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		°	°	°	°		°				
424001 2006 VP_{152}	18.4	X	240.65175	263.48739	132.32587	1.77098	0.1852235	0.26445969	2.4037893	20	6 13.9	21.8
424002 2006 VH_{170}	17.8	X	189.91367	324.99821	100.17782	3.96280	0.2203279	0.25736039	2.4477943	20	6 2.8	21.8
424003 2006 WD_{3}	16.5	X	262.44465	96.27206	263.63155	19.86702	0.3818299	0.26620955	2.3932439	20	4 24.9	20.9
424004 2006 WU_{52}	17.7	X	92.70439	37.95657	39.28433	3.45094	0.0805868	0.23930658	2.5694073	20	2 27.1	20.9
424005 2006 WK_{56}	17.4	X	140.53722	119.15626	265.03635	8.82505	0.1812652	0.24001344	2.5643601	20	2 23.8	21.5
424006 2006 WZ_{56}	17.8	X	180.34546	56.64559	13.75714	0.90969	0.1675920	0.25479947	2.4641683	20	6 1.0	21.6
424007 2006 WU_{80}	16.9	X	299.52215	351.05906	251.10803	11.17367	0.0724255	0.24252989	2.5465910	20	2 12.6	20.5
424008 2006 WF_{83}	17.6	X	184.59552	210.57630	247.19232	4.54221	0.1876684	0.26114471	2.4240890	20	7 9.8	21.6
424009 2006 WP_{93}	17.2	X	105.31056	8.12235	70.59668	13.11988	0.0615517	0.24336760	2.5407438	20	3 19.9	20.8
424010 2006 WS_{97}	18.0	X	182.68692	149.04275	242.65295	2.63593	0.2804193	0.25227920	2.4805525	20	4 15.8	22.4
424011 2006 WD_{101}	17.3	X	184.81389	357.09536	86.27135	6.59038	0.1780291	0.25953713	2.4340886	20	6 22.1	21.1
424012 2006 WG_{111}	17.4	X	329.60593	281.17333	74.28491	10.52074	0.1660180	0.27401694	2.3475658	20	9 25.7	19.5
424013 2006 WZ_{123}	17.9	X	308.10792	302.94587	17.38038	6.22399	0.1411578	0.26679345	2.3897507	20	6 5.9	20.5
424014 2006 WU_{129}	17.5	X	232.67860	83.68883	297.72571	5.41129	0.1381402	0.26175940	2.4202925	20	5 20.5	21.2
424015 2006 WQ_{133}	17.8	X	132.46807	231.81595	241.46523	10.00927	0.1965029	0.25546720	2.4598726	20	6 13.0	21.6
424016 2006 WR_{146}	17.1	X	24.82141	201.10566	58.01185	6.13679	0.0893286	0.26203165	2.4186158	20	8 1.1	19.8
424017 2006 WF_{191}	18.1	X	194.28628	338.60751	75.26402	6.05614	0.1708022	0.25697581	2.4502359	20	5 24.2	21.9
424018 2006 WZ_{194}	18.0	X	219.20068	298.57174	98.45999	4.54247	0.2551636	0.25991323	2.4317399	20	5 21.6	22.0
424019 2006 XM_{9}	17.3	X	104.26349	49.83306	55.10078	3.21969	0.0817956	0.24323575	2.5416619	20	4 18.6	20.7
424020 2006 XS_{13}	17.3	X	171.12307	43.24223	61.00718	1.90330	0.1403651	0.25791566	2.4442797	20	7 6.8	21.1
424021 2006 XX_{15}	17.1	X	198.59248	137.73223	266.08337	8.64364	0.1412435	0.25279076	2.4772049	20	5 14.6	21.0
424022 2006 XZ_{26}	16.5	X	134.28527	139.52725	281.29392	25.88039	0.3003999	0.24209360	2.5496496	20	4 5.7	21.4
424023 2006 XY_{31}	17.5	X	112.83583	301.76401	81.37041	24.08117	0.1233534	0.37591996	1.9013955	20	—	—
424024 2006 XK_{41}	17.4	X	231.70874	356.13137	101.30542	5.17994	0.0993702	0.26669365	2.3903469	20	9 9.9	20.5
424025 2006 XW_{46}	17.9	X	104.21512	181.95962	270.52790	11.92415	0.2678159	0.24245056	2.5471465	20	4 22.9	21.9
424026 2006 XK_{53}	17.6	X	205.10449	158.44686	288.76168	4.90563	0.1615705	0.25855562	2.4402448	20	7 17.2	21.4
424027 2006 XG_{62}	16.5	X	52.83112	15.82252	116.78946	34.47563	0.1907325	0.23322820	2.6138581	20	4 13.5	20.3
424028 2006 XN_{62}	16.7	X	86.44121	108.60083	97.40909	8.19285	0.0758213	0.25643427	2.4536843	20	8 14.0	19.9
424029 2006 XA_{72}	17.5	X	96.17686	71.31957	119.59369	4.40942	0.0612740	0.25470770	2.4647602	20	8 1.6	20.6
424030 2006 YE_{7}	17.2	X	149.26190	187.37546	215.51250	10.35213	0.2217365	0.24591015	2.5232004	20	3 31.4	21.5
424031 2006 YU_{13}	18.0	X	246.53075	2.69613	13.31085	1.46689	0.2018197	0.26014123	2.4303189	20	5 22.6	21.5
424032 2006 YV_{13}	17.7	X	148.02735	202.65833	348.33249	2.16709	0.1340034	0.26921522	2.3753976	20	10 5.5	21.4
424033 2006 YS_{17}	16.1	X	306.58723	216.73410	298.27247	10.30121	0.2510274	0.21405621	2.7676903	20	—	—
424034 2006 YO_{22}	17.2	X	162.37891	189.78660	310.12884	4.04575	0.1105292	0.26024812	2.4296533	20	8 13.7	20.8
424035 2006 YA_{48}	17.4	X	170.17502	138.52061	358.02131	2.39513	0.1272910	0.25559937	2.4590245	20	8 17.9	21.2
424036 2007 AA_{11}	17.3	X	193.47271	323.42243	116.89892	5.09065	0.1717235	0.25557969	2.4591508	20	6 26.3	21.2
424037 2007 AH_{13}	17.4	X	35.34373	145.67061	302.70075	19.26474	0.0697429	0.36936536	1.9238237	20	—	—
424038 2007 AH_{15}	16.8	X	157.54883	178.96150	325.63032	8.91689	0.1500017	0.25683636	2.4511226	20	8 15.3	20.6
424039 2007 AH_{17}	17.0	X	173.69799	29.59624	112.64544	7.57126	0.1357408	0.25999662	2.4312199	20	8 30.8	20.7
424040 2007 AU_{20}	18.5	X	5.62723	33.18802	125.18774	24.33601	0.0660780	0.37518667	1.9038722	20	1 4.8	20.2
424041 2007 AD_{28}	17.8	X	101.62961	285.63291	300.57184	4.65664	0.1454734	0.26089462	2.4256379	20	10 1.8	21.5
424042 2007 AV_{28}	18.0	X	196.71613	101.15137	5.01224	1.08169	0.1452562	0.25830768	2.4418061	20	8 4.2	21.7
424043 2007 BA_{4}	17.5	X	209.38490	159.25162	285.91346	5.37764	0.1508913	0.25924312	2.4359286	20	7 19.5	21.3
424044 2007 BZ_{5}	16.1	X	113.45057	103.23291	317.01185	21.40158	0.0547599	0.23402855	2.6078953	20	2 22.3	19.7
424045 2007 BC_{7}	17.7	X	131.16865	157.29790	312.21413	13.27679	0.1238596	0.24613492	2.5216640	20	5 30.2	21.7
424046 2007 BU_{11}	17.0	X	121.00933	100.98875	326.98445	11.32431	0.2184660	0.23781482	2.5801410	20	4 1.9	21.1
424047 2007 BE_{25}	17.5	X	174.59769	355.66319	105.55140	4.80448	0.1612003	0.25355266	2.4722398	20	7 5.8	21.4
424048 2007 BH_{35}	17.4	X	157.05828	76.82165	44.51277	3.33737	0.1377593	0.25269182	2.4778514	20	7 15.3	21.2
424049 2007 BW_{40}	17.4	X	212.05053	220.17227	191.13432	2.24336	0.2059347	0.25425807	2.4676651	20	6 4.6	21.4
424050 2007 BE_{42}	17.7	X	5.44620	205.53745	310.00167	18.57597	0.0142365	0.37520938	1.9037953	20	1 9.5	19.5
424051 2007 BE_{43}	17.3	X	115.78417	106.93522	124.46994	6.39078	0.0760637	0.26498664	2.4006014	20	10 25.2	20.7
424052 2007 BT_{55}	17.1	X	144.74537	65.05001	7.63786	3.75841	0.1479544	0.24296429	2.5435547	20	4 29.2	21.1
424053 2007 BE_{63}	17.5	X	183.92582	192.91777	206.46209	1.36956	0.2200868	0.24484342	2.5305238	20	4 26.6	21.8
424054 2007 BP_{63}	17.2	X	92.07121	79.19508	70.58658	4.24731	0.0894388	0.24432963	2.5340701	20	6 3.1	20.4
424055 2007 BG_{71}	17.2	X	54.60443	0.22983	155.83942	6.92598	0.1238409	0.23510495	2.5999293	20	4 25.7	20.2
424056 2007 BV_{80}	17.5	X	104.11522	102.41940	130.84787	3.26173	0.1900602	0.26113816	2.4241295	20	10 20.4	21.3
424057 2007 BZ_{101}	16.7	X	160.07505	14.99978	60.15134	12.90698	0.2165679	0.24639132	2.5199143	20	5 21.2	20.7
424058 2007 BL_{102}	17.1	X	329.55694	191.48203	15.36407	5.57535	0.1371345	0.22209337	2.7005092	20	2 8.5	20.5
424059 2007 CU_{13}	17.5	X	156.80752	305.44481	99.89095	2.19829	0.1997902	0.24017267	2.5632265	20	4 11.7	21.6
424060 2007 CV_{13}	16.9	X	114.91248	228.63553	223.25006	2.69185	0.2196513	0.23984609	2.5655528	20	5 1.5	20.5
424061 2007 CT_{32}	16.3	X	177.90888	170.26163	139.47218	12.43442	0.1169615	0.21955881	2.7212522	20	1 2.9	20.6
424062 2007 CE_{45}	16.8	X	69.10701	175.57830	305.53482	12.46120	0.1331532	0.23359958	2.6110870	20	3 22.4	20.1
424063 2007 CP_{46}	16.4	X	26.30843	234.51264	321.55620	6.52383	0.0853235	0.23766964	2.5811916	20	4 24.7	19.4
424064 2007 CQ_{54}	18.3	X	90.08096	331.62444	150.80606	7.36361	0.2980152	0.24047987	2.5610432	20	5 26.4	22.1
424065 2007 CF_{63}	17.4	X	111.23692	81.13893	334.07470	18.88672	0.1172295	0.37731226	1.8967151	20	2 9.8	19.0
424066 2007 CM_{63}	17.4	X	18.51020	296.84021	146.16869	25.36502	0.0261068	0.36101797	1.9533655	20	—	—
424067 2007 CJ_{65}	16.9	X	290.18986	150.45917	148.51891	10.61799	0.1721745	0.23805848	2.5783801	20	4 9.7	20.5
424068 2007 DL_{1}	17.6	X	170.45105	256.30845	133.93377	3.79809	0.2185301	0.24215747	2.5492013	20	4 6.1	21.9
424069 2007 DV_{1}	17.9	X	116.74932	228.22322	232.00954	2.68263	0.1250536	0.23968687	2.5666888	20	5 3.1	21.4
424070 2007 DB_{2}	17.0	X	39.97531	343.83020	192.39507	4.65434	0.2193891	0.23417696	2.6067934	20	5 11.1	19.4
424071 2007 DA_{11}	16.7	X	33.83079	350.23554	163.09556	13.12262	0.0958232	0.22773682	2.6557094	20	3 13.9	19.6
424072 2007 DF_{16}	17.2	X	286.33421	299.85902	103.28560	5.21103	0.0235796	0.25998439	2.4312962	20	9 22.2	20.2
424073 2007 DY_{18}	17.2	X	65.20075	195.75245	337.47008	12.14556	0.0862177	0.23901111	2.5715245	20	5 24.8	20.7
424074 2007 DA_{21}	16.9	X	46.98882	4.52529	152.51778	9.86697	0.1656423	0.23236236	2.6203473	20	4 21.1	19.8
424075 2007 DZ_{22}	16.9	X	112.49484	145.12625	335.24629	10.52660	0.0782923	0.23947459	2.5682054	20	5 15.1	20.6
424076 2007 DV_{27}	17.5	X	122.59152	18.74740	93.52002	2.60433	0.1659750	0.24067903	2.5596301	20	5 30.4	21.4
424077 2007 DR_{30}	17.4	X	357.20543	99.22451	148.36618	5.00688	0.1632401	0.23600535	2.5933123	20	5 22.9	19.8
424078 2007 DN_{31}	17.3	X	318.66080	101.16019	146.65302	2.56606	0.1239304	0.22927280	2.6438350	20	3 17.2	20.5
424079 2007 DZ_{31}	17.4	X	76.52767	125.12595	155.13122	6.16504	0.1108229	0.26016183	2.4301906	20	11 14.2	20.9
424080 2007 DU_{35}	16.5	X	313.96016	314.16786	345.83591	11.77524	0.0559048	0.24013897	2.5634664	20	5 26.9	20.0

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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		°	°	°	°		°				
424081 2007 DS_{39}	17.0	X	63.64017	334.43125	160.92807	14.02369	0.2188109	0.23290613	2.6162673	20	4 28.4	20.2
424082 2007 DY_{39}	17.6	X	164.81653	162.58033	310.30732	8.92610	0.1465447	0.25404132	2.4690685	20	7 12.5	21.4
424083 2007 DR_{40}	16.6	X	68.14803	38.79848	113.83373	33.82586	0.2466594	0.23301629	2.6154426	20	6 9.3	20.5
424084 2007 DN_{48}	17.9	X	301.54325	255.83103	336.39621	19.97952	0.0501424	0.37327339	1.9103724	20	1 27.0	20.0
424085 2007 DP_{53}	16.4	X	335.11476	262.63777	345.30780	17.43133	0.1123078	0.23076141	2.6324528	20	4 5.5	19.7
424086 2007 DY_{71}	17.6	X	349.45428	194.95723	24.88674	3.14516	0.0611847	0.23051809	2.6343049	20	4 2.6	20.6
424087 2007 DU_{73}	18.1	X	124.79624	310.24343	160.59322	5.67403	0.1891424	0.24083622	2.5585162	20	6 2.8	22.1
424088 2007 DQ_{82}	17.5	X	220.15250	246.27949	358.91032	18.97625	0.0477734	0.35987419	1.9575022	20	—	—
424089 2007 DU_{103}	17.7	X	94.67732	294.57386	338.26420	23.20187	0.5011566	0.25507925	2.4623661	20	12 9.1	23.2
424090 2007 DH_{104}	17.6	X	329.78850	68.25935	84.46543	23.80917	0.0693362	0.36396847	1.9427945	20	—	—
424091 2007 DO_{109}	17.1	X	150.01279	356.53887	355.00398	7.54565	0.0205963	0.21828908	2.7317946	20	1 16.4	20.9
424092 2007 DW_{109}	17.5	X	346.98320	265.98509	351.58819	4.23432	0.0900362	0.23655442	2.5892978	20	5 18.1	20.5
424093 2007 DF_{112}	17.4	X	60.30167	129.17792	19.84031	9.77571	0.0898061	0.22923306	2.6441406	20	4 16.9	20.6
424094 2007 EC_{9}	17.5	X	59.19666	212.01245	6.41565	8.56856	0.1259209	0.24190981	2.5509409	20	8 1.5	20.8
424095 2007 EP_{10}	17.1	X	82.16893	157.50426	337.43191	10.94802	0.0280360	0.23623899	2.5916021	20	4 15.3	20.7
424096 2007 EJ_{11}	17.8	X	97.24400	212.83313	23.88232	2.98976	0.2055357	0.25527446	2.4611106	20	10 17.3	21.8
424097 2007 EQ_{12}	17.6	X	94.71410	348.07927	170.83373	5.40181	0.1540584	0.24254595	2.5464786	20	6 28.2	21.3
424098 2007 EY_{12}	16.5	X	130.97690	270.77909	170.84511	26.98582	0.1407119	0.23527672	2.5986637	20	5 1.1	20.8
424099 2007 EU_{16}	17.3	X	27.60067	156.62957	66.30164	3.11097	0.0949091	0.23658645	2.5890641	20	6 9.3	20.3
424100 2007 EO_{19}	18.0	X	174.06952	147.95250	330.33508	1.81703	0.1373724	0.25447965	2.4662325	20	7 28.2	21.8
424101 2007 ER_{23}	17.0	X	112.36407	308.95420	151.49852	7.12392	0.0386244	0.23028691	2.6360677	20	4 19.4	20.6
424102 2007 EB_{27}	14.0	X	314.74463	160.49936	126.75296	20.27705	0.1421716	0.08480271	5.1309317	20	5 13.8	20.7
424103 2007 EO_{27}	17.7	X	111.48046	268.00961	160.77234	6.17407	0.2130357	0.23354723	2.6114772	20	3 30.3	21.5
424104 2007 ES_{43}	18.1	X	251.80457	90.67146	179.97891	21.58717	0.0836087	0.36724157	1.9312337	20	1 6.0	21.0
424105 2007 EQ_{46}	17.4	X	33.92929	210.37243	359.87322	3.92335	0.0616125	0.23585562	2.5944097	20	5 28.1	20.6
424106 2007 EU_{60}	16.8	X	287.15400	134.98611	162.44952	14.87657	0.1176537	0.23264062	2.6182575	20	4 12.1	20.4
424107 2007 EH_{66}	17.6	X	68.96655	188.37431	16.55623	7.60926	0.1349687	0.24185719	2.5513109	20	7 28.4	21.0
424108 2007 EB_{72}	18.0	X	75.31976	186.69399	28.16251	4.62558	0.1811462	0.24375923	2.5380217	20	8 25.6	21.5
424109 2007 EM_{83}	17.2	X	81.57920	65.49138	57.59462	4.46463	0.1493608	0.23274597	2.6174674	20	4 23.8	20.4
424110 2007 EF_{91}	17.0	X	267.34415	324.81887	357.87195	2.78805	0.1307566	0.23237310	2.6202666	20	4 14.6	20.6
424111 2007 EZ_{92}	18.5	X	80.19679	220.02106	309.90748	2.92364	0.0943866	0.24232245	2.5480441	20	6 15.6	21.8
424112 2007 EP_{94}	17.3	X	258.27932	347.80375	1.55383	3.92373	0.0758188	0.23900803	2.5715465	20	5 15.6	20.8
424113 2007 ER_{97}	17.6	X	66.71161	153.12618	43.40021	1.68241	0.1260970	0.24341182	2.5404361	20	7 9.5	20.8
424114 2007 EU_{102}	18.0	X	77.39084	177.95978	32.03433	6.85782	0.1506018	0.24403447	2.5361130	20	8 18.6	21.6
424115 2007 EP_{107}	16.6	X	231.72734	307.85130	28.95092	14.54666	0.0651815	0.22707083	2.6608996	20	4 2.9	20.4
424116 2007 EU_{111}	16.5	X	146.25054	48.87942	19.70892	15.70936	0.1373039	0.23159981	2.6260959	20	4 23.4	20.5
424117 2007 EG_{113}	17.5	X	127.35003	317.45033	139.51259	5.54428	0.1309742	0.24026131	2.5625961	20	5 13.6	21.3
424118 2007 EL_{117}	16.8	X	108.11327	56.97364	38.24440	12.93931	0.1362086	0.22752344	2.6573695	20	4 19.7	20.6
424119 2007 EJ_{119}	17.7	X	69.57258	88.58125	80.59567	2.44620	0.2286813	0.23470409	2.6028888	20	6 21.3	20.8
424120 2007 ET_{119}	17.8	X	137.66838	329.38077	170.96020	5.97056	0.2143047	0.24403900	2.5360816	20	7 22.4	22.0
424121 2007 EB_{138}	17.3	X	95.61495	357.44850	111.87983	4.78425	0.1670183	0.23029481	2.6360074	20	4 27.9	20.9
424122 2007 EP_{144}	17.0	X	198.05290	142.81880	161.00694	8.94357	0.1068890	0.21475394	2.7616923	20	1 14.8	21.3
424123 2007 EL_{147}	17.3	X	281.87685	84.05129	124.98022	3.91808	0.1231169	0.21276299	2.7788941	20	—	—
424124 2007 ER_{150}	16.8	X	183.25667	170.41627	120.43664	4.33198	0.0355156	0.21020011	2.8014363	20	—	—
424125 2007 ES_{172}	16.7	X	106.22926	223.58209	189.76634	12.44500	0.0993436	0.21958686	2.7210205	20	2 14.9	20.5
424126 2007 EY_{175}	16.4	X	222.44507	116.17814	196.74516	14.18520	0.2481702	0.21421540	2.7663190	20	2 11.3	21.4
424127 2007 EL_{178}	16.2	X	85.06360	229.75425	205.24132	14.49102	0.0484626	0.21751494	2.7382724	20	2 6.2	20.1
424128 2007 EY_{187}	16.7	X	13.80958	36.37796	195.99328	10.15986	0.2129219	0.23510118	2.5999571	20	6 7.9	19.1
424129 2007 EY_{205}	16.6	X	292.26552	80.66179	169.35125	12.92757	0.2325943	0.22216416	2.6999355	20	1 29.2	20.8
424130 2007 EG_{221}	16.8	X	287.35732	149.91558	112.75461	4.81569	0.1667202	0.21989906	2.7184445	20	2 19.9	20.8
424131 2007 FZ	16.7	X	84.57698	215.53598	296.09243	16.68182	0.1113990	0.24188843	2.5510912	20	5 28.8	20.3
424132 2007 FZ_{5}	17.1	X	168.30435	302.95069	25.65850	6.73589	0.0768937	0.21473775	2.7618311	20	1 15.1	21.2
424133 2007 FA_{13}	16.0	X	305.66846	349.04685	268.12656	10.03362	0.1496648	0.22511040	2.6763260	20	3 1.5	19.9
424134 2007 FK_{22}	17.1	X	305.00072	255.31107	15.27116	8.97802	0.1117167	0.22728533	2.6592252	20	3 30.0	20.5
424135 2007 FV_{23}	17.1	X	308.94184	237.66978	18.88801	7.50389	0.2436528	0.22235777	2.6983680	20	2 28.5	20.7
424136 2007 FS_{27}	18.0	X	58.08971	190.13267	321.54859	2.17268	0.1327742	0.23273109	2.6175789	20	4 22.9	20.9
424137 2007 FU_{36}	17.2	X	206.33606	202.08935	147.12010	6.83753	0.0353004	0.22398131	2.6853127	20	3 20.7	21.0
424138 2007 FN_{38}	17.4	X	343.10092	143.37468	7.29562	20.26188	0.0597896	0.36768831	1.9296691	20	—	—
424139 2007 FC_{41}	16.3	X	282.39391	103.19453	136.09030	9.70088	0.2345425	0.21247570	2.7813984	20	1 9.4	20.8
424140 2007 FL_{46}	17.4	X	63.62987	151.31087	32.18088	11.14056	0.0343837	0.23366807	2.6105767	20	5 30.1	20.9
424141 2007 GN	17.3	X	6.46229	11.33184	216.14247	1.08693	0.1390681	0.23009294	2.6375489	20	5 10.3	20.0
424142 2007 GQ_{1}	16.8	X	53.48153	29.46481	156.13092	8.69567	0.1081436	0.23186478	2.6240949	20	6 1.9	20.1
424143 2007 GV_{2}	17.1	X	247.34925	247.78475	2.28851	8.41628	0.0773180	0.21329288	2.7742897	20	1 2.9	21.3
424144 2007 GM_{6}	16.7	X	314.14754	265.80260	47.61815	14.21208	0.0295213	0.23675156	2.5878603	20	6 20.3	20.1
424145 2007 GY_{14}	16.9	X	348.98830	315.73587	215.43365	9.56876	0.2317587	0.21902525	2.7256699	20	1 5.7	20.0
424146 2007 GC_{16}	16.4	X	307.35448	116.61947	158.58384	12.45049	0.2254610	0.22577120	2.6711013	20	3 23.2	19.8
424147 2007 GU_{16}	16.7	X	46.01496	163.74679	28.63268	13.77686	0.1618721	0.23151482	2.6267386	20	6 2.7	19.8
424148 2007 GY_{22}	17.0	X	233.38709	241.55509	44.80711	5.45521	0.1342521	0.21035255	2.8000828	20	1 30.1	21.5
424149 2007 GR_{23}	16.5	X	58.72787	333.11835	210.37592	13.24454	0.1767561	0.23276383	2.6173334	20	6 16.2	19.9
424150 2007 GH_{28}	16.7	X	356.41687	13.72768	188.60380	12.48820	0.2178863	0.22370368	2.6875339	20	3 5.5	19.2
424151 2007 GF_{35}	16.8	X	30.20138	295.60230	194.36660	12.95253	0.0214554	0.21568429	2.7537449	20	2 1.7	20.7
424152 2007 GH_{41}	16.8	X	343.03043	145.64061	37.06844	7.53766	0.0302459	0.21495501	2.7599698	20	2 12.3	20.5
424153 2007 GY_{41}	17.9	X	67.35582	292.37262	216.65270	3.28264	0.1118135	0.22787964	2.6545996	20	5 1.9	20.9
424154 2007 GW_{42}	17.2	X	48.78746	126.03050	36.03531	5.66494	0.0987375	0.22635447	2.6665107	20	4 19.5	20.4
424155 2007 GT_{45}	16.6	X	62.18995	300.87215	205.51251	10.90262	0.0208539	0.22306966	2.6926240	20	4 7.8	20.2
424156 2007 GP_{57}	17.6	X	41.52365	24.26926	156.58193	5.58625	0.0942855	0.22892775	2.6464910	20	5 5.2	20.7
424157 2007 GY_{67}	17.8	X	94.42872	269.09571	227.78377	3.65207	0.2095144	0.23242848	2.6198504	20	6 6.0	21.5
424158 2007 GX_{74}	16.6	X	34.10117	67.27409	131.67882	17.47327	0.1653447	0.23050622	2.6343954	20	5 30.3	19.8
424159 2007 HO_{5}	16.9	X	253.84608	57.85093	158.12152	2.93480	0.1202346	0.20391503	2.8587087	20	—	—
424160 2007 HP_{5}	17.0	X	117.12863	137.18646	8.01144	13.22577	0.1067820	0.24133515	2.5549888	20	7 2.2	20.9

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Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
	m		°	°	°	°		°				
424161 2007 HG_{6}	17.2	X	13.29701	158.81689	45.02836	5.25609	0.1551051	0.22798066	2.6538154	20	4 19.7	19.8
424162 2007 HL_{14}	17.3	X	349.90017	210.74154	52.33273	1.40375	0.0934167	0.23065760	2.6332426	20	6 1.5	20.0
424163 2007 HX_{21}	16.7	X	277.78952	263.04426	45.20392	13.47791	0.2272116	0.22172100	2.7035319	20	4 2.2	20.8
424164 2007 HG_{23}	17.3	X	61.64729	154.96778	79.74818	3.88201	0.0835002	0.24039729	2.5616297	20	8 19.3	20.5
424165 2007 HX_{36}	17.2	X	91.06540	166.28953	31.50367	4.68893	0.1782049	0.24120299	2.5559220	20	8 20.4	20.9
424166 2007 HB_{40}	16.6	X	33.01186	138.77338	47.48604	12.82845	0.0959010	0.22896859	2.6461763	20	4 28.2	19.6
424167 2007 HR_{43}	17.0	X	178.27200	264.09885	91.57899	5.00066	0.1108683	0.21478251	2.7614474	20	2 29.6	21.3
424168 2007 HY_{43}	16.9	X	92.75305	217.84045	173.77238	5.83344	0.0862918	0.20577045	2.8414982	20	1 3.8	20.7
424169 2007 HO_{44}	17.6	X	113.92087	137.85081	42.38165	2.68528	0.1610843	0.24501636	2.5293329	20	8 19.2	21.4
424170 2007 HJ_{45}	16.7	X	325.37546	50.48664	210.86163	14.35684	0.1468843	0.22397778	2.6853409	20	4 10.9	20.0
424171 2007 HC_{55}	16.3	X	293.82562	44.40496	183.61517	13.21630	0.1378145	0.21316860	2.7753679	20	1 16.9	20.5
424172 2007 HQ_{57}	16.3	X	358.33397	171.03893	63.22738	14.83593	0.1949251	0.22617797	2.6678977	20	5 5.6	18.7
424173 2007 HY_{57}	17.5	X	66.18496	90.07613	152.23631	5.22977	0.0840276	0.24387403	2.5372252	20	9 4.2	20.8
424174 2007 HX_{58}	17.0	X	45.62415	108.63620	172.07230	13.13302	0.3441534	0.24251818	2.5466730	20	11 7.9	20.9
424175 2007 HD_{74}	17.6	X	33.57063	54.88503	201.88244	7.34036	0.1041353	0.23817203	2.5775605	20	8 6.8	20.8
424176 2007 HA_{77}	16.8	X	15.98112	129.95396	99.56610	4.95486	0.1969518	0.23048348	2.6345686	20	6 6.7	19.1
424177 2007 HZ_{85}	16.0	X	153.20175	308.28413	79.57606	12.90201	0.1359045	0.21421620	2.7663121	20	3 21.4	20.5
424178 2007 HZ_{94}	17.3	X	9.12431	34.62603	211.56168	4.43263	0.1194252	0.22967648	2.6407363	20	6 12.4	20.0
424179 2007 HX_{97}	16.4	X	322.97586	96.54389	153.22011	11.82858	0.1402117	0.22065176	2.7122587	20	3 27.1	19.7
424180 2007 JL	16.8	X	355.59089	108.30853	129.60069	12.34619	0.1471593	0.22517687	2.6757992	20	5 9.5	19.8
424181 2007 JP	16.7	X	13.90065	46.70982	168.35583	13.82275	0.0377819	0.22384891	2.6863714	20	5 7.4	20.3
424182 2007 JD_{3}	16.6	X	324.64465	228.81577	43.54917	13.90472	0.1434638	0.22769511	2.6560337	20	4 27.5	19.6
424183 2007 JD_{8}	17.3	X	287.63769	250.97902	52.48832	4.65119	0.1298936	0.22376436	2.6870481	20	4 17.1	20.9
424184 2007 JX_{8}	16.8	X	102.83820	82.78091	218.04179	3.12057	0.1216669	0.18398147	3.0616344	20	12 20.8	21.5
424185 2007 JB_{11}	17.1	X	43.58602	179.91753	46.36296	6.26081	0.2482564	0.23477773	2.6023445	20	8 8.4	20.2
424186 2007 JU_{19}	16.2	X	344.86234	139.31377	83.00353	15.22387	0.1948444	0.22317726	2.6917584	20	3 25.9	19.3
424187 2007 JT_{21}	16.7	X	58.92002	177.29758	53.80209	12.15921	0.1678042	0.23861722	2.5743536	20	8 28.9	20.3
424188 2007 JN_{22}	15.9	X	147.76487	189.58441	77.93174	19.91932	0.1941164	0.18579439	3.0416856	20	12 22.5	21.1
424189 2007 JD_{24}	17.2	X	344.72570	24.63313	162.13372	14.85772	0.1454371	0.21500860	2.7595112	20	2 1.7	20.5
424190 2007 JF_{28}	16.5	X	322.68772	176.50653	65.08629	8.34122	0.1797338	0.21972455	2.7198837	20	3 11.7	19.9
424191 2007 JF_{40}	16.6	X	335.26728	194.96863	51.30557	14.62232	0.1954772	0.22499602	2.6772329	20	4 7.4	19.6
424192 2007 JB_{43}	17.3	X	44.86930	50.42951	211.51355	11.61539	0.2281354	0.24011918	2.5636072	20	9 20.9	20.6
424193 2007 JR_{45}	16.5	X	149.79259	186.34060	90.29592	11.34883	0.0829312	0.18840220	3.0135523	20	—	—
424194 2007 LJ_{2}	16.0	X	207.39581	212.07391	85.71577	16.24418	0.1254427	0.20406352	2.8573217	20	1 19.8	20.7
424195 2007 LN_{12}	16.7	X	3.08713	73.86416	100.90935	3.85211	0.1165539	0.21676114	2.7446171	20	2 22.1	19.7
424196 2007 LX_{15}	17.0	X	314.80606	53.94241	150.07438	10.01418	0.1796071	0.21183245	2.7870262	20	1 8.4	20.9
424197 2007 LG_{32}	16.2	X	313.74836	169.50694	67.02257	15.41440	0.0755427	0.21625464	2.7489009	20	3 12.4	20.2
424198 2007 LX_{37}	16.7	X	40.26630	269.22339	2.39502	11.37120	0.2578292	0.23480751	2.6021245	20	10 3.2	19.9
424199 2007 MY_{6}	16.8	X	20.58070	111.67855	148.63371	12.73891	0.1753269	0.23506068	2.6002557	20	7 31.6	19.4
424200 Tonicelia	15.6	X	108.87956	56.13616	283.16587	21.29430	0.1831666	0.18029703	3.1032041	20	—	—
424201 2007 OH_{7}	15.3	X	96.43644	100.24917	245.09537	23.85150	0.3705516	0.17334797	3.1855925	20	—	—
424202 2007 PU_{9}	15.9	X	75.41742	24.99025	319.92200	12.35210	0.2466175	0.17272400	3.1932598	20	—	—
424203 2007 PA_{25}	15.9	X	89.46468	63.50583	309.96692	13.05004	0.3080127	0.17957429	3.1115248	20	1 16.2	20.0
424204 2007 PP_{27}	16.1	X	353.00876	118.20076	341.02710	15.22109	0.0655981	0.17355582	3.1830486	20	—	—
424205 2007 PJ_{32}	16.0	X	96.79654	212.49890	151.47823	16.68183	0.2967102	0.17849653	3.1240372	20	1 10.5	20.6
424206 2007 PB_{33}	18.3	X	276.20628	242.88775	134.29847	4.02208	0.3239391	0.29557709	2.2319727	20	6 11.2	21.1
424207 2007 PL_{42}	19.5	X	27.75275	330.75636	319.46057	4.53508	0.1657070	0.46253528	1.6559205	20	11 12.9	20.8
424208 2007 QY	15.3	X	96.50230	40.44776	314.00710	20.75331	0.1095626	0.17851743	3.1237933	20	—	—
424209 2007 QL_{10}	16.4	X	169.02369	22.70018	335.54177	8.92242	0.0470341	0.19357721	2.9596014	20	2 20.2	20.8
424210 2007 QK_{16}	15.7	X	114.28395	5.08136	341.88179	21.75898	0.0823880	0.17888112	3.1195579	20	—	—
424211 2007 QY_{17}	16.0	X	52.40976	67.16387	331.26871	12.77903	0.1404803	0.17520169	3.1630825	20	—	—
424212 2007 RN_{4}	16.2	X	123.90384	106.93605	237.40843	3.83699	0.1074366	0.18193942	3.0845005	20	—	—
424213 2007 RM_{10}	15.9	X	85.53906	34.92692	321.95150	9.35127	0.2163977	0.17511390	3.1641396	20	—	—
424214 2007 RF_{36}	17.7	X	299.51767	32.42185	336.54885	4.34921	0.2611540	0.29842234	2.2177632	20	7 19.9	19.5
424215 2007 RH_{39}	18.5	X	28.09995	337.46741	15.41514	0.60480	0.1884119	0.31269099	2.1497723	20	—	—
424216 2007 RQ_{50}	16.4	X	340.46259	269.57267	221.84784	9.23657	0.0847095	0.17687396	3.1431139	20	—	—
424217 2007 RO_{70}	15.8	X	32.74934	265.07943	154.51026	12.03248	0.1181803	0.17441043	3.1726421	20	—	—
424218 2007 RP_{80}	16.9	X	29.02307	282.51778	343.44773	12.06010	0.2527233	0.22733502	2.6588376	20	9 6.9	19.8
424219 2007 RG_{92}	16.3	X	40.27258	50.79894	2.64203	3.87084	0.1806846	0.17161746	3.2069713	20	—	—
424220 2007 RR_{93}	16.3	X	357.92537	293.34829	180.45735	10.36973	0.0486684	0.17564898	3.1577104	20	—	—
424221 2007 RN_{103}	15.9	X	132.92403	359.87072	357.71523	10.76634	0.2039446	0.18313080	3.0711082	20	1 31.6	20.8
424222 2007 RS_{105}	17.8	X	331.29748	335.07778	9.87090	6.13007	0.1962776	0.30157023	2.2023030	20	9 13.1	18.8
424223 2007 RM_{111}	16.7	X	121.27591	316.31654	14.89470	2.88721	0.2385955	0.17724445	3.1387324	20	—	—
424224 2007 RT_{128}	16.4	X	236.56931	249.39482	16.97409	8.88611	0.0899395	0.18581958	3.0414107	20	1 15.3	21.2
424225 2007 RY_{140}	15.7	X	73.21078	204.14283	174.64187	9.13745	0.2948202	0.17447253	3.1718892	20	—	—
424226 2007 RR_{141}	18.3	X	4.69789	6.57048	351.83846	1.60416	0.1851171	0.31135178	2.1559324	20	12 18.6	20.3
424227 2007 RK_{143}	15.9	X	38.60120	223.79553	176.25143	27.59750	0.2051662	0.17100964	3.2145658	20	—	—
424228 2007 RU_{146}	15.7	X	125.41707	79.49109	255.30875	8.56164	0.1282991	0.17983270	3.1085434	20	—	—
424229 2007 RH_{150}	17.9	X	316.80069	332.22670	10.49976	6.98807	0.2033659	0.30080198	2.2060512	20	7 29.3	19.4
424230 2007 RL_{158}	16.3	X	314.60576	296.27240	1.83270	9.08261	0.1724694	0.21479292	2.7613581	20	5 8.7	19.7
424231 2007 RQ_{164}	16.6	X	21.36774	102.82104	319.19439	6.30846	0.1797295	0.17156802	3.2075873	20	—	—
424232 2007 RX_{169}	16.2	X	235.86046	93.13868	155.16594	10.35425	0.0551981	0.18528402	3.0472687	20	—	—
424233 2007 RA_{170}	16.4	X	19.47822	86.41861	1.42632	10.15824	0.0435644	0.17935527	3.1140574	20	—	—
424234 2007 RG_{170}	16.3	X	118.13009	181.58298	159.49109	12.49307	0.0801893	0.17893786	3.1188984	20	—	—
424235 2007 RR_{181}	16.1	X	137.59211	341.72775	10.07196	7.96547	0.2157456	0.18272118	3.0756963	20	1 29.6	21.1
424236 2007 RQ_{194}	18.4	X	255.10279	301.45138	137.26957	2.26475	0.1900572	0.29953420	2.2122716	20	9 3.1	20.8
424237 2007 RV_{198}	16.3	X	49.93739	42.65299	249.96572	11.76987	0.3076911	0.23589012	2.5941567	20	11 17.9	20.1
424238 2007 RZ_{198}	15.5	X	87.50457	142.12469	221.96129	16.77232	0.2679554	0.17580645	3.1558246	20	—	—
424239 2007 RB_{201}	16.0	X	110.40354	192.63621	191.45744	16.21680	0.0887058	0.18202307	3.0835555	20	1 18.9	20.7
424240 2007 RV_{205}	16.4	X	115.45480	234.78368	133.34876	4.06524	0.1894984	0.18247123	3.0785044	20	1 21.6	21.0

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Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
	m		°	°	°	°		°				
424241 2007 RN_{206}	16.7	X	116.49550	284.57696	79.03666	2.53730	0.1781460	0.18057503	3.1000183	20	1 16.7	21.2
424242 2007 RW_{214}	17.2	X	85.72231	215.22734	343.72411	7.05828	0.1029120	0.29349305	2.2425261	20	8 10.0	19.9
424243 2007 RP_{217}	16.5	X	201.03363	317.38597	357.48313	12.02781	0.0922386	0.18924701	3.0045771	20	2 7.4	21.3
424244 2007 RJ_{233}	15.9	X	56.85292	18.63267	13.22640	12.15808	0.2179305	0.17286042	3.1915795	20	—	—
424245 2007 RA_{253}	15.8	X	128.53720	15.14133	3.96975	11.93336	0.1260013	0.18456691	3.0551567	20	2 13.8	20.4
424246 2007 RD_{255}	16.5	X	266.41800	39.75700	189.30485	9.76151	0.0375425	0.18782497	3.0197234	20	1 4.5	21.0
424247 2007 RC_{257}	15.9	X	114.66509	193.31180	145.85548	15.48008	0.1750316	0.17864923	3.1222568	20	—	—
424248 2007 RK_{268}	16.5	X	165.10792	268.38467	24.83912	9.02705	0.1329775	0.17856594	3.1232276	20	—	—
424249 2007 RN_{275}	15.7	X	65.85499	279.72007	101.10159	21.14726	0.3698588	0.17308494	3.1888189	20	—	—
424250 2007 RW_{283}	16.2	X	309.78166	264.82650	52.88209	8.86758	0.2091033	0.21530947	2.7569399	20	5 24.9	19.3
424251 2007 RK_{286}	15.8	X	36.85711	76.84704	349.96677	14.95123	0.2125540	0.17612787	3.1519839	20	—	—
424252 2007 RP_{287}	15.7	X	41.02145	92.70011	338.97302	11.22032	0.0652124	0.17671063	3.1450503	20	—	—
424253 2007 RG_{299}	18.5	X	221.70611	137.32470	289.44283	2.38516	0.1273681	0.29067985	2.2569716	20	7 12.2	21.4
424254 2007 RL_{299}	16.0	X	101.96312	110.19620	244.56141	8.66794	0.1019305	0.17468569	3.1693083	20	—	—
424255 2007 RV_{302}	16.3	X	113.50992	274.99357	60.69731	2.45259	0.1718149	0.17315531	3.1879550	20	—	—
424256 2007 RM_{316}	16.0	X	123.47244	338.70169	15.90183	10.62666	0.1004461	0.18095050	3.0957285	20	1 4.9	20.6
424257 2007 RH_{320}	17.9	X	3.48103	325.45776	18.98319	2.65242	0.1099199	0.30928667	2.1655186	20	11 11.8	19.9
424258 2007 RD_{322}	16.6	X	358.16196	89.97393	20.97622	16.31935	0.0829384	0.17494157	3.1662172	20	—	—
424259 2007 SY_{1}	16.0	X	336.50748	151.54228	339.56752	16.68994	0.0807280	0.17749502	3.1357777	20	—	—
424260 2007 SQ_{8}	16.2	X	6.43898	27.01810	88.73973	2.86874	0.0474598	0.17715180	3.1398266	20	—	—
424261 2007 SK_{9}	16.5	X	160.67468	181.22642	175.48473	13.71703	0.0664057	0.18696479	3.0289784	20	2 8.9	21.2
424262 2007 ST_{12}	16.2	X	72.49259	17.71318	351.77855	12.00413	0.1168387	0.17107281	3.2137745	20	—	—
424263 2007 SY_{12}	16.3	X	54.30145	202.55315	207.64299	10.24345	0.1053601	0.17418522	3.1753761	20	—	—
424264 2007 SD_{14}	17.6	X	238.16194	159.96182	219.07223	4.76816	0.1632811	0.28592093	2.2819463	20	5 22.2	20.7
424265 2007 SW_{15}	18.1	X	336.62030	333.88881	48.73123	3.23026	0.1319887	0.31034552	2.1605902	20	11 26.0	19.9
424266 2007 TW_{3}	16.5	X	84.40605	70.04143	301.77988	3.74184	0.0506691	0.17284652	3.1917506	20	—	—
424267 2007 TG_{4}	16.1	X	167.04160	121.81937	189.75286	8.98282	0.0689770	0.18000663	3.1065408	20	—	—
424268 2007 TV_{15}	17.8	X	24.95358	341.07222	344.12655	4.75966	0.1931812	0.30888932	2.1673753	20	11 30.1	20.3
424269 2007 TO_{24}	15.8	X	230.43109	325.36796	313.58736	7.79874	0.0513002	0.19139322	2.9820735	20	1 23.7	20.1
424270 2007 TH_{27}	18.6	X	298.84663	229.44171	196.72622	3.16519	0.0511871	0.30754517	2.1736858	20	11 19.9	20.6
424271 2007 TE_{36}	17.2	X	310.65039	39.55113	346.63401	6.73346	0.2707678	0.30122451	2.2039878	20	9 21.0	17.7
424272 2007 TB_{55}	16.3	X	70.81102	224.45148	221.60373	8.69384	0.0917604	0.18050033	3.1008735	20	2 12.9	20.5
424273 2007 TN_{59}	16.4	X	58.97859	33.38247	7.09053	9.62740	0.0773505	0.17723524	3.1388411	20	—	—
424274 2007 TU_{74}	18.4	X	316.51191	26.20224	7.36459	4.07956	0.2239439	0.30381013	2.1914651	20	10 30.8	19.2
424275 2007 TG_{84}	16.2	X	216.10928	262.33869	29.45941	6.95414	0.1935668	0.18767663	3.0213144	20	1 22.4	21.4
424276 2007 TT_{90}	15.7	X	108.14707	312.46529	53.84331	10.20932	0.0791329	0.17426157	3.1744486	20	—	—
424277 2007 TF_{101}	16.3	X	121.29441	148.84820	186.02296	9.32724	0.0762230	0.17381821	3.1798444	20	—	—
424278 2007 TQ_{101}	17.6	X	357.49088	249.83915	36.51455	6.68860	0.1592859	0.29503881	2.2346866	20	8 3.3	19.3
424279 2007 TF_{102}	16.4	X	4.36932	334.26624	197.88022	9.05004	0.0600077	0.18491208	3.0513535	20	2 24.4	20.5
424280 2007 TG_{116}	17.9	X	27.70133	248.18375	96.26550	3.60433	0.2086274	0.31097837	2.1576579	20	—	—
424281 2007 TH_{120}	18.3	X	3.25565	297.61219	56.25989	5.95869	0.2029987	0.30863915	2.1685463	20	12 11.6	20.3
424282 2007 TG_{124}	15.9	X	87.01186	11.28476	41.73943	11.43313	0.0580540	0.17942193	3.1132861	20	1 27.5	20.4
424283 2007 TA_{131}	16.6	X	188.12883	286.66258	12.63894	0.90701	0.1523453	0.18001740	3.1064167	20	1 7.2	21.6
424284 2007 TO_{131}	16.6	X	113.90247	313.57666	46.84825	2.03528	0.1816692	0.17599760	3.1535391	20	1 11.3	21.3
424285 2007 TQ_{132}	16.2	X	196.82796	92.76749	207.29517	7.92810	0.0905905	0.18022710	3.1040068	20	1 12.9	21.1
424286 2007 TP_{135}	16.6	X	92.83795	251.52896	111.58521	2.32619	0.1375388	0.17729478	3.1381384	20	—	—
424287 2007 TU_{142}	17.6	X	252.68925	97.70004	262.30996	5.63625	0.1877406	0.28506528	2.2865103	20	5 8.1	20.9
424288 2007 TH_{144}	15.6	X	89.22073	39.60803	13.20342	10.04785	0.1056683	0.18137395	3.0909083	20	2 5.6	19.9
424289 2007 TT_{159}	17.7	X	278.74519	154.91694	234.90159	3.74628	0.2357712	0.29414439	2.2392144	20	7 17.1	20.2
424290 2007 TC_{161}	15.7	X	152.20756	348.19171	4.54843	10.93694	0.0814694	0.18207387	3.0829818	20	2 2.9	20.4
424291 2007 TJ_{167}	18.2	X	343.53883	113.24831	276.55984	2.06294	0.1680569	0.31010324	2.1617154	20	12 26.4	20.1
424292 2007 TW_{170}	15.1	X	293.53417	181.34514	2.32739	27.66952	0.1134836	0.17645321	3.1481084	20	—	—
424293 2007 TW_{213}	17.9	X	347.95332	1.95261	336.84343	2.42916	0.1763311	0.30107177	2.2047331	20	10 10.9	19.3
424294 2007 TG_{220}	16.2	X	100.15678	334.74841	8.77650	9.38587	0.0720983	0.17412455	3.1761137	20	—	—
424295 2007 TC_{243}	16.5	X	64.22294	127.20221	237.69572	10.40455	0.2226127	0.16894721	3.2406741	20	—	—
424296 2007 TY_{254}	16.0	X	91.77935	349.77233	35.54779	10.40672	0.0649373	0.17576141	3.1563636	20	—	—
424297 2007 TH_{256}	15.7	X	102.40364	332.38665	34.60803	27.02235	0.1556547	0.17472165	3.1688735	20	1 1.8	20.6
424298 2007 TV_{263}	15.6	X	115.38789	25.86764	352.10531	11.97770	0.0629042	0.18088178	3.0965125	20	1 20.3	20.2
424299 2007 TG_{264}	16.5	X	102.15092	90.26181	256.89319	5.97234	0.2017028	0.17395109	3.1782248	20	—	—
424300 2007 TW_{266}	16.4	X	130.62314	138.63332	201.35081	0.55248	0.1555303	0.17720718	3.1391724	20	1 1.4	21.2
424301 2007 TH_{269}	16.8	X	82.07074	234.82393	129.49190	1.87584	0.1899086	0.17119253	3.2122759	20	—	—
424302 2007 TB_{273}	15.9	X	19.13540	83.27793	54.51050	16.12258	0.0326818	0.18114358	3.0935283	20	2 12.1	20.4
424303 2007 TH_{285}	16.5	X	335.35389	92.33855	27.67246	11.27164	0.0287302	0.17253245	3.1956229	20	—	—
424304 2007 TP_{285}	16.2	X	88.59664	24.77667	30.03791	9.92081	0.1171766	0.18190398	3.0849012	20	2 9.1	20.5
424305 2007 TH_{289}	15.8	X	84.40876	50.46007	354.29710	10.03973	0.0650165	0.17952936	3.1120439	20	1 13.9	20.1
424306 2007 TH_{296}	15.9	X	145.84610	111.91260	213.20577	8.97064	0.0969134	0.17817572	3.1277860	20	—	—
424307 2007 TG_{314}	16.2	X	36.19519	35.60427	39.15028	16.59122	0.0768000	0.17323209	3.1870129	20	—	—
424308 2007 TF_{315}	16.4	X	25.33904	58.27286	34.26805	6.30954	0.1332542	0.17075161	3.2178034	20	—	—
424309 2007 TQ_{317}	18.4	X	211.57871	268.34513	212.30965	1.02785	0.0910684	0.29508589	2.2344489	20	9 18.4	21.0
424310 2007 TG_{324}	15.9	X	38.97306	227.76812	249.55921	9.24315	0.0521366	0.18146296	3.0898974	20	2 3.8	20.1
424311 2007 TG_{335}	18.5	X	283.50350	35.70687	26.89101	1.52565	0.1123856	0.29942029	2.2128326	20	10 10.3	20.3
424312 2007 TW_{363}	16.3	X	357.85793	281.06083	231.30744	6.30304	0.0907014	0.17353069	3.1833558	20	1 22.3	20.4
424313 2007 TH_{370}	16.7	X	346.00845	38.51298	289.20242	7.81774	0.2625378	0.29934659	2.2131958	20	9 21.9	17.9
424314 2007 TP_{372}	15.9	X	76.65889	56.99345	339.79259	13.81807	0.2332945	0.17408241	3.1766262	20	1 19.2	20.0
424315 2007 TP_{404}	17.5	X	307.30754	157.67426	229.25684	5.08775	0.1796061	0.29927361	2.2135556	20	9 20.8	19.0
424316 2007 TN_{414}	15.9	X	168.06709	273.09559	95.20754	14.25942	0.1160475	0.18889959	3.0082600	20	3 12.4	20.9
424317 2007 TY_{427}	16.0	X	121.31528	344.64480	44.47859	10.89857	0.0356659	0.17960105	3.1112158	20	2 7.1	20.6
424318 2007 TK_{430}	16.3	X	202.94930	54.38673	265.44735	7.90949	0.1302709	0.18473230	3.0533329	20	2 8.7	21.4
424319 2007 TC_{432}	15.5	X	358.50049	310.22704	178.00785	28.12592	0.1617136	0.17992395	3.1074923	20	—	—
424320 2007 TZ_{432}	15.9	X	140.73385	5.49562	345.32703	8.84075	0.1094939	0.18089983	3.0963065	20	1 20.9	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		°	°	°	°		°				
424321 2007 TM_{446}	18.2	X	251.12990	87.68077	356.88565	5.31315	0.1757469	0.29582834	2.2307087	20	9 8.1	20.5
424322 2007 UR_{12}	15.9	X	123.91477	275.88332	69.64441	11.27767	0.2533999	0.17735955	3.1373743	20	1 12.8	20.9
424323 2007 UG_{15}	16.1	X	181.78847	275.35435	17.34022	14.14760	0.0260101	0.17861185	3.1226924	20	—	—
424324 2007 UM_{15}	16.4	X	353.43168	239.90338	21.73763	10.63907	0.0684264	0.20944671	2.8081504	20	6 3.9	20.0
424325 2007 UC_{33}	16.4	X	107.44154	52.60601	295.75253	14.30298	0.3190790	0.17572456	3.1568049	20	1 8.0	21.1
424326 2007 UL_{38}	16.1	X	196.33502	78.34488	231.04426	7.93273	0.1711358	0.18834023	3.0142133	20	1 22.6	21.2
424327 2007 UW_{43}	16.2	X	126.01372	170.17375	203.50772	9.09908	0.0677806	0.18178861	3.0862061	20	1 22.5	20.8
424328 2007 UG_{57}	16.3	X	229.84524	65.34357	224.19587	7.29831	0.0688213	0.18345658	3.0674714	20	2 1.6	21.0
424329 2007 UJ_{57}	18.2	X	207.83923	293.86814	221.38260	5.91864	0.1386622	0.30155545	2.2023749	20	10 26.6	21.1
424330 2007 UH_{58}	16.0	X	244.96082	219.07438	50.58308	9.02839	0.1303911	0.18223050	3.0812150	20	1 25.4	20.9
424331 2007 UY_{62}	16.3	X	96.88403	120.42565	229.76100	0.72334	0.0712296	0.17166602	3.2063665	20	—	—
424332 2007 UK_{81}	16.7	X	88.13093	211.00567	187.31097	11.00680	0.0946541	0.17825030	3.1269135	20	1 11.2	21.2
424333 2007 UE_{99}	17.9	X	332.13696	223.01061	135.00032	0.07144	0.1817644	0.29903658	2.2147251	20	10 6.7	19.2
424334 2007 UU_{99}	15.7	X	144.59019	293.01133	56.01676	10.41547	0.0560565	0.17449774	3.1715837	20	1 17.8	20.4
424335 2007 UE_{102}	16.2	X	40.88347	239.07698	235.05649	9.60606	0.0566667	0.17625794	3.1504330	20	2 3.3	20.5
424336 2007 UW_{103}	17.8	X	349.14414	150.79237	183.86364	2.74363	0.1574203	0.29683810	2.2256470	20	10 4.2	19.4
424337 2007 UM_{105}	17.6	X	281.85885	138.94989	202.38640	5.11825	0.1892658	0.28408936	2.2917438	20	5 19.7	20.4
424338 2007 UG_{116}	18.1	X	300.36595	267.44665	112.95196	2.18462	0.1752339	0.29563984	2.2316568	20	8 26.9	19.8
424339 2007 UZ_{116}	18.5	X	306.12921	9.59034	41.20042	3.36037	0.0980216	0.30391869	2.1909431	20	11 6.3	20.4
424340 2007 UA_{121}	18.4	X	229.16779	343.76835	45.35066	4.84809	0.2159007	0.28282898	2.2985473	20	5 21.1	21.8
424341 2007 UD_{131}	15.9	X	214.14604	239.42573	66.52665	10.26644	0.0721967	0.18048924	3.1010005	20	2 10.9	20.8
424342 2007 UL_{135}	18.6	X	247.91985	87.28145	36.30965	2.79286	0.1111169	0.30589228	2.1815091	20	11 12.2	20.8
424343 2007 UL_{136}	16.0	X	141.85177	295.51424	92.04322	13.12225	0.1167052	0.18653853	3.0335909	20	3 9.1	20.8
424344 2007 VX_{23}	16.2	X	278.29504	259.66938	58.07982	12.72478	0.0321569	0.20000254	2.8958699	20	5 9.4	20.2
424345 2007 VY_{48}	17.3	X	357.60778	290.64546	5.46133	5.29533	0.1222983	0.29097892	2.2554248	20	8 15.6	19.2
424346 2007 VP_{49}	17.8	X	134.55433	337.40892	282.55955	4.63027	0.1079461	0.31143271	2.1555589	20	12 28.1	20.5
424347 2007 VU_{50}	16.1	X	321.76370	147.22489	32.27805	11.65758	0.0393044	0.17549260	3.1595859	20	1 16.3	20.7
424348 2007 VO_{52}	18.2	X	213.63736	321.48913	68.36306	8.07216	0.1766120	0.27871905	2.3210880	20	5 11.5	21.7
424349 2007 VX_{61}	17.7	X	223.23317	9.76908	39.60414	3.66119	0.1213914	0.28260404	2.2997668	20	6 19.8	21.0
424350 2007 VR_{79}	15.9	X	80.96210	331.34359	55.13955	22.22697	0.0824475	0.16996862	3.2276781	20	—	—
424351 2007 VS_{114}	15.6	X	162.65652	259.26327	77.25853	9.77475	0.0660688	0.17461002	3.1702239	20	1 23.3	20.4
424352 2007 VJ_{120}	16.0	X	155.68823	114.99318	198.30411	11.40657	0.0594482	0.17613678	3.1518776	20	—	—
424353 2007 VX_{127}	16.0	X	5.42327	91.64426	12.94904	8.94830	0.0745537	0.17419908	3.1752078	20	—	—
424354 2007 VA_{129}	16.3	X	180.86651	65.88911	206.62495	7.96792	0.0492784	0.17036928	3.2226157	20	—	—
424355 2007 VU_{145}	17.7	X	352.60277	24.82413	301.58020	3.04948	0.2705961	0.29876839	2.2160503	20	10 14.9	18.9
424356 2007 VE_{146}	15.9	X	317.04055	154.09075	42.27928	9.95375	0.1485821	0.17261586	3.1945934	20	1 15.7	20.3
424357 2007 VM_{151}	16.2	X	275.95147	138.64658	82.72168	11.60399	0.0645183	0.17208594	3.2011482	20	1 6.8	20.9
424358 2007 VQ_{159}	17.7	X	91.40224	215.28259	83.69489	6.13843	0.0640181	0.31075504	2.1586916	20	12 31.0	20.3
424359 2007 VE_{165}	16.7	X	137.98155	259.73694	84.54819	2.44451	0.1733314	0.17448847	3.1716961	20	1 16.1	21.6
424360 2007 VA_{180}	18.4	X	249.92878	289.65415	191.40163	3.87732	0.0974111	0.30442011	2.1885367	20	11 14.7	20.7
424361 2007 VF_{181}	16.3	X	65.69534	214.25995	230.36245	3.76396	0.1470013	0.17784046	3.1317157	20	2 13.2	20.2
424362 2007 VT_{185}	16.0	X	172.78003	81.21187	224.33868	8.58430	0.0550435	0.17475072	3.1685220	20	—	—
424363 2007 VB_{189}	18.0	X	283.83748	141.91034	279.34359	2.19869	0.1967061	0.29785195	2.2205936	20	9 23.3	19.8
424364 2007 VW_{197}	18.1	X	257.07576	146.81644	264.13808	5.07813	0.2031529	0.28516904	2.2859556	20	7 21.9	20.9
424365 2007 VC_{220}	17.8	X	188.51337	36.85011	73.75658	3.48088	0.1504116	0.28323826	2.2963325	20	8 3.8	21.2
424366 2007 VE_{229}	16.3	X	136.18216	300.52888	42.67072	6.00600	0.1575508	0.17465080	3.1697305	20	1 12.2	21.2
424367 2007 VD_{238}	16.0	X	308.93829	111.73710	55.53055	14.05608	0.0515450	0.17214575	3.2004068	20	—	—
424368 2007 VB_{244}	17.4	X	204.37539	204.25123	248.79941	6.00838	0.0668907	0.28696959	2.2763837	20	7 31.8	20.4
424369 2007 VQ_{250}	18.2	X	253.99965	339.44627	89.19483	4.40672	0.1888320	0.29361922	2.2418836	20	8 18.3	21.0
424370 2007 VC_{256}	16.5	X	113.77977	1.16288	11.90600	9.25446	0.0776670	0.17522024	3.1628592	20	1 14.3	21.1
424371 2007 VU_{257}	16.1	X	72.55691	117.28923	315.02413	5.88748	0.1461716	0.17699495	3.1416814	20	2 9.3	20.2
424372 2007 VT_{268}	17.5	X	4.14166	189.47058	175.04632	5.27386	0.1638346	0.30749601	2.1739175	20	12 21.8	19.8
424373 2007 VY_{280}	18.3	X	321.74261	162.05842	240.36787	4.99437	0.0403982	0.30286739	2.1960103	20	11 19.8	20.4
424374 2007 VW_{305}	17.2	X	330.56364	280.65625	93.71951	8.23354	0.1495559	0.29497834	2.2349920	20	10 31.9	19.0
424375 2007 VZ_{311}	15.4	X	242.25117	357.94843	265.90899	10.10615	0.0190844	0.17297930	3.1901171	20	1 21.3	20.1
424376 2007 VQ_{326}	17.6	X	248.21510	103.24321	312.39726	3.58697	0.1675802	0.28837214	2.2689966	20	7 23.9	20.4
424377 2007 WF_{4}	17.3	X	355.10796	74.36917	261.06746	6.05251	0.2897962	0.30126843	2.2037735	20	11 11.4	18.8
424378 2007 WY_{6}	17.7	X	347.71596	320.84997	33.14871	6.44458	0.2195172	0.30265693	2.1970282	20	11 12.7	19.2
424379 2007 WA_{11}	17.9	X	336.59604	205.64420	140.05327	4.43913	0.2181592	0.29881538	2.2158180	20	10 1.3	18.9
424380 2007 WO_{15}	18.1	X	229.13628	255.54177	180.82903	1.55178	0.1624998	0.28777555	2.2721314	20	7 29.8	21.3
424381 2007 WQ_{16}	17.7	X	248.86005	318.26414	111.41477	2.14213	0.1307606	0.29099508	2.2553414	20	8 20.7	20.2
424382 2007 WC_{35}	15.9	X	169.90968	285.50779	45.50142	9.70941	0.0709999	0.17473987	3.1686532	20	1 25.9	20.8
424383 2007 WY_{39}	17.8	X	258.38089	251.10373	102.70739	6.41045	0.1984452	0.28373821	2.2936343	20	5 8.2	21.1
424384 2007 WV_{48}	16.3	X	70.39304	218.27390	221.54749	8.42756	0.0719174	0.17597209	3.1538439	20	2 3.3	20.7
424385 2007 WB_{53}	17.9	X	121.84943	82.02455	43.02943	5.65476	0.0638714	0.27499930	2.3419718	20	6 3.8	20.9
424386 2007 WU_{61}	17.6	X	271.60368	62.66926	299.92509	5.68699	0.1465888	0.28542639	2.2845814	20	6 11.3	20.3
424387 2007 XX_{10}	17.9	X	320.30793	90.83665	275.80427	1.76432	0.1839604	0.29645993	2.2275393	20	9 18.3	19.0
424388 2007 XY_{15}	17.5	X	262.06986	91.14317	304.34296	4.39093	0.1588127	0.28707023	2.2758516	20	7 14.7	20.2
424389 2007 XS_{19}	17.6	X	222.15776	135.32886	296.61241	4.17910	0.1397471	0.28579315	2.2826264	20	7 18.4	20.8
424390 2007 XW_{41}	17.7	X	215.87816	187.50789	304.25777	5.13655	0.1263722	0.29144941	2.2529969	20	10 1.6	20.7
424391 2007 XO_{54}	18.0	X	159.57114	352.85661	132.15484	5.49012	0.1999070	0.27203756	2.3589395	20	7 23.5	21.8
424392 2007 YJ	21.9	X	139.02080	199.00370	29.12551	3.30543	0.2799836	0.84986547	1.1038310	20	—	—
424393 2007 YP_{27}	17.5	X	240.41251	351.03195	78.61965	9.04231	0.1654021	0.28482362	2.2878035	20	8 5.4	20.6
424394 2007 YW_{31}	17.7	X	95.72812	88.58659	66.72267	7.25395	0.0776713	0.27037899	2.3685765	20	6 14.1	20.6
424395 2007 YG_{62}	16.0	X	51.90004	97.92840	306.87993	9.17017	0.0608146	0.15801835	3.3884237	20	—	—
424396 2007 YT_{64}	18.3	X	177.79300	128.39847	6.61141	5.81141	0.0996070	0.27897478	2.3196694	20	8 28.3	21.6
424397 2007 YM_{67}	18.4	X	202.57997	138.19806	338.10276	5.57834	0.1008424	0.28347549	2.2950511	20	8 29.9	21.3
424398 2007 YV_{67}	18.4	X	248.16039	125.10493	292.12627	3.71623	0.1427903	0.28296916	2.2977881	20	7 28.9	21.4
424399 2007 YX_{71}	17.6	X	64.15464	319.61920	289.97106	5.83204	0.0931234	0.28026287	2.3125564	20	9 14.3	20.6
424400 2007 YP_{72}	17.5	X	114.84309	103.54021	98.56018	5.87944	0.1762781	0.27674939	2.3320880	20	9 23.5	21.1

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Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
	m		°	°	°	°		°				
424401 2008 AB_9	17.9	X	160.46291	255.09424	266.00169	2.79329	0.1846509	0.28092146	2.3089407	20	9 8.5	21.5
424402 2008 AT_9	17.3	X	286.71642	359.77994	277.33124	5.01570	0.1526488	0.25548710	2.4597449	20	3 2.6	20.6
424403 2008 AL_{23}	18.3	X	227.80696	2.82061	72.80924	3.13931	0.1788942	0.27979720	2.3151216	20	7 25.9	21.6
424404 2008 AK_{25}	18.0	X	145.74604	132.47878	53.37230	2.45872	0.0808183	0.28148542	2.3058556	20	9 29.6	21.0
424405 2008 AT_{25}	17.1	X	233.64830	260.82608	114.52296	7.27092	0.1289186	0.26754602	2.3852673	20	5 17.6	20.6
424406 2008 AS_{26}	17.9	X	184.12210	78.20096	133.18802	4.37735	0.0788134	0.29510242	2.2343654	20	12 19.4	20.7
424407 2008 AP_{27}	17.0	X	74.22751	32.71088	156.25138	7.71639	0.1743474	0.26266506	2.4147259	20	7 17.1	20.2
424408 2008 AG_{34}	18.1	X	76.86423	156.70367	350.11632	0.92451	0.1110331	0.26059076	2.4275231	20	5 11.4	20.8
424409 2008 AR_{38}	18.0	X	110.23159	290.02465	292.64943	5.52385	0.0526319	0.28371850	2.2937405	20	10 1.9	21.1
424410 2008 AZ_{39}	17.5	X	156.98245	209.74740	334.18871	3.76344	0.1817391	0.28251133	2.3002700	20	10 5.0	21.2
424411 2008 AW_{42}	17.1	X	190.36705	296.17531	118.28584	24.22634	0.2665331	0.27301261	2.3533196	20	5 27.4	21.7
424412 2008 AN_{57}	17.8	X	104.51188	76.26864	121.54335	3.68946	0.0493088	0.27806704	2.3247150	20	8 23.8	20.7
424413 2008 AJ_{60}	16.0	X	113.86958	294.63489	128.22057	9.13613	0.0412240	0.17171046	3.2058133	20	3 9.7	20.6
424414 2008 AK_{67}	18.0	X	227.30525	326.16850	129.82385	6.11047	0.1134832	0.28385266	2.2930177	20	9 1.1	20.9
424415 2008 AN_{77}	17.4	X	106.57946	144.23715	85.17800	5.91375	0.1185727	0.28299905	2.2976263	20	10 17.7	20.8
424416 2008 AH_{80}	17.7	X	259.35144	116.96218	285.68102	6.38740	0.1119001	0.27980321	2.3150884	20	7 27.5	20.5
424417 2008 AQ_{84}	18.4	X	243.84886	78.75285	343.42368	3.67923	0.2052854	0.28287078	2.2983208	20	7 22.8	21.4
424418 2008 AP_{86}	15.7	X	109.29089	186.42358	128.67525	10.91053	0.0710611	0.14858169	3.5304157	20	—	—
424419 2008 AS_{90}	17.9	X	73.80547	31.56998	145.39918	2.28844	0.1387087	0.26577779	2.3958351	20	6 24.6	20.7
424420 2008 AL_{92}	17.7	X	238.99968	31.51928	80.13707	5.59508	0.1076041	0.29100745	2.2552774	20	10 12.9	20.3
424421 2008 AR_{93}	18.0	X	86.14687	61.02962	86.46225	5.41593	0.1214100	0.26314709	2.4117762	20	5 28.4	21.0
424422 2008 AD_{109}	17.7	X	177.24535	53.47782	115.41554	5.62690	0.0546388	0.28814177	2.2702058	20	10 18.4	20.7
424423 2008 AW_{114}	18.2	X	262.09113	97.84095	335.10123	5.26248	0.1504165	0.28660158	2.2783319	20	9 8.9	20.5
424424 2008 AA_{128}	18.1	X	139.35970	267.17025	255.24576	2.76229	0.1067250	0.27645088	2.3337665	20	8 19.2	21.3
424425 2008 BZ_{19}	18.4	X	244.40743	194.95990	253.16299	0.71315	0.1676240	0.28890784	2.2661909	20	9 3.0	21.1
424426 2008 BS_{33}	17.2	X	148.98222	48.91032	157.24746	11.48381	0.1332122	0.28294372	2.2979258	20	10 31.9	20.8
424427 2008 BW_{33}	17.8	X	187.74146	31.32515	128.57176	5.05960	0.1873491	0.28434937	2.2903466	20	10 6.3	21.3
424428 2008 BJ_{35}	17.5	X	220.52470	309.12243	146.50450	6.44434	0.1016518	0.27800745	2.3250471	20	8 22.6	20.5
424429 2008 BG_{38}	17.7	X	100.09079	67.64887	160.63435	6.31414	0.1717355	0.27589893	2.3368780	20	10 11.2	21.2
424430 2008 BF_{46}	18.2	X	174.68971	302.59866	143.84018	2.21430	0.1921787	0.26966885	2.3727330	20	6 17.0	22.1
424431 2008 BW_{46}	17.9	X	211.85569	0.28505	80.32674	2.41765	0.1518833	0.27353765	2.3503072	20	7 17.3	21.4
424432 2008 BH_{47}	17.4	X	134.74641	185.11483	335.56491	13.05238	0.0459491	0.27173169	2.3607094	20	8 11.6	20.5
424433 2008 CU_5	17.0	X	135.86758	106.49932	114.39286	7.26973	0.1275062	0.28314731	2.2968242	20	11 6.2	20.5
424434 2008 CB_7	17.8	X	145.88198	30.88214	130.98629	5.25455	0.0886643	0.27465906	2.3439055	20	8 27.4	21.1
424435 2008 CE_{11}	18.2	X	208.77626	126.06455	353.32834	5.59560	0.1950923	0.28305692	2.2973131	20	9 1.7	21.5
424436 2008 CG_{15}	18.1	X	195.26788	354.53154	93.61271	2.37474	0.1354011	0.27256546	2.3558927	20	7 10.7	21.4
424437 2008 CP_{15}	17.7	X	151.73634	222.34532	343.69711	8.12230	0.1629945	0.28338104	2.2955611	20	10 26.9	21.5
424438 2008 CU_{15}	17.0	X	114.21654	268.50837	344.55189	7.62918	0.0778844	0.28629737	2.2799456	20	11 19.2	20.2
424439 2008 CE_{18}	18.0	X	152.37941	33.80327	148.79984	4.18006	0.1848090	0.28126377	2.3070669	20	10 1.7	21.6
424440 2008 CR_{23}	17.4	X	210.21455	180.30667	334.15140	4.96962	0.1214754	0.28801747	2.2708590	20	10 26.3	20.5
424441 2008 CL_{24}	17.9	X	186.38448	60.28259	132.18710	5.90068	0.1969770	0.28806426	2.2706131	20	11 15.1	21.4
424442 2008 CQ_{36}	17.9	X	247.75801	132.57347	308.81130	6.17510	0.1543130	0.28378011	2.2934085	20	8 28.9	20.9
424443 2008 CE_{39}	17.8	X	233.71078	13.93247	21.02883	1.61506	0.1706958	0.27206965	2.3587540	20	6 6.6	21.3
424444 2008 CL_{40}	18.2	X	58.07535	275.41836	337.85109	0.70226	0.1555727	0.27386370	2.3484414	20	9 23.2	21.1
424445 2008 CA_{43}	17.6	X	174.72578	349.16045	98.53430	3.74688	0.1864481	0.26787475	2.3833155	20	6 18.6	21.5
424446 2008 CK_{44}	17.6	X	256.79876	18.81809	40.74616	2.82353	0.1637911	0.27966358	2.3158590	20	8 11.2	20.3
424447 2008 CQ_{61}	17.9	X	62.66679	216.99452	52.19981	2.15841	0.2370349	0.27285278	2.3542385	20	10 30.8	21.2
424448 2008 CU_{62}	17.2	X	95.80297	93.17371	148.34427	9.50708	0.1800570	0.27808635	2.3246073	20	10 26.6	20.9
424449 2008 CC_{68}	17.9	X	141.63413	211.94340	359.41652	3.55947	0.1673075	0.28283251	2.2985282	20	10 26.4	21.6
424450 2008 CE_{77}	17.7	X	252.16757	349.24487	100.62846	7.06533	0.1305374	0.28658336	2.2784285	20	9 27.2	20.4
424451 2008 CH_{77}	17.6	X	253.70577	41.88436	109.37994	7.32020	0.0872730	0.29823541	2.2186898	20	—	—
424452 2008 CY_{80}	17.9	X	194.99216	58.75918	78.12486	2.51003	0.1626391	0.28241571	2.3007891	20	9 14.1	21.3
424453 2008 CW_{83}	17.9	X	59.30667	185.11665	16.55742	2.48628	0.1458190	0.26204027	2.4185627	20	7 10.6	20.6
424454 2008 CO_{86}	17.8	X	198.60610	81.89793	75.48741	3.13477	0.0974049	0.28522419	2.2856610	20	10 22.2	20.7
424455 2008 CF_{89}	17.3	X	13.52231	173.05954	120.86900	9.41210	0.2202769	0.26905956	2.3763136	20	9 27.6	19.6
424456 2008 CC_{92}	17.7	X	42.24144	287.22239	10.99272	3.74204	0.0086707	0.28168747	2.3047529	20	10 12.1	20.4
424457 2008 CQ_{92}	18.0	X	56.60385	52.62496	133.18118	7.31866	0.1510742	0.25808157	2.4432321	20	6 13.7	20.8
424458 2008 CO_{98}	18.1	X	118.42894	141.36142	322.76177	0.85394	0.1466313	0.25964416	2.4334196	20	5 12.2	21.4
424459 2008 CD_{100}	17.9	X	208.70785	7.01154	138.46363	4.20696	0.0742201	0.28638643	2.2794729	20	10 22.5	20.7
424460 2008 CC_{121}	18.2	X	195.31490	155.25252	359.76058	9.51192	0.2840461	0.28484700	2.2876783	20	9 27.2	22.1
424461 2008 CD_{127}	17.7	X	78.02537	28.52660	150.04002	5.67680	0.1605109	0.26280424	2.4138733	20	7 5.8	20.8
424462 2008 CM_{131}	18.0	X	201.23346	305.13836	137.81988	1.82433	0.1464503	0.27320476	2.3522160	20	7 9.2	21.6
424463 2008 CY_{131}	17.8	X	136.74289	73.38622	116.43920	2.04683	0.1285730	0.27754004	2.3276568	20	9 25.1	21.3
424464 2008 CF_{138}	17.9	X	197.30415	33.44335	32.80385	3.53994	0.1668667	0.26838042	2.3803208	20	6 11.6	21.5
424465 2008 CV_{138}	16.8	X	233.79446	311.27127	4.38840	3.78908	0.1173783	0.24605158	2.5222335	20	3 2.1	20.4
424466 2008 CW_{139}	17.9	X	200.68257	352.33445	167.13584	3.71517	0.1411559	0.28683938	2.2770726	20	10 22.7	21.0
424467 2008 CP_{150}	18.3	X	198.62647	171.67880	308.85014	3.30663	0.2074946	0.27983880	2.3148922	20	8 21.6	21.8
424468 2008 CX_{153}	17.5	X	303.81284	296.32846	4.44942	9.27853	0.1300292	0.25690313	2.4506980	20	4 30.4	20.6
424469 2008 CS_{158}	18.0	X	170.70877	99.54116	56.83114	2.96916	0.1574845	0.27838042	2.3229700	20	9 15.5	21.6
424470 2008 CD_{168}	17.7	X	99.78060	116.64600	101.80008	7.51767	0.1751521	0.27193934	2.3595075	20	9 30.3	21.4
424471 2008 CJ_{172}	18.0	X	123.42057	160.51621	35.40167	2.63733	0.1705569	0.27769251	2.3268047	20	9 21.3	21.5
424472 2008 CP_{177}	17.9	X	197.67549	28.22551	116.24046	2.66817	0.1404396	0.28396991	2.2923864	20	9 29.2	21.0
424473 2008 CV_{191}	17.9	X	194.53165	292.57531	163.89996	4.60379	0.0903807	0.27302392	2.3532546	20	7 22.9	21.2
424474 2008 CF_{193}	17.5	X	241.36439	79.50534	318.18290	7.27456	0.2737728	0.27515610	2.3410820	20	6 7.7	21.4
424475 2008 CN_{198}	17.9	X	121.74734	102.76959	170.86209	1.87745	0.1786797	0.29069819	2.2568767	20	12 27.2	21.3
424476 2008 CO_{198}	18.1	X	115.94774	14.29956	188.68420	0.89551	0.1244175	0.27546036	2.3393578	20	9 19.2	21.3
424477 2008 CV_{205}	18.2	X	171.90558	282.95437	228.41467	1.66160	0.1340477	0.27905974	2.3191985	20	9 8.7	21.5
424478 2008 CP_{207}	18.1	X	156.69082	346.50536	161.36056	2.43725	0.1344672	0.27468792	2.3437413	20	8 19.6	21.4
424479 2008 CV_{210}	18.1	X	148.83378	62.45014	76.26344	3.44792	0.1233869	0.26997853	2.3709181	20	7 30.7	21.5
424480 2008 CW_{213}	17.0	X	54.72585	252.68457	329.55549	5.67630	0.1085495	0.26265477	2.4147890	20	7 27.9	19.8

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Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
	m		°	°	°	°		°				
424481 2008 DV_3	17.7	X	259.42930	279.74046	122.43582	3.74505	0.1693635	0.27826101	2.3236345	20	7 18.2	20.7
424482 2008 DG_5	19.5	X	125.85908	59.68552	244.03461	5.70700	0.2425703	0.70066569	1.2554386	20	—	—
424483 2008 DM_6	17.4	X	351.33642	315.00429	319.67691	6.49791	0.0940663	0.26709874	2.3879294	20	6 23.2	19.8
424484 2008 DH_{14}	15.7	X	170.70384	132.69526	65.36153	3.58939	0.1045698	0.12613084	3.9378139	20	10 19.2	21.6
424485 2008 DS_{15}	17.6	X	176.39249	53.03638	112.70682	3.16251	0.1514170	0.28201732	2.3029554	20	10 4.2	21.0
424486 2008 DT_{16}	17.7	X	69.61350	185.47958	31.78353	2.82950	0.1391895	0.26597231	2.3946668	20	8 17.0	20.8
424487 2008 DN_{19}	16.8	X	142.83943	210.51967	337.23742	6.48450	0.1504300	0.27492653	2.3423850	20	9 25.6	20.5
424488 2008 DP_{24}	18.2	X	171.20207	140.90736	11.47148	4.41641	0.1750306	0.27870030	2.3211921	20	9 9.8	21.7
424489 2008 DH_{28}	17.9	X	128.56059	101.63512	74.32770	7.62537	0.0971981	0.27597869	2.3364277	20	8 30.3	21.3
424490 2008 DR_{32}	17.8	X	106.18862	129.28015	77.35299	2.38058	0.1311157	0.27216530	2.3582013	20	9 15.1	21.2
424491 2008 DJ_{37}	17.4	X	103.44543	209.42431	1.91932	4.26294	0.1671003	0.27043707	2.3682374	20	9 20.0	20.8
424492 2008 DC_{38}	17.8	X	191.19192	183.74425	325.02999	1.88463	0.1479742	0.27910645	2.3189398	20	9 24.6	21.2
424493 2008 DV_{42}	17.6	X	143.36604	133.19099	130.20099	7.06077	0.0972708	0.29723095	2.2236855	20	—	—
424494 2008 DN_{43}	18.0	X	120.87514	217.72555	6.17995	5.79194	0.1186163	0.28014216	2.3132207	20	10 21.0	21.3
424495 2008 DK_{44}	17.1	X	150.33817	42.73561	129.58744	5.94520	0.1725836	0.27440513	2.3453513	20	9 16.8	20.9
424496 2008 DO_{45}	17.3	X	33.37982	254.47182	16.36578	7.59447	0.0766971	0.26755584	2.3852089	20	9 1.6	20.0
424497 2008 DR_{47}	17.6	X	165.20970	236.25126	13.86664	6.50079	0.1969958	0.29008774	2.2600417	20	—	—
424498 2008 DN_{49}	17.2	X	144.05085	119.95877	89.87598	7.85867	0.1871809	0.28489099	2.2874428	20	10 30.9	20.9
424499 2008 DA_{52}	17.8	X	181.82671	317.73916	203.30530	4.45840	0.1598563	0.27961184	2.3161446	20	9 30.4	21.2
424500 2008 DG_{53}	17.6	X	60.58099	12.16927	205.69395	3.23277	0.1411853	0.26222674	2.4174160	20	8 2.6	20.5
424501 2008 DS_{64}	15.1	X	277.36786	82.11964	359.81794	11.25027	0.0875957	0.12670438	3.9259216	20	9 27.2	20.6
424502 2008 DD_{68}	17.6	X	131.62928	259.50796	276.78682	4.50521	0.0949698	0.26996374	2.3710047	20	8 27.4	21.1
424503 2008 DX_{69}	18.4	X	106.24529	226.43882	267.50576	0.37388	0.1270688	0.26032902	2.4291500	20	6 5.1	21.6
424504 2008 DX_{75}	15.6	X	110.80282	238.62758	17.49637	3.47299	0.0182226	0.12486776	3.9643243	20	10 19.2	21.1
424505 2008 DK_{78}	18.1	X	171.87562	96.78520	42.56079	2.40383	0.1774884	0.27500173	2.3419580	20	8 24.1	21.8
424506 2008 DQ_{80}	15.7	X	245.87917	337.95868	138.58751	5.84059	0.2106375	0.12530774	3.9550391	20	9 18.2	21.6
424507 2008 DZ_{80}	18.1	X	106.26066	13.18089	185.26698	1.01580	0.1279539	0.27032754	2.3688771	20	9 2.1	21.4
424508 2008 DC_{82}	17.9	X	46.06719	183.78408	56.99274	2.09101	0.1736477	0.26232448	2.4168155	20	8 21.9	20.5
424509 2008 EY	17.3	X	35.44730	141.65265	79.50616	5.95063	0.1898230	0.25746592	2.4471254	20	7 5.9	19.6
424510 2008 ED_{11}	17.5	X	196.56600	307.76928	128.80290	7.75617	0.0802121	0.26625052	2.3929984	20	6 28.9	21.0
424511 2008 EU_{13}	17.9	X	149.68501	114.34339	37.58422	5.32900	0.0703017	0.27114186	2.3641317	20	8 19.2	21.2
424512 2008 EH_{22}	17.9	X	177.23405	176.65766	331.81930	1.62646	0.1734587	0.27871608	2.3211045	20	9 9.1	21.3
424513 2008 ES_{23}	17.8	X	209.86477	14.46734	62.44655	7.26426	0.1702112	0.27191155	2.3596682	20	7 8.9	21.5
424514 2008 EV_{26}	16.7	X	84.04865	143.28070	87.17064	5.87371	0.1858494	0.26876604	2.3780435	20	9 29.7	20.2
424515 2008 EV_{32}	17.0	X	225.17997	164.06345	133.86898	8.77756	0.1791902	0.23547100	2.5972341	20	1 30.2	21.3
424516 2008 EZ_{39}	17.8	X	183.41451	336.83896	197.16705	5.46196	0.0965480	0.28182377	2.3040097	20	10 25.5	21.0
424517 2008 EJ_{44}	18.0	X	83.34201	239.05468	19.84656	2.94594	0.1249644	0.27467340	2.3438239	20	10 26.9	21.3
424518 2008 EC_{45}	18.0	X	104.83721	262.31341	305.99716	0.69571	0.1341861	0.26982161	2.3718373	20	9 14.2	21.4
424519 2008 EA_{48}	17.6	X	104.86395	186.49809	20.49468	7.48232	0.1616972	0.26812037	2.3818597	20	9 17.1	21.2
424520 2008 EX_{52}	17.3	X	57.76461	148.05556	98.78500	5.55321	0.1997584	0.26542926	2.3979320	20	9 22.7	20.5
424521 2008 EZ_{53}	17.9	X	124.39267	85.81523	60.88671	7.32443	0.0793617	0.26282087	2.4137715	20	7 10.2	21.2
424522 2008 EB_{69}	16.1	X	278.72565	202.69548	133.82551	32.01468	0.2037632	0.24423990	2.5346907	20	5 19.0	20.4
424523 2008 EW_{70}	17.7	X	203.22330	131.57535	333.99419	24.02102	0.1105492	0.27905346	2.3192333	20	8 18.0	21.0
424524 2008 EJ_{71}	17.6	X	109.75530	185.20356	64.01883	3.36610	0.1789884	0.28066844	2.3103281	20	11 15.2	21.3
424525 2008 EN_{72}	18.3	X	110.62669	100.50033	98.09203	4.06810	0.1517473	0.27176880	2.3604945	20	9 11.5	21.8
424526 2008 EP_{76}	18.1	X	84.73784	59.17655	127.80958	3.07832	0.0904309	0.26174744	2.4203662	20	7 16.1	21.2
424527 2008 EX_{86}	17.7	X	160.79092	335.12772	162.66892	5.40328	0.1658989	0.27066008	2.3669363	20	8 9.5	21.3
424528 2008 EB_{92}	17.7	X	157.36617	92.53000	70.29514	2.51545	0.1234335	0.27680822	2.3317575	20	9 11.1	21.0
424529 2008 EE_{92}	17.8	X	119.03438	152.79366	64.34745	2.84008	0.1783441	0.27701471	2.3305987	20	10 14.7	21.5
424530 2008 EK_{94}	17.8	X	163.47442	11.04028	98.23300	6.17412	0.1765280	0.26883148	2.3776575	20	7 6.4	21.6
424531 2008 EB_{95}	18.0	X	138.72379	71.97958	110.97358	3.86951	0.2014968	0.27210917	2.3585256	20	9 19.8	21.8
424532 2008 EZ_{97}	18.0	X	75.01618	197.21139	68.76796	8.48355	0.4745056	0.26335505	2.4105064	20	11 23.4	22.6
424533 2008 EC_{100}	17.3	X	176.12794	164.54072	54.45908	11.57321	0.1750972	0.28721056	2.2751103	20	12 7.3	20.6
424534 2008 EH_{100}	17.6	X	179.54900	168.74131	293.73546	4.98518	0.1001964	0.27044023	2.3682189	20	7 14.3	20.9
424535 2008 ET_{111}	17.6	X	104.77548	130.28706	81.20549	3.43503	0.1282036	0.27213008	2.3584048	20	9 20.4	20.9
424536 2008 EH_{117}	17.8	X	129.38010	23.20033	162.51237	2.27336	0.1573550	0.27100547	2.3649248	20	9 11.7	21.3
424537 2008 EF_{128}	17.9	X	141.19600	66.06917	81.54788	3.05900	0.1415888	0.26896220	2.3768871	20	8 4.2	21.4
424538 2008 EA_{130}	17.6	X	224.27343	31.54255	109.92180	4.56220	0.1518811	0.28644094	2.2791836	20	10 26.2	20.6
424539 2008 EO_{135}	17.5	X	243.33174	237.10104	151.76913	6.08864	0.0631173	0.26204447	2.4185369	20	6 23.0	20.7
424540 2008 ET_{135}	18.2	X	110.83161	23.52075	136.50728	4.46063	0.1618817	0.26295631	2.4129425	20	7 19.9	21.8
424541 2008 EY_{138}	17.4	X	129.92833	200.31608	336.18532	5.51532	0.1362977	0.26959500	2.3731662	20	8 29.9	20.7
424542 2008 EB_{140}	17.8	X	211.15471	69.76154	19.76969	2.52461	0.1400959	0.27520007	2.3408326	20	7 30.4	21.0
424543 2008 EQ_{141}	18.0	X	180.39491	86.64117	56.89620	3.78015	0.1340983	0.27841841	2.3227586	20	9 9.9	21.4
424544 2008 EH_{148}	18.1	X	231.42256	331.53047	95.46371	3.62603	0.1559259	0.27456713	2.3444287	20	7 20.1	21.2
424545 2008 EN_{148}	18.0	X	187.40482	128.78423	355.34985	9.90903	0.2013021	0.27523036	2.3406608	20	8 19.4	21.8
424546 2008 EP_{150}	17.9	X	168.63219	61.22936	52.90267	3.89950	0.0787906	0.26623907	2.3930670	20	7 18.5	21.3
424547 2008 EB_{152}	18.0	X	143.22791	278.38105	199.86656	6.52725	0.1845473	0.26347751	2.4097594	20	6 28.7	22.0
424548 2008 EP_{153}	17.4	X	16.04988	327.49944	10.45851	7.63794	0.1260223	0.27927788	2.3179907	20	11 15.3	20.1
424549 2008 EX_{160}	17.5	X	67.29043	211.22169	341.28817	0.78575	0.1259113	0.25914781	2.4365258	20	7 5.3	20.4
424550 2008 ER_{161}	15.5	X	185.99850	23.56112	158.60537	3.38748	0.0923732	0.12286708	4.0072431	20	10 15.4	21.6
424551 2008 EY_{163}	17.4	X	264.76378	331.26904	23.74625	3.35772	0.1024838	0.25874581	2.4390488	20	5 28.4	20.6
424552 2008 EW_{167}	17.4	X	70.35037	215.86656	355.71721	6.34181	0.0812657	0.26283635	2.4136767	20	8 1.1	20.4
424553 2008 FQ	18.1	X	160.97875	108.43946	22.41323	1.73923	0.1295254	0.27150205	2.3620403	20	8 1.9	21.5
424554 2008 FC_{16}	17.3	X	118.09179	265.26763	359.72410	7.50789	0.1046974	0.28734218	2.2744155	20	12 11.2	20.7
424555 2008 FP_{20}	17.2	X	323.20449	159.92747	167.79666	11.82382	0.0435606	0.26299753	2.4126904	20	7 24.8	20.2
424556 2008 FZ_{25}	16.7	X	339.90012	194.23553	26.87120	12.35882	0.1632100	0.24107332	2.5568385	20	3 12.3	19.5
424557 2008 FK_{36}	18.0	X	147.70079	196.56045	22.30410	2.86116	0.1606333	0.28236796	2.3010485	20	11 10.9	21.5
424558 2008 FV_{38}	17.5	X	58.83214	130.29301	85.39666	3.79619	0.1376071	0.25900844	2.4373998	20	7 29.0	20.5
424559 2008 FT_{46}	18.1	X	205.26546	309.01385	145.23877	2.40206	0.1294848	0.27294102	2.3537311	20	7 29.9	21.6
424560 2008 FS_{52}	18.2	X	149.96126	88.57865	86.96678	2.48712	0.1195339	0.27316255	2.3524583	20	9 19.8	21.6

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		°	°	°	°		°				
424561 2008 FE_{57}	17.8	X	152.66672	92.12561	39.74663	3.10765	0.1392363	0.26414258	2.4057127	20	7 25.7	21.5
424562 2008 FA_{62}	17.8	X	57.40226	158.97559	357.91923	0.48886	0.1458071	0.25273681	2.4775574	20	5 1.1	20.2
424563 2008 FM_{62}	17.2	X	355.92086	128.49150	181.68420	10.98636	0.1566022	0.26918086	2.3755997	20	8 30.1	19.2
424564 2008 FJ_{67}	17.9	X	115.01113	23.99002	155.76366	1.62268	0.1240620	0.26445513	2.4038169	20	8 16.9	21.4
424565 2008 FH_{69}	17.4	X	105.29113	149.62799	75.92132	3.38351	0.1695990	0.26989623	2.3714001	20	10 11.6	21.0
424566 2008 FH_{86}	18.3	X	168.76138	327.95366	149.72684	2.82666	0.1405448	0.26906273	2.3762950	20	7 22.2	21.8
424567 2008 FF_{95}	17.7	X	125.47269	26.98080	148.23334	4.31608	0.1637751	0.26620998	2.3932413	20	8 25.1	21.4
424568 2008 FV_{96}	17.6	X	156.55462	46.68966	125.64075	6.58166	0.2115135	0.27383339	2.3486147	20	9 22.5	21.5
424569 2008 FP_{104}	18.0	X	166.67424	4.88302	179.99636	1.96684	0.1507904	0.27620034	2.3351775	20	10 17.3	21.6
424570 2008 FB_{115}	15.5	X	228.41637	326.65833	170.55418	6.62524	0.2219849	0.12422445	3.9779990	20	9 23.6	21.7
424571 2008 FN_{130}	17.2	X	52.29481	197.70388	72.61571	12.34990	0.2221496	0.26587365	2.3952592	20	10 23.1	20.6
424572 2008 FO_{133}	17.3	X	329.98772	288.74113	13.88304	3.85059	0.0890296	0.26111332	2.4242833	20	6 26.7	19.9
424573 2008 GS	17.6	X	148.14968	135.81551	55.32302	8.09871	0.1638119	0.27665703	2.3326070	20	10 10.2	21.3
424574 2008 GM_{3}	17.4	X	115.53258	201.70679	29.85751	11.46471	0.1466467	0.27385918	2.3484673	20	10 26.5	21.0
424575 2008 GV_{18}	17.9	X	170.33780	65.76534	145.17088	6.14823	0.2075982	0.28286503	2.2983520	20	11 21.6	21.6
424576 2008 GY_{22}	17.8	X	28.76092	173.56511	95.78996	3.65593	0.1440355	0.26283995	2.4136547	20	8 31.6	20.3
424577 2008 GD_{28}	18.0	X	118.66535	83.10318	173.82900	7.26395	0.2150917	0.27875461	2.3208906	20	12 3.6	22.0
424578 2008 GW_{29}	18.0	X	158.45732	82.22325	20.66483	3.07857	0.0511031	0.26005051	2.4308840	20	6 18.8	21.4
424579 2008 GC_{34}	17.6	X	9.62279	110.49372	191.00894	4.79746	0.1163212	0.26697537	2.3886650	20	9 8.7	19.9
424580 2008 GJ_{37}	18.1	X	41.23819	143.03062	128.99694	2.40730	0.1567446	0.26236399	2.4165729	20	9 25.8	20.9
424581 2008 GO_{37}	18.1	X	103.87401	48.38911	144.45676	2.74755	0.1389665	0.26280985	2.4138390	20	8 23.6	21.5
424582 2008 GZ_{46}	17.5	X	162.94133	33.65571	100.83323	7.61126	0.0789097	0.26235440	2.4166318	20	8 9.2	20.9
424583 2008 GK_{54}	17.4	X	159.66735	265.46479	204.80403	7.93825	0.1205061	0.25946802	2.4345208	20	7 1.6	21.2
424584 2008 GY_{57}	17.7	X	97.53017	205.40030	38.46989	2.78597	0.1688923	0.27290596	2.3539326	20	10 26.4	21.3
424585 2008 GF_{58}	17.4	X	66.68492	196.02780	24.73797	6.96107	0.0669104	0.26275911	2.4141497	20	8 7.7	20.5
424586 2008 GB_{65}	17.7	X	17.96870	220.22678	35.76066	7.17186	0.1382862	0.25796211	2.4439863	20	7 20.4	20.2
424587 2008 GP_{66}	17.2	X	132.65363	20.17519	77.73228	6.64220	0.0178801	0.24763052	2.5115005	20	5 8.1	20.5
424588 2008 GT_{68}	17.2	X	298.61367	128.07762	112.54747	5.31983	0.1789163	0.23327579	2.6135026	20	2 1.3	20.7
424589 2008 GV_{71}	17.6	X	73.08314	207.98740	57.64418	3.24376	0.1855497	0.27065638	2.3669579	20	10 31.2	20.9
424590 2008 GO_{85}	17.2	X	324.91641	108.82737	98.11690	8.30726	0.1478244	0.23413630	2.6070952	20	1 28.0	20.4
424591 2008 GD_{99}	17.6	X	264.35482	318.42695	28.77546	6.14169	0.0469408	0.25376630	2.4708521	20	5 24.9	20.8
424592 2008 GM_{100}	17.2	X	330.85565	3.87171	199.93805	12.57416	0.1158061	0.23581675	2.5946948	20	2 1.3	20.6
424593 2008 GF_{101}	17.3	X	98.30791	224.81460	40.93661	6.88336	0.0848599	0.27577724	2.3375654	20	11 17.9	20.4
424594 2008 GL_{106}	17.5	X	104.79450	170.40260	27.20957	7.63343	0.0477842	0.26509722	2.3999338	20	8 25.2	20.7
424595 2008 GM_{118}	17.5	X	56.21281	55.45585	202.48247	1.85172	0.1774922	0.26439572	2.4041770	20	9 28.9	20.4
424596 2008 GM_{123}	17.8	X	110.30065	156.55214	14.32891	6.69608	0.1074192	0.26297916	2.4128028	20	7 31.3	21.2
424597 2008 GO_{136}	17.3	X	196.07745	135.38640	167.03775	6.86000	0.0425413	0.22538564	2.6741467	20	1 7.9	21.2
424598 2008 GS_{144}	16.9	X	317.46003	253.67066	10.81254	12.21390	0.2617028	0.24193178	2.5507864	20	3 16.2	19.8
424599 2008 GR_{145}	17.9	X	138.43158	149.90774	82.47962	4.64415	0.1912521	0.27711343	2.3300451	20	11 19.4	21.6
424600 2008 HT_{12}	17.2	X	37.05655	140.54227	133.25537	7.83264	0.1987221	0.26008795	2.4306507	20	9 30.9	20.1
424601 2008 HY_{13}	17.7	X	121.45835	205.60163	324.12202	1.78943	0.1356600	0.26545660	2.3977673	20	8 11.7	21.1
424602 2008 HU_{20}	17.9	X	124.07903	79.36233	46.56398	1.26024	0.1639636	0.25681238	2.4512753	20	6 18.7	21.6
424603 2008 HS_{27}	18.0	X	126.41480	263.09286	270.21331	0.95203	0.2260979	0.26819159	2.3814380	20	8 26.3	22.0
424604 2008 HV_{39}	17.9	X	9.71944	274.11380	16.87977	2.14192	0.1973454	0.26175422	2.4203245	20	9 5.1	19.9
424605 2008 HH_{41}	16.5	X	124.86950	111.19253	108.37316	22.56337	0.2438611	0.27216673	2.3581930	20	11 2.5	21.0
424606 2008 HZ_{45}	13.6	X	340.92034	46.37120	214.55178	14.75044	0.0747598	0.08269351	5.2178121	20	5 19.1	20.2
424607 2008 HE_{51}	17.8	X	118.35745	117.33628	55.39478	5.21808	0.1477550	0.26209294	2.4182387	20	8 15.4	21.4
424608 2008 HR_{55}	17.5	X	39.17459	171.42390	75.44680	3.35928	0.1672909	0.25598208	2.4565730	20	8 18.4	20.2
424609 2008 HC_{68}	16.6	X	211.07642	224.12989	76.79967	13.82932	0.1649923	0.22392632	2.6857522	20	1 25.3	21.1
424610 2008 HZ_{69}	17.0	X	276.20985	126.40372	147.12169	11.50545	0.1592772	0.23172477	2.6251517	20	2 19.6	20.9
424611 2008 JD	16.6	X	249.72255	132.17644	142.50981	13.34257	0.2355608	0.22732793	2.6588930	20	1 20.9	21.3
424612 2008 JN_{4}	16.8	X	343.81213	200.07401	111.97168	7.52251	0.1129421	0.25558238	2.4591335	20	8 6.3	19.2
424613 2008 JC_{6}	16.6	X	199.10665	201.26844	71.51206	10.26522	0.3068742	0.21366449	2.7710721	20	—	—
424614 2008 JS_{6}	18.1	X	38.55731	171.22582	103.21972	3.31763	0.1942202	0.26088599	2.4256914	20	10 2.1	20.9
424615 2008 JP_{12}	17.0	X	178.08488	240.41798	185.93378	13.56288	0.1197371	0.24707854	2.5152396	20	5 26.4	21.1
424616 2008 JH_{13}	16.5	X	232.34735	243.19527	86.84432	14.09980	0.1222206	0.23616128	2.5921707	20	3 26.2	20.7
424617 2008 JO_{15}	17.2	X	271.89383	189.44765	93.00475	8.33885	0.0300026	0.23578227	2.5949478	20	3 17.4	20.8
424618 2008 JZ_{24}	13.0	X	330.40488	180.27362	86.31772	35.31210	0.1500427	0.08235125	5.2322590	20	5 17.4	19.6
424619 2008 JT_{25}	13.8	X	341.39887	178.20982	87.83174	19.01698	0.1052211	0.08411144	5.1590055	20	5 26.3	20.2
424620 2008 JO_{26}	17.4	X	342.30149	125.78190	110.51806	23.14306	0.0953538	0.40569390	1.8071897	20	4 8.3	19.4
424621 2008 JY_{32}	14.3	X	308.28621	177.15481	123.82735	14.88516	0.0809276	0.08309480	5.2009997	20	5 25.4	21.1
424622 2008 JZ_{36}	18.0	X	127.80385	85.14509	99.48013	2.28574	0.1272599	0.26477808	2.4018619	20	9 7.7	21.6
424623 2008 JA_{37}	16.9	X	355.27393	303.28977	229.15578	13.46114	0.0617826	0.23058905	2.6337644	20	2 1.8	20.5
424624 2008 JL_{37}	16.9	X	2.73492	90.32071	97.41760	14.93200	0.1483651	0.23673984	2.5879456	20	3 11.3	19.9
424625 2008 JF_{38}	17.6	X	36.15543	173.15284	91.09250	4.88871	0.1093859	0.25805904	2.4433743	20	8 30.4	20.4
424626 2008 JH_{39}	17.0	X	47.11384	23.73742	141.96361	15.48540	0.0509304	0.24035222	2.5619498	20	4 21.5	20.5
424627 2008 JH_{40}	17.2	X	54.24104	194.13618	79.80416	7.92836	0.0915337	0.26458708	2.4030177	20	10 9.9	20.3
424628 2008 KD_{5}	16.8	X	286.78190	198.00290	92.27047	15.18486	0.1636163	0.23708540	2.5854303	20	3 31.3	20.7
424629 2008 KV_{5}	17.7	X	155.58573	20.90706	175.22935	6.75269	0.0513561	0.27151918	2.3619410	20	10 24.5	20.9
424630 2008 KN_{12}	17.4	X	54.16713	174.65652	70.68958	3.67445	0.1431954	0.25938525	2.4350387	20	9 5.0	20.4
424631 2008 KJ_{14}	18.0	X	81.90705	272.06105	81.24802	23.56527	0.1202359	0.37015871	1.9210739	20	—	—
424632 2008 KE_{18}	13.4	X	265.76479	245.51909	93.98710	29.28335	0.0230192	0.08400415	5.1633976	20	5 29.5	20.4
424633 2008 KK_{27}	17.5	X	90.72150	83.56244	116.64286	6.04898	0.1376302	0.26136050	2.4227545	20	8 19.3	20.8
424634 2008 KW_{40}	18.0	X	137.15953	78.96702	141.14569	4.87323	0.2179382	0.27430663	2.3459127	20	11 4.0	22.0
424635 2008 KN_{41}	17.9	X	50.78972	34.55133	203.16803	1.23029	0.1362548	0.25774962	2.4453294	20	8 16.1	20.8
424636 2008 LA_{3}	17.6	X	128.02539	12.09341	182.50388	6.09222	0.0617663	0.26562082	2.3967789	20	9 16.4	20.9
424637 2008 LV_{5}	18.0	X	56.41898	150.35454	118.30252	8.18367	0.1765752	0.26384951	2.4074938	20	10 17.9	21.3
424638 2008 LM_{8}	16.6	X	185.28775	250.37473	104.55419	13.74833	0.2880980	0.22622733	2.6675097	20	3 12.7	21.7
424639 2008 LW_{9}	16.9	X	159.37854	184.38358	162.99568	14.60910	0.0949607	0.22173932	2.7033829	20	1 25.9	21.1
424640 2008 LO_{11}	17.1	X	287.57988	26.49616	220.82804	12.53525	0.1282861	0.23027956	2.6361237	20	1 30.2	21.2

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Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
	m		°	°	°	°		°				
424641 2008 LZ_{12}	17.6	X	58.52347	149.37359	133.83871	6.76336	0.2129979	0.26550411	2.3974812	20	11 11.6	21.1
424642 2008 OA	17.0	X	283.90978	171.59006	134.14647	11.52667	0.3124870	0.23137989	2.6277596	20	3 24.1	21.1
424643 2008 OD_{2}	16.6	X	179.85996	59.23083	291.79319	8.36888	0.2105049	0.21546608	2.7556038	20	2 23.7	21.4
424644 2008 OC_{7}	15.9	X	227.13369	77.86670	261.53970	13.21819	0.1128040	0.22205513	2.7008192	20	3 19.6	20.4
424645 2008 OV_{9}	16.2	X	308.68391	336.40589	299.47921	12.63974	0.2368546	0.23255827	2.6188755	20	3 14.3	19.8
424646 2008 OD_{21}	16.4	X	307.94550	286.08473	330.66027	11.06101	0.1406640	0.22408396	2.6844926	20	3 8.6	20.0
424647 2008 PY_{6}	17.6	X	22.56101	285.05312	145.55950	25.65160	0.1358556	0.36217349	1.9492084	20	—	—
424648 2008 PH_{18}	16.4	X	260.00252	211.75464	149.24718	34.22449	0.2261459	0.23265790	2.6181278	20	5 23.9	21.2
424649 2008 PG_{20}	16.8	X	197.07863	218.39868	102.40018	13.51142	0.2715917	0.21203447	2.7852557	20	2 8.0	21.9
424650 2008 QN_{11}	16.4	X	250.50418	296.74325	349.95062	8.56129	0.1967954	0.21600595	2.7510104	20	2 10.8	21.0
424651 2008 QX_{12}	16.8	X	315.96273	307.59168	335.39362	7.89724	0.1117948	0.23146570	2.6271102	20	4 27.7	20.1
424652 2008 QS_{20}	16.1	X	296.00151	0.28727	270.67838	8.67940	0.1279699	0.22555871	2.6727786	20	3 10.5	20.0
424653 2008 QK_{21}	16.2	X	244.09997	45.56196	265.46166	6.71437	0.1404062	0.21946252	2.7220482	20	3 3.2	20.5
424654 2008 QJ_{23}	16.4	X	341.86270	333.37331	323.45016	12.97811	0.1638000	0.23819567	2.5773900	20	7 7.5	19.0
424655 2008 QB_{33}	16.2	X	274.32999	260.38966	333.19154	11.46913	0.0050788	0.20174828	2.8791402	20	1 24.4	20.2
424656 2008 QM_{36}	17.5	X	116.34514	22.05817	353.82421	4.53179	0.3168159	0.20011444	2.8947902	20	2 14.3	22.0
424657 2008 QU_{39}	16.8	X	205.91929	161.36971	185.92429	6.44210	0.0515517	0.21310236	2.7759430	20	3 16.1	20.8
424658 2008 QF_{41}	16.8	X	101.65715	195.92428	173.20068	7.45172	0.0955019	0.19669380	2.9282553	20	—	—
424659 2008 QU_{41}	17.1	X	216.30511	141.26084	200.59607	5.84047	0.0526230	0.21453927	2.7635343	20	3 20.5	21.2
424660 2008 QA_{47}	16.2	X	168.47774	95.47187	359.18528	22.05115	0.0603325	0.22845873	2.6501119	20	6 18.9	20.6
424661 2008 RS_{17}	17.1	X	169.74722	82.19965	316.69520	5.59027	0.0514006	0.21702137	2.7424226	20	4 6.3	21.1
424662 2008 RL_{25}	17.2	X	225.65076	182.69059	157.68446	5.07021	0.1492502	0.22149161	2.7053982	20	3 24.9	21.4
424663 2008 RS_{40}	16.9	X	67.31114	207.55792	182.84374	10.35528	0.0777318	0.18975136	2.9992509	20	—	—
424664 2008 RA_{43}	17.0	X	163.32770	5.36475	41.46803	2.29542	0.0769673	0.21529228	2.7570866	20	4 13.7	21.0
424665 2008 RC_{44}	17.5	X	10.29667	112.40908	142.48505	1.25117	0.2275117	0.23620025	2.5918855	20	7 7.5	19.5
424666 2008 RH_{44}	16.8	X	128.76634	339.03327	23.74207	2.03319	0.0789991	0.19891979	2.9063688	20	1 14.1	20.8
424667 2008 RM_{44}	16.9	X	327.07257	74.09647	173.45176	12.65513	0.1550109	0.22223166	2.6993887	20	3 26.5	19.9
424668 2008 RN_{49}	16.7	X	319.67975	10.12517	226.40750	6.22850	0.0852154	0.22008089	2.7169470	20	3 7.0	20.3
424669 2008 RZ_{57}	17.1	X	310.66282	243.70933	2.57596	4.57678	0.1041532	0.21756419	2.7378592	20	3 8.1	20.6
424670 2008 RN_{62}	16.9	X	75.44895	52.03102	2.11541	10.73910	0.1132891	0.19738084	2.9214563	20	1 16.8	20.8
424671 2008 RB_{71}	16.6	X	239.04600	172.80650	150.56641	6.31445	0.0282166	0.22262387	2.6962173	20	3 27.8	20.3
424672 2008 RT_{80}	16.3	X	51.92745	186.11497	255.26944	6.13989	0.1732859	0.18474402	3.0532037	20	1 20.0	19.9
424673 2008 RH_{81}	18.9	X	9.08659	187.04628	242.72588	2.92033	0.0707296	0.35684248	1.9685737	20	—	—
424674 2008 RT_{82}	17.3	X	117.06983	175.35919	261.45211	3.19780	0.0543133	0.21600047	2.7510570	20	3 24.4	21.1
424675 2008 RB_{94}	17.2	X	157.12750	6.11859	28.32719	4.65556	0.0810791	0.21163030	2.7888007	20	3 23.7	21.2
424676 2008 RD_{96}	16.9	X	118.26765	72.89247	311.60154	5.40347	0.0972475	0.20429323	2.8551794	20	1 29.6	20.9
424677 2008 RO_{99}	17.2	X	156.68025	185.71672	170.47804	2.20212	0.0769069	0.20358783	2.8617707	20	2 4.5	21.4
424678 2008 RX_{102}	16.8	X	100.63087	126.27765	197.95262	14.85858	0.2282565	0.18505497	3.0497826	20	—	—
424679 2008 RA_{104}	16.5	X	2.38850	289.62474	339.57723	9.20205	0.1161919	0.23339390	2.6126208	20	7 5.9	19.4
424680 2008 RJ_{104}	16.7	X	268.09041	90.32014	205.56610	12.41006	0.0842071	0.21689582	2.7434808	20	3 17.5	20.7
424681 2008 RL_{108}	16.2	X	242.03927	288.48836	12.92218	20.45086	0.1171904	0.21028156	2.8007129	20	3 3.8	20.7
424682 2008 RO_{108}	17.5	X	113.53196	185.21596	214.52423	1.35750	0.1026097	0.20252926	2.8717339	20	2 11.9	21.4
424683 2008 RP_{111}	16.8	X	211.15379	337.33722	35.19760	6.77269	0.0851295	0.21970351	2.7200573	20	4 21.8	20.6
424684 2008 RX_{111}	16.4	X	31.84555	179.19421	219.63689	4.20128	0.2466970	0.18086754	3.0966750	20	—	—
424685 2008 RQ_{113}	17.0	X	163.39069	46.03596	290.49116	1.05714	0.0711418	0.20260544	2.8710140	20	1 19.2	21.3
424686 2008 RP_{114}	16.4	X	36.61233	136.47416	18.07653	15.42303	0.0848201	0.20671575	2.8328288	20	3 24.2	19.8
424687 2008 RZ_{117}	17.2	X	193.52978	315.67086	5.07680	10.35326	0.1391929	0.20419175	2.8561253	20	2 5.8	21.9
424688 2008 RE_{123}	17.2	X	130.55544	177.13641	201.11578	1.51095	0.0801710	0.20367801	2.8609260	20	2 2.5	21.2
424689 2008 RW_{130}	16.7	X	115.00591	312.14763	56.16495	3.92776	0.0986285	0.19655196	2.9296639	20	1 7.7	20.8
424690 2008 RD_{136}	16.3	X	351.51085	295.12393	336.95456	14.76515	0.1409610	0.23456536	2.6039149	20	6 17.4	19.3
424691 2008 RR_{140}	16.5	X	166.93836	52.66688	327.26372	5.47394	0.0844245	0.21289669	2.7777305	20	3 13.8	20.6
424692 2008 RW_{144}	16.8	X	80.59616	329.20671	106.88286	3.27858	0.0439868	0.20307192	2.8666156	20	2 8.3	20.6
424693 2008 SN_{9}	16.7	X	182.84039	169.76007	181.99373	8.14034	0.2347641	0.21146441	2.7902590	20	2 29.6	21.7
424694 2008 SU_{9}	16.7	X	172.66548	18.01524	352.57862	13.63680	0.2062708	0.21169901	2.7881972	20	3 14.7	21.3
424695 2008 SU_{19}	17.0	X	198.05356	352.45755	325.18042	9.58255	0.0747871	0.20975541	2.8053944	20	2 2.2	21.1
424696 2008 SM_{26}	16.8	X	43.74832	8.75640	135.46620	4.09040	0.0572503	0.21059041	2.7979738	20	3 16.9	20.3
424697 2008 SS_{36}	16.6	X	34.04633	214.09328	346.34940	8.51390	0.0670565	0.22699373	2.6615021	20	5 12.7	20.0
424698 2008 SL_{37}	17.0	X	130.65298	244.26330	122.54052	1.07461	0.1160180	0.19843814	2.9110698	20	1 25.4	21.2
424699 2008 ST_{37}	16.9	X	323.86994	172.67275	187.40451	14.24823	0.1228616	0.24230712	2.5481516	20	9 4.3	19.7
424700 2008 SP_{38}	16.4	X	326.96202	85.08676	17.25911	26.02405	0.3002099	0.17393321	3.1784426	20	—	—
424701 2008 SY_{43}	17.6	X	87.29441	192.78687	196.20543	1.97044	0.3025777	0.19123039	2.9837660	20	1 27.8	21.5
424702 2008 SH_{45}	16.4	X	61.04846	227.49000	195.15042	16.13724	0.1914790	0.19044091	2.9920066	20	1 10.9	20.2
424703 2008 SC_{50}	17.6	X	313.01211	90.64472	196.42902	2.41193	0.1943857	0.22903186	2.6456890	20	4 19.8	20.8
424704 2008 ST_{50}	16.9	X	59.04769	50.18589	2.15808	10.05819	0.1177289	0.19158502	2.9800829	20	—	—
424705 2008 SE_{66}	16.4	X	98.12254	347.62108	29.07328	10.51664	0.0615630	0.18872177	3.0101494	20	—	—
424706 2008 SR_{68}	16.4	X	80.37244	355.22693	349.37444	11.37202	0.0845167	0.18206934	3.0830330	20	—	—
424707 2008 SM_{86}	16.0	X	112.16888	95.41828	233.42206	8.67522	0.1429985	0.18755014	3.0226727	20	—	—
424708 2008 SV_{92}	16.5	X	79.48761	143.53755	211.59037	14.47952	0.1103756	0.18335494	3.0686049	20	—	—
424709 2008 SH_{100}	16.4	X	29.02217	85.31826	38.80369	15.72319	0.1263018	0.19620311	2.9331355	20	2 8.0	20.1
424710 2008 SR_{103}	16.9	X	77.33452	107.44839	209.65220	8.54987	0.0751648	0.17506025	3.1647860	20	12 7.9	21.5
424711 2008 SX_{108}	17.1	X	312.00539	281.05825	341.48212	10.56877	0.1603204	0.22516660	2.6758806	20	3 18.9	20.5
424712 2008 SQ_{119}	17.2	X	42.94573	15.04064	188.49975	1.44844	0.0068892	0.22080772	2.7109814	20	5 27.6	20.8
424713 2008 SJ_{124}	17.3	X	225.44039	101.63423	217.11474	6.47677	0.1101804	0.20934109	2.8090948	20	2 27.0	21.8
424714 2008 SO_{125}	17.0	X	335.78214	231.85630	209.83709	12.82158	0.0881824	0.17453546	3.1711267	20	12 27.2	21.2
424715 2008 SV_{130}	17.2	X	214.54624	334.49567	344.38948	3.15628	0.0635422	0.20472625	2.8511519	20	2 21.1	21.2
424716 2008 SP_{140}	15.9	X	118.95147	60.70952	282.80446	9.91294	0.0733143	0.19163152	2.9796009	20	—	—
424717 2008 SH_{149}	17.1	X	28.89813	67.31990	208.72136	13.76662	0.1987898	0.24388636	2.5371397	20	9 10.9	20.1
424718 2008 SQ_{157}	16.1	X	105.17154	335.48642	348.25200	8.85605	0.0473868	0.18538189	3.0461960	20	—	—
424719 2008 SR_{161}	16.5	X	50.14065	212.47665	178.30909	9.27775	0.1482853	0.18487487	3.0517629	20	—	—
424720 2008 SY_{180}	17.0	X	231.57838	129.79240	193.92816	4.92461	0.1861063	0.21380388	2.7698675	20	3 6.9	21.6

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Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
	m		°	°	°	°		°				
424721 2008 SB_{184}	16.5	X	41.40635	25.81933	65.81660	4.40270	0.0360090	0.19329198	2.9625123	20	1 7.5	20.4
424722 2008 SS_{193}	16.8	X	125.04488	20.67401	63.62130	7.06517	0.0358946	0.21176649	2.7876049	20	4 15.1	20.7
424723 2008 SP_{195}	16.0	X	1.94303	49.74870	31.49454	16.92197	0.2097362	0.17803479	3.1294365	20	—	—
424724 2008 SW_{196}	16.8	X	233.59933	341.60907	40.63838	6.94544	0.0482441	0.22205172	2.7008468	20	6 1.5	20.5
424725 2008 SM_{206}	16.3	X	193.15425	306.18743	63.33418	8.93087	0.0728552	0.20966409	2.8062090	20	4 3.4	20.6
424726 2008 SP_{208}	16.5	X	99.87659	348.70194	64.42878	11.39199	0.1031384	0.19280061	2.9675437	20	2 18.6	20.8
424727 2008 SZ_{226}	16.4	X	137.73583	275.54606	217.03731	9.06402	0.0112244	0.23039179	2.6352675	20	6 28.4	20.1
424728 2008 SL_{227}	16.3	X	244.66684	1.44056	306.74291	5.45685	0.0459184	0.21400499	2.7681319	20	3 10.3	20.4
424729 2008 SX_{227}	16.9	X	74.91059	314.41247	227.92908	7.53632	0.0803569	0.22760056	2.6567692	20	6 22.5	20.4
424730 2008 SJ_{241}	16.6	X	97.43667	205.70150	161.71090	6.55207	0.2346545	0.19218860	2.9738402	20	1 4.3	20.6
424731 2008 SK_{243}	16.5	X	102.50464	321.69246	58.08930	5.54399	0.2378961	0.19184781	2.9773609	20	1 27.8	20.7
424732 2008 SW_{243}	17.0	X	321.73712	245.68457	22.28373	4.47151	0.1001698	0.22157702	2.7047029	20	4 21.4	20.1
424733 2008 SE_{244}	17.8	X	240.77722	219.71456	12.82311	20.95422	0.0574771	0.36266147	1.9474595	20	—	—
424734 2008 SO_{246}	16.1	X	38.10863	146.64146	201.92063	9.21013	0.0791240	0.17412720	3.1760815	20	11 30.1	20.5
424735 2008 SZ_{250}	17.6	X	127.51552	221.46388	176.21650	1.96657	0.0731788	0.20373421	2.8603998	20	2 21.9	21.5
424736 2008 SE_{251}	17.2	X	167.99034	145.92779	183.31791	1.75402	0.0700573	0.19751600	2.9201233	20	1 15.7	21.5
424737 2008 SH_{254}	16.6	X	18.37884	296.01117	201.62186	8.13691	0.0439261	0.19803842	2.9149856	20	1 30.1	20.6
424738 2008 ST_{270}	16.8	X	337.70707	292.83487	195.67507	3.07110	0.0688203	0.18536196	3.0464144	20	—	—
424739 2008 SR_{271}	16.3	X	52.30549	47.09281	23.34716	11.14256	0.0984890	0.18694944	3.0291441	20	1 1.7	20.3
424740 2008 SH_{281}	16.7	X	81.12025	316.98029	97.29007	2.27412	0.0592206	0.18941776	3.0027713	20	1 16.7	20.7
424741 2008 SP_{281}	16.8	X	51.33249	242.50489	175.50420	2.24212	0.2027968	0.18347996	3.0672107	20	—	—
424742 2008 SO_{286}	16.3	X	83.11248	241.16866	132.49023	11.15731	0.2925688	0.18933902	3.0036037	20	1 2.4	20.0
424743 2008 SC_{299}	15.6	X	184.73448	203.68259	113.80335	7.01095	0.0744555	0.20045603	2.8915007	20	1 19.6	20.0
424744 2008 SR_{300}	16.4	X	292.32500	63.20978	248.48148	14.58868	0.2669474	0.22882336	2.6472958	20	4 7.4	20.4
424745 2008 SX_{300}	16.6	X	189.68341	77.26180	331.36730	8.12776	0.0994961	0.21939761	2.7225851	20	5 11.2	20.9
424746 2008 SN_{302}	16.8	X	17.03843	4.83860	86.67737	2.97243	0.1838225	0.18368995	3.0648728	20	—	—
424747 2008 SC_{305}	16.5	X	116.60424	230.39130	185.50368	15.01224	0.1384082	0.20301981	2.8671061	20	3 10.1	20.8
424748 2008 SN_{305}	16.5	X	114.56884	311.26361	48.86462	14.76066	0.1442116	0.19121118	2.9839660	20	1 4.4	20.9
424749 2008 TX	17.4	X	148.83821	81.34714	204.73642	21.22700	0.0794925	0.35462503	1.9767714	20	—	—
424750 2008 TW_{21}	16.4	X	336.31001	252.76795	32.38430	11.47272	0.1764417	0.22711668	2.6605415	20	5 30.9	19.3
424751 2008 TQ_{29}	17.0	X	245.84461	126.79133	184.18598	4.97964	0.1589569	0.21663057	2.7457199	20	3 6.4	21.3
424752 2008 TW_{33}	17.2	X	107.83611	278.36277	148.45906	2.65789	0.0532664	0.20323610	2.8650716	20	3 3.4	21.0
424753 2008 TA_{35}	16.5	X	344.13194	48.71296	8.71881	2.19410	0.1462528	0.17442700	3.1724412	20	12 14.0	20.2
424754 2008 TG_{38}	16.5	X	89.26745	285.89696	78.98208	9.27696	0.2591446	0.18938553	3.0031119	20	—	—
424755 2008 TO_{42}	16.5	X	5.01197	192.69267	296.97559	8.62979	0.0132550	0.19567806	2.9383800	20	1 7.2	20.5
424756 2008 TZ_{44}	16.6	X	43.77328	57.45490	34.42422	10.27778	0.0826890	0.19085176	2.9877111	20	1 15.4	20.5
424757 2008 TJ_{49}	16.6	X	141.69433	110.44307	204.85173	9.29697	0.0713198	0.19152544	2.9807009	20	—	—
424758 2008 TB_{50}	17.1	X	181.12395	148.35077	181.38148	1.82879	0.0771780	0.20218482	2.8749945	20	1 29.7	21.5
424759 2008 TF_{59}	16.7	X	322.95416	264.93338	194.34847	9.01587	0.1878408	0.17387676	3.1791305	20	12 30.2	20.3
424760 2008 TM_{63}	16.8	X	58.54205	93.53652	20.07480	1.99814	0.0310097	0.20283993	2.8688010	20	2 24.9	20.5
424761 2008 TH_{67}	16.5	X	39.82028	57.02763	40.44294	11.92433	0.0760646	0.19250886	2.9705411	20	1 16.2	20.5
424762 2008 TK_{69}	16.5	X	41.27489	257.73372	192.03556	11.18627	0.1041562	0.19084028	2.9878310	20	1 6.4	20.4
424763 2008 TQ_{75}	17.4	X	75.14414	356.19627	41.26671	2.91381	0.2604714	0.18784077	3.0195541	20	1 16.2	20.9
424764 2008 TB_{77}	16.7	X	256.66084	300.17277	23.19778	5.60674	0.0697599	0.21931918	2.7232340	20	4 12.0	20.3
424765 2008 TC_{78}	17.2	X	246.00229	281.55108	27.74175	5.34174	0.0691738	0.21359771	2.7716496	20	3 14.9	21.1
424766 2008 TC_{80}	16.5	X	190.45540	265.32206	58.57171	2.86053	0.0607134	0.20312889	2.8660796	20	2 2.2	20.7
424767 2008 TG_{81}	16.7	X	195.53252	351.17547	19.28000	6.13011	0.0247079	0.21440730	2.7646681	20	4 3.3	20.4
424768 2008 TN_{85}	16.7	X	9.50293	236.95206	193.92627	4.52764	0.1151782	0.18275474	3.0753198	20	—	—
424769 2008 TQ_{85}	17.1	X	309.47653	125.22844	194.32273	13.49122	0.0498705	0.23028645	2.6360711	20	6 20.2	20.7
424770 2008 TZ_{88}	16.5	X	325.66211	168.49162	252.74169	1.26452	0.0945575	0.16810127	3.2515371	20	11 16.2	20.7
424771 2008 TA_{91}	16.3	X	30.31293	38.04814	44.80132	16.36657	0.2299649	0.18370232	3.0647351	20	—	—
424772 2008 TE_{94}	16.7	X	221.82797	290.25432	39.96852	8.40040	0.1780154	0.21370247	2.7707437	20	3 11.3	21.4
424773 2008 TK_{94}	16.3	X	182.08052	300.38357	58.65894	4.55385	0.1078375	0.20861403	2.8156179	20	3 8.9	20.7
424774 2008 TJ_{95}	17.2	X	116.34036	87.13394	342.83746	4.92547	0.0623008	0.21359085	2.7717089	20	3 17.0	21.0
424775 2008 TQ_{101}	16.9	X	78.57664	195.80067	201.88300	8.83988	0.2064574	0.19042614	2.9921613	20	1 10.6	20.7
424776 2008 TB_{107}	16.7	X	16.00626	254.44699	174.97045	9.12115	0.1316427	0.18326495	3.0696093	20	—	—
424777 2008 TL_{107}	16.8	X	207.60686	96.50341	172.09009	9.57569	0.0424931	0.19352292	2.9601550	20	—	—
424778 2008 TL_{115}	16.3	X	77.67893	207.03854	153.68801	9.91594	0.0923693	0.18272975	3.0756002	20	—	—
424779 2008 TQ_{115}	16.8	X	54.21421	57.57186	351.72416	10.19546	0.1784805	0.18637852	3.0353270	20	—	—
424780 2008 TV_{122}	16.6	X	155.06794	325.51310	68.69973	4.03980	0.0694691	0.20852650	2.8164057	20	3 21.5	20.8
424781 2008 TU_{129}	16.2	X	34.39150	92.86278	8.89604	10.31261	0.0796850	0.19314393	2.9640259	20	1 13.7	20.1
424782 2008 TO_{131}	16.8	X	247.32711	315.01206	344.15172	5.01698	0.2038091	0.21226381	2.7832491	20	2 21.1	21.2
424783 2008 TD_{150}	16.8	X	181.72313	196.58206	162.93898	3.99097	0.1092804	0.20967794	2.8060854	20	3 6.9	21.1
424784 2008 TR_{150}	16.8	X	8.37406	257.38882	173.53109	5.07424	0.1531496	0.18194682	3.0844169	20	—	—
424785 2008 TG_{155}	15.9	X	43.23194	79.76876	353.53473	15.24022	0.0913583	0.18883464	3.0089498	20	—	—
424786 2008 TG_{156}	15.9	X	322.59296	171.44429	288.30041	8.67087	0.0775896	0.17644775	3.1481733	20	—	—
424787 2008 TE_{160}	17.1	X	237.51599	274.75844	46.24743	5.05585	0.0581457	0.21125246	2.7921251	20	3 21.5	21.2
424788 2008 TK_{167}	16.9	X	282.84568	202.73607	92.92626	4.96010	0.0363305	0.21376686	2.7701873	20	4 16.5	20.7
424789 2008 TP_{174}	16.8	X	218.23372	32.10165	268.17847	1.04053	0.0399806	0.20172668	2.8793458	20	2 3.1	20.8
424790 2008 TD_{176}	17.3	X	296.42216	31.13157	226.31065	3.26393	0.1474995	0.21216707	2.7840951	20	2 24.8	21.1
424791 2008 TA_{182}	15.9	X	71.81872	167.91356	194.87909	10.58519	0.0585843	0.18122075	3.0926500	20	—	—
424792 2008 TM_{188}	17.0	X	115.87025	142.30433	237.18741	13.67405	0.1865136	0.19647383	2.9304405	20	1 28.6	21.6
424793 2008 TP_{188}	16.2	X	31.68496	157.95167	240.65501	16.17945	0.2128470	0.18086051	3.0967553	20	—	—
424794 2008 UZ_{13}	16.3	X	43.51712	142.69243	5.40002	11.00399	0.0412668	0.20953951	2.8073212	20	3 19.9	20.0
424795 2008 UE_{28}	16.1	X	348.42619	78.86459	49.77751	9.77833	0.0934353	0.18497460	3.0506659	20	—	—
424796 2008 UM_{29}	16.9	X	229.48963	161.20878	204.08028	4.40434	0.0984489	0.21681763	2.7441403	20	5 2.0	20.8
424797 2008 UC_{32}	16.7	X	91.90166	256.08681	119.39634	2.27233	0.1403836	0.18722537	3.0261672	20	—	—
424798 2008 UW_{34}	16.5	X	62.00870	333.68343	84.66346	4.71187	0.1381918	0.18729985	3.0253649	20	1 4.3	20.0
424799 2008 UY_{41}	16.2	X	62.38727	137.00172	229.75853	8.19464	0.0891273	0.17636166	3.1491977	20	—	—
424800 2008 UJ_{50}	16.7	X	70.23075	208.52446	215.27219	1.18229	0.1024240	0.19250156	2.9706162	20	1 17.9	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		°	°	°	°		°				
424801 2008 UF_{52}	15.9	X	326.20588	287.31102	56.63291	15.10395	0.2042649	0.23486573	2.6016944	20	8 19.2	18.6
424802 2008 UR_{56}	16.9	X	144.38615	13.67129	349.07458	11.72692	0.1339352	0.20556328	2.8434070	20	2 8.2	21.3
424803 2008 UE_{61}	16.3	X	102.47154	79.04352	237.26258	12.63883	0.1040587	0.17626487	3.1503505	20	—	—
424804 2008 UV_{74}	16.8	X	31.29482	102.61273	333.13324	2.66666	0.0907435	0.18122380	3.0926153	20	—	—
424805 2008 UO_{75}	16.1	X	112.91686	112.42504	253.86879	10.94333	0.0703521	0.18578744	3.0417614	20	—	—
424806 2008 UL_{104}	17.0	X	283.83761	241.85939	34.07899	3.22965	0.1089320	0.21286845	2.7779762	20	3 11.8	21.0
424807 2008 UQ_{105}	16.4	X	70.95348	310.03495	79.77910	2.54892	0.1644525	0.18199256	3.0839001	20	—	—
424808 2008 UB_{107}	16.7	X	167.90078	229.54509	131.08376	2.95174	0.0755929	0.20244043	2.8725739	20	2 22.7	20.8
424809 2008 UO_{113}	16.8	X	192.17888	148.38960	253.36622	5.47886	0.0572513	0.21576605	2.7530492	20	5 8.0	20.9
424810 2008 UJ_{115}	16.0	X	189.82099	263.41629	5.84345	8.82273	0.0466487	0.18340242	3.0680753	20	—	—
424811 2008 UJ_{125}	16.3	X	9.27290	108.19461	316.44676	6.33545	0.1780809	0.17404408	3.1770926	20	—	—
424812 2008 UK_{127}	16.9	X	85.81401	149.99199	224.70873	1.35622	0.1794711	0.18276390	3.0752171	20	—	—
424813 2008 UR_{128}	16.7	X	237.58396	331.97199	39.42280	6.91003	0.0447252	0.22486424	2.6782788	20	5 23.4	20.3
424814 2008 UX_{132}	17.0	X	346.42129	30.49188	240.49138	3.19552	0.0803215	0.22192716	2.7018573	20	6 7.7	20.2
424815 2008 UK_{137}	16.5	X	187.14429	8.11762	43.54493	5.99386	0.0472111	0.21596608	2.7513490	20	5 15.4	20.4
424816 2008 UC_{139}	16.3	X	270.85996	338.81685	222.95138	4.13579	0.1110597	0.18406585	3.0606986	20	—	—
424817 2008 UA_{141}	16.7	X	198.14753	322.93268	45.21376	10.85107	0.1378963	0.21005755	2.8027037	20	4 5.6	21.2
424818 2008 UB_{141}	16.2	X	319.53014	249.92786	223.01560	8.11885	0.0704703	0.17414893	3.1758173	20	—	—
424819 2008 UY_{146}	16.5	X	340.98766	38.75246	237.76961	12.84793	0.2268774	0.22349553	2.6892024	20	5 25.2	18.7
424820 2008 UX_{149}	17.0	X	42.52073	127.56274	68.20628	2.92870	0.0130031	0.21829151	2.7317743	20	5 17.1	20.6
424821 2008 UG_{161}	17.0	X	86.23029	192.06699	278.47521	2.89654	0.0630310	0.21043556	2.7993463	20	3 30.1	20.8
424822 2008 UX_{161}	16.1	X	344.76449	219.87597	242.62876	8.20088	0.0731745	0.18055957	3.1001953	20	—	—
424823 2008 UF_{165}	16.8	X	54.33589	303.12072	244.90888	4.14838	0.0672441	0.21821565	2.7324074	20	5 29.9	20.3
424824 2008 UO_{173}	16.4	X	74.53977	26.70100	345.79369	10.37880	0.1742537	0.18562756	3.0435078	20	—	—
424825 2008 UD_{185}	16.3	X	303.62583	246.89211	244.15249	5.64074	0.1218543	0.17054950	3.2203451	20	—	—
424826 2008 UR_{200}	15.6	X	35.36659	152.85316	221.26618	30.53774	0.3399391	0.17663977	3.1458914	20	—	—
424827 2008 UT_{201}	15.7	X	91.50706	350.69579	45.21551	16.83434	0.1480641	0.18931250	3.0038842	20	1 23.9	20.0
424828 2008 UK_{210}	16.9	X	155.38756	2.69971	18.69515	2.08434	0.0816474	0.20346553	2.8629174	20	3 6.0	21.1
424829 2008 US_{217}	16.9	X	107.16924	141.58409	336.70895	3.63024	0.0179875	0.21269920	2.7794496	20	4 29.9	20.8
424830 2008 US_{229}	16.0	X	353.39426	48.22252	42.06454	10.75913	0.0699689	0.17391133	3.1787092	20	—	—
424831 2008 UP_{236}	16.3	X	85.26539	85.29509	246.57193	12.21052	0.1692765	0.17766138	3.1338198	20	—	—
424832 2008 UJ_{240}	16.1	X	27.51064	37.36883	23.08138	12.82271	0.1260188	0.17886215	3.1197785	20	—	—
424833 2008 UH_{241}	15.5	X	118.60299	57.36143	248.39508	18.79099	0.0604810	0.17457545	3.1706424	20	—	—
424834 2008 UJ_{241}	16.8	X	349.31626	306.88669	339.55715	5.81765	0.2118726	0.22788096	2.6545894	20	7 4.4	19.0
424835 2008 UW_{249}	16.5	X	341.96327	218.52949	44.02781	13.32403	0.2324511	0.22393312	2.6856979	20	5 4.3	18.7
424836 2008 UC_{250}	16.7	X	143.51280	276.74672	63.31923	6.73342	0.1133846	0.19314848	2.9639794	20	1 8.3	21.2
424837 2008 UG_{259}	16.6	X	199.52387	240.35857	49.32291	4.36748	0.0438166	0.18909698	3.0061662	20	1 3.2	21.0
424838 2008 UY_{259}	17.0	X	5.34848	301.83960	152.38702	0.38709	0.1400779	0.17846989	3.1243481	20	—	—
424839 2008 UQ_{260}	16.8	X	213.30719	324.81893	96.38944	3.86437	0.0614174	0.22399811	2.6851784	20	6 28.1	20.7
424840 2008 UR_{264}	16.5	X	22.17682	164.63717	229.84738	22.27284	0.1747623	0.17506508	3.1647278	20	—	—
424841 2008 UH_{274}	16.6	X	69.21961	1.47660	32.37043	1.92688	0.1485480	0.18426346	3.0585100	20	—	—
424842 2008 UA_{275}	16.8	X	293.16401	230.82432	40.87269	5.80704	0.1319120	0.20907501	2.8114777	20	3 16.3	20.6
424843 2008 UV_{275}	17.1	X	93.51371	276.52854	258.38009	0.66080	0.0903510	0.22233439	2.6985572	20	7 8.9	20.9
424844 2008 UK_{276}	16.8	X	289.38615	246.46369	39.20102	4.96580	0.0350254	0.21263467	2.7800120	20	4 10.8	20.6
424845 2008 UL_{276}	16.9	X	175.14041	347.59813	343.49587	0.48097	0.1889992	0.20010079	2.8949219	20	1 31.6	21.8
424846 2008 UK_{284}	17.2	X	70.05027	355.14572	49.44402	11.17879	0.1123433	0.18758254	3.0223247	20	—	—
424847 2008 US_{297}	16.6	X	146.15339	261.05816	15.73565	8.83665	0.0563002	0.17447884	3.1718127	20	—	—
424848 2008 UP_{299}	16.7	X	40.46884	88.48813	319.01524	3.71563	0.1542909	0.17996679	3.1069992	20	—	—
424849 2008 UK_{323}	16.6	X	108.32097	17.04015	329.81145	6.99832	0.2702507	0.18778152	3.0201892	20	—	—
424850 2008 UO_{324}	15.8	X	36.65266	162.44838	258.96143	8.77483	0.0659691	0.17864337	3.1223250	20	—	—
424851 2008 UK_{327}	16.3	X	32.81268	295.58781	100.11221	25.54532	0.4530205	0.17773467	3.1329583	20	—	—
424852 2008 UG_{335}	16.6	X	64.82850	172.95398	17.93863	11.27285	0.0815589	0.21829063	2.7317816	20	6 19.7	20.4
424853 2008 UQ_{335}	17.0	X	43.80047	57.71856	41.40936	5.72791	0.1132976	0.19231702	2.9725163	20	1 25.8	20.6
424854 2008 UA_{339}	16.8	X	133.49674	102.89300	259.00740	11.75776	0.1965244	0.19275093	2.9680535	20	1 28.5	21.6
424855 2008 UY_{342}	15.6	X	144.10346	223.43678	59.95927	11.96314	0.0592635	0.17585781	3.1552101	20	—	—
424856 2008 UG_{343}	17.4	X	32.26414	312.09156	85.05508	2.89653	0.2438312	0.17615864	3.1516168	20	—	—
424857 2008 UP_{345}	16.5	X	324.54974	283.07749	251.43510	8.16040	0.0994517	0.18575302	3.0421372	20	1 1.0	20.7
424858 2008 UT_{355}	16.2	X	187.47983	252.62395	99.69496	10.18828	0.1276426	0.20158301	2.8807138	20	3 9.1	20.9
424859 2008 UB_{356}	16.9	X	51.68513	152.57620	274.80977	4.43034	0.1608139	0.18444317	3.0565229	20	1 1.6	20.5
424860 2008 UZ_{357}	16.2	X	188.43364	241.18909	49.90254	11.75271	0.0593322	0.18510931	3.0491857	20	—	—
424861 2008 UH_{358}	16.7	X	71.42505	58.81676	353.33421	5.23798	0.2498619	0.18850703	3.0124350	20	1 27.9	20.2
424862 2008 UJ_{363}	16.4	X	52.38121	218.61513	152.54805	14.47087	0.2184471	0.18025813	3.1036504	20	—	—
424863 2008 UG_{370}	16.8	X	352.21546	42.50281	68.97267	27.58052	0.3344801	0.17495733	3.1660271	20	—	—
424864 2008 VM_{5}	16.3	X	10.60612	84.27990	313.59105	9.96930	0.1884819	0.17459991	3.1703463	20	—	—
424865 2008 VH_{16}	16.3	X	109.48298	304.08595	50.67215	8.42440	0.0932684	0.18682609	3.0304772	20	—	—
424866 2008 VL_{25}	16.4	X	247.65818	135.22498	88.28587	4.06420	0.0159345	0.18776806	3.0203336	20	—	—
424867 2008 VG_{28}	15.7	X	9.33475	182.46084	240.25165	8.50026	0.0776433	0.17585243	3.1552744	20	—	—
424868 2008 VC_{32}	16.6	X	304.80296	115.19999	68.89270	12.17708	0.0433586	0.18796991	3.0181709	20	—	—
424869 2008 VO_{34}	16.4	X	65.23230	325.57980	75.04557	10.39840	0.1147108	0.18381978	3.0634294	20	—	—
424870 2008 VH_{38}	15.7	X	63.63843	106.09202	248.81207	14.17062	0.0647927	0.17180914	3.2045856	20	—	—
424871 2008 VO_{52}	16.8	X	113.93358	3.28042	2.62667	7.50793	0.1082846	0.19210701	2.9746822	20	1 6.4	21.0
424872 2008 VX_{52}	15.9	X	50.93654	120.71182	219.16294	11.97236	0.1045721	0.17185631	3.2039991	20	12 7.7	20.5
424873 2008 VX_{53}	16.1	X	96.67167	113.98914	230.62611	9.81716	0.1115597	0.18343079	3.0677589	20	—	—
424874 2008 VE_{58}	16.6	X	114.52241	265.01363	103.44572	8.70659	0.2847658	0.19246912	2.9709500	20	2 1.3	21.1
424875 2008 VN_{69}	16.5	X	57.33445	52.70792	18.14216	2.54472	0.0849845	0.18761365	3.0219905	20	1 8.0	20.3
424876 2008 VO_{69}	16.2	X	82.54747	326.13845	46.99692	8.64899	0.0741346	0.18173276	3.0868384	20	—	—
424877 2008 VA_{71}	16.2	X	114.84170	45.12933	264.22386	8.11707	0.0560484	0.17422356	3.1749103	20	—	—
424878 2008 VN_{71}	15.9	X	61.38319	81.78283	329.72262	16.80238	0.3412549	0.18118987	3.0930013	20	1 28.3	19.2
424879 2008 VB_{73}	16.6	X	147.57986	301.83340	89.62382	7.13051	0.0811904	0.20091360	2.8871088	20	3 13.0	20.9
424880 2008 VS_{73}	16.7	X	126.17169	309.72010	99.60445	3.13789	0.0658320	0.19821826	2.9132222	20	3 7.2	20.8

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Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
	m		°	°	°	°		°				
424881 2008 VW_{73}	16.5	X	325.01539	352.08361	167.42687	2.27263	0.1567324	0.18215760	3.0820371	20	—	—
424882 2008 VV_{76}	16.2	X	55.11386	187.74340	254.77230	11.44154	0.0941027	0.19035649	2.9928912	20	1 16.7	20.1
424883 2008 VE_{77}	16.1	X	349.61410	12.28121	90.94968	9.49130	0.0348878	0.17861468	3.1226593	20	—	—
424884 2008 VQ_{78}	16.0	X	87.24733	254.18329	125.86604	6.12149	0.1705550	0.18426181	3.0585282	20	—	—
424885 2008 VG_{79}	15.6	X	62.76214	336.10331	56.92039	18.23826	0.2316935	0.18022458	3.1040356	20	—	—
424886 2008 VN_{80}	15.3	X	231.54602	71.53980	111.71590	11.05780	0.0861761	0.15802811	3.3882841	20	12 8.6	20.2
424887 2008 WT_{10}	16.8	X	11.91244	133.69906	322.15554	0.89289	0.1620429	0.18080685	3.0973680	20	—	—
424888 2008 WV_{13}	16.2	X	61.37580	280.90603	109.74626	15.93468	0.2772649	0.18116063	3.0933342	20	—	—
424889 2008 WZ_{14}	15.9	X	5.28493	182.85860	225.33965	27.98469	0.1616850	0.17373913	3.1808092	20	12 31.7	20.4
424890 2008 WC_{25}	16.5	X	73.40329	336.80153	70.36017	7.45964	0.2523788	0.18759294	3.0222129	20	1 25.5	20.1
424891 2008 WQ_{29}	16.3	X	92.20359	98.96716	261.34929	15.09629	0.2819789	0.18340056	3.0680960	20	—	—
424892 2008 WH_{33}	15.8	X	264.25220	16.73893	149.39696	9.67392	0.0397354	0.17561208	3.1581527	20	—	—
424893 2008 WN_{33}	16.2	X	358.44526	200.10240	241.45066	4.29488	0.1538547	0.17724755	3.1386957	20	—	—
424894 2008 WO_{37}	16.9	X	0.39872	36.20851	72.66385	2.54436	0.1434934	0.17952710	3.1120701	20	—	—
424895 2008 WH_{38}	16.6	X	118.74383	22.28174	69.19566	7.18284	0.0235836	0.20566608	2.8424594	20	4 15.4	20.5
424896 2008 WT_{38}	16.2	X	332.44577	236.87354	232.27175	9.82676	0.0355869	0.17548097	3.1597256	20	—	—
424897 2008 WZ_{39}	17.5	X	58.02159	249.06850	128.71023	1.26359	0.1898415	0.17822174	3.1272475	20	—	—
424898 2008 WP_{43}	16.5	X	37.04767	351.73612	62.35841	10.98851	0.1107527	0.17748992	3.1358378	20	—	—
424899 2008 WO_{46}	16.7	X	36.83091	345.84978	51.03411	1.84858	0.1782284	0.17483226	3.1675368	20	—	—
424900 2008 WN_{50}	16.9	X	95.02353	287.37502	85.77110	1.99778	0.1088293	0.18621370	3.0371177	20	—	—
424901 2008 WB_{51}	16.5	X	349.17208	85.64078	60.65187	9.66504	0.0354579	0.18969679	2.9998259	20	1 6.9	20.6
424902 2008 WF_{55}	17.1	X	111.58285	275.83687	92.46504	2.89149	0.1345141	0.18813931	3.0163589	20	1 9.7	21.4
424903 2008 WD_{59}	16.2	X	4.33628	207.95373	241.93619	9.38267	0.1910080	0.17755321	3.1350925	20	—	—
424904 2008 WG_{62}	15.8	X	68.88967	306.09962	75.44895	17.80846	0.2564828	0.18111134	3.0938953	20	—	—
424905 2008 WX_{62}	16.1	X	20.41117	187.35090	261.87098	17.34352	0.1584350	0.17949608	3.1124286	20	—	—
424906 2008 WE_{66}	16.1	X	123.14818	292.82533	57.40796	9.75526	0.1180000	0.18926852	3.0043496	20	—	—
424907 2008 WX_{67}	16.1	X	336.91523	71.07675	73.41002	17.39700	0.1888924	0.17857919	3.1230731	20	—	—
424908 2008 WZ_{72}	16.5	X	169.66508	296.66710	26.38430	2.95400	0.0824674	0.18710805	3.0274320	20	1 13.4	21.0
424909 2008 WL_{77}	16.4	X	101.56589	292.15485	81.98069	10.57199	0.1048144	0.18532156	3.0468571	20	—	—
424910 2008 WK_{82}	16.3	X	16.48890	351.48352	126.05424	5.98950	0.1333734	0.18398515	3.0615936	20	1 4.6	19.8
424911 2008 WF_{84}	16.1	X	109.67599	112.48868	272.75525	9.63289	0.1324458	0.18780912	3.0198933	20	1 25.4	20.4
424912 2008 WO_{86}	16.2	X	353.55606	269.26354	246.41888	7.67597	0.1267442	0.19220205	2.9737015	20	1 13.3	19.8
424913 2008 WP_{86}	16.5	X	132.07367	3.60139	4.69281	8.25780	0.2102190	0.20283754	2.8688235	20	2 10.2	21.0
424914 2008 WC_{94}	16.2	X	228.47670	195.38136	72.75392	12.30543	0.0868293	0.18914240	3.0056849	20	1 7.3	20.9
424915 2008 WB_{96}	16.6	X	30.06531	232.01202	184.65279	14.14902	0.2826116	0.17618432	3.1513107	20	—	—
424916 2008 WZ_{100}	15.6	X	51.08857	355.10239	90.72800	17.58395	0.0614311	0.18307547	3.0717270	20	1 16.8	19.7
424917 2008 WT_{129}	17.1	X	339.73847	59.28450	73.34691	11.12745	0.2136892	0.17671312	3.1450208	20	—	—
424918 2008 WA_{130}	15.7	X	354.86121	224.17042	247.49933	15.04762	0.0781824	0.17697662	3.1418982	20	—	—
424919 2008 WH_{138}	15.8	X	28.62994	293.13953	112.22839	14.13815	0.2465651	0.17152799	3.2080863	20	—	—
424920 2008 XP_{21}	15.9	X	89.29752	140.77738	261.72116	16.15240	0.1142880	0.18334583	3.0687065	20	1 17.6	20.2
424921 2008 XS_{22}	16.4	X	262.57664	285.95077	21.21668	7.21090	0.0927588	0.20847798	2.8168426	20	3 28.3	20.4
424922 2008 XR_{23}	16.5	X	335.96969	261.04813	279.63942	8.73678	0.1662185	0.18934397	3.0035513	20	1 14.5	20.1
424923 2008 XR_{44}	15.2	X	158.93351	237.64332	100.33533	21.58460	0.0208656	0.18343371	3.0677263	20	1 14.3	19.6
424924 2008 XK_{51}	16.0	X	338.52361	66.63408	39.59719	16.09199	0.2256403	0.17295944	3.1903613	20	—	—
424925 2008 YP_{4}	16.3	X	41.44869	32.61432	123.90981	12.12769	0.0766659	0.18873359	3.0100237	20	4 6.6	20.4
424926 2008 YM_{5}	16.0	X	92.13711	349.14335	86.09231	8.81571	0.1047684	0.18989366	2.9977523	20	3 7.1	20.2
424927 2008 YJ_{6}	16.0	X	146.93579	252.26801	132.77575	10.06485	0.0656294	0.19662324	2.9289558	20	3 1.7	20.3
424928 2008 YG_{12}	16.7	X	42.67932	350.60310	78.77964	2.29248	0.1321389	0.18102169	3.0949168	20	—	—
424929 2008 YV_{13}	15.8	X	299.81315	275.76969	247.84492	8.86995	0.0394462	0.17823760	3.1270621	20	—	—
424930 2008 YA_{20}	16.2	X	132.54943	315.53634	115.33974	10.59426	0.0876115	0.19468992	2.9483140	20	4 16.5	20.7
424931 2008 YQ_{22}	15.5	X	25.50634	143.52993	300.46135	18.08839	0.1345646	0.17124216	3.2116553	20	—	—
424932 2008 YP_{38}	16.2	X	337.84475	45.26899	110.34948	7.11070	0.1534275	0.17507376	3.1646233	20	—	—
424933 2008 YZ_{50}	16.4	X	17.97912	15.57882	77.44105	2.91224	0.1772940	0.17294268	3.1905675	20	—	—
424934 2008 YP_{59}	16.9	X	345.20884	95.72209	52.89565	1.95503	0.1341779	0.17658898	3.1464946	20	—	—
424935 2008 YU_{63}	16.1	X	2.35254	3.65205	122.67615	27.87784	0.1187196	0.17499872	3.1655278	20	—	—
424936 2008 YH_{65}	17.8	X	255.63541	336.65867	85.34794	6.68604	0.1258273	0.30909241	2.1664258	20	8 24.9	20.2
424937 2008 YM_{77}	15.9	X	62.77502	273.42324	122.71568	16.76460	0.2665744	0.17667587	3.1454628	20	—	—
424938 2008 YN_{80}	16.0	X	353.45070	60.74529	88.12762	5.65687	0.0791938	0.17830961	3.1262201	20	1 13.9	19.9
424939 2008 YL_{85}	16.1	X	146.70089	237.20282	76.58319	10.08941	0.0465545	0.17889034	3.1194507	20	—	—
424940 2008 YD_{91}	16.2	X	36.45140	321.35024	108.52964	7.64231	0.2064905	0.17574769	3.1565279	20	—	—
424941 2008 YV_{102}	16.0	X	41.03988	316.78495	119.86257	10.70472	0.0798837	0.17454562	3.1710037	20	—	—
424942 2008 YC_{105}	15.6	X	154.80974	36.91606	293.82892	13.89104	0.0748251	0.17534247	3.1613892	20	1 8.1	20.3
424943 2008 YH_{106}	16.7	X	322.75466	51.20861	65.96110	2.19050	0.2475599	0.16316366	3.3168086	20	—	—
424944 2008 YN_{106}	16.0	X	230.26837	324.41295	308.67893	25.18320	0.1372177	0.17496935	3.1658820	20	1 17.2	21.1
424945 2008 YT_{108}	16.5	X	321.56266	74.90548	90.72592	2.47506	0.1309178	0.17113821	3.2129556	20	—	—
424946 2008 YJ_{118}	16.6	X	187.28121	37.07800	313.81760	12.93885	0.0621669	0.18588607	3.0406853	20	2 28.4	21.3
424947 2008 YQ_{118}	15.8	X	338.95938	313.22145	115.04124	7.12119	0.0967072	0.15654699	3.4096220	20	12 12.2	20.2
424948 2008 YM_{124}	16.2	X	71.31468	82.60359	296.97608	17.84194	0.1689919	0.17209680	3.2010137	20	—	—
424949 2008 YW_{125}	16.2	X	64.76802	314.91949	107.33342	6.05483	0.1381400	0.17862882	3.1224946	20	1 15.4	20.0
424950 2008 YA_{129}	16.0	X	9.45153	129.27979	319.29914	5.81581	0.0979244	0.17146135	3.2089176	20	—	—
424951 2008 YU_{136}	15.8	X	160.43202	191.70109	94.89728	14.05191	0.0297672	0.16935889	3.2354204	20	—	—
424952 2008 YY_{149}	15.8	X	256.24819	127.00426	122.14799	11.73483	0.0211655	0.17895102	3.1187455	20	1 20.9	20.3
424953 2008 YG_{150}	18.0	X	102.83962	97.21894	104.90217	3.62375	0.0942041	0.30137827	2.2032381	20	9 5.3	20.8
424954 2008 YK_{150}	15.7	X	118.39340	269.65071	120.77687	20.01017	0.0274998	0.17901382	3.1180160	20	1 31.4	20.2
424955 2008 YR_{158}	15.8	X	353.35320	292.89308	137.02437	12.47111	0.0541242	0.15914254	3.3724474	20	—	—
424956 2008 YK_{160}	16.3	X	298.51351	265.46344	326.65894	12.12463	0.2303579	0.17110738	3.2133416	20	1 25.2	21.0
424957 2008 YE_{162}	16.5	X	300.71557	50.13393	145.73226	1.40345	0.1131753	0.17641166	3.1486027	20	—	—
424958 2008 YL_{163}	16.1	X	1.48446	11.12687	95.18582	6.60534	0.1617944	0.17215024	3.2003512	20	—	—
424959 2008 YG_{165}	15.8	X	355.07469	195.11910	306.69163	25.80241	0.0385292	0.17650116	3.1475382	20	1 14.1	20.1
424960 2008 YE_{169}	16.3	X	303.45031	44.40597	131.19488	7.35813	0.1022487	0.17054904	3.2203509	20	—	—

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Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
	m		°	°	°	°		°				
424961 2008 YB_{170}	16.4	X	33.00859	90.68462	26.57779	10.41943	0.2632803	0.18158068	3.0885618	20	2 14.6	19.4
424962 2008 YO_{170}	15.8	X	349.51443	16.22761	127.56783	22.46579	0.0242872	0.17513901	3.1638371	20	1 8.0	20.3
424963 2009 AW_{3}	16.5	X	295.55744	174.43744	22.46959	3.96636	0.0914841	0.17597856	3.1537665	20	—	—
424964 2009 AG_{5}	15.9	X	45.51924	318.77124	100.53099	18.04801	0.2133167	0.17645313	3.1481093	20	—	—
424965 2009 AM_{15}	18.8	X	348.22902	131.48302	166.18211	28.86970	0.4870963	1.34566069	0.8125417	20	1 9.3	19.8
424966 2009 AH_{39}	15.8	X	233.68191	328.65244	288.96971	7.95277	0.0338759	0.17511939	3.1640735	20	1 5.1	20.3
424967 2009 AA_{40}	16.0	X	28.07177	153.84055	291.54310	9.42637	0.1056853	0.17296085	3.1903439	20	—	—
424968 2009 BN_{1}	15.8	X	65.44495	127.56059	293.05412	26.31786	0.1826370	0.17993927	3.1073159	20	1 18.3	19.5
424969 2009 BT_{5}	20.6	X	103.38007	73.32442	130.50803	21.21613	0.1292457	0.64716007	1.3237163	20	11 19.3	21.9
424970 2009 BQ_{8}	15.7	X	22.99914	163.35065	295.45947	16.16195	0.1855778	0.17543161	3.1603183	20	—	—
424971 2009 BY_{15}	15.7	X	348.70075	354.69588	126.49202	11.93447	0.0215262	0.17174563	3.2053756	20	—	—
424972 2009 BV_{20}	16.1	X	244.30324	121.15196	117.83231	19.67823	0.1095470	0.17143918	3.2091942	20	—	—
424973 2009 BD_{45}	16.4	X	325.52001	57.65995	142.11595	7.68631	0.0559514	0.17685830	3.1432994	20	2 9.7	20.7
424974 2009 BA_{49}	16.4	X	291.24771	81.49023	126.24728	5.54464	0.0882801	0.17316298	3.1878608	20	1 4.6	20.9
424975 2009 BQ_{55}	16.4	X	22.63374	152.14648	319.54300	15.44270	0.2692753	0.17636298	3.1491821	20	1 10.8	19.4
424976 2009 BD_{73}	16.8	X	36.89719	65.99771	14.27178	9.71210	0.2275153	0.17701963	3.1413893	20	—	—
424977 2009 BP_{100}	16.6	X	131.09782	199.59583	151.62357	2.28338	0.0764981	0.17360112	3.1824948	20	1 6.2	21.2
424978 2009 BG_{106}	16.1	X	359.78579	23.56978	135.83043	4.76238	0.1394793	0.17420525	3.1751327	20	2 1.1	19.6
424979 2009 BR_{114}	15.8	X	39.44271	110.21428	321.17683	25.10441	0.2221551	0.17313203	3.1882407	20	—	—
424980 2009 BY_{121}	16.2	X	160.94269	58.52406	321.87298	11.07392	0.1002952	0.18514392	3.0488056	20	3 9.5	21.0
424981 2009 BM_{133}	16.4	X	296.72337	54.80403	139.61817	6.53901	0.0857402	0.17151103	3.2082978	20	—	—
424982 2009 BA_{153}	16.3	X	339.73413	150.90640	40.49845	2.51660	0.1507453	0.17976385	3.1093371	20	2 8.3	20.1
424983 2009 BR_{159}	16.1	X	74.29536	323.38597	142.04953	11.71790	0.0283084	0.17954363	3.1118791	20	3 9.9	20.4
424984 2009 BE_{161}	16.3	X	314.38625	49.74408	153.94986	9.49806	0.0945912	0.17760351	3.1345005	20	1 25.1	20.6
424985 2009 BR_{182}	15.8	X	181.99590	139.10403	154.17174	7.57006	0.0449763	0.16750763	3.2592148	20	—	—
424986 2009 BX_{187}	15.9	X	192.49735	230.33704	139.13680	11.92017	0.1023327	0.18904924	3.0066723	20	4 3.8	20.7
424987 2009 BB_{188}	15.5	X	297.81031	250.33206	313.90663	17.86454	0.1260739	0.17098026	3.2149341	20	1 6.2	20.2
424988 2009 BS_{189}	16.2	X	24.18203	311.68743	162.57525	10.64673	0.1891544	0.17781358	3.1320314	20	1 13.8	19.6
424989 2009 CF_{7}	17.4	X	352.61421	130.53322	118.77956	7.02020	0.1563338	0.27988105	2.3146592	20	5 15.6	19.3
424990 2009 CU_{17}	15.7	X	329.96954	43.18625	138.55031	27.23003	0.1231766	0.17437461	3.1730765	20	1 17.1	20.1
424991 2009 CB_{19}	15.9	X	264.85540	97.66330	157.34520	25.99587	0.1902159	0.17095620	3.2152357	20	1 20.7	21.3
424992 2009 CB_{21}	16.2	X	24.32546	345.98054	147.68999	9.40676	0.0432455	0.17940579	3.1134728	20	2 7.2	20.4
424993 2009 CH_{30}	16.3	X	58.20027	355.67190	133.44676	9.81501	0.0548764	0.18333369	3.0688420	20	3 22.3	20.5
424994 2009 CM_{36}	16.4	X	65.69872	282.81738	133.87948	19.19564	0.3671782	0.17917867	3.1161032	20	2 13.8	19.8
424995 2009 CY_{37}	16.6	X	25.08025	342.15045	168.10827	8.94342	0.1038943	0.18312582	3.0711639	20	2 29.6	20.4
424996 2009 CZ_{40}	15.8	X	68.35627	273.17861	140.75538	9.40109	0.1101188	0.17465859	3.1696362	20	1 7.4	19.9
424997 2009 CH_{45}	16.5	X	133.92633	79.84378	324.58587	8.14278	0.1176156	0.19084303	2.9878022	20	3 12.6	21.0
424998 2009 CU_{48}	15.9	X	228.47344	319.11374	307.41939	11.88440	0.0740153	0.17444282	3.1722494	20	1 9.0	20.8
424999 2009 CB_{58}	16.3	X	70.45011	273.43876	177.56222	13.81955	0.0685775	0.17640677	3.1486609	20	2 17.6	20.7
425000 2009 CG_{61}	15.9	X	350.49867	99.22798	121.24166	11.83133	0.0386815	0.18882422	3.0090605	20	4 15.0	20.1
425001 2009 CN_{64}	16.3	X	271.79171	126.24410	167.19555	12.75986	0.1076989	0.18368471	3.0649311	20	3 22.1	20.7
425002 2009 DL_{4}	17.4	X	126.56450	143.24401	135.23751	25.24894	0.2110336	0.31860763	2.1230747	20	—	—
425003 2009 DK_{6}	16.4	X	270.27659	237.49981	341.28800	3.26459	0.0768341	0.17043341	3.2218073	20	—	—
425004 2009 DN_{39}	15.6	X	230.28198	295.98355	340.46227	25.96053	0.0928654	0.17590686	3.1546235	20	1 28.6	20.8
425005 2009 DU_{46}	15.8	X	328.88592	229.37953	314.21012	9.30129	0.1906645	0.17219983	3.1997366	20	1 9.5	20.0
425006 2009 DF_{64}	17.8	X	43.41466	180.18481	115.23196	5.43708	0.1559512	0.29947927	2.2125421	20	11 8.6	20.5
425007 2009 DQ_{66}	17.9	X	31.22003	2.34255	315.72890	2.90318	0.1637244	0.30777679	2.1725952	20	11 24.0	20.4
425008 2009 DE_{76}	18.1	X	119.74539	75.13750	136.44083	3.64602	0.1376154	0.30460658	2.1876434	20	10 10.8	21.2
425009 2009 DZ_{88}	15.5	X	325.66367	304.98950	260.73328	25.22144	0.2952419	0.17375615	3.1806016	20	1 9.7	19.9
425010 2009 DU_{106}	16.2	X	202.25461	180.98498	130.39710	10.11469	0.0342662	0.17892230	3.1190792	20	2 2.0	20.6
425011 2009 DC_{112}	16.0	X	165.30128	111.92547	171.69726	10.41530	0.0363466	0.15307589	3.4609728	20	—	—
425012 2009 DN_{124}	16.3	X	359.62419	55.30030	102.70721	2.23088	0.1370149	0.17154885	3.2078262	20	1 31.2	20.2
425013 2009 DV_{124}	17.4	X	345.15354	279.78979	8.22203	3.62194	0.1644367	0.28221254	2.3018932	20	7 1.6	19.0
425014 2009 DW_{125}	15.5	X	210.78763	312.75130	359.46151	16.49868	0.0826599	0.16906561	3.2391609	20	2 17.8	20.6
425015 2009 DJ_{126}	16.7	X	309.95867	343.04166	2.79336	23.87606	0.1584829	0.28857207	2.2679485	20	8 3.9	19.4
425016 2009 EL_{6}	16.0	X	151.63332	354.22451	25.53773	10.16924	0.1102744	0.17814081	3.1281946	20	3 7.9	20.9
425017 2009 EW_{16}	15.8	X	285.88298	273.93622	335.41735	9.73695	0.0348399	0.17644266	3.1482339	20	2 23.6	20.1
425018 2009 EE_{19}	16.3	X	331.23530	216.84404	340.94999	5.71059	0.0791835	0.17791152	3.1308817	20	2 12.8	20.3
425019 2009 EK_{29}	15.8	X	301.84199	73.60597	177.89254	13.64627	0.2312970	0.17135245	3.2102770	20	2 16.6	20.5
425020 2009 ES_{30}	17.9	X	87.23803	40.56620	167.38393	4.03914	0.1149111	0.29123776	2.2540883	20	8 24.1	20.8
425021 2009 FH_{3}	18.2	X	215.54662	126.96759	5.46180	7.05024	0.0730989	0.30515834	2.1850056	20	10 13.7	20.8
425022 2009 FN_{7}	17.7	X	27.82511	214.26082	41.12849	5.39844	0.1793042	0.28429611	2.2906326	20	8 18.8	19.9
425023 2009 FL_{22}	18.0	X	102.83987	236.26553	13.85821	4.52028	0.1529291	0.30055110	2.2072787	20	11 10.5	21.2
425024 2009 FK_{66}	18.3	X	138.94397	196.21027	349.02089	3.10591	0.1055584	0.29589252	2.2303861	20	9 21.8	21.3
425025 2009 FR_{67}	17.6	X	296.62714	239.06617	49.90817	3.52833	0.1905002	0.26610296	2.3938829	20	3 28.4	20.6
425026 2009 FB_{70}	17.6	X	334.89819	183.23649	94.96049	3.31666	0.1772266	0.27056123	2.3675128	20	5 19.5	19.6
425027 2009 FN_{71}	15.7	X	297.95899	156.33755	85.03811	15.38121	0.1852414	0.16824354	3.2497039	20	2 12.8	20.5
425028 2009 FZ_{72}	18.0	X	98.91585	176.03174	62.56857	6.48971	0.1083783	0.29403530	2.2397682	20	10 21.6	21.0
425029 2009 FL_{74}	18.0	X	107.76653	233.74556	4.91672	5.64169	0.1148031	0.30287432	2.1959768	20	10 29.6	21.0
425030 2009 FC_{77}	18.4	X	95.54025	151.67359	62.60754	4.76459	0.0722535	0.29106450	2.2549827	20	9 10.7	21.3
425031 2009 HF_{18}	18.7	X	125.55256	89.82708	168.50207	2.61145	0.1202212	0.30735783	2.1745690	20	12 15.5	21.9
425032 2009 HQ_{24}	15.6	X	204.22487	284.45605	66.88459	17.04924	0.0336805	0.17158205	3.2074125	20	4 1.7	20.6
425033 2009 HL_{29}	18.3	X	62.65476	144.04045	149.30441	5.34512	0.1558403	0.30040920	2.2079737	20	11 27.8	21.3
425034 2009 HJ_{78}	18.1	X	325.47890	176.17854	115.57215	2.47913	0.1751470	0.27407256	2.3472482	20	5 21.5	20.0
425035 2009 HK_{98}	18.2	X	129.75217	133.11409	93.17146	4.11394	0.1204283	0.30138059	2.2032268	20	11 8.2	21.3
425036 2009 HF_{103}	18.0	X	34.01155	181.08622	107.73485	3.45852	0.2121306	0.28561972	2.2835504	20	10 23.3	20.6
425037 2009 HT_{104}	17.8	X	308.97760	255.71930	38.30185	1.77743	0.1881060	0.26931142	2.3748319	20	4 21.5	20.1
425038 2009 KN_{16}	17.1	X	336.92644	217.67187	86.84405	7.34624	0.1224874	0.27647234	2.3336457	20	7 12.3	19.1
425039 2009 KX_{37}	13.8	X	305.52370	142.33879	136.34242	18.16659	0.0766566	0.08452778	5.1420514	20	4 29.4	20.7
425040 2009 MS_{2}	17.3	X	82.29254	51.67053	274.89211	6.88092	0.1892121	0.29714324	2.2241230	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		°	°	°	°		°				
425041 2009 OF_9	16.6	X	187.06110	148.62793	173.10332	12.55182	0.2574778	0.22817666	2.6522955	20	1 27.8	21.5
425042 2009 PR	17.4	X	324.15779	169.55471	144.03218	1.75963	0.1890735	0.26218212	2.4176903	20	6 20.8	19.2
425043 2009 PE_3	17.5	X	122.35125	170.87381	173.42864	7.73930	0.3088739	0.21654669	2.7464288	20	1 9.2	21.8
425044 2009 PV_7	16.9	X	159.27636	47.32127	319.80252	12.18649	0.2763130	0.22894797	2.6463351	20	2 28.9	21.6
425045 2009 PQ_{12}	17.7	X	320.80578	303.90706	7.35788	2.50075	0.2323914	0.25992254	2.4316819	20	6 1.4	19.6
425046 2009 QY_2	17.8	X	169.92316	86.83198	320.26862	6.29527	0.1979789	0.23797493	2.5789836	20	4 21.3	22.1
425047 2009 QE_8	18.0	X	133.72558	295.52815	334.09189	8.48488	0.4419197	0.30085945	2.2057703	20	12 29.6	22.5
425048 2009 QW_{10}	18.0	X	281.40266	240.65965	97.14940	2.41978	0.1897964	0.25345077	2.4729024	20	5 14.4	21.1
425049 2009 QS_{21}	18.0	X	356.09541	356.70845	326.48154	2.07345	0.2193816	0.27184063	2.3600786	20	10 1.2	19.6
425050 2009 QR_{23}	17.6	X	199.64695	60.81884	260.82932	2.51747	0.2141753	0.23220514	2.6215300	20	2 5.9	22.1
425051 2009 QR_{29}	17.2	X	132.67904	173.25458	195.10073	12.11395	0.1988305	0.22072959	2.7116211	20	2 1.9	21.5
425052 2009 QP_{32}	17.5	X	125.44620	30.85882	324.50658	3.95481	0.1767066	0.21753462	2.7381072	20	1 11.1	21.5
425053 2009 QM_{33}	17.6	X	179.50671	76.03020	296.95402	11.70322	0.2760453	0.23168626	2.6254426	20	3 17.8	22.6
425054 2009 QQ_{34}	16.7	X	193.44168	42.70004	295.48449	12.31749	0.2760890	0.23060904	2.6336122	20	2 18.2	21.6
425055 2009 QA_{40}	17.9	X	357.04986	276.59657	355.61990	6.14853	0.0959755	0.25663770	2.4523874	20	6 30.1	20.5
425056 2009 QM_{50}	17.1	X	130.64195	265.45200	168.75949	4.36424	0.0252323	0.22923656	2.6441137	20	4 4.8	20.6
425057 2009 QK_{54}	16.5	X	165.32110	122.69500	252.52765	8.40443	0.0893184	0.23416735	2.6068647	20	3 1.9	20.6
425058 2009 QB_{59}	17.7	X	149.95369	139.14692	227.99291	1.70237	0.1234391	0.22463219	2.6801230	20	2 12.1	21.6
425059 2009 QC_{62}	16.5	X	268.28237	30.17923	264.16398	14.66509	0.2099703	0.24154864	2.5534831	20	2 23.1	20.8
425060 2009 RN_3	16.7	X	134.65059	75.63317	317.15804	14.90546	0.2225761	0.22467569	2.6797771	20	3 4.4	21.0
425061 2009 RF_8	17.8	X	194.77373	7.01713	345.87018	2.56296	0.3053559	0.23300669	2.6155144	20	3 10.9	22.7
425062 2009 RZ_8	17.5	X	216.03461	5.62452	354.24037	4.43905	0.0927761	0.23798512	2.5789100	20	4 8.4	21.4
425063 2009 RQ_{10}	17.3	X	134.47387	164.11208	184.09536	4.99337	0.1732797	0.21549994	2.7553152	20	1 10.7	21.5
425064 2009 RD_{15}	17.4	X	124.96404	238.26633	183.61359	4.86170	0.1529099	0.22605532	2.6688627	20	3 28.3	21.3
425065 2009 RV_{15}	17.5	X	171.84878	0.68624	16.25720	6.42961	0.1721837	0.22948897	2.6421745	20	3 20.6	21.8
425066 2009 RB_{19}	17.8	X	181.27396	68.78471	304.41467	4.86665	0.3017987	0.23197256	2.6232819	20	3 23.5	22.6
425067 2009 RP_{20}	17.7	X	317.26815	319.96115	16.21778	5.71957	0.1215666	0.25686147	2.4509629	20	7 23.4	20.2
425068 2009 RN_{37}	17.9	X	178.02955	34.90382	7.88347	2.13269	0.1993316	0.23640645	2.5903782	20	4 25.4	22.2
425069 2009 RJ_{41}	17.5	X	138.80788	122.50657	275.21024	4.46764	0.2241041	0.22509783	2.6764256	20	3 16.7	21.9
425070 2009 RL_{43}	17.5	X	168.50296	42.74170	303.69738	4.12535	0.0550895	0.22179492	2.7029312	20	2 1.6	21.2
425071 2009 RB_{46}	17.1	X	129.34161	68.62574	3.01132	5.56949	0.1262368	0.22895899	2.6462502	20	4 10.1	21.1
425072 2009 RQ_{55}	17.0	X	159.16956	322.25587	35.51124	7.02672	0.1404127	0.22093388	2.7099493	20	2 15.6	21.2
425073 2009 RV_{59}	16.8	X	170.73551	60.55396	337.97230	12.37482	0.2663974	0.23288174	2.6164499	20	4 11.2	21.6
425074 2009 RF_{61}	16.8	X	190.00808	68.67595	325.10954	24.57822	0.2024105	0.23842755	2.5757186	20	4 10.4	21.7
425075 2009 RN_{65}	17.6	X	242.26374	222.45676	142.81197	15.19668	0.3222348	0.24647888	2.5193175	20	4 30.8	22.3
425076 2009 RC_{69}	17.6	X	196.62940	57.30263	299.57928	4.90528	0.2900686	0.23490451	2.6014081	20	3 14.5	22.4
425077 2009 RG_{69}	17.3	X	95.75741	13.70052	281.37647	6.32583	0.1950300	0.29085133	2.2560844	20	12 31.5	20.8
425078 2009 RE_{70}	17.1	X	206.20216	194.19786	195.05809	15.02663	0.1977283	0.23955374	2.5676397	20	5 4.5	21.4
425079 2009 RX_{70}	17.8	X	112.94669	262.00114	176.68925	1.96326	0.2198030	0.22607252	2.6687273	20	4 13.7	21.7
425080 2009 RB_{71}	17.4	X	153.43962	351.53331	40.77608	3.07989	0.0417248	0.22978429	2.6399102	20	3 12.1	21.0
425081 2009 RO_{72}	17.1	X	52.82643	290.44723	195.04682	15.62972	0.1829104	0.22017691	2.7161570	20	3 15.2	20.1
425082 2009 RH_{74}	17.7	X	260.51691	296.73260	18.54140	2.45944	0.0408256	0.23630459	2.5911225	20	4 8.9	21.2
425083 2009 RJ_{75}	16.9	X	227.86432	19.17643	342.06589	11.26681	0.0989691	0.24108640	2.5567459	20	4 18.6	20.9
425084 2009 SB_2	16.7	X	187.69999	46.66173	331.57383	11.98683	0.2374320	0.23325163	2.6136831	20	3 30.4	21.5
425085 2009 SS_{15}	17.1	X	124.69035	187.82972	214.00692	8.05770	0.0816889	0.22447067	2.6814085	20	2 19.8	21.0
425086 2009 SG_{19}	17.1	X	158.59480	346.20148	29.07885	14.37198	0.2559832	0.22605100	2.6688967	20	3 16.3	21.8
425087 2009 SJ_{23}	16.9	X	169.27300	205.82965	236.24924	6.08496	0.0676201	0.25196854	2.4825910	20	6 4.2	20.3
425088 2009 SP_{25}	17.5	X	144.37181	47.70535	345.99742	4.06044	0.2881618	0.22550835	2.6731765	20	3 22.9	22.0
425089 2009 SL_{31}	17.3	X	150.02060	278.49636	133.72460	2.86175	0.2286219	0.22941253	2.6427615	20	4 16.6	21.7
425090 2009 SX_{36}	17.9	X	152.38122	90.59950	297.35157	2.07862	0.1340238	0.22595222	2.6696745	20	3 11.6	22.1
425091 2009 SW_{37}	17.8	X	175.09882	23.48374	359.09904	3.58263	0.1525442	0.23062578	2.6334848	20	3 28.2	22.0
425092 2009 SE_{44}	16.9	X	58.95322	327.51270	344.98839	4.71108	0.2327670	0.28051807	2.3111537	20	12 21.2	20.4
425093 2009 SW_{58}	16.9	X	144.38702	225.01089	260.87154	4.23098	0.1698987	0.24299992	2.5433061	20	7 8.6	21.0
425094 2009 SU_{59}	17.1	X	129.15112	137.12766	211.82854	12.57902	0.1700283	0.21287624	2.7779084	20	1 4.8	21.4
425095 2009 SD_{66}	17.4	X	175.16016	172.37773	164.46703	4.89644	0.1448055	0.22118036	2.7079356	20	2 2.1	21.6
425096 2009 SZ_{68}	17.2	X	99.06996	239.54857	145.07121	4.48820	0.1117094	0.21049443	2.7988243	20	1 6.4	20.8
425097 2009 SN_{76}	17.2	X	82.55919	169.70966	63.41289	7.93907	0.0809567	0.26073607	2.4266211	20	9 19.1	20.5
425098 2009 SY_{89}	17.1	X	85.65340	84.11020	326.97326	6.64797	0.2289022	0.21426457	2.7658958	20	2 8.3	20.5
425099 2009 SF_{98}	17.5	X	359.37790	324.87391	348.55260	2.36109	0.1863415	0.26754385	2.3852802	20	9 17.4	19.5
425100 2009 SP_{102}	16.9	X	156.57258	114.19723	196.99152	22.12748	0.3791764	0.21696822	2.7428705	20	1 1.7	22.3
425101 2009 SN_{108}	17.5	X	152.92902	211.90747	148.79268	1.90619	0.2923495	0.22040464	2.7142857	20	2 21.1	22.0
425102 2009 SN_{111}	17.0	X	91.90072	113.97644	345.26948	10.30106	0.1713609	0.22635266	2.6665250	20	4 5.0	20.6
425103 2009 SS_{113}	16.7	X	182.55587	354.62338	297.05015	4.20628	0.0488450	0.21313316	2.7756756	20	—	—
425104 2009 ST_{115}	17.0	X	59.91746	342.03291	226.17932	4.53826	0.0776364	0.25132635	2.4868182	20	7 7.6	20.1
425105 2009 SF_{117}	17.6	X	141.32363	118.11907	325.19791	3.88096	0.1411939	0.23568462	2.5956645	20	5 8.6	21.6
425106 2009 SA_{119}	17.7	X	57.73189	254.17548	2.11053	10.87997	0.1922972	0.26700539	2.3884860	20	9 30.6	20.7
425107 2009 SF_{119}	17.7	X	228.72655	16.11849	341.43124	2.79349	0.1819172	0.24087848	2.5582170	20	4 13.1	21.7
425108 2009 SM_{121}	17.5	X	172.58087	190.14974	201.10019	6.17039	0.2503588	0.23230844	2.6207528	20	4 8.7	22.1
425109 2009 ST_{133}	17.8	X	195.96659	285.44002	70.06328	3.99508	0.1011797	0.23026555	2.6362307	20	3 16.5	21.8
425110 2009 SW_{141}	17.1	X	208.82816	329.05932	6.35770	12.28022	0.2068191	0.23216545	2.6218287	20	3 4.2	21.6
425111 2009 SB_{144}	17.3	X	212.48143	327.53405	25.58540	4.65538	0.2685533	0.23620697	2.5918364	20	3 24.3	21.8
425112 2009 SY_{146}	16.9	X	113.62926	80.52128	30.38374	13.19773	0.2225869	0.22982978	2.6395619	20	5 22.3	21.1
425113 2009 SM_{151}	16.8	X	127.00747	145.67757	196.66715	7.55155	0.0603498	0.21137252	2.7910677	20	—	—
425114 2009 SZ_{159}	17.3	X	118.91897	77.67043	9.39824	13.26459	0.1911752	0.22723167	2.6596438	20	4 23.3	21.4
425115 2009 SQ_{160}	18.0	X	215.86219	22.24906	325.73708	2.64147	0.1674323	0.23390849	2.6087876	20	3 21.9	22.4
425116 2009 SO_{170}	16.9	X	150.46695	208.21212	210.96732	12.87869	0.2413316	0.22883064	2.6472397	20	4 25.2	21.3
425117 2009 SK_{172}	17.2	X	130.10138	204.05362	124.60191	4.24213	0.1787449	0.21087553	2.7954513	20	—	—
425118 2009 SM_{175}	16.6	X	114.05345	243.20985	139.18652	7.67175	0.2550812	0.21754379	2.7380303	20	2 10.0	20.7
425119 2009 SE_{183}	17.4	X	195.90412	13.03039	326.22812	5.84490	0.2336952	0.22923651	2.6441141	20	2 24.3	21.9
425120 2009 SG_{186}	17.4	X	261.05494	100.20998	187.91329	14.61725	0.1294615	0.23136278	2.6278892	20	2 21.9	21.4

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Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
	m		°	°	°	°		°				
425121 2009 SX_{187}	17.2	X	108.11526	242.47110	150.47844	5.30921	0.0807288	0.21486864	2.7607094	20	1 22.9	20.8
425122 2009 SD_{189}	16.4	X	213.53974	78.45894	275.83789	13.88807	0.1123307	0.23485424	2.6017793	20	3 22.5	20.7
425123 2009 SA_{195}	17.4	X	141.09239	215.80521	338.77876	3.12126	0.1177857	0.26784353	2.3835006	20	10 2.4	20.9
425124 2009 SF_{199}	17.1	X	113.54975	50.27399	339.18413	5.29204	0.0533802	0.21645076	2.7472403	20	1 22.9	20.7
425125 2009 SV_{209}	17.3	X	83.00843	131.33096	232.10376	1.13096	0.0784685	0.20354255	2.8621952	20	—	—
425126 2009 SZ_{209}	17.4	X	22.35516	257.50137	359.75741	1.95457	0.1586993	0.25677780	2.4514953	20	8 1.4	19.6
425127 2009 SY_{212}	16.5	X	176.50237	322.94219	22.82446	13.25171	0.1971646	0.22427567	2.6829625	20	2 22.5	21.2
425128 2009 SJ_{216}	17.7	X	173.85595	12.37954	10.97865	4.97689	0.1889831	0.23260145	2.6185514	20	3 29.5	22.1
425129 2009 SK_{216}	17.1	X	85.97400	177.06424	184.06068	15.29167	0.1488720	0.20586125	2.8406626	20	—	—
425130 2009 SY_{218}	17.1	X	170.93205	237.76555	146.08234	17.49639	0.2412044	0.23154823	2.6264859	20	4 2.9	21.9
425131 2009 SO_{224}	17.2	X	58.54461	314.26831	76.05626	3.19923	0.0781140	0.20187070	2.8779761	20	—	—
425132 2009 SK_{229}	16.2	X	217.00720	346.59402	7.24107	18.70992	0.2173927	0.23516597	2.5994795	20	3 28.8	20.6
425133 2009 SY_{234}	16.1	X	210.27889	323.51406	38.14746	16.20276	0.1435276	0.23357864	2.6112431	20	4 8.4	20.3
425134 2009 SC_{238}	17.0	X	165.00562	278.61720	95.48761	7.99005	0.2756923	0.22809320	2.6529424	20	3 18.9	21.8
425135 2009 SP_{239}	17.3	X	131.48196	58.56988	327.56539	8.68333	0.2750380	0.22174552	2.7033326	20	3 2.2	21.6
425136 2009 SU_{239}	16.8	X	126.93667	283.39317	90.23238	10.45625	0.2927401	0.21911405	2.7249334	20	2 19.1	21.3
425137 2009 SJ_{249}	18.0	X	55.46897	256.64345	177.71914	5.17881	0.1429925	0.21016577	2.8017415	20	1 8.6	21.2
425138 2009 SG_{250}	16.3	X	254.02307	65.25751	200.24553	13.33372	0.1394132	0.22400136	2.6851525	20	1 18.3	20.8
425139 2009 SO_{257}	16.8	X	140.28807	207.88940	209.47894	15.03050	0.2717799	0.22902282	2.6457585	20	4 16.2	21.3
425140 2009 SZ_{262}	16.8	X	120.41713	355.12308	30.10181	7.38308	0.1600076	0.21888844	2.7268056	20	2 11.3	20.8
425141 2009 SK_{266}	17.1	X	76.71433	31.58932	275.18695	2.86170	0.1801751	0.28184855	2.3038747	20	12 26.4	20.7
425142 2009 SR_{266}	16.6	X	185.27579	193.15857	215.66893	14.25428	0.0867459	0.23722006	2.5844518	20	5 10.1	20.5
425143 2009 SO_{279}	17.0	X	335.05583	322.38974	33.25745	7.58136	0.1241410	0.26695907	2.3887622	20	9 30.3	19.1
425144 2009 SF_{282}	17.1	X	239.96425	318.69956	54.17755	5.17043	0.0992176	0.24606892	2.5221149	20	5 22.5	20.5
425145 2009 SC_{285}	17.4	X	124.48981	55.98450	359.70129	9.73568	0.1483333	0.22717437	2.6600910	20	3 19.3	21.3
425146 2009 SS_{286}	17.1	X	77.45593	267.63092	263.87194	5.72972	0.0930144	0.24217965	2.5490457	20	6 13.8	20.2
425147 2009 SU_{295}	17.3	X	135.56434	239.78762	155.80554	6.84801	0.0620364	0.22332715	2.6905539	20	2 25.6	21.0
425148 2009 SE_{297}	17.4	X	165.56726	116.64275	275.97285	6.69485	0.2665836	0.22981537	2.6396722	20	4 2.5	22.1
425149 2009 SC_{327}	17.0	X	176.28812	177.41807	210.43569	14.01520	0.2625988	0.22857446	2.6492173	20	4 6.8	21.8
425150 2009 SO_{327}	17.2	X	143.21790	12.61461	66.25676	4.33758	0.0246856	0.23603595	2.5930882	20	4 26.9	20.7
425151 2009 SS_{328}	17.2	X	130.30773	79.16013	328.10979	10.56674	0.2035850	0.22317388	2.6917856	20	3 17.6	21.5
425152 2009 SS_{334}	16.0	X	164.31701	354.65687	36.30770	15.45244	0.1753054	0.22897587	2.6461202	20	4 3.5	20.3
425153 2009 SR_{337}	16.7	X	167.78263	147.14708	230.50608	12.59184	0.2320250	0.22754549	2.6571979	20	3 15.2	21.4
425154 2009 SX_{339}	16.3	X	93.91783	24.63543	88.01198	15.69811	0.1254396	0.21521221	2.7577704	20	4 29.6	20.3
425155 2009 SS_{347}	17.8	X	286.40994	297.28323	36.32370	4.56607	0.0933431	0.25052249	2.4921351	20	5 29.9	21.0
425156 2009 SA_{352}	16.6	X	198.77763	45.34273	318.80645	28.09982	0.2036003	0.23750966	2.5823505	20	3 12.1	21.4
425157 2009 SP_{354}	17.0	X	169.95358	300.73483	23.05458	5.43716	0.2161042	0.22117577	2.7079732	20	1 19.3	21.6
425158 2009 SC_{357}	16.5	X	18.24125	177.52821	51.33754	14.49428	0.0618941	0.23441456	2.6050316	20	5 28.9	19.7
425159 2009 SQ_{358}	16.9	X	183.31292	58.67157	298.87455	12.26277	0.1866599	0.22907844	2.6453303	20	3 1.4	21.6
425160 2009 SU_{358}	17.1	X	204.02486	253.29750	140.70558	5.15878	0.0590405	0.24009752	2.5637613	20	5 13.7	20.7
425161 2009 SA_{360}	16.4	X	190.51944	23.72421	337.55713	12.90277	0.2623528	0.23038988	2.6352822	20	3 15.0	21.1
425162 2009 SE_{360}	17.1	X	140.10073	238.64462	48.82743	6.84440	0.1848857	0.29743602	2.2226633	20	—	—
425163 2009 SL_{363}	17.3	X	122.54360	192.26499	219.66004	3.41105	0.2047429	0.22338079	2.6901232	20	3 18.1	21.4
425164 2009 TU_{7}	17.3	X	313.01902	317.20823	354.23016	5.57637	0.2291525	0.25989501	2.4318536	20	5 15.7	19.8
425165 2009 TK_{9}	16.8	X	143.72126	34.37951	36.91858	12.45581	0.1572946	0.23018229	2.6368663	20	4 28.3	20.9
425166 2009 TD_{13}	15.8	X	187.95323	338.10564	42.65055	32.07715	0.1145413	0.23250946	2.6192420	20	4 16.9	20.1
425167 2009 TO_{13}	16.9	X	112.73919	272.18775	146.95982	8.22643	0.2194350	0.21940124	2.7225550	20	3 22.1	20.9
425168 2009 TD_{18}	17.5	X	27.81257	301.69489	4.46753	5.85387	0.2454613	0.27344867	2.3508171	20	11 6.9	20.4
425169 2009 TV_{18}	17.2	X	344.02835	259.78356	350.40107	5.72151	0.1479000	0.24501794	2.5293220	20	4 25.5	19.8
425170 2009 TB_{33}	16.9	X	39.95073	314.13392	353.19554	6.85754	0.1336940	0.27426848	2.3461302	20	11 6.8	20.0
425171 2009 TR_{47}	17.5	X	154.20244	301.49098	125.57774	4.47223	0.1327757	0.23377411	2.6097872	20	5 3.7	21.5
425172 2009 UQ_{3}	16.7	X	159.13886	295.38876	91.24527	8.28600	0.0972394	0.22684886	2.6626351	20	3 19.4	20.8
425173 2009 UQ_{10}	17.3	X	99.17960	243.36867	159.99241	3.99773	0.0995095	0.21507980	2.7589022	20	1 27.2	20.9
425174 2009 UN_{19}	16.7	X	103.37799	318.80069	119.94768	17.21793	0.2342026	0.21989766	2.7184560	20	4 13.2	21.1
425175 2009 UD_{20}	17.8	X	114.06633	93.66985	326.57641	5.98479	0.2939507	0.21773044	2.7364653	20	3 28.9	22.2
425176 2009 UQ_{21}	17.4	X	153.55963	342.22164	140.48448	6.41120	0.1736507	0.24512996	2.5285514	20	7 13.2	21.5
425177 2009 UA_{32}	17.0	X	143.06472	334.31223	41.99416	5.43589	0.1268099	0.21751988	2.7382310	20	2 20.4	21.2
425178 2009 US_{32}	17.5	X	99.26364	214.70447	47.54353	5.12582	0.0959995	0.26936157	2.3745371	20	11 14.5	20.9
425179 2009 UE_{35}	16.6	X	203.03025	295.24057	49.24296	6.60718	0.0694043	0.22243148	2.6977718	20	3 12.1	20.6
425180 2009 UL_{35}	17.5	X	187.66246	313.53648	66.35168	3.05672	0.2480858	0.22990064	2.6390195	20	4 7.7	22.2
425181 2009 UJ_{38}	16.2	X	184.81651	288.51616	52.05997	14.76639	0.0582574	0.21797938	2.7343815	20	2 20.7	20.5
425182 2009 UN_{38}	15.8	X	253.77527	105.66284	54.80215	12.81393	0.1210159	0.18379851	3.0636658	20	12 6.3	20.1
425183 2009 UY_{43}	17.3	X	44.18099	285.37027	204.39701	1.82924	0.1186734	0.21887350	2.7269296	20	2 29.1	20.4
425184 2009 UJ_{62}	17.1	X	44.43248	7.74504	184.15185	6.52423	0.0933136	0.23866651	2.5739991	20	5 24.7	20.1
425185 2009 UH_{69}	16.7	X	150.26117	215.91922	170.79595	13.79826	0.2029326	0.22308178	2.6925265	20	3 14.7	20.9
425186 2009 UK_{70}	18.1	X	148.45533	296.27723	95.31998	6.21758	0.1637113	0.22518349	2.6757468	20	3 18.8	22.3
425187 2009 UB_{74}	17.2	X	69.24544	284.66439	219.63377	12.17626	0.2094321	0.22724486	2.6595409	20	5 14.7	20.4
425188 2009 UE_{79}	16.8	X	155.15087	230.73687	227.90488	13.29143	0.0275369	0.23702638	2.5858595	20	6 7.3	20.4
425189 2009 UR_{96}	17.2	X	20.28436	26.99918	44.09383	14.51674	0.2336403	0.19697167	2.9255006	20	—	—
425190 2009 UW_{96}	17.2	X	180.09155	196.48463	201.84388	7.69392	0.0939417	0.23301079	2.6154838	20	4 20.9	21.2
425191 2009 UT_{107}	17.0	X	0.10971	162.16079	47.60409	6.21126	0.0104562	0.22575529	2.6712267	20	4 8.9	20.5
425192 2009 UJ_{111}	17.3	X	195.27430	153.98749	232.87266	1.97211	0.1131054	0.23132445	2.6281795	20	4 21.5	21.1
425193 2009 US_{111}	17.1	X	217.88029	167.15504	236.14281	11.74452	0.1669177	0.24123117	2.5557229	20	6 1.9	21.0
425194 2009 UD_{135}	17.3	X	81.14301	231.14989	234.34298	2.50647	0.1590525	0.21752070	2.7382241	20	3 31.2	20.9
425195 2009 UX_{136}	16.8	X	207.75876	328.53719	56.16803	13.81368	0.1696007	0.23630551	2.5911158	20	5 1.7	20.9
425196 2009 UC_{151}	16.4	X	328.33963	233.32109	231.72215	8.94753	0.1033511	0.19080984	2.9881487	20	—	—
425197 2009 UO_{151}	16.5	X	233.22059	345.86047	349.16825	12.89911	0.2208375	0.23561724	2.5961593	20	3 18.1	20.9
425198 2009 UM_{152}	16.9	X	145.28882	161.03572	343.10076	5.05092	0.1310392	0.24339037	2.5405854	20	8 2.1	20.7
425199 2009 UY_{153}	17.7	X	227.86610	294.46236	45.99266	4.07153	0.0235039	0.22850094	2.6497855	20	4 4.5	21.2
425200 2009 VS_{3}	17.5	X	112.00308	162.80861	300.63391	2.42343	0.1253831	0.22713758	2.6603782	20	5 1.3	21.2

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Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
	m		°	°	°	°		°				
425201 2009 VA_4	17.5	X	131.59885	88.17290	2.74938	3.38613	0.1432537	0.22896373	2.6462137	20	5 8.9	21.6
425202 2009 VE_8	17.2	X	179.32640	342.57166	36.41610	4.66927	0.1879591	0.22751640	2.6574244	20	3 30.2	21.7
425203 2009 VW_{14}	17.1	X	62.70290	175.44881	272.75739	3.59958	0.0797950	0.21233216	2.7826518	20	1 31.3	20.7
425204 2009 VJ_{18}	16.8	X	177.97688	296.62244	12.02807	4.59326	0.0768082	0.20842538	2.8173166	20	1 1.3	21.1
425205 2009 VA_{19}	17.5	X	198.69391	28.19846	352.77507	2.54603	0.1961946	0.23317066	2.6142881	20	4 15.8	21.9
425206 2009 VR_{23}	16.6	X	23.66074	288.49656	261.96504	9.92788	0.0204002	0.22478337	2.6789212	20	4 9.7	20.4
425207 2009 VD_{31}	17.3	X	120.77531	113.81642	305.25621	3.84243	0.1074820	0.21904177	2.7255329	20	3 13.2	21.1
425208 2009 VM_{32}	16.9	X	179.44595	119.71226	276.57511	6.13935	0.1227594	0.22828557	2.6514518	20	4 15.3	21.1
425209 2009 VL_{39}	17.2	X	24.77541	325.97119	32.22645	6.85721	0.1195666	0.27561532	2.3384808	20	12 25.9	20.2
425210 2009 VG_{43}	16.2	X	149.23271	206.53742	248.02002	13.14492	0.0505940	0.23319695	2.6140916	20	5 26.7	19.8
425211 2009 VA_{45}	16.9	X	129.24579	74.77858	26.82059	12.92246	0.2178416	0.22841091	2.6504817	20	5 24.8	21.3
425212 2009 VW_{48}	16.9	X	184.48697	253.73404	101.21384	7.42257	0.0580661	0.21725379	2.7404663	20	3 4.9	20.9
425213 2009 VH_{52}	18.0	X	229.46497	346.90532	34.82580	3.35059	0.0606222	0.24142540	2.5543520	20	5 25.7	21.5
425214 2009 VA_{55}	16.6	X	84.13071	65.18650	268.12142	11.55394	0.1823716	0.18746107	3.0236301	20	—	—
425215 2009 VQ_{55}	16.8	X	192.60602	176.85900	244.99051	13.68767	0.0842331	0.23841380	2.5758177	20	6 3.7	20.5
425216 2009 VW_{61}	17.4	X	183.67373	346.45517	56.71984	5.06622	0.1519998	0.23195669	2.6234016	20	5 1.5	21.4
425217 2009 VL_{63}	17.3	X	105.14036	287.51612	134.94716	1.14572	0.0623567	0.21376001	2.7702465	20	2 23.5	20.9
425218 2009 VQ_{63}	16.2	X	189.48000	327.95484	68.62704	14.37519	0.1957264	0.23123791	2.6288352	20	5 1.8	20.7
425219 2009 VA_{66}	16.9	X	131.99464	136.81666	263.58754	4.73790	0.0338404	0.21719059	2.7409980	20	2 22.2	20.7
425220 2009 VS_{66}	17.2	X	161.26134	335.87479	37.21441	5.44055	0.1286303	0.21970716	2.7200272	20	3 5.7	21.4
425221 2009 VT_{66}	17.6	X	90.00728	83.20957	23.42499	2.55371	0.2225260	0.21846187	2.7303540	20	4 23.7	21.2
425222 2009 VS_{67}	17.0	X	78.68487	214.58861	264.52525	4.45713	0.0554552	0.22119816	2.7077904	20	3 28.3	20.6
425223 2009 VH_{68}	16.6	X	18.22729	6.19389	53.01309	7.83384	0.1404927	0.19095476	2.9866367	20	—	—
425224 2009 VP_{69}	16.9	X	236.22142	107.49062	252.05204	5.87875	0.1198980	0.23513475	2.5997096	20	4 27.8	20.8
425225 2009 VF_{80}	16.8	X	148.51431	255.88883	143.55161	13.39339	0.2719690	0.22451715	2.6810384	20	4 5.7	21.6
425226 2009 VG_{87}	16.6	X	75.71621	314.66656	77.58923	13.00455	0.0600181	0.19969247	2.8988668	20	—	—
425227 2009 VT_{89}	16.7	X	14.66319	285.88335	296.29261	5.41703	0.0548678	0.23295565	2.6158965	20	5 13.4	19.9
425228 2009 VT_{90}	17.3	X	97.97650	67.30633	358.72228	5.14730	0.1948882	0.21334836	2.7738087	20	3 9.6	21.1
425229 2009 VS_{95}	16.4	X	116.67924	273.49133	95.08467	10.77520	0.1488619	0.20448198	2.8534221	20	1 15.5	20.4
425230 2009 VT_{95}	16.1	X	140.39071	344.43000	60.50132	12.41379	0.1215100	0.21766358	2.7370257	20	3 27.2	20.4
425231 2009 VQ_{97}	16.9	X	106.05052	12.56314	47.81224	10.34865	0.1147904	0.21430693	2.7655313	20	3 5.8	20.8
425232 2009 VP_{113}	17.2	X	158.27078	329.03281	55.23105	6.23097	0.0365492	0.22137534	2.7063454	20	3 9.9	21.1
425233 2009 VR_{115}	16.8	X	143.66799	274.08002	81.53341	8.50868	0.2393713	0.21183547	2.7869998	20	2 7.0	21.4
425234 2009 VL_{116}	15.8	X	164.15752	233.56814	85.47984	10.53279	0.0655503	0.19294595	2.9660532	20	—	—
425235 2009 WZ_5	17.0	X	96.41357	250.53383	236.82955	11.41600	0.1892532	0.22510787	2.6763460	20	5 24.0	20.7
425236 2009 WE_7	17.2	X	195.73373	54.80938	305.35688	12.08563	0.3046205	0.23207861	2.6224827	20	3 14.5	22.2
425237 2009 WL_{10}	16.9	X	186.40375	277.82228	156.44641	5.63425	0.2352117	0.23598149	2.5934871	20	6 11.2	21.4
425238 2009 WQ_{12}	17.2	X	74.17537	46.37878	212.15438	6.34270	0.0943412	0.26060256	2.4274498	20	10 9.3	20.3
425239 2009 WS_{17}	16.8	X	106.37977	90.64335	217.31950	12.97101	0.0620258	0.18998203	2.9968226	20	12 28.5	21.4
425240 2009 WB_{19}	17.2	X	49.72432	315.51585	106.49684	3.20861	0.0624267	0.20183749	2.8782918	20	—	—
425241 2009 WL_{30}	16.1	X	300.97446	37.53046	244.78737	14.32674	0.0958052	0.22987419	2.6392219	20	4 6.2	19.8
425242 2009 WP_{32}	17.2	X	110.62090	334.73760	91.55172	5.98789	0.3235515	0.21771899	2.7365612	20	4 10.5	21.6
425243 2009 WT_{42}	16.0	X	331.52181	116.15547	83.60710	9.59442	0.0805195	0.20872180	2.8146486	20	2 13.2	19.7
425244 2009 WA_{44}	17.1	X	264.45813	100.91157	247.21369	13.57654	0.1577602	0.24018491	2.5631394	20	5 10.6	20.9
425245 2009 WJ_{45}	16.7	X	142.88292	334.49245	67.89631	15.17348	0.1307208	0.22112937	2.7083519	20	3 29.2	21.1
425246 2009 WC_{48}	16.4	X	208.53781	139.79796	244.35464	16.78656	0.1185672	0.23473485	2.6026614	20	4 29.9	20.6
425247 2009 WP_{50}	17.5	X	124.41959	222.48161	160.42811	4.68009	0.3089267	0.21592459	2.7517014	20	2 26.2	21.9
425248 2009 WG_{51}	16.5	X	87.12020	203.61112	258.07661	7.90647	0.1246910	0.21590237	2.7518903	20	3 26.2	20.3
425249 2009 WK_{52}	16.6	X	221.52509	84.06708	268.13736	13.48808	0.1660772	0.23188977	2.6239063	20	3 26.5	21.2
425250 2009 WG_{54}	21.2	X	78.62602	85.84348	64.37675	13.02623	0.2876841	0.50409012	1.5636178	20	6 21.9	22.1
425251 2009 WK_{62}	17.1	X	114.89554	320.55631	82.42667	9.69569	0.1057508	0.21359334	2.7716874	20	2 20.9	21.1
425252 2009 WE_{65}	17.3	X	133.50157	150.58937	213.59878	7.60445	0.1913385	0.21849186	2.7301041	20	1 28.9	21.6
425253 2009 WS_{70}	16.9	X	152.20146	316.22732	71.14244	6.02201	0.1740203	0.22113856	2.7082769	20	3 18.2	21.2
425254 2009 WY_{72}	17.7	X	98.10717	264.43785	183.46046	3.00671	0.1605479	0.21805770	2.7337267	20	3 31.9	21.5
425255 2009 WU_{77}	16.0	X	324.03782	228.69282	276.32762	7.53660	0.0595091	0.19613067	2.9338576	20	—	—
425256 2009 WX_{78}	17.5	X	116.08785	216.27610	62.90716	4.05099	0.1735003	0.28267015	2.2994082	20	12 27.7	21.0
425257 2009 WH_{79}	17.6	X	112.78832	231.49167	178.08222	2.49677	0.0634526	0.21767286	2.7369479	20	2 15.8	21.3
425258 2009 WS_{84}	17.2	X	195.63106	341.07394	13.31091	6.96271	0.0752810	0.22260416	2.6963765	20	3 14.6	21.1
425259 2009 WY_{85}	16.5	X	86.54258	193.69990	279.46160	7.03090	0.2059696	0.21828784	2.7318049	20	4 22.9	20.3
425260 2009 WD_{86}	17.4	X	180.80440	344.51839	21.30959	6.45922	0.0407977	0.21978887	2.7193530	20	3 12.4	21.2
425261 2009 WW_{86}	16.2	X	38.78034	237.39626	265.28810	10.83466	0.1073348	0.21482052	2.7611217	20	3 2.8	19.6
425262 2009 WC_{87}	15.9	X	223.83661	135.98687	52.67674	17.30732	0.0856357	0.18181221	3.0859391	20	12 8.0	20.4
425263 2009 WS_{88}	16.0	X	351.52785	9.58211	77.66727	17.35049	0.0664451	0.18926558	3.0043806	20	—	—
425264 2009 WS_{95}	17.4	X	160.02362	215.54863	144.30233	0.91485	0.2186260	0.21915823	2.7245672	20	2 21.3	21.7
425265 2009 WU_{105}	16.4	X	116.55825	324.86108	99.69097	7.57393	0.0485839	0.21758300	2.7377014	20	3 12.6	20.2
425266 2009 WB_{113}	16.8	X	95.66111	243.32431	234.58454	13.42671	0.1243032	0.22334529	2.6904082	20	4 30.3	20.6
425267 2009 WM_{113}	17.3	X	97.72651	47.90999	34.12691	5.89970	0.1450035	0.22248985	2.6972999	20	3 23.0	20.8
425268 2009 WS_{117}	16.5	X	85.05784	78.97640	250.14398	7.67628	0.0442368	0.18703375	3.0282338	20	12 29.0	20.8
425269 2009 WH_{127}	16.4	X	65.46455	276.25020	75.60863	10.74443	0.0708395	0.18535745	3.0464638	20	—	—
425270 2009 WX_{127}	17.4	X	89.14158	146.08835	102.98877	3.03612	0.1395415	0.25672496	2.4518317	20	10 20.9	20.9
425271 2009 WE_{128}	16.9	X	201.56879	129.91097	201.67130	1.62559	0.0765133	0.21605202	2.7506193	20	2 20.5	21.1
425272 2009 WQ_{128}	16.4	X	152.15595	315.11963	66.44255	6.90942	0.0527362	0.21816920	2.7327952	20	3 1.5	20.4
425273 2009 WH_{129}	17.6	X	192.91661	91.67354	254.89497	3.66292	0.1333977	0.22275321	2.6951736	20	2 28.6	22.0
425274 2009 WC_{141}	17.4	X	120.33094	345.68080	94.70526	8.06365	0.1201195	0.22386187	2.6862677	20	4 15.8	21.4
425275 2009 WY_{145}	17.2	X	95.70089	71.82034	355.50285	3.36228	0.1855371	0.21272535	2.7792219	20	3 6.9	20.9
425276 2009 WG_{168}	17.3	X	211.30577	122.15421	218.57892	5.29187	0.0564552	0.22343115	2.6897189	20	3 11.6	21.4
425277 2009 WT_{170}	16.6	X	284.78942	295.82283	15.80338	4.77330	0.2065092	0.24066848	2.5597050	20	4 10.5	20.2
425278 2009 WD_{177}	17.2	X	172.09656	135.14469	283.55073	8.67846	0.0674125	0.23173136	2.6251019	20	5 4.8	21.1
425279 2009 WB_{180}	17.0	X	97.85226	75.12418	78.50559	12.63097	0.1307437	0.23090325	2.6313746	20	6 21.3	20.6
425280 2009 WQ_{180}	17.0	X	166.64024	285.84842	95.94648	5.93981	0.1264392	0.22045621	2.7138624	20	3 22.1	21.3

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		°	°	°	°		°				
425281 2009 WB_{181}	16.9	X	72.44969	110.41070	79.51943	17.23387	0.1827745	0.23238205	2.6201993	20	7 17.2	20.6
425282 2009 WH_{184}	16.4	X	242.83504	157.63889	231.56844	6.29439	0.1679599	0.24039361	2.5616558	20	6 9.2	20.3
425283 2009 WD_{186}	17.2	X	150.70341	159.37110	272.91692	4.22552	0.1475224	0.23000632	2.6382110	20	5 4.9	21.3
425284 2009 WR_{190}	17.0	X	258.02083	243.65291	83.90025	3.17931	0.0966129	0.23130911	2.6282957	20	4 16.4	20.7
425285 2009 WQ_{191}	17.1	X	127.58571	121.90776	250.89189	3.79192	0.1344993	0.21188600	2.7865566	20	1 28.5	21.2
425286 2009 WA_{202}	15.6	X	88.65317	300.99718	96.36641	13.39199	0.0693775	0.20375317	2.8602223	20	1 4.1	19.2
425287 2009 WR_{205}	17.0	X	172.60924	327.18970	39.74935	6.69269	0.0765171	0.21994800	2.7180412	20	3 7.4	21.0
425288 2009 WK_{208}	17.2	X	78.46628	76.50525	44.83322	4.04291	0.1495030	0.21831865	2.7315480	20	4 17.6	20.7
425289 2009 WS_{209}	16.7	X	58.20270	62.22545	92.95700	10.03934	0.1873692	0.21631358	2.7484016	20	5 11.8	20.0
425290 2009 WD_{211}	17.1	X	201.02459	261.67739	95.14354	5.23675	0.0953941	0.22439000	2.6820511	20	3 24.4	21.2
425291 2009 WK_{213}	17.0	X	141.50545	56.93344	352.96709	12.40947	0.2640204	0.22416661	2.6838327	20	4 4.8	21.6
425292 2009 WP_{213}	16.7	X	153.27257	56.46966	356.09902	12.51958	0.1713080	0.22874409	2.6479074	20	4 11.5	21.0
425293 2009 WU_{224}	15.6	X	136.52585	145.60485	91.65584	11.14396	0.0582337	0.17197938	3.2024704	20	11 8.5	20.5
425294 2009 WH_{250}	17.1	X	196.02577	105.15690	261.93419	6.83457	0.2588676	0.22996328	2.6385403	20	3 25.2	21.9
425295 2009 WN_{251}	16.5	X	82.35018	36.85117	72.89049	9.74244	0.1749051	0.21663979	2.7456420	20	4 15.4	20.2
425296 2009 WR_{262}	15.7	X	207.95317	179.69329	94.81360	11.15668	0.0592067	0.19085376	2.9876903	20	—	—
425297 2009 XR_{3}	16.8	X	308.87365	211.63677	245.42034	12.33368	0.3323362	0.17741321	3.1367416	20	11 16.3	19.6
425298 2009 XF_{19}	16.0	X	259.95271	299.75120	286.88959	9.16546	0.0456146	0.19057034	2.9906518	20	—	—
425299 2009 XA_{21}	16.9	X	85.10803	19.88699	103.48728	6.58431	0.1168538	0.21394303	2.7686664	20	4 26.9	20.6
425300 2009 XV_{21}	16.8	X	53.00257	236.38231	337.06184	11.12244	0.1320662	0.22851632	2.6496667	20	7 15.5	20.2
425301 2009 XR_{23}	17.2	X	322.02082	137.16697	292.83010	6.74248	0.2649089	0.17825925	3.1268088	20	11 17.5	20.0
425302 2009 XW_{23}	16.6	X	113.45283	359.54428	55.89680	6.50410	0.2145645	0.21204030	2.7852047	20	3 19.4	20.8
425303 2009 YU	17.2	X	251.95919	29.60607	35.74899	7.67963	0.1077165	0.25857263	2.4401378	20	8 22.3	20.4
425304 2009 YU_{4}	16.4	X	76.14848	142.87504	302.21469	14.00799	0.1107836	0.20324103	2.8650253	20	2 17.7	20.2
425305 2009 YU_{8}	16.1	X	100.92068	181.13004	272.27208	7.31345	0.1343867	0.21441481	2.7646035	20	4 4.1	20.1
425306 2009 YX_{12}	16.5	X	90.93119	151.89957	299.00913	6.48842	0.1091402	0.21031737	2.8003949	20	3 16.1	20.3
425307 2009 YU_{13}	15.9	X	288.39263	68.71164	102.87672	27.09278	0.2198593	0.18083664	3.0970277	20	—	—
425308 2009 YT_{14}	15.8	X	254.30865	294.20939	298.18910	14.23789	0.1118416	0.19048967	2.9914961	20	—	—
425309 2009 YJ_{17}	16.6	X	166.29692	89.02478	281.93812	6.03924	0.0691459	0.21081670	2.7959713	20	2 29.0	20.9
425310 2009 YZ_{18}	16.7	X	161.16486	253.38604	151.82772	5.70341	0.1004004	0.21691400	2.7433275	20	4 12.2	20.8
425311 2009 YE_{23}	16.7	X	341.70669	23.17057	105.23177	17.59859	0.2413850	0.18559280	3.0438878	20	—	—
425312 2009 YY_{24}	15.7	X	237.44518	62.65312	128.09838	10.37857	0.0430439	0.17522570	3.1627936	20	—	—
425313 2010 AA_{2}	15.9	X	10.13433	93.66314	311.47920	15.95061	0.0674519	0.17527143	3.1622434	20	—	—
425314 2010 AU_{3}	16.0	X	97.56907	310.09073	116.78931	14.46973	0.0922224	0.20665399	2.8333933	20	2 27.9	20.0
425315 2010 AP_{6}	15.3	X	156.95516	148.67904	113.76888	28.11654	0.1383094	0.17432147	3.1737213	20	12 26.3	20.6
425316 2010 AQ_{7}	16.9	X	88.33918	246.29686	135.34624	2.02717	0.1421232	0.19132311	2.9828020	20	—	—
425317 2010 AB_{12}	16.7	X	16.73809	310.08384	128.25842	12.31489	0.2467172	0.18769892	3.0210752	20	—	—
425318 2010 AA_{13}	17.1	X	318.31525	47.50825	81.77550	2.97966	0.2199574	0.18617057	3.0375868	20	—	—
425319 2010 AJ_{14}	16.1	X	293.28513	208.92738	300.28299	4.02163	0.0894913	0.17822466	3.1272134	20	—	—
425320 2010 AA_{23}	16.2	X	309.66834	1.37500	130.56867	6.62936	0.1071520	0.17766251	3.1338066	20	—	—
425321 2010 AN_{33}	16.4	X	274.86546	232.32385	106.24066	13.88965	0.0891516	0.22518923	2.6757013	20	5 25.7	20.2
425322 2010 AZ_{50}	16.4	X	341.12883	296.52189	156.75696	12.31010	0.1431796	0.17802891	3.1295053	20	—	—
425323 2010 AE_{51}	15.4	X	16.15037	146.86175	273.75867	9.58581	0.1147960	0.17860060	3.1228235	20	—	—
425324 2010 AV_{51}	16.1	X	315.87587	307.30088	273.95474	11.86282	0.1213250	0.20206810	2.8761015	20	2 6.8	20.1
425325 2010 AZ_{53}	16.5	X	339.92030	123.55558	158.94272	9.79126	0.1168843	0.22198432	2.7013935	20	6 12.0	19.7
425326 2010 AS_{55}	16.2	X	299.00290	74.51168	122.76473	9.32740	0.0317473	0.18869002	3.0104871	20	1 6.2	20.4
425327 2010 AA_{56}	16.9	X	14.94022	353.06656	116.00208	6.40576	0.2323345	0.18955244	3.0013487	20	—	—
425328 2010 AD_{58}	16.6	X	30.33393	333.98090	97.06584	3.36728	0.1892535	0.19161292	2.9797937	20	—	—
425329 2010 AW_{58}	15.9	X	260.82473	29.86284	194.45744	20.06395	0.1410322	0.17230888	3.1983864	20	—	—
425330 2010 AY_{59}	17.1	X	29.40223	107.13735	304.77250	19.44978	0.0966205	0.36905362	1.9249069	20	—	—
425331 2010 AO_{63}	17.0	X	126.07851	340.30302	86.46282	9.18972	0.2128525	0.21444825	2.7643162	20	4 15.6	21.5
425332 2010 AY_{66}	15.2	X	300.10313	0.48727	144.93228	24.57133	0.1443757	0.17433124	3.1736028	20	—	—
425333 2010 AU_{74}	17.1	X	312.81233	326.29749	144.42243	24.17567	0.0642278	0.36166368	1.9510397	20	—	—
425334 2010 AV_{74}	16.2	X	23.25888	149.61678	311.07598	8.64423	0.0415229	0.19151886	2.9807692	20	—	—
425335 2010 AC_{87}	16.0	X	300.09037	141.03003	122.49946	9.15935	0.2075092	0.19159861	2.9799420	20	3 5.7	20.2
425336 2010 AL_{93}	16.0	X	349.99458	129.32331	339.26778	13.72024	0.1012937	0.17183484	3.2042661	20	—	—
425337 2010 AR_{105}	16.2	X	32.81636	15.53491	108.46941	7.15908	0.0664303	0.18546616	3.0452732	20	2 8.1	20.1
425338 2010 AY_{109}	16.2	X	321.71471	73.98252	95.87890	13.29834	0.1786488	0.17823713	3.1270675	20	—	—
425339 2010 AX_{110}	16.1	X	98.76368	356.03092	52.64143	10.85910	0.0182491	0.18141833	3.0904041	20	1 30.9	20.6
425340 2010 AE_{111}	15.9	X	15.36822	135.98520	336.22637	27.69128	0.1247067	0.17862572	3.1225308	20	1 5.1	20.2
425341 2010 AN_{124}	16.4	X	331.36240	104.99855	80.35760	10.20978	0.1060786	0.18336069	3.0685407	20	1 25.2	20.5
425342 2010 AP_{124}	16.3	X	299.85626	18.07251	173.19313	10.77886	0.1627746	0.17592849	3.1543649	20	—	—
425343 2010 BX_{3}	15.8	X	329.63424	132.18430	105.18430	4.80739	0.0408452	0.21163869	2.7887270	20	4 3.0	19.4
425344 2010 BY_{4}	15.9	X	302.90712	20.98599	131.96399	11.47439	0.0449315	0.18013145	3.1051055	20	—	—
425345 2010 BD_{22}	16.5	X	328.76154	170.73898	336.84947	15.00457	0.2113158	0.17541570	3.1605093	20	—	—
425346 2010 BP_{25}	15.9	X	330.44190	298.47086	232.54129	26.20813	0.1601118	0.18060119	3.0997189	20	—	—
425347 2010 BP_{32}	16.5	X	7.02704	331.83821	210.04881	0.96735	0.1420672	0.19155224	2.9804229	20	3 10.5	19.9
425348 2010 BY_{34}	13.7	X	345.22404	202.47694	176.88638	20.15275	0.0594165	0.08441322	5.1467024	20	10 9.9	20.3
425349 2010 BV_{40}	16.0	X	0.66968	39.19490	84.94070	10.38712	0.0632215	0.17490816	3.1666203	20	—	—
425350 2010 BQ_{42}	16.0	X	253.25892	322.93215	273.70002	14.41081	0.0608707	0.17324987	3.1867948	20	—	—
425351 2010 BP_{43}	16.3	X	357.22556	86.94429	60.15077	21.61434	0.1772602	0.18271436	3.0757729	20	1 6.3	20.2
425352 2010 BX_{46}	16.2	X	235.05272	41.99439	216.10373	15.37256	0.0497583	0.17394043	3.1783546	20	1 3.8	21.2
425353 2010 BM_{52}	16.7	X	158.23020	295.11547	98.25948	11.73327	0.2104911	0.22739864	2.6583417	20	4 4.6	21.3
425354 2010 BC_{53}	15.4	X	237.53672	190.70200	89.22052	26.08811	0.2133371	0.17607543	3.1526097	20	1 25.3	20.9
425355 2010 BM_{53}	15.2	X	276.94767	221.77432	340.81675	21.60657	0.0778673	0.17062696	3.2193704	20	—	—
425356 2010 BV_{63}	15.5	X	126.08868	225.19946	158.95376	18.02451	0.0938064	0.17914875	3.1164503	20	2 8.6	20.2
425357 2010 BX_{65}	15.8	X	304.91203	279.88464	251.76516	14.91218	0.0818868	0.17137053	3.2100511	20	—	—
425358 2010 BZ_{74}	16.6	X	329.34675	92.39479	77.13921	7.16495	0.1348097	0.17758785	3.1346848	20	—	—
425359 2010 BM_{75}	15.0	X	96.48482	224.13117	81.13926	11.15154	0.0676566	0.14703992	3.5550514	20	12 8.1	20.1
425360 2010 BX_{77}	15.8	X	60.26572	20.80667	75.32522	18.44717	0.0752768	0.18278316	3.0750010	20	2 18.9	20.2

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Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
	m		°	°	°	°		°				
425361 2010 BU_{78}	15.6	X	197.78535	19.20453	302.99789	16.40925	0.1182931	0.17791456	3.1308462	20	2 7.7	20.7
425362 2010 BM_{87}	16.4	X	39.99384	312.36194	200.59220	7.93287	0.1074326	0.19206013	2.9751662	20	3 26.6	20.0
425363 2010 BS_{87}	15.8	X	223.23941	309.13874	328.94444	14.73470	0.0633285	0.17355392	3.1830718	20	1 19.4	20.7
425364 2010 BQ_{97}	16.1	X	281.50569	250.79259	339.25792	11.10835	0.0705125	0.17703713	3.1411823	20	1 24.1	20.7
425365 2010 BF_{129}	17.3	X	168.89539	57.71177	330.22680	6.42453	0.0738304	0.22620929	2.6676515	20	3 23.6	21.2
425366 2010 CX_{2}	15.8	X	352.43618	339.83525	139.62881	7.05343	0.0834199	0.18250645	3.0781084	20	—	—
425367 2010 CF_{3}	18.2	X	243.48137	297.30403	329.67608	17.12930	0.0577075	0.38193162	1.8813906	20	—	—
425368 2010 CQ_{4}	16.1	X	151.40473	308.66613	120.16917	8.48189	0.1197410	0.21534569	2.7566307	20	5 4.4	20.4
425369 2010 CF_{6}	15.8	X	277.87818	63.64987	150.98437	16.38497	0.1281290	0.17084247	3.2166624	20	—	—
425370 2010 CQ_{6}	16.0	X	25.61436	341.22455	119.91685	22.42126	0.0538789	0.17124500	3.2116197	20	1 3.2	20.3
425371 2010 CQ_{18}	16.5	X	333.66716	346.96199	134.93086	14.89307	0.2200678	0.18214995	3.0821234	20	—	—
425372 2010 CU_{28}	16.2	X	1.43217	135.55918	353.76474	11.50592	0.1124419	0.18457682	3.0550474	20	—	—
425373 2010 CU_{31}	16.1	X	300.69909	89.46622	139.67167	18.27365	0.0918614	0.19660495	2.9291374	20	2 6.2	20.1
425374 2010 CU_{33}	15.7	X	237.27079	298.65429	324.25414	10.08180	0.1188439	0.18521639	3.0480104	20	1 10.0	20.6
425375 2010 CP_{35}	16.3	X	53.95991	39.72918	16.65471	5.21102	0.1557809	0.18346299	3.0673999	20	—	—
425376 2010 CT_{35}	16.4	X	222.23518	141.46800	100.42011	4.44303	0.0632987	0.17472184	3.1688712	20	—	—
425377 2010 CA_{36}	15.8	X	7.54153	312.90759	145.24979	17.27864	0.0752201	0.17901411	3.1180126	20	—	—
425378 2010 CZ_{37}	16.4	X	309.74595	211.97017	329.48972	8.36036	0.0814829	0.18587137	3.0408457	20	—	—
425379 2010 CA_{41}	16.8	X	327.68939	61.52237	160.72585	12.00173	0.2675724	0.19044050	2.9920109	20	2 7.5	20.6
425380 2010 CZ_{41}	16.4	X	45.77663	212.01273	319.17501	7.67325	0.1374994	0.20921230	2.8102475	20	4 29.2	19.9
425381 2010 CB_{44}	16.7	X	258.26877	108.12960	127.28266	2.72809	0.1971482	0.18195335	3.0843431	20	—	—
425382 2010 CA_{45}	16.2	X	223.82642	113.22221	164.57025	6.25431	0.1077323	0.16974422	3.2305221	20	1 14.8	21.3
425383 2010 CR_{47}	16.5	X	336.41394	34.06005	137.68495	11.29488	0.1617569	0.17726850	3.1384484	20	1 7.5	20.6
425384 2010 CQ_{55}	16.0	X	13.30860	178.87643	265.15445	9.93542	0.2158754	0.18738547	3.0244433	20	—	—
425385 2010 CU_{59}	15.9	X	306.60823	228.50458	318.31722	13.63709	0.1676482	0.18463890	3.0543625	20	—	—
425386 2010 CO_{60}	16.1	X	308.65940	17.79962	154.20435	12.62672	0.1209147	0.18259167	3.0771505	20	—	—
425387 2010 CZ_{61}	15.6	X	220.74540	114.83990	150.14226	16.38053	0.1957729	0.17588359	3.1549018	20	—	—
425388 2010 CA_{62}	16.0	X	295.38591	279.70053	349.44544	15.11212	0.2034757	0.19757999	2.9194928	20	3 5.3	20.0
425389 2010 CT_{62}	16.0	X	276.86991	46.21262	153.75324	9.10209	0.0290813	0.17939765	3.1135670	20	—	—
425390 2010 CB_{63}	16.5	X	355.31597	5.72942	107.20703	4.66163	0.2993132	0.18522300	3.0479379	20	—	—
425391 2010 CM_{63}	16.8	X	326.45910	61.94340	109.53585	2.65030	0.0794231	0.18485060	3.0520301	20	1 3.3	20.7
425392 2010 CV_{68}	16.0	X	255.53062	63.58230	171.48146	10.17983	0.1132141	0.17948447	3.1125629	20	—	—
425393 2010 CJ_{71}	16.3	X	289.85208	341.68435	169.68966	10.80372	0.1768046	0.17542999	3.1603377	20	—	—
425394 2010 CU_{76}	16.5	X	41.97749	356.84346	176.79863	15.22652	0.0749309	0.20433122	2.8548255	20	4 26.1	20.2
425395 2010 CM_{78}	16.0	X	292.26342	24.48530	156.47583	12.25659	0.0237303	0.17885589	3.1198512	20	—	—
425396 2010 CC_{79}	16.7	X	335.39245	172.34063	330.32741	3.88707	0.1836499	0.18201044	3.0836981	20	—	—
425397 2010 CC_{81}	15.9	X	341.62763	292.61615	163.45521	16.46333	0.1896103	0.17450755	3.1714648	20	—	—
425398 2010 CD_{82}	16.4	X	41.27065	316.94799	149.21462	3.30050	0.0459703	0.18554106	3.0444536	20	1 26.3	20.4
425399 2010 CO_{85}	16.5	X	273.70123	120.29255	134.00821	2.76879	0.1131835	0.19057241	2.9906301	20	2 3.6	20.8
425400 2010 CG_{93}	16.8	X	33.29291	318.27542	145.16203	6.77104	0.2023093	0.18913078	3.0058080	20	1 15.5	19.8
425401 2010 CT_{93}	15.8	X	310.22641	7.86252	154.03576	17.15546	0.1029444	0.17713325	3.1400458	20	—	—
425402 2010 CE_{95}	16.7	X	263.81157	88.26472	117.77719	1.81269	0.0372254	0.17564818	3.1577199	20	—	—
425403 2010 CP_{103}	16.8	X	303.70442	168.64874	2.66390	6.26675	0.0488347	0.17712463	3.1401478	20	—	—
425404 2010 CU_{109}	16.7	X	296.52658	214.00339	357.42009	1.23704	0.1395577	0.18805139	3.0172990	20	1 6.1	21.0
425405 2010 CR_{115}	16.7	X	105.28870	349.48294	98.21895	3.23231	0.0284136	0.20396292	2.8582611	20	3 24.3	20.6
425406 2010 CR_{125}	16.4	X	11.00003	291.48967	161.34122	15.98816	0.2485322	0.18088164	3.0965141	20	—	—
425407 2010 CS_{138}	16.0	X	265.18285	100.29402	137.93777	10.64679	0.0570192	0.18894912	3.0077343	20	1 12.3	20.4
425408 2010 CS_{141}	15.5	X	283.26156	195.01621	359.77270	19.85724	0.1702087	0.18027942	3.1034061	20	—	—
425409 2010 CN_{142}	15.7	X	328.09514	179.94995	330.93367	22.67528	0.0671585	0.18204177	3.0833443	20	—	—
425410 2010 CT_{153}	17.7	X	312.30285	127.25906	349.61136	19.72115	0.0631385	0.36021607	1.9562634	20	—	—
425411 2010 CA_{154}	16.9	X	116.78946	296.07021	152.44059	7.39130	0.0795395	0.20315836	2.8658024	20	4 16.5	21.0
425412 2010 CS_{157}	16.0	X	212.02921	103.17081	163.74390	15.97477	0.1893493	0.17329391	3.1862549	20	—	—
425413 2010 CC_{160}	16.7	X	6.37683	295.68610	183.50572	11.14599	0.1704054	0.18281237	3.0746734	20	—	—
425414 2010 CL_{161}	16.8	X	33.28230	159.86080	301.08571	11.22216	0.1122640	0.19574625	2.9376975	20	1 9.4	20.3
425415 2010 CT_{161}	16.5	X	306.72191	273.95332	246.92327	0.19933	0.1388815	0.17545603	3.1600250	20	—	—
425416 2010 CV_{161}	16.1	X	316.52128	235.64014	335.41017	9.23109	0.0550456	0.18979586	2.9987820	20	2 11.5	20.1
425417 2010 CM_{164}	15.7	X	181.15794	161.49064	136.31715	21.85513	0.1436652	0.18219991	3.0815599	20	—	—
425418 2010 CE_{165}	16.5	X	317.62564	45.49408	158.34047	10.05877	0.2118125	0.18919722	3.0051042	20	1 10.9	20.8
425419 2010 CS_{181}	16.5	X	235.66746	246.21850	135.10643	6.79927	0.0381725	0.21930706	2.7233344	20	6 6.1	20.3
425420 2010 CQ_{185}	15.9	X	358.97028	331.90664	120.42234	5.16921	0.1265476	0.18094105	3.0958362	20	—	—
425421 2010 CR_{185}	16.2	X	333.79632	39.11064	153.76099	5.46285	0.0763263	0.18865503	3.0108592	20	2 7.6	20.2
425422 2010 CY_{218}	15.7	X	119.77660	265.13232	115.78225	11.14582	0.0443975	0.17264382	3.1942485	20	1 24.8	20.1
425423 2010 DZ	16.9	X	336.63761	303.60339	332.73899	3.96242	0.0791925	0.21831160	2.7316067	20	5 29.1	20.3
425424 2010 DP_{2}	16.5	X	313.35965	192.50327	330.54665	6.72076	0.0660852	0.18554618	3.0443976	20	—	—
425425 2010 DU_{8}	16.0	X	290.60013	39.45216	169.49736	9.82483	0.0901320	0.18227063	3.0807627	20	1 3.0	20.5
425426 2010 DE_{12}	15.7	X	340.73993	160.55590	70.95848	9.25973	0.1519627	0.20053046	2.8907851	20	4 3.5	19.1
425427 2010 DW_{21}	15.1	X	13.94259	265.57602	135.67065	25.51022	0.0854101	0.17368093	3.1815197	20	—	—
425428 2010 DL_{38}	16.3	X	276.13394	239.30924	335.51794	12.01210	0.0715885	0.18561270	3.0436702	20	—	—
425429 2010 DT_{42}	16.2	X	111.67155	176.33779	176.53984	9.48986	0.0646190	0.17459000	3.1704663	20	—	—
425430 2010 DJ_{44}	16.1	X	37.64742	252.98953	172.91831	11.76445	0.0907617	0.17690815	3.1427090	20	—	—
425431 2010 DJ_{45}	16.1	X	1.70831	192.07937	331.18346	9.63569	0.0503600	0.19111562	2.9849605	20	2 12.4	19.9
425432 2010 DH_{49}	18.4	X	348.71772	138.52309	350.98179	18.12059	0.0494269	0.37200453	1.9147139	20	—	—
425433 2010 DL_{49}	16.1	X	348.33654	115.95076	349.97379	10.05354	0.0899858	0.17383790	3.1796043	20	—	—
425434 2010 DO_{51}	15.9	X	253.37571	126.74829	142.04366	14.56347	0.2334601	0.17234232	3.1979728	20	1 22.9	21.2
425435 2010 DU_{56}	16.1	X	274.60475	109.40605	138.71452	24.98949	0.3664550	0.17299801	3.1898870	20	1 7.5	21.8
425436 2010 DY_{57}	16.7	X	164.70362	288.83645	83.67684	6.65184	0.1751480	0.21999093	2.7176876	20	3 12.0	21.2
425437 2010 DA_{74}	16.3	X	153.36914	337.24052	340.19082	8.04892	0.0662711	0.17595867	3.1540042	20	—	—
425438 2010 DK_{76}	15.9	X	206.80653	341.46650	336.41551	8.30602	0.0516218	0.18871409	3.0102311	20	2 14.2	20.3
425439 2010 DS_{76}	17.5	X	87.73026	56.67964	358.15863	20.76196	0.0836487	0.38169366	1.8821725	20	—	—
425440 2010 DJ_{78}	15.8	X	290.46136	56.13574	138.23000	10.72524	0.1695957	0.17846899	3.1243586	20	—	—

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Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
	m		°	°	°	°		°				
425441 2010 EZ_{11}	16.6	X	330.15483	284.78808	197.09521	10.31580	0.2094381	0.17892408	3.1190585	20	—	—
425442 Eberstadt	16.3	X	282.77188	185.16231	77.39231	8.13199	0.2309508	0.18782182	3.0197571	20	2 12.2	21.0
425443 2010 EX_{31}	17.0	X	339.79230	247.21465	356.42490	11.29616	0.0356019	0.20624183	2.8371669	20	4 19.7	20.9
425444 2010 EQ_{33}	16.4	X	278.35645	85.91411	133.48464	2.62390	0.1102913	0.17868526	3.1218371	20	—	—
425445 2010 EC_{35}	16.0	X	293.26941	3.06145	183.65380	9.67859	0.0573187	0.17874632	3.1211261	20	—	—
425446 2010 EJ_{42}	16.5	X	92.87481	345.05763	148.62414	13.72683	0.1114246	0.21074065	2.7966439	20	5 20.9	20.7
425447 2010 EL_{43}	16.5	X	133.82334	86.51044	327.31897	10.46598	0.2995257	0.21447581	2.7640793	20	4 4.9	21.4
425448 2010 EA_{45}	16.0	X	275.85894	75.50326	128.18378	13.00456	0.0954631	0.18142074	3.0903767	20	—	—
425449 2010 EL_{45}	16.2	X	301.57221	35.13402	125.20393	4.57072	0.0726305	0.17331255	3.1860264	20	—	—
425450 2010 EV_{45}	19.6	X	356.55050	118.29527	125.81790	7.93526	0.3704841	0.39165771	1.8501130	20	3 24.4	19.2
425451 2010 EX_{45}	18.2	X	358.90805	295.38955	186.26916	21.36860	0.1183788	0.37442373	1.9064575	20	—	—
425452 2010 ED_{46}	15.5	X	273.34445	299.60622	309.94147	11.67062	0.1120133	0.18796596	3.0182132	20	1 29.2	20.0
425453 2010 ED_{67}	16.4	X	330.48783	26.88119	151.15585	7.65512	0.1157586	0.18570410	3.0426714	20	1 11.1	20.5
425454 2010 EO_{67}	17.7	X	241.07091	171.03282	8.83175	19.56723	0.0514122	0.35393455	1.9793416	20	—	—
425455 2010 EU_{67}	16.5	X	312.76758	169.18921	11.44518	17.53124	0.1438070	0.17922857	3.1155249	20	—	—
425456 2010 EJ_{71}	17.1	X	1.02389	342.34979	148.15446	0.12181	0.1087953	0.18371252	3.0646217	20	—	—
425457 2010 EE_{77}	16.7	X	319.09116	121.97835	52.31234	1.85987	0.0980454	0.17761462	3.1343698	20	—	—
425458 2010 ET_{78}	16.2	X	258.07857	215.45612	12.97247	8.92371	0.0590036	0.17842384	3.1248856	20	—	—
425459 2010 EL_{88}	16.4	X	62.58913	225.60098	319.07508	12.69678	0.1437737	0.21914628	2.7246663	20	6 19.2	20.1
425460 2010 EU_{91}	16.1	X	235.06887	121.66001	151.59434	9.54656	0.1089937	0.17934877	3.1141327	20	1 18.9	21.1
425461 2010 EN_{92}	16.2	X	198.47916	142.96169	166.40246	9.58544	0.0736170	0.18707312	3.0278088	20	1 24.4	20.9
425462 2010 EQ_{92}	16.6	X	312.80340	97.49615	144.40745	3.53091	0.1726906	0.19182160	2.9776321	20	2 27.0	20.5
425463 2010 EO_{93}	16.5	X	245.13183	131.90595	132.93934	3.10831	0.1553063	0.18247486	3.0784636	20	1 16.0	21.4
425464 2010 EC_{96}	16.5	X	37.87098	39.85264	11.18396	8.48284	0.1027456	0.17399833	3.1776495	20	—	—
425465 2010 EV_{98}	15.8	X	12.08995	93.68367	17.68144	26.01371	0.2209045	0.18127640	3.0920170	20	—	—
425466 2010 EY_{100}	15.7	X	123.45480	187.26360	173.65066	27.83764	0.1168577	0.17966160	3.1105167	20	1 12.2	20.7
425467 2010 EB_{101}	16.8	X	83.78647	311.87184	163.11380	6.50006	0.0209670	0.19983129	2.8975241	20	3 30.3	20.8
425468 2010 EK_{106}	17.4	X	40.91263	96.93158	23.75686	21.77851	0.0342844	0.38143720	1.8830160	20	1 10.5	19.7
425469 2010 EX_{106}	16.6	X	342.14860	62.84868	98.39387	4.14297	0.1527895	0.18450670	3.0558213	20	1 2.9	20.2
425470 2010 EG_{107}	16.8	X	321.36023	265.59223	279.22651	0.82147	0.1903265	0.18158145	3.0885530	20	—	—
425471 2010 EU_{108}	16.2	X	316.83571	112.55652	35.77305	11.72404	0.1544993	0.17156566	3.2076167	20	—	—
425472 2010 EE_{110}	16.0	X	352.03027	108.02501	347.94658	3.99783	0.1088955	0.17110777	3.2133366	20	—	—
425473 2010 EG_{112}	16.1	X	335.50292	144.76207	10.36490	9.71527	0.0426361	0.17557438	3.1586048	20	1 2.5	20.6
425474 2010 EU_{125}	16.1	X	333.32879	13.59549	137.76273	18.51610	0.2228141	0.18142481	3.0903305	20	—	—
425475 2010 EN_{126}	15.6	X	327.18788	84.20856	82.12596	11.41678	0.0796984	0.18006580	3.1058601	20	—	—
425476 2010 EY_{127}	15.5	X	340.76810	84.32367	38.18011	25.82236	0.2517787	0.17495785	3.1660207	20	—	—
425477 2010 ET_{135}	16.5	X	281.08890	220.55886	32.59589	3.47487	0.2053090	0.18200546	3.0837543	20	2 1.7	21.1
425478 2010 EC_{142}	16.0	X	262.00977	250.38752	10.47399	7.32259	0.0527011	0.18449213	3.0559822	20	2 8.8	20.5
425479 2010 FO_{4}	15.7	X	196.17164	263.94663	8.77660	15.82814	0.0773032	0.17047716	3.2212561	20	—	—
425480 2010 FF_{5}	16.1	X	35.94768	129.13804	347.11261	9.83757	0.0258727	0.18622913	3.0369500	20	2 2.7	20.2
425481 2010 FK_{10}	16.0	X	243.82240	147.58865	96.73803	4.17511	0.0536275	0.17486649	3.1671235	20	—	—
425482 2010 FH_{12}	16.4	X	48.78551	94.41455	353.51429	8.08044	0.0483451	0.18201548	3.0836411	20	1 17.1	20.6
425483 2010 FA_{18}	15.5	X	170.82348	300.51608	358.19209	26.22983	0.2122689	0.17121309	3.2120187	20	—	—
425484 2010 FQ_{19}	16.3	X	71.79770	75.17666	21.80710	9.98214	0.0428595	0.19158355	2.9800982	20	2 27.8	20.4
425485 2010 FP_{46}	15.6	X	251.45603	72.39078	88.23736	16.90507	0.0972036	0.17360196	3.1824845	20	12 7.0	20.0
425486 2010 FV_{47}	16.5	X	315.12523	80.17452	117.21350	2.18670	0.1428106	0.18281228	3.0746745	20	1 11.7	20.8
425487 2010 FM_{54}	16.0	X	353.10875	82.63663	74.77770	11.39150	0.0625957	0.18588161	3.0407340	20	1 25.5	20.1
425488 2010 FP_{90}	15.9	X	223.69309	250.50699	0.63159	14.79131	0.1664665	0.17196490	3.2026502	20	—	—
425489 2010 FW_{93}	16.8	X	359.13971	289.76339	188.19127	7.83524	0.2070700	0.18087516	3.0965880	20	—	—
425490 2010 GF_{24}	16.5	X	289.53663	178.50008	356.78370	4.18611	0.0643135	0.17368546	3.1814645	20	—	—
425491 2010 GL_{25}	15.4	X	251.58166	170.79210	90.33278	11.81108	0.1867203	0.17490670	3.1666380	20	1 16.9	20.6
425492 2010 GN_{27}	15.7	X	324.14509	0.31154	204.49246	17.21877	0.1298000	0.18119117	3.0929866	20	1 30.1	20.2
425493 2010 GG_{31}	16.7	X	314.51734	57.19388	146.61765	9.65747	0.1963099	0.18290259	3.0736623	20	1 10.6	21.1
425494 2010 GC_{67}	15.6	X	318.15470	298.06008	227.27050	14.43864	0.1164711	0.17590181	3.1546838	20	—	—
425495 2010 GF_{67}	15.6	X	29.08335	339.22434	151.82947	13.78982	0.1826468	0.18900955	3.0070931	20	2 12.8	18.6
425496 2010 GF_{98}	16.6	X	326.08796	77.19850	105.19010	8.33333	0.2439055	0.17967742	3.1103341	20	—	—
425497 2010 GK_{101}	16.5	X	261.90332	129.77819	102.39070	6.55864	0.0806789	0.17178756	3.2048540	20	1 2.3	21.1
425498 2010 GZ_{105}	15.9	X	238.44984	244.33860	60.05309	11.32016	0.2035210	0.17978133	3.1091356	20	2 27.2	21.2
425499 2010 GS_{110}	16.3	X	295.78987	129.96544	165.28273	9.40708	0.1136194	0.19662374	2.9289508	20	4 22.7	20.3
425500 2010 GU_{124}	16.7	X	352.58136	49.20501	198.36600	16.97190	0.0789962	0.20179743	2.8786728	20	5 17.7	20.4
425501 2010 GA_{125}	16.0	X	251.38581	230.95820	92.15323	12.95354	0.0523770	0.19109507	2.9851746	20	4 15.8	20.5
425502 2010 GH_{139}	16.8	X	15.82442	80.07711	25.24435	1.20522	0.2085725	0.18352977	3.0666558	20	—	—
425503 2010 GR_{146}	16.2	X	270.34500	120.49175	123.05433	20.68762	0.3421117	0.17389454	3.1789138	20	1 1.2	21.9
425504 2010 GT_{171}	15.8	X	136.49246	276.65818	83.23352	8.78005	0.0767296	0.17956694	3.1116098	20	1 22.7	20.4
425505 2010 GW_{171}	15.8	X	311.18095	114.97919	70.15214	11.13516	0.0642808	0.18003064	3.1062645	20	1 3.6	20.1
425506 2010 HB_{41}	17.2	X	298.72344	30.86688	253.89660	9.04401	0.2123732	0.27862718	2.3215982	20	3 14.4	20.3
425507 2010 HV_{105}	16.2	X	290.41164	15.76088	180.46427	4.30876	0.1188558	0.17108245	3.2136537	20	—	—
425508 2010 HE_{106}	16.1	X	262.09252	221.88291	62.86122	6.04353	0.1502849	0.18208784	3.0828242	20	2 27.3	20.9
425509 2010 JM_{34}	15.9	X	322.32870	13.49291	150.90440	17.14368	0.0823915	0.17273904	3.1930745	20	—	—
425510 2010 JW_{44}	16.1	X	329.24660	342.37007	198.84154	13.14611	0.1779614	0.18414589	3.0598116	20	1 3.8	20.3
425511 2010 JR_{61}	15.7	X	273.93485	114.20467	160.57378	17.75140	0.2260422	0.17023047	3.2243674	20	2 16.7	20.8
425512 2010 JS_{72}	15.9	X	245.68132	142.00629	174.54895	13.04471	0.1872723	0.18236280	3.0797246	20	3 13.8	20.7
425513 2010 JA_{84}	15.4	X	1.41897	34.78965	96.82406	20.65397	0.1124171	0.17161497	3.2070022	20	1 2.4	19.2
425514 2010 JF_{116}	15.3	X	248.90388	17.81368	252.01447	16.23501	0.1615975	0.17645760	3.1480561	20	1 20.9	20.6
425515 2010 JD_{150}	16.2	X	269.83024	67.79941	212.42144	9.00819	0.0546557	0.18498538	3.0505474	20	3 6.4	20.7
425516 2010 JX_{177}	15.6	X	68.46263	16.38943	83.79418	11.38009	0.0649083	0.18994397	2.9972229	20	3 2.4	19.8
425517 2010 KK_{54}	18.1	X	339.57719	25.93793	331.10578	1.33506	0.1945987	0.30015208	2.2092345	20	10 24.9	19.5
425518 2010 LF_{1}	15.7	X	272.73500	342.95749	254.13878	13.78421	0.2058717	0.17189245	3.2035501	20	1 4.8	20.8
425519 2010 LL_{11}	17.3	X	238.43207	204.05752	160.13813	11.07638	0.2312973	0.27199669	2.3591758	20	4 30.1	21.2
425520 2010 LU_{61}	16.5	X	308.59907	15.79332	278.00853	11.76863	0.2037579	0.28480849	2.2878845	20	4 10.2	19.5

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	m		°	°	°	°		°				
425521 2010 LD_{85}	16.0	X	221.84772	216.68875	57.30223	11.23905	0.1743099	0.17569839	3.1571183	20	1 7.4	21.3
425522 2010 MS_{26}	17.8	X	310.93568	48.13786	319.47504	1.22798	0.1576921	0.29182386	2.2510692	20	8 29.5	19.2
425523 2010 MR_{82}	18.0	X	183.84792	205.47390	226.65771	4.37942	0.2050629	0.26824178	2.3811409	20	6 6.6	21.9
425524 2010 MT_{105}	17.7	X	192.51493	157.18966	291.29889	4.44511	0.1990673	0.27407152	2.3472541	20	7 5.7	21.5
425525 2010 NL_{11}	16.0	X	253.50846	271.21864	261.69042	6.99295	0.0609499	0.15852285	3.3812306	20	12 23.9	20.8
425526 2010 NV_{42}	16.3	X	300.54713	318.09032	40.73880	22.98368	0.2385660	0.28607940	2.2811035	20	7 8.6	19.1
425527 2010 ND_{110}	15.8	X	304.16563	340.90533	218.86526	20.85321	0.2337951	0.17823678	3.1270716	20	—	—
425528 2010 OJ	16.9	X	290.77545	265.26466	88.45514	23.28477	0.3114549	0.28193992	2.3033768	20	6 1.8	19.7
425529 2010 OK_{44}	16.6	X	249.33756	354.15951	20.32794	23.22987	0.2220709	0.27281321	2.3544661	20	5 13.3	20.5
425530 2010 OQ_{50}	17.5	X	278.75520	333.42534	12.56400	5.86529	0.2510287	0.27609645	2.3357633	20	5 10.3	20.8
425531 2010 OJ_{68}	17.5	X	221.72958	215.25141	263.04378	8.90984	0.1262954	0.28909582	2.2652085	20	9 17.4	20.8
425532 2010 OY_{95}	16.1	X	316.53634	338.69647	242.03242	9.73716	0.1082171	0.18363416	3.0654936	20	2 11.6	20.4
425533 2010 OQ_{96}	16.9	X	195.22176	294.22626	106.98415	13.14081	0.2015677	0.26139520	2.4225401	20	5 12.5	21.1
425534 2010 OZ_{111}	16.2	X	2.24171	340.58781	184.31424	15.45640	0.1486206	0.18361496	3.0657072	20	2 6.7	20.0
425535 2010 OJ_{121}	16.1	X	343.55565	29.40676	163.29110	14.84985	0.1589802	0.18481909	3.0523770	20	2 11.7	19.7
425536 2010 PE_{26}	13.5	X	255.12208	212.84796	230.92881	18.95516	0.0871422	0.08281763	5.2125973	20	8 22.8	20.7
425537 2010 PE_{45}	17.0	X	287.67696	15.69740	318.62677	5.65716	0.2941244	0.27630405	2.3345932	20	4 27.6	20.3
425538 2010 PV_{62}	17.9	X	319.12498	282.66832	98.45643	4.52637	0.1381724	0.29897035	2.2150522	20	10 17.0	19.6
425539 2010 RF_{11}	18.3	X	14.96041	336.58127	341.63769	6.70579	0.1296939	0.29911025	2.2143615	20	10 20.5	20.6
425540 2010 RC_{14}	17.8	X	254.55331	88.96844	343.73605	5.50079	0.1239778	0.29334079	2.2433020	20	9 3.5	20.3
425541 2010 RO_{39}	17.3	X	260.46486	162.24198	246.40554	5.33357	0.1617364	0.28750721	2.2735450	20	7 29.2	20.2
425542 2010 RE_{40}	16.8	X	251.38940	169.78250	181.10062	24.60112	0.1833114	0.27392161	2.3481104	20	4 29.4	20.5
425543 2010 RM_{51}	17.7	X	289.69016	23.68926	6.27473	5.76749	0.1383085	0.28967890	2.2621678	20	8 26.9	19.8
425544 2010 RL_{55}	17.8	X	289.75330	160.13839	217.86110	3.43470	0.1792491	0.28954100	2.2628860	20	7 27.8	20.1
425545 2010 RG_{59}	17.4	X	219.63573	168.26878	222.67607	5.77601	0.1799554	0.27060034	2.3672847	20	5 17.8	21.1
425546 2010 RE_{67}	17.2	X	309.37853	334.38350	57.16714	7.09816	0.1216046	0.29563932	2.2316594	20	10 13.0	19.0
425547 2010 RK_{87}	18.1	X	349.03498	54.93658	328.04160	5.66506	0.1724239	0.30570025	2.1824226	20	12 25.4	20.1
425548 2010 RD_{103}	17.8	X	245.37710	131.01379	197.99896	4.69557	0.1670388	0.26473691	2.4021109	20	3 24.2	21.3
425549 2010 RM_{103}	18.2	X	243.78505	52.38108	355.37518	5.64499	0.1515926	0.28016965	2.3130694	20	7 9.7	21.4
425550 2010 RA_{104}	18.4	X	223.54621	177.79333	262.78125	0.53981	0.1596450	0.28155674	2.3054662	20	7 29.4	21.8
425551 2010 RM_{113}	17.8	X	21.75666	56.45293	238.15654	5.29537	0.1930353	0.29599835	2.2298545	20	10 7.8	20.1
425552 2010 RH_{115}	18.2	X	318.89213	138.55698	221.62692	4.66789	0.0791891	0.29092995	2.2556779	20	9 6.5	20.5
425553 2010 RS_{115}	17.7	X	38.98519	271.54131	336.58603	7.44658	0.0829378	0.28760001	2.2730559	20	8 9.3	20.0
425554 2010 RJ_{119}	18.3	X	8.21075	174.52712	165.15386	3.06300	0.1611886	0.30266546	2.1969869	20	11 20.9	20.4
425555 2010 RU_{120}	17.5	X	308.04346	22.92779	297.20209	4.70510	0.1492376	0.28222554	2.3018225	20	6 4.9	19.8
425556 2010 RY_{125}	18.0	X	246.19490	349.72538	54.79316	3.34657	0.1181834	0.28171876	2.3045822	20	7 12.5	20.8
425557 2010 RU_{136}	18.7	X	12.96800	76.83400	267.12137	4.34046	0.2147469	0.30779024	2.1725319	20	12 14.2	21.0
425558 2010 RK_{139}	18.2	X	217.12029	174.46791	222.56111	2.03661	0.2259890	0.27262836	2.3555303	20	5 20.5	22.1
425559 2010 RS_{143}	17.9	X	303.81378	191.80042	202.30527	7.01505	0.1833419	0.29453240	2.2372473	20	9 24.2	19.5
425560 2010 RJ_{149}	17.8	X	205.22902	36.51393	341.37799	6.17129	0.1251329	0.26517071	2.3994904	20	4 16.3	21.5
425561 2010 RB_{152}	17.8	X	171.85104	67.22215	19.20976	1.75119	0.1465843	0.27050069	2.3678660	20	6 13.9	21.4
425562 2010 RR_{153}	18.1	X	283.19791	165.67564	243.18176	4.73319	0.1352049	0.29193797	2.2504826	20	9 9.7	20.3
425563 2010 RH_{165}	17.7	X	345.26563	344.55754	22.81016	5.77872	0.1774756	0.30040171	2.2080104	20	11 20.9	19.4
425564 2010 RO_{167}	18.0	X	190.33142	250.00807	146.48195	2.67441	0.2210016	0.26408507	2.4060620	20	4 28.6	22.1
425565 2010 RX_{171}	17.6	X	186.06298	240.26340	192.91212	2.67883	0.1714623	0.26896932	2.3768452	20	6 10.4	21.2
425566 2010 RV_{179}	18.2	X	237.43039	74.32152	297.61756	1.24094	0.1995728	0.27240833	2.3567986	20	5 7.9	21.9
425567 2010 SD_{9}	17.9	X	242.30368	71.49847	0.48179	5.13239	0.1755445	0.28635117	2.2796600	20	8 8.9	21.0
425568 2010 SV_{13}	18.2	X	263.52660	41.92880	357.14130	4.53149	0.1586273	0.28523432	2.2856069	20	7 23.1	20.9
425569 2010 SO_{19}	17.8	X	31.16819	275.81772	31.17491	7.38606	0.1181170	0.29850698	2.2173439	20	10 29.9	20.1
425570 2010 SV_{34}	17.6	X	254.94629	257.83665	89.25324	3.12504	0.2093811	0.27195145	2.3594374	20	4 23.7	21.0
425571 2010 SL_{35}	17.6	X	241.11444	215.69376	152.64170	2.63667	0.2471319	0.27046506	2.3680740	20	5 4.3	21.3
425572 2010 TZ	17.5	X	325.08797	242.29046	97.85576	5.46611	0.2088324	0.29044264	2.2582003	20	8 12.9	18.7
425573 2010 TX_{5}	17.9	X	295.67224	2.58152	17.91868	7.17552	0.1028914	0.28977006	2.2616933	20	8 29.8	20.1
425574 2010 TK_{23}	18.4	X	163.21862	53.25838	24.77041	2.62479	0.1614596	0.26368818	2.4084757	20	5 25.3	22.1
425575 2010 TT_{23}	18.7	X	69.22439	280.52599	23.69455	4.43837	0.1752733	0.31071937	2.1588568	20	12 21.3	21.8
425576 2010 TT_{38}	17.7	X	190.44438	184.39498	240.11014	2.44900	0.2031984	0.26742735	2.3859729	20	6 2.4	21.5
425577 2010 TL_{59}	18.4	X	262.14875	83.00853	307.75144	4.94789	0.1873176	0.28099885	2.3085167	20	7 3.1	21.2
425578 2010 TV_{90}	17.8	X	267.33308	353.78422	28.37596	4.95803	0.1246250	0.28189557	2.3036185	20	7 8.6	20.6
425579 2010 TP_{92}	17.4	X	275.31974	180.10339	228.89453	6.91196	0.1654790	0.28969154	2.2621020	20	8 20.1	19.8
425580 2010 TK_{99}	18.1	X	262.30651	36.52802	28.94203	3.33292	0.1062019	0.29097562	2.2554419	20	9 8.8	20.4
425581 2010 TB_{106}	18.7	X	201.63086	136.68280	299.92815	1.54856	0.1703422	0.27321086	2.3521810	20	6 29.9	22.4
425582 2010 TZ_{107}	18.2	X	158.16061	255.05688	190.81262	2.11751	0.0956732	0.26616203	2.3935288	20	5 28.6	21.6
425583 2010 TC_{114}	18.3	X	175.72581	205.57659	235.38759	0.65199	0.1608852	0.26746214	2.3857660	20	6 10.7	21.8
425584 2010 TH_{116}	18.7	X	36.47952	141.31384	175.61141	0.95716	0.1963300	0.30426960	2.1892583	20	12 4.1	21.4
425585 2010 TX_{128}	18.7	X	266.31188	93.88924	294.78132	1.83357	0.2208133	0.28459318	2.2890383	20	6 30.2	21.3
425586 2010 TU_{141}	17.2	X	310.09822	298.87926	325.75711	5.43301	0.1047373	0.25989602	2.4318473	20	3 24.4	20.1
425587 2010 TE_{143}	18.0	X	17.40594	351.59853	321.74364	4.21244	0.1667154	0.29526604	2.2335399	20	10 23.7	20.3
425588 2010 TX_{143}	18.6	X	211.28156	214.50353	289.56959	3.58501	0.0357200	0.29583745	2.2306629	20	10 27.8	21.4
425589 2010 TV_{163}	17.8	X	190.11587	234.22008	190.12958	2.14164	0.1564359	0.26657073	2.3910817	20	6 3.0	21.4
425590 2010 TD_{168}	18.5	X	264.81720	3.54916	16.04378	1.31293	0.2000344	0.27859684	2.3217667	20	6 18.2	21.6
425591 2010 TM_{169}	17.7	X	144.58887	252.33795	283.30320	3.59859	0.0798974	0.28621434	2.2803865	20	9 11.9	20.8
425592 2010 TS_{170}	18.4	X	309.40584	103.21390	242.30556	2.25266	0.2416160	0.28571245	2.2830562	20	7 3.1	20.0
425593 2010 TD_{171}	17.9	X	237.25420	61.26760	1.97400	7.07131	0.1028893	0.28043035	2.3116356	20	7 31.7	20.9
425594 2010 TV_{176}	17.2	X	314.62909	334.36205	354.68646	7.78840	0.2405698	0.28190621	2.3035605	20	6 16.4	19.2
425595 2010 TK_{180}	17.8	X	336.36704	308.92859	36.56688	5.70402	0.1611021	0.29270906	2.2465285	20	9 24.7	19.3
425596 2010 UP_{9}	18.1	X	312.80632	303.58096	29.96322	3.31085	0.1861230	0.28175499	2.3043846	20	6 30.9	19.9
425597 2010 UP_{13}	17.7	X	230.12323	85.65865	5.02934	2.92450	0.1192348	0.28332392	2.2958696	20	8 26.8	20.7
425598 2010 UP_{17}	18.2	X	206.90103	5.74760	59.58818	2.03894	0.1712757	0.27061097	2.3672227	20	6 19.9	22.0
425599 2010 UJ_{21}	17.4	X	198.52081	212.47066	218.51126	7.47611	0.0741073	0.27143227	2.3624451	20	6 23.6	20.7
425600 2010 UD_{25}	17.8	X	270.71163	164.68693	217.99385	1.75509	0.2135462	0.27650549	2.3334592	20	6 28.2	20.8

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Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
	m		°	°	°	°		°				
425601 2010 UN_{25}	16.1	X	175.41161	279.53344	65.57347	15.15315	0.1472123	0.23851331	2.5751012	20	2 17.5	20.4
425602 2010 UA_{45}	18.1	X	204.91449	198.17443	269.54272	5.84467	0.1403633	0.27974484	2.3154105	20	8 14.3	21.5
425603 2010 UH_{48}	18.0	X	319.24348	95.57605	271.55028	4.07673	0.1769064	0.29089836	2.2558412	20	9 13.4	19.6
425604 2010 UA_{54}	17.7	X	20.76768	312.02547	17.72220	4.77703	0.2007611	0.29995971	2.2101789	20	11 29.8	20.1
425605 2010 UG_{54}	18.0	X	267.03789	145.92968	245.36965	4.66851	0.1608959	0.27958933	2.3162690	20	7 13.7	20.8
425606 2010 UM_{70}	17.9	X	217.74261	179.47712	211.17357	4.44413	0.2329201	0.26509822	2.3999278	20	5 12.9	21.8
425607 2010 UN_{70}	17.8	X	262.99615	331.68580	57.40066	4.09960	0.2245532	0.27745230	2.3281475	20	6 25.7	20.9
425608 2010 UG_{75}	17.1	X	186.61239	33.31496	24.18951	14.53284	0.1825826	0.26183154	2.4198479	20	5 17.5	21.2
425609 2010 UW_{91}	17.4	X	211.63664	19.00097	345.19314	5.58510	0.1324284	0.25538511	2.4603997	20	4 6.1	21.2
425610 2010 UQ_{94}	16.4	X	259.59936	336.26991	71.89080	25.82985	0.2072956	0.28395890	2.2924457	20	7 23.4	19.8
425611 2010 UW_{96}	18.0	X	222.18454	161.93387	233.56469	1.30865	0.1973490	0.26789839	2.3831753	20	5 24.8	21.7
425612 2010 VA_{22}	17.7	X	220.56671	222.39474	167.41322	2.22040	0.1841354	0.26507016	2.4000971	20	5 17.3	21.5
425613 2010 VO_{22}	17.7	X	203.76130	165.32101	239.36068	4.61547	0.2159391	0.26299636	2.4126976	20	5 19.2	21.8
425614 2010 VW_{29}	17.5	X	279.70119	6.27266	56.52488	8.40704	0.1739574	0.29216663	2.2493082	20	9 26.9	19.7
425615 2010 VX_{41}	17.8	X	235.08979	18.96209	53.45305	3.02742	0.1868037	0.27692455	2.3311045	20	7 28.9	21.2
425616 2010 VF_{48}	17.9	X	249.27056	323.21993	55.90757	3.37882	0.1884484	0.26899795	2.3766765	20	5 31.3	21.1
425617 2010 VL_{52}	17.7	X	234.24955	285.34783	91.79330	2.27940	0.2002748	0.26741895	2.3860228	20	5 12.7	21.2
425618 2010 VK_{55}	17.7	X	224.42307	251.08085	180.90624	2.47043	0.1721834	0.27481843	2.3429993	20	7 16.5	21.2
425619 2010 VV_{60}	18.5	X	316.65923	21.10626	342.49293	8.00243	0.1345490	0.28835722	2.2690749	20	9 6.1	20.4
425620 2010 VA_{62}	17.4	X	211.63619	176.00974	288.81185	5.88745	0.1533528	0.27792924	2.3254833	20	8 16.9	20.9
425621 2010 VH_{65}	18.2	X	18.42483	81.94539	308.14444	3.39699	0.0863887	0.30810135	2.1710691	20	—	—
425622 2010 VG_{66}	17.7	X	204.49012	271.31773	129.56362	4.02643	0.1658193	0.26483325	2.4015283	20	5 17.9	21.5
425623 2010 VN_{67}	17.0	X	242.61896	158.86197	205.13225	24.84505	0.2233424	0.27147521	2.3621960	20	5 1.9	20.7
425624 2010 VL_{70}	18.0	X	248.51864	38.34036	27.35472	3.07766	0.1396670	0.28066731	2.3103343	20	8 12.7	20.8
425625 2010 VR_{83}	18.4	X	273.96824	46.36723	306.43507	0.62924	0.1995180	0.27179178	2.3603614	20	5 22.9	21.3
425626 2010 VP_{89}	18.1	X	218.88031	34.27390	13.75589	1.53831	0.1657854	0.26694341	2.3888557	20	6 9.1	21.8
425627 2010 VH_{96}	18.3	X	227.20128	195.85329	224.35284	1.47531	0.1868065	0.27035226	2.3687327	20	7 2.2	21.7
425628 2010 VP_{100}	17.5	X	125.59838	294.39370	239.24079	6.38393	0.0430120	0.27469777	2.3436853	20	8 12.5	20.6
425629 2010 VL_{101}	17.9	X	262.86570	154.99999	231.89740	2.39786	0.0873429	0.27466747	2.3438577	20	7 13.6	20.7
425630 2010 VO_{101}	18.1	X	184.24064	238.64279	219.88969	1.86524	0.1467591	0.26801190	2.3825023	20	7 12.1	21.6
425631 2010 VZ_{123}	17.7	X	61.52683	15.73504	265.00873	4.24265	0.1982277	0.29547646	2.2324794	20	11 11.9	20.8
425632 2010 VZ_{126}	17.9	X	154.08278	17.19372	73.08246	3.73809	0.1673826	0.25543590	2.4600735	20	6 2.2	21.6
425633 2010 VW_{127}	17.5	X	172.75304	42.31166	83.06560	8.04287	0.0611625	0.27200699	2.3591162	20	8 10.5	20.8
425634 2010 VJ_{133}	17.3	X	107.24952	327.93207	67.13473	4.95118	0.1798136	0.23359259	2.6111391	20	2 7.5	20.8
425635 2010 VU_{138}	17.8	X	225.61961	214.09254	213.87864	1.87026	0.1886762	0.27355694	2.3501967	20	7 10.8	21.1
425636 2010 VH_{140}	17.6	X	291.98815	310.87496	32.47848	6.49219	0.1650378	0.27679783	2.3318159	20	6 9.6	20.3
425637 2010 VJ_{144}	17.6	X	141.71632	3.96110	180.38180	6.18694	0.0394976	0.28490217	2.2873829	20	9 21.6	20.4
425638 2010 VU_{159}	17.9	X	267.64822	304.59963	101.34305	6.09749	0.1819320	0.27932091	2.3177526	20	8 3.6	20.5
425639 2010 VU_{164}	17.2	X	248.47079	350.83998	40.54935	8.03543	0.1165004	0.27463080	2.3440663	20	6 25.9	20.4
425640 2010 VR_{170}	16.9	X	351.99405	308.04227	243.03408	12.11001	0.2187502	0.23516832	2.5994622	20	2 2.6	19.7
425641 2010 VX_{174}	17.6	X	88.57308	279.43903	222.55514	6.68150	0.1302792	0.25216228	2.4813192	20	5 25.4	20.7
425642 2010 VJ_{175}	18.2	X	284.98554	169.28999	181.05282	2.39856	0.2230725	0.27575893	2.3376689	20	5 31.3	20.8
425643 2010 VS_{184}	17.4	X	300.88989	295.73340	55.83637	6.77661	0.2149787	0.27947343	2.3169093	20	6 30.3	19.5
425644 2010 VD_{185}	18.2	X	271.17487	85.28962	310.64002	4.98728	0.1672262	0.28060495	2.3106766	20	7 26.9	20.8
425645 2010 VF_{192}	17.9	X	206.78230	123.18136	316.69182	3.45020	0.1803111	0.26931917	2.3747863	20	7 8.9	21.7
425646 2010 VJ_{196}	18.0	X	167.31715	177.02811	306.79602	5.42515	0.0471377	0.27306344	2.3530275	20	7 30.2	20.8
425647 2010 VP_{199}	17.4	X	195.56403	265.72080	125.39422	6.90597	0.2394912	0.26078591	2.4263119	20	4 27.9	21.7
425648 2010 VL_{206}	17.7	X	39.59453	265.79220	5.32173	6.68865	0.0954202	0.28458210	2.2890977	20	9 15.3	20.2
425649 2010 VE_{209}	17.8	X	332.50311	353.16983	321.17306	5.97562	0.1218064	0.28029569	2.3123759	20	7 20.3	19.7
425650 2010 VY_{209}	17.7	X	215.27895	112.08628	20.55775	5.45557	0.1014594	0.28847842	2.2684393	20	10 8.2	20.3
425651 2010 WO_{10}	18.0	X	336.59591	315.94357	83.87427	4.46366	0.1046026	0.29934747	2.2131915	20	12 15.5	20.1
425652 2010 WG_{16}	17.3	X	143.93063	184.02336	198.12898	8.68442	0.1687257	0.23952478	2.5678467	20	2 25.5	21.3
425653 2010 WB_{54}	18.1	X	166.34351	106.25170	20.12300	3.14469	0.1687501	0.26699972	2.3885198	20	8 1.5	21.8
425654 2010 WV_{56}	17.4	X	197.58489	271.65692	84.81327	10.44614	0.2267191	0.25128517	2.4870899	20	3 21.4	21.8
425655 2010 WW_{66}	17.9	X	240.51206	351.28854	56.30342	3.60171	0.1690543	0.27178399	2.3604065	20	7 2.0	21.1
425656 2010 XU_{1}	17.7	X	151.66622	280.88992	221.35162	5.78597	0.0502040	0.27127565	2.3633543	20	8 2.7	20.9
425657 2010 XG_{4}	16.3	X	70.79708	240.55978	264.81321	13.93884	0.0802869	0.23724218	2.5842911	20	4 22.4	19.8
425658 2010 XW_{4}	16.7	X	159.96043	281.80935	94.64278	3.34514	0.2004993	0.24194052	2.5507250	20	3 10.7	20.9
425659 2010 XC_{12}	16.8	X	328.48117	84.46357	94.32910	5.17907	0.1491423	0.21705504	2.7421390	20	—	—
425660 2010 XD_{12}	17.4	X	208.35986	119.28647	285.97469	3.11402	0.1696474	0.25710355	2.4494242	20	5 25.5	21.2
425661 2010 XA_{17}	16.4	X	233.68387	29.39567	267.90611	11.45010	0.1186874	0.23135054	2.6279819	20	2 5.1	20.6
425662 2010 XG_{18}	17.4	X	207.70071	330.89097	262.91646	8.14261	0.1201334	0.30362802	2.1923412	20	—	—
425663 2010 XX_{18}	17.4	X	136.01869	255.52064	135.01672	5.66811	0.1397688	0.23708317	2.5854465	20	2 28.3	21.2
425664 2010 XA_{37}	17.8	X	123.10381	178.09707	330.30075	2.56431	0.1337305	0.25544698	2.4600025	20	7 15.4	21.4
425665 2010 XT_{49}	18.0	X	17.10416	18.16467	293.83006	2.91587	0.2796435	0.29096659	2.2554886	20	11 10.3	20.3
425666 2010 XS_{61}	17.4	X	250.95637	126.01452	255.41343	5.73089	0.1384772	0.27080179	2.3661105	20	6 11.9	20.4
425667 2010 XQ_{63}	17.3	X	140.54943	316.38345	75.25456	7.54102	0.1078021	0.23694782	2.5864310	20	3 5.1	21.1
425668 2010 XY_{65}	18.1	X	220.03225	156.25874	283.61182	2.32341	0.1486415	0.26867552	2.3785776	20	7 24.7	21.5
425669 2010 XV_{66}	17.7	X	229.37950	245.59414	155.58119	3.03421	0.1866455	0.26714104	2.3876774	20	6 9.5	21.4
425670 2010 XP_{67}	17.9	X	138.90335	20.87639	131.43830	3.05266	0.1160075	0.26633042	2.3925198	20	8 5.9	21.4
425671 2010 XX_{79}	16.1	X	75.89586	204.31390	281.43572	27.46294	0.1934403	0.23412417	2.6071852	20	4 13.6	20.1
425672 2010 XA_{80}	17.8	X	193.56182	335.19064	65.40236	6.37030	0.2374653	0.25906354	2.4370542	20	5 6.3	22.0
425673 2010 XN_{88}	16.5	X	28.10597	13.34378	264.96636	23.76230	0.1662330	0.28737422	2.2742464	20	9 2.7	19.7
425674 2010 YR_{3}	16.3	X	295.55054	67.08560	308.70145	22.44231	0.2124138	0.27445311	2.3450780	20	7 29.6	18.6
425675 2010 YJ_{4}	17.5	X	72.61575	216.20389	49.58337	8.41902	0.2042913	0.27317812	2.3523690	20	11 2.5	20.9
425676 2011 AC_{2}	17.7	X	132.57253	90.05866	55.70608	3.23474	0.1567610	0.25662809	2.4524487	20	7 24.0	21.4
425677 2011 AQ_{5}	16.8	X	120.22269	129.75434	305.77080	10.87722	0.1502231	0.23382266	2.6094260	20	4 2.3	20.8
425678 2011 AG_{19}	17.7	X	225.39564	82.76592	332.78750	6.28442	0.0932474	0.26366554	2.4086136	20	7 4.3	21.0
425679 2011 AH_{21}	17.4	X	25.23289	135.36420	84.01451	5.46301	0.1718565	0.24040302	2.5615889	20	6 8.4	19.8
425680 2011 AL_{21}	16.6	X	154.89673	247.84944	94.54340	7.83693	0.0874292	0.21663599	2.7456741	20	1 16.9	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		°	°	°	°		°				
425681 2011 AV_{21}	16.9	X	122.92498	249.90985	311.96446	6.40669	0.0734304	0.26749493	2.3855710	20	9 18.5	20.2
425682 2011 AA_{30}	17.4	X	103.67636	138.01549	72.71632	2.50626	0.1385835	0.26345370	2.4099046	20	9 17.5	21.0
425683 2011 AW_{30}	17.1	X	93.66949	343.56658	115.48672	8.67164	0.1069545	0.23274140	2.6175016	20	4 4.9	20.6
425684 2011 AK_{46}	17.2	X	153.27327	229.45871	309.26857	5.76326	0.0733928	0.26689698	2.3891327	20	9 22.8	20.6
425685 2011 AJ_{48}	16.4	X	239.35959	36.48012	323.41473	6.50616	0.2649020	0.25571206	2.4583020	20	4 17.3	20.7
425686 2011 AU_{51}	17.3	X	143.89627	63.60452	122.54091	7.19618	0.0735533	0.26678843	2.3897808	20	9 28.1	20.7
425687 2011 AQ_{53}	17.4	X	220.54715	37.22293	90.08262	8.48045	0.1117780	0.27527168	2.3404266	20	10 8.6	20.6
425688 2011 AV_{56}	17.9	X	181.50041	262.40576	222.38455	0.37231	0.1355739	0.26183147	2.4198484	20	8 13.4	21.5
425689 2011 AK_{57}	17.2	X	223.93077	49.30030	279.25370	5.06243	0.0309317	0.23306000	2.6151155	20	3 10.3	21.0
425690 2011 AG_{59}	17.9	X	286.97680	234.06433	130.30207	3.07368	0.1681532	0.26618226	2.3934075	20	7 3.0	20.5
425691 2011 AO_{59}	17.0	X	86.07590	128.99204	295.27727	13.57662	0.0572651	0.22105398	2.7089677	20	1 28.4	20.6
425692 2011 AL_{62}	17.0	X	149.81070	269.26159	94.51135	13.07362	0.0938172	0.22429051	2.6828441	20	2 8.3	21.0
425693 2011 AL_{65}	17.7	X	226.43386	20.96147	3.22856	1.58636	0.1911486	0.25331798	2.4737665	20	5 14.3	21.5
425694 2011 AZ_{66}	17.3	X	240.55206	253.70578	109.09065	3.19768	0.1850721	0.25402640	2.4691652	20	5 2.6	21.0
425695 2011 AY_{72}	16.6	X	150.49017	40.69348	13.00512	12.75566	0.2331232	0.24334870	2.5408754	20	4 15.4	20.8
425696 2011 AZ_{72}	16.5	X	355.94826	165.49900	342.13053	8.95547	0.0795261	0.21794605	2.7346603	20	1 9.2	20.0
425697 2011 AD_{74}	15.9	X	251.28788	272.60439	301.24118	15.53094	0.0774511	0.20568726	2.8422642	20	—	—
425698 2011 AG_{75}	17.4	X	140.63193	140.49298	353.20287	6.70534	0.1938729	0.25447063	2.4662907	20	7 18.7	21.5
425699 2011 AQ_{75}	17.3	X	204.05584	53.19309	60.45250	3.16439	0.1208239	0.26568447	2.3963961	20	8 25.9	20.7
425700 2011 AT_{77}	16.7	X	50.95619	36.05556	114.96317	14.75410	0.1959547	0.23067326	2.6331234	20	4 28.3	19.9
425701 2011 BK_{5}	17.6	X	188.19163	259.36125	123.44856	9.33318	0.2037722	0.24446073	2.5331641	20	4 13.8	22.0
425702 2011 BF_{6}	17.1	X	25.61443	359.96922	115.69386	6.73689	0.0279547	0.21706883	2.7420229	20	1 11.5	20.8
425703 2011 BW_{7}	17.1	X	185.98011	349.43774	117.42998	7.06885	0.0931012	0.26161779	2.4211658	20	7 27.5	20.6
425704 2011 BT_{8}	17.0	X	49.15379	325.44907	105.49612	6.94340	0.0104338	0.21072797	2.7967561	20	—	—
425705 2011 BM_{9}	17.4	X	187.02903	5.92244	77.98016	2.22185	0.1501814	0.25709560	2.4494747	20	6 25.5	21.2
425706 2011 BO_{10}	17.1	X	41.17247	272.02950	303.07520	3.72811	0.2294985	0.23631088	2.5910765	20	7 13.0	19.7
425707 2011 BR_{10}	17.7	X	139.81428	26.23959	163.58172	1.41592	0.1509892	0.26701438	2.3884324	20	9 26.6	21.5
425708 2011 BO_{14}	16.0	X	268.33010	183.05607	123.09597	16.12424	0.1114918	0.23508731	2.6000593	20	4 4.4	20.0
425709 2011 BR_{19}	16.5	X	97.39125	180.67663	314.74277	6.88114	0.1442691	0.23685729	2.5870901	20	5 28.3	20.2
425710 2011 BN_{20}	17.7	X	186.87365	296.58267	95.61698	1.53088	0.1372369	0.24469830	2.5315242	20	4 20.3	21.7
425711 2011 BZ_{22}	16.5	X	19.49903	285.99292	310.77562	27.30078	0.3660384	0.23284987	2.6166887	20	7 28.7	18.4
425712 2011 BS_{23}	16.9	X	323.89376	307.00332	308.33831	6.32527	0.2467455	0.22800769	2.6536057	20	3 12.5	19.9
425713 2011 BK_{24}	19.6	X	221.91711	209.53694	6.01311	8.75604	0.2236285	0.50647998	1.5586952	20	—	—
425714 2011 BH_{27}	17.5	X	190.90122	221.11978	264.17998	1.59948	0.1466433	0.26376095	2.4080327	20	8 22.8	21.1
425715 2011 BJ_{27}	17.7	X	110.31196	142.10515	302.58206	4.41434	0.2696379	0.23378201	2.6097285	20	4 21.5	21.7
425716 2011 BX_{28}	17.2	X	121.54392	255.32520	109.43548	14.80833	0.2747341	0.22044724	2.7139360	20	1 30.1	21.4
425717 2011 BS_{29}	16.8	X	338.17822	65.43507	98.20658	10.33984	0.0821429	0.21440018	2.7647293	20	1 3.0	20.1
425718 2011 BT_{30}	16.5	X	5.53000	190.16259	331.67716	8.51230	0.1370434	0.22007958	2.7169578	20	2 6.4	19.4
425719 2011 BD_{31}	17.8	X	183.73847	81.66158	104.61360	5.79777	0.1338249	0.27825845	2.3236487	20	11 8.5	21.1
425720 2011 BV_{32}	17.7	X	143.87270	134.56295	284.57976	2.29442	0.1192921	0.23514476	2.5996358	20	4 8.7	21.6
425721 2011 BQ_{35}	17.6	X	161.01421	123.65573	310.18246	10.35265	0.1123738	0.24393241	2.5368203	20	5 13.2	21.6
425722 2011 BX_{37}	16.3	X	282.46355	129.49268	162.16796	13.75890	0.1939699	0.22102357	2.7092162	20	3 17.9	20.2
425723 2011 BK_{43}	16.3	X	332.14578	280.42785	296.95028	10.90177	0.1372185	0.22218174	2.6997931	20	2 20.2	19.8
425724 2011 BJ_{45}	16.4	X	32.75968	220.12437	321.89708	12.60567	0.0863339	0.22872976	2.6480180	20	4 12.2	19.8
425725 2011 BH_{51}	16.7	X	139.35988	175.21884	301.88990	8.48978	0.0296443	0.24521071	2.5279963	20	6 12.2	20.1
425726 2011 BQ_{51}	17.1	X	168.28388	113.27746	270.68047	6.94327	0.1050962	0.23028180	2.6361067	20	3 17.7	21.2
425727 2011 BL_{76}	16.9	X	305.96963	322.23050	316.21009	12.22525	0.1122120	0.22981070	2.6397080	20	4 3.1	20.5
425728 2011 BN_{76}	17.2	X	316.70668	101.85587	185.92743	3.78022	0.1604020	0.23505076	2.6003289	20	5 2.8	20.0
425729 2011 BB_{79}	17.9	X	213.97001	46.40903	77.71262	3.30386	0.1792943	0.27316503	2.3524441	20	9 14.9	21.3
425730 2011 BE_{79}	18.1	X	119.09023	157.51674	312.84068	4.72493	0.2420367	0.24311715	2.5424884	20	5 30.8	22.3
425731 2011 BJ_{80}	16.1	X	118.05254	152.28935	304.45140	21.40759	0.0313101	0.23348155	2.6119669	20	4 4.7	20.2
425732 2011 BW_{81}	17.1	X	169.17448	185.25754	237.84159	3.58155	0.2229849	0.24550621	2.5259673	20	5 13.8	21.3
425733 2011 BJ_{82}	16.8	X	50.79141	127.59365	69.78609	3.70010	0.0416042	0.24655863	2.5187742	20	6 3.2	19.8
425734 2011 BM_{82}	17.2	X	81.47407	123.40585	76.67892	5.38283	0.0871434	0.25449635	2.4661246	20	7 30.7	20.4
425735 2011 BP_{82}	17.4	X	137.80150	179.15935	349.70031	5.54710	0.0916132	0.26292647	2.4131251	20	8 26.6	20.9
425736 2011 BU_{83}	16.5	X	353.58308	346.03894	266.62574	7.38185	0.1052552	0.24128672	2.5553306	20	5 22.7	19.1
425737 2011 BU_{88}	17.0	X	59.82981	107.66317	172.35912	9.48199	0.0687552	0.26567713	2.3964403	20	10 20.2	20.1
425738 2011 BQ_{90}	17.4	X	90.26968	224.66829	268.61991	3.58924	0.0544130	0.23787822	2.5796825	20	5 2.5	20.7
425739 2011 BB_{95}	17.6	X	171.22339	114.25992	328.98768	5.57337	0.0804882	0.25183802	2.4834487	20	6 7.5	21.3
425740 2011 BZ_{96}	16.3	X	120.87856	24.07275	314.67052	11.11991	0.1176272	0.20403553	2.8575830	20	—	—
425741 2011 BB_{97}	17.2	X	356.68004	260.33313	340.23037	2.61323	0.1122437	0.23928106	2.5695900	20	5 9.7	20.0
425742 2011 BG_{101}	17.8	X	135.81060	132.24710	335.85803	7.15244	0.1861185	0.24725114	2.5140689	20	6 8.1	21.9
425743 2011 BH_{101}	17.7	X	115.24974	142.61325	37.40806	1.97620	0.1302255	0.25752523	2.4467496	20	8 18.5	21.3
425744 2011 BL_{101}	17.0	X	14.72070	103.45614	95.90200	6.65081	0.0617507	0.23404266	2.6077905	20	4 16.7	20.2
425745 2011 BW_{102}	17.8	X	129.07725	307.76806	173.00459	3.47831	0.1588431	0.24579651	2.5239780	20	6 16.7	21.7
425746 2011 BH_{103}	17.1	X	4.92028	38.05430	106.93783	5.81004	0.1002655	0.21452973	2.7636162	20	1 16.7	20.3
425747 2011 BL_{106}	18.1	X	118.98260	327.71551	166.18252	3.08832	0.1093994	0.24414034	2.5353797	20	6 18.1	21.8
425748 2011 BH_{109}	17.7	X	196.57936	114.35500	252.57945	3.65437	0.0770576	0.22994034	2.6387157	20	3 27.6	21.7
425749 2011 BZ_{116}	17.8	X	180.63897	24.48161	38.04091	3.22906	0.1538728	0.25215399	2.4813736	20	5 21.9	21.6
425750 2011 BO_{118}	17.3	X	100.95873	121.94622	12.57917	5.91945	0.0852685	0.24330341	2.5411907	20	5 22.8	20.7
425751 2011 BW_{154}	17.2	X	59.99311	232.76948	170.61213	2.17320	0.0698697	0.20325747	2.8648708	20	—	—
425752 2011 BY_{160}	17.7	X	199.81362	233.27906	233.09135	1.94346	0.1390077	0.25955594	2.4339710	20	8 7.1	21.4
425753 2011 BR_{161}	16.7	X	69.41465	176.04101	272.12297	8.58290	0.1800595	0.22050530	2.7134596	20	2 18.9	20.0
425754 2011 CP	16.3	X	335.28285	255.14858	343.57144	17.17350	0.1209353	0.22810734	2.6528328	20	3 25.1	19.5
425755 2011 CP_{4}	21.2	X	134.63637	159.92959	147.99158	9.45730	0.8703398	1.13273107	0.9114192	20	—	—
425756 2011 CQ_{5}	17.6	X	186.55745	53.96285	103.33265	3.55858	0.1625847	0.27109993	2.3643755	20	10 1.6	21.1
425757 2011 CF_{13}	17.6	X	131.80742	4.47564	92.65695	7.34433	0.2153039	0.24300688	2.5432575	20	5 25.2	21.7
425758 2011 CU_{13}	16.5	X	5.11241	60.61581	118.97983	15.92956	0.1379173	0.22289255	2.6940502	20	3 4.1	19.6
425759 2011 CV_{14}	18.1	X	137.43625	119.88606	312.49487	1.56190	0.1448674	0.23716676	2.5848390	20	4 21.5	21.8
425760 2011 CM_{17}	17.6	X	193.54956	34.56503	75.93498	3.38303	0.1485113	0.26156870	2.4214688	20	8 7.5	21.3

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Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
	m		°	°	°	°		°				
425761 2011 CB_{18}	17.2	X	52.43271	23.83287	116.84858	4.82230	0.2035487	0.22731943	2.6589592	20	4 12.4	20.0
425762 2011 CS_{18}	16.3	X	28.79777	55.14270	135.40487	16.50520	0.1399660	0.23136564	2.6278676	20	5 6.4	19.5
425763 2011 CU_{18}	17.8	X	158.03336	68.93469	98.46372	1.52178	0.1682457	0.26431139	2.4046883	20	9 15.3	21.6
425764 2011 CD_{20}	17.7	X	135.86901	110.80442	344.69892	7.28035	0.1678800	0.24244808	2.5471639	20	5 20.0	21.8
425765 2011 CM_{22}	17.3	X	73.45473	239.16426	317.93797	13.45840	0.1738336	0.24440241	2.5335670	20	7 28.6	20.7
425766 2011 CT_{24}	16.7	X	157.09132	59.81759	19.93866	11.66528	0.0898696	0.24462593	2.5320234	20	5 15.6	20.5
425767 2011 CD_{26}	18.0	X	138.63438	76.95361	128.84097	5.48844	0.1695688	0.26836398	2.3804181	20	10 18.4	21.8
425768 2011 CJ_{26}	17.3	X	85.26819	52.93662	352.15508	5.70706	0.0721935	0.21231329	2.7828166	20	1 9.0	21.0
425769 2011 CC_{30}	17.1	X	103.13996	66.01245	124.47804	7.90496	0.0711368	0.25689434	2.4507538	20	8 12.0	20.3
425770 2011 CQ_{31}	17.8	X	170.29739	252.14582	155.80729	9.21326	0.1597606	0.23934466	2.5691348	20	4 27.4	22.0
425771 2011 CB_{32}	17.1	X	53.75344	289.92966	310.26293	5.39567	0.1231219	0.25564690	2.4587197	20	8 21.2	20.0
425772 2011 CY_{36}	17.5	X	7.89733	287.18541	318.98600	5.47672	0.1520413	0.24113478	2.5564039	20	6 11.2	19.9
425773 2011 CJ_{38}	17.0	X	181.35855	1.30872	120.35288	8.53678	0.0491611	0.26113042	2.4241775	20	8 14.1	20.2
425774 2011 CD_{40}	16.0	X	160.24090	140.84939	119.41269	11.91515	0.1259229	0.18478599	3.0527414	20	12 27.1	20.8
425775 2011 CO_{40}	16.5	X	207.40829	138.52242	131.47792	15.64820	0.1204075	0.20335328	2.8639709	20	—	—
425776 2011 CP_{41}	16.4	X	108.90229	125.10995	353.39423	31.78794	0.2375868	0.23372332	2.6101654	20	5 18.3	21.2
425777 2011 CL_{47}	17.5	X	336.61931	52.56226	192.32321	1.98981	0.0718268	0.23365075	2.6107058	20	4 16.0	20.5
425778 2011 CP_{51}	16.4	X	269.49444	325.17197	326.51642	12.18830	0.1652531	0.22599313	2.6693523	20	3 3.3	20.4
425779 2011 CY_{55}	17.3	X	157.02795	61.30911	325.46673	9.88976	0.2224596	0.23121989	2.6289717	20	3 17.6	21.8
425780 2011 CC_{56}	17.6	X	113.18038	135.28383	330.72471	3.17566	0.1316668	0.23681103	2.5874269	20	5 6.4	21.3
425781 2011 CM_{58}	16.9	X	72.56839	308.64050	145.54427	5.74630	0.1343587	0.22210372	2.7004252	20	2 29.9	20.2
425782 2011 CL_{68}	17.4	X	208.93179	170.83025	269.09155	5.56270	0.0965577	0.26026255	2.4295635	20	7 16.0	20.9
425783 2011 CC_{71}	17.6	X	104.78571	93.24110	41.88106	2.67154	0.1777083	0.23730823	2.5838116	20	6 11.0	21.2
425784 2011 CP_{71}	16.1	X	77.92135	165.91433	341.63240	28.54947	0.0459509	0.23192799	2.6236180	20	4 16.6	20.2
425785 2011 CM_{72}	16.6	X	1.98228	15.30896	145.76292	9.27855	0.1354597	0.21543146	2.7558990	20	1 29.3	19.8
425786 2011 CW_{74}	17.5	X	201.15166	71.52072	48.60423	3.36113	0.1375410	0.26499527	2.4005493	20	8 29.9	20.9
425787 2011 CD_{76}	17.4	X	135.95153	141.40493	46.49631	7.50154	0.2925686	0.25692747	2.4505431	20	9 25.5	21.9
425788 2011 CO_{78}	17.9	X	127.01413	290.41669	170.01169	3.60823	0.1882034	0.24012965	2.5635327	20	5 22.3	21.8
425789 2011 CL_{79}	16.4	X	8.90642	266.90638	308.87145	11.63981	0.2030090	0.22846567	2.6500582	20	4 20.8	19.1
425790 2011 CU_{79}	16.5	X	95.24290	173.60520	299.95700	12.20808	0.1022451	0.23189553	2.6238628	20	4 14.7	20.3
425791 2011 CM_{87}	16.2	X	219.47816	357.44935	275.68464	8.10184	0.0902884	0.20408222	2.8571471	20	1 1.7	20.7
425792 2011 CC_{91}	17.7	X	297.14442	3.91349	286.89821	2.75725	0.0531854	0.23355564	2.6114145	20	4 21.9	21.0
425793 2011 CV_{91}	17.7	X	135.80715	16.63486	151.06804	3.78696	0.1192984	0.25565395	2.4586746	20	8 22.4	21.3
425794 2011 CZ_{92}	18.2	X	94.39530	348.15058	252.17726	4.54250	0.1541212	0.26275822	2.4141551	20	10 14.3	21.9
425795 2011 CZ_{95}	18.4	X	143.39608	146.28134	295.21763	2.47450	0.1009709	0.23767311	2.5811665	20	5 5.7	22.2
425796 2011 CC_{103}	17.3	X	24.13078	212.17374	308.14686	3.94306	0.0554804	0.22198699	2.7013719	20	3 5.0	20.6
425797 2011 CT_{103}	17.0	X	263.80616	339.41632	306.74029	3.80761	0.0681276	0.22200184	2.7012513	20	3 2.8	20.7
425798 2011 CC_{104}	17.2	X	250.07529	7.30919	282.59112	3.12298	0.0498025	0.21936962	2.7228167	20	2 22.8	21.0
425799 2011 CH_{107}	17.6	X	139.75679	170.82191	266.19425	0.88751	0.0344951	0.23203857	2.6227844	20	4 19.8	21.3
425800 2011 CC_{109}	17.5	X	338.43711	272.84231	319.66074	10.20382	0.1412424	0.22417218	2.6837882	20	3 20.4	20.8
425801 2011 CO_{112}	17.1	X	241.13125	359.74485	315.81408	3.37675	0.1696684	0.22467103	2.6798141	20	3 5.9	21.3
425802 2011 CF_{117}	16.1	X	271.03457	316.47316	258.99594	11.06451	0.0941181	0.20172816	2.8793317	20	—	—
425803 2011 CY_{117}	16.9	X	64.37898	281.98822	355.37147	6.62273	0.1153300	0.26453304	2.4033449	20	10 24.4	20.2
425804 2011 DM_{5}	16.7	X	148.23245	32.72116	351.02313	8.36297	0.0610847	0.21728430	2.7402098	20	2 27.3	20.6
425805 2011 DH_{8}	17.3	X	85.40173	8.91370	144.77299	3.50267	0.1437167	0.23352746	2.6116246	20	6 8.4	20.8
425806 2011 DW_{8}	17.8	X	46.19191	85.42821	113.93431	4.90189	0.1899040	0.23101646	2.6305149	20	6 21.2	20.6
425807 2011 DD_{10}	17.0	X	113.47664	136.32729	359.45587	4.81785	0.0430709	0.23606698	2.5928609	20	6 4.6	20.5
425808 2011 DE_{11}	17.1	X	57.72451	42.57711	158.11660	8.57607	0.2021330	0.23756600	2.5819423	20	7 13.4	20.3
425809 2011 DK_{13}	17.6	X	34.88893	175.92057	288.27873	3.12355	0.1620490	0.21411627	2.7671727	20	1 12.2	20.1
425810 2011 DO_{13}	17.8	X	138.40053	282.57569	147.02383	5.12632	0.1890511	0.23763581	2.5814366	20	4 25.4	21.9
425811 2011 DL_{15}	17.3	X	340.30675	96.16419	183.35983	2.83492	0.1618655	0.24144182	2.5542362	20	6 4.3	19.6
425812 2011 DX_{15}	16.9	X	169.31144	26.17841	347.42644	5.23042	0.0385509	0.22076404	2.7113390	20	3 6.6	20.7
425813 2011 DD_{18}	17.6	X	53.35643	12.48930	152.00443	3.21923	0.0745982	0.22657779	2.6647583	20	4 27.9	20.9
425814 2011 DV_{19}	18.0	X	199.56107	301.32201	170.93330	2.66936	0.1317305	0.26396854	2.4067700	20	8 15.8	21.6
425815 2011 DK_{23}	17.4	X	342.81605	257.18888	356.00834	2.30502	0.1446646	0.22649155	2.6654347	20	4 30.7	20.3
425816 2011 DD_{24}	17.1	X	164.17722	69.50364	77.53717	5.21431	0.1293309	0.25427397	2.4675622	20	8 27.2	20.9
425817 2011 DC_{25}	16.8	X	10.26889	101.52999	138.33103	7.48737	0.1455008	0.24105024	2.5570016	20	6 7.7	19.4
425818 2011 DV_{28}	17.6	X	140.44164	135.69341	246.57378	0.47138	0.1769677	0.22260145	2.6963984	20	2 26.7	21.7
425819 2011 DV_{39}	17.1	X	324.39687	315.47289	302.32841	2.72775	0.1007176	0.22770726	2.6559392	20	4 9.9	20.4
425820 2011 DL_{41}	18.2	X	59.41742	348.34262	161.29666	2.47515	0.1446919	0.22675621	2.6633603	20	4 26.4	21.2
425821 2011 DO_{48}	17.2	X	68.55369	190.92245	85.92946	2.85169	0.1732710	0.26185464	2.4197056	20	11 7.3	20.5
425822 2011 EP_{4}	17.3	X	49.16456	335.79606	208.55654	1.59338	0.1359500	0.22996746	2.6385082	20	5 26.8	20.3
425823 2011 EO_{8}	17.5	X	171.75631	72.75860	347.76937	5.79915	0.0643943	0.24077150	2.5589748	20	5 6.9	21.3
425824 2011 ES_{10}	17.2	X	64.15853	357.94314	167.11990	7.90343	0.1379933	0.23204472	2.6227381	20	5 25.4	20.5
425825 2011 EP_{12}	16.5	X	12.15624	202.06435	5.39259	9.50468	0.1758033	0.22462096	2.6802123	20	4 19.6	19.2
425826 2011 ET_{13}	16.5	X	80.82415	179.60820	349.98715	12.78486	0.1456426	0.23529709	2.5985137	20	6 24.9	20.2
425827 2011 EA_{15}	17.6	X	77.81596	98.83775	152.76161	2.75277	0.1720585	0.25861909	2.4398455	20	10 15.4	21.1
425828 2011 EA_{16}	17.3	X	95.23205	146.30945	346.92177	4.91041	0.2171525	0.23507121	2.6001780	20	6 2.0	21.0
425829 2011 ER_{16}	16.8	X	64.13625	90.83896	15.12028	9.05756	0.1293502	0.21609954	2.7502161	20	3 6.1	20.1
425830 2011 ET_{18}	16.3	X	28.38652	182.01209	352.61486	15.17000	0.1587224	0.22074458	2.7114984	20	4 2.3	19.1
425831 2011 EA_{20}	17.4	X	154.36723	341.53249	110.93256	5.91818	0.1158965	0.24573676	2.5243872	20	6 3.7	21.2
425832 2011 EA_{23}	16.8	X	9.05117	55.52422	158.47520	11.82192	0.1333736	0.22742997	2.6580976	20	4 29.5	19.8
425833 2011 EF_{23}	16.1	X	168.33583	41.44226	10.64356	22.28565	0.0351348	0.22895418	2.6462873	20	4 17.1	20.0
425834 2011 EH_{24}	17.2	X	88.92413	336.23536	138.14214	8.06640	0.2050251	0.22823908	2.6518118	20	5 3.1	20.9
425835 2011 EV_{26}	17.1	X	93.44396	139.71315	153.33033	6.57335	0.1243339	0.27332284	2.3515385	20	12 20.5	20.6
425836 2011 EP_{27}	18.0	X	120.58624	326.20834	147.52176	4.59315	0.2574955	0.23860788	2.5744207	20	6 8.1	22.3
425837 2011 EY_{36}	17.2	X	311.04361	102.33849	168.46193	7.18698	0.1830730	0.22049926	2.7135091	20	3 28.9	20.6
425838 2011 EQ_{37}	16.9	X	131.88915	78.68971	24.29270	14.31976	0.0535239	0.23171805	2.6252025	20	5 13.3	20.7
425839 2011 ED_{38}	16.7	X	33.29504	114.71108	115.83445	5.30295	0.1326939	0.23503282	2.6004612	20	7 5.4	19.5
425840 2011 EO_{39}	17.2	X	349.50638	105.14030	126.24032	4.84452	0.1255085	0.22052637	2.7132868	20	4 17.0	20.2

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Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
	m		°	°	°	°		°				
425841 2011 EQ_{41}	16.9	X	52.91440	150.64884	343.00676	4.32632	0.1101828	0.22160424	2.7044815	20	3 18.6	20.1
425842 2011 EP_{43}	17.1	X	30.18852	107.85727	155.70405	15.07867	0.1887470	0.24419678	2.5349891	20	8 28.1	19.9
425843 2011 EK_{50}	16.7	X	208.49774	27.16755	92.15506	7.44295	0.0728135	0.26237800	2.4164869	20	9 14.9	20.1
425844 2011 EP_{53}	17.0	X	346.30814	153.15620	59.45347	10.23804	0.1412273	0.21434817	2.7651765	20	3 18.7	20.3
425845 2011 EX_{53}	17.2	X	59.06467	133.06013	104.31817	4.77816	0.1042804	0.24302593	2.5431246	20	8 22.9	20.4
425846 2011 EM_{54}	16.5	X	294.53796	178.87014	119.58058	5.56873	0.2141406	0.21877636	2.7277367	20	4 8.7	20.2
425847 2011 EV_{54}	16.5	X	334.34937	262.68430	339.27526	12.37496	0.1548236	0.22204659	2.7008884	20	3 25.5	19.6
425848 2011 EG_{58}	16.8	X	220.39082	167.58541	55.83344	10.75550	0.1704142	0.18411084	3.0602000	20	—	—
425849 2011 EH_{59}	17.6	X	89.27696	39.65305	102.87709	6.78133	0.2407028	0.23543503	2.5974986	20	6 12.0	21.2
425850 2011 ET_{62}	16.9	X	311.64420	198.86729	75.61809	8.11426	0.1531430	0.22523943	2.6753038	20	4 11.1	20.2
425851 2011 ER_{68}	17.4	X	107.84527	244.37948	20.06804	2.35731	0.1610603	0.26579235	2.3957476	20	11 28.6	21.0
425852 2011 EY_{68}	17.2	X	100.35899	11.19629	141.27097	7.77922	0.1446163	0.23710582	2.5852819	20	6 25.3	20.9
425853 2011 EV_{70}	16.2	X	153.86643	284.61325	25.54520	12.94426	0.1866188	0.18170022	3.0872070	20	—	—
425854 2011 EV_{71}	17.1	X	37.51959	54.83659	83.87034	3.71179	0.1343511	0.21282684	2.7783382	20	3 5.8	20.1
425855 2011 EY_{71}	16.5	X	127.46922	333.28743	49.52044	7.04565	0.0763563	0.20153252	2.8811948	20	2 7.5	20.7
425856 2011 EL_{72}	16.6	X	187.26883	47.74228	355.72574	8.53572	0.0984571	0.22986687	2.6392780	20	5 1.7	20.7
425857 2011 EH_{75}	16.5	X	325.81629	116.80268	33.37521	14.71636	0.1679149	0.19669393	2.9282540	20	—	—
425858 2011 EU_{75}	18.0	X	90.63330	12.90780	133.37336	5.02015	0.1634925	0.23735340	2.5834838	20	6 8.2	21.6
425859 2011 EG_{80}	17.7	X	84.18134	250.08367	247.78779	4.70457	0.1503155	0.23153284	2.6266023	20	5 16.4	21.1
425860 2011 EZ_{82}	16.9	X	16.93059	88.75641	130.93922	4.76411	0.0508317	0.23330164	2.6133096	20	5 16.6	20.1
425861 2011 EB_{83}	16.9	X	177.70191	76.33065	348.34160	14.45184	0.0902995	0.23872678	2.5735659	20	5 16.6	21.1
425862 2011 EQ_{84}	16.4	X	274.23604	64.10609	134.54311	5.58354	0.0961080	0.19060012	2.9903403	20	—	—
425863 2011 EN_{86}	16.7	X	37.86776	58.37042	76.18238	10.31112	0.1033702	0.21492481	2.7602283	20	3 1.8	20.1
425864 2011 FM_{2}	17.2	X	85.74544	277.71867	205.37854	4.10564	0.1940668	0.22580608	2.6708262	20	5 6.3	20.7
425865 2011 FX_{3}	16.8	X	31.59393	47.06594	166.43637	13.72819	0.2013431	0.22968153	2.6406976	20	6 17.3	19.8
425866 2011 FF_{4}	16.7	X	54.00108	88.44965	113.83278	6.84467	0.0760418	0.23523934	2.5989390	20	6 20.2	19.8
425867 2011 FW_{6}	16.2	X	61.83164	142.60386	11.11911	15.70860	0.1175369	0.22554302	2.6729025	20	4 26.0	19.6
425868 2011 FW_{7}	16.7	X	19.99498	229.73600	40.42092	14.26748	0.2404660	0.23182414	2.6244015	20	9 3.9	19.6
425869 2011 FL_{10}	16.8	X	22.29693	194.57715	354.95288	8.69684	0.0779789	0.22255472	2.6967758	20	4 10.2	20.1
425870 2011 FE_{11}	17.6	X	94.51391	165.74847	330.36248	2.79800	0.0979335	0.23060389	2.6336514	20	5 19.2	21.2
425871 2011 FQ_{11}	16.7	X	119.53690	94.49775	35.04337	13.71470	0.0534088	0.23069125	2.6329865	20	6 3.5	20.5
425872 2011 FH_{12}	17.0	X	244.39645	272.65762	341.62877	7.45833	0.0531582	0.20182502	2.8784103	20	1 8.5	21.3
425873 2011 FS_{16}	15.9	X	212.51056	54.72714	163.54052	16.91187	0.1722915	0.17863394	3.1224349	20	12 22.9	21.0
425874 2011 FM_{18}	16.4	X	142.93483	92.86341	196.17739	13.87387	0.1020798	0.17508965	3.1644318	20	—	—
425875 2011 FW_{18}	16.4	X	356.89504	358.51988	196.07098	11.50327	0.0239196	0.21479003	2.7613830	20	3 12.3	20.0
425876 2011 FH_{19}	16.7	X	285.43661	323.90879	173.41599	11.37630	0.0473577	0.17579695	3.1559382	20	12 27.6	21.1
425877 2011 FP_{19}	16.3	X	100.00480	296.29612	170.65001	11.35646	0.0714853	0.22029986	2.7151463	20	4 17.3	20.0
425878 2011 FP_{22}	17.0	X	134.87874	266.58039	154.16880	5.47180	0.1052767	0.21928986	2.7234768	20	4 3.4	20.9
425879 2011 FB_{24}	17.2	X	16.15606	186.06195	25.18740	2.55082	0.1380241	0.22552379	2.6730545	20	5 4.9	19.9
425880 2011 FE_{25}	16.3	X	283.67052	96.01927	158.07690	14.17400	0.0248441	0.20844939	2.8171002	20	2 23.9	20.1
425881 2011 FT_{26}	15.6	X	348.53661	266.47221	113.07282	11.15594	0.0810434	0.15864390	3.3795105	20	11 1.0	20.1
425882 2011 FL_{30}	17.3	X	12.62716	233.54025	319.16121	2.67507	0.0994524	0.22327636	2.6909619	20	3 31.1	20.5
425883 2011 FZ_{32}	17.2	X	56.52486	116.98675	120.26402	4.21750	0.1045060	0.23804652	2.5784665	20	8 17.7	20.5
425884 2011 FU_{33}	16.1	X	311.80580	83.30521	40.06978	12.07531	0.0819957	0.18039288	3.1021048	20	—	—
425885 2011 FA_{34}	17.0	X	31.51242	124.62386	119.30241	4.37249	0.1627900	0.23411298	2.6072683	20	7 26.8	19.8
425886 2011 FV_{35}	17.0	X	254.31418	298.39095	14.95304	8.77104	0.0433978	0.22134217	2.7066157	20	3 30.8	20.8
425887 2011 FJ_{36}	16.2	X	114.84497	330.29223	70.26454	6.88396	0.0816453	0.20509005	2.8477792	20	2 14.6	20.2
425888 2011 FH_{41}	16.8	X	110.24940	345.02100	86.47611	8.05076	0.0547760	0.21949792	2.7217555	20	3 14.9	20.6
425889 2011 FC_{48}	17.3	X	17.56453	82.41108	200.21481	5.62668	0.2603639	0.23380753	2.6095385	20	9 10.9	19.7
425890 2011 FO_{48}	15.8	X	311.32755	67.00484	86.95923	11.13350	0.0453191	0.18255979	3.0775087	20	—	—
425891 2011 FP_{48}	16.1	X	137.14078	254.95978	65.85026	21.06647	0.0953590	0.17531708	3.1616944	20	—	—
425892 2011 FO_{51}	16.5	X	97.62776	149.38893	359.45662	13.95453	0.1942047	0.23651123	2.5896131	20	6 23.9	20.6
425893 2011 FQ_{57}	16.2	X	116.65906	4.46910	355.78326	12.60382	0.1645536	0.19121224	2.9839549	20	1 12.1	20.7
425894 2011 FP_{59}	17.3	X	67.07302	282.57851	232.55882	1.94450	0.0348049	0.22404740	2.6847846	20	4 28.4	20.8
425895 2011 FT_{59}	17.2	X	32.72831	307.31065	249.92288	1.58386	0.0986008	0.22536776	2.6742881	20	5 12.2	20.1
425896 2011 FV_{63}	16.6	X	207.18745	63.32309	359.85508	5.83481	0.0561942	0.23866760	2.5739913	20	6 24.4	20.3
425897 2011 FG_{70}	16.9	X	136.77327	335.43527	126.22679	6.69224	0.2357871	0.24063938	2.5599113	20	6 5.7	21.2
425898 2011 FP_{79}	16.7	X	286.30233	124.64653	159.78099	9.46320	0.1864351	0.21669308	2.7451918	20	3 14.2	20.5
425899 2011 FJ_{84}	16.5	X	329.95928	111.63378	103.12731	8.77799	0.1626640	0.21231770	2.7827781	20	2 17.6	19.9
425900 2011 FA_{88}	16.5	X	89.30197	99.54829	18.90840	13.92324	0.0957989	0.22716675	2.6601505	20	4 17.5	20.0
425901 2011 FB_{88}	16.4	X	18.70343	68.63448	147.70267	13.89070	0.0541051	0.22915045	2.6447761	20	5 17.8	19.9
425902 2011 FO_{88}	16.7	X	341.69591	254.07558	0.50106	11.03860	0.1491963	0.22491857	2.6778475	20	4 26.7	19.7
425903 2011 FE_{101}	16.9	X	265.47502	302.26682	346.61029	4.38148	0.1431204	0.21113225	2.7931847	20	3 2.0	20.9
425904 2011 FL_{104}	16.3	X	229.99623	36.14590	140.10643	10.09338	0.0413988	0.17551490	3.1593183	20	12 8.4	20.9
425905 2011 FB_{115}	16.5	X	275.16749	340.96111	312.48734	7.14035	0.1979308	0.21367679	2.7709657	20	3 8.6	20.8
425906 2011 FY_{120}	16.4	X	131.42057	42.44934	7.30363	8.12516	0.0892426	0.21530544	2.7569743	20	3 14.8	20.2
425907 2011 FB_{125}	17.2	X	75.83395	244.84105	268.02965	6.11553	0.1703366	0.22938514	2.6429718	20	5 28.7	20.6
425908 2011 FM_{126}	17.4	X	95.61386	106.17831	42.87476	7.67901	0.1093076	0.23698025	2.5861951	20	6 8.9	21.0
425909 2011 FG_{127}	17.0	X	65.58505	48.09437	113.94143	13.51548	0.0949309	0.22978509	2.6399041	20	5 19.3	20.6
425910 2011 FE_{132}	17.1	X	126.91690	256.91946	180.46551	15.14104	0.2535482	0.23209017	2.6223956	20	4 30.8	21.5
425911 2011 FG_{132}	16.7	X	85.86152	91.75979	100.06879	13.39512	0.1874720	0.24162073	2.5529752	20	8 7.8	20.5
425912 2011 FS_{134}	17.6	X	110.14553	98.38773	353.35534	3.79653	0.0659642	0.22358550	2.6884809	20	4 5.9	21.2
425913 2011 FE_{141}	16.8	X	19.74402	87.21044	76.50324	4.88929	0.1510074	0.21208256	2.7848347	20	3 9.2	19.7
425914 2011 FJ_{141}	17.1	X	52.53238	215.20856	28.65891	9.51121	0.1193114	0.23914659	2.5705531	20	8 27.9	20.5
425915 2011 FL_{143}	16.1	X	280.60812	142.10547	36.73561	9.60707	0.0832956	0.18341805	3.0679010	20	—	—
425916 2011 FD_{148}	16.8	X	346.77127	28.24734	180.99571	8.34890	0.1514419	0.21634261	2.7481558	20	3 6.4	19.8
425917 2011 FN_{152}	16.6	X	136.85506	149.74329	331.92955	12.90936	0.2188709	0.24277579	2.5448712	20	6 30.9	21.0
425918 2011 FA_{154}	16.6	X	19.98243	200.21190	128.71335	7.86552	0.2024694	0.25991114	2.4317530	20	11 21.1	19.5
425919 2011 FV_{157}	15.6	X	81.06777	295.96048	62.62170	16.83619	0.0869496	0.18457764	3.0550383	20	—	—
425920 2011 GU_{12}	16.6	X	58.63452	191.98557	1.33195	9.75465	0.0613305	0.23160902	2.6260263	20	6 10.6	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		°	°	°	°		°				
425921 2011 GZ_{13}	16.9	X	87.44788	255.90125	240.32055	5.92416	0.0389071	0.22424908	2.6831746	20	5 1.0	20.3
425922 2011 GC_{17}	16.2	X	8.71176	245.23266	211.25801	9.80378	0.0889817	0.19133298	2.9826994	20	—	—
425923 2011 GP_{17}	17.5	X	14.72499	4.34951	230.61788	5.38717	0.1654550	0.22810041	2.6528865	20	6 9.5	20.1
425924 2011 GU_{24}	16.5	X	17.09931	13.40421	216.67841	13.32284	0.1940810	0.22671746	2.6636638	20	6 9.4	19.2
425925 2011 GD_{27}	16.2	X	151.30251	316.66061	350.79501	9.14581	0.0755637	0.18254589	3.0776650	20	—	—
425926 2011 GW_{38}	16.2	X	36.82022	302.92001	106.98643	4.89684	0.1268844	0.19076054	2.9886635	20	—	—
425927 2011 GG_{39}	16.6	X	216.48734	223.58702	90.64188	4.73991	0.0831780	0.20978659	2.8051165	20	2 17.7	20.9
425928 2011 GY_{39}	16.9	X	235.40952	216.33387	130.07359	6.75367	0.0741851	0.22607567	2.6687025	20	4 18.8	20.8
425929 2011 GS_{46}	16.1	X	313.79723	315.43501	311.20161	11.93144	0.1456627	0.22631055	2.6668557	20	3 24.9	19.6
425930 2011 GZ_{46}	16.9	X	298.54078	319.12443	211.30164	2.00245	0.1090162	0.18710924	3.0274192	20	—	—
425931 2011 GD_{56}	16.9	X	318.77713	110.50085	111.22716	5.93568	0.1015852	0.21060212	2.7978702	20	2 18.7	20.6
425932 2011 GL_{58}	16.3	X	74.80847	142.52240	49.71255	13.27281	0.0944336	0.23333811	2.6130373	20	7 10.1	20.0
425933 2011 GO_{60}	16.4	X	106.73264	348.64021	154.23796	14.73050	0.1352966	0.23273747	2.6175310	20	6 19.7	20.5
425934 2011 GD_{61}	16.7	X	34.83952	102.46044	80.58251	10.05021	0.1135632	0.21968226	2.7202327	20	5 1.2	19.9
425935 2011 GL_{61}	16.4	X	22.09618	124.43503	99.41977	9.89512	0.0768417	0.22709260	2.6607295	20	6 1.3	19.5
425936 2011 GH_{64}	16.4	X	18.02342	168.30164	91.15102	14.49906	0.1327124	0.23361632	2.6109623	20	7 21.6	19.3
425937 2011 GP_{64}	16.1	X	211.65326	79.64043	3.58958	14.25065	0.0447829	0.24403412	2.5361154	20	8 3.4	19.8
425938 2011 GC_{65}	16.2	X	42.21662	98.82266	51.94782	14.90184	0.0308144	0.21356181	2.7719602	20	3 27.4	20.1
425939 2011 GU_{67}	16.5	X	333.92166	157.92663	61.00653	13.78389	0.1463400	0.21300591	2.7767809	20	3 8.3	20.1
425940 2011 GQ_{70}	16.3	X	277.72140	99.07305	198.52400	12.23963	0.1587013	0.20998546	2.8033451	20	3 22.8	20.3
425941 2011 GS_{70}	16.7	X	46.46224	98.51443	82.31818	14.31655	0.2185789	0.22799201	2.6537273	20	5 31.3	19.4
425942 2011 GT_{71}	16.8	X	70.76100	186.16250	356.95388	4.34366	0.2096652	0.23366693	2.6105853	20	7 9.9	20.3
425943 2011 GY_{71}	16.2	X	275.57535	342.57378	212.71294	7.33328	0.2003173	0.18772364	3.0208100	20	—	—
425944 2011 GT_{75}	17.3	X	26.44344	123.27640	112.70721	6.54723	0.1069130	0.23147361	2.6270504	20	6 27.9	20.3
425945 2011 GX_{75}	17.0	X	89.95527	41.91056	120.51665	6.61621	0.1068427	0.23282158	2.6169006	20	6 20.5	20.5
425946 2011 GB_{76}	15.8	X	156.46853	204.55003	88.55399	8.06074	0.1448479	0.17554023	3.1590144	20	—	—
425947 2011 GH_{77}	16.9	X	343.03923	33.96155	205.38130	7.57189	0.1615673	0.21651347	2.7467097	20	4 10.5	19.9
425948 2011 GZ_{78}	16.6	X	80.81157	314.32135	189.76540	14.61682	0.0669751	0.22513043	2.6761672	20	5 9.8	20.3
425949 2011 GL_{84}	15.9	X	138.35993	177.76887	115.92159	11.69333	0.0527093	0.17523721	3.1626550	20	—	—
425950 2011 GS_{84}	16.9	X	291.59966	63.48189	197.57559	9.59174	0.0765609	0.21046088	2.7991218	20	3 3.9	20.8
425951 2011 GN_{87}	17.4	X	7.03988	76.50831	109.50075	6.81588	0.1865363	0.21529999	2.7570208	20	3 14.6	20.1
425952 2011 HL_{3}	16.0	X	160.24785	212.01757	84.01254	11.88609	0.0731246	0.17911937	3.1167909	20	—	—
425953 2011 HR_{3}	16.3	X	292.00042	53.70193	97.69679	10.17630	0.0651220	0.18004229	3.1061305	20	—	—
425954 2011 HY_{3}	16.9	X	120.55503	26.91054	112.34074	14.80089	0.1144657	0.23474188	2.6026094	20	6 27.7	20.8
425955 2011 HE_{7}	15.7	X	166.78375	180.86112	116.02857	19.66335	0.1100561	0.17382921	3.1797102	20	—	—
425956 2011 HL_{10}	16.5	X	7.60677	356.32954	126.36025	2.99345	0.0424582	0.19743464	2.9209255	20	—	—
425957 2011 HL_{11}	16.6	X	257.89091	241.06612	135.57845	6.48351	0.0702057	0.23413712	2.6070891	20	6 23.6	20.1
425958 2011 HC_{14}	16.4	X	259.67914	179.21881	135.83268	6.60777	0.1144059	0.21312335	2.7757607	20	4 2.6	20.5
425959 2011 HC_{16}	17.1	X	12.42563	190.09714	358.36154	4.48867	0.0565912	0.21368214	2.7709195	20	3 26.9	20.5
425960 2011 HH_{18}	17.1	X	78.39437	161.10824	17.55106	3.95190	0.1846085	0.23457400	2.6038510	20	7 9.8	20.7
425961 2011 HL_{19}	16.2	X	112.98036	153.75004	211.50933	9.36722	0.0657942	0.18111148	3.0938937	20	—	—
425962 2011 HY_{20}	16.9	X	48.68876	240.13996	351.83126	7.18078	0.1496661	0.23438483	2.6052519	20	8 7.2	20.1
425963 2011 HL_{22}	16.7	X	359.99974	150.75129	72.47798	9.64775	0.1918859	0.21755700	2.7379195	20	4 23.8	19.3
425964 2011 HO_{23}	16.4	X	267.06618	192.55968	38.69906	10.89344	0.0819418	0.19233113	2.9723708	20	1 4.0	20.9
425965 2011 HT_{31}	16.8	X	56.44285	318.26325	198.85592	10.07088	0.0492223	0.21789559	2.7350824	20	4 19.1	20.3
425966 2011 HK_{33}	17.0	X	124.75065	63.89139	104.31142	7.62786	0.1347945	0.24235242	2.5478341	20	8 12.9	20.8
425967 2011 HY_{43}	17.2	X	87.19169	67.62885	134.53589	5.65019	0.0936436	0.23923614	2.5699116	20	8 8.5	20.8
425968 2011 HA_{45}	15.7	X	95.76925	285.28491	63.96760	10.86131	0.1049634	0.17394327	3.1783201	20	—	—
425969 2011 HG_{50}	15.9	X	209.15971	149.68172	116.79216	18.28946	0.1776865	0.17719316	3.1393380	20	—	—
425970 2011 HH_{50}	16.1	X	175.27482	144.35362	160.23110	16.93408	0.1351272	0.17656977	3.1467228	20	1 1.5	21.4
425971 2011 HC_{52}	17.3	X	64.74611	34.38880	111.58421	10.50801	0.2411376	0.21984385	2.7188996	20	5 18.5	20.7
425972 2011 HD_{57}	16.3	X	172.21373	229.62678	113.84607	12.15033	0.1380039	0.19166741	2.9792289	20	2 12.4	21.1
425973 2011 HL_{60}	16.0	X	343.06962	21.46985	91.48663	10.43617	0.0187889	0.18162195	3.0880939	20	—	—
425974 2011 HX_{60}	16.3	X	118.87704	132.34040	205.80941	10.41502	0.0057953	0.18291765	3.0734936	20	—	—
425975 2011 HS_{63}	17.1	X	62.37453	321.01522	175.28331	3.37229	0.1414668	0.21753098	2.7381378	20	4 12.6	20.2
425976 2011 HY_{63}	16.3	X	206.08391	320.13803	34.93041	12.97839	0.1164588	0.21525069	2.7574418	20	3 28.9	20.7
425977 2011 HV_{67}	17.5	X	29.26119	330.68593	190.78588	3.64967	0.1064978	0.21429990	2.7655917	20	3 18.3	20.7
425978 2011 HL_{72}	16.4	X	351.10342	36.96033	92.18059	17.00143	0.0509761	0.18544050	3.0455541	20	—	—
425979 2011 HH_{73}	16.7	X	92.15586	35.58800	101.78383	9.24506	0.1151337	0.22309031	2.6924579	20	5 23.4	20.4
425980 2011 HP_{73}	16.6	X	11.97759	344.77085	146.98292	16.35994	0.1807401	0.20419381	2.8561061	20	1 7.3	19.8
425981 2011 HG_{74}	16.7	X	46.11535	45.05759	161.99104	13.80594	0.0311285	0.22376043	2.6870795	20	6 10.2	20.5
425982 2011 HL_{75}	15.9	X	237.58982	206.56429	69.35285	17.70190	0.0598643	0.20047799	2.8912896	20	1 28.7	20.4
425983 2011 HA_{77}	15.7	X	326.12678	92.45442	88.27355	17.13225	0.0116965	0.19244718	2.9711758	20	1 22.6	19.9
425984 2011 HF_{77}	15.7	X	269.38728	121.22050	116.71089	11.42971	0.0276630	0.18920936	3.0049757	20	1 20.6	20.0
425985 2011 HO_{77}	16.9	X	0.41529	105.60102	169.27284	15.30466	0.2230973	0.22863675	2.6487361	20	7 12.2	19.4
425986 2011 HR_{81}	17.1	X	352.45572	257.07201	333.13407	8.25060	0.2381733	0.21675779	2.7446454	20	4 4.7	19.6
425987 2011 HD_{82}	16.1	X	233.86387	197.28462	78.47613	5.47211	0.2233876	0.18909745	3.0061612	20	1 15.7	21.2
425988 2011 HK_{82}	16.5	X	65.38824	136.42349	90.80925	10.70816	0.0604849	0.23588768	2.5941747	20	8 11.0	20.0
425989 2011 HX_{82}	15.9	X	308.65353	147.32462	120.39194	13.95485	0.1278830	0.21093521	2.7949239	20	4 5.3	19.8
425990 2011 HV_{84}	17.0	X	58.25552	11.35094	185.33202	14.22327	0.1147078	0.22613141	2.6682639	20	6 23.7	20.7
425991 2011 HX_{84}	16.4	X	129.17268	317.31766	170.98345	13.26504	0.2064156	0.23571260	2.5954591	20	6 29.3	20.9
425992 2011 HR_{89}	16.3	X	125.39304	201.65152	169.58865	11.99082	0.1199286	0.18752801	3.0229104	20	1 25.2	20.8
425993 2011 HS_{90}	16.7	X	319.63665	141.18201	124.52844	9.46309	0.1182331	0.21788151	2.7352003	20	4 17.9	20.2
425994 2011 HE_{92}	16.7	X	126.97534	24.19971	65.84715	8.17654	0.1140807	0.22277264	2.6950168	20	5 2.7	20.6
425995 2011 HX_{97}	16.0	X	195.62792	215.04089	106.48061	7.59232	0.1779280	0.18991020	2.9975782	20	2 8.0	21.0
425996 2011 HS_{100}	16.7	X	287.89755	160.85490	120.73089	5.85107	0.0863241	0.20887593	2.8132638	20	3 29.1	20.6
425997 2011 HS_{102}	16.9	X	14.76090	94.48218	90.12815	11.52578	0.1129021	0.21846501	2.7303278	20	4 1.4	20.2
425998 2011 JE_{4}	15.8	X	147.67038	196.46248	108.93375	10.30148	0.0524915	0.17389704	3.1788833	20	—	—
425999 2011 JF_{6}	15.8	X	1.65418	352.41242	116.23441	11.38663	0.0275564	0.18380835	3.0635565	20	—	—
426000 2011 JX_{7}	16.6	X	17.33706	105.24407	148.78586	12.01509	0.1724136	0.23065947	2.6332284	20	7 14.6	19.4

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Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
	m		°	°	°	°		°				
426001 2011 JB_{12}	16.9	X	45.14566	177.70971	49.03648	5.64631	0.1976499	0.23083140	2.6319207	20	8 1.7	20.0
426002 2011 JE_{13}	15.6	X	149.10439	227.36206	88.85719	28.50178	0.1615691	0.17460353	3.1703025	20	—	—
426003 2011 JT_{20}	17.0	X	313.95144	175.80170	133.21753	6.55533	0.1414964	0.22240313	2.6980011	20	6 1.5	20.2
426004 2011 JB_{31}	16.2	X	253.82731	324.95413	228.75363	9.50943	0.1733282	0.17766710	3.1337526	20	—	—
426005 2011 JE_{31}	15.8	X	199.23293	51.23120	228.41380	10.01854	0.0602316	0.17991353	3.1076123	20	—	—
426006 2011 KS_{2}	16.1	X	238.26748	38.05654	238.37252	8.72105	0.0261342	0.19151557	2.9808033	20	1 27.6	20.5
426007 2011 KZ_{6}	16.0	X	255.29788	69.97586	137.24899	17.15193	0.2477121	0.17813803	3.1282271	20	—	—
426008 2011 KJ_{7}	15.8	X	144.10369	265.27974	59.71484	10.54854	0.0925416	0.17749830	3.1357391	20	—	—
426009 2011 KV_{14}	16.5	X	272.20178	165.94642	51.26145	10.19157	0.0353146	0.18952197	3.0016704	20	—	—
426010 2011 KN_{22}	16.0	X	199.90562	123.52071	163.39253	17.91499	0.1566103	0.17852899	3.1236585	20	1 2.9	21.4
426011 2011 KF_{23}	16.7	X	23.80804	301.29087	227.20447	6.14965	0.0866748	0.20953544	2.8073575	20	3 16.6	20.1
426012 2011 KN_{25}	16.8	X	288.88308	34.10941	155.08976	1.11438	0.1950747	0.18675664	3.0312286	20	—	—
426013 2011 KQ_{28}	16.8	X	98.10748	322.60638	211.24985	4.92509	0.3539530	0.23639069	2.5904933	20	8 9.3	21.3
426014 2011 KN_{31}	16.2	X	344.56613	220.42182	91.81197	12.88797	0.1796910	0.22755414	2.6571305	20	8 6.0	18.8
426015 2011 KZ_{31}	16.9	X	52.42099	157.64899	85.99311	4.89498	0.1304184	0.23340830	2.6125133	20	8 25.8	20.2
426016 2011 KL_{35}	16.0	X	245.21527	46.59268	233.10838	16.94149	0.1456127	0.18957264	3.0011355	20	1 27.4	21.1
426017 2011 KO_{42}	15.8	X	218.43792	12.55520	215.21748	16.17609	0.0863006	0.17433712	3.1735314	20	—	—
426018 2011 KT_{42}	16.2	X	227.51820	166.75447	73.91567	6.55581	0.1149934	0.18057899	3.0999730	20	—	—
426019 2011 KC_{45}	15.8	X	147.26570	94.47240	235.08934	9.47743	0.0348171	0.17945917	3.1128554	20	—	—
426020 2011 LO	15.6	X	98.01601	306.82542	74.96360	19.85601	0.1186050	0.18099934	3.0951715	20	1 8.1	20.0
426021 2011 LO_{7}	16.4	X	262.06203	19.21976	205.21490	2.22495	0.1430670	0.18329402	3.0692848	20	—	—
426022 2011 LP_{9}	16.2	X	170.48778	210.84177	136.49038	8.99482	0.0705508	0.18793132	3.0185841	20	2 10.6	20.8
426023 2011 LK_{14}	16.4	X	192.58683	90.20127	212.48632	11.43834	0.0792580	0.18469007	3.0537983	20	1 10.3	21.3
426024 2011 LC_{23}	16.2	X	243.23860	77.47582	177.36826	8.52959	0.0627762	0.18489093	3.0515862	20	1 7.7	20.9
426025 2011 LL_{23}	17.0	X	82.26906	357.48019	147.02135	5.59318	0.1000866	0.21750460	2.7383592	20	5 17.3	20.7
426026 2011 MH_{2}	15.3	X	173.19974	206.28905	127.32967	28.01694	0.1409793	0.17207051	3.2013397	20	2 2.6	20.3
426027 2011 MJ_{5}	16.1	X	331.93472	81.01470	111.67437	10.75857	0.0978633	0.18588977	3.0406451	20	2 4.2	20.0
426028 2011 OV_{3}	15.8	X	236.83528	124.07336	139.97098	16.82186	0.1070179	0.17279231	3.1924182	20	1 11.6	21.0
426029 2011 PA_{2}	14.7	X	197.48127	67.08243	269.27973	25.21847	0.1833200	0.17373823	3.1808202	20	2 14.3	20.5
426030 2011 QM_{1}	16.0	X	295.72285	55.38017	174.79850	15.83766	0.0540660	0.17487102	3.1670687	20	2 7.6	20.7
426031 2011 QL_{12}	17.9	X	204.73774	64.08041	308.23957	14.17788	0.0835223	0.41146406	1.7902545	20	3 23.7	20.1
426032 2011 QT_{50}	16.6	X	344.73970	102.64222	179.05939	8.32172	0.2629082	0.21117169	2.7928370	20	6 9.8	19.1
426033 2011 QF_{75}	16.3	X	261.37516	118.39483	176.01938	9.50864	0.0638260	0.18597224	3.0397460	20	3 15.4	20.6
426034 2011 QO_{75}	16.3	X	5.01864	338.36023	289.04774	7.72639	0.0836623	0.21108384	2.7936118	20	7 3.7	19.5
426035 2011 SS_{28}	15.7	X	244.66828	302.91890	5.64105	16.10870	0.2130551	0.17811274	3.1285233	20	3 6.2	20.9
426036 2011 SN_{47}	15.9	X	310.84096	227.21421	350.68659	5.29112	0.1062132	0.16945234	3.2342307	20	2 8.5	20.4
426037 2011 SO_{103}	15.6	X	248.66701	136.56228	178.36652	17.02086	0.2244560	0.18073636	3.0981732	20	3 11.2	20.8
426038 2011 SP_{120}	15.6	X	252.65166	60.18690	265.54160	7.81295	0.1320606	0.17833904	3.1258761	20	4 2.2	20.4
426039 2011 SX_{174}	14.8	X	13.16421	5.96481	33.79907	6.62494	0.1656026	0.12422870	3.9779082	20	12 24.3	19.9
426040 2011 SQ_{189}	18.5	X	314.66286	336.42798	205.08208	21.43676	0.0839197	0.37979567	1.8884379	20	—	—
426041 2011 UH	15.9	X	231.69971	270.81812	72.30566	17.06078	0.1054981	0.17636205	3.1491930	20	4 15.7	21.0
426042 2011 UN_{21}	18.1	X	72.52525	272.05627	164.98189	22.42184	0.1436472	0.37915589	1.8905617	20	—	—
426043 2011 UD_{104}	18.4	X	85.82033	184.23333	229.12353	20.25000	0.0694190	0.37421088	1.9071804	20	—	—
426044 2011 UM_{137}	17.7	X	310.97556	275.63961	219.98791	19.95648	0.0706122	0.35716658	1.9673827	20	—	—
426045 2011 UD_{261}	17.5	X	69.03432	199.17261	235.22878	19.05006	0.0759351	0.37374702	1.9087581	20	—	—
426046 2011 UM_{375}	15.5	X	312.75032	251.22735	10.34567	16.13645	0.2091421	0.17660054	3.1463572	20	3 20.9	19.7
426047 2011 WV_{100}	18.3	X	193.85757	333.32011	166.13580	1.75566	0.0089793	0.31872436	2.1225563	20	10 7.0	20.7
426048 2011 YK	17.8	X	301.30991	84.56201	100.60592	23.61182	0.0592447	0.36407297	1.9424228	20	—	—
426049 2011 YG_{24}	13.7	X	328.05949	293.91156	102.13697	11.17904	0.0779718	0.08371316	5.1753558	20	10 9.4	20.3
426050 2012 AA_{14}	18.1	X	169.47820	11.74181	110.82987	1.70195	0.1458846	0.28949596	2.2631206	20	7 31.1	21.3
426051 2012 AQ_{22}	17.7	X	326.75408	240.85884	289.55546	16.11532	0.0838669	0.35910651	1.9602909	20	—	—
426052 2012 BB_{10}	18.6	X	195.92328	219.99600	230.33407	2.95058	0.2007364	0.28902764	2.2655647	20	7 11.1	22.1
426053 2012 BA_{15}	17.3	X	336.60150	112.73188	144.61698	7.79479	0.0644092	0.26576216	2.3959291	20	5 5.9	20.1
426054 2012 BW_{22}	17.6	X	229.99392	286.81159	334.72086	17.51342	0.0560164	0.35576348	1.9725521	20	—	—
426055 2012 BA_{53}	17.6	X	234.01579	288.18746	137.77522	5.86723	0.0577478	0.29029629	2.2589592	20	8 5.1	20.3
426056 2012 BM_{53}	18.8	X	160.74366	148.19518	339.09591	4.30435	0.1529280	0.28525604	2.2854908	20	7 29.1	22.3
426057 2012 BH_{62}	18.5	X	18.65008	272.10355	132.76203	12.16167	0.2888023	0.34444802	2.0155191	20	—	—
426058 2012 BV_{78}	18.4	X	140.08560	341.74528	234.66002	5.53073	0.0893575	0.30407084	2.1902122	20	11 5.3	21.4
426059 2012 BS_{81}	17.3	X	359.56327	84.90160	127.40205	5.00092	0.1294963	0.25901821	2.4373385	20	4 3.9	19.6
426060 2012 BT_{88}	17.1	X	296.02605	134.84864	99.22000	4.65202	0.1159213	0.24549921	2.5260154	20	1 27.9	20.5
426061 2012 BY_{90}	18.0	X	96.83385	47.74431	110.73064	1.50527	0.1458868	0.27390298	2.3482169	20	6 30.5	20.9
426062 2012 BC_{92}	18.5	X	138.16368	59.76594	124.81352	3.27293	0.1029504	0.29477272	2.2360312	20	9 21.7	21.5
426063 2012 BC_{98}	17.1	X	79.45584	215.74683	160.84165	49.14535	0.0638188	0.34157704	2.0267971	20	—	—
426064 2012 BL_{112}	17.8	X	93.80979	318.59409	311.42811	3.42773	0.1637397	0.30360645	2.1924451	20	11 28.8	21.0
426065 2012 BM_{125}	18.6	X	172.71523	343.56269	162.78244	4.63740	0.0948738	0.29546392	2.2325426	20	9 7.2	21.7
426066 2012 BR_{125}	17.9	X	145.29475	235.14020	299.89345	5.31130	0.1481349	0.29315333	2.2442582	20	9 12.7	21.3
426067 2012 BL_{131}	17.0	X	80.30711	216.84577	343.98966	8.47174	0.0815703	0.28468042	2.2885706	20	8 1.9	19.8
426068 2012 CC_{12}	18.1	X	91.37269	201.75113	10.91280	2.28623	0.1584192	0.28468832	2.2885283	20	9 10.1	21.1
426069 2012 CC_{18}	18.1	X	320.91909	221.53175	353.10988	18.93070	0.0744454	0.36843385	1.9270650	20	1 27.3	20.4
426070 2012 CJ_{25}	18.7	X	204.67701	209.78979	252.90732	2.65587	0.0700959	0.29226145	2.2488217	20	8 16.2	21.6
426071 2012 CD_{29}	19.9	X	278.65707	152.41088	144.72724	19.29162	0.6486831	0.94916817	1.0254330	20	1 7.4	21.1
426072 2012 CJ_{32}	17.9	X	55.25193	48.50242	166.19914	7.80137	0.1333896	0.27486903	2.3427117	20	7 20.5	20.6
426073 2012 CL_{45}	17.6	X	137.35484	331.31646	138.66867	7.11750	0.0694918	0.26957909	2.3732596	20	6 5.0	20.9
426074 2012 CX_{50}	18.3	X	180.24641	357.45380	172.93614	3.27986	0.1748449	0.30223908	2.1990527	20	10 14.3	21.5
426075 2012 DG_{3}	18.4	X	179.91047	183.92476	10.69330	5.77232	0.0858405	0.30814517	2.1708633	20	11 22.1	21.2
426076 2012 DF_{8}	18.2	X	158.36652	153.60135	17.35082	3.16147	0.0952028	0.29316972	2.2441746	20	9 24.7	21.3
426077 2012 DY_{16}	18.1	X	135.08516	56.97323	117.54220	3.92626	0.1615703	0.28628872	2.2799915	20	9 5.5	21.6
426078 2012 DB_{23}	18.1	X	135.46343	257.75299	305.49698	5.17514	0.0170498	0.29705269	2.2245750	20	10 8.7	20.8
426079 2012 DR_{23}	18.7	X	200.50894	178.84389	343.44657	5.02932	0.1508972	0.30419839	2.1896000	20	10 24.8	21.7
426080 2012 DR_{25}	18.2	X	132.55264	236.34794	29.89386	5.47165	0.1684142	0.30624553	2.1798313	20	12 31.2	21.5

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Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
	m		°	°	°	°		°				
426081 2012 DA_{28}	18.3	X	129.85439	97.81756	137.46368	4.58631	0.0501318	0.30579698	2.1819623	20	11 21.3	21.0
426082 2012 DG_{31}	20.1	X	141.71319	332.15182	135.01636	20.26765	0.1273737	0.62653151	1.3526147	20	6 20.1	21.0
426083 2012 DE_{39}	18.2	X	162.03040	357.04105	226.66658	1.38198	0.1405091	0.30603976	2.1808082	20	12 6.7	21.4
426084 2012 DO_{39}	18.6	X	141.06163	358.91814	228.49572	2.53265	0.1337960	0.30029757	2.2085208	20	11 19.6	21.7
426085 2012 DR_{39}	18.3	X	106.91971	46.30749	192.48326	1.98566	0.1661545	0.29065024	2.2571249	20	10 31.5	21.6
426086 2012 DM_{43}	18.2	X	213.50201	299.50631	156.79714	1.14608	0.0294183	0.28390983	2.2927099	20	8 24.1	20.9
426087 2012 DY_{44}	17.9	X	107.68524	239.99201	40.13433	6.11709	0.1921162	0.30146533	2.2028139	20	12 25.1	21.5
426088 2012 DF_{51}	16.7	X	129.74768	185.28475	180.88137	11.21050	0.0896367	0.22294408	2.6936350	20	1 14.9	20.6
426089 2012 DQ_{52}	17.6	X	204.17816	114.94319	336.20591	6.22499	0.1218823	0.28906623	2.2653630	20	7 27.7	20.8
426090 2012 DM_{66}	17.8	X	129.72977	221.13719	342.79726	6.45635	0.0404338	0.29549936	2.2323640	20	10 3.2	20.6
426091 2012 DN_{67}	17.2	X	65.92826	204.59288	51.18883	8.14417	0.0718307	0.28283578	2.2985105	20	9 30.0	20.1
426092 2012 DD_{80}	18.3	X	223.17726	53.37485	126.39317	2.86737	0.0313841	0.31815673	2.1250801	20	—	—
426093 2012 DQ_{83}	17.2	X	71.19403	147.23267	144.60699	7.07556	0.1173186	0.29624620	2.2286106	20	11 30.7	20.3
426094 2012 DB_{88}	17.7	X	211.36296	236.33960	232.40484	4.00580	0.0810740	0.29549324	2.2323949	20	8 31.7	20.5
426095 2012 DE_{98}	17.8	X	123.25058	40.50333	85.96752	3.16696	0.1341726	0.27145047	2.3623395	20	6 16.0	21.1
426096 2012 EZ_{3}	17.8	X	193.09166	16.24205	85.35720	2.82550	0.1311510	0.28481544	2.2878473	20	7 28.0	21.1
426097 2012 EU_{4}	18.1	X	113.88699	187.13004	11.32754	5.71561	0.0654523	0.28471226	2.2884000	20	9 9.1	21.0
426098 2012 EE_{15}	17.2	X	97.16577	100.74621	130.58567	8.74747	0.1547941	0.28597186	2.2816753	20	10 14.5	20.6
426099 2012 EL_{17}	16.3	X	247.96022	182.45226	122.22935	8.95764	0.1668871	0.23926634	2.5696954	20	3 1.2	20.4
426100 2012 FM_{11}	17.0	X	155.49978	46.88447	79.51572	8.81557	0.1354167	0.27845835	2.3225365	20	7 22.2	20.5
426101 2012 FL_{12}	18.0	X	71.03873	132.22504	147.22581	2.27259	0.1169383	0.29325913	2.2437184	20	11 12.7	20.9
426102 2012 FV_{21}	18.4	X	122.02170	140.42711	73.68403	2.52026	0.0787152	0.29165383	2.2519440	20	10 11.9	21.3
426103 2012 FC_{23}	16.3	X	145.30585	151.64920	73.81310	25.16557	0.2407023	0.29330807	2.2434688	20	11 21.3	20.2
426104 2012 FW_{28}	18.3	X	176.03109	135.18676	43.55241	2.55240	0.1657031	0.29956718	2.2121092	20	10 20.9	21.4
426105 2012 FC_{34}	18.2	X	170.44289	126.39447	72.82959	4.32906	0.0922604	0.30121844	2.2040174	20	11 17.0	20.9
426106 2012 FD_{34}	18.4	X	149.39804	144.84059	119.95335	4.86901	0.1257748	0.31226009	2.1517496	20	—	—
426107 2012 FT_{43}	16.7	X	301.67073	8.33159	206.59195	13.44379	0.1922673	0.22470373	2.6795541	20	1 1.3	20.9
426108 2012 FH_{49}	18.3	X	59.81081	112.31399	162.09906	7.14958	0.1157889	0.28709334	2.2757295	20	10 23.5	21.2
426109 2012 FL_{50}	18.4	X	244.83544	333.62411	125.43244	3.79051	0.1076369	0.29891707	2.2153154	20	10 3.6	20.8
426110 2012 FU_{54}	18.0	X	45.17147	242.98635	32.91753	5.55444	0.2000359	0.27383280	2.3486181	20	10 15.2	20.9
426111 2012 FK_{55}	17.0	X	179.83407	154.16301	134.39749	5.09102	0.0361677	0.21208910	2.7847774	20	—	—
426112 2012 FN_{58}	17.9	X	94.45719	262.83546	284.30034	1.48156	0.1525857	0.27213186	2.3583945	20	8 6.9	21.2
426113 2012 FF_{61}	16.8	X	322.25519	333.44024	169.34625	6.81004	0.0471058	0.21372287	2.7705674	20	—	—
426114 2012 FH_{61}	17.8	X	161.06693	49.19174	132.58302	4.06022	0.0752096	0.29240115	2.2481054	20	10 14.6	20.8
426115 2012 FZ_{61}	17.7	X	110.66376	146.55540	86.88899	3.58909	0.1264961	0.28535999	2.2849357	20	10 26.6	21.1
426116 2012 FN_{67}	16.8	X	100.72831	114.92300	90.67481	7.37484	0.0823804	0.27386356	2.3484422	20	9 5.1	20.0
426117 2012 FJ_{68}	17.5	X	226.00529	159.18482	159.35234	12.26559	0.0672924	0.23917009	2.5703848	20	2 29.1	21.2
426118 2012 FQ_{68}	18.1	X	249.43175	305.19224	113.65185	6.25371	0.0674755	0.28474829	2.2882070	20	8 16.1	20.8
426119 2012 FW_{70}	17.7	X	91.79001	31.58559	192.38397	4.96538	0.1564677	0.27880891	2.3205893	20	9 23.8	21.0
426120 2012 GN_{3}	17.8	X	120.50372	173.34046	71.67904	1.79012	0.0637025	0.29566427	2.2315339	20	11 19.9	20.6
426121 2012 GN_{7}	17.8	X	123.49659	197.22665	8.87059	6.21390	0.0519984	0.28244611	2.3006240	20	9 29.0	20.6
426122 2012 GH_{10}	16.7	X	262.75697	238.16067	17.02036	12.04469	0.1649416	0.22382473	2.6865649	20	1 18.3	21.1
426123 2012 GC_{11}	18.3	X	66.96166	235.96823	5.98006	6.96000	0.0718619	0.27782746	2.3260512	20	9 8.7	21.0
426124 2012 GV_{14}	16.5	X	154.03543	135.93058	208.75788	5.64117	0.0161526	0.22118146	2.7079267	20	1 8.9	20.3
426125 2012 GQ_{19}	16.9	X	265.50579	204.67987	32.98876	14.58747	0.1373241	0.21913112	2.7247919	20	—	—
426126 2012 GJ_{20}	16.1	X	238.33627	133.58500	121.54212	9.88386	0.1134327	0.21728003	2.7402457	20	—	—
426127 2012 GF_{23}	17.6	X	185.16765	169.03649	34.49771	6.97578	0.1311736	0.30613417	2.1803598	20	12 5.2	20.6
426128 2012 GZ_{23}	18.1	X	169.55860	131.38859	26.35984	6.77275	0.1227132	0.28905544	2.2654194	20	9 19.4	21.3
426129 2012 GR_{31}	18.1	X	283.83234	121.02939	355.11848	2.87432	0.0324462	0.30722690	2.1751868	20	—	—
426130 2012 GW_{32}	17.5	X	335.33018	166.20530	145.28638	1.85404	0.1967065	0.26287034	2.4134686	20	7 13.7	19.1
426131 2012 GZ_{39}	16.9	X	277.81186	84.78035	173.96711	12.62168	0.1903891	0.22664124	2.6642610	20	1 29.2	21.2
426132 2012 GN_{40}	17.0	X	80.24613	139.78025	96.75525	23.34994	0.1939063	0.27955522	2.3164574	20	10 16.1	21.0
426133 2012 HP_{17}	16.7	X	323.55450	153.86899	90.16928	10.74869	0.1577423	0.23680049	2.5875037	20	3 19.1	19.9
426134 2012 HL_{21}	16.8	X	275.21757	75.48340	118.39220	4.95089	0.0400609	0.20999284	2.8032794	20	—	—
426135 2012 HX_{22}	16.7	X	292.93331	231.70720	83.79930	13.83209	0.2777082	0.23973502	2.5663451	20	4 22.2	20.4
426136 2012 HD_{23}	16.6	X	275.97825	98.47201	167.06680	13.59485	0.1685080	0.22759799	2.6567892	20	2 7.1	20.7
426137 2012 HU_{25}	16.4	X	256.57062	170.72123	49.30243	13.72506	0.1112374	0.21465850	2.7625108	20	—	—
426138 2012 HJ_{26}	18.4	X	91.61463	55.17708	158.88917	2.41340	0.1603185	0.27414841	2.3468152	20	9 10.9	21.6
426139 2012 HU_{28}	17.9	X	99.11399	123.18409	104.41544	7.00209	0.1624039	0.27988763	2.3146229	20	10 11.2	21.4
426140 2012 HJ_{29}	16.2	X	283.34499	4.26441	227.81006	16.10876	0.0733842	0.21691712	2.7433012	20	1 15.4	20.4
426141 2012 HG_{30}	17.3	X	95.58509	115.03154	66.44403	8.62587	0.0427787	0.26356943	2.4091991	20	7 17.4	20.5
426142 2012 HH_{30}	17.8	X	61.97638	177.66079	96.91851	4.00286	0.2075761	0.27707101	2.3302830	20	11 4.5	21.1
426143 2012 HC_{32}	15.5	X	27.09352	267.50334	102.29351	15.01118	0.1134189	0.17676804	3.1443694	20	12 16.9	19.8
426144 2012 HK_{33}	16.8	X	135.49542	132.45858	40.52763	22.81715	0.0379804	0.27738721	2.3285117	20	9 11.9	20.4
426145 2012 HD_{37}	17.7	X	219.41602	348.11707	79.92566	5.96692	0.1292598	0.27267927	2.3552371	20	7 10.6	20.9
426146 2012 HZ_{38}	17.3	X	257.02474	223.60859	72.48761	3.17124	0.1863617	0.22516935	2.6758589	20	2 27.2	21.5
426147 2012 HA_{39}	16.2	X	128.80457	206.82391	58.50447	11.95423	0.1044274	0.17472670	3.1688124	20	12 1.2	21.1
426148 2012 HT_{39}	17.4	X	77.40164	136.54927	101.51929	2.24587	0.1994660	0.27491480	2.3424516	20	10 2.9	20.7
426149 2012 HQ_{40}	17.8	X	49.98160	217.31991	58.32095	6.90643	0.1039684	0.27546905	2.3393086	20	10 8.9	20.7
426150 2012 HG_{45}	17.0	X	236.31544	55.60688	203.89224	9.66262	0.0735381	0.21339487	2.7734057	20	—	—
426151 2012 HM_{46}	16.9	X	254.90118	220.11053	63.69995	15.33756	0.2150907	0.22274260	2.6952591	20	2 12.8	21.6
426152 2012 HA_{52}	16.4	X	344.97348	104.94433	61.15492	29.86417	0.1336823	0.23191409	2.6237228	20	1 2.3	20.0
426153 2012 HU_{53}	17.7	X	117.16442	91.59883	92.79127	3.70119	0.1709893	0.27637503	2.3341934	20	8 31.8	21.2
426154 2012 HA_{54}	17.0	X	285.91134	157.12358	76.81272	6.64272	0.0843760	0.22462588	2.6801732	20	1 23.6	20.7
426155 2012 HT_{56}	17.9	X	89.71562	179.32366	43.71369	6.41144	0.1125814	0.27671846	2.3322618	20	9 18.8	21.1
426156 2012 HC_{58}	16.5	X	345.19167	88.76974	120.95914	10.93721	0.0540107	0.23311240	2.6147237	20	3 17.9	19.9
426157 2012 HO_{59}	17.5	X	126.44099	161.03430	83.34270	4.87769	0.1462502	0.29094761	2.2555867	20	11 25.7	21.0
426158 2012 HQ_{59}	17.1	X	294.19645	132.05278	169.70672	4.52545	0.1782409	0.23995035	2.5648095	20	4 15.2	20.3
426159 2012 HX_{64}	18.2	X	52.05734	147.94349	139.48331	3.65979	0.1673179	0.27803024	2.3249201	20	11 5.2	21.3
426160 2012 HK_{71}	17.8	X	72.58131	25.90277	218.92114	5.66050	0.0874113	0.27483562	2.3429015	20	9 18.5	20.8

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		°	°	°	°		°				
426161 2012 HZ_{72}	17.7	X	55.16063	240.08368	40.30105	7.53002	0.1078365	0.28241388	2.3007991	20	10 22.2	20.5
426162 2012 HK_{73}	17.2	X	256.96216	138.96244	187.78012	6.68701	0.2491969	0.23357069	2.6113023	20	3 27.7	21.4
426163 2012 HT_{74}	17.6	X	49.93685	159.05616	72.58722	6.82959	0.0797755	0.26332406	2.4106955	20	7 30.4	20.5
426164 2012 HN_{77}	16.7	X	58.36459	274.36792	223.98603	13.80725	0.0380822	0.23445248	2.6047507	20	3 20.2	20.3
426165 2012 HR_{77}	18.7	X	83.27039	173.68338	49.29263	3.40507	0.1509712	0.27191436	2.3596520	20	9 13.7	21.9
426166 2012 HW_{77}	17.7	X	78.32331	0.40502	231.31535	6.89811	0.1548926	0.27391258	2.3481620	20	9 15.7	21.1
426167 2012 JN	16.5	X	73.26241	319.20169	258.60948	22.81070	0.2712593	0.27017933	2.3697433	20	8 26.4	20.6
426168 2012 JT_{1}	17.1	X	305.16682	63.91249	180.54405	7.19260	0.1790405	0.22910653	2.6451141	20	2 12.5	20.6
426169 2012 JK_{2}	17.1	X	51.75979	157.11747	129.17491	6.86728	0.0998235	0.28175145	2.3044039	20	10 26.9	20.1
426170 2012 JY_{2}	17.9	X	156.63050	139.41719	43.76698	4.94083	0.1155637	0.28527855	2.2853706	20	10 8.5	21.1
426171 2012 JK_{3}	17.8	X	112.81051	11.37107	217.93902	1.85473	0.1900156	0.28651806	2.2787747	20	10 24.9	21.4
426172 2012 JJ_{4}	17.3	X	228.64021	40.86217	110.43174	6.65606	0.0852623	0.29874328	2.2161745	20	11 27.2	19.8
426173 2012 JV_{7}	18.0	X	114.44636	345.02514	228.98727	2.33880	0.1333965	0.27966500	2.3158511	20	10 2.5	21.4
426174 2012 JG_{9}	17.6	X	60.83969	187.58002	59.33598	2.91356	0.0790147	0.26972297	2.3724155	20	9 7.2	20.5
426175 2012 JQ_{10}	18.0	X	39.94493	175.86464	74.60499	4.20424	0.1918999	0.26216575	2.4177910	20	8 30.9	20.7
426176 2012 JZ_{12}	16.0	X	150.25145	165.04744	130.47475	10.19062	0.0854946	0.19092736	2.9869224	20	—	—
426177 2012 JB_{13}	16.0	X	107.79141	314.79333	61.35753	12.54298	0.0767912	0.20480250	2.8504442	20	1 3.6	20.0
426178 2012 JT_{15}	16.7	X	259.32984	99.54470	152.11333	9.37648	0.0539948	0.21471522	2.7620243	20	1 17.9	20.7
426179 2012 JK_{18}	17.6	X	306.78581	22.72889	235.68283	3.18043	0.1524015	0.23640853	2.5903630	20	3 6.8	20.9
426180 2012 JX_{18}	17.9	X	30.00024	40.75718	209.85720	0.87378	0.1439895	0.26089624	2.4256278	20	8 2.7	20.3
426181 2012 JE_{21}	16.6	X	286.19351	320.13843	305.73166	11.63457	0.2536791	0.22767853	2.6561626	20	2 8.5	20.8
426182 2012 JQ_{23}	16.2	X	346.39419	107.17842	104.93763	15.96489	0.0713284	0.23137601	2.6277890	20	3 25.5	19.7
426183 2012 JO_{25}	16.8	X	217.23039	241.22681	61.27435	5.91383	0.1438582	0.21479238	2.7613628	20	2 2.7	21.3
426184 2012 JP_{27}	18.1	X	143.02307	72.29607	103.28329	3.03412	0.1478662	0.27679500	2.3318318	20	9 13.5	21.6
426185 2012 JF_{34}	17.2	X	335.26175	219.39173	32.44541	5.72285	0.1841926	0.24107311	2.5568399	20	4 9.6	19.8
426186 2012 JS_{38}	16.6	X	230.34245	71.26315	203.13071	9.90142	0.0535435	0.21454286	2.7635034	20	1 12.2	20.8
426187 2012 JV_{41}	16.9	X	193.08672	263.20958	60.15786	9.89320	0.1522427	0.21233703	2.7826092	20	2 7.7	21.6
426188 2012 JJ_{42}	17.3	X	218.58618	127.56473	180.03287	3.32696	0.1845658	0.21684502	2.7439093	20	2 6.2	21.9
426189 2012 JP_{42}	17.8	X	21.53665	62.32125	236.42580	5.79608	0.1224030	0.27159368	2.3615090	20	9 25.6	20.5
426190 2012 JB_{46}	16.6	X	346.97305	122.40617	89.81388	8.39471	0.1424127	0.23493461	2.6011858	20	3 15.2	19.5
426191 2012 JQ_{48}	17.4	X	51.18788	247.83745	68.40732	8.25742	0.1403255	0.28901739	2.2656182	20	12 9.2	20.2
426192 2012 JR_{50}	17.2	X	177.09757	180.01208	212.06325	7.00384	0.0225773	0.24133365	2.5549994	20	4 5.4	20.6
426193 2012 JE_{58}	16.9	X	188.61743	268.00048	67.43497	9.86393	0.2255634	0.21738472	2.7393659	20	2 19.7	21.8
426194 2012 JP_{63}	18.1	X	191.97104	90.47462	54.10264	6.49030	0.1997551	0.28947438	2.2632331	20	9 21.1	21.6
426195 2012 JY_{66}	16.9	X	278.30414	60.04483	244.83986	13.90200	0.1119263	0.23415342	2.6069681	20	4 3.2	20.7
426196 2012 KQ	18.1	X	18.18669	203.16245	83.06966	3.37497	0.1759141	0.26724011	2.3870872	20	9 13.7	20.4
426197 2012 KV_{1}	17.6	X	247.64051	97.54083	158.55349	5.39870	0.0932123	0.21673413	2.7448451	20	1 7.4	21.8
426198 2012 KK_{2}	16.7	X	317.55139	136.60519	146.85496	13.57160	0.2368169	0.23958186	2.5674388	20	4 19.3	19.8
426199 2012 KS_{2}	16.9	X	329.23106	6.01177	204.69398	12.60196	0.2217076	0.22949978	2.6420916	20	1 23.9	20.4
426200 2012 KU_{2}	17.2	X	340.42314	72.65404	143.37079	5.28761	0.1023330	0.23531367	2.5983917	20	3 10.4	20.2
426201 2012 KN_{10}	16.6	X	68.36205	354.71685	93.70295	7.35012	0.0202905	0.21718273	2.7410641	20	2 3.8	20.2
426202 2012 KB_{12}	16.1	X	125.96242	309.61818	118.92366	22.60592	0.0350619	0.22882960	2.6472477	20	4 1.4	20.3
426203 2012 KD_{20}	18.5	X	29.35684	147.06799	138.12974	2.54617	0.2073492	0.26864630	2.3787501	20	10 6.4	21.1
426204 2012 KM_{23}	15.7	X	105.67612	186.72784	117.19320	30.32263	0.1657309	0.17480968	3.1678096	20	12 30.1	21.0
426205 2012 KA_{25}	17.0	X	141.37230	351.78889	66.65063	3.46786	0.0814662	0.23928823	2.5695387	20	4 3.9	20.5
426206 2012 KE_{33}	18.2	X	116.86600	112.47814	92.16594	2.75461	0.1852584	0.27938652	2.3173898	20	9 27.8	21.9
426207 2012 KV_{33}	17.8	X	216.89416	40.28265	115.47995	4.63534	0.1018865	0.29544757	2.2326249	20	11 13.9	20.5
426208 2012 KP_{35}	18.4	X	45.00508	128.00063	154.05841	3.24604	0.1760560	0.27539336	2.3397372	20	10 20.6	21.2
426209 2012 KG_{39}	17.8	X	317.93810	150.63781	158.47676	5.23902	0.1971102	0.25173223	2.4841444	20	5 30.9	20.4
426210 2012 KM_{40}	17.8	X	285.21836	332.81019	141.18343	4.26168	0.0961996	0.30299283	2.1954041	20	—	—
426211 2012 KV_{45}	16.3	X	236.48099	191.01447	132.12732	16.52555	0.1453781	0.22274206	2.6952635	20	3 17.7	20.7
426212 2012 KF_{46}	16.5	X	308.74925	31.92119	210.60694	13.46891	0.2190048	0.22691609	2.6621091	20	2 6.1	20.4
426213 2012 KL_{46}	15.8	X	245.57460	337.21235	247.11052	19.31617	0.1245784	0.20278181	2.8693491	20	—	—
426214 2012 KO_{46}	16.0	X	161.58762	167.56011	83.57366	16.28965	0.1553369	0.17889306	3.1194191	20	12 15.6	21.2
426215 2012 KY_{46}	17.5	X	53.82133	170.64230	86.45384	7.17262	0.1844694	0.26685224	2.3893998	20	9 30.7	20.7
426216 2012 KJ_{49}	16.4	X	229.59888	232.07834	110.00005	15.05575	0.0966108	0.22909322	2.6452165	20	4 9.4	20.6
426217 2012 KM_{49}	16.8	X	230.02233	204.10430	107.53096	6.05408	0.1030998	0.22040417	2.7142896	20	2 26.8	20.9
426218 2012 KL_{50}	16.6	X	282.66412	196.67223	116.45385	16.66752	0.2820264	0.23310719	2.6147627	20	4 8.7	20.8
426219 2012 LL_{6}	16.5	X	205.78278	206.85123	102.92723	10.48981	0.1449098	0.21014668	2.8019112	20	1 31.9	21.1
426220 2012 LT_{8}	16.0	X	95.26989	237.86903	123.55456	11.81173	0.1140993	0.19183151	2.9775296	20	—	—
426221 2012 LQ_{12}	16.6	X	333.30550	354.39079	276.37854	10.01747	0.0866140	0.23409913	2.6073711	20	5 13.7	19.7
426222 2012 LS_{15}	17.1	X	44.78518	34.85377	141.72387	9.06368	0.1631926	0.24380697	2.5376904	20	5 14.6	19.9
426223 2012 LA_{18}	16.8	X	178.66152	245.04394	116.49534	7.14548	0.0568089	0.22128550	2.7070778	20	3 5.6	20.7
426224 2012 LH_{24}	16.6	X	305.08236	181.93779	107.72854	12.64287	0.0804904	0.22988935	2.6391059	20	5 4.7	20.2
426225 2012 LM_{24}	16.8	X	224.83286	127.55914	179.02010	8.65910	0.1603104	0.21572857	2.7533680	20	2 10.1	21.5
426226 2012 LA_{25}	15.2	X	76.96894	230.14193	114.98940	27.94559	0.1368807	0.17713846	3.1399842	20	—	—
426227 2012 MT_{1}	17.9	X	72.22471	147.39386	126.20141	4.48583	0.1934888	0.27067136	2.3668706	20	11 11.4	21.4
426228 2012 MC_{5}	16.8	X	1.34768	16.68125	182.50806	13.42270	0.0919494	0.23078121	2.6323022	20	3 21.6	19.9
426229 2012 MW_{8}	16.3	X	51.35454	283.29748	275.40051	12.48090	0.1149366	0.23758937	2.5817729	20	6 16.9	19.4
426230 2012 MA_{9}	15.6	X	157.11430	192.46193	125.53631	23.07922	0.0995086	0.18603850	3.0390242	20	—	—
426231 2012 OS_{1}	16.5	X	117.21050	189.10156	166.70168	11.21394	0.2147689	0.17732388	3.1377950	20	1 11.9	21.4
426232 2012 OL_{2}	16.1	X	104.47252	149.95221	231.46539	5.69139	0.0566801	0.18471531	3.0535201	20	1 5.8	20.4
426233 2012 OT_{2}	16.0	X	124.40353	118.66829	222.34150	10.65298	0.1372232	0.17834037	3.1258606	20	—	—
426234 2012 OZ_{2}	16.9	X	293.72207	189.51424	102.74416	11.59470	0.2614325	0.22561505	2.6723336	20	3 26.7	20.9
426235 2012 OD_{3}	17.8	X	26.85235	235.48750	53.94216	3.02455	0.2065717	0.25879319	2.4387512	20	10 6.4	20.5
426236 2012 PX_{3}	16.2	X	292.14981	206.46592	321.78292	7.35657	0.0180565	0.16784741	3.2548148	20	—	—
426237 2012 PX_{4}	15.6	X	111.51072	65.17300	301.11179	8.28805	0.0744746	0.17801736	3.1296407	20	1 1.2	20.1
426238 2012 PR_{9}	16.6	X	13.02326	247.72275	215.94754	8.42754	0.0621475	0.17569960	3.1571038	20	—	—
426239 2012 PD_{10}	15.7	X	317.05952	248.64417	254.11941	7.73206	0.0866232	0.17070581	3.2183789	20	—	—
426240 2012 PL_{14}	16.6	X	181.17990	143.51346	172.83350	11.63600	0.1912656	0.18369142	3.0648564	20	1 19.8	21.9

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	m		°	°	°	°		°				
426241 2012 PE_{16}	16.3	X	183.97103	111.41232	174.71550	4.56857	0.2765753	0.18276992	3.0751495	20	—	—
426242 2012 PN_{16}	16.9	X	349.24534	276.09773	7.77613	17.54140	0.1446051	0.23827384	2.5768262	20	7 3.7	19.9
426243 2012 PE_{17}	15.5	X	91.23442	258.31742	171.34543	27.31555	0.0933097	0.18492245	3.0512395	20	2 21.1	19.8
426244 2012 PB_{18}	15.8	X	23.07799	151.18346	279.03391	10.78039	0.0592380	0.17286031	3.1915809	20	—	—
426245 2012 PG_{20}	16.3	X	191.29054	114.02059	168.33906	10.47616	0.0850326	0.18009300	3.1055474	20	—	—
426246 2012 PA_{22}	16.1	X	175.36357	21.76834	269.86807	5.61772	0.1312524	0.17902331	3.1179058	20	—	—
426247 2012 PS_{27}	16.5	X	30.78575	85.33530	146.31084	16.74433	0.1373904	0.23392191	2.6086879	20	7 3.5	19.7
426248 2012 PJ_{30}	16.9	X	34.12079	239.91222	50.48854	2.69466	0.1695263	0.25542301	2.4601563	20	10 11.6	19.7
426249 2012 PS_{33}	15.7	X	167.86179	341.19353	306.05910	17.78359	0.0770034	0.17438470	3.1729542	20	—	—
426250 2012 PT_{36}	15.9	X	161.68564	323.37900	326.23654	2.66868	0.1267414	0.17307858	3.1888970	20	—	—
426251 2012 PT_{37}	15.9	X	130.24446	1.66230	340.67643	8.82597	0.0787477	0.17615989	3.1516019	20	—	—
426252 2012 PQ_{38}	17.0	X	323.22772	160.41156	165.04642	11.09729	0.0649167	0.23945779	2.5683256	20	7 18.2	20.3
426253 2012 PE_{44}	15.9	X	210.25278	254.27921	359.74809	9.66175	0.0484628	0.17463942	3.1698682	20	—	—
426254 2012 QP	16.4	X	359.39025	206.01015	331.17768	10.73921	0.0461239	0.20260974	2.8709734	20	2 24.1	20.0
426255 2012 QU_2	16.5	X	64.16135	309.90881	28.59621	24.41150	0.3293579	0.27339354	2.3511331	20	—	—
426256 2012 QT_{20}	16.4	X	266.32942	272.05674	347.30333	8.15413	0.0259788	0.18802333	3.0175992	20	2 13.8	20.6
426257 2012 QB_{23}	15.7	X	62.39616	88.63541	337.11129	11.06786	0.0388912	0.17439431	3.1728376	20	1 8.8	20.2
426258 2012 QB_{25}	15.7	X	283.80008	214.54294	345.99923	17.88147	0.0681500	0.17439131	3.1728740	20	—	—
426259 2012 QG_{25}	16.7	X	315.37044	320.49993	326.04177	5.58242	0.0336803	0.21646863	2.7470891	20	5 14.6	20.4
426260 2012 QG_{28}	16.2	X	49.96995	255.48020	177.58722	10.77614	0.0496930	0.17088763	3.2160957	20	—	—
426261 2012 QS_{29}	17.0	X	315.92334	299.00507	340.02282	10.72744	0.2799706	0.22577027	2.6711086	20	3 26.2	20.3
426262 2012 QO_{38}	15.7	X	234.82939	110.03974	162.14126	15.41370	0.1678847	0.18956150	3.0012531	20	1 13.1	20.8
426263 2012 QW_{38}	15.6	X	173.92178	12.81432	303.86531	10.13449	0.0703490	0.18010050	3.1054612	20	1 10.8	20.3
426264 2012 QA_{39}	16.4	X	279.29744	131.31820	179.14350	16.48521	0.1959021	0.21793239	2.7347745	20	4 7.4	20.4
426265 2012 QZ_{41}	16.0	X	172.06566	52.78499	266.44535	9.19912	0.2439432	0.18444210	3.0565348	20	1 18.1	21.3
426266 2012 QB_{43}	15.3	X	208.28883	288.25977	303.17771	14.85339	0.0332819	0.16854609	3.2458138	20	—	—
426267 2012 QQ_{51}	16.8	X	342.47853	189.43943	127.14261	8.19682	0.2803783	0.24215203	2.5492395	20	8 7.4	18.1
426268 2012 RR_5	16.5	X	166.52159	160.44259	177.36632	6.53543	0.1325677	0.18378973	3.0637633	20	1 29.2	21.4
426269 2012 RF_{27}	15.9	X	142.32288	244.86780	177.07652	18.00135	0.1449099	0.20064456	2.8896891	20	4 18.3	20.5
426270 2012 RK_{32}	17.3	X	342.25111	152.01295	167.73775	12.71039	0.1728207	0.24044387	2.5612988	20	8 9.8	19.6
426271 2012 RY_{37}	15.6	X	193.32898	319.08848	344.02801	11.42274	0.1328273	0.17862929	3.1224892	20	1 18.2	20.7
426272 2012 RS_{40}	15.9	X	339.39132	343.95140	309.74784	11.73771	0.1437436	0.23097752	2.6308105	20	6 26.5	18.7
426273 2012 SL_4	16.3	X	206.52684	250.40148	56.13895	4.63592	0.1551297	0.18419916	3.0592217	20	1 31.7	21.4
426274 2012 SD_8	16.2	X	250.70184	279.75354	343.71167	7.61023	0.0690386	0.18604648	3.0389374	20	1 27.8	20.7
426275 2012 SX_{17}	15.9	X	30.28776	294.49874	200.74669	8.71707	0.0568487	0.18066047	3.0990408	20	2 15.1	20.1
426276 2012 SL_{23}	16.6	X	93.10274	64.32275	36.82576	6.23742	0.0347614	0.19110283	2.9850937	20	3 27.9	20.7
426277 2012 SD_{31}	16.9	X	274.69367	320.16546	25.72679	6.43441	0.0596636	0.21293059	2.7774356	20	6 4.4	20.7
426278 2012 SB_{34}	16.4	X	145.47685	355.38577	358.51594	10.42972	0.0769627	0.17777903	3.1324371	20	1 27.7	21.1
426279 2012 SX_{52}	16.1	X	168.38396	107.69302	206.30670	8.73112	0.0607747	0.17436648	3.1731752	20	—	—
426280 2012 SL_{55}	16.3	X	211.74446	94.76132	194.12235	9.24232	0.0539804	0.17505314	3.1648717	20	1 15.4	21.2
426281 2012 SP_{61}	16.4	X	10.24914	71.38405	169.51015	4.01085	0.0392224	0.21962649	2.7206932	20	6 3.8	19.8
426282 2012 TU_{23}	15.8	X	205.85369	355.84543	332.29750	8.90943	0.1126984	0.19060889	2.9902485	20	2 23.3	20.4
426283 2012 TK_{25}	16.7	X	336.09060	108.04636	191.86204	11.30202	0.1958388	0.23003807	2.6379683	20	6 22.9	19.4
426284 2012 TJ_{26}	16.2	X	182.34936	339.08802	351.44892	13.37996	0.0683102	0.18431225	3.0579702	20	2 7.2	20.9
426285 2012 TW_{31}	16.0	X	184.37789	303.77032	13.52974	9.62731	0.0830754	0.17482474	3.1676277	20	1 25.5	21.0
426286 2012 TL_{36}	16.4	X	100.04324	235.35517	189.00233	20.70922	0.1465119	0.18639069	3.0351948	20	3 2.9	20.8
426287 2012 TF_{41}	15.5	X	187.32926	295.71354	352.96542	16.02169	0.0780467	0.16828948	3.2491124	20	—	—
426288 2012 TA_{51}	16.5	X	209.72466	280.42645	20.47494	1.40811	0.1802615	0.18339780	3.0681267	20	1 26.8	21.6
426289 2012 TE_{52}	14.3	X	275.05469	33.38581	294.82006	5.35710	0.0671468	0.08457870	5.1399872	20	5 13.6	21.1
426290 2012 TC_{58}	15.8	X	183.92146	293.77280	6.65573	16.18887	0.0983016	0.17052874	3.2206064	20	1 6.4	21.1
426291 2012 TF_{70}	16.3	X	193.03016	199.54010	123.79235	2.05686	0.1619805	0.18142148	3.0903684	20	2 7.6	21.4
426292 2012 TA_{74}	13.6	X	240.08365	155.76232	200.22738	24.23196	0.0365620	0.08043452	5.3150548	20	5 12.7	20.8
426293 2012 TH_{82}	15.9	X	248.22231	233.67207	15.23282	16.46227	0.1704064	0.18045121	3.1014362	20	1 1.2	21.2
426294 2012 TA_{84}	16.1	X	199.13002	80.79104	203.64941	15.42982	0.2066585	0.17392568	3.1785344	20	—	—
426295 2012 TV_{90}	16.3	X	171.61314	153.35204	169.02991	8.00817	0.1614302	0.17725205	3.1386427	20	1 18.7	21.5
426296 2012 TB_{94}	16.6	X	211.95507	145.71308	152.43385	4.80548	0.1560693	0.18408382	3.0604994	20	1 24.8	21.6
426297 2012 TD_{108}	15.7	X	166.24161	274.84716	13.90980	10.12917	0.0423603	0.15363231	3.4526112	20	—	—
426298 2012 TH_{119}	16.4	X	333.44810	58.88014	235.11318	8.40576	0.1583418	0.22368062	2.6877187	20	6 11.9	19.1
426299 2012 TF_{128}	15.9	X	17.22551	7.20851	138.95756	6.37118	0.0894209	0.17959547	3.1112803	20	2 13.3	19.6
426300 2012 TE_{131}	17.3	X	68.17481	116.90989	192.10708	4.33289	0.1997121	0.26440236	2.4041368	20	12 19.5	20.9
426301 2012 TM_{136}	17.4	X	34.73770	215.68830	60.44503	5.78423	0.2106647	0.24418241	2.5350886	20	9 29.6	20.4
426302 2012 TG_{139}	16.0	X	156.88730	42.41479	339.45329	10.17726	0.0967242	0.18513334	3.0489219	20	3 9.2	20.7
426303 2012 TG_{145}	16.2	X	329.87272	206.67929	354.05029	10.10424	0.0362968	0.19059534	2.9903903	20	2 19.5	20.3
426304 2012 TP_{162}	16.0	X	318.38786	21.92168	197.94017	10.28613	0.0430516	0.18376469	3.0640417	20	2 23.1	20.3
426305 2012 TO_{163}	16.2	X	193.33687	245.34484	72.11480	6.08136	0.1260425	0.17849303	3.1240780	20	2 2.4	21.2
426306 2012 TB_{164}	15.9	X	162.17288	160.63749	155.60902	5.85717	0.1242620	0.16737755	3.2609032	20	1 3.1	21.0
426307 2012 TP_{165}	16.2	X	237.40568	161.36924	117.09472	2.25236	0.1575656	0.18531035	3.0469799	20	1 24.5	21.0
426308 2012 TE_{166}	16.0	X	247.15222	181.69238	100.91109	6.11260	0.1685917	0.18765255	3.0215728	20	2 6.9	20.9
426309 2012 TA_{176}	16.4	X	20.29036	299.21747	199.89835	5.66257	0.0770660	0.17892434	3.1190555	20	2 7.2	20.5
426310 2012 TX_{186}	15.9	X	147.53117	347.93444	51.57629	10.07838	0.1175732	0.17856833	3.1231997	20	3 28.2	20.8
426311 2012 TT_{201}	14.1	X	293.85621	261.80443	34.90745	12.91655	0.0776812	0.08134745	5.2752139	20	4 29.1	21.0
426312 2012 TA_{215}	17.8	X	96.19592	236.03761	51.41403	3.60144	0.1777928	0.26900996	2.3766058	20	12 17.8	21.4
426313 2012 TD_{224}	15.9	X	217.58304	289.98026	20.65138	21.79996	0.0493881	0.18529456	3.0471530	20	2 27.6	20.7
426314 2012 TD_{243}	16.7	X	337.93961	106.04192	161.85114	4.54844	0.0629169	0.21052594	2.7985451	20	5 22.8	20.2
426315 2012 TJ_{259}	16.9	X	290.73435	106.48840	171.35898	2.14005	0.0227865	0.20202695	2.8764920	20	4 4.5	20.7
426316 2012 TY_{264}	16.0	X	267.78662	97.05268	128.95826	2.23009	0.0914643	0.16885821	3.2418128	20	—	—
426317 2012 TJ_{271}	16.0	X	217.66258	229.09566	78.61483	3.96591	0.1701951	0.18571253	3.0425794	20	2 10.8	21.1
426318 2012 TC_{310}	16.3	X	207.38210	51.44790	294.95665	10.00768	0.1466471	0.19229309	2.9727628	20	3 11.7	21.4
426319 2012 TM_{315}	16.4	X	6.94734	257.03847	99.73458	10.20588	0.2788457	0.25796689	2.4439561	20	12 19.6	18.9
426320 2012 UM_2	16.1	X	257.80099	181.12378	124.86973	3.08058	0.0815639	0.19742314	2.9210389	20	3 23.8	20.2

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	m		°	°	°	°		°				
426321 2012 UF_{16}	17.2	X	338.34320	255.78461	35.33868	12.05762	0.1912425	0.22465861	2.6799129	20	6 13.0	19.9
426322 2012 UY_{34}	16.2	X	170.46103	147.89905	176.69756	6.70952	0.1304563	0.16981650	3.2296054	20	1 19.4	21.4
426323 2012 UG_{94}	16.0	X	260.62296	124.91055	139.82488	6.84467	0.0865212	0.18228052	3.0806513	20	2 5.8	20.5
426324 2012 UR_{94}	16.9	X	2.46765	146.94145	165.05434	9.01198	0.1703900	0.23867865	2.5739118	20	9 13.7	19.3
426325 2012 UE_{128}	16.3	X	250.93491	349.92996	300.32325	8.12053	0.1253137	0.18770155	3.0210470	20	2 19.5	21.1
426326 2012 US_{137}	14.2	X	256.64435	143.31380	199.84604	28.75198	0.0609294	0.08200253	5.2470823	20	5 13.0	21.4
426327 2012 UD_{139}	15.9	X	182.71392	311.31212	7.48785	10.73920	0.1223508	0.17577673	3.1561802	20	1 27.3	21.0
426328 2012 UP_{139}	15.9	X	276.99793	291.35169	326.61325	10.18463	0.1254064	0.18735575	3.0247631	20	2 10.9	20.5
426329 2012 UJ_{156}	17.0	X	356.91804	261.16881	14.33894	10.71032	0.2109757	0.22689993	2.6622355	20	7 6.9	19.5
426330 2012 UG_{167}	16.2	X	285.75183	245.77325	86.60559	6.41153	0.1235906	0.21501738	2.7594360	20	5 24.2	19.8
426331 2012 UA_{172}	15.9	X	14.53748	313.22081	12.04951	8.02942	0.1759042	0.23968990	2.5666672	20	10 24.6	18.7
426332 2012 UK_{176}	16.7	X	28.85441	81.76791	44.94706	2.68813	0.0341319	0.17341225	3.1848051	20	2 6.9	21.0
426333 2012 VG_{39}	15.7	X	188.62095	350.66113	35.91025	15.62213	0.0923115	0.19083345	2.9879022	20	4 18.0	20.3
426334 2012 VK_{45}	15.8	X	201.82393	244.47257	114.37044	9.07675	0.0847300	0.18240163	3.0792876	20	4 1.2	20.6
426335 2012 VP_{57}	15.9	X	273.36272	53.30950	222.57244	11.75721	0.1016280	0.18419159	3.0593055	20	2 26.7	20.6
426336 2012 VE_{78}	15.8	X	280.00297	136.48507	170.51481	9.71782	0.1013309	0.19872538	2.9082640	20	4 18.7	19.9
426337 2012 VV_{100}	15.5	X	295.68175	52.83903	181.77613	16.05416	0.0505884	0.17713072	3.1400757	20	2 12.6	20.1
426338 2012 WL_{1}	15.9	X	226.47067	261.57079	48.41595	9.90461	0.0558781	0.17682781	3.1436607	20	3 2.0	20.7
426339 2012 WL_{12}	16.0	X	196.00767	280.04345	71.66528	12.66570	0.0901110	0.18009785	3.1054916	20	3 20.5	21.0
426340 2013 EB_{19}	17.9	X	275.22576	204.26693	0.45999	20.81165	0.0663001	0.38660783	1.8661890	20	—	—
426341 2013 FD_{16}	18.0	X	329.97952	258.53315	43.99402	5.35091	0.1805046	0.29887945	2.2155013	20	6 17.9	19.6
426342 2013 GG_{12}	16.8	X	297.55478	294.37974	14.83498	23.10130	0.2348212	0.28393355	2.2925821	20	4 13.3	19.5
426343 2013 GT_{91}	17.4	X	5.36452	9.70396	241.01641	6.78931	0.1838768	0.28989277	2.2610550	20	6 16.6	18.8
426344 2013 GZ_{94}	17.5	X	334.99872	60.42239	218.08892	6.81652	0.1545824	0.29083330	2.2561776	20	5 22.6	19.2
426345 2013 HA_{15}	17.6	X	188.03808	154.17890	82.61056	23.95019	0.0420655	0.35886516	1.9611697	20	—	—
426346 2013 KM_{2}	16.8	X	307.74651	216.62321	139.83487	25.14716	0.2094207	0.27526527	2.3404629	20	7 23.4	19.0
426347 2013 KO_{2}	16.8	X	184.36817	230.00682	141.44076	14.08813	0.2091524	0.23037311	2.6354100	20	3 28.3	21.4
426348 2013 KA_{4}	16.0	X	215.27881	202.84066	144.44550	20.92435	0.2976852	0.23508323	2.6000895	20	3 21.6	20.9
426349 2013 KG_{15}	17.6	X	268.03034	149.02188	242.98882	8.84190	0.0963817	0.29823190	2.2187072	20	7 26.6	20.3
426350 2013 LR_{5}	18.0	X	263.13018	86.98181	90.73496	24.16524	0.0541841	0.36031003	1.9559233	20	—	—
426351 2013 LX_{19}	18.6	X	6.54268	226.72112	102.31958	4.66671	0.2074126	0.30696172	2.1764394	20	11 12.3	20.5
426352 2013 LX_{23}	17.3	X	305.67402	259.20928	89.44325	6.75849	0.1270791	0.29505225	2.2346187	20	7 22.8	19.2
426353 2013 LW_{31}	17.1	X	220.75604	141.55474	165.57988	13.63899	0.2687219	0.23158662	2.6261956	20	2 3.6	21.9
426354 2013 LY_{32}	17.6	X	165.62726	171.51673	131.48333	24.54930	0.0595678	0.35508332	1.9750702	20	—	—
426355 2013 MA_{4}	16.5	X	87.44741	78.31091	287.86823	13.28034	0.3422626	0.19005706	2.9960338	20	1 6.9	20.3
426356 2013 MD_{5}	16.2	X	33.86133	245.02737	139.08422	27.09023	0.1914812	0.17775501	3.1327193	20	—	—
426357 2013 NW_{3}	17.3	X	134.45760	120.12349	275.78693	10.45751	0.1542966	0.22028050	2.7153054	20	3 1.1	21.7
426358 2013 NW_{6}	15.9	X	32.91727	92.72216	284.67667	25.06548	0.2247888	0.17981393	3.1087597	20	—	—
426359 2013 NS_{7}	17.4	X	338.02503	28.20579	282.33863	6.14902	0.1284243	0.28065111	2.3104232	20	7 23.7	19.3
426360 2013 NS_{9}	17.8	X	261.42447	117.00632	261.52904	5.67979	0.1341175	0.27483185	2.3429229	20	6 22.2	20.6
426361 2013 NA_{11}	16.6	X	188.49536	167.75582	132.85353	15.12477	0.1665500	0.21804410	2.7338404	20	1 4.7	21.1
426362 2013 ND_{11}	17.8	X	30.53824	260.07690	35.11557	9.03250	0.3114511	0.29174649	2.2514672	20	11 10.3	20.5
426363 2013 NM_{14}	17.9	X	320.48066	192.53306	129.85584	1.96511	0.1993328	0.27587583	2.3370084	20	6 26.3	19.7
426364 2013 NK_{16}	18.0	X	342.07023	183.56376	160.34072	5.96927	0.1752356	0.29025398	2.2591788	20	10 5.4	19.5
426365 2013 NV_{19}	17.2	X	210.01657	79.28325	309.37172	4.02518	0.2273627	0.25161109	2.4849416	20	5 2.5	21.4
426366 2013 NQ_{21}	16.1	X	128.59963	256.19284	119.59071	24.77115	0.2774560	0.21234812	2.7825123	20	2 21.6	20.8
426367 2013 NX_{22}	17.1	X	275.41160	119.22028	161.44200	15.54185	0.1026050	0.24125649	2.5555441	20	3 4.7	20.5
426368 2013 ND_{23}	17.3	X	8.44953	300.06843	282.63254	10.89764	0.1372024	0.25724286	2.4485398	20	5 1.4	19.8
426369 2013 OP_{4}	17.1	X	195.72139	259.15237	86.19809	8.52552	0.2007130	0.23075073	2.6325340	20	3 6.4	21.6
426370 2013 OE_{5}	18.0	X	76.50464	0.03816	247.67838	6.38146	0.1188779	0.29869069	2.2164346	20	10 4.7	21.0
426371 2013 ON_{8}	18.2	X	11.54396	69.21580	260.18803	5.51568	0.2432480	0.29716308	2.2240241	20	11 22.7	20.4
426372 2013 OP_{8}	15.1	X	325.84528	142.22418	301.88439	26.28860	0.1000240	0.17474973	3.1685341	20	12 20.3	19.4
426373 2013 OT_{9}	17.1	X	324.56636	200.92880	129.66712	9.56819	0.1734807	0.28138113	2.3064254	20	7 24.5	18.7
426374 2013 PJ	16.2	X	242.56058	335.97590	282.67248	13.22153	0.2678060	0.22023991	2.7156390	20	—	—
426375 2013 PH_{1}	17.4	X	329.17830	43.19513	225.54110	5.72031	0.0578477	0.25584811	2.4574305	20	5 8.4	20.3
426376 2013 PS_{2}	18.2	X	297.65430	84.74353	145.08662	24.06934	0.0633509	0.37791147	1.8947097	20	1 8.7	20.6
426377 2013 PU_{7}	17.0	X	187.70386	59.85687	310.99384	16.49134	0.2353736	0.23276400	2.6173321	20	3 18.2	21.9
426378 2013 PJ_{9}	18.4	X	118.22650	304.91715	302.18625	3.48046	0.1386395	0.30747937	2.1739959	20	11 22.7	21.6
426379 2013 PW_{15}	17.1	X	177.33958	197.30822	146.73707	14.75491	0.2468106	0.22029018	2.7152258	20	2 17.6	21.8
426380 2013 PF_{16}	15.5	X	140.87369	340.54902	300.75495	16.18461	0.1075314	0.17979569	3.1089701	20	—	—
426381 2013 PG_{16}	17.7	X	25.50066	74.85089	231.03109	8.81185	0.2137932	0.29039940	2.2584245	20	11 3.2	20.2
426382 2013 PM_{17}	17.4	X	296.21011	183.30896	129.00929	2.27190	0.1777936	0.25960929	2.4336375	20	5 1.5	20.2
426383 2013 PC_{19}	16.6	X	100.84678	159.45453	311.46887	14.66243	0.1300040	0.24334126	2.5409271	20	4 20.9	20.5
426384 2013 PH_{19}	17.0	X	197.55514	190.32354	139.61217	6.32954	0.2723372	0.22702769	2.6612366	20	2 15.9	21.8
426385 2013 PF_{20}	17.7	X	356.62479	213.83455	131.23847	2.82274	0.1905663	0.29080056	2.2563470	20	11 10.2	19.5
426386 2013 PC_{21}	16.7	X	158.86617	235.40477	127.13731	11.79181	0.3973347	0.21577153	2.7530026	20	3 6.2	22.0
426387 2013 PR_{21}	18.4	X	9.27639	347.05922	336.83838	2.95123	0.1803574	0.29223502	2.2489573	20	10 28.1	20.4
426388 2013 PG_{24}	17.3	X	210.09159	110.82972	183.77046	4.15925	0.0439018	0.21223429	2.7835072	20	1 16.1	21.3
426389 2013 PK_{24}	18.1	X	190.18913	165.24856	288.37010	1.67325	0.0506027	0.26510261	2.3999013	20	7 16.3	21.3
426390 2013 PV_{25}	17.0	X	307.09481	230.45339	87.02581	10.97073	0.1588068	0.26758814	2.3850170	20	5 30.2	19.6
426391 2013 PL_{26}	16.4	X	227.21752	87.04032	260.99688	16.41723	0.2814066	0.23378994	2.6096695	20	3 19.9	21.5
426392 2013 PW_{26}	17.0	X	270.41576	30.84655	322.39613	5.67274	0.1598270	0.25937738	2.4350879	20	5 23.8	20.3
426393 2013 PA_{31}	16.9	X	197.88454	35.84139	332.17794	11.85606	0.2933177	0.23049136	2.6345086	20	3 26.4	21.9
426394 2013 PJ_{32}	17.1	X	154.05493	207.83492	190.72153	9.17391	0.1344025	0.22544356	2.6736886	20	3 27.1	21.2
426395 2013 PN_{32}	17.7	X	250.56613	236.56310	200.86029	6.50890	0.0826617	0.28088401	2.3091459	20	9 7.6	20.6
426396 2013 PW_{32}	16.0	X	30.32609	210.73919	194.32938	9.15411	0.0868159	0.17805258	3.1292280	20	—	—
426397 2013 PR_{34}	17.9	X	41.29769	77.12463	181.01828	6.37030	0.0997904	0.28374911	2.2935755	20	8 27.8	20.5
426398 2013 PH_{40}	17.3	X	180.05456	3.12267	5.90613	3.18426	0.1948534	0.22530800	2.6747610	20	3 18.2	21.8
426399 2013 PL_{41}	17.5	X	82.99009	162.52280	246.49398	1.40892	0.1711005	0.19934487	2.9022356	20	1 25.7	21.1
426400 2013 PE_{49}	17.1	X	203.44464	125.16026	163.90632	14.03946	0.2569311	0.21829798	2.7317203	20	1 4.4	22.2

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		°	°	°	°		°				
426401 2013 PX_{49}	17.8	X	99.55060	331.87069	289.40261	5.39619	0.1372559	0.30769665	2.1729724	20	11 22.2	21.0
426402 2013 PC_{51}	16.8	X	204.08342	125.48326	176.99568	12.90834	0.2670414	0.22264903	2.6960142	20	1 18.5	21.9
426403 2013 PR_{54}	18.3	X	18.25782	125.81613	196.56366	1.58271	0.0801327	0.29197835	2.2502751	20	10 25.6	20.7
426404 2013 PF_{62}	16.3	X	261.91202	311.87568	297.00634	10.24566	0.0359668	0.22250735	2.6971585	20	1 18.9	20.1
426405 2013 PA_{64}	18.3	X	232.77789	131.84269	294.31858	6.84501	0.0822147	0.27758294	2.3274170	20	7 29.5	21.4
426406 2013 PB_{66}	17.1	X	115.28855	150.15167	234.55813	5.95928	0.0478551	0.21153532	2.7896354	20	1 16.7	21.0
426407 2013 PL_{69}	16.7	X	260.87010	258.41825	30.90654	13.05483	0.1493288	0.24220006	2.5489025	20	2 29.4	20.7
426408 2013 PO_{69}	16.1	X	206.17951	16.45682	280.65516	13.16391	0.1764793	0.22037375	2.7145393	20	1 14.3	20.6
426409 2013 PH_{71}	17.1	X	253.00198	225.43364	132.57147	8.31202	0.1376600	0.25558945	2.4590882	20	5 16.3	20.7
426410 2013 PS_{71}	16.3	X	221.26144	357.36319	315.49892	11.83950	0.0673199	0.23195285	2.6234306	20	2 16.1	20.1
426411 2013 PC_{72}	17.3	X	287.13574	172.66418	150.79187	6.13955	0.1209091	0.25600161	2.4564480	20	5 14.7	20.4
426412 2013 PP_{72}	17.1	X	175.89749	136.35646	227.21523	12.72595	0.2979625	0.22315521	2.6919358	20	3 6.9	22.2
426413 2013 QL_{2}	18.3	X	65.91967	5.11347	294.54547	5.55913	0.0836234	0.30845684	2.1694007	20	12 1.7	21.0
426414 2013 QS_{3}	18.2	X	295.60371	91.16951	283.73807	1.33369	0.1504839	0.27848083	2.3224115	20	8 7.9	20.5
426415 2013 QX_{3}	17.3	X	220.25354	83.83321	317.76816	5.97569	0.1274296	0.25779503	2.4450422	20	6 4.3	21.0
426416 2013 QY_{3}	17.9	X	243.76803	21.65162	318.70728	5.12331	0.1987582	0.24686797	2.5166697	20	4 2.7	21.9
426417 2013 QB_{9}	16.7	X	85.02899	135.82366	259.80552	0.93684	0.1227629	0.19679082	2.9272928	20	1 5.7	20.4
426418 2013 QG_{9}	17.6	X	280.35602	52.76065	324.01163	5.97094	0.1457390	0.26907872	2.3762008	20	7 16.3	20.3
426419 2013 QY_{13}	17.3	X	240.74476	86.69550	186.49121	13.00141	0.0676624	0.22093466	2.7099429	20	1 19.9	21.6
426420 2013 QO_{14}	17.6	X	164.98369	85.27263	331.44779	4.39715	0.0944689	0.23741018	2.5830718	20	4 25.8	21.5
426421 2013 QP_{14}	18.1	X	165.91384	336.95389	190.07343	5.46379	0.0552098	0.28675905	2.2774978	20	9 28.1	20.8
426422 2013 QW_{14}	15.9	X	241.57131	274.87967	257.31277	7.38805	0.0466542	0.17781000	3.1320733	20	12 15.5	20.4
426423 2013 QU_{15}	17.4	X	282.60209	18.20719	296.88879	3.98914	0.1968138	0.25527024	2.4611378	20	4 11.0	20.7
426424 2013 QG_{16}	18.0	X	11.20204	158.25508	160.44547	3.16691	0.1837299	0.29056580	2.2575622	20	10 26.5	20.1
426425 2013 QR_{16}	16.3	X	182.27522	340.85249	354.27237	9.64901	0.2212619	0.21386743	2.7693188	20	2 13.2	21.1
426426 2013 QC_{19}	16.9	X	165.78186	219.83222	137.55388	6.74575	0.0443241	0.22196990	2.7015105	20	2 11.6	20.5
426427 2013 QV_{23}	16.9	X	103.70423	20.52109	356.44400	1.54680	0.0860609	0.20261357	2.8709372	20	1 1.2	20.8
426428 2013 QV_{26}	17.0	X	272.05716	337.26432	359.58575	12.33178	0.1918733	0.25511726	2.4621215	20	4 25.8	20.6
426429 2013 QT_{29}	17.7	X	66.20872	133.75112	323.05941	3.12990	0.1199329	0.21210410	2.7846461	20	2 22.1	20.9
426430 2013 QA_{30}	17.1	X	240.79177	250.76397	118.07526	3.49360	0.2022968	0.25605036	2.4561363	20	5 9.0	21.0
426431 2013 QD_{32}	17.2	X	170.21740	221.88265	147.24516	17.93841	0.1982322	0.21502661	2.7593571	20	3 13.1	21.9
426432 2013 QP_{32}	16.8	X	166.68728	60.68135	334.65536	25.25859	0.1740977	0.23209643	2.6223485	20	3 25.2	21.4
426433 2013 QS_{34}	16.7	X	136.13370	287.88035	117.06254	15.76186	0.1292667	0.22728120	2.6592574	20	3 22.5	20.9
426434 2013 QH_{35}	16.2	X	95.14835	211.24609	137.40176	3.45359	0.1386905	0.18860455	3.0113965	20	—	—
426435 2013 QV_{35}	17.3	X	113.23106	70.60828	325.22083	5.12002	0.0583536	0.20958254	2.8069369	20	1 31.7	21.2
426436 2013 QN_{36}	17.4	X	140.26327	26.00950	340.66204	4.47594	0.1902768	0.21230725	2.7828694	20	2 10.9	21.8
426437 2013 QK_{39}	17.1	X	302.26858	2.12098	204.01797	5.42166	0.0077470	0.21630572	2.7484682	20	1 18.5	20.9
426438 2013 QM_{39}	17.6	X	242.75381	170.26454	211.99544	3.43283	0.1225471	0.25926737	2.4357767	20	6 5.3	21.0
426439 2013 QV_{39}	16.2	X	119.61373	133.34239	320.32370	14.39371	0.1888586	0.23411812	2.6072301	20	4 28.8	20.5
426440 2013 QF_{40}	16.9	X	27.04760	122.87893	313.32595	10.24655	0.1230105	0.19258020	2.9698075	20	—	—
426441 2013 QN_{43}	17.5	X	301.72344	58.30298	336.92921	6.62409	0.0976434	0.28747672	2.2737057	20	9 27.6	19.8
426442 2013 QG_{46}	16.3	X	176.96248	84.33727	221.78629	19.55371	0.1030012	0.21011125	2.8022261	20	—	—
426443 2013 QK_{46}	15.5	X	340.00834	194.54621	245.70438	16.80064	0.0542142	0.17542072	3.1604491	20	12 29.3	19.8
426444 2013 QT_{48}	17.5	X	316.77360	205.48176	192.16053	8.12348	0.2418648	0.28836826	2.2690170	20	11 4.7	18.5
426445 2013 QV_{54}	16.3	X	35.25411	308.77758	116.92394	5.68310	0.1440883	0.19120542	2.9840258	20	—	—
426446 2013 QR_{56}	16.3	X	94.69661	211.23565	134.60046	10.41520	0.1278972	0.18577440	3.0419038	20	—	—
426447 2013 QF_{57}	17.4	X	21.34491	227.60564	26.34655	5.98729	0.2144104	0.27470190	2.3436618	20	8 8.0	19.4
426448 2013 QK_{57}	17.8	X	281.04665	320.97114	66.43291	4.32864	0.1393224	0.27375832	2.3490440	20	8 4.7	20.4
426449 2013 QE_{59}	16.6	X	101.45815	328.90063	25.76215	4.59361	0.0574058	0.19293824	2.9661322	20	—	—
426450 2013 QX_{59}	17.3	X	188.03208	5.26307	141.37355	5.63592	0.0620505	0.29075634	2.2565758	20	9 30.1	20.1
426451 2013 QR_{61}	17.3	X	189.90275	251.35813	149.93422	17.06422	0.2232073	0.24326491	2.5414588	20	5 8.8	22.0
426452 2013 QS_{63}	17.9	X	237.62944	214.07158	150.34914	2.42008	0.1894124	0.25264010	2.4781895	20	5 1.1	21.6
426453 2013 QW_{64}	17.3	X	206.78098	249.90185	106.00071	6.52914	0.1308540	0.23327001	2.6135457	20	3 28.4	21.5
426454 2013 QZ_{64}	18.0	X	333.46182	222.30404	91.48436	3.43388	0.1920853	0.27344815	2.3508201	20	7 15.0	19.5
426455 2013 QH_{66}	17.4	X	193.66534	128.27251	309.78466	5.74974	0.1360876	0.25991357	2.4317378	20	6 25.3	21.1
426456 2013 QE_{68}	16.6	X	143.88472	80.71924	340.06181	21.86061	0.0558962	0.23501843	2.6005673	20	3 27.5	20.6
426457 2013 QR_{70}	16.8	X	170.52849	45.58624	345.36837	13.70373	0.2038284	0.22937542	2.6430465	20	4 1.1	21.3
426458 2013 QE_{72}	17.1	X	323.29441	212.98575	120.26416	7.39388	0.1387047	0.27505726	2.3416428	20	7 29.4	19.2
426459 2013 QM_{72}	17.1	X	173.79210	256.38150	83.30756	4.50023	0.1875675	0.21605024	2.7506345	20	2 9.0	21.7
426460 2013 QC_{73}	17.9	X	326.07305	214.08263	133.10336	3.43832	0.1041888	0.28137807	2.3064421	20	8 30.9	19.8
426461 2013 QS_{73}	18.0	X	313.06164	285.20168	136.52546	3.72373	0.1133749	0.30219968	2.1992438	20	12 7.5	19.7
426462 2013 QU_{73}	16.7	X	29.30050	30.68575	145.40810	15.00043	0.0415703	0.23732961	2.5836565	20	4 7.5	20.1
426463 2013 QG_{75}	16.6	X	166.53056	206.09254	143.74977	14.62769	0.2000542	0.21508135	2.7588889	20	2 14.2	21.1
426464 2013 QW_{77}	17.3	X	127.86598	118.85876	286.60764	2.76747	0.2342846	0.21618148	2.7495211	20	3 18.6	21.7
426465 2013 QO_{82}	17.0	X	231.75293	8.42738	261.36011	2.62699	0.0639467	0.21158427	2.7892052	20	1 9.8	21.2
426466 2013 QW_{82}	16.0	X	245.63145	190.50569	121.59643	16.79226	0.1622134	0.24089959	2.5580676	20	3 10.8	20.2
426467 2013 QJ_{83}	16.6	X	186.91465	347.60742	8.64369	13.64090	0.1745789	0.22490444	2.6779596	20	3 11.2	21.1
426468 2013 QO_{83}	17.6	X	340.10443	166.30578	171.90567	6.44506	0.1880468	0.28492573	2.2872569	20	9 18.1	18.7
426469 2013 QO_{84}	16.7	X	177.24067	234.26596	167.60131	13.66891	0.2693568	0.23156155	2.6263852	20	4 28.5	21.5
426470 2013 QP_{84}	16.8	X	281.22828	120.27102	217.79513	5.65563	0.1167633	0.25746574	2.4471265	20	5 26.0	19.8
426471 2013 QA_{93}	17.2	X	201.57093	12.71156	327.03157	5.20114	0.1044162	0.22868886	2.6483337	20	2 29.1	21.3
426472 2013 QB_{93}	17.2	X	265.54136	189.42875	149.08247	3.17927	0.1292590	0.25483911	2.4639128	20	5 4.6	20.5
426473 2013 QS_{93}	18.6	X	87.29270	122.71886	154.58643	0.89775	0.1415745	0.30575415	2.1821661	20	12 1.6	21.6
426474 2013 RK	16.8	X	217.08844	60.05977	293.46049	9.93423	0.1985926	0.23508557	2.6000722	20	3 24.1	21.3
426475 2013 RW	17.4	X	205.53039	77.95967	254.50630	1.06898	0.2065499	0.22503718	2.6769065	20	2 23.9	21.9
426476 2013 RV_{2}	16.5	X	89.25756	66.38120	263.42881	0.66757	0.1290065	0.17489480	3.1667817	20	—	—
426477 2013 RH_{5}	17.6	X	144.01067	91.54776	312.69786	0.89407	0.0802656	0.22311945	2.6922234	20	3 18.9	21.5
426478 2013 RW_{6}	17.0	X	36.68233	237.68026	257.65221	3.57174	0.0441385	0.22258026	2.6965695	20	2 18.7	20.5
426479 2013 RE_{7}	18.2	X	78.15768	334.20581	323.85431	2.65315	0.1486605	0.30887638	2.1674358	20	12 20.0	21.2
426480 2013 RG_{16}	16.7	X	135.66387	30.09079	334.53488	3.76653	0.1692282	0.20641740	2.8355579	20	2 2.5	20.9

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	m		°	°	°	°		°				
426481 2013 RY_{16}	16.3	X	331.08786	31.80647	352.96647	25.73735	0.2786530	0.28212163	2.3023877	20	11 5.8	18.4
426482 2013 RH_{17}	17.1	X	212.17238	87.13848	263.19823	6.31951	0.2216871	0.23541777	2.5976256	20	3 17.7	21.7
426483 2013 RK_{17}	17.3	X	143.54617	257.76625	176.33585	11.39306	0.2262845	0.23307132	2.6150309	20	5 8.9	21.8
426484 2013 RW_{17}	16.9	X	257.41304	335.61404	320.35694	13.18770	0.1026511	0.23333260	2.6130784	20	2 29.8	20.9
426485 2013 RU_{18}	17.4	X	326.36622	141.18773	160.65012	3.21764	0.1785391	0.26685402	2.3893891	20	6 8.3	19.5
426486 2013 RB_{20}	17.0	X	208.65493	345.68970	341.13193	6.30059	0.2036097	0.22642637	2.6659462	20	2 20.8	21.6
426487 2013 RA_{22}	16.4	X	158.00570	259.22088	119.52333	3.63065	0.0956376	0.21647429	2.7470412	20	3 6.1	20.4
426488 2013 RB_{23}	16.8	X	121.27787	238.77443	172.25281	13.26538	0.1652410	0.21018488	2.8015717	20	3 13.4	20.8
426489 2013 RW_{23}	17.3	X	130.75324	182.85872	181.94363	3.47453	0.1882340	0.20189390	2.8777557	20	1 30.1	21.8
426490 2013 RB_{24}	16.2	X	153.17790	110.05449	180.92152	8.92418	0.0604334	0.18367233	3.0650688	20	—	—
426491 2013 RH_{25}	18.1	X	348.19224	62.16293	240.41413	1.63172	0.1855446	0.27038127	2.3685632	20	8 1.9	19.6
426492 2013 RM_{25}	16.1	X	52.07383	53.97650	334.47930	3.80528	0.1214793	0.17477611	3.1682152	20	—	—
426493 2013 RG_{29}	16.9	X	153.12827	248.32889	177.23404	11.81852	0.1351999	0.22685479	2.6625887	20	5 1.7	21.1
426494 2013 RN_{31}	16.4	X	200.87544	45.48591	261.57151	6.10043	0.0983592	0.21723940	2.7405874	20	1 20.6	20.7
426495 2013 RY_{31}	17.2	X	162.67321	333.60149	18.13193	3.72224	0.1041091	0.21112793	2.7932229	20	2 8.5	21.5
426496 2013 RS_{32}	17.0	X	257.60058	354.37571	12.32957	6.36164	0.2906593	0.25564336	2.4587424	20	5 10.8	21.1
426497 2013 RJ_{33}	17.6	X	338.41734	215.43308	103.52878	2.47579	0.2095929	0.27501317	2.3418930	20	8 7.3	19.0
426498 2013 RK_{33}	17.5	X	264.13958	240.40033	119.01055	2.21009	0.2045527	0.25603546	2.4562316	20	5 20.3	21.1
426499 2013 RB_{34}	17.6	X	60.93258	341.40975	307.27574	1.87177	0.1200287	0.29945106	2.2126810	20	11 13.3	20.4
426500 2013 RE_{35}	16.2	X	154.24617	146.92057	249.63324	15.15311	0.2090877	0.21344022	2.7730128	20	3 24.7	21.1
426501 2013 RJ_{35}	16.8	X	257.43696	334.28232	56.56431	7.28659	0.1177649	0.25922508	2.4360416	20	7 6.9	20.0
426502 2013 RS_{35}	15.7	X	123.64262	165.83570	155.22466	11.16442	0.0392442	0.18106090	3.0944699	20	—	—
426503 2013 RU_{35}	16.5	X	171.09252	240.70413	114.18775	3.06493	0.2350629	0.21337176	2.7736059	20	2 26.3	21.2
426504 2013 RO_{37}	16.2	X	90.17738	283.12320	175.09217	14.24138	0.1137861	0.21670150	2.7451207	20	3 29.3	19.8
426505 2013 RP_{37}	16.6	X	301.78853	264.16178	7.96317	12.78493	0.1325718	0.23913763	2.5706174	20	3 23.5	19.7
426506 2013 RT_{37}	16.4	X	107.28488	204.06448	178.68862	10.51606	0.1248421	0.20007776	2.8951440	20	1 16.9	20.6
426507 2013 RX_{38}	16.2	X	318.32695	295.60000	176.86547	11.75190	0.0680086	0.17195282	3.2028002	20	—	—
426508 2013 RE_{39}	16.7	X	64.16867	352.14253	9.94065	0.20082	0.1502699	0.17424893	3.1746021	20	—	—
426509 2013 RS_{39}	16.9	X	133.90834	229.03672	170.24017	6.03361	0.0872225	0.21535859	2.7565206	20	3 2.7	20.7
426510 2013 RH_{41}	17.7	X	1.20570	206.40475	54.61392	3.08506	0.1561799	0.25977850	2.4325806	20	6 21.7	19.6
426511 2013 RR_{41}	16.6	X	191.18325	186.97637	202.38554	9.38050	0.1272160	0.23235768	2.6203825	20	4 21.2	20.5
426512 2013 RV_{41}	17.8	X	44.67876	314.25621	356.34069	7.79566	0.1738024	0.29935335	2.2131625	20	11 29.1	20.8
426513 2013 RZ_{43}	15.8	X	54.69956	93.19856	326.98348	11.60178	0.0550031	0.19332309	2.9621944	20	—	—
426514 2013 RU_{44}	17.0	X	234.65934	46.03856	290.89484	6.71070	0.1348907	0.23802352	2.5786326	20	3 24.6	21.0
426515 2013 RW_{44}	15.6	X	192.22864	44.41750	225.62596	8.29937	0.0603228	0.19301731	2.9653221	20	—	—
426516 2013 RK_{46}	16.5	X	214.58810	325.10780	332.77786	5.16931	0.0710606	0.21252352	2.7809812	20	1 26.2	20.6
426517 2013 RL_{46}	16.9	X	67.81731	61.70724	332.67316	3.80331	0.1242815	0.18625518	3.0366668	20	—	—
426518 2013 RM_{46}	17.5	X	276.63559	332.53370	344.66223	8.96287	0.0833127	0.24557607	2.5254883	20	4 21.8	20.9
426519 2013 RN_{46}	17.1	X	124.89103	103.25484	338.62509	5.63972	0.1235013	0.22620211	2.6677080	20	4 16.7	21.1
426520 2013 RK_{47}	17.6	X	317.67824	330.32754	357.11665	3.79459	0.1663273	0.26651737	2.3914008	20	7 3.7	19.7
426521 2013 RQ_{48}	17.7	X	117.79728	195.54268	342.21778	5.22381	0.0693292	0.26796949	2.3827537	20	8 13.9	20.8
426522 2013 RG_{49}	17.4	X	204.23097	151.96153	191.91962	4.26628	0.1518015	0.22741357	2.6582254	20	3 7.3	21.7
426523 2013 RO_{49}	17.3	X	252.40930	92.09437	237.24186	5.36156	0.2084326	0.24327791	2.5413682	20	3 27.8	21.4
426524 2013 RH_{52}	16.7	X	187.08324	82.59708	257.34730	10.14936	0.0775214	0.21979541	2.7192990	20	2 11.3	20.9
426525 2013 RT_{52}	16.5	X	102.94840	5.94032	346.54827	16.20397	0.1806648	0.18988919	2.9977993	20	—	—
426526 2013 RX_{53}	17.8	X	352.65613	30.16238	295.14398	3.26411	0.1835747	0.27916605	2.3186097	20	9 22.4	19.6
426527 2013 RO_{56}	16.6	X	100.64798	180.49691	289.69537	11.25485	0.1314859	0.23086238	2.6316852	20	4 23.3	20.4
426528 2013 RZ_{56}	16.3	X	122.08507	189.76199	200.43829	6.38028	0.2112642	0.20507938	2.8478781	20	2 21.7	20.6
426529 2013 RX_{58}	16.1	X	347.78467	243.59510	200.46584	8.72683	0.0830136	0.17435032	3.1733713	20	—	—
426530 2013 RY_{60}	15.4	X	128.33973	29.85804	296.25303	12.73290	0.1321950	0.18262894	3.0767319	20	—	—
426531 2013 RU_{63}	17.1	X	157.13601	197.03482	162.64552	3.79566	0.1055241	0.21359155	2.7717029	20	2 10.3	21.4
426532 2013 RY_{64}	16.0	X	182.82838	53.28033	239.58798	11.56324	0.0800734	0.19921029	2.9035426	20	—	—
426533 2013 RS_{66}	17.9	X	190.45312	183.80519	222.22882	2.36786	0.1619245	0.24115820	2.5562385	20	5 10.7	22.1
426534 2013 RV_{67}	17.8	X	49.73420	248.09893	67.70909	7.35875	0.2665707	0.30381882	2.1914233	20	12 24.3	21.1
426535 2013 RT_{70}	17.5	X	352.04281	326.29896	26.15441	7.41591	0.1713757	0.28799804	2.2709611	20	11 5.9	19.5
426536 2013 RW_{70}	17.0	X	236.31415	187.18639	156.12437	10.78052	0.1583182	0.23606366	2.5928852	20	4 8.3	21.1
426537 2013 RM_{71}	16.8	X	176.24023	205.46240	160.75263	5.97095	0.0402687	0.21978513	2.7193838	20	3 5.8	20.6
426538 2013 RC_{77}	17.8	X	228.37839	340.08355	356.96272	1.87746	0.0893654	0.23506506	2.6002234	20	3 24.9	21.5
426539 2013 RL_{79}	16.4	X	7.85823	313.35273	191.63800	7.11759	0.0561854	0.21092822	2.7949857	20	1 22.8	20.0
426540 2013 RV_{79}	16.5	X	182.65172	284.76245	44.27456	13.59845	0.2212954	0.21154012	2.7895933	20	2 9.5	21.5
426541 2013 RX_{81}	17.9	X	306.39788	293.68197	9.65877	1.27345	0.1826449	0.25504154	2.4626088	20	5 2.3	20.5
426542 2013 RZ_{81}	17.7	X	153.41304	323.49009	144.89766	8.24729	0.1531811	0.24162368	2.5529544	20	6 24.4	21.8
426543 2013 RH_{82}	16.3	X	40.06426	83.34073	349.42334	10.87370	0.0651811	0.18602578	3.0391628	20	—	—
426544 2013 RZ_{83}	16.4	X	19.01535	88.96832	332.00120	8.15527	0.1200936	0.17203918	3.2017283	20	—	—
426545 2013 RL_{84}	16.7	X	163.29313	103.12838	293.13166	5.34527	0.0839962	0.22180487	2.7028503	20	3 28.1	20.8
426546 2013 RN_{84}	16.3	X	15.66778	132.98708	341.33740	8.80798	0.0669547	0.19309387	2.9645382	20	1 1.0	20.3
426547 2013 RS_{84}	17.0	X	240.79179	353.86039	342.55215	5.58481	0.2968736	0.23601716	2.5932258	20	3 21.8	21.7
426548 2013 RT_{84}	16.6	X	159.13898	132.41783	267.51638	8.08196	0.1825249	0.21674611	2.7447440	20	4 2.5	21.2
426549 2013 RW_{84}	16.7	X	203.51930	84.90547	269.94591	4.94621	0.0479261	0.22519215	2.6756782	20	3 19.7	20.7
426550 2013 RC_{87}	15.5	X	98.76845	335.67745	357.10662	10.14845	0.1996858	0.17692684	3.1424876	20	—	—
426551 2013 RE_{87}	17.3	X	201.15102	139.50097	211.49835	6.11319	0.0467587	0.22149102	2.7054030	20	3 13.4	21.2
426552 2013 RH_{87}	16.1	X	344.50159	243.01416	24.74398	22.60476	0.0446086	0.24023684	2.5627701	20	5 24.9	19.6
426553 2013 RY_{87}	16.8	X	109.53575	147.65245	274.92201	3.76849	0.1159057	0.21042046	2.7994802	20	3 5.9	20.7
426554 2013 RR_{88}	17.0	X	147.65905	53.68579	327.31466	5.46129	0.0866346	0.21201517	2.7854248	20	2 24.7	21.0
426555 2013 RU_{88}	17.7	X	106.62474	278.84923	348.26333	8.34740	0.1578520	0.30455515	2.1878897	20	12 6.5	21.2
426556 2013 RR_{89}	16.8	X	163.27776	101.09644	268.29439	2.65347	0.1103081	0.21541046	2.7560781	20	2 27.8	21.1
426557 2013 RV_{89}	17.1	X	172.71954	198.76070	217.98472	5.50472	0.0855016	0.23571675	2.5954286	20	5 6.2	20.9
426558 2013 RV_{91}	16.4	X	282.46253	6.85636	292.05770	11.26760	0.2353517	0.23759146	2.5817578	20	3 12.9	20.4
426559 2013 RU_{92}	17.0	X	198.25572	341.20524	348.27921	1.91477	0.2145445	0.21735609	2.7396064	20	2 16.3	21.7
426560 2013 RD_{93}	17.1	X	189.16343	13.53737	314.58306	2.42309	0.1040491	0.21091278	2.7951221	20	2 5.3	21.4

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	m		°	°	°	°		°				
426561 2013 RV_{93}	16.7	X	125.57091	94.72482	283.13391	1.01677	0.0831201	0.20114074	2.8849350	20	1 28.3	20.8
426562 2013 RL_{94}	16.1	X	67.40308	106.53515	304.41708	9.18951	0.1072878	0.18256469	3.0774536	20	1 1.5	20.1
426563 2013 RD_{97}	16.7	X	329.23328	292.27094	327.16095	16.77106	0.0107325	0.24384676	2.5374143	20	4 21.3	20.4
426564 2013 RF_{97}	16.6	X	156.53176	345.62099	29.06743	5.78360	0.1452708	0.21298054	2.7770014	20	3 4.7	20.9
426565 2013 RJ_{97}	17.7	X	337.72028	66.78444	304.98191	6.15426	0.0907744	0.29080729	2.2563122	20	10 28.6	19.9
426566 2013 RL_{97}	16.8	X	155.10909	6.32146	22.13475	15.18444	0.1798358	0.21530377	2.7569885	20	3 23.6	21.3
426567 2013 RU_{97}	16.1	X	131.92768	291.80596	55.59019	10.41604	0.0925298	0.19217344	2.9739966	20	1 1.8	20.5
426568 2013 SG	16.7	X	249.26506	340.02754	305.96272	10.72965	0.1649085	0.23117201	2.6293348	20	2 6.4	20.9
426569 2013 SL_{8}	17.2	X	313.44673	109.06569	248.67379	5.96917	0.1531243	0.27867132	2.3213531	20	8 13.3	19.3
426570 2013 SK_{11}	17.2	X	189.95491	346.95784	0.96424	9.29603	0.1715934	0.22253721	2.6969173	20	3 2.8	21.6
426571 2013 SA_{14}	17.4	X	206.50079	167.76708	193.89683	3.09119	0.0802344	0.23372244	2.6101719	20	4 2.1	21.0
426572 2013 SA_{15}	17.5	X	253.84612	316.65440	0.57389	4.14022	0.1935176	0.23807208	2.5782819	20	3 17.9	21.5
426573 2013 SD_{16}	16.2	X	157.77467	96.52046	179.41906	10.57504	0.0371058	0.17766371	3.1337924	20	—	—
426574 2013 SF_{17}	16.8	X	211.84022	338.13052	7.66342	14.78128	0.1181203	0.23255420	2.6189061	20	3 19.6	20.9
426575 2013 SS_{17}	17.0	X	68.94623	128.45127	352.27640	7.74892	0.1864404	0.21825503	2.7320787	20	4 5.7	20.3
426576 2013 SA_{19}	17.0	X	185.68989	184.16871	186.13467	6.20424	0.1007681	0.22481802	2.6786459	20	3 22.4	20.9
426577 2013 SL_{22}	16.2	X	163.42204	297.01064	80.56377	6.94444	0.0354668	0.21484295	2.7609295	20	3 8.6	20.2
426578 2013 SO_{23}	17.5	X	202.63300	148.57277	187.48723	1.71585	0.2061251	0.22271596	2.6954741	20	2 26.2	22.1
426579 2013 SX_{23}	17.2	X	114.17091	343.99957	115.18890	8.12656	0.0911158	0.23102249	2.6304692	20	4 28.4	21.0
426580 2013 SC_{24}	16.5	X	105.14457	335.56993	55.98286	5.59858	0.1141110	0.19693834	2.9258307	20	1 27.3	20.5
426581 2013 SH_{26}	16.3	X	181.22867	355.50886	339.98316	8.51501	0.1564729	0.21001046	2.8031227	20	2 9.9	20.9
426582 2013 SV_{26}	17.3	X	162.42957	66.45137	24.59451	17.55293	0.1450144	0.23983174	2.5656551	20	6 6.7	21.7
426583 2013 SV_{27}	16.1	X	131.57600	84.78492	324.41304	10.11207	0.1019945	0.20946299	2.8080048	20	3 11.9	20.4
426584 2013 SA_{28}	16.0	X	64.34694	66.56320	336.13191	18.72196	0.2713017	0.17992334	3.1074994	20	1 12.4	19.7
426585 2013 SS_{28}	17.4	X	319.85838	342.91096	3.69320	6.80418	0.1226687	0.26769172	2.3844017	20	8 16.1	19.7
426586 2013 SU_{28}	15.8	X	90.55074	248.32290	137.73313	11.47412	0.1467467	0.18353133	3.0666384	20	1 7.2	19.9
426587 2013 SV_{28}	15.6	X	63.75021	262.47884	139.61128	11.44715	0.1129911	0.17761412	3.1343758	20	—	—
426588 2013 SD_{29}	17.1	X	60.85372	34.88159	258.81861	5.32656	0.1151306	0.29543073	2.2327098	20	11 18.6	19.9
426589 2013 SR_{29}	15.5	X	116.45268	36.57926	269.01618	10.05164	0.0317896	0.17037646	3.2225253	20	12 31.4	20.2
426590 2013 SB_{30}	16.8	X	211.60141	318.37519	13.01012	8.82220	0.1495781	0.21873031	2.7281196	20	3 3.2	21.2
426591 2013 SC_{31}	16.9	X	246.21050	120.05103	161.72161	14.50152	0.1667705	0.23068495	2.6330344	20	1 29.1	21.3
426592 2013 SS_{31}	18.0	X	66.68937	229.83054	85.28310	4.53355	0.2046517	0.30832655	2.1700118	20	—	—
426593 2013 SP_{33}	17.2	X	168.65875	115.87790	355.73338	6.60827	0.0504550	0.26042288	2.4285663	20	7 15.6	20.6
426594 2013 SS_{33}	16.6	X	21.83372	273.33738	194.35040	7.31096	0.0144966	0.20093116	2.8869406	20	—	—
426595 2013 SG_{34}	16.7	X	288.20519	227.79688	13.71840	6.25624	0.0284380	0.21860498	2.7291622	20	2 14.6	20.4
426596 2013 SQ_{34}	16.3	X	107.09596	159.26031	176.96634	18.16675	0.1186148	0.18398977	3.0615423	20	—	—
426597 2013 SJ_{36}	17.9	X	355.28793	293.30536	347.12458	3.01381	0.1180665	0.26609340	2.3939403	20	7 10.8	20.0
426598 2013 SO_{36}	17.6	X	205.10214	299.41337	182.73462	9.66280	0.1568528	0.27536880	2.3398763	20	9 1.9	21.0
426599 2013 SW_{37}	16.7	X	144.29576	255.34766	145.55491	5.48442	0.1868748	0.21796947	2.7344644	20	3 26.9	21.0
426600 2013 SK_{38}	16.9	X	119.53357	77.95016	22.95446	11.97477	0.1760534	0.22637896	2.6663184	20	5 10.7	21.1
426601 2013 SN_{38}	17.2	X	151.07188	51.57231	40.48510	5.09693	0.0232125	0.24321903	2.5417784	20	5 22.9	20.5
426602 2013 SV_{38}	16.3	X	141.22949	350.96167	28.04066	7.99602	0.0701317	0.21009850	2.8023395	20	2 17.5	20.4
426603 2013 SA_{39}	16.4	X	25.82716	231.38978	205.82875	2.88618	0.1795232	0.17548241	3.1597083	20	—	—
426604 2013 SL_{40}	16.3	X	299.61560	341.81571	294.53364	17.91128	0.2064765	0.23688481	2.5868897	20	3 4.2	20.2
426605 2013 SW_{40}	17.1	X	168.69635	139.48162	197.06597	4.11196	0.1135830	0.21573270	2.7533330	20	1 25.1	21.3
426606 2013 SF_{41}	15.9	X	12.36194	260.32905	169.54258	26.24548	0.2951245	0.17546247	3.1599477	20	—	—
426607 2013 SD_{43}	16.5	X	144.43996	319.44214	70.15031	7.48188	0.0413243	0.21498350	2.7597260	20	3 1.9	20.5
426608 2013 SS_{43}	16.7	X	327.39048	279.53220	40.64000	14.71100	0.1705309	0.26639471	2.3921348	20	7 15.1	19.1
426609 2013 SE_{44}	16.0	X	7.60355	114.14752	3.54797	9.95416	0.1386958	0.18248771	3.0783191	20	—	—
426610 2013 SF_{44}	16.9	X	244.11687	262.62805	72.90331	6.16084	0.1553258	0.23572906	2.5953382	20	4 6.5	20.9
426611 2013 SQ_{46}	18.7	X	80.06344	304.11725	355.35117	5.47333	0.2159966	0.31177523	2.1539799	20	12 28.6	22.1
426612 2013 SY_{46}	17.0	X	206.91672	179.35020	145.86161	2.52505	0.0763106	0.21991761	2.7182916	20	2 18.5	21.1
426613 2013 SR_{49}	16.3	X	221.90709	243.07876	64.19677	5.89436	0.1373825	0.21287644	2.7779067	20	2 13.4	20.7
426614 2013 SU_{50}	16.5	X	57.24667	0.39536	43.62489	0.86777	0.2431592	0.17800245	3.1298154	20	—	—
426615 2013 SZ_{52}	17.6	X	84.17429	214.04886	68.32893	6.21979	0.1771884	0.30123049	2.2039586	20	12 6.2	21.0
426616 2013 SH_{53}	15.6	X	333.18368	154.99697	173.55107	11.23384	0.2585066	0.12551112	3.9507655	20	7 13.1	20.0
426617 2013 SV_{54}	16.6	X	1.92415	64.44173	13.86393	1.23622	0.0434568	0.17831997	3.1260990	20	—	—
426618 2013 SG_{55}	16.1	X	113.11284	211.28885	255.40148	13.72561	0.0898012	0.22181020	2.7028070	20	5 1.2	20.0
426619 2013 SL_{55}	16.4	X	79.39589	244.70601	137.97275	1.96979	0.1920562	0.18047003	3.1012205	20	—	—
426620 2013 SE_{57}	17.1	X	308.69445	277.03881	37.73846	6.62553	0.1573042	0.25819972	2.4424867	20	5 26.7	19.7
426621 2013 SP_{58}	17.0	X	28.55738	190.85810	92.67252	3.49593	0.2100058	0.28082305	2.3094800	20	10 6.5	19.5
426622 2013 SW_{58}	17.1	X	240.31065	132.63529	193.34839	3.73134	0.0962528	0.23169079	2.6254084	20	3 23.5	20.8
426623 2013 SV_{59}	16.6	X	92.37202	102.56569	343.89106	21.36269	0.1145646	0.22248454	2.6973429	20	3 12.2	20.1
426624 2013 SA_{60}	17.4	X	163.14544	213.78604	168.92211	4.58864	0.1711797	0.22435424	2.6823361	20	3 19.3	21.7
426625 2013 SJ_{60}	17.5	X	14.83398	334.36395	348.41398	8.35433	0.1779747	0.29351178	2.2424307	20	11 2.5	19.9
426626 2013 SR_{60}	17.7	X	16.94342	354.00982	0.77167	5.35756	0.1630740	0.30160834	2.2021175	20	12 24.9	20.3
426627 2013 SW_{61}	16.4	X	119.62251	351.54375	23.15113	2.06836	0.0908799	0.20143762	2.8820997	20	1 19.2	20.5
426628 2013 SM_{62}	16.3	X	33.08168	45.77654	18.65758	11.08829	0.1736772	0.17992710	3.1074561	20	—	—
426629 2013 SX_{62}	18.2	X	107.53773	96.37720	153.42872	2.79915	0.1314216	0.29955649	2.2121618	20	11 15.6	21.4
426630 2013 SU_{63}	17.5	X	317.73473	16.59318	332.55581	5.36197	0.0812439	0.27129509	2.3632414	20	8 17.6	20.0
426631 2013 SC_{64}	17.7	X	7.54421	177.19806	155.30729	6.46038	0.1605812	0.28620591	2.2804312	20	11 6.0	20.0
426632 2013 SR_{64}	17.3	X	128.87901	255.36550	165.80863	5.44183	0.1927183	0.22345833	2.6895008	20	4 5.9	21.4
426633 2013 SO_{66}	16.8	X	272.78479	308.12763	39.34336	9.76663	0.2229561	0.25519635	2.4616128	20	5 10.3	20.4
426634 2013 SZ_{66}	18.0	X	345.42673	291.18184	42.57327	5.49846	0.1649052	0.28155644	2.3054678	20	9 23.6	19.7
426635 2013 SM_{67}	18.1	X	266.05470	66.49746	17.51227	8.09140	0.0854508	0.29031524	2.2588609	20	10 14.0	20.5
426636 2013 ST_{67}	17.1	X	199.12385	267.78664	122.06861	5.81676	0.1997371	0.23683754	2.5872338	20	4 30.0	21.5
426637 2013 SG_{68}	16.7	X	139.03391	21.42031	22.78708	6.23457	0.0414464	0.22034748	2.7147551	20	3 11.5	20.5
426638 2013 SJ_{70}	17.9	X	213.31575	338.89636	27.21108	3.48886	0.1077694	0.23624266	2.5915753	20	4 14.0	21.7
426639 2013 SE_{71}	17.1	X	218.13904	148.80553	185.84234	1.96346	0.2258210	0.22867377	2.6484502	20	3 6.9	21.6
426640 2013 SW_{71}	16.3	X	105.15551	306.25668	94.56868	6.88019	0.1261459	0.20042925	2.8917582	20	2 8.9	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		°	°	°	°		°				
426641 2013 SA_{72}	17.3	X	25.66116	144.13336	143.15668	7.30876	0.1288974	0.27939541	2.3173406	20	9 23.1	19.7
426642 2013 SG_{72}	16.8	X	205.94625	103.37890	172.68931	12.23523	0.0084278	0.19856232	2.9098560	20	—	—
426643 2013 SZ_{72}	16.5	X	190.59413	232.44121	156.67600	13.61105	0.1633735	0.23215092	2.6219381	20	4 23.7	20.9
426644 2013 SE_{75}	18.1	X	343.90477	218.69036	106.53520	3.08263	0.2268718	0.27909820	2.3189854	20	9 7.8	19.4
426645 2013 SJ_{75}	17.4	X	137.72079	338.49441	127.45875	3.33072	0.0796482	0.24046594	2.5611420	20	5 31.1	20.9
426646 2013 SX_{75}	15.9	X	114.38505	12.26399	336.50777	14.95302	0.1513285	0.18466600	3.0540637	20	—	—
426647 2013 SB_{76}	17.7	X	128.40187	183.90608	204.86877	4.64272	0.1695876	0.21446714	2.7641538	20	2 21.2	21.8
426648 2013 SV_{78}	16.9	X	176.61931	137.18760	268.68626	4.09992	0.1739757	0.22739633	2.6583597	20	4 26.9	21.3
426649 2013 SD_{79}	17.5	X	324.22657	144.08418	271.80598	7.13656	0.0958595	0.29679758	2.2258496	20	12 15.8	19.6
426650 2013 SR_{79}	17.2	X	167.91886	235.57339	152.35499	13.86762	0.2147919	0.22649017	2.6654455	20	4 3.6	21.8
426651 2013 SO_{80}	17.0	X	112.03355	175.76471	355.18486	4.88316	0.1517884	0.25576608	2.4579559	20	8 5.3	20.6
426652 2013 SC_{81}	17.6	X	303.79982	336.12873	340.14066	0.54400	0.1914163	0.25954116	2.4340634	20	5 15.5	20.2
426653 2013 SA_{82}	16.4	X	327.91654	14.36044	353.56826	23.69207	0.1719088	0.28746498	2.2737677	20	9 30.8	18.2
426654 2013 SB_{84}	15.2	X	101.47156	5.47916	307.83636	13.63551	0.0440995	0.17161170	3.2070430	20	12 26.7	20.1
426655 2013 SD_{84}	17.0	X	126.84760	22.38161	24.32401	5.09573	0.1562433	0.21264216	2.7799467	20	3 14.2	21.1
426656 2013 SB_{86}	15.8	X	47.54789	98.18877	325.41021	15.16538	0.2418422	0.17652408	3.1472657	20	1 1.2	19.2
426657 2013 SL_{86}	16.2	X	119.33360	239.31983	147.55534	6.33546	0.0595552	0.20113122	2.8850259	20	1 28.4	20.3
426658 2013 TW_{1}	16.5	X	201.05641	124.20036	232.55086	5.47580	0.0543890	0.22198146	2.7014167	20	3 20.0	20.6
426659 2013 TA_{2}	16.9	X	233.93149	194.87514	282.49892	8.39095	0.0975584	0.28412253	2.2915655	20	10 6.2	20.0
426660 2013 TP_{2}	17.4	X	77.59394	168.33758	94.35610	3.39494	0.0619497	0.28468947	2.2885221	20	10 21.7	20.2
426661 2013 TW_{2}	17.2	X	219.27509	147.91314	183.23574	1.91611	0.0919489	0.22730552	2.6590677	20	3 8.3	21.2
426662 2013 TZ_{2}	16.6	X	151.22224	75.05114	32.08694	18.20546	0.2105065	0.23432024	2.6057306	20	6 20.9	21.3
426663 2013 TR_{3}	15.8	X	221.26733	256.91704	70.48221	16.09973	0.1155191	0.21860106	2.7291948	20	3 14.7	20.4
426664 2013 TS_{3}	16.4	X	155.63631	312.21924	78.74369	7.34548	0.0568213	0.21259982	2.7803158	20	3 18.6	20.5
426665 2013 TF_{7}	16.4	X	135.57895	5.56858	60.26389	9.10955	0.1351356	0.21610686	2.7501540	20	4 15.2	20.6
426666 2013 TO_{7}	16.4	X	180.72570	54.94318	341.76532	12.46162	0.1008088	0.23346092	2.6121208	20	4 13.7	20.5
426667 2013 TU_{8}	18.0	X	3.35551	324.82749	359.99532	4.80981	0.1505895	0.28555547	2.2838929	20	10 12.1	20.0
426668 2013 TV_{8}	17.0	X	213.72192	85.28163	2.97177	7.08076	0.0657934	0.26775693	2.3840145	20	8 9.5	20.2
426669 2013 TC_{9}	16.5	X	125.93546	268.04754	168.84931	13.39309	0.1761297	0.21430670	2.7655332	20	4 23.1	20.9
426670 2013 TR_{13}	17.0	X	122.59328	250.11232	161.54933	4.84912	0.0705864	0.21141039	2.7907343	20	3 3.7	20.7
426671 2013 TX_{13}	17.7	X	61.11661	231.16258	56.46106	3.88003	0.1034596	0.28983892	2.2613351	20	11 8.9	20.4
426672 2013 TZ_{13}	17.0	X	173.86919	312.15567	98.57846	3.64150	0.0932380	0.23148075	2.6269963	20	5 1.1	20.9
426673 2013 TH_{14}	16.8	X	110.49827	322.33851	98.18138	4.42884	0.0529289	0.20938411	2.8087100	20	2 28.6	20.7
426674 2013 TV_{14}	15.8	X	63.37999	141.98200	215.80776	7.22260	0.0917176	0.17021557	3.2245556	20	—	—
426675 2013 TD_{15}	18.0	X	331.16963	191.28919	97.24794	3.40025	0.1637510	0.25833386	2.4416411	20	5 29.9	20.3
426676 2013 TX_{17}	16.2	X	42.24273	62.82578	358.20689	9.41211	0.0876713	0.17816233	3.1279427	20	—	—
426677 2013 TS_{18}	16.6	X	1.90931	119.51906	323.13957	7.93596	0.0670555	0.17547402	3.1598091	20	—	—
426678 2013 TB_{19}	17.1	X	134.09256	227.95491	294.19217	5.03366	0.0459692	0.26418176	2.4054749	20	8 8.7	20.4
426679 2013 TM_{19}	16.6	X	129.54161	245.96955	200.88214	21.59475	0.0555450	0.23064497	2.6333387	20	4 23.9	20.2
426680 2013 TS_{19}	16.9	X	167.87926	303.49452	50.74965	3.05261	0.0932764	0.21089753	2.7952568	20	2 16.1	21.1
426681 2013 TL_{20}	16.0	X	132.36783	136.79843	152.46902	1.58325	0.1514018	0.17573562	3.1566724	20	—	—
426682 2013 TF_{21}	17.4	X	157.60209	164.81500	28.38962	7.35724	0.0472531	0.28728849	2.2746988	20	10 24.2	20.3
426683 2013 TO_{21}	16.8	X	55.87083	292.11187	132.45569	2.73340	0.0862723	0.18906236	3.0065332	20	—	—
426684 2013 TQ_{21}	16.3	X	31.17688	29.68381	28.14997	6.88175	0.0951949	0.17673255	3.1447902	20	—	—
426685 2013 TA_{22}	17.3	X	209.81554	304.72209	58.56591	2.52638	0.1114612	0.23155329	2.6264477	20	4 7.8	21.3
426686 2013 TB_{22}	17.2	X	165.79262	339.47062	29.46592	6.98716	0.0797589	0.21521116	2.7577794	20	3 3.0	21.3
426687 2013 TZ_{22}	16.9	X	196.21827	253.89925	74.13850	1.52999	0.0720456	0.21365976	2.7711129	20	2 11.9	20.9
426688 2013 TQ_{23}	16.6	X	357.51457	34.61474	54.42920	1.66201	0.1391923	0.17233935	3.1980095	20	—	—
426689 2013 TC_{26}	16.3	X	166.60273	52.44911	213.34974	2.53576	0.0620713	0.17495646	3.1660376	20	—	—
426690 2013 TM_{26}	17.2	X	249.86781	115.01942	186.38475	2.98308	0.0920988	0.22438842	2.6820637	20	3 3.9	21.0
426691 2013 TU_{26}	17.2	X	204.14079	154.71159	188.20672	6.06215	0.0111708	0.21891560	2.7265800	20	3 8.2	21.0
426692 2013 TC_{27}	17.9	X	152.99709	201.60073	9.13909	7.49923	0.0478468	0.29304284	2.2448223	20	11 10.3	20.8
426693 2013 TT_{27}	16.6	X	182.71650	94.13818	193.07546	10.33917	0.0527848	0.19032614	2.9932093	20	—	—
426694 2013 TG_{28}	16.6	X	136.86517	310.00829	60.85755	2.98750	0.0827056	0.20262208	2.8708568	20	2 2.6	20.7
426695 2013 TR_{28}	16.5	X	113.40550	53.01593	39.33005	5.03808	0.0914016	0.21566236	2.7539316	20	4 16.3	20.3
426696 2013 TW_{28}	17.4	X	283.06762	159.51172	196.03100	5.83630	0.1310163	0.25834184	2.4415908	20	6 20.0	20.3
426697 2013 TP_{29}	16.4	X	256.06699	114.28219	173.25353	4.38729	0.0790212	0.20950992	2.8075855	20	2 25.5	20.5
426698 2013 TX_{30}	17.8	X	11.04802	312.31426	17.17425	3.27797	0.1744612	0.28887815	2.2663462	20	11 7.3	19.9
426699 2013 TY_{30}	18.0	X	79.40196	270.67197	329.15221	6.53442	0.1398075	0.28030899	2.3123028	20	9 27.4	21.3
426700 2013 TQ_{31}	16.1	X	91.76711	359.71525	359.29560	9.38393	0.0815540	0.17848005	3.1242295	20	—	—
426701 2013 TS_{31}	17.4	X	302.90274	108.33763	231.82813	5.20213	0.1586712	0.26070375	2.4268217	20	6 24.8	19.9
426702 2013 TD_{32}	17.7	X	44.13412	301.94688	349.70683	5.42875	0.1650932	0.29739382	2.2228736	20	10 31.8	20.4
426703 2013 TM_{32}	16.6	X	132.91119	199.88912	211.24029	14.03103	0.0457268	0.21185775	2.7868043	20	3 8.3	20.8
426704 2013 TN_{32}	16.9	X	111.74974	168.64161	231.62868	2.58189	0.1116007	0.19847641	2.9106956	20	2 11.7	20.9
426705 2013 TR_{33}	17.7	X	68.72974	62.02463	197.32978	5.23104	0.0818630	0.28659071	2.2783896	20	10 6.7	20.6
426706 2013 TN_{34}	17.0	X	185.92877	69.42610	37.27783	15.09656	0.0371554	0.25689686	2.4507378	20	8 4.7	20.6
426707 2013 TS_{34}	15.6	X	18.71975	22.24041	48.84429	16.64182	0.0691682	0.16928013	3.2364238	20	—	—
426708 2013 TQ_{36}	17.0	X	158.47992	266.31687	120.64834	4.67671	0.1115455	0.21898438	2.7260090	20	3 18.3	21.1
426709 2013 TN_{37}	17.0	X	245.35055	2.05639	343.56549	8.68834	0.1764017	0.23813070	2.5778588	20	4 12.2	21.0
426710 2013 TH_{39}	16.7	X	83.04080	92.49338	27.61966	9.26453	0.0789014	0.21738963	2.7393246	20	4 11.4	20.1
426711 2013 TX_{39}	17.5	X	289.79982	131.61011	210.29520	6.01013	0.0937099	0.25277080	2.4773352	20	6 16.7	20.6
426712 2013 TJ_{40}	16.8	X	145.39234	202.60927	204.19095	6.39103	0.0810977	0.21578100	2.7529220	20	3 23.7	20.7
426713 2013 TE_{41}	16.7	X	162.52549	172.41055	205.19492	3.86069	0.0876186	0.21295476	2.7772256	20	3 6.8	20.9
426714 2013 TO_{42}	16.7	X	206.39535	344.12073	328.61352	7.40895	0.2091465	0.21463197	2.7627385	20	2 3.9	21.4
426715 2013 TQ_{43}	17.9	X	307.09416	328.38101	8.42854	4.88387	0.1400199	0.26304393	2.4124067	20	7 1.5	20.4
426716 2013 TF_{45}	17.6	X	114.70975	248.35273	10.33989	7.05871	0.0862674	0.29692824	2.2251966	20	11 30.4	20.7
426717 2013 TT_{45}	17.4	X	85.97986	232.08662	355.75999	1.87087	0.1601370	0.27246335	2.3564812	20	9 22.6	20.7
426718 2013 TP_{46}	17.2	X	110.12710	1.94147	9.36800	2.02614	0.0898295	0.19045720	2.9918360	20	1 5.2	21.3
426719 2013 TC_{47}	17.4	X	289.40073	263.20620	7.14688	3.44968	0.1193897	0.22619919	2.6677309	20	3 8.1	21.0
426720 2013 TJ_{47}	16.8	X	148.47859	349.75335	29.40497	1.94167	0.1178174	0.20831700	2.8182936	20	2 27.8	21.1

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Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
	m		°	°	°	°		°				
426721 2013 TP_{49}	16.1	X	121.85583	301.61953	26.83450	6.55951	0.1365529	0.18103983	3.0947100	20	—	—
426722 2013 TZ_{50}	16.8	X	188.92551	9.49482	23.54007	5.49699	0.1614862	0.22932507	2.6434333	20	4 22.7	21.0
426723 2013 TM_{51}	13.9	X	196.94696	165.87438	223.85867	3.81583	0.1690391	0.08222001	5.2378255	20	4 30.2	21.6
426724 2013 TX_{51}	17.1	X	126.00405	138.03365	252.87123	1.71437	0.2208841	0.20545110	2.8444419	20	2 28.5	21.6
426725 2013 TM_{52}	16.6	X	185.44771	358.76450	345.32236	8.02742	0.2271090	0.21384684	2.7694965	20	2 24.4	21.3
426726 2013 TQ_{52}	16.3	X	295.26478	266.53015	5.14271	13.34379	0.1468400	0.22775850	2.6555409	20	3 14.4	19.8
426727 2013 TU_{52}	15.6	X	88.14322	106.00736	255.06877	8.06365	0.0802428	0.17453899	3.1710840	20	—	—
426728 2013 TW_{52}	16.9	X	190.55052	27.87529	351.37491	7.83969	0.1445712	0.22403150	2.6849116	20	4 5.8	21.2
426729 2013 TH_{53}	16.0	X	246.79101	309.92811	355.43811	9.12563	0.1135394	0.22126847	2.7072168	20	3 5.6	20.0
426730 2013 TS_{57}	16.5	X	34.86996	152.31438	295.29830	5.05116	0.1024209	0.18541457	3.0458381	20	—	—
426731 2013 TY_{58}	16.4	X	54.07793	38.73642	355.19460	9.50650	0.1204198	0.17384242	3.1795491	20	—	—
426732 2013 TP_{60}	15.8	X	52.84911	70.23547	345.99659	9.70205	0.1076611	0.18110680	3.0939471	20	—	—
426733 2013 TV_{63}	17.4	X	222.60624	49.75448	298.00794	0.91965	0.1574450	0.23037810	2.6353719	20	3 28.7	21.6
426734 2013 TF_{67}	16.8	X	107.50915	130.13433	315.08535	12.52477	0.2186213	0.22178847	2.7029836	20	4 9.1	21.1
426735 2013 TE_{72}	16.7	X	250.82274	268.36251	24.46768	8.77759	0.1029113	0.21822736	2.7323097	20	2 27.3	20.8
426736 2013 TZ_{72}	17.4	X	7.90486	241.74819	51.26183	6.04121	0.1900396	0.27025997	2.3692719	20	9 8.2	19.5
426737 2013 TY_{75}	16.4	X	136.83424	147.12306	246.04283	2.77438	0.1065223	0.20990546	2.8040573	20	2 29.2	20.6
426738 2013 TW_{77}	15.5	X	67.99192	115.51711	222.04907	9.30191	0.0146275	0.15775608	3.3921781	20	12 9.7	20.3
426739 2013 TQ_{78}	16.3	X	41.26364	46.00086	5.32740	9.80206	0.0955161	0.17696819	3.1419980	20	—	—
426740 2013 TG_{79}	18.1	X	7.28944	127.15916	201.61103	6.63142	0.1381112	0.28783806	2.2718025	20	10 25.6	20.3
426741 2013 TJ_{80}	17.2	X	139.60124	341.19688	86.81926	3.26532	0.0700596	0.22374900	2.6871711	20	4 13.9	21.0
426742 2013 TJ_{83}	17.9	X	82.10640	2.17261	303.57139	2.77139	0.1835085	0.30633352	2.1794138	20	—	—
426743 2013 TW_{83}	17.0	X	7.98356	316.33772	255.46578	4.11867	0.0835494	0.22899205	2.6459956	20	4 18.6	20.1
426744 2013 TA_{84}	16.7	X	122.70349	60.69242	357.42485	6.23007	0.0366962	0.21130529	2.7916596	20	3 8.0	20.5
426745 2013 TD_{84}	17.1	X	157.48882	55.16712	340.19316	3.90943	0.0734780	0.21672997	2.7448802	20	3 22.3	21.0
426746 2013 TZ_{88}	16.4	X	99.80072	357.32377	8.82315	8.72988	0.0717910	0.18070777	3.0984999	20	—	—
426747 2013 TL_{89}	16.8	X	218.65816	72.68720	250.46212	3.03501	0.0696838	0.21466326	2.7624700	20	2 27.6	21.0
426748 2013 TW_{89}	16.6	X	328.44693	211.32452	12.28436	6.65662	0.0328373	0.21550143	2.7553024	20	3 13.8	20.1
426749 2013 TN_{90}	18.1	X	236.82635	339.87822	198.27299	6.41923	0.1595476	0.31021738	2.1611851	20	—	—
426750 2013 TB_{92}	16.6	X	44.86391	336.57703	61.78781	0.35407	0.1850710	0.17387422	3.1791615	20	—	—
426751 2013 TC_{92}	16.8	X	214.38118	34.35029	312.96089	10.62969	0.1804314	0.23234602	2.6204702	20	3 15.7	21.3
426752 2013 TE_{92}	17.3	X	205.55774	334.49113	28.56994	2.80828	0.0926863	0.22354951	2.6887694	20	4 3.6	21.2
426753 2013 TN_{92}	16.5	X	163.13575	19.73552	32.27024	5.53065	0.1017307	0.22233816	2.6985267	20	4 20.7	20.7
426754 2013 TE_{93}	16.4	X	139.26168	39.33290	36.84631	6.61307	0.0566916	0.22293653	2.6936959	20	4 21.6	20.0
426755 2013 TA_{94}	16.2	X	34.65613	267.24061	181.67878	3.77130	0.1014263	0.18093382	3.0959187	20	—	—
426756 2013 TC_{94}	16.5	X	154.39211	318.95516	94.70059	2.58622	0.0594175	0.21903991	2.7255483	20	4 11.8	20.3
426757 2013 TF_{94}	15.5	X	223.80517	171.93187	66.15771	10.42737	0.0641387	0.17218729	3.1998921	20	—	—
426758 2013 TP_{94}	16.7	X	261.40885	348.70156	338.85255	6.54548	0.1225775	0.23869509	2.5737936	20	4 12.7	20.4
426759 2013 TU_{98}	16.4	X	96.58761	235.65081	135.32484	4.06058	0.0472914	0.18042890	3.1016918	20	—	—
426760 2013 TP_{99}	17.5	X	112.14541	322.22539	335.99481	5.54671	0.0712992	0.30742494	2.1742525	20	—	—
426761 2013 TQ_{99}	15.9	X	357.55452	97.49380	15.73971	15.61514	0.1458940	0.17197947	3.2024694	20	—	—
426762 2013 TR_{99}	15.5	X	45.63667	357.79698	5.90011	9.61105	0.1417496	0.15766229	3.3935232	20	12 31.8	20.4
426763 2013 TZ_{99}	16.5	X	136.12922	67.83474	13.46461	9.18465	0.2147399	0.21634958	2.7480967	20	5 6.2	21.1
426764 2013 TB_{100}	16.0	X	134.76827	318.80304	16.00313	10.10255	0.0756875	0.17981648	3.1087304	20	—	—
426765 2013 TC_{101}	17.7	X	42.56348	303.38623	7.35348	6.33892	0.1162834	0.29167459	2.2518372	20	11 16.8	20.6
426766 2013 TM_{102}	17.4	X	297.42415	146.64936	159.87155	0.64808	0.1018818	0.24324054	2.5416285	20	5 7.5	20.5
426767 2013 TG_{104}	17.0	X	235.33635	340.30644	311.52075	1.66130	0.1796478	0.21483671	2.7609829	20	2 2.9	21.4
426768 2013 TP_{104}	16.8	X	124.51163	171.90858	235.56711	3.47794	0.0783359	0.20828978	2.8185392	20	2 29.4	20.9
426769 2013 TS_{104}	16.0	X	38.31140	42.42076	14.71491	9.75005	0.0262781	0.17669942	3.1451834	20	—	—
426770 2013 TO_{105}	17.1	X	245.50917	98.72782	239.76834	11.11002	0.2144724	0.23696966	2.5862721	20	3 31.1	21.5
426771 2013 TE_{107}	17.5	X	266.65711	159.90113	169.37984	2.56093	0.1511417	0.23996943	2.5646736	20	4 20.8	21.2
426772 2013 TS_{107}	16.8	X	155.67518	192.64930	187.32993	4.29101	0.0821326	0.21032190	2.8003548	20	3 2.5	20.8
426773 2013 TW_{107}	17.0	X	155.15861	280.13174	99.99621	1.89404	0.0839053	0.20995315	2.8036327	20	3 4.0	21.0
426774 2013 TA_{108}	16.4	X	89.41177	3.71783	66.42102	2.98687	0.0524678	0.20092478	2.8870017	20	2 14.4	20.2
426775 2013 TF_{112}	16.5	X	114.09756	40.34758	50.18663	4.90274	0.0390534	0.22087741	2.7104112	20	4 8.1	20.2
426776 2013 TG_{112}	17.2	X	355.32718	93.56054	189.59356	4.49391	0.2304104	0.26436766	2.4043471	20	7 17.9	18.8
426777 2013 TH_{112}	15.9	X	264.86701	189.23970	23.57944	15.98070	0.0367590	0.18637542	3.0353606	20	—	—
426778 2013 TL_{113}	16.7	X	265.07380	128.67836	202.24356	12.93568	0.1544106	0.23990588	2.5651265	20	4 20.6	20.4
426779 2013 TG_{114}	16.8	X	316.77351	198.81879	44.61142	6.55671	0.0380383	0.22094773	2.7098361	20	3 23.9	20.3
426780 2013 TW_{114}	16.9	X	330.64379	301.59957	29.12711	7.58794	0.2438984	0.26713592	2.3877078	20	8 6.1	18.4
426781 2013 TG_{115}	16.1	X	72.54949	4.39844	38.79745	5.06552	0.1148231	0.17832684	3.1260187	20	—	—
426782 2013 TP_{116}	16.6	X	197.34489	29.89108	316.20783	3.83534	0.1236903	0.21560864	2.7543890	20	3 4.5	20.9
426783 2013 TL_{120}	18.1	X	356.49582	212.94244	112.78448	4.25147	0.2138055	0.28238570	2.3009522	20	10 12.6	19.8
426784 2013 TR_{120}	16.8	X	41.10138	54.32313	341.20842	2.40311	0.1336427	0.16995917	3.2277978	20	—	—
426785 2013 TZ_{123}	17.1	X	249.69761	283.60292	6.86175	4.81091	0.1397784	0.21966259	2.7203951	20	2 17.8	21.3
426786 2013 TC_{125}	15.9	X	353.99040	36.85309	353.18240	9.33484	0.1084527	0.14705848	3.5547521	20	11 12.5	20.6
426787 2013 TY_{127}	16.1	X	294.33555	331.53930	194.65124	17.23188	0.0738579	0.18044157	3.1015467	20	—	—
426788 2013 TQ_{128}	15.7	X	95.55800	132.70419	209.04786	11.34838	0.1196451	0.17995636	3.1071192	20	—	—
426789 2013 TR_{128}	16.3	X	38.53189	109.78435	336.68251	9.11368	0.1259364	0.19112670	2.9848451	20	1 1.2	20.0
426790 2013 TA_{130}	15.8	X	46.97915	1.20046	9.96259	5.57809	0.1390448	0.16826444	3.2494347	20	—	—
426791 2013 TF_{130}	15.5	X	12.92113	248.48965	187.37515	26.00405	0.1696723	0.17222521	3.1994223	20	—	—
426792 2013 TQ_{131}	16.0	X	89.02193	186.98851	209.80254	14.85894	0.0757876	0.18599126	3.0395388	20	1 5.7	20.4
426793 2013 TR_{131}	17.4	X	257.85073	190.48718	132.81002	5.52150	0.2339769	0.24237954	2.5476440	20	3 27.3	21.4
426794 2013 TT_{131}	17.5	X	325.63741	250.28527	72.53749	6.38793	0.2525468	0.26530337	2.3986905	20	6 30.9	19.0
426795 2013 TG_{133}	16.2	X	37.02841	275.32546	154.22003	11.72957	0.0803033	0.17727240	3.1384024	20	—	—
426796 2013 TK_{133}	15.5	X	19.39595	137.39862	320.67649	12.06225	0.1201993	0.17564048	3.1578123	20	—	—
426797 2013 TM_{133}	16.6	X	156.98942	114.43068	257.78274	3.39754	0.0935271	0.21455375	2.7634099	20	2 23.2	20.7
426798 2013 TX_{133}	16.6	X	26.09372	27.42056	52.62937	1.60793	0.1380030	0.17873877	3.1212140	20	—	—
426799 2013 TD_{134}	16.1	X	52.37678	37.68011	16.49908	8.35039	0.0297522	0.18342618	3.0678103	20	—	—
426800 2013 TH_{134}	16.3	X	106.51080	209.05893	182.12411	12.95552	0.0895003	0.19253904	2.9702306	20	1 21.9	20.7

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Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
	m		°	°	°	°		°				
426801 2013 TA_{135}	17.8	X	333.78371	285.43110	47.99120	2.85440	0.1992507	0.26951678	2.3736254	20	8 21.1	19.3
426802 2013 TJ_{136}	16.1	X	33.95969	84.09721	358.81503	5.81114	0.1516853	0.18110500	3.0939676	20	—	—
426803 2013 TO_{136}	15.9	X	168.68999	309.01480	80.69327	26.26893	0.1538555	0.21354941	2.7720675	20	4 16.3	20.9
426804 2013 TP_{136}	16.2	X	110.52103	276.46208	113.22231	13.32087	0.1873620	0.19023527	2.9941624	20	2 11.4	20.6
426805 2013 TD_{137}	16.2	X	62.06659	197.70326	198.19248	5.10631	0.1588913	0.18178652	3.0862298	20	—	—
426806 2013 TO_{137}	16.3	X	34.85200	111.71578	354.18093	15.72196	0.2631260	0.18026637	3.1035560	20	2 4.2	19.4
426807 2013 TT_{137}	16.8	X	125.84058	348.64838	77.95147	5.72686	0.0541910	0.21394468	2.7686521	20	3 27.1	20.7
426808 2013 TK_{138}	17.1	X	172.45793	194.58972	170.88316	3.81628	0.1089548	0.21526728	2.7573001	20	3 4.2	21.2
426809 2013 TP_{138}	16.0	X	211.75138	266.99502	78.30787	7.02288	0.0755951	0.21982710	2.7190377	20	3 23.2	20.1
426810 2013 TD_{139}	16.7	X	283.19266	189.70883	143.33312	10.30502	0.2660114	0.24495663	2.5297440	20	5 2.5	20.4
426811 2013 TH_{140}	16.8	X	171.64563	180.50936	221.58000	13.69776	0.1001168	0.22340952	2.6898926	20	4 15.7	20.9
426812 2013 TR_{140}	16.2	X	58.55416	295.55980	75.80292	2.20803	0.1083055	0.17117415	3.2125058	20	—	—
426813 2013 TZ_{140}	16.6	X	243.18032	232.74989	36.39504	2.42413	0.0115408	0.20431698	2.8549581	20	1 27.5	20.6
426814 2013 TF_{141}	17.2	X	53.16366	148.39033	46.02399	1.12697	0.0872720	0.24215114	2.5492457	20	6 9.1	20.3
426815 2013 TW_{141}	17.9	X	110.95057	89.47563	177.33579	3.09897	0.1725757	0.30462864	2.1875378	20	12 11.9	21.2
426816 2013 TO_{144}	16.6	X	197.64134	279.91367	76.16899	4.06574	0.0177176	0.21936948	2.7228178	20	3 20.1	20.4
426817 2013 TT_{145}	17.4	X	45.83020	209.27127	146.70663	5.33734	0.1720376	0.30600308	2.1809825	20	—	—
426818 2013 TU_{145}	17.3	X	202.33313	256.68867	88.41738	5.27697	0.2696189	0.22443570	2.6816870	20	3 10.0	22.2
426819 2013 TU_{156}	16.6	X	108.52007	115.16039	245.95209	0.71301	0.0990831	0.17803353	3.1294511	20	—	—
426820 2013 UU_{5}	15.9	X	144.52615	336.04464	61.56838	7.04838	0.0557345	0.21124557	2.7921858	20	3 13.9	20.0
426821 2013 UJ_{6}	16.7	X	280.12779	68.21129	236.06774	9.77353	0.1326217	0.23485565	2.6017688	20	4 3.3	20.4
426822 2013 UT_{6}	15.7	X	40.40858	72.99774	308.78769	12.72122	0.1879323	0.17003063	3.2268933	20	—	—
426823 2013 UD_{7}	16.6	X	243.02341	42.89723	308.93600	4.89109	0.0896492	0.23566353	2.5958193	20	4 27.5	20.4
426824 2013 UQ_{7}	16.2	X	214.00013	237.71836	104.09742	13.44289	0.1836098	0.21763654	2.7372524	20	3 20.3	21.0
426825 2013 UY_{7}	16.3	X	65.46764	43.47301	353.66616	9.03800	0.1071885	0.17750817	3.1356229	20	—	—
426826 2013 UH_{8}	16.7	X	265.32662	219.14438	98.44898	9.07929	0.1927143	0.23646615	2.5899421	20	4 3.7	20.7
426827 2013 UG_{14}	16.8	X	231.80203	245.13760	103.68647	5.75737	0.2398095	0.23316346	2.6143419	20	4 5.9	21.3
426828 2013 UQ_{14}	16.8	X	171.31184	247.08850	156.87455	4.94398	0.0826544	0.22467227	2.6798042	20	4 19.9	20.8
426829 2013 VZ	17.3	X	50.91862	219.49782	87.42394	3.95013	0.1880256	0.29297467	2.2451705	20	12 3.9	20.3
426830 2013 VD_{1}	15.9	X	32.69143	222.50174	244.66982	8.14245	0.0970679	0.18339119	3.0682005	20	1 16.2	19.8
426831 2013 VP_{2}	16.3	X	268.86364	126.31311	201.69530	11.40291	0.1354276	0.23922151	2.5700164	20	4 23.9	19.8
426832 2013 VV_{2}	15.6	X	31.74840	138.50367	302.95174	8.80731	0.0966641	0.17628308	3.1501335	20	—	—
426833 2013 VX_{2}	15.7	X	58.34445	103.66045	297.98819	10.09666	0.1371109	0.17369088	3.1813982	20	—	—
426834 2013 VG_{3}	15.9	X	25.94120	171.23520	275.09062	11.75375	0.0947684	0.17768935	3.1334910	20	—	—
426835 2013 VM_{3}	16.0	X	95.55029	328.86458	53.98971	12.57158	0.0396569	0.18233773	3.0800069	20	—	—
426836 2013 VD_{7}	16.0	X	67.95494	81.56524	335.38568	10.49729	0.1415615	0.18401816	3.0612274	20	1 14.9	19.9
426837 2013 VL_{7}	15.9	X	317.71057	158.01886	351.72127	10.71763	0.0428541	0.17998322	3.1068101	20	—	—
426838 2013 VQ_{7}	16.7	X	148.04078	172.44198	235.15218	3.64990	0.0688067	0.21400100	2.7681663	20	3 26.3	20.7
426839 2013 VC_{8}	15.9	X	10.85842	102.19221	31.28192	10.43000	0.0578007	0.18966031	3.0002107	20	1 20.8	20.0
426840 2013 VM_{8}	16.5	X	94.46547	226.09666	169.83741	1.14091	0.1184224	0.18382829	3.0633350	20	1 20.2	20.7
426841 2013 VV_{9}	15.9	X	154.81831	261.78217	170.64784	21.64896	0.0916440	0.22255069	2.6968084	20	5 11.2	20.3
426842 2013 VJ_{10}	17.0	X	290.32967	119.19128	203.83029	13.62943	0.1412082	0.24567961	2.5247786	20	5 14.9	20.2
426843 2013 VP_{10}	17.2	X	256.78795	0.29525	346.88015	3.33687	0.1457761	0.23934281	2.5691480	20	5 1.6	20.8
426844 2013 VV_{11}	16.9	X	147.74319	250.72211	233.23109	26.62296	0.2750784	0.24130668	2.5551897	20	7 6.3	21.9
426845 2013 VH_{14}	15.6	X	211.15331	239.95616	3.06981	10.37786	0.0406018	0.17267162	3.1939056	20	—	—
426846 2013 VG_{15}	17.0	X	236.90060	219.00537	134.78379	6.26668	0.1161754	0.22876839	2.6477199	20	4 25.6	21.0
426847 2013 VF_{16}	16.8	X	231.00723	260.98791	91.35477	8.28478	0.2126321	0.23228644	2.6209182	20	4 12.3	21.2
426848 2013 VF_{19}	16.2	X	69.89382	280.58848	127.41111	4.10412	0.3189057	0.18341924	3.0678877	20	1 30.9	19.7
426849 2013 VR_{20}	15.9	X	134.59752	305.39775	41.47600	15.67940	0.0930945	0.18625797	3.0366365	20	1 5.9	20.6
426850 2013 VB_{21}	16.4	X	177.81884	271.28296	86.33550	8.56522	0.2318932	0.21391838	2.7688790	20	3 8.6	21.3
426851 2013 VQ_{22}	15.9	X	18.06751	114.33660	345.46843	14.16614	0.1710672	0.17501489	3.1653329	20	—	—
426852 2013 VX_{22}	16.0	X	40.45401	39.91133	76.63642	11.36987	0.1044870	0.19329710	2.9624599	20	2 13.5	19.8
426853 2013 VB_{23}	16.3	X	102.19417	148.34428	226.67642	8.77157	0.1657998	0.18587582	3.0407972	20	1 9.5	20.6
426854 2013 WJ_{1}	16.1	X	44.40040	337.20287	139.33996	6.12319	0.1237900	0.19166593	2.9792442	20	2 17.8	19.6
426855 2013 WL_{1}	15.7	X	243.71639	127.31849	113.84904	7.37489	0.0262094	0.18182034	3.0858471	20	—	—
426856 2013 WV_{2}	15.9	X	95.75659	132.79647	229.12413	16.38572	0.2282515	0.17750673	3.1356398	20	—	—
426857 2013 WH_{3}	15.9	X	110.82106	103.18528	283.33696	12.85963	0.1817523	0.18606032	3.0387866	20	2 2.8	20.4
426858 2013 WJ_{4}	16.3	X	28.02372	43.68724	53.97712	9.80077	0.1617775	0.17454506	3.1710105	20	1 1.5	20.0
426859 2013 WP_{4}	15.5	X	69.41369	160.42942	238.77854	16.33460	0.0099602	0.17244741	3.1966733	20	—	—
426860 2013 WX_{4}	16.0	X	175.28066	257.41033	113.40710	9.83134	0.2198985	0.21198891	2.7856548	20	3 21.9	20.9
426861 2013 WG_{5}	16.1	X	91.51758	230.97826	156.87588	11.42309	0.1533085	0.18060940	3.0996250	20	1 11.5	20.4
426862 2013 WJ_{5}	15.7	X	68.74406	288.74733	131.21161	12.42525	0.0879527	0.18093118	3.0959488	20	1 11.6	19.9
426863 2013 WZ_{5}	16.0	X	71.38134	261.62578	141.21191	10.09783	0.0893634	0.17504759	3.1649387	20	—	—
426864 2013 WK_{6}	16.1	X	181.53608	262.77848	97.89596	12.74024	0.2345432	0.21093485	2.7949271	20	3 16.9	21.2
426865 2013 WA_{7}	15.8	X	115.04166	260.07077	107.97451	10.69321	0.1777661	0.18234122	3.0799676	20	1 20.1	20.3
426866 2013 WC_{7}	17.1	X	233.24819	28.53368	338.44783	2.70299	0.2625673	0.23659928	2.5889705	20	4 23.8	21.5
426867 2013 WU_{8}	15.8	X	66.91526	144.30850	255.84113	6.92624	0.0435829	0.17070998	3.2183265	20	—	—
426868 2013 WL_{15}	17.3	X	37.57107	72.13274	150.83348	1.57318	0.0752665	0.23018519	2.6368442	20	6 23.5	20.4
426869 2013 WQ_{19}	15.6	X	207.38675	178.45171	101.86226	12.57625	0.0445692	0.17590437	3.1546532	20	1 2.6	20.1
426870 2013 WJ_{21}	15.9	X	328.27182	79.70862	99.71588	11.34793	0.0271230	0.18741795	3.0240938	20	1 22.1	20.0
426871 2013 WQ_{21}	16.2	X	282.42802	118.29942	159.92411	7.85055	0.0631721	0.21224782	2.7833889	20	3 19.4	20.0
426872 2013 WK_{27}	15.5	X	121.76701	70.66449	273.85879	17.04540	0.1824822	0.18207134	3.0830104	20	—	—
426873 2013 WH_{28}	16.4	X	92.98117	256.39742	244.94424	11.16917	0.0778936	0.21971655	2.7199497	20	5 22.1	19.9
426874 2013 WS_{29}	16.9	X	144.16586	24.39132	69.13389	6.46353	0.0454665	0.22279271	2.6948550	20	5 19.3	20.7
426875 2013 WJ_{34}	17.2	X	152.63616	219.45288	239.66770	2.40399	0.0483908	0.22958851	2.6414108	20	6 6.0	20.9
426876 2013 WS_{35}	16.4	X	318.84625	358.49377	302.96907	8.17594	0.1671190	0.24735772	2.5133467	20	5 22.7	19.1
426877 2013 WB_{37}	16.0	X	141.15754	79.26418	280.13985	10.00122	0.0655694	0.18266243	3.0763558	20	1 23.0	20.5
426878 2013 WR_{37}	15.7	X	48.96835	158.30429	304.15042	11.07119	0.1305247	0.17776056	3.1326540	20	2 8.1	19.6
426879 2013 WP_{39}	15.5	X	40.40926	119.11883	282.02324	7.14591	0.1335941	0.15952061	3.3671168	20	—	—
426880 2013 WG_{42}	17.0	X	87.08842	230.03849	243.59402	1.04557	0.0485442	0.21064371	2.7975018	20	4 3.2	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		°	°	°	°		°				
426881 2013 WW_{46}	15.5	X	283.30437	132.83109	66.59886	17.66707	0.0520340	0.17818351	3.1276948	20	—	—
426882 2013 WR_{47}	16.2	X	185.85166	190.28144	171.01425	4.08957	0.1099803	0.21490813	2.7603712	20	3 12.7	20.3
426883 2013 WL_{48}	17.0	X	14.75593	323.17223	334.08631	8.82024	0.2497292	0.27043340	2.3682588	20	10 1.8	19.2
426884 2013 WT_{49}	16.0	X	18.17038	168.53896	325.04238	8.86904	0.0462434	0.18777581	3.0202504	20	1 29.9	20.0
426885 2013 WD_{50}	16.2	X	354.02267	246.92729	28.63083	15.30611	0.1167862	0.24274471	2.5450884	20	6 28.2	19.2
426886 2013 WZ_{50}	16.3	X	65.10317	85.19661	335.43836	9.09515	0.0360607	0.17789083	3.1311245	20	1 4.4	20.6
426887 2013 WA_{51}	15.7	X	16.56574	104.65093	8.05925	10.50927	0.0599217	0.17677734	3.1442590	20	1 4.2	20.0
426888 2013 WZ_{52}	15.7	X	167.30528	38.64665	306.02056	7.54767	0.0491311	0.19025971	2.9939060	20	2 1.8	19.9
426889 2013 WG_{53}	16.0	X	84.32981	46.18788	325.16490	7.21825	0.1021912	0.16883858	3.2420640	20	—	—
426890 2013 WS_{56}	16.2	X	222.80130	256.12841	71.58485	14.19562	0.1593890	0.21176122	2.7876512	20	3 13.9	21.0
426891 2013 WX_{56}	15.6	X	308.21733	97.43764	73.39508	9.08749	0.0041948	0.17300023	3.1898598	20	—	—
426892 2013 WL_{57}	16.3	X	218.14111	259.41363	93.67905	7.24804	0.1624786	0.22190533	2.7020345	20	4 4.6	20.7
426893 2013 WX_{57}	16.5	X	145.46627	356.47630	60.55483	6.80174	0.0452698	0.21134238	2.7913330	20	4 6.4	20.5
426894 2013 WR_{58}	16.9	X	197.08345	289.62095	90.87782	7.22023	0.0609201	0.21761669	2.7374189	20	4 20.3	21.0
426895 2013 WT_{58}	16.6	X	147.28183	255.10752	226.13641	6.64720	0.1061003	0.23282110	2.6169042	20	7 1.6	20.6
426896 2013 WU_{58}	16.8	X	249.46971	235.32750	115.62261	3.46593	0.1048684	0.23020052	2.6367271	20	5 5.9	20.5
426897 2013 WT_{59}	16.5	X	87.69731	51.41836	90.47021	9.82040	0.0757902	0.22016156	2.7162832	20	5 17.9	20.2
426898 2013 WC_{62}	15.6	X	291.36316	317.04368	249.43133	14.74277	0.0160938	0.18423799	3.0587919	20	1 8.5	20.1
426899 2013 WJ_{62}	15.8	X	101.69637	255.14244	97.22322	16.52606	0.2263022	0.17283822	3.1918528	20	—	—
426900 2013 WZ_{66}	16.3	X	249.09626	45.22413	288.03004	5.39537	0.1030104	0.22580072	2.6708685	20	4 8.8	20.4
426901 2013 WV_{69}	16.1	X	358.23688	99.67372	51.60094	6.43303	0.0225886	0.18718354	3.0266180	20	1 27.3	20.3
426902 2013 WX_{70}	15.9	X	166.85470	284.96625	54.09343	5.02820	0.0871620	0.18971943	2.9995873	20	1 30.2	20.5
426903 2013 WZ_{72}	17.0	X	280.57543	328.69326	353.80206	3.40523	0.2479016	0.23978675	2.5659760	20	4 13.5	20.6
426904 2013 WH_{74}	16.6	X	62.79888	289.98511	115.10091	4.45995	0.1242748	0.17082867	3.2168356	20	—	—
426905 2013 WM_{74}	16.0	X	101.47113	293.93850	83.29749	11.03436	0.0347662	0.17460520	3.1702823	20	—	—
426906 2013 WK_{75}	16.5	X	286.49085	230.67694	0.03319	0.91047	0.0090267	0.18989407	2.9977480	20	2 3.8	20.6
426907 2013 WZ_{75}	16.9	X	110.12962	232.78174	147.61525	1.42181	0.1990230	0.18478200	3.0527854	20	1 31.2	21.4
426908 2013 WZ_{76}	15.5	X	40.79903	243.82537	234.26532	9.89814	0.0667293	0.18953367	3.0015469	20	2 6.3	19.6
426909 2013 WM_{78}	17.1	X	152.34532	231.82104	32.41233	7.22378	0.0750412	0.30009132	2.2095327	20	—	—
426910 2013 WY_{80}	16.8	X	66.85825	111.01615	300.63892	1.09124	0.0846082	0.17562623	3.1579830	20	—	—
426911 2013 WA_{81}	17.2	X	130.88184	341.81537	261.94811	4.78437	0.1317293	0.28273277	2.2990687	20	11 27.0	20.5
426912 2013 WA_{83}	16.1	X	183.07071	98.42530	229.72356	7.86992	0.0996004	0.19169561	2.9789366	20	1 29.9	20.9
426913 2013 WM_{84}	16.3	X	182.76818	254.60104	106.30076	6.78960	0.0803213	0.20175689	2.8790583	20	3 12.4	20.7
426914 2013 WK_{85}	15.4	X	153.84892	246.89387	83.55611	14.27690	0.0597427	0.17511221	3.1641600	20	1 4.8	20.1
426915 2013 WO_{86}	16.1	X	107.52984	293.31084	105.54096	11.58476	0.1320238	0.19158108	2.9801238	20	2 11.8	20.4
426916 2013 WT_{91}	16.8	X	264.20319	249.98296	35.72926	2.47130	0.0239290	0.20351666	2.8624379	20	3 12.4	20.6
426917 2013 WH_{94}	16.1	X	154.33485	35.51711	288.32408	3.98865	0.1297097	0.17914753	3.1164644	20	1 3.5	20.8
426918 2013 WF_{97}	17.8	X	148.56653	299.91401	12.57503	1.34439	0.1900405	0.32492388	2.0954709	20	—	—
426919 2013 WH_{97}	16.1	X	91.96471	129.83018	256.58605	15.50368	0.2533032	0.17933351	3.1143093	20	1 21.4	20.6
426920 2013 WZ_{98}	16.7	X	90.25356	54.66706	61.34518	5.21884	0.0219597	0.21026740	2.8008386	20	4 9.1	20.5
426921 2013 WP_{99}	16.3	X	60.63133	38.23414	18.95110	9.49227	0.1039660	0.17551898	3.1592693	20	—	—
426922 2013 WY_{102}	16.4	X	118.00068	305.88111	182.63651	11.08797	0.1484680	0.21702650	2.7423794	20	6 13.9	20.7
426923 2013 WL_{107}	16.3	X	294.49318	64.49419	250.54291	13.53785	0.0650127	0.23555702	2.5966017	20	5 20.6	19.7
426924 2013 WM_{107}	16.6	X	194.78060	161.04746	269.40463	8.41564	0.0694068	0.23404607	2.6077652	20	6 18.2	20.4
426925 2013 WG_{109}	15.9	X	48.63633	180.56204	250.80385	11.47920	0.1827675	0.17276844	3.1927122	20	1 4.9	19.6
426926 2013 XG_{1}	16.3	X	276.78819	244.13232	114.52964	9.31293	0.1889751	0.24442506	2.5334105	20	6 7.0	19.7
426927 2013 XR_{1}	15.6	X	127.84447	204.82223	142.55683	13.68558	0.0594451	0.18390333	3.0625016	20	—	—
426928 2013 XB_{9}	16.5	X	182.89735	5.98843	20.73486	17.41221	0.2412075	0.21888609	2.7268250	20	4 11.2	21.1
426929 2013 XF_{9}	16.2	X	126.97717	232.73009	135.29001	3.07615	0.1186714	0.18482276	3.0523365	20	1 24.9	20.6
426930 2013 XT_{10}	16.7	X	228.74396	86.17608	271.81151	5.22566	0.0418474	0.22245929	2.6975470	20	4 24.1	20.5
426931 2013 XE_{11}	15.2	X	154.97886	255.21614	81.35674	12.24695	0.0050805	0.17728229	3.1382857	20	1 7.7	19.7
426932 2013 XL_{11}	15.9	X	108.30737	326.80837	81.13178	12.70983	0.1685534	0.18294535	3.0731833	20	3 4.4	20.6
426933 2013 XF_{12}	16.8	X	136.48293	31.22935	64.47744	5.54414	0.1259087	0.21660778	2.7459124	20	5 20.1	21.0
426934 2013 XW_{13}	16.0	X	181.28344	56.69800	262.75272	9.82937	0.1064293	0.18405554	3.0608130	20	1 19.9	20.9
426935 2013 XH_{15}	16.5	X	246.03060	259.54555	75.83718	12.35096	0.2165726	0.22414314	2.6840200	20	4 7.1	21.0
426936 2013 XS_{18}	16.6	X	252.34777	118.87136	282.54087	8.10754	0.0408779	0.24466364	2.5317632	20	7 24.3	19.9
426937 2013 XT_{24}	16.2	X	152.69318	85.19339	63.30383	16.01094	0.0452350	0.24318321	2.5420279	20	8 19.7	20.1
426938 2013 YL	15.3	X	40.17479	149.05754	330.98733	29.20462	0.1736403	0.17348829	3.1838745	20	2 21.5	18.7
426939 2013 YW_{3}	15.6	X	319.47505	314.77215	254.65460	10.86966	0.0809293	0.19051026	2.9912805	20	2 4.3	19.8
426940 2013 YG_{5}	15.7	X	118.72455	236.78925	97.08945	19.42757	0.1099273	0.17741630	3.1367052	20	—	—
426941 2013 YA_{6}	16.3	X	350.54505	154.30962	100.17004	4.70243	0.0497870	0.20841456	2.8174140	20	5 24.1	19.8
426942 2013 YF_{8}	15.7	X	12.63845	255.14738	252.58647	12.99950	0.1662584	0.18038142	3.1022361	20	1 31.7	19.5
426943 2013 YS_{16}	15.4	X	9.53047	55.74916	122.38124	12.65812	0.0703628	0.18119578	3.0929341	20	3 17.6	19.5
426944 2013 YA_{18}	15.9	X	67.42688	342.69713	135.62997	10.16185	0.0783491	0.18153305	3.0891019	20	3 24.4	20.1
426945 2013 YJ_{19}	16.8	X	308.48228	264.71459	52.39324	6.38877	0.1228625	0.23819923	2.5773643	20	6 4.9	19.7
426946 2013 YN_{20}	16.1	X	223.69488	77.19319	309.06842	11.84263	0.1475789	0.22203298	2.7009988	20	5 15.0	20.6
426947 2013 YB_{22}	16.4	X	259.41432	258.54217	60.98036	14.64936	0.1001272	0.22301635	2.6930531	20	4 12.7	20.4
426948 2013 YG_{22}	16.2	X	99.85506	116.87274	248.18276	8.08000	0.0828914	0.17400091	3.1776181	20	—	—
426949 2013 YY_{23}	16.1	X	53.01732	32.53179	66.77098	6.43202	0.0986530	0.18540282	3.0459667	20	2 10.0	20.0
426950 2013 YR_{24}	16.9	X	72.08821	274.99493	259.38042	2.96407	0.0765317	0.22187812	2.7022554	20	6 7.3	20.4
426951 2013 YD_{25}	15.8	X	139.29202	249.29207	72.14416	5.58102	0.1173700	0.17051386	3.2207938	20	—	—
426952 2013 YT_{25}	16.2	X	308.92479	305.97350	258.51655	4.36766	0.1268589	0.18283512	3.0744183	20	1 14.2	20.4
426953 2013 YF_{26}	15.9	X	101.70965	338.46454	84.54486	2.98598	0.0594171	0.18087088	3.0966369	20	2 24.6	20.2
426954 2013 YH_{26}	15.8	X	115.99842	300.17573	98.69750	11.87051	0.0867160	0.17844243	3.1246686	20	2 18.3	20.4
426955 2013 YL_{26}	15.9	X	351.24387	96.11789	88.80497	6.73036	0.0900170	0.17928044	3.1149239	20	2 25.8	19.9
426956 2013 YC_{27}	16.6	X	188.09811	354.50801	95.55931	6.72624	0.0719858	0.22747051	2.6577817	20	7 6.2	20.5
426957 2013 YB_{28}	16.2	X	161.64109	303.27402	110.70946	7.73601	0.0544972	0.20113856	2.8849558	20	4 23.5	20.5
426958 2013 YB_{37}	16.1	X	236.91745	38.58428	215.67347	15.47567	0.0312959	0.17227850	3.1987625	20	1 2.9	21.0
426959 2013 YB_{45}	15.5	X	218.80122	231.87751	114.29728	10.52216	0.0174662	0.19707438	2.9244842	20	4 7.2	19.8
426960 2013 YL_{52}	16.9	X	95.08627	139.58985	34.26596	4.40748	0.1279264	0.22786400	2.6547212	20	7 15.9	20.7

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Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
	m		°	°	°	°		°				
426961 2013 YJ_{56}	16.2	X	100.97852	78.07005	321.10124	8.52934	0.0806536	0.17424201	3.1746861	20	1 29.4	20.7
426962 2013 YL_{57}	15.9	X	26.75518	200.05157	344.22290	5.75141	0.0998851	0.19564826	2.9386784	20	4 13.8	19.4
426963 2013 YY_{59}	16.6	X	205.08509	15.70661	318.68697	7.84156	0.0634503	0.18730358	3.0253248	20	2 29.4	21.2
426964 2013 YD_{60}	16.2	X	354.59255	184.60139	351.38348	4.72126	0.0798168	0.17732910	3.1377335	20	2 18.6	20.3
426965 2013 YS_{70}	16.3	X	149.79657	278.71206	69.29045	8.48296	0.0637350	0.18072841	3.0982641	20	1 21.9	21.0
426966 2013 YV_{71}	16.9	X	327.59319	257.55664	41.24380	5.55495	0.2162055	0.24114953	2.5562997	20	5 29.8	19.3
426967 2013 YB_{82}	16.6	X	262.89006	183.85537	111.36273	7.46759	0.0282501	0.19061455	2.9901893	20	3 25.9	20.9
426968 2013 YW_{103}	17.2	X	301.30932	282.83354	92.84407	3.34134	0.2290135	0.26607937	2.3940245	20	8 6.6	19.3
426969 2013 YM_{112}	15.4	X	283.07205	162.53158	81.47591	12.03077	0.0577443	0.17576214	3.1563549	20	2 14.6	20.1
426970 2013 YL_{114}	16.4	X	275.12798	193.60895	101.55119	3.07975	0.0690688	0.19155471	2.9803973	20	4 2.1	20.5
426971 2013 YA_{119}	16.1	X	65.09150	306.34063	133.24212	5.89902	0.1987324	0.17386539	3.1792691	20	2 15.9	19.9
426972 2013 YO_{124}	16.1	X	354.05766	91.40610	103.95551	9.05900	0.1195399	0.17425328	3.1745493	20	3 14.3	20.1
426973 2013 YP_{125}	16.6	X	45.20160	47.45964	78.08680	2.88684	0.0651891	0.17199605	3.2022635	20	2 29.5	20.9
426974 2013 YH_{133}	15.9	X	236.97176	348.29684	334.76033	11.32525	0.0524554	0.19531184	2.9420520	20	3 19.8	20.3
426975 2013 YF_{138}	16.3	X	230.76322	257.86283	54.82341	11.15696	0.1051810	0.19036788	2.9927718	20	3 6.2	21.1
426976 2013 YK_{141}	15.6	X	101.23417	303.14601	85.22502	11.70576	0.0623112	0.17499600	3.1655607	20	1 13.9	20.0
426977 2013 YX_{143}	16.5	X	344.55989	103.81822	67.53579	2.15617	0.1278714	0.17804645	3.1292998	20	1 24.1	20.3
426978 2014 AO_{7}	16.4	X	202.06480	34.49158	309.71659	8.63804	0.0294821	0.18512942	3.0489649	20	3 8.0	20.9
426979 2014 AU_{11}	16.1	X	230.16643	222.76629	167.35691	7.77465	0.0581086	0.22072512	2.7116577	20	6 8.5	20.1
426980 2014 AH_{37}	16.1	X	172.02976	208.38807	127.75423	10.87439	0.2509460	0.18096995	3.0955066	20	2 8.5	21.5
426981 2014 AO_{37}	15.1	X	106.89747	263.92058	98.08244	17.34966	0.1068190	0.16840364	3.2476438	20	—	—
426982 2014 AX_{48}	15.7	X	314.53965	82.52482	150.01531	9.86373	0.1008781	0.17674491	3.1446437	20	3 1.3	20.0
426983 2014 AU_{54}	16.4	X	62.61355	166.05429	358.93220	1.95909	0.1164002	0.19815124	2.9138790	20	5 17.6	20.2
426984 2014 BB_{11}	16.3	X	0.58267	92.45579	119.34152	2.65784	0.0193881	0.19011014	2.9954761	20	4 13.9	20.3
426985 2014 BO_{16}	15.6	X	73.80932	299.76057	84.20581	6.71584	0.0458741	0.14892220	3.5250321	20	—	—
426986 2014 BV_{17}	16.0	X	175.60540	253.37994	152.73450	9.88388	0.0678107	0.19537578	2.9414100	20	4 29.7	20.5
426987 2014 BE_{22}	15.5	X	243.29654	155.79947	149.29555	9.90441	0.0568184	0.17527030	3.1622570	20	3 11.1	20.2
426988 2014 BA_{44}	16.0	X	312.95704	133.42865	133.58416	9.59876	0.0438889	0.19158740	2.9800582	20	4 21.3	20.2
426989 2014 BL_{55}	16.6	X	226.92517	242.58624	127.26297	6.80627	0.0562302	0.20922717	2.8101144	20	5 10.8	20.8
426990 2014 DS_{7}	15.9	X	226.97558	229.05598	117.21770	10.93260	0.0692722	0.19183804	2.9774620	20	4 13.6	20.5
426991 2014 DT_{29}	15.9	X	281.32828	136.85472	147.96316	11.68483	0.0562392	0.18403187	3.0610754	20	3 31.8	20.3
426992 2014 DQ_{67}	13.9	X	222.57821	41.90824	103.61276	8.63316	0.0328311	0.08214788	5.2408913	20	10 12.9	21.0
426993 2014 DX_{123}	13.9	X	235.17552	318.70551	167.48615	19.56571	0.0593184	0.08432057	5.1504719	20	9 30.3	20.9
426994 2014 HS_{131}	15.7	X	344.83765	245.46471	338.93105	9.65067	0.0662102	0.18172154	3.0869655	20	4 1.6	19.8
426995 2014 OO_{298}	17.9	X	148.70539	248.69971	163.53502	2.59329	0.1873236	0.25957607	2.4338452	20	4 10.9	21.8
426996 2014 PB_{68}	16.7	X	106.71585	302.59479	87.25318	12.56279	0.3149867	0.22440070	2.6819658	20	2 22.7	20.8
426997 2014 QD_{30}	16.8	X	46.79201	120.92370	233.15186	4.95483	0.1946640	0.19714731	2.9237629	20	—	—
426998 2014 QA_{167}	16.2	X	43.29573	261.95140	108.13036	11.03676	0.1280013	0.19095500	2.9866342	20	—	—
426999 2014 QR_{330}	16.6	X	90.66007	261.58743	111.36440	7.32800	0.0908559	0.21629456	2.7485627	20	—	—
427000 2014 QN_{368}	16.9	X	144.33394	278.02618	85.98968	10.02523	0.1550373	0.23690720	2.5867267	20	2 7.4	20.8
427001 2014 QA_{387}	15.9	X	27.05633	265.87917	129.10203	9.59645	0.1439149	0.18914174	3.0056920	20	—	—
427002 2014 QA_{409}	16.8	X	240.89791	74.84297	203.53420	5.32029	0.1372208	0.24154586	2.5535027	20	1 20.7	20.9
427003 2014 QF_{409}	16.2	X	44.81000	134.23359	200.40794	11.91651	0.2504256	0.17812413	3.1283899	20	12 15.2	20.9
427004 2014 QM_{432}	17.2	X	145.08880	206.36817	172.84180	4.28315	0.1145446	0.23955068	2.5676616	20	2 19.3	21.0
427005 2014 QP_{438}	17.8	X	179.70328	341.65268	118.26044	4.28553	0.1841623	0.28052695	2.3111049	20	7 9.4	21.6
427006 2014 RV_{6}	16.9	X	110.74434	223.22311	181.19492	3.63328	0.2431853	0.23446121	2.6046860	20	2 29.6	20.7
427007 2014 RP_{18}	16.6	X	174.02520	232.73904	86.44943	28.43574	0.3138942	0.23260178	2.6185489	20	1 19.3	21.6
427008 2014 SJ_{165}	17.7	X	184.76337	238.79572	124.11439	2.31243	0.1935231	0.26114125	2.4241104	20	3 13.1	21.5
427009 2014 SZ_{206}	17.0	X	126.15181	240.57076	176.80460	4.02297	0.1559961	0.24108704	2.5567414	20	3 23.2	20.5
427010 2014 SH_{207}	17.3	X	169.04553	241.37339	97.27583	4.19525	0.2389507	0.23673020	2.5880159	20	2 4.1	21.6
427011 2014 SN_{207}	17.6	X	201.71247	304.93805	73.57701	7.20095	0.1558652	0.26456422	2.4031561	20	4 18.3	21.4
427012 2014 SN_{208}	15.9	X	67.59065	147.42609	192.58726	14.04655	0.1226129	0.18112052	3.0937908	20	12 29.5	20.7
427013 2014 SR_{209}	15.9	X	312.93207	349.45126	135.84426	10.08755	0.0949336	0.18408910	3.0604409	20	—	—
427014 2014 SG_{210}	17.3	X	91.57679	336.26917	87.92559	9.20076	0.1677151	0.22559674	2.6724782	20	2 25.9	20.8
427015 2014 SY_{212}	16.1	X	8.07330	295.51058	131.49137	10.22264	0.1644551	0.18431245	3.0579680	20	—	—
427016 2014 SO_{214}	16.6	X	159.30004	223.30958	119.27555	5.13437	0.1124649	0.22505344	2.6767775	20	1 22.7	20.4
427017 2014 SB_{215}	16.9	X	132.00419	236.79335	142.38510	4.84745	0.1335170	0.22699912	2.6614600	20	2 9.2	20.8
427018 2014 SR_{215}	15.7	X	72.48122	255.11237	79.14339	11.28580	0.2285109	0.18313512	3.0710599	20	—	—
427019 2014 SM_{216}	15.9	X	215.76890	130.71796	197.26691	14.67711	0.1529500	0.24556130	2.5255895	20	2 23.4	20.1
427020 2014 ST_{218}	16.4	X	33.52706	279.29344	114.45387	10.36710	0.1717512	0.18594598	3.0400322	20	—	—
427021 2014 SA_{219}	17.0	X	233.36622	269.27552	75.50199	13.14570	0.2436395	0.26864898	2.3787342	20	4 4.5	21.2
427022 2014 SF_{219}	17.2	X	185.07989	306.74816	92.61100	6.92945	0.1292096	0.26000109	2.4311921	20	4 29.1	21.0
427023 2014 SP_{219}	16.7	X	32.99211	275.72377	68.59281	25.76234	0.3652914	0.17450950	3.1714412	20	12 25.7	21.4
427024 2014 SZ_{229}	16.9	X	128.48842	308.76421	52.15965	4.78916	0.1164037	0.22933872	2.6433284	20	1 11.8	20.7
427025 2014 SN_{258}	16.3	X	16.05263	338.88431	88.91068	3.58072	0.0122616	0.20544451	2.8445027	20	—	—
427026 2014 SJ_{265}	17.2	X	101.99794	249.05699	122.86515	2.82173	0.2235569	0.22290419	2.6939564	20	1 8.7	20.7
427027 2014 SW_{285}	16.2	X	4.54007	190.23776	203.18001	12.47125	0.1553353	0.18037827	3.1022722	20	12 19.4	20.2
427028 2014 SZ_{306}	16.4	X	76.38415	103.21827	219.76478	8.18275	0.0844427	0.17941088	3.1134139	20	12 15.4	21.1
427029 2014 SS_{308}	18.0	X	178.61174	190.78345	222.32072	1.75783	0.1818252	0.26662150	2.3907781	20	5 8.3	21.9
427030 2014 SL_{309}	16.2	X	39.61515	125.18869	217.68598	16.51422	0.1151706	0.17106671	3.2138509	20	11 28.9	20.7
427031 2014 SV_{309}	16.5	X	77.56189	251.31686	212.80098	15.52060	0.0864484	0.24012374	2.5635747	20	3 7.1	19.9
427032 2014 SN_{312}	15.7	X	37.01946	149.16217	190.72077	9.24341	0.1047125	0.17736238	3.1373409	20	11 22.9	20.0
427033 2014 SV_{323}	15.5	X	7.23360	181.97237	335.65808	13.07820	0.3055942	0.19979278	2.8978964	20	1 26.7	17.9
427034 2014 SS_{325}	16.2	X	57.79145	105.10015	214.30572	25.42352	0.1836087	0.17676071	3.1444563	20	12 1.9	21.0
427035 2014 SC_{328}	16.7	X	83.62290	206.69762	179.46955	8.85524	0.1694605	0.21444618	2.7643339	20	—	—
427036 2014 SM_{336}	17.6	X	121.46165	275.13625	109.35488	2.27136	0.2046473	0.23431423	2.6057751	20	2 12.7	21.2
427037 2014 TG_{5}	17.5	X	204.34425	321.91070	33.66916	1.84131	0.1922152	0.26396417	2.4067966	20	3 20.2	21.5
427038 2014 TH_{5}	17.1	X	126.02295	149.13153	199.53471	4.38347	0.1233239	0.22053996	2.7131753	20	—	—
427039 2014 TH_{6}	16.8	X	92.82564	322.74814	52.63225	5.32707	0.0820993	0.21311710	2.7758150	20	—	—
427040 2014 TZ_{29}	17.6	X	267.79624	284.07934	80.05525	5.33793	0.1719999	0.29668534	2.2264109	20	6 4.6	20.2

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Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
	m		°	°	°	°		°				
427041 2014 TH_{30}	17.9	X	258.64342	181.97422	186.21565	4.46265	0.2061305	0.29302987	2.2448885	20	5 25.7	20.9
427042 2014 TN_{31}	15.5	X	312.07674	64.48095	107.49668	10.34890	0.0126444	0.18724450	3.0259610	20	—	—
427043 2014 TE_{37}	16.9	X	157.09232	276.89537	73.02517	5.12381	0.1845941	0.23391499	2.6087393	20	2 4.7	21.0
427044 2014 TK_{44}	17.4	X	153.90452	148.46828	188.47308	2.31285	0.1085532	0.22686888	2.6624784	20	1 9.1	21.3
427045 2014 TX_{55}	16.1	X	335.33619	248.17497	204.56933	10.60460	0.1247906	0.18455746	3.0552609	20	—	—
427046 2014 TG_{56}	16.9	X	136.60419	187.19262	168.02604	4.34322	0.1094556	0.22040848	2.7142542	20	1 13.3	20.7
427047 2014 TP_{56}	16.5	X	121.82838	255.37140	105.63339	6.05573	0.0890348	0.21921241	2.7241183	20	1 1.2	20.3
427048 2014 TC_{58}	15.9	X	25.95602	244.62952	130.31420	11.95063	0.2584252	0.18536895	3.0463378	20	—	—
427049 2014 TB_{59}	16.4	X	134.31518	321.25116	21.66573	13.13240	0.1152811	0.21914049	2.7247143	20	—	—
427050 2014 TV_{65}	17.0	X	57.90453	183.08425	286.78233	2.01984	0.0718456	0.23611909	2.5924794	20	2 17.1	20.1
427051 2014 TF_{67}	17.4	X	128.16733	154.44154	223.16460	5.14692	0.2619224	0.23238487	2.6201781	20	2 15.1	21.5
427052 2014 TE_{69}	17.2	X	104.05042	313.45081	62.39661	7.12636	0.0594884	0.21464083	2.7626624	20	—	—
427053 2014 TM_{69}	17.1	X	43.35979	0.21375	74.77552	5.37052	0.0861857	0.20923831	2.8100146	20	—	—
427054 2014 TT_{70}	16.7	X	93.90919	299.21345	77.97598	5.41056	0.0797003	0.21071690	2.7968540	20	—	—
427055 2014 TQ_{72}	16.8	X	83.60269	194.02759	200.78846	6.13623	0.0488191	0.21307083	2.7762169	20	—	—
427056 2014 TW_{73}	17.6	X	289.27340	252.05631	83.65582	5.49720	0.1773967	0.29357909	2.2420879	20	5 24.1	19.9
427057 2014 TN_{82}	16.6	X	97.71952	291.16400	60.29764	13.86335	0.2174978	0.21081604	2.7959772	20	—	—
427058 2014 TX_{83}	16.4	X	185.75103	265.04125	47.01302	14.11570	0.1756004	0.23236813	2.6203040	20	1 16.3	20.9
427059 2014 TD_{84}	16.5	X	264.44626	79.21044	249.97841	22.77838	0.2254634	0.27622631	2.3350312	20	3 30.1	20.6
427060 2014 TE_{84}	18.0	X	124.80255	13.87092	99.32134	3.82857	0.1261959	0.26233742	2.4167361	20	5 30.2	21.5
427061 2014 UD	16.0	X	301.52423	318.35894	114.49040	5.31498	0.0714622	0.16816229	3.2507506	20	10 30.3	20.3
427062 2014 UD_{4}	17.2	X	118.58014	296.07742	109.43498	4.66275	0.0446250	0.23198222	2.6232091	20	2 14.9	20.6
427063 2014 UK_{7}	15.8	X	334.48889	193.13124	265.89927	11.93953	0.0368146	0.18761389	3.0219880	20	—	—
427064 2014 UL_{9}	16.7	X	180.90179	108.11442	230.75909	13.75442	0.1007613	0.23624851	2.5915325	20	2 1.9	20.9
427065 2014 UF_{10}	17.0	X	138.50237	241.77216	94.65894	5.47659	0.0693645	0.21143700	2.7905002	20	—	—
427066 2014 UW_{14}	16.9	X	157.53747	63.85224	261.93039	3.01101	0.1905890	0.22658012	2.6647400	20	1 7.1	21.1
427067 2014 UF_{15}	17.0	X	85.82298	128.29871	301.83411	1.90710	0.0868343	0.22957623	2.6415050	20	2 8.6	20.3
427068 2014 UK_{15}	16.1	X	23.46737	316.19580	97.61872	9.45697	0.0963347	0.19251710	2.9704564	20	—	—
427069 2014 UU_{18}	16.5	X	306.17021	314.62707	162.52791	3.25657	0.0716063	0.18121805	3.0926807	20	12 31.2	20.5
427070 2014 UM_{19}	17.0	X	174.61188	137.56219	177.51098	4.78057	0.0991167	0.22331505	2.6906511	20	1 3.8	21.0
427071 2014 UX_{20}	18.1	X	283.22977	167.17390	193.93720	7.88981	0.0444351	0.29293508	2.2453728	20	7 13.5	20.8
427072 2014 UF_{22}	15.9	X	92.13134	229.96646	84.54472	10.75078	0.0890608	0.17689751	3.1428349	20	12 21.9	20.6
427073 2014 UM_{22}	16.8	X	139.54227	251.95726	149.69087	5.22022	0.0950776	0.23905386	2.5712179	20	3 12.0	20.3
427074 2014 UV_{22}	17.5	X	228.34679	267.53363	90.60076	5.73050	0.1839355	0.26871612	2.3783379	20	4 15.9	21.3
427075 2014 UR_{23}	16.8	X	92.05708	264.03531	133.61313	5.31571	0.1004942	0.21923967	2.7238924	20	1 10.1	20.3
427076 2014 UJ_{24}	15.9	X	348.88228	217.55797	193.03092	12.47373	0.0870194	0.17252242	3.1957468	20	12 9.2	20.2
427077 2014 UQ_{24}	15.9	X	310.94369	286.29565	151.24490	7.50889	0.1576421	0.16981471	3.2296281	20	11 12.9	19.8
427078 2014 UE_{25}	16.0	X	103.83378	307.83505	69.79282	11.06482	0.1648311	0.21401506	2.7680451	20	1 12.0	19.7
427079 2014 UO_{30}	16.8	X	172.58253	221.65854	95.55793	5.26064	0.0390069	0.21576743	2.7530375	20	1 1.3	20.8
427080 2014 UX_{32}	16.7	X	52.28427	250.71765	129.54442	0.96852	0.1588026	0.19190745	2.9767441	20	—	—
427081 2014 UO_{40}	16.8	X	47.06070	275.68826	104.81234	2.72353	0.0876846	0.19162661	2.9796517	20	—	—
427082 2014 UJ_{41}	16.9	X	31.92694	250.14214	240.66509	11.68710	0.0802789	0.22465943	2.6799063	20	2 3.2	20.3
427083 2014 UG_{42}	16.1	X	357.34195	284.43623	232.12288	12.71654	0.1135208	0.21773764	2.7364050	20	1 14.5	19.6
427084 2014 UE_{43}	16.7	X	118.73301	97.24509	281.26120	4.44742	0.0363752	0.22521090	2.6755297	20	1 10.5	20.3
427085 2014 UN_{43}	16.6	X	188.60767	5.82333	274.16446	4.25021	0.0694041	0.21506008	2.7590708	20	—	—
427086 2014 UA_{44}	16.6	X	75.97352	16.95039	24.84870	10.17936	0.1717470	0.21351895	2.7723311	20	1 4.2	20.0
427087 2014 UJ_{44}	15.8	X	231.17909	288.68773	242.88729	8.47930	0.0572268	0.17509937	3.1643147	20	11 30.6	20.2
427088 2014 UL_{45}	16.9	X	183.78285	78.27493	227.95950	6.31839	0.1946212	0.22877518	2.6476675	20	1 6.1	21.3
427089 2014 UR_{45}	17.4	X	184.31757	107.47719	222.64026	1.41816	0.1762558	0.23913499	2.5706363	20	2 2.1	21.4
427090 2014 US_{45}	16.7	X	6.67763	333.14999	61.90763	1.60433	0.1659362	0.17659709	3.1463982	20	12 25.4	20.6
427091 2014 UL_{46}	16.3	X	326.15511	268.64284	199.91800	1.39317	0.1418370	0.18240490	3.0792507	20	—	—
427092 2014 UM_{46}	16.3	X	174.08831	96.86287	213.02207	4.30757	0.0208127	0.21421885	2.7662893	20	—	—
427093 2014 UN_{46}	17.9	X	182.95435	233.44595	202.32833	1.81317	0.1733174	0.27596180	2.3365231	20	6 10.9	21.4
427094 2014 UY_{46}	16.2	X	32.79495	185.93730	188.30769	1.79310	0.0660207	0.17903954	3.1177174	20	12 22.8	20.5
427095 2014 UM_{53}	15.9	X	330.09699	20.75609	54.08051	18.27556	0.1073937	0.17614205	3.1518148	20	12 9.9	19.9
427096 2014 UQ_{53}	16.6	X	23.02976	225.97981	172.67781	4.80862	0.1362798	0.18674196	3.0313874	20	—	—
427097 2014 UU_{53}	17.6	X	176.85511	264.85630	170.66310	2.76675	0.2039451	0.27483949	2.3428796	20	6 5.1	21.4
427098 2014 UW_{53}	17.9	X	201.23786	45.01625	334.18803	1.62432	0.2202598	0.26758343	2.3850450	20	4 14.2	21.8
427099 2014 UD_{56}	16.9	X	4.77428	245.31843	180.24444	4.54720	0.1817439	0.18296577	3.0729546	20	—	—
427100 2014 UF_{62}	17.1	X	91.45639	295.37094	85.58874	5.42983	0.0806723	0.20928758	2.8095736	20	—	—
427101 2014 UK_{62}	16.8	X	27.14074	262.98259	218.69684	4.39832	0.1170256	0.21652085	2.7466473	20	1 19.7	20.0
427102 2014 UF_{64}	16.8	X	214.83982	80.63802	216.95906	14.12040	0.1326352	0.23261574	2.6184442	20	1 18.4	21.3
427103 2014 UA_{67}	17.0	X	68.51936	185.52488	230.36031	13.15308	0.1235381	0.20973361	2.8055889	20	1 2.3	20.5
427104 2014 UO_{67}	16.7	X	91.61610	294.13991	100.06411	5.05766	0.1184335	0.22361288	2.6882615	20	1 7.1	20.0
427105 2014 UT_{67}	16.9	X	140.42852	211.21820	121.64462	1.51356	0.0749014	0.21364231	2.7712638	20	—	—
427106 2014 UW_{67}	16.8	X	133.36404	113.90089	207.81750	6.64763	0.1803527	0.21009832	2.8023411	20	—	—
427107 2014 UB_{80}	16.3	X	82.55522	132.86921	211.32318	1.27136	0.0586296	0.19538148	2.9413528	20	—	—
427108 2014 UC_{83}	18.0	X	114.98501	94.01866	47.09540	8.39917	0.0732842	0.27116220	2.3640135	20	6 18.8	21.2
427109 2014 UU_{84}	16.6	X	65.36921	223.44240	228.45222	5.23732	0.0724289	0.22517736	2.6757954	20	2 4.7	20.0
427110 2014 UB_{86}	17.6	X	66.95367	321.34435	213.84932	0.52785	0.0623957	0.26713983	2.3876845	20	5 29.9	20.5
427111 2014 UU_{88}	16.2	X	193.80597	142.99451	80.21188	5.94755	0.0698509	0.17997474	3.1069077	20	12 19.3	20.7
427112 2014 UV_{89}	16.4	X	89.02509	129.48904	204.19960	10.19961	0.1245976	0.19178938	2.9779656	20	—	—
427113 2014 UD_{92}	17.1	X	149.39118	185.28538	186.70430	5.35528	0.2550526	0.24027401	2.5625058	20	2 26.5	21.4
427114 2014 UE_{92}	17.2	X	52.23676	11.08234	105.68332	4.71991	0.1803763	0.22702820	2.6612327	20	3 4.7	19.9
427115 2014 UH_{94}	17.9	X	254.17493	256.92189	63.62284	2.84962	0.2278976	0.27074869	2.3664199	20	3 18.5	21.6
427116 2014 UO_{94}	18.1	X	313.51798	124.68903	227.41158	2.10536	0.1366038	0.30944395	2.1647847	20	8 12.9	19.6
427117 2014 UX_{94}	17.7	X	151.26159	15.97758	114.43550	4.27009	0.1204414	0.28723353	2.2749890	20	7 22.2	20.8
427118 2014 UM_{95}	16.8	X	343.77655	21.67037	69.40917	2.42406	0.0378621	0.19072699	2.9890140	20	—	—
427119 2014 UO_{95}	16.9	X	11.44720	248.60506	143.94220	1.76618	0.1775025	0.17965192	3.1106285	20	12 31.9	20.7
427120 2014 UA_{96}	16.8	X	25.19769	272.11763	103.96524	2.40048	0.1682828	0.17985634	3.1082710	20	12 29.8	20.8

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		°	°	°	°		°				
427121 2014 UD_{97}	17.0	X	67.99100	236.10601	129.58777	2.66013	0.0874536	0.19399546	2.9553460	20	—	—
427122 2014 UA_{98}	16.2	X	146.99632	210.91995	80.25277	9.56015	0.1826209	0.20103770	2.8859206	20	—	—
427123 2014 UK_{99}	17.1	X	163.11708	138.46338	212.19376	4.76318	0.0839443	0.22778675	2.6553213	20	2 1.1	21.0
427124 2014 UN_{99}	16.5	X	4.09463	324.86054	96.41494	4.09801	0.1768988	0.18042033	3.1017900	20	—	—
427125 2014 UL_{100}	17.0	X	158.22251	268.98782	110.99987	3.34254	0.0327859	0.24428789	2.5343587	20	2 28.5	20.4
427126 2014 UR_{100}	17.8	X	229.80828	218.62720	94.58300	3.60841	0.2019495	0.25706326	2.4496801	20	2 20.0	21.9
427127 2014 UY_{100}	16.7	X	107.64720	302.45171	82.87511	5.66654	0.0850139	0.22231802	2.6986896	20	1 13.1	20.2
427128 2014 UC_{101}	16.9	X	99.53721	276.30819	83.44437	4.99353	0.1127024	0.20836353	2.8178740	20	—	—
427129 2014 UK_{101}	18.4	X	258.22998	335.21711	68.47381	6.11487	0.1579974	0.30352495	2.1928375	20	7 23.9	20.9
427130 2014 UY_{102}	15.8	X	281.01251	239.66972	126.93303	4.59809	0.1812779	0.12448692	3.9724054	20	6 20.6	21.3
427131 2014 UN_{105}	17.8	X	137.02565	207.79069	244.17542	5.94724	0.0714748	0.26369512	2.4084335	20	5 9.1	21.1
427132 2014 UA_{106}	17.9	X	105.94586	145.77114	359.98144	1.69071	0.0188033	0.27505314	2.3416661	20	6 5.6	20.7
427133 2014 UW_{113}	17.6	X	75.49225	205.52083	205.86518	4.06601	0.2877630	0.21407458	2.7675320	20	1 31.8	20.8
427134 2014 UB_{114}	17.2	X	105.34858	5.27283	117.48414	7.76362	0.0536126	0.26463827	2.4027077	20	5 11.6	20.3
427135 2014 UV_{117}	16.6	X	95.73614	328.62226	54.11979	5.90310	0.1499361	0.21432387	2.7653855	20	1 5.1	20.1
427136 2014 UC_{127}	16.8	X	313.13234	236.82524	231.84978	9.18782	0.0976064	0.18342295	3.0678463	20	12 29.9	20.7
427137 2014 UW_{132}	15.8	X	222.68949	322.46734	203.74418	10.54902	0.0375117	0.16886591	3.2417143	20	11 16.6	20.5
427138 2014 UG_{135}	17.4	X	226.02058	324.20822	6.77904	2.54038	0.2490708	0.26278792	2.4139732	20	3 6.5	21.5
427139 2014 UK_{135}	18.7	X	226.20027	72.41367	334.78960	1.44725	0.1238883	0.28866600	2.2674565	20	6 20.2	21.6
427140 2014 UR_{135}	17.7	X	149.99848	207.95707	246.52091	2.91208	0.1392728	0.26873520	2.3782254	20	6 2.2	21.1
427141 2014 UW_{135}	16.1	X	2.51594	26.67676	36.07420	9.62463	0.0634751	0.18460937	3.0546882	20	—	—
427142 2014 UB_{139}	16.6	X	220.20357	313.88721	246.98021	9.23545	0.0389459	0.18693037	3.0293502	20	12 27.1	20.9
427143 2014 UL_{140}	17.4	X	126.16044	193.60983	247.16821	4.88791	0.0136593	0.25872739	2.4391646	20	3 31.8	20.7
427144 2014 UD_{148}	16.3	X	130.20462	90.22519	220.89484	6.61856	0.1143374	0.20048274	2.8912439	20	—	—
427145 2014 UM_{148}	18.7	X	177.90461	182.39513	218.80828	0.61589	0.1889839	0.26289413	2.4133230	20	4 22.7	22.5
427146 2014 UQ_{155}	16.1	X	323.27771	270.74070	152.49368	10.29033	0.1399778	0.17176699	3.2051098	20	11 17.9	20.0
427147 2014 UL_{156}	18.4	X	298.41795	39.97133	333.19352	1.88411	0.1980900	0.30968340	2.1636687	20	8 7.6	20.0
427148 2014 UY_{157}	17.2	X	13.36307	142.27715	95.42295	6.74328	0.0378266	0.27994639	2.3142990	20	6 4.3	19.7
427149 2014 UA_{171}	16.7	X	72.98628	154.51329	213.24797	9.51973	0.0848410	0.19310576	2.9644166	20	—	—
427150 2014 UC_{171}	15.9	X	60.88520	272.26827	67.81590	16.70697	0.1999877	0.18065191	3.0991386	20	—	—
427151 2014 UF_{175}	17.0	X	350.35994	172.07259	259.01296	18.22334	0.0947471	0.36027472	1.9560511	20	—	—
427152 2014 UN_{175}	16.4	X	151.59240	209.47771	104.64441	14.36429	0.2695181	0.22500560	2.6771569	20	—	—
427153 2014 UU_{175}	15.8	X	27.79732	267.32884	140.03006	15.80824	0.3125861	0.19209699	2.9747856	20	—	—
427154 2014 UJ_{178}	17.0	X	43.63892	243.12527	197.33307	7.42036	0.1676955	0.21365558	2.7711491	20	—	—
427155 2014 UZ_{181}	16.8	X	215.67215	49.78668	208.87021	6.05134	0.0293807	0.21117161	2.7928377	20	—	—
427156 2014 UF_{183}	16.7	X	105.80596	229.83681	195.05097	6.11621	0.1170810	0.23513591	2.5997010	20	3 2.2	20.1
427157 2014 UQ_{183}	15.9	X	206.27646	138.28480	64.12958	12.96486	0.0290958	0.17639716	3.1487752	20	12 11.3	20.4
427158 2014 UA_{185}	16.4	X	100.17327	317.71981	76.63577	7.74133	0.0179340	0.21443337	2.7644441	20	1 6.7	20.1
427159 2014 UA_{186}	16.2	X	247.90087	2.50479	226.47538	7.07010	0.0187591	0.21678327	2.7444303	20	—	—
427160 2014 UP_{186}	16.7	X	96.80101	105.07106	248.80516	4.54930	0.0248714	0.20261955	2.8708807	20	—	—
427161 2014 UY_{186}	18.4	X	235.52715	121.18113	280.14271	1.26712	0.1356356	0.29284083	2.2458545	20	6 21.9	21.2
427162 2014 UC_{187}	16.7	X	307.67444	196.98152	7.02585	3.63818	0.1158503	0.22920974	2.6443199	20	1 6.7	20.3
427163 2014 UQ_{189}	17.7	X	270.44441	207.41338	150.07438	7.02126	0.1705662	0.29299098	2.2450872	20	5 31.1	20.5
427164 2014 UT_{190}	16.6	X	63.13964	146.90561	283.44079	5.59836	0.1013727	0.22211955	2.7002969	20	1 9.7	19.8
427165 2014 UX_{191}	16.2	X	88.28818	337.51009	113.57006	27.84167	0.2293611	0.23357297	2.6112853	20	4 15.6	20.4
427166 2014 UH_{193}	17.4	X	196.01563	276.00940	39.92809	3.92112	0.2153105	0.24056045	2.5604712	20	1 28.7	21.8
427167 2014 UC_{197}	18.1	X	315.62641	211.62324	130.32013	3.16444	0.2087042	0.31135055	2.1559381	20	7 21.6	19.0
427168 2014 UH_{197}	16.6	X	71.87266	148.93474	202.21876	10.46462	0.0084849	0.18600242	3.0394173	20	—	—
427169 2014 UU_{197}	17.2	X	153.12282	48.60764	313.15719	2.49358	0.2007844	0.23714427	2.5850024	20	2 14.5	21.2
427170 2014 UU_{199}	16.8	X	194.15030	292.83002	19.96422	7.22450	0.2853514	0.24065627	2.5597915	20	1 26.1	21.5
427171 2014 UX_{199}	15.6	X	282.91188	290.63522	224.54749	16.85046	0.1851158	0.17745591	3.1362385	20	12 29.2	19.6
427172 2014 UY_{205}	16.0	X	1.24601	190.15697	225.62102	18.38846	0.1762974	0.17763928	3.1340798	20	—	—
427173 2014 UZ_{208}	16.5	X	6.28572	356.81006	67.17655	3.75311	0.2288396	0.18600511	3.0393879	20	—	—
427174 2014 UY_{214}	16.0	X	14.61061	295.69723	74.55223	11.15531	0.2068408	0.17539833	3.1607180	20	12 11.7	19.8
427175 2014 UH_{215}	16.2	X	86.11886	230.89335	142.33867	10.01336	0.1638242	0.20963258	2.8064902	20	—	—
427176 2014 UO_{215}	16.1	X	3.31486	296.59691	88.55972	17.79308	0.2508922	0.17593169	3.1543267	20	12 18.9	19.5
427177 2014 UX_{215}	15.5	X	0.02814	307.32775	106.12906	17.19467	0.1810794	0.18101187	3.0950287	20	—	—
427178 2014 UJ_{216}	17.7	X	209.12171	295.15902	77.94641	1.74298	0.2093103	0.26766661	2.3845508	20	4 14.7	21.5
427179 2014 UD_{217}	16.1	X	172.72623	100.37403	241.89433	4.35166	0.2995282	0.23791452	2.5794201	20	2 11.2	20.7
427180 2014 VK	16.3	X	23.10405	335.96122	108.87370	6.69590	0.0487786	0.20053964	2.8906970	20	—	—
427181 2014 VE_{1}	17.6	X	14.31103	271.64279	144.12001	23.45322	0.1065049	0.36802904	1.9284779	20	—	—
427182 2014 VF_{9}	18.7	X	177.55137	295.20976	121.76634	2.03864	0.1802225	0.26375251	2.4080841	20	5 12.9	22.5
427183 2014 VX_{9}	18.2	X	196.86535	350.08546	58.59563	2.34220	0.1744790	0.27223428	2.3578030	20	5 19.3	22.0
427184 2014 VM_{10}	16.1	X	49.95035	240.00474	124.25524	13.76398	0.1502045	0.18437181	3.0573115	20	—	—
427185 2014 VD_{11}	17.2	X	84.70680	45.28570	41.32490	4.35735	0.2401002	0.23255743	2.6188818	20	3 25.1	20.4
427186 2014 VA_{12}	17.0	X	103.34364	147.69471	218.10385	7.14938	0.2378415	0.21398720	2.7682854	20	1 5.5	20.7
427187 2014 VZ_{12}	17.2	X	159.16078	236.75226	110.74399	5.04605	0.2728761	0.23941119	2.5686588	20	2 8.5	21.6
427188 2014 VB_{14}	16.0	X	48.22118	218.21693	149.42689	9.20942	0.2072151	0.18795391	3.0183422	20	—	—
427189 2014 VD_{14}	16.4	X	12.18704	290.86063	112.73069	11.13944	0.2027433	0.18287659	3.0739536	20	—	—
427190 2014 VH_{14}	16.1	X	20.58465	296.42167	66.71278	27.55452	0.3060234	0.17616684	3.1515191	20	12 24.1	20.3
427191 2014 VR_{16}	16.7	X	350.43364	274.21177	158.55187	2.06966	0.0663614	0.18243906	3.0788663	20	—	—
427192 2014 VG_{17}	17.8	X	273.37770	288.95517	51.46695	6.89852	0.1697026	0.28885928	2.2664449	20	5 9.2	20.7
427193 2014 VN_{19}	17.1	X	200.90021	304.69472	93.49343	7.58291	0.1114760	0.27302228	2.3532640	20	5 13.3	20.5
427194 2014 VW_{19}	16.1	X	311.28237	65.83453	68.60197	9.68635	0.0576256	0.18806702	3.0171318	20	—	—
427195 2014 VT_{20}	16.7	X	193.76762	247.16033	69.09796	8.37726	0.2059259	0.23468190	2.6030528	20	1 28.3	21.2
427196 2014 VS_{21}	17.9	X	84.68761	266.27152	175.33511	2.81492	0.1480027	0.22801929	2.6535156	20	3 2.4	21.0
427197 2014 VA_{22}	17.2	X	112.36080	263.83200	118.60060	3.13096	0.1059634	0.21803513	2.7339154	20	1 18.8	20.9
427198 2014 VE_{22}	17.0	X	157.54148	250.60800	116.71647	3.02260	0.1371369	0.23541028	2.5976807	20	2 21.6	20.8
427199 2014 VX_{25}	16.8	X	101.58300	14.31621	65.39642	13.71048	0.1822705	0.23319129	2.6141339	20	4 3.7	20.6
427200 2014 VG_{28}	17.0	X	102.28915	229.34624	148.58303	2.46295	0.0917348	0.21594912	2.7514930	20	—	—

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Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
	m		°	°	°	°		°				
427201 2014 VK_{28}	18.2	X	194.69592	42.97157	3.97057	1.23422	0.1815232	0.27078187	2.3662265	20	5 14.5	21.9
427202 2014 VR_{31}	15.2	X	249.65734	267.33575	236.37689	13.42743	0.1436367	0.15354190	3.4539663	20	11 2.3	20.2
427203 2014 VY_{32}	15.7	X	100.78421	225.09602	80.09694	17.94315	0.2191588	0.17898648	3.1183335	20	12 28.5	20.9
427204 2014 VA_{35}	16.4	X	109.08939	171.38635	216.97031	5.55043	0.0361668	0.22069253	2.7119247	20	1 10.6	20.2
427205 2014 VO_{36}	18.6	X	288.43332	222.76686	182.67082	1.91721	0.1030590	0.31755781	2.1277513	20	9 27.5	20.5
427206 2014 VQ_{37}	16.0	X	359.96000	226.21907	193.62739	17.49521	0.2361951	0.18110531	3.0939640	20	—	—
427207 2014 WM	16.2	X	59.89449	275.66689	86.12289	3.52877	0.0974434	0.18546810	3.0452520	20	—	—
427208 2014 WN	17.6	X	193.29043	265.68058	121.16201	2.17345	0.1888117	0.26396893	2.4067677	20	4 19.1	21.6
427209 2014 WJ_{2}	17.7	X	209.81334	172.83010	209.98517	5.89894	0.1051049	0.26923415	2.3752862	20	5 1.1	20.9
427210 2014 WU_{2}	15.8	X	45.14397	276.02577	93.01231	2.50932	0.2870140	0.18888390	3.0084266	20	—	—
427211 2014 WA_{3}	17.5	X	124.77749	344.55441	71.14017	14.22957	0.1510102	0.24089837	2.5580762	20	3 26.9	21.5
427212 2014 WX_{3}	17.7	X	31.83611	83.07086	176.09754	3.38246	0.0840372	0.29499076	2.2349292	20	8 13.1	19.9
427213 2014 WV_{8}	16.8	X	27.91927	9.58303	41.65014	2.44732	0.0875042	0.19407067	2.9545824	20	—	—
427214 2014 WM_{10}	17.1	X	13.17624	65.44966	9.47749	1.96602	0.1777142	0.19459961	2.9492261	20	—	—
427215 2014 WS_{10}	16.9	X	358.97221	267.93833	236.03307	4.40501	0.0970646	0.22088995	2.7103086	20	1 4.3	20.1
427216 2014 WK_{13}	17.8	X	260.70135	102.80797	256.66213	5.68218	0.1384783	0.28769743	2.2725428	20	5 24.1	20.6
427217 2014 WE_{14}	16.6	X	164.70726	115.90027	181.03312	1.83125	0.0471015	0.20487323	2.8497881	20	—	—
427218 2014 WU_{18}	17.9	X	125.34683	124.99879	260.54533	1.74499	0.2274456	0.22751614	2.6574264	20	2 20.1	22.0
427219 2014 WK_{22}	17.6	X	49.97246	317.93466	247.92725	3.71097	0.0903110	0.27693587	2.3310410	20	6 22.3	20.0
427220 2014 WS_{22}	17.0	X	153.62059	284.00179	38.37842	3.57231	0.0869256	0.21502930	2.7593341	20	—	—
427221 2014 WB_{31}	15.8	X	19.36816	342.41916	67.87239	11.21021	0.1163055	0.18677071	3.0310763	20	—	—
427222 2014 WS_{33}	16.7	X	80.49877	20.47559	24.99419	4.71985	0.1094335	0.20857187	2.8159972	20	1 8.2	20.3
427223 2014 WT_{34}	17.0	X	181.30116	25.16326	313.77844	3.34741	0.1753379	0.24292141	2.5438540	20	2 9.9	21.2
427224 2014 WQ_{41}	18.3	X	195.56600	256.58911	138.82313	3.11304	0.1878532	0.26872762	2.3782701	20	5 2.0	22.1
427225 2014 WP_{42}	16.7	X	136.50791	300.56999	26.85453	13.08768	0.1859472	0.21569556	2.7536490	20	—	—
427226 2014 WX_{43}	16.6	X	8.64009	50.47634	84.12767	5.92221	0.0597459	0.22024167	2.7156245	20	1 10.6	20.0
427227 2014 WZ_{44}	16.8	X	2.99724	281.50298	223.90200	6.89124	0.1742657	0.21239505	2.7821025	20	1 6.3	19.9
427228 2014 WZ_{47}	16.6	X	58.56458	297.08141	93.65775	5.00717	0.0988597	0.19538831	2.9412843	20	—	—
427229 2014 WP_{48}	17.4	X	182.75726	210.64757	151.13934	3.34007	0.1648149	0.24732487	2.5135692	20	3 9.8	21.5
427230 2014 WK_{50}	13.4	X	257.31453	92.06921	238.93605	12.41819	0.0651908	0.08444976	5.1452177	20	4 27.5	20.4
427231 2014 WO_{54}	15.7	X	82.97568	278.06935	78.23345	18.51931	0.0498793	0.18747920	3.0234351	20	—	—
427232 2014 WT_{54}	16.8	X	90.78119	295.89540	111.89711	4.41117	0.1971099	0.21724861	2.7405099	20	2 6.0	20.2
427233 2014 WH_{55}	18.3	X	167.69757	325.39611	126.28980	2.02580	0.1441565	0.27060175	2.3672765	20	6 16.9	21.9
427234 2014 WR_{55}	17.6	X	165.46820	347.87477	81.74892	4.22422	0.1496670	0.26219273	2.4176251	20	5 17.2	21.3
427235 2014 WB_{56}	17.2	X	48.21793	65.74416	76.68328	6.59466	0.0668354	0.23601034	2.5932757	20	3 21.7	20.4
427236 2014 WM_{59}	16.9	X	49.92072	0.82259	112.69008	3.17472	0.0476026	0.22526848	2.6750738	20	2 11.2	20.1
427237 2014 WH_{60}	16.6	X	7.42808	327.61266	151.38015	5.10563	0.0166996	0.21313824	2.7756315	20	—	—
427238 2014 WC_{61}	16.6	X	246.21221	157.70456	77.75610	10.21707	0.0882007	0.21273728	2.7791180	20	—	—
427239 2014 WF_{61}	17.1	X	154.84564	272.82140	71.16669	11.96601	0.2106947	0.23138960	2.6276862	20	1 30.0	21.5
427240 2014 WJ_{61}	16.4	X	145.05394	221.30870	88.28762	9.13736	0.2124630	0.21120508	2.7925426	20	—	—
427241 2014 WZ_{61}	17.1	X	40.83136	48.51247	124.77132	6.27791	0.0124335	0.25597243	2.4566347	20	4 15.2	20.2
427242 2014 WB_{65}	17.2	X	139.29779	101.53097	228.11556	11.79102	0.1929872	0.21825736	2.7320593	20	—	—
427243 2014 WR_{66}	17.4	X	7.15100	295.98927	206.30694	2.79302	0.0171685	0.22639732	2.6661742	20	1 18.9	20.9
427244 2014 WG_{67}	15.3	X	350.98760	351.11924	79.41399	24.03443	0.1247118	0.17616111	3.1515875	20	—	—
427245 2014 WM_{67}	16.1	X	310.53021	256.67536	247.48181	24.26586	0.2504603	0.17922357	3.1155828	20	—	—
427246 2014 WU_{67}	16.7	X	12.71839	296.70823	107.91569	2.51123	0.1961877	0.17901769	3.1179711	20	—	—
427247 2014 WC_{70}	15.3	X	31.06671	260.86984	146.11133	26.29914	0.2707119	0.17221829	3.1995080	20	—	—
427248 2014 WN_{70}	17.2	X	244.68999	172.62932	94.62010	4.27153	0.0464996	0.22779476	2.6552590	20	1 20.2	21.0
427249 2014 WY_{74}	17.3	X	116.50461	300.64313	59.35590	16.01587	0.2970766	0.22502952	2.6769673	20	1 23.5	21.5
427250 2014 WP_{76}	18.3	X	103.35232	35.24897	101.40785	3.22363	0.1435981	0.26145294	2.4221835	20	6 7.8	21.6
427251 2014 WN_{85}	17.1	X	173.20623	109.79553	195.69311	4.23359	0.0491647	0.21366516	2.7710663	20	—	—
427252 2014 WR_{96}	17.6	X	325.18876	73.84592	183.77569	6.83878	0.0714504	0.26333927	2.4106027	20	4 14.9	20.2
427253 2014 WU_{102}	17.8	X	113.23955	254.58882	227.43180	3.49805	0.1309602	0.26420445	2.4053372	20	5 28.9	21.1
427254 2014 WZ_{109}	16.9	X	66.68859	247.43945	146.62361	5.75497	0.1584795	0.20304247	2.8668928	20	—	—
427255 2014 WT_{115}	15.9	X	257.89702	280.71545	205.17496	13.53259	0.0591533	0.17119273	3.2122735	20	11 7.8	20.3
427256 2014 WQ_{117}	16.6	X	127.07367	295.68355	60.14837	18.28368	0.1801187	0.21436756	2.7650098	20	1 15.2	20.9
427257 2014 WN_{118}	16.1	X	296.34877	68.24904	75.86633	11.62348	0.0479859	0.17046584	3.2213986	20	—	—
427258 2014 WV_{128}	17.5	X	242.73819	290.10949	97.97399	6.68753	0.1935635	0.29218239	2.2492274	20	6 5.6	20.7
427259 2014 WW_{128}	16.8	X	106.79063	290.94398	47.13633	9.53737	0.2320251	0.20930370	2.8094294	20	—	—
427260 2014 WE_{145}	16.6	X	130.06503	109.31614	249.24236	24.53911	0.1286288	0.21979196	2.7193275	20	1 7.4	20.8
427261 2014 WW_{147}	16.8	X	36.01943	320.16750	51.41200	1.88533	0.1601414	0.18456750	3.0551501	20	—	—
427262 2014 WV_{157}	16.7	X	44.56813	23.14661	58.59781	7.20601	0.0260407	0.21532001	2.7568499	20	—	—
427263 2014 WL_{159}	17.3	X	245.08526	208.85740	126.90763	5.78731	0.0964221	0.26954260	2.3734738	20	4 11.3	20.6
427264 2014 WO_{160}	17.3	X	156.85187	295.76788	118.26753	6.95809	0.1372725	0.25529853	2.4609559	20	4 20.7	21.1
427265 2014 WN_{163}	16.3	X	108.74498	8.91242	64.08989	22.73382	0.0411447	0.22492632	2.6777860	20	3 22.5	20.5
427266 2014 WO_{163}	16.7	X	140.95018	106.43498	2.67700	8.68110	0.1541102	0.25628573	2.4546322	20	6 12.2	20.6
427267 2014 WS_{163}	16.0	X	23.45469	14.90241	55.72381	17.91921	0.1972424	0.18172421	3.0869352	20	—	—
427268 2014 WJ_{166}	17.8	X	198.11299	93.02656	269.44532	1.64402	0.2179258	0.26297005	2.4128585	20	3 22.0	21.7
427269 2014 WO_{166}	16.8	X	122.69128	159.24731	223.62572	7.95120	0.1226337	0.23054213	2.6341217	20	1 29.6	20.6
427270 2014 WT_{167}	17.8	X	268.58120	312.99852	62.28476	3.32096	0.1610428	0.29857718	2.2169964	20	6 23.9	20.3
427271 2014 WQ_{168}	18.1	X	199.33871	9.60338	90.35621	4.24468	0.1738063	0.29638955	2.2278919	20	7 30.6	21.3
427272 2014 WA_{170}	16.8	X	155.34132	240.12168	91.79485	7.48977	0.1774672	0.23451594	2.6042807	20	1 10.6	20.9
427273 2014 WQ_{170}	18.0	X	137.53947	148.59763	324.00502	2.32307	0.1932432	0.26184402	2.4197711	20	6 16.9	21.8
427274 2014 WK_{180}	16.0	X	53.70103	209.07803	128.00358	5.40405	0.1162583	0.18249170	3.0782742	20	12 11.9	20.4
427275 2014 WG_{183}	16.1	X	102.40067	226.33993	118.41108	4.77070	0.1024824	0.20866568	2.8151532	20	—	—
427276 2014 WY_{183}	16.2	X	254.04904	194.14409	6.43096	10.38582	0.0648334	0.17775149	3.1327606	20	—	—
427277 2014 WF_{186}	17.5	X	181.98920	126.90643	350.23731	5.54881	0.1687552	0.28084252	2.3093733	20	8 5.5	21.1
427278 2014 WV_{191}	15.9	X	326.07013	320.25452	156.66319	13.37476	0.1510130	0.17974882	3.1095105	20	—	—
427279 2014 WZ_{196}	17.0	X	100.17422	171.13739	308.47457	5.83786	0.0812227	0.25162067	2.4848786	20	4 29.2	20.4
427280 2014 WN_{197}	16.9	X	142.76663	270.65465	80.45563	13.71835	0.2504197	0.23163730	2.6258126	20	1 31.1	21.3

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Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
	m		°	°	°	°		°				
427281 2014 WY_{197}	17.7	X	129.12756	279.51781	188.07073	12.46592	0.1274540	0.26133653	2.4229027	20	5 28.8	21.4
427282 2014 WZ_{202}	17.1	X	187.90299	347.12457	100.34027	24.09326	0.2094955	0.28199882	2.3030561	20	6 30.2	20.6
427283 2014 WN_{208}	15.1	X	105.14498	212.51487	78.28719	16.68831	0.0270123	0.17471056	3.1690076	20	12 3.1	19.7
427284 2014 WK_{212}	15.9	X	217.47964	318.75097	282.70155	10.87411	0.0707028	0.19962442	2.8995256	20	—	—
427285 2014 WM_{219}	16.1	X	30.16889	109.50459	258.84116	9.03721	0.0815161	0.17471351	3.1689719	20	12 13.5	20.4
427286 2014 WW_{230}	17.8	X	199.62074	62.63130	345.28534	6.86780	0.1065062	0.27328551	2.3517527	20	5 20.9	21.4
427287 2014 WH_{231}	16.0	X	359.29363	135.35257	280.06536	6.73296	0.1484694	0.17367208	3.1816279	20	—	—
427288 2014 WE_{235}	15.3	X	209.82850	268.01477	303.59451	13.10506	0.1696771	0.17173173	3.2055485	20	12 11.0	20.4
427289 2014 WD_{238}	16.7	X	293.33390	22.61821	124.57920	6.43712	0.2544085	0.17818903	3.1276303	20	12 31.4	19.9
427290 2014 WY_{238}	17.8	X	298.41991	226.64250	125.83606	6.45797	0.0881562	0.29838174	2.2179643	20	7 20.5	19.7
427291 2014 WP_{241}	16.0	X	22.63505	262.92678	140.83610	13.92416	0.1585044	0.18103998	3.0947083	20	—	—
427292 2014 WR_{241}	15.7	X	47.18035	261.23374	118.18641	17.43804	0.1950787	0.18512667	3.0489951	20	—	—
427293 2014 WF_{250}	17.6	X	302.71286	344.92297	337.93536	6.56993	0.1451525	0.28912071	2.2650784	20	5 30.2	20.1
427294 2014 WZ_{252}	18.0	X	120.78010	329.74870	97.17787	6.67993	0.2428393	0.24413718	2.5354016	20	4 11.4	22.0
427295 2014 WJ_{253}	15.8	X	38.93824	261.00957	82.28825	14.92400	0.2150157	0.17742619	3.1365886	20	12 13.8	20.1
427296 2014 WL_{253}	15.5	X	286.58831	349.18453	128.33825	10.28182	0.0530918	0.17537438	3.1610057	20	12 6.6	19.9
427297 2014 WQ_{253}	15.7	X	96.93035	341.69743	67.02803	22.80371	0.0419132	0.22805198	2.6532621	20	1 24.1	19.6
427298 2014 WS_{253}	16.2	X	39.92596	298.97500	81.47101	11.46695	0.0567320	0.18880501	3.0092646	20	—	—
427299 2014 WZ_{258}	17.0	X	29.59443	343.34971	120.90556	5.73244	0.0849609	0.21105714	2.7938474	20	1 3.2	20.2
427300 2014 WT_{259}	18.2	X	189.84879	286.46785	173.87555	3.30435	0.1128055	0.28761993	2.2729510	20	7 22.6	21.3
427301 2014 WR_{260}	17.7	X	60.25318	13.36475	129.99595	4.65948	0.0761833	0.24407361	2.5358419	20	4 9.2	20.7
427302 2014 WZ_{260}	17.6	X	229.97573	334.40594	95.96788	7.11362	0.0616886	0.29581622	2.2307697	20	8 7.7	20.4
427303 2014 WP_{264}	15.6	X	24.83330	268.82197	97.89588	14.00306	0.1273713	0.17008440	3.2262132	20	12 10.7	19.9
427304 2014 WE_{266}	16.2	X	176.27959	212.65674	113.34542	9.92065	0.0409390	0.22034492	2.7147761	20	1 15.8	20.0
427305 2014 WO_{267}	17.2	X	305.67508	84.21614	181.68850	6.54157	0.1421385	0.25523547	2.4613613	20	3 16.2	20.2
427306 2014 WZ_{268}	17.8	X	120.78613	318.72348	184.66510	6.24960	0.0685710	0.27372644	2.3492264	20	6 29.2	21.1
427307 2014 WJ_{272}	16.5	X	113.58035	199.49214	170.64643	6.00744	0.0647985	0.21020032	2.8014345	20	—	—
427308 2014 WU_{278}	16.1	X	293.61295	346.95104	195.33749	8.79560	0.0408149	0.19934784	2.9022068	20	—	—
427309 2014 WW_{280}	16.5	X	182.92013	237.59051	99.44791	7.37560	0.2710648	0.23991327	2.5650738	20	2 14.6	21.1
427310 2014 WA_{282}	15.7	X	303.21648	27.17542	99.34422	10.28314	0.1199956	0.17299190	3.1899622	20	—	—
427311 2014 WH_{285}	16.5	X	89.99301	263.94110	86.57362	14.27665	0.1346749	0.19303621	2.9651285	20	—	—
427312 2014 WL_{285}	17.7	X	327.06173	143.33266	163.20061	6.25293	0.2231818	0.29401436	2.2398745	20	6 12.1	19.2
427313 2014 WQ_{286}	16.2	X	119.28701	253.63148	140.60775	6.94836	0.0592727	0.22313516	2.6920971	20	2 3.5	19.7
427314 2014 WW_{290}	18.0	X	272.14471	230.19378	136.32991	7.68445	0.1668999	0.29365555	2.2416987	20	6 15.6	20.8
427315 2014 WB_{291}	16.3	X	167.83923	242.65694	97.27677	14.52068	0.1149027	0.22823637	2.6518329	20	1 29.3	20.4
427316 2014 WT_{291}	17.1	X	82.91906	10.57672	132.22783	9.62175	0.1122883	0.25341032	2.4731655	20	5 18.6	20.4
427317 2014 WH_{292}	16.4	X	26.40698	341.56294	111.04094	13.29400	0.0522243	0.20500959	2.8485243	20	—	—
427318 2014 WO_{292}	16.6	X	90.44617	189.09724	164.90262	10.60969	0.0242084	0.18980040	2.9987341	20	—	—
427319 2014 WU_{292}	16.6	X	15.03877	274.85113	159.14824	10.65350	0.0951691	0.19003784	2.9962358	20	—	—
427320 2014 WV_{293}	16.2	X	334.01159	73.33931	115.55817	15.15208	0.0794103	0.22327028	2.6910108	20	1 28.8	19.6
427321 2014 WK_{294}	16.5	X	321.80485	343.84190	182.96905	15.22833	0.0773252	0.20403862	2.8575541	20	—	—
427322 2014 WC_{295}	16.2	X	18.89894	66.10825	112.81938	16.16633	0.0699597	0.23911975	2.5707455	20	3 30.2	19.6
427323 2014 WM_{295}	17.1	X	90.77505	245.89517	136.87985	8.97129	0.2260168	0.20977590	2.8052118	20	1 9.9	20.7
427324 2014 WY_{300}	16.4	X	180.43612	53.30852	274.81723	10.77099	0.1469024	0.23703545	2.5857935	20	1 24.6	20.5
427325 2014 WB_{309}	15.8	X	69.11424	337.22480	35.43048	11.42266	0.0519552	0.18979548	2.9987859	20	—	—
427326 2014 WZ_{310}	17.2	X	70.05769	130.23193	336.15093	2.85907	0.0852431	0.23002074	2.6381008	20	3 4.5	20.3
427327 2014 WJ_{311}	17.8	X	171.40018	134.72143	17.23139	5.05739	0.0718149	0.30084590	2.2058365	20	9 16.6	20.7
427328 2014 WQ_{314}	16.6	X	79.22418	279.51989	98.89049	7.56658	0.1276809	0.21147941	2.7901271	20	—	—
427329 2014 WQ_{316}	15.3	X	284.84923	230.18043	106.21087	14.61386	0.2682473	0.12360637	3.9912489	20	5 12.9	21.1
427330 2014 WL_{317}	16.8	X	165.12221	260.96285	80.95667	15.20113	0.1493642	0.23905280	2.5712254	20	1 31.5	21.0
427331 2014 WA_{324}	16.3	X	43.51632	250.34215	120.46163	9.41267	0.0872641	0.18321009	3.0702221	20	—	—
427332 2014 WF_{326}	16.6	X	337.65495	305.81692	157.48347	12.72715	0.0680320	0.19039609	2.9924762	20	—	—
427333 2014 WV_{326}	16.8	X	357.31884	273.33725	171.24578	10.98630	0.1111317	0.19007547	2.9958403	20	—	—
427334 2014 WW_{327}	16.0	X	52.13105	215.17325	174.65413	12.08002	0.0678017	0.19419445	2.9533268	20	—	—
427335 2014 WC_{331}	16.3	X	20.89646	294.81476	101.64869	10.64443	0.1067024	0.18223831	3.0811269	20	—	—
427336 2014 WW_{334}	15.9	X	11.26866	242.29871	196.36130	12.95579	0.0979075	0.19284310	2.9671078	20	—	—
427337 2014 WR_{337}	17.1	X	96.31628	199.47254	184.25548	10.66399	0.3154131	0.21794068	2.7347052	20	1 28.6	20.9
427338 2014 WR_{340}	16.2	X	64.58553	242.78408	129.85218	10.33480	0.1235097	0.19404136	2.9548799	20	—	—
427339 2014 WV_{342}	16.2	X	37.93879	230.16367	155.47061	12.11486	0.0394045	0.18551123	3.0447800	20	—	—
427340 2014 WK_{348}	17.3	X	173.15858	93.06008	345.20470	6.50417	0.1035019	0.27144600	2.3623655	20	6 2.8	20.8
427341 2014 WN_{348}	15.8	X	97.51529	333.56144	5.54132	9.62833	0.0352204	0.18837503	3.0138421	20	—	—
427342 2014 WQ_{349}	16.5	X	189.91410	346.01061	340.10218	4.98789	0.0459512	0.22825572	2.6516830	20	1 31.5	20.4
427343 2014 WC_{353}	16.6	X	70.67731	51.32686	100.77264	6.28647	0.1832635	0.24626525	2.5207743	20	5 23.8	19.6
427344 2014 WA_{354}	17.0	X	79.58805	307.29794	183.80123	10.43898	0.1650857	0.22935465	2.6432060	20	5 5.7	20.4
427345 2014 WP_{358}	16.1	X	39.10274	13.39373	13.39209	9.82726	0.0840097	0.18809995	3.0167797	20	—	—
427346 2014 WW_{364}	12.7	X	233.88767	272.20794	75.74767	33.08845	0.0676643	0.08323406	5.1951969	20	5 6.1	20.0
427347 2014 WO_{374}	17.8	X	176.48443	98.34410	357.99609	0.91207	0.1384422	0.27680391	2.3317817	20	7 2.3	21.2
427348 2014 WT_{377}	15.9	X	334.16872	257.23294	176.69038	15.98072	0.0707548	0.17213173	3.2005805	20	12 16.0	20.4
427349 2014 WU_{381}	16.3	X	107.31033	125.79424	354.14207	12.73005	0.0943284	0.24416228	2.5352279	20	5 8.7	20.0
427350 2014 WE_{392}	16.1	X	25.33492	259.66051	121.47954	15.72415	0.0791820	0.17561996	3.1580583	20	12 23.6	20.5
427351 2014 WX_{392}	16.7	X	8.78590	91.20807	344.90953	5.62284	0.1640099	0.18492702	3.0511892	20	—	—
427352 2014 WG_{393}	15.6	X	7.64876	104.81225	294.32694	10.49234	0.0761057	0.16947706	3.2339162	20	12 19.4	19.9
427353 2014 WS_{400}	14.9	X	143.81864	9.73341	261.44017	21.37574	0.1020482	0.17860664	3.1227531	20	12 22.6	19.8
427354 2014 WT_{401}	16.6	X	60.59601	294.00273	98.58855	3.17379	0.0895127	0.19702024	2.9250198	20	—	—
427355 2014 WA_{404}	16.1	X	343.14802	19.94390	74.45825	18.36113	0.1141455	0.17974780	3.1095221	20	—	—
427356 2014 WQ_{406}	16.0	X	36.98137	150.39838	251.42565	15.39938	0.1528546	0.18624207	3.0368094	20	—	—
427357 2014 WX_{407}	16.1	X	77.48234	357.90997	71.51329	10.37067	0.0850072	0.21567172	2.7538519	20	1 31.9	19.7
427358 2014 WY_{412}	17.5	X	281.39117	201.84322	144.06059	7.45591	0.1380945	0.28471492	2.2883858	20	6 4.1	20.3
427359 2014 WZ_{413}	15.0	X	39.89212	283.22728	93.90624	16.56091	0.0534906	0.17433825	3.1735177	20	12 31.9	19.4
427360 2014 WA_{427}	16.4	X	34.68948	341.29219	117.74427	11.16855	0.0744159	0.18993561	2.9973108	20	1 8.8	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		°	°	°	°		°				
427361 2014 WL_{427}	17.0	X	133.03565	261.82133	272.02654	8.42365	0.0515577	0.26861698	2.3789231	20	8 21.2	20.3
427362 2014 WS_{435}	17.2	X	177.01463	61.99246	330.53042	13.24895	0.1653617	0.25784790	2.4447080	20	4 4.3	21.3
427363 2014 WR_{447}	16.5	X	79.86783	200.61138	263.98643	8.37013	0.0840194	0.23248045	2.6194600	20	3 11.4	20.1
427364 2014 WY_{448}	16.7	X	16.59913	201.60584	301.28507	7.12099	0.1683161	0.21388260	2.7691878	20	1 29.7	19.5
427365 2014 WK_{452}	16.2	X	74.74394	60.99325	293.72241	8.74683	0.1189128	0.18401638	3.0612471	20	—	—
427366 2014 WB_{456}	14.8	X	188.56373	59.35972	158.49905	21.44365	0.0312810	0.16816614	3.2507009	20	12 11.1	19.9
427367 2014 WF_{461}	16.9	X	87.82377	194.15353	251.46745	10.62555	0.1520779	0.22927608	2.6438099	20	3 7.3	20.5
427368 2014 WE_{465}	16.9	X	218.27246	316.63372	64.58571	7.96952	0.1151213	0.26759991	2.3849470	20	5 8.5	20.4
427369 2014 WB_{472}	13.3	X	251.20476	255.88544	82.08250	26.06071	0.0512587	0.08415315	5.1573008	20	5 10.3	20.4
427370 2014 WD_{472}	15.7	X	4.14262	317.61805	101.87047	11.87212	0.0420014	0.17838917	3.1252905	20	—	—
427371 2014 WF_{484}	16.6	X	136.38936	295.17197	113.28072	14.60970	0.1774843	0.24093499	2.5578170	20	3 31.6	20.8
427372 2014 WB_{485}	17.8	X	172.68785	72.10989	20.22944	2.42503	0.1624703	0.27263898	2.3554691	20	6 22.8	21.4
427373 2014 WF_{498}	15.8	X	224.04223	239.59224	118.15927	31.83741	0.2727841	0.23658374	2.5890839	20	4 19.9	21.0
427374 2014 XO	13.7	X	214.50873	58.22796	309.50346	14.53516	0.1302660	0.08505632	5.1207275	20	4 15.5	21.2
427375 2014 XW_{7}	18.1	X	208.20307	31.44605	232.39878	21.59669	0.0430720	0.37681337	1.8983889	20	—	—
427376 2014 XQ_{12}	17.4	X	94.79359	327.50859	119.62964	0.42926	0.1421512	0.23288317	2.6164392	20	3 22.7	20.6
427377 2014 XF_{15}	16.8	X	166.80768	308.41935	76.32004	10.35600	0.1300704	0.24354430	2.5395148	20	3 27.1	20.8
427378 2014 XN_{15}	16.4	X	69.33437	209.47338	258.26253	11.92584	0.2037155	0.22534958	2.6744319	20	3 17.2	19.8
427379 2014 XD_{17}	16.9	X	158.22381	213.65647	158.40659	5.11083	0.2727929	0.24185059	2.5513573	20	3 6.9	21.2
427380 2014 XC_{26}	16.8	X	114.50534	85.01958	274.14052	7.99869	0.1588095	0.20673302	2.8326710	20	1 1.9	20.8
427381 2014 XS_{26}	15.8	X	25.60533	79.77875	104.99063	15.23336	0.0477990	0.23264167	2.6182496	20	4 17.9	19.4
427382 2014 XZ_{26}	17.2	X	52.03422	214.11701	271.66864	6.41291	0.1763282	0.21504905	2.7591652	20	3 12.2	20.3
427383 2014 XD_{27}	16.8	X	52.52300	321.29044	134.93008	1.67934	0.2103317	0.20475427	2.8508919	20	2 11.3	19.4
427384 2014 XX_{28}	16.0	X	104.78585	210.35510	86.68784	10.11256	0.0706613	0.17270117	3.1935413	20	12 12.7	20.8
427385 2014 XC_{29}	16.2	X	37.42511	330.44918	116.53606	9.48289	0.1738561	0.20209173	2.8758773	20	—	—
427386 2014 XK_{39}	16.1	X	356.83508	33.30747	68.09818	2.96806	0.1724249	0.18521520	3.0480234	20	—	—
427387 2014 XM_{39}	16.5	X	89.07138	335.93491	74.99693	16.71790	0.1942179	0.21510823	2.7586590	20	2 12.5	20.4
427388 2014 YH_{5}	17.8	X	331.36744	219.37876	285.97783	18.76560	0.0825845	0.36507857	1.9388542	20	—	—
427389 2014 YA_{11}	16.4	X	62.80279	117.64100	278.29433	9.72117	0.0804400	0.19300331	2.9654655	20	—	—
427390 2014 YQ_{16}	16.7	X	85.42584	61.45345	353.59941	5.16239	0.0814183	0.21256569	2.7806134	20	1 23.4	20.2
427391 2014 YW_{16}	15.9	X	30.43007	90.66584	298.19505	7.99104	0.0829846	0.17369518	3.1813457	20	—	—
427392 2014 YO_{30}	16.9	X	4.99414	131.83690	346.18049	10.93048	0.2752656	0.18764892	3.0216118	20	—	—
427393 2014 YB_{32}	15.6	X	33.37078	280.03029	125.35063	11.75514	0.1270942	0.17404645	3.1770638	20	—	—
427394 1995 SJ_{76}	16.4	X	197.60689	156.56510	174.34695	8.53374	0.0738803	0.17845949	3.1244695	20	2 18.8	21.3
427395 1995 UB_{31}	17.5	X	165.34475	169.40337	203.22929	7.40041	0.1219807	0.21609009	2.7502963	20	3 4.7	21.8
427396 1996 TA	16.7	X	151.41595	39.76693	7.12489	13.25853	0.2519535	0.22862410	2.6488338	20	4 9.4	21.3
427397 1997 NZ_{1}	17.4	X	116.17880	152.42655	112.32478	5.44477	0.2079227	0.27254258	2.3560245	20	12 9.4	21.2
427398 1997 SQ_{7}	18.0	X	42.72108	291.49966	4.79203	4.62965	0.1923241	0.26106911	2.4245570	20	11 2.9	21.1
427399 1997 SY_{7}	16.9	X	62.40498	75.63678	354.42172	8.86689	0.1474610	0.18669915	3.0318508	20	1 23.5	20.6
427400 1997 WH_{56}	18.0	X	335.00960	18.42647	25.68385	8.54349	0.1234420	0.30358484	2.1925491	20	12 22.9	20.1
427401 1998 HJ_{5}	16.4	X	290.93542	273.71654	43.24477	14.20162	0.1496264	0.22625474	2.6672943	20	5 5.0	19.8
427402 1998 MU_{15}	16.5	X	45.92629	339.12955	247.35145	12.71999	0.0830384	0.22793496	2.6541701	20	7 9.9	20.0
427403 1998 RN_{8}	15.9	X	65.71724	126.25502	14.34000	15.11768	0.0866901	0.20557980	2.8432547	20	4 13.5	19.5
427404 1999 CO_{135}	16.2	X	314.20693	249.03312	337.33270	9.12326	0.2002501	0.18458362	3.0549723	20	2 7.8	20.3
427405 1999 RD_{45}	15.8	X	266.80100	116.35879	175.02416	25.53237	0.3751297	0.17564579	3.1577487	20	2 15.0	21.5
427406 1999 RV_{185}	17.7	X	268.84955	33.17578	348.38772	8.04979	0.2320801	0.27608401	2.3358335	20	6 21.5	20.8
427407 1999 TR_{7}	16.5	X	160.88539	351.39507	29.06774	13.86945	0.3042601	0.21325544	2.7746144	20	3 25.4	21.5
427408 1999 TU_{219}	17.1	X	62.96725	86.41898	309.60913	4.28634	0.3534511	0.20083665	2.8878462	20	1 3.3	19.5
427409 1999 UA_{22}	16.7	X	160.58168	178.91586	204.62094	3.15670	0.1089486	0.21194454	2.7860435	20	3 13.9	20.9
427410 1999 UG_{31}	16.4	X	344.69613	232.70956	31.36859	15.46533	0.0720002	0.22260655	2.6963572	20	5 22.4	19.8
427411 1999 VF_{42}	16.6	X	62.09091	207.25005	268.37197	3.08761	0.0603582	0.21010262	2.8023029	20	3 3.2	20.1
427412 1999 VQ_{156}	17.8	X	261.02603	4.68514	30.08423	1.57206	0.2137310	0.27307984	2.3529333	20	7 2.8	20.8
427413 1999 XT_{53}	17.8	X	55.07845	170.01827	240.55190	9.08625	0.3659726	0.19906084	2.9049957	20	1 5.9	20.1
427414 1999 XX_{147}	17.1	X	128.14579	22.80131	66.18376	5.81562	0.0953435	0.21265229	2.7798584	20	4 30.5	21.2
427415 2000 AP_{221}	18.0	X	179.49915	6.97171	84.31154	2.51013	0.1466673	0.26332263	2.4107042	20	6 27.9	21.8
427416 2000 BN_{31}	17.9	X	23.96129	38.15994	131.87913	23.45667	0.0763545	0.39550986	1.8380804	20	2 24.7	19.1
427417 2000 DE_{118}	18.0	X	130.80776	222.05017	328.75612	1.84964	0.1488894	0.26539317	2.3981493	20	9 18.2	21.5
427418 2000 KD_{49}	15.9	X	235.40189	123.09389	127.67866	17.81499	0.1686230	0.17650046	3.1475464	20	—	—
427419 2000 NH_{8}	17.1	X	21.75372	11.77330	233.26022	3.76421	0.1497541	0.24500318	2.5294236	20	7 8.2	19.7
427420 2000 QO_{34}	18.0	X	61.65368	64.75493	343.33381	17.06608	0.2343872	0.36455089	1.9407247	20	—	—
427421 2000 QO_{133}	16.7	X	194.97465	20.99275	345.17964	12.50507	0.3037793	0.22982076	2.6396310	20	3 23.9	21.6
427422 2000 RA_{37}	16.8	X	244.87234	359.63104	325.70405	15.05344	0.2181003	0.23223859	2.6212783	20	3 12.9	21.2
427423 2000 SO_{11}	16.8	X	307.58183	293.21279	7.96843	12.73188	0.2826084	0.23823236	2.5771253	20	4 12.6	19.9
427424 2000 SP_{21}	17.6	X	45.80255	74.69825	6.14047	21.41393	0.0863230	0.36623473	1.9347716	20	—	—
427425 2000 SV_{21}	17.8	X	78.33958	68.47478	357.67411	19.13230	0.1094113	0.36902923	1.9249918	20	—	—
427426 2000 SW_{96}	17.4	X	348.57870	39.45950	295.33787	5.10226	0.2022086	0.29652778	2.2271995	20	10 5.0	19.0
427427 2000 SB_{162}	16.0	X	141.64358	138.27398	223.29889	13.75774	0.2363431	0.21953411	2.7214564	20	2 4.2	20.7
427428 2000 SK_{181}	17.2	X	344.53821	356.07383	5.90429	6.01188	0.1954347	0.29931015	2.2133754	20	11 12.4	18.8
427429 2000 SR_{304}	16.7	X	144.41396	28.78794	358.06509	13.78316	0.2500809	0.22169494	2.7037437	20	3 13.9	21.1
427430 2000 SM_{343}	16.1	X	250.77735	106.84863	186.85544	15.50620	0.1815800	0.17925777	3.1151865	20	2 18.9	21.3
427431 2000 TM_{30}	17.1	X	154.74794	11.97082	37.79082	10.56881	0.2089381	0.22494104	2.6776691	20	4 16.7	21.5
427432 2000 TE_{38}	17.0	X	171.17234	329.14872	40.85397	9.67937	0.3000267	0.22568606	2.6717730	20	3 19.5	21.9
427433 2000 UV_{61}	17.4	X	141.40238	135.77393	247.60285	4.67393	0.3440067	0.22058538	2.7128028	20	3 11.1	22.3
427434 2000 WS_{63}	17.1	X	219.27592	300.26006	37.19613	14.95896	0.1382775	0.22603583	2.6690161	20	3 21.1	21.5
427435 2001 BC_{73}	15.9	X	44.79363	97.81893	130.73291	23.58759	0.2477998	0.21623929	2.7490311	20	8 9.0	19.1
427436 2001 DK_{55}	18.7	X	246.50228	11.05083	66.63981	0.57729	0.1934528	0.28326822	2.2961706	20	8 17.9	21.7
427437 2001 FN_{7}	18.0	X	217.78327	28.96518	92.55467	3.74466	0.1418800	0.28115091	2.3076842	20	9 21.4	21.1
427438 2001 FQ_{40}	16.7	X	58.03632	36.65687	174.54176	8.37516	0.2364706	0.21586206	2.7522328	20	7 31.5	20.3
427439 2001 FP_{210}	17.6	X	136.45676	201.36771	185.03068	1.87225	0.0800972	0.20336133	2.8638953	20	2 19.1	21.8
427440 2001 OW_{12}	17.1	X	330.09082	33.72148	317.89882	4.76210	0.2168809	0.26199589	2.4188358	20	9 6.6	18.8

ELEMENTS AND OPPOSITION DATES IN 2020

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Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
	m		°	°	°	°		°				
427441 2001 OU_{44}	17.1	X	8.24386	328.18037	353.67895	7.65122	0.1960300	0.26363975	2.4087707	20	10 16.9	19.5
427442 2001 PA_{41}	16.4	X	182.77058	103.97848	299.03705	10.70003	0.2678068	0.24188567	2.5511106	20	4 26.1	21.2
427443 2001 QV_{61}	16.8	X	8.85054	340.48588	332.93666	16.53418	0.2376074	0.26225577	2.4172376	20	10 5.2	19.4
427444 2001 QD_{87}	16.9	X	306.74619	42.86502	308.88032	12.36344	0.1905559	0.25529703	2.4609656	20	7 16.3	19.3
427445 2001 QA_{110}	15.8	X	158.07461	337.23888	350.97951	15.49206	0.2107243	0.18059729	3.0997636	20	1 21.9	21.1
427446 2001 QN_{189}	16.9	X	308.80783	56.32577	278.21196	14.31337	0.2377809	0.25468882	2.4648820	20	6 13.5	19.3
427447 2001 RU_{62}	15.9	X	93.16343	5.22038	13.03432	13.99911	0.2471722	0.17462730	3.1700148	20	1 21.5	20.5
427448 2001 RJ_{127}	16.8	X	9.88505	310.04352	6.09801	11.99613	0.2812897	0.26203677	2.4185843	20	10 25.1	19.2
427449 2001 RC_{132}	15.6	X	160.03732	188.79859	167.51039	17.98147	0.1600837	0.18198333	3.0840043	20	2 15.3	20.7
427450 2001 SC_{6}	16.2	X	190.69174	144.33736	176.39651	10.38977	0.1137865	0.18310272	3.0714222	20	1 30.6	21.2
427451 2001 SL_{13}	16.3	X	127.94443	202.29099	176.98331	21.58323	0.2240033	0.17958414	3.1114111	20	2 17.9	21.4
427452 2001 SD_{15}	16.8	X	110.07714	71.11827	359.10197	29.29461	0.3094483	0.23311123	2.6147324	20	4 1.8	21.0
427453 2001 SS_{103}	15.9	X	134.63872	12.69617	355.25692	8.75308	0.0764654	0.17895367	3.1187147	20	1 31.6	20.6
427454 2001 SZ_{185}	16.3	X	80.68085	246.01343	169.99623	10.30079	0.2276228	0.17710385	3.1403933	20	2 11.2	20.4
427455 2001 SM_{201}	17.5	X	158.45547	57.20004	3.41741	9.20223	0.1658917	0.24095397	2.5576826	20	4 26.6	21.7
427456 2001 SQ_{202}	17.4	X	84.47522	242.07149	7.85689	4.33559	0.2192808	0.26380179	2.4077842	20	10 23.4	21.1
427457 2001 SO_{212}	15.7	X	99.00072	224.10239	179.66900	27.26515	0.1720340	0.17719430	3.1393246	20	2 10.2	20.5
427458 2001 SL_{250}	16.8	X	115.35799	61.05482	24.35373	31.01037	0.2261936	0.23435565	2.6054681	20	4 20.6	20.9
427459 2001 SE_{259}	15.8	X	73.50952	11.17401	356.27385	13.58689	0.2073318	0.17183364	3.2042810	20	—	—
427460 2001 SP_{299}	15.9	X	76.08905	91.80858	339.02755	8.85582	0.0757295	0.17899304	3.1182573	20	2 4.7	20.0
427461 2001 TT_{47}	17.4	X	34.43118	202.97924	104.02576	7.43367	0.2222719	0.26157881	2.4214063	20	11 14.9	20.5
427462 2001 TW_{132}	16.8	X	42.37599	18.31231	302.39385	8.78358	0.2720377	0.26592983	2.3949219	20	12 16.9	20.4
427463 2001 TO_{219}	17.0	X	326.74202	38.04664	304.16324	5.13487	0.1474132	0.25555887	2.4592843	20	8 15.7	19.2
427464 2001 UK_{57}	17.9	X	171.88265	39.97543	20.31102	9.36914	0.2286096	0.24038915	2.5616875	20	5 10.7	22.5
427465 2001 UQ_{127}	17.2	X	172.82148	354.76610	50.72076	12.69360	0.2423404	0.23817231	2.5775585	20	4 27.5	21.7
427466 2001 US_{128}	15.8	X	93.10971	25.01680	14.21228	17.93851	0.2267839	0.17612963	3.1519629	20	2 16.3	20.4
427467 2001 UA_{201}	16.3	X	85.12941	176.61481	226.27823	6.50515	0.1570389	0.17343739	3.1844973	20	1 22.1	20.6
427468 2001 UW_{227}	16.2	X	75.63272	357.69884	7.44695	3.61935	0.1462885	0.16827205	3.2493368	20	—	—
427469 2001 VB_{6}	16.8	X	99.72939	252.35076	222.37400	12.27952	0.2200553	0.23415366	2.6069663	20	5 15.5	20.5
427470 2001 VB_{38}	17.9	X	159.41168	160.55334	244.88565	2.93190	0.3131687	0.23561245	2.5961945	20	4 17.4	22.6
427471 2001 VC_{91}	16.3	X	133.64085	306.89414	86.05071	14.44789	0.2658728	0.23081545	2.6320419	20	3 19.6	20.9
427472 2001 VG_{115}	16.4	X	254.60119	115.52962	254.18654	8.00121	0.1333227	0.24380700	2.5376902	20	5 31.8	19.7
427473 2001 VK_{133}	17.9	X	327.52170	274.45839	101.56022	6.24087	0.0089538	0.31100297	2.1575441	20	10 25.1	20.3
427474 2001 WR_{68}	15.9	X	130.85060	293.97942	61.47783	12.75251	0.0986678	0.17250306	3.1959858	20	1 15.1	20.7
427475 2001 WT_{68}	17.9	X	148.86325	230.79180	216.59444	5.76661	0.2673323	0.23777881	2.5804015	20	5 29.9	22.5
427476 2001 WB_{75}	17.9	X	199.06509	186.39332	230.33419	8.33993	0.1516228	0.24246065	2.5470758	20	6 1.9	21.8
427477 2001 XH_{4}	16.8	X	112.62769	76.48726	64.06177	29.96145	0.2698835	0.23676991	2.5877265	20	7 2.4	21.4
427478 2001 XC_{54}	17.3	X	198.28003	306.98740	85.60530	5.71561	0.2551062	0.23911564	2.5707750	20	5 1.1	21.8
427479 2001 XG_{61}	17.1	X	200.74030	297.84100	91.44756	9.81751	0.1713625	0.23796536	2.5790527	20	5 2.5	21.4
427480 2001 XC_{96}	17.1	X	179.41452	332.66416	73.75331	6.87556	0.2631329	0.23757360	2.5818872	20	5 3.7	21.6
427481 2001 XE_{114}	17.4	X	165.85403	59.20617	351.69507	3.47740	0.3338682	0.23584446	2.5944916	20	4 28.4	22.3
427482 2001 XH_{134}	16.9	X	108.32250	187.35635	253.73215	13.97824	0.1556455	0.23024286	2.6364039	20	3 27.8	20.9
427483 2001 XA_{145}	17.2	X	136.23517	135.56742	250.93722	11.06615	0.3049021	0.22951602	2.6419669	20	3 4.5	21.9
427484 2001 XT_{149}	17.1	X	167.70978	347.37833	84.72355	10.96960	0.1791873	0.23731821	2.5837392	20	5 24.5	21.3
427485 2001 XP_{206}	17.0	X	187.21053	332.99180	100.41768	10.19505	0.1821738	0.24074601	2.5591553	20	6 11.8	21.1
427486 2001 XQ_{223}	16.5	X	124.35745	173.71701	262.42240	12.08523	0.0919062	0.23280293	2.6170404	20	4 1.3	20.4
427487 2002 AY_{35}	17.0	X	110.14124	123.08902	288.60518	6.92650	0.1898378	0.22504911	2.6768119	20	2 29.4	20.9
427488 2002 AZ_{42}	16.7	X	55.38323	21.30341	128.46654	7.50797	0.1012776	0.22789876	2.6544512	20	4 16.6	19.9
427489 2002 AW_{109}	17.0	X	147.35257	331.57967	120.80189	5.06134	0.2057700	0.23348891	2.6119120	20	6 1.3	21.3
427490 2002 AG_{145}	16.6	X	120.97371	212.21544	296.31594	16.90033	0.0969643	0.23598138	2.5934879	20	7 9.5	20.4
427491 2002 AW_{185}	17.6	X	58.92064	110.48181	22.74818	4.08580	0.2692398	0.22455209	2.6807603	20	4 21.8	20.3
427492 2002 AP_{203}	16.8	X	127.05477	162.91400	309.09148	12.08210	0.1803696	0.23066621	2.6331771	20	6 3.9	21.1
427493 2002 BN_{20}	15.6	X	109.52913	252.82530	239.06414	27.81190	0.3398446	0.23195436	2.6234192	20	6 23.3	20.4
427494 2002 BK_{26}	18.0	X	258.46232	81.94657	329.13155	24.30801	0.1440343	0.45877683	1.6649521	20	8 25.5	18.4
427495 2002 BN_{30}	16.9	X	129.65377	58.17018	26.12165	12.86794	0.2371791	0.23073019	2.6326902	20	5 5.5	21.2
427496 2002 BF_{32}	17.2	X	130.14970	260.15057	240.03371	11.87847	0.1980421	0.23665522	2.5885625	20	7 12.7	21.5
427497 2002 CK_{14}	17.8	X	123.20635	257.85063	143.35289	21.00355	0.1111792	0.38188535	1.8815426	20	1 31.3	19.5
427498 2002 CN_{43}	17.8	X	264.00106	242.06845	318.55654	19.26075	0.0161546	0.37286673	1.9117611	20	—	—
427499 2002 CZ_{58}	19.2	X	261.26379	88.15221	339.30635	18.82527	0.4642573	0.30415390	2.1898135	20	7 21.7	22.7
427500 2002 CJ_{69}	16.9	X	91.59716	29.06092	128.14479	14.31785	0.1912803	0.23112944	2.6296576	20	6 27.7	20.8
427501 2002 CQ_{138}	17.1	X	109.78695	224.45239	263.69625	5.58686	0.2476310	0.23097611	2.6308212	20	6 14.9	21.2
427502 2002 CS_{151}	16.7	X	119.30750	343.40909	146.88685	12.58283	0.1269308	0.22989639	2.6390520	20	6 16.5	20.8
427503 2002 CO_{157}	16.5	X	347.37987	86.61391	137.79351	13.79465	0.1322932	0.22363958	2.6880475	20	4 5.3	19.7
427504 2002 CD_{158}	17.1	X	179.18730	323.52798	132.56209	9.24385	0.1571146	0.23767731	2.5811361	20	7 2.9	21.2
427505 2002 CL_{159}	18.0	X	19.37866	172.23345	337.05501	20.83410	0.0779823	0.37925989	1.8902160	20	1 19.1	19.8
427506 2002 CR_{162}	17.0	X	137.31869	124.74052	25.04959	4.29129	0.1687575	0.23679780	2.5875233	20	8 3.2	21.1
427507 2002 DH_{5}	10.1	X	76.28717	327.91525	157.07252	22.46968	0.3633235	0.00950249	22.0755304	20	5 27.5	23.8
427508 2002 DK_{16}	16.7	X	160.45877	281.99298	150.09021	13.85254	0.2466416	0.23190476	2.6237933	20	5 22.4	21.5
427509 2002 DA_{19}	17.8	X	85.54375	65.44116	359.78916	19.99787	0.1003367	0.37839766	1.8930863	20	1 6.5	19.8
427510 2002 ES_{6}	17.2	X	305.78814	131.98106	180.52369	5.13164	0.0455528	0.22737685	2.6585116	20	6 6.5	20.6
427511 2002 EA_{35}	16.8	X	95.03227	185.16259	14.45971	13.59214	0.0960440	0.23408194	2.6074988	20	8 20.9	20.7
427512 2002 EZ_{104}	17.3	X	78.40095	90.30986	86.76803	5.06778	0.2029804	0.22932399	2.6434416	20	7 9.7	21.0
427513 2002 EO_{113}	16.5	X	17.34263	212.23432	4.77488	13.15805	0.1071015	0.22434997	2.6823701	20	5 9.5	19.8
427514 2002 EV_{114}	17.2	X	73.97000	206.43268	339.40918	3.22407	0.1156670	0.22870260	2.6482276	20	7 2.5	20.6
427515 2002 FE_{14}	17.5	X	130.02174	236.37680	163.92378	22.36923	0.1300286	0.38161638	1.8824266	20	2 11.8	19.4
427516 2002 GZ_{1}	18.0	X	257.10868	251.13101	15.61612	21.23270	0.0752096	0.37526137	1.9036195	20	1 13.4	20.8
427517 2002 GK_{4}	17.5	X	298.33341	206.24427	22.65645	22.12325	0.0499646	0.37451235	1.9061568	20	1 16.6	20.1
427518 2002 GX_{9}	17.6	X	243.20620	277.80939	9.00641	20.44262	0.0575812	0.37548974	1.9028476	20	1 29.7	20.3
427519 2002 GF_{62}	16.9	X	26.19256	188.60444	32.45196	14.47296	0.1906071	0.22266026	2.6959236	20	6 12.4	19.8
427520 2002 GT_{134}	17.2	X	45.02233	258.27193	1.53517	5.36510	0.1943738	0.23059086	2.6337507	20	9 14.8	20.5

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Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
	m		°	°	°	°		°				
427521 2002 JK_{20}	16.2	X	1.46662	212.29636	79.56187	11.59619	0.4105071	0.22404448	2.6848079	20	9 23.2	18.1
427522 2002 JJ_{108}	16.7	X	76.87464	83.70992	127.23792	13.56523	0.2158650	0.22945516	2.6424341	20	8 25.3	20.5
427523 2002 JQ_{137}	17.6	X	81.30627	326.30842	47.97400	21.58687	0.0814556	0.36129522	1.9523660	20	—	—
427524 2002 JE_{141}	17.5	X	352.13256	53.40387	179.67625	7.83464	0.2705665	0.21694333	2.7430803	20	4 10.4	19.7
427525 2002 NB_{1}	18.6	X	120.08030	219.67438	148.59741	23.36884	0.0940835	0.35754074	1.9660099	20	—	—
427526 2002 NF_{31}	17.2	X	63.74168	133.92105	165.00057	22.54116	0.2110432	0.28815260	2.2701489	20	12 10.8	21.2
427527 2002 NP_{65}	16.6	X	106.59899	357.70577	35.46583	2.23585	0.2341689	0.19272322	2.9683380	20	2 16.2	20.9
427528 2002 OL_{7}	16.1	X	210.23494	61.55868	274.32365	10.00426	0.1588661	0.19947638	2.9009600	20	3 1.0	21.1
427529 2002 OY_{33}	16.4	X	289.24921	12.24097	294.60385	8.74410	0.2354280	0.20970836	2.8058141	20	4 2.9	20.5
427530 2002 PM_{4}	17.2	X	68.04212	184.61904	142.73084	28.21612	0.2122928	0.28868091	2.2673784	20	—	—
427531 2002 PG_{173}	17.9	X	150.81603	84.23886	150.63750	22.37105	0.1895821	0.28970734	2.2620197	20	12 8.5	22.0
427532 2002 PJ_{188}	16.9	X	307.91606	333.30277	319.62652	7.02846	0.2516408	0.21204587	2.7851558	20	4 7.8	20.6
427533 2002 QM_{16}	16.3	X	77.32065	47.35908	315.58620	10.43955	0.3390187	0.18121373	3.0927298	20	—	—
427534 2002 QL_{57}	16.4	X	174.49211	23.63542	324.97868	9.92104	0.1326295	0.19556169	2.9395455	20	2 17.9	21.1
427535 2002 QW_{59}	16.7	X	349.78773	348.84632	285.68829	7.14330	0.1869917	0.21400277	2.7681510	20	6 15.2	19.3
427536 2002 QT_{63}	18.1	X	238.01904	228.83713	148.86878	9.76196	0.2254981	0.26330483	2.4108129	20	5 17.4	22.1
427537 2002 QV_{119}	17.7	X	132.34677	89.68626	133.61603	3.93693	0.0899008	0.28277154	2.2988586	20	11 4.1	21.0
427538 2002 QK_{135}	16.6	X	289.69036	270.41152	4.06224	14.47636	0.1311487	0.20346776	2.8628965	20	3 15.5	20.5
427539 2002 QN_{137}	16.3	X	187.76287	218.68957	145.37842	18.55266	0.1386134	0.20088752	2.8873587	20	3 22.9	21.1
427540 2002 QO_{139}	16.4	X	227.56090	354.73159	312.23347	10.54822	0.0862397	0.19890856	2.9064782	20	2 17.9	20.9
427541 2002 RX_{28}	16.2	X	142.62077	151.80274	215.13905	13.00942	0.1859228	0.19286942	2.9668378	20	2 10.1	21.2
427542 2002 RC_{167}	15.9	X	131.05759	32.75842	357.33844	8.37962	0.0777218	0.19249917	2.9706408	20	2 21.1	20.2
427543 2002 RR_{200}	17.7	X	251.82813	233.18639	131.78311	6.14595	0.2722592	0.26291765	2.4131791	20	5 8.9	21.6
427544 2002 RZ_{235}	18.3	X	38.91125	322.45064	324.92821	3.31460	0.2189674	0.27830026	2.3234160	20	10 24.2	21.2
427545 2002 RB_{261}	17.3	X	177.24180	289.26767	12.00290	20.12838	0.0619760	0.35515356	1.9748098	20	—	—
427546 2002 RB_{272}	18.3	X	278.15313	177.03621	180.39147	1.49320	0.1550587	0.26734018	2.3864915	20	6 11.8	21.0
427547 2002 SJ_{4}	17.7	X	185.13506	94.13176	288.71619	14.38756	0.3210096	0.25361506	2.4718343	20	3 31.5	22.7
427548 2002 SO_{32}	17.6	X	225.13671	87.24761	290.04531	1.06727	0.2321518	0.25880160	2.4386983	20	5 1.7	21.5
427549 2002 TQ_{11}	16.3	X	20.96814	47.67191	5.13484	27.44953	0.3846688	0.17553575	3.1590681	20	—	—
427550 2002 TZ_{104}	17.8	X	227.49849	96.47641	312.00652	2.10469	0.1985224	0.26199804	2.4188226	20	6 15.7	21.5
427551 2002 TM_{204}	17.8	X	252.72032	263.27567	112.34648	5.75273	0.2415369	0.26291829	2.4131752	20	5 25.7	21.5
427552 2002 TQ_{213}	16.3	X	162.38542	338.15090	23.78263	10.98054	0.1804203	0.19150574	2.9809053	20	3 1.1	21.3
427553 2002 TM_{334}	16.7	X	119.58874	198.48913	172.57093	10.20977	0.0677902	0.18608938	3.0384703	20	1 12.4	21.1
427554 2002 TB_{339}	17.8	X	71.56789	214.69822	85.65330	3.60325	0.1793111	0.28174098	2.3044610	20	12 13.5	21.2
427555 2002 TQ_{370}	16.5	X	71.67560	15.02280	79.43189	15.63931	0.1238685	0.18648260	3.0341975	20	3 10.9	20.7
427556 2002 UF_{25}	17.1	X	359.70386	354.04320	351.31290	6.48326	0.1427046	0.27469459	2.3437034	20	10 30.9	19.4
427557 2002 UX_{53}	16.8	X	69.47525	258.07031	123.62521	5.80209	0.1874524	0.17904467	3.1176578	20	—	—
427558 2002 UA_{60}	16.3	X	229.51610	203.73851	68.45308	15.93204	0.1190939	0.18691953	3.0294672	20	1 12.5	21.2
427559 2002 UG_{73}	16.8	X	170.02217	320.55034	33.23640	10.58328	0.1531915	0.19017187	2.9948279	20	2 26.4	21.8
427560 2002 VA_{47}	17.6	X	257.54975	333.07789	72.71050	8.38325	0.1586598	0.26409911	2.4059767	20	7 23.1	20.7
427561 2002 VW_{66}	17.6	X	231.43463	1.03658	51.36536	9.35335	0.2363387	0.26079096	2.4262806	20	6 20.9	21.5
427562 2002 VB_{78}	16.5	X	109.99027	248.25103	117.27716	5.06732	0.3186179	0.18283728	3.0743942	20	1 28.8	21.2
427563 2002 VH_{117}	16.0	X	114.61957	6.52495	11.87411	11.00302	0.2948429	0.18445893	3.0563489	20	2 17.9	20.9
427564 2002 VD_{146}	16.6	X	26.16209	282.42836	202.14706	11.52712	0.2191479	0.18060214	3.0997080	20	1 29.0	20.0
427565 2002 WA_{22}	16.2	X	115.34033	153.50418	239.22201	14.82435	0.2171155	0.18441184	3.0568691	20	2 16.2	21.1
427566 2002 WR_{24}	16.0	X	54.56897	49.71685	57.96997	11.76847	0.0508726	0.18380759	3.0635649	20	2 21.7	20.3
427567 2003 AG_{53}	15.8	X	55.60086	355.53512	109.54935	16.88330	0.2314564	0.17757820	3.1347984	20	3 14.5	19.7
427568 2003 BG_{4}	16.0	X	314.20262	273.42500	282.59482	7.99962	0.0209697	0.17275409	3.1928890	20	1 26.0	20.5
427569 2003 CR_{25}	16.1	X	328.41236	138.06963	352.53372	17.49280	0.2807707	0.16352860	3.3118722	20	—	—
427570 2003 EW_{31}	17.0	X	101.18888	288.74495	192.63804	4.45511	0.2195923	0.24139826	2.5545435	20	5 26.0	20.7
427571 2003 EB_{43}	17.7	X	27.74511	127.01249	112.57606	5.24316	0.2268877	0.23883500	2.5727884	20	7 24.2	20.0
427572 2003 EW_{62}	17.3	X	61.90683	29.12318	181.34833	15.23216	0.0175844	0.24332127	2.5410663	20	7 3.2	20.9
427573 2003 FO_{16}	16.5	X	34.38447	98.83864	75.68238	8.15261	0.1494916	0.23421800	2.6064888	20	4 20.5	19.3
427574 2003 FY_{52}	17.0	X	21.70908	190.51748	53.81939	8.89071	0.3014331	0.23807133	2.5782874	20	8 4.8	19.3
427575 2003 FX_{132}	17.6	X	59.55303	180.95607	22.91973	5.18963	0.1288650	0.23984704	2.5655460	20	7 10.4	20.8
427576 2003 OK_{15}	16.4	X	312.18121	17.96494	261.15662	12.80002	0.2241757	0.22275236	2.6951804	20	3 27.4	20.1
427577 2003 OS_{18}	16.0	X	203.47830	50.15384	298.71480	12.01824	0.1986825	0.21193382	2.7861374	20	3 8.4	21.0
427578 2003 QT_{4}	17.0	X	221.83774	9.06183	301.74879	8.10728	0.1524201	0.20980568	2.8049463	20	2 13.4	21.5
427579 2003 QY_{14}	16.7	X	208.18100	35.65980	290.95625	6.53490	0.2207631	0.20938224	2.8087268	20	2 18.8	21.7
427580 2003 QC_{29}	17.7	X	20.56188	83.97263	163.06831	8.66966	0.4472756	0.23151892	2.6267075	20	9 1.4	19.8
427581 2003 QB_{92}	7.9	X	162.43180	65.39888	119.96100	3.48510	0.0893213	0.00475297	35.0342449	20	9 14.8	23.7
427582 2003 QF_{93}	17.4	X	285.31980	308.38669	60.92117	8.75707	0.2284392	0.28439218	2.2901167	20	6 27.8	20.0
427583 2003 QK_{103}	17.6	X	270.52304	226.02606	139.23682	10.75052	0.2825626	0.28143350	2.3061392	20	5 27.2	21.0
427584 2003 RK_{11}	17.9	X	315.37609	45.21262	317.92524	9.63110	0.2799181	0.28863983	2.2675935	20	8 14.9	18.8
427585 2003 RB_{20}	16.7	X	337.30101	110.39048	175.03325	11.87969	0.1772839	0.22415943	2.6838899	20	6 6.6	19.6
427586 2003 SO_{34}	18.3	X	89.16426	265.39875	19.90344	3.20385	0.1559399	0.30032559	2.2083835	20	12 13.1	21.6
427587 2003 SG_{50}	17.9	X	248.41259	148.13228	233.56888	4.44350	0.2352350	0.27984848	2.3148388	20	5 28.9	21.4
427588 2003 SF_{67}	17.3	X	261.87457	65.16532	324.19060	6.46351	0.1174407	0.28321974	2.2964326	20	7 12.9	20.0
427589 2003 SU_{74}	17.1	X	137.07955	51.47284	345.39600	5.56598	0.0686343	0.20450274	2.8532290	20	3 2.9	21.0
427590 2003 SW_{75}	16.9	X	122.34264	5.29399	6.12890	7.62926	0.2907364	0.19868005	2.9087064	20	2 13.3	21.5
427591 2003 SQ_{92}	18.2	X	295.56253	40.23283	342.82099	2.21001	0.1969540	0.28633812	2.2797293	20	8 14.9	20.1
427592 2003 SC_{116}	17.9	X	62.86580	26.37634	317.98048	2.82802	0.2115377	0.30367691	2.1921059	20	—	—
427593 2003 SU_{116}	17.6	X	275.73704	280.86523	163.80576	5.08423	0.0834306	0.29469847	2.2364068	20	11 3.7	19.8
427594 2003 SD_{122}	16.1	X	158.58604	32.26276	326.66815	9.77289	0.1043283	0.20466171	2.8517513	20	2 12.7	20.3
427595 2003 SD_{130}	16.1	X	180.60644	83.94909	345.67007	21.22452	0.0795661	0.21674020	2.7447939	20	5 25.6	20.7
427596 2003 SP_{137}	18.1	X	264.33334	276.69890	15.52693	20.57401	0.0440549	0.38482632	1.8719441	20	3 7.3	20.2
427597 2003 SF_{166}	18.6	X	266.55255	223.43584	160.64991	3.72603	0.2596992	0.28303550	2.2974290	20	6 18.2	21.8
427598 2003 SM_{178}	18.1	X	292.82736	198.67650	164.36794	5.13381	0.1569846	0.28382873	2.2931465	20	7 13.6	20.4
427599 2003 SO_{179}	17.6	X	330.74819	311.75836	35.78540	7.05502	0.2010057	0.28869378	2.2673110	20	9 15.2	19.0
427600 2003 SZ_{203}	18.2	X	332.52477	176.94780	183.17492	0.47230	0.2322322	0.29037608	2.2585454	20	10 12.1	19.1

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	m		°	°	°	°		°				
427601 2003 SC_{208}	18.3	X	276.24282	42.86242	16.28991	2.84621	0.2457341	0.28575126	2.2828495	20	8 26.9	20.6
427602 2003 SF_{219}	17.5	X	264.57954	247.38801	177.28026	22.48413	0.3211927	0.28510247	2.2863115	20	7 30.8	20.9
427603 2003 SV_{219}	18.4	X	216.79516	155.35525	177.11186	21.67616	0.0848716	0.38821036	1.8610497	20	2 16.9	20.8
427604 2003 SB_{244}	17.9	X	267.95958	230.46266	184.78970	2.85797	0.1837141	0.28449635	2.2895576	20	8 16.3	20.5
427605 2003 SA_{257}	16.4	X	211.57646	355.92037	352.46555	6.78587	0.1703281	0.21146321	2.7902696	20	3 20.2	21.1
427606 2003 SR_{272}	17.9	X	348.93978	348.04915	342.09925	9.18205	0.1788645	0.28961878	2.2624808	20	9 23.6	19.5
427607 2003 SO_{280}	18.0	X	313.56371	43.92627	342.77243	5.41083	0.1801942	0.29056763	2.2575527	20	10 4.3	19.5
427608 2003 SC_{285}	16.5	X	219.49389	138.64593	192.91258	20.49596	0.1985829	0.20998349	2.8033626	20	3 4.0	21.4
427609 2003 SX_{301}	18.1	X	292.24029	90.97670	327.49459	7.49674	0.2064367	0.29037739	2.2585386	20	10 1.3	19.8
427610 2003 SQ_{353}	18.2	X	231.21051	213.34589	184.70002	4.16527	0.2128139	0.27769391	2.3267969	20	6 5.1	21.8
427611 2003 SA_{401}	17.6	X	219.57742	314.36878	182.07386	23.12415	0.2159751	0.28629505	2.2799579	20	10 3.9	20.8
427612 2003 SQ_{408}	18.8	X	241.76120	100.08765	330.29383	4.60555	0.2343540	0.28378429	2.2933860	20	7 27.9	22.1
427613 2003 SR_{415}	17.1	X	174.60233	323.03369	25.94047	9.61551	0.1953264	0.20433845	2.8547582	20	2 24.5	22.0
427614 2003 SR_{422}	7.1	X	248.50965	69.65830	99.71610	23.96013	0.0524653	0.00389214	40.0261527	20	11 21.7	23.3
427615 2003 SK_{429}	17.2	X	213.47117	305.91545	69.45952	1.60667	0.0899395	0.21357193	2.7718726	20	4 28.0	21.4
427616 2003 SP_{429}	16.6	X	56.27935	48.10729	34.65185	10.04296	0.1020667	0.19498915	2.9452970	20	1 24.1	20.4
427617 2003 SL_{433}	16.2	X	100.82868	333.17968	64.10221	10.91111	0.1161498	0.19696937	2.9255234	20	1 30.5	20.3
427618 2003 TP_{20}	17.1	X	37.68539	61.62680	282.72710	7.81192	0.2257335	0.29912463	2.2142905	20	—	—
427619 2003 TL_{47}	18.1	X	28.42224	336.11677	353.91101	5.37344	0.1819568	0.29500916	2.2348363	20	12 6.4	20.9
427620 2003 UT_{6}	18.0	X	78.18435	38.58264	18.65374	19.70873	0.0958022	0.37134615	1.9169764	20	—	—
427621 2003 UN_{12}	18.3	X	135.68716	257.91000	40.51830	6.89746	0.4031626	0.31093409	2.1578628	20	—	—
427622 2003 UT_{25}	18.9	X	44.36780	282.60234	217.04444	21.54494	0.0407519	0.38115506	1.8839452	20	2 2.9	21.2
427623 2003 UZ_{45}	16.8	X	146.99027	332.81851	20.16639	10.14942	0.0459064	0.19703373	2.9248864	20	1 21.9	21.2
427624 2003 UN_{81}	17.2	X	293.15732	285.54753	80.97026	8.00944	0.2847035	0.28320828	2.2964946	20	6 26.0	19.5
427625 2003 UA_{85}	17.4	X	64.42728	343.40626	70.60883	2.37542	0.2219775	0.19125445	2.9835158	20	1 12.5	20.5
427626 2003 UB_{93}	16.6	X	57.42629	157.14001	214.90159	4.35370	0.1985372	0.18505781	3.0497513	20	—	—
427627 2003 UZ_{101}	16.1	X	49.48784	330.75757	37.83355	6.00117	0.1521329	0.18476609	3.0529606	20	—	—
427628 2003 UK_{110}	16.9	X	215.88088	287.18175	52.72689	9.64944	0.0938613	0.20547084	2.8442597	20	3 22.1	21.3
427629 2003 UF_{141}	17.5	X	176.42846	346.98635	23.34130	18.78512	0.0889227	0.38435783	1.8734649	20	3 7.1	19.9
427630 2003 UD_{144}	17.7	X	280.51886	102.18424	273.19441	1.54051	0.2379618	0.28092779	2.3089060	20	6 27.7	20.4
427631 2003 UO_{147}	17.5	X	280.73835	41.88486	324.08421	2.04918	0.2601252	0.28008815	2.3135180	20	6 10.2	20.1
427632 2003 UO_{173}	17.9	X	306.65077	215.19177	153.77226	1.72548	0.2332878	0.28451740	2.2894447	20	8 8.6	19.6
427633 2003 UM_{184}	17.6	X	356.64183	139.54539	232.08659	7.02695	0.1361031	0.29332984	2.2433578	20	12 10.9	19.7
427634 2003 UV_{184}	16.8	X	178.59689	132.23293	234.14294	5.68707	0.1234260	0.26302299	2.4125347	20	3 5.6	20.5
427635 2003 UJ_{204}	17.9	X	221.72769	196.68002	186.58025	2.49169	0.2219898	0.27303506	2.3531906	20	5 7.5	21.7
427636 2003 UF_{228}	17.5	X	305.33065	340.20232	54.15976	7.83638	0.2137290	0.28733871	2.2744338	20	9 29.5	19.0
427637 2003 UL_{229}	17.9	X	269.15629	128.80299	258.94793	4.20942	0.1805639	0.28055588	2.3109460	20	7 8.7	20.8
427638 2003 UQ_{231}	18.1	X	246.65890	71.54599	11.46481	6.37823	0.1719479	0.28449777	2.2895501	20	8 31.3	20.9
427639 2003 UU_{257}	17.9	X	275.89904	303.35140	64.29350	8.12825	0.2819363	0.27994969	2.3142808	20	6 2.7	20.8
427640 2003 UB_{348}	18.4	X	321.37817	336.31957	70.01974	2.43615	0.1509873	0.29383209	2.2408007	20	11 28.5	19.8
427641 2003 UH_{354}	18.5	X	231.45092	9.72901	63.09058	6.28489	0.1718180	0.28122908	2.3072566	20	7 28.1	21.8
427642 2003 UT_{379}	17.2	X	358.52312	190.71648	36.73340	6.07598	0.0524776	0.21357770	2.7718227	20	4 28.0	20.7
427643 2003 VF_{1}	17.3	X	188.77911	98.58854	46.98618	53.58660	0.3787274	0.45451151	1.6753522	20	10 26.1	20.6
427644 2003 VD_{10}	18.4	X	30.19965	230.21033	233.69329	18.94506	0.0997406	0.36949275	1.9233815	20	—	—
427645 2003 WA_{24}	16.3	X	186.17626	318.34700	99.55499	6.44431	0.0464402	0.21006536	2.8026342	20	5 24.1	20.3
427646 2003 WT_{62}	17.0	X	115.06211	17.42696	9.37581	9.58684	0.2692934	0.19659813	2.9292051	20	2 23.3	21.5
427647 2003 WZ_{66}	15.6	X	346.43577	221.13806	249.84404	13.79403	0.0895378	0.18246713	3.0785506	20	—	—
427648 2003 WZ_{96}	18.1	X	280.64678	325.18458	77.07820	4.47809	0.2047572	0.28348646	2.2949919	20	8 16.7	20.4
427649 2003 XP_{21}	15.7	X	310.03994	66.24407	86.78286	17.23188	0.2068684	0.17708540	3.1406114	20	—	—
427650 2003 YD_{1}	18.0	X	334.55801	228.57724	280.51443	17.55663	0.0688127	0.36415774	1.9421213	20	—	—
427651 2003 YR_{8}	17.5	X	211.72254	278.51391	95.08387	23.79335	0.1100948	0.38343160	1.8764808	20	4 29.1	20.4
427652 2003 YF_{10}	17.5	X	319.98396	44.85836	345.97831	5.60515	0.2479637	0.28773750	2.2723318	20	10 27.6	18.6
427653 2003 YH_{28}	16.7	X	32.05141	10.66085	87.65692	10.14867	0.2447914	0.18709151	3.0276104	20	1 8.4	19.4
427654 2003 YZ_{40}	17.2	X	202.74696	305.04443	100.69475	12.39222	0.2267787	0.26700577	2.3884837	20	5 22.3	21.3
427655 2003 YA_{43}	16.6	X	70.17123	168.39200	284.18428	7.24535	0.1080154	0.18930434	3.0039705	20	2 21.5	20.5
427656 2003 YX_{73}	17.9	X	241.33792	156.68119	272.44346	7.54264	0.2479586	0.27827666	2.3235473	20	7 21.7	21.2
427657 2003 YR_{144}	15.8	X	314.61295	43.10832	86.81385	28.20206	0.1280108	0.17516845	3.1634826	20	—	—
427658 2003 YC_{155}	16.6	X	15.09682	103.89347	340.68723	14.06813	0.3675332	0.18150958	3.0893682	20	—	—
427659 2003 YY_{157}	16.4	X	114.24853	76.54511	15.49716	5.97369	0.0284004	0.20343291	2.8632235	20	4 8.2	20.4
427660 2003 YD_{166}	17.1	X	50.51144	326.22809	113.69397	3.40532	0.1779280	0.18560564	3.0437474	20	1 17.3	20.4
427661 2004 BP_{8}	16.1	X	1.48524	219.78256	281.61651	7.15655	0.0757881	0.18333485	3.0688290	20	1 14.5	19.9
427662 2004 BN_{17}	17.3	X	202.71404	86.28881	68.18487	13.24604	0.0938010	0.28111512	2.3078801	20	10 26.8	20.5
427663 2004 BC_{25}	16.7	X	310.35891	44.42760	315.43709	23.96269	0.1606667	0.27674684	2.3321023	20	8 10.8	18.5
427664 2004 BU_{36}	16.5	X	47.35971	8.65802	52.90221	1.53766	0.1722259	0.18074943	3.0980238	20	—	—
427665 2004 BV_{60}	16.3	X	344.87261	214.75526	304.22783	9.55586	0.1181809	0.18317531	3.0706107	20	1 9.4	20.2
427666 2004 BJ_{63}	15.8	X	32.78597	110.63312	306.83756	9.55672	0.0746314	0.17707591	3.1407237	20	—	—
427667 2004 BF_{64}	18.5	X	222.41453	133.57017	327.18480	2.17718	0.1780912	0.27586596	2.3370642	20	8 22.3	21.7
427668 2004 BA_{79}	18.0	X	222.16698	102.35774	353.17974	1.97342	0.1614232	0.27437496	2.3455232	20	8 17.2	21.4
427669 2004 BE_{83}	17.6	X	168.86487	65.16325	101.37156	5.03291	0.0901747	0.27484284	2.3428605	20	9 30.7	20.9
427670 2004 BV_{130}	15.9	X	193.50298	357.56307	294.27203	12.00009	0.0453553	0.18070775	3.0985002	20	1 1.0	20.6
427671 2004 BR_{132}	16.2	X	282.82191	128.70515	131.56576	13.02080	0.0017547	0.19130482	2.9829921	20	3 10.2	20.4
427672 2004 BV_{137}	16.2	X	277.32220	151.74255	116.81997	10.02373	0.0423950	0.19017163	2.9948304	20	3 8.4	20.5
427673 2004 BG_{142}	16.4	X	313.37303	56.09214	135.09592	11.93394	0.0813347	0.18213378	3.0823057	20	1 10.5	20.8
427674 2004 CU_{20}	17.9	X	122.08948	193.08669	12.75643	2.26166	0.1526522	0.27180571	2.3602808	20	9 30.5	21.4
427675 2004 CP_{28}	16.4	X	45.42183	156.42855	317.50695	10.97020	0.1590432	0.18683953	3.0303320	20	2 18.3	19.9
427676 2004 CZ_{46}	17.8	X	143.27836	172.44703	358.37728	5.63634	0.1438920	0.26941680	2.3742126	20	9 6.2	21.5
427677 2004 CY_{60}	17.1	X	201.85428	15.58813	97.94270	8.81343	0.1185828	0.27177932	2.3604335	20	8 25.6	20.5
427678 2004 CT_{63}	16.0	X	334.67826	189.19902	7.21264	15.09159	0.1898825	0.18292086	3.0734576	20	2 6.2	20.0
427679 2004 CV_{71}	15.9	X	17.04737	2.60149	130.33098	18.70793	0.1341041	0.18154239	3.0889961	20	1 25.9	19.4
427680 2004 CD_{84}	18.0	X	146.26417	22.36836	163.37813	3.43428	0.1758557	0.27124503	2.3635322	20	9 28.5	21.6

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	m		°	°	°	°		°				
427681 2004 CU_{108}	16.1	*X*	8.46230	201.59058	292.86148	7.68726	0.1851525	0.18069241	3.0986756	20	1 10.6	19.5
427682 2004 CN_{122}	16.2	*X*	297.15333	197.57787	335.84857	8.84564	0.0493310	0.17441388	3.1726003	20	—	—
427683 2004 CA_{128}	16.4	*X*	22.96753	123.42139	17.56426	11.33092	0.1105637	0.18215684	3.0820456	20	2 20.1	20.3
427684 2004 DH_{2}	20.2	*X*	13.30341	216.11658	157.30694	23.02028	0.4002542	1.07424564	0.9442065	20	—	—
427685 2004 DJ_{44}	16.2	*X*	289.95265	49.52043	169.05057	17.34932	0.2398779	0.17514367	3.1637810	20	—	—
427686 2004 DB_{52}	17.9	*X*	172.40400	134.00525	350.56392	4.45252	0.2366200	0.26739473	2.3861669	20	8 3.9	21.9
427687 2004 DB_{55}	16.1	*X*	107.82445	52.15258	331.57468	8.98599	0.0948965	0.18003831	3.1061763	20	1 21.1	20.6
427688 2004 ET	17.9	*X*	116.43148	180.36218	2.01261	2.00566	0.1437547	0.26327649	2.4109859	20	8 24.1	21.4
427689 2004 EB_{19}	16.1	*X*	295.49414	77.32161	127.36332	20.85955	0.2671859	0.17378131	3.1802944	20	—	—
427690 2004 EB_{36}	15.8	*X*	307.51138	225.38942	320.30743	15.32965	0.2120494	0.17505390	3.1648625	20	—	—
427691 2004 EW_{41}	16.0	*X*	353.40253	177.60665	342.34286	10.27299	0.1437768	0.17913419	3.1166191	20	1 23.7	19.8
427692 2004 EW_{46}	18.1	*X*	213.79871	322.76180	142.56636	1.84810	0.1428193	0.27006382	2.3704190	20	8 22.3	21.4
427693 2004 EH_{76}	16.0	*X*	351.70992	280.95403	168.68188	25.46937	0.2633336	0.17166988	3.2063184	20	—	—
427694 2004 ED_{87}	15.9	*X*	61.96802	268.12200	163.82990	15.79112	0.1083984	0.17847743	3.1242601	20	1 18.4	20.1
427695 Johnpazder	15.8	*X*	333.54375	234.56607	301.07407	9.50936	0.1120693	0.17974590	3.1095441	20	1 14.9	19.7
427696 2004 FJ_{17}	16.9	*X*	147.35423	21.28708	163.50152	10.67392	0.2045323	0.26784508	2.3834915	20	9 28.9	20.8
427697 2004 FL_{24}	15.5	*X*	0.78478	260.02980	266.02122	17.16106	0.2756067	0.18196288	3.0842354	20	1 22.9	18.7
427698 2004 FH_{30}	17.3	*X*	154.09302	115.19029	64.46896	22.65549	0.2430416	0.26828695	2.3808736	20	10 9.1	21.9
427699 2004 FR_{31}	15.8	*X*	320.06409	75.58919	154.85649	26.07348	0.1998266	0.17788355	3.1312099	20	2 19.9	20.0
427700 2004 FJ_{32}	16.6	*X*	174.63001	73.50521	83.58768	22.26906	0.2627972	0.26982537	2.3718153	20	9 26.4	21.2
427701 2004 FG_{38}	16.3	*X*	305.99744	241.47712	350.57605	15.10070	0.2452741	0.17772297	3.1330958	20	2 2.3	20.9
427702 2004 FV_{46}	17.3	*X*	66.84954	287.28370	295.19152	1.26060	0.1568028	0.25964483	2.4334155	20	8 21.0	20.3
427703 2004 FA_{58}	15.7	*X*	356.36490	259.23386	271.83657	11.10051	0.3068030	0.18151388	3.0893195	20	1 18.9	18.7
427704 2004 FH_{63}	15.5	*X*	299.20350	180.03801	20.26757	15.02521	0.0735686	0.17324126	3.1869004	20	1 9.4	20.3
427705 2004 FT_{66}	16.7	*X*	79.68210	162.10381	28.80278	6.51119	0.0622019	0.25825928	2.4421112	20	7 11.4	19.8
427706 2004 FL_{79}	16.6	*X*	181.18034	156.07396	182.60103	10.30266	0.0802962	0.17756965	3.1348991	20	2 10.7	21.6
427707 2004 FP_{96}	16.2	*X*	303.89037	57.76115	160.97185	27.37859	0.2317319	0.17681656	3.1437941	20	1 12.5	21.1
427708 2004 FZ_{102}	16.5	*X*	230.26343	280.03752	355.89718	9.20312	0.2012359	0.17337243	3.1852928	20	1 17.2	21.9
427709 2004 FH_{104}	18.2	*X*	171.62753	118.43987	23.70663	1.75590	0.1229339	0.26770479	2.3843241	20	8 27.9	21.8
427710 2004 FT_{118}	17.3	*X*	93.16555	56.84513	182.23179	8.24118	0.1636434	0.26463704	2.4027152	20	10 15.4	20.9
427711 2004 FP_{128}	16.4	*X*	331.85559	130.55361	107.34819	10.66790	0.3266420	0.18138215	3.0908151	20	3 2.4	20.0
427712 2004 FQ_{132}	16.8	*X*	303.35620	47.68543	155.33194	4.64123	0.1813782	0.17558429	3.1584860	20	—	—
427713 2004 FM_{140}	18.7	*X*	201.16735	306.54471	358.12055	19.12476	0.0852264	0.35856622	1.9622596	20	—	—
427714 2004 FH_{144}	15.8	*X*	357.62009	83.66575	99.00272	17.21150	0.2010537	0.18088771	3.0964448	20	2 27.3	19.4
427715 2004 FB_{152}	17.6	*X*	122.23426	58.18638	150.48758	3.06809	0.1148874	0.27058134	2.3673955	20	10 3.4	21.0
427716 2004 GW_{2}	16.4	*X*	344.35572	111.55265	57.03673	14.78950	0.0614871	0.17474075	3.1686426	20	1 31.5	20.9
427717 2004 GN_{33}	16.4	*X*	335.61507	334.95608	205.26847	8.34457	0.1951358	0.17610689	3.1522342	20	1 11.1	20.5
427718 2004 GY_{51}	17.9	*X*	151.77616	305.80810	189.25832	5.51312	0.1349463	0.26092777	2.4254324	20	7 26.4	21.7
427719 2004 GN_{66}	16.1	*X*	352.11437	136.06298	17.94157	9.82887	0.0532131	0.17445069	3.1721539	20	1 23.8	20.5
427720 2004 HP_{2}	17.8	*X*	306.15569	166.97971	69.94311	22.98016	0.0428492	0.36316759	1.9456497	20	2 16.4	20.4
427721 2004 HN_{32}	17.3	*X*	71.23826	159.47366	66.63785	8.68982	0.1087331	0.25911535	2.4367293	20	8 29.6	20.6
427722 2004 HJ_{39}	17.4	*X*	69.02523	4.95120	250.57719	2.10449	0.1661055	0.26548028	2.3976247	20	10 9.1	20.6
427723 2004 HW_{56}	15.9	*X*	329.28830	95.24403	91.25667	22.28055	0.1966553	0.17555195	3.1588738	20	1 10.7	20.1
427724 2004 JW_{31}	16.7	*X*	300.74027	110.83421	160.04717	17.40558	0.3390092	0.17815189	3.1280649	20	2 24.9	21.3
427725 2004 NZ_{3}	17.0	*X*	338.62578	227.82774	84.17204	13.58657	0.2189753	0.24514571	2.5284431	20	7 21.5	19.0
427726 2004 NJ_{5}	15.9	*X*	154.94592	8.24531	312.93991	21.90501	0.2445324	0.21346431	2.7728042	20	1 9.2	20.7
427727 2004 NF_{21}	17.0	*X*	128.43197	112.09632	250.43694	5.95934	0.3121182	0.21421864	2.7662911	20	2 4.3	21.5
427728 2004 PJ_{12}	16.8	*X*	286.86650	358.22543	329.02200	6.34925	0.1505091	0.23771113	2.5808912	20	5 10.7	20.4
427729 2004 PL_{18}	16.9	*X*	224.89849	194.01434	161.78216	8.42592	0.2113412	0.22980899	2.6397211	20	4 9.5	21.4
427730 2004 PO_{65}	17.2	*X*	156.94497	63.43586	317.09739	7.80991	0.2495965	0.21923780	2.7239079	20	3 13.0	21.9
427731 2004 PU_{79}	16.7	*X*	213.15987	15.76454	319.86983	16.66700	0.2182270	0.22452623	2.6809661	20	2 29.7	21.5
427732 2004 PN_{84}	17.1	*X*	348.72105	21.73811	290.04717	7.60696	0.2078327	0.24607633	2.5220643	20	8 13.9	19.1
427733 2004 PQ_{84}	16.6	*X*	245.13895	341.70243	5.56204	13.22445	0.2994736	0.22967278	2.6407646	20	4 6.3	21.2
427734 2004 QA_{13}	17.3	*X*	200.54598	305.99068	43.24073	6.81365	0.3064059	0.22440971	2.6818940	20	3 13.8	22.3
427735 2004 RO_{33}	16.7	*X*	233.48435	14.67245	3.87879	12.04651	0.1927617	0.23287031	2.6165355	20	5 10.4	21.1
427736 2004 RL_{41}	17.1	*X*	143.79327	49.98790	352.59965	14.28223	0.2222993	0.21995990	2.7179432	20	3 26.9	21.6
427737 2004 RE_{52}	17.1	*X*	303.33940	181.38779	157.92862	8.40532	0.1724299	0.23939028	2.5688083	20	6 21.7	20.1
427738 2004 RZ_{65}	16.5	*X*	164.47873	27.00718	350.72153	12.69869	0.2157843	0.21945630	2.7220996	20	3 15.9	21.0
427739 2004 RA_{71}	17.0	*X*	272.99020	18.92162	313.21930	8.06883	0.1124171	0.23363391	2.6108312	20	5 3.9	20.7
427740 2004 RA_{82}	16.7	*X*	300.88598	330.52986	5.36285	14.13428	0.1186874	0.23553525	2.5967618	20	6 20.5	20.1
427741 2004 RQ_{88}	16.4	*X*	296.48931	108.36105	225.14902	8.41744	0.1540235	0.24057018	2.5604022	20	6 4.9	19.4
427742 2004 RB_{96}	16.6	*X*	34.32118	295.94136	306.73038	12.69133	0.1302595	0.24194028	2.5507267	20	7 25.9	19.4
427743 2004 RV_{113}	16.5	*X*	195.60916	11.10415	340.93346	14.66420	0.1426959	0.22381600	2.6866348	20	3 8.9	20.9
427744 2004 RM_{125}	17.0	*X*	111.60745	90.04338	339.87391	12.57268	0.1900925	0.21832582	2.7314882	20	3 24.8	21.0
427745 2004 RE_{133}	17.2	*X*	332.06410	275.69351	355.97894	6.37707	0.1272170	0.23522869	2.5990174	20	5 7.8	20.2
427746 2004 RS_{157}	16.9	*X*	223.13211	65.95385	294.45898	7.99514	0.1444528	0.22806018	2.6531985	20	4 11.1	21.2
427747 2004 RM_{197}	16.8	*X*	211.13604	19.80055	339.89287	14.09661	0.2373429	0.22411010	2.6842838	20	3 26.9	21.6
427748 2004 RY_{289}	16.4	*X*	267.85457	357.79494	7.88047	18.34904	0.1361152	0.23536011	2.5980498	20	6 8.0	20.4
427749 2004 RM_{319}	16.5	*X*	211.21428	238.07670	170.29437	22.08601	0.0373333	0.23555643	2.5966061	20	6 12.5	20.6
427750 2004 RY_{324}	16.7	*X*	220.56426	47.85462	335.76617	8.36377	0.1575739	0.22815579	2.6524572	20	5 7.8	21.1
427751 2004 SD_{12}	16.7	*X*	286.93170	234.04620	101.98743	13.63324	0.1776677	0.23545087	2.5973821	20	5 24.6	20.2
427752 2004 SZ_{34}	17.4	*X*	124.88521	110.38604	299.12705	6.43709	0.1958545	0.21749325	2.7384545	20	3 14.9	21.6
427753 2004 SR_{36}	17.3	*X*	264.62445	45.44106	317.05643	7.25664	0.0984630	0.23609051	2.5926887	20	6 8.2	20.9
427754 2004 SY_{51}	16.4	*X*	215.86566	298.74572	73.25933	6.26015	0.3035523	0.22446580	2.6814473	20	4 18.7	21.3
427755 2004 SQ_{53}	17.0	*X*	119.97476	200.55630	193.55534	16.38534	0.2558674	0.21215102	2.7842355	20	2 27.5	21.5
427756 2004 TH_{3}	18.0	*X*	286.48953	47.44758	16.04413	7.51727	0.1893150	0.30772664	2.1728312	20	10 8.7	19.1
427757 2004 TV_{13}	16.4	*X*	179.45179	157.52873	241.51609	8.29268	0.1156353	0.22250715	2.6971602	20	4 19.9	20.7
427758 2004 TF_{40}	17.3	*X*	270.43746	116.61187	206.83436	1.54284	0.2102689	0.23027406	2.6361657	20	4 9.8	21.3
427759 2004 TC_{58}	16.8	*X*	180.49705	16.86721	11.38181	13.42507	0.1583477	0.22250669	2.6971639	20	4 8.6	21.2
427760 2004 TM_{61}	16.9	*X*	257.08495	187.47601	174.96327	7.98048	0.1955715	0.23303989	2.6152660	20	5 19.1	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		°	°	°	°		°				
427761 2004 TU_{68}	16.6	X	141.57395	318.99162	39.51412	9.73793	0.2809349	0.21238102	2.7822250	20	2 13.9	21.4
427762 2004 TT_{106}	16.9	X	227.45421	8.19874	14.02167	2.21621	0.2233454	0.22979681	2.6398144	20	5 10.9	21.4
427763 2004 TJ_{138}	17.1	X	141.50070	86.13394	305.83206	7.07136	0.1792306	0.21565203	2.7540196	20	3 8.6	21.5
427764 2004 TP_{148}	17.5	X	208.51252	79.73521	323.64370	2.67345	0.0253581	0.22937818	2.6430253	20	5 31.6	21.0
427765 2004 TD_{149}	16.8	X	9.71889	195.07583	12.62663	14.21541	0.0751823	0.22361085	2.6882777	20	4 15.0	20.0
427766 2004 TE_{183}	16.5	X	216.32221	359.89714	351.90768	5.92774	0.0465116	0.22275485	2.6951603	20	4 1.4	20.2
427767 2004 TG_{183}	17.6	X	212.44399	129.87076	221.54273	5.35753	0.0696273	0.22225252	2.6992198	20	3 26.3	21.6
427768 2004 TR_{202}	16.4	X	108.52025	73.35041	38.49354	14.66104	0.0819781	0.21793758	2.7347312	20	5 2.9	20.1
427769 2004 TA_{256}	17.1	X	129.62219	271.04176	109.29038	9.26828	0.3171177	0.21347871	2.7726795	20	3 2.5	21.8
427770 2004 TA_{334}	16.9	X	151.75965	162.42129	226.42133	3.85972	0.0832628	0.21400238	2.7681544	20	3 8.1	21.0
427771 2004 VR_{1}	16.3	X	73.82983	345.43609	62.04741	12.08716	0.1456904	0.20445064	2.8537137	20	1 6.2	19.8
427772 2004 VK_{22}	15.9	X	139.34583	349.04450	55.46145	14.92707	0.1853124	0.21257867	2.7805002	20	4 1.3	20.5
427773 2004 VU_{98}	17.6	X	297.43631	301.89105	37.93051	3.00453	0.1382474	0.23378999	2.6096691	20	6 17.7	20.8
427774 2004 XZ_{3}	16.7	X	97.03431	31.72433	70.71800	11.64318	0.2215911	0.21187075	2.7866903	20	4 30.4	20.8
427775 2004 XN_{141}	16.3	X	131.17675	330.07133	109.31284	17.28854	0.1878090	0.21201748	2.7854045	20	5 6.8	21.0
427776 2004 YE_{36}	15.6	X	334.68863	168.39227	70.55245	16.27159	0.0923943	0.20236394	2.8732977	20	4 13.5	19.4
427777 2005 AC_{20}	16.1	X	136.53244	168.52796	278.72892	11.64212	0.1549617	0.21363854	2.7712965	20	5 9.4	20.6
427778 2005 BE	20.1	X	1.97586	168.69533	115.97062	31.19127	0.4211447	1.18610568	0.8838674	20	1 14.2	18.4
427779 2005 BF_{17}	17.8	X	254.97991	3.77992	124.75582	7.71692	0.0745636	0.30312973	2.1947431	20	12 7.4	20.1
427780 2005 CU_{29}	18.0	X	259.52788	291.69995	327.10108	16.65668	0.0464213	0.38820332	1.8610722	20	1 1.6	20.3
427781 2005 CJ_{32}	17.5	X	359.46367	153.12800	66.38115	2.02896	0.2070008	0.20230800	2.8738274	20	4 14.4	20.1
427782 2005 CO_{36}	17.7	X	169.97866	26.33802	111.46439	6.03364	0.0908257	0.28796774	2.2711204	20	8 24.2	20.8
427783 2005 EN_{37}	17.0	X	88.90353	324.41905	349.96001	10.09478	0.1357224	0.29942321	2.2128182	20	—	—
427784 2005 EL_{56}	18.2	X	143.63924	84.39432	172.10034	5.26149	0.1605466	0.29759207	2.2218862	20	12 27.3	21.5
427785 2005 EC_{83}	17.8	X	98.87819	245.49556	341.28542	5.98215	0.1522183	0.28407266	2.2918337	20	10 3.9	21.2
427786 2005 ER_{90}	17.5	X	191.88377	231.58107	334.19927	7.85306	0.1323256	0.29942046	2.2128318	20	12 15.1	20.6
427787 2005 ES_{162}	18.1	X	150.45697	231.03892	12.02981	4.61321	0.1025466	0.29611285	2.2292796	20	12 19.9	21.2
427788 2005 EU_{166}	17.7	X	82.53760	266.82957	347.04574	6.75420	0.0733561	0.28651307	2.2788011	20	10 13.5	20.7
427789 2005 EC_{182}	18.0	X	238.79322	46.77589	96.51229	2.35667	0.1572530	0.29922995	2.2137709	20	11 17.9	20.2
427790 2005 EE_{243}	16.9	X	356.68547	192.06997	10.11141	10.89134	0.0656795	0.19733119	2.9219462	20	3 24.3	20.5
427791 2005 EO_{245}	18.3	X	68.19728	93.22621	179.57162	5.33997	0.1311559	0.28614274	2.2807668	20	11 1.4	21.3
427792 2005 EN_{271}	16.6	X	13.20179	14.34194	186.44972	17.72302	0.1606227	0.19980132	2.8978138	20	4 18.8	19.7
427793 2005 ED_{327}	16.2	X	184.13456	285.21387	20.53618	10.38991	0.0714598	0.18305918	3.0719092	20	1 8.9	21.0
427794 2005 ES_{327}	15.8	X	29.42134	77.35010	27.14196	10.97316	0.0643660	0.18514889	3.0487512	20	1 10.7	20.0
427795 2005 FL	17.9	X	60.25577	306.34263	161.39625	22.71946	0.0463987	0.38755922	1.8631336	20	1 16.5	19.9
427796 2005 GK_{34}	18.4	X	105.90746	202.99970	63.43542	2.18802	0.1873921	0.28901874	2.2656112	20	12 4.4	22.0
427797 2005 GS_{48}	16.8	X	333.87444	170.20258	44.03911	3.99900	0.1191677	0.19189457	2.9768773	20	3 2.4	20.5
427798 2005 GJ_{58}	16.6	X	252.91188	36.33390	191.18892	8.36702	0.0100774	0.17953194	3.1120142	20	—	—
427799 2005 GX_{65}	15.7	X	241.71277	117.35999	135.60682	20.60115	0.2620237	0.17970441	3.1100227	20	—	—
427800 2005 GF_{76}	16.5	X	301.89817	172.06630	54.10283	12.23560	0.2960490	0.18601391	3.0392921	20	1 10.6	21.3
427801 2005 GP_{88}	17.0	X	15.59210	160.96743	4.50152	1.67535	0.1748690	0.19284247	2.9671142	20	3 4.2	19.9
427802 2005 GY_{101}	16.3	X	277.83604	218.15380	29.77118	8.85508	0.2980418	0.18446289	3.0563051	20	1 14.8	21.4
427803 2005 GG_{110}	18.7	X	132.10546	355.71712	217.99325	2.66153	0.1634125	0.28489965	2.2873964	20	10 21.7	22.2
427804 2005 GG_{113}	15.7	X	264.17044	185.78902	73.54594	13.43130	0.3217332	0.18261824	3.0768520	20	1 14.8	21.1
427805 2005 GS_{116}	16.4	X	235.26086	231.86199	25.02005	11.45070	0.0370829	0.18085628	3.0968035	20	1 5.9	21.1
427806 2005 GE_{127}	15.7	X	264.83314	154.84131	57.97712	18.65978	0.1600704	0.17834386	3.1258198	20	—	—
427807 2005 GH_{130}	18.1	X	173.23407	167.78458	40.51190	1.66244	0.1137244	0.29129287	2.2538040	20	11 27.6	21.0
427808 2005 GE_{142}	17.7	X	152.02649	346.23502	230.14497	3.97915	0.0969412	0.29011780	2.2598857	20	11 16.1	20.9
427809 2005 GG_{169}	16.4	X	286.73900	198.30298	30.47418	9.07792	0.0607298	0.18502935	3.0500641	20	1 29.2	20.9
427810 2005 GY_{169}	16.9	X	322.12530	188.87050	26.27134	9.38451	0.0889976	0.18923588	3.0046950	20	2 22.4	21.0
427811 2005 GT_{171}	15.6	X	331.06798	168.09930	78.94213	17.26999	0.2158274	0.19650809	2.9300999	20	4 4.9	19.3
427812 2005 GS_{179}	15.3	X	204.86949	149.91710	111.80624	28.75768	0.1882139	0.17336938	3.1853301	20	—	—
427813 2005 GC_{180}	17.6	X	309.97957	85.17350	110.37244	24.43490	0.1426540	0.38079829	1.8851217	20	—	—
427814 2005 GV_{189}	15.7	X	50.18832	238.02424	162.45618	15.75629	0.1004925	0.18402510	3.0611504	20	—	—
427815 2005 GS_{223}	18.1	X	167.84583	102.68691	102.20080	3.74045	0.1880714	0.29121659	2.2541975	20	11 13.7	21.6
427816 2005 GX_{225}	16.5	X	323.19054	34.48262	182.28674	2.89899	0.1001806	0.18885104	3.0087756	20	2 19.6	20.5
427817 2005 HD_{5}	17.7	X	70.97059	163.25062	120.46410	6.66861	0.1055609	0.28209252	2.3025461	20	11 16.3	20.9
427818 2005 HG_{6}	15.5	X	256.42145	118.86142	76.45243	22.74130	0.0749437	0.17060608	3.2196331	20	—	—
427819 2005 JG_{22}	17.5	X	86.39227	168.68227	89.49733	9.87029	0.2025454	0.28207485	2.3026423	20	11 9.7	21.1
427820 2005 JU_{24}	18.2	X	145.47902	21.68305	208.91854	3.77922	0.0862055	0.28888897	2.2662896	20	11 28.1	21.2
427821 2005 JG_{55}	17.6	X	130.14394	152.80215	99.43671	7.05977	0.1541194	0.28767107	2.2726816	20	12 8.5	21.0
427822 2005 JO_{64}	15.8	X	300.20261	295.48270	246.45954	16.92435	0.2302142	0.18218872	3.0816860	20	—	—
427823 2005 JV_{69}	16.0	X	106.13527	336.55167	49.76442	12.23739	0.1060832	0.17817601	3.1277826	20	1 25.4	20.6
427824 2005 JC_{78}	18.5	X	84.41302	205.22070	49.09653	5.59739	0.1069941	0.28202168	2.3029316	20	10 22.9	21.5
427825 2005 JD_{78}	16.1	X	9.72635	59.18937	42.14726	12.37850	0.1025644	0.17854822	3.1234343	20	—	—
427826 2005 JO_{80}	15.4	X	227.19262	158.31794	96.42808	28.04508	0.1120489	0.17389188	3.1789462	20	—	—
427827 2005 JT_{80}	15.4	X	242.90082	162.72930	97.75415	29.35565	0.1399699	0.17880252	3.1204720	20	1 9.9	20.4
427828 2005 JB_{100}	16.0	X	293.86280	98.38226	112.49284	9.47891	0.0121937	0.17956709	3.1116081	20	1 20.8	20.4
427829 2005 JD_{103}	16.3	X	249.99094	132.32049	117.21300	18.18521	0.1228782	0.17710277	3.1404061	20	1 6.2	21.2
427830 2005 JB_{108}	15.9	X	293.88559	70.57572	120.15781	14.74723	0.2180715	0.18047050	3.1012151	20	—	—
427831 2005 JQ_{108}	16.0	X	213.75430	140.98816	126.46612	28.25515	0.1844956	0.17420081	3.1751867	20	—	—
427832 2005 JO_{111}	17.4	X	96.34335	112.63019	155.15319	7.08051	0.1138603	0.28405965	2.2919036	20	11 24.4	20.8
427833 2005 JH_{112}	16.1	X	271.86648	23.80720	188.62833	10.53378	0.1574870	0.17735369	3.1374434	20	—	—
427834 2005 JY_{114}	16.4	X	243.85620	79.40866	197.20758	10.70882	0.1962133	0.18124998	3.0923174	20	1 23.7	21.7
427835 2005 JG_{120}	18.4	X	134.79120	55.98168	152.16888	3.65257	0.1665098	0.28312459	2.2969471	20	10 18.5	21.9
427836 2005 JN_{123}	16.2	X	129.08926	176.52028	240.38124	8.59965	0.0120789	0.18877523	3.0095810	20	3 8.7	20.6
427837 2005 JQ_{132}	17.6	X	358.34682	217.44453	92.32829	8.33205	0.1329694	0.27248418	2.3563612	20	9 9.1	19.9
427838 2005 JM_{145}	17.5	X	179.46386	111.60372	216.10383	20.45505	0.0991109	0.37295176	1.9114705	20	—	—
427839 2005 JU_{153}	16.4	X	280.16536	181.59776	86.82523	12.66443	0.0609565	0.18828932	3.0147566	20	3 12.3	20.9
427840 2005 LE_{4}	15.9	X	196.52374	82.62248	207.96536	14.46545	0.1854504	0.17402243	3.1773562	20	1 3.5	21.4

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	m		°	°	°	°		°				
427841 2005 LD_{9}	16.4	X	245.19919	68.16122	217.95905	9.42292	0.0866818	0.18306664	3.0718257	20	2 11.4	21.2
427842 2005 LT_{11}	15.3	X	179.91885	73.76684	284.10306	14.90812	0.2349290	0.17392163	3.1785837	20	3 1.8	21.1
427843 2005 LN_{22}	18.5	X	124.45756	106.21299	154.51635	3.00073	0.2035248	0.28786744	2.2716479	20	12 13.5	22.2
427844 2005 LZ_{24}	18.0	X	99.26127	157.88509	86.55191	7.81091	0.0838490	0.28120069	2.3074119	20	10 26.9	21.2
427845 2005 LH_{52}	15.8	X	266.78584	310.49623	291.96770	25.50718	0.2415193	0.17429685	3.1740202	20	1 5.4	21.0
427846 2005 MN_{8}	15.8	X	222.44716	165.55676	100.70034	17.96929	0.1096730	0.17455911	3.1708403	20	—	—
427847 2005 ME_{18}	18.1	X	74.83987	128.94180	120.46405	6.09135	0.2032101	0.27240708	2.3568057	20	10 16.8	21.6
427848 2005 MC_{24}	17.5	X	96.81669	110.63917	123.63536	12.11828	0.1779916	0.27368279	2.3494763	20	10 19.7	21.3
427849 2005 MP_{30}	15.5	X	275.64465	359.92155	287.73532	18.24741	0.2140311	0.18181334	3.0859263	20	2 25.7	20.6
427850 2005 MQ_{30}	15.5	X	256.73562	6.08057	285.13866	16.59587	0.1358529	0.17796960	3.1302006	20	2 21.2	20.5
427851 2005 MD_{37}	15.6	X	264.36791	164.29957	130.14365	16.48411	0.0431885	0.17929717	3.1147301	20	3 27.7	20.3
427852 2005 MT_{49}	18.3	X	85.02454	352.39991	268.12974	0.85605	0.1480245	0.27536772	2.3398824	20	11 2.3	21.6
427853 2005 MJ_{54}	16.9	X	252.40609	100.02392	260.28811	13.13850	0.2424608	0.25104308	2.4886885	20	5 2.0	20.9
427854 2005 NK_{47}	17.9	X	104.71186	285.61085	305.69959	7.28455	0.1914302	0.27542506	2.3395577	20	10 15.2	21.8
427855 2005 NN_{67}	16.3	X	255.35900	342.76081	273.15809	13.49438	0.2084853	0.17316365	3.1878526	20	1 11.1	21.6
427856 2005 NZ_{67}	17.6	X	168.59690	127.93485	117.29877	9.39104	0.1727824	0.28928158	2.2642386	20	—	—
427857 2005 NP_{76}	17.5	X	241.89458	86.03273	279.74704	9.12004	0.1168542	0.25251699	2.4789950	20	5 11.4	21.1
427858 2005 NR_{93}	18.2	X	69.64304	330.76965	270.87798	1.50694	0.1506620	0.27017314	2.3697795	20	9 19.9	21.2
427859 2005 NA_{120}	17.8	X	85.36480	306.30963	292.91907	5.90511	0.0831442	0.27134984	2.3629235	20	9 24.7	21.1
427860 2005 OJ_{28}	17.5	X	45.09735	301.37727	330.59812	5.49922	0.1323968	0.26559615	2.3969273	20	9 24.7	20.4
427861 2005 OV_{31}	17.5	X	67.55125	254.07603	32.93105	9.93885	0.3016233	0.27629267	2.3346573	20	12 1.1	21.4
427862 2005 PV_{4}	16.7	X	46.99864	273.88797	73.65551	11.09089	0.2356120	0.27902424	2.3193952	20	—	—
427863 2005 PD_{12}	18.1	X	40.52755	211.73150	62.74982	2.33288	0.1688071	0.26693966	2.3888781	20	10 1.1	20.8
427864 2005 QH_{10}	18.4	X	150.34539	237.51934	155.29395	23.01770	0.0935526	0.37072811	1.9191063	20	2 27.1	20.3
427865 2005 QN_{27}	17.5	X	26.82099	158.47871	154.75785	10.28801	0.2035720	0.26720003	2.3873259	20	11 12.3	20.5
427866 2005 QV_{59}	17.5	X	79.05627	121.79983	165.24073	5.10708	0.2272069	0.27381806	2.3487024	20	12 6.9	21.4
427867 2005 QP_{90}	17.7	X	22.85925	27.66038	271.56775	0.64560	0.1677689	0.26585290	2.3953839	20	10 7.2	20.3
427868 2005 QD_{95}	17.6	X	34.12679	328.38593	348.13016	4.95957	0.1876021	0.27142986	2.3624591	20	11 20.2	20.6
427869 2005 QT_{99}	16.3	X	240.05075	105.50940	176.30064	16.04335	0.2037208	0.17081934	3.2169528	20	1 27.3	21.9
427870 2005 QJ_{131}	17.5	X	134.44178	208.23678	21.78115	6.05811	0.1728135	0.27448567	2.3448925	20	11 10.9	21.2
427871 2005 RM_{27}	16.4	X	171.69863	345.12517	348.91135	14.08952	0.2632588	0.22823753	2.6518239	20	2 5.9	21.1
427872 2005 ST_{5}	17.2	X	301.60474	0.45685	358.09058	6.92640	0.1826726	0.25643707	2.4536664	20	7 19.0	19.8
427873 2005 SK_{29}	17.2	X	123.61766	240.56522	215.99977	6.77765	0.1660595	0.23679184	2.5875667	20	5 11.4	20.9
427874 2005 SC_{32}	17.3	X	181.92930	215.61544	180.45564	9.65184	0.1268703	0.23822585	2.5771723	20	4 21.6	21.3
427875 2005 SU_{57}	17.1	X	323.77460	347.99886	7.28711	6.38004	0.1075997	0.25972656	2.4329049	20	9 5.3	19.5
427876 2005 SZ_{84}	18.1	X	164.67999	62.64674	15.62814	1.09467	0.1830050	0.24124388	2.5556332	20	5 27.9	22.3
427877 2005 SE_{102}	17.7	X	149.43468	86.93993	333.10569	4.69698	0.1707713	0.23529569	2.5985240	20	4 18.7	21.9
427878 2005 SH_{115}	18.0	X	61.39324	37.45454	255.94147	0.53672	0.1801619	0.26911855	2.3759664	20	11 21.9	21.3
427879 2005 SO_{147}	17.9	X	181.03232	12.32465	38.76034	2.99734	0.2394055	0.23910172	2.5708747	20	5 8.6	22.4
427880 2005 SZ_{148}	17.8	X	71.14261	159.26682	121.09035	2.25833	0.1713139	0.26703172	2.3883289	20	11 15.1	21.3
427881 2005 SC_{149}	17.6	X	7.39028	258.47182	38.11768	6.83852	0.0981939	0.25636749	2.4541103	20	8 29.3	20.3
427882 2005 SQ_{156}	17.8	X	185.56205	16.34406	50.52022	1.75531	0.0449431	0.24461164	2.5321220	20	6 2.9	21.2
427883 2005 SB_{178}	17.5	X	126.92833	122.19778	352.96888	8.48422	0.1129314	0.24190679	2.5509621	20	5 31.7	21.3
427884 2005 ST_{191}	18.0	X	61.84589	94.26777	192.94632	5.26750	0.2180770	0.26711121	2.3878551	20	11 19.5	21.4
427885 2005 SR_{218}	17.2	X	147.43991	347.34982	67.70871	8.52603	0.4039949	0.23149185	2.6269124	20	4 27.8	22.3
427886 2005 SC_{236}	17.7	X	348.93408	339.25682	331.93242	2.38425	0.1872362	0.25672429	2.4518359	20	8 17.5	19.6
427887 2005 SP_{289}	17.3	X	229.17499	338.47360	23.63812	8.95084	0.1582389	0.24396192	2.5366157	20	4 20.9	21.4
427888 2005 SU_{289}	17.1	X	148.71948	40.85252	5.12847	13.96452	0.1990741	0.23197721	2.6232469	20	4 3.1	21.3
427889 2005 TV_{9}	16.5	X	30.46273	303.05126	36.97947	11.49165	0.2417610	0.26901095	2.3765999	20	12 24.9	19.9
427890 2005 TH_{15}	17.6	X	92.39535	33.86596	8.01385	25.01801	0.0294800	0.36051485	1.9551824	20	—	—
427891 2005 TC_{40}	17.7	X	185.78298	28.54217	44.67552	8.60273	0.1096441	0.24337456	2.5406954	20	6 9.8	21.7
427892 2005 TQ_{77}	16.8	X	181.77995	353.96789	21.94433	14.76894	0.1954336	0.23466002	2.6032147	20	3 29.7	21.2
427893 2005 TA_{80}	17.7	X	133.55430	95.51552	19.07672	9.92196	0.0204353	0.24309876	2.5426167	20	5 28.8	21.3
427894 2005 UA_{2}	17.6	X	131.03679	28.41761	25.16489	1.61394	0.3008019	0.22948964	2.6421694	20	4 6.8	22.0
427895 2005 UN_{20}	17.1	X	170.64550	35.02586	40.54249	13.40682	0.2404314	0.23864177	2.5741770	20	5 28.8	21.7
427896 2005 UD_{36}	16.1	X	280.42180	227.68632	223.05205	2.15246	0.1606419	0.12643248	3.9315483	20	10 1.4	21.3
427897 2005 UK_{37}	17.1	X	141.79413	229.88112	216.01186	11.68674	0.3255056	0.23283949	2.6167664	20	5 25.8	21.9
427898 2005 UA_{94}	17.2	X	123.22327	231.71986	271.31657	4.69946	0.0711018	0.24297537	2.5434774	20	7 1.3	20.5
427899 2005 UB_{97}	17.6	X	191.75919	281.92757	111.31115	2.21596	0.2333782	0.23775044	2.5806068	20	4 26.3	22.0
427900 2005 UB_{101}	17.5	X	162.31079	271.51234	120.96220	3.85595	0.1069177	0.23163186	2.6258537	20	3 27.8	21.4
427901 2005 UB_{103}	18.3	X	187.99379	206.35810	192.04780	2.80423	0.1765536	0.23692997	2.5865609	20	4 29.3	22.6
427902 2005 UT_{126}	15.9	X	287.80164	191.62278	235.23945	1.94874	0.2045820	0.12577841	3.9451662	20	9 6.0	21.2
427903 2005 UD_{132}	17.5	X	206.31241	211.47585	196.72961	12.15011	0.2479104	0.24154147	2.5535336	20	5 26.0	22.0
427904 2005 UC_{154}	17.7	X	221.78342	156.20133	239.55676	2.51136	0.1540834	0.24246990	2.5470110	20	5 27.9	21.6
427905 2005 UM_{173}	17.6	X	145.47003	179.22243	225.12507	6.32151	0.2484461	0.23038610	2.6353109	20	4 1.8	22.0
427906 2005 UU_{186}	17.8	X	110.57179	107.48269	24.30551	4.95325	0.2135291	0.23473445	2.6026644	20	6 16.7	21.9
427907 2005 UK_{229}	17.7	X	143.84653	272.87302	152.98753	1.67781	0.1235065	0.23302616	2.6153688	20	4 19.6	21.7
427908 2005 US_{237}	17.8	X	217.48725	267.61005	116.96534	4.18709	0.1576761	0.24030155	2.5623100	20	5 10.4	21.9
427909 2005 UF_{238}	17.4	X	220.82013	247.15405	106.06913	4.73451	0.0602534	0.23441445	2.6050324	20	4 10.8	21.2
427910 2005 UZ_{241}	16.9	X	114.62708	265.52069	253.12427	10.31738	0.2635490	0.23753731	2.5821502	20	7 26.5	21.4
427911 2005 UK_{266}	18.2	X	140.61824	329.15376	74.97609	4.54600	0.2574378	0.22890424	2.6466722	20	4 1.9	22.6
427912 2005 US_{280}	16.9	X	184.78392	19.52667	38.50621	12.65113	0.1274369	0.23908837	2.5709704	20	5 18.8	21.0
427913 2005 UU_{288}	16.6	X	40.39698	287.70315	247.17373	11.20354	0.1550184	0.23160505	2.6260563	20	4 27.6	19.5
427914 2005 UF_{314}	17.5	X	173.22667	113.54046	225.39468	11.66893	0.1749186	0.36512104	1.9387039	20	1 15.7	20.2
427915 2005 UC_{331}	16.7	X	193.77137	108.69189	320.38166	12.87307	0.1658351	0.24507007	2.5289633	20	6 11.9	21.0
427916 2005 UZ_{333}	17.3	X	202.05980	320.79046	72.28557	6.29587	0.1950105	0.23807192	2.5782831	20	5 5.5	21.5
427917 2005 UO_{365}	17.9	X	126.65326	48.92780	76.88480	5.50613	0.2140700	0.23707977	2.5854713	20	6 24.8	22.0
427918 2005 UF_{393}	17.6	X	87.51773	199.39292	67.56872	3.34032	0.1915076	0.26870357	2.3784120	20	11 15.9	21.3
427919 2005 UF_{397}	16.8	X	179.06494	339.64445	40.15992	12.67918	0.1864325	0.23537138	2.5979669	20	4 2.4	21.1
427920 2005 UG_{398}	16.0	X	285.59990	245.87182	98.34716	13.77396	0.3964424	0.18439055	3.0571044	20	5 5.5	20.9

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	m		°	°	°	°		°				
427921 2005 UK_{406}	16.1	X	252.78627	335.21612	140.66016	3.66143	0.1996796	0.12580575	3.9445948	20	9 25.2	21.9
427922 2005 UV_{500}	17.0	X	169.01732	257.41817	139.12684	7.40263	0.1864124	0.23390667	2.6088012	20	4 13.1	21.3
427923 2005 UM_{508}	17.8	X	154.41760	328.63713	77.66484	6.58906	0.2534390	0.23271660	2.6176875	20	4 15.7	22.3
427924 2005 UY_{522}	16.0	X	236.20467	4.95857	120.46118	11.21956	0.2048655	0.12436269	3.9750503	20	9 22.2	22.2
427925 2005 UM_{523}	17.9	X	15.51107	190.20903	102.75030	2.14055	0.1648867	0.26037243	2.4288800	20	9 14.9	20.2
427926 2005 UQ_{524}	17.5	X	178.12455	310.71377	84.37336	4.79881	0.1391553	0.23391890	2.6087102	20	4 17.4	21.6
427927 2005 UE_{530}	17.8	X	128.00368	78.96219	11.76200	2.30600	0.1824864	0.23163720	2.6258133	20	5 9.1	21.9
427928 2005 VQ_{1}	16.6	X	118.58717	23.56003	71.44637	14.76368	0.2179101	0.22707537	2.6608641	20	5 12.0	20.8
427929 2005 VQ_{3}	16.4	X	136.35839	93.42046	354.23752	28.13066	0.3342596	0.23457946	2.6038106	20	5 11.5	21.6
427930 2005 VL_{26}	17.9	X	190.56232	77.18522	333.07877	3.76027	0.1832592	0.24256393	2.5463528	20	5 14.5	22.1
427931 2005 VC_{28}	17.7	X	169.40288	63.33768	4.75433	2.97690	0.0703467	0.23873884	2.5734792	20	5 15.7	21.4
427932 2005 VS_{33}	17.6	X	191.54072	325.66611	95.38552	4.22685	0.1632926	0.23963710	2.5670442	20	5 31.1	21.6
427933 2005 VW_{40}	17.2	X	171.61288	263.88613	153.58523	3.07271	0.0795951	0.23546793	2.5972567	20	5 6.6	21.0
427934 2005 VW_{65}	17.6	X	184.25322	27.87406	56.15651	9.04529	0.1194152	0.24371775	2.5383097	20	6 22.8	21.5
427935 2005 VR_{69}	17.7	X	175.47889	336.31643	86.14879	4.66079	0.1399268	0.23700645	2.5860045	20	5 18.1	21.8
427936 2005 VT_{91}	17.3	X	136.99460	71.78352	50.74603	12.51432	0.1475278	0.23970078	2.5665896	20	6 25.4	21.4
427937 2005 VG_{97}	17.2	X	166.19876	194.79896	230.41499	11.62688	0.1515374	0.23652913	2.5894824	20	5 12.1	21.1
427938 2005 VE_{134}	15.9	X	148.98510	139.42526	159.70429	10.47638	0.0597208	0.14696967	3.5561841	20	—	—
427939 2005 WG	17.5	X	157.21963	11.76158	62.21523	12.82900	0.1614939	0.23486355	2.6017105	20	5 15.9	21.6
427940 2005 WE_{42}	17.7	X	109.39876	224.93727	242.27080	12.23070	0.2140702	0.23057192	2.6338948	20	5 14.8	21.6
427941 2005 WF_{46}	17.3	X	199.81045	189.85157	201.99807	13.88491	0.2532547	0.23865345	2.5740930	20	4 30.7	21.9
427942 2005 WB_{61}	16.8	X	103.09975	190.24452	271.56349	6.31583	0.1096032	0.22835423	2.6509203	20	4 14.2	20.5
427943 2005 WA_{88}	17.7	X	152.17172	332.29771	93.93544	6.66818	0.2510321	0.23043500	2.6349382	20	5 7.4	22.3
427944 2005 WZ_{109}	15.8	X	282.00223	215.26279	244.54112	7.23918	0.2427466	0.12466163	3.9686931	20	9 30.1	21.2
427945 2005 WP_{140}	17.0	X	74.39072	174.50195	278.20204	8.70852	0.2303931	0.21817468	2.7327494	20	3 11.4	20.5
427946 2005 WS_{142}	17.7	X	211.53970	319.07487	67.17310	5.93683	0.2047363	0.23909799	2.5709015	20	5 4.5	21.9
427947 2005 WQ_{145}	17.3	X	349.30458	296.62846	36.89778	2.33664	0.1797059	0.25536090	2.4605552	20	9 24.6	19.3
427948 2005 WR_{156}	16.1	X	134.58139	293.06750	82.42496	13.01952	0.1471887	0.22073002	2.7116176	20	2 13.9	20.3
427949 2005 WZ_{169}	17.6	X	195.53213	184.54233	236.74733	4.42200	0.0622750	0.23888766	2.5724103	20	6 7.3	21.3
427950 2005 WH_{176}	17.6	X	153.36872	10.67569	50.93892	3.14775	0.2032863	0.22985425	2.6393746	20	4 28.6	22.0
427951 2005 WJ_{183}	17.7	X	134.04434	147.54090	290.01292	4.99448	0.2703883	0.23040145	2.6351939	20	5 4.2	22.2
427952 2005 WY_{198}	16.0	X	292.47423	118.59729	325.25306	1.74672	0.1656031	0.12490180	3.9636038	20	10 8.4	21.0
427953 2005 XH_{43}	16.9	X	7.74232	289.09536	14.60212	2.99653	0.1841509	0.25231665	2.4803070	20	9 16.9	19.2
427954 2005 XB_{45}	17.3	X	271.35238	357.58519	350.50309	3.32545	0.1517632	0.24186405	2.5512627	20	5 19.8	20.9
427955 2005 XO_{49}	17.3	X	162.44051	44.28102	26.78590	4.24117	0.1161186	0.23246110	2.6196053	20	5 13.9	21.2
427956 2005 XS_{50}	17.0	X	174.93139	330.24555	73.66738	13.86542	0.2310911	0.23183022	2.6243556	20	4 29.8	21.7
427957 2005 XV_{54}	18.3	X	150.51747	50.37914	347.20301	1.30902	0.2368930	0.22865828	2.6485698	20	3 29.4	22.8
427958 2005 XD_{67}	17.1	X	87.01200	253.59422	277.50988	4.15298	0.0812138	0.23745328	2.5827593	20	6 24.5	20.4
427959 2005 XA_{71}	17.3	X	251.24382	310.07375	15.52543	3.93966	0.0686452	0.23049499	2.6344809	20	4 7.7	21.0
427960 2005 YA_{51}	16.7	X	117.20882	18.89617	112.92356	10.24564	0.1130443	0.22995242	2.6386233	20	6 14.2	20.6
427961 2005 YH_{54}	17.2	X	161.55311	281.94076	116.61017	3.93336	0.1492829	0.22630834	2.6668731	20	4 6.5	21.4
427962 2005 YD_{56}	16.4	X	297.65435	57.37112	276.31533	12.78554	0.2033100	0.24489570	2.5301636	20	5 28.7	19.6
427963 2005 YF_{65}	16.6	X	124.15977	138.64188	286.35269	10.68744	0.1766735	0.22372754	2.6873429	20	3 28.1	20.9
427964 2005 YY_{66}	16.6	X	102.87655	206.81486	304.00732	12.29202	0.0861250	0.23050044	2.6344394	20	6 18.7	20.4
427965 2005 YD_{71}	16.9	X	159.31215	9.47719	82.92310	15.02904	0.2217880	0.23475633	2.6025026	20	6 11.5	21.2
427966 2005 YX_{83}	16.8	X	168.95057	302.10883	114.10681	14.08148	0.2416556	0.23099689	2.6306635	20	5 11.1	21.6
427967 2005 YZ_{85}	15.2	X	343.06488	116.79352	290.90713	10.48798	0.1233843	0.12436992	3.9748964	20	11 12.6	20.3
427968 2005 YQ_{105}	16.6	X	24.41160	341.35259	282.47857	12.87372	0.1497625	0.23814864	2.5777293	20	8 6.6	19.6
427969 2005 YU_{108}	17.8	X	117.38781	358.57590	130.76677	2.72196	0.1439596	0.23046520	2.6347080	20	6 13.8	21.6
427970 2005 YC_{118}	17.9	X	173.17503	326.74848	92.21436	2.86639	0.1792677	0.23078890	2.6322438	20	5 12.1	22.1
427971 2005 YG_{125}	17.4	X	103.86814	149.56622	312.70131	5.14723	0.1680617	0.22466503	2.6798618	20	4 24.5	21.3
427972 2005 YY_{141}	17.4	X	85.32568	83.20431	60.60670	2.16457	0.0979861	0.22676711	2.6632750	20	5 18.3	20.9
427973 2005 YW_{142}	16.8	X	97.29223	125.89914	294.81450	8.77065	0.2019918	0.21747482	2.7386092	20	2 27.4	20.6
427974 2005 YB_{167}	16.9	X	74.43806	58.18032	123.15245	14.14771	0.2089661	0.22838810	2.6506582	20	7 10.9	20.5
427975 2005 YP_{171}	16.7	X	164.83619	151.57227	285.46066	8.78432	0.1770471	0.23625575	2.5914796	20	5 25.7	21.0
427976 2005 YZ_{171}	17.0	X	119.27488	229.64491	256.30635	10.91399	0.2438225	0.22893516	2.6464339	20	6 20.2	21.2
427977 2005 YL_{191}	16.4	X	198.61928	273.33369	111.83565	7.01573	0.0509758	0.22584922	2.6704861	20	4 27.8	20.3
427978 2005 YO_{204}	17.0	X	223.00794	90.81247	295.22218	9.47749	0.1252421	0.23265348	2.6181610	20	5 16.7	21.1
427979 2005 YV_{231}	16.3	X	54.12230	251.00058	304.83988	13.50905	0.0460641	0.22750805	2.6574893	20	6 6.0	19.9
427980 2005 YQ_{239}	17.4	X	71.99541	65.81645	118.39848	12.45213	0.2303463	0.22816077	2.6524186	20	7 14.9	21.0
427981 2005 YJ_{290}	17.4	X	277.67078	231.36566	145.97700	7.77440	0.1002800	0.24086522	2.5583109	20	7 16.9	20.7
427982 2006 AY_{14}	16.8	X	220.95288	261.68024	126.13301	10.45945	0.1964898	0.23352652	2.6116316	20	5 17.6	21.2
427983 2006 AJ_{21}	17.0	X	172.71825	24.62901	27.66212	6.83682	0.3316630	0.23181956	2.6244361	20	5 4.7	21.9
427984 2006 AU_{26}	17.1	X	210.82725	285.91214	114.84162	4.53186	0.2275677	0.23668714	2.5883298	20	5 21.1	21.4
427985 2006 AP_{38}	18.0	X	162.14199	113.21120	298.09494	4.38936	0.0828712	0.22707089	2.6608991	20	4 15.2	22.0
427986 2006 AQ_{51}	17.0	X	83.81567	66.78473	115.63206	11.53183	0.0709078	0.23265210	2.6181714	20	7 4.0	20.4
427987 2006 AG_{52}	17.6	X	165.36781	196.05762	254.23387	2.44896	0.0608361	0.23276452	2.6173282	20	6 10.1	21.1
427988 2006 AJ_{52}	17.4	X	99.55551	345.65150	119.16416	12.78925	0.1034569	0.22334230	2.6904323	20	4 22.1	21.3
427989 2006 AC_{54}	17.2	X	267.40556	138.37729	149.20483	5.43076	0.0361213	0.21923393	2.7239400	20	3 15.7	20.9
427990 2006 AZ_{54}	17.1	X	26.01399	48.21198	139.13918	7.94572	0.2188124	0.21936169	2.7228823	20	4 30.3	19.7
427991 2006 AL_{59}	17.3	X	274.22858	232.86083	93.76008	3.93469	0.0350328	0.22800408	2.6536337	20	5 14.4	20.7
427992 2006 AX_{74}	16.6	X	73.79408	80.70842	115.46818	23.21209	0.3628907	0.22373209	2.6873065	20	8 21.5	21.0
427993 2006 AR_{105}	16.7	X	325.75914	284.87800	324.09909	8.19333	0.0400118	0.21954832	2.7213389	20	4 5.7	20.4
427994 2006 BA_{7}	16.5	X	64.59487	259.39348	308.16776	14.44786	0.0991763	0.23087663	2.6315769	20	7 18.0	19.9
427995 2006 BZ_{14}	16.6	X	54.93180	103.07650	125.17448	13.54885	0.2369299	0.23095163	2.6310072	20	8 24.9	20.0
427996 2006 BF_{24}	17.7	X	101.91943	64.06760	29.99612	0.84551	0.3183277	0.22254769	2.6968326	20	5 2.9	21.8
427997 2006 BD_{27}	16.9	X	87.54688	126.04085	332.45606	10.68363	0.1905304	0.21775021	2.7362997	20	3 31.8	20.7
427998 2006 BL_{32}	16.7	X	113.13634	344.03740	131.65226	6.69673	0.1694372	0.22342176	2.6897943	20	5 26.6	20.8
427999 2006 BB_{36}	16.5	X	342.55664	340.95720	315.50671	14.36157	0.1389043	0.23366299	2.6106146	20	7 9.1	19.3
428000 2006 BC_{38}	17.6	X	59.71637	100.09577	7.64523	2.96097	0.2170775	0.21325734	2.7745979	20	3 11.6	20.6