ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
	m		°	°	°	°		°				
388001 2005 QH_{125}	17.0	X	359.46915	113.77565	159.66007	4.61587	0.1471541	0.19023812	2.9941326	20	7 2.6	20.3
388002 2005 QR_{135}	17.8	X	356.46481	263.63852	159.33463	6.62859	0.0839093	0.27814208	2.3242968	20	—	—
388003 2005 QL_{139}	15.7	X	36.04325	157.92249	1.75667	12.76028	0.0754118	0.17058818	3.2198583	20	3 28.6	19.9
388004 2005 QD_{140}	16.5	X	200.52209	16.46250	1.14041	8.89932	0.0999602	0.17491399	3.1665500	20	4 15.9	21.5
388005 2005 QF_{148}	17.4	X	49.91538	19.26304	348.63643	5.50538	0.2142929	0.28152505	2.3056392	20	—	—
388006 2005 QL_{173}	17.9	X	8.91996	220.92155	182.36259	3.17621	0.2227422	0.27441482	2.3452961	20	—	—
388007 2005 QT_{175}	17.5	X	340.32144	309.45345	118.78248	3.18756	0.1862275	0.27407750	2.3472200	20	—	—
388008 2005 QB_{179}	16.2	X	259.27267	339.29729	337.52159	10.11614	0.1800011	0.17943092	3.1131821	20	3 24.7	21.1
388009 2005 QC_{187}	16.5	X	178.58387	196.05325	195.79865	3.98320	0.1128258	0.17455037	3.1709462	20	4 14.1	21.4
388010 2005 QJ_{189}	16.0	X	276.63188	175.54731	169.75476	16.17886	0.1205753	0.18543071	3.0456613	20	5 31.4	20.6
388011 2005 RR_{30}	18.4	X	326.54368	3.24165	21.68047	1.27188	0.1943195	0.26640545	2.3920705	20	10 27.8	20.2
388012 2005 RB_{35}	16.0	X	48.77340	194.67956	294.83577	11.31223	0.0436572	0.16989043	3.2286684	20	3 2.1	20.5
388013 2005 RJ_{41}	17.8	X	85.76135	227.48752	145.17625	4.65454	0.1427784	0.28643397	2.2792206	20	—	—
388014 2005 RM_{48}	17.2	X	46.17566	209.46009	136.73554	7.06361	0.1473642	0.27507190	2.3415597	20	—	—
388015 2005 SB_{4}	15.4	X	299.68561	288.81839	15.64423	26.06658	0.1717648	0.17987427	3.1080645	20	4 22.1	19.7
388016 2005 SD_{11}	17.5	X	26.44915	202.70079	185.91992	5.28580	0.2006409	0.27660451	2.3329022	20	—	—
388017 2005 SA_{15}	17.9	X	338.58168	99.01664	359.66257	12.14619	0.1278306	0.27901459	2.3194487	20	—	—
388018 2005 SA_{26}	17.6	X	32.94730	19.46772	1.71095	24.57192	0.2103660	0.27456012	2.3444686	20	—	—
388019 2005 SF_{29}	17.7	X	41.08159	128.59351	270.12561	2.10608	0.1673443	0.28000441	2.3139793	20	—	—
388020 2005 SU_{35}	16.0	X	224.64993	205.88727	134.56880	3.98138	0.1845891	0.17164253	3.2066590	20	3 25.8	21.2
388021 2005 ST_{40}	16.2	X	326.52635	118.17988	148.76252	1.06785	0.1479178	0.17933568	3.1142842	20	4 24.8	19.9
388022 2005 SY_{40}	18.1	X	308.02646	266.72320	166.75846	1.26884	0.1708535	0.26794446	2.3829021	20	12 2.4	19.9
388023 2005 SU_{42}	15.4	X	338.77684	236.23276	6.64411	13.98348	0.1479244	0.17462095	3.1700916	20	4 10.5	19.4
388024 2005 ST_{46}	17.6	X	237.30598	275.22238	357.21734	3.88745	0.1489348	0.29683915	2.2256418	20	1 4.1	20.9
388025 2005 SP_{55}	17.3	X	20.73505	15.40902	23.84156	3.76811	0.1893856	0.27540621	2.3396644	20	—	—
388026 2005 SM_{66}	17.4	X	155.71517	315.75791	18.91094	6.73456	0.2310969	0.29361120	2.2419244	20	1 12.5	20.8
388027 2005 SF_{69}	15.6	X	230.62289	330.08135	3.59957	17.02539	0.1522345	0.17240846	3.1971548	20	3 23.6	20.6
388028 2005 SU_{82}	18.0	X	274.26526	273.22688	335.51466	0.91064	0.1597943	0.30033872	2.2083191	20	1 8.6	21.2
388029 2005 SH_{87}	15.7	X	337.78908	211.92481	17.44698	16.57532	0.1115084	0.17199702	3.2022514	20	3 30.8	19.8
388030 2005 SL_{94}	17.3	X	226.53147	118.73216	176.35826	8.43921	0.0897161	0.30246929	2.1979367	20	1 20.4	20.5
388031 2005 SG_{98}	15.7	X	305.57960	346.08630	329.29432	6.86112	0.2234047	0.18379888	3.0636618	20	5 11.3	19.6
388032 2005 ST_{107}	17.5	X	284.24043	325.53962	201.26015	7.00326	0.1060609	0.28177902	2.3042536	20	—	—
388033 2005 SW_{109}	18.3	X	231.51739	70.66748	215.97600	1.59881	0.1781155	0.29897542	2.2150272	20	1 14.8	21.7
388034 2005 SN_{124}	17.9	X	250.77325	131.22819	169.21668	5.72956	0.2814522	0.30801682	2.1714663	20	2 11.3	21.4
388035 2005 SL_{128}	15.5	X	265.45262	314.44364	18.67227	16.67882	0.2401082	0.17916510	3.1162607	20	4 14.5	20.3
388036 2005 SQ_{134}	18.0	X	8.63789	18.12140	24.10651	2.00796	0.1874579	0.27259631	2.3557149	20	—	—
388037 2005 SL_{144}	17.8	X	356.35819	22.58416	13.58488	1.26825	0.1900788	0.27210119	2.3585717	20	—	—
388038 2005 SW_{145}	17.6	X	295.20057	122.11371	33.11755	7.39534	0.0578088	0.28302924	2.2974629	20	—	—
388039 2005 SE_{146}	17.2	X	209.69667	285.73454	26.30420	5.46435	0.1579123	0.30001582	2.2099034	20	1 28.9	20.6
388040 2005 SE_{162}	17.7	X	209.54061	321.78937	332.97019	2.42893	0.1400104	0.29594798	2.2301075	20	1 5.6	20.9
388041 2005 SU_{170}	17.8	X	166.39255	330.46898	326.75144	2.59068	0.1803315	0.28983890	2.2613351	20	—	—
388042 2005 SF_{193}	17.0	X	347.68290	323.72054	62.86062	4.35745	0.2972868	0.26553915	2.3972703	20	—	—
388043 2005 SP_{209}	16.9	X	69.68174	99.20537	264.31863	4.73572	0.1420996	0.28160549	2.3052002	20	—	—
388044 2005 SO_{212}	17.7	X	218.53177	290.03813	210.23222	5.67878	0.1266980	0.26180967	2.4199827	20	10 14.0	21.0
388045 2005 SF_{218}	17.6	X	298.67561	253.03029	146.10429	4.26609	0.2156966	0.25908687	2.4369079	20	9 9.2	19.5
388046 2005 ST_{231}	18.3	X	323.72804	188.96334	203.42170	0.52403	0.1876253	0.26288359	2.4133875	20	10 31.9	20.0
388047 2005 SO_{232}	17.5	X	5.01135	7.98384	21.29466	3.07993	0.1597656	0.27008422	2.3702996	20	—	—
388048 2005 SZ_{240}	15.5	X	8.39198	35.93989	212.39053	16.77311	0.3046356	0.18453698	3.0554870	20	6 22.8	18.3
388049 2005 SC_{267}	17.7	X	355.95596	226.60050	171.52461	2.08971	0.2085729	0.27234236	2.3571791	20	—	—
388050 2005 SR_{271}	17.8	X	245.07824	235.40906	345.94035	5.57250	0.1038139	0.28851458	2.2682497	20	—	—
388051 2005 SJ_{278}	18.5	X	211.34558	133.24557	173.86091	5.71969	0.1926556	0.29889446	2.2154272	20	1 21.9	22.2
388052 2005 SB_{279}	17.6	X	323.33208	86.48989	329.05411	7.55306	0.2039376	0.26587091	2.3952756	20	12 8.9	19.5
388053 2005 SN_{288}	15.7	X	344.43892	92.78804	169.76468	17.23714	0.1029221	0.17760018	3.1345397	20	5 25.6	19.9
388054 2005 SO_{292}	17.3	X	270.12455	352.93489	198.74828	6.01494	0.1010149	0.28538381	2.2848086	20	—	—
388055 2005 TW_{10}	15.3	X	271.53264	308.34290	21.26818	17.41914	0.1935853	0.17805551	3.1291936	20	4 21.1	19.9
388056 2005 TL_{23}	17.5	X	170.13415	183.20910	154.34230	6.77384	0.2512159	0.29622873	2.2286982	20	1 28.0	21.1
388057 2005 TS_{49}	17.4	X	345.08659	132.96966	259.48389	7.25948	0.2279292	0.26731826	2.3866219	20	12 26.1	19.5
388058 2005 TP_{53}	15.7	X	260.40317	81.48845	224.31954	8.91262	0.2270663	0.17718700	3.1394108	20	3 8.3	20.9
388059 2005 TA_{64}	16.4	X	269.66178	168.13643	22.08783	23.59073	0.1155358	0.28294897	2.2978974	20	—	—
388060 2005 TN_{67}	18.0	X	308.56815	209.87214	255.25058	2.35207	0.1504299	0.27433540	2.3457487	20	—	—
388061 2005 TW_{82}	18.0	X	5.24424	120.94606	287.21274	4.28170	0.2350930	0.27367992	2.3494927	20	—	—
388062 2005 TF_{87}	17.9	X	292.62045	327.51823	138.34615	1.77739	0.1302779	0.27107343	2.3645295	20	12 22.2	20.0
388063 2005 TL_{108}	17.8	X	315.87689	149.11205	301.05654	3.66622	0.1647103	0.27242332	2.3567121	20	—	—
388064 2005 TE_{138}	17.2	X	0.13828	334.77921	54.80326	6.54893	0.1073188	0.26975191	2.3722458	20	12 29.9	19.8
388065 2005 TQ_{141}	17.6	X	264.95394	132.44567	64.29209	4.38931	0.0748962	0.28395693	2.2924563	20	—	—
388066 2005 TF_{142}	17.7	X	268.75782	117.60381	44.99064	8.02668	0.0500350	0.27781754	2.3261066	20	—	—
388067 2005 TS_{167}	17.7	X	19.36718	35.64176	27.98749	7.53972	0.0834971	0.27856177	2.3219616	20	—	—
388068 2005 US_{14}	17.7	X	273.31576	226.64843	44.05560	5.02548	0.1450444	0.30040602	2.2079893	20	2 8.5	20.8
388069 2005 UP_{20}	17.2	X	44.23329	340.73390	50.19037	3.55783	0.2138227	0.27744938	2.3281639	20	—	—
388070 2005 UZ_{22}	17.1	X	211.56181	236.74288	23.95083	7.69892	0.0768598	0.28540179	2.2847127	20	—	—
388071 2005 US_{24}	17.7	X	184.50310	293.49767	29.52371	7.37544	0.1378868	0.29352714	2.2423524	20	1 18.6	21.1
388072 2005 UD_{29}	17.2	X	60.94037	141.17844	236.33047	4.75043	0.2208518	0.27829961	2.3234196	20	—	—
388073 2005 UH_{42}	18.0	X	26.06846	158.37997	212.95772	0.77682	0.1856230	0.27208801	2.3586479	20	—	—
388074 2005 UQ_{47}	17.3	X	7.81065	299.26098	63.03580	4.18066	0.1620872	0.26668483	2.3903996	20	12 11.2	19.8
388075 2005 UX_{47}	17.3	X	323.46691	309.71631	104.85755	3.18485	0.1987288	0.26524342	2.3990519	20	12 8.2	18.9
388076 2005 UW_{51}	17.1	X	355.27773	147.19158	255.34670	4.78584	0.1146300	0.27048258	2.3679717	20	—	—
388077 2005 UU_{52}	17.5	X	16.93591	226.59290	165.39257	3.85171	0.2369625	0.27296864	2.3535723	20	—	—
388078 2005 UQ_{62}	17.9	X	179.31998	65.69043	218.96390	4.95033	0.2434287	0.28495193	2.2871167	20	—	—
388079 2005 UP_{68}	17.4	X	70.53054	32.40088	337.83866	7.39479	0.1250213	0.28086600	2.3092446	20	—	—
388080 2005 US_{70}	16.9	X	311.77467	81.82569	12.92967	9.59875	0.1940481	0.26950406	2.3737001	20	—	—

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
	m		°	°	°	°		°				
388081 2005 UB_{71}	17.2	X	270.47072	135.61106	327.58958	6.26441	0.2608829	0.26213672	2.4179694	20	10 10.6	19.7
388082 2005 UZ_{85}	17.8	X	258.49648	105.45719	50.05785	6.20136	0.1632040	0.27016802	2.3698094	20	12 27.2	20.1
388083 2005 UR_{95}	18.1	X	341.38639	311.12342	103.49635	2.24678	0.1679996	0.26857098	2.3791947	20	—	—
388084 2005 UA_{108}	15.8	X	15.22862	48.48718	213.46438	10.00124	0.1426832	0.17970832	3.1099776	20	7 13.0	19.6
388085 2005 UA_{113}	17.8	X	311.39329	63.18908	25.33283	2.20483	0.1986421	0.26630388	2.3926787	20	—	—
388086 2005 UC_{113}	17.5	X	17.91833	357.59788	42.22084	5.16891	0.1471127	0.27227063	2.3575931	20	—	—
388087 2005 UA_{125}	17.8	X	229.57298	103.85759	34.88803	5.71462	0.1216186	0.26079505	2.4262552	20	10 26.7	21.0
388088 2005 UJ_{144}	17.3	X	201.18152	255.78091	16.00870	6.82583	0.0967928	0.28528224	2.2853509	20	—	—
388089 2005 UM_{207}	18.0	X	278.31358	261.49905	195.53447	4.32406	0.1668137	0.26345756	2.4098811	20	11 5.5	20.4
388090 2005 UQ_{215}	17.4	X	320.49065	299.18426	127.26834	2.82922	0.1796696	0.26718198	2.3874335	20	12 19.4	19.1
388091 2005 UZ_{216}	17.3	X	344.78494	349.23901	56.34419	6.44671	0.1786919	0.26721030	2.3872648	20	—	—
388092 2005 UE_{217}	17.1	X	9.82311	250.58998	145.07383	10.60524	0.2214069	0.27337881	2.3512175	20	—	—
388093 2005 UY_{222}	17.6	X	344.18246	73.52675	325.06322	1.56289	0.1726618	0.26737231	2.3863003	20	12 25.1	19.9
388094 2005 UK_{252}	17.4	X	126.62802	310.36230	27.34862	7.71915	0.1442570	0.28434453	2.2903725	20	—	—
388095 2005 UB_{262}	18.1	X	311.03074	29.10581	68.74267	2.99706	0.1651176	0.27008273	2.3703083	20	—	—
388096 2005 UJ_{268}	17.2	X	283.84990	4.58268	189.33238	6.03061	0.0418985	0.28796999	2.2711086	20	—	—
388097 2005 UB_{285}	17.7	X	272.12869	18.57257	90.62612	4.54190	0.0997928	0.26535880	2.3983564	20	11 22.3	20.2
388098 2005 UV_{286}	17.5	X	127.56079	272.35280	57.79671	7.15474	0.1578355	0.28478737	2.2879976	20	—	—
388099 2005 UD_{298}	17.3	X	76.46608	91.93035	233.38365	7.53986	0.0780949	0.27012186	2.3700794	20	—	—
388100 2005 UF_{299}	18.0	X	18.50215	313.14694	87.48659	0.59639	0.0584805	0.27261411	2.3556124	20	—	—
388101 2005 UX_{301}	15.7	X	337.70472	247.61012	74.68815	12.92383	0.2021685	0.18532521	3.0468171	20	7 30.1	19.0
388102 2005 UN_{303}	16.9	X	237.99201	74.01268	100.13803	7.89924	0.0991276	0.26829554	2.3808228	20	12 30.1	19.5
388103 2005 UL_{305}	17.6	X	296.22032	109.64793	3.20278	2.39346	0.1676620	0.26893661	2.3770378	20	—	—
388104 2005 UV_{327}	17.2	X	63.55199	330.03482	40.56912	6.71416	0.1693035	0.27609204	2.3357882	20	—	—
388105 2005 UH_{339}	17.2	X	279.74670	201.78938	295.60837	3.97418	0.1724111	0.26925240	2.3751789	20	—	—
388106 2005 UO_{341}	17.8	X	215.71374	138.25968	105.71733	3.38568	0.1112130	0.28003694	2.3138001	20	—	—
388107 2005 UO_{348}	16.9	X	121.36493	28.04557	302.43641	4.88117	0.1559698	0.28406577	2.2918707	20	—	—
388108 2005 UP_{348}	17.3	X	338.81331	171.98585	247.35668	8.96275	0.0773602	0.27066140	2.3669287	20	—	—
388109 2005 UG_{370}	17.5	X	238.78165	319.51649	200.20798	6.36277	0.1403997	0.26546527	2.3977151	20	12 4.9	20.5
388110 2005 US_{371}	17.8	X	320.73724	74.58875	2.06510	1.00718	0.1513126	0.26656592	2.3911104	20	—	—
388111 2005 UO_{396}	17.5	X	330.94855	333.83235	89.28820	7.00358	0.2229354	0.26879173	2.3778919	20	—	—
388112 2005 UF_{402}	17.4	X	303.89882	68.38856	20.04011	2.82411	0.1680103	0.26582994	2.3955218	20	12 15.3	19.4
388113 2005 UP_{402}	17.5	X	308.22780	8.81267	77.96900	3.29661	0.1896777	0.26787331	2.3833240	20	12 23.9	19.2
388114 2005 UW_{411}	17.8	X	298.87547	16.89324	92.48723	4.05731	0.0480955	0.26827216	2.3809612	20	—	—
388115 2005 UV_{418}	17.2	X	262.75424	330.77195	196.23860	6.48790	0.0560198	0.27481325	2.3430287	20	—	—
388116 2005 UD_{426}	17.1	X	219.63247	138.98619	50.79331	7.39815	0.0535365	0.26997178	2.3709577	20	—	—
388117 2005 UH_{431}	17.7	X	329.54687	334.73641	99.65272	2.09789	0.1546274	0.26819430	2.3814220	20	—	—
388118 2005 UK_{438}	18.1	X	299.55573	236.67152	225.65394	1.86288	0.1522620	0.26828476	2.3808866	20	12 28.8	19.9
388119 2005 UK_{443}	17.3	X	125.57762	44.63815	278.03390	5.91773	0.1342169	0.28363175	2.2942082	20	—	—
388120 2005 US_{457}	18.1	X	7.11662	164.38023	251.60429	3.63535	0.1325290	0.27421438	2.3464388	20	—	—
388121 2005 UT_{463}	18.0	X	305.62835	326.17652	113.61695	2.44647	0.1536506	0.26610732	2.3938568	20	12 6.5	20.1
388122 2005 UA_{467}	18.4	X	109.30084	3.43456	320.02149	3.64185	0.0454774	0.27602468	2.3361682	20	—	—
388123 2005 UJ_{476}	17.9	X	344.95047	84.84101	333.27667	1.47367	0.2117135	0.27069624	2.3667255	20	—	—
388124 2005 UP_{477}	17.3	X	316.18145	182.94844	247.26428	5.42646	0.0824343	0.26635068	2.3923984	20	12 11.6	19.7
388125 2005 UP_{482}	18.1	X	18.91786	76.02983	323.25698	1.92934	0.1712967	0.27475981	2.3433324	20	—	—
388126 2005 UQ_{510}	15.8	X	243.65328	25.21404	243.38667	7.61202	0.0787865	0.15383311	3.4496061	20	1 25.9	21.1
388127 2005 UP_{522}	16.0	X	43.31798	140.60315	32.97697	5.69388	0.1073631	0.17220143	3.1997169	20	4 29.8	20.1
388128 2005 VE_{8}	18.0	X	248.63441	359.04246	208.07030	2.20837	0.0483203	0.28068535	2.3102353	20	—	—
388129 2005 VZ_{33}	17.5	X	335.20799	337.51728	86.76156	3.53728	0.1879279	0.26729815	2.3867417	20	—	—
388130 2005 VN_{82}	18.0	X	352.40759	36.95462	9.55455	2.74684	0.2024146	0.26931824	2.3747918	20	—	—
388131 2005 VW_{108}	17.5	X	354.76827	25.43503	51.04823	6.65791	0.0947588	0.27457463	2.3443860	20	—	—
388132 2005 VC_{112}	17.7	X	322.49546	75.86181	359.92309	2.35206	0.1716538	0.26580905	2.3956473	20	—	—
388133 2005 VV_{112}	17.6	X	25.70574	347.78579	39.13095	2.91513	0.1963666	0.27156119	2.3616974	20	—	—
388134 2005 VS_{113}	17.6	X	275.47054	96.74658	6.77955	3.08619	0.1522858	0.26129860	2.4231371	20	11 9.6	20.0
388135 2005 VG_{129}	16.0	X	304.60603	190.73880	72.45587	5.98091	0.1146748	0.17292068	3.1908380	20	3 26.8	20.3
388136 2005 WW_{4}	17.1	X	84.34966	279.84475	90.49580	6.71466	0.2021311	0.28258050	2.2998946	20	—	—
388137 2005 WC_{7}	18.1	X	344.60552	330.17531	77.36405	3.27025	0.2128582	0.26713834	2.3876934	20	—	—
388138 2005 WT_{25}	18.0	X	292.55494	154.10513	282.78251	3.07224	0.1825641	0.26036433	2.4289303	20	10 28.7	20.0
388139 2005 WY_{29}	18.1	X	335.16868	87.48407	344.38839	2.02776	0.1868767	0.26758438	2.3850394	20	—	—
388140 2005 WO_{31}	18.0	X	320.37797	42.91459	34.36404	1.79259	0.1542647	0.26515418	2.3995901	20	—	—
388141 2005 WQ_{31}	18.2	X	5.60453	21.74894	13.33148	1.22874	0.1721076	0.26786487	2.3833740	20	—	—
388142 2005 WR_{46}	17.8	X	237.55211	276.30656	260.64296	0.69512	0.1259997	0.26897456	2.3768142	20	12 29.2	20.4
388143 2005 WF_{66}	18.1	X	313.27465	228.50035	229.47253	0.66572	0.1485023	0.26761437	2.3848611	20	—	—
388144 2005 WQ_{106}	16.1	X	268.23854	144.70757	187.87225	10.51360	0.0872245	0.18055846	3.1002079	20	5 8.9	20.6
388145 2005 WZ_{119}	17.8	X	54.97282	104.07229	266.46544	4.00038	0.2408212	0.27526955	2.3404387	20	—	—
388146 2005 WS_{137}	17.6	X	130.74032	169.10084	247.50540	1.88397	0.1014479	0.22770712	2.6559403	20	3 20.8	21.5
388147 2005 WF_{155}	17.7	X	249.81791	233.41269	284.21590	2.02470	0.1448546	0.26323698	2.4112271	20	12 16.4	20.5
388148 2005 WP_{159}	16.2	X	298.64399	197.86491	43.15575	2.76278	0.0243570	0.16205498	3.3319192	20	3 4.1	20.8
388149 2005 WZ_{195}	16.8	X	198.26864	98.72684	95.77040	6.39363	0.1426302	0.25533411	2.4607273	20	11 28.3	20.3
388150 2005 WU_{197}	16.0	X	238.30566	17.37175	68.97470	9.26598	0.0759615	0.18344928	3.0675527	20	8 29.9	20.6
388151 2005 WZ_{210}	17.8	X	257.81292	62.57042	74.73532	3.98234	0.1136915	0.26213633	2.4179719	20	12 5.2	20.6
388152 2005 XB_{38}	17.2	X	355.26445	343.79662	80.82022	7.47351	0.0921248	0.26738274	2.3862383	20	—	—
388153 2005 XX_{50}	16.9	X	115.27318	325.21015	348.99548	4.88870	0.1328129	0.26987298	2.3715363	20	—	—
388154 2005 YZ_{9}	17.2	X	250.49575	92.19775	77.53359	5.89554	0.1298133	0.26577710	2.3958393	20	—	—
388155 2005 YX_{13}	17.8	X	274.71883	20.92655	105.45612	2.42577	0.1493964	0.25936221	2.4351829	20	12 12.3	20.2
388156 2005 YR_{18}	17.3	X	185.50456	343.65866	255.80016	7.23117	0.0897916	0.27064261	2.3670382	20	—	—
388157 2005 YD_{59}	17.2	X	232.04137	215.60872	311.35219	7.02666	0.0784137	0.25839708	2.4412428	20	12 12.2	20.3
388158 2005 YK_{66}	17.3	X	141.05560	203.21210	81.85436	5.84441	0.1255542	0.26461735	2.4028344	20	—	—
388159 2005 YV_{70}	16.9	X	262.99446	185.85931	294.54929	11.45323	0.1056209	0.25730815	2.4481256	20	11 16.9	20.1
388160 2005 YH_{132}	17.9	X	248.91281	229.02143	280.60731	0.79279	0.1398279	0.25709580	2.4494734	20	12 2.9	20.7

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Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
	m		°	°	°	°		°				
388161 2005 YQ_{133}	17.8	X	209.89704	121.66627	47.55930	2.95224	0.1551454	0.25545598	2.4599446	20	11 6.6	21.4
388162 2005 YM_{137}	18.1	X	315.25684	60.06172	355.11464	2.12794	0.1933843	0.25845942	2.4408503	20	11 14.8	20.0
388163 2005 YZ_{179}	17.8	X	309.66504	91.30889	321.64614	2.52525	0.1922979	0.25494264	2.4632457	20	10 26.8	19.9
388164 2005 YH_{231}	17.7	X	293.87104	128.80713	324.40338	0.93091	0.1526652	0.26226975	2.4171517	20	11 30.6	19.7
388165 2005 YO_{239}	17.9	X	208.24433	329.52031	225.76978	0.84522	0.1273614	0.25831509	2.4417594	20	12 12.1	21.2
388166 2006 AN_{28}	17.2	X	335.03508	286.82340	115.52327	8.86252	0.1105068	0.25845968	2.4408487	20	12 4.8	19.8
388167 2006 AN_{37}	16.6	X	358.44170	152.45229	120.48642	12.01567	0.1187186	0.23147042	2.6270745	20	7 2.3	19.3
388168 2006 AN_{46}	17.5	X	293.60351	287.05313	139.08418	3.21660	0.1105054	0.25349565	2.4726105	20	10 24.1	20.1
388169 2006 AF_{62}	17.5	X	133.71302	42.74893	203.53456	2.64714	0.1277013	0.25280320	2.4771236	20	11 28.3	21.2
388170 2006 AP_{87}	17.5	X	28.54924	35.38471	316.98293	3.91421	0.0751122	0.25552682	2.4594900	20	12 10.6	20.5
388171 2006 AT_{93}	16.9	X	248.68636	109.17910	333.76179	16.33294	0.0909611	0.24157641	2.5532874	20	9 5.5	20.3
388172 2006 BW_{37}	17.7	X	155.80363	139.45522	115.86531	2.43108	0.1467253	0.25733849	2.4479331	20	12 30.1	21.4
388173 2006 BM_{99}	17.4	X	179.03845	125.20503	346.43497	19.66395	0.0800061	0.37189548	1.9150882	20	8 11.4	19.8
388174 2006 BQ_{108}	17.9	X	249.77437	122.66759	16.72127	1.75598	0.1255935	0.25493128	2.4633188	20	11 21.7	20.8
388175 2006 BM_{109}	17.2	X	262.22835	147.03046	116.07738	6.78326	0.1404553	0.27812173	2.3244102	20	1 19.2	20.6
388176 2006 BH_{127}	16.9	X	203.74687	358.61378	151.14077	14.18980	0.0761808	0.24539191	2.5267516	20	10 17.3	20.6
388177 2006 BM_{130}	16.9	X	69.54225	281.88159	337.45664	10.18651	0.1410519	0.23648509	2.5898038	20	10 4.0	20.7
388178 2006 BY_{137}	17.6	X	208.08022	271.97283	159.75066	4.41156	0.1985755	0.23582829	2.5946102	20	6 26.9	21.9
388179 2006 BK_{147}	17.4	X	199.98629	252.80243	327.74106	0.42620	0.1432653	0.25750547	2.4468748	20	—	—
388180 2006 BG_{155}	16.9	X	137.12945	156.46797	121.07087	5.86554	0.1860885	0.25345393	2.4728818	20	—	—
388181 2006 BS_{167}	17.8	X	179.06058	192.05092	325.49951	11.35032	0.1093793	0.24286373	2.5442568	20	9 18.0	21.7
388182 2006 BB_{203}	17.2	X	56.98919	306.62435	28.50336	2.04541	0.2032942	0.25522133	2.4614522	20	—	—
388183 2006 BS_{232}	17.1	X	144.33416	223.39402	81.37826	4.32723	0.1324313	0.26568762	2.3963772	20	—	—
388184 2006 BY_{271}	17.4	X	163.32607	324.99006	178.36257	20.95072	0.0775917	0.37407916	1.9076281	20	8 29.8	19.6
388185 2006 CX_{10}	17.7	X	157.98594	189.72599	32.17635	27.09787	0.5127514	0.23974971	2.5662403	20	11 6.4	23.3
388186 2006 CM_{16}	17.8	X	294.13065	262.21417	151.85927	4.25897	0.2234594	0.25232893	2.4802266	20	9 20.6	19.9
388187 2006 DN_{11}	16.4	X	91.96953	55.81212	120.86874	11.01019	0.1021013	0.22669695	2.6638244	20	7 11.1	20.0
388188 2006 DP_{14}	18.9	X	8.29330	59.30757	317.16238	11.77666	0.7761506	0.61744842	1.3658477	20	—	—
388189 2006 DS_{14}	20.5	X	76.48972	187.49143	162.25530	26.53405	0.3365491	1.22774880	0.8637665	20	—	—
388190 2006 DK_{22}	17.7	X	198.67740	38.52684	107.88274	3.37310	0.0686083	0.24288038	2.5441405	20	10 4.7	21.2
388191 2006 DW_{29}	16.6	X	193.22689	262.21518	169.79272	10.50847	0.1045121	0.22750316	2.6575275	20	6 17.5	20.9
388192 2006 DW_{45}	16.7	X	9.59825	197.47553	355.59536	7.68730	0.0908482	0.21288091	2.7778678	20	3 27.9	20.0
388193 2006 DM_{46}	16.7	X	62.80854	272.73004	352.17134	12.98131	0.2351372	0.23241537	2.6199489	20	10 14.5	20.7
388194 2006 DH_{93}	17.9	X	167.41967	173.96265	348.99563	4.11164	0.1258912	0.23793705	2.5792573	20	9 15.7	21.9
388195 2006 DD_{94}	17.3	X	152.61177	200.85194	2.32308	5.04155	0.1403684	0.24030869	2.5622592	20	10 20.7	21.3
388196 2006 DX_{105}	17.2	X	64.81361	309.78782	357.83342	6.01229	0.0386653	0.24599132	2.5226453	20	11 19.9	20.6
388197 2006 DX_{133}	16.6	X	228.40303	227.18332	142.58168	9.55193	0.0789464	0.22310196	2.6923641	20	5 10.9	20.7
388198 2006 DR_{139}	16.8	X	271.80734	301.05657	116.77126	5.35119	0.2622187	0.24411767	2.5355367	20	8 9.5	19.8
388199 2006 DZ_{166}	17.1	X	242.65876	75.72020	14.02635	7.30536	0.2605320	0.24417246	2.5351574	20	8 19.9	20.9
388200 2006 DL_{168}	16.6	X	69.41950	148.69871	107.86210	4.09464	0.0935534	0.23507551	2.6001463	20	9 29.6	20.1
388201 2006 DL_{193}	16.4	X	93.87871	113.53879	137.11662	13.72698	0.1350804	0.23037641	2.6353849	20	10 27.5	20.6
388202 2006 DW_{211}	16.5	X	277.33214	76.80700	2.61819	15.03446	0.0727720	0.24217231	2.5490972	20	10 13.2	19.7
388203 2006 DJ_{216}	17.6	X	217.35653	289.13950	188.09593	11.89394	0.1345091	0.23977611	2.5660519	20	9 6.9	21.5
388204 2006 EY_{29}	17.2	X	275.03661	269.78011	166.59054	12.00828	0.0053332	0.24323847	2.5416429	20	10 21.3	20.6
388205 2006 EQ_{36}	18.1	X	213.10627	96.59936	353.16346	18.42834	0.0834351	0.37409895	1.9075608	20	8 23.5	20.2
388206 2006 EY_{74}	17.4	X	166.09915	67.06264	153.15005	4.31332	0.1695741	0.24425621	2.5345779	20	11 24.6	21.5
388207 2006 FN_{33}	17.2	X	129.39942	215.63512	27.25225	14.22813	0.1721822	0.23859220	2.5745335	20	11 15.1	21.6
388208 2006 FB_{41}	17.4	X	126.98566	196.19762	37.33673	3.77388	0.1558745	0.23802086	2.5786518	20	11 4.1	21.6
388209 2006 FG_{45}	16.5	X	142.16846	231.12200	23.44529	11.63690	0.1112121	0.24713770	2.5148382	20	12 14.0	20.5
388210 2006 GV_{19}	17.1	X	192.47645	118.44714	35.27410	14.26826	0.0997260	0.23809932	2.5780853	20	10 5.9	21.0
388211 2006 GZ_{32}	17.0	X	128.28460	100.93149	169.26291	5.81099	0.2329061	0.24322446	2.5417405	20	12 20.6	21.5
388212 2006 GE_{45}	16.2	X	331.67068	0.55494	32.75742	6.33794	0.0868898	0.24056062	2.5604700	20	11 7.3	18.9
388213 2006 GY_{53}	17.7	X	100.24185	36.63819	198.15273	1.81493	0.1500022	0.23112482	2.6296926	20	10 10.2	21.6
388214 2006 HW_{17}	16.0	X	82.34733	193.97413	85.64008	14.25801	0.1700892	0.23321837	2.6139315	20	11 21.5	20.1
388215 2006 HV_{34}	16.8	X	13.58765	279.92765	43.56361	12.21848	0.1919880	0.22764497	2.6564237	20	10 23.8	19.7
388216 2006 HC_{41}	16.8	X	203.99902	337.79108	175.31203	11.66200	0.1271199	0.23714302	2.5850115	20	10 12.6	20.6
388217 2006 HX_{42}	16.6	X	216.32033	85.16495	26.27630	27.16809	0.2943197	0.24068803	2.5595663	20	9 2.1	21.4
388218 2006 HT_{70}	17.0	X	336.17440	247.90752	81.52608	2.81565	0.0836131	0.22871030	2.6481682	20	8 15.4	20.0
388219 2006 HD_{79}	16.9	X	121.03721	207.27109	44.97867	7.40951	0.1058073	0.23809992	2.5780809	20	11 19.3	20.7
388220 2006 HX_{92}	17.1	X	205.63181	28.29110	89.14111	6.43324	0.0158585	0.22891877	2.6465602	20	9 10.2	20.7
388221 2006 HJ_{103}	17.1	X	56.07832	113.70773	152.26590	12.39274	0.1462967	0.22608360	2.6686401	20	10 2.3	20.7
388222 2006 HM_{104}	16.7	X	84.75029	71.75385	109.07608	13.12860	0.1431257	0.21877249	2.7277689	20	7 13.2	20.4
388223 2006 JC_{1}	16.7	X	167.38248	328.39999	185.53500	15.51698	0.0933666	0.22763030	2.6565378	20	9 1.7	20.8
388224 2006 JE_{12}	16.6	X	304.53364	245.93822	108.25364	7.72497	0.0337957	0.22204667	2.7008878	20	8 3.1	20.0
388225 2006 JA_{18}	16.2	X	79.54591	225.06704	55.56885	17.49224	0.1194472	0.23389327	2.6089008	20	11 13.1	20.0
388226 2006 JT_{26}	16.5	X	103.41890	25.36212	249.83329	11.17163	0.3038115	0.23599242	2.5934070	20	12 9.4	21.1
388227 2006 JG_{47}	16.4	X	126.27223	103.30447	136.82269	11.28351	0.0875385	0.23912229	2.5707273	20	11 13.8	20.4
388228 2006 JM_{54}	16.7	X	149.11416	125.31713	101.44029	13.06176	0.1634201	0.23863256	2.5742433	20	11 19.4	21.0
388229 2006 JC_{81}	16.3	X	40.59238	120.66989	161.36920	12.54020	0.1688346	0.22714525	2.6603183	20	10 6.0	19.7
388230 2006 KT_{12}	17.2	X	139.13359	64.18773	131.39040	13.57415	0.2008033	0.23389525	2.6088861	20	10 5.2	21.8
388231 2006 KC_{14}	16.4	X	21.82156	181.57228	104.62006	15.54156	0.2138310	0.22289815	2.6940051	20	9 24.1	19.7
388232 2006 KK_{17}	16.8	X	113.65080	130.92805	92.88541	10.62668	0.1638256	0.23128989	2.6284413	20	10 16.0	21.1
388233 2006 KT_{17}	16.4	X	85.47415	176.77061	104.04431	15.99214	0.0879597	0.23732432	2.5836949	20	11 21.2	20.3
388234 2006 KV_{17}	16.5	X	131.40330	107.80374	127.99909	12.32426	0.1335845	0.23818116	2.5774947	20	11 14.8	20.8
388235 2006 KW_{17}	16.7	X	54.39265	136.98502	117.61347	13.24695	0.1108995	0.22617908	2.6678890	20	9 10.9	20.4
388236 2006 KZ_{18}	16.3	X	26.14168	148.48459	147.99624	14.38471	0.0942808	0.22800427	2.6536322	20	9 23.3	19.6
388237 2006 KP_{22}	16.3	X	40.41440	159.45607	101.53630	10.52557	0.1782120	0.22130649	2.7069067	20	9 9.9	19.8
388238 2006 KH_{26}	16.5	X	98.97496	21.24226	140.67256	10.60883	0.1601445	0.22028638	2.7152570	20	7 7.1	20.6
388239 2006 KB_{29}	17.1	X	183.79687	247.11049	229.04926	7.29389	0.1633769	0.22640292	2.6661303	20	7 29.9	21.6
388240 2006 KE_{29}	17.2	X	138.29365	324.76903	230.53028	7.43499	0.1179397	0.23153415	2.6265924	20	9 24.3	21.4

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Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
	m		°	°	°	°		°				
388241 2006 KN_{33}	16.4	X	137.85626	79.68427	228.50552	11.13865	0.0668965	0.17950205	3.1123596	20	—	—
388242 2006 KS_{39}	17.0	X	105.86341	137.88542	137.05479	14.11986	0.2555578	0.23815403	2.5776904	20	12 11.3	21.7
388243 2006 KU_{42}	17.0	X	173.10500	83.45219	63.01658	13.03525	0.1265100	0.22974685	2.6401970	20	9 7.0	21.4
388244 2006 KP_{44}	16.3	X	191.07320	294.71078	151.09371	15.33836	0.0796041	0.22215882	2.6999787	20	7 3.4	20.5
388245 2006 KR_{55}	16.3	X	140.18835	49.39761	156.59992	13.78446	0.1998630	0.23297198	2.6157742	20	10 17.2	20.9
388246 2006 KH_{56}	16.0	X	258.89957	293.62769	75.45088	12.42492	0.3430543	0.21075501	2.7965168	20	5 14.3	20.7
388247 2006 KP_{57}	16.6	X	269.29219	235.79160	117.78288	6.39455	0.0970397	0.21315106	2.7755201	20	6 3.8	20.4
388248 2006 KD_{74}	16.4	X	40.73690	171.70327	113.83644	10.47070	0.1035826	0.22562149	2.6722828	20	10 3.1	20.0
388249 2006 KR_{88}	16.8	X	91.31932	139.29264	167.99901	11.50898	0.2494795	0.23619799	2.5919020	20	—	—
388250 2006 KC_{90}	16.6	X	6.10814	195.94545	100.06808	10.83520	0.1484688	0.22314047	2.6920543	20	8 26.1	19.6
388251 2006 KJ_{117}	16.9	X	133.76238	144.91374	75.70847	12.27653	0.1322517	0.23418982	2.6066980	20	10 29.1	21.1
388252 2006 MQ_{1}	16.9	X	188.00227	58.35190	115.63170	12.84890	0.1325985	0.23836747	2.5761515	20	10 26.1	21.1
388253 2006 MJ_{14}	16.6	X	179.87693	226.92022	14.57981	13.49426	0.2873486	0.24223756	2.5486394	20	12 22.6	21.3
388254 2006 OF_{12}	16.4	X	103.39823	313.14952	298.41718	12.65030	0.2560960	0.22703039	2.6612155	20	11 4.8	21.2
388255 2006 OO_{16}	17.0	X	49.51470	166.86006	132.89870	5.21598	0.2087532	0.22348475	2.6892889	20	11 13.7	20.8
388256 2006 OL_{21}	16.7	X	22.55420	305.89277	341.88070	7.63686	0.2909689	0.21274311	2.7790672	20	9 28.3	19.6
388257 2006 PR_{26}	16.6	X	54.41297	217.55512	93.55534	4.84448	0.2251719	0.22288377	2.6941209	20	12 3.6	20.6
388258 2006 PG_{31}	16.8	X	55.75225	116.19833	152.51026	9.15355	0.1707609	0.21708841	2.7418580	20	10 7.2	20.6
388259 2006 QF_{1}	18.1	X	60.19093	58.08727	319.36789	0.42070	0.3680204	0.30081591	2.2059831	20	—	—
388260 2006 QQ_{3}	16.9	X	65.21238	330.34302	317.41857	7.75517	0.3531273	0.22337081	2.6902033	20	11 27.1	21.5
388261 2006 QA_{16}	15.8	X	150.39412	54.63658	327.67756	10.38905	0.0982806	0.18302209	3.0723242	20	3 2.8	20.4
388262 2006 QS_{48}	15.3	X	205.61760	2.02951	3.92291	17.47094	0.3256176	0.18412761	3.0600142	20	4 1.7	20.9
388263 2006 QG_{49}	15.8	X	192.49081	194.52446	155.72989	18.82913	0.2042033	0.18244898	3.0787547	20	3 10.1	21.1
388264 2006 QV_{58}	17.2	X	37.55401	125.26776	160.97144	14.30181	0.2437492	0.21703759	2.7422860	20	10 18.3	20.9
388265 2006 QD_{80}	16.1	X	138.04097	77.61042	318.01770	8.57642	0.2453547	0.17838674	3.1253189	20	3 17.3	21.4
388266 2006 QZ_{95}	15.6	X	112.55557	53.24687	355.22696	26.38908	0.2999556	0.17442481	3.1724677	20	3 17.9	20.7
388267 2006 QP_{98}	18.6	X	159.57355	16.19367	315.68974	5.01231	0.1212042	0.31709853	2.1298053	20	—	—
388268 2006 QR_{106}	15.9	X	129.87644	223.98704	164.16215	17.42047	0.2278571	0.17608173	3.1525345	20	3 3.6	20.8
388269 2006 QF_{120}	17.0	X	97.62106	106.86791	172.72728	11.41315	0.2911695	0.22923195	2.6441492	20	12 10.1	21.9
388270 2006 QE_{185}	16.9	X	322.83889	331.14216	336.50022	2.51337	0.0769513	0.19951907	2.9005461	20	6 20.5	20.4
388271 2006 RD_{17}	16.0	X	132.07325	239.96872	161.92469	14.13319	0.2966804	0.17554488	3.1589586	20	3 29.1	21.4
388272 2006 RW_{39}	16.3	X	130.27411	238.53614	159.38711	5.02042	0.2367672	0.17408613	3.1765810	20	3 16.9	21.4
388273 2006 RZ_{42}	16.5	X	172.00021	342.12641	23.16385	3.19855	0.1354847	0.17775643	3.1327026	20	3 8.9	21.5
388274 2006 RV_{59}	16.2	X	144.33627	294.72613	83.96091	0.70452	0.2163927	0.17374078	3.1807891	20	3 4.7	21.3
388275 2006 RS_{70}	16.6	X	295.53613	144.21981	196.68523	1.26928	0.0718696	0.19898848	2.9056999	20	6 25.4	20.4
388276 2006 RT_{70}	16.4	X	139.99994	92.19409	354.53620	3.43675	0.1481973	0.18519626	3.0482313	20	5 13.4	21.2
388277 2006 RE_{88}	17.4	X	228.74567	345.68803	45.65654	1.52075	0.0719697	0.19344559	2.9609438	20	6 5.6	21.7
388278 2006 RX_{88}	16.0	X	206.13470	15.27773	2.01512	10.91885	0.0721586	0.18621052	3.0371523	20	4 20.8	20.8
388279 2006 RC_{89}	16.1	X	138.25578	264.10911	195.20126	21.40306	0.1147058	0.18622964	3.0369444	20	5 26.8	21.1
388280 2006 RQ_{100}	16.1	X	166.97051	17.74705	11.48514	16.33821	0.2106274	0.18274916	3.0753823	20	4 2.6	21.2
388281 2006 RW_{103}	16.4	X	314.22610	90.22077	175.13955	15.39593	0.0233747	0.18799115	3.0179436	20	4 22.4	20.7
388282 `Akepa	16.7	X	55.63031	159.79576	17.97072	2.49214	0.1264296	0.18734110	3.0249208	20	5 26.1	20.5
388283 2006 RJ_{121}	15.9	X	195.51981	11.96780	4.94394	10.21589	0.1085165	0.18297461	3.0728556	20	4 10.2	20.8
388284 2006 SY_{12}	17.0	X	153.27789	231.47493	173.40466	15.05972	0.2676786	0.18285720	3.0741709	20	4 15.4	22.4
388285 2006 SQ_{22}	16.0	X	176.72234	323.84723	36.44771	11.03982	0.1862748	0.17950102	3.1123715	20	3 12.5	21.3
388286 2006 SW_{57}	16.6	X	263.51971	47.60905	280.13655	7.80223	0.0826766	0.19497327	2.9454568	20	4 22.3	20.9
388287 2006 SQ_{60}	17.7	X	64.74274	277.29462	100.27456	6.26738	0.1737242	0.30221830	2.1991535	20	—	—
388288 2006 SC_{67}	16.8	X	126.58442	83.59301	8.25454	9.42180	0.0548732	0.18536295	3.0464036	20	4 25.1	21.2
388289 2006 SN_{77}	16.3	X	123.69372	212.91791	204.85721	8.99197	0.0969861	0.17475362	3.1684870	20	3 17.3	21.0
388290 2006 SJ_{79}	16.1	X	259.87147	284.14245	4.60761	15.87195	0.0265620	0.18085685	3.0967970	20	3 14.2	20.4
388291 2006 SF_{81}	16.5	X	261.63639	41.37750	314.25414	0.20264	0.0785848	0.19374397	2.9579030	20	5 29.4	20.7
388292 2006 SO_{81}	16.0	X	70.66313	298.39149	189.71263	12.09192	0.1197031	0.17873490	3.1212590	20	4 13.9	20.1
388293 2006 ST_{99}	16.2	X	160.64672	172.01262	199.55054	9.38107	0.1063280	0.17475085	3.1685205	20	3 1.1	21.3
388294 2006 SC_{102}	16.9	X	313.05544	57.78028	250.99790	1.07209	0.1064347	0.19692884	2.9259249	20	6 3.2	20.5
388295 2006 ST_{114}	16.1	X	235.01276	334.41279	23.97366	8.95335	0.0880078	0.18752122	3.0229835	20	4 29.5	20.7
388296 2006 SZ_{118}	15.3	X	158.19065	32.14906	346.43181	27.02219	0.1397091	0.17811526	3.1284938	20	3 9.6	20.3
388297 2006 SL_{125}	17.8	X	89.13981	225.37706	102.43347	6.38225	0.1891575	0.30055099	2.2072792	20	—	—
388298 2006 SW_{140}	16.0	X	204.43853	270.96948	104.91236	10.40852	0.2138995	0.18550875	3.0448071	20	4 21.2	21.3
388299 2006 SK_{145}	16.6	X	300.90804	293.32277	27.32413	1.22104	0.0728624	0.19476287	2.9475778	20	6 5.6	20.5
388300 2006 SL_{146}	16.6	X	79.88622	266.94035	190.17587	3.50582	0.1463200	0.17330701	3.1860943	20	3 21.4	21.0
388301 2006 SG_{147}	16.6	X	70.48485	296.46961	208.37048	2.94281	0.1110961	0.18274679	3.0754090	20	5 2.8	20.5
388302 2006 SG_{158}	16.8	X	96.00675	46.55091	28.06772	3.40544	0.0959376	0.17532096	3.1616478	20	3 8.4	21.2
388303 2006 SQ_{164}	16.0	X	109.79374	164.15473	241.61364	5.20115	0.1791454	0.17230168	3.1984756	20	2 26.5	20.8
388304 2006 SK_{201}	16.5	X	110.33544	91.07098	29.45311	6.12031	0.1024706	0.18279424	3.0748767	20	5 19.4	21.1
388305 2006 SL_{233}	15.8	X	266.94705	282.79953	352.33869	9.12136	0.0499171	0.18020179	3.1042973	20	3 1.9	20.3
388306 2006 SR_{234}	18.3	X	92.09887	66.69918	333.34466	4.43511	0.1111135	0.31223499	2.1518649	20	—	—
388307 2006 SX_{236}	16.4	X	104.67910	260.78079	168.71544	7.25546	0.2795804	0.17437490	3.1730730	20	4 4.7	21.3
388308 2006 SN_{245}	16.8	X	309.75734	260.85309	64.36807	2.95374	0.0672022	0.19809823	2.9143988	20	6 25.7	20.5
388309 2006 SU_{258}	16.7	X	138.28401	174.26070	210.90827	4.74308	0.1836061	0.17310418	3.1885826	20	3 2.6	21.7
388310 2006 SR_{286}	15.9	X	171.59344	196.96864	169.11702	9.67901	0.1895316	0.17750906	3.1356124	20	3 10.6	21.2
388311 2006 SQ_{297}	16.4	X	133.62970	241.45115	187.76118	10.45049	0.0530387	0.18219151	3.0816546	20	4 8.4	20.9
388312 2006 SC_{313}	16.2	X	82.03239	145.19827	29.25191	10.35068	0.1681954	0.18989006	2.9977901	20	7 4.6	20.6
388313 2006 SO_{322}	16.2	X	26.95550	163.74590	30.75850	10.87829	0.0521169	0.18516413	3.0485838	20	4 26.9	20.2
388314 2006 SQ_{323}	16.9	X	242.92733	344.60218	28.37165	11.85970	0.0814609	0.19223232	2.9733893	20	5 26.3	21.4
388315 2006 SS_{323}	16.2	X	126.01340	38.52477	34.61206	8.36894	0.1683372	0.17779217	3.1322828	20	4 16.9	21.0
388316 2006 SY_{326}	16.7	X	331.37070	236.50658	51.31766	5.45013	0.0766571	0.19305968	2.9648883	20	6 6.1	20.4
388317 2006 SU_{331}	18.1	X	351.07437	113.30106	14.73056	6.59495	0.1220838	0.30395253	2.1907806	20	—	—
388318 2006 SD_{332}	16.2	X	136.23194	18.41911	25.33826	13.50014	0.1469211	0.17319454	3.1874735	20	3 24.2	21.2
388319 2006 SJ_{335}	16.3	X	212.18143	227.46693	165.73694	9.29673	0.1229425	0.18950440	3.0018560	20	5 19.6	21.2
388320 2006 SJ_{336}	16.1	X	174.29294	352.93574	56.04127	7.62658	0.1064114	0.18461283	3.0546501	20	4 30.8	20.9

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
	m		°	°	°	°		°				
388321 2006 SB_{338}	16.5	X	198.75826	299.76673	96.07093	4.65635	0.0828868	0.18766734	3.0214141	20	5 9.9	21.2
388322 2006 SV_{344}	16.9	X	94.58880	349.93999	259.90978	3.20513	0.0218374	0.20954571	2.8072658	20	10 5.0	20.9
388323 2006 SA_{346}	16.3	X	243.89810	350.58439	0.48561	9.93935	0.1181612	0.18864846	3.0109292	20	4 25.2	20.9
388324 2006 SL_{348}	16.6	X	318.22459	299.73628	31.00683	12.45012	0.0634385	0.19802976	2.9150706	20	7 19.5	20.6
388325 2006 SH_{356}	17.8	X	334.67366	302.39115	125.55018	2.77312	0.1439910	0.29034526	2.2587052	20	—	—
388326 2006 SG_{362}	16.2	X	215.22494	334.55252	47.92668	9.83587	0.1586992	0.18552867	3.0445891	20	5 5.7	21.1
388327 2006 SS_{362}	15.6	X	350.88947	342.74662	211.17697	12.45139	0.1002986	0.17170877	3.2058342	20	3 1.1	19.9
388328 2006 SE_{375}	16.5	X	84.96309	98.55499	56.15303	2.80465	0.0604907	0.19001958	2.9964278	20	5 26.8	20.6
388329 2006 SO_{379}	16.4	X	238.65590	174.10953	172.09460	10.60603	0.1104445	0.18915305	3.0055720	20	4 19.9	21.0
388330 2006 SR_{381}	16.5	X	186.15072	282.32222	107.21071	4.03234	0.1451876	0.18412517	3.0600412	20	4 19.9	21.5
388331 2006 SK_{385}	16.4	X	11.85547	120.79432	121.89533	11.25630	0.0636055	0.19007353	2.9958608	20	6 10.2	20.3
388332 2006 SW_{385}	16.0	X	146.18706	296.00123	111.76634	11.62349	0.1304078	0.17650736	3.1474644	20	4 7.9	21.1
388333 2006 SZ_{387}	16.4	X	272.98087	155.43447	144.51128	10.80478	0.0652781	0.18299052	3.0726776	20	4 8.7	20.9
388334 2006 SE_{389}	16.1	X	229.32838	252.91388	112.49454	10.71659	0.0935414	0.18612430	3.0380902	20	5 7.0	20.8
388335 2006 SF_{412}	15.7	X	204.76045	281.36605	93.25121	13.61368	0.1145010	0.18332856	3.0688993	20	4 24.2	20.7
388336 2006 TY_{11}	16.3	X	274.02063	318.60837	5.79849	9.76906	0.1080479	0.18745082	3.0237403	20	4 27.8	20.7
388337 2006 TK_{12}	15.5	X	226.58315	261.79127	38.18645	13.11024	0.2076655	0.17896880	3.1185389	20	2 12.8	21.0
388338 2006 TQ_{22}	17.4	X	68.36462	321.27237	48.58287	9.10072	0.1062798	0.29898775	2.2149663	20	—	—
388339 2006 TY_{22}	16.0	X	140.20797	35.95529	48.71017	10.64281	0.1106572	0.18044095	3.1015538	20	5 9.3	20.8
388340 2006 TP_{50}	16.7	X	305.55049	191.41595	120.85162	0.62830	0.1136908	0.18986248	2.9980805	20	5 26.6	20.5
388341 2006 TN_{52}	15.7	X	188.07120	322.84758	58.74943	10.58467	0.0896559	0.17833394	3.1259357	20	4 14.1	20.6
388342 2006 TL_{57}	15.6	X	148.77807	328.06811	38.56692	14.35624	0.0181495	0.16861411	3.2449408	20	2 13.8	20.5
388343 2006 TP_{59}	16.1	X	182.47112	352.68643	23.00652	9.62574	0.0964991	0.17713392	3.1400379	20	3 30.4	21.0
388344 2006 TW_{63}	16.2	X	205.54125	187.08020	180.47792	13.32143	0.2068084	0.18375162	3.0641870	20	4 9.2	21.5
388345 2006 TA_{91}	15.9	X	197.72556	338.53510	40.85703	12.04887	0.1001101	0.18017986	3.1045493	20	4 18.9	20.8
388346 2006 TM_{93}	16.1	X	226.51822	91.75255	247.37804	3.92845	0.1544570	0.18222709	3.0812534	20	3 23.7	21.0
388347 2006 TH_{101}	15.8	X	117.48356	178.71936	233.85688	8.34456	0.1010797	0.17095850	3.2152068	20	3 3.2	20.6
388348 2006 TR_{108}	16.3	X	178.04981	256.57469	121.89729	7.89437	0.1998062	0.17933118	3.1143363	20	4 2.5	21.6
388349 2006 TF_{109}	16.0	X	108.39151	58.85619	51.64612	11.80102	0.0829428	0.17959716	3.1112607	20	5 4.0	20.4
388350 2006 TX_{109}	16.2	X	320.75974	27.78432	236.06525	4.95742	0.0990705	0.18400913	3.0613276	20	4 16.3	20.2
388351 2006 TA_{113}	16.1	X	130.63746	310.68634	124.13766	10.91866	0.0763587	0.17805582	3.1291901	20	4 18.7	20.9
388352 2006 TR_{113}	16.4	X	102.50266	31.12101	113.55811	10.19903	0.0330372	0.18773291	3.0207105	20	6 3.2	20.7
388353 2006 TV_{115}	16.2	X	68.59095	342.22860	155.96214	11.24445	0.0194050	0.18046462	3.1012826	20	4 12.2	20.6
388354 2006 TY_{116}	16.3	X	341.68001	194.17424	81.39182	5.62518	0.0910279	0.19456613	2.9495645	20	6 5.4	19.9
388355 2006 TX_{117}	16.3	X	350.61738	56.65332	152.39318	13.27520	0.0757181	0.17685109	3.1433848	20	3 27.8	20.4
388356 2006 TY_{117}	16.1	X	131.83407	284.37440	141.38293	11.84844	0.1049864	0.17582520	3.1556002	20	4 11.4	21.0
388357 2006 TA_{121}	16.3	X	62.79981	274.50239	138.89965	12.69088	0.1676833	0.15921410	3.3714369	20	1 8.8	20.6
388358 2006 UR_{19}	18.4	X	37.51948	228.08669	233.77661	3.89058	0.0503754	0.31087621	2.1581306	20	—	—
388359 2006 UE_{20}	16.6	X	86.29721	229.64050	221.64221	8.36567	0.0697204	0.17317070	3.1877660	20	3 8.9	21.2
388360 2006 UC_{25}	18.8	X	82.29645	44.60863	11.42415	3.45718	0.1292177	0.31022134	2.1611667	20	1 3.9	20.5
388361 2006 UK_{33}	16.2	X	182.08476	273.87145	126.47893	1.90082	0.0507826	0.18214106	3.0822237	20	4 27.5	20.8
388362 2006 UQ_{34}	16.9	X	137.98556	256.06590	177.05376	1.19051	0.0722444	0.17937298	3.1138525	20	4 19.8	21.6
388363 2006 UW_{34}	15.5	X	144.74782	8.98524	35.29600	9.93790	0.0908737	0.17556814	3.1586796	20	3 27.8	20.3
388364 2006 UK_{36}	16.2	X	136.86971	18.96313	30.75910	11.44360	0.1059558	0.17404898	3.1770330	20	3 27.6	21.0
388365 2006 UM_{43}	16.1	X	189.20812	342.81032	47.41100	9.93792	0.0790302	0.18081839	3.0972361	20	4 23.4	20.7
388366 2006 UT_{46}	14.8	X	22.60601	209.44730	65.51623	5.98057	0.1057708	0.12405391	3.9816438	20	8 6.9	20.0
388367 2006 UR_{47}	15.8	X	141.14993	56.42934	333.80186	14.95906	0.0968163	0.17738292	3.1370986	20	3 2.9	20.4
388368 2006 UD_{52}	16.5	X	94.16985	267.74535	169.33499	3.41470	0.1091670	0.17122292	3.2118958	20	3 10.2	21.0
388369 2006 UN_{62}	16.3	X	276.67011	134.73584	202.08961	9.09375	0.0595545	0.19070406	2.9892535	20	5 27.9	20.5
388370 2006 UT_{62}	16.5	X	305.45198	231.18028	53.59056	6.67812	0.1287581	0.18301495	3.0724042	20	4 19.8	20.6
388371 2006 UU_{63}	15.7	X	337.23217	160.27092	66.49339	12.76617	0.0650140	0.18177661	3.0863420	20	4 4.1	19.9
388372 2006 UJ_{70}	16.4	X	185.17705	348.15434	43.22761	11.82352	0.0918132	0.17971476	3.1099033	20	4 20.9	21.3
388373 2006 UQ_{77}	16.4	X	281.10572	334.82844	11.31390	8.57188	0.0792993	0.19286269	2.9669068	20	6 9.9	20.7
388374 2006 UE_{79}	16.4	X	273.32794	68.96903	235.50181	7.69094	0.0919182	0.18480823	3.0524965	20	4 5.1	20.8
388375 2006 UC_{129}	16.7	X	67.91607	163.06431	30.93675	10.66867	0.0449981	0.18915847	3.0055146	20	6 21.9	20.9
388376 2006 UW_{158}	16.5	X	118.43421	248.44529	188.36492	9.37675	0.0367784	0.17774195	3.1328727	20	3 28.4	21.0
388377 2006 UY_{160}	16.6	X	114.05423	323.07052	96.96118	2.69743	0.1786619	0.17238094	3.1974951	20	3 22.5	21.3
388378 2006 UE_{207}	16.6	X	184.38542	289.22618	69.11443	3.09093	0.1044217	0.17663078	3.1459981	20	3 12.1	21.5
388379 2006 UF_{211}	16.3	X	153.53475	134.81277	250.78071	9.39453	0.0455061	0.17174200	3.2054207	20	3 3.9	21.2
388380 2006 UW_{225}	16.2	X	268.19342	314.78204	20.94327	10.55518	0.1051288	0.19237726	2.9718957	20	5 5.9	20.5
388381 2006 UF_{234}	16.5	X	105.29321	33.89301	77.15141	2.37653	0.1427131	0.17660670	3.1462841	20	5 8.4	21.2
388382 2006 US_{258}	16.8	X	131.45883	60.35115	1.30085	1.25663	0.1097907	0.17635836	3.1492371	20	4 2.2	21.4
388383 2006 UG_{264}	16.3	X	90.05345	71.70212	27.99385	18.30817	0.2200094	0.17309442	3.1887026	20	4 17.2	20.9
388384 2006 UM_{267}	16.7	X	24.05902	196.80355	37.21745	11.66767	0.0480411	0.18907668	3.0063814	20	6 12.8	20.8
388385 2006 US_{268}	16.5	X	275.33220	257.45520	33.75679	1.83214	0.0299258	0.17816080	3.1279606	20	4 2.6	20.7
388386 2006 UP_{271}	18.6	X	242.29230	46.59590	50.16777	2.29779	0.1471654	0.27358880	2.3500143	20	9 15.2	21.6
388387 2006 UC_{275}	16.3	X	174.86398	37.49658	11.85453	9.08030	0.0298853	0.18379172	3.0637413	20	4 26.9	20.8
388388 2006 US_{291}	16.5	X	104.61022	118.02087	332.42684	8.66864	0.0509611	0.18314226	3.0709801	20	3 26.9	20.9
388389 2006 UD_{323}	16.1	X	152.21753	231.66325	173.75076	10.97647	0.0534823	0.18439507	3.0570544	20	3 31.7	20.7
388390 2006 US_{328}	15.8	X	208.26721	87.44047	257.15216	10.12405	0.0907038	0.17626018	3.1504063	20	3 12.8	20.8
388391 2006 UX_{328}	16.0	X	219.54930	288.66191	67.96838	10.79119	0.0180749	0.17984598	3.1083904	20	4 20.9	20.6
388392 2006 UR_{332}	16.6	X	356.26909	71.63201	156.56717	11.93725	0.0869205	0.18352624	3.0666951	20	4 30.1	20.6
388393 2006 UA_{346}	16.7	X	77.09885	41.05972	87.40849	2.75277	0.1353467	0.17675035	3.1445791	20	4 25.4	20.9
388394 2006 UV_{360}	17.6	X	356.63448	241.06137	143.37682	5.94541	0.2140116	0.28632679	2.2797894	20	—	—
388395 2006 VL_{26}	18.3	X	80.67054	0.92591	47.00932	1.92090	0.1385043	0.30599673	2.1810127	20	—	—
388396 2006 VS_{31}	17.7	X	76.61987	43.63594	321.66738	3.50144	0.1891785	0.29958155	2.2120384	20	—	—
388397 2006 VT_{32}	16.5	X	170.38007	215.85934	168.91098	1.19733	0.1927266	0.17719668	3.1392964	20	3 31.4	21.8
388398 2006 VS_{33}	16.5	X	127.56155	11.97627	55.06870	5.81924	0.1689569	0.17339509	3.1850152	20	4 12.5	21.4
388399 2006 VP_{47}	16.2	X	88.24396	58.87120	42.09370	12.20101	0.0704723	0.17221831	3.1995078	20	3 30.9	20.7
388400 2006 VL_{49}	15.2	X	210.85157	95.06492	255.39369	17.22613	0.0579092	0.17388509	3.1790290	20	3 21.3	20.4

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Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
	m		°	°	°	°		°				
388401 2006 VZ_{62}	16.3	X	206.28178	117.34201	237.75490	3.55827	0.1596920	0.18204089	3.0833542	20	3 24.7	21.3
388402 2006 VP_{71}	16.7	X	97.27963	10.91177	83.98989	2.27031	0.1301975	0.17083494	3.2167570	20	4 8.6	21.3
388403 2006 VO_{120}	15.5	X	62.00836	311.65229	238.36572	20.02684	0.2408854	0.17961158	3.1110942	20	7 4.5	20.0
388404 2006 WG_{41}	15.6	X	18.26193	122.56504	101.09266	9.82216	0.1927469	0.17938025	3.1137683	20	6 2.9	18.9
388405 2006 WS_{42}	15.9	X	228.55683	186.78871	128.55900	6.19255	0.1313066	0.17288131	3.1913224	20	3 2.9	20.9
388406 2006 WJ_{48}	16.1	X	72.98490	185.75335	306.33953	3.04805	0.1177424	0.17048688	3.2211337	20	4 19.8	20.5
388407 2006 WC_{56}	17.8	X	36.45393	17.03725	41.20048	3.01322	0.1299315	0.29683449	2.2256651	20	—	—
388408 2006 WM_{71}	16.1	X	290.35514	238.32029	49.80796	11.81589	0.0475569	0.17924617	3.1153209	20	4 17.5	20.5
388409 2006 WG_{93}	16.1	X	13.62662	126.88671	71.05861	12.72080	0.0452989	0.17507024	3.1646656	20	4 18.9	20.5
388410 2006 WF_{97}	16.4	X	283.56275	281.54637	51.01289	0.62120	0.1055148	0.18710928	3.0274188	20	5 23.6	20.4
388411 2006 WF_{100}	15.6	X	199.32455	250.40940	86.24180	10.17103	0.0863232	0.17382624	3.1797465	20	3 4.4	20.6
388412 2006 WL_{104}	16.2	X	59.80410	86.28271	71.80586	10.21855	0.0252247	0.17466608	3.1695456	20	4 27.0	20.6
388413 2006 WY_{157}	17.7	X	270.77189	159.03089	83.59051	5.49450	0.0586223	0.30888335	2.1674032	20	1 4.6	20.2
388414 2006 WD_{163}	18.2	X	45.03704	208.46925	204.41114	3.69504	0.1253369	0.29944811	2.2126956	20	—	—
388415 2006 WJ_{175}	17.8	X	312.31209	349.25844	206.53934	2.36861	0.1375451	0.30461171	2.1876188	20	—	—
388416 2006 WR_{178}	16.3	X	151.18329	9.48593	55.46132	11.32285	0.0811137	0.17924195	3.1153698	20	4 26.7	21.0
388417 2006 WB_{205}	17.9	X	261.83192	291.67851	240.95435	5.19222	0.0990792	0.29300876	2.2449964	20	—	—
388418 2006 XX_{49}	17.4	X	323.49583	286.00530	111.01357	5.45235	0.2343664	0.27662840	2.3327680	20	11 18.4	18.7
388419 2006 XL_{51}	15.2	X	221.71500	240.69939	86.52236	16.32128	0.0733393	0.16951715	3.2334064	20	3 20.5	20.4
388420 2006 XQ_{59}	18.2	X	7.06006	131.03268	329.50257	3.22675	0.1071301	0.29461862	2.2368108	20	—	—
388421 2006 XF_{63}	18.0	X	87.84205	313.06248	86.62648	4.22464	0.1476884	0.30455668	2.1878823	20	—	—
388422 2006 YF_{8}	18.0	X	274.14777	177.67531	296.07089	1.92667	0.1403419	0.27660969	2.3328731	20	11 29.4	20.1
388423 2006 YH_{15}	17.5	X	347.36986	275.89826	149.97980	5.36451	0.1484206	0.28858535	2.2678789	20	—	—
388424 2006 YT_{32}	17.8	X	267.64135	150.99954	60.76635	5.04603	0.0882504	0.29384211	2.2407498	20	—	—
388425 2006 YK_{52}	18.2	X	295.37164	174.60331	349.66068	3.23402	0.0836728	0.28996674	2.2606704	20	—	—
388426 2007 AR	17.5	X	339.24027	163.20204	299.60151	4.96829	0.1036185	0.28793609	2.2712868	20	—	—
388427 2007 AQ_{1}	18.0	X	340.10834	34.89312	91.63324	1.44463	0.1354376	0.29188597	2.2507499	20	—	—
388428 2007 BX_{8}	17.8	X	332.75063	166.67183	328.95994	5.83818	0.1214495	0.29120146	2.2542757	20	—	—
388429 2007 BE_{10}	18.0	X	77.01606	42.00963	349.66388	4.77501	0.1338752	0.29429299	2.2384605	20	—	—
388430 2007 BN_{28}	17.7	X	227.02820	115.90956	117.23330	4.46535	0.1905578	0.28534313	2.2850258	20	—	—
388431 2007 BQ_{40}	18.3	X	356.27189	176.47864	276.91639	0.48242	0.1763186	0.29002845	2.2603498	20	—	—
388432 2007 BQ_{48}	17.9	X	254.38428	89.88643	104.31720	4.61452	0.1548223	0.28171024	2.3046287	20	—	—
388433 2007 BW_{55}	17.7	X	309.27635	130.47400	40.50671	3.63891	0.1057967	0.29244890	2.2478607	20	—	—
388434 2007 BY_{65}	18.0	X	330.29951	164.24635	319.35828	2.70255	0.1815367	0.28694049	2.2765376	20	—	—
388435 2007 BP_{69}	17.6	X	235.49154	7.17070	134.28071	3.12296	0.1511812	0.26982406	2.3718229	20	11 5.6	20.6
388436 2007 BY_{75}	17.5	X	215.76163	250.53746	334.25385	7.37004	0.0573254	0.28130477	2.3068427	20	—	—
388437 2007 BH_{77}	17.6	X	15.61898	80.24902	323.93922	6.20620	0.1109303	0.28513906	2.2861159	20	—	—
388438 2007 BV_{77}	17.8	X	326.57121	186.43407	317.89675	4.72282	0.0669273	0.29268329	2.2466604	20	—	—
388439 2007 BL_{81}	18.5	X	283.15561	180.80543	341.12679	4.22767	0.0923335	0.28310052	2.2970773	20	—	—
388440 2007 CH_{10}	18.2	X	245.30677	252.85001	297.66134	2.47882	0.1733484	0.28106081	2.3081774	20	—	—
388441 2007 CT_{15}	17.3	X	293.06233	47.62209	98.41223	5.43858	0.1106995	0.28428165	2.2907103	20	—	—
388442 2007 CW_{16}	17.3	X	320.02557	124.75375	0.54500	8.67411	0.1631756	0.28577478	2.2827242	20	—	—
388443 2007 CZ_{20}	18.2	X	229.31020	103.65968	141.16202	5.96747	0.2357447	0.28611662	2.2809057	20	—	—
388444 2007 CC_{22}	17.4	X	235.88519	269.89522	319.89449	11.38916	0.0878649	0.28748115	2.2736824	20	—	—
388445 2007 CG_{46}	17.7	X	311.39125	259.21964	276.69465	3.20869	0.1262530	0.29163707	2.2520303	20	—	—
388446 2007 CG_{48}	18.0	X	290.94726	35.97977	164.69993	7.50016	0.0715097	0.29284621	2.2458270	20	—	—
388447 2007 CH_{62}	17.5	X	334.54365	292.92256	203.85537	6.18266	0.1386981	0.28892294	2.2661120	20	—	—
388448 2007 DY_{2}	17.5	X	287.65119	60.41687	107.82109	6.44435	0.1451348	0.28485585	2.2876309	20	—	—
388449 2007 DO_{3}	17.6	X	230.83024	41.96290	187.36480	5.83503	0.1975284	0.28182974	2.3039772	20	—	—
388450 2007 DX_{7}	17.6	X	223.58565	288.57049	290.06591	3.98781	0.1942205	0.27878145	2.3207417	20	—	—
388451 2007 DJ_{14}	18.2	X	49.22698	29.58962	21.11646	3.82671	0.1101445	0.28960079	2.2625745	20	—	—
388452 2007 DF_{19}	18.0	X	320.80982	347.09389	110.85585	1.27023	0.0874017	0.27857886	2.3218667	20	—	—
388453 2007 DA_{26}	17.6	X	345.79439	294.77202	109.87272	3.01699	0.2027572	0.27486123	2.3427560	20	—	—
388454 2007 DY_{29}	17.4	X	155.02592	138.14175	150.58018	8.92766	0.1622272	0.27734189	2.3287654	20	—	—
388455 2007 DR_{32}	17.5	X	320.21923	120.36005	351.30188	6.63156	0.1405169	0.28071279	2.3100848	20	—	—
388456 2007 DL_{33}	17.7	X	223.40424	102.09993	148.66655	6.13771	0.2041112	0.28173662	2.3044848	20	—	—
388457 2007 DV_{33}	18.0	X	356.70189	69.70690	21.25723	2.62935	0.1701674	0.28469832	2.2884747	20	—	—
388458 2007 DS_{36}	18.0	X	340.34164	105.19310	6.89604	4.03329	0.1575902	0.28418777	2.2912147	20	—	—
388459 2007 DF_{43}	17.2	X	1.62411	132.98216	327.89293	7.13665	0.0452911	0.28641627	2.2793145	20	—	—
388460 2007 DQ_{43}	17.1	X	261.05944	117.25505	96.78700	6.06969	0.2065457	0.28369679	2.2938575	20	—	—
388461 2007 DZ_{53}	17.6	X	239.54491	15.99517	118.80916	9.37465	0.0681760	0.27280247	2.3545280	20	11 17.9	20.6
388462 2007 DC_{56}	17.0	X	251.33660	219.46066	359.38361	5.07761	0.1716662	0.28294714	2.2979073	20	—	—
388463 2007 DK_{64}	17.8	X	183.50569	133.26734	140.12919	4.17236	0.1521372	0.28086330	2.3092594	20	—	—
388464 2007 DV_{70}	18.1	X	287.87268	101.85855	64.49721	1.39600	0.1401532	0.28264630	2.2995376	20	—	—
388465 2007 DS_{72}	17.8	X	179.50038	258.43851	358.04261	3.46078	0.2168564	0.27349975	2.3505244	20	—	—
388466 2007 DD_{75}	17.5	X	156.78397	342.28865	355.03010	4.79917	0.2047616	0.29011793	2.2598850	20	1 14.5	20.8
388467 2007 DZ_{76}	17.6	X	267.12871	118.38433	42.12198	6.05059	0.1754239	0.27858479	2.3218337	20	—	—
388468 2007 DB_{83}	18.3	X	228.17668	162.29942	55.25307	10.90466	0.3000981	0.42555639	1.7505102	20	—	—
388469 2007 DN_{85}	17.7	X	209.61518	110.47472	155.16208	10.38439	0.2160949	0.28417550	2.2912807	20	—	—
388470 2007 DT_{85}	17.6	X	240.42457	295.11835	333.55805	6.54654	0.1914120	0.29167829	2.2518181	20	1 2.1	21.2
388471 2007 DS_{95}	17.2	X	168.83357	254.71426	33.40270	5.00544	0.1458341	0.28030425	2.3123288	20	—	—
388472 2007 DD_{99}	17.3	X	207.59327	288.15832	346.29148	9.46483	0.1530211	0.28685093	2.2770114	20	—	—
388473 2007 DS_{99}	17.6	X	16.00713	303.47678	141.31081	6.54424	0.0730814	0.28745274	2.2738322	20	—	—
388474 2007 DF_{105}	18.2	X	288.03196	116.52478	11.89804	5.55177	0.1042699	0.27336102	2.3513196	20	—	—
388475 2007 EC_{1}	17.0	X	349.68551	266.37956	163.07644	21.53210	0.2336507	0.28403483	2.2920371	20	—	—
388476 2007 EQ_{7}	18.2	X	347.94276	99.10289	339.66170	3.73839	0.2040240	0.28191605	2.3035069	20	—	—
388477 2007 EG_{8}	17.6	X	277.32180	80.34257	112.11812	3.02384	0.1580408	0.28401190	2.2921605	20	—	—
388478 2007 EM_{28}	17.7	X	216.70138	38.09042	179.23848	5.73734	0.1830530	0.27571887	2.3378953	20	—	—
388479 2007 ET_{29}	17.5	X	201.53576	198.96747	98.54451	3.31371	0.1402087	0.28797753	2.2710689	20	1 2.2	20.6
388480 2007 EE_{31}	17.3	X	284.70188	348.04613	137.73015	7.15657	0.0505516	0.27671741	2.3322677	20	—	—

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	m		°	°	°	°		°				
388481 2007 EB_{44}	18.3	X	225.98918	245.05312	341.20325	2.01869	0.1836193	0.27694115	2.3310114	20	—	—
388482 2007 EU_{45}	17.4	X	232.91131	7.76925	183.88689	9.89644	0.1258814	0.27222455	2.3578591	20	—	—
388483 2007 EP_{47}	17.8	X	263.17874	166.84577	6.98996	3.45140	0.1282178	0.27715335	2.3298214	20	—	—
388484 2007 EY_{47}	17.5	X	343.12644	301.86896	179.03916	6.63903	0.0368505	0.28119192	2.3074599	20	—	—
388485 2007 EP_{64}	17.8	X	354.24315	3.97616	63.32106	2.53613	0.2139245	0.27958780	2.3162774	20	—	—
388486 2007 EP_{68}	17.7	X	226.10342	44.26141	155.14444	4.63208	0.0775163	0.27395222	2.3479355	20	—	—
388487 2007 EL_{71}	17.9	X	207.97006	163.41962	87.95245	1.93560	0.1640447	0.27763520	2.3271249	20	—	—
388488 2007 ED_{72}	17.4	X	320.60748	211.70544	161.90642	4.02997	0.0959046	0.26306521	2.4122766	20	9 27.5	19.9
388489 2007 EA_{74}	17.4	X	249.11667	30.71210	196.13651	4.51079	0.0962652	0.28296590	2.2978058	20	—	—
388490 2007 EL_{75}	16.9	X	148.82201	298.34379	359.15884	7.54553	0.1407632	0.27441688	2.3452843	20	—	—
388491 2007 EZ_{78}	17.3	X	250.02228	12.69402	209.40481	6.38533	0.1531100	0.28206672	2.3026865	20	—	—
388492 2007 ET_{79}	17.7	X	179.50410	38.69793	225.30218	0.93103	0.1611520	0.27251828	2.3561646	20	—	—
388493 2007 EX_{90}	18.1	X	310.67449	299.51424	175.10441	7.62286	0.0557367	0.27669410	2.3323987	20	—	—
388494 2007 EY_{94}	18.0	X	167.72978	137.91250	163.09795	2.20071	0.2172998	0.28031365	2.3122771	20	—	—
388495 2007 EQ_{96}	17.9	X	248.26187	255.76173	276.55363	0.47817	0.1286673	0.27197709	2.3592891	20	—	—
388496 2007 EM_{97}	17.3	X	47.41878	82.42984	307.14440	5.47310	0.1056465	0.28389754	2.2927760	20	—	—
388497 2007 EC_{105}	17.8	X	352.96433	29.73954	57.72520	0.77158	0.1334155	0.28179988	2.3041399	20	—	—
388498 2007 ES_{105}	17.6	X	286.25911	120.55758	25.84169	6.02346	0.2309127	0.27856891	2.3219220	20	—	—
388499 2007 EK_{107}	18.5	X	288.45124	50.96748	105.61136	3.72831	0.1774560	0.27932099	2.3177522	20	—	—
388500 2007 EA_{110}	17.4	X	182.49805	237.79317	30.70714	8.27612	0.1742189	0.27414367	2.3468422	20	—	—
388501 2007 EE_{113}	17.4	X	34.60249	71.46206	349.36661	8.30147	0.1152592	0.28820342	2.2698821	20	—	—
388502 2007 ED_{132}	18.2	X	213.05533	85.54745	179.60337	4.87581	0.1469933	0.28200475	2.3030238	20	—	—
388503 2007 EH_{136}	17.6	X	295.14753	43.63959	178.99478	6.57263	0.0907834	0.29278912	2.2461190	20	1 6.1	20.5
388504 2007 EW_{136}	17.4	X	250.98610	354.09999	216.87901	4.03322	0.1520030	0.28025120	2.3126206	20	—	—
388505 2007 EB_{146}	17.5	X	31.04897	246.16672	154.77531	6.79581	0.2530289	0.28178006	2.3042480	20	—	—
388506 2007 ER_{156}	17.5	X	183.71251	6.16656	234.18098	4.67346	0.2413778	0.26849427	2.3796479	20	—	—
388507 2007 EW_{159}	17.5	X	267.01719	34.23928	88.17280	3.36079	0.1111710	0.27053735	2.3676522	20	12 2.1	19.9
388508 2007 EM_{167}	17.4	X	316.93463	91.12191	17.48294	22.33470	0.2916667	0.27914411	2.3187312	20	—	—
388509 2007 EC_{173}	17.2	X	12.36487	57.32311	354.57001	5.00337	0.0339002	0.27338894	2.3511595	20	—	—
388510 2007 EB_{189}	18.0	X	243.55216	55.91745	191.28918	5.02011	0.1229834	0.28693438	2.2765699	20	—	—
388511 2007 EZ_{195}	16.8	X	76.83029	239.56727	36.06418	15.11187	0.1064422	0.25258264	2.4785654	20	11 3.8	20.3
388512 2007 EW_{206}	17.7	X	226.19223	177.04062	41.83054	6.99202	0.0590699	0.27438282	2.3454784	20	—	—
388513 2007 EQ_{214}	18.2	X	265.70129	39.60371	122.24661	2.60252	0.1408786	0.27397956	2.3477793	20	—	—
388514 2007 EO_{217}	17.8	X	168.74328	294.98053	320.41718	1.41771	0.1474919	0.27135384	2.3629003	20	—	—
388515 2007 FE_{18}	17.5	X	267.85266	155.31568	3.57739	7.57243	0.1586420	0.27698757	2.3307509	20	—	—
388516 2007 FT_{24}	17.9	X	150.42436	273.84057	357.38150	0.88396	0.1699465	0.27187900	2.3598565	20	—	—
388517 2007 GJ_{6}	16.9	X	193.80356	114.02529	135.90322	24.09109	0.2204921	0.27180517	2.3602839	20	—	—
388518 2007 GU_{22}	17.4	X	242.32045	115.33803	41.75175	6.89503	0.0634440	0.26502237	2.4003857	20	12 17.0	20.3
388519 2007 GE_{26}	17.7	X	266.62721	122.78072	27.95397	2.56666	0.1290489	0.27355307	2.3502189	20	—	—
388520 2007 GN_{31}	18.1	X	172.05709	54.77498	180.14912	1.13175	0.1397505	0.26940368	2.3742897	20	12 23.8	21.6
388521 2007 GV_{32}	17.9	X	236.11237	135.99696	74.08148	3.19210	0.1295829	0.27748521	2.3279635	20	—	—
388522 2007 GM_{40}	17.6	X	153.89004	200.56171	83.35342	2.47491	0.1809549	0.26783280	2.3835643	20	—	—
388523 2007 GK_{45}	17.8	X	298.46824	309.05156	183.95161	4.61670	0.1502529	0.27320696	2.3522034	20	—	—
388524 2007 GF_{47}	17.7	X	182.11474	64.89741	140.27949	3.57695	0.1425959	0.26066501	2.4270621	20	11 25.8	21.4
388525 2007 GJ_{47}	17.6	X	181.11054	125.12107	104.54205	3.30128	0.1387059	0.26417969	2.4054875	20	12 25.5	21.2
388526 2007 GD_{48}	18.2	X	230.98357	69.28318	139.43065	1.77568	0.1277635	0.27136894	2.3628126	20	—	—
388527 2007 GR_{52}	17.4	X	177.35562	227.22258	27.44972	6.97731	0.1391803	0.26883116	2.3776594	20	—	—
388528 2007 GS_{58}	16.6	X	66.37920	337.05617	3.17176	26.11640	0.2646804	0.26845790	2.3798628	20	—	—
388529 2007 GS_{60}	16.9	X	171.41103	243.85176	15.80418	7.01162	0.0894362	0.26918553	2.3755723	20	—	—
388530 2007 GF_{63}	17.6	X	233.65259	148.74960	28.14378	2.86995	0.1311575	0.26789490	2.3831959	20	12 22.4	20.4
388531 2007 HO_{2}	17.5	X	125.07770	102.81280	177.71573	0.93147	0.2049370	0.26170152	2.4206493	20	—	—
388532 2007 HV_{5}	17.3	X	261.58682	56.86387	149.14901	5.91685	0.1129070	0.28082056	2.3094937	20	—	—
388533 2007 HO_{6}	17.3	X	190.71079	161.60967	85.14180	3.61312	0.2053244	0.26959085	2.3731906	20	—	—
388534 2007 HF_{22}	18.2	X	198.30613	88.35784	172.80568	2.75912	0.2021204	0.27293488	2.3537664	20	—	—
388535 2007 HN_{31}	15.3	X	198.15043	6.49777	276.15078	1.13424	0.2354394	0.12541607	3.9527613	20	1 3.5	21.8
388536 2007 HR_{42}	17.6	X	147.34993	175.71199	113.29235	2.95664	0.1963253	0.26763883	2.3847158	20	—	—
388537 2007 HW_{47}	17.6	X	230.53397	159.55329	76.28008	3.12339	0.1806822	0.27631208	2.3345479	20	—	—
388538 2007 HP_{58}	17.1	X	198.30531	141.31250	84.19100	8.78421	0.1573207	0.26891385	2.3771720	20	—	—
388539 2007 HT_{62}	17.5	X	184.39077	117.63449	166.22615	2.02128	0.1846480	0.27475125	2.3433812	20	—	—
388540 2007 HG_{81}	18.1	X	200.34016	33.40695	209.95654	0.90660	0.1471642	0.27234234	2.3571792	20	—	—
388541 2007 HS_{84}	17.9	X	226.96985	91.10274	127.26414	3.50976	0.0903122	0.27177719	2.3604459	20	—	—
388542 2007 HQ_{85}	17.9	X	213.83990	101.13331	124.84872	2.85745	0.1793246	0.27115603	2.3640493	20	—	—
388543 2007 HF_{95}	17.0	X	345.75840	323.96063	86.06135	6.94413	0.0997050	0.25849853	2.4406041	20	12 30.9	19.6
388544 2007 JC_{4}	17.2	X	20.06411	323.23458	70.73277	8.01682	0.0955219	0.26799124	2.3826247	20	—	—
388545 2007 JB_{16}	17.5	X	190.21148	207.28943	51.92295	3.10281	0.2567375	0.26894978	2.3769603	20	—	—
388546 2007 JA_{18}	17.0	X	197.88217	358.54840	258.38713	4.38410	0.2400517	0.27190925	2.3596815	20	—	—
388547 2007 JM_{31}	17.3	X	168.89359	148.28227	112.45104	2.26438	0.1644307	0.26733807	2.3865041	20	—	—
388548 2007 JZ_{31}	17.4	X	242.60412	183.56148	82.31281	4.85168	0.1512863	0.28303328	2.2974411	20	1 2.3	20.7
388549 2007 LQ_{15}	17.6	X	195.56316	154.00859	93.43714	3.48350	0.1716490	0.26896582	2.3768658	20	—	—
388550 2007 LX_{24}	17.7	X	98.87031	122.33182	187.31433	2.50993	0.1826144	0.25787618	2.4445292	20	—	—
388551 2007 MJ_{2}	17.1	X	151.33061	128.26572	163.95362	6.21120	0.1444435	0.26707287	2.3880836	20	—	—
388552 2007 MZ_{8}	17.1	X	159.90273	109.24141	157.11518	7.43228	0.1092766	0.26439651	2.4041722	20	—	—
388553 2007 MK_{27}	17.7	X	60.81160	272.28734	282.75149	18.04421	0.0621956	0.37535358	1.9033077	20	6 23.4	19.1
388554 2007 NA_{1}	16.8	X	88.06141	45.31572	242.21167	7.30313	0.2173547	0.24569607	2.5246659	20	12 9.3	20.8
388555 2007 NE_{6}	16.0	X	48.61923	260.72580	52.14574	13.04492	0.2034852	0.24206305	2.5498642	20	11 29.1	19.5
388556 2007 OD_{2}	16.2	X	316.90345	264.04440	105.56592	12.02566	0.1223961	0.23090729	2.6313439	20	9 11.5	19.3
388557 2007 PS_{7}	16.1	X	308.40879	188.69602	157.71217	31.14858	0.2215015	0.23010375	2.6374663	20	7 4.9	19.7
388558 2007 PO_{8}	16.4	X	172.18323	156.51107	148.12935	10.16617	0.0820443	0.18692447	3.0294138	20	—	—
388559 2007 PB_{14}	16.5	X	65.72982	330.82299	323.03352	14.41843	0.1237265	0.24181186	2.5516297	20	11 9.9	20.4
388560 2007 PY_{17}	15.4	X	41.91323	218.20684	153.29080	8.05930	0.1521272	0.17174580	3.2053735	20	—	—

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
	m		°	°	°	°		°				
388561 2007 PG_{36}	16.5	X	110.22251	101.31257	212.84298	3.59029	0.1846306	0.25397463	2.4695007	20	—	—
388562 2007 PQ_{39}	16.4	X	285.86193	65.02757	311.90228	11.55366	0.2134005	0.22220127	2.6996348	20	7 10.9	19.7
388563 2007 PC_{43}	16.1	X	357.94005	348.78368	326.32727	12.97258	0.1661430	0.22847122	2.6500153	20	9 3.2	18.7
388564 2007 QB_{5}	17.4	X	41.05823	291.22115	1.92254	4.11257	0.1882463	0.23567688	2.5957213	20	10 22.3	20.7
388565 2007 QX_{6}	16.8	X	300.48281	226.05858	146.61235	8.34083	0.2240646	0.22348415	2.6892937	20	7 25.1	19.7
388566 2007 QQ_{10}	16.2	X	87.87030	256.89017	337.66813	13.21531	0.0276497	0.22758906	2.6568587	20	9 9.7	19.7
388567 2007 QX_{14}	17.9	X	221.71511	250.53115	20.45588	5.21857	0.4615740	0.27375889	2.3490408	20	—	—
388568 2007 QW_{15}	16.5	X	12.72318	190.51604	116.58784	9.12385	0.1993959	0.22992613	2.6388244	20	10 3.5	19.4
388569 2007 QE_{16}	16.5	X	263.83010	34.03197	331.07951	11.59002	0.1683482	0.21642379	2.7474685	20	5 29.9	20.8
388570 2007 RT_{2}	16.4	X	41.63136	324.63027	324.67696	11.40647	0.1681464	0.23126414	2.6286364	20	10 9.1	19.9
388571 2007 RZ_{31}	16.3	X	319.19195	330.32855	24.29105	12.37040	0.2011384	0.22480399	2.6787573	20	8 16.8	19.1
388572 2007 RX_{33}	16.2	X	246.41312	18.44127	10.09311	12.31827	0.2491982	0.20962787	2.8065323	20	5 31.5	20.9
388573 2007 RB_{36}	16.5	X	37.97353	319.02314	345.28414	11.33062	0.1872519	0.23266069	2.6181069	20	10 28.2	20.0
388574 2007 RB_{43}	17.3	X	345.86904	102.62040	228.10408	5.07509	0.1046447	0.22454342	2.6808293	20	8 29.9	20.3
388575 2007 RO_{57}	15.9	X	97.66718	21.90988	196.76286	13.69971	0.0286883	0.22246715	2.6974835	20	8 30.1	19.7
388576 2007 RN_{69}	16.9	X	68.55814	123.59105	161.58185	19.15946	0.0675840	0.23486513	2.6016988	20	11 3.9	20.8
388577 2007 RC_{71}	17.3	X	217.69138	327.82884	97.71817	2.69816	0.0348761	0.21666189	2.7454552	20	7 11.7	20.9
388578 2007 RV_{73}	16.5	X	217.56608	275.48624	160.28498	9.52334	0.1327385	0.21739961	2.7392408	20	7 14.6	20.8
388579 2007 RC_{75}	16.9	X	77.07549	271.43667	354.77366	6.00187	0.1292279	0.23509278	2.6000190	20	10 21.8	20.6
388580 2007 RC_{82}	16.6	X	206.04791	291.36486	165.31732	10.55759	0.0610882	0.22087976	2.7103920	20	8 3.7	20.6
388581 2007 RB_{90}	16.9	X	342.33156	344.96844	3.85981	4.35893	0.1228534	0.22666887	2.6640444	20	9 22.5	19.6
388582 2007 RY_{91}	17.6	X	200.82702	71.34610	0.85638	5.74947	0.1077383	0.21035353	2.8000740	20	6 24.9	22.0
388583 2007 RE_{97}	15.6	X	156.55244	340.25754	50.54295	9.08584	0.0606348	0.18662093	3.0326979	20	3 22.1	20.2
388584 2007 RZ_{101}	18.0	X	233.38424	40.36494	341.30016	18.19239	0.1113457	0.36525147	1.9382423	20	5 16.9	20.9
388585 2007 RQ_{105}	17.1	X	303.09123	210.48984	134.06842	2.76191	0.0779134	0.21921082	2.7241315	20	7 11.8	20.3
388586 2007 RU_{115}	17.0	X	228.08118	140.04749	255.67634	2.92332	0.1075869	0.20962983	2.8065148	20	6 7.3	21.2
388587 2007 RW_{122}	17.1	X	295.10982	345.34190	5.31238	4.89317	0.1281301	0.21951880	2.7215829	20	7 1.1	20.4
388588 2007 RC_{126}	17.0	X	301.98068	154.91915	171.45971	23.77944	0.0507964	0.36739731	1.9306879	20	6 24.6	19.5
388589 2007 RH_{129}	17.2	X	72.18553	142.63318	167.45156	3.72233	0.1785921	0.23932677	2.5692628	20	12 17.9	21.1
388590 2007 RE_{130}	17.5	X	246.60339	210.93826	184.17607	21.99208	0.0764919	0.36776436	1.9294030	20	7 7.3	20.2
388591 2007 RO_{138}	16.3	X	302.64114	200.33115	149.75637	15.06495	0.1137564	0.22414388	2.6840141	20	7 13.7	19.7
388592 2007 RZ_{143}	16.2	X	317.04848	11.36906	336.88656	12.73966	0.1087028	0.22204774	2.7008791	20	8 8.7	19.4
388593 2007 RX_{145}	17.7	X	346.54234	338.91582	12.69408	21.16291	0.0820526	0.38014534	1.8872797	20	10 31.5	19.4
388594 2007 RQ_{169}	16.1	X	150.52811	148.02948	3.05959	15.99181	0.0206364	0.22090101	2.7102181	20	8 17.1	20.1
388595 2007 RW_{169}	17.3	X	287.04626	232.03687	115.19705	2.76065	0.0430205	0.21615901	2.7497116	20	6 26.9	20.9
388596 2007 RX_{177}	17.1	X	35.93448	230.75711	86.91544	3.79923	0.1485617	0.23292983	2.6160898	20	11 11.9	20.4
388597 2007 RY_{179}	16.1	X	120.74274	7.82333	47.13086	10.41358	0.0827407	0.18267975	3.0761613	20	3 15.1	20.7
388598 2007 RX_{181}	16.5	X	183.22041	83.94862	18.65024	6.71684	0.0852230	0.21041818	2.7995005	20	7 17.5	20.8
388599 2007 RQ_{183}	16.2	X	117.39539	247.82148	17.07317	29.74725	0.1254890	0.23690681	2.5867296	20	11 20.8	20.7
388600 2007 RF_{187}	16.7	X	102.80596	41.44409	198.86184	7.90176	0.0917045	0.22884509	2.6471283	20	10 14.7	20.6
388601 2007 RM_{191}	17.0	X	87.09066	236.50373	14.87887	5.87509	0.1060478	0.22990603	2.6389782	20	10 12.4	20.7
388602 2007 RX_{202}	16.8	X	139.04154	243.99626	357.46688	5.32051	0.1560928	0.23823567	2.5771015	20	11 23.3	21.0
388603 2007 RJ_{231}	17.1	X	73.09896	145.98763	174.22056	15.31747	0.1471574	0.24224398	2.5485944	20	12 28.3	21.2
388604 2007 RO_{243}	16.5	X	31.17595	316.48854	25.64441	15.55996	0.2076177	0.23482249	2.6020137	20	12 13.3	20.2
388605 2007 RF_{246}	16.3	X	124.36716	138.32888	156.35805	10.56636	0.2058463	0.17464013	3.1698595	20	—	—
388606 2007 RD_{273}	16.7	X	255.78527	24.72846	356.75264	9.37240	0.2128403	0.21204626	2.7851525	20	6 6.0	21.1
388607 2007 RB_{284}	16.7	X	148.81714	341.21847	189.46589	14.53753	0.0664066	0.22125579	2.7073201	20	9 1.8	20.8
388608 2007 RD_{287}	17.0	X	7.81921	299.74770	20.91735	14.44941	0.1678796	0.22518189	2.6757595	20	10 5.2	19.8
388609 2007 RG_{296}	17.1	X	20.75036	218.70532	73.95734	3.79709	0.0966596	0.22064866	2.7122841	20	9 7.7	20.4
388610 2007 RC_{300}	16.5	X	122.47787	137.32176	60.00238	5.95396	0.0550197	0.21965696	2.7204416	20	9 10.9	20.4
388611 2007 RL_{302}	16.8	X	240.07500	19.54164	14.50424	4.86108	0.1748765	0.21197031	2.7858177	20	6 10.8	21.1
388612 2007 RM_{308}	17.8	X	22.94270	153.61906	178.71416	1.96401	0.1003642	0.23369763	2.6103566	20	11 5.6	21.0
388613 2007 RX_{314}	16.3	X	160.83754	192.77537	352.71074	14.66601	0.0377171	0.23061936	2.6335336	20	10 4.9	20.1
388614 2007 SE_{5}	17.4	X	274.96452	9.73651	17.60090	23.44070	0.0249048	0.37372435	1.9088353	20	9 9.3	19.6
388615 2007 SO_{5}	16.5	X	291.89716	193.81353	175.89169	10.85506	0.1155243	0.21935317	2.7229527	20	7 22.4	20.0
388616 2007 SL_{19}	16.9	X	160.86905	108.51490	18.60051	13.09219	0.1951754	0.21077414	2.7963476	20	7 29.1	21.8
388617 2007 TO_{7}	16.8	X	161.22272	159.18942	293.98772	2.43165	0.1279369	0.20328360	2.8646253	20	6 10.9	21.2
388618 2007 TS_{18}	17.1	X	334.15687	300.71336	17.10967	22.02830	0.0808872	0.36967507	1.9227491	20	8 28.5	19.1
388619 2007 TT_{20}	16.6	X	89.87275	250.55938	14.06335	13.87777	0.1670052	0.23189712	2.6238509	20	11 3.7	20.8
388620 2007 TQ_{22}	16.1	X	350.57745	296.25754	36.40418	10.41090	0.0640407	0.22262386	2.6962174	20	9 15.7	19.5
388621 2007 TN_{28}	16.8	X	295.82178	147.30956	223.24090	2.06655	0.0849147	0.21631917	2.7483543	20	8 4.1	20.2
388622 2007 TO_{37}	16.7	X	297.69133	353.54926	22.33187	4.98580	0.0618189	0.22031589	2.7150146	20	8 20.9	20.1
388623 2007 TA_{44}	16.3	X	291.77975	318.12094	46.58724	6.37964	0.0553781	0.21201628	2.7854150	20	7 27.6	20.0
388624 2007 TH_{50}	16.3	X	338.74698	309.61723	18.64000	13.82886	0.0979499	0.21869209	2.7284374	20	8 22.6	19.7
388625 2007 TQ_{52}	16.8	X	331.76625	125.50715	216.17738	5.17482	0.0724771	0.21829273	2.7317642	20	8 20.9	20.1
388626 2007 TB_{60}	16.2	X	174.95273	103.53142	27.80111	14.72372	0.0839348	0.21247332	2.7814192	20	8 20.3	20.7
388627 2007 TS_{65}	17.5	X	92.85636	276.17003	200.14667	22.99649	0.1612644	0.34832591	2.0005321	20	4 26.7	19.4
388628 2007 TA_{67}	16.3	X	51.93313	268.10719	202.78458	9.68002	0.0736092	0.18501692	3.0502007	20	2 15.2	20.4
388629 2007 TL_{69}	17.1	X	214.53978	189.57858	213.43692	1.38274	0.0690634	0.20314842	2.8658960	20	6 4.8	21.3
388630 2007 TH_{73}	16.9	X	264.12872	300.63390	78.89839	1.56159	0.0841641	0.21117553	2.7928031	20	7 2.7	20.6
388631 2007 TM_{88}	16.9	X	153.12452	258.64766	167.20946	4.21272	0.3009694	0.19268344	2.9687465	20	5 9.6	22.3
388632 2007 TO_{89}	16.7	X	38.82976	172.17569	104.63867	4.13154	0.0862235	0.21832150	2.7315241	20	9 11.4	20.1
388633 2007 TQ_{102}	16.7	X	297.15519	298.39085	69.04460	5.12781	0.0835817	0.21408510	2.7674413	20	8 4.3	20.2
388634 2007 TE_{103}	16.3	X	99.30266	24.16312	59.76305	6.21458	0.1233748	0.18489286	3.0515650	20	3 28.4	20.6
388635 2007 TM_{113}	15.6	X	77.98688	272.75232	188.25133	23.50093	0.3745068	0.18119226	3.0929742	20	4 27.9	20.2
388636 2007 TG_{118}	17.1	X	275.44289	194.32693	181.58868	5.78598	0.0580413	0.21328597	2.7743497	20	7 16.2	20.9
388637 2007 TE_{119}	17.0	X	138.32147	3.02470	85.70826	2.48960	0.2168292	0.19284800	2.9670575	20	5 20.3	22.0
388638 2007 TR_{131}	16.4	X	139.13887	15.03396	36.84150	10.59867	0.1058379	0.18925694	3.0044721	20	3 31.5	21.0
388639 2007 TJ_{141}	16.0	X	273.80170	335.83097	53.11115	7.14058	0.0787519	0.21375550	2.7702854	20	7 31.9	19.7
388640 2007 TS_{151}	17.0	X	307.61446	100.69336	256.66945	3.67826	0.1749241	0.21997386	2.7178282	20	7 23.3	19.9

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Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
	m		°	°	°	°		°				
388641 2007 TU_{154}	16.6	X	298.28476	34.73767	350.46622	4.07368	0.1075952	0.22106480	2.7088793	20	8 27.5	19.9
388642 2007 TG_{163}	17.0	X	315.18947	123.58659	219.28612	2.56850	0.2058387	0.21789482	2.7350889	20	7 11.9	19.7
388643 2007 TY_{164}	16.3	X	186.33448	67.98141	21.26144	9.16658	0.1232630	0.20867155	2.8151004	20	7 1.6	20.8
388644 2007 TD_{169}	16.6	X	96.67043	45.91010	241.44276	5.30911	0.3088382	0.24207524	2.5497786	20	12 19.7	21.1
388645 2007 TH_{174}	17.1	X	237.86852	99.40239	334.04739	1.78987	0.0542209	0.21614676	2.7498155	20	8 14.6	20.9
388646 2007 TT_{177}	16.2	X	92.20078	332.19435	58.05028	4.27057	0.1806231	0.17546771	3.1598847	20	1 21.8	20.6
388647 2007 TB_{193}	16.8	X	326.96992	269.65171	79.63447	3.62667	0.0965387	0.22018401	2.7160986	20	8 27.1	19.9
388648 2007 TJ_{199}	16.9	X	92.11368	213.67692	340.96795	1.88519	0.0516429	0.21104190	2.7939819	20	7 27.8	20.8
388649 2007 TK_{235}	16.9	X	253.37463	2.64266	43.06688	4.82876	0.0655307	0.21450932	2.7637915	20	7 28.2	20.8
388650 2007 TU_{245}	16.6	X	172.03955	159.58838	332.85877	10.73432	0.0231535	0.22279030	2.6948744	20	8 14.5	20.3
388651 2007 TP_{248}	16.4	X	165.68777	227.37425	167.86849	5.56619	0.1381199	0.19077813	2.9884798	20	4 6.9	21.1
388652 2007 TP_{253}	16.6	X	77.93048	284.56388	146.73356	1.43770	0.1817817	0.18055052	3.1002988	20	2 20.5	20.7
388653 2007 TS_{253}	17.3	X	312.25025	156.87904	190.42421	6.19151	0.0450033	0.21649634	2.7468547	20	7 31.6	20.8
388654 2007 TY_{260}	16.0	X	102.60832	207.63283	45.81404	13.01977	0.2134830	0.22909541	2.6451996	20	11 8.3	20.2
388655 2007 TR_{265}	17.1	X	315.68814	27.44309	339.35863	5.59534	0.0305043	0.22175884	2.7032244	20	9 4.8	20.6
388656 2007 TK_{269}	16.0	X	172.06253	68.66800	32.14070	15.39190	0.1150333	0.20628330	2.8367866	20	7 1.7	20.7
388657 2007 TE_{270}	16.5	X	336.40976	83.03230	244.32267	5.61241	0.0700875	0.21624000	2.7490250	20	8 7.9	20.0
388658 2007 TA_{280}	16.9	X	77.40502	330.06692	335.85464	2.66178	0.2015564	0.23755813	2.5819993	20	12 19.3	20.9
388659 2007 TZ_{287}	16.1	X	256.31205	296.97616	80.48361	10.05583	0.1696245	0.21142624	2.7905949	20	6 8.3	20.3
388660 2007 TF_{290}	15.9	X	110.63989	281.36167	89.72118	11.91368	0.2904845	0.17964189	3.1107442	20	2 3.8	20.7
388661 2007 TS_{327}	16.5	X	311.86372	330.65724	7.90216	9.24862	0.1553100	0.21440321	2.7647033	20	7 8.7	19.9
388662 2007 TO_{328}	16.4	X	202.61862	359.59548	19.51059	11.11117	0.1318360	0.19720021	2.9232400	20	4 19.1	21.1
388663 2007 TX_{334}	16.6	X	71.21892	78.76330	39.49465	8.50844	0.0945831	0.18501593	3.0502115	20	3 30.8	20.7
388664 2007 TG_{337}	18.0	X	272.92071	14.76874	10.92269	19.89069	0.0696692	0.37577768	1.9018754	20	8 24.1	20.0
388665 2007 TF_{354}	15.9	X	318.38348	267.16475	72.46911	13.20152	0.2211376	0.21878000	2.7277065	20	7 12.7	18.7
388666 2007 TT_{369}	17.7	X	170.54432	113.64854	333.24829	20.38164	0.0188883	0.37085746	1.9186601	20	6 13.6	20.2
388667 2007 TY_{370}	15.8	X	192.34554	290.86017	68.63509	11.80172	0.1340940	0.19134765	2.9825469	20	3 24.8	20.8
388668 2007 TP_{373}	16.6	X	32.97318	340.44696	325.68253	12.37594	0.2862445	0.22957961	2.6414791	20	11 7.3	20.3
388669 2007 TL_{383}	17.1	X	288.34946	132.53095	205.79006	1.44818	0.0789129	0.20707315	2.8295684	20	6 11.0	20.7
388670 2007 TZ_{397}	16.2	X	141.49140	9.18049	16.44678	10.31737	0.1123219	0.18508201	3.0494855	20	3 3.8	20.9
388671 2007 TP_{399}	16.6	X	272.71521	29.29871	6.88189	6.02535	0.0718174	0.21451715	2.7637242	20	8 10.3	20.2
388672 2007 TW_{418}	16.7	X	278.86677	85.30646	294.13987	3.29901	0.0836395	0.21203732	2.7852307	20	7 22.8	20.2
388673 2007 TV_{426}	16.6	X	109.19433	238.53870	240.97793	10.10681	0.0496799	0.19508873	2.9442946	20	5 10.2	20.8
388674 2007 TH_{435}	16.8	X	48.94608	315.19014	140.95118	1.54065	0.1664861	0.17543636	3.1602612	20	2 5.5	20.4
388675 2007 TZ_{444}	16.0	X	340.16227	246.95409	57.36011	14.76039	0.0093578	0.21028876	2.8006490	20	7 18.4	20.0
388676 2007 TE_{447}	16.6	X	215.99168	285.95504	85.00478	3.13881	0.0946839	0.19617751	2.9333907	20	4 26.3	21.0
388677 2007 TJ_{448}	17.0	X	359.15425	305.23849	47.52298	6.38223	0.0542779	0.22533262	2.6745661	20	10 21.9	20.2
388678 2007 UH_{10}	15.7	X	36.40809	144.28780	177.08730	32.26049	0.1888500	0.23174209	2.6250209	20	11 25.0	19.9
388679 2007 UG_{12}	16.0	X	128.60403	185.60064	16.99734	16.20393	0.1429718	0.22250356	2.6971892	20	9 28.9	20.2
388680 2007 UV_{49}	16.3	X	175.47705	302.00655	73.75896	9.05417	0.1868920	0.18904401	3.0067278	20	3 28.6	21.4
388681 2007 UX_{56}	17.1	X	104.23626	65.79645	60.62525	2.98238	0.0302302	0.19668614	2.9283313	20	5 10.7	21.2
388682 2007 UX_{60}	16.5	X	129.55606	328.26690	72.22033	2.63016	0.2104173	0.18349096	3.0670882	20	3 16.9	21.3
388683 2007 UN_{78}	16.7	X	118.23648	106.86939	39.59385	14.05707	0.1172301	0.20243481	2.8726271	20	7 3.8	21.2
388684 2007 UN_{82}	17.1	X	277.47749	77.30654	274.59449	1.33310	0.0616596	0.20652401	2.8345820	20	6 16.8	20.9
388685 2007 UM_{83}	16.9	X	276.69799	320.01618	44.76704	3.66407	0.1214211	0.20917242	2.8106047	20	6 23.9	20.6
388686 2007 UH_{85}	16.4	X	44.56202	206.30079	59.71869	5.42645	0.0772815	0.21500646	2.7595295	20	9 4.2	20.0
388687 2007 UT_{92}	16.9	X	200.23295	76.29852	321.10904	1.12020	0.0689043	0.19953671	2.9003751	20	5 12.0	21.1
388688 2007 UP_{103}	16.1	X	130.28965	331.87977	69.64615	11.52977	0.0837149	0.18161439	3.0881796	20	3 10.8	20.8
388689 2007 UG_{110}	17.2	X	92.26995	228.64920	45.49086	4.63004	0.1661409	0.23246762	2.6195563	20	11 20.9	21.2
388690 2007 UO_{126}	15.9	X	142.20371	324.83509	89.57228	6.42993	0.1614432	0.18206594	3.0830714	20	4 11.7	20.8
388691 2007 UH_{129}	16.6	X	315.25350	280.56162	64.87715	6.12107	0.0901100	0.21202379	2.7853492	20	8 1.4	20.0
388692 2007 UN_{130}	17.0	X	177.11861	14.95744	97.60490	3.21614	0.0399733	0.21263652	2.7799958	20	7 23.3	20.9
388693 2007 UE_{133}	16.4	X	105.30101	223.59049	252.47471	8.87774	0.0484633	0.19184229	2.9774180	20	4 29.7	20.7
388694 2007 UR_{134}	16.5	X	89.50802	240.69844	221.98924	5.85122	0.1378474	0.18456865	3.0551375	20	4 6.8	20.8
388695 2007 UY_{136}	16.1	X	122.91779	218.30942	200.58410	12.44500	0.1863421	0.18368881	3.0648855	20	3 27.7	20.9
388696 2007 UH_{139}	15.9	X	94.85813	40.67863	26.71591	10.74796	0.1487963	0.17960161	3.1112094	20	3 8.3	20.3
388697 2007 UX_{140}	16.4	X	86.29295	42.57928	75.24236	10.49765	0.1312790	0.18494849	3.0509530	20	4 25.7	20.7
388698 2007 VJ_{7}	17.0	X	28.85644	153.62463	130.57217	2.33096	0.2160621	0.22470108	2.6795751	20	9 26.9	20.1
388699 2007 VZ_{33}	16.3	X	88.33696	211.37392	277.16948	7.65759	0.0417894	0.18947819	3.0021328	20	4 21.9	20.5
388700 2007 VF_{35}	16.0	X	95.29790	290.64886	101.31691	3.98236	0.1248741	0.17376033	3.1805505	20	1 19.5	20.4
388701 2007 VU_{41}	17.0	X	191.79823	292.09801	147.80862	2.59091	0.0422359	0.20525807	2.8462249	20	6 27.4	21.1
388702 2007 VO_{48}	16.6	X	295.24410	30.78573	342.02143	4.08025	0.0860031	0.21382563	2.7696797	20	8 7.6	20.1
388703 2007 VH_{52}	16.0	X	105.64849	41.93265	38.64718	10.89197	0.0952552	0.18476944	3.0529237	20	3 28.8	20.4
388704 2007 VO_{63}	15.8	X	78.91615	51.83194	66.24984	12.19355	0.0855819	0.18449065	3.0559985	20	4 11.5	20.1
388705 2007 VM_{64}	17.2	X	131.30139	86.48401	320.72071	1.76133	0.2510244	0.18318394	3.0705142	20	3 27.9	22.3
388706 2007 VO_{64}	16.0	X	137.48381	186.51835	257.56278	9.06401	0.0601096	0.18958017	3.0010560	20	4 29.1	20.5
388707 2007 VR_{80}	16.8	X	239.07934	1.97517	34.72859	8.98133	0.1347558	0.21006019	2.8026802	20	6 17.2	21.1
388708 2007 VV_{84}	16.5	X	289.83361	234.65105	143.05483	14.54548	0.2228637	0.21783465	2.7355926	20	7 14.1	20.0
388709 2007 VO_{99}	15.9	X	301.62187	330.29366	23.48281	6.72737	0.0639510	0.20954538	2.8072687	20	7 25.9	19.6
388710 2007 VU_{100}	16.3	X	87.89678	230.56076	265.68778	6.38483	0.1228328	0.18849637	3.0125486	20	5 15.2	20.5
388711 2007 VS_{109}	16.5	X	184.31223	161.92237	240.31413	9.90163	0.1373528	0.19466244	2.9485915	20	4 30.3	21.4
388712 2007 VN_{110}	17.5	X	196.54007	163.16264	268.88364	0.79705	0.0742738	0.20174646	2.8791576	20	6 21.3	21.6
388713 2007 VE_{111}	17.0	X	30.37307	252.06843	65.33413	3.74630	0.1975546	0.22445310	2.6815485	20	11 9.3	20.2
388714 2007 VC_{115}	16.9	X	195.56368	310.20087	111.10133	3.44044	0.0502453	0.19862142	2.9092787	20	6 7.6	21.2
388715 2007 VO_{130}	16.8	X	175.12130	293.55618	193.91512	4.22592	0.0134867	0.21323126	2.7748241	20	8 8.5	20.8
388716 2007 VH_{139}	17.1	X	313.65608	196.96529	161.20233	3.24925	0.0950880	0.21596658	2.7513448	20	8 14.3	20.3
388717 2007 VO_{143}	18.1	X	204.39500	16.82437	115.39572	3.19686	0.0750134	0.29476482	2.2360711	20	9 29.6	20.8
388718 2007 VU_{143}	16.5	X	160.18181	315.60849	76.56049	9.48861	0.1373187	0.18766557	3.0214331	20	4 1.9	21.4
388719 2007 VE_{147}	16.4	X	232.33106	333.66704	96.99728	5.48611	0.0402589	0.20791541	2.8219215	20	8 5.9	20.3
388720 2007 VD_{158}	16.6	X	325.79106	258.92733	83.63536	7.44873	0.0637187	0.21350405	2.7724601	20	8 17.6	20.1

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Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
	m		°	°	°	°		°				
388721 2007 VW_{158}	16.1	X	41.18599	98.19853	77.85314	11.88496	0.0376248	0.19102202	2.9859355	20	4 26.9	20.2
388722 2007 VX_{167}	15.8	X	174.52646	303.71642	58.37805	12.88444	0.2220960	0.18539419	3.0460612	20	3 15.4	21.2
388723 2007 VQ_{175}	17.0	X	319.34778	196.67528	139.80966	2.50065	0.0814359	0.21317222	2.7753365	20	7 25.3	20.3
388724 2007 VX_{191}	16.5	X	154.57712	313.03356	89.23715	2.26767	0.1818131	0.18194993	3.0843817	20	4 7.8	21.6
388725 2007 VJ_{192}	16.6	X	142.52083	53.83344	15.34225	0.72492	0.1816308	0.18388946	3.0626556	20	4 27.8	21.6
388726 2007 VS_{204}	17.1	X	73.06473	257.71208	39.37558	2.45769	0.1140186	0.23095233	2.6310018	20	11 24.2	20.9
388727 2007 VH_{217}	17.1	X	299.57274	335.82686	354.21528	1.53053	0.0692561	0.20368850	2.8608277	20	6 17.1	20.9
388728 2007 VC_{223}	16.4	X	30.91557	32.05953	111.64651	2.31564	0.1100907	0.18458485	3.0549587	20	3 2.9	19.9
388729 2007 VQ_{234}	16.6	X	295.62112	143.14272	223.55133	3.99487	0.1724111	0.21251484	2.7810569	20	7 15.5	20.0
388730 2007 VF_{237}	16.8	X	358.06229	69.91871	231.70221	4.89254	0.0213994	0.21114076	2.7931097	20	8 4.9	20.6
388731 2007 VY_{242}	17.4	X	205.59972	303.71365	126.09180	2.98598	0.0546223	0.20680197	2.8320414	20	6 30.0	21.3
388732 2007 VX_{250}	16.2	X	133.61451	54.18855	352.27298	8.34240	0.1318493	0.18630294	3.0361478	20	3 18.3	20.8
388733 2007 VH_{254}	16.0	X	163.47982	221.64224	196.35006	9.35416	0.1127800	0.19288843	2.9666428	20	5 1.2	20.6
388734 2007 VF_{261}	16.5	X	346.51496	320.29737	353.81382	4.29863	0.1229698	0.21387738	2.7692328	20	8 9.5	19.4
388735 2007 VU_{262}	16.3	X	115.62134	108.66944	72.23367	5.14075	0.1371659	0.21196715	2.7858454	20	8 18.1	20.6
388736 2007 VA_{267}	16.1	X	42.32687	304.29360	182.79128	16.95275	0.1932060	0.17409975	3.1764154	20	3 6.5	19.7
388737 2007 VS_{270}	16.5	X	231.18471	11.14023	63.15698	5.29628	0.0488346	0.20979568	2.8050354	20	8 9.2	20.4
388738 2007 VK_{281}	16.7	X	67.53505	355.50249	252.66208	2.11133	0.0436575	0.21295323	2.7772388	20	9 2.2	20.4
388739 2007 VC_{291}	16.6	X	217.17136	248.86392	89.80207	4.74287	0.0512174	0.18634540	3.0356866	20	3 23.3	21.1
388740 2007 VY_{306}	15.8	X	58.23249	103.19032	81.29654	9.89325	0.0490377	0.18903202	3.0068548	20	5 29.0	19.9
388741 2007 VH_{308}	16.0	X	87.56379	26.78184	94.57476	10.35152	0.1318772	0.18113966	3.0935728	20	5 2.3	20.4
388742 2007 VU_{308}	16.4	X	33.94350	226.83116	65.02382	9.64446	0.2021405	0.22070198	2.7118473	20	10 15.3	19.8
388743 2007 VX_{309}	16.1	X	117.63864	18.74275	93.60594	11.25775	0.0792759	0.18490885	3.0513890	20	5 18.4	20.6
388744 2007 VV_{318}	16.3	X	253.70869	261.18616	29.20179	12.40320	0.0526318	0.18667354	3.0321281	20	3 8.4	20.8
388745 2007 VS_{331}	16.2	X	45.42105	78.26516	87.63824	10.28023	0.0376891	0.18808528	3.0169366	20	4 20.1	20.4
388746 2007 VO_{334}	16.6	X	14.26064	210.37523	69.02523	10.07779	0.1266505	0.20934356	2.8090727	20	8 12.8	20.0
388747 2007 VQ_{334}	16.5	X	346.37935	231.30894	80.63434	5.31482	0.0978692	0.20966262	2.8062221	20	8 5.8	19.8
388748 2007 VM_{335}	15.8	X	228.65266	246.80002	104.52376	10.73433	0.0686156	0.18286209	3.0741161	20	4 22.0	20.5
388749 2007 WU	16.1	X	171.37500	311.69333	60.79225	11.45304	0.1200273	0.18709713	3.0275498	20	3 20.4	21.0
388750 2007 WS_{3}	15.2	X	118.73836	270.03170	126.72213	26.40859	0.3888327	0.17411626	3.1762145	20	3 25.6	21.0
388751 2007 WO_{5}	16.4	X	216.88851	333.24338	93.10603	2.19638	0.1087257	0.20413454	2.8566589	20	7 4.2	20.7
388752 2007 WE_{6}	15.9	X	184.00428	325.32099	48.97817	17.10189	0.2185369	0.19035856	2.9928694	20	4 5.3	21.2
388753 2007 WN_{22}	16.5	X	8.80866	279.11516	20.56607	9.43339	0.1298769	0.21666992	2.7453874	20	9 2.8	19.6
388754 2007 WG_{23}	16.7	X	183.24254	331.35953	98.24379	3.42883	0.0935686	0.20030723	2.8929325	20	6 3.5	21.1
388755 2007 WU_{28}	16.6	X	301.59694	6.57396	328.71622	5.16439	0.0803644	0.20609301	2.8385325	20	6 26.2	20.3
388756 2007 WL_{44}	16.4	X	140.98153	95.58897	337.52639	8.09750	0.1818947	0.19065305	2.9897867	20	4 27.8	21.4
388757 2007 WT_{55}	16.1	X	125.78369	351.54691	77.66210	8.37289	0.1964732	0.18532791	3.0467875	20	4 17.2	21.0
388758 2007 XM_{19}	15.9	X	124.77674	49.91892	51.67469	13.81365	0.1461712	0.19081013	2.9881457	20	5 16.8	20.5
388759 2007 XD_{21}	16.8	X	104.61972	64.42334	48.53559	8.18446	0.2156015	0.18707087	3.0278332	20	5 17.7	21.4
388760 2007 XC_{29}	16.2	X	333.68285	259.27236	84.27310	13.21926	0.3490568	0.22285247	2.6943732	20	8 24.6	17.8
388761 2007 XX_{29}	16.1	X	142.40347	305.33217	131.68874	4.74368	0.1336739	0.19020093	2.9945228	20	5 5.5	20.8
388762 2007 XF_{49}	16.7	X	98.65857	15.34438	88.77142	2.23207	0.1446160	0.18064395	3.0992298	20	4 22.8	21.0
388763 2007 XD_{50}	16.0	X	223.86470	287.11736	105.92633	10.40821	0.0734228	0.19301419	2.9653540	20	6 3.7	20.4
388764 2007 XQ_{53}	16.1	X	185.86029	307.89437	90.68555	6.35191	0.1309116	0.18547243	3.0452046	20	4 30.8	21.1
388765 2007 XC_{54}	16.3	X	65.88655	206.14462	280.26291	6.02616	0.2107903	0.17633986	3.1494573	20	4 14.8	20.4
388766 2007 XT_{55}	15.5	X	122.98423	356.66144	81.28088	12.85462	0.0976255	0.18139773	3.0906381	20	4 17.4	20.2
388767 2007 XV_{58}	16.0	X	221.94172	275.36389	107.39972	9.27052	0.0658118	0.18868404	3.0105506	20	5 21.0	20.5
388768 2007 YO_{5}	16.4	X	58.21760	100.16304	69.54398	10.60412	0.1881718	0.18597471	3.0397191	20	5 29.3	20.3
388769 2007 YT_{23}	16.7	X	116.89592	137.69309	314.19999	4.18236	0.1233951	0.18249126	3.0782792	20	4 22.8	21.3
388770 2007 YX_{27}	16.1	X	286.55604	181.98502	80.91563	10.12649	0.0176968	0.17557043	3.1586521	20	3 19.6	20.7
388771 2007 YY_{30}	16.8	X	158.30741	335.02944	84.31244	4.55924	0.1240020	0.18908809	3.0062605	20	4 28.7	21.6
388772 2007 YK_{35}	15.9	X	130.30893	3.20998	98.93334	10.47343	0.0446977	0.18659766	3.0329501	20	5 16.7	20.4
388773 2007 YR_{39}	15.9	X	93.91412	199.65919	306.14107	10.77557	0.0852660	0.18714531	3.0270302	20	5 29.2	20.4
388774 2007 YF_{45}	16.0	X	176.78564	292.56914	126.57526	12.33939	0.1297006	0.18671017	3.0317315	20	5 18.8	21.0
388775 2007 YF_{52}	15.9	X	133.52509	288.99533	152.51400	15.37239	0.2425537	0.18879984	3.0093196	20	5 13.3	21.2
388776 2007 YX_{55}	15.9	X	64.09958	163.14064	337.39762	11.88520	0.0797945	0.17560880	3.1581921	20	4 8.9	20.4
388777 2007 YW_{58}	15.7	X	86.97552	141.71427	320.59819	16.57469	0.1885719	0.17657414	3.1466708	20	4 3.1	20.4
388778 2007 YE_{64}	16.3	X	33.23554	202.77850	349.56197	2.82519	0.1193463	0.17862350	3.1225565	20	5 9.0	20.2
388779 2007 YA_{72}	15.6	X	92.49679	192.84256	341.08086	10.27675	0.0361481	0.19300481	2.9654502	20	6 28.3	19.9
388780 2008 AQ_{22}	15.9	X	110.49330	305.13619	123.94657	10.08188	0.1270509	0.17111294	3.2132719	20	3 25.9	20.7
388781 2008 AC_{25}	15.5	X	307.82481	138.45273	127.73036	19.49823	0.0588213	0.17529821	3.1619213	20	4 16.4	20.2
388782 2008 AM_{30}	15.9	X	22.19803	95.66705	98.61676	16.72003	0.1776795	0.17618239	3.1513337	20	5 5.7	19.7
388783 2008 AZ_{32}	16.2	X	98.00613	167.98884	269.07744	8.28201	0.0940466	0.17491758	3.1665067	20	3 7.9	20.8
388784 2008 AT_{34}	15.7	X	328.03387	135.55414	115.33416	13.89007	0.0946478	0.17853576	3.1235796	20	4 19.1	20.0
388785 2008 AQ_{40}	15.9	X	356.46726	94.80294	121.42410	11.53453	0.0322691	0.17572077	3.1568503	20	4 18.7	20.4
388786 2008 AL_{42}	16.3	X	161.80061	69.66999	320.71733	14.86392	0.1199166	0.17565820	3.1575999	20	3 20.7	21.5
388787 2008 AM_{47}	15.8	X	166.68251	83.84020	286.68002	8.71603	0.0718198	0.17679238	3.1440807	20	3 2.1	20.6
388788 2008 AY_{77}	16.5	X	59.49682	88.07221	56.11772	10.55391	0.1266805	0.17752402	3.1354362	20	4 21.4	20.5
388789 2008 AA_{82}	16.1	X	265.01238	217.46127	140.51562	12.17812	0.0331283	0.19184605	2.9773792	20	6 13.9	20.4
388790 2008 AD_{87}	15.9	X	52.81621	219.18247	292.67176	9.80566	0.0799646	0.17883348	3.1201118	20	4 7.4	20.2
388791 2008 AA_{97}	16.2	X	259.53687	301.80843	347.36509	8.89644	0.0619852	0.17229688	3.1985350	20	3 8.4	20.9
388792 2008 AT_{97}	16.4	X	282.49356	182.10954	107.05278	10.95824	0.0867782	0.17786996	3.1313695	20	4 6.1	21.0
388793 2008 AW_{105}	16.1	X	158.70298	333.14117	91.11665	8.61898	0.0786057	0.18595993	3.0398802	20	5 4.3	20.7
388794 2008 AL_{114}	16.2	X	331.01741	113.33836	160.55986	9.54364	0.0786406	0.17947538	3.1126680	20	5 20.8	20.4
388795 2008 AB_{117}	16.1	X	140.29289	106.33420	289.28131	8.31826	0.1994119	0.17777656	3.1324662	20	3 14.8	21.3
388796 2008 AY_{128}	16.6	X	357.03996	238.67402	331.08133	7.81096	0.1667283	0.17157210	3.2075365	20	3 28.3	20.3
388797 2008 AE_{138}	15.6	X	102.94472	345.27603	143.96312	11.56114	0.0669362	0.18475650	3.0530662	20	5 21.2	20.1
388798 2008 BU_{2}	18.3	X	199.94517	212.85183	115.31445	38.41922	0.7245803	0.65959884	1.3070217	20	2 3.4	20.8
388799 2008 BT_{4}	16.5	X	113.92874	97.39127	335.98152	8.65976	0.0802560	0.17467093	3.1694869	20	3 22.3	21.0
388800 2008 BY_{5}	16.1	X	65.76641	4.84158	128.00389	11.00654	0.0684619	0.17466569	3.1695502	20	4 10.1	20.5

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
	m		°	°	°	°		°				
388801 2008 BK_7	16.1	X	0.41623	273.09994	273.64002	2.76848	0.0764815	0.16943406	3.2344633	20	3 10.3	20.4
388802 2008 BA_{11}	15.6	X	295.66662	209.90986	112.04566	10.82587	0.0687778	0.19299145	2.9655870	20	6 2.6	19.6
388803 2008 BJ_{14}	16.1	X	0.97408	235.04394	0.95705	14.70325	0.1547319	0.17873098	3.1213046	20	5 7.7	19.9
388804 2008 BQ_{14}	16.5	X	18.85530	216.61901	320.46739	5.02124	0.1021439	0.17402304	3.1773487	20	3 24.7	20.4
388805 2008 BR_{21}	15.8	X	347.28753	102.38035	154.04484	14.10784	0.1607211	0.17651908	3.1473252	20	5 19.7	19.7
388806 2008 BT_{24}	15.4	X	45.98694	22.16886	139.39696	27.93895	0.0460994	0.17625776	3.1504352	20	4 21.0	20.2
388807 2008 BY_{24}	16.1	X	19.37750	257.45898	279.77270	8.26681	0.1950561	0.17381950	3.1798286	20	3 26.1	19.7
388808 2008 BC_{28}	16.7	X	26.02672	56.83329	109.52635	2.67771	0.1190888	0.17191819	3.2032303	20	3 26.8	20.5
388809 2008 BX_{39}	15.7	X	92.71391	30.65588	102.27245	17.51297	0.0503230	0.18152305	3.0892154	20	5 13.9	20.3
388810 2008 BN_{41}	15.9	X	94.01218	149.83367	321.44248	18.23904	0.1791101	0.17669075	3.1452862	20	4 20.9	20.9
388811 2008 BE_{48}	16.2	X	326.87248	224.92315	46.58928	7.22745	0.0629810	0.17980277	3.1088884	20	5 10.4	20.4
388812 2008 BP_{52}	15.7	X	162.00671	267.74738	153.32742	18.70994	0.1072912	0.18172733	3.0868999	20	5 7.7	20.8
388813 2008 CF_1	15.5	X	61.60505	29.54350	131.36845	14.01754	0.0243629	0.17669069	3.1452869	20	5 4.9	20.1
388814 2008 CP_9	16.0	X	109.16621	118.39017	324.35915	14.47790	0.0665605	0.17245116	3.1966271	20	3 22.6	20.7
388815 2008 CB_{12}	16.2	X	58.70893	152.42438	344.57646	11.33385	0.0345943	0.17093493	3.2155023	20	3 25.5	20.7
388816 2008 CB_{30}	16.1	X	160.50574	289.80080	116.47385	6.37597	0.0710732	0.17698088	3.1418478	20	4 14.3	20.9
388817 2008 CR_{65}	15.8	X	339.67326	82.14346	148.26934	16.09892	0.0719600	0.17383678	3.1796179	20	4 10.5	20.2
388818 2008 CO_{76}	16.1	X	98.58345	328.07573	117.67342	9.79456	0.1289678	0.17408938	3.1765415	20	4 1.9	20.8
388819 2008 CS_{76}	15.4	X	91.79681	37.80325	79.47231	10.24189	0.0574248	0.17725904	3.1385601	20	4 22.1	19.9
388820 2008 CX_{92}	16.1	X	82.12244	134.66717	358.35054	3.15361	0.1285725	0.17431279	3.1738267	20	5 4.9	20.5
388821 2008 CM_{101}	16.4	X	134.58659	279.53704	150.18126	11.61775	0.1212050	0.17824052	3.1270279	20	4 20.1	21.3
388822 2008 CS_{103}	16.0	X	88.40501	315.57723	178.76623	11.69356	0.0512684	0.17565296	3.1576627	20	5 6.6	20.5
388823 2008 CM_{106}	16.1	X	308.28584	288.08731	1.21136	9.52189	0.2063673	0.17749878	3.1357335	20	4 14.3	20.2
388824 2008 CO_{122}	15.7	X	239.98961	339.00669	342.30377	16.10556	0.1153898	0.17018248	3.2249735	20	3 17.5	20.7
388825 2008 CM_{135}	15.7	X	219.64016	22.08126	302.83949	5.86031	0.1086943	0.16992869	3.2281837	20	3 3.5	20.7
388826 2008 CU_{154}	16.0	X	1.02553	173.49725	106.63103	6.50209	0.1154955	0.18394562	3.0620322	20	7 14.0	19.5
388827 2008 CJ_{180}	15.7	X	117.87732	281.46574	166.37394	25.39251	0.3016878	0.17988651	3.1079235	20	5 13.0	21.3
388828 2008 CD_{207}	16.3	X	157.70494	284.58219	158.69576	7.53775	0.1035935	0.18245689	3.0786657	20	5 26.8	21.2
388829 2008 CD_{211}	15.5	X	328.93800	262.28752	325.02887	24.56459	0.2260640	0.16920358	3.2373999	20	2 23.3	19.5
388830 2008 DO_1	16.0	X	12.56816	83.53775	140.53352	16.49880	0.1822458	0.17822065	3.1272604	20	5 25.7	19.8
388831 2008 DB_9	16.4	X	41.93047	124.11630	147.95950	10.22684	0.0525935	0.19749524	2.9203280	20	8 31.4	20.2
388832 2008 DL_9	16.1	X	278.87220	163.89438	157.81094	9.59588	0.0018987	0.18206547	3.0830766	20	5 21.4	20.5
388833 2008 DG_{12}	16.5	X	87.54639	49.94329	82.13947	2.72830	0.0364897	0.17798029	3.1300753	20	4 28.9	20.9
388834 2008 DQ_{31}	16.1	X	4.08595	221.82763	11.35008	8.70370	0.1661255	0.17410857	3.1763081	20	5 13.3	19.7
388835 2008 DK_{54}	15.7	X	31.64471	34.47418	144.32347	18.51388	0.0867508	0.17333468	3.1857553	20	4 23.6	20.1
388836 2008 DY_{60}	16.0	X	15.94066	124.91849	152.41989	11.25421	0.1709644	0.18564510	3.0433161	20	8 9.9	19.4
388837 2008 DN_{66}	15.8	X	230.27771	334.30580	337.76562	14.11132	0.0614160	0.16944935	3.2342688	20	3 3.1	20.5
388838 2008 EZ_5	19.4	X	0.93098	228.01650	15.19775	8.02284	0.5083778	0.32661331	2.0882386	20	3 11.3*	19.1
388839 2008 ES_7	18.9	X	132.78191	77.43983	356.64828	24.46855	0.0902344	0.49210319	1.5889074	20	3 20.9	19.6
388840 2008 EF_{19}	15.9	X	117.04712	76.15503	354.18921	9.17805	0.1286310	0.17547711	3.1597719	20	3 29.1	20.6
388841 2008 ES_{25}	15.8	X	20.76240	235.76696	315.83261	7.44260	0.1595671	0.17316558	3.1878289	20	4 16.7	19.6
388842 2008 EA_{73}	15.4	X	153.10846	346.35525	11.23657	9.61109	0.0553622	0.15625393	3.4138839	20	2 10.2	20.6
388843 2008 EO_{74}	15.6	X	248.42926	174.98021	167.90326	11.72091	0.1157516	0.17157514	3.2074986	20	4 26.9	20.5
388844 2008 EV_{92}	15.8	X	105.10518	25.18706	123.02480	14.48913	0.1065047	0.18064999	3.0991606	20	6 20.0	20.4
388845 2008 EC_{105}	17.3	X	198.53470	216.68917	55.30254	5.45697	0.0446729	0.22818609	2.6522224	20	—	—
388846 2008 EN_{110}	16.2	X	71.72949	168.80391	330.64594	10.16011	0.0542413	0.17519663	3.1631435	20	4 14.8	20.7
388847 2008 EY_{118}	15.8	X	26.93368	46.20204	163.70729	7.16488	0.1152022	0.17820480	3.1274457	20	5 24.5	19.7
388848 2008 FP_4	17.5	X	312.12279	172.17345	11.09413	2.23967	0.1344381	0.23064372	2.6333482	20	—	—
388849 2008 FL_{109}	17.6	X	11.05762	234.17944	162.52350	7.26575	0.1274982	0.29335281	2.2432407	20	—	—
388850 2008 FX_{113}	13.8	X	266.69144	283.36559	42.41648	10.69561	0.1721167	0.08241750	5.2294550	20	4 21.4	20.8
388851 2008 GC_{40}	15.9	X	13.24083	175.92820	23.21475	8.32379	0.0896447	0.17207488	3.2012854	20	4 15.2	19.9
388852 2008 GF_{49}	15.8	X	103.12806	280.67086	136.96348	4.59580	0.0612235	0.16016665	3.3580564	20	2 21.7	20.4
388853 2008 GR_{70}	16.2	X	330.11177	275.55034	353.60090	19.97085	0.3797760	0.16700819	3.2657094	20	3 25.4	19.8
388854 2008 GS_{85}	16.1	X	87.73676	327.20460	161.97773	10.58081	0.1330928	0.17336772	3.1853504	20	5 11.7	20.7
388855 2008 GO_{100}	16.0	X	355.68428	285.54171	43.18743	11.70504	0.1312145	0.18414013	3.0598755	20	9 16.6	19.7
388856 2008 GD_{106}	16.0	X	289.27598	79.21935	193.01489	16.36464	0.1134742	0.16046238	3.3539293	20	3 15.2	20.8
388857 2008 GG_{137}	18.0	X	176.11042	70.85980	229.47857	5.44816	0.1970124	0.29815749	2.2190763	20	—	—
388858 2008 HH_{26}	18.1	X	263.21420	113.28094	140.91565	5.14242	0.1644552	0.30836967	2.1698095	20	1 2.7	21.2
388859 2008 JU_{29}	18.7	X	263.62934	33.22562	180.64969	2.93328	0.1090606	0.30148286	2.2027285	20	—	—
388860 2008 JU_{36}	16.1	X	34.31075	130.80264	195.81797	13.77788	0.2080527	0.18578093	3.0418325	20	11 20.2	20.2
388861 2008 OJ_{15}	17.9	X	171.77133	164.72022	150.37476	7.61071	0.1443850	0.29019143	2.2595034	20	—	—
388862 2008 OU_{18}	17.7	X	185.17928	314.30330	320.40300	5.93036	0.2011227	0.28480128	2.2879231	20	—	—
388863 2008 PV_9	16.9	X	350.85633	25.80359	1.91925	8.76936	0.1914746	0.25994992	2.4315111	20	12 21.5	19.5
388864 2008 QH_1	17.5	X	210.70751	165.42606	131.92366	3.84486	0.1811817	0.29413961	2.2392386	20	1 10.6	21.1
388865 2008 QB_3	16.6	X	225.98092	329.03660	317.15475	24.35011	0.2076859	0.29756863	2.2220029	20	1 14.7	20.4
388866 2008 QB_{11}	17.5	X	208.15070	138.85738	164.17964	3.36253	0.1675641	0.29222433	2.2490121	20	1 15.0	20.9
388867 2008 QC_{13}	17.0	X	86.34068	150.34527	169.61241	5.86398	0.1202003	0.26696853	2.3887058	20	—	—
388868 2008 QH_{20}	16.5	X	265.28680	349.05841	11.41507	10.38368	0.2334521	0.23267843	2.6179738	20	5 15.9	20.5
388869 2008 QL_{36}	16.8	X	359.62611	14.48825	345.22695	6.67385	0.1569278	0.25538130	2.4604242	20	11 17.6	19.4
388870 2008 RN	17.5	X	144.11564	146.65784	136.97131	8.20060	0.1151677	0.27168043	2.3610063	20	—	—
388871 2008 RC_3	17.0	X	257.66976	181.81178	337.68404	5.87518	0.1108994	0.26555111	2.3971983	20	—	—
388872 2008 RQ_5	17.7	X	216.83796	240.58345	22.53331	3.93543	0.2317859	0.28636694	2.2795763	20	—	—
388873 2008 RC_{18}	16.7	X	175.20468	155.27651	343.25383	14.74514	0.0249654	0.24174996	2.5520652	20	8 28.9	20.2
388874 2008 RB_{21}	13.9	X	284.02290	241.00238	191.56771	20.69989	0.0642349	0.08083646	5.2974214	20	9 20.3	20.8
388875 2008 RR_{21}	18.0	X	209.62654	88.97750	200.57413	7.56191	0.2365970	0.29022581	2.2593249	20	1 1.1	22.0
388876 2008 RE_{29}	13.3	X	319.67708	39.13045	356.12603	31.05203	0.0174709	0.08266178	5.2191473	20	9 23.6	20.2
388877 2008 RN_{33}	17.4	X	267.88952	187.75259	333.23650	6.13450	0.0512018	0.26901242	2.3765913	20	—	—
388878 2008 RP_{35}	17.9	X	244.07254	263.57374	181.02018	5.42660	0.2653822	0.23835430	2.5762463	20	8 9.4	21.7
388879 2008 RE_{56}	14.3	X	294.51345	100.11390	317.75163	11.25225	0.1062981	0.08290050	5.2091231	20	9 9.3	21.0
388880 2008 RT_{62}	17.4	X	197.23067	46.01044	158.78488	5.81967	0.0757398	0.26445054	2.4038447	20	12 19.6	20.6

* The additional opposition: 8 7.8, $V = 18.4$

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
	m		°	°	°	°		°				
388881 2008 RJ_{67}	17.2	X	230.37143	18.84951	48.94800	5.07817	0.2061448	0.23308424	2.6149343	20	7 13.1	21.3
388882 2008 RB_{84}	18.2	X	236.89233	311.74903	309.35476	2.97773	0.2037167	0.29357466	2.2421104	20	—	—
388883 2008 RO_{85}	17.5	X	192.12003	32.95120	257.18676	4.05201	0.2076589	0.28718601	2.2752399	20	—	—
388884 2008 RE_{91}	17.5	X	225.33429	262.80659	343.60223	4.20667	0.1101409	0.28546965	2.2843506	20	—	—
388885 2008 RG_{94}	17.2	X	85.00995	331.13129	1.77787	6.35398	0.1573654	0.26666798	2.3905003	20	—	—
388886 2008 RG_{103}	17.1	X	242.09774	75.53281	332.62558	12.01767	0.2603366	0.23191255	2.6237345	20	6 24.1	21.5
388887 2008 RL_{110}	14.0	X	297.57456	232.61822	193.02569	9.42099	0.0784198	0.08122022	5.2807218	20	9 27.9	20.8
388888 2008 RH_{120}	16.3	X	265.38239	316.78698	72.86589	8.35162	0.1399668	0.22966624	2.6408148	20	7 10.9	19.8
388889 2008 RZ_{123}	14.1	X	7.37641	141.64297	202.45853	3.93035	0.0520657	0.08217716	5.2396464	20	9 25.4	20.8
388890 2008 RL_{128}	17.4	X	263.02902	252.84288	175.92449	14.83279	0.1146829	0.24513020	2.5285497	20	9 3.5	20.6
388891 2008 RW_{128}	14.1	X	352.78338	47.88177	315.11725	6.49085	0.0436083	0.08495175	5.1249288	20	9 26.7	20.8
388892 2008 RV_{134}	17.0	X	182.69479	176.97242	130.27120	11.57098	0.2103312	0.28925098	2.2643983	20	—	—
388893 2008 RO_{137}	16.6	X	254.71040	169.65244	251.28319	8.93210	0.1861156	0.23634199	2.5908491	20	7 29.7	20.5
388894 2008 RV_{137}	17.2	X	250.95731	129.08269	288.50411	4.19226	0.2307744	0.23509420	2.6000085	20	7 17.6	21.1
388895 2008 SG_{1}	16.5	X	234.14989	246.82410	143.79802	11.04529	0.2513895	0.22782980	2.6549868	20	5 28.2	21.1
388896 2008 SJ_{4}	17.2	X	92.12879	180.70075	159.04303	8.07394	0.2892479	0.27159996	2.3614726	20	—	—
388897 2008 SD_{6}	16.8	X	173.52352	169.76205	137.97746	7.28631	0.1350679	0.28154378	2.3055370	20	—	—
388898 2008 SM_{23}	13.9	X	272.51771	280.66288	170.35779	28.53517	0.0681854	0.08544008	5.1053823	20	9 30.7	20.7
388899 2008 SD_{28}	16.6	X	208.49250	93.82778	237.03759	5.36553	0.0388501	0.20913545	2.8109360	20	2 26.3	20.7
388900 2008 SU_{35}	17.0	X	270.60011	312.69427	184.16627	6.34371	0.0750241	0.25883803	2.4384695	20	12 28.1	19.8
388901 2008 SB_{38}	16.8	X	122.77765	238.78719	350.28819	15.92440	0.0578960	0.25425938	2.4676566	20	10 17.8	20.6
388902 2008 SL_{39}	16.9	X	267.94982	281.96550	48.17671	3.12343	0.0966621	0.22295465	2.6935499	20	5 1.1	20.4
388903 2008 SK_{50}	13.7	X	237.88952	128.51008	4.48500	18.72130	0.0570303	0.08368255	5.1766180	20	10 6.7	20.8
388904 2008 SR_{55}	17.6	X	303.79709	31.66076	11.02133	12.96872	0.2247861	0.24421409	2.5348693	20	9 23.1	19.7
388905 2008 SU_{66}	17.4	X	122.51947	164.31930	166.00259	5.07900	0.1649472	0.27489615	2.3425576	20	—	—
388906 2008 SC_{67}	15.7	X	191.09925	52.51358	2.81210	33.35706	0.2670992	0.21757752	2.7377473	20	5 4.9	21.2
388907 2008 SD_{70}	17.2	X	256.77169	357.59307	60.12256	3.49471	0.1987360	0.23570717	2.5954989	20	7 30.2	20.7
388908 2008 SU_{70}	17.6	X	55.77217	314.07483	34.48578	0.97609	0.2102167	0.26503409	2.4003149	20	—	—
388909 2008 SH_{81}	17.9	X	245.72037	289.57330	120.98927	5.32108	0.2814201	0.22988836	2.6391135	20	6 27.4	22.2
388910 2008 SP_{91}	17.3	X	52.24061	49.66800	317.00053	1.45052	0.1044175	0.26431061	2.4046930	20	—	—
388911 2008 SQ_{96}	17.9	X	228.87163	218.47618	240.12410	2.81551	0.1512697	0.23759433	2.5817370	20	8 24.8	21.7
388912 2008 SY_{96}	17.0	X	187.86070	257.12089	206.11590	12.30220	0.2389279	0.22615412	2.6680853	20	7 14.9	21.9
388913 2008 SZ_{110}	17.8	X	215.05906	289.69245	142.11423	3.36794	0.2610031	0.22670589	2.6637544	20	6 29.2	22.5
388914 2008 SR_{112}	17.3	X	308.03394	35.75227	43.65633	7.32736	0.0177496	0.25530296	2.4609275	20	12 7.2	20.3
388915 2008 SA_{115}	17.7	X	310.39441	355.63323	41.58074	7.90827	0.1773401	0.24527120	2.5275806	20	10 6.0	20.0
388916 2008 SK_{119}	17.5	X	181.46964	247.86933	18.88023	1.57285	0.1632503	0.27251830	2.3561645	20	—	—
388917 2008 SF_{120}	16.8	X	146.69963	257.09801	196.92500	6.06055	0.1078481	0.21674445	2.7447580	20	5 28.0	21.0
388918 2008 SB_{121}	17.4	X	70.93968	274.38025	7.16640	3.77001	0.0471611	0.24758355	2.5118181	20	10 27.0	20.8
388919 2008 SR_{123}	17.4	X	195.84752	80.03497	19.20478	6.96566	0.2158048	0.22647306	2.6655797	20	7 21.8	21.9
388920 2008 SW_{129}	17.3	X	189.68675	251.67218	5.08472	6.12200	0.0812490	0.26843151	2.3800188	20	—	—
388921 2008 SW_{136}	17.3	X	197.59627	228.01659	227.09716	4.44504	0.2392817	0.22693876	2.6619319	20	7 14.3	21.9
388922 2008 SJ_{140}	17.5	X	210.96509	226.10100	2.38034	23.41168	0.1755870	0.27291576	2.3538763	20	—	—
388923 2008 SU_{145}	17.5	X	98.38183	313.55569	21.64543	5.37830	0.2383363	0.27175066	2.3605995	20	—	—
388924 2008 SA_{154}	13.1	X	3.73878	342.18257	10.99150	21.60607	0.0770571	0.08344087	5.1866090	20	10 3.1	19.6
388925 2008 SN_{155}	16.5	X	198.44199	225.41231	155.70066	5.25626	0.2300924	0.21660197	2.7459615	20	4 18.3	21.3
388926 2008 SC_{156}	16.5	X	240.49486	312.96183	113.04909	6.39772	0.2160509	0.23146113	2.6271448	20	7 19.2	20.6
388927 2008 SY_{162}	17.5	X	61.03110	320.88250	32.04113	3.08114	0.2128890	0.26515271	2.3995990	20	—	—
388928 2008 ST_{175}	17.5	X	237.90735	132.39570	283.46130	3.41293	0.2255689	0.23150038	2.6268478	20	7 2.4	21.5
388929 2008 SH_{188}	17.7	X	77.30197	0.98256	328.27698	1.93829	0.1432147	0.26246464	2.4159550	20	—	—
388930 2008 SL_{188}	17.5	X	144.14319	30.15646	248.05755	2.00477	0.1709154	0.26766971	2.3845324	20	—	—
388931 2008 SS_{191}	17.3	X	158.44893	251.56547	58.47930	4.16602	0.1644123	0.27791116	2.3255842	20	—	—
388932 2008 SF_{193}	17.3	X	232.68418	19.82178	77.90408	5.16581	0.1181566	0.23832766	2.5764383	20	9 5.6	20.9
388933 2008 SZ_{203}	17.3	X	344.70035	283.07466	94.56986	3.44369	0.0619411	0.24727891	2.5138807	20	11 8.5	20.1
388934 2008 SC_{226}	17.5	X	176.47276	127.91049	160.65656	7.81331	0.1154031	0.27857617	2.3218816	20	—	—
388935 2008 SQ_{229}	13.7	X	11.80003	29.62049	315.99589	6.57324	0.0346623	0.08206695	5.2443363	20	9 29.4	20.5
388936 2008 SC_{237}	17.3	X	153.71260	236.62106	211.10660	8.19089	0.1177041	0.21787290	2.7352723	20	5 27.8	21.6
388937 2008 SH_{247}	17.6	X	119.90415	14.90716	288.83266	5.94032	0.1245390	0.26893110	2.3770703	20	—	—
388938 2008 SA_{256}	16.9	X	234.43500	76.41020	13.49625	13.86547	0.0308650	0.24100340	2.5573329	20	9 11.9	20.3
388939 2008 SL_{259}	17.9	X	287.55773	346.58734	66.19183	2.06615	0.1185111	0.24404735	2.5360238	20	9 20.9	20.6
388940 2008 SD_{260}	13.8	X	19.81370	292.96306	65.51209	9.29145	0.0415467	0.08428227	5.1520321	20	10 29.0	20.5
388941 2008 SJ_{273}	16.9	X	157.83762	223.76945	36.10458	6.78170	0.0998604	0.25770681	2.4456001	20	—	—
388942 2008 SL_{278}	17.5	X	158.03296	246.48146	43.37533	3.77508	0.1289805	0.27153436	2.3618529	20	—	—
388943 2008 ST_{282}	16.6	X	224.00779	124.27834	299.28436	12.69035	0.1862745	0.22651716	2.6652338	20	7 3.2	20.8
388944 2008 TR_{1}	17.7	X	113.17445	354.89893	267.02199	0.58595	0.1520792	0.25950558	2.4342859	20	11 29.4	21.4
388945 2008 TZ_{3}	20.4	X	355.83403	219.71305	44.07786	8.71971	0.3911213	0.49142655	1.5903656	20	4 16.1*	17.8
388946 2008 TO_{4}	17.6	X	348.77082	245.07221	188.80202	4.54562	0.0774606	0.26371594	2.4083067	20	—	—
388947 2008 TU_{4}	16.7	X	112.95000	286.06452	7.90727	6.34008	0.0541243	0.26299621	2.4126985	20	—	—
388948 2008 TV_{17}	17.5	X	264.68483	51.50058	27.44736	9.70278	0.1047865	0.23997036	2.5646670	20	9 25.4	20.7
388949 2008 TA_{21}	17.6	X	113.70345	343.25662	337.14206	0.78055	0.1963751	0.26839591	2.3802292	20	—	—
388950 2008 TG_{22}	17.4	X	265.04532	192.60584	219.68944	3.66157	0.1001411	0.23478888	2.6022621	20	8 15.3	20.8
388951 2008 TN_{24}	16.9	X	242.68237	49.15254	9.64368	11.49671	0.1776821	0.23288963	2.6163908	20	7 20.0	20.9
388952 2008 TZ_{26}	17.0	X	131.00740	355.87988	309.08971	11.27601	0.2293763	0.27607211	2.3359006	20	—	—
388953 2008 TA_{32}	17.6	X	260.92479	254.13672	178.39515	3.05833	0.1685580	0.23855449	2.5748048	20	8 27.9	21.0
388954 2008 TX_{37}	17.5	X	243.52513	216.73115	348.98105	4.45992	0.1512261	0.27278378	2.3546355	20	—	—
388955 2008 TW_{62}	17.2	X	243.85795	223.71160	204.56500	13.48717	0.1416763	0.23422185	2.6064602	20	7 31.3	21.2
388956 2008 TC_{72}	17.3	X	228.19874	295.88549	166.86104	5.22850	0.1789885	0.23534936	2.5981289	20	8 26.9	21.2
388957 2008 TW_{72}	16.9	X	209.01861	274.26241	236.85605	4.10159	0.1467592	0.24245613	2.5471074	20	10 11.2	20.6
388958 2008 TH_{75}	16.9	X	72.94273	169.67660	187.04623	0.49079	0.1780108	0.18039724	3.1020547	20	—	—
388959 2008 TL_{83}	16.9	X	217.32994	77.34502	5.28914	10.77152	0.2552517	0.22950994	2.6420136	20	7 17.9	21.5
388960 2008 TC_{84}	17.4	X	233.11689	147.25398	274.35655	1.27765	0.2003680	0.23021364	2.6366269	20	7 7.5	21.5

* The additional opposition: 10 1.4, $V = 20.3$

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
	m		°	°	°	°		°				
388961 2008 TX_{85}	18.0	X	124.03750	252.47979	8.64263	2.08914	0.1067030	0.25940686	2.4349034	20	12 7.5	21.5
388962 2008 TG_{87}	17.8	X	258.07093	70.94927	354.07768	3.38003	0.1624019	0.23712919	2.5851120	20	8 16.2	21.2
388963 2008 TH_{88}	17.5	X	95.14972	191.43948	130.31801	4.62249	0.1154231	0.26398404	2.4066759	20	—	—
388964 2008 TJ_{88}	16.7	X	141.45856	1.76525	86.83875	6.10620	0.1309882	0.21413354	2.7670239	20	5 17.6	21.0
388965 2008 TP_{90}	17.2	X	287.96141	211.64263	189.64256	3.91282	0.2275592	0.23851879	2.5750618	20	8 14.4	20.1
388966 2008 TY_{93}	17.3	X	238.89475	259.40394	160.05127	3.81201	0.1801602	0.23195453	2.6234179	20	7 12.5	21.2
388967 2008 TS_{100}	17.9	X	231.44870	111.14947	358.31662	1.32765	0.1308730	0.24128413	2.5553489	20	9 15.6	21.5
388968 2008 TK_{121}	16.1	X	223.69302	283.30178	189.28412	28.72617	0.3140724	0.23382902	2.6093787	20	8 18.5	21.0
388969 2008 TB_{124}	17.3	X	153.97245	321.48538	328.36308	4.86998	0.0859464	0.27214108	2.3583412	20	—	—
388970 2008 TL_{154}	16.7	X	223.97790	77.21557	348.93084	10.96853	0.1955080	0.22819719	2.6521364	20	7 6.7	21.1
388971 2008 TZ_{170}	18.0	X	151.11428	147.20510	173.21660	2.07037	0.2016294	0.27511355	2.3413233	20	—	—
388972 2008 TH_{173}	14.0	X	59.86039	108.32835	193.21058	2.74155	0.1411853	0.08250904	5.2255862	20	10 22.9	20.8
388973 2008 TA_{177}	17.0	X	262.95755	241.64873	188.62135	9.45057	0.2018680	0.23656163	2.5892452	20	8 20.3	20.4
388974 2008 UQ_{13}	16.9	X	267.00338	98.58075	32.62371	7.43161	0.0743064	0.25766356	2.4458738	20	12 14.1	19.8
388975 2008 UW_{24}	17.3	X	274.61142	10.76204	46.32317	8.23988	0.1657537	0.23765977	2.5812631	20	9 1.0	20.5
388976 2008 UB_{27}	17.1	X	196.27343	109.70180	43.97704	15.45150	0.0449757	0.24204253	2.5500083	20	10 16.1	20.7
388977 2008 UB_{28}	17.8	X	270.96058	344.50567	100.33842	1.41907	0.0955207	0.24268176	2.5455285	20	10 12.5	20.8
388978 2008 UP_{29}	17.9	X	135.41470	169.17420	148.17562	1.89848	0.1899511	0.27185968	2.3599684	20	—	—
388979 2008 UK_{35}	17.8	X	199.12655	242.69678	32.65477	2.29612	0.2179320	0.28096493	2.3087025	20	—	—
388980 2008 UV_{52}	16.8	X	99.05230	233.01195	58.24775	6.86696	0.0946550	0.25076834	2.4905059	20	12 17.0	20.4
388981 2008 UK_{54}	16.3	X	353.85489	316.98155	47.73142	12.89813	0.0740028	0.24330314	2.5411926	20	11 4.6	19.3
388982 2008 UJ_{56}	17.0	X	179.13796	222.05336	14.32228	6.42178	0.0876831	0.26464620	2.4026598	20	—	—
388983 2008 UZ_{60}	16.2	X	96.51876	260.24093	236.13040	11.94933	0.0535766	0.21328150	2.7743884	20	5 16.6	19.9
388984 2008 UE_{63}	16.8	X	171.35143	73.49284	24.37027	6.11905	0.1602636	0.21951151	2.7216431	20	6 27.6	21.3
388985 2008 UL_{64}	17.6	X	242.20928	307.41622	137.26983	4.30238	0.2483230	0.23600638	2.5933047	20	8 10.8	21.3
388986 2008 UW_{64}	17.1	X	315.10384	83.23699	286.43971	4.71455	0.1355848	0.23768720	2.5810645	20	8 31.1	19.7
388987 2008 UG_{72}	16.1	X	102.52392	353.72191	255.38508	14.39586	0.0446195	0.23956717	2.5675437	20	10 18.8	19.9
388988 2008 UG_{77}	15.9	X	324.22815	127.38537	235.52182	10.27202	0.1945839	0.23736302	2.5834140	20	8 31.7	18.4
388989 2008 UR_{78}	16.8	X	194.88764	238.32089	141.62158	5.16526	0.0861510	0.21231242	2.7828242	20	4 15.9	21.0
388990 2008 UX_{84}	17.8	X	271.42067	345.99593	91.86126	2.13559	0.1356373	0.24402132	2.5362041	20	9 27.9	20.9
388991 2008 UV_{87}	17.4	X	236.03257	66.23488	21.64527	4.79329	0.2359647	0.23664223	2.5886572	20	8 11.9	21.3
388992 2008 UY_{87}	17.4	X	253.83169	241.69123	176.59390	4.55911	0.2015590	0.23597818	2.5935113	20	7 24.9	21.1
388993 2008 UZ_{87}	17.4	X	128.35573	285.64940	28.30950	6.88092	0.1315963	0.27339689	2.3511139	20	—	—
388994 2008 UD_{91}	16.1	X	276.15505	330.50391	17.65402	13.39147	0.2784197	0.22839247	2.6506244	20	5 5.6	20.1
388995 2008 UL_{96}	17.8	X	115.80484	239.07426	93.63336	5.89486	0.2498799	0.27347685	2.3506556	20	—	—
388996 2008 UU_{96}	16.7	X	227.46920	261.79119	87.37251	4.37515	0.2087628	0.21716945	2.7411759	20	4 4.5	21.2
388997 2008 UW_{106}	16.9	X	183.28496	66.54232	43.21784	14.17504	0.1316480	0.22682807	2.6627978	20	7 28.9	21.4
388998 2008 UK_{107}	17.3	X	203.33903	96.08756	8.13183	2.84533	0.0882124	0.22967143	2.6407750	20	8 11.5	21.0
388999 2008 US_{123}	17.6	X	212.55407	104.02217	340.36166	4.28611	0.2120550	0.22504096	2.6768765	20	7 16.7	22.0
389000 2008 UW_{141}	16.9	X	120.49309	232.74259	49.33945	7.15973	0.1219327	0.25652840	2.4530839	20	12 29.9	20.7
389001 2008 UT_{144}	17.1	X	166.51650	240.73014	60.03157	6.60910	0.2328493	0.27587918	2.3369895	20	—	—
389002 2008 UH_{148}	17.2	X	250.44120	63.14426	356.01752	0.74627	0.1016461	0.23036070	2.6355046	20	8 6.0	20.8
389003 2008 UJ_{148}	17.6	X	184.90032	272.51472	32.46829	2.77087	0.2561130	0.28052901	2.3110936	20	1 3.5	21.4
389004 2008 UT_{161}	17.8	X	232.68965	200.40402	269.22615	2.87028	0.1183413	0.24262008	2.5459599	20	9 17.5	21.5
389005 2008 UP_{168}	16.6	X	192.72493	321.48389	200.88575	6.43706	0.2881320	0.23648766	2.5897851	20	9 29.2	21.0
389006 2008 UZ_{168}	17.5	X	157.38170	186.53158	72.48043	5.96416	0.0892619	0.25985219	2.4321207	20	—	—
389007 2008 UM_{175}	16.8	X	202.00135	207.10135	234.58909	5.65690	0.2659562	0.22356506	2.6886447	20	6 30.4	21.5
389008 2008 UL_{176}	17.2	X	264.22905	107.70235	336.44049	1.86396	0.0702549	0.24247469	2.5469775	20	10 3.9	20.4
389009 2008 UQ_{177}	17.7	X	274.69750	60.48603	325.84296	1.90749	0.1582627	0.23295707	2.6158858	20	7 16.2	21.0
389010 2008 UG_{180}	17.0	X	236.61239	126.05787	291.28946	2.27678	0.2396445	0.22651409	2.6652578	20	7 1.6	21.1
389011 2008 UZ_{187}	17.5	X	231.16429	216.92646	199.53539	5.18218	0.1642529	0.22406600	2.6846360	20	7 1.7	21.6
389012 2008 UH_{191}	16.8	X	182.76352	99.15969	47.42160	13.36628	0.2200526	0.23368091	2.6104811	20	9 13.1	21.4
389013 2008 UF_{204}	17.6	X	279.96519	32.98263	351.85391	3.95780	0.2037736	0.23381011	2.6095194	20	7 14.9	20.8
389014 2008 UL_{206}	16.6	X	266.33013	211.46696	180.50196	13.27792	0.1669044	0.23268170	2.6179493	20	7 9.2	20.5
389015 2008 UN_{207}	16.9	X	122.89163	262.38763	20.04584	6.82801	0.1145632	0.25945088	2.4346280	20	—	—
389016 2008 UW_{215}	17.5	X	53.65351	287.25845	31.83947	4.52102	0.0222550	0.24596152	2.5228491	20	11 19.3	20.7
389017 2008 UG_{224}	16.7	X	165.09822	274.46619	263.12588	11.84013	0.2038606	0.23359284	2.6111373	20	9 23.9	21.4
389018 2008 UR_{225}	17.0	X	288.56273	304.05333	89.40509	4.22942	0.1196972	0.23751535	2.5823093	20	8 25.2	20.0
389019 2008 UX_{225}	16.4	X	245.58430	134.46850	306.51008	10.93521	0.1603181	0.23642394	2.5902504	20	8 18.8	20.2
389020 2008 UR_{227}	17.2	X	230.69732	31.41002	9.36697	2.82049	0.1062886	0.22119943	2.7077800	20	6 16.9	21.2
389021 2008 UC_{238}	17.3	X	270.75177	38.60818	12.17951	5.33074	0.1861181	0.23476174	2.6024626	20	8 11.2	20.6
389022 2008 UC_{239}	16.5	X	315.42523	323.77234	74.40571	9.23806	0.1737109	0.24559878	2.5253326	20	10 20.8	18.8
389023 2008 UH_{255}	17.3	X	222.80092	201.98998	222.89581	1.68685	0.1806083	0.22517853	2.6757861	20	7 2.9	21.4
389024 2008 UK_{274}	17.4	X	182.79257	125.17708	44.81049	9.97971	0.0585642	0.24081708	2.5586518	20	10 17.6	21.1
389025 2008 UM_{282}	17.0	X	124.36823	235.00005	204.54860	2.34782	0.2276346	0.20327041	2.8647492	20	4 27.4	21.6
389026 2008 UP_{316}	16.9	X	32.60051	158.52897	167.64683	2.07162	0.1481880	0.24430197	2.5342613	20	11 20.8	20.0
389027 2008 UF_{318}	17.0	X	255.89800	65.28664	8.04180	9.28878	0.1889312	0.23606182	2.5928987	20	8 23.1	20.5
389028 2008 UE_{319}	17.7	X	265.28112	73.99840	330.54285	4.88565	0.2039608	0.23348333	2.6119536	20	7 21.9	21.1
389029 2008 UF_{322}	17.0	X	237.84548	179.87285	291.46817	4.51788	0.1475728	0.24163831	2.5528513	20	9 21.1	20.5
389030 2008 UH_{322}	17.3	X	230.12850	91.36408	358.84511	7.52411	0.1639162	0.23467397	2.6031115	20	8 17.2	21.2
389031 2008 UT_{323}	16.6	X	177.58286	227.46780	252.31670	12.20923	0.2138615	0.22402486	2.6849646	20	7 26.4	21.4
389032 2008 UH_{325}	16.9	X	321.26785	114.69062	259.69010	2.25947	0.1254403	0.23799862	2.5788124	20	9 20.9	19.5
389033 2008 UN_{344}	17.2	X	209.42856	84.23454	356.20162	3.63321	0.0741927	0.22386921	2.6862090	20	7 18.8	21.2
389034 2008 UZ_{348}	16.9	X	53.05246	117.70385	190.30941	2.41851	0.1144503	0.24402538	2.5361760	20	11 18.2	20.2
389035 2008 UN_{354}	16.9	X	41.48107	227.58874	96.05768	3.30763	0.1075023	0.24711297	2.5150060	20	11 23.7	20.2
389036 2008 UH_{355}	17.1	X	22.84890	65.50050	258.83175	11.06111	0.2033781	0.24430024	2.5342733	20	11 11.3	20.2
389037 2008 UM_{355}	16.5	X	291.87389	244.34488	169.69108	10.60774	0.1638401	0.23880600	2.5729967	20	9 22.2	19.1
389038 2008 US_{355}	16.8	X	293.61268	226.04420	154.85364	5.26906	0.3306924	0.23540816	2.5976963	20	7 6.8	19.9
389039 2008 UU_{359}	17.1	X	135.99955	168.08767	70.95241	3.43602	0.0659732	0.24481539	2.5307170	20	11 19.9	20.6
389040 2008 UD_{360}	16.9	X	288.22278	121.63255	296.84363	5.12841	0.0960651	0.23802769	2.5786024	20	9 27.8	20.1

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
	m		°	°	°	°		°				
389041 2008 UE_{364}	17.1	X	298.30482	239.17272	158.34102	13.83203	0.2714909	0.23981993	2.5657394	20	8 21.2	19.4
389042 2008 UD_{368}	17.5	X	224.26163	95.48783	339.28002	6.24663	0.2426684	0.22705986	2.6609853	20	7 13.2	21.9
389043 2008 UA_{370}	16.3	X	207.42148	83.21327	96.57127	7.27157	0.2681214	0.24172943	2.5522097	20	11 6.0	20.5
389044 2008 UA_{371}	16.7	X	157.88310	122.58282	71.40329	13.70203	0.1977615	0.23477969	2.6023300	20	10 19.8	21.2
389045 2008 VO_{2}	16.5	X	292.46541	77.24009	284.74570	3.95818	0.2593046	0.23196927	2.6233067	20	6 20.9	19.4
389046 2008 VW_{6}	17.1	X	271.13135	214.69573	190.00273	5.59603	0.0724061	0.23287029	2.6165357	20	8 17.6	20.6
389047 2008 VY_{35}	17.3	X	224.95788	52.37786	41.28509	14.54716	0.1181996	0.23055632	2.6340137	20	8 26.4	21.4
389048 2008 VY_{38}	16.9	X	267.30597	236.73512	151.15753	9.15688	0.1873808	0.22921497	2.6442797	20	7 2.9	20.6
389049 2008 VG_{42}	16.9	X	268.68258	256.34270	172.87552	6.29784	0.1376359	0.23746185	2.5826972	20	9 8.6	19.9
389050 2008 VL_{46}	16.7	X	266.33375	138.02467	238.51459	6.66800	0.3176801	0.22888771	2.6467996	20	5 30.8	20.9
389051 2008 VE_{47}	16.8	X	256.76948	349.50476	75.86384	4.07972	0.1610149	0.23233407	2.6205600	20	8 15.4	20.3
389052 2008 VH_{51}	16.3	X	69.38413	245.49104	54.64653	6.12855	0.1273612	0.24613564	2.5216591	20	11 28.4	19.7
389053 2008 VK_{51}	17.2	X	160.03399	233.76835	247.47916	5.08651	0.2640097	0.21635781	2.7480270	20	7 16.9	22.2
389054 2008 VP_{52}	16.5	X	215.35141	78.12134	239.18340	9.24930	0.0829009	0.20553038	2.8437104	20	2 15.0	21.0
389055 2008 VS_{53}	16.0	X	281.59312	167.57443	216.41324	13.12422	0.1575723	0.23269174	2.6178740	20	7 19.0	19.7
389056 2008 VY_{63}	16.6	X	250.67530	145.24214	257.30943	3.05567	0.3231050	0.22779323	2.6552710	20	6 17.5	21.0
389057 2008 VH_{64}	16.5	X	286.76446	102.57216	283.96613	8.13927	0.0695694	0.23286316	2.6165891	20	8 14.5	19.9
389058 2008 VV_{66}	16.3	X	164.59838	250.88635	257.66972	11.73376	0.2050329	0.22635950	2.6664712	20	8 18.7	21.1
389059 2008 VD_{72}	16.9	X	348.00547	40.21195	303.48263	4.43756	0.0634999	0.23532138	2.5983349	20	9 21.6	20.0
389060 2008 VE_{79}	16.4	X	237.73538	122.12682	260.16610	11.68433	0.3183217	0.22007080	2.7170300	20	5 12.4	21.2
389061 2008 WJ	17.0	X	223.89938	328.58303	155.66642	4.33064	0.2065326	0.23671398	2.5881341	20	9 17.3	21.0
389062 2008 WJ_{2}	15.9	X	285.04462	43.49854	6.08458	13.94902	0.1764775	0.23722243	2.5844346	20	9 5.2	18.9
389063 2008 WY_{8}	17.1	X	204.41113	81.12296	81.46023	5.35460	0.0591922	0.24591549	2.5231639	20	11 3.1	20.5
389064 2008 WJ_{30}	17.4	X	326.79771	60.52269	314.53616	2.13484	0.1243526	0.23782134	2.5800938	20	10 2.7	20.0
389065 2008 WT_{49}	17.1	X	234.66163	282.41823	156.35824	3.60282	0.1446374	0.23011897	2.6373500	20	8 6.3	21.0
389066 2008 WE_{50}	15.9	X	253.96405	170.07525	275.34407	22.05355	0.0918543	0.24176626	2.5519506	20	9 4.1	19.9
389067 2008 WG_{55}	17.5	X	171.20499	39.54518	91.23918	3.30287	0.1483685	0.22443497	2.6816928	20	8 9.1	21.7
389068 2008 WE_{60}	16.6	X	313.84630	282.37048	88.65436	5.66261	0.2547185	0.23695284	2.5863945	20	8 20.8	18.7
389069 2008 WG_{63}	17.1	X	249.00107	50.76521	24.75713	2.50794	0.1995534	0.23334451	2.6129894	20	8 13.3	20.7
389070 2008 WE_{70}	17.4	X	129.84065	293.94967	252.59057	4.88162	0.0750977	0.22701542	2.6613326	20	9 1.8	21.3
389071 2008 WC_{72}	16.9	X	260.18723	136.61533	258.19557	13.94728	0.1427534	0.22748239	2.6576892	20	7 7.9	20.7
389072 2008 WN_{79}	17.3	X	203.73710	27.50913	142.55083	4.33247	0.0677236	0.24263478	2.5458570	20	11 10.2	20.8
389073 2008 WG_{87}	17.0	X	323.86584	334.80870	76.31479	5.84442	0.0139942	0.24736733	2.5132816	20	11 20.8	20.1
389074 2008 WF_{102}	16.3	X	185.41447	186.63300	252.45124	13.32875	0.1716606	0.22013391	2.7165107	20	6 16.3	20.8
389075 2008 WV_{111}	17.5	X	148.51128	354.61929	296.12930	1.71127	0.1812712	0.26249835	2.4157482	20	—	—
389076 2008 WV_{113}	17.6	X	280.54783	154.23746	235.63904	1.68689	0.1099305	0.22971682	2.6404271	20	8 5.5	20.9
389077 2008 WW_{115}	17.5	X	176.43205	115.78123	19.77189	0.71539	0.0470768	0.22653056	2.6651287	20	8 22.7	21.2
389078 2008 WX_{118}	17.2	X	168.27007	157.83804	28.75584	1.67683	0.1699408	0.23422071	2.6064687	20	10 14.5	21.4
389079 2008 WL_{122}	16.5	X	285.50173	45.49266	346.97319	10.20037	0.1100441	0.23484631	2.6018378	20	8 20.4	19.6
389080 2008 WZ_{124}	17.1	X	249.92268	115.62381	280.24898	2.63786	0.1637895	0.22431032	2.6826862	20	6 25.9	21.0
389081 2008 WR_{130}	17.1	X	150.07809	210.39199	278.07591	6.76471	0.1701657	0.21352566	2.7722730	20	7 15.8	21.6
389082 2008 WC_{133}	16.5	X	258.98438	291.90500	129.92462	6.22410	0.1201099	0.23370107	2.6103310	20	8 19.1	19.8
389083 2008 WY_{133}	16.9	X	3.93976	322.10573	49.86262	8.19769	0.1544831	0.24700416	2.5157446	20	12 10.6	19.7
389084 2008 WB_{137}	16.5	X	289.45343	105.34271	296.73718	3.71138	0.2480354	0.23373341	2.6100902	20	8 14.4	19.3
389085 2008 WC_{138}	16.2	X	354.53819	260.66464	113.51298	7.60189	0.1334263	0.24426626	2.5345083	20	11 26.9	19.1
389086 2008 XS_{1}	16.6	X	134.41368	241.96529	159.63130	9.21093	0.2699668	0.19969197	2.8988716	20	3 26.8	21.4
389087 2008 XY_{4}	16.2	X	267.30076	104.21801	325.45438	6.96920	0.1373101	0.23678407	2.5876233	20	9 6.0	19.5
389088 2008 XG_{8}	16.3	X	318.12044	261.57363	131.72707	12.57906	0.1065069	0.24226573	2.5484418	20	10 22.1	19.3
389089 2008 XH_{21}	16.7	X	166.29642	41.57624	96.32819	12.15528	0.1578224	0.21890778	2.7266449	20	8 14.9	21.2
389090 2008 XX_{31}	16.2	X	27.99042	201.10396	52.05958	11.71383	0.1801407	0.22268076	2.6957581	20	8 9.7	19.4
389091 2008 XS_{32}	16.1	X	68.49876	74.68079	266.58256	9.07987	0.0715860	0.16904497	3.2394246	20	12 24.1	20.8
389092 2008 XM_{34}	17.2	X	297.83458	46.35738	348.12736	3.24641	0.0488754	0.23426363	2.6061503	20	9 16.9	20.5
389093 2008 XB_{38}	16.9	X	136.32120	180.21825	325.19771	2.64459	0.1332503	0.21689922	2.7434522	20	7 23.3	21.1
389094 2008 XB_{40}	16.5	X	165.08802	15.41565	68.21923	6.90564	0.0675326	0.21182964	2.7870509	20	5 31.9	20.4
389095 2008 XT_{40}	17.1	X	96.78648	133.78832	192.84666	5.92282	0.1614327	0.26026269	2.4295627	20	—	—
389096 2008 XB_{41}	16.0	X	327.75934	221.66860	282.73729	15.94806	0.0979467	0.17434470	3.1734395	20	—	—
389097 2008 XW_{46}	15.9	X	176.76512	108.05161	354.66647	24.93253	0.1434343	0.21179495	2.7873552	20	7 16.4	20.9
389098 2008 XC_{48}	16.6	X	339.42197	211.63856	104.35769	8.31144	0.0791991	0.21871725	2.7282282	20	7 31.2	19.7
389099 2008 XW_{52}	16.6	X	167.09771	70.99130	325.66215	9.11839	0.1302412	0.19342386	2.9611656	20	4 4.2	21.4
389100 2008 YQ_{8}	16.7	X	271.52893	331.65093	84.15160	7.54237	0.1136617	0.22917907	2.6445559	20	9 1.1	20.1
389101 2008 YA_{11}	16.9	X	177.54522	83.60432	83.18533	10.48141	0.1212520	0.23266344	2.6180862	20	10 6.2	21.1
389102 2008 YL_{11}	16.8	X	331.57414	121.12855	254.14448	2.90878	0.2441125	0.23659566	2.5889969	20	10 13.8	18.6
389103 2008 YZ_{13}	17.4	X	222.08347	342.35771	84.85800	3.39001	0.1942993	0.22325013	2.6911727	20	7 4.3	21.6
389104 2008 YB_{14}	16.8	X	93.39518	224.34250	82.43619	3.27913	0.1722401	0.25386775	2.4701938	20	—	—
389105 2008 YC_{18}	16.9	X	116.67496	48.24603	121.63760	5.00215	0.0084440	0.21300863	2.7767572	20	7 20.6	20.5
389106 2008 YE_{20}	16.5	X	306.16072	256.38776	113.66437	6.14559	0.0741385	0.22178650	2.7029996	20	8 24.0	19.8
389107 2008 YP_{35}	16.0	X	94.91675	261.18379	303.28072	11.51651	0.1294807	0.21252647	2.7809554	20	8 19.9	20.1
389108 2008 YN_{37}	16.8	X	1.76956	214.55147	120.09025	7.11883	0.0660284	0.22624480	2.6673723	20	10 5.0	20.1
389109 2008 YJ_{40}	16.5	X	164.05424	310.59554	109.08816	6.84827	0.2652823	0.20461253	2.8522083	20	5 9.7	21.6
389110 2008 YN_{57}	16.6	X	121.43270	183.85630	328.55646	4.27134	0.0974358	0.21066817	2.7972854	20	7 13.6	20.7
389111 2008 YQ_{62}	16.8	X	252.77751	263.40019	128.71233	9.03156	0.1758995	0.21827735	2.7318924	20	6 22.9	20.8
389112 2008 YG_{63}	17.2	X	168.97018	317.56872	174.60843	3.33028	0.1424020	0.21632980	2.7482642	20	8 6.6	21.7
389113 2008 YT_{90}	16.6	X	164.06440	302.85184	107.61538	7.47703	0.1145631	0.20142683	2.8822026	20	4 24.5	21.2
389114 2008 YC_{92}	16.6	X	255.41606	290.30194	102.45611	6.32120	0.1350031	0.21907713	2.7252396	20	7 2.1	20.3
389115 2008 YP_{94}	17.2	X	292.08280	35.18788	296.91529	3.71323	0.0758263	0.21123020	2.7923212	20	6 8.1	20.9
389116 2008 YD_{96}	15.9	X	199.54762	141.22526	291.61124	8.97619	0.2213134	0.21443357	2.7644423	20	6 19.9	20.7
389117 2008 YE_{97}	17.1	X	204.26460	101.85980	317.81158	6.25213	0.1065740	0.20955548	2.8071785	20	6 12.2	21.4
389118 2008 YW_{105}	16.5	X	217.71402	286.18205	111.34473	9.45586	0.2529826	0.21191043	2.7863424	20	5 22.9	21.4
389119 2008 YY_{107}	16.8	X	248.52675	278.54445	114.91484	9.48829	0.1874758	0.21624744	2.7489620	20	6 18.7	21.1
389120 2008 YD_{117}	17.3	X	53.98547	177.18535	96.98512	3.13078	0.0400886	0.22449827	2.6811887	20	9 22.6	20.8

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	m		°	°	°	°		°				
389121 2008 YD_{118}	16.3	X	78.33910	134.24847	313.94774	5.38798	0.1108158	0.18589474	3.0405908	20	2 29.7	20.4
389122 2008 YV_{119}	17.6	X	250.95593	80.59691	359.12268	1.93170	0.0413381	0.22736506	2.6586035	20	9 12.4	21.0
389123 2008 YM_{127}	17.0	X	189.16463	164.60318	313.27255	2.85416	0.0699747	0.21858376	2.7293388	20	8 12.3	20.9
389124 2008 YV_{127}	17.2	X	271.77757	308.13084	116.73373	2.22913	0.0855228	0.22619984	2.6677258	20	9 15.1	20.6
389125 2008 YN_{142}	17.0	X	319.84657	257.17100	110.44864	9.43477	0.0893152	0.22674271	2.6634660	20	9 14.1	20.2
389126 2008 YK_{143}	16.8	X	317.15681	234.39295	130.04950	6.92609	0.0566084	0.22304424	2.6928286	20	9 4.1	20.1
389127 2008 YB_{148}	16.5	X	314.36264	278.19162	115.35197	8.36819	0.1392657	0.23908056	2.5710265	20	10 11.9	19.2
389128 2008 YV_{150}	16.9	X	112.50140	173.05678	118.96551	7.07289	0.2126595	0.24289120	2.5440650	20	—	—
389129 2008 YB_{168}	16.8	X	188.13829	116.30600	326.49533	10.11101	0.2534484	0.21464504	2.7626263	20	6 22.6	21.8
389130 2008 YW_{170}	16.7	X	103.92062	66.60618	124.73466	13.77605	0.0743647	0.21348059	2.7726632	20	8 10.8	20.6
389131 2009 AW_{1}	16.8	X	311.87218	1.18423	27.75071	3.79105	0.2073798	0.23568309	2.5956757	20	9 19.1	18.9
389132 2009 AT_{23}	16.7	X	273.17297	22.79567	297.87731	9.03156	0.0430081	0.20217922	2.8750476	20	4 30.1	20.9
389133 2009 AP_{31}	15.7	X	158.81732	56.81544	288.90112	14.27734	0.1054085	0.18172331	3.0869455	20	1 28.5	20.5
389134 2009 AW_{32}	16.9	X	112.97139	315.13518	122.88586	4.32003	0.0958196	0.18997628	2.9968831	20	4 1.3	21.2
389135 2009 AH_{33}	16.7	X	259.40696	60.42107	327.16872	3.62981	0.0785826	0.21270588	2.7793915	20	7 8.7	20.6
389136 2009 AW_{35}	17.2	X	233.00852	315.92330	85.83046	5.47243	0.0700522	0.21134949	2.7912704	20	6 24.8	21.1
389137 2009 AW_{37}	16.7	X	100.23084	196.12189	121.43041	6.73611	0.0789958	0.24592173	2.5231212	20	—	—
389138 2009 AE_{39}	17.1	X	232.72683	328.04198	137.24725	3.42264	0.0658067	0.22659495	2.6646238	20	9 19.8	20.6
389139 2009 AL_{43}	17.3	X	251.93436	234.73495	142.78562	4.25980	0.1069131	0.21264313	2.7799382	20	6 11.7	21.2
389140 2009 AE_{46}	16.6	X	281.30540	210.75425	159.52344	3.94873	0.1053937	0.21276336	2.7788909	20	7 10.0	20.1
389141 2009 AF_{47}	16.7	X	250.14449	242.29317	141.86539	12.06046	0.2206584	0.21568485	2.7537401	20	6 6.3	21.2
389142 2009 AG_{50}	16.6	X	281.71196	191.30549	134.49741	18.98180	0.1422405	0.20421371	2.8559205	20	5 13.5	21.0
389143 2009 AB_{51}	16.7	X	302.53467	243.54411	128.92707	6.61923	0.1059215	0.22002381	2.7174168	20	8 16.5	19.9
389144 2009 BY_{3}	15.9	X	77.67865	158.94427	261.33314	10.05768	0.0818627	0.17956983	3.1115763	20	1 21.6	20.2
389145 2009 BC_{6}	16.3	X	252.70186	323.62239	104.33813	15.58867	0.0749360	0.22955442	2.6416723	20	8 29.7	20.1
389146 2009 BO_{27}	16.6	X	86.82635	124.46809	89.50249	5.40669	0.0139467	0.21519210	2.7579423	20	8 11.7	20.3
389147 2009 BB_{30}	16.9	X	49.01434	302.94664	316.26925	6.75550	0.1285727	0.21447833	2.7640577	20	9 4.3	20.5
389148 2009 BC_{30}	16.7	X	266.44319	311.56647	100.25751	3.45966	0.0772911	0.22160276	2.7044934	20	8 21.6	20.1
389149 2009 BA_{31}	15.7	X	94.14300	295.29453	119.52781	10.25274	0.0749500	0.18012357	3.1051961	20	2 7.2	20.0
389150 2009 BW_{32}	17.7	X	211.88563	83.12633	331.82351	1.84021	0.1749228	0.21121325	2.7924706	20	6 10.1	22.1
389151 2009 BY_{33}	16.8	X	164.06520	325.00240	88.32808	3.29716	0.0949244	0.19698976	2.9253216	20	4 25.2	21.2
389152 2009 BN_{37}	16.4	X	255.14815	15.32476	322.84334	11.23696	0.0604597	0.19839051	2.9115357	20	4 26.1	20.8
389153 2009 BR_{37}	16.9	X	82.34724	332.40175	85.70082	2.58851	0.1935863	0.18012334	3.1051987	20	2 12.9	20.8
389154 2009 BL_{39}	16.8	X	91.98528	105.41200	107.97990	4.14748	0.0246378	0.21342882	2.7731116	20	8 18.6	20.7
389155 2009 BC_{40}	16.4	X	356.07663	291.42076	324.98353	17.57071	0.1436998	0.19758747	2.9194191	20	5 30.1	20.1
389156 2009 BA_{45}	16.1	X	47.70839	178.33465	325.06688	10.03974	0.0500841	0.18472932	3.0533658	20	3 18.4	20.3
389157 2009 BL_{47}	16.3	X	114.71295	290.15765	149.87561	11.85332	0.0979333	0.18774290	3.0206033	20	4 7.7	20.8
389158 2009 BX_{50}	16.7	X	314.29692	38.74805	325.39064	5.49754	0.0359160	0.21942390	2.7223676	20	8 29.0	20.0
389159 2009 BH_{52}	16.8	X	48.00207	126.46871	119.95395	5.61104	0.0170416	0.21269582	2.7794791	20	8 1.8	20.4
389160 2009 BU_{58}	17.0	X	247.36704	341.80939	90.16086	3.58224	0.1273990	0.22921747	2.6442605	20	8 16.6	20.7
389161 2009 BG_{59}	15.9	X	270.33517	129.67981	111.59778	16.92207	0.0534570	0.18082367	3.0971758	20	1 24.1	20.3
389162 2009 BS_{59}	17.4	X	154.67401	245.62440	243.06026	2.99013	0.0480278	0.21314612	2.7755630	20	7 16.6	21.4
389163 2009 BH_{63}	16.6	X	192.23646	58.04514	120.02282	4.93567	0.0534127	0.23074676	2.6325642	20	11 6.5	20.4
389164 2009 BL_{63}	16.3	X	33.22952	135.73517	147.16710	9.29385	0.0863206	0.21834143	2.7313579	20	9 10.9	19.7
389165 2009 BT_{69}	16.4	X	191.28341	346.11401	93.75238	5.90791	0.1003883	0.21117113	2.7928419	20	6 24.8	20.6
389166 2009 BU_{88}	16.5	X	214.91887	263.29089	141.11968	8.29677	0.2276243	0.21047248	2.7990189	20	5 29.8	21.4
389167 2009 BN_{90}	17.3	X	169.21521	356.22297	137.84139	6.21377	0.0606031	0.21437609	2.7649364	20	8 10.6	21.2
389168 2009 BT_{92}	16.4	X	39.98234	329.65602	314.66211	5.58912	0.1153759	0.21668062	2.7452970	20	9 22.7	20.0
389169 2009 BE_{93}	16.4	X	28.07315	299.99636	312.25485	14.48386	0.2262903	0.20224786	2.8743971	20	8 7.5	19.5
389170 2009 BR_{98}	15.6	X	59.03773	304.61466	133.85494	28.21890	0.1353621	0.17675420	3.1445335	20	1 26.8	19.5
389171 2009 BB_{102}	16.2	X	35.99880	312.55109	145.67256	15.55171	0.0724558	0.17017193	3.2251068	20	1 13.2	20.5
389172 2009 BS_{107}	16.8	X	77.31640	100.63263	136.47843	6.30179	0.0289662	0.21199674	2.7855862	20	8 31.3	20.5
389173 2009 BV_{117}	16.1	X	296.21927	340.44741	326.88319	6.44431	0.0893069	0.20327422	2.8647134	20	5 7.3	20.0
389174 2009 BD_{121}	16.7	X	262.93905	179.18284	148.23552	12.66374	0.0594760	0.19515277	2.9436504	20	5 1.8	21.1
389175 2009 BK_{123}	17.6	X	220.20580	281.19991	143.63177	23.55941	0.1358992	0.38637648	1.8669338	20	7 11.9	20.0
389176 2009 BH_{124}	16.8	X	106.76343	64.46226	151.24862	5.83505	0.0174101	0.21617923	2.7495402	20	9 8.9	20.4
389177 2009 BE_{129}	16.0	X	175.80018	33.17787	322.19890	16.10311	0.1230851	0.18376535	3.0640344	20	2 25.3	20.9
389178 2009 BW_{129}	16.4	X	26.50409	153.21894	143.75829	7.01657	0.0442425	0.21759112	2.7376333	20	9 14.5	19.9
389179 2009 BL_{147}	16.9	X	162.11759	261.70568	164.45253	12.99235	0.1687459	0.19668613	2.9283314	20	5 13.9	21.9
389180 2009 BP_{147}	16.5	X	70.74547	321.12794	161.83665	12.12148	0.1662898	0.18606795	3.0387036	20	4 16.0	20.5
389181 2009 BU_{154}	16.9	X	272.03149	294.34095	110.52624	6.07298	0.0525230	0.21924208	2.7238725	20	8 24.1	20.4
389182 2009 BF_{159}	16.7	X	260.16096	214.67526	160.60571	2.37885	0.0799077	0.20376612	2.8601012	20	6 22.2	20.6
389183 2009 BS_{168}	16.7	X	278.52267	160.59932	208.03225	5.70209	0.0513683	0.20893022	2.8127763	20	7 11.4	20.5
389184 2009 BS_{169}	16.2	X	299.13891	162.60861	143.44409	9.16291	0.0468027	0.19652096	2.9299719	20	5 21.3	20.3
389185 2009 BQ_{171}	16.3	X	304.20938	211.68942	134.56184	7.39192	0.0958648	0.20926687	2.8097589	20	7 12.6	19.7
389186 2009 BG_{173}	17.1	X	353.68782	213.04710	58.59209	2.86343	0.0102664	0.20380993	2.8596913	20	6 20.6	20.8
389187 2009 BH_{176}	16.2	X	151.82977	248.71205	170.34984	10.18365	0.0935726	0.18774690	3.0205604	20	4 20.9	20.9
389188 2009 BO_{178}	15.7	X	68.95485	132.82891	92.28773	16.04786	0.0980623	0.20370915	2.8606345	20	8 17.1	19.8
389189 2009 BR_{181}	15.7	X	296.98993	280.34968	6.41333	13.62707	0.0484764	0.18237138	3.0796280	20	4 17.6	20.1
389190 2009 BW_{181}	16.3	X	137.41890	258.82281	180.22495	9.91955	0.0688657	0.18775829	3.0204383	20	4 27.5	20.8
389191 2009 CS_{3}	16.1	X	21.02307	74.87912	106.55518	9.88390	0.0656475	0.18907657	3.0063825	20	4 7.6	20.1
389192 2009 CG_{15}	16.8	X	57.98948	335.56289	120.73726	2.13541	0.1529295	0.18066315	3.0990101	20	2 18.6	20.6
389193 2009 CO_{21}	17.1	X	222.80090	262.72941	147.21235	4.56475	0.0963912	0.20930102	2.8094533	20	6 20.9	21.2
389194 2009 CS_{23}	15.9	X	270.72556	105.18623	125.81528	21.37846	0.1495089	0.17453692	3.1711090	20	1 3.5	20.9
389195 2009 CH_{27}	15.7	X	240.37619	229.07117	128.09785	10.27800	0.1259201	0.19712327	2.9240005	20	5 5.2	20.3
389196 2009 CG_{29}	16.3	X	29.20614	99.84457	134.66604	9.85580	0.1270325	0.19830477	2.9123749	20	7 1.2	19.8
389197 2009 CM_{49}	16.3	X	33.25702	39.02000	121.53815	7.67428	0.0670699	0.18250991	3.0780695	20	3 28.6	20.3
389198 2009 CM_{51}	16.5	X	36.37294	185.27656	335.92573	11.03519	0.1348184	0.18639662	3.0351304	20	3 30.9	20.3
389199 2009 CH_{54}	17.1	X	123.07280	129.61268	54.18007	4.94002	0.1369161	0.21290226	2.7776821	20	8 29.7	21.4
389200 2009 CF_{58}	17.4	X	96.46594	324.40597	184.54831	6.30948	0.1577696	0.19612825	2.9338818	20	6 16.9	21.8

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	m		°	°	°	°		°				
389201 2009 CQ_{59}	16.5	X	183.94991	310.03576	91.40311	2.88442	0.0280547	0.19079095	2.9883460	20	4 30.7	20.9
389202 2009 CN_{62}	16.5	X	62.89324	125.23896	54.00644	4.52062	0.0541492	0.18788755	3.0190528	20	5 28.2	20.6
389203 2009 CB_{63}	15.7	X	62.66815	90.43453	86.05310	10.80077	0.0192531	0.19043722	2.9920453	20	5 21.7	19.8
389204 2009 DZ_{1}	16.7	X	43.68964	317.17024	151.69391	0.18159	0.1201189	0.17714609	3.1398941	20	2 8.6	20.6
389205 2009 DV_{6}	16.6	X	72.05273	287.58540	340.45483	12.96607	0.2311972	0.21919024	2.7243019	20	10 24.0	21.0
389206 2009 DA_{14}	16.5	X	70.23160	233.70052	334.49268	5.02538	0.0602792	0.19956173	2.9001327	20	7 18.0	20.5
389207 2009 DD_{22}	16.7	X	54.77869	89.61042	151.08925	5.13067	0.0668253	0.21120099	2.7925786	20	8 9.9	20.2
389208 2009 DQ_{24}	16.1	X	327.78212	113.33948	156.40758	11.79564	0.0847404	0.18929160	3.0041053	20	5 10.7	20.2
389209 2009 DR_{27}	17.2	X	273.42721	356.59729	357.82812	1.65963	0.0825083	0.20300935	2.8672046	20	6 11.3	21.0
389210 2009 DN_{32}	16.6	X	1.25513	77.46290	126.52848	1.94925	0.1017285	0.18052739	3.1005636	20	4 2.9	20.3
389211 2009 DU_{47}	16.1	X	83.77799	215.65288	357.13200	15.06059	0.0819789	0.20524214	2.8463723	20	8 18.8	20.2
389212 2009 DP_{48}	16.4	X	264.77468	239.35867	145.38201	12.15241	0.0646903	0.21347754	2.7726896	20	7 13.1	20.2
389213 2009 DR_{50}	16.1	X	4.84271	193.49348	355.44123	13.80166	0.2048358	0.17785603	3.1315330	20	3 15.9	19.2
389214 2009 DL_{51}	16.5	X	62.70755	50.69353	156.50080	12.16868	0.0838705	0.19777847	2.9175392	20	7 8.3	20.6
389215 2009 DZ_{67}	16.5	X	151.56082	347.54459	139.88286	9.56134	0.1489028	0.21013411	2.8020229	20	7 15.1	21.0
389216 2009 DT_{81}	16.8	X	146.64059	357.86396	115.11491	3.42794	0.1777446	0.19861773	2.9093148	20	6 23.8	21.5
389217 2009 DZ_{91}	16.7	X	144.73239	45.28873	68.58285	3.08222	0.0339741	0.19590222	2.9361381	20	6 14.2	20.8
389218 2009 DE_{93}	15.6	X	189.89033	23.54256	36.14697	8.74692	0.0775779	0.19437242	2.9515238	20	5 27.7	20.1
389219 2009 DY_{98}	16.0	X	183.39277	248.18102	154.07904	10.24618	0.1301082	0.19173230	2.9785566	20	5 3.8	20.9
389220 2009 DX_{116}	16.6	X	278.29028	22.95168	352.41581	8.18423	0.0553995	0.20656667	2.8341917	20	7 22.8	20.4
389221 2009 DY_{118}	16.4	X	20.61373	157.00234	347.94239	8.90974	0.0414533	0.17510577	3.1642376	20	2 18.7	20.7
389222 2009 DH_{121}	16.8	X	225.06030	235.62099	178.77837	2.30784	0.0246026	0.20170341	2.8795673	20	7 6.2	20.8
389223 2009 DL_{128}	16.2	X	84.63019	130.33159	334.81032	9.47648	0.0110281	0.18324540	3.0698276	20	3 15.6	20.5
389224 2009 DF_{129}	15.9	X	144.16456	224.69980	182.22929	10.86372	0.1209337	0.18024842	3.1037620	20	3 30.0	20.7
389225 2009 DA_{138}	16.5	X	342.74994	280.44918	4.60484	3.76653	0.0828192	0.19531124	2.9420580	20	6 20.5	20.1
389226 2009 DC_{139}	16.6	X	332.94875	156.56740	164.22224	7.93637	0.0510789	0.20547368	2.8442335	20	7 25.2	20.3
389227 2009 DY_{139}	16.9	X	160.19451	312.62632	175.55516	7.68524	0.1637890	0.20934568	2.8090537	20	7 23.5	21.6
389228 2009 DB_{141}	16.1	X	111.77769	114.21202	348.63771	9.59939	0.0724123	0.18939583	3.0030030	20	4 22.1	20.5
389229 2009 EN_{9}	16.7	X	113.79402	114.83874	148.95095	7.96192	0.2967059	0.22686442	2.6625133	20	12 3.3	21.6
389230 2009 EL_{10}	16.4	X	330.81474	120.38216	117.65228	2.26239	0.1326069	0.18084028	3.0969862	20	3 27.2	20.2
389231 2009 EY_{12}	15.9	X	102.68936	88.82566	123.48731	13.48496	0.0998898	0.20927209	2.8097122	20	9 10.9	20.2
389232 2009 EL_{14}	16.6	X	38.17270	145.40995	139.66901	4.71752	0.0347028	0.21385623	2.7694155	20	9 12.7	20.2
389233 2009 EJ_{17}	16.6	X	34.21477	85.57177	74.78748	3.67935	0.0445767	0.18353042	3.0666486	20	3 26.6	20.6
389234 2009 ED_{21}	15.9	X	308.95064	213.44621	25.46767	11.56893	0.1834995	0.17571508	3.1569184	20	2 23.6	20.3
389235 2009 EJ_{21}	16.7	X	350.06957	169.44705	37.61000	1.11182	0.1063264	0.17906761	3.1173916	20	3 19.5	20.6
389236 2009 EA_{22}	15.4	X	62.78596	58.42495	111.57097	9.92822	0.0305707	0.19102947	2.9858579	20	5 16.2	19.6
389237 2009 ED_{22}	15.8	X	231.88721	266.02373	31.50056	13.02946	0.0074435	0.16968036	3.2313326	20	2 27.7	20.6
389238 2009 EO_{24}	16.5	X	277.96842	129.71926	141.61689	1.61924	0.1204685	0.17441505	3.1725861	20	2 29.7	21.2
389239 2009 FQ_{7}	15.8	X	107.56675	271.31129	158.54179	10.44986	0.0923155	0.17718122	3.1394791	20	3 15.7	20.2
389240 2009 FF_{9}	16.6	X	37.52602	36.78344	159.41065	5.02467	0.0982273	0.18973310	2.9994433	20	5 20.9	20.4
389241 2009 FJ_{12}	16.9	X	158.63666	252.51277	189.54320	0.73716	0.0666261	0.19323017	2.9631440	20	5 22.9	21.2
389242 2009 FW_{12}	16.0	X	258.29647	314.99190	357.49714	10.63502	0.0885539	0.18240427	3.0792578	20	3 29.8	20.6
389243 2009 FQ_{21}	15.9	X	14.40053	145.99468	9.69206	12.00667	0.0923330	0.17370127	3.1812714	20	2 26.0	20.0
389244 2009 FW_{27}	15.9	X	112.53148	16.42218	111.19983	11.58709	0.0481484	0.19224538	2.9732546	20	5 27.7	20.3
389245 2009 FD_{31}	16.0	X	31.83762	312.02677	192.33469	15.96400	0.1996400	0.17659628	3.1464079	20	3 8.9	19.5
389246 2009 FR_{31}	17.7	X	164.78130	284.04068	162.37184	22.54137	0.1367521	0.37081504	1.9188064	20	6 10.7	20.9
389247 2009 FV_{33}	16.3	X	102.33544	51.08207	358.62230	10.82360	0.0991572	0.17340227	3.1849274	20	2 17.6	20.8
389248 2009 FV_{37}	16.0	X	9.61100	34.08518	175.69487	16.28691	0.1602447	0.18228912	3.0805544	20	4 27.1	19.6
389249 2009 FA_{38}	16.4	X	142.79766	284.96467	165.80331	10.08231	0.1485925	0.19120673	2.9840122	20	5 24.2	21.3
389250 2009 FO_{39}	16.1	X	280.67126	318.06401	12.29699	8.93713	0.1088278	0.19657220	2.9294628	20	5 13.8	20.2
389251 2009 FP_{42}	16.0	X	260.24959	277.00549	42.17081	11.45519	0.1323438	0.18033177	3.1028054	20	4 8.7	20.7
389252 2009 FL_{45}	16.5	X	60.87028	99.26187	71.06788	7.41650	0.2100746	0.18900564	3.0071347	20	6 6.4	20.3
389253 2009 FB_{46}	16.2	X	354.14110	161.75676	38.86248	11.79783	0.1558262	0.17709345	3.1405163	20	3 19.5	19.9
389254 2009 FG_{47}	16.0	X	31.53746	341.05434	181.07423	10.57157	0.1574616	0.17747892	3.1359673	20	3 31.9	19.7
389255 2009 FK_{48}	16.5	X	38.62039	189.53506	36.72193	6.29460	0.1583262	0.19275823	2.9679786	20	7 10.5	20.1
389256 2009 FW_{49}	17.1	X	29.88481	203.19973	33.61258	2.31709	0.0375883	0.19604381	2.9347242	20	6 25.8	21.0
389257 2009 FY_{50}	16.3	X	294.15412	212.66040	46.94353	8.76523	0.1554061	0.17421230	3.1750471	20	3 4.7	20.9
389258 2009 FR_{54}	16.0	X	196.68376	22.45436	41.71585	10.20702	0.0287369	0.19359975	2.9593717	20	6 12.0	20.3
389259 2009 FG_{55}	16.2	X	345.58421	68.17160	164.49998	9.19826	0.0743207	0.18146403	3.0898852	20	4 19.0	20.2
389260 2009 FL_{61}	16.5	X	3.88786	158.91713	53.90862	1.63699	0.1156247	0.17986140	3.1082128	20	4 18.1	20.2
389261 2009 FN_{62}	15.8	X	12.14574	30.05974	184.56951	12.41044	0.0687472	0.18211918	3.0824705	20	5 5.2	19.8
389262 2009 FW_{62}	16.4	X	90.88256	93.74818	5.23620	5.56274	0.0478249	0.17882715	3.1201855	20	3 23.6	20.6
389263 2009 FR_{64}	15.9	X	9.67873	191.64825	32.40632	8.54394	0.0483927	0.18574649	3.0422084	20	5 9.9	20.0
389264 2009 FN_{66}	16.6	X	311.65728	135.71391	138.32324	1.64216	0.1328850	0.17762758	3.1342174	20	4 13.8	20.6
389265 2009 FS_{71}	16.6	X	339.24190	102.57363	143.86874	1.87742	0.1168364	0.18118642	3.0930407	20	4 22.1	20.2
389266 2009 FY_{71}	16.1	X	268.75642	280.90778	22.70656	11.47297	0.0580738	0.17723952	3.1387906	20	4 6.6	20.6
389267 2009 FZ_{73}	15.9	X	93.09454	327.26636	179.15777	10.90473	0.0551492	0.18581760	3.0414322	20	5 27.7	20.3
389268 2009 FE_{75}	16.0	X	74.62393	283.82113	215.55477	10.64749	0.1298680	0.18227214	3.0807457	20	5 4.4	20.0
389269 2009 GE_{4}	15.7	X	42.92117	134.15545	27.44563	27.83805	0.1433230	0.18011471	3.1052978	20	4 17.4	19.4
389270 2009 GW_{4}	15.4	X	16.32476	88.41321	121.13662	15.76999	0.0842828	0.17987978	3.1080010	20	5 9.8	19.6
389271 2009 HE_{3}	15.7	X	341.52119	16.60322	202.19455	17.27309	0.1441776	0.17450231	3.1715283	20	3 14.8	19.7
389272 2009 HP_{4}	16.2	X	293.41556	87.12452	175.98839	14.28234	0.0722723	0.17561662	3.1580982	20	3 15.1	20.5
389273 2009 HX_{6}	15.7	X	343.27860	178.64279	75.85971	11.02187	0.1418050	0.18168593	3.0873688	20	5 9.4	19.4
389274 2009 HD_{14}	16.0	X	35.28145	113.16558	50.84694	15.96613	0.1662033	0.17696343	3.1420544	20	4 15.6	19.7
389275 2009 HJ_{18}	16.5	X	351.11512	154.70737	69.18667	2.58676	0.0340678	0.17997597	3.1068935	20	4 16.3	20.6
389276 2009 HC_{23}	16.2	X	47.20012	315.35794	192.57439	16.92055	0.1724038	0.17688670	3.1429629	20	4 11.2	19.8
389277 2009 HH_{29}	17.6	X	165.10277	230.26530	190.19999	26.18203	0.1444997	0.36414560	1.9421645	20	5 3.3	20.5
389278 2009 HD_{32}	16.1	X	266.79887	115.28929	174.54838	9.87909	0.0463484	0.17279235	3.1924177	20	3 19.8	20.7
389279 2009 HY_{45}	16.3	X	353.82725	13.41500	222.54153	3.91802	0.1783673	0.18089579	3.0963526	20	4 28.5	19.7
389280 2009 HQ_{46}	16.3	X	286.35013	91.76641	167.63363	12.11750	0.0508685	0.17302913	3.1895046	20	3 5.1	20.7

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
	m		°	°	°	°		°				
389281 2009 HQ_{48}	16.2	X	343.61187	172.88387	76.09080	17.19175	0.0541517	0.18079007	3.0975595	20	5 10.6	20.4
389282 2009 HK_{50}	15.8	X	49.30745	135.35215	30.45153	13.17556	0.1092231	0.18297498	3.0728515	20	4 27.8	19.7
389283 2009 HY_{68}	16.4	X	308.73341	181.65555	87.48565	2.68353	0.1384141	0.17589332	3.1547854	20	4 3.4	20.5
389284 2009 HH_{72}	15.7	X	31.16619	149.00176	68.93191	17.39157	0.1776310	0.18533601	3.0466987	20	6 15.9	19.2
389285 2009 HY_{76}	16.3	X	9.82702	18.66433	199.84051	10.82417	0.1849087	0.18325638	3.0697050	20	5 8.3	19.5
389286 2009 HE_{84}	16.0	X	69.29499	80.43422	182.68263	14.80731	0.1257000	0.20375909	2.8601670	20	10 6.4	20.1
389287 2009 HR_{96}	16.2	X	328.60812	141.43173	121.53985	2.92958	0.0664533	0.17876763	3.1208781	20	5 2.9	20.2
389288 2009 HQ_{99}	16.5	X	86.89331	272.51996	210.86957	15.25566	0.2260667	0.18225371	3.0809534	20	5 14.3	20.9
389289 2009 JX_{2}	15.6	X	183.75485	322.44413	195.24601	8.64324	0.1384826	0.12525246	3.9562026	20	9 11.8	21.8
389290 2009 JO_{5}	15.6	X	39.03433	115.90418	53.74084	17.23804	0.1693168	0.17637420	3.1490485	20	4 28.4	19.3
389291 2009 JC_{17}	16.1	X	318.52521	38.41022	193.02988	15.25728	0.1203040	0.16818619	3.2504426	20	2 29.2	20.7
389292 2009 JL_{17}	15.9	X	1.34045	86.69855	182.55010	14.50607	0.2068668	0.18325988	3.0696660	20	7 1.0	19.3
389293 Hasubick	15.2	X	23.78281	87.63106	79.37640	26.54005	0.2447007	0.17159090	3.2073021	20	4 16.2	19.0
389294 2009 KO_{12}	16.7	X	18.10684	85.34894	129.40697	2.41953	0.1782206	0.18055650	3.1002303	20	5 19.2	20.1
389295 2009 KM_{16}	16.4	X	76.34964	320.29839	196.26250	7.56734	0.0946141	0.18136948	3.0909590	20	5 24.2	20.6
389296 2009 KL_{22}	15.8	X	13.38059	35.63592	213.77090	22.53093	0.2849839	0.18307773	3.0717017	20	7 3.3	19.2
389297 2009 KH_{30}	15.5	X	342.12599	143.89356	107.56881	26.22846	0.2302452	0.17726758	3.1384594	20	5 6.0	19.4
389298 2009 LQ_{6}	15.7	X	344.35105	66.84723	177.35667	26.28348	0.2097665	0.17390287	3.1788122	20	4 22.2	19.4
389299 2009 OX_{15}	17.6	X	51.71430	59.71627	284.28815	4.92469	0.1303921	0.29124473	2.2540523	20	—	—
389300 2009 QE_{16}	18.3	X	42.12901	255.63506	133.66314	2.71973	0.2406839	0.29155148	2.2524710	20	—	—
389301 2009 QH_{16}	13.9	X	273.48162	257.55163	163.93239	9.67845	0.0823507	0.08289313	5.2094320	20	8 25.2	20.8
389302 2009 RV_{25}	13.9	X	25.82479	126.48005	191.41102	13.59152	0.1225712	0.08359040	5.1804218	20	9 25.1	20.3
389303 2009 RZ_{30}	18.0	X	341.76673	261.77066	215.59124	4.91952	0.1384909	0.29513637	2.2341941	20	—	—
389304 2009 RC_{44}	13.3	X	236.82454	98.18198	14.96336	28.83218	0.0392291	0.08333215	5.1911189	20	9 24.8	20.3
389305 2009 RY_{49}	13.8	X	318.73139	12.43002	19.37638	8.86922	0.0282367	0.08348773	5.1846679	20	9 22.8	20.5
389306 2009 RL_{53}	17.8	X	0.50334	247.54791	189.68960	7.68792	0.0933335	0.28930990	2.2640909	20	—	—
389307 2009 RU_{63}	14.0	X	286.02627	34.55010	25.07572	7.68103	0.0594727	0.08493229	5.1257114	20	9 13.0	20.7
389308 2009 SA_{10}	18.0	X	25.23118	63.38638	333.06954	6.92603	0.2496227	0.28907155	2.2653352	20	—	—
389309 2009 SK_{25}	14.0	X	250.86057	240.40188	212.35595	5.78789	0.0522311	0.08366539	5.1773259	20	9 6.9	21.0
389310 2009 SS_{32}	13.6	X	212.07169	122.73749	11.61973	18.54234	0.0492106	0.08116715	5.2830230	20	9 18.2	20.8
389311 2009 SF_{36}	18.1	X	12.52810	111.02283	338.88346	3.43826	0.1189899	0.29586049	2.2305471	20	—	—
389312 2009 SR_{70}	17.8	X	31.21366	250.77626	168.81623	6.68195	0.1968162	0.29175931	2.2514012	20	—	—
389313 2009 SU_{76}	13.6	X	201.54987	54.22386	110.63581	6.23483	0.1458097	0.08212446	5.2418874	20	10 4.8	21.1
389314 2009 SH_{114}	14.0	X	256.85266	98.76500	355.30054	15.35295	0.1177929	0.08355896	5.1817209	20	9 10.1	20.9
389315 2009 SN_{115}	18.2	X	100.78113	151.16764	209.55344	5.94023	0.1443401	0.30133791	2.2034348	20	—	—
389316 2009 SJ_{119}	14.1	X	241.85999	125.91592	345.85629	7.00256	0.0883930	0.08465985	5.1367021	20	9 15.8	21.1
389317 2009 ST_{140}	13.6	X	324.28614	131.83887	248.51012	6.20032	0.0687613	0.08479255	5.1313414	20	9 9.3	20.2
389318 2009 SV_{169}	13.5	X	266.57204	168.23513	261.94327	6.25139	0.1060441	0.08206658	5.2443520	20	8 22.0	20.5
389319 2009 SO_{188}	17.1	X	62.44421	10.83342	50.96807	8.59066	0.1069416	0.30177065	2.2013278	20	—	—
389320 2009 SR_{197}	13.5	X	263.68018	76.23830	1.30342	16.26871	0.0508828	0.08102220	5.2893221	20	9 8.8	20.5
389321 2009 SQ_{199}	14.2	X	269.17340	87.92276	358.01712	9.36841	0.0657179	0.08431572	5.1506694	20	9 19.9	20.9
389322 2009 SQ_{203}	13.6	X	221.74433	318.83682	184.69089	13.89382	0.1282512	0.08262771	5.2205819	20	9 27.7	21.0
389323 2009 SL_{218}	14.1	X	300.18089	24.10522	30.69575	8.05303	0.0950125	0.08518345	5.1156312	20	9 20.6	20.6
389324 2009 SJ_{233}	17.7	X	48.45145	48.32211	32.60342	5.41138	0.0807471	0.30323817	2.1942198	20	—	—
389325 2009 SW_{242}	18.1	X	30.18851	357.05612	25.91749	0.97276	0.2445729	0.28963873	2.2623769	20	—	—
389326 2009 SB_{244}	13.8	X	264.42333	262.81744	191.98139	5.26635	0.0875577	0.08234020	5.2327272	20	9 20.8	20.7
389327 2009 SB_{248}	14.1	X	342.03183	22.71027	348.40313	6.95090	0.0621198	0.08522609	5.1139249	20	9 24.0	20.6
389328 2009 SU_{253}	14.2	X	225.79988	161.21536	333.60432	6.34566	0.0980418	0.08216405	5.2402034	20	9 22.9	21.4
389329 2009 SP_{267}	17.6	X	145.10402	28.68228	336.95409	2.40002	0.1387924	0.31069030	2.1589915	20	1 27.6	20.2
389330 2009 SF_{272}	17.9	X	67.99803	184.16407	213.09927	6.88188	0.1083858	0.29804785	2.2196205	20	—	—
389331 2009 SL_{281}	13.8	X	244.29061	18.24507	84.29275	5.21597	0.0538572	0.08285220	5.2111471	20	9 14.8	20.8
389332 2009 SF_{283}	14.0	X	267.26214	30.50180	63.48014	8.60518	0.0717126	0.08557601	5.0999749	20	9 29.9	20.8
389333 2009 SO_{290}	17.8	X	10.05395	34.17770	60.04331	5.34767	0.1225882	0.29527905	2.2334743	20	—	—
389334 2009 SP_{295}	14.2	X	289.80425	267.08115	158.68343	9.37687	0.0772225	0.08353583	5.1826774	20	9 20.8	20.8
389335 2009 SN_{298}	14.0	X	356.64790	83.84047	266.58774	7.55133	0.0141235	0.08373560	5.1744313	20	9 15.7	20.9
389336 2009 SN_{306}	14.1	X	256.35943	284.98855	171.49168	10.19509	0.0801046	0.08381909	5.1709948	20	9 15.6	21.0
389337 2009 SQ_{318}	14.3	X	287.11132	275.71070	147.86348	3.37854	0.0941098	0.08360914	5.1796476	20	9 12.3	21.0
389338 2009 SS_{322}	17.0	X	56.82884	16.71783	37.29443	4.89232	0.0641300	0.21129939	2.7917116	20	—	—
389339 2009 SA_{349}	18.2	X	7.80491	25.33018	49.53953	4.39215	0.1969731	0.28495445	2.2871032	20	—	—
389340 2009 SQ_{351}	18.2	X	108.39438	56.25548	317.02586	2.37916	0.0925480	0.30429994	2.1891128	20	—	—
389341 2009 SF_{355}	14.4	X	243.07287	319.81782	151.18550	8.00100	0.1076473	0.08219578	5.2388547	20	9 15.4	21.5
389342 2009 TD_{29}	14.4	X	315.24144	115.70026	280.30111	5.62063	0.0231576	0.08435532	5.1490573	20	9 19.4	21.2
389343 2009 TS_{31}	18.0	X	87.53657	338.09656	58.45156	5.94582	0.1115205	0.30187092	2.2008403	20	—	—
389344 2009 TX_{40}	17.5	X	336.09978	339.84863	51.85886	3.20216	0.2477139	0.27164457	2.3612141	20	12 10.3	19.0
389345 2009 UD_{5}	15.8	X	298.16591	25.34195	39.13805	18.47809	0.2310631	0.17643010	3.1483833	20	10 2.5	19.6
389346 2009 UW_{7}	15.1	X	174.50597	217.81850	88.69326	4.35035	0.2100392	0.12466443	3.9686336	20	1 12.4	21.5
389347 2009 UK_{11}	14.0	X	291.37763	324.81391	95.33484	6.11880	0.0456950	0.08460447	5.1389434	20	9 21.9	20.7
389348 2009 UA_{12}	17.9	X	313.83103	46.08601	36.63519	2.67077	0.1739585	0.27235768	2.3570907	20	—	—
389349 2009 UW_{16}	17.6	X	43.16223	306.19636	51.61333	3.95114	0.1782615	0.28309345	2.2971155	20	—	—
389350 2009 UL_{30}	15.7	X	130.83121	185.11062	47.60858	21.20848	0.0897243	0.17549665	3.1595374	20	10 29.6	20.5
389351 2009 UL_{53}	17.3	X	130.52400	138.22732	227.59047	3.47784	0.1515509	0.30523167	2.1846556	20	1 11.1	20.0
389352 2009 UA_{58}	17.9	X	352.32710	239.79639	235.40264	3.18329	0.1416731	0.29265241	2.2468184	20	—	—
389353 2009 UC_{60}	13.9	X	242.90551	65.92604	38.23643	9.30440	0.0619925	0.08401786	5.1628357	20	9 15.6	20.9
389354 2009 UW_{72}	17.2	X	335.23593	24.52405	39.50676	6.01072	0.2205969	0.27559884	2.3385740	20	—	—
389355 2009 UE_{80}	14.0	X	227.45671	301.66184	191.43612	8.73353	0.0257703	0.08380333	5.1716431	20	10 1.3	20.9
389356 2009 UZ_{93}	13.2	X	313.42006	25.00853	22.59240	14.27065	0.1626686	0.08193700	5.2498795	20	9 23.4	19.6
389357 2009 UZ_{101}	17.7	X	288.34949	213.20069	179.84325	4.08280	0.1938387	0.25977350	2.4326118	20	8 11.8	20.2
389358 2009 UQ_{130}	17.8	X	32.65210	40.41935	28.03738	6.32263	0.1400041	0.29362272	2.2418658	20	—	—
389359 2009 UJ_{153}	17.6	X	359.12098	320.05241	86.47288	3.62352	0.2093578	0.27290801	2.3539209	20	—	—
389360 2009 UD_{155}	13.7	X	291.29353	51.15197	24.32422	14.23920	0.0176004	0.08060342	5.3076271	20	10 9.9	20.6

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Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
	m		°	°	°	°		°				
389361 2009 VS_1	17.2	X	328.54095	269.83398	177.89526	20.41605	0.3030228	0.27570810	2.3379562	20	—	—
389362 2009 VG_5	14.4	X	296.89076	52.11870	28.74796	5.83713	0.0930385	0.08317225	5.1977701	20	10 13.6	21.0
389363 2009 VC_8	17.5	X	40.65785	162.35990	242.87935	2.66955	0.1503176	0.28950085	2.2630952	20	—	—
389364 2009 VE_{28}	17.5	X	310.00175	222.58385	226.85649	4.10899	0.1772019	0.27431776	2.3458493	20	—	—
389365 2009 VG_{28}	17.6	X	38.01289	135.71480	240.55344	5.32142	0.2108637	0.28407362	2.2918285	20	—	—
389366 2009 VH_{28}	17.7	X	350.75293	165.69257	246.13120	2.44407	0.2346594	0.27785700	2.3258863	20	—	—
389367 2009 VE_{44}	18.0	X	60.44283	252.57605	147.94053	2.52537	0.1645737	0.29361090	2.2419259	20	—	—
389368 2009 VZ_{44}	17.7	X	107.71913	46.83269	315.78539	4.87046	0.1925255	0.29936637	2.2130983	20	—	—
389369 2009 VF_{52}	17.2	X	16.35976	357.36426	73.71835	7.63973	0.0795701	0.28726084	2.2743170	20	—	—
389370 2009 VQ_{71}	17.8	X	324.07922	307.42943	156.16593	3.30222	0.0854316	0.27920606	2.3183882	20	—	—
389371 2009 VH_{101}	17.7	X	294.01910	243.26884	195.97470	4.80003	0.2010270	0.26537156	2.3982795	20	11 6.6	19.7
389372 2009 VS_{103}	17.2	X	1.01391	133.74034	295.43972	6.38694	0.0989167	0.27484108	2.3428705	20	—	—
389373 2009 VU_{113}	17.6	X	357.66033	342.44229	53.48990	1.47383	0.2133854	0.27540765	2.3396562	20	—	—
389374 2009 WE_2	18.0	X	273.08357	351.47764	91.14703	2.37670	0.1578582	0.26693258	2.3889203	20	10 8.7	20.3
389375 2009 WD_{24}	17.5	X	346.80714	11.50718	73.29521	3.27326	0.1963649	0.28118829	2.3074798	20	—	—
389376 2009 WX_{28}	17.2	X	305.45674	71.70813	65.68778	6.15217	0.1013121	0.28345393	2.2951676	20	—	—
389377 2009 WZ_{39}	17.5	X	216.60459	190.52828	59.51557	8.13756	0.1424658	0.28959664	2.2625961	20	—	—
389378 2009 WB_{45}	18.3	X	322.42740	254.62676	213.96302	2.24362	0.1545908	0.28078579	2.3096843	20	—	—
389379 2009 WZ_{46}	17.9	X	1.17916	234.82756	174.13987	4.91661	0.2290684	0.28026687	2.3125344	20	—	—
389380 2009 WP_{64}	18.2	X	2.53158	276.67354	126.22922	2.63261	0.2147991	0.27753849	2.3276655	20	—	—
389381 2009 WB_{87}	16.8	X	209.53257	62.14139	336.58435	3.39563	0.0623604	0.23598428	2.5934667	20	5 23.7	20.5
389382 2009 WW_{88}	17.4	X	328.07651	5.20713	100.94739	3.30764	0.1551019	0.28000550	2.3139733	20	—	—
389383 2009 WO_{130}	17.3	X	137.07679	80.64961	247.43833	9.52354	0.0054646	0.29344240	2.2427841	20	—	—
389384 2009 WZ_{145}	17.4	X	292.80980	97.25611	34.50591	4.98355	0.1879066	0.27602121	2.3361877	20	—	—
389385 2009 WY_{157}	17.5	X	243.40030	345.95157	140.90780	4.07557	0.2046487	0.26231233	2.4168901	20	10 18.1	20.5
389386 2009 WB_{164}	18.3	X	325.32778	113.72289	289.00106	1.62921	0.1570790	0.26659704	2.3909243	20	11 20.7	20.2
389387 2009 WQ_{177}	17.7	X	59.77916	328.18122	57.10955	3.96252	0.0771280	0.28928150	2.2642391	20	—	—
389388 2009 WH_{183}	18.4	X	251.75321	334.61387	186.57840	2.83500	0.1724890	0.27018829	2.3696909	20	12 22.3	20.9
389389 2009 WG_{220}	18.1	X	315.29863	308.68549	220.32090	5.79425	0.1329037	0.29533160	2.2332093	20	—	—
389390 2009 WX_{253}	17.9	X	47.90165	1.98947	51.09994	2.23511	0.1666938	0.29105971	2.2550075	20	—	—
389391 2009 WM_{255}	17.4	X	322.00107	327.98273	97.96433	7.24939	0.1316508	0.26624418	2.3930364	20	12 18.2	19.4
389392 2009 WY_{255}	18.1	X	314.48965	178.61719	276.08771	2.06907	0.1364430	0.27392679	2.3480808	20	—	—
389393 2009 WQ_{261}	18.1	X	332.71658	78.19624	359.82336	4.65818	0.2414272	0.27616082	2.3354003	20	—	—
389394 2009 XS_1	17.3	X	311.28796	0.31622	121.52205	5.97103	0.1005438	0.28013340	2.3132689	20	—	—
389395 2009 XA_3	17.1	X	353.93480	8.48011	88.99857	7.53284	0.0716199	0.28568552	2.2831997	20	—	—
389396 2009 XZ_7	16.7	X	149.45775	28.04165	96.11612	23.02883	0.1286146	0.23572973	2.5953334	20	7 9.2	20.8
389397 2009 XN_8	17.2	X	351.08801	327.64462	99.24159	7.71407	0.1957247	0.27577959	2.3375521	20	—	—
389398 2009 XX_{15}	17.0	X	252.03004	115.00126	119.59921	7.26969	0.0656390	0.28689269	2.2767905	20	—	—
389399 2009 XQ_{17}	17.2	X	237.45609	80.25966	92.46496	7.53415	0.0674183	0.26628042	2.3928193	20	12 31.6	20.0
389400 2009 XP_{18}	15.8	X	329.60409	355.13239	289.74136	13.21359	0.1608373	0.22523291	2.6753554	20	5 19.0	19.0
389401 2009 XQ_{22}	17.7	X	336.57070	253.41592	139.25830	3.03245	0.2193911	0.26262868	2.4149489	20	12 5.6	19.6
389402 2009 XB_{24}	17.2	X	117.41968	270.21598	93.48075	7.47655	0.2056129	0.29928199	2.2135143	20	—	—
389403 2009 YE_{25}	17.9	X	323.70926	308.35186	121.16662	1.84596	0.1536921	0.26648282	2.3916075	20	12 28.5	19.8
389404 2010 AM_5	17.5	X	355.15785	319.83785	104.94664	5.03485	0.0781356	0.27336924	2.3512725	20	—	—
389405 2010 AM_{12}	16.9	X	258.63576	62.25917	111.24985	12.28794	0.1836694	0.26768990	2.3844125	20	—	—
389406 2010 AY_{12}	17.8	X	72.33881	55.45162	331.68054	2.88702	0.1784259	0.28748661	2.2736536	20	—	—
389407 2010 AT_{18}	17.2	X	168.26696	75.87812	119.81329	7.00321	0.0891568	0.25279553	2.4771737	20	11 3.8	20.9
389408 2010 AT_{21}	17.8	X	263.04085	16.90860	134.49351	3.21556	0.1087398	0.26576503	2.3959118	20	—	—
389409 2010 AL_{24}	16.7	X	222.72989	71.89881	106.83834	7.05682	0.1009569	0.26040803	2.4286586	20	12 13.2	19.8
389410 2010 AC_{35}	17.6	X	291.92052	304.35121	150.55917	5.12092	0.1495503	0.26108685	2.4244471	20	11 30.5	19.8
389411 2010 AU_{39}	17.1	X	257.62087	180.85968	309.86004	5.45610	0.1508341	0.26269826	2.4145225	20	11 18.4	19.8
389412 2010 AH_{55}	17.6	X	245.37606	75.86716	63.45597	3.37312	0.1378256	0.25573912	2.4581286	20	11 14.2	20.6
389413 2010 AM_{56}	17.2	X	206.68699	84.01032	85.40842	7.15063	0.1622106	0.25504164	2.4626082	20	11 4.8	20.9
389414 2010 AP_{66}	17.3	X	154.41167	220.01045	309.12171	4.23256	0.2011118	0.23654380	2.5893753	20	9 9.3	21.6
389415 2010 AA_{136}	16.9	X	125.50853	350.99592	246.10264	8.05424	0.1559035	0.23521634	2.5991084	20	11 5.9	21.2
389416 2010 BY	18.2	X	259.07875	169.56992	20.69190	1.44435	0.1229035	0.27385793	2.3484744	20	—	—
389417 2010 BO_{34}	17.0	X	190.50229	115.67657	354.74791	5.91288	0.0851781	0.22304417	2.6928291	20	8 5.6	21.0
389418 2010 BR_{61}	13.5	X	345.16742	281.57377	85.09567	15.27189	0.0915869	0.08212595	5.2418241	20	9 30.9	20.2
389419 2010 BD_{68}	16.6	X	96.99371	183.25330	43.17932	13.85321	0.0710461	0.22513922	2.6760976	20	9 24.2	20.6
389420 2010 BU_{88}	16.8	X	165.90461	52.00248	136.33379	12.52611	0.1346212	0.23412743	2.6071610	20	10 20.4	21.1
389421 2010 BP_{127}	16.7	X	143.27801	340.55398	199.34192	10.75036	0.1105537	0.22507961	2.6765701	20	9 9.3	20.9
389422 2010 CR_3	17.4	X	191.11140	250.80011	353.67786	5.96029	0.1032530	0.26400118	2.4065717	20	—	—
389423 2010 CJ_7	15.6	X	277.24655	101.30492	122.78906	16.78244	0.0367884	0.17321483	3.1872246	20	1 14.5	20.1
389424 2010 CZ_8	15.7	X	259.23405	215.35361	75.40714	17.83912	0.1587106	0.18260363	3.0770161	20	3 7.6	20.8
389425 2010 CZ_{11}	17.5	X	240.77174	259.34870	252.57197	5.27186	0.0725363	0.25764549	2.4459882	20	12 5.1	20.6
389426 2010 CK_{17}	16.6	X	25.84631	225.80043	62.15603	9.04987	0.1780064	0.21437945	2.7649076	20	9 23.3	19.9
389427 2010 CQ_{20}	17.6	X	243.68703	6.26051	136.45611	4.49957	0.0738835	0.25504002	2.4626187	20	11 27.0	20.6
389428 2010 CF_{23}	17.9	X	292.99987	354.45992	132.65294	3.45594	0.1094108	0.26750913	2.3854866	20	—	—
389429 2010 CK_{29}	17.2	X	317.92183	231.09867	147.92093	1.50577	0.0503732	0.23884426	2.5727219	20	9 27.3	20.3
389430 2010 CW_{30}	16.4	X	91.73838	29.77634	139.61143	14.46250	0.0472347	0.22266385	2.6958946	20	6 23.8	20.3
389431 2010 CO_{36}	17.4	X	240.59613	23.84305	95.04235	3.35842	0.1581218	0.25857583	2.4401176	20	10 10.1	20.5
389432 2010 CB_{42}	17.3	X	181.64912	125.62791	315.54775	3.08559	0.1547223	0.22686196	2.6625326	20	6 15.9	21.6
389433 2010 CG_{54}	16.7	X	153.96118	95.22600	111.32928	12.78722	0.2535461	0.23310768	2.6147590	20	10 30.3	21.5
389434 2010 CX_{63}	16.7	X	193.54690	113.15294	148.02787	13.15522	0.1836638	0.26413700	2.4057467	20	—	—
389435 2010 CH_{73}	17.8	X	291.93301	308.91075	162.42457	2.79988	0.1384191	0.26395422	2.4068571	20	12 25.6	20.1
389436 2010 CW_{75}	16.7	X	155.26160	203.05326	325.86305	11.61042	0.1441383	0.23567307	2.5957493	20	9 8.3	20.8
389437 2010 CH_{81}	16.5	X	70.87805	291.45694	333.13537	12.28094	0.2270520	0.23187405	2.6240249	20	10 19.9	20.7
389438 2010 CF_{94}	17.0	X	143.65089	73.57402	160.15869	12.70279	0.0800721	0.24667551	2.5179786	20	11 24.5	20.9
389439 2010 CQ_{94}	17.4	X	166.34740	22.24722	151.85079	6.83668	0.0193941	0.23878527	2.5731456	20	10 4.8	20.9
389440 2010 CM_{101}	17.5	X	271.40604	317.03322	111.24794	2.77604	0.0625610	0.24532627	2.5272023	20	9 26.3	20.6

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Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
	m		°	°	°	°		°				
389441 2010 CK_{102}	17.8	X	180.20923	203.22670	31.78575	1.48575	0.1398001	0.25946508	2.4345392	20	12 30.2	21.3
389442 2010 CF_{138}	16.8	X	200.98781	162.19682	343.25098	6.48756	0.1022809	0.24001333	2.5643609	20	9 28.9	20.4
389443 2010 CV_{144}	16.5	X	102.84803	61.22198	204.05269	12.72560	0.1109892	0.24515927	2.5283498	20	11 20.2	20.3
389444 2010 CP_{152}	16.9	X	269.26732	65.33412	351.00648	15.29688	0.0986217	0.23734006	2.5835806	20	8 31.9	20.1
389445 2010 CR_{177}	16.9	X	121.03401	226.24088	35.59174	7.20901	0.1638839	0.24594645	2.5229521	20	12 3.5	21.0
389446 2010 CL_{178}	17.0	X	94.63393	66.50714	178.39211	13.02097	0.1327922	0.23026093	2.6362659	20	10 17.4	21.0
389447 2010 CL_{181}	17.5	X	228.25566	312.48710	131.40587	6.33963	0.1950382	0.23909201	2.5709443	20	8 1.4	21.3
389448 2010 CJ_{182}	16.7	X	246.46356	11.16847	158.30509	6.91841	0.1214803	0.26056303	2.4276953	20	12 30.1	19.5
389449 2010 CG_{183}	17.1	X	179.74725	191.69926	344.71277	12.10608	0.1985570	0.24138615	2.5546289	20	10 7.6	21.5
389450 2010 CP_{185}	17.2	X	274.17576	40.53201	160.97316	5.60115	0.0626737	0.27740661	2.3284032	20	—	—
389451 2010 CU_{196}	15.6	X	233.02776	322.34283	350.18345	26.87685	0.1239384	0.17956538	3.1116278	20	3 5.0	20.4
389452 2010 CA_{228}	16.0	X	212.13364	292.59066	20.70576	15.24309	0.0323717	0.17819806	3.1275246	20	2 22.2	20.8
389453 2010 DW_{4}	16.4	X	93.40062	34.55788	131.21221	5.77312	0.0771883	0.22230411	2.6988022	20	6 24.6	20.1
389454 2010 DX_{8}	16.0	X	224.83925	297.79069	167.89869	27.13253	0.0583738	0.23685839	2.5870820	20	9 11.7	19.4
389455 2010 DQ_{18}	15.5	X	330.70694	96.72898	95.69394	23.37661	0.1138866	0.17943094	3.1131819	20	2 2.1	19.8
389456 2010 DT_{21}	17.0	X	214.12812	257.32573	308.63598	11.16951	0.1601668	0.26337029	2.4104134	20	12 30.7	20.2
389457 2010 DX_{39}	15.5	X	328.35754	208.15207	306.80788	11.49436	0.0900656	0.18262882	3.0767332	20	—	—
389458 2010 DZ_{41}	17.6	X	215.84569	55.17220	136.70294	6.97555	0.0566052	0.26158366	2.4213764	20	12 28.0	20.6
389459 2010 DL_{45}	16.9	X	152.16454	233.46870	335.32449	11.69570	0.1134929	0.24172507	2.5522405	20	10 23.6	21.0
389460 2010 DL_{46}	17.4	X	111.59108	304.49553	319.94608	4.60617	0.2253104	0.24058994	2.5602620	20	11 29.9	21.8
389461 2010 DY_{63}	15.8	X	325.08548	160.69494	141.63106	20.82412	0.1654772	0.19873021	2.9082168	20	6 11.0	19.6
389462 2010 DM_{76}	16.6	X	194.60690	154.12566	80.05493	6.49961	0.1260695	0.26179080	2.4200990	20	—	—
389463 2010 DZ_{76}	16.1	X	356.97117	291.72094	2.14147	13.63805	0.0649073	0.22389552	2.6859986	20	8 2.8	19.6
389464 2010 EY_{31}	17.6	X	112.01553	180.23711	14.24078	3.47073	0.0904393	0.22831162	2.6512502	20	8 27.9	21.5
389465 2010 EY_{39}	17.1	X	214.36953	121.92956	7.22325	28.32523	0.2387449	0.24064167	2.5598950	20	9 17.9	21.4
389466 2010 ED_{41}	16.8	X	51.95096	283.67273	345.40195	7.80826	0.1551404	0.22767144	2.6562178	20	9 27.7	20.4
389467 2010 EU_{42}	16.6	X	209.88110	330.67663	151.46200	13.63364	0.1130034	0.23653239	2.5894586	20	9 10.2	20.3
389468 2010 ER_{44}	17.0	X	157.74310	85.73133	88.28715	10.34718	0.1433894	0.23810390	2.5780522	20	9 25.9	21.3
389469 2010 EG_{45}	15.7	X	97.40695	237.56387	42.35189	31.39226	0.3052549	0.23228824	2.6209047	20	12 2.7	20.7
389470 2010 ER_{45}	17.2	X	123.47370	168.59422	10.72510	13.02000	0.1005787	0.22647588	2.6655576	20	8 25.9	21.3
389471 2010 ES_{45}	16.5	X	122.30789	231.25646	7.12199	16.70383	0.0870040	0.24028732	2.5624111	20	10 29.3	20.4
389472 2010 EL_{66}	17.1	X	95.92511	239.18885	2.14276	11.43336	0.2571478	0.22930325	2.6436010	20	10 19.4	21.6
389473 2010 EK_{69}	17.4	X	82.58309	175.03713	55.46626	2.92288	0.1449279	0.22493832	2.6776908	20	9 16.2	21.3
389474 2010 ET_{70}	16.8	X	55.93067	296.72861	4.96708	14.71488	0.0889681	0.23536626	2.5980045	20	11 2.6	20.5
389475 2010 EQ_{81}	17.6	X	208.49812	221.06121	18.41585	2.89755	0.1692800	0.25774121	2.4453825	20	—	—
389476 2010 EL_{82}	16.3	X	324.83569	212.64706	168.70606	15.76859	0.0584248	0.23675223	2.5878554	20	10 13.1	19.5
389477 2010 EL_{87}	16.3	X	211.98573	126.84505	15.99479	9.59562	0.0677324	0.23758890	2.5817763	20	10 13.0	19.8
389478 2010 ER_{87}	16.6	X	130.86239	21.61085	181.08258	12.08025	0.1208090	0.22871335	2.6481447	20	9 28.9	20.5
389479 2010 EO_{89}	16.9	X	44.32093	161.53151	137.20840	3.96689	0.0939447	0.23359656	2.6111095	20	10 22.1	20.2
389480 2010 EA_{99}	17.4	X	135.62202	31.90734	169.14042	8.88021	0.1528696	0.23169525	2.6253747	20	10 3.9	21.6
389481 2010 EA_{100}	17.4	X	186.85872	186.49928	7.86698	5.15569	0.1821481	0.24263449	2.5458591	20	11 8.7	21.4
389482 2010 EB_{107}	16.6	X	150.73736	200.08660	352.30139	7.99224	0.0128737	0.23587876	2.5942401	20	10 4.7	20.1
389483 2010 EB_{110}	17.2	X	175.69903	204.32321	354.48547	9.61783	0.0314162	0.24543515	2.5264549	20	11 12.7	20.8
389484 2010 EF_{110}	17.4	X	83.33849	297.66302	310.40663	0.95075	0.1471844	0.22971693	2.6404263	20	10 8.4	21.1
389485 2010 EW_{127}	16.0	X	85.32769	193.41117	43.21430	16.56137	0.1583619	0.22689151	2.6623014	20	10 4.3	20.1
389486 2010 ED_{130}	16.6	X	318.12755	56.53068	355.61229	9.85976	0.0398561	0.24125443	2.5555586	20	11 8.4	19.9
389487 2010 EL_{131}	17.2	X	100.56395	309.85505	289.77428	2.78011	0.1132802	0.22913657	2.6448829	20	10 11.7	21.1
389488 2010 EN_{131}	16.6	X	194.29918	130.06370	357.90932	14.42492	0.0450153	0.23058207	2.6338176	20	9 6.6	20.3
389489 2010 EV_{139}	16.9	X	54.78313	254.92663	354.73473	5.04546	0.0630679	0.22380772	2.6867010	20	8 24.5	20.4
389490 2010 EC_{172}	16.9	X	89.06718	339.85209	201.40452	9.40974	0.1921314	0.22020789	2.7159022	20	7 23.0	21.1
389491 2010 FX_{1}	17.2	X	212.08139	300.86726	136.58652	6.92688	0.0758176	0.22620038	2.6677215	20	7 16.7	21.1
389492 2010 FW_{3}	17.2	X	67.59507	76.41748	127.30320	5.37809	0.0205572	0.21801951	2.7340460	20	7 2.2	20.8
389493 2010 FR_{5}	17.0	X	97.55456	169.72402	129.71791	5.10078	0.1156993	0.24484301	2.5305266	20	12 25.9	20.9
389494 2010 FJ_{6}	17.4	X	95.99958	246.40840	40.87267	4.62136	0.1895797	0.24463474	2.5319627	20	12 13.6	21.5
389495 2010 FX_{16}	17.2	X	102.18063	311.44550	233.38015	1.08384	0.1791908	0.21933934	2.7230672	20	8 11.2	21.3
389496 2010 FP_{17}	17.5	X	245.52037	20.70705	134.53531	4.70674	0.0976875	0.25544864	2.4599917	20	12 12.3	20.5
389497 2010 FG_{22}	17.0	X	344.81872	280.27468	71.91483	4.09777	0.0881829	0.23444432	2.6048111	20	10 4.0	19.9
389498 2010 FW_{25}	16.8	X	103.85530	287.77804	349.28071	4.87678	0.0950678	0.24035637	2.5619204	20	12 1.8	20.6
389499 2010 FG_{30}	16.7	X	71.87761	283.83506	190.67908	11.11629	0.0962985	0.19399388	2.9553620	20	3 22.9	20.4
389500 2010 FU_{84}	15.8	X	341.84834	210.62324	174.73384	12.43420	0.1812418	0.24233165	2.5479797	20	11 25.2	18.5
389501 2010 FJ_{87}	16.1	X	252.35678	62.83380	7.33052	22.11760	0.0916489	0.23494763	2.6010898	20	9 3.7	19.8
389502 2010 FL_{88}	15.9	X	110.65580	163.23371	54.01223	10.78472	0.1080086	0.22454121	2.6808469	20	9 29.9	20.0
389503 2010 FW_{92}	16.2	X	57.62517	156.00811	65.56052	18.91154	0.2202795	0.21451953	2.7637038	20	8 21.5	20.3
389504 2010 FJ_{101}	16.6	X	115.70871	221.32436	12.52719	8.52465	0.1279053	0.23271839	2.6176741	20	10 21.7	20.6
389505 2010 GG_{6}	16.3	X	68.65642	214.33719	52.07535	13.46732	0.1673467	0.22411825	2.6842187	20	10 21.2	20.2
389506 2010 GN_{25}	16.7	X	76.85624	217.59221	58.33423	14.20638	0.2399888	0.22718379	2.6600175	20	11 15.3	21.0
389507 2010 GO_{27}	16.8	X	95.91646	193.89055	83.45651	5.96693	0.2297368	0.23089290	2.6314532	20	12 2.5	21.2
389508 2010 GY_{101}	16.7	X	73.03913	195.72104	71.27610	8.87916	0.0976352	0.22502772	2.6769815	20	10 18.2	20.5
389509 2010 GM_{107}	16.8	X	92.57450	237.37240	11.62792	10.57928	0.0612312	0.23028328	2.6360953	20	10 10.2	20.4
389510 2010 GP_{110}	16.4	X	92.05243	40.45102	193.62554	14.52605	0.0973488	0.22923675	2.6441123	20	9 23.9	20.2
389511 2010 GO_{113}	17.4	X	101.78846	333.15096	216.62318	6.48100	0.0726180	0.21682262	2.7440982	20	8 2.9	21.4
389512 2010 GE_{120}	16.3	X	38.73626	171.07836	103.69876	6.34607	0.0791632	0.21856234	2.7295171	20	9 8.4	19.8
389513 2010 GO_{121}	17.2	X	78.91991	61.03165	178.49820	10.19035	0.1451138	0.21972794	2.7198557	20	9 21.5	21.0
389514 2010 GZ_{132}	16.2	X	289.29290	157.37565	185.97363	15.01895	0.1507364	0.20485461	2.8499608	20	6 8.7	20.3
389515 2010 GK_{136}	16.0	X	98.76459	358.38126	276.05265	15.72063	0.1936923	0.23951307	2.5679303	20	11 30.0	20.3
389516 2010 GY_{139}	17.0	X	165.54990	123.14220	44.13254	9.47308	0.1432499	0.23066546	2.6331828	20	9 22.7	21.2
389517 2010 GH_{141}	16.0	X	132.36911	301.43452	301.75508	11.45756	0.2725161	0.23704538	2.5857214	20	11 19.4	20.8
389518 2010 GX_{144}	16.5	X	277.07161	11.52403	29.28895	9.67554	0.0675126	0.22441627	2.6818418	20	8 27.2	20.1
389519 2010 GD_{146}	16.5	X	201.26549	310.77358	171.13160	15.86979	0.1492196	0.23148269	2.6269816	20	8 25.1	20.7
389520 2010 GT_{157}	16.7	X	165.27583	143.41915	33.42888	11.89771	0.1113593	0.23146302	2.6271305	20	10 4.2	20.7

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
	m		°	°	°	°		°				
389521 2010 GT_{158}	16.5	X	337.37351	192.38578	109.76390	5.63947	0.1854089	0.20998279	2.8033688	20	6 29.7	19.4
389522 2010 GB_{161}	17.1	X	85.15775	54.70260	169.39249	14.46263	0.1897806	0.22048028	2.7136649	20	9 14.3	21.2
389523 2010 HW_{96}	16.0	X	331.31496	131.28467	121.66869	8.54186	0.1950376	0.18214341	3.0821971	20	4 11.6	19.7
389524 2010 HR_{104}	16.8	X	125.86197	145.05867	69.08508	4.65003	0.1966535	0.22765748	2.6563263	20	10 12.7	21.2
389525 2010 JU_{1}	17.0	X	119.19685	121.38101	82.17164	14.13423	0.2037037	0.22473567	2.6793002	20	9 30.1	21.7
389526 2010 JG_{29}	16.9	X	14.70387	277.88374	52.88173	3.97257	0.0602002	0.22609045	2.6685862	20	10 15.9	20.3
389527 2010 JF_{38}	16.6	X	164.32569	155.05514	35.98059	12.08425	0.1095214	0.23452243	2.6042327	20	10 19.5	20.4
389528 2010 JH_{40}	16.5	X	145.32970	5.96252	183.56013	14.75649	0.1777559	0.22841944	2.6504158	20	9 27.2	20.9
389529 2010 JZ_{46}	16.7	X	155.03885	196.01037	9.29200	7.50145	0.1388082	0.23588428	2.5941995	20	10 24.6	20.9
389530 2010 JC_{63}	16.2	X	332.55951	332.12402	323.83296	5.02366	0.3149114	0.18968389	2.9999620	20	5 20.5	19.1
389531 2010 JP_{68}	15.7	X	295.44648	132.00676	151.59302	11.22352	0.2248746	0.17726471	3.1384932	20	3 23.4	20.1
389532 2010 JK_{72}	16.5	X	324.21831	177.42596	159.74308	9.80545	0.0934051	0.21344322	2.7729869	20	8 1.2	19.8
389533 2010 JU_{75}	17.0	X	131.84669	35.40036	170.48985	5.72812	0.1276040	0.22942219	2.6426873	20	10 4.8	21.1
389534 2010 JS_{77}	17.1	X	57.30700	244.21066	37.20164	9.01918	0.3239588	0.21945993	2.7220696	20	11 10.3	21.3
389535 2010 JJ_{80}	17.1	X	129.91218	221.75695	48.40477	5.66830	0.2791615	0.23915533	2.5704905	20	12 20.9	21.8
389536 2010 JC_{149}	16.6	X	105.24187	71.39420	101.14796	5.88154	0.1088380	0.21191065	2.7863406	20	7 22.3	20.5
389537 2010 JE_{149}	15.7	X	269.34859	193.80404	104.45810	5.26833	0.0878349	0.18862687	3.0111589	20	3 28.9	20.1
389538 2010 JW_{163}	17.4	X	61.47288	103.39031	105.87327	1.72520	0.0122980	0.20852477	2.8164213	20	6 29.9	21.3
389539 2010 KN_{38}	16.0	X	196.63776	264.36710	90.04890	11.28817	0.1046647	0.18101911	3.0949461	20	3 23.2	21.0
389540 2010 KH_{66}	15.5	X	264.79654	155.66087	174.20033	28.43753	0.2244476	0.17516992	3.1634650	20	4 16.0	20.6
389541 2010 KH_{110}	16.0	X	271.37947	165.19900	149.61836	18.57934	0.1338561	0.17234286	3.1979661	20	4 18.3	20.9
389542 2010 KG_{117}	16.9	X	122.22250	75.13024	173.55560	9.54470	0.2654511	0.23007924	2.6376536	20	11 21.8	21.7
389543 2010 LY_{36}	16.4	X	293.30725	112.24360	170.23004	5.89782	0.1581088	0.17111103	3.2132958	20	3 27.7	20.9
389544 2010 LZ_{82}	15.8	X	14.23309	111.33678	169.52143	16.97507	0.1114549	0.19103207	2.9858308	20	8 4.8	19.7
389545 2010 LL_{133}	17.2	X	139.81947	95.18844	137.55799	5.51494	0.1795592	0.23302131	2.6154050	20	11 15.8	21.6
389546 2010 MF_{87}	15.3	X	247.06032	282.08580	356.82693	17.49915	0.0372501	0.14893334	3.5248564	20	2 21.7	20.5
389547 2010 MH_{89}	15.9	X	1.97336	265.50215	343.65242	23.44653	0.2763433	0.18090947	3.0961964	20	5 29.2	19.3
389548 2010 OY_{67}	16.9	X	7.30975	150.35934	165.16232	8.40434	0.2243384	0.21640219	2.7476513	20	10 2.4	19.5
389549 2010 OD_{70}	15.6	X	352.49282	269.18771	12.37924	21.37318	0.2688366	0.18113084	3.0936733	20	7 1.2	18.9
389550 2010 PB_{10}	15.4	X	249.33360	198.46487	168.12624	18.22771	0.2333606	0.17503769	3.1650579	20	5 15.4	20.8
389551 2010 PU_{19}	16.1	X	317.23965	151.94661	134.41099	4.91803	0.3212653	0.17280254	3.1922922	20	4 10.6	20.1
389552 2010 RA_{81}	18.1	X	267.93533	24.40061	337.28226	15.55622	0.0765400	0.38071522	1.8853959	20	6 20.4	20.2
389553 2010 RY_{113}	15.7	X	346.43097	273.30707	352.16819	15.68977	0.2345572	0.17715406	3.1398000	20	5 14.6	19.2
389554 2010 RK_{126}	16.1	X	182.38337	21.05360	60.36737	5.89512	0.1347580	0.16926336	3.2366376	20	6 16.1	21.3
389555 2010 RY_{159}	16.3	X	299.84097	133.37452	175.16493	12.83823	0.1434230	0.17718159	3.1394747	20	5 11.9	20.6
389556 2010 SD_{6}	14.2	X	244.64247	72.96590	22.97424	9.33834	0.0993761	0.08398862	5.1640341	20	9 3.6	21.3
389557 2010 UB_{12}	16.2	X	243.65484	34.51699	30.30567	17.26639	0.0815179	0.17971513	3.1098991	20	8 11.4	21.0
389558 2010 UX_{25}	13.9	X	300.52424	9.72535	39.37975	9.86887	0.0447330	0.08428931	5.1517452	20	9 21.4	20.6
389559 2010 UW_{33}	14.2	X	237.06454	107.05074	354.94477	6.69101	0.1159316	0.08210268	5.2428147	20	8 29.5	21.3
389560 2010 UN_{93}	14.2	X	264.45719	95.03595	354.92475	6.80604	0.0875898	0.08460461	5.1389380	20	9 16.3	21.1
389561 2010 UV_{97}	13.8	X	234.67671	5.66510	118.81695	6.58603	0.0525583	0.08473861	5.1335186	20	9 29.6	20.7
389562 2010 VR_{38}	13.4	X	301.27609	317.77449	85.55807	10.73025	0.1170541	0.08446044	5.1447843	20	9 8.5	20.0
389563 2010 VO_{46}	13.9	X	269.59058	49.96338	27.66784	5.05062	0.0845401	0.08039341	5.3168664	20	9 9.8	20.8
389564 2010 VK_{47}	13.8	X	309.40415	139.68334	254.63976	10.42002	0.1563544	0.08220503	5.2384617	20	8 25.5	20.4
389565 2010 VR_{109}	14.5	X	285.63822	239.05793	171.87095	7.13483	0.0798973	0.08275745	5.2151242	20	8 27.6	21.3
389566 2010 VN_{138}	13.2	X	265.24556	178.52083	254.59596	15.52820	0.1640159	0.08235233	5.2322133	20	8 12.8	20.4
389567 2010 VQ_{141}	14.1	X	241.89408	3.58621	104.28038	7.01943	0.0696843	0.08380416	5.1716086	20	9 16.9	21.1
389568 2010 VQ_{149}	14.0	X	239.70602	20.09772	89.17423	10.18909	0.0292002	0.08218278	5.2394071	20	9 22.5	21.1
389569 2010 VG_{157}	14.2	X	152.22533	281.96872	266.49839	9.10509	0.0483562	0.08134962	5.2751201	20	9 9.3	21.4
389570 2010 VQ_{170}	13.9	X	140.01959	150.68133	62.02342	9.75874	0.0221959	0.08210256	5.2428197	20	10 1.0	21.0
389571 2010 VZ_{202}	13.8	X	333.79120	120.80504	245.90491	6.63283	0.0483765	0.08329511	5.1926581	20	9 6.7	20.6
389572 2010 WN_{4}	14.4	X	251.01965	210.76699	239.24308	3.32703	0.0541232	0.08141594	5.2722554	20	9 3.9	21.4
389573 2010 WN_{10}	14.0	X	257.72645	10.53845	85.98303	4.72945	0.0459390	0.08378000	5.1726029	20	9 23.6	20.9
389574 2010 WF_{53}	13.3	X	230.55465	82.21843	54.86701	9.49082	0.0437099	0.08399615	5.1637255	20	10 10.6	20.3
389575 2010 XP_{41}	14.4	X	246.94856	304.69192	161.28473	7.04309	0.0826599	0.08183151	5.2543903	20	9 16.1	21.5
389576 2011 AF	17.4	X	159.99295	90.22223	117.81019	5.48584	0.1556340	0.27957886	2.3163268	20	11 11.1	21.0
389577 2011 AV_{15}	17.8	X	200.22961	82.94247	309.88136	16.88226	0.1170709	0.35480760	1.9760933	20	4 20.9	21.0
389578 2011 AP_{73}	15.3	X	236.21151	225.97623	297.20169	25.98511	0.1744132	0.17922678	3.1155456	20	11 4.7	20.5
389579 2011 BM_{22}	18.0	X	231.41261	247.15326	140.49928	24.66409	0.0851919	0.35505412	1.9751785	20	6 9.8	21.0
389580 2011 CU_{2}	17.1	X	240.47769	264.13870	126.49640	24.54634	0.0909967	0.35709480	1.9676463	20	6 23.9	19.7
389581 2011 DJ_{17}	16.9	X	17.66289	358.15092	351.68931	9.85219	0.1347384	0.27544072	2.3394689	20	12 5.1	19.9
389582 2011 DY_{40}	18.0	X	4.26718	290.97881	150.09247	2.44361	0.0716974	0.29752019	2.2222441	20	—	—
389583 2011 EP_{22}	16.0	X	341.73360	201.79811	117.71537	6.99835	0.1271583	0.25130823	2.4869377	20	8 13.4	18.3
389584 2011 EX_{71}	18.1	X	246.36023	38.67660	112.06369	2.77681	0.1580987	0.27887409	2.3202277	20	12 4.3	20.6
389585 2011 FL_{16}	17.8	X	189.89950	178.64267	103.76594	5.98763	0.1602356	0.29108025	2.2549014	20	—	—
389586 2011 FS_{28}	17.0	X	158.79310	23.25973	185.35000	9.61572	0.1763705	0.26517853	2.3994432	20	11 7.6	20.9
389587 2011 FR_{56}	18.1	X	248.37181	96.65663	142.18655	4.69538	0.1258900	0.29710302	2.2243238	20	—	—
389588 2011 FH_{126}	17.4	X	261.38233	178.44068	247.00833	5.76202	0.1150571	0.26658926	2.3909709	20	8 28.4	20.5
389589 2011 FG_{129}	15.4	X	295.42631	85.16049	15.39198	26.72512	0.0474563	0.17565612	3.1576248	20	11 16.3	20.1
389590 2011 FQ_{141}	17.6	X	262.22160	122.46818	131.42264	6.77448	0.1247875	0.30354456	2.1927431	20	1 4.7	20.6
389591 2011 FB_{154}	17.9	X	224.01453	180.81025	83.60349	7.57188	0.0827376	0.29800635	2.2198265	20	—	—
389592 2011 GW_{16}	17.9	X	283.39132	130.46726	330.88809	3.54078	0.1799146	0.27836627	2.3230487	20	11 23.5	19.9
389593 2011 GM_{17}	17.1	X	144.07098	316.30359	351.48006	7.03370	0.2545175	0.28341293	2.2953889	20	—	—
389594 2011 GL_{31}	18.2	X	269.68382	51.16958	185.43579	3.42518	0.0616854	0.30416592	2.1897558	20	—	—
389595 2011 GT_{32}	18.1	X	201.22014	100.77635	178.43152	5.90941	0.1173838	0.29082014	2.2562457	20	—	—
389596 2011 GX_{51}	17.3	X	186.40742	79.94105	197.92833	7.81654	0.1457169	0.29180041	2.2511898	20	—	—
389597 2011 GA_{70}	17.9	X	222.82707	20.90474	217.86469	4.87334	0.1231343	0.28957350	2.2627166	20	—	—
389598 2011 GJ_{70}	17.2	X	109.36572	237.33534	57.19855	7.23997	0.1205027	0.26908046	2.3761906	20	—	—
389599 2011 GH_{73}	18.0	X	270.60975	283.34137	298.03430	4.32927	0.1155805	0.30069025	2.2065977	20	—	—
389600 2011 GS_{74}	17.9	X	261.01055	92.47340	124.99353	3.70342	0.1256613	0.29436942	2.2380730	20	—	—

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Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
	m		°	°	°	°		°				
389601 2011 GO_{80}	18.0	X	229.18594	35.94053	205.54545	6.92152	0.0679371	0.29258101	2.2471840	20	—	—
389602 2011 GB_{84}	18.0	X	229.18170	69.23126	203.24642	2.34467	0.1936934	0.29843076	2.2177214	20	—	—
389603 2011 HX_{5}	17.7	X	279.68149	157.65389	83.18395	5.60107	0.1793234	0.30614651	2.1803012	20	1 1.2	20.9
389604 2011 HG_{9}	17.9	X	219.35079	138.32878	158.70563	6.18704	0.0661015	0.30589342	2.1815037	20	1 15.2	20.7
389605 2011 HL_{14}	17.7	X	164.96105	159.21194	97.71726	2.18199	0.1582244	0.27597400	2.3364542	20	—	—
389606 2011 HN_{21}	17.6	X	161.20775	107.15229	116.76368	4.02926	0.1461404	0.26457746	2.4030759	20	11 28.9	21.2
389607 2011 HW_{21}	17.2	X	146.94891	201.82889	61.19108	10.83906	0.1022548	0.27231259	2.3573509	20	—	—
389608 2011 HU_{22}	17.9	X	262.98987	85.46501	165.79366	5.25491	0.1485049	0.30286267	2.1960331	20	—	—
389609 2011 HF_{23}	17.7	X	179.33731	31.60696	224.84280	6.36883	0.0833142	0.28164542	2.3049822	20	—	—
389610 2011 HZ_{24}	17.8	X	249.71827	40.39191	169.01735	4.75468	0.0845354	0.28741434	2.2740347	20	—	—
389611 2011 HT_{30}	16.9	X	45.18410	230.18942	65.69216	13.91181	0.3271269	0.24236324	2.5477583	20	11 21.8	20.6
389612 2011 HU_{33}	18.2	X	260.38866	78.25064	143.90304	4.92808	0.1092006	0.29505701	2.2345947	20	—	—
389613 2011 HR_{42}	17.2	X	310.48490	324.61836	123.51983	7.75160	0.0629004	0.27414738	2.3468211	20	12 29.7	19.7
389614 2011 HN_{44}	16.5	X	234.45550	279.64343	90.35699	7.09703	0.0380523	0.22284437	2.6944384	20	5 20.7	20.3
389615 2011 HM_{49}	18.4	X	247.45460	138.38721	142.09806	6.78804	0.2090677	0.30269162	2.1968604	20	1 19.4	22.0
389616 2011 HD_{58}	16.4	X	348.75471	246.49016	71.10511	14.25749	0.1559962	0.23828564	2.5767412	20	8 31.1	19.3
389617 2011 HM_{74}	17.5	X	180.45181	222.89772	66.39695	4.29125	0.0893657	0.28946404	2.2632870	20	—	—
389618 2011 HH_{75}	18.4	X	294.93446	353.82910	207.52660	4.00568	0.0721070	0.30423502	2.1894242	20	—	—
389619 2011 HB_{79}	17.4	X	165.14457	123.99262	150.66781	12.06647	0.1913630	0.27859360	2.3217848	20	—	—
389620 2011 HN_{82}	17.9	X	264.13338	121.88829	133.99921	5.52581	0.1828528	0.30277894	2.1964380	20	1 5.3	21.2
389621 2011 HT_{82}	17.4	X	281.48452	161.04328	45.08932	7.72038	0.1023779	0.29796418	2.2200360	20	—	—
389622 2011 HU_{90}	16.6	X	48.67759	230.00127	186.97900	10.28194	0.0270345	0.18917135	3.0053783	20	—	—
389623 2011 HM_{91}	16.8	X	301.28854	248.91867	69.17676	2.82161	0.1987837	0.22586516	2.6703604	20	5 14.2	19.9
389624 2011 HS_{92}	18.0	X	120.52458	245.66681	104.77753	5.58533	0.0169218	0.29430034	2.2384232	20	—	—
389625 2011 JR_{4}	17.4	X	296.52678	324.15825	128.51280	6.62046	0.0515064	0.26727738	2.3868653	20	12 12.7	20.1
389626 2011 JV_{25}	17.0	X	37.54570	229.55902	106.54503	8.18998	0.1317807	0.25513433	2.4620117	20	12 10.5	20.2
389627 2011 JA_{28}	17.5	X	158.80220	173.31210	79.98967	4.09762	0.1555104	0.26958188	2.3732432	20	—	—
389628 2011 JB_{28}	17.5	X	196.53307	179.13400	72.04098	4.04951	0.0959357	0.28093338	2.3088753	20	—	—
389629 2011 JV_{29}	17.6	X	220.49992	165.42580	135.85803	7.49660	0.2444208	0.29626362	2.2285232	20	1 23.3	21.3
389630 2011 JX_{29}	17.7	X	194.09205	84.01011	182.17094	5.74153	0.1704778	0.28111298	2.3078918	20	—	—
389631 2011 KR_{5}	17.4	X	179.42443	259.27377	62.56576	6.54300	0.1040522	0.29622922	2.2286957	20	1 7.4	20.4
389632 2011 KS_{7}	16.1	X	258.68055	218.58246	97.89831	5.52029	0.0577295	0.20964613	2.8063692	20	4 10.6	20.1
389633 2011 KT_{14}	17.5	X	46.09315	105.56085	221.11756	5.85891	0.1226426	0.25854887	2.4402872	20	12 7.9	20.7
389634 2011 KA_{26}	18.3	X	311.53554	115.99330	72.64068	1.66255	0.1110985	0.30133903	2.2034293	20	—	—
389635 2011 KQ_{29}	18.2	X	231.93977	76.57923	213.74346	2.40025	0.1914908	0.29894138	2.2151953	20	1 19.2	21.8
389636 2011 KE_{31}	16.9	X	173.83137	349.90568	268.84704	5.78660	0.1046288	0.27435219	2.3456530	20	—	—
389637 2011 KU_{34}	17.8	X	237.90988	54.60386	159.92527	6.49749	0.1991180	0.28329021	2.2960518	20	—	—
389638 2011 KX_{43}	16.2	X	278.65707	272.81045	68.01681	14.68353	0.1660161	0.22061359	2.7125716	20	5 19.7	20.0
389639 2011 KH_{46}	17.6	X	357.03638	64.25815	37.12985	7.60457	0.0717133	0.28410625	2.2916530	20	—	—
389640 2011 KX_{47}	17.7	X	152.61406	143.36275	109.45546	2.87270	0.1365055	0.26799988	2.3825735	20	12 26.7	21.4
389641 2011 LM_{4}	18.2	X	240.59733	43.42940	196.72821	3.98279	0.2084624	0.28989231	2.2610574	20	—	—
389642 2011 LD_{5}	17.2	X	155.08165	82.71564	144.78656	6.48169	0.0744430	0.26054444	2.4278108	20	11 30.5	20.7
389643 2011 LN_{5}	17.4	X	349.92673	352.20392	130.84687	7.17048	0.0490113	0.28855407	2.2680428	20	—	—
389644 2011 LC_{16}	17.5	X	204.69785	192.39523	49.42542	7.40777	0.1531362	0.28122757	2.3072649	20	—	—
389645 2011 LH_{19}	15.5	X	272.49497	69.08140	257.39838	9.31747	0.0874977	0.19088698	2.9873436	20	5 2.6	19.7
389646 2011 MH	17.3	X	123.33149	138.20084	159.72976	8.14633	0.2248484	0.26458758	2.4030146	20	—	—
389647 2011 MR_{4}	15.7	X	246.53460	117.47424	196.23981	17.20789	0.1630014	0.17755853	3.1350299	20	3 11.4	20.9
389648 2011 MS_{6}	17.9	X	287.61587	80.85802	158.06426	7.70115	0.0952562	0.30232654	2.1986286	20	1 16.3	20.7
389649 2011 NW_{3}	16.6	X	120.03982	301.67422	337.47894	11.07663	0.2335402	0.24338496	2.5406230	20	12 25.6	21.2
389650 2011 OB_{3}	16.6	X	97.16404	160.95752	162.05343	2.44234	0.2251216	0.25591219	2.4570203	20	—	—
389651 2011 OW_{13}	16.5	X	173.93987	189.61751	163.32359	6.21107	0.2006873	0.17479923	3.1679358	20	2 26.7	21.8
389652 2011 OK_{14}	16.9	X	331.62384	165.72222	174.95020	5.24938	0.0634798	0.22307298	2.6925973	20	8 21.5	20.1
389653 2011 OT_{14}	16.8	X	96.90349	309.68845	289.36730	8.24180	0.0814124	0.23572999	2.5953314	20	10 1.6	20.7
389654 2011 OE_{27}	17.3	X	118.55197	257.49861	43.01311	1.74800	0.1825249	0.25936873	2.4351421	20	—	—
389655 2011 OG_{28}	16.9	X	251.99469	119.68969	122.04447	6.81736	0.0565605	0.28054830	2.3109876	20	—	—
389656 2011 OZ_{39}	15.6	X	104.90298	281.24576	167.15928	22.32428	0.0703519	0.17565227	3.1576709	20	4 2.8	20.2
389657 2011 OA_{40}	17.5	X	106.93750	115.37404	161.27393	12.66828	0.1738541	0.24332111	2.5410674	20	12 11.1	21.8
389658 2011 OG_{46}	17.1	X	242.08489	135.94073	103.87931	6.67474	0.1549846	0.28414185	2.2914616	20	—	—
389659 2011 OD_{50}	16.9	X	312.33518	68.50168	290.60310	2.18095	0.0965610	0.22320507	2.6915348	20	8 14.1	20.0
389660 2011 OE_{51}	17.0	X	116.24476	171.87181	135.07432	2.17067	0.1876202	0.25775443	2.4452989	20	—	—
389661 2011 OY_{52}	15.8	X	163.79100	208.32421	137.68043	11.80286	0.1163573	0.17352790	3.1833900	20	2 6.5	20.7
389662 2011 OH_{56}	17.3	X	176.29329	207.52519	34.40506	2.71092	0.1574902	0.26045595	2.4283607	20	—	—
389663 2011 OT_{56}	16.4	X	310.32899	256.33366	84.33307	5.94864	0.1320734	0.21284458	2.7781838	20	7 10.7	19.5
389664 2011 OZ_{57}	16.8	X	38.43639	203.44269	67.17452	14.83099	0.2286941	0.23544655	2.5974139	20	10 4.7	20.3
389665 2011 OA_{59}	16.1	X	199.13834	16.17970	88.77567	12.53907	0.0119270	0.21799585	2.7342438	20	8 15.3	20.0
389666 2011 PP_{2}	16.3	X	326.50682	189.58831	97.73582	6.98336	0.0059665	0.20931232	2.8093522	20	6 5.6	20.1
389667 2011 PR_{4}	16.8	X	119.04100	62.45850	241.96184	1.68470	0.2048238	0.25784992	2.4446952	20	—	—
389668 2011 PE_{8}	16.9	X	220.16070	337.01112	197.58014	4.16782	0.1080172	0.24185484	2.5513274	20	11 29.3	20.3
389669 2011 PU_{8}	17.7	X	121.23639	111.76527	167.52673	4.45505	0.2048813	0.24949019	2.4990047	20	12 26.4	22.0
389670 2011 PF_{9}	17.0	X	336.80976	141.07917	176.15888	3.42738	0.0865636	0.21065421	2.7974089	20	7 25.8	20.3
389671 2011 PW_{9}	16.8	X	40.14540	66.56817	264.50665	3.31220	0.0525995	0.24138567	2.5546322	20	11 21.1	20.1
389672 2011 PC_{11}	16.3	X	249.64999	14.32780	347.97831	12.49422	0.1647178	0.19959525	2.8998080	20	5 8.5	21.0
389673 2011 PC_{12}	17.2	X	106.87979	147.56179	162.76910	6.94339	0.1364091	0.25521072	2.4615204	20	—	—
389674 2011 PS_{13}	17.2	X	144.60233	200.63191	86.43960	3.54390	0.1700858	0.26099365	2.4250243	20	—	—
389675 2011 PZ_{13}	17.4	X	23.13851	8.83849	317.78186	3.12222	0.1480577	0.22840558	2.6505230	20	11 2.3	20.6
389676 2011 QV_{4}	17.4	X	140.63994	106.13934	195.68112	1.54320	0.2157854	0.26270758	2.4144654	20	—	—
389677 2011 QT_{7}	16.9	X	2.00415	66.62402	252.54584	4.88994	0.1425751	0.22426861	2.6830188	20	9 13.9	19.9
389678 2011 QA_{9}	15.9	X	230.55537	359.40757	331.65393	8.31230	0.1522796	0.18144216	3.0901335	20	3 17.5	20.9
389679 2011 QB_{9}	16.7	X	322.73399	332.34912	336.12841	5.63602	0.0562317	0.20278041	2.8693623	20	6 23.9	20.4
389680 2011 QC_{16}	16.3	X	54.04676	318.94943	353.65128	14.08819	0.1266930	0.23461067	2.6035797	20	11 19.8	20.2

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Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
	m		°	°	°	°		°				
389681 2011 QA_{17}	16.3	X	204.87358	184.93288	170.57365	12.31099	0.0836541	0.18034624	3.1026395	20	3 28.5	21.1
389682 2011 QN_{17}	16.5	X	43.13775	285.64475	344.35284	8.52373	0.1186615	0.21764693	2.7371652	20	9 10.8	19.9
389683 2011 QY_{20}	16.6	X	267.30722	357.70040	336.35697	7.98623	0.0533406	0.19276439	2.9679153	20	5 9.3	21.0
389684 2011 QJ_{26}	16.1	X	300.00212	198.32986	154.53921	12.57695	0.1824153	0.21022141	2.8012471	20	7 2.2	19.6
389685 2011 QD_{28}	16.8	X	144.92503	251.05262	22.12804	3.05986	0.1699809	0.25577725	2.4578843	20	—	—
389686 2011 QR_{28}	15.7	X	186.71654	19.01853	323.92647	12.01413	0.1271375	0.17465217	3.1697138	20	2 23.2	20.7
389687 2011 QF_{29}	16.2	X	159.06618	46.51534	344.01905	8.58454	0.0897381	0.17566621	3.1575039	20	3 21.4	21.1
389688 2011 QW_{32}	15.8	X	187.72458	36.09593	354.00453	11.02221	0.0131920	0.18540740	3.0459166	20	4 16.4	20.2
389689 2011 QH_{34}	16.8	X	351.67845	135.17852	137.28714	1.49368	0.0936460	0.20491705	2.8493819	20	6 17.9	20.2
389690 2011 QP_{38}	16.3	X	249.91715	39.43854	328.54948	5.23530	0.1082899	0.19871644	2.9083512	20	5 26.1	20.6
389691 2011 QT_{39}	17.2	X	25.31937	189.16317	126.98987	5.22676	0.1924353	0.22747077	2.6577797	20	11 2.0	20.4
389692 2011 QE_{40}	16.8	X	160.10815	86.39115	181.99606	6.04535	0.1350056	0.25913000	2.4366375	20	—	—
389693 2011 QG_{44}	16.5	X	183.42433	350.19461	175.40761	15.17232	0.0328479	0.23065812	2.6332386	20	10 12.9	20.2
389694 2011 QD_{48}	18.1	X	115.79108	106.71185	358.85387	19.06306	0.4922804	0.51310608	1.5452471	20	6 9.7	21.0
389695 2011 QJ_{49}	15.8	X	139.29242	48.19581	7.10034	16.02706	0.1119809	0.17344945	3.1843498	20	4 2.0	20.6
389696 2011 QK_{52}	16.1	X	126.53235	260.02045	164.49411	9.94696	0.0939413	0.17918171	3.1160680	20	3 31.4	20.8
389697 2011 QY_{61}	16.3	X	343.15775	120.41062	183.60960	17.46541	0.2497422	0.21114859	2.7930407	20	7 10.2	19.1
389698 2011 QK_{77}	17.8	X	101.39915	115.18717	164.79371	6.25511	0.2073279	0.24321184	2.5418284	20	12 11.1	22.1
389699 2011 QZ_{77}	16.6	X	332.73666	214.91690	113.21067	4.96726	0.1068880	0.21125926	2.7920651	20	8 3.8	19.7
389700 2011 QD_{78}	16.1	X	126.71144	61.19253	6.73134	8.78339	0.1058103	0.17303257	3.1894623	20	4 3.9	20.8
389701 2011 QC_{79}	17.0	X	281.30332	180.50377	162.90091	2.25251	0.0787326	0.20157470	2.8807929	20	6 8.2	20.9
389702 2011 QA_{80}	17.6	X	177.72643	267.27843	355.70153	9.23960	0.1819432	0.26194160	2.4191700	20	—	—
389703 2011 QA_{88}	16.1	X	120.71387	242.75513	357.97816	11.07097	0.1551916	0.23352696	2.6116283	20	11 2.8	20.4
389704 2011 QH_{90}	16.5	X	278.64212	206.83346	162.83115	8.10746	0.1283594	0.20853450	2.8163336	20	7 1.6	20.3
389705 2011 QC_{94}	16.6	X	113.59857	50.95515	188.55733	15.18936	0.0963171	0.23062191	2.6335142	20	10 27.6	20.6
389706 2011 QB_{98}	15.9	X	253.44484	307.61517	20.84553	7.10968	0.0915861	0.19181299	2.9777212	20	4 13.4	20.1
389707 2011 RC_{2}	16.6	X	198.16938	52.05010	352.25854	10.50562	0.0241538	0.19002153	2.9964073	20	5 17.2	21.1
389708 2011 RV_{6}	16.4	X	24.71383	212.19205	323.22821	6.41531	0.1421152	0.17938760	3.1136833	20	4 1.5	20.0
389709 2011 RJ_{9}	15.5	X	227.80984	3.14050	355.39358	17.97828	0.1323009	0.18423188	3.0588594	20	4 13.7	20.5
389710 2011 RZ_{9}	17.2	X	174.27338	106.86946	190.44297	6.13514	0.1275682	0.26820692	2.3813473	20	—	—
389711 2011 RE_{17}	16.3	X	219.30684	62.36506	291.94713	4.43662	0.1493609	0.18143286	3.0902391	20	4 3.9	21.3
389712 2011 RF_{17}	16.3	X	70.09242	169.47224	317.79883	8.36258	0.0379148	0.17496992	3.1658751	20	3 27.2	20.8
389713 2011 SW_{1}	16.3	X	304.87700	280.42720	336.21730	8.48665	0.0898851	0.18223817	3.0811285	20	3 16.7	20.5
389714 2011 SH_{2}	17.2	X	327.73007	59.44210	249.34671	1.00378	0.0621523	0.20366341	2.8610627	20	7 1.1	20.6
389715 2011 SH_{10}	17.0	X	89.89975	347.55108	298.51537	3.83027	0.1816518	0.23899493	2.5716405	20	12 5.3	21.1
389716 2011 SU_{29}	16.0	X	198.23886	7.46222	6.22928	17.78164	0.2124558	0.17906786	3.1173887	20	4 6.7	21.4
389717 2011 SH_{30}	15.2	X	30.15301	280.19734	125.04189	1.45780	0.1062173	0.12607436	3.9389898	20	—	—
389718 2011 SD_{33}	16.5	X	56.38551	132.29129	175.43984	13.63028	0.1798565	0.23281815	2.6169263	20	11 29.6	20.5
389719 2011 SP_{46}	16.9	X	346.84099	208.12951	147.15661	6.60813	0.1570577	0.22519393	2.6756641	20	10 14.7	19.6
389720 2011 ST_{47}	16.3	X	271.29278	328.20149	356.16303	9.70435	0.0644754	0.18905559	3.0066049	20	4 29.9	20.7
389721 2011 SU_{47}	16.7	X	314.45689	128.11160	196.02257	1.63400	0.0684148	0.20233281	2.8735925	20	7 1.1	20.2
389722 2011 SA_{52}	15.4	X	245.94809	281.12282	48.69472	17.76233	0.2253485	0.17534361	3.1613755	20	4 3.4	20.8
389723 2011 SB_{53}	16.1	X	127.08507	241.06410	187.86418	4.25999	0.0574494	0.17059875	3.2197253	20	4 1.1	20.6
389724 2011 SG_{56}	15.8	X	359.63678	21.45189	182.30403	16.49843	0.1406770	0.17187751	3.2037357	20	3 30.1	19.6
389725 2011 SJ_{58}	16.6	X	9.78981	262.85839	30.57921	5.08287	0.1421247	0.21033176	2.8002673	20	8 25.2	19.7
389726 2011 SD_{62}	16.2	X	304.33581	174.15349	183.15833	5.49335	0.0538053	0.20961067	2.8066858	20	8 1.3	19.8
389727 2011 SY_{81}	16.8	X	353.03855	35.12981	208.90992	2.00238	0.0842943	0.19100592	2.9861034	20	5 12.3	20.3
389728 2011 SX_{83}	15.2	X	21.57350	42.20032	353.01036	4.67002	0.2142711	0.12622015	3.9359561	20	—	—
389729 2011 SN_{90}	15.8	X	219.90507	352.53955	15.37140	15.36759	0.0716388	0.17890590	3.1192698	20	4 24.3	20.5
389730 2011 SF_{93}	16.8	X	114.02521	278.19908	345.64711	8.86542	0.1837291	0.23808711	2.5781734	20	11 28.1	21.2
389731 2011 SL_{93}	15.4	X	135.56624	218.23496	197.81607	12.79143	0.0570764	0.17094369	3.2153925	20	3 24.9	20.1
389732 2011 SP_{102}	17.2	X	58.33588	28.59974	241.27178	3.78790	0.0726157	0.22164338	2.7041630	20	9 23.7	20.9
389733 2011 SR_{108}	16.8	X	15.12260	126.67881	164.80939	4.44543	0.0815061	0.21435512	2.7651168	20	8 22.7	20.1
389734 2011 SC_{109}	16.3	X	252.67618	145.83290	178.05421	9.96187	0.0905100	0.18415351	3.0597272	20	4 9.0	20.9
389735 2011 SU_{109}	16.3	X	184.65883	311.29992	55.83824	2.03676	0.2143024	0.17432155	3.1737205	20	3 23.5	21.6
389736 2011 SG_{110}	15.5	X	87.65192	133.18051	2.67717	17.12712	0.1058121	0.18177098	3.0864057	20	5 6.3	20.1
389737 2011 SK_{110}	16.1	X	139.47423	237.66495	1.85157	11.78084	0.1218671	0.23802146	2.5786475	20	11 19.1	20.3
389738 2011 SB_{111}	15.9	X	273.60451	14.86891	298.43521	9.24430	0.0919061	0.18995578	2.9970987	20	4 13.6	20.3
389739 2011 SD_{114}	16.2	X	187.17769	212.03061	179.71131	4.58675	0.1297513	0.18030252	3.1031410	20	4 22.7	21.1
389740 2011 ST_{117}	16.4	X	359.96351	334.11620	6.92405	7.76167	0.1089948	0.22152186	2.7051519	20	10 9.5	19.4
389741 2011 SF_{120}	16.7	X	317.32088	244.35177	83.16086	3.17508	0.0755211	0.20382118	2.8595861	20	7 9.8	20.4
389742 2011 SY_{124}	16.8	X	142.69414	232.97160	19.92610	13.52992	0.2154011	0.24038228	2.5617363	20	12 8.8	21.4
389743 2011 SE_{126}	17.5	X	19.55479	53.18799	48.84059	1.91137	0.1534844	0.25500869	2.4628203	20	—	—
389744 2011 SV_{132}	16.7	X	298.32093	212.08483	103.44333	2.42848	0.0854739	0.19053135	2.9910597	20	5 24.9	20.6
389745 2011 SX_{134}	17.4	X	351.60223	103.48277	197.32742	7.90650	0.2955232	0.21118188	2.7927471	20	7 30.4	19.4
389746 2011 SL_{137}	16.0	X	99.53121	172.79088	358.55822	11.46729	0.0798336	0.19512339	2.9439460	20	7 11.5	20.4
389747 2011 SS_{143}	17.0	X	153.45301	240.05116	21.78003	6.72230	0.0808125	0.24182717	2.5515220	20	—	—
389748 2011 SP_{144}	15.8	X	316.44014	234.84632	20.60218	10.65960	0.0318746	0.17918200	3.1160647	20	4 9.4	20.1
389749 2011 SW_{154}	15.8	X	233.90832	167.84804	177.19939	12.88191	0.0609589	0.18131443	3.0915846	20	4 18.0	20.4
389750 2011 SY_{154}	16.5	X	309.51265	295.29734	54.58375	2.92323	0.0653452	0.20625074	2.8370852	20	7 30.7	20.0
389751 2011 SW_{162}	16.5	X	349.68668	311.94719	337.98143	9.85641	0.1064125	0.19914102	2.9042159	20	7 10.8	20.0
389752 2011 SA_{163}	16.6	X	267.14186	353.10057	342.25060	9.67043	0.0617435	0.18526587	3.0474676	20	5 9.0	21.1
389753 2011 SM_{164}	15.9	X	211.50783	330.16083	29.83102	11.20791	0.0427418	0.17430232	3.1739539	20	4 11.6	20.4
389754 2011 SR_{174}	17.0	X	144.74272	319.16114	333.42225	11.44770	0.2732696	0.25949219	2.4343696	20	—	—
389755 2011 SO_{178}	16.2	X	210.96301	0.40632	345.62141	5.97241	0.0929891	0.17153568	3.2079905	20	3 21.4	21.3
389756 2011 SW_{180}	15.7	X	225.57766	149.64512	206.57040	9.38846	0.1152662	0.17788487	3.1311945	20	4 16.5	20.5
389757 2011 SM_{186}	15.7	X	174.73078	24.99329	21.12794	18.98857	0.0374051	0.17569079	3.1572093	20	4 22.5	20.3
389758 2011 SS_{193}	16.8	X	8.85204	219.96775	83.86546	3.01436	0.0287717	0.20966533	2.8061979	20	8 26.8	20.5
389759 2011 SH_{198}	16.3	X	325.36908	295.48547	11.99525	6.18549	0.0472832	0.20195275	2.8771966	20	6 27.3	20.1
389760 2011 SS_{198}	16.7	X	222.55222	278.22051	98.07902	2.44991	0.1351227	0.18847040	3.0128253	20	5 6.9	21.4

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Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
	m		°	°	°	°		°				
389761 2011 SG_{199}	16.4	X	152.07889	203.55914	4.23300	10.69393	0.1106205	0.23152058	2.6266950	20	10 23.3	20.5
389762 2011 SY_{202}	15.9	X	25.94176	220.44454	359.64096	12.04315	0.1448913	0.19950960	2.9006379	20	6 4.6	19.5
389763 2011 SD_{212}	15.8	X	351.56863	53.21381	170.30747	8.72348	0.0538029	0.18578640	3.0417728	20	4 16.3	19.8
389764 2011 SV_{214}	16.0	X	227.59059	337.56177	25.49896	9.70531	0.0963850	0.17964939	3.1106576	20	4 27.0	20.8
389765 2011 SN_{215}	16.5	X	226.20527	14.69203	0.11731	10.03131	0.0675952	0.18501080	3.0502679	20	5 10.0	21.2
389766 2011 SX_{215}	16.0	X	359.59909	345.83045	354.39952	21.36032	0.0053285	0.22408470	2.6844866	20	9 26.9	19.7
389767 2011 SW_{216}	15.9	X	193.20140	156.54613	178.16986	16.50055	0.0565989	0.16978482	3.2300071	20	2 18.6	20.9
389768 2011 SX_{224}	16.2	X	113.98450	247.81028	0.27434	12.37540	0.1414876	0.22917018	2.6446243	20	11 3.8	20.6
389769 2011 SA_{230}	18.4	X	264.58245	64.26351	219.17458	1.79801	0.2235669	0.29312219	2.2444172	20	2 6.9	21.9
389770 2011 SN_{241}	16.6	X	53.66928	128.13215	11.41802	9.36386	0.0319898	0.17227095	3.1988560	20	3 25.3	20.9
389771 2011 SY_{255}	16.2	X	267.70888	181.73938	113.56356	4.05430	0.1934464	0.17817528	3.1277912	20	3 10.8	21.1
389772 2011 SP_{256}	16.7	X	22.38346	106.58463	191.64287	8.57165	0.1408078	0.21337931	2.7735405	20	9 19.6	19.9
389773 2011 SN_{258}	16.5	X	299.34036	117.89496	188.52695	4.18033	0.1591793	0.18593556	3.0401458	20	5 3.8	20.4
389774 2011 SU_{259}	16.3	X	66.07963	126.95302	15.00051	4.38432	0.0908361	0.17043656	3.2217676	20	4 19.9	20.7
389775 2011 SH_{264}	15.9	X	62.31874	131.28552	354.54397	8.04702	0.0602884	0.17257655	3.1950784	20	3 21.5	20.3
389776 2011 SP_{269}	16.7	X	297.69393	272.85427	19.90321	1.93565	0.0625076	0.18769219	3.0211474	20	4 27.1	20.8
389777 2011 SQ_{274}	15.8	X	190.51998	181.17570	177.22645	13.27262	0.1208050	0.17295631	3.1903998	20	3 16.8	20.8
389778 2011 TW_{11}	15.9	X	197.05290	351.00215	32.85122	10.80833	0.1332532	0.17742434	3.1366105	20	4 21.7	20.7
389779 2011 TF_{13}	15.7	X	245.32235	143.99564	180.86441	9.76060	0.0769135	0.17723830	3.1388049	20	4 3.4	20.2
389780 2011 TP_{13}	16.4	X	215.98581	247.37713	102.01155	6.42446	0.2054790	0.17837557	3.1254494	20	3 29.5	21.7
389781 2011 UU_{12}	15.8	X	257.24800	322.18128	30.79528	6.28972	0.0353999	0.18333571	3.0688195	20	5 25.5	20.1
389782 2011 UA_{18}	15.7	X	259.35862	74.00690	216.43958	5.12488	0.1835941	0.17169102	3.2060551	20	2 24.3	20.8
389783 2011 UG_{24}	17.6	X	210.25270	70.90364	232.53059	5.87898	0.1216286	0.27041269	2.3683797	20	1 18.6	21.3
389784 2011 UC_{29}	15.3	X	11.35590	323.08856	245.66812	12.51173	0.1016403	0.16862908	3.2447487	20	4 23.1	19.4
389785 2011 UV_{51}	15.6	X	338.09432	64.65179	202.81936	9.37657	0.1089854	0.18130983	3.0916369	20	5 19.3	19.5
389786 2011 UW_{53}	16.3	X	305.22928	54.71673	246.29666	5.54121	0.2699465	0.18600915	3.0393439	20	4 15.4	20.3
389787 2011 UL_{69}	16.4	X	40.12355	317.30477	331.61419	8.74196	0.2093463	0.22008494	2.7169136	20	10 12.8	20.0
389788 2011 UN_{72}	15.6	X	304.65739	223.22565	47.19484	17.84505	0.0497135	0.16945097	3.2342481	20	4 16.0	20.1
389789 2011 UC_{75}	16.0	X	260.82865	272.40275	53.46026	6.52560	0.1712668	0.18130052	3.0917427	20	4 11.9	20.7
389790 2011 UY_{75}	16.5	X	22.56819	268.12251	9.61670	9.53403	0.1045752	0.20050740	2.8910068	20	8 20.8	20.1
389791 2011 UQ_{79}	16.3	X	288.34259	277.28711	27.02544	10.62668	0.1537761	0.18073158	3.0982279	20	4 16.8	20.6
389792 2011 UY_{79}	15.6	X	79.24702	41.14749	25.99192	10.03336	0.0842299	0.14605659	3.5709897	20	2 12.7	20.6
389793 2011 UR_{92}	17.0	X	297.74593	317.42241	354.40971	1.24300	0.0864359	0.18803610	3.0174625	20	5 18.4	21.1
389794 2011 UX_{100}	16.4	X	359.78559	247.41209	66.91707	4.44486	0.0908358	0.20863250	2.8154517	20	9 1.6	19.7
389795 2011 UB_{117}	16.1	X	233.21686	120.19199	203.11209	9.15779	0.0715875	0.17449534	3.1716128	20	3 17.6	20.9
389796 2011 US_{119}	16.3	X	41.20121	261.77891	20.33892	11.17858	0.1865421	0.21617453	2.7495800	20	10 6.2	19.8
389797 2011 UB_{134}	16.4	X	9.41425	150.25800	98.38111	12.51065	0.1622001	0.19062680	2.9900613	20	6 17.9	19.7
389798 2011 UE_{141}	16.5	X	40.50313	236.27103	74.58744	6.97799	0.0279564	0.21631727	2.7483704	20	10 20.8	20.2
389799 2011 UC_{144}	16.0	X	333.27799	14.93569	249.02196	4.59330	0.1367981	0.17903645	3.1177533	20	5 2.0	19.7
389800 2011 UD_{152}	16.1	X	291.27364	294.02342	24.75542	11.21020	0.0578844	0.18577720	3.0418732	20	5 20.6	20.5
389801 2011 UH_{190}	15.5	X	243.00016	241.68624	92.96930	11.06584	0.1305359	0.18029640	3.1032113	20	4 12.2	20.4
389802 2011 UW_{221}	15.2	X	339.22937	183.72409	32.27390	19.27835	0.0587453	0.16846645	3.2468367	20	3 26.8	19.7
389803 2011 UU_{285}	16.9	X	81.97885	149.26317	111.74163	3.24351	0.0478613	0.21618363	2.7495028	20	10 11.3	20.6
389804 2011 UA_{298}	16.1	X	278.24584	273.59018	55.11598	10.90746	0.1270751	0.18430558	3.0580439	20	5 9.4	20.5
389805 2011 UZ_{314}	18.0	X	3.96030	173.52563	104.98839	3.54494	0.0863436	0.30783150	2.1723377	20	7 27.2	19.9
389806 2011 UE_{347}	16.5	X	49.53303	21.73693	169.73961	9.36470	0.0656850	0.18284904	3.0742624	20	5 29.2	20.7
389807 2011 UD_{356}	16.7	X	336.35768	154.90582	143.74307	3.63958	0.1086448	0.19656173	2.9295668	20	6 27.3	20.2
389808 2011 UT_{369}	16.4	X	66.78021	67.29986	204.99019	12.40903	0.2109215	0.21808840	2.7334701	20	10 27.7	20.5
389809 2011 UL_{395}	15.6	X	299.18389	145.27291	158.92108	11.33507	0.0518792	0.18565454	3.0432128	20	5 18.7	19.9
389810 2011 UD_{404}	13.5	X	202.18000	14.38471	126.50944	19.49176	0.0728726	0.08303934	5.2033150	20	9 14.5	20.8
389811 2011 UA_{405}	16.2	X	0.86156	185.71791	90.63741	2.96651	0.0408458	0.19671003	2.9280942	20	7 7.3	20.0
389812 2011 UL_{406}	15.3	X	187.93117	356.81154	12.46594	13.19377	0.0857267	0.17278873	3.1924622	20	3 27.8	20.2
389813 2011 VB_{20}	16.5	X	300.39331	254.41496	47.77771	3.07020	0.1166397	0.18408661	3.0604685	20	5 5.5	20.5
389814 2011 VV_{22}	15.6	X	241.38500	258.66761	80.38899	10.72299	0.1185692	0.18061251	3.0995894	20	4 16.2	20.5
389815 2011 VC_{23}	16.9	X	166.30906	230.97623	91.46591	7.26326	0.2371958	0.27024838	2.3693396	20	1 9.3	20.7
389816 2011 WJ_4	15.9	X	257.71200	267.60584	48.34974	10.06818	0.0773718	0.17469732	3.1691677	20	4 8.8	20.6
389817 2011 WW_{37}	15.6	X	271.67562	255.06107	45.72214	14.50439	0.1611363	0.17090066	3.2159322	20	3 29.9	20.5
389818 2011 WC_{47}	16.1	X	293.95069	252.31786	33.30579	16.57579	0.1079253	0.17218700	3.1998956	20	4 10.6	20.6
389819 2011 WV_{47}	16.2	X	83.08443	211.23080	125.76950	5.73746	0.2514509	0.23803698	2.5785354	20	—	—
389820 2011 WU_{92}	13.1	X	93.37180	22.56627	101.18440	6.45115	0.3696853	0.03743114	8.8507627	20	6 6.4	23.0
389821 2011 WX_{149}	16.1	X	285.01502	324.83523	0.46011	10.03210	0.1091769	0.18292895	3.0733669	20	5 12.3	20.5
389822 2011 XW_1	14.2	X	265.59191	144.85982	297.04549	4.89336	0.0537687	0.08571353	5.0945183	20	9 10.9	21.0
389823 2011 YP_{24}	13.6	X	180.55145	89.29054	103.70606	8.61500	0.0115766	0.08291480	5.2085240	20	10 21.8	20.6
389824 2011 YH_{75}	13.7	X	322.81161	260.59473	133.76808	8.39311	0.0755169	0.08117050	5.2828777	20	9 27.9	20.4
389825 2012 AM_1	14.1	X	255.67931	194.35675	274.90920	3.74281	0.0479497	0.08249688	5.2260998	20	10 1.1	21.0
389826 2012 BU_{60}	13.5	X	306.10686	260.20061	161.57322	28.19962	0.1105543	0.08148795	5.2691485	20	10 4.1	20.2
389827 2012 BN_{96}	13.8	X	338.05996	12.65169	2.74780	11.33160	0.1184572	0.08325259	5.1944256	20	9 22.8	20.1
389828 2012 BY_{117}	17.0	X	138.63324	250.40309	130.54154	2.86708	0.1992748	0.25376169	2.4708820	20	2 23.3	20.6
389829 2012 DC_5	18.0	X	54.21724	254.90450	345.27823	2.09024	0.1749620	0.27862569	2.3216065	20	9 3.5	20.7
389830 2012 EY_1	16.2	X	154.65419	316.77942	338.60891	4.08249	0.0805758	0.21510261	2.7587072	20	—	—
389831 2012 FN_{12}	16.6	X	156.68049	106.20028	168.58105	8.59841	0.1776018	0.19739638	2.9213030	20	—	—
389832 2012 HG_{33}	16.0	X	147.15209	95.23454	143.03808	9.02852	0.1777115	0.17563231	3.1579102	20	11 20.9	21.4
389833 2012 JW_5	17.4	X	299.74953	233.02801	106.47776	24.34149	0.0957951	0.37999452	1.8877790	20	7 6.5	18.5
389834 2012 JG_{46}	16.1	X	296.00158	215.45537	116.26667	5.42017	0.2822052	0.24255172	2.5464382	20	5 12.6	19.3
389835 2012 OG_5	17.8	X	39.71636	166.90885	227.08713	6.51281	0.1281432	0.28550429	2.2841658	20	—	—
389836 2012 PQ_4	17.5	X	43.67945	282.03988	292.52639	17.32300	0.0715220	0.35839929	1.9628689	20	6 27.5	19.2
389837 2012 PP_{23}	17.6	X	27.68305	55.76622	326.91906	6.26640	0.1198556	0.27948881	2.3168243	20	—	—
389838 2012 PY_{26}	18.3	X	349.93153	347.36293	146.76112	3.76307	0.0577670	0.30730166	2.1748340	20	—	—
389839 2012 PU_{37}	18.1	X	41.78453	266.02271	334.22852	18.90860	0.0692316	0.36597991	1.9356695	20	8 11.5	19.7
389840 2012 QV_{19}	17.9	X	111.76724	20.22611	0.61019	5.74311	0.1458506	0.29630245	2.2283285	20	1 8.5	20.4

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ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
	m		°	°	°	°		°				
389841 2012 QV_{25}	17.2	X	272.19935	70.33448	343.99896	15.49756	0.2147142	0.23800911	2.5787366	20	8 15.8	20.5
389842 2012 QO_{30}	16.5	X	97.72023	238.64726	294.26991	8.06621	0.0537474	0.22681421	2.6629063	20	7 6.9	20.1
389843 2012 QP_{30}	16.2	X	186.26600	84.13484	323.44722	16.46746	0.1475420	0.20887407	2.8132804	20	5 2.4	21.1
389844 2012 QQ_{37}	17.8	X	170.80411	329.12372	325.61789	8.51981	0.0716994	0.30064580	2.2068152	20	—	—
389845 2012 QX_{51}	16.9	X	323.30696	233.21449	169.49178	14.59475	0.0839319	0.25723089	2.4486158	20	11 15.3	19.8
389846 2012 RS_{3}	17.6	X	354.62766	82.58748	291.48407	1.60468	0.1618869	0.26091280	2.4255252	20	12 4.2	20.0
389847 2012 RF_{5}	17.3	X	15.19709	45.59913	301.71331	5.40242	0.1499797	0.26156103	2.4215161	20	11 27.6	20.0
389848 2012 RJ_{5}	16.1	X	294.66522	19.25295	358.18295	32.17667	0.2087550	0.23471994	2.6027716	20	8 15.2	19.7
389849 2012 RB_{7}	17.3	X	28.63906	316.15784	42.07157	2.15267	0.1608391	0.26413545	2.4057561	20	—	—
389850 2012 RT_{15}	17.2	X	185.19995	35.22096	276.41129	5.96566	0.1217165	0.30780058	2.1724832	20	—	—
389851 2012 RE_{18}	17.3	X	214.11469	204.43756	195.73922	8.60683	0.2054482	0.21204610	2.7851539	20	5 24.4	22.0
389852 2012 RY_{19}	16.8	X	293.48638	19.84967	14.39187	3.01278	0.2112097	0.23289096	2.6163808	20	8 18.6	19.7
389853 2012 RS_{24}	17.2	X	33.11669	10.34348	17.96558	7.61254	0.1130715	0.27174299	2.3606439	20	—	—
389854 2012 RT_{24}	16.6	X	330.14121	66.78622	316.30284	10.71593	0.1125752	0.25689267	2.4507645	20	10 20.6	19.4
389855 2012 RG_{26}	17.6	X	354.76669	5.55905	13.84906	2.61950	0.2039215	0.25771303	2.4455608	20	12 17.6	19.9
389856 2012 RL_{28}	17.2	X	299.56604	316.64681	76.46565	9.01011	0.1470241	0.24076793	2.5590000	20	9 13.2	20.1
389857 2012 RQ_{28}	16.5	X	222.47494	21.23377	355.98673	13.59830	0.2029602	0.21170632	2.7881330	20	4 27.4	21.4
389858 2012 RC_{29}	16.9	X	253.52255	272.30925	114.30638	4.34540	0.2246869	0.22588883	2.6701739	20	6 10.8	20.8
389859 2012 RY_{33}	16.9	X	226.66428	203.71566	197.43312	8.85422	0.1036372	0.21660086	2.7459709	20	6 13.4	21.1
389860 2012 RX_{34}	17.0	X	297.77544	67.46382	303.16971	1.85846	0.1943483	0.23433613	2.6056128	20	7 24.1	19.7
389861 2012 RT_{39}	17.1	X	355.28096	346.36199	17.83621	1.96158	0.1780221	0.25686899	2.4509151	20	11 21.9	19.4
389862 2012 RX_{39}	18.0	X	228.07445	223.93960	15.71828	4.52429	0.1331418	0.29421110	2.2388758	20	—	—
389863 2012 RY_{40}	16.4	X	275.55924	327.65991	26.64361	12.17027	0.1879903	0.22416436	2.6838506	20	5 26.5	20.3
389864 2012 RF_{41}	16.4	X	248.34987	56.50693	344.62294	11.46909	0.2402744	0.22701152	2.6613630	20	6 22.7	20.7
389865 2012 RJ_{42}	17.8	X	148.14579	200.72638	137.13780	4.47421	0.1856951	0.30342413	2.1933232	20	—	—
389866 2012 RZ_{42}	16.8	X	296.45589	228.66972	123.92518	4.40295	0.3239611	0.23075599	2.6324940	20	6 3.2	20.0
389867 2012 SH_{3}	16.6	X	196.68956	278.37533	186.39966	6.78614	0.2005435	0.22367367	2.6877744	20	7 26.5	21.2
389868 2012 ST_{3}	16.8	X	192.96885	72.43773	22.47650	13.26458	0.1531294	0.21952127	2.7215625	20	7 17.2	21.4
389869 2012 SY_{9}	16.7	X	213.82251	71.75036	336.65740	12.46434	0.1967232	0.21136272	2.7911540	20	5 31.5	21.5
389870 2012 SB_{10}	18.4	X	25.65826	100.62788	179.86918	12.28717	0.1232959	0.37336718	1.9100524	20	9 28.3	19.6
389871 2012 SW_{10}	17.8	X	163.65244	211.14069	132.26507	4.74951	0.1732199	0.30702140	2.1761573	20	1 22.5	20.6
389872 2012 SH_{11}	18.0	X	160.84453	81.00473	279.16436	2.79601	0.0863694	0.30941464	2.1649214	20	1 31.8	20.8
389873 2012 SH_{12}	17.6	X	333.07360	245.46302	169.46519	3.68475	0.1937231	0.25864028	2.4397122	20	12 26.5	19.8
389874 2012 SL_{18}	16.8	X	281.31941	57.84526	348.06292	7.05529	0.1870638	0.23487411	2.6016325	20	8 19.6	19.7
389875 2012 SM_{18}	15.8	X	116.22909	67.53400	2.40545	12.06408	0.1044150	0.18369882	3.0647742	20	3 25.3	20.2
389876 2012 SU_{18}	17.4	X	335.57479	83.39194	355.39024	7.01707	0.0730069	0.26621988	2.3931820	20	—	—
389877 2012 SX_{25}	17.5	X	303.93592	232.13375	215.41893	3.52243	0.0872242	0.26169700	2.4206772	20	12 14.1	20.1
389878 2012 SA_{42}	17.9	X	71.37512	32.99302	340.56040	6.62907	0.1458356	0.28501008	2.2868055	20	—	—
389879 2012 SC_{44}	17.7	X	267.02177	322.76141	261.94228	2.89179	0.0343515	0.30373589	2.1918221	20	—	—
389880 2012 SJ_{45}	16.9	X	212.80141	107.29144	357.90629	11.30666	0.1518150	0.23058665	2.6337827	20	8 20.3	21.0
389881 2012 SR_{54}	16.9	X	278.67572	157.77790	201.85287	9.03034	0.1323306	0.21861170	2.7291063	20	6 18.0	20.7
389882 2012 SY_{55}	17.0	X	257.21190	249.85997	156.15075	13.27447	0.1708435	0.23158251	2.6262267	20	7 16.5	20.9
389883 2012 SL_{59}	16.0	X	119.87899	40.29742	1.27875	12.53038	0.2064978	0.17704641	3.1410725	20	3 9.7	20.9
389884 2012 SA_{61}	17.0	X	277.20985	47.50599	335.24646	8.19045	0.0829019	0.23303468	2.6153050	20	7 28.7	20.4
389885 2012 SD_{61}	17.2	X	47.69572	272.87284	144.17085	4.76513	0.1363016	0.28399649	2.2922434	20	—	—
389886 2012 SS_{61}	15.9	X	171.25237	139.75269	192.79906	4.78285	0.1367937	0.18232441	3.0801568	20	1 27.9	20.9
389887 2012 SX_{64}	16.9	X	223.18357	58.95840	348.20911	16.85964	0.2314838	0.21714082	2.7414168	20	6 4.5	21.8
389888 2012 TG_{2}	18.5	X	137.21307	22.56113	346.67694	2.87069	0.1298388	0.30855732	2.1689297	20	1 22.0	21.0
389889 2012 TL_{5}	13.1	X	286.04345	267.97326	56.15037	22.25166	0.0231577	0.08248151	5.2267490	20	5 26.8	20.0
389890 2012 TE_{7}	16.4	X	261.29007	92.79404	314.41561	11.54334	0.2460094	0.22796251	2.6539563	20	7 14.8	20.2
389891 2012 TS_{8}	17.9	X	130.66644	329.47628	349.05292	2.29978	0.1795824	0.28871795	2.2671845	20	—	—
389892 2012 TJ_{9}	16.8	X	246.95723	30.53713	10.19740	2.40247	0.1844111	0.22098643	2.7095197	20	6 26.5	20.9
389893 2012 TL_{13}	16.6	X	240.13535	309.69331	73.35366	9.85678	0.1511084	0.21489463	2.7604868	20	5 31.0	20.6
389894 2012 TZ_{13}	17.8	X	36.57613	118.18581	257.13817	3.25351	0.2057363	0.26922269	2.3753536	20	—	—
389895 2012 TB_{14}	18.1	X	188.00904	339.31070	345.34991	3.19717	0.2272241	0.31150979	2.1552033	20	1 25.5	21.4
389896 2012 TW_{17}	16.2	X	117.79139	78.42155	335.40693	17.60878	0.2489898	0.18172459	3.0869309	20	3 18.9	21.2
389897 2012 TD_{23}	17.7	X	139.34245	95.53747	221.04955	6.54807	0.1629643	0.29214580	2.2494152	20	—	—
389898 2012 TM_{27}	17.7	X	311.10762	262.75732	205.40318	5.98510	0.0532537	0.27119873	2.3638012	20	—	—
389899 2012 TP_{27}	17.6	X	31.16652	72.73476	27.60829	7.79879	0.0614745	0.29455221	2.2371470	20	—	—
389900 2012 TX_{27}	16.6	X	213.29255	44.66218	29.45010	4.05751	0.1850375	0.22098696	2.7095154	20	7 5.7	21.0
389901 2012 TP_{32}	16.7	X	115.26313	48.35776	18.78269	11.02654	0.0797195	0.18450098	3.0558844	20	3 20.4	21.1
389902 2012 TA_{37}	16.2	X	118.03322	184.60091	187.25113	9.60793	0.0833279	0.17504779	3.1649362	20	1 14.9	20.9
389903 2012 TE_{38}	17.6	X	341.63470	58.55388	351.44886	6.73514	0.0991957	0.26086418	2.4258266	20	12 25.3	20.4
389904 2012 TH_{40}	17.5	X	348.43533	264.01446	250.00017	5.00225	0.0796493	0.30072882	2.2064090	20	—	—
389905 2012 TC_{42}	16.3	X	174.53951	173.49823	265.94862	5.15924	0.0165202	0.21298951	2.7769234	20	6 5.8	20.1
389906 2012 TL_{54}	16.4	X	286.03652	79.43082	325.90255	5.76806	0.0762731	0.23399288	2.6081604	20	9 9.5	19.5
389907 2012 TY_{54}	16.8	X	213.39359	161.88014	344.57205	6.09110	0.1585761	0.23851791	2.5750681	20	10 7.5	20.8
389908 2012 TO_{56}	16.2	X	120.54142	58.73303	16.48205	5.18758	0.1325987	0.18105136	3.0945786	20	4 9.2	20.9
389909 2012 TZ_{56}	15.5	X	284.44297	216.20721	41.15456	12.50532	0.0122227	0.17849993	3.1239975	20	3 11.5	20.1
389910 2012 TP_{57}	17.6	X	336.36509	214.00870	248.82768	1.85230	0.0877244	0.27212818	2.3584158	20	—	—
389911 2012 TP_{58}	17.6	X	134.47724	177.60991	149.29109	4.89351	0.1875316	0.29408688	2.2395062	20	—	—
389912 2012 TY_{65}	17.1	X	280.90377	181.58249	201.48848	3.23943	0.1695151	0.22880068	2.6474708	20	7 17.5	20.5
389913 2012 TX_{69}	17.1	X	284.06432	210.18295	186.24465	5.86123	0.1318561	0.23622703	2.5916896	20	8 16.4	20.3
389914 2012 TH_{74}	17.5	X	277.77296	270.41821	211.50782	7.14243	0.1078527	0.26315711	2.4117150	20	12 17.3	20.0
389915 2012 TG_{87}	17.0	X	275.32113	113.06451	16.81292	6.93070	0.0526200	0.26389060	2.4072439	20	12 30.4	19.9
389916 2012 TC_{88}	17.0	X	219.15540	200.96098	206.79077	3.51826	0.0934986	0.21467018	2.7624107	20	6 14.4	21.1
389917 2012 TH_{91}	17.5	X	288.05013	49.00246	69.59428	2.51956	0.1366995	0.26399121	2.4066323	20	12 29.1	19.5
389918 2012 TG_{93}	17.3	X	324.65528	323.60673	79.64251	3.36336	0.1333720	0.25302579	2.4756706	20	11 15.5	19.7
389919 2012 TO_{97}	16.8	X	252.03848	173.86169	226.61871	3.49078	0.1106477	0.22314243	2.6920386	20	7 11.2	20.5
389920 2012 TT_{99}	16.3	X	133.46166	201.08508	214.34207	11.60142	0.1957917	0.18427205	3.0584149	20	4 2.9	21.2

ELEMENTS AND OPPOSITION DATES IN 2020

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Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
	m		°	°	°	°		°				
389921 2012 TN_{102}	18.0	X	284.19085	138.11132	342.59949	2.46680	0.1358375	0.26104242	2.4247222	20	12 23.7	20.3
389922 2012 TO_{102}	17.3	X	138.86938	146.22810	329.08254	3.09120	0.0582506	0.21009459	2.8023742	20	6 10.9	21.3
389923 2012 TX_{104}	16.6	X	97.95138	73.85733	358.54514	4.95332	0.1528657	0.17805996	3.1291415	20	3 14.7	20.9
389924 2012 TT_{109}	16.3	X	145.04097	77.16028	343.54915	10.84509	0.1088308	0.19220573	2.9736636	20	4 10.3	21.0
389925 2012 TU_{118}	17.1	X	284.66967	288.60215	235.78893	8.99685	0.1207163	0.27906945	2.3191447	20	—	—
389926 2012 TJ_{125}	16.8	X	181.99095	108.99543	326.13596	5.47121	0.1128710	0.20847170	2.8168992	20	6 8.4	21.3
389927 2012 TD_{126}	16.1	X	276.50333	39.30823	7.13260	13.49894	0.1605474	0.23256696	2.6188103	20	8 21.3	19.5
389928 2012 TH_{129}	17.7	X	131.30686	260.32201	88.25810	2.67049	0.1298232	0.29624132	2.2286351	20	—	—
389929 2012 TM_{129}	17.3	X	286.21800	59.90208	350.51469	2.95114	0.1083602	0.23699224	2.5861079	20	9 14.3	20.3
389930 2012 TS_{130}	16.4	X	284.55733	288.15386	139.75962	7.58758	0.1328415	0.24226938	2.5484163	20	10 7.2	19.3
389931 2012 TB_{131}	17.2	X	39.60957	221.89700	122.26744	3.14113	0.2221789	0.26356598	2.4092201	20	—	—
389932 2012 TO_{131}	16.6	X	219.03522	219.28644	182.68481	11.79814	0.2614203	0.21192677	2.7861993	20	5 28.2	21.6
389933 2012 TR_{131}	15.5	X	85.90136	196.14163	252.61461	10.74486	0.1267510	0.17214588	3.2004051	20	3 11.2	20.2
389934 2012 TA_{133}	16.9	X	174.75849	283.27696	166.55396	5.31577	0.0978556	0.21746695	2.7386753	20	6 20.4	21.1
389935 2012 TX_{133}	16.7	X	209.29120	281.05934	176.46420	13.86549	0.0709141	0.23177901	2.6247421	20	8 7.8	20.7
389936 2012 TT_{134}	17.1	X	295.79854	135.55730	223.16275	1.62802	0.1221805	0.22749071	2.6576244	20	7 14.2	20.2
389937 2012 TG_{136}	16.9	X	78.01734	326.59191	60.88518	8.77450	0.1291527	0.28785768	2.2716992	20	—	—
389938 2012 TC_{138}	17.4	X	266.67806	60.83611	0.98501	3.29402	0.1794689	0.23205501	2.6226605	20	8 20.3	20.6
389939 2012 TB_{145}	17.5	X	294.67846	126.91694	33.55171	6.52152	0.0259140	0.28472036	2.2883566	20	—	—
389940 2012 TP_{149}	17.9	X	41.08389	354.90332	8.71358	2.42011	0.1373222	0.26525658	2.3989725	20	—	—
389941 2012 TJ_{150}	16.8	X	117.42310	37.60556	359.90871	3.83415	0.2070255	0.17252379	3.1957298	20	3 1.9	21.8
389942 2012 TF_{151}	16.8	X	241.22178	165.37574	227.17386	4.59332	0.1837188	0.21460110	2.7630034	20	6 9.9	21.2
389943 2012 TC_{154}	17.5	X	243.37860	265.33905	155.56869	2.56094	0.0817583	0.23018765	2.6368253	20	8 1.6	21.0
389944 2012 TV_{157}	16.4	X	197.84959	276.61214	190.80462	11.81270	0.1626634	0.22493892	2.6776860	20	7 31.6	20.9
389945 2012 TR_{161}	17.7	X	359.93063	173.19792	208.68728	1.97801	0.0995589	0.25862535	2.4398062	20	12 14.3	20.5
389946 2012 TM_{163}	17.1	X	276.58352	245.71390	182.82836	8.29216	0.1461982	0.23990088	2.5651621	20	9 18.7	19.9
389947 2012 TY_{163}	16.4	X	310.42750	33.48680	24.76657	15.47777	0.0833527	0.24532091	2.5272392	20	11 5.4	19.4
389948 2012 TQ_{166}	17.2	X	309.08730	47.54415	288.26315	0.97281	0.0920952	0.22082971	2.7108015	20	7 7.3	20.5
389949 2012 TA_{167}	16.2	X	205.02138	204.80159	171.84287	9.05088	0.1364945	0.19924106	2.9032437	20	4 21.5	20.9
389950 2012 TH_{168}	16.9	X	179.43046	1.53276	158.62238	8.12226	0.1247103	0.23526785	2.5987290	20	9 25.6	20.9
389951 2012 TM_{168}	15.9	X	304.12591	235.85929	106.39368	6.98540	0.0575929	0.22195903	2.7015987	20	7 13.2	19.2
389952 2012 TV_{168}	17.4	X	51.43169	198.90684	178.22095	6.89678	0.1328597	0.27349897	2.3505288	20	—	—
389953 2012 TX_{168}	17.7	X	150.56628	174.77198	121.67347	4.54236	0.1472835	0.28490191	2.2873843	20	—	—
389954 2012 TW_{169}	16.5	X	139.37164	29.33137	81.20511	7.55977	0.0078451	0.20677213	2.8323139	20	6 1.4	20.2
389955 2012 TR_{178}	16.9	X	182.57560	198.85502	247.45156	4.96016	0.0946543	0.21540586	2.7561174	20	6 23.9	21.0
389956 2012 TD_{187}	17.4	X	307.17319	147.42327	49.53664	8.14923	0.0768765	0.29089170	2.2558757	20	—	—
389957 2012 TN_{188}	16.4	X	276.61404	85.88278	339.07218	13.32071	0.0865267	0.24095890	2.5576478	20	9 20.1	19.5
389958 2012 TD_{189}	17.4	X	280.83759	107.35148	42.49917	3.60891	0.0667355	0.27213247	2.3583910	20	—	—
389959 2012 TV_{189}	16.5	X	75.45409	146.97574	314.60423	3.24968	0.1083079	0.17710883	3.1403345	20	3 14.3	20.6
389960 2012 TS_{190}	17.6	X	205.74149	284.72528	13.90397	7.50177	0.0484420	0.30147751	2.2027545	20	1 3.1	20.5
389961 2012 TU_{190}	17.4	X	248.14680	160.06437	14.22374	6.73851	0.0660771	0.26806691	2.3821764	20	—	—
389962 2012 TS_{196}	16.4	X	327.82971	109.70222	241.78625	11.71938	0.1941457	0.23281663	2.6169377	20	8 20.0	19.1
389963 2012 TP_{199}	15.9	X	52.37645	325.29550	135.05031	4.11043	0.0804950	0.17845495	3.1245225	20	2 7.5	19.9
389964 2012 TG_{200}	16.5	X	112.43024	71.79696	12.19480	8.20903	0.1839780	0.18339574	3.0681498	20	4 16.0	21.1
389965 2012 TN_{200}	16.7	X	160.93723	93.27957	24.50432	9.63005	0.1528388	0.21730120	2.7400677	20	7 14.7	21.3
389966 2012 TZ_{200}	16.9	X	246.57066	89.61405	32.81044	7.12324	0.0797793	0.25325608	2.4741696	20	10 31.9	19.9
389967 2012 TQ_{213}	17.1	X	253.33284	134.82106	359.68054	6.43565	0.0828510	0.25637866	2.4540391	20	11 25.8	20.2
389968 2012 TY_{213}	17.5	X	21.80995	70.42584	324.38554	6.19252	0.1218030	0.26844608	2.3799327	20	—	—
389969 2012 TJ_{214}	16.4	X	304.00661	4.80459	9.37184	12.48345	0.2004597	0.23455531	2.6039893	20	8 15.5	19.2
389970 2012 TU_{218}	15.8	X	96.82645	15.63081	61.60923	11.53805	0.2017595	0.17868827	3.1218019	20	3 31.2	20.4
389971 2012 TF_{223}	15.8	X	112.04527	237.81933	186.18341	11.81336	0.1238989	0.17838821	3.1253017	20	3 15.8	20.3
389972 2012 TF_{224}	18.2	X	200.40323	108.66182	187.99888	4.85497	0.1762904	0.30791231	2.1719576	20	—	—
389973 2012 TN_{224}	17.7	X	307.71824	282.15785	169.67463	2.80718	0.1700682	0.25907112	2.4370067	20	12 26.1	19.8
389974 2012 TO_{227}	17.6	X	252.48460	107.35573	44.45469	1.93134	0.1120718	0.26300460	2.4126472	20	12 17.4	20.1
389975 2012 TW_{234}	17.6	X	347.32331	33.69506	77.32490	5.48515	0.0751897	0.28472174	2.2883492	20	—	—
389976 2012 TP_{235}	16.3	X	117.52474	9.85500	65.17891	9.92520	0.0768744	0.18963801	3.0004458	20	4 3.2	20.7
389977 2012 TP_{237}	16.9	X	241.99405	323.87798	125.61084	5.63304	0.0560999	0.23878684	2.5731343	20	9 14.8	20.3
389978 2012 TD_{238}	18.1	X	69.61408	249.15503	161.18657	6.97210	0.0927359	0.29277234	2.2462048	20	—	—
389979 2012 TL_{252}	17.0	X	261.27165	204.63536	300.98628	5.38999	0.0657765	0.26270562	2.4144774	20	12 28.9	19.7
389980 2012 TQ_{254}	16.1	X	112.94804	132.79285	305.13628	8.64791	0.0658445	0.18487605	3.0517499	20	3 22.2	20.5
389981 2012 TB_{255}	16.7	X	249.43106	35.60599	18.01312	12.91788	0.1724569	0.22314889	2.6919866	20	7 21.5	20.8
389982 2012 TL_{255}	15.6	X	96.29363	76.30715	9.91689	22.49326	0.1579981	0.17829333	3.1264104	20	3 30.1	20.1
389983 2012 TF_{256}	17.0	X	173.84098	64.16079	68.15172	7.07130	0.0753504	0.22076475	2.7113332	20	8 16.8	21.1
389984 2012 TM_{267}	17.0	X	210.87989	331.72632	78.12136	5.49498	0.0664185	0.21105539	2.7938629	20	6 9.5	21.2
389985 2012 TF_{270}	18.2	X	244.20748	42.51867	204.16387	5.10615	0.1427523	0.30144854	2.2028956	20	—	—
389986 2012 TT_{281}	16.6	X	287.70729	114.57417	277.54845	10.63863	0.0729635	0.23423219	2.6063836	20	8 21.2	20.0
389987 2012 TB_{287}	17.6	X	82.02013	264.05169	88.96957	5.43277	0.1536816	0.27703769	2.3304698	20	—	—
389988 2012 TV_{289}	16.9	X	274.88025	173.11061	224.17655	2.96657	0.0774318	0.23007570	2.6376807	20	8 12.0	20.2
389989 2012 TZ_{289}	16.4	X	198.31479	349.96320	59.93462	4.81887	0.1980845	0.20488527	2.8496765	20	5 22.1	21.0
389990 2012 TF_{290}	17.2	X	196.81148	313.03385	6.40378	7.91683	0.1188801	0.30675502	2.1774169	20	1 24.4	20.3
389991 2012 TP_{290}	16.0	X	181.32053	298.24325	54.34463	15.33920	0.0282897	0.18016197	3.1047548	20	3 6.6	20.8
389992 2012 TA_{291}	17.3	X	281.86351	347.54421	83.13427	4.15069	0.1477631	0.24538856	2.5267746	20	10 4.3	20.1
389993 2012 TP_{291}	16.6	X	98.17317	284.80307	185.57874	0.66907	0.2379906	0.18269987	3.0759355	20	5 11.3	21.0
389994 2012 TC_{295}	17.2	X	349.28420	287.47697	34.64906	3.42967	0.0665888	0.22777215	2.6554347	20	8 27.2	20.4
389995 2012 TF_{296}	16.6	X	272.24449	347.06540	22.00662	6.29130	0.0558207	0.21807146	2.7336117	20	7 4.9	20.3
389996 2012 TO_{296}	17.4	X	256.72764	236.20388	17.23163	4.45051	0.0946398	0.30190535	2.2006730	20	1 1.1	20.5
389997 2012 TT_{296}	17.1	X	262.50313	76.31750	296.65569	1.41378	0.0875710	0.21554408	2.7549390	20	6 21.4	20.7
389998 2012 TV_{297}	16.9	X	195.65279	300.49888	205.26617	7.38881	0.0426392	0.23691521	2.5866684	20	9 28.9	20.4
389999 2012 TP_{299}	17.6	X	27.82286	4.69108	26.81409	7.29502	0.1212191	0.27025462	2.3693031	20	—	—
390000 2012 TB_{300}	17.2	X	279.35685	336.92109	56.39369	3.96847	0.0761872	0.22396897	2.6854113	20	8 15.8	20.6

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Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
	m		°	°	°	°		°				
390001 2012 TD_{303}	16.6	X	266.15368	337.18511	76.15097	3.87544	0.1118714	0.22984813	2.6394214	20	8 19.3	19.9
390002 2012 TN_{303}	17.0	X	229.39279	95.43998	20.98904	4.15824	0.0057001	0.24663451	2.5182576	20	10 11.3	20.1
390003 2012 TH_{307}	16.1	X	142.01573	327.51967	85.21295	9.43605	0.0949402	0.19362862	2.9590776	20	4 5.1	20.7
390004 2012 TT_{310}	16.4	X	219.07111	43.61551	21.16406	7.90923	0.2159741	0.21360099	2.7716212	20	6 26.7	21.1
390005 2012 TC_{311}	17.1	X	317.31889	36.48632	351.64884	3.80335	0.2285269	0.24037349	2.5617987	20	9 28.4	18.8
390006 2012 TD_{312}	17.2	X	331.10317	96.80126	27.42339	7.76708	0.0525528	0.28467527	2.2885982	20	—	—
390007 2012 TK_{312}	15.7	X	107.19560	234.97416	225.62190	10.72274	0.0951759	0.18507359	3.0495780	20	4 19.7	20.2
390008 2012 TW_{312}	16.3	X	267.46673	272.88803	53.56258	9.54028	0.1641098	0.20900290	2.8121243	20	4 19.5	20.5
390009 2012 TX_{313}	16.3	X	182.59822	44.43225	53.74904	9.16509	0.1062439	0.21183659	2.7869899	20	7 9.8	20.7
390010 2012 TR_{314}	17.1	X	220.26335	351.52264	37.94394	2.36542	0.1239545	0.20908620	2.8113773	20	5 20.4	21.5
390011 2012 TR_{315}	16.3	X	262.05992	335.41243	47.08544	9.63526	0.2213682	0.21667138	2.7453750	20	6 13.7	20.4
390012 2012 TQ_{317}	16.9	X	250.98209	350.49259	98.79074	6.93607	0.1312137	0.23639073	2.5904930	20	9 16.2	20.4
390013 2012 TS_{317}	16.6	X	250.97186	275.09532	175.12638	9.10191	0.1141814	0.23612398	2.5924436	20	9 16.3	20.1
390014 2012 TS_{318}	15.9	X	68.21252	289.50285	165.45176	9.95487	0.1441578	0.17120597	3.2121078	20	3 2.7	19.9
390015 2012 UN	17.2	X	273.81819	61.75977	76.48303	2.37514	0.1232165	0.26462281	2.4028013	20	—	—
390016 2012 UH_{3}	16.7	X	236.89216	269.30684	178.18988	10.18043	0.1179881	0.23309080	2.6148852	20	8 22.9	20.4
390017 2012 UB_{11}	17.8	X	181.63487	284.54817	157.16585	4.02355	0.0693235	0.21308358	2.7761061	20	6 17.6	22.0
390018 2012 UE_{14}	17.1	X	161.46394	7.14145	61.72539	2.93705	0.0528488	0.20202450	2.8765153	20	5 8.7	21.3
390019 2012 UJ_{15}	17.6	X	189.59627	76.03212	123.08035	3.23058	0.1352393	0.25973936	2.4328250	20	11 26.3	21.2
390020 2012 UY_{18}	17.3	X	201.23282	355.08617	120.95077	3.12843	0.0310526	0.22984215	2.6394672	20	8 29.6	20.8
390021 2012 UN_{29}	16.5	X	151.48757	321.39146	111.88404	10.75519	0.0992832	0.19680008	2.9272009	20	5 9.8	21.1
390022 2012 UX_{29}	17.6	X	113.06159	268.98791	109.71831	2.08220	0.0494305	0.29546485	2.2325378	20	—	—
390023 2012 US_{30}	17.0	X	191.04867	21.42861	70.17924	5.42863	0.0829042	0.21549508	2.7553566	20	7 11.0	21.0
390024 2012 UQ_{31}	15.9	X	158.78913	145.11875	262.93307	10.68772	0.1134713	0.18625271	3.0366936	20	4 9.5	20.9
390025 2012 UY_{32}	16.3	X	232.66967	105.52973	5.13098	21.90133	0.1057266	0.23767638	2.5811428	20	9 23.4	19.8
390026 2012 UH_{33}	16.9	X	194.60656	40.20646	57.46349	5.59371	0.0719777	0.21897870	2.7260562	20	7 24.6	20.9
390027 2012 UE_{35}	16.7	X	131.94303	177.33317	259.80502	0.61027	0.1396630	0.18693453	3.0293052	20	4 23.8	21.3
390028 2012 UA_{38}	17.6	X	294.53053	177.74314	346.24642	5.01758	0.0528864	0.28027960	2.3124644	20	—	—
390029 2012 UZ_{40}	16.6	X	179.06813	98.17573	36.30682	11.80320	0.0687686	0.22893552	2.6464311	20	8 29.8	20.7
390030 2012 UB_{41}	16.9	X	226.28365	225.48299	183.20004	3.16349	0.1021292	0.21609951	2.7502164	20	6 22.7	20.9
390031 2012 UL_{41}	16.9	X	248.49685	205.84566	191.91243	4.66862	0.0476850	0.22112115	2.7084190	20	7 11.7	20.6
390032 2012 UC_{42}	17.2	X	56.45496	259.20788	47.20854	4.04316	0.0676780	0.25170901	2.4842971	20	11 14.7	20.5
390033 2012 UP_{47}	16.5	X	221.23770	345.53372	55.09158	7.25494	0.0528516	0.21120056	2.7925824	20	6 10.4	20.4
390034 2012 UG_{51}	17.7	X	222.77751	268.47332	205.73940	0.94752	0.0623042	0.23376774	2.6098347	20	9 19.1	21.1
390035 2012 UO_{54}	17.2	X	49.37454	92.56613	269.70243	3.72705	0.1896199	0.26892019	2.3771346	20	—	—
390036 2012 UR_{54}	15.8	X	338.49342	219.65489	11.17081	10.60441	0.0697660	0.19198013	2.9759927	20	4 2.9	19.5
390037 2012 UE_{55}	17.2	X	216.37542	270.40089	309.09082	3.31269	0.0299016	0.27266241	2.3553342	20	—	—
390038 2012 UM_{56}	16.6	X	90.72137	314.68941	249.99279	4.00652	0.0487399	0.22052213	2.7133215	20	8 6.8	20.4
390039 2012 UC_{57}	16.2	X	117.20659	169.43565	256.28148	4.21500	0.1352907	0.17842646	3.1248551	20	3 23.7	20.8
390040 2012 UE_{57}	16.4	X	283.78850	324.82308	25.49703	6.23322	0.0749617	0.21549140	2.7553879	20	6 21.4	20.0
390041 2012 UP_{58}	16.3	X	65.86353	271.97825	233.25269	7.92198	0.0810183	0.18641786	3.0348999	20	4 20.9	20.5
390042 2012 UB_{59}	16.5	X	217.69298	95.27164	5.02206	3.94991	0.0454376	0.22739912	2.6583380	20	8 27.9	20.2
390043 2012 UU_{59}	16.7	X	291.23024	97.29277	255.42922	5.28492	0.0409003	0.21801155	2.7341125	20	7 10.1	20.2
390044 2012 UA_{62}	16.0	X	13.64355	129.60844	60.43705	6.97851	0.0667751	0.18436950	3.0573371	20	4 5.9	19.9
390045 2012 UE_{62}	16.1	X	9.97804	116.46560	89.72746	5.26088	0.0581766	0.18957486	3.0011121	20	4 20.5	20.0
390046 2012 UC_{67}	16.0	X	215.97336	13.53952	64.38145	17.42828	0.1299981	0.22044538	2.7139513	20	7 18.7	20.4
390047 2012 UD_{69}	16.6	X	193.40044	286.84113	210.65006	12.20230	0.1042833	0.24304257	2.5430085	20	9 8.4	20.5
390048 2012 UN_{69}	17.4	X	131.51696	55.89059	246.06665	4.84060	0.1794116	0.28200682	2.3030125	20	—	—
390049 2012 UF_{72}	17.0	X	276.64571	146.62286	217.20150	0.46735	0.1103572	0.22157797	2.7046952	20	6 24.6	20.5
390050 2012 UU_{72}	17.7	X	226.13591	260.18975	140.99040	1.03361	0.0753872	0.21440365	2.7646995	20	6 15.4	21.7
390051 2012 UM_{73}	16.6	X	79.33410	37.75275	49.24604	1.71759	0.1842248	0.17248418	3.1962190	20	3 14.9	20.8
390052 2012 UP_{73}	17.7	X	198.52391	15.55293	200.04436	4.77430	0.0614115	0.26781543	2.3836674	20	—	—
390053 2012 UA_{76}	16.8	X	112.46197	328.52787	95.57192	2.36302	0.1464445	0.17695854	3.1421123	20	3 21.3	21.5
390054 2012 UH_{76}	17.5	X	316.98037	183.10217	150.42811	2.19938	0.0996295	0.22371352	2.6874552	20	7 16.1	20.6
390055 2012 UZ_{81}	16.8	X	287.72093	30.67432	331.13084	6.41976	0.0693317	0.21815431	2.7329195	20	7 15.3	20.3
390056 2012 UK_{84}	17.7	X	357.20619	15.81835	22.83209	6.67567	0.1382488	0.26085218	2.4259010	20	—	—
390057 2012 UR_{87}	17.6	X	95.80620	271.88129	47.95000	7.50301	0.0607290	0.26464552	2.4026638	20	—	—
390058 2012 UE_{88}	17.4	X	270.06166	210.85641	228.13553	1.08858	0.0882848	0.23641422	2.5903214	20	10 1.8	20.5
390059 2012 UG_{88}	16.8	X	206.96239	98.13997	36.80893	1.94203	0.0912790	0.23152627	2.6266520	20	9 24.3	20.6
390060 2012 UK_{88}	17.0	X	131.84233	36.71782	31.98689	0.76230	0.1762279	0.18193460	3.0845550	20	4 17.2	21.9
390061 2012 UL_{90}	17.4	X	103.19931	58.96478	247.82411	1.50717	0.2074654	0.26952464	2.3735792	20	—	—
390062 2012 UX_{94}	17.0	X	2.03204	315.68992	89.04892	4.87500	0.1659066	0.26353165	2.4094294	20	—	—
390063 2012 UE_{96}	17.4	X	58.91065	75.84296	213.41769	9.96815	0.0420221	0.24518029	2.5282054	20	10 20.9	20.6
390064 2012 UF_{98}	15.3	X	113.83320	149.27026	250.52943	20.98659	0.1117619	0.17033178	3.2230887	20	2 8.7	20.4
390065 2012 UV_{100}	16.0	X	1.10464	135.48561	46.73593	16.82477	0.0988749	0.17832371	3.1260553	20	3 14.6	20.2
390066 2012 UT_{102}	17.5	X	92.14633	228.37986	87.65134	2.31014	0.0976443	0.26624698	2.3930196	20	—	—
390067 2012 UO_{104}	16.3	X	177.46831	208.43747	293.55622	11.58906	0.0722900	0.23004133	2.6379434	20	8 26.7	20.4
390068 2012 UX_{106}	17.2	X	250.91247	266.34500	342.80918	4.70788	0.1035437	0.29974881	2.2112155	20	—	—
390069 2012 UG_{108}	16.4	X	147.93111	294.20724	221.64303	11.93695	0.0975233	0.22086929	2.7104776	20	8 11.4	20.8
390070 2012 UA_{110}	17.5	X	211.35557	90.46126	148.57580	7.63819	0.0600512	0.28211466	2.3024256	20	—	—
390071 2012 UU_{113}	17.1	X	299.51769	88.99980	10.39368	4.74798	0.0392769	0.26163161	2.4210805	20	12 24.4	20.0
390072 2012 UQ_{116}	17.8	X	172.65631	334.54930	283.80587	2.85984	0.1008037	0.27773487	2.3265682	20	—	—
390073 2012 UU_{117}	17.1	X	232.44701	52.47681	356.88599	1.71398	0.1032033	0.21842358	2.7306731	20	6 30.8	20.9
390074 2012 UP_{122}	16.8	X	158.62498	111.36870	30.16590	8.26937	0.1684966	0.21341006	2.7732741	20	8 12.9	21.4
390075 2012 UT_{123}	16.2	X	73.96540	247.24490	250.39138	6.01376	0.0376276	0.18565015	3.0432609	20	4 15.5	20.4
390076 2012 UH_{126}	16.4	X	254.20784	118.05694	253.47115	5.47322	0.0317325	0.20705541	2.8297300	20	6 16.6	20.3
390077 2012 UC_{128}	16.6	X	136.48853	92.37605	347.64749	10.76143	0.1990141	0.18997181	2.9969301	20	5 2.5	21.6
390078 2012 UV_{130}	16.5	X	264.84289	322.11690	37.59262	10.46026	0.1313921	0.21531716	2.7568743	20	5 29.5	20.5
390079 2012 US_{131}	17.5	X	265.11667	22.57083	52.35815	4.10902	0.1742885	0.23706880	2.5855510	20	9 7.9	20.8
390080 2012 UM_{132}	16.4	X	287.63791	66.87999	337.56169	10.03261	0.0564334	0.23655738	2.5892762	20	9 13.4	19.6

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	m		°	°	°	°		°				
390081 2012 UQ_{136}	16.3	X	348.93860	332.24044	4.23879	5.93140	0.2810612	0.24008415	2.5638566	20	10 3.8	17.9
390082 2012 UM_{137}	17.5	X	274.25397	61.31224	313.59465	0.14912	0.0967628	0.22049831	2.7135169	20	7 8.7	21.1
390083 2012 UW_{140}	17.2	X	255.37041	232.85752	186.93902	4.44035	0.1216280	0.22912960	2.6449365	20	8 8.7	20.9
390084 2012 UC_{148}	16.4	X	276.85562	268.94234	95.28606	7.19288	0.0838561	0.21934072	2.7230558	20	6 29.6	20.1
390085 2012 UU_{148}	16.1	X	331.43080	293.82328	134.17459	1.71889	0.3187160	0.12546718	3.9516878	20	11 15.6	19.8
390086 2012 UJ_{151}	17.2	X	223.86854	16.40997	75.70877	5.22994	0.0718577	0.22288221	2.6941335	20	8 22.3	21.0
390087 2012 UC_{152}	16.4	X	147.41838	7.37712	63.28402	10.62649	0.1321572	0.18843991	3.0131503	20	5 2.8	21.1
390088 2012 UJ_{152}	16.2	X	67.59462	17.14913	100.31514	3.45091	0.0516421	0.17529537	3.1619555	20	3 19.2	20.5
390089 2012 UO_{152}	16.2	X	230.05329	214.74000	221.44006	13.56729	0.0234445	0.22036453	2.7146151	20	8 7.2	20.3
390090 2012 UF_{155}	16.7	X	153.16888	258.59700	256.86855	3.99800	0.1012326	0.21992419	2.7182374	20	8 19.3	20.8
390091 2012 UA_{156}	16.4	X	185.86401	106.94755	19.47111	15.25246	0.0647350	0.22636605	2.6664197	20	8 28.2	20.5
390092 2012 UG_{156}	17.2	X	195.70321	157.50473	263.71715	3.10713	0.0929535	0.21028338	2.8006968	20	6 5.8	21.4
390093 2012 UL_{156}	16.8	X	104.54339	78.75960	359.21621	5.24758	0.1308285	0.18186241	3.0853712	20	3 25.3	21.1
390094 2012 UF_{160}	16.3	X	224.98228	70.63600	52.47648	14.92361	0.0080861	0.23646824	2.5899269	20	10 17.4	19.9
390095 2012 UK_{161}	16.7	X	166.27219	136.92297	281.14007	4.74860	0.1185797	0.19307677	2.9647133	20	5 1.6	21.3
390096 2012 UG_{162}	17.1	X	236.46663	163.75196	272.71267	1.63207	0.0402461	0.22396663	2.6854301	20	8 18.7	20.9
390097 2012 UQ_{163}	16.6	X	284.49881	80.55755	281.10816	5.05268	0.0292694	0.21649237	2.7468882	20	7 14.9	20.2
390098 2012 UF_{168}	16.4	X	187.47177	40.82944	87.02858	14.23026	0.2049561	0.22326314	2.6910682	20	8 22.3	21.1
390099 2012 UQ_{168}	16.6	X	162.06757	257.39013	138.37434	10.68240	0.1203328	0.18897031	3.0075094	20	4 6.0	21.4
390100 2012 VG_{9}	17.0	X	280.86860	253.98715	230.98898	5.06719	0.0958746	0.26304798	2.4123819	20	12 27.6	19.5
390101 2012 VR_{10}	15.9	X	153.77492	178.62335	244.58026	9.46777	0.0909994	0.18936706	3.0033073	20	4 23.8	20.5
390102 2012 VC_{17}	16.1	X	142.01818	325.89912	83.60396	10.47235	0.1044284	0.17507126	3.1646534	20	4 3.8	21.1
390103 2012 VY_{17}	16.6	X	128.11238	346.93080	97.66273	4.44688	0.1653387	0.18431634	3.0579249	20	5 3.2	21.3
390104 2012 VQ_{19}	16.5	X	324.24954	253.03661	72.31367	9.33614	0.0802453	0.21431012	2.7655038	20	7 19.2	20.0
390105 2012 VJ_{25}	17.3	X	316.37412	323.63695	37.09684	1.92395	0.0742260	0.23441277	2.6050448	20	8 28.3	20.4
390106 2012 VN_{26}	16.8	X	245.49816	191.80881	212.12214	1.59830	0.1346097	0.22095064	2.7098123	20	7 4.9	20.7
390107 2012 VZ_{29}	17.5	X	64.48319	52.13920	325.33635	5.57399	0.1086911	0.27780618	2.3261700	20	—	—
390108 2012 VS_{30}	16.9	X	66.97424	297.63700	57.03413	7.63056	0.1309335	0.26822269	2.3812539	20	—	—
390109 2012 VW_{30}	16.5	X	232.09568	256.39665	94.97148	2.60058	0.0994464	0.19390253	2.9562902	20	4 18.9	21.0
390110 2012 VY_{30}	16.1	X	93.48518	268.18824	225.33063	9.57800	0.0531890	0.19067513	2.9895559	20	5 9.6	20.3
390111 2012 VP_{33}	17.5	X	235.08191	358.91240	114.67234	3.63023	0.1272332	0.23381770	2.6094629	20	9 26.7	21.2
390112 2012 VE_{34}	16.6	X	332.83721	242.86009	133.99458	4.27035	0.1686023	0.24117193	2.5561414	20	10 22.6	18.9
390113 2012 VW_{34}	17.3	X	95.80952	258.96406	68.80469	7.11627	0.1283875	0.27091747	2.3654370	20	—	—
390114 2012 VW_{35}	16.7	X	193.40768	309.94215	159.74189	5.28386	0.0673340	0.21886244	2.7270215	20	8 6.1	20.7
390115 2012 VX_{38}	18.2	X	315.10019	41.46737	46.76753	2.46944	0.1433560	0.26112793	2.4241928	20	—	—
390116 2012 VF_{40}	17.6	X	109.64450	77.23199	258.23801	3.88008	0.1546525	0.27620178	2.3351695	20	—	—
390117 2012 VQ_{43}	17.4	X	250.18685	200.04015	231.88158	3.14876	0.0991122	0.23125668	2.6286929	20	8 21.7	20.9
390118 2012 VK_{44}	17.0	X	318.59690	7.16352	18.80624	1.38025	0.0729901	0.23480377	2.6021521	20	10 5.9	20.0
390119 2012 VC_{45}	16.3	X	159.21580	280.64661	130.00322	6.30994	0.1736671	0.18661741	3.0327360	20	4 22.7	21.3
390120 2012 VG_{45}	16.6	X	208.89802	273.30678	145.17624	6.45979	0.0667669	0.20383944	2.8594153	20	6 18.7	20.9
390121 2012 VL_{45}	16.8	X	307.75913	8.08873	44.62532	4.90807	0.1966447	0.23882917	2.5728303	20	10 18.7	18.9
390122 2012 VE_{48}	17.1	X	260.01995	191.05641	202.28643	4.63338	0.0126888	0.22325951	2.6910973	20	7 26.2	20.8
390123 2012 VQ_{53}	17.0	X	177.77366	101.90431	47.97519	5.55961	0.1056302	0.22749904	2.6575595	20	9 12.2	21.0
390124 2012 VY_{53}	17.1	X	100.31401	262.80244	219.57926	4.25530	0.1043278	0.18927580	3.0042725	20	5 11.3	21.2
390125 2012 VH_{57}	16.8	X	79.31215	350.34024	213.34801	3.47634	0.0376302	0.21402398	2.7679682	20	7 19.8	20.7
390126 2012 VN_{59}	16.6	X	151.18663	77.87075	74.49447	4.41370	0.0587040	0.21937445	2.7227767	20	8 15.7	20.6
390127 2012 VQ_{59}	17.8	X	241.61768	125.64782	86.96078	2.99800	0.0699032	0.27558441	2.3386557	20	—	—
390128 2012 VF_{60}	17.0	X	204.88067	345.69021	215.97069	3.94426	0.1465189	0.25568121	2.4584998	20	12 13.4	20.5
390129 2012 VV_{60}	17.7	X	240.22659	107.06033	96.06267	2.16675	0.1318022	0.26932589	2.3747468	20	—	—
390130 2012 VW_{61}	17.6	X	267.69630	336.71499	64.97711	2.89172	0.0913772	0.22408897	2.6844526	20	8 7.5	21.2
390131 2012 VW_{62}	16.8	X	267.71460	262.14618	154.75408	5.85894	0.1083396	0.23049238	2.6345008	20	8 25.2	20.2
390132 2012 VY_{64}	17.9	X	285.55564	142.86941	20.42912	5.96202	0.1028245	0.27771007	2.3267066	20	—	—
390133 2012 VJ_{68}	17.0	X	134.08466	12.30212	213.34563	5.33361	0.1919445	0.24467811	2.5316635	20	11 2.7	21.2
390134 2012 VG_{71}	16.6	X	110.21901	260.13644	210.51254	8.04765	0.0584156	0.18906720	3.0064819	20	5 2.4	20.7
390135 2012 VT_{72}	16.7	X	169.45035	282.97392	149.47507	2.38736	0.0901847	0.19604056	2.9347567	20	5 23.9	21.1
390136 2012 VY_{72}	16.6	X	258.67033	333.73685	77.24365	5.79942	0.1035492	0.22248603	2.6973308	20	8 6.4	20.3
390137 2012 VJ_{73}	17.1	X	175.52567	332.28120	163.57926	3.26684	0.0355708	0.22334335	2.6904239	20	8 21.5	20.8
390138 2012 VQ_{74}	17.7	X	136.62123	198.91337	143.23587	6.68464	0.1649467	0.28801386	2.2708780	20	—	—
390139 2012 VO_{79}	17.7	X	237.80644	109.89538	106.37094	2.98239	0.1455619	0.27570920	2.3379500	20	—	—
390140 2012 VK_{83}	16.6	X	54.83701	196.50569	80.46928	5.47816	0.1390080	0.23475196	2.6025349	20	10 15.1	20.1
390141 2012 VQ_{83}	16.5	X	44.55019	10.20773	147.46574	2.17545	0.1098829	0.17822015	3.1272661	20	4 12.2	20.3
390142 2012 VC_{84}	17.3	X	244.39117	336.57766	101.08635	3.40338	0.0642201	0.22608507	2.6686286	20	8 29.5	20.8
390143 2012 VK_{84}	16.3	X	162.20519	54.84598	7.41570	5.11210	0.1182418	0.19066849	2.9896253	20	5 2.9	20.9
390144 2012 VL_{84}	16.1	X	194.85975	93.36217	268.63533	10.95175	0.1704335	0.18486947	3.0518224	20	3 18.6	21.4
390145 2012 VN_{85}	17.2	X	172.37172	12.00998	64.59780	11.29532	0.0945520	0.19949111	2.9008171	20	5 31.3	21.5
390146 2012 VR_{85}	16.6	X	249.23106	26.13189	63.51427	14.15847	0.1530361	0.22942632	2.6426555	20	9 15.1	20.5
390147 2012 VD_{86}	17.0	X	302.68127	111.90056	260.29899	3.97622	0.0334925	0.22886239	2.6469948	20	8 23.2	20.4
390148 2012 VZ_{86}	17.1	X	275.58808	82.95620	279.67383	5.25859	0.0674034	0.21264959	2.7798819	20	6 28.0	20.9
390149 2012 VB_{88}	15.5	X	101.08596	33.45521	64.16458	18.62051	0.1411548	0.17501513	3.1653300	20	4 23.2	20.3
390150 2012 VE_{88}	16.3	X	354.76579	201.19732	143.49088	8.49445	0.2118363	0.23908416	2.5710006	20	10 26.4	18.8
390151 2012 VF_{88}	17.2	X	324.44063	86.14759	294.61330	0.44497	0.0844615	0.23390680	2.6088002	20	10 7.4	20.2
390152 2012 VP_{88}	16.7	X	220.30039	340.50018	85.67036	5.78125	0.0459885	0.21313505	2.7756591	20	7 14.7	20.6
390153 2012 VF_{89}	16.9	X	237.26978	355.63368	60.65876	8.59173	0.0451099	0.21688939	2.7435350	20	7 24.9	20.8
390154 2012 VJ_{91}	17.1	X	318.35077	159.00222	144.66829	2.68890	0.0487562	0.20593531	2.8399814	20	6 11.7	20.7
390155 2012 VG_{93}	16.7	X	206.88892	241.69768	220.21499	4.38477	0.0928424	0.21632799	2.7482795	20	8 8.3	20.9
390156 2012 VK_{93}	17.1	X	222.24978	241.80423	186.31781	3.57031	0.0813581	0.21259540	2.7803543	20	7 14.8	21.2
390157 2012 VX_{95}	17.1	X	244.20270	281.57645	130.92772	3.82731	0.0834110	0.21567333	2.7538382	20	7 21.2	20.8
390158 2012 VD_{97}	15.8	X	187.59068	10.80797	16.90194	8.77562	0.1131362	0.18983711	2.9983476	20	4 16.1	20.5
390159 2012 VS_{98}	16.9	X	308.97156	189.06033	179.42840	5.18985	0.2604579	0.23297599	2.6157442	20	7 29.9	19.5
390160 2012 VE_{101}	16.6	X	315.61430	132.82689	208.55316	5.72507	0.0414355	0.22127312	2.7071788	20	7 28.9	20.2

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
	m		°	°	°	°		°				
390161 2012 VH_{101}	16.6	X	174.61752	282.74982	150.79843	2.42914	0.0467680	0.20209578	2.8758389	20	5 30.1	20.8
390162 2012 VJ_{101}	17.2	X	218.28522	63.51939	66.14950	4.67028	0.0325086	0.23787923	2.5796753	20	10 10.8	20.6
390163 2012 VM_{101}	17.0	X	124.03608	12.30925	93.30663	2.27171	0.1214160	0.19190145	2.9768061	20	5 19.4	21.5
390164 2012 VO_{101}	16.2	X	333.84007	234.90114	187.84363	2.70186	0.2610345	0.12425232	3.9774040	20	11 16.4	20.4
390165 2012 VG_{102}	17.1	X	275.96922	117.06901	246.90296	5.10299	0.0786312	0.21517220	2.7581123	20	6 28.4	20.8
390166 2012 VJ_{102}	16.6	X	244.81501	121.90005	236.99442	9.31442	0.0560227	0.20184661	2.8782052	20	5 15.8	20.7
390167 2012 VN_{103}	17.2	X	220.54366	298.65992	194.52184	4.43561	0.0462986	0.23293773	2.6160306	20	10 13.7	20.7
390168 2012 VS_{103}	16.5	X	161.52631	26.41522	63.51079	11.38639	0.0881286	0.19986359	2.8972119	20	6 5.2	20.9
390169 2012 VC_{104}	16.6	X	125.48555	280.22616	214.51125	9.08123	0.1036811	0.20021349	2.8938354	20	6 24.2	21.0
390170 2012 VY_{106}	16.7	X	23.51567	7.01057	264.95774	1.29654	0.0233067	0.21908347	2.7251870	20	8 3.1	20.2
390171 2012 VE_{107}	16.9	X	278.96305	141.69251	251.54307	2.94437	0.0468801	0.22503787	2.6769010	20	8 16.4	20.4
390172 2012 VP_{107}	17.0	X	118.75487	296.09375	245.56450	1.61767	0.0222823	0.21589192	2.7519790	20	8 9.3	20.6
390173 2012 VS_{109}	16.2	X	41.90220	290.28097	222.59120	9.37755	0.1246935	0.17600115	3.1534967	20	3 31.5	20.3
390174 2012 WU	15.8	X	329.86227	205.16886	229.35353	2.54479	0.1355128	0.12475001	3.9668185	20	11 26.5	20.8
390175 2012 WT_2	18.0	X	162.82402	96.75558	209.67636	3.94793	0.1372767	0.28699691	2.2762392	20	—	—
390176 2012 WH_3	17.1	X	81.59949	295.26279	65.32017	6.92743	0.1334071	0.27376256	2.3490198	20	—	—
390177 2012 WO_5	17.4	X	123.79222	264.49482	55.81567	4.92471	0.1032006	0.27483618	2.3428984	20	—	—
390178 2012 WF_6	16.5	X	313.83846	282.42405	67.66728	8.16396	0.0632253	0.22104660	2.7090280	20	8 10.5	19.9
390179 2012 WU_6	17.3	X	165.40692	14.60625	242.18757	2.61059	0.1022186	0.26541300	2.3980299	20	—	—
390180 2012 WP_{11}	16.9	X	123.52142	255.77274	174.04537	1.11328	0.1569726	0.17833216	3.1259566	20	4 8.9	21.7
390181 2012 WR_{11}	16.7	X	127.44494	38.77554	91.18309	3.79237	0.1389706	0.19825496	2.9128626	20	6 23.9	21.1
390182 2012 WO_{12}	17.1	X	70.21551	215.82594	85.33176	4.08831	0.0885043	0.24648357	2.5192856	20	11 26.9	20.7
390183 2012 WW_{12}	16.8	X	330.55049	100.83973	208.58913	4.12105	0.1105739	0.21521064	2.7577838	20	7 2.9	19.9
390184 2012 WV_{13}	17.1	X	287.97760	207.77052	164.12534	3.20226	0.0215864	0.21797017	2.7344586	20	8 3.5	20.7
390185 2012 WF_{16}	16.6	X	322.12787	215.97979	164.06018	6.22774	0.2308567	0.23922915	2.5699617	20	9 29.4	18.3
390186 2012 WW_{17}	16.7	X	257.56656	163.88986	289.68181	4.31835	0.0486867	0.23668578	2.5883397	20	10 7.7	20.2
390187 2012 WH_{18}	16.3	X	63.90361	102.68929	45.16428	8.62612	0.1636738	0.17915587	3.1163676	20	5 5.2	20.2
390188 2012 WD_{20}	16.6	X	287.79492	105.01223	265.97973	5.31284	0.0478250	0.21829460	2.7317485	20	7 28.6	20.3
390189 2012 WV_{20}	17.8	X	173.22125	346.49808	352.21926	2.39539	0.1809023	0.30190741	2.2006630	20	1 28.1	21.0
390190 2012 WG_{22}	17.3	X	306.26008	118.43918	288.50871	2.80458	0.0815384	0.23743554	2.5828879	20	10 13.7	20.3
390191 2012 WT_{22}	16.5	X	281.13649	349.79320	48.68376	6.29069	0.0539314	0.22471334	2.6794777	20	8 30.4	20.0
390192 2012 WD_{23}	16.0	X	94.66709	44.40232	49.57311	9.98247	0.0704850	0.17462087	3.1700927	20	3 29.8	20.5
390193 2012 WM_{23}	16.7	X	231.64496	35.85348	65.52603	3.68111	0.0544219	0.22796850	2.6539098	20	9 15.9	20.3
390194 2012 WX_{23}	16.6	X	347.43958	188.14191	92.72176	6.93562	0.0239483	0.20341814	2.8633621	20	6 24.2	20.3
390195 2012 WG_{26}	17.2	X	236.78263	239.99676	16.04540	4.39084	0.0794844	0.28800519	2.2709235	20	—	—
390196 2012 WL_{26}	16.6	X	256.33592	32.00050	54.18001	15.45943	0.1034736	0.23091393	2.6312935	20	9 27.9	20.3
390197 2012 WV_{26}	16.6	X	287.34689	287.89458	87.19060	6.29188	0.0831592	0.21804503	2.7338326	20	7 31.1	20.0
390198 2012 WZ_{26}	16.8	X	332.60114	273.88783	105.34881	7.74167	0.2239820	0.24139364	2.5545761	20	10 30.3	18.9
390199 2012 WX_{29}	16.5	X	190.35705	218.49867	78.91208	10.72311	0.1469250	0.28527250	2.2854029	20	—	—
390200 2012 WF_{30}	17.7	X	98.27224	146.16327	156.92877	1.57268	0.1886720	0.26423263	2.4051661	20	—	—
390201 2012 WZ_{31}	16.4	X	74.18264	286.25406	212.73104	6.52433	0.0688566	0.18145611	3.0899751	20	4 24.0	20.5
390202 2012 XP	16.1	X	105.32388	260.37278	242.63707	11.68533	0.0955604	0.19651871	2.9299944	20	6 11.2	20.3
390203 2012 XQ	17.2	X	253.57793	155.07810	267.43309	1.41638	0.0883252	0.22472515	2.6793838	20	8 15.4	20.8
390204 2012 XE_2	16.1	X	145.10889	29.02120	105.15005	10.29564	0.0741011	0.20390184	2.8588319	20	7 14.0	20.3
390205 2012 XW_4	17.1	X	125.30518	180.43649	109.16870	6.69708	0.1037307	0.26103286	2.4247814	20	—	—
390206 2012 XD_6	17.0	X	162.64580	182.44894	117.06592	8.09110	0.1284805	0.27987888	2.3146712	20	—	—
390207 2012 XS_7	16.8	X	290.40730	184.27602	226.93931	3.96008	0.1820710	0.23354464	2.6114965	20	9 8.7	19.6
390208 2012 XV_8	16.9	X	220.18243	310.16651	158.24077	2.70447	0.0545128	0.22663297	2.6643258	20	9 8.6	20.3
390209 2012 XM_{11}	17.5	X	204.35152	305.36434	141.75115	0.61552	0.0326261	0.21533738	2.7567016	20	7 23.5	21.3
390210 2012 XD_{12}	17.4	X	205.01126	72.59999	31.07071	4.66935	0.0526811	0.22109759	2.7086114	20	8 16.2	21.3
390211 2012 XO_{12}	16.9	X	157.73299	67.04992	128.63946	7.61092	0.0589185	0.23412871	2.6071515	20	10 21.8	20.7
390212 2012 XS_{18}	16.6	X	221.79405	294.17754	61.06539	2.07464	0.1620640	0.19237340	2.9719354	20	4 8.9	21.5
390213 2012 XR_{23}	16.4	X	133.03199	349.80284	65.91900	5.88746	0.1336503	0.17786754	3.1313979	20	4 1.7	21.2
390214 2012 XA_{26}	16.6	X	59.32013	63.78336	66.06170	6.63926	0.1522596	0.17238206	3.1974812	20	4 6.8	20.7
390215 2012 XC_{26}	17.7	X	190.97767	231.68213	73.90283	2.45134	0.0542020	0.29190270	2.2506639	20	—	—
390216 2012 XU_{26}	16.7	X	252.17885	305.17507	49.96094	2.57097	0.0777855	0.19828340	2.9125841	20	5 17.2	20.9
390217 2012 XY_{29}	16.5	X	169.23488	115.62736	326.43508	1.20384	0.1024646	0.19695276	2.9256879	20	6 4.2	21.0
390218 2012 XD_{33}	17.1	X	191.55729	184.17901	273.74356	3.11941	0.0673470	0.20928921	2.8095590	20	7 19.4	21.3
390219 2012 XN_{36}	17.1	X	326.83327	270.46699	74.09376	7.39415	0.0731112	0.22162169	2.7043394	20	8 23.3	20.4
390220 2012 XB_{37}	16.3	X	317.72895	144.39030	103.64697	1.66816	0.0225643	0.17928759	3.1148411	20	4 3.7	20.5
390221 2012 XE_{37}	16.7	X	335.49340	310.11031	92.54404	4.55260	0.1264104	0.24464146	2.5319163	20	12 1.7	19.2
390222 2012 XW_{37}	17.0	X	47.23320	193.79575	131.44455	1.01501	0.0806782	0.24346631	2.5400570	20	11 27.9	20.1
390223 2012 XB_{38}	17.9	X	181.83517	87.80281	216.43848	2.87421	0.1415674	0.28679066	2.2773304	20	—	—
390224 2012 XZ_{38}	17.5	X	207.02274	355.47577	197.38334	2.00050	0.1294510	0.24603381	2.5223549	20	12 4.8	21.1
390225 2012 XB_{42}	16.8	X	310.08824	327.76851	71.09370	6.77897	0.0741113	0.23372402	2.6101601	20	10 13.2	19.9
390226 2012 XE_{42}	16.7	X	264.93498	84.71135	258.64649	4.75708	0.0754206	0.19797583	2.9155999	20	5 17.6	20.8
390227 2012 XM_{42}	16.9	X	228.34804	125.40784	271.49604	0.94544	0.0731853	0.20297015	2.8675737	20	6 12.4	20.9
390228 2012 XR_{42}	17.0	X	258.61095	181.45437	269.80719	1.59823	0.0619949	0.23184297	2.6242594	20	10 4.8	20.4
390229 2012 XN_{43}	16.4	X	126.14396	91.23203	34.00001	1.58476	0.1021507	0.19202462	2.9755331	20	6 13.1	20.8
390230 2012 XM_{45}	16.6	X	150.55721	311.64640	231.32475	10.67978	0.0689868	0.23071371	2.6328157	20	9 19.3	20.6
390231 2012 XP_{49}	16.5	X	106.14715	98.22819	34.61069	2.85904	0.1279649	0.19220671	2.9736534	20	6 2.9	20.8
390232 2012 XS_{51}	17.6	X	195.96060	256.51431	332.94640	2.80857	0.0878337	0.26186908	2.4196167	20	—	—
390233 2012 XT_{51}	16.6	X	279.74684	86.35585	278.39548	5.21075	0.0594631	0.21334380	2.7738482	20	7 7.8	20.3
390234 2012 XQ_{52}	15.7	X	55.07135	64.85779	100.22105	10.67285	0.0299899	0.17458544	3.1705215	20	5 1.4	20.2
390235 2012 XM_{54}	15.8	X	146.82742	343.93293	99.19240	7.82171	0.0933954	0.18971920	2.9995898	20	5 15.0	20.4
390236 2012 XT_{55}	16.6	X	102.25018	144.96418	113.65413	5.49439	0.0242353	0.23888570	2.5724244	20	11 4.2	20.1
390237 2012 XV_{60}	17.5	X	54.37277	185.26163	166.09576	5.54809	0.1227573	0.25899817	2.4374642	20	—	—
390238 2012 XG_{63}	16.2	X	246.40956	112.47098	208.84708	12.35331	0.0760024	0.18529724	3.0471237	20	3 28.4	20.8
390239 2012 XQ_{63}	17.0	X	147.54128	6.42688	183.32592	3.04580	0.0879253	0.23046084	2.6347411	20	9 28.9	20.7
390240 2012 XK_{69}	16.0	X	166.89248	320.70573	106.77115	10.21180	0.1008853	0.19351737	2.9602115	20	5 17.7	20.7

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	m		°	°	°	°		°				
390241 2012 XO_{69}	15.9	X	158.69762	213.27178	173.64931	9.71506	0.1159460	0.17575373	3.1564556	20	3 20.4	20.9
390242 2012 XY_{69}	16.6	X	173.07065	267.90582	143.47540	8.93724	0.1462599	0.18927582	3.0042723	20	5 5.4	21.6
390243 2012 XK_{78}	17.3	X	90.62087	196.69786	102.61766	4.61818	0.1721044	0.25713690	2.4492124	20	12 24.8	21.2
390244 2012 XX_{79}	17.4	X	172.88835	87.68202	169.21420	4.97449	0.0726078	0.26624632	2.3930236	20	—	—
390245 2012 XH_{80}	17.4	X	207.26219	31.34566	172.50142	6.36320	0.0805234	0.25782972	2.4448229	20	12 27.9	20.7
390246 2012 XE_{82}	15.9	X	188.92505	259.66267	81.80874	17.17849	0.2444255	0.17950126	3.1123687	20	3 4.0	21.6
390247 2012 XK_{85}	15.8	X	146.74581	333.80249	148.34942	13.41535	0.1571532	0.19731245	2.9221313	20	7 4.1	20.7
390248 2012 XF_{87}	16.7	X	129.87148	116.70785	59.53021	5.82772	0.0508485	0.21872595	2.7281559	20	8 22.4	20.6
390249 2012 XZ_{91}	17.0	X	134.44151	104.78023	12.44463	2.07904	0.0651167	0.19559444	2.9392174	20	6 8.7	21.4
390250 2012 XW_{94}	16.0	X	86.11848	288.10850	127.25226	3.96055	0.0788761	0.15653786	3.4097546	20	2 1.1	20.5
390251 2012 XD_{96}	16.4	X	171.21591	103.30435	102.17592	8.77503	0.1159873	0.23747831	2.5825778	20	11 14.8	20.4
390252 2012 XL_{96}	16.4	X	91.06359	348.00005	269.72081	10.62960	0.1513546	0.23352622	2.6116338	20	10 26.7	20.6
390253 2012 XZ_{97}	16.3	X	204.92809	78.06950	7.34506	4.19318	0.0501423	0.21014502	2.8019259	20	7 21.4	20.3
390254 2012 XJ_{106}	16.3	X	264.86123	284.92853	97.71290	3.15915	0.0875161	0.20147388	2.8817539	20	7 6.9	20.3
390255 2012 XU_{114}	15.0	X	239.03295	226.68596	110.73035	27.90842	0.1172865	0.17442952	3.1724106	20	4 20.9	20.4
390256 2012 XK_{119}	16.1	X	56.61004	272.42635	63.91946	6.60288	0.1945483	0.24639392	2.5198967	20	—	—
390257 2012 XM_{128}	16.2	X	130.21367	104.27521	311.38071	4.31558	0.1374585	0.17941738	3.1133387	20	3 25.5	21.0
390258 2012 XZ_{129}	16.3	X	53.81951	129.84671	13.66584	5.07428	0.1073362	0.17279401	3.1923972	20	4 6.9	20.4
390259 2012 XO_{130}	16.9	X	226.58584	235.11335	163.64018	2.36373	0.0734879	0.20251726	2.8718474	20	6 12.9	21.0
390260 2012 XU_{131}	16.7	X	5.75675	238.93475	114.75075	4.53101	0.1043585	0.24010698	2.5636940	20	11 11.8	19.7
390261 2012 XQ_{133}	16.5	X	327.77130	56.22739	343.42734	2.32689	0.1546943	0.24120595	2.5559011	20	11 11.6	18.9
390262 2012 XU_{133}	16.6	X	337.82884	324.81063	47.72262	3.14357	0.1434352	0.23701225	2.5859623	20	10 22.4	19.0
390263 2012 XM_{135}	16.3	X	142.85198	324.30773	90.66320	9.26087	0.1329514	0.17973807	3.1096344	20	4 12.3	21.3
390264 2012 XO_{135}	16.2	X	152.59985	188.37595	223.66698	4.14599	0.1468262	0.18250902	3.0780795	20	4 13.9	21.0
390265 2012 XV_{136}	16.5	X	104.14570	104.80746	89.89710	6.32103	0.0275175	0.21383579	2.7695920	20	8 10.7	20.3
390266 2012 XD_{138}	15.7	X	65.59259	322.68224	250.64438	11.05569	0.0466806	0.20454904	2.8527984	20	7 13.6	19.7
390267 2012 XS_{138}	16.9	X	2.69087	254.02359	123.30813	7.66978	0.0644016	0.24621924	2.5210883	20	12 5.2	20.1
390268 2012 XL_{141}	17.2	X	7.34773	311.49593	45.62641	3.31197	0.1493087	0.24427184	2.5344698	20	11 24.6	20.0
390269 2012 XS_{143}	16.8	X	190.25393	248.47730	177.22181	1.71558	0.0797962	0.20021131	2.8938564	20	6 6.2	21.2
390270 2012 XF_{145}	15.8	X	148.31305	328.49345	95.80619	4.03651	0.0728478	0.17265959	3.1940540	20	4 22.1	20.5
390271 2012 XX_{145}	16.0	X	226.83727	223.40822	124.12045	11.01511	0.1850639	0.19071182	2.9891725	20	4 7.1	21.1
390272 2012 XN_{148}	16.7	X	120.84318	337.63158	164.28968	2.29980	0.0227424	0.19921616	2.9034855	20	6 20.0	20.6
390273 2012 XX_{148}	16.6	X	196.67456	61.21038	121.72346	7.93731	0.0416710	0.24143465	2.5542868	20	11 21.8	20.2
390274 2012 XE_{149}	16.6	X	299.68822	181.66508	170.79079	7.47140	0.0430938	0.21226866	2.7832067	20	7 20.6	20.3
390275 2012 XF_{149}	16.8	X	86.77596	142.69397	175.07435	6.32070	0.1108743	0.25644818	2.4535955	20	—	—
390276 2012 XK_{152}	15.8	X	211.34528	259.47973	132.54446	15.68273	0.0846243	0.18459998	3.0547918	20	5 22.0	20.7
390277 2012 XX_{153}	16.4	X	213.19647	115.95532	246.35203	8.41850	0.1413885	0.18930532	3.0039602	20	4 7.3	21.4
390278 2012 YH_{1}	15.1	X	328.31169	8.88991	266.48871	13.60971	0.1731762	0.17751900	3.1354953	20	5 2.6	19.0
390279 2012 YV_{1}	15.6	X	322.45154	199.16502	96.63561	9.88161	0.0727298	0.18956004	3.0012685	20	6 5.1	19.5
390280 2012 YT_{8}	13.7	X	239.97049	320.60736	133.84951	15.74107	0.0633291	0.08196033	5.2488833	20	8 30.2	20.8
390281 2013 AF_{6}	16.9	X	53.65692	173.29989	115.21720	2.88097	0.1215028	0.23159370	2.6261421	20	10 24.2	20.4
390282 2013 AN_{9}	15.9	X	292.08742	197.25176	81.60447	7.55479	0.0369412	0.17906909	3.1173745	20	4 10.4	20.3
390283 2013 AY_{9}	17.4	X	188.45673	203.93954	84.47052	6.34400	0.1678991	0.27893714	2.3198781	20	—	—
390284 2013 AA_{10}	16.1	X	149.97752	139.07305	277.64134	5.73204	0.1584600	0.17975837	3.1094003	20	4 16.1	21.2
390285 2013 AL_{13}	16.2	X	219.19243	265.69216	113.84537	11.44503	0.1337383	0.18546040	3.0453363	20	5 11.1	21.2
390286 2013 AH_{16}	15.7	X	221.28944	51.50978	280.14371	15.24221	0.2033261	0.18114810	3.0934767	20	3 2.4	21.2
390287 2013 AM_{21}	15.5	X	275.09832	233.61314	99.29868	11.06323	0.0449632	0.18058813	3.0998683	20	5 24.5	19.9
390288 2013 AN_{23}	14.2	X	224.87840	156.03983	338.47005	3.92745	0.1306854	0.08296008	5.2066285	20	9 19.8	21.4
390289 2013 AD_{24}	17.2	X	136.06444	355.49753	202.58714	5.33697	0.1269285	0.22262760	2.6961872	20	9 26.6	21.5
390290 2013 AR_{24}	16.3	X	311.54371	282.52908	82.06831	8.48101	0.1308597	0.22282048	2.6946311	20	8 21.2	19.4
390291 2013 AD_{27}	15.8	X	168.68907	70.71611	322.44146	13.22621	0.2171733	0.18817000	3.0160310	20	4 2.5	21.1
390292 2013 AL_{29}	16.8	X	76.90057	76.60292	215.70076	4.78764	0.0439566	0.24228887	2.5482796	20	11 17.3	20.1
390293 2013 AK_{31}	16.6	X	143.84937	11.04415	153.60439	8.97890	0.0795075	0.21405970	2.7676603	20	8 21.5	20.6
390294 2013 AT_{31}	15.8	X	294.43746	240.82457	61.79063	9.57527	0.0590124	0.18349738	3.0670166	20	5 7.6	20.0
390295 2013 AN_{43}	16.1	X	279.38682	293.21468	109.75184	13.94511	0.1021249	0.20927753	2.8096636	20	8 24.9	19.9
390296 2013 AD_{44}	13.5	X	323.03430	256.57283	124.29760	10.63367	0.0476644	0.08265269	5.2195298	20	9 15.6	20.3
390297 2013 AE_{47}	16.3	X	144.99247	106.62616	350.56535	4.59985	0.0723729	0.18477857	3.0528232	20	5 25.9	20.9
390298 2013 AW_{48}	15.0	X	119.00316	346.84959	88.09032	24.26455	0.0699035	0.17294352	3.1905571	20	4 14.0	20.1
390299 2013 AT_{51}	15.4	X	253.14125	275.93214	96.40740	10.90329	0.0550320	0.19698195	2.9253989	20	6 13.3	19.5
390300 2013 AS_{60}	14.2	X	177.23799	342.15934	199.35081	1.82773	0.0748894	0.08461571	5.1384882	20	9 30.9	21.3
390301 2013 AG_{64}	13.4	X	148.84780	102.32906	96.69757	11.25636	0.0868591	0.08283034	5.2120642	20	9 28.9	20.8
390302 2013 AF_{68}	16.3	X	240.38031	264.60380	89.69686	4.24258	0.1228456	0.19300629	2.9654350	20	4 29.5	20.9
390303 2013 AO_{76}	13.6	X	351.67454	268.48634	91.49040	10.69147	0.0211460	0.08396109	5.1651629	20	9 29.6	20.5
390304 2013 AW_{86}	15.8	X	316.64856	207.74799	97.81923	11.77416	0.0949067	0.18924679	3.0045795	20	6 7.0	19.7
390305 2013 AB_{88}	15.9	X	249.09113	249.23753	96.72140	10.13099	0.0612455	0.18105362	3.0945529	20	5 7.9	20.5
390306 2013 AK_{93}	15.9	X	191.32602	298.58108	100.46559	10.17265	0.1506150	0.18485228	3.0520116	20	5 7.6	21.0
390307 2013 AX_{94}	16.5	X	302.95784	273.37636	96.73434	4.30547	0.0993063	0.21067249	2.7972471	20	8 14.2	19.9
390308 2013 AL_{99}	13.6	X	250.84930	346.91954	106.69372	13.09596	0.1354415	0.08249735	5.2260800	20	9 3.6	20.8
390309 2013 AV_{106}	13.1	X	309.98780	97.04294	292.47347	12.79740	0.0776264	0.08205059	5.2450332	20	8 29.1	19.9
390310 2013 AZ_{109}	16.8	X	342.14537	164.83261	263.32700	7.37889	0.0645483	0.24497446	2.5296213	20	—	—
390311 2013 AE_{112}	13.3	X	291.09889	291.17473	123.70327	11.28070	0.0742420	0.08203526	5.2456867	20	9 12.1	20.1
390312 2013 AS_{116}	15.4	X	340.16751	185.14085	112.46087	13.60038	0.1940169	0.18500791	3.0502997	20	6 27.2	18.6
390313 2013 AU_{119}	16.5	X	124.84161	121.10150	333.05417	0.81733	0.0971104	0.17516260	3.1635531	20	5 3.2	21.1
390314 2013 AT_{122}	16.3	X	101.39324	185.81925	107.78748	13.96790	0.1430019	0.23197554	2.6232595	20	12 22.0	20.4
390315 2013 AB_{127}	16.0	X	184.12932	319.64213	88.85007	10.86876	0.1092211	0.18346880	3.0673352	20	5 11.9	20.9
390316 2013 AG_{132}	13.9	X	233.31143	312.09731	166.72245	13.25059	0.0907476	0.08194216	5.2496593	20	9 15.3	21.1
390317 2013 AB_{133}	13.6	X	277.54877	328.37850	98.91692	10.56312	0.0488134	0.08011026	5.3293875	20	9 14.5	20.6
390318 2013 AF_{150}	15.7	X	336.04143	56.34886	191.18908	9.30063	0.1036043	0.16985424	3.2291270	20	4 20.7	19.9
390319 2013 AQ_{165}	16.0	X	333.62311	123.30069	168.81794	12.98542	0.1014873	0.18696822	3.0289412	20	6 14.9	20.0
390320 2013 AG_{167}	16.0	X	243.35714	188.68806	179.01875	9.54330	0.0846903	0.18563975	3.0433746	20	5 23.9	20.6

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	m		°	°	°	°		°				
390321 2013 AL_{170}	15.9	X	245.71345	175.50285	157.71801	17.01480	0.1261587	0.17351718	3.1835210	20	4 12.4	20.9
390322 2013 BA_{1}	13.6	X	167.35435	126.01471	49.68422	8.18740	0.0095080	0.08434919	5.1493070	20	9 18.4	20.5
390323 2013 BB_{1}	14.2	X	252.78900	45.91351	43.42186	4.69535	0.0655966	0.08369007	5.1763077	20	9 7.4	21.2
390324 2013 BL_{14}	16.5	X	62.69303	206.29651	111.92283	4.63275	0.1101579	0.24477506	2.5309949	20	12 11.9	20.0
390325 2013 BQ_{17}	13.9	X	120.13856	9.16568	224.05209	1.93825	0.1174759	0.08333811	5.1908717	20	10 5.9	21.2
390326 2013 BR_{17}	14.4	X	274.50275	175.32981	242.88802	8.05305	0.0439008	0.08232140	5.2335241	20	8 24.7	21.4
390327 2013 BB_{53}	15.7	X	339.55319	301.01050	338.96868	9.09462	0.0853854	0.18480238	3.0525609	20	6 7.0	19.7
390328 2013 BJ_{60}	13.6	X	281.93576	329.79792	97.97973	9.52392	0.0594485	0.08175857	5.2575150	20	9 18.8	20.5
390329 2013 BZ_{61}	14.2	X	294.96047	351.99658	69.93000	1.16712	0.0767166	0.08414381	5.1576825	20	9 22.2	20.8
390330 2013 BG_{62}	14.0	X	302.35932	284.96246	130.30157	6.59397	0.0784718	0.08380073	5.1717498	20	9 25.2	20.6
390331 2013 BG_{64}	13.8	X	265.49091	308.84753	145.15204	11.76540	0.0794315	0.08172115	5.2591197	20	9 25.2	20.8
390332 2013 BF_{78}	16.5	X	47.77404	196.93720	97.38891	5.23867	0.0751291	0.21254608	2.7807844	20	10 15.1	20.2
390333 2013 CK_{10}	14.4	X	218.72907	31.19559	105.72032	5.18753	0.1307581	0.08389282	5.1679646	20	9 19.8	21.7
390334 2013 CF_{14}	14.1	X	144.34751	164.46281	64.29206	3.08552	0.0162235	0.08425754	5.1530402	20	10 19.8	20.9
390335 2013 CL_{15}	16.0	X	2.38687	160.70707	135.70021	11.72985	0.0509214	0.19138646	2.9821438	20	8 5.2	19.9
390336 2013 CX_{43}	14.0	X	251.76913	355.30628	108.38190	6.20086	0.0785294	0.08251636	5.2252773	20	9 21.3	21.0
390337 2013 CE_{58}	13.1	X	268.90789	287.16307	169.91120	17.77733	0.1040716	0.08246088	5.2276207	20	9 28.1	20.0
390338 2013 CF_{71}	13.7	X	121.99236	93.72281	156.68452	7.87060	0.0306008	0.08178486	5.2563882	20	10 21.9	20.7
390339 2013 CC_{74}	13.9	X	299.06357	284.43874	135.22027	7.89361	0.0538094	0.08199435	5.2474314	20	9 28.9	20.7
390340 2013 CD_{77}	13.5	X	284.29678	293.90052	157.19643	18.42964	0.0186816	0.08372602	5.1748261	20	10 22.6	20.5
390341 2013 CQ_{79}	16.0	X	292.40682	177.34918	129.95232	11.58731	0.2147104	0.17803583	3.1294243	20	4 21.9	20.5
390342 2013 CT_{79}	15.7	X	349.14862	106.22586	133.03647	8.67928	0.0121636	0.17300599	3.1897889	20	5 6.9	20.2
390343 2013 CB_{80}	16.3	X	357.05298	93.69952	164.17814	0.78086	0.1272851	0.17966631	3.1104624	20	6 6.1	19.9
390344 2013 CP_{95}	14.0	X	34.41786	11.95324	323.01518	6.37251	0.0171864	0.08348989	5.1845784	20	10 12.8	20.9
390345 2013 CA_{105}	14.4	X	261.48107	120.00115	327.37982	4.63468	0.0855569	0.07975631	5.3451433	20	9 8.9	21.4
390346 2013 CY_{109}	14.2	X	268.66719	349.87353	100.25773	7.01423	0.1663680	0.08483069	5.1298034	20	9 14.0	21.1
390347 2013 CU_{111}	14.0	X	316.68049	252.67333	144.35529	8.42897	0.0809469	0.08093781	5.2929983	20	9 21.8	20.6
390348 2013 CS_{133}	15.6	X	277.32542	254.12334	116.07649	11.63548	0.1143731	0.18825879	3.0150825	20	7 2.3	19.7
390349 2013 CG_{140}	13.8	X	283.59235	341.65278	99.27872	8.87001	0.0877636	0.08481028	5.1306261	20	10 2.3	20.5
390350 2013 CU_{141}	14.1	X	209.38816	158.36226	1.27543	9.81583	0.0431660	0.08285580	5.2109963	20	10 8.6	21.1
390351 2013 CC_{143}	14.2	X	293.72851	232.76492	200.31800	4.17667	0.0873040	0.08340473	5.1881069	20	9 30.9	20.8
390352 2013 CY_{173}	14.1	X	272.57121	303.30811	159.69519	7.82666	0.0877249	0.08301016	5.2045344	20	10 11.5	20.9
390353 2013 CB_{178}	13.4	X	317.43815	245.26967	159.03222	30.09666	0.1111710	0.08482725	5.1299422	20	9 29.8	19.9
390354 2013 CS_{178}	13.4	X	287.15696	52.38380	12.58609	9.84086	0.1201978	0.08220508	5.2384599	20	9 12.2	20.1
390355 2013 CJ_{185}	15.7	X	90.89061	205.49336	74.38722	13.15948	0.2579511	0.21614649	2.7498178	20	12 1.2	20.3
390356 2013 CW_{194}	15.7	X	1.61470	156.99775	133.33911	12.48888	0.1021931	0.18675283	3.0312698	20	7 28.4	19.4
390357 2013 CM_{196}	14.1	X	292.77169	12.15092	62.09930	4.73835	0.0702038	0.08490420	5.1268420	20	10 5.6	20.8
390358 2013 CC_{207}	14.1	X	283.91692	124.25474	302.60214	6.05484	0.0991807	0.08038004	5.3174558	20	9 8.4	20.9
390359 2013 CO_{209}	15.0	X	321.39487	264.49206	339.37204	17.15216	0.1515787	0.15859205	3.3802470	20	3 15.3	19.4
390360 2013 CY_{210}	14.1	X	20.95184	120.65835	226.69056	7.02606	0.0304818	0.08266135	5.2191654	20	10 13.5	20.9
390361 2013 CO_{212}	13.9	X	334.34613	19.36141	20.85276	11.73890	0.0742723	0.08546820	5.1042624	20	10 17.1	20.4
390362 2013 CQ_{217}	14.0	X	202.83231	344.98339	174.70766	7.46062	0.0060079	0.08130145	5.2772035	20	10 6.5	21.0
390363 2013 DU_{2}	13.8	X	339.26504	293.13843	84.99623	4.36371	0.0614040	0.08135545	5.2748683	20	9 30.9	20.4
390364 2013 EF_{46}	16.0	X	328.43929	339.69594	344.19446	10.22654	0.1175432	0.17931062	3.1145743	20	7 19.8	19.9
390365 2013 EJ_{94}	15.0	X	166.71055	329.51165	73.28034	11.77658	0.1097489	0.15629716	3.4132544	20	4 20.6	20.4
390366 2013 GD_{76}	17.7	X	307.41162	286.87867	3.44515	0.98981	0.1012585	0.29339882	2.2430062	20	4 26.7	20.0
390367 2013 JP_{55}	15.3	X	46.16894	179.59865	88.88572	9.21822	0.0562381	0.16837042	3.2480710	20	9 1.8	19.9
390368 2013 LZ_{9}	17.7	X	301.87312	173.88677	72.55681	6.87046	0.1088177	0.25801162	2.4436736	20	2 22.4	20.9
390369 2013 LQ_{35}	16.0	X	77.65182	292.58462	105.21958	22.59039	0.0129338	0.23251191	2.6192236	20	—	—
390370 2013 QP_{26}	17.6	X	211.56207	280.72478	152.55541	4.77024	0.1485705	0.26572129	2.3961747	20	7 6.3	21.2
390371 2013 RE_{13}	16.1	X	265.94095	35.20308	234.17309	12.07843	0.1391391	0.22508160	2.6765543	20	2 2.0	20.4
390372 2013 SU_{47}	16.6	X	175.00143	250.79596	185.68237	16.79266	0.1941419	0.23371479	2.6102289	20	6 5.3	21.3
390373 2013 TU_{11}	15.8	X	48.78238	274.01621	254.59376	14.08379	0.0787520	0.24535920	2.5269762	20	4 21.1	18.9
390374 2013 TR_{32}	15.9	X	84.21370	264.15602	211.94710	13.64503	0.1847671	0.20977040	2.8052608	20	4 23.9	19.5
390375 2013 TH_{46}	17.0	X	226.87582	285.50617	15.18119	1.74926	0.0764268	0.21246730	2.7814717	20	2 11.0	21.0
390376 2013 TA_{47}	16.6	X	276.35023	269.04235	34.28849	4.78270	0.1010099	0.23402000	2.6079589	20	4 5.8	20.1
390377 2013 TR_{72}	16.0	X	214.24408	271.65318	43.85400	5.77078	0.1594559	0.21381532	2.7697687	20	2 15.8	20.6
390378 2013 TB_{90}	15.9	X	146.63791	280.03267	24.60461	9.88573	0.1028972	0.17781551	3.1320087	20	—	—
390379 2013 UK_{14}	17.0	X	268.34521	332.76395	349.22459	3.02297	0.2162008	0.23920678	2.5701219	20	4 3.9	20.8
390380 2013 VZ_{18}	16.1	X	82.03523	324.17086	94.91118	4.97004	0.1127097	0.18787639	3.0191724	20	1 31.9	20.1
390381 2013 VW_{20}	16.9	X	191.57885	307.46439	94.73418	8.48682	0.3725565	0.22672906	2.6635729	20	5 7.9	22.1
390382 2013 WM_{14}	16.9	X	276.34691	159.81444	190.39169	3.50686	0.1958219	0.24370186	2.5384201	20	5 24.1	20.2
390383 2013 WF_{29}	15.9	X	270.77563	312.53074	258.26522	0.64098	0.0444646	0.17536200	3.1611546	20	—	—
390384 2013 WB_{46}	15.7	X	179.10856	290.83729	72.04022	9.89115	0.1706779	0.21232120	2.7827476	20	3 15.3	20.4
390385 2013 WG_{47}	16.8	X	135.79639	57.01590	61.56175	4.47389	0.2297824	0.22726258	2.6594027	20	6 24.6	21.2
390386 2013 WC_{58}	15.6	X	116.22524	281.89468	233.98254	20.88235	0.0744459	0.23626687	2.5913983	20	7 5.4	19.6
390387 2013 WJ_{63}	16.2	X	78.06943	346.91352	257.50951	10.19562	0.0621289	0.23022296	2.6365557	20	9 11.4	20.0
390388 2013 WB_{69}	16.0	X	78.41867	324.08767	67.95669	6.20810	0.1436123	0.17872770	3.1213428	20	—	—
390389 2013 WY_{81}	15.2	X	5.27337	262.48386	247.69891	24.58208	0.1962388	0.17648802	3.1476944	20	1 16.8	19.1
390390 2013 WC_{84}	15.6	X	150.08538	115.15095	245.44258	14.24696	0.0848515	0.18803915	3.0174299	20	1 31.5	20.4
390391 2013 WN_{85}	16.2	X	93.34531	282.76068	120.52499	1.59779	0.1999378	0.18235546	3.0798072	20	2 8.9	20.4
390392 2013 WG_{86}	15.4	X	353.37219	270.84175	244.96487	9.24498	0.0283109	0.18063853	3.0992917	20	1 22.9	19.7
390393 2013 WQ_{94}	15.9	X	32.31899	320.15410	262.35494	10.85928	0.1314331	0.22721131	2.6598027	20	6 21.1	18.7
390394 2013 WC_{98}	16.8	X	219.08282	112.00449	277.48931	4.65789	0.1714884	0.23100022	2.6306382	20	5 15.3	21.0
390395 2013 XE	16.0	X	189.51158	184.18600	235.78836	21.38321	0.0551129	0.23168342	2.6254641	20	5 29.2	19.8
390396 2013 XA_{2}	16.9	X	215.20298	227.19594	244.03707	7.89657	0.1200733	0.23808444	2.5781927	20	8 26.9	20.9
390397 2013 XE_{2}	16.7	X	208.02827	302.59995	167.55419	13.10888	0.1190749	0.23466382	2.6031865	20	8 19.9	20.6
390398 2013 XV_{20}	15.4	X	83.04069	275.90398	103.99485	26.14550	0.2931621	0.17314209	3.1881172	20	1 13.0	19.4
390399 2013 XA_{23}	15.7	X	1.63121	189.07552	74.35975	11.01199	0.1925477	0.21173614	2.7878713	20	6 24.9	18.3
390400 2013 YO_{5}	17.3	X	110.85812	89.14890	119.20341	3.24093	0.0371361	0.24151322	2.5537327	20	9 10.3	20.6

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
	m		°	°	°	°		°				
390401 2013 YU_{5}	16.9	X	257.29679	308.75490	103.58665	12.89511	0.1505388	0.24444162	2.5332961	20	7 31.5	20.3
390402 2013 YJ_{9}	15.9	X	229.40307	194.50447	110.32655	10.45670	0.0363748	0.18184461	3.0855725	20	2 26.9	20.5
390403 2013 YU_{10}	15.8	X	89.11325	188.12814	294.98173	13.46082	0.1108381	0.19078995	2.9883564	20	4 23.2	20.2
390404 2013 YE_{11}	17.8	X	18.55865	297.30619	145.36737	5.71184	0.1249726	0.30348270	2.1930410	20	—	—
390405 2013 YB_{13}	16.0	X	39.91495	111.76226	77.71161	13.09161	0.1152812	0.21154294	2.7895684	20	5 18.0	19.4
390406 2013 YN_{13}	17.2	X	169.49885	70.74619	86.42438	3.63240	0.1330048	0.24001702	2.5643346	20	9 12.6	21.2
390407 2013 YX_{13}	17.7	X	265.84228	59.57148	330.16495	23.18020	0.1541676	0.39415085	1.8423031	20	7 29.1	19.5
390408 2013 YJ_{16}	17.1	X	85.41812	261.97013	284.88359	7.74203	0.0959442	0.21669011	2.7452169	20	7 14.8	20.8
390409 2013 YU_{16}	16.9	X	257.13347	243.77328	127.16607	6.01747	0.1195740	0.22421982	2.6834081	20	6 8.1	20.8
390410 2013 YQ_{17}	16.1	X	134.59753	286.02469	129.01414	11.17518	0.1166674	0.18822075	3.0154888	20	4 1.9	20.8
390411 2013 YU_{19}	15.2	X	124.19831	259.66806	128.08692	14.88483	0.2927696	0.18412350	3.0600597	20	3 6.8	20.3
390412 2013 YK_{27}	15.0	X	273.99230	304.93405	295.11808	16.90359	0.0766807	0.16845979	3.2469222	20	1 24.2	19.7
390413 2013 YK_{29}	15.8	X	69.64782	91.54021	75.59561	14.44852	0.0553358	0.22134087	2.7066264	20	5 23.2	19.3
390414 2013 YA_{30}	15.8	X	133.77106	94.82403	285.63957	12.95884	0.1032861	0.17430902	3.1738724	20	2 11.3	20.6
390415 2013 YO_{30}	15.5	X	108.04018	289.90329	138.19631	18.82157	0.0761339	0.17761921	3.1343158	20	3 14.3	20.1
390416 2013 YA_{32}	16.4	X	304.35120	242.60222	130.83354	15.58740	0.1240370	0.23985659	2.5654779	20	8 22.4	19.2
390417 2013 YF_{32}	16.1	X	201.83230	235.61903	136.59302	10.76749	0.0794784	0.19347910	2.9606018	20	4 16.9	20.7
390418 2013 YH_{32}	17.1	X	216.87223	22.40477	136.46599	7.91654	0.0468355	0.25881202	2.4386329	20	11 19.2	20.4
390419 2013 YL_{32}	15.8	X	70.97617	288.77862	297.55469	12.92661	0.2068344	0.21577611	2.7529637	20	8 28.7	20.0
390420 2013 YN_{32}	16.2	X	122.37746	283.89451	139.38287	12.85411	0.1695365	0.18522177	3.0479514	20	4 4.9	21.0
390421 2013 YQ_{32}	15.4	X	346.26633	276.03679	294.65562	13.09378	0.0262668	0.18120851	3.0927892	20	3 16.4	19.9
390422 2013 YB_{34}	17.5	X	167.27867	320.45109	200.84723	2.92111	0.1329533	0.24045087	2.5612491	20	9 13.0	21.5
390423 2013 YM_{34}	16.3	X	116.93885	260.08481	298.88964	11.94779	0.0490545	0.23872826	2.5735552	20	8 30.7	20.0
390424 2013 YW_{35}	17.5	X	348.24191	70.13062	5.49096	6.89935	0.1362617	0.29183292	2.2510227	20	—	—
390425 2013 YH_{40}	16.5	X	227.95379	266.65569	143.81550	8.84998	0.0660714	0.22352072	2.6890003	20	7 1.0	20.3
390426 2013 YO_{43}	15.4	X	355.28529	74.17668	111.57646	12.81215	0.0281747	0.17959688	3.1112639	20	3 9.2	19.8
390427 2013 YO_{45}	16.1	X	172.09661	22.12512	135.08344	33.99100	0.1824041	0.23427045	2.6060998	20	9 15.5	20.8
390428 2013 YF_{49}	16.9	X	0.50982	15.84403	291.68056	7.56003	0.0448002	0.23615179	2.5922401	20	8 19.9	20.1
390429 2013 YL_{49}	18.0	X	274.06498	327.38957	159.61822	1.18507	0.1290751	0.27567699	2.3381320	20	12 20.3	20.1
390430 2013 YZ_{49}	16.0	X	6.29270	54.97806	127.04841	9.03599	0.0826245	0.18119057	3.0929934	20	3 16.1	19.9
390431 2013 YC_{50}	16.8	X	105.08854	324.59856	199.61942	1.92075	0.0420270	0.21699220	2.7426684	20	7 2.2	20.5
390432 2013 YF_{50}	17.6	X	238.43004	300.49611	278.09346	5.38852	0.1450934	0.29085936	2.2560429	20	—	—
390433 2013 YJ_{55}	16.3	X	66.63530	315.89304	303.94127	6.89319	0.1787321	0.23267560	2.6179951	20	10 5.9	20.2
390434 2013 YB_{56}	15.6	X	64.21461	29.29140	92.39931	17.24679	0.0081992	0.18490544	3.0514265	20	3 21.2	20.2
390435 2013 YW_{58}	17.5	X	304.55748	308.72973	167.08983	2.66573	0.2161917	0.28460081	2.2889974	20	—	—
390436 2013 YY_{58}	17.2	X	186.53450	143.27221	323.15992	6.42500	0.2843931	0.23051182	2.6343527	20	7 20.3	21.9
390437 2013 YV_{62}	16.7	X	183.08969	340.92567	137.10395	5.14229	0.1691622	0.23257949	2.6187162	20	8 3.1	20.9
390438 2013 YV_{64}	16.6	X	222.15542	313.00210	76.87453	3.08741	0.1258638	0.22805237	2.6532590	20	5 23.0	20.5
390439 2013 YT_{65}	15.6	X	35.30386	43.03096	120.05446	16.14497	0.0374575	0.18377019	3.0639805	20	4 5.4	20.0
390440 2013 YF_{68}	16.2	X	99.54568	324.88272	119.81479	6.26739	0.1412233	0.18102349	3.0948963	20	4 1.4	20.7
390441 2013 YW_{68}	16.7	X	196.53408	300.09405	128.83610	5.36697	0.0407364	0.21298543	2.7769589	20	6 19.3	20.8
390442 2013 YY_{68}	16.7	X	90.14522	230.75092	307.95760	3.98019	0.0937648	0.21002668	2.8029783	20	7 9.9	20.7
390443 2013 YN_{69}	16.6	X	178.57334	175.90509	311.18949	12.76465	0.1256597	0.23054370	2.6341098	20	8 10.7	20.6
390444 2013 YQ_{69}	16.6	X	131.50450	20.08959	113.81204	6.11835	0.0533345	0.21196768	2.7858407	20	6 26.4	20.6
390445 2013 YU_{69}	17.9	X	253.01759	158.03656	12.53813	1.03445	0.1128530	0.27798690	2.3251617	20	—	—
390446 2013 YR_{73}	16.9	X	220.23673	351.31243	84.71620	3.75440	0.1567658	0.23484543	2.6018443	20	7 17.8	20.9
390447 2013 YY_{73}	16.1	X	23.49123	331.96514	298.21365	13.23155	0.0813945	0.22136875	2.7063991	20	8 5.4	19.4
390448 2013 YG_{76}	15.8	X	55.43796	20.94483	94.02961	11.77815	0.1139021	0.17741103	3.1367673	20	3 10.3	20.0
390449 2013 YC_{78}	17.1	X	321.10754	311.58872	157.30836	6.27293	0.0988885	0.28920660	2.2646300	20	—	—
390450 2013 YO_{82}	16.9	X	14.92141	239.97853	296.48274	8.17345	0.0163129	0.18666625	3.0322070	20	3 13.9	21.2
390451 2013 YS_{83}	17.9	X	184.25228	53.80839	186.57602	3.55689	0.1071174	0.28199200	2.3030932	20	—	—
390452 2013 YH_{90}	17.9	X	357.22090	146.07746	297.04100	6.92306	0.0876936	0.29143627	2.2530646	20	—	—
390453 2013 YP_{90}	16.1	X	156.90164	222.56900	303.27323	11.81098	0.0978197	0.23456396	2.6039253	20	9 3.8	20.2
390454 2013 YC_{91}	17.7	X	243.48235	267.91307	166.60226	3.47913	0.1414584	0.24073824	2.5592104	20	8 12.3	21.2
390455 2013 YO_{92}	16.0	X	278.62552	286.15348	105.05156	15.56584	0.1102205	0.23750004	2.5824203	20	8 7.9	19.3
390456 2013 YF_{96}	16.5	X	251.07343	217.19510	121.83176	10.44571	0.0293414	0.20177898	2.8788483	20	5 5.6	20.7
390457 2013 YD_{97}	16.8	X	177.60849	127.21258	9.66714	15.55729	0.1277519	0.23800178	2.5787896	20	8 29.9	20.9
390458 2013 YX_{97}	17.3	X	174.22969	47.82367	9.49599	3.28243	0.1572393	0.21112806	2.7932217	20	5 9.5	21.9
390459 2013 YD_{98}	16.5	X	26.08687	165.05729	62.70410	4.90273	0.0131583	0.21359648	2.7716602	20	6 6.3	20.2
390460 2013 YJ_{98}	17.2	X	51.98139	300.43158	331.84877	3.63301	0.0581707	0.24467632	2.5316758	20	9 20.4	20.3
390461 2013 YS_{108}	17.8	X	347.50280	358.31499	123.56359	4.82185	0.1089050	0.30377631	2.1916277	20	—	—
390462 2013 YE_{111}	17.4	X	211.98373	92.52747	91.09890	3.14780	0.1424701	0.26482466	2.4015802	20	12 1.2	20.6
390463 2013 YU_{112}	16.9	X	106.62698	177.99047	336.20531	8.17168	0.0770138	0.21528421	2.7571555	20	6 26.3	20.9
390464 2013 YT_{113}	16.8	X	338.60611	342.21324	307.07177	5.13098	0.0380437	0.21887050	2.7269545	20	6 23.1	20.2
390465 2013 YG_{114}	18.2	X	320.02750	116.27045	314.98742	2.37385	0.1365288	0.27592200	2.3367477	20	12 26.5	20.3
390466 2013 YX_{116}	16.0	X	356.14919	110.12292	110.92393	9.65972	0.2347923	0.18007141	3.1057956	20	4 14.5	19.2
390467 2013 YA_{117}	17.1	X	243.12035	53.83344	331.29765	5.54640	0.0158428	0.21463368	2.7627238	20	6 22.9	20.9
390468 2013 YS_{118}	15.9	X	297.88479	86.82891	260.92522	7.12027	0.2959371	0.24430217	2.5342600	20	6 2.6	18.7
390469 2013 YF_{120}	16.7	X	212.62225	199.46182	151.65369	1.04542	0.2081280	0.20471675	2.8512401	20	3 24.5	21.4
390470 2013 YE_{124}	15.4	X	262.53384	179.83094	113.70812	12.11215	0.0332859	0.18183640	3.0856654	20	3 25.3	20.0
390471 2013 YJ_{124}	16.4	X	280.73506	260.00395	80.79098	5.54549	0.0734019	0.21243217	2.7817784	20	6 4.7	20.1
390472 2013 YB_{125}	17.5	X	310.18125	328.11767	109.31789	5.91028	0.1775072	0.27317414	2.3523918	20	12 16.1	19.3
390473 2013 YM_{125}	16.5	X	146.16386	90.28778	323.71242	8.32798	0.0736306	0.18832634	3.0143615	20	3 31.9	21.2
390474 2013 YY_{125}	17.1	X	241.87439	16.38484	71.83050	3.45124	0.0413587	0.24172820	2.5522184	20	9 15.5	20.4
390475 2013 YJ_{129}	15.3	X	106.95881	57.76259	300.86979	8.54316	0.0714374	0.15524202	3.4287030	20	—	—
390476 2013 YJ_{132}	15.9	X	133.88000	2.17913	70.71747	12.96956	0.0204267	0.19728263	2.9224257	20	4 13.9	20.2
390477 2013 YL_{137}	17.1	X	255.18513	38.67399	327.17180	11.91372	0.1395681	0.22778390	2.6553434	20	5 23.7	21.2
390478 2013 YP_{147}	16.7	X	40.82864	161.66080	124.03023	9.32940	0.1266398	0.23957752	2.5674698	20	10 8.7	20.1
390479 2013 YH_{148}	16.4	X	200.50003	318.49703	133.90933	14.06472	0.0788390	0.23022084	2.6365720	20	7 22.9	20.2
390480 2013 YW_{149}	15.4	X	226.67613	222.88599	127.72883	14.69339	0.2147631	0.22061479	2.7125618	20	4 8.8	20.2

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Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
	m		°	°	°	°		°				
390481 2014 AU	16.2	X	291.77534	261.73912	87.05051	10.48831	0.1990519	0.23385114	2.6092141	20	6 11.7	19.2
390482 2014 AK_{4}	16.2	X	272.87560	260.15859	98.04889	12.88479	0.3160683	0.23680838	2.5874463	20	5 17.5	20.3
390483 2014 AV_{4}	16.5	X	46.38326	29.98542	106.37642	2.40926	0.0981635	0.17751064	3.1355938	20	3 17.8	20.4
390484 2014 AB_{6}	17.7	X	304.12678	174.38874	328.69511	7.13858	0.0523800	0.29691541	2.2252606	20	—	—
390485 2014 AG_{9}	17.1	X	248.01326	306.00341	106.68078	5.76356	0.0534696	0.23425732	2.6061972	20	8 2.1	20.5
390486 2014 AT_{19}	16.8	X	56.34909	195.30225	137.72867	13.69771	0.0660267	0.26877192	2.3780088	20	12 24.1	20.1
390487 2014 AV_{19}	16.3	X	309.04897	100.32887	142.55147	11.04933	0.0695049	0.17765835	3.1338555	20	3 12.5	20.6
390488 2014 AE_{27}	17.6	X	306.31730	320.41975	190.90773	4.74409	0.1040132	0.29521814	2.2337815	20	—	—
390489 2014 AC_{28}	15.7	X	319.05237	306.17141	287.09787	12.47778	0.0522459	0.17451007	3.1714344	20	3 7.5	20.3
390490 2014 AN_{29}	16.2	X	276.55119	213.90751	135.96083	6.96238	0.0488864	0.21962209	2.7207295	20	6 15.7	19.9
390491 2014 AT_{33}	17.6	X	234.34540	257.09019	150.94827	0.90427	0.1553787	0.23432721	2.6056789	20	6 25.8	21.5
390492 2014 AR_{34}	16.8	X	230.42567	121.96851	265.88449	12.10743	0.1898380	0.23373890	2.6100494	20	5 22.9	20.9
390493 2014 AG_{39}	16.4	X	207.58884	69.01400	332.84546	12.18362	0.1834633	0.21885510	2.7270824	20	5 16.8	21.2
390494 2014 AG_{40}	16.3	X	233.32771	43.93508	32.76294	13.61711	0.1545386	0.23973464	2.5663479	20	8 8.0	20.3
390495 2014 AA_{41}	15.8	X	288.92324	147.34368	127.39990	7.75033	0.1155123	0.18446227	3.0563120	20	3 19.9	20.2
390496 2014 AV_{43}	16.7	X	120.55971	68.41597	141.90829	11.43048	0.0969586	0.24322802	2.5417157	20	10 1.8	20.5
390497 2014 AZ_{44}	16.7	X	203.30806	190.07385	192.28027	1.82925	0.0820585	0.20398277	2.8580757	20	4 26.5	21.0
390498 2014 AJ_{47}	16.5	X	200.50568	87.01618	314.28299	3.47656	0.0721422	0.21140603	2.7907727	20	5 16.3	20.7
390499 2014 AQ_{49}	18.1	X	231.25644	106.48608	344.21160	4.26048	0.2080021	0.24320001	2.5419109	20	8 13.2	21.9
390500 2014 AV_{49}	17.2	X	167.58125	335.11375	288.60457	5.75130	0.1055352	0.28614421	2.2807590	20	—	—
390501 2014 AY_{50}	16.2	X	10.27746	211.78502	336.26761	3.80176	0.0925681	0.18131574	3.0915697	20	3 25.5	20.0
390502 2014 AQ_{54}	16.6	X	57.98744	159.81980	327.93152	8.41129	0.0651180	0.18157323	3.0886463	20	3 15.8	20.7
390503 2014 BV	17.0	X	214.24202	99.85563	341.81527	10.67759	0.1513997	0.23439438	2.6051811	20	7 21.7	21.1
390504 2014 BB_{1}	15.7	X	29.60521	216.98385	295.41856	17.47793	0.0653803	0.18180001	3.0860771	20	2 29.6	20.1
390505 2014 BF_{17}	17.2	X	51.41803	354.49448	148.45907	2.94308	0.1760611	0.18392516	3.0622592	20	4 11.9	20.7
390506 2014 BS_{21}	16.0	X	276.45924	237.00254	142.42690	15.84315	0.1369651	0.22871500	2.6481319	20	7 11.7	19.6
390507 2014 BU_{24}	16.0	X	274.43252	138.63554	178.93124	10.36801	0.0553183	0.19341807	2.9612246	20	5 2.0	20.2
390508 2014 BD_{25}	17.7	X	321.08409	173.36483	134.19496	24.55771	0.1082467	0.37035145	1.9204073	20	6 24.3	19.6
390509 2014 BU_{29}	17.0	X	187.13326	85.06252	136.06326	9.66764	0.2149827	0.26031867	2.4292144	20	12 14.2	21.0
390510 2014 BM_{33}	17.0	X	69.67000	34.54348	208.96786	2.23577	0.1064804	0.22700003	2.6614529	20	9 10.4	20.5
390511 2014 BC_{44}	17.0	X	289.00877	82.47143	313.07654	14.74034	0.1193506	0.24455314	2.5325258	20	8 24.3	20.0
390512 2014 BC_{56}	16.0	X	208.58044	313.65087	82.33864	13.87316	0.1692039	0.21320194	2.7750785	20	5 17.6	20.6
390513 2014 BJ_{62}	16.6	X	174.25829	303.08666	198.42995	11.95615	0.1150884	0.23072453	2.6327333	20	8 22.7	20.8
390514 4209 $T{-}3$	17.4	X	216.34590	269.00456	133.11946	3.61702	0.3447998	0.22263827	2.6961011	20	5 21.9	22.3
390515 1994 TQ_{5}	17.0	X	115.25007	230.52168	17.72877	11.34927	0.1245630	0.23121999	2.6289710	20	11 6.3	21.2
390516 1995 SP_{6}	16.9	X	301.55064	33.39644	352.11564	15.09567	0.1423642	0.23557027	2.5965044	20	9 2.4	19.7
390517 1995 SZ_{6}	17.0	X	233.06012	76.06375	354.23227	11.40364	0.1785605	0.23144466	2.6272694	20	7 24.6	21.1
390518 1995 SF_{42}	18.4	X	284.90667	243.95435	22.03218	6.20150	0.2159215	0.30285091	2.1960899	20	2 7.0	21.6
390519 1995 TT_{11}	17.4	X	285.23592	40.61591	34.95404	1.94863	0.0192207	0.23747998	2.5825657	20	10 28.4	20.4
390520 1995 UH_{21}	18.1	X	227.25517	97.65337	1.30137	1.72184	0.1506105	0.27190570	2.3597021	20	8 28.8	21.4
390521 1995 YU_{3}	18.7	X	312.53011	23.64639	115.07196	10.92790	0.1404906	0.44076230	1.7100143	20	—	—
390522 1996 GD_{1}	20.5	X	163.16387	293.59424	38.09522	18.38280	0.3525960	0.76319477	1.1858938	20	—	—
390523 1996 TE_{22}	16.1	X	25.64994	198.78136	13.99959	12.12319	0.0466176	0.19207495	2.9750132	20	5 15.6	20.2
390524 1996 TW_{27}	17.2	X	111.81982	167.28319	160.23217	6.35651	0.1936190	0.25883616	2.4384812	20	—	—
390525 1996 VB_{26}	17.4	X	208.13216	5.24066	147.21122	6.64080	0.1264224	0.24336899	2.5407341	20	10 17.9	21.2
390526 1996 XW_{25}	16.5	X	24.17894	343.93078	80.12268	28.24882	0.2029021	0.29594560	2.2301194	20	—	—
390527 1997 EV_{5}	17.3	X	91.03999	57.91786	174.33123	8.68093	0.1161219	0.22801655	2.6535369	20	9 23.9	21.1
390528 1997 SV_{11}	14.2	X	329.05871	79.89049	299.95906	4.68067	0.1414365	0.08370563	5.1756664	20	9 11.2	20.4
390529 1997 ST_{12}	18.1	X	328.78514	184.53306	221.64140	0.82756	0.1844887	0.26161032	2.4212119	20	12 4.2	20.0
390530 1998 EG_{8}	16.4	X	56.01881	228.89899	346.40327	5.64269	0.2271144	0.18793233	3.0185732	20	8 2.5	20.3
390531 1998 HN_{24}	16.4	X	31.39655	110.86025	131.57260	9.13798	0.1933139	0.18442319	3.0567437	20	7 23.8	19.9
390532 1998 QO_{102}	16.8	X	36.54689	336.05182	354.28705	12.43632	0.3246606	0.23019720	2.6367525	20	12 22.1	20.9
390533 1998 RG_{2}	16.9	X	213.64623	236.18779	153.02025	9.05158	0.3008497	0.21086908	2.7955083	20	5 8.4	22.1
390534 1998 TA_{2}	17.6	X	23.26041	7.34738	22.49641	6.96580	0.2318790	0.27729520	2.3290268	20	—	—
390535 1999 CW_{89}	16.9	X	291.11610	37.81040	92.23698	8.64155	0.2604382	0.26851406	2.3795310	20	—	—
390536 1999 KK_{1}	18.2	X	266.08398	230.01676	76.73763	7.10304	0.4610455	0.32027836	2.1156849	20	2 22.5	22.2
390537 1999 RO_{108}	16.3	X	272.22954	151.77845	257.09482	5.57547	0.3202677	0.22970691	2.6405030	20	7 16.9	20.0
390538 1999 RJ_{214}	16.3	X	27.60155	310.23071	18.24086	6.19841	0.3118941	0.24052567	2.5607180	20	12 9.6	19.7
390539 1999 TV_{53}	17.9	X	199.95708	339.45322	355.04510	3.39400	0.1246997	0.30813320	2.1709195	20	2 14.6	20.9
390540 1999 TE_{165}	17.7	X	247.62265	349.40387	319.74089	3.65514	0.2762401	0.31429104	2.1424698	20	2 19.9	21.4
390541 1999 TV_{215}	16.7	X	346.03521	185.86957	186.05326	9.20454	0.1931301	0.23580551	2.5947772	20	11 12.4	19.2
390542 1999 VV_{91}	16.2	X	256.34919	353.29572	22.85029	14.84575	0.2587159	0.22558942	2.6725360	20	5 23.2	20.6
390543 1999 YU_{2}	17.5	X	3.20666	35.96742	94.86326	6.92088	0.1105826	0.29253333	2.2474281	20	—	—
390544 2000 CM_{103}	17.0	X	186.44560	349.94027	147.30494	14.29978	0.2292887	0.21935845	2.7229091	20	8 27.6	21.7
390545 2000 CE_{123}	16.4	X	141.47081	50.87443	127.43593	9.38675	0.2467138	0.21648697	2.7469339	20	9 13.4	21.3
390546 2000 EK_{50}	17.7	X	285.47250	53.79353	136.92830	24.61147	0.3101722	0.28344142	2.2952351	20	—	—
390547 2000 ET_{98}	18.5	X	274.60040	14.47875	186.71105	1.85615	0.1474546	0.28406496	2.2918751	20	—	—
390548 2000 FZ_{5}	17.4	X	123.01439	138.07666	12.23120	2.32760	0.1556840	0.25642392	2.4537502	20	7 19.9	21.2
390549 2000 FH_{6}	18.2	X	215.30337	212.64166	23.84498	1.96646	0.1424858	0.27767626	2.3268955	20	—	—
390550 2000 JG_{11}	18.1	X	275.16464	331.25173	230.00524	4.74916	0.1800754	0.28080393	2.3095849	20	—	—
390551 2000 JV_{68}	18.4	X	225.62481	32.01822	202.35798	1.84698	0.1947955	0.27811568	2.3244439	20	—	—
390552 2000 SD_{18}	17.1	X	95.38676	74.03659	255.79753	6.14191	0.1303212	0.25997245	2.4313706	20	—	—
390553 2000 SL_{164}	17.0	X	45.20274	38.92579	33.63675	25.61213	0.2666759	0.31151969	2.1551577	20	—	—
390554 2000 SM_{204}	17.3	X	264.08246	214.20866	190.97387	13.64936	0.2513439	0.23940874	2.5686763	20	7 11.5	21.2
390555 2000 SF_{303}	17.0	X	55.99978	128.66784	230.44728	3.62938	0.1568306	0.25683333	2.4511419	20	—	—
390556 2000 TE_{65}	16.3	X	168.42818	185.71438	210.33800	8.50481	0.0933318	0.17551101	3.1593651	20	4 7.6	21.2
390557 2000 UL_{2}	17.4	X	88.22010	301.42654	29.26975	1.89122	0.2026493	0.25842585	2.4410617	20	—	—
390558 2000 VV	16.2	X	131.79108	9.25239	60.93039	4.31883	0.1672473	0.17162178	3.2069175	20	4 19.6	21.3
390559 2000 WV_{109}	16.6	X	326.03536	85.92845	321.15803	3.43931	0.1903461	0.24611449	2.5218036	20	11 22.2	18.7
390560 2000 YE_{95}	16.2	X	345.32162	275.22330	104.77676	14.05384	0.2154176	0.24315506	2.5422241	20	11 29.9	18.6

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Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
	m		°	°	°	°		°				
390561 2001 AR_{25}	17.5	X	307.67323	86.52995	303.25317	18.56713	0.1180973	0.38991649	1.8556169	20	10 18.6	19.2
390562 2001 BG_{13}	16.1	X	190.89299	86.82956	118.45244	12.20765	0.2212768	0.23927506	2.5696330	20	11 26.4	20.5
390563 2001 CU_{40}	16.2	X	226.81911	8.96344	117.75320	23.15415	0.1117529	0.23426067	2.6061723	20	10 15.0	20.4
390564 2001 CP_{49}	18.2	X	325.50570	58.51213	110.25769	2.39492	0.2093100	0.30414065	2.1898771	20	—	—
390565 2001 DK_{47}	16.4	X	292.90915	251.17029	144.24739	14.57970	0.1230014	0.23222422	2.6213864	20	9 2.5	19.4
390566 2001 DZ_{62}	17.0	X	213.20114	172.65894	325.95154	2.81195	0.2074415	0.23405287	2.6077146	20	9 22.9	21.1
390567 2001 FP_{6}	17.3	X	205.40915	305.86171	192.97267	21.72135	0.0978685	0.38494795	1.8715498	20	10 24.0	19.0
390568 2001 FX_{93}	16.3	X	194.88919	107.62904	87.19509	8.39207	0.1518114	0.23502419	2.6005248	20	11 21.1	20.2
390569 2001 FS_{95}	16.8	X	153.53163	121.35931	105.68210	6.24322	0.2352390	0.23127729	2.6285368	20	11 19.0	21.4
390570 2001 FU_{166}	18.0	X	207.21243	302.62687	188.96157	22.87193	0.0366154	0.38339592	1.8765972	20	10 26.3	19.8
390571 2001 HA_{11}	18.1	X	285.35521	190.76945	33.32312	7.71634	0.2347461	0.29972003	2.2113571	20	—	—
390572 2001 HJ_{21}	17.9	X	262.09020	83.65209	194.10957	3.89987	0.2555377	0.30130175	2.2036111	20	1 25.4	21.5
390573 2001 HB_{57}	17.6	X	76.79509	179.25388	46.73563	22.06803	0.0616839	0.37522041	1.9037580	20	9 25.7	20.1
390574 2001 KQ	16.6	X	96.70711	231.83196	60.87525	7.95630	0.2940323	0.22584899	2.6704879	20	12 22.8	21.4
390575 2001 MT_{22}	17.5	X	225.76043	228.94047	65.04984	6.18586	0.2051387	0.29391014	2.2404040	20	1 20.6	21.2
390576 2001 OJ_{62}	17.8	X	201.83432	151.83032	166.33314	1.71278	0.1934479	0.29239787	2.2481222	20	1 28.9	21.4
390577 2001 OU_{82}	16.6	X	25.57888	313.42508	359.82751	7.70887	0.3059426	0.21376905	2.7701684	20	11 8.8	20.0
390578 2001 PF_{16}	18.0	X	148.81771	338.13549	3.08339	3.36383	0.2806142	0.28568829	2.2831849	20	1 19.6	21.5
390579 2001 PQ_{62}	17.1	X	174.78406	272.52093	67.49225	7.63935	0.1506032	0.28873953	2.2670715	20	2 1.3	20.5
390580 2001 QP_{6}	17.6	X	110.69665	16.79153	324.28085	10.06172	0.2491815	0.27968438	2.3157442	20	—	—
390581 2001 QD_{116}	16.8	X	137.13371	139.49543	211.34514	5.63744	0.1319286	0.28309852	2.2970881	20	—	—
390582 2001 QG_{206}	16.3	X	21.12556	192.75852	156.22928	9.74784	0.1717749	0.21445199	2.7642840	20	12 2.2	19.9
390583 2001 QH_{256}	16.6	X	30.69619	178.86798	144.16946	7.00502	0.2720073	0.21257137	2.7805638	20	11 26.8	20.4
390584 2001 QX_{288}	17.5	X	201.56926	65.04243	248.78592	7.98518	0.2465442	0.29121644	2.2541983	20	1 22.9	21.4
390585 2001 QV_{333}	18.1	X	330.32862	332.79595	340.51261	17.61192	0.0741089	0.36002962	1.9569387	20	7 31.9	19.8
390586 2001 RE_{25}	17.6	X	51.70018	196.36536	181.96147	2.43987	0.2177038	0.27374091	2.3491437	20	—	—
390587 2001 RY_{53}	17.4	X	120.66709	341.29203	359.14510	6.85651	0.1382544	0.28040056	2.3117993	20	—	—
390588 2001 RF_{66}	16.6	X	69.76930	103.73791	195.81138	15.23722	0.3889641	0.21684745	2.7438888	20	12 16.9	21.7
390589 2001 RM_{134}	16.3	X	313.33950	330.12229	12.91095	13.25718	0.1883926	0.20238742	2.8730755	20	7 13.8	19.8
390590 2001 SC_{1}	17.8	X	129.00951	351.38921	356.29551	7.96314	0.1773093	0.28078951	2.3096640	20	—	—
390591 2001 SN_{35}	17.2	X	156.72448	275.94068	44.88942	3.97778	0.1506583	0.28125918	2.3070920	20	—	—
390592 2001 SQ_{59}	17.3	X	185.43648	41.92832	20.79091	19.76437	0.0916121	0.34907781	1.9976584	20	5 20.2	20.2
390593 2001 SL_{91}	17.8	X	76.18398	50.06902	326.70391	5.08189	0.1784921	0.27693888	2.3310241	20	—	—
390594 2001 SV_{96}	16.5	X	322.61576	114.24362	199.61362	6.81694	0.0654496	0.19963243	2.8994479	20	6 29.2	20.4
390595 2001 SL_{100}	17.5	X	104.92801	106.13158	260.78685	1.92787	0.1572376	0.27974540	2.3154074	20	—	—
390596 2001 SB_{186}	17.8	X	187.25981	139.79943	169.57868	7.24462	0.1326485	0.28652362	2.2787452	20	1 2.4	21.2
390597 2001 SV_{274}	17.9	X	75.44275	25.63949	13.60559	5.34147	0.0494369	0.27865268	2.3214566	20	—	—
390598 2001 SJ_{304}	17.0	X	204.35495	289.19710	359.51168	6.89995	0.1145618	0.28398833	2.2922873	20	—	—
390599 2001 SE_{311}	16.7	X	59.98967	116.53906	176.01913	26.77777	0.2772280	0.21416072	2.7667898	20	11 23.8	21.5
390600 2001 SC_{313}	16.5	X	358.54953	303.28907	43.94633	8.70289	0.2416073	0.20910181	2.8112374	20	10 29.7	19.0
390601 2001 TD_{25}	17.3	X	339.30785	56.49833	357.46311	6.23459	0.1079475	0.26546517	2.3977157	20	12 29.9	19.9
390602 2001 TB_{89}	17.0	X	127.06582	141.52383	221.42585	5.64431	0.1232836	0.28125654	2.3071064	20	1 2.9	19.8
390603 2001 TE_{89}	17.5	X	238.96700	78.42344	6.25492	7.27786	0.2629502	0.25235080	2.4800833	20	8 9.6	21.3
390604 2001 TT_{152}	17.2	X	177.77034	251.35856	56.16727	8.80748	0.1846272	0.28166296	2.3048865	20	—	—
390605 2001 TL_{174}	15.7	X	120.41579	38.46754	49.74679	17.48354	0.1727669	0.18137691	3.0908745	20	5 1.1	20.4
390606 2001 TC_{175}	17.7	X	321.24249	27.74023	47.90883	3.30072	0.1757787	0.26502509	2.4003692	20	—	—
390607 2001 TN_{191}	16.0	X	130.71450	52.12026	35.76086	16.72059	0.2000922	0.18209447	3.0827494	20	5 9.0	21.1
390608 2001 TL_{258}	17.5	X	230.74771	265.37563	47.71519	7.47902	0.1956128	0.29181551	2.2511122	20	2 20.1	21.2
390609 2001 UD_{28}	17.2	X	164.59640	287.03356	28.23862	22.96515	0.1217276	0.28087788	2.3091795	20	—	—
390610 2001 UL_{37}	16.1	X	149.70339	26.86299	24.25818	17.27516	0.1526518	0.18403405	3.0610512	20	4 11.5	20.8
390611 2001 UV_{58}	16.8	X	6.37901	212.42529	215.30453	5.00382	0.1738565	0.27003284	2.3706002	20	—	—
390612 2001 UN_{186}	17.8	X	146.50148	317.51255	16.31151	7.30457	0.1333509	0.28042802	2.3116484	20	—	—
390613 2001 UT_{212}	15.9	X	125.27646	160.97674	207.44735	10.81796	0.0539606	0.17319453	3.1874736	20	1 14.9	20.7
390614 2001 UQ_{213}	17.8	X	153.73767	18.01339	308.22878	2.12785	0.2258276	0.28093223	2.3088817	20	—	—
390615 2001 VN_{3}	18.2	X	290.80451	62.78349	38.71064	2.90909	0.1460473	0.26220508	2.4175492	20	12 7.2	20.2
390616 2001 VM_{7}	15.7	X	158.59915	207.03554	226.13199	14.32031	0.1781909	0.18531175	3.0469646	20	5 17.1	20.7
390617 2001 VO_{75}	16.1	X	164.56735	229.44068	216.17915	9.93649	0.0629444	0.19053404	2.9910316	20	6 3.3	20.6
390618 2001 WU_{2}	15.9	X	81.42781	253.93186	221.88935	15.49502	0.2000945	0.17974300	3.1095775	20	4 22.9	20.1
390619 2001 WV_{46}	16.9	X	299.23975	215.77342	251.70309	5.86716	0.0845089	0.26346188	2.4098547	20	—	—
390620 2001 WH_{64}	17.7	X	17.19024	136.82664	247.36618	4.64226	0.2062406	0.26469802	2.4023462	20	—	—
390621 2001 WP_{99}	17.7	X	341.12921	24.61607	46.66442	2.80913	0.1651403	0.26515623	2.3995778	20	—	—
390622 2001 YR_{131}	15.9	X	144.89744	341.34783	83.55927	18.65140	0.1914851	0.17872566	3.1213665	20	5 2.8	21.2
390623 2002 AP_{11}	15.9	X	57.63753	52.99028	113.32326	16.08301	0.2454484	0.17272562	3.1932398	20	6 5.1	20.1
390624 2002 AG_{183}	15.2	X	116.80824	332.93541	105.70316	29.66968	0.1997581	0.17365188	3.1818746	20	5 1.9	20.8
390625 2002 BO_{4}	15.9	X	44.72597	115.13553	68.54657	26.39330	0.2751098	0.17304082	3.1893610	20	6 7.3	19.6
390626 2002 BC_{15}	15.7	X	51.23762	52.71634	107.14045	29.02095	0.2455215	0.17089008	3.2160650	20	5 25.3	20.1
390627 2002 CD_{32}	17.0	X	283.04749	354.61596	96.28942	6.43262	0.1896363	0.25311595	2.4750826	20	11 1.1	19.4
390628 2002 CU_{89}	15.8	X	19.92612	47.99428	146.17157	14.11413	0.1094968	0.17014680	3.2254243	20	4 25.5	20.0
390629 2002 CP_{181}	15.9	X	104.06656	323.11491	128.40862	13.18181	0.0240775	0.17108393	3.2136351	20	4 2.0	20.6
390630 2002 CC_{227}	15.9	X	24.08811	56.93907	138.69495	14.73291	0.2065182	0.17133075	3.2105481	20	5 12.0	19.7
390631 2002 CL_{285}	16.4	X	90.35999	354.21584	121.62999	1.40787	0.1314158	0.17327673	3.1864655	20	4 25.7	20.8
390632 2002 DY_{9}	15.4	X	82.63164	33.82560	113.79051	27.61127	0.1010285	0.17405636	3.1769433	20	5 29.8	20.3
390633 2002 FV_{25}	16.5	X	204.26425	154.94322	65.72092	15.31232	0.0656804	0.25308495	2.4752848	20	—	—
390634 2002 GX_{143}	17.2	X	196.29233	0.71121	191.55494	10.51725	0.1628065	0.24518569	2.5281682	20	11 20.1	21.1
390635 2002 GL_{149}	17.3	X	239.15231	144.43991	14.95074	13.59122	0.0878833	0.24859258	2.5050166	20	12 5.2	20.8
390636 2002 JV_{8}	16.4	X	88.20828	116.86102	159.81155	29.82550	0.3695677	0.23443268	2.6048974	20	12 8.3	21.8
390637 2002 JO_{108}	17.1	X	148.69764	120.53003	136.07478	12.64475	0.2268010	0.24485408	2.5304504	20	12 21.2	21.6
390638 2002 LZ_{62}	18.5	X	286.77291	282.31999	14.16056	4.63381	0.2810133	0.31973306	2.1180897	20	3 9.4	21.5
390639 2002 NC_{15}	16.5	X	104.24443	217.26517	89.06920	12.71739	0.1919442	0.23736925	2.5833688	20	—	—
390640 2002 NE_{48}	17.5	X	66.51053	355.31948	320.38028	6.20700	0.2892367	0.23160243	2.6260761	20	12 28.2	21.8

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
	m		°	°	°	°		°				
390641 2002 NB_{60}	18.3	X	254.59757	184.24528	129.23823	7.20812	0.1738101	0.31666364	2.1317548	20	3 11.8	21.4
390642 2002 NV_{68}	17.9	X	114.54154	42.12448	221.52057	3.19833	0.2098043	0.23450052	2.6043949	20	11 30.9	22.2
390643 2002 OS_{13}	16.9	X	110.54104	128.11966	149.91791	17.26121	0.2116978	0.23502576	2.6005132	20	12 16.3	21.6
390644 2002 OR_{30}	16.7	X	111.42763	166.20079	99.44983	14.31492	0.2614923	0.23428023	2.6060273	20	12 4.2	21.4
390645 2002 PX_{40}	16.0	X	311.61528	28.73889	291.77144	7.51570	0.3409169	0.21275987	2.7789212	20	5 6.9	19.4
390646 2002 PN_{56}	17.8	X	205.49408	141.69434	157.26728	7.09664	0.2539895	0.30594868	2.1812410	20	1 8.2	21.6
390647 2002 PT_{60}	16.2	X	307.66854	2.91326	351.69305	16.70603	0.2805306	0.21397601	2.7683819	20	7 5.4	19.6
390648 2002 PN_{88}	16.4	X	65.80887	174.75117	154.07885	12.36616	0.1940631	0.23137887	2.6277674	20	—	—
390649 2002 PT_{102}	17.2	X	128.01851	134.90829	167.45375	13.71302	0.2651023	0.23966609	2.5668372	20	—	—
390650 2002 PW_{103}	16.5	X	87.41531	322.18836	288.78804	12.60452	0.2303091	0.22761945	2.6566222	20	10 18.7	21.0
390651 2002 PR_{167}	17.8	X	276.90416	158.09927	137.44702	3.30139	0.1533420	0.31611194	2.1342344	20	3 13.1	20.3
390652 2002 QS_{36}	17.9	X	227.66748	322.74044	0.36076	0.39338	0.2209321	0.31112581	2.1569762	20	2 24.1	21.3
390653 2002 QR_{65}	16.6	X	89.99576	131.00787	152.52021	14.41551	0.0955556	0.22984064	2.6394788	20	11 27.3	20.8
390654 2002 QW_{87}	18.4	X	46.81376	142.73874	124.47942	0.56576	0.2181128	0.27763491	2.3271266	20	10 8.4	21.1
390655 2002 QW_{102}	17.8	X	60.65123	100.39143	301.53647	5.81422	0.1581298	0.29330187	2.2435005	20	—	—
390656 2002 QN_{117}	16.8	X	301.36199	192.04519	211.51041	4.77074	0.0647692	0.22382615	2.6865536	20	9 30.5	20.0
390657 2002 QR_{118}	18.2	X	64.64950	313.85957	107.23537	5.31759	0.1704714	0.29832852	2.2182281	20	—	—
390658 2002 QY_{126}	16.8	X	68.24033	164.02606	134.56890	12.88480	0.1209342	0.22799429	2.6537096	20	11 24.8	20.9
390659 2002 QC_{135}	17.1	X	333.66351	321.57359	359.74875	6.26251	0.0640043	0.21627892	2.7486952	20	7 30.9	20.5
390660 2002 QY_{137}	17.1	X	49.50048	175.56962	133.49197	4.65382	0.0486638	0.22774371	2.6556559	20	11 3.6	20.7
390661 2002 RF_{45}	15.9	X	67.61649	352.84449	352.75257	24.55712	0.2167958	0.17676179	3.1444434	20	—	—
390662 2002 RM_{76}	18.0	X	250.29317	288.39436	349.81422	6.10490	0.2555701	0.31002609	2.1620740	20	1 18.1	21.6
390663 2002 RQ_{112}	16.6	X	18.88264	8.66640	355.94371	27.38628	0.2136817	0.28092245	2.3089352	20	—	—
390664 2002 RT_{164}	16.3	X	305.05449	13.46623	353.06298	13.73595	0.1227093	0.21575972	2.7531030	20	8 13.8	19.6
390665 2002 RR_{210}	16.6	X	32.24787	176.15275	181.83662	11.47942	0.1384945	0.22718669	2.6599949	20	12 24.7	20.4
390666 2002 RW_{232}	17.2	X	271.10894	87.28430	307.31259	3.55592	0.0737800	0.21444029	2.7643846	20	8 3.2	20.8
390667 2002 RV_{266}	16.8	X	273.22521	65.33254	312.63710	6.56180	0.1584952	0.21223013	2.7835436	20	7 1.9	20.5
390668 2002 SL_{5}	17.9	X	171.67033	73.00163	11.58269	21.53699	0.1547775	0.37040647	1.9202171	20	6 7.6	21.1
390669 2002 SZ_{20}	16.5	X	200.73560	50.40402	7.47290	15.10188	0.1385142	0.20449191	2.8533298	20	6 1.7	21.3
390670 2002 SN_{55}	16.4	X	267.46928	206.63128	169.48843	10.09696	0.2277082	0.20911038	2.8111606	20	6 12.4	20.7
390671 2002 SN_{72}	18.0	X	311.88678	304.38502	298.75381	1.32341	0.1201013	0.31225734	2.1517622	20	2 18.5	20.4
390672 2002 TE_{57}	18.2	X	1.98400	323.32690	7.98863	18.55185	0.0919984	0.38581941	1.8687305	20	10 29.9	19.9
390673 2002 TJ_{60}	17.5	X	211.52252	262.35620	209.04542	21.51894	0.1056943	0.38167930	1.8822197	20	9 9.8	19.8
390674 2002 TV_{109}	16.6	X	20.50788	241.70446	93.42862	7.87764	0.3184413	0.22357566	2.6885598	20	12 7.4	19.8
390675 2002 TP_{161}	17.6	X	260.86259	29.91128	48.66345	19.23801	0.1373933	0.38239913	1.8798569	20	10 18.7	18.9
390676 2002 TW_{228}	16.5	X	88.49754	121.82072	197.57473	30.21506	0.2745400	0.23106623	2.6301371	20	—	—
390677 2002 TE_{241}	17.7	X	229.66101	293.99050	27.33233	4.93705	0.2017810	0.30862142	2.1686294	20	2 26.3	21.1
390678 2002 TO_{255}	16.9	X	30.39874	136.73384	210.96222	12.72680	0.2706228	0.22433578	2.6824832	20	12 26.8	20.8
390679 2002 TW_{277}	17.9	X	297.12735	39.78312	2.50429	20.35552	0.0690346	0.38409397	1.8743228	20	10 20.7	19.4
390680 2002 TA_{291}	16.4	X	120.33751	56.51092	25.62360	17.56910	0.3549819	0.18956503	3.0012158	20	5 4.4	21.7
390681 2002 TT_{322}	17.4	X	54.72513	273.49466	7.14955	11.22349	0.0959160	0.22071366	2.7117516	20	10 7.2	21.1
390682 2002 TM_{353}	16.8	X	108.50937	78.84146	194.51812	13.40214	0.1642061	0.23013351	2.6372389	20	12 5.4	21.3
390683 2002 TW_{365}	16.8	X	282.16851	287.58766	117.85752	5.25291	0.0729661	0.21484556	2.7609071	20	9 4.8	20.3
390684 2002 UT_{4}	16.8	X	3.02393	65.09958	0.01449	23.46883	0.2255663	0.28302140	2.2975053	20	—	—
390685 2002 UR_{44}	16.8	X	21.81319	141.75693	211.05301	12.31547	0.2611416	0.22427195	2.6829922	20	12 21.8	20.4
390686 2002 UH_{51}	16.2	X	113.87688	326.79815	280.18657	11.83033	0.1407629	0.22913251	2.6449141	20	11 3.3	20.6
390687 2002 VJ_{1}	16.6	X	353.08808	299.24374	54.56372	7.79433	0.0951796	0.21675734	2.7446491	20	10 16.9	19.9
390688 2002 VF_{8}	16.4	X	283.65527	9.61321	5.02572	9.13466	0.2577341	0.21012216	2.8021291	20	6 25.6	20.3
390689 2002 VS_{91}	18.7	X	154.86751	276.19336	182.09773	5.60762	0.2758655	0.36585522	1.9361093	20	6 18.6	21.9
390690 2002 VG_{112}	17.7	X	27.57802	57.89932	323.97102	1.66249	0.2434772	0.28143953	2.3061063	20	—	—
390691 2002 XC_{15}	17.9	X	312.45498	185.09404	248.65404	2.89680	0.2172615	0.27440998	2.3453237	20	12 17.3	19.0
390692 2002 XE_{79}	15.9	X	72.40834	341.64863	70.58113	8.00655	0.3241773	0.17763918	3.1340810	20	2 14.2	19.8
390693 2002 XB_{115}	17.7	X	288.80040	316.20149	86.35945	23.66509	0.0878041	0.37956877	1.8891904	20	10 28.9	19.8
390694 2002 YT_{1}	17.3	X	143.65753	147.55312	328.83026	19.44911	0.0851026	0.36564235	1.9368607	20	6 28.2	20.0
390695 2003 AY_{3}	16.4	X	291.17181	282.02750	207.10995	22.58374	0.3189757	0.27562387	2.3384325	20	—	—
390696 2003 AZ_{48}	16.3	X	120.63451	331.38365	77.46309	9.88494	0.3430173	0.18448157	3.0560989	20	4 3.3	21.6
390697 2003 AJ_{62}	17.5	X	325.33366	42.93674	77.38779	7.09127	0.2281031	0.27901036	2.3194722	20	—	—
390698 2003 AQ_{68}	16.9	X	319.94900	198.95555	275.29840	4.38917	0.1148334	0.27628295	2.3347121	20	—	—
390699 2003 BF_{31}	17.1	X	67.04550	357.68759	167.78783	1.46569	0.2930342	0.18330584	3.0691528	20	6 21.6	21.2
390700 2003 BA_{32}	17.3	X	9.84763	277.18119	129.62884	8.54735	0.1987185	0.27655149	2.3332004	20	—	—
390701 2003 BE_{77}	17.5	X	259.53547	176.73225	326.31521	5.18050	0.1594861	0.27064095	2.3670479	20	12 11.3	20.0
390702 2003 BF_{87}	15.8	X	332.05902	87.59167	143.01770	11.86037	0.0296634	0.17941710	3.1133419	20	4 2.7	20.2
390703 2003 BL_{89}	16.3	X	44.98110	46.22427	151.82779	15.97528	0.2609384	0.18139380	3.0906828	20	6 27.7	20.3
390704 2003 CJ_{26}	15.9	X	304.52905	289.56824	331.48198	9.67516	0.0312850	0.17888640	3.1194965	20	3 28.3	20.4
390705 2003 CK_{26}	18.1	X	317.86541	157.49664	337.97399	2.20529	0.1785673	0.27659494	2.3329561	20	—	—
390706 2003 DO_{2}	17.9	X	263.53274	212.60340	328.90482	2.22356	0.1614528	0.27337717	2.3512270	20	—	—
390707 2003 DR_{24}	17.3	X	266.34041	204.85466	346.31091	6.98249	0.0624521	0.27468085	2.3437815	20	—	—
390708 2003 EZ_{11}	17.7	X	268.18178	79.29577	99.42057	6.23887	0.2066234	0.27336415	2.3513016	20	—	—
390709 2003 EJ_{43}	17.8	X	296.20033	37.03545	109.72662	5.02440	0.1648156	0.27174000	2.3606612	20	—	—
390710 2003 FL_{18}	15.8	X	121.37842	290.37602	178.81270	9.27330	0.0389600	0.18037101	3.1023554	20	5 13.4	20.3
390711 2003 FU_{24}	16.1	X	39.77704	80.02051	155.48298	5.74719	0.2228847	0.18557445	3.0440884	20	8 1.9	19.7
390712 2003 FP_{46}	17.4	X	308.36035	137.78197	15.67057	6.53277	0.0718823	0.27371041	2.3493182	20	—	—
390713 2003 FO_{67}	16.9	X	237.40715	218.89983	34.80170	7.89055	0.1695665	0.27490913	2.3424838	20	—	—
390714 2003 FU_{70}	17.1	X	179.97498	229.29069	44.61811	5.84789	0.1142921	0.26985437	2.3716453	20	—	—
390715 2003 FS_{82}	16.8	X	207.34767	199.47141	46.33601	9.08996	0.1680378	0.26805531	2.3822451	20	—	—
390716 2003 FR_{89}	16.5	X	52.95995	302.50373	199.96056	26.14897	0.2522720	0.17576098	3.1563688	20	4 26.0	20.2
390717 2003 FC_{105}	17.8	X	221.60988	149.73720	68.69022	3.10997	0.1658059	0.26839354	2.3802433	20	—	—
390718 2003 FB_{124}	18.0	X	252.34089	174.28802	30.43624	1.83780	0.1254165	0.27345740	2.3507671	20	—	—
390719 2003 GG_{1}	16.8	X	228.99591	88.01813	143.65031	6.86839	0.1903709	0.26989683	2.3713966	20	—	—
390720 2003 GM_{7}	16.1	X	349.94855	242.02619	15.44348	16.64218	0.1975299	0.17886660	3.1197267	20	5 14.2	19.6

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	m		°	°	°	°		°				
390721 2003 GF_{43}	16.9	X	200.80168	168.98799	43.15554	23.59496	0.1590999	0.26450207	2.4035325	20	12 18.8	20.7
390722 2003 GG_{43}	16.1	X	67.63454	112.59118	72.31859	18.04336	0.2130297	0.18254374	3.0776891	20	7 4.9	20.4
390723 2003 GE_{46}	17.3	X	244.18662	74.97023	119.01218	5.37495	0.0999599	0.26870412	2.3784088	20	—	—
390724 2003 GK_{56}	16.9	X	170.00738	242.28968	45.26129	7.85170	0.1094655	0.26832153	2.3806691	20	—	—
390725 2003 HB	19.7	X	133.79924	306.75101	70.38425	18.10909	0.3804919	1.25848352	0.8496454	20	—	—
390726 2003 HC_{58}	17.0	X	144.83247	225.78586	71.29174	6.64572	0.1633989	0.26349309	2.4096644	20	—	—
390727 2003 JF_{11}	16.1	X	337.51088	64.73190	221.90111	20.15755	0.2550624	0.17670690	3.1450946	20	5 29.3	19.4
390728 2003 JB_{12}	16.0	X	78.05582	334.36244	204.85262	10.05285	0.0461463	0.18177283	3.0863848	20	6 16.4	20.4
390729 2003 JU_{12}	15.6	X	65.01022	48.90199	144.39885	13.17863	0.2133542	0.18176674	3.0864537	20	7 12.4	19.9
390730 2003 JK_{18}	16.2	X	52.07061	299.28630	233.28663	4.62337	0.0714866	0.17517491	3.1634049	20	5 7.2	20.4
390731 2003 MR_{1}	15.9	X	357.80780	121.94820	152.43247	21.46622	0.3223748	0.17481494	3.1677460	20	7 4.5	18.8
390732 2003 NC_{1}	16.4	X	53.95768	14.16741	288.34537	14.17028	0.2912861	0.24342711	2.5403297	20	12 3.2	20.5
390733 2003 OS	17.0	X	289.38600	183.60400	144.24330	35.28789	0.2034031	0.34552359	2.0113343	20	5 18.6	20.3
390734 2003 OM_{9}	17.3	X	51.99171	128.08664	203.34178	8.77217	0.2636049	0.24404503	2.5360398	20	—	—
390735 2003 QY_{62}	16.4	X	33.35053	179.95479	159.92189	11.54033	0.1799070	0.23966483	2.5668462	20	12 13.8	20.0
390736 2003 RE_{17}	16.7	X	44.54995	47.29891	283.81013	2.32690	0.1306798	0.24105421	2.5569735	20	12 8.4	20.0
390737 2003 RQ_{25}	16.6	X	76.35348	109.54113	215.66554	12.96417	0.1695277	0.24472075	2.5313693	20	—	—
390738 2003 SB_{5}	16.1	X	273.58165	34.11414	7.58076	13.35731	0.2680686	0.22423519	2.6832854	20	7 21.8	20.0
390739 2003 SX_{50}	16.8	X	288.95687	186.20987	179.19954	13.38999	0.1761341	0.22490574	2.6779493	20	7 3.1	20.4
390740 2003 SO_{53}	16.9	X	221.36890	106.33621	332.62519	8.31292	0.1760299	0.22401972	2.6850057	20	7 21.7	21.1
390741 2003 SK_{81}	16.8	X	67.67352	92.58230	233.29641	10.08559	0.1515949	0.24360295	2.5391071	20	12 29.7	20.7
390742 2003 SY_{93}	15.0	X	27.94007	192.42490	212.78131	7.63720	0.3333139	0.12413893	3.9798256	20	—	—
390743 2003 SD_{129}	16.3	X	341.51601	4.72628	342.37539	33.34595	0.1771861	0.23375952	2.6098959	20	9 13.2	18.9
390744 2003 SS_{139}	17.2	X	32.78156	67.31939	261.25236	2.13868	0.1280884	0.23713032	2.5851038	20	11 18.6	20.3
390745 2003 SB_{161}	17.0	X	48.56388	179.82420	164.34370	12.41879	0.1327636	0.24224858	2.5485621	20	12 30.1	20.8
390746 2003 SC_{166}	16.7	X	291.07325	195.52695	165.53340	6.02951	0.1859126	0.22607398	2.6687158	20	6 29.5	20.1
390747 2003 SQ_{186}	16.3	X	251.55604	42.30970	341.77906	13.71410	0.1394251	0.22042450	2.7141226	20	6 15.0	20.5
390748 2003 SD_{194}	16.0	X	15.49633	344.94387	359.42658	31.37465	0.1687117	0.23525023	2.5988588	20	11 2.8	19.7
390749 2003 SP_{225}	16.3	X	299.00559	352.39064	23.96346	10.96326	0.2182433	0.22625419	2.6672985	20	8 3.9	19.4
390750 2003 SR_{284}	16.5	X	260.07838	205.49549	196.34819	11.42460	0.1794525	0.22399029	2.6852409	20	7 11.7	20.5
390751 2003 SF_{301}	17.2	X	72.06677	337.76904	341.04180	11.43067	0.2379712	0.24377770	2.5378936	20	—	—
390752 2003 SJ_{302}	17.6	X	38.12457	134.67543	210.70711	12.24792	0.2114435	0.24083265	2.5585415	20	12 28.6	21.4
390753 2003 SA_{306}	16.4	X	235.37444	79.06128	337.05668	10.37928	0.2687851	0.21841601	2.7307361	20	6 26.9	21.1
390754 2003 SP_{308}	16.9	X	219.84430	74.76083	324.50903	12.33444	0.2289681	0.21588125	2.7520697	20	5 22.9	21.8
390755 2003 SV_{312}	16.7	X	215.13576	38.06185	14.19214	11.54380	0.1347169	0.21970424	2.7200513	20	6 11.1	21.1
390756 2003 SZ_{323}	17.2	X	327.00353	10.62375	348.14761	6.74070	0.0472147	0.23085541	2.6317381	20	9 11.2	20.3
390757 2003 SY_{326}	17.9	X	82.75691	305.66337	10.12619	6.35271	0.1917365	0.24454103	2.5326095	20	—	—
390758 2003 ST_{331}	16.9	X	211.84957	105.89684	17.34865	7.63639	0.1521595	0.22873610	2.6479690	20	9 10.1	20.9
390759 2003 SU_{365}	16.7	X	100.62762	43.22348	184.85459	15.82619	0.0296554	0.23264518	2.6182233	20	9 19.5	20.2
390760 2003 SP_{393}	17.3	X	214.53559	322.69296	137.11482	7.06969	0.0319780	0.22574314	2.6713226	20	8 24.2	20.9
390761 2003 SJ_{420}	16.2	X	126.05235	59.16739	339.41420	7.49005	0.0583258	0.20383515	2.8594554	20	2 20.4	20.3
390762 2003 SN_{433}	16.6	X	217.50793	4.45509	29.51252	6.72155	0.0798957	0.21521540	2.7577432	20	5 25.4	20.7
390763 2003 TR_{19}	16.4	X	24.25568	336.53507	20.67044	14.83026	0.1781622	0.23874748	2.5734171	20	12 21.9	20.0
390764 2003 TH_{25}	17.5	X	39.66278	134.26855	204.30601	14.28391	0.1327882	0.23920435	2.5701394	20	12 11.9	21.2
390765 2003 TW_{33}	16.8	X	195.87710	42.42028	167.39425	5.45153	0.0725628	0.24158722	2.5532113	20	12 19.2	20.3
390766 2003 TT_{38}	16.7	X	140.53411	170.29329	355.33064	15.21324	0.0666574	0.22392674	2.6857489	20	8 24.2	20.7
390767 2003 UU_{5}	16.5	X	218.16874	131.29924	255.79466	7.33237	0.3487512	0.21337564	2.7735723	20	5 3.2	21.7
390768 2003 UY_{89}	16.6	X	349.88196	348.09981	45.13082	12.59866	0.2364102	0.23610500	2.5925825	20	12 24.9	19.3
390769 2003 UN_{118}	16.7	X	4.64877	339.27320	337.48479	4.72233	0.1799977	0.23002732	2.6380504	20	9 22.8	19.3
390770 2003 UZ_{126}	16.8	X	188.00946	345.80149	218.71850	11.19768	0.0923956	0.23649165	2.5897559	20	11 30.7	20.6
390771 2003 UU_{137}	16.7	X	315.59358	248.91666	138.38570	5.35184	0.1866185	0.22919666	2.6444205	20	9 26.3	19.2
390772 2003 UR_{140}	16.6	X	292.78576	337.44760	46.96023	14.85735	0.1800964	0.22649769	2.6653865	20	8 13.5	20.0
390773 2003 UR_{155}	15.7	X	89.20447	314.07918	51.04605	10.43526	0.0726431	0.19026745	2.9938248	20	—	—
390774 2003 UJ_{188}	15.8	X	179.60340	84.46334	37.23202	29.28185	0.4092233	0.21352210	2.7723038	20	8 12.1	21.8
390775 2003 UW_{211}	16.6	X	355.39789	332.99288	42.47164	20.26455	0.1902179	0.23361502	2.6109719	20	11 28.5	19.5
390776 2003 UN_{270}	17.1	X	84.01202	283.18179	38.34028	15.25607	0.1336938	0.24275067	2.5450467	20	—	—
390777 2003 UB_{316}	16.4	X	249.59492	92.95729	302.94734	7.99158	0.3055484	0.21885956	2.7270454	20	6 9.6	21.0
390778 2003 UV_{320}	16.5	X	22.15948	291.16623	35.35656	13.12287	0.1848326	0.23180429	2.6245513	20	11 7.3	19.5
390779 2003 WY_{6}	16.5	X	247.75319	176.03816	194.41325	8.52903	0.3367022	0.21613744	2.7498946	20	5 6.8	21.3
390780 2003 WM_{93}	16.9	X	248.68021	146.92442	263.36172	6.09036	0.1236322	0.21899846	2.7258922	20	7 17.7	20.8
390781 2003 WG_{105}	16.8	X	249.35988	321.68112	65.23945	5.03560	0.2169652	0.21610400	2.7501782	20	6 7.2	21.1
390782 2003 WQ_{109}	17.2	X	199.52228	45.44728	40.80062	6.93834	0.2393607	0.21443345	2.7644433	20	7 5.9	22.0
390783 2003 WG_{130}	16.5	X	235.74892	9.88242	57.18073	10.70145	0.2182873	0.21721736	2.7407727	20	7 16.2	20.9
390784 2003 WW_{175}	17.1	X	197.76678	254.60625	221.41754	6.59346	0.0880616	0.21964152	2.7205691	20	8 15.9	21.3
390785 2003 WC_{183}	16.2	X	43.95128	229.50218	74.83849	14.76053	0.0750792	0.22799312	2.6537188	20	10 29.1	19.9
390786 2003 XS_{1}	16.7	X	167.16025	16.07847	79.29810	8.90988	0.2728659	0.20961426	2.8066537	20	6 21.5	21.6
390787 2003 YH_{10}	17.2	X	189.81275	109.20016	319.10825	7.99227	0.2796740	0.21001011	2.8031257	20	6 4.4	22.4
390788 2003 YP_{48}	16.4	X	208.23099	40.26097	84.71751	12.17616	0.1236015	0.21978309	2.7194007	20	9 14.2	20.7
390789 2004 BH_{47}	16.9	X	152.71466	30.33113	114.62199	9.10538	0.1657192	0.20952998	2.8074063	20	8 8.9	21.6
390790 2004 BE_{110}	16.1	X	109.30909	92.23306	96.85274	15.11883	0.2504207	0.20314783	2.8659015	20	9 2.9	21.1
390791 2004 BM_{147}	16.1	X	108.55493	111.63145	110.01312	19.05904	0.0500140	0.21587042	2.7521617	20	9 30.5	20.4
390792 2004 BL_{149}	16.5	X	102.12394	97.01547	112.12089	10.55595	0.1381049	0.20973491	2.8055773	20	9 10.3	20.9
390793 2004 CN_{8}	17.4	X	222.11290	57.07930	14.98126	2.27441	0.0432267	0.20838929	2.8176418	20	7 25.1	21.3
390794 2004 CY_{115}	16.1	X	72.51160	101.69130	330.21714	5.78288	0.1188104	0.18461890	3.0545831	20	2 4.7	19.9
390795 2004 CJ_{130}	16.7	X	143.27447	45.65765	75.31768	13.96651	0.2635195	0.20210041	2.8757950	20	7 4.5	21.8
390796 2004 DT_{4}	16.5	X	164.51640	64.97519	126.26180	5.87531	0.0938969	0.21538518	2.7562937	20	10 19.0	20.7
390797 2004 ER_{28}	17.0	X	197.78683	69.75836	13.63159	1.88105	0.0262051	0.20078020	2.8883875	20	7 10.3	20.9
390798 2004 FG_{8}	18.4	X	38.30830	67.48810	50.74923	3.85301	0.1003975	0.30277350	2.1964643	20	1 16.4	20.2
390799 2004 FZ_{59}	16.8	X	198.56900	245.20398	164.86970	7.91690	0.0676053	0.19717059	2.9235327	20	5 28.3	21.3
390800 2004 FG_{61}	16.9	X	113.41268	161.85212	29.96497	1.66165	0.1640293	0.20344760	2.8630856	20	8 29.6	21.3

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	m		°	°	°	°		°				
390801 2004 FL_{104}	16.7	X	137.28927	273.00212	175.55208	8.28798	0.0738784	0.19228527	2.9728434	20	5 9.5	21.2
390802 2004 GS_{19}	16.5	X	208.86617	209.94878	75.97538	26.01324	0.2693798	0.28773078	2.2723671	20	—	—
390803 2004 GX_{32}	16.8	X	328.47787	274.62298	205.37593	23.13109	0.2399789	0.29019987	2.2594596	20	—	—
390804 2004 GS_{72}	18.0	X	281.20080	59.54000	168.87378	6.10255	0.1684809	0.29482296	2.2357771	20	—	—
390805 2004 GW_{82}	16.7	X	102.30645	90.72046	12.40783	9.74973	0.1813915	0.18886181	3.0086611	20	4 27.1	21.2
390806 2004 HD_{36}	18.2	X	275.87022	71.98290	173.44631	8.01090	0.1686462	0.29579551	2.2308738	20	1 4.9	21.5
390807 2004 HA_{47}	17.4	X	258.00950	220.53263	39.27083	7.24874	0.1401981	0.29470228	2.2363875	20	1 9.4	20.8
390808 2004 HK_{52}	18.9	X	125.67761	128.76074	77.08362	9.25617	0.2593701	0.38732978	1.8638693	20	10 23.3	21.9
390809 2004 HU_{65}	18.2	X	333.40906	312.22286	196.13047	4.02216	0.1777459	0.29549406	2.2323908	20	—	—
390810 2004 HF_{67}	17.8	X	230.99945	35.13183	237.77370	4.02908	0.2112818	0.28946721	2.2632705	20	—	—
390811 2004 HY_{69}	16.6	X	60.88572	154.90389	85.15268	3.13369	0.1178780	0.19818619	2.9135364	20	8 25.8	20.5
390812 2004 JQ_{6}	15.9	X	16.09835	286.08115	31.59500	13.87053	0.4632442	0.19340712	2.9613364	20	11 21.6	19.5
390813 2004 JY_{6}	17.3	X	350.98994	348.28191	48.25157	32.78743	0.0723634	0.39482779	1.8401967	20	—	—
390814 2004 JD_{16}	17.3	X	242.96200	50.52232	204.63803	5.92714	0.1361685	0.29080942	2.2563012	20	—	—
390815 2004 JW_{44}	15.6	X	283.11925	138.89514	93.60125	9.93664	0.1275601	0.17055636	3.2202588	20	1 20.8	20.4
390816 2004 KQ_{6}	17.8	X	222.96628	124.25861	133.14382	4.49280	0.1478562	0.28637564	2.2795301	20	—	—
390817 2004 KW_{18}	16.2	X	15.64089	110.18932	156.98881	24.50760	0.0421306	0.19142580	2.9817352	20	7 15.8	20.5
390818 2004 KX_{18}	16.2	X	306.71915	180.17378	139.99638	24.83882	0.1746793	0.18535759	3.0464622	20	6 5.0	20.6
390819 2004 LE_{2}	18.0	X	214.18642	252.01382	55.41251	6.49503	0.3945206	0.28600003	2.2815255	20	1 29.3	22.6
390820 2004 LQ_{23}	15.4	X	267.72877	287.66651	31.32782	26.27911	0.2676762	0.17378142	3.1802932	20	4 5.6	20.6
390821 2004 MW_{4}	17.3	X	204.22204	226.28875	54.02866	6.80300	0.2383710	0.28247716	2.3004554	20	—	—
390822 2004 NG_{16}	17.2	X	137.67242	21.80156	289.32420	7.09730	0.2007506	0.27309346	2.3528551	20	—	—
390823 2004 NQ_{23}	17.1	X	138.62988	191.88382	145.37674	13.33328	0.2198352	0.27550117	2.3391268	20	—	—
390824 2004 OT	17.5	X	135.09379	13.37895	313.77780	4.09127	0.2144448	0.27462115	2.3441212	20	—	—
390825 2004 OA_{3}	16.8	X	107.98962	8.71021	295.75502	12.41305	0.2031455	0.26703705	2.3882972	20	—	—
390826 2004 OB_{11}	15.1	X	310.52113	312.97828	337.83625	19.47749	0.2741928	0.17489760	3.1667479	20	4 2.3	19.5
390827 2004 PD_{17}	16.4	X	217.60937	305.69345	318.33069	23.41080	0.2269908	0.27970194	2.3156472	20	—	—
390828 2004 PV_{17}	17.5	X	87.44772	246.00643	112.40669	2.23506	0.2059884	0.26851257	2.3795398	20	—	—
390829 2004 PU_{20}	17.7	X	150.37548	34.85552	284.35301	1.76344	0.2620298	0.27448630	2.3448889	20	—	—
390830 2004 PP_{34}	17.2	X	125.96098	335.07814	354.20767	4.17177	0.1351484	0.27177682	2.3604480	20	—	—
390831 2004 PF_{44}	16.2	X	19.69409	104.51162	140.29619	16.93554	0.2546198	0.18356407	3.0662738	20	7 12.7	19.4
390832 2004 PX_{64}	16.5	X	340.83504	320.01282	311.76600	2.75962	0.2824437	0.17894019	3.1188713	20	5 10.6	19.6
390833 2004 PH_{88}	16.2	X	277.13513	353.68534	325.09530	10.05123	0.1064759	0.17129817	3.2109551	20	4 23.6	20.9
390834 2004 PM_{99}	17.9	X	138.77553	358.19738	352.08887	6.72147	0.1595709	0.27719729	2.3295752	20	1 8.6	21.1
390835 2004 PJ_{100}	15.9	X	5.37893	125.33982	154.72162	23.97958	0.2566857	0.18143378	3.0902287	20	7 30.4	19.0
390836 2004 PV_{110}	17.8	X	218.02976	256.12124	4.58720	5.72113	0.2297891	0.27858275	2.3218451	20	—	—
390837 2004 QV_{4}	16.8	X	124.82623	76.65619	255.49647	6.69016	0.1919062	0.27169293	2.3609339	20	—	—
390838 2004 QM_{12}	15.7	X	343.00467	225.40138	79.85218	10.60463	0.2593350	0.18117135	3.0932121	20	7 10.9	18.5
390839 2004 RU_{8}	16.7	X	71.59985	341.47179	342.01978	10.25512	0.2484061	0.26032499	2.4291750	20	—	—
390840 2004 RL_{23}	17.2	X	120.48087	185.64495	154.31062	7.37480	0.1338601	0.27093066	2.3653602	20	—	—
390841 2004 RJ_{44}	16.5	X	267.92103	153.58907	188.55935	4.52931	0.1854342	0.17204320	3.2016784	20	5 6.8	21.3
390842 2004 RJ_{71}	17.2	X	130.82891	300.49735	25.03207	6.07259	0.1495922	0.26964931	2.3728476	20	—	—
390843 2004 RP_{71}	18.0	X	170.01918	211.29112	103.35065	3.33541	0.2306654	0.27590599	2.3368381	20	1 1.7	21.8
390844 2004 RB_{87}	16.9	X	127.30087	63.23350	251.72816	5.53364	0.1701120	0.26774652	2.3840764	20	—	—
390845 2004 RT_{122}	18.0	X	146.07017	232.20096	46.19136	2.48065	0.1241733	0.26698122	2.3886302	20	—	—
390846 2004 RV_{138}	16.7	X	318.32756	82.35057	226.46461	9.74101	0.3157817	0.17764713	3.1339875	20	5 10.8	20.4
390847 2004 RY_{161}	16.3	X	330.81794	120.22674	191.98881	16.21306	0.2584116	0.17912516	3.1167238	20	6 19.7	19.9
390848 Veerle	17.5	X	142.00934	121.63444	220.37589	6.53903	0.1406676	0.27634961	2.3343366	20	—	—
390849 2004 RF_{175}	17.0	X	80.01738	120.75106	259.39385	6.11952	0.1296094	0.26952347	2.3735861	20	—	—
390850 2004 RH_{181}	17.2	X	57.66110	110.10594	254.91976	3.65859	0.2037196	0.26205727	2.4184581	20	—	—
390851 2004 RD_{183}	17.6	X	200.28208	102.73828	199.47691	5.07320	0.2344390	0.27974787	2.3153937	20	1 10.1	21.6
390852 2004 RX_{183}	17.3	X	116.57034	332.41105	339.78624	5.18480	0.2733720	0.26660661	2.3908671	20	—	—
390853 2004 RO_{194}	15.8	X	337.94147	104.41978	199.03313	10.64109	0.2867723	0.17774027	3.1328925	20	6 20.6	18.8
390854 2004 RJ_{208}	15.5	X	309.67231	52.12811	261.30572	13.13087	0.2913091	0.17566714	3.1574928	20	5 4.5	19.6
390855 2004 RR_{217}	16.4	X	335.91873	65.97235	296.15319	11.86913	0.1711868	0.24585301	2.5235913	20	9 27.2	19.1
390856 2004 RR_{218}	15.9	X	331.86181	81.24146	227.18910	24.11200	0.3014579	0.17668609	3.1453415	20	6 8.9	19.2
390857 2004 RS_{243}	16.2	X	288.71435	202.11742	130.30035	2.43924	0.1773027	0.17317059	3.1877674	20	5 20.3	20.7
390858 2004 RC_{244}	17.3	X	214.93581	233.56892	25.27308	2.85892	0.2061529	0.27605022	2.3360241	20	—	—
390859 2004 RC_{276}	16.0	X	258.27814	177.29517	163.03013	9.91732	0.1078401	0.17094273	3.2154046	20	5 5.5	20.8
390860 2004 RK_{319}	17.4	X	116.29136	141.63428	194.04443	5.68449	0.1305755	0.26986103	2.3716063	20	—	—
390861 2004 RL_{319}	15.6	X	219.50500	134.37818	171.65116	17.83026	0.1424638	0.15908153	3.3733097	20	2 10.6	21.2
390862 2004 SU_{7}	18.1	X	190.49390	218.05734	53.23221	1.42771	0.0850648	0.27083597	2.3659115	20	—	—
390863 2004 SY_{60}	17.8	X	107.38376	268.62606	46.10095	4.52015	0.1109826	0.26093795	2.4253693	20	—	—
390864 2004 TH_{31}	18.0	X	142.39793	348.92022	328.22304	3.31479	0.1951003	0.26892902	2.3770826	20	—	—
390865 2004 TE_{42}	17.7	X	156.61399	299.03973	7.28869	6.22657	0.1008738	0.26677589	2.3898556	20	—	—
390866 2004 TY_{75}	17.0	X	273.13671	354.30009	47.43942	5.51540	0.3115337	0.23744685	2.5828059	20	7 11.9	20.5
390867 2004 TY_{97}	16.6	X	225.68274	352.99746	200.81695	14.14717	0.0288748	0.25794410	2.4441001	20	—	—
390868 2004 TW_{107}	16.2	X	346.91750	119.66214	184.48300	17.66075	0.2693490	0.17869926	3.1216740	20	7 15.6	19.4
390869 2004 TT_{117}	16.7	X	112.88262	262.01649	58.55924	7.70158	0.1217787	0.26319292	2.4114962	20	—	—
390870 2004 TV_{129}	17.3	X	76.29393	317.08958	38.22219	4.51987	0.1608183	0.26337549	2.4103816	20	—	—
390871 2004 TE_{130}	17.1	X	34.35531	301.06259	99.79355	5.43824	0.1509418	0.26175222	2.4203368	20	—	—
390872 2004 TL_{130}	17.7	X	191.87451	154.53477	161.12999	7.83224	0.2992573	0.27958782	2.3162773	20	1 21.7	22.0
390873 2004 TT_{164}	17.9	X	257.03207	222.05808	186.97848	3.44171	0.1642967	0.23571700	2.5954268	20	7 21.8	21.4
390874 2004 TG_{168}	15.9	X	212.18278	49.59394	23.39223	31.52707	0.2197682	0.23217290	2.6217727	20	7 1.0	20.9
390875 2004 TC_{204}	16.8	X	121.81136	84.87604	235.83337	5.49152	0.1471576	0.26148770	2.4219688	20	—	—
390876 2004 TV_{239}	17.6	X	126.03052	146.28352	183.78893	2.15004	0.2728273	0.26804776	2.3822898	20	—	—
390877 2004 TH_{242}	17.5	X	108.73207	6.30276	354.81010	2.84094	0.1428411	0.26776216	2.3839835	20	—	—
390878 2004 TQ_{263}	17.1	X	169.87214	140.25984	247.24461	3.92621	0.1730866	0.21849163	2.7301060	20	3 29.6	21.7
390879 2004 TV_{287}	17.2	X	178.26041	16.22165	43.68197	20.45770	0.0341165	0.35062565	1.9917749	20	5 10.9	19.4
390880 2004 TR_{296}	17.1	X	3.76895	9.48012	49.27825	5.14253	0.0515559	0.25565362	2.4586767	20	—	—

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
	m		°	°	°	°		°				
390881 2004 TZ_{333}	17.1	X	170.92685	231.50542	46.21551	7.12450	0.1135492	0.26238402	2.4164499	20	—	—
390882 2004 VY_{66}	17.8	X	102.79752	289.73141	102.03730	2.31028	0.1961165	0.26904566	2.3763955	20	1 23.3	20.3
390883 2004 VH_{71}	18.0	X	274.06065	134.60018	277.07402	0.86338	0.2255273	0.23788859	2.5796075	20	8 8.6	21.3
390884 2004 VB_{78}	17.1	X	68.90705	116.75887	62.99320	23.29906	0.0908757	0.34806579	2.0015287	20	6 11.7	19.1
390885 2004 XE_{41}	17.4	X	322.16703	84.86205	270.23435	1.08724	0.1930507	0.23783843	2.5799703	20	8 19.9	19.4
390886 2004 XU_{59}	17.4	X	223.03741	35.49794	62.99025	4.86006	0.2540473	0.23091470	2.6312877	20	8 10.9	21.7
390887 2004 XX_{61}	16.7	X	49.01035	309.97092	61.93173	6.61781	0.1511853	0.25439883	2.4667548	20	—	—
390888 2004 XK_{85}	16.4	X	203.89045	21.89827	97.26729	14.59096	0.2039333	0.22958854	2.6414106	20	8 26.2	20.9
390889 2004 XS_{110}	17.2	X	270.56596	89.22626	7.84176	4.61841	0.2199254	0.24186228	2.5512751	20	10 7.6	20.2
390890 2004 XP_{135}	16.8	X	330.25805	44.84520	12.51533	3.64313	0.1839417	0.24628682	2.5206271	20	12 17.7	19.0
390891 2004 YS_{23}	17.2	X	264.53291	306.85626	118.25295	4.96616	0.1588070	0.23107734	2.6300528	20	8 25.3	20.6
390892 2004 YW_{27}	17.4	X	207.58513	114.90107	12.18268	3.98430	0.2173310	0.23363296	2.6108383	20	9 4.4	21.6
390893 2005 AF_{38}	16.9	X	220.09445	2.20740	135.46561	9.23629	0.1880694	0.23413778	2.6070841	20	10 4.9	20.9
390894 2005 AK_{50}	17.2	X	182.69617	7.23547	138.47084	14.17567	0.1908819	0.22805348	2.6532504	20	9 7.7	21.7
390895 2005 AP_{75}	17.2	X	351.60835	261.52706	122.61276	4.03276	0.1285289	0.24031956	2.5621819	20	12 2.9	20.0
390896 2005 BV_{7}	16.2	X	156.11022	50.72907	111.62509	14.10502	0.1235689	0.22605349	2.6688770	20	9 7.4	20.5
390897 2005 BA_{25}	16.4	X	92.28637	78.34917	122.84047	25.46452	0.2002718	0.21825674	2.7320645	20	8 27.4	20.8
390898 2005 CW_{28}	16.9	X	193.59860	29.98942	131.85465	10.88362	0.0575141	0.23072633	2.6327196	20	10 20.8	20.8
390899 2005 CD_{36}	16.4	X	285.07248	292.22611	110.95719	14.24783	0.1328503	0.23057935	2.6338383	20	9 2.1	19.7
390900 2005 ES_{29}	17.1	X	235.16104	294.63600	130.42224	13.84732	0.2539725	0.22521617	2.6754880	20	7 8.5	21.6
390901 2005 EB_{34}	16.6	X	136.88417	172.08270	350.68076	13.41122	0.2584753	0.21722227	2.7407315	20	8 22.9	21.4
390902 2005 EA_{53}	17.3	X	136.39859	3.98641	163.43046	4.22207	0.1143408	0.21877727	2.7277292	20	8 18.8	21.6
390903 2005 EE_{63}	16.9	X	105.60769	265.94085	339.97155	13.78385	0.1650223	0.22532144	2.6746546	20	10 23.2	21.4
390904 2005 EE_{77}	17.1	X	182.63789	130.77991	345.24675	5.45242	0.2066158	0.21979561	2.7192974	20	7 30.9	21.6
390905 2005 EA_{84}	16.8	X	207.69080	140.20152	338.61307	12.71260	0.1521438	0.22450520	2.6811335	20	8 28.8	21.0
390906 2005 ED_{92}	16.3	X	167.47539	159.93284	11.97161	14.90658	0.1314163	0.22299086	2.6932583	20	9 27.0	20.6
390907 2005 EW_{94}	16.5	X	214.79049	321.99135	144.57542	14.01270	0.1393397	0.22413334	2.6840983	20	8 21.4	20.4
390908 2005 EQ_{96}	16.6	X	161.38238	227.51309	286.43838	9.35046	0.2064367	0.22286501	2.6942721	20	8 24.2	21.3
390909 2005 EV_{100}	15.8	X	136.16983	62.83184	149.91873	13.62526	0.2067644	0.22279375	2.6948466	20	10 21.5	20.5
390910 2005 EQ_{105}	17.3	X	96.27296	89.02558	143.90676	13.85099	0.2842210	0.22131003	2.7068778	20	10 18.1	22.1
390911 2005 EB_{117}	16.7	X	186.93263	340.08574	173.38465	8.92319	0.2648278	0.22545468	2.6736007	20	9 15.1	21.4
390912 2005 EQ_{119}	16.6	X	139.72007	3.95565	178.90851	16.04955	0.2581122	0.21792546	2.7348325	20	9 14.5	21.5
390913 2005 EN_{168}	16.8	X	136.32673	160.87372	355.12290	8.30148	0.1347570	0.21541921	2.7560035	20	8 8.0	21.2
390914 2005 EB_{178}	16.5	X	88.09120	240.66198	312.31472	8.29309	0.1267550	0.21598128	2.7512199	20	7 31.2	20.2
390915 2005 EE_{179}	17.2	X	93.08126	53.33512	177.45427	12.54903	0.0905561	0.22006489	2.7170786	20	9 19.9	20.9
390916 2005 EF_{188}	16.5	X	312.86859	340.03024	10.25641	6.21236	0.0299845	0.21335062	2.7737892	20	8 10.9	20.1
390917 2005 EZ_{198}	17.0	X	175.50693	316.38439	199.03109	8.56512	0.0902702	0.22045198	2.7138971	20	9 12.0	21.1
390918 2005 EU_{202}	17.8	X	178.00987	207.35657	36.30194	2.70747	0.1215086	0.30020540	2.2089729	20	—	—
390919 2005 EF_{205}	16.3	X	195.25933	100.37926	50.12757	3.75302	0.0534799	0.22192408	2.7018823	20	10 3.8	20.1
390920 2005 EG_{235}	17.3	X	112.52515	179.66950	15.73583	3.60545	0.1279011	0.21752653	2.7381752	20	9 1.0	21.4
390921 2005 EH_{241}	16.8	X	189.72707	61.66949	67.00654	5.09294	0.2874791	0.22499255	2.6772605	20	8 19.5	21.6
390922 2005 EY_{243}	16.3	X	148.17067	191.35311	5.46182	14.06634	0.1962867	0.22484128	2.6784612	20	10 6.7	20.9
390923 2005 EG_{247}	16.7	X	192.15510	355.72406	148.63681	10.45434	0.1116491	0.22630689	2.6668844	20	9 19.1	20.7
390924 2005 ET_{256}	17.4	X	143.32540	162.54206	341.53340	3.90660	0.1543641	0.21459869	2.7630241	20	7 29.9	21.9
390925 2005 EQ_{284}	17.0	X	57.68963	103.93631	202.12478	5.00148	0.1637945	0.22309149	2.6924484	20	11 23.7	20.9
390926 2005 ED_{331}	16.8	X	124.66776	87.99496	131.45039	11.66278	0.2026078	0.22333324	2.6905050	20	10 20.6	21.5
390927 2005 FO	16.5	X	212.58652	78.10356	8.67158	9.22661	0.4726503	0.22275114	2.6951903	20	7 6.8	22.0
390928 2005 GU_{3}	16.5	X	53.23996	195.86723	57.84032	6.02323	0.1120302	0.21240553	2.7820110	20	9 5.2	20.2
390929 2005 GP_{21}	20.5	X	221.88505	1.38767	10.00394	18.80260	0.2244988	0.65861615	1.3083215	20	4 2.4	20.7
390930 2005 GX_{24}	16.7	X	117.05657	164.33623	51.56388	8.22888	0.2319883	0.21783322	2.7356045	20	10 9.0	21.4
390931 2005 GR_{36}	16.2	X	138.62753	42.60992	202.14513	13.74644	0.1428074	0.22605674	2.6688515	20	11 27.2	20.6
390932 2005 GZ_{37}	16.2	X	110.95299	333.61288	271.76774	6.16542	0.1929250	0.22234841	2.6984437	20	11 2.0	20.7
390933 2005 GM_{48}	17.1	X	108.73225	47.94645	183.91533	4.77951	0.0600564	0.21974612	2.7197057	20	10 6.7	21.0
390934 2005 GP_{52}	16.7	X	49.90813	65.08909	212.37190	7.42566	0.1567773	0.21316922	2.7753625	20	10 4.5	20.4
390935 2005 GR_{73}	15.9	X	123.62917	163.11960	57.58827	15.59472	0.1320587	0.21955964	2.7212454	20	10 18.8	20.3
390936 2005 GA_{104}	15.7	X	46.13780	188.89325	106.85779	24.24567	0.2500809	0.21339330	2.7734193	20	11 16.5	20.1
390937 2005 GZ_{108}	16.8	X	60.55358	120.79032	194.81275	7.30582	0.2641823	0.21986020	2.7187648	20	12 18.3	21.1
390938 2005 GS_{126}	16.6	X	183.20849	191.39046	215.49191	9.55990	0.1113205	0.19878711	2.9076619	20	5 6.2	21.1
390939 2005 GM_{137}	16.7	X	231.19799	71.74130	31.68783	12.21391	0.1619281	0.22237665	2.6982153	20	9 7.3	20.9
390940 2005 GO_{170}	16.0	X	122.40894	225.69158	31.06891	13.66707	0.2317926	0.22323609	2.6912856	20	11 25.1	20.8
390941 2005 GS_{206}	16.1	X	29.17336	261.67754	42.76281	9.72805	0.1505830	0.21367903	2.7709463	20	10 13.8	19.5
390942 2005 GW_{227}	16.1	X	163.65694	70.34825	100.74751	10.11596	0.1078754	0.22099880	2.7094186	20	9 26.1	20.4
390943 2005 JP_{8}	17.1	X	166.47956	260.37067	208.51086	8.30641	0.1742890	0.21092041	2.7950547	20	7 5.5	21.9
390944 2005 JQ_{48}	16.8	X	312.82122	159.84368	171.80512	6.35016	0.0774010	0.20346897	2.8628852	20	7 7.4	20.5
390945 2005 JN_{51}	16.7	X	119.30172	145.94160	84.30547	4.30753	0.1747561	0.21897161	2.7261150	20	10 24.2	21.1
390946 2005 JS_{132}	16.8	X	43.12576	135.50142	141.71200	5.68613	0.0647994	0.21099534	2.7943929	20	9 13.1	20.4
390947 2005 JM_{138}	16.2	X	91.05539	90.36994	133.30010	7.60438	0.0248973	0.21100014	2.7943506	20	8 31.0	20.0
390948 2005 JT_{147}	16.8	X	129.70586	123.12985	109.82993	14.47620	0.2649283	0.21996438	2.7179063	20	11 11.1	21.9
390949 2005 JO_{171}	16.6	X	3.57140	257.97624	49.43499	5.40491	0.0512748	0.21189084	2.7865142	20	8 27.3	20.2
390950 2005 LP_{1}	17.3	X	68.36830	77.27339	171.51992	7.68526	0.2002717	0.21023705	2.8011082	20	9 27.9	21.4
390951 2005 LU_{33}	16.6	X	48.32118	78.05080	208.43711	3.39688	0.0758881	0.21382118	2.7697181	20	10 2.6	20.2
390952 2005 LF_{37}	16.6	X	59.05457	48.06192	203.56809	6.32952	0.0902426	0.20898741	2.8122632	20	9 1.1	20.4
390953 2005 MV_{20}	15.7	X	194.19808	274.50143	122.50537	13.78948	0.2726284	0.17944924	3.1129702	20	5 7.7	21.5
390954 2005 MK_{26}	16.2	X	182.72783	253.73527	123.53739	14.81847	0.2769710	0.17600352	3.1534684	20	4 8.3	22.0
390955 2005 ME_{35}	18.4	X	195.23675	5.67261	292.39847	2.86968	0.1530062	0.30074756	2.2063173	20	—	—
390956 2005 NL_{41}	16.3	X	244.00729	231.85296	124.50926	11.55739	0.0646725	0.18708501	3.0276805	20	5 14.9	20.9
390957 2005 NL_{49}	15.8	X	266.49371	224.05619	97.03380	13.46880	0.1332949	0.19127273	2.9833258	20	4 20.8	20.4
390958 2005 NG_{61}	18.0	X	221.95902	56.18034	262.98491	0.25680	0.2152277	0.30770948	2.1729120	20	2 14.7	21.4
390959 2005 OM_{5}	17.9	X	317.68198	97.95859	270.23033	1.76475	0.2217686	0.26394308	2.4069249	20	9 2.0	19.5
390960 2005 OY_{26}	15.8	X	241.89985	149.10502	162.37495	14.53552	0.1459694	0.17514991	3.1637059	20	3 8.7	20.8

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Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
	m		°	°	°	°		°				
390961 2005 OQ_{31}	16.5	X	265.13186	159.67656	180.18934	10.21937	0.1285818	0.18532005	3.0468737	20	5 8.9	21.0
390962 2005 PU_{20}	16.3	X	176.33953	257.01839	132.78023	6.61453	0.1495016	0.17727620	3.1383576	20	4 12.7	21.4
390963 2005 QJ_{5}	18.0	X	210.68958	325.94222	344.79155	1.51611	0.1627272	0.30404880	2.1903181	20	1 26.3	21.2
390964 2005 QA_{27}	16.1	X	305.86197	298.32654	24.20390	8.68731	0.2031499	0.18619914	3.0372760	20	5 25.1	20.0
390965 2005 QU_{47}	16.4	X	296.59209	290.46977	6.29483	10.10651	0.1789002	0.18247017	3.0785163	20	4 12.2	20.5
390966 2005 QS_{71}	18.0	X	158.30695	173.77959	178.26486	2.17229	0.1989022	0.29754981	2.2220966	20	1 31.5	21.3
390967 2005 QM_{76}	16.0	X	301.13752	137.28894	151.64688	17.93035	0.2045702	0.18463962	3.0543546	20	4 11.0	20.3
390968 2005 QX_{120}	17.7	X	327.87548	242.49596	177.36186	5.36008	0.2067206	0.27189194	2.3597817	20	12 30.2	19.5
390969 2005 QM_{125}	16.3	X	219.40674	181.89502	161.98483	8.39067	0.0780762	0.17457763	3.1706161	20	3 30.5	21.1
390970 2005 QH_{127}	16.3	X	263.98777	325.54236	344.11424	12.20623	0.1319106	0.17820243	3.1274735	20	3 26.2	21.0
390971 2005 QS_{132}	16.0	X	82.53434	118.27292	11.34429	8.94578	0.0274771	0.17539687	3.1607355	20	4 15.9	20.4
390972 2005 QG_{136}	16.2	X	29.33650	228.99046	338.20686	4.32631	0.1046819	0.18172155	3.0869654	20	5 20.8	20.2
390973 2005 QE_{173}	17.2	X	71.23815	70.83050	342.23972	7.55732	0.2069364	0.28774356	2.2722998	20	—	—
390974 2005 QP_{180}	17.7	X	61.86647	20.18787	19.61062	4.43816	0.1247592	0.28596094	2.2817334	20	—	—
390975 2005 QS_{181}	18.1	X	42.60617	151.14136	186.65359	18.21706	0.0766688	0.40809302	1.8000999	20	—	—
390976 2005 RZ_{21}	15.5	X	241.77084	340.01585	7.74371	17.68404	0.2251013	0.17795044	3.1304253	20	4 10.3	20.8
390977 2005 RB_{31}	17.7	X	90.59152	246.66889	145.71788	6.59353	0.1384764	0.29114208	2.2545822	20	—	—
390978 2005 RK_{33}	16.6	X	192.95774	316.62765	36.72480	24.47944	0.2246893	0.30217228	2.1993768	20	3 18.7	20.7
390979 2005 SU_{6}	17.4	X	232.07635	311.92750	350.41535	2.49255	0.1329017	0.30008377	2.2095697	20	2 6.1	20.6
390980 2005 SX_{7}	15.9	X	318.03724	309.31571	33.86689	11.11304	0.1454638	0.19141983	2.9817971	20	7 27.9	19.6
390981 2005 SC_{12}	17.5	X	117.29505	329.71526	24.38232	7.30959	0.1405919	0.28772026	2.2724226	20	—	—
390982 2005 SZ_{19}	17.2	X	112.37598	110.86233	261.47835	5.31890	0.1806098	0.28907477	2.2653184	20	1 3.3	19.5
390983 2005 SO_{21}	15.6	X	320.04467	80.97010	203.02933	16.06920	0.2162314	0.17987562	3.1080489	20	4 27.5	19.3
390984 2005 SK_{25}	15.7	X	217.06916	192.10531	173.87797	29.03800	0.1996392	0.17690136	3.1427893	20	4 18.7	21.2
390985 2005 SR_{34}	17.9	X	235.34329	237.91231	53.11723	4.89419	0.1530050	0.29996127	2.2101712	20	1 26.0	21.2
390986 2005 SW_{36}	16.6	X	271.35494	163.75815	159.83359	0.87184	0.1478520	0.17885162	3.1199009	20	4 21.8	21.0
390987 2005 SN_{50}	17.1	X	234.25605	39.69020	196.86111	7.75272	0.0776258	0.28653714	2.2786735	20	—	—
390988 2005 ST_{51}	16.0	X	247.37963	156.26307	203.90292	8.80459	0.1321426	0.17665688	3.1456883	20	5 13.2	20.7
390989 2005 SV_{59}	15.9	X	230.09420	336.08379	20.36580	16.16046	0.0860567	0.17377103	3.1804199	20	4 21.5	20.7
390990 2005 SP_{68}	16.0	X	240.57000	333.96069	9.67035	18.35293	0.1853527	0.17541045	3.1605724	20	4 8.3	21.2
390991 2005 SG_{85}	16.2	X	303.23619	141.45339	189.62945	8.94265	0.0610797	0.18357298	3.0661745	20	6 23.9	20.4
390992 2005 SM_{86}	16.0	X	264.17887	304.86446	21.57069	12.02162	0.0521233	0.17564442	3.1577650	20	4 27.5	20.6
390993 2005 SF_{88}	17.9	X	37.89322	66.07398	2.98047	10.95655	0.0806806	0.28427682	2.2907362	20	—	—
390994 2005 SR_{88}	16.0	X	296.74159	298.83943	13.71347	10.89473	0.1385471	0.17965148	3.1106335	20	5 7.6	20.3
390995 2005 SF_{89}	17.6	X	123.96111	144.84557	201.03568	7.22964	0.1762233	0.28764245	2.2728323	20	—	—
390996 2005 ST_{89}	16.5	X	325.92683	343.52495	325.66362	1.35710	0.2385171	0.18610573	3.0382923	20	6 7.9	19.7
390997 2005 SN_{93}	15.4	X	280.42023	329.28425	23.24976	11.86170	0.2396782	0.18304250	3.0720959	20	5 22.8	19.9
390998 2005 SA_{97}	16.1	X	329.19549	297.91515	23.15767	10.52153	0.1167702	0.18816092	3.0161280	20	7 18.0	19.9
390999 2005 SQ_{98}	17.3	X	342.02924	208.96222	257.34638	5.12976	0.1200986	0.27961051	2.3161520	20	—	—
391000 2005 SC_{99}	16.9	X	298.22283	253.38230	204.31224	21.58200	0.3141924	0.26650739	2.3914605	20	12 7.5	18.5
391001 2005 SZ_{107}	16.1	X	346.20910	284.73740	11.64931	9.05039	0.1365656	0.18671447	3.0316850	20	7 12.1	19.7
391002 2005 SM_{109}	18.2	X	318.83111	312.08105	200.99215	3.20778	0.0600913	0.28556022	2.2838675	20	—	—
391003 2005 SJ_{115}	17.9	X	269.64843	289.19995	7.33573	6.10479	0.2107139	0.30918052	2.1660142	20	3 1.3	21.1
391004 2005 SL_{115}	18.0	X	1.92343	197.40367	198.46293	3.75014	0.1332633	0.27249270	2.3563120	20	—	—
391005 2005 SY_{122}	17.5	X	75.76344	26.21463	343.02714	7.99261	0.1415944	0.28282809	2.2985521	20	—	—
391006 2005 SA_{123}	16.0	X	195.17557	184.10462	213.43244	11.17138	0.1030361	0.17486025	3.1671987	20	5 7.5	20.9
391007 2005 SO_{154}	18.0	X	358.13314	252.75493	205.83320	5.56125	0.1244882	0.28264207	2.2995605	20	—	—
391008 2005 SX_{170}	18.1	X	216.96220	53.38965	240.71462	2.27027	0.1877743	0.29893717	2.2152161	20	1 11.3	21.7
391009 2005 SU_{171}	17.6	X	271.11140	261.96939	346.13069	6.50467	0.1176573	0.29898741	2.2149680	20	1 9.5	20.7
391010 2005 SV_{171}	18.4	X	329.01564	96.33406	346.08154	5.16095	0.2053076	0.27293692	2.3537547	20	—	—
391011 2005 SK_{173}	16.5	X	327.28232	356.08898	301.25093	3.63673	0.2167742	0.18645788	3.0344657	20	5 27.2	19.8
391012 2005 SL_{174}	16.6	X	288.99703	74.30237	235.59076	8.15199	0.0610964	0.17785663	3.1315259	20	5 8.1	21.0
391013 2005 SR_{177}	17.7	X	6.09484	210.91850	220.98037	6.17030	0.0909403	0.27957557	2.3163450	20	—	—
391014 2005 SP_{178}	17.7	X	114.88604	347.83669	20.54740	7.49521	0.1414573	0.29015957	2.2596688	20	—	—
391015 2005 SU_{178}	16.9	X	18.24829	95.70000	328.67670	6.68743	0.0696980	0.28169395	2.3047175	20	—	—
391016 2005 SF_{195}	15.8	X	265.33158	134.80355	192.72672	17.21713	0.2052287	0.18132642	3.0914483	20	4 13.7	20.5
391017 2005 SX_{208}	16.5	X	336.01848	38.81593	252.79029	0.89076	0.2466962	0.18669201	3.0319280	20	6 3.3	19.3
391018 2005 SJ_{233}	15.8	X	299.22924	286.49154	35.89696	11.58472	0.0906896	0.17855761	3.1233247	20	6 1.0	20.0
391019 2005 SJ_{234}	17.4	X	28.35920	47.56622	43.55717	7.62556	0.0437285	0.28825045	2.2696352	20	—	—
391020 2005 SE_{235}	17.5	X	80.77328	31.12711	23.46991	7.27597	0.0870685	0.28916208	2.2648624	20	—	—
391021 2005 SG_{236}	18.1	X	251.70063	340.35310	320.47976	1.77161	0.1763373	0.30415407	2.1898126	20	2 19.9	21.4
391022 2005 SC_{246}	16.3	X	305.29955	247.12666	24.00491	14.66445	0.0307918	0.17093346	3.2155208	20	4 14.9	20.7
391023 2005 SX_{253}	16.1	X	263.81034	135.79741	173.21899	10.28649	0.2292453	0.17992088	3.1075276	20	3 18.2	21.0
391024 2005 SL_{256}	16.0	X	329.98227	304.26981	17.61303	10.53591	0.1177520	0.18981742	2.9985549	20	7 21.0	19.8
391025 2005 SA_{269}	16.2	X	295.61822	96.22072	196.37328	9.81556	0.0823179	0.17493385	3.1663104	20	4 23.1	20.5
391026 2005 SS_{270}	17.2	X	22.82750	323.68184	45.74473	8.35962	0.1854654	0.27352086	2.3504035	20	—	—
391027 2005 SV_{270}	15.9	X	250.28516	223.31552	133.82335	8.73891	0.1754290	0.17960462	3.1111746	20	5 9.9	20.9
391028 2005 SK_{274}	16.1	X	212.02947	149.90810	200.71211	13.92164	0.1835814	0.17209810	3.2009975	20	3 24.3	21.4
391029 2005 SG_{280}	18.2	X	328.76137	58.59918	31.37940	7.68290	0.1470111	0.27364599	2.3496869	20	—	—
391030 2005 TY_{1}	17.5	X	279.63502	261.53880	356.45734	4.90730	0.1241531	0.30319110	2.1944469	20	1 31.0	20.5
391031 2005 TU_{2}	17.1	X	87.25839	41.96055	352.75028	8.13207	0.1399111	0.28885891	2.2664468	20	—	—
391032 2005 TQ_{10}	15.3	X	232.22319	351.83190	27.68344	28.28316	0.1380196	0.17815645	3.1280115	20	5 11.3	20.4
391033 2005 TR_{15}	19.1	X	332.02836	59.43373	214.08845	3.91606	0.4338801	0.32021072	2.1159828	20	3 6.7	21.0
391034 2005 TX_{20}	16.1	X	316.33909	104.63511	193.36796	8.47720	0.0859459	0.18243911	3.0788658	20	5 28.5	20.2
391035 2005 TT_{24}	17.6	X	189.38335	281.12766	32.90349	4.48156	0.2015982	0.29440097	2.2379131	20	1 14.4	21.1
391036 2005 TV_{53}	16.2	X	330.51802	309.91308	24.62060	12.15273	0.1547639	0.19100450	2.9861181	20	8 8.8	19.8
391037 2005 TC_{72}	17.6	X	50.69495	285.13974	121.50238	6.89189	0.1879971	0.28441843	2.2899758	20	—	—
391038 2005 TS_{73}	17.7	X	163.13763	239.84716	126.95494	3.43232	0.2024420	0.30025277	2.2087405	20	2 25.1	20.9
391039 2005 TO_{83}	16.2	X	67.49585	4.29102	210.90530	15.32644	0.1234638	0.18481092	3.0524669	20	7 26.6	20.8
391040 2005 TV_{85}	17.9	X	270.45955	280.77617	352.98580	3.81489	0.1486155	0.30355033	2.1927153	20	2 7.5	20.9

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Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
	m		°	°	°	°		°				
391041 2005 TV_{89}	18.2	X	236.70590	127.13134	157.63840	3.16992	0.1715506	0.30110087	2.2045911	20	1 16.9	21.6
391042 2005 TP_{105}	15.7	X	264.70247	330.03340	10.33699	9.99254	0.1229091	0.17684906	3.1434089	20	5 5.2	20.4
391043 2005 TV_{116}	17.6	X	276.76586	15.53926	208.97346	5.95973	0.1111526	0.29434083	2.2382179	20	—	—
391044 2005 TY_{123}	16.6	X	246.97787	120.70575	213.37652	8.80132	0.0458548	0.17239902	3.1972716	20	4 19.1	21.3
391045 2005 TF_{141}	17.7	X	280.76423	99.72578	127.32766	3.30027	0.0772311	0.29354234	2.2422750	20	—	—
391046 2005 TC_{147}	15.5	X	31.80343	179.86250	36.01413	18.10349	0.1337736	0.17752363	3.1354407	20	6 6.2	19.6
391047 2005 TE_{151}	17.7	X	242.85898	199.62763	79.82894	3.66013	0.1720043	0.29966629	2.2116214	20	1 16.9	21.0
391048 2005 TO_{155}	18.0	X	314.54209	135.86698	0.39000	7.63900	0.1407215	0.28030327	2.3123342	20	—	—
391049 2005 TH_{161}	16.1	X	293.90496	265.69916	16.02196	15.36682	0.2074334	0.17467919	3.1693870	20	3 22.5	20.5
391050 2005 TO_{164}	15.2	X	36.57143	182.52890	26.73532	25.03470	0.1520155	0.17470904	3.1690260	20	6 4.0	19.5
391051 2005 TG_{166}	17.2	X	295.37123	252.00692	18.59992	4.70286	0.2209131	0.30666864	2.1778258	20	2 22.8	19.9
391052 2005 TE_{167}	15.8	X	342.94830	38.55640	217.67225	8.60781	0.0387014	0.17417700	3.1754761	20	5 16.2	20.0
391053 2005 TU_{169}	17.6	X	330.13831	264.78566	233.62604	5.20340	0.0513433	0.28543161	2.2845535	20	—	—
391054 2005 TE_{176}	17.9	X	358.38815	352.17600	150.64114	6.20423	0.0221388	0.29280661	2.2460295	20	—	—
391055 2005 TM_{195}	17.6	X	260.92146	174.89313	34.12099	9.94859	0.1026357	0.28670406	2.2777890	20	—	—
391056 2005 UK_{4}	17.4	X	351.84194	207.08733	222.60126	6.06112	0.1076541	0.27377465	2.3489506	20	—	—
391057 2005 UW_{7}	17.7	X	56.53517	162.12866	221.35768	6.32969	0.1321205	0.27895364	2.3197865	20	—	—
391058 2005 UJ_{36}	15.6	X	295.35199	270.07788	46.06235	16.04657	0.2315315	0.17874845	3.1211013	20	4 30.4	19.9
391059 2005 UL_{36}	17.8	X	76.78309	332.74763	43.51559	8.94189	0.1271712	0.28064938	2.3104327	20	—	—
391060 2005 UB_{43}	17.7	X	226.90798	113.52875	191.21158	5.39566	0.1422121	0.29849090	2.2174236	20	2 1.8	21.0
391061 2005 UG_{43}	18.0	X	64.50086	182.15136	199.25355	6.09873	0.1207203	0.28027620	2.3124831	20	—	—
391062 2005 UH_{57}	17.2	X	69.57023	151.58806	190.88911	6.34828	0.1359333	0.27556478	2.3387667	20	—	—
391063 2005 UT_{59}	17.3	X	214.55652	116.15577	195.87777	6.18378	0.1338711	0.29746473	2.2225203	20	1 30.0	20.7
391064 2005 UW_{71}	15.6	X	243.75589	10.66691	349.05337	10.25555	0.2321401	0.17688306	3.1430061	20	4 24.9	20.9
391065 2005 UN_{85}	15.9	X	281.07833	289.56495	44.67785	12.54853	0.1520501	0.17878972	3.1206210	20	5 14.8	20.2
391066 2005 UP_{85}	18.4	X	310.00214	304.66950	196.32010	5.11772	0.1044563	0.27814533	2.3242787	20	—	—
391067 2005 UQ_{87}	15.9	X	286.29411	119.40984	206.11404	8.12291	0.0781170	0.17688541	3.1429782	20	5 23.2	20.2
391068 2005 UZ_{103}	17.5	X	35.51532	332.10644	59.64467	6.89092	0.1133132	0.27452517	2.3446676	20	—	—
391069 2005 UT_{104}	17.8	X	84.19027	278.41444	74.21906	6.38438	0.0141730	0.27577660	2.3375690	20	—	—
391070 2005 UG_{107}	17.6	X	282.14950	323.36456	131.03131	1.99963	0.1383117	0.26274501	2.4142361	20	11 12.4	19.9
391071 2005 UE_{108}	15.4	X	296.65271	292.45525	51.83121	27.34540	0.1985181	0.18232871	3.0801084	20	6 6.4	19.7
391072 2005 UP_{111}	17.6	X	308.66348	46.78496	42.91011	8.31216	0.0873582	0.26658146	2.3910175	20	12 26.7	20.3
391073 2005 UH_{116}	17.4	X	339.60277	20.64473	24.01536	4.35527	0.1919434	0.26706316	2.3881416	20	12 28.2	19.5
391074 2005 UY_{121}	17.2	X	282.33495	57.25251	35.30407	9.92994	0.2276281	0.26243465	2.4161391	20	10 26.9	19.4
391075 2005 UZ_{134}	16.5	X	141.48287	89.90049	4.03163	9.02425	0.0422436	0.17605734	3.1528257	20	5 13.9	21.2
391076 2005 UZ_{139}	16.5	X	2.48058	195.46009	45.50526	9.65389	0.0335291	0.17385343	3.1794149	20	5 22.1	20.7
391077 2005 UQ_{155}	17.4	X	36.71288	312.96923	88.28673	6.28693	0.2249624	0.27671972	2.3322547	20	—	—
391078 2005 US_{162}	17.8	X	120.27407	120.74260	233.00138	8.04099	0.0382037	0.28253822	2.3001240	20	—	—
391079 2005 UH_{177}	17.6	X	192.58430	302.17087	23.26834	3.32486	0.2048871	0.29522091	2.2337675	20	1 31.5	21.2
391080 2005 UQ_{191}	17.6	X	152.48736	322.24212	29.57461	2.84721	0.1672874	0.29154908	2.2524834	20	1 24.3	20.6
391081 2005 UH_{208}	16.7	X	14.31423	87.55423	189.09053	4.01062	0.2316058	0.18789885	3.0189318	20	8 13.1	19.8
391082 2005 UT_{213}	15.5	X	324.80406	275.85937	45.51401	19.14983	0.1603185	0.18627355	3.0364671	20	7 3.3	19.4
391083 2005 UE_{219}	17.7	X	153.17041	88.34232	252.25679	5.65902	0.1437518	0.29063254	2.2572165	20	1 6.5	20.7
391084 2005 UD_{230}	16.3	X	151.33002	230.01319	211.32720	9.87169	0.0367674	0.16951032	3.2334933	20	5 12.9	20.9
391085 2005 UU_{236}	17.7	X	179.75975	252.06234	80.05033	6.78163	0.1586322	0.29308179	2.2446234	20	1 26.2	21.0
391086 2005 UX_{237}	17.5	X	221.32414	173.90108	84.36382	7.07730	0.0781818	0.28407026	2.2918466	20	—	—
391087 2005 UQ_{263}	16.9	X	357.14650	105.52507	188.30676	4.06128	0.2959283	0.18903505	3.0068227	20	8 2.6	19.2
391088 2005 UV_{274}	17.8	X	32.22966	156.36006	214.57600	4.48526	0.1918728	0.27292302	2.3538346	20	—	—
391089 2005 UN_{276}	15.6	X	291.46526	299.25546	34.31967	9.65633	0.0771057	0.17850466	3.1239423	20	6 7.5	20.0
391090 2005 UK_{300}	15.3	X	335.16246	191.46075	72.64075	20.64063	0.0845215	0.17139167	3.2097873	20	5 15.4	19.5
391091 2005 UC_{310}	15.8	X	281.49515	277.46419	65.52859	6.45809	0.1879399	0.17843957	3.1247020	20	5 22.4	20.0
391092 2005 UG_{310}	16.5	X	358.98562	196.22883	84.11384	1.88507	0.0827869	0.18572158	3.0424805	20	7 10.1	20.1
391093 2005 UO_{310}	16.2	X	309.48075	249.22472	62.72494	6.88933	0.1071688	0.17959631	3.1112705	20	6 1.6	20.1
391094 2005 UO_{324}	17.8	X	60.53725	358.78457	58.88136	7.55191	0.0890177	0.28381974	2.2931950	20	—	—
391095 2005 UQ_{355}	18.1	X	299.39430	289.64394	178.22925	2.32207	0.1520783	0.26668312	2.3904098	20	—	—
391096 2005 UE_{358}	16.5	X	307.20085	67.13119	251.19826	2.09555	0.1049855	0.18153658	3.0890620	20	6 7.2	20.5
391097 2005 UT_{364}	15.7	X	235.11052	296.68088	62.76169	9.90976	0.0430359	0.17117512	3.2124937	20	5 8.4	20.4
391098 2005 UF_{367}	17.3	X	258.11979	152.26385	73.10509	8.48616	0.1056086	0.28511604	2.2862389	20	—	—
391099 2005 UC_{389}	17.1	X	220.51312	326.78747	212.17994	25.46950	0.2480129	0.26748938	2.3856040	20	11 21.6	20.7
391100 2005 UT_{393}	17.4	X	317.43451	64.50160	44.55671	12.01181	0.2531876	0.27198052	2.3592693	20	—	—
391101 2005 UG_{406}	16.1	X	312.72906	256.58676	51.04446	12.17121	0.0660477	0.17824293	3.1269997	20	6 4.8	20.3
391102 2005 UQ_{407}	16.2	X	293.06845	127.00500	196.98711	9.12605	0.0819414	0.17903118	3.1178145	20	5 29.9	20.6
391103 2005 UA_{436}	15.7	X	249.37380	325.66929	28.92800	15.00508	0.0568978	0.17606488	3.1527356	20	5 13.1	20.3
391104 2005 UX_{443}	17.5	X	25.84804	139.83565	252.30763	4.57072	0.2391917	0.27397461	2.3478076	20	—	—
391105 2005 UU_{459}	15.5	X	347.89860	225.51059	58.34924	17.83735	0.2050016	0.17776875	3.1325579	20	6 20.7	18.9
391106 2005 UK_{475}	16.2	X	119.08011	100.07516	21.42406	16.06071	0.0464827	0.17335977	3.1854478	20	5 20.8	21.0
391107 2005 UO_{478}	15.6	X	70.83597	287.46927	228.64665	10.07553	0.0361072	0.16834245	3.2484308	20	5 7.1	20.1
391108 2005 UU_{514}	15.9	X	43.36358	80.05904	181.04529	18.13764	0.2400000	0.19112953	2.9848157	20	9 13.9	19.8
391109 2005 UZ_{516}	18.1	X	57.91874	207.48818	169.06208	6.33630	0.1190544	0.28001577	2.3139167	20	—	—
391110 2005 VT_{20}	15.4	X	13.74571	191.33803	51.76077	15.90514	0.0382254	0.17533002	3.1615389	20	6 8.6	19.8
391111 2005 VK_{31}	16.9	X	206.92113	207.24552	62.39193	6.92824	0.0877441	0.28234003	2.3012002	20	—	—
391112 2005 VR_{32}	17.5	X	95.93901	267.87756	67.90950	6.91395	0.1313712	0.27567936	2.3381186	20	—	—
391113 2005 VX_{37}	17.7	X	0.14509	275.40890	130.95502	3.30285	0.1112553	0.26955122	2.3734232	20	—	—
391114 2005 VL_{41}	17.9	X	246.12158	345.03269	153.33630	2.67758	0.1588746	0.26145870	2.4221479	20	11 12.7	20.8
391115 2005 VL_{50}	15.2	X	272.73016	305.33922	27.53321	12.49436	0.0706291	0.17505152	3.1648913	20	5 12.9	19.7
391116 2005 VV_{54}	17.1	X	231.87014	40.79261	205.61781	8.40677	0.1121632	0.28422078	2.2910373	20	—	—
391117 2005 VS_{70}	17.4	X	346.05567	326.95678	76.87971	7.87928	0.0913607	0.26607904	2.3940264	20	12 24.1	20.0
391118 2005 VM_{102}	15.8	X	327.86294	248.00115	30.39653	10.06785	0.1579603	0.17766776	3.1337448	20	5 9.0	19.7
391119 2005 VP_{129}	17.9	X	299.90784	263.00514	166.05585	6.09459	0.1720399	0.26512704	2.3997539	20	11 7.9	19.9
391120 2005 WQ_{10}	18.4	X	304.52876	281.65189	205.93912	0.63185	0.1053749	0.27226420	2.3576302	20	—	—

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
	m		°	°	°	°		°				
391121 2005 WP_{17}	15.8	X	321.42865	52.78149	236.20632	6.14771	0.2138315	0.17405107	3.1770076	20	5 5.8	19.5
391122 2005 WY_{17}	18.0	X	25.96992	312.36336	73.52900	4.46596	0.0799568	0.26935242	2.3745908	20	—	—
391123 2005 WS_{19}	16.1	X	180.59428	67.04661	254.97072	14.38565	0.3424028	0.22582582	2.6706706	20	1 24.3	21.3
391124 2005 WX_{24}	17.9	X	309.51137	168.29363	291.05731	3.63671	0.1006322	0.26730935	2.3866750	20	—	—
391125 2005 WY_{31}	17.2	X	311.86574	188.05625	269.47994	5.57289	0.0884819	0.26661169	2.3908368	20	—	—
391126 2005 WQ_{47}	15.9	X	338.68757	227.23359	67.42544	13.20799	0.1937080	0.17696698	3.1420123	20	6 18.1	19.4
391127 2005 WO_{48}	17.8	X	262.26138	107.12965	63.23465	4.68544	0.1464861	0.26816356	2.3816040	20	—	—
391128 2005 WE_{71}	17.3	X	63.56093	329.73779	56.67614	7.89490	0.1102065	0.27709847	2.3301290	20	—	—
391129 2005 WH_{79}	18.0	X	4.46001	143.46786	305.32360	0.77886	0.1507931	0.27463110	2.3440646	20	—	—
391130 2005 WX_{139}	17.4	X	243.53877	289.10042	293.86276	1.68557	0.1593763	0.27524901	2.3405551	20	—	—
391131 2005 WM_{194}	16.1	X	304.41846	199.28507	117.81740	12.69765	0.0880530	0.24345930	2.5401058	20	6 6.6	19.3
391132 2005 XT_{3}	17.6	X	351.66779	312.66888	84.92861	2.76865	0.1723538	0.26619811	2.3933125	20	—	—
391133 2005 XN_{12}	17.5	X	26.68105	359.61113	72.96252	7.72440	0.0720877	0.27735502	2.3286919	20	—	—
391134 2005 XO_{40}	16.9	X	285.12686	50.10189	87.60884	6.58285	0.1503443	0.26527862	2.3988396	20	—	—
391135 2005 XM_{51}	17.6	X	289.55480	126.71684	26.65624	3.18336	0.1159360	0.26842434	2.3800612	20	—	—
391136 2005 XF_{73}	17.2	X	182.63909	342.04561	319.64515	3.87781	0.2074790	0.28141611	2.3062342	20	—	—
391137 2005 XH_{80}	17.1	X	51.36262	168.32760	221.50838	4.95744	0.1655099	0.28216695	2.3021412	20	—	—
391138 2005 YR	17.7	X	265.51753	328.05802	81.19045	27.20168	0.1109317	0.38298646	1.8779345	20	9 23.9	20.2
391139 2005 YW_{8}	17.1	X	355.48830	322.86981	117.38079	5.90589	0.1929231	0.27089410	2.3655730	20	—	—
391140 2005 YK_{11}	17.9	X	260.64652	127.48988	32.11735	1.84022	0.1274362	0.26438874	2.4042193	20	—	—
391141 2005 YH_{14}	17.1	X	202.11543	166.12568	106.40475	3.03942	0.1884261	0.27142420	2.3624920	20	—	—
391142 2005 YM_{46}	17.4	X	79.67801	248.77828	124.41129	6.73240	0.1424455	0.27392194	2.3481085	20	—	—
391143 2005 YN_{57}	17.9	X	282.48058	131.48711	353.95651	1.63314	0.1273708	0.26212745	2.4180265	20	12 28.7	20.1
391144 2005 YB_{62}	17.3	X	332.73327	316.77018	63.45601	2.19593	0.1949553	0.25645636	2.4535433	20	11 1.3	19.1
391145 2005 YA_{64}	18.1	X	341.00597	335.12846	93.37806	4.70134	0.1969264	0.26523929	2.3990767	20	—	—
391146 2005 YF_{67}	17.6	X	255.81225	200.27642	303.97996	6.50846	0.1346110	0.25906397	2.4370515	20	12 7.1	20.3
391147 2005 YH_{81}	17.8	X	53.62340	139.90482	278.47374	2.39833	0.0497949	0.27518654	2.3409093	20	—	—
391148 2005 YF_{84}	17.9	X	266.49428	359.31151	136.07258	3.91326	0.2396101	0.25834490	2.4415715	20	11 26.7	20.4
391149 2005 YU_{85}	17.6	X	162.12737	274.94490	320.64338	1.52905	0.1681021	0.25705017	2.4497633	20	12 10.7	21.4
391150 2005 YS_{87}	17.9	X	300.84597	324.63904	102.94723	1.89101	0.1827410	0.25751413	2.4468199	20	11 2.7	19.9
391151 2005 YY_{93}	17.1	X	150.30982	311.76024	296.67761	24.17884	0.8832391	0.23780812	2.5801894	20	12 2.4	23.9
391152 2005 YZ_{93}	17.4	X	310.71821	296.04342	83.85958	21.48481	0.1371901	0.38664110	1.8660819	20	11 5.1	18.8
391153 2005 YR_{95}	15.1	X	181.31165	233.00276	121.32048	13.83065	0.0949719	0.15172335	3.4815110	20	3 8.5	20.6
391154 2005 YJ_{105}	17.9	X	295.08274	350.00740	86.80488	2.04515	0.0568253	0.25660817	2.4525755	20	11 14.9	20.7
391155 2005 YT_{109}	18.1	X	237.60394	7.56444	152.82302	2.80618	0.1390454	0.25783048	2.4448181	20	12 2.3	21.1
391156 2005 YD_{112}	17.8	X	244.06377	67.49056	106.90996	2.54219	0.1328743	0.26205551	2.4184690	20	—	—
391157 2005 YZ_{137}	17.0	X	137.39054	229.05322	91.58900	8.36983	0.1411998	0.27368606	2.3494575	20	—	—
391158 2005 YW_{143}	17.6	X	302.05886	343.70835	94.87511	2.43902	0.1626924	0.25717404	2.4489765	20	11 23.4	19.7
391159 2005 YT_{165}	16.8	X	292.54872	340.41572	108.53770	26.05130	0.2649752	0.26007595	2.4307255	20	11 20.6	19.3
391160 2005 YW_{191}	18.0	X	238.38442	132.57144	81.58965	2.27432	0.1021325	0.26590022	2.3950997	20	—	—
391161 2005 YB_{199}	17.2	X	343.53739	333.30425	130.61807	6.04284	0.0894739	0.26998988	2.3708517	20	—	—
391162 2005 YZ_{202}	17.6	X	24.11838	305.21873	99.03733	3.76767	0.1678838	0.26929528	2.3749268	20	—	—
391163 2005 YQ_{228}	15.7	X	245.89487	238.45462	94.28126	8.76505	0.0703648	0.15815986	3.3864022	20	4 18.5	20.8
391164 2005 YE_{285}	17.3	X	306.79043	6.27832	86.72057	12.89853	0.1464412	0.26541851	2.3979967	20	12 28.4	19.2
391165 2006 AB_{25}	17.6	X	335.96770	68.36791	307.27478	1.92160	0.2208315	0.25663337	2.4524150	20	11 2.5	19.3
391166 2006 AY_{25}	17.6	X	168.47964	206.18527	95.72541	4.77521	0.1509862	0.27488845	2.3426014	20	—	—
391167 2006 AL_{26}	17.7	X	194.71052	226.72036	21.09448	1.24535	0.1549735	0.26585855	2.3953499	20	—	—
391168 2006 AW_{39}	17.7	X	311.61572	326.86037	104.83027	3.64582	0.0753469	0.25807016	2.4433041	20	12 3.8	20.4
391169 2006 AB_{41}	17.9	X	275.43098	106.83652	357.29557	2.41536	0.1595466	0.25574138	2.4581142	20	11 7.8	20.3
391170 2006 AW_{47}	17.3	X	231.16892	44.14891	156.30435	2.78765	0.1629177	0.26197523	2.4189630	20	—	—
391171 2006 AU_{56}	18.2	X	324.35168	348.95443	86.57281	2.30460	0.1626703	0.26246723	2.4159392	20	—	—
391172 2006 AO_{60}	17.6	X	174.66374	305.57290	293.80454	5.62500	0.0785393	0.26083122	2.4260309	20	—	—
391173 2006 AL_{69}	17.1	X	279.00782	34.80081	107.86798	6.52719	0.2351317	0.26330840	2.4107911	20	—	—
391174 2006 AN_{69}	17.6	X	235.68177	159.84705	23.01012	3.59209	0.1276243	0.26098644	2.4250689	20	—	—
391175 2006 BN_{3}	17.3	X	213.78914	98.30048	126.03609	2.78348	0.1177382	0.26356309	2.4092377	20	—	—
391176 2006 BS_{98}	17.8	X	133.47585	138.57771	18.05369	19.47011	0.0979354	0.37284264	1.9118435	20	8 25.7	20.5
391177 2006 BT_{114}	17.6	X	306.65988	1.39043	146.73474	6.20163	0.0605667	0.26621889	2.3931879	20	—	—
391178 2006 BS_{136}	17.8	X	301.90456	309.28667	97.67411	2.90959	0.2258351	0.25186002	2.4833040	20	9 27.1	19.9
391179 2006 BC_{145}	17.9	X	127.55293	204.19006	303.39498	18.54478	0.0532535	0.37059711	1.9195586	20	7 20.3	19.6
391180 2006 BO_{165}	17.4	X	125.82255	105.33153	144.43295	11.00259	0.2081923	0.24520106	2.5280626	20	11 27.3	21.8
391181 2006 BH_{178}	17.5	X	197.84226	240.79403	355.06834	2.19590	0.1062347	0.26155445	2.4215567	20	—	—
391182 2006 BT_{192}	17.8	X	190.50199	62.70947	153.79387	3.89637	0.1828559	0.25344673	2.4729287	20	12 12.7	21.6
391183 2006 BA_{193}	17.7	X	212.23549	31.41444	158.31425	5.10881	0.1102590	0.25438716	2.4668302	20	12 11.6	21.0
391184 2006 BK_{203}	17.5	X	226.21237	92.34438	109.18335	2.42019	0.1225726	0.25879584	2.4387345	20	—	—
391185 2006 BR_{216}	17.5	X	229.66001	296.32415	154.37654	23.35532	0.1091327	0.38021377	1.8870532	20	9 10.7	19.1
391186 2006 BA_{226}	17.7	X	216.38391	265.85741	306.81099	1.41660	0.1260056	0.25789008	2.4444414	20	—	—
391187 2006 BU_{234}	17.4	X	213.06380	224.22691	349.90567	2.19393	0.1443446	0.25966985	2.4332592	20	—	—
391188 2006 BE_{263}	16.5	X	293.79693	247.39126	146.57818	17.00167	0.1589361	0.24247922	2.5469457	20	8 28.5	19.3
391189 2006 CL_{16}	16.9	X	306.84460	114.36963	144.07758	9.67445	0.1756837	0.21689718	2.7434694	20	3 8.9	20.5
391190 2006 DO_{9}	16.8	X	214.02768	4.64150	117.37471	8.55757	0.1158175	0.24285986	2.5442838	20	9 17.3	20.6
391191 2006 DD_{50}	17.6	X	136.31988	67.24918	144.73052	13.77824	0.1953787	0.23992339	2.5650017	20	10 23.0	22.1
391192 2006 DM_{72}	17.5	X	183.05256	131.58324	117.26237	2.28040	0.1486764	0.25722098	2.4486786	20	—	—
391193 2006 DB_{87}	16.4	X	40.52163	304.38706	6.81719	9.51977	0.1307082	0.23988708	2.5652605	20	11 4.5	19.8
391194 2006 DS_{125}	17.4	X	206.48493	59.76073	168.79145	7.00071	0.0623911	0.25959930	2.4337000	20	—	—
391195 2006 EC_{53}	18.0	X	146.13835	226.39106	13.82706	2.90518	0.1505151	0.24455662	2.5325018	20	11 29.9	22.0
391196 2006 EU_{65}	16.9	X	124.18842	279.89971	0.74705	13.22084	0.2035642	0.24571240	2.5245540	20	12 31.2	21.4
391197 2006 FX_{11}	17.4	X	136.12522	37.42972	161.75438	4.61075	0.1787748	0.23657224	2.5891678	20	10 2.9	21.6
391198 2006 FC_{25}	16.9	X	309.52296	25.97720	15.88490	2.61365	0.0133443	0.23835869	2.5762147	20	10 17.1	20.3
391199 2006 FX_{50}	17.4	X	158.00294	8.94684	140.01479	24.15713	0.0724026	0.37070197	1.9191965	20	9 5.5	19.6
391200 2006 GH_{12}	16.9	X	92.31363	252.19618	44.86958	6.86029	0.0920346	0.24361552	2.5390198	20	12 15.2	20.7

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	m		°	°	°	°		°				
391201 2006 GZ_{13}	17.3	X	162.03582	201.50141	34.20946	13.05857	0.0820298	0.24588353	2.5233825	20	12 11.7	21.1
391202 2006 GF_{26}	17.8	X	110.82167	64.06868	194.79153	8.46662	0.1348390	0.23814444	2.5777596	20	11 20.4	21.8
391203 2006 GN_{36}	17.5	X	119.66838	75.08511	148.91753	3.19368	0.0281357	0.23709416	2.5853667	20	10 10.7	20.9
391204 2006 HA_{25}	18.0	X	177.58629	64.29009	49.68441	20.96425	0.0984588	0.36463721	1.9404184	20	8 14.6	21.0
391205 2006 HL_{39}	17.4	X	187.95004	24.22688	117.50250	3.77309	0.1371676	0.23340798	2.6125157	20	9 9.9	21.4
391206 2006 HD_{40}	17.7	X	161.57420	116.32293	131.38718	4.28702	0.1651050	0.24436775	2.5338066	20	12 22.9	21.7
391207 2006 HR_{43}	17.5	X	85.61224	46.58548	237.88303	3.00248	0.1285514	0.23575684	2.5951344	20	11 24.7	21.4
391208 2006 HV_{47}	17.2	X	213.63705	21.49882	88.57255	5.51426	0.2217527	0.23598958	2.5934278	20	8 20.2	21.4
391209 2006 HD_{48}	17.6	X	133.50993	95.14275	170.78143	6.43361	0.1281224	0.24339876	2.5405269	20	12 20.1	21.6
391210 2006 HA_{51}	14.6	X	248.62724	50.17791	198.47254	12.64120	0.1546424	0.12498398	3.9618663	20	1 6.7	20.9
391211 2006 HZ_{51}	18.5	X	103.71803	193.35305	84.29210	12.41383	0.4501794	0.37715534	1.8972412	20	12 30.9	22.2
391212 2006 HQ_{68}	17.1	X	141.56246	40.14225	231.54045	5.26138	0.0714133	0.24499944	2.5294493	20	—	—
391213 2006 HN_{72}	17.0	X	143.44687	135.45492	106.35701	6.61149	0.0545049	0.24030230	2.5623047	20	12 1.7	20.6
391214 2006 HF_{75}	17.1	X	172.23374	59.71521	133.13860	9.48131	0.1032788	0.23798203	2.5789323	20	11 2.2	21.1
391215 2006 HN_{89}	16.2	X	174.39979	163.83574	60.11007	13.38578	0.2083864	0.24249932	2.5468051	20	12 2.1	20.4
391216 2006 HF_{92}	16.2	X	255.77930	348.09568	67.15927	15.88134	0.1034805	0.22598444	2.6694207	20	8 12.7	20.1
391217 2006 HR_{92}	17.4	X	217.58232	72.81966	105.69160	4.28096	0.0837905	0.24436998	2.5337912	20	12 5.0	20.8
391218 2006 HY_{96}	15.6	X	235.97516	298.19916	229.30614	17.71556	0.0268316	0.17472917	3.1687825	20	12 5.1	20.2
391219 2006 HZ_{117}	17.0	X	181.88395	98.31695	89.17406	18.03801	0.1199911	0.23855998	2.5747653	20	11 7.7	21.2
391220 2006 HK_{120}	16.8	X	312.89307	195.95735	223.86255	13.12873	0.1474494	0.23811282	2.5779878	20	11 11.4	19.2
391221 2006 HP_{147}	17.0	X	241.74920	78.38497	29.66053	7.01425	0.0620629	0.23471782	2.6027873	20	10 7.0	20.5
391222 2006 JL_{1}	17.0	X	147.31357	132.87261	80.00114	3.66747	0.0776227	0.23705226	2.5856713	20	10 29.9	20.7
391223 2006 JH_{8}	17.1	X	145.28255	14.00785	211.19382	6.51374	0.1717240	0.23850342	2.5751724	20	11 11.0	21.2
391224 2006 JH_{16}	17.0	X	334.32152	253.63134	178.28754	3.50617	0.0637381	0.24575224	2.5242811	20	—	—
391225 2006 JO_{20}	17.1	X	161.09133	56.92407	143.00666	8.26930	0.1280736	0.23675591	2.5878285	20	10 28.9	21.2
391226 2006 JQ_{32}	16.6	X	60.04506	221.85060	94.49317	13.44996	0.2830970	0.23269719	2.6178331	20	12 22.9	20.8
391227 2006 JJ_{35}	17.8	X	211.62246	56.74987	58.28730	22.96724	0.0833552	0.37060415	1.9195342	20	10 9.3	20.3
391228 2006 JZ_{56}	16.8	X	157.01713	172.68675	46.90379	14.39576	0.1909473	0.23924015	2.5698829	20	11 12.9	21.1
391229 2006 JB_{81}	16.6	X	247.88449	274.06335	213.80932	14.78273	0.1134883	0.23911684	2.5707664	20	11 2.6	19.8
391230 2006 KY	16.5	X	116.10816	178.25122	86.20682	13.04687	0.1478125	0.23633116	2.5909283	20	12 2.3	20.6
391231 2006 KS_{6}	16.5	X	172.95387	160.67832	55.67448	8.64277	0.1583623	0.24168093	2.5525512	20	11 24.9	20.6
391232 2006 KN_{13}	17.4	X	117.48269	81.35109	178.39132	12.31413	0.1690904	0.23813616	2.5778194	20	11 29.4	21.8
391233 2006 KR_{44}	16.4	X	96.35925	208.14259	85.20444	16.04388	0.0941326	0.24137394	2.5547150	20	12 15.2	20.2
391234 2006 KL_{58}	17.1	X	113.91489	111.75430	202.62380	6.26254	0.2869902	0.24188541	2.5511124	20	—	—
391235 2006 KP_{66}	17.0	X	29.09565	253.60572	75.29040	3.68414	0.1775250	0.23071674	2.6327925	20	11 20.7	20.2
391236 2006 KT_{80}	16.7	X	72.38522	215.35679	84.76059	13.20887	0.1766256	0.23350164	2.6118171	20	12 5.4	20.7
391237 2006 KJ_{98}	17.4	X	132.39946	81.61661	200.78129	6.75348	0.2035736	0.24183052	2.5514985	20	—	—
391238 2006 KP_{112}	16.8	X	155.97925	120.19287	105.82514	13.99820	0.2539348	0.23969847	2.5666060	20	11 22.4	21.5
391239 2006 KE_{118}	16.6	X	169.46680	75.14162	134.23461	11.99630	0.2400523	0.24040253	2.5615924	20	11 13.8	21.2
391240 2006 KP_{134}	16.7	X	222.34579	120.46614	59.74026	7.47482	0.1193747	0.24401706	2.5362337	20	12 7.0	19.9
391241 2006 OG_{6}	16.7	X	193.08287	337.50542	126.36777	5.42942	0.0224400	0.21239859	2.7820715	20	8 1.2	20.4
391242 2006 PL_{4}	16.5	X	133.88206	155.32368	93.90722	6.45478	0.2705723	0.23261166	2.6184748	20	11 29.8	21.2
391243 2006 PF_{13}	16.1	X	130.60782	117.45383	143.42224	30.17401	0.3222696	0.23463042	2.6034336	20	12 15.9	21.5
391244 2006 QE_{2}	16.2	X	41.25953	159.61410	158.01018	15.75412	0.1177334	0.22050550	2.7134580	20	11 14.9	20.1
391245 2006 QK_{8}	16.9	X	21.47815	130.24030	154.17100	4.73874	0.0773968	0.21033428	2.8002448	20	8 22.2	20.3
391246 2006 QA_{9}	15.7	X	165.60827	53.10430	336.10881	25.98206	0.1525259	0.18385232	3.0630680	20	3 20.3	21.0
391247 2006 QC_{70}	17.0	X	5.10958	323.66126	353.79937	4.71510	0.1588725	0.21274245	2.7790729	20	9 19.5	19.8
391248 2006 QZ_{74}	16.9	X	6.22515	309.10780	347.80158	6.52722	0.1613100	0.21003864	2.8028719	20	8 24.0	19.8
391249 2006 QD_{84}	16.3	X	126.97970	283.86344	151.83908	9.61710	0.1350832	0.18521085	3.0480711	20	4 19.9	21.0
391250 2006 QX_{96}	16.4	X	55.52867	149.79603	155.54829	14.11217	0.1987866	0.21959951	2.7209160	20	11 26.7	20.6
391251 2006 QM_{114}	16.4	X	40.67612	156.88045	174.95924	13.14894	0.2372775	0.22285432	2.6943583	20	12 16.0	20.5
391252 2006 QM_{119}	16.6	X	95.66836	100.66945	197.35071	10.89022	0.3022651	0.22952992	2.6418603	20	12 28.4	21.5
391253 2006 QA_{129}	16.8	X	57.47338	294.32794	17.85362	10.23037	0.1900442	0.22324710	2.6911971	20	12 1.5	20.9
391254 2006 QO_{150}	16.8	X	222.22417	214.10861	191.79844	1.81764	0.0588374	0.20002634	2.8956402	20	6 18.3	21.1
391255 2006 QH_{165}	17.0	X	27.10775	2.75935	310.07973	7.39219	0.1954150	0.21631584	2.7483825	20	10 23.1	20.5
391256 2006 QR_{166}	16.8	X	117.68000	104.80475	196.95941	10.77168	0.2830936	0.23251139	2.6192276	20	—	—
391257 Wilwheaton	16.7	X	97.60517	103.49155	198.47555	10.87827	0.3040127	0.22939280	2.6429130	20	—	—
391258 2006 RP_{33}	16.6	X	24.43300	290.59165	43.76045	10.27287	0.3103349	0.21846376	2.7303382	20	12 7.2	20.1
391259 2006 RF_{48}	16.0	X	153.19564	222.19539	195.17455	17.17661	0.1997856	0.18033246	3.1027976	20	4 25.7	21.2
391260 2006 RZ_{54}	17.0	X	206.74508	200.96500	185.69489	10.44176	0.0836152	0.18715818	3.0268914	20	5 7.6	21.7
391261 2006 RA_{63}	16.2	X	182.08802	30.47470	358.87112	18.86906	0.1244733	0.18660158	3.0329075	20	4 8.6	21.2
391262 2006 RR_{77}	17.0	X	297.66148	204.07732	146.41712	2.67643	0.0756985	0.20056740	2.8904302	20	7 10.8	20.6
391263 2006 RW_{79}	16.0	X	143.53119	84.63965	8.66135	13.38392	0.1752004	0.18618575	3.0374217	20	5 23.9	21.1
391264 2006 RS_{120}	16.7	X	52.55362	280.87839	3.19674	6.75143	0.0850190	0.21328981	2.7743163	20	10 6.2	20.5
391265 2006 SC_{17}	16.7	X	104.10997	86.93677	205.33217	12.91442	0.2790093	0.22685444	2.6625914	20	12 26.1	21.7
391266 2006 SV_{22}	16.5	X	59.88643	144.13527	158.73196	16.02564	0.2684503	0.22100531	2.7093653	20	12 5.7	21.0
391267 2006 SE_{43}	17.0	X	230.95186	190.41196	193.72793	10.53928	0.0638976	0.19028339	2.9936576	20	5 31.9	21.5
391268 2006 SH_{60}	15.7	X	112.66026	83.14150	21.30758	22.28026	0.2995751	0.17796038	3.1303087	20	5 17.1	21.1
391269 2006 SN_{82}	15.9	X	183.63252	347.16138	10.53047	15.16708	0.1370699	0.18101406	3.0950037	20	3 12.9	20.9
391270 2006 SL_{90}	15.6	X	344.99930	202.84764	19.60842	16.44681	0.0732852	0.18144077	3.0901493	20	4 3.8	19.5
391271 2006 SS_{96}	16.1	X	18.13972	256.87386	28.28707	15.13864	0.1431013	0.20328370	2.8646244	20	9 2.3	19.7
391272 2006 SL_{112}	16.8	X	156.66967	60.00764	356.65028	9.58363	0.0831239	0.18577282	3.0419210	20	4 17.2	21.5
391273 2006 SV_{118}	16.1	X	222.25761	347.59792	5.89969	9.09636	0.0970995	0.18396391	3.0618293	20	4 9.3	20.9
391274 2006 SW_{130}	16.6	X	342.91355	277.62785	356.70836	9.33002	0.0029187	0.19295155	2.9659958	20	6 8.5	20.9
391275 2006 SJ_{134}	17.9	X	45.99541	303.38093	129.67610	26.10845	0.4775948	0.30137442	2.2032568	20	—	—
391276 2006 SJ_{146}	16.9	X	132.43584	255.00820	187.77693	5.16658	0.1548214	0.18116080	3.0933322	20	5 3.9	21.7
391277 2006 SL_{148}	16.6	X	105.51519	288.99430	183.10771	15.58134	0.1888168	0.18183036	3.0857338	20	5 17.4	21.5
391278 2006 SU_{150}	17.2	X	40.98581	274.86978	10.57714	7.27298	0.2058110	0.21086031	2.7955858	20	10 10.7	20.7
391279 2006 SA_{165}	16.2	X	136.29187	233.63793	196.00969	16.34737	0.1794654	0.18142009	3.0903841	20	4 23.9	21.1
391280 2006 SL_{168}	16.7	X	216.54348	119.72525	271.35453	3.16914	0.0486733	0.19255796	2.9700361	20	5 23.9	20.9

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	m		°	°	°	°		°				
391281 2006 SR_{171}	17.1	X	31.75536	327.61091	325.38361	1.81556	0.0500872	0.20916225	2.8106958	20	9 14.0	20.8
391282 2006 SV_{179}	16.2	X	85.20978	224.94512	12.94247	13.20236	0.1659100	0.20982807	2.8047468	20	9 28.8	20.3
391283 2006 ST_{188}	16.3	X	188.71402	234.21634	161.27238	20.02853	0.2728471	0.18638960	3.0352066	20	5 1.5	22.0
391284 2006 SM_{194}	16.4	X	161.45948	204.77796	224.20080	5.31517	0.0609364	0.18570918	3.0426159	20	5 9.5	21.0
391285 2006 SQ_{219}	16.3	X	184.07091	34.57867	351.31496	15.22592	0.0737412	0.18651538	3.0338420	20	4 6.3	21.0
391286 2006 SF_{229}	16.6	X	345.31340	337.65763	319.49575	5.31962	0.0392858	0.19942710	2.9014378	20	7 13.3	20.3
391287 2006 SH_{230}	16.7	X	87.97341	137.54586	172.84636	14.73048	0.2668122	0.22731987	2.6589558	20	—	—
391288 2006 SB_{231}	16.5	X	90.30614	69.87319	0.51684	15.90121	0.1189231	0.17223169	3.1993420	20	3 2.4	21.0
391289 2006 SP_{260}	16.7	X	303.92646	309.44401	353.41846	1.96864	0.0609370	0.19143263	2.9816643	20	5 18.6	20.7
391290 2006 SB_{265}	16.3	X	266.03881	131.15148	234.38057	8.99446	0.1175969	0.19419305	2.9533410	20	6 11.2	20.4
391291 2006 SB_{269}	16.5	X	215.51801	0.26624	356.37717	8.33496	0.0501434	0.18232105	3.0801947	20	4 8.2	21.1
391292 2006 SP_{293}	16.7	X	45.64783	268.21750	344.39190	5.81389	0.0650001	0.20386119	2.8592119	20	8 13.8	20.4
391293 2006 SD_{298}	16.8	X	122.41850	224.97671	195.24222	9.74173	0.0896903	0.17536975	3.1610614	20	3 18.5	21.5
391294 2006 SB_{300}	15.3	X	136.60954	249.81504	157.95147	14.61973	0.0757403	0.17874796	3.1211070	20	3 20.4	20.0
391295 2006 SD_{303}	16.6	X	231.52666	229.41299	212.11759	5.13627	0.0467218	0.20485280	2.8499776	20	8 14.9	20.7
391296 2006 SZ_{309}	16.2	X	72.48776	136.21332	355.83838	7.42355	0.1015528	0.17963862	3.1107820	20	4 15.4	20.4
391297 2006 SA_{317}	16.6	X	211.94216	280.06508	95.74129	2.74228	0.0850092	0.18626186	3.0365942	20	4 28.8	21.2
391298 2006 SU_{321}	15.7	X	77.41430	291.98229	190.53283	25.84437	0.2048420	0.17597454	3.1538145	20	4 29.6	20.2
391299 2006 SF_{325}	16.5	X	87.07144	271.45589	191.89741	8.27753	0.2103276	0.17320879	3.1872987	20	4 17.6	21.0
391300 2006 SH_{360}	16.3	X	163.64036	209.95225	200.96581	9.46214	0.0631085	0.17971040	3.1099536	20	4 20.3	21.0
391301 2006 SP_{375}	16.8	X	102.40202	8.08538	123.44504	4.50483	0.0513032	0.18792737	3.0186263	20	5 19.2	21.1
391302 2006 SJ_{378}	16.3	X	281.50370	248.67870	87.04343	11.37735	0.1218333	0.19267212	2.9688628	20	5 24.3	20.4
391303 2006 SQ_{379}	16.8	X	290.26943	143.25659	168.89138	8.68198	0.0416521	0.19224823	2.9732253	20	5 17.6	21.0
391304 2006 SV_{384}	16.3	X	212.04597	276.87749	103.83378	10.31442	0.0505671	0.18576703	3.0419842	20	5 9.6	20.9
391305 2006 SJ_{385}	16.2	X	263.21303	220.99480	128.63729	10.83359	0.1348535	0.19120901	2.9839885	20	5 19.4	20.7
391306 2006 ST_{401}	16.4	X	118.99664	90.37840	44.98133	16.15592	0.1014135	0.18504471	3.0498953	20	6 15.9	21.1
391307 2006 SK_{402}	16.5	X	346.63693	44.45062	198.67772	9.58759	0.0171686	0.18579025	3.0417308	20	5 5.7	20.6
391308 2006 SS_{409}	18.1	X	2.99260	226.85142	182.25806	5.71927	0.0774457	0.29526973	2.2335213	20	—	—
391309 2006 TN_{16}	16.5	X	343.73438	259.27901	24.97757	10.76858	0.1686048	0.19678416	2.9273588	20	6 15.7	19.8
391310 2006 TM_{25}	16.1	X	164.53587	332.17296	32.57473	10.30678	0.0341414	0.17227013	3.1988661	20	2 28.7	20.9
391311 2006 TL_{26}	15.8	X	213.08170	335.07328	33.21662	8.62622	0.0951084	0.18325588	3.0697107	20	4 19.7	20.6
391312 2006 TM_{41}	16.2	X	118.41951	73.80524	36.00346	13.16291	0.0636211	0.18132878	3.0914215	20	5 9.9	20.8
391313 2006 TL_{44}	16.5	X	154.77591	238.74508	226.07770	7.79831	0.0691874	0.18599695	3.0394768	20	6 16.3	21.1
391314 2006 TY_{53}	16.3	X	183.16510	171.25298	213.21696	10.70454	0.1578902	0.17857668	3.1231023	20	4 8.8	21.5
391315 2006 TT_{69}	16.2	X	4.24106	271.14318	30.69879	15.87475	0.1395765	0.20462501	2.8520923	20	9 1.6	19.7
391316 2006 TD_{76}	17.8	X	327.03240	311.16426	34.64997	12.11667	0.1865693	0.27679558	2.3318286	20	9 3.2	19.7
391317 2006 TN_{80}	18.8	X	66.41136	94.41896	320.95569	3.70542	0.1196089	0.30632655	2.1794469	20	—	—
391318 2006 TB_{82}	16.0	X	53.15371	295.93042	233.64287	11.42738	0.0904103	0.18041015	3.1019068	20	5 6.9	20.0
391319 2006 TX_{82}	16.0	X	41.35782	323.36863	235.80285	12.97945	0.1995799	0.18393567	3.0621426	20	6 12.2	19.6
391320 2006 TS_{83}	16.2	X	93.76908	105.40045	9.69968	10.65196	0.0483899	0.17875261	3.1210528	20	4 14.4	20.6
391321 2006 TD_{86}	15.9	X	204.59436	163.34896	236.10731	9.05816	0.1826555	0.18578405	3.0417984	20	5 15.4	20.9
391322 2006 TJ_{87}	16.7	X	137.22075	190.06440	239.33560	5.77841	0.0884184	0.17716857	3.1396285	20	4 14.3	21.4
391323 2006 TL_{101}	18.5	X	58.77999	188.61911	231.22522	4.26827	0.1261982	0.30547186	2.1835103	20	—	—
391324 2006 TC_{103}	16.2	X	57.39755	191.36250	23.08972	9.31091	0.0347252	0.19214311	2.9743096	20	7 4.7	20.4
391325 2006 TY_{108}	16.3	X	93.60207	274.64549	212.02026	8.81595	0.0549844	0.18222275	3.0813023	20	5 1.8	20.5
391326 2006 TC_{115}	16.3	X	75.13789	16.03560	122.05038	11.56961	0.1661280	0.17642668	3.1484239	20	5 12.9	20.8
391327 2006 TG_{116}	16.4	X	23.24760	359.29683	165.24868	13.30997	0.1067592	0.17496308	3.1659577	20	3 18.9	20.3
391328 2006 TB_{120}	16.9	X	98.15084	312.20401	176.96590	10.24008	0.0280744	0.18679496	3.0308140	20	5 8.6	21.2
391329 2006 TM_{120}	16.5	X	305.37768	204.25933	139.57116	9.10386	0.0704815	0.19765780	2.9187265	20	7 13.5	20.3
391330 2006 TA_{126}	15.7	X	273.12091	251.34117	62.46113	12.87360	0.0381215	0.18196468	3.0842150	20	4 29.4	20.1
391331 2006 UY_{5}	16.9	X	112.58110	74.29101	203.49772	8.29760	0.2813711	0.22268490	2.6957247	20	12 16.1	21.9
391332 2006 UP_{12}	16.0	X	77.21863	39.37234	50.40638	14.48951	0.0477502	0.16962814	3.2319958	20	3 3.8	20.7
391333 2006 UH_{15}	15.3	X	91.91561	267.33478	219.22717	24.39739	0.2465793	0.17346080	3.1842109	20	5 25.5	20.2
391334 2006 UW_{18}	17.0	X	121.63802	93.39901	346.72175	4.37759	0.1501279	0.17708607	3.1406035	20	4 17.1	21.8
391335 2006 UZ_{29}	16.3	X	106.46551	266.66677	221.63730	4.44152	0.1229534	0.18295983	3.0730211	20	5 28.6	20.8
391336 2006 UU_{45}	16.4	X	284.30380	124.43291	214.88411	9.14294	0.1174520	0.19007427	2.9958529	20	6 1.2	20.5
391337 2006 UH_{65}	16.7	X	183.85490	37.39117	7.24717	9.16634	0.0929885	0.18439514	3.0570537	20	5 1.4	21.4
391338 2006 UB_{79}	16.0	X	168.59825	169.53183	230.43949	8.68331	0.0818504	0.18010656	3.1053915	20	4 10.9	20.9
391339 2006 UV_{87}	17.6	X	131.23443	193.64616	235.45190	5.06821	0.1039434	0.31960322	2.1186633	20	3 30.2	20.3
391340 2006 UE_{92}	16.8	X	158.22741	19.14253	50.56311	5.98470	0.1220382	0.18230132	3.0804169	20	5 9.9	21.7
391341 2006 UY_{97}	16.8	X	353.29112	244.18656	64.12702	6.34748	0.0499258	0.19871174	2.9083971	20	8 11.1	20.6
391342 2006 UT_{102}	16.3	X	77.54936	110.66251	53.17971	13.88328	0.0363868	0.18483504	3.0522013	20	5 24.4	20.5
391343 2006 UE_{103}	17.0	X	78.00270	43.39535	224.20230	8.57996	0.2271199	0.21697656	2.7428002	20	11 2.9	21.3
391344 2006 UG_{118}	16.8	X	268.55179	131.13485	180.97218	1.69626	0.0477541	0.18423221	3.0588559	20	4 17.4	21.1
391345 2006 US_{118}	16.8	X	94.92391	44.33907	63.25629	1.84962	0.1143850	0.17674952	3.1445890	20	4 18.3	21.3
391346 2006 UO_{157}	16.6	X	254.25924	308.13055	37.06775	10.28147	0.0944927	0.18890305	3.0082233	20	5 4.5	20.9
391347 2006 UH_{177}	16.3	X	220.04339	185.40241	174.01029	10.67081	0.1504021	0.18520565	3.0481282	20	4 14.5	21.2
391348 2006 UN_{214}	15.9	X	39.55424	334.74965	248.84286	9.57466	0.1019328	0.18676444	3.0311441	20	6 28.4	19.8
391349 2006 UE_{217}	16.2	X	121.90001	56.84168	36.72948	24.49511	0.1514642	0.18053605	3.1004645	20	5 3.1	20.9
391350 2006 UG_{222}	16.1	X	321.92762	50.01147	258.25556	4.66462	0.0651961	0.19617184	2.9334472	20	6 20.9	19.7
391351 2006 UP_{226}	15.8	X	102.12453	68.07634	33.30483	22.63425	0.2332805	0.17544483	3.1601594	20	5 1.4	20.6
391352 2006 UY_{228}	15.6	X	227.42309	188.17469	217.25454	17.38235	0.1904474	0.18927813	3.0042478	20	6 10.9	20.6
391353 2006 UB_{256}	15.9	X	121.42196	49.80583	47.26364	14.90203	0.1957758	0.17517054	3.1634575	20	5 12.7	20.8
391354 2006 UC_{257}	16.2	X	132.57819	218.30793	235.40896	3.52106	0.1294747	0.18177336	3.0863788	20	5 14.1	20.9
391355 2006 UJ_{267}	16.9	X	102.36454	248.38855	219.38146	0.28958	0.1480641	0.17621852	3.1509029	20	5 1.3	21.3
391356 2006 UN_{290}	16.3	X	74.42654	338.22205	203.10765	13.23838	0.0364979	0.18858378	3.0116175	20	6 13.2	20.6
391357 2006 US_{306}	16.3	X	272.61971	196.30683	160.00828	2.37823	0.0487952	0.19892155	2.9063516	20	6 18.1	20.3
391358 2006 UX_{314}	16.4	X	332.31678	75.84120	218.98860	8.31994	0.1000741	0.18994999	2.9971596	20	6 15.6	20.1
391359 2006 UK_{332}	16.3	X	91.67617	270.94715	181.63358	15.82396	0.0746214	0.17484129	3.1674277	20	3 20.6	20.8
391360 2006 UQ_{333}	16.0	X	323.81150	113.12713	160.92498	11.10441	0.0464435	0.18765463	3.0215505	20	5 14.2	20.2

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
	m		°	°	°	°		°				
391361 2006 VZ_{10}	16.5	X	181.31093	315.74137	52.38408	9.13541	0.0930297	0.17472476	3.1688359	20	3 23.2	21.5
391362 2006 VJ_{11}	16.5	X	274.97406	121.38975	228.39199	6.33322	0.0455364	0.18971757	2.9996070	20	6 12.9	20.6
391363 2006 VF_{36}	15.8	X	116.35842	242.15731	234.00789	8.74017	0.0852368	0.17989772	3.1077943	20	5 19.9	20.4
391364 2006 VG_{53}	15.9	X	18.70372	305.93295	264.92305	8.26825	0.0581351	0.18010419	3.1054187	20	5 5.9	20.0
391365 2006 VL_{57}	16.2	X	36.74124	300.82633	228.09069	6.45711	0.0610745	0.17307389	3.1889547	20	4 8.7	20.5
391366 2006 VV_{71}	16.1	X	44.74597	298.82701	234.48942	9.87906	0.1419373	0.17424075	3.1747015	20	5 5.7	20.0
391367 2006 VM_{105}	16.5	X	250.41100	127.79402	241.83868	7.90190	0.0558708	0.18782260	3.0197488	20	6 5.8	20.8
391368 2006 VN_{122}	16.3	X	119.94709	141.17218	299.62504	3.61224	0.1612603	0.17234055	3.1979946	20	4 17.3	21.3
391369 2006 VO_{130}	16.7	X	247.71537	146.38315	204.94218	1.32378	0.1063296	0.18417298	3.0595116	20	5 4.4	21.2
391370 2006 VO_{131}	16.2	X	265.25200	235.53280	79.53775	6.03914	0.0469997	0.17891668	3.1191445	20	4 19.5	20.7
391371 2006 VM_{170}	16.6	X	74.79864	60.69520	50.15506	3.05636	0.0631396	0.16918218	3.2376729	20	3 21.9	21.1
391372 2006 VQ_{171}	16.1	X	223.47262	134.20476	217.28961	8.43411	0.0848609	0.17979244	3.1090075	20	4 9.6	20.9
391373 2006 WJ_{4}	16.7	X	194.30968	41.80980	19.37619	8.61657	0.1382554	0.18524760	3.0476681	20	6 1.4	21.6
391374 2006 WM_{12}	17.8	X	46.13645	189.01225	249.01376	4.81483	0.0850307	0.30255436	2.1975247	20	—	—
391375 2006 WG_{14}	16.2	X	315.25039	69.85780	224.08666	8.65051	0.0526295	0.18218583	3.0817186	20	5 24.9	20.3
391376 2006 WV_{21}	16.0	X	195.06632	288.93570	88.67007	10.93833	0.0820937	0.17631073	3.1498042	20	4 18.1	21.0
391377 2006 WM_{23}	15.9	X	267.31084	303.69007	91.84928	10.84982	0.0819011	0.19282532	2.9672901	20	7 28.7	20.1
391378 2006 WC_{44}	16.3	X	173.70504	194.05583	218.19355	11.09459	0.0983195	0.17968232	3.1102776	20	5 3.4	21.0
391379 2006 WP_{62}	16.4	X	178.43307	28.62145	45.29761	12.90410	0.1334404	0.18308991	3.0715654	20	6 1.9	21.4
391380 2006 WY_{94}	16.6	X	307.62075	86.35893	211.50000	4.45724	0.0980845	0.18562539	3.0435315	20	5 13.2	20.5
391381 2006 WO_{97}	15.9	X	272.53223	282.55764	62.87333	11.11725	0.0777767	0.18641965	3.0348805	20	5 29.7	20.2
391382 2006 WS_{108}	16.6	X	142.32291	356.01412	73.85841	8.40187	0.1544503	0.17415931	3.1756911	20	4 29.4	21.7
391383 2006 WK_{111}	15.5	X	305.79015	32.13507	246.42977	14.83828	0.0777574	0.17763213	3.1341638	20	4 15.1	19.9
391384 2006 WN_{134}	16.3	X	170.83185	30.83196	33.59427	17.14706	0.0813799	0.18314256	3.0709768	20	5 11.7	21.0
391385 2006 WR_{138}	15.6	X	138.09725	7.16883	80.80195	12.62396	0.0878520	0.18023136	3.1039578	20	5 12.3	20.3
391386 2006 WK_{149}	15.6	X	227.11548	78.41816	261.48656	7.75768	0.0914212	0.17505065	3.1649017	20	3 27.6	20.6
391387 2006 WJ_{164}	16.9	X	151.26664	329.46198	90.60694	4.83581	0.0794687	0.17650373	3.1475076	20	4 20.7	21.7
391388 2006 WP_{164}	16.0	X	100.38373	229.67477	247.66766	8.30513	0.0344468	0.17654805	3.1469809	20	4 23.7	20.5
391389 2006 WD_{171}	16.1	X	106.63760	45.21442	74.79944	10.71665	0.0545083	0.17670165	3.1451569	20	5 11.3	20.6
391390 2006 WR_{173}	16.2	X	128.13581	3.13364	67.04472	10.34663	0.0637926	0.17293683	3.1906394	20	4 8.9	21.0
391391 2006 WW_{186}	15.5	X	201.81866	261.34947	78.46803	15.45965	0.2482984	0.17659355	3.1464402	20	3 11.6	21.3
391392 2006 XU_{32}	16.3	X	338.45028	216.42850	80.57965	10.71724	0.0795740	0.18643624	3.0347004	20	6 29.7	20.2
391393 2006 YG_{22}	16.1	X	157.30879	332.86609	85.55811	10.56826	0.0597516	0.17686353	3.1432374	20	4 26.2	20.9
391394 2007 AW_{22}	16.0	X	164.06684	153.31363	280.93188	10.83530	0.1201902	0.17444964	3.1721667	20	5 19.8	21.2
391395 2007 AY_{22}	17.8	X	331.68201	251.20867	261.21065	3.24867	0.1435007	0.29487724	2.2355028	20	—	—
391396 2007 BY_{5}	18.0	X	13.44533	105.37712	339.99464	8.36023	0.2000731	0.29345974	2.2426958	20	—	—
391397 2007 BW_{8}	17.9	X	284.42659	178.31624	24.48636	2.50952	0.1142763	0.29296856	2.2452018	20	—	—
391398 2007 BZ_{11}	17.3	X	359.96177	128.74983	334.82852	7.91313	0.0728699	0.29049905	2.2579080	20	—	—
391399 2007 BH_{20}	17.6	X	296.52860	213.88261	343.14816	4.77895	0.2820519	0.29110117	2.2547934	20	—	—
391400 2007 BC_{38}	18.2	X	221.28674	79.08451	148.13363	2.53931	0.1527123	0.28413023	2.2915241	20	—	—
391401 2007 BK_{65}	18.2	X	279.46500	276.12872	322.09014	1.71285	0.1369429	0.29521527	2.2337960	20	1 3.4	21.1
391402 2007 CP_{2}	18.1	X	247.94270	273.00322	289.69883	1.90451	0.1603559	0.28270031	2.2992447	20	—	—
391403 2007 CP_{4}	17.2	X	19.09591	170.36815	310.60093	6.73129	0.0970145	0.29715211	2.2240788	20	—	—
391404 2007 CA_{22}	17.7	X	58.16655	351.31411	102.54093	5.46381	0.1157109	0.30095102	2.2053228	20	1 17.3	19.5
391405 2007 CR_{28}	17.9	X	279.70228	336.82255	293.95283	2.16577	0.1391696	0.30745855	2.1740941	20	2 12.8	20.6
391406 2007 CG_{45}	17.2	X	63.50114	75.24708	349.13815	7.50774	0.0890396	0.29637861	2.2279468	20	—	—
391407 2007 CL_{62}	17.5	X	326.30596	226.87169	298.25421	4.00917	0.1045202	0.29271062	2.2465205	20	—	—
391408 2007 DU_{6}	17.8	X	204.63516	276.25290	311.57439	5.98064	0.0631276	0.27761319	2.3272479	20	—	—
391409 2007 DK_{17}	17.5	X	289.13027	134.41101	124.65502	7.03081	0.1250651	0.30218094	2.1993348	20	2 12.2	20.1
391410 2007 DS_{19}	17.9	X	281.00909	78.84148	143.79464	2.70745	0.0680120	0.29273774	2.2463818	20	—	—
391411 2007 DS_{23}	18.1	X	256.86361	18.74253	256.00148	0.38532	0.1474590	0.29663189	2.2266784	20	1 25.5	21.2
391412 2007 DG_{26}	17.8	X	2.05740	50.96052	0.84154	5.53435	0.2045073	0.27987856	2.3146729	20	—	—
391413 2007 DB_{29}	18.1	X	318.21522	34.05677	129.24662	3.34832	0.1414660	0.28862615	2.2676652	20	—	—
391414 2007 DH_{31}	18.3	X	0.52957	104.16470	5.44671	1.56877	0.0995564	0.28862919	2.2676493	20	—	—
391415 2007 DH_{33}	17.9	X	327.30162	144.52950	16.63067	2.77406	0.0941057	0.28976229	2.2617337	20	—	—
391416 2007 DR_{72}	17.5	X	225.06749	271.65147	347.91333	7.01370	0.0904463	0.28643997	2.2791888	20	—	—
391417 2007 DE_{76}	17.5	X	336.30004	12.41751	120.51172	3.11139	0.1012325	0.28566355	2.2833167	20	—	—
391418 2007 DJ_{76}	17.7	X	171.80469	153.77890	106.59294	3.00696	0.1997757	0.27153034	2.3618763	20	—	—
391419 2007 DY_{86}	18.0	X	275.62520	239.74388	330.71959	3.08712	0.1043735	0.29014831	2.2597272	20	—	—
391420 2007 DT_{93}	17.9	X	328.09827	105.87355	24.54831	4.68737	0.1878545	0.28630298	2.2799158	20	—	—
391421 2007 DH_{99}	17.8	X	312.34972	46.79927	128.86560	2.94732	0.1039664	0.29057215	2.2575293	20	—	—
391422 2007 DT_{112}	18.1	X	234.25360	189.62515	353.29100	0.95180	0.1233490	0.27022332	2.3694861	20	—	—
391423 2007 EK_{11}	17.2	X	215.15687	242.65159	356.75012	6.15194	0.0955924	0.28254510	2.3000867	20	—	—
391424 2007 EC_{12}	18.0	X	321.95593	81.69977	51.50517	3.43342	0.1638955	0.28545108	2.2844497	20	—	—
391425 2007 EH_{25}	18.0	X	279.88033	186.56606	2.59304	2.24984	0.1369040	0.28139577	2.3063454	20	—	—
391426 2007 EY_{27}	17.7	X	287.47106	29.05140	151.79838	6.49715	0.0725031	0.28559841	2.2836640	20	—	—
391427 2007 EU_{32}	17.6	X	255.48637	109.87434	103.46011	2.75011	0.1549014	0.28217099	2.3021192	20	—	—
391428 2007 EP_{43}	17.9	X	186.21659	269.80261	2.56597	2.64249	0.1572904	0.27704326	2.3304386	20	—	—
391429 2007 EZ_{54}	17.8	X	220.55194	116.59600	119.85913	3.64464	0.1243086	0.27949725	2.3167777	20	—	—
391430 2007 EO_{64}	17.3	X	255.18483	272.77377	326.80144	5.15457	0.1165891	0.29115553	2.2545127	20	—	—
391431 2007 EG_{69}	17.8	X	314.46836	28.40364	142.74520	3.62680	0.0932095	0.28722173	2.2750513	20	—	—
391432 2007 EL_{70}	17.7	X	240.58781	208.00335	72.73772	2.71252	0.1777055	0.28978035	2.2616397	20	1 17.4	21.2
391433 2007 ED_{71}	17.5	X	232.32382	248.98957	20.15398	7.59239	0.0975327	0.28727809	2.2747537	20	—	—
391434 2007 ER_{92}	18.0	X	195.62556	328.00652	290.86087	1.87147	0.1541818	0.28182087	2.3040255	20	—	—
391435 2007 ER_{99}	18.3	X	275.11397	171.66292	6.27120	3.02850	0.1117523	0.28124718	2.3071576	20	—	—
391436 2007 EL_{102}	17.2	X	298.04779	142.96717	93.77668	3.55759	0.2217051	0.21805337	2.7337629	20	1 23.3	21.0
391437 2007 EE_{118}	17.9	X	216.91361	155.24660	122.42996	3.11428	0.2244485	0.28072836	2.3099993	20	—	—
391438 2007 ES_{129}	17.9	X	12.23078	267.78591	170.94422	4.31241	0.1476689	0.28490922	2.2873452	20	—	—
391439 2007 EP_{148}	18.5	X	314.28049	48.69751	60.51724	3.30470	0.1874926	0.27890294	2.3200677	20	—	—
391440 2007 EZ_{149}	17.7	X	358.88197	316.44810	144.56329	6.00268	0.0479261	0.28376448	2.2934927	20	—	—

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Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
	m		°	°	°	°		°				
391441 2007 ES_{168}	17.7	X	175.75083	138.95034	150.19867	4.45232	0.1346536	0.27673846	2.3321494	20	—	—
391442 2007 EW_{173}	17.7	X	244.66016	304.88528	258.61249	1.82795	0.1543612	0.27739184	2.3284858	20	—	—
391443 2007 EW_{178}	17.4	X	193.03343	93.12986	213.66484	4.85909	0.1928197	0.28267809	2.2993652	20	1 8.0	21.1
391444 2007 EF_{190}	18.3	X	326.05039	164.56739	292.89911	1.42816	0.1827819	0.27983774	2.3148980	20	—	—
391445 2007 EU_{195}	15.0	X	179.45665	245.18121	56.44225	6.94583	0.2260449	0.12560558	3.9487844	20	1 11.5	21.6
391446 2007 EV_{199}	17.1	X	312.99090	93.60877	74.86378	6.18720	0.1497724	0.28831623	2.2692900	20	—	—
391447 2007 EZ_{206}	16.9	X	350.90519	5.70426	125.83798	7.60708	0.0345692	0.28931469	2.2640659	20	—	—
391448 2007 ET_{215}	17.3	X	309.47243	76.86634	61.58900	6.22075	0.1060517	0.28146593	2.3059621	20	—	—
391449 2007 FL_{1}	18.5	X	218.60603	172.95459	72.19124	28.66109	0.5033454	0.27276768	2.3547281	20	—	—
391450 2007 FC_{4}	16.9	X	217.31093	160.74665	100.95668	7.80336	0.1378437	0.28342926	2.2953008	20	—	—
391451 2007 FE_{20}	19.5	X	237.91798	279.47492	282.29300	7.61156	0.2729196	0.42447441	1.7534836	20	—	—
391452 2007 FA_{32}	17.6	X	300.96641	143.12687	6.66951	7.42135	0.0484985	0.27811785	2.3244318	20	—	—
391453 2007 FB_{33}	18.0	X	217.76473	101.42183	146.82842	2.13759	0.1513594	0.27665463	2.3326205	20	—	—
391454 2007 GS_{13}	17.7	X	66.16195	52.12272	19.27258	8.86153	0.0501527	0.29030387	2.2589199	20	—	—
391455 2007 GA_{15}	18.0	X	269.59434	68.29064	191.24999	5.26063	0.1703335	0.29358625	2.2420514	20	1 16.4	21.4
391456 2007 GQ_{20}	17.8	X	301.99721	124.44062	43.64048	6.10726	0.0979346	0.27975029	2.3153804	20	—	—
391457 2007 GS_{39}	17.5	X	255.91630	162.70756	41.92642	5.88203	0.1605029	0.27727125	2.3291609	20	—	—
391458 2007 GG_{48}	17.3	X	227.24529	199.67542	57.06340	6.53050	0.2459301	0.27739634	2.3284606	20	—	—
391459 2007 GY_{48}	17.0	X	78.22668	260.86209	69.16702	3.44966	0.2027129	0.25947645	2.4344681	20	—	—
391460 2007 GH_{52}	17.2	X	223.30754	199.70766	34.12439	11.24610	0.2184933	0.27439033	2.3454356	20	—	—
391461 2007 GY_{53}	17.6	X	222.19855	178.24984	45.55982	13.54932	0.1384391	0.27220135	2.3579931	20	—	—
391462 2007 GB_{57}	17.6	X	225.13270	188.90567	65.20631	8.02724	0.0896683	0.28001774	2.3139059	20	—	—
391463 2007 GM_{60}	18.1	X	287.62280	118.30309	26.18041	9.71201	0.1800760	0.27450046	2.3448082	20	—	—
391464 2007 GN_{70}	18.2	X	202.59367	249.70088	27.18313	3.06083	0.1180510	0.28178530	2.3042194	20	—	—
391465 2007 GF_{71}	17.5	X	291.77108	333.30981	185.33450	6.57568	0.0391949	0.27859111	2.3217986	20	—	—
391466 2007 GW_{73}	17.3	X	171.91091	111.63802	142.19248	4.27479	0.0400573	0.26656319	2.3911267	20	—	—
391467 2007 GJ_{76}	17.7	X	298.17308	348.01273	195.18224	5.88231	0.0499159	0.28635047	2.2796637	20	—	—
391468 2007 HP_{23}	17.8	X	274.30093	302.33958	204.49521	4.80489	0.1349024	0.27057024	2.3674602	20	—	—
391469 2007 HA_{25}	18.2	X	257.18230	72.97700	125.16725	2.20256	0.1284988	0.27496450	2.3421694	20	—	—
391470 2007 HK_{27}	17.2	X	119.78491	262.06892	38.13574	8.40183	0.1068971	0.26409821	2.4059822	20	—	—
391471 2007 HA_{28}	18.0	X	202.15651	115.95430	115.38681	2.24272	0.1357597	0.26860388	2.3790005	20	—	—
391472 2007 HB_{29}	17.6	X	24.39099	68.26199	8.98469	3.27739	0.1358081	0.28581338	2.2825187	20	—	—
391473 2007 HE_{29}	17.5	X	308.71968	84.81673	188.64239	7.34788	0.1182732	0.22753278	2.6572968	20	4 7.0	20.8
391474 2007 HN_{29}	15.6	X	224.95151	270.67734	28.61501	11.69536	0.2130429	0.21268329	2.7795882	20	2 6.6	20.5
391475 2007 HH_{30}	17.1	X	191.26528	218.27786	34.36809	6.01858	0.0622701	0.27453677	2.3446015	20	—	—
391476 2007 HU_{38}	17.7	X	215.74392	276.41359	17.78089	6.68557	0.2392126	0.28597950	2.2816347	20	1 14.0	21.6
391477 2007 HF_{61}	17.8	X	269.70176	43.30625	195.03029	10.05596	0.1587329	0.28438275	2.2901673	20	—	—
391478 2007 HH_{66}	17.2	X	140.71063	178.33208	100.69092	6.05267	0.1558796	0.26296355	2.4128983	20	—	—
391479 2007 HK_{69}	17.7	X	204.59370	66.36237	143.90608	4.84293	0.0993879	0.26633912	2.3924677	20	—	—
391480 2007 HK_{78}	17.5	X	308.42324	103.20810	112.41910	7.01003	0.0547222	0.29128747	2.2538319	20	1 20.5	20.2
391481 2007 HK_{85}	17.5	X	252.79845	154.06268	73.36789	8.05155	0.1814372	0.27931085	2.3178083	20	—	—
391482 2007 HG_{96}	17.2	X	211.73346	234.76095	30.29270	7.17148	0.0767131	0.27855100	2.3220215	20	—	—
391483 2007 JY	17.5	X	236.55865	74.66648	182.66525	2.98278	0.1848340	0.28138949	2.3063796	20	—	—
391484 2007 JQ_{11}	16.8	X	344.73062	40.27994	45.11757	22.70456	0.1215197	0.27009277	2.3702495	20	—	—
391485 2007 JV_{13}	18.0	X	158.88952	253.83381	51.60117	3.24230	0.1784403	0.27139505	2.3626611	20	—	—
391486 2007 JB_{17}	18.1	X	226.80426	63.45453	155.36386	2.54225	0.1669493	0.27139598	2.3626557	20	—	—
391487 2007 JK_{25}	17.3	X	265.77335	56.37389	95.66201	7.39708	0.0475280	0.26589899	2.3951070	20	—	—
391488 2007 JE_{35}	17.7	X	189.89277	231.18229	38.44698	5.88208	0.2151568	0.27158823	2.3615406	20	—	—
391489 2007 LG_{3}	17.0	X	229.22803	185.17107	81.24202	8.21687	0.1838839	0.27882780	2.3204845	20	—	—
391490 2007 LZ_{3}	17.2	X	270.70855	94.71188	96.70553	8.99980	0.0165211	0.27312833	2.3526549	20	—	—
391491 2007 LR_{26}	17.4	X	172.08060	53.73419	224.67174	5.32457	0.2333584	0.26362072	2.4088866	20	—	—
391492 2007 MS_{20}	17.3	X	132.15050	282.44874	349.97045	4.50840	0.1812111	0.25385102	2.4703023	20	12 28.4	21.3
391493 2007 OJ_{7}	16.4	X	28.69838	311.92627	350.81515	29.88147	0.2187630	0.23688604	2.5868807	20	10 8.7	19.9
391494 2007 OF_{10}	16.8	X	239.58134	161.85752	327.90861	6.90169	0.0084351	0.23683845	2.5872272	20	11 6.1	20.4
391495 2007 OV_{10}	17.6	X	195.14074	319.42623	309.74561	4.08198	0.2078046	0.26455906	2.4031873	20	—	—
391496 2007 PG_{9}	16.3	X	131.88917	292.12203	27.48908	11.40670	0.2671852	0.25815192	2.4427882	20	—	—
391497 2007 PP_{13}	16.1	X	69.14525	159.44860	118.45676	15.45523	0.0980044	0.23891275	2.5722302	20	11 2.2	20.0
391498 2007 PQ_{14}	16.7	X	135.97650	187.68855	88.37488	5.39866	0.1753114	0.25356697	2.4721468	20	—	—
391499 2007 PG_{21}	16.0	X	47.74851	161.82643	161.66705	29.42891	0.1014242	0.23807739	2.5782436	20	12 2.9	20.2
391500 2007 PF_{32}	16.5	X	278.24961	292.04796	90.38891	5.03362	0.3065450	0.21916393	2.7245199	20	6 21.5	20.1
391501 2007 PV_{34}	16.5	X	330.87305	9.24402	326.63469	6.92550	0.2091323	0.22549772	2.6732605	20	8 7.5	18.8
391502 2007 PL_{43}	16.6	X	310.31668	242.01552	161.59761	12.60774	0.1775225	0.23024321	2.6364012	20	10 11.9	19.2
391503 2007 PU_{45}	16.9	X	91.62490	133.71060	142.73365	8.39837	0.1922055	0.24263172	2.5458784	20	11 28.8	21.1
391504 2007 RP_{2}	16.6	X	325.38492	38.65643	321.29211	13.06780	0.2313481	0.22663579	2.6643037	20	8 27.7	18.9
391505 2007 RC_{8}	17.7	X	110.32318	192.56015	359.34566	19.08047	0.0339129	0.37451245	1.9061565	20	9 7.2	19.6
391506 2007 RW_{9}	18.1	X	267.57355	209.97362	171.93282	23.54350	0.0642145	0.37223195	1.9139340	20	7 23.2	20.4
391507 2007 RP_{13}	16.6	X	321.06807	39.52131	321.56362	8.56253	0.1566410	0.22541902	2.6738827	20	8 27.0	19.4
391508 2007 RV_{17}	19.1	X	24.61485	321.76562	146.78158	11.10825	0.6851733	0.32066241	2.1139953	20	—	—
391509 2007 RS_{56}	16.9	X	205.00620	101.78994	338.47219	8.27649	0.1335853	0.21187235	2.7866763	20	7 9.4	21.4
391510 2007 RV_{61}	17.2	X	211.21780	181.67447	355.91232	2.02108	0.1308811	0.24339938	2.5405227	20	11 18.8	20.7
391511 2007 RK_{69}	17.3	X	48.34066	350.61357	2.78931	9.14788	0.0407211	0.24376698	2.5379680	20	12 30.6	20.8
391512 2007 RJ_{96}	16.6	X	192.82619	55.38857	21.39950	14.57841	0.2077957	0.20595883	2.8397652	20	6 17.9	21.7
391513 2007 RG_{97}	16.9	X	76.53651	275.08885	49.28184	9.20663	0.1902350	0.23723606	2.5843356	20	—	—
391514 2007 RR_{116}	17.0	X	284.44580	196.05212	202.36838	5.06670	0.0835726	0.22246901	2.6974684	20	8 25.3	20.5
391515 2007 RY_{123}	17.0	X	58.59482	63.61394	249.52519	6.02600	0.2094074	0.23870018	2.5737571	20	12 11.2	20.8
391516 2007 RG_{137}	16.5	X	9.69075	138.56686	168.26199	11.01879	0.0692430	0.22576576	2.6711442	20	9 4.9	19.8
391517 2007 RP_{163}	16.8	X	240.03125	92.65396	293.69849	4.90734	0.0803186	0.21384594	2.7695043	20	6 11.8	20.7
391518 2007 RG_{164}	17.3	X	57.13678	24.15639	273.50234	3.14062	0.0889815	0.23577878	2.5949734	20	11 3.1	20.8
391519 2007 RX_{171}	17.1	X	249.87241	302.01002	98.64975	3.33606	0.1776490	0.21580172	2.7527458	20	6 30.2	20.9
391520 2007 RZ_{177}	17.0	X	165.35687	76.86745	146.24306	6.64961	0.0758912	0.23868998	2.5738304	20	12 1.7	20.8

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	m		°	°	°	°		°				
391521 2007 RD_{178}	16.4	X	266.44279	351.16333	53.87948	5.81806	0.1156186	0.21903961	2.7255507	20	8 7.2	20.1
391522 2007 RX_{179}	16.0	X	67.24071	263.90914	43.47114	15.31672	0.0923600	0.22839352	2.6506163	20	11 25.3	19.9
391523 2007 RH_{192}	17.2	X	173.64806	94.73464	212.08996	12.00244	0.3069151	0.26545084	2.3978020	20	—	—
391524 2007 RM_{199}	17.3	X	167.54127	140.87843	306.18520	2.04774	0.0853228	0.20638806	2.8358266	20	6 8.5	21.6
391525 2007 RM_{208}	17.4	X	117.95748	266.44739	61.69838	2.53005	0.1965262	0.25338122	2.4733549	20	—	—
391526 2007 RV_{215}	17.0	X	246.70391	177.52196	192.33439	9.12966	0.2084827	0.20941695	2.8084163	20	5 16.5	21.5
391527 2007 RA_{222}	17.6	X	344.16018	320.38665	8.32731	23.42816	0.0464684	0.37614444	1.9006389	20	9 24.5	19.0
391528 2007 RF_{233}	16.7	X	331.05987	198.35470	152.38867	12.60994	0.1949067	0.22525120	2.6752106	20	9 1.6	18.9
391529 2007 RK_{269}	16.5	X	131.60069	209.24738	357.85144	11.16077	0.2041659	0.22870708	2.6481930	20	10 5.5	21.0
391530 2007 RO_{279}	16.2	X	246.45124	326.04892	36.36127	14.44280	0.2731480	0.20989810	2.8041229	20	4 29.5	21.0
391531 2007 RV_{281}	18.0	X	352.41936	341.84915	20.93971	20.81746	0.1031989	0.39080572	1.8528010	20	12 11.4	20.1
391532 2007 RK_{282}	16.1	X	4.50786	10.78179	20.33441	29.59177	0.1015107	0.24316141	2.5421799	20	12 28.9	20.0
391533 2007 RJ_{297}	16.9	X	137.11806	217.28592	26.81579	12.62771	0.1258941	0.23845873	2.5754941	20	11 23.3	21.1
391534 2007 RJ_{299}	16.9	X	70.53593	300.98939	5.21936	12.96758	0.1317273	0.23746595	2.5826675	20	12 3.6	20.9
391535 2007 RY_{300}	17.0	X	64.63079	31.86552	59.57008	1.07146	0.1404811	0.18374849	3.0642217	20	2 20.6	20.9
391536 2007 RC_{309}	14.1	X	256.64875	296.88632	173.78709	8.88660	0.0458753	0.08113866	5.2842597	20	10 6.6	21.1
391537 2007 RP_{309}	17.6	X	282.21966	193.37346	168.99025	23.14708	0.0267057	0.37226848	1.9138088	20	7 22.9	19.9
391538 2007 RN_{321}	16.6	X	268.87659	35.14303	339.15896	8.61664	0.1070288	0.21556399	2.7547694	20	6 29.6	20.5
391539 2007 RT_{323}	17.1	X	5.72917	266.90174	31.75038	3.35381	0.0774337	0.21860326	2.7291765	20	8 19.9	20.3
391540 2007 RT_{324}	16.5	X	146.18794	167.54224	1.28619	10.25020	0.0826644	0.22284270	2.6944519	20	9 2.2	20.5
391541 2007 SB_{14}	16.7	X	273.90721	196.55593	204.75307	11.95475	0.1541013	0.21882980	2.7272926	20	7 31.3	20.5
391542 2007 SA_{19}	18.0	X	215.24982	79.62830	11.68282	20.13888	0.1078335	0.36937196	1.9238008	20	8 29.5	20.5
391543 2007 SQ_{19}	16.2	X	123.51383	217.16616	26.73403	15.02227	0.0950807	0.23127623	2.6285448	20	11 7.8	20.2
391544 2007 SU_{19}	16.6	X	309.16512	323.34710	31.41136	6.59535	0.0706306	0.21698027	2.7427689	20	8 8.4	20.1
391545 2007 TB_{1}	17.3	X	223.37347	34.56441	30.55116	20.34393	0.1122177	0.37172600	1.9156703	20	7 26.4	20.1
391546 2007 TL_{7}	16.8	X	138.20771	181.22065	217.82701	3.63258	0.1481972	0.18620386	3.0372248	20	3 14.9	21.5
391547 2007 TR_{13}	16.2	X	31.47313	314.82452	53.10921	14.60364	0.1857114	0.23420084	2.6066161	20	—	—
391548 2007 TD_{27}	16.5	X	184.21450	161.39765	199.14256	5.84646	0.0811700	0.19199771	2.9758110	20	3 10.0	21.1
391549 2007 TR_{33}	17.4	X	73.05997	263.44596	37.62718	4.59819	0.2477199	0.23612177	2.5924598	20	12 12.9	21.6
391550 2007 TT_{48}	16.8	X	214.84574	153.59330	226.72693	5.09382	0.0894555	0.20143209	2.8821524	20	5 5.8	21.1
391551 2007 TR_{49}	17.2	X	167.67022	103.53495	339.68711	1.57363	0.1931200	0.20038340	2.8921994	20	6 5.9	22.1
391552 2007 TA_{56}	17.3	X	38.45072	332.37270	344.43001	1.14402	0.1831002	0.23019347	2.6367810	20	11 17.5	20.6
391553 2007 TT_{59}	16.5	X	167.69909	127.77631	1.35401	16.16305	0.0694833	0.21920385	2.7241892	20	8 9.3	20.8
391554 2007 TW_{60}	16.9	X	190.70162	1.23624	36.01124	7.21985	0.2259955	0.19848334	2.9106278	20	4 30.2	22.0
391555 2007 TZ_{61}	17.2	X	11.21884	317.46361	20.49429	2.76713	0.1022718	0.22719430	2.6599354	20	10 24.5	20.4
391556 2007 TU_{65}	17.8	X	41.61620	252.56685	15.04815	20.14206	0.0395620	0.37405037	1.9077259	20	9 23.6	19.5
391557 2007 TQ_{71}	17.3	X	50.00059	346.07965	336.29767	3.85837	0.2057631	0.23725039	2.5842316	20	12 12.6	21.0
391558 2007 TF_{81}	17.0	X	11.20174	262.09102	31.55974	3.44119	0.0768186	0.21858912	2.7292942	20	8 21.7	20.2
391559 2007 TX_{98}	17.0	X	126.45791	125.22955	38.48954	5.16266	0.0237105	0.21324100	2.7747397	20	7 28.6	20.9
391560 2007 TM_{112}	17.0	X	195.83241	79.80892	213.91003	21.18911	0.2444241	0.26538570	2.3981943	20	—	—
391561 2007 TH_{129}	16.8	X	116.51213	264.04974	38.08097	16.13695	0.1721638	0.24233844	2.5479321	20	—	—
391562 2007 TB_{134}	17.1	X	267.78507	288.81048	50.81582	2.79498	0.0777893	0.20278210	2.8693463	20	5 16.3	21.1
391563 2007 TN_{134}	16.5	X	216.46339	332.49461	39.19330	12.49216	0.0488572	0.19770825	2.9182301	20	4 29.4	20.8
391564 2007 TT_{154}	16.2	X	313.21458	192.69734	212.32905	14.22234	0.1080662	0.22798152	2.6538088	20	10 19.9	19.0
391565 2007 TM_{162}	17.1	X	354.85368	348.76934	17.39345	5.72146	0.1222369	0.23012483	2.6373052	20	11 7.7	19.9
391566 2007 TH_{191}	17.4	X	258.05014	199.93792	204.23266	3.49313	0.1810466	0.21883049	2.7272869	20	7 13.3	21.3
391567 2007 TZ_{200}	17.2	X	65.51775	284.99069	18.09488	2.19835	0.0584772	0.23068405	2.6330413	20	11 15.7	20.9
391568 2007 TY_{203}	16.7	X	354.76716	261.73562	53.53832	10.57253	0.0751551	0.21557503	2.7546753	20	8 29.4	20.2
391569 2007 TJ_{218}	16.7	X	283.37564	147.10050	232.58169	5.97942	0.1297945	0.21308206	2.7761193	20	7 20.8	20.3
391570 2007 TS_{220}	16.7	X	268.45538	89.13405	290.48287	2.93679	0.1126065	0.21009217	2.8023958	20	7 4.2	20.4
391571 2007 TW_{228}	16.3	X	79.99811	186.65129	216.84327	9.71155	0.0551128	0.17477079	3.1682794	20	1 2.9	20.7
391572 2007 TO_{233}	17.0	X	257.88173	265.59256	82.27881	3.26422	0.0824363	0.20125417	2.8838508	20	5 14.7	21.0
391573 2007 TA_{236}	16.3	X	13.31279	253.87651	38.19532	10.89449	0.1778762	0.22089635	2.7102562	20	9 8.8	19.4
391574 2007 TZ_{240}	17.1	X	2.55795	180.14826	182.31625	11.60770	0.0993342	0.23510822	2.5999052	20	11 17.4	20.3
391575 2007 TL_{254}	16.4	X	113.87885	111.33393	94.95361	4.38124	0.0290180	0.21727084	2.7403230	20	9 8.4	20.2
391576 2007 TW_{259}	18.0	X	51.56778	49.47153	277.68758	0.99994	0.1357166	0.23620215	2.5918716	20	12 11.4	21.5
391577 2007 TW_{268}	17.1	X	132.38075	224.10855	33.46130	5.03846	0.1168497	0.23739475	2.5831838	20	12 7.0	21.0
391578 2007 TF_{322}	16.9	X	308.63631	336.29679	45.54773	6.46581	0.1728882	0.22585292	2.6704569	20	9 5.7	19.7
391579 2007 TG_{322}	16.8	X	87.64456	207.84028	43.45464	13.84274	0.1219622	0.22591938	2.6699332	20	10 17.5	20.8
391580 2007 TF_{329}	16.9	X	254.38788	133.03518	265.18629	4.26650	0.0471479	0.21148981	2.7900357	20	7 19.8	20.8
391581 2007 TB_{342}	16.8	X	266.83075	254.69019	200.79747	21.65756	0.0649832	0.22619640	2.6677528	20	10 21.9	20.1
391582 2007 TU_{362}	16.5	X	194.00503	51.36625	68.72245	5.47741	0.0255917	0.21198756	2.7856666	20	8 26.2	20.4
391583 2007 TY_{362}	16.3	X	94.98758	244.74940	227.15852	9.62356	0.1145276	0.18682084	3.0305341	20	4 21.9	20.5
391584 2007 TB_{366}	17.2	X	333.71384	237.69492	132.47907	2.75464	0.0999487	0.22779731	2.6552392	20	10 8.5	20.0
391585 2007 TS_{374}	17.1	X	329.19488	102.57297	213.07822	5.88094	0.0983660	0.21613612	2.7499058	20	7 9.9	20.5
391586 2007 TA_{381}	16.3	X	61.32995	245.10926	42.22171	15.07408	0.0193670	0.22504239	2.6768652	20	10 18.3	19.9
391587 2007 TL_{387}	17.0	X	317.55933	306.53318	29.41464	6.44280	0.0578840	0.21521354	2.7577591	20	7 26.5	20.5
391588 2007 TC_{405}	17.1	X	220.44620	55.12168	18.17224	4.05201	0.0800441	0.20884162	2.8135719	20	7 21.2	21.2
391589 2007 TP_{425}	17.1	X	299.68677	282.15719	87.59225	3.73129	0.0241136	0.21465211	2.7625657	20	8 18.4	20.8
391590 2007 TR_{428}	16.7	X	285.48503	8.92675	20.74395	6.64256	0.0572991	0.21626295	2.7488305	20	8 22.7	20.3
391591 2007 TK_{434}	16.7	X	282.99746	80.76122	313.55353	5.20671	0.0198722	0.21611718	2.7500665	20	8 26.6	20.4
391592 2007 TT_{435}	16.4	X	280.24685	135.38279	246.38337	4.33858	0.0415550	0.21092082	2.7950511	20	8 1.7	20.1
391593 2007 TW_{444}	16.2	X	305.26047	320.45206	60.94601	6.93284	0.0563116	0.22270617	2.6955531	20	9 11.7	19.6
391594 2007 UK_{1}	16.8	X	303.53219	155.61234	206.88427	12.23076	0.1474364	0.21748914	2.7384890	20	7 24.4	20.3
391595 2007 UR_{2}	19.5	X	243.12482	356.22973	40.69385	8.26224	0.0609823	0.52308927	1.5255233	20	7 28.7	20.0
391596 2007 UQ_{7}	17.2	X	327.97623	85.78615	249.41164	19.66799	0.0608958	0.37385908	1.9083767	20	8 17.1	19.5
391597 2007 UJ_{13}	16.6	X	294.87499	313.06713	55.90693	5.13536	0.0646045	0.21372660	2.7705351	20	8 5.8	20.2
391598 2007 UX_{26}	16.5	X	271.81282	6.99651	19.04036	13.22062	0.1635215	0.21808830	2.7334710	20	7 12.5	20.4
391599 2007 UD_{29}	16.5	X	129.16148	259.11969	39.67194	9.10326	0.3384326	0.25471582	2.4647078	20	—	—
391600 2007 UY_{30}	16.9	X	91.97006	238.49782	64.44880	8.67006	0.2928811	0.24301328	2.5432129	20	—	—

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
	m		°	°	°	°		°				
391601 2007 UJ_{39}	17.2	X	16.57514	125.32429	224.96270	7.72362	0.2056480	0.23182581	2.6243889	20	12 5.6	20.4
391602 2007 UC_{56}	17.0	X	198.70842	50.36548	51.86623	4.74384	0.0615539	0.21034002	2.8001939	20	8 4.8	21.1
391603 2007 UR_{77}	16.9	X	149.23976	268.74758	241.37344	4.31928	0.0527687	0.21435262	2.7651383	20	8 6.4	21.0
391604 2007 UA_{78}	17.2	X	141.55369	180.40342	10.39404	6.92705	0.0531846	0.22237996	2.6981885	20	9 22.6	21.0
391605 2007 UN_{92}	17.2	X	181.81529	56.79679	24.72112	6.04971	0.0469820	0.20398315	2.8580722	20	6 17.1	21.4
391606 2007 UF_{113}	16.7	X	45.53837	220.62278	96.19878	6.25607	0.0575827	0.22383331	2.6864962	20	11 9.1	20.3
391607 2007 UP_{126}	16.1	X	159.50328	269.69615	245.49321	5.87430	0.0867842	0.21088152	2.7953983	20	8 23.7	20.4
391608 2007 UE_{129}	16.5	X	205.34055	212.39860	261.09784	3.96811	0.0597021	0.21269169	2.7795151	20	8 23.9	20.5
391609 2007 UT_{130}	16.7	X	357.51329	296.01981	69.64595	6.99128	0.0548614	0.22533668	2.6745340	20	11 6.1	20.1
391610 2007 UU_{134}	16.6	X	72.20758	205.75771	71.76721	7.86061	0.1008316	0.22211827	2.7003073	20	10 29.2	20.4
391611 2007 UL_{140}	15.9	X	201.29493	297.09358	80.27676	13.61052	0.1475419	0.19683655	2.9268394	20	4 22.4	20.8
391612 2007 UQ_{141}	16.3	X	133.39240	231.88754	27.87970	13.65467	0.1398726	0.23366286	2.6106156	20	12 8.4	20.6
391613 2007 VU_{3}	16.6	X	32.61773	47.12330	265.80901	8.05224	0.1173016	0.23011917	2.6373485	20	10 22.9	20.0
391614 2007 VO_{21}	17.5	X	90.90511	314.41654	12.43373	4.64904	0.1909437	0.24486798	2.5303546	20	—	—
391615 2007 VS_{22}	17.5	X	203.00162	124.15391	340.70518	3.44702	0.0598307	0.21544485	2.7557848	20	8 12.7	21.4
391616 2007 VK_{23}	15.8	X	146.24068	309.04337	106.15021	13.71610	0.1963634	0.19151605	2.9807984	20	4 21.6	20.9
391617 2007 VP_{48}	16.3	X	298.61789	285.66125	5.30508	5.55285	0.0410721	0.19649175	2.9302623	20	4 27.5	20.3
391618 2007 VD_{51}	17.1	X	52.83240	0.56982	311.58512	3.21099	0.2299042	0.23119831	2.6291354	20	12 4.7	21.0
391619 2007 VT_{52}	16.5	X	172.04558	97.81770	67.74623	12.77124	0.0574151	0.21751343	2.7382851	20	9 30.9	20.7
391620 2007 VJ_{53}	16.8	X	247.65586	340.12456	87.65191	5.38861	0.0459151	0.21332349	2.7740243	20	8 22.6	20.6
391621 2007 VE_{54}	16.4	X	36.61770	136.75836	217.46881	12.91380	0.1734281	0.23365205	2.6106961	20	12 30.6	20.2
391622 2007 VU_{65}	17.3	X	69.80770	273.73348	29.78926	7.55965	0.1972975	0.23845932	2.5754899	20	12 8.2	21.3
391623 2007 VV_{66}	16.7	X	261.55523	15.61949	28.06149	4.64983	0.0725636	0.21097912	2.7945361	20	8 4.2	20.5
391624 2007 VZ_{101}	17.1	X	296.25410	282.89115	75.58072	23.35480	0.0963135	0.36254823	1.9478650	20	8 9.2	19.3
391625 2007 VY_{108}	17.4	X	350.45719	83.47094	242.40585	3.46936	0.0898793	0.21587650	2.7521101	20	8 29.8	20.6
391626 2007 VJ_{109}	17.2	X	330.02302	157.77395	232.59406	1.39737	0.0656175	0.22396812	2.6854181	20	10 27.5	20.5
391627 2007 VK_{114}	16.5	X	144.55929	359.35941	75.04623	12.50009	0.0360999	0.19056766	2.9906798	20	4 29.0	20.9
391628 2007 VU_{118}	16.6	X	350.38503	277.83167	88.84858	6.89352	0.0427992	0.22235058	2.6984261	20	10 27.9	20.1
391629 2007 VX_{133}	16.5	X	132.74157	60.21842	10.63464	9.72815	0.0999128	0.18946971	3.0022224	20	4 11.9	20.9
391630 2007 VO_{141}	16.5	X	98.78238	225.72230	62.64803	13.17419	0.1744061	0.23318866	2.6141536	20	12 13.9	20.8
391631 2007 VT_{141}	15.8	X	87.91571	124.94289	63.98627	15.84905	0.0852029	0.20313197	2.8660507	20	7 20.7	20.1
391632 2007 VR_{152}	16.6	X	18.73767	243.68655	77.84698	12.17700	0.0624048	0.22086294	2.7105296	20	10 14.1	20.2
391633 2007 VG_{160}	16.8	X	94.95112	210.48292	71.30292	13.67287	0.2748681	0.23311395	2.6147121	20	12 9.0	21.2
391634 2007 VS_{178}	16.6	X	281.67181	68.87736	50.53276	13.93961	0.2202718	0.22999643	2.6382867	20	11 23.6	19.3
391635 2007 VV_{208}	17.6	X	165.92319	60.47296	65.32594	23.29330	0.0713715	0.36534450	1.9379133	20	8 18.8	20.5
391636 2007 VJ_{220}	16.8	X	224.23974	228.83424	192.16786	1.53480	0.0544296	0.20356737	2.8619625	20	7 10.7	20.7
391637 2007 VT_{232}	17.6	X	311.77129	275.12813	88.94923	1.90552	0.0859100	0.21457656	2.7632141	20	8 21.5	20.8
391638 2007 VC_{247}	16.9	X	58.09137	270.14412	31.39003	16.80232	0.2459452	0.23010704	2.6374411	20	11 25.4	21.1
391639 2007 VZ_{254}	16.2	X	278.49230	265.34232	193.88519	27.50139	0.2623645	0.23109622	2.6299096	20	10 15.3	19.0
391640 2007 VG_{257}	16.5	X	79.79860	195.71227	80.60817	15.23792	0.0839080	0.22519634	2.6756450	20	11 6.6	20.5
391641 2007 VX_{266}	17.4	X	214.65615	226.26665	201.60833	23.58733	0.1783452	0.36239192	1.9484251	20	6 29.9	20.7
391642 2007 VF_{267}	17.4	X	20.75199	123.68600	210.63554	20.64215	0.1254290	0.38201095	1.8811302	20	12 15.6	19.7
391643 2007 VO_{270}	16.9	X	77.08101	261.42179	46.90755	11.90779	0.1941521	0.23384482	2.6092612	20	12 19.7	21.1
391644 2007 VF_{282}	16.1	X	88.62421	37.31875	238.33909	13.06463	0.0775657	0.22520351	2.6755882	20	11 9.6	19.9
391645 2007 VR_{282}	17.2	X	109.38571	313.28915	198.17684	1.24726	0.0667709	0.19883180	2.9072262	20	6 23.6	21.3
391646 2007 VY_{289}	15.8	X	63.64761	294.09447	141.91900	26.61824	0.3683460	0.17438917	3.1728999	20	3 9.3	19.7
391647 2007 VU_{290}	16.8	X	163.00497	262.52999	135.61645	0.52653	0.1518377	0.18767579	3.0213235	20	4 7.7	21.7
391648 2007 VA_{293}	17.2	X	265.36936	230.64873	168.25869	6.67771	0.0206723	0.21185227	2.7868524	20	8 8.0	21.1
391649 2007 VB_{306}	15.8	X	159.53800	316.68876	71.34557	11.06286	0.1039675	0.18335285	3.0686282	20	3 26.7	20.7
391650 2007 VQ_{310}	16.4	X	126.92978	325.03670	101.06503	2.61511	0.1764180	0.17695882	3.1421089	20	4 10.9	21.4
391651 2007 VQ_{314}	16.3	X	8.94202	235.04411	99.54834	7.21724	0.0667693	0.22257145	2.6966406	20	10 15.5	19.7
391652 2007 VY_{319}	16.3	X	37.01936	323.13587	336.87996	7.89039	0.0290675	0.22373356	2.6872947	20	9 27.9	20.0
391653 2007 VZ_{329}	15.5	X	295.08145	319.33064	288.17440	9.42513	0.0824597	0.17422183	3.1749314	20	2 22.3	20.0
391654 2007 WA_{21}	16.0	X	65.18879	195.28832	302.43595	10.18797	0.1666689	0.17473264	3.1687406	20	4 19.6	20.4
391655 2007 WO_{21}	16.3	X	351.52595	47.30152	254.32744	11.30165	0.1968725	0.21522953	2.7576225	20	7 27.7	19.1
391656 2007 WE_{35}	17.6	X	239.06541	75.49708	16.98615	4.27463	0.0259846	0.21468484	2.7622848	20	9 15.1	21.4
391657 2007 WX_{57}	16.7	X	234.50446	332.08627	59.25818	2.97301	0.0572157	0.19955967	2.9001527	20	6 14.2	20.8
391658 2007 WB_{59}	16.0	X	8.01216	83.84876	129.79817	10.75387	0.1625788	0.17440445	3.1727146	20	5 1.4	19.8
391659 2007 WC_{61}	15.0	X	184.20564	220.44839	77.44330	19.14037	0.0951740	0.17047034	3.2213420	20	—	—
391660 2007 XG_{20}	16.0	X	48.49431	253.70794	61.39143	15.60782	0.1984918	0.22729879	2.6591201	20	11 28.7	19.6
391661 2007 XM_{27}	16.1	X	86.62083	171.77448	81.88298	15.18338	0.0863859	0.21399150	2.7682482	20	10 18.1	20.4
391662 2007 XP_{45}	16.7	X	203.36674	316.50010	116.32293	2.99938	0.0511696	0.19946840	2.9010373	20	7 1.3	20.8
391663 2007 XB_{57}	16.6	X	84.79284	238.06584	90.26588	8.89905	0.2133533	0.23899366	2.5716496	20	—	—
391664 2007 YG_{22}	15.6	X	276.54825	186.89148	106.56992	17.93015	0.1012943	0.18258113	3.0772689	20	4 5.3	20.4
391665 2007 YA_{26}	16.5	X	124.56972	127.17611	324.68186	10.39405	0.1752147	0.18337419	3.0683901	20	5 3.9	21.5
391666 2007 YD_{26}	17.1	X	209.11103	329.51364	79.53443	10.65409	0.0527117	0.19225954	2.9731086	20	6 7.3	21.5
391667 2007 YD_{28}	16.3	X	20.63134	151.76464	85.52697	14.49239	0.1975186	0.18683794	3.0303492	20	6 26.5	19.5
391668 2007 YD_{33}	16.9	X	226.67274	68.02193	337.84306	1.32120	0.0876078	0.20139578	2.8824988	20	6 20.6	21.0
391669 2007 YO_{50}	15.9	X	139.87043	113.98386	286.65237	9.29032	0.1389798	0.17760152	3.1345240	20	3 14.7	20.9
391670 2007 YH_{53}	16.4	X	122.68763	138.67803	299.81590	7.06881	0.1866116	0.17962229	3.1109706	20	4 17.9	21.4
391671 2007 YJ_{61}	17.6	X	247.87672	276.02611	123.76287	24.46596	0.1145476	0.35871806	1.9617059	20	7 12.8	19.6
391672 2008 AF_{5}	16.2	X	139.04015	311.82210	126.03364	16.93836	0.1801706	0.18192962	3.0846113	20	5 11.4	21.5
391673 2008 AC_{11}	16.3	X	165.06797	311.76803	130.30264	12.51807	0.0699306	0.18821009	3.0156026	20	6 1.8	21.0
391674 2008 AP_{11}	15.9	X	67.45995	224.49202	284.75968	8.81656	0.0074115	0.18055898	3.1002020	20	4 15.9	20.4
391675 2008 AZ_{14}	16.4	X	66.52727	348.74412	141.29019	5.71670	0.0930432	0.17465983	3.1696212	20	4 8.4	20.7
391676 2008 AV_{17}	16.5	X	85.85248	204.81341	297.42130	6.21450	0.1016816	0.18069261	3.0986732	20	5 16.7	20.9
391677 2008 AT_{21}	15.7	X	27.37688	52.44944	126.49300	12.05964	0.0230737	0.17407343	3.1767355	20	4 12.8	20.3
391678 2008 AF_{26}	15.9	X	28.76491	218.61855	318.58703	26.45089	0.1346098	0.17286728	3.1914951	20	3 27.6	20.4
391679 2008 AF_{28}	16.1	X	357.94925	103.25556	151.15623	13.84612	0.2638811	0.17412545	3.1761028	20	6 4.6	19.3
391680 2008 AK_{32}	15.9	X	62.99710	234.27668	278.13253	7.30823	0.0906912	0.18027987	3.1034010	20	4 26.5	20.1

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	m		°	°	°	°		°				
391681 2008 AK_{41}	16.0	X	156.38834	324.66721	120.91918	14.47703	0.0727615	0.18436552	3.0573811	20	5 28.7	20.8
391682 2008 AC_{43}	16.4	X	99.53287	207.32628	274.98976	8.81946	0.1936150	0.18126476	3.0921494	20	5 20.9	21.2
391683 2008 AC_{60}	16.7	X	97.92447	198.55087	276.78912	2.86649	0.1348370	0.17943026	3.1131897	20	5 2.9	21.1
391684 2008 AF_{62}	16.1	X	68.71134	244.81302	309.15687	7.21110	0.1087377	0.18647652	3.0342634	20	7 3.6	20.2
391685 2008 AG_{64}	16.5	X	75.09538	14.77635	171.31385	4.37894	0.1237286	0.18625937	3.0366213	20	7 2.9	20.7
391686 2008 AX_{67}	16.9	X	71.40702	17.12795	128.40709	3.09881	0.1747568	0.17723579	3.1388346	20	5 15.5	21.1
391687 2008 AH_{89}	16.6	X	40.13938	339.32229	164.47447	2.78865	0.1082805	0.17348188	3.1839529	20	3 18.3	20.6
391688 2008 AJ_{90}	16.9	X	183.91464	311.36603	127.43760	7.77318	0.0980951	0.19284262	2.9671127	20	6 16.0	21.5
391689 2008 AF_{94}	16.3	X	347.22949	209.75665	116.53783	9.89408	0.1692502	0.20341391	2.8634017	20	8 29.5	19.3
391690 2008 AJ_{94}	16.6	X	17.67486	158.88375	55.15644	1.65251	0.1055286	0.18082113	3.0972049	20	5 12.3	20.2
391691 2008 AJ_{103}	16.5	X	85.87293	14.70878	105.83684	6.09209	0.2041135	0.17902338	3.1179050	20	5 7.7	21.0
391692 2008 AQ_{104}	16.6	X	70.24793	358.60735	120.03150	3.73060	0.2502350	0.17536715	3.1610926	20	4 21.9	20.7
391693 2008 AA_{123}	16.4	X	350.05555	152.07891	117.35540	9.98713	0.0560543	0.18797257	3.0181424	20	6 12.5	20.3
391694 2008 AD_{127}	16.5	X	77.78281	44.27989	84.65591	6.58900	0.1040710	0.17831297	3.1261808	20	4 23.9	20.8
391695 2008 AG_{127}	16.8	X	80.93238	80.48404	22.36169	4.74206	0.1872195	0.17310269	3.1886009	20	4 5.5	21.1
391696 2008 AF_{129}	16.1	X	208.36742	291.77819	92.67350	11.01335	0.1108855	0.18752129	3.0229827	20	5 7.2	20.9
391697 2008 AD_{135}	16.5	X	126.88175	104.93234	350.68980	11.16600	0.2396244	0.18481627	3.0524080	20	5 16.7	21.7
391698 2008 AA_{136}	16.4	X	318.91722	306.37221	329.68406	9.66088	0.1433555	0.17820871	3.1274000	20	4 20.2	20.6
391699 2008 AG_{137}	16.1	X	153.81875	264.64499	161.11872	16.57405	0.1832368	0.18365453	3.0652669	20	5 8.0	21.4
391700 2008 BU_{11}	16.7	X	184.45000	23.70004	34.14481	10.07321	0.1067153	0.18990801	2.9976012	20	5 19.1	21.5
391701 2008 BR_{15}	16.0	X	48.92060	211.79036	302.51503	5.21270	0.2152730	0.17410120	3.1763977	20	4 25.7	19.8
391702 2008 BW_{16}	15.9	X	130.62306	173.89028	298.39424	9.18807	0.0778748	0.18657716	3.0331722	20	5 29.4	20.5
391703 2008 BT_{40}	16.1	X	181.60974	283.40243	136.87921	13.96203	0.1402117	0.18683428	3.0303888	20	5 24.7	21.2
391704 2008 BB_{44}	15.9	X	194.09523	307.82097	99.53308	15.20874	0.1867771	0.19044661	2.9919469	20	5 19.9	21.1
391705 2008 BS_{48}	16.0	X	47.57842	40.88525	132.60826	18.50505	0.1012853	0.17835166	3.1257287	20	5 12.5	20.4
391706 2008 CF_{2}	15.9	X	64.03374	155.57836	1.42776	17.14152	0.1169581	0.17775251	3.1327487	20	5 3.4	20.3
391707 2008 CH_{7}	16.4	X	70.08195	55.77320	117.22356	5.50372	0.0876510	0.18219697	3.0815931	20	6 4.8	20.6
391708 2008 CJ_{10}	15.7	X	312.03815	304.82633	345.96869	26.11174	0.2107293	0.17413158	3.1760282	20	4 9.9	20.3
391709 2008 CK_{11}	16.0	X	308.57487	185.80901	122.78561	10.84675	0.0674287	0.18382526	3.0633686	20	6 3.5	20.2
391710 2008 CM_{14}	15.9	X	28.18371	127.19104	129.61230	9.48682	0.1193877	0.18653210	3.0336606	20	7 28.4	19.7
391711 2008 CK_{15}	16.3	X	47.15905	106.86957	56.96747	2.28513	0.0963820	0.17281203	3.1921753	20	4 22.5	20.3
391712 2008 CD_{19}	16.4	X	2.69952	85.89834	157.51642	16.31702	0.1834595	0.17512821	3.1639672	20	5 31.2	20.2
391713 2008 CB_{39}	16.2	X	112.24845	125.53507	333.36124	9.86295	0.1215309	0.17694264	3.1423005	20	4 23.8	21.0
391714 2008 CK_{43}	16.5	X	43.69002	155.67015	47.48833	4.27606	0.1129218	0.17808908	3.1288004	20	6 8.9	20.6
391715 2008 CA_{50}	15.8	X	142.93666	312.28948	126.02124	9.76592	0.1988508	0.18136335	3.0910286	20	5 13.6	21.0
391716 2008 CM_{50}	16.1	X	74.83247	84.46365	76.15924	4.62118	0.1383113	0.17915258	3.1164058	20	6 2.1	20.2
391717 2008 CV_{50}	16.0	X	58.15546	179.09399	354.05430	10.16919	0.1439792	0.17592829	3.1543673	20	5 24.0	20.3
391718 2008 CB_{52}	16.5	X	192.53117	321.82657	77.97531	4.02257	0.1824603	0.19004556	2.9961547	20	5 6.4	21.5
391719 2008 CN_{68}	15.7	X	54.22522	59.73135	130.77444	17.95640	0.1960233	0.17803564	3.1294265	20	6 22.7	19.9
391720 2008 CD_{73}	16.1	X	107.30506	26.95423	90.74003	11.40547	0.1179628	0.18051504	3.1007050	20	5 17.9	20.7
391721 2008 CX_{74}	16.2	X	337.09940	281.73655	310.43719	4.13786	0.0976133	0.17310195	3.1886100	20	3 30.7	20.4
391722 2008 CW_{82}	15.9	X	344.26974	121.03679	137.52711	11.30196	0.0616434	0.17938214	3.1137465	20	5 22.5	20.1
391723 2008 CU_{85}	15.9	X	87.96333	344.80830	140.31770	13.20804	0.0991344	0.17400581	3.1775584	20	5 3.9	20.6
391724 2008 CV_{107}	16.2	X	193.32419	47.58323	1.65622	10.62149	0.0697335	0.18319238	3.0704199	20	5 16.6	21.0
391725 2008 CB_{114}	16.1	X	355.42719	129.45843	133.58011	18.07332	0.1998071	0.18068528	3.0987570	20	6 12.7	19.6
391726 2008 CE_{130}	16.1	X	238.39745	164.71583	158.84508	9.38604	0.0417957	0.17176386	3.2051487	20	3 30.0	20.8
391727 2008 CH_{131}	16.0	X	355.48871	134.26999	147.42165	11.10997	0.0993358	0.18607318	3.0386466	20	7 5.9	19.8
391728 2008 CZ_{144}	16.0	X	229.66616	29.37697	317.44948	8.44374	0.0969177	0.17553198	3.1591134	20	4 6.7	21.0
391729 2008 CP_{145}	16.4	X	158.27653	306.94706	159.39625	10.41684	0.0453830	0.18557088	3.0441275	20	6 21.6	21.0
391730 2008 CV_{146}	16.8	X	64.68688	233.69980	251.10005	3.29121	0.1099622	0.16976673	3.2302366	20	3 29.1	21.1
391731 2008 CX_{146}	16.0	X	49.78403	11.97501	168.30944	12.49454	0.0668194	0.17708061	3.1406681	20	5 16.4	20.4
391732 2008 CT_{167}	16.4	X	42.16650	248.44220	282.75406	4.13155	0.1239889	0.17335367	3.1855226	20	4 25.4	20.4
391733 2008 CU_{174}	16.7	X	359.94495	72.84458	184.64705	8.68735	0.1371491	0.18158709	3.0884891	20	6 11.4	20.4
391734 2008 CT_{189}	15.2	X	322.44737	122.64023	132.65240	19.19849	0.1020596	0.16946233	3.2341036	20	4 17.1	19.8
391735 2008 CD_{192}	16.5	X	146.31884	284.90612	148.38953	11.53304	0.2213868	0.17726359	3.1385064	20	5 12.1	21.9
391736 2008 CZ_{192}	16.5	X	56.87559	0.54476	168.28108	3.80506	0.1042641	0.17622237	3.1508569	20	5 14.7	20.6
391737 2008 CO_{196}	16.0	X	145.89929	101.41618	321.76031	9.32713	0.0290220	0.17659214	3.1464570	20	4 7.9	20.7
391738 2008 CL_{199}	16.8	X	38.83177	55.33559	161.16279	1.59337	0.0868448	0.17764623	3.1339980	20	6 16.5	20.9
391739 2008 CD_{200}	16.2	X	345.02489	117.90353	155.08584	7.53184	0.1130702	0.17403150	3.1772458	20	6 7.1	20.2
391740 2008 CP_{201}	16.3	X	175.60409	275.52405	145.18056	10.20087	0.0961908	0.17945825	3.1128661	20	5 18.3	21.3
391741 2008 CS_{202}	16.7	X	141.43909	82.89019	350.91380	11.92074	0.1656206	0.17692491	3.1425105	20	4 27.0	21.9
391742 2008 CN_{203}	16.1	X	48.94938	129.50409	67.36119	6.17532	0.0854766	0.17810220	3.1286468	20	6 5.1	20.2
391743 2008 DX_{5}	16.9	X	91.01476	124.22977	359.13962	2.63617	0.1402051	0.17870437	3.1216145	20	5 5.5	21.3
391744 2008 DC_{9}	16.2	X	155.78676	264.32327	148.65160	9.99680	0.1023677	0.17757022	3.1348924	20	4 19.7	21.1
391745 2008 DK_{11}	16.7	X	140.06907	80.52842	328.93102	5.00739	0.1017599	0.17396369	3.1780713	20	3 25.4	21.5
391746 2008 DH_{12}	16.5	X	128.85569	83.68807	333.81015	15.15923	0.2569310	0.17672919	3.1448302	20	4 1.9	21.8
391747 2008 DC_{24}	16.2	X	71.31904	57.47454	143.94179	8.93339	0.1748531	0.18388614	3.0626925	20	7 25.2	20.5
391748 2008 DK_{28}	15.9	X	144.37674	302.25799	143.18865	21.99601	0.1314252	0.18258783	3.0771937	20	5 22.2	21.2
391749 2008 DZ_{42}	16.0	X	330.02425	279.76947	334.54479	10.23116	0.1098610	0.17673881	3.1447160	20	4 13.2	20.1
391750 2008 DX_{54}	15.8	X	39.01056	69.16493	106.05781	14.91262	0.1502520	0.17201635	3.2020115	20	5 6.8	19.9
391751 2008 DY_{62}	16.2	X	163.77816	286.08035	146.07340	10.61054	0.0554583	0.17835713	3.1256648	20	5 18.9	21.0
391752 2008 DK_{68}	16.0	X	122.55786	92.55470	358.67219	20.57357	0.2068638	0.17763952	3.1340769	20	4 29.9	21.3
391753 2008 DX_{88}	15.9	X	277.48561	172.36343	160.38433	14.53054	0.1560326	0.17928849	3.1148307	20	5 12.8	20.6
391754 2008 EU_{4}	15.8	X	129.82385	54.81189	43.58487	9.62051	0.0633043	0.17543353	3.1602952	20	5 10.2	20.5
391755 2008 EA_{35}	16.1	X	359.22357	247.73883	12.88996	15.64414	0.2007304	0.17671907	3.1449502	20	6 11.6	19.7
391756 2008 EO_{36}	15.6	X	79.48770	331.87673	180.47865	27.61596	0.1361263	0.17326016	3.1866687	20	5 30.2	20.6
391757 2008 ES_{49}	16.0	X	31.47708	30.66058	195.45719	10.60041	0.1729583	0.17640245	3.1487123	20	6 27.3	19.9
391758 2008 EP_{55}	16.3	X	82.40346	351.36553	131.68564	10.32050	0.0361761	0.17503310	3.1651133	20	4 14.7	20.8
391759 2008 EB_{61}	15.8	X	256.70222	1.48232	332.76199	9.38837	0.0849253	0.17321042	3.1872787	20	4 21.9	20.6
391760 2008 ED_{72}	16.2	X	38.64341	69.91320	136.68429	9.32730	0.1710066	0.17663271	3.1459751	20	6 14.6	20.1

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	m		°	°	°	°		°				
391761 2008 EK_{107}	16.5	X	281.74074	174.34405	143.84111	10.20353	0.0456913	0.17356305	3.1829601	20	5 15.2	21.1
391762 2008 EJ_{128}	16.2	X	0.42833	132.45161	142.72410	6.81297	0.1864590	0.17895156	3.1187392	20	7 7.4	19.6
391763 2008 EY_{129}	16.1	X	329.22257	193.67974	120.91936	6.51648	0.1419348	0.18167919	3.0874453	20	7 3.6	19.6
391764 2008 EO_{168}	16.0	X	46.51037	359.40890	202.44393	22.70596	0.1371701	0.17401358	3.1774638	20	6 13.9	20.5
391765 2008 EY_{169}	16.8	X	353.39492	195.68437	58.74982	1.98803	0.1074996	0.18056310	3.1001548	20	5 26.1	20.5
391766 2008 FA	14.9	X	42.94924	70.27257	100.30666	33.15442	0.0716287	0.17129223	3.2110293	20	5 9.3	19.8
391767 2008 FW_{9}	16.1	X	305.08192	119.43663	155.94845	9.44569	0.0239374	0.17416636	3.1756054	20	4 24.0	20.6
391768 2008 FP_{39}	16.5	X	328.53705	252.61922	29.66626	15.60006	0.1191919	0.17111754	3.2132143	20	5 17.9	20.7
391769 2008 FJ_{54}	15.8	X	19.99427	105.42478	187.49281	8.91380	0.0501175	0.18531320	3.0469488	20	8 23.4	19.9
391770 2008 FK_{133}	16.6	X	70.22743	16.39256	150.55165	1.02256	0.0992387	0.17453386	3.1711461	20	5 29.3	20.9
391771 2008 GE_{112}	15.8	X	350.26730	218.60425	59.49941	32.82473	0.3343827	0.16977801	3.2300934	20	6 6.1	18.5
391772 2008 GH_{140}	15.3	X	147.10733	333.92004	50.64788	10.82853	0.1204307	0.15233877	3.4721282	20	3 13.5	20.8
391773 2008 HW_{33}	18.0	X	212.70381	157.27079	153.47100	5.52345	0.1777565	0.30612313	2.1804123	20	1 27.1	21.4
391774 2008 KQ_{35}	15.8	X	337.01782	226.56055	116.47272	10.08437	0.0722447	0.17965592	3.1105823	20	8 30.9	19.8
391775 2008 LO_{13}	16.6	X	33.39946	288.82607	189.94965	12.48693	0.1761133	0.23084518	2.6318159	20	1 22.6	19.3
391776 2008 ON_{7}	16.3	X	211.27916	65.32159	303.81025	13.65277	0.1904894	0.22515771	2.6759510	20	4 5.9	21.1
391777 2008 PO	17.8	X	146.33950	189.67748	151.05455	6.90558	0.2321778	0.28622297	2.2803407	20	1 10.2	21.2
391778 2008 PF_{7}	17.9	X	220.73380	303.48733	353.33283	6.39645	0.2054903	0.29880621	2.2158633	20	1 19.8	21.6
391779 2008 PM_{7}	16.2	X	174.65286	71.82430	283.33769	12.69605	0.2202190	0.21343350	2.7730710	20	2 22.5	21.1
391780 2008 PU_{13}	17.7	X	130.98997	190.82458	142.65925	5.37063	0.1726521	0.28190037	2.3035923	20	—	—
391781 2008 PH_{16}	17.6	X	141.59451	18.29260	327.67398	4.44229	0.1788970	0.28627390	2.2800702	20	1 6.6	20.6
391782 2008 PJ_{22}	17.0	X	240.54702	345.88584	286.35538	7.70238	0.1983212	0.29626200	2.2285313	20	1 5.1	20.4
391783 2008 QY_{5}	16.5	X	269.02848	65.27357	324.24749	30.69201	0.2057312	0.23637277	2.5906242	20	7 15.4	20.4
391784 2008 QZ_{17}	17.6	X	165.47294	321.34165	337.33718	6.53750	0.1299626	0.28097562	2.3086439	20	—	—
391785 2008 QQ_{18}	17.5	X	240.19692	13.56939	266.44376	8.42464	0.1536528	0.29714326	2.2241229	20	1 14.5	20.8
391786 2008 QF_{45}	17.4	X	229.81126	57.59803	230.34558	5.96707	0.1453626	0.29521543	2.2337952	20	1 14.9	20.8
391787 2008 QQ_{46}	17.4	X	206.17313	356.51833	304.68239	8.54632	0.1239848	0.29113813	2.2546026	20	1 11.1	20.8
391788 2008 RA_{1}	17.0	X	217.16548	286.54374	118.65347	5.26521	0.3447776	0.22603937	2.6689882	20	5 26.3	22.0
391789 2008 RR_{26}	16.6	X	133.48475	311.11199	38.86384	38.28760	0.1297140	0.28456257	2.2892024	20	—	—
391790 2008 RU_{43}	13.9	X	329.33727	18.72930	5.55588	6.77568	0.1024907	0.08073722	5.3017617	20	9 21.1	20.3
391791 2008 RC_{64}	18.1	X	211.26635	203.65820	134.84141	3.01938	0.2320189	0.29949461	2.2124665	20	3 2.2	21.6
391792 2008 RE_{70}	13.8	X	4.85261	174.30523	173.96651	7.72341	0.0174022	0.08079614	5.2991835	20	9 26.6	20.7
391793 2008 RR_{73}	17.5	X	0.86065	198.46928	179.62135	2.77754	0.2181903	0.25688692	2.4508010	20	12 28.2	20.0
391794 2008 RV_{73}	17.1	X	278.75494	225.13668	340.66833	6.48344	0.0476808	0.28454052	2.2893207	20	—	—
391795 Univofutah	16.4	X	181.08933	85.72768	305.10890	11.00629	0.1265581	0.21822788	2.7323053	20	4 7.5	21.0
391796 2008 RH_{78}	17.3	X	88.61844	4.66976	330.94193	6.18565	0.1127342	0.26544401	2.3978431	20	—	—
391797 2008 RM_{88}	17.5	X	251.14982	325.20094	254.18934	5.30473	0.1253428	0.27889934	2.3200877	20	—	—
391798 2008 RG_{90}	18.0	X	164.36215	5.78378	311.14376	4.39169	0.1649075	0.28250190	2.3003211	20	—	—
391799 2008 RL_{102}	17.9	X	205.14043	123.64277	128.37339	3.47927	0.1414765	0.27657128	2.3330891	20	—	—
391800 2008 RC_{106}	17.3	X	135.97834	99.43117	201.35780	6.09297	0.1264303	0.26741988	2.3860173	20	—	—
391801 2008 RD_{107}	17.2	X	217.78814	256.17063	53.76128	6.95178	0.2085663	0.29571673	2.2312699	20	2 3.6	20.9
391802 2008 RZ_{113}	13.6	X	280.05508	70.82542	357.40040	12.83647	0.0290060	0.08050643	5.3118890	20	9 17.0	20.6
391803 2008 RF_{115}	16.8	X	278.67693	198.41341	211.27841	7.16391	0.1777439	0.23588024	2.5942292	20	8 17.9	20.2
391804 2008 RM_{126}	14.2	X	302.41772	29.71461	45.11322	7.70352	0.0191296	0.08370948	5.1755077	20	10 21.9	21.0
391805 2008 RM_{128}	17.7	X	301.87480	155.39158	335.45531	6.02666	0.0869919	0.27006455	2.3704147	20	—	—
391806 2008 RS_{128}	14.3	X	89.91611	103.02048	172.35722	4.28944	0.0115014	0.08178871	5.2562232	20	10 11.3	21.2
391807 2008 RP_{135}	17.0	X	33.54538	21.37407	14.04120	7.10189	0.1120365	0.26742157	2.3860073	20	—	—
391808 2008 RF_{136}	17.4	X	217.23344	42.10077	238.39226	5.18281	0.1752597	0.28879726	2.2667694	20	—	—
391809 2008 RK_{136}	17.4	X	249.02309	345.12147	79.95525	2.76531	0.1751726	0.23678215	2.5876373	20	8 2.7	20.9
391810 2008 RX_{136}	17.6	X	231.78872	44.61216	219.42317	5.16323	0.1555155	0.28721524	2.2750856	20	—	—
391811 2008 RL_{137}	17.1	X	135.19027	345.74231	297.69957	5.74913	0.1292691	0.27022919	2.3694518	20	—	—
391812 2008 RR_{138}	17.8	X	221.72712	252.63638	16.36351	5.72259	0.2146016	0.28521111	2.2857309	20	—	—
391813 2008 RC_{147}	17.7	X	160.60441	94.99602	206.78418	6.39516	0.1432206	0.28166419	2.3048799	20	—	—
391814 2008 SB_{4}	18.4	X	252.78175	256.95837	53.40611	3.03776	0.2468225	0.30456417	2.1878465	20	2 29.8	22.0
391815 2008 SL_{7}	17.4	X	106.80810	299.69956	28.77293	5.96976	0.2707004	0.27243805	2.3566272	20	—	—
391816 2008 SZ_{16}	17.6	X	259.66537	99.79201	343.87296	6.54757	0.2102470	0.24217206	2.5490989	20	9 5.1	20.9
391817 2008 SK_{28}	17.2	X	166.56098	320.31865	330.96694	4.64182	0.1599376	0.27762730	2.3271691	20	—	—
391818 2008 SZ_{29}	17.0	X	318.18522	235.66910	205.09578	5.98241	0.0837875	0.25751127	2.4468380	20	12 26.4	19.8
391819 2008 SS_{30}	16.8	X	161.87712	212.43471	237.43826	8.11783	0.1859529	0.22056631	2.7129592	20	6 9.3	21.4
391820 2008 SY_{30}	16.9	X	212.89019	299.34050	280.23139	5.92660	0.0669377	0.26867627	2.3785731	20	—	—
391821 2008 SV_{39}	17.7	X	221.46521	256.83154	30.75972	5.69316	0.1421332	0.28857427	2.2679370	20	1 9.7	21.2
391822 2008 SD_{49}	14.4	X	322.85762	211.80794	187.81106	13.25699	0.0892670	0.08230027	5.2344196	20	9 30.3	20.8
391823 2008 SC_{60}	17.9	X	140.12939	56.56917	243.80558	3.86675	0.2333680	0.27521742	2.3407342	20	—	—
391824 2008 SP_{88}	16.9	X	300.44188	351.44471	24.49271	12.68121	0.1909030	0.23806118	2.5783606	20	8 13.9	19.9
391825 2008 SO_{91}	17.9	X	251.64881	74.27763	347.70659	2.73437	0.1541428	0.23602798	2.5931465	20	8 4.6	21.4
391826 2008 SP_{94}	18.3	X	302.98432	177.54751	217.07884	2.22434	0.1741416	0.24531022	2.5273125	20	9 12.6	20.7
391827 2008 SD_{114}	17.6	X	181.97828	241.33536	63.16300	3.99764	0.1784036	0.28395807	2.2924502	20	—	—
391828 2008 SQ_{116}	17.3	X	207.00068	261.39587	12.54839	6.68089	0.1101257	0.27990287	2.3145389	20	—	—
391829 2008 ST_{116}	17.4	X	327.09507	49.91339	10.96292	7.07110	0.0906467	0.25383289	2.4704200	20	12 12.0	20.2
391830 2008 SB_{118}	17.2	X	116.48434	339.18322	14.89364	4.19283	0.0653547	0.27506097	2.3416217	20	—	—
391831 2008 SH_{130}	17.7	X	206.34486	310.47783	328.58992	2.35135	0.1655733	0.28118765	2.3074832	20	—	—
391832 2008 SE_{148}	17.1	X	66.97734	224.92250	142.07109	5.28213	0.1867893	0.26690606	2.3890785	20	—	—
391833 2008 SS_{148}	16.8	X	344.10368	0.22876	24.34442	5.70850	0.1846718	0.25430208	2.4673804	20	11 29.7	19.0
391834 2008 SW_{148}	17.7	X	105.82921	148.32723	162.39096	3.96187	0.2262245	0.26957813	2.3732653	20	—	—
391835 2008 SO_{153}	16.9	X	33.34035	5.89881	10.37518	6.67676	0.1653246	0.26344933	2.4099312	20	—	—
391836 2008 SH_{162}	17.4	X	255.19863	233.52477	183.96457	11.03068	0.1616059	0.23684292	2.5871947	20	7 29.8	21.2
391837 2008 SG_{170}	17.6	X	117.94887	47.48945	293.49313	2.81342	0.1875520	0.27780187	2.3261940	20	—	—
391838 2008 SE_{179}	18.2	X	260.20581	71.08055	203.78419	1.51473	0.1639406	0.29788413	2.2204337	20	1 27.2	21.4
391839 2008 SO_{179}	17.7	X	225.05097	239.54827	55.72913	1.45274	0.2304533	0.29580044	2.2308490	20	1 20.4	21.5
391840 2008 SK_{197}	17.5	X	200.40311	65.52331	60.24874	3.80984	0.1461589	0.23431947	2.6057363	20	9 2.2	21.5

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
	m		°	°	°	°		°				
391841 2008 SS_{208}	17.0	X	104.25006	263.32749	70.85993	4.93336	0.2142636	0.26604144	2.3942520	20	—	—
391842 2008 SK_{232}	17.6	X	214.41181	20.75424	230.31788	5.43910	0.1112079	0.27956180	2.3164210	20	—	—
391843 2008 SN_{235}	17.4	X	134.66534	86.43270	229.08609	5.76191	0.1510495	0.27604442	2.3360568	20	—	—
391844 2008 SU_{254}	13.6	X	74.83959	36.62654	254.60742	7.12721	0.0260755	0.08147426	5.2697390	20	10 10.8	20.6
391845 2008 SM_{257}	13.6	X	356.20267	354.56839	33.13483	18.22559	0.0858154	0.08385394	5.1695619	20	10 30.9	20.0
391846 2008 SK_{261}	16.5	X	48.26669	218.96606	194.59393	9.30447	0.0533374	0.18482937	3.0522638	20	—	—
391847 2008 SS_{278}	17.6	X	212.28995	189.52535	356.52053	5.09023	0.0593379	0.26105641	2.4246356	20	12 14.8	20.8
391848 2008 SD_{283}	16.5	X	2.20897	61.39173	274.42913	12.08600	0.1190264	0.24395645	2.5366537	20	10 6.2	19.7
391849 2008 SH_{285}	17.2	X	285.44274	319.76794	184.28394	10.70026	0.0883792	0.26607598	2.3940448	20	—	—
391850 2008 SL_{286}	16.4	X	271.48573	176.25466	218.71719	14.21436	0.0992059	0.23182561	2.6243904	20	7 27.9	20.2
391851 2008 SQ_{290}	17.6	X	352.42903	324.42116	79.54307	3.65397	0.1935190	0.25659508	2.4526590	20	—	—
391852 2008 SB_{294}	17.8	X	220.64718	192.31177	127.27836	6.95482	0.2807240	0.29880916	2.2158487	20	2 14.9	21.6
391853 2008 SN_{298}	17.4	X	270.88232	110.99115	307.71736	2.04455	0.1879339	0.23848672	2.5752926	20	8 20.0	20.4
391854 2008 SU_{299}	17.1	X	46.98823	321.25578	38.14670	7.75174	0.1133596	0.26086853	2.4257996	20	—	—
391855 2008 SG_{300}	17.4	X	288.90632	98.32211	289.35380	6.35857	0.2081537	0.23883706	2.5727736	20	7 30.9	20.2
391856 2008 SO_{305}	16.9	X	152.12425	153.17386	162.08585	6.63678	0.1759883	0.27675805	2.3320394	20	—	—
391857 2008 TC_{14}	17.8	X	20.04776	30.43498	5.62269	12.60201	0.2037541	0.26234634	2.4166813	20	—	—
391858 2008 TD_{20}	16.9	X	298.42870	165.36155	214.77787	4.77050	0.1929487	0.23715882	2.5848967	20	8 7.0	19.8
391859 2008 TP_{24}	17.3	X	198.37768	122.15638	207.06577	6.95812	0.1828600	0.29267994	2.2466775	20	2 6.2	21.0
391860 2008 TP_{25}	17.6	X	245.42086	212.51006	15.47880	5.50238	0.0850194	0.27857006	2.3219156	20	—	—
391861 2008 TZ_{27}	17.3	X	214.02373	135.62125	304.38235	3.08626	0.1974646	0.23342599	2.6123814	20	7 13.2	21.4
391862 2008 TE_{31}	17.4	X	191.69842	307.62176	202.47519	31.16238	0.3031296	0.23598887	2.5934330	20	9 10.0	22.4
391863 2008 TA_{42}	17.1	X	213.36667	354.66772	269.17279	7.35931	0.1528831	0.28042362	2.3116726	20	—	—
391864 2008 TF_{55}	17.6	X	133.13949	293.62185	14.55238	2.34344	0.2426864	0.27406658	2.3472823	20	—	—
391865 2008 TK_{58}	16.9	X	266.83260	2.19256	26.25342	9.42759	0.1938775	0.23285263	2.6166680	20	7 3.4	20.6
391866 2008 TV_{65}	17.4	X	265.96747	172.16791	213.05734	4.12253	0.2630295	0.23244583	2.6197200	20	6 17.4	21.3
391867 2008 TE_{69}	17.5	X	248.98747	304.45336	101.88713	2.45877	0.0984312	0.23102291	2.6304660	20	7 18.2	21.2
391868 2008 TH_{73}	17.6	X	211.54253	23.58719	256.97059	2.57250	0.2034113	0.28243276	2.3006965	20	—	—
391869 2008 TN_{89}	17.7	X	172.55243	91.73470	207.72837	5.37653	0.2307982	0.27991845	2.3144530	20	—	—
391870 2008 TO_{92}	13.2	X	339.97947	199.07329	187.79399	16.65032	0.0880888	0.08214989	5.2408057	20	10 9.6	19.6
391871 2008 TG_{109}	16.6	X	160.71191	343.59134	184.61103	22.65473	0.0241115	0.24147490	2.5540029	20	9 16.7	20.2
391872 2008 TN_{110}	17.1	X	163.45509	339.27079	340.21402	6.57310	0.1367132	0.28131183	2.3068041	20	—	—
391873 2008 TW_{110}	17.3	X	192.30414	25.36868	254.09947	3.87245	0.1392005	0.27819723	2.3239896	20	—	—
391874 2008 TT_{111}	17.3	X	147.10381	315.64000	2.79458	7.45561	0.1333159	0.27585184	2.3371439	20	—	—
391875 2008 TE_{112}	16.7	X	313.78487	359.04777	11.23972	16.06638	0.1510914	0.24047885	2.5610504	20	9 6.8	19.4
391876 2008 TE_{118}	17.1	X	12.17430	205.13376	218.43151	5.48939	0.1070588	0.26278969	2.4139624	20	—	—
391877 2008 TV_{125}	13.8	X	43.69804	72.54174	250.94194	5.65189	0.0944850	0.08329339	5.1927295	20	10 20.5	20.4
391878 2008 TS_{130}	17.1	X	359.08137	169.02109	236.13459	4.77572	0.0284285	0.25809062	2.4431749	20	—	—
391879 2008 TT_{139}	17.4	X	264.66129	159.15459	13.04890	6.40277	0.0597212	0.26431301	2.4046785	20	—	—
391880 2008 TT_{141}	14.2	X	18.53104	330.82665	17.14152	15.76407	0.0638779	0.08308508	5.2014051	20	10 14.2	20.8
391881 2008 TW_{177}	15.2	X	40.07870	298.00820	86.35551	14.81139	0.0309556	0.17833994	3.1258656	20	—	—
391882 2008 TT_{180}	17.7	X	148.35617	170.09596	164.70773	7.07656	0.1511927	0.28079739	2.3096208	20	—	—
391883 2008 UW_{2}	16.1	X	218.66148	255.52010	96.37230	13.79097	0.2033521	0.21536733	2.7564461	20	4 5.7	21.0
391884 2008 UC_{27}	16.9	X	290.25076	273.29018	54.96606	3.28822	0.1435766	0.22512544	2.6762068	20	5 20.6	20.4
391885 2008 UL_{29}	16.4	X	112.19218	156.40996	212.97026	8.74034	0.0252359	0.18857660	3.0116940	20	—	—
391886 2008 UH_{30}	17.9	X	236.34933	37.69732	65.73374	5.09736	0.1947079	0.23600902	2.5932854	20	9 7.2	21.8
391887 2008 UH_{38}	16.6	X	123.99542	254.46259	37.32785	8.12352	0.1097826	0.25959105	2.4337516	20	—	—
391888 2008 UD_{51}	15.9	X	159.91193	51.23450	234.51122	8.59257	0.0444332	0.17927606	3.1149747	20	—	—
391889 2008 UY_{53}	16.8	X	322.13437	285.72430	61.12061	7.99624	0.0831479	0.23172882	2.6251211	20	8 19.9	20.0
391890 2008 UZ_{54}	17.5	X	349.77230	315.49086	88.62090	2.51534	0.1759166	0.25430147	2.4673843	20	—	—
391891 2008 UA_{59}	17.4	X	215.74346	336.37165	106.10791	3.85722	0.1517185	0.22833501	2.6510691	20	7 21.4	21.3
391892 2008 UQ_{69}	17.0	X	196.51926	241.10898	113.25738	5.36189	0.0835671	0.20979269	2.8050621	20	3 17.5	21.3
391893 2008 UX_{76}	17.8	X	238.76781	90.96360	336.90160	1.76504	0.1938885	0.22826547	2.6516075	20	7 22.4	21.7
391894 2008 UE_{78}	16.8	X	3.59546	106.58392	253.07663	5.32027	0.0863830	0.24434131	2.5339894	20	11 13.0	19.8
391895 2008 UX_{80}	17.7	X	290.07578	281.87004	131.46207	1.53536	0.1731369	0.24287784	2.5441582	20	9 17.1	20.4
391896 2008 UA_{91}	16.8	X	263.76828	288.86468	139.87243	10.26731	0.3211915	0.23401440	2.6080004	20	8 3.2	20.5
391897 2008 UK_{92}	16.5	X	260.79246	33.41202	65.07177	13.29240	0.2287223	0.24279612	2.5447291	20	10 1.8	19.9
391898 2008 UM_{94}	16.4	X	201.62876	224.32036	205.85528	14.93769	0.2333449	0.21910353	2.7250207	20	6 17.1	21.3
391899 2008 UC_{97}	16.6	X	261.96914	18.88141	48.92796	19.73688	0.2139942	0.23646368	2.5899602	20	8 27.7	20.5
391900 2008 UC_{112}	17.1	X	202.05759	341.30933	254.11163	6.04702	0.0748655	0.26478435	2.4018240	20	—	—
391901 2008 UC_{113}	17.0	X	87.51405	41.56845	308.31487	1.91344	0.2501523	0.26868227	2.3785377	20	—	—
391902 2008 UT_{115}	18.0	X	73.90788	9.68642	351.95967	5.05019	0.1462976	0.26501935	2.4004039	20	—	—
391903 2008 UF_{116}	17.4	X	314.41148	120.99218	299.05399	3.70954	0.1391063	0.24716288	2.5146674	20	11 16.5	20.0
391904 2008 UV_{126}	16.5	X	179.94781	49.98584	66.51018	14.51330	0.1327375	0.22270732	2.6955438	20	8 2.3	21.0
391905 2008 UJ_{127}	17.3	X	307.15815	154.80994	234.69343	1.06243	0.1177501	0.23701946	2.5859098	20	9 18.2	19.9
391906 2008 UX_{127}	17.0	X	178.95999	134.74477	66.40597	13.67936	0.0754090	0.24431195	2.5341923	20	11 19.9	20.5
391907 2008 UU_{146}	17.5	X	123.12308	46.80591	243.67326	5.57637	0.1307138	0.25916179	2.4364382	20	—	—
391908 2008 UF_{154}	15.7	X	87.21453	321.49255	51.95029	10.79599	0.0418445	0.18183763	3.0856515	20	—	—
391909 2008 UY_{163}	17.7	X	224.45651	209.32461	258.67324	3.87986	0.1743651	0.23563720	2.5960127	20	8 28.8	21.8
391910 2008 UK_{175}	17.8	X	126.36087	311.97252	336.76152	2.57057	0.2124861	0.26559882	2.3969113	20	—	—
391911 2008 UT_{182}	17.4	X	161.78071	156.75555	78.33793	2.62501	0.1395893	0.25675753	2.4516244	20	12 11.4	21.1
391912 2008 UL_{184}	17.5	X	219.94777	50.31692	47.55691	4.86352	0.1665037	0.22955109	2.6416978	20	8 15.4	21.6
391913 2008 UW_{188}	18.0	X	191.53990	239.05554	45.68951	3.74141	0.1801145	0.27879516	2.3206656	20	—	—
391914 2008 UP_{196}	17.4	X	213.62931	135.91209	80.31130	4.23649	0.1396838	0.26170975	2.4205986	20	—	—
391915 2008 UW_{203}	16.4	X	172.58645	262.46084	237.71579	10.39544	0.0450241	0.23310708	2.6147635	20	8 19.7	20.3
391916 2008 UJ_{204}	17.4	X	124.89516	350.96203	341.97462	4.93516	0.1998829	0.27335365	2.3513619	20	—	—
391917 2008 UD_{209}	17.4	X	281.52075	186.34642	231.43645	6.02218	0.1845322	0.23927676	2.5696208	20	9 2.3	20.4
391918 2008 UR_{210}	17.5	X	229.32331	85.34894	35.09725	12.35315	0.1957519	0.23860250	2.5744595	20	9 23.9	21.4
391919 2008 UD_{228}	16.8	X	356.40112	131.50201	319.58509	1.54450	0.1627831	0.17535813	3.1612010	20	—	—
391920 2008 UR_{243}	16.8	X	277.07871	70.55890	5.07909	8.34350	0.0572002	0.24043203	2.5613829	20	10 11.7	19.9

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
	m		°	°	°	°		°				
391921 2008 UZ_{258}	17.7	X	200.44732	250.53546	229.56339	6.04738	0.2261389	0.22874145	2.6479278	20	8 15.8	22.3
391922 2008 UF_{267}	18.1	X	262.10033	72.52395	3.91257	2.40224	0.2139611	0.23733212	2.5836383	20	8 28.9	21.6
391923 2008 UC_{282}	17.2	X	161.10081	21.10108	233.21735	4.63188	0.0593040	0.25581336	2.4576530	20	—	—
391924 2008 UR_{284}	17.6	X	299.30838	311.32418	58.55371	3.97661	0.0663337	0.23446032	2.6046926	20	8 15.7	20.8
391925 2008 UU_{291}	18.0	X	280.06573	77.60246	6.24500	3.22629	0.1483725	0.24447045	2.5330969	20	10 16.7	20.9
391926 2008 UV_{292}	17.1	X	156.96010	62.95016	241.78028	6.13650	0.1336034	0.28056259	2.3109091	20	—	—
391927 2008 UH_{296}	17.7	X	232.16290	116.33585	356.86803	2.00285	0.1248061	0.23826231	2.5769094	20	9 21.7	21.2
391928 2008 UV_{302}	17.3	X	192.91524	43.23377	42.48999	6.83107	0.1213550	0.22049482	2.7135456	20	7 4.1	21.6
391929 2008 UR_{303}	16.5	X	248.88629	178.47321	253.99108	4.77853	0.1565077	0.23159319	2.6261459	20	8 11.9	20.2
391930 2008 UG_{304}	17.5	X	102.81361	349.01018	16.57323	6.35300	0.0973732	0.26912128	2.3759503	20	—	—
391931 2008 UL_{330}	17.6	X	247.79082	316.88837	218.24510	2.86841	0.0642976	0.25861811	2.4398517	20	—	—
391932 2008 UW_{338}	17.2	X	191.28720	230.42463	242.64043	5.81823	0.2082823	0.22737532	2.6585235	20	7 31.6	21.7
391933 2008 UE_{345}	16.8	X	197.39680	287.16235	236.44705	4.44004	0.2168999	0.23758551	2.5818009	20	10 8.5	20.9
391934 2008 UT_{350}	17.0	X	288.63517	199.32390	215.08470	7.75329	0.1152103	0.23936637	2.5689794	20	9 20.9	20.0
391935 2008 UV_{351}	16.7	X	217.40897	2.05431	89.84134	10.12322	0.2269539	0.22064768	2.7122922	20	7 29.8	21.3
391936 2008 UQ_{354}	16.5	X	74.88593	207.71965	67.52380	8.09292	0.1314920	0.24282103	2.5445550	20	11 5.0	20.2
391937 2008 UE_{358}	16.7	X	297.77109	91.80199	309.75449	4.48815	0.0842585	0.23673999	2.5879445	20	9 21.3	19.7
391938 2008 UY_{366}	17.5	X	241.43815	241.25756	69.44303	7.72694	0.2537615	0.29938333	2.2130147	20	2 23.1	21.3
391939 2008 VD_{1}	15.8	X	323.36761	334.71584	54.52322	15.75892	0.1035976	0.24017184	2.5632325	20	10 24.1	18.7
391940 2008 VR_{32}	17.2	X	192.09889	331.28462	183.16063	5.45942	0.1524468	0.23648337	2.5898164	20	9 28.1	21.0
391941 2008 VD_{34}	17.5	X	237.48996	265.76103	185.01824	4.77251	0.2309658	0.23254343	2.6189870	20	8 14.2	21.5
391942 2008 VU_{39}	17.6	X	236.95431	128.18627	307.45334	4.31746	0.1594347	0.22833328	2.6510825	20	8 3.2	21.4
391943 2008 VT_{47}	17.0	X	248.46153	255.90130	211.30309	15.78337	0.1215736	0.23882784	2.5728399	20	10 3.0	20.5
391944 2008 VZ_{50}	17.3	X	230.92535	180.51109	264.66570	5.44466	0.1157124	0.22897530	2.6461246	20	8 12.2	21.1
391945 2008 VV_{59}	17.3	X	223.44319	42.69676	67.29742	5.28946	0.1263173	0.23506938	2.6001915	20	9 9.6	21.0
391946 2008 VG_{71}	16.7	X	286.53014	61.04204	9.78271	13.60987	0.1614747	0.24363605	2.5388772	20	10 6.9	19.5
391947 2008 VQ_{72}	17.2	X	231.82019	2.17428	83.60888	4.51750	0.1688916	0.22477234	2.6790088	20	8 10.9	21.1
391948 2008 VA_{76}	16.5	X	229.09787	176.14422	312.12982	6.78685	0.1405716	0.24231445	2.5481002	20	10 2.8	20.2
391949 2008 VF_{78}	17.0	X	104.44893	146.87953	212.48498	5.48390	0.1296267	0.26790728	2.3831225	20	—	—
391950 2008 WE_{3}	17.2	X	321.48235	18.84245	350.85683	2.43623	0.1856011	0.24104841	2.5570146	20	9 12.8	19.3
391951 2008 WK_{10}	16.8	X	264.26421	328.09844	69.24781	7.22103	0.2376126	0.23051221	2.6343497	20	7 5.2	20.5
391952 2008 WP_{14}	17.2	X	214.85936	352.50949	222.07466	12.35197	0.1320951	0.26271049	2.4144475	20	—	—
391953 2008 WD_{18}	17.6	X	220.20230	120.79576	1.79551	3.57942	0.1682642	0.23723187	2.5843661	20	9 15.2	21.5
391954 2008 WC_{19}	17.7	X	180.26821	328.75851	136.13097	2.57730	0.2312904	0.22236634	2.6982987	20	7 13.3	22.3
391955 2008 WV_{32}	16.3	X	285.43490	10.94884	63.07482	30.36134	0.0984867	0.24204829	2.5499678	20	10 31.9	19.7
391956 2008 WS_{38}	17.1	X	192.92700	166.83352	91.21559	2.34979	0.1567798	0.26542567	2.3979535	20	—	—
391957 2008 WA_{46}	16.8	X	117.76527	244.63035	63.49950	14.29382	0.1454653	0.25965975	2.4333222	20	—	—
391958 2008 WR_{50}	17.6	X	104.01467	123.75652	197.48808	1.92232	0.1864215	0.26443402	2.4039448	20	—	—
391959 2008 WQ_{73}	17.0	X	236.27520	22.49999	58.05347	5.40575	0.1261052	0.22837945	2.6507251	20	8 15.7	20.8
391960 2008 WO_{80}	16.6	X	181.83578	70.74313	77.17219	17.91772	0.1307872	0.23013410	2.6372344	20	9 20.5	21.1
391961 2008 WZ_{97}	16.7	X	238.32805	317.23820	135.75355	10.72644	0.1430489	0.23442577	2.6049485	20	9 1.2	20.3
391962 2008 WA_{99}	17.4	X	56.09329	289.27039	34.96305	9.39290	0.0874192	0.25630012	2.4545403	20	12 10.1	20.8
391963 2008 WE_{101}	16.5	X	169.65355	19.33523	75.26017	9.29654	0.0890225	0.21628492	2.7486444	20	6 20.6	20.5
391964 2008 WL_{110}	17.5	X	163.70783	59.88575	65.31454	8.89807	0.0897196	0.22163859	2.7042020	20	7 26.3	21.7
391965 2008 WN_{111}	17.3	X	252.26327	169.87956	280.04931	2.48616	0.0787566	0.23554851	2.5966643	20	9 21.7	20.7
391966 2008 WD_{124}	16.1	X	183.90693	124.52914	67.67010	28.76649	0.2730620	0.23730079	2.5838656	20	11 7.5	20.8
391967 2008 WX_{125}	16.8	X	293.85800	67.06354	298.55562	5.52857	0.0104157	0.21471491	2.7620269	20	8 4.3	20.5
391968 2008 WK_{130}	17.1	X	318.92833	271.53589	71.47411	9.92054	0.0366494	0.22749822	2.6575659	20	8 11.9	20.6
391969 2008 WK_{132}	16.8	X	354.31600	159.98078	181.39163	9.34409	0.1318356	0.24016350	2.5632918	20	10 8.5	19.3
391970 2008 WN_{134}	17.1	X	244.81749	11.70947	103.60407	3.45877	0.1545780	0.23761371	2.5815966	20	10 7.9	20.6
391971 2008 WT_{136}	16.5	X	339.04245	284.05412	94.14074	9.49487	0.1456542	0.23875394	2.5733707	20	11 6.1	19.2
391972 2008 WO_{140}	16.8	X	323.18968	264.04554	88.00992	11.36269	0.1844624	0.23709104	2.5853893	20	8 23.8	19.4
391973 2008 XX_{16}	17.7	X	151.34084	309.02609	199.12864	2.35406	0.0232272	0.22348516	2.6892855	20	8 6.9	21.5
391974 2008 XR_{19}	16.7	X	288.78712	305.31364	89.12270	14.74188	0.2867723	0.23358217	2.6112167	20	7 28.7	19.9
391975 2008 XD_{32}	17.5	X	130.81982	19.75350	301.25715	3.70707	0.1709490	0.26751190	2.3854701	20	—	—
391976 2008 XE_{35}	17.2	X	149.98105	359.49737	278.20759	6.87240	0.0994627	0.25693453	2.4504983	20	—	—
391977 2008 XN_{45}	17.3	X	282.01480	44.04418	354.06521	2.34885	0.1373060	0.23399273	2.6081615	20	8 16.8	20.5
391978 2008 XJ_{49}	16.5	X	298.61642	107.59449	275.63634	4.77696	0.0244145	0.22387190	2.6861875	20	9 1.3	20.0
391979 2008 XX_{49}	16.0	X	50.83866	349.14265	117.46821	12.82811	0.0992401	0.18364113	3.0654159	20	2 15.8	19.9
391980 2008 XD_{50}	16.6	X	219.96243	69.47861	59.56269	9.20257	0.1346953	0.22663923	2.6642767	20	9 30.0	20.6
391981 2008 XJ_{50}	16.5	X	184.41900	68.23887	40.14792	13.58085	0.1523623	0.21624771	2.7489596	20	7 26.7	21.2
391982 2008 YK	16.9	X	325.78956	325.71668	67.35957	7.96953	0.0792275	0.23398939	2.6081863	20	10 29.6	19.9
391983 2008 YP_{6}	16.6	X	28.20268	111.25598	215.74086	9.14909	0.0382826	0.23974720	2.5662582	20	10 28.6	19.6
391984 2008 YO_{8}	16.0	X	324.67804	98.22316	250.59240	11.38031	0.3109279	0.23581731	2.5946907	20	7 26.8	18.0
391985 2008 YH_{9}	17.1	X	280.85603	296.44081	147.34203	6.16689	0.0572584	0.24093350	2.5578275	20	11 1.3	20.3
391986 2008 YV_{16}	16.6	X	161.00788	84.35093	111.52339	11.92016	0.1749641	0.22616484	2.6680010	20	10 23.7	21.2
391987 2008 YA_{24}	16.5	X	318.67885	164.94986	242.11984	3.11370	0.2220344	0.24023034	2.5628163	20	11 2.7	18.4
391988 Illmárton	16.8	X	348.31480	267.49841	73.34440	9.15744	0.1949528	0.23301938	2.6154195	20	10 4.3	19.3
391989 2008 YH_{26}	16.0	X	198.29396	233.89418	261.52873	11.48519	0.1289169	0.22622849	2.6675005	20	9 4.6	20.4
391990 2008 YG_{27}	16.4	X	217.36179	333.98939	112.95307	14.88252	0.2222515	0.22217045	2.6998845	20	7 22.8	20.7
391991 2008 YW_{33}	17.0	X	249.68207	277.27297	117.22241	9.44493	0.1940487	0.22030387	2.7151133	20	6 20.5	21.0
391992 2008 YU_{35}	16.9	X	178.93573	48.80053	101.97296	5.25752	0.0765440	0.22229800	2.6988516	20	9 15.1	20.9
391993 2008 YB_{38}	16.5	X	156.34241	85.78923	118.38629	12.77874	0.0843736	0.23009669	2.6375202	20	10 31.9	20.7
391994 2008 YH_{49}	17.4	X	136.47649	147.53111	312.95536	7.79414	0.2609615	0.20283648	2.8688335	20	6 3.7	22.4
391995 2008 YS_{73}	17.5	X	115.62950	232.24849	347.98255	3.27863	0.0369302	0.22709158	2.6607375	20	9 28.1	21.0
391996 2008 YX_{84}	15.5	X	346.84831	172.25483	326.36300	8.36684	0.2198956	0.17436413	3.1732036	20	—	—
391997 2008 YD_{86}	16.8	X	219.52663	221.63981	276.17744	7.24254	0.0266345	0.23404557	2.6077689	20	10 17.9	20.5
391998 2008 YW_{114}	16.7	X	147.22831	252.46569	291.23961	12.04283	0.0961074	0.22375057	2.6871585	20	9 13.5	21.0
391999 2008 YS_{116}	17.2	X	94.50456	42.21825	304.25331	1.70676	0.1979465	0.25711548	2.4493484	20	—	—
392000 2008 YJ_{119}	16.2	X	57.95189	171.61257	119.29014	12.69499	0.1619732	0.22522228	2.6754396	20	11 9.6	20.2