733 2013 EP ₈₇	16.1	X	205.70876	9.94842	62.00106	11.15051	0.0974100	0.17956055	3.1116836	20	6 29.1	21.0
482734 2013 EH ₉₀	16.8	X	219.71291	143.33322	0.98293	18.95489	0.2106796	0.21537470	2.7563832	20	10 2.2	21.1
482735 2013 EK ₉₃	17.0	X	244.92565	312.99947	217.88395	13.94686	0.1786183	0.22744437	2.6579854	20	12 11.4	20.6
482736 2013 EQ ₉₉	17.3	X	286.00390	31.39353	87.82996	3.24943	0.1553614	0.22818780	2.6522901	20	12 10.9	20.0
482737 2013 EZ ₁₀₂	17.1	X	267.11084	352.80705	136.28632	10.13421	0.2656813	0.22471517	2.6794631	20	11 8.0	20.4
482738 2013 EX ₁₀₅	16.3	X	276.87879	32.26786	330.50183	8.99175	0.1159914	0.18543948	3.0455653	20	6 22.0	20.6
482739 2013 EO ₁₁₂	16.0	X	27.09614	154.81479	108.27964	12.30589	0.0932006	0.17557667	3.1585773	20	8 1.1	20.0
482740 2013 EB ₁₁₄	16.3	X	168.68232	9.92553	123.58379	13.04093	0.0852955	0.18605428	3.0388524	20	8 7.6	21.0
482741 2013 EA ₁₂₁	17.5	X	299.45989	95.13525	0.54129	12.54541	0.2410850	0.22613865	2.6682070	20	11 19.1	20.1
482742 2013 EB ₁₂₁	16.9	X	198.29643	283.06390	195.69471	10.57853	0.0990485	0.18928020	3.0042259	20	8 16.5	21.7
482743 2013 ED ₁₂₃	16.0	X	69.46347	59.47097	149.30136	4.90806	0.0947861	0.16924984	3.2368100	20	7 19.5	20.6
482744 2013 EW ₁₂₆	16.3	X	219.88959	90.40525	89.30811	25.42715	0.2260130	0.22093805	2.7099152	20	11 22.9	20.7
482745 2013 EX ₁₂₆	16.6	X	217.60606	298.05775	274.86212	11.88805	0.2286148	0.22578305	2.6710078	20	12 24.5	20.6
482746 2013 EM ₁₂₈	17.0	X	200.39951	89.08086	65.65536	10.97498	0.2245293	0.21394068	2.7686866	20	10 3.9	21.7
482747 2013 FV	17.8	X	310.71290	206.79943	265.32203	3.45377	0.2197372	0.23859880	2.5744861	20	—	—
482748 2013 FK ₂	16.4	X	99.22545	102.51503	82.71210	11.93564	0.0682275	0.17579439	3.1559688	20	7 25.2	21.0
482749 2013 FB ₄	17.2	X	280.23929	10.65589	127.14432	14.61305	0.2023908	0.23302193	2.6154004	20	12 23.3	20.0
482750 2013 FQ ₅	16.3	X	106.31435	108.18332	70.37832	10.73372	0.0457498	0.17711727	3.1402347	20	7 22.7	20.9
482751 2013 FZ ₆	16.4	X	241.78393	4.56788	84.41072	2.88209	0.0897565	0.19566485	2.9385122	20	9 2.9	20.5
482752 2013 FW ₉	17.2	X	294.46264	272.88547	177.56847	9.91134	0.1897629	0.22184588	2.7025172	20	11 12.5	20.1
482753 2013 FO ₁₃	16.7	X	285.81757	334.48499	117.62172	6.44424	0.0831441	0.21587414	2.7521301	20	11 10.9	20.1
482754 2013 GM ₆	17.0	X	224.51748	349.07427	181.81845	12.50860	0.0963986	0.21825450	2.7320832	20	11 27.6	21.0
482755 2013 GQ ₁₄	16.7	X	146.35948	77.11110	63.32737	13.87571	0.1120348	0.17966047	3.1105298	20	7 26.4	21.7
482756 2013 GK ₁₈	16.1	X	16.28632	218.98052	54.32079	13.89254	0.1032437	0.17424751	3.1746194	20	8 2.0	20.3
482757 2013 GQ ₂₄	16.6	X	150.87933	280.62766	357.01696	12.12264	0.1793712	0.22040628	2.7142723	20	—	—
482758 2013 GB ₂₈	16.0	X	51.54713	210.69286	76.96330	11.12642	0.0800577	0.19272744	2.9682947	20	10 11.8	20.2
482759 2013 GA ₃₈	16.2	X	77.09003	169.12895	40.19819	7.73148	0.1132784	0.17051102	3.2208296	20	8 5.2	20.9
482760 2013 GO ₃₈	17.1	X	261.32775	335.30590	122.56442	9.58047	0.2583008	0.21832596	2.7314869	20	9 19.3	20.9
482761 2013 GZ ₄₈	16.0	X	232.65761	60.13139	23.89582	22.19197	0.1363829	0.18999952	2.9966387	20	8 21.1	20.9
482762 2013 GM ₅₂	16.2	X	184.55845	97.33462	34.22113	17.73418	0.0927905	0.18437489	3.0572775	20	8 30.3	21.2
482763 2013 GK ₅₅	17.1	X	215.63749	74.02243	86.47877	4.11600	0.1155149	0.20925346	2.8098790	20	10 31.0	21.2
482764 2013 GF ₅₆	16.4	X	212.78528	53.40544	32.47747	10.65037	0.0756993	0.18045489	3.1013940	20	7 29.6	21.2
482765 2013 GZ ₆₈	17.3	X	147.17012	107.97757	223.24604	20.53168	0.1236975	0.37714792	1.8972660	20	—	—
482766 2013 GF ₆₉	19.3	X	145.19907	153.15092	174.89535	10.00797	0.4978896	0.35736805	1.9666432	20	1 10.9	22.6
482767 2013 GZ ₇₀	16.0	X	63.96817	200.64672	69.33828	15.27982	0.2321855	0.18159644	3.0883831	20	10 24.4	20.7
482768 2013 GN ₇₃	16.2	X	175.56830	80.36037	74.53945	7.59999	0.1421274	0.18896897	3.0075237	20	9 12.4	21.1
482769 2013 GJ ₇₅	17.0	X	264.31770	20.52524	100.62698	4.33688	0.1410381	0.21313307	2.7756763	20	11 7.9	20.4
482770 2013 GS ₇₅	16.1	X	167.86384	312.10255	212.35476	26.95985	0.1065022	0.18589572	3.0405801	20	9 7.6	21.3
482771 2013 GO ₉₃	16.3	X	124.34949	139.65169	40.96481	8.68753	0.0725361	0.18081234	3.0973052	20	8 21.0	21.0
482772 2013 GK ₉₅	16.3	X	118.65001	309.88314	251.79990	7.10521	0.1491267	0.18834152	3.0141996	20	9 8.9	21.1
482773 2013 GM ₉₅	16.1	X	148.04513	9.22099	156.49354	15.89466	0.1711700	0.19006360	2.9959651	20	8 27.9	21.1
482774 2013 GP ₁₀₇	16.0	X	114.59212	35.82590	134.76598	4.80262	0.1327135	0.17291201	3.1909446	20	7 29.6	21.0
482775 2013 GP ₁₂₆	16.0	X	215.14128	247.97397	211.89676	17.60872	0.0684258	0.18056922	3.1000847	20	8 10.3	20.9
482776 2013 GT ₁₃₁	16.3	X	244.57421	93.21081	70.92741	22.63888	0.0457972	0.22891825	2.6465643	20	12 20.6	19.9
482777 2013 HQ ₁₂	17.4	X	218.36100	107.25059	85.29301	3.42245	0.1654987	0.21902184	2.7256982	20	12 6.8	21.5
482778 2013 HO ₂₆	15.9	X	51.27420	241.21771	39.73235	16.54791	0.2119554	0.17546590	3.1599064	20	10 17.0	20.4
482779 2013 HT ₅₅	17.1	X	245.40574	125.86028	15.14648	15.69655	0.1103359	0.21284573	2.7781739	20	11 6.3	21.1
482780 2013 HV ₆₉	17.3	X	213.25479	270.61470	213.36169	12.11414	0.2253587	0.19856240	2.9098552	20	8 27.9	22.4
482781 2013 HO ₈₅	17.2	X	207.02139	177.89655	273.89580	2.51753	0.1451895	0.18123156	3.0925270	20	7 22.0	22.0
482782 2013 HH ₁₁₉	17.1	X	179.58868	84.53427	47.41931	5.44756	0.1012772	0.18239503	3.0793617	20	8 18.2	22.0
482783 2013 JZ ₃₄	15.7	X	127.02791	323.29018	233.96592	26.03864	0.1256878	0.17546943	3.1598641	20	9 2.9	21.2
482784 2013 JD ₆₃	16.4	X	147.97612	109.58953	44.10303	12.79706	0.1422001	0.17535797	3.1612029	20	8 17.2	21.7
482785 2013 KD ₁	16.0	X	173.65881	91.44966	47.48893	14.66396	0.0948455	0.18016346	3.1047377	20	8 25.7	21.1
482786 2013 KX ₇	16.9	X	226.37536	281.48441	252.33834	6.60241	0.1594953	0.21037967	2.7998421	20	11 21.3	20.9
482787 2013 KB ₁₇	15.6	X	38.29800	191.82072	110.26909	21.22899	0.0863305	0.17501288	3.1653570	20	10 15.2	20.3
482788 2013 LU ₃	16.0	X	120.19195	82.27181	143.12554	23.70622	0.0167711	0.17796653	3.1303266	20	10 7.8	20.8
482789 2013 LY ₁₀	15.4	X	170.50186	67.04791	81.65598	21.86132	0.1173163	0.17455399	3.1709023	20	9 4.8	20.8
482790 2013 LS ₁₁	16.6	X	217.24838	53.42309	127.56018	16.35562	0.1755215	0.20616170	2.8379019	20	11 22.9	21.2
482791 2013 LX ₁₅	18.0	X	132.28208	254.32921	86.14450	23.73001	0.0933400	0.36504774	1.9389634	20	—	—
482792 2013 LO ₁₇	15.4	X	203.27883	232.64436	247.00913	26.03794	0.1895388	0.17702356	3.1413428	20	8 7.2	21.1
482793 2013 LP ₂₂	16.2	X	196.90172	272.81665	242.78626	10.58424	0.1091385	0.18639705				

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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>
482801 2013 RO ₇₃	17.9	X	243.67854	30.76071	285.89712	18.96160	0.0577757	0.38197393	1.8812517	20	2 21.6	20.4
482802 2013 TL ₁₁₄	19.3	X	66.73028	234.95525	224.12221	4.58870	0.2539069	0.34169258	2.0263401	20	2 19.6	20.1
482803 2013 TY ₁₃₅	17.9	X	178.40668	151.44931	277.70600	20.46980	0.0622812	0.39152080	1.8505443	20	5 27.4	20.1
482804 2013 UM	17.4	X	224.15626	29.00627	258.41326	18.07516	0.0680050	0.35156500	1.9882254	20	—	—
482805 2013 VB ₂	17.7	X	132.79760	21.03577	70.29248	22.79783	0.0750726	0.37100607	1.9181477	20	5 7.6	20.0
482806 2013 WH ₄	16.0	X	87.59464	182.06669	236.74249	8.65681	0.1475142	0.18769592	3.0211074	20	2 8.5	20.2
482807 2013 WY ₁₅	18.1	X	182.70777	189.80706	70.81106	5.97162	0.0956284	0.30913799	2.1662129	20	—	—
482808 2013 WE ₁₇	18.1	X	59.49281	216.75314	130.82105	4.25163	0.1308251	0.29886334	2.2155810	20	—	—
482809 2013 WU ₂₅	15.9	X	88.22924	173.89018	214.24194	28.38773	0.1605959	0.17966863	3.1104356	20	1 3.6	20.6
482810 2013 WK ₂₆	16.1	X	79.86926	332.10539	54.81075	16.97898	0.0876851	0.17515167	3.1636847	20	—	—
482811 2013 WR ₅₇	16.4	X	59.20904	214.97551	233.56551	15.31652	0.0635120	0.18694923	3.0291464	20	1 25.1	20.7
482812 2013 WJ ₆₀	17.4	X	272.91836	45.57975	45.62265	13.25086	0.1078165	0.27484664	2.3428389	20	10 30.7	19.7
482813 2013 WH ₆₇	17.5	X	24.07770	271.67176	273.63142	17.48500	0.0706940	0.36001513	1.9569912	20	3 12.5	19.7
482814 2013 WM ₇₁	18.2	X	15.26002	3.36504	62.52768	8.07483	0.0769416	0.30869922	2.1682650	20	—	—
482815 2013 WE ₈₃	18.2	X	269.03037	249.67255	220.79942	5.49906	0.1815728	0.27779037	2.3262582	20	11 9.7	20.2
482816 2013 WS ₉₀	17.6	X	187.35369	326.01431	264.46440	5.29674	0.1392176	0.29560078	2.2318534	20	—	—
482817 2013 WY ₉₆	16.4	X	175.33356	266.25389	50.06387	11.21699	0.0935814	0.18430524	3.0580477	20	1 16.9	21.2
482818 2013 WT ₉₉	17.9	X	226.34519	67.57001	261.30787	18.66746	0.0900518	0.36413672	1.9421960	20	2 18.1	20.9
482819 2013 WB ₁₀₈	15.9	X	36.85950	23.94845	35.23651	26.86857	0.1772195	0.17419248	3.1752880	20	—	—
482820 2013 XL ₁₀	17.4	X	249.56266	234.23081	84.96061	24.49019	0.0542720	0.36335335	1.9449866	20	4 5.3	20.3
482821 2013 XL ₁₂	17.3	X	168.03982	256.89014	109.99689	28.26528	0.1086659	0.35350674	1.9809382	20	2 20.3	20.1
482822 2013 XH ₂₁	18.1	X	1.73391	103.46184	111.37451	23.99180	0.0599019	0.36325023	1.9453546	20	4 18.9	20.6
482823 2013 XX ₂₁	17.5	X	170.14953	261.71359	111.98140	24.51686	0.1184838	0.35033744	1.9928671	20	3 7.9	20.5
482824 2013 XC ₂₆	4.4	X	314.01152	148.28220	43.34752	18.65066	0.2263489	0.00360378	42.1337971	20	1 27.6	20.1
482825 2013 YK ₅₃	18.0	X	328.03665	2.04332	109.51833	5.85647	0.1411147	0.29503741	2.2346936	20	—	—
482826 2013 YC ₁₇	17.9	X	57.73030	114.01495	274.41498	5.01980	0.1134234	0.30074231	2.2063430	20	—	—
482827 2013 YU ₃₇	18.5	X	31.20242	267.59564	146.58546	5.93327	0.1337963	0.30273740	2.1966389	20	—	—
482828 2013 YB ₆₅	16.7	X	152.22346	267.93654	321.02549	12.68169	0.1383503	0.26611361	2.3938191	20	11 23.5	20.7
482829 2013 YL ₆₈	17.9	X	33.13913	93.76082	303.30997	5.93624	0.0939121	0.28883073	2.2665942	20	—	—
482830 2013 YF ₇₃	18.6	X	70.31986	149.85074	244.38362	3.78656	0.1321651	0.31047088	2.1600085	20	—	—
482831 2013 YC ₈₄	17.7	X	38.58163	202.41747	151.06379	5.90260	0.1829765	0.28011018	2.3133967	20	—	—
482832 2013 YU ₉₅	17.5	X	265.22642	31.71821	110.16911	7.86454	0.0467259	0.27679873	2.3318109	20	—	—
482833 2013 YZ ₉₉	18.4	X	24.99956	335.64834	105.54364	4.58003	0.0836518	0.30660769	2.1781144	20	—	—
482834 2013 YE ₁₁₆	18.4	X	331.77746	22.00457	101.67823	4.51466	0.0599939	0.29559981	2.2318583	20	—	—
482835 2014 AH ₇	17.7	X	41.02184	337.92693	1.33443	1.26276	0.2067891	0.27551858	2.3390282	20	—	—
482836 2014 AR ₁₆	17.6	X	158.19527	77.91290	316.94570	17.30239	0.0948389	0.35004115	1.9939916	20	3 6.0	20.2
482837 2014 AD ₄₇	18.2	X	74.38757	280.69846	90.81763	3.76771	0.1243194	0.30213419	2.1995616	20	—	—
482838 2014 BR ₄	17.3	X	132.86746	203.08995	105.86485	6.62527	0.1123161	0.29894154	2.2151945	20	—	—
482839 2014 BQ ₇	17.7	X	188.62587	327.13022	325.05077	6.59320	0.0584209	0.30369280	2.1920295	20	—	—
482840 2014 BO ₂₀	17.7	X	265.30936	200.91731	319.76223	6.39750	0.0476025	0.27959597	2.3164334	20	—	—
482841 2014 AR ₂₂	18.1	X	288.45903	1.71229	146.17323	5.54034	0.0804534	0.28392020	2.2926540	20	—	—
482842 2014 BR ₂₂	17.3	X	121.65829	327.89578	292.63754	5.14800	0.0772052	0.25649194	2.4533164	20	12 3.0	20.9
482843 2014 BU ₃₄	17.9	X	66.24711	299.24038	117.93743	5.53523	0.1057052	0.31032673	2.1606774	20	—	—
482844 2014 BT ₅₅	18.2	X	328.68062	110.24567	19.49767	3.22205	0.1340995	0.29439855	2.2379254	20	—	—
482845 2014 BD ₅₉	17.7	X	290.56806	244.08343	306.52678	6.25409	0.0610033	0.29895002	2.2151526	20	—	—
482846 2014 CC ₅	17.4	X	158.52883	77.41999	315.24489	7.45909	0.0902016	0.25260030	2.4784499	20	11 14.4	21.1
482847 2014 CS ₇	17.6	X	13.20126	301.64415	121.32730	5.90493	0.1118875	0.29043769	2.2582260	20	—	—
482848 2014 DS ₁₅	17.4	X	6.97174	322.88173	111.56488	6.36462	0.0939068	0.28460890	2.2889540	20	—	—
482849 2014 DO ₂₃	18.4	X	357.23389	314.18741	158.01232	4.87931	0.0948283	0.30497834	2.1858652	20	—	—
482850 2014 DR ₃₃	17.6	X	22.48826	355.10625	41.67605	3.95509	0.1757633	0.27905808	2.3192077	20	—	—
482851 2014 DT ₃₄	18.2	X	25.06041	286.86585	153.23732	1.87079	0.1174382	0.29757361	2.2219781	20	—	—
482852 2014 DP ₄₁	17.5	X	261.89441	183.86760	325.29090	6.59976	0.0625122	0.27272546	2.3549712	20	—	—
482853 2014 DR ₄₂	18.2	X	288.24665	112.58025	33.22061	5.89659	0.1616442	0.27816036	2.3241950	20	—	—
482854 2014 DN ₅₁	17.6	X	258.19941	359.22161	151.35584	5.89751	0.1138231	0.26406711	2.4061711	20	12 24.8	20.4
482855 2014 DY ₅₁	17.4	X	155.58103	120.66869	126.56636	3.64153	0.0598652	0.25634224	2.4542715	20	12 24.6	20.9
482856 2014 DJ ₆₄	17.6	X	16.98655	27.53097	27.43005	6.93996	0.0515268	0.27240436	2.3568214	20	—	—
482857 2014 DW ₇₂	17.7	X	266.32946	76.34448	65.70513	5.34646	0.1211792	0.26266344	2.4147359	20	12 24.6	20.3
482858 2014 DH ₈₈	18.6	X	314.80717	247.65124	227.83394	0.75341	0.1299438	0.28248677	2.3004033	20	—	—
482859 2014 DB ₉₁	18.0	X	94.04278	38.06057	341.93387	7.13768	0.1565954	0.29998234	2.2100677	20	—	—
482860 2014 DO ₉₇	17.7	X	267.39560	55.29455	104.62045	6.13558	0.1708535	0.27606175	2.3359591	20	—	—
482861 2014 DF ₁₀₇	17.0	X	7.84242	170.59915	150.75849	2.18102	0.1672168	0.22498254	2.6773399	20	10 4.9	19.8
482862 2014 DO ₁₁₀	17.7	X	20.80903	289.81352	124.07701	3.72047	0.1972618	0.28256598	2.2999733	20	—	—
482863 2014 DN ₁₁₅	18.1	X	19.60644	76.14011	358.30313	5.75989	0.1291475	0.28702478	2.2760919	20	—	—
482864 2014 DA ₁₁₉	18.6	X	307.94180	318.89579	171.46841	3.13212	0.1728440	0.28225657	2.3016539	20	—	—
482865 2014 DC ₁₂₉	17.5	X	6.98027	310.43772	6.40876	5.30585	0.0340534	0.22624145	2.6673987	20	9 12.9	20.8
482866 2014 DL ₁₂₉	18.3	X	353.50208	308.29815	124.02894	3.09372	0.1678962	0.28040712	2.3117633	20	—	—
482867 2014 DT ₁₂₉	17.0	X	89.57162	337.37100	355.53042	15.06382	0.1898466	0.26756744	2.3851400	20	—	—
482868 2014 DM ₁₃₄	16.9	X	343.26781	333.47982	12.90210	5.63697	0.0398059	0.22715515	2.6602411	20	9 19.2	20.1
482869 2014 DT ₁₃₅	17.0	X	336.86303	304.01634	25.96346	5.63104	0.0645629	0.21619256	2.7494272	20	8 17.6	20.4
482870 2014 EB ₂	18.4	X	343.70799	116.10212	341.94912	3.87648	0.1772614	0.28773284	2.2723563	20	—	—
482871 2014 ER ₅	18.2	X	291.51933	333.17667	140.62582	1.92957	0.1370578	0.26822578	2.3812356	20	12 30.3	20.2
482872 2014 EM ₆	18.3	X	341.86232	97.02010	4.70473	1.37507	0.1719441	0.28606378	2.2811865	20	—	—
482873 2014 EZ ₁₆	18.6	X	331.61138	139.18428	317.85949	0.70079	0.1482594	0.27865136	2.3214639	20	—	—
482874 2014 EM ₁₉	18.1	X	343.86859	355.33815	77.07940	3.05386	0.1521239	0.27448281	2.3449087	20	—	—
482875 2014 ER ₂₁	18.3	X	19.62665	93.02561	15.64690	7.83683	0.1114176	0.30030272	2.2084956	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>		
482881	2014	ER ₃₂	18.2 ^m	X	325.74707	320.87893	147.86607	2.30093	0.1391196	0.27947289	2.3169123	20	—	—
482882	2014	EE ₄₂	17.2	X	102.68546	221.16451	34.89795	8.80420	0.0599884	0.23205167	2.6226857	20	10 31.8	20.8
482883	2014	EK ₄₈	17.6	X	37.18768	10.77902	65.14841	7.13373	0.1045540	0.29675919	2.2260415	20	—	—
482884	2014	EQ ₅₁	18.1	X	314.16861	48.97982	91.29968	1.84614	0.1799744	0.28533025	2.2850946	20	—	—
482885	2014	FC ₁₄	16.3	X	84.58578	205.97533	46.86291	18.26691	0.2357674	0.21970198	2.7200699	20	10 26.6	20.7
482886	2014	FL ₁₆	17.5	X	342.23844	69.30482	353.50686	6.74397	0.0941303	0.26386868	2.4073772	20	—	—
482887	2014	FU ₁₇	16.1	X	2.57444	10.77124	353.84249	15.26698	0.1891175	0.24308515	2.5427116	20	11 28.9	19.2
482888	2014	FH ₃₈	18.9	X	27.55826	78.85824	36.31749	3.36189	0.3015479	0.30912356	2.1662803	20	—	—
482889	2014	FT ₅₁	16.1	X	262.26104	101.66580	18.72965	15.55850	0.0470992	0.24265811	2.5456939	20	11 18.2	19.5
482890	2014	FR ₅₃	17.1	X	196.73495	352.46261	187.53719	15.42112	0.1461858	0.23956615	2.5675510	20	11 6.7	21.1
482891	2014	FC ₆₅	17.9	X	197.55048	132.23863	118.68178	4.32655	0.1107549	0.27048477	2.3679589	20	—	—
482892	2014	FR ₆₆	17.6	X	288.28889	96.10523	90.10183	6.03995	0.1076373	0.28313392	2.2968966	20	—	—
482893	2014	FX ₆₆	16.8	X	130.58433	180.78721	53.70595	12.64859	0.1179678	0.22933503	2.6433567	20	11 7.6	20.8
482894	2014	GD ₅	17.1	X	65.06369	293.82371	2.95014	11.69035	0.0697581	0.23282957	2.6168407	20	11 5.5	20.9
482895	2014	GS ₆	17.2	X	159.67761	312.52744	271.38983	1.11668	0.0624276	0.24312158	2.5424575	20	11 26.6	20.9
482896	2014	GX ₁₅	18.0	X	174.00879	132.33949	136.21435	3.48535	0.1484416	0.26423325	2.4051624	20	—	—
482897	2014	GZ ₂₅	18.1	X	351.31983	217.32756	266.05148	2.60871	0.1054398	0.28522265	2.2856692	20	—	—
482898	2014	GW ₄₁	16.4	X	230.49446	104.93345	28.53019	13.57180	0.1055679	0.23323083	2.6138385	20	10 18.6	19.8
482899	2014	GT ₄₂	17.3	X	288.63013	268.28053	199.81036	6.61314	0.0897720	0.24656829	2.5187084	20	12 12.5	20.2
482900	2014	HG ₃	16.7	X	183.15162	325.82478	205.56083	12.31229	0.1301659	0.23135274	2.6279652	20	10 10.6	20.7
482901	2014	HA ₁₂	17.1	X	274.19686	44.85859	56.51925	6.02498	0.0853373	0.23812043	2.5779329	20	11 9.1	20.0
482902	2014	HG ₁₄	17.2	X	214.37747	268.19160	197.96362	3.50996	0.0589469	0.21385779	2.7694020	20	8 26.2	21.2
482903	2014	HP ₁₈	17.3	X	295.57803	263.27470	190.88432	5.83661	0.0848110	0.24477614	2.5309874	20	12 4.8	20.2
482904	2014	HO ₂₂	16.4	X	139.61241	110.57317	129.24653	14.47416	0.1610416	0.23006933	2.6377294	20	11 25.7	21.0
482905	2014	HX ₂₅	16.9	X	357.83962	272.42887	41.10114	10.18363	0.0683804	0.20243021	2.8726706	20	8 29.3	20.7
482906	2014	HA ₂₆	16.6	X	346.27418	274.05156	41.84086	9.70394	0.1093306	0.19594132	2.9357475	20	8 12.6	20.2
482907	2014	HB ₃₀	17.2	X	6.67117	269.85074	59.61085	7.34276	0.0461082	0.21543931	2.7558321	20	10 1.6	20.8
482908	2014	HT ₃₁	16.8	X	328.98338	350.21265	53.99903	14.51083	0.1752303	0.23460891	2.6035927	20	11 19.7	19.0
482909	2014	HD ₃₈	15.9	X	340.46958	102.34035	203.00904	25.18545	0.2658167	0.17827746	3.1265959	20	6 28.7	19.5
482910	2014	HV ₄₂	17.0	X	112.62073	191.90905	51.26044	9.45894	0.0972286	0.22264471	2.6960491	20	10 29.5	20.9
482911	2014	HR ₄₇	17.4	X	316.44064	49.02635	45.84601	12.84659	0.1472141	0.25821620	2.4423828	20	—	—
482912	2014	HW ₅₁	17.7	X	133.24027	160.81017	66.44780	4.01752	0.0125456	0.23000594	2.6382139	20	10 29.7	21.1
482913	2014	HT ₇₀	17.5	X	78.50585	195.21250	67.31387	3.18833	0.0381108	0.21863551	2.7289082	20	10 7.7	21.3
482914	2014	HV ₇₃	18.0	X	284.76759	316.30050	183.55622	4.63116	0.1225113	0.26259346	2.4151648	20	—	—
482915	2014	HB ₉₃	17.2	X	342.87548	264.03917	75.76136	7.67330	0.0515311	0.20803707	2.8208212	20	9 10.2	20.9
482916	2014	HO ₁₁₂	17.0	X	266.12341	302.42665	112.49859	6.39245	0.0936583	0.21016475	2.8017506	20	8 21.9	20.7
482917	2014	HL ₁₃₅	17.6	X	46.40330	255.68833	48.72623	3.06232	0.0795934	0.21959049	2.7209906	20	10 25.9	21.2
482918	2014	HO ₁₄₅	17.5	X	252.27023	355.44348	161.48535	6.44601	0.1075062	0.25974491	2.4327903	20	12 23.9	20.4
482919	2014	HK ₁₅₅	17.2	X	225.82382	313.16544	209.42025	12.67501	0.0751859	0.24227583	2.5483710	20	11 25.9	20.7
482920	2014	HM ₁₅₉	16.0	X	280.13751	271.42229	76.29369	14.18655	0.1208138	0.17776451	3.1326077	20	6 5.6	20.3
482921	2014	HR ₁₅₉	15.8	X	357.76815	231.93009	52.03684	27.70032	0.2155769	0.18104043	3.0947032	20	7 19.1	19.5
482922	2014	HF ₁₆₁	16.8	X	2.55332	209.29753	118.14381	8.83176	0.0522384	0.20904758	2.8117235	20	9 22.6	20.5
482923	2014	HL ₁₆₄	15.8	X	341.52426	170.55406	129.35021	18.64827	0.1354000	0.17599624	3.1535554	20	7 6.1	19.7
482924	2014	HJ ₁₈₃	17.4	X	161.32111	162.26893	15.88378	5.20167	0.0391877	0.21697627	2.7428026	20	9 28.5	21.1
482925	2014	HF ₁₈₅	15.9	X	18.08689	201.97602	65.96084	18.47220	0.1774693	0.18236010	3.0797550	20	8 7.7	19.8
482926	2014	HA ₁₈₇	16.7	X	12.87801	194.56773	92.20507	9.26630	0.0806139	0.19118748	2.9842125	20	8 12.8	20.5
482927	2014	HE ₁₉₅	16.5	X	132.44866	226.65710	48.05350	15.35284	0.0751248	0.23985790	2.5654686	20	12 28.6	20.5
482928	2014	JW	17.8	X	227.87830	29.67078	234.87192	5.41564	0.2127015	0.27513723	2.3411890	20	—	—
482929	2014	JZ ₄	16.7	X	292.49344	275.42409	186.62364	6.88738	0.2065033	0.24425085	2.5346150	20	11 30.3	18.9
482930	2014	JY ₁₀	16.3	X	324.26341	5.11688	57.04877	33.70240	0.1691081	0.23544206	2.5974469	20	12 1.1	18.9
482931	2014	JB ₁₇	15.9	X	315.87784	232.82081	83.90171	20.67234	0.0445461	0.17775310	3.1327417	20	6 24.3	20.1
482932	2014	JG ₂₄	16.1	X	359.76136	174.88627	99.47007	13.68919	0.1578813	0.17726732	3.1384623	20	7 4.3	19.5
482933	2014	JC ₂₇	16.1	X	309.97465	233.20953	94.61918	17.39991	0.0910372	0.18200721	3.0837345	20	6 25.9	20.1
482934	2014	JH ₂₉	16.8	X	225.32976	93.60721	80.49347	16.33210	0.1568871	0.24052273	2.5607389	20	11 28.9	20.3
482935	2014	JX ₃₆	16.8	X	339.12317	336.01376	66.36479	12.61783	0.0637851	0.23100833	2.6305766	20	11 28.3	19.7
482936	2014	JR ₃₈	16.4	X	344.09293	231.37307	79.68782	17.53795	0.0678690	0.18639842	3.0351109	20	7 30.9	20.5
482937	2014	JO ₄₈	16.7	X	19.15441	204.93083	67.86259	10.76065	0.0389859	0.19230337	2.9726569	20	7 31.1	20.8
482938	2014	JO ₅₂	16.5	X	107.07223	180.15088	57.94126	14.70935	0.1894589	0.21293044	2.7774370	20	10 25.4	21.1
482939	2014	JM ₅₉	16.9	X	151.63843	140.06895	56.96873	18.19866	0.0632659	0.21921189	2.7241225	20	10 18.2	21.1
482940	2014	JH ₆₁	17.3	X	187.64215	17.92100	191.91178	13.14895	0.0869145	0.23765416	2.5813037	20	12 7.9	21.2
482941	2014	JP ₆₁	16.8	X	311.16757	232.11923	134.89712	12.68794	0.0185610	0.19480914	2.9471110	20	8 28.9	20.9
482942	2014	JS ₆₁	15.9	X	347.37685	166.29327	132.23273	12.72423	0.0652660	0.17803900	3.1293871	20	7 15.4	20.0
482943	2014	JJ ₆₂	16.8	X	339.33243	337.82891	68.45810	22.88136	0.0523918	0.23044157	2.6348881	20	12 2.5	20.0
482944	2014	JL ₆₇	16.8	X	128.30110	359.99998	215.36597	11.29305	0.0483048	0.21258183	2.7804726	20	10 4.3	20.9
482945	2014	JJ ₆₉	17.9	X	34.73891	76.44506	34.82389	3.51126	0.0946609	0.29233109	2.2484646	20	1 1.5	20.1
482946	2014	JM ₆₉	18.3	X	273.91082	347.60763	226.42958	8.67012	0.1343798	0.28132375	2.3067390	20	—	—
482947	2014	JU ₇₇	17.6	X	223.10058	319.63019	206.18803	7.24486	0.0711120	0.23855082	2.5748312	20	11 26.4	21.1
482948	2014	KG ₁	17.3	X	191.60649	186.78673	67.38270	16.72675	0.1123450	0.25926462	2.4357939	20	—	—
482949	2014	KV ₂	15.8	X	317.87664	226.33179	84.80975	16.43794	0.1121484	0.17710569	3.1403715	20	6 13.2	19.7
482950	2014	KV ₁₅	17.9	X	292.01164	21.7124								

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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>
482961 2014 KO ₅₉	16.5	X	277.12609	16.12619	90.15197	22.93022	0.0222517	0.22593891	2.6697793	20	11 28.4	20.2
482962 2014 KS ₆₅	17.2	X	260.60608	66.55729	76.53840	9.16353	0.1898196	0.24365294	2.5387598	20	11 30.7	19.9
482963 2014 KA ₆₇	17.3	X	204.45748	25.68734	122.03798	3.84448	0.1249874	0.22062546	2.7124743	20	10 4.3	21.4
482964 2014 KD ₆₇	16.4	X	357.53423	209.73410	86.40919	10.53652	0.0803502	0.18332475	3.0689418	20	7 30.7	20.3
482965 2014 KK ₆₇	16.3	X	269.55179	114.87432	208.98115	9.25451	0.0921605	0.15435624	3.4418076	20	4 28.6	21.3
482966 2014 KY ₆₈	16.5	X	285.23144	289.28305	94.35829	10.90914	0.1646245	0.18621946	3.0370551	20	7 23.9	20.5
482967 2014 KE ₆₉	16.5	X	271.84327	148.27882	213.05263	9.85063	0.0358728	0.17396156	3.1780973	20	6 24.0	21.1
482968 2014 KK ₆₉	16.1	X	304.59260	258.05871	87.51678	14.42665	0.1050362	0.17929199	2.7147901	20	7 9.6	20.2
482969 2014 KY ₇₉	16.8	X	44.61707	252.41007	65.91490	6.63151	0.0637361	0.21621259	3.492574	20	11 8.1	20.4
482970 2014 KM ₈₂	15.2	X	39.12148	296.39221	331.31797	19.70047	0.1223995	0.17525838	3.1624004	20	8 27.2	19.4
482971 2014 KA ₉₄	16.9	X	191.75844	322.69775	252.00138	11.50974	0.2362369	0.24274574	2.5450811	20	12 4.7	21.1
482972 2014 KY ₉₅	16.3	X	38.80355	1.15570	228.46395	11.36793	0.0851329	0.17644426	3.1482148	20	7 1.9	20.5
482973 2014 KT ₉₈	16.3	X	44.75560	181.67165	62.45736	11.01316	0.1396301	0.18363402	3.0654950	20	8 13.3	20.4
482974 2014 LL	16.9	X	185.37493	34.41277	166.92341	11.57634	0.0919296	0.23119939	2.6291271	20	11 24.8	21.0
482975 2014 LX ₃	16.3	X	319.19042	245.28725	75.95139	17.64201	0.1071296	0.17657914	3.1466115	20	6 28.3	20.4
482976 2014 LF ₈	17.9	X	279.05915	48.62208	122.06684	5.43979	0.0919507	0.26246979	2.4159234	20	—	—
482977 2014 KF ₂₈	17.1	X	203.97763	4.07052	246.44187	7.41845	0.1728270	0.25860820	2.4399140	20	—	—
482978 2014 MS ₈	17.0	X	221.45873	76.68792	153.54162	17.59993	0.1986062	0.24697844	2.5159192	20	—	—
482979 2014 MO ₂₃	16.4	X	255.11203	245.76059	161.30413	20.95353	0.1578765	0.24051145	2.5608190	20	12 1.5	19.5
482980 2014 MK ₂₈	17.0	X	185.51975	54.18373	172.04622	11.68848	0.2261145	0.24369293	2.5384821	20	12 14.8	21.4
482981 2014 ME ₄₈	16.6	X	176.38079	335.26695	110.52157	13.55358	0.1085443	0.21900451	2.7258420	20	10 21.5	20.7
482982 2014 NP ₅₅	15.0	X	194.54280	316.23212	202.02437	11.87058	0.1724601	0.12510625	3.9592845	20	5 31.6	21.3
482983 2014 NP ₆₂	16.4	X	81.60498	330.20509	309.96861	6.52960	0.1417351	0.20293407	2.8679136	20	11 8.6	20.8
482984 2014 OJ ₇	16.0	X	36.55884	342.76846	316.94585	10.17200	0.0893684	0.17785573	3.1315365	20	9 25.4	20.4
482985 2014 OY ₁₃	17.9	X	270.32984	255.92303	335.65541	1.76375	0.1587656	0.26966004	2.3727846	20	—	—
482986 2014 OD ₅₂	15.9	X	238.17538	95.47263	319.06190	8.84099	0.0729717	0.15530481	3.4277787	20	7 15.8	20.9
482987 2014 OM ₈₈	16.4	X	75.71407	347.07288	283.37787	11.06709	0.0458220	0.19093812	2.9688101	20	10 3.6	20.9
482988 2014 OH ₉₀	16.5	X	272.88893	233.67226	286.27597	10.77555	0.1147856	0.23294584	2.6159699	20	—	—
482989 2014 OV ₁₅₉	15.9	X	350.63102	17.60403	314.64718	26.24025	0.0850312	0.17627437	3.1502373	20	8 25.9	20.1
482990 2014 OK ₁₆₅	17.2	X	200.11736	94.74642	108.30014	14.84995	0.1525751	0.22236899	2.6982772	20	12 5.0	21.5
482991 2014 OA ₃₃₃	16.2	X	83.41257	279.36416	341.39599	11.05841	0.1171536	0.19077112	2.9885530	20	10 11.3	20.7
482992 2014 OP ₃₄₆	16.5	X	270.49524	270.22046	167.89911	7.69166	0.0548326	0.18752669	3.0229247	20	9 29.3	20.5
482993 2014 OO ₃₇₂	16.2	X	79.69654	20.03058	276.94831	13.06472	0.1475181	0.20409021	2.8570725	20	11 29.3	20.6
482994 2014 PK ₇	16.2	X	31.63518	3.47330	300.00114	15.13250	0.0240576	0.17962748	3.1109106	20	9 12.2	20.8
482995 2014 QD ₃₈	15.9	X	64.14096	318.37450	307.91053	12.50030	0.1734362	0.18315147	3.0708772	20	9 30.0	20.5
482996 2014 QJ ₇₂	16.2	X	56.36530	17.29834	284.95829	8.78316	0.0768887	0.18939972	3.0029620	20	10 25.9	20.6
482997 2014 QR ₁₀₂	16.6	X	103.45342	317.06102	284.29685	5.98264	0.1130583	0.18522440	3.0479225	20	10 9.1	21.3
482998 2014 QS ₂₇₁	16.2	X	106.61109	276.11027	355.65256	10.33059	0.2125910	0.21034795	2.8001236	20	11 27.9	21.0
482999 2014 QZ ₂₈₅	15.6	X	148.18474	93.12044	98.20895	17.16163	0.0524454	0.17334751	3.1855981	20	10 2.4	20.7
483000 2014 QP ₃₀₀	16.2	X	154.11380	107.48265	92.65505	2.71170	0.1059471	0.17373717	3.1808331	20	10 12.3	21.1
483001 2014 QL ₄₂₀	15.9	X	108.00268	232.70077	13.47745	14.71369	0.1857288	0.18176397	3.0864850	20	10 24.5	21.0
483002 2014 QS ₄₄₁	5.4	X	314.48523	266.79086	185.88968	37.86216	0.0803282	0.00306433	46.9438958	20	11 3.8	21.9
483003 2014 RX ₆₂	15.9	X	64.46018	19.84096	309.34959	9.94614	0.0979409	0.19135476	2.9824731	20	12 13.8	20.3
483004 2014 SB ₁₅	17.3	X	143.07969	232.43670	172.09692	6.18172	0.1337327	0.26093196	2.4254065	20	3 21.4	20.9
483005 2014 SP ₁₄₀	15.2	X	118.40400	309.10098	266.64022	16.00137	0.10707614	0.17000756	3.2271852	20	9 7.3	20.2
483006 2014 SS ₂₁₀	16.9	X	89.55228	261.31389	155.21156	6.34020	0.1430313	0.22186392	2.7023707	20	2 5.3	20.3
483007 2014 SE ₃₁₇	17.2	X	229.13303	257.69408	108.90218	7.84076	0.1408857	0.27995180	2.3142692	20	4 30.8	20.7
483008 2014 SM ₃₄₉	13.6	X	264.57039	236.56191	73.27061	29.10270	0.0332019	0.08142695	5.2717801	20	4 29.2	20.8
483009 2014 TS ₅₄	16.2	X	348.93029	229.05715	198.88017	10.90614	0.1132171	0.17662905	3.1460186	20	—	—
483010 2014 TJ ₅₅	17.8	X	210.39399	59.48668	4.31763	6.32508	0.0744048	0.29403809	2.2397540	20	6 30.0	20.8
483011 2014 UQ	16.2	X	95.68250	261.82416	82.31629	20.55099	0.2698997	0.21222407	2.7835965	20	—	—
483012 2014 UX ₄₅	16.4	X	71.97109	178.79608	223.56419	8.11190	0.2107906	0.21088985	2.7953247	20	1 2.3	19.5
483013 2014 UY ₁₀₃	16.5	X	72.93879	328.78266	69.04167	9.25352	0.1416471	0.21069824	2.7970192	20	—	—
483014 2014 UJ ₁₇₀	13.5	X	201.39396	349.19061	38.25271	4.96973	0.0555385	0.08393310	5.1663110	20	5 4.8	20.5
483015 2014 UR ₁₉₄	16.8	X	61.88675	7.72866	52.95592	9.18641	0.0988582	0.21985203	2.7188321	20	—	—
483016 2014 UG ₁₉₇	16.7	X	7.46917	259.44905	206.31184	10.43117	0.1027228	0.20622967	2.8372784	20	—	—
483017 2014 UJ ₂₀₇	16.8	X	78.53493	252.61973	149.25151	6.14673	0.0584883	0.21809790	2.7333908	20	—	—
483018 2014 VV ₃₇	14.3	X	128.58817	285.47808	170.20292	13.04522	0.0557641	0.08427851	5.1521852	20	5 10.3	21.4
483019 2014 WB ₁₁₆	17.3	X	172.04871	354.69901	49.44803	7.87084	0.1676566	0.26582509	2.3955509	20	4 21.9	21.0
483020 2014 WL ₁₂₀	13.1	X	305.80205	237.12719	45.55993	18.52894	0.1130889	0.08483451	5.1296492	20	4 25.7	19.7
483021 2014 WD ₂₀₂	14.0	X	300.94803	246.16496	36.17416	16.81141	0.1286842	0.08357151	5.1812022	20	4 17.1	20.6
483022 2014 WZ ₂₃₆	15.8	X	57.91696	354.71821	39.40571	9.71982	0.1069343	0.19260518	2.9695507	20	—	—
483023 2014 WK ₃₂₁	16.7	X	63.11952	276.57716	152.05891	9.56918	0.0872873	0.21765058	2.7371347	20	1 6.6	20.1
483024 2014 WB ₃₆₇	13.3	X	311.21736	235.62897	45.56089	14.28341	0.1499355	0.08314312	5.1989841	20	4 25.7	19.8
483025 2014 WY ₃₇₈	13.3	X	354.11564	290.97478	301.69427	7.77470	0.0857187	0.08246233	5.2275597	20	4 30.4	19.9
483026 2014 WS ₄₅₄	13.9	X	173.40535	285.47564	125.20967	24.86933	0.0397484	0.08263634	5.2202185	20	5 11.6	21.3
483027 2015 AY ₄₇	13.4	X	246.58605	197.84154	150.13974	17.98300	0.0139533	0.08445350	5.1450658	20	5 16.7	20.5
483028 2015 AL ₁₄₈	16.5	X	159.20154	284.26623	91.56284	6.20371	0.1319688	0.21839617	2.7309015	20	3 7.9	20.8
483029 2015 BE ₃₂₄	16.1	X	164.75944	231.38151	94.05888	11.10221	0.0628626	0.18138717	3.0907581	20	1 10.1	20.7
483030 2015 DF ₁₃₈	17.6	X	1.67181	113.01103	77.00949	21.57008	0.0879604	0.37248308	1.9130736	20	2 28.2	19.8
483031 2015 FC ₄₄	17.6	X	55.95132	220.41473	80.37489	5.65016	0.1359006	0.26195168	2.4191080	20	11 19.3	20.8
483032 2015 FZ ₇₄	17.3	X	10.82601	153.05326	165.62134	4.99220	0.2470671	0.24061136	2.5601100	20	10 24.1	19.8
483033 2015 FD ₁₄₀	17.7	X	43.48798	296.25902	24.33626	7.74310	0.1524962	0.27416939	2.3466955	20	12 2.9	20.8

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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>
483041 2015 HW ₅₅	17.3	X	66.83923	70.92600	281.62082	7.17755	0.2612257	0.28395309	2.2924770	20	—	—
483042 2015 HN ₆₀	16.8	X	48.38180	164.11998	151.22771	11.26479	0.2873115	0.24395320	2.5366762	20	12 14.7	20.8
483043 2015 HV ₆₁	17.6	X	110.65358	133.64283	146.85364	3.70863	0.1747465	0.27668459	2.3324521	20	12 23.4	21.3
483044 2015 HJ ₉₁	18.0	X	77.89775	229.36312	76.65738	2.47635	0.1919579	0.26940551	2.3742789	20	12 25.1	21.7
483045 2015 HY ₁₅₀	18.1	X	83.72692	288.52697	15.20770	3.35223	0.2209320	0.26900945	2.3766087	20	12 29.4	21.9
483046 2015 JG ₃	18.1	X	151.03351	312.59035	92.59211	23.17963	0.0886771	0.36903656	1.9249662	20	4 1.6	21.1
483047 2015 JD ₁₀	18.0	X	125.57037	242.54529	55.00387	7.79368	0.1252713	0.28742898	2.2739575	20	—	—
483048 2015 KD ₁₂	17.0	X	13.53726	159.13153	155.92096	7.78188	0.2688219	0.22775018	2.6556055	20	10 25.5	19.8
483049 2015 KX ₂₀	17.3	X	46.66113	49.35418	249.91901	14.41443	0.1100794	0.24573062	2.5244292	20	10 26.0	20.8
483050 2015 KP ₂₁	17.0	X	73.65992	73.80100	195.01582	12.31068	0.2486591	0.24318254	2.5420326	20	11 7.9	21.0
483051 2015 KH ₂₉	17.9	X	113.28223	2.92083	288.33267	2.76016	0.1661980	0.28200841	2.3030039	20	—	—
483052 2015 KY ₃₆	17.2	X	161.58822	10.94507	254.89387	6.76951	0.0904870	0.28003329	2.3138202	20	—	—
483053 2015 KT ₃₇	17.2	X	3.45844	182.94316	170.27663	6.57896	0.1713162	0.24642606	2.5196775	20	11 18.8	19.9
483054 2015 KH ₄₆	17.5	X	1.00432	215.97518	131.03064	2.79062	0.1493964	0.24395011	2.5366976	20	11 1.2	20.1
483055 2015 KS ₅₂	17.2	X	71.04931	249.78409	78.15145	6.94678	0.1607222	0.26850421	2.3795892	20	—	—
483056 2015 KR ₅₄	17.8	X	23.43588	193.36059	112.32551	3.48503	0.2000819	0.23183872	2.6242915	20	10 17.6	20.8
483057 2015 KM ₅₆	16.6	X	45.74900	235.47736	79.13454	14.74679	0.2343447	0.24462034	2.5320620	20	12 4.4	20.2
483058 2015 KC ₉₂	17.9	X	71.13848	200.92349	169.10854	5.42863	0.1267130	0.29851816	2.2172885	20	—	—
483059 2015 KX ₁₂₈	17.6	X	57.83726	192.91745	107.24165	5.57742	0.1538192	0.25653571	2.4530374	20	11 22.4	21.0
483060 2015 KT ₁₃₁	15.8	X	256.70706	290.59794	80.24938	27.43640	0.1812251	0.17959851	3.1112451	20	6 1.2	20.5
483061 2015 KF ₁₃₂	16.4	X	37.06913	258.87252	51.68702	7.90008	0.1915781	0.23090746	2.6313426	20	11 9.7	19.7
483062 2015 KW ₁₄₃	17.6	X	19.90463	99.57891	227.88601	4.57992	0.2168716	0.24080693	2.5587237	20	11 14.0	20.5
483063 2015 KN ₁₄₄	17.8	X	79.02694	202.69443	84.61347	2.82029	0.1640218	0.25788094	2.4444991	20	11 28.9	21.3
483064 2015 KB ₁₅₅	16.4	X	351.70768	257.28182	90.11029	29.87471	0.3246147	0.23110790	2.6298210	20	11 17.9	19.1
483065 2015 KE ₁₅₇	17.5	X	200.16420	276.28379	101.12753	23.77032	0.1083322	0.38227381	1.8802677	20	4 21.6	20.6
483066 2015 KC ₁₆₀	17.6	X	88.98689	151.37986	143.38865	3.02571	0.2005585	0.26312094	2.4119360	20	12 20.7	21.4
483067 2015 LP ₁	18.5	X	27.19828	325.68761	194.77613	21.42837	0.0465280	0.36922893	1.9242976	20	2 12.2	20.6
483068 2015 LU ₅	17.5	X	72.42344	340.06670	4.07867	7.78733	0.1388672	0.28541944	2.2846184	20	—	—
483069 2015 LT ₁₄	17.2	X	52.41768	225.71927	82.05119	5.94536	0.2341460	0.24424809	2.5346341	20	12 2.5	20.9
483070 2015 LA ₁₈	15.8	X	97.73276	326.92423	253.28536	13.51378	0.1341607	0.23426385	2.6061487	20	9 11.1	20.0
483071 2015 LE ₂₀	16.7	X	104.77320	23.07325	232.20698	17.43803	0.1546162	0.23863379	2.5742344	20	11 10.1	20.7
483072 2015 LJ ₃₀	17.1	X	343.27256	253.86885	102.72533	12.78529	0.0718028	0.22298847	2.6932776	20	10 9.7	20.6
483073 2015 LD ₃₁	16.9	X	339.65730	291.24969	96.74012	4.17496	0.1319771	0.23313316	2.6145684	20	11 15.9	19.7
483074 2015 LU ₃₄	16.3	X	295.89343	52.59039	305.12012	11.08650	0.1881442	0.18933866	3.0036075	20	7 1.6	20.1
483075 2015 LV ₃₅	17.3	X	48.61470	79.58430	273.61917	5.60292	0.1363998	0.25251924	2.4789802	20	—	—
483076 2015 LX ₃₅	17.0	X	80.10349	18.08018	257.84492	7.85537	0.1505352	0.23668110	2.5883738	20	11 9.6	20.8
483077 2015 LJ ₃₈	17.0	X	32.86102	175.39860	116.38758	9.21241	0.1509509	0.23001151	2.6381714	20	10 7.8	20.4
483078 2015 LQ ₃₉	16.4	X	357.78983	81.27687	271.88324	24.74690	0.3213940	0.21351583	2.7723581	20	11 18.2	19.3
483079 2015 LU ₃₉	17.4	X	128.58850	199.63330	71.34479	6.65834	0.1937240	0.26211977	2.4180737	20	12 24.6	21.4
483080 2015 MH ₃	17.1	X	97.86853	245.18627	21.61977	10.01315	0.1146995	0.24623366	2.5209899	20	11 13.9	20.9
483081 2015 MY ₄	16.1	X	237.39983	261.27851	140.03689	9.77005	0.1395212	0.18427516	3.0583805	20	6 21.4	20.8
483082 2015 MP ₅	16.9	X	311.97568	176.18523	250.04205	12.48978	0.1348941	0.24162106	2.5529728	20	11 19.8	19.4
483083 2015 MT ₈	17.5	X	51.20463	137.42987	229.21047	5.61729	0.1542012	0.25813921	2.4428683	20	—	—
483084 2015 MS ₁₇	18.4	X	96.00593	41.63491	304.17335	2.63427	0.1552661	0.30172491	2.2015503	20	—	—
483085 2015 MJ ₄₉	16.1	X	335.69345	217.04890	69.05949	11.50748	0.2094425	0.17640454	3.1486874	20	5 29.9	19.5
483086 2015 MM ₄₉	16.8	X	56.33556	251.59798	94.58066	15.05168	0.1045110	0.24610684	2.5218559	20	—	—
483087 2015 MO ₄₉	15.7	X	226.35472	323.94491	102.19410	18.06041	0.1863877	0.17154652	3.2078553	20	7 5.8	20.8
483088 2015 MF ₅₂	17.2	X	60.41281	174.93536	114.04480	10.75953	0.1865926	0.23087515	2.6315881	20	11 13.0	21.2
483089 2015 MD ₅₃	16.6	X	62.18437	316.07928	315.08898	6.83376	0.2000534	0.22908350	2.6452914	20	10 17.8	20.6
483090 2015 MW ₆₂	16.1	X	291.68873	208.27311	111.41024	10.56217	0.1098461	0.17555534	3.1588332	20	5 20.4	20.6
483091 2015 MG ₇₂	17.3	X	17.63120	213.74999	142.13866	8.92821	0.0953782	0.24104128	2.5570650	20	12 1.7	20.6
483092 2015 ML ₇₅	17.0	X	350.56167	279.09871	124.84202	12.55674	0.2806227	0.23881816	2.5729093	20	—	—
483093 2015 MG ₇₈	17.1	X	342.17118	137.70494	270.36693	12.81147	0.2105657	0.23921646	2.5700526	20	12 28.7	19.3
483094 2015 MZ ₇₉	17.3	X	97.06391	96.16294	269.37581	7.78813	0.0290777	0.29209920	2.2496544	20	—	—
483095 2015 MC ₈₀	17.6	X	194.89404	45.41581	162.72060	3.57419	0.0414919	0.26314185	2.4118082	20	12 24.9	20.8
483096 2015 MN ₈₃	16.5	X	236.14844	124.12105	278.30830	14.01890	0.0518638	0.18299126	3.0726693	20	6 30.7	20.7
483097 2015 MT ₈₄	17.0	X	307.80428	332.89653	136.35893	6.90005	0.1109897	0.26566691	2.3965017	20	—	—
483098 2015 MW ₈₅	17.6	X	8.80333	231.45490	123.90295	12.99850	0.1018036	0.23583238	2.5945802	20	11 20.1	21.0
483099 2015 MV ₈₇	17.3	X	10.83095	179.61602	180.19254	6.08234	0.0576511	0.23875336	2.5733748	20	11 20.8	20.5
483100 2015 MH ₈₈	17.3	X	355.96189	218.02130	140.16245	3.16234	0.1215101	0.22640669	2.6661007	20	10 31.3	20.2
483101 2015 ML ₈₈	16.9	X	2.18528	90.43940	247.17560	5.36523	0.0630212	0.22170853	2.7036333	20	10 2.5	20.3
483102 2015 MN ₉₁	16.2	X	280.78913	79.25609	305.34437	24.24007	0.2698852	0.17119158	3.2122878	20	7 5.0	20.9
483103 2015 MV ₉₇	16.3	X	268.03965	241.52412	123.41650	18.78060	0.1489604	0.17823008	3.1271501	20	6 11.5	21.0
483104 2015 MO ₁₀₈	17.9	X	242.19731	268.70636	308.04906	3.91517	0.1095211	0.29950794	2.2124009	20	—	—
483105 2015 MY ₁₀₈	16.2	X	263.65901	266.93776	110.17676	16.31146	0.2199059	0.17736824	3.1372718	20	6 11.3	21.0
483106 2015 MR ₁₀₉	17.9	X	255.46308	126.91125	80.99357	4.79932	0.1085959	0.30134243	2.2034128	20	—	—
483107 2015 MS ₁₀₉	16.9	X	277.13164	260.78236	103.42690	11.12063	0.2323190	0.17839879	3.1251782	20	6 7.7	21.5
483108 2015 ME ₁₁₃	17.1	X	15.34815	144.26223	182.45727	11.78827	0.1921025	0.21954916	2.7213320	20	10 29.4	20.2
483109 2015 MM ₁₁₈	16.3	X	319.95506	232.41951	101.29870	9.58358	0.1534611	0.18875117	3.0098368	20	7 13.1	19.7
483110 2015 MN ₁₁₈	15.6	X	319.42631	205.52740	113.40380	14.09289	0.0725060	0.18224698	3.0810293	20	6 30.6	19.5
483111 2015 MC ₁₂₁	15.6	X	312.75690	31.78661	297.90458	21.04021	0.0456852	0.17814501	3.1281455	20	7 9.3	19.9
483112 2015 MK ₁₂₆	17.2	X	44.98505	40.36644	321.26527	5.22087	0.1524268	0.25271024	2.4777310	20	—	—
483113 2015 MP ₁₂₆	16.4	X	278.27493	284.10733	103.60504	6.70935	0.0703010	0.19734229	2.9218367	20	8 4.0	20.3
483114 2015 MO ₁₂₈	16.3	X	27									

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>
483121 2015 NJ ₂₀	15.7	X	6.06587	301.76176	276.93479	12.05267	0.0710113	0.18414538	3.0598173	20	4 24.9	19.8
483122 2015 NF ₂₃	16.9	X	283.86282	209.02101	218.89922	10.59061	0.0552768	0.22358852	2.6884567	20	10 7.6	20.5
483123 2015 OF ₁	16.9	X	338.68480	260.83463	78.29368	4.99876	0.1082826	0.20882765	2.8136974	20	8 31.9	20.1
483124 2015 OE ₇	16.6	X	40.07013	356.72866	280.02922	14.31507	0.0358009	0.21034329	2.8001649	20	8 26.2	20.7
483125 2015 OF ₁₀	17.6	X	3.32809	322.67732	23.47801	2.39378	0.0742127	0.22477958	2.6789513	20	10 19.8	20.7
483126 2015 OQ ₁₀	17.3	X	343.74042	296.25277	101.78808	6.79788	0.0413928	0.24313887	2.5423370	20	12 1.9	20.4
483127 2015 OS ₁₀	16.9	X	287.34688	336.95318	0.22613	4.05667	0.1486338	0.17487526	3.1670175	20	5 27.3	21.3
483128 2015 OC ₁₃	16.8	X	352.59406	269.64219	61.67883	4.41071	0.0960748	0.20976987	2.8052656	20	9 13.8	20.1
483129 2015 OD ₁₃	17.2	X	48.72844	199.16526	84.65073	6.45659	0.0218419	0.21722726	2.7406895	20	9 26.5	21.0
483130 2015 OG ₁₄	17.6	X	28.79778	307.63933	118.79406	7.43326	0.0898618	0.28037251	2.3119535	20	—	—
483131 2015 OC ₁₅	16.4	X	268.39595	242.11285	123.41894	20.23601	0.1739396	0.17265240	3.1941426	20	6 9.8	21.4
483132 2015 OF ₁₅	17.7	X	122.74167	181.22395	99.50445	6.31183	0.0905028	0.25856061	2.4402134	20	12 30.5	21.2
483133 2015 OV ₁₆	17.3	X	6.06233	299.28630	97.13880	7.01756	0.1615175	0.24244867	2.5471597	20	—	—
483134 2015 OZ ₁₇	17.1	X	7.53676	230.14697	89.57099	6.73424	0.0788218	0.21238231	2.7822137	20	9 22.5	20.6
483135 2015 OD ₂₀	16.4	X	263.85689	116.17193	292.28114	15.83470	0.3070183	0.17532736	3.1615709	20	7 8.1	21.3
483136 2015 OA ₂₃	16.7	X	48.52403	143.11174	165.18526	12.62789	0.1759541	0.22986072	2.6393250	20	11 21.2	20.6
483137 2015 OL ₂₄	16.4	X	310.94079	53.74979	259.99197	16.03352	0.2538793	0.17574884	3.1565141	20	5 14.1	20.4
483138 2015 OA ₂₅	16.6	X	98.91519	341.51964	275.07747	17.74489	0.1999701	0.23387272	2.6090536	20	11 5.2	21.2
483139 2015 OS ₄₀	16.7	X	94.36803	284.06486	322.18034	8.19346	0.1354158	0.21832050	2.7315325	20	10 11.5	20.9
483140 2015 OU ₄₀	15.4	X	182.48959	85.71026	320.66300	11.09120	0.3199844	0.12576802	3.9453835	20	5 2.3	22.4
483141 2015 OO ₄₃	16.5	X	338.86703	333.56926	339.83870	6.73401	0.1965613	0.19610392	2.9341244	20	7 19.9	19.5
483142 2015 OQ ₄₄	18.0	X	216.30235	262.07298	334.74117	5.18401	0.1140259	0.29493910	2.2351902	20	—	—
483143 2015 OT ₄₄	17.3	X	329.46464	0.92607	35.62166	3.18257	0.1102131	0.23169060	2.6254098	20	11 6.8	20.2
483144 2015 OB ₅₀	15.3	X	287.72103	254.79803	106.18022	21.01021	0.1552605	0.17983291	3.1085411	20	6 28.3	19.6
483145 2015 OR ₅₀	16.7	X	12.26374	247.28663	90.92383	15.03655	0.1050671	0.21979795	2.7192781	20	11 1.4	20.3
483146 2015 OA ₅₇	16.9	X	6.47213	263.28415	54.16491	13.28564	0.1218951	0.20502576	2.8483745	20	9 24.4	20.5
483147 2015 OP ₆₇	16.2	X	261.30526	214.10290	170.93271	10.90178	0.1482404	0.17849725	3.1240288	20	6 14.2	20.9
483148 2015 OK ₆₈	17.4	X	150.11515	26.60508	268.06168	5.46398	0.1347775	0.28768059	2.2726314	20	—	—
483149 2015 OH ₆₉	15.9	X	224.86476	121.10955	293.63744	23.65144	0.0326752	0.18466779	3.0540440	20	7 6.7	20.3
483150 2015 OM ₆₉	17.4	X	172.47492	359.69528	242.33889	5.77756	0.0623575	0.26745345	2.3858176	20	—	—
483151 2015 OX ₇₂	16.8	X	325.25453	213.47239	155.09440	6.76419	0.0551184	0.21522492	2.7576619	20	9 20.6	20.1
483152 2015 OC ₇₄	16.6	X	299.98799	30.21080	304.65032	9.24098	0.2237112	0.17782008	3.1319487	20	5 30.1	20.9
483153 2015 PF ₂	16.3	X	295.92670	330.16007	8.46660	6.51806	0.1671177	0.17610088	3.1523060	20	6 7.1	20.6
483154 2015 PJ ₃	16.0	X	304.45429	205.61933	132.77695	17.97137	0.2147892	0.17677510	3.1442857	20	6 15.8	20.2
483155 2015 PO ₃	16.2	X	319.59577	203.57324	111.90117	11.76566	0.2070085	0.17747825	3.1359752	20	6 10.5	19.9
483156 2015 PX ₄	17.0	X	40.10622	166.38013	164.18613	11.94502	0.0249721	0.23783770	2.5799755	20	11 18.9	20.6
483157 2015 PK ₅	16.1	X	283.39507	51.00973	305.05833	15.30185	0.1175910	0.17954622	3.1118492	20	6 22.5	20.5
483158 2015 PO ₈	16.2	X	279.17696	196.82273	176.27922	16.62195	0.1011474	0.17666434	3.1455996	20	7 8.5	20.9
483159 2015 PD ₉	16.2	X	307.14991	243.25383	89.99722	13.29357	0.1532439	0.17607326	3.1526357	20	6 20.1	19.9
483160 2015 PN ₁₂	16.2	X	251.49779	120.58370	981.04605	7.96275	0.0788971	0.17530168	3.1618796	20	7 14.1	20.7
483161 2015 PL ₂₂	16.5	X	303.98405	226.25096	99.04785	11.53828	0.2215483	0.17802018	3.1296076	20	5 27.2	20.6
483162 2015 PN ₃₁	16.6	X	325.15487	183.67397	163.53854	10.55380	0.1031369	0.19038386	2.9926043	20	8 13.4	20.3
483163 2015 PE ₃₄	16.8	X	140.68479	346.41367	270.61255	13.81700	0.0864074	0.24556598	2.5255574	20	12 17.2	20.3
483164 2015 PK ₃₄	16.9	X	102.74060	149.46489	117.01704	12.91794	0.1750432	0.23774102	2.5806749	20	11 26.3	21.2
483165 2015 PR ₃₄	17.5	X	329.58033	318.29172	265.42581	17.52665	0.0388269	0.36095722	1.9535846	20	2 12.9	19.9
483166 2015 PB ₃₆	16.4	X	316.92762	217.38737	122.12088	13.02136	0.1772575	0.18650029	3.0340056	20	7 12.3	19.8
483167 2015 PZ ₃₆	16.9	X	340.30337	289.84743	28.94790	5.64931	0.1001691	0.19120369	2.9840438	20	8 3.6	20.5
483168 2015 PS ₃₉	17.5	X	229.04930	153.58173	25.73277	4.57195	0.0539287	0.25438832	2.4668227	20	12 27.5	20.6
483169 2015 PX ₃₉	16.9	X	69.62138	289.06025	351.19156	8.14480	0.0508286	0.22104192	2.7090662	20	10 17.4	20.8
483170 2015 PD ₄₂	16.7	X	291.75077	78.65889	6.38032	11.36181	0.0903975	0.22979425	2.6398340	20	11 6.9	20.1
483171 2015 PG ₄₃	15.5	X	326.12454	207.87293	97.58180	12.25035	0.0624791	0.17438878	3.1729047	20	6 23.2	19.6
483172 2015 PF ₄₅	17.0	X	37.62903	175.18181	111.52743	7.85507	0.1771636	0.20958689	2.8068981	20	10 7.7	20.7
483173 2015 PR ₄₈	15.7	X	301.26701	212.80017	119.12673	10.00305	0.0911236	0.17506975	3.1646716	20	6 18.9	20.0
483174 2015 PC ₅₁	16.9	X	288.06463	269.20640	108.64215	17.13960	0.1564623	0.18119116	3.0929866	20	7 20.5	19.9
483175 2015 PF ₅₃	16.9	X	129.10589	235.32121	63.10599	12.71886	0.1541311	0.26511723	2.3998131	20	—	—
483176 2015 PD ₅₅	16.0	X	238.01829	75.19681	356.02899	21.18168	0.1767640	0.17164214	3.2066639	20	8 1.6	21.2
483177 2015 PE ₅₇	17.7	X	79.33463	35.47145	125.77591	24.11151	0.0717730	0.37044139	1.9200964	20	6 6.3	20.1
483178 2015 PM ₈₁	16.7	X	321.41958	10.00952	310.23320	8.21403	0.1260157	0.18661835	3.0327259	20	6 30.6	20.3
483179 2015 PD ₈₆	16.0	X	241.92007	79.85664	310.76647	25.69363	0.1158326	0.17709556	3.1404914	20	6 18.1	21.1
483180 2015 PP ₉₇	16.4	X	283.99596	229.38837	130.72224	10.07089	0.1437336	0.18134470	3.0912405	20	6 23.7	20.7
483181 2015 PR ₉₉	17.2	X	324.75267	164.41097	322.39721	5.38364	0.1085880	0.28197286	2.3031975	20	—	—
483182 2015 PU ₉₉	18.0	X	347.24329	84.06904	5.73737	2.12781	0.0421161	0.27284393	2.3542894	20	—	—
483183 2015 PX ₁₀₂	17.0	X	326.08798	88.18801	319.30116	21.47864	0.0473571	0.23618475	2.5919989	20	11 7.4	20.8
483184 2015 PF ₁₁₂	17.8	X	332.81971	309.27031	92.77864	3.10131	0.2039925	0.22699283	2.6615091	20	11 24.7	20.1
483185 2015 PL ₁₂₆	17.2	X	1.60231	245.44260	97.68779	0.97233	0.0858132	0.21931218	2.7232920	20	10 13.7	20.4
483186 2015 PM ₁₂₆	16.8	X	292.50350	109.71174	321.10095	10.93465	0.0546125	0.22945679	2.6424216	20	10 21.4	20.3
483187 2015 PT ₁₃₈	17.1	X	355.80572	109.25486	342.16413	6.62870	0.0779384	0.27526891	2.3404423	20	—	—
483188 2015 PS ₁₄₀	16.2	X	300.50152	286.22164	43.36712	4.25508	0.1693383	0.17569840	3.1571183	20	6 2.1	20.2
483189 2015 PY ₁₆₃	17.3	X	58.18285	244.22621	42.91256	2.73595	0.0493274	0.22485844	2.6783249	20	10 15.5	20.9
483190 2015 PJ ₁₆₅	17.5	X	176.84540	199.85961	34.73215	3.00071	0.1356406	0.26802813	2.3824062	20	12 28.5	20.8
483191 2015 PZ ₁₇₅	17.1	X	70.73685	288.98007	359.07633	8.29838	0.0973826	0.22904727	2.6455703	20	11 5.4	21.0
483192 2015 PL ₂₁₈	16.4	X	244.29115	193.08493	206.17292	16.13339	0.1004144	0.16915456	3.2380254	20	6 28.1	21.5
483193 2015 PX ₂₁₈	16.8	X	146.87636	357.51025	205.41307	12.36988	0.0988116	0.21888648	2.7268218	20	10 12.7</	

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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>
483201 2015 PO ₂₉₅	15.8	X	258.32693	57.59268	27.56102	10.74363	0.0524320	0.20178323	2.8788078	20	9 26.9	19.8
483202 2015 PY ₃₀₁	16.2	X	296.10651	256.93700	111.74903	10.68883	0.0631530	0.18341116	3.0679778	20	8 3.5	20.3
483203 2015 PG ₃₀₃	16.5	X	314.30063	227.88231	103.03410	10.91067	0.1052781	0.17423976	3.1747135	20	7 4.5	20.5
483204 2015 PW ₃₀₃	15.5	X	147.87713	8.53563	93.42205	11.17582	0.0571307	0.14742592	3.5488432	20	6 5.0	20.8
483205 2015 PK ₃₀₆	17.5	X	87.13108	263.80444	109.04978	6.93599	0.0898923	0.27033623	2.3688263	20	—	—
483206 2015 PS ₃₀₆	16.5	X	20.88836	189.83673	81.60859	10.08367	0.2826326	0.20545662	2.8443910	20	9 6.8	19.6
483207 2015 PO ₃₁₀	16.6	X	44.36137	283.68430	29.18108	8.36515	0.1281128	0.21721354	2.7408049	20	11 8.3	20.2
483208 2015 PR ₃₁₀	15.8	X	2.01130	248.44186	54.02086	14.09121	0.0898831	0.18763162	3.0217975	20	8 21.7	19.9
483209 2015 PH ₃₁₁	16.6	X	41.29834	218.61470	125.44975	18.32218	0.1415546	0.22758238	2.6569107	20	12 21.1	20.4
483210 2015 PN ₃₁₁	18.1	X	329.42989	275.18918	335.91511	17.65701	0.0596223	0.35706672	1.9677495	20	3 25.9	20.1
483211 2015 QE ₄	15.3	X	258.44576	218.25777	171.61368	24.97949	0.1325301	0.17001808	3.2270522	20	6 30.4	20.5
483212 2015 QJ ₆	16.3	X	332.79290	323.80161	341.68369	8.57860	0.1459084	0.17788499	3.1311930	20	6 27.7	20.1
483213 2015 QY ₉	16.8	X	21.99783	53.56958	293.87601	5.37210	0.0787798	0.22016304	2.7162711	20	11 15.9	20.4
483214 2015 RN ₄	16.4	X	291.81508	191.20650	193.25622	22.52823	0.2295064	0.17326901	3.1865602	20	5 18.3	21.3
483215 2015 RK ₂₂	17.7	X	345.16516	298.33515	191.37186	4.48507	0.0801411	0.28028125	2.3124553	20	—	—
483216 2015 RF ₂₃	16.3	X	214.63559	210.41355	223.82242	2.49765	0.0711851	0.17054942	3.2203461	20	7 12.9	21.0
483217 2015 RW ₂₃	16.2	X	334.40423	348.62903	336.00248	9.40664	0.0320272	0.18166979	3.0875517	20	8 3.5	20.3
483218 2015 RH ₂₅	17.0	X	41.23778	42.83765	270.05083	1.45345	0.0908135	0.21917828	2.7244010	20	10 30.8	20.5
483219 2015 RL ₂₆	16.3	X	352.03922	78.95829	285.55720	7.33969	0.0888058	0.20906650	2.8115539	20	10 21.4	19.8
483220 2015 RT ₃₁	15.8	X	22.01376	286.27909	339.28318	8.83353	0.0578383	0.17617343	3.1514405	20	7 25.4	20.0
483221 2015 RP ₃₇	15.7	X	248.20160	53.65679	11.32380	21.78973	0.0846936	0.17409184	3.1765116	20	8 19.0	20.6
483222 2015 RA ₃₈	16.2	X	254.25879	55.43504	344.72721	9.74289	0.0544928	0.17364304	3.1819825	20	7 23.1	20.8
483223 2015 RT ₄₄	16.5	X	253.12310	264.11586	179.48134	15.46542	0.144374	0.18697887	3.0288262	20	8 27.3	21.0
483224 2015 RQ ₅₂	17.2	X	309.26790	113.74127	313.21165	2.98808	0.0886668	0.21342488	2.7731457	20	11 8.9	20.4
483225 2015 RG ₅₃	17.9	X	347.09149	274.71004	274.32387	1.94046	0.1021245	0.28400968	2.2921724	20	—	—
483226 2015 RG ₅₆	16.9	X	6.40867	180.44508	196.02888	5.70576	0.0302261	0.22048942	2.7135899	20	11 28.1	20.4
483227 2015 RZ ₅₆	16.2	X	233.97675	277.01831	185.41765	15.89460	0.1928110	0.18085836	3.0967798	20	8 23.8	21.2
483228 2015 RE ₅₉	17.5	X	271.66028	299.55021	186.49708	5.05527	0.0941761	0.22453724	2.6808785	20	12 3.7	20.8
483229 2015 RE ₆₃	15.7	X	169.41380	262.11718	159.49887	4.12339	0.1446474	0.12568153	3.9471934	20	5 13.5	21.9
483230 2015 RC ₇₀	16.8	X	236.37445	90.66874	11.14516	5.6387	0.0888732	0.18812851	3.0164743	20	9 11.7	21.1
483231 2015 RW ₇₃	16.6	X	246.35553	69.42786	12.32917	15.71460	0.0323514	0.18470514	3.0536322	20	9 9.9	21.0
483232 2015 RE ₈₁	16.9	X	291.56620	13.53588	42.35097	2.57328	0.0532585	0.19881568	2.9073833	20	10 1.2	20.6
483233 2015 RE ₈₆	16.8	X	280.62743	157.34791	239.55103	9.11144	0.2572521	0.17721459	3.1390850	20	7 16.8	21.3
483234 2015 RJ ₈₇	16.0	X	235.24365	178.70826	266.73882	16.96481	0.2189496	0.17239408	3.1973326	20	7 29.5	21.4
483235 2015 RU ₈₉	16.2	X	337.08688	97.84512	263.54188	8.55134	0.1106480	0.19065302	2.9897870	20	9 18.1	19.9
483236 2015 RR ₉₈	16.2	X	294.97872	31.35776	337.45182	4.69756	0.1379062	0.17770224	3.1333395	20	7 22.1	20.2
483237 2015 RD ₁₀₁	17.0	X	39.29479	266.18577	148.34298	2.60754	0.1540750	0.25940592	2.4349093	20	—	—
483238 2015 RY ₁₀₃	15.5	X	220.64702	58.86660	331.90503	17.14304	0.0945322	0.14828866	3.550651	20	5 20.7	21.2
483239 2015 RM ₁₂₃	15.9	X	356.69348	317.12386	349.53200	8.53227	0.0457820	0.18049538	3.1009302	20	8 11.7	20.0
483240 2015 RY ₁₂₅	16.0	X	15.07685	306.07772	333.68685	9.47262	0.0675426	0.18236727	3.0796743	20	8 4.0	20.0
483241 2015 RO ₁₄₃	17.2	X	290.19149	349.55196	113.97291	3.50202	0.0193328	0.23126768	2.6286096	20	12 9.4	20.5
483242 2015 RK ₁₅₈	18.0	X	20.14909	312.91749	141.75139	3.39233	0.1021689	0.27594940	2.3365931	20	—	—
483243 2015 RT ₁₉₂	16.4	X	285.56128	220.40727	168.30210	8.60255	0.2270966	0.17313231	3.1882373	20	7 18.2	20.8
483244 2015 RP ₁₉₉	16.3	X	240.94945	65.31401	33.69224	9.06263	0.0622942	0.18766731	3.0214144	20	9 19.6	20.6
483245 2015 RO ₂₂₃	16.9	X	248.93685	91.89847	47.81391	5.57443	0.0971240	0.21347280	2.7727306	20	11 15.6	20.7
483246 2015 SK ₁	16.6	X	230.79740	141.00015	302.98884	12.90420	0.0242125	0.19014086	2.9951534	20	8 17.6	21.0
483247 2015 SG ₂	16.1	X	201.91497	216.44968	239.25791	8.88973	0.0831132	0.17672395	3.1448923	20	7 23.1	21.0
483248 2015 SK ₃	15.6	X	250.78589	151.47416	232.07454	17.11652	0.0416926	0.15730240	3.3986972	20	6 23.3	20.6
483249 2015 SZ ₃	16.0	X	339.03217	68.74928	274.90303	12.47816	0.0710062	0.18593924	3.0401057	20	8 26.3	20.2
483250 2015 SP ₇	16.4	X	317.83371	69.25206	281.40654	20.41770	0.2919376	0.18057408	3.1000291	20	7 10.9	19.5
483251 2015 SR ₇	15.4	X	276.26598	88.40646	309.10731	23.93005	0.1723269	0.17369121	3.1813942	20	7 27.9	19.8
483252 2015 SA ₈	15.8	X	238.89206	94.40733	356.7092	23.67663	0.2491458	0.17283657	3.1918731	20	8 20.2	21.1
483253 2015 SK ₁₁	16.6	X	131.68410	192.28670	339.98249	6.83868	0.0376367	0.17675570	3.1445156	20	8 13.3	21.1
483254 2015 SW ₁₂	15.9	X	171.19007	155.23265	345.90396	9.37302	0.0726294	0.17899135	3.1182769	20	8 20.4	20.6
483255 2015 TS ₇	15.7	X	248.28109	317.05766	116.40942	12.36269	0.0496185	0.17858295	3.1230292	20	8 27.1	20.2
483256 2015 TX ₁₄	16.0	X	237.75579	198.57101	235.99150	9.63197	0.0806387	0.18728419	3.0255335	20	8 5.7	20.6
483257 2015 TJ ₁₆	16.9	X	237.98372	80.92443	349.35881	9.57576	0.0889638	0.16736393	3.2610801	20	8 4.5	21.7
483258 2015 TH ₆₂	16.3	X	141.42009	217.45297	33.67587	13.92121	0.1560329	0.21622639	2.7491404	20	12 2.1	20.9
483259 2015 TT ₆₇	16.3	X	206.21717	182.70889	334.80734	4.69509	0.1071603	0.18526030	3.0475288	20	10 11.4	20.9
483260 2015 TL ₈₆	16.2	X	187.96099	302.79942	214.72741	10.39946	0.0261607	0.17551078	3.1593678	20	9 25.9	20.9
483261 2015 TE ₁₀₅	15.6	X	155.92714	135.85556	71.18122	21.99044	0.1316742	0.18049963	3.1008816	20	10 30.2	20.8
483262 2015 TR ₁₃₆	15.8	X	146.75316	103.52887	106.39922	10.10350	0.0883186	0.18456808	3.0551437	20	10 21.5	20.6
483263 2015 TJ ₁₄₂	16.1	X	106.61854	87.01826	150.75667	11.65422	0.0336558	0.17964912	3.1106608	20	10 5.9	20.7
483264 2015 TG ₁₄₈	16.5	X	141.33418	252.02347	9.08907	9.20082	0.1002871	0.23649017	2.5897667	20	12 20.4	20.6
483265 2015 TP ₁₅₂	17.6	X	287.12779	176.46146	352.10426	0.87949	0.1223141	0.25798841	2.4438202	20	—	—
483266 2015 TZ ₁₇₀	16.3	X	297.61495	223.64573	178.08953	10.16558	0.0733160	0.17931083	3.1145720	20	9 14.6	20.4
483267 2015 TG ₁₇₈	16.3	X	9.26821	231.94065	100.43001	17.51650	0.2645149	0.21542302	2.7559710	20	11 11.5	19.6
483268 2015 TO ₁₈₃	16.5	X	24.41054	308.81577	14.27019	2.81634	0.0240750	0.19476949	2.9475110	20	10 8.1	20.2
483269 2015 TT ₁₈₃	16.5	X	286.62049	30.95708	29.57237	2.82205	0.0958714	0.18974754	2.9992910	20	9 23.3	20.3
483270 2015 TT ₁₉₃	16.5	X	125.61453	281.29681	352.81039	14.27476	0.1654068	0.23795675	2.5791149	20	12 21.9	21.0
483271 2015 TT ₁₉₅	16.2	X	328.14710	103.15697	317.36078	15.11554	0.0516790	0.21579776	2.7527795	20	11 29.1	20.0
483272 2015 TR ₂₀₃	16.0	X	13.96238	277.38031	21.36273	19.65329	0.2622815	0.18391680	3.0623521	20	9 24.8	19.3
483273 2015 TZ ₂₀₇	15.8	X	24.88560	18.59016	293.07371	7.53851	0.0255328	0.186				

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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>
483281 2015 TY ₂₇₃	17.0	X	306.54440	177.19606	211.29978	9.41626	0.1345943	0.18765520	3.0215444	20	9 2.1	20.8
483282 2015 TC ₂₈₃	16.9	X	221.00265	286.15181	224.25451	5.17868	0.1327465	0.20316559	2.8657345	20	10 19.5	21.0
483283 2015 TR ₂₈₉	16.7	X	319.32011	96.87196	317.36055	5.35787	0.0161468	0.21509705	2.7587547	20	11 8.8	20.4
483284 2015 TH ₂₉₄	16.5	X	62.75399	264.75313	30.08520	9.52312	0.0287458	0.20565939	2.8425211	20	10 24.1	20.4
483285 2015 TA ₃₀₃	15.9	X	206.99587	312.36122	81.71003	8.63498	0.3093592	0.12349880	3.9935661	20	5 9.8	22.8
483286 2015 TU ₃₁₁	15.3	X	20.61924	201.96463	110.32279	20.33857	0.0690862	0.17636302	3.1491816	20	9 30.5	19.9
483287 2015 TX ₃₁₇	16.4	X	160.86391	132.72420	40.78714	4.25374	0.0273485	0.18563569	3.0434189	20	9 19.1	20.7
483288 2015 TT ₃₁₉	17.9	X	264.38314	173.74985	42.61154	2.87082	0.1571081	0.27456438	2.3444443	20	—	—
483289 2015 TS ₃₂₀	16.4	X	334.06588	132.75778	26.24432	10.52647	0.0883183	0.17658424	3.1465508	20	8 22.4	20.5
483290 2015 TV ₃₄₁	15.2	X	296.78848	287.51066	76.82553	19.05895	0.1048029	0.17863602	3.1224107	20	7 24.7	19.5
483291 2015 TD ₃₄₄	16.8	X	204.62973	35.04607	90.07570	2.86281	0.0359063	0.17681308	3.1438353	20	9 8.5	21.3
483292 2015 TP ₃₄₅	16.7	X	117.95524	239.01689	38.62688	11.86304	0.1016185	0.22514751	2.6760318	20	12 13.8	20.9
483293 2015 TW ₃₄₈	16.2	X	228.57649	313.70368	145.93860	5.17060	0.1380712	0.17016559	3.2251869	20	8 22.5	21.0
483294 2015 UC ₂	17.4	X	202.90193	153.41498	36.38795	8.88022	0.1220463	0.21832504	2.7314946	20	11 20.4	21.4
483295 2015 UT ₈	17.2	X	319.39055	254.72561	150.21763	2.61713	0.0643894	0.20356955	2.8619421	20	10 27.4	20.9
483296 2015 UJ ₉	16.9	X	296.99518	270.37430	117.11082	2.50866	0.0963524	0.18036902	3.1023783	20	8 24.6	20.9
483297 2015 UG ₁₃	17.5	X	301.33050	358.59583	86.30944	1.73718	0.0394650	0.21452295	2.7636744	20	11 25.0	21.1
483298 2015 UX ₁₄	17.7	X	304.02220	29.86668	141.58236	1.76506	0.1223683	0.26445537	2.4038154	20	—	—
483299 2015 US ₃₀	16.2	X	192.25258	313.39370	195.51034	12.54521	0.1438105	0.17860047	3.1228250	20	9 13.7	21.3
483300 2015 UK ₃₂	16.7	X	191.02840	96.17359	82.27990	3.24968	0.0099531	0.20341401	2.8634008	20	11 3.6	20.7
483301 2015 UM ₃₈	16.1	X	232.58508	281.30362	176.64889	9.59576	0.0585664	0.18009994	3.1054676	20	9 3.0	20.6
483302 2015 UU ₄₂	16.6	X	274.63248	270.04040	171.13372	9.15129	0.1204668	0.18348408	3.0671649	20	9 28.5	20.5
483303 2015 UZ ₄₃	16.1	X	77.19759	123.86122	140.96244	10.72675	0.0848590	0.18403181	3.0610761	20	10 12.3	20.6
483304 2015 UK ₄₄	16.1	X	192.33603	80.19327	96.41491	12.52483	0.0357071	0.19358174	2.9595553	20	11 2.9	20.5
483305 2015 UD ₅₆	16.4	X	357.42729	260.47149	63.56085	3.00507	0.1060326	0.181732288	3.0868371	20	9 6.8	20.2
483306 2015 UB ₈₃	16.0	X	299.03779	215.96242	154.17466	16.48129	0.1238329	0.16939333	3.2349818	20	7 29.1	20.4
483307 2015 VT ₃	17.2	X	28.10923	346.69126	68.18805	13.68438	0.1743697	0.24369534	2.5384653	20	—	—
483308 2015 VC ₂₉	17.0	X	116.60782	75.51846	241.52597	11.24688	0.1351655	0.24557228	2.5255142	20	—	—
483309 2015 VC ₆₂	16.2	X	339.77000	274.49402	50.45152	10.72862	0.1986281	0.17379381	3.1801420	20	8 7.9	19.8
483310 2015 VJ ₆₆	15.7	X	71.92451	127.68611	31.94313	17.72380	0.0799270	0.17419106	3.1753052	20	9 19.4	20.4
483311 2015 VW ₇₉	16.9	X	249.92226	158.81961	61.65605	7.37406	0.0698641	0.26110521	2.4243335	20	—	—
483312 2015 VT ₁₂₂	15.7	X	156.48576	171.13097	16.74456	18.47242	0.0286342	0.18149737	3.0895068	20	10 1.7	20.1
483313 2015 VR ₁₂₆	16.2	X	276.68910	201.54893	220.14507	10.26248	0.0572442	0.17391222	3.1786984	20	9 9.5	20.7
483314 2015 VA ₁₄₃	15.8	X	286.20832	322.77001	81.39879	13.38811	0.1000724	0.18362699	3.0655734	20	9 5.7	20.1
483315 2015 VD ₁₄₃	15.8	X	304.06972	284.75977	105.00636	13.19979	0.0282637	0.18588691	3.0406762	20	9 20.5	20.2
483316 2015 VQ ₁₄₉	16.1	X	225.06762	286.66902	197.08101	15.10234	0.0516877	0.17358251	3.1827223	20	9 25.9	20.8
483317 2015 WO ₉	16.0	X	317.48874	145.89185	243.28558	9.67218	0.1843793	0.17998071	3.1068389	20	9 14.3	19.7
483318 2015 XT ₁₁₀	15.8	X	27.95733	108.74088	216.63212	10.56783	0.0612764	0.17555629	3.1588218	20	10 15.8	20.1
483319 2016 AJ ₁₅	15.5	X	147.23932	183.57533	100.23244	16.30429	0.1679745	0.20278763	2.8692942	20	—	—
483320 2016 LV ₁₁	16.9	X	30.30187	68.20145	269.75379	21.65217	0.2639036	0.27857957	2.3218627	20	12 26.9	20.1
483321 2016 NS ₂₁	15.6	X	281.61842	19.69983	279.19115	16.33270	0.1878711	0.17983347	3.1085345	20	3 19.6	20.6
483322 2016 NN ₂₃	16.1	X	255.80775	10.92286	327.22198	16.48060	0.2799031	0.18439508	3.0570544	20	4 1.3	21.4
483323 2016 OG	17.1	X	22.35675	306.57062	53.18481	6.02042	0.2522522	0.27444485	2.3451250	20	—	—
483324 2016 OP	18.0	X	145.51750	108.69431	295.74245	16.93914	0.1479557	0.38723912	1.8641602	20	3 3.8	20.5
483325 2016 OP ₂	17.6	X	22.65200	112.51770	247.62765	5.52440	0.1490966	0.29022275	2.2593408	20	—	—
483326 2016 PQ ₆	16.2	X	334.94870	31.56053	260.98636	10.98633	0.1619626	0.21867081	2.7286145	20	6 12.4	18.8
483327 2016 PJ ₁₄	16.7	X	296.72037	59.12380	298.12096	10.59258	0.1255297	0.22837147	2.6507869	20	7 13.9	19.8
483328 2016 PT ₇₁	16.3	X	305.85583	10.86982	307.99841	8.73231	0.0975371	0.18695686	3.0290639	20	6 6.5	20.4
483329 2016 PH ₇₂	17.7	X	29.22151	59.61146	276.12164	3.81499	0.2105437	0.27326604	2.3518644	20	12 14.8	20.7
483330 2016 PT ₇₅	17.1	X	76.46738	56.21171	246.70598	2.20495	0.1848810	0.28397956	2.2923345	20	12 22.1	20.5
483331 2016 PO ₇₇	17.8	X	51.77122	35.29079	302.68887	5.19430	0.2110267	0.29432708	2.2382877	20	—	—
483332 2016 QR ₇₇	15.9	X	280.24789	334.03351	339.43668	16.39288	0.1488405	0.18367269	3.0650648	20	4 11.3	20.5
483333 2016 PQ ₇₈	15.3	X	225.31785	126.47146	277.49613	26.07209	0.1663937	0.17674301	3.1446662	20	6 10.9	20.4
483334 2016 QF ₂₈	16.5	X	57.04759	7.95804	252.30357	7.76579	0.1833283	0.24684454	2.5168290	20	9 11.1	19.9
483335 2016 QU ₄₅	16.2	X	336.85429	189.35975	158.31825	11.21954	0.2483444	0.25207602	2.4818853	20	9 20.7	17.6
483336 2016 QC ₇₁	16.3	X	208.71933	121.15235	271.84199	3.99407	0.1443133	0.17615911	3.1516113	20	5 12.3	21.3
483337 2016 QR ₇₁	16.9	X	100.42957	356.43946	258.88143	6.33260	0.0887683	0.27961045	2.3161523	20	11 7.2	20.0
483338 2016 QY ₇₂	16.5	X	328.55111	317.23889	354.94462	17.45633	0.1662518	0.21553503	2.7550161	20	7 1.2	19.8
483339 2016 QD ₇₅	16.5	X	261.29460	189.64940	194.22136	8.17691	0.1101045	0.18536308	3.0464021	20	6 29.2	21.0
483340 2016 QK ₇₅	15.6	X	255.75378	128.02742	194.13921	26.25684	0.1620461	0.17845057	3.1245736	20	4 1.3	20.3
483341 2016 QW ₇₅	16.2	X	254.62764	32.44990	291.40825	16.66607	0.2108453	0.17834197	3.1258419	20	3 19.7	21.6
483342 2016 QL ₇₆	15.4	X	236.44375	75.16862	265.41876	14.11320	0.0785219	0.17549125	3.1596021	20	4 6.2	20.4
483343 2016 QQ ₇₆	18.1	X	25.37824	145.56772	207.38852	3.69272	0.2535887	0.28763056	2.2728949	20	—	—
483344 2016 QU ₇₇	15.7	X	219.66795	123.81559	269.89709	10.84118	0.0297787	0.19003616	2.9962535	20	6 1.8	19.9
483345 2016 QA ₇₈	16.0	X	250.93043	82.01307	265.63010	9.00020	0.1860753	0.18194561	3.0844305	20	4 22.1	20.9
483346 2016 QF ₇₈	16.8	X	310.41084	111.63882	196.24561	13.89747	0.2200206	0.20986718	2.8043983	20	5 12.9	20.2
483347 2016 QZ ₇₈	16.4	X	32.49932	341.56040	282.61227	11.43336	0.1323724	0.24063675	2.5599299	20	8 18.0	19.6
483348 2016 QT ₈₀	16.0	X	270.07940	38.38068	281.42968	10.85980	0.0143288	0.17459708	3.1703806	20	4 30.5	20.7
483349 2016 QW ₈₀	15.5	X	263.12571	69.22812	256.34575	10.80065	0.1417827	0.18000727	3.1065333	20	4 11.9	20.3
483350 2016 QJ ₈₂	18.0	X	22.18323	142.75590	236.26611	5.09873	0.2054701	0.29669425	2.2863663	20	—	—
483351 2016 QU ₈₄	16.9	X	339.92214	199.38601	287.01967	18.49822	0.0275909	0.35176098	1.9874869	20	—	—
483352 2016 RA	17.3	X	15.08595	161.39401	166.92396	4.27147	0.2497834	0.26003928	2.4309541	20	11 19.4	19.9
483353 2016 RQ	16.8	X	315.97672	25.37306	334.93080	15.44569	0.3709146	0.22660702	2.6645291	20	7 17.3	19.2
483354 2016 RJ												

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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>
483361 2016 <i>RL</i> ₃₆	16.7	X	262.23234	252.58366	117.36583	3.06588	0.0858864	0.20327555	2.8647009	20	6 17.1	20.7
483362 2016 <i>RL</i> ₃₉	17.6	X	54.59521	103.47963	229.51801	6.93264	0.1929262	0.29407750	2.2395539	20	—	—
483363 2016 <i>RV</i> ₄₀	18.3	X	32.47097	111.69350	244.44829	1.13943	0.2503588	0.28071059	2.3100968	20	—	—
483364 2016 <i>SE</i> ₃	18.0	X	7.73218	215.68912	269.20022	18.12085	0.0761117	0.36671593	1.9330787	20	—	—
483365 2016 <i>SW</i> ₁₀	17.7	X	321.70334	183.19407	208.73341	1.94131	0.2039591	0.25393187	2.4697780	20	10 22.8	19.4
483366 2016 <i>SO</i> ₁₃	14.9	X	207.85102	87.91643	214.45884	6.77160	0.1842413	0.12628766	3.9345534	20	1 30.0	21.4
483367 2016 <i>SA</i> ₁₅	16.9	X	286.04515	191.30017	185.31256	11.17562	0.1295891	0.21981912	2.7191035	20	7 20.5	20.5
483368 2016 <i>SH</i> ₁₅	18.1	X	75.74732	146.84988	190.41248	2.13581	0.1750240	0.31047147	2.1600058	20	—	—
483369 2016 <i>SJ</i> ₁₇	17.0	X	320.68199	203.33838	195.43947	7.35697	0.2717666	0.25563462	2.4587985	20	11 2.8	18.2
483370 2016 <i>SF</i> ₁₈	17.2	X	27.37021	351.89039	320.53916	5.65747	0.1201894	0.25658433	2.4527275	20	10 20.6	20.1
483371 2016 <i>SB</i> ₃₂	16.3	X	256.55486	286.28086	121.82405	5.89396	0.0684718	0.20891497	2.8129133	20	8 2.4	20.0
483372 2016 <i>SV</i> ₃₆	17.1	X	275.28366	195.77789	229.86382	4.50907	0.0550548	0.22337790	2.6901464	20	9 22.3	20.6
483373 2016 <i>SN</i> ₄₅	17.5	X	299.41535	251.57550	165.49034	5.89312	0.1814847	0.25652372	2.4531138	20	10 14.8	19.6
483374 2016 <i>SX</i> ₄₅	16.9	X	265.54648	4.11098	314.65845	3.68666	0.2503579	0.18364173	3.0654092	20	3 27.2	21.8
483375 2016 <i>TM</i> ₅	16.1	X	262.02392	70.39502	268.62822	19.99547	0.2480413	0.18023349	3.1039334	20	4 12.1	21.4
483376 2016 <i>TK</i> ₆	18.6	X	170.72075	127.96105	212.34113	20.23691	0.1111104	0.36925106	1.9242207	20	1 5.7	21.4
483377 2016 <i>TU</i> ₆	16.4	X	233.50994	8.92460	27.06439	11.12598	0.2239767	0.17604994	3.1529141	20	5 31.8	21.6
483378 2016 <i>TJ</i> ₉	15.9	X	245.77952	142.55093	215.53582	22.09986	0.0656159	0.16941785	3.2346697	20	5 15.9	20.7
483379 2016 <i>TP</i> ₉	15.9	X	202.33655	62.33735	14.77809	13.55877	0.2695339	0.17228781	3.1986473	20	6 24.5	21.7
483380 2016 <i>TA</i> ₁₃	16.0	X	245.11918	95.28101	287.13216	10.83992	0.1902527	0.18007640	3.1057383	20	5 30.5	21.0
483381 2016 <i>TX</i> ₁₆	15.9	X	346.10650	289.28922	357.73766	15.70388	0.0860638	0.18593369	3.0401662	20	6 30.1	20.0
483382 2016 <i>TZ</i> ₁₆	16.7	X	1.36139	314.54717	348.90773	12.41816	0.1961233	0.22266344	2.6958979	20	8 30.5	19.1
483383 2016 <i>TW</i> ₂₀	17.3	X	18.54184	82.58951	255.03433	3.69242	0.1448428	0.25849257	2.4406416	20	11 18.2	19.9
483384 2016 <i>TB</i> ₂₉	17.5	X	93.83292	40.36380	299.29920	6.40268	0.1067055	0.31088968	2.1580683	20	—	—
483385 2016 <i>TV</i> ₄₁	17.2	X	270.25110	62.15248	17.84252	14.19557	0.1465891	0.23864275	2.5741699	20	9 27.9	20.4
483386 2016 <i>TS</i> ₄₇	16.3	X	249.94014	227.35671	154.85130	5.13133	0.0977514	0.17313722	3.1881770	20	6 15.8	21.0
483387 2016 <i>TX</i> ₅₂	17.0	X	344.46646	104.18116	234.83519	13.89287	0.1606254	0.24245772	2.5470963	20	9 9.7	19.8
483388 2016 <i>TD</i> ₅₇	17.7	X	68.55749	81.31429	45.53715	16.36099	0.2252685	0.35260616	1.9843097	20	4 16.8	19.0
483389 2016 <i>TN</i> ₆₆	17.5	X	321.78099	84.52737	281.41053	8.31553	0.1813625	0.23846955	2.5754162	20	9 1.9	20.0
483390 2016 <i>T-3</i>	17.9	X	68.78725	321.49574	17.17465	9.68467	0.2192214	0.28237768	2.3009957	20	—	—
483391 1991 <i>TT</i> ₁₆	17.9	X	56.46346	230.66598	171.68009	2.94606	0.2606943	0.28136017	2.3065399	20	—	—
483392 1994 <i>RY</i> ₅	16.7	X	344.58171	188.29188	187.09410	7.91126	0.1993935	0.19073529	2.9889273	20	10 30.5	19.7
483393 1994 <i>SQ</i> ₆	16.9	X	31.13777	193.05798	150.23113	2.41262	0.1230363	0.19303423	2.9651488	20	11 24.9	20.9
483394 1995 <i>CZ</i> ₄	18.8	X	337.12785	190.53913	298.33337	2.79260	0.1836327	0.26944854	2.3740261	20	—	—
483395 1995 <i>FG</i> ₁₅	18.3	X	258.17068	121.75696	97.28795	3.31132	0.1505953	0.26509233	2.3999633	20	—	—
483396 1995 <i>ST</i> ₁₁	18.1	X	349.43133	54.29856	347.26638	6.47055	0.3081676	0.24119487	2.5559793	20	—	—
483397 1995 <i>SH</i> ₆₇	18.3	X	109.91684	349.40228	8.50953	4.97880	0.1846417	0.29071938	2.2567670	20	—	—
483398 1996 <i>JU</i> ₈	16.8	X	175.61515	127.43366	89.76531	9.68467	0.2233925	0.18308789	3.0715880	20	11 18.9	22.1
483399 1997 <i>HZ</i> ₃	16.9	X	157.98391	116.60864	122.17775	12.82945	0.2075605	0.19007962	2.9957967	20	12 1.9	22.2
483400 1997 <i>LY</i> ₁₃	13.0	X	296.33983	216.46938	64.63213	30.65215	0.0576071	0.08335861	5.1900204	20	4 28.8	20.0
483401 1997 <i>MQ</i>	16.3	X	337.81731	199.85997	144.50176	29.01366	0.1753189	0.17248708	3.1961832	20	8 28.4	19.8
483402 1998 <i>SR</i> ₂₀	16.4	X	307.26859	87.95685	357.85421	16.50571	0.0177455	0.18621096	3.0371476	20	11 23.2	20.9
483403 1998 <i>TU</i> ₁₃	18.5	X	32.58118	13.86830	44.53532	3.72748	0.1810696	0.27963425	2.3160209	20	—	—
483404 1998 <i>XG</i> ₂₀	17.5	X	72.14480	295.39807	80.68636	3.49063	0.1963884	0.28009191	2.3134973	20	—	—
483405 1999 <i>CP</i> ₂	17.3	X	244.27463	45.71821	120.39568	15.24457	0.1671769	0.21996849	2.7178724	20	12 7.3	21.1
483406 1999 <i>RK</i> ₃₀	17.2	X	317.87818	76.61875	337.16416	27.36537	0.4005818	0.23552581	2.5968311	20	10 4.1	19.0
483407 1999 <i>SL</i> ₁	16.8	X	323.79762	242.19702	141.85050	15.28654	0.2157891	0.23493462	2.6011858	20	10 15.1	19.2
483408 1999 <i>TZ</i> ₄	19.4	X	343.14653	61.62211	15.08358	32.00453	0.1571007	0.52875090	1.5146140	20	—	—
483409 1999 <i>TE</i> ₁₁₄	18.3	X	121.69135	342.46340	7.99795	5.73994	0.2371611	0.30087710	2.2056840	20	—	—
483410 1999 <i>TN</i> ₁₇₁	17.7	X	3.83768	353.43480	26.94613	6.56263	0.3134405	0.23877777	2.5731995	20	—	—
483411 1999 <i>VR</i> ₁₆	18.6	X	53.93231	137.46564	286.07821	1.46656	0.2210588	0.29711230	2.2242774	20	—	—
483412 1999 <i>VK</i> ₄₁	17.7	X	82.93770	356.10531	26.46177	7.58580	0.2158158	0.29730407	2.2233209	20	—	—
483413 1999 <i>VD</i> ₄₆	18.1	X	113.25095	55.40428	16.25598	19.36579	0.2250730	0.35343383	1.9812106	20	3 29.6	20.3
483414 1999 <i>VQ</i> ₉₁	16.6	X	304.81581	58.92914	25.46712	30.38420	0.3264364	0.23664092	2.5886668	20	11 3.7	18.5
483415 1999 <i>VN</i> ₁₃₈	18.5	X	108.17935	274.88960	76.60026	4.19856	0.1673938	0.29607264	2.2294814	20	—	—
483416 1999 <i>YD</i> ₆	16.8	X	250.18834	75.73899	343.32142	15.07445	0.4785410	0.17566022	3.1575756	20	6 24.0	22.7
483417 1999 <i>YJ</i> ₈	17.2	X	353.15238	349.46528	108.50695	22.92430	0.0618446	0.23888647	2.5724188	20	—	—
483418 2000 <i>BK</i> ₂₂	17.5	X	253.42258	200.85033	323.32735	7.92656	0.1197656	0.23083229	2.6319139	20	12 25.1	20.9
483419 2000 <i>BM</i> ₄₇	17.1	X	82.58261	43.63665	324.80486	13.42445	0.0918729	0.23681957	2.5873647	20	—	—
483420 2000 <i>CX</i> ₃₉	17.2	X	337.43434	294.51578	142.74575	29.71689	0.3733739	0.23600684	2.5933014	20	—	—
483421 2000 <i>CD</i> ₄₀	16.3	X	302.25317	148.64436	332.46421	32.60574	0.1747249	0.23254735	2.6189575	20	—	—
483422 2000 <i>CE</i> ₅₉	20.4	X	156.26993	307.46008	318.64618	12.26488	0.1665887	0.81262040	1.1373066	20	—	—
483423 2000 <i>DO</i> ₁	20.3	X	268.08341	302.75797	335.84161	3.45758	0.6819289	0.57642764	1.4299017	20	—	—
483424 2000 <i>DY</i> ₈₅	17.0	X	313.63886	357.62703	121.97586	9.23128	0.2738256	0.23447507	2.6045834	20	—	—
483425 2000 <i>EG</i> ₄	16.2	X	308.40730	350.42268	150.73270	34.92910	0.1873633	0.23475073	2.6025440	20	—	—
483426 2000 <i>FU</i> ₁₀	16.0	X	157.93219	46.82676	190.91859	27.32910	0.1964063	0.17208279	3.2011873	20	11 26.8	21.8
483427 2000												

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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>
483441 2001 SK ₁₀₄	17.1	X	193.42612	323.90153	323.53836	4.29717	0.2054911	0.23162235	2.6259255	20	—	—
483442 2001 SY ₁₄₂	17.2	X	97.94563	9.66255	322.21219	5.04791	0.2837394	0.27580259	2.3374222	20	—	—
483443 2001 SX ₂₅₅	18.1	X	73.47771	8.90388	23.23066	13.23487	0.1720113	0.27597433	2.3364523	20	—	—
483444 2001 SC ₃₄₂	17.9	X	75.03078	315.77241	54.21577	6.65041	0.2728515	0.27498667	2.3420435	20	—	—
483445 2001 TH ₂₅	17.9	X	18.50547	47.07942	11.23339	8.35093	0.1999931	0.27102465	2.3648133	20	—	—
483446 2001 TG ₁₂₇	18.4	X	39.18133	232.74818	187.57928	4.45277	0.1865233	0.27453285	2.3446238	20	—	—
483447 2001 TT ₁₄₀	18.3	X	78.53092	279.00547	84.89760	3.95572	0.2523586	0.27558517	2.3386514	20	—	—
483448 2001 UX ₃₇	17.6	X	59.48221	350.51850	26.09119	6.31510	0.1352022	0.27274418	2.3548634	20	—	—
483449 2001 UR ₁₀₆	18.0	X	44.34897	21.67754	39.25872	2.87959	0.1633689	0.27406677	2.3472813	20	—	—
483450 2001 VR ₈₃	17.5	X	88.66694	119.66448	243.23790	8.28379	0.2667364	0.27567366	2.3381509	20	—	—
483451 2001 WU ₃₅	17.6	X	343.05919	309.98251	75.32649	10.95173	0.2720623	0.26033275	2.4291267	20	12 15.4	19.4
483452 2001 XZ ₁₈₂	18.5	X	256.69256	359.77320	103.14920	14.99874	0.4199629	0.19896991	2.9058807	20	8 29.3	23.3
483453 2002 AN ₁₁	18.2	X	200.66666	116.74543	278.65795	19.86689	0.3354925	0.40242701	1.8169570	20	4 23.4	21.8
483454 2002 AF ₁₇	18.6	X	333.38478	137.11340	0.70696	1.18255	0.1309597	0.26677404	2.3898667	20	—	—
483455 2002 CQ ₂₃₄	18.2	X	315.65169	162.44299	343.87055	1.10106	0.1315494	0.26388370	2.4072859	20	—	—
483456 2002 CG ₂₆₈	18.2	X	359.95553	320.06602	136.50018	3.72423	0.2010858	0.26447041	2.4037243	20	—	—
483457 2002 CW ₂₉₅	17.9	X	296.22660	59.96259	125.56731	1.72628	0.1163688	0.26372897	2.4082274	20	—	—
483458 2002 DC ₁	18.3	X	333.95657	28.95360	103.58750	2.45371	0.1319760	0.26491013	2.4010636	20	—	—
483459 2002 EM ₆	20.2	X	101.43644	120.96336	169.50066	31.75870	0.1413346	0.78915308	1.1597433	20	—	—
483460 2002 EO ₆₅	17.4	X	252.32629	71.39186	183.17915	8.74076	0.1895271	0.26334757	2.4105520	20	—	—
483461 2002 ES ₁₀₆	15.5	X	63.13640	75.05359	156.97477	26.71022	0.1853524	0.17845673	3.1245017	20	8 24.4	19.9
483462 2002 FH ₈	17.8	X	322.29171	315.50705	195.61011	7.89956	0.2332758	0.26263978	2.4148809	20	—	—
483463 2002 FE ₂₄	17.5	X	325.19471	248.87251	273.35034	3.95921	0.1680557	0.26394938	2.4068865	20	—	—
483464 2002 FP ₄₁	17.8	X	196.74613	302.22944	338.72197	1.83340	0.0802769	0.25849517	2.4406252	20	—	—
483465 2002 GQ ₃₈	16.4	X	183.39039	170.41232	141.27863	11.48114	0.0916045	0.19005107	2.9960968	20	10 30.9	21.0
483466 2002 GF ₉₈	18.0	X	263.27311	337.78200	218.15628	1.84494	0.1370848	0.25646033	2.4535180	20	—	—
483467 2002 GA ₁₂₃	17.2	X	270.29713	11.32941	171.80188	6.18150	0.1564352	0.25575477	2.4580283	20	—	—
483468 2002 JY ₈	17.7	X	1.57171	188.01184	127.93047	24.28146	0.5951257	0.27645525	2.3337419	20	12 18.4	21.1
483469 2002 JT ₂₂	16.7	X	190.18978	184.49863	44.71547	16.06415	0.3166655	0.19306286	2.9648557	20	12 5.5	22.2
483470 2002 JR ₁₄₅	18.2	X	341.28404	78.55054	196.09027	24.10011	0.1140719	0.38513572	1.8709414	20	6 3.3	20.0
483471 2002 LS ₃₂	18.3	X	164.12874	151.72777	239.79040	8.85176	0.6969579	0.41385761	1.7833452	20	4 9.9	22.5
483472 2002 NX	19.2	X	258.82170	62.36463	288.41037	15.00849	0.4339483	0.42885331	1.7415270	20	3 27.9	22.6
483473 2002 NT ₅	16.0	X	63.30347	19.10332	287.67111	8.08879	0.1489403	0.17570876	3.1569941	20	11 17.6	20.6
483474 2002 NQ ₆₂	18.4	X	300.48480	221.34823	53.62078	2.44734	0.1751155	0.31998513	2.1169772	20	3 10.9	20.9
483475 2002 NP ₇₇	16.3	X	123.44155	95.47648	235.51339	13.83764	0.1411234	0.24175516	2.5520286	20	—	—
483476 2002 PL ₁₃₉	16.5	X	94.94241	216.15555	151.86765	14.12831	0.1885563	0.23981395	2.5657820	20	—	—
483477 2002 PJ ₁₄₀	16.6	X	36.96160	7.95565	344.64647	12.84082	0.2949980	0.22905066	2.6455442	20	—	—
483478 2002 PE ₁₄₂	17.1	X	21.49897	34.63584	321.93088	15.75301	0.2482584	0.22652155	2.6651994	20	12 27.6	20.7
483479 2002 PA ₁₉₁	18.6	X	263.87742	28.51255	325.31623	21.56723	0.1006071	0.37756427	1.8958710	20	5 17.5	21.3
483480 2002 PF ₁₉₁	16.1	X	97.42950	182.38991	129.37994	27.25138	0.0668307	0.18040026	3.1020202	20	12 26.3	21.1
483481 2002 QQ ₃₀	17.7	X	115.06652	312.79680	0.42952	4.24558	0.2261120	0.23808316	2.5782019	20	—	—
483482 2002 RM ₂₂	16.8	X	122.22676	343.13816	346.62032	12.58647	0.1748097	0.23942242	2.5685785	20	—	—
483483 2002 RR ₂₈	17.0	X	265.61303	323.49470	1.51307	25.31898	0.2809966	0.31526528	2.1380538	20	3 24.4	20.1
483484 2002 RJ ₇₉	18.4	X	158.53693	170.54744	158.56770	4.51339	0.2110409	0.30046764	2.2076874	20	1 3.6	21.5
483485 2002 RZ ₁₃₇	18.4	X	225.19515	193.03444	177.53469	22.63281	0.1237352	0.37106329	1.9179505	20	4 30.1	21.1
483486 2002 RU ₂₁₀	18.5	X	55.75016	252.80755	170.98423	3.19531	0.2077239	0.29354724	2.2422501	20	—	—
483487 2002 RU ₂₄₃	17.2	X	113.56139	22.87235	319.07621	8.47625	0.1203994	0.24041216	2.5615240	20	—	—
483488 2002 RF ₂₅₇	18.4	X	81.06390	194.49023	177.36671	2.50398	0.1721679	0.29389220	2.2404952	20	—	—
483489 2002 SH ₈	18.7	X	73.47230	323.86372	66.54956	1.89193	0.2450103	0.29221902	2.2490394	20	—	—
483490 2002 SJ ₆₉	17.0	X	128.41578	283.74908	3.70329	9.92897	0.2170849	0.23456842	2.6038923	20	—	—
483491 2002 TB ₁₈	18.0	X	123.27247	202.27880	148.69717	4.47017	0.2179477	0.29610070	2.2293406	20	—	—
483492 2002 TA ₅₅	16.5	X	143.86528	266.41920	33.79182	7.22806	0.2395048	0.23937656	2.5689065	20	—	—
483493 2002 TY ₁₈₈	18.1	X	71.56711	152.50985	227.52331	4.53419	0.3087349	0.28943344	2.2634465	20	—	—
483494 2002 TA ₁₉₇	16.8	X	42.86196	333.14474	32.51349	8.46737	0.1373118	0.22863549	2.6487458	20	—	—
483495 2002 TK ₂₉₅	17.5	X	83.67150	70.68547	300.79578	7.25849	0.2514839	0.29038725	2.2584875	20	—	—
483496 2002 TG ₂₉₈	17.5	X	79.14156	26.26977	2.44642	6.43558	0.2260661	0.29182741	2.2510510	20	—	—
483497 2002 TC ₃₇₈	17.7	X	56.66181	263.27311	92.47294	5.21168	0.2283354	0.28515127	2.2860506	20	—	—
483498 2002 UL ₃	16.6	X	291.80654	72.55429	347.77965	28.23122	0.4304936	0.21466007	2.7624973	20	8 20.2	20.0
483499 2002 VM ₁₄	17.4	X	346.15932	211.07805	36.54115	23.02777	0.0602674	0.36663850	1.9333508	20	4 28.2	18.8
483500 2002 VX ₄₂	17.9	X	42.86609	329.08019	84.68098	2.87755	0.1510154	0.28825782	2.2695965	20	—	—
483501 2002 VN ₅₄	16.6	X	77.17818	345.85535	4.50785	13.67869	0.2525552	0.23141989	2.6274568	20	—	—
483502 2002 VF ₉₈	17.6	X	62.07471	132.34598	269.86579	21.76515	0.3026810	0.28960516	2.2625517	20	—	—
483503 2002 WH ₂₉	18.1	X	101.20099	252.74702	229.00518	19.93151	0.0819653	0.36274053	1.9471765	20	5 1.4	19.8
483504 2002 XN ₁₄	20.2	X	177.71466	310.96655	86.15956	11.79596	0.4407828	0.41941367	1.7675607	20	4 23.4	23.7
483505 2002 XD ₃₁	17.4	X	290.69396	199.24701	267.24978	7.81641	0.2945940	0.21774793	2.7363187	20	11 6.5	20.2
483506 2002 XU ₆₆	18.4	X	314.72133	89.85811	285.45306	24.45309	0.5376558	0.21569589	2.7536462	20	6 25.8	21.1
483507 2003 AH ₉	16.9	X	316.26007	7.81466	104.78896	26.43423	0.2853477	0.27629270	2.3346571	20	—	—
483508 2003 CR ₁	20.1	X	359.36479	101.97689	310.96385	12.72071	0.4628552	0.56271773	1.4530336	20	—	—
483509 2003 CH ₁₁	19.5	X	343.24470	322.03886	134.54107	36.47790	0.5216243	0.27995816	2.3142341	20	—	—
483510 2003 DN ₂₂	16.7	X	264.91057	234.64286	284.12137	7.75014	0.2006443	0.21447309	2.7641027	20	12 17.6	19.8
483511 2003 FA ₁₇	17.7	X	280.53460	182.17761	5.02903	11.94730	0.1135601	0.27542025	2.3395848	20	—	—
483512 2003 FT ₃₅	17.9	X	270.18099	237.23034	1.03641	3.19048	0.1953051	0.27824334	2.3237328	20	—	—
483513 2003 FD ₃₇	17.7	X	255.38597	320.77674	193.66211	8.43367	0.2140217	0.20996320	2.8035448	20	11 25.9	21.5
483514 2003 FF ₁₁₅	17.1	X	22.92727	162.25444	56.06623	21.76664	0.1169635	0.35002239	1.9940628	20	5 24.1	18.2
483515 2003 FV ₁₃₂	18.4	X	325.49832	45.08293	137.89508	5.86496	0.1547316	0.28230513	2.3013899			

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>
483521 2003 SO ₃₀	17.6	X	337.12968	192.41938	187.08799	10.54259	0.2582610	0.23323437	2.6138120	20	11 9.1	19.6
483522 2003 SE ₆₄	17.5	X	5.76884	224.43149	144.66353	5.56601	0.2485891	0.23764633	2.5813604	20	12 22.7	20.4
483523 2003 SR ₁₀₀	17.1	X	334.86057	162.86848	227.93647	13.62790	0.2587126	0.23543342	2.5975105	20	11 20.4	18.8
483524 2003 SN ₁₅₈	17.4	X	2.01057	18.79428	14.09065	12.67418	0.2836362	0.23935952	2.5690285	20	—	—
483525 2003 SB ₂₂₇	16.0	X	87.75480	242.96329	355.48406	16.22453	0.0688793	0.17386191	3.1793115	20	9 15.4	20.6
483526 2003 SC ₃₃₀	16.7	X	353.46100	7.47364	355.84578	17.83100	0.0954228	0.17679764	3.1440183	20	10 12.8	20.8
483527 2003 ST ₃₄₄	16.7	X	332.51281	66.33211	324.46815	15.10942	0.1017736	0.17876661	3.1208899	20	10 13.6	20.9
483528 2003 SE ₃₅₆	17.5	X	346.15069	68.48814	338.54633	30.08646	0.2449124	0.23982676	2.5656906	20	—	—
483529 2003 TA ₂₆	18.0	X	344.65396	101.57046	322.38405	3.59575	0.2446296	0.23983657	2.5656207	20	—	—
483530 2003 TH ₄₆	16.5	X	323.93644	157.11352	225.82209	9.40841	0.0718650	0.17208122	3.2012068	20	9 25.2	20.8
483531 2003 UF ₂₂	20.0	X	149.04011	13.37864	27.92223	11.70024	0.3799460	0.38117272	1.8838870	20	4 5.9	23.0
483532 2003 UO ₂₃	16.6	X	352.78438	132.18116	221.51529	14.71160	0.1758684	0.23083565	2.6318884	20	10 23.8	19.2
483533 2003 UQ ₂₄	16.1	X	313.47465	68.50489	56.69046	28.45407	0.4264284	0.23245601	2.6196436	20	—	—
483534 2003 UJ ₄₉	16.4	X	29.64698	168.13481	251.71972	13.96664	0.0912294	0.24592607	2.5230915	20	—	—
483535 2003 UM ₈₆	18.2	X	107.33391	247.81151	131.15932	2.87899	0.2726998	0.31305202	2.1481192	20	1 15.9	20.1
483536 2003 UD ₁₄₈	18.3	X	164.30862	267.74731	72.60886	2.52850	0.1843327	0.31797948	2.1258697	20	1 19.5	21.3
483537 2003 UP ₁₇₂	17.5	X	321.47160	296.49389	82.55560	7.62922	0.2640231	0.22945459	2.6424385	20	9 24.1	19.5
483538 2003 UR ₂₃₁	15.9	X	316.51920	49.16836	13.24840	16.41602	0.1319390	0.17682680	3.1436727	20	10 30.5	19.8
483539 2003 UY ₂₅₈	17.7	X	342.80679	317.86258	81.43656	6.07570	0.2845130	0.23419152	2.6066853	20	12 26.5	19.9
483540 2003 UZ ₂₇₅	18.1	X	346.46187	171.02746	236.00677	3.82898	0.2473246	0.23654959	2.5893330	20	—	—
483541 2003 UN ₃₁₅	17.0	X	359.69511	317.34294	62.78376	13.18628	0.2455352	0.23505105	2.6003333	20	12 25.5	19.9
483542 2003 UO ₃₆₂	17.9	X	310.47426	339.68353	132.94200	6.28196	0.1922497	0.24011700	2.5636227	20	—	—
483543 2003 VF ₁₁	17.1	X	322.39986	40.18414	48.83728	16.33290	0.1379131	0.23669706	2.5882574	20	—	—
483544 2003 WG ₇	17.6	X	159.63528	306.70325	45.63241	22.48377	0.0891285	0.37506057	1.9042989	20	1 10.5	20.2
483545 2003 WW ₉	17.7	X	0.55352	147.73451	260.07738	12.97469	0.2434712	0.23808969	2.5781548	20	—	—
483546 2003 WW ₁₃	17.2	X	319.16344	246.04537	230.05860	14.17289	0.0664632	0.24174266	2.5521166	20	—	—
483547 2003 WM ₂₅	17.8	X	351.67392	295.07888	67.84295	12.22935	0.5658625	0.23271046	2.6177336	20	—	—
483548 2003 WR ₅₉	17.2	X	25.36070	160.87310	228.85730	12.84479	0.1777333	0.23961413	2.5672082	20	—	—
483549 2003 WA ₇₀	18.0	X	349.10670	249.48530	152.95827	1.69412	0.2401132	0.23546932	2.5972465	20	—	—
483550 2003 WT ₁₇₅	18.3	X	347.87622	167.42802	247.86611	2.52580	0.2086194	0.23632570	2.5909682	20	—	—
483551 2003 XO ₁₄	17.8	X	189.69212	109.26960	300.39611	18.79805	0.1287186	0.38520729	1.8707096	20	5 5.1	20.7
483552 2003 XR ₁₅	17.7	X	101.08161	39.21555	74.90758	23.43544	0.0703164	0.37854125	1.8926076	20	4 29.4	19.9
483553 2003 XE ₂₄	17.4	X	14.82863	309.15678	73.41741	9.34299	0.1765205	0.23599387	2.5933964	20	—	—
483554 2003 YD ₈	18.1	X	139.79327	200.13940	268.07524	19.20176	0.0772456	0.38584854	1.8686364	20	6 6.2	20.1
483555 2003 YP ₁₀	16.9	X	358.63742	341.06110	16.91333	7.95284	0.4281212	0.23231850	2.6206771	20	12 25.7	19.6
483556 2003 YW ₁₈	17.2	X	239.90445	95.14814	79.16057	11.58841	0.1301266	0.23343343	2.6123258	20	12 17.9	20.4
483557 2003 YO ₉₄	17.8	X	226.72984	296.23982	95.49262	23.42582	0.0917066	0.38973740	1.8561853	20	6 6.8	19.9
483558 2003 YJ ₁₀₈	16.6	X	20.47597	250.65525	122.49144	29.69689	0.3968339	0.23214557	2.6219785	20	—	—
483559 2004 AC ₂₄	17.0	X	14.78038	303.55631	108.49007	13.51552	0.1400440	0.23478205	2.6023125	20	—	—
483560 2004 BV ₁	19.2	X	205.65290	223.24777	96.75789	12.15983	0.3674095	0.55701895	1.4629273	20	1 15.1	20.7
483561 2004 BO ₂₄	17.4	X	270.40323	24.75575	128.89975	13.29588	0.2023447	0.22917922	2.6445548	20	12 25.3	20.4
483562 2004 BB ₂₇	18.2	X	205.07988	255.08772	128.58599	22.18209	0.1186481	0.38058108	1.8858389	20	5 2.4	21.2
483563 2004 BD ₆₈	18.7	X	106.59471	203.86456	172.05382	19.24617	0.8293651	0.37591826	1.9014012	20	3 16.5	22.2
483564 2004 BJ ₇₉	18.4	X	34.70920	148.85044	329.13681	5.38563	0.0855502	0.30583868	2.1817640	20	1 8.9	20.4
483565 2004 BX ₇₉	17.4	X	215.79218	244.30447	307.35131	11.47958	0.2107784	0.22495471	2.6775606	20	11 27.1	21.6
483566 2004 BE ₈₅	17.8	X	235.80484	268.74429	275.69533	23.99565	0.5203456	0.22373531	2.6872807	20	10 31.9	22.9
483567 2004 CG ₇	16.1	X	228.02360	282.32245	319.29199	27.75759	0.2146313	0.23274607	2.6174666	20	—	—
483568 2004 CC ₁₅	18.3	X	353.52868	113.07108	73.22984	2.40172	0.0868850	0.30802229	2.1714406	20	2 8.3	20.4
483569 2004 CZ ₂₃	17.7	X	222.82602	252.80322	139.95493	23.36567	0.0924614	0.38321634	1.8771834	20	6 5.5	20.5
483570 2004 CL ₅₂	17.8	X	161.44235	290.84904	131.56484	23.83689	0.1265334	0.37675614	1.8985811	20	5 8.9	20.9
483571 2004 DU ₁	18.1	X	140.57830	288.11763	152.54266	23.72284	0.0943465	0.37576562	1.9019161	20	5 4.3	20.9
483572 2004 DJ ₅₇	17.9	X	263.89919	183.09735	342.04711	6.00505	0.2024414	0.22874864	2.6478723	20	12 29.5	20.8
483573 2004 DD ₆₄	18.1	X	127.63354	146.43867	358.48625	20.18734	0.0565846	0.38261326	1.8791555	20	7 25.6	20.6
483574 2004 EQ ₉	17.6	X	229.80754	220.42938	170.15117	23.52745	0.0875359	0.38022111	1.8870290	20	6 8.7	20.4
483575 2004 EW ₁₀	17.7	X	284.94111	6.26516	139.19950	3.28842	0.2952002	0.22763348	2.6565131	20	12 27.8	19.6
483576 2004 ER ₂₃	18.0	X	174.29539	276.84896	165.94151	22.55254	0.0576047	0.37996681	1.8878708	20	6 15.4	20.8
483577 2004 ES ₃₃	18.2	X	315.21270	284.46416	357.31989	19.03282	0.0717323	0.37394452	1.9080859	20	4 17.1	20.1
483578 2004 EY ₆₅	17.2	X	254.35245	128.44412	84.70904	7.27167	0.3428929	0.22935329	2.6432165	20	—	—
483579 2004 ET ₇₇	16.7	X	209.50752	4.61703	164.60305	12.31027	0.1454116	0.21672477	2.7449242	20	11 3.9	21.0
483580 2004 EP ₇₈	17.5	X	301.51461	316.34459	172.15669	15.33467	0.3036360	0.22841344	2.6504622	20	—	—
483581 2004 FX ₄	17.6	X	333.85739	237.91690	34.78089	20.64232	0.0951697	0.37554302	1.9026676	20	5 9.4	18.9
483582 2004 FX ₅	18.0	X	11.22900	189.45653	9.43061	19.42202	0.0370875	0.36920279	1.9243884	20	3 26.2	19.3
483583 2004 FO ₄₈	17.2	X	192.61849	65.72859	176.78729	9.60369	0.3056928	0.22183999	2.7025651	20	12 28.8	22.0
483584 2004 FY ₆₃	16.7	X	194.73675	215.12534	22.50037	14.78600	0.1354076	0.22143034	2.7058972	20	—	—
483585 2004 FK ₁₀₆	17.8	X	0.81550	206.62835	20.00677	20.20563	0.0454768	0.37038388	1.9202952	20	4 17.9	19.3
483586 2004 FK ₁₁₅	17.2	X	235.96423	354.45595	210.96516	4.18658	0.1649203	0.22575519	2.6712276	20	—	—
483587 2004 FL ₁₃₅	17.0	X	206.07284	55.26799	190.94872	10.46189	0.1426687	0.22555000	2.6728474	20	—	—
483588 2004 FY ₁₄₁	16.9	X	197.09419	24.67458	191.60006	12.52452	0.1498068	0.21999203	2.7176785	20	12 15.4	21.3
483589 2004 GB ₇₇	16.9	X	224.69640	87.22639	163.66766	17.34509	0.3268066	0.22362148	2.6881925	20	—	—
483590 2004 JE ₅	17.6	X	252.76490	2.06676	254.58082	5.58547	0.2078043	0.29108359	2.2548842	20	—	—
483591 2004 JZ ₃₁	19.5	X	44.44249	32.85874	203.22065	7.04040	0.2622021	0.37557101	1.9025731	20	9 9.3	21.3
483592 2004 MY ₃	17.4	X	161.90591	355.94555	293.72453	9.27093	0.1145045	0.27460485	2.3442140	20	—	—
483593 2004 MA ₆	16.7	X	202.81505	250.33428	31.89609	14.83275	0.2722694	0.22007600	2.7169872	20	—	—
483594 2004 PT ₈	17.5	X	209.66000	322.35873	325.09287	9.27999	0.2664009</					

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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>		
483601	2004	RZ ₃₂	18.2	X	56.64833	187.26851	199.25378	2.29317	0.1765741	0.26570822	2.3962533	20	—	—
483602	2004	RC ₃₄	17.5	X	41.65875	353.65864	25.51477	3.11204	0.2048639	0.26181627	2.4199420	20	—	—
483603	2004	RR ₇₇	16.8	X	224.96738	300.33120	10.39233	23.87955	0.2976283	0.28516643	2.2859696	20	2 18.8	21.3
483604	2004	RO ₉₇	17.9	X	20.45404	221.85057	171.12772	5.84873	0.2748335	0.25900450	2.4374245	20	—	—
483605	2004	RY ₁₀₀	16.6	X	264.05533	223.47815	181.47740	13.25752	0.2885457	0.17511823	3.1640874	20	7 4.5	21.7
483606	2004	RL ₁₀₁	17.4	X	73.00333	37.08754	303.74237	2.31316	0.2494154	0.26233681	2.4167398	20	—	—
483607	2004	RL ₁₄₇	16.7	X	359.52038	5.86001	352.54478	9.59215	0.1563734	0.18811770	3.0165899	20	10 26.2	20.3
483608	2004	RR ₁₇₄	16.6	X	276.26728	173.81823	191.63944	15.04075	0.2776064	0.17540077	3.1606886	20	6 2.0	21.5
483609	2004	RG ₂₁₀	16.3	X	178.42786	347.52260	326.78857	24.16665	0.1968901	0.27747397	2.3280263	20	1 12.3	20.3
483610	2004	RH ₂₄₈	15.9	X	300.09346	134.95771	265.75757	17.43862	0.1276284	0.18285684	3.0741750	20	9 1.3	20.2
483611	2004	RF ₂₅₆	17.6	X	41.23309	36.81460	3.35819	10.37422	0.2167987	0.26394854	2.4068917	20	—	—
483612	2004	RN ₂₇₀	17.1	X	358.07947	178.05942	171.63899	10.49957	0.1137494	0.18753929	3.0227893	20	10 14.0	20.8
483613	2004	RK ₃₀₃	16.9	X	117.11099	343.39804	323.53630	11.99619	0.1725170	0.20286598	2.8685554	20	—	—
483614	2004	SU ₃₀	16.0	X	277.32764	45.29255	6.60235	22.66697	0.2597968	0.17767689	3.1336375	20	8 13.7	20.7
483615	2004	SP ₄₁	16.2	X	333.15217	185.26780	204.59658	10.09839	0.1049027	0.18796596	3.0182131	20	10 24.2	19.8
483616	2004	TG ₁₆	17.3	X	315.41515	141.59133	215.92297	28.95060	0.2851157	0.24092663	2.5578762	20	7 15.1	20.5
483617	2004	TR ₅₈	17.2	X	260.22312	228.25767	192.46937	12.52893	0.2017124	0.17625121	3.1505132	20	7 28.7	22.1
483618	2004	TR ₇₆	17.2	X	279.16626	3.89248	31.63190	1.09750	0.1746374	0.17597682	3.1537873	20	7 28.2	21.5
483619	2004	TK ₉₁	17.0	X	308.04487	150.52910	261.60068	2.23825	0.1425755	0.18361984	3.0656528	20	10 6.9	20.7
483620	2004	TF ₁₀₈	16.0	X	319.38380	328.50334	40.16847	17.92407	0.2069639	0.18023943	3.1038652	20	9 3.4	19.7
483621	2004	TN ₁₃₂	16.7	X	311.23666	94.97002	282.72508	8.20445	0.2521592	0.17911609	3.1168291	20	8 10.1	20.1
483622	2004	TZ ₁₄₁	16.6	X	275.91178	28.83197	17.01602	17.73718	0.2076197	0.17719683	3.1392947	20	8 8.9	21.2
483623	2004	TJ ₁₉₀	17.9	X	354.16375	56.41354	18.86922	11.15230	0.1674225	0.25865837	2.4395985	20	—	—
483624	2004	TX ₁₉₂	18.2	X	12.95379	24.56602	48.94335	2.02243	0.1631779	0.26174365	2.4203896	20	—	—
483625	2004	TT ₂₀₀	18.1	X	71.72084	310.38457	55.22167	3.22305	0.1817818	0.26223523	2.4173639	20	—	—
483626	2004	TH ₂₀₆	17.4	X	40.36147	321.57158	47.97422	3.19522	0.2084875	0.25572430	2.4582236	20	—	—
483627	2004	TX ₂₀₉	16.3	X	343.83916	11.45500	21.43487	10.50060	0.1178963	0.18908688	3.0062732	20	11 12.4	20.0
483628	2004	TS ₂₂₇	16.6	X	289.57031	27.90358	10.63404	10.80231	0.2193374	0.17741756	3.1366904	20	8 13.2	20.7
483629	2004	TL ₂₄₁	16.2	X	284.94114	51.21165	342.64222	14.29807	0.1978316	0.17659940	3.1463708	20	8 3.2	20.5
483630	2004	TE ₂₄₉	16.3	X	309.08830	358.91459	28.10798	9.67788	0.1489050	0.17989422	3.1078347	20	9 9.3	20.1
483631	2004	TG ₂₆₆	18.3	X	10.48842	149.98427	273.48953	0.41936	0.1625591	0.25828184	2.4419689	20	—	—
483632	2004	TB ₂₇₁	16.3	X	269.43653	11.39771	37.82053	17.94910	0.1903107	0.17441735	3.1725582	20	8 6.5	21.1
483633	2004	TK ₂₉₀	16.8	X	324.97493	13.60977	354.48673	4.70564	0.2008832	0.18086825	3.0966669	20	9 4.2	20.0
483634	2004	TS ₃₀₀	16.4	X	280.97065	14.43827	13.80158	15.95410	0.2727960	0.17310277	3.1886000	20	7 8.3	21.2
483635	2004	TQ ₃₂₈	16.0	X	286.46245	357.06307	15.06251	17.56419	0.2290186	0.17634028	3.1494523	20	6 29.9	20.7
483636	2004	TJ ₃₄₇	17.9	X	117.01103	20.34533	332.46717	4.43682	0.2154756	0.26870159	2.3784237	20	—	—
483637	2004	TM ₃₄₇	15.8	X	273.57318	185.02141	251.42769	9.11374	0.0570989	0.18167137	3.0875338	20	9 24.6	20.2
483638	2004	UM ₅	16.8	X	314.64017	215.62156	159.52071	0.98754	0.1764922	0.17756226	3.1349860	20	8 25.9	20.4
483639	2004	VA ₃₁	16.6	X	308.30049	172.04030	218.58138	10.57507	0.1089597	0.17798685	3.1299983	20	9 8.6	20.7
483640	2004	VE ₃₉	16.6	X	256.96091	35.29889	63.36427	5.90154	0.1110397	0.17932379	3.1144219	20	9 30.1	20.9
483641	2004	VJ ₃₉	16.5	X	241.11285	247.94527	223.97525	15.25315	0.1775298	0.17755027	3.1351272	20	9 10.9	21.5
483642	2004	VJ ₇₄	15.1	X	9.27136	269.68507	64.10305	22.84548	0.1229592	0.18019309	3.1043973	20	10 19.9	19.3
483643	2004	VX ₉₅	16.1	X	248.44758	34.09765	46.91915	17.60907	0.2152590	0.17356324	3.1829578	20	8 20.2	21.3
483644	2004	XU ₃₂	17.6	X	0.11119	348.72306	100.71070	2.00672	0.1973471	0.25635779	2.4541722	20	—	—
483645	2004	XJ ₃₇	16.9	X	267.98420	205.57080	233.29824	9.49280	0.1929122	0.17753255	3.1353357	20	8 30.7	21.4
483646	2004	XX ₇₃	15.8	X	228.57847	295.27385	148.61078	17.43684	0.1840858	0.16884149	3.2420268	20	7 28.7	21.1
483647	2004	XN ₁₂₅	15.8	X	14.84322	19.70362	341.45801	15.70432	0.2204332	0.24540793	2.5266417	20	12 24.9	19.2
483648	2004	YA ₂	15.7	X	240.17698	198.97273	276.32183	20.64998	0.1937549	0.17491266	3.1665660	20	9 5.1	21.0
483649	2004	YL ₁₆	13.5	X	261.49900	229.60666	109.97229	13.04814	0.0749701	0.08596820	5.0844520	20	5 15.6	20.5
483650	2005	AG ₁₀	16.0	X	287.88771	298.76398	137.37598	17.23120	0.2055186	0.17501664	3.1653117	20	10 1.7	20.2
483651	2005	AF ₄₂	16.2	X	333.14508	331.51033	60.60851	15.09264	0.1190555	0.23896189	2.5718775	20	11 11.6	18.9
483652	2005	AC ₃₇	13.6	X	223.54384	76.67785	304.35480	30.11940	0.0904049	0.08338641	5.1888668	20	5 12.1	21.2
483653	2005	CJ ₆₁	15.8	X	166.87709	264.96856	351.65483	9.52796	0.0629646	0.17688610	3.1429700	20	12 30.9	20.6
483654	2005	EG ₃₃	17.1	X	254.21140	221.19131	332.32552	35.39407	0.2265840	0.24278946	2.5447756	20	—	—
483655	2005	EH ₄₀	16.6	X	166.05875	80.74051	153.80977	15.78041	0.1170897	0.23651241	2.5896044	20	12 14.2	20.9
483656	2005	ES ₇₀	23.8	X	134.37770	351.07876	352.85253	20.82378	0.3863432	1.47838966	0.7631503	20	—	—
483657	2005	EP ₉₉	16.5	X	183.76801	15.62552	173.23824	16.17032	0.1205866	0.23078988	2.6322363	20	11 6.3	20.7
483658	2005	EQ ₁₁₆	17.8	X	217.86139	221.79546	2.97599	6.95853	0.1698691	0.23974661	2.5662624	20	—	—
483659	2005	EO ₁₃₇	17.5	X	298.42106	110.38771	1.75758	26.17354	0.2614440	0.24167992	2.5525583	20	12 24.2	20.3
483660	2005	EM ₂₀₃	18.0	X	322.21425	182.10584	340.11212	7.75414	0.1711771	0.25416020	2.4682985	20	—	—
483661	2005	ED ₂₁₃	18.0	X	265.24138	12.70897	145.49222	1.37073	0.1065961	0.23921463	2.5700657	20	—	—
483662	2005	EY ₂₂₃	19.6	X	134.99017	330.00467	155.41832	30.63747	0.3515997	0.40730616	1.8024175	20	7 14.5	23.2
483663	2005	EM ₂₄₅	16.3	X	111.22884	354.55577	354.26364	11.80178	0.1381510	0.24482848	2.5306267	20	—	—
483664	2005	ES ₂₇₂	13.3	X	7.94048	92.82366	142.28240	25.72802	0.0582525	0.08230198	5.2343472	20	5 30.6	20.3
483665	2005	GL ₈	16.8	X	181.28661	48.73031	147.43561	12.45211	0.1380025	0.22882621	2.6472739	20	11 11.9	21.1
483666	2005	GK ₃₀	17.6	X	198.57847	176.74875	70.88098	3.36352	0.2769809	0.23693067	2.5865558	20	—	—
483667	2005	GT ₆₉	16.7	X	161.35837	268.95499	299.18183	1.73413	0.2231956	0.16356519	3.113782	20	10 24.2	22.4
483668	2005	GH ₉₇	16.5	X	117.02982	248.74322	343.18918	14.96587	0.4032836	0.15345532	3.4552654	20	10 20.1	23.0
483669	2005	GZ ₁₅₀	17.8	X	185.98059	184.14849	79.62261	4.96457	0.1966810	0.23499891	2.6007113	20	—	—
483670	2005	JH ₆	17.5	X	217.20984	211.62594	33.45530	15.10518	0.0624					

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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>
483681 2005 NV ₃	18.5	X	276.63575	161.08620	119.01871	4.36123	0.1801556	0.31230155	2.1515591	20	2 18.0	21.4
483682 2005 NN ₃₇	18.2	X	148.83700	343.57615	128.40602	23.77664	0.0962533	0.38850638	1.8601042	20	6 28.4	20.7
483683 2005 NW ₅₇	17.0	X	183.13289	10.56109	273.90517	6.95296	0.2024310	0.23031472	2.6358554	20	—	—
483684 2005 NS ₆₃	18.4	X	34.86229	122.36647	112.93029	23.60809	0.0769989	0.39862615	1.8284883	20	7 20.4	19.3
483685 2005 NN ₆₉	17.6	X	111.95489	224.97849	121.56965	7.58087	0.1935207	0.29191891	2.2505806	20	—	—
483686 2005 ND ₁₀₂	16.7	X	145.20584	163.97348	117.76208	18.09368	0.3548383	0.22329046	2.6908487	20	—	—
483687 2005 NF ₁₂₅	16.8	X	69.02220	62.49712	274.28797	6.19392	0.0795123	0.21627663	2.7487146	20	12 31.5	20.7
483688 2005 OT ₆	16.3	X	48.42875	2.95134	347.09426	13.81109	0.1982009	0.21083312	2.7958261	20	—	—
483689 2005 OH ₁₇	17.2	X	143.66860	345.63995	307.43728	10.95084	0.1720922	0.22184424	2.7025305	20	—	—
483690 2005 QN ₇₅	18.2	X	92.16874	153.14189	214.17722	2.13100	0.2164382	0.28821798	2.2698056	20	—	—
483691 2005 QV ₁₃₃	16.9	X	359.17978	354.82218	355.98207	1.59133	0.0812975	0.20005165	2.8953959	20	10 14.8	20.5
483692 2005 QF ₁₃₄	16.8	X	221.21919	260.01163	354.51391	10.94520	0.2710945	0.22914590	2.6448111	20	—	—
483693 2005 QF ₁₅₁	16.7	X	57.30641	181.07829	167.12850	10.14318	0.2050896	0.21007153	2.8025794	20	—	—
483694 2005 QS ₁₅₅	17.0	X	124.57080	161.96272	168.20123	16.23219	0.2198216	0.22251909	2.6970637	20	—	—
483695 2005 QW ₁₅₉	16.8	X	135.98766	170.70077	126.97480	13.14123	0.1791076	0.21980220	2.7192430	20	—	—
483696 2005 RR ₉	16.3	X	214.47475	284.64135	18.49814	28.93555	0.3537955	0.23286315	2.6165892	20	2 9.3	21.8
483697 2005 RF ₃₂	17.7	X	181.16631	233.67301	168.15871	32.50261	0.1265726	0.37321914	1.9105575	20	4 25.9	20.8
483698 2005 RP ₄₆	17.5	X	120.09326	163.69999	144.49004	10.74635	0.1134017	0.21221181	2.7837038	20	—	—
483699 2005 SU ₄₃	18.5	X	52.77535	161.23877	264.65328	1.84981	0.1590170	0.28555776	2.2838807	20	—	—
483700 2005 SX ₅₉	18.6	X	33.04843	230.51468	193.11894	0.78291	0.1857738	0.28123173	2.3072421	20	—	—
483701 2005 SN ₆₄	18.0	X	193.78944	284.17196	14.86190	7.88300	0.0887564	0.29263437	2.2469108	20	—	—
483702 2005 ST ₆₄	17.7	X	189.19335	15.14835	315.69976	5.01484	0.2112342	0.29994038	2.2102739	20	2 2.9	21.1
483703 2005 SA ₇₆	18.2	X	150.22023	321.44608	11.92057	3.98497	0.0669178	0.29124675	2.2540419	20	—	—
483704 2005 SO ₉₅	16.2	X	207.25759	52.06393	16.83912	13.11075	0.1273263	0.18089041	3.0964140	20	6 25.5	21.3
483705 2005 SS ₁₁₃	18.5	X	101.87929	17.76321	5.23777	5.98802	0.0724866	0.29005335	2.2602204	20	—	—
483706 2005 SW ₁₁₃	17.3	X	311.43208	22.23315	4.89502	10.50604	0.0993938	0.19519316	2.9432444	20	9 17.9	21.0
483707 2005 SG ₁₃₁	18.2	X	17.39068	231.73910	204.45614	5.07919	0.1305043	0.28071358	2.3100804	20	—	—
483708 2005 SL ₁₄₃	17.2	X	343.36445	223.28309	173.93533	9.67708	0.1136519	0.20236802	2.8732592	20	11 25.2	20.7
483709 2005 SH ₁₅₆	16.9	X	319.29753	14.94146	22.88021	11.98208	0.0604667	0.19727378	2.9225132	20	10 15.8	20.7
483710 2005 SV ₁₉₁	18.3	X	59.47743	253.35967	144.76377	0.95939	0.1950860	0.28212179	2.3023868	20	—	—
483711 2005 SC ₂₂₂	16.7	X	112.28652	230.66907	103.68569	10.71431	0.2361654	0.21864297	2.7288461	20	—	—
483712 2005 SJ ₂₃₇	17.9	X	50.17926	165.85418	220.26967	5.64406	0.1441481	0.27854145	2.3220746	20	—	—
483713 2005 SS ₂₄₉	17.6	X	60.69080	327.43322	72.36262	3.02036	0.2308469	0.28523899	2.2855819	20	—	—
483714 2005 TJ ₄	18.6	X	39.14798	266.42155	188.55106	3.49742	0.1366682	0.28780082	2.2719984	20	—	—
483715 2005 TN ₁₄	17.7	X	83.64719	300.02358	78.10585	4.32023	0.2377195	0.28639434	2.2794309	20	—	—
483716 2005 TH ₂₄	18.1	X	148.46845	53.94594	26.90009	26.25541	0.1018206	0.37259151	1.9127024	20	5 1.1	20.4
483717 2005 TO ₂₄	18.8	X	58.08647	203.21378	201.63268	0.71687	0.1830144	0.28214415	2.3022652	20	—	—
483718 2005 TQ ₂₆	18.0	X	58.83632	190.47258	197.49224	5.02658	0.2360723	0.28004937	2.3137316	20	—	—
483719 2005 TV ₅₄	18.3	X	42.06363	224.44794	175.11297	2.84978	0.2650089	0.27868399	2.3212827	20	—	—
483720 2005 TG ₆₆	18.4	X	50.05167	88.34521	317.91563	4.65295	0.2810115	0.28189158	2.3036402	20	—	—
483721 2005 TF ₈₂	18.0	X	295.20233	14.22477	221.17168	6.39231	0.0414887	0.29881030	2.2158431	20	1 28.0	20.8
483722 2005 TL ₈₇	17.6	X	35.89272	287.11335	54.77254	2.72690	0.0736901	0.20324285	2.8650082	20	11 24.0	21.5
483723 2005 TZ ₈₉	17.7	X	342.77076	255.15973	153.61529	3.03814	0.2221747	0.27060153	2.3672778	20	—	—
483724 2005 TC ₉₁	18.0	X	41.91526	251.49196	173.52858	5.57511	0.1236567	0.28549840	2.2841972	20	—	—
483725 2005 TX ₉₅	17.2	X	42.20001	323.63759	5.72628	5.87079	0.0418870	0.19971649	2.8986344	20	11 9.6	21.2
483726 2005 TM ₁₀₅	17.3	X	81.15954	293.32953	78.79245	11.62963	0.2243440	0.28186591	2.3037800	20	—	—
483727 2005 TM ₁₁₁	18.1	X	124.03804	332.74312	351.07070	4.68812	0.1842002	0.28560538	2.2836268	20	—	—
483728 2005 TP ₁₃₄	18.5	X	131.15236	59.87196	283.53773	3.93129	0.1852255	0.28821616	2.2698152	20	—	—
483729 2005 TO ₁₃₆	18.7	X	48.99875	324.44115	94.90763	2.55565	0.1791751	0.28452923	2.2893812	20	—	—
483730 2005 TZ ₁₄₄	17.0	X	273.80989	76.01703	39.01681	15.36258	0.1854885	0.19951647	2.9005713	20	11 2.2	20.6
483731 2005 TW ₁₆₄	18.8	X	42.94818	204.99190	221.39175	5.03573	0.1820304	0.28257060	2.2999483	20	—	—
483732 2005 TY ₁₆₈	18.8	X	37.70876	160.91605	270.48525	1.43551	0.1907415	0.28245475	2.3005771	20	—	—
483733 2005 TM ₁₇₀	17.4	X	260.68047	104.80619	2.71594	8.87635	0.1203225	0.19797506	2.9156075	20	10 13.1	21.3
483734 2005 TC ₁₇₁	17.5	X	27.63249	197.00226	232.82767	11.72152	0.2545548	0.27908109	2.3190802	20	—	—
483735 2005 TO ₁₈₀	18.5	X	101.54609	103.45497	18.08619	21.20890	0.0682119	0.37395789	1.9080405	20	4 23.1	20.3
483736 2005 TL ₁₈₅	18.1	X	324.01538	225.03907	19.58804	5.44265	0.1221154	0.30556332	2.1830746	20	3 13.1	20.1
483737 2005 TS ₁₉₆	18.4	X	229.82056	321.09830	29.13605	21.66012	0.0638939	0.37452240	1.9061227	20	4 9.6	20.5
483738 2005 UX ₉	17.8	X	108.13313	262.64511	88.82258	4.39952	0.2416071	0.28584922	2.2823279	20	—	—
483739 2005 UC ₁₀	17.5	X	94.76989	198.14405	160.50303	4.23891	0.2121755	0.28372048	2.2937298	20	—	—
483740 2005 UM ₁₄	17.9	X	328.01280	102.00475	36.78109	23.07176	0.2309239	0.27826153	2.3236316	20	—	—
483741 2005 UF ₂₁	18.4	X	8.54018	237.29511	233.35420	5.62742	0.1896514	0.28217154	2.3021162	20	—	—
483742 2005 UK ₂₅	18.4	X	22.78097	47.22569	28.60459	7.40923	0.0698870	0.28062901	2.3105445	20	—	—
483743 2005 UT ₃₄	18.4	X	32.50455	196.71936	221.75266	0.64900	0.2169375	0.27807734	2.3246575	20	—	—
483744 2005 UQ ₄₁	17.7	X	65.54560	43.27522	347.51827	4.93572	0.2569474	0.28176288	2.3043416	20	—	—
483745 2005 UA ₅₇	17.8	X	296.23476	267.23971	32.06331	25.16819	0.0423728	0.37647510	1.8995259	20	4 26.4	19.3
483746 2005 UQ ₆₈	17.5	X	94.16138	48.45092	0.73558	10.62070	0.1513984	0.29068790	2.2569300	20	1 26.5	20.0
483747 2005 UG ₈₀	15.5	X	133.13438	203.89130	211.37345	10.19495	0.3159809	0.15985367	3.3624381	20	4 13.5	21.2
483748 2005 UD ₈₆	18.2	X	267.95291	227.23332	56.14616	6.09311	0.1796629	0.30292021	2.1957550	20	2 16.3	21.4
483749 2005 UF ₉₅	18.1	X	21.50709	77.03885	5.61880	6.11511	0.0813961	0.28094168	2.3088299	20	—	—
483750 2005 UJ ₁₂₆	18.4	X	18.24959	25.48050	41.78005	5.62068	0.1832700	0.27680384	2.3317822	20	—	—
483751 2005 UL ₁₂₈	18.4	X	33.68768	141.60555	282.94548	0.60496	0.2186436	0.27925402	2.3181227	20	—	—
483752 2005 UO ₁₃₀	17.3	X	41.32509	156.40736	200.86105	24.51181	0.2714060	0.27286546	2.3541656	20	—	—
483753 2005 UR ₁₃₀	18.3	X	9.76778	69.21841	15.93246	2.71006	0.1762206	0.27690229	2.3312295	20	—	—
483754 2005 UJ ₁₃₄	16.7	X	306.48075	68.68485	21.46261	12.76027	0.1794483	0.19996227	2.8962586	20	11 23.4	20.0
483755 2005 UB ₁₃₉	18.4	X	36.07238	246.13121	207.44063	5.79196	0.1641287	0.28382839	2.2931484			

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>		
483761	2005	UZ ₁₇₂	17.4	X	280.38638	199.57365	232.74405	4.53917	0.1487200	0.19176100	2.9782594	20	9 19.5	21.2
483762	2005	UD ₁₇₆	18.0	X	24.02332	149.94970	276.62028	1.64390	0.1929814	0.27719866	2.3295675	20	—	—
483763	2005	UD ₁₈₄	17.3	X	343.59949	165.25219	224.98624	13.10652	0.1837336	0.19755453	2.9197437	20	11 18.2	20.2
483764	2005	UU ₁₉₁	16.1	X	326.64223	143.69891	234.95107	16.37462	0.1887954	0.19196821	2.9761159	20	9 18.7	19.5
483765	2005	UB ₁₉₃	18.7	X	42.93669	348.33917	58.39906	1.72330	0.1824604	0.28050731	2.3112127	20	—	—
483766	2005	UX ₂₀₀	18.7	X	355.88062	43.29585	53.10849	5.67955	0.1920390	0.27633928	2.3343948	20	—	—
483767	2005	UW ₂₀₁	18.6	X	35.62382	239.19376	167.41993	1.28853	0.1826406	0.27721768	2.3294610	20	—	—
483768	2005	UT ₂₂₂	18.0	X	231.58914	231.54705	18.87701	5.39163	0.0766487	0.28665057	2.2780723	20	—	—
483769	2005	UE ₂₂₆	17.0	X	353.07749	212.79307	59.77428	3.11687	0.1042990	0.19660813	2.9291058	20	11 4.8	20.6
483770	2005	UO ₂₄₀	16.5	X	188.41579	212.12098	67.48982	15.82231	0.2157807	0.21780188	2.7358669	20	—	—
483771	2005	UF ₂₅₅	18.3	X	29.53389	25.18338	38.06479	8.22976	0.1626777	0.28055441	2.3109541	20	—	—
483772	2005	UU ₂₈₀	18.4	X	11.38559	57.25047	33.64251	6.18482	0.2085727	0.27820253	2.3239601	20	—	—
483773	2005	UE ₂₈₉	18.6	X	60.84092	32.61743	7.33801	4.43892	0.1255514	0.28116822	2.3075895	20	—	—
483774	2005	UJ ₂₉₁	17.6	X	270.06652	82.10049	353.74776	4.11736	0.1363407	0.19030343	2.9934474	20	9 13.3	21.6
483775	2005	UT ₃₀₁	18.0	X	91.98546	279.03060	92.70907	4.87690	0.2183475	0.28303066	2.2974553	20	—	—
483776	2005	UH ₃₀₇	18.4	X	336.97459	261.30385	227.03081	4.44903	0.1785181	0.27742189	2.3283177	20	—	—
483777	2005	UJ ₃₁₆	18.5	X	188.56395	104.71073	238.88844	18.72123	0.0861830	0.36204824	1.9496580	20	1 27.6	21.4
483778	2005	UU ₃₃₅	18.1	X	6.14925	113.20741	356.38704	3.64380	0.1529410	0.28095423	2.3087611	20	—	—
483779	2005	UZ ₃₄₆	18.9	X	18.20866	20.55336	53.83954	2.39267	0.1608374	0.27755336	2.3275824	20	—	—
483780	2005	UD ₃₈₁	17.8	X	257.32983	249.55513	201.77330	6.59391	0.2355063	0.18915919	3.0055070	20	8 31.1	22.2
483781	2005	UJ ₃₉₀	17.4	X	274.67496	250.94372	193.22040	4.66161	0.0986223	0.19467849	2.9484294	20	10 6.6	21.3
483782	2005	UV ₃₉₅	17.0	X	268.68795	157.95996	256.63147	8.36042	0.2644034	0.18571763	3.0425236	20	7 24.3	21.5
483783	2005	UK ₄₁₄	17.7	X	261.66241	353.76572	79.99411	2.53389	0.1372849	0.18887471	3.0085242	20	8 31.3	21.8
483784	2005	UF ₄₃₃	18.7	X	359.92992	56.75341	52.82296	3.41740	0.1851821	0.27809214	2.3245750	20	—	—
483785	2005	UT ₄₃₃	18.8	X	11.98427	177.13435	217.37800	1.79534	0.2033558	0.27048192	2.3679756	20	—	—
483786	2005	UY ₄₄₇	17.8	X	50.64513	147.09881	277.77927	4.75410	0.1308771	0.28452367	2.2894111	20	—	—
483787	2005	UM ₄₇₁	18.3	X	64.00379	36.13902	347.88733	2.32199	0.2198030	0.27995184	2.3142689	20	—	—
483788	2005	UJ ₄₇₉	17.2	X	321.78725	281.01901	93.38697	6.21037	0.2422288	0.19106340	2.9855044	20	9 7.3	20.1
483789	2005	UH ₅₂₃	15.8	X	26.53589	187.01666	92.30576	1.95798	0.1329353	0.12540406	3.9530136	20	8 19.8	20.7
483790	2005	VQ ₃₀	17.9	X	57.98865	10.38568	65.77943	12.21720	0.1748581	0.28411701	2.2915952	20	—	—
483791	2005	VX ₃₂	17.4	X	51.85939	171.80308	203.58595	1.21471	0.2104539	0.27513706	2.3411900	20	—	—
483792	2005	VO ₅₆	17.3	X	151.84428	142.81990	113.00234	3.22226	0.0157135	0.20392125	2.8586505	20	12 20.5	21.2
483793	2005	VR ₆₀	18.6	X	41.47073	86.96260	327.28523	1.19164	0.2130264	0.27935986	2.3175372	20	—	—
483794	2005	VL ₈₁	16.5	X	123.53438	226.91023	66.79507	7.62044	0.0431217	0.20223485	2.8745204	20	—	—
483795	2005	VJ ₈₂	17.4	X	28.19943	64.95359	358.33951	21.54106	0.2998189	0.27762704	2.3271705	20	—	—
483796	2005	VY ₉₆	17.4	X	267.99139	177.28078	239.18341	8.75182	0.2250804	0.18568126	3.0429209	20	7 30.5	21.8
483797	2005	VK ₉₇	16.9	X	306.88749	2.59605	47.65882	7.65212	0.1130834	0.19321210	2.9642585	20	10 11.1	20.4
483798	2005	VJ ₁₀₂	18.2	X	50.02581	331.69562	60.16549	5.85147	0.2269946	0.28078192	2.9097056	20	—	—
483799	2005	VF ₁₂₅	18.7	X	10.57878	48.60354	36.54516	2.10927	0.1525863	0.27615620	2.3354264	20	—	—
483800	2005	WB ₉	18.0	X	345.21264	87.31395	58.61476	4.96917	0.0956595	0.28281349	2.2986312	20	—	—
483801	2005	WL ₁₁	17.8	X	33.85695	54.05652	62.83189	6.25295	0.1026514	0.28707580	2.2758222	20	1 9.9	20.0
483802	2005	WO ₁₃	18.2	X	22.99268	192.41744	235.90693	1.33343	0.1998992	0.27650742	2.3334484	20	—	—
483803	2005	WB ₃₆	18.2	X	57.49460	303.72140	86.83740	4.50834	0.1912086	0.27724649	2.3292996	20	—	—
483804	2005	WM ₃₆	17.8	X	80.03849	308.51800	84.26576	5.30930	0.1717750	0.28179549	2.3041639	20	—	—
483805	2005	WX ₅₃	17.7	X	27.35415	7.96538	69.58579	6.70520	0.1330144	0.27855539	2.3219971	20	—	—
483806	2005	WU ₅₄	17.6	X	12.41717	39.97469	53.03439	6.88813	0.2002564	0.27713613	2.3299179	20	—	—
483807	2005	WJ ₇₂	18.1	X	41.22893	34.68886	11.29025	2.34377	0.2015779	0.27726917	2.3291725	20	—	—
483808	2005	WO ₇₅	17.9	X	78.28554	103.45548	252.99016	5.16208	0.1977696	0.27842649	2.3227137	20	—	—
483809	2005	WA ₈₅	18.0	X	3.67950	166.36888	50.55430	22.92457	0.0327925	0.37206599	1.9145031	20	4 19.9	19.8
483810	2005	WT ₈₆	18.7	X	12.26679	317.08541	119.70780	1.19756	0.2013940	0.27549308	2.3391725	20	—	—
483811	2005	WW ₈₆	17.6	X	108.84670	135.33266	202.20046	1.53615	0.2370830	0.28092813	2.3089041	20	—	—
483812	2005	WV ₈₉	17.9	X	53.50549	323.80874	90.21995	7.41980	0.1660984	0.28126566	2.3070566	20	—	—
483813	2005	WR ₉₄	18.5	X	52.48563	344.07552	80.39742	8.11589	0.0721185	0.28018723	2.3129276	20	—	—
483814	2005	WJ ₉₉	17.1	X	297.91648	274.77088	114.67843	1.26309	0.2866064	0.18664164	3.0324735	20	7 30.6	20.4
483815	2005	WW ₁₀₀	16.3	X	304.43339	319.82260	73.32981	12.00116	0.3015315	0.18890957	3.0081540	20	8 19.6	19.7
483816	2005	WO ₁₁₃	17.3	X	274.63193	72.62631	262.28747	18.02649	0.1085006	0.37835896	1.8932154	20	5 6.9	19.4
483817	2005	WU ₁₂₄	17.9	X	50.28214	290.73542	108.77006	6.55373	0.2268785	0.27796895	2.3252618	20	—	—
483818	2005	WX ₁₂₅	17.9	X	93.53416	91.05211	64.47986	1.43816	0.2399216	0.23492888	2.6012281	20	7 3.4	21.7
483819	2005	WD ₁₄₃	17.9	X	63.83167	325.22151	67.56510	7.35867	0.1330690	0.27870905	2.3211435	20	—	—
483820	2005	WN ₁₄₆	19.2	X	7.97987	127.80704	315.77028	1.53807	0.1815758	0.27516499	2.3410316	20	—	—
483821	2005	WZ ₁₆₆	17.0	X	300.72777	300.44279	88.30535	3.71613	0.2128215	0.18726834	3.0257042	20	8 17.3	20.6
483822	2005	WV ₁₆₉	16.4	X	81.00761	244.55454	83.49775	7.85138	0.1974910	0.20347603	2.8628189	20	—	—
483823	2005	WU ₁₇₁	18.6	X	31.33173	219.74053	213.93748	2.39619	0.1691314	0.27761511	2.3272372	20	—	—
483824	2005	WV ₁₇₄	18.5	X	28.44692	16.78955	44.41230	2.77177	0.1840184	0.27445895	2.3450447	20	—	—
483825	2005	WS ₁₇₅	18.6	X	27.42337	349.79356	80.55505	6.61361	0.2111118	0.27570224	2.3379893	20	—	—
483826	2005	WL ₁₈₄	17.0	X	8.32039	147.66981	299.12521	23.65554	0.2589824	0.27222420	2.3578612	20	—	—
483827	2005	WA ₁₉₃	17.8	X	10.42506	97.79967	339.17608	6.18228	0.2251605	0.27475367	2.3433674	20	—	—
483828	2005	WA ₂₀₀	18.5	X	32.84292	358.18722	73.75498	5.87587	0.1711407	0.27706819	2.3302988	20	—	—
483829	2005	WV ₂₁₀	17.5	X	255.57975	236.23559	230.13063	5.27381	0.1527905	0.18957933	3.0010650	20	9 28.9	21.6
483830	2005	WY ₂₁₀	18.2	X	94.15607	131.96449	245.38434	5.67712	0.1203652	0.28133062	2.3067014	20	—	—
483831	2005	XL ₈	16.9	X	259.10136	45.83922	23.66637	14.45765	0.3170733	0.18444212	3.0565346	20	8 2.5	21.9
48383														

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>
483841 2005 XZ ₇₆	18.6	X	37.71979	120.91183	290.75160	2.48713	0.2416825	0.27802466	2.3249512	20	—	—
483842 2005 XN ₈₅	16.7	X	258.43170	326.78329	278.49488	23.04590	0.2268383	0.28004775	2.3137405	20	—	—
483843 2005 YQ ₆	17.0	X	320.44602	99.37165	280.72861	8.08381	0.0929693	0.18535458	3.0464952	20	9 15.6	21.0
483844 2005 YF ₈	16.6	X	242.96873	329.75884	118.40045	11.03349	0.1998069	0.18034028	3.1027079	20	8 18.9	21.4
483845 2005 YY ₉	17.4	X	266.07538	302.60157	151.21719	2.75590	0.1471676	0.18920344	3.0050385	20	9 29.9	21.3
483846 2005 YG ₁₀	17.0	X	263.60720	334.46659	113.96208	2.63077	0.0860829	0.18793472	3.0185476	20	9 29.1	21.0
483847 2005 YJ ₁₄	16.7	X	270.45301	293.29772	112.09964	10.65134	0.3160653	0.17933664	3.1142731	20	7 9.5	21.5
483848 2005 YZ ₁₈	16.4	X	309.12371	289.03531	74.61638	18.02200	0.2469720	0.18579576	3.0416706	20	7 23.3	20.1
483849 2005 YH ₂₂	17.2	X	248.49228	52.55893	36.61436	0.62464	0.1451528	0.18179581	3.0861247	20	8 31.9	21.6
483850 2005 YX ₂₃	18.0	X	21.42195	201.37503	280.39842	3.61216	0.0810118	0.28000047	2.3140010	20	—	—
483851 2005 YD ₂₇	18.1	X	26.15790	336.03812	71.84391	2.15906	0.1799974	0.27013224	2.3700187	20	—	—
483852 2005 YV ₂₈	17.0	X	219.45842	40.25669	109.05846	2.69223	0.1281904	0.18489880	3.0514996	20	10 16.2	21.6
483853 2005 YK ₃₁	17.9	X	280.31304	80.23778	109.59796	3.43489	0.1647163	0.27013606	2.3699963	20	—	—
483854 2005 YF ₃₂	16.4	X	178.19932	62.44533	112.23494	15.70477	0.1442413	0.17924226	3.1153663	20	10 10.6	21.7
483855 2005 YA ₄₃	17.0	X	287.79472	131.65715	282.12541	7.90503	0.1367526	0.18295906	3.0730297	20	9 4.4	21.1
483856 2005 YV ₅₅	20.2	X	105.40570	308.36338	126.57841	5.93231	0.3929087	0.35980878	1.9577394	20	4 18.2	22.8
483857 2005 YZ ₇₇	18.2	X	285.47794	60.26765	74.87959	2.41068	0.1355331	0.26402398	2.4064331	20	—	—
483858 2005 YO ₈₃	18.3	X	339.94788	305.29751	180.53572	1.06259	0.1295451	0.27186513	2.3599368	20	—	—
483859 2005 YM ₈₇	16.6	X	260.71334	143.04568	284.19761	9.13998	0.1696441	0.18093865	3.0958636	20	8 12.2	21.1
483860 2005 YH ₈₈	16.7	X	305.90935	164.08785	288.71665	9.06563	0.0650900	0.19172282	2.9786548	20	12 3.5	20.6
483861 2005 YU ₈₉	17.7	X	336.81908	53.64340	110.56184	5.36384	0.1483083	0.27739267	2.3284812	20	—	—
483862 2005 YA ₉₇	18.1	X	53.39479	71.33037	294.76962	3.96642	0.2476892	0.27323269	2.3520557	20	—	—
483863 2005 YO ₁₀₉	16.7	X	292.12265	284.77624	112.67186	18.31404	0.2620755	0.18298359	3.0727552	20	8 6.0	20.6
483864 2005 YP ₁₁₁	18.6	X	6.45345	302.80844	149.56787	2.62428	0.1727545	0.27305849	2.3530560	20	—	—
483865 2005 YT ₁₁₁	16.3	X	68.28187	195.99138	123.60893	9.73792	0.0556461	0.19064892	2.9898300	20	12 2.9	20.7
483866 2005 YM ₁₁₂	17.5	X	333.33071	145.13231	280.21531	5.76550	0.0895101	0.26233913	2.4167255	20	—	—
483867 2005 YJ ₁₁₇	16.5	X	269.79476	329.23185	106.01052	16.07580	0.2776377	0.18452881	3.0555772	20	8 24.9	21.0
483868 2005 YF ₁₃₀	17.6	X	179.03710	26.98920	322.60964	7.01468	0.1561015	0.28511722	2.2862326	20	2 15.8	21.0
483869 2005 YO ₁₃₅	16.4	X	130.31215	166.02218	93.90070	12.16021	0.0353673	0.19035890	2.9928659	20	11 29.5	20.8
483870 2005 YY ₁₃₅	15.8	X	148.20588	152.69647	94.49127	14.56553	0.1751183	0.18832215	3.0144062	20	12 3.1	20.9
483871 2005 YX ₁₃₆	18.6	X	15.58560	342.44953	107.15981	6.14544	0.1954699	0.27413003	2.3469201	20	—	—
483872 2005 YJ ₁₃₉	17.1	X	247.92073	199.32331	278.93537	17.99298	0.0718011	0.18776616	3.0203539	20	10 8.7	21.7
483873 2005 YO ₁₄₃	16.7	X	286.31338	332.43480	116.17216	16.90012	0.0906951	0.18617805	3.0375055	20	11 4.6	21.0
483874 2005 YB ₁₄₅	18.0	X	75.66447	68.53923	315.33226	3.63981	0.1491502	0.27317053	2.3524125	20	—	—
483875 2005 YK ₁₅₉	16.7	X	277.63786	148.40017	274.06653	14.14380	0.2530813	0.18480187	3.0525665	20	8 12.5	21.0
483876 2005 YN ₁₆₃	15.5	X	193.68617	344.09900	119.48974	28.21590	0.1023030	0.17210517	3.2009098	20	7 25.4	20.4
483877 2005 YX ₁₆₄	15.7	X	204.95075	80.61826	59.03356	17.39216	0.1517043	0.18127125	3.0920755	20	9 25.8	20.9
483878 2005 YS ₁₆₅	17.5	X	66.63541	10.27078	86.11682	34.00718	0.4450272	0.35703777	1.9678558	20	4 29.9	20.1
483879 2005 YZ ₁₇₅	17.0	X	292.50351	11.63782	26.37501	0.84453	0.1670629	0.18106207	3.0944566	20	8 21.5	20.7
483880 2005 YP ₁₉₃	18.9	X	318.16142	168.75978	290.84509	1.93514	0.2179351	0.26394826	2.4068934	20	—	—
483881 2005 YS ₂₀₂	16.7	X	257.50081	167.17525	288.15454	6.47566	0.0440955	0.18424677	3.0586947	20	9 30.6	21.0
483882 2005 YV ₂₁₈	18.6	X	4.51526	46.93782	35.47047	2.86281	0.1650691	0.27082723	2.3659623	20	—	—
483883 2005 YO ₂₂₇	17.2	X	231.05486	28.39515	121.32313	10.61232	0.1664300	0.18675802	3.0312136	20	10 28.2	21.9
483884 2005 YH ₂₄₁	16.7	X	198.73549	79.11370	103.15757	6.00387	0.0915987	0.18539523	3.0460499	20	11 7.4	21.3
483885 2005 YJ ₂₄₆	16.4	X	191.13005	36.27008	142.82265	13.26091	0.1196570	0.18281285	3.0746681	20	10 27.0	21.4
483886 2005 YO ₂₄₆	17.2	X	270.93715	319.76664	148.62054	9.19035	0.2074030	0.18805606	3.0172490	20	10 18.2	21.2
483887 2005 YB ₂₅₄	18.3	X	340.14829	48.02049	98.93452	2.81485	0.1360754	0.27468208	2.3437746	20	—	—
483888 2005 YW ₂₇₁	15.6	X	336.24915	47.10311	318.18695	26.63221	0.1562785	0.17700855	3.1415204	20	9 9.5	19.6
483889 2005 YN ₂₉₀	16.3	X	267.14222	276.82695	152.62943	16.31539	0.2439324	0.17883930	3.1200442	20	8 14.1	20.8
483890 2005 YQ ₂₉₂	16.9	X	249.17396	215.33800	265.51286	8.98687	0.1569631	0.19007158	2.9958812	20	10 6.3	21.4
483891 2006 AB ₄	16.7	X	273.73370	322.21611	83.09927	10.94898	0.3221825	0.18224933	3.0810028	20	7 12.7	21.2
483892 2006 AO ₉	18.5	X	308.46315	59.41789	98.18111	3.55569	0.1327947	0.271117521	2.3639379	20	—	—
483893 2006 AX ₁₆	16.4	X	229.33270	157.58345	283.09971	19.16406	0.2258848	0.17695702	3.1421302	20	7 20.7	21.5
483894 2006 AP ₁₇	16.7	X	177.86475	268.89192	291.23666	8.80712	0.1704432	0.18355559	3.0663682	20	10 29.2	21.8
483895 2006 AX ₁₈	16.2	X	308.11023	313.02666	130.26497	10.65256	0.0667713	0.18964676	3.0003535	20	11 27.3	20.2
483896 2006 AZ ₂₂	18.3	X	31.61962	110.50699	295.21655	5.77907	0.2435070	0.27191615	2.3596416	20	—	—
483897 2006 AC ₂₃	18.2	X	326.65569	40.20590	101.65407	5.55749	0.1050380	0.27194082	2.3594989	20	—	—
483898 2006 AS ₄₁	16.2	X	204.57973	243.05656	288.40598	13.86636	0.2548037	0.18214470	3.0821825	20	10 9.6	21.7
483899 2006 AM ₄₂	16.7	X	168.34943	39.80693	142.17609	6.16931	0.2045271	0.17712325	3.1401640	20	10 4.1	22.0
483900 2006 AG ₄₄	16.5	X	263.65760	126.16337	320.91466	9.80741	0.1127345	0.18195513	3.0843230	20	9 17.6	21.0
483901 2006 AC ₅₀	18.6	X	9.55264	342.06000	102.83749	6.50103	0.0779390	0.27182128	2.3601906	20	—	—
483902 2006 AM ₅₂	18.3	X	315.36447	18.10189	151.70075	2.33951	0.1531533	0.27351887	2.3504149	20	—	—
483903 2006 AP ₅₂	16.8	X	263.64254	14.03014	126.86448	10.27804	0.1415142	0.19099546	2.9862124	20	11 27.8	20.8
483904 2006 AQ ₅₂	16.7	X	209.76413	27.83605	142.79879	5.80094	0.0819891	0.18600328	3.0394078	20	11 6.4	21.3
483905 2006 YQ ₆₇	16.2	X	46.01766	16.99581	289.00976	16.93229	0.0463698	0.18134914	3.0911902	20	10 6.1	20.9
483906 2006 AN ₇₃	18.5	X	16.66669	205.38934	245.87896	2.05259	0.2037513	0.27363988	2.3497219	20	—	—
483907 2006 AE ₈₅	15.8	X	172.74789	95.16409	96.46261	17.28901	0.1898301	0.17729950	3.1380826	20	10 25.0	21.3
483908 2006 AD ₉₂	18.0	X	25.44717	295.04056	117.21170	2.96336	0.1836016	0.26860470	2.3789956	20	—	—
483909 2006 AT ₉₄	19.1	X	12.32567	78.37090	350.50510	1.03764	0.1696293	0.26938450	2.3744024	20	—	—
483910 2006 AE ₁₀₄	15.9	X	37.31653	26.93692	306.29479	8.87341	0.1003690	0.18379035	3.0637565	20	11 11.9	20.2
483911 2006 BH ₈	16.4	X	214.80553	56.99586	148.90228	12.84462	0.2696064	0.18462528	3.0545128	20	12 4.2	21.6
483912 2006 BE ₁₇	18.3	X	321.57534	3.13982	165.97271	1.24569	0.1338816	0.27377606	2.3489426	20	—	—
483913 2006 BV ₁₈	17.6	X	288.47428	271.04223	286.77378	3.35540	0.0629357	0.27383524	2.3486042	20	—	—
483914 2006 BZ ₂₄	18.0	X	309.07550	294.68826	258.							

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>
483921 2006 BB ₄₉	16.0	X	221.22891	176.24384	318.21446	9.53259	0.0881990	0.18142859	3.0902876	20	9 28.3	20.6
483922 2006 BV ₅₉	18.5	X	337.20862	99.98340	32.75693	1.78432	0.1273601	0.27020164	2.3696128	20	—	—
483923 2006 BW ₅₉	18.1	X	306.04581	77.92750	120.91142	5.30418	0.0977784	0.27470310	2.3436550	20	—	—
483924 2006 BV ₆₁	18.3	X	126.41349	338.96723	120.56947	24.05300	0.0757767	0.36190602	1.9501687	20	5 15.7	21.2
483925 2006 BP ₆₂	18.1	X	133.04127	330.41892	108.27883	24.77311	0.0883833	0.36127371	1.9524435	20	4 27.9	21.1
483926 2006 BU ₆₆	18.6	X	36.44898	82.10728	331.92814	3.19618	0.2387168	0.27220039	2.3579987	20	—	—
483927 2006 BD ₆₇	17.8	X	69.38615	46.19539	328.28602	5.80096	0.1484555	0.26886869	2.3774381	20	—	—
483928 2006 BQ ₆₇	18.1	X	312.93096	19.57354	114.67580	5.97478	0.1566166	0.26635071	2.3923982	20	—	—
483929 2006 BR ₆₈	18.3	X	47.28120	84.54685	332.27572	4.52876	0.1820123	0.27368629	2.3494562	20	—	—
483930 2006 BW ₆₉	17.7	X	54.12278	357.65247	33.51461	3.74573	0.2135670	0.27012773	2.3700451	20	—	—
483931 2006 BD ₇₆	16.3	X	279.22285	307.83152	119.25380	10.99128	0.0987672	0.18007117	3.1057984	20	9 23.0	20.6
483932 2006 BT ₈₃	18.3	X	278.08710	226.03248	355.09240	2.62380	0.1887369	0.27262474	2.3555512	20	—	—
483933 2006 BQ ₈₅	18.4	X	254.10117	216.89892	7.14888	1.55520	0.1423684	0.26876233	2.3780654	20	—	—
483934 2006 BD ₈₉	17.9	X	48.14143	90.83068	319.68228	9.19022	0.1237142	0.27087608	2.3656779	20	—	—
483935 2006 BE ₉₀	18.4	X	6.65178	118.85894	338.17281	2.81641	0.2069748	0.27130957	2.3631573	20	—	—
483936 2006 BN ₉₁	16.8	X	218.74675	347.33306	151.36787	11.75661	0.2023039	0.17896070	3.1186330	20	9 25.9	21.8
483937 2006 BT ₁₀₀	16.7	X	250.54535	154.64048	329.03921	10.47289	0.0814462	0.18397044	3.0617567	20	10 20.3	21.1
483938 2006 BJ ₁₀₅	18.7	X	315.99000	120.35441	15.63629	2.25950	0.1648808	0.26752499	2.3853923	20	—	—
483939 2006 BP ₁₀₇	18.3	X	298.61787	48.85899	120.77816	5.13875	0.2051537	0.26843897	2.3799747	20	—	—
483940 2006 BG ₁₁₀	18.4	X	296.13712	111.72726	37.13779	1.89181	0.1327882	0.26470080	2.4023294	20	—	—
483941 2006 BX ₁₁₀	16.2	X	284.10813	61.46846	329.24281	13.80619	0.2528885	0.17607419	3.1526246	20	7 19.2	20.6
483942 2006 BL ₁₁₂	18.2	X	4.35777	88.47638	354.03808	3.24340	0.0995007	0.26718251	2.3874303	20	—	—
483943 2006 BN ₁₂₃	18.2	X	10.45386	129.45670	334.31489	3.47702	0.0853622	0.26983551	2.3717559	20	—	—
483944 2006 BS ₁₂₃	16.9	X	143.17665	229.97181	335.33814	9.08949	0.0801436	0.17399570	3.1776815	20	10 2.7	21.8
483945 2006 BS ₁₂₄	16.9	X	175.28790	21.97575	139.10834	2.19431	0.1116678	0.17282972	3.1919575	20	9 15.4	21.9
483946 2006 BT ₁₂₇	17.1	X	178.89690	57.23281	151.03342	21.99474	0.2234341	0.17920058	3.1158492	20	11 14.4	22.8
483947 2006 BK ₁₃₀	16.5	X	219.37619	345.85749	158.24847	11.34831	0.0802451	0.17805395	3.1292119	20	10 15.8	21.2
483948 2006 BP ₁₃₂	16.6	X	219.49585	133.74786	333.99558	14.65494	0.1229546	0.17238372	3.1974607	20	8 24.9	21.5
483949 2006 BU ₁₃₃	16.7	X	249.38932	319.90279	137.16208	2.44827	0.0710641	0.17511057	3.1641797	20	9 21.8	21.1
483950 2006 BY ₁₄₀	18.0	X	286.31738	218.38282	306.32956	4.65919	0.1628994	0.26416111	2.4058735	20	—	—
483951 2006 BM ₁₄₇	18.1	X	260.10087	205.16260	358.43029	3.64581	0.1276983	0.26685612	2.3893766	20	—	—
483952 2006 BD ₁₅₁	16.6	X	144.81988	224.46470	343.67058	7.05076	0.0211533	0.17862805	3.1225035	20	10 7.9	21.2
483953 2006 BE ₁₅₄	17.8	X	318.29480	18.12411	130.33504	6.45776	0.0780117	0.26762444	2.3848013	20	—	—
483954 2006 BY ₁₅₆	17.7	X	262.77524	118.38177	94.12161	2.63380	0.1291936	0.26553453	2.3972981	20	—	—
483955 2006 BS ₁₆₄	18.1	X	322.84350	32.62318	106.55994	2.13713	0.1268240	0.26639066	2.3921591	20	—	—
483956 2006 BL ₁₇₁	16.7	X	144.43158	93.43272	136.49953	11.19205	0.2080959	0.17940572	3.1134736	20	11 11.3	22.2
483957 2006 BW ₁₇₁	17.4	X	225.30496	275.45337	232.46942	1.14606	0.1397789	0.18376014	3.0640923	20	10 17.7	22.1
483958 2006 BY ₁₈₈	16.0	X	117.22758	133.13593	131.85547	13.70194	0.2212597	0.17524707	3.1625365	20	11 29.4	21.5
483959 2006 BZ ₁₉₂	16.0	X	105.57219	296.97427	320.37562	25.16965	0.2330854	0.17424383	3.1746640	20	10 28.9	21.8
483960 2006 BO ₁₉₈	16.5	X	288.38509	79.48512	344.42475	9.40796	0.1030617	0.17803168	3.1294729	20	9 24.5	20.7
483961 2006 BW ₂₀₂	18.3	X	25.49243	66.12731	357.71681	2.46448	0.1583351	0.26870736	2.3783896	20	—	—
483962 2006 BJ ₂₀₅	18.2	X	265.31659	108.64716	125.75213	3.10035	0.2096010	0.26962181	2.3730089	20	—	—
483963 2006 BZ ₂₀₉	16.8	X	189.02042	29.70453	120.12483	5.37039	0.1819529	0.17460450	3.1702907	20	9 13.6	22.0
483964 2006 BR ₂₁₀	16.3	X	263.32263	322.18650	151.73116	18.52415	0.1863105	0.18466417	3.0540838	20	10 19.4	20.7
483965 2006 BE ₂₁₂	16.1	X	121.54728	267.84276	341.02845	25.62490	0.1487391	0.17503917	3.1650402	20	10 26.3	21.7
483966 2006 BT ₂₁₄	17.9	X	50.33166	221.77856	322.94233	18.06825	0.0650007	0.36415534	1.9421298	20	5 5.4	20.2
483967 2006 BJ ₂₂₀	16.8	X	150.22232	98.07192	112.21026	4.29527	0.2140586	0.17654603	3.1470049	20	10 22.3	22.2
483968 2006 BJ ₂₂₆	13.4	X	314.32232	316.59769	321.25691	24.10901	0.0644691	0.08306912	5.2020716	20	4 23.1	20.4
483969 2006 BL ₂₃₀	18.0	X	306.12087	85.16780	75.05095	3.37203	0.1322078	0.26874410	2.3781729	20	—	—
483970 2006 BW ₂₃₀	17.3	X	261.83554	97.56809	321.80345	18.96362	0.3122788	0.17878902	3.1206292	20	7 22.1	22.2
483971 2006 BL ₂₃₂	17.9	X	261.66727	229.57504	0.90456	4.53724	0.1992474	0.27027005	2.3692130	20	—	—
483972 2006 BT ₂₃₃	16.0	X	139.33000	248.58525	328.01764	12.38392	0.2513889	0.17488273	3.1669274	20	10 14.5	21.8
483973 2006 BG ₂₃₅	17.8	X	54.79587	277.22141	107.14624	7.61131	0.2126866	0.26890443	2.3772275	20	—	—
483974 2006 BN ₂₄₄	16.4	X	11.73982	216.31352	130.42242	10.51378	0.0719523	0.17958418	3.1114107	20	10 27.7	20.7
483975 2006 BK ₂₅₁	17.0	X	161.93024	213.95448	337.72801	0.42204	0.1075479	0.17586804	3.1550877	20	10 8.7	21.8
483976 2006 BM ₂₅₆	18.2	X	7.84448	87.10020	11.45927	2.41700	0.1752705	0.27025225	2.3693170	20	—	—
483977 2006 BG ₂₆₃	16.6	X	169.05176	84.93813	148.74663	16.15459	0.2428962	0.17962270	3.1109658	20	12 2.6	22.3
483978 2006 BA ₂₆₄	17.9	X	294.95410	197.90850	348.68653	6.88837	0.1459182	0.26761083	2.3848822	20	—	—
483979 2006 BT ₂₇₂	18.0	X	283.18488	266.29308	295.74800	1.90760	0.1330505	0.27039991	2.3684544	20	—	—
483980 2006 BL ₂₇₇	18.2	X	339.48761	14.11713	139.07584	5.87600	0.1724599	0.27325237	2.3519428	20	—	—
483981 2006 BP ₂₇₇	18.5	X	2.03248	122.17916	339.88110	1.01711	0.1430045	0.26870288	2.3784161	20	—	—
483982 2006 BC ₂₇₉	18.3	X	268.06381	214.56362	349.05437	1.87822	0.0885742	0.26538002	2.3982285	20	—	—
483983 2006 BK ₂₈₂	17.8	X	319.27319	206.35210	343.14098	7.02342	0.0740330	0.27599042	2.3363615	20	—	—
483984 2006 BO ₂₈₂	16.5	X	214.21490	130.67236	359.94256	6.73874	0.1137093	0.17669871	3.1451917	20	9 17.6	21.4
483985 2006 BA ₂₈₄	16.4	X	334.49135	260.69535	127.28502	9.37823	0.0835762	0.18240775	3.0792186	20	10 26.4	20.4
483986 2006 BC ₂₈₄	16.9	X	196.71636	51.82420	157.08057	7.01850	0.1146385	0.18383223	3.0632912	20	12 3.6	21.7
483987 2006 CF ₄	17.6	X	251.54681	79.07181	152.48483	5.42387	0.1349651	0.27029751	2.3690525	20	—	—
483988 2006 CA ₇	16.0	X	188.48086	257.00482	312.50400	16.47368	0.1369629	0.18426510	3.0584918	20	11 20.2	21.1
483989 2006 CY ₁₀	20.5	X	59.70755	167.38317	32.52574	6.78008	0.4852652	0.35944755	1.9590508	20	9 6.8	23.5
483990 2006 CC ₁₇	18.1	X	356.17817	334.01115	150.26603	6.31522	0.0504155	0.27307155	2.3529809	20	—	—
483991 2006 CD ₁₈	16.3	X	154.86808	234.03325	336.86196	12.94934	0.2472110	0.17534074	3.1614100	20	10 19.0	22.0
483992 2006 CY ₁₉	16.4	X	280.12151	98.77658	306.43990	8.88399	0.0621763	0.17550787	3.1594027	20	8 24.9	20.8
483993 2006 CU ₂₃	16.8	X	318.16521	272.55899	129.05660	17.02085	0.0997760	0.18362533	3.0655918	20	10 21.6	20.9
483994 2006 CX ₂₃	16.7	X	156.33426	255.21208	314.52751	10.87009	0.1513252	0.17934779	3.1141440	20		