

ELEMENTS AND OPPOSITION DATES IN 2021

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2021 JULY 5.0 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>
444001 2003 YN ₈₀	16.1	X	113.76175	97.13012	301.35333	13.98294	0.1323459	0.23393049	2.6086241	21	1 29.9	19.4
444002 2003 YG ₁₁₇	16.3	X	135.95299	332.03455	77.96655	12.90438	0.1357547	0.23931042	2.5693798	21	3 20.6	20.3
444003 2003 YY ₁₂₀	16.1	X	271.10034	219.50613	313.07787	28.51082	0.2136586	0.21653854	2.7464977	21	—	—
444004 2004 AS ₁	20.5	X	187.06974	262.07799	322.54323	17.21584	0.1744188	0.88984877	1.0705129	21	—	—
444005 2004 BA ₆₅	16.7	X	13.09791	164.35576	312.62154	12.26273	0.1010391	0.22740419	2.6582985	21	—	—
444006 2004 BF ₉₁	16.5	X	12.96532	175.09024	312.54699	7.32569	0.1726738	0.22707517	2.6608656	21	—	—
444007 2004 BU ₉₉	17.1	X	292.49234	165.65406	359.37484	9.37951	0.2070443	0.21619457	2.7494101	21	—	—
444008 2004 BE ₁₂₆	16.7	X	110.87467	282.16599	117.10398	13.10323	0.1757974	0.23351805	2.6116947	21	2 5.1	20.1
444009 2004 BK ₁₄₄	17.5	X	103.22812	301.19164	115.14811	3.54653	0.0985482	0.23255551	2.6188963	21	2 4.8	20.9
444010 2004 CO ₁₂	17.8	X	87.90533	108.46415	315.72401	3.74534	0.2645726	0.23339749	2.6125940	21	2 17.8	20.6
444011 2004 CY ₂₇	16.5	X	274.22000	217.98737	325.23784	10.64761	0.1701085	0.21902189	2.7256978	21	—	—
444012 2004 CB ₈₉	17.3	X	130.46691	317.09961	105.34881	8.14783	0.2909657	0.24036093	2.5618879	21	4 12.9	21.5
444013 2004 DM ₈	17.6	X	157.73013	210.32365	337.04325	6.12471	0.0533335	0.31316284	2.1476124	21	10 4.8	20.2
444014 2004 DW ₁₁	17.1	X	107.17748	130.13665	315.59224	5.33476	0.3259278	0.23801419	2.5787000	21	4 17.7	21.0
444015 2004 DH ₅₄	17.2	X	330.78063	103.07388	26.81515	1.25112	0.0490661	0.21945406	2.7221181	21	—	—
444016 2004 EQ ₆₀	16.8	X	0.02860	120.64370	11.38004	13.33015	0.1724245	0.22327633	2.6909621	21	—	—
444017 2004 ER ₉₂	16.7	X	107.01943	27.22000	340.41181	5.66618	0.0774499	0.21893106	2.7294516	21	—	—
444018 2004 EU ₉₅	7.0	X	32.39333	125.21067	65.60132	2.82375	0.0425688	0.00335857	44.1603809	21	5 6.6	23.3
444019 2004 FJ ₉₄	18.1	X	6.61054	36.43598	185.03576	6.24941	0.1806779	0.29034214	2.2587214	21	4 1.4	19.6
444020 2004 FJ ₉₄	17.9	X	342.22962	68.52325	142.38267	4.28973	0.1733671	0.28642322	2.2792777	21	1 28.6	20.2
444021 2004 FL ₁₃₁	16.1	X	48.05327	120.71201	35.52799	31.74455	0.2586144	0.23128951	2.6284442	21	4 20.1	18.3
444022 2004 FP ₁₄₉	16.8	X	295.28894	330.73770	199.66490	12.46301	0.1269042	0.21781277	2.7357757	21	—	—
444023 2004 GH ₁₃	17.1	X	27.53951	302.11118	296.84915	7.77651	0.1148186	0.29457371	2.2370382	21	6 19.3	19.0
444024 2004 GD ₁₄	16.8	X	303.97924	234.29539	41.90286	22.95465	0.2451871	0.28406425	2.2918789	21	3 11.9	20.4
444025 2004 HJ ₇₉	6.9	X	265.53437	281.36604	45.30624	3.32177	0.0495801	0.00337768	43.9937170	21	5 6.9	23.3
444026 2004 JC ₄₄	17.7	X	308.06866	84.51655	175.68612	6.85647	0.2558033	0.28178160	2.3042396	21	2 6.7	20.9
444027 2004 KK ₁₄	15.8	X	202.76372	31.49794	213.67111	14.56204	0.0945243	0.20524461	2.8463494	21	—	—
444028 2004 LB ₁₀	17.0	X	17.56569	74.79814	276.82888	13.77945	0.3565315	0.18116100	3.0933300	21	12 8.7	20.5
444029 2004 NJ ₁₁	17.7	X	266.12950	309.44989	7.74705	2.43599	0.2549123	0.27704413	2.3304337	21	3 13.0	21.4
444030 2004 NT ₃₃	4.7	X	43.62183	40.38362	240.98540	31.22346	0.1559055	0.00339336	43.8580216	21	8 21.2	20.8
444031 2004 PQ ₁₆	17.1	X	259.37975	251.89846	77.94831	5.93515	0.2950022	0.27695779	2.3309180	21	3 23.0	21.1
444032 2004 PE ₂₆	17.3	X	219.20315	4.17169	324.14628	23.76305	0.1840550	0.26956794	2.3733250	21	2 17.2	21.1
444033 2004 PE ₂₉	17.9	X	232.94704	61.98073	306.25665	5.02795	0.1829819	0.27677017	2.3319712	21	4 18.9	21.6
444034 2004 PH ₂₉	17.7	X	258.61593	31.15522	280.68113	3.23333	0.1775066	0.27487872	2.3426566	21	3 3.7	21.4
444035 2004 PL ₃₂	15.9	X	75.11099	169.15363	120.32139	12.81765	0.1633513	0.18359902	3.0658846	21	11 12.5	20.7
444036 2004 PH ₄₅	17.8	X	233.52491	313.25272	11.12064	4.07902	0.2345972	0.27052342	2.3573216	21	2 25.9	21.7
444037 2004 PG ₅₁	16.1	X	48.98245	341.41348	333.18731	17.51483	0.2731587	0.18265352	3.0764558	21	11 17.7	20.8
444038 2004 PC ₇₇	16.2	X	39.06273	211.72732	150.71294	20.11310	0.2718375	0.18513966	3.0488525	21	—	—
444039 2004 PJ ₈₃	15.8	X	83.41007	318.08094	354.86012	10.95745	0.1665700	0.18500456	3.0503366	21	12 13.6	20.7
444040 2004 PR ₁₁₄	15.8	X	26.77740	92.58589	286.90851	24.89631	0.2276782	0.18440365	3.0569597	21	—	—
444041 2004 PF ₁₁₄	18.3	X	212.92806	262.45215	105.02519	2.18131	0.2132288	0.27231767	2.3573216	21	4 3.3	22.2
444042 2004 PS ₁₁₄	17.7	X	223.05293	100.72142	245.88587	5.82066	0.1858092	0.27100682	2.3649170	21	3 13.6	21.7
444043 2004 QR ₅	17.3	X	137.43998	158.98825	167.37672	22.72814	0.0793917	0.37105375	1.9179833	21	—	—
444044 2004 QR ₁₀	17.5	X	262.15972	200.00286	121.06049	11.90635	0.2540712	0.27467051	2.3438404	21	3 18.8	21.5
444045 2004 QY ₂₆	18.2	X	82.82317	319.77063	349.89782	18.86210	0.0867135	0.36078569	1.9542038	21	—	—
444046 2004 QX ₂₈	16.5	X	12.38439	23.14433	328.86744	9.81086	0.0686657	0.17833505	3.1259227	21	10 17.0	20.8
444047 2004 RD ₃₀	18.0	X	229.02323	181.02698	175.86767	2.29424	0.2540584	0.27324475	2.3519866	21	4 1.3	22.0
444048 2004 RG ₄₂	16.4	X	28.20447	313.31614	20.45857	10.43185	0.2017413	0.17574451	3.1565660	21	11 5.0	20.3
444049 2004 RQ ₄₂	17.6	X	247.71318	53.59192	276.89433	1.02803	0.2342514	0.27242609	2.3566961	21	3 14.9	21.6
444050 2004 RY ₄₃	18.3	X	230.19043	140.03516	177.34402	0.96237	0.2001232	0.26890815	2.3772056	21	2 14.4	22.3
444051 2004 RP ₄₆	15.9	X	357.77247	18.46072	349.15334	14.97375	0.0938178	0.17779644	3.1322326	21	10 15.8	20.0
444052 2004 RP ₄₇	18.1	X	221.67777	214.46677	159.76360	2.20884	0.2057812	0.27334230	2.3514269	21	4 18.9	21.8
444053 2004 RK ₇₅	17.4	X	247.11728	163.30951	156.49163	6.25096	0.2411203	0.27084212	2.3658756	21	3 1.9	21.3
444054 2004 RC ₈₄	18.1	X	117.94112	292.44656	347.38273	17.83479	0.2552622	0.36062379	1.9547886	21	—	—
444055 2004 RU ₁₀₆	16.1	X	11.52870	139.73598	241.12805	4.81496	0.1827345	0.18147764	3.0897307	21	12 9.3	19.8
444056 2004 RG ₁₂₉	16.3	X	63.53469	328.26948	342.62019	9.44375	0.0585101	0.18072587	3.0982931	21	11 2.3	20.8
444057 2004 RH ₁₃₆	16.0	X	34.94550	18.55011	317.29467	16.93456	0.2066447	0.17946597	3.1127767	21	11 16.1	20.4
444058 2004 RH ₁₅₀	16.5	X	27.49460	342.39017	49.81305	1.05039	0.1805712	0.18475033	3.0531342	21	—	—
444059 2004 RO ₁₅₃	17.8	X	205.54238	128.83502	220.86280	8.02029	0.2283275	0.26777702	2.3838953	21	3 2.9	22.0
444060 2004 RU ₁₆₂	18.0	X	214.12602	174.64159	194.82297	5.28171	0.1716418	0.27163353	2.3612781	21	4 6.4	21.5
444061 2004 RK ₁₆₆	18.2	X	241.77719	349.66123	329.99269	0.54318	0.2056607	0.27171084	2.3608301	21	2 26.6	21.9
444062 2004 RQ ₁₆₇	17.6	X	247.77995	208.70840	134.25131	8.81305	0.2112510	0.27423936	2.3462963	21	4 4.8	21.5
444063 2004 RC ₁₇₉	17.2	X	241.23114	68.65410	257.00493	6.13154	0.2296159	0.27089721	2.3655549	21	3 1.5	21.3
444064 2004 RN ₁₈₂	16.0	X	33.74830	343.34715	345.35457	17.29915	0.1702980	0.17793354	3.1306234	21	10 27.7	20.3
444065 2004 RE ₁₈₄	16.8	X	344.28006	79.64011	302.47757	8.53430	0.2593025	0.17599086	3.1536196	21	10 16.5	19.9
444066 2004 RX ₂₁₃	16.6	X	237.62229	83.64590	245.51399	11.82491	0.2556078	0.26966116	2.3727781	21	2 27.6	21.0
444067 2004 RX ₂₁₈	15.8	X	356.13715	54.56223	355.39851	26.53045	0.1845040	0.17856559	2.3232317	21	12 19.2	20.0
444068 2004 RE ₂₂₆	17.8	X	235.94669	166.25729	182.52943	5.30982	0.2672515	0.27177224	2.3604745	21	3 27.1	21.6
444069 2004 RN ₂₂₈	16.3	X	321.92669	60.00369	2.31155	8.24339	0.1593794	0.17514462	3.1637696	21	10 29.4	20.0
444070 2004 RT ₂₄₁	16.8	X	82.38142	126.58581	174.94667	1.02728	0.1610140	0.18303610	3.0721674	21	11 29.5	21.5
444071 2004 RE ₂₅₆	15.8	X	336.45793	249.78705	156.78759	16.30941	0.1954630	0.17821680	3.1273054	21	11 12.1	19.4
444072 2004 RP ₂₆₃	17.9	X	138.93288	273.66807	137.29758	1.67938	0.1705735	0.26440017	2.4041500	21	3 19.4	21.2
444073 2004 RY ₂₇₁	17.2	X	324.84897	348.19647	41.56667	1.76072	0.1642502	0.17408138	3.1766388	21	9 24.1	20.6
444074 2004 RJ ₂₈₂	16.8											

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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>			
444081	2004	SO ₃	18.3	X	69.01403	147.61372	190.30495	21.34141	0.0666087	0.36101435	1.9533785	21	—	—	
444082	2004	SB ₂₁	16.8	X	240.02435	260.07654	35.25277	21.98222	0.2558856	0.26628702	2.3927797	21	2	3.6	21.4
444083	2004	SY ₂₃	17.6	X	95.21214	252.66934	186.05240	4.87016	0.1977740	0.257779263	2.4450574	21	3	4.6	20.4
444084	2004	SC ₂₄	16.7	X	55.66901	290.05311	20.64205	12.26693	0.3654910	0.17990214	3.1077435	21	12	4.5	21.6
444085	2004	SU ₃₉	16.0	X	0.13703	346.01653	17.97766	15.83815	0.2594015	0.17498072	3.1657450	21	10	30.2	19.2
444086	2004	SV ₄₆	15.8	X	14.08213	2.73023	350.78911	12.42205	0.1234221	0.17670135	3.1451604	21	10	26.2	19.9
444087	2004	SY ₄₆	15.7	X	358.11145	137.25076	267.87624	8.88447	0.1964912	0.17863606	3.1224102	21	12	18.2	19.1
444088	2004	SO ₅₁	16.1	X	357.02179	353.36472	13.11526	15.56263	0.2759262	0.17506226	3.1647618	21	10	27.6	19.1
444089	2004	SH ₅₈	17.1	X	230.44890	331.57920	24.19192	7.52274	0.2348575	0.27051662	2.3677731	21	4	2.5	21.1
444090	2004	TW ₁₀	17.6	X	15.52502	117.65216	263.29693	17.12002	0.0934649	0.35794123	1.9645431	21	—	—	—
444091	2004	TG ₁₄	17.6	X	214.34170	297.13472	41.96786	7.41678	0.2518748	0.26624117	2.3930544	21	3	3.6	21.8
444092	2004	TX ₂₃	17.8	X	254.99281	2.45261	295.85730	1.64005	0.2022835	0.26860796	2.3789764	21	2	12.0	21.7
444093	2004	TV ₂₅	15.9	X	213.35958	302.56122	203.16739	9.06658	0.0363939	0.17403242	3.1772346	21	10	4.7	20.4
444094	2004	TA ₂₉	17.6	X	25.77026	170.90814	23.41493	8.11542	0.0646783	0.26940418	2.3742867	21	4	6.6	19.9
444095	2004	TF ₃₃	18.3	X	145.31006	118.35136	318.37196	1.53667	0.1916117	0.26590057	2.3950975	21	4	29.1	21.9
444096	2004	TE ₃₄	16.3	X	2.86181	185.49895	204.13555	9.36770	0.1436714	0.17782472	3.1319005	21	12	1.5	20.2
444097	2004	TY ₃₄	16.0	X	352.48784	357.99521	31.92124	3.70943	0.1728614	0.17654037	3.1470722	21	11	14.7	19.4
444098	2004	TC ₃₆	16.1	X	319.77297	86.86087	20.12875	15.26857	0.2289783	0.18053103	3.1005220	21	12	23.3	19.5
444099	2004	TG ₃₆	17.1	X	7.33145	117.45327	256.04287	0.28477	0.2027602	0.17654860	3.1469744	21	11	23.8	20.5
444100	2004	TQ ₄₀	16.7	X	11.24724	137.40703	234.00843	0.36793	0.2001446	0.17734315	3.1375677	21	11	27.9	20.3
444101	2004	TY ₄₀	18.0	X	243.41096	121.42690	193.78114	3.08059	0.1047428	0.26680071	2.3897074	21	2	27.3	21.4
444102	2004	TJ ₄₉	18.0	X	159.20847	347.17699	52.09578	2.82437	0.2319307	0.26312123	2.4119342	21	3	30.5	21.8
444103	2004	TG ₅₁	17.9	X	157.68216	82.36363	306.00267	1.57978	0.1996167	0.26909439	2.4255773	21	3	11.6	21.6
444104	2004	TZ ₅₆	16.8	X	3.30228	171.24425	209.33267	5.69599	0.2662033	0.17685687	3.1433164	21	12	4.4	20.0
444105	2004	TR ₅₉	16.7	X	24.57626	308.70326	76.37725	1.88734	0.1695973	0.18162187	3.0880948	21	—	—	—
444106	2004	TX ₆₈	16.4	X	354.47761	29.94968	33.62559	14.28190	0.2868490	0.18032980	3.1028281	21	—	—	—
444107	2004	TF ₈₈	18.3	X	254.66500	135.97652	162.35482	2.75434	0.2217425	0.26858245	3.1791270	21	2	10.7	22.2
444108	2004	TQ ₉₂	16.5	X	44.72287	97.77993	228.55999	3.66769	0.1919419	0.17697941	2.4118652	21	11	19.9	20.8
444109	2004	TF ₁₁₁	16.1	X	342.59640	238.74628	208.12344	13.84981	0.3314270	0.18037332	3.1023290	21	—	—	—
444110	2004	TH ₁₁₂	15.9	X	49.78395	306.60274	85.45141	18.78869	0.2567289	0.17957797	3.1114823	21	12	12.6	20.6
444111	2004	TP ₁₁₉	16.0	X	357.78455	95.63110	293.38871	8.69505	0.0877415	0.17878532	3.1206721	21	11	15.6	20.1
444112	2004	TR ₁₁₉	15.9	X	39.75555	148.86418	222.26665	14.72201	0.2367246	0.18269946	3.0759401	21	—	—	—
444113	2004	TK ₁₂₁	17.9	X	202.66194	208.04932	145.20302	1.77635	0.2056617	0.26578603	2.3957856	21	3	8.2	21.7
444114	2004	TT ₁₃₂	15.9	X	34.11211	98.29378	234.28420	14.70289	0.2537929	0.17679976	3.1439932	21	11	22.6	19.8
444115	2004	TM ₁₄₃	15.8	X	103.70272	72.46219	215.60023	9.51176	0.0112908	0.17739539	3.1369517	21	11	20.3	20.3
444116	2004	TK ₁₅₁	16.2	X	352.47404	232.39335	207.32611	8.49026	0.1190491	0.18373829	3.0643351	21	—	—	—
444117	2004	TX ₁₅₆	16.7	X	25.41190	331.02700	27.58195	9.50370	0.1046537	0.17787671	3.1312902	21	11	19.3	20.9
444118	2004	TE ₁₅₉	17.5	X	157.64890	133.11282	230.64228	4.17794	0.1140608	0.25751063	2.4468421	21	1	31.0	21.0
444119	2004	TJ ₁₆₃	16.0	X	12.93638	164.39653	205.55062	8.85257	0.0799972	0.17529273	3.1619872	21	11	15.4	20.1
444120	2004	TW ₁₇₈	15.7	X	70.13415	293.63214	12.05489	9.69306	0.0883691	0.17939230	3.1136289	21	11	8.9	20.3
444121	2004	TO ₁₈₃	16.0	X	356.40620	154.59497	208.33543	15.46240	0.0778437	0.17360661	3.1824276	21	10	11.4	20.2
444122	2004	TZ ₁₉₃	16.4	X	327.60673	114.15868	279.87897	3.18367	0.1748368	0.17126619	3.2113549	21	10	1.1	20.1
444123	2004	TQ ₁₉₇	17.9	X	158.79603	198.04563	199.34317	6.17036	0.2097663	0.26307112	3.2142245	21	3	24.4	21.8
444124	2004	TK ₂₀₇	15.6	X	339.53445	335.34026	48.86216	15.64085	0.1761182	0.17038825	2.4223766	21	10	17.7	19.2
444125	2004	TF ₂₁₂	16.0	X	9.40305	11.32421	30.66130	29.33716	0.2127904	0.17906080	3.1174706	21	—	—	—
444126	2004	TT ₂₁₅	18.1	X	242.71307	73.07350	242.79510	2.48662	0.1425783	0.26714990	2.3876246	21	2	24.9	21.9
444127	2004	TW ₂₃₄	15.3	X	288.18011	73.45135	18.48036	18.53042	0.1204608	0.17167453	3.2062605	21	10	18.2	19.5
444128	2004	TY ₂₆₉	17.1	X	325.15709	296.97322	139.81448	2.42801	0.1583712	0.17706352	3.1408702	21	11	26.8	20.6
444129	2004	TM ₂₇₂	17.7	X	169.13708	162.95107	240.54591	4.32738	0.2259582	0.26430554	2.4047238	21	4	10.4	21.7
444130	2004	TZ ₃₁₀	15.8	X	39.36878	336.85625	19.24913	18.22842	0.2107131	0.17837513	3.1254545	21	12	20.5	20.4
444131	2004	TR ₃₃₄	16.6	X	325.89491	253.56056	172.50480	9.72406	0.2789322	0.17739157	3.1369967	21	11	9.4	19.5
444132	2004	TY ₃₄₃	16.0	X	6.08167	158.07797	223.49289	10.38718	0.0740806	0.17469098	3.1692444	21	11	18.9	20.1
444133	2004	TH ₃₄₄	18.0	X	137.64561	243.58930	180.96117	3.08920	0.2273126	0.26236522	2.4165653	21	4	10.7	21.6
444134	2004	TK ₃₆₆	17.9	X	125.97290	19.71056	33.26569	0.91880	0.2112757	0.25849676	2.4406152	21	3	13.2	21.3
444135	2004	UB ₁₁	17.7	X	185.56071	335.63340	63.21851	12.45988	0.2453166	0.26794078	2.3829239	21	4	23.5	21.9
444136	2004	VX ₁	17.2	X	206.35122	115.77816	294.69940	3.47020	0.2189004	0.27221246	2.3579290	21	5	20.1	21.1
444137	2004	VZ ₂	17.3	X	185.52604	172.49977	211.44475	5.52422	0.1237328	0.26455227	2.4032284	21	3	27.4	20.8
444138	2004	VE ₁₅	15.1	X	342.69691	292.07725	101.39207	18.76158	0.1576599	0.17167489	3.2062560	21	11	8.5	19.1
444139	2004	VK ₁₅	16.3	X	20.83793	277.27479	77.85914	6.27017	0.1540769	0.17439609	3.1728160	21	11	16.9	20.2
444140	2004	VR ₂₁	17.5	X	179.69453	354.53804	66.18427	4.17723	0.2188667	0.26753996	2.3853033	21	5	12.2	21.5
444141	2004	VX ₃₉	18.0	X	139.55210	280.42777	153.90785	1.43901	0.1895965	0.26241716	2.4162464	21	4	21.6	21.6
444142	2004	VO ₄₁	16.6	X	329.02823	344.22377	74.34806	1.87838	0.1926567	0.17328115	3.1864113	21	11	7.5	20.0
444143	2004	VT ₄₉	16.2	X	23.94433	169.38910	209.77513	10.23833	0.2130237	0.17714955	3.1398532	21	12	28.4	20.3
444144	2004	VO ₅₁	17.5	X	148.73198	269.75016	152.27374	3.21861	0.1489957	0.26254627	2.4154542	21	4	11.8	21.0
444145	2004	VC ₅₄	16.2	X	15.58367	116.53058	257.81098	14.16972	0.3385468	0.17763267	3.1341576	21	12	29.2	19.8
444146	2004	WO ₄	17.7	X	199.03741	267.84929	82.41462	2.73967	0.2155723	0.26206110	2.4184346	21	3	3.1	21.7
444147	2004	XZ ₁₄	17.8	X	203.64830	324.71368	63.94214	3.44640	0.2229712	0.26652139	2.3913767	21	4	22.2	21.8
444148	2004	XR ₄₇	17.8	X	148.30381	7.74555	21.55079	2.							

ELEMENTS AND OPPOSITION DATES IN 2021

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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>		
444161	2005	GP ₁₂₅	16.6	X	236.83748	318.23243	212.34277	13.73114	0.1792426	0.21748244	2.7385452	21	11 20.8	20.6
444162	2005	GN ₁₂₉	16.8	X	246.42526	83.27624	89.18542	5.51574	0.0473761	0.21789259	2.7351075	21	12 22.7	20.2
444163	2005	GU ₁₇₃	18.0	X	4.33303	220.24714	49.82986	7.99050	0.2461611	0.31103243	2.1574079	21	6 21.5	18.6
444164	2005	JN ₄	16.8	X	311.78070	107.48671	114.60641	14.22108	0.0672589	0.23400034	2.6081049	21	1 30.3	20.2
444165	2005	JY ₄₇	17.2	X	122.74081	259.60164	56.68517	10.41074	0.2895057	0.21345403	2.7728932	21	—	—
444166	2005	JY ₇₈	16.7	X	232.53401	303.27013	233.64918	12.54720	0.1260646	0.21554286	2.7549494	21	11 29.8	20.6
444167	2005	JF ₈₉	16.3	X	188.98006	91.59179	236.20934	11.38178	0.1364323	0.22884263	2.6471473	21	1 23.1	20.7
444168	2005	JP ₉₇	17.1	X	49.37380	285.54835	175.30466	4.31518	0.1053405	0.23206547	2.6225817	21	1 11.7	20.0
444169	2005	JO ₁₀₆	17.0	X	156.45786	198.25833	105.36306	11.40754	0.2262129	0.21681946	2.7441249	21	—	—
444170	2005	JZ ₁₃₅	16.5	X	267.44032	36.58621	191.28019	14.09789	0.1828962	0.22973488	2.6402887	21	—	—
444171	2005	KC ₁	18.3	X	343.42778	129.93577	164.71534	5.37142	0.1942094	0.30971171	2.1635369	21	6 10.2	19.6
444172	2005	LO ₄	17.6	X	147.79218	75.35241	182.72750	5.90278	0.2769079	0.21126471	2.7920171	21	12 11.5	22.8
444173	2005	NE ₈₁	18.7	X	321.81974	208.70884	107.43618	2.53843	0.1857935	0.30395685	2.1907598	21	5 30.3	20.4
444174	2005	NZ ₁₀₄	16.8	X	145.55974	306.91935	278.77514	3.92268	0.0563346	0.19947727	2.9009513	21	10 27.6	21.1
444175	2005	OH ₅	17.8	X	334.10185	355.47308	300.21438	5.42043	0.2017676	0.30283787	2.9096153	21	5 16.2	19.4
444176	2005	OA ₂₀	17.5	X	287.00259	18.56601	324.85277	7.35571	0.2306801	0.29968836	2.2115128	21	5 4.9	20.6
444177	2005	QA ₁	18.4	X	315.86758	339.31256	315.24816	4.52322	0.2269700	0.29957504	2.2120705	21	4 5.2	21.0
444178	2005	QP ₁	16.7	X	174.72413	88.21761	213.27085	4.18187	0.1442546	0.21308401	2.7761023	21	—	—
444179	2005	QV ₄₀	17.1	X	83.84731	16.22796	315.04161	14.70825	0.2553813	0.20013112	2.8946294	21	—	—
444180	2005	QZ ₁₂₀	16.7	X	12.19607	86.69998	327.62108	5.74717	0.0554695	0.20019320	2.8940310	21	—	—
444181	2005	QY ₁₂₁	16.9	X	43.46433	35.69611	338.52408	11.03994	0.2145282	0.19729557	2.9222980	21	—	—
444182	2005	QB ₁₈₀	17.6	X	314.74948	241.48866	81.76545	5.96847	0.2368523	0.30059571	2.2070603	21	5 19.2	19.6
444183	2005	QH ₁₈₇	18.0	X	191.76302	184.88733	217.97388	4.61022	0.1319932	0.29077166	2.2564965	21	4 26.6	21.1
444184	2005	RY ₁₂	18.0	X	206.23619	42.40616	345.92567	8.49178	0.1259962	0.29121500	2.2542058	21	4 18.8	21.4
444185	2005	SR ₁	19.1	X	308.38879	189.93923	147.38601	3.26266	0.4987406	0.29770306	2.2213339	21	2 9.0	22.8
444186	2005	SC ₁₅	18.6	X	220.94152	199.43453	212.02993	2.93107	0.1438505	0.29433974	2.2382235	21	6 7.6	21.7
444187	2005	SH ₂₅	18.0	X	291.40576	271.97958	47.67576	4.08527	0.1235759	0.29589618	2.2303677	21	4 14.1	20.9
444188	2005	SN ₂₈	16.5	X	322.44025	71.40999	349.72054	9.05601	0.2022014	0.18757140	3.0224442	21	11 2.5	20.3
444189	2005	SR ₄₁	17.7	X	320.34683	306.13650	341.57387	5.29531	0.1872098	0.29431074	2.2383705	21	4 10.2	20.1
444190	2005	SF ₅₇	16.6	X	323.92525	71.19401	11.99617	9.35208	0.0488726	0.19316091	2.9638523	21	12 7.5	20.6
444191	2005	SF ₆₄	16.5	X	14.92698	165.14464	195.11685	8.73968	0.1130623	0.18791343	3.0187756	21	11 12.4	20.3
444192	2005	SW ₆₆	17.2	X	56.73757	311.62893	11.82902	4.65218	0.1131257	0.19082620	2.9879779	21	11 21.3	21.5
444193	2005	SE ₇₁	18.1	X	33.36430	78.30115	39.11009	24.83221	0.1944380	0.89111406	1.0694993	21	—	—
444194	2005	SM ₈₀	17.7	X	1.49336	248.18302	11.56928	7.91770	0.1536871	0.29726759	2.2235028	21	5 24.7	19.5
444195	2005	SQ ₉₀	17.9	X	317.57743	270.95352	27.00870	2.49354	0.1802983	0.29449352	2.2374442	21	4 24.5	20.3
444196	2005	SO ₉₃	17.7	X	209.27743	48.30477	20.60292	5.40667	0.1475959	0.29281957	2.2459633	21	6 18.5	21.0
444197	2005	SK ₁₀₈	18.6	X	282.91767	131.04639	196.40780	2.83307	0.2440041	0.29434506	2.2381965	21	4 10.3	21.7
444198	2005	SZ ₁₂₁	18.1	X	300.55007	19.65288	307.44087	2.54146	0.1966454	0.29751386	2.2222756	21	5 7.5	20.5
444199	2005	SQ ₁₄₆	17.1	X	340.49283	9.29175	28.86438	3.42641	0.1866804	0.18598012	3.0396602	21	11 5.5	20.2
444200	2005	SM ₁₅₆	16.9	X	94.98124	166.03046	167.17216	2.19789	0.0863597	0.19729197	2.9223335	21	—	—
444201	2005	SK ₁₈₁	17.7	X	76.66643	218.94412	267.81043	2.37968	0.0690987	0.28140222	2.3063101	21	3 18.6	20.1
444202	2005	SH ₂₃₃	16.2	X	229.28000	95.05334	32.92050	5.37363	0.1033054	0.17920284	3.1158231	21	9 26.7	20.8
444203	2005	SV ₂₃₅	16.8	X	68.65675	110.63891	218.11925	11.94181	0.1258909	0.19154739	2.9804732	21	12 14.2	21.2
444204	2005	SE ₂₅₂	17.7	X	269.33523	48.24754	347.74094	5.90365	0.1509737	0.30084757	2.2058283	21	7 14.5	20.4
444205	2005	SM ₂₈₅	15.9	X	327.56225	269.95601	180.60569	22.25006	0.0773828	0.19059552	2.9903884	21	12 22.5	20.2
444206	2005	SC ₂₉₁	17.4	X	13.37131	174.51632	212.56629	1.86111	0.1257765	0.18999866	2.9966477	21	12 14.8	21.0
444207	2005	SK ₂₉₃	16.1	X	71.82500	62.00545	270.80300	8.94841	0.1180269	0.19420495	2.9532203	21	12 22.1	20.2
444208	2005	TR ₃₄	17.1	X	92.70868	187.82706	148.96885	2.63636	0.0843353	0.19882459	2.9072965	21	—	—
444209	2005	TU ₅₄	17.8	X	229.99555	166.75059	217.86296	4.72487	0.1068283	0.29228104	2.2487212	21	5 14.4	20.9
444210	2005	TP ₅₇	17.5	X	8.12296	203.25851	34.19468	5.05639	0.0903606	0.28987216	2.2611622	21	5 6.9	19.4
444211	2005	TL ₅₈	17.7	X	10.68421	14.58478	40.64149	2.71171	0.1545624	0.19335832	2.9618347	21	—	—
444212	2005	TH ₆₈	16.8	X	86.05156	277.22204	34.78572	10.21688	0.2365473	0.19300810	2.9654164	21	12 22.9	21.7
444213	2005	TC ₇₈	17.8	X	18.12709	275.87078	84.28368	0.63477	0.2048645	0.19019431	2.9945923	21	11 28.6	21.3
444214	2005	TY ₇₈	17.4	X	1.17392	22.58812	25.87188	2.27243	0.1613775	0.19070984	2.9891932	21	12 27.5	20.9
444215	2005	TM ₈₃	18.1	X	238.27790	40.38352	351.13717	4.08857	0.1753995	0.29369280	2.2415091	21	5 26.0	21.3
444216	2005	TG ₈₇	18.3	X	143.16738	327.70541	140.10508	1.46596	0.1867072	0.28798088	2.2710513	21	6 6.6	21.5
444217	2005	TN ₁₁₂	17.9	X	99.37545	254.36684	209.65019	6.40034	0.0100666	0.28295352	2.2978728	21	3 10.7	20.7
444218	2005	TE ₁₁₉	16.7	X	99.31149	30.27845	280.42944	0.81496	0.0571092	0.19433463	2.9519064	21	12 19.2	21.0
444219	2005	TW ₁₂₀	17.1	X	31.16757	348.94582	40.30589	2.58794	0.1034049	0.19447490	2.9504868	21	—	—
444220	2005	TT ₁₂₂	17.1	X	68.76047	136.83005	171.30562	1.38300	0.1460001	0.19022848	2.9942337	21	11 22.4	21.3
444221	2005	TJ ₁₃₇	18.0	X	335.42752	248.52538	29.99623	5.84639	0.1953594	0.29648984	2.2273895	21	4 23.5	19.9
444222	2005	TM ₁₈₀	16.6	X	9.87686	203.59898	181.36483	10.33084	0.0825328	0.19036486	2.9928034	21	12 3.4	20.6
444223	2005	TN ₁₈₇	16.1	X	321.84205	205.56052	218.37605	8.86775	0.0293641	0.18688138	3.0298795	21	11 12.1	20.0
444224	2005	TO ₁₉₄	16.1	X	315.88528	158.13909	270.60815	12.70648	0.2043494	0.18499462	3.0504459	21	10 22.8	19.7
444225	2005	US ₅	18.4	X	46.08006	234.04274	196.60994	21.44275	0.1557405	0.38913731	1.8580931	21	—	—
444226	2005	UN ₆	17.9	X	162.74309	18.41869	234.94790	20.54736	0.0872767	0.37881961	1.8916803	21	—	—
444227	2005	UA ₃₂	15.9	X	0.45401	182.65154	216.32208	13.24163	0.1013784	0.18834496	3.0141629	21	12 7.5	19.8
444228	2005	UY ₄₂	16.3	X	9.67749	180.85579	199.33796	8.51407	0.0624699	0.18752881	3.0229019	21	11 24.3	20.3
444229	2005	UJ ₄₇	17.9	X	266.99243	127.56580	235.18009	4.14067	0.1974265	0.29434609	2.2381913	21	5 16.4	20.7
444230	2005	UH ₇₁	18.0	X	208.24262	139.40579	281.							

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ECLIPTIC AND EQUINOX 2000.0, EPOCH 2021 JULY 5.0 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>
444241 2005 <i>US</i> ₁₄₄	16.8	X	70.45456	40.37108	285.44554	0.69884	0.1739978	0.19076956	2.9885693	21	12 18.3	21.3
444242 2005 <i>US</i> ₁₄₉	18.3	X	256.90626	104.88095	264.36512	1.50819	0.1740328	0.29232299	2.2485061	21	5 16.6	21.2
444243 2005 <i>UU</i> ₁₄₉	17.1	X	281.98854	110.71811	20.52556	2.49839	0.0847385	0.18882800	3.0090203	21	12 6.5	21.0
444244 2005 <i>UD</i> ₁₅₄	16.3	X	88.30610	50.73140	236.54060	9.78174	0.0323229	0.18281111	3.0746875	21	11 2.9	20.6
444245 2005 <i>UF</i> ₁₅₉	18.0	X	99.64257	147.03278	210.57462	20.83333	0.0643363	0.38724406	1.8641444	21	—	—
444246 2005 <i>UG</i> ₁₆₅	18.2	X	125.17546	62.50081	36.48925	5.85995	0.1172422	0.28211957	2.3023989	21	4 27.5	21.0
444247 2005 <i>UA</i> ₁₆₉	16.0	X	111.31320	33.68426	230.35310	15.49336	0.0320615	0.18387117	3.0628587	21	11 1.9	20.5
444248 2005 <i>UM</i> ₁₇₁	16.3	X	42.51470	106.45790	232.44062	9.27076	0.0692506	0.18517288	3.0484878	21	11 16.3	20.4
444249 2005 <i>UA</i> ₁₇₉	16.5	X	358.30100	187.23069	219.14134	9.49898	0.0960323	0.18742278	3.0240418	21	12 12.8	20.3
444250 2005 <i>US</i> ₁₈₃	18.9	X	205.06201	346.52772	45.85997	3.52472	0.2140023	0.28622508	2.2803294	21	4 26.3	22.4
444251 2005 <i>UX</i> ₁₉₁	17.3	X	11.62727	80.84750	322.61519	0.78943	0.1912334	0.18954228	3.0014560	21	—	—
444252 2005 <i>UG</i> ₁₉₃	16.9	X	67.73557	135.16847	201.11673	10.61073	0.0443461	0.19194540	2.9763516	21	12 12.1	21.2
444253 2005 <i>UT</i> ₁₉₅	17.0	X	122.41442	124.76834	178.10310	1.81997	0.1103004	0.19726580	2.9225920	21	—	—
444254 2005 <i>UL</i> ₂₀₆	17.3	X	0.92469	326.63915	77.04510	2.15419	0.1896892	0.19066530	2.9896587	21	12 24.2	20.5
444255 2005 <i>UB</i> ₂₁₂	17.2	X	56.51097	259.69204	82.43333	3.15501	0.1646257	0.18943984	3.0025379	21	12 21.3	21.6
444256 2005 <i>US</i> ₂₁₉	17.0	X	348.36721	144.02425	264.85907	4.20776	0.1584713	0.18761690	3.0219556	21	12 4.5	20.2
444257 2005 <i>UG</i> ₂₂₄	18.1	X	126.76864	94.30352	13.47500	4.64312	0.1158512	0.28370302	2.2938239	21	5 10.3	21.1
444258 2005 <i>UU</i> ₂₃₂	18.2	X	172.81053	210.34071	221.74591	6.70962	0.0712167	0.28572213	2.2830046	21	5 13.9	21.3
444259 2005 <i>UT</i> ₂₃₆	16.9	X	16.96450	191.01033	178.47383	4.84451	0.1479154	0.18604021	3.0390056	21	11 30.6	20.7
444260 2005 <i>UA</i> ₂₃₈	18.2	X	300.10316	127.09361	178.41182	5.27137	0.1191425	0.28797324	2.2710915	21	4 21.6	20.8
444261 2005 <i>UX</i> ₂₄₀	18.0	X	278.15210	165.72130	183.94980	6.14506	0.1258831	0.29211170	2.2495002	21	5 23.4	20.8
444262 2005 <i>UG</i> ₂₄₄	17.6	X	247.63120	22.82250	316.76869	3.93945	0.2394271	0.28620346	2.2804443	21	3 23.4	21.4
444263 2005 <i>UD</i> ₂₅₈	17.6	X	38.84665	189.36382	172.98852	2.30316	0.2115329	0.19067435	2.9895640	21	12 31.4	21.7
444264 2005 <i>UU</i> ₂₆₅	17.8	X	347.60247	248.24554	151.89423	1.88065	0.1610822	0.18492911	3.0511662	21	11 21.7	21.3
444265 2005 <i>UT</i> ₂₆₉	16.9	X	58.76079	294.10548	33.64050	15.54885	0.1218533	0.19126502	2.9834060	21	12 10.6	21.5
444266 2005 <i>UD</i> ₂₉₆	17.2	X	352.93988	11.01909	47.96490	2.51141	0.0905245	0.18877479	3.0095857	21	12 20.5	21.0
444267 2005 <i>UT</i> ₂₉₇	16.9	X	263.85318	82.85117	38.18597	1.07248	0.1030896	0.18237253	3.0796150	21	10 27.6	21.1
444268 2005 <i>UQ</i> ₂₉₉	16.5	X	323.08552	35.19330	53.85188	11.52864	0.0667555	0.18841171	3.0134509	21	12 12.7	20.4
444269 2005 <i>UT</i> ₃₁₁	17.4	X	55.55798	322.10226	42.33332	9.13447	0.1890026	0.19501966	2.9449897	21	—	—
444270 2005 <i>UA</i> ₃₂₂	18.2	X	183.61575	32.65200	17.76120	2.99010	0.1722818	0.28343082	2.2952923	21	4 29.5	21.7
444271 2005 <i>UV</i> ₃₂₅	17.9	X	1.20316	54.66416	198.44318	7.53971	0.1024101	0.29185504	2.2509089	21	5 19.9	19.9
444272 2005 <i>US</i> ₃₃₂	17.1	X	79.54716	134.26267	182.52367	2.87450	0.1072355	0.19058158	2.9905341	21	12 9.8	21.5
444273 2005 <i>UK</i> ₃₃₃	17.3	X	2.52134	217.22267	173.64702	2.95510	0.0678003	0.18602845	3.0391337	21	11 27.4	21.2
444274 2005 <i>UP</i> ₃₃₅	16.4	X	69.66168	94.65597	258.57561	9.64078	0.1215767	0.19379304	2.9574036	21	—	—
444275 2005 <i>UM</i> ₃₃₆	16.6	X	268.58282	356.00458	127.68981	2.21772	0.1331511	0.18437143	3.0573158	21	11 2.8	20.6
444276 2005 <i>UX</i> ₃₄₉	15.4	X	55.77899	45.14281	249.76208	9.32003	0.1802524	0.18359228	3.0659596	21	10 23.4	19.7
444277 2005 <i>UT</i> ₃₈₀	16.9	X	43.70323	159.24808	200.49656	6.12899	0.1814098	0.19026316	2.9938698	21	12 29.5	21.1
444278 2005 <i>UQ</i> ₃₈₄	16.3	X	349.74439	154.02056	250.96201	8.87368	0.0978021	0.18538492	3.0461628	21	11 27.6	20.0
444279 2005 <i>UO</i> ₄₂₄	16.6	X	16.92511	133.16510	217.55341	3.65308	0.1646437	0.18536716	3.0463574	21	11 7.9	20.2
444280 2005 <i>UK</i> ₄₂₆	17.3	X	343.47154	95.99115	323.06141	0.55821	0.1066809	0.18757251	3.0224323	21	12 6.7	20.9
444281 2005 <i>UX</i> ₄₂₉	16.4	X	337.55824	4.23357	39.94037	9.13797	0.1067588	0.18376483	3.0640402	21	11 7.0	20.1
444282 2005 <i>UF</i> ₄₃₁	16.8	X	290.16580	223.22830	244.94268	5.88367	0.0790057	0.18565767	3.0431786	21	11 19.3	20.8
444283 2005 <i>UT</i> ₄₃₆	16.6	X	223.05921	322.80072	216.11064	10.71867	0.0472972	0.19062947	2.9900332	21	11 27.6	20.9
444284 2005 <i>UF</i> ₄₄₂	17.4	X	151.34525	154.92142	284.17158	5.83822	0.1992271	0.28229756	3.0214311	21	5 6.7	20.9
444285 2005 <i>UB</i> ₄₄₆	16.4	X	359.22442	154.73196	269.13968	6.11118	0.1958541	0.19283581	2.9671825	21	—	—
444286 2005 <i>UH</i> ₄₆₀	16.9	X	63.45317	83.48857	264.71781	3.49992	0.2640891	0.19140681	2.9819324	21	—	—
444287 2005 <i>UV</i> ₄₆₉	16.5	X	129.87249	227.46009	334.25929	4.12369	0.0822179	0.17422162	3.1749338	21	9 11.2	21.3
444288 2005 <i>UE</i> ₄₇₃	16.8	X	45.17057	84.00194	249.15510	12.92003	0.2005975	0.18518629	3.0483407	21	12 1.3	21.0
444289 2005 <i>UE</i> ₄₇₆	18.0	X	247.83615	85.34509	333.04591	4.35111	0.1531755	0.29782973	2.2207040	21	7 17.8	20.8
444290 2005 <i>UP</i> ₄₈₉	16.3	X	358.13011	39.17860	357.75326	11.50156	0.1546310	0.18821179	3.0155845	21	12 3.5	20.0
444291 2005 <i>UY</i> ₄₉₅	15.8	X	285.51582	139.68361	282.71390	8.00703	0.0609645	0.18087771	3.0965589	21	9 13.8	20.1
444292 2005 <i>US</i> ₅₁₁	16.9	X	335.88971	192.28850	233.32222	9.54925	0.0855406	0.18649416	3.0340721	21	12 2.9	20.6
444293 2005 <i>UO</i> ₅₁₁	17.3	X	274.15269	60.92441	44.50995	1.79330	0.1301776	0.18044692	3.1014856	21	10 17.7	21.4
444294 2005 <i>UM</i> ₅₁₃	17.9	X	280.15780	346.24299	358.13392	1.85564	0.1278720	0.29266441	2.2467570	21	5 16.2	20.5
444295 2005 <i>UM</i> ₅₁₅	16.3	X	294.37875	275.43203	144.38816	12.45954	0.0743528	0.17890006	3.1193376	21	9 28.4	20.5
444296 2005 <i>UV</i> ₅₁₇	16.7	X	352.11340	271.16034	146.50150	9.43086	0.0568477	0.19109907	2.9851329	21	12 16.8	20.7
444297 2005 <i>UH</i> ₅₂₆	17.2	X	358.98133	237.63407	175.84973	6.03283	0.2122446	0.18891658	3.0080797	21	—	—
444298 2005 <i>UF</i> ₅₂₇	18.9	X	220.85677	80.87937	289.19239	1.83880	0.2004937	0.28483936	2.2877192	21	4 10.5	22.6
444299 2005 <i>VO</i> ₁₃	16.7	X	50.15964	18.25774	33.08251	11.67603	0.0893279	0.19872769	2.9082414	21	—	—
444300 2005 <i>VC</i> ₃₄	16.1	X	13.63930	145.46931	224.54582	9.10757	0.0512030	0.18334677	3.0686961	21	11 14.4	20.1
444301 2005 <i>VO</i> ₅₁	17.7	X	334.81111	172.33362	269.54854	1.99752	0.1748748	0.18983329	2.9983878	21	12 24.8	20.7
444302 2005 <i>VD</i> ₆₆	16.4	X	21.57115	170.00230	208.29946	11.17783	0.0263124	0.18873110	3.0100502	21	12 3.6	20.6
444303 2005 <i>VA</i> ₆₈	17.6	X	316.77035	162.90932	108.86465	3.66077	0.1398504	0.28455037	2.2892678	21	3 26.2	20.3
444304 2005 <i>VD</i> ₆₈	16.9	X	354.93671	253.49853	127.19075	3.44165	0.1596020	0.18357728	3.0661267	21	11 9.7	20.4
444305 2005 <i>VM</i> ₇₆	16.0	X	52.27277	116.32979	248.30011	9.34019	0.0316204	0.19107358	2.9853984	21	12 25.1	20.1
444306 2005 <i>VX</i> ₈₀	16.2	X	39.06416	130.24418	241.47166	8.39648	0.0599035	0.18770746	3.0209836	21	12 20.9	20.4
444307 2005 <i>VF</i> ₉₂	17.7	X	144.26416	97.73093	71.33800	2.86629	0.0955064	0.29627579	2.2284622	21	8 26.8	20.6
444308 2005 <i>VE</i> ₉₄	16.5	X	234.21642	168.89816	342.87692	2.89757	0.1517176	0.18067263	3.0989017	21	10 22.8	21.3
444309 2005 <i>VE</i> ₉₉	16.4	X	335.84066	212.84995	190.77026	10.61172	0.2843267	0.18215601	3.0820550	21	11 3.7	18.9
444310 2005 <i>VK</i> ₁₀₁	17.6	X	288.77174	295.46276	9.38294	7.28122	0.1521726	0.28874264	2.2670552	21	3 29.9	20.4
444311 2005 <i>VT</i> ₁₀₅	16.7	X	17.23883	22.06376	321.24625	2.739						

ELEMENTS AND OPPOSITION DATES IN 2021

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2021 JULY 5.0 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>		
444321	2005	WX ₁₉	16.7	X	332.14349	112.92484	281.52606	4.21561	0.1431284	0.18025183	3.1037228	21	10 12.9	20.4
444322	2005	WR ₂₁	18.4	X	251.71098	101.43818	261.31783	3.51547	0.1917731	0.28908779	2.2652504	21	4 30.0	21.7
444323	2005	WX ₂₅	17.7	X	245.15280	316.36643	50.52143	7.48180	0.1355165	0.28719950	2.2751686	21	5 5.2	21.0
444324	2005	WB ₃₀	18.4	X	244.75791	47.19891	331.03252	1.84188	0.2228586	0.28992788	2.2608724	21	5 11.4	21.9
444325	2005	WV ₃₀	18.4	X	188.75840	8.00775	17.63963	2.55807	0.1318698	0.27968468	2.3157425	21	4 1.9	21.8
444326	2005	WL ₃₅	18.0	X	278.91783	332.75019	9.65911	0.21071	0.2771703	0.29174418	2.2514791	21	4 22.3	21.3
444327	2005	WL ₃₈	16.8	X	342.02318	344.97959	51.56093	1.93036	0.1807854	0.18195977	3.0842705	21	11 5.8	20.0
444328	2005	WR ₄₀	17.6	X	201.27605	357.84032	74.41090	5.68414	0.1112217	0.28771191	2.2724665	21	6 16.2	20.6
444329	2005	WY ₄₂	16.9	X	3.90498	353.71605	49.19815	3.24413	0.1091076	0.18680594	3.0306952	21	12 17.7	20.7
444330	2005	WE ₄₇	16.3	X	33.00389	79.43722	259.82035	8.24174	0.0948773	0.18088328	3.0964954	21	11 5.4	20.4
444331	2005	WT ₅₇	18.1	X	257.65370	3.96635	3.70713	3.17826	0.1912627	0.29120752	2.2542444	21	5 12.8	21.4
444332	2005	WH ₆₅	16.8	X	51.98459	94.50955	243.35432	8.44484	0.1846657	0.18991167	2.9975627	21	12 13.8	20.9
444333	2005	WG ₆₉	16.6	X	282.65840	350.87963	81.13653	2.93048	0.1992933	0.17575399	3.1564524	21	9 7.3	20.8
444334	2005	WB ₇₂	18.1	X	192.81603	291.49595	142.88567	4.51855	0.2300471	0.28906210	2.2653846	21	6 9.2	21.9
444335	2005	WH ₈₁	16.0	X	8.63243	121.70565	264.33969	7.87343	0.0561126	0.18298400	3.0727505	21	11 27.2	20.1
444336	2005	WV ₈₅	16.3	X	40.49348	85.63658	241.36559	13.81996	0.0897090	0.18138557	3.0907763	21	10 30.6	20.6
444337	2005	WB ₈₉	16.0	X	32.89626	144.19636	241.92693	9.60767	0.1126814	0.19006925	2.9959057	21	—	—
444338	2005	WD ₉₈	17.0	X	296.30531	150.03642	302.84475	0.31456	0.2659534	0.18050581	3.1008107	21	10 13.4	20.3
444339	2005	WF ₁₀₉	17.7	X	188.71818	193.99049	240.44234	5.00938	0.1470892	0.28667922	2.2779205	21	6 5.4	20.9
444340	2005	WP ₁₁₂	16.7	X	245.25866	8.82202	261.01195	7.28662	0.1662452	0.26140726	2.4224656	21	1 2.5	20.6
444341	2005	WY ₁₁₂	16.4	X	281.21069	308.90845	135.98344	10.91721	0.1925516	0.17723732	3.1388166	21	9 24.8	20.6
444342	2005	WE ₁₁₈	15.7	X	342.77400	126.19380	280.98992	7.84376	0.0638421	0.18410081	3.0603112	21	11 17.2	19.7
444343	2005	WG ₁₂₄	16.8	X	280.45363	229.94674	233.15529	1.60656	0.0863128	0.18386660	3.0629094	21	10 29.5	20.9
444344	2005	WY ₁₃₀	16.3	X	135.71527	352.56377	74.21460	4.21934	0.0796072	0.18065522	3.0991008	21	11 2.4	20.9
444345	2005	WY ₁₃₁	17.0	X	287.06889	50.17739	27.37465	2.10026	0.1370093	0.18493837	3.0510643	21	11 25.9	20.7
444346	2005	WM ₁₃₈	17.3	X	348.60166	44.74307	346.56224	0.44126	0.1347460	0.18256048	3.0775010	21	11 9.3	20.9
444347	2005	WT ₁₄₁	16.3	X	316.80528	138.65039	285.59228	10.16689	0.1237371	0.17727377	3.1383862	21	10 24.4	20.3
444348	2005	WW ₁₄₄	17.3	X	57.76860	90.68067	261.45331	8.40439	0.2731736	0.19067937	2.9895116	21	—	—
444349	2005	WN ₁₄₅	17.2	X	314.91379	93.16720	4.62345	1.14574	0.1575337	0.17972485	3.1097869	21	10 14.4	20.6
444350	2005	WP ₁₅₂	16.5	X	56.64099	296.90083	67.33169	11.20941	0.1206200	0.18976809	2.9990755	21	—	—
444351	2005	WZ ₁₅₃	18.0	X	173.94756	266.89118	146.07580	4.56739	0.1928378	0.28302707	2.2974746	21	4 26.9	21.6
444352	2005	WN ₁₅₈	16.3	X	330.22348	120.41678	308.11984	3.72518	0.3277625	0.18316461	3.0707303	21	11 21.3	18.6
444353	2005	WH ₁₆₉	16.3	X	49.16084	298.90136	81.44199	11.76525	0.1897895	0.19139169	2.9820895	21	—	—
444354	2005	WK ₁₉₈	16.1	X	318.74544	159.76852	250.24378	8.44881	0.1479290	0.18102744	3.0948513	21	10 8.7	19.9
444355	2005	XH ₉	16.0	X	68.35214	66.30758	278.24545	10.33891	0.1483686	0.18907674	3.0063807	21	—	—
444356	2005	XT ₁₅	16.4	X	357.33933	154.34428	283.89356	9.05607	0.0796261	0.18446765	3.0562526	21	11 29.3	20.3
444357	2005	XP ₁₇	16.0	X	349.03163	298.47887	95.30744	10.62427	0.0850956	0.17882780	3.1201780	21	11 13.8	20.0
444358	2005	XB ₂₁	16.0	X	214.32726	308.87554	234.58816	11.07410	0.0293053	0.18686849	3.0300188	21	11 23.9	20.2
444359	2005	XL ₂₆	17.3	X	42.43007	293.93315	97.87277	9.09172	0.3167483	0.19086749	2.9875470	21	—	—
444360	2005	XM ₂₇	17.1	X	25.24654	336.93410	63.70283	1.07567	0.2721494	0.18748139	3.0234115	21	—	—
444361	2005	XH ₃₇	16.5	X	11.86247	326.28802	48.75787	1.54038	0.2280648	0.18174971	3.0866466	21	12 8.5	20.0
444362	2005	XA ₄₇	15.9	X	86.15959	280.00272	61.05017	12.71981	0.2097524	0.19281383	2.9674079	21	—	—
444363	2005	XZ ₅₀	17.0	X	4.04517	355.51926	64.50830	8.73303	0.1242875	0.18624582	3.0367686	21	—	—
444364	2005	XA ₅₈	17.6	X	189.64073	134.54311	282.96375	7.65649	0.1137156	0.28399399	2.2922569	21	5 12.6	21.1
444365	2005	XC ₆₁	17.3	X	296.03320	314.23609	137.93495	1.79205	0.1558677	0.18080176	3.0974260	21	10 29.3	21.1
444366	2005	XP ₇₂	16.4	X	339.49362	130.75606	289.07836	12.21282	0.2029732	0.18286094	3.0741290	21	12 2.4	19.6
444367	2005	XE ₉₀	18.3	X	174.56607	1.06923	86.28709	4.33504	0.1017175	0.28381440	2.2932238	21	6 7.4	21.4
444368	2005	YD ₂	18.4	X	236.50331	350.12187	30.16345	3.34175	0.2197869	0.28890886	2.2661856	21	5 6.9	21.8
444369	2005	YU ₂	15.3	X	35.95544	185.05135	295.95916	15.31615	0.0864338	0.20325400	2.8649034	21	1 23.8	18.8
444370	2005	YH ₄₄	15.8	X	303.18914	229.84027	242.88233	8.23928	0.0294753	0.18576829	3.0419704	21	12 16.9	19.9
444371	2005	YE ₆₂	15.9	X	48.00122	227.99596	98.37764	10.05336	0.1848779	0.17706675	3.1408320	21	11 24.9	20.2
444372	2005	YL ₆₅	16.1	X	13.55507	248.75691	102.07532	10.98953	0.2459613	0.17768959	3.1334881	21	11 15.2	19.7
444373	2005	YL ₆₆	18.5	X	201.47299	12.17703	39.73386	2.41398	0.1881888	0.28286923	2.2983292	21	5 18.3	22.0
444374	2005	YZ ₆₈	17.9	X	113.11501	160.34878	332.54403	1.69297	0.1413386	0.27786560	3.2358384	21	6 2.2	21.0
444375	2005	YJ ₆₉	16.8	X	332.11662	115.81890	304.51697	3.75322	0.1186650	0.17894740	3.1187875	21	11 17.2	20.6
444376	2005	YA ₇₁	15.7	X	252.14231	43.92197	107.23220	17.89222	0.1744613	0.17769426	3.1334332	21	11 14.9	20.5
444377	2005	YL ₈₃	18.5	X	139.95442	281.37322	189.82253	1.62171	0.1822320	0.27914814	2.3187088	21	6 7.8	21.9
444378	2005	YU ₈₇	16.8	X	311.74907	166.32128	268.20999	2.17799	0.1200243	0.17825233	3.1268898	21	11 2.7	20.5
444379	2005	YO ₉₂	18.3	X	241.34298	123.55206	281.40271	6.80458	0.2477552	0.28959470	2.2626062	21	6 11.1	21.9
444380	2005	YJ ₉₉	16.5	X	227.54058	85.10894	45.54780	2.20387	0.0728066	0.17225860	3.1990088	21	9 29.9	21.2
444381	2005	YY ₁₁₃	16.5	X	28.90443	293.20227	70.01629	5.94058	0.1921151	0.17996901	3.1069736	21	12 14.2	20.4
444382	2005	YJ ₁₁₄	18.0	X	44.32514	138.33112	33.50483	2.00190	0.1249804	0.27037580	2.3685951	21	4 8.6	20.0
444383	2005	YN ₁₁₉	15.6	X	52.61794	29.62776	304.68963	10.74222	0.2107807	0.17737155	3.1372328	21	12 11.4	20.2
444384	2005	YT ₁₂₅	16.3	X	36.76803	281.85410	82.30241	7.27374	0.1253022	0.18142146	3.0903686	21	12 16.7	20.4
444385	2005	YT ₁₃₄	17.6	X	172.37479	117.12574	328.59543	6.70512	0.1567533	0.28213636	3.023076	21	6 3.4	21.3
444386	2005	YY ₁₅₀	17.2	X	53.97846	172.74812	301.26104	12.87086	0.1128239	0.26392677	2.4070240	21	1 29.1	19.5
444387	2005	YA ₁₅₆	15.7	X	345.68737	123.38999	268.57324	10.07377	0.0556552	0.17599460	3.1535750	21	10 30.3	20.0
444388	2005	YG ₁₇₆	18.0	X	332.65574	102.19170	95.62319	2.27066	0.1301237	0.26185727	2.4196894	21	1 9.9	20.8
444389	2005	YA ₁₈₀	18.8	X	187.58769	91.54378	352.87781	1.49996	0.2441580	0.28411397	2.2916115	21	6 17.2	22.6
444390	2005	YX ₁₈₇												

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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>		
444401	2005	YU ₂₈₆	17.7	X	253.96628	85.78917	286.64371	4.96950	0.1216282	0.28771300	2.2724607	21	5 23.4	20.8
444402	2006	AE ₈	15.9	X	325.52421	309.68360	142.50981	19.65840	0.2951294	0.18235402	3.0798234	21	12 18.3	18.9
444403	2006	AK ₃₀	18.2	X	223.65801	153.12328	247.08940	3.71634	0.1832513	0.28478389	2.2880162	21	5 23.9	21.8
444404	2006	AO ₃₁	15.8	X	283.75381	125.23299	297.63417	20.93103	0.1912841	0.17080640	3.2171152	21	8 19.5	20.4
444405	2006	AV ₃₁	16.4	X	327.32948	123.02416	308.60428	15.53232	0.1921315	0.17992403	3.1074914	21	11 19.3	20.1
444406	2006	AO ₃₅	18.1	X	152.62548	347.21971	119.91181	6.25762	0.0901541	0.27974873	2.3153890	21	6 9.4	21.3
444407	2006	AR ₃₅	18.3	X	119.60305	318.77858	129.97648	1.91288	0.1586084	0.27195645	2.3594085	21	4 14.1	21.4
444408	2006	AL ₄₀	16.2	X	353.50673	310.97819	122.73033	14.35490	0.0889579	0.18262837	3.0767382	21	—	—
444409	2006	AY ₄₆	18.5	X	113.89704	257.41583	216.13770	2.08501	0.1278322	0.27526279	2.3404777	21	5 5.6	21.6
444410	2006	AD ₄₉	15.4	X	7.30453	96.07641	287.02419	16.61690	0.0581382	0.18013853	3.1050241	21	11 19.7	19.8
444411	2006	AR ₅₁	17.9	X	171.09012	92.74325	284.14038	2.18243	0.0631051	0.26879414	2.3778777	21	2 25.9	21.0
444412	2006	AQ ₅₃	17.8	X	243.36363	57.08271	289.09418	6.53379	0.1390444	0.27633035	2.3344451	21	4 2.2	21.4
444413	2006	AH ₅₅	17.9	X	227.37445	127.93622	263.22236	5.69129	0.1313260	0.28249844	2.3003399	21	5 18.2	21.2
444414	2006	AQ ₅₆	15.4	X	99.19445	326.63218	291.12458	14.49923	0.0945198	0.17135536	3.2102406	21	10 10.1	20.5
444415	2006	AK ₆₅	17.7	X	252.45321	307.01344	280.73829	1.16419	0.1387330	0.25233761	2.4801697	21	—	—
444416	2006	BQ ₈	17.8	X	126.71764	347.60658	305.69726	18.33855	0.0624736	0.37155942	1.9162428	21	—	—
444417	2006	BP ₁₃	16.4	X	12.96901	62.35271	307.69793	4.21718	0.1398433	0.17760056	2.1345353	21	11 20.4	20.4
444418	2006	BM ₃₀	15.5	X	312.86867	295.82422	124.71988	13.97792	0.1211967	0.17250884	3.1959145	21	10 23.4	19.7
444419	2006	BR ₃₄	17.2	X	346.12520	75.03236	318.14260	6.97284	0.2814747	0.17746007	3.1361894	21	11 9.9	20.1
444420	2006	BQ ₃₅	18.3	X	78.26086	150.34656	355.24695	3.29112	0.1084117	0.27160727	2.3614303	21	4 25.6	21.0
444421	2006	BC ₃₉	18.1	X	133.79148	12.67606	107.99854	3.55052	0.1367006	0.27843694	2.3226556	21	6 9.9	21.3
444422	2006	BJ ₄₉	18.0	X	329.96519	178.81819	28.37903	1.91677	0.1228342	0.26160964	2.4212161	21	1 20.4	20.9
444423	2006	BE ₅₇	17.7	X	103.85022	142.04411	309.28821	6.25980	0.0485761	0.26860963	2.3789665	21	3 7.2	20.5
444424	2006	BM ₆₅	17.9	X	301.31644	197.61170	27.01622	1.40337	0.1338735	0.25991339	2.4317389	21	1 5.6	21.4
444425	2006	BV ₆₅	18.5	X	338.29485	112.90653	355.23766	2.22596	0.1112162	0.26137946	2.4226374	21	1 22.9	21.4
444426	2006	BC ₇₉	17.5	X	203.85788	77.80035	336.62069	22.44163	0.2527343	0.28004273	2.3137682	21	5 14.6	22.1
444427	2006	BN ₈₇	18.2	X	162.09813	93.20799	344.40564	3.02274	0.1854400	0.27708685	2.3301942	21	5 15.1	21.9
444428	2006	BN ₁₃₇	18.7	X	174.83920	164.79755	258.52746	1.51799	0.1956574	0.27644669	2.3337900	21	5 9.5	22.4
444429	2006	BE ₁₄₀	17.7	X	112.70889	170.18732	307.42118	1.77023	0.1554148	0.27272710	2.3549617	21	5 13.2	20.8
444430	2006	BD ₁₄₄	16.3	X	316.34840	309.75708	170.88438	12.94890	0.3153748	0.18396444	3.0618233	21	12 30.4	19.1
444431	2006	BV ₁₆₈	17.4	X	63.25656	31.16641	142.98053	4.03294	0.1692948	0.26978074	2.3720768	21	5 26.1	19.8
444432	2006	BF ₁₇₉	18.1	X	134.38950	61.41423	30.96557	0.78328	0.1116851	0.27307915	2.3529373	21	4 29.8	21.2
444433	2006	BE ₁₈₀	17.5	X	234.14312	170.07199	101.54350	2.59391	0.1605491	0.25396225	2.4695810	21	—	—
444434	2006	BU ₁₈₄	18.7	X	153.65867	42.61665	54.11216	2.13463	0.1507415	0.27832637	2.3232707	21	5 30.8	22.1
444435	2006	BK ₁₉₄	15.7	X	303.93242	275.96961	144.72237	26.26406	0.2749407	0.17223024	3.1993600	21	9 14.4	19.6
444436	2006	BF ₂₀₅	16.4	X	345.67793	275.61568	143.28937	10.90144	0.0989184	0.17585553	3.1552374	21	12 8.7	20.5
444437	2006	BJ ₂₂₈	17.5	X	23.09076	184.40096	20.25712	2.31627	0.1538928	0.26975963	2.3721270	21	4 17.1	19.2
444438	2006	BM ₂₂₈	16.9	X	288.82568	136.45935	329.09147	9.67106	0.1897982	0.17735980	3.1373737	21	10 24.5	21.0
444439	2006	BK ₂₄₇	17.6	X	142.10788	321.03324	132.95478	4.29889	0.1718618	0.27471171	2.3436060	21	5 18.4	21.0
444440	2006	BO ₂₄₇	18.0	X	57.97724	44.19963	117.70409	2.09565	0.1171803	0.26849759	2.3796283	21	4 19.4	20.3
444441	2006	BN ₂₆₄	17.7	X	120.87545	114.04165	339.70422	9.50103	0.1015390	0.26821913	2.3812750	21	4 9.6	20.9
444442	2006	BC ₂₈₂	18.3	X	125.60495	25.21346	35.19627	2.92037	0.1813206	0.26514974	2.3996169	21	3 18.4	21.4
444443	2006	CV ₁₁	18.1	X	123.29675	208.94426	269.56431	0.52300	0.1365547	0.27529895	2.3402721	21	5 25.4	21.3
444444	2006	CL ₆₇	17.9	X	101.78722	31.55384	87.20114	3.32712	0.1736160	0.26910608	2.3760398	21	5 5.3	20.9
444445	2006	DB ₂₂	17.7	X	100.77964	326.36259	144.55576	6.95073	0.0802031	0.26683647	2.3894939	21	4 9.9	20.6
444446	2006	DH ₄₅	17.9	X	321.20105	311.79566	150.17848	24.50431	0.0348344	0.36987181	1.9220672	21	—	—
444447	2006	DR ₈₀	16.1	X	285.01971	284.91683	170.37128	10.70201	0.0765344	0.16831641	3.2487659	21	10 27.5	20.6
444448	2006	DY ₁₂₇	16.2	X	339.33070	76.78123	335.71933	8.79384	0.1430383	0.17562156	3.1580390	21	11 16.6	20.0
444449	2006	DS ₁₃₇	17.5	X	208.84683	296.91985	74.56012	3.30011	0.1054793	0.26768037	2.3844691	21	4 6.6	20.9
444450	2006	DS ₁₄₉	17.8	X	352.84537	236.85541	305.26300	2.28001	0.1283278	0.25698085	2.4502038	21	1 20.1	20.4
444451	2006	DT ₁₅₁	17.6	X	347.09210	218.62687	342.26622	4.54759	0.0534477	0.25850794	2.4405448	21	2 16.6	20.3
444452	2006	EG ₁₈₃	18.3	X	353.34978	89.94550	359.86758	19.38978	0.1103723	0.37171386	1.9157120	21	—	—
444453	2006	DK ₁₉₂	17.2	X	12.03529	160.64090	13.14845	11.97113	0.1705471	0.25826843	2.4420534	21	2 11.3	19.7
444454	2006	DK ₁₉₉	17.6	X	186.02617	222.98149	1.86534	21.22110	0.0566181	0.36369584	1.9437653	21	—	—
444455	2006	DG ₂₀₆	18.4	X	178.79662	46.71186	23.48682	1.73472	0.1658497	0.27639346	2.3340897	21	5 21.2	22.0
444456	2006	EK ₆	18.5	X	161.00525	56.97413	26.84722	1.76141	0.1512797	0.27460999	2.3441847	21	5 21.1	22.0
444457	2006	EB ₂₁	17.4	X	241.99080	313.65540	344.38670	4.63629	0.1067152	0.25920270	2.4361819	21	2 6.9	20.9
444458	2006	EH ₂₁	17.9	X	172.70641	273.94001	132.19053	2.14084	0.1769864	0.27119967	2.3637957	21	4 16.2	21.5
444459	2006	EJ ₃₇	18.2	X	20.07374	69.04364	4.67156	20.33554	0.1102934	0.37285286	1.9118085	21	—	—
444460	2006	EB ₄₈	15.7	X	12.27783	15.69998	10.00433	15.35946	0.2655734	0.17379856	3.1800840	21	12 26.8	19.7
444461	2006	EV ₆₆	17.0	X	340.36522	203.09208	5.93151	10.03849	0.0313706	0.26079771	2.4262387	21	2 23.4	20.1
444462	2006	EC ₆₈	18.2	X	142.00475	73.40431	352.15264	3.09200	0.1096473	0.26760717	2.3849039	21	4 2.3	21.5
444463	2006	EY ₇₂	18.0	X	70.69750	279.52547	195.81545	4.26374	0.1185133	0.26028798	2.4294053	21	3 3.1	20.6
444464	2006	FU ₁₀	16.1	X	260.04509	325.06817	161.78341	15.01516	0.2323920	0.17331167	3.1860373	21	10 14.0	20.8
444465	2006	FA ₂₁	18.1	X	284.37982	169.06099	341.08662	18.75443	0.0702499	0.37173553	1.9156375	21	—	—
444466	2006	GL ₃₁	17.6	X	167.56156	46.38285	211.36206	21.03074	0.0515253	0.36075513	1.9543141	21	—	—
444467	2006	HS ₅₇	17.8	X	53.45003	321.55349	49.46251	22.59681	0.0850726	0.35963427	1.9583727	21	—	—
444468	2006	HJ ₅₈	16.2	X	165.96020	268.81568	47.99048	28.89677	0.3475427	0.23473580	2.6026543	21	1 6.4	21.3
444469	2006	JG ₄	17.4	X	204.88395	221.06279	57.48590	5.14457	0.2823442	0.23802703	2.5786072	21	—	—
444470	2006	KJ ₂₆	17.3	X	178.									

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444481 2006 QG ₁₀₅	16.9	X	88.63569	91.76420	315.77428	11.36496	0.1937940	0.22526812	2.6750766	21	1 19.9	19.9
444482 2006 QK ₁₁₈	16.5	X	126.70363	342.57185	299.32355	7.88695	0.2079471	0.21468428	2.7622897	21	12 22.9	21.2
444483 2006 QY ₁₁₈	17.5	X	117.64938	137.13933	191.02920	10.41054	0.3111235	0.22009393	2.7168397	21	—	—
444484 2006 QV ₁₄₄	17.0	X	132.71161	117.94197	224.81063	11.49055	0.2879067	0.22297662	2.6933730	21	1 4.8	21.3
444485 2006 QY ₁₄₄	17.0	X	107.18998	83.77521	296.58882	5.80492	0.2507923	0.22236777	2.6982871	21	1 19.6	20.4
444486 2006 QU ₁₄₇	17.2	X	127.25694	168.71560	152.39105	5.43223	0.1098654	0.21792484	2.7348377	21	—	—
444487 2006 QW ₁₅₇	17.1	X	182.19629	18.71429	329.85895	3.17396	0.0836261	0.23397817	2.6082697	21	2 10.6	20.9
444488 2006 QJ ₁₈₅	17.2	X	63.79852	19.62246	351.68800	4.24445	0.0795954	0.21340683	2.7733020	21	—	—
444489 2006 QZ ₁₈₆	16.3	X	165.34726	341.95920	341.06890	11.30058	0.0845528	0.22794436	2.6540971	21	—	—
444490 2006 RT ₂	16.4	X	167.67192	304.59128	14.35595	13.17962	0.2677809	0.22708746	2.6607697	21	1 8.4	21.1
444491 2006 RY ₃	17.1	X	52.23856	240.26907	177.83144	8.99104	0.2394288	0.21720700	2.7408599	21	—	—
444492 2006 RR ₁₇	16.6	X	104.70756	178.19024	212.61751	13.91862	0.2530128	0.22239986	2.6980275	21	1 25.7	20.5
444493 2006 RE ₂₀	17.1	X	91.24138	247.03781	173.73595	11.83660	0.2792369	0.22439424	2.6820173	21	2 21.5	20.4
444494 2006 RY ₂₀	17.4	X	61.17747	218.06021	197.43985	1.94284	0.1894065	0.21837472	2.7310803	21	—	—
444495 2006 RQ ₂₂	17.0	X	77.52270	160.18934	207.53984	10.01357	0.3283830	0.21440622	2.7646774	21	—	—
444496 2006 RL ₃₂	17.1	X	112.20928	172.98108	199.55178	5.65019	0.0341560	0.22121083	2.7076870	21	—	—
444497 2006 RT ₄₁	17.1	X	66.11225	23.33247	5.22858	4.14331	0.0748782	0.21524103	2.7575242	21	—	—
444498 2006 RG ₅₃	16.7	X	344.81524	79.07752	26.27039	6.08768	0.0668331	0.21191636	2.7862905	21	—	—
444499 2006 RW ₅₄	16.9	X	135.07072	187.39639	176.31065	2.77914	0.1736720	0.22356831	2.6886187	21	1 20.2	20.7
444500 2006 RJ ₅₇	17.4	X	125.96063	111.65293	270.08768	4.09506	0.2446451	0.22820297	2.6520916	21	2 8.7	21.3
444501 2006 RQ ₇₀	17.4	X	24.82679	271.65348	185.61112	1.20159	0.0477973	0.22102999	2.7091637	21	—	—
444502 2006 RU ₇₉	17.1	X	76.20094	239.88431	165.51768	5.13693	0.1148306	0.22021707	2.7158267	21	—	—
444503 2006 RZ ₈₀	16.5	X	274.91397	160.67035	9.34484	4.96911	0.0607640	0.21485932	2.7607892	21	—	—
444504 2006 RM ₈₇	17.4	X	153.73011	262.88657	15.28402	6.20187	0.2767156	0.21790115	2.7350599	21	—	—
444505 2006 RT ₉₃	17.1	X	71.51827	36.52588	336.29562	2.80370	0.1059248	0.21272895	2.7791905	21	—	—
444506 2006 SA ₂	16.7	X	104.30514	171.30507	216.68292	12.44501	0.1853788	0.22309046	2.6924566	21	1 12.5	20.4
444507 2006 SY ₁₃	17.3	X	83.55362	204.76939	188.52074	2.92438	0.0940933	0.21978648	2.7193727	21	—	—
444508 2006 SW ₂₆	16.4	X	55.50096	92.35532	337.55387	12.36173	0.1928786	0.21895860	2.7262230	21	—	—
444509 2006 ST ₂₆	18.1	X	85.20028	7.40234	7.37328	9.28329	0.2880682	0.21713468	2.7414685	21	—	—
444510 2006 SZ ₃₃	16.4	X	103.07702	101.28529	305.50113	4.46840	0.1212682	0.22563994	2.6721371	21	1 27.6	19.6
444511 2006 SG ₃₄	16.1	X	156.30400	324.78977	335.53110	12.20222	0.1645541	0.22010273	2.7167673	21	—	—
444512 2006 SH ₅₄	16.5	X	99.43351	54.48807	277.13193	14.20356	0.1620471	0.21505595	2.7591061	21	—	—
444513 2006 SE ₅₅	16.9	X	156.11342	286.87900	37.15654	12.30573	0.3524224	0.22474097	2.6792581	21	1 11.5	21.8
444514 2006 SB ₆₃	17.2	X	64.76722	42.67519	26.28816	18.79893	0.2921023	0.21798059	2.7343714	21	1 29.1	20.1
444515 2006 SL ₆₅	16.9	X	20.66267	279.70934	184.93386	23.76336	0.2873655	0.21636867	2.7479351	21	—	—
444516 2006 SW ₆₅	17.3	X	115.68849	154.94467	180.98395	10.78845	0.1555590	0.22099303	2.7094658	21	—	—
444517 2006 SW ₆₈	17.2	X	198.11300	66.53681	166.11193	3.62686	0.0347846	0.21323528	2.7747893	21	—	—
444518 2006 SD ₇₉	16.3	X	121.11491	1.98387	320.49606	25.10978	0.0852657	0.21515263	2.7582795	21	—	—
444519 2006 SH ₈₁	17.5	X	80.91007	221.99654	190.12681	7.21262	0.1409148	0.22100616	2.7093584	21	1 4.8	20.8
444520 2006 SR ₉₀	17.0	X	58.52352	30.28881	7.60402	3.14137	0.0959148	0.21351263	2.7723858	21	—	—
444521 2006 SP ₉₂	17.2	X	100.01032	153.78774	203.84931	6.14574	0.0646174	0.21449782	2.7638903	21	—	—
444522 2006 SE ₉₈	16.9	X	34.25497	244.80416	195.36831	2.59936	0.1864461	0.21440253	2.7647092	21	—	—
444523 2006 SF ₉₈	17.3	X	71.30164	179.05296	196.52051	6.00632	0.0666948	0.21227556	2.7831464	21	—	—
444524 2006 SY ₁₀₇	16.5	X	76.81387	19.39441	32.27400	15.26538	0.1401778	0.21238647	2.7062547	21	—	—
444525 2006 SW ₁₁₄	17.2	X	48.96166	61.16219	0.98120	5.65338	0.0534100	0.21832119	2.7315267	21	—	—
444526 2006 SA ₁₁₆	16.7	X	106.94532	242.76020	122.35470	9.70662	0.3024968	0.21937007	2.7228129	21	1 8.4	20.2
444527 2006 SP ₁₃₀	16.9	X	132.23341	327.79707	6.30612	8.17738	0.2322139	0.21879084	2.7276164	21	—	—
444528 2006 SN ₁₄₈	17.3	X	81.49528	23.71582	13.87850	5.65231	0.0826855	0.22003587	2.7173176	21	—	—
444529 2006 SL ₁₄₉	17.6	X	108.48866	130.16523	211.09240	7.90366	0.0603665	0.21411275	2.7672030	21	—	—
444530 2006 SV ₁₅₆	17.3	X	20.48694	245.73992	201.76414	2.03066	0.0245238	0.21907523	2.7252554	21	—	—
444531 2006 SR ₁₆₃	17.5	X	68.95068	230.64072	126.64616	1.42317	0.0829856	0.20893171	2.8127630	21	—	—
444532 2006 ST ₁₆₅	17.1	X	103.35095	54.64209	308.70619	5.21701	0.0246998	0.21938539	2.7226862	21	—	—
444533 2006 SA ₁₆₉	16.6	X	34.36687	121.79372	607.26329	2.78278	0.1520149	0.21599158	2.7511324	21	—	—
444534 2006 SX ₁₇₉	17.3	X	331.14967	50.74408	39.63651	9.36665	0.0225584	0.21474786	2.7617444	21	—	—
444535 2006 SB ₁₈₂	17.3	X	101.96360	257.72544	151.70238	12.48790	0.2782284	0.22272379	2.6954109	21	2 22.9	20.9
444536 2006 SM ₁₈₅	17.1	X	108.86126	174.26024	237.69193	4.19647	0.1576896	0.22457304	2.6805936	21	2 14.7	20.8
444537 2006 SF ₁₉₉	17.2	X	111.27875	119.58358	196.04858	3.95135	0.0662009	0.21201859	2.7853947	21	—	—
444538 2006 SR ₂₀₇	16.4	X	85.06156	165.11424	214.77351	9.60821	0.2504731	0.21557029	2.7547156	21	—	—
444539 2006 SV ₂₂₀	17.4	X	71.40084	160.40634	184.13062	3.55125	0.1060412	0.21209388	2.7847355	21	—	—
444540 2006 SW ₂₂₉	17.4	X	50.21142	189.78858	222.42945	5.50946	0.0355263	0.21696989	2.7428564	21	—	—
444541 2006 SC ₂₄₂	17.1	X	105.20090	341.38993	27.73792	5.17232	0.1268379	0.21985678	2.7187930	21	—	—
444542 2006 SZ ₂₄₆	17.3	X	337.90162	0.77751	102.63516	1.23079	0.0218964	0.21439170	2.7648022	21	—	—
444543 2006 SU ₂₄₉	16.7	X	89.19393	197.08733	198.21780	13.89586	0.1235549	0.21993005	2.7181891	21	—	—
444544 2006 SS ₂₅₇	17.6	X	38.29985	205.83894	225.55233	2.10160	0.2000018	0.21422267	2.7662564	21	—	—
444545 2006 SR ₂₆₂	17.4	X	83.88838	150.35217	194.55354	3.81382	0.1336048	0.20925111	2.8099001	21	—	—
444546 2006 SK ₂₆₅	16.6	X	26.12296	103.24261	300.20759	4.92431	0.0239799	0.20821612	2.8192039	21	—	—
444547 2006 ST ₂₆₆	17.0	X	65.98308	51.23655	347.01697	5.23565	0.0637562	0.21460263	2.7629903	21	—	—
444548 2006 SM ₂₉₄	17.8	X	53.27631	198.07471	212.94923	3.79262	0.2047730	0.21553682	2.7550008	21	—	—
444549 2006 SB ₂₉₈	17.5	X	90.26968	328.63868	22.08789	4.28733	0.1523407	0.21299206	2.7769013	21	—	—
444550 2006 SQ ₂₉₉	17.3	X	73.33338	40.79995	17.00344	6.40132	0.0691801	0.22174026	2.7033753	21	—	—
444551 2006 SO ₃₀₆	17.4	X	77.44393	241.10908	158.86980	4.29659	0.0765446	0.21628346	2.7486568	21	—	—
444552 2006 SU ₃₀₇	16.8	X	113.56686	7.30345	349.43843	5.94761	0.1437227	0.21869722	2.7283948	21	—	—
444553 2006 SR ₃₁₇	17.3	X	111.76334	237.42692	80.64515	2.58102	0.2062704	0.21334486	2.7738391	21	—	—
444554 2006 SW ₃₂₅	17.8	X	77.88623	179.66778	177.83686	3.68822	0.1085374	0.21114843	2.7930421	21	—	—
444555 2006 SF ₃₂₉	17.1	X	118.37333	265.95691	49.82698	3.46259	0.1873943	0.21382421	2.7696920	21	—	—
444556 2006 SQ ₃₃₄	16.3	X	1									

ELEMENTS AND OPPOSITION DATES IN 2021

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2021 JULY 5.0 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>
444561 2006 SN ₃₆₇	16.4	X	128.60432	306.11154	47.63591	13.11586	0.2845354	0.22325796	2.6911098	21	1 17.8	20.6
444562 2006 SP ₃₆₈	16.7	X	89.42961	156.78044	223.68959	8.55506	0.2048932	0.21709379	2.7418127	21	—	—
444563 2006 SU ₄₀₁	17.0	X	128.27718	286.34457	52.94279	7.01185	0.0678847	0.21518598	2.7579945	21	—	—
444564 2006 SW ₄₀₇	17.6	X	55.31946	44.00547	336.42563	4.56478	0.0964620	0.21002812	2.8029655	21	—	—
444565 2006 TG ₁₉	16.7	X	123.81202	134.87093	225.41644	4.67346	0.0965031	0.21856574	2.7294889	21	—	—
444566 2006 TY ₁₉	17.5	X	84.39981	165.43594	217.84556	8.78206	0.2126548	0.21546139	2.7556438	21	—	—
444567 2006 TX ₃₀	16.9	X	98.21928	310.32830	31.03734	8.49606	0.2627827	0.21340878	2.7732852	21	—	—
444568 2006 TH ₃₃	17.1	X	30.06116	240.33286	200.46441	2.91679	0.0820126	0.21437280	2.7649648	21	—	—
444569 2006 TE ₄₇	17.1	X	26.41474	8.13794	49.99278	4.37913	0.0882985	0.20850228	2.8166238	21	—	—
444570 2006 TD ₅₄	16.7	X	106.26907	289.65388	59.88436	7.38744	0.0653007	0.21137797	2.7910197	21	—	—
444571 2006 TZ ₆₅	17.3	X	66.94355	156.53317	200.32384	13.77171	0.2032433	0.20968321	2.8060384	21	—	—
444572 2006 TJ ₆₇	17.0	X	64.13237	70.95277	317.04303	6.80912	0.2210945	0.21311659	2.7758194	21	—	—
444573 2006 TB ₇₀	16.1	X	39.38672	207.29287	226.53822	16.22658	0.0769728	0.21613016	2.7499564	21	—	—
444574 2006 TC ₇₀	16.3	X	40.82798	61.20494	10.81090	24.95338	0.1836133	0.21411335	2.7671979	21	—	—
444575 2006 TK ₇₁	16.8	X	154.71220	354.69425	349.96944	3.59082	0.1079580	0.22344287	2.6896249	21	1 11.7	20.7
444576 2006 TE ₇₃	16.5	X	87.34892	131.98507	254.13106	5.56682	0.1473929	0.21621402	2.7492452	21	—	—
444577 2006 TD ₈₄	17.5	X	65.06389	81.97608	316.81730	3.88860	0.1623809	0.21383678	2.7695834	21	—	—
444578 2006 TG ₉₃	17.3	X	64.13385	35.94536	343.80214	3.65454	0.2088872	0.21122942	2.7923281	21	—	—
444579 2006 TN ₉₇	17.1	X	10.37344	76.44678	21.46117	8.27483	0.1798302	0.21051937	2.7986033	21	—	—
444580 2006 TU ₁₀₀	17.2	X	64.97498	151.73384	231.07822	7.46482	0.1979463	0.21148849	2.7900473	21	—	—
444581 2006 TC ₁₀₄	16.5	X	53.39853	9.05086	39.32715	9.67726	0.1484760	0.21244137	2.7816981	21	—	—
444582 2006 TE ₁₀₅	16.3	X	97.70166	317.49675	72.49138	12.03494	0.2936609	0.21753618	2.7380942	21	1 29.7	19.9
444583 2006 TH ₁₂₂	17.0	X	11.88506	202.81435	238.94508	4.11539	0.0918392	0.20990939	2.8040223	21	—	—
444584 2006 UK	20.2	X	328.25602	252.30172	243.98403	4.74513	0.5393259	0.53982241	1.4938332	21	—	—
444585 2006 UU ₁₈	16.9	X	75.66965	116.50208	226.08183	7.74302	0.2705193	0.21010480	2.8022835	21	—	—
444586 2006 UA ₂₁	17.0	X	358.13636	95.82087	4.98609	4.12811	0.0225498	0.21384803	2.7694862	21	—	—
444587 2006 UN ₂₆	17.6	X	23.64257	197.67720	221.46787	4.44786	0.1448630	0.20924374	2.8099660	21	—	—
444588 2006 UN ₃₉	17.4	X	86.00553	28.11805	33.73668	5.79942	0.0754166	0.22106186	2.7089033	21	1 19.3	20.8
444589 2006 UF ₅₂	17.0	X	323.78240	299.72675	148.66419	2.65799	0.0212466	0.20466295	2.8517398	21	12 18.2	20.8
444590 2006 UG ₇₈	17.1	X	69.19549	150.71559	226.75020	8.69364	0.2097590	0.21211732	2.7845304	21	—	—
444591 2006 UA ₈₀	16.4	X	44.52415	23.47443	46.11481	9.24703	0.0821127	0.21542577	2.7559476	21	—	—
444592 2006 UW ₈₁	17.3	X	41.23628	3.90596	69.07684	5.77464	0.1099024	0.21292896	2.7774499	21	—	—
444593 2006 UX ₁₁₂	17.2	X	33.18621	85.14831	337.37934	1.53577	0.0528303	0.21332433	2.7740170	21	—	—
444594 2006 UQ ₁₂₁	17.3	X	49.39902	214.35453	180.35938	4.39334	0.0780617	0.21095387	2.7947591	21	—	—
444595 2006 UA ₁₂₃	17.7	X	82.47634	142.33852	198.30540	6.88903	0.1056378	0.20889009	2.8131366	21	—	—
444596 2006 UD ₁₂₉	17.0	X	13.90861	79.40145	27.90559	4.55670	0.0303116	0.21616807	2.7496348	21	—	—
444597 2006 UU ₁₄₁	17.1	X	74.65230	337.13563	27.92159	10.33107	0.2256639	0.21012999	2.8020595	21	—	—
444598 2006 UC ₁₄₈	17.0	X	116.94405	343.06274	16.87677	7.62607	0.1190113	0.22149515	2.7053693	21	—	—
444599 2006 UP ₁₅₅	17.1	X	58.65424	312.06349	94.52084	3.43089	0.2023618	0.21467398	2.7623781	21	—	—
444600 2006 UV ₂₀₅	17.0	X	303.88936	69.71424	262.47867	1.05214	0.0144385	0.20981394	2.8048727	21	—	—
444601 2006 UD ₂₁₂	17.1	X	77.40473	93.72823	285.05477	3.77920	0.1825492	0.21159823	2.7890825	21	—	—
444602 2006 UB ₂₁₈	17.0	X	60.79912	120.56246	260.14696	4.74886	0.0382167	0.20949215	2.8077442	21	—	—
444603 2006 UQ ₂₂₂	16.3	X	71.64088	6.82518	43.77694	15.50476	0.1423789	0.21593968	2.7515732	21	—	—
444604 2006 UT ₂₂₆	16.5	X	77.21354	337.02253	28.57761	6.62248	0.0785832	0.21092243	2.7950368	21	—	—
444605 2006 UP ₂₄₈	17.1	X	36.15252	200.93361	208.77589	4.30860	0.1644445	0.21002329	2.8030085	21	—	—
444606 2006 UJ ₂₅₄	17.5	X	10.60104	209.80074	194.00597	1.61053	0.0655034	0.20346382	2.8629334	21	12 27.7	21.2
444607 2006 UL ₂₇₀	16.5	X	345.27265	90.26883	48.39395	15.10557	0.2005623	0.21118634	2.7927078	21	—	—
444608 2006 UF ₂₇₄	16.9	X	43.64605	32.04628	33.74686	5.12216	0.0612624	0.21637245	2.7479030	21	—	—
444609 2006 UV ₂₈₈	16.8	X	119.13114	295.62171	56.00022	17.87280	0.2362441	0.21519593	2.7579095	21	—	—
444610 2006 US ₂₉₅	17.7	X	48.85890	63.16801	352.99720	0.35314	0.1392189	0.21921952	2.7240594	21	—	—
444611 2006 UH ₃₂₉	17.3	X	72.50702	221.20526	178.41075	9.09851	0.2980961	0.21301505	2.7767015	21	—	—
444612 2006 UN ₃₃₆	16.5	X	105.90087	310.36556	66.82199	9.73002	0.1422176	0.21717899	2.7410956	21	—	—
444613 2006 VQ ₁	16.4	X	10.04862	123.23942	323.74684	8.18600	0.1739987	0.21263809	2.7799822	21	—	—
444614 2006 VF ₁₂	17.0	X	49.49626	147.80596	227.23972	7.23888	0.0519105	0.20342095	2.8633356	21	—	—
444615 2006 VT ₂₄	16.9	X	52.01580	195.43353	219.17510	4.40752	0.1789121	0.21173996	2.7878377	21	—	—
444616 2006 VT ₂₉	16.8	X	98.37100	3.47998	54.99888	16.22377	0.3821256	0.22082876	2.7108093	21	3 25.7	20.9
444617 2006 VG ₄₅	16.8	X	43.06892	173.91071	252.88605	3.05642	0.0553225	0.21496387	2.7598940	21	—	—
444618 2006 VR ₆₁	19.0	X	341.10010	92.87236	254.07421	1.26138	0.1483516	0.32238906	2.1064405	21	9 15.4	20.1
444619 2006 VV ₈₂	16.9	X	125.50714	75.99424	256.17144	3.26676	0.0746004	0.21179936	2.7873165	21	—	—
444620 2006 VT ₈₈	17.0	X	136.73442	21.87593	292.69041	3.38742	0.0659768	0.21058989	2.7979785	21	—	—
444621 2006 VU ₁₀₀	16.3	X	125.81296	267.11574	61.92871	14.61744	0.1740253	0.21389924	2.7690442	21	—	—
444622 2006 VR ₁₀₇	16.5	X	47.55220	334.12689	84.24735	9.44337	0.1915403	0.21288107	2.7778664	21	—	—
444623 2006 VJ ₁₅₄	16.7	X	56.04800	224.70997	234.47611	7.76517	0.0988840	0.22014897	2.7163868	21	1 21.7	20.0
444624 2006 VJ ₁₇₀	16.6	X	68.35118	289.38255	116.85413	8.55065	0.2310199	0.21340183	2.7733453	21	—	—
444625 2006 VU ₁₇₀	16.3	X	55.30776	289.19132	104.39583	14.38070	0.1495525	0.20230116	2.8738922	21	—	—
444626 2006 VV ₁₇₂	17.0	X	117.69428	95.68458	224.64891	12.10361	0.2176485	0.21251638	2.7810435	21	—	—
444627 2006 WU	19.0	X	302.16564	208.95271	332.23580	2.91009	0.3555633	0.41216456	1.7882255	21	—	—
444628 2006 WQ ₁	19.3	X	129.31266	205.20709	111.81865	14.41095	0.2404124	0.55023246	1.4749317	21	—	—
444629 2006 WD ₃₀	16.2	X	49.41362	345.56399	75.24446	13.01765	0.1071527	0.21431344	2.7654753	21	—	—
444630 2006 WH ₃₉	17.1	X	119.69406	122.60950	227.84457	7.41710	0.3047068	0.21618741	2.7494708	21	1 5.1	21.2
444631 2006 WL ₅₁	16.2	X	113.25022	358.17240	252.78046	9.20567	0.0634948	0.19055958	2.9907643	21	10 21.2	20.8
444632 2006 WX ₆₉	17.3	X	13.56567	49.15801	13.01835	6.02418	0.0877054	0.20865492	2.8152500	21	—	—
444633 2006 WL ₇₁	17.0	X	112.11927	305.92469	34.28262	3.99296	0.0995985	0.21076210	2.7964542	21	—	—
444634 2006 WZ ₁₀₂	17.1	X	299.39736	237.18917	244.41079	9.21921	0.0548320	0.20023861	2.8935934	21	12 24.5	20.7
444635 2006 WU ₁₃₃	17.1	X	75.89121	11.25815	22.96477	8.04921	0.1151169	0.21439485	2.7647752	21	—	—
444636 2006 WB ₁₄₀	16.0	X	57.97575	105.53623	264.23941	15.41814	0.2042665	0.20574861	2.			

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ECLIPTIC AND EQUINOX 2000.0, EPOCH 2021 JULY 5.0 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>		
444641	2006	XU ₃₇	16.6	X	292.53706	326.35617	106.56773	6.74192	0.0886048	0.18615474	3.0377590	21	10 11.8	20.7
444642	2006	XO ₅₉	16.1	X	183.00340	229.75158	308.74850	7.89423	0.0843362	0.18286829	3.0740465	21	10 5.5	20.9
444643	2006	YW ₁₀	16.8	X	301.02992	311.10521	113.90215	3.96390	0.0806039	0.18521682	3.0480057	21	10 13.1	20.7
444644	2006	YZ ₃₁	16.0	X	217.61363	176.84784	313.84977	8.68401	0.0379107	0.17895066	3.1187497	21	9 18.6	20.6
444645	2006	YJ ₅₂	16.3	X	341.72330	73.04656	321.02729	9.22809	0.0996245	0.18741136	3.0241647	21	10 28.3	20.2
444646	2006	YQ ₅₂	17.8	X	26.66088	292.82910	285.66453	7.35888	0.0773700	0.29550766	2.2323223	21	5 9.2	20.0
444647	2006	YW ₅₃	18.4	X	173.37726	142.23249	292.32742	3.00742	0.0786843	0.29725828	2.2235492	21	5 16.6	21.2
444648	2007	BR ₉	16.0	X	23.28964	206.62269	111.71733	10.94458	0.0881392	0.17679089	3.1440984	21	10 1.7	20.2
444649	2007	BV ₉	16.5	X	270.65888	102.26053	335.75511	8.51633	0.0339327	0.17858127	3.1230488	21	9 20.0	20.9
444650	2007	BL ₁₃	16.8	X	202.29497	171.74510	348.85399	4.57354	0.0686233	0.18057466	3.1000224	21	10 7.8	21.4
444651	2007	BY ₁₅	16.2	X	69.91871	15.59312	316.66803	10.03401	0.1839197	0.19020931	2.9944348	21	12 27.2	20.8
444652	2007	BO ₂₁	16.2	X	173.02057	206.81069	317.72751	6.65207	0.1326339	0.17636543	3.1491529	21	9 9.4	21.3
444653	2007	BP ₂₆	18.1	X	151.68538	81.04175	106.92275	1.25343	0.0971868	0.31179928	2.1538691	21	10 1.0	21.0
444654	2007	BT ₆₅	18.2	X	20.37106	51.27789	145.22965	2.92516	0.1387780	0.28476498	2.2881175	21	3 27.4	19.9
444655	2007	BA ₇₁	17.8	X	335.26656	58.63859	151.26302	12.17707	0.1455370	0.27843980	2.3226397	21	1 22.5	20.6
444656	2007	BP ₇₈	16.2	X	48.88159	63.31940	309.48796	8.43962	0.0635804	0.19330841	2.9623444	21	—	—
444657	2007	CY ₁₂	17.7	X	197.39042	215.68695	239.81333	4.44240	0.3098894	0.30666974	2.1778206	21	7 7.3	21.5
444658	2007	CX ₁₉	16.9	X	338.10213	298.02442	159.95192	5.96980	0.1975592	0.19724313	2.9228158	21	—	—
444659	2007	CG ₂₃	16.6	X	158.74778	57.01939	161.26230	4.55441	0.0896992	0.18085279	3.0968434	21	11 2.4	21.3
444660	2007	CL ₃₁	16.7	X	162.41803	74.61507	145.46631	3.36921	0.0376554	0.18338313	3.0682904	21	11 8.8	21.2
444661	2007	CY ₃₉	16.5	X	289.47996	153.52898	319.68867	9.62986	0.0684946	0.18753492	3.0228363	21	11 24.2	20.6
444662	2007	CC ₄₀	16.0	X	23.85484	54.31912	319.99312	12.49080	0.0949208	0.18713892	3.0270991	21	12 8.3	20.2
444663	2007	CE ₄₀	15.8	X	132.09291	256.20769	321.67363	6.80933	0.0574970	0.17566647	3.1575008	21	9 29.4	20.6
444664	2007	CN ₅₈	15.6	X	153.46826	201.18196	12.16939	10.86205	0.0745394	0.18121271	3.0927414	21	10 19.2	20.3
444665	2007	CR ₆₇	16.9	X	137.10708	85.05436	113.77647	2.24435	0.1137577	0.17323735	3.1869483	21	9 18.6	21.8
444666	2007	DV ₂	16.2	X	154.19779	187.36306	21.08251	5.37108	0.1053229	0.17694979	3.1422158	21	10 15.6	21.0
444667	2007	DS ₁₈	16.4	X	175.17967	208.22847	340.17214	8.06053	0.0760688	0.17642983	3.1483655	21	10 10.0	21.3
444668	2007	DP ₂₂	16.8	X	310.63612	299.09941	158.73331	5.11889	0.2119629	0.18920188	3.0050550	21	11 27.4	19.9
444669	2007	DS ₂₂	17.7	X	327.12217	287.23168	342.23140	6.45345	0.1018356	0.28711387	2.2756210	21	4 9.2	20.2
444670	2007	DK ₂₃	16.2	X	134.44099	235.19955	331.19723	4.92295	0.0914933	0.17110642	3.2135636	21	9 21.3	21.2
444671	2007	DT ₂₆	15.6	X	72.02962	295.69518	359.63948	8.98431	0.0907011	0.17495652	3.1660368	21	10 29.2	20.2
444672	2007	DX ₂₉	16.1	X	245.99595	332.45233	151.41176	11.65314	0.2472534	0.18085278	3.0968435	21	9 23.7	20.9
444673	2007	DU ₃₀	16.1	X	237.15423	321.67821	156.82580	11.36522	0.1468052	0.17656912	3.1467305	21	9 18.3	20.8
444674	2007	DJ ₃₂	15.6	X	93.25597	261.36160	351.73042	11.05121	0.0750861	0.17022414	3.2244474	21	9 30.7	20.4
444675	2007	DS ₄₂	17.8	X	132.11993	28.28297	138.78408	2.72424	0.1701765	0.30078721	2.2061234	21	8 13.7	21.1
444676	2007	DQ ₄₅	16.1	X	186.29340	228.64589	302.02456	8.72593	0.0239531	0.18185960	3.0854030	21	10 1.6	20.8
444677	2007	DL ₆₅	16.2	X	339.88364	43.48238	334.62290	16.84850	0.0203535	0.17598525	3.1536866	21	9 30.7	20.8
444678	2007	DO ₆₇	18.4	X	104.48480	138.21019	14.25350	2.21247	0.1475670	0.29328201	2.2436017	21	6 19.7	21.2
444679	2007	DR ₆₉	16.0	X	257.00727	137.31153	345.95059	11.24362	0.1154700	0.18127553	3.0920269	21	10 15.6	20.5
444680	2007	DM ₇₀	16.8	X	158.89785	185.67063	32.32765	2.12125	0.0574867	0.17704851	3.1410476	21	10 31.3	21.6
444681	2007	DO ₈₃	16.2	X	283.00525	83.67066	350.27679	8.69309	0.0433741	0.17704776	3.1410566	21	9 29.7	20.6
444682	2007	DV ₈₉	16.1	X	299.56452	63.17296	345.08655	15.62412	0.0734505	0.17496767	3.1659023	21	9 15.5	20.3
444683	2007	DY ₉₀	16.6	X	25.96215	63.58940	335.40437	8.23775	0.1047818	0.19111315	2.9849862	21	—	—
444684	2007	DZ ₁₀₂	16.6	X	21.90909	32.67087	342.67777	16.82133	0.2133324	0.18546888	3.0452434	21	12 25.3	20.7
444685	2007	DO ₁₀₇	17.8	X	317.79001	100.53711	137.15211	4.66745	0.1026466	0.28374872	2.2935776	21	2 12.1	20.6
444686	2007	DP ₁₁₃	16.0	X	137.66147	223.77132	349.87691	9.03787	0.0552066	0.17085789	3.2164689	21	9 30.8	20.9
444687	2007	DH ₁₁₆	15.7	X	233.64292	126.18781	11.70490	27.52013	0.1420728	0.17875695	3.1210023	21	10 6.6	20.3
444688	2007	EL ₂	18.3	X	45.54170	33.02715	177.79320	3.56048	0.0855647	0.29061849	2.2572893	21	6 5.2	20.4
444689	2007	EP ₉	16.1	X	331.12091	60.00653	353.32682	10.79687	0.0953568	0.18226316	3.0808470	21	11 4.7	20.1
444690	2007	EQ ₁₇	16.7	X	218.20655	172.04980	355.16571	0.26046	0.0343999	0.17877812	3.1207560	21	11 6.8	21.1
444691	2007	EP ₂₀	18.0	X	345.94861	235.44576	348.07875	5.96093	0.1921253	0.28055108	2.3109724	21	2 21.7	20.2
444692	2007	EQ ₃₂	17.7	X	292.03328	240.12287	26.67983	3.91502	0.1892442	0.27671485	2.3322821	21	2 9.9	21.0
444693	2007	EM ₃₃	16.2	X	144.05310	223.62310	333.35990	10.97225	0.0448568	0.17162653	3.2068583	21	9 16.4	20.9
444694	2007	EQ ₃₇	17.6	X	344.93184	261.64537	343.50335	5.72551	0.1212520	0.28290076	2.2981585	21	3 31.8	19.9
444695	2007	EY ₄₁	18.0	X	345.22863	215.69556	357.75279	3.60624	0.1836679	0.27705974	2.3303461	21	2 8.1	20.3
444696	2007	EB ₅₆	16.2	X	41.84877	182.99840	151.12683	10.83461	0.1007216	0.17512386	3.1640197	21	11 15.4	20.6
444697	2007	EX ₆₇	16.4	X	252.05660	120.87147	5.68953	11.59041	0.0958927	0.17831537	3.1261528	21	10 17.8	20.9
444698	2007	EX ₆₉	17.5	X	295.12221	131.25512	159.02851	5.77883	0.1684101	0.28014718	2.3131930	21	3 17.6	20.3
444699	2007	EA ₇₇	16.3	X	235.62062	332.15832	171.81714	9.84600	0.0540514	0.17669583	3.1452283	21	10 29.7	20.9
444700	2007	EY ₈₀	16.3	X	313.59210	123.87764	323.01419	11.10844	0.0541707	0.18693978	3.0292484	21	11 25.5	20.5
444701	2007	EZ ₈₁	16.3	X	262.04104	322.82812	170.72726	10.22871	0.0805427	0.18142228	3.0903593	21	11 15.1	20.7
444702	2007	EG ₈₉	16.0	X	134.56193	61.94417	162.01131	5.52005	0.1359317	0.17426505	3.1744064	21	10 17.7	21.0
444703	2007	EY ₉₅	17.6	X	257.77884	243.06626	48.19958	4.33222	0.2298361	0.27122861	2.3636276	21	2 5.9	21.5
444704	2007	EA ₁₂₁	17.7	X	306.41486	303.89564	342.62636	7.26164	0.1113137	0.28757189	2.2732041	21	3 31.9	20.4
444705	2007	EX ₁₂₆	16.1	X	317.99496	76.71039	326.29222	10.25618	0.0509698	0.17924077	3.1153835	21	10 4.2	20.3
444706	2007	EW ₁₂₇	18.1	X	128.58025	129.37971	352.89396	7.43180	0.0466192	0.29152247	2.2526205	21	5 22.4	21.0
444707	2007	EA ₁₃₂	17.9	X	281.56194	87.91437	178.35204	1.23799	0.1622383	0.27343467	2.3508974	21	1 30.8	21.3
444708	2007	EJ ₁₃₃	16.7	X	170.50172	127.95118	64.88092	0.72303	0.1572441	0.17310643	3.1885550	21	10 12.1	22.0
444709	2007	EJ ₁₄₀	16.6	X	213.01858	352.47724	176.41487	9.73622	0.0409878	0.18058004	3.0999609	2		

ELEMENTS AND OPPOSITION DATES IN 2021

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2021 JULY 5.0 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>
444721 2007 <i>FP</i> ₁	18.2	X	344.69017	79.17166	116.32977	4.15987	0.1264747	0.27626519	2.3348121	21	1 21.3	20.7
444722 2007 <i>FQ</i> ₆	16.3	X	316.99611	64.57786	356.57656	26.54896	0.1350506	0.17919777	3.1158818	21	10 13.4	20.3
444723 2007 <i>FA</i> ₁₆	18.2	X	350.68983	357.18651	201.25852	6.41341	0.1883983	0.27623276	2.3349949	21	1 22.9	20.8
444724 2007 <i>FM</i> ₁₆	16.6	X	273.14940	294.11924	156.74754	11.35692	0.0881445	0.17985643	3.1082700	21	10 6.5	20.9
444725 2007 <i>FA</i> ₂₀	16.1	X	336.65123	38.88789	356.64962	15.89007	0.2150065	0.17884864	3.1199355	21	10 17.3	19.4
444726 2007 <i>FY</i> ₂₅	17.5	X	334.82425	269.09187	349.27391	6.99400	0.1461828	0.28436789	2.2902471	21	3 30.5	19.8
444727 2007 <i>FN</i> ₂₇	16.1	X	98.24827	91.05446	178.62155	9.42090	0.0614339	0.17452963	3.1711974	21	10 29.2	20.8
444728 2007 <i>FO</i> ₄₇	17.7	X	278.04427	248.67171	28.22093	6.89691	0.0904569	0.27357410	2.3500985	21	2 20.8	20.9
444729 2007 <i>FQ</i> ₄₈	17.2	X	255.02681	324.15731	179.63955	0.70249	0.1351768	0.18195953	3.0842733	21	11 9.1	21.6
444730 2007 <i>GT</i> ₁₀	15.8	X	233.01680	157.61028	18.18645	19.39141	0.1667985	0.18231968	3.0802102	21	11 12.8	20.6
444731 2007 <i>GS</i> ₁₇	17.8	X	338.12520	242.73114	356.26968	4.49651	0.1156991	0.27711377	2.3300432	21	3 15.4	20.3
444732 2007 <i>GC</i> ₂₉	18.0	X	277.27573	81.87662	165.69878	2.79068	0.1578607	0.26664088	2.3906623	21	1 4.7	21.7
444733 2007 <i>GT</i> ₃₁	18.1	X	282.91136	247.27911	23.22567	1.79700	0.2250677	0.27165045	2.3611800	21	2 1.7	21.8
444734 2007 <i>GG</i> ₄₆	15.4	X	320.61406	31.52973	45.13466	21.72374	0.1124831	0.17393417	3.1784309	21	11 17.3	19.4
444735 2007 <i>GB</i> ₇₀	18.0	X	262.47643	243.34649	25.48691	3.31184	0.1528463	0.26951796	2.3736184	21	1 17.7	21.5
444736 2007 <i>HY</i> ₁₂	17.6	X	50.72561	12.51381	166.34362	8.53291	0.0894915	0.28287709	2.2982867	21	4 28.8	20.0
444737 2007 <i>HO</i> ₂₆	17.8	X	318.18863	184.20382	72.54070	2.24009	0.1565287	0.27550872	2.3390840	21	3 4.9	20.6
444738 2007 <i>HT</i> ₄₄	18.2	X	24.82006	160.66680	35.37289	5.07569	0.1597085	0.28059972	2.3107053	21	4 6.2	19.7
444739 2007 <i>HE</i> ₄₈	17.7	X	236.83038	140.80352	173.73687	2.65378	0.2213891	0.26769229	2.3843983	21	2 15.7	21.5
444740 2007 <i>HM</i> ₇₄	17.8	X	337.61129	91.71213	92.72641	3.86857	0.1169273	0.26727703	2.3868674	21	—	—
444741 2007 <i>HU</i> ₈₈	15.6	X	10.36362	358.33164	38.07415	27.99038	0.1224248	0.17468012	3.1693757	21	12 11.3	20.0
444742 2007 <i>HJ</i> ₉₃	18.6	X	11.36338	223.54448	22.29017	6.60782	0.0738329	0.28882040	2.2666483	21	5 25.8	21.0
444743 2007 <i>HO</i> ₉₃	16.7	X	250.46744	296.66935	179.36343	9.58818	0.0424562	0.17455628	3.1778746	21	10 13.7	21.1
444744 2007 <i>JP</i> ₄₀	18.0	X	258.02288	150.05683	140.45590	2.93498	0.2098153	0.26678059	2.3898275	21	2 5.2	21.6
444745 2007 <i>JF</i> ₄₃	5.3	X	301.59333	121.94054	207.54792	15.09018	0.1872192	0.00396416	39.5398615	21	6 1.6	21.0
444746 2007 <i>LR</i> ₉	18.5	X	295.95973	157.73231	111.98481	4.09734	0.1360939	0.27068084	2.3668153	21	2 25.5	21.5
444747 2007 <i>LW</i> ₂₆	16.9	X	222.64522	188.99809	106.43814	9.90660	0.2586894	0.25995282	2.4314930	21	1 14.6	21.3
444748 2007 <i>MB</i> ₁₉	16.9	X	255.80740	165.97781	126.45130	7.54106	0.1265791	0.26070454	2.4268168	21	2 12.5	20.5
444749 2007 <i>QU</i> ₁₀	17.0	X	2.74993	214.77547	317.38674	3.03527	0.1170157	0.25123652	2.4874109	21	1 25.7	19.8
444750 2007 <i>QL</i> ₁₅	18.2	X	158.12596	176.17930	173.71550	6.33117	0.1789926	0.24578495	2.5240572	21	1 23.3	22.1
444751 2007 <i>RZ</i> ₃₃	17.3	X	39.10537	174.96839	200.73324	21.50948	0.0711036	0.36600845	1.9355689	21	—	—
444752 2007 <i>RW</i> ₃₄	17.9	X	56.35864	56.78807	342.15317	20.78297	0.0974375	0.37708292	1.8974841	21	—	—
444753 2007 <i>RP</i> ₃₇	15.5	X	259.33589	211.65109	168.09576	3.09033	0.2721740	0.12497578	3.9620396	21	5 29.8	21.6
444754 2007 <i>RD</i> ₁₀₅	15.5	X	252.74267	227.73507	148.42131	3.51614	0.2423120	0.12497789	3.9619950	21	5 23.1	21.7
444755 2007 <i>RS</i> ₁₁₆	17.8	X	122.43113	67.23089	304.28184	1.91116	0.2093104	0.23947882	2.5681752	21	1 17.8	21.1
444756 2007 <i>RP</i> ₁₃₂	17.7	X	43.73541	166.99603	218.24293	19.43748	0.0833153	0.37067713	1.9192823	21	—	—
444757 2007 <i>RL</i> ₁₄₈	17.9	X	96.87526	137.47612	183.92849	22.89406	0.0744368	0.37222220	1.9139674	21	—	—
444758 2007 <i>RP</i> ₁₅₀	18.0	X	108.77604	184.50815	170.35215	21.63902	0.0807731	0.37798106	1.8944771	21	—	—
444759 2007 <i>RK</i> ₁₇₅	17.9	X	118.81360	9.91144	21.06726	14.38525	0.1896907	0.24097261	2.5575508	21	2 10.7	21.6
444760 2007 <i>RS</i> ₁₈₇	17.0	X	125.48846	293.52826	129.34311	15.11238	0.2716241	0.24315257	2.5422415	21	4 8.8	21.2
444761 2007 <i>RK</i> ₁₉₅	18.2	X	164.98671	326.15353	347.62872	4.50719	0.2508447	0.24100951	2.5572897	21	—	—
444762 2007 <i>RC</i> ₂₂₀	16.7	X	232.81581	246.65620	2.94780	13.65938	0.0360338	0.23715706	2.5849095	21	—	—
444763 2007 <i>RN</i> ₂₂₇	18.1	X	65.16820	205.79083	171.55753	22.08230	0.1116427	0.37262319	1.9125940	21	—	—
444764 2007 <i>RH</i> ₂₅₃	17.8	X	161.06961	237.61315	155.34612	1.30453	0.1726932	0.24682032	2.5169936	21	3 20.8	21.6
444765 2007 <i>RR</i> ₂₅₉	17.6	X	166.94501	297.01773	37.26686	13.07122	0.3243934	0.24149123	2.5538878	21	1 29.4	22.3
444766 2007 <i>RS</i> ₂₅₉	17.9	X	163.16310	310.06599	41.39220	6.74630	0.2913766	0.24223771	2.5466383	21	2 11.9	22.3
444767 2007 <i>RT</i> ₂₆₂	15.5	X	235.80907	125.96813	274.20465	1.59997	0.2695148	0.12505002	3.9604712	21	6 2.8	22.0
444768 2007 <i>RG</i> ₂₇₀	16.5	X	135.42231	187.44476	225.05784	15.76187	0.1837057	0.24203750	2.5500436	21	3 16.2	20.6
444769 2007 <i>RR</i> ₂₇₃	17.7	X	121.65537	32.01129	336.82189	2.97820	0.2081996	0.23851299	2.5751035	21	1 13.9	21.1
444770 2007 <i>RV</i> ₂₉₁	18.1	X	164.40232	180.64836	177.49783	2.13914	0.1462168	0.24576889	2.5241671	21	2 6.3	21.8
444771 2007 <i>RX</i> ₃₀₈	17.6	X	123.32230	217.29828	164.10098	11.62337	0.1709097	0.24212740	2.5494124	21	1 14.9	21.2
444772 2007 <i>RE</i> ₃₁₃	18.4	X	137.86777	113.86859	159.82616	23.48848	0.0634192	0.37196650	1.9148445	21	—	—
444773 2007 <i>SC</i> ₂₁	15.4	X	258.40133	114.13126	271.84187	7.47193	0.2478906	0.12514940	3.9583745	21	6 6.9	21.4
444774 2007 <i>TV</i> ₁₀	17.1	X	139.93861	346.93113	21.26493	17.58526	0.1599262	0.24113662	2.5563909	21	2 3.3	21.1
444775 2007 <i>TM</i> ₁₆	18.1	X	155.11335	334.10998	15.29463	30.33145	0.2837069	0.24342216	2.5403641	21	2 16.5	23.0
444776 2007 <i>TR</i> ₂₃	17.6	X	317.82892	94.46184	12.45830	19.50406	0.1416038	0.36642681	1.9340954	21	—	—
444777 2007 <i>TZ</i> ₂₄	17.6	X	105.45616	116.38231	180.30720	23.40102	0.0512155	0.36517653	1.9385075	21	—	—
444778 2007 <i>TY</i> ₃₂	17.3	X	120.57007	356.37898	35.53994	10.78527	0.1455755	0.23983073	2.5656623	21	2 5.8	20.9
444779 2007 <i>TP</i> ₃₆	17.9	X	153.54333	253.48917	59.87399	2.82127	0.3115700	0.24084066	2.5584848	21	—	—
444780 2007 <i>TZ</i> ₃₉	17.7	X	173.66617	316.09494	44.04916	4.29270	0.2155370	0.24586545	2.5235063	21	2 24.7	21.9
444781 2007 <i>TP</i> ₄₆	17.3	X	132.04114	329.82142	48.63088	6.38724	0.2253753	0.23917901	2.5703208	21	2 11.0	21.1
444782 2007 <i>TC</i> ₅₉	17.0	X	19.94320	255.18303	188.75527	13.69748	0.0672970	0.23455859	2.6039651	21	—	—
444783 2007 <i>TQ</i> ₆₃	17.6	X	149.96924	319.17635	36.84751	14.31590	0.2746640	0.24082798	2.5585746	21	2 8.9	22.0
444784 2007 <i>TC</i> ₆₄	17.4	X	45.66803	253.73558	186.50261	2.54131	0.0641348	0.23187496	2.6240180	21	—	—
444785 2007 <i>TR</i> ₈₂	17.6	X	181.90819	304.23542	21.01674	3.63510	0.1890373	0.24522476	2.5278997	21	1 18.5	21.6
444786 2007 <i>TL</i> ₈₅	15.9	X	259.43842	349.42517	66.77825	4.77741	0.2122507	0.12494762	3.9626348	21	7 18.0	21.8
444787 2007 <i>TM</i> ₁₀₆	18.1	X	147.88682	139.40681	197.98279	13.39303	0.2892580	0.24037480	2.5617894	21	1 9.3	22.4
444788 2007 <i>TN</i> ₁₂₁	17.9	X	131.09173	230.66339	144.19114	1.15679	0.2050972	0.23984313	2.5655739	21	1 31.1	21.5
444789 2007 <i>TO</i> ₁₂₄	18.1	X	94.41817	252.83920	150.32931	2.50925	0.1447320	0.23636137	2.5907075	21	1 11.0	21.1
444790 2007 <i>TO</i> ₁₃₆	17.7	X	117.34261	50.32655	315.49088	8.59630	0.2209039	0.23703396	2.5858044	21	1 7.5	21.0
444791 2007 <i>TR</i> ₁₆₀	16.2	X	137.91699	347.15764	30.63986	13.94208	0.1829596	0.23897451	2.5717870	21	2 15.3	20.2
444792												

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ECLIPTIC AND EQUINOX 2000.0, EPOCH 2021 JULY 5.0 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>
444801 2007 TZ ₂₇₇	18.4	X	112.82057	103.15075	256.59953	1.43063	0.1309518	0.23457146	2.6038698	21	—	—
444802 2007 TP ₃₃₀	17.4	X	136.84249	347.79079	22.43728	9.54021	0.1480741	0.23887685	2.5724879	21	1 28.1	21.2
444803 2007 TH ₃₅₆	17.0	X	181.79175	263.71371	5.93270	23.84577	0.3210272	0.23981766	2.5657555	21	—	—
444804 2007 TT ₃₉₈	18.2	X	146.52399	2.73070	3.66487	4.72034	0.2833515	0.24183510	2.5514663	21	2 14.4	22.4
444805 2007 TP ₄₂₇	18.3	X	144.49446	299.34213	76.29077	2.31042	0.1289025	0.24144553	2.5542100	21	2 7.1	21.8
444806 2007 TR ₄₂₇	17.5	X	142.30002	115.06158	207.34112	15.21468	0.1940559	0.23308563	2.6149239	21	—	—
444807 2007 TQ ₄₄₀	18.0	X	133.22378	20.88057	13.09813	8.98070	0.1637920	0.24285027	2.5443508	21	2 24.2	21.7
444808 2007 TR ₄₄₀	15.0	X	269.11310	317.36762	72.14216	8.61292	0.2699394	0.12515095	3.9583417	21	6 18.6	20.9
444809 2007 TT ₄₄₃	17.0	X	118.64154	17.58747	35.27293	10.92977	0.1258695	0.24469746	2.5315300	21	2 27.7	20.5
444810 2007 UT ₂	16.9	X	85.93081	219.97570	202.19173	33.06451	0.2978903	0.23512955	2.5997479	21	2 10.9	20.6
444811 2007 UD ₉	17.7	X	139.56009	216.97510	181.67435	9.24076	0.2050011	0.24572321	2.5244800	21	3 8.9	21.4
444812 2007 UO ₁₀	16.9	X	64.41255	195.35827	233.12174	17.17263	0.1632949	0.23316996	2.6142933	21	—	—
444813 2007 UW ₁₂	17.4	X	198.43391	268.55184	86.38236	2.44515	0.2004194	0.25503539	2.4626484	21	3 8.6	21.4
444814 2007 UB ₂₁	17.5	X	115.44669	166.66168	219.28520	4.87650	0.0889706	0.23787959	2.5796726	21	1 8.9	20.8
444815 2007 UJ ₂₃	18.1	X	174.23100	274.00456	52.22221	8.40065	0.3005582	0.242110890	2.5495422	21	1 21.4	22.7
444816 2007 UV ₂₃	17.6	X	149.57392	204.41958	131.52741	2.22975	0.2032137	0.23662737	2.5887656	21	1 3.0	21.5
444817 2007 UQ ₃₃	16.4	X	123.39973	109.60531	300.43472	11.84680	0.1540227	0.24335051	2.5408627	21	2 24.0	20.1
444818 2007 UC ₅₂	17.2	X	90.72749	212.18214	218.65891	3.21046	0.2193464	0.23654076	2.5893975	21	2 22.1	20.3
444819 2007 US ₆₇	18.0	X	147.81495	137.75392	207.24561	7.85380	0.1758070	0.23949679	2.5680467	21	1 7.5	21.8
444820 2007 UW ₇₇	16.9	X	295.55938	10.76095	214.53249	13.44353	0.1148118	0.24354497	2.5395101	21	1 3.3	20.8
444821 2007 UO ₈₃	17.8	X	107.68059	218.95710	198.16294	0.43276	0.1524593	0.23931557	2.5693430	21	2 18.1	20.9
444822 2007 UN ₈₆	17.5	X	82.15380	215.20742	220.55890	11.21658	0.1637265	0.23649987	2.5896959	21	2 3.2	20.7
444823 2007 UQ ₁₂₇	17.4	X	152.29325	305.93242	62.71667	9.07482	0.1835060	0.24116265	2.5562070	21	2 15.7	21.4
444824 2007 UQ ₁₃₅	17.5	X	88.24761	152.81072	246.66392	11.87537	0.2430021	0.23211580	2.6222026	21	1 10.3	20.4
444825 2007 UJ ₁₃₆	17.1	X	4.58611	168.93393	252.70566	20.02349	0.1807907	0.36672930	1.9330317	21	—	—
444826 2007 UX ₁₃₇	17.0	X	103.27187	25.55542	29.05435	14.11119	0.1606334	0.23786607	2.5797704	21	2 17.8	20.5
444827 2007 UM ₁₃₈	16.9	X	133.64756	54.32955	355.73553	5.10489	0.2025459	0.24269747	2.5454186	21	3 18.1	20.5
444828 2007 VH ₄	16.2	X	10.51224	215.49077	240.77571	21.21039	0.0456618	0.22847811	2.6499620	21	—	—
444829 2007 VB ₂₅	17.7	X	138.03103	236.47063	140.24355	6.30454	0.192586	0.23835516	2.5762401	21	1 31.6	21.3
444830 2007 VV ₃₈	16.6	X	162.14427	254.24755	121.42617	7.30413	0.1030300	0.24227745	2.5485597	21	2 24.5	20.4
444831 2007 VE ₆₄	17.6	X	160.28710	307.73692	51.23384	7.65226	0.2619906	0.24039994	2.5616108	21	2 17.4	22.0
444832 2007 VP ₆₅	18.6	X	113.02689	215.89349	196.78224	8.32158	0.3088368	0.24158266	2.5532433	21	3 11.5	22.3
444833 2007 VF ₆₆	17.6	X	119.26983	237.51007	156.09048	2.78422	0.1460119	0.23761418	2.5815932	21	2 1.9	21.0
444834 2007 VF ₆₇	17.5	X	137.07537	305.19989	66.21031	5.15543	0.1235443	0.23488636	2.6015421	21	1 25.3	21.2
444835 2007 VJ ₇₂	18.3	X	154.19700	128.65634	232.48661	3.76575	0.2977720	0.24067234	2.5596775	21	2 12.8	22.7
444836 2007 VN ₇₇	17.7	X	150.61184	115.01305	201.30824	1.75088	0.1839308	0.23225464	2.6211575	21	—	—
444837 2007 VM ₈₆	17.6	X	182.12190	61.93439	266.82362	4.81768	0.2867677	0.24412581	2.5354804	21	1 26.1	22.0
444838 2007 VM ₈₇	16.6	X	36.73685	217.59321	249.49625	12.23107	0.2044485	0.23164101	2.6257845	21	—	—
444839 2007 VV ₉₀	17.8	X	119.98204	147.67188	231.69921	8.84534	0.2135730	0.23781689	2.5801260	21	1 22.9	21.5
444840 2007 VF ₉₂	17.5	X	39.93358	118.56730	256.14578	18.21852	0.0870263	0.36246128	1.9481765	21	—	—
444841 2007 VK ₉₃	16.6	X	82.12641	124.28459	266.49206	12.68936	0.1884405	0.23067449	2.6331140	21	—	—
444842 2007 VN ₉₇	18.6	X	73.50029	55.24360	353.56429	3.44210	0.2728630	0.23119439	2.6291651	21	1 2.9	20.8
444843 2007 VV ₉₈	17.8	X	158.05142	7.51486	345.33001	2.01441	0.2224846	0.24104905	2.5570100	21	2 2.0	21.9
444844 2007 VQ ₉₉	17.6	X	125.79811	359.10329	28.20918	6.37848	0.2766442	0.23847543	2.5753739	21	2 21.8	21.5
444845 2007 VN ₁₀₀	16.3	X	82.18903	1.92709	53.37672	14.33662	0.0784632	0.23159383	2.6261411	21	1 1.4	19.7
444846 2007 VV ₁₀₀	18.1	X	131.20785	358.13335	29.12260	3.39018	0.2628074	0.23890222	2.5723058	21	2 24.1	22.0
444847 2007 VJ ₁₁₂	17.2	X	166.68753	239.16335	60.52497	4.82162	0.1763172	0.22989286	2.6390790	21	—	—
444848 2007 VM ₁₅₈	17.9	X	98.34938	239.11503	166.06465	3.81208	0.0991905	0.23469091	2.6029862	21	1 12.9	21.1
444849 2007 VV ₁₆₇	17.3	X	117.58124	346.35341	44.23410	4.29077	0.1655820	0.23495519	2.6010339	21	2 1.2	20.8
444850 2007 VU ₁₇₉	17.6	X	138.17319	205.24939	157.21617	1.85972	0.2189650	0.23870485	2.5737235	21	1 25.0	21.4
444851 2007 VM ₁₈₅	16.7	X	139.04801	315.45555	47.64787	12.59853	0.0990561	0.23573071	2.5953261	21	1 14.4	20.5
444852 2007 VV ₁₈₅	17.7	X	140.60388	113.98024	228.79515	13.35902	0.1527147	0.23412913	2.6071484	21	—	—
444853 2007 VM ₁₈₆	16.5	X	114.74581	328.64974	55.20229	14.97946	0.1139664	0.23486420	2.6017057	21	1 12.1	20.1
444854 2007 VR ₁₈₈	16.1	X	162.50674	321.59769	42.29984	14.68962	0.0897873	0.24042235	2.5614516	21	2 14.5	20.1
444855 2007 VF ₂₀₁	18.0	X	176.06432	297.32886	44.17767	13.24581	0.1190752	0.24154334	2.5535204	21	2 1.1	22.1
444856 2007 VC ₂₀₃	17.7	X	71.29264	256.62427	201.17249	8.38861	0.1265874	0.23883904	2.5727594	21	2 11.4	20.7
444857 2007 VA ₂₁₅	17.5	X	30.06970	295.04634	173.55654	4.90177	0.2267461	0.22953468	2.6418237	21	—	—
444858 2007 VV ₂₁₉	17.7	X	156.71990	151.22527	235.62366	2.69060	0.1983755	0.24249276	2.5468509	21	3 10.1	21.7
444859 2007 VV ₂₃₀	17.5	X	114.06776	322.82065	57.84295	4.93718	0.2070805	0.23493521	2.6011814	21	1 20.8	20.9
444860 2007 VJ ₂₃₅	16.6	X	97.67770	174.98397	231.94397	7.04871	0.1871085	0.23423605	2.6063549	21	1 25.9	19.9
444861 2007 VG ₂₄₀	17.5	X	112.68298	161.50825	224.38205	8.37519	0.1300290	0.23707265	2.5855230	21	1 10.6	20.9
444862 2007 VK ₂₄₁	17.6	X	168.41529	282.14569	87.95461	11.20441	0.1882704	0.24536741	2.5269198	21	3 5.6	21.8
444863 2007 VQ ₂₄₂	16.9	X	101.89295	66.32826	346.61635	11.62164	0.1897480	0.23818456	2.5774701	21	2 13.7	20.1
444864 2007 VL ₂₅₅	17.7	X	95.26003	81.89073	306.34428	3.88649	0.1814729	0.23181630	2.6244607	21	—	—
444865 2007 VV ₂₅₅	18.1	X	147.09816	16.44158	358.68769	2.93747	0.2634332	0.24123914	2.5556667	21	2 22.9	22.2
444866 2007 VM ₂₅₇	17.2	X	136.76191	347.34456	24.93576	5.05251	0.1902768	0.23795000	2.5791637	21	2 3.5	21.0
444867 2007 VQ ₂₇₆	17.6	X	49.65227	114.68931	325.64390	3.96449	0.1472469	0.23215287	2.6219235	21	—	—
444868 2007 VB ₂₇₇	17.6	X	89.37512	165.56733	255.06907	6.96283	0.1078292	0.23705237	2.5856705	21	1 19.8	20.7
444869 2007 VA ₂₇₈	16.8	X	138.61791	282.14962	58.24741	13.59375	0.2837567	0.23583304	2.5945753	21	1 7.5	20.9
444870 2007 VX ₂₉₈	17.4	X	7.14058	309.52820	84.60191	23.52428	0.1007160	0.35950022	1.9588595	21	—	—
444871 2007 VB ₃₂₂	17.4	X	139.50161	198.93164	184.10672	6.03485	0.3083595	0.24006323	2.5640055	21	2 28.4	21.6
444872 2007 VF ₃₂₇	17.4	X	160.14794	70.89512	258.69600	2.99594	0.3142562	0.23676415	2.5877685	21	1 14.4	21.9
444873 2007 VV ₃₂₈	17.5	X	81.65718	217.08381	216.57313	3.17345	0.1880909	0.23397730	2.6082761	21	2 6.9	20.3
444874 2007 VB _{329</}												

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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>		
444881	2007	WL ₈	16.8	X	66.16730	160.88337	291.98165	3.92792	0.1597093	0.23440298	2.6051174	21	2 2.9	19.5
444882	2007	WN ₁₄	17.6	X	87.74402	207.01130	190.33643	2.08592	0.2187751	0.23131264	2.6282690	21	1 5.1	20.4
444883	2007	WJ ₁₉	17.1	X	192.95986	245.09482	75.22967	16.83400	0.2801212	0.24086527	2.5583106	21	1 27.7	21.9
444884	2007	WO ₂₀	17.2	X	142.22894	296.56117	102.22189	3.97015	0.1729332	0.23432243	2.6057144	21	3 12.5	21.1
444885	2007	WZ ₂₄	16.0	X	281.81285	232.08445	142.65102	3.62061	0.2451205	0.12415188	3.9795489	21	6 17.8	21.6
444886	2007	WX ₃₇	17.6	X	120.98957	89.17425	358.04735	3.38973	0.2225694	0.24414711	2.5353329	21	4 22.5	21.4
444887	2007	WO ₄₄	16.5	X	160.76400	73.29861	283.50191	10.31133	0.2031229	0.24108805	2.5567343	21	2 4.5	20.7
444888	2007	WM ₅₄	16.9	X	37.20962	134.91517	295.89883	8.42024	0.2066084	0.21862103	2.7290287	21	—	—
444889	2007	WU ₅₉	16.6	X	104.18513	321.68111	82.833170	14.09569	0.1767811	0.22930036	2.6436233	21	2 5.7	20.2
444890	2007	WB ₆₀	15.7	X	131.21714	58.72561	169.10523	24.28547	0.2114581	0.17954280	3.1118887	21	10 25.2	21.2
444891	2007	XX ₁₅	17.3	X	106.47290	6.37495	43.40611	5.73724	0.2839175	0.23613408	2.5923697	21	3 2.3	20.8
444892	2007	XF ₂₆	17.3	X	160.14702	85.24914	275.79196	7.13132	0.2283340	0.24203794	2.5500405	21	2 11.1	21.5
444893	2007	XU ₂₇	16.9	X	102.02508	201.16969	243.28303	5.74813	0.3271679	0.23637474	2.5906098	21	4 11.9	20.7
444894	2007	XP ₃₄	17.2	X	121.22720	112.88923	277.80083	6.28664	0.2031656	0.23718914	2.5846796	21	2 7.2	20.7
444895	2007	XE ₄₃	16.5	X	182.08836	296.81926	266.60620	8.84432	0.0916097	0.20522866	2.8464969	21	11 8.0	20.9
444896	2007	XS ₅₁	17.2	X	146.47846	97.39980	292.25885	2.55903	0.2431895	0.24010126	2.5637347	21	3 8.4	21.2
444897	2007	XJ ₅₄	17.8	X	125.51968	52.09769	345.49585	4.31199	0.2716326	0.23657731	2.5891308	21	3 3.2	21.7
444898	2007	XA ₅₇	17.1	X	129.28594	289.82771	98.50562	8.70452	0.1770512	0.23751386	2.5823201	21	2 14.2	20.8
444899	2007	XG ₅₈	16.6	X	96.50424	324.10497	86.63866	14.17075	0.1728446	0.23077767	2.6323292	21	2 1.9	19.9
444900	2007	XJ ₅₉	16.6	X	132.66764	348.43109	61.17011	8.39173	0.2287115	0.23750135	2.5824108	21	3 24.3	20.6
444901	2007	YM ₃₄	17.3	X	151.36912	53.12795	297.92933	3.80814	0.2850527	0.23667104	2.5884472	21	1 30.4	21.5
444902	2007	YY ₄₀	16.6	X	141.45589	47.71424	352.85253	5.10221	0.1681053	0.23788109	2.5796618	21	3 11.3	20.4
444903	2007	YB ₅₁	17.3	X	31.27633	5.13367	110.85545	4.64315	0.1435027	0.22619210	2.6677867	21	1 2.7	20.1
444904	2007	YK ₅₂	17.0	X	129.18157	284.32700	67.45511	6.51089	0.0485446	0.22325741	2.6911142	21	—	—
444905	2007	YF ₅₂	17.3	X	121.18237	23.13285	53.54210	4.87082	0.2276035	0.23978223	2.5660083	21	4 12.5	21.1
444906	2007	YD ₅₃	17.1	X	63.26341	136.51563	289.32970	7.74251	0.1479077	0.22408746	2.6844646	21	—	—
444907	2007	YE ₅₆	16.6	X	59.02240	158.12801	295.90211	4.19108	0.2733030	0.22960261	2.6413027	21	2 5.6	18.5
444908	2007	YF ₅₆	16.2	X	343.44766	203.07604	281.82298	18.39510	0.2827591	0.21731974	2.7399119	21	—	—
444909	2007	YV ₆₁	16.9	X	54.65689	335.73835	137.43416	14.30693	0.1414755	0.22628739	2.6670377	21	2 11.8	19.7
444910	2007	YM ₆₄	17.0	X	147.17099	78.49747	282.14926	1.63393	0.0775795	0.22696071	2.6617602	21	1 17.9	20.6
444911	2007	YT ₆₇	17.1	X	26.87519	69.25417	347.36479	3.40852	0.0814340	0.21931638	2.7232572	21	—	—
444912	2008	AD ₅	16.3	X	50.11675	155.49885	310.63306	14.34165	0.2770716	0.22942948	2.6426313	21	2 1.9	18.1
444913	2008	AT ₅	17.7	X	57.31160	237.11756	177.71072	2.21969	0.0920250	0.22879297	2.6475302	21	—	—
444914	2008	AZ ₁₃	17.0	X	14.02036	192.10704	265.51272	4.53836	0.0980271	0.21856779	2.7294718	21	—	—
444915	2008	AE ₁₈	17.9	X	73.62344	290.62883	127.84618	2.66007	0.3362754	0.22758796	2.6568673	21	1 29.7	20.0
444916	2008	AB ₃₀	17.6	X	91.20494	11.54615	20.33863	2.35745	0.2165271	0.22515049	2.6760082	21	1 5.7	20.7
444917	2008	AT ₄₁	17.3	X	70.52969	301.90981	153.90827	5.44462	0.2240995	0.23134752	2.6280048	21	2 26.0	19.7
444918	2008	AT ₅₂	17.2	X	110.80787	253.63769	119.91762	3.08607	0.0776568	0.22268735	2.6957049	21	—	—
444919	2008	AZ ₆₂	17.0	X	342.63621	243.38335	174.83510	1.89976	0.0810251	0.20430054	2.8551113	21	12 7.6	20.5
444920	2008	AL ₆₃	17.4	X	79.37623	171.66355	250.45613	3.92680	0.1889427	0.22762041	2.6566147	21	1 20.4	20.2
444921	2008	AC ₉₂	17.2	X	81.98231	57.40393	7.75203	3.06242	0.2494634	0.22997945	2.6384166	21	2 9.2	19.9
444922	2008	AA ₉₈	17.1	X	321.43665	138.95629	2.69175	3.64006	0.0317020	0.21492471	2.7602292	21	—	—
444923	2008	AK ₉₈	16.9	X	70.37584	341.71340	90.39419	4.87817	0.1497538	0.22560564	2.6724079	21	1 15.1	19.8
444924	2008	AT ₁₁₂	16.6	X	136.41925	14.48695	299.42001	12.88021	0.1420220	0.21469519	2.7621961	21	—	—
444925	2008	AF ₁₁₆	17.0	X	42.04080	274.63520	145.78502	8.00160	0.1116138	0.21672557	2.7449174	21	—	—
444926	2008	AK ₁₁₆	16.7	X	34.61729	93.49060	337.02290	8.64852	0.1706607	0.21848273	2.7301802	21	—	—
444927	2008	AE ₁₁₇	17.2	X	66.03255	77.66066	354.69972	6.70778	0.2606685	0.22740953	2.6582569	21	1 22.3	19.5
444928	2008	AB ₁₂₇	17.4	X	346.38901	162.32834	291.76505	1.58438	0.0531356	0.21311440	2.7758385	21	—	—
444929	2008	AD ₁₃₈	17.4	X	69.48929	279.35496	149.38318	7.46060	0.3922202	0.23063202	2.6334373	21	2 14.7	19.5
444930	2008	BM ₂₄	17.6	X	353.63965	123.68312	12.56433	1.95662	0.2158007	0.21935562	2.7229324	21	—	—
444931	2008	BS ₃₂	16.7	X	87.81936	341.15656	101.65927	7.02994	0.2708579	0.23221193	2.6214789	21	3 20.5	19.9
444932	2008	BO ₃₄	16.7	X	20.37861	307.56870	155.87780	9.68692	0.1232395	0.21597659	2.7512597	21	—	—
444933	2008	BA ₅₂	15.8	X	101.67731	282.70269	290.93605	12.55797	0.2388799	0.17877980	3.1207364	21	9 6.2	21.0
444934	2008	BF ₅₃	17.2	X	85.24479	252.04431	166.71090	12.96604	0.2511223	0.22536562	2.6743050	21	2 4.5	20.4
444935	2008	CQ ₁	19.4	X	351.72415	303.76123	290.32595	3.34270	0.4311240	0.30303261	2.1952120	21	1 26.8	21.3
444936	2008	CE ₃	16.6	X	103.66985	268.05227	154.80434	13.31389	0.2594927	0.23159078	2.6261642	21	3 11.3	20.0
444937	2008	CD ₁₇	16.7	X	165.43850	215.89735	319.52567	10.04644	0.1847429	0.18445809	3.0563581	21	9 14.5	21.9
444938	2008	CU ₂₃	17.5	X	23.88160	106.50599	315.17522	3.25342	0.1927738	0.21182895	2.7870569	21	—	—
444939	2008	CW ₂₆	16.9	X	327.02110	132.35650	0.51495	4.75241	0.0713150	0.21293129	2.7774296	21	—	—
444940	2008	CX ₄₀	17.5	X	328.27649	293.25866	194.61554	4.05261	0.2135040	0.21109424	2.7935201	21	—	—
444941	2008	CF ₄₆	16.1	X	144.53300	258.58185	336.66601	9.43325	0.0997874	0.18900387	3.0071534	21	11 4.5	20.9
444942	2008	CL ₄₈	17.4	X	2.55375	199.18086	281.26029	1.82327	0.2582734	0.21880084	2.7275333	21	—	—
444943	2008	CX ₅₇	17.7	X	46.13857	134.69602	269.78523	3.74366	0.1556333	0.21438316	2.7648757	21	—	—
444944	2008	CY ₆₀	17.4	X	298.55042	54.93507	108.34065	3.58400	0.1045471	0.20974158	2.8055178	21	—	—
444945	2008	CG ₇₁	16.6	X	185.84442	261.33976	291.51824	4.36033	0.3297054	0.19250085	2.9706236	21	10 22.2	21.9
444946	2008	CP ₈₃	16.5	X	64.60843	283.08066	138.22887	13.82308	0.1988037	0.21961137	2.7208180	21	—	—
444947	2008	CG ₉₂	17.4	X	41.92736	97.60757	351.79501	7.34879	0.3005562	0.22199600	2.7012987	21	—	—
444948	2008	CD ₁₀₁	16.9	X	62.07724	10.14258	54.27738	4.70313	0.0946451	0.22259407	2.6964580	21	—	—
444949	2008	CU ₁₀₇	16.8	X	64.02727	288.15683	174.66610	13.73580	0.1789078	0.22683407	2.6627509	21	2 15.9	19.6
444950	2008	CZ ₁₀₇	16.8	X	81.11544	298.42873	141.34162	13.17279	0.1696138	0.22494136	2.6776666	21	2 15.5	19.7
444951	2008</													

ELEMENTS AND OPPOSITION DATES IN 2021

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2021 JULY 5.0 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>
444961 2008 DP ₄₄	16.7	X	56.64956	173.15136	138.50571	11.70924	0.0894224	0.18925198	3.0045245	21	11 8.4	21.1
444962 2008 DG ₄₈	15.9	X	129.76130	236.80189	2.32885	11.91178	0.1909767	0.18481386	3.0524345	21	10 29.5	21.1
444963 2008 DX ₅₁	17.1	X	98.78863	3.93654	72.62697	7.04566	0.2289659	0.23374814	2.6099806	21	3 20.7	20.5
444964 2008 DX ₈₀	17.0	X	22.96696	314.05539	127.52178	1.30884	0.0426467	0.21251083	2.7810919	21	—	—
444965 2008 DJ ₈₇	15.7	X	62.08143	274.04529	13.18796	8.98683	0.0657588	0.18155276	3.0888784	21	10 7.2	19.9
444966 2008 DL ₈₇	16.8	X	159.51259	128.67792	69.12322	2.48024	0.0857893	0.18388817	3.0626698	21	10 9.8	21.5
444967 2008 ER ₉	18.2	X	1.40768	92.03015	328.28301	16.35268	0.1783284	0.35616459	1.9710708	21	—	—
444968 2008 EQ ₁₅	16.8	X	99.61931	273.17585	14.06523	10.83521	0.1111905	0.18674461	3.0313587	21	11 22.8	21.5
444969 2008 EO ₂₅	16.0	X	165.97736	123.87710	89.50946	7.22175	0.1460037	0.18720614	3.0263744	21	11 4.6	20.9
444970 2008 EL ₃₇	17.0	X	64.56639	85.62873	336.69010	9.52337	0.1017360	0.22112454	2.7083914	21	—	—
444971 2008 EF ₅₀	16.9	X	97.93793	156.86182	106.13396	2.32080	0.2068022	0.18393970	3.0620979	21	11 4.4	21.7
444972 2008 EN ₅₆	16.4	X	79.07532	104.36544	151.72588	10.81594	0.1733029	0.18203510	3.0834196	21	10 6.9	21.0
444973 2008 EX ₆₀	16.7	X	33.27987	258.11795	177.61600	8.81370	0.1423154	0.21048777	2.7988834	21	—	—
444974 2008 EA ₆₅	16.4	X	131.03677	245.59349	335.66671	9.19450	0.1789692	0.18234661	3.0799069	21	10 9.1	21.6
444975 2008 EL ₇₅	16.2	X	60.26589	133.05175	160.83796	10.70209	0.2161655	0.17841712	3.1249641	21	11 5.9	20.8
444976 2008 EL ₇₇	15.8	X	77.61022	276.66840	23.12018	10.85486	0.1367175	0.18453904	3.0554643	21	11 17.4	20.4
444977 2008 EH ₁₁₅	16.8	X	106.68666	248.53698	340.78227	11.67869	0.2617541	0.17597048	3.1538631	21	10 2.9	22.2
444978 2008 EW ₁₁₈	17.1	X	333.94744	311.56610	163.65000	8.97240	0.1406796	0.21080375	2.7960858	21	—	—
444979 2008 EY ₁₅₂	15.8	X	54.78139	104.43070	201.74766	22.64150	0.1254780	0.18014535	3.1049458	21	10 30.9	20.1
444980 2008 EO ₁₆₁	16.7	X	23.70738	250.44361	167.47568	2.20457	0.0562739	0.20320442	2.8653694	21	—	—
444981 2008 ET ₁₆₁	16.8	X	124.93545	63.66563	186.99325	5.32354	0.1197541	0.18563429	3.0434342	21	11 8.9	21.6
444982 2008 EC ₁₆₈	16.2	X	75.03098	67.13815	189.88945	16.55749	0.2054590	0.17307095	3.1889908	21	10 4.0	20.7
444983 2008 FD ₁₂	16.7	X	12.94254	272.08870	170.23240	8.98010	0.1000443	0.21077821	2.7963116	21	—	—
444984 2008 FR ₂₅	16.7	X	138.99000	66.81600	182.87241	9.57858	0.0961816	0.18579675	3.0416598	21	11 20.9	21.5
444985 2008 FR ₃₁	17.0	X	193.54731	33.76900	185.13674	2.79220	0.1064289	0.19712255	2.9240077	21	12 7.9	21.5
444986 2008 FV ₃₅	16.7	X	124.95178	50.85264	168.71489	6.14217	0.1233112	0.18180087	3.0860674	21	10 2.8	21.6
444987 2008 FW ₅₁	16.8	X	277.36837	311.89648	174.47571	8.36691	0.0989656	0.19474898	2.9477179	21	11 25.4	20.7
444988 2008 FM ₈₂	16.8	X	142.13372	65.96659	173.64766	5.35060	0.1671017	0.18589849	3.0405499	21	11 13.4	21.8
444989 2008 FP ₉₀	16.9	X	68.45565	273.76089	151.18619	8.08188	0.1640473	0.22116714	2.7080436	21	1 4.0	19.9
444990 2008 FO ₉₈	16.3	X	63.51386	265.34005	171.06883	10.74538	0.10257306	0.18617754	3.0375110	21	12 16.3	20.6
444991 2008 FH ₁₁₆	16.9	X	355.62867	244.45815	177.86643	12.11793	0.0410588	0.19615238	2.9336412	21	12 26.2	21.0
444992 2008 FX ₁₂₁	16.5	X	26.04567	168.41636	164.98916	14.11413	0.1398236	0.17942289	3.1132750	21	10 29.9	20.6
444993 2008 GR ₄	16.2	X	80.35867	91.42530	172.93664	14.96315	0.2579285	0.17845817	3.1244849	21	10 27.5	21.2
444994 2008 GG ₂₉	16.9	X	339.19754	71.63010	9.06909	11.94615	0.0224208	0.19684404	2.9267651	21	12 27.3	21.1
444995 2008 GV ₃₂	17.9	X	319.50751	245.08835	74.08874	7.92540	0.2327410	0.30714968	2.1755514	21	5 21.6	19.7
444996 2008 GV ₆₁	16.4	X	316.05541	274.84586	142.12785	10.39502	0.1046417	0.18525178	3.0476221	21	10 25.2	20.3
444997 2008 GW ₇₅	16.9	X	236.44128	170.79083	5.01592	2.38019	0.0649976	0.19377842	2.9575524	21	12 6.8	21.0
444998 2008 GR ₇₉	16.3	X	123.34732	52.67671	207.61537	8.92486	0.0549532	0.18210406	3.0826411	21	11 14.1	20.8
444999 2008 GG ₁₀₁	16.7	X	138.12986	168.33052	71.74129	2.08013	0.1274517	0.18166646	3.0875895	21	11 8.0	21.6
445000 2008 GX ₁₀₂	15.9	X	31.70489	302.14273	53.12339	16.61261	0.1371322	0.18138438	3.0907898	21	11 29.2	20.0
445001 2008 GT ₁₀₆	16.0	X	96.42365	203.65744	81.55248	2.81818	0.1635459	0.18163296	3.0879690	21	11 24.2	20.7
445002 2008 GV ₁₁₃	16.8	X	191.24703	208.39900	354.56438	0.78053	0.2167465	0.18958987	3.0009537	21	11 8.9	21.9
445003 2008 GZ ₁₁₉	16.1	X	97.92369	29.47674	195.11418	16.11204	0.1296884	0.17544621	3.1601430	21	9 7.5	21.0
445004 2008 GC ₁₂₃	16.8	X	194.72982	202.74049	355.89483	8.73433	0.0937863	0.19008492	2.9957410	21	11 11.9	21.6
445005 2008 GA ₁₃₀	15.8	X	240.89733	270.20480	244.36806	9.70504	0.1299538	0.19080780	2.9881700	21	11 6.5	20.1
445006 2008 GQ ₁₃₇	15.9	X	63.78438	204.91131	94.71103	11.21831	0.0971098	0.17599957	3.1535156	21	11 1.9	20.5
445007 2008 HQ ₁	16.4	X	115.89547	255.52790	26.01364	2.21234	0.0861402	0.18809062	3.0168795	21	12 3.2	20.9
445008 2008 HJ ₂	15.8	X	105.47182	201.42805	54.25903	12.43323	0.1657471	0.18032180	3.1029198	21	10 31.1	20.7
445009 2008 HD ₁₁	16.6	X	139.29218	45.56767	178.69241	10.96623	0.1032693	0.18014057	3.1050007	21	10 22.0	21.5
445010 2008 HE ₁₈	16.3	X	132.26045	60.96657	175.01243	11.04719	0.1314050	0.17998773	3.1067582	21	10 30.7	21.3
445011 2008 HS ₂₀	16.7	X	82.35842	279.50851	34.98028	10.57366	0.0686112	0.18602901	3.0391276	21	12 2.9	21.1
445012 2008 HJ ₂₆	16.6	X	117.88205	92.42897	166.59712	7.88205	0.1000001	0.17867056	3.1220082	21	11 10.7	21.5
445013 2008 HC ₃₇	16.3	X	143.53132	166.10881	53.73468	9.97693	0.0264519	0.17946473	3.1127911	21	10 19.1	20.8
445014 2008 HE ₄₁	16.7	X	116.13425	82.75619	200.48223	4.87254	0.1442715	0.18538871	3.0461213	21	12 9.2	21.6
445015 2008 HK ₅₁	16.2	X	62.20886	84.85119	217.69786	6.54591	0.1692683	0.17414260	3.1758942	21	11 8.9	20.7
445016 2008 HO ₆₀	16.4	X	124.38220	356.49506	188.55108	17.89711	0.1414323	0.16884210	3.2420190	21	8 17.8	21.7
445017 2008 HB ₆₅	16.3	X	60.67492	205.31479	121.56150	11.38762	0.0476104	0.18346495	3.0673781	21	11 24.0	20.8
445018 2008 JJ ₂₄	15.1	X	91.47035	24.66820	245.22621	27.48793	0.1760461	0.17551576	3.1593081	21	10 31.1	20.3
445019 2008 JG ₃₁	18.3	X	1.49854	61.24854	175.08064	3.93975	0.0893260	0.30164249	2.2019513	21	4 22.7	20.2
445020 2008 KB ₃₀	15.9	X	131.00212	71.50479	165.94757	16.10226	0.1861312	0.17698259	3.1418276	21	11 3.7	21.3
445021 2008 KK ₃₁	16.2	X	100.22766	83.66669	193.37597	9.99658	0.0304014	0.17912166	3.1167645	21	11 6.0	20.7
445022 2008 KE ₃₉	15.6	X	171.26063	8.36128	176.04236	13.04940	0.1114940	0.17551619	3.1593029	21	10 4.6	20.5
445023 2008 LN ₁₁	15.7	X	132.38830	336.45176	231.05373	11.33207	0.1382076	0.17353225	3.1833368	21	9 21.0	21.0
445024 2008 NT	17.9	X	276.48814	66.33129	287.07577	4.79085	0.2840428	0.29225960	2.2488312	21	5 1.9	21.3
445025 2008 NS ₁	17.5	X	170.58295	209.05124	307.69039	14.01211	0.8060316	0.26178694	2.4201228	21	8 27.5	23.6
445026 2008 OX ₃	17.5	X	300.50980	42.76806	264.38037	5.26226	0.1423972	0.29052421	2.2577776	21	4 16.8	20.1
445027 2008 PO ₈	17.9	X	238.64501	33.34529	218.55445	6.30007	0.2243878	0.28362040	2.2942694	21	3 30.9	21.7
445028 2008 PD ₂₀	18.7	X	251.78375	89.63926	221.03241	0.29017	0.1940572	0.27957759	2.3163338	21	2 23.8	22.4
445029 2008 QT ₉	17.9	X	225.82879	226.29465	160.12584	7.79001	0.1520586	0.28541627	2.2846354	21	5 11.9	21.4
445030 2008 QS ₃₇	17.7	X	259.83096	190.60361	154.70430	6.60689	0.2185329	0.28574831	2.2828652	21	4 16.2	21.2
445031 2008 QS ₃₉	17.9	X	272.26951	312.71069	351.86175	6.64113	0.1515327	0.27987473	2.3146940	21	3 11.7	21.1
445032 2008 RT ₁₄	18.0	X	241.54557	89.51736	286.75457	3.69309	0.1271316	0.28581768	2.2824958	21	5 13.4	21.3
445033 2008 RJ ₂₄	17.4	X	244.16710	52.55449	299.70747	5.86235	0.1548714	0.28100201	2.3084994	21		

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Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>
445041 2008 RY ₁₂₈	17.1	X	109.53302	168.83677	347.21125	6.51336	0.0308438	0.28934410	2.2639125	21	6 13.5	20.0
445042 2008 RZ ₁₃₉	18.3	X	251.42415	106.40326	199.12917	6.21723	0.2410635	0.27859443	2.3217802	21	2 13.1	22.3
445043 2008 RM ₁₄₁	17.7	X	305.91335	357.62422	313.94568	4.53371	0.1550953	0.28987712	2.2611364	21	4 29.2	20.3
445044 2008 RY ₁₄₅	17.5	X	302.63241	314.28789	335.32830	6.99109	0.1257167	0.28237155	2.3010290	21	3 29.0	20.3
445045 2008 SO ₂₇	18.2	X	189.77776	191.85830	180.53074	1.02758	0.2034269	0.27296195	2.3536108	21	3 19.8	21.9
445046 2008 SL ₂₈	17.9	X	142.47334	103.19603	311.60027	2.98323	0.1653099	0.26904419	2.3764042	21	3 25.1	21.4
445047 2008 SP ₄₄	17.9	X	198.84146	8.18056	20.61201	7.36433	0.1144848	0.27605563	2.3359936	21	4 15.9	21.4
445048 2008 SK ₄₇	18.1	X	197.01733	234.20392	145.15445	1.45373	0.2014637	0.27408750	2.3471629	21	4 4.1	22.0
445049 2008 SZ ₅₂	18.0	X	132.08260	253.91832	182.88102	1.12351	0.1612865	0.27064055	2.3670502	21	4 12.5	21.3
445050 2008 SG ₅₆	18.1	X	131.75722	22.94790	42.76071	2.18669	0.1727034	0.26704081	2.3882748	21	3 30.7	21.3
445051 2008 SZ ₆₂	18.2	X	168.20573	132.18462	268.20436	1.21382	0.2071312	0.27261866	2.3555862	21	4 4.7	22.0
445052 2008 SW ₆₈	18.1	X	277.16228	11.10313	334.91882	2.30216	0.1840185	0.29125077	2.2540212	21	5 6.1	20.9
445053 2008 SM ₉₂	18.1	X	231.76906	143.98692	193.31825	4.32132	0.2433340	0.27656648	2.3331161	21	3 9.4	22.0
445054 2008 SG ₉₉	18.4	X	224.24222	318.00700	55.71664	5.27264	0.1717830	0.27885513	2.3203329	21	4 21.8	22.0
445055 2008 SV ₁₂₃	17.6	X	139.11576	223.76963	211.68844	1.80210	0.1077792	0.27071770	2.3666005	21	4 12.1	20.8
445056 2008 ST ₁₃₂	17.9	X	186.36623	97.04835	237.92932	1.87385	0.1947419	0.26400060	2.4065752	21	1 30.2	21.7
445057 2008 SL ₁₃₉	17.9	X	245.35578	359.20112	13.99046	6.66668	0.1549106	0.28664544	2.2780995	21	5 10.1	21.2
445058 2008 SO ₁₉₅	18.3	X	229.85905	176.83069	153.46003	1.55619	0.2005291	0.27311186	2.3527494	21	3 1.7	22.1
445059 2008 SK ₁₉₈	17.7	X	199.71933	180.37332	186.01860	6.95139	0.1549678	0.27094680	2.3652662	21	3 19.9	21.3
445060 2008 SE ₂₀₂	17.8	X	241.73418	38.56900	285.99102	1.19085	0.2104814	0.27474232	2.3434319	21	3 3.5	21.7
445061 2008 SH ₂₀₂	18.2	X	256.32983	279.19677	14.99939	4.02100	0.2330399	0.27247220	2.3564302	21	2 7.8	22.0
445062 2008 SO ₂₀₂	18.1	X	195.53204	200.60386	209.57526	3.85100	0.1677978	0.27761562	2.3272344	21	5 11.6	21.7
445063 2008 SS ₂₀₄	17.6	X	192.31261	209.71374	169.56504	5.27387	0.2057987	0.27073922	2.3664751	21	3 28.2	20.7
445064 2008 SF ₂₀₅	17.7	X	229.28982	142.84401	164.19259	5.17463	0.1142454	0.26504770	2.4002328	21	2 2.4	21.4
445065 2008 SO ₂₃₂	14.8	X	130.70312	24.82393	219.10295	7.74424	0.0930776	0.12350097	3.9935195	21	5 14.2	20.7
445066 2008 SD ₂₄₂	18.5	X	207.60072	215.59473	178.19165	2.19423	0.2090674	0.27963397	2.3160224	21	4 30.9	22.2
445067 2008 SA ₂₆₇	17.5	X	255.32012	71.88348	220.30241	5.26776	0.2330047	0.26988708	2.3714537	21	2 1.6	21.6
445068 2008 SE ₂₆₈	15.4	X	178.53293	277.67611	174.90113	3.24477	0.2203256	0.12539222	3.9532625	21	6 22.0	22.0
445069 2008 SD ₂₈₅	18.1	X	142.38952	76.10031	349.14768	3.63456	0.2075952	0.26736192	2.3863622	21	4 12.3	21.7
445070 2008 SE ₂₈₈	18.0	X	105.35801	30.45422	70.22075	3.48515	0.1681658	0.26669899	2.3903150	21	4 14.7	21.0
445071 2008 SP ₂₉₇	17.6	X	241.42020	53.72522	330.73793	6.73715	0.2072133	0.28725614	2.2748696	21	5 16.2	21.2
445072 2008 SO ₂₉₉	17.9	X	179.09667	323.10023	85.49712	2.35815	0.1819387	0.27449100	2.3448621	21	4 25.2	21.1
445073 2008 SE ₃₀₀	18.2	X	221.24398	29.71217	357.19677	4.55459	0.2317206	0.27969725	2.3156731	21	5 1.1	22.1
445074 2008 TE ₁₆	17.9	X	151.97953	173.40244	260.78044	1.82292	0.1585315	0.27486169	2.3427534	21	4 29.3	21.3
445075 2008 TB ₁₈	17.9	X	249.57224	337.67465	13.21452	2.04824	0.2131930	0.27996981	2.3141699	21	4 12.1	21.5
445076 2008 TP ₁₈	17.9	X	243.17663	4.77503	327.39458	0.81339	0.1866382	0.27479694	2.3431214	21	3 15.7	21.7
445077 2008 TJ ₂₇	18.5	X	167.42676	53.35690	2.33811	2.26389	0.2027323	0.27432127	2.3458292	21	4 23.2	22.3
445078 2008 TD ₃₉	18.1	X	183.28399	157.10270	242.26533	1.32643	0.2099322	0.27350102	2.3505171	21	4 16.8	21.8
445079 2008 TQ ₄₂	17.6	X	264.75536	61.99799	280.07159	6.61862	0.1346844	0.28289563	2.2981862	21	4 20.8	20.9
445080 2008 TY ₄₃	18.0	X	104.61291	235.89427	219.77564	5.74003	0.1774859	0.26442204	2.4040174	21	4 5.9	21.1
445081 2008 TL ₅₅	17.3	X	27.89330	174.11547	16.30559	7.43930	0.0474554	0.27407587	2.3472293	21	4 3.1	19.9
445082 2008 TJ ₇₄	17.9	X	212.82280	114.74596	223.55255	6.08868	0.1378147	0.26866222	2.3786561	21	2 22.9	21.7
445083 2008 TV ₈₇	18.2	X	232.98860	239.71776	79.16954	3.44902	0.2387389	0.27290219	2.3539544	21	2 18.9	22.2
445084 2008 TY ₈₇	17.7	X	202.95877	329.11865	50.64042	7.24072	0.1451662	0.27496356	2.3421747	21	4 11.2	21.3
445085 2008 TR ₉₆	17.4	X	177.80131	106.25588	331.33468	6.53033	0.1053655	0.28205527	2.3027488	21	5 27.1	20.8
445086 2008 TF ₁₀₉	18.0	X	129.74904	276.52729	173.97263	12.12248	0.1770397	0.27151886	2.3619428	21	5 2.8	21.5
445087 2008 TQ ₁₁₀	17.8	X	229.13647	26.36348	303.55042	3.13118	0.2382142	0.27479746	2.3431184	21	2 26.6	21.7
445088 2008 TW ₁₂₁	17.9	X	202.90091	116.74091	278.48079	5.48107	0.1899341	0.27812432	2.3243957	21	4 26.4	21.6
445089 2008 TV ₁₃₆	17.7	X	245.79237	316.21027	25.78499	8.06757	0.1099907	0.27679791	2.3318155	21	4 6.0	20.8
445090 2008 TF ₁₄₆	18.4	X	179.40742	259.52882	135.86883	1.71957	0.1809336	0.27399141	2.3477117	21	4 8.5	22.0
445091 2008 TQ ₁₆₁	18.1	X	141.24369	262.07931	172.07145	3.96390	0.1203542	0.26895521	2.3769283	21	4 15.7	21.4
445092 2008 TV ₁₆₁	18.2	X	93.65485	349.75721	93.30342	2.99765	0.1599759	0.26079353	2.4262646	21	3 3.9	20.9
445093 2008 TL ₁₆₆	18.0	X	256.63994	197.40711	131.03291	6.28760	0.2625702	0.28033821	2.3121421	21	3 20.0	21.8
445094 2008 TM ₁₇₄	17.5	X	118.27949	53.84185	27.20828	6.53481	0.0557157	0.26903633	2.3764504	21	3 18.9	20.4
445095 2008 TG ₁₇₅	18.0	X	206.95870	28.69753	3.70482	6.52730	0.1323041	0.27758144	2.3274254	21	4 27.4	21.5
445096 2008 TS ₁₇₉	17.7	X	218.22146	232.20012	121.10001	7.16721	0.2414193	0.27602795	2.3361497	21	3 22.3	21.7
445097 2008 TU ₁₈₁	18.1	X	219.58280	250.80659	175.04467	2.63014	0.0629103	0.28694348	2.2765218	21	7 2.1	21.1
445098 2008 UQ ₄₀	18.1	X	209.60424	313.62110	1.47455	1.32666	0.1976396	0.26350752	2.4095765	21	1 26.9	21.9
445099 2008 UG ₄₂	18.1	X	188.51407	326.58006	75.71456	2.24674	0.1905463	0.27412369	2.3469563	21	4 25.7	22.0
445100 2008 UL ₄₅	17.8	X	202.77165	197.20801	146.85609	1.79455	0.2049551	0.27001676	2.3706944	21	2 24.4	21.8
445101 2008 UR ₄₅	18.3	X	177.57638	19.96822	55.03867	2.41101	0.1549643	0.27855221	2.3220147	21	5 26.2	21.6
445102 2008 UO ₅₂	17.7	X	228.38775	311.83199	46.42673	7.66830	0.1495557	0.27330097	2.3516640	21	4 8.3	21.2
445103 2008 UO ₆₁	18.4	X	173.36321	63.14790	340.95197	2.13192	0.1835348	0.27089453	2.3655705	21	4 12.8	22.2
445104 2008 UR ₆₄	18.2	X	135.87706	96.53713	339.15872	3.78922	0.2048889	0.26697583	2.3886623	21	4 18.7	21.7
445105 2008 UE ₇₁	18.1	X	154.01617	267.96801	181.04970	4.84859	0.1965895	0.27494248	2.3422944	21	5 25.1	21.9
445106 2008 UE ₇₃	17.2	X	177.36988	43.17721	19.29592	8.29552	0.1404151	0.27360158	2.3499411	21	5 7.4	20.7
445107 2008 UU ₈₂	18.4	X	136.17375	79.96874	350.85058	4.36234	0.2285394	0.26569088	2.3963576	21	4 15.3	22.1
445108 2008 UU ₁₀₅	17.7	X	227.62318	124.80996	216.56180	6.34519	0.1298285	0.27546016	2.3393589	21	3 12.9	21.3
445109 2008 UW ₁₂₂	17.6	X	259.34158	356.67776	307.43134	5.02092	0.1035718	0.26897005	2.3768409	21	3 1.3	21.0
445110 2008 UB ₁₂₉	17.9	X	141.57579	231.55985	235.70799	5.95094	0.2676779	0.27301474	2.3533073	21	6 10.5	21.8
445111 2008 UL ₁₃₅	18.4	X	189.55404	12.07657	35.64628	1.69365	0.1843720	0.27523582	2.3406299	21	5 2.6	22.2
445112 2008 UM ₁₄₀	17.7	X	214.88049	213.91982	172.23388	0.63869	0.1566639	0.27677044	2.3319698	21	4 28.7	21.1
445113 2008 UZ ₁₅₁	18.2	X	119.89854	281.12231	157.64670	1						

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445121 2008 <i>UL</i> ₂₅₆	18.3	X	181.47473	236.43779	179.72324	0.99111	0.1760826	0.27417483	2.3466644	21	5 6.4	21.8
445122 2008 <i>UN</i> ₂₆₃	18.3	X	177.32142	104.37674	301.08842	1.27196	0.2072859	0.27036795	2.3686410	21	4 19.3	22.1
445123 2008 <i>UQ</i> ₂₆₃	18.1	X	168.10048	26.47860	14.14533	1.20914	0.1832780	0.26716230	2.3875507	21	4 4.6	21.9
445124 2008 <i>UC</i> ₂₆₈	18.1	X	156.58582	25.56140	54.19604	3.12156	0.1757666	0.27302673	2.3532385	21	5 13.3	21.7
445125 2008 <i>UD</i> ₂₈₆	15.8	X	166.36592	305.48508	149.66800	3.47256	0.1447784	0.12313680	4.0013893	21	6 14.2	22.1
445126 2008 <i>UF</i> ₃₀₀	17.4	X	236.40170	351.41612	316.10366	2.72727	0.1325052	0.26544867	2.3978150	21	2 10.2	21.0
445127 2008 <i>UC</i> ₃₂₃	17.6	X	226.31265	59.25143	300.35050	4.69171	0.2630195	0.27516686	2.3410209	21	3 30.4	21.7
445128 2008 <i>UY</i> ₃₅₆	18.1	X	123.44471	68.04072	32.09113	2.31676	0.1305425	0.26722765	2.3871614	21	4 29.9	21.2
445129 2008 <i>VE</i> ₂₀	18.3	X	213.57466	263.51789	111.00291	2.39593	0.1851023	0.27406882	2.3472695	21	4 13.1	22.1
445130 2008 <i>VV</i> ₃₉	17.4	X	96.77605	206.91016	261.41200	6.28115	0.1669723	0.26217665	2.4177240	21	4 9.4	20.4
445131 2008 <i>VE</i> ₄₆	17.7	X	199.53479	246.42943	111.11643	6.56869	0.1398204	0.26764390	2.3846857	21	3 11.8	21.4
445132 2008 <i>VD</i> ₆₄	17.5	X	230.76838	30.77985	304.78876	11.54101	0.3147434	0.27665165	2.3326373	21	3 1.5	21.9
445133 2008 <i>WB</i> ₃	17.4	X	156.83881	48.48452	26.17870	6.96638	0.0791424	0.27377502	2.3489486	21	4 28.4	20.5
445134 2008 <i>WT</i> ₃	17.5	X	86.74112	81.87446	47.49077	5.12008	0.1842326	0.26673550	2.3900969	21	4 30.3	20.1
445135 2008 <i>WH</i> ₅	18.4	X	220.47070	165.94619	155.24051	1.62222	0.1915033	0.26820199	2.3813765	21	2 11.2	22.3
445136 2008 <i>WR</i> ₅	17.9	X	257.15940	187.28228	124.84901	3.00404	0.2142577	0.27326188	2.3518883	21	3 2.8	21.6
445137 2008 <i>WH</i> ₁₂	17.8	X	207.88200	298.53767	93.75910	3.72126	0.1961167	0.27710816	2.3300747	21	4 30.5	21.5
445138 2008 <i>WZ</i> ₂₃	18.2	X	206.56583	355.21472	6.73051	1.33301	0.1882466	0.27071282	2.3666289	21	3 21.3	22.0
445139 2008 <i>WD</i> ₃₈	17.9	X	224.48884	144.00814	195.20976	0.85743	0.2024248	0.26983138	2.3717800	21	3 8.1	21.6
445140 2008 <i>WR</i> ₄₂	17.1	X	267.54877	232.92936	48.38343	5.62024	0.1027817	0.26260258	2.4151090	21	2 14.3	20.6
445141 2008 <i>WQ</i> ₇₇	18.3	X	129.03539	327.71217	126.09795	2.69121	0.1368564	0.26728904	2.3867959	21	4 30.2	21.5
445142 2008 <i>WY</i> ₈₉	17.8	X	151.39597	18.80189	39.19382	1.33517	0.1836035	0.26146243	2.4221248	21	4 11.5	21.5
445143 2008 <i>WX</i> ₉₄	18.0	X	131.34038	56.95853	29.57803	2.36309	0.1935928	0.26635185	2.3923915	21	4 28.4	21.3
445144 2008 <i>WL</i> ₉₇	17.6	X	169.86915	295.38097	113.59699	8.96418	0.1823360	0.27122607	2.3636424	21	4 20.9	21.5
445145 2008 <i>WM</i> ₁₀₉	17.8	X	82.12479	111.06192	351.54770	1.68749	0.1937853	0.25869621	2.4393606	21	3 8.8	20.2
445146 2008 <i>WZ</i> ₁₂₉	18.3	X	186.31057	93.49943	291.66923	2.14103	0.2039557	0.26853511	2.3794066	21	4 1.1	22.2
445147 2008 <i>WG</i> ₁₃₀	18.2	X	153.21241	55.33434	24.81863	1.55696	0.1559130	0.26951045	2.3736625	21	5 8.9	21.6
445148 2008 <i>WF</i> ₁₃₃	18.1	X	167.56782	17.90348	34.97647	3.10837	0.1996422	0.26878591	2.3779263	21	4 20.6	21.8
445149 2008 <i>WT</i> ₁₃₅	17.9	X	92.17789	107.56439	340.01079	2.14445	0.1756153	0.25753562	2.4466838	21	3 9.4	20.5
445150 2008 <i>WM</i> ₁₃₉	16.8	X	115.52099	0.16264	94.29877	9.01158	0.1091437	0.26263924	2.4148842	21	4 14.5	20.1
445151 2008 <i>XA</i> ₃	18.1	X	116.46268	54.32991	47.40877	2.24601	0.2218115	0.26546153	2.3977376	21	5 6.0	21.2
445152 2008 <i>XQ</i> ₄₈	17.2	X	167.70609	319.62204	103.65424	11.59923	0.1844033	0.26665950	2.3905510	21	5 7.8	21.2
445153 2008 <i>XY</i> ₅₄	17.6	X	130.45431	325.68680	118.19710	3.32536	0.1506133	0.26402374	2.4064346	21	4 20.9	20.9
445154 2008 <i>YW</i> ₅₇	18.2	X	141.27734	105.10482	305.25866	1.52308	0.2012284	0.26296360	2.4128980	21	3 23.3	21.8
445155 2008 <i>YS</i> ₇	17.6	X	135.79550	35.15407	45.90433	2.33458	0.2529610	0.26411098	2.4059046	21	5 1.9	21.4
445156 2008 <i>YH</i> ₃₁	17.6	X	106.51846	41.47054	45.19833	1.92624	0.1584269	0.25676064	2.4516046	21	3 26.9	20.7
445157 2008 <i>YW</i> ₃₈	16.4	X	201.55194	190.53181	79.99190	2.80486	0.0295845	0.23703965	2.5857630	21	—	—
445158 2008 <i>YT</i> ₅₀	17.3	X	101.92693	134.51797	322.48342	4.74905	0.1684414	0.25560816	2.4589682	21	4 2.6	20.5
445159 2008 <i>YT</i> ₇₄	17.7	X	188.88476	301.42123	84.49356	3.27353	0.2079823	0.26540364	2.3980863	21	4 7.2	21.6
445160 2008 <i>YP</i> ₁₀₉	17.2	X	196.94282	57.36375	291.88431	4.17726	0.0891038	0.26173794	2.4204248	21	2 21.7	20.8
445161 2008 <i>YU</i> ₁₂₂	17.5	X	118.03033	213.57843	147.28501	4.21659	0.0733843	0.24032625	2.5621344	21	—	—
445162 2008 <i>YM</i> ₁₃₇	17.6	X	143.13974	299.66048	135.00410	2.84175	0.1389895	0.26240876	2.4162980	21	4 21.4	21.0
445163 2008 <i>YY</i> ₁₅₁	17.2	X	285.86113	264.01546	291.51143	11.49101	0.0620974	0.23509865	2.5999757	21	—	—
445164 2008 <i>YF</i> ₁₅₂	17.1	X	235.42012	72.45059	114.17269	10.12867	0.1328666	0.22126821	2.7072188	21	12 15.9	20.9
445165 2008 <i>YD</i> ₁₅₇	17.6	X	243.61845	39.23614	175.53435	1.05177	0.1355033	0.22804684	2.6533019	21	—	—
445166 2008 <i>YO</i> ₁₅₇	17.9	X	90.50229	320.67809	146.50249	1.73817	0.1457808	0.25541340	2.4602181	21	3 30.6	20.6
445167 2008 <i>YQ</i> ₁₇₁	17.5	X	99.10446	99.90900	353.81214	3.44907	0.1469485	0.25555751	2.4592930	21	3 23.6	20.5
445168 2008 <i>AY</i> ₁₇	17.5	X	205.89823	102.87796	286.97523	9.79123	0.2274843	0.27048920	2.3679331	21	4 20.2	21.7
445169 2009 <i>AQ</i> ₂₈	18.0	X	113.99958	327.35625	111.18475	2.61985	0.1553124	0.25539849	2.4603138	21	3 26.2	21.2
445170 2009 <i>BJ</i> ₂₄	16.9	X	265.13326	261.19452	353.25610	6.32053	0.0771244	0.24042820	2.5614101	21	1 13.9	20.7
445171 2009 <i>BH</i> ₂₇	17.3	X	323.32242	125.66851	84.81170	4.08368	0.0660802	0.24647763	2.5193260	21	1 28.1	20.4
445172 2009 <i>BO</i> ₄₁	17.3	X	325.38934	197.36435	344.28856	6.05720	0.0710168	0.23831963	2.5764962	21	—	—
445173 2009 <i>BC</i> ₄₆	17.2	X	179.85691	68.03240	154.14971	7.95460	0.2268710	0.21057312	2.7981171	21	11 25.8	22.1
445174 2009 <i>BD</i> ₅₀	17.6	X	180.84262	87.62100	314.46573	9.95516	0.2276446	0.26374228	2.4081463	21	4 14.7	21.9
445175 2009 <i>BG</i> ₆₅	17.0	X	310.06317	217.70344	300.37975	3.63921	0.1621109	0.22944929	2.6424792	21	—	—
445176 2009 <i>BR</i> ₇₀	17.1	X	310.22154	67.13724	101.73525	8.33001	0.1449675	0.23441379	2.6050373	21	—	—
445177 2009 <i>BO</i> ₇₆	17.3	X	356.55468	12.81758	124.68592	6.33676	0.2451174	0.23605667	2.5929364	21	—	—
445178 2009 <i>BU</i> ₈₃	17.0	X	347.22881	55.53523	130.65327	12.58573	0.0770448	0.24590774	2.5232169	21	1 26.8	19.8
445179 2009 <i>BF</i> ₈₈	17.7	X	7.31000	116.10323	59.38190	1.36814	0.0742490	0.24704777	2.5154485	21	2 12.5	20.6
445180 2009 <i>BL</i> ₉₇	18.2	X	35.83658	326.27028	136.03656	2.82570	0.1334470	0.23819411	2.5774012	21	—	—
445181 2009 <i>BC</i> ₁₀₆	17.2	X	316.40638	339.94594	154.47045	5.65103	0.0952326	0.22645453	2.6657252	21	—	—
445182 2009 <i>BY</i> ₁₁₂	17.0	X	339.98642	143.54328	6.96168	9.62685	0.0693461	0.22921041	2.6443148	21	—	—
445183 2009 <i>BY</i> ₁₄₁	17.4	X	56.88963	131.76608	327.21036	8.26088	0.1467648	0.24415536	2.5352758	21	1 23.3	19.9
445184 2009 <i>BL</i> ₁₅₂	17.4	X	340.81283	180.70671	336.57940	3.94551	0.0351114	0.23750335	2.5823963	21	—	—
445185 2009 <i>BE</i> ₁₅₆	17.8	X	131.90928	54.06639	2.97006	2.16085	0.2046428	0.25477727	2.4643115	21	3 24.1	21.4
445186 2009 <i>BK</i> ₁₅₈	16.7	X	349.51254	298.09484	151.88024	11.70241	0.0386630	0.22203301	2.7009986	21	—	—
445187 2009 <i>BM</i> ₁₇₆	17.8	X	22.71588	158.00658	337.34493	4.32262	0.1675628	0.24036923	2.5618290	21	1 8.0	20.2
445188 2009 <i>BB</i> ₁₈₀	16.8	X	255.45987	227.96307	319.31944	6.25073	0.0615125	0.22543820	2.6737310	21	—	—
445189 2009 <i>BL</i> ₁₈₇	17.0	X	209.31387	48.85674	170.41330	8.32272	0.2372741	0.21452061	2.7636945	21	12 14.9	21.6
445190 2009 <i>CW</i> ₃	16.8	X	220.34714	231.90469	328.41801	13.91862	0.1310627	0.21905854	2.7253938	21	12 14.3	21.0
445191 2009 <i>CW</i> ₁₅	17.9	X	98.81926	284.96713	159.26291	2.97230	0.0619583	0.24635025	2.5201944	21	2 26.9	20.9
445192 2009 <i>CW</i> ₂												

ELEMENTS AND OPPOSITION DATES IN 2021

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2021 JULY 5.0 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>
445201 2009 DT ₆₇	17.4	X	145.55885	290.16294	144.37410	7.15908	0.1200410	0.26035698	2.4289760	21	4 23.8	20.9
445202 2009 DG ₇₃	17.1	X	234.47602	203.33663	355.82450	3.09481	0.1288396	0.21741278	2.7391301	21	12 29.5	20.9
445203 2009 DG ₇₈	17.1	X	308.42314	170.18626	40.19999	4.85395	0.0642607	0.23923005	2.5699552	21	1 10.5	20.5
445204 2009 DS ₈₀	16.5	X	252.30990	213.79940	0.65105	12.60812	0.1120237	0.22385713	2.6863057	21	—	—
445205 2009 DZ ₉₈	17.2	X	257.07712	194.92555	47.97668	3.16378	0.1506348	0.22964046	2.6410124	21	—	—
445206 2009 DH ₁₀₀	17.3	X	312.39780	157.07963	26.04023	6.20816	0.1824575	0.23075029	2.6325374	21	—	—
445207 2009 DZ ₁₀₄	16.9	X	83.94219	266.26368	174.56350	11.65946	0.0583912	0.23747237	2.5826208	21	1 31.6	20.3
445208 2009 DB ₁₀₅	16.7	X	153.70661	308.62094	6.85191	13.77722	0.0886678	0.22173801	2.7033936	21	—	—
445209 2009 DL ₁₁₀	18.0	X	273.75535	356.63056	174.34509	23.04659	0.0856846	0.38080060	1.8851141	21	—	—
445210 2009 DR ₁₁₀	17.7	X	22.85067	162.34838	332.58645	1.52534	0.0872351	0.24022170	2.5628778	21	1 13.1	20.6
445211 2009 DC ₁₁₆	17.8	X	346.54351	169.28799	305.73510	1.19979	0.1449529	0.22964707	2.6409618	21	—	—
445212 2009 DA ₁₁₉	18.0	X	4.09427	162.90113	333.33585	0.76524	0.1816928	0.23576647	2.5950637	21	—	—
445213 2009 DP ₁₁₉	17.5	X	243.05351	64.52113	181.38690	2.43120	0.0307529	0.22991371	2.6389195	21	—	—
445214 2009 DQ ₁₂₆	16.7	X	161.33944	259.14325	4.10076	8.56871	0.1384917	0.21001227	2.8031065	21	12 29.9	21.3
445215 2009 EN ₁₆	16.7	X	262.14885	57.12582	176.25906	10.22450	0.1422883	0.22972460	2.6436375	21	—	—
445216 2009 EL ₁₇	17.6	X	35.80927	99.11789	43.31732	3.61358	0.1364814	0.24428588	2.5343727	21	2 14.5	20.1
445217 2009 FH ₆	18.2	X	76.44828	31.78272	54.16239	2.30933	0.1160044	0.24197609	2.5504751	21	2 5.4	20.9
445218 2009 FS ₈	18.5	X	68.39207	206.25165	174.89869	20.96855	0.0929072	0.38062157	1.8857051	21	—	—
445219 2009 FQ ₉	17.3	X	200.72713	42.79569	175.78480	8.60627	0.0628381	0.21370162	2.7707511	21	12 1.8	21.5
445220 2009 FO ₃₄	16.7	X	54.10778	296.93596	163.51320	9.65441	0.1665322	0.23756649	2.5819387	21	1 20.4	19.3
445221 2009 FL ₃₆	17.0	X	88.16348	248.47608	168.90230	15.09033	0.1300436	0.23476983	2.6024029	21	1 17.2	20.3
445222 2009 FC ₅₂	17.3	X	296.05057	42.32721	87.84935	5.72837	0.0760892	0.21516682	2.7581582	21	—	—
445223 2009 FX ₅₈	17.2	X	200.92819	18.99753	193.43186	4.86348	0.0926759	0.21047122	2.7990301	21	12 11.2	21.4
445224 2009 FG ₆₃	16.9	X	144.76468	352.34314	25.09297	5.47931	0.0364752	0.23303377	2.6153118	21	1 31.7	20.5
445225 2009 FU ₆₄	17.1	X	76.20054	72.32459	19.13132	15.23511	0.1064893	0.23785213	2.5798711	21	2 19.1	20.4
445226 2009 FB ₇₃	18.0	X	55.03992	178.43638	199.97250	22.12121	0.0711427	0.37279243	1.9120151	21	—	—
445227 2009 HM ₆	16.6	X	117.26170	231.95586	133.06232	7.16182	0.0472061	0.22123643	2.7074781	21	—	—
445228 2009 HQ ₂₅	16.9	X	143.49354	185.96221	127.18262	7.02604	0.0243981	0.21922980	2.7239742	21	—	—
445229 2009 HD ₃₈	17.0	X	13.67538	329.02999	157.52053	11.05261	0.1507595	0.23289747	2.6163321	21	—	—
445230 2009 HK ₅₂	17.6	X	142.36225	262.27322	34.83043	22.29441	0.0382622	0.37430591	1.9068576	21	—	—
445231 2009 HK ₈₂	17.4	X	322.85738	251.74858	210.50466	21.88631	0.0594073	0.37030447	1.9205697	21	—	—
445232 2009 HQ ₈₂	17.7	X	78.90092	16.10605	33.21330	22.12425	0.0710371	0.38470589	1.8723347	21	—	—
445233 2009 HL ₉₁	15.9	X	42.74227	230.64029	57.92333	18.99041	0.2561465	0.18103468	3.0947688	21	10 19.3	20.1
445234 2009 HZ ₁₀₃	16.8	X	325.37574	327.91580	155.12245	8.50007	0.1717778	0.21502790	2.7593461	21	—	—
445235 2009 JZ ₂	16.6	X	88.37016	18.99655	34.77689	15.45267	0.1119479	0.22949933	2.6420951	21	1 16.8	20.1
445236 2009 JH ₁₄	17.2	X	56.73369	109.85421	200.37478	0.64572	0.2181893	0.18519178	3.0482804	21	11 19.9	21.6
445237 2009 KA	17.5	X	279.99475	263.40610	216.28359	21.07046	0.0913528	0.36229461	1.9487739	21	12 30.1	19.6
445238 2009 KN ₆	15.3	X	69.62708	228.25534	117.19255	24.36431	0.3993093	0.19086347	2.9875889	21	—	—
445239 2009 KS ₁₃	16.4	X	72.34308	151.89794	113.34970	9.42200	0.2153085	0.18436069	3.0574346	21	10 17.9	21.0
445240 2009 KW ₁₈	17.0	X	204.22540	80.09066	158.96114	8.78656	0.1573617	0.20987626	2.8043174	21	—	—
445241 2009 KU ₃₇	16.7	X	197.90208	171.87938	92.04191	6.57285	0.0565071	0.21327338	2.7744588	21	—	—
445242 2009 OY ₅	15.5	X	83.31468	339.38050	305.78935	16.51249	0.1901531	0.17945947	3.1128520	21	11 8.7	20.6
445243 2009 OZ ₁₃	16.5	X	77.64125	194.10309	121.56710	2.25803	0.1635834	0.18220365	3.0815178	21	12 11.4	21.2
445244 2009 OX ₂₂	15.8	X	10.68856	300.88227	53.62665	14.83558	0.198982	0.17502299	3.1652352	21	11 5.9	19.3
445245 2009 OM ₂₃	15.5	X	64.76853	336.41420	324.82328	26.64410	0.0936830	0.17654780	3.1469838	21	10 15.3	20.5
445246 2009 PF ₂	15.9	X	72.30635	48.55849	253.58221	8.59433	0.1829687	0.17937222	3.1138612	21	11 21.3	20.6
445247 2009 QD	15.8	X	31.53978	33.82349	325.10182	16.19243	0.1404152	0.17874386	3.1211547	21	12 3.1	20.2
445248 2009 QF ₁₃	16.0	X	350.82491	226.43350	170.86379	17.06022	0.1021495	0.17383149	3.1796824	21	11 20.7	20.3
445249 2009 QX ₁₈	16.1	X	60.49707	142.38149	157.82565	28.17261	0.2940792	0.17444569	3.1722146	21	11 25.5	21.4
445250 2009 QR ₄₆	15.9	X	45.13438	344.91879	10.20665	10.70538	0.2161485	0.17751709	3.1355178	21	12 28.9	20.5
445251 2009 QU ₅₃	16.2	X	311.98160	171.48382	198.39436	6.86580	0.1270317	0.15674093	3.4068089	21	8 6.7	20.6
445252 2009 QO ₅₉	15.5	X	57.72416	71.22686	247.56576	11.76294	0.1600320	0.17476145	3.1683923	21	11 21.4	20.1
445253 2009 QA ₆₀	15.8	X	43.14082	341.70133	349.65584	15.45057	0.2209981	0.17554246	3.1589877	21	11 23.2	20.4
445254 2009 QO ₆₁	15.9	X	23.37332	123.43063	235.62571	10.43467	0.2180235	0.17378713	3.1802236	21	12 3.7	19.7
445255 2009 QB ₆₃	16.2	X	78.52444	273.26739	8.05587	11.31421	0.0721903	0.16923968	3.2369395	21	10 17.4	20.9
445256 2009 QG ₆₄	15.4	X	354.92456	247.81709	128.07570	19.58309	0.1502088	0.17040425	3.2221748	21	11 6.7	19.6
445257 2009 RY ₂₆	16.0	X	61.67528	105.59679	185.63784	22.00101	0.1894174	0.17208633	3.2011435	21	10 30.2	20.7
445258 2009 RD ₂₉	15.8	X	226.35828	150.91597	328.17039	6.37050	0.0649257	0.15937821	3.3691222	21	9 12.2	20.9
445259 2009 RR ₅₀	15.9	X	339.27051	314.53366	18.35305	7.11993	0.1346041	0.15333920	3.4570096	21	8 6.9	20.1
445260 2009 RN ₅₅	16.3	X	347.82084	356.63718	64.78898	3.36276	0.1285413	0.17198817	3.2023613	21	12 13.8	20.0
445261 2009 RL ₆₃	15.7	X	60.04680	91.97062	220.16502	14.50854	0.2903731	0.17560020	3.1582952	21	12 3.4	20.5
445262 2009 RP ₆₃	15.8	X	10.91362	195.25551	196.62736	18.08906	0.2264525	0.17558829	3.1584380	21	12 25.2	19.9
445263 2009 SX ₆₉	16.2	X	143.42667	75.16323	197.18660	6.20029	0.1454336	0.18348002	3.0672101	21	12 19.9	21.3
445264 2009 SU ₉₂	15.2	X	347.47745	37.11552	11.35099	26.63730	0.1519909	0.17154255	3.2079049	21	11 16.9	19.4
445265 2009 SZ ₉₇	15.5	X	210.86888	267.34403	216.16561	13.74589	0.1219183	0.15214461	3.4750816	21	8 23.5	21.2
445266 2009 SY ₁₆₁	15.6	X	46.52213	132.54584	181.94847	12.19070	0.1376704	0.17167896	3.2062054	21	11 1.1	20.0
445267 2009 SD ₂₂₉	19.5	X	351.64999	181.11564	124.08314	8.12032	0.4100891	0.32429239	2.0981903	21	7 9.2	17.8
445268 2009 SX ₂₉₁	16.1	X	59.03281	251.94566	69.37861	1.93760	0.1693426	0.17462173	3.1700823	21	11 27.5	20.6
445269 2009 SU ₃₂₅	18.9	X	343.51398	243.43418	71.89604	5.74861	0.3158753	0.32334422	2.1022901	21	7 5.0	18.7
445270 2009 SC ₃₂₉	16.1	X	12.08652	201.16578	188.33874	15.60120	0.3034297	0.17362468	3.1822069	21	—	—
445271 2009 SJ ₃₃₇	15.3	X	33.33414	342.09170	31.70431	16.33722	0.1790825	0.17577225	3.1562339	21	12 30.5	19.8
445272 2009 SS ₃₅₀	16.2	X	64.86404	293.72709	43.73552	12.00264	0.0779414	0.17428085	3.1742145	21	12 9.6	20.8
445273 2009 SL ₃₅₉	15.9	X	324.39215	331.27599	40.26159	11.22118	0.0918134	0.15425781	3.4432716	21	9 8.2	20.5
445274 2009 SV ₃₅₉	16.0	X	357.72219	179.68201	217.49169	16.41209	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>
445281 2009 WM ₈₈	18.1	X	249.00800	155.37647	218.69629	3.65576	0.1427816	0.30368045	2.1920889	21	5 17.7	20.9
445282 2009 WB ₈₉	18.9	X	270.60286	235.93991	131.71344	2.14444	0.1852671	0.30803080	2.1714006	21	5 29.0	21.6
445283 2009 WJ ₈₉	18.2	X	59.62823	21.29475	145.28508	2.86774	0.0818813	0.28963555	2.2623935	21	4 22.3	20.4
445284 2009 WH ₁₃₈	18.5	X	241.86231	231.27290	180.13006	2.91240	0.1377970	0.31030472	2.1607795	21	7 1.2	21.3
445285 2009 WL ₁₅₃	17.8	X	352.04022	289.65818	301.32690	6.24878	0.0720357	0.29283130	2.2459033	21	3 26.2	20.4
445286 2009 WT ₁₆₃	18.1	X	264.83106	63.19022	288.49696	2.89351	0.1338515	0.30186229	2.2008822	21	5 4.8	21.1
445287 2009 WC ₁₆₉	15.7	X	163.71052	299.02498	150.84716	3.91957	0.2364764	0.12702356	3.9193423	21	6 8.6	22.2
445288 2009 WO ₂₁₇	15.4	X	323.32676	301.18909	70.66077	17.18805	0.1675084	0.15347198	3.4550153	21	9 3.1	19.9
445289 2009 XE ₁₉	17.3	X	123.72184	212.46538	282.53946	7.17697	0.0875422	0.29087477	2.2559632	21	6 11.3	20.2
445290 2009 XH ₂₂	18.4	X	296.31990	84.20481	298.05411	4.24896	0.2112694	0.31316331	2.1476103	21	7 24.5	20.4
445291 2010 AT ₂₄	17.7	X	212.71257	354.91992	93.35133	5.42158	0.1164551	0.30107115	2.2047361	21	7 22.1	20.7
445292 2010 AF ₂₆	18.3	X	187.88700	111.05506	322.16508	4.98471	0.1108749	0.29217928	2.2492433	21	6 1.7	21.6
445293 2010 AK ₂₇	17.5	X	106.43550	342.17788	140.14775	7.31813	0.1052699	0.28151069	2.3051717	21	5 6.9	20.4
445294 2010 AU ₄₉	17.4	X	306.16913	44.44768	177.65847	5.21014	0.1805775	0.26266624	2.4147187	21	—	—
445295 2010 AY ₇₆	17.4	X	68.11899	145.33543	74.22690	9.77809	0.0577743	0.29863227	2.2167237	21	7 23.9	20.0
445296 2010 AN ₁₀₄	17.3	X	179.05921	119.59898	303.15449	23.17794	0.1382416	0.27711020	2.3300632	21	5 2.8	21.5
445297 2010 BJ ₈₇	16.9	X	256.17778	22.70888	165.70984	11.91460	0.1165178	0.23311483	2.6147055	21	—	—
445298 2010 CZ ₂₁	18.3	X	57.93383	59.72641	116.90060	2.69238	0.1447313	0.27749555	2.3279056	21	5 15.0	20.5
445299 2010 CZ ₂₃	18.2	X	97.75051	2.39538	142.86550	4.65580	0.1268837	0.28485661	2.2876268	21	5 29.2	20.9
445300 2010 CS ₉₂	17.5	X	187.90427	15.41189	24.55010	2.80992	0.1907677	0.28052298	2.3111267	21	4 20.9	21.2
445301 2010 CZ ₁₁₄	17.7	X	7.06443	184.17448	349.26043	6.27498	0.0758988	0.26659888	2.3909133	21	2 5.7	20.2
445302 2010 CM ₁₂₄	17.5	X	159.01731	150.21011	287.51386	4.75315	0.1089707	0.28479058	2.2879804	21	5 5.9	20.9
445303 2010 CR ₁₃₁	17.0	X	267.56817	40.73259	162.47975	12.44889	0.1520951	0.23698860	2.5861343	21	—	—
445304 2010 CY ₁₆₃	17.7	X	46.64882	197.42272	349.56038	6.27191	0.09415629	0.28056482	2.3108969	21	4 24.2	20.4
445305 2010 DM ₅₆	20.0	X	278.29135	48.16637	349.62700	25.60293	0.224872	0.66043202	1.3059222	21	7 31.3	20.8
445306 2010 DN ₇₉	17.6	X	202.58319	289.38464	318.54183	2.46646	0.1868093	0.23636867	2.5906542	21	—	—
445307 2010 EY ₈	15.7	X	166.70509	48.42359	42.14586	1.39819	0.1824725	0.12646071	3.9309631	21	6 9.8	22.0
445308 2010 ET ₂₀	17.5	X	101.07100	304.52748	168.41295	6.44643	0.0933330	0.27420094	2.3465155	21	4 13.2	20.3
445309 2010 EK ₄₂	17.8	X	299.86746	37.16969	188.79883	4.12579	0.1740898	0.25622780	2.4550022	21	1 1.1	21.4
445310 2010 EP ₈₇	17.5	X	41.13984	212.32314	23.99638	6.98555	0.0725546	0.27919496	2.3184496	21	7 6.7	20.1
445311 2010 ES ₁₀₈	17.9	X	66.21325	51.41197	121.24041	3.04745	0.1304121	0.27478775	2.3431736	21	5 21.7	20.3
445312 2010 EC ₁₁₀	17.9	X	109.99453	341.70557	160.67245	3.85474	0.1198289	0.28100274	2.3084954	21	6 9.2	20.8
445313 2010 EF ₁₃₂	17.4	X	269.31169	175.20940	60.06061	7.87423	0.0650482	0.24746778	2.5126015	21	—	—
445314 2010 EU ₁₃₉	17.7	X	22.41928	205.59239	341.68781	5.07742	0.1174023	0.26782927	2.3835853	21	3 18.9	19.8
445315 2010 FC ₁₅	17.7	X	259.69838	152.84739	48.75653	5.64285	0.1864052	0.23804397	2.5784849	21	—	—
445316 2010 FC ₂₇	17.8	X	320.08134	178.91001	58.21045	3.30167	0.1334892	0.26464369	2.4026749	21	2 14.7	20.9
445317 2010 FQ ₄₈	17.8	X	100.63461	121.34556	21.56897	7.48637	0.0400151	0.27646348	2.3336956	21	5 13.1	20.7
445318 2010 FF ₅₇	17.7	X	177.74714	81.02754	24.49704	6.07231	0.1338678	0.28949623	2.2631193	21	7 7.0	21.1
445319 2010 FN ₇₂	16.7	X	52.27361	217.76022	314.39849	22.24400	0.2226268	0.28053178	2.3110784	21	4 22.2	19.4
445320 2010 FW ₉₆	17.4	X	245.97804	18.33222	186.26371	7.08211	0.0970954	0.23521765	2.5990988	21	—	—
445321 2010 GU ₂₃	16.8	X	106.32699	317.23511	181.58908	24.85211	0.2439151	0.27715780	2.3297965	21	6 16.6	20.8
445322 2010 GX ₂₄	16.9	X	218.68546	67.09089	157.72479	13.62506	0.2085720	0.23145504	2.6271909	21	—	—
445323 2010 GS ₂₈	16.9	X	218.52079	74.45517	182.32946	29.41985	0.2946621	0.23515923	2.5995291	21	—	—
445324 2010 GC ₃₀	17.5	X	203.98984	253.28106	26.51139	2.98247	0.2030686	0.23703008	2.5858326	21	—	—
445325 2010 GS ₃₃	17.9	X	74.98536	1.32762	140.97188	3.25976	0.1417647	0.27296208	2.3536100	21	4 23.5	20.4
445326 2010 GK ₇₂	17.6	X	151.44783	119.66112	166.74018	14.07472	0.3579515	0.21554648	2.7549185	21	—	—
445327 2010 GD ₉₈	17.3	X	212.34934	228.23842	15.90071	4.64994	0.2232433	0.23265906	2.6181191	21	—	—
445328 2010 GE ₁₁₉	17.3	X	112.49056	87.68472	30.59085	7.22789	0.0524613	0.27097063	2.3651275	21	4 28.4	20.1
445329 2010 HL ₁₀₈	17.8	X	98.16421	331.57179	168.63022	5.69486	0.1670090	0.27412656	2.3469399	21	5 29.6	20.8
445330 2010 JM ₁₅	15.9	X	173.55909	183.84114	82.73892	18.28938	0.2180168	0.22773793	2.6557008	21	—	—
445331 2010 JT ₃₆	17.2	X	204.72509	91.27422	146.24659	8.80765	0.0704783	0.22812715	2.6526792	21	—	—
445332 2010 JD ₄₃	16.6	X	204.72347	9.27537	228.25951	13.35340	0.2520471	0.22800496	2.6536268	21	12 30.7	21.1
445333 2010 JL ₄₆	16.7	X	164.89180	225.13308	128.14796	13.07498	0.2747970	0.23743717	2.5828761	21	2 13.1	21.1
445334 2010 JP ₇₅	17.5	X	193.92991	109.09669	180.68994	8.34980	0.1514945	0.23383341	2.6093460	21	—	—
445335 2010 JR ₇₅	16.7	X	221.70703	76.38979	192.47356	14.94983	0.1420119	0.23819002	2.5774308	21	—	—
445336 2010 JP ₇₉	17.1	X	149.27514	128.71111	191.23215	12.61499	0.2689412	0.22710679	2.6606187	21	—	—
445337 2010 JL ₁₆₂	17.7	X	56.50256	300.80776	236.37211	1.96533	0.1046122	0.27076741	2.3663108	21	5 6.8	19.9
445338 2010 KU ₈	17.4	X	165.90413	80.10815	195.12130	7.77520	0.2689765	0.22322793	2.6913511	21	—	—
445339 2010 KR ₁₀₁	17.1	X	53.44841	57.95023	352.15553	6.85005	0.3242614	0.20529895	2.8458471	21	—	—
445340 2010 LT ₄₈	16.2	X	64.81949	55.13436	290.51265	10.16615	0.1187185	0.19817553	2.9136409	21	12 30.9	20.5
445341 2010 LU ₆₃	16.9	X	110.22695	174.24117	139.64029	13.25624	0.1865948	0.21605797	2.7505689	21	—	—
445342 2010 LM ₇₄	16.8	X	87.98085	355.56663	334.06858	8.44290	0.2312021	0.20083425	2.8878693	21	—	—
445343 2010 LB ₉₇	16.4	X	329.45115	207.22650	175.35329	9.29832	0.1069328	0.18078937	3.0975676	21	9 27.2	20.1
445344 2010 MQ ₂₃	16.3	X	111.33389	242.36201	113.60512	21.56428	0.1544633	0.20992599	2.8038745	21	—	—
445345 2010 MJ ₆₉	17.1	X	71.35328	210.87623	104.26553	3.56278	0.2531732	0.19317856	2.9636718	21	12 15.8	21.7
445346 2010 MS ₇₁	16.0	X	84.58712	281.89000	61.27714	10.37792	0.0897739	0.19999091	2.8959822	21	—	—
445347 2010 MQ ₇₆	16.6	X	14.74478	64.94481	312.16179	6.60687	0.0636379	0.18964988	3.0003207	21	11 25.5	20.6
445348 2010 MY ₈₄	16.2	X	323.95233	297.63577	107.10733	6.28805	0.0858259	0.18222742	3.0812498	21	10 21.3	20.2
445349 2010 MU ₁₀₇	16.7	X	31.04600	316.46059	352.20324	2.91880	0.1982285	0.18025185	3.1037225	21	10 9.9	20.5
445350 2010 MY ₁₁₀	16.5	X	42.08788	31.44408	303.45314	6.82416	0.2503394	0.18811776	3.4016589	21	12 6.8	20.7
445351 2010 NP ₁₂	16.7	X	293.88390	265.46474	151.03880	4.45595	0.0994379	0.17567741	3.1573697	21	9 17.3	20.8
445352 2010 NS ₂₃	16.1	X	137.11561	274.02965	298.31751	7.11028	0.1425434	0.18021873	3.1041028	21	10 2.1	21.3
445353 2010 NM ₇₁	16.7	X	7.54130	84.76310	304.10202	6.60381	0.0991554	0.18735823	3.0247364	21	12 4.0	20.5
445354 2010 NX ₈₀	16.4	X	340.72888	167.93738	226.40916	4.88922	0.1453864	0.18085797</				

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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>		
445361	2010	OS ₃₃	16.9	X	14.07842	150.54677	229.34543	8.71812	0.1530505	0.18605358	3.0388600	21	12 9.4	20.7
445362	2010	OV ₃₃	16.8	X	328.93469	66.55111	340.77129	8.74000	0.2242502	0.17843026	3.1248107	21	10 18.2	20.1
445363	2010	OU ₄₀	15.8	X	145.74307	339.63147	243.17246	12.72029	0.0683969	0.18083196	3.0970812	21	10 21.5	20.7
445364	2010	OK ₅₉	16.1	X	36.02683	51.88428	313.25464	12.96581	0.1816057	0.18856180	3.0118516	21	12 27.9	20.3
445365	2010	ON ₉₀	15.7	X	294.96998	241.43731	192.10618	25.77546	0.2562217	0.17284365	3.1917860	21	9 14.2	19.8
445366	2010	OE ₉₈	16.1	X	8.68795	79.40661	334.45082	12.75787	0.1864239	0.18969973	2.9997950	21	—	—
445367	2010	OF ₁₁₂	16.0	X	37.17125	28.66048	329.10046	11.06427	0.1079828	0.18589781	3.0405574	21	12 6.9	20.3
445368	2010	OU ₁₂₀	15.2	X	318.53249	76.29469	19.09210	18.82221	0.2183792	0.18421259	3.0590730	21	12 1.9	18.7
445369	2010	OP ₁₂₆	16.3	X	150.01016	297.58911	341.24167	15.16075	0.2593734	0.21160400	2.7890318	21	—	—
445370	2010	PS ₁₀	16.0	X	280.86032	56.91486	165.59832	32.75283	0.3531002	0.23693737	2.5865071	21	—	—
445371	2010	PU ₂₆	16.6	X	216.62061	346.99976	301.56492	4.78368	0.2273120	0.22932151	2.6434607	21	1 6.2	21.0
445372	2010	PO ₂₇	16.1	X	305.38549	194.97767	221.60313	8.63320	0.0641161	0.17465336	3.1696995	21	10 5.0	20.3
445373	2010	PK ₃₀	16.7	X	0.89125	220.96412	209.10620	9.48124	0.2328768	0.18997772	2.9968679	21	—	—
445374	2010	PZ ₃₆	15.9	X	329.30034	86.31562	323.47674	9.17494	0.2051779	0.17968156	3.1102863	21	10 30.3	20.5
445375	2010	PG ₄₈	15.7	X	89.72328	244.25116	23.86035	16.28920	0.2048768	0.17924360	3.1153507	21	10 30.1	20.7
445376	2010	PC ₅₅	16.6	X	20.70388	84.25456	325.02244	9.64605	0.1485600	0.19121348	2.9839421	21	—	—
445377	2010	PU ₇₁	15.0	X	289.00006	212.38362	254.83510	27.21570	0.1693565	0.18009800	3.1054899	21	11 1.3	19.3
445378	2010	RQ ₂₆	16.0	X	359.23281	29.06339	348.24171	13.31861	0.1426288	0.18457801	3.0550342	21	11 4.5	19.8
445379	2010	RH ₆₁	16.9	X	7.03882	342.41387	8.00459	4.54294	0.2020291	0.17980896	3.1088171	21	10 23.4	20.1
445380	2010	RM ₆₅	18.0	X	337.20178	270.11083	185.34842	21.76143	0.0982854	0.38254947	3.1075343	21	—	—
445381	2010	RQ ₇₀	16.3	X	2.11040	22.69433	2.85014	10.30657	0.0974548	0.18714551	3.0270280	21	11 19.1	20.3
445382	2010	RV ₇₄	18.5	X	106.62079	171.08207	191.89551	26.17204	0.1460414	0.39086383	1.8526173	21	—	—
445383	2010	RD ₁₀₁	16.5	X	318.67457	231.10933	205.90673	10.84348	0.0836359	0.18688114	3.0298821	21	11 22.4	20.3
445384	2010	RG ₁₀₅	16.3	X	20.66559	11.96410	9.17777	10.04341	0.1001581	0.18897580	3.0074512	21	12 13.1	20.4
445385	2010	RO ₁₁₃	16.2	X	307.19794	238.59709	222.45952	9.72637	0.1064469	0.18918308	3.0052541	21	12 3.9	19.9
445386	2010	RG ₁₁₇	16.7	X	317.33434	273.21746	165.82722	8.50418	0.1149490	0.18499143	3.0504809	21	11 21.9	20.5
445387	2010	RH ₁₁₉	16.4	X	120.45572	132.48477	231.81535	11.49955	0.1385867	0.21398722	2.7682851	21	—	—
445388	2010	RF ₁₄₃	17.4	X	9.95938	129.16379	309.06792	4.10348	0.2426097	0.19789903	2.9154703	21	—	—
445389	2010	RE ₁₅₃	16.3	X	348.64017	36.61253	324.38173	8.27080	0.1120222	0.17761823	3.1343274	21	9 25.7	20.1
445390	2010	RM ₁₇₆	16.2	X	297.33433	81.72876	2.22467	9.23377	0.0990035	0.18252793	3.0778668	21	10 24.7	20.2
445391	2010	RF ₁₈₄	16.4	X	359.60124	131.61490	276.25927	8.30988	0.0710237	0.19191588	2.9766569	21	12 15.5	20.2
445392	2010	SU ₂	16.1	X	358.34199	171.79262	216.47749	13.45449	0.1146464	0.18285669	3.0741766	21	11 21.1	19.9
445393	2010	SZ ₅	16.3	X	162.39262	216.93141	357.39731	4.49092	0.0989190	0.18027038	3.1035099	21	10 29.6	21.2
445394	2010	SG ₁₁	16.8	X	67.38751	354.45891	327.98653	7.97785	0.0773508	0.18932458	3.0037564	21	11 26.9	21.2
445395	2010	SV ₁₈	17.4	X	41.33333	253.63156	117.22638	1.29752	0.2006513	0.19214270	2.9743138	21	—	—
445396	2010	SS ₂₆	17.1	X	45.89362	225.49537	217.63959	3.63859	0.0413920	0.21011819	2.8021644	21	—	—
445397	2010	TN ₁₀	16.7	X	45.53106	284.70171	11.66783	0.93212	0.1635472	0.18063788	3.0992992	21	10 11.1	20.8
445398	2010	TZ ₁₂	16.1	X	176.91913	327.66328	221.31521	9.30575	0.0390579	0.18112343	3.0937576	21	10 15.9	20.6
445399	2010	TE ₁₃	16.4	X	359.62095	346.14345	358.06495	11.68763	0.0550103	0.17561651	3.1580996	21	9 22.3	20.6
445400	2010	TQ ₂₂	17.0	X	310.11138	283.55325	191.67537	7.40849	0.1379957	0.19236676	2.9720038	21	12 24.9	20.5
445401	2010	TB ₂₃	16.7	X	56.14326	303.60639	24.63975	6.13579	0.1470325	0.18841938	3.0133692	21	11 30.7	21.0
445402	2010	TE ₂₃	17.4	X	18.94433	180.35342	182.94770	0.98360	0.1871213	0.18578274	3.0418127	21	11 30.5	21.1
445403	2010	TB ₃₁	16.2	X	305.18994	103.72344	9.77742	12.26868	0.0539841	0.19327464	2.9626895	21	12 20.3	20.3
445404	2010	TC ₃₄	17.0	X	316.38685	275.05147	170.37891	4.71384	0.2195016	0.18409439	3.0603823	21	11 20.1	20.2
445405	2010	TX ₃₇	16.2	X	4.89219	21.94758	4.62644	9.26863	0.1020920	0.18596158	3.0398622	21	11 25.4	20.1
445406	2010	TZ ₄₄	16.9	X	51.65739	319.50045	358.42373	1.02843	0.2140770	0.18549262	3.0449836	21	11 22.5	21.0
445407	2010	TO ₆₀	16.2	X	293.03481	121.10111	318.62204	7.47621	0.1504193	0.18009593	3.1055137	21	10 4.8	20.2
445408	2010	TO ₇₀	16.8	X	24.45440	116.16453	257.33322	2.08955	0.0611684	0.18980611	2.9986740	21	12 5.1	20.7
445409	2010	TJ ₇₉	16.4	X	351.84204	181.90235	113.26480	9.62127	0.1685808	0.18263485	3.0766654	21	11 23.0	19.8
445410	2010	TW ₈₁	16.9	X	314.35832	8.86455	63.24905	1.70990	0.1542278	0.18054797	3.1003280	21	11 2.3	20.3
445411	2010	TV ₈₇	16.8	X	16.97877	341.92456	37.62873	0.63979	0.0500369	0.18921236	3.0049440	21	12 1.3	20.9
445412	2010	TE ₉₁	16.8	X	55.82532	167.46324	185.55498	9.76280	0.0705519	0.19308208	2.9646590	21	12 21.6	21.2
445413	2010	TQ ₁₀₀	16.6	X	85.35937	191.88787	138.22160	2.81139	0.0499761	0.19491795	2.9460142	21	12 26.1	20.8
445414	2010	TD ₁₀₆	16.4	X	11.63876	30.81545	14.51655	9.86322	0.1042749	0.19179820	2.9787743	21	—	—
445415	2010	TV ₁₁₂	16.6	X	36.93779	335.06986	6.56135	6.31974	0.1368968	0.18518746	3.0483278	21	11 20.2	20.7
445416	2010	TT ₁₁₅	16.5	X	264.49215	273.69189	199.59898	13.49846	0.1698151	0.17796217	3.1302877	21	10 8.3	20.9
445417	2010	TY ₁₄₂	16.5	X	52.08046	84.32127	231.63590	12.25643	0.1800822	0.18259652	3.0770961	21	11 15.7	20.7
445418	2010	TL ₁₄₄	16.0	X	337.74928	172.13331	231.29800	10.23767	0.0846910	0.18045891	3.1013480	21	11 5.7	19.8
445419	2010	TZ ₁₄₇	17.0	X	176.17782	69.62166	258.21427	4.89822	0.0241917	0.21839517	2.7309099	21	1 6.7	20.7
445420	2010	TT ₁₆₆	16.3	X	359.55606	118.14090	265.80863	7.58576	0.0964007	0.18450559	3.0558336	21	11 14.6	20.1
445421	2010	TG ₁₆₈	16.8	X	294.85657	127.70614	325.46662	0.25555	0.1470007	0.18042893	3.1016915	21	10 28.9	20.6
445422	2010	TJ ₁₇₈	17.2	X	348.49676	232.21339	169.92217	1.81236	0.0918333	0.18707141	3.0278273	21	11 22.7	20.8
445423	2010	TU ₁₈₄	16.5	X	40.61818	331.20165	20.75201	9.34780	0.1451697	0.18747972	3.0234295	21	12 9.6	20.7
445424	2010	TL ₁₈₇	16.5	X	19.54169	34.29146	32.20907	10.27133	0.1180276	0.19844144	2.9110375	21	—	—
445425	2010	UL ₁	16.5	X	303.83958	95.98672	338.30840	4.80286	0.0766733	0.18009518	3.1055223	21	10 24.6	20.5
445426	2010	UJ ₁₀	15.9	X	43.24801	134.76284	216.97889	18.37937	0.1332709	0.18658308	3.0331080	21	12 11.6	20.3
445427	2010	UU ₁₆	15.4	X	18.85687	302.70508	58.83841	14.82808	0.0973621	0.17668461	3.1453591	21	11 15.3	19.4
445428	2010	UV ₂₁	15.3	X	288.55217	222.14683	225.44315	26.14871	0.1486392	0.17427653	3.1742670	21	10 8.1	19.7
445429	2010	UL ₂₅	16.2	X	1.24034	303.16757	83.95833	2.96737	0.1257007	0.17793618	3.1305925	21	11 23.7	19.8
445430	2010	UH ₃₂	16.1	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>
445441 2010 UY ₆₇	16.5	X	90.28585	314.91708	1.20432	10.20524	0.0500355	0.19096354	2.9865451	21	12 13.2	21.0
445442 2010 UP ₆₉	16.0	X	347.69896	194.78018	231.06232	9.60568	0.1679787	0.18410416	3.0602741	21	12 24.7	19.5
445443 2010 UH ₇₂	16.1	X	47.59176	174.01036	186.53602	10.31483	0.0813150	0.18938866	3.0030789	21	12 21.4	20.5
445444 2010 UP ₇₃	16.0	X	318.61759	39.92302	43.13479	10.70377	0.0950954	0.17872729	3.1213476	21	11 25.2	19.9
445445 2010 UK ₇₇	15.7	X	35.28650	353.24119	15.33367	16.08556	0.0655817	0.18643656	3.0346969	21	12 10.4	20.1
445446 2010 UM ₇₈	16.6	X	18.98404	55.37864	339.10268	8.68325	0.1521525	0.18839817	3.0135953	21	—	—
445447 2010 UY ₇₉	16.9	X	49.50708	295.80268	29.45163	15.84028	0.3198153	0.18465122	3.0542267	21	12 10.3	21.6
445448 2010 UA ₈₁	15.8	X	26.24096	306.99633	49.29552	17.03737	0.1543091	0.18123540	3.0924833	21	11 24.9	19.7
445449 2010 UZ ₈₇	16.5	X	351.24907	53.72028	7.03788	10.25040	0.2029636	0.18578091	3.0418327	21	12 29.8	20.0
445450 2010 UE ₈₈	15.9	X	343.94941	10.07783	43.25708	12.24631	0.1152231	0.17936807	3.1139093	21	11 26.9	19.7
445451 2010 UJ ₁₀₁	16.5	X	12.35123	217.55912	174.18389	2.41261	0.1647256	0.18951784	3.0017140	21	12 23.9	20.0
445452 2010 UL ₁₀₇	15.6	X	135.77000	357.02852	268.21653	7.83631	0.0642022	0.18945290	3.0024400	21	12 3.7	20.0
445453 2010 VT ₅	16.8	X	35.69123	215.35668	161.52515	6.44138	0.2245940	0.18997913	2.9968531	21	—	—
445454 2010 VH ₁₀	16.0	X	330.25419	195.12882	233.52861	15.60138	0.2181418	0.18027539	3.1034524	21	11 24.8	18.9
445455 2010 VB ₁₄	16.6	X	38.48581	164.10610	218.35854	10.32322	0.1723039	0.19092163	2.9869821	21	—	—
445456 2010 VF ₁₅	16.2	X	28.19737	110.56387	246.87878	12.23418	0.1778429	0.18351584	3.0668110	21	12 4.9	20.0
445457 2010 VA ₁₆	16.6	X	41.49892	21.53403	357.20223	9.30832	0.1012131	0.19131439	2.9828927	21	—	—
445458 2010 VU ₁₉	15.5	X	32.51294	121.42733	231.90486	15.10921	0.1337175	0.18244255	3.0788270	21	11 29.5	19.6
445459 2010 VM ₂₀	15.4	X	300.28440	227.69941	222.20678	21.04057	0.1541099	0.17733639	3.1376475	21	10 31.7	19.3
445460 2010 VF ₃₇	15.8	X	349.77387	316.11966	86.52346	17.47257	0.2252961	0.17985644	3.1082699	21	12 6.1	19.0
445461 2010 VJ ₄₀	16.5	X	72.29896	328.96528	340.86418	5.91050	0.0137240	0.18222677	3.0812571	21	11 7.2	20.9
445462 2010 VU ₄₈	16.2	X	352.76547	290.15729	111.27189	2.85801	0.1719078	0.17821291	3.1273509	21	12 1.7	19.8
445463 2010 VD ₆₁	15.8	X	6.83463	311.11351	82.68318	13.24548	0.1214108	0.18181686	3.0858865	21	12 11.1	19.7
445464 2010 VE ₆₄	16.5	X	303.72198	14.37627	272.53530	11.81978	0.1387427	0.17822053	3.1272617	21	11 7.5	20.4
445465 2010 VV ₆₉	17.0	X	19.73137	127.18047	256.84471	2.57228	0.1824048	0.18561584	3.0436358	21	12 26.9	20.7
445466 2010 VQ ₇₃	17.0	X	31.45884	350.01121	37.03255	10.40281	0.1022038	0.19049123	2.9914797	21	—	—
445467 2010 VK ₇₇	16.1	X	348.50314	209.52722	176.60403	13.21245	0.1504992	0.17975400	3.1094506	21	11 5.4	19.8
445468 2010 VZ ₇₇	15.9	X	272.71184	273.72010	221.45892	14.06572	0.0290510	0.18378476	3.0638187	21	12 5.6	20.2
445469 2010 VG ₈₂	15.9	X	324.25810	34.73675	58.40910	17.69710	0.1411490	0.18467426	3.0539726	21	12 16.6	19.5
445470 2010 VG ₈₄	16.5	X	11.09742	119.53366	245.07367	4.45619	0.1733824	0.17635283	3.1493029	21	11 10.7	20.4
445471 2010 VO ₈₅	16.3	X	22.35134	122.91499	228.07726	8.61699	0.1391050	0.18003088	3.1062618	21	11 12.2	19.9
445472 2010 VA ₈₉	16.0	X	341.90210	341.67741	45.63395	11.16494	0.1529551	0.17383256	3.1796693	21	10 23.9	19.5
445473 2010 VZ ₈₈	4.9	X	358.83045	313.50819	117.31964	4.51343	0.7771513	0.00051457	154.2315352	21	11 20.4	20.3
445474 2010 VF ₁₀₁	17.0	X	30.76222	157.59404	188.07644	0.71636	0.1637731	0.17924278	3.1153602	21	11 21.2	21.0
445475 2010 VX ₁₀₇	15.3	X	28.94578	114.39557	234.18129	25.66236	0.0406720	0.17664439	3.1458365	21	11 5.0	19.6
445476 2010 VN ₁₁₃	16.7	X	20.75545	309.24764	101.41774	3.49504	0.3210173	0.19010211	2.9955605	21	—	—
445477 2010 VZ ₁₁₅	15.9	X	343.99926	334.12943	30.66062	12.98291	0.0967706	0.17000416	3.2272283	21	9 29.6	20.0
445478 2010 VF ₁₂₉	17.3	X	348.28491	280.27568	136.40521	2.12761	0.2292002	0.18451424	3.0557381	21	12 19.7	20.4
445479 2010 VR ₁₃₅	17.0	X	9.50528	304.27791	69.85111	2.25551	0.1663735	0.18063780	3.0993001	21	11 25.0	20.5
445480 2010 VM ₁₃₈	15.5	X	278.59501	179.44222	271.34690	10.03859	0.0362510	0.17584539	3.1553586	21	10 13.1	20.0
445481 2010 VH ₁₄₉	17.2	X	24.10153	130.35744	211.38941	9.51150	0.1753369	0.17659863	3.1463799	21	11 7.9	21.0
445482 2010 VN ₁₅₂	16.5	X	23.87173	153.38419	189.65824	5.06329	0.1898259	0.17394531	3.1782952	21	11 11.1	20.4
445483 2010 VS ₁₅₂	16.4	X	340.36550	188.40234	224.43178	9.01010	0.0898214	0.17645359	3.1481039	21	11 21.6	20.4
445484 2010 VG ₁₅₃	16.8	X	52.69997	19.03050	29.95860	10.98254	0.2840807	0.20014580	2.8944878	21	—	—
445485 2010 VU ₁₅₇	16.0	X	74.52639	65.31020	237.92545	15.51740	0.2035374	0.18253071	3.0778356	21	11 28.2	20.7
445486 2010 VQ ₁₆₂	17.3	X	332.48491	122.90840	314.98175	1.79319	0.1511392	0.18298387	3.0727520	21	12 12.5	20.6
445487 2010 VM ₁₇₃	16.4	X	63.01761	300.86511	56.48706	2.31511	0.2315152	0.18914403	3.0056676	21	—	—
445488 2010 VE ₁₇₅	16.0	X	162.11318	5.65448	221.16459	10.77954	0.0424525	0.17813446	3.1282689	21	11 14.9	20.5
445489 2010 VY ₁₇₅	15.8	X	282.41366	178.89884	269.79065	12.54037	0.0834659	0.17324358	3.1868719	21	10 7.4	20.4
445490 2010 VJ ₁₇₇	17.2	X	355.28114	52.07924	352.35457	0.57969	0.0737363	0.18237223	3.0796184	21	12 3.0	21.0
445491 2010 VH ₁₈₂	15.7	X	75.94205	8.33284	273.46308	8.25287	0.0674347	0.17500053	3.1655060	21	10 13.4	20.3
445492 2010 VZ ₁₈₄	16.6	X	353.65517	345.34888	43.09893	1.61455	0.1662311	0.17751596	3.1355312	21	11 15.2	20.0
445493 2010 VV ₁₈₇	15.9	X	62.47420	235.65428	81.25717	10.72333	0.1048272	0.18056278	3.1001585	21	11 20.2	20.3
445494 2010 VR ₁₈₉	16.4	X	30.43133	78.06278	246.80733	22.38358	0.2591272	0.17520427	3.1630514	21	11 6.6	20.4
445495 2010 VZ ₁₉₁	16.6	X	340.43851	298.28898	91.11433	2.53251	0.1769025	0.17484986	3.1673243	21	10 23.4	19.9
445496 2010 VG ₁₉₉	16.1	X	289.94890	210.40640	249.73351	9.27274	0.1885455	0.17784602	3.1316504	21	10 21.8	20.2
445497 2010 VG ₂₀₂	15.1	X	262.70456	216.35613	259.11941	25.57862	0.1255209	0.17330409	3.1861301	21	10 6.2	20.1
445498 2010 VR ₂₀₄	16.4	X	66.64212	106.63415	230.07597	7.07062	0.0676171	0.18755643	3.0226051	21	12 13.4	20.6
445499 2010 VH ₂₀₅	16.2	X	100.95684	294.67141	359.51320	9.99429	0.0932078	0.18768945	3.0211768	21	12 1.5	21.0
445500 2010 VH ₂₀₇	16.5	X	21.00816	115.90661	259.27963	8.98050	0.0575026	0.18624931	3.0367306	21	12 1.4	20.7
445501 2010 VJ ₂₀₇	16.7	X	12.55463	59.93968	339.12878	3.08184	0.1026860	0.18840174	3.0135572	21	12 25.4	20.5
445502 2010 VA ₂₀₉	16.0	X	27.22561	330.16021	23.27853	10.79320	0.0981606	0.17921698	3.1156592	21	11 14.4	20.1
445503 2010 VV ₂₁₀	16.0	X	83.02808	288.25510	347.61146	8.88686	0.0739638	0.17532794	3.1615639	21	10 16.1	20.6
445504 2010 VP ₂₁₁	15.9	X	288.86241	226.88428	224.83297	9.25905	0.0742783	0.17620051	3.1511176	21	10 26.6	20.1
445505 2010 VH ₂₁₂	15.8	X	6.69558	141.55332	238.12240	9.65264	0.0886640	0.17663506	3.1459473	21	11 18.6	19.8
445506 2010 WY ₃	16.7	X	310.92391	32.81588	22.07174	0.33405	0.1782835	0.17300001	3.1898625	21	9 30.4	20.5
445507 2010 WP ₆	16.3	X	36.95518	110.84021	219.09140	4.13879	0.0742105	0.17592797	3.1543711	21	10 28.0	20.5
445508 2010 WH ₈	15.8	X	4.81995	142.85178	248.93051	12.48561	0.1323726	0.17954480	3.1118655	21	12 5.9	19.5
445509 2010 WC ₁₁	15.9	X	298.51203	102.78120	344.47387	9.47092	0.0241853	0.17812500	3.1283797	21	11 5.5	20.4
445510 2010 WU ₁₃	16.4	X	100.35322	77.89360	263.25439	1.12071	0.1832974	0.19600691	2.9350925	21	—	—
445511 2010 WH ₁₅	15.6	X	35.27343	121.56197	238.94169	25.97575	0.1067741	0.18139553	3.0906631	21	12 6.9	19.8
445512 2010 WS ₂₂	16.6	X	240.42850	239.27708	247.59294	3.66911	0.1078621	0.16880638	3.2424763	21	10 3.0	21.3
445513 2010 WL ₃₀	15.8	X	330.53447	175.61328	245.51804	9.60167						

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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>
445521 2010 <i>XL</i> ₅₂	16.9 ^m	X	229.30109	296.23924	260.26821	20.47700	0.0513391	0.36667328	1.9332286	21	—	—
445522 2010 <i>XF</i> ₅₈	15.8	X	35.89709	79.89452	246.41688	7.68978	0.0862722	0.17523677	3.1626604	21	10 21.9	20.2
445523 2010 <i>XJ</i> ₆₄	16.7	X	16.52494	354.05640	16.19117	1.66644	0.1005144	0.18227103	3.0807583	21	11 23.1	20.5
445524 2010 <i>XM</i> ₆₈	16.2	X	335.98546	44.76016	70.25960	12.30016	0.3502057	0.18402572	3.0611436	21	—	—
445525 2010 <i>XK</i> ₈₈	15.7	X	14.15439	333.43195	64.90909	18.75144	0.1973830	0.17580862	3.1557986	21	—	—
445526 2011 <i>AL</i>	16.1	X	320.57905	310.92046	117.46973	9.37751	0.2618072	0.17157890	3.2074517	21	11 1.4	19.4
445527 2011 <i>AL</i> ₁₃	15.6	X	297.44063	164.04624	310.59098	14.45051	0.2238734	0.17388436	3.1790379	21	11 13.6	19.6
445528 2011 <i>AE</i> ₂₉	17.2	X	286.65016	175.30626	306.85981	18.55282	0.0719420	0.35591801	1.9719811	21	—	—
445529 2011 <i>AY</i> ₃₀	15.9	X	318.06048	328.58888	119.27670	14.74260	0.0986064	0.17066012	3.2189533	21	12 2.9	20.1
445530 2011 <i>AS</i> ₅₅	15.4	X	315.59536	221.24129	241.31714	10.17577	0.2736780	0.17489733	3.1667511	21	12 2.8	18.2
445531 2011 <i>BH</i> ₁₁	15.6	X	358.60855	117.00990	267.34227	25.25113	0.2218254	0.17842567	3.1248643	21	11 24.4	19.1
445532 2011 <i>BR</i> ₁₂₀	15.9	X	344.62234	86.92552	313.45205	13.42796	0.2068872	0.17094885	3.2153279	21	11 8.8	19.6
445533 2011 <i>BE</i> ₁₆₁	16.6	X	325.69339	273.16867	168.10316	15.95985	0.3659264	0.17931666	3.1145044	21	11 26.9	19.1
445534 2011 <i>CZ</i> ₈₆	15.2	X	159.28444	276.66090	166.92270	9.44354	0.1579187	0.12405735	3.9815702	21	5 27.5	21.5
445535 2011 <i>EL</i> ₂₄	17.8	X	344.88219	246.76917	162.13711	24.22075	0.1161851	0.34799669	2.0017937	21	—	—
445536 2011 <i>EP</i> ₂₄	18.6	X	10.54286	31.29561	189.22983	6.81152	0.1945776	0.29710867	2.2242956	21	4 6.8	19.6
445537 2011 <i>EQ</i> ₆₆	18.2	X	341.81520	55.49303	167.36483	1.90196	0.1526769	0.29136643	2.2534246	21	2 16.5	20.3
445538 2011 <i>FL</i> ₂₃	17.9	X	297.85663	70.90540	162.49150	6.15936	0.2075424	0.27644416	2.3338043	21	—	—
445539 2011 <i>FK</i> ₂₅	17.9	X	293.25608	104.95917	178.26051	24.21800	0.2112497	0.28692295	2.2766304	21	2 24.6	21.5
445540 2011 <i>FR</i> ₄₇	18.4	X	1.35572	78.17315	169.97791	3.19284	0.1690991	0.29605359	2.2295771	21	5 6.5	19.8
445541 2011 <i>FW</i> ₈₆	17.9	X	359.10496	343.44897	285.39828	4.34014	0.1345459	0.30573938	2.1822364	21	6 7.0	19.3
445542 2011 <i>FZ</i> ₁₂₉	18.2	X	352.48298	264.82308	337.72807	4.21827	0.1291709	0.30022863	2.2088589	21	4 7.7	20.0
445543 2011 <i>FU</i> ₁₅₄	17.9	X	272.52044	167.49049	116.58783	6.46116	0.1622303	0.28163320	2.3050489	21	2 13.3	21.3
445544 2011 <i>GT</i>	18.2	X	338.38690	282.74533	341.69114	6.27884	0.1670155	0.29729782	2.2233520	21	4 8.9	20.2
445545 2011 <i>GX</i> ₁	18.0	X	3.53827	290.81744	325.40130	4.74285	0.1819209	0.30116033	2.2043009	21	5 22.3	19.4
445546 2011 <i>GV</i> ₄₈	18.0	X	22.95168	47.31852	195.82259	3.27172	0.1310672	0.30355830	2.1926769	21	6 17.5	19.6
445547 2011 <i>HT</i> ₁₃	18.2	X	307.47264	176.26746	112.61470	3.45051	0.1716616	0.29150750	2.2526976	21	3 30.8	20.8
445548 2011 <i>HW</i> ₁₈	17.7	X	300.81937	186.64492	101.57870	7.87376	0.2195525	0.28608409	2.2810786	21	3 17.0	20.8
445549 2011 <i>HU</i> ₈₄	18.0	X	6.41573	24.85721	227.31794	2.90551	0.0943313	0.29737839	2.2229504	21	5 27.6	19.7
445550 2011 <i>HD</i> ₈₉	18.5	X	65.34848	78.50997	138.85753	4.76297	0.1037959	0.30628313	2.1796529	21	7 22.3	20.8
445551 2011 <i>JE</i> ₉	17.4	X	298.37186	129.62608	117.25258	6.50277	0.0959586	0.27789186	2.3256918	21	2 1.7	20.4
445552 2011 <i>JX</i> ₃₀	18.1	X	4.12131	125.68546	105.33150	1.59172	0.1682638	0.29111360	2.2547292	21	4 13.7	19.7
445553 2011 <i>KV</i> ₈	18.6	X	257.70276	42.82304	236.64198	2.26282	0.2466575	0.27158319	2.3615698	21	1 19.7	22.6
445554 2011 <i>KZ</i> ₁₀	17.8	X	303.06050	34.52521	249.12933	6.95898	0.1065917	0.28515876	2.2860106	21	3 23.0	20.8
445555 2011 <i>KP</i> ₃₃	17.9	X	330.56638	33.81098	239.17571	5.43529	0.1064914	0.29033968	2.2587342	21	4 20.7	20.2
445556 2011 <i>KN</i> ₄₈	17.5	X	281.89755	182.58232	120.54906	6.79382	0.1295223	0.28456279	2.2892013	21	3 26.0	20.6
445557 2011 <i>LN</i> ₁₆	17.3	X	296.75308	56.91293	205.37308	21.81807	0.2047419	0.27608741	2.3358143	21	1 31.3	21.3
445558 2011 <i>OD</i> ₄	17.0	X	208.29221	210.12919	131.78855	13.48188	0.1979571	0.26161626	2.4211752	21	3 1.3	21.0
445559 2011 <i>OD</i> ₈	17.9	X	254.44963	260.87116	0.68484	1.46390	0.1569381	0.25910677	2.4367831	21	1 2.1	21.7
445560 2011 <i>OS</i> ₁₄	17.5	X	250.15895	28.49942	170.32764	4.85134	0.2349458	0.26634248	2.3924476	21	2 6.1	21.5
445561 2011 <i>OE</i> ₁₈	17.6	X	281.95041	148.05481	136.07534	3.21044	0.1638189	0.27030889	2.3689860	21	2 24.0	21.1
445562 2011 <i>OU</i> ₂₃	17.7	X	255.16246	218.12573	67.79416	3.03729	0.1933951	0.26549962	2.3975082	21	1 30.2	21.5
445563 2011 <i>OA</i> ₃₂	17.8	X	231.76455	269.82657	41.15056	3.04250	0.1602388	0.26351300	2.4095430	21	2 10.9	21.6
445564 2011 <i>OC</i> ₄₉	17.8	X	216.73474	84.83416	287.93163	4.94112	0.1340202	0.27083559	2.3659137	21	4 11.4	21.5
445565 2011 <i>QH</i> ₇	17.8	X	184.16715	90.11790	286.37151	5.56662	0.1806985	0.26085547	2.4258806	21	3 17.4	21.7
445566 2011 <i>QM</i> ₂₄	18.1	X	167.56656	127.91578	175.15093	8.67894	0.1660600	0.23864945	2.5741218	21	—	—
445567 2011 <i>QC</i> ₂₆	18.1	X	228.35385	38.96095	308.64780	3.52475	0.2343134	0.26726789	2.3869218	21	3 19.6	22.1
445568 2011 <i>QP</i> ₂₇	17.9	X	208.11139	196.50490	160.16151	2.35055	0.2482512	0.26191250	2.4193493	21	3 17.2	21.9
445569 2011 <i>QJ</i> ₂₈	17.1	X	174.49592	49.96100	332.26119	5.45393	0.1575371	0.25807356	2.4432826	21	3 16.4	21.0
445570 2011 <i>QA</i> ₃₃	18.1	X	211.31976	235.81129	148.96955	2.89184	0.1994246	0.26701697	2.3884169	21	4 24.2	22.1
445571 2011 <i>QC</i> ₃₆	17.7	X	198.12658	178.36371	147.53939	2.67877	0.1551303	0.25142623	2.4861595	21	1 29.9	21.6
445572 2011 <i>QJ</i> ₃₈	17.4	X	246.29827	176.78393	151.11865	6.28092	0.1008484	0.26666645	2.3905094	21	3 21.4	20.7
445573 2011 <i>QG</i> ₄₂	16.9	X	151.55836	169.48949	130.49616	11.19943	0.1920289	0.23591967	2.5939401	21	—	—
445574 2011 <i>QI</i> ₅₅	17.8	X	146.38585	122.07611	201.88618	10.54003	0.1895505	0.23713771	2.5850502	21	—	—
445575 2011 <i>QY</i> ₅₇	17.4	X	67.18028	92.96947	319.67252	6.98031	0.1501705	0.23213050	2.6220919	21	—	—
445576 2011 <i>QL</i> ₅₉	18.6	X	132.92759	152.86140	200.64448	3.70094	0.2444474	0.23980856	2.5658204	21	1 11.1	22.3
445577 2011 <i>QJ</i> ₆₂	17.4	X	151.45139	8.85644	331.75264	11.76579	0.1950854	0.24034836	2.5619773	21	1 11.4	21.3
445578 2011 <i>QD</i> ₆₄	18.4	X	191.40252	150.08788	258.64811	1.43046	0.1776595	0.26645091	2.3917984	21	5 5.8	22.7
445579 2011 <i>QQ</i> ₆₆	17.8	X	269.00696	11.11346	274.11855	4.61768	0.0957793	0.26249249	2.4157842	21	2 17.2	20.8
445580 2011 <i>QD</i> ₆₉	17.7	X	195.03644	32.66200	324.01647	3.42922	0.1585801	0.25790222	2.4443646	21	3 4.6	21.6
445581 2011 <i>QL</i> ₇₄	17.8	X	177.34096	62.88280	350.90519	4.19507	0.1921011	0.26286063	2.4135281	21	4 28.9	21.7
445582 2011 <i>QG</i> ₈₀	17.8	X	160.28625	195.62184	131.06380	4.84262	0.2645996	0.24109617	2.5566769	21	1 6.8	21.8
445583 2011 <i>QC</i> ₈₄	17.5	X	142.46448	358.70244	342.85429	10.37475	0.1535689	0.24103020	2.5571433	21	—	—
445584 2011 <i>QU</i> ₈₇	18.3	X	157.89700	37.28158	322.25458	2.04122	0.2129334	0.24661023	2.5184229	21	2 7.9	22.1
445585 2011 <i>RW</i> ₃	18.3	X	132.88823	125.59521	233.22342	1.66436	0.2320958	0.23916345	2.5704323	21	1 16.5	21.8
445586 2011 <i>RN</i> ₁₅	17.5	X	117.25402	256.48548	228.42793	6.29643	0.0756256	0.27220553	2.3579690	21	5 18.7	20.3
445587 2011 <i>SA</i> ₁₄	17.1	X	265.53267	331.98947	223.48550	3.48788	0.1378635	0.23319346	2.6141177	21	—	—
445588 2011 <i>SE</i> ₂₃	16.3	X	34.91190	59.57063	9.61961	22.31365	0.0258764	0.22618474	2.6678445	21	—	—
445589 2011 <i>SJ</i> ₃₁	18.1	X	196.34912	112.30129	302.12631	0.98502	0.1596333	0.27057112	2.3674552	21	5 17.6	21.6
445590 2011 <i>SW</i> ₃₂	17.2	X	196.90002	34.46217	355.25263	1.69716	0.1772479	0.26280372	2.4138765	21	4 16.6	20.9
445591 2011 <i>SC</i> ₃₃	17.3	X	167.88164	243.53273	171.94048	5.27351	0.2268625	0.25878699	2.4387901	21	4 27.4	21.3
445592 2011 <i>SH</i> ₄₉												

ELEMENTS AND OPPOSITION DATES IN 2021

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2021 JULY 5.0 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>		
445601	2011	SR ₈₆	17.0	X	109.21306	189.38300	199.29781	13.67088	0.2228351	0.23534590	2.5981544	21	1 22.5	20.6
445602	2011	ST ₈₇	17.2	X	147.21827	33.43281	329.12078	4.68876	0.0585886	0.23917354	2.5703601	21	1 16.3	20.6
445603	2011	SP ₉₀	17.4	X	122.96653	21.94992	351.40917	3.23796	0.2038694	0.23507281	2.6001662	21	1 21.6	20.9
445604	2011	SV ₉₁	16.3	X	105.04311	192.52379	205.98071	31.38765	0.0876891	0.23476937	2.6024062	21	1 6.1	20.4
445605	2011	SK ₁₀₁	17.5	X	207.91513	322.43145	12.99301	5.84393	0.1515779	0.25432890	2.4672069	21	2 21.2	21.4
445606	2011	SL ₁₀₉	17.0	X	181.74523	34.37776	6.64458	5.91103	0.1111984	0.26265708	2.4147748	21	4 14.3	20.6
445607	2011	SP ₁₁₅	17.5	X	177.46688	155.54056	162.83154	7.03777	0.2487261	0.24283733	2.5444412	21	1 9.1	21.8
445608	2011	SD ₁₁₈	17.6	X	185.23546	199.19931	208.79411	3.69435	0.1824269	0.26281263	2.4138219	21	4 30.1	21.4
445609	2011	ST ₁₂₈	17.3	X	58.83209	261.51890	160.98532	2.41166	0.0880383	0.22643785	2.6658561	21	—	—
445610	2011	ST ₁₃₄	17.3	X	183.38072	125.34770	187.62547	12.92373	0.1932995	0.24113034	2.5564353	21	1 3.8	21.7
445611	2011	SG ₁₃₅	17.2	X	75.18838	190.98104	171.84816	2.67346	0.1166305	0.22062591	2.7124706	21	—	—
445612	2011	SM ₁₃₈	17.7	X	146.98171	153.41524	187.85977	2.11078	0.1330586	0.23687082	2.5869915	21	—	—
445613	2011	SX ₁₄₁	17.1	X	300.12253	220.81761	19.91439	2.97450	0.1365557	0.25038936	2.4930183	21	1 27.0	20.4
445614	2011	SZ ₁₄₂	18.1	X	90.93201	56.46219	15.65630	3.88271	0.1653747	0.23865194	2.5741039	21	2 18.0	21.0
445615	2011	SB ₁₄₇	17.6	X	152.41515	180.20917	162.57805	2.56947	0.0390480	0.23849656	2.5752218	21	—	—
445616	2011	SD ₁₅₅	17.5	X	166.58112	315.66955	11.16433	15.10876	0.1603296	0.24012109	2.5635936	21	1 6.3	21.7
445617	2011	SP ₁₅₈	16.9	X	200.85485	308.91424	1.81398	13.04782	0.1720972	0.24420383	2.5449403	21	1 19.8	21.2
445618	2011	SB ₁₇₈	17.1	X	60.55199	229.30978	219.80198	11.64606	0.1650700	0.23282805	2.6168521	21	1 16.3	20.0
445619	2011	SX ₁₇₈	17.9	X	129.98783	142.40611	206.11809	12.06093	0.1677661	0.23266412	2.6180811	21	—	—
445620	2011	SY ₁₈₁	16.7	X	230.86075	251.33517	12.93734	12.64792	0.1552772	0.23703016	2.5858320	21	—	—
445621	2011	SE ₁₈₇	17.3	X	96.40262	187.97210	202.34140	7.18993	0.1854189	0.23233887	2.6205240	21	1 3.5	20.5
445622	2011	SE ₁₉₀	17.0	X	64.90392	27.50943	23.74825	12.36218	0.1921565	0.22326612	2.6910442	21	—	—
445623	2011	SG ₁₉₃	17.4	X	69.91857	202.20352	239.88571	1.53039	0.1160814	0.23986406	2.5654246	21	1 19.5	20.1
445624	2011	SE ₂₁₁	17.4	X	335.85344	262.88934	356.40926	5.36645	0.2045544	0.26971983	2.3724339	21	3 27.4	19.5
445625	2011	SM ₂₁₂	16.9	X	178.84870	196.00510	217.39050	13.09567	0.1436377	0.26089563	2.42556316	21	4 29.9	20.5
445626	2011	SR ₂₁₈	17.0	X	42.15950	250.96682	161.04557	12.86577	0.1643448	0.22124641	2.7073967	21	—	—
445627	2011	SO ₂₂₉	17.2	X	229.38519	228.53189	2.64297	6.01102	0.0293120	0.22109530	2.7086302	21	—	—
445628	2011	SO ₂₂₉	18.3	X	158.05948	274.71313	93.61451	13.74161	0.1632100	0.24440458	2.5335520	21	3 7.1	23.1
445629	2011	SC ₂₃₀	16.9	X	47.56242	168.87373	240.45160	5.58214	0.0454390	0.22154541	2.7409602	21	—	—
445630	2011	SW ₂₃₂	17.9	X	176.01619	50.72056	304.49620	6.95107	0.1935329	0.25189448	2.4830776	21	2 15.4	21.8
445631	2011	SS ₂₄₄	17.7	X	175.18296	320.29415	13.32252	4.19911	0.0955988	0.24236232	2.5477647	21	1 15.8	21.5
445632	2011	SZ ₂₄₄	17.5	X	355.97360	126.88196	12.64049	4.36700	0.1272066	0.23487613	2.6016176	21	—	—
445633	2011	SM ₂₄₆	16.8	X	114.90741	206.42641	191.78559	13.40791	0.2472033	0.23557910	2.5964351	21	2 14.4	20.6
445634	2011	SK ₂₅₀	17.8	X	201.02538	85.27357	297.51024	2.14970	0.2023130	0.26004468	2.4309204	21	4 11.2	21.9
445635	2011	SY ₂₅₇	17.3	X	96.69389	315.44470	12.20245	3.10213	0.0856004	0.21707372	2.7419817	21	—	—
445636	2011	SM ₂₅₈	16.8	X	12.81243	289.22729	215.92282	15.09865	0.0913056	0.23265137	2.6181768	21	1 9.1	20.2
445637	2011	SB ₂₅₉	17.0	X	10.90013	31.07397	47.23848	5.83092	0.1511410	0.21194367	2.7860511	21	—	—
445638	2011	TR ₁	17.5	X	97.56528	190.10394	146.44641	4.90355	0.1169059	0.22036580	2.7146047	21	—	—
445639	2011	TL ₆	17.4	X	206.34156	119.78393	169.57833	9.18656	0.1216072	0.24145267	2.5541597	21	—	—
445640	2011	UX	17.2	X	169.32851	66.57843	259.40870	4.78471	0.0899642	0.23484977	2.6018123	21	—	—
445641	2011	UQ ₅	17.4	X	52.01693	238.22607	207.31947	2.60702	0.1693223	0.22663242	2.6643300	21	—	—
445642	2011	UT ₆	17.3	X	112.76511	187.07080	222.45410	8.67473	0.2112945	0.23664330	2.5886495	21	2 20.5	21.0
445643	2011	UB ₁₀	17.6	X	57.89224	72.76933	314.75745	2.31273	0.2032987	0.21619517	2.7494050	21	—	—
445644	2011	UQ ₁₁	17.8	X	72.92628	234.01113	208.17757	4.68266	0.2815306	0.23700043	2.5860483	21	2 17.0	20.2
445645	2011	UF ₁₂	17.2	X	158.83578	289.13643	40.96462	8.96055	0.3192584	0.23590032	2.5940820	21	1 16.6	21.7
445646	2011	UZ ₁₆	17.2	X	133.18735	343.63622	35.92780	5.56542	0.2172465	0.23654225	2.5893866	21	2 12.7	21.1
445647	2011	UH ₃₀	17.3	X	80.52034	151.34716	221.69473	12.80823	0.1986994	0.21931458	2.7232721	21	—	—
445648	2011	UV ₃₆	16.8	X	116.25966	303.98360	64.67665	8.71611	0.1125464	0.22685834	2.6625609	21	—	—
445649	2011	UE ₄₄	17.5	X	160.27534	83.52093	229.09000	9.88729	0.1347600	0.23197390	2.6232719	21	—	—
445650	2011	UK ₄₇	17.4	X	59.56111	76.45069	10.25471	3.14399	0.1257113	0.23076224	2.6324465	21	1 12.7	20.2
445651	2011	UG ₄₈	17.1	X	55.87933	35.93827	30.86164	2.86095	0.0771925	0.22533221	2.6445694	21	—	—
445652	2011	UK ₄₉	17.3	X	53.28118	48.21964	44.32876	2.67973	0.1740639	0.22917712	2.6745709	21	1 12.7	19.8
445653	2011	UU ₅₁	17.3	X	135.72461	209.52397	177.76194	3.34972	0.2018445	0.23918070	2.5750388	21	2 19.6	21.1
445654	2011	UE ₅₄	16.2	X	163.06782	262.28084	48.68851	13.66549	0.0928844	0.22405700	2.6847079	21	—	—
445655	2011	UJ ₆₅	17.1	X	193.58152	34.07457	230.80984	14.61494	0.1282257	0.22922245	2.6442222	21	—	—
445656	2011	UD ₆₇	17.2	X	76.79459	235.50884	113.12903	4.45621	0.0991655	0.21480283	2.7612732	21	—	—
445657	2011	UZ ₇₀	17.4	X	79.49208	31.63670	68.84116	15.72842	0.3774080	0.22965898	2.6408704	21	4 22.2	20.9
445658	2011	UV ₇₄	17.1	X	99.28856	232.55883	172.34450	2.01810	0.1704126	0.23326402	2.6135905	21	1 25.2	20.3
445659	2011	UK ₇₅	17.4	X	80.07076	184.53043	169.39732	4.46649	0.0843501	0.21567437	2.7538294	21	—	—
445660	2011	UK ₇₆	16.9	X	105.92699	68.07992	307.83010	4.11134	0.0439794	0.22710322	2.6606465	21	—	—
445661	2011	UN ₇₆	16.8	X	50.86137	49.51770	4.63180	6.54786	0.0809672	0.22121785	2.7076297	21	—	—
445662	2011	UR ₇₇	17.5	X	95.29234	350.12358	4.94884	5.50209	0.0988909	0.21924649	2.7238360	21	—	—
445663	2011	UJ ₇₉	17.0	X	23.02798	89.67796	334.79109	2.96216	0.0531957	0.21588154	2.7520673	21	—	—
445664	2011	UA ₈₀	17.2	X	37.23823	115.34148	313.39886	1.93361	0.0372863	0.22100116	2.7093993	21	—	—
445665	2011	UO ₈₂	17.2	X	116.90157	69.18724	356.05236	3.83993	0.2716606	0.23958372	2.5674254	21	3 28.0	20.8
445666	2011	UU ₈₃	16.7	X	339.92106	193.84470	237.29293	14.60399	0.1212095	0.20263748	2.8707113	21	12 20.4	20.2
445667	2011	UX ₈₄	17.1	X	162.70685	341.88769	17.87847	4.91642	0.2103209	0.23934374	2.5691143	21	2 15.1	21.2
445668	2011	UQ ₈₆	16.9	X	122.91809	120.76010	235.36592	8.46819	0.1121591	0.22330606	2.6907233	21	—	—
445669	2011	UE ₈₈	16.5	X	134.19026	262.66034	60.75466	7.11538	0.0330306	0.21528647	2.7571362	21	—	—
445670	2011	UP ₉₀	16.2	X	90.11649	115.15057	280.60748	21.18221	0.1092859	0.23422930	2.6064050	21	—	—
445671	2011	UK ₉₂	18.0	X	79.75197	150.16714								

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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>
445681 2011 UW ₁₂₆	16.7	X	154.39651	264.62669	35.67928	11.97108	0.1769444	0.22310955	2.6923031	21	—	—
445682 2011 UD ₁₂₉	17.9	X	123.16795	121.48753	245.36404	4.26101	0.2432158	0.23188971	2.6239068	21	1 17.9	21.5
445683 2011 UJ ₁₃₉	17.4	X	143.34661	114.12188	230.24025	7.92874	0.1996631	0.23142041	2.6274529	21	1 6.3	21.3
445684 2011 UP ₁₄₀	16.8	X	88.03785	348.53276	23.88033	6.30553	0.0520506	0.21924508	2.7238476	21	—	—
445685 2011 UG ₁₄₅	16.5	X	207.40638	304.32587	2.62226	11.71774	0.2386889	0.24319462	2.5419484	21	1 22.1	21.1
445686 2011 UD ₁₄₇	17.2	X	39.55238	57.43056	20.14062	5.50342	0.0490409	0.22150415	2.7052960	21	—	—
445687 2011 UJ ₁₄₉	16.4	X	152.66341	136.91510	211.04436	11.30268	0.1834316	0.23494135	2.6011361	21	1 16.2	20.5
445688 2011 UD ₁₅₁	17.2	X	83.55817	30.71329	21.84462	13.70795	0.0585134	0.22871955	2.6480968	21	2 1.3	20.3
445689 2011 UN ₁₅₅	17.4	X	217.32745	56.54232	183.21357	4.28756	0.0154481	0.21499816	2.7596006	21	—	—
445690 2011 UY ₁₅₉	16.9	X	156.04420	179.30907	193.34828	13.90389	0.2027580	0.24085859	2.5583578	21	2 18.9	21.1
445691 2011 UX ₁₆₀	17.3	X	174.81514	299.14816	46.74067	5.36193	0.2264967	0.23985566	2.5654846	21	2 10.2	21.6
445692 2011 UC ₁₆₃	17.5	X	89.13828	177.40677	249.88402	3.91032	0.2751962	0.23224835	2.6212048	21	2 24.3	20.7
445693 2011 UJ ₁₆₆	17.3	X	149.63360	286.77922	88.43659	6.91956	0.2736652	0.23986148	2.5654430	21	2 28.5	21.6
445694 2011 UB ₁₇₂	17.0	X	115.93536	59.06387	346.14304	7.02611	0.1827906	0.23889099	2.5723864	21	2 19.2	20.3
445695 2011 UG ₁₇₃	17.3	X	23.61971	332.27614	131.48256	5.73612	0.1612555	0.22531296	2.6747217	21	—	—
445696 2011 UK ₁₇₄	17.1	X	129.98768	205.05357	183.65758	7.87914	0.08193733	0.23569514	2.5955873	21	2 13.2	20.9
445697 2011 UC ₁₇₆	17.2	X	101.14589	110.44616	255.99825	4.70583	0.0414489	0.22230920	2.6987610	21	—	—
445698 2011 UP ₁₈₂	17.1	X	92.52069	86.30251	260.11601	7.27244	0.2251905	0.21692560	2.7432298	21	—	—
445699 2011 UB ₁₈₄	17.3	X	56.48172	275.43849	132.94894	4.88563	0.1534296	0.22147261	2.7055529	21	—	—
445700 2011 UC ₁₈₈	17.1	X	29.29971	214.36400	213.23302	11.16628	0.1648074	0.22230406	2.6988026	21	—	—
445701 2011 UA ₁₉₁	17.5	X	124.91253	295.51961	68.23871	4.22586	0.0853108	0.22710498	2.6606328	21	—	—
445702 2011 UG ₁₉₃	16.8	X	125.07495	340.56754	42.45345	5.42549	0.1646489	0.23361613	2.6109637	21	2 1.3	20.4
445703 2011 UJ ₁₉₅	16.7	X	78.67916	54.88646	5.77684	7.85141	0.0544207	0.22972960	2.6403292	21	1 2.3	20.1
445704 2011 UQ ₁₉₆	16.8	X	126.91932	357.24155	339.24331	5.60004	0.0324530	0.22086472	2.7105150	21	—	—
445705 2011 UK ₁₉₇	16.7	X	141.78421	288.29300	37.45633	16.13991	0.1662960	0.22569724	2.6716848	21	—	—
445706 2011 UL ₁₉₈	17.1	X	114.50192	295.91073	60.49566	6.93691	0.0603909	0.22189221	2.7021410	21	—	—
445707 2011 UR ₁₉₈	17.2	X	128.26114	141.80263	214.74755	3.88424	0.1830211	0.22825024	2.6517254	21	1 4.1	20.9
445708 2011 UP ₂₁₀	17.4	X	150.59900	89.54161	230.07375	10.61535	0.2165696	0.23182152	2.6244213	21	—	—
445709 2011 UW ₂₄₃	17.3	X	317.64681	249.23988	233.40241	1.55891	0.0273587	0.21022773	2.8011909	21	—	—
445710 2011 UO ₂₄₅	17.1	X	132.64276	273.51321	58.98309	6.59971	0.1666383	0.22577229	2.6710927	21	—	—
445711 2011 UN ₂₅₂	16.9	X	353.49007	254.19663	220.50752	6.91719	0.1909262	0.21304879	2.7764083	21	—	—
445712 2011 UD ₂₅₅	17.4	X	92.44483	181.58759	228.84947	2.90589	0.1507493	0.23329359	2.6133696	21	1 18.9	20.4
445713 2011 UV ₂₆₀	17.2	X	163.20306	301.24976	24.31740	3.98965	0.2866365	0.23422104	2.6064663	21	1 11.5	21.6
445714 2011 UC ₂₆₁	17.2	X	130.71587	118.83208	252.84923	7.57913	0.1274754	0.23185870	2.6241407	21	1 16.4	20.8
445715 2011 UA ₂₆₅	17.2	X	44.71814	52.39034	346.80610	5.92569	0.0454841	0.21685118	2.7438573	21	—	—
445716 2011 UV ₂₆₆	17.3	X	85.98454	229.47220	182.26814	12.91344	0.2465944	0.22981636	2.6396646	21	1 24.4	20.4
445717 2011 UC ₂₆₉	16.7	X	46.21721	212.74487	267.67859	6.44129	0.0937209	0.23507658	2.6001385	21	1 30.7	19.7
445718 2011 UJ ₂₇₉	16.9	X	90.32376	322.40060	49.80956	6.23152	0.0937009	0.21818256	2.7331346	21	—	—
445719 2011 UA ₂₈₂	17.1	X	44.94429	90.14799	302.67732	2.47781	0.0978875	0.21370826	2.7706936	21	—	—
445720 2011 UA ₂₈₃	17.3	X	41.08656	243.79308	188.01402	4.82753	0.0965955	0.22034903	2.7147423	21	—	—
445721 2011 UN ₂₈₃	17.1	X	6.60562	7.87242	89.97256	6.18034	0.1233015	0.21678781	2.7443920	21	—	—
445722 2011 UO ₂₈₇	16.9	X	273.55055	175.79562	11.07119	11.38023	0.0114822	0.22139489	2.7061860	21	—	—
445723 2011 UC ₂₈₉	17.7	X	7.99109	36.24848	126.35216	5.78658	0.1290022	0.23868740	2.5738490	21	1 22.9	20.5
445724 2011 UA ₂₉₇	17.5	X	32.12795	241.46900	202.12664	4.56638	0.1339255	0.22241696	2.6978892	21	—	—
445725 2011 UB ₂₉₉	17.4	X	80.89578	214.35818	208.36788	2.96300	0.1646860	0.22947723	2.6422647	21	1 19.9	20.3
445726 2011 UC ₃₀₀	16.6	X	24.37088	208.99698	220.31959	6.80805	0.0178088	0.21387158	2.7692829	21	—	—
445727 2011 UY ₃₀₂	17.5	X	6.29383	123.30416	6.09412	3.82975	0.1621575	0.22644006	2.6658387	21	—	—
445728 2011 UU ₃₁₀	17.2	X	0.97496	127.72878	355.65115	1.96060	0.0860857	0.22446083	2.6814869	21	—	—
445729 2011 UO ₃₂₂	16.4	X	80.10019	294.24334	115.16814	9.89594	0.1622736	0.22807855	2.6530560	21	1 1.4	19.3
445730 2011 UM ₃₂₅	17.7	X	189.67186	293.60573	15.85432	9.78794	0.1789271	0.23961961	2.5671691	21	1 7.3	22.0
445731 2011 UB ₃₃₆	17.4	X	70.43644	260.24221	171.29746	6.28378	0.2081774	0.23144399	2.6272745	21	1 18.3	19.9
445732 2011 UT ₃₄₇	17.5	X	66.54202	335.70490	71.66958	1.05315	0.0851140	0.22626838	2.6671871	21	—	—
445733 2011 UK ₃₅₉	17.5	X	200.91543	338.97975	351.72858	4.26266	0.2589543	0.24449763	2.5329091	21	2 11.7	22.0
445734 2011 UQ ₃₅₉	17.2	X	178.20299	131.12997	235.53709	14.16534	0.1608685	0.24318925	2.5419859	21	2 25.7	21.5
445735 2011 UH ₃₆₀	17.1	X	314.63159	262.97091	208.15948	3.25567	0.0564006	0.20933624	2.8091382	21	—	—
445736 2011 UD ₃₇₄	17.3	X	158.99969	305.15949	48.79124	9.69898	0.1786164	0.23824443	2.5770384	21	2 3.9	21.4
445737 2011 UY ₃₈₅	16.9	X	106.26915	1.73777	13.27613	5.48686	0.0809563	0.22312324	2.6921929	21	—	—
445738 2011 UH ₃₈₉	16.5	X	175.31051	333.73496	345.45900	13.55340	0.1761040	0.23477601	2.6023572	21	1 7.9	20.8
445739 2011 UX ₃₉₇	16.5	X	17.80120	174.64187	232.79157	12.00140	0.0951648	0.21204985	2.7851210	21	—	—
445740 2011 UJ ₄₀₅	17.0	X	101.63233	31.25673	0.36095	16.70902	0.1352864	0.23141913	2.6274626	21	1 10.8	20.6
445741 2011 VS ₇	16.8	X	114.87148	342.94458	27.92706	6.43384	0.1810155	0.22651432	2.6652561	21	1 7.1	20.3
445742 2011 VG ₁₃	17.0	X	141.18722	271.46291	83.77837	2.36228	0.0311197	0.22897844	2.6461004	21	—	—
445743 2011 WE ₂	16.9	X	154.17478	312.45551	78.75567	4.19498	0.2112081	0.24207935	2.5497497	21	3 17.7	20.9
445744 2011 WO ₁₄	17.0	X	90.15985	321.14752	90.09754	5.73925	0.3055784	0.22988086	2.6391709	21	2 14.1	20.1
445745 2011 WS ₂₄	17.0	X	38.62441	161.04282	262.04299	2.72043	0.0498781	0.21445380	2.7642684	21	—	—
445746 2011 WL ₃₀	17.9	X	74.95394	93.61427	290.90404	5.79469	0.1409123	0.22010416	2.7167554	21	—	—
445747 2011 WW ₃₆	17.2	X	111.33228	136.26644	215.53935	5.31320	0.0457656	0.22124489	2.7074091	21	—	—
445748 2011 WS ₃₉	17.3	X	111.76682	227.94633	177.90061	7.64178	0.2243468	0.23505610	2.6002895	21	2 19.0	20.8
445749 2011 WT ₄₂	15.9	X	294.61401	213.11986	259.73039	9.37717	0.0170445	0.19239560	2.9717068	21	12 8.6	20.0
445750 2011 WQ ₄₃	17.3	X	123.70004	311.28742	67.90864	6.22961	0.2898645	0.23254628	2.6189656	21	2 11.9	21.2
445751 2011 WC ₅₇	17.4	X	8.79377	3.03750	75.43993	10.10852	0.0959568	0.21120823	2.7925149	21	—	—
445752 2011 WA ₆₉	17.2	X	85.39217	88.54232	331.02695	5.68346	0.1872253	0.22995276	2.6386207	21	1 28.2	20.0
445753 2011 WW ₆₉	16.7	X	254.94650	232.98958	254.18997	4.56952	0.1908364	0.18962549	3.0005778	21	10 11.0	21.1
445754 2011 WY ₆₉	17.6	X	135.36859	104.45706	287.24287	3.59534	0.2667143	0.23716030	2.5848860	21	3 3.0	21.7
445755 2011 WV ₇₀												

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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>
445761 2011 <i>WT</i> ₉₇	17.1	X	275.39590	129.73373	83.74383	4.51699	0.0047192	0.22275814	2.6951337	21	—	—
445762 2011 <i>WT</i> ₁₀₃	16.3	X	95.67028	323.60954	288.81457	8.80062	0.0629075	0.18625899	3.0366254	21	9 30.2	20.9
445763 2011 <i>WR</i> ₁₀₅	16.3	X	352.00727	247.31992	256.41396	12.07976	0.0348829	0.22303987	2.6928637	21	—	—
445764 2011 <i>WY</i> ₁₁₂	16.7	X	110.95500	231.09165	178.55396	10.50068	0.2310961	0.23439851	2.6051505	21	2 23.8	20.3
445765 2011 <i>WD</i> ₁₁₄	16.9	X	130.40407	283.06816	125.52376	14.19745	0.2929616	0.24153655	2.5535683	21	3 28.3	21.2
445766 2011 <i>WB</i> ₁₁₅	16.4	X	157.54519	287.19361	90.65335	14.89658	0.1303011	0.23939317	2.5687877	21	3 1.7	20.5
445767 2011 <i>WC</i> ₁₁₅	16.9	X	86.86011	301.85855	90.95222	12.41797	0.2419966	0.22471825	2.6794387	21	1 3.4	19.7
445768 2011 <i>WY</i> ₁₁₈	16.5	X	58.67210	51.51729	31.65786	14.82711	0.0418341	0.22818905	2.6521995	21	1 2.6	20.2
445769 2011 <i>WH</i> ₁₃₆	15.9	X	318.52822	211.20702	265.83027	13.88115	0.0966585	0.20366147	2.8610809	21	—	—
445770 2011 <i>WD</i> ₁₃₇	17.6	X	102.62280	107.65493	228.53003	2.69035	0.1027326	0.21416888	2.7667195	21	—	—
445771 2011 <i>WX</i> ₁₄₂	17.5	X	79.35163	119.27608	262.48739	4.15601	0.1325908	0.21880154	2.7275275	21	—	—
445772 2011 <i>WD</i> ₁₄₃	17.6	X	346.69257	132.39444	328.36311	3.37969	0.0262717	0.21392576	2.7688154	21	—	—
445773 2011 <i>WS</i> ₁₅₁	16.8	X	183.18872	353.50914	327.20709	11.49412	0.1675305	0.23729781	2.5838873	21	1 15.3	21.0
445774 2011 <i>XN</i> ₃	16.3	X	134.85284	181.80698	236.60245	12.46833	0.2589643	0.24127865	2.5553876	21	4 1.1	20.5
445775 2011 <i>YA</i>	18.6	X	12.19770	226.67822	340.88664	5.25071	0.7556888	0.31961581	2.1186077	21	8 23.5	18.2
445776 2011 <i>YP</i> ₉	17.1	X	100.10224	179.00266	252.68847	3.88062	0.1932121	0.23399348	2.6081559	21	3 4.3	20.5
445777 2011 <i>YU</i> ₁₅	17.6	X	57.30726	89.17437	40.17045	5.65603	0.4834528	0.22484263	2.6784504	21	5 10.6	20.1
445778 2011 <i>YW</i> ₁₇	16.5	X	313.24204	118.44316	314.94455	4.20013	0.1392748	0.19314505	2.9640145	21	11 3.8	19.9
445779 2011 <i>YU</i> ₃₂	16.1	X	212.22637	333.42949	143.61465	7.25530	0.0754867	0.16638092	3.2739122	21	8 26.4	20.9
445780 2011 <i>YP</i> ₃₃	15.8	X	258.45118	10.37136	91.17472	11.59338	0.0445002	0.17565570	3.1576298	21	10 10.4	20.4
445781 2011 <i>YR</i> ₄₅	16.4	X	313.45039	351.77715	66.98836	6.76968	0.0595401	0.17964603	3.1106964	21	10 24.2	20.5
445782 2011 <i>YJ</i> ₄₈	16.9	X	314.07405	186.79491	252.49228	4.22950	0.1349392	0.18766581	3.0214305	21	11 13.5	20.3
445783 2011 <i>YF</i> ₅₃	16.9	X	42.25709	176.90884	273.99875	8.03879	0.1676150	0.21610706	2.7501523	21	—	—
445784 2011 <i>YD</i> ₅₇	16.9	X	354.39812	106.87269	305.80147	8.20901	0.0997756	0.19163866	2.9795268	21	12 16.3	20.6
445785 2011 <i>YZ</i> ₆₅	16.1	X	153.60964	339.90651	319.48825	11.29261	0.0477726	0.20139403	2.8825156	21	—	—
445786 2011 <i>YR</i> ₇₇	16.3	X	269.91078	142.49995	336.05999	8.57008	0.1233255	0.18200861	3.0837187	21	10 25.6	20.6
445787 2011 <i>YA</i> ₇₈	16.9	X	133.35787	272.78665	108.39014	14.99115	0.1467784	0.23404260	2.6077910	21	2 5.9	20.6
445788 2012 <i>AN</i> ₂	15.6	X	136.01855	329.60905	277.15204	8.01380	0.0522180	0.18157412	3.0886362	21	11 8.8	20.3
445789 2012 <i>AK</i> ₄	16.7	X	10.77818	319.63109	100.28961	1.72318	0.0968372	0.19913933	2.9042323	21	—	—
445790 2012 <i>AY</i> ₄	15.3	X	105.23221	356.73228	292.72473	23.36958	0.0166988	0.18431741	3.0579131	21	11 22.9	20.0
445791 2012 <i>AN</i> ₁₄	16.8	X	56.68087	276.54571	115.07502	10.63326	0.1349207	0.21194335	2.7860540	21	—	—
445792 2012 <i>AF</i> ₂₀	16.2	X	318.56714	317.48946	285.78146	12.07828	0.0787995	0.18249866	3.0781960	21	11 8.0	20.3
445793 2012 <i>AO</i> ₂₁	15.2	X	196.51771	220.53549	109.20927	15.56426	0.1337012	0.17092451	3.2156330	21	9 7.0	20.6
445794 2012 <i>BD</i> ₁	16.4	X	263.95525	152.84412	335.11602	11.82125	0.2089160	0.17961547	3.1110493	21	10 15.4	20.9
445795 2012 <i>BC</i> ₅	17.0	X	97.51466	104.97474	308.96312	4.14245	0.1166506	0.22104459	2.7090444	21	1 29.5	20.3
445796 2012 <i>BN</i> ₅	16.4	X	280.83626	134.55450	307.55898	8.50546	0.0627140	0.17615950	3.1516066	21	10 1.6	20.9
445797 2012 <i>BB</i> ₁₆	15.8	X	41.79764	41.89013	307.84987	10.00790	0.0462502	0.18231555	3.0802567	21	11 23.0	20.2
445798 2012 <i>BV</i> ₂₉	16.9	X	334.23526	118.07444	315.77405	8.03028	0.0948292	0.19115317	2.9845696	21	12 11.4	20.7
445799 2012 <i>BY</i> ₂₉	16.6	X	267.59274	309.62469	141.09041	6.63970	0.1352515	0.17588751	3.1548548	21	9 21.1	21.0
445800 2012 <i>BQ</i> ₃₂	16.2	X	215.03580	169.78929	337.51735	8.52254	0.0281437	0.17539225	3.1607910	21	10 7.2	20.8
445801 2012 <i>BD</i> ₃₄	15.7	X	305.39032	171.80347	252.69721	8.28815	0.0433785	0.17536596	3.1611069	21	10 16.2	20.1
445802 2012 <i>BD</i> ₄₈	16.2	X	325.28250	42.23999	108.61831	14.05761	0.0438991	0.20543351	2.8446043	21	—	—
445803 2012 <i>BN</i> ₅₈	16.1	X	66.60507	15.52601	309.15289	11.64818	0.1166581	0.18522578	3.0479073	21	12 3.9	20.6
445804 2012 <i>BJ</i> ₆₇	16.4	X	285.53181	163.31690	286.40060	13.16225	0.0540264	0.17928288	3.1148956	21	10 17.2	20.9
445805 2012 <i>BH</i> ₇₆	16.8	X	340.55372	104.41261	321.31229	9.64966	0.1351390	0.18662002	3.0327077	21	12 11.0	20.5
445806 2012 <i>BK</i> ₈₁	16.8	X	284.91771	24.09413	101.95978	2.23518	0.1713309	0.18742784	3.0239874	21	11 23.3	20.4
445807 2012 <i>BP</i> ₈₁	16.7	X	34.49047	82.32947	308.72993	7.44590	0.0696425	0.19322068	2.9632411	21	—	—
445808 2012 <i>BK</i> ₈₄	16.4	X	53.76336	237.38192	75.08786	2.22843	0.0469808	0.17351129	3.1835932	21	10 24.9	20.7
445809 2012 <i>BS</i> ₈₆	16.5	X	41.31354	118.52312	312.44233	6.59037	0.2105814	0.21020204	2.8014192	21	—	—
445810 2012 <i>BK</i> ₈₉	17.1	X	27.13867	103.36607	11.01273	4.15278	0.1457230	0.21308763	2.7760709	21	—	—
445811 2012 <i>BU</i> ₉₀	16.3	X	318.69141	320.23475	138.34153	6.76507	0.0779889	0.18791958	3.0187098	21	12 19.3	20.2
445812 2012 <i>BM</i> ₁₁₀	16.0	X	324.08503	92.44715	330.55025	10.13569	0.0564400	0.17778954	3.1323137	21	11 6.8	20.3
445813 2012 <i>BH</i> ₁₁₂	15.7	X	32.95310	27.98148	166.75399	2.98555	0.1311667	0.12543700	3.9523215	21	5 9.7	20.6
445814 2012 <i>BO</i> ₁₁₂	16.2	X	327.39310	110.74559	323.80044	8.26660	0.1264922	0.18324826	3.0697957	21	11 27.9	20.0
445815 2012 <i>BF</i> ₁₁₇	16.0	X	320.83806	126.06133	300.28021	8.68997	0.0799934	0.18183345	3.0856988	21	11 7.2	20.1
445816 2012 <i>BH</i> ₁₂₀	16.9	X	263.80991	221.58204	218.48444	1.86237	0.0724419	0.16781265	3.2552643	21	9 8.7	21.5
445817 2012 <i>BM</i> ₁₂₄	16.8	X	353.23534	356.74133	138.13159	10.75094	0.0750193	0.20918042	2.8105330	21	—	—
445818 2012 <i>BR</i> ₁₂₈	15.9	X	262.57623	130.65623	348.44462	9.95000	0.1735639	0.17768949	3.1334894	21	10 9.9	20.4
445819 2012 <i>BF</i> ₁₃₀	16.2	X	104.91459	168.55418	135.11731	13.28772	0.0592382	0.18158784	3.0884806	21	12 16.3	20.9
445820 2012 <i>BQ</i> ₁₃₁	15.3	X	293.92529	76.22999	343.69286	21.13793	0.0243087	0.17234867	3.1978942	21	9 23.9	19.8
445821 2012 <i>BV</i> ₁₃₅	16.8	X	63.12765	126.33722	253.88749	2.75389	0.1145557	0.20352829	2.8623288	21	—	—
445822 2012 <i>BK</i> ₁₃₉	16.5	X	267.43899	332.53763	169.28261	4.69762	0.0878520	0.18219330	3.0816344	21	11 29.6	20.7
445823 2012 <i>BO</i> ₁₅₁	15.8	X	48.00344	77.73568	301.36729	9.26540	0.0991718	0.19203670	2.9754083	21	—	—
445824 2012 <i>BF</i> ₁₅₂	16.1	X	12.97989	251.37341	145.62563	9.79404	0.0594494	0.18669786	3.0318647	21	12 18.7	20.3
445825 2012 <i>CR</i> ₂	17.3	X	351.52967	145.77472	291.92894	1.13739	0.1496447	0.19301314	2.9653648	21	—	—
445826 2012 <i>CQ</i> ₅	15.7	X	28.49672	284.56305	63.60779	10.01980	0.0864818	0.17502031	3.1652675	21	11 11.0	20.0
445827 2012 <i>CV</i> ₉	16.0	X	252.83372	333.35612	150.18460	10.13529	0.0346317	0.17429561	3.1740352	21	10 28.9	20.6
445828 2012 <i>CW</i> ₁₇	15.6	X	335.94253	264.46018	144.27200	16.08858	0.0665364	0.17740207	3.1368730	21	11 14.7	20.0
445829 2012 <i>CG</i> ₁₈	17.0	X	306.93845	287.88224	217.86252	2.16549	0.1388020	0.19776880	2.9176344	21	—	—
445830 2012 <i>CL</i> ₁₉	22.2	X	320.27430	295.30910	128.52244	2.86586	0.4409287	0.50501954	1.5616988	21	—	—
445831 2012 <i>CR</i> ₃₃	16.1	X	307.65100	138.63113	304.88589	8.39564	0.1285217	0.18025675	3.1036663	21	11 4.6	20.0
445832 2012 <i>CU</i>												

ELEMENTS AND OPPOSITION DATES IN 2021

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2021 JULY 5.0 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>		
445841	2012	DT ₂₅	16.7	X	325.12083	270.41737	163.15913	15.56343	0.2974110	0.17923666	3.1154311	21	11 19.2	19.7
445842	2012	DA ₃₁	15.8	X	242.32549	102.04252	63.03610	13.39951	0.1109644	0.18109496	3.0940819	21	11 22.9	20.1
445843	2012	DB ₅₄	16.8	X	90.65598	55.61942	20.90676	32.96555	0.3769903	0.22557814	2.6726251	21	4 4.1	20.5
445844	2012	DS ₅₅	15.8	X	251.93010	145.09025	340.78919	13.83943	0.1581987	0.17097906	3.2149491	21	10 5.0	20.6
445845	2012	DD ₅₆	16.4	X	272.74752	305.51157	176.15712	5.03979	0.1657723	0.17580853	3.1557996	21	10 31.1	20.7
445846	2012	DP ₈₉	16.7	X	11.05685	126.74025	23.72331	9.82855	0.2168501	0.21036498	2.7999724	21	1 13.2	19.7
445847	2012	ET ₁₆	16.3	X	314.78640	336.61320	154.78098	15.98414	0.1250950	0.18626890	3.0365177	21	—	—
445848	2012	FX ₂₆	15.3	X	79.07791	157.56078	11.99044	8.35707	0.0738697	0.12638363	3.9325663	21	6 2.2	20.9
445849	2012	FO ₄₅	16.7	X	296.70961	39.05668	96.38637	5.65985	0.2644009	0.18589169	3.0406240	21	12 11.8	20.0
445850	2012	FF ₆₃	16.3	X	316.44681	65.68900	48.11839	12.00282	0.1817862	0.18375456	3.0641543	21	12 29.6	19.8
445851	2012	FC ₇₅	15.7	X	292.98379	82.04605	30.10670	13.27802	0.0711770	0.17601923	3.1532808	21	11 24.5	20.0
445852	2012	FU ₈₁	15.4	X	37.16837	7.64024	49.59262	16.12985	0.0567835	0.18881027	3.0092087	21	—	—
445853	2012	GH ₃₂	15.8	X	297.19658	295.60422	189.45671	13.71237	0.1873464	0.17908088	3.1172376	21	12 8.2	19.7
445854	2012	HT ₂₀	18.0	X	49.79253	224.56875	198.02048	23.89682	0.0439925	0.39401406	1.8427294	21	—	—
445855	2012	HG ₄₂	15.8	X	288.91361	63.90508	43.08913	10.04029	0.1974945	0.17114178	3.2129110	21	10 29.6	19.8
445856	2012	HD ₅₆	16.6	X	288.98766	278.45546	214.58041	4.93026	0.2199013	0.17801906	3.1296208	21	11 29.5	20.4
445857	2012	MR ₆	17.5	X	92.06209	106.58286	246.68227	18.36699	0.0961757	0.37833553	1.8931935	21	—	—
445858	2012	OL	17.5	X	327.63524	146.47637	302.69589	19.33208	0.0749263	0.36604118	1.9354535	21	—	—
445859	2012	SX ₄₆	18.3	X	301.29120	169.22381	184.83890	2.84211	0.1128712	0.31523960	2.1381699	21	7 5.5	20.2
445860	2012	TC ₅₁	18.2	X	205.60230	52.40714	349.41606	5.11793	0.1161259	0.29592269	2.2302345	21	5 7.7	21.4
445861	2012	TU ₁₀	17.8	X	145.69199	246.25591	211.90683	6.06922	0.0960840	0.28983563	2.2613521	21	5 19.4	20.7
445862	2012	TO ₅₄	17.5	X	140.67869	176.40117	316.33983	5.01693	0.0975087	0.29641852	2.2277468	21	7 1.1	20.5
445863	2012	TS ₅₇	18.2	X	179.80675	67.04093	9.01978	3.33394	0.0873478	0.29462329	2.2267872	21	5 27.0	21.1
445864	2012	TH ₆₆	18.0	X	214.78466	35.74591	30.67131	4.83911	0.1198200	0.30040116	2.2080131	21	6 22.7	21.1
445865	2012	TC ₆₉	18.7	X	259.39392	206.89159	190.29884	1.84033	0.1207685	0.30883527	2.1676282	21	7 5.5	21.1
445866	2012	TN ₈₇	18.4	X	148.75599	61.54628	24.02146	4.59135	0.1341309	0.28794185	2.2712565	21	5 7.8	21.5
445867	2012	TD ₁₂₀	18.4	X	80.39903	250.04612	323.10515	4.21925	0.0431392	0.31137738	2.1558143	21	7 29.8	20.6
445868	2012	TQ ₁₄₉	18.9	X	303.48693	92.29398	243.44695	1.87639	0.2023189	0.30952574	2.1644034	21	5 24.5	21.2
445869	2012	TU ₁₅₅	18.4	X	149.32215	22.72357	79.55840	1.85099	0.1454865	0.29428656	2.2384931	21	6 1.9	21.6
445870	2012	TS ₁₆₈	18.6	X	271.34209	5.25792	13.05673	1.68462	0.1839344	0.30822085	2.1705079	21	6 14.9	21.4
445871	2012	TZ ₁₉₃	18.5	X	308.10129	191.77517	160.07980	0.97575	0.1475416	0.31346545	2.1462300	21	7 8.6	20.2
445872	2012	TU ₂₀₃	18.1	X	340.74948	342.73025	306.47418	5.08835	0.1046978	0.30483588	2.1865462	21	6 4.5	20.2
445873	2012	TB ₂₄₆	18.5	X	267.18743	245.09718	137.87547	2.94645	0.0668943	0.30945380	2.1647388	21	7 4.3	21.0
445874	2012	TS ₂₅₅	17.7	X	149.71233	198.67464	261.68440	3.62865	0.0858243	0.29190179	2.2506686	21	5 25.4	20.7
445875	2012	TA ₂₈₄	17.8	X	28.93851	20.66610	184.47667	4.68165	0.1162197	0.29065370	2.2571070	21	4 27.9	19.6
445876	2012	UQ ₂₆	17.5	X	101.64529	178.58189	286.03511	6.13740	0.0538766	0.27995171	2.3142697	21	3 20.4	20.3
445877	2012	UT ₄₅	18.5	X	289.77249	207.65352	154.51500	2.49871	0.1487559	0.31085010	2.1582515	21	6 22.6	20.8
445878	2012	UH ₅₆	18.5	X	292.66438	93.99997	249.55189	3.26681	0.1773601	0.30652777	2.1784930	21	5 24.2	21.0
445879	2012	UG ₉₁	18.2	X	336.95701	255.38609	39.20535	3.46172	0.1855098	0.30679052	2.1772490	21	5 24.8	19.8
445880	2012	UF ₉₉	18.5	X	315.20473	321.52340	39.91167	0.69507	0.0972161	0.31663567	2.1318803	21	8 17.1	20.1
445881	2012	UN ₁₁₆	18.3	X	283.83972	8.90679	8.47704	3.26096	0.1536662	0.31305147	2.1481217	21	7 6.6	20.5
445882	2012	UL ₁₂₄	17.9	X	92.79414	230.96941	268.95425	5.54829	0.1028008	0.28115377	2.3076686	21	5 7.8	20.5
445883	2012	UR ₁₃₃	18.1	X	289.73611	325.62066	51.90230	3.52233	0.1170844	0.31285481	2.1490218	21	7 24.1	20.3
445884	2012	UZ ₁₄₉	17.9	X	164.58680	184.82817	266.70614	3.04584	0.0968408	0.29214025	2.2494437	21	5 31.9	20.9
445885	2012	VO ₁₆₃	18.2	X	337.11785	311.82777	16.57809	4.20463	0.1656431	0.31473267	2.1404651	21	8 2.2	19.5
445886	2012	VZ	17.7	X	149.98299	145.00983	305.27552	6.20036	0.0677128	0.28995483	2.2607324	21	5 7.6	20.7
445887	2012	VL ₁₀	18.1	X	122.71069	183.37537	275.60458	2.50565	0.1881496	0.27748978	2.3279379	21	5 3.5	21.4
445888	2012	VJ ₁₆	18.2	X	231.09368	121.06493	274.95609	4.63293	0.1358884	0.29694212	2.2251272	21	5 28.2	21.2
445889	2012	VB ₁₇	17.8	X	147.96188	55.47407	15.36395	2.50004	0.1938326	0.27831860	2.3233139	21	4 23.7	21.3
445890	2012	VA ₁₈	18.3	X	129.07847	2.63654	90.21359	4.76664	0.1658857	0.27784418	2.3259579	21	5 2.2	21.5
445891	2012	VU ₂₄	18.9	X	274.51330	162.36014	234.54242	1.93218	0.1820973	0.31269742	2.1497429	21	7 16.4	21.1
445892	2012	VS ₃₄	18.2	X	252.07627	271.95450	124.86037	3.43650	0.1705737	0.30377913	2.1916141	21	6 19.1	21.1
445893	2012	VC ₃₉	18.6	X	272.35140	233.91409	164.31697	1.45505	0.1980976	0.30952679	2.1643985	21	7 12.8	21.2
445894	2012	VJ ₄₂	17.5	X	215.94751	171.31947	241.39808	6.38288	0.0757296	0.29308312	2.2464166	21	6 7.9	20.3
445895	2012	VD ₄₄	17.6	X	324.90352	48.24658	219.34102	6.21257	0.1020948	0.29198301	2.2502511	21	4 3.4	20.1
445896	2012	VY ₅₇	18.1	X	136.84548	36.63169	55.38635	7.04980	0.0523002	0.28337138	2.2956132	21	4 25.4	21.0
445897	2012	VP ₇₃	18.0	X	132.19011	334.83498	83.15733	4.21797	0.1337525	0.27035108	2.3687395	21	3 17.3	21.1
445898	2012	VD ₈₁	18.1	X	203.09219	246.92919	172.03385	6.95113	0.0872449	0.29478530	2.2359676	21	6 1.6	21.2
445899	2012	VA ₈₂	17.5	X	303.42318	258.71385	53.13139	6.60973	0.1456935	0.29507029	2.2345276	21	4 30.2	19.9
445900	2012	VH ₈₂	17.7	X	320.43239	61.87569	276.22787	6.47027	0.2940408	0.31381648	2.1446292	21	6 10.7	19.1
445901	2012	VE ₈₅	18.3	X	256.68269	248.89830	91.15538	1.32856	0.1266824	0.29033129	2.2587777	21	4 12.6	21.4
445902	2012	VA ₈₇	17.5	X	203.49872	166.09600	268.58113	5.97828	0.0319387	0.29796947	2.2200097	21	6 25.8	19.9
445903	2012	VH ₁₀₅	17.8	X	137.80832	120.68192	40.87778	5.47391	0.0855682	0.30258065	2.1973974	21	8 9.1	20.7
445904	2012	VY ₁₀₅	18.6	X	164.00054	166.03111	239.45249	6.11307	0.1459788	0.27832847	2.3232590	21	4 1.0	22.1
445905	2012	VW ₁₆	17.8	X	190.92122	73.41022	312.51433	1.91557	0.1590965	0.27931528	2.3177838	21	4 4.2	21.5
445906	2012	WO ₂₅	18.1	X	215.67018	86.13897	347.92191	4.26034	0.1297545	0.30027944	2.2086098	21	7 4.4	21.3
445907	2012	WQ ₂₇	15.7	X	20.55215	132.09866	255.05150	21.04928	0.0284161	0.22432203	2.6825928	21	12 19.3	19.3
445908	2012	WE ₃₅	17.9	X	213.39947	350.45746	54.76322	8.01986	0.1208509	0.29181319	2.2511241	21	5 22.6	21.1
445909	2012	XN ₃₂	18.4	X	163.76341	33.48378	109.08835	1.19123	0.1291289	0.30080276	2.2060474	21	8 11.7	21.6
445910	2012	XO ₃₂	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>
445921 2012 XQ ₉₅	17.6	X	1.26411	326.62193	170.68698	3.52830	0.1510736	0.24528988	2.5274523	21	—	—
445922 2012 XF ₁₀₆	17.2	X	46.02238	90.29975	74.42962	4.32523	0.1218774	0.26045892	2.4283423	21	4 4.6	19.6
445923 2012 XB ₁₁₃	17.7	X	181.01358	124.64714	312.44115	4.99979	0.1219365	0.28829703	2.2693907	21	5 30.8	21.0
445924 2012 XN ₁₁₇	16.7	X	143.62608	335.80873	332.84860	13.62531	0.1516673	0.23415492	2.6069569	21	—	—
445925 2012 XU ₁₁₉	16.6	X	17.53189	120.64654	306.71507	13.76144	0.0478950	0.22466364	2.6798729	21	—	—
445926 2012 XD ₁₂₀	17.4	X	121.67343	23.32844	81.47569	8.72239	0.1789442	0.27005887	2.3704479	21	5 12.4	20.7
445927 2012 XB ₁₂₄	18.0	X	95.43037	312.99145	185.78109	6.64888	0.1299673	0.27618265	2.3352773	21	5 17.8	20.8
445928 2012 XY ₁₃₈	17.0	X	349.15763	303.20080	179.81410	9.64038	0.1159415	0.23885004	2.5726804	21	—	—
445929 2012 XD ₁₄₅	17.9	X	104.62384	38.86171	40.38423	1.94575	0.1518530	0.25821178	2.4424106	21	3 13.2	20.8
445930 2013 AR ₄	17.7	X	3.37571	224.60143	239.78765	1.68674	0.0827757	0.23232548	2.6206246	21	—	—
445931 2013 AA ₆	18.1	X	204.88999	357.96496	86.57274	3.26747	0.1206999	0.29706399	2.2245186	21	7 7.1	21.1
445932 2013 AN ₁₁	18.3	X	156.17311	4.61879	114.41177	3.52791	0.1378654	0.28523873	2.2855833	21	7 1.9	21.7
445933 2013 AJ ₁₅	16.8	X	302.62765	291.47668	218.48427	13.26503	0.1341213	0.23016994	2.6369607	21	—	—
445934 2013 AX ₂₄	17.7	X	87.80179	356.98339	88.87366	2.17641	0.1524340	0.25922993	2.4360112	21	2 25.2	20.2
445935 2013 AE ₃₃	16.4	X	340.25277	96.82176	93.83925	14.03897	0.1068715	0.24461493	2.5320993	21	1 19.6	19.5
445936 2013 AQ ₃₃	17.1	X	14.64208	249.26582	291.87052	5.88272	0.0416290	0.26449835	2.4035550	21	2 27.0	19.9
445937 2013 AR ₃₅	18.1	X	202.47622	93.64141	325.86767	5.52441	0.1893110	0.28568884	2.2831820	21	5 28.1	21.8
445938 2013 AY ₃₉	17.0	X	322.76742	175.21621	302.44254	6.91930	0.0682672	0.21862004	2.7290369	21	—	—
445939 2013 AG ₄₃	16.9	X	34.49810	201.91209	12.74758	3.82476	0.0556546	0.26992183	2.3712502	21	5 19.5	19.5
445940 2013 AE ₄₄	16.8	X	28.27293	141.99330	298.67629	13.53416	0.1962870	0.23315022	2.6144409	21	—	—
445941 2013 AK ₅₀	16.5	X	161.44517	212.90810	139.48786	11.25773	0.1858248	0.25216786	2.4812826	21	1 30.0	20.2
445942 2013 AM ₅₇	17.3	X	65.75672	342.38756	97.35379	3.50008	0.1244294	0.24418799	2.5350499	21	1 9.1	19.8
445943 2013 AT ₅₇	17.0	X	344.28564	78.09087	96.24184	5.90043	0.1078386	0.24126861	2.5554585	21	1 3.8	20.1
445944 2013 AN ₆₁	17.8	X	178.96407	14.76903	0.81515	5.21196	0.1125802	0.26448427	2.4036403	21	3 11.0	21.2
445945 2013 AN ₆₄	18.3	X	159.04549	108.30724	301.43445	3.85949	0.1801753	0.26914392	2.3758171	21	4 5.2	22.1
445946 2013 AS ₆₉	17.4	X	187.74627	28.93872	5.25667	6.96117	0.1287712	0.27252705	2.3561140	21	4 11.2	20.9
445947 2013 AR ₇₀	17.5	X	203.49395	278.23705	117.66837	7.30037	0.1205014	0.27374392	2.3491265	21	5 3.9	21.1
445948 2013 AU ₇₀	17.3	X	321.64904	44.67887	126.20688	3.82884	0.1114661	0.23149068	2.6269212	21	—	—
445949 2013 AX ₇₀	17.0	X	296.81377	206.10773	304.21359	2.73549	0.1260905	0.21886383	2.7270099	21	—	—
445950 2013 AU ₇₄	17.3	X	94.49911	109.59959	34.24463	12.01134	0.1809367	0.26947794	2.3738535	21	5 28.6	20.4
445951 2013 AS ₇₅	17.8	X	201.17155	301.99353	102.06621	6.76109	0.1022025	0.27515993	2.3410603	21	5 11.6	21.2
445952 2013 AR ₇₈	17.4	X	178.95051	132.69536	275.92982	12.61578	0.1550938	0.27253563	2.3560646	21	4 18.4	21.3
445953 2013 AA ₈₄	17.8	X	38.24666	169.30974	6.20976	2.05821	0.1280822	0.26098664	2.4250677	21	4 3.6	20.1
445954 2013 AL ₈₆	17.9	X	193.80867	130.11754	299.86361	6.07855	0.0848262	0.28359713	2.2943948	21	6 4.8	21.2
445955 2013 AS ₈₈	17.3	X	73.50821	96.71991	52.63552	3.15731	0.1374942	0.26239399	2.4163887	21	4 30.8	19.8
445956 2013 AK ₈₉	17.0	X	135.82326	36.26242	13.31546	4.80380	0.0753402	0.25605014	2.4561377	21	3 3.8	20.2
445957 2013 AM ₈₉	17.3	X	232.42277	303.67347	96.67862	9.62228	0.2461713	0.29055890	2.2575979	21	5 29.7	21.0
445958 2013 AR ₉₀	17.5	X	112.85498	10.74812	52.00945	5.20781	0.1729301	0.25586419	2.4573275	21	3 7.7	20.7
445959 2013 AJ ₉₇	17.8	X	101.02325	150.26564	294.13035	5.49317	0.0906670	0.25467673	2.4649600	21	3 2.6	20.9
445960 2013 AW ₉₉	17.1	X	340.46290	203.59549	22.70338	6.65805	0.0726612	0.26017173	2.4301289	21	3 12.7	19.9
445961 2013 AR ₁₀₂	16.0	X	157.58336	300.87448	317.56593	11.78326	0.1169771	0.21235896	2.7824176	21	12 21.9	20.6
445962 2013 AW ₁₀₄	16.5	X	352.21260	172.60111	325.90774	12.37768	0.0817137	0.22839946	2.6505703	21	—	—
445963 2013 AG ₁₁₂	17.7	X	102.48435	13.48701	89.64772	2.14414	0.1271416	0.25982462	2.4322928	21	4 8.1	20.6
445964 2013 AW ₁₁₅	17.3	X	45.61371	56.95217	104.11383	5.68338	0.1405601	0.25608180	2.4559352	21	4 1.8	19.7
445965 2013 AY ₁₁₅	16.7	X	236.19632	279.03144	323.52545	9.00730	0.0984588	0.22619546	2.6677602	21	—	—
445966 2013 AE ₁₂₂	17.3	X	324.82850	179.30235	349.97271	3.62762	0.1290986	0.23268325	2.6179377	21	—	—
445967 2013 AN ₁₂₅	17.7	X	160.39473	127.39923	358.76410	7.84367	0.0952789	0.28538262	2.2848150	21	7 16.8	21.0
445968 2013 AX ₁₂₈	17.0	X	35.41465	154.81842	325.25491	4.83296	0.2433475	0.23744588	2.5828130	21	1 10.2	18.8
445969 2013 AP ₁₃₀	18.0	X	156.73087	88.79136	6.45505	5.98995	0.1166978	0.27544617	2.3394381	21	5 28.7	21.4
445970 2013 AV ₁₃₂	17.6	X	125.27498	308.81327	151.54758	2.78587	0.1539583	0.26597240	2.3946663	21	5 6.7	20.8
445971 2013 BZ ₇	17.0	X	175.49166	350.65224	318.35471	13.02179	0.0870579	0.23780565	2.5802073	21	—	—
445972 2013 BE ₉	17.3	X	192.68278	64.79719	309.46793	10.57102	0.0945524	0.26572611	2.3961457	21	3 17.1	20.9
445973 2013 BO ₁₄	16.7	X	186.97171	201.65377	323.36147	8.58968	0.0426249	0.18448313	3.0560815	21	9 25.8	21.2
445974 2013 BJ ₁₈	20.3	X	160.22056	159.59602	90.84264	3.71067	0.3637481	0.54865907	1.4777501	21	—	—
445975 2013 BM ₂₁	18.0	X	140.96592	136.72581	307.11813	3.43019	0.1956960	0.27129869	2.3632205	21	5 3.4	21.6
445976 2013 BV ₂₁	16.7	X	199.59801	283.07507	226.46398	5.44998	0.1026969	0.21959359	2.7209649	21	—	—
445977 2013 BD ₂₄	17.5	X	202.26255	86.16058	393.34581	6.57953	0.0932319	0.26961477	2.3730502	21	4 4.6	21.1
445978 2013 BD ₃₄	18.0	X	210.85331	302.90587	132.69195	5.94878	0.1571441	0.29121295	2.2542164	21	6 29.0	21.3
445979 2013 BE ₃₅	18.0	X	115.13520	183.64448	276.32732	1.15015	0.1588475	0.26608684	2.3939797	21	4 23.0	21.2
445980 2013 BL ₄₃	17.5	X	114.34356	31.90322	73.25361	3.29598	0.1637201	0.26574141	2.3960538	21	5 1.2	20.6
445981 2013 BS ₄₄	16.7	X	91.47617	143.49502	253.82249	13.07621	0.0409263	0.23700223	2.5860351	21	—	—
445982 2013 BV ₄₆	16.6	X	176.06534	154.57052	99.62619	13.11624	0.1085021	0.21410119	2.7673027	21	—	—
445983 2013 BY ₄₆	17.5	X	139.26648	24.14172	51.51222	4.48917	0.1019764	0.26458820	2.4030109	21	4 3.7	20.5
445984 2013 BB ₅₅	17.5	X	19.46408	147.22201	322.80601	6.88391	0.1437938	0.23258349	2.6186862	21	—	—
445985 2013 BY ₅₉	16.7	X	273.14415	148.70572	88.90210	6.15371	0.0898374	0.23621034	2.5918117	21	—	—
445986 2013 BB ₆₀	17.8	X	162.12099	53.19484	357.90769	6.05628	0.1137931	0.26423631	2.4051438	21	4 6.2	21.1
445987 2013 BA ₆₉	18.1	X	144.06512	113.30669	341.00916	4.91338	0.1991806	0.27315261	2.3525154	21	5 20.4	21.8
445988 2013 BJ ₇₁	17.1	X	87.29571	96.05695	310.88164	14.32480	0.1170764	0.24272492	2.5452267	21	1 1.4	20.1
445989 2013 BE ₇₇	17.9	X	132.20908	40.96176	359.77271	1.57291	0.1992064	0.25499792	2.4628897	21	3 3.2	21.4
445990 2013 BY ₇₈	18.1	X	223.68360	71.68784	339.12942	3.31327	0.0653483	0.28101967	2.3084027	21	6 15.9	21.0
445991 2013 CZ ₁	16.1	X	115.46964	332.25347	270.25653	8.35723	0.0464965	0.18822902	3.0154005	21	10 10.3	20.7
445992 2013 CW ₂	17.0	X	138.54332	165.57096	284.19316	4.92753	0.1001447	0.26652086	2.3913799	21	4 28.5	20.3
445993 2013 CY ₄	17.8	X	123.37016	212.52404	188.25260	2.67894	0.0891780	0.24768752	2.5111152	21	2 5.6	20.9
445994 2013 CD ₁₂	16.2	X	114.67663	239.57835	346.42470	9.27345	0.1658784	0.17649189				

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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>
446001 2013 CD ₂₃	15.9 ^m	X	148.61564	207.14156	145.06209	19.61779	0.0556345	0.22809022	2.6529655	21	1 6.4	19.8
446002 2013 CE ₂₆	16.9	X	0.28193	318.44076	155.33922	8.66204	0.0229266	0.22680779	2.6629565	21	—	—
446003 2013 CZ ₂₆	17.7	X	52.16470	208.02247	246.80202	2.41068	0.0951777	0.23992117	2.5650175	21	1 5.9	20.6
446004 2013 CO ₂₉	16.4	X	32.52807	177.86160	131.62736	12.43392	0.0699567	0.18188693	3.0850939	21	10 1.3	20.6
446005 2013 CO ₃₄	17.4	X	74.50941	295.23569	155.82794	10.28411	0.1517755	0.24333271	2.5409867	21	2 11.9	20.1
446006 2013 CR ₃₄	17.0	X	337.92909	182.06802	338.52292	6.66345	0.1943805	0.22861822	2.6488792	21	—	—
446007 2013 CC ₃₅	16.9	X	281.35186	327.80249	210.14744	4.29250	0.1297280	0.21814862	2.7329671	21	—	—
446008 2013 CP ₃₇	16.4	X	32.20042	235.47474	251.77582	13.60696	0.1087218	0.24112229	2.5564922	21	1 13.3	19.4
446009 2013 CB ₃₉	17.2	X	288.17252	226.59111	298.38727	5.33659	0.0791170	0.22288191	2.6941359	21	—	—
446010 2013 CB ₄₀	16.6	X	220.56483	26.55357	331.43077	23.77317	0.2943022	0.27421927	2.3464109	21	3 16.8	21.2
446011 2013 CJ ₄₁	17.5	X	344.11650	346.20278	154.74613	5.40296	0.0834054	0.23162364	2.6259158	21	—	—
446012 2013 CY ₄₆	16.8	X	19.03380	59.93094	3.15252	9.01727	0.0155859	0.21590405	2.7518760	21	—	—
446013 2013 CW ₄₇	16.3	X	61.94195	314.81732	146.62183	11.54021	0.1272219	0.23748093	2.5825589	21	2 3.2	19.1
446014 2013 CN ₅₁	16.3	X	214.47277	102.92156	143.51711	15.77192	0.1207408	0.21635786	2.7480266	21	—	—
446015 2013 CS ₅₂	16.5	X	310.26595	208.03110	8.88572	13.28655	0.0981574	0.24240546	2.5474624	21	1 18.8	20.2
446016 2013 CK ₅₃	16.5	X	67.20700	143.70083	300.46617	14.33532	0.0639856	0.23961996	2.5671666	21	1 14.5	19.6
446017 2013 CP ₅₃	17.5	X	354.46865	220.55094	278.26244	0.71548	0.1161092	0.23054275	2.6341171	21	—	—
446018 2013 CS ₅₃	16.5	X	72.18041	292.81643	328.94738	10.49028	0.0578209	0.17507697	3.1645846	21	9 13.6	20.9
446019 2013 CX ₅₃	17.6	X	341.90627	334.59220	188.40607	1.96741	0.1188424	0.23222713	2.6213645	21	—	—
446020 2013 CH ₅₆	17.9	X	124.47281	295.10513	164.69676	2.38248	0.1544522	0.26396806	2.4067730	21	5 4.9	21.3
446021 2013 CC ₅₇	16.5	X	236.84786	304.64004	251.48549	11.25969	0.1264430	0.21191730	2.7862822	21	12 26.9	20.4
446022 2013 CV ₅₇	17.0	X	31.94842	194.16009	273.64952	6.71949	0.1632701	0.23714313	2.5850107	21	—	—
446023 2013 CL ₆₀	17.2	X	39.50032	134.30431	330.18466	7.19010	0.1778295	0.23535629	2.5980779	21	—	—
446024 2013 CV ₆₄	17.4	X	14.53110	275.70962	191.80807	3.80856	0.0633479	0.22902704	2.6457261	21	—	—
446025 2013 CQ ₆₅	17.6	X	112.87788	199.34745	302.54758	4.07789	0.0665105	0.27041433	2.3683701	21	5 25.1	20.6
446026 2013 CY ₆₈	17.6	X	336.60183	327.24524	179.38039	4.49042	0.0483491	0.22867855	2.6484133	21	—	—
446027 2013 CD ₇₃	18.3	X	148.78840	204.91922	220.25666	0.56555	0.1616799	0.26518852	2.3993830	21	4 15.6	21.9
446028 2013 CH ₇₄	16.7	X	322.85806	250.46785	234.08675	4.31051	0.1140897	0.21742557	2.7390227	21	—	—
446029 2013 CR ₇₈	17.2	X	147.85867	212.74191	227.47581	5.62869	0.1025137	0.26535620	2.3983720	21	4 28.6	20.4
446030 2013 CQ ₇₈	17.0	X	356.31266	299.15544	180.21163	5.82608	0.1388197	0.22701250	2.6613554	21	—	—
446031 2013 CC ₈₁	17.2	X	295.46740	296.69958	206.55399	7.11779	0.1734693	0.21312221	2.7757707	21	—	—
446032 2013 CY ₈₃	16.8	X	185.03316	153.93738	95.65715	3.36551	0.0960140	0.20508590	2.8478177	21	—	—
446033 2013 CQ ₈₆	17.4	X	27.71105	118.01692	16.72344	3.58248	0.1022671	0.23685322	2.5871197	21	1 21.9	20.2
446034 2013 CA ₉₀	17.4	X	22.88414	317.38514	138.96138	8.35294	0.1222716	0.23080017	2.6321581	21	—	—
446035 2013 CV ₉₄	17.5	X	326.63421	154.13181	305.41688	3.23787	0.0328021	0.21002839	2.8029631	21	—	—
446036 2013 CK ₉₅	17.7	X	22.85421	152.58959	305.65957	2.08552	0.0359441	0.22788267	2.6545761	21	—	—
446037 2013 CN ₉₅	16.9	X	271.10593	28.89672	160.56712	2.32500	0.1736596	0.21616963	2.7496216	21	—	—
446038 2013 CQ ₁₀₀	16.5	X	157.88718	23.99240	144.79491	10.77196	0.0410814	0.17541909	3.1604686	21	9 1.0	21.2
446039 2013 CW ₁₀₂	16.6	X	101.87098	235.94765	106.96739	6.30593	0.1265048	0.21693568	2.7431447	21	—	—
446040 2013 CS ₁₀₃	16.3	X	36.74416	155.63887	131.14860	16.81532	0.0536284	0.17394745	3.1782692	21	9 3.5	20.7
446041 2013 CH ₁₀₅	16.2	X	53.50536	324.18283	332.56451	2.79229	0.1994687	0.18099500	3.0952210	21	10 26.3	20.4
446042 2013 CU ₁₀₅	17.6	X	183.78452	197.79572	65.97920	0.47711	0.0223218	0.21552798	2.7550762	21	—	—
446043 2013 CP ₁₀₆	17.4	X	290.55749	203.11822	338.33673	3.02013	0.0374731	0.22319429	2.6916215	21	—	—
446044 2013 CR ₁₀₆	17.8	X	146.10517	33.71538	10.28736	1.13865	0.1776285	0.25623453	2.4549592	21	3 19.2	21.3
446045 2013 CG ₁₀₇	15.8	X	103.35046	291.44124	331.23229	15.83348	0.1942983	0.18246265	3.0786010	21	10 30.9	21.1
446046 2013 CU ₁₀₈	17.0	X	328.44357	141.88692	359.18185	4.16163	0.0410267	0.22160825	2.7044488	21	—	—
446047 2013 CX ₁₁₁	17.5	X	90.69946	9.77638	116.71250	5.90760	0.1547489	0.26015732	2.4302186	21	4 30.2	20.5
446048 2013 CB ₁₁₄	17.2	X	355.16983	211.80489	264.42706	3.26341	0.1209577	0.22475967	2.6791095	21	—	—
446049 2013 CA ₁₁₅	17.2	X	319.85121	121.87375	6.40948	3.71801	0.0479857	0.21441410	2.7646096	21	—	—
446050 2013 CP ₁₁₈	17.5	X	154.25477	281.41556	144.47391	2.52280	0.1959816	0.26511863	2.3998046	21	4 25.9	21.3
446051 2013 CU ₁₁₈	17.4	X	31.74596	329.32324	146.09809	5.33377	0.1788246	0.23733201	2.5836391	21	—	—
446052 2013 CL ₁₂₀	17.3	X	108.81673	265.76538	150.81623	7.35822	0.1747063	0.24418355	2.5350806	21	2 21.7	20.5
446053 2013 CT ₁₂₀	17.6	X	158.27715	319.56554	128.90692	1.81525	0.1454212	0.26893387	2.3707540	21	5 25.1	21.2
446054 2013 CX ₁₂₁	17.1	X	356.49339	294.42590	155.26051	3.72579	0.1685328	0.21694718	2.7430478	21	—	—
446055 2013 CL ₁₂₂	17.3	X	267.88592	207.18977	341.35304	2.38671	0.1246172	0.21461325	2.7628991	21	—	—
446056 2013 CD ₁₂₄	16.8	X	57.65510	83.58498	146.54140	14.00778	0.1018687	0.22867636	2.6484302	21	—	—
446057 2013 CE ₁₂₄	16.8	X	250.88249	79.77442	345.57106	10.92133	0.1112353	0.21762465	2.7373521	21	—	—
446058 2013 CE ₁₂₆	15.9	X	130.19247	241.92850	345.27124	12.95019	0.2067395	0.17519807	3.1631261	21	10 14.8	21.3
446059 2013 CU ₁₃₂	17.1	X	45.55034	144.02239	311.13302	11.03149	0.0322697	0.23769595	2.5810011	21	—	—
446060 2013 CQ ₁₃₄	16.3	X	314.27861	160.59340	0.78930	14.48028	0.1183494	0.22037884	2.7144975	21	—	—
446061 2013 CP ₁₃₅	17.2	X	299.45402	132.33329	47.28544	4.04920	0.1229130	0.22174813	2.7033114	21	—	—
446062 2013 CU ₁₃₅	17.1	X	150.68203	92.42790	1.67081	13.72710	0.0985312	0.27536729	2.3398848	21	5 15.0	20.7
446063 2013 CX ₁₃₆	16.5	X	252.11774	248.88274	19.48055	14.20647	0.0354777	0.23887715	2.5724858	21	1 23.2	20.4
446064 2013 CC ₁₃₇	17.6	X	338.80177	316.64481	198.22810	1.55425	0.1661147	0.22795522	2.6540128	21	—	—
446065 2013 CS ₁₄₈	17.5	X	81.87159	108.52191	23.68500	4.18590	0.1828657	0.25773424	2.4454266	21	4 26.6	20.1
446066 2013 CR ₁₅₀	16.7	X	98.19777	288.46104	1.54696	6.95470	0.0494352	0.19099059	2.9862632	21	11 19.9	21.1
446067 2013 CP ₁₅₁	16.9	X	274.25041	144.65960	34.29463	4.25797	0.0369024	0.21246002	2.7815353	21	—	—
446068 2013 CQ ₁₅₁	17.1	X	350.57505	62.69061	53.86025	2.94600	0.0568711	0.218881491	2.7274163	21	—	—
446069 2013 CO ₁₅₅	17.2	X	4.39704	107.18847	341.00170	4.32037	0.0458517	0.21573934	2.7532764	21	—	—
446070 2013 CV ₁₅₆	16.4	X	336.46675	117.46548	342.21444	8.87760	0.0793134	0.21275618	2.7789534	21	—	—
446071 2013 CC ₁₅₉	16.5	X	259.60520	130.41126	345.29340	11.18211	0.1079659	0.19009229	2.9956636	21	10 11.9	20.9
446072 2013 CE ₁₅₉	16.8	X	32.66974	259.66398	159.85871	5.75852	0.0129994	0.21221745	2.7836545	21	—	—
446073 2013 CC ₁₆₂	17.2	X	47.48297	275.62494	156.11232	0.81440	0.1137891	0.22538509	2.6741510	21	—	—
446074 2013 CV ₁₆₂	16.7	X	122.33409	182.19332	69.07481	0.41027	0.1550572	0.18022649	3.1040137	21	11 7.5	21.7
446075 2013 CR ₁₆₆	17.2	X	262.03553									

ELEMENTS AND OPPOSITION DATES IN 2021

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2021 JULY 5.0 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>
446081 2013 CW ₁₇₂	16.3	X	183.12225	5.34864	159.57240	12.52408	0.0703802	0.17974648	3.1095375	21	9 25.1	21.0
446082 2013 CQ ₁₇₄	16.8	X	297.06442	333.36204	175.20300	4.97194	0.1030103	0.21179966	2.7873139	21	—	—
446083 2013 CT ₁₇₇	17.1	X	338.99736	314.01616	177.28975	2.70805	0.1025981	0.22338669	2.6900758	21	—	—
446084 2013 CX ₁₇₈	17.3	X	332.58586	67.79772	94.71144	3.23006	0.0204665	0.23136717	2.6278560	21	—	—
446085 2013 CW ₁₇₉	16.9	X	142.75553	47.34319	16.80868	6.37756	0.0475692	0.25724026	2.4485563	21	3 27.3	19.9
446086 2013 CZ ₁₇₉	17.9	X	75.63899	357.92074	129.50405	2.48056	0.1463026	0.25479842	2.4641751	21	4 5.6	20.6
446087 2013 CN ₁₈₃	16.2	X	150.79336	254.73086	350.28302	6.03748	0.1676541	0.19043482	2.9920705	21	11 24.7	21.2
446088 2013 CK ₁₈₅	16.7	X	65.32258	43.80276	47.59113	11.57707	0.0931749	0.24392607	2.5368643	21	1 25.4	19.8
446089 2013 CD ₁₈₆	17.5	X	81.04681	242.71613	198.43198	3.47381	0.1637841	0.24520643	2.5280257	21	2 9.9	20.2
446090 2013 CF ₁₈₆	17.1	X	72.76007	189.79766	251.16309	4.46753	0.1282106	0.24135763	2.5548301	21	1 22.8	19.9
446091 2013 CV ₁₈₆	16.4	X	268.40118	9.39443	179.35892	8.15184	0.1242411	0.21322226	2.7749022	21	—	—
446092 2013 CE ₁₈₇	17.6	X	352.51044	100.83543	46.43574	5.35031	0.1704626	0.23335752	2.6128923	21	—	—
446093 2013 CX ₁₈₈	17.0	X	89.40873	332.67021	79.16871	4.26046	0.0666130	0.23465281	2.6032680	21	1 5.3	20.3
446094 2013 CN ₁₉₀	17.1	X	75.59219	326.81492	178.50954	6.27108	0.0762636	0.25876674	2.4389173	21	4 20.1	19.9
446095 2013 CR ₁₉₀	16.7	X	299.24606	167.98698	325.42600	8.96163	0.0915554	0.21028107	2.8007172	21	—	—
446096 2013 CC ₁₉₁	16.6	X	96.23507	45.15688	62.93823	15.45302	0.0911340	0.25797676	2.4438938	21	4 7.8	19.9
446097 2013 CW ₁₉₇	16.8	X	122.46960	74.62683	161.69450	14.91688	0.1678559	0.17992012	3.1075365	21	10 25.2	22.0
446098 2013 CO ₂₀₆	17.0	X	222.99084	110.90792	172.12308	11.87349	0.1016640	0.23165352	2.6256900	21	1 3.4	21.3
446099 2013 CP ₂₀₈	17.0	X	20.20993	225.09183	225.82347	1.40636	0.0628142	0.22045922	2.7138377	21	—	—
446100 2013 CN ₂₁₅	16.3	X	39.58695	354.92338	310.00476	17.33416	0.0418145	0.18167160	3.0875312	21	9 17.7	20.8
446101 2013 CC ₂₁₆	17.1	X	115.58535	81.48034	269.90199	5.08081	0.0303253	0.22159973	2.7045181	21	—	—
446102 2013 DN ₂	17.0	X	267.37489	278.37563	252.80656	4.16739	0.0561717	0.21358470	2.7717621	21	—	—
446103 2013 DC ₃	15.6	X	102.12912	292.12717	318.49454	25.30421	0.1846440	0.17808880	3.1288036	21	10 6.7	21.0
446104 2013 DF ₃	17.6	X	25.56866	317.69925	167.78691	5.13545	0.1097904	0.23394902	2.6084863	21	1 4.4	20.6
446105 2013 DN ₄	17.9	X	167.48215	40.54071	349.96752	3.26188	0.1909952	0.25802005	2.4436204	21	3 23.7	21.8
446106 2013 DQ ₄	16.8	X	298.47841	162.57915	347.84438	4.96794	0.0642479	0.21558514	2.7545892	21	—	—
446107 2013 DR ₄	16.6	X	208.38031	230.70705	9.89832	2.87237	0.1412055	0.21024526	2.8010352	21	—	—
446108 2013 DU ₄	17.4	X	342.86300	108.18715	11.32145	2.11359	0.0857872	0.22140969	2.7060655	21	—	—
446109 2013 DG ₅	17.7	X	175.73837	42.79902	11.97079	2.22544	0.2127525	0.27001078	2.3707294	21	4 30.1	21.5
446110 2013 DT ₆	16.9	X	21.37259	343.09194	132.07536	4.99669	0.0966359	0.23271750	2.6176808	21	—	—
446111 2013 DJ ₁₁	17.0	X	13.02061	139.17809	350.88691	12.37580	0.0920747	0.23508250	2.6000948	21	—	—
446112 2013 DM ₁₃	16.7	X	278.83177	332.07757	201.89356	8.71734	0.0846329	0.21622537	2.7491491	21	—	—
446113 2013 DT ₁₅	16.0	X	81.25584	343.84865	292.96572	9.52666	0.1913969	0.17876522	3.1209061	21	10 29.4	20.9
446114 2013 EK ₁	16.4	X	342.00563	321.63509	178.39534	12.67999	0.1087769	0.22423519	2.6832854	21	—	—
446115 2013 EZ ₁	17.7	X	203.69925	306.77205	103.30483	2.14566	0.1738352	0.27348395	2.3506149	21	5 19.3	21.3
446116 2013 EL ₆	17.2	X	307.26426	263.97014	319.63544	2.06710	0.0713771	0.23616863	2.5921168	21	1 24.9	20.7
446117 2013 ES ₆	17.1	X	358.89487	235.42501	190.82093	1.52597	0.0196458	0.20486194	2.8498928	21	—	—
446118 2013 ER ₇	17.1	X	203.08750	332.59713	246.27657	1.03500	0.0533316	0.20171276	2.8794782	21	12 23.5	21.1
446119 2013 EW ₈	16.8	X	123.28043	55.49738	222.94374	0.82385	0.0475614	0.19519995	2.9431761	21	12 6.5	21.0
446120 2013 EB ₉	17.2	X	299.95290	11.10541	189.21187	3.05534	0.0469892	0.22786808	2.6546894	21	—	—
446121 2013 EH ₉	16.3	X	330.16507	70.92552	321.50825	8.65117	0.0995543	0.18681832	3.0305613	21	10 7.5	20.2
446122 2013 EG ₁₂	17.0	X	222.77312	198.59831	356.73159	5.15874	0.0678631	0.20084729	2.8877443	21	12 15.4	21.1
446123 2013 EW ₁₉	16.8	X	149.17525	131.92998	165.26259	4.61123	0.0439440	0.21003231	2.8029282	21	—	—
446124 2013 EN ₂₁	16.4	X	118.83692	0.30252	266.52184	3.98890	0.1207610	0.18634682	3.0356712	21	11 20.7	21.2
446125 2013 EM ₂₂	16.2	X	156.60469	332.17502	232.81036	1.28126	0.0310775	0.18127468	3.0920365	21	10 13.2	20.5
446126 2013 EF ₃₀	15.7	X	86.81004	209.80915	51.13820	2.39512	0.1283385	0.17098521	3.2148720	21	10 12.3	20.5
446127 2013 EJ ₃₂	17.3	X	20.22314	117.61101	8.63063	7.73290	0.1682088	0.23174823	2.6249746	21	—	—
446128 2013 EW ₃₂	15.9	X	200.32179	196.33338	329.11515	15.12336	0.1734744	0.18483715	3.0521781	21	9 29.6	21.1
446129 2013 EC ₃₃	16.4	X	52.40964	114.35029	315.90206	10.43432	0.0533814	0.22319215	2.6916387	21	—	—
446130 2013 ES ₃₃	15.9	X	283.28809	358.05549	178.74360	14.62213	0.0678072	0.21320623	2.7750413	21	—	—
446131 2013 EB ₃₅	16.5	X	39.81770	346.51867	28.05205	7.85937	0.0681488	0.19774045	2.9179132	21	12 29.2	20.6
446132 2013 EL ₄₇	17.6	X	18.83516	293.99840	177.80586	4.90287	0.1538494	0.22818669	2.6522178	21	—	—
446133 2013 EV ₄₈	16.9	X	93.55696	127.08039	211.35961	1.39743	0.0733086	0.20309611	2.8663881	21	—	—
446134 2013 EF ₅₁	16.1	X	90.59708	273.68435	31.80595	10.43935	0.0840470	0.18636898	3.0354306	21	12 3.1	20.6
446135 2013 ET ₅₅	16.3	X	126.80071	65.65205	170.46105	11.20624	0.0457597	0.18018136	3.1045320	21	10 20.5	20.9
446136 2013 EV ₆₀	16.7	X	322.34994	91.06949	5.50208	1.67389	0.0487841	0.20144385	2.8820402	21	12 25.5	20.3
446137 2013 EB ₆₅	15.6	X	117.13493	203.14834	79.04075	11.21692	0.0726331	0.18905745	3.0065852	21	12 5.1	20.0
446138 2013 EW ₇₀	16.8	X	263.18840	153.47429	353.40714	1.40258	0.0048219	0.19940034	2.9016974	21	12 13.9	20.7
446139 2013 EA ₇₂	16.6	X	199.79478	178.42079	71.45975	3.81968	0.0266337	0.21013793	2.8019890	21	—	—
446140 2013 EG ₇₈	16.9	X	41.04622	265.32855	142.83926	4.48228	0.0952599	0.21335428	2.7737574	21	—	—
446141 2013 EZ ₇₉	17.7	X	182.96641	32.19697	45.70407	3.89212	0.2129362	0.27485742	2.3427776	21	6 4.8	21.7
446142 2013 EN ₈₀	16.1	X	65.62011	300.93252	11.08427	12.75701	0.0867683	0.18458459	3.0549616	21	11 10.7	20.6
446143 2013 EW ₈₃	17.3	X	21.82802	91.01820	58.38433	4.99707	0.1900177	0.23786913	2.5797482	21	1 26.7	19.6
446144 2013 EE ₈₆	16.4	X	163.21343	68.93690	141.22455	13.92172	0.0382311	0.18550710	3.0448252	21	11 1.8	21.1
446145 2013 EB ₉₃	15.5	X	183.58231	190.48348	317.93628	16.48489	0.1377995	0.17612151	3.1520598	21	8 28.9	20.7
446146 2013 EV ₉₄	16.9	X	64.92749	346.54681	22.49886	2.72909	0.0589098	0.20431617	2.8549657	21	—	—
446147 2013 EA ₉₅	16.9	X	108.11705	61.62361	356.26964	8.49632	0.1322643	0.23816263	2.7576284	21	2 17.9	20.2
446148 2013 ED ₉₇	16.9	X	78.78910	235.94907	148.40667	5.40631	0.1338619	0.21454198	2.7635110	21	—	—
446149 2013 ED ₉₉	17.1	X	233.20385	198.52567	25.56521	3.04601	0.0280540	0.20935806	2.8089430	21	—	—
446150 2013 EO ₁₀₂	16.2	X	267.16487	290.25349	151.07997	10.10125	0.0521082	0.17395317	3.1781995	21	9 20.6	20.7
446151 2013 EW ₁₀₄	16.6	X	271.45014	357.83054	119.21554	2.48655	0.1024207	0.19106137	2.9855256	21	11 3.9	20.5
446152 2013 EZ ₁₀₄	16.1	X	156.34652	331.00585	210.44822	4.22717	0.0728001	0.16987846	3.2288200	21	9 13.1	20.9
446153 2013 EP ₁₀₆	16.9	X	87.76561	300.44291	97.81829	5.98044	0.1167647	0.21871173	2.7282741	21	—	—
446154 2013 EB ₁₀₉	16.3	X	68.47161	53.90378	35.70581	14.83545	0.0725694	0.23055661	2.6340115	21	1 31.8	19.8
446155												

ELEMENTS AND OPPOSITION DATES IN 2021

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2021 JULY 5.0 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>
446161 2013 <i>EH</i> ₁₁₈	16.2	X	10.46964	302.31602	170.37922	11.53633	0.0926313	0.21903417	2.7255959	21	—	—
446162 2013 <i>EC</i> ₁₁₉	16.6	X	160.33327	143.11151	177.87963	5.93083	0.0385464	0.22248590	2.6973319	21	—	—
446163 2013 <i>EE</i> ₁₁₉	16.1	X	209.20583	211.74696	339.26208	10.61414	0.1541074	0.18883224	3.0089753	21	11 11.2	21.1
446164 2013 <i>ED</i> ₁₂₀	16.7	X	193.89786	261.77971	2.23133	4.15220	0.0257037	0.20931505	2.8093278	21	—	—
446165 2013 <i>EF</i> ₁₂₂	16.3	X	146.99115	71.78586	174.02597	12.71944	0.1203831	0.18514545	3.0487889	21	11 24.8	21.3
446166 2013 <i>EX</i> ₁₂₂	16.6	X	337.33399	256.79604	166.90552	2.03534	0.0483672	0.19303608	2.9651299	21	12 3.5	20.3
446167 2013 <i>EB</i> ₁₂₃	15.7	X	43.62300	325.72023	7.07074	27.17732	0.0965168	0.17956021	3.1116876	21	11 1.5	20.4
446168 2013 <i>EO</i> ₁₂₃	17.9	X	139.94207	52.59093	54.89575	4.46908	0.1588625	0.26313530	2.4118482	21	5 31.8	21.5
446169 2013 <i>EP</i> ₁₂₄	17.7	X	191.33033	16.23079	52.88066	6.89570	0.2023834	0.27127612	2.3633516	21	5 31.6	21.6
446170 2013 <i>EQ</i> ₁₂₄	15.6	X	68.90854	205.09324	104.90313	8.18050	0.1333386	0.17941082	3.1134147	21	11 23.0	20.1
446171 2013 <i>ED</i> ₁₂₅	16.5	X	273.12382	323.27307	157.37133	5.92629	0.0854319	0.19024868	2.9940217	21	11 13.7	20.5
446172 2013 <i>ED</i> ₁₂₆	16.3	X	68.27990	220.05064	105.86769	4.60493	0.0500885	0.18435617	3.0574845	21	11 30.0	20.7
446173 2013 <i>EC</i> ₁₂₈	15.7	X	96.82034	205.93211	72.24425	11.79671	0.0274989	0.18465978	3.0541323	21	11 5.5	20.1
446174 2013 <i>EX</i> ₁₃₃	17.3	X	139.31762	319.14837	1.56584	1.67772	0.0593005	0.20366505	2.8610474	21	—	—
446175 2013 <i>ER</i> ₁₄₃	17.4	X	153.48113	146.84261	147.71370	3.87540	0.0681074	0.21414081	2.7669613	21	—	—
446176 2013 <i>FD</i> ₂	16.6	X	166.60080	200.31979	40.91015	11.24729	0.0532944	0.19258223	2.9697866	21	12 7.0	21.1
446177 2013 <i>FN</i> ₂	16.0	X	152.95550	89.95177	115.15992	10.73372	0.0541349	0.17647938	3.1477972	21	10 14.5	20.9
446178 2013 <i>FC</i> ₆	16.2	X	110.53035	195.19718	130.42130	17.21425	0.1014060	0.20141823	2.8822847	21	—	—
446179 2013 <i>FE</i> ₇	16.8	X	35.10858	298.52018	147.50247	5.38568	0.1355603	0.22042317	2.7141336	21	—	—
446180 2013 <i>FS</i> ₉	16.1	X	137.03423	222.65723	5.78071	10.45209	0.1489059	0.17526807	3.1622838	21	10 21.9	21.3
446181 2013 <i>FL</i> ₁₀	16.6	X	163.79342	4.25088	191.73034	0.74274	0.1050228	0.17649794	3.1475765	21	10 10.2	21.6
446182 2013 <i>FQ</i> ₁₁	17.1	X	13.44491	80.00601	2.38464	3.84533	0.0798743	0.21119040	2.7926720	21	—	—
446183 2013 <i>FR</i> ₁₁	16.2	X	170.29241	234.90206	346.58401	8.20136	0.0653132	0.18799519	3.0179003	21	11 15.2	20.8
446184 2013 <i>FZ</i> ₁₅	16.0	X	12.67362	156.87797	180.55467	22.33428	0.0826741	0.16969954	3.2310891	21	10 4.8	20.1
446185 2013 <i>FF</i> ₁₇	16.5	X	135.92469	21.06335	215.11665	2.21940	0.0842881	0.18090097	3.0962935	21	10 30.3	21.3
446186 2013 <i>FM</i> ₁₇	16.9	X	144.93906	100.71151	174.47121	1.99957	0.0233291	0.19509983	2.9441830	21	12 25.9	21.1
446187 2013 <i>FV</i> ₁₇	16.5	X	159.95027	126.20610	190.70919	5.84366	0.0069116	0.21455034	2.7634392	21	—	—
446188 2013 <i>FX</i> ₁₈	15.5	X	246.38817	34.27130	99.01558	11.81749	0.0292560	0.17875192	3.1210609	21	11 4.6	20.1
446189 2013 <i>FA</i> ₂₀	16.1	X	142.16947	151.09631	108.19514	3.15643	0.0551283	0.18760922	3.0220381	21	12 3.4	20.5
446190 2013 <i>FM</i> ₂₀	16.2	X	135.79957	148.49104	68.10877	3.41059	0.0741025	0.17196554	3.2026423	21	10 6.8	21.0
446191 2013 <i>FB</i> ₂₃	17.0	X	4.95388	120.10332	331.16959	0.64306	0.0520356	0.20960484	2.8067378	21	—	—
446192 2013 <i>FQ</i> ₂₅	16.7	X	358.52655	44.04323	69.67458	13.25763	0.1519129	0.22101582	2.7092795	21	—	—
446193 2013 <i>FZ</i> ₂₆	16.5	X	172.94882	53.43795	163.90205	6.07682	0.0796935	0.18420556	3.0591508	21	11 16.3	21.2
446194 2013 <i>FC</i> ₂₇	17.0	X	16.42449	9.31116	101.21855	12.01687	0.1388751	0.22441234	2.6818731	21	—	—
446195 2013 <i>FJ</i> ₂₇	16.2	X	99.81524	295.36228	12.80379	9.60524	0.0638524	0.18867958	3.0105981	21	12 15.5	20.8
446196 2013 <i>GL</i>	16.8	X	29.57796	330.69600	161.26538	7.58474	0.1284638	0.23456403	2.6039248	21	1 18.7	19.6
446197 2013 <i>GN</i>	16.2	X	68.20892	222.46040	88.76758	10.29838	0.0538278	0.17651705	3.1474939	21	11 13.5	20.7
446198 2013 <i>GS</i>	16.9	X	35.75857	328.91619	149.47853	8.46003	0.0355997	0.23172939	2.6251169	21	1 11.2	19.4
446199 2013 <i>GU</i> ₁	16.8	X	333.97437	231.53388	258.84202	3.22130	0.0182266	0.21077726	2.7963201	21	—	—
446200 2013 <i>GG</i> ₂	16.2	X	202.56135	311.27661	201.76389	8.03506	0.1680909	0.17556876	3.1586722	21	9 21.7	21.4
446201 2013 <i>GK</i> ₅	16.9	X	11.91777	65.07940	51.37882	5.67214	0.0662814	0.22118077	2.7079323	21	—	—
446202 2013 <i>GA</i> ₆	15.9	X	171.45716	58.55635	171.36667	12.22291	0.0323142	0.18974568	2.9993107	21	12 2.5	20.4
446203 2013 <i>GW</i> ₉	16.3	X	189.19157	172.94966	30.15567	9.35015	0.0622381	0.18639434	3.0351552	21	11 14.5	20.8
446204 2013 <i>GW</i> ₁₄	16.9	X	234.45892	56.59909	176.94971	4.42830	0.10104100	0.21211413	2.7845583	21	—	—
446205 2013 <i>GA</i> ₁₇	16.8	X	234.30343	100.96047	119.00908	1.50379	0.0144462	0.20843189	2.8172579	21	—	—
446206 2013 <i>GJ</i> ₁₇	16.0	X	152.99531	96.64899	152.70605	11.89209	0.0794540	0.18859516	3.0114964	21	12 4.9	20.8
446207 2013 <i>GD</i> ₂₄	16.1	X	83.57199	73.76135	217.99835	8.33658	0.0538047	0.17761122	3.1344099	21	11 5.8	20.5
446208 2013 <i>GE</i> ₂₄	16.3	X	282.39502	261.66817	252.17930	4.11565	0.0383021	0.20119604	2.8844062	21	—	—
446209 2013 <i>GH</i> ₂₉	17.1	X	347.07587	272.41722	213.61982	2.68429	0.1452129	0.21748806	2.7384980	21	—	—
446210 2013 <i>GF</i> ₃₁	16.5	X	103.08486	48.36039	9.69631	10.18192	0.1429087	0.23244326	2.6197393	21	2 17.2	19.9
446211 2013 <i>GA</i> ₃₆	17.2	X	37.09221	301.05548	205.50795	7.36055	0.1432115	0.23803216	2.5785702	21	2 19.9	19.9
446212 2013 <i>GD</i> ₄₁	16.4	X	26.14933	86.91898	24.33105	14.62484	0.0492606	0.21968971	2.7201712	21	—	—
446213 2013 <i>GL</i> ₄₅	16.5	X	125.46099	118.71317	109.42121	1.35927	0.0626102	0.17388278	3.1790571	21	10 8.2	21.2
446214 2013 <i>GD</i> ₅₀	16.1	X	214.39427	347.07444	186.81501	16.39906	0.1825984	0.17881680	3.1203058	21	10 29.2	21.2
446215 2013 <i>GN</i> ₅₀	16.0	X	327.54292	285.67642	148.39275	8.96683	0.0785498	0.19098516	2.9863197	21	12 3.6	19.9
446216 2013 <i>GU</i> ₅₀	17.1	X	39.89025	93.82143	26.15211	11.56941	0.1466200	0.23147062	2.6270729	21	1 27.6	20.0
446217 2013 <i>GU</i> ₅₂	16.5	X	24.95924	287.54151	80.08772	5.04865	0.0790342	0.18099976	3.0951667	21	11 29.4	20.6
446218 2013 <i>GA</i> ₅₆	16.6	X	186.71515	118.95457	61.95309	1.91109	0.0914142	0.17862960	3.1224855	21	10 15.9	21.3
446219 2013 <i>GB</i> ₅₆	16.5	X	187.08565	109.37525	83.70053	2.45104	0.1241737	0.18194929	3.0843890	21	10 29.6	21.4
446220 2013 <i>GG</i> ₅₆	16.5	X	199.10399	6.21872	171.77461	5.47323	0.0838347	0.18084194	3.0969672	21	10 26.6	21.1
446221 2013 <i>GQ</i> ₅₈	16.7	X	160.05091	232.81377	167.87111	4.10645	0.1905961	0.24406794	2.5358812	21	3 31.5	20.7
446222 2013 <i>GL</i> ₆₀	16.8	X	194.72684	181.17103	18.56024	1.65821	0.0329871	0.18442906	3.0566789	21	11 19.7	21.3
446223 2013 <i>GJ</i> ₆₄	16.2	X	129.70125	105.56682	120.69295	5.71503	0.0663030	0.17085132	3.2165513	21	10 12.5	21.1
446224 2013 <i>GT</i> ₆₉	16.2	X	354.18906	29.11388	61.27035	2.96883	0.0281862	0.20358993	2.8617511	21	—	—
446225 2013 <i>GF</i> ₇₅	17.2	X	78.90967	237.11086	197.27893	2.19899	0.0707048	0.22484107	2.6784628	21	1 21.8	20.5
446226 2013 <i>GP</i> ₇₇	16.4	X	240.67713	321.79748	183.36509	11.00661	0.1229172	0.18198771	3.0839549	21	10 28.3	20.9
446227 2013 <i>GM</i> ₈₇	15.6	X	307.30361	234.30316	190.61383	15.50042	0.0625252	0.17193683	3.2029988	21	10 21.1	19.9
446228 2013 <i>GW</i> ₈₈	16.3	X	169.69172	27.15332	192.33533	9.83639	0.2028548	0.17593427	3.1542958	21	11 11.7	21.7
446229 2013 <i>GH</i> ₉₄	16.1	X	140.54800	28.70492	209.76373	9.27613	0.0814357	0.17899586	3.1182246	21	11 6.9	20.8
446230 2013 <i>GQ</i> ₁₀₀	16.0	X	329.86171	318.21497	102.55343	2.84875	0.0251418	0.18092216	3.0960517	21	11 17.9	20.2
446231 2013 <i>GA</i> ₁₀₆	16.4	X	351.50242	75.98441	19.09359	6.23468	0.0382603	0.20447834	2.8534560	21	—	—
446232 2013 <i>GR</i> ₁₀₆	17.1	X	327.60236	149.84119	359.53688							

ELEMENTS AND OPPOSITION DATES IN 2021

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2021 JULY 5.0 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>
446241 2013 HW ₄	15.6 ^m	X	141.34130	174.48872	121.56442	12.66870	0.0240533	0.20053034	2.8907863	21	—	—
446242 2013 HY ₈	15.6	X	9.68036	233.17887	141.60351	11.60629	0.0346480	0.17857962	3.1230681	21	11 16.2	20.0
446243 2013 HY ₉	15.9	X	56.78691	241.22154	108.94043	11.25381	0.0457329	0.18686133	3.0300963	21	12 15.5	20.2
446244 2013 HE ₁₇	15.5	X	266.12558	267.57441	234.14459	18.34263	0.0216374	0.18152756	3.0891643	21	12 5.5	19.8
446245 2013 HG ₃₃	16.5	X	34.50704	134.30984	273.61423	6.53544	0.0667352	0.20027379	2.8932545	21	—	—
446246 2013 HT ₃₅	16.0	X	315.68553	112.77050	256.75755	7.71838	0.0684656	0.15852034	3.3812663	21	8 17.2	20.6
446247 2013 HS ₄₂	15.7	X	167.27934	9.29681	219.37259	22.21116	0.0609261	0.18198060	3.0840352	21	11 22.7	20.4
446248 2013 HW ₄₈	17.3	X	316.66309	131.65152	327.06095	3.32271	0.0141470	0.18891789	3.0080657	21	12 18.5	21.5
446249 2013 HG ₅₅	16.0	X	172.67460	332.34347	219.20952	8.60895	0.0447623	0.17439094	3.1728784	21	10 13.4	20.6
446250 2013 HU ₅₇	16.5	X	217.81751	308.46270	225.21685	9.08808	0.0480560	0.18366976	3.0650974	21	11 13.6	20.8
446251 2013 HX ₅₈	15.9	X	25.15168	130.17342	225.12838	12.22847	0.1086828	0.17661526	3.1461824	21	11 17.4	19.9
446252 2013 HP ₆₉	16.5	X	154.20000	204.99453	16.20435	10.35761	0.0493412	0.17602347	3.1532301	21	10 28.1	21.2
446253 2013 HM ₇₀	16.1	X	81.94939	78.77728	213.12820	11.46725	0.0732092	0.17314270	3.1881097	21	11 6.3	20.6
446254 2013 HY ₇₀	16.3	X	39.73413	157.56161	215.09673	8.45494	0.0501391	0.18804073	3.0174131	21	12 21.5	20.6
446255 2013 HB ₈₀	17.5	X	29.65129	272.73775	222.74932	2.61958	0.0655841	0.22761148	2.6566843	21	1 27.5	20.6
446256 2013 HA ₈₇	17.6	X	355.60355	126.39661	359.37989	1.32238	0.1710200	0.21904658	2.7254930	21	—	—
446257 2013 HL ₉₇	16.1	X	32.70453	141.80346	208.73951	9.58879	0.0443012	0.17889384	3.1194099	21	11 14.5	20.3
446258 2013 HO ₉₇	16.6	X	8.55791	150.47472	208.53366	8.72165	0.0400503	0.17388097	3.1790792	21	10 22.3	21.0
446259 2013 HE ₁₀₃	17.0	X	278.71912	86.91060	16.65673	1.42051	0.0914039	0.18258596	3.0772146	21	10 26.8	21.0
446260 2013 HS ₁₀₉	16.9	X	239.66737	91.45118	44.67783	0.98638	0.1215038	0.18119411	3.0929531	21	10 14.7	21.3
446261 2013 HU ₁₄₄	17.2	X	114.67916	100.88061	321.66571	2.76362	0.1611396	0.23568991	2.5956256	21	3 7.5	20.5
446262 2013 JU ₁₀	16.4	X	73.07309	69.01994	51.95896	22.75183	0.0636817	0.23437845	2.6052992	21	3 27.9	20.2
446263 2013 JC ₃₃	15.5	X	89.52659	143.39375	131.77575	17.14733	0.0685271	0.17634814	3.1493587	21	10 31.8	20.4
446264 2013 JK ₅₀	16.3	X	172.13620	8.31417	210.17786	7.84345	0.1011925	0.17732672	3.1377615	21	11 14.4	21.1
446265 2013 JQ ₅₈	17.4	X	38.67164	305.58817	221.99194	1.30993	0.1745486	0.24150391	2.5537984	21	3 29.9	19.6
446266 2013 KV	15.8	X	207.02186	161.16049	52.77780	12.79699	0.1463444	0.18568389	3.0428922	21	12 8.6	20.6
446267 2013 KD ₁₄	15.7	X	6.25815	321.35443	79.98413	16.22818	0.0445703	0.17713711	3.1400002	21	12 11.0	20.0
446268 2013 LD ₃₂	16.1	X	220.20254	1.87026	178.42257	16.69686	0.1313176	0.17798236	3.1300509	21	11 16.6	21.1
446269 2013 ST ₂₀	17.7	X	206.38454	272.48016	249.48292	18.12358	0.0771618	0.37851463	1.8926963	21	11 10.1	19.8
446270 2013 YM ₁₂₃	17.8	X	29.48934	72.35732	134.16746	8.00414	0.1201843	0.29953673	2.2122951	21	5 3.2	19.8
446271 2014 AP ₄₆	17.4	X	121.54023	189.45578	93.03251	23.93699	0.0395752	0.36655215	1.9336545	21	—	—
446272 2014 BA ₆	18.5	X	39.10318	260.35358	312.88370	2.86749	0.0747229	0.30629006	2.1796200	21	5 24.5	20.6
446273 2014 BM ₆	18.0	X	287.45226	159.16752	82.38878	1.76811	0.1734533	0.27032475	2.3688933	21	1 5.7	21.6
446274 2014 BM ₂₂	17.8	X	309.55603	58.07577	159.83117	2.45874	0.1512388	0.27046167	2.3680938	21	1 1.7	21.0
446275 2014 BP ₂₄	18.0	X	314.22939	47.00150	211.52098	5.50008	0.1316376	0.28625330	2.2801796	21	2 28.5	20.8
446276 2014 CC ₃	18.2	X	272.60571	125.67318	5.08820	19.46030	0.0951104	0.36396406	1.9428102	21	—	—
446277 2014 CW ₁₃	17.6	X	341.50229	261.50916	169.28631	22.52268	0.1209553	0.37100997	1.9181342	21	—	—
446278 2014 DT ₂	17.4	X	139.45965	266.99232	8.34650	18.82184	0.0634286	0.36616728	1.9350092	21	—	—
446279 2014 DZ ₁₅	17.0	X	262.65280	88.25265	122.68847	8.95659	0.1423477	0.24539556	2.5267266	21	—	—
446280 2014 DM ₂₁	17.6	X	293.43802	319.28733	182.92769	24.00779	0.1111294	0.36728209	1.9310916	21	—	—
446281 2014 DH ₃₃	18.2	X	16.41632	186.17894	25.71883	4.06528	0.0912391	0.29106161	2.2549977	21	4 12.5	20.2
446282 2014 DW ₃₃	17.5	X	323.01575	166.60432	120.10896	6.42523	0.1918716	0.29437435	2.2380480	21	4 18.3	19.8
446283 2014 DB ₃₅	18.3	X	327.81472	214.48137	36.70282	1.42198	0.1643405	0.28314679	2.2968270	21	3 7.9	20.6
446284 2014 DW ₃₈	17.8	X	311.79122	217.98791	12.46075	2.05355	0.1614527	0.27117326	2.3639492	21	1 19.8	20.8
446285 2014 DU ₄₁	17.4	X	219.61785	152.79052	121.67397	3.71440	0.2707729	0.24262333	2.5459371	21	—	—
446286 2014 DK ₅₇	17.7	X	257.65763	164.03027	139.05889	5.55218	0.1494980	0.27324649	2.3519766	21	2 24.2	21.3
446287 2014 DF ₅₉	18.1	X	16.94635	203.54271	74.42720	4.64573	0.0927073	0.31074995	2.1587152	21	8 2.1	20.0
446288 2014 DW ₆₈	17.8	X	100.48395	86.65429	155.14830	12.22080	0.3517669	0.18405602	3.0608076	21	10 26.7	23.3
446289 2014 DT ₇₀	17.8	X	26.52262	205.57352	24.64309	5.34959	0.0869291	0.29539828	2.2328733	21	5 29.8	19.8
446290 2014 DJ ₇₂	17.9	X	15.10179	57.35042	140.59589	6.31045	0.0820484	0.28045922	2.3114770	21	3 24.0	20.2
446291 2014 DN ₁₀₀	17.3	X	266.57978	183.51299	86.37919	4.31511	0.1766462	0.26364209	2.4087564	21	1 21.9	21.0
446292 2014 DK ₁₀₆	17.7	X	233.24267	50.64029	179.69452	3.76644	0.1425473	0.23979486	2.5659182	21	—	—
446293 2014 DJ ₁₀₈	17.4	X	185.63619	83.82793	163.62189	3.73914	0.1305715	0.22857593	2.6492059	21	—	—
446294 2014 DG ₁₀₉	16.9	X	305.38765	223.77510	26.68909	9.13251	0.2058945	0.26377901	2.4079228	21	2 5.8	20.4
446295 2014 DC ₁₁₁	17.1	X	177.48169	100.09670	126.25047	10.51219	0.1644728	0.21845377	2.7304215	21	12 2.7	21.6
446296 2014 DE ₁₂₁	17.9	X	283.61893	88.19449	168.05876	2.26954	0.1826732	0.26686755	2.3893083	21	1 19.3	21.4
446297 2014 DE ₁₂₁	18.3	X	353.52049	257.59251	313.15455	1.53825	0.1717583	0.27883359	2.3204524	21	2 18.8	20.4
446298 2014 DU ₁₃₉	17.0	X	227.12407	40.81947	165.55402	13.70148	0.1308486	0.22994655	2.6386682	21	12 31.5	21.0
446299 2014 EH ₄	16.2	X	105.68001	73.79091	149.37998	11.65306	0.2377117	0.18375703	3.0641269	21	9 30.1	21.3
446300 2014 EE ₇	17.6	X	277.77811	146.51968	152.62713	6.69854	0.1593686	0.28008705	2.3135241	21	3 10.6	20.7
446301 2014 ED ₈	18.0	X	325.34643	239.84192	16.91044	1.61139	0.1530065	0.28178739	2.3042080	21	3 14.1	20.6
446302 2014 EJ ₁₀	18.3	X	323.56675	252.48984	326.45484	1.57883	0.1509937	0.27125825	2.3634554	21	1 20.6	21.2
446303 2014 EC ₁₄	17.5	X	245.48019	59.29418	207.83458	1.95004	0.1690527	0.25578202	2.4578538	21	—	—
446304 2014 EN ₁₄	17.9	X	333.83382	129.05604	158.93335	7.07081	0.1578989	0.29852904	2.2172347	21	5 15.4	20.0
446305 2014 EH ₁₇	17.0	X	239.81157	68.51471	132.45215	12.63532	0.1323148	0.23086903	2.6316346	21	—	—
446306 2014 EB ₂₈	18.0	X	348.76265	255.93108	339.95974	3.73828	0.1514088	0.28750954	2.2735327	21	3 20.9	20.0
446307 2014 EB ₄₇	17.5	X	355.84165	83.88217	108.06857	6.32636	0.1131579	0.27470971	2.3436174	21	2 6.6	19.8
446308 2014 EN ₄₉	17.6	X	71.31267	4.99062	101.05406	2.18768	0.1442115	0.27129477	2.3632433	21	2 21.6	19.8
446309 2014 EL ₅₁	17.5	X	348.30430	97.14468	137.77508	6.68188	0.1246843	0.28184947	2.3038696	21	3 27.5	19.7
446310 2014 FU ₆	17.0	X	332.91379	307.31785	105.07403	24.61870	0.0845134	0.35190726	1.9869361	21	12 25.0	18.6
446311 2014 FC ₁₀	17.5	X	200.56673	280.29040	0.60168	7.11868	0.1889480	0.24015475	2.5633541	21	—	—
446312 2014 FT ₁₂	18.3	X	41.05807	211.21044	322.12852	1.97603	0.0270867	0.28309227	2.2971219	21	3 26.9	21.0
446313 2014 FF ₁₅	17.9	X	339.92945	348.73470	210.69302	0.77449	0.1345362	0.26795747	2.3828250	21	1 20.0	20.5
446314 2014 FJ ₁₇	17.6	X	287.8042									

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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>
446321 2014 FH ₃₇	17.7	X	339.66984	50.05561	186.01053	2.17410	0.1832600	0.27180976	2.3602573	21	3 3.2	20.1
446322 2014 FM ₃₇	17.7	X	5.95372	166.38156	31.01866	2.61160	0.1731473	0.27145627	2.3623059	21	2 26.2	19.6
446323 2014 FJ ₄₁	17.3	X	223.19744	29.53576	181.27239	7.14141	0.2268431	0.21975976	2.7195932	21	12 19.2	21.6
446324 2014 FC ₄₉	17.1	X	282.99443	193.71901	347.24870	10.67279	0.1496913	0.23916797	2.5704000	21	—	—
446325 2014 FK ₅₀	16.8	X	224.71115	11.78078	229.67092	7.22413	0.1801319	0.23516194	2.5995092	21	—	—
446326 2014 FW ₆₃	17.8	X	34.22473	344.49932	202.77103	2.68983	0.0856075	0.28397252	2.2923724	21	4 8.1	19.8
446327 2014 FX ₆₃	17.5	X	322.28161	104.78255	153.19554	2.30516	0.1749893	0.27661906	2.3328205	21	3 8.3	19.9
446328 2014 FJ ₆₄	17.8	X	358.91183	270.20189	287.69732	2.60038	0.1135170	0.27292958	2.3537968	21	2 18.6	20.1
446329 2014 FP ₆₄	17.9	X	332.27145	119.86464	13.52315	20.73287	0.0866868	0.37849059	1.8927764	21	—	—
446330 2014 FW ₆₅	17.7	X	351.85749	152.00434	55.88637	3.06818	0.1404229	0.27260536	2.3556628	21	2 19.9	20.0
446331 2014 FY ₆₅	17.4	X	284.26159	200.58735	35.88947	7.06792	0.1359483	0.25571790	2.4582646	21	1 2.9	21.1
446332 2014 FB ₆₆	16.6	X	273.59779	130.63009	128.53109	13.02128	0.1189067	0.26024094	2.4296981	21	1 19.9	20.1
446333 2014 GT ₁	17.6	X	228.17905	272.97365	331.24557	3.16304	0.1985254	0.24076018	2.5590550	21	—	—
446334 2014 GN ₁₂	18.2	X	342.02145	94.68561	142.01336	2.28343	0.1585366	0.27752028	2.3277673	21	3 12.3	20.4
446335 2014 GF ₁₆	17.1	X	349.19009	333.47031	146.69718	5.17776	0.0804262	0.23735792	2.5834510	21	—	—
446336 2014 GQ ₁₆	16.1	X	106.58720	22.85514	190.67355	17.68016	0.1572214	0.17608611	3.1524823	21	9 6.4	21.1
446337 2014 GB ₂₉	16.2	X	54.71512	88.54676	202.74395	12.74972	0.2894083	0.170505683	3.1648273	21	11 3.9	20.7
446338 2014 GQ ₃₃	17.8	X	13.14591	187.92507	12.92005	2.26708	0.1625877	0.27367788	2.3495044	21	3 18.8	19.4
446339 2014 GS ₃₅	17.7	X	44.18075	341.62950	239.49644	2.37180	0.1281813	0.29187157	2.2508239	21	6 24.8	19.8
446340 2014 GT ₃₈	17.6	X	350.20563	81.98165	163.74923	6.44687	0.1538503	0.28486562	2.2875786	21	4 11.7	19.6
446341 2014 GR ₄₀	16.7	X	109.61208	51.95669	186.63329	27.20881	0.2936327	0.18359877	3.0658874	21	10 24.0	22.2
446342 2014 GE ₄₆	17.2	X	223.51981	119.79656	121.02556	5.53859	0.2371529	0.23007191	2.6377096	21	—	—
446343 2014 GE ₄₇	17.8	X	3.72385	87.41978	103.05052	3.30612	0.1391492	0.26795109	2.3828627	21	2 17.3	20.0
446344 2014 GA ₄₉	17.5	X	1.53844	265.80851	169.98294	22.43883	0.1152709	0.36672457	1.9330483	21	—	—
446345 2014 HA ₄	17.3	X	35.19024	216.72334	34.34428	5.43754	0.0833447	0.28228237	2.3015136	21	4 29.1	19.6
446346 2014 HQ ₅	18.2	X	31.58352	70.73539	87.12449	2.42236	0.1141289	0.27225900	2.3576603	21	2 21.3	20.4
446347 2014 HZ ₇	16.0	X	89.98460	85.93040	173.23329	16.50622	0.1208654	0.17850243	3.1239683	21	10 25.6	21.0
446348 2014 HF ₈	17.0	X	187.98290	92.49273	194.66944	12.58767	0.1579165	0.22987345	2.6392276	21	—	—
446349 2014 HM ₉	18.2	X	2.01429	71.32613	125.02972	2.15890	0.1282387	0.27007849	2.3703331	21	2 22.2	20.5
446350 2014 HJ ₁₀	17.2	X	92.87557	208.74715	95.67258	3.17683	0.0546256	0.20452179	2.8530519	21	12 6.2	21.2
446351 2014 HQ ₁₁	18.0	X	316.42374	126.45287	152.10857	2.42395	0.0877961	0.28312417	2.2969494	21	4 12.4	20.5
446352 2014 HB ₁₂	18.3	X	347.50805	41.47078	169.01014	2.50994	0.1371327	0.26796016	2.3828090	21	2 15.8	20.6
446353 2014 HN ₁₃	17.0	X	170.77784	320.48422	48.36269	9.82073	0.1243682	0.25656883	2.4528263	21	2 28.4	20.8
446354 2014 HS ₁₃	17.1	X	200.91172	306.20358	35.58182	8.54874	0.1806961	0.25650121	2.4532573	21	2 24.9	21.2
446355 2014 HT ₁₉	16.9	X	61.70017	60.33124	217.30744	6.62102	0.2207298	0.17728058	3.1383059	21	10 15.7	21.3
446356 2014 HP ₂₀	17.0	X	205.55916	351.40114	223.18348	7.97816	0.1350318	0.21563799	2.7541391	21	12 15.0	21.2
446357 2014 HG ₂₁	16.8	X	217.89424	297.47386	256.03955	3.05586	0.0404674	0.21392714	2.7688061	21	12 13.8	20.5
446358 2014 HM ₂₂	16.1	X	42.72260	216.35852	117.11047	18.07113	0.2694356	0.18359889	3.0658835	21	12 11.1	20.6
446359 2014 HL ₂₃	17.1	X	232.93936	109.01686	188.51623	13.62669	0.0931017	0.25787578	2.4445317	21	1 24.8	21.0
446360 2014 HA ₂₄	17.5	X	253.55246	354.63657	240.40770	2.67664	0.1258134	0.23963438	2.5670636	21	—	—
446361 2014 HB ₂₄	17.4	X	327.80289	337.54116	234.80555	3.41676	0.1553128	0.26493682	2.4009024	21	1 17.1	20.3
446362 2014 HW ₂₄	18.0	X	262.65130	33.72848	227.54951	1.10104	0.1502011	0.25369338	2.4713256	21	1 10.3	21.8
446363 2014 HU ₂₆	17.9	X	316.93604	60.46135	189.02794	4.61389	0.1035670	0.27023688	2.3694069	21	2 28.2	20.7
446364 2014 HH ₂₈	17.0	X	232.90763	358.12755	198.58415	14.27108	0.0974342	0.22157902	2.7046867	21	12 28.4	21.0
446365 2014 HG ₃₂	17.1	X	176.66002	108.41496	189.67704	1.81975	0.1939484	0.23031989	2.6358160	21	—	—
446366 2014 HR ₃₄	17.2	X	294.85091	33.18254	105.96755	5.95455	0.0546451	0.22249763	2.6972371	21	—	—
446367 2014 HW ₃₄	17.4	X	217.10167	166.11494	169.85570	6.52420	0.1612436	0.25859576	2.4399923	21	2 27.2	21.2
446368 2014 HX ₃₇	17.4	X	175.03238	241.10470	167.17981	7.14637	0.0957420	0.27720267	3.3295540	21	4 17.6	20.6
446369 2014 HW ₃₈	16.3	X	67.09955	119.71881	153.18553	6.17731	0.0953434	0.17980723	2.1088370	21	10 1.4	20.7
446370 2014 HC ₄₀	17.1	X	139.78217	114.40710	182.28036	8.79029	0.1470122	0.21345347	2.7728980	21	—	—
446371 2014 HE ₄₁	17.1	X	45.86594	248.42252	130.27476	5.28299	0.0823684	0.21450969	2.7637883	21	—	—
446372 2014 HO ₄₄	17.1	X	150.68178	245.07492	51.25114	4.07725	0.0676140	0.22559138	2.6725205	21	—	—
446373 2014 HS ₄₄	17.9	X	300.51261	65.57422	184.53874	2.25813	0.1460157	0.26333204	2.4106468	21	2 3.3	21.3
446374 2014 HH ₅₀	16.8	X	320.11526	353.76029	203.96150	11.95079	0.0200702	0.254313147	2.4684846	21	1 9.2	20.2
446375 2014 HP ₅₅	17.5	X	229.45385	119.08974	74.01664	3.64150	0.0605322	0.21947179	2.7219715	21	12 25.7	21.1
446376 2014 HP ₇₂	17.5	X	175.40881	206.06248	120.94849	2.78687	0.2120894	0.23861599	2.5743624	21	1 16.5	21.5
446377 2014 HK ₁₀₉	16.7	X	116.95606	155.72599	144.74417	6.78233	0.0255759	0.21260885	2.7802370	21	12 27.9	20.7
446378 2014 HK ₁₂₃	17.0	X	244.69128	295.15927	8.16791	8.57950	0.1182812	0.26123553	2.4235271	21	2 17.5	20.6
446379 2014 HJ ₁₂₈	17.3	X	264.15197	73.18860	113.67001	24.37638	0.0699634	0.36036593	1.9557210	21	—	—
446380 2014 HR ₁₃₁	17.0	X	228.29316	88.09562	115.58683	16.72069	0.1655509	0.21769510	2.7367615	21	12 23.8	21.0
446381 2014 HW ₁₃₆	17.1	X	20.33052	324.81477	144.82865	3.05239	0.0713905	0.24541315	2.5266059	21	—	—
446382 2014 HK ₁₃₈	17.6	X	333.61176	170.88489	73.45617	3.35546	0.1638573	0.27215374	2.3582681	21	3 10.9	20.1
446383 2014 HV ₁₃₈	17.5	X	30.65568	272.71364	162.22186	2.24908	0.0451726	0.23329993	2.6133223	21	—	—
446384 2014 HZ ₁₅₂	17.3	X	175.43674	8.75915	14.33751	5.48177	0.1827975	0.26190097	2.4194202	21	3 21.6	21.1
446385 2014 HQ ₁₅₃	17.1	X	73.58903	260.14407	59.74292	2.95887	0.0646434	0.20310746	2.8662813	21	12 3.4	21.0
446386 2014 HH ₁₅₅	16.2	X	51.24182	102.26055	197.32753	11.69486	0.1607512	0.18172033	3.0869792	21	10 23.4	20.3
446387 2014 HK ₁₅₉	16.6	X	57.93012	122.94930	175.69070	9.94853	0.1673464	0.18198140	3.0840262	21	11 1.9	21.0
446388 2014 HT ₁₆₂	17.7	X	355.01340	12.73080	180.02316	6.88048	0.0745941	0.26326388	2.4110628	21	2 11.3	20.5
446389 2014 HA ₁₆₉	17.6	X	198.72037	319.97372	334.69075	2.77855	0.0382238	0.24194468	2.5506958	21	—	—
446390 2014 HD ₁₇₅	16.3	X	23.26409	98.33626	248.09450	11.16621	0.0714437	0.18970118	2.9997797	21	10 30.2	20.4
446391 2014 HL ₁₇₅	16.9	X	220.80294	252.41580	359.60225	3.69731	0.1865291	0.22843658	2.6502832	21	—	—
446392 2014 HS ₁₇₅	16.9	X	235.58607	309.85385	336.42367	3.33167	0.2310415	0.24220367	2.5488771	21	1 16.3	21.2
446393 2014 HW ₁₇₅	17.7	X	76.01064	139.93161	351.63591	3.97627	0.1566138	0.27464950	2.3439599	21	4 8.5	20.0
446394 2014 HP ₁₇₆	16.9	X	177.14783	346.09341	264.							

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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>		
446401	2014	HW ₁₈₅	17.3	X	130.73716	217.93835	205.07136	8.26031	0.0537170	0.26144992	2.4222021	21	3 7.3	20.4
446402	2014	HV ₁₈₉	17.0	X	70.56387	160.94068	119.67081	2.12421	0.1221501	0.17895626	3.1186846	21	10 18.2	21.4
446403	2014	HB ₁₉₀	16.9	X	231.24112	333.98356	234.84401	3.73229	0.0543540	0.21876461	2.7278344	21	—	—
446404	2014	HT ₁₉₄	17.7	X	333.31109	41.46975	194.17621	8.53162	0.1766281	0.26800658	2.3825338	21	2 20.1	20.5
446405	2014	HY ₁₉₄	16.8	X	221.33461	260.08425	336.17689	7.78248	0.2006815	0.22664381	2.6642408	21	—	—
446406	2014	HD ₁₉₅	16.7	X	266.95606	45.91507	193.15348	3.11002	0.1173420	0.24202666	2.5501197	21	—	—
446407	2014	JN	16.4	X	211.59967	183.37514	59.67265	10.82045	0.1634648	0.22020253	2.7159463	21	—	—
446408	2014	JA ₁	16.2	X	127.25446	56.94571	148.21260	5.98268	0.1002795	0.17811209	3.1285309	21	9 15.9	20.9
446409	2014	JY ₁	17.8	X	272.24334	160.34016	186.31730	5.76515	0.1925501	0.28192826	2.3034404	21	5 2.9	21.0
446410	2014	JJ ₂	17.7	X	28.43160	32.27620	143.83529	3.54665	0.0592533	0.26721104	2.3872603	21	3 16.2	20.4
446411	2014	JF ₃	16.7	X	167.81130	260.81244	53.54087	15.85325	0.1253500	0.23017061	2.6369555	21	—	—
446412	2014	JP ₃	16.9	X	103.54909	167.90980	171.23212	6.29808	0.0358104	0.21680732	2.7442274	21	—	—
446413	2014	JU ₄	15.7	X	53.05759	231.15762	77.46934	16.77689	0.2377196	0.17718325	3.1394551	21	11 18.2	20.2
446414	2014	JM ₆	16.8	X	280.68302	16.52486	204.63271	7.87808	0.0958362	0.24141110	2.5544528	21	—	—
446415	2014	JD ₉	17.0	X	135.85129	36.65023	179.35314	3.96175	0.1896311	0.18690566	3.0296172	21	10 11.9	22.1
446416	2014	JS ₁₁	17.6	X	305.50550	170.64097	126.16192	2.16630	0.1827386	0.27321380	2.3521642	21	4 7.9	20.3
446417	2014	JV ₁₂	16.8	X	144.47485	82.60340	144.64779	3.27969	0.1365457	0.19227924	2.9729056	21	11 1.1	21.6
446418	2014	JQ ₁₄	16.4	X	171.42067	235.15384	79.59703	10.60655	0.1050555	0.23196264	2.6233567	21	—	—
446419	2014	JG ₁₆	16.3	X	115.31741	346.99849	211.30706	16.17782	0.1417548	0.17348788	3.1838795	21	8 23.5	21.5
446420	2014	JR ₂₀	18.3	X	33.02756	37.39501	127.33868	4.28859	0.1766535	0.27419618	2.3465426	21	3 6.3	20.1
446421	2014	JM ₂₂	16.9	X	86.76495	74.56491	174.25982	16.68222	0.2130914	0.17566907	3.1574697	21	10 9.2	21.8
446422	2014	JD ₂₃	17.0	X	304.07693	165.32584	86.09829	7.78514	0.1444128	0.25836187	2.4414646	21	2 13.6	20.4
446423	2014	JE ₂₆	16.8	X	200.39757	156.96572	156.79069	14.62555	0.0530908	0.24221711	2.5487829	21	1 14.0	20.7
446424	2014	JZ ₂₇	16.5	X	0.25687	260.66747	192.64750	21.59795	0.0663552	0.22692026	2.6620765	21	—	—
446425	2014	JC ₂₈	16.8	X	186.76938	158.17798	140.65653	13.93403	0.2635414	0.22541794	2.6738912	21	—	—
446426	2014	JV ₂₈	16.7	X	60.96415	165.36378	154.82836	5.65349	0.1451283	0.18332230	3.0689692	21	11 27.7	21.1
446427	2014	JC ₃₂	16.9	X	126.98742	129.97357	84.03334	4.56478	0.1211376	0.18203259	2.8034479	21	9 29.4	21.7
446428	2014	JH ₃₂	17.3	X	217.61887	40.74709	190.51019	4.98308	0.0945279	0.22217870	2.6998177	21	—	—
446429	2014	JE ₃₅	15.6	X	20.82929	262.22174	95.00829	11.83875	0.0127555	0.18827716	3.0148865	21	11 8.9	19.9
446430	2014	JG ₃₅	17.1	X	155.93870	212.61857	200.31037	7.00017	0.1089452	0.26113163	2.4241700	21	4 2.5	20.6
446431	2014	JH ₃₅	17.3	X	196.64557	158.35483	120.84214	5.83582	0.1390581	0.22358004	2.6885247	21	—	—
446432	2014	JA ₃₆	17.6	X	46.26153	34.02018	217.71920	6.58393	0.1909618	0.29938681	2.2129976	21	8 25.9	19.9
446433	2014	JH ₃₆	16.7	X	147.38708	88.50245	124.57222	1.85498	0.0861934	0.18970842	2.9997034	21	10 16.2	21.2
446434	2014	JK ₃₆	17.6	X	276.37396	350.68820	194.06129	4.93607	0.1077307	0.22999168	2.6383230	21	—	—
446435	2014	JX ₃₉	17.2	X	151.96740	143.71392	177.29521	6.49312	0.1332073	0.22364331	2.6880176	21	—	—
446436	2014	JY ₃₉	16.7	X	122.15096	304.70751	272.23248	0.59871	0.2007793	0.18618817	3.0373954	21	10 1.2	21.8
446437	2014	JD ₄₂	16.4	X	140.25499	61.03849	147.83661	8.66462	0.1568322	0.18959777	3.0012714	21	10 8.4	21.3
446438	2014	JH ₄₃	16.1	X	54.19139	220.20337	96.61420	12.15398	0.1606985	0.18070754	3.0985026	21	11 19.3	20.5
446439	2014	JT ₄₃	16.9	X	136.90270	193.37263	135.04823	6.25339	0.0769769	0.22209781	2.7004732	21	—	—
446440	2014	JU ₄₄	16.9	X	277.81092	332.57867	219.10318	12.23134	0.1369857	0.23459465	2.6036982	21	—	—
446441	2014	JA ₄₅	17.2	X	178.31955	7.54229	218.75747	1.26637	0.0333045	0.20710239	2.8293020	21	12 7.2	21.2
446442	2014	JG ₄₅	17.8	X	355.78387	246.03564	45.06162	2.36204	0.0980217	0.29584733	2.2306133	21	7 10.6	19.7
446443	2014	JZ ₄₅	17.5	X	234.39507	7.58721	243.93791	1.86965	0.1325503	0.23549299	2.5970724	21	—	—
446444	2014	JL ₄₇	16.6	X	98.06064	234.35280	131.32475	6.90314	0.0578854	0.21922116	2.7240458	21	—	—
446445	2014	JQ ₄₈	16.4	X	82.65892	240.96214	115.26274	14.87503	0.0129032	0.21512252	2.7585369	21	—	—
446446	2014	JE ₄₉	16.3	X	196.59008	313.16022	244.14051	12.33884	0.0286192	0.20171955	2.8794136	21	11 22.2	20.2
446447	2014	JN ₅₈	16.9	X	337.47837	355.62892	167.59475	15.17813	0.0468003	0.24258729	2.5461893	21	—	—
446448	2014	JE ₅₉	18.2	X	39.92829	102.80166	84.63579	3.11783	0.1529833	0.27906073	3.1191930	21	4 26.7	19.9
446449	2014	JU ₆₁	16.2	X	321.86466	261.24397	139.61719	13.35198	0.1297315	0.17915643	2.3163612	21	10 11.4	20.0
446450	2014	JM ₆₂	16.6	X	187.35331	174.03067	109.91217	6.27131	0.1145361	0.22420649	2.6835144	21	—	—
446451	2014	JN ₆₃	16.3	X	58.50228	123.74880	145.67521	12.63047	0.1338566	0.17146867	3.2088262	21	9 21.9	20.7
446452	2014	JW ₆₃	17.6	X	260.42592	147.40336	68.8071	3.27302	0.1422455	0.23390043	2.6088476	21	—	—
446453	2014	JA ₆₄	17.8	X	16.28849	137.15876	61.87489	2.38328	0.1296292	0.27300898	2.3533404	21	3 25.9	19.9
446454	2014	JR ₆₄	17.0	X	289.53187	201.05320	54.63888	6.95754	0.0741923	0.25717623	2.4489627	21	2 11.6	20.4
446455	2014	JZ ₆₄	17.7	X	12.94059	89.51174	92.02080	3.92470	0.1327003	0.26596501	2.3947107	21	2 22.4	20.0
446456	2014	JP ₆₇	16.7	X	14.58027	243.31509	216.78442	12.31769	0.0297818	0.22961526	2.6412056	21	—	—
446457	2014	JW ₆₇	17.8	X	267.76535	60.32711	154.29872	4.25910	0.1138740	0.23551050	2.5969437	21	—	—
446458	2014	JK ₆₈	16.4	X	151.34851	207.74742	93.46303	9.86050	0.1388535	0.21628176	2.7486712	21	—	—
446459	2014	JV ₆₈	17.2	X	172.10698	276.10345	356.46255	2.76367	0.1618874	0.21555918	2.7548103	21	—	—
446460	2014	JU ₆₉	16.9	X	143.36485	114.25852	229.04030	12.39697	0.1940336	0.22780034	2.6552157	21	1 4.3	21.0
446461	2014	JM ₇₀	17.1	X	143.71255	249.73581	52.37977	9.69766	0.2013749	0.21190578	2.7863833	21	—	—
446462	2014	JA ₇₁	16.8	X	127.65900	207.65394	19.53413	6.64183	0.0872113	0.18578943	3.0417397	21	10 11.8	21.5
446463	2014	JF ₇₂	17.1	X	331.47507	351.04320	248.76298	5.34702	0.1163658	0.26645866	2.3917520	21	3 4.7	20.0
446464	2014	JK ₇₂	16.6	X	315.75514	213.17670	245.61738	4.75936	0.0738295	0.20869602	2.8148803	21	12 20.1	20.1
446465	2014	JA ₇₄	17.1	X	158.05250	70.81237	207.71390	3.33742	0.0333709	0.21439690	2.7647575	21	—	—
446466	2014	JT ₇₄	17.1	X	258.48790	52.12680	118.26851	1.56555	0.0131865	0.21390797	2.7689689	21	—	—
446467	2014	JZ ₇₄	17.5	X	274.60106	307.28576	272.85013	1.73198	0.1411123	0.24013094	2.5635235	21	—	—
446468	2014	JL ₇₅	17.4	X	8.13828	328.81539	265.86900	5.27980	0.0613273	0.28022084	2.3127877	21	5 3.6	19.9
446469	2014	JY ₇₈	16.4	X	191.74861	200.17594	47.35594	9.84188	0.1404633	0.21742663	2.7390138	21	—	—
446470	2014	JF ₇₉	16.3	X	177.62882	6.45143	248.40050	5.30139	0.1859307	0.21228864	2.7830321	21	12 31.7	21.0
446471	2014	KA ₁	17.7	X	39.81750	33.								

ELEMENTS AND OPPOSITION DATES IN 2021

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2021 JULY 5.0 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>
446481 2014 KW ₁₉	16.8	X	180.64339	175.78595	75.63802	8.22100	0.0779770	0.21440605	2.7646789	21	—	—
446482 2014 KY ₁₉	16.9	X	158.05648	227.06935	99.06450	6.53270	0.1206628	0.23023602	2.6364561	21	—	—
446483 2014 KZ ₂₈	17.5	X	56.53316	275.14058	200.29636	7.02270	0.1198252	0.25466358	2.4650448	21	2 6.3	20.1
446484 2014 KB ₂₉	16.6	X	223.05860	202.43686	82.31102	13.00084	0.0908174	0.23834158	2.5763380	21	1 5.2	20.6
446485 2014 KG ₂₉	17.8	X	42.16199	28.49789	189.34870	2.99665	0.0383447	0.28718205	2.2752608	21	6 4.9	20.4
446486 2014 KY ₃₀	17.5	X	211.73020	215.23010	139.74859	6.04964	0.0862314	0.26267656	2.4146554	21	3 20.3	20.9
446487 2014 KH ₃₄	15.8	X	99.60290	258.22932	126.90405	23.95544	0.3280736	0.22247569	2.6974144	21	1 27.6	19.0
446488 2014 KG ₃₈	16.5	X	0.38397	314.23454	139.14133	15.00180	0.0710469	0.22782570	2.6550186	21	—	—
446489 2014 KS ₃₉	16.0	X	40.86438	201.01688	128.19050	17.84052	0.2189938	0.18004893	3.1060541	21	11 27.8	20.5
446490 2014 KO ₄₃	16.3	X	52.86592	160.58838	176.35627	14.90696	0.1822645	0.18370704	3.0646827	21	12 13.2	20.9
446491 2014 KD ₄₈	16.8	X	246.12770	28.22259	219.08082	9.38766	0.1244851	0.23830450	2.5766052	21	—	—
446492 2014 KX ₅₁	16.6	X	118.42651	62.42662	157.74334	17.16538	0.1620122	0.17668630	3.1453391	21	10 1.5	21.7
446493 2014 KJ ₅₃	16.2	X	72.48989	104.72079	170.22356	6.15571	0.1261431	0.17525862	3.1623975	21	10 13.9	20.6
446494 2014 KE ₅₃	17.2	X	91.09278	292.23303	161.05892	5.57073	0.0845905	0.25578561	2.4578308	21	3 1.8	20.0
446495 2014 KS ₅₄	16.4	X	105.58098	22.36520	219.08044	15.15309	0.1154780	0.17797682	3.1301160	21	10 5.2	21.2
446496 2014 KA ₅₅	16.6	X	162.97996	63.03312	171.95948	6.53871	0.1666071	0.19807993	2.9145783	21	11 26.9	21.5
446497 2014 KX ₅₇	16.4	X	84.19504	156.30892	126.20165	10.23455	0.1724807	0.18316265	3.0707522	21	11 2.5	21.0
446498 2014 KL ₅₇	16.2	X	72.90405	92.36979	196.10328	9.64076	0.0829461	0.17989830	3.1077877	21	10 25.2	20.5
446499 2014 KN ₅₉	16.4	X	36.05684	142.81808	172.65077	9.37251	0.0961015	0.17465306	3.1697030	21	10 13.3	20.6
446500 2014 KR ₅₉	15.9	X	59.97405	226.35609	64.93571	13.79742	0.3508032	0.17915437	3.1163850	21	11 17.6	20.7
446501 2014 KO ₆₅	17.3	X	98.96910	228.71363	212.82805	8.04937	0.1055669	0.25173795	2.4841068	21	2 26.0	20.4
446502 2014 KW ₆₆	17.4	X	231.32885	117.89000	103.63457	4.53801	0.1199121	0.22082681	2.7108252	21	—	—
446503 2014 KC ₆₇	17.6	X	242.52760	100.11587	138.10622	4.13786	0.1908366	0.23003385	2.6380005	21	—	—
446504 2014 KF ₆₇	16.9	X	119.64082	242.37284	115.75140	4.70219	0.1451290	0.22286323	2.6942864	21	—	—
446505 2014 KH ₆₉	17.8	X	69.38625	0.30361	140.61418	5.68686	0.0739986	0.26767429	2.3845052	21	4 3.5	20.5
446506 2014 KY ₆₉	17.2	X	174.56061	162.01153	188.75152	9.27967	0.1431995	0.24083960	2.5584923	21	2 5.9	21.2
446507 2014 KC ₇₁	17.5	X	299.74411	27.79111	162.18236	5.14095	0.0736238	0.23449851	2.6044098	21	—	—
446508 2014 KZ ₇₁	17.3	X	140.11606	259.98668	129.59818	8.30000	0.1128762	0.24355375	2.5394909	21	2 17.6	20.7
446509 2014 KC ₇₂	16.3	X	245.52528	298.13525	173.86522	9.18805	0.0967175	0.18307052	3.0717824	21	9 25.6	20.6
446510 2014 KD ₇₃	16.2	X	323.01107	228.72764	162.80219	10.48726	0.0921004	0.17614366	3.1517956	21	9 30.3	20.2
446511 2014 KP ₈₁	17.9	X	11.31178	143.08829	74.96476	2.72103	0.1146858	0.27434268	2.3457072	21	4 15.2	20.1
446512 2014 KZ ₈₂	16.2	X	74.16817	258.29242	54.87751	11.17097	0.0801807	0.19047541	2.9916453	21	11 25.3	20.4
446513 2014 KR ₉₅	17.0	X	151.48586	184.35070	179.75392	14.71464	0.1584364	0.23633309	2.5909142	21	2 1.0	21.1
446514 2014 KU ₉₅	18.1	X	154.19342	290.74227	167.56065	2.47682	0.0390213	0.28203601	2.3028537	21	5 25.4	21.1
446515 2014 KF ₉₈	17.1	X	326.93869	113.46280	77.36970	3.06170	0.1042111	0.24594323	2.5229742	21	—	—
446516 2014 KL ₉₉	16.8	X	50.35787	195.01816	141.76421	1.63366	0.1787099	0.18641760	3.0349027	21	12 9.3	21.1
446517 2014 KE ₁₀₀	17.5	X	51.00049	86.30187	111.32608	5.46314	0.0924180	0.28067879	2.3102713	21	5 27.5	19.8
446518 2014 KJ ₁₀₁	17.1	X	272.11264	339.24927	229.02828	3.22076	0.1288872	0.23287847	2.6164744	21	—	—
446519 2014 LW ₁	16.9	X	123.49140	265.00580	84.42683	5.84234	0.1737966	0.22149837	2.7053431	21	—	—
446520 2014 LP ₂	16.8	X	127.27154	279.09703	76.51622	6.26640	0.0978196	0.22957568	2.6415092	21	—	—
446521 2014 LO ₃	16.3	X	201.93280	307.61045	218.98273	10.97665	0.0791235	0.19240654	2.9715942	21	10 15.0	20.7
446522 2014 LQ ₁₁	17.2	X	252.12216	347.50841	230.15233	4.27586	0.1812627	0.22849394	2.6498396	21	—	—
446523 2014 LT ₁₁	16.4	X	85.19853	103.87789	158.30634	0.72049	0.1371002	0.17630006	3.1499313	21	10 13.3	20.9
446524 2014 LX ₁₂	16.3	X	81.54846	267.44252	85.28877	12.84853	0.1487452	0.20220355	2.8748170	21	—	—
446525 2014 LC ₁₃	15.5	X	28.84510	266.89418	77.55796	17.65035	0.2183288	0.17563655	3.1578594	21	11 25.9	19.5
446526 2014 LG ₁₃	16.8	X	281.25943	167.68569	62.16937	3.26586	0.1424190	0.24078262	2.5588959	21	—	—
446527 2014 LO ₁₈	17.9	X	318.26819	164.79301	61.85524	2.28943	0.1380920	0.26019703	2.4299714	21	1 28.7	20.9
446528 2014 LF ₂₃	17.0	X	174.41570	57.64756	215.49141	4.78595	0.1411569	0.21384064	2.7695501	21	—	—
446529 2014 LJ ₂₄	16.3	X	198.05766	250.91879	36.39700	13.95103	0.1143891	0.21625771	2.7488749	21	—	—
446530 2014 ME ₁	17.1	X	349.64288	163.21934	71.77251	7.85449	0.0638728	0.27507923	2.3415181	21	4 9.2	19.7
446531 2014 MX ₁	16.3	X	79.24239	70.92061	197.99610	14.15490	0.1029659	0.17248131	3.1962545	21	10 9.6	20.9
446532 2014 MN ₄	17.0	X	193.60788	48.20560	198.14940	11.93062	0.0848596	0.21127617	2.7919161	21	—	—
446533 2014 MP ₆	15.8	X	76.34394	211.54403	74.43233	11.95120	0.1656913	0.17759803	3.1345650	21	11 7.5	20.5
446534 2014 MR ₁₄	15.8	X	60.36260	165.66486	131.98950	14.01757	0.2224966	0.17674794	3.1446077	21	11 5.4	20.5
446535 2014 MR ₁₇	16.5	X	158.09654	256.85891	106.18096	25.75159	0.2037944	0.23146933	2.6270827	21	2 17.3	21.0
446536 2014 MU ₂₈	15.6	X	53.82036	89.72276	252.24954	8.59932	0.0867877	0.17678582	3.1441585	21	12 5.0	19.9
446537 2014 MW ₃₀	17.5	X	257.42877	164.95940	130.27622	8.13395	0.0393541	0.25696016	2.4503353	21	2 26.5	20.7
446538 2014 MX ₃₀	16.7	X	159.56454	225.82569	113.40057	15.08407	0.0905035	0.23232984	2.6205919	21	1 6.1	20.3
446539 2014 MT ₃₄	17.2	X	105.40451	268.80671	241.20129	5.90432	0.0496077	0.28213850	2.3022959	21	6 2.6	20.0
446540 2014 MW ₃₄	17.1	X	237.18178	124.94341	134.87244	2.91665	0.1608239	0.23286296	2.6165906	21	—	—
446541 2014 MF ₄₃	16.1	X	256.91058	14.63782	248.53680	14.25769	0.0924922	0.22716850	2.6601369	21	1 12.5	20.3
446542 2014 MY ₄₇	16.3	X	192.12914	73.01688	205.75072	12.13891	0.0442373	0.22133755	2.7066534	21	—	—
446543 2014 MR ₅₅	16.4	X	123.95201	176.17999	104.77902	5.83595	0.1797954	0.19070691	2.9892238	21	12 15.5	21.3
446544 2014 MW ₅₈	15.9	X	353.20481	252.67926	159.95921	11.55158	0.0807876	0.18018314	3.1045116	21	12 11.7	20.1
446545 2014 MU ₆₄	16.5	X	271.78315	206.70366	50.78424	9.25279	0.0081825	0.23095872	2.6309533	21	2 5.7	20.2
446546 2014 MV ₆₈	16.3	X	220.47579	181.92029	115.70015	15.96547	0.2633776	0.23281447	2.6169539	21	1 18.8	20.9
446547 2014 NY ₇	16.7	X	106.41073	158.89309	123.56874	4.57981	0.1810379	0.18003769	3.1061834	21	12 1.7	21.8
446548 2014 NR ₁₁	16.6	X	302.75509	74.76620	99.64323	5.66852	0.0124775	0.21393587	2.7687281	21	—	—
446549 2014 NP ₁₆	17.8	X	35.82298	17.74639	224.77414	6.14030	0.0536323	0.28956153	2.2627790	21	7 2.9	20.3
446550 2014 NM ₁₈	16.8	X	103.72220	201.06424	155.87805	5.19104	0.0789019	0.21446130	2.7642040	21	—	—
446551 2014 NJ ₂₆	16.3	X	54.78672	209.97891	131.66480	10.90624	0.0948326	0.17733422	3.1376730	21	12 8.7	20.8
446552 2014 NC ₃₁	16.3	X	127.10719	46.64258	216.23406	3.10428	0.1767297	0.17995727	3.1071087	21	11 26.2	21.4
446553 2014 NY ₃₂	17.1	X	145.53972	117.90236	242.02765	5.24723	0.0328377	0.22069343	2.7119173	21	1 9.8	20.8
446554 2014 NG ₄₅	16.2	X	253.95337	350.32304	173.64719	18.48546	0.0313707					

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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>
446561 2014 OT ₅₁	16.1	X	121.02832	153.66131	124.67231	11.13229	0.0500719	0.17846388	3.1244183	21	12 3.3	20.8
446562 2014 OD ₆₇	17.1	X	58.47823	332.46735	75.32622	3.11481	0.0138426	0.20146405	2.8818476	21	—	—
446563 2014 OR ₈₀	16.3	X	62.91549	322.87663	356.53177	4.22294	0.1339662	0.17345718	3.1842552	21	11 23.7	20.8
446564 2014 OP ₁₀₆	16.0	X	6.97304	297.48127	129.98301	13.57199	0.1057682	0.18699175	3.0286872	21	—	—
446565 2014 OF ₁₀₇	16.0	X	189.47907	105.96548	115.68392	5.99463	0.0142984	0.18249736	3.0782106	21	12 11.9	20.5
446566 2014 OP ₁₀₇	16.5	X	144.45265	292.14522	44.88961	6.84299	0.0529248	0.21248169	2.7813462	21	—	—
446567 2014 OL ₁₁₁	16.1	X	68.52937	197.19697	139.73847	12.84274	0.0601876	0.17930575	3.1146308	21	12 14.7	20.7
446568 2014 ON ₁₁₅	16.4	X	171.77236	33.29227	287.99077	5.29066	0.0892779	0.21526723	2.7573005	21	—	—
446569 2014 OD ₁₁₆	16.7	X	92.61958	271.61805	122.03139	13.11395	0.0194238	0.21263703	2.7799914	21	—	—
446570 2014 OX ₁₁₉	15.7	X	346.54117	237.36794	94.76456	6.03629	0.0617277	0.14536963	3.5822310	21	8 18.8	20.4
446571 2014 OY ₁₂₇	17.1	X	222.66067	253.97179	18.86425	6.15344	0.0141307	0.21444797	2.7643186	21	—	—
446572 2014 OJ ₁₃₀	14.9	X	211.21197	276.14467	147.14015	9.56059	0.1548582	0.12572250	3.9463359	21	6 16.7	21.2
446573 2014 OY ₁₃₀	16.0	X	71.99794	170.89435	139.55871	13.41129	0.2478523	0.18165451	3.0877248	21	12 10.6	21.0
446574 2014 OT ₁₃₂	16.4	X	45.89414	69.03754	316.31669	9.26365	0.1334663	0.18777526	3.0202563	21	—	—
446575 2014 OQ ₁₃₃	16.6	X	22.09676	293.14176	86.83753	4.18162	0.0253944	0.18069473	3.0986490	21	12 4.3	20.7
446576 2014 OE ₁₃₆	16.1	X	337.02547	120.78657	313.69350	9.02201	0.1747970	0.17845807	3.1244860	21	12 15.5	19.6
446577 2014 OL ₁₅₄	15.7	X	9.97405	316.88088	96.68863	11.10252	0.0685576	0.18728834	3.0254888	21	—	—
446578 2014 OJ ₂₀₄	16.9	X	337.52063	124.96943	28.75493	4.95070	0.0109090	0.21322451	2.7748827	21	—	—
446579 2014 OV ₂₁₃	16.2	X	100.21675	194.78683	128.38782	13.29861	0.1085532	0.18797113	3.0181579	21	—	—
446580 2014 OF ₂₁₇	16.1	X	223.19646	196.47327	343.36694	10.29918	0.1673699	0.19036041	2.9928501	21	11 10.7	20.9
446581 2014 OM ₂₂₃	15.6	X	269.81224	336.52352	111.67172	17.25689	0.1241234	0.15683056	3.4055107	21	9 25.9	20.7
446582 2014 OF ₂₄₅	16.0	X	158.53440	222.46775	23.92112	5.48401	0.0257014	0.18396787	3.0617853	21	12 4.2	20.4
446583 2014 OW ₃₀₈	16.1	X	11.18006	289.20066	125.38361	11.68217	0.1184828	0.18544973	3.0454531	21	—	—
446584 2014 OL ₃₃₅	15.1	X	232.97177	75.13468	332.85266	12.41806	0.2486889	0.12379394	3.9872162	21	6 10.4	21.7
446585 2014 PF ₂	17.0	X	292.88072	326.34115	276.21322	2.51106	0.1813287	0.23969353	2.5666413	21	1 16.7	20.6
446586 2014 PO ₁₁	15.8	X	54.60881	224.54360	141.00659	12.47586	0.0717793	0.17913596	3.1165985	21	—	—
446587 2014 QP ₃₈	16.0	X	26.53879	116.98951	182.49530	17.95402	0.0580038	0.14643164	3.5648897	21	8 29.8	21.0
446588 2014 QR ₃₀₁	15.9	X	118.48202	161.68740	162.45074	23.13520	0.0766954	0.18144040	3.0901535	21	—	—
446589 2014 RY ₃₄	15.5	X	143.19327	272.25729	15.17808	11.29636	0.0784042	0.17969938	3.1100807	21	—	—
446590 2014 LS ₁₂₅	15.8	X	309.01574	336.71709	176.23806	17.29953	0.1501282	0.17852652	3.1236874	21	—	—
446591 2014 SQ ₃₀₂	15.7	X	350.19636	191.08536	237.08755	8.19044	0.0554680	0.17396742	3.1780259	21	12 21.9	20.0
446592 2015 KA ₂₃	15.0	X	9.85001	244.75708	95.45633	27.33142	0.2651985	0.17390008	3.1788463	21	11 6.6	19.0
446593 2015 LK ₁₄	17.2	X	158.14825	311.87662	8.04193	12.89822	0.2994821	0.23517883	2.5993847	21	1 2.6	21.8
446594 2015 LS ₂₀	16.8	X	127.49143	75.16968	242.48624	14.45196	0.1593740	0.22350932	2.6890918	21	—	—
446595 2015 LO ₂₃	16.2	X	359.31438	57.81818	241.11778	15.29246	0.1742994	0.17538161	3.1609189	21	7 21.2	20.0
446596 2015 LX ₃₉	16.1	X	77.96661	36.93326	230.53049	10.83835	0.1573698	0.18853337	3.0121544	21	10 13.3	20.5
446597 2015 ME ₄	16.3	X	142.29364	344.02022	357.20549	7.31090	0.2324868	0.24545504	2.5263184	21	1 5.0	20.1
446598 2015 MA ₇	16.8	X	32.57493	234.94262	162.93285	6.52501	0.0466594	0.22256793	2.6966691	21	—	—
446599 2015 MB ₈	16.8	X	66.43283	140.10186	133.72173	10.99746	0.0978779	0.18520615	3.0481227	21	10 5.2	21.2
446600 2015 MF ₈	16.0	X	172.23191	22.33854	137.75130	17.43243	0.0592451	0.18105271	3.0945633	21	9 8.6	20.7
446601 2015 MU ₈	16.3	X	19.84175	58.53704	250.41640	8.19994	0.0772412	0.17522745	3.1627725	21	9 3.5	20.5
446602 2015 MD ₉	15.2	X	242.55968	163.64244	285.41691	15.61732	0.0869661	0.17320210	3.1873807	21	8 18.3	20.1
446603 2015 MJ ₄₆	17.8	X	255.60397	259.58061	23.40272	2.24702	0.2009237	0.27400790	2.3476174	21	1 25.3	21.7
446604 2015 MQ ₄₆	17.6	X	169.95075	303.18532	70.25158	3.70304	0.2125022	0.26219716	2.4175979	21	3 7.6	21.4
446605 2015 MX ₄₆	17.2	X	119.63033	263.15711	81.02450	5.86808	0.1163237	0.23116448	2.6293918	21	—	—
446606 2015 MF ₄₇	16.2	X	13.60634	239.15168	95.92022	5.57450	0.1489746	0.17729943	3.1380835	21	10 12.5	20.0
446607 2015 MM ₅₂	16.5	X	105.97953	61.77843	279.52411	13.13588	0.1709820	0.22446876	2.6814237	21	—	—
446608 2015 MA ₅₉	16.4	X	212.23564	292.06441	309.14743	9.80038	0.0182028	0.23590005	2.5940840	21	—	—
446609 2015 MJ ₆₇	15.7	X	357.50506	60.21882	245.15819	25.96301	0.2338561	0.17326218	3.1866438	21	7 21.2	19.4
446610 2015 MJ ₆₉	17.8	X	305.19677	161.68304	140.76118	4.04262	0.2019425	0.30757506	2.1735450	21	4 9.0	20.2
446611 2015 MQ ₇₁	18.1	X	233.98791	154.75729	150.14185	8.53527	0.1337642	0.27535816	2.3399365	21	2 2.6	21.7
446612 2015 MK ₇₃	15.2	X	283.80733	276.26896	124.68246	25.58073	0.0476855	0.17486642	3.1671242	21	8 23.0	19.7
446613 2015 MJ ₇₆	16.0	X	324.38928	236.27532	143.48173	11.11641	0.0822583	0.18139288	3.0906931	21	9 19.1	19.9
446614 2015 MK ₇₆	17.5	X	208.61656	158.28259	138.83218	7.55426	0.1038130	0.26059610	2.4274900	21	1 1.5	21.1
446615 2015 MX ₇₆	16.2	X	349.55017	215.15058	132.19773	17.21719	0.1020670	0.17826704	3.1267178	21	9 17.1	20.2
446616 2015 MN ₇₇	15.7	X	243.83326	303.91475	137.44964	18.38104	0.0944155	0.17285372	3.1916620	21	8 15.8	20.2
446617 2015 MM ₇₈	15.9	X	303.99137	288.37321	130.06735	25.55165	0.3376307	0.17513843	3.1638441	21	8 31.9	19.7
446618 2015 MP ₈₂	17.1	X	126.73698	161.29080	180.32609	6.62651	0.0529212	0.23947236	2.5682214	21	—	—
446619 2015 MA ₈₃	16.6	X	69.18057	149.23578	223.11240	6.02797	0.1530471	0.22102179	2.7092307	21	—	—
446620 2015 MV ₈₃	16.8	X	247.91147	39.34894	136.70159	13.94497	0.0375079	0.22238228	2.6981697	21	12 31.8	20.6
446621 2015 MG ₈₄	17.1	X	198.00077	19.11181	229.01288	5.16705	0.0393718	0.23221303	2.6214706	21	—	—
446622 2015 MF ₈₅	17.6	X	112.76379	93.68935	283.90037	3.24011	0.1485295	0.24383302	2.5375096	21	1 2.9	20.7
446623 2015 MK ₈₅	17.1	X	76.95470	95.23785	216.17075	1.33720	0.0545083	0.20347831	2.8627975	21	11 26.0	21.1
446624 2015 MU ₉₁	15.3	X	52.14451	312.96062	306.08493	20.93207	0.0734636	0.16900293	3.2399618	21	8 14.9	19.8
446625 2015 MV ₉₁	16.4	X	165.72987	125.86104	105.85692	4.84482	0.0403802	0.21013281	2.8020344	21	11 30.2	20.5
446626 2015 MZ ₉₈	17.0	X	7.24563	160.12499	248.42909	2.63524	0.0918258	0.21190991	2.7863471	21	—	—
446627 2015 MZ ₁₀₂	17.5	X	247.26140	32.39337	305.65683	6.95924	0.1790582	0.28505336	2.2865741	21	3 23.0	21.2
446628 2015 ME ₁₀₃	15.4	X	264.94610	111.15213	308.26320	6.37760	0.0628415	0.17066829	3.2188506	21	8 16.7	19.9
446629 2015 ML ₁₀₃	16.7	X	135.61636	53.74823	321.44730	6.05059	0.1372305	0.25441066	2.4666783	21	1 25.9	20.1
446630 2015 MU ₁₀₇	16.3	X	66.42123	162.77362	98.61297	2.24191	0.1263695	0.18155719	3.0888281	21	9 20.3	20.6
446631 2015 ML ₁₁₁	16.6	X	10.14479	94.23894	303.94386	4.95824	0.0581402	0.20995046	2.8036567	21	12 20.8	20.3
446632 2015 MN ₁₁₁	16.6	X	353.31408	259.32202	105.13475	2.05465	0.1712211	0.18200809	3.0837246	21	10 15.9	19.8
446633 2015 MZ ₁₁₄	17.3	X	154.63830	173.92354	147.66548	13.73327	0.1707725	0.24190975	2.5509413	21	—	—
446634 2015 MC ₁₁₆	17.2	X	167.24803	34.02715	275.30456	1						

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Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>		
446641	2015	<i>MN</i> ₁₂₁	17.2	X	87.21556	115.47748	257.11707	7.45475	0.1629155	0.22226066	2.6991539	21	—	—
446642	2015	<i>MT</i> ₁₂₃	16.5	X	206.90603	340.14483	265.20916	9.41723	0.0967949	0.23578394	2.5949355	21	—	—
446643	2015	<i>MM</i> ₁₂₄	17.7	X	229.14858	52.20839	247.85267	5.05127	0.1992575	0.26841760	2.3801010	21	1 22.7	21.7
446644	2015	<i>MJ</i> ₁₂₅	17.0	X	13.77808	104.30508	257.59260	11.19100	0.2640484	0.18350919	3.0668851	21	11 30.6	20.4
446645	2015	<i>ML</i> ₁₂₅	17.2	X	191.29336	22.58051	237.62099	5.19682	0.2592439	0.23830143	2.5766274	21	—	—
446646	2015	<i>MQ</i> ₁₂₅	16.8	X	212.20977	358.09726	272.92065	6.03547	0.1401984	0.24788607	2.5097741	21	—	—
446647	2015	<i>ML</i> ₁₂₆	16.0	X	8.41128	36.21920	310.15886	15.28299	0.2449867	0.18085673	3.0967984	21	10 18.3	19.6
446648	2015	<i>MA</i> ₁₂₉	16.5	X	51.02840	16.16958	344.62642	5.41423	0.0196658	0.21153755	2.7896158	21	12 22.1	20.3
446649	2015	<i>MK</i> ₁₂₉	16.7	X	158.49250	260.18135	352.90163	8.08352	0.0533386	0.21348242	2.7726473	21	12 17.3	20.9
446650	2015	<i>MZ</i> ₁₂₉	17.7	X	123.34726	47.56263	323.64404	13.98358	0.2184671	0.24079442	2.5588124	21	1 21.9	21.2
446651	2015	<i>NM</i> ₄	16.1	X	61.52473	59.17706	252.38293	8.22579	0.0880709	0.19534616	2.9417074	21	11 9.9	20.3
446652	2015	<i>NA</i> ₅	17.0	X	203.91257	138.53288	150.64067	6.30398	0.0874273	0.25602585	2.4562930	21	—	—
446653	2015	<i>NY</i> ₇	16.4	X	56.15572	119.40529	139.48831	10.85081	0.0463690	0.17233595	3.1980516	21	8 21.8	20.8
446654	2015	<i>NE</i> ₈	16.5	X	260.93274	267.51047	251.80655	5.71440	0.0581572	0.22032811	2.7149142	21	12 23.9	19.9
446655	2015	<i>NJ</i> ₈	17.1	X	82.63043	186.97171	147.94115	8.77089	0.2204650	0.21197708	2.7857584	21	—	—
446656	2015	<i>NM</i> ₈	15.6	X	1.51544	192.00637	136.70308	10.69008	0.0851703	0.17510095	3.1642956	21	9 8.5	19.6
446657	2015	<i>NP</i> ₈	18.1	X	202.48916	193.33794	149.99764	4.42688	0.2560962	0.26931538	2.3748086	21	2 24.4	22.3
446658	2015	<i>NW</i> ₈	17.7	X	148.82389	94.24935	290.21333	5.30080	0.1035186	0.26506003	2.4001583	21	2 13.9	21.1
446659	2015	<i>NS</i> ₉	17.0	X	123.52019	94.17014	205.64386	4.44452	0.1267668	0.22009560	2.7168259	21	—	—
446660	2015	<i>NP</i> ₁₂	16.9	X	63.51414	70.04412	311.87405	10.37253	0.1780717	0.21692708	2.7432172	21	—	—
446661	2015	<i>NU</i> ₁₅	17.5	X	205.02135	58.77852	300.70917	5.86448	0.1291771	0.27617349	2.3353289	21	3 12.9	21.1
446662	2015	<i>NK</i> ₁₆	16.8	X	237.55230	1.30810	307.89001	23.83562	0.1919503	0.27268329	2.3552140	21	2 7.2	20.7
446663	2015	<i>NL</i> ₁₆	18.0	X	239.57754	168.65116	129.05814	4.62281	0.2477049	0.27152870	2.3618858	21	1 28.1	21.9
446664	2015	<i>NY</i> ₁₆	16.4	X	115.20006	213.97075	133.10262	15.57439	0.0619348	0.22926881	2.6438658	21	—	—
446665	2015	<i>NM</i> ₁₇	16.5	X	41.84980	22.14701	324.30405	10.16377	0.2004927	0.19206630	2.9751026	21	12 14.5	20.7
446666	2015	<i>NC</i> ₁₈	17.8	X	190.72290	307.83096	41.70389	2.56083	0.2099535	0.26192994	2.4192419	21	2 23.2	21.8
446667	2015	<i>NE</i> ₂₄	16.5	X	53.09112	352.70268	335.59087	7.06238	0.2303196	0.18847051	3.0128241	21	12 8.7	20.9
446668	2015	<i>NB</i> ₂₅	17.2	X	173.10303	25.71196	321.90440	11.38602	0.1495963	0.25859400	2.4400033	21	2 1.7	20.9
446669	2015	<i>NP</i> ₂₅	17.1	X	271.49918	346.26084	298.82806	5.97689	0.1061798	0.27893085	2.3199129	21	2 16.5	20.2
446670	2015	<i>NQ</i> ₂₅	16.7	X	129.32173	105.82184	295.52910	16.19298	0.2352912	0.25104128	2.4887004	21	2 25.9	20.6
446671	2015	<i>NR</i> ₂₅	16.0	X	102.56353	6.99583	300.12035	12.07557	0.0998190	0.20611298	2.8383491	21	12 24.8	20.3
446672	2015	<i>OH</i> ₁	17.9	X	188.39131	168.98604	149.29177	2.44445	0.1829750	0.25851402	2.4405065	21	1 12.3	21.8
446673	2015	<i>OJ</i> ₁	17.7	X	260.68558	173.76900	130.85554	6.78405	0.1671264	0.28764003	2.2728451	21	2 26.7	21.0
446674	2015	<i>OC</i> ₂	17.8	X	294.73515	153.32117	141.84435	6.48336	0.1821474	0.29771071	2.2212959	21	3 20.7	20.6
446675	2015	<i>OF</i> ₂	15.7	X	72.10130	318.75045	310.71982	4.40021	0.0847105	0.18296220	3.0729946	21	9 28.5	20.1
446676	2015	<i>OS</i> ₂	15.7	X	63.83938	322.80081	286.26320	13.08831	0.2361386	0.17500825	3.1654129	21	9 8.7	20.4
446677	2015	<i>OK</i> ₇	16.2	X	48.27375	94.86108	189.33970	8.10646	0.1500438	0.18061145	3.0996015	21	9 27.1	20.2
446678	2015	<i>OT</i> ₉	16.0	X	349.00586	108.18589	273.56005	15.43147	0.1728351	0.18449934	3.0559025	21	10 25.3	19.6
446679	2015	<i>OH</i> ₁₁	17.1	X	229.57563	100.23068	121.40297	9.52942	0.1146104	0.23838472	2.5760271	21	—	—
446680	2015	<i>OF</i> ₁₃	16.4	X	343.75781	18.62320	355.48501	4.89917	0.0408033	0.18588218	3.0407278	21	10 8.3	20.4
446681	2015	<i>OY</i> ₁₃	18.2	X	299.45867	139.29790	92.23169	3.34192	0.1844929	0.27695753	2.3309195	21	1 2.9	21.6
446682	2015	<i>OP</i> ₁₄	16.2	X	33.62888	209.06117	101.69575	2.38812	0.1663862	0.18121187	3.0927510	21	10 14.0	20.0
446683	2015	<i>OB</i> ₁₅	15.3	X	335.93644	258.42287	339.14709	4.32281	0.1436739	0.12686665	3.9225732	21	3 29.6	20.2
446684	2015	<i>OJ</i> ₁₅	17.8	X	244.07043	289.48877	349.21328	4.25667	0.1410477	0.26727708	2.3868671	21	1 13.3	21.5
446685	2015	<i>OW</i> ₁₅	16.6	X	0.23652	26.89432	343.63882	8.80038	0.0717829	0.18931070	3.0039033	21	10 26.1	20.5
446686	2015	<i>OG</i> ₁₆	16.7	X	100.76886	198.31502	111.34256	6.20854	0.1468807	0.21119683	2.7926153	21	12 29.5	21.1
446687	2015	<i>OK</i> ₁₆	17.4	X	155.22256	239.07177	89.10899	3.11619	0.0352664	0.24355084	2.5394693	21	—	—
446688	2015	<i>OX</i> ₁₆	17.3	X	153.52824	214.19494	82.88962	3.95758	0.0787293	0.22956682	2.6415772	21	—	—
446689	2015	<i>OQ</i> ₁₆	17.1	X	147.92032	196.28541	65.48316	4.37477	0.1126215	0.21355788	2.7719941	21	12 16.1	21.4
446690	2015	<i>OO</i> ₁₈	16.7	X	111.60624	124.28127	179.75283	11.19139	0.0589186	0.18747085	3.0235249	21	10 17.8	21.3
446691	2015	<i>OD</i> ₁₉	16.4	X	111.13708	132.85912	173.31926	20.81670	0.1789231	0.21296181	2.7771642	21	—	—
446692	2015	<i>OH</i> ₁₉	15.4	X	323.02491	118.20401	268.97035	14.77737	0.0221508	0.17547737	3.1597691	21	9 19.1	20.1
446693	2015	<i>OD</i> ₂₄	17.0	X	115.27368	184.29001	121.73570	3.41664	0.1667288	0.21829434	2.7317507	21	—	—
446694	2015	<i>OR</i> ₂₄	17.9	X	269.02781	82.88810	255.08702	4.68530	0.1502223	0.29857444	2.2170099	21	4 18.3	20.8
446695	2015	<i>OX</i> ₂₄	16.7	X	179.97087	23.20174	270.07068	8.52552	0.1172485	0.23999802	2.5644700	21	—	—
446696	2015	<i>OD</i> ₂₅	17.6	X	216.99748	185.76092	150.41040	9.64894	0.1984829	0.27228977	2.3574826	21	2 26.6	21.3
446697	2015	<i>OK</i> ₂₅	17.3	X	185.10961	263.77603	89.99348	2.57106	0.2252542	0.26195563	2.4190837	21	2 24.2	21.4
446698	2015	<i>OM</i> ₂₅	16.4	X	206.57286	292.06619	312.31400	28.50124	0.1757946	0.23316843	2.6143048	21	—	—
446699	2015	<i>OK</i> ₂₆	16.7	X	243.85792	35.38286	283.36711	13.66941	0.2510672	0.27540481	2.3396723	21	2 19.1	20.9
446700	2015	<i>OX</i> ₂₆	16.8	X	217.29293	20.79670	243.38575	8.07093	0.1579263	0.24609530	2.5219347	21	—	—
446701	2015	<i>OX</i> ₂₇	16.9	X	184.92820	332.35381	324.68260	12.57231	0.1772168	0.23952664	2.5678333	21	—	—
446702	2015	<i>OE</i> ₂₈	17.0	X	185.22324	195.82892	158.91497	9.14517	0.1732042	0.25779666	2.4450319	21	2 22.3	20.9
446703	2015	<i>OT</i> ₃₀	16.1	X	14.43485	226.88869	135.34558	10.18522	0.1281945	0.18251407	3.0780227	21	11 16.9	20.1
446704	2015	<i>OM</i> ₃₁	17.3	X	240.54738	234.49939	111.90811	7.95161	0.1450322	0.28442533	2.2899388	21	4 6.2	20.8
446705	2015	<i>ON</i> ₃₂	17.5	X	154.64201	299.80349	88.86407	7.58549	0.1745173	0.25643756	2.4536633	21	3 11.9	21.3
446706	2015	<i>OO</i> ₃₂	16.7	X	60.86155	284.59731	119.66251	12.62099	0.0661182	0.22224456	2.6992843	21	—	—
446707	2015	<i>OV</i> ₃₂	16.5	X	112.47427	250.23760	88.23153	9.88460	0.1456564	0.21910443	2.7250132	21	—	—
446708	2015	<i>OD</i> ₃₄	16.6	X	106.17759	227.32830	28.47132	4.11584	0.1293583	0.19248531	2.9707834	21	10 27.9	21.1
446709	2015	<i>ON</i> ₃₅ </												

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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>
446721 2015 OB ₆₆	17.2	X	292.45165	326.12959	305.38919	6.01293	0.1739960	0.28363212	2.2942062	21	2 14.4	20.5
446722 2015 OM ₆₆	15.9	X	64.58947	23.64801	287.95456	9.08182	0.0630143	0.18658865	3.0330477	21	11 7.1	20.3
446723 2015 OU ₆₉	17.6	X	174.57981	208.23075	155.33577	6.89363	0.1503771	0.26576830	2.3958921	21	2 20.9	21.2
446724 2015 OW ₆₉	17.0	X	107.51088	214.79821	147.55091	13.71804	0.1712006	0.23327956	2.6134744	21	—	—
446725 2015 ON ₇₀	16.6	X	80.00222	45.79339	285.30321	6.76750	0.1149513	0.21091299	2.7951202	21	12 31.7	20.8
446726 2015 OD ₇₃	16.4	X	342.65636	87.24605	300.14679	10.37248	0.0332419	0.19195995	2.9762012	21	10 20.3	20.7
446727 2015 OH ₇₃	18.1	X	295.58955	171.25153	145.98379	6.42282	0.2206650	0.30071865	2.2064587	21	4 16.2	20.9
446728 2015 OK ₇₃	17.0	X	180.42819	149.45529	146.61587	13.69648	0.2819552	0.24084424	2.5584594	21	—	—
446729 2015 OW ₇₃	16.5	X	122.56172	135.23295	184.08346	10.51793	0.1046727	0.21833713	2.7313938	21	—	—
446730 2015 OY ₇₃	16.6	X	187.89001	75.57280	256.86268	5.83907	0.1302166	0.25325443	2.4741803	21	1 25.5	20.5
446731 2015 OF ₇₄	16.4	X	13.51335	211.26282	129.33871	11.43926	0.1339447	0.18239028	3.0794152	21	10 20.9	20.3
446732 2015 OP ₇₄	17.0	X	49.12195	269.27966	58.69982	1.22216	0.3376470	0.18468034	3.0539056	21	12 17.9	21.5
446733 2015 OT ₇₄	15.6	X	311.74433	81.85691	332.12378	24.57244	0.1850008	0.16974373	3.2305283	21	9 18.8	19.8
446734 2015 ON ₇₅	15.2	X	17.98001	11.48677	339.30751	26.54381	0.0720018	0.17653475	3.1471389	21	10 13.0	19.8
446735 2015 OE ₇₆	16.6	X	221.10322	331.46649	340.75259	4.86911	0.2043914	0.25932871	2.4353926	21	2 3.0	20.7
446736 2015 OJ ₇₆	17.4	X	229.80478	328.75213	340.08501	5.66746	0.1256723	0.26068065	2.4269650	21	2 7.4	21.0
446737 2015 OH ₇₆	17.4	X	175.59616	319.49897	349.73822	4.42814	0.2742880	0.24002345	2.5642888	21	—	—
446738 2015 OL ₇₇	16.9	X	50.69020	149.34306	156.62619	17.60900	0.3136751	0.18072206	3.0983367	21	11 23.9	21.7
446739 2015 OV ₇₇	16.4	X	189.29126	301.73173	351.61807	11.77627	0.1188944	0.23246570	2.6195707	21	—	—
446740 2015 OH ₇₈	17.4	X	206.10904	234.24397	75.00569	0.36669	0.1730410	0.25822707	2.4423142	21	1 16.9	21.1
446741 2015 OP ₇₈	17.9	X	202.38506	224.88667	144.48450	6.34204	0.2312058	0.27117614	2.3639325	21	3 29.1	21.9
446742 2015 PH	17.5	X	250.92558	234.57141	136.93014	23.48897	0.2429151	0.31169780	2.1543366	21	5 14.7	21.4
446743 2015 PS ₁	16.3	X	32.42609	13.51882	130.46809	12.12771	0.1837978	0.18409305	3.0603971	21	10 25.0	20.4
446744 2015 PZ ₁	16.4	X	72.31731	318.36607	354.22351	8.10218	0.2134028	0.19902079	2.9053854	21	12 9.4	21.0
446745 2015 PT ₂	17.3	X	164.46200	15.73683	346.58597	1.74488	0.2204068	0.25462818	2.4652733	21	2 17.0	21.1
446746 2015 PW ₂	16.7	X	154.99495	12.73165	274.44076	10.22868	0.1920024	0.22518469	2.6757373	21	—	—
446747 2015 PY ₂	17.7	X	151.75740	89.60417	285.39817	1.80661	0.2516050	0.25134649	2.4866854	21	2 23.3	21.7
446748 2015 PG ₃	16.0	X	15.86414	194.11573	151.99107	13.08894	0.1647618	0.18027550	3.1034511	21	11 3.4	19.9
446749 2015 PH ₃	15.8	X	50.69366	60.66920	312.16484	14.02791	0.1625802	0.20495368	2.8490423	21	—	—
446750 2015 PP ₃	17.4	X	221.80900	216.78025	78.36898	6.29466	0.2551584	0.26170244	2.4206437	21	1 13.9	21.7
446751 2015 PS ₃	15.5	X	80.35357	287.31630	340.48231	25.34533	0.2216071	0.18491499	3.0513215	21	10 12.4	20.6
446752 2015 PY ₃	17.6	X	264.66906	267.44247	30.19093	5.66406	0.1744607	0.28050167	2.3112437	21	2 23.3	21.1
446753 2015 PF ₅	15.1	X	273.80709	110.73795	298.94479	14.40641	0.0339295	0.16941945	3.2346493	21	8 16.7	19.7
446754 2015 PY ₈	17.1	X	222.01481	6.36407	3.91309	10.09963	0.2219302	0.28465992	2.2886805	21	4 10.2	20.9
446755 2015 PY ₁₁	18.4	X	326.08722	105.86500	175.02153	8.73861	0.2016167	0.30289460	2.1958788	21	4 9.6	20.4
446756 2015 PX ₁₂	16.9	X	189.62155	332.69534	350.31358	4.47550	0.1932582	0.25472670	2.4646376	21	1 21.5	20.9
446757 2015 PP ₂₉	16.8	X	188.52790	51.01054	280.22380	5.40949	0.1300347	0.25652280	2.4531196	21	1 24.9	20.6
446758 2015 PS ₃₀	16.1	X	7.74313	193.17594	155.48221	13.13667	0.1465112	0.17694824	3.1422342	21	10 21.1	20.0
446759 2015 PR ₃₁	17.8	X	205.91975	72.83062	276.07398	1.43334	0.2102228	0.26849317	2.3796544	21	3 4.3	21.8
446760 2015 PW ₃₁	17.4	X	167.29248	49.38232	303.42274	2.85390	0.1402985	0.25286369	2.4767285	21	2 1.3	21.0
446761 2015 PJ ₃₃	17.3	X	201.17679	114.78668	214.62960	10.09677	0.2307410	0.25986525	2.4320393	21	2 3.8	21.8
446762 2015 PH ₃₄	17.3	X	205.98913	183.51080	75.42397	3.02524	0.1982875	0.24092358	2.5578977	21	—	—
446763 2015 PN ₃₄	16.7	X	115.34111	181.92913	113.67732	9.27946	0.2023230	0.21218568	2.7839323	21	12 28.9	21.4
446764 2015 PO ₃₄	17.1	X	195.13728	291.41807	4.65572	4.91065	0.1943217	0.25085818	2.4899113	21	—	—
446765 2015 PA ₃₇	16.4	X	49.53993	269.10588	9.98387	7.30159	0.2065753	0.17618685	3.1512804	21	9 30.9	20.6
446766 2015 PC ₃₇	16.5	X	168.78228	169.21188	105.87022	7.57870	0.0761282	0.22544394	2.6736856	21	—	—
446767 2015 PN ₃₇	17.3	X	160.30168	177.08756	103.71118	6.07833	0.1018910	0.22455039	2.6807739	21	—	—
446768 2015 PO ₃₇	17.0	X	70.34654	266.42913	110.91250	7.34753	0.0810023	0.22068741	2.7119667	21	—	—
446769 2015 PV ₃₇	17.0	X	162.32074	203.19278	76.07962	3.15163	0.0577618	0.22434024	2.6824477	21	—	—
446770 2015 PD ₃₈	17.3	X	205.45105	162.51162	74.84010	3.36931	0.0376162	0.22450196	2.6811593	21	—	—
446771 2015 PH ₃₉	18.0	X	145.87091	7.24980	42.19135	2.15556	0.1637639	0.26572771	2.3961361	21	3 24.2	21.5
446772 2015 PB ₄₁	17.6	X	342.83797	188.77831	2.16147	10.10529	0.1732482	0.27159135	2.3615225	21	1 7.8	20.5
446773 2015 PB ₅₃	16.1	X	110.58371	232.60143	89.91948	15.64450	0.0640279	0.21405475	2.7677029	21	—	—
446774 2015 PV ₅₄	17.1	X	112.22843	181.09765	130.58564	10.31270	0.1993011	0.20989555	2.8041456	21	—	—
446775 2015 PV ₅₄	16.9	X	335.56701	129.40569	119.53397	7.97751	0.0856815	0.28416964	2.2913122	21	4 2.7	19.5
446776 2015 PA ₆₀	17.9	X	273.03276	266.63524	25.41937	6.37375	0.2442145	0.28492972	2.2872355	21	2 18.2	21.5
446777 2015 PU ₁₄₉	17.7	X	235.56776	223.17383	68.57779	2.99517	0.2030846	0.26781690	2.3836587	21	1 19.9	21.6
446778 2015 PH ₂₀₀	17.7	X	160.44063	339.55801	34.48144	2.99547	0.2053704	0.25637725	2.4540480	21	2 27.4	21.4
446779 2015 PM ₂₀₂	16.1	X	35.97341	320.06006	355.40333	4.45323	0.1255096	0.18012852	3.1051391	21	10 15.1	20.0
446780 2015 PK ₂₃₀	16.4	X	226.53515	305.42460	321.85229	12.80118	0.1468216	0.24407628	2.5358234	21	—	—
446781 2015 PB ₂₈₆	17.1	X	119.96205	247.37922	127.44549	15.51019	0.2253509	0.23499097	2.6007699	21	1 21.9	20.6
446782 2015 PN ₂₉₃	17.0	X	192.47834	57.76944	233.61728	5.12519	0.2037133	0.24268566	2.5455012	21	—	—
446783 1993 TB ₁₀	18.2	X	216.18217	25.62955	333.67037	3.20938	0.2305712	0.26806545	2.3821850	21	3 24.9	22.3
446784 1995 SQ ₁₂	16.9	X	18.17303	178.34401	177.13242	5.52407	0.1368120	0.19325865	2.9628529	21	11 15.2	20.5
446785 1995 UU ₂₄	18.2	X	130.28002	224.61631	188.90793	4.03289	0.1994931	0.24494435	2.5298286	21	3 18.0	21.7
446786 1996 GD	17.9	X	72.69649	140.55306	39.06097	6.40199	0.1730242	0.27979522	2.3151325	21	6 18.2	20.4
446787 1997 TP ₂₂	18.7	X	224.81621	67.63113	310.30017	0.64707	0.1882207	0.27595163	2.3365805	21	4 25.8	22.5
446788 1997 WM ₆	18.2	X	225.14173	255.21836	101.67435	2.31651	0.2050658	0.27177771	2.3604429	21	3 31.7	22.0
446789 1998 FN ₉	20.7	X	59.42544	329.26806	183.84908	14.62687	0.2356617	0.59724143	1.3964844	21	—	—
446790 1998 RJ ₂₆	16.5	X	139.87936	351.29619	2.47011	13.18308	0.2363997	0.23329348	2.6133705	21	1 23.5	20.7
446791 1998 SJ ₇₀	18.3	X	310.93314	246.99839	21.46114	7.30259	0.7050152	0.29421428	2.2388597	21	1 11.4	23.1
446792 1998 TN ₂₁	17.5	X	107.91945	85.23778	313.05583	5.06691	0.0930240	0.23066179	2.6332107	21	1 18.0	20.7
446793 1998 UF ₂	16.9	X	153.63828	353.06114	10.79729	5.34785	0.2693796	0.23363883	2.6102146	21	2 17.4	21.2
446794 1998 UF ₅₀	17.7	X	126.58375	172.26111	222.74989	3.43296	0.2162492</					

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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>
446801 1999 <i>TT</i> ₂₅₃	18.0	X	309.15251	336.63210	25.97632	5.23628	0.1964452	0.30886010	2.1675120	21	7 21.9	19.8
446802 1999 <i>TB</i> ₃₀₂	16.8	X	97.75166	25.27199	23.23055	15.69647	0.1543420	0.24216555	2.5491446	21	1 29.9	20.2
446803 1999 <i>UD</i> ₅₄	16.2	X	308.28390	87.71346	44.61270	10.17878	0.0730773	0.18568536	3.0428761	21	—	—
446804 1999 <i>VN</i> ₆	19.5	X	150.08280	43.64605	58.05737	19.47724	0.3707052	0.43203126	1.7329762	21	6 10.3	22.3
446805 1999 <i>VY</i> ₂₀	17.2	X	267.43537	351.18516	45.50557	26.21055	0.2046928	0.30637020	2.1792399	21	6 30.8	20.6
446806 1999 <i>VK</i> ₇₆	17.1	X	14.38760	213.69482	159.89315	1.80262	0.1851210	0.17987626	3.1080416	21	12 4.8	20.7
446807 1999 <i>VH</i> ₁₁₃	16.8	X	55.61913	23.24852	70.48723	12.27111	0.2051987	0.23721069	2.5845199	21	1 20.2	19.2
446808 1999 <i>VE</i> ₁₂₉	16.9	X	22.26671	149.20941	228.49613	9.54317	0.0540086	0.18286235	3.0741131	21	12 5.4	21.0
446809 1999 <i>VP</i> ₁₃₁	17.9	X	193.22769	298.67257	37.65451	3.86089	0.1740335	0.24541231	2.5266116	21	2 10.5	22.0
446810 1999 <i>VT</i> ₁₃₅	17.6	X	14.93217	17.88125	36.89598	21.85232	0.0991077	0.36791578	1.9288736	21	—	—
446811 1999 <i>WN</i> ₂₂	17.6	X	52.54698	193.81991	154.04480	0.68499	0.2340866	0.18270028	3.0759309	21	12 31.3	22.1
446812 1999 <i>XH</i> ₃₅	15.3	X	50.90750	101.11808	251.36855	24.83983	0.2239298	0.18164826	3.0877957	21	12 29.9	20.0
446813 1999 <i>XB</i> ₂₃₉	16.1	X	334.55228	19.54351	63.43781	18.79064	0.2149463	0.18164578	3.0878238	21	12 22.4	19.3
446814 2000 <i>AG</i> ₂₀₉	15.7	X	29.89683	290.75387	86.71293	12.11156	0.1961891	0.18176698	3.0864510	21	—	—
446815 2000 <i>BQ</i> ₂₄	16.7	X	0.87971	37.08904	99.57073	14.39056	0.2068831	0.23014857	2.6371238	21	—	—
446816 2000 <i>EE</i> ₃₈	17.4	X	342.01792	285.13157	199.58622	2.70491	0.5146432	0.18178804	3.0821266	21	—	—
446817 2000 <i>QT</i> ₁₁₇	17.2	X	39.27310	120.70706	356.12746	5.55197	0.1824442	0.23070701	2.6328666	21	1 19.3	19.6
446818 2000 <i>GP</i> ₁₁₉	16.5	X	108.39016	113.73369	198.79729	5.74178	0.0516546	0.21425402	2.7659865	21	—	—
446819 2000 <i>RB</i> ₅₃	16.4	X	307.57927	85.21569	317.51723	26.36628	0.4307907	0.23206767	2.6225652	21	8 2.6	19.1
446820 2000 <i>SK</i> ₂₀₄	17.6	X	222.05488	167.36515	189.39678	10.51514	0.2092949	0.26530332	2.3986907	21	3 27.9	21.4
446821 2000 <i>SO</i> ₃₂	17.8	X	140.43173	77.72665	318.30069	0.80160	0.1830827	0.25916413	2.4364235	21	3 3.1	21.3
446822 2000 <i>WV</i> ₃₈	16.2	X	58.68223	170.64619	227.30298	15.51924	0.2601853	0.19647393	2.9304395	21	—	—
446823 2001 <i>FB</i> ₁₅₂	16.7	X	309.31755	346.48249	214.18875	12.66911	0.2342986	0.23770917	2.5809054	21	—	—
446824 2001 <i>FB</i> ₁₈₁	17.3	X	166.24299	313.83280	6.05393	9.66337	0.1446065	0.23355355	2.6114301	21	—	—
446825 2001 <i>OM</i> ₅₀	17.9	X	274.74810	291.36327	46.84181	6.48564	0.3258419	0.28604871	2.2812667	21	4 10.5	21.5
446826 2001 <i>PE</i> ₁	18.2	X	100.71556	191.14072	182.91410	3.45664	0.5931318	0.21277792	2.7787641	21	2 19.6	22.7
446827 2001 <i>QL</i> ₁₆₂	17.3	X	145.14676	174.40832	146.51437	10.32061	0.2694641	0.21769738	2.7367424	21	—	—
446828 2001 <i>QS</i> ₁₇₁	17.5	X	280.20017	277.95385	43.66728	3.44764	0.2261130	0.28577754	2.2827095	21	4 3.6	20.8
446829 2001 <i>QR</i> ₂₁₀	16.8	X	157.85710	355.84050	309.33064	9.14976	0.2258239	0.21711664	2.7416203	21	—	—
446830 2001 <i>QM</i> ₂₂₆	17.5	X	289.66373	354.07649	319.74703	10.03215	0.1795035	0.28485631	2.2876285	21	4 2.1	20.8
446831 2001 <i>QR</i> ₂₂₉	16.7	X	116.71046	14.74024	341.90297	17.45363	0.2286986	0.21602034	2.7508883	21	1 3.3	20.8
446832 2001 <i>QT</i> ₃₀₆	17.2	X	129.92842	204.43325	157.89146	6.82854	0.0532447	0.21865469	2.7287486	21	—	—
446833 2001 <i>RB</i> ₁₂	21.0	X	52.97779	141.71236	333.20140	6.61229	0.3814123	0.91331345	1.0520979	21	—	—
446834 2001 <i>RV</i> ₁₂₂	16.9	X	90.96977	203.35217	156.18645	3.33654	0.1053969	0.21231892	2.7827674	21	—	—
446835 2001 <i>SD</i> ₈₅	16.9	X	174.04097	157.39224	178.09295	13.06515	0.1690847	0.22176637	2.7031631	21	1 22.8	21.4
446836 2001 <i>SW</i> ₈₈	18.6	X	258.11760	73.81853	284.81558	1.63833	0.2394139	0.28530485	2.2852301	21	4 27.1	22.0
446837 2001 <i>SW</i> ₉₀	17.1	X	292.88240	317.86319	351.41001	24.52656	0.1676255	0.28510606	2.2862923	21	3 30.6	20.3
446838 2001 <i>SZ</i> ₁₁₉	17.2	X	130.94141	102.98203	347.69563	22.64497	0.2553334	0.27609968	2.3357451	21	4 27.7	21.3
446839 2001 <i>SK</i> ₁₂₀	17.4	X	96.57231	141.39183	228.77943	2.79944	0.1694364	0.21376126	2.7702357	21	—	—
446840 2001 <i>SU</i> ₁₂₆	17.1	X	100.62492	143.91036	215.02584	3.92752	0.1266206	0.21334108	2.7738719	21	—	—
446841 2001 <i>SF</i> ₁₅₇	17.9	X	252.38674	150.81899	225.90572	4.71586	0.2316003	0.28530150	2.2852481	21	5 17.0	21.2
446842 2001 <i>SO</i> ₁₉₈	17.0	X	124.43346	358.85302	2.50149	14.23619	0.1301044	0.21678781	2.7443920	21	1 3.1	21.1
446843 2001 <i>SN</i> ₂₀₈	16.6	X	180.18961	138.82042	148.12503	3.07617	0.1605202	0.21639656	2.7476989	21	—	—
446844 2001 <i>SG</i> ₂₂₆	17.5	X	197.22577	328.43880	21.09245	7.62068	0.1580858	0.27452929	2.3446440	21	2 27.5	21.1
446845 2001 <i>SN</i> ₂₆₄	17.1	X	318.82602	89.02048	213.08468	22.25262	0.2325662	0.28704524	2.2759837	21	4 24.5	19.5
446846 2001 <i>SR</i> ₃₁₂	17.5	X	69.28027	17.44094	355.45308	3.81932	0.2065455	0.21027927	2.8007332	21	—	—
446847 2001 <i>SB</i> ₃₃₃	15.9	X	105.92912	81.54697	297.21190	10.90907	0.1985026	0.21467581	2.7623623	21	1 10.3	19.4
446848 2001 <i>TN</i> ₂₇	18.5	X	246.12368	5.88902	1.15898	4.70501	0.2399612	0.28249129	2.3003787	21	4 26.5	22.1
446849 2001 <i>TF</i> ₉₉	17.3	X	294.64902	51.63876	227.92018	6.43389	0.0917121	0.27837596	3.3229947	21	3 9.9	20.3
446850 2001 <i>TT</i> ₉₉	18.5	X	237.47439	114.57844	238.83115	2.86328	0.2657307	0.28050737	2.3112124	21	4 1.2	22.5
446851 2001 <i>TK</i> ₁₀₉	17.9	X	240.64654	128.96542	237.20285	8.44772	0.2519051	0.28162061	2.3051176	21	4 19.9	21.7
446852 2001 <i>TM</i> ₂₅₉	17.2	X	45.97060	28.26951	21.75859	8.88607	0.1491581	0.20881541	2.8138073	21	—	—
446853 2001 <i>UY</i> ₄₅	18.4	X	183.66772	210.26475	190.96645	5.51230	0.2589584	0.27635116	2.3343279	21	4 21.7	22.4
446854 2001 <i>UY</i> ₆₇	17.9	X	204.47387	109.83681	265.22701	2.10173	0.2079277	0.27773738	2.3265541	21	4 3.2	21.8
446855 2001 <i>UC</i> ₇₂	17.7	X	272.54228	221.05473	125.70528	8.17835	0.2811292	0.28481331	2.2878587	21	4 25.6	21.4
446856 2001 <i>UY</i> ₉₆	17.8	X	242.30821	304.50022	69.73662	3.91227	0.1771687	0.28234982	2.3011470	21	5 9.0	21.1
446857 2001 <i>UM</i> ₉₈	16.4	X	75.61189	350.26377	42.93825	26.37299	0.1225601	0.21028093	2.8007185	21	—	—
446858 2001 <i>UH</i> ₁₂₉	16.8	X	48.07913	19.11460	34.26643	10.12635	0.2148588	0.20988159	2.8042699	21	—	—
446859 2001 <i>UZ</i> ₁₃₇	18.1	X	278.16211	266.87056	63.84558	2.89138	0.2338882	0.28369192	2.2938838	21	4 12.8	21.4
446860 2001 <i>UU</i> ₂₁₄	18.7	X	240.22825	298.12699	61.51827	2.81835	0.2260130	0.28057647	2.3108329	21	4 15.2	22.5
446861 2001 <i>VL</i> ₃₉	17.6	X	222.28298	204.20475	214.06202	4.40085	0.2534541	0.28204473	2.3028062	21	6 11.8	21.5
446862 2001 <i>VB</i> ₇₆	20.3	X	356.15898	248.42532	259.45476	4.23629	0.3486406	0.55948776	1.4586205	21	—	—
446863 2001 <i>VZ</i> ₇₆	17.5	X	20.73134	280.35917	87.90934	21.86078	0.1427507	0.34851081	1.9998245	21	—	—
446864 2001 <i>WK</i> ₃₃	16.6	X	335.78439	37.73537	66.25147	13.80989	0.1616873	0.20244770	2.8275052	21	—	—
446865 2001 <i>XM</i> ₁₂	16.9	X	85.95078	345.60607	52.53148	10.67551	0.2167672	0.21009777	2.8023460	21	1 10.7	20.3
446866 2001 <i>XC</i> ₃₃	17.0	X	58.83751	206.76635	232.38487	8.66143	0.1381546	0.21114114	2.7931064	21	1 5.9	20.3
446867 2001 <i>XA</i> ₇₇	17.9	X	188.60512	328.54164	80.63627	8.54606	0.1878676	0.27656470	2.3331261	21	5 6.1	21.7
446868 2001 <i>XP</i> ₉₂	17.7	X	230.66483	326.41343	65.63237	7.12376	0.1962012	0.28078301	2.3096996	21	5 19.6	21.2
446869 2001 <i>XJ</i> ₁₀₂	17.6	X	193.21041	5.31498	62.44050	10.45192	0.1808511	0.27866739	2.3213749	21	5 31.5	21.3
446870 2001 <i>XE</i> ₁₂₃	18.0	X	151.12666	249.38082	219.32550	4.42245	0.2349418	0.27665307	2.3326293	21	6 18.4	21.8
446871 2001 <i>YJ</i> ₇	18.3	X	180.66488	75.74034	5.52433	5.64043	0.2465306	0.27771513	2.3266784	21	6 6.9	22.3
446872 2001 <i>YO</i> ₁₀₂	16.7	X	209.96070	224.93572	270.76822	22.						

ELEMENTS AND OPPOSITION DATES IN 2021

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2021 JULY 5.0 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>
446881 2002 CA ₃₁₆	16.0	X	123.69911	94.52002	155.65231	11.60814	0.0351123	0.18271164	3.0758034	21	11 3.7	20.6
446882 2002 DR ₁₃	17.8	X	88.91336	16.24305	165.91933	5.83777	0.1605511	0.27074060	2.3664670	21	7 13.2	20.9
446883 2002 DY ₁₅	16.1	X	220.03225	169.84928	324.98382	16.31446	0.2108162	0.18216920	3.0819062	21	9 9.7	21.3
446884 2002 EA ₈	15.6	X	72.25048	276.61181	348.06251	21.16350	0.2292864	0.17324901	3.1868053	21	10 5.7	20.5
446885 2002 GB ₆₆	15.7	X	193.26491	196.16911	31.01663	11.95242	0.0634994	0.18461528	3.0546230	21	12 17.3	20.4
446886 2002 GN ₇₄	17.2	X	336.07273	237.51336	328.76530	1.52388	0.1416146	0.25381648	2.4705264	21	1 26.4	19.9
446887 2002 GZ ₈₂	15.5	X	134.95191	211.91376	56.07079	12.56701	0.1208832	0.18055002	3.1003045	21	12 5.6	20.4
446888 2002 JA ₁₀	16.3	X	149.22088	108.49810	184.77324	26.00470	0.2890165	0.23152197	2.6266845	21	—	—
446889 2002 JW ₈₂	16.8	X	182.64563	251.69070	52.85796	29.54743	0.3663678	0.23760036	2.5816933	21	1 2.2	22.0
446890 2002 JU ₈₆	16.1	X	170.43943	176.17526	45.31953	16.69558	0.1548792	0.17850015	3.1239950	21	11 13.5	21.1
446891 2002 JU ₁₀₇	16.1	X	214.15347	172.20906	30.78537	17.82228	0.2374814	0.18334523	3.0687132	21	11 21.8	21.4
446892 2002 JL ₁₃₄	16.0	X	150.24609	197.34247	39.00952	18.11111	0.1506435	0.17775943	3.1326673	21	11 12.2	21.1
446893 2002 NO	17.1	X	224.96017	132.75960	186.81147	14.37076	0.1342064	0.24165995	2.5526989	21	2 14.5	21.4
446894 2002 NZ ₇₄	17.4	X	142.05862	240.83424	113.09615	13.66397	0.2768182	0.23254300	2.6189902	21	1 26.4	21.5
446895 2002 PQ ₆₃	17.2	X	144.23642	245.74532	138.56602	7.99916	0.4445370	0.23263350	2.6183109	21	3 19.2	22.1
446896 2002 PZ ₇₅	17.4	X	163.75924	211.28249	124.61959	7.83165	0.3218906	0.23349664	2.6118544	21	1 25.6	22.1
446897 2002 QW ₁₇₁	17.6	X	134.19518	225.60804	177.26277	3.33780	0.2422912	0.23642757	2.5902239	21	3 14.7	21.6
446898 2002 PR ₁₈₃	17.3	X	57.50961	256.46344	164.29019	14.07077	0.2188049	0.22786475	2.6547153	21	—	—
446899 2002 PD ₁₉₂	16.8	X	156.39243	77.84282	282.97926	11.08097	0.0595628	0.23649209	2.5897528	21	1 23.3	20.5
446900 2002 QS ₃₂	17.6	X	87.64673	357.80207	26.58718	2.06329	0.2562389	0.22541264	2.6739331	21	—	—
446901 2002 QE ₆₁	16.9	X	138.47934	70.65101	318.51223	6.37945	0.1894578	0.23480765	2.6021234	21	2 23.6	20.9
446902 2002 QA ₁₁₅	18.0	X	168.74235	122.07415	190.86145	4.20190	0.2233001	0.23168009	2.6254892	21	—	—
446903 2002 QL ₁₁₉	18.5	X	353.86266	105.84967	189.57887	4.34332	0.2148645	0.30818674	2.1706681	21	7 9.8	19.4
446904 2002 QB ₁₃₃	17.1	X	157.89795	244.10093	136.78925	13.35799	0.1899386	0.23808182	2.5782116	21	3 7.5	21.2
446905 2002 QS ₁₃₉	17.0	X	119.15519	234.00944	175.23830	10.99485	0.1724491	0.23476491	2.6024392	21	2 25.0	20.5
446906 2002 RR ₅	16.3	X	194.66733	6.99256	317.76338	11.33396	0.1933932	0.23452364	2.6042238	21	1 30.2	20.6
446907 2002 RE ₂₁	17.6	X	101.19159	214.81280	140.01807	3.23632	0.2515591	0.22455189	2.6807619	21	—	—
446908 2002 RU ₂₆	16.9	X	223.48316	328.79074	322.43723	13.20736	0.2469481	0.23655889	2.5892652	21	1 15.2	21.6
446909 2002 RQ ₈₀	15.9	X	7.08976	348.70256	342.83998	8.71413	0.2361979	0.15561739	3.4231870	21	9 25.7	19.5
446910 2002 RL ₁₅₉	17.4	X	142.90558	22.87061	343.46511	3.28949	0.2394753	0.23267225	2.6180202	21	2 7.4	21.3
446911 2002 RY ₁₈₉	17.3	X	174.78829	329.24343	335.63105	6.33133	0.2714333	0.23118774	2.6292155	21	—	—
446912 2002 RW ₂₀₃	17.2	X	148.26390	205.20037	160.90984	2.36972	0.2577963	0.23338327	2.6127002	21	2 12.6	21.4
446913 2002 RW ₂₃₃	18.0	X	22.42068	123.50778	345.30908	21.50736	0.0841812	0.38684554	1.8654244	21	—	—
446914 2002 RR ₂₄₄	17.2	X	125.86311	259.72119	123.60226	3.42000	0.1008458	0.23219573	2.6216008	21	1 22.9	20.7
446915 2002 RR ₂₇₁	16.9	X	182.12771	312.76130	333.71359	12.76714	0.1777680	0.23050528	2.6344025	21	—	—
446916 2002 SF ₇₀	17.9	X	201.19648	270.67498	3.08547	12.12386	0.2491483	0.23012894	2.6372738	21	—	—
446917 2002 TN ₁₅	17.7	X	321.39851	315.54078	23.33069	6.77618	0.1684459	0.30687901	2.1768304	21	7 12.3	19.5
446918 2002 TT ₁₁₄	16.6	X	166.38871	148.78926	223.41387	12.49029	0.1818937	0.23455811	2.6036726	21	2 25.3	21.0
446919 2002 TB ₁₉₆	17.1	X	136.71605	171.02466	211.21944	13.48573	0.2670045	0.22923153	2.6441524	21	2 19.1	21.5
446920 2002 TY ₂₉₆	16.4	X	139.39286	310.38784	50.37529	13.61702	0.1728964	0.22768039	2.6561481	21	1 24.8	20.5
446921 2002 TN ₃₁₀	18.2	X	346.19132	172.59264	105.31519	5.90756	0.1794155	0.30151355	2.2025790	21	5 21.1	19.7
446922 2002 UM ₇₂	17.2	X	107.07402	212.54287	194.10877	3.64083	0.1577359	0.22757769	2.6569472	21	2 5.8	20.6
446923 2002 VL ₂	17.1	X	123.72687	266.29619	74.83573	24.27264	0.1288693	0.38164097	1.8823457	21	—	—
446924 2002 VV ₁₇	20.2	X	352.57262	348.81480	222.19998	9.69802	0.4365642	1.28589609	0.8375270	21	—	—
446925 2002 VH ₂₇	17.6	X	87.89542	203.92081	231.91389	4.76655	0.2680916	0.22617625	2.6679113	21	3 5.6	20.9
446926 2002 VD ₉₈	16.2	X	59.49987	52.39543	36.90777	22.35791	0.0497862	0.22557210	2.6726728	21	1 16.1	20.1
446927 2002 VH ₁₀₂	16.8	X	154.13222	122.23464	233.89956	25.19717	0.2453915	0.22904224	2.6456090	21	1 27.3	21.6
446928 2002 VP ₁₀₇	16.9	X	91.76846	43.89921	43.60865	12.80804	0.3067295	0.22728200	2.6592511	21	4 7.7	20.5
446929 2002 VA ₁₀₈	16.0	X	123.26404	139.75874	248.84243	14.84920	0.1760749	0.22631047	2.6668563	21	2 1.1	20.1
446930 2002 VZ ₁₄₄	16.5	X	75.64623	216.36527	224.04016	21.28592	0.0457500	0.22685205	2.6626101	21	1 15.9	20.5
446931 2002 VD ₁₄₅	16.9	X	81.66553	13.65268	56.75219	13.10126	0.1697038	0.22585924	2.6704071	21	2 8.6	20.2
446932 2002 WN ₁₃	17.4	X	73.44849	353.04832	80.65317	9.90775	0.2982998	0.22360176	2.6883506	21	2 18.9	20.2
446933 2002 XA ₂₅	16.4	X	165.66863	117.31900	276.45989	29.23813	0.3307378	0.23274651	2.6174633	21	3 19.9	21.8
446934 2002 XZ ₃₅	17.7	X	170.70265	50.11860	62.84131	8.74530	0.1298031	0.29491420	2.2333160	21	7 9.5	21.0
446935 2002 XZ ₃₈	18.1	X	205.29025	237.18121	262.96807	21.63645	0.4819534	0.29832316	2.2182547	21	8 20.1	23.1
446936 2002 XJ ₆₁	17.4	X	72.36244	91.63075	270.48444	17.12167	0.1191276	0.37166702	1.9158729	21	—	—
446937 2002 XN ₁₁₉	16.5	X	151.49077	122.72215	231.04735	14.50476	0.1043476	0.22642017	2.6659948	21	1 13.9	20.6
446938 2002 YQ ₅	20.0	X	179.74702	258.56416	279.92462	15.54543	0.1236055	0.67510829	1.2869265	21	—	—
446939 2002 YE ₁₃	17.4	X	85.83289	314.40739	86.70846	2.77989	0.2688155	0.22148557	2.7054474	21	1 18.8	20.2
446940 2003 BH ₃₄	17.9	X	132.23858	140.68570	20.34473	1.74163	0.1440612	0.29107625	2.2549221	21	8 3.9	21.2
446941 2003 BQ ₆₅	17.1	X	347.81675	312.19063	195.12709	2.05012	0.1974450	0.21347625	2.7727008	21	—	—
446942 2003 FZ ₁₀	17.6	X	86.68568	146.95655	27.77385	5.27504	0.1008151	0.28092252	2.3089349	21	6 20.0	20.3
446943 2003 FS ₁₁	17.9	X	132.98812	179.03583	323.83973	2.02908	0.1299601	0.28446136	2.2897454	21	7 8.9	21.0
446944 2003 FF ₃₂	17.7	X	128.82299	141.17392	1.79526	5.34480	0.1500005	0.28402838	2.2920718	21	7 6.9	21.0
446945 2003 FH ₃₉	18.3	X	66.90225	179.89062	350.39556	1.98788	0.1523025	0.27779255	2.3262461	21	5 21.2	20.6
446946 2003 GM ₄₇	18.0	X	51.61051	108.22986	89.96541	2.55480	0.1176742	0.27781172	2.3261390	21	6 1.2	20.2
446947 2003 HH ₅₀	16.0	X	78.86813	166.53986	122.84131	13.92511	0.0942291	0.18142349	3.0903456	21	11 8.4	20.7
446948 2003 JS ₅	16.3	X	110.69222	68.08955	212.96224	13.53337	0.2571059	0.18497171	3.0506977	21	12 8.1	21.7
446949 2003 LL ₇	17.9	X	2.15271	209.53052	203.62263	1.90729	0.0865179	0.19028953	2.9935932	21	12 26.6	21.7
446950 2003 MO ₇	16.0	X	101.37815	147.76494	142.12831	23.16428	0.2880021	0.18226049	3.0808770	21	12 15.9	21.7
446951 2003 RF ₆	15.5	X	18.66503	37.94292	339.01087	26.06457	0.1564531	0.17294461	3.1905436	21	12 7.0	20.1
446952 2003 RE ₂₄	15.9	X	41.41771	131.16113	217.10444	26.31237	0.2342663	0.17285918	3.1915948	21	12 14.8	20.6
446953 2003 SR ₃	18.1	X	202.14891	169.08659	181.88571	5.25931	0.2446846	0.25162875	2.4848254	21	3 5.9	22.5
446954 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>
446961 2003 <i>ST</i> ₃₆₅	16.7	X	40.72462	139.78440	215.85326	3.93610	0.1203831	0.17257739	3.1950681	21	12 9.3	21.1
446962 2003 <i>SV</i> ₄₀₈	16.4	X	111.66907	74.42630	197.55828	10.39680	0.0228626	0.17185643	3.2039976	21	11 11.3	21.1
446963 2003 <i>TK</i>	19.5	X	38.20951	11.26080	258.73486	4.38750	0.4479317	0.33142412	2.0679814	21	10 29.3	22.1
446964 2003 <i>TS</i> ₄₇	15.9	X	16.16865	51.65501	310.99371	9.64559	0.0562816	0.16932144	3.2358974	21	11 2.6	20.4
446965 2003 <i>UV</i> ₄₁	18.1	X	107.74155	193.42038	194.27741	3.87671	0.2002767	0.24027996	2.5624635	21	1 17.1	21.2
446966 2003 <i>UX</i> ₅₉	17.4	X	122.66949	14.46895	343.24876	18.17174	0.2297529	0.23897786	2.5717630	21	1 7.9	21.2
446967 2003 <i>UO</i> ₁₁₂	17.5	X	87.98918	333.66120	72.83979	5.69445	0.2712532	0.23780806	2.5801899	21	1 26.7	20.2
446968 2003 <i>UP</i> ₁₉₀	16.5	X	11.30969	18.14382	5.29520	21.91419	0.1645105	0.17038562	3.2224098	21	11 30.9	20.9
446969 2003 <i>UO</i> ₃₀₃	16.2	X	319.45715	288.45641	288.08292	6.06143	0.0756117	0.24509021	2.5288248	21	1 27.9	19.3
446970 2003 <i>UL</i> ₃₀₄	18.4	X	132.71295	23.64631	18.40860	17.39121	0.1910894	0.24518624	2.5281644	21	3 12.0	22.2
446971 2003 <i>UQ</i> ₃₀₈	18.3	X	157.28874	334.61630	48.60731	2.44062	0.2082555	0.24636041	2.5201251	21	3 8.9	22.2
446972 2003 <i>UT</i> ₃₂₂	18.0	X	71.81401	251.02801	191.52699	11.44086	0.1626881	0.24062884	2.5599860	21	1 25.9	21.0
446973 2003 <i>UV</i> ₃₃₇	18.3	X	101.96386	38.24180	36.50702	1.09683	0.1105011	0.24647886	2.5193177	21	2 26.5	21.2
446974 2003 <i>UF</i> ₃₃₈	18.5	X	175.75502	168.84845	178.44060	2.78588	0.1554967	0.24672967	2.5176101	21	2 4.5	22.5
446975 2003 <i>UJ</i> ₃₄₉	17.7	X	147.21659	334.17629	41.61746	6.79672	0.2306199	0.24516700	2.5282967	21	2 22.9	21.7
446976 2003 <i>UX</i> ₃₅₅	18.5	X	125.18426	123.18559	258.73543	1.75016	0.1661739	0.24099759	2.5573740	21	1 27.4	—
446977 2003 <i>UE</i> ₄₀₃	17.9	X	98.23995	199.44664	189.03906	4.78432	0.1029365	0.23979228	2.5659366	21	—	—
446978 2003 <i>WF</i> ₂₂	17.6	X	95.90031	19.08888	38.79797	14.29092	0.2435431	0.23925488	2.5697774	21	2 25.3	21.0
446979 2003 <i>WH</i> ₂₅	17.1	X	153.58113	287.58128	114.27798	8.43346	0.2301772	0.24530682	2.5273359	21	4 2.2	21.3
446980 2003 <i>WJ</i> ₃₀	17.5	X	103.67918	13.16588	45.24511	14.86770	0.2368652	0.24013839	2.5634704	21	3 8.0	21.2
446981 2003 <i>WD</i> ₃₅	16.8	X	109.61064	0.41366	54.39216	13.42173	0.1406607	0.24016439	2.5632855	21	2 23.0	20.4
446982 2003 <i>WJ</i> ₄₆	17.3	X	170.97924	314.69517	70.52650	9.87258	0.2172976	0.24754066	2.5121083	21	3 27.8	21.6
446983 2003 <i>WW</i> ₈₅	17.8	X	147.28097	133.23147	269.25529	6.32258	0.2748708	0.24541948	2.5265624	21	3 24.7	22.2
446984 2003 <i>WP</i> ₁₁₀	17.0	X	130.90975	132.92098	245.51493	15.38634	0.1579739	0.23966854	2.5668197	21	1 24.1	20.9
446985 2003 <i>WZ</i> ₁₆₃	16.9	X	1.46023	268.60581	249.91663	4.86157	0.1229944	0.23599008	2.5934242	21	1 7.4	19.8
446986 2003 <i>WS</i> ₁₉₂	16.3	X	155.36075	81.73321	295.75480	11.04231	0.1865980	0.24018526	2.5631370	21	2 21.9	20.4
446987 2003 <i>XY</i>	16.4	X	76.41976	104.87662	49.35487	27.82046	0.4477531	0.23766651	2.5812142	21	6 29.2	20.7
446988 2003 <i>YJ</i> ₁₁	16.6	X	79.51267	181.72662	293.95684	13.12814	0.1905783	0.23978036	2.5660216	21	3 26.1	19.9
446989 2003 <i>YG</i> ₁₄	17.0	X	144.39069	331.73656	70.49480	16.29177	0.3036717	0.24287845	2.5441540	21	4 5.3	21.6
446990 2003 <i>YM</i> ₂₂	17.8	X	113.00652	339.37656	66.78461	4.50707	0.2422140	0.23894363	2.5720086	21	2 26.5	21.3
446991 2003 <i>YL</i> ₂₄	16.6	X	67.91327	192.40826	273.40174	13.77436	0.1625228	0.23597688	2.5935209	21	2 17.6	19.7
446992 2003 <i>YJ</i> ₃₃	17.2	X	155.58243	272.45450	137.85836	6.72827	0.1925267	0.24649037	2.5192393	21	4 10.3	—
446993 2003 <i>YE</i> ₃₉	16.2	X	264.04465	276.17428	297.85198	13.20493	0.0603163	0.22525515	2.6751793	21	—	—
446994 2003 <i>YD</i> ₄₂	17.2	X	148.61492	309.52739	109.43217	8.77925	0.1822696	0.24310587	2.5425671	21	4 15.6	21.3
446995 2003 <i>YM</i> ₁₁₆	16.3	X	86.43036	316.17757	107.80829	15.33552	0.1348565	0.23264538	2.6182218	21	1 27.2	19.3
446996 2003 <i>YL</i> ₁₈₁	16.9	X	38.55774	353.64412	127.08920	14.72809	0.1190462	0.23147390	2.6270481	21	1 21.3	19.7
446997 2004 <i>BV</i> ₃	17.3	X	99.73218	6.68760	87.95165	3.63636	0.2055159	0.23858660	2.5745738	21	4 8.5	20.6
446998 2004 <i>BJ</i> ₁₀₃	16.1	X	12.81629	78.01487	119.74800	28.87634	0.3569773	0.23122918	2.6289013	21	3 16.2	18.2
446999 2004 <i>BA</i> ₁₂₉	19.0	X	196.24270	173.03077	308.65746	1.41881	0.1150505	0.31293505	2.1486545	21	8 18.9	21.8
447000 2004 <i>BR</i> ₁₃₁	18.2	X	130.80770	300.10984	132.88567	8.00576	0.2440554	0.24188959	2.5510831	21	4 21.1	22.3
447001 2004 <i>BH</i> ₁₆₀	18.7	X	259.76403	35.89636	341.62226	3.55990	0.1408047	0.30269920	2.1968237	21	6 3.9	21.7
447002 2004 <i>CH</i> ₂₇	17.4	X	82.25501	137.96928	325.52528	2.45697	0.2404175	0.23508325	2.6000893	21	3 29.8	20.3
447003 2004 <i>CH</i> ₂₉	16.8	X	112.30045	60.05077	306.77491	12.55152	0.1301254	0.22690106	2.6622667	21	—	—
447004 2004 <i>DS</i> ₁₃	17.9	X	55.41308	228.70835	346.56030	5.27205	0.1167828	0.30106611	2.2050537	21	7 5.4	20.0
447005 2004 <i>EM</i> ₄₁	17.0	X	6.27208	180.58611	351.07315	6.16382	0.2074319	0.22827578	2.6515276	21	1 28.3	19.5
447006 2004 <i>EU</i> ₅₇	16.8	X	1.82990	10.86555	166.68288	14.43503	0.1770319	0.22858131	2.6491644	21	1 28.0	19.8
447007 2004 <i>EG</i> ₅₈	17.4	X	74.44460	191.57760	21.70982	6.74078	0.1071752	0.30137243	2.2032665	21	8 3.2	20.0
447008 2004 <i>EF</i> ₉₆	16.2	X	198.78259	204.80741	60.64967	10.29714	0.1665727	0.21032662	2.8003129	21	—	—
447009 2004 <i>FS</i> ₁₃	16.6	X	18.59821	296.40722	204.70539	10.43487	0.2537715	0.22718776	2.6599865	21	1 1.2	19.1
447010 2004 <i>FO</i> ₅₉	16.8	X	44.75279	284.17296	183.92150	12.92298	0.1750977	0.22625156	2.6673192	21	1 15.6	19.7
447011 2004 <i>FJ</i> ₁₀₆	18.2	X	236.01755	3.50300	183.69337	20.47069	0.0767318	0.37888424	1.8914652	21	—	—
447012 2004 <i>FJ</i> ₁₂₅	17.8	X	5.23195	230.25379	4.36468	7.95567	0.2530872	0.29032521	2.5888092	21	4 10.0	18.8
447013 2004 <i>FE</i> ₁₄₃	18.0	X	207.17251	203.60874	28.30158	23.65653	0.1094327	0.37948231	1.8894774	21	—	—
447014 2004 <i>GO</i> ₂₀	17.0	X	9.22761	138.05429	40.10533	8.27307	0.2288852	0.22821774	2.6519772	21	2 12.9	19.5
447015 2004 <i>HF</i> ₄	16.5	X	289.57816	334.81002	201.44886	13.21096	0.1163809	0.21396882	2.7684439	21	—	—
447016 2004 <i>HK</i> ₂₂	17.2	X	358.89890	123.38607	22.87665	6.50766	0.2262794	0.22223334	2.6993751	21	—	—
447017 2004 <i>HH</i> ₅₄	17.7	X	246.54493	133.15227	74.33774	23.06136	0.0723365	0.38124229	1.8836578	21	—	—
447018 2004 <i>KH</i> ₁₁	17.4	X	331.02716	195.07082	102.74444	8.24654	0.1445957	0.29082465	2.2562224	21	5 28.1	19.4
447019 2004 <i>LS</i> ₇	16.2	X	324.41778	330.08770	274.73312	24.90426	0.1976565	0.28016206	2.3131112	21	2 4.4	19.7
447020 2004 <i>LE</i> ₁₀	17.6	X	223.07039	326.58863	260.36218	19.79299	0.0320071	0.37812172	1.8940072	21	—	—
447021 2004 <i>LP</i> ₁₄	16.0	X	178.75211	146.87826	116.94935	16.17200	0.1165383	0.20316718	2.8657195	21	—	—
447022 2004 <i>NO</i> ₃₀	18.4	X	264.19221	197.27676	105.99396	8.00913	0.3577492	0.27529009	2.3403223	21	2 18.0	22.6
447023 2004 <i>NZ</i> ₁₂	18.1	X	264.86008	157.49469	150.90128	2.52886	0.2487176	0.27648705	2.3335629	21	3 1.4	21.8
447024 2004 <i>OY</i> ₈	17.8	X	259.98557	80.96101	149.29277	3.77522	0.2449314	0.27747660	2.3280116	21	3 22.5	21.6
447025 2004 <i>OH</i> ₉	16.3	X	43.83055	251.76085	234.44604	8.97764	0.2875857	0.18690024	3.0296757	21	—	—
447026 2004 <i>OC</i> ₁₂	17.6	X	274.66355	261.83453	62.09635	4.75723	0.1747920	0.27928149	2.3179707	21	4 8.2	20.8
447027 2004 <i>OH</i> ₁₃	18.3	X	260.84179	82.58831	237.03073	1.82826	0.1863325	0.27622315	2.3350490	21	3 15.6	22.0
447028 2004 <i>PV</i> ₂₂	18.5	X	299.37514	49.59391	235.20908	0.19169	0.2519667	0.27879352	2.3206747	21	3 3.3	21.8
447029 2004 <i>PC</i> ₃₄	17.4	X	246.56810	182.93780	152.42735	6.25453	0.1703302	0.27425790	2.3461906	21	3 25.7	21.0
447030 2004 <i>PM</i> ₆₀	15.0	X	356.16732	352.37434	348.31568	29.55557	0.2358783	0.17403400	3.1772154	21	9 15.9	18.1
447031 2004 <i>PW</i> ₇₃	18.1	X	235.63238	240.46981	117.59128	3.20014	0.2282330	0.27498763	2.3420380	21	4 10.2	21.9
447032 2004 <i>PS</i>												

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Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>	
447041	2004	RV ₅₇	16.1	X	88.47976	343.08536	317.55742	8.75367	0.2212734	0.18525755	3.0475589	21 12 9.6	21.1
447042	2004	RN ₇₀	17.9	X	268.52899	237.66196	69.23697	3.14154	0.2427404	0.27385731	2.3484780	21 3 4.9	21.7
447043	2004	RH ₇₆	17.5	X	249.47029	203.47509	117.09597	3.38587	0.2502653	0.27129515	2.3632411	21 3 5.2	21.5
447044	2004	RL ₈₈	15.4	X	48.93820	328.08945	353.90396	12.87430	0.2598378	0.17907012	3.1173625	21 11 26.3	20.0
447045	2004	RL ₉₁	16.2	X	65.54128	147.76723	192.79132	10.35191	0.1642377	0.18655101	3.0334556	21 12 27.9	20.9
447046	2004	RK ₁₂₅	16.2	X	216.03111	206.60303	334.99850	10.06893	0.0402877	0.18431008	3.0579942	21 11 18.8	20.8
447047	2004	RW ₁₄₀	16.8	X	21.10769	176.46246	175.61093	11.64232	0.2207865	0.17912629	3.1167107	21 11 24.9	20.7
447048	2004	RB ₁₅₄	16.8	X	10.90830	309.19453	303.52633	9.45501	0.1872203	0.28196285	2.3032520	21 6 8.4	18.5
447049	2004	RO ₁₆₀	16.6	X	27.34674	194.89291	185.13068	9.18005	0.1360245	0.18351104	3.0668645	21 12 25.3	20.8
447050	2004	RR ₁₇₂	16.2	X	193.72395	343.70109	199.40544	11.81081	0.0379998	0.18134746	3.0912092	21 10 29.9	20.7
447051	2004	RK ₁₈₆	15.4	X	102.59445	296.59019	339.49626	26.29767	0.1688018	0.18255998	3.0775067	21 11 8.3	20.8
447052	2004	RZ ₂₁₁	15.4	X	66.72631	47.07747	303.44713	15.12023	0.1482717	0.18619679	3.0373016	21 —	—
447053	2004	RB ₂₂₄	16.9	X	347.71358	249.09068	172.34451	16.80586	0.3270872	0.17959948	3.1112340	21 —	—
447054	2004	RN ₂₃₀	16.0	X	60.38513	322.98378	4.10733	5.84943	0.0651908	0.17861344	3.1226738	21 11 20.9	20.5
447055	2004	RA ₂₃₁	16.4	X	53.85644	148.72567	203.57148	6.05939	0.1201650	0.18147602	3.0897491	21 12 22.7	20.8
447056	2004	RS ₂₃₂	16.2	X	6.55003	343.50676	16.10472	12.04270	0.1329356	0.17471978	3.1688960	21 10 25.5	20.0
447057	2004	RE ₂₄₂	18.2	X	181.50068	271.89427	160.01183	3.15233	0.1457807	0.27447686	2.3449427	21 5 26.8	21.7
447058	2004	RV ₂₄₅	16.2	X	311.11868	279.40466	160.33907	10.49559	0.0424581	0.18136478	3.0910125	21 11 18.1	20.5
447059	2004	RY ₂₄₅	18.0	X	204.42961	14.42339	29.00753	3.18621	0.1974688	0.27379387	2.3484807	21 5 10.0	21.8
447060	2004	RF ₂₅₂	18.3	X	348.82978	229.76837	183.317968	22.53183	0.1145891	0.35858567	1.9621887	21 —	—
447061	2004	RY ₂₆₁	18.2	X	188.25541	61.05344	352.51751	1.55408	0.1785192	0.27273727	2.3549032	21 5 8.6	21.9
447062	2004	RG ₂₆₅	16.5	X	69.67056	271.98587	61.72764	2.24727	0.1657796	0.18498496	3.0505520	21 12 24.9	21.0
447063	2004	RB ₂₆₈	16.8	X	74.25363	122.96118	173.59482	10.52883	0.0883910	0.18057928	3.0999696	21 11 7.9	21.3
447064	2004	RP ₂₈₂	17.2	X	129.28505	113.05488	354.98245	12.75097	0.0789430	0.27286426	2.3541725	21 5 5.5	20.6
447065	2004	RS ₃₀₃	16.8	X	65.45026	101.54129	245.31687	4.90658	0.1184340	0.18604874	3.0389128	21 12 29.9	21.3
447066	2004	RY ₃₀₇	17.7	X	241.99504	21.50321	327.94045	5.10287	0.2438101	0.27247371	2.3564215	21 3 31.5	21.7
447067	2004	RJ ₃₀₈	17.5	X	257.43267	336.45926	334.84636	9.60329	0.1842235	0.27064301	2.3670359	21 3 2.7	21.2
447068	2004	RR ₃₁₆	16.3	X	40.90970	3.16924	345.79315	14.88259	0.1410509	0.18145820	3.0899515	21 12 3.2	20.8
447069	2004	RB ₃₂₂	18.3	X	60.89391	196.05303	189.73673	21.79794	0.0802646	0.36484730	1.9396735	21 —	—
447070	2004	RH ₃₂₇	16.4	X	31.61730	47.38009	331.68526	8.33388	0.1461705	0.18293492	3.0732497	21 —	—
447071	2004	RG ₃₄₅	16.3	X	55.49586	315.72418	11.85663	14.89385	0.2180262	0.17942447	3.1132568	21 12 5.1	21.0
447072	2004	RD ₃₄₇	15.6	X	24.80127	115.95340	265.76863	20.36294	0.1891467	0.18018786	3.1044573	21 12 29.7	19.6
447073	2004	RG ₃₅₆	16.6	X	354.35553	218.88671	195.54355	4.63939	0.1240728	0.17994167	3.1072883	21 12 17.4	20.4
447074	2004	SP ₈	16.4	X	33.15456	43.75618	339.77473	5.37818	0.1637940	0.18392801	3.0622276	21 —	—
447075	2004	SH ₂₁	16.1	X	10.17204	255.12852	119.28403	19.68132	0.4313697	0.17605335	3.1528733	21 —	—
447076	2004	SB ₃₉	15.6	X	304.97300	53.62547	17.73377	11.35841	0.2935433	0.17132644	3.2106018	21 9 26.6	19.1
447077	2004	SS ₅₈	17.7	X	144.22208	248.06833	64.00044	24.02428	0.0470974	0.37124900	1.9173108	21 —	—
447078	2004	TF ₈	17.3	X	112.72143	130.88713	189.38717	25.77898	0.1660966	0.27479115	2.3431543	21 6 15.2	21.2
447079	2004	TV ₂₂	16.8	X	40.25841	135.90742	227.27221	4.21134	0.1328940	0.18178510	3.0862459	21 12 21.1	21.1
447080	2004	TH ₃₂	16.3	X	45.86471	9.04840	354.43612	4.94615	0.1926536	0.18160732	3.0882597	21 —	—
447081	2004	TL ₃₆	16.5	X	43.04350	123.78789	198.49762	9.92472	0.0762913	0.17514535	3.1637608	21 10 27.8	20.7
447082	2004	TX ₄₀	17.5	X	227.95509	6.38944	15.65185	7.46907	0.1167572	0.27353051	2.3503482	21 5 6.8	20.9
447083	2004	TC ₄₂	16.4	X	40.93102	348.70728	2.94274	5.33611	0.2081167	0.17882807	3.1201748	21 12 18.0	20.7
447084	2004	TK ₄₃	16.4	X	309.12920	69.78294	16.48917	7.62452	0.1233713	0.17622063	3.1508778	21 11 11.6	20.4
447085	2004	TP ₄₄	18.0	X	156.13995	165.49513	271.94586	1.40809	0.1590938	0.26722005	2.3872067	21 5 8.6	21.5
447086	2004	TV ₄₇	17.7	X	218.39508	289.17053	39.05045	1.68329	0.2020758	0.26461703	2.4028363	21 2 19.2	21.6
447087	2004	TZ ₅₁	16.0	X	347.68923	224.34844	233.18622	7.40029	0.1466125	0.18260859	3.0769605	21 —	—
447088	2004	TL ₆₀	17.4	X	187.47481	324.87491	11.42460	6.58252	0.2302750	0.26268711	2.4145908	21 2 6.6	21.4
447089	2004	TG ₆₃	18.0	X	254.36758	318.17539	17.27618	2.46002	0.2024158	0.27208875	2.3586436	21 3 29.7	21.5
447090	2004	TT ₆₅	15.7	X	49.97952	297.07007	31.68543	11.30414	0.1153401	0.17863217	3.1224556	21 11 16.8	20.0
447091	2004	TN ₆₇	15.5	X	69.82974	271.17600	58.73774	16.40103	0.2494037	0.18210895	3.0825860	21 12 28.5	20.5
447092	2004	TM ₉₅	17.4	X	329.23553	100.97457	311.42263	0.10517	0.1606963	0.17453628	3.1711168	21 10 31.9	21.0
447093	2004	TZ ₉₉	16.0	X	254.46026	306.63142	198.01635	16.20519	0.1945070	0.17630101	3.1499200	21 11 1.7	20.6
447094	2004	TP ₁₀₀	15.8	X	305.04551	153.60322	294.53990	16.56219	0.1986243	0.17548699	3.1596533	21 10 24.2	19.9
447095	2004	TZ ₁₁₀	16.0	X	309.56804	116.79969	19.47475	12.91805	0.2500782	0.18219217	3.0816472	21 —	—
447096	2004	TW ₁₁₈	15.1	X	1.93168	359.92780	52.11844	29.02712	0.1411807	0.17881023	3.1203823	21 12 23.0	19.3
447097	2004	TL ₁₁₉	17.5	X	207.89556	303.58118	63.24718	11.74002	0.2555653	0.26849891	2.3796205	21 4 3.1	21.8
447098	2004	TB ₁₂₅	16.4	X	26.30449	264.60086	127.84254	5.54443	0.2302635	0.18273633	3.0755264	21 —	—
447099	2004	TR ₁₃₅	16.3	X	26.92663	131.01727	237.18793	8.56222	0.2715028	0.17876230	3.1209400	21 12 28.6	20.3
447100	2004	TQ ₁₄₅	18.3	X	207.63290	27.68341	342.72434	1.79086	0.2397035	0.26917149	2.3756548	21 4 1.2	22.4
447101	2004	TP ₁₅₃	17.7	X	224.20696	154.64468	198.64876	9.21878	0.0403923	0.26841579	2.3801117	21 3 30.5	20.8
447102	2004	TM ₁₅₄	18.3	X	193.24821	29.68248	15.94473	1.72859	0.1717789	0.27041215	2.3683829	21 5 3.2	22.1
447103	2004	TQ ₁₅₅	16.7	X	18.80769	226.85719	191.71115	11.45562	0.0502797	0.18572965	3.0423924	21 —	—
447104	2004	TL ₁₆₂	16.5	X	34.00261	309.00722	63.00746	1.82381	0.1762011	0.17937952	3.1137768	21 12 29.6	20.7
447105	2004	TB ₁₇₂	15.3	X	25.01223	117.71507	250.48625	24.85190	0.2570671	0.17632198	3.1496702	21 12 21.6	19.4
447106	2004	TN ₁₇₅	17.6	X	148.16920	254.49688	201.96443	4.58474	0.1670077	0.26988928	2.3714409	21 5 27.0	21.1
447107	2004	TV ₁₇₇	18.2	X	178.76481	71.73346	331.06059	1.05448	0.1836543	0.26860895	2.3789705	21 4 16.6	21.8
447108	2004	TD ₁₈₁	15.6	X	295.44089	67.51159	10.33662	26.92843	0.0936694	0.17619092	3.1512319	21 10 12.2	19.9
447109	2004	TS ₁₉₀	17.2	X	16.08778	10.12923	36.38113	0.82517	0.1678591	0.18264288	3.0765754	21 —	—
447110	2004	TH ₁₉₈	17.6	X	171.84206	40.09555	28.23971	4.38266	0.0731697	0.26983373	2.3717663	21 5 7.8	20.7
447111	2004	TS ₁₉₈	16.0	X	323.33330	84.88484	35.83797	7.57904	0.1372033	0.18385254	3.0630655	21 —	—
4													

ELEMENTS AND OPPOSITION DATES IN 2021

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2021 JULY 5.0 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>
447121 2004 TK ₃₃₉	16.0 ^m	X	63.87736	247.40519	27.67848	17.46827	0.1799914	0.17232274	3.1982149	21	10 11.9	20.6
447122 2004 TM ₃₇₀	16.0	X	31.11634	284.13571	98.29225	17.72300	0.2553852	0.18078410	3.0976277	21	—	—
447123 2004 VF ₃	15.8	X	32.97174	153.12000	220.77941	17.39872	0.1244745	0.17858062	3.1230565	21	12 21.4	20.2
447124 2004 VQ ₈	16.4	X	25.88552	180.92250	213.06104	12.88293	0.3151673	0.17926884	3.1150582	21	—	—
447125 2004 VF ₁₉	15.7	X	290.13618	54.74734	52.64686	15.98249	0.2220451	0.17373816	3.1808210	21	10 30.9	19.7
447126 2004 VM ₂₇	16.4	X	332.07325	59.01844	10.29735	5.25981	0.1407392	0.17643431	3.1483332	21	11 27.8	20.1
447127 2004 VC ₃₈	16.0	X	303.78260	57.30932	51.95208	10.55579	0.1989675	0.17622863	3.1507824	21	11 25.4	19.5
447128 2004 VN ₄₂	16.2	X	312.15378	357.42708	50.91817	7.84820	0.1237520	0.16907732	3.2390115	21	10 2.8	20.3
447129 2004 VL ₄₅	15.4	X	292.18976	257.16615	225.42662	23.48817	0.2015421	0.17491068	3.1665900	21	11 22.9	19.2
447130 2004 XJ ₉	15.7	X	18.54940	102.71146	264.49453	11.86348	0.2969267	0.17443081	3.1723950	21	12 18.4	19.4
447131 2004 XJ ₁₁	15.0	X	28.71774	102.11840	256.51460	24.97129	0.2530571	0.17369213	3.1813830	21	12 15.4	19.0
447132 2004 XZ ₂₉	16.2	X	277.42877	71.00033	77.14758	8.33965	0.3831213	0.17156349	3.2076438	21	11 6.5	20.5
447133 2004 XS ₉₃	17.8	X	108.39641	39.20878	75.23598	6.75677	0.1873718	0.25888750	2.4381589	21	5 10.9	21.1
447134 2004 XY ₁₀₃	17.9	X	159.40141	35.45461	50.32806	4.87307	0.2425131	0.26432284	2.4046189	21	5 27.2	21.8
447135 2004 XG ₁₁₂	15.4	X	9.86662	299.44072	72.45073	27.54006	0.1963442	0.17223837	3.1992593	21	11 26.9	19.1
447136 2004 XN ₁₃₁	17.2	X	152.01583	50.50028	52.16043	10.72556	0.2045992	0.26684344	2.3894523	21	6 8.8	21.0
447137 2004 YK ₈	17.6	X	161.50055	185.27583	237.57099	4.77724	0.1724034	0.26431606	2.4046600	21	4 25.6	21.4
447138 2005 AB ₄₄	17.9	X	110.11411	59.02630	41.93603	1.87462	0.1561567	0.25502336	2.4627259	21	4 19.4	21.0
447139 2005 CP ₂₃	17.0	X	137.87530	185.43974	252.32104	6.18271	0.1086757	0.25557900	2.4591552	21	4 13.3	20.5
447140 2005 EO ₂₂	17.2	X	286.77280	39.01811	162.21556	6.02002	0.1548394	0.23406419	2.6076306	21	—	—
447141 2005 EP ₁₄₀	17.5	X	143.04001	89.10197	327.78820	14.09697	0.0977687	0.25307085	2.4753767	21	3 18.4	21.1
447142 2005 EQ ₂₀₃	17.2	X	273.46108	245.24683	327.90868	14.06708	0.1317793	0.23657529	2.5891455	21	—	—
447143 2005 EN ₂₁₀	15.0	X	336.55124	230.66229	355.41644	10.26735	0.1260543	0.12305506	4.0031611	21	3 19.9	20.1
447144 2005 EQ ₂₄₇	17.4	X	299.01377	46.18743	175.07263	4.24036	0.0375603	0.23787363	2.5797157	21	1 15.1	21.0
447145 2005 EX ₂₇₆	17.5	X	279.44093	35.82436	187.96654	9.72317	0.0919163	0.23261656	2.6184380	21	—	—
447146 2005 GZ ₂₅	18.3	X	132.37395	338.55980	19.76760	18.23611	0.0878370	0.41213572	1.7883089	21	—	—
447147 2005 GQ ₇₂	17.3	X	182.20786	129.25299	186.78434	3.58330	0.0193294	0.23163277	2.6258468	21	—	—
447148 2005 GY ₇₇	16.5	X	337.35146	82.58601	69.25261	12.62823	0.1571998	0.23305555	2.6151489	21	—	—
447149 2005 GG ₇₈	16.2	X	225.95685	183.07023	86.84886	14.21665	0.1411599	0.22899536	2.6459700	21	—	—
447150 2005 GE ₉₁	17.1	X	226.95898	33.96985	213.84347	12.69419	0.0947065	0.22692478	2.6620412	21	—	—
447151 2005 GR ₉₄	17.1	X	244.25444	44.48356	194.78154	11.86556	0.0858573	0.22809072	2.6529617	21	—	—
447152 2005 GJ ₁₇₇	17.5	X	142.55628	143.69670	257.23019	1.14444	0.0045980	0.23924913	2.5698186	21	2 19.9	20.8
447153 2005 GM ₁₇₇	16.9	X	154.23811	180.91670	210.15911	13.17953	0.1035000	0.23963066	2.5670902	21	3 1.9	20.8
447154 2005 GC ₁₇₈	16.9	X	295.33906	132.73182	38.85293	13.85054	0.1885134	0.22875753	2.6478037	21	—	—
447155 2005 HE ₁₀	16.7	X	176.66333	246.09749	47.97749	13.54643	0.1908820	0.22148571	2.7054462	21	—	—
447156 2005 HF ₁₀	16.8	X	198.07560	34.44186	225.44706	9.15937	0.2354850	0.22165737	2.7040493	21	—	—
447157 2005 JE ₁	17.0	X	219.30584	151.49686	95.01701	9.71970	0.2541150	0.22146244	2.7056358	21	—	—
447158 2005 JD ₁₇	16.6	X	246.40700	23.91407	226.31291	12.34013	0.1328023	0.22788217	2.6545800	21	—	—
447159 2005 JC ₂₀	16.5	X	287.25351	82.60500	98.08065	13.85540	0.2081479	0.22667318	2.6640107	21	—	—
447160 2005 JK ₇₁	16.3	X	294.17006	147.51252	79.16346	29.24967	0.0471786	0.23148601	2.6269565	21	1 16.4	20.3
447161 2005 JJ ₁₃₁	16.9	X	296.13910	62.71897	96.26124	10.40345	0.0269524	0.22104062	2.7090768	21	—	—
447162 2005 JN ₁₃₉	16.9	X	297.94391	166.27539	57.67490	14.03315	0.1177672	0.23541903	2.5976163	21	1 8.5	20.7
447163 2005 JQ ₁₄₃	16.3	X	177.26310	243.46453	73.70623	12.49061	0.1975751	0.22265277	2.6959840	21	1 8.3	20.8
447164 2005 JH ₁₆₂	17.3	X	185.39636	207.72649	96.38971	8.29502	0.1346267	0.22328183	2.6909180	21	—	—
447165 2005 JU ₁₆₇	17.0	X	316.61907	0.04617	215.64498	14.55535	0.2000913	0.23486573	2.6016944	21	1 5.5	21.0
447166 2005 KH ₃	16.9	X	187.26359	237.56845	63.55457	6.93573	0.0680364	0.22657604	2.6647721	21	—	—
447167 2005 LS ₁₈	16.6	X	298.40462	118.16241	71.10198	12.87114	0.0480754	0.22623565	2.6674443	21	—	—
447168 2005 MX ₅₀	17.0	X	88.17589	63.66130	305.00692	3.78309	0.1279583	0.20830246	2.8184248	21	—	—
447169 2005 NC ₂₈	16.9	X	205.65182	100.29894	164.70743	9.31135	0.1215485	0.21494977	2.7600147	21	—	—
447170 2005 NW ₄₆	16.5	X	137.90849	48.52463	282.69950	11.93865	0.0588291	0.21295736	2.7772029	21	—	—
447171 2005 NJ ₆₅	17.0	X	105.44153	90.23689	267.80056	4.72528	0.1014768	0.20988848	2.8042086	21	—	—
447172 2005 NQ ₇₆	18.6	X	347.02032	172.22856	145.67908	5.10558	0.2338116	0.30809177	2.1711141	21	8 3.7	19.4
447173 2005 NP ₉₈	18.1	X	346.85915	189.84248	113.56544	3.92266	0.1363138	0.30639914	2.1791026	21	7 10.6	19.6
447174 2005 SH ₂₂	17.1	X	71.30146	323.05415	39.44727	2.46023	0.0905705	0.20185119	2.8781616	21	—	—
447175 2005 QZ ₅₀	18.3	X	334.20812	140.62434	151.05858	7.41884	0.2969331	0.30117280	2.2042400	21	4 25.7	20.2
447176 2005 QQ ₅₆	17.7	X	286.83645	256.84520	331.37323	19.92650	0.0399937	0.40454568	1.8106076	21	—	—
447177 2005 QU ₁₂₄	16.9	X	90.04149	335.86917	17.34344	1.93798	0.0767029	0.20329748	2.8644949	21	—	—
447178 2005 RO ₄₃	7.1	X	336.52422	326.81367	198.11073	35.46144	0.5174071	0.00640901	28.7039784	21	12 24.5	19.7
447179 2005 SH ₃₄	17.9	X	208.78841	358.73610	41.84557	7.89705	0.1127284	0.28973824	2.2618589	21	5 11.3	21.1
447180 2005 SN ₃₆	17.6	X	203.83348	21.47328	5.56475	6.07635	0.2370212	0.28766719	2.2727020	21	4 16.8	21.3
447181 2005 SO ₅₅	16.6	X	325.47501	239.02576	195.45897	11.31487	0.1699743	0.18841508	3.0134150	21	11 27.7	20.0
447182 2005 SK ₆₉	16.6	X	53.00906	321.39171	358.49630	9.43286	0.0796630	0.18908239	3.0063208	21	11 5.1	20.8
447183 2005 SN ₈₅	17.5	X	102.65241	325.22149	19.00272	6.20582	0.2059053	0.20185714	2.8781050	21	—	—
447184 2005 ST ₈₅	17.2	X	64.15744	212.27006	162.95337	1.60687	0.1531074	0.19873798	2.9081410	21	—	—
447185 2005 SP ₉₉	16.7	X	86.12538	148.00417	229.98289	7.57269	0.2148088	0.20225466	2.8743326	21	—	—
447186 2005 SG ₁₀₇	17.5	X	286.53927	22.69923	292.05096	8.49362	0.2030474	0.29425049	2.2386761	21	3 28.2	20.7
447187 2005 SM ₁₀₈	18.1	X	270.09605	142.90397	226.83383	1.47611	0.1602396	0.29656723	2.2270020	21	6 4.1	21.0
447188 2005 SW ₁₁₂	16.7	X	86.74452	169.70598	213.33277	13.10681	0.1868265	0.20391325	2.8587252	21	—	—
447189 2005 SF ₁₁₄	16.5	X	271.79827	259.40751	191.23998	8.05997	0.0618893	0.18508649	3.0494364	21	10 6.3	20.6
447190 2005 SP ₁₂₈	18.0	X	262.51628	11.15495	22.87646	4.89167	0.1839446	0.29810930	2.2193154	21	6 26.1	20.9
447191 2005 ST ₁₂₉	16.2	X	32.98104	312.89642	24.77862	16.03325	0.0699618	0.18632868	3.0358681	21	10 31.1	20.4
447192 2005 SV ₁₆₀	17.1	X	110.36810	95.92339	229.03363	1.16170	0.0601753	0.20004187	2.8954903	21	—	—
447193 2005 SL ₁₈₅	17.2	X	121.07566	334.59449	359.99888	1.67538	0.0695717	0.20337168	2.8637981	21	—	—
447194 2005 SH ₁₈₆	17.9	X	222.86085	5.56822	14.52971	7.46415	0.1796230	0.28986704	2.2611888	21	4 25.1	21.5

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Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>		
447201	2005	SV ₂₃₉	18.6	X	218.23559	148.40844	261.03772	4.59363	0.1624278	0.29252922	2.2474492	21	5 31.6	21.9
447202	2005	SM ₂₅₉	17.9	X	223.87088	307.14098	63.11889	8.59341	0.2187500	0.28937249	2.2637644	21	4 16.5	21.6
447203	2005	SF ₂₆₂	16.6	X	110.96009	248.65998	86.60897	3.17681	0.0848307	0.20228401	2.8740546	21	—	—
447204	2005	SZ ₂₆₂	16.7	X	291.15990	22.77586	74.50728	3.36247	0.2112248	0.18604435	3.0389605	21	10 21.7	20.4
447205	2005	TU ₇	16.8	X	47.67523	148.30398	191.84115	10.97933	0.1183015	0.19001446	2.9964816	21	12 3.2	21.0
447206	2005	TW ₂₅	16.9	X	337.82630	248.56635	209.82187	12.50119	0.1468854	0.19293757	2.9661391	21	—	—
447207	2005	TH ₄₈	15.7	X	36.32394	2.75274	329.27530	10.08702	0.1079843	0.18872229	3.0101439	21	11 1.1	19.9
447208	2005	TG ₅₄	16.6	X	54.54458	355.45249	46.46475	9.20005	0.2267210	0.19857861	2.9096968	21	—	—
447209	2005	TF ₅₆	17.9	X	260.60717	45.68967	7.80618	5.49956	0.1195551	0.30079397	2.2060903	21	8 3.2	20.6
447210	2005	TN ₅₈	16.3	X	18.14210	336.27142	30.28073	14.18801	0.1422166	0.18812469	3.0165152	21	11 24.5	20.1
447211	2005	TX ₅₉	17.6	X	235.41705	55.59072	17.81536	6.16399	0.1160707	0.29834931	2.2181250	21	7 30.2	20.5
447212	2005	TY ₆₂	17.8	X	184.39547	52.47737	59.76708	3.37998	0.1065523	0.29521064	2.2338193	21	7 23.9	21.0
447213	2005	TP ₉₀	16.4	X	53.88763	194.71967	217.34117	12.15718	0.1500264	0.20247874	2.8722115	21	—	—
447214	2005	TY ₉₆	16.7	X	327.04287	234.81384	220.47065	8.38714	0.0985570	0.19209305	2.9748264	21	12 27.5	20.4
447215	2005	TN ₁₂₇	17.5	X	48.43066	161.69410	254.87567	1.06661	0.0603328	0.20176418	2.8789890	21	—	—
447216	2005	TC ₁₂₈	17.3	X	99.29728	290.67907	15.28939	8.34261	0.2344217	0.19619235	2.9332427	21	12 27.8	22.3
447217	2005	TH ₁₆₉	17.5	X	41.55259	88.13916	308.72634	1.05767	0.0681680	0.19650418	2.9301387	21	—	—
447218	2005	TP ₁₇₁	16.0	X	44.09081	173.90351	228.96605	18.54785	0.1859229	0.19766399	2.9186657	21	—	—
447219	2005	TK ₁₇₅	18.5	X	286.11982	65.80575	291.74246	3.80031	0.2155670	0.29786115	2.2205479	21	5 29.4	21.1
447220	2005	TO ₁₈₇	16.9	X	291.34991	248.38998	227.32341	7.04077	0.0774169	0.18943469	3.0025923	21	12 1.8	20.9
447221	2005	UO ₅	20.7	X	114.53306	76.34557	50.75192	19.67826	0.1503438	0.78775490	1.1611152	21	—	—
447222	2005	UG ₁₅	18.3	X	314.59834	282.19498	48.75680	4.84466	0.1751512	0.29776037	2.2210489	21	6 11.1	20.3
447223	2005	UM ₁₆	18.4	X	253.78425	179.57236	200.57575	4.85597	0.2150484	0.29392747	2.2403159	21	5 24.7	21.8
447224	2005	UG ₂₇	16.1	X	7.26335	342.95482	44.73449	7.40146	0.1668406	0.18803567	3.0174671	21	12 9.8	19.7
447225	2005	UK ₃₅	16.8	X	30.71378	111.63235	224.26508	8.72406	0.0637231	0.18258732	3.0771994	21	10 26.3	20.9
447226	2005	UR ₇₈	17.5	X	190.91296	358.22261	21.05347	6.28179	0.1776037	0.28177811	2.3042586	21	3 28.8	21.0
447227	2005	UZ ₈₁	17.5	X	33.40565	184.99161	249.23968	1.06940	0.0484168	0.20142875	2.8821843	21	—	—
447228	2005	UJ ₈₃	16.9	X	80.00081	160.07226	193.96539	1.73796	0.1167205	0.19648698	2.9303098	21	—	—
447229	2005	UZ ₉₅	18.3	X	202.87163	255.96909	173.78724	3.47243	0.1406638	0.29055601	2.2576129	21	6 13.8	21.7
447230	2005	UE ₉₇	17.3	X	355.47259	237.38768	189.15227	5.81089	0.1286700	0.19085311	2.9876970	21	—	—
447231	2005	UQ ₁₀₂	17.1	X	16.81753	224.05315	217.57405	10.62348	0.0872571	0.19643846	2.9307922	21	—	—
447232	2005	UP ₁₁₈	16.9	X	25.86623	128.11516	222.89137	7.85856	0.0935291	0.18590073	3.0405255	21	11 12.7	20.7
447233	2005	UL ₁₂₇	16.9	X	217.81157	212.05754	31.04025	2.98404	0.0198367	0.19830906	2.9123329	21	—	—
447234	2005	UB ₁₂₉	18.1	X	166.80504	94.67264	41.00857	6.78919	0.0331672	0.29552722	2.2322237	21	8 7.2	20.9
447235	2005	UR ₁₆₅	16.5	X	328.45939	196.10447	219.27393	11.34434	0.0546781	0.18567626	3.0429755	21	11 9.3	20.5
447236	2005	US ₁₆₅	16.9	X	2.72968	33.30428	24.77809	2.52730	0.1173021	0.19178895	2.9779701	21	—	—
447237	2005	UA ₁₇₆	16.5	X	357.65927	189.72361	245.22348	8.50004	0.1007299	0.19152053	2.9807519	21	—	—
447238	2005	US ₁₉₁	16.8	X	301.51608	27.75251	41.90434	6.07244	0.1175735	0.18074007	3.0981308	21	10 14.2	20.6
447239	2005	UK ₂₀₂	18.2	X	228.85411	170.24982	208.53463	5.24196	0.1678367	0.28848639	2.2683975	21	5 1.7	21.6
447240	2005	UV ₂₀₂	16.6	X	48.64270	331.85389	54.53606	9.85828	0.1192689	0.19442581	2.9509835	21	—	—
447241	2005	UW ₂₀₂	16.9	X	6.51951	358.67649	56.71654	9.55053	0.0808701	0.19131412	2.9828954	21	—	—
447242	2005	UK ₂₀₄	16.8	X	1.77099	207.37276	223.26530	11.21035	0.2089928	0.19163527	2.9795620	21	—	—
447243	2005	UM ₂₀₈	17.7	X	12.97224	247.09454	176.30418	2.41160	0.1689814	0.19445634	2.9506745	21	—	—
447244	2005	UO ₂₁₁	16.9	X	225.01900	352.11782	214.19984	6.61955	0.0409566	0.19217737	2.9739561	21	—	—
447245	2005	UV ₂₁₂	18.7	X	270.35742	174.47430	161.87300	1.76492	0.1630402	0.28897523	2.2658386	21	4 19.2	21.7
447246	2005	UX ₂₁₃	16.2	X	339.54479	17.99222	57.98766	18.25270	0.2263626	0.18988469	2.9978466	21	12 27.8	19.3
447247	2005	UB ₂₂₀	18.8	X	206.96563	145.20278	253.98318	4.54499	0.1359522	0.28773339	2.2723534	21	5 6.9	22.0
447248	2005	UM ₂₂₁	18.4	X	252.12092	69.92220	335.48316	2.80676	0.1351832	0.29615258	2.2290803	21	7 6.4	21.1
447249	2005	UF ₂₃₆	18.1	X	117.47888	75.46696	86.89410	5.09448	0.0325696	0.29124009	2.2540763	21	7 5.4	20.6
447250	2005	UN ₂₄₃	17.7	X	332.93180	324.13645	342.12489	3.27771	0.1832652	0.29396594	2.2401205	21	6 6.5	19.3
447251	2005	UD ₂₄₈	16.8	X	54.29626	314.75061	51.02254	12.01164	0.0877100	0.19205400	2.9752296	21	—	—
447252	2005	UA ₂₅₅	17.7	X	218.99746	10.92247	27.60280	8.34659	0.1412609	0.29239865	2.2481182	21	5 17.1	21.0
447253	2005	UT ₂₆₂	16.6	X	102.87128	332.21347	34.98105	9.77999	0.0342609	0.20361830	2.8614852	21	—	—
447254	2005	UP ₂₈₀	16.9	X	29.45341	345.90381	39.17630	2.55783	0.0715679	0.19136053	2.9824132	21	12 27.7	20.9
447255	2005	UB ₂₉₄	16.4	X	340.38988	346.80794	23.57539	4.66365	0.1801419	0.18013578	3.1050557	21	9 28.0	19.6
447256	2005	UG ₂₉₇	17.2	X	36.54605	187.76151	232.08572	5.82951	0.2114832	0.19629583	2.9322117	21	—	—
447257	2005	UE ₂₉₉	18.1	X	214.15150	338.44807	49.21510	7.68351	0.1307702	0.28639254	2.2794405	21	4 30.6	21.4
447258	2005	UC ₃₁₁	17.0	X	61.59958	163.76773	182.76478	5.25714	0.0555959	0.19266882	2.9688967	21	12 18.7	21.2
447259	2005	UM ₃₂₀	16.7	X	19.85357	124.37464	205.29572	7.26807	0.1894000	0.18168244	3.0874084	21	10 18.7	20.3
447260	2005	UU ₃₂₃	16.2	X	5.66418	322.20737	90.41118	18.59746	0.1936591	0.18517100	3.0485084	21	—	—
447261	2005	UY ₃₂₄	18.0	X	232.15485	42.35114	40.93702	5.54499	0.0914478	0.30041866	2.2079274	21	8 12.9	20.9
447262	2005	UC ₃₂₅	18.3	X	329.62289	184.93453	140.43003	2.00697	0.1507447	0.30087780	2.2056806	21	7 7.8	19.8
447263	2005	UR ₃₃₁	17.1	X	292.87072	85.26327	54.17708	6.95909	0.0992369	0.19158386	2.9800950	21	12 31.9	21.0
447264	2005	UL ₃₄₆	16.0	X	125.42675	29.48907	237.12316	9.24387	0.1046388	0.18694000	3.0292461	21	11 26.5	20.6
447265	2005	UF ₃₄₇	18.4	X	289.14724	261.97883	60.85275	3.24762	0.1970231	0.29100723	2.2552786	21	4 18.6	21.2
447266	2005	UE ₃₄₈	17.4	X	73.12949	137.82022	74.56163	7.47758	0.0676088	0.29326407	2.2436932	21	7 21.8	20.0
447267	2005	UE ₃₆₆	18.1	X	223.63740	237.50311	185.89108	5.73292	0.1695479	0.29301461	2.2449665	21	6 24.6	21.6
447268	2005	UJ ₃₇₈	18.0	X	203.86293	218.03963	207.49837	4.23578	0.1198175	0.28968872	2.2621166	21	6 9.8	21.2
447269	2005	UE ₃₉₆	16.6	X	6.93133	303.37715	64.03397	7.20854	0.2235999	0.18565485	3.0432095	21	11 20.4	19.9
447270	2005	UJ ₄₂₄	16.8	X	97.51412	72.88037	222.63586	9.65575	0.1028006	0.18994625	2.9971989	21		

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Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>
447281 2005 VQ ₁₃	17.6	X	282.26014	194.28602	161.97812	4.76573	0.2762725	0.29641267	2.2277761	21	5 15.9	20.8
447282 2005 VJ ₂₀	17.7	X	1.52746	190.39888	211.62185	9.35890	0.0981177	0.18869715	3.0104112	21	12 12.7	20.5
447283 2005 VU ₄₉	17.2	X	229.18604	126.00144	247.08934	22.47936	0.2399823	0.28691118	2.2766926	21	4 16.9	21.3
447284 2005 VE ₆₇	18.5	X	175.67290	43.73147	7.38069	2.55359	0.1278148	0.28304742	2.2973645	21	4 20.8	21.8
447285 2005 VR ₆₇	15.7	X	68.47862	37.33651	237.04547	16.82785	0.2330307	0.18065674	3.0990834	21	10 19.5	20.4
447286 2005 WA ₂	16.5	X	8.46549	341.07952	67.53156	14.67005	0.1097131	0.18855064	3.0119705	21	12 31.9	20.5
447287 2005 WU ₉	17.0	X	53.75712	309.17649	60.00868	1.79942	0.1407214	0.18992825	2.9973883	21	—	—
447288 2005 WE ₁₈	16.6	X	349.07680	145.98420	247.80649	8.64008	0.1155804	0.18212632	3.0823900	21	11 11.8	20.4
447289 2005 WE ₃₂	15.9	X	279.77783	84.13447	70.25815	18.68278	0.0169034	0.18927920	3.0042365	21	—	—
447290 2005 WN ₃₅	17.8	X	267.42475	276.78070	67.62261	6.20715	0.2296424	0.28904770	2.2654598	21	4 20.9	21.1
447291 2005 WH ₃₇	18.7	X	220.49388	224.37798	208.08606	1.56991	0.1437850	0.29161216	2.2521585	21	7 5.7	21.7
447292 2005 WZ ₃₇	16.7	X	46.79443	311.70489	79.67242	10.24881	0.1097583	0.19104711	2.9856741	21	—	—
447293 2005 WB ₄₈	16.1	X	275.46855	232.05854	251.91349	13.05093	0.0766999	0.18374859	3.0642207	21	11 18.6	20.3
447294 2005 WE ₆₂	16.6	X	2.04918	280.27449	116.76805	10.61651	0.2492870	0.18672641	3.0315557	21	12 24.6	19.8
447295 2005 WQ ₆₆	16.1	X	330.16657	198.14600	239.17152	7.48481	0.0862637	0.18644671	3.0345868	21	12 8.9	19.9
447296 2005 WR ₇₇	18.2	X	198.12507	152.88613	283.53225	2.84841	0.1445373	0.28796897	2.2711139	21	6 17.6	21.4
447297 2005 WU ₇₈	15.8	X	75.93266	246.10220	68.63885	13.36992	0.1078835	0.18247326	3.0784816	21	11 27.6	20.2
447298 2005 WR ₈₂	18.0	X	199.83079	219.57486	227.63526	2.17959	0.1494762	0.29152418	2.2526117	21	7 3.7	21.4
447299 2005 WM ₈₃	16.9	X	255.10172	32.85967	286.44755	22.66060	0.1458344	0.27335880	2.3513323	21	2 28.5	21.0
447300 2005 WL ₈₈	15.9	X	354.89459	102.72116	281.95434	11.08139	0.1372957	0.17677427	3.1442955	21	11 7.5	19.8
447301 2005 WK ₁₀₃	16.3	X	71.09769	279.53735	92.44818	8.72864	0.2301613	0.19718534	2.9233869	21	—	—
447302 2005 WU ₁₁₄	17.4	X	104.47643	234.79412	272.63325	4.75649	0.0916204	0.27989556	2.3145792	21	6 4.1	20.3
447303 2005 WR ₁₃₈	18.1	X	299.45394	78.19262	254.34505	4.85681	0.1375641	0.29138854	2.2533106	21	5 25.8	20.7
447304 2005 WJ ₁₄₀	15.5	X	310.45201	334.34177	92.69062	18.15333	0.1017929	0.17696188	3.1420727	21	11 1.6	19.8
447305 2005 WA ₁₄₂	16.4	X	18.57919	350.00130	63.15580	4.07858	0.1031405	0.19028932	2.9935954	21	—	—
447306 2005 WR ₁₄₂	18.0	X	230.66603	341.79667	67.26210	5.34365	0.1410344	0.29182452	2.2510658	21	6 14.8	21.3
447307 2005 WR ₁₄₄	16.9	X	74.31197	294.62549	40.99097	3.86180	0.2629729	0.19106750	2.9854617	21	—	—
447308 2005 WX ₁₄₈	17.8	X	205.57845	334.84789	39.62657	5.18339	0.1831601	0.28216336	3.0216071	21	4 5.3	21.5
447309 2005 WS ₁₆₁	15.7	X	152.12942	127.64356	69.83409	10.70564	0.0437699	0.17590459	3.1546506	21	10 4.5	20.5
447310 2005 WE ₁₇₄	16.5	X	357.56752	301.51268	84.80091	8.37198	0.1048969	0.18233806	3.0800032	21	11 17.6	20.3
447311 2005 WG ₁₇₅	16.6	X	15.43683	282.69752	87.50687	8.07394	0.1934369	0.18161554	3.0881666	21	12 3.9	20.2
447312 2005 WF ₁₇₇	18.4	X	199.43499	46.64580	28.56718	2.39813	0.1445193	0.28623535	2.2802749	21	6 17.3	21.7
447313 2005 WE ₁₈₉	17.6	X	159.04101	8.27467	103.95458	6.35076	0.1014704	0.28651650	2.2787829	21	6 23.9	20.8
447314 2005 XF ₆	15.5	X	282.34575	201.08005	256.88974	22.06863	0.0863149	0.18110029	3.0940212	21	10 20.3	20.1
447315 2005 XG ₁₂	17.8	X	267.20084	101.37601	251.98833	7.93089	0.1767451	0.29016021	2.2596654	21	5 5.3	21.1
447316 2005 XL ₁₆	16.2	X	348.73467	299.45216	108.99235	5.78025	0.1782340	0.18189711	3.0849789	21	12 5.2	19.5
447317 2005 XX ₂₄	16.0	X	22.04430	60.99858	293.95956	14.86353	0.1127967	0.17565468	3.1576421	21	11 8.3	20.4
447318 2005 XL ₄₈	16.6	X	23.96085	329.46121	74.49630	16.88303	0.2533248	0.19052160	2.9911618	21	—	—
447319 2005 XG ₅₀	16.7	X	43.60633	325.34759	72.09525	12.40142	0.0731130	0.18965374	3.0002799	21	—	—
447320 2005 XD ₅₁	18.1	X	175.62630	83.60317	334.37186	4.64317	0.0992070	0.27935252	2.3175778	21	4 27.3	21.4
447321 2005 XP ₆₈	16.0	X	186.38539	264.42885	273.23841	8.72016	0.1743047	0.17643330	3.1483452	21	10 7.6	20.9
447322 2005 XD ₇₇	16.4	X	74.36160	71.23389	252.53561	8.29571	0.0927461	0.18804572	3.0173597	21	12 9.9	20.8
447323 2005 XT ₈₅	17.4	X	186.89821	117.76008	310.79725	5.99943	0.1028077	0.28301560	2.2975367	21	5 25.1	20.8
447324 2005 XD ₈₆	15.9	X	277.12718	10.21961	89.99451	17.36807	0.1631154	0.17899238	3.1182650	21	10 19.1	20.4
447325 2005 XA ₁₀₅	16.4	X	280.15898	22.79395	112.05448	6.09563	0.0844275	0.17838674	3.1253189	21	12 7.4	20.6
447326 2005 YC ₃	16.0	X	330.60015	26.86667	51.05872	14.91475	0.2669148	0.18286862	3.0740129	21	12 6.7	18.7
447327 2005 YX ₈	17.7	X	99.11808	258.18295	104.79467	24.82446	0.1963605	0.38411208	1.8742639	21	—	—
447328 2005 YP ₁₄	16.3	X	356.71400	112.09415	296.30125	15.06732	0.0615348	0.17950571	3.1123172	21	12 8.6	20.6
447329 2005 YU ₂₁	16.6	X	12.65349	304.84892	101.10634	6.29868	0.1116745	0.18399961	3.0614331	21	—	—
447330 2005 YE ₂₂	16.7	X	20.44711	67.29214	308.27975	2.06306	0.1067763	0.17993788	3.1073319	21	12 5.7	20.7
447331 2005 YF ₂₅	15.7	X	63.77722	19.34683	291.57363	10.86540	0.1078676	0.17389570	3.1788997	21	11 9.2	20.4
447332 2005 YM ₂₈	16.4	X	50.26312	270.39798	98.64746	5.81133	0.1624798	0.18407210	3.0606293	21	—	—
447333 2005 YE ₃₆	18.2	X	97.05303	28.92236	74.54047	2.32173	0.1428159	0.26989321	2.3714178	21	4 2.1	20.9
447334 2005 YA ₄₇	18.2	X	244.23172	77.00145	307.56778	5.45467	0.2781769	0.28735885	2.3142375	21	5 14.2	22.1
447335 2005 YR ₄₉	16.6	X	131.75994	245.01664	274.27649	20.48237	0.3432832	0.28558177	2.2837527	21	8 4.7	21.0
447336 2005 YF ₇₀	17.6	X	87.13226	166.01437	348.98347	2.55126	0.1229733	0.27573999	2.3377759	21	5 25.9	20.4
447337 2005 YZ ₈₃	18.2	X	194.13932	288.06707	121.92166	6.40007	0.1639175	0.28076751	2.3097846	21	5 11.8	21.9
447338 2005 YO ₈₈	16.7	X	279.65546	3.37004	116.87138	11.68351	0.0306245	0.17818643	3.1276607	21	11 27.6	21.2
447339 2005 YK ₉₅	15.6	X	65.14343	34.78986	282.87076	13.63660	0.2129169	0.17676326	3.1444260	21	12 5.5	20.4
447340 2005 YN ₁₁₄	17.4	X	269.37496	348.32326	310.82941	8.42577	0.2122097	0.27103149	2.3647735	21	2 23.2	21.2
447341 2005 YD ₁₃₄	17.7	X	95.20664	129.10531	11.33849	4.50156	0.1239223	0.27597221	2.3364643	21	5 16.2	20.4
447342 2005 YK ₁₄₈	17.3	X	181.02780	7.13962	83.22043	6.60947	0.0538279	0.28318482	2.2966214	21	6 18.3	20.2
447343 2005 YQ ₁₄₈	16.2	X	318.31307	94.24116	321.13797	8.04441	0.0596117	0.17462477	3.1700454	21	10 19.8	20.6
447344 2005 YA ₁₄₉	17.9	X	85.39731	155.95164	8.73020	3.49464	0.1411455	0.27653809	2.3332758	21	6 10.0	20.6
447345 2005 YO ₁₅₀	17.1	X	3.92815	347.08955	73.40141	4.54642	0.2232997	0.18588208	3.0407288	21	—	—
447346 2005 YG ₁₆₄	18.2	X	200.82877	352.80511	85.79509	3.64113	0.1693569	0.28810299	2.2704096	21	6 22.6	21.7
447347 2005 YY ₁₈₀	15.9	X	320.49748	301.66816	126.64501	19.34269	0.1611933	0.17855350	3.1233726	21	11 14.6	19.9
447348 2005 YU ₁₈₈	18.5	X	199.92762	126.17125	314.56619	2.17872	0.1994686	0.28545158	2.2844470	21	6 23.8	22.2
447349 2005 YU ₁₉₀	16.3	X	295.15483	113.91917	294.93131	3.98578	0.1705693	0.17035039	3.2228540	21	8 27.3	20.4
447350 2005 YS ₁₉₁	18.1	X	30.29269	194.13418	352.08745	2.13672	0.1497494	0.268871692	2.3783333	21	4 2.9	20.1
447351 2005 YL ₂₀₁	15.9	X	288.05888	150.40855	299.13929	10.91549	0.1003702	0.17718266	3.1394621	21	10 14.5	20.3
447352 2005 YM ₂₂₇	17.4	X	136.64649	15.28822	122.18054	7.21442	0.1061316	0.28254141	2.3001067	21	7 3.2	20.6
447353 2005 YM ₂₃₅	16.7	X	265.80010	113.78762	42.00854	1.98143	0.1181121	0.18117262	3.0931977	21	12 9.1	20.9</

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Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>		
447361	2005	YJ ₂₈₁	17.6	X	243.69406	95.86066	301.04179	9.11896	0.0857099	0.28530073	2.2852522	21	6 19.9	20.6
447362	2006	AK ₃	15.2	X	290.09592	24.51030	103.27682	30.53988	0.2099325	0.17530203	3.1618755	21	12 3.5	19.4
447363	2006	AN ₁₅	16.2	X	16.87812	260.19612	130.38886	5.96243	0.1365197	0.18020084	3.1043083	21	12 23.3	20.1
447364	2006	AG ₂₀	15.2	X	5.23658	281.28155	101.90100	23.00082	0.0902187	0.17723253	3.1388731	21	11 27.6	19.5
447365	2006	AV ₂₂	15.9	X	102.95390	10.72499	301.33121	15.44072	0.0931297	0.18101133	3.0950348	21	12 26.6	20.7
447366	2006	AJ ₂₃	16.9	X	291.62127	20.29863	96.27472	2.50508	0.1123950	0.17948729	3.1125302	21	11 27.3	20.8
447367	2006	AO ₃₄	15.0	X	348.24079	318.52818	98.30297	28.49020	0.1377703	0.17842710	3.1248476	21	12 14.4	18.8
447368	2006	AW ₃₈	17.4	X	259.16062	306.48830	299.98180	5.86288	0.0748624	0.25802930	2.4435620	21	—	—
447369	2006	AT ₄₀	16.6	X	253.10254	49.86631	106.10424	2.32018	0.1399602	0.17722968	3.1389068	21	11 20.4	21.1
447370	2006	AQ ₄₄	16.1	X	19.78623	258.80430	94.77553	6.25482	0.2040505	0.17403277	3.1772302	21	11 20.3	19.9
447371	2006	AM ₄₈	16.6	X	359.11394	138.98741	311.87359	18.93244	0.3419702	0.18743608	3.0238989	21	—	—
447372	2006	AS ₄₈	15.5	X	246.75328	10.30583	148.65884	27.67685	0.1116205	0.17364607	3.1819456	21	11 26.1	20.6
447373	2006	AW ₅₀	16.1	X	47.56677	64.41503	282.46029	9.50700	0.0880269	0.17953475	3.1119817	21	12 3.6	20.4
447374	2006	AP ₅₃	18.0	X	18.21284	57.90168	146.88475	2.66938	0.1534682	0.26990676	2.3713384	21	4 7.8	19.8
447375	2006	AY ₅₅	17.7	X	57.87748	236.24296	287.59272	4.44306	0.1555123	0.27166392	2.3611020	21	4 23.7	20.0
447376	2006	AM ₅₆	17.9	X	132.62276	179.80206	302.43997	3.17408	0.1657968	0.28000196	2.3139928	21	6 13.2	21.3
447377	2006	AB ₆₇	16.0	X	18.34313	273.35482	136.60626	11.43507	0.0888173	0.18371370	3.0646086	21	—	—
447378	2006	AR ₈₁	16.1	X	327.16735	30.55229	118.38230	15.43418	0.2171358	0.18667873	3.0320719	21	—	—
447379	2006	AQ ₈₅	15.4	X	287.67410	72.17455	62.38989	17.58348	0.2023436	0.17867290	3.1219811	21	11 30.8	19.3
447380	2006	AD ₈₉	16.1	X	281.38847	148.43565	311.20185	13.76525	0.2014357	0.17450852	3.1714531	21	10 1.0	20.6
447381	2006	AB ₉₅	18.7	X	158.66682	242.90348	234.11744	0.58108	0.1597057	0.28333278	2.2958218	21	7 2.8	22.2
447382	2006	BX ₉	17.5	X	143.34525	333.98173	133.02220	10.45362	0.1084438	0.27713112	2.3299460	21	5 26.9	20.7
447383	2006	BB ₁₇	15.8	X	246.00274	65.43025	114.63448	10.61541	0.0901552	0.17880752	3.1204139	21	12 18.0	20.3
447384	2006	BX ₂₀	16.1	X	26.38879	234.96022	136.11704	6.25582	0.1354365	0.17701187	3.1414811	21	12 12.4	20.2
447385	2006	BY ₃₁	15.7	X	286.62968	128.86669	329.95439	9.54945	0.2083454	0.17285985	3.1915865	21	10 27.7	20.2
447386	2006	BB ₄₀	16.1	X	354.52166	126.42668	324.04201	8.11147	0.2328043	0.18603556	3.0390563	21	—	—
447387	2006	BY ₄₃	17.0	X	139.93597	343.36948	144.67001	24.76396	0.2267452	0.27834764	3.2321523	21	7 4.7	21.2
447388	2006	BV ₅₂	18.0	X	167.19260	321.60689	123.88935	4.87033	0.1035013	0.27800405	2.3250661	21	5 28.7	21.3
447389	2006	BK ₅₃	17.7	X	359.32051	95.36763	138.97941	5.33056	0.1235784	0.26853775	2.3793910	21	4 18.9	20.0
447390	2006	BA ₆₂	16.3	X	278.69888	88.85608	53.81369	10.74021	0.2099189	0.17854410	3.1234823	21	11 26.3	20.2
447391	2006	BU ₆₇	16.2	X	60.70129	238.76338	124.22796	18.60630	0.1428156	0.18165622	3.0877055	21	—	—
447392	2006	BR ₇₁	16.8	X	8.01299	66.09221	353.88348	8.11071	0.2276002	0.18400097	3.0614181	21	—	—
447393	2006	BC ₇₂	16.0	X	329.64177	33.16264	98.91521	6.41407	0.2074809	0.18617066	3.0375859	21	—	—
447394	2006	BX ₇₅	18.5	X	185.47519	319.74951	110.30110	6.52620	0.1636212	0.27996469	2.3141981	21	5 28.8	22.1
447395	2006	BG ₁₁₂	16.9	X	322.78112	356.91774	85.12883	2.15361	0.1200334	0.17777286	3.1325096	21	11 30.7	20.7
447396	2006	BH ₁₁₂	16.6	X	344.78352	340.64650	128.99959	12.87570	0.1125687	0.18527416	3.0473767	21	—	—
447397	2006	BK ₁₁₄	18.1	X	173.78120	291.35330	101.42695	2.12014	0.1814918	0.27194542	2.3594723	21	3 31.5	21.7
447398	2006	BV ₁₂₀	18.1	X	347.46102	336.43710	228.86150	2.33437	0.1277639	0.26189157	2.4194782	21	2 10.5	20.8
447399	2006	BC ₁₂₁	18.1	X	123.51080	318.68309	170.09679	3.59506	0.2040043	0.27589453	2.3369029	21	6 16.6	21.5
447400	2006	BX ₁₂₂	16.9	X	270.50902	285.06485	226.65913	0.19083	0.1204205	0.17638991	3.1488615	21	12 9.2	21.1
447401	2006	BS ₁₂₈	18.0	X	138.47645	103.52950	332.97949	3.17838	0.1184195	0.27061293	2.3672113	21	4 12.6	21.3
447402	2006	BV ₁₃₃	17.3	X	216.17214	39.26768	342.41559	6.53702	0.0553153	0.27097098	2.3651255	21	4 25.1	20.7
447403	2006	BX ₁₃₆	17.3	X	70.35726	191.12971	331.53541	6.12487	0.1055706	0.27185692	2.3599843	21	5 5.9	20.1
447404	2006	BT ₁₄₄	18.1	X	122.71899	298.55870	197.03416	5.66730	0.2236103	0.27711464	2.3300383	21	6 26.4	21.7
447405	2006	BN ₁₅₁	17.9	X	48.13027	212.17354	324.07648	5.01230	0.1300578	0.26957148	2.3733043	21	4 20.4	20.2
447406	2006	BV ₁₆₁	17.6	X	69.56434	129.03152	43.74582	2.81955	0.1686671	0.27310865	2.3527678	21	6 2.2	20.1
447407	2006	BW ₁₆₃	16.8	X	311.65921	322.33672	132.64453	2.70728	0.1460051	0.17837543	3.1254511	21	11 27.9	20.5
447408	2006	BF ₁₆₈	17.5	X	23.96895	336.36923	126.91279	24.17230	0.0306186	0.38071135	1.8854087	21	—	—
447409	2006	BE ₁₇₃	16.4	X	343.73586	293.98465	135.79999	12.92405	0.1276516	0.18122571	3.0925935	21	12 21.2	20.3
447410	2006	BB ₁₇₇	16.2	X	44.91001	227.94106	120.23260	10.77745	0.0815091	0.17455476	3.1708930	21	12 2.5	20.7
447411	2006	BV ₁₈₅	15.8	X	12.70765	60.14115	314.54143	9.98269	0.0709423	0.17217095	3.2000945	21	11 15.5	20.2
447412	2006	BP ₁₉₂	16.1	X	333.08055	78.72969	319.07972	23.20626	0.3943100	0.17583575	3.1554740	21	9 17.7	18.7
447413	2006	BL ₂₀₃	17.9	X	166.88681	336.81643	128.32327	6.10742	0.1119931	0.28016353	2.3131031	21	6 23.7	21.3
447414	2006	BK ₂₀₇	16.6	X	209.93249	58.69968	141.42421	10.08637	0.0744972	0.17615495	2.3151609	21	12 3.9	21.4
447415	2006	BK ₂₀₈	18.1	X	3.76822	357.05006	147.84155	21.32450	0.0752678	0.38436312	1.8734477	21	—	—
447416	2006	BD ₂₃₇	17.7	X	325.94863	158.92002	82.57099	3.73070	0.1280645	0.26584493	2.3954317	21	3 2.1	20.5
447417	2006	BX ₂₃₈	17.3	X	342.88665	291.79598	149.63674	6.06937	0.1722705	0.18468360	3.0538697	21	—	—
447418	2006	BG ₂₅₆	18.0	X	343.24351	233.38712	344.81233	6.36433	0.1268564	0.26294421	2.4130166	21	2 23.6	20.7
447419	2006	BD ₂₅₇	17.6	X	141.78305	114.99964	346.86019	6.37289	0.1183843	0.27450971	2.3447556	21	5 20.3	21.0
447420	2006	BR ₂₇₈	16.0	X	324.64232	137.55262	313.69345	7.17926	0.1589908	0.17879298	3.1205830	21	12 14.4	19.5
447421	2006	BC ₂₈₀	16.5	X	316.91505	6.67052	133.89770	12.40378	0.0529146	0.18275098	3.0753620	21	—	—
447422	2006	CC ₂₄	18.2	X	227.14728	295.17477	117.89285	2.15006	0.2331732	0.28652204	2.2787536	21	6 10.3	21.8
447423	2006	CX ₃₉	16.8	X	354.56950	312.66836	145.39600	11.05362	0.1970433	0.18420508	3.0591561	21	—	—
447424	2006	CW ₄₈	17.8	X	14.96296	262.47890	309.92329	1.26120	0.1472127	0.26804906	2.3822821	21	4 11.4	19.8
447425	2006	CZ ₄₈	18.8	X	186.43903	169.79073	272.80803	1.68557	0.1916887	0.28154115	2.3055513	21	6 14.1	22.6
447426	2006	CD ₅₉	17.2	X	4.15359	175.53048	242.82037	0.60792	0.2454204	0.18374855	3.0642211	21	—	—
447427	2006	CB ₆₂	15.1	X	244.71239	105.41047	68.98964	27.35279	0.1902176	0.17412723	3.1760811	21	11 26.5	19.7
447428	2006	DH	16.6	X	235.51533	39.21871	139.24213	12.98359	0.1045198	0.17525907	3.1623921	21	12 3.4	21.4
447429	2006	DS ₁₆	17.8	X	111.33474	44.01154	42.99411	3.09452	0.1370807	0.26735685	2.3863923	21	3 29.5	20.6
447430	2006	DT ₃₁	17.7	X	88.43650									

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ECLIPTIC AND EQUINOX 2000.0, EPOCH 2021 JULY 5.0 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>
447441 2006 DB ₂₁₄	16.6	X	322.66341	204.20399	27.42596	23.89814	0.1778762	0.25916032	2.4364475	21	2 17.5	20.2
447442 2006 DZ ₂₁₆	17.5	X	135.84988	260.89512	155.78533	2.87973	0.1852758	0.26586411	2.3953165	21	3 25.1	20.9
447443 2006 ET ₆	17.8	X	304.52248	272.76434	167.51147	23.57903	0.0919062	0.36221717	1.9490517	21	12 19.9	20.1
447444 2006 EJ ₉	18.1	X	165.02108	302.25614	142.65235	1.95351	0.1475057	0.27406595	2.3472859	21	5 27.3	21.5
447445 2006 EL ₁₂	18.1	X	84.09278	149.19618	351.74275	2.44673	0.1377285	0.26801527	2.3824823	21	5 3.6	20.9
447446 2006 EC ₃₂	18.1	X	91.81025	300.76073	186.80971	5.04307	0.0754961	0.26735628	2.3863957	21	4 17.5	20.8
447447 2006 EF ₃₆	16.3	X	141.23167	129.14866	149.96309	11.78871	0.0312471	0.17327661	3.1864670	21	12 22.9	21.1
447448 2006 EE ₃₇	18.3	X	132.55917	67.94705	38.37003	2.74724	0.1618122	0.27188500	2.3598218	21	5 22.2	21.7
447449 2006 ED ₇₂	16.6	X	314.00437	310.55117	182.84620	17.46681	0.2940207	0.18140200	3.0905896	21	—	—
447450 2006 FZ ₄₄	17.7	X	36.37566	138.32905	29.15125	1.58058	0.1139322	0.26203378	2.4186027	21	3 18.6	19.8
447451 2006 GV ₁	16.0	X	312.41015	309.88323	180.94339	27.20488	0.1290930	0.17871177	3.1215283	21	—	—
447452 2006 GE ₃₂	17.8	X	107.03892	104.81211	56.63032	4.23743	0.1822756	0.27105419	2.3646415	21	7 10.9	21.1
447453 2006 HS ₁₂	17.5	X	92.96946	240.84503	15.92328	19.67004	0.0818382	0.35026769	1.9931317	21	10 25.7	19.9
447454 2006 HQ ₆₉	18.3	X	159.55182	67.75809	208.34488	20.85581	0.0601764	0.36109831	1.9530757	21	—	—
447455 2006 HJ ₁₀₁	17.1	X	28.47204	321.09581	197.98551	6.49405	0.0657980	0.25316145	2.4747861	21	2 19.6	20.0
447456 2006 HN ₁₅₃	17.0	X	55.17211	328.07044	213.11687	6.45034	0.0671734	0.26319742	2.4114687	21	5 7.1	19.5
447457 2006 JQ ₂₂	17.4	X	212.55251	144.60030	139.23900	13.47695	0.2618000	0.23835964	2.5762079	21	—	—
447458 2006 JB ₂₉	16.3	X	292.10958	96.15405	54.95827	14.08110	0.2596651	0.17473690	3.1686891	21	12 19.5	20.0
447459 2006 JK ₃₈	18.2	X	48.89038	133.65948	222.35894	18.54088	0.1257739	0.35566801	1.9729050	21	—	—
447460 2006 JH ₅₅	17.1	X	98.29158	283.02661	237.60569	10.48419	0.1862100	0.26827736	2.3809304	21	6 28.3	20.4
447461 2006 JS ₅₇	16.9	X	239.70913	114.62841	157.71500	5.27957	0.2537428	0.24197998	2.5504477	21	1 1.9	21.5
447462 2006 KO ₉₅	17.9	X	228.05263	31.01733	212.76833	11.16756	0.1413067	0.23708047	2.5854662	21	—	—
447463 2006 MU ₄	17.8	X	209.07595	80.53308	183.17255	12.44693	0.1526531	0.23563315	2.5960424	21	—	—
447464 2006 NU	17.5	X	210.00721	39.09544	222.97043	8.96049	0.2615274	0.23285795	2.6166281	21	—	—
447465 2006 PH ₁₅	16.7	X	162.93810	2.84249	324.53325	11.26110	0.1925421	0.22827109	2.6515640	21	1 7.8	20.9
447466 2006 QJ ₄	17.0	X	140.65653	239.70239	122.95199	2.82833	0.1298598	0.22650254	2.6653485	21	1 19.6	20.7
447467 2006 QF ₅	16.7	X	198.52681	176.39613	162.38820	16.19794	0.1599630	0.23567971	2.5957005	21	2 16.2	20.9
447468 2006 QK ₅	17.4	X	157.95803	136.73857	167.28334	8.92385	0.2387188	0.22432473	2.6825713	21	—	—
447469 2006 QC ₂₅	17.2	X	206.39400	147.11794	166.35745	12.74785	0.2491945	0.23458749	2.6037512	21	1 25.1	22.0
447470 2006 QE ₃₈	17.0	X	137.56382	322.58522	20.87305	7.87131	0.2649047	0.22510715	2.6763518	21	1 10.7	21.2
447471 2006 QF ₃₈	16.5	X	153.98767	235.88860	92.98558	7.80798	0.2618575	0.22663887	2.6642795	21	1 6.4	20.7
447472 2006 QG ₆₈	17.5	X	117.30593	228.90065	142.77487	3.64884	0.0044908	0.22656789	2.6648359	21	—	—
447473 2006 QN ₁₀₂	17.1	X	119.56050	343.60525	130.46657	4.13539	0.1371315	0.21486177	2.7607683	21	12 28.8	21.5
447474 2006 QB ₁₁₄	16.9	X	174.17959	321.10324	323.49345	12.04865	0.3099094	0.22456513	2.6806565	21	—	—
447475 2006 QL ₁₁₄	16.4	X	227.05770	85.85403	174.47785	13.09615	0.2487932	0.23254651	2.6189638	21	—	—
447476 2006 QH ₁₁₉	16.7	X	198.16218	340.41031	322.51939	12.25254	0.1743027	0.23160791	2.6260347	21	1 8.4	21.1
447477 2006 QG ₁₂₃	16.5	X	109.93993	192.72744	209.33958	13.72681	0.2445755	0.22282268	2.6946133	21	2 13.8	20.5
447478 2006 QL ₁₆₆	17.2	X	139.40352	133.21463	204.90196	13.22641	0.2805608	0.22296554	2.6934622	21	1 4.7	21.7
447479 2006 QD ₁₆₇	16.8	X	124.69696	151.75524	226.72987	5.68296	0.1816528	0.22755485	2.6571250	21	1 25.8	20.7
447480 2006 QA ₁₈₄	17.2	X	70.69913	9.51315	15.97291	6.39290	0.0062987	0.21744658	2.7388463	21	—	—
447481 2006 QC ₁₈₄	17.0	X	90.45542	308.22813	7.01299	13.29062	0.2003997	0.21125158	2.7921328	21	12 31.9	21.8
447482 2006 RL ₂₀	17.1	X	118.45648	111.78569	225.26392	7.48748	0.2841101	0.21974297	2.7197316	21	—	—
447483 2006 RV ₃₁	17.6	X	145.65965	127.41010	185.40809	4.20818	0.1428815	0.21924958	2.7238103	21	—	—
447484 2006 RV ₃₂	17.7	X	157.99271	83.25896	207.34198	11.94224	0.2121606	0.21797690	2.7344023	21	—	—
447485 2006 RV ₃₂	17.0	X	106.40924	349.86742	358.27697	10.60478	0.3082199	0.21708025	2.7419267	21	—	—
447486 2006 RM ₄₅	17.3	X	155.16385	154.30332	172.59006	6.61763	0.0464237	0.22113222	2.7083287	21	—	—
447487 2006 RY ₄₈	17.0	X	60.40092	199.94671	212.30532	1.87720	0.0724528	0.21729641	2.7401080	21	—	—
447488 2006 RR ₄₉	17.6	X	80.69273	228.62326	186.03099	1.19435	0.3004895	0.21947058	2.7219816	21	2 2.5	20.5
447489 2006 RY ₅₀	16.8	X	162.68920	323.34581	14.07437	5.19709	0.1748389	0.22510558	2.6763642	21	1 18.0	21.0
447490 2006 RN ₅₁	17.0	X	125.17369	172.75258	191.71104	5.83850	0.1289175	0.22149845	2.7053425	21	1 3.9	20.8
447491 2006 RX ₅₁	17.4	X	85.46718	232.42113	188.65426	2.06297	0.0956850	0.22273305	2.6953362	21	1 17.7	20.6
447492 2006 RC ₆₁	16.3	X	115.88622	54.79292	316.37963	8.12401	0.1605821	0.22243245	2.6977640	21	1 6.8	19.8
447493 2006 RG ₇₁	16.5	X	212.50672	229.41866	359.92611	11.37195	0.0592113	0.21538305	2.7563119	21	—	—
447494 2006 RK ₇₁	17.4	X	149.77718	130.05365	188.37713	4.29508	0.1363512	0.22119755	2.7077954	21	—	—
447495 2006 RO ₇₄	17.3	X	44.26073	285.58105	171.36363	4.43285	0.1179793	0.22262608	2.6961995	21	1 1.1	20.3
447496 2006 RO ₈₀	17.6	X	86.70580	194.72666	178.33424	6.26704	0.0477526	0.21772089	2.7365453	21	—	—
447497 2006 RS ₈₀	17.1	X	151.61383	169.57629	174.66964	4.23347	0.1443808	0.22541132	2.6739436	21	1 10.3	21.1
447498 2006 RZ ₈₂	17.4	X	115.39644	176.76836	194.04755	2.34256	0.0441437	0.22186818	2.7023361	21	—	—
447499 2006 RQ ₈₉	16.7	X	57.56635	84.32547	8.60957	22.11130	0.0438374	0.22458492	2.6804990	21	1 21.9	20.6
447500 2006 RF ₉₇	17.0	X	14.52827	77.37798	7.29217	7.92213	0.1735531	0.21237217	2.7823023	21	—	—
447501 2006 RL ₁₀₁	17.1	X	117.54567	357.29826	11.55470	14.31059	0.2535092	0.22328154	2.6909203	21	1 22.7	21.1
447502 2006 RV ₁₂₁	17.1	X	18.91680	58.98724	13.57467	4.88247	0.0994425	0.21264582	2.7799148	21	—	—
447503 2006 SB ₁₄	17.2	X	83.44602	43.70758	2.12976	8.44766	0.1030488	0.22161652	2.7043815	21	—	—
447504 2006 SH ₁₅	17.0	X	89.69815	56.08042	356.80514	13.95785	0.2218590	0.22227745	2.6990180	21	2 6.7	20.4
447505 2006 SH ₁₆	16.6	X	148.65833	129.00924	218.26973	5.76941	0.0559224	0.22415262	2.6839443	21	—	—
447506 2006 SJ ₄₁	16.9	X	110.52346	268.37025	127.96805	7.44867	0.2282853	0.22401970	2.6850059	21	2 9.9	20.4
447507 2006 SK ₄₉	16.1	X	45.80795	260.62321	189.60181	25.00546	0.1386612	0.22075129	2.7114435	21	—	—
447508 2006 SQ ₅₃	16.6	X	180.50600	132.76868	206.30458	18.25331	0.1493474	0.23125888	2.6286763	21	1 27.7	21.1
447509 2006 SK ₅₄	16.1	X	124.01855	137.43869	243.99040	12.47998	0.2720663	0.22450162	2.6811621	21	2 6.4	20.3
447510 2006 SK ₆₂	17.3	X	86.50732	251.00155	167.66671	7.75619	0.2920086	0.22225359	2.6992111	21	2 14.7	20.5
447511 2006 SV ₆₂	16.1	X	127.95507	322.27519	37.16094	14.30623	0.2664609	0.22238227	2.6981698	21	1 23.5	20.4
447512 2006 SR ₇₄	17.1	X	103.90279	210.55969	174.74104	5.19726	0.1676987	0.22017170	2.7161999	21	1 8.7	20.5
447513 2006 SW ₇₈	16.3	X	176.30000	138.50358	198.00930	31.76245	0.2144008	0.22889044	2.6467786	21	1 24.4	21.4
447514 2006 SC ₇₉	16.1	X	84.10618	189.59458	229.02889	21.19060	0.0487063	0.22502520	2.6770015	2		

ELEMENTS AND OPPOSITION DATES IN 2021

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2021 JULY 5.0 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>		
447521	2006	SB ₁₂₄	16.9	X	54.04372	327.77836	92.71573	8.93217	0.2688238	0.21632085	2.7483400	21	—	—
447522	2006	SH ₁₂₅	16.8	X	126.04658	129.87155	211.49843	5.69282	0.0381488	0.22038356	2.7144588	21	—	—
447523	2006	SS ₁₂₆	16.4	X	122.84963	308.79579	71.96982	10.14738	0.2343089	0.22373881	2.6872527	21	2 8.3	20.4
447524	2006	SL ₁₂₇	17.2	X	113.66470	319.69150	93.67748	9.48804	0.2927445	0.22596049	2.6696093	21	3 19.3	21.3
447525	2006	SY ₁₂₈	16.7	X	153.87023	88.17443	258.06144	10.44863	0.1970864	0.22536098	2.6743417	21	1 18.6	20.9
447526	2006	SF ₁₃₉	16.5	X	352.67633	26.45146	46.44967	8.68795	0.3056846	0.20505540	2.8481001	21	—	—
447527	2006	SC ₁₄₁	17.0	X	123.89095	187.06984	170.02796	10.09715	0.1845511	0.22061649	2.7125478	21	1 1.4	20.9
447528	2006	SS ₁₅₉	17.0	X	86.83865	214.15367	182.45890	4.60445	0.1667528	0.21841591	2.7307370	21	—	—
447529	2006	SE ₁₆₅	17.3	X	96.83223	128.39213	257.49312	4.16039	0.0678307	0.22182518	2.7026854	21	—	—
447530	2006	SC ₁₇₀	17.1	X	345.13398	328.73049	202.45439	8.78992	0.0469504	0.22778748	2.6553156	21	1 10.8	20.7
447531	2006	SP ₁₇₄	17.2	X	130.86448	68.07051	320.81521	1.84070	0.1111751	0.23015907	2.6370437	21	2 6.9	20.7
447532	2006	SG ₂₀₀	16.9	X	167.53079	340.48441	347.76589	2.45186	0.1673374	0.22409347	2.6844166	21	1 10.3	21.0
447533	2006	SW ₂₁₆	16.9	X	59.07304	23.05953	48.73474	14.73939	0.1677596	0.21427063	2.7658436	21	—	—
447534	2006	SP ₂₂₇	16.9	X	122.68903	168.67210	207.03842	10.93370	0.0397931	0.22434778	2.6823876	21	—	—
447535	2006	SM ₂₃₀	17.0	X	82.76119	190.19682	215.78486	5.86793	0.0309689	0.22212598	2.7002448	21	—	—
447536	2006	SZ ₂₃₂	16.6	X	305.34185	106.31853	349.23360	10.04981	0.0822201	0.20463053	2.8520410	21	11 26.3	20.3
447537	2006	SC ₂₄₀	17.1	X	90.27591	215.10184	175.41544	6.16877	0.0769419	0.22024422	2.7156035	21	—	—
447538	2006	SE ₂₄₅	16.7	X	26.81224	253.41284	179.87455	13.76241	0.1551410	0.21422885	2.7662032	21	—	—
447539	2006	SD ₂₅₂	17.3	X	191.97971	268.53665	2.63531	1.30498	0.0988702	0.21900031	2.7258769	21	—	—
447540	2006	SJ ₂₅₃	17.3	X	59.99622	29.34559	28.41818	2.18109	0.0661557	0.21948285	2.7128801	21	—	—
447541	2006	SG ₂₆₀	17.1	X	180.96165	297.26166	4.94683	4.86472	0.1516630	0.22286273	2.6942905	21	—	—
447542	2006	SQ ₂₆₂	17.1	X	78.51467	204.44529	195.36391	5.44098	0.0414817	0.21638446	2.7478013	21	—	—
447543	2006	SS ₂₆₂	17.2	X	77.59621	161.74189	198.15904	4.76571	0.1483660	0.21044991	2.7992191	21	—	—
447544	2006	SK ₂₈₆	16.7	X	98.24174	309.24908	55.16710	9.18480	0.2184438	0.21645829	2.7471765	21	—	—
447545	2006	SS ₂₈₇	16.7	X	105.12732	147.54367	251.16418	9.79471	0.2361280	0.22307779	2.6925586	21	2 3.0	20.4
447546	2006	SH ₂₈₉	16.5	X	88.57849	3.44183	46.09460	14.50940	0.0976340	0.22252037	2.6970534	21	1 9.4	20.1
447547	2006	SE ₂₉₂	17.1	X	98.84793	197.91638	192.87523	8.16399	0.1657912	0.21991453	2.7183170	21	1 7.8	20.6
447548	2006	SO ₂₉₂	17.0	X	164.72510	113.01642	254.48700	3.41962	0.1122752	0.23109189	2.6299424	21	2 16.3	20.9
447549	2006	SY ₂₉₉	17.5	X	71.82274	359.03325	56.46797	1.27799	0.0461077	0.22091347	2.7101163	21	—	—
447550	2006	SL ₃₀₇	17.1	X	158.57450	14.10827	275.89018	2.96547	0.0811507	0.21564710	2.7540615	21	—	—
447551	2006	SC ₃₁₇	17.0	X	66.70894	275.89836	184.30960	13.37144	0.0355877	0.22702975	2.6612205	21	1 31.9	20.7
447552	2006	SC ₃₂₈	16.9	X	61.87365	82.96312	24.29936	28.15427	0.2178451	0.22350109	2.6891578	21	3 15.3	20.1
447553	2006	SP ₃₂₉	17.2	X	110.60238	311.55993	50.59051	3.34780	0.0339550	0.21766142	2.7370438	21	—	—
447554	2006	SL ₃₃₁	17.3	X	44.38056	56.77076	5.53888	6.94079	0.1552326	0.21576057	2.7530958	21	—	—
447555	2006	SP ₃₆₂	16.6	X	168.31895	231.82457	44.04877	15.06279	0.1352490	0.21155497	2.7894627	21	—	—
447556	2006	ST ₃₇₈	17.2	X	245.35620	149.19684	80.46417	14.35985	0.1218776	0.21737149	2.7394770	21	—	—
447557	2006	SX ₃₈₄	17.2	X	231.98625	115.40667	125.47737	9.69517	0.1621817	0.21823867	2.7322152	21	—	—
447558	2006	SO ₃₉₄	17.0	X	113.66355	315.65559	13.34073	8.45309	0.2009191	0.21595429	2.7514492	21	—	—
447559	2006	SS ₃₉₆	16.9	X	342.90282	235.42145	267.58041	3.23637	0.0018436	0.22204129	2.7009314	21	—	—
447560	2006	SP ₃₉₉	17.6	X	82.49057	164.83360	191.38499	5.01946	0.0649844	0.21212943	2.7844244	21	—	—
447561	2006	SK ₄₁₃	16.7	X	144.66611	236.44943	111.84902	13.70593	0.2931943	0.22323119	2.6913250	21	1 24.8	21.1
447562	2006	TM	18.1	X	19.05829	31.72696	224.21029	24.75990	0.1266536	0.45197452	1.6816157	21	6 21.4	19.1
447563	2006	TG ₃	17.1	X	64.97761	348.64053	68.74658	5.42808	0.1171892	0.21891265	2.7266045	21	—	—
447564	2006	TS ₁₆	16.9	X	147.39929	321.67646	31.99973	2.75048	0.0847520	0.22277086	2.6950312	21	1 11.9	20.7
447565	2006	TJ ₁₉	17.0	X	88.90829	139.77456	224.44550	4.45855	0.1000051	0.21271663	2.7792979	21	—	—
447566	2006	TJ ₂₅	16.7	X	201.47701	257.40676	30.45452	14.06524	0.1382343	0.22159788	2.7045332	21	—	—
447567	2006	TU ₂₉	17.0	X	91.66539	177.40746	198.09911	5.33200	0.0971228	0.21511684	2.7585855	21	—	—
447568	2006	TO ₃₃	17.0	X	213.28419	248.22807	30.25336	8.89863	0.2102488	0.22367504	2.6877634	21	—	—
447569	2006	TJ ₅₉	16.8	X	85.62267	112.59416	265.04668	4.52889	0.0608228	0.21332628	2.7740001	21	—	—
447570	2006	TM ₆₅	16.8	X	92.48321	28.01884	306.89374	8.20111	0.1639836	0.21265536	2.7798316	21	—	—
447571	2006	TP ₆₅	16.9	X	69.75857	53.55041	294.43993	8.14189	0.2259852	0.21049788	2.7987937	21	—	—
447572	2006	TP ₆₆	16.8	X	93.82477	51.46930	81.21579	7.27050	0.1694137	0.22393766	2.6856616	21	2 10.7	20.1
447573	2006	TO ₆₈	16.8	X	115.52783	305.30850	30.67036	9.33411	0.2029549	0.21656565	2.7462685	21	—	—
447574	2006	TF ₆₉	16.3	X	48.58282	66.07025	44.91996	22.61939	0.0647775	0.22650718	2.6653121	21	2 2.2	20.1
447575	2006	TH ₈₄	16.8	X	100.31782	156.16152	239.64233	6.90737	0.1352500	0.22006002	2.7171188	21	1 11.7	20.3
447576	2006	TQ ₈₈	17.3	X	79.61402	96.15530	271.16620	2.77792	0.1115452	0.21102234	2.7941545	21	—	—
447577	2006	TD ₉₃	16.7	X	114.26700	331.15126	15.26473	10.30548	0.2215878	0.21651609	2.7466876	21	—	—
447578	2006	TS ₁₀₀	16.7	X	52.61634	207.76480	227.80581	10.05522	0.1046964	0.21702351	2.7424046	21	—	—
447579	2006	TE ₁₀₂	17.4	X	359.36830	85.09859	33.09185	7.80552	0.1731585	0.21260873	2.7802380	21	—	—
447580	2006	TN ₁₀₆	16.8	X	81.92274	354.53606	56.69643	5.92871	0.1116061	0.21994634	2.7180549	21	1 3.1	20.1
447581	2006	TO ₁₁₈	17.1	X	92.06230	278.51911	113.87426	5.89674	0.1208681	0.21927741	2.7235799	21	—	—
447582	2006	TY ₁₁₈	16.9	X	170.46450	257.58355	77.69973	13.36504	0.0071931	0.22242219	2.6978469	21	1 7.1	20.6
447583	2006	TQ ₁₂₁	16.6	X	350.78934	212.61537	229.65164	12.10912	0.1117293	0.20623709	2.8372103	21	—	—
447584	2006	TO ₁₂₃	16.7	X	81.48132	261.45159	47.90422	9.76698	0.1284209	0.20443682	2.8538423	21	12 6.4	21.0
447585	2006	UH ₂₁	17.0	X	160.37239	66.15819	227.48395	5.88593	0.0269600	0.21387386	2.7692633	21	—	—
447586	2006	UU ₂₅	17.4	X	158.59819	112.03419	215.64853	11.32347	0.1749344	0.22168425	2.7038307	21	—	—
447587	2006	UQ ₂₆	17.1	X	12.46840	261.99628	215.07223	6.62730	0.1587141	0.21577986	2.7529317	21	—	—
447588	2006	UA ₄₃	17.3	X	94.74300	169.37811	207.62012	4.31372	0.0854940	0.21452262	2.7636773	21	—	—
447589	2006	UN ₄₃	16.9	X	55.05636	348.51269	45.94108	5.70373	0.1281860	0.21030808	2.8004774	21	—	—
447590	2006	UW ₄₃	16.8	X	185.42139	221.44951	47.62224	4.51519	0.0611928	0.21154003	2.7895940	21	—	—
447591	2006	UF ₄₄	17.5	X	149.08851	94.05115	218.12781	7.19798	0.2384163	0.21711943	2.7415968	21	—	—
447592														

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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>		
447601	2006	UN ₁₀₉	16.3	X	64.21229	230.39964	204.82234	21.49940	0.0510392	0.22490091	2.6779877	21	—	—
447602	2006	UM ₁₁₁	17.2	X	61.57866	81.38417	323.49562	8.21673	0.1570950	0.21725293	2.7404736	21	—	—
447603	2006	UF ₁₁₅	16.9	X	21.06691	309.21276	203.75855	12.12557	0.1199081	0.22634784	2.6665628	21	2 1.6	20.2
447604	2006	UO ₁₁₆	16.9	X	75.84220	215.81852	210.62586	7.35171	0.2027964	0.22002054	2.7174438	21	1 22.9	20.0
447605	2006	UO ₁₂₃	17.3	X	178.24014	256.75207	46.09689	2.79626	0.0628462	0.21967431	2.7202983	21	—	—
447606	2006	US ₁₂₃	17.1	X	193.72028	243.73563	49.43365	3.03030	0.0346537	0.22015323	2.7163517	21	—	—
447607	2006	UV ₁₂₅	17.4	X	29.79542	176.70899	266.05338	3.39310	0.0885100	0.21440862	2.7646568	21	—	—
447608	2006	UX ₁₂₇	17.8	X	82.63036	180.75793	240.84555	4.20379	0.0453737	0.22072898	2.7116261	21	1 8.7	21.2
447609	2006	UR ₁₃₂	16.9	X	163.35848	127.57877	214.45232	6.28887	0.0422522	0.22193493	2.7017942	21	1 9.5	20.7
447610	2006	UW ₁₃₂	16.9	X	186.55330	227.44972	63.54134	2.50512	0.0170625	0.21629265	2.7485789	21	—	—
447611	2006	UD ₁₃₉	16.7	X	356.74738	114.30384	27.12757	12.95588	0.0556325	0.21683794	2.7439690	21	—	—
447612	2006	UH ₁₄₀	17.5	X	355.96953	108.26869	12.75143	7.58467	0.1790503	0.21062041	2.7977082	21	—	—
447613	2006	UQ ₁₄₁	16.9	X	153.34388	102.23855	232.85274	23.96456	0.1720712	0.21990318	2.7184105	21	—	—
447614	2006	UN ₁₄₂	16.8	X	93.57244	0.12072	343.50741	4.54603	0.1628606	0.21017823	2.8016308	21	—	—
447615	2006	UV ₁₄₈	17.2	X	218.86843	189.88580	56.66279	1.14885	0.0218894	0.21402753	2.7679375	21	—	—
447616	2006	UO ₁₄₉	16.9	X	131.92458	164.01666	203.78272	12.29527	0.1794269	0.22319662	2.6916028	21	1 20.1	21.0
447617	2006	UP ₁₆₁	17.1	X	24.81973	263.24237	161.51772	4.76319	0.0557013	0.21234243	2.7825621	21	—	—
447618	2006	UF ₁₆₂	17.3	X	231.87495	151.78274	108.78501	3.22971	0.0376929	0.22116625	2.7080509	21	—	—
447619	2006	UY ₁₇₆	16.8	X	112.44944	276.57320	131.73168	5.61475	0.1628527	0.22502513	2.6770021	21	2 17.8	20.3
447620	2006	UR ₁₈₈	16.4	X	153.49226	74.74130	242.43605	11.78409	0.2809010	0.22240523	2.6979841	21	—	—
447621	2006	UE ₂₀₀	16.1	X	145.13293	289.10953	69.14654	14.24902	0.1803691	0.22507228	2.6766282	21	1 28.0	20.3
447622	2006	UX ₂₁₃	16.8	X	38.03685	340.07132	41.34886	15.90052	0.1376714	0.20407000	2.8572611	21	—	—
447623	2006	UE ₂₁₆	16.9	X	71.72020	21.01218	26.93744	4.55824	0.1052107	0.21676816	2.7445578	21	—	—
447624	2006	UM ₂₁₈	16.8	X	52.45642	211.02973	240.93069	7.76233	0.1411301	0.21876601	2.7278228	21	1 9.8	19.8
447625	2006	UP ₂₂₄	17.2	X	153.91856	91.40463	241.42021	13.13950	0.2323177	0.22221655	2.6995111	21	1 6.6	21.6
447626	2006	UO ₂₃₄	17.3	X	107.64050	278.05787	76.68083	10.89484	0.2625806	0.21708184	2.7419133	21	—	—
447627	2006	UZ ₂₄₂	16.7	X	284.35641	340.09733	201.02429	14.05864	0.0694518	0.21653296	2.7465449	21	—	—
447628	2006	UX ₂₅₀	17.0	X	184.50359	243.76511	35.23349	13.84179	0.1734067	0.21723695	2.7406080	21	—	—
447629	2006	US ₂₆₀	17.2	X	84.87439	204.70820	209.20350	5.88385	0.0530724	0.21991571	2.7183072	21	1 2.8	20.8
447630	2006	UV ₂₆₃	16.8	X	143.90130	262.00960	60.80271	7.66103	0.0442993	0.21343363	2.7730699	21	—	—
447631	2006	UM ₂₆₅	16.1	X	193.83286	243.91665	38.41499	13.39968	0.1000795	0.21883831	2.7272220	21	—	—
447632	2006	UW ₂₇₉	17.4	X	47.96321	224.66823	191.66839	2.55285	0.0600699	0.21218907	2.7839027	21	—	—
447633	2006	UY ₃₄₆	18.2	X	61.97214	213.29973	196.87195	1.52584	0.2253607	0.21271636	2.7793002	21	—	—
447634	2006	UJ ₃₅₉	17.4	X	355.15965	146.76527	323.05151	2.56747	0.0474984	0.21254390	2.7808034	21	—	—
447635	2006	VL ₃	16.7	X	102.84352	180.27468	217.79065	13.50292	0.0075039	0.22089614	2.7102580	21	—	—
447636	2006	VL ₉	17.3	X	108.87600	302.05650	77.15756	3.85481	0.1938081	0.21836897	2.7311283	21	1 13.2	20.9
447637	2006	VN ₁₄	16.9	X	43.70037	51.37728	34.20351	9.55315	0.1404690	0.21508289	2.7588757	21	—	—
447638	2006	VR ₁₅	17.9	X	41.88544	88.88179	343.55862	2.28976	0.1760287	0.21248029	2.7813583	21	—	—
447639	2006	VV ₁₇	17.3	X	23.59045	130.47465	356.81693	2.49554	0.0569826	0.21948041	2.7219003	21	1 11.5	20.7
447640	2006	VO ₂₈	18.5	X	257.42617	353.55700	39.90545	6.41391	0.1724747	0.31408580	2.1434031	21	6 19.8	21.3
447641	2006	VQ ₄₉	17.1	X	53.33763	9.48997	55.31529	10.67937	0.2806611	0.21226294	2.7832567	21	—	—
447642	2006	VK ₅₄	16.9	X	58.72893	345.09774	61.70067	7.69957	0.0301229	0.21115462	2.7929875	21	—	—
447643	2006	VY ₅₈	16.9	X	25.99230	23.02025	70.61063	10.25353	0.1030235	0.21243311	2.7817702	21	—	—
447644	2006	VK ₆₁	17.3	X	74.33732	105.81087	257.28426	0.95720	0.1041765	0.20681690	2.8319051	21	—	—
447645	2006	VY ₆₂	17.1	X	123.80607	320.77383	62.85777	10.46034	0.1551917	0.21974265	2.7197343	21	2 3.1	21.1
447646	2006	VN ₆₃	16.2	X	158.74335	235.30404	65.13626	12.31460	0.0702721	0.20963955	2.8064280	21	—	—
447647	2006	VE ₆₉	16.5	X	103.18600	159.32317	247.73191	11.34380	0.2739890	0.22052426	2.7133041	21	2 15.6	20.4
447648	2006	VZ ₇₀	16.9	X	113.54449	287.89695	77.56940	7.07487	0.1241408	0.21413501	2.7670113	21	—	—
447649	2006	VX ₇₆	16.8	X	226.12094	143.39510	85.43999	4.88083	0.0417779	0.20931514	2.8093270	21	—	—
447650	2006	VS ₈₂	16.6	X	100.11196	348.91068	40.99493	6.81156	0.0596978	0.21666819	2.7454020	21	—	—
447651	2006	VS ₈₅	17.4	X	22.78531	212.58715	246.27647	1.68560	0.1204979	0.21314581	2.7755657	21	—	—
447652	2006	VT ₉₂	16.8	X	109.09535	275.92069	92.75484	5.25872	0.1116765	0.21462774	2.7627747	21	—	—
447653	2006	VE ₁₃₁	17.5	X	108.82173	161.08110	223.27681	4.24488	0.1324908	0.21729029	2.7401595	21	1 9.5	21.1
447654	2006	VB ₁₅₀	16.3	X	99.59747	341.75781	64.29104	10.05038	0.1353459	0.22062875	2.7124473	21	1 27.6	19.9
447655	2006	WA	19.9	X	79.02358	270.41613	58.12155	28.22510	0.1426519	0.54050049	1.4925836	21	—	—
447656	2006	WZ ₈	16.9	X	7.36455	51.33297	80.94562	12.48922	0.1628546	0.21321551	2.7749608	21	—	—
447657	2006	WO ₁₀	16.3	X	94.68026	274.91446	91.93823	16.94404	0.1916505	0.21394412	2.7686570	21	—	—
447658	2006	WX ₁₅	17.1	X	348.15644	109.03423	30.60657	8.08625	0.1642918	0.21205187	2.7851033	21	—	—
447659	2006	WN ₁₇	17.3	X	34.22364	68.78467	357.44467	3.12374	0.0786722	0.21158497	2.7891990	21	—	—
447660	2006	WK ₃₇	17.0	X	26.93319	316.78822	118.02820	4.96619	0.0786084	0.20993796	2.8037680	21	—	—
447661	2006	WA ₅₃	15.9	X	102.25042	279.59585	93.62726	23.16745	0.1643657	0.21545753	2.7556767	21	—	—
447662	2006	WL ₅₇	16.4	X	288.61673	339.83192	223.57565	12.01263	0.0554877	0.21947538	2.7219419	21	—	—
447663	2006	WG ₈₃	16.0	X	284.09598	40.30655	48.39050	10.63641	0.0727125	0.19285823	2.9669526	21	10 21.9	20.0
447664	2006	WY ₉₃	16.8	X	154.34372	244.44611	70.50300	12.61879	0.1025738	0.21339179	2.7734323	21	—	—
447665	2006	WR ₉₄	17.9	X	58.22487	253.68074	169.96666	1.89909	0.1861501	0.21395348	2.7685762	21	—	—
447666	2006	WD ₁₇₄	17.3	X	266.06612	339.31194	177.45842	1.59849	0.0239152	0.20037840	2.8922475	21	12 27.4	21.2
447667	2006	WC ₁₈₅	16.9	X	87.01182	35.24818	8.93156	5.65773	0.0809455	0.21787103	2.7352880	21	—	—
447668	2006	WH ₂₀₀	17.0	X	316.08953	233.41563	247.45364	6.31642	0.1138997	0.20192029	2.8775049	21	—	—
447669	2006	WU ₂₀₅	17.2	X	58.83434	5.75477	73.24533	10.90115	0.2124986	0.21451009	2.7637849	21	1 13.7	19.9
447670	2006	XZ ₁₂	16.7	X	359.26047	337.74315	73.98869	10.88286	0.0461965	0.19841978	2.9112494	21	12 18.8	20.6
447671	2006	XD ₁₃	16.7	X	72.84597	154.34772	263.98166	8.79690	0.1889025	0.21422985	2.7661946	21	1 7.7	19.6
4476														

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ECLIPTIC AND EQUINOX 2000.0, EPOCH 2021 JULY 5.0 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>
447681 2006 YX ₃₈	16.3	X	336.90193	329.49171	102.95614	11.22171	0.0739156	0.19198924	2.9758986	21	12 14.6	20.0
447682 2007 AA ₂₀	16.6	X	207.55397	71.85075	103.41220	11.60973	0.0744580	0.18517990	3.0484107	21	11 5.8	21.3
447683 2007 BB ₄	16.6	X	281.51619	202.32778	280.71788	4.97781	0.1246643	0.19130697	2.9829698	21	11 20.5	20.5
447684 2007 BA ₁₁	18.2	X	152.27765	169.04851	0.25349	4.35614	0.0581405	0.30835665	2.1698706	21	9 4.8	20.7
447685 2007 BD ₁₁	16.5	X	176.33182	211.25116	344.33908	8.22165	0.0644834	0.18155213	3.0888856	21	10 20.5	21.3
447686 2007 BX ₂₂	17.5	X	62.55270	79.07787	306.84408	7.56145	0.2892654	0.20419451	2.8560995	21	—	—
447687 2007 BE ₃₆	18.0	X	108.42524	238.47330	304.39902	4.67218	0.0488938	0.30437838	2.1887367	21	7 25.6	20.3
447688 2007 BX ₃₉	16.2	X	121.75042	307.23389	314.63789	8.86151	0.1122438	0.18425082	3.0586499	21	11 14.7	21.1
447689 2007 BP ₇₉	16.6	X	36.39095	46.35665	323.83334	9.92858	0.1074257	0.18893717	3.0078611	21	12 23.4	20.7
447690 2007 CN ₂₃	16.1	X	135.72591	103.18345	119.96665	11.77602	0.1590825	0.18039481	3.1020826	21	10 22.9	21.3
447691 2007 CH ₂₈	18.3	X	97.22402	240.44116	313.23875	1.92080	0.0701810	0.30083125	2.2059081	21	7 28.9	20.8
447692 2007 CX ₄₀	17.4	X	3.32658	254.97316	322.26909	4.84220	0.1696741	0.28502747	2.2867126	21	3 17.7	19.1
447693 2007 CA ₄₈	17.3	X	62.60692	264.84511	155.58169	8.44685	0.1866748	0.20570737	2.8420791	21	—	—
447694 2007 CH ₅₀	15.8	X	210.31273	210.30018	307.04694	12.78305	0.2271934	0.17994519	3.1072478	21	9 24.9	21.2
447695 2007 DO ₆	17.0	X	315.91994	271.07994	208.53800	4.25296	0.0898311	0.19127502	2.9833019	21	—	—
447696 2007 DB ₉	16.3	X	261.10286	315.33461	144.48770	5.18311	0.1454121	0.17857844	3.1230818	21	9 22.8	20.8
447697 2007 DV ₁₈	18.0	X	87.23207	200.84604	344.37714	4.40556	0.0742677	0.29576573	2.2310235	21	7 2.6	20.6
447698 2007 DN ₂₁	16.4	X	256.61966	161.71013	344.59863	12.25582	0.1278206	0.18493008	3.0511555	21	11 10.8	21.0
447699 2007 DQ ₅₅	16.1	X	208.53828	181.17349	8.89120	7.16886	0.0956653	0.18168407	3.0873900	21	11 15.7	20.8
447700 2007 DS ₉₉	16.5	X	296.96895	127.87604	341.64777	8.89211	0.1060433	0.18706128	3.0279366	21	11 26.0	20.5
447701 2007 DY ₆₃	17.4	X	224.44008	350.27610	344.93507	6.20225	0.1313323	0.28235029	2.3011445	21	3 3.4	20.8
447702 2007 DX ₈₈	18.5	X	202.06167	107.26123	0.88960	4.42399	0.1210105	0.30526799	2.1844823	21	8 7.6	21.4
447703 2007 EH ₁₁	18.2	X	111.54603	100.59110	4.67033	3.47078	0.0407815	0.28716933	2.2753280	21	4 4.9	20.9
447704 2007 EP ₄₂	17.7	X	41.89173	222.47064	7.28609	4.65069	0.1131605	0.29098535	2.2553917	21	7 2.9	19.9
447705 2007 EF ₄₅	16.6	X	303.74757	308.27820	181.46046	12.84372	0.0676833	0.18733045	3.0250355	21	—	—
447706 2007 EN ₆₀	16.8	X	227.88332	40.41479	145.03238	3.24588	0.1931440	0.18394105	3.0620829	21	11 22.8	21.4
447707 2007 EN ₇₈	16.2	X	19.36147	228.63890	178.71493	16.45766	0.0780592	0.18566477	3.0431011	21	—	—
447708 2007 ED ₇₉	17.8	X	143.13012	163.64939	347.07931	5.62595	0.1372439	0.29745342	2.2225766	21	8 2.2	21.0
447709 2007 EE ₈₁	18.4	X	165.04444	99.85420	52.75452	0.76468	0.1281668	0.30543695	2.1836767	21	8 27.3	21.4
447710 2007 EX ₁₁₄	17.9	X	44.71817	165.90579	47.72266	5.17246	0.0907432	0.28729041	2.2746887	21	6 7.9	20.0
447711 2007 EA ₁₂₀	15.8	X	349.92706	27.55635	45.63357	10.57159	0.0794030	0.18115020	3.0934529	21	12 31.4	19.9
447712 2007 EA ₁₃₀	16.4	X	255.06265	152.42049	357.30113	10.22771	0.0519642	0.18231919	3.0802157	21	11 25.1	20.8
447713 2007 EW ₁₃₂	16.6	X	257.95408	141.79335	357.46658	10.96224	0.1660796	0.18286209	3.0741161	21	10 29.9	21.1
447714 2007 EY ₁₃₂	16.4	X	261.85185	153.76587	359.45345	10.38307	0.0883385	0.18447030	3.0562233	21	12 3.9	20.7
447715 2007 EM ₁₃₃	17.0	X	287.46856	136.05380	17.97744	1.40037	0.1134040	0.18932063	3.0037982	21	—	—
447716 2007 EX ₁₃₅	18.4	X	237.75393	243.55361	181.87446	3.25436	0.1264594	0.30239405	2.1983013	21	7 17.3	21.2
447717 2007 EL ₁₄₆	17.9	X	85.54811	24.93691	153.66580	6.46468	0.0819543	0.29240624	2.2480773	21	6 21.1	20.6
447718 2007 EX ₁₅₀	17.1	X	332.37298	89.70833	33.22847	3.86085	0.1657168	0.19467404	2.9484794	21	—	—
447719 2007 EU ₁₅₁	15.6	X	153.66647	37.85410	162.13531	17.06115	0.0773340	0.17190690	3.2033706	21	10 6.9	20.6
447720 2007 EP ₁₅₄	16.5	X	277.18162	308.38094	202.82077	9.90106	0.0969987	0.18530056	3.0407873	21	12 22.2	20.6
447721 2007 ET ₁₆₅	16.2	X	232.33293	157.43168	44.40555	11.22217	0.1535735	0.18227417	3.0807228	21	12 19.1	20.9
447722 2007 EX ₁₆₅	16.5	X	251.42963	47.69115	65.39451	2.70267	0.1182489	0.17999185	3.1067108	21	10 1.4	21.0
447723 2007 EN ₁₆₈	16.6	X	280.00088	324.60394	182.56651	12.18685	0.1674469	0.18506502	3.0496722	21	12 12.9	20.6
447724 2007 EN ₁₈₃	17.0	X	9.66243	285.20162	150.05325	9.41231	0.0680634	0.19248666	2.9707695	21	—	—
447725 2007 ET ₁₉₂	18.3	X	324.84983	129.88666	134.50868	1.89566	0.1588395	0.28137804	2.3064423	21	3 23.9	20.8
447726 2007 EX ₁₉₅	16.4	X	310.49237	99.15328	37.05064	14.54722	0.2232580	0.18879695	3.0093503	21	—	—
447727 2007 EB ₂₀₀	18.0	X	57.17790	157.91594	51.14614	5.41205	0.1477296	0.29083504	2.2561687	21	7 3.7	20.3
447728 2007 EM ₂₀₈	16.0	X	325.45200	241.87075	180.41866	26.59568	0.1875054	0.17744380	3.1363812	21	11 9.5	19.8
447729 2007 EH ₂₀₉	16.1	X	43.73288	36.03593	336.92785	12.80420	0.1161602	0.18903692	3.0068029	21	—	—
447730 2007 EA ₂₁₇	16.1	X	298.20339	121.72170	9.86802	12.36679	0.1205522	0.18674576	3.0313463	21	12 26.9	20.1
447731 2007 EF ₂₁₇	16.6	X	256.45577	292.79347	180.84352	7.39020	0.0838124	0.17683637	3.1435593	21	10 12.2	21.1
447732 2007 EC ₂₁₉	16.8	X	188.64083	23.23340	186.55718	17.20759	0.0530490	0.17892463	3.1190522	21	11 24.7	21.6
447733 2007 FR ₇	16.1	X	17.98908	19.73434	347.29567	10.15534	0.1107771	0.17932043	3.1144608	21	11 18.9	20.3
447734 2007 FU ₁₇	15.9	X	239.14651	351.49620	208.24433	18.72799	0.2425145	0.18454249	3.0554262	21	12 13.7	20.8
447735 2007 FN ₂₄	18.1	X	98.60873	14.34496	178.00742	2.39301	0.0851117	0.29795813	2.2200660	21	7 30.4	20.8
447736 2007 FP ₄₀	18.1	X	301.28025	288.12018	351.94834	2.99342	0.2428546	0.28067226	2.3103071	21	2 28.6	21.2
447737 2007 FK ₄₆	16.1	X	291.14254	101.14894	29.98711	15.95209	0.1350225	0.18299583	3.0726181	21	12 9.7	20.2
447738 2007 GG ₈	16.1	X	259.94408	328.16906	195.66380	17.95156	0.1518984	0.18422848	3.0588971	21	12 7.8	20.6
447739 2007 GM ₂₅	17.6	X	39.96132	229.47659	9.53903	4.58846	0.1925195	0.28877900	2.2668649	21	7 29.2	19.5
447740 2007 GZ ₂₅	18.1	X	295.98227	16.41428	263.95656	2.87954	0.1703660	0.27765768	2.3269993	21	3 2.9	21.3
447741 2007 GH ₃₂	15.8	X	180.08859	49.77438	172.61900	28.00093	0.2316391	0.17637958	3.1489845	21	11 23.9	21.7
447742 2007 GL ₃₈	17.7	X	236.60537	266.76759	44.81518	5.99364	0.2314640	0.26844680	2.3799284	21	2 14.8	21.9
447743 2007 GR ₆₄	16.1	X	314.53771	53.21962	35.36699	11.81063	0.0475647	0.17461198	3.1702002	21	11 27.2	20.4
447744 2007 GX ₆₉	18.5	X	341.00157	63.93069	189.75140	4.15772	0.1183259	0.28277569	2.2988360	21	4 10.3	20.6
447745 2007 HZ ₆	17.0	X	281.22144	83.35734	212.12259	22.08308	0.1895514	0.27442292	2.3452499	21	2 28.0	20.9
447746 2007 HG ₁₇	15.6	X	189.56768	173.01054	58.44013	17.60625	0.0705281	0.17932086	3.1144559	21	12 16.3	20.4
447747 2007 HT ₂₀	18.0	X	224.77460	278.32276	34.19694	7.38190	0.1063912	0.26766862	2.3845389	21	2 8.3	21.6
447748 2007 HT ₃₅	17.8	X	295.24640	25.94694	203.15478	2.86858	0.0845867	0.26633571	2.3924881	21	1 8.4	20.9
447749 2007 HU ₃₇	16.9	X	30.01966	71.68470	34.41723	23.85307	0.3539624	0.20325323	2.8649107	21	—	—
447750 2007 HS ₄₇	18.1	X	259.96088	150.25214	157.34941	2.70376	0.1905093	0.27142279	2.3625001	21	2 28.7	21.7
447751 2007 HS ₆₇	17.5	X	251.32414	196.99309	97.87059	3.53728	0.2050825	0.26929535	2.3749264	21	2 5.6	21.2
447752 2007 HA ₇₁	15.7	X	246.07811	96.90287	61.12565	10.76175	0.1774794	0.17759910	3.1345524	21	11 10.6	20.4
447753 2007 HL ₈₁	16.3	X	262.40464	118.40569	32.68212	16.93124	0.1476143	0.18082274	3.0971864	21	11 21.4	20.8</

ELEMENTS AND OPPOSITION DATES IN 2021

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2021 JULY 5.0 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>
447761 2007 JF ₂₅	18.2	X	130.73167	122.95950	49.00324	4.89185	0.0971186	0.29428208	2.2385158	21	8 15.7	21.2
447762 2007 JU ₂₆	18.0	X	2.21654	38.34747	184.35114	6.07306	0.0932547	0.27653037	2.3333192	21	4 5.6	20.4
447763 2007 LM ₉	17.7	X	278.49451	228.42858	89.71848	10.65178	0.1639502	0.27446647	2.3450018	21	4 10.6	21.1
447764 2007 LV ₁₀	17.6	X	271.03883	162.88312	139.27649	2.92924	0.2062314	0.27037429	2.3686040	21	3 3.7	21.2
447765 2007 LJ ₁₃	16.1	X	236.08798	325.15018	207.15974	23.97961	0.2518987	0.17771560	3.1331824	21	11 8.3	21.1
447766 2007 LE ₁₄	15.7	X	358.20913	351.90431	82.68790	18.63005	0.1701652	0.17771797	3.1331546	21	—	—
447767 2007 LG ₁₉	16.3	X	240.43744	69.39765	136.46891	17.65045	0.1017991	0.18044931	3.1014580	21	—	—
447768 2007 LP ₂₈	17.9	X	234.26882	189.63026	127.56570	8.05558	0.2942384	0.26297704	2.4128157	21	2 17.1	22.2
447769 2007 LE ₃₄	17.3	X	173.14581	162.14393	170.46173	13.59613	0.2135339	0.25546959	2.4598573	21	1 17.3	21.4
447770 2007 MU ₄	17.8	X	306.88744	167.41073	118.82302	3.38031	0.1982534	0.27493271	2.3423499	21	3 24.1	20.7
447771 2007 PW ₁₀	17.4	X	210.11073	186.72864	154.81676	10.28004	0.2800443	0.25508002	2.4623611	21	3 1.4	21.8
447772 2007 PC ₁₉	17.5	X	250.75581	155.28648	152.54454	2.50516	0.2331578	0.26079154	2.4262770	21	2 19.6	21.5
447773 2007 PZ ₄₅	17.9	X	180.46808	229.78798	144.80528	3.36945	0.2714677	0.25298514	2.4759358	21	3 20.1	22.1
447774 2007 RL ₁₃	17.6	X	175.89373	0.74721	52.19959	3.47826	0.1878549	0.25702903	2.4498976	21	4 28.6	21.4
447775 2007 RA ₈₃	17.9	X	162.31636	314.50526	359.61612	4.38517	0.1422380	0.24093059	2.5578481	21	—	—
447776 2007 RU ₉₂	18.2	X	180.09804	205.47471	173.80698	1.12057	0.2720795	0.25202834	2.4821982	21	3 24.7	22.6
447777 2007 RH ₉₃	18.1	X	253.56688	45.82895	178.10485	21.50163	0.0600740	0.38133899	1.8833393	21	—	—
447778 2007 RZ ₁₁₇	17.7	X	83.12285	294.39353	354.73937	18.17520	0.0730215	0.36086735	1.9539090	21	11 29.4	20.5
447779 2007 RP ₁₂₂	15.8	X	239.87651	315.94326	76.94564	1.84765	0.2279203	0.12545202	3.9520062	21	5 31.8	22.1
447780 2007 RZ ₁₄₆	17.3	X	209.23877	238.39664	146.14322	5.10720	0.1782224	0.25996039	2.4314458	21	4 23.8	21.3
447781 2007 RV ₁₈₈	17.2	X	107.65343	3.92260	356.37955	12.17488	0.0889622	0.23684567	2.5871746	21	—	—
447782 2007 RA ₁₉₅	15.6	X	246.31640	116.22321	278.34581	1.73225	0.2107561	0.12411352	3.9803689	21	6 9.7	21.7
447783 2007 RC ₂₀₀	17.9	X	113.30533	197.72406	218.83767	2.74519	0.1423218	0.24457989	2.5234312	21	2 21.3	21.2
447784 2007 RE ₂₁₉	17.5	X	357.61406	347.69348	217.46360	2.20782	0.1276662	0.254440096	2.4667410	21	3 1.3	20.0
447785 2007 RR ₂₂₁	15.9	X	257.41660	176.89217	213.84579	2.11260	0.2358147	0.12408792	3.9809162	21	6 13.1	22.0
447786 2007 RO ₂₅₉	17.9	X	305.89953	326.56680	176.70593	22.05801	0.0655959	0.37300336	1.9112942	21	—	—
447787 2007 RF ₂₉₆	17.1	X	191.71500	262.97946	32.26253	13.17251	0.0479752	0.23665121	2.5885918	21	—	—
447788 2007 RU ₃₀₉	16.4	X	200.15754	276.64251	54.48054	12.52586	0.0776290	0.24029919	2.5623267	21	2 11.9	20.4
447789 2007 RZ ₃₁₆	17.3	X	206.00815	265.92473	338.12709	3.56737	0.0982072	0.23661068	2.5888873	21	—	—
447790 2007 RR ₃₁₇	17.4	X	94.41582	228.48899	200.34402	8.57574	0.1451088	0.23863556	2.5742217	21	2 11.3	20.7
447791 2007 RO ₃₂₄	17.6	X	143.22593	178.24758	218.50063	4.41747	0.1859857	0.24315715	2.5422096	21	3 7.7	21.4
447792 2007 RG ₃₂₅	17.5	X	162.86794	304.40273	59.24051	5.84106	0.1552051	0.24165926	2.5527038	21	2 15.9	21.4
447793 2007 ST ₁₇	18.3	X	151.11904	142.49336	180.44988	3.01897	0.2153476	0.24035148	2.5619551	21	—	—
447794 2007 TZ ₆	17.6	X	107.57096	95.37549	212.17651	20.63088	0.0707795	0.36655702	1.9336373	21	—	—
447795 2007 TH ₁₉	17.8	X	223.00666	194.90138	86.36663	2.27444	0.5025983	0.24828269	2.5071006	21	—	—
447796 2007 TV ₂₆	17.7	X	177.79822	10.93153	31.57435	1.94256	0.1844401	0.25383895	2.4703806	21	4 16.9	21.5
447797 2007 TK ₄₇	17.1	X	225.49166	69.77801	214.52343	14.59166	0.0653619	0.24159652	2.5531457	21	1 4.1	21.1
447798 2007 TC ₅₆	17.2	X	58.33620	107.18668	28.25493	13.77297	0.2677618	0.24104597	2.5570318	21	4 8.4	19.3
447799 2007 TE ₅₉	18.1	X	162.00941	202.16771	191.07878	11.03024	0.2309293	0.25144493	2.4860362	21	3 24.8	22.2
447800 2007 TS ₇₈	18.0	X	93.18919	170.46391	233.71827	3.31924	0.2872256	0.23575393	2.5951558	21	2 1.5	21.0
447801 2007 TV ₈₀	18.0	X	123.56332	318.81394	23.85899	5.66683	0.2279787	0.23476437	2.6024432	21	—	—
447802 2007 TK ₈₄	18.1	X	125.48629	7.74986	35.61998	3.63658	0.1183744	0.24351088	2.5397471	21	2 19.2	21.4
447803 2007 TT ₉₃	18.4	X	139.76505	260.00986	136.08642	1.88125	0.2323187	0.24376032	2.5380142	21	3 10.4	22.2
447804 2007 TS ₉₆	18.4	X	164.64152	173.09797	192.96429	12.26892	0.1670821	0.24677096	2.5173292	21	2 15.4	22.4
447805 2007 TY ₉₈	17.6	X	38.22138	307.96746	198.15662	17.22696	0.1250709	0.24497702	2.5296037	21	2 17.4	20.5
447806 2007 TC ₁₃₄	18.1	X	90.12772	293.75100	139.20687	0.52288	0.1104646	0.23909472	2.5709249	21	2 7.9	21.0
447807 2007 TD ₁₃₄	18.7	X	15.52846	47.14543	32.52756	20.83095	0.1539216	0.36906911	1.9248531	21	—	—
447808 2007 TJ ₁₄₅	17.2	X	117.94961	328.01470	27.96613	5.85687	0.2609301	0.23529656	2.5985176	21	1 1.5	20.7
447809 2007 TN ₁₄₉	18.2	X	130.18463	321.95167	34.56360	5.24150	0.2814427	0.23842842	2.5757124	21	1 18.7	22.0
447810 2007 TZ ₁₅₂	18.1	X	134.00920	25.38510	330.12989	3.05714	0.2340997	0.23914438	2.5705690	21	1 14.7	21.8
447811 2007 TV ₁₅₆	16.0	X	272.20159	42.14392	346.82973	4.57641	0.3260803	0.12601428	3.9402418	21	6 14.6	22.1
447812 2007 TO ₁₉₃	17.9	X	124.35177	193.45666	181.51879	11.62251	0.1851888	0.24187823	2.5511629	21	1 18.5	21.5
447813 2007 TV ₂₁₀	17.5	X	76.14990	206.94729	228.24728	13.12785	0.2396866	0.23663491	2.5887106	21	2 2.4	20.4
447814 2007 TP ₂₁₄	17.5	X	346.46135	45.37994	47.49935	21.63743	0.1052983	0.36552426	1.9372779	21	—	—
447815 2007 TH ₂₃₂	17.8	X	182.39558	142.37628	208.86855	4.39230	0.1717534	0.24440139	2.5335740	21	2 15.7	21.8
447816 2007 TJ ₂₃₇	17.6	X	170.28583	223.33761	148.28044	2.87618	0.1954682	0.24736656	2.5132868	21	3 4.6	21.7
447817 2007 TU ₂₄₁	17.6	X	140.21545	324.68594	41.20017	4.97423	0.2063105	0.23939360	2.5687846	21	1 31.8	21.4
447818 2007 TL ₂₅₆	17.6	X	76.68435	223.74172	181.72176	4.11127	0.1967665	0.23267229	2.6180199	21	—	—
447819 2007 TN ₂₅₉	16.9	X	350.21253	356.90004	214.92187	5.17288	0.1168377	0.25210204	2.4817145	21	2 26.8	19.6
447820 2007 TS ₂₆₀	18.0	X	118.17911	359.91688	43.58426	6.06783	0.2519117	0.24053365	2.5606614	21	3 2.8	21.6
447821 2007 TW ₂₆₁	17.9	X	133.99412	334.23686	34.80973	15.25735	0.2162969	0.23852722	2.5750011	21	2 3.9	22.0
447822 2007 TA ₂₆₂	18.1	X	97.13923	223.00274	221.22413	2.89086	0.2156828	0.24107071	2.5568569	21	3 20.4	21.2
447823 2007 TV ₂₆₂	18.2	X	161.57848	351.43718	39.27160	5.13132	0.2265391	0.24690993	2.5163846	21	3 23.8	22.3
447824 2007 TO ₃₀₁	17.6	X	134.85718	125.40563	283.37247	1.26446	0.1490867	0.24442273	2.5334266	21	3 10.7	21.1
447825 2007 TH ₃₃₂	17.6	X	102.50896	27.15825	11.32866	3.62431	0.0685984	0.23587759	2.5942486	21	1 6.6	20.8
447826 2007 TU ₃₃₄	17.9	X	176.23947	144.45441	227.23403	16.44267	0.1737169	0.24630152	2.5205268	21	3 2.4	22.3
447827 2007 TW ₃₃₄	16.5	X	19.18173	224.37083	225.35612	21.18794	0.0467850	0.22774428	2.6565614	21	—	—
447828 2007 TL ₃₄₆	17.5	X	319.69222	110.19517	161.67275	5.71242	0.1127747	0.26037082	2.4288900	21	4 7.3	20.2
447829 2007 TV ₃₇₃	15.3	X	283.44458	334.08046	45.01847	3.51381	0.2723386	0.12558593	3.9491964	21	6 20.9	21.0
447830 2007 TP ₃₇₉	17.9	X	254.33582	177.79900	26.54750	19.74757	0.0355207	0.37463946	1.9057256	21	—	—
447831 2007 TN ₃₈₈	18.2	X	121.94130	320.35524	44.26117	3.59198	0.1586263	0.23806774	2.5783132	21	1 1.6	21.5
447832 2007 TS ₄₀₄	17.5	X	139.57498	29.78330	10.25269	4.14151	0.1806712	0.24360440	2.5390970	21	3 10.1	21.1
447833 2007 TJ ₄₀₅	17.6	X	159.27152	132.94518	229.88438	12.88249	0.2147746	0.24209122	2.5496664	21	2 8.8	21.9
447834 2007 TF ₄₂₃	18.0											

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ECLIPTIC AND EQUINOX 2000.0, EPOCH 2021 JULY 5.0 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>
447841 2007 UM ₄₆	17.3	X	136.94757	318.84463	90.31462	4.51286	0.1736478	0.24394377	2.5367416	21	3 19.6	21.0
447842 2007 UT ₅₃	17.2	X	69.18773	139.02835	239.77610	5.14113	0.0407060	0.22519428	2.6756614	21	—	—
447843 2007 UE ₅₈	17.8	X	82.40946	235.36612	227.00482	2.85467	0.1833738	0.24102516	2.5571790	21	3 17.8	20.6
447844 2007 UR ₆₀	17.8	X	154.79904	192.54418	155.38440	0.57113	0.2493595	0.23921257	2.5700804	21	1 26.4	21.7
447845 2007 UA ₇₂	17.9	X	71.65206	237.71455	227.41505	1.73201	0.1578206	0.23984153	2.5655853	21	2 28.3	20.6
447846 2007 UF ₈₃	17.6	X	178.24009	126.31811	226.21400	14.17667	0.1157666	0.24297030	2.5435128	21	2 6.4	21.7
447847 2007 US ₈₃	17.2	X	129.21761	155.76201	225.06541	8.10802	0.1715826	0.23831702	2.5765150	21	1 29.6	20.9
447848 2007 UV ₁₁₃	17.5	X	131.76992	188.85884	241.91570	6.47234	0.1537777	0.24627680	2.5260955	21	4 3.2	21.2
447849 2007 UG ₁₃₂	15.1	X	272.67112	233.70380	157.57516	14.76708	0.2295058	0.12505583	3.9603486	21	6 29.5	21.1
447850 2007 UJ ₁₃₇	17.6	X	116.15693	218.38568	140.63210	5.88705	0.2437132	0.23479017	2.6022525	21	—	—
447851 2007 UL ₁₃₈	17.2	X	90.29090	64.81076	349.58723	6.94411	0.1908292	0.23458417	2.6037758	21	1 29.5	20.1
447852 2007 UA ₁₃₉	16.6	X	34.18693	226.83839	255.44868	11.26147	0.1428704	0.23632671	2.5909608	21	1 11.5	19.3
447853 2007 UK ₁₃₉	17.5	X	168.38693	207.83078	149.05338	2.90101	0.1901996	0.24417942	2.5351092	21	2 12.6	21.6
447854 2007 UO ₁₃₉	17.4	X	96.38548	134.50314	288.58672	7.81193	0.1500825	0.23773567	2.5807137	21	2 8.2	20.5
447855 2007 VT ₁	17.7	X	11.10334	231.33701	239.07279	20.64424	0.0881195	0.37342188	1.9098659	21	—	—
447856 2007 VE ₂	16.9	X	155.51812	358.99613	28.32303	15.48273	0.1114092	0.24444437	2.5332771	21	3 9.9	20.8
447857 2007 UT ₈	18.2	X	123.48579	146.04346	278.04844	3.70954	0.2822195	0.24272914	2.5451972	21	4 1.5	22.2
447858 2007 VN ₉	17.7	X	47.81992	144.20695	279.19784	5.37637	0.1889913	0.22738582	2.6584416	21	—	—
447859 2007 VM ₄₁	17.0	X	118.83065	30.37289	308.12725	13.45669	0.1940571	0.23288263	2.6164433	21	—	—
447860 2007 VN ₅₁	18.1	X	96.04116	304.04781	42.02990	21.59150	0.1016439	0.36926388	1.9241762	21	—	—
447861 2007 VM ₅₅	16.3	X	80.81262	341.66565	64.13075	15.66521	0.0714788	0.23170466	2.6253036	21	—	—
447862 2007 VB ₅₉	17.5	X	115.25111	1.52818	45.83063	14.28065	0.1601170	0.23829370	2.5766831	21	2 24.6	21.2
447863 2007 VG ₆₁	17.0	X	180.01787	55.73158	249.94388	10.42760	0.1903616	0.23418611	2.6067254	21	—	—
447864 2007 VV ₆₁	17.0	X	48.16239	120.76101	40.34978	5.77898	0.2376437	0.24109154	2.5567096	21	4 19.1	19.0
447865 2007 VL ₆₄	17.0	X	111.50630	200.48386	255.55074	7.24744	0.2148558	0.24303197	2.5430825	21	4 21.6	20.7
447866 2007 VC ₆₇	16.8	X	20.42531	242.59165	246.78235	6.41426	0.2763910	0.22844110	2.6502483	21	—	—
447867 2007 VS ₆₇	17.0	X	357.80845	175.63768	26.81750	7.15059	0.0548802	0.25377095	2.4708219	21	3 9.8	19.9
447868 2007 VA ₈₀	16.9	X	120.33513	182.56985	239.64190	7.93681	0.0680751	0.24102743	2.5571630	21	2 24.6	20.5
447869 2007 VP ₈₀	17.0	X	299.45028	151.99769	62.55634	14.17155	0.0977252	0.23375241	2.6099488	21	—	—
447870 2007 VX ₉₆	18.4	X	149.75765	45.82427	354.57800	4.55996	0.1970790	0.24527951	2.5275235	21	3 20.9	22.3
447871 2007 VT ₁₀₈	17.8	X	182.68382	126.62338	218.24299	1.04967	0.1940197	0.24308376	2.5427212	21	2 10.8	22.0
447872 2007 VA ₁₁₂	17.6	X	135.42257	286.33367	61.32047	5.35271	0.1501549	0.23279364	2.6171100	21	—	—
447873 2007 VS ₁₃₉	17.9	X	182.36430	131.85744	219.29018	1.27490	0.1402803	0.24331613	2.5411021	21	2 15.1	21.7
447874 2007 VX ₁₆₄	18.0	X	151.36349	294.66233	61.58088	10.31092	0.2220825	0.23807747	2.5782430	21	2 3.2	22.2
447875 2007 VQ ₁₆₈	16.8	X	349.63053	102.09256	67.86558	28.27861	0.2386883	0.22901667	2.6458059	21	—	—
447876 2007 VR ₁₇₀	17.9	X	124.49984	10.17674	51.61176	4.38403	0.0292742	0.24764576	2.5113975	21	2 28.8	21.1
447877 2007 VM ₁₈₀	17.7	X	157.40354	271.58615	67.13114	4.90091	0.2757101	0.24007836	2.5638978	21	1 20.8	21.9
447878 2007 VZ ₁₈₅	17.4	X	156.73098	333.74495	34.02582	4.09713	0.1970299	0.24161675	2.5530032	21	2 17.9	21.3
447879 2007 VU ₂₀₂	17.2	X	76.01666	27.81396	80.16282	7.84773	0.2718031	0.23364199	2.6107710	21	4 6.3	20.2
447880 2007 VN ₂₁₆	18.3	X	91.29210	88.97930	5.42787	2.07655	0.1928960	0.23993823	2.5648960	21	3 23.5	21.4
447881 2007 VG ₂₃₄	16.5	X	117.38977	343.62623	62.26886	23.19747	0.0879985	0.23789884	2.5795335	21	2 17.2	20.5
447882 2007 VV ₂₆₈	17.2	X	124.20943	341.85054	87.85504	7.25024	0.2018127	0.24340320	2.5404960	21	4 5.9	21.0
447883 2007 VL ₂₈₉	16.9	X	88.67067	84.20204	338.88625	8.77562	0.1978668	0.23686318	2.5870472	21	2 7.9	19.7
447884 2007 VB ₂₉₅	17.4	X	124.49332	332.23688	79.52777	10.20375	0.1746488	0.24142421	2.5543604	21	3 12.7	21.2
447885 2007 VE ₃₀₈	17.4	X	45.36516	209.60007	278.44297	2.92589	0.1059300	0.23575770	2.5951280	21	2 10.0	20.2
447886 2007 VN ₃₂₄	16.2	X	133.53614	141.41169	255.20689	21.46371	0.0734471	0.23786668	2.5797660	21	2 3.5	20.3
447887 2007 VU ₃₂₆	17.4	X	116.24403	281.02244	74.61438	15.03429	0.1838488	0.22928671	2.6437282	21	—	—
447888 2007 VJ ₃₂₈	17.7	X	96.44801	210.30203	183.82822	5.99792	0.2793570	0.23347474	2.6120177	21	1 23.1	20.8
447889 2007 VN ₃₃₀	16.2	X	232.47776	352.72658	287.86340	12.81210	0.0941448	0.22781876	2.6550726	21	1 11.3	20.2
447890 2007 VF ₃₃₄	16.5	X	139.49633	305.41545	92.67858	16.70832	0.1929173	0.23554843	2.5966649	21	3 17.3	20.8
447891 2007 VS ₃₃₄	17.1	X	79.07113	342.04192	66.92531	7.39294	0.1048759	0.22972857	2.6403371	21	—	—
447892 2007 WX ₃₀	18.1	X	148.01961	319.65543	67.42671	8.13000	0.2421951	0.24378623	2.5378343	21	3 11.6	22.3
447893 2007 WT ₂₄	17.6	X	102.85465	12.78650	85.11079	5.60882	0.2229141	0.24338942	2.5405920	21	4 19.5	21.0
447894 2007 WS ₂₅	17.7	X	152.71994	130.58524	223.33868	11.22238	0.2134446	0.23917518	2.5703483	21	1 24.9	22.0
447895 2007 WG ₃₅	17.8	X	64.73156	76.26002	35.47915	5.29335	0.2576776	0.23546023	2.5973133	21	3 16.6	20.2
447896 2007 WD ₃₉	17.1	X	132.67803	11.52510	27.89833	6.37970	0.1448238	0.23969861	2.5666050	21	2 27.9	20.7
447897 2007 WP ₄₉	16.5	X	292.00881	0.66946	229.29504	11.48183	0.0547263	0.23669230	2.5882921	21	1 13.3	20.3
447898 2007 WV ₅₈	16.8	X	174.72913	292.88057	70.66395	12.43645	0.1847023	0.24259713	2.5461204	21	3 4.6	21.1
447899 2007 WF ₆₁	16.9	X	75.51250	349.64383	70.02795	13.74781	0.1344443	0.23227729	2.6209871	21	1 2.7	19.9
447900 2007 XM ₃	18.1	X	64.21446	173.91601	210.63182	20.77861	0.0962331	0.36882660	1.9256967	21	—	—
447901 2007 XN ₅	16.8	X	53.21498	124.07490	254.11604	20.47637	0.1020370	0.36632029	1.9344703	21	—	—
447902 2007 XE ₁₀	17.4	X	113.36708	270.78927	160.41697	3.98358	0.2311936	0.24062173	2.5600365	21	3 27.8	20.8
447903 2007 XJ ₂₀	18.5	X	352.07014	151.91442	56.62240	10.63622	0.5994566	0.44699028	1.6940933	21	—	—
447904 2007 XL ₂₀	17.5	X	78.03233	351.95506	85.27938	5.54285	0.1721990	0.23337939	2.6127291	21	2 6.6	20.3
447905 2007 XG ₂₆	17.1	X	70.14315	156.73051	281.40277	6.62612	0.1096218	0.23469943	2.6029233	21	1 15.1	20.1
447906 2007 XK ₃₅	16.6	X	166.75157	74.41344	314.80478	4.21485	0.1455951	0.24491004	2.5300649	21	3 17.9	20.4
447907 2007 XX ₃₉	17.2	X	74.97285	11.62031	63.99809	7.89074	0.2570409	0.23049195	2.6345040	21	2 14.9	19.9
447908 2007 XG ₄₆	16.3	X	159.99240	258.49362	134.61073	6.82297	0.1662796	0.24382054	2.5375963	21	3 21.8	20.2
447909 2007 XL ₅₁	17.7	X	97.78475	349.48044	68.52001	2.90639	0.1925912	0.23499560	2.6007358	21	2 14.1	20.9
447910 2007 XV ₅₄	16.5	X	145.43846	126.14376	256.49200	12.90671	0.0922431	0.23756050	2.5819821	21	2 6.8	20.4
447911 2007 XE ₅₆	16.9	X	121.81302	354.30212	46.06976	9.39692	0.2746696	0.23585167	2.5944387	21	3 8.0	20.9
447912 2007 YZ ₉	16.5	X	291.79962	114.39941	82.42553	13.81907	0.1563030	0.21935164	2.7229654	21	—	—
447913 2007 YZ ₁₈	17.9	X	55.86849	224.65332	241.28622	4.60702	0.1876412	0.23179485	2.6246226	21	2 4.0	20.5
447914 2007 YQ ₂₇	17.3	X	129.37254	341.56385								

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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>		
447921	2007	YJ ₆₅	17.3	X	62.95422	62.92466	41.30214	4.90593	0.1643111	0.22903631	2.6456547	21	2 18.3	20.0
447922	2007	YX ₆₉	17.3	X	335.93099	62.91884	103.22745	4.08895	0.1067694	0.22235035	2.6984280	21	—	—
447923	2007	YD ₇₁	17.3	X	102.63628	33.58678	55.08849	14.26908	0.2460193	0.23730656	2.5838238	21	4 13.9	21.0
447924	2007	YP ₇₃	17.1	X	39.22097	156.98745	295.92995	4.00758	0.0917764	0.22269434	2.6956485	21	—	—
447925	2008	AM ₂	17.1	X	101.28761	153.22369	279.64702	8.81883	0.2027070	0.23507470	2.6001523	21	3 5.9	20.7
447926	2008	AO ₄	17.7	X	130.18567	106.62485	309.01844	5.93832	0.3911280	0.23963819	2.5670364	21	4 6.3	22.2
447927	2008	AV ₅	17.2	X	47.05405	334.47085	117.05878	2.85197	0.1407560	0.23227372	2.6210139	21	—	—
447928	2008	AZ ₇	17.1	X	107.07250	99.63037	288.36426	3.74616	0.1578885	0.22529913	2.6748311	21	1 14.4	20.5
447929	2008	AY ₂₀	15.9	X	101.15706	248.85451	322.56139	15.21593	0.1721491	0.17850662	3.1239195	21	8 30.6	20.8
447930	2008	AS ₂₂	17.4	X	296.06454	69.23475	105.96341	4.70453	0.0364008	0.21368208	2.7709199	21	—	—
447931	2008	AT ₂₉	16.3	X	276.65811	125.95740	102.57584	12.90807	0.0941215	0.22012445	2.7165885	21	—	—
447932	2008	AO ₃₈	17.3	X	33.08152	216.07457	250.85702	4.33119	0.1418387	0.22441369	2.6818624	21	—	—
447933	2008	AN ₄₁	17.8	X	102.94766	284.51765	158.66094	5.10811	0.2916562	0.23707842	2.5854811	21	4 9.7	21.3
447934	2008	AZ ₄₄	16.2	X	253.77386	289.30612	317.37477	12.64913	0.0949562	0.21766223	2.7370370	21	—	—
447935	2008	AQ ₅₂	17.9	X	349.13872	233.48813	250.07040	0.80842	0.0388678	0.21853072	2.7297805	21	—	—
447936	2008	AL ₅₈	17.2	X	9.60648	192.28253	277.64578	4.11072	0.1233588	0.21973205	2.7198217	21	—	—
447937	2008	AV ₆₁	16.3	X	41.64983	74.89315	40.70191	11.33509	0.1236682	0.22713769	2.6603774	21	1 24.8	19.4
447938	2008	AB ₈₀	17.4	X	331.67224	330.91226	177.72231	1.35249	0.1242325	0.21647330	2.7470495	21	—	—
447939	2008	AV ₈₂	17.5	X	59.12146	33.48724	64.37619	3.06929	0.1992991	0.22959495	2.6413614	21	2 4.3	20.0
447940	2008	AK ₈₃	17.0	X	119.64818	111.83366	307.33780	11.75046	0.2463778	0.23686554	2.5870300	21	3 15.1	21.0
447941	2008	AP ₉₃	16.8	X	27.50361	359.25461	93.44295	8.13819	0.0182757	0.21999286	2.7176717	21	—	—
447942	2008	AQ ₉₉	16.5	X	116.39161	97.05735	286.04285	10.12211	0.0851901	0.22315734	2.6919186	21	1 10.1	20.0
447943	2008	AV ₁₀₄	17.6	X	105.73915	117.47609	294.69324	2.70150	0.1054693	0.23050576	2.6343988	21	2 3.4	21.0
447944	2008	AD ₁₀₇	17.1	X	35.20245	109.75698	307.03994	6.32933	0.0171773	0.21402654	2.7679461	21	—	—
447945	2008	AR ₁₀₈	17.3	X	149.65683	255.97392	135.54291	5.90010	0.3695861	0.24020491	2.5629972	21	3 25.6	22.0
447946	2008	AR ₁₁₅	17.8	X	115.75060	92.72688	329.30521	1.02794	0.2449356	0.23331499	2.6132099	21	3 20.2	21.5
447947	2008	AC ₁₂₉	17.1	X	167.33149	207.68363	93.26567	5.38569	0.0517918	0.21553664	2.7550024	21	—	—
447948	2008	AD ₁₂₉	17.6	X	50.61147	9.05082	104.48775	6.87329	0.0071763	0.22698523	2.6615685	21	1 29.4	21.0
447949	2008	AI ₁₃₇	17.3	X	88.53072	176.01737	271.70604	1.63802	0.1335539	0.23203992	2.6227742	21	3 1.4	20.4
447950	2008	AX ₁₃₇	16.3	X	130.13657	25.36313	327.53664	13.85933	0.1013261	0.21755618	2.7379264	21	—	—
447951	2008	BM ₃	17.5	X	39.87510	102.37330	293.07679	11.92362	0.2087410	0.21482444	2.7610881	21	—	—
447952	2008	BW ₆	17.5	X	40.76164	290.00044	217.17963	1.36431	0.1771166	0.23031889	2.6358236	21	3 6.1	20.0
447953	2008	BU ₈	16.3	X	357.63134	210.95638	332.74966	13.80859	0.2483818	0.22558685	2.6725563	21	1 24.7	19.1
447954	2008	BB ₁₁	16.9	X	20.89740	157.04630	290.78921	8.75093	0.0841671	0.21977244	2.7194885	21	—	—
447955	2008	BT ₁₄	17.1	X	131.68896	128.14869	251.08077	7.08019	0.1614368	0.22773267	2.6557416	21	1 31.4	21.0
447956	2008	BB ₁₉	16.7	X	181.93174	195.76180	108.73388	7.21625	0.1230514	0.22112292	2.7084046	21	—	—
447957	2008	BK ₂₇	16.8	X	20.19463	187.79721	289.28182	6.42929	0.1043478	0.22393328	2.6856967	21	—	—
447958	2008	BZ ₃₅	16.5	X	318.25618	163.99936	345.96054	8.78814	0.2121947	0.21115755	2.7929617	21	—	—
447959	2008	BN ₃₆	17.5	X	99.36924	287.50186	150.79829	5.59888	0.2894170	0.23111978	2.6297309	21	3 30.7	21.0
447960	2008	BU ₄₀	17.1	X	121.98275	263.64047	150.58838	5.79169	0.1490310	0.23351254	2.6117358	21	3 5.7	20.7
447961	2008	BC ₄₂	17.0	X	30.26145	109.59369	20.93156	7.81376	0.2832311	0.22575077	2.6712624	21	1 18.2	18.9
447962	2008	BY ₄₃	16.6	X	23.69502	209.35327	251.66350	7.20186	0.1650955	0.22100970	2.7093295	21	—	—
447963	2008	BM ₅₀	16.8	X	186.46714	300.30888	336.87264	6.63111	0.1714030	0.21451701	2.7637254	21	—	—
447964	2008	CN ₈	16.9	X	35.51761	104.86897	30.99271	5.79061	0.0933305	0.22629125	2.6620688	21	2 10.9	19.3
447965	2008	CA ₁₄	17.7	X	69.25286	96.87140	349.80371	7.03255	0.22573932	0.22700168	2.6614399	21	2 18.4	20.1
447966	2008	CN ₄₂	17.0	X	89.75725	248.78738	172.41658	12.91716	0.2203097	0.22483458	2.6785143	21	2 9.7	20.3
447967	2008	CH ₄₇	15.9	X	136.46695	277.12539	334.48962	20.69683	0.2242109	0.19123573	2.9837105	21	11 16.7	21.5
447968	2008	CY ₆₅	17.3	X	199.96040	101.25267	169.02575	4.64904	0.0229425	0.21374364	2.7703879	21	—	—
447969	2008	CE ₆₇	15.9	X	136.43220	138.20657	122.68277	7.13356	0.1647105	0.19211406	2.9746094	21	12 3.6	20.8
447970	2008	CE ₇₃	16.9	X	26.68754	24.36532	45.95738	6.53765	0.2938973	0.21842478	2.7306630	21	—	—
447971	2008	CB ₈₆	17.4	X	343.77975	17.77170	134.36014	9.50364	0.1332180	0.21696697	2.7428810	21	—	—
447972	2008	CT ₉₇	16.8	X	124.95371	235.36463	132.20243	7.16064	0.0432933	0.21780984	2.7358002	21	—	—
447973	2008	CE ₁₀₃	17.6	X	69.81506	246.38941	174.52332	9.19976	0.2021827	0.22077327	2.7112635	21	1 5.1	20.5
447974	2008	CT ₁₀₇	17.6	X	25.43693	312.63219	182.13049	8.74576	0.2964868	0.22433577	2.6823000	21	1 6.0	19.6
447975	2008	CA ₁₁₅	16.7	X	32.72979	149.05306	309.51667	9.39140	0.1238829	0.21946319	2.7220426	21	—	—
447976	2008	CT ₁₁₆	16.8	X	123.74232	267.40417	153.90587	27.73498	0.4211774	0.23461063	2.6035800	21	4 20.0	21.8
447977	2008	CC ₁₁₉	18.6	X	90.38432	137.15104	350.50174	24.98065	0.5397830	0.23710932	2.5852565	21	6 21.9	23.6
447978	2008	CW ₁₂₆	17.3	X	351.30708	171.14769	306.63587	2.98413	0.0134263	0.21299406	2.7768839	21	—	—
447979	2008	CG ₁₂₈	16.6	X	171.74265	111.91006	160.58069	2.33923	0.0520594	0.20629408	2.8366878	21	—	—
447980	2008	CL ₁₃₂	17.0	X	307.13947	199.16956	318.59814	2.92781	0.0222156	0.21117631	2.7927962	21	—	—
447981	2008	CX ₁₅₂	17.0	X	79.03314	244.01420	240.75606	8.60652	0.1685653	0.23376395	2.6098629	21	4 9.9	20.2
447982	2008	CG ₁₅₃	17.1	X	103.75702	320.12979	144.27371	14.19972	0.2038855	0.23470476	2.6028838	21	4 30.0	21.0
447983	2008	CG ₁₆₁	16.3	X	130.91631	254.49692	97.38150	7.34992	0.0453764	0.21810487	2.7333325	21	—	—
447984	2008	CP ₁₆₁	17.3	X	96.61866	287.16424	142.71062	4.49018	0.2190076	0.22998098	2.6384049	21	3 4.7	20.6
447985	2008	CK ₁₆₅	16.9	X	78.04540	339.12733	58.63319	7.03729	0.0283391	0.21197669	2.7857618	21	—	—
447986	2008	CE ₁₇₂	16.3	X	334.31438	326.41392	130.53683	10.67464	0.0554226	0.20238207	2.8731262	21	—	—
447987	2008	CP ₁₇₅	17.2	X	37.54524	136.80223	133.59258	5.18542	0.2103207	0.22970394	2.6405258	21	3 8.1	19.3
447988	2008	CU ₁₇₇	16.4	X	336.00255	57.74602	59.81824	7.93153	0.1172582	0.21324556	2.7747001	21	—	—
447989	2008	CD ₁₈₇	17.1	X	103.69980	280.63557	167.75876	12.99711	0.2441571	0.23412833	2.6071543	21	4 12.2	20.8
447990	2008	CT ₁₉₂	17.0	X	111.70168	324.61110	110.58725	4.45111	0.2608480	0.23378853	2.6096800	21	4 6.1	20.8
447991	2008	CE ₁₉₅	16.3	X	31.44683	28								