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		°	°	°	°		°				
296001 2008 YO_{97}	16.8	X	128.78021	41.85946	41.89610	2.52865	0.0925668	0.19606939	2.9344690	20	4 23.9	21.0
296002 2008 YO_{101}	17.2	X	67.87052	299.79989	127.66429	3.98190	0.1414939	0.26763280	2.3847516	20	1 6.7	19.4
296003 2008 YU_{101}	17.1	X	170.67607	95.69429	254.25916	2.25117	0.1537815	0.27462690	2.3440885	20	2 8.5	20.7
296004 2008 YA_{103}	16.4	X	199.16522	212.61547	275.98096	3.53480	0.1280226	0.22333910	2.6904579	20	9 1.1	20.5
296005 2008 YU_{108}	17.6	X	108.49976	39.18560	354.93077	1.62731	0.2200906	0.27061781	2.3671828	20	2 7.0	20.5
296006 2008 YL_{109}	16.2	X	253.18221	147.89391	283.66688	2.33853	0.0713966	0.21282410	2.7783621	20	8 27.9	20.1
296007 2008 YM_{117}	17.3	X	112.22971	231.65811	131.39545	5.02307	0.1165015	0.26337245	2.4104002	20	—	—
296008 2008 YE_{118}	17.1	X	13.07822	264.92755	323.56765	3.16812	0.1753524	0.28467808	2.2885832	20	5 25.6	18.7
296009 2008 YW_{118}	16.2	X	255.77724	331.59716	310.82365	6.57031	0.2406832	0.18217481	3.0818430	20	2 7.9	21.4
296010 2008 YT_{121}	16.1	X	210.22723	144.30693	155.38324	2.63912	0.0423159	0.18275102	3.0753615	20	1 26.9	20.6
296011 2008 YK_{123}	16.4	X	92.03024	96.95147	126.92619	8.50076	0.1621657	0.21797898	2.7343848	20	9 20.8	20.6
296012 2008 YO_{123}	16.8	X	37.40973	112.13758	138.67709	4.29082	0.0846104	0.21368143	2.7709256	20	8 1.5	20.1
296013 2008 YW_{123}	17.3	X	133.40696	190.67524	159.20233	3.00433	0.1190922	0.26524799	2.3990243	20	—	—
296014 2008 YR_{125}	17.4	X	74.32694	153.47520	299.49564	3.60741	0.1130022	0.27348886	2.3505868	20	2 18.3	19.9
296015 2008 YY_{125}	16.1	X	94.40941	343.68777	299.94205	12.30128	0.1633081	0.23528682	2.5985893	20	12 4.3	20.4
296016 2008 YM_{135}	16.2	X	264.66531	161.19455	308.68678	12.42807	0.1040148	0.23407326	2.6075632	20	10 27.2	19.9
296017 2008 YN_{144}	15.5	X	261.33221	119.70242	127.37868	10.24232	0.0238042	0.17829315	3.1264125	20	1 24.0	19.8
296018 2008 YZ_{148}	17.2	X	342.81634	190.95830	297.32742	2.60517	0.1511340	0.26014064	2.4303225	20	—	—
296019 2008 YM_{149}	17.0	X	279.31625	101.46341	272.16062	1.47897	0.0911582	0.21926284	2.7237006	20	7 14.8	20.5
296020 2008 YF_{151}	16.6	X	216.13461	9.56817	4.41268	1.82981	0.0826367	0.20342067	2.8633383	20	4 29.1	21.0
296021 2008 YS_{151}	16.9	X	305.76913	224.19484	171.93293	2.74559	0.0815314	0.22838527	2.6506802	20	9 27.8	20.1
296022 2008 YK_{153}	17.2	X	200.90596	169.19675	117.82875	4.84141	0.1643013	0.26202479	2.4186580	20	—	—
296023 2008 YJ_{154}	17.0	X	316.86597	166.35390	265.12706	4.71375	0.1122149	0.24070973	2.5594125	20	12 6.5	19.8
296024 2008 YZ_{154}	17.5	X	356.92101	173.95856	249.82650	2.22896	0.0734098	0.24653451	2.5189385	20	—	—
296025 2008 YR_{155}	16.6	X	6.78149	76.34239	165.07256	2.20541	0.0086156	0.20258082	2.8712466	20	5 29.6	20.5
296026 2008 YS_{155}	17.2	X	172.41803	195.00303	138.40824	6.41685	0.1270471	0.26691725	2.3890118	20	1 19.9	20.8
296027 2008 YG_{158}	15.8	X	283.93446	304.84587	278.94643	8.59316	0.1695710	0.17534313	3.1613813	20	1 5.1	20.5
296028 2008 YZ_{158}	16.3	X	155.17016	344.22642	154.74695	2.46129	0.0149524	0.20479919	2.8504749	20	7 29.3	20.4
296029 2008 YS_{160}	15.7	X	62.77087	120.70975	350.79869	8.76919	0.0683946	0.17536218	3.1611523	20	3 6.2	19.8
296030 2008 YR_{164}	16.3	X	92.75365	152.02318	256.11023	2.24647	0.2032894	0.18258306	3.0772473	20	2 13.4	20.4
296031 2008 YU_{166}	16.4	X	243.43935	0.12569	60.13562	4.68284	0.1339352	0.22275651	2.6951469	20	7 25.6	20.3
296032 2008 YV_{166}	16.3	X	234.13172	133.97557	292.00348	10.94075	0.1688449	0.22230112	2.6988264	20	7 16.9	20.4
296033 2008 YF_{167}	16.2	X	341.23137	252.60263	100.71148	8.95601	0.0979750	0.23472586	2.6027278	20	10 3.1	19.2
296034 2008 YS_{167}	16.0	X	120.17413	344.39677	69.92377	4.71668	0.1570173	0.19271634	2.9684086	20	3 19.1	20.5
296035 2008 YV_{167}	17.2	X	107.01815	164.40819	239.73310	6.03660	0.1166198	0.27262371	2.3555571	20	1 30.3	20.2
296036 2008 YV_{168}	17.0	X	275.83224	228.96860	233.90542	0.43234	0.1086346	0.23816319	2.5776244	20	11 10.0	19.9
296037 2008 YB_{172}	17.1	X	280.42399	115.35690	118.13316	4.91641	0.0988008	0.26068860	2.4269157	20	1 7.9	20.4
296038 2008 YC_{172}	15.8	X	347.88393	107.31656	112.18150	9.83654	0.1119415	0.18532046	3.0468691	20	4 4.9	19.7
296039 2009 AB	15.3	X	287.87587	305.17377	269.71469	14.80714	0.2038686	0.17583000	3.1555427	20	—	—
296040 2009 AH_{2}	16.2	X	121.10083	232.61943	285.32904	2.91775	0.0414276	0.21179324	2.7873702	20	7 14.1	20.0
296041 2009 AC_{6}	16.3	X	325.31116	225.87364	354.96711	1.85808	0.0211333	0.19111492	2.9849678	20	3 8.8	20.4
296042 2009 AW_{6}	16.5	X	347.71941	33.10945	266.58818	7.61813	0.1642515	0.21567316	2.7538396	20	7 18.7	19.3
296043 2009 AW_{11}	16.5	X	49.24880	258.53403	301.85211	6.07709	0.0600661	0.29013108	2.2598167	20	6 7.9	19.0
296044 2009 AA_{16}	15.9	X	205.32206	244.45812	328.54196	12.42235	0.1300096	0.24413328	2.5354287	20	12 28.9	19.6
296045 2009 AX_{18}	16.5	X	333.61829	292.65934	278.25005	0.57717	0.1933449	0.18562895	3.0434925	20	2 15.5	20.1
296046 2009 AC_{20}	16.4	X	359.53713	215.82076	101.79721	5.84542	0.0543493	0.22181511	2.7027672	20	9 5.6	19.8
296047 2009 AD_{21}	15.6	X	39.45526	9.04642	93.10592	10.34762	0.0577692	0.18335925	3.0685568	20	1 20.9	19.7
296048 2009 AL_{23}	17.8	X	34.30282	268.17305	304.88583	2.27405	0.1027880	0.28901554	2.2656279	20	6 7.9	20.0
296049 2009 AV_{24}	17.3	X	302.35910	291.00263	303.88847	3.89365	0.1682374	0.26785071	2.3834581	20	1 25.3	20.3
296050 2009 AT_{26}	16.8	X	3.72275	244.34925	96.45953	3.84601	0.1017571	0.22873590	2.6479706	20	10 19.1	19.8
296051 2009 AM_{27}	16.3	X	12.26973	160.75894	311.31122	0.44515	0.1544146	0.17420777	3.1751021	20	—	—
296052 2009 AG_{28}	16.0	X	9.89670	1.06322	124.26771	12.34748	0.0486556	0.17693681	3.1423695	20	1 9.4	20.3
296053 2009 AK_{28}	16.6	X	18.80844	300.15737	159.40983	1.06392	0.1575125	0.17425177	3.1745676	20	—	—
296054 2009 AR_{29}	16.1	X	328.94013	293.22883	105.48050	0.30787	0.0144451	0.15072146	3.4969223	20	10 22.5	20.9
296055 2009 AW_{29}	18.2	X	113.15895	216.27191	192.62336	0.53322	0.1710731	0.27688930	2.3313024	20	2 23.9	21.0
296056 2009 AX_{30}	15.9	X	47.52868	326.97087	127.22967	6.18776	0.1285762	0.18031525	3.1029950	20	1 27.3	19.6
296057 2009 AH_{32}	17.3	X	51.78031	166.20671	286.04760	2.53844	0.1626303	0.26691285	2.3890380	20	1 14.2	19.1
296058 2009 AA_{33}	15.7	X	328.39853	259.22364	316.58658	7.67664	0.0593115	0.18442317	3.0567439	20	2 29.9	19.9
296059 2009 AD_{37}	16.7	X	276.94597	165.53646	97.98978	7.89403	0.0859982	0.27654996	2.3332090	20	2 13.1	19.8
296060 2009 AO_{38}	17.0	X	347.00697	160.64247	186.64093	1.80451	0.0932727	0.22752239	2.6573777	20	9 27.3	20.1
296061 2009 AW_{40}	17.2	X	44.55676	284.63929	130.39553	3.29248	0.1555390	0.25858749	2.4400443	20	—	—
296062 2009 AC_{41}	17.6	X	145.47124	347.45226	10.40086	1.64986	0.2010312	0.26933873	2.3746713	20	1 30.8	21.1
296063 2009 AL_{42}	16.8	X	343.04205	290.05314	66.39909	2.88271	0.0886434	0.22549010	2.6733207	20	10 4.4	19.8
296064 2009 AN_{43}	16.4	X	31.07071	29.07651	307.17633	11.25718	0.2045386	0.23275829	2.6173749	20	12 6.4	20.0
296065 2009 AU_{43}	16.7	X	149.69193	26.62076	136.81221	5.97822	0.0953276	0.21939062	2.7226429	20	8 28.3	20.9
296066 2009 AN_{44}	16.8	X	321.06106	269.31849	303.90931	10.42407	0.2065199	0.26828322	2.3808957	20	1 15.3	19.6
296067 2009 AX_{44}	15.9	X	222.82649	77.42225	92.83291	15.80181	0.0434911	0.23425602	2.6062068	20	12 5.7	19.5
296068 2009 AA_{48}	15.8	X	67.29747	2.25116	63.23929	6.02696	0.0462114	0.17788879	3.1311485	20	1 13.5	20.0
296069 2009 AD_{50}	16.7	X	236.67253	137.50968	305.77016	4.82273	0.0520905	0.21458650	2.7631287	20	8 24.8	20.5
296070 2009 AE_{50}	16.7	X	195.24291	211.53827	148.38191	6.80939	0.1360375	0.28084168	2.3093779	20	3 17.1	20.1
296071 2009 AS_{50}	17.0	X	246.42939	107.70901	171.70641	3.70823	0.0722136	0.26823166	2.3812008	20	1 28.7	20.3
296072 2009 BK_{1}	15.9	X	167.30217	355.54538	128.21172	12.40373	0.1231288	0.21170984	2.7881022	20	7 25.7	20.3
296073 2009 BP_{3}	16.5	X	252.53140	280.43704	140.64100	15.32966	0.1714550	0.22419460	2.6836093	20	7 30.9	20.2
296074 2009 BH_{4}	16.6	X	310.10963	239.84428	211.09996	5.12381	0.1668298	0.24316925	2.5421253	20	12 22.7	18.9
296075 2009 BL_{7}	16.1	X	263.09491	315.31820	138.35088	13.67931	0.1243433	0.23197096	2.6232940	20	10 10.9	19.6
296076 2009 BZ_{7}	15.7	X	289.60373	117.98535	119.29974	11.22232	0.1910969	0.17971206	3.1099344	20	1 23.7	20.2
296077 2009 BN_{8}	16.6	X	86.32943	237.07383	121.13309	16.81611	0.1623720	0.25640335	2.4538815	20	—	—
296078 2009 BF_{9}	16.5	X	186.19177	195.09887	290.78898	4.58643	0.0743451	0.21862382	2.7290054	20	8 17.9	20.6
296079 2009 BE_{11}	16.3	X	31.95334	334.90011	142.38632	14.13907	0.1121287	0.26368700	2.4084829	20	1 11.6	18.9
296080 2009 BA_{12}	15.1	X	255.34859	335.69458	285.79808	16.04296	0.1618409	0.17711636	3.1402455	20	1 20.1	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		°	°	°	°		°				
296081 2009 BB_{12}	17.4	X	53.79005	275.28332	188.49858	4.64524	0.1893477	0.26957521	2.3732824	20	2 5.7	19.3
296082 2009 BR_{13}	15.1	X	244.31085	272.52541	336.48110	10.13109	0.0499941	0.17477144	3.1682716	20	1 7.1	19.9
296083 2009 BT_{13}	16.8	X	70.53305	248.41736	147.16171	7.02932	0.1762940	0.26060232	2.4274513	20	—	—
296084 2009 BA_{14}	15.4	X	242.67894	13.80982	308.26232	8.21927	0.1310420	0.18486524	3.0518690	20	3 18.2	20.3
296085 2009 BB_{14}	16.7	X	166.36946	59.03630	187.77786	5.88804	0.0826449	0.23453048	2.6041731	20	12 28.9	20.5
296086 2009 BC_{16}	17.2	X	55.77751	176.96277	232.64291	1.85034	0.0846128	0.25936574	2.4351608	20	—	—
296087 2009 BL_{16}	16.8	X	236.06930	208.90410	135.86651	7.84095	0.1466936	0.28765884	2.2727460	20	4 8.3	20.2
296088 2009 BW_{16}	16.8	X	249.53567	209.23105	338.78624	3.75487	0.0622539	0.24316597	2.5421481	20	—	—
296089 2009 BK_{17}	15.6	X	318.64994	117.12813	116.78448	11.26921	0.0612883	0.18541206	3.0458655	20	3 16.5	19.8
296090 2009 BP_{20}	17.7	X	92.87786	85.40277	309.06495	1.31887	0.1949277	0.26759473	2.3849778	20	1 11.8	20.2
296091 2009 BF_{25}	15.4	X	316.33759	75.22460	136.44065	18.04904	0.0779499	0.18183273	3.0857070	20	2 9.0	19.6
296092 2009 BK_{29}	16.7	X	105.21823	3.54666	352.85242	1.99672	0.2370427	0.26037692	2.4288520	20	—	—
296093 2009 BD_{31}	16.4	X	184.84978	355.09686	105.59486	5.55946	0.0263901	0.21132112	2.7915202	20	7 17.3	20.3
296094 2009 BB_{32}	16.1	X	328.10794	103.53623	81.92366	2.45234	0.1062659	0.17655179	3.1469364	20	1 20.9	20.3
296095 2009 BF_{34}	17.1	X	74.93589	221.88468	94.86833	3.77022	0.0197052	0.23663318	2.5887232	20	12 11.6	20.5
296096 2009 BL_{34}	17.5	X	167.34287	274.16781	45.31746	2.87839	0.2281429	0.26024490	2.4296734	20	1 7.4	21.4
296097 2009 BQ_{34}	15.5	X	131.77320	78.44237	321.27328	15.22731	0.0747265	0.18518617	3.0483420	20	2 28.4	20.1
296098 2009 BS_{34}	16.2	X	332.88362	221.12799	119.51551	14.35475	0.1602438	0.21938542	2.7226859	20	8 23.5	19.0
296099 2009 BO_{35}	16.5	X	104.22170	327.51673	333.74450	9.20108	0.1993477	0.23805099	2.5784342	20	—	—
296100 2009 BS_{39}	16.7	X	274.63282	285.47173	331.48533	5.78326	0.1053586	0.26627788	2.3928345	20	1 30.7	20.1
296101 2009 BT_{42}	16.9	X	271.64244	248.77042	126.49639	4.40105	0.1064977	0.21196763	2.7858412	20	7 3.4	20.6
296102 2009 BV_{42}	17.6	X	27.55531	163.89339	127.04749	4.21660	0.1769849	0.30190464	2.2006764	20	10 14.6	19.9
296103 2009 BC_{43}	17.1	X	122.93283	280.66588	109.26468	2.17895	0.1612449	0.26870510	2.3784030	20	2 11.2	20.0
296104 2009 BT_{43}	16.9	X	64.44173	252.14058	306.93990	4.39322	0.0726250	0.20104032	2.8858955	20	6 29.2	20.8
296105 2009 BE_{44}	15.7	X	237.57300	331.77400	321.94626	14.59080	0.1286351	0.17798197	3.1300555	20	2 13.3	20.5
296106 2009 BG_{44}	16.2	X	356.11984	172.14913	144.33657	5.75775	0.1093906	0.21380966	2.7698176	20	8 29.3	19.1
296107 2009 BR_{44}	15.4	X	251.42534	296.17091	320.63975	13.94915	0.0321289	0.17329446	3.1862481	20	1 25.9	20.0
296108 2009 BQ_{47}	16.4	X	48.16663	102.24241	129.17301	4.96950	0.0480841	0.20866469	2.8151621	20	7 16.2	20.1
296109 2009 BK_{49}	16.5	X	54.40772	69.84832	120.79003	2.93875	0.1489779	0.19778328	2.9174919	20	6 14.7	20.1
296110 2009 BR_{50}	16.1	X	197.63800	260.02987	100.02035	3.55967	0.0868164	0.19142262	2.9817682	20	3 26.3	20.6
296111 2009 BU_{50}	16.3	X	296.94121	2.36232	353.18469	2.94819	0.0987175	0.21414076	2.7669618	20	7 15.2	19.7
296112 2009 BW_{50}	17.1	X	203.25023	247.14724	106.28450	4.13115	0.1966531	0.28035816	2.3120324	20	3 16.9	20.8
296113 2009 BT_{53}	16.3	X	296.85787	172.04301	57.08769	2.01860	0.1084446	0.17777535	3.1324803	20	2 2.8	20.6
296114 2009 BG_{55}	16.4	X	327.45485	330.79714	329.44036	5.97576	0.0501639	0.20593049	2.8400258	20	6 20.2	20.0
296115 2009 BH_{56}	16.5	X	285.34979	179.76552	163.84045	2.23785	0.0837308	0.20488806	2.8496506	20	6 13.3	20.2
296116 2009 BS_{60}	17.3	X	354.66102	295.29442	228.04460	1.35825	0.1530643	0.26397322	2.4067416	20	1 6.8	19.7
296117 2009 BO_{62}	14.9	X	18.95070	181.48202	330.49478	27.10575	0.1121157	0.17812355	3.1283967	20	2 22.2	18.5
296118 2009 BJ_{63}	16.7	X	174.52755	278.03750	181.03202	3.76583	0.0562393	0.20951080	2.8075776	20	7 1.5	20.8
296119 2009 BU_{64}	15.6	X	105.52005	182.63399	329.19964	14.41291	0.0744826	0.20414322	2.8565779	20	6 21.6	19.9
296120 2009 BK_{65}	17.2	X	220.98827	59.21910	170.37931	1.48019	0.1352742	0.24461786	2.5320792	20	—	—
296121 2009 BL_{65}	16.8	X	108.14404	328.33052	160.40188	2.82087	0.0201282	0.19639461	2.9312285	20	5 17.9	20.9
296122 2009 BA_{68}	16.4	X	254.30990	295.62729	132.87772	5.22455	0.1221126	0.21928787	2.7234933	20	8 19.8	19.9
296123 2009 BC_{68}	16.4	X	111.55411	260.13636	182.87596	1.31400	0.0608609	0.18661144	3.0328007	20	3 30.4	20.8
296124 2009 BL_{69}	16.2	X	225.94283	174.77849	309.03444	14.39715	0.0391342	0.22901673	2.6458055	20	9 30.0	20.1
296125 2009 BQ_{70}	16.4	X	153.84106	96.69436	58.62372	3.00872	0.0104457	0.21860210	2.7291862	20	8 21.3	20.0
296126 2009 BE_{71}	16.9	X	150.18865	318.54490	55.85038	8.01730	0.1673553	0.27405506	2.3473481	20	2 25.1	20.4
296127 2009 BN_{71}	17.1	X	117.96142	155.77624	219.89770	4.91584	0.1074074	0.26557659	2.3970450	20	1 8.2	20.1
296128 2009 BQ_{72}	16.0	X	48.82201	194.20580	263.68340	4.00123	0.1044889	0.17882068	3.1202607	20	1 31.1	20.0
296129 2009 BG_{73}	16.1	X	76.42408	40.11216	350.99665	8.24470	0.0534526	0.16998010	3.2275328	20	—	—
296130 2009 BT_{73}	16.8	X	99.05768	105.27264	61.17913	11.73857	0.0576698	0.20466292	2.8517401	20	6 29.1	20.9
296131 2009 BT_{75}	16.0	X	66.80712	302.11712	144.97583	13.74530	0.2483952	0.18145511	3.0899865	20	3 6.8	19.7
296132 2009 BS_{76}	17.5	X	62.71349	271.21103	156.88452	3.37260	0.2157154	0.26538925	2.3981730	20	1 6.2	19.2
296133 2009 BG_{77}	17.7	X	83.02491	295.51532	94.53370	2.99578	0.1938214	0.26387416	2.4073439	20	—	—
296134 2009 BN_{81}	15.4	X	148.16330	316.92661	75.33258	17.14836	0.0879523	0.18434583	3.0575988	20	3 22.6	20.4
296135 2009 BS_{84}	16.2	X	48.88224	335.10787	133.45122	6.06746	0.1085334	0.18139730	3.0906430	20	2 15.1	20.0
296136 2009 BB_{86}	17.2	X	311.72423	131.13165	315.58737	3.19435	0.1506905	0.24096181	2.5576272	20	12 19.0	19.5
296137 2009 BU_{86}	15.9	X	106.40305	25.89605	329.43749	3.23682	0.1069423	0.16775555	3.2560029	20	—	—
296138 2009 BD_{87}	16.7	X	13.53587	165.07198	122.64669	5.96245	0.0657167	0.21307445	2.7761854	20	8 14.5	20.1
296139 2009 BB_{91}	16.6	X	155.22925	283.29146	325.57525	2.59377	0.1102347	0.23597935	2.5935027	20	12 19.2	20.5
296140 2009 BK_{91}	17.4	X	311.11427	45.76238	144.71776	1.65606	0.1210519	0.25971795	2.4329587	20	—	—
296141 2009 BR_{91}	16.2	X	295.85044	208.76214	131.97513	4.54042	0.1053910	0.20875386	2.8143604	20	6 21.2	19.7
296142 2009 BL_{92}	17.2	X	319.51319	344.07609	310.59471	5.72329	0.1959114	0.28631066	2.2798750	20	5 6.4	19.4
296143 2009 BG_{96}	16.5	X	46.42904	333.74866	140.55763	3.31486	0.1758080	0.18282136	3.0745726	20	2 24.8	19.9
296144 2009 BA_{97}	17.5	X	79.28425	20.29957	33.08268	3.63750	0.1333838	0.26607086	2.3940755	20	1 6.9	19.9
296145 2009 BS_{97}	17.5	X	45.75709	265.54994	147.33949	2.65675	0.1938158	0.25458579	2.4655469	20	—	—
296146 2009 BE_{101}	16.1	X	205.18882	24.69447	80.04054	13.38467	0.1118035	0.21880025	2.7275382	20	8 14.7	20.4
296147 2009 BA_{102}	16.4	X	97.17205	44.83609	88.81108	2.78157	0.0771731	0.19311789	2.9642924	20	5 18.2	20.6
296148 2009 BD_{104}	17.7	X	63.09350	106.60518	296.70879	1.50284	0.1775789	0.25699612	2.4501067	20	—	—
296149 2009 BN_{104}	17.6	X	283.27357	127.53286	148.92936	2.88548	0.1972780	0.26973647	2.3723364	20	2 22.2	20.7
296150 2009 BE_{107}	16.4	X	68.55753	122.79135	336.70429	6.93362	0.0646021	0.26785532	2.3834307	20	2 14.8	19.0
296151 2009 BQ_{108}	15.8	X	132.99378	296.27193	73.05604	3.21204	0.0306281	0.17031792	3.2232635	20	1 25.3	20.3
296152 2009 BW_{109}	15.6	X	281.06255	117.23692	165.57086	13.86241	0.1638439	0.18119100	3.0929884	20	3 11.9	20.2
296153 2009 BX_{109}	16.4	X	233.52933	255.70163	170.86750	3.88505	0.0393791	0.20887609	2.8132623	20	7 31.2	20.2
296154 2009 BW_{112}	17.0	X	307.82861	129.04063	152.57209	6.34599	0.1112800	0.27169690	2.3609109	20	4 16.9	19.7
296155 2009 BF_{113}	16.2	X	181.65893	207.67407	176.87653	10.55012	0.0089145	0.18649470	3.0340662	20	4 7.1	20.5
296156 2009 BG_{114}	17.3	X	70.08320	284.88703	95.52756	2.40453	0.1838608	0.25833459	2.4416365	20	—	—
296157 2009 BC_{115}	16.5	X	50.67751	327.30259	157.96633	1.42629	0.1290396	0.26885406	2.3775244	20	2 27.7	18.7
296158 2009 BF_{115}	16.8	X	7.86929	329.18883	163.31024	2.61917	0.1436189	0.26106826	2.4245622	20	—	—
296159 2009 BX_{122}	15.6	X	286.91191	321.39172	325.55208	7.74970	0.0885175	0.18859084	3.0115424	20	3 29.8	20.0
296160 2009 BO_{123}	15.8	X	342.80273	305.05561	299.86396	4.37913	0.1033416	0.19104476	2.9856986	20	4 23.4	19.5

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	m		°	°	°	°		°				
296161 2009 BX_{123}	16.9	X	328.92289	21.01872	313.14250	5.07882	0.0474003	0.21185908	2.7867927	20	8 8.5	20.5
296162 2009 BX_{126}	16.8	X	74.57980	325.04177	208.72811	1.24577	0.0347048	0.19972254	2.8985758	20	6 3.4	20.6
296163 2009 BJ_{127}	16.1	X	169.96704	254.20044	144.37639	9.74412	0.0297408	0.19115062	2.9845961	20	4 13.1	20.5
296164 2009 BV_{127}	17.6	X	56.53437	88.47947	327.50041	1.74961	0.1624890	0.25843607	2.4409973	20	—	—
296165 2009 BW_{127}	15.7	X	271.60749	131.32651	144.24542	9.75203	0.0993226	0.18241512	3.0791356	20	3 1.3	20.3
296166 2009 BT_{129}	16.7	X	135.36330	39.96043	113.20759	6.13175	0.0053038	0.20808694	2.8203705	20	7 22.6	20.4
296167 2009 BO_{131}	16.0	X	127.44869	247.46874	359.43711	11.87629	0.0477665	0.22580584	2.6708281	20	11 11.9	20.0
296168 2009 BS_{131}	15.4	X	19.98972	339.60641	105.75424	11.00362	0.0521457	0.16821543	3.2500659	20	—	—
296169 2009 BS_{133}	15.9	X	21.80174	197.06501	307.46937	5.66790	0.0703031	0.18182211	3.0858271	20	2 16.5	19.9
296170 2009 BX_{133}	17.9	X	66.90697	172.60183	236.75262	0.61202	0.1850462	0.26225887	2.4172186	20	—	—
296171 2009 BP_{134}	16.6	X	309.67220	292.55596	134.55001	4.63128	0.1645522	0.23714156	2.5850222	20	11 16.1	19.1
296172 2009 BE_{136}	16.6	X	161.41557	307.13334	286.14074	2.66805	0.1112714	0.23449634	2.6044259	20	12 5.9	20.7
296173 2009 BH_{136}	16.9	X	10.80750	200.60578	142.77210	5.34320	0.1666249	0.23033759	2.6356810	20	11 12.4	19.9
296174 2009 BK_{139}	17.0	X	14.63201	70.77946	167.12971	0.86195	0.0428063	0.20120090	2.8843598	20	6 5.7	20.7
296175 2009 BD_{143}	16.5	X	24.99357	248.30962	106.77403	5.15459	0.0669649	0.23296976	2.6157908	20	12 3.4	19.9
296176 2009 BT_{143}	17.3	X	279.76647	179.18569	136.69678	10.10032	0.2110190	0.28433327	2.2904330	20	4 11.5	20.5
296177 2009 BM_{149}	16.1	X	160.53284	297.41348	165.20166	16.11960	0.0695706	0.20078842	2.8883087	20	6 21.1	20.7
296178 2009 BB_{150}	15.9	X	237.39277	337.08927	332.45478	5.19070	0.1343598	0.18024719	3.1037761	20	3 1.7	20.9
296179 2009 BM_{151}	17.4	X	10.21740	20.07192	157.53232	3.28963	0.1317373	0.26589433	2.3951350	20	2 28.1	19.6
296180 2009 BO_{151}	15.7	X	272.24388	91.19581	173.63566	18.68691	0.1096291	0.17190469	3.2033980	20	2 15.1	20.6
296181 2009 BH_{153}	16.6	X	298.99193	177.22919	53.63221	0.71051	0.1168125	0.17980275	3.1088886	20	2 5.5	20.9
296182 2009 BW_{153}	17.1	X	218.20275	5.44890	74.69961	1.96217	0.0503590	0.21467497	2.7623695	20	7 30.4	20.8
296183 2009 BU_{156}	17.2	X	30.91865	166.59931	331.46370	2.38645	0.1074721	0.26624347	2.3930406	20	2 9.3	19.6
296184 2009 BZ_{157}	15.6	X	220.17596	151.52144	153.46422	9.36294	0.0746911	0.17455795	3.1708544	20	2 12.5	20.3
296185 2009 BH_{159}	16.5	X	108.72813	300.93595	336.99154	12.37489	0.1887571	0.22488431	2.6781195	20	12 9.3	21.1
296186 2009 BK_{159}	15.5	X	213.71229	174.20530	160.14865	10.65844	0.0947115	0.18096067	3.0956124	20	3 11.3	20.3
296187 2009 BD_{160}	15.7	X	284.55917	281.05288	312.41080	8.11228	0.0313604	0.17455555	3.1708834	20	2 3.5	20.1
296188 2009 BH_{161}	16.7	X	1.83404	80.41467	67.58605	3.37060	0.1041530	0.26333451	2.4106317	20	1 4.3	19.1
296189 2009 BO_{170}	17.2	X	11.38925	82.56525	317.99348	2.60969	0.1759508	0.24517002	2.5282760	20	—	—
296190 2009 BY_{170}	16.4	X	52.50017	116.96475	130.56821	5.30147	0.0176433	0.20971562	2.8057493	20	8 9.2	19.9
296191 2009 BB_{171}	16.1	X	169.98740	143.39914	147.65568	2.06302	0.1291080	0.16867212	3.2441967	20	—	—
296192 2009 BU_{172}	15.6	X	75.95095	6.02648	184.92269	15.23291	0.0767858	0.20205768	2.8762004	20	7 3.1	19.9
296193 2009 BQ_{176}	17.4	X	199.22459	92.07039	152.17405	3.43686	0.0805471	0.24161096	2.5530440	20	—	—
296194 2009 BA_{183}	16.3	X	313.48815	285.52044	0.11819	1.66445	0.0702888	0.19763358	2.9189650	20	5 7.9	20.1
296195 2009 BH_{183}	16.1	X	258.81746	358.98723	120.33106	15.58742	0.2039547	0.22976112	2.6400877	20	10 28.4	19.8
296196 2009 BN_{183}	15.9	X	221.31486	314.93193	337.46333	25.11603	0.1376101	0.17001564	3.2270829	20	2 4.5	21.2
296197 2009 BN_{186}	16.2	X	21.78566	204.27216	317.14960	13.11926	0.0863941	0.18184835	3.0855302	20	3 5.5	20.2
296198 2009 BA_{187}	15.7	X	268.96196	328.77312	339.54139	18.23145	0.1088062	0.18659066	3.0330259	20	3 28.5	20.4
296199 2009 BH_{187}	15.6	X	121.58231	30.28413	345.50055	10.51234	0.0647396	0.17768723	3.1335159	20	1 25.1	20.1
296200 2009 BM_{187}	16.0	X	197.24670	151.17140	170.28021	9.56392	0.0562054	0.17496077	3.1659855	20	2 7.5	20.8
296201 2009 BN_{188}	15.8	X	46.86235	348.09653	173.03974	13.33496	0.0966821	0.18545269	3.0454207	20	4 20.2	19.8
296202 2009 BO_{188}	15.9	X	207.52742	191.32770	154.41922	16.63398	0.0582726	0.18292022	3.0734648	20	3 21.2	20.6
296203 2009 BY_{188}	15.3	X	332.07067	9.51019	163.22683	27.60872	0.1003565	0.17428568	3.1741558	20	1 11.5	20.0
296204 2009 BT_{189}	16.3	X	231.88081	266.27787	284.29879	10.80837	0.1272958	0.24069497	2.5595171	20	12 31.1	19.5
296205 2009 CC_{1}	17.2	X	70.35428	272.45163	146.15659	7.38032	0.1567229	0.26403483	2.4063672	20	1 1.1	19.6
296206 2009 CE_{1}	15.7	X	252.96830	124.30846	301.55120	4.41638	0.0233295	0.21884176	2.7271933	20	8 27.6	19.5
296207 2009 CO_{2}	17.5	X	87.10936	17.52298	15.60466	5.44463	0.1671518	0.26238465	2.4164460	20	—	—
296208 2009 CG_{5}	16.4	X	356.36616	63.31623	138.75935	5.31011	0.0455963	0.19085609	2.9876659	20	3 26.4	20.3
296209 2009 CO_{7}	16.4	X	267.25217	175.98202	240.56830	2.30545	0.2387118	0.23168119	2.6254809	20	8 2.6	19.9
296210 2009 CQ_{12}	17.9	X	98.52769	278.33195	193.81528	3.46014	0.1669726	0.27934763	2.3176049	20	5 2.0	20.6
296211 2009 CB_{15}	16.1	X	46.69411	334.60354	322.17020	16.05466	0.0639581	0.22689735	2.6622557	20	10 5.9	20.0
296212 2009 CK_{22}	16.6	X	205.35586	229.57987	158.06783	2.20527	0.0692707	0.19883067	2.9072372	20	5 6.5	20.9
296213 2009 CL_{22}	16.3	X	323.01919	190.91828	141.25123	12.30467	0.1273295	0.21277003	2.7788328	20	7 20.5	19.4
296214 2009 CM_{22}	17.6	X	34.77911	231.89077	202.67784	1.14964	0.1586161	0.25796614	2.4439609	20	—	—
296215 2009 CN_{23}	16.2	X	2.32617	158.43949	152.99062	6.96359	0.0414640	0.21640189	2.7476538	20	8 28.1	19.8
296216 2009 CE_{26}	16.0	X	248.37095	293.23418	348.40029	10.07450	0.0881534	0.17747281	3.1360394	20	2 15.4	20.7
296217 2009 CQ_{26}	16.4	X	273.39845	278.59864	106.22653	5.39472	0.0821863	0.21197389	2.7857863	20	7 23.0	20.0
296218 2009 CM_{27}	15.9	X	284.83743	293.72967	350.45332	10.41921	0.0570678	0.18744738	3.0237773	20	3 29.4	20.2
296219 2009 CY_{27}	16.2	X	287.14539	99.53252	331.59589	13.43198	0.1268451	0.22872668	2.6480418	20	10 4.0	19.6
296220 2009 CC_{28}	16.9	X	229.63769	43.61505	97.10428	1.65690	0.0676367	0.22854348	2.6494567	20	10 31.6	20.4
296221 2009 CW_{28}	17.3	X	33.49030	79.05298	343.03311	5.59001	0.1158339	0.25175505	2.4839943	20	—	—
296222 2009 CN_{29}	16.6	X	310.00982	213.39298	100.86609	3.26338	0.0632936	0.20125361	2.8838562	20	6 11.9	20.2
296223 2009 CR_{33}	17.6	X	338.83308	234.73563	180.62854	0.41284	0.0832686	0.23833809	2.5763632	20	12 18.8	20.4
296224 2009 CB_{35}	16.4	X	200.43362	20.60686	91.96976	6.20621	0.0811218	0.21811341	2.7332612	20	8 19.8	20.4
296225 2009 CQ_{36}	16.9	X	100.07008	299.80243	292.76060	5.07507	0.2148206	0.21407840	2.7674990	20	10 7.8	21.6
296226 2009 CH_{38}	17.8	X	5.68123	291.27617	303.25538	1.87740	0.1723586	0.28232917	2.3012592	20	5 17.6	19.4
296227 2009 CK_{38}	17.2	X	14.39804	275.25284	99.25935	3.00933	0.0789937	0.23801650	2.5786833	20	12 16.6	20.5
296228 2009 CB_{39}	17.0	X	328.77250	234.76305	320.89501	3.36309	0.1094056	0.26175619	2.4203123	20	1 18.7	19.9
296229 2009 CC_{44}	15.5	X	7.96071	203.86099	339.83035	8.03550	0.0792500	0.17966799	3.1104430	20	3 16.3	19.4
296230 2009 CG_{44}	15.7	X	316.03699	42.40360	172.66968	9.74782	0.1399294	0.17188417	3.2036529	20	2 3.8	20.1
296231 2009 CR_{45}	16.6	X	197.13331	221.55156	96.82542	7.35058	0.1035507	0.26915919	2.3757272	20	1 26.1	20.0
296232 2009 CS_{47}	17.4	X	8.76661	16.69033	31.51541	5.35827	0.2566965	0.24411553	2.5355516	20	—	—
296233 2009 CQ_{50}	15.5	X	290.92706	174.97651	114.21240	10.87601	0.0155134	0.19209887	2.9747662	20	4 25.6	19.8
296234 2009 CD_{51}	15.8	X	74.88960	355.01431	136.06955	11.05088	0.0605535	0.19024410	2.9940697	20	4 17.7	20.0
296235 2009 CK_{51}	16.4	X	282.04474	104.58434	328.87606	21.63844	0.0511983	0.22724851	2.6595124	20	10 2.9	20.3
296236 2009 CF_{54}	16.3	X	199.94515	313.48809	155.58816	8.27399	0.1764924	0.21346624	2.7727875	20	8 5.2	20.9
296237 2009 CA_{56}	16.4	X	48.42247	0.72027	132.04471	7.46719	0.1022981	0.18272100	3.0756984	20	3 17.4	20.3
296238 2009 CW_{57}	15.6	X	85.80352	29.49895	93.46397	9.81724	0.0385223	0.18609446	3.0384150	20	4 18.9	19.9
296239 2009 CY_{59}	17.6	X	306.92856	339.97171	255.92323	0.82720	0.1588569	0.26015709	2.4302201	20	2 3.5	20.6
296240 2009 CE_{60}	16.6	X	330.88131	62.50372	348.97614	12.38039	0.2314201	0.23849793	2.5752119	20	12 9.5	19.0

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	m		°	°	°	°		°				
296241 2009 CN_{60}	16.5	X	282.08495	136.69378	257.81531	4.17617	0.0778953	0.21400012	2.7681739	20	8 16.2	20.2
296242 2009 DW_{6}	17.2	X	81.50665	150.76396	320.11143	1.80270	0.0989058	0.27233050	2.3572476	20	3 24.6	19.7
296243 2009 DZ_{11}	16.7	X	320.30154	61.33426	148.98263	5.46757	0.2031555	0.26038628	2.4287938	20	1 11.3	19.9
296244 2009 DA_{12}	17.2	X	202.65525	325.04349	24.19581	21.13484	0.0753943	0.35736656	1.9666486	20	3 12.5	19.9
296245 2009 DQ_{12}	16.7	X	257.16420	358.18908	310.92286	4.53487	0.2059652	0.26744489	2.3858685	20	3 6.1	20.4
296246 2009 DN_{13}	16.7	X	13.20945	154.74273	187.96313	6.06835	0.0259923	0.21958721	2.7210176	20	10 24.2	20.2
296247 2009 DA_{15}	15.9	X	68.17235	302.25377	49.49698	7.24075	0.1644026	0.23616777	2.5921231	20	—	—
296248 2009 DL_{17}	16.9	X	222.26543	323.17145	168.65050	7.79355	0.1840218	0.22461045	2.6802959	20	9 26.4	21.0
296249 2009 DR_{18}	16.5	X	227.66597	254.35422	163.57500	5.63409	0.0684592	0.20653985	2.8344370	20	7 9.0	20.7
296250 2009 DC_{20}	15.7	X	321.80678	95.13990	327.54565	21.72467	0.0470244	0.23219970	2.6215710	20	11 24.0	19.6
296251 2009 DH_{21}	16.3	X	234.55450	285.50164	344.75092	4.37593	0.1552063	0.17328322	3.1863859	20	1 14.9	21.4
296252 2009 DK_{23}	16.1	X	88.87376	287.85614	149.79933	6.29706	0.1864331	0.18054920	3.1003139	20	3 15.6	20.3
296253 2009 DM_{23}	18.1	X	100.48022	74.53704	146.68224	3.13913	0.0490973	0.29994461	2.2102531	20	9 23.8	20.7
296254 2009 DP_{23}	16.9	X	339.11729	245.35294	159.15464	13.06963	0.1586802	0.23255171	2.6189248	20	12 10.9	19.9
296255 2009 DU_{23}	16.7	X	85.29813	24.83685	96.23009	4.17873	0.0556490	0.18562409	3.0435457	20	4 15.6	20.9
296256 2009 DB_{28}	15.8	X	327.64848	85.70861	151.10291	10.00091	0.0400409	0.18572691	3.0424223	20	4 2.1	19.9
296257 2009 DQ_{31}	16.2	X	126.55175	283.02042	287.16998	3.00358	0.0349236	0.21433211	2.7653147	20	9 25.3	20.2
296258 2009 DW_{32}	16.0	X	13.76666	37.11918	142.25564	3.84226	0.0546080	0.17837295	3.1254799	20	3 22.3	20.0
296259 2009 DP_{33}	15.7	X	304.35641	86.15519	151.50915	5.51344	0.0419659	0.17428513	3.1741625	20	3 2.6	19.9
296260 2009 DM_{34}	15.9	X	93.49093	69.31357	29.47154	5.48069	0.1215139	0.18070708	3.0985079	20	4 6.6	20.2
296261 2009 DX_{34}	16.1	X	143.02412	240.28906	162.58063	7.20637	0.0164173	0.17551922	3.1592665	20	3 14.7	20.5
296262 2009 DA_{35}	15.6	X	13.34870	290.25679	15.90643	14.94706	0.1551204	0.20376539	2.8601080	20	9 20.6	18.9
296263 2009 DO_{35}	16.8	X	92.16593	169.44598	53.22624	1.18674	0.1477817	0.20565442	2.8425668	20	9 13.9	21.0
296264 2009 DH_{36}	15.9	X	104.90287	0.41415	335.95452	6.75369	0.2568537	0.24389153	2.5371038	20	—	—
296265 2009 DY_{38}	16.1	X	178.96510	254.77821	278.76253	11.43166	0.2560328	0.22182553	2.7026825	20	9 27.2	21.2
296266 2009 DO_{39}	17.1	X	106.66987	199.69863	177.78859	6.84154	0.1621596	0.26286909	2.4134763	20	1 4.3	20.0
296267 2009 DY_{40}	16.4	X	254.86846	286.20472	158.27897	9.91554	0.0930547	0.22273829	2.6952939	20	9 16.4	20.0
296268 2009 DA_{41}	16.6	X	12.34335	329.16810	322.19615	3.47490	0.0454368	0.21173975	2.7878396	20	8 15.1	20.1
296269 2009 DZ_{41}	15.5	X	81.08420	166.97142	322.37910	10.83094	0.0417983	0.18864905	3.0109229	20	4 10.9	19.9
296270 2009 DO_{43}	17.4	X	314.84573	113.41830	165.09569	2.40697	0.0793035	0.27564597	2.3383075	20	4 26.8	19.9
296271 2009 DH_{45}	17.0	X	41.71804	307.01855	267.04247	5.82927	0.0644088	0.28486586	2.2875773	20	6 17.5	19.4
296272 2009 DU_{45}	16.8	X	201.57930	252.40625	325.48981	11.04345	0.1853228	0.23549671	2.5970451	20	12 21.7	20.9
296273 2009 DX_{45}	15.6	X	342.75542	248.82786	324.41853	9.70352	0.0605803	0.18371185	3.0646292	20	3 15.9	19.7
296274 2009 DV_{47}	15.8	X	308.06446	149.10366	43.61132	10.10063	0.0333624	0.17462025	3.1701001	20	1 15.6	20.4
296275 2009 DD_{48}	16.4	X	242.55015	307.27865	282.24655	7.36499	0.1851510	0.24521732	2.5279508	20	—	—
296276 2009 DN_{51}	17.1	X	275.25521	24.76212	135.40791	5.30876	0.1320217	0.24029376	2.5623653	20	—	—
296277 2009 DB_{55}	16.8	X	265.04788	57.62751	351.02112	13.91140	0.1357153	0.21505098	2.7591486	20	8 9.1	20.6
296278 2009 DD_{57}	17.5	X	97.88923	174.08572	5.56706	3.65302	0.0067551	0.29019479	2.2594859	20	7 13.8	20.1
296279 2009 DG_{58}	16.3	X	320.97223	269.82431	54.50994	2.78648	0.0675568	0.20296843	2.8675900	20	7 12.1	19.8
296280 2009 DH_{61}	16.6	X	115.42740	198.27998	101.43686	5.55929	0.2044751	0.22927353	2.6438295	20	—	—
296281 2009 DL_{61}	16.6	X	134.54891	195.14026	63.41704	4.78327	0.0440626	0.22796674	2.6539234	20	12 8.7	20.2
296282 2009 DP_{65}	15.7	X	235.05047	139.66729	156.81414	15.81395	0.0700813	0.17733074	3.1377141	20	2 17.7	20.5
296283 2009 DQ_{69}	17.5	X	23.51284	264.16452	338.42306	5.37421	0.1729597	0.28372722	2.2936935	20	7 16.7	19.4
296284 2009 DF_{71}	15.4	X	290.84449	265.72908	341.81572	26.33951	0.1148815	0.17554815	3.1589193	20	2 20.9	20.0
296285 2009 DD_{73}	15.8	X	293.38206	324.46408	328.90216	11.33856	0.0212331	0.19222911	2.9734224	20	4 22.7	20.1
296286 2009 DF_{73}	16.1	X	221.04122	199.19242	164.91749	11.80907	0.1069581	0.19010686	2.9955106	20	4 24.5	20.8
296287 2009 DV_{74}	17.6	X	39.49515	289.45914	355.11747	5.24362	0.2330854	0.29165406	2.2519429	20	10 25.6	20.4
296288 2009 DE_{75}	17.1	X	289.76382	137.68063	26.05209	2.89219	0.0615760	0.24347350	2.5400070	20	—	—
296289 2009 DY_{77}	15.7	X	64.81888	177.33756	347.38543	8.69918	0.0255862	0.18994040	2.9972605	20	5 4.8	19.9
296290 2009 DE_{82}	18.3	X	110.68452	238.59423	28.00815	5.96023	0.0291486	0.31079259	2.1585177	20	12 8.7	20.9
296291 2009 DU_{83}	16.5	X	33.01785	85.31726	113.46982	2.26683	0.1050685	0.18603818	3.0390277	20	5 17.3	20.2
296292 2009 DA_{86}	17.5	X	11.51340	192.91423	229.01815	2.04480	0.1937959	0.24501819	2.5293203	20	—	—
296293 2009 DD_{89}	15.9	X	261.62932	193.13522	127.84237	4.59898	0.1012178	0.18395094	3.0619731	20	4 14.9	20.4
296294 2009 DL_{89}	16.4	X	243.23928	75.09675	91.77352	14.06770	0.1291719	0.22841377	2.6504597	20	12 12.5	19.8
296295 2009 DN_{90}	18.7	X	142.11405	36.08211	186.31642	3.98735	0.0938442	0.31081175	2.1584290	20	11 17.9	21.5
296296 2009 DW_{104}	17.1	X	217.60811	26.54844	157.50538	3.56969	0.0667117	0.22931781	2.6434891	20	12 10.9	20.7
296297 2009 DT_{106}	16.3	X	348.34552	306.31176	326.61292	16.63166	0.1381235	0.20197950	2.8769426	20	6 10.8	19.9
296298 2009 DQ_{107}	16.1	X	46.80678	205.13893	120.91969	12.82845	0.0310896	0.22902428	2.6457473	20	11 21.7	19.9
296299 2009 DF_{113}	15.5	X	262.48731	103.23195	169.91660	17.78529	0.1519546	0.17157646	3.2074821	20	2 10.4	20.7
296300 2009 DA_{120}	16.0	X	50.67492	127.96845	346.52913	4.85387	0.1222449	0.17661779	3.1461523	20	2 27.3	19.9
296301 2009 DU_{121}	17.2	X	293.85571	80.19359	1.54929	11.78177	0.2492949	0.23157828	2.6262587	20	10 17.9	19.8
296302 2009 DN_{123}	16.1	X	132.27608	127.06972	131.74154	13.98742	0.0553715	0.22661888	2.6644362	20	12 8.9	20.2
296303 2009 DH_{125}	17.6	X	300.92776	93.67741	161.71120	1.34520	0.1519481	0.26339706	2.4102501	20	2 22.3	20.5
296304 2009 DH_{126}	16.1	X	61.94332	278.62908	4.84029	11.39317	0.1923005	0.20925201	2.8098919	20	10 28.7	20.2
296305 2009 DP_{126}	16.4	X	262.63932	62.49027	322.81798	1.12715	0.0779412	0.20354492	2.8621729	20	7 9.1	20.4
296306 2009 DS_{127}	15.8	X	254.98495	287.10780	14.52762	9.79560	0.0815096	0.17661630	3.1461701	20	3 17.7	20.4
296307 2009 DU_{127}	16.6	X	26.18424	106.80859	178.46352	11.61541	0.0992843	0.20403791	2.8575607	20	8 31.1	20.2
296308 2009 DV_{128}	16.4	X	224.73437	88.52395	59.46276	11.80473	0.1480260	0.22610424	2.6684777	20	10 26.3	20.3
296309 2009 DX_{128}	18.2	X	58.62827	253.43300	13.17049	1.47266	0.2034239	0.29279159	2.2461063	20	10 21.8	21.1
296310 2009 DC_{131}	16.9	X	303.82633	314.88128	314.09614	4.72027	0.1876425	0.26887812	2.3773826	20	3 7.8	19.9
296311 2009 DS_{131}	16.0	X	85.90144	91.63992	358.13065	9.02642	0.0683754	0.17491561	3.1665304	20	3 10.1	20.4
296312 2009 DW_{133}	16.3	X	49.18580	178.22834	133.30240	2.66956	0.0580296	0.22048654	2.7136135	20	11 5.4	20.0
296313 2009 DJ_{134}	17.7	X	111.43300	180.42430	19.74257	5.19126	0.0932921	0.29433497	2.2382477	20	9 12.1	20.6
296314 2009 DG_{137}	16.9	X	128.77329	123.51790	164.73678	5.57492	0.2162455	0.22768821	2.6560873	20	—	—
296315 2009 DK_{137}	17.3	X	325.27161	74.31148	175.78204	6.53060	0.0717576	0.26946675	2.3739191	20	4 3.5	19.8
296316 2009 DB_{140}	16.9	X	331.76948	112.88636	160.69335	10.22685	0.2191771	0.27685147	2.3315147	20	4 30.8	19.0
296317 2009 DL_{140}	15.8	X	239.00035	10.17371	319.08152	6.85454	0.1796713	0.18497749	3.0506342	20	3 20.6	20.9
296318 2009 EN_{2}	18.5	X	62.60020	138.10219	144.82092	47.36354	0.5247702	0.46127183	1.6589429	20	—	—
296319 2009 EE_{3}	16.4	X	309.95054	214.38673	116.81113	6.66027	0.0540234	0.20359226	2.8617293	20	7 5.8	20.1
296320 2009 EX_{7}	16.2	X	305.71759	301.82870	140.74555	11.88173	0.1528125	0.23425016	2.6062503	20	12 1.5	19.1

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		°	°	°	°		°				
296321 2009 EM_{11}	16.2	X	331.96279	254.69331	85.82221	9.29887	0.2143245	0.21409367	2.7673675	20	8 18.4	18.8
296322 2009 ER_{14}	16.1	X	231.13134	346.62342	34.53452	2.39442	0.1051678	0.19923228	2.9033289	20	5 22.9	20.3
296323 2009 ES_{14}	16.6	X	128.14198	101.77723	120.84208	3.10385	0.0788542	0.21952604	2.7215230	20	10 19.1	20.6
296324 2009 ES_{15}	16.9	X	244.15628	246.28797	181.09405	7.74436	0.1431977	0.21454700	2.7634679	20	7 31.1	20.9
296325 2009 EG_{16}	17.3	X	241.54999	339.20318	289.28930	2.09134	0.1638698	0.25454403	2.4658166	20	1 7.9	21.2
296326 2009 EX_{16}	16.3	X	275.04609	249.41723	179.51818	14.78303	0.1408152	0.22246056	2.6975367	20	9 14.5	19.7
296327 2009 EN_{17}	16.4	X	141.57726	211.73160	353.31379	15.88742	0.1176742	0.21712706	2.7415326	20	10 6.3	20.9
296328 2009 EU_{19}	17.2	X	211.03115	42.28188	176.38420	3.44332	0.1200775	0.23796145	2.5790810	20	—	—
296329 2009 EW_{19}	16.7	X	163.63166	123.05999	169.20839	12.04620	0.0142294	0.24665352	2.5181282	20	—	—
296330 2009 EF_{20}	15.3	X	51.63489	350.46057	135.03191	11.14865	0.0665720	0.17866293	3.1220971	20	3 9.8	19.5
296331 2009 EO_{21}	18.0	X	110.58949	45.77017	181.96755	5.19962	0.0920734	0.30020318	2.2089838	20	10 18.9	20.8
296332 2009 EC_{22}	17.5	X	95.38062	207.38045	96.26733	3.57091	0.1357672	0.31093566	2.1578555	20	—	—
296333 2009 EZ_{22}	16.9	X	256.45326	23.72616	340.71206	2.51718	0.1055128	0.19642590	2.9309172	20	5 30.3	21.2
296334 2009 EQ_{24}	16.5	X	48.26093	188.41005	136.48952	6.00507	0.0650042	0.21839123	2.7309427	20	11 22.4	20.2
296335 2009 EM_{25}	16.2	X	289.03288	161.36615	199.99705	1.50927	0.0805201	0.20367795	2.8609266	20	7 12.5	19.8
296336 2009 EA_{26}	15.5	X	281.69257	52.51751	192.16018	15.73859	0.0453626	0.17142423	3.2093807	20	2 8.7	20.4
296337 2009 EQ_{28}	15.7	X	357.96545	26.13378	134.94611	19.59782	0.0915762	0.17191252	3.2033007	20	2 4.2	19.7
296338 2009 EL_{29}	17.1	X	280.58212	175.23054	112.72242	3.47904	0.2098591	0.25903753	2.4372173	20	3 5.9	20.5
296339 2009 EC_{31}	17.9	X	77.72081	303.79102	346.32115	3.12020	0.1986969	0.30402028	2.1904551	20	12 11.7	21.2
296340 2009 FO	17.4	X	141.65343	303.50564	142.44256	23.47412	0.1151477	0.36791411	1.9288795	20	5 17.3	20.4
296341 2009 FE_{1}	15.7	X	239.63150	137.62624	174.86834	9.70717	0.0323192	0.17953372	3.1119936	20	3 16.4	20.1
296342 2009 FV_{3}	15.9	X	91.70307	355.10958	106.82028	6.18890	0.1143819	0.17959860	3.1112441	20	4 9.8	20.3
296343 2009 FX_{3}	15.5	X	278.98134	147.80150	166.93505	9.46030	0.1195804	0.18722499	3.0261713	20	4 25.5	19.8
296344 2009 FJ_{4}	17.2	X	29.59281	119.11291	96.50537	3.26128	0.1463707	0.27680588	2.3317707	20	6 8.9	19.3
296345 2009 FR_{4}	17.0	X	297.50971	237.30617	22.88410	6.06694	0.1489294	0.26258674	2.4152060	20	2 27.6	20.2
296346 2009 FO_{7}	16.5	X	141.02180	198.60134	63.72540	4.49198	0.1006138	0.22760837	2.6567085	20	12 19.9	20.5
296347 2009 FA_{9}	16.3	X	141.34576	251.86142	182.80350	9.48669	0.0555256	0.18964673	3.0003539	20	4 24.9	20.7
296348 2009 FE_{9}	17.9	X	85.59885	124.03818	157.39783	3.59210	0.1503611	0.30704797	2.1760318	20	12 6.4	21.1
296349 2009 FN_{9}	16.6	X	229.11188	114.79961	184.85928	2.42258	0.1348303	0.25882472	2.4385531	20	2 3.2	20.3
296350 2009 FJ_{11}	17.1	X	209.19593	117.30032	189.21089	6.33775	0.1361938	0.25797282	2.4439186	20	1 23.0	20.9
296351 2009 FZ_{18}	16.5	X	186.84178	34.73248	193.53618	4.06675	0.1028645	0.22932995	2.6433958	20	12 25.5	20.5
296352 2009 FA_{22}	15.3	X	61.97409	288.84547	186.51196	18.82170	0.1632382	0.17663613	3.1459346	20	3 20.9	19.3
296353 2009 FG_{22}	17.1	X	353.47224	104.48271	169.77924	5.89151	0.1183400	0.27795281	2.3253518	20	6 26.7	19.3
296354 2009 FH_{22}	15.9	X	206.95429	184.06633	30.16313	12.48296	0.1373619	0.22984821	2.6394207	20	12 26.4	20.0
296355 2009 FO_{22}	17.8	X	59.31881	16.01029	193.57402	2.33987	0.1282933	0.28235697	2.3011082	20	7 19.6	20.5
296356 2009 FE_{23}	16.3	X	334.36109	239.59316	45.51254	8.21816	0.3000976	0.18700413	3.0285535	20	5 12.3	18.9
296357 2009 FN_{23}	17.5	X	321.07282	60.04200	194.63292	1.61672	0.2164696	0.26578178	2.3958111	20	3 9.9	20.2
296358 2009 FD_{25}	16.5	X	212.75184	275.33762	43.09540	6.63693	0.1363115	0.25828234	2.4419658	20	2 14.3	20.3
296359 2009 FK_{25}	16.7	X	124.39732	293.20973	31.55931	6.57338	0.0122283	0.24230856	2.5481415	20	—	—
296360 2009 FM_{25}	17.6	X	52.06670	334.35121	222.34264	1.46220	0.1552328	0.27848376	2.3223953	20	6 23.1	19.8
296361 2009 FQ_{25}	15.6	X	44.59925	328.48154	188.59983	15.39435	0.1158749	0.17913361	3.1166258	20	4 12.4	19.4
296362 2009 FU_{25}	15.5	X	130.85578	333.58602	29.66915	12.28130	0.1285094	0.17336111	3.1854314	20	1 30.4	20.5
296363 2009 FH_{26}	16.1	X	214.92753	312.71180	118.69989	3.15155	0.0394456	0.20309861	2.8663645	20	7 14.6	20.1
296364 2009 FE_{27}	17.0	X	201.71309	137.82633	174.81495	3.47178	0.0766893	0.25841308	2.4411421	20	1 22.9	20.4
296365 2009 FZ_{29}	17.4	X	3.28938	194.94575	65.84053	6.88450	0.1082096	0.28353362	2.2947375	20	6 25.0	19.4
296366 2009 FD_{30}	15.9	X	172.19120	226.05869	148.65612	9.69310	0.0631152	0.17846633	3.1243896	20	3 18.2	20.6
296367 2009 FF_{31}	16.0	X	166.52318	279.50516	13.79260	31.95186	0.0872882	0.24087104	2.5582697	20	—	—
296368 2009 FM_{37}	17.4	X	242.62393	33.02187	38.05691	7.56500	0.0909065	0.29742125	2.2227369	20	8 24.8	20.1
296369 2009 FP_{37}	17.1	X	273.23942	229.28243	72.92115	4.43300	0.2154414	0.26505173	2.4002084	20	3 16.3	20.6
296370 2009 FS_{39}	16.9	X	82.25676	86.55837	106.01511	7.32732	0.0352984	0.28665536	2.2780469	20	7 13.7	19.4
296371 2009 FF_{42}	16.1	X	93.13526	139.64404	118.18511	5.73670	0.0456491	0.21446283	2.7641908	20	10 21.3	20.0
296372 2009 FH_{42}	17.0	X	13.36702	282.60655	104.06365	5.50521	0.0527454	0.22775445	2.6555723	20	12 24.4	20.4
296373 2009 FK_{43}	15.1	X	230.01718	119.17303	91.46935	13.81076	0.3248038	0.14793298	3.5407292	20	12 9.8	20.8
296374 2009 FA_{44}	15.9	X	107.29326	285.32869	161.56246	12.16619	0.1145250	0.18232717	3.0801258	20	4 9.4	20.4
296375 2009 FU_{44}	15.6	X	318.61844	276.74017	350.50005	9.91308	0.0739061	0.18484502	3.0520915	20	4 18.1	19.8
296376 2009 FW_{44}	17.3	X	106.56509	234.70218	44.72486	5.43593	0.1419269	0.30538025	2.1839469	20	12 23.0	20.5
296377 2009 FD_{46}	17.9	X	192.14116	318.10325	196.78052	19.79613	0.0710630	0.38926884	1.8576745	20	11 4.2	19.7
296378 2009 FU_{46}	17.6	X	308.29604	94.05567	172.18346	1.37318	0.1628699	0.26686689	2.3893123	20	3 16.1	20.3
296379 2009 FW_{48}	17.1	X	274.03404	327.88515	312.01993	4.93011	0.1441332	0.26795516	2.3828386	20	2 21.9	20.3
296380 2009 FV_{52}	16.9	X	306.44024	184.24690	60.57643	5.63610	0.1937170	0.26490349	2.4011037	20	2 11.5	20.0
296381 2009 FM_{53}	18.1	X	57.28054	138.11627	117.43590	4.92315	0.0067275	0.29446253	2.2376012	20	9 6.3	20.7
296382 2009 FF_{56}	15.5	X	45.45733	171.84290	84.55571	21.04467	0.1186501	0.20159661	2.8805841	20	9 3.6	19.7
296383 2009 FB_{57}	14.7	X	256.07185	206.48770	111.89542	29.63826	0.1112865	0.17504243	3.1650008	20	4 17.0	20.0
296384 2009 FW_{57}	16.7	X	11.53267	170.73202	211.40245	4.32978	0.0577769	0.22275305	2.6951748	20	12 15.5	20.2
296385 2009 FY_{57}	16.4	X	304.57658	125.59868	325.38530	1.51740	0.0486545	0.22473330	2.6793191	20	12 9.3	19.6
296386 2009 FK_{64}	15.2	X	32.76316	215.38734	202.03825	9.45328	0.0741526	0.15023776	3.5044240	20	—	—
296387 2009 FX_{64}	17.5	X	329.23538	52.25083	158.77286	1.90307	0.1061411	0.25937253	2.4351183	20	2 9.6	20.4
296388 2009 FE_{65}	17.4	X	311.98551	112.10910	105.04708	2.45349	0.1258357	0.25699251	2.4501297	20	1 22.4	20.3
296389 2009 FD_{68}	16.6	X	129.27861	173.50841	65.30770	2.55699	0.0100635	0.21820671	2.7324820	20	11 5.6	20.4
296390 2009 FR_{68}	17.2	X	300.38449	215.12321	74.18913	2.58642	0.1807580	0.27095938	2.3651930	20	4 4.0	19.9
296391 2009 FJ_{70}	16.9	X	46.94467	44.15025	130.44380	7.39509	0.0396947	0.26979837	2.3719735	20	4 28.2	19.8
296392 2009 FN_{70}	16.4	X	80.19317	118.76806	184.26006	9.22192	0.1667682	0.21299948	2.7768368	20	12 11.6	20.8
296393 2009 FQ_{70}	15.5	X	302.42492	90.74648	202.17941	11.72293	0.0572373	0.18186729	3.0853161	20	5 6.1	19.7
296394 2009 FE_{71}	16.9	X	270.48764	67.39624	173.84475	7.04805	0.0796544	0.25077861	2.4904380	20	1 9.3	20.5
296395 2009 FF_{71}	17.0	X	319.57468	135.51990	129.83144	3.82830	0.0885157	0.26762670	2.3847879	20	4 15.3	19.6
296396 2009 FW_{71}	17.2	X	31.53164	337.67797	198.62156	12.35204	0.0500880	0.26699609	2.3885414	20	4 3.4	19.7
296397 2009 FS_{72}	16.6	X	194.36982	115.60040	171.59719	6.04132	0.1172660	0.23850162	2.5751853	20	—	—
296398 2009 FU_{72}	16.9	X	331.72825	89.34200	171.32097	4.92962	0.0206545	0.27296035	2.3536200	20	5 5.4	19.6
296399 2009 FJ_{74}	16.2	X	175.92697	74.17356	104.11002	8.31059	0.1140398	0.21225834	2.7832969	20	10 15.0	20.6
296400 2009 FO_{74}	16.3	X	257.55639	216.78434	359.04228	16.15450	0.1694343	0.24267784	2.5455559	20	—	—

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Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
	m		°	°	°	°		°				
296401 2009 FF_{75}	15.3	X	212.11597	141.66129	202.54048	10.03030	0.0762467	0.17195191	3.2028115	20	3 20.5	20.3
296402 2009 GF_{1}	17.3	X	349.60089	210.26221	58.38108	3.95603	0.1183122	0.27093849	2.3653146	20	6 8.9	19.5
296403 2009 GQ_{1}	16.4	X	301.32500	297.14967	225.77489	11.99098	0.0605877	0.23603577	2.5930895	20	—	—
296404 2009 GT_{1}	17.5	X	358.92030	281.21721	42.44898	6.05496	0.1990188	0.29721265	2.2237768	20	10 15.3	19.1
296405 2009 GE_{2}	17.1	X	5.11007	143.63565	79.16531	3.33040	0.1370148	0.26926507	2.3751044	20	4 29.1	19.2
296406 2009 GO_{3}	16.8	X	330.91380	28.48051	141.87248	5.90231	0.0681967	0.25193481	2.4828125	20	—	—
296407 2009 GY_{3}	16.7	X	87.87618	172.22099	229.05962	14.33201	0.0993532	0.23926400	2.5697122	20	1 2.4	20.0
296408 2009 GV_{4}	17.4	X	57.71590	330.39774	228.54017	19.78888	0.0643795	0.36801793	1.9285167	20	6 20.7	19.4
296409 2009 GC_{5}	16.7	X	338.33434	187.84106	125.90093	3.07107	0.0657690	0.19613624	2.9338021	20	7 23.7	20.3
296410 2009 GK_{5}	15.7	X	225.32117	305.57010	264.22474	17.13769	0.1256988	0.23152674	2.6266484	20	—	—
296411 2009 GX_{5}	17.4	X	228.62045	274.29510	84.12128	2.80439	0.1356536	0.26629226	2.3927483	20	4 18.2	21.0
296412 2009 HA_{1}	16.8	X	47.79978	251.79227	38.36604	7.34269	0.0986957	0.29490613	2.2353568	20	10 26.5	19.5
296413 2009 HO_{1}	15.4	X	332.00330	206.56957	62.65076	15.25143	0.1896397	0.18095201	3.0957112	20	5 4.6	18.9
296414 2009 HT_{1}	17.7	X	23.68170	108.42000	144.38796	3.01079	0.0719439	0.28193511	2.3034031	20	7 17.4	20.1
296415 2009 HF_{3}	16.0	X	61.84024	235.44749	26.80211	15.34096	0.1214969	0.20318945	2.8655101	20	9 29.0	20.0
296416 2009 HK_{3}	15.6	X	232.11363	294.93594	89.77687	11.49541	0.1016455	0.18268086	3.0761489	20	5 30.5	20.3
296417 2009 HT_{3}	15.8	X	314.29602	100.08472	165.86681	16.14913	0.2013871	0.17877662	3.1207734	20	3 29.5	19.8
296418 2009 HE_{4}	16.5	X	69.25679	177.69958	108.35975	6.46801	0.0490626	0.21504350	2.7592126	20	10 28.7	20.4
296419 2009 HT_{4}	17.1	X	30.05058	267.73455	42.59198	7.62435	0.1653876	0.29631074	2.2282870	20	11 9.6	19.5
296420 2009 HT_{14}	17.4	X	290.01491	215.55263	144.83641	6.86302	0.1426271	0.28809938	2.2704285	20	7 7.7	19.9
296421 2009 HQ_{18}	17.2	X	20.88860	88.43856	163.07994	5.82852	0.0660326	0.27725267	2.3292650	20	7 9.1	19.8
296422 2009 HY_{18}	17.2	X	262.46436	233.74190	355.70829	3.16983	0.0628342	0.24647852	2.5193200	20	—	—
296423 2009 HO_{22}	17.1	X	97.28866	128.57182	37.94905	7.02643	0.0494011	0.28244069	2.3006534	20	6 29.1	20.0
296424 2009 HM_{31}	17.5	X	336.51367	247.69943	102.48511	6.39543	0.1505507	0.29139175	2.2532941	20	10 3.9	19.3
296425 2009 HZ_{35}	15.9	X	107.93361	125.67145	110.93321	5.10461	0.0447677	0.21209767	2.7847024	20	10 11.5	19.9
296426 2009 HQ_{36}	17.0	X	334.99657	149.61748	111.79131	2.33210	0.1637184	0.26922377	2.3753473	20	4 24.8	19.0
296427 2009 HD_{37}	16.7	X	340.83201	348.84549	251.79517	5.95376	0.0818076	0.26900938	2.3766092	20	4 10.3	19.5
296428 2009 HM_{39}	17.0	X	203.64944	139.19599	111.79601	2.03499	0.1097217	0.23280736	2.6170072	20	—	—
296429 2009 HB_{41}	17.4	X	297.80719	266.78566	54.54970	3.00894	0.2216832	0.27523925	2.3406105	20	5 7.9	20.1
296430 2009 HU_{41}	16.7	X	89.27103	232.42045	84.25242	6.15155	0.1127483	0.22158976	2.7045992	20	—	—
296431 2009 HS_{42}	17.0	X	267.47725	82.39939	65.60555	5.38610	0.1377909	0.23096218	2.6309271	20	12 21.7	20.0
296432 2009 HN_{43}	17.7	X	86.10354	147.29864	85.13887	3.09415	0.1072045	0.29115607	2.2545099	20	9 27.4	20.7
296433 2009 HG_{45}	17.8	X	67.75279	178.06412	57.35577	4.50832	0.1927735	0.28772067	2.2724204	20	9 20.6	20.8
296434 2009 HD_{47}	16.2	X	226.58351	252.32441	150.24393	2.61214	0.1101040	0.19678343	2.9273660	20	6 14.2	20.6
296435 2009 HH_{48}	15.8	X	255.78703	205.25509	113.53428	10.24322	0.0530451	0.17568549	3.1572729	20	4 14.8	20.5
296436 2009 HJ_{48}	15.4	X	157.14517	331.63093	79.88909	15.11329	0.0329403	0.17591104	3.1545735	20	4 18.7	20.2
296437 2009 HY_{48}	17.5	X	111.48885	145.61615	120.95155	5.40687	0.1436773	0.30111984	2.2044985	20	12 11.3	20.7
296438 2009 HZ_{48}	16.1	X	138.13941	130.73918	195.81236	11.40355	0.1438141	0.23051377	2.6343378	20	—	—
296439 2009 HA_{49}	14.9	X	288.10422	247.79404	69.95675	17.18572	0.1046339	0.17899971	3.1181798	20	5 13.7	19.2
296440 2009 HP_{51}	15.3	X	301.27203	254.95887	68.13333	12.32013	0.1399137	0.18572425	3.0424513	20	5 30.6	19.3
296441 2009 HQ_{51}	16.9	X	231.35651	106.10286	160.96129	9.37588	0.1037980	0.24454444	2.5325859	20	—	—
296442 2009 HV_{53}	16.5	X	223.17287	149.18338	52.20779	12.45496	0.0616542	0.22970057	2.6405516	20	—	—
296443 2009 HL_{54}	17.6	X	138.27482	131.15027	118.59905	5.59318	0.1741766	0.30484319	2.1865112	20	12 15.3	21.0
296444 2009 HS_{54}	16.5	X	39.74713	96.86217	142.44518	7.44734	0.1446408	0.18935293	3.0034566	20	7 26.4	20.3
296445 2009 HQ_{57}	17.0	X	327.75836	102.73429	196.82241	6.16766	0.1099131	0.27738421	2.3285285	20	6 16.2	19.3
296446 2009 HF_{58}	17.0	X	205.44786	140.21059	205.40767	6.61726	0.1290307	0.26108163	2.4244795	20	3 7.0	20.8
296447 2009 HG_{58}	16.0	X	132.55742	186.51272	71.43108	9.17552	0.1628991	0.21940682	2.7225089	20	12 5.4	20.5
296448 2009 HE_{59}	15.5	X	319.01905	203.05028	81.26241	16.45389	0.1778563	0.17834155	3.1258468	20	5 6.8	19.5
296449 2009 HM_{59}	15.8	X	219.09737	183.50098	42.36710	14.07146	0.1678203	0.23243706	2.6197859	20	—	—
296450 2009 HL_{64}	17.6	X	325.33595	73.63666	151.70540	2.06166	0.1561412	0.25806460	2.4433392	20	2 15.9	20.3
296451 2009 HS_{64}	16.1	X	303.27761	0.92930	49.16356	5.62357	0.0385898	0.21640659	2.7476141	20	10 15.4	19.6
296452 2009 HY_{64}	17.5	X	34.12628	10.67795	167.91745	6.74861	0.1018446	0.26755012	2.3852429	20	4 17.3	19.9
296453 2009 HD_{65}	16.6	X	271.24121	217.47682	75.03790	17.06506	0.1428961	0.25904502	2.4371704	20	3 18.3	20.4
296454 2009 HJ_{65}	16.0	X	49.41281	121.23145	158.31275	10.86251	0.1129173	0.20158439	2.8807006	20	10 1.5	19.9
296455 2009 HR_{73}	15.0	X	345.68128	161.47546	60.91718	20.16271	0.1585443	0.17895024	3.1187545	20	4 7.6	19.0
296456 2009 HY_{73}	15.8	X	181.43920	137.00925	106.32802	14.58264	0.1039964	0.22696535	2.6617240	20	—	—
296457 2009 HQ_{76}	17.0	X	6.95362	353.44738	260.70864	2.91868	0.1595016	0.27311883	2.3527094	20	6 24.4	18.7
296458 2009 HJ_{79}	17.3	X	319.49832	50.60148	131.73251	1.92230	0.0520914	0.24682184	2.5169832	20	—	—
296459 2009 HN_{79}	17.2	X	130.83662	330.30646	143.26117	6.32867	0.0619138	0.27241789	2.3567434	20	6 1.0	20.3
296460 2009 HQ_{80}	15.8	X	10.91471	70.23692	183.39028	16.07928	0.1392746	0.18864878	3.0109258	20	6 25.5	19.6
296461 2009 HY_{80}	15.9	X	92.76717	283.77162	192.06843	11.98979	0.1185099	0.18218800	3.0816941	20	4 27.3	20.3
296462 Corylachlan	16.6	X	351.40836	325.88380	124.81646	14.13685	0.2383796	0.24159310	2.5531698	20	—	—
296463 2009 HT_{83}	16.0	X	59.93164	79.76380	198.58473	12.31242	0.0647075	0.20418828	2.8561576	20	10 3.9	19.9
296464 2009 HC_{84}	16.9	X	201.48378	136.90769	187.44824	7.23683	0.2114897	0.24558224	2.5254460	20	2 8.3	21.3
296465 2009 HK_{88}	16.3	X	168.68735	173.39065	108.93216	5.82548	0.1890295	0.23008266	2.6376275	20	—	—
296466 2009 HU_{88}	17.5	X	305.52230	350.29975	244.59987	2.05411	0.1417632	0.25643787	2.4536613	20	2 3.0	20.6
296467 2009 HO_{89}	17.0	X	301.80589	153.63086	129.17480	4.84693	0.2159196	0.26197713	2.4189513	20	3 23.9	20.0
296468 2009 HV_{90}	17.6	X	9.56164	251.02450	73.50948	3.32649	0.1810873	0.29135016	2.2535085	20	10 31.9	19.6
296469 2009 HB_{91}	17.9	X	297.62212	111.35616	128.20489	1.90810	0.2032854	0.25635138	2.4542132	20	1 22.8	21.1
296470 2009 HG_{92}	16.8	X	312.74144	145.10063	161.04187	2.84177	0.1677096	0.18023494	3.1039167	20	5 22.3	20.5
296471 2009 HS_{93}	16.3	X	97.95006	119.98651	168.92970	11.15635	0.0929420	0.21403621	2.7678627	20	12 7.1	20.6
296472 2009 HA_{94}	17.1	X	304.64010	183.41352	81.55633	5.08033	0.1823852	0.26078810	2.4262984	20	3 9.7	20.2
296473 2009 HX_{95}	17.0	X	92.43049	93.37793	198.63741	4.31840	0.1392953	0.21739348	2.7392923	20	12 8.5	21.2
296474 2009 HN_{97}	16.4	X	79.74648	16.06706	226.01263	7.76384	0.1469134	0.20104775	2.8858244	20	9 20.8	20.7
296475 2009 HA_{98}	16.3	X	207.84395	110.16357	150.33906	10.25760	0.0581843	0.23805701	2.5783908	20	—	—
296476 2009 HB_{98}	15.8	X	18.59245	198.18448	72.59107	13.54449	0.1143632	0.19090027	2.9872049	20	8 4.3	19.6
296477 2009 HS_{99}	17.2	X	312.47887	283.74075	33.81412	5.65398	0.1705841	0.27418479	2.3466076	20	6 5.0	19.5
296478 2009 HP_{101}	17.5	X	38.26744	226.24485	88.90625	6.48250	0.1226649	0.29525201	2.2336107	20	11 22.0	20.1
296479 2009 HR_{101}	15.2	X	202.54490	274.50615	110.27225	16.84333	0.1047762	0.17495213	3.1660898	20	5 5.7	20.4
296480 2009 HW_{101}	17.3	X	247.65394	181.16769	67.50866	4.70596	0.1092838	0.24341108	2.5404413	20	—	—

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Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
	m		°	°	°	°		°				
296481 2009 HM_{102}	17.1	X	147.39923	229.66403	202.50915	6.70414	0.0659997	0.26366973	2.4085881	20	4 25.4	20.3
296482 2009 HX_{102}	17.4	X	334.37259	217.37948	60.97931	3.05203	0.1917652	0.26935428	2.3745800	20	5 15.8	19.2
296483 2009 HJ_{103}	16.1	X	150.96619	130.72857	209.01965	13.05169	0.2729814	0.23364732	2.6107313	20	1 20.6	20.7
296484 2009 HW_{103}	15.5	X	225.64560	80.79058	193.80693	14.70276	0.1141860	0.15443767	3.4405976	20	1 13.0	21.1
296485 2009 HP_{104}	17.4	X	233.65413	189.80125	78.62892	1.58655	0.1109994	0.24334956	2.5408693	20	1 3.9	21.1
296486 2009 HT_{105}	17.7	X	87.44091	35.40815	230.44476	3.72002	0.1536899	0.29577348	2.2309846	20	11 15.9	21.0
296487 2009 HX_{105}	17.0	X	268.59746	89.58435	151.30345	5.00546	0.1044667	0.24439443	2.5336221	20	1 5.8	20.7
296488 2009 JX	16.9	X	13.92462	32.65401	229.35207	6.42837	0.0836138	0.27618640	2.3352561	20	7 13.9	19.4
296489 2009 JY	16.2	X	249.93630	115.48324	109.80575	4.99396	0.1906460	0.23868308	2.5738800	20	—	—
296490 2009 JD_{1}	16.8	X	8.70858	159.12323	108.34248	7.20651	0.2034608	0.27462574	2.3440951	20	7 27.8	18.4
296491 2009 JH_{1}	17.7	X	39.73738	142.45949	107.05006	1.71506	0.1764384	0.28153609	2.3055789	20	8 27.5	20.1
296492 2009 JS_{1}	17.3	X	96.14508	272.53526	215.00972	20.60665	0.1289861	0.35981755	1.9577076	20	5 12.9	19.2
296493 2009 JB_{2}	14.9	X	347.80798	46.02543	252.19797	21.80782	0.1992273	0.17431001	3.1738605	20	7 8.1	18.5
296494 2009 JC_{2}	17.5	X	107.25309	4.39587	267.47684	4.55297	0.1811540	0.30077332	2.2061913	20	12 14.2	21.0
296495 2009 JF_{4}	16.5	X	188.68478	34.34234	172.41231	6.35924	0.1438355	0.22196537	2.7015473	20	11 27.6	20.7
296496 2009 JL_{6}	15.6	X	330.27935	103.83756	172.72429	10.12998	0.0839022	0.18048019	3.1011042	20	5 22.3	19.7
296497 2009 JY_{10}	17.6	X	251.33858	215.23635	107.93863	2.53814	0.1965073	0.25801526	2.4436507	20	3 22.5	21.3
296498 2009 JB_{12}	15.7	X	41.96440	59.40781	194.54710	12.68798	0.1030578	0.19160213	2.9799055	20	8 9.7	19.8
296499 2009 JO_{15}	13.5	X	304.10789	115.83461	169.55083	21.72658	0.0646615	0.08425157	5.1532835	20	5 4.3	20.4
296500 2009 JZ_{15}	15.9	X	24.11190	33.34888	186.64542	9.94566	0.0524080	0.18202741	3.0835064	20	5 28.4	20.1
296501 2009 JL_{16}	15.8	X	299.60895	117.30855	190.94109	8.65792	0.0894643	0.17899561	3.1182275	20	5 17.8	20.1
296502 2009 JM_{16}	16.0	X	241.64007	242.47184	101.16448	6.60494	0.1644098	0.17249733	3.1960566	20	4 16.6	21.1
296503 2009 KW	16.5	X	241.84566	256.25000	74.47322	7.69914	0.1686382	0.25944375	2.4346727	20	3 27.9	20.3
296504 2009 KM_{1}	16.0	X	332.50403	46.21002	231.74841	15.35918	0.1859997	0.17835214	3.1257230	20	5 15.0	19.4
296505 2009 KJ_{2}	16.1	X	261.89866	69.94910	156.96498	5.06676	0.1314855	0.24044201	2.5613120	20	—	—
296506 2009 KL_{3}	17.3	X	341.55500	250.47619	74.20754	7.44278	0.1265088	0.28356215	2.2945836	20	8 30.5	19.4
296507 2009 KL_{4}	15.1	X	5.26146	126.50670	190.16378	26.81384	0.1791254	0.17925326	3.1152388	20	9 11.7	18.8
296508 2009 KA_{8}	16.2	X	223.25606	327.87252	252.26134	6.73750	0.1509582	0.23145982	2.6271547	20	—	—
296509 2009 KN_{9}	17.1	X	191.92795	145.70449	160.32851	3.14455	0.1559328	0.23960845	2.5672488	20	1 10.5	21.3
296510 2009 KL_{11}	15.9	X	78.96462	274.42696	215.92584	8.76767	0.0372743	0.17449155	3.1716587	20	4 14.6	20.3
296511 2009 KF_{19}	16.3	X	106.38250	198.05030	88.44552	3.83846	0.0708777	0.21491356	2.7603247	20	12 10.4	20.3
296512 2009 KW_{19}	15.6	X	304.68238	201.50764	105.88612	11.14530	0.0311580	0.18329647	3.0692574	20	6 1.1	19.8
296513 2009 KB_{22}	13.5	X	253.50796	143.47537	189.58566	26.96083	0.0754233	0.08138522	5.2735820	20	4 27.6	20.7
296514 2009 KK_{24}	16.4	X	264.22822	4.03973	194.36639	17.25762	0.1149056	0.23694384	2.5864600	20	—	—
296515 2009 KJ_{28}	16.0	X	318.36835	65.60185	216.25274	13.31740	0.1729317	0.17544408	3.1601684	20	4 27.7	19.9
296516 2009 LJ	15.7	X	332.63204	45.04831	209.99992	27.80038	0.2184435	0.17397618	3.1779192	20	4 8.8	19.5
296517 2009 LC_{1}	15.7	X	285.69157	175.04464	161.12346	10.32429	0.1030327	0.18122891	3.0925572	20	6 2.4	20.1
296518 2009 LK_{5}	16.9	X	316.36709	191.07534	116.27614	11.47997	0.0887375	0.26974090	2.3723104	20	6 11.4	19.5
296519 2009 LG_{6}	17.2	X	94.19290	316.57408	290.12249	5.96132	0.0849900	0.28377725	2.2934239	20	10 18.1	20.3
296520 2009 MO	15.1	X	347.83359	146.43813	174.37580	27.43641	0.2086947	0.17537176	3.1610372	20	8 12.7	18.7
296521 2009 MZ_{8}	17.1	X	296.85340	78.68009	261.14015	1.54439	0.2074779	0.26394687	2.4069018	20	6 5.4	19.7
296522 2009 OB	15.8	X	191.61500	178.92805	117.59513	15.50709	0.2323746	0.22750316	2.6575275	20	1 3.6	20.4
296523 2009 OT	17.1	X	68.12745	178.35330	127.47927	7.58614	0.1516946	0.28901031	2.2656552	20	12 16.5	20.4
296524 2009 OU_{1}	15.3	X	344.86156	66.67687	241.16134	13.96137	0.1699518	0.17783234	3.1318111	20	7 17.8	19.0
296525 Milanovskiy	15.3	X	232.94024	233.76252	203.88966	13.21091	0.0797016	0.16860717	3.2450298	20	8 2.6	20.3
296526 2009 OW_{5}	16.6	X	59.89935	350.94002	318.89326	6.97448	0.1381729	0.28654206	2.2786474	20	12 9.7	19.8
296527 2009 OG_{7}	17.3	X	358.19257	71.04146	228.43260	2.67687	0.2165490	0.27099564	2.3649820	20	8 25.0	18.9
296528 2009 OM_{8}	17.6	X	82.48219	152.30769	124.43549	3.28275	0.1567408	0.28868761	2.2673433	20	11 24.6	20.9
296529 2009 OL_{9}	16.4	X	314.96017	349.54004	262.29929	6.86335	0.0613423	0.24399497	2.5363867	20	3 20.5	19.8
296530 2009 OV_{9}	17.6	X	220.05962	152.81430	216.57465	3.94501	0.2532423	0.24548662	2.5261017	20	4 17.3	22.0
296531 2009 OF_{10}	16.9	X	322.90306	40.39929	307.31590	5.64947	0.1392015	0.26516443	2.3995283	20	8 18.4	19.2
296532 2009 OW_{10}	16.3	X	319.66706	134.30935	180.63015	4.48017	0.1804139	0.17260737	3.1946981	20	6 12.5	20.1
296533 2009 OM_{12}	15.5	X	305.43904	114.96227	248.80747	8.62093	0.1060572	0.17515498	3.1636448	20	7 31.4	19.7
296534 2009 OG_{16}	17.2	X	94.08239	193.61989	179.71224	2.61319	0.1933183	0.21518183	2.7580300	20	—	—
296535 2009 OA_{18}	17.1	X	273.12671	334.53962	306.76708	8.36299	0.2033937	0.24433252	2.5340501	20	2 17.9	21.0
296536 2009 OC_{18}	17.7	X	19.58864	124.54088	165.05766	3.77478	0.2050092	0.27288275	2.3540661	20	9 26.2	19.9
296537 2009 OK_{19}	15.6	X	310.71052	59.96987	319.02006	10.18022	0.0597341	0.18146250	3.0899026	20	9 3.5	19.7
296538 2009 OF_{20}	15.2	X	282.74472	140.68779	251.31625	8.88500	0.0685396	0.17641502	3.1485627	20	8 9.3	19.6
296539 2009 OM_{22}	15.6	X	336.39315	95.22408	295.88537	10.83944	0.0641561	0.19475194	2.9476880	20	10 26.8	19.7
296540 2009 OE_{23}	16.4	X	137.71647	263.08138	75.08668	13.55417	0.0935335	0.22101119	2.7093173	20	—	—
296541 2009 OP_{23}	15.4	X	236.69776	242.82465	153.38086	15.48625	0.0369859	0.16835604	3.2482560	20	6 25.5	20.3
296542 2009 OY_{24}	16.6	X	281.36526	199.03358	133.35500	6.69358	0.1921695	0.25748664	2.4469940	20	5 8.4	19.9
296543 2009 PA_{1}	16.1	X	155.42877	325.61858	348.58104	10.85512	0.3382702	0.22057822	2.7128615	20	1 5.5	21.0
296544 2009 PC_{2}	17.0	X	255.13978	191.13820	179.94781	5.43555	0.2015660	0.25374878	2.4709658	20	5 26.7	20.6
296545 2009 PH_{5}	14.8	X	130.61699	5.03475	336.96680	8.01701	0.1924935	0.12457823	3.9704642	20	1 16.1	20.9
296546 2009 PE_{9}	16.9	X	98.11296	211.84957	157.99301	3.96045	0.1070938	0.21217340	2.7840397	20	—	—
296547 2009 PO_{10}	15.3	X	210.58248	195.61079	302.49584	9.14484	0.0515914	0.18811471	3.0166219	20	9 25.3	19.9
296548 2009 PG_{15}	17.0	X	323.96819	161.12988	162.55050	3.53588	0.1817735	0.26327679	2.4109840	20	7 7.9	19.1
296549 2009 PY_{19}	15.3	X	330.52689	52.62592	285.94404	20.03905	0.2613699	0.17319822	3.1874283	20	7 24.3	18.5
296550 2009 PV_{20}	17.9	X	11.45964	16.93959	339.49263	2.55194	0.1123648	0.27990169	2.3145454	20	12 4.2	20.5
296551 2009 QY_{1}	16.3	X	208.01929	23.74991	263.99687	10.70308	0.1448904	0.22894778	2.6463367	20	1 3.9	20.5
296552 2009 QR_{7}	15.5	X	274.40513	215.42459	219.09902	9.25675	0.0343964	0.18368037	3.0649794	20	9 28.7	19.7
296553 2009 QQ_{11}	17.1	X	8.90109	279.97150	358.22756	1.29933	0.1624652	0.26675499	2.3899804	20	8 8.8	19.2
296554 2009 QK_{15}	15.9	X	206.15449	143.87888	359.61146	4.71445	0.1117834	0.18001773	3.1064130	20	9 24.9	20.7
296555 2009 QZ_{16}	15.2	X	137.41505	166.67245	160.28632	3.28539	0.2102787	0.12389493	3.9850492	20	1 5.5	21.4
296556 2009 QW_{23}	17.2	X	17.06295	206.74878	89.69940	2.06904	0.1648362	0.27049401	2.3679050	20	9 25.2	19.5
296557 2009 QG_{24}	16.9	X	92.71165	168.17881	267.52515	1.59130	0.0754725	0.22584866	2.6704905	20	2 23.7	20.3
296558 2009 QJ_{24}	15.8	X	116.26097	164.41733	169.18641	21.89550	0.2026719	0.21143808	2.7904907	20	—	—
296559 2009 QS_{26}	17.0	X	75.41131	123.62678	198.10264	6.62053	0.1427985	0.29058822	2.2574461	20	—	—
296560 2009 QJ_{28}	17.8	X	306.72106	213.72630	149.92074	1.82654	0.1955444	0.26685934	2.3893574	20	8 3.4	19.8

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		°	°	°	°		°				
296561 2009 QZ_{30}	15.2	*X*	318.97759	291.05639	90.91889	10.39370	0.0817346	0.17818379	3.1276916	20	9 25.8	19.4
296562 2009 QJ_{34}	15.3	*X*	219.92357	266.56483	210.72428	13.14928	0.0788043	0.18190020	3.0849438	20	9 7.5	20.1
296563 2009 QS_{35}	16.7	*X*	268.70394	295.18267	329.53194	7.34183	0.0770487	0.23425063	2.6062468	20	2 9.9	20.4
296564 2009 QU_{37}	16.5	*X*	204.02594	90.80627	162.39882	7.78246	0.1686922	0.21624998	2.7489404	20	—	—
296565 2009 QP_{40}	17.5	*X*	347.22303	137.26203	210.43022	0.52586	0.2029841	0.27261363	2.3556152	20	10 19.8	19.0
296566 2009 QB_{43}	17.3	*X*	296.35079	17.86778	0.72001	6.25493	0.1740760	0.26563213	2.3967109	20	8 12.3	19.6
296567 2009 QJ_{43}	16.4	*X*	128.38209	3.91574	342.30967	5.06462	0.0884424	0.21590065	2.7519049	20	—	—
296568 2009 QL_{44}	15.2	*X*	75.74897	185.40510	75.61067	10.70037	0.0317733	0.17799545	3.1298975	20	9 29.8	19.8
296569 2009 QA_{46}	16.8	*X*	110.62026	331.43615	343.27780	0.71381	0.1756485	0.20635837	2.8360986	20	—	—
296570 2009 QN_{49}	17.4	*X*	103.45198	256.96778	125.52921	4.29560	0.2078889	0.21722014	2.7407494	20	1 22.6	20.8
296571 2009 QV_{51}	17.0	*X*	270.84868	16.20217	8.44191	5.25005	0.1450516	0.25926822	2.4357714	20	7 13.1	20.0
296572 2009 QD_{55}	15.5	*X*	308.64905	194.74665	176.84387	9.53256	0.0821154	0.17463442	3.1699286	20	8 19.6	19.6
296573 2009 QT_{55}	16.8	*X*	163.33729	75.90403	188.22910	1.37140	0.0401800	0.20362303	2.8614409	20	—	—
296574 2009 QU_{55}	17.3	*X*	306.97503	216.62118	169.46536	1.14586	0.1740448	0.17563504	3.1578774	20	8 26.9	21.1
296575 2009 QJ_{58}	17.1	*X*	139.12480	155.97590	191.59872	2.06091	0.1502287	0.21797092	2.7344522	20	1 12.2	21.0
296576 2009 QC_{59}	16.6	*X*	315.90990	85.22352	332.57436	1.94468	0.0803177	0.18568927	3.0428334	20	11 1.3	20.4
296577 Arkhangelsk	15.6	*X*	342.87251	40.17066	317.06908	16.51148	0.1843929	0.17950652	3.1123080	20	9 17.5	19.3
296578 2009 RB_{6}	15.5	*X*	44.70366	249.30411	30.19367	5.91999	0.1303465	0.18294072	3.0732351	20	9 24.2	19.6
296579 2009 RC_{6}	17.2	*X*	344.48936	228.75100	85.93564	3.26216	0.2334050	0.26749572	2.3855663	20	8 17.4	18.5
296580 2009 RT_{7}	16.3	*X*	46.37429	81.11509	218.12791	7.23736	0.2412859	0.18754380	3.0227408	20	11 5.6	20.5
296581 2009 RU_{8}	13.5	*X*	205.26077	138.67579	3.55364	7.21022	0.0400200	0.08461914	5.1383497	20	9 17.6	20.5
296582 2009 RM_{11}	16.5	*X*	301.61083	241.44666	186.39310	1.72288	0.1644994	0.18133770	3.0913201	20	10 15.3	20.1
296583 2009 RD_{14}	17.7	*X*	158.11162	284.32179	99.47020	0.10963	0.1463980	0.22757722	2.6569509	20	3 13.9	21.7
296584 2009 RQ_{16}	15.8	*X*	256.53529	10.73842	60.03159	2.72999	0.0262983	0.17125735	3.2114654	20	9 4.3	20.3
296585 2009 RZ_{18}	16.5	*X*	332.12961	33.88059	264.03087	6.02651	0.0917159	0.25362710	2.4717561	20	6 22.5	19.0
296586 2009 RB_{25}	17.7	*X*	0.06626	110.72778	168.08858	1.55846	0.1644138	0.25742273	2.4473991	20	7 18.8	19.8
296587 2009 RA_{26}	16.0	*X*	329.36667	207.22479	11.04670	14.30738	0.0113601	0.22795671	2.6540013	20	3 11.7	19.6
296588 2009 RW_{30}	13.2	*X*	265.53350	93.00466	358.80384	11.79588	0.0941810	0.08420503	5.1551825	20	9 18.9	19.9
296589 2009 RN_{31}	15.0	*X*	37.67210	106.92679	202.39483	10.32092	0.1334557	0.18086552	3.0966980	20	10 20.9	19.0
296590 2009 RV_{31}	17.4	*X*	292.59105	6.75414	324.59553	3.07828	0.0589624	0.25085872	2.4899077	20	6 10.9	20.3
296591 2009 RZ_{31}	16.8	*X*	46.95336	203.43764	268.34364	2.71033	0.2014728	0.21675594	2.7446610	20	2 17.1	19.5
296592 2009 RA_{33}	13.0	*X*	300.45465	206.44821	217.06327	7.79591	0.1692120	0.08273688	5.2159883	20	9 16.7	19.6
296593 2009 RO_{34}	17.3	*X*	239.04012	300.28447	18.19915	3.91947	0.2517872	0.23600907	2.5932851	20	3 3.9	21.6
296594 2009 RG_{46}	16.8	*X*	142.70193	36.29421	278.64683	1.20915	0.0775573	0.20681734	2.8319011	20	—	—
296595 2009 RV_{50}	16.7	*X*	175.66035	191.35455	194.03032	7.83247	0.2154274	0.23120020	2.6291211	20	4 3.2	21.0
296596 2009 RD_{52}	16.1	*X*	357.32169	227.70087	191.73665	8.47100	0.0628299	0.19288985	2.9666283	20	—	—
296597 2009 RF_{52}	16.0	*X*	275.36676	278.69955	173.53982	4.08926	0.1669851	0.17749001	3.1358367	20	10 5.4	20.1
296598 2009 RA_{55}	16.7	*X*	347.20694	226.64697	146.02811	2.03879	0.1857653	0.17978262	3.1091207	20	10 27.3	20.1
296599 2009 RH_{55}	17.1	*X*	90.54212	240.44352	169.48760	4.85659	0.0713024	0.21407194	2.7675547	20	1 19.9	20.8
296600 2009 RC_{56}	16.3	*X*	336.42876	292.83595	90.31295	2.99763	0.1240528	0.17857994	3.1230643	20	10 19.7	19.9
296601 2009 RE_{57}	15.9	*X*	56.39566	210.35482	116.37938	3.78316	0.1714975	0.18785542	3.0193971	20	12 10.7	20.2
296602 2009 RL_{60}	16.4	*X*	167.16814	31.79301	319.00836	8.95136	0.0905444	0.22740876	2.6582628	20	2 7.8	20.3
296603 2009 RG_{62}	13.5	*X*	319.58200	341.07124	47.45818	4.50420	0.0626915	0.08142292	5.2719540	20	9 17.4	20.2
296604 2009 RT_{63}	13.6	*X*	288.30762	234.18939	182.50620	7.51542	0.0931683	0.08414737	5.1575368	20	9 4.6	20.3
296605 2009 RV_{69}	15.7	*X*	3.41334	355.32108	8.89214	10.72372	0.0569862	0.18317317	3.0706346	20	10 30.0	19.8
296606 2009 RC_{70}	15.4	*X*	31.58344	81.60935	230.00598	4.23238	0.0501895	0.17768585	3.1335321	20	10 1.9	19.6
296607 2009 RV_{70}	17.4	*X*	295.71359	25.64760	6.86745	1.97752	0.1919173	0.26482538	2.4015759	20	8 28.2	19.7
296608 2009 RM_{73}	17.1	*X*	12.45722	73.75795	9.29876	2.00016	0.1284412	0.20412100	2.8567852	20	—	—
296609 2009 RA_{75}	17.5	*X*	319.96299	115.50824	352.18572	5.20410	0.0703261	0.29380068	2.2409604	20	—	—
296610 2009 SV_{12}	16.7	*X*	96.57121	101.65330	353.31228	13.54546	0.1413284	0.22957775	2.6414933	20	3 31.9	20.4
296611 2009 SH_{13}	16.1	*X*	56.64817	81.78190	353.68463	12.56020	0.1475282	0.21452696	2.7636400	20	1 15.7	19.4
296612 2009 SA_{19}	17.4	*X*	156.74019	324.12159	325.76107	4.81153	0.1456953	0.30103007	2.2049367	20	—	—
296613 2009 SY_{20}	16.3	*X*	347.94314	106.90230	239.43968	1.22856	0.0776474	0.17875444	3.1210316	20	9 17.4	20.3
296614 2009 SC_{21}	17.5	*X*	81.16867	55.76270	272.00179	5.57580	0.1239876	0.29020485	2.2594337	20	—	—
296615 2009 SL_{21}	15.7	*X*	163.96179	297.27156	280.80259	7.73352	0.0483863	0.18954179	3.0014612	20	11 12.9	20.2
296616 2009 SX_{28}	17.3	*X*	310.61851	145.54413	189.38807	9.60869	0.2345105	0.25859451	2.4400001	20	6 18.2	19.9
296617 2009 SW_{30}	16.2	*X*	162.67312	282.93695	25.64370	8.62843	0.0849879	0.21154846	2.7895199	20	—	—
296618 2009 SY_{30}	17.2	*X*	132.93016	194.17893	171.33122	6.32854	0.0247767	0.21642271	2.7474776	20	1 11.1	21.1
296619 2009 SY_{35}	16.8	*X*	7.36784	278.76758	310.32784	2.83440	0.1767172	0.24202476	2.5501331	20	5 13.5	18.9
296620 2009 SJ_{40}	17.0	*X*	146.01479	162.38425	205.51037	4.86353	0.0873864	0.21927163	2.7236278	20	2 4.9	21.0
296621 2009 SQ_{43}	17.1	*X*	130.44601	269.22904	337.90366	4.76895	0.1644203	0.27900505	2.3195016	20	11 29.4	20.8
296622 2009 SE_{46}	16.4	*X*	355.16321	97.11224	282.26057	2.91794	0.0517791	0.18269907	3.0759445	20	11 8.2	20.4
296623 2009 SG_{47}	16.1	*X*	332.12447	40.80999	328.95845	2.79575	0.1694814	0.17483436	3.1675115	20	9 20.2	19.5
296624 2009 SP_{50}	16.6	*X*	129.67914	271.41977	298.79800	6.74610	0.0537540	0.27352841	2.3503602	20	10 6.9	20.0
296625 2009 SY_{50}	18.0	*X*	230.64336	257.14667	160.71487	2.87062	0.1767162	0.25384347	2.4703513	20	7 3.1	21.6
296626 2009 SO_{53}	17.1	*X*	84.33333	313.60321	325.20975	3.56920	0.1400929	0.27998319	2.3140962	20	11 24.5	20.5
296627 2009 SU_{54}	17.2	*X*	95.11067	39.48501	323.00274	2.70887	0.1146126	0.21006900	2.8026018	20	—	—
296628 2009 SN_{58}	13.7	*X*	339.98813	56.64389	311.39422	5.05703	0.0341426	0.08250803	5.2256288	20	9 17.3	20.5
296629 2009 SX_{59}	17.6	*X*	163.01368	14.19152	268.90372	3.61416	0.1368437	0.29892230	2.2152896	20	—	—
296630 2009 SK_{60}	15.6	*X*	178.33949	294.55013	232.67445	8.33472	0.0416043	0.17541179	3.1605563	20	9 25.2	20.4
296631 2009 SG_{61}	17.5	*X*	127.39262	320.54059	309.06057	3.86776	0.1241276	0.28537743	2.2848427	20	12 27.1	20.7
296632 2009 SZ_{65}	16.8	*X*	13.28543	256.89252	145.76785	3.10884	0.1058838	0.19264601	2.9691311	20	—	—
296633 2009 SA_{70}	16.8	*X*	118.30440	115.35020	230.39491	1.66154	0.1810900	0.21185633	2.7868168	20	—	—
296634 2009 SX_{70}	13.6	*X*	291.39509	243.97342	179.31721	8.84268	0.0843209	0.08134418	5.2753555	20	9 17.3	20.4
296635 2009 SA_{75}	16.9	*X*	335.88524	128.38816	142.99461	5.10495	0.1225003	0.24567682	2.5247978	20	5 18.9	19.6
296636 2009 SR_{75}	15.5	*X*	255.55121	300.20299	179.66190	11.87073	0.0332316	0.18131566	3.0915707	20	11 4.4	19.9
296637 2009 SR_{87}	17.2	*X*	50.44692	281.99705	171.39430	4.97529	0.1331745	0.21255030	2.7807476	20	1 23.7	20.3
296638 Sergeibelov	15.4	*X*	185.92908	269.82072	262.61110	10.98385	0.0886863	0.17742448	3.1366088	20	10 5.8	20.5
296639 2009 SA_{102}	16.7	*X*	46.15711	23.05731	263.45471	5.67560	0.1066678	0.27379021	2.3488617	20	10 13.2	19.7
296640 2009 SA_{107}	15.2	*X*	135.75117	118.30066	227.07166	6.33802	0.1327802	0.12493497	3.9629023	20	1 16.2	21.2

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	m		°	°	°	°		°				
296641 2009 ST_{109}	16.3	X	175.69512	190.02261	91.91441	3.17725	0.0586389	0.20840859	2.8174679	20	—	—
296642 2009 SE_{115}	15.9	X	220.01870	59.61367	345.66857	8.59569	0.1608648	0.15481998	3.4349312	20	6 5.2	21.5
296643 2009 SF_{115}	16.1	X	357.79363	115.99416	210.10109	8.35740	0.2015713	0.17632035	3.1496897	20	9 10.9	19.5
296644 2009 SE_{118}	16.7	X	43.00660	157.51004	294.16220	3.00305	0.0711180	0.21382838	2.7696560	20	1 6.7	20.0
296645 2009 SG_{119}	18.0	X	61.67118	62.15657	222.28999	3.04414	0.1835583	0.27545340	2.3393972	20	11 12.5	21.2
296646 2009 SY_{119}	16.9	X	127.92876	330.88761	232.95887	3.81611	0.0926101	0.26772002	2.3842336	20	9 29.3	20.2
296647 2009 SR_{120}	16.7	X	76.47845	174.51090	241.71746	2.79640	0.0931418	0.21398749	2.7682828	20	1 11.8	20.2
296648 2009 SG_{122}	13.1	X	263.21899	239.40445	203.61301	15.07784	0.0815408	0.08244256	5.2283953	20	9 4.3	20.2
296649 2009 SH_{124}	15.6	X	336.66540	141.16469	217.94274	11.11660	0.0796716	0.17488933	3.1668477	20	9 13.1	19.8
296650 2009 SC_{129}	16.5	X	351.75599	36.13561	185.40632	7.46135	0.0786323	0.23559755	2.5963039	20	4 7.3	19.5
296651 2009 SH_{130}	16.4	X	100.98581	279.81112	63.03565	2.98560	0.0687996	0.20237556	2.8731878	20	—	—
296652 2009 SC_{133}	16.6	X	227.06162	78.46900	164.03394	5.02660	0.0600095	0.20878465	2.8140837	20	—	—
296653 2009 SN_{135}	16.1	X	232.26082	249.16183	279.69168	1.47329	0.1454911	0.18629205	3.0362661	20	11 19.0	20.4
296654 2009 SW_{135}	14.1	X	248.84347	240.09154	220.05920	8.66645	0.0519769	0.08053072	5.3108211	20	9 11.8	21.2
296655 2009 SS_{136}	17.1	X	82.92853	56.61626	310.52489	1.09967	0.0808756	0.20222653	2.8745991	20	—	—
296656 2009 SD_{139}	15.8	X	312.34281	25.25628	48.23846	4.67587	0.0391483	0.18826494	3.0150169	20	11 18.9	19.7
296657 2009 SY_{141}	17.7	X	273.70844	185.13064	200.74873	2.03601	0.2312518	0.25688169	2.4508343	20	7 3.1	20.7
296658 2009 SS_{143}	17.3	X	45.73869	287.40279	14.07345	3.32540	0.0577991	0.27092104	2.3654162	20	10 27.0	20.3
296659 2009 SZ_{143}	16.6	X	77.78414	193.27616	178.05106	2.02015	0.0806872	0.20296167	2.8676536	20	—	—
296660 2009 ST_{149}	15.1	X	84.77460	325.67807	208.85426	8.71470	0.0583832	0.15629091	3.4133454	20	6 20.0	20.0
296661 2009 SK_{151}	16.5	X	107.34118	165.17201	210.84259	2.09577	0.0950751	0.21402973	2.7679186	20	1 3.4	20.1
296662 2009 SH_{153}	17.1	X	120.10991	37.34886	338.17522	5.03895	0.1158062	0.22012634	2.7165730	20	1 21.7	20.9
296663 2009 SO_{154}	16.3	X	86.95731	242.73611	38.41202	1.21457	0.1458674	0.18756671	3.0224947	20	11 15.2	21.0
296664 2009 SQ_{155}	13.7	X	265.10055	85.82434	11.32896	2.78835	0.2005999	0.08304419	5.2031123	20	9 11.2	20.6
296665 2009 SS_{155}	13.5	X	238.40076	274.76595	189.46348	4.06614	0.0359001	0.08282239	5.2123977	20	9 9.2	20.4
296666 2009 SQ_{156}	13.1	X	288.45752	29.63892	24.72816	11.93120	0.0828497	0.08223704	5.2371024	20	9 8.8	19.9
296667 2009 SM_{159}	13.4	X	96.02228	27.33734	227.91386	11.95754	0.0306290	0.08394811	5.1656952	20	9 24.3	20.4
296668 2009 SY_{159}	16.9	X	181.84178	343.46151	322.83779	2.62146	0.1816044	0.21680750	2.7442258	20	1 6.5	21.4
296669 2009 SG_{163}	16.0	X	89.33368	181.04091	68.97120	2.28030	0.1387798	0.18103967	3.0947119	20	10 10.8	20.6
296670 2009 SW_{163}	16.6	X	148.11792	97.62792	274.90113	4.34385	0.0779687	0.22077630	2.7112387	20	2 11.9	20.4
296671 2009 SP_{170}	13.8	X	306.27229	158.38088	246.86218	3.78821	0.0582749	0.08082378	5.2979754	20	9 16.5	20.7
296672 2009 SU_{173}	12.7	X	277.30180	149.37795	276.84462	16.43962	0.0520984	0.08267108	5.2187558	20	8 31.4	19.8
296673 2009 ST_{183}	16.8	X	154.85636	241.21975	254.42455	5.69515	0.0823525	0.25164988	2.4846863	20	7 28.4	20.5
296674 2009 SH_{188}	13.6	X	342.11473	259.02352	101.85751	6.87098	0.0866654	0.08194744	5.2494339	20	9 15.3	20.1
296675 2009 SS_{189}	16.2	X	121.74396	128.26045	225.84549	6.81512	0.1105078	0.21279976	2.7785740	20	—	—
296676 2009 ST_{191}	15.7	X	312.50707	164.18293	266.38608	2.52778	0.1479232	0.18491658	3.0513040	20	11 8.5	19.1
296677 2009 SA_{208}	17.8	X	313.62680	83.52235	346.99635	2.25277	0.1624199	0.27605026	2.3360239	20	12 13.1	19.6
296678 2009 SQ_{209}	17.4	X	285.66910	344.55542	24.29342	2.94289	0.1815534	0.25873763	2.4391003	20	7 5.4	20.2
296679 2009 SD_{211}	17.0	X	107.07859	232.77239	156.35799	1.18600	0.0807915	0.21491015	2.7603539	20	1 17.3	20.7
296680 2009 SA_{212}	18.7	X	321.80069	145.35789	289.83946	0.25165	0.1544431	0.27861787	2.3216499	20	—	—
296681 2009 SZ_{213}	17.6	X	279.36822	18.00729	49.86831	1.20942	0.1865539	0.26568929	2.3963671	20	9 21.7	19.9
296682 2009 SM_{218}	13.1	X	251.65933	277.27736	181.85343	10.15790	0.0476008	0.08381918	5.1709909	20	9 16.9	20.1
296683 2009 SS_{227}	13.9	X	306.21540	225.43694	192.44540	9.89074	0.0515949	0.08615872	5.0769540	20	10 3.6	20.5
296684 2009 SS_{229}	17.9	X	177.23113	319.50692	329.79660	3.34740	0.1727361	0.30779316	2.1725181	20	—	—
296685 2009 SW_{235}	16.4	X	160.75487	281.60650	51.74817	4.72177	0.1237226	0.21572573	2.7533923	20	1 16.0	20.6
296686 2009 SN_{236}	16.1	X	167.34680	195.70939	112.57246	9.20389	0.1896041	0.21872407	2.7281715	20	—	—
296687 2009 SU_{238}	15.9	X	116.64876	331.90656	49.49384	13.15429	0.1439361	0.21595556	2.7514384	20	2 1.7	20.0
296688 2009 SF_{240}	16.2	X	104.86389	251.97214	114.22120	11.21134	0.1582409	0.21169121	2.7882658	20	—	—
296689 2009 SD_{242}	15.2	X	349.98805	58.38264	273.24899	9.65216	0.0974385	0.17653341	3.1471548	20	8 27.9	19.4
296690 2009 SM_{245}	13.6	X	290.00621	79.82136	321.14559	6.00173	0.1310288	0.08238420	5.2308638	20	8 15.5	20.3
296691 2009 SC_{246}	13.4	X	269.03195	287.21622	140.50107	5.10871	0.0379906	0.08201837	5.2464068	20	9 3.2	20.3
296692 2009 SV_{246}	14.1	X	288.50354	138.65650	294.27815	2.33982	0.0634535	0.08631490	5.0708280	20	9 27.1	20.8
296693 2009 SD_{247}	13.6	X	317.57476	92.05512	298.15316	4.02444	0.0609446	0.08333792	5.1908796	20	9 13.6	20.3
296694 2009 SV_{253}	13.8	X	303.20272	257.10147	158.52875	5.51881	0.1098970	0.08362782	5.1788763	20	9 21.7	20.3
296695 2009 SY_{254}	16.2	X	203.87153	220.59508	139.84996	16.42078	0.2158019	0.23423562	2.6063582	20	3 31.3	20.9
296696 2009 SJ_{265}	15.6	X	17.42996	9.55693	5.55106	5.56483	0.1344141	0.18695938	3.0290367	20	12 14.7	19.6
296697 2009 SD_{269}	17.2	X	287.04986	293.05200	101.23421	3.40031	0.1991738	0.26460197	2.4029275	20	8 13.2	19.6
296698 2009 SF_{275}	16.7	X	262.04617	333.10272	118.78589	2.18464	0.1190231	0.17688969	3.1429276	20	9 24.7	21.0
296699 2009 SY_{276}	15.9	X	295.08759	278.25354	172.77199	8.25459	0.1019698	0.18601728	3.0392553	20	11 13.7	19.8
296700 2009 SG_{277}	16.8	X	177.38447	168.06466	170.12408	5.97621	0.1892288	0.22472172	2.6794111	20	2 7.2	21.3
296701 2009 SS_{278}	15.7	X	301.38992	35.26358	28.47492	11.04852	0.0580672	0.18163249	3.0879744	20	10 20.5	19.6
296702 2009 SD_{282}	16.2	X	132.14247	290.74747	52.88411	5.84032	0.0577401	0.21143422	2.7905247	20	—	—
296703 2009 SZ_{284}	16.9	X	38.62554	63.80612	334.28998	1.24861	0.0735176	0.20268383	2.8702737	20	—	—
296704 2009 SA_{291}	16.6	X	294.01817	93.14087	137.33618	5.22493	0.1197844	0.22206153	2.7007673	20	1 23.1	20.2
296705 2009 SW_{296}	17.0	X	50.53625	239.06796	171.66974	2.71274	0.0172028	0.20727249	2.8277539	20	—	—
296706 2009 SG_{306}	15.8	X	204.58889	21.37876	103.75594	2.25300	0.1097607	0.17134760	3.2103376	20	9 1.3	20.7
296707 2009 SK_{313}	13.7	X	299.73872	260.03995	155.95413	7.43615	0.0514576	0.08344534	5.1864235	20	9 24.8	20.4
296708 2009 SN_{314}	17.3	X	166.09770	122.96124	211.93799	1.66558	0.0876195	0.22068388	2.7119955	20	1 18.5	21.3
296709 2009 SV_{320}	16.8	X	96.33274	17.91707	32.77542	1.41155	0.1655621	0.21812398	2.7331729	20	2 12.3	20.2
296710 2009 SX_{323}	16.0	X	331.85318	262.81955	128.43979	5.88055	0.2091684	0.18369490	3.0648177	20	10 24.8	19.1
296711 2009 SF_{327}	12.8	X	239.00121	142.96299	324.74744	14.68109	0.0512540	0.08114092	5.2841615	20	9 8.8	19.9
296712 2009 SA_{330}	16.5	X	220.86418	358.15752	357.13851	13.62296	0.1876268	0.23735387	2.5834804	20	4 1.5	20.7
296713 2009 SQ_{331}	16.2	X	162.81238	213.74607	199.85165	13.42604	0.2436568	0.22950023	2.6420881	20	4 29.2	20.8
296714 2009 SL_{335}	18.1	X	113.72394	103.95680	179.05885	1.96031	0.0610863	0.28471604	2.2883798	20	12 29.3	21.1
296715 2009 SQ_{337}	16.4	X	153.76448	134.75369	248.55685	8.11777	0.2690661	0.22514091	2.6760842	20	3 13.6	21.1
296716 2009 SP_{342}	16.7	X	273.84943	337.77982	56.39461	10.65281	0.1946110	0.25810683	2.4430726	20	7 24.1	19.8
296717 2009 SX_{344}	16.4	X	61.09703	288.26239	185.91430	12.69818	0.0719550	0.22223416	2.6993685	20	2 28.1	19.9
296718 2009 ST_{346}	15.6	X	250.88853	97.23420	19.65248	16.82870	0.1198534	0.18142865	3.0902869	20	10 11.7	19.9
296719 2009 SH_{349}	17.0	X	279.63414	187.99668	34.35973	3.13794	0.0038907	0.21522590	2.7576535	20	1 13.2	20.7
296720 2009 SX_{349}	13.6	X	324.61102	299.34768	81.72946	2.48504	0.0789985	0.08208040	5.2437631	20	9 13.6	20.2

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	m		°	°	°	°		°				
296721 2009 SE_{351}	15.4	X	67.00979	239.84350	58.42272	11.03070	0.1141599	0.18380827	3.0635574	20	11 11.1	19.8
296722 2009 SJ_{352}	16.1	X	283.35063	6.55433	221.80311	7.55150	0.0488835	0.21833988	2.7313709	20	1 16.3	20.0
296723 2009 SD_{353}	16.5	X	239.92294	241.39656	249.94896	1.29797	0.1246438	0.17922933	3.1155161	20	10 14.7	21.0
296724 2009 SL_{353}	15.7	X	21.18794	283.36877	58.19566	16.60049	0.1113396	0.17501967	3.1652752	20	11 5.5	19.9
296725 2009 SW_{354}	13.5	X	282.45197	321.75655	113.04873	7.39019	0.0980740	0.08344646	5.1863774	20	9 21.3	20.3
296726 2009 SA_{356}	14.0	X	307.66268	180.11666	233.96017	7.83461	0.0752497	0.08375816	5.1735022	20	9 26.0	20.7
296727 2009 SO_{359}	14.9	X	232.23265	200.72163	257.65810	18.03269	0.1091657	0.17141951	3.2094397	20	8 19.2	20.0
296728 2009 SQ_{360}	16.1	X	45.33368	147.66784	287.92784	3.26769	0.0443646	0.21082799	2.7958714	20	—	—
296729 2009 SF_{361}	15.6	X	280.35326	80.79870	13.46849	15.78339	0.0756080	0.17838768	3.1253079	20	10 23.8	19.9
296730 2009 TD_3	16.6	X	89.88032	42.81731	3.90873	7.49647	0.2265175	0.21279624	2.7786046	20	2 10.6	20.2
296731 2009 TK_{10}	15.8	X	182.30365	251.84223	283.83731	9.72605	0.0615461	0.17608687	3.1524731	20	10 6.9	20.8
296732 2009 TP_{11}	16.4	X	145.08500	324.50858	58.97532	7.93845	0.0614054	0.22105947	2.7089228	20	2 25.7	20.3
296733 2009 TT_{14}	16.9	X	162.69919	15.26322	20.09366	3.34495	0.1444744	0.22802958	2.6534358	20	4 1.6	20.9
296734 2009 TH_{16}	17.6	X	26.33717	182.29326	174.59259	2.08157	0.2309910	0.27969507	2.3156851	20	—	—
296735 2009 TT_{17}	15.2	X	26.34213	265.02483	105.30613	11.19602	0.0884662	0.18921511	3.0049148	20	12 16.2	19.3
296736 2009 TH_{20}	15.4	X	323.70775	114.84742	242.88261	11.63779	0.2775986	0.17365981	3.1817777	20	8 1.6	18.8
296737 2009 TS_{20}	17.5	X	329.66545	238.76436	171.66703	4.33494	0.1412397	0.27575211	2.3377074	20	12 14.5	19.7
296738 2009 TO_{25}	12.9	X	290.03842	212.57682	211.94525	24.32147	0.0515742	0.08296112	5.2065854	20	9 17.7	19.9
296739 2009 TY_{26}	17.3	X	191.51120	189.69393	122.99655	4.51484	0.1486606	0.31335828	2.1467193	20	1 8.3	20.4
296740 2009 TD_{31}	16.4	X	15.71432	201.98942	321.56653	7.83951	0.0755761	0.22371280	2.6874609	20	2 25.4	19.6
296741 2009 TO_{34}	16.5	X	136.21984	219.90300	130.49529	4.33733	0.1008445	0.21199454	2.7856054	20	1 7.7	20.5
296742 2009 TR_{35}	15.9	X	324.34075	267.57550	132.38053	2.08190	0.1883394	0.17633137	3.1495584	20	10 17.5	19.3
296743 2009 TQ_{41}	16.2	X	186.31951	250.53468	75.34338	6.99155	0.0384678	0.21825672	2.7320646	20	1 28.8	20.1
296744 2009 TZ_{43}	16.8	X	139.54812	244.88841	188.39428	10.48120	0.1069161	0.22746235	2.6578453	20	4 24.1	20.7
296745 2009 TL_{46}	13.2	X	301.74494	317.16753	93.61546	10.16958	0.0706823	0.08203715	5.2456061	20	9 22.6	20.0
296746 2009 UV	15.5	X	49.53188	102.26753	258.28368	8.80987	0.0465234	0.19140922	2.9819074	20	12 26.9	19.8
296747 2009 UB_1	16.0	X	25.04516	118.13510	213.06195	4.07621	0.0606106	0.18008767	3.1056087	20	10 20.7	20.1
296748 2009 UT_1	15.7	X	355.85022	46.56923	345.25997	9.25059	0.2549487	0.18291324	3.0735429	20	12 16.5	19.1
296749 2009 UH_{12}	17.0	X	36.17426	211.07105	175.84922	1.99982	0.0816170	0.20015915	2.8943591	20	—	—
296750 2009 UW_{13}	15.1	X	295.67908	235.61447	172.59659	14.65634	0.0499983	0.17796030	3.1303096	20	9 23.8	19.3
296751 2009 UX_{13}	15.2	X	347.39643	221.00755	159.31609	9.23975	0.0916064	0.18444736	3.0564767	20	11 4.7	19.1
296752 2009 UB_{14}	15.3	X	71.00869	141.96673	167.53285	11.16235	0.0939368	0.18882391	3.0090638	20	11 28.5	19.8
296753 Mustafamahmoud	15.5	X	21.71235	69.01126	279.18911	16.22794	0.1481427	0.17670362	3.1451335	20	11 14.7	19.8
296754 2009 UM_{24}	18.0	X	58.57461	145.61896	147.74746	1.68502	0.1885898	0.27302878	2.3532267	20	11 21.1	21.2
296755 2009 UV_{27}	15.1	X	203.98502	116.15061	59.50580	20.27754	0.0648107	0.17721420	3.1390895	20	11 7.5	19.8
296756 2009 UY_{27}	15.5	X	208.41665	110.90556	26.07813	9.92379	0.0766813	0.16959567	3.2324083	20	9 24.1	20.3
296757 2009 US_{29}	13.1	X	203.31427	119.20691	48.45808	17.71821	0.0421207	0.08204897	5.2451022	20	10 17.5	20.3
296758 2009 UM_{33}	18.3	X	61.72318	3.62761	63.36790	1.56171	0.1815153	0.29902333	2.2147906	20	—	—
296759 2009 UD_{34}	16.2	X	96.04637	92.36053	219.62844	2.66105	0.1325913	0.18928253	3.0042013	20	12 28.9	20.8
296760 2009 UP_{35}	15.5	X	358.98593	279.72230	60.60000	7.30122	0.1027584	0.16882399	3.2422508	20	9 30.3	19.6
296761 2009 UP_{41}	17.0	X	351.78917	92.20067	56.18397	1.25315	0.0163261	0.21368134	2.7709263	20	1 9.8	20.8
296762 2009 UH_{45}	15.4	X	134.25217	232.87808	180.36845	2.56786	0.1116884	0.13084244	3.8427043	20	3 29.5	21.2
296763 2009 UB_{51}	12.8	X	300.58953	34.17723	30.34448	13.04036	0.1143387	0.08194992	5.2493278	20	9 30.3	19.4
296764 2009 UH_{68}	16.4	X	162.67210	191.11646	121.21641	5.37627	0.0767406	0.21017845	2.8016288	20	—	—
296765 2009 UR_{69}	15.4	X	32.43741	326.06277	59.13037	11.41409	0.1219891	0.19084869	2.9877431	20	—	—
296766 2009 UP_{76}	17.0	X	302.08662	18.62525	252.09616	1.70015	0.1753149	0.23748127	2.5825563	20	3 13.8	20.2
296767 2009 UR_{79}	17.0	X	67.06709	355.46719	323.12514	2.58075	0.1967510	0.28158853	2.3052927	20	—	—
296768 2009 UM_{80}	16.7	X	77.55117	198.76431	231.55023	3.33611	0.0541101	0.21544871	2.7557519	20	1 25.6	20.3
296769 2009 UQ_{82}	18.4	X	293.34641	25.34021	106.43208	2.56627	0.1732895	0.27847694	2.3224332	20	—	—
296770 2009 UA_{84}	15.2	X	68.88346	255.79843	62.64307	11.55769	0.0621700	0.18140875	3.0905129	20	11 29.0	19.5
296771 2009 UF_{88}	15.9	X	3.55190	254.06930	120.39366	3.33268	0.2142827	0.18299440	3.0726341	20	12 3.1	19.3
296772 2009 UE_{100}	16.0	X	53.75636	198.15636	123.09087	3.73373	0.2784375	0.18590013	3.0405320	20	12 14.0	20.6
296773 2009 UQ_{103}	16.6	X	118.13952	130.46630	260.96274	0.84807	0.0788210	0.21226617	2.7832285	20	2 2.9	20.3
296774 2009 UG_{121}	13.5	X	316.49483	8.83875	21.60037	6.54723	0.1402224	0.08276777	5.2146906	20	9 8.9	19.8
296775 2009 UW_{121}	15.8	X	333.52632	232.35007	168.68827	16.72329	0.1495417	0.18058922	3.0998558	20	11 10.4	19.6
296776 2009 UG_{127}	16.3	X	138.96232	99.26461	286.31312	8.24917	0.0825327	0.22327066	2.6910077	20	2 16.5	20.2
296777 2009 UX_{130}	13.0	X	320.56524	138.24296	262.85946	13.62468	0.1220933	0.08301459	5.2043492	20	9 20.1	19.6
296778 2009 UJ_{132}	16.9	X	32.95489	6.06162	332.46067	6.26026	0.1305123	0.27649548	2.3335155	20	12 11.7	19.9
296779 2009 UW_{135}	15.6	X	355.39425	88.64043	309.36162	9.61532	0.1358846	0.18539623	3.0460389	20	12 10.3	19.4
296780 2009 UB_{140}	16.7	X	158.70087	313.11772	254.72359	19.46621	0.0391304	0.35947222	1.9589612	20	12 2.0	18.7
296781 2009 UH_{143}	17.1	X	27.51065	152.25203	221.41608	0.92250	0.0896543	0.18580415	3.0415790	20	12 20.4	21.1
296782 2009 UW_{148}	13.4	X	287.98519	351.63452	63.23596	7.25115	0.1034001	0.08072776	5.3021756	20	9 4.9	20.3
296783 2009 UT_{151}	13.1	X	286.97002	165.01356	275.98130	9.21369	0.0363559	0.08330427	5.1922772	20	10 3.9	20.0
296784 2009 UU_{151}	15.4	X	249.70195	6.38405	244.22898	11.68787	0.0941767	0.21667931	2.7453081	20	1 1.9	19.7
296785 2009 UA_{153}	16.2	X	200.15358	47.24952	234.35488	5.35479	0.1271190	0.20951224	2.8075647	20	—	—
296786 2009 UX_{153}	13.5	X	315.55920	267.16866	132.05159	5.38567	0.1055587	0.08426209	5.1528545	20	9 20.9	19.9
296787 2009 UR_{154}	13.0	X	348.53951	257.21261	87.02960	7.61786	0.0501413	0.08109848	5.2860049	20	9 5.6	19.8
296788 2009 VP_1	17.0	X	89.50485	185.86664	61.27448	6.86468	0.0735304	0.26531132	2.3986425	20	10 14.6	20.2
296789 2009 VX_9	15.6	X	304.02157	346.04757	103.62032	3.74749	0.0244137	0.18022863	3.1039892	20	11 27.7	19.7
296790 2009 VQ_{18}	16.9	X	205.52183	40.26660	293.65853	2.24467	0.1159637	0.22335554	2.6903259	20	2 26.2	21.1
296791 2009 VV_{18}	16.5	X	130.33111	0.09420	28.76116	6.34345	0.0434811	0.21513192	2.7584566	20	2 12.2	20.4
296792 2009 VF_{24}	16.5	X	283.06330	272.85987	36.62936	5.17796	0.2071115	0.23537899	2.5979109	20	4 7.2	20.1
296793 2009 VL_{25}	12.7	X	66.89407	44.29507	242.67525	17.27229	0.0289700	0.08172425	5.2589870	20	9 24.4	19.8
296794 2009 VS_{29}	16.3	X	307.98534	252.35401	184.39384	5.01645	0.0559079	0.18379451	3.0637103	20	11 16.5	20.4
296795 2009 VY_{34}	16.2	X	227.84258	26.49293	265.35787	3.98837	0.0982232	0.21765951	2.7370598	20	1 29.3	20.4
296796 2009 VK_{35}	15.5	X	201.68106	291.65618	248.52225	12.29334	0.1228665	0.17611846	3.1520962	20	10 31.0	20.4
296797 2009 VA_{38}	18.0	X	149.39903	149.14073	194.81364	1.59556	0.1598868	0.30687768	2.1768367	20	1 6.2	20.7
296798 2009 VX_{38}	17.5	X	159.45282	64.60292	265.24124	3.37979	0.2532743	0.30612429	2.1804068	20	1 8.8	20.8
296799 2009 VT_{41}	17.0	X	146.96292	8.61942	102.98131	3.99808	0.1052085	0.23671033	2.5881608	20	6 19.5	20.9
296800 2009 VQ_{48}	16.5	X	340.24446	273.35343	163.11540	2.01517	0.2163718	0.18539331	3.0460709	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		°	°	°	°		°				
296801 2009 VU_{49}	17.1	X	211.50048	147.61363	281.86447	4.20118	0.2204183	0.23748217	2.5825499	20	6 26.1	21.4
296802 2009 VV_{53}	16.4	X	134.06196	330.12456	31.59090	4.30118	0.0663390	0.21215987	2.7841581	20	1 15.8	20.3
296803 2009 VU_{55}	16.8	X	335.57106	23.82638	49.23527	1.26800	0.1517334	0.18871080	3.0102661	20	12 24.9	20.2
296804 2009 VD_{58}	15.6	X	321.32782	286.00322	91.63303	6.24070	0.1493058	0.17023044	3.2243677	20	9 15.3	19.4
296805 2009 VJ_{59}	16.4	X	142.35594	268.63735	141.12514	13.35223	0.3166074	0.22332923	2.6905372	20	4 16.7	21.3
296806 2009 VK_{61}	15.6	X	89.38754	254.59820	52.42111	10.11333	0.1428355	0.18503149	3.0500406	20	12 16.3	20.5
296807 2009 VF_{72}	15.5	X	349.34063	296.08116	85.99234	10.03018	0.0899198	0.17748855	3.1358540	20	11 8.3	19.5
296808 2009 VO_{75}	16.7	X	206.67506	299.89600	88.35994	5.83716	0.1016070	0.23412098	2.6072089	20	5 7.3	20.6
296809 2009 VC_{79}	12.9	X	22.09586	69.67272	266.37761	20.54301	0.0713359	0.08242256	5.2292410	20	9 27.8	19.9
296810 2009 VA_{93}	15.2	X	96.69706	25.17926	68.17655	4.00882	0.1670689	0.12590060	3.9426132	20	4 13.8	20.8
296811 2009 VX_{94}	16.2	X	84.41388	127.49556	154.45235	2.96202	0.0792026	0.17495871	3.1660104	20	11 5.2	20.9
296812 2009 VN_{100}	15.4	X	81.24431	247.24491	74.02824	10.22117	0.0793434	0.18402995	3.0610967	20	12 18.8	19.8
296813 2009 VL_{111}	15.0	X	248.38082	344.79846	71.14269	11.20407	0.1146944	0.15501413	3.4320625	20	7 24.6	20.1
296814 2009 VF_{112}	16.2	X	13.95556	208.10603	177.43657	6.89168	0.1341545	0.18613569	3.0379662	20	12 22.9	20.2
296815 2009 VE_{114}	17.6	X	292.55424	106.80499	342.03341	0.90400	0.1513140	0.26710297	2.3879042	20	11 23.0	19.7
296816 2009 VR_{116}	15.4	X	114.26415	235.97321	93.17935	11.19747	0.0954709	0.19258171	2.9697919	20	—	—
296817 2009 WF_{3}	13.3	X	339.55908	272.73274	86.55281	3.37649	0.0519360	0.08123672	5.2800067	20	9 9.7	20.0
296818 2009 WW_{5}	17.2	X	156.87727	324.85032	106.37569	5.21942	0.0776934	0.23164344	2.6257661	20	5 8.6	21.1
296819 Artesian	16.3	X	252.86150	294.40985	65.93503	8.81872	0.1426899	0.23953837	2.5677495	20	5 16.7	20.0
296820 2009 WT_{7}	16.8	X	176.25245	15.01770	7.41125	1.81642	0.1442928	0.22850690	2.6497395	20	3 29.2	21.0
296821 2009 WX_{10}	15.4	X	161.62292	135.42722	59.47147	5.04745	0.0294251	0.17132218	3.2106551	20	10 14.2	20.1
296822 2009 WP_{24}	15.6	X	343.39935	313.12160	66.83121	7.98429	0.0801556	0.17408514	3.1765931	20	10 25.9	19.7
296823 2009 WB_{25}	16.1	X	265.41138	317.95620	57.84676	11.62839	0.1404287	0.24205946	2.5498894	20	6 21.0	19.5
296824 2009 WK_{28}	17.5	X	184.65658	63.84172	241.33526	4.00388	0.0825669	0.30093111	2.2054201	20	—	—
296825 2009 WG_{36}	15.3	X	41.67558	83.50836	257.12596	9.81627	0.0761239	0.17965919	3.1105446	20	11 24.6	19.6
296826 2009 WH_{36}	16.8	X	105.25257	26.55810	341.04265	2.72950	0.1278745	0.20440389	2.8541488	20	—	—
296827 2009 WM_{37}	16.9	X	243.40489	325.59979	316.47382	2.58831	0.0611541	0.21371023	2.7706766	20	2 6.5	20.9
296828 2009 WC_{40}	16.9	X	28.41829	333.81468	37.34315	2.80642	0.2339914	0.27849855	2.3223130	20	—	—
296829 2009 WJ_{40}	16.8	X	208.59769	336.06644	45.24692	3.98447	0.2179312	0.23301972	2.6154170	20	4 24.9	21.2
296830 2009 WG_{46}	15.4	X	43.11198	317.83828	83.90696	14.68511	0.1193811	0.19534513	2.9417177	20	—	—
296831 2009 WW_{47}	15.2	X	241.43371	226.13150	247.45838	8.01027	0.0559426	0.17452379	3.1712681	20	9 30.4	19.8
296832 2009 WZ_{48}	15.4	X	238.30781	163.19926	337.75596	11.39100	0.0896096	0.17763068	3.1341810	20	10 24.3	20.1
296833 2009 WY_{49}	15.9	X	232.20234	116.79931	318.27655	21.38349	0.0202795	0.23535071	2.5981190	20	8 14.7	19.3
296834 2009 WA_{64}	14.6	X	312.37794	174.27370	313.24494	27.24944	0.1190098	0.17922547	3.1155608	20	—	—
296835 2009 WX_{66}	16.7	X	338.53690	229.54168	149.76854	1.50369	0.1611531	0.17635628	3.1492618	20	10 17.4	20.3
296836 2009 WS_{68}	16.8	X	24.41044	119.98309	126.67487	4.86434	0.0622948	0.24257357	2.5462853	20	7 5.6	19.8
296837 2009 WO_{71}	16.0	X	307.38965	21.63464	94.35214	2.66091	0.0142965	0.18713297	3.0271633	20	—	—
296838 2009 WB_{73}	16.0	X	152.95717	56.02846	223.50086	7.83445	0.0227779	0.19062602	2.9900694	20	—	—
296839 2009 WF_{77}	16.5	X	246.90470	324.48026	26.34137	5.93748	0.1705858	0.23608716	2.5927132	20	4 23.9	20.4
296840 2009 WW_{78}	16.7	X	153.21919	196.80860	133.86419	1.18334	0.0739988	0.20988552	2.8042350	20	—	—
296841 2009 WL_{79}	16.2	X	295.28122	326.40843	134.95767	3.68361	0.0356525	0.17755732	3.1350442	20	11 29.4	20.4
296842 2009 WT_{83}	15.7	X	210.91279	278.50815	274.31126	8.12090	0.1241355	0.18045180	3.1014295	20	11 25.8	20.5
296843 2009 WK_{84}	15.8	X	274.99179	5.44763	265.00276	10.15828	0.1212291	0.22131604	2.7068288	20	2 15.4	19.9
296844 2009 WN_{84}	17.5	X	83.27246	297.93416	6.80002	4.89551	0.1939399	0.27757167	2.3274800	20	12 30.4	21.2
296845 2009 WG_{88}	15.7	X	129.25142	18.10400	235.65454	9.79760	0.0838504	0.17540462	3.1606424	20	11 18.3	20.4
296846 2009 WA_{107}	16.2	X	53.64721	159.43466	248.00373	10.97089	0.0513571	0.19749084	2.9203714	20	—	—
296847 2009 WR_{115}	16.2	X	89.86226	122.60291	172.90793	2.02088	0.0877666	0.17772893	3.1330257	20	11 27.9	20.7
296848 2009 WJ_{169}	17.2	X	119.06158	229.53321	200.33298	3.68777	0.0546355	0.21919522	2.7242607	20	3 18.7	21.0
296849 2009 WF_{172}	15.5	X	195.10754	252.79974	272.60448	7.88263	0.0875093	0.17097587	3.2149891	20	10 7.0	20.6
296850 2009 WP_{176}	15.6	X	264.06589	109.79029	36.01670	9.58278	0.0689685	0.18204357	3.0833239	20	12 8.4	19.8
296851 2009 WJ_{182}	15.2	X	164.05098	332.76261	273.25161	14.98121	0.1520604	0.17938786	3.1136803	20	12 12.3	20.3
296852 2009 WV_{184}	15.4	X	341.57962	54.47396	241.18895	14.95632	0.1768752	0.24560538	2.5252873	20	6 29.6	17.9
296853 2009 WC_{185}	13.9	X	286.15757	58.64519	10.11372	4.70437	0.0958777	0.08273058	5.2162532	20	9 16.8	20.7
296854 2009 WP_{188}	17.4	X	123.73856	264.44708	39.60289	6.99512	0.1299424	0.28811068	2.2703692	20	—	—
296855 2009 WG_{198}	16.6	X	208.28399	166.63782	329.53460	5.84476	0.0875780	0.25871854	2.4392203	20	9 28.8	19.9
296856 2009 WK_{204}	16.3	X	251.58579	159.23368	3.44497	4.20734	0.1138500	0.18277568	3.0750848	20	12 7.7	20.5
296857 2009 WM_{206}	15.9	X	349.69146	286.51723	259.33926	7.87544	0.1060623	0.21348998	2.7725819	20	2 11.5	19.3
296858 2009 WA_{207}	16.6	X	244.65187	326.89609	39.28668	4.07585	0.0763700	0.23824732	2.5770175	20	5 21.7	20.0
296859 2009 WA_{215}	15.2	X	310.99016	215.67347	295.30341	15.35880	0.2335561	0.18051530	3.1007021	20	—	—
296860 2009 WU_{225}	15.4	X	40.20103	318.77483	185.03708	2.82170	0.1607485	0.12339787	3.9957436	20	3 28.5	20.3
296861 2009 WU_{241}	16.5	X	99.76525	241.06582	179.56925	5.18078	0.0605075	0.21192554	2.7862100	20	2 12.9	20.2
296862 2009 WN_{259}	16.7	X	215.58681	216.29923	294.83956	18.39377	0.0949744	0.34856272	1.9996259	20	11 12.4	19.3
296863 2009 WW_{260}	16.6	X	257.77711	226.65946	77.05967	3.81490	0.1164225	0.22236995	2.6982694	20	3 15.8	20.5
296864 2009 WY_{261}	15.5	X	55.41902	254.14753	77.64033	5.85019	0.1311133	0.17780924	3.1320823	20	12 8.0	19.8
296865 2009 WP_{262}	14.8	X	42.86930	282.82773	78.97801	23.69007	0.0286683	0.17973706	3.1096461	20	12 14.8	19.2
296866 2009 XB_{7}	15.6	X	344.99397	287.38126	121.24750	10.35713	0.0799740	0.17843368	3.1247708	20	12 3.7	19.7
296867 2009 XC_{9}	17.0	X	311.67682	138.04005	302.26466	2.70307	0.3057849	0.26938438	2.3744030	20	12 29.4	17.5
296868 2009 XL_{9}	15.9	X	171.06634	198.92357	257.77375	16.39421	0.1205085	0.23586226	2.5943611	20	6 24.9	19.9
296869 2009 XD_{10}	16.5	X	293.42572	297.71178	208.00052	0.82133	0.0305264	0.18903037	3.0068723	20	—	—
296870 2009 XP_{14}	17.5	X	157.53797	156.28050	264.82829	3.82727	0.0674491	0.31488118	2.1397921	20	4 18.1	20.2
296871 2009 YN_{6}	15.3	X	232.41573	61.77985	117.91032	10.50418	0.0376313	0.17925720	3.1151931	20	12 15.9	19.8
296872 2009 YO_{6}	16.4	X	85.66975	249.01592	122.80178	7.18592	0.0796761	0.19790957	2.9162506	20	—	—
296873 2009 YV_{19}	17.4	X	240.53395	3.62614	128.50374	1.94609	0.1374336	0.25724803	2.4485069	20	10 29.9	20.3
296874 2009 YY_{21}	15.6	X	5.94604	277.97961	96.24408	22.70995	0.2382436	0.17473838	3.1686713	20	12 9.9	19.3
296875 2010 AT_{5}	17.8	X	109.89021	131.68247	291.37391	2.73448	0.0931455	0.29956676	2.2121113	20	2 22.9	20.2
296876 2010 AS_{12}	17.2	X	173.94561	100.17632	40.73898	3.87002	0.1708239	0.23913635	2.5706266	20	8 26.1	21.4
296877 2010 AR_{19}	16.9	X	235.53384	8.08419	132.70546	6.23554	0.0840900	0.25694636	2.4504231	20	11 13.4	20.1
296878 2010 AU_{31}	16.6	X	235.13237	66.09787	123.65688	7.34686	0.0638749	0.26458321	2.4030411	20	—	—
296879 2010 AK_{32}	16.8	X	194.17492	70.77893	184.48104	1.26657	0.1533768	0.26832702	2.3806366	20	—	—
296880 2010 AZ_{39}	16.5	X	179.58924	158.28788	292.87008	12.55418	0.2069664	0.23306935	2.6150456	20	6 27.2	21.0

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	m		°	°	°	°		°				
296881 2010 AM_{40}	15.1	X	184.15190	103.27404	298.16432	30.51651	0.0916628	0.22116540	2.7080577	20	4 13.9	20.0
296882 2010 AU_{40}	16.2	X	52.72634	50.84823	121.81235	9.68591	0.2131000	0.21230579	2.7828822	20	5 30.7	19.6
296883 2010 AD_{52}	15.7	X	293.98025	130.67964	262.48777	7.84697	0.1501948	0.15491907	3.4334664	20	8 13.1	20.3
296884 2010 AH_{54}	15.5	X	46.44762	284.84835	280.42910	7.18633	0.0658735	0.21900071	2.7258735	20	6 10.8	18.8
296885 2010 AU_{55}	16.6	X	57.33694	296.07699	326.84001	10.67146	0.1703485	0.23410903	2.6072976	20	9 26.9	20.3
296886 2010 AF_{79}	16.6	X	246.47962	169.62628	321.43726	6.66303	0.0636126	0.25752770	2.4467340	20	11 13.9	19.8
296887 2010 AB_{88}	13.0	X	50.07757	249.83561	41.51253	28.94299	0.0273596	0.08305058	5.2028454	20	9 30.6	20.1
296888 2010 BM_{1}	16.4	X	211.50210	64.02069	112.76429	7.84156	0.1322270	0.25900799	2.4374026	20	11 23.6	19.8
296889 2010 BC_{4}	15.9	X	11.24687	236.27544	333.46737	8.21988	0.0945800	0.21108120	2.7936351	20	4 19.8	19.4
296890 2010 BA_{5}	15.8	X	100.43661	100.08236	305.45610	10.91446	0.0567932	0.19824109	2.9129985	20	1 28.5	19.8
296891 2010 BS_{9}	16.1	X	272.96190	318.52714	148.53771	7.40439	0.1313750	0.17943919	3.1130865	20	10 28.4	20.3
296892 2010 BF_{25}	15.6	X	38.20076	259.89672	165.66456	18.02504	0.2009622	0.17277182	3.1926706	20	—	—
296893 2010 BV_{36}	15.8	X	297.28858	249.11744	220.33897	10.00627	0.1216623	0.18580451	3.0415751	20	12 6.8	19.6
296894 2010 BP_{39}	15.9	X	307.98461	114.50558	144.03620	13.75837	0.1349016	0.19173725	2.9785054	20	3 20.9	20.0
296895 2010 BS_{46}	16.5	X	223.12251	277.48758	151.54406	6.47917	0.0981707	0.22004493	2.7172430	20	7 15.7	20.5
296896 2010 BN_{105}	15.2	X	63.74966	154.52128	260.56419	23.46490	0.1598899	0.17236605	3.1976793	20	1 5.1	19.3
296897 2010 CH_{3}	17.1	X	334.42057	192.04503	357.71270	2.89894	0.1310832	0.28879745	2.2667684	20	1 10.1	19.7
296898 2010 CJ_{4}	17.0	X	153.21671	113.80648	162.51114	2.74511	0.1780849	0.26126797	2.4233265	20	—	—
296899 2010 CO_{7}	15.5	X	247.32313	82.77036	195.36864	15.64396	0.2019824	0.17506728	3.1647014	20	1 27.6	21.0
296900 2010 CY_{9}	16.3	X	137.08395	175.54909	80.64741	10.02607	0.1288662	0.23899995	2.5716045	20	12 10.8	20.2
296901 2010 CL_{12}	16.6	X	74.19476	150.76901	92.98297	3.15521	0.0668370	0.23504956	2.6003377	20	9 14.3	20.1
296902 2010 CN_{13}	16.2	X	99.52829	293.18045	282.19808	10.71647	0.1631158	0.22011083	2.7167006	20	9 9.3	20.6
296903 2010 CK_{16}	16.5	X	38.98756	157.87570	79.09765	5.41607	0.0132139	0.20844756	2.8171167	20	7 6.8	20.3
296904 2010 CH_{29}	17.3	X	195.74733	152.59822	138.58866	0.96659	0.2123649	0.27241509	2.3567595	20	—	—
296905 Korochantsev	18.3	X	347.78208	216.07837	342.84532	6.12951	0.0976976	0.29417427	2.2390627	20	2 18.4	20.5
296906 2010 CO_{51}	16.6	X	16.21546	159.03506	134.12557	13.97896	0.2020841	0.21179744	2.7873334	20	9 15.2	19.7
296907 Alexander	15.2	X	174.82274	226.72514	120.19944	10.47954	0.0800074	0.17526476	3.1623236	20	2 17.8	20.0
296908 2010 CM_{55}	16.2	X	136.26378	35.55174	114.51592	8.48660	0.2124531	0.22774698	2.6556304	20	8 3.2	20.6
296909 2010 CO_{55}	15.4	X	57.09239	244.55410	278.40981	15.65183	0.1269721	0.21520910	2.7577970	20	5 4.3	19.1
296910 2010 CQ_{68}	17.5	X	185.24080	320.63171	306.49728	3.98129	0.2036805	0.26582106	2.3955751	20	—	—
296911 2010 CT_{75}	17.6	X	270.33639	280.64324	315.51428	2.56219	0.1381857	0.28122587	2.3072742	20	—	—
296912 2010 CX_{75}	17.0	X	240.78257	307.27044	318.02259	4.94893	0.1634098	0.27975297	2.3153656	20	—	—
296913 2010 CY_{77}	16.4	X	234.28257	315.34842	336.56513	2.01734	0.2151288	0.18829121	3.0147364	20	2 3.3	21.4
296914 2010 CO_{81}	15.9	X	18.82266	142.95505	323.08780	3.08247	0.1077551	0.18472078	3.0534599	20	—	—
296915 2010 CX_{84}	17.6	X	1.17847	137.89900	350.82197	5.82326	0.1140812	0.28204300	2.3028156	20	—	—
296916 2010 CW_{92}	17.3	X	224.86986	101.40414	26.28768	2.81395	0.0894326	0.24395614	2.5366558	20	10 7.9	20.8
296917 2010 CD_{95}	16.9	X	252.85984	267.26663	133.33451	2.38896	0.0645856	0.22720021	2.6598893	20	7 19.9	20.6
296918 2010 CJ_{95}	16.4	X	10.07234	127.45482	25.51187	2.80270	0.0256537	0.19098377	2.9863342	20	2 12.1	20.3
296919 2010 CR_{105}	16.0	X	3.42085	336.68769	137.24397	7.79547	0.0821426	0.18453444	3.0555151	20	—	—
296920 2010 CT_{107}	15.5	X	328.13092	331.85214	162.77582	11.81142	0.2593737	0.17766260	3.1338055	20	—	—
296921 2010 CU_{107}	17.3	X	179.73522	306.74653	144.57568	2.57694	0.1923071	0.22378914	2.6868498	20	6 26.7	21.8
296922 2010 CK_{117}	15.4	X	294.62351	174.75552	97.56982	10.66001	0.0778522	0.18788659	3.0190632	20	3 31.9	19.8
296923 2010 CV_{133}	16.1	X	225.29367	153.95376	157.06972	16.59478	0.1449969	0.17661324	3.1462064	20	2 21.2	21.0
296924 2010 CS_{134}	16.0	X	99.06665	343.04143	261.76447	11.10262	0.1451685	0.22507470	2.6766090	20	10 16.3	20.4
296925 2010 CV_{137}	17.6	X	270.42454	69.61626	128.31774	1.89106	0.1270350	0.27345109	2.3508032	20	—	—
296926 2010 CR_{146}	15.7	X	241.11103	265.86154	346.93291	22.28048	0.3549238	0.17144590	3.2091103	20	—	—
296927 2010 CY_{146}	17.6	X	262.79872	79.02847	103.86888	2.86544	0.1489739	0.26472251	2.4021980	20	—	—
296928 Francescopalla	16.0	X	53.28059	279.65487	145.88900	10.78461	0.2326876	0.18817305	3.0159983	20	1 8.2	19.2
296929 2010 CT_{160}	17.1	X	76.94676	153.06176	36.42902	2.42291	0.1286839	0.21719530	2.7409584	20	7 13.1	20.7
296930 2010 CB_{181}	17.4	X	208.14659	330.96690	335.19030	5.91911	0.1404614	0.28432490	2.2904780	20	1 21.0	20.9
296931 2010 CF_{232}	15.1	X	141.46284	141.38225	100.32484	10.47599	0.0445196	0.18019895	3.1043300	20	11 19.3	19.8
296932 2010 CR_{235}	15.6	X	103.97329	0.59210	281.64596	9.55017	0.0224654	0.18119730	3.0929168	20	11 20.5	20.1
296933 2010 DH_{6}	14.8	X	88.20809	66.86443	341.49288	20.73599	0.2445053	0.19171577	2.9787278	20	2 17.5	18.8
296934 2010 DU_{6}	17.0	X	87.87341	352.91001	173.87469	2.55610	0.1391530	0.21545925	2.7556621	20	6 27.5	20.9
296935 2010 DV_{6}	16.4	X	259.08017	141.16232	165.74331	6.34247	0.0457984	0.20162448	2.8803187	20	3 30.3	20.5
296936 2010 DV_{11}	17.0	X	268.79699	69.49986	184.19075	6.60327	0.0765553	0.28355270	2.2946345	20	1 17.9	20.2
296937 2010 DQ_{15}	15.3	X	243.49746	351.19057	284.48548	26.65249	0.1383057	0.17392763	3.1785106	20	1 23.8	20.5
296938 2010 DX_{16}	16.0	X	49.25613	343.90074	154.97254	13.98864	0.2522908	0.19139654	2.9820391	20	4 16.7	19.4
296939 2010 DH_{26}	16.5	X	153.25803	354.93698	272.13330	6.88612	0.1117872	0.24375211	2.5380712	20	—	—
296940 2010 DT_{39}	18.1	X	224.11378	334.57153	255.19633	1.72867	0.1598649	0.26483107	2.4015415	20	—	—
296941 2010 DU_{42}	17.3	X	109.65371	332.54147	263.94982	0.98907	0.1136340	0.23670859	2.5881734	20	10 19.5	21.0
296942 2010 DU_{44}	16.8	X	141.95944	348.11019	178.36439	1.82297	0.1351451	0.22949918	2.6420962	20	8 25.1	20.9
296943 2010 DN_{45}	16.1	X	118.94592	83.73554	335.68192	11.88947	0.1002000	0.19748485	2.9204304	20	3 11.8	20.4
296944 2010 DX_{62}	16.2	X	103.03598	203.50248	75.72224	8.77904	0.1758541	0.23084147	2.6318441	20	12 7.4	20.2
296945 2010 DD_{78}	16.8	X	200.17885	326.20538	281.60679	5.80280	0.0629017	0.26281119	2.4138307	20	—	—
296946 2010 DN_{78}	16.9	X	342.22150	285.72220	307.64773	6.04287	0.1422153	0.29695439	2.2250659	20	3 20.8	19.1
296947 2010 DS_{78}	15.4	X	278.85403	136.90103	128.59049	9.29082	0.0294560	0.19607781	2.9343849	20	3 6.6	19.5
296948 2010 DP_{79}	17.2	X	256.21032	70.52080	168.02231	3.82781	0.1082353	0.27207468	2.3587249	20	—	—
296949 2010 EH_{14}	15.3	X	192.35378	240.80379	129.69788	12.81557	0.0636714	0.18217982	3.0817864	20	4 6.5	20.1
296950 Robertbauer	15.5	X	195.71890	192.16127	166.01140	30.06030	0.1832451	0.17566873	3.1574737	20	3 22.3	20.9
296951 2010 EL_{21}	16.7	X	61.96923	213.68922	0.36489	11.11569	0.1465738	0.21782062	2.7357100	20	8 1.5	20.4
296952 2010 EW_{29}	17.3	X	271.98675	84.22104	93.93099	5.75012	0.1630495	0.26698088	2.3886321	20	—	—
296953 2010 EX_{33}	16.3	X	7.87881	111.13314	25.67334	4.12101	0.2019767	0.18621254	3.0371304	20	1 10.4	19.6
296954 2010 EE_{34}	16.4	X	109.34454	329.95336	181.98940	7.80304	0.2706084	0.21637616	2.7478717	20	7 14.9	21.1
296955 2010 EJ_{34}	16.8	X	114.95525	47.74408	186.83241	14.19507	0.0805927	0.23396859	2.6083409	20	10 22.2	20.6
296956 2010 ES_{34}	15.3	X	254.64869	233.44827	25.76987	16.62881	0.1948410	0.17984214	3.1084346	20	1 19.7	20.6
296957 2010 EJ_{35}	17.5	X	264.71214	79.20893	169.66407	2.96690	0.1228634	0.28208526	2.3025856	20	1 4.3	20.7
296958 2010 ER_{37}	15.5	X	257.80924	82.68382	176.54910	7.82012	0.1158662	0.17866425	3.1220817	20	1 23.8	20.3
296959 2010 ES_{42}	17.4	X	340.18029	69.11032	130.74230	3.43229	0.0513623	0.29052298	2.2577840	20	2 13.9	19.7
296960 2010 EY_{43}	16.2	X	270.98836	107.08584	62.86396	4.18566	0.2189984	0.16800439	3.2527870	20	12 23.8	20.4

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	m		°	°	°	°		°				
296961 2010 EU_{44}	15.8	X	355.31365	120.24587	159.71075	20.80305	0.1589229	0.21098976	2.7944422	20	7 5.8	19.2
296962 2010 EF_{66}	16.1	X	107.63653	80.05444	139.46442	11.81973	0.1316406	0.22875519	2.6478217	20	9 30.6	20.2
296963 2010 EA_{67}	16.6	X	255.90633	5.49407	180.67154	6.24218	0.0744321	0.26211193	2.4181219	20	—	—
296964 2010 EN_{70}	16.1	X	58.93728	227.63074	13.86034	13.84256	0.1670844	0.21854510	2.7296607	20	9 7.8	19.9
296965 2010 EF_{74}	16.2	X	86.34576	103.52755	177.50890	12.96800	0.0877788	0.24185504	2.5513260	20	11 20.8	20.0
296966 2010 EG_{74}	16.7	X	181.92524	53.24953	186.06585	14.35560	0.1224815	0.25656436	2.4528548	20	—	—
296967 2010 EK_{74}	16.2	X	274.44151	138.29249	74.68085	4.39517	0.1133037	0.17851890	3.1237763	20	—	—
296968 Ignatianum	16.5	X	45.45507	238.02542	46.48064	5.14771	0.1487647	0.22929614	2.6436557	20	10 12.0	19.8
296969 2010 EU_{75}	16.8	X	105.84830	305.53240	183.50803	12.73406	0.1337436	0.21012132	2.8021366	20	5 31.4	21.1
296970 2010 EA_{77}	17.7	X	258.00567	86.20317	177.73223	4.01203	0.2145935	0.27631394	2.3345375	20	1 10.8	21.6
296971 2010 EN_{77}	17.0	X	280.77267	288.16770	182.12869	22.24698	0.1029077	0.35007516	1.9938624	20	—	—
296972 2010 ER_{78}	16.7	X	172.94271	16.22114	115.19582	3.43903	0.0521914	0.22872683	2.6480406	20	8 13.5	20.4
296973 2010 EU_{82}	17.1	X	324.89119	204.83795	25.49661	4.06549	0.1973886	0.28953293	2.2629280	20	2 12.2	19.5
296974 2010 EY_{85}	15.5	X	345.70873	142.21102	318.99344	17.33646	0.0551950	0.17867641	3.1219402	20	—	—
296975 2010 EN_{87}	16.4	X	4.36831	111.70493	37.15021	1.69006	0.1302556	0.18380720	3.0635692	20	1 25.5	19.9
296976 2010 EY_{98}	16.3	X	185.96499	279.54215	125.48129	3.59718	0.0141221	0.20377925	2.8599784	20	5 7.7	20.3
296977 2010 ED_{99}	16.9	X	150.68898	56.93889	176.73513	15.19509	0.0697569	0.24336172	2.5407848	20	11 30.8	20.9
296978 2010 ER_{99}	16.5	X	306.90901	71.79396	183.09421	11.81701	0.1935394	0.18997652	2.9968806	20	3 1.6	20.7
296979 2010 EV_{101}	16.3	X	331.15018	305.71320	325.66772	5.78749	0.1813088	0.20543758	2.8445667	20	4 29.8	19.6
296980 2010 EC_{104}	15.3	X	328.67689	58.93150	139.41677	18.26363	0.2698331	0.18418019	3.0594318	20	1 11.9	19.4
296981 2010 EN_{104}	15.4	X	344.91486	24.11096	134.05069	10.54842	0.0295286	0.18417149	3.0595281	20	1 16.5	19.6
296982 2010 EP_{104}	17.7	X	247.72706	105.07726	103.99389	5.98081	0.1794775	0.26580832	2.3956516	20	—	—
296983 2010 EQ_{105}	16.7	X	158.87963	155.02237	28.77360	5.17266	0.1794704	0.23405606	2.6076909	20	10 3.5	21.0
296984 2010 ER_{105}	16.8	X	150.93459	35.38251	145.81233	5.19519	0.1777881	0.23135936	2.6279151	20	9 23.5	21.1
296985 2010 ED_{109}	16.2	X	107.45965	18.84912	181.84013	12.67986	0.0400106	0.22208090	2.7006103	20	8 21.0	20.0
296986 2010 EK_{113}	16.6	X	139.75528	289.84144	351.89611	5.46664	0.0671097	0.25065296	2.4912702	20	—	—
296987 Piotrflin	15.1	X	249.45590	69.99504	166.21843	15.90826	0.2039441	0.17140293	3.2096467	20	—	—
296988 2010 EA_{125}	17.4	X	282.81966	72.76930	109.60406	7.20481	0.1144344	0.26948694	2.3738006	20	—	—
296989 2010 EE_{125}	17.1	X	260.21229	221.23551	51.89216	3.32380	0.1522347	0.27961073	2.3161508	20	1 29.7	20.6
296990 2010 EM_{125}	16.4	X	132.25821	191.20455	0.34560	12.65323	0.2163222	0.22877147	2.6476961	20	9 20.1	20.7
296991 2010 EM_{126}	16.0	X	5.56749	188.06113	77.24246	13.26874	0.1234171	0.21367421	2.7709880	20	7 3.3	19.1
296992 2010 EW_{129}	15.9	X	248.15114	33.24054	209.95149	8.88551	0.0315476	0.17501627	3.1653162	20	1 3.2	20.6
296993 2010 ER_{132}	16.9	X	175.88073	178.49627	14.98711	4.42538	0.0893282	0.24083714	2.5585098	20	11 3.4	20.7
296994 2010 EA_{133}	16.8	X	150.82238	79.29381	209.41862	5.80345	0.0693234	0.25712233	2.4493049	20	—	—
296995 2010 EG_{137}	17.4	X	22.86052	110.67500	123.82994	2.22132	0.1387676	0.30491164	2.1861840	20	6 26.3	19.0
296996 2010 ES_{139}	18.0	X	345.16185	162.70057	56.14151	1.43814	0.1232956	0.29220416	2.2491156	20	3 11.5	20.2
296997 2010 FC_{17}	16.4	X	138.72275	230.44652	196.17489	11.67765	0.0638972	0.19776989	2.9176236	20	4 10.8	20.7
296998 2010 FM_{19}	16.3	X	289.50073	35.82975	133.92909	5.77230	0.0998639	0.17164231	3.2066618	20	—	—
296999 2010 FN_{28}	16.8	X	183.58695	80.71670	182.26114	4.32419	0.1256691	0.25961301	2.4336143	20	—	—
297000 2010 FV_{28}	17.1	X	232.35688	128.38491	107.77489	2.94976	0.1729186	0.26472265	2.4021972	20	—	—
297001 2010 FW_{28}	17.4	X	359.61870	340.68668	170.79626	5.64880	0.0970667	0.28224350	2.3017249	20	1 1.2	20.0
297002 2010 FB_{30}	16.8	X	29.71425	146.25866	187.28643	13.26136	0.0331443	0.23695259	2.5863963	20	11 9.2	20.3
297003 2010 FR_{30}	15.9	X	123.48468	354.54133	24.54614	10.18485	0.0427181	0.17699741	3.1416523	20	1 29.2	20.5
297004 2010 FP_{31}	16.6	X	296.83764	357.55914	177.17992	4.79750	0.2086712	0.17804070	3.1293671	20	—	—
297005 Ellirichter	18.0	X	320.66243	47.04894	161.50284	2.32857	0.1667309	0.28363979	2.2941648	20	1 10.8	20.9
297006 2010 FN_{54}	16.6	X	213.96493	213.80982	146.10576	2.74975	0.0651788	0.19719507	2.9232908	20	4 11.9	20.8
297007 2010 FF_{56}	17.8	X	291.26442	52.96699	163.29113	2.07075	0.1600605	0.27524640	2.3405699	20	—	—
297008 2010 FZ_{82}	17.5	X	274.57030	133.72440	129.37241	3.81030	0.2153318	0.28119346	2.3074515	20	1 24.3	20.9
297009 2010 FL_{84}	15.6	X	166.31545	84.93092	193.70388	19.38482	0.2046303	0.15587496	3.4194150	20	—	—
297010 2010 FL_{87}	16.8	X	121.12789	163.94960	96.47010	3.66111	0.0591265	0.24295198	2.5436406	20	11 29.9	20.3
297011 2010 FU_{88}	16.1	X	131.52422	305.98449	207.61132	12.65368	0.1089543	0.21822326	2.7323439	20	7 23.5	20.5
297012 2010 FY_{88}	16.6	X	222.61003	260.23086	355.28982	6.50398	0.0762759	0.26869186	2.3784812	20	—	—
297013 2010 FL_{90}	16.4	X	159.64579	288.97485	195.29866	11.01368	0.1137509	0.21813371	2.7330916	20	7 16.8	20.9
297014 2010 FV_{90}	16.6	X	128.79648	37.98280	176.32053	8.86026	0.1397202	0.22942145	2.6426929	20	10 13.2	20.7
297015 2010 FU_{91}	16.1	X	244.22689	91.91362	179.72617	8.14372	0.1207795	0.17438181	3.1729892	20	1 24.9	21.1
297016 2010 FT_{92}	16.6	X	123.34074	278.68641	290.89640	5.38558	0.1569115	0.22923101	2.6441564	20	9 28.6	20.8
297017 2010 GY_{5}	17.2	X	331.80362	316.85213	234.88813	6.20018	0.0588021	0.28622026	2.2803550	20	1 18.7	20.0
297018 2010 GM_{11}	17.3	X	291.22221	23.01263	285.21912	1.19998	0.1890655	0.28279803	2.2987150	20	4 13.7	20.0
297019 2010 GN_{23}	13.1	X	301.90935	172.29135	107.01428	32.59648	0.0480623	0.08414625	5.1575829	20	5 7.9	20.3
297020 2010 GM_{26}	17.1	X	193.54930	210.91873	65.34226	2.27405	0.1701888	0.25799027	2.4438084	20	—	—
297021 2010 GK_{29}	16.7	X	335.05541	314.91265	107.68832	4.62902	0.0343538	0.24631218	2.5204541	20	12 21.6	19.7
297022 2010 GM_{31}	16.9	X	189.12764	23.08135	136.29672	5.71511	0.0926416	0.23344011	2.6122760	20	10 7.6	20.8
297023 2010 GY_{31}	17.4	X	267.48179	175.27602	104.93377	4.29507	0.1920364	0.27903338	2.3193446	20	2 11.4	20.8
297024 2010 GB_{32}	16.2	X	56.88517	28.55475	214.03680	9.15745	0.1482292	0.21701844	2.7424473	20	8 25.6	20.0
297025 2010 GA_{33}	14.8	X	31.21895	282.45618	82.04401	18.91349	0.1240997	0.14759168	3.5461856	20	12 9.6	19.5
297026 Corton	17.4	X	157.95386	112.21000	175.03226	4.04104	0.1242542	0.25456104	2.4657068	20	—	—
297027 2010 GG_{66}	15.9	X	111.07734	167.72288	63.93636	8.84767	0.1917518	0.22776346	2.6555023	20	10 21.9	20.2
297028 2010 GH_{66}	15.7	X	280.42552	28.84580	211.55748	17.30616	0.1445848	0.18119011	3.0929986	20	1 18.7	20.7
297029 2010 GW_{96}	16.7	X	80.99364	163.84698	149.12404	14.99991	0.1244066	0.23884556	2.5727126	20	12 25.7	20.8
297030 2010 GB_{106}	16.7	X	218.48154	229.65874	69.27514	7.12946	0.1160095	0.27241371	2.3567675	20	1 23.7	20.2
297031 2010 GE_{106}	16.2	X	14.12901	195.00289	86.97780	6.39809	0.0255478	0.21467853	2.7623390	20	8 5.1	19.8
297032 2010 GJ_{106}	16.6	X	145.92942	251.97974	59.22603	5.23974	0.0582377	0.25991023	2.4317586	20	—	—
297033 2010 GG_{109}	15.9	X	295.63901	29.15460	216.25698	8.49404	0.0794883	0.18371783	3.0645627	20	2 20.3	20.4
297034 2010 GX_{113}	17.3	X	267.03610	1.63269	236.24807	1.53920	0.1712808	0.27192658	2.3595813	20	—	—
297035 2010 GV_{114}	16.6	X	303.71580	25.38307	222.24447	8.67293	0.1076368	0.18682228	3.0305185	20	2 28.5	21.0
297036 2010 GH_{124}	17.1	X	188.34493	29.62595	168.23534	6.20572	0.1580937	0.24262042	2.5459575	20	11 19.1	21.0
297037 2010 GU_{139}	17.5	X	210.22490	70.96832	159.47083	2.89406	0.1240627	0.25583505	2.4575141	20	—	—
297038 2010 GP_{143}	16.5	X	23.62708	123.91595	204.66769	2.07772	0.0568918	0.23130672	2.6283138	20	10 25.4	19.8
297039 2010 GS_{146}	15.4	X	44.75157	171.98272	327.17290	9.93579	0.1130856	0.19272971	2.9682714	20	3 14.2	19.0
297040 2010 GN_{158}	16.3	X	48.95700	146.44031	159.57834	13.54794	0.0563068	0.22925097	2.6440029	20	11 2.4	20.0

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		°	°	°	°		°				
297041 2010 GZ_{158}	17.3	*X*	255.41792	232.12444	10.17279	2.27837	0.1515661	0.26948874	2.3737900	20	—	—
297042 2010 GX_{159}	16.8	*X*	116.37654	271.38275	334.28297	7.46423	0.1086820	0.23419980	2.6066239	20	11 3.5	20.9
297043 2010 GU_{160}	15.6	*X*	301.91722	54.52681	159.65040	15.27494	0.1361342	0.17552332	3.1592174	20	1 16.7	20.3
297044 2010 HH_{13}	16.6	*X*	238.49865	13.94625	258.59879	9.30757	0.2068689	0.26038713	2.4287886	20	1 6.8	20.7
297045 2010 HB_{20}	15.9	*X*	349.18845	231.24084	70.13936	14.58254	0.2158292	0.20959292	2.8068442	20	7 28.8	18.7
297046 2010 HA_{21}	15.4	*X*	195.10587	149.39309	182.80819	20.56081	0.2664858	0.17282435	3.1920236	20	2 17.7	21.3
297047 2010 HT_{21}	13.5	*X*	317.77396	64.52683	208.10627	27.91830	0.0534881	0.08160979	5.2639028	20	5 4.6	20.3
297048 2010 HD_{24}	13.2	*X*	272.95743	99.74977	229.37246	14.76601	0.0595905	0.08157588	5.2653616	20	5 14.7	20.1
297049 2010 HS_{48}	12.9	*X*	25.16274	271.66544	290.95857	4.16924	0.0412104	0.08093835	5.2929748	20	5 7.1	19.7
297050 2010 HY_{50}	17.3	*X*	313.64095	125.79795	152.96431	6.24126	0.1713538	0.28142025	2.3062116	20	4 10.9	19.8
297051 2010 HA_{54}	17.1	*X*	178.94983	225.32526	162.08593	5.96811	0.2407621	0.26539307	2.3981499	20	4 8.9	21.2
297052 2010 HB_{81}	12.7	*X*	290.38134	231.45355	84.04657	19.95860	0.0629223	0.08231148	5.2339444	20	5 22.3	19.6
297053 2010 HG_{99}	16.0	*X*	340.24890	137.35884	165.32169	12.04741	0.1190429	0.19316041	2.9638574	20	7 8.2	19.7
297054 2010 HP_{104}	16.2	*X*	78.96128	78.99861	149.73126	10.61929	0.0608144	0.21979890	2.7192703	20	8 27.2	19.9
297055 2010 HP_{107}	17.3	*X*	75.56836	123.92000	143.37916	2.68184	0.1702986	0.22432232	2.6825905	20	10 27.5	21.3
297056 2010 HA_{109}	14.1	*X*	282.69309	120.32124	200.26793	16.88394	0.1308407	0.08125069	5.2794011	20	5 7.9	21.1
297057 2010 HU_{111}	12.4	*X*	306.63414	342.41748	303.25269	26.13931	0.1447383	0.08330363	5.1923037	20	4 11.1	19.4
297058 2010 JO	15.1	*X*	275.84293	134.86337	78.47558	11.51872	0.0647681	0.16891395	3.2410996	20	—	—
297059 2010 JV	12.7	*X*	298.26705	353.05981	308.57269	21.61186	0.0638683	0.08109980	5.2859478	20	5 5.5	19.8
297060 2010 JF_{1}	17.3	*X*	346.78321	61.70289	195.14454	14.10181	0.2711138	0.19686359	2.9265713	20	5 6.6	19.9
297061 2010 JX_{1}	16.0	*X*	298.87675	33.21447	228.33873	6.41898	0.1542912	0.18665996	3.0322751	20	3 4.6	20.3
297062 2010 JC_{29}	15.4	*X*	213.29183	189.31802	141.04423	12.09684	0.0295834	0.18114418	3.0935214	20	3 9.9	19.9
297063 2010 JD_{34}	16.4	*X*	100.98588	86.60426	144.86475	13.61170	0.1320877	0.22609190	2.6685748	20	10 8.9	20.6
297064 2010 JX_{34}	15.9	*X*	166.01131	218.07338	359.59165	4.87266	0.2116497	0.23873853	2.5734814	20	11 16.5	20.4
297065 2010 JA_{36}	16.0	*X*	297.35313	107.79836	197.26210	12.64151	0.1127817	0.20282228	2.8689674	20	5 6.4	19.8
297066 2010 JB_{36}	17.1	*X*	344.15084	139.02266	226.11266	2.27213	0.0869998	0.22947667	2.6422690	20	10 17.2	20.2
297067 2010 JK_{36}	17.3	*X*	25.76287	124.64007	173.15907	1.85899	0.0557044	0.22097603	2.7096047	20	9 14.9	20.7
297068 2010 JR_{39}	15.2	*X*	245.59168	40.84433	266.55384	15.18259	0.0342410	0.18607537	3.0386228	20	3 8.2	20.0
297069 2010 JC_{72}	17.3	*X*	261.28564	193.27507	102.21257	7.41088	0.2003558	0.28041682	2.3117099	20	2 25.4	20.8
297070 2010 JE_{73}	16.4	*X*	344.71879	82.93665	220.33788	3.08203	0.0824153	0.20915219	2.8107860	20	7 19.3	19.9
297071 2010 JQ_{75}	16.7	*X*	283.39504	280.75000	176.08511	8.44920	0.0605158	0.23555844	2.5965914	20	11 20.3	20.0
297072 2010 JO_{86}	15.8	*X*	329.59138	145.79455	140.69403	13.68962	0.1880566	0.18628804	3.0363097	20	5 24.9	19.5
297073 2010 JK_{116}	15.2	*X*	246.70006	36.99677	251.88309	10.18837	0.0776836	0.17898821	3.1183134	20	2 16.3	20.1
297074 2010 JS_{129}	15.5	*X*	268.90479	213.78564	104.35333	14.17097	0.1229040	0.17505512	3.1648479	20	4 22.2	20.4
297075 2010 JD_{147}	15.6	*X*	308.04505	97.58283	142.06095	11.75506	0.1788916	0.18518180	3.0483899	20	2 17.9	19.8
297076 2010 JE_{152}	17.3	*X*	268.51206	280.43927	317.72513	0.64610	0.1437867	0.27334453	2.3514141	20	—	—
297077 2010 JQ_{152}	16.5	*X*	258.58813	113.75131	185.14248	0.58472	0.1598384	0.18353558	3.0665911	20	3 7.5	21.2
297078 2010 JJ_{173}	16.2	*X*	274.97739	306.31949	57.15299	10.04265	0.1481563	0.20643221	2.8354222	20	6 14.8	20.1
297079 2010 JH_{176}	15.1	*X*	279.30719	35.64088	208.20054	10.65571	0.0787968	0.17923274	3.1154765	20	1 30.9	19.9
297080 2010 KV_{3}	16.3	*X*	182.71190	357.68706	261.95403	11.80295	0.2374552	0.24000572	2.5644151	20	—	—
297081 2010 KE_{10}	15.2	*X*	175.34540	208.26520	123.67845	17.10290	0.0250545	0.17133751	3.2104636	20	1 28.2	19.8
297082 Bygott	15.4	*X*	288.74022	226.18097	116.63194	12.54703	0.1476101	0.18445309	3.0564134	20	6 8.5	19.7
297083 2010 KA_{26}	16.5	*X*	102.83342	353.88352	311.91470	6.14043	0.1772166	0.22539087	2.6741053	20	—	—
297084 2010 KL_{36}	16.2	*X*	189.46632	323.33175	209.62973	12.48599	0.2151176	0.23491805	2.6013081	20	10 13.5	20.5
297085 2010 KO_{51}	15.3	*X*	287.57978	309.83114	337.85867	19.65024	0.2339328	0.17414868	3.1758203	20	3 12.0	20.0
297086 2010 KY_{55}	15.3	*X*	252.32660	313.75496	270.21745	8.80561	0.0795461	0.17804983	3.1292602	20	—	—
297087 2010 KG_{63}	15.8	*X*	266.38150	191.21073	148.37252	16.60602	0.2095038	0.17658988	3.1464839	20	5 3.3	20.9
297088 2010 KM_{70}	15.5	*X*	238.04173	154.27951	197.01453	14.12579	0.1616773	0.17137599	3.2099829	20	4 20.4	20.6
297089 2010 KJ_{117}	16.3	*X*	219.68477	315.32413	209.40032	6.98092	0.1035881	0.23850592	2.5751544	20	11 16.2	19.9
297090 2010 KK_{123}	18.1	*X*	12.76248	89.73740	213.11860	3.29459	0.2013754	0.29855071	2.2171274	20	10 8.1	19.8
297091 2010 LS_{111}	16.1	*X*	63.85670	157.72202	136.36543	9.89736	0.1491914	0.21179896	2.7873201	20	11 14.5	20.3
297092 2010 LB_{122}	15.7	*X*	279.21971	12.54960	328.03038	10.89725	0.1551420	0.17752935	3.1353735	20	5 17.9	20.4
297093 2010 MD	15.9	*X*	19.87535	148.20336	274.19900	16.50860	0.0845891	0.23653203	2.5894612	20	—	—
297094 2010 MH_{31}	15.8	*X*	53.79978	256.98030	119.49223	13.51641	0.2145449	0.22087757	2.7104099	20	—	—
297095 2010 MB_{37}	16.6	*X*	325.99525	13.22967	16.60806	4.15827	0.1817204	0.19920390	2.9036047	20	10 12.3	19.4
297096 2010 MC_{41}	18.0	*X*	342.06019	127.32119	198.34937	0.55594	0.1925117	0.29214461	2.2494213	20	9 2.2	19.2
297097 2010 ML_{43}	17.3	*X*	113.15627	99.90560	213.06846	4.65476	0.2461597	0.22623546	2.6674458	20	—	—
297098 2010 MA_{45}	17.7	*X*	347.96008	157.64771	206.99134	8.43978	0.1500575	0.30148039	2.2027405	20	11 20.7	19.5
297099 2010 MD_{112}	17.2	*X*	331.57528	359.28940	285.93423	4.10149	0.1530180	0.28898428	2.2657913	20	5 25.3	19.0
297100 2010 NR_{3}	17.3	*X*	223.39982	305.29271	339.58973	1.72981	0.2016847	0.25776201	2.4452510	20	1 10.9	21.5
297101 2010 NH_{58}	17.1	*X*	349.17175	129.70062	156.35738	2.79867	0.1713171	0.28311316	2.2970089	20	7 7.5	18.7
297102 2010 OA_{29}	16.6	*X*	65.15300	226.57927	186.33326	1.80025	0.2121703	0.22782280	2.6550412	20	—	—
297103 2010 OO_{53}	16.0	*X*	112.01603	229.97686	140.00219	12.92497	0.2716552	0.23294900	2.6159463	20	1 23.1	19.6
297104 2010 OX_{60}	15.9	*X*	220.70910	59.52668	219.12528	8.23457	0.1273647	0.17079922	3.2172055	20	1 11.4	21.2
297105 2010 OH_{91}	16.0	*X*	251.79589	86.74916	210.21398	15.01627	0.1167190	0.18320121	3.0703213	20	2 27.5	21.0
297106 2010 OH_{93}	15.9	*X*	184.34660	345.24363	332.72679	12.16385	0.1941274	0.24179394	2.5517558	20	1 22.2	20.2
297107 2010 OY_{94}	16.2	*X*	232.08765	290.96159	24.12993	8.84461	0.0659862	0.18404925	3.0608826	20	3 10.9	20.8
297108 2010 OM_{96}	16.3	*X*	262.61630	226.50142	169.76591	15.25846	0.2189046	0.17656440	3.1467866	20	7 1.6	21.2
297109 2010 OT_{99}	16.2	*X*	269.49173	223.58607	183.75536	5.08855	0.1505239	0.18142787	3.0902958	20	8 2.1	20.5
297110 2010 PM_{48}	16.0	*X*	311.18874	286.75412	63.83471	9.70783	0.1499271	0.18035675	3.1025190	20	7 22.6	19.9
297111 2010 PY_{65}	12.4	*X*	255.33371	155.74770	283.14448	21.79139	0.0583808	0.08293813	5.2075473	20	8 18.8	19.6
297112 2010 PS_{74}	17.5	*X*	10.12471	312.26000	327.16309	3.94687	0.1649815	0.29368939	2.2415265	20	8 17.9	19.3
297113 2010 PP_{76}	17.4	*X*	209.67837	344.14348	332.37667	2.93320	0.1809468	0.25624760	2.4548757	20	2 6.7	21.4
297114 2010 RU_{43}	17.6	*X*	302.38007	255.13710	43.25277	3.09201	0.2417227	0.27682555	2.3316602	20	4 8.6	20.4
297115 2010 RX_{47}	17.1	*X*	352.91088	29.13630	344.22784	1.37588	0.0786413	0.20309442	2.8664039	20	11 4.2	20.7
297116 2010 RB_{72}	17.7	*X*	243.77698	180.76255	166.68505	2.24529	0.2184696	0.26930356	2.3748781	20	4 11.9	21.3
297117 2010 RY_{108}	16.7	*X*	128.89447	289.80308	5.93125	7.74510	0.0734298	0.22225331	2.6992134	20	—	—
297118 2010 RY_{116}	16.3	*X*	310.01404	301.11101	84.28061	4.35505	0.0534219	0.19140870	2.9819127	20	9 17.9	20.3
297119 2010 RZ_{118}	16.0	*X*	341.84241	344.47336	64.12344	6.49113	0.0526942	0.20680249	2.8320367	20	12 2.9	19.6
297120 2010 RO_{125}	16.4	*X*	290.18864	325.27764	109.48065	3.13994	0.0427870	0.20146386	2.8818494	20	10 25.8	20.2

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Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
	m		°	°	°	°		°				
297121 2010 RB_{126}	16.9	X	302.83353	263.28781	30.80391	6.57069	0.1320454	0.27282392	2.3544046	20	4 21.2	19.2
297122 2010 RS_{126}	16.6	X	343.23834	259.58250	163.18280	4.49778	0.1841071	0.20957975	2.8069618	20	—	—
297123 2010 RM_{136}	16.6	X	168.53758	15.00322	30.72200	6.71060	0.1311332	0.25853825	2.4403541	20	4 18.2	20.3
297124 2010 RM_{152}	17.3	X	61.58258	172.23645	35.19317	2.90011	0.0640588	0.27847787	2.3224280	20	7 9.6	20.1
297125 2010 RV_{166}	17.7	X	36.72103	180.65273	182.27947	1.23100	0.2734055	0.31263419	2.1500327	20	—	—
297126 2010 RC_{174}	16.5	X	86.44460	61.19026	252.26594	4.48830	0.0446475	0.21216933	2.7840753	20	12 18.2	20.3
297127 2010 RD_{179}	17.4	X	202.86358	329.15392	18.01091	4.76500	0.2074141	0.25864103	2.4397076	20	3 9.7	21.5
297128 2010 SY_{2}	16.3	X	34.59765	337.85122	313.03262	2.72409	0.0982780	0.18908934	3.0062472	20	9 18.1	20.1
297129 2010 SL_{11}	17.1	X	323.01130	73.98672	212.44458	6.35369	0.1129988	0.27044826	2.3681721	20	5 17.7	19.5
297130 2010 SN_{20}	16.4	X	18.21278	53.85563	297.64438	0.98155	0.0759000	0.20371996	2.8605332	20	11 12.7	20.1
297131 2010 ST_{33}	17.2	X	224.87671	216.55380	245.98243	5.00895	0.0799586	0.28963909	2.2623750	20	9 8.4	20.0
297132 2010 TJ_{2}	17.0	X	300.87932	151.55247	156.63073	4.76471	0.2608157	0.27670135	2.3323579	20	4 18.3	19.8
297133 2010 TU_{27}	16.9	X	139.93339	105.06654	201.72091	13.19543	0.1736285	0.23030532	2.6359272	20	—	—
297134 2010 TK_{37}	17.7	X	284.37549	114.33617	260.88408	4.36390	0.1714888	0.28394309	2.2925308	20	7 15.3	20.1
297135 2010 TD_{38}	17.0	X	186.38392	158.11504	252.07926	2.03060	0.1967164	0.26202234	2.4186731	20	5 11.4	20.8
297136 2010 TH_{38}	16.5	X	68.26916	222.64981	204.10482	13.45827	0.1492830	0.23261379	2.6184588	20	1 13.3	19.7
297137 2010 TS_{38}	17.6	X	182.72524	28.09758	15.82792	1.17548	0.1795076	0.26168000	2.4207821	20	4 30.1	21.6
297138 2010 TB_{79}	17.1	X	229.15987	67.50915	34.24659	7.01243	0.0483933	0.28911153	2.2651264	20	9 23.8	19.8
297139 2010 TK_{90}	17.9	X	158.59235	293.05526	124.27792	2.04506	0.1791058	0.25819042	2.4425453	20	4 26.4	21.7
297140 2010 TY_{127}	16.2	X	237.39977	258.60969	148.72904	1.38183	0.1657914	0.17252776	3.1956808	20	6 25.4	21.1
297141 2010 TU_{145}	16.6	X	124.56033	59.82848	275.83940	3.91911	0.0474971	0.22519596	2.6756480	20	—	—
297142 2010 TZ_{163}	17.2	X	222.20676	347.20834	23.74917	7.46187	0.1175548	0.26409260	2.4060163	20	4 26.9	20.7
297143 2010 TV_{173}	17.3	X	345.67489	354.86837	46.05944	5.95105	0.1223888	0.30566834	2.1825745	20	—	—
297144 2010 TM_{177}	13.1	X	255.21326	16.48284	74.89083	8.88067	0.0568317	0.08475199	5.1329786	20	9 15.9	20.0
297145 2010 TN_{177}	17.1	X	163.77503	0.53144	59.36312	2.59827	0.1793191	0.25696390	2.4503115	20	5 3.9	20.9
297146 2010 UF	16.7	X	1.06660	18.45805	243.12814	20.33243	0.0262968	0.37465368	1.9056774	20	6 20.5	18.4
297147 2010 UB_{6}	13.5	X	258.52615	351.24698	94.83609	7.35905	0.0811643	0.08225845	5.2361936	20	9 8.9	20.5
297148 2010 UD_{11}	15.0	X	221.45254	356.56288	67.88782	5.78236	0.1155444	0.16815997	3.2507804	20	7 4.9	20.0
297149 2010 UR_{26}	16.3	X	75.42168	132.34654	240.26864	5.11701	0.0208393	0.21702373	2.7424028	20	—	—
297150 2010 UN_{27}	17.2	X	72.77814	228.36297	224.31859	2.60368	0.1557165	0.23586537	2.5943382	20	2 27.4	20.2
297151 2010 UW_{34}	16.5	X	117.16350	40.19283	324.78549	4.33136	0.2155679	0.23321388	2.6139651	20	1 16.3	20.0
297152 2010 UQ_{56}	16.0	X	346.37858	107.72491	249.41303	8.09082	0.1684606	0.18975362	2.9992270	20	10 1.3	19.4
297153 2010 UU_{59}	16.0	X	88.69719	102.20455	267.96528	5.13290	0.0308158	0.21617735	2.7495561	20	—	—
297154 2010 UE_{60}	16.4	X	128.19983	128.57362	264.36219	3.04294	0.2056479	0.23756536	2.5819469	20	2 27.9	20.3
297155 2010 UV_{66}	13.2	X	261.80026	190.50177	257.62321	7.85174	0.1285879	0.08381652	5.1711004	20	9 2.3	20.2
297156 2010 UC_{81}	16.9	X	123.01224	195.13262	152.07798	0.52255	0.3278813	0.23232823	2.6206040	20	1 14.2	20.8
297157 2010 UE_{81}	17.4	X	206.40671	342.75565	59.73445	1.84908	0.2260759	0.26440197	2.4041391	20	5 18.3	21.5
297158 2010 UW_{99}	13.5	X	260.65351	189.53970	264.24633	10.02021	0.0436830	0.08457618	5.1400895	20	9 17.1	20.5
297159 2010 VN_{13}	17.3	X	5.18702	115.29107	231.30901	0.90164	0.2378945	0.29728596	2.2234112	20	12 7.2	19.2
297160 2010 VG_{22}	14.0	X	229.32454	206.48652	269.88505	2.79711	0.0240714	0.08162406	5.2632893	20	9 13.4	21.0
297161 2010 VU_{26}	17.0	X	207.88062	217.17363	236.89925	5.95300	0.0680633	0.27353072	2.3503470	20	8 5.2	20.3
297162 2010 VY_{27}	17.1	X	329.01315	337.67320	351.65490	6.64433	0.1991343	0.28209028	2.3025583	20	8 3.6	18.6
297163 2010 VT_{36}	13.1	X	43.16125	167.31637	140.34721	9.78084	0.0271251	0.08341654	5.1876173	20	9 28.9	19.9
297164 2010 VA_{37}	16.1	X	40.56256	11.17207	67.82653	12.41455	0.1635159	0.22369728	2.6875852	20	—	—
297165 2010 VF_{57}	17.6	X	54.35571	260.27027	77.32762	4.00757	0.1692424	0.30954699	2.1643043	20	—	—
297166 2010 VY_{57}	17.8	X	201.32438	226.25155	195.84205	2.04908	0.1867915	0.26531062	2.3986467	20	6 9.7	21.7
297167 2010 VS_{81}	16.6	X	183.17770	282.69702	54.23266	5.50578	0.1399505	0.23694405	2.5864585	20	2 10.8	20.8
297168 2010 VW_{81}	13.3	X	231.83399	67.74059	72.40251	16.86385	0.0614943	0.08271812	5.2167771	20	10 17.4	20.5
297169 2010 VK_{99}	17.3	X	65.49589	72.53273	246.33078	0.45976	0.1763170	0.30710985	2.1757394	20	—	—
297170 2010 VE_{103}	16.3	X	354.65557	173.93611	154.89571	1.34059	0.1401454	0.18273634	3.0755262	20	9 8.9	19.6
297171 2010 VD_{112}	16.3	X	345.07385	172.51356	195.99940	2.29537	0.1503867	0.19159914	2.9799365	20	10 18.1	19.3
297172 2010 VU_{112}	17.9	X	207.04856	45.17609	68.62555	7.58628	0.0468579	0.28118226	2.3075127	20	9 11.5	20.9
297173 2010 VC_{113}	16.1	X	331.74605	271.44141	85.85068	5.43889	0.1715816	0.18531763	3.0469002	20	9 8.0	19.4
297174 2010 VB_{136}	13.2	X	154.99924	146.36585	56.59148	16.36624	0.0859364	0.08491663	5.1263417	20	10 10.5	20.5
297175 2010 VF_{169}	15.6	X	212.25876	33.62075	69.69485	4.57797	0.0448228	0.17515260	3.1636735	20	8 20.8	20.2
297176 2010 VX_{171}	16.5	X	131.99461	346.05518	48.61144	2.18293	0.0884605	0.23745243	2.5827654	20	2 22.9	19.9
297177 2010 VC_{187}	15.8	X	291.27549	275.03897	112.45841	9.73460	0.1862681	0.18055060	3.1002979	20	8 2.9	19.7
297178 2010 WF_{24}	13.0	X	279.29131	193.24441	250.88528	27.86539	0.1097102	0.08385392	5.1695628	20	9 12.5	20.2
297179 2010 WB_{34}	15.9	X	219.93315	269.62351	228.68879	3.72006	0.0817786	0.18535536	3.0464867	20	10 6.3	20.5
297180 2010 WM_{38}	17.5	X	351.45446	267.77663	87.73016	5.98813	0.1576105	0.29319012	2.2440705	20	11 12.4	19.4
297181 2010 WJ_{47}	16.8	X	104.40814	278.40587	65.03384	5.15706	0.0753854	0.21449716	2.7638959	20	—	—
297182 2010 WD_{49}	13.6	X	288.13026	8.29430	64.15151	6.96069	0.0548871	0.08341698	5.1875991	20	9 30.9	20.4
297183 2010 WL_{53}	17.6	X	290.82877	71.87611	277.16287	3.63932	0.2505984	0.27596528	2.3365034	20	6 1.6	20.1
297184 2010 WS_{55}	15.9	X	280.09717	8.64785	104.75881	11.48936	0.0745024	0.18835987	3.0140038	20	11 24.7	20.0
297185 2010 WO_{69}	15.7	X	21.22128	267.94901	67.89659	11.96338	0.1356565	0.18984642	2.9982496	20	11 5.0	19.5
297186 2010 XD_{3}	16.6	X	224.46560	223.50574	258.63045	7.17559	0.1904083	0.28087888	2.3091740	20	9 17.6	20.1
297187 2010 XN_{17}	17.2	X	326.06615	232.00513	114.81667	4.69904	0.0544061	0.27166096	2.3611191	20	8 31.4	19.7
297188 2010 XS_{35}	16.6	X	310.72127	268.91935	155.69485	0.94137	0.1353623	0.19201502	2.9756321	20	11 1.3	20.0
297189 2010 XZ_{35}	15.1	X	100.50895	160.29820	82.08063	16.36233	0.0584091	0.18171374	3.0870538	20	10 13.0	19.9
297190 2010 XM_{38}	15.4	X	284.54093	308.37063	81.92962	6.04730	0.1014726	0.16843442	3.2472482	20	8 9.6	19.8
297191 2010 XZ_{41}	17.2	X	241.07358	308.38549	76.35523	1.71581	0.0741778	0.25841405	2.4411360	20	6 12.5	20.3
297192 2010 XO_{63}	15.2	X	149.21669	108.25874	106.09483	13.64338	0.0113083	0.17960423	3.1111791	20	10 29.2	19.9
297193 2010 XZ_{66}	16.7	X	167.50091	244.43275	97.21497	8.58591	0.1348125	0.23374241	2.6100232	20	1 31.6	20.8
297194 2010 XX_{68}	12.9	X	344.74665	305.13315	74.79911	17.55598	0.0309928	0.08196975	5.2484812	20	10 16.3	19.9
297195 2010 XS_{76}	13.8	X	294.43504	294.73690	147.23418	5.14096	0.0691908	0.08619296	5.0756091	20	10 16.4	20.4
297196 2011 AY_{26}	13.3	X	299.35390	167.95503	263.52832	12.24238	0.0537415	0.08457429	5.1401660	20	10 5.4	20.2
297197 2011 AE_{30}	17.2	X	70.22741	140.61014	327.26753	3.83859	0.1123351	0.22830109	2.6513317	20	3 10.1	20.4
297198 2011 AB_{34}	16.5	X	249.60280	162.26940	314.23892	2.81281	0.2027942	0.17720571	3.1391898	20	9 26.3	21.2
297199 2011 AS_{56}	16.7	X	89.67639	305.78775	126.83257	5.64072	0.0798807	0.22253103	2.6969672	20	2 18.3	20.2
297200 2011 BS_{99}	16.0	X	187.56479	19.38648	184.29875	10.71050	0.0437164	0.17687619	3.1430874	20	11 22.9	20.7

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Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
	m		°	°	°	°		°				
297201 2011 BH_{100}	16.7	X	318.82472	356.15950	214.33952	7.27034	0.1508724	0.21364287	2.7712590	20	1 24.1	20.4
297202 2011 BZ_{112}	16.9	X	290.36099	104.37684	201.73141	3.73832	0.0557359	0.23535405	2.5980944	20	5 4.7	20.1
297203 2011 CM_{88}	15.9	X	309.54431	297.53123	158.55428	21.98584	0.1019966	0.18306683	3.0718236	20	12 12.2	20.2
297204 2011 CF_{89}	16.5	X	305.41093	153.15614	316.79782	5.70757	0.1209437	0.18648145	3.0342099	20	12 20.5	20.1
297205 2011 DT_{7}	15.6	X	102.37039	181.75151	109.29294	11.87753	0.0659573	0.16854137	3.2458743	20	12 3.7	20.5
297206 2011 DW_{11}	17.7	X	155.94523	279.85995	1.58959	1.39615	0.2501740	0.28343348	2.2952779	20	—	—
297207 2011 DG_{48}	15.9	X	19.10945	293.06300	165.65142	15.16446	0.1129210	0.20451910	2.8530768	20	—	—
297208 2011 DL_{49}	16.9	X	200.20173	308.55999	272.52115	6.42566	0.0537545	0.29013039	2.2598203	20	—	—
297209 2011 FA_{102}	16.9	X	146.28943	289.99753	272.55275	5.55634	0.0196940	0.26897508	2.3768112	20	10 17.5	20.2
297210 2011 FL_{141}	17.9	X	236.09751	72.24140	192.27030	4.71249	0.2202755	0.29691284	2.2252735	20	—	—
297211 2011 HA_{32}	16.4	X	265.83784	208.00699	90.58805	16.59171	0.1256623	0.20537101	2.8451814	20	3 25.6	20.9
297212 2011 HJ_{52}	16.3	X	16.46388	181.81234	114.07221	11.96390	0.1144131	0.23895954	2.5718944	20	9 13.4	19.4
297213 2011 HG_{59}	16.5	X	315.01743	97.14855	163.54504	7.34177	0.0871400	0.21185610	2.7868188	20	4 6.3	20.0
297214 2011 HS_{59}	17.1	X	141.33435	109.05345	157.29963	6.16543	0.0841342	0.26933485	2.3746942	20	—	—
297215 2011 JJ	13.2	X	258.94492	109.22098	223.80357	22.79173	0.0328237	0.08600516	5.0829954	20	5 6.7	20.0
297216 2011 KK_{6}	16.1	X	222.90494	137.71688	90.37075	2.44921	0.1166062	0.17522224	3.1628352	20	—	—
297217 2011 KX_{9}	16.8	X	2.12335	149.45612	159.89333	4.72284	0.1868714	0.23616433	2.5921483	20	9 10.3	19.0
297218 2011 KT_{16}	13.0	X	292.27445	43.69349	260.42490	10.26316	0.0858638	0.08240571	5.2299536	20	5 3.4	19.8
297219 2011 KW_{21}	16.1	X	335.99412	165.81204	112.57705	4.16780	0.1393724	0.20767150	2.8241306	20	5 27.5	19.3
297220 2011 LZ_{4}	16.0	X	33.75476	204.63532	105.02998	15.56750	0.2707196	0.23478891	2.6022618	20	11 21.4	19.7
297221 2011 OF_{18}	13.9	X	256.74477	147.59367	184.15193	0.36605	0.2160450	0.08210102	5.2428851	20	4 12.9	21.2
297222 2011 OM_{19}	16.4	X	56.45922	329.44914	243.88897	2.22499	0.0201697	0.21124910	2.7921546	20	6 29.6	20.2
297223 2011 OS_{19}	16.9	X	122.46811	345.92599	277.55622	3.75929	0.0946042	0.24755204	2.5120313	20	12 6.5	20.7
297224 2011 OK_{31}	17.0	X	128.01623	227.28078	42.51568	2.94895	0.1557383	0.25607410	2.4559845	20	12 21.8	20.9
297225 2011 PG	17.6	X	142.87563	356.10067	321.55570	1.53817	0.2129578	0.26683165	2.3895226	20	—	—
297226 4219 $P\text{–}L$	16.2	X	319.62368	148.26203	204.65787	6.32265	0.1230005	0.21227843	2.7831213	20	8 11.9	19.4
297227 3473 $T\text{–}2$	17.2	X	210.47095	328.92887	34.31356	3.98819	0.2444678	0.24505921	2.5290381	20	4 3.8	21.5
297228 1012 $T\text{–}3$	15.3	X	211.86705	321.27820	339.32450	13.81126	0.2552470	0.17287796	3.1913636	20	1 30.8	21.0
297229 2126 $T\text{–}3$	16.6	X	359.13290	33.87243	324.00914	3.70095	0.2534735	0.23028558	2.6360778	20	11 22.4	19.2
297230 2205 $T\text{–}3$	17.6	X	253.27876	49.98088	282.88388	1.91864	0.1915736	0.26863142	2.3788378	20	4 3.1	21.1
297231 2320 $T\text{–}3$	15.9	X	59.21242	302.45311	4.66015	11.02540	0.1082382	0.23112093	2.6297222	20	11 17.0	19.7
297232 3388 $T\text{–}3$	17.4	X	206.90342	311.83574	19.33311	12.54460	0.1421795	0.28837731	2.2689695	20	2 24.3	21.0
297233 5100 $T\text{–}3$	16.2	X	328.39988	210.24405	170.68774	15.83143	0.2628565	0.18195123	3.0843670	20	9 27.5	19.0
297234 1960 SP	18.1	X	104.76245	71.84430	324.02336	1.67633	0.2153083	0.27014088	2.3699682	20	2 3.4	20.7
297235 1981 EN_{11}	17.2	X	110.79720	137.02496	337.24771	6.13082	0.3670776	0.28218687	2.3020328	20	6 8.9	21.2
297236 1981 EB_{29}	15.9	X	264.46673	339.02218	187.00827	9.61873	0.1230490	0.24403213	2.5361292	20	—	—
297237 1981 EA_{48}	16.6	X	167.38818	177.05220	333.65592	7.68267	0.1990984	0.21170705	2.7881267	20	8 28.0	21.4
297238 1994 JY_{3}	16.2	X	29.28445	4.08736	224.13296	7.21085	0.0651881	0.19235498	2.9721251	20	6 15.7	20.1
297239 1994 RH_{19}	16.4	X	7.69926	6.41818	338.72111	12.91510	0.2564952	0.23075423	2.6325074	20	11 17.3	19.5
297240 1994 SC_{1}	16.9	X	344.85871	202.82704	191.73640	8.10392	0.2056271	0.23074896	2.6325475	20	12 11.4	19.5
297241 1994 SF_{5}	16.3	X	80.31885	126.72537	184.52301	14.53480	0.1056942	0.23400960	2.6080361	20	12 19.6	20.4
297242 1994 SL_{11}	16.1	X	161.55326	21.37786	28.90489	5.13168	0.1952490	0.17382055	3.1798158	20	4 22.7	21.3
297243 1994 SC_{13}	15.8	X	232.25479	304.04342	18.57700	16.80934	0.2424906	0.17612972	3.1519618	20	3 12.4	21.3
297244 1994 UW_{1}	16.1	X	356.75174	236.06865	196.64183	30.80630	0.3327847	0.23329677	2.6133459	20	—	—
297245 1994 UP_{6}	17.5	X	119.52435	105.32020	1.52538	4.02249	0.1099777	0.28907326	2.2653263	20	5 11.1	20.4
297246 1994 UW_{7}	15.4	X	234.25660	309.27599	22.74249	16.80247	0.0110794	0.17258818	3.1949350	20	4 6.7	19.9
297247 1994 UZ_{10}	16.7	X	299.49577	221.29161	234.54156	7.86836	0.0234357	0.23121594	2.6290017	20	12 11.5	20.1
297248 1995 AF_{2}	17.0	X	337.99791	85.34314	287.70133	3.71873	0.1285621	0.22140278	2.7061218	20	10 15.9	20.0
297249 1995 DQ_{2}	15.8	X	246.83677	120.56656	2.02988	33.92907	0.2527202	0.21911100	2.7249587	20	9 28.2	19.7
297250 1995 EC_{4}	17.3	X	351.30827	187.94804	318.56636	3.85982	0.0772566	0.27193985	2.3595045	20	—	—
297251 1995 FN_{10}	17.1	X	164.17699	193.74793	80.65436	3.92779	0.1736974	0.25974181	2.4328097	20	—	—
297252 1995 GS_{2}	17.1	X	6.59503	40.85466	114.02892	3.16106	0.1340120	0.27158971	2.3615320	20	1 16.8	19.3
297253 1995 QN_{14}	15.7	X	169.89840	200.86188	196.11903	9.57650	0.0887683	0.18147140	3.0898016	20	4 10.7	20.5
297254 1995 SR_{10}	16.1	X	188.33739	34.63617	8.64355	5.89401	0.1318736	0.18328160	3.0694234	20	5 5.1	21.0
297255 1995 SN_{51}	15.7	X	225.58919	0.68521	13.93579	9.26972	0.1469738	0.18484525	3.0520890	20	5 4.1	20.6
297256 1995 SA_{52}	15.3	X	123.35291	225.39924	199.14901	15.58737	0.0286274	0.17832035	3.1260946	20	3 16.1	19.8
297257 1995 SC_{59}	16.6	X	212.59290	305.55578	83.98769	0.14118	0.1871357	0.18455662	3.0552702	20	5 10.3	21.7
297258 1995 SZ_{64}	16.2	X	0.29782	359.99149	205.97470	5.23192	0.0644232	0.18104673	3.0946314	20	4 3.7	20.1
297259 1995 SA_{66}	15.9	X	111.77925	121.27436	353.29870	11.27345	0.0889055	0.18445063	3.0564406	20	5 8.7	20.6
297260 1995 SO_{68}	16.7	X	263.29136	312.05165	14.31119	1.48239	0.1398411	0.18786496	3.0192948	20	4 16.3	21.2
297261 1995 SB_{80}	16.5	X	149.67145	87.67050	350.14885	8.81359	0.0273861	0.18622022	3.0370469	20	5 1.3	20.9
297262 1995 TV_{3}	18.0	X	92.77232	314.11681	4.52647	1.67309	0.0275798	0.24382061	2.5375957	20	—	—
297263 1995 TG_{4}	17.9	X	237.34171	3.74802	17.82941	5.34979	0.1314911	0.30652751	2.1784942	20	5 26.4	20.8
297264 1995 TH_{6}	15.4	X	228.40163	313.22643	26.22905	17.35276	0.2471691	0.18258415	3.0772350	20	3 27.0	20.7
297265 1995 UT_{12}	17.4	X	311.07899	87.20078	19.56906	6.43886	0.1300517	0.24246429	2.5470503	20	—	—
297266 1995 UP_{15}	15.6	X	189.15951	349.01834	61.53965	10.86515	0.0597406	0.18181184	3.0859433	20	5 17.6	20.2
297267 1995 UR_{20}	17.1	X	261.59507	355.35208	16.36130	4.20131	0.1338349	0.30825493	2.1703479	20	6 12.9	19.6
297268 1995 VJ_{15}	15.2	X	33.97958	275.07473	235.07184	14.59423	0.0710811	0.17373403	3.1808715	20	3 8.1	19.7
297269 1995 VF_{18}	17.5	X	320.84470	26.38075	236.42124	4.40465	0.1790761	0.30106371	2.2047725	20	3 21.9	19.9
297270 1995 WB_{18}	17.4	X	62.58275	351.86608	32.40974	5.60466	0.2195209	0.24653161	2.5189583	20	—	—
297271 1995 WH_{18}	15.6	X	124.59607	39.48865	37.11989	16.16876	0.0415271	0.17794601	3.1304773	20	4 8.9	20.2
297272 1996 BV_{9}	16.7	X	51.61334	115.05285	195.25525	5.90378	0.0678444	0.22811987	2.6527356	20	11 9.8	20.2
297273 1996 FU_{5}	16.8	X	335.83842	293.04745	151.57265	4.76773	0.1740033	0.23494888	2.6010805	20	—	—
297274 1996 SK	16.8	X	60.82438	284.41885	197.35369	1.96308	0.7943591	0.25922793	2.4360237	20	6 26.7	21.1
297275 1996 TX_{29}	17.2	X	107.47144	325.84645	33.77171	4.28720	0.2111500	0.26006872	2.4307706	20	—	—
297276 1996 VR_{11}	16.2	X	257.13603	34.69747	275.21481	6.24850	0.1487167	0.19005597	2.9960453	20	3 16.6	20.9
297277 1996 VT_{15}	16.5	X	82.18687	272.44133	221.81139	7.71781	0.0331268	0.18638802	3.0352238	20	4 22.6	20.6
297278 1996 XB_{16}	18.1	X	53.96850	153.77612	281.54793	0.96939	0.1617363	0.25912352	2.4366781	20	—	—
297279 1997 CT_{11}	17.0	X	129.32251	126.75333	108.43211	2.30309	0.1720032	0.23686974	2.5869994	20	11 9.2	21.1
297280 1997 GG_{1}	16.4	X	41.76576	70.24209	185.53470	19.24135	0.1381189	0.22422488	2.6833677	20	8 21.2	20.0

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		°	°	°	°		°				
297281 1997 GJ_{30}	17.7	X	324.80270	191.66470	38.45256	1.42958	0.1858468	0.29718638	2.2239078	20	2 11.2	19.8
297282 1997 HV_{1}	16.3	X	76.06497	261.57234	20.17030	14.81699	0.0849848	0.23120695	2.6290699	20	11 2.1	20.1
297283 1997 NK	17.2	X	322.55305	87.02885	289.92212	6.78167	0.2321680	0.21615221	2.7497693	20	9 12.6	19.7
297284 1997 NT_{5}	17.8	X	238.58995	348.81065	270.31656	2.96564	0.2582267	0.28382854	2.2931476	20	—	—
297285 1997 SO_{6}	17.9	X	161.83735	31.02857	352.17546	3.28331	0.1693411	0.28297938	2.2977328	20	3 14.1	21.2
297286 1997 SQ_{8}	16.9	X	44.68171	182.16576	357.30470	5.88326	0.0919278	0.28879539	2.2667792	20	4 30.9	19.3
297287 1997 SC_{33}	13.8	X	320.35423	185.77897	214.51968	4.86728	0.1218005	0.08268319	5.2182462	20	9 24.1	20.2
297288 1997 TT_{1}	16.7	X	305.13864	45.33687	348.08750	4.75963	0.0806105	0.21271341	2.7793259	20	9 19.5	19.9
297289 1997 WF	17.7	X	73.86676	221.43251	257.60148	4.97325	0.3671499	0.27462318	2.3441096	20	5 9.5	20.5
297290 1997 WU_{18}	17.8	X	27.37597	347.53588	134.94480	1.75844	0.1340015	0.27219927	2.3580051	20	1 7.9	19.9
297291 1997 XG_{2}	17.1	X	100.14408	346.86756	61.40914	4.22547	0.1960555	0.27293351	2.3537743	20	2 12.1	19.8
297292 1998 FW_{105}	15.8	X	355.44066	202.92996	351.28654	10.62422	0.2045487	0.17710419	3.1403893	20	3 4.9	19.0
297293 1998 HN_{12}	16.9	X	76.06169	250.56828	74.47251	17.74791	0.2418425	0.24184695	2.5513829	20	—	—
297294 1998 ML_{7}	16.3	X	3.81103	127.12602	285.74059	4.46947	0.2927414	0.23556710	2.5965277	20	—	—
297295 1998 QN_{3}	15.5	X	231.37025	250.81582	138.62771	31.97283	0.3817147	0.21432382	2.7653860	20	5 23.6	21.2
297296 1998 QQ_{73}	15.9	X	13.11748	73.59216	282.85877	11.51256	0.2869493	0.22897885	2.6460973	20	12 20.9	19.0
297297 1998 RQ_{13}	16.4	X	9.45343	22.90679	344.98455	9.26525	0.1159589	0.23062229	2.6335114	20	12 2.0	19.8
297298 1998 RF_{22}	15.9	X	39.38589	8.22730	327.74868	13.05219	0.1411550	0.23117857	2.6292850	20	12 6.2	19.7
297299 1998 RM_{62}	17.1	X	291.55931	330.46711	4.36712	5.04277	0.2114796	0.30748457	2.1739714	20	5 17.6	19.5
297300 1998 SC_{15}	19.2	X	319.65358	277.46743	198.71712	16.08046	0.4146631	0.68624173	1.2729694	20	—	—
297301 1998 SQ_{20}	16.8	X	135.34727	254.98823	0.48570	4.42911	0.0681205	0.23254372	2.6189847	20	12 6.4	20.8
297302 1998 SB_{38}	17.1	X	26.32454	177.47990	175.86946	2.51064	0.2147892	0.23093649	2.6311221	20	12 23.8	20.5
297303 1998 SK_{86}	17.4	X	262.70469	12.45762	2.44795	4.24051	0.1842318	0.30683370	2.1770447	20	6 11.1	20.0
297304 1998 SQ_{125}	17.1	X	31.25647	206.44472	130.67046	3.13067	0.3202622	0.22909189	2.6452267	20	12 23.8	20.8
297305 1998 TT_{8}	17.0	X	269.04112	66.28425	35.33895	10.23481	0.1262672	0.22372962	2.6873262	20	10 23.6	20.3
297306 1998 TR_{10}	16.6	X	21.80617	297.57282	37.69327	9.18367	0.2500703	0.22589774	2.6701037	20	11 27.2	19.8
297307 1998 TQ_{20}	17.4	X	17.47354	309.91906	33.44903	2.27588	0.2052122	0.22609518	2.6685490	20	11 25.5	20.6
297308 1998 TH_{21}	16.9	X	336.33034	359.40958	20.31526	3.77764	0.1366385	0.22397925	2.6853291	20	10 24.9	19.7
297309 1998 UJ_{18}	17.2	X	246.15919	353.28453	11.46081	4.86167	0.1865614	0.30331286	2.1938596	20	5 6.9	20.4
297310 1998 UK_{28}	16.4	X	335.93684	227.42398	198.42037	14.07399	0.3218059	0.22717763	2.6600656	20	—	—
297311 1998 VR_{4}	16.2	X	340.72553	132.81698	232.12074	4.92433	0.1549138	0.22198242	2.7014089	20	10 11.3	18.9
297312 1998 WW_{3}	16.5	X	329.09603	315.90904	65.17329	14.35159	0.2633029	0.22226303	2.6991347	20	10 20.3	18.7
297313 1998 WF_{42}	18.3	X	221.74898	127.20408	231.91260	3.35472	0.2324734	0.29844197	2.2176659	20	4 3.8	21.9
297314 1998 XV_{2}	18.0	X	191.28499	314.27027	78.78253	1.84629	0.1153638	0.29548299	2.2324465	20	4 23.8	21.0
297315 1999 BV_{31}	16.2	X	292.96285	308.87795	102.67052	3.44964	0.0758630	0.21445131	2.7642899	20	9 28.7	19.6
297316 1999 HV_{7}	17.3	X	29.54089	96.21371	47.27383	3.92541	0.1303679	0.27625968	2.3348431	20	2 14.6	19.3
297317 1999 HH_{10}	16.8	X	205.65192	61.90694	209.05844	10.07091	0.2196917	0.26568480	2.3963941	20	—	—
297318 1999 TV_{4}	17.7	X	49.40578	1.71127	14.38984	14.00768	0.3182088	0.24498431	2.5295535	20	—	—
297319 1999 TR_{39}	16.4	X	34.05786	336.52499	78.57602	9.47122	0.2233425	0.24571635	2.5245270	20	—	—
297320 1999 TV_{163}	16.3	X	55.87772	253.95392	127.06752	7.64949	0.1407890	0.24487941	2.5302758	20	—	—
297321 1999 TU_{178}	17.2	X	40.26910	160.92104	242.13502	4.03188	0.2639471	0.24580063	2.5239498	20	—	—
297322 1999 TB_{180}	17.2	X	68.92224	350.90557	337.62171	5.71492	0.2322008	0.24320080	2.5419054	20	—	—
297323 1999 TE_{211}	17.0	X	274.18963	79.40155	227.45816	24.21489	0.0539401	0.41088967	1.7919225	20	3 23.8	19.1
297324 1999 TU_{213}	17.5	X	52.98851	314.42802	36.51531	1.63374	0.2697076	0.24365847	2.5387214	20	—	—
297325 1999 TX_{217}	17.4	X	60.53490	140.23725	212.39604	8.07781	0.3039126	0.24441967	2.5334477	20	—	—
297326 1999 TP_{246}	15.3	X	235.13993	126.71675	180.90137	19.20898	0.1300544	0.16946778	3.2340343	20	2 26.0	20.5
297327 1999 TQ_{290}	16.8	X	359.95579	187.75681	200.54334	13.54432	0.2833193	0.23821848	2.5772255	20	—	—
297328 1999 US_{35}	16.7	X	291.31733	247.70766	225.35250	12.60368	0.1433619	0.23786853	2.5797526	20	12 16.0	19.5
297329 1999 VY_{26}	17.2	X	25.87951	187.27673	232.62534	5.76622	0.2582952	0.24377787	2.5378923	20	—	—
297330 1999 VW_{99}	16.4	X	28.47288	324.03927	57.72037	4.78895	0.0675124	0.24076672	2.5590086	20	—	—
297331 1999 VZ_{132}	16.5	X	316.59179	92.82289	7.56105	14.75064	0.0648906	0.24497762	2.5295995	20	—	—
297332 1999 VH_{147}	15.6	X	3.76328	177.70903	239.13847	14.81965	0.1502496	0.23986413	2.5654241	20	—	—
297333 1999 VE_{168}	17.1	X	25.14667	358.99822	47.29439	5.19642	0.2707532	0.24255660	2.5464041	20	—	—
297334 1999 VN_{175}	17.3	X	47.53952	1.22166	8.47305	4.98343	0.1881540	0.24362138	2.5389790	20	—	—
297335 1999 VH_{190}	16.0	X	18.38426	180.94467	231.57308	12.77712	0.1478014	0.24116568	2.5561856	20	—	—
297336 1999 VR_{206}	18.2	X	51.51716	328.57900	35.89493	4.15383	0.2685395	0.24335763	2.5408132	20	—	—
297337 1999 WH_{13}	16.1	X	110.58243	87.33951	229.06803	2.64838	0.0846317	0.24350495	2.5397883	20	—	—
297338 1999 WR_{15}	18.0	X	332.36225	229.93137	228.74303	5.92669	0.2049106	0.24086617	2.5583042	20	—	—
297339 1999 WY_{25}	17.8	X	328.62639	225.11819	231.78391	3.27493	0.2081698	0.23930178	2.5694417	20	—	—
297340 1999 XY_{39}	16.4	X	294.27433	0.96474	106.63506	5.74769	0.2584478	0.23472379	2.6027431	20	12 2.4	18.4
297341 1999 XR_{102}	15.7	X	52.74714	95.95939	290.42071	3.90635	0.2455238	0.24189644	2.5510349	20	—	—
297342 1999 XM_{103}	14.9	X	81.76644	91.93863	287.07832	11.41970	0.3428278	0.24578135	2.5240819	20	1 2.2	17.0
297343 1999 XU_{140}	16.9	X	333.56076	184.59420	271.75431	4.49692	0.2216971	0.23702826	2.5858459	20	—	—
297344 1999 XK_{146}	17.1	X	136.23783	69.04794	222.34112	1.84194	0.0249211	0.24147656	2.5539912	20	—	—
297345 1999 XY_{151}	16.8	X	6.33178	120.48225	296.93786	4.20071	0.1241620	0.23703545	2.5857935	20	—	—
297346 1999 XP_{179}	16.5	X	1.38201	95.70583	337.29474	5.09379	0.1875312	0.23910240	2.5708699	20	—	—
297347 1999 XK_{196}	15.6	X	46.19036	64.57075	346.26231	7.56764	0.1719437	0.24304629	2.5429826	20	—	—
297348 1999 XR_{244}	16.7	X	37.60064	351.63248	354.11423	1.19382	0.0917408	0.23659490	2.5890025	20	12 11.7	20.0
297349 1999 XR_{245}	16.1	X	289.11102	1.33517	124.66874	7.60253	0.2578513	0.23585234	2.5944338	20	12 18.4	18.1
297350 1999 YX_{12}	16.2	X	280.01438	200.11708	265.24768	12.37731	0.2054531	0.23253034	2.6190852	20	11 1.8	19.2
297351 1999 YP_{16}	17.5	X	348.77065	79.64139	305.15464	3.65396	0.2185585	0.23166983	2.6255668	20	12 6.3	20.1
297352 2000 AO_{19}	16.5	X	298.64940	171.30612	295.78561	2.79004	0.2449962	0.23482163	2.6020201	20	12 13.2	18.5
297353 2000 AV_{24}	16.3	X	316.96851	159.81000	287.28894	12.51139	0.1260566	0.23423786	2.6063415	20	12 27.1	18.9
297354 2000 AB_{147}	16.5	X	343.87020	136.19412	307.45282	4.45523	0.2277130	0.23720106	2.5845898	20	—	—
297355 2000 BM_{2}	16.4	X	10.92841	123.43054	305.91780	11.27402	0.2935686	0.24125393	2.5555622	20	—	—
297356 2000 BG_{46}	16.3	X	179.79298	166.38181	324.92406	2.83368	0.0149370	0.21713097	2.7414997	20	8 21.3	19.9
297357 2000 BQ_{48}	16.6	X	51.85542	144.76785	135.92043	5.57521	0.1226525	0.21995466	2.7179864	20	10 10.9	20.2
297358 2000 CT_{19}	16.6	X	0.89939	269.82607	182.27893	5.09936	0.2918982	0.23970189	2.5665816	20	—	—
297359 2000 CL_{106}	16.8	X	15.13250	232.02327	120.25337	2.50773	0.1336159	0.22793305	2.6541849	20	11 24.2	20.0
297360 2000 CH_{119}	17.0	X	74.18004	292.84988	332.56404	4.51829	0.0801472	0.21962264	2.7207250	20	10 8.7	20.7

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	m		°	°	°	°		°				
297361 2000 CE_{131}	17.2	X	355.34473	265.76819	129.72904	1.83784	0.1432548	0.22989176	2.6390874	20	12 22.4	20.1
297362 2000 CT_{140}	16.6	X	96.78159	340.23785	301.39828	3.94900	0.0659287	0.22767629	2.6561800	20	11 25.4	20.5
297363 2000 DG_{11}	16.5	X	335.47320	101.32456	330.53971	12.64453	0.1813015	0.23225839	2.6211293	20	—	—
297364 2000 DS_{16}	17.1	X	324.48451	109.44952	340.16571	28.89273	0.3802680	0.23429536	2.6059151	20	—	—
297365 2000 DO_{46}	16.2	X	279.23104	95.85453	335.00918	14.19516	0.0424841	0.22130833	2.7068917	20	10 1.8	19.9
297366 2000 DP_{49}	16.7	X	216.25848	153.01335	358.49015	1.47486	0.1440149	0.22346538	2.6894443	20	10 17.8	20.8
297367 2000 DV_{49}	16.0	X	146.99603	204.66674	320.28979	7.15194	0.1519219	0.21524715	2.7574720	20	8 26.7	20.5
297368 2000 DH_{90}	17.1	X	243.54553	175.47848	316.16983	2.94756	0.1847952	0.22638573	2.6662653	20	10 17.9	20.9
297369 2000 EY_{35}	17.5	X	184.12168	75.82209	339.33327	3.97812	0.0416637	0.30268890	2.1968735	20	5 13.7	20.2
297370 2000 EO_{175}	15.4	X	310.24084	74.87459	343.94830	28.52861	0.3302804	0.22988790	2.6391170	20	9 28.1	17.6
297371 2000 FC_{51}	16.3	X	311.09094	37.35780	6.42432	2.88980	0.0724158	0.21826457	2.7319991	20	10 14.6	19.6
297372 2000 GJ_{88}	16.2	X	178.35452	331.69623	179.56680	12.41750	0.2570549	0.21573876	2.7532814	20	9 4.3	21.1
297373 2000 GN_{170}	16.2	X	175.90925	189.65233	324.24926	7.17901	0.1538079	0.21562173	2.7542775	20	9 8.1	20.6
297374 2000 HA_{95}	17.6	X	242.81098	47.80285	175.62576	21.71057	0.0468050	0.37663460	1.8989895	20	—	—
297375 2000 JE_{8}	16.6	X	86.82081	61.24888	170.39539	4.49877	0.0101307	0.21058035	2.7980630	20	9 1.1	20.3
297376 2000 JX_{42}	16.3	X	119.49110	359.16823	221.51131	8.29546	0.1064471	0.21236580	2.7823579	20	10 4.8	20.6
297377 2000 KC_{37}	17.8	X	312.58830	339.36162	258.63332	1.59075	0.1210225	0.28970463	2.2620338	20	2 14.9	20.4
297378 2000 KR_{44}	17.2	X	339.00574	154.59218	100.26616	9.50408	0.1398412	0.19597139	2.9354471	20	5 3.2	20.7
297379 2000 OR_{40}	16.2	X	160.95289	135.03929	248.50442	6.50617	0.2284882	0.27649049	2.3335436	20	3 14.8	20.1
297380 2000 OS_{49}	17.4	X	133.41674	20.32351	325.85261	7.80137	0.3059852	0.26782708	2.3835982	20	1 16.9	21.0
297381 2000 PL_{27}	17.4	X	152.46601	332.66806	323.69832	6.38110	0.1853157	0.26723016	2.3871465	20	—	—
297382 2000 QC	15.5	X	237.99982	85.27019	280.94983	8.05098	0.1443568	0.18521961	3.0479751	20	5 6.4	20.4
297383 2000 QO_{1}	17.1	X	148.98242	104.79968	229.14389	2.92272	0.2243380	0.27066158	2.3669276	20	1 5.9	20.6
297384 2000 QB_{13}	17.4	X	129.29295	286.52451	47.86757	0.45537	0.2333683	0.26787668	2.3833040	20	—	—
297385 2000 QW_{16}	17.3	X	123.54877	151.26059	218.20501	1.54165	0.2280702	0.26977806	2.3720925	20	1 24.4	20.4
297386 2000 QW_{17}	16.9	X	153.16856	54.83629	339.98969	6.04627	0.2421930	0.27640071	2.3340489	20	3 24.7	20.6
297387 2000 QC_{52}	17.9	X	129.48593	185.04130	170.45766	2.17701	0.2210127	0.26925552	2.3751606	20	1 12.5	21.0
297388 2000 QM_{61}	15.7	X	238.25516	183.33836	165.31574	18.53628	0.2527538	0.18304213	3.0720999	20	4 12.7	21.0
297389 2000 QE_{81}	16.5	X	271.20809	112.83881	184.25088	4.60192	0.2372150	0.18469230	3.0537738	20	3 9.0	21.3
297390 2000 QR_{90}	17.3	X	180.02918	122.75765	217.33463	4.36273	0.2486398	0.27425879	2.3461855	20	2 9.0	21.4
297391 2000 QT_{90}	17.0	X	156.60703	155.07967	198.73390	6.26309	0.2189861	0.27216489	2.3582037	20	2 4.3	20.7
297392 2000 QG_{108}	15.9	X	188.19872	186.63498	156.30500	12.31038	0.2380627	0.17637983	3.1489814	20	2 27.1	21.4
297393 2000 QK_{109}	16.6	X	217.09129	190.58839	152.19318	1.87220	0.1173604	0.18147203	3.0897944	20	3 23.3	21.3
297394 2000 QZ_{115}	17.6	X	123.36720	128.99214	248.37226	1.11427	0.2307302	0.26957899	2.3732602	20	2 3.8	20.7
297395 2000 QA_{125}	17.3	X	176.54136	357.05856	359.65077	4.17383	0.1657814	0.27588767	2.3369416	20	2 24.9	20.8
297396 2000 QC_{130}	17.0	X	167.06264	196.36216	154.76970	12.27881	0.2851162	0.27295535	2.3536487	20	2 15.4	21.0
297397 2000 QL_{174}	17.1	X	220.78629	357.56090	282.36868	5.00883	0.2368351	0.27494627	2.3422729	20	—	—
297398 2000 QL_{177}	17.0	X	114.83632	189.32814	207.11250	2.82509	0.2050170	0.27077211	2.3662834	20	2 14.3	20.0
297399 2000 QS_{184}	15.8	X	218.09900	342.11255	353.27682	10.30515	0.2491661	0.18139881	3.0906258	20	3 10.7	21.3
297400 2000 QG_{193}	15.4	X	230.65460	248.66975	145.94349	15.99847	0.3162444	0.18569926	3.0427243	20	5 27.2	21.0
297401 2000 QA_{199}	15.9	X	259.21868	205.62241	115.76515	2.90272	0.2033945	0.18479001	3.0526972	20	3 31.8	20.8
297402 2000 QJ_{203}	17.5	X	164.94821	295.02312	34.44437	2.89152	0.2031543	0.27118882	2.3638588	20	1 14.3	21.1
297403 2000 QD_{206}	15.4	X	182.52470	210.24463	176.14395	10.86119	0.2241819	0.17809236	3.1287620	20	4 13.8	20.8
297404 2000 QN_{227}	17.4	X	159.87810	26.09190	307.51440	2.11235	0.2721984	0.27063538	2.3670803	20	1 19.9	21.3
297405 2000 QV_{243}	16.8	X	261.42844	286.04598	331.89926	6.48286	0.0801721	0.27679604	2.3318260	20	1 18.2	20.0
297406 2000 QF_{245}	17.6	X	161.39831	55.80437	286.80385	1.58132	0.1886245	0.27255507	2.3559526	20	1 25.1	21.1
297407 2000 RZ_{21}	15.5	X	256.49199	129.42502	211.00712	8.07337	0.1735833	0.18433752	3.0576908	20	4 22.9	20.0
297408 2000 RU_{36}	17.0	X	110.05032	172.68002	179.99618	21.96653	0.2524527	0.26381314	2.4077151	20	—	—
297409 Mållgan	17.7	X	109.46910	62.72122	312.08344	1.17149	0.2474818	0.26621494	2.3932116	20	1 18.2	20.6
297410 2000 RR_{81}	16.0	X	220.34100	120.08767	206.28313	6.98012	0.2570157	0.17947780	3.1126399	20	2 28.6	21.6
297411 2000 RB_{107}	17.2	X	149.62539	253.80759	57.65320	2.74992	0.2097812	0.26750436	2.3855149	20	—	—
297412 2000 SJ_{1}	15.4	X	189.58448	110.75706	296.35530	24.53338	0.2654366	0.17927507	3.1149862	20	5 5.2	21.4
297413 2000 SE_{17}	15.5	X	242.40559	98.70365	254.71564	9.42725	0.1473025	0.18301640	3.0723879	20	4 25.0	20.3
297414 2000 SR_{18}	15.6	X	221.32353	57.40705	290.58993	11.51396	0.1419821	0.18018987	3.1044343	20	3 25.8	20.8
297415 2000 SH_{26}	15.5	X	206.94197	225.99599	182.60667	13.44685	0.2113385	0.18458566	3.0549498	20	5 29.0	20.9
297416 2000 SJ_{30}	17.3	X	125.08921	235.05854	178.40870	2.81382	0.2157039	0.27314306	2.3525703	20	3 21.4	20.7
297417 2000 SD_{42}	15.6	X	172.04979	224.57914	169.81516	8.00626	0.2080840	0.17723928	3.1387934	20	4 14.8	20.9
297418 2000 SP_{43}	18.5	X	73.29956	224.44427	350.56225	10.34569	0.4667928	1.34820795	0.8115179	20	—	—
297419 2000 SW_{45}	16.3	X	247.64044	99.78652	199.82949	17.93214	0.3656943	0.18304311	3.0720890	20	2 9.9	22.2
297420 2000 SO_{48}	15.4	X	228.42499	120.52550	242.18223	9.34652	0.1746024	0.18382086	3.0634175	20	4 21.1	20.3
297421 2000 SP_{51}	16.0	X	215.83906	139.93860	195.45927	12.73539	0.1617111	0.17884450	3.1199836	20	3 9.6	21.2
297422 2000 SO_{59}	17.8	X	126.87396	36.66825	317.13886	2.29349	0.1966354	0.26703782	2.3882926	20	1 4.9	20.8
297423 2000 SP_{59}	15.3	X	240.75627	21.31797	346.80795	5.97547	0.1419111	0.18411813	3.0601192	20	5 11.9	20.0
297424 2000 SC_{68}	17.3	X	138.98453	14.53977	34.54583	2.83419	0.2285877	0.27364396	2.3496985	20	3 31.4	21.0
297425 2000 SK_{75}	17.3	X	136.22530	263.29174	90.88447	4.10668	0.2191792	0.26761125	2.3848797	20	1 18.9	20.7
297426 2000 SZ_{82}	16.0	X	231.13700	185.58574	179.44692	17.61569	0.2322787	0.18137137	3.0909376	20	4 26.9	21.3
297427 2000 SZ_{89}	15.5	X	236.41265	85.97677	248.88233	11.88218	0.2910485	0.18307233	3.0717621	20	3 15.8	21.1
297428 2000 SB_{92}	15.2	X	194.11796	133.30313	241.86867	11.88410	0.1306609	0.18036654	3.1024067	20	4 5.1	20.3
297429 2000 SH_{94}	17.4	X	149.28507	79.99635	258.50604	4.21747	0.2102480	0.26918701	2.3755635	20	1 10.5	21.0
297430 2000 SU_{96}	16.8	X	167.99938	46.89244	265.87472	6.12440	0.1611660	0.26879423	2.3778772	20	—	—
297431 2000 SO_{98}	15.4	X	207.60762	43.93321	348.24447	8.93232	0.1077170	0.18196198	3.0842455	20	5 9.3	20.4
297432 2000 SD_{99}	16.8	X	68.06234	53.12661	347.25861	5.63672	0.1179120	0.26348445	2.4097171	20	—	—
297433 2000 SK_{109}	16.9	X	176.53962	300.02397	5.29151	4.81162	0.2382896	0.26891591	2.3771598	20	—	—
297434 2000 SA_{158}	15.0	X	210.24396	195.38054	227.84897	20.14997	0.3012042	0.18204679	3.0832876	20	6 11.6	20.7
297435 2000 SB_{164}	17.3	X	93.51099	269.05295	19.50421	18.66350	0.1163931	0.35293014	1.9830951	20	—	—
297436 2000 SS_{171}	15.3	X	168.90540	123.57843	266.27514	25.80290	0.2233712	0.17666736	3.1455638	20	3 26.1	21.2
297437 2000 SK_{173}	15.4	X	165.95139	181.11386	221.30976	23.01633	0.2051822	0.17652167	3.1472944	20	4 16.4	20.8
297438 2000 SJ_{174}	16.3	X	156.11347	105.26397	249.00173	8.79578	0.2774928	0.27075902	2.3663597	20	2 7.4	20.4
297439 2000 SX_{174}	15.6	X	210.35068	92.77351	285.26604	6.87814	0.1947048	0.17936374	3.1139594	20	4 21.8	20.9
297440 2000 SE_{175}	16.7	X	94.64520	208.65117	227.82942	11.30658	0.2158063	0.26910097	2.3760699	20	3 11.3	19.9

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Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
	m		°	°	°	°		°				
297441 2000 SJ_{188}	17.3	X	126.92677	60.73087	336.72392	0.77037	0.1768314	0.27022232	2.3694920	20	2 27.1	20.5
297442 2000 SF_{191}	12.9	X	254.42256	333.14663	21.92494	21.76641	0.0878286	0.08370848	5.1755488	20	5 14.0	20.1
297443 2000 SC_{197}	16.4	X	156.45015	7.90953	1.09790	7.30741	0.1248844	0.27319133	2.3522931	20	2 18.9	19.8
297444 2000 SE_{207}	15.7	X	248.59714	178.43921	168.39862	11.01354	0.2395555	0.18188521	3.0851133	20	4 19.3	20.8
297445 2000 SQ_{214}	17.7	X	129.95097	154.90266	212.12484	1.39874	0.2237566	0.26864399	2.3787637	20	1 28.0	21.0
297446 2000 SU_{218}	16.5	X	132.21188	326.75006	48.28954	12.37311	0.2215043	0.26852161	2.3794864	20	2 15.6	20.2
297447 2000 SF_{239}	17.9	X	107.09561	31.73536	352.35044	1.15747	0.1835380	0.26677315	2.3898720	20	1 17.4	20.7
297448 2000 SW_{240}	17.2	X	41.19386	178.06858	219.85231	20.61323	0.0768550	0.35940104	1.9592198	20	—	—
297449 2000 SN_{245}	17.8	X	111.35864	85.20755	293.94578	1.55226	0.1968638	0.26791218	2.3830935	20	1 18.3	20.7
297450 2000 SS_{249}	15.5	X	189.69257	268.13025	95.15237	3.96334	0.1784105	0.17678409	3.1441791	20	3 23.8	20.7
297451 2000 SC_{250}	17.0	X	137.52403	233.72536	127.68608	3.56744	0.1360432	0.26905153	2.3763609	20	1 18.4	20.2
297452 2000 SD_{252}	16.3	X	212.37776	52.84218	6.57186	14.91623	0.3460791	0.18230203	3.0804090	20	6 5.2	22.2
297453 2000 SP_{253}	17.2	X	89.05126	319.20913	68.10984	3.59764	0.1742966	0.26490763	2.4010788	20	—	—
297454 2000 SD_{262}	16.7	X	116.37086	12.46749	25.02057	6.52444	0.1173863	0.27068552	2.3667880	20	2 8.6	19.7
297455 2000 SZ_{267}	15.8	X	175.55833	52.12297	328.56067	7.60730	0.1541629	0.17639236	3.1488323	20	3 26.9	21.0
297456 2000 SD_{276}	15.5	X	146.02280	53.33064	35.76007	28.13419	0.2636949	0.17499843	3.1655313	20	5 21.9	21.2
297457 2000 SG_{279}	16.9	X	48.17569	61.64986	16.20810	4.60131	0.2914456	0.26071813	2.4267324	20	—	—
297458 2000 SO_{290}	15.7	X	240.54165	119.14262	199.37821	16.00527	0.2287860	0.18002129	3.1063720	20	3 6.3	21.1
297459 2000 SG_{292}	15.4	X	141.73923	67.07031	32.22122	10.64432	0.2885719	0.17606125	3.1527790	20	6 6.8	21.1
297460 2000 SV_{300}	17.1	X	92.35660	24.97123	354.92869	6.60217	0.1150482	0.26400241	2.4065642	20	—	—
297461 2000 SF_{309}	16.1	X	198.03833	105.94160	295.97970	8.25535	0.2454880	0.17940051	3.1135339	20	5 9.3	21.7
297462 2000 SV_{310}	15.2	X	189.24868	150.05706	262.44161	16.00090	0.1997179	0.17954449	3.1118692	20	5 17.0	20.6
297463 2000 SD_{318}	15.0	X	130.68263	155.13449	267.67944	15.27252	0.1308992	0.17266965	3.1939299	20	3 29.3	20.2
297464 2000 SP_{323}	16.1	X	191.08045	153.49683	193.08452	15.63928	0.0742882	0.17337314	3.1852841	20	2 29.6	21.2
297465 2000 SZ_{327}	15.3	X	223.34403	120.26267	236.59977	10.31342	0.1837656	0.17895741	3.1186712	20	4 8.7	20.6
297466 2000 SV_{329}	15.3	X	221.83425	336.10443	41.23396	16.45201	0.0940381	0.18046409	3.1012886	20	5 8.6	20.1
297467 2000 SQ_{330}	16.0	X	199.40855	339.82765	44.20058	3.75413	0.1191792	0.17888561	3.1195056	20	4 24.5	20.8
297468 2000 SV_{343}	16.8	X	91.34264	173.18054	263.71263	2.59518	0.2151555	0.27012328	2.3700711	20	3 10.1	19.6
297469 2000 SX_{343}	16.2	X	221.16037	93.47757	243.63376	12.46420	0.2966762	0.18110703	3.0939444	20	3 7.7	22.0
297470 2000 SD_{349}	16.0	X	215.97444	273.28441	107.54620	12.91699	0.2733412	0.18044882	3.1014636	20	5 4.1	21.6
297471 2000 TA_{5}	15.7	X	234.79173	323.97403	12.41725	8.44422	0.1381935	0.18034891	3.1026089	20	3 31.2	20.7
297472 2000 TT_{21}	15.2	X	170.21780	237.49866	200.44866	12.23754	0.1217783	0.18028255	3.1033702	20	6 1.4	20.2
297473 2000 TX_{21}	16.9	X	67.80319	32.54766	45.26120	8.42131	0.2035336	0.26519280	2.3993571	20	2 3.9	19.2
297474 2000 TT_{27}	15.3	X	175.65551	206.20384	213.01644	17.02986	0.1976453	0.17819779	3.1275278	20	5 15.7	20.6
297475 2000 TS_{30}	15.5	X	104.24765	273.96611	184.57720	12.50883	0.0990197	0.17366669	3.1816936	20	4 17.4	20.1
297476 2000 TX_{31}	15.5	X	160.94706	31.17581	18.99880	17.02469	0.0974389	0.17799108	3.1299487	20	4 16.2	20.3
297477 2000 TV_{41}	16.5	X	114.85755	321.71874	127.18830	7.37063	0.2004640	0.27560791	2.3385227	20	4 27.4	19.9
297478 2000 TW_{58}	15.7	X	182.35951	273.88937	158.95530	16.65116	0.2362174	0.17983193	3.1085523	20	6 7.7	21.4
297479 2000 TB_{61}	15.5	X	198.22859	359.12629	52.82132	19.56589	0.2597107	0.18049694	3.1009124	20	5 21.8	20.9
297480 2000 TC_{61}	15.3	X	160.69123	283.43030	126.48493	12.93938	0.2720953	0.17516979	3.1634665	20	4 29.6	21.1
297481 2000 TQ_{66}	17.8	X	142.61660	61.67907	334.01246	0.83139	0.1716745	0.27225272	2.3576965	20	3 11.8	21.3
297482 2000 UH_{3}	17.4	X	6.12505	36.40654	30.71390	25.25854	0.1631767	0.35625828	1.9707252	20	—	—
297483 2000 UA_{14}	17.0	X	158.39769	36.76102	294.29154	5.44405	0.1456226	0.26716960	2.3875072	20	1 4.7	20.3
297484 2000 UJ_{15}	17.0	X	98.68943	2.53815	42.45594	3.81037	0.1933071	0.26591271	2.3950246	20	2 5.9	19.7
297485 2000 UB_{25}	17.6	X	136.39939	224.09405	178.22314	5.61241	0.2666081	0.27109069	2.3644292	20	3 23.6	21.2
297486 2000 UL_{28}	16.4	X	55.28461	40.33921	61.32767	5.55136	0.1492548	0.26620852	2.3932501	20	2 6.2	18.6
297487 2000 UA_{33}	16.9	X	347.35583	253.06289	210.05117	5.69035	0.0827626	0.25632595	2.4543755	20	—	—
297488 2000 UL_{33}	15.7	X	236.75913	104.93616	216.52942	8.98007	0.0949844	0.17649382	3.1476254	20	3 16.3	20.6
297489 2000 UL_{57}	16.8	X	157.29634	102.64868	256.91300	4.87923	0.1391129	0.27057931	2.3674074	20	2 5.4	20.3
297490 2000 UK_{69}	15.4	X	216.40442	345.90018	22.97966	11.12406	0.2309209	0.17860008	3.1228296	20	4 16.8	20.8
297491 2000 UT_{93}	15.1	X	219.19975	7.96450	8.88801	9.06895	0.1816291	0.17929946	3.1147037	20	4 28.9	20.3
297492 2000 VR_{13}	15.6	X	155.68827	24.02378	55.45454	16.47675	0.2780627	0.17489187	3.1668170	20	5 24.5	21.2
297493 2000 VQ_{21}	16.1	X	148.80333	357.90639	52.15468	4.59982	0.1898862	0.17203124	3.2018268	20	4 12.9	21.3
297494 2000 VK_{22}	17.0	X	65.52192	208.64455	229.94705	8.13774	0.2150095	0.26427525	2.4049076	20	1 26.3	19.2
297495 2000 VT_{22}	15.3	X	201.24044	154.03288	228.75153	9.56215	0.2409512	0.17743981	3.1364281	20	4 20.8	20.9
297496 2000 WT_{3}	16.2	X	136.70859	84.70794	273.25902	12.36159	0.2540341	0.26679505	2.3897412	20	1 24.9	19.8
297497 2000 WG_{4}	16.3	X	9.96137	195.71151	262.09252	8.52423	0.1186618	0.25938891	2.4350158	20	—	—
297498 2000 WH_{45}	17.9	X	77.45847	239.23791	165.38556	2.49555	0.2344279	0.26225134	2.4172649	20	1 6.1	19.9
297499 2000 WB_{47}	17.2	X	89.12685	269.18538	126.80712	2.81999	0.2028942	0.26253837	2.4155027	20	1 9.9	19.7
297500 2000 WH_{51}	15.2	X	270.07201	294.10981	18.97045	16.07120	0.0703863	0.18077652	3.0977143	20	4 15.7	19.6
297501 2000 WV_{51}	16.9	X	141.85860	118.45449	245.99406	4.00057	0.2314129	0.26718526	2.3874139	20	2 5.8	20.5
297502 2000 WE_{67}	14.7	X	208.15110	150.91358	234.13538	27.24172	0.1860472	0.17604358	3.1529899	20	4 30.7	20.1
297503 2000 WO_{129}	16.3	X	11.94299	90.66888	41.15118	6.96752	0.0676233	0.26385270	2.4074745	20	1 1.8	19.2
297504 2000 WW_{130}	17.7	X	88.20013	192.05254	231.33366	2.61172	0.2320033	0.26519987	2.3993145	20	2 19.2	20.4
297505 2000 WM_{132}	15.5	X	187.04944	92.99712	322.74336	11.00963	0.2142904	0.17788534	3.1311890	20	5 16.9	21.1
297506 2000 WE_{188}	15.8	X	177.82642	316.56269	74.60998	6.33478	0.1949350	0.17442884	3.1724189	20	4 16.2	21.2
297507 2000 WC_{189}	17.6	X	87.01490	24.57828	15.00550	2.56533	0.2133084	0.26361844	2.4089005	20	1 13.7	19.9
297508 2000 WX_{195}	16.6	X	355.63126	74.83045	49.71126	6.54526	0.1324524	0.25581172	2.4576635	20	—	—
297509 2000 XW_{2}	15.5	X	163.89294	128.04170	272.25542	18.56630	0.1714416	0.17334574	3.1856197	20	4 4.6	21.1
297510 2000 XM_{4}	15.6	X	183.96435	105.91352	316.55162	8.60334	0.2463019	0.17695481	3.1421564	20	5 23.6	21.2
297511 2000 XF_{33}	15.1	X	159.24291	55.20246	37.08503	13.93438	0.2723463	0.17323677	3.1869555	20	6 9.9	20.9
297512 2000 YQ_{6}	16.9	X	0.02387	172.28934	296.38909	5.87914	0.1798482	0.25503321	2.4626625	20	—	—
297513 2000 YQ_{55}	17.2	X	77.44181	288.84153	119.07010	10.56529	0.2521426	0.26041711	2.4286021	20	1 14.8	19.2
297514 2000 YB_{89}	15.9	X	158.27215	247.97718	162.03452	1.89824	0.2708768	0.16997107	3.2276471	20	4 23.6	21.5
297515 2000 YW_{117}	15.8	X	249.35913	61.78400	100.99371	7.20390	0.1080074	0.24282462	2.5445300	20	12 22.3	18.9
297516 2001 BN_{1}	16.8	X	145.61611	227.90527	200.14788	4.18818	0.3901377	0.16973332	3.2306605	20	5 10.6	22.9
297517 2001 BO_{40}	16.8	X	247.52578	247.24073	251.48099	2.21706	0.1845557	0.23990079	2.5651627	20	11 4.8	20.2
297518 2001 BQ_{43}	16.2	X	240.65408	236.97672	288.58547	11.00796	0.1862522	0.24040009	2.5616098	20	11 30.3	19.6
297519 2001 BP_{72}	16.7	X	257.01148	340.11415	166.70899	8.50327	0.2017441	0.24164926	2.5527742	20	11 29.0	19.8
297520 2001 BC_{79}	16.4	X	196.38297	290.66033	266.84846	5.95953	0.1884183	0.23837144	2.5761229	20	11 20.9	20.4

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
	m		°	°	°	°		°				
297521 2001 CE	17.4	X	51.18947	268.45593	140.90710	4.00096	0.2217076	0.25336682	2.4734486	20	—	—
297522 2001 CJ_{15}	15.9	X	253.80940	186.64082	339.68093	9.30172	0.0948029	0.24356664	2.5393594	20	—	—
297523 2001 CD_{40}	16.3	X	218.14516	130.62994	42.61115	5.81396	0.1675804	0.23813279	2.5778437	20	11 15.7	20.1
297524 2001 DC_{35}	16.6	X	249.37589	206.40546	315.16103	4.06435	0.1188997	0.24231112	2.5481236	20	12 18.8	19.6
297525 2001 DU_{45}	15.7	X	287.03336	357.46201	161.06017	15.41079	0.0581715	0.24531031	2.5273119	20	—	—
297526 2001 DT_{70}	16.2	X	88.52342	72.56726	162.11303	13.21934	0.2186194	0.22425947	2.6830917	20	10 6.6	20.5
297527 2001 FP_{7}	16.4	X	56.47282	218.68424	165.80074	14.91189	0.1070086	0.24271149	2.5453206	20	—	—
297528 2001 FG_{20}	16.3	X	149.63970	332.89430	199.79489	13.31575	0.1857723	0.22561180	2.6723593	20	9 7.3	21.0
297529 2001 FX_{21}	16.5	X	202.73352	13.58638	175.21953	14.07224	0.2189802	0.23317942	2.6142226	20	11 16.1	20.9
297530 2001 FH_{31}	18.0	X	170.56645	301.92304	183.72730	28.26971	0.0899431	0.42794676	1.7439856	20	8 15.2	20.4
297531 2001 FL_{85}	16.7	X	178.29461	204.25026	27.84102	3.95230	0.0702860	0.23616902	2.5921140	20	12 25.8	20.5
297532 2001 FH_{115}	17.0	X	251.53644	341.71275	175.63663	8.06670	0.1180495	0.23844203	2.5756144	20	12 15.8	20.4
297533 2001 FF_{156}	16.2	X	249.48718	172.03858	351.10900	8.91342	0.0542332	0.23954893	2.5676741	20	12 30.6	19.6
297534 2001 HO_{38}	16.2	X	6.15236	150.05812	210.38357	10.59931	0.2614351	0.22495225	2.6775802	20	12 9.8	19.2
297535 2001 HN_{55}	17.0	X	311.36535	179.98213	77.10334	8.76743	0.2373801	0.30569177	2.1824630	20	2 24.2	19.7
297536 2001 KK_{4}	16.2	X	11.93883	199.85976	60.25274	13.43773	0.2321839	0.21076642	2.7964160	20	7 20.6	19.0
297537 2001 KF_{64}	16.6	X	92.00445	355.04487	225.56654	8.12539	0.2500389	0.21870239	2.7283518	20	9 19.5	21.1
297538 2001 OL_{39}	17.1	X	245.43199	294.85145	72.32398	5.78287	0.2412192	0.30119321	2.2041404	20	5 6.7	20.4
297539 2001 OY_{51}	17.9	X	257.35709	295.36626	61.46153	2.08238	0.2644904	0.30348565	2.1930268	20	5 1.2	20.9
297540 2001 PQ_{37}	16.1	X	283.34295	307.56202	83.14299	11.66418	0.1731169	0.20465127	2.8518483	20	8 1.2	19.8
297541 2001 PW_{41}	17.0	X	224.17830	53.49446	302.19161	6.31457	0.2214403	0.29659029	2.2268866	20	3 30.7	20.8
297542 2001 PX_{54}	18.2	X	258.16618	156.48378	158.25136	5.87235	0.2028166	0.29934580	2.2131997	20	3 14.2	21.3
297543 2001 QT_{26}	17.5	X	299.59862	116.02822	172.49021	4.30716	0.2289398	0.30117890	2.2042103	20	3 21.4	20.2
297544 2001 QA_{123}	17.5	X	286.33651	201.16986	110.74691	5.32711	0.1739315	0.30268160	2.1969088	20	4 17.1	20.2
297545 2001 QS_{128}	15.8	X	304.64894	56.98732	266.95184	6.84891	0.2093136	0.20172650	2.8793475	20	5 25.4	19.3
297546 2001 QB_{144}	16.5	X	229.53884	235.03496	178.10473	1.83969	0.0729627	0.19936779	2.9020132	20	7 4.6	20.7
297547 2001 QM_{145}	16.7	X	242.33887	176.92159	214.43748	1.21567	0.0777923	0.19788485	2.9164935	20	6 21.2	20.7
297548 2001 QH_{155}	16.2	X	301.32537	36.52302	307.75872	9.47175	0.1419142	0.20230558	2.8738503	20	6 29.4	19.9
297549 2001 QG_{203}	17.9	X	268.49487	220.69188	122.52605	7.02893	0.1820360	0.30382569	2.1913903	20	5 7.5	20.8
297550 2001 QY_{205}	16.9	X	275.15910	348.54676	328.15307	6.69621	0.0252923	0.29996487	2.2101536	20	4 26.3	19.6
297551 2001 QO_{221}	15.6	X	302.93866	126.28622	280.19313	11.38185	0.2658212	0.20962889	2.8065232	20	9 2.7	18.7
297552 2001 QF_{231}	17.7	X	225.81968	85.05403	291.32228	8.18097	0.1467772	0.30007784	2.2095988	20	5 2.9	21.0
297553 2001 QU_{240}	15.7	X	301.68980	335.57467	352.48884	5.90356	0.0916114	0.19880146	2.9075220	20	6 13.8	19.5
297554 2001 QE_{271}	16.0	X	305.17988	11.77524	324.84577	14.47703	0.1448123	0.20405819	2.8573714	20	6 25.5	19.7
297555 2001 QR_{271}	17.2	X	236.30227	332.92438	48.40558	4.34540	0.1898435	0.30292094	2.1957515	20	5 19.9	20.5
297556 2001 QZ_{282}	15.6	X	1.29584	34.56780	260.15610	14.39824	0.1289069	0.20604929	2.8389340	20	8 1.1	19.0
297557 2001 QV_{329}	15.7	X	336.73782	57.97666	256.41920	5.03707	0.0518266	0.20244517	2.8725291	20	7 22.0	19.3
297558 2001 QX_{329}	17.7	X	264.11853	263.40546	76.37089	2.18845	0.1794341	0.30160349	2.2021411	20	4 25.6	20.5
297559 2001 QS_{334}	15.7	X	260.61252	269.65237	87.30686	14.82116	0.1588219	0.19298477	2.9656554	20	5 22.1	20.1
297560 2001 RT_{3}	17.6	X	258.02461	342.66242	333.47672	7.45317	0.1773072	0.29831993	2.2182707	20	3 15.7	20.8
297561 2001 RA_{9}	17.4	X	186.09076	83.93281	333.51403	5.90451	0.1697051	0.29756219	2.2220350	20	5 18.6	21.0
297562 2001 RQ_{26}	17.9	X	201.78902	243.74379	125.45648	2.10853	0.1644110	0.29525804	2.2335802	20	4 2.9	21.2
297563 2001 RQ_{28}	17.8	X	201.09821	204.83132	191.90291	2.53101	0.1500470	0.29854553	2.2171530	20	5 8.3	21.1
297564 2001 RJ_{29}	17.5	X	269.04650	336.90635	357.90382	5.74563	0.1304808	0.30139792	2.2031423	20	4 28.7	20.4
297565 2001 RR_{34}	17.8	X	272.10405	15.74950	292.40000	4.80524	0.1694638	0.29979004	2.2110127	20	3 20.3	21.0
297566 2001 RT_{54}	17.6	X	190.58263	183.31698	164.35288	7.44419	0.1263654	0.29127005	2.2539217	20	2 22.5	20.7
297567 2001 RO_{64}	17.6	X	224.42789	113.52257	226.28733	6.33549	0.1892786	0.29439438	2.2379465	20	3 13.0	21.1
297568 2001 RH_{85}	17.3	X	238.95168	175.05315	195.36041	2.89064	0.1945580	0.29987866	2.2105772	20	5 8.2	20.6
297569 2001 RH_{94}	17.2	X	212.51539	180.56805	190.16754	6.82560	0.1811219	0.29531737	2.2332811	20	4 14.3	20.5
297570 2001 RA_{98}	16.6	X	184.57679	122.18570	290.85062	0.80541	0.2452028	0.18897547	3.0074547	20	5 14.4	21.8
297571 2001 RS_{98}	17.6	X	146.24734	188.28236	159.12849	23.51229	0.0899114	0.39235828	1.8479101	20	—	—
297572 2001 RK_{103}	16.0	X	301.54596	14.13576	337.61546	1.30741	0.0804421	0.20309849	2.8663656	20	7 18.4	19.7
297573 2001 RK_{108}	16.3	X	286.55685	31.41387	353.02982	8.74351	0.1540485	0.20377699	2.8599995	20	7 31.9	20.0
297574 2001 RO_{110}	17.5	X	283.96333	281.59538	3.83091	6.67197	0.1679610	0.29828913	2.2184234	20	3 7.8	20.3
297575 2001 RM_{116}	16.9	X	261.32465	298.22570	3.17500	7.01130	0.1080202	0.29573331	2.2311866	20	3 10.1	19.9
297576 2001 RE_{117}	18.1	X	217.17681	16.96275	345.47909	2.80047	0.1426936	0.29647520	2.2274628	20	4 7.7	21.4
297577 2001 RJ_{122}	15.5	X	349.23017	312.63635	358.91493	14.80611	0.1482041	0.20458253	2.8524870	20	8 14.9	18.7
297578 2001 RH_{143}	17.0	X	185.80967	105.05050	281.86115	5.58345	0.0895123	0.29422241	2.2388185	20	4 5.4	20.2
297579 2001 SX_{2}	17.8	X	167.04135	191.90334	173.73250	6.83626	0.2018382	0.28761271	2.2729890	20	2 26.7	21.4
297580 2001 SN_{7}	17.7	X	194.57719	232.63525	152.52732	3.27824	0.1213411	0.29656827	2.2269968	20	4 17.2	20.9
297581 2001 SW_{10}	16.2	X	246.32217	179.79943	205.12129	15.85749	0.2613286	0.19775704	2.9177501	20	5 29.2	21.2
297582 2001 SY_{12}	16.2	X	298.36233	7.89474	356.45936	9.53769	0.1496885	0.20244471	2.8725335	20	7 23.5	19.8
297583 2001 SP_{16}	17.4	X	198.11519	32.64908	8.90858	6.53277	0.1396796	0.29744605	2.2226133	20	5 9.6	20.8
297584 2001 SY_{31}	17.6	X	249.85739	298.53344	31.10316	3.59175	0.2289659	0.29699222	2.2248770	20	3 23.9	20.9
297585 2001 SM_{68}	17.2	X	95.49329	174.19159	194.66849	22.36610	0.0815298	0.38112427	1.8840466	20	—	—
297586 2001 SM_{77}	17.3	X	248.52744	346.87781	334.12048	5.38723	0.0949667	0.29460267	2.2368916	20	3 20.3	20.4
297587 2001 SN_{78}	16.5	X	235.60218	254.59463	161.69844	2.23033	0.0546946	0.19992347	2.8966334	20	7 18.2	20.7
297588 2001 SF_{81}	17.3	X	217.79145	219.32869	212.29778	3.65873	0.1604121	0.30561123	2.1828464	20	7 11.1	20.3
297589 2001 SG_{83}	17.2	X	257.25090	190.41974	209.85481	4.23494	0.0340632	0.30844031	2.1694782	20	8 5.1	19.7
297590 2001 SX_{84}	16.6	X	267.27439	123.37850	291.40872	2.00084	0.3340297	0.20092407	2.8870085	20	7 16.6	20.9
297591 2001 SL_{90}	17.5	X	280.76084	342.86804	346.88833	8.35651	0.2793467	0.19800024	2.9153603	20	4 18.6	22.0
297592 2001 SQ_{90}	15.9	X	190.18804	136.55452	281.41198	1.09503	0.0901879	0.19410643	2.9542196	20	5 26.8	20.4
297593 2001 SJ_{99}	16.2	X	200.80049	254.22284	186.26494	10.61295	0.1118761	0.19699385	2.9252811	20	7 3.6	20.9
297594 2001 SL_{104}	16.2	X	251.18219	55.03963	333.15779	6.66405	0.0869074	0.19796983	2.9156588	20	6 27.3	20.5
297595 2001 SF_{131}	17.0	X	245.04813	178.81923	191.49519	4.12478	0.1620749	0.30059820	2.2070481	20	5 18.2	20.1
297596 2001 SZ_{147}	16.0	X	203.49658	204.47696	205.54631	9.93297	0.3410607	0.19116130	2.9844850	20	5 23.3	21.6
297597 2001 SK_{156}	17.4	X	249.28307	75.66740	260.93469	3.58668	0.1623015	0.29776546	2.2210236	20	4 4.3	20.6
297598 2001 SJ_{194}	16.2	X	290.39370	153.34295	177.63616	11.29822	0.1022419	0.19795100	2.9158438	20	6 1.9	20.3
297599 2001 SU_{200}	16.8	X	261.51263	207.64238	168.52423	2.04750	0.0884712	0.19850902	2.9103768	20	6 23.7	20.8
297600 2001 SJ_{207}	18.1	X	222.49252	3.09318	356.38699	0.72900	0.1015568	0.29618662	2.2289095	20	4 12.2	20.9

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	m		°	°	°	°		°				
297601 2001 SC_{215}	16.9	X	278.64273	330.00826	43.94405	4.48932	0.3579056	0.19948385	2.9008876	20	6 3.2	21.2
297602 2001 SX_{217}	17.5	X	10.62118	63.32365	172.51155	6.25198	0.1261108	0.30194362	2.2004870	20	6 1.2	19.3
297603 2001 SW_{219}	17.3	X	225.09262	302.24411	8.98290	7.74477	0.1836348	0.29127760	2.2538828	20	2 12.5	20.9
297604 2001 SU_{220}	16.5	X	216.47347	208.38711	173.58372	11.62926	0.1651520	0.19187093	2.9771218	20	5 8.0	21.5
297605 2001 SW_{223}	16.3	X	237.40150	341.58256	44.39671	2.55192	0.0950526	0.19503144	2.9448712	20	6 6.2	20.7
297606 2001 SV_{226}	15.8	X	320.19544	231.56074	70.55762	3.05974	0.0916017	0.19650968	2.9300841	20	6 7.1	19.5
297607 2001 SQ_{235}	17.9	X	224.45224	184.79550	185.28912	2.74556	0.1864680	0.29626214	2.2285307	20	4 24.3	21.2
297608 2001 SR_{239}	18.1	X	228.50494	201.96881	116.35517	1.51814	0.1949897	0.29218068	2.2492361	20	2 21.5	21.5
297609 2001 SN_{274}	15.8	X	324.84241	115.62060	191.06238	11.81859	0.0308550	0.19669951	2.9281986	20	6 25.6	19.9
297610 2001 SO_{301}	16.2	X	219.71781	91.20600	322.03047	1.82728	0.0719520	0.19666238	2.9285672	20	6 23.5	20.4
297611 2001 SN_{319}	18.0	X	298.64915	279.46312	19.77723	7.49693	0.1362916	0.30010324	2.2094741	20	4 19.0	20.5
297612 2001 SQ_{328}	17.9	X	238.43422	317.32603	355.16966	5.96388	0.2610720	0.29497762	2.2349956	20	2 20.8	21.8
297613 2001 ST_{347}	15.6	X	340.89474	353.10644	307.92176	6.87527	0.0483135	0.19728692	2.9223834	20	7 11.6	19.3
297614 2001 SZ_{348}	17.4	X	140.55380	170.72883	230.75638	7.73413	0.1117851	0.28755261	2.2733057	20	3 5.8	20.6
297615 2001 SY_{354}	17.4	X	157.46187	314.87623	91.16708	6.13340	0.1868381	0.29024093	2.2592465	20	4 12.2	20.9
297616 2001 TS_{3}	17.7	X	218.41433	326.23079	18.37652	2.91449	0.1783766	0.29265140	2.2468236	20	3 17.3	21.2
297617 2001 TZ_{16}	17.3	X	138.26804	95.70966	320.51084	4.53051	0.1583059	0.28882584	2.2666198	20	3 29.5	20.6
297618 2001 TM_{22}	17.5	X	176.38661	38.52072	5.28390	4.59444	0.1298286	0.29313611	2.2443461	20	4 20.9	20.9
297619 2001 TO_{31}	15.6	X	229.64170	87.43228	280.13987	7.94770	0.1105061	0.18820197	3.0156893	20	5 2.1	20.3
297620 2001 TQ_{32}	17.5	X	173.73977	26.34241	345.70753	4.81142	0.2036270	0.28736469	2.2742967	20	3 12.3	20.9
297621 2001 TZ_{32}	15.7	X	197.81532	110.05893	300.01393	6.97018	0.1445463	0.18788290	3.0191027	20	5 22.2	20.6
297622 2001 TB_{40}	15.9	X	216.69179	79.70953	255.82147	22.20455	0.2434834	0.28820635	2.2698667	20	2 20.6	20.4
297623 2001 TV_{50}	17.7	X	215.31102	231.64708	154.53366	3.10858	0.1593364	0.29673300	2.2261725	20	5 8.7	21.0
297624 2001 TQ_{53}	17.4	X	201.89686	327.47191	32.36481	7.25079	0.1483152	0.29199758	2.2501763	20	3 23.5	20.7
297625 2001 TC_{69}	15.9	X	307.20649	123.84750	202.00133	10.06547	0.0565094	0.19639658	2.9312089	20	6 23.5	19.9
297626 2001 TB_{70}	16.6	X	200.05351	196.97527	204.91279	4.75339	0.2117401	0.18988497	2.9978438	20	5 14.3	21.6
297627 2001 TT_{81}	15.5	X	315.08053	39.94985	274.36605	4.53357	0.0566996	0.19725656	2.9226832	20	6 19.9	19.4
297628 2001 TR_{85}	17.4	X	120.58612	134.51360	325.95952	5.03289	0.0946773	0.29280444	2.2460406	20	4 30.1	20.4
297629 2001 TC_{86}	17.0	X	107.16302	102.81889	347.85923	4.90691	0.1611572	0.28864476	2.2675677	20	4 9.5	19.9
297630 2001 TQ_{88}	17.5	X	138.22257	182.87288	212.19047	6.34047	0.1351839	0.28671656	2.2777228	20	2 27.5	20.7
297631 2001 TJ_{89}	17.1	X	88.95665	225.65885	261.30522	3.53556	0.1261462	0.29121553	2.2542030	20	5 1.2	19.5
297632 2001 TX_{90}	18.1	X	244.24345	21.12297	297.00558	2.76247	0.1819150	0.29380243	2.2409515	20	3 5.4	21.5
297633 2001 TP_{91}	15.9	X	145.87879	245.16103	213.16572	8.16308	0.2033278	0.18784981	3.0194572	20	6 6.6	21.0
297634 2001 TL_{95}	15.4	X	239.49931	316.22064	9.83274	9.47689	0.1090041	0.18683664	3.0303632	20	3 25.7	19.9
297635 2001 TJ_{122}	17.1	X	230.55186	29.49682	329.70667	6.93761	0.2041468	0.29545589	2.2325830	20	4 10.9	20.8
297636 2001 TE_{130}	15.9	X	56.63689	264.40403	216.22384	0.30922	0.1350608	0.17804630	3.1293015	20	3 16.0	19.7
297637 2001 TX_{140}	17.8	X	263.49934	200.78033	117.78195	5.38255	0.2466920	0.29887595	2.2155186	20	3 22.1	21.1
297638 2001 TM_{145}	17.0	X	193.70419	288.68002	78.23972	6.26179	0.1622556	0.29181360	2.2511220	20	3 26.1	20.5
297639 2001 TA_{148}	16.4	X	241.24974	293.22932	72.47821	6.12591	0.2604605	0.19311553	2.9643166	20	5 2.4	21.3
297640 2001 TZ_{154}	15.3	X	186.85618	326.35055	73.11805	10.99515	0.1028888	0.18768570	3.0212170	20	5 3.4	20.0
297641 2001 TF_{155}	15.9	X	217.30472	143.39074	219.84132	8.51363	0.0444780	0.18588681	3.0406773	20	4 19.9	20.4
297642 2001 TP_{157}	15.9	X	238.17590	157.79504	206.25405	8.29224	0.1077095	0.18921460	3.0049203	20	5 10.2	20.5
297643 2001 TE_{161}	17.3	X	252.78878	128.05838	211.17139	6.69377	0.0620274	0.29741889	2.2227486	20	4 25.6	19.9
297644 2001 TJ_{176}	13.2	X	206.64370	179.17120	201.10147	12.91081	0.0941711	0.08363775	5.1784664	20	5 1.6	20.4
297645 2001 TP_{181}	17.5	X	205.82291	44.56775	350.94724	6.77318	0.1739818	0.29566837	2.2315132	20	5 7.6	21.1
297646 2001 TF_{190}	16.7	X	54.99227	259.44151	225.97165	21.46597	0.2060957	0.28198619	2.3031249	20	3 6.4	19.2
297647 2001 TK_{199}	16.6	X	217.96866	218.45296	146.92792	8.65532	0.2551091	0.19067088	2.9896004	20	4 15.9	21.9
297648 2001 TO_{201}	17.5	X	202.92322	308.16613	81.07958	6.23103	0.2000087	0.29547461	2.2324887	20	4 30.5	21.2
297649 2001 TQ_{203}	17.4	X	157.88499	332.10851	91.12553	4.94758	0.2352866	0.29294261	2.2453343	20	5 5.8	21.0
297650 2001 TA_{213}	15.5	X	167.79035	177.69834	247.89105	8.24810	0.0441405	0.18842480	3.0133113	20	5 10.9	20.0
297651 2001 TY_{215}	14.9	X	299.96143	5.65778	303.85812	10.53547	0.1360921	0.19252764	2.9703480	20	5 7.6	19.1
297652 2001 TV_{228}	16.6	X	327.61706	116.68067	201.41487	12.06496	0.1354982	0.19995868	2.8962933	20	7 5.5	20.2
297653 2001 TZ_{229}	15.7	X	122.55973	265.19260	203.54535	8.62569	0.0899539	0.18861818	3.0112515	20	5 19.0	20.2
297654 2001 TN_{235}	17.3	X	195.96979	267.74687	126.27995	6.42543	0.1500785	0.29392884	2.2403090	20	5 1.9	20.7
297655 2001 TF_{240}	17.3	X	253.62521	286.22255	8.48232	5.39699	0.1504056	0.29100279	2.2553016	20	2 19.1	20.6
297656 2001 TU_{253}	17.3	X	81.30978	27.66853	48.31269	7.59894	0.0656296	0.28396507	2.2924125	20	1 31.7	20.0
297657 2001 TS_{258}	18.0	X	255.02097	264.71211	49.35687	8.11667	0.1869553	0.29537639	2.2329836	20	3 15.4	21.4
297658 2001 TL_{259}	16.1	X	201.47398	241.91330	162.89777	12.07451	0.0911443	0.19248989	2.9707362	20	5 24.9	20.8
297659 2001 TR_{261}	15.8	X	336.32045	8.35669	206.37806	12.55662	0.0331720	0.18236915	3.0796531	20	3 12.2	20.1
297660 2001 UE_{25}	15.7	X	258.83278	92.17710	239.99549	10.95693	0.2847239	0.19310344	2.9644403	20	3 31.4	20.9
297661 2001 UT_{27}	17.4	X	199.93427	326.42486	45.59626	4.93857	0.1218213	0.29332389	2.2433882	20	4 5.7	20.6
297662 2001 UT_{36}	16.0	X	189.86479	220.08033	168.51183	10.33330	0.2742366	0.18647150	3.0343179	20	4 22.2	21.5
297663 2001 US_{45}	17.5	X	172.22828	338.89463	54.29733	5.20870	0.1161423	0.29006727	2.2601481	20	4 5.1	20.7
297664 2001 UP_{53}	16.1	X	172.93709	282.65993	125.56922	2.44266	0.1886167	0.18557683	3.0440624	20	4 30.3	21.3
297665 2001 UJ_{56}	15.7	X	196.90451	79.92976	345.15114	9.11598	0.1015412	0.19272775	2.9682915	20	6 10.8	20.4
297666 2001 US_{67}	17.6	X	211.02335	267.03123	70.44451	3.33327	0.2023893	0.29094345	2.2556082	20	3 2.7	21.2
297667 2001 UJ_{79}	15.9	X	260.98671	310.36226	40.77877	12.57361	0.1441273	0.19247485	2.9708910	20	5 12.9	20.2
297668 2001 UK_{79}	15.1	X	79.18254	276.71749	215.16126	20.33475	0.0857998	0.18285696	3.0741735	20	4 23.8	19.2
297669 2001 UC_{81}	15.1	X	278.10243	118.78963	215.08432	14.43798	0.1093129	0.19184262	2.9774146	20	5 18.4	19.3
297670 2001 UO_{81}	17.5	X	202.85844	283.94583	80.46416	3.28856	0.1760006	0.29153107	2.2525762	20	3 29.6	21.0
297671 2001 UA_{88}	17.8	X	188.52609	340.86835	43.91144	4.52011	0.0209104	0.29262658	2.2469506	20	4 8.9	20.5
297672 2001 UL_{95}	17.7	X	240.22872	104.42876	235.68169	4.87697	0.1793379	0.29417740	2.2390468	20	3 29.4	21.2
297673 2001 UJ_{108}	17.5	X	171.61108	348.39874	82.55997	2.73418	0.1254782	0.29370196	2.2414626	20	5 23.9	20.6
297674 2001 UD_{114}	15.7	X	293.47045	273.75977	42.74100	13.66288	0.1312672	0.19248702	2.9707658	20	5 11.0	19.5
297675 2001 UJ_{119}	17.6	X	174.70966	356.12879	52.03325	2.47863	0.2076174	0.29121293	2.2542165	20	4 28.6	21.3
297676 2001 UT_{131}	17.4	X	174.26392	348.91148	52.60965	4.61990	0.1186934	0.29088496	2.2559105	20	4 17.6	20.6
297677 2001 UG_{135}	15.8	X	238.91538	262.54842	100.91754	3.80315	0.1115538	0.18960711	3.0007718	20	5 10.2	20.4
297678 2001 UW_{139}	17.0	X	195.78458	107.23076	239.89371	7.52450	0.2295016	0.28783178	2.2718355	20	2 26.3	21.0
297679 2001 UK_{144}	17.7	X	160.93475	258.31640	143.08511	2.82392	0.1517375	0.28910032	2.2651849	20	4 5.4	20.9
297680 2001 US_{144}	15.5	X	263.45449	266.74983	44.66914	11.71164	0.1462466	0.18718512	3.0266009	20	4 1.9	20.1

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	m		°	°	°	°		°				
297681 2001 UF_{148}	16.8	X	205.16253	0.75876	49.46407	2.68693	0.2186492	0.19027162	2.9937811	20	5 27.4	21.9
297682 2001 UK_{159}	15.5	X	209.88134	190.84577	228.66523	12.86870	0.1565541	0.19007747	2.9958194	20	6 14.4	20.4
297683 2001 UD_{171}	15.8	X	256.27287	28.34276	26.53778	12.40403	0.0944792	0.19798799	2.9154806	20	8 11.6	20.1
297684 2001 UC_{173}	17.1	X	149.05646	230.43368	181.72939	5.66795	0.1516642	0.28881472	2.2666780	20	4 6.8	20.3
297685 2001 UU_{174}	17.9	X	142.43336	88.52777	349.95040	1.89255	0.2211261	0.29136842	2.2534144	20	5 8.9	21.5
297686 2001 UD_{183}	16.1	X	329.04951	275.98723	27.51620	11.35968	0.0878104	0.19728401	2.9224121	20	6 23.2	19.9
297687 2001 UL_{204}	17.2	X	219.34435	109.52188	244.71669	4.74666	0.1583434	0.29287948	2.2456570	20	3 28.5	20.7
297688 2001 UQ_{206}	17.5	X	260.30761	251.27901	75.88903	6.97834	0.2350740	0.29844134	2.2176690	20	4 1.6	20.9
297689 2001 UC_{207}	18.0	X	254.71544	295.57535	26.76677	4.53114	0.1643278	0.29606490	2.2295203	20	3 24.8	21.0
297690 2001 UZ_{217}	16.4	X	201.37929	205.94263	207.97866	9.06226	0.1074033	0.19064488	2.9898721	20	6 2.6	21.1
297691 2001 UE_{220}	17.2	X	102.95623	102.18817	315.98182	4.53648	0.1368599	0.28207711	2.3026300	20	2 16.4	19.8
297692 2001 UN_{228}	13.6	X	289.64413	131.61010	169.58312	14.54894	0.1119016	0.08247843	5.2268790	20	4 28.2	20.5
297693 2001 UR_{230}	16.7	X	280.57213	198.64169	123.13342	6.97514	0.1768884	0.19350764	2.9603108	20	4 28.4	21.0
297694 2001 UU_{230}	16.0	X	204.04558	220.40520	181.75019	13.58205	0.1018672	0.19034105	2.9930530	20	5 23.3	20.8
297695 2001 VK_{34}	17.4	X	221.38560	299.87898	74.87319	2.73626	0.3168190	0.29494428	2.2351640	20	4 21.9	21.2
297696 2001 VT_{37}	17.0	X	143.81023	200.71717	243.53526	6.75368	0.0745650	0.29118536	2.2543588	20	5 6.2	19.9
297697 2001 VS_{39}	15.7	X	253.79609	305.27735	62.54416	13.98025	0.2305023	0.19162571	2.9796611	20	5 18.1	20.4
297698 2001 VX_{41}	17.3	X	200.57164	97.98284	255.42432	3.74131	0.1638518	0.28775969	2.2722149	20	3 10.0	21.0
297699 2001 VJ_{49}	15.2	X	111.21871	201.85828	246.00032	14.23423	0.2483133	0.18110011	3.0940232	20	4 25.8	20.2
297700 2001 VQ_{54}	17.4	X	140.04187	126.34621	288.09073	5.59481	0.1360502	0.28740123	2.2741039	20	3 25.6	20.6
297701 2001 VF_{72}	15.5	X	345.51982	306.77143	87.78328	16.41659	0.1569371	0.20916964	2.8106296	20	12 1.1	18.6
297702 2001 VT_{74}	18.2	X	179.05869	355.08452	49.66751	2.57591	0.1465008	0.29150826	2.2526937	20	4 26.8	21.5
297703 2001 VD_{79}	17.1	X	182.90794	122.05086	266.72405	2.52340	0.1630903	0.29024971	2.2592009	20	4 8.5	20.6
297704 2001 VL_{82}	15.8	X	294.84807	90.91532	240.80921	11.09635	0.1433648	0.19662324	2.9289558	20	6 1.4	19.5
297705 2001 VN_{82}	16.1	X	218.01641	145.40587	215.29111	8.39837	0.0994237	0.18619611	3.0373090	20	4 14.3	20.7
297706 2001 VJ_{91}	15.8	X	187.73277	311.60717	114.60635	12.91275	0.1892873	0.18814644	3.0162828	20	6 4.4	21.0
297707 2001 VF_{92}	15.8	X	238.88179	196.32317	193.83152	13.16976	0.2092815	0.19181717	2.9776780	20	6 2.8	20.7
297708 2001 VC_{103}	17.4	X	103.78371	115.49075	5.03461	2.90666	0.1057805	0.28933863	2.2639410	20	5 9.7	20.2
297709 2001 VL_{107}	17.3	X	211.25992	78.53912	248.70267	5.95537	0.1480452	0.28655022	2.2786042	20	2 15.3	20.9
297710 2001 VY_{110}	15.5	X	149.34954	159.35684	262.50366	7.95435	0.0740365	0.18156630	3.0887248	20	4 15.4	20.2
297711 2001 VP_{112}	16.9	X	166.16479	119.20438	260.31478	8.58709	0.1505528	0.28584374	2.2823571	20	3 7.5	20.5
297712 2001 VS_{118}	17.0	X	85.83698	89.07053	51.05668	6.63435	0.1271371	0.28839844	2.2688587	20	5 17.1	19.6
297713 2001 VR_{122}	17.1	X	169.37641	333.36745	74.95647	6.86585	0.1711605	0.29080091	2.2563452	20	4 24.9	20.5
297714 2001 VY_{123}	17.0	X	165.25459	95.23955	317.39618	3.99599	0.0539618	0.29045063	2.2581589	20	4 15.8	20.0
297715 2001 VZ_{123}	15.8	X	199.27780	13.75434	15.56574	6.02581	0.1656473	0.18650855	3.0339160	20	4 28.0	20.9
297716 2001 VG_{125}	15.9	X	185.96748	330.37972	66.70398	9.06409	0.2880714	0.18320211	3.0703113	20	4 29.1	21.5
297717 2001 VO_{126}	17.5	X	202.97634	133.73917	240.60491	6.24780	0.1198184	0.29060332	2.2573678	20	4 8.7	20.9
297718 2001 WN_{12}	15.6	X	207.59781	309.59621	87.23110	15.69698	0.1471204	0.18728641	3.0255096	20	5 19.7	20.6
297719 2001 WQ_{12}	16.8	X	223.95310	196.80800	212.16013	11.26106	0.2967777	0.19100988	2.9860621	20	6 6.1	22.1
297720 2001 WS_{15}	16.8	X	124.12259	45.89697	32.22813	7.05744	0.1059487	0.28544547	2.2844796	20	4 8.7	19.7
297721 2001 WT_{16}	16.2	X	235.39812	3.21352	24.20439	5.99732	0.2358051	0.19306720	2.9648112	20	5 23.0	21.1
297722 2001 WB_{20}	17.6	X	132.46690	68.19544	15.04591	3.21079	0.1933974	0.28948918	2.2631560	20	5 3.3	20.8
297723 2001 WJ_{23}	17.8	X	128.43137	208.81317	220.03942	6.26698	0.0508895	0.28942847	2.2634725	20	3 21.1	20.7
297724 2001 WD_{28}	16.5	X	237.95085	145.95336	209.04494	7.67130	0.1626745	0.29393777	2.2402636	20	4 18.9	19.8
297725 2001 WG_{30}	16.5	X	299.39442	20.98748	209.19076	4.96522	0.1135516	0.28283689	2.2985044	20	1 19.4	19.6
297726 2001 WN_{31}	16.0	X	192.05526	202.92486	224.61172	10.19782	0.0424077	0.18927967	3.0042315	20	6 11.3	20.4
297727 2001 WB_{33}	15.4	X	186.79764	327.33836	83.92050	11.35807	0.0936716	0.18637399	3.0353762	20	5 17.3	20.1
297728 2001 WD_{34}	16.1	X	208.31117	317.11110	79.76179	10.84410	0.1316822	0.18781275	3.0198544	20	5 19.3	21.0
297729 2001 WK_{44}	18.4	X	198.79591	302.74195	75.01075	1.97521	0.2275400	0.29215734	2.2493559	20	4 10.8	22.2
297730 2001 WF_{48}	15.6	X	255.49373	268.61346	101.13693	12.24570	0.1395524	0.19212978	2.9744472	20	6 2.8	20.0
297731 2001 WK_{55}	15.9	X	266.93380	128.30740	238.22760	3.53277	0.1010809	0.19350927	2.9602942	20	6 16.0	20.0
297732 2001 WE_{57}	16.3	X	262.60586	130.57239	233.90261	9.38409	0.0852608	0.19228070	2.9728906	20	6 10.2	20.5
297733 2001 WC_{70}	16.3	X	256.19271	296.26708	55.27854	13.02706	0.1700555	0.19127611	2.9832906	20	5 7.4	20.8
297734 2001 WL_{79}	16.5	X	163.02317	246.75315	172.84122	1.90667	0.1038348	0.18361954	3.0656563	20	5 1.9	21.1
297735 2001 WZ_{80}	17.6	X	212.03014	245.31150	95.81851	1.71470	0.2425788	0.28930028	2.2641411	20	3 6.8	21.4
297736 2001 WR_{96}	15.8	X	109.38480	186.98385	235.81736	11.53405	0.0637295	0.17704903	3.1410416	20	2 28.2	20.5
297737 2001 XB_{2}	16.6	X	135.72162	88.82575	357.92254	23.96368	0.2475598	0.28915914	2.2648777	20	5 4.9	20.7
297738 2001 XM_{2}	15.1	X	162.76200	81.45334	331.83560	20.23044	0.2114102	0.18258111	3.0772692	20	4 17.5	20.7
297739 2001 XR_{10}	16.4	X	237.44818	305.75829	58.22105	1.74548	0.1432874	0.18952794	3.0016074	20	5 5.3	21.0
297740 2001 XT_{11}	17.3	X	148.61188	58.46678	278.23875	16.49130	0.0962121	0.38326124	1.8770368	20	—	—
297741 2001 XK_{12}	15.7	X	93.50027	193.76804	287.40789	12.44331	0.0838607	0.17978124	3.1091366	20	4 23.7	20.3
297742 2001 XN_{12}	17.2	X	17.54033	131.24548	14.28856	5.68118	0.1546594	0.27734325	2.3287578	20	1 22.5	19.2
297743 2001 XH_{13}	15.2	X	93.35388	128.85374	306.87059	16.52039	0.1856482	0.17203150	3.2018236	20	3 10.1	20.0
297744 2001 XQ_{13}	15.8	X	95.89159	174.08996	333.07242	11.19942	0.2987303	0.17728516	3.1382518	20	7 1.3	20.9
297745 2001 XW_{13}	17.4	X	192.64217	354.57937	29.25782	3.75703	0.1811183	0.28927277	2.2642846	20	4 12.8	20.8
297746 2001 XC_{15}	15.8	X	242.04689	3.66957	39.59832	13.19483	0.1343268	0.19258792	2.9697281	20	6 29.2	20.5
297747 2001 XY_{35}	17.9	X	120.18118	63.80420	14.71685	4.37898	0.2033964	0.28476619	2.2881110	20	4 15.4	21.0
297748 2001 XU_{37}	15.5	X	91.33581	173.03867	318.40154	9.17844	0.2063670	0.17870623	3.1215928	20	5 23.9	20.2
297749 2001 XO_{44}	15.6	X	123.99425	69.99909	28.46322	9.57339	0.0732075	0.17826757	3.1267115	20	5 3.8	20.1
297750 2001 XL_{60}	16.8	X	145.63075	314.87491	108.79260	6.33986	0.1010407	0.28554743	2.2839357	20	4 16.7	20.0
297751 2001 XL_{63}	15.3	X	176.00498	155.18571	275.71368	11.31156	0.2385155	0.18370063	3.0647539	20	5 28.9	20.8
297752 2001 XJ_{71}	15.1	X	192.03382	165.30080	220.02976	11.48657	0.0892965	0.18213182	3.0823279	20	4 18.1	19.9
297753 2001 XB_{79}	15.8	X	217.07628	297.19797	82.84226	12.62177	0.1182718	0.18617430	3.0375462	20	5 9.8	20.7
297754 2001 XL_{79}	15.5	X	172.92098	324.20569	85.37729	10.65761	0.1261676	0.18380356	3.0636097	20	5 3.2	20.4
297755 2001 XX_{80}	16.9	X	63.29922	256.92437	248.57933	6.42367	0.1193475	0.28405416	2.2919332	20	4 15.9	19.3
297756 2001 XJ_{91}	15.8	X	209.57997	11.23669	58.65514	10.68365	0.1551537	0.19091544	2.9870467	20	6 27.2	20.7
297757 2001 XX_{93}	16.7	X	76.33352	125.79820	36.03818	5.58257	0.0845954	0.29104659	2.2550752	20	5 27.1	19.2
297758 2001 XJ_{95}	16.9	X	220.99606	292.12484	66.02820	7.82074	0.1370139	0.29070663	2.2568330	20	4 10.8	20.3
297759 2001 XN_{110}	15.6	X	174.84454	178.91192	242.97649	8.21654	0.1145787	0.18449925	3.0559036	20	5 16.1	20.4
297760 2001 XR_{127}	15.7	X	231.15327	289.15131	72.28260	11.69206	0.1291103	0.18644446	3.0346113	20	4 30.4	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		°	°	°	°		°				
297761 2001 XU_{130}	16.9	X	202.07534	203.19839	211.02093	3.21949	0.2305463	0.18809005	3.0168856	20	5 29.8	22.2
297762 2001 XB_{132}	15.8	X	231.40013	280.58757	74.22943	12.88346	0.2427426	0.18707053	3.0278368	20	4 17.1	21.1
297763 2001 XC_{141}	16.2	X	207.10634	324.88822	118.72168	1.78271	0.1143977	0.19161118	2.9798116	20	7 14.7	20.8
297764 2001 XZ_{141}	16.6	X	35.16139	294.40432	237.38576	4.57601	0.0994832	0.28493301	2.2872179	20	4 2.8	18.7
297765 2001 XH_{142}	17.3	X	97.82653	10.62718	89.15899	4.46046	0.1105320	0.28421579	2.2910641	20	4 6.2	20.0
297766 2001 XF_{151}	17.7	X	174.30833	157.49769	229.93962	1.86221	0.1701950	0.28679954	2.2772834	20	3 30.6	21.3
297767 2001 XG_{154}	15.9	X	176.92168	311.19002	88.18835	12.52183	0.1043863	0.18075322	3.0979806	20	4 26.1	20.9
297768 2001 XE_{169}	17.5	X	112.28432	143.10491	260.56203	3.83463	0.1955666	0.27921675	2.3183290	20	2 17.5	20.5
297769 2001 XE_{172}	16.8	X	23.70076	272.78329	257.64395	2.43320	0.0990031	0.28040568	2.3117712	20	3 10.9	19.1
297770 2001 XD_{173}	16.3	X	194.81884	94.99078	260.82072	5.84993	0.1646672	0.28393450	2.2925770	20	3 6.9	20.0
297771 2001 XY_{176}	15.8	X	173.31693	345.24736	105.05190	11.29137	0.1474325	0.18420495	3.0591576	20	6 19.4	20.9
297772 2001 XG_{185}	17.0	X	74.16388	240.34578	239.06117	1.93826	0.1645338	0.28088692	2.3091299	20	4 4.4	19.3
297773 2001 XD_{187}	17.1	X	187.03432	269.33950	110.95303	5.76162	0.1979860	0.28651594	2.2787859	20	4 6.4	20.8
297774 2001 XE_{187}	17.5	X	92.85317	281.55458	153.90761	2.94559	0.1489973	0.27837741	2.3229867	20	2 28.9	20.1
297775 2001 XD_{195}	15.6	X	148.89358	281.95602	122.84337	15.40627	0.2186796	0.17544299	3.1601816	20	4 13.7	21.1
297776 2001 XY_{219}	17.8	X	154.67498	58.17709	2.28456	2.79429	0.1494825	0.28912954	2.2650324	20	4 22.1	21.0
297777 2001 XY_{220}	15.6	X	195.11715	328.52943	62.72540	11.19018	0.0568189	0.18437333	3.0572948	20	5 1.9	20.1
297778 2001 XT_{222}	16.1	X	282.98458	310.22664	44.67962	2.42983	0.1113330	0.19353538	2.9600279	20	6 20.3	19.9
297779 2001 XC_{228}	17.6	X	159.16696	40.40849	358.15648	2.54796	0.1672480	0.28667934	2.2779199	20	3 30.6	21.1
297780 2001 XA_{231}	15.9	X	191.68371	338.09359	16.79745	3.06460	0.2212570	0.18067411	3.0988848	20	3 14.3	21.1
297781 2001 XH_{237}	17.0	X	215.76615	72.73919	276.29356	6.20217	0.1464829	0.28784133	2.2717853	20	3 17.5	20.6
297782 2001 XZ_{241}	16.5	X	215.05305	172.49143	256.52045	3.66134	0.1086332	0.19046498	2.9917546	20	7 4.8	21.0
297783 2001 XB_{246}	15.5	X	185.29626	237.21092	206.13593	12.01998	0.2003236	0.18814984	3.0162464	20	6 20.3	20.8
297784 2001 XT_{249}	17.3	X	197.77458	285.78843	94.16053	7.37574	0.1533121	0.28953656	2.2629091	20	4 16.2	20.8
297785 2001 XB_{250}	17.7	X	120.28983	166.72193	265.84222	4.92909	0.1824372	0.28349172	2.2949636	20	4 2.9	20.8
297786 2001 XO_{262}	16.3	X	189.82481	311.55427	89.41688	1.20093	0.1668691	0.18582891	3.0413089	20	5 5.2	21.3
297787 2001 YJ_{10}	16.5	X	154.05351	110.81694	294.13788	7.41863	0.0939535	0.28326902	2.2961662	20	3 24.0	19.8
297788 2001 YZ_{12}	16.3	X	136.90182	233.59250	251.25905	3.92577	0.1853148	0.18492571	3.0512036	20	6 29.5	21.4
297789 2001 YR_{14}	16.3	X	226.90399	187.74644	181.80539	0.89501	0.1875936	0.18681094	3.0306411	20	4 28.9	21.3
297790 2001 YG_{17}	15.3	X	107.32603	166.19284	290.58609	14.78854	0.0744943	0.17641947	3.1485098	20	4 6.2	20.2
297791 2001 YE_{22}	17.9	X	164.33422	157.88577	267.52183	4.46217	0.2130700	0.28992990	2.2608620	20	5 10.9	21.7
297792 2001 YY_{30}	17.6	X	144.40522	315.82407	76.19722	3.50513	0.1802507	0.28321598	2.2964529	20	3 10.9	21.0
297793 2001 YB_{47}	16.9	X	152.00780	7.80874	52.04011	4.69742	0.1019668	0.28662067	2.2782308	20	4 16.8	20.0
297794 2001 YC_{58}	16.8	X	354.16118	258.77077	288.26152	5.36161	0.1710077	0.27810010	2.3245307	20	2 2.6	18.8
297795 2001 YO_{76}	17.9	X	150.47955	107.56874	331.01569	2.71616	0.1832631	0.28789229	2.2715172	20	5 13.9	21.3
297796 2001 YM_{82}	16.6	X	36.18980	173.70062	311.29612	6.59668	0.0602900	0.27548061	2.3392431	20	1 28.3	19.1
297797 2001 YE_{86}	17.3	X	47.98429	63.59767	56.70345	3.03450	0.1755693	0.27590438	2.3368472	20	2 19.5	19.1
297798 2001 YO_{98}	15.6	X	89.68922	250.07039	248.30346	3.93350	0.0994349	0.18074731	3.0980481	20	5 17.6	20.0
297799 2001 YM_{110}	15.9	X	217.80879	324.46571	88.34938	11.60579	0.2424011	0.18707821	3.0277539	20	6 9.2	21.1
297800 2001 YO_{122}	17.4	X	144.18520	107.68092	356.26497	4.17666	0.1667488	0.29105124	2.2550512	20	6 10.2	20.7
297801 2001 YD_{131}	16.9	X	114.70962	39.54094	54.06634	6.14766	0.0522737	0.28326057	2.2962119	20	4 11.3	19.6
297802 2001 YB_{145}	17.5	X	144.92581	99.09097	330.20801	1.27817	0.1448385	0.28543530	2.2845338	20	4 23.6	20.7
297803 2002 AH_{7}	15.6	X	175.29423	181.44539	211.88644	8.45896	0.0970384	0.17481304	3.1677690	20	4 11.5	20.4
297804 2002 AQ_{27}	15.8	X	153.14757	79.66088	22.96129	7.78293	0.2011013	0.18119863	3.0929016	20	6 16.9	21.1
297805 2002 AQ_{30}	17.8	X	192.06037	200.48499	201.41299	0.79720	0.2155363	0.28946383	2.2632881	20	5 5.4	21.4
297806 2002 AQ_{31}	16.7	X	54.80902	347.62823	320.12589	17.11517	0.0614930	0.35687282	1.9684622	20	12 7.5	19.3
297807 2002 AH_{43}	15.6	X	95.28338	10.05489	112.34185	11.19817	0.0341344	0.17685972	3.1432826	20	4 30.2	20.2
297808 2002 AT_{51}	15.8	X	210.47458	278.23667	131.45436	5.28559	0.2871259	0.18540421	3.0459515	20	5 29.4	21.3
297809 2002 AB_{57}	17.5	X	96.68848	144.30938	287.51429	1.33601	0.1911295	0.27742091	2.3283231	20	3 6.7	20.1
297810 2002 AC_{76}	15.5	X	202.10785	60.53576	295.13472	10.30252	0.0931137	0.17582176	3.1556414	20	3 19.4	20.6
297811 2002 AY_{79}	17.2	X	277.14235	234.55056	315.11562	1.58088	0.1373509	0.26518803	2.3993859	20	—	—
297812 2002 AN_{80}	16.3	X	176.44820	345.25407	49.83992	1.53955	0.2050738	0.17939933	3.1135475	20	4 17.5	21.6
297813 2002 AP_{87}	15.7	X	190.97333	288.47111	140.61105	13.47427	0.1970942	0.18368354	3.0649441	20	6 10.2	21.0
297814 2002 AP_{93}	17.1	X	126.37185	132.84393	295.43875	6.80173	0.0671591	0.28131539	2.3067846	20	3 18.9	20.2
297815 2002 AF_{98}	17.2	X	74.38918	116.52310	348.94049	2.32053	0.1644038	0.27815615	2.3242184	20	3 15.9	19.4
297816 2002 AG_{101}	15.8	X	145.81186	330.34351	95.80434	7.26393	0.1962230	0.17788944	3.1311408	20	4 30.9	21.0
297817 2002 AU_{101}	17.4	X	355.34517	213.11686	305.01812	4.97859	0.1560321	0.27225961	2.3576567	20	—	—
297818 2002 AF_{104}	17.0	X	70.05911	156.91305	300.24330	3.69268	0.0977346	0.27639976	2.3340542	20	2 14.8	19.4
297819 2002 AN_{117}	14.9	X	120.89197	166.26305	317.89530	8.18726	0.1253948	0.17732124	3.1378261	20	6 7.7	19.8
297820 2002 AY_{119}	17.2	X	77.89843	353.41384	112.27603	4.12643	0.1256138	0.27750217	2.3278686	20	3 18.2	19.7
297821 2002 AW_{131}	15.1	X	163.48118	183.92772	281.33972	18.82667	0.1041428	0.18530539	3.0470344	20	6 27.9	19.9
297822 2002 AF_{136}	16.6	X	248.79561	312.57748	257.46050	4.38174	0.1255530	0.26435283	2.4044370	20	—	—
297823 2002 AU_{143}	15.3	X	175.82200	116.15465	281.99717	7.89696	0.0742654	0.17689844	3.1428240	20	4 14.3	20.2
297824 2002 AK_{149}	16.4	X	190.83490	180.75993	111.62453	7.44591	0.1135985	0.26942277	2.3741775	20	—	—
297825 2002 AA_{150}	15.1	X	214.25069	268.18583	110.07021	26.84755	0.2333037	0.18226609	3.0808139	20	5 8.1	20.8
297826 2002 AQ_{151}	15.3	X	136.79465	326.03025	123.31865	11.41204	0.0993649	0.17550829	3.1593977	20	5 14.6	20.3
297827 2002 AE_{158}	15.2	X	163.80648	108.51910	301.16880	14.03092	0.1133705	0.17515574	3.1636357	20	4 14.1	20.4
297828 2002 AS_{163}	17.3	X	62.70335	153.77150	293.87697	3.21397	0.2137624	0.27337972	2.3512124	20	2 3.4	18.9
297829 2002 AW_{167}	15.4	X	178.51729	293.44231	151.71509	16.83520	0.2346724	0.18118518	3.0930547	20	6 18.7	21.1
297830 2002 AK_{180}	17.2	X	264.51715	260.70829	291.06452	3.90253	0.1696862	0.26304080	2.4124258	20	—	—
297831 2002 AB_{183}	17.1	X	61.72321	164.49550	262.44584	5.06405	0.1297401	0.27102562	2.3648076	20	—	—
297832 2002 AJ_{186}	15.8	X	197.40477	332.70851	77.73025	11.74036	0.2959973	0.18425955	3.0585533	20	5 21.4	21.3
297833 2002 AG_{190}	16.5	X	108.30914	64.49989	39.60534	1.14350	0.1399106	0.17621690	3.1509222	20	5 2.4	21.0
297834 2002 AH_{196}	17.4	X	225.34378	294.01436	284.76710	4.33959	0.0773330	0.26262750	2.4149562	20	—	—
297835 2002 AL_{202}	17.7	X	84.02774	320.57930	147.23867	3.94919	0.1575567	0.27919423	2.3184537	20	4 4.6	20.2
297836 2002 AM_{208}	17.0	X	23.63485	212.76699	289.83659	4.82036	0.0566366	0.27430526	2.3459205	20	2 1.4	19.4
297837 2002 BX	16.8	X	151.58224	85.77156	314.31412	22.02087	0.3244201	0.28245874	2.3005554	20	3 23.5	21.3
297838 2002 BT_{14}	15.8	X	116.13889	314.63783	150.32605	14.06124	0.2788901	0.17503628	3.1650750	20	5 28.6	21.3
297839 2002 BE_{17}	15.8	X	94.35454	76.23678	157.49642	28.78951	0.3668882	0.23509062	2.6000349	20	10 25.2	20.9
297840 2002 BE_{19}	16.8	X	125.82042	85.18405	10.49255	7.57965	0.1566513	0.28353144	2.2947492	20	5 7.8	20.1

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Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
	m		°	°	°	°		°				
297841 2002 BK_{22}	15.7	X	156.72294	105.59933	305.39695	10.06372	0.2220960	0.17632345	3.1496527	20	4 16.2	21.2
297842 2002 BK_{27}	15.2	X	202.11103	0.11745	64.54808	11.38472	0.1106143	0.18436340	3.0574046	20	6 15.2	20.0
297843 2002 BS_{29}	15.4	X	183.93499	98.18182	334.27223	15.27991	0.2069566	0.18423215	3.0588565	20	6 4.8	20.9
297844 2002 CJ_{3}	17.2	X	42.75250	114.46848	17.76835	4.77185	0.1760863	0.27463337	2.3440516	20	2 27.6	19.0
297845 2002 CC_{5}	17.7	X	108.05751	108.95428	325.85578	6.98877	0.2399375	0.27972259	2.3155332	20	3 30.1	20.9
297846 2002 CA_{7}	15.9	X	137.27500	71.28473	34.18244	25.85142	0.2884063	0.18033745	3.1027404	20	6 6.4	21.7
297847 2002 CH_{7}	16.8	X	135.01076	63.65210	11.49031	23.12632	0.2892433	0.28516937	2.2859539	20	4 25.9	20.8
297848 2002 CS_{7}	16.8	X	46.66437	96.55815	0.85031	1.43615	0.1466319	0.27027840	2.3691642	20	1 9.9	18.8
297849 2002 CR_{8}	16.0	X	67.30687	250.55704	262.52155	2.77219	0.0933256	0.17428263	3.1741928	20	5 5.9	20.2
297850 2002 CW_{8}	17.3	X	270.59150	253.22803	289.81464	5.16054	0.1285922	0.26171607	2.4205596	20	—	—
297851 2002 CM_{10}	17.7	X	5.11510	112.80767	351.86716	20.26312	0.0612562	0.37219472	1.9140616	20	—	—
297852 2002 CL_{19}	17.0	X	113.26315	77.83894	348.34038	6.41140	0.1049303	0.27779688	2.3262219	20	3 8.6	19.9
297853 2002 CY_{22}	17.1	X	82.91758	344.93241	131.08975	4.20435	0.1862592	0.27840018	2.3228600	20	4 20.4	19.8
297854 2002 CW_{24}	17.3	X	164.54294	327.02541	338.50512	6.32498	0.1271355	0.26338122	2.4103467	20	—	—
297855 2002 CQ_{25}	17.6	X	76.36583	86.68538	320.65870	18.97892	0.0901350	0.37481337	1.9051361	20	—	—
297856 2002 CF_{27}	17.1	X	31.60824	123.38386	345.60797	5.92500	0.1871203	0.27187461	2.3598820	20	—	—
297857 2002 CU_{27}	15.6	X	132.18001	131.47493	80.84317	5.41266	0.0982253	0.24598855	2.5226642	20	10 16.0	19.4
297858 2002 CS_{35}	15.8	X	159.84264	43.02814	60.15961	6.77345	0.1781166	0.18039719	3.1020553	20	6 22.9	20.9
297859 2002 CB_{53}	17.3	X	288.53052	175.30844	17.39362	1.80412	0.1054932	0.26531741	2.3986058	20	—	—
297860 2002 CY_{55}	16.5	X	84.05681	124.32128	330.72319	6.06401	0.2110048	0.27593610	2.3366681	20	3 22.8	19.0
297861 2002 CP_{58}	16.0	X	97.56050	45.52954	347.00618	23.77147	0.2316119	0.26930802	2.3748519	20	2 1.1	19.1
297862 2002 CY_{68}	18.1	X	67.94877	10.37744	101.64397	3.02505	0.1630682	0.27706821	2.3302986	20	3 16.3	20.2
297863 2002 CF_{73}	17.5	X	17.64659	146.85178	349.96197	1.71054	0.1430238	0.27147969	2.3621700	20	1 10.4	19.7
297864 2002 CN_{75}	15.5	X	171.40968	260.83130	135.84246	25.75511	0.3134065	0.17697952	3.1418640	20	4 25.9	21.6
297865 2002 CA_{77}	16.6	X	283.65279	144.31952	75.32826	2.44761	0.1315593	0.26718132	2.3874374	20	—	—
297866 2002 CJ_{78}	17.5	X	305.90462	91.24371	95.45039	2.22526	0.1446423	0.26592518	2.3949498	20	—	—
297867 2002 CM_{86}	17.5	X	107.07874	331.17612	105.16254	3.53673	0.1409832	0.27802025	2.3249758	20	3 21.9	20.4
297868 2002 CG_{94}	16.8	X	339.61266	163.41473	349.60357	5.16158	0.1677111	0.26640059	2.3920996	20	—	—
297869 2002 CY_{96}	17.2	X	59.02505	102.61329	4.13509	3.75472	0.1844436	0.27349782	2.3505355	20	2 23.1	19.0
297870 2002 CR_{99}	17.1	X	87.74268	111.25968	353.96239	6.06701	0.1832092	0.27727049	2.3291652	20	4 7.7	19.8
297871 2002 CW_{109}	15.5	X	160.31002	96.76237	340.24125	25.11630	0.2323119	0.17703267	3.1412351	20	5 15.9	21.4
297872 2002 CR_{117}	16.9	X	332.66942	196.76466	326.57805	4.38956	0.1236454	0.26574984	2.3960031	20	—	—
297873 2002 CC_{121}	16.7	X	267.65452	306.36144	274.98920	5.11750	0.0774759	0.26733871	2.3865002	20	—	—
297874 2002 CK_{122}	17.6	X	94.55888	263.74608	173.93356	2.53635	0.2243722	0.27746163	2.3280953	20	3 18.1	20.3
297875 2002 CG_{123}	17.1	X	321.29240	2.66561	173.80626	5.03554	0.1557194	0.26731932	2.3866157	20	—	—
297876 2002 CJ_{125}	16.8	X	333.93688	52.54271	142.44234	3.09732	0.0666056	0.27247960	2.3563876	20	1 29.2	19.6
297877 2002 CS_{129}	17.8	X	6.25257	179.34788	298.44021	1.91010	0.1325580	0.26719535	2.3873538	20	—	—
297878 2002 CE_{133}	17.1	X	339.37675	143.40041	329.19437	1.61407	0.1607917	0.26141365	2.4224261	20	—	—
297879 2002 CX_{135}	17.8	X	46.73247	204.11793	251.04094	2.11767	0.1465361	0.27153036	2.3618761	20	1 5.7	19.7
297880 2002 CL_{139}	16.8	X	72.36189	252.52572	184.99494	6.32140	0.1687151	0.27308891	2.3528812	20	1 30.6	19.1
297881 2002 CM_{151}	17.7	X	144.27102	287.78250	117.35024	4.49366	0.2222503	0.28020024	2.3129010	20	3 31.9	21.3
297882 2002 CL_{152}	17.5	X	295.83784	72.80882	108.43062	2.49012	0.1312458	0.26200030	2.4188087	20	—	—
297883 2002 CP_{152}	18.2	X	35.77002	105.74951	334.37173	19.87754	0.0947269	0.37384553	1.9084228	20	—	—
297884 2002 CZ_{157}	16.6	X	345.17711	63.39298	111.35280	4.71197	0.1462086	0.27015706	2.3698735	20	1 6.8	19.1
297885 2002 CD_{159}	17.1	X	63.49394	93.87271	359.10363	4.92311	0.1271665	0.27165426	2.3611579	20	2 4.5	19.3
297886 2002 CL_{162}	14.9	X	104.86239	151.31754	326.50234	26.26284	0.1265347	0.17467519	3.1694354	20	5 1.8	20.1
297887 2002 CW_{166}	16.6	X	274.55150	206.68297	15.05848	7.25985	0.0676438	0.26637048	2.3922799	20	—	—
297888 2002 CK_{173}	17.2	X	15.12142	76.33797	43.22959	3.76355	0.1492780	0.26781537	2.3836677	20	—	—
297889 2002 CS_{176}	16.3	X	123.01737	126.07526	325.25472	4.64918	0.1505660	0.17559149	3.1583996	20	5 1.8	21.1
297890 2002 CX_{178}	15.6	X	66.07862	151.77986	348.63370	4.90659	0.1149669	0.17224284	3.1992040	20	4 20.1	20.0
297891 2002 CD_{179}	17.1	X	279.45554	180.35188	61.62266	2.05877	0.1524447	0.27103751	2.3647385	20	1 10.5	20.6
297892 2002 CF_{191}	17.6	X	359.17264	139.88987	329.87216	6.33048	0.0754987	0.26545550	2.3977739	20	—	—
297893 2002 CE_{193}	16.1	X	169.06183	92.23071	350.13392	4.84562	0.2153698	0.18055212	3.1002805	20	6 5.8	21.5
297894 2002 CH_{202}	17.2	X	56.05944	355.28900	115.51913	4.51320	0.0776446	0.27322098	2.3521230	20	2 11.3	19.5
297895 2002 CP_{208}	17.2	X	68.62656	139.53676	339.10270	4.44097	0.0961341	0.27569691	2.3380194	20	3 14.5	19.6
297896 2002 CC_{215}	17.4	X	331.75178	127.96269	33.30622	1.73067	0.1215767	0.26593353	2.3948996	20	—	—
297897 2002 CM_{218}	17.3	X	2.07351	88.68192	35.59693	2.63601	0.1388864	0.26583188	2.3955101	20	—	—
297898 2002 CW_{236}	16.9	X	32.01964	20.08973	120.93249	4.86597	0.2421544	0.27107613	2.3645138	20	2 18.3	18.1
297899 2002 CK_{239}	16.9	X	59.87863	294.80006	174.49132	5.78721	0.1979294	0.27324363	2.3519930	20	2 28.8	18.9
297900 2002 CV_{241}	15.9	X	183.15565	257.09975	171.21913	16.29505	0.2768079	0.17945759	3.1128736	20	6 2.6	21.7
297901 2002 CB_{265}	16.8	X	261.70220	272.48388	332.86473	4.96360	0.0747463	0.27057882	2.3674102	20	1 3.2	20.0
297902 2002 CR_{267}	16.0	X	157.22013	64.76553	348.06127	9.37381	0.1311419	0.17382481	3.1797639	20	4 15.9	21.1
297903 2002 CY_{271}	16.5	X	155.56021	317.05155	120.10553	2.51736	0.1537296	0.17831763	3.1261264	20	5 18.5	21.6
297904 2002 CU_{275}	14.8	X	159.00903	205.64698	254.93633	14.53010	0.2592933	0.18062787	3.0994136	20	6 20.8	20.2
297905 2002 CT_{280}	17.6	X	283.01355	242.71915	306.49690	2.55403	0.1276339	0.26427098	2.4049335	20	—	—
297906 2002 CA_{286}	16.6	X	225.91922	128.20758	143.20075	6.71204	0.0920231	0.26796565	2.3827764	20	—	—
297907 2002 CM_{294}	15.2	X	63.68307	150.64838	341.09546	17.98620	0.0824302	0.17132461	3.2106248	20	3 27.6	19.7
297908 2002 CU_{295}	17.4	X	234.87431	214.32789	1.98537	1.39825	0.1347251	0.25817537	2.4426402	20	—	—
297909 2002 CU_{298}	17.6	X	82.05407	194.13733	297.14826	1.97362	0.1663246	0.27988172	2.3146555	20	5 4.8	20.2
297910 2002 CJ_{310}	15.8	X	84.78288	157.29997	316.71954	9.09371	0.1487740	0.16988010	3.2287993	20	4 14.0	20.4
297911 2002 CN_{310}	17.5	X	321.90838	262.06454	272.08649	1.06097	0.1202912	0.26698157	2.3886281	20	—	—
297912 2002 CD_{315}	16.2	X	109.98176	235.27548	222.70217	3.84832	0.1532138	0.17325909	3.1866818	20	4 28.4	21.0
297913 2002 DD_{2}	16.9	X	52.65009	38.95562	33.86196	22.32511	0.1070503	0.37543917	1.9030184	20	—	—
297914 2002 DV_{2}	17.5	X	83.93900	9.64392	349.31099	20.70383	0.0690082	0.36577419	1.9363953	20	—	—
297915 2002 DJ_{3}	16.0	X	46.93654	137.14865	26.85931	24.65980	0.2429380	0.27662492	2.3327875	20	4 30.9	18.0
297916 2002 DK_{8}	15.9	X	110.10286	46.76426	50.42612	12.38076	0.2182035	0.17392933	3.1784899	20	5 5.6	20.8
297917 2002 DL_{9}	17.5	X	341.72137	128.09359	359.63175	20.08595	0.0547711	0.37266878	1.9124380	20	—	—
297918 2002 DX_{15}	15.7	X	121.76225	279.03139	160.37817	25.81187	0.2717079	0.17309214	3.1887305	20	5 4.7	21.4
297919 2002 DP_{18}	17.6	X	92.37952	45.73990	343.49935	19.02625	0.1418334	0.37587591	1.9015440	20	—	—
297920 2002 DJ_{20}	17.2	X	96.78695	278.11836	163.39937	2.78410	0.0781207	0.27394974	2.3479497	20	3 3.1	19.7

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Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
	m		°	°	°	°		°				
297921 2002 EM	17.2	X	11.55375	303.86204	178.45442	5.00443	0.1883967	0.26721858	2.3872155	20	—	—
297922 2002 EE_{12}	16.5	X	269.75276	49.78636	164.61714	14.83167	0.0825623	0.26224277	2.4173175	20	—	—
297923 2002 EP_{15}	16.9	X	355.60014	298.97157	201.88899	10.10615	0.1803993	0.26675502	2.3899803	20	—	—
297924 2002 ES_{15}	16.8	X	270.09432	222.17492	297.28670	5.17829	0.0809627	0.25578169	2.4578559	20	—	—
297925 2002 EB_{43}	16.6	X	327.54113	154.60068	338.16862	6.31595	0.1113678	0.26047888	2.4282182	20	—	—
297926 2002 EK_{45}	16.8	X	14.71083	307.15090	176.01254	4.87798	0.1595420	0.26725045	2.3870257	20	—	—
297927 2002 EG_{69}	16.8	X	28.89432	127.88054	342.49562	3.89893	0.1021040	0.26619843	2.3933106	20	—	—
297928 2002 ER_{75}	15.8	X	122.56670	263.28831	199.32812	12.69859	0.2749042	0.17483585	3.1674934	20	5 28.8	21.2
297929 2002 EL_{80}	17.4	X	114.06005	6.02117	66.09849	1.64797	0.1873566	0.27565244	2.3382709	20	3 30.7	20.5
297930 2002 EC_{93}	17.2	X	303.11889	58.77763	128.06121	3.22476	0.1280359	0.26483088	2.4015426	20	—	—
297931 2002 ER_{95}	16.6	X	134.72382	45.89753	1.97720	8.48821	0.1487448	0.27536058	2.3399229	20	3 17.1	19.8
297932 2002 EK_{105}	17.6	X	16.39137	75.57007	8.88078	21.17884	0.0790526	0.36989803	1.9219763	20	—	—
297933 2002 EO_{126}	16.6	X	243.82230	266.31723	311.56457	6.00332	0.0641858	0.25955116	2.4340009	20	—	—
297934 2002 EO_{127}	17.3	X	275.71522	201.04672	353.60792	6.74321	0.1004499	0.26213008	2.4180103	20	—	—
297935 2002 EB_{130}	15.5	X	104.43242	300.67560	173.68451	27.10500	0.2550526	0.17383164	3.1796806	20	5 27.3	21.0
297936 2002 ER_{131}	17.4	X	195.26144	221.15628	26.01321	1.23344	0.1332302	0.25448520	2.4661966	20	—	—
297937 2002 EE_{133}	17.0	X	316.16202	303.86959	182.36492	5.98033	0.0889500	0.25765949	2.4458996	20	—	—
297938 2002 EY_{148}	17.5	X	283.31438	159.89584	358.71817	20.46231	0.0358480	0.36473513	1.9400711	20	—	—
297939 2002 ED_{151}	17.0	X	287.52105	210.11637	7.35044	5.97513	0.1318619	0.26410598	2.4059350	20	—	—
297940 2002 EW_{152}	16.2	X	153.39563	61.32565	352.01904	1.30345	0.1664325	0.17229541	3.1985532	20	4 17.9	21.4
297941 2002 EA_{160}	15.7	X	173.15818	190.44504	227.59262	5.16477	0.2242833	0.17782253	3.1319262	20	5 11.9	20.9
297942 2002 ET_{161}	17.4	X	121.46728	161.95245	263.08644	4.67134	0.2053138	0.27847685	2.3224336	20	3 28.5	20.8
297943 2002 FQ_{6}	16.6	X	303.43166	152.36639	23.42032	4.65947	0.1168227	0.26077274	2.4263936	20	—	—
297944 2002 FA_{7}	15.7	X	152.91277	89.09120	17.36773	25.15442	0.2524075	0.17885987	3.1198050	20	6 21.9	21.6
297945 2002 FJ_{7}	15.6	X	78.27879	134.79992	6.09659	15.53243	0.2132171	0.17156637	3.2076079	20	5 18.3	20.3
297946 2002 FM_{12}	17.1	X	322.35913	100.77068	87.81909	2.18303	0.1253609	0.26595859	2.3947492	20	—	—
297947 2002 FN_{20}	16.4	X	102.83300	351.61187	95.68727	9.22929	0.2147179	0.27614536	2.3354875	20	4 14.7	19.6
297948 2002 FF_{23}	17.8	X	12.29063	279.30742	189.33895	1.06522	0.1454953	0.26355517	2.4092860	20	—	—
297949 2002 FM_{26}	16.0	X	96.21514	139.50211	9.76373	17.24565	0.1412642	0.17654183	3.1470548	20	6 11.9	20.9
297950 2002 FF_{41}	17.1	X	148.16252	70.64115	178.82466	6.78349	0.0960639	0.24710085	2.5150882	20	12 15.9	21.0
297951 2002 GV_{36}	16.5	X	334.91942	96.32931	41.06541	7.38402	0.1050374	0.26180537	2.4200092	20	—	—
297952 2002 GQ_{52}	16.8	X	323.83391	350.88977	155.29847	2.40770	0.1367410	0.25933430	2.4353576	20	—	—
297953 2002 GC_{63}	17.0	X	309.60159	77.39932	65.28354	3.46642	0.1440205	0.25648056	2.4533890	20	—	—
297954 2002 GA_{79}	16.3	X	128.64189	128.67387	118.96508	13.55267	0.2147600	0.24291617	2.5438906	20	11 27.6	20.8
297955 2002 GS_{110}	16.9	X	261.98478	149.55770	46.00126	5.41561	0.1328212	0.25600859	2.4564034	20	—	—
297956 2002 GC_{115}	16.7	X	107.32673	153.19504	125.39892	5.77091	0.2441106	0.24210380	2.5495781	20	12 15.2	21.2
297957 2002 GT_{121}	17.1	X	101.18473	274.33616	2.07885	5.72139	0.3231193	0.23992937	2.5649590	20	12 9.9	21.8
297958 2002 GF_{126}	16.7	X	120.12392	34.41509	211.57528	11.87159	0.1137960	0.23991206	2.5650825	20	11 12.7	20.6
297959 2002 GA_{147}	15.6	X	105.88470	80.28179	40.34119	14.04128	0.1196337	0.17026706	3.2239054	20	5 15.9	20.4
297960 2002 GG_{161}	16.4	X	16.88553	12.62366	116.06713	7.27286	0.1200998	0.26421620	2.4052659	20	—	—
297961 2002 GM_{168}	16.4	X	231.65074	322.93883	239.36230	6.45693	0.0416202	0.25199127	2.4824416	20	—	—
297962 2002 GE_{179}	17.0	X	151.42274	273.69412	45.13566	6.16510	0.1615888	0.26181296	2.4199624	20	—	—
297963 2002 GL_{185}	17.3	X	337.33646	128.83449	24.07562	2.53449	0.1584379	0.26218311	2.4176842	20	—	—
297964 2002 HK_{6}	17.4	X	92.56666	56.93545	188.41097	4.61416	0.2281327	0.23493634	2.6011731	20	10 23.5	21.6
297965 2002 HH_{11}	16.3	X	133.89188	118.80878	123.03718	12.97662	0.1402588	0.24153424	2.5535846	20	11 24.5	20.6
297966 2002 HJ_{15}	15.2	X	341.09718	137.99620	31.61287	8.92617	0.0554428	0.15624351	3.4140357	20	1 30.9	20.0
297967 2002 HU_{16}	16.6	X	106.92057	242.24559	26.04251	14.55451	0.2992312	0.23839395	2.5759607	20	12 1.1	21.4
297968 2002 JP_{20}	16.9	X	127.96335	79.60135	194.12214	12.15826	0.3143448	0.24214937	2.5492581	20	12 23.9	21.9
297969 2002 JB_{23}	17.2	X	153.48289	41.49647	200.28128	5.96466	0.2446619	0.24343908	2.5402464	20	12 6.5	21.7
297970 2002 JZ_{30}	16.3	X	186.12988	164.66527	56.28963	12.98395	0.1071258	0.24531464	2.5272822	20	12 17.9	20.0
297971 2002 JM_{53}	16.6	X	277.71296	172.60590	27.27838	6.92262	0.1120073	0.25774516	2.4453575	20	—	—
297972 2002 JN_{54}	16.8	X	84.07999	25.34722	230.80901	8.29788	0.3272039	0.23344975	2.6122041	20	11 4.7	21.4
297973 2002 JX_{55}	16.2	X	115.84858	38.28983	230.41686	14.14043	0.1102364	0.24093163	2.5578407	20	12 5.6	20.2
297974 2002 JU_{104}	16.4	X	29.52850	91.93020	234.78069	9.64125	0.2578056	0.23220868	2.6215033	20	11 30.9	19.7
297975 2002 JX_{104}	16.5	X	62.63419	223.81837	59.97330	14.66923	0.2577817	0.23244618	2.6197173	20	11 14.7	20.5
297976 2002 JK_{122}	16.5	X	130.45094	112.59327	122.49227	15.23876	0.1534027	0.23980660	2.5658344	20	11 14.9	20.9
297977 2002 JE_{146}	16.8	X	112.68830	95.34528	172.67580	14.94472	0.1724519	0.23817726	2.5775228	20	12 5.3	21.3
297978 2002 JC_{149}	16.7	X	120.89020	29.72672	246.47684	7.80150	0.1185501	0.24310131	2.5425989	20	12 20.0	20.6
297979 2002 KL_{4}	16.4	X	118.48950	13.46458	233.43743	13.56634	0.1351727	0.23770125	2.5809627	20	11 11.7	20.4
297980 2002 KL_{13}	17.2	X	204.68527	13.16476	225.52535	7.22984	0.0836740	0.25156397	2.4852520	20	—	—
297981 2002 LE	17.5	X	138.32550	74.32878	166.93658	4.95761	0.1020291	0.34891878	1.9982653	20	12 16.2	20.1
297982 2002 LK_{17}	16.2	X	71.83602	218.73377	69.25288	14.58111	0.1663254	0.23472869	2.6027069	20	11 19.8	20.0
297983 2002 LL_{20}	16.1	X	87.57752	241.79115	84.38017	13.26384	0.2905181	0.23667673	2.5884056	20	—	—
297984 2002 LW_{39}	16.8	X	356.49374	98.54647	205.13844	9.09487	0.2960495	0.22354575	2.6887996	20	8 23.2	18.8
297985 2002 LX_{40}	16.5	X	43.67331	162.51839	135.63715	8.39959	0.1991827	0.23014859	2.6371237	20	11 6.2	20.2
297986 2002 LW_{61}	16.4	X	19.54710	111.62028	195.56481	11.62554	0.0456290	0.23025124	2.6363398	20	9 17.1	19.9
297987 2002 MR_{5}	15.8	X	78.99152	279.77483	89.98295	12.74238	0.3271357	0.23828595	2.5767390	20	—	—
297988 2002 MV_{5}	17.0	X	56.14221	100.68605	202.84769	11.61461	0.2091995	0.22965640	2.6408902	20	11 26.2	21.0
297989 2002 MJ_{6}	16.7	X	144.06514	222.21749	343.56237	4.19170	0.1410601	0.23151044	2.6267717	20	10 14.5	20.9
297990 2002 ND_{7}	16.0	X	71.22499	131.24115	206.32135	13.20035	0.1538782	0.23434439	2.6055516	20	—	—
297991 2002 ND_{27}	15.7	X	38.07574	7.24159	325.46315	16.82281	0.1769181	0.22713549	2.6603945	20	12 4.2	19.7
297992 2002 NG_{37}	16.5	X	355.83604	64.75685	270.33102	10.41591	0.2070215	0.22282017	2.6946336	20	9 28.2	19.3
297993 2002 ND_{57}	16.0	X	282.04751	150.30015	319.64917	13.11827	0.0400387	0.23288011	2.6164621	20	12 3.6	19.6
297994 2002 NA_{59}	17.2	X	26.14464	269.24221	76.45635	3.31705	0.2091024	0.22906903	2.6454027	20	12 12.5	20.5
297995 2002 NN_{59}	17.1	X	62.17400	86.59434	217.56371	11.95863	0.1792118	0.22993753	2.6387372	20	11 29.3	21.0
297996 2002 NR_{62}	16.3	X	348.14753	228.51922	108.88469	16.28455	0.1270058	0.22353939	2.6888506	20	9 24.5	19.6
297997 2002 NK_{64}	16.9	X	99.98136	168.41417	102.81514	14.91598	0.1368598	0.23341138	2.6124904	20	11 26.5	21.1
297998 2002 NU_{66}	17.1	X	5.03691	63.70674	307.81737	6.29546	0.1994288	0.22925850	2.6439450	20	12 13.8	20.1
297999 2002 NF_{71}	16.1	X	106.24097	319.23971	261.71879	8.41628	0.0844684	0.22620943	2.6676504	20	9 18.1	20.1
298000 2002 NJ_{74}	17.2	X	90.79235	115.93789	148.86866	4.52124	0.1800192	0.23017328	2.6369351	20	11 10.8	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		°	°	°	°		°				
298001 2002 NQ_{75}	16.3	X	138.00183	9.35881	157.68293	13.77310	0.0520032	0.21901610	2.7257458	20	8 16.3	20.3
298002 2002 OT_{4}	17.0	X	13.48963	140.35162	184.83661	7.15585	0.3254323	0.22497111	2.6774306	20	11 16.4	19.9
298003 2002 ON_{14}	16.2	X	49.06675	53.29515	267.68227	11.93316	0.1844705	0.22894754	2.6463385	20	12 5.6	20.0
298004 2002 OC_{15}	15.9	X	8.95813	48.50403	301.63524	24.57042	0.1781303	0.22477839	2.6789608	20	11 9.7	19.6
298005 2002 OU_{27}	16.8	X	349.74614	62.89859	292.28483	5.39305	0.1662108	0.22424438	2.6832121	20	10 14.8	19.6
298006 2002 OA_{30}	17.0	X	42.19430	261.77525	60.38368	4.33687	0.2739282	0.22783246	2.6549661	20	12 10.7	20.7
298007 2002 OA_{31}	16.2	X	3.86192	338.50651	325.21156	7.01777	0.1291973	0.21988896	2.7185277	20	8 26.1	19.2
298008 2002 OH_{32}	16.3	X	337.98778	59.65467	237.95187	9.13330	0.1322504	0.21704314	2.7422392	20	6 27.5	19.4
298009 2002 OR_{35}	16.9	X	2.72088	211.00274	182.65791	9.83316	0.0852057	0.23238857	2.6201503	20	12 24.1	20.3
298010 2002 PG_{2}	16.3	X	13.31714	197.94063	196.33170	12.15084	0.0929139	0.23413588	2.6070983	20	—	—
298011 2002 PT_{2}	16.2	X	30.92921	44.34195	260.70149	12.05894	0.1374303	0.22427978	2.6829297	20	10 9.5	19.8
298012 2002 PY_{7}	17.3	X	6.35907	67.08199	266.43232	5.01517	0.1600732	0.22483933	2.6784766	20	10 15.3	20.3
298013 2002 PJ_{10}	16.2	X	345.44204	94.48864	293.31016	9.14966	0.1019406	0.22786936	2.6546795	20	11 18.5	19.4
298014 2002 PL_{10}	17.0	X	45.36697	92.21260	218.29861	3.45308	0.1860019	0.22745752	2.6578830	20	11 18.5	20.5
298015 2002 PN_{24}	16.3	X	10.00106	81.52722	310.71312	9.58843	0.2150499	0.23113760	2.6295957	20	—	—
298016 2002 PO_{25}	17.3	X	5.66212	36.76835	298.11843	3.75621	0.1265194	0.22449726	2.6811968	20	10 11.9	20.4
298017 2002 PB_{29}	16.4	X	92.09926	15.39308	278.33693	3.73340	0.1544971	0.23275327	2.6174126	20	12 13.8	20.5
298018 2002 PA_{31}	16.5	X	47.35933	298.85234	309.80505	12.42821	0.1782251	0.22030407	2.7151117	20	8 25.7	20.0
298019 2002 PY_{35}	16.0	X	357.73533	227.25205	152.01598	13.73181	0.2113305	0.22686812	2.6624844	20	12 14.8	19.1
298020 2002 PH_{53}	16.8	X	23.01573	12.31626	342.31653	3.41607	0.1808877	0.22853813	2.6494980	20	12 15.2	20.2
298021 2002 PW_{53}	16.3	X	69.46448	295.52750	328.17352	12.58888	0.0605673	0.22362918	2.6881308	20	9 25.0	20.2
298022 2002 PF_{78}	15.9	X	101.93626	277.24950	346.89419	11.62203	0.2523229	0.23228000	2.6209667	20	11 19.4	20.6
298023 2002 PH_{86}	16.1	X	25.31695	324.67237	10.15915	13.44942	0.1960977	0.22647220	2.6655865	20	11 20.5	19.6
298024 2002 PF_{90}	16.5	X	35.82149	70.34082	258.66880	10.99464	0.2286070	0.22741400	2.6582220	20	12 6.0	20.1
298025 2002 PR_{92}	16.1	X	35.19312	59.78633	246.19704	13.67003	0.1314591	0.22400963	2.6850863	20	10 17.7	19.8
298026 2002 PH_{102}	16.0	X	14.57813	106.92267	285.46311	11.40060	0.1518312	0.23222251	2.6213992	20	—	—
298027 2002 PK_{105}	16.0	X	7.24217	85.85245	293.47576	12.16857	0.1220215	0.22868001	2.6484020	20	12 16.5	19.3
298028 2002 PG_{119}	16.8	X	83.61847	58.38598	231.30459	3.01583	0.2622664	0.23138163	2.6277465	20	12 9.1	21.1
298029 2002 PX_{119}	16.3	X	9.09017	38.82335	313.30511	10.85367	0.0932915	0.22594805	2.6697073	20	11 3.4	19.8
298030 2002 PM_{141}	15.6	X	33.89015	37.20652	281.78762	13.94481	0.1951810	0.22460749	2.6803195	20	11 12.6	19.3
298031 2002 PP_{141}	15.4	X	6.98043	76.11256	258.49889	12.56141	0.2472711	0.22165541	2.7040652	20	10 29.6	18.3
298032 2002 PG_{142}	16.2	X	318.54297	22.85033	333.67139	9.47557	0.2066789	0.21727767	2.7402656	20	8 10.9	18.7
298033 2002 PC_{152}	16.0	X	359.09043	270.01056	123.74870	10.30930	0.0743399	0.23204956	2.6227016	20	12 18.5	19.3
298034 2002 PR_{156}	17.0	X	15.59988	207.11625	159.39792	0.30031	0.1760539	0.22930538	2.6435846	20	12 19.8	20.1
298035 2002 PN_{161}	17.2	X	45.24886	197.54165	144.91230	2.95771	0.1538476	0.23088656	2.6315014	20	12 24.4	20.9
298036 2002 PO_{162}	17.0	X	356.05322	52.09933	353.65470	3.99355	0.2548632	0.22976808	2.6400344	20	—	—
298037 2002 PW_{163}	16.3	X	45.51722	229.30541	123.98387	15.52921	0.1267988	0.23305766	2.6151330	20	—	—
298038 2002 PQ_{164}	17.2	X	0.47416	53.34701	323.89027	2.00327	0.2184101	0.22799361	2.6537149	20	12 16.6	20.1
298039 2002 PP_{168}	16.6	X	16.77569	345.76604	330.83984	10.79900	0.0785209	0.22280794	2.6947322	20	9 25.9	20.1
298040 2002 PO_{182}	16.2	X	292.98995	225.83951	127.43208	7.22168	0.0880988	0.21399372	2.7682291	20	7 6.8	19.8
298041 2002 PD_{191}	16.6	X	31.07903	0.27147	331.06555	13.35138	0.1602095	0.22809758	2.6529085	20	11 18.7	20.3
298042 2002 PR_{191}	16.8	X	12.16704	334.19449	333.84279	5.59396	0.1399153	0.22184636	2.7025133	20	9 17.1	19.9
298043 2002 PV_{193}	16.6	X	331.03177	231.68088	188.79000	14.47610	0.1681997	0.22810136	2.6528791	20	12 15.6	19.6
298044 2002 PS_{197}	17.3	X	84.63138	61.63924	203.74633	3.72265	0.1704930	0.22947726	2.6422644	20	11 3.5	21.3
298045 2002 QU_{3}	16.7	X	41.48199	23.90868	288.93428	4.14126	0.1558428	0.22616124	2.6680293	20	11 10.5	20.2
298046 2002 QF_{7}	16.8	X	6.47377	264.20788	80.32056	4.32537	0.2747127	0.22465141	2.6799701	20	11 20.9	19.4
298047 2002 QB_{8}	16.1	X	333.44099	245.86201	130.56325	9.34324	0.0189136	0.22347713	2.6893500	20	10 17.8	19.8
298048 2002 QL_{16}	16.6	X	295.92382	49.93313	317.04468	12.41985	0.2026184	0.21537430	2.7563866	20	7 14.6	19.9
298049 2002 QF_{35}	16.8	X	61.83970	156.00140	148.10640	14.46561	0.1521684	0.22761145	2.6566845	20	11 28.1	20.9
298050 2002 QP_{36}	16.7	X	3.96577	209.19728	159.52024	2.64733	0.2138831	0.22540984	2.6739552	20	12 9.8	19.5
298051 2002 QD_{37}	16.6	X	261.37373	324.93026	150.83295	4.72703	0.1417580	0.22430405	2.6827362	20	10 30.3	19.9
298052 2002 QT_{39}	16.6	X	289.83728	250.31740	165.00372	2.26508	0.2617958	0.21829367	2.7317563	20	8 30.2	19.4
298053 2002 QW_{48}	16.9	X	32.08885	294.35018	28.50379	3.10333	0.0990766	0.22476224	2.6790891	20	11 2.9	20.3
298054 2002 QH_{50}	16.5	X	340.71573	346.96161	347.82047	5.94276	0.0631946	0.21775904	2.7362258	20	8 28.8	19.9
298055 2002 QM_{51}	16.5	X	338.52421	7.87573	338.50096	13.41049	0.0528391	0.22028694	2.7152525	20	9 8.5	19.7
298056 2002 QC_{54}	16.0	X	277.23422	287.25282	153.34986	22.04597	0.0483907	0.22459428	2.6804245	20	10 24.1	19.9
298057 2002 QN_{61}	17.2	X	43.21817	332.67257	310.52595	3.91583	0.1525517	0.22298095	2.6933381	20	10 3.2	20.7
298058 2002 QB_{81}	16.5	X	336.33862	320.84094	20.88393	5.01792	0.1364931	0.21893868	2.7263884	20	9 1.2	19.3
298059 2002 QO_{83}	17.1	X	289.58303	119.63137	283.05690	4.34477	0.0727839	0.22099470	2.7094521	20	9 8.7	20.5
298060 2002 QM_{84}	16.6	X	307.64672	105.45694	292.00124	5.01513	0.0315260	0.22362389	2.6881732	20	10 2.2	20.1
298061 2002 QN_{84}	16.5	X	277.57605	193.84501	215.00653	5.02810	0.0302647	0.22063309	2.7124118	20	9 5.8	20.2
298062 2002 QX_{85}	16.4	X	248.68648	130.37214	316.93189	12.42259	0.0982053	0.22146201	2.7056392	20	9 5.7	20.3
298063 2002 QW_{86}	17.0	X	350.73351	178.36392	178.73102	6.10200	0.0406958	0.22424344	2.6832196	20	10 14.1	20.3
298064 2002 QQ_{87}	16.5	X	211.08860	308.35664	152.78017	10.23479	0.1654976	0.21572290	2.7534164	20	8 6.7	20.9
298065 2002 QP_{96}	16.3	X	98.42930	109.65591	126.39458	15.62488	0.1117227	0.22566337	2.6719521	20	10 12.4	20.6
298066 2002 QR_{96}	16.5	X	308.81770	290.70203	126.11838	12.53532	0.1738440	0.22543163	2.6737830	20	10 30.3	19.4
298067 2002 QM_{98}	16.9	X	338.92486	59.53383	352.02430	3.80151	0.1615106	0.22947882	2.6422525	20	12 17.7	19.5
298068 2002 QG_{105}	16.9	X	246.50504	2.06148	146.26380	2.33866	0.0043593	0.23148859	2.6269370	20	12 11.4	20.3
298069 2002 QJ_{106}	16.2	X	323.67470	43.96953	3.38760	14.79702	0.1507578	0.22512928	2.6761763	20	11 4.1	19.2
298070 2002 QC_{107}	17.4	X	333.10774	107.32943	271.63805	1.88356	0.1906215	0.22324898	2.6911820	20	10 18.1	19.7
298071 2002 QV_{110}	16.7	X	77.70022	230.81630	64.01240	3.09635	0.0190979	0.22991397	2.6389175	20	11 15.6	20.3
298072 2002 QB_{113}	17.5	X	337.58514	184.89402	186.26254	5.22576	0.1576350	0.22303503	2.6929027	20	10 16.7	20.2
298073 2002 QZ_{114}	17.2	X	344.19101	171.00207	220.20726	3.78562	0.1613315	0.22638338	2.6662837	20	11 28.3	19.8
298074 2002 QW_{123}	17.0	X	40.14796	161.87908	172.94797	2.54151	0.2135626	0.22974953	2.6401765	20	12 16.9	20.8
298075 2002 QE_{129}	16.3	X	29.69203	220.90149	138.41063	12.58322	0.2059136	0.23080171	2.6321464	20	—	—
298076 2002 QK_{131}	15.8	X	322.66984	92.59418	336.16823	21.81735	0.0562199	0.23058379	2.6338045	20	12 5.6	19.6
298077 2002 QR_{131}	17.0	X	339.23253	37.39278	359.89066	4.87772	0.0488842	0.22842124	2.6504018	20	11 18.7	20.3
298078 2002 QU_{131}	17.2	X	23.07737	296.87441	11.05287	3.50583	0.1730979	0.22323933	2.6912595	20	10 11.7	20.2
298079 2002 QH_{133}	16.3	X	323.14686	196.93952	198.23773	8.76820	0.1829330	0.22281795	2.6946514	20	10 21.8	18.7
298080 2002 QA_{134}	17.0	X	13.91143	244.01367	94.09217	3.78199	0.0907195	0.22413046	2.6841212	20	10 28.5	20.2

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	m		°	°	°	°		°				
298081 2002 QH_{135}	17.3	X	354.51337	263.84159	83.06520	5.98070	0.0700001	0.22236865	2.6982800	20	10 9.8	20.6
298082 2002 QL_{135}	16.4	X	27.03996	293.34574	78.74937	6.43878	0.0668100	0.23079453	2.6322010	20	12 26.6	19.9
298083 2002 QY_{139}	16.6	X	323.79642	139.28715	180.72756	4.13291	0.1005479	0.21517861	2.7580575	20	7 7.2	19.9
298084 2002 QC_{140}	17.0	X	340.10794	178.89307	213.86309	1.23153	0.1348155	0.22642785	2.6659346	20	11 20.5	19.7
298085 2002 QU_{142}	16.7	X	264.23705	207.25106	218.40617	9.13062	0.1052039	0.21830147	2.7316912	20	8 27.5	20.6
298086 2002 QE_{147}	16.7	X	40.60497	343.94651	356.62851	2.43443	0.1568546	0.22907316	2.6453710	20	12 16.4	20.4
298087 2002 RW_{2}	16.3	X	321.38815	23.19131	352.34624	8.57870	0.2350081	0.21862110	2.7290281	20	9 12.5	18.5
298088 2002 RW_{4}	15.7	X	123.06593	14.34747	254.12520	10.07464	0.0327207	0.23003407	2.6379989	20	12 8.3	19.2
298089 2002 RF_{36}	16.6	X	5.21702	161.07479	176.66850	14.94867	0.1278061	0.22267286	2.6958219	20	10 19.6	19.8
298090 2002 RM_{36}	16.1	X	26.03766	13.10007	337.24770	13.78987	0.2278353	0.22814819	2.6525161	20	12 21.6	19.8
298091 2002 RY_{41}	16.2	X	349.19793	29.85795	349.55252	13.52550	0.1462329	0.22491997	2.6778364	20	11 13.0	19.4
298092 2002 RH_{45}	15.7	X	347.96967	356.33873	355.13780	18.60472	0.1141233	0.22116653	2.7080486	20	9 30.7	18.8
298093 2002 RQ_{46}	16.2	X	343.76764	356.07153	3.11802	9.91863	0.1577540	0.22113862	2.7082764	20	10 8.7	18.8
298094 2002 RM_{58}	16.6	X	24.30378	100.45514	194.55306	8.31258	0.2392017	0.22064302	2.7123304	20	10 6.3	19.7
298095 2002 RO_{60}	16.1	X	352.71573	31.16013	10.00569	14.74074	0.2380506	0.22504116	2.6768749	20	—	—
298096 2002 RE_{68}	16.0	X	10.60004	202.71960	181.24515	21.51563	0.1084417	0.22903630	2.6456548	20	12 24.7	19.8
298097 2002 RY_{76}	16.1	X	341.95935	349.38968	339.40340	14.24091	0.1282462	0.21736337	2.7395452	20	8 23.4	19.0
298098 2002 RY_{79}	16.4	X	9.47878	6.56244	345.17173	4.38113	0.1654428	0.22393778	2.6856607	20	11 16.2	19.6
298099 2002 RK_{99}	16.1	X	323.16570	164.23988	191.38868	26.52831	0.1865485	0.21513404	2.7584384	20	8 14.7	19.5
298100 2002 RS_{108}	16.2	X	347.93290	196.41789	172.10048	12.65748	0.1906101	0.22226888	2.6990873	20	11 7.9	19.1
298101 2002 RC_{119}	15.8	X	21.51621	304.51649	11.81528	13.75038	0.2144795	0.22280604	2.6947475	20	10 24.2	19.0
298102 2002 RO_{121}	15.7	X	352.09911	157.37907	228.06458	9.12806	0.1316354	0.22342189	2.6897933	20	11 30.3	18.6
298103 2002 RP_{126}	16.0	X	329.63315	231.13747	128.11552	12.81196	0.1733602	0.22011985	2.7166263	20	9 15.1	18.8
298104 2002 RQ_{127}	16.1	X	313.41943	171.09379	260.15182	13.17756	0.2102438	0.22584773	2.6704978	20	11 21.8	18.5
298105 2002 RS_{127}	15.8	X	352.02616	133.24453	236.08656	11.89866	0.2733574	0.22355162	2.6887526	20	11 26.3	18.2
298106 2002 RR_{133}	16.2	X	348.16461	280.56695	93.07596	7.05266	0.2449328	0.22250352	2.6971895	20	11 20.8	18.5
298107 2002 RR_{139}	16.2	X	352.24718	235.14526	69.13026	11.04598	0.2210128	0.21629913	2.7485240	20	8 13.3	18.8
298108 2002 RV_{140}	15.9	X	357.60884	281.63641	82.86397	7.29571	0.0728113	0.22341806	2.6898240	20	11 6.7	19.3
298109 2002 RZ_{144}	16.4	X	335.17903	356.56339	30.14044	3.61528	0.0936428	0.22312976	2.6921405	20	10 31.1	19.4
298110 2002 RG_{146}	17.4	X	288.81539	46.99857	338.61586	3.24468	0.2139886	0.21424114	2.7660974	20	7 26.1	20.7
298111 2002 RJ_{152}	16.0	X	299.10674	110.68680	327.02533	13.88395	0.0526946	0.22508620	2.6765178	20	11 8.3	19.7
298112 2002 RC_{154}	17.3	X	349.01421	137.81695	182.64009	8.12853	0.1957400	0.21638332	2.7478110	20	8 22.9	19.9
298113 2002 RN_{176}	16.5	X	357.25475	148.39636	221.33927	6.84412	0.0994032	0.22452422	2.6809821	20	11 14.2	19.6
298114 2002 RF_{177}	16.8	X	354.51196	132.67089	189.66267	9.35390	0.2297185	0.21885466	2.7270861	20	9 11.6	19.1
298115 2002 RR_{177}	16.7	X	317.44613	158.38039	224.89155	3.85929	0.1305491	0.21926683	2.7236675	20	9 22.2	19.7
298116 2002 RC_{199}	16.9	X	71.30227	245.96839	38.75379	2.43422	0.1814487	0.22616639	2.6679888	20	11 13.8	20.9
298117 2002 RB_{202}	15.8	X	41.22529	290.91970	357.40589	14.06317	0.1087842	0.22202373	2.7010738	20	9 30.3	19.2
298118 2002 RF_{202}	16.5	X	358.61500	72.69287	302.05927	6.86476	0.1484165	0.22455711	2.6807204	20	11 27.6	19.5
298119 2002 RS_{206}	16.9	X	329.93427	176.42597	186.82347	9.07634	0.1203526	0.21876423	2.7278376	20	9 17.5	20.0
298120 2002 RV_{212}	16.3	X	4.74426	228.66200	157.36718	14.75492	0.2096562	0.22528507	2.6749424	20	—	—
298121 2002 RP_{228}	16.0	X	61.66223	285.10888	31.13136	11.57508	0.0597016	0.22822706	2.6519049	20	11 25.5	19.8
298122 2002 RP_{237}	16.2	X	244.47017	123.29165	3.72862	10.22743	0.0972074	0.22554551	2.6728828	20	10 24.3	19.9
298123 2002 RW_{237}	17.4	X	353.54559	212.88043	148.18765	3.82886	0.1938315	0.22344993	2.6895682	20	11 7.5	20.0
298124 2002 RE_{243}	16.6	X	40.05873	89.76684	228.97158	3.44225	0.0819547	0.22644604	2.6657918	20	11 6.4	20.2
298125 2002 RH_{247}	17.1	X	352.99583	68.44441	339.57946	3.06110	0.1833154	0.22972020	2.6404012	20	—	—
298126 2002 RB_{251}	16.4	X	10.59168	167.20340	155.21083	6.55333	0.0286410	0.22193065	2.7018290	20	9 24.9	19.9
298127 2002 RF_{251}	16.2	X	50.38308	82.11529	154.88838	12.01383	0.0779550	0.21586287	2.7522260	20	7 31.0	19.8
298128 2002 RZ_{251}	17.1	X	181.06430	176.46100	300.62715	1.01798	0.0198621	0.21375347	2.7703030	20	8 3.5	20.9
298129 2002 RR_{253}	17.2	X	260.56346	188.75716	253.38661	3.06886	0.1378774	0.21863792	2.7288881	20	9 10.6	20.8
298130 2002 RD_{255}	16.5	X	341.49610	187.06321	149.15879	9.94711	0.0466905	0.21891583	2.7265781	20	9 1.0	19.8
298131 2002 RZ_{262}	16.2	X	77.72228	65.54482	191.95268	12.51041	0.0895103	0.22102727	2.7091860	20	10 6.2	20.0
298132 2002 RZ_{263}	16.4	X	289.28036	121.25449	322.20989	9.05955	0.0955374	0.22466717	2.6798448	20	10 29.6	19.8
298133 2002 RR_{265}	16.3	X	341.83566	27.63833	0.65051	13.87641	0.0758135	0.22459801	2.6803949	20	11 7.2	19.7
298134 2002 RD_{272}	16.5	X	317.81181	51.96450	332.04467	7.50256	0.1834266	0.22067951	2.7120314	20	9 19.5	19.1
298135 2002 RV_{272}	17.2	X	332.26427	173.40792	174.24348	3.13644	0.0802587	0.21911233	2.7249477	20	8 31.9	20.3
298136 2002 RD_{273}	17.1	X	293.33797	187.25146	209.73070	1.59134	0.0868596	0.21967801	2.7202678	20	9 6.3	20.5
298137 2002 RZ_{277}	17.3	X	339.97045	119.88467	225.84749	6.46639	0.2467896	0.21929140	2.7234641	20	9 10.2	19.5
298138 2002 RH_{280}	16.5	X	319.50021	202.44356	194.57515	6.10270	0.0834167	0.22296528	2.6934643	20	10 20.3	19.5
298139 2002 RN_{290}	16.6	X	71.09229	242.56721	60.31659	6.66909	0.2100096	0.22986155	2.6393186	20	12 8.9	20.6
298140 2002 SL_{1}	16.5	X	79.51550	67.17698	202.19881	11.48483	0.1883215	0.22721068	2.6598076	20	11 5.4	20.6
298141 2002 ST_{4}	16.7	X	313.80386	185.15901	192.63750	10.01687	0.2392918	0.21647838	2.7470065	20	8 23.9	19.4
298142 2002 SX_{20}	15.8	X	29.11703	311.65558	12.76128	14.46607	0.1162298	0.22248622	2.6973293	20	10 30.2	19.3
298143 2002 SN_{25}	16.3	X	314.85553	324.37933	89.12443	3.91069	0.1779806	0.22091755	2.7100828	20	10 31.6	18.8
298144 2002 SQ_{38}	17.3	X	338.10664	313.70744	31.02995	2.35622	0.2953701	0.21802965	2.7339612	20	9 7.6	19.0
298145 2002 SH_{45}	16.0	X	315.26279	245.58312	205.25576	10.96942	0.1559017	0.22491880	2.6778457	20	12 24.6	18.9
298146 2002 SX_{49}	16.3	X	328.36633	215.49649	170.38111	9.75517	0.1843987	0.22027054	2.7153872	20	10 20.5	18.9
298147 2002 SD_{54}	15.8	X	7.86224	51.15304	327.85273	12.85828	0.2146289	0.22703428	2.6611852	20	—	—
298148 2002 SO_{62}	16.8	X	17.09244	207.22770	147.47104	2.60139	0.1028901	0.22415321	2.6839396	20	11 24.9	20.2
298149 2002 SE_{66}	16.6	X	6.55712	249.98622	61.40386	5.05771	0.1280683	0.21963882	2.7205913	20	9 14.6	19.7
298150 2002 SC_{69}	17.3	X	294.63017	105.28006	307.37945	0.83138	0.1448385	0.21862676	2.7289810	20	9 22.5	20.3
298151 2002 SJ_{72}	17.1	X	309.15812	153.55208	229.66213	2.91101	0.0698685	0.21937141	2.7228018	20	9 12.9	20.4
298152 2002 SG_{74}	16.5	X	191.24484	129.51090	17.90679	9.60549	0.0452222	0.21807918	2.7335472	20	9 25.7	20.4
298153 2002 TQ_{2}	16.1	X	333.73251	141.64554	198.85012	12.68933	0.2415219	0.21587741	2.7521024	20	8 12.9	18.7
298154 2002 TG_{18}	17.3	X	305.95232	45.01083	354.96344	2.17874	0.3093779	0.21693492	2.7431511	20	8 31.9	19.5
298155 2002 TV_{22}	16.2	X	358.27906	338.18479	14.30171	9.80829	0.0712978	0.21979349	2.7193148	20	10 18.1	19.4
298156 2002 TW_{24}	16.6	X	269.98192	62.57362	20.74040	2.28636	0.2446484	0.21603657	2.7507505	20	9 10.4	20.0
298157 2002 TA_{26}	16.6	X	322.94846	203.74562	187.53299	4.78238	0.1769117	0.21880856	2.7274691	20	10 14.4	19.2
298158 2002 TU_{50}	15.2	X	284.41538	349.76920	57.64641	15.38488	0.2259296	0.21177606	2.7875209	20	8 23.7	18.9
298159 2002 TZ_{55}	16.5	X	15.45966	338.42354	2.17522	10.35612	0.1631459	0.22174142	2.7033659	20	11 7.6	19.8
298160 2002 TR_{56}	16.2	X	261.87548	63.38687	26.51657	7.94597	0.2218814	0.21599769	2.7510806	20	9 14.1	19.9

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	m		°	°	°	°		°				
298161 2002 TP_{62}	16.6	X	42.91117	336.79031	346.06745	6.79427	0.0975760	0.22335166	2.6903570	20	11 14.8	20.3
298162 2002 TO_{67}	17.4	X	343.72024	89.94473	234.16893	6.65333	0.2309657	0.21509086	2.7588076	20	8 14.3	19.8
298163 2002 TN_{101}	16.2	X	352.09553	161.01678	204.01144	15.27084	0.1501417	0.22146309	2.7056305	20	11 4.4	19.1
298164 2002 TA_{102}	16.7	X	348.48104	139.41140	216.19659	5.13188	0.0562238	0.21933471	2.7231055	20	10 6.7	20.2
298165 2002 TN_{103}	16.4	X	333.02287	153.28252	219.68972	4.76895	0.0811692	0.21894048	2.7263734	20	10 6.7	19.7
298166 2002 TF_{110}	16.2	X	343.81419	242.26504	152.85505	13.45017	0.2594468	0.22261168	2.6963157	20	12 15.0	18.9
298167 2002 TK_{119}	16.3	X	304.97775	168.54646	224.64760	13.70704	0.1315809	0.21643202	2.7473989	20	9 9.1	19.7
298168 2002 TU_{123}	16.4	X	352.81800	93.52417	252.97371	7.64548	0.1502923	0.21995494	2.7179840	20	10 5.2	19.5
298169 2002 TU_{141}	15.8	X	295.51246	13.10911	46.39664	20.53251	0.2574836	0.21731074	2.7399875	20	9 29.4	19.0
298170 2002 TS_{145}	16.0	X	116.37626	37.03507	210.70489	12.77536	0.1286836	0.22383988	2.6864436	20	11 9.2	20.1
298171 2002 TO_{154}	16.2	X	334.81518	91.39964	200.40631	14.45308	0.1680506	0.21262556	2.7800914	20	6 10.5	19.4
298172 2002 TV_{154}	15.9	X	318.44256	178.92525	222.07175	13.23284	0.1827843	0.22191920	2.7019219	20	10 17.6	18.7
298173 2002 TM_{161}	16.0	X	251.29437	3.45346	87.41584	14.56149	0.2964923	0.21272861	2.7791935	20	8 25.7	20.5
298174 2002 TM_{163}	16.1	X	287.02582	285.56562	130.89971	14.36124	0.1682606	0.21493890	2.7601077	20	9 15.5	19.5
298175 2002 TQ_{165}	17.0	X	12.82422	84.06442	237.29505	11.62482	0.2875797	0.22247125	2.6974503	20	10 30.7	19.8
298176 2002 TE_{166}	15.9	X	341.67308	135.78004	252.17894	13.48727	0.0842518	0.22432414	2.6825760	20	11 11.2	19.1
298177 2002 TM_{166}	16.1	X	341.79037	61.85347	268.42826	12.66395	0.1689087	0.21698603	2.7427204	20	8 16.5	19.2
298178 2002 TV_{166}	16.0	X	5.34472	81.17319	258.86268	13.35625	0.1442634	0.22128600	2.7070738	20	10 17.4	19.4
298179 2002 TO_{167}	16.1	X	26.61583	59.11794	289.15539	11.33599	0.1700572	0.22538548	2.6741479	20	12 9.5	19.6
298180 2002 TR_{169}	16.1	X	337.42509	288.81823	16.89769	9.24564	0.1556014	0.21103338	2.7940571	20	7 9.2	19.3
298181 2002 TW_{172}	15.9	X	280.48123	14.06173	24.47919	16.49984	0.1993929	0.21413917	2.7669755	20	8 10.1	19.8
298182 2002 TH_{175}	16.2	X	307.76236	39.16244	42.44332	13.89271	0.2412471	0.22291553	2.6938650	20	11 19.4	18.4
298183 2002 TY_{189}	16.3	X	339.78107	59.67212	289.08957	6.52610	0.1249100	0.21710117	2.7417506	20	9 11.7	19.4
298184 2002 TS_{193}	16.0	X	303.77261	37.49341	1.99495	8.46495	0.1414871	0.21779836	2.7358964	20	9 21.1	18.9
298185 2002 TW_{196}	16.3	X	6.22190	306.41651	0.02669	4.79915	0.1540245	0.21706519	2.7420535	20	9 7.1	19.3
298186 2002 TD_{197}	16.2	X	344.35573	145.46852	248.22502	4.93635	0.1481792	0.22422819	2.6833412	20	11 29.8	18.9
298187 2002 TP_{197}	16.5	X	4.48586	348.58914	343.81831	2.91454	0.1930444	0.21931349	2.7232811	20	10 14.7	19.3
298188 2002 TO_{199}	15.7	X	11.45520	32.79702	249.10949	12.19729	0.1489598	0.21380980	2.7698163	20	8 4.6	19.0
298189 2002 TL_{203}	15.7	X	348.69059	241.48871	163.74897	14.73252	0.1199227	0.22534123	2.6744980	20	12 21.1	19.1
298190 2002 TQ_{205}	15.9	X	347.60152	128.57546	244.21558	7.82949	0.1503399	0.22003868	2.7172944	20	11 4.4	18.8
298191 2002 TL_{230}	16.0	X	285.56121	307.46672	93.96788	13.67201	0.2005474	0.21421235	2.7663452	20	8 17.5	19.6
298192 2002 TV_{235}	16.5	X	325.88248	80.62539	321.37843	12.27938	0.2172217	0.21996915	2.7178669	20	10 29.4	19.2
298193 2002 TL_{239}	16.4	X	271.00738	103.07635	289.84868	3.67418	0.1660033	0.21129701	2.7917326	20	7 17.1	20.2
298194 2002 TO_{244}	16.9	X	248.14111	203.89076	225.77344	1.30402	0.0387291	0.21250340	2.7811567	20	8 23.9	20.7
298195 2002 TU_{256}	15.8	X	274.22731	91.53314	35.32808	10.10482	0.2487731	0.22052579	2.7132915	20	11 12.8	18.8
298196 2002 TA_{262}	16.3	X	281.79141	266.15182	188.19452	13.85796	0.1723896	0.21983897	2.7189398	20	10 27.3	19.5
298197 2002 TG_{274}	16.1	X	287.21994	174.90159	226.24499	8.39502	0.2485632	0.21310955	2.7758805	20	8 4.1	19.7
298198 2002 TH_{279}	15.8	X	312.71651	40.88959	355.82433	9.16489	0.1493708	0.21725168	2.7404841	20	9 30.8	18.6
298199 2002 TT_{279}	16.1	X	359.98359	28.84760	292.72182	7.36400	0.2853745	0.21754123	2.7380518	20	9 27.9	18.6
298200 2002 TP_{280}	15.9	X	315.75371	1.04611	353.21959	12.31815	0.1711288	0.21250279	2.7811621	20	8 8.6	19.1
298201 2002 TN_{282}	15.5	X	357.33781	133.83833	227.68260	15.39945	0.2754789	0.22052007	2.7133385	20	11 25.7	18.1
298202 2002 TZ_{292}	15.6	X	337.24576	145.51480	257.78118	8.44263	0.2208213	0.21901053	2.7257921	20	12 4.1	18.0
298203 2002 TC_{296}	15.6	X	311.17077	133.42228	254.16697	14.95118	0.3589521	0.21476387	2.7616072	20	8 6.5	18.4
298204 2002 TJ_{298}	16.6	X	321.56644	50.61522	356.56086	4.79545	0.2361713	0.21914765	2.7246549	20	10 31.1	18.8
298205 2002 TS_{298}	16.5	X	18.87581	310.47601	1.16575	4.47652	0.3079573	0.21916432	2.7245167	20	10 30.3	19.5
298206 2002 TR_{299}	16.3	X	23.14634	42.75699	269.35478	3.26149	0.0654526	0.21577461	2.7529764	20	9 28.9	19.8
298207 2002 TT_{311}	16.0	X	53.64717	263.24817	56.08234	13.58822	0.1886907	0.22491215	2.6778985	20	12 7.2	19.9
298208 2002 TS_{318}	16.8	X	269.66111	204.01366	199.17445	6.21529	0.0083514	0.21608937	2.7503024	20	8 20.9	20.5
298209 2002 TD_{330}	16.6	X	119.69881	0.23688	176.05975	9.43068	0.0975500	0.21118048	2.7927595	20	8 9.1	20.8
298210 2002 TW_{339}	16.3	X	340.40915	195.29147	132.43182	5.31846	0.0695123	0.21361552	2.7714955	20	8 17.6	19.7
298211 2002 TB_{351}	16.4	X	51.04378	118.18917	195.95312	14.40354	0.1525662	0.22720126	2.6598811	20	11 26.2	20.3
298212 2002 TD_{354}	16.9	X	348.31341	102.62191	220.49561	5.16744	0.0489600	0.21651065	2.7467336	20	8 20.9	20.4
298213 2002 TE_{355}	17.1	X	289.66694	185.07496	217.26047	4.30044	0.1628106	0.21699191	2.7426708	20	8 26.1	20.5
298214 2002 TN_{355}	16.7	X	302.69814	162.98697	209.31360	5.38329	0.0326126	0.21613437	2.7499206	20	8 21.7	20.3
298215 2002 TS_{374}	16.1	X	252.02626	115.25612	299.57383	6.60341	0.1777143	0.20860674	2.8156834	20	7 20.8	20.0
298216 2002 TT_{375}	16.0	X	353.40309	296.65930	29.94394	8.00849	0.2285446	0.21561273	2.7543542	20	9 19.9	18.4
298217 2002 TF_{382}	16.0	X	341.02028	321.66458	49.92765	10.26808	0.1504669	0.22070969	2.7117842	20	10 24.7	18.8
298218 2002 TT_{382}	16.3	X	238.14559	65.17443	44.24683	5.32513	0.0557959	0.21574036	2.7532678	20	10 2.6	20.0
298219 2002 TF_{385}	16.2	X	284.42309	274.23126	120.87241	5.41495	0.0791015	0.21352554	2.7722741	20	8 23.3	19.7
298220 2002 UF_{6}	15.7	X	280.78402	354.67817	61.20314	12.29445	0.2310658	0.21414671	2.7669105	20	8 27.8	19.4
298221 2002 UD_{7}	15.8	X	320.21740	323.43912	82.74634	11.82244	0.0949507	0.21989693	2.7184620	20	11 5.6	19.1
298222 2002 UT_{24}	16.2	X	289.21348	214.46734	210.01090	5.80356	0.1024111	0.21684010	2.7439508	20	10 4.7	19.6
298223 2002 UB_{33}	16.5	X	299.08649	142.96260	233.83675	7.04549	0.2398650	0.21202423	2.7853454	20	7 23.1	19.7
298224 2002 UC_{36}	16.0	X	283.66613	342.34464	55.75957	15.90734	0.1044585	0.21119451	2.7926358	20	8 30.2	19.9
298225 2002 UR_{43}	16.6	X	181.15578	316.52127	209.72777	2.73928	0.1478790	0.21346966	2.7727579	20	9 29.2	20.9
298226 2002 UA_{45}	16.6	X	279.84914	247.50494	159.15821	8.14244	0.2282895	0.21243462	2.7817570	20	8 6.2	20.2
298227 2002 UO_{46}	16.1	X	347.24863	337.22055	2.55111	9.11253	0.1659884	0.21600809	2.7509923	20	9 18.9	18.6
298228 2002 UY_{46}	16.4	X	260.25310	339.30842	81.75093	9.12823	0.2050247	0.21106696	2.7937608	20	8 6.4	20.4
298229 2002 UG_{63}	17.0	X	234.22508	223.43977	208.92214	4.81961	0.0381184	0.21388049	2.7692060	20	8 8.4	21.0
298230 2002 UU_{63}	16.2	X	87.26814	271.15791	7.20250	11.38028	0.0542338	0.22442167	2.6817988	20	11 5.7	20.2
298231 2002 UL_{75}	16.7	X	314.87096	337.48867	46.99901	4.11620	0.1086452	0.21544732	2.7557637	20	9 23.6	19.8
298232 2002 UA_{77}	16.8	X	251.17003	291.01050	151.19522	2.57738	0.1962042	0.21084334	2.7957358	20	8 21.9	20.7
298233 2002 UH_{77}	16.4	X	278.63130	350.95075	59.35179	7.13477	0.0347093	0.21286308	2.7780229	20	9 13.6	20.1
298234 2002 UE_{78}	15.9	X	329.24005	149.97406	225.82394	8.85770	0.0857650	0.21680648	2.7442344	20	10 2.5	19.2
298235 2002 VC_{4}	16.4	X	297.38101	152.06129	233.81505	3.50650	0.1189586	0.21272863	2.7791933	20	8 21.8	19.7
298236 2002 VQ_{7}	15.8	X	250.89576	157.35504	294.05360	8.16778	0.2514396	0.21312516	2.7757450	20	8 23.5	20.0
298237 2002 VM_{13}	15.9	X	273.39389	353.95149	49.10619	2.09076	0.1741617	0.20954349	2.8072856	20	8 2.5	19.5
298238 2002 VP_{13}	15.3	X	206.43994	225.19187	232.31732	12.19895	0.0587487	0.20613864	2.8381137	20	8 1.3	19.7
298239 2002 VB_{16}	16.2	X	302.80616	31.98626	32.32335	13.86063	0.1413285	0.21836044	2.7311994	20	10 24.3	19.2
298240 2002 VS_{22}	16.3	X	328.90122	329.47570	44.47461	8.74766	0.2357788	0.21626045	2.7488517	20	10 2.7	18.6

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		°	°	°	°		°				
298241 2002 VC_{28}	15.8	X	302.87140	156.06551	228.16954	9.44848	0.1726709	0.21192403	2.7862232	20	8 18.4	19.3
298242 2002 VP_{36}	16.5	X	267.32225	242.02285	185.06234	2.44633	0.1713802	0.21229709	2.7829582	20	8 25.7	20.2
298243 2002 VY_{42}	16.2	X	328.23606	309.13969	51.23828	6.47595	0.0784073	0.21329564	2.7742658	20	9 15.2	19.6
298244 2002 VB_{44}	15.3	X	132.23537	219.73577	279.42629	15.90802	0.2787121	0.19640150	2.9311599	20	7 17.0	20.5
298245 2002 VC_{44}	16.1	X	324.78902	153.89756	215.77339	8.50907	0.1689643	0.21437531	2.7649432	20	9 11.5	19.0
298246 2002 VW_{50}	16.5	X	337.64447	274.60825	85.17724	10.07096	0.2267977	0.21761627	2.7374223	20	10 6.3	19.0
298247 2002 VL_{51}	15.7	X	233.07474	12.40067	61.60947	13.16755	0.1005084	0.20824368	2.8189551	20	8 6.7	20.0
298248 2002 VE_{52}	15.9	X	301.65553	305.03875	104.05152	5.75421	0.1269630	0.21695253	2.7430027	20	10 5.3	19.1
298249 2002 VZ_{53}	16.2	X	325.43890	3.45275	8.50802	13.44714	0.1206037	0.21548536	2.7554394	20	9 23.6	19.2
298250 2002 VO_{54}	15.9	X	280.64759	59.13423	359.11979	12.27585	0.1067886	0.21403152	2.7679031	20	9 14.3	19.4
298251 2002 VP_{58}	15.6	X	293.72634	130.07393	224.54579	14.13709	0.2124559	0.20671335	2.8328508	20	6 18.7	19.4
298252 2002 VE_{61}	16.1	X	312.48132	121.75313	257.02159	4.61104	0.0778014	0.21391961	2.7688684	20	9 9.2	19.5
298253 2002 VF_{61}	16.0	X	266.01556	28.66198	14.18269	6.60544	0.0724826	0.20954278	2.8072920	20	8 9.9	19.8
298254 2002 VG_{78}	13.0	X	190.35901	172.27473	227.49651	18.32182	0.1098493	0.08347859	5.1850463	20	5 6.8	20.3
298255 2002 VS_{87}	16.1	X	282.05135	130.72370	281.11451	3.91945	0.1635640	0.21180322	2.7872827	20	8 26.5	19.7
298256 2002 VP_{96}	16.4	X	297.87130	158.25208	271.03830	6.64321	0.2451473	0.21749779	2.7384163	20	10 4.2	19.3
298257 2002 VZ_{96}	16.0	X	239.74891	101.04520	8.68074	12.49748	0.1843319	0.21233164	2.7826563	20	9 17.3	20.1
298258 2002 VT_{102}	15.9	X	326.52394	117.03234	258.63553	3.84636	0.0597704	0.21488563	2.7605639	20	9 28.5	19.3
298259 2002 VW_{117}	15.9	X	285.34090	62.19763	12.05491	32.33568	0.2710691	0.21366126	2.7710999	20	9 24.7	19.2
298260 2002 VS_{123}	15.7	X	354.74252	62.02297	278.64942	7.81135	0.1460967	0.21630738	2.7484541	20	9 28.0	18.8
298261 2002 VA_{143}	16.4	X	294.11910	299.32730	79.08727	10.46597	0.1433984	0.21023122	2.8011600	20	8 6.9	20.0
298262 2002 VD_{144}	16.3	X	336.30342	252.03464	106.27458	1.77988	0.0838063	0.21423845	2.7661205	20	9 23.0	19.5
298263 2002 WN_{15}	16.4	X	282.89995	328.96246	97.30651	9.40761	0.2088964	0.21354182	2.7721332	20	9 16.5	19.9
298264 2002 WH_{16}	15.9	X	324.81228	168.47482	219.42680	13.11486	0.1577509	0.21472029	2.7619808	20	10 10.1	18.8
298265 2002 WS_{16}	16.5	X	302.43801	282.16007	111.36094	8.75002	0.2355275	0.21227448	2.7831558	20	8 28.9	19.5
298266 2002 WU_{18}	16.5	X	358.19075	246.17939	105.19650	10.56075	0.3575486	0.21982567	2.7190495	20	11 29.4	19.0
298267 2002 WL_{20}	16.2	X	265.05311	195.59544	227.57045	3.93535	0.1420677	0.21115056	2.7930233	20	8 20.6	19.9
298268 2002 XG	16.3	X	309.49287	182.35581	209.28821	4.66871	0.1622018	0.21319005	2.7751818	20	9 15.1	19.4
298269 2002 XY	15.2	X	272.68524	165.00120	256.17252	12.75579	0.1641917	0.21208726	2.7847935	20	8 20.3	19.1
298270 2002 XW_{2}	16.1	X	329.56128	270.54389	110.16773	9.53970	0.2014890	0.21585158	2.7523219	20	10 17.1	18.8
298271 2002 XY_{5}	16.0	X	253.51526	34.57558	72.65022	10.16741	0.2388658	0.21334276	2.7738572	20	9 26.1	20.1
298272 2002 XY_{6}	15.9	X	333.83220	96.22382	315.91198	7.41015	0.2911459	0.22185085	2.7024769	20	12 18.2	17.9
298273 2002 XJ_{12}	15.5	X	326.58514	45.73709	310.40938	8.21185	0.1375767	0.21151675	2.7897987	20	8 28.4	18.7
298274 2002 XY_{23}	15.7	X	320.79309	13.80910	9.07274	9.07172	0.1671381	0.21424046	2.7661033	20	9 26.8	18.5
298275 2002 XF_{30}	16.1	X	350.49398	40.09715	340.95378	10.39128	0.2032661	0.21912676	2.7248280	20	11 25.0	19.1
298276 2002 XE_{33}	16.3	X	273.27311	297.67087	141.62637	8.44530	0.2023531	0.21231715	2.7827830	20	9 17.4	19.9
298277 2002 XG_{46}	15.6	X	3.66753	124.34006	252.03306	13.66326	0.1668695	0.22232691	2.6986176	20	12 11.0	18.6
298278 2002 XL_{54}	15.7	X	295.36522	323.27095	90.83271	11.05925	0.2693501	0.21362414	2.7714210	20	9 12.0	18.8
298279 2002 XV_{66}	16.0	X	280.26077	161.23939	256.27241	6.95571	0.2096937	0.21139289	2.7908883	20	8 22.1	19.6
298280 2002 XZ_{83}	16.4	X	280.66513	309.07982	114.28607	12.60974	0.2777966	0.21256697	2.7806022	20	8 26.2	19.9
298281 2002 XD_{94}	16.1	X	292.72457	195.88656	201.73316	5.26433	0.0637007	0.21159436	2.7891165	20	9 6.9	19.8
298282 2002 XL_{98}	16.5	X	293.99155	314.29793	81.53470	5.96204	0.1665289	0.21161153	2.7889657	20	8 27.8	19.8
298283 2002 XW_{100}	16.3	X	129.50910	238.03610	243.27434	2.68703	0.1549430	0.19442993	2.9509417	20	6 16.5	20.9
298284 2002 YC_{13}	15.9	X	306.60533	109.20460	270.28560	7.16947	0.1642856	0.20966165	2.8062308	20	8 20.3	19.1
298285 2002 YD_{31}	15.4	X	98.78467	168.49107	290.76068	9.82587	0.0770896	0.18350302	3.0669538	20	4 1.1	19.9
298286 2003 AG_{3}	15.6	X	22.40832	341.37815	261.06569	11.00868	0.0214182	0.19808201	2.9145579	20	6 21.2	19.4
298287 2003 AF_{22}	15.5	X	145.42723	37.37612	75.74237	9.10616	0.1761159	0.19244311	2.9712177	20	6 22.5	20.3
298288 2003 AC_{68}	16.1	X	253.12602	273.39534	120.32714	3.77850	0.1897136	0.19978524	2.8979693	20	6 22.9	20.4
298289 2003 AF_{70}	15.4	X	359.50242	263.53141	297.30134	10.68396	0.0315819	0.18236178	3.0797361	20	3 22.5	19.7
298290 2003 AZ_{72}	15.7	X	91.64395	153.83894	7.80559	4.59457	0.1677992	0.18958323	3.0010237	20	6 28.8	20.2
298291 2003 AL_{86}	15.7	X	264.36126	330.35243	104.73322	14.76099	0.1670884	0.21046827	2.7990562	20	9 8.2	19.7
298292 2003 AC_{90}	16.1	X	272.05305	314.01726	73.70752	3.37574	0.0168473	0.20357798	2.8618631	20	8 4.1	20.0
298293 2003 BA_{10}	15.2	X	36.17194	271.66001	274.45045	10.00149	0.0899839	0.18464570	3.0542875	20	4 30.4	19.3
298294 2003 BX_{11}	15.4	X	108.35542	160.14925	321.83066	15.81033	0.0412243	0.18510806	3.0491994	20	5 5.4	20.1
298295 2003 BW_{18}	15.2	X	13.43386	240.17408	296.42666	19.32054	0.1358385	0.17763254	3.1341591	20	3 6.0	19.3
298296 2003 BC_{27}	15.7	X	85.75340	206.40696	296.83761	8.07745	0.1724805	0.18365411	3.0652715	20	5 28.7	20.2
298297 2003 BF_{32}	15.7	X	252.25139	222.28238	135.40819	11.63059	0.0979634	0.19091103	2.9870927	20	5 21.6	20.2
298298 2003 BH_{39}	15.6	X	217.93082	276.71723	137.24636	13.64831	0.1414070	0.19525007	2.9426724	20	6 18.1	20.4
298299 2003 BH_{62}	15.5	X	102.59011	149.93676	334.99229	13.40833	0.2758229	0.18386650	3.0629105	20	6 5.0	20.6
298300 2003 BL_{78}	16.2	X	147.29096	113.73906	355.05818	6.57622	0.1802533	0.19209015	2.9748562	20	6 19.1	21.2
298301 2003 BH_{94}	15.6	X	271.58824	307.60794	7.32668	11.84202	0.1266020	0.18545513	3.0453939	20	4 11.5	20.0
298302 2003 CW_{11}	16.2	X	143.45796	142.21379	336.68925	9.29394	0.1778979	0.19082633	2.9879765	20	6 29.0	21.2
298303 2003 CY_{16}	16.0	X	67.09033	56.22054	110.95638	1.36223	0.1922169	0.18351111	3.0668637	20	6 8.4	20.1
298304 2003 CN_{18}	17.3	X	220.00529	76.85952	335.16991	3.19589	0.1545508	0.30617319	2.1801746	20	6 17.3	20.4
298305 2003 DO	17.2	X	4.07587	220.28940	325.31879	6.04807	0.1033346	0.29034652	2.2586987	20	2 25.5	19.2
298306 2003 DG_{1}	16.9	X	343.48519	248.61116	332.29982	7.99583	0.0881820	0.29310968	2.2444810	20	3 13.2	19.1
298307 2003 DZ_{7}	16.8	X	240.21942	273.78661	339.58686	6.61793	0.2027590	0.27724896	2.3292857	20	—	—
298308 2003 DR_{12}	15.6	X	64.87317	163.90277	340.01787	14.29821	0.1245929	0.17901182	3.1180393	20	4 18.8	20.0
298309 2003 DK_{18}	15.5	X	157.47718	339.94611	99.86920	11.14112	0.0416472	0.18637593	3.0353550	20	5 20.2	20.1
298310 2003 EV_{3}	17.3	X	314.27765	32.15799	165.94250	6.23934	0.1536034	0.28269641	2.2992658	20	—	—
298311 2003 EJ_{11}	17.6	X	3.85875	357.65445	191.13248	5.17844	0.1693781	0.28925101	2.2643982	20	2 22.6	19.3
298312 2003 EE_{18}	15.4	X	319.55019	93.38158	117.02043	6.37148	0.1230756	0.17117058	3.2125505	20	2 7.7	19.7
298313 2003 EV_{26}	15.6	X	11.17828	208.69163	347.79992	13.36240	0.1670400	0.17636295	3.1491824	20	4 4.2	19.2
298314 2003 ED_{33}	15.8	X	133.12900	309.15800	166.64811	16.78870	0.1741395	0.18570970	3.0426102	20	6 15.7	21.0
298315 2003 EG_{35}	15.4	X	61.39095	194.79943	335.68749	12.70843	0.2082738	0.18010476	3.1054122	20	6 5.6	19.7
298316 2003 ET_{38}	15.1	X	333.28941	254.31039	303.75423	13.17400	0.1665742	0.17042279	3.2219411	20	2 4.0	19.1
298317 2003 EL_{43}	14.9	X	327.43744	221.87553	2.99292	25.82934	0.1824800	0.17222791	3.1993889	20	3 6.4	19.0
298318 2003 ES_{44}	17.4	X	306.84554	256.11556	314.18806	5.02634	0.1797301	0.28184378	2.3039007	20	—	—
298319 2003 EC_{45}	17.0	X	257.32933	3.18516	234.86289	4.75584	0.1931324	0.27786119	2.3258629	20	—	—
298320 2003 EK_{50}	14.9	X	72.04786	126.80599	20.29982	17.01505	0.1377494	0.17792976	3.1306678	20	5 7.1	19.3

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	m		°	°	°	°		°				
298321 2003 ED_{56}	15.2	X	220.09796	109.17556	169.82430	26.80827	0.1351974	0.16081265	3.3490573	20	1 12.9	20.9
298322 2003 ER_{61}	16.1	X	46.99279	346.44667	175.56399	7.42942	0.0447233	0.17879806	3.1205240	20	4 15.1	20.3
298323 2003 FG_{30}	15.6	X	58.49041	346.67582	154.26717	11.68721	0.1857994	0.17638230	3.1489521	20	4 25.4	19.7
298324 2003 FY_{32}	16.6	X	200.01214	304.73268	14.12351	12.36601	0.2486022	0.27875329	2.3208980	20	2 4.8	20.8
298325 2003 FB_{38}	16.0	X	78.84848	120.27003	2.67318	8.75491	0.1367009	0.17640601	3.1486699	20	4 17.7	20.4
298326 2003 FB_{41}	15.7	X	27.12260	21.99034	151.71877	11.69446	0.0852605	0.17679926	3.1439991	20	4 6.9	19.8
298327 2003 FK_{46}	15.4	X	94.61911	136.10527	10.49381	13.59397	0.0835841	0.18138606	3.0907706	20	5 28.7	20.0
298328 2003 FY_{47}	18.1	X	278.57642	218.15906	1.27958	5.20992	0.1800025	0.27709790	2.3301322	20	—	—
298329 2003 FV_{50}	16.5	X	230.64276	70.46697	227.68715	5.33261	0.1677059	0.28186744	2.3037717	20	1 29.0	20.2
298330 2003 FR_{59}	18.0	X	273.80794	20.57755	211.27657	4.59661	0.1834998	0.27827083	2.3235798	20	—	—
298331 2003 FZ_{86}	16.9	X	63.63951	213.89048	318.15995	5.48827	0.0719640	0.29485705	2.2356048	20	5 19.4	19.4
298332 2003 FA_{111}	16.7	X	189.31327	150.63586	114.73340	7.34173	0.2437636	0.26735695	2.3863917	20	—	—
298333 2003 FF_{111}	15.8	X	13.78737	192.47567	341.19146	8.68021	0.0426441	0.17296864	3.1902482	20	3 13.3	20.0
298334 2003 FQ_{113}	15.9	X	74.73036	326.94800	188.83662	16.49206	0.2088996	0.18119925	3.0928946	20	6 7.1	20.5
298335 2003 FL_{121}	17.6	X	25.35215	11.13291	181.52641	3.85989	0.0851296	0.29243707	2.2479213	20	4 18.5	19.7
298336 2003 FP_{123}	17.6	X	205.67304	308.28233	323.02824	1.63025	0.1846164	0.27400232	2.3476493	20	—	—
298337 2003 FZ_{130}	15.5	X	126.49692	281.22424	218.16380	15.59544	0.1689165	0.18425324	3.0586231	20	7 4.1	20.6
298338 2003 GG_{2}	16.2	X	132.99361	211.66352	293.83627	4.32600	0.1797605	0.18794433	3.0184447	20	7 21.1	21.0
298339 2003 GK_{9}	17.2	X	173.48466	88.53505	168.08597	4.65246	0.2524607	0.26262514	2.4149706	20	—	—
298340 2003 GN_{12}	16.0	X	67.68221	145.06536	5.92658	5.96703	0.1681801	0.17924975	3.1152794	20	5 13.6	20.1
298341 2003 GK_{31}	17.1	X	243.51346	217.19855	40.19925	8.63260	0.1553518	0.27600120	2.3363007	20	—	—
298342 2003 GM_{52}	17.6	X	298.57457	159.67200	53.70940	2.74920	0.1391972	0.27906515	2.3191685	20	—	—
298343 2003 HV_{6}	16.1	X	35.90382	142.45421	24.88519	2.50540	0.0729904	0.17394148	3.1783419	20	4 7.9	20.2
298344 2003 HF_{10}	17.8	X	237.17303	19.84650	233.70443	1.53334	0.1849193	0.27300934	2.3533384	20	—	—
298345 2003 HK_{21}	15.9	X	63.02777	332.51524	201.98115	5.03829	0.1968514	0.17811728	3.1284701	20	6 13.1	20.0
298346 2003 HH_{31}	17.7	X	241.67484	42.93986	201.14006	2.35743	0.1661441	0.27237423	2.3569953	20	—	—
298347 2003 HD_{42}	16.5	X	145.30057	189.73212	112.34229	9.37570	0.2968460	0.26176904	2.4202331	20	—	—
298348 2003 HT_{43}	15.6	X	166.61282	261.70192	206.07153	14.33230	0.1507070	0.18395911	3.0618825	20	7 2.4	20.8
298349 2003 JW_{10}	17.2	X	9.75252	63.45792	93.58694	6.59997	0.0691838	0.28349647	2.2949380	20	1 30.3	19.6
298350 2003 JY_{14}	18.1	X	239.06197	50.59444	220.05653	2.36470	0.1954404	0.27631898	2.3345091	20	1 4.2	21.8
298351 2003 KU_{9}	17.5	X	194.59545	127.18617	142.65695	6.21729	0.1782524	0.26741134	2.3860681	20	—	—
298352 2003 KC_{11}	16.5	X	180.49380	68.92224	213.89542	5.97182	0.2241661	0.26502865	2.4003477	20	—	—
298353 2003 KU_{16}	15.3	X	99.67283	310.32677	206.65221	15.54108	0.1719038	0.17810619	3.1285999	20	6 29.7	20.3
298354 2003 KW_{32}	17.2	X	159.34055	172.81889	154.47989	4.60187	0.1066082	0.27121621	2.3636997	20	—	—
298355 2003 LD_{4}	16.4	X	218.55278	154.19980	103.49120	13.05998	0.2332952	0.26804386	2.3823129	20	—	—
298356 2003 OE_{26}	16.7	X	350.52872	294.38506	215.56112	5.72966	0.0917615	0.26531246	2.3986356	20	—	—
298357 2003 OL_{32}	17.4	X	350.89622	40.38061	84.69060	1.73642	0.1667998	0.26094627	2.4253178	20	—	—
298358 2003 PQ_{8}	16.7	X	104.60302	78.17320	304.11587	7.99426	0.2677392	0.25845438	2.4408820	20	1 26.0	19.6
298359 2003 QG_{29}	16.7	X	51.17481	263.52466	92.33067	8.47342	0.2999832	0.24465116	2.5318494	20	—	—
298360 2003 QV_{57}	17.6	X	170.08275	107.47457	169.95995	22.66105	0.0594754	0.37129406	1.9171557	20	—	—
298361 2003 QR_{59}	17.2	X	148.52391	323.84728	356.54757	11.47593	0.2875781	0.25713889	2.4491998	20	—	—
298362 2003 QJ_{73}	17.5	X	260.63682	226.31933	338.51278	21.89808	0.0077325	0.37370132	1.9089137	20	—	—
298363 2003 QH_{89}	16.6	X	103.53633	193.30762	101.60345	3.51298	0.1296945	0.24777501	2.5105240	20	12 27.5	20.2
298364 2003 QM_{89}	17.3	X	70.75610	152.92350	228.30476	1.65030	0.1768669	0.25270807	2.4777452	20	—	—
298365 2003 QQ_{92}	16.8	X	98.49371	274.13252	81.94205	6.93076	0.3106626	0.25210878	2.4816702	20	—	—
298366 2003 QX_{95}	17.5	X	69.83743	113.43371	176.67552	7.38309	0.1932182	0.23912271	2.5707243	20	11 24.0	21.5
298367 2003 QB_{103}	18.0	X	94.65410	25.63888	338.04952	19.33378	0.0438983	0.37266142	1.9124632	20	—	—
298368 2003 QL_{105}	17.4	X	88.69054	330.39375	16.04187	21.17152	0.0906047	0.36621047	1.9348570	20	—	—
298369 2003 QW_{109}	17.0	X	61.60818	94.17475	300.39549	17.87247	0.0984864	0.36918355	1.9244553	20	—	—
298370 2003 RK_{2}	16.9	X	329.30378	240.22496	178.05329	30.88226	0.3581710	0.23388110	2.6089913	20	12 31.2	19.5
298371 2003 RY_{7}	17.1	X	219.78665	68.80051	182.20451	21.91393	0.0487542	0.37465469	1.9056740	20	—	—
298372 2003 RW_{17}	17.0	X	104.20250	343.48259	44.80976	3.24137	0.1864378	0.25773127	2.4454454	20	1 21.8	20.0
298373 2003 SX_{2}	16.2	X	336.33555	254.31844	187.06036	27.15357	0.1087389	0.24298687	2.5433971	20	—	—
298374 2003 SZ_{3}	17.1	X	319.97507	256.27355	186.40591	2.61562	0.1183094	0.24039928	2.5616155	20	12 27.7	19.7
298375 2003 SO_{31}	17.2	X	41.19152	328.90567	3.38529	2.97297	0.0972902	0.23694327	2.5864642	20	11 29.4	20.5
298376 2003 SU_{45}	14.5	X	27.90687	337.81406	43.35025	9.17054	0.2752199	0.12480435	3.9656669	20	—	—
298377 2003 SZ_{49}	15.9	X	77.28078	117.01990	306.33568	7.42408	0.2516002	0.25673695	2.4517554	20	2 6.4	18.2
298378 2003 SM_{51}	15.8	X	249.55062	126.73337	35.86021	8.85631	0.1112726	0.24253507	2.5465548	20	12 21.1	19.0
298379 2003 SP_{51}	16.7	X	77.60620	283.42707	131.98101	5.41214	0.1244825	0.25521767	2.4614757	20	1 7.6	19.3
298380 2003 ST_{58}	17.2	X	100.60463	142.79086	217.66677	9.03193	0.1929623	0.25379560	2.4706619	20	—	—
298381 2003 SK_{72}	17.0	X	68.12632	29.49164	348.80007	18.22791	0.0600156	0.36851608	1.9267783	20	—	—
298382 2003 SC_{76}	17.4	X	14.24177	49.57493	355.81200	5.75942	0.2618080	0.24242859	2.5473003	20	—	—
298383 2003 SD_{101}	16.5	X	17.49093	125.96408	227.38261	12.73853	0.1941727	0.23856277	2.5747453	20	12 10.6	19.6
298384 2003 SA_{116}	16.9	X	107.74868	146.13544	236.26073	4.47711	0.0957165	0.25685260	2.4510194	20	1 3.5	19.8
298385 2003 SU_{127}	17.3	X	131.99450	109.30897	191.94325	21.51118	0.0837688	0.36731151	1.9309885	20	—	—
298386 2003 SQ_{134}	17.4	X	28.45697	102.49645	10.52329	20.67769	0.0873081	0.37611949	1.9007230	20	—	—
298387 2003 SV_{148}	17.1	X	8.58164	1.61731	351.92693	2.41036	0.1820299	0.23546844	2.5972530	20	11 23.8	20.0
298388 2003 SS_{149}	16.8	X	9.88584	298.29857	125.01583	7.30988	0.2697333	0.24484787	2.5304931	20	—	—
298389 2003 SM_{166}	16.6	X	130.55229	211.50832	51.10840	4.73283	0.1407382	0.24490361	2.5301092	20	12 13.2	20.6
298390 2003 SV_{171}	16.8	X	258.26934	228.07094	330.06899	6.83536	0.0830340	0.25304554	2.4755418	20	—	—
298391 2003 SJ_{180}	17.2	X	58.37709	126.07230	252.07313	4.58383	0.1675477	0.24742950	2.5128606	20	—	—
298392 2003 ST_{188}	15.7	X	243.78229	86.75859	89.22550	4.50805	0.0885833	0.24472065	2.5313701	20	—	—
298393 2003 SW_{193}	15.0	X	11.50231	87.29550	329.51875	10.99966	0.2658347	0.12448002	3.9725523	20	—	—
298394 2003 SN_{201}	17.4	X	175.22876	84.34879	210.10473	21.51849	0.1582531	0.37440110	1.9065344	20	—	—
298395 2003 SA_{207}	17.1	X	25.14990	280.32441	95.84486	1.40072	0.1248558	0.24166358	2.5526733	20	—	—
298396 2003 SE_{236}	16.1	X	301.88342	300.44044	183.77809	3.59813	0.0770348	0.24610576	2.5218633	20	—	—
298397 2003 SE_{242}	17.0	X	215.82698	260.83071	269.31588	1.88538	0.0334845	0.23666335	2.5885032	20	11 26.7	20.6
298398 2003 SM_{242}	17.8	X	344.22368	62.77681	17.90808	7.80490	0.1611891	0.24133091	2.5550187	20	—	—
298399 2003 SR_{243}	17.7	X	120.94343	108.49714	173.32583	3.19051	0.1543452	0.24553829	2.5257473	20	12 27.9	21.7
298400 2003 SR_{253}	18.4	X	54.14839	176.42829	194.77893	10.92210	0.2921098	0.24541374	2.5266018	20	—	—

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	m		°	°	°	°		°				
298401 2003 SS_{261}	16.8	X	34.41353	112.29560	223.36612	10.64464	0.2124689	0.23739102	2.5832109	20	12 12.7	20.3
298402 2003 SC_{263}	16.3	X	65.01945	261.79785	34.53696	10.00629	0.1740613	0.23880802	2.5729822	20	11 21.6	20.1
298403 2003 SK_{268}	17.6	X	54.36767	27.78276	291.15706	1.89569	0.0418086	0.23578093	2.5949576	20	11 20.9	21.0
298404 2003 SD_{269}	17.3	X	85.61502	120.76541	195.08553	5.27661	0.2536335	0.24448249	2.5330137	20	—	—
298405 2003 SE_{270}	16.9	X	24.30849	244.26327	134.43500	7.95819	0.1968688	0.24074746	2.5591451	20	—	—
298406 2003 SZ_{270}	16.8	X	44.22393	293.13977	62.59140	13.92081	0.2835877	0.24302435	2.5431356	20	—	—
298407 2003 SU_{271}	16.3	X	16.91883	312.81238	91.10651	14.59692	0.1907292	0.24444229	2.5332914	20	—	—
298408 2003 SL_{280}	16.7	X	309.58944	109.18126	337.17522	4.88353	0.0757671	0.23972280	2.5664323	20	12 14.4	19.7
298409 2003 SR_{294}	17.0	X	36.24617	199.94425	189.24182	13.76473	0.2543454	0.24236265	2.5477624	20	—	—
298410 2003 SK_{296}	16.1	X	31.40954	341.15729	337.52660	15.71771	0.2153256	0.23533203	2.5982565	20	11 10.5	19.8
298411 2003 SQ_{296}	16.1	X	106.26063	318.16723	316.94932	14.03192	0.1693528	0.24012415	2.5635718	20	12 5.6	20.5
298412 2003 SB_{304}	16.0	X	38.63973	121.08110	254.31124	12.25616	0.0560309	0.24238927	2.5475759	20	—	—
298413 2003 SH_{307}	15.9	X	75.70640	65.62287	295.72929	12.72751	0.1672644	0.24664415	2.5181920	20	—	—
298414 2003 ST_{307}	16.9	X	116.47345	328.36719	303.71647	4.02891	0.1952918	0.24454942	2.5325515	20	12 13.1	21.1
298415 2003 SF_{322}	16.3	X	319.09033	309.82607	132.16509	9.64556	0.1655267	0.23702477	2.5858712	20	12 26.0	18.9
298416 2003 SO_{322}	16.5	X	92.06956	82.25660	268.51600	4.74694	0.0470736	0.24695612	2.5160708	20	—	—
298417 2003 SK_{325}	15.7	X	23.73944	83.47158	286.40711	3.74298	0.1646232	0.12522752	3.9567280	20	12 4.8	20.8
298418 2003 SW_{331}	16.3	X	67.96567	341.47698	18.47046	10.71887	0.2579882	0.24305508	2.5429213	20	—	—
298419 2003 SP_{346}	17.1	X	194.37305	17.20756	176.84845	8.11310	0.1590030	0.24131983	2.5550969	20	11 20.3	21.0
298420 2003 SO_{361}	14.6	X	16.39084	355.61028	41.86045	5.11798	0.0969679	0.12542708	3.9525299	20	12 18.8	19.8
298421 2003 SR_{380}	17.5	X	314.15851	28.38482	46.60292	2.21406	0.1661115	0.23784080	2.5799531	20	12 5.3	19.9
298422 2003 SV_{406}	16.3	X	80.14517	222.72185	81.87747	12.71507	0.1622276	0.23949143	2.5680850	20	12 17.3	20.0
298423 2003 SB_{407}	16.5	X	117.04597	144.74072	86.78202	13.72340	0.2050405	0.23138047	2.6277553	20	10 30.6	21.1
298424 2003 SG_{423}	17.0	X	316.62016	230.19096	192.13358	14.20788	0.0655983	0.23576069	2.5951061	20	11 23.8	20.3
298425 2003 TU	16.8	X	321.61578	245.81520	231.80749	21.18410	0.0769387	0.36529814	1.9380772	20	—	—
298426 2003 TJ_{12}	17.7	X	335.75639	35.76710	38.45240	6.16718	0.2939995	0.23843364	2.5756748	20	—	—
298427 2003 TW_{15}	16.5	X	358.10132	284.29395	145.75733	6.48318	0.2196406	0.24220047	2.5488996	20	—	—
298428 2003 TR_{51}	16.9	X	294.11340	274.64633	229.83815	19.32833	0.0838437	0.36556470	1.9371350	20	—	—
298429 2003 TN_{53}	16.7	X	145.97964	53.83067	170.35406	7.48275	0.0158881	0.23553693	2.5967494	20	11 12.8	20.3
298430 2003 TF_{57}	16.1	X	40.05032	55.59259	289.50735	12.41812	0.0855868	0.23871999	2.5736147	20	12 14.0	19.6
298431 2003 TO_{58}	16.9	X	18.30333	169.53778	240.80079	6.96799	0.3141775	0.24009492	2.5637799	20	—	—
298432 2003 UY_{1}	16.6	X	97.80128	343.46517	281.80556	2.57537	0.0377503	0.23472568	2.6027292	20	11 4.6	20.2
298433 2003 US_{10}	16.0	X	344.75182	23.78055	24.16803	16.07359	0.1375279	0.23586860	2.5943146	20	12 21.9	19.2
298434 2003 UT_{10}	17.3	X	48.07723	301.30289	64.77442	10.37523	0.2623593	0.24212661	2.5494179	20	—	—
298435 2003 UO_{13}	17.3	X	357.13812	156.17352	324.44530	18.03329	0.0715906	0.37113347	1.9177087	20	—	—
298436 2003 UG_{16}	16.0	X	342.46079	22.05615	41.56698	13.42160	0.2771513	0.23756204	2.5819710	20	—	—
298437 2003 UN_{19}	16.5	X	316.75089	184.78295	219.97883	13.02429	0.1683673	0.23236070	2.6203598	20	10 24.4	19.0
298438 2003 UU_{20}	16.8	X	154.85717	199.09829	55.79541	27.32023	0.0211259	0.35710737	1.9676001	20	—	—
298439 2003 UB_{24}	16.8	X	343.04143	233.82773	205.44318	4.99909	0.1159414	0.24218081	2.5490375	20	—	—
298440 2003 UQ_{28}	16.9	X	341.35245	180.47279	213.65241	2.93166	0.0884398	0.23346174	2.6121147	20	11 23.3	19.9
298441 2003 UW_{31}	17.5	X	352.71361	242.71619	194.95496	12.73758	0.1513340	0.24316363	2.5421645	20	—	—
298442 2003 UQ_{34}	17.3	X	159.35835	43.64878	216.67696	7.67903	0.0506319	0.24427371	2.5344568	20	—	—
298443 2003 UV_{36}	16.0	X	5.04369	116.74228	265.16107	12.96318	0.1778317	0.23693163	2.5865489	20	12 26.6	19.0
298444 2003 UD_{46}	17.1	X	117.12680	263.40374	35.62541	12.10209	0.1179488	0.24351445	2.5397223	20	—	—
298445 2003 US_{53}	17.2	X	336.84633	50.19522	353.13725	8.93987	0.1163549	0.23454637	2.6040555	20	11 28.1	20.2
298446 2003 UQ_{55}	17.0	X	332.10596	57.46686	1.33776	4.77439	0.2319509	0.23455855	2.6039654	20	12 23.8	19.2
298447 2003 UE_{56}	17.2	X	40.17252	232.36021	158.09826	6.23211	0.2219191	0.24436730	2.5338097	20	—	—
298448 2003 UM_{58}	16.5	X	33.37328	75.39935	235.42634	7.31177	0.2311436	0.23523234	2.5989905	20	11 11.6	19.7
298449 2003 US_{64}	16.2	X	32.59147	294.09081	129.82442	13.26608	0.1730294	0.24611712	2.5217856	20	—	—
298450 2003 UH_{68}	16.8	X	304.47759	247.75674	195.40659	10.47531	0.1332182	0.23553361	2.5967738	20	11 29.7	19.6
298451 2003 UF_{73}	16.9	X	90.91716	122.45962	217.55791	10.98189	0.1001733	0.24411775	2.5355362	20	—	—
298452 2003 UF_{76}	17.2	X	47.05749	126.63812	261.70488	10.63158	0.1849594	0.24571421	2.5245416	20	—	—
298453 2003 UA_{78}	16.5	X	340.91104	72.51405	341.37602	3.74202	0.2013043	0.23695922	2.5863481	20	—	—
298454 2003 UG_{84}	17.3	X	75.21837	250.78503	38.17733	12.83070	0.1555092	0.23554419	2.5966960	20	11 20.2	21.2
298455 2003 UC_{89}	16.8	X	245.48517	304.18262	219.41763	16.46252	0.1258028	0.23509383	2.6000112	20	12 12.4	20.3
298456 2003 UV_{95}	15.0	X	12.62619	1.55906	56.04103	2.98439	0.2506661	0.12291202	4.0062664	20	—	—
298457 2003 UF_{109}	16.6	X	23.95531	8.99095	3.06668	9.98780	0.1081664	0.23775821	2.5805505	20	12 31.8	20.1
298458 2003 UX_{119}	17.1	X	53.45491	70.54703	245.68240	3.14500	0.1895335	0.23785048	2.5798831	20	12 7.2	20.6
298459 2003 UY_{126}	17.3	X	243.59157	258.05756	232.13863	2.77865	0.1982854	0.23022974	2.6365040	20	10 15.6	21.0
298460 2003 UF_{128}	16.2	X	67.82115	66.92003	252.29197	8.34993	0.0232635	0.23668447	2.5883492	20	12 6.2	19.7
298461 2003 UV_{128}	18.3	X	348.81432	201.88799	220.50615	3.29597	0.1846417	0.23887772	2.5724817	20	—	—
298462 2003 UJ_{142}	16.2	X	357.08101	210.08848	176.10505	18.27391	0.2074069	0.23706004	2.5856148	20	12 24.5	19.5
298463 2003 UM_{145}	17.4	X	23.18642	324.87852	56.92185	6.92255	0.2582662	0.23932537	2.5692729	20	—	—
298464 2003 UL_{150}	17.1	X	348.57365	68.19689	352.29981	1.78516	0.2890295	0.23754353	2.5821051	20	—	—
298465 2003 UG_{151}	16.5	X	328.69901	52.61445	2.16416	14.52586	0.1203709	0.23505081	2.6003285	20	11 28.3	19.6
298466 2003 UQ_{158}	16.4	X	320.68129	35.03116	40.43845	13.67467	0.1478651	0.23488500	2.6015521	20	12 16.2	19.2
298467 2003 UW_{169}	17.5	X	64.31650	89.22435	261.17206	4.62963	0.2511895	0.24346675	2.5400539	20	—	—
298468 2003 UW_{188}	15.9	X	56.01925	324.86295	12.52108	10.46427	0.1437198	0.23921391	2.5700709	20	12 31.8	19.8
298469 2003 UE_{197}	16.7	X	38.25549	329.34940	68.22771	3.70481	0.1245264	0.24430923	2.5342111	20	—	—
298470 2003 UY_{199}	17.4	X	79.35880	294.90970	58.14751	4.60504	0.1800398	0.24641848	2.5197292	20	—	—
298471 2003 UA_{201}	16.2	X	124.65323	135.71869	182.91934	4.58318	0.0336491	0.24679651	2.5171555	20	—	—
298472 2003 UO_{202}	16.8	X	55.20357	261.31351	125.38905	2.41437	0.0571734	0.24507879	2.5289033	20	—	—
298473 2003 UT_{205}	16.8	X	61.57155	129.97473	239.79017	11.24452	0.2761184	0.24374903	2.5380926	20	—	—
298474 2003 UW_{205}	15.8	X	355.03224	202.72759	240.68055	11.57160	0.2672864	0.23947340	2.5682139	20	—	—
298475 2003 UY_{211}	16.3	X	6.91225	167.06970	218.33340	12.74507	0.1353304	0.23641682	2.5903024	20	12 26.5	19.7
298476 2003 UE_{212}	16.2	X	175.56609	47.89449	207.85964	7.53855	0.1056158	0.24278556	2.5448029	20	—	—
298477 2003 UZ_{215}	17.2	X	55.84074	259.24847	86.92310	4.09434	0.1911132	0.24149944	2.5538299	20	—	—
298478 2003 UR_{218}	16.6	X	351.19707	356.93666	76.86790	6.26871	0.1239817	0.24111143	2.5565690	20	—	—
298479 2003 UH_{225}	16.5	X	344.48120	57.74052	9.43748	5.23734	0.1420493	0.23908465	2.5709971	20	—	—
298480 2003 UN_{227}	16.6	X	46.44573	98.23984	279.27377	3.44061	0.1062762	0.24250497	2.5467655	20	—	—

ELEMENTS AND OPPOSITION DATES IN 2020

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Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
	m		°	°	°	°		°				
298481 2003 UZ_{232}	17.3	X	49.92603	327.03977	30.19841	5.28764	0.2006634	0.24182858	2.5515121	20	—	—
298482 2003 UW_{238}	16.3	X	192.91617	228.98082	7.33511	5.29115	0.1255542	0.24621305	2.5211306	20	—	—
298483 2003 UL_{249}	17.2	X	6.86330	158.63888	291.13700	2.88857	0.0423929	0.24733488	2.5135014	20	—	—
298484 2003 UQ_{261}	15.1	X	53.82172	152.99087	212.00051	7.50319	0.1898286	0.12456545	3.9707356	20	—	—
298485 2003 UT_{261}	16.1	X	143.15498	213.29334	34.76611	12.80419	0.1371117	0.23869844	2.5737696	20	12 4.3	20.3
298486 2003 UK_{264}	16.9	X	329.22024	237.11628	168.61086	6.54366	0.2007165	0.23294586	2.6159697	20	11 25.4	19.3
298487 2003 US_{264}	16.0	X	286.00629	9.99692	85.18125	9.07763	0.1470882	0.23152250	2.6266805	20	11 12.0	18.9
298488 2003 UY_{265}	16.9	X	324.51168	201.65168	221.66685	5.15239	0.2072265	0.23410070	2.6073595	20	12 10.6	19.0
298489 2003 UX_{266}	16.8	X	41.01779	305.16136	58.48849	7.96475	0.2204541	0.24020879	2.5629696	20	—	—
298490 2003 UR_{268}	16.9	X	34.67920	351.93509	36.17382	4.00846	0.1411277	0.24119629	2.5559693	20	—	—
298491 2003 UD_{276}	16.1	X	353.26834	182.92868	236.97885	9.07529	0.1881056	0.23812703	2.5778853	20	—	—
298492 2003 UO_{276}	16.6	X	9.74479	74.68056	338.76977	5.39064	0.2249558	0.24107976	2.5567929	20	—	—
298493 2003 UP_{280}	16.8	X	33.65174	239.22759	101.66351	5.62460	0.2650904	0.23649824	2.5897078	20	12 25.5	20.4
298494 2003 US_{282}	16.1	X	353.41039	270.46689	104.07426	12.61303	0.1928865	0.23192963	2.6236057	20	11 30.3	18.9
298495 2003 UB_{287}	16.9	X	238.30212	296.16201	212.05114	4.26482	0.1295610	0.23219723	2.6215895	20	11 12.7	20.4
298496 2003 UG_{315}	18.5	X	11.31773	225.75954	184.24503	1.88459	0.1698780	0.24403152	2.5361334	20	—	—
298497 2003 UW_{343}	17.0	X	21.98804	186.23247	199.23756	11.26733	0.0705725	0.24409487	2.5356946	20	—	—
298498 2003 UD_{345}	15.0	X	320.22097	260.84852	194.80228	5.28504	0.1377195	0.12390787	3.9847718	20	12 6.4	20.0
298499 2003 UU_{367}	17.8	X	60.10755	289.03052	50.37596	8.10968	0.2549168	0.24217901	2.5490502	20	—	—
298500 2003 US_{373}	16.7	X	308.24450	251.24506	258.72439	5.86541	0.0634252	0.25358024	2.4720606	20	—	—
298501 2003 UC_{415}	17.5	X	351.27277	55.01458	352.40078	5.03837	0.1533744	0.23889782	2.5723374	20	—	—
298502 2003 VD_{2}	17.1	X	6.25594	42.56941	25.49794	21.04367	0.0888711	0.36058380	1.9549331	20	—	—
298503 2003 VT_{2}	15.8	X	12.71650	52.28755	14.77878	32.39774	0.2165879	0.24012668	2.5635538	20	—	—
298504 2003 VD_{7}	17.0	X	291.82010	50.36431	44.15695	4.03749	0.1316215	0.23251466	2.6192029	20	11 20.3	19.7
298505 2003 VG_{9}	16.9	X	20.20711	340.71652	52.65992	3.89375	0.2236521	0.23930766	2.5693996	20	—	—
298506 2003 VK_{9}	15.9	X	254.22163	244.47585	235.98464	12.08516	0.1174085	0.22898243	2.6460697	20	10 27.9	19.5
298507 2003 VD_{11}	17.1	X	49.11536	312.71376	47.01396	4.10037	0.2656041	0.24112414	2.5564792	20	—	—
298508 2003 WU	16.7	X	4.00161	308.53684	72.07423	2.76320	0.1333386	0.23475678	2.6024993	20	12 16.3	19.8
298509 2003 WQ_{6}	17.0	X	37.67397	18.47296	22.71680	4.51021	0.1789529	0.24322947	2.5417057	20	—	—
298510 2003 WU_{9}	16.0	X	99.41162	266.90197	25.23706	14.90480	0.1583178	0.23686554	2.5870300	20	12 18.2	20.3
298511 2003 WO_{13}	17.5	X	20.82298	14.13001	19.50455	3.11980	0.1724335	0.24015526	2.5633504	20	—	—
298512 2003 WL_{17}	15.6	X	215.89264	212.11888	294.17300	13.44636	0.0838612	0.22849235	2.6498519	20	10 11.9	19.7
298513 2003 WF_{19}	16.8	X	4.88782	354.52240	40.54655	15.41720	0.1324345	0.23643886	2.5901414	20	—	—
298514 2003 WX_{19}	15.6	X	317.88082	163.54877	267.23500	13.08698	0.0715622	0.23336807	2.6128136	20	12 4.6	18.7
298515 2003 WB_{28}	16.5	X	299.74981	144.84266	2.10190	3.96234	0.0674641	0.24290724	2.5439530	20	—	—
298516 2003 WN_{28}	16.7	X	347.51895	140.90408	270.41493	3.04188	0.1390748	0.23648490	2.5898052	20	—	—
298517 2003 WE_{32}	16.8	X	23.50673	100.82938	292.65742	2.26942	0.1619773	0.23976270	2.5661476	20	—	—
298518 2003 WY_{32}	17.1	X	293.31579	128.59052	345.46319	2.69002	0.2231118	0.23474536	2.6025837	20	12 13.0	19.3
298519 2003 WB_{33}	15.9	X	36.13628	77.32499	243.69171	9.86890	0.0737191	0.23152391	2.6266698	20	11 2.8	19.3
298520 2003 WH_{35}	16.4	X	329.24183	222.77632	243.87790	12.46519	0.1349166	0.24261916	2.5459663	20	—	—
298521 2003 WC_{38}	15.5	X	283.11143	165.56766	266.99656	21.32260	0.0430520	0.22745297	2.6579184	20	10 7.6	19.6
298522 2003 WE_{40}	16.9	X	315.83599	131.89031	329.20808	3.10028	0.1596662	0.23736856	2.5833738	20	—	—
298523 2003 WX_{40}	16.8	X	5.46685	139.83228	275.02502	4.14887	0.2667514	0.23894752	2.5719806	20	—	—
298524 2003 WL_{41}	16.6	X	19.55999	349.14686	47.40527	7.88949	0.2025139	0.23880467	2.5730063	20	—	—
298525 2003 WF_{51}	17.0	X	65.95523	311.53793	7.64291	9.65255	0.2112650	0.23815536	2.5776809	20	12 26.0	21.2
298526 2003 WM_{66}	15.9	X	115.15483	156.95476	47.31247	6.78152	0.2015681	0.21911723	2.7249071	20	9 22.0	20.4
298527 2003 WQ_{72}	17.7	X	10.33308	343.17007	39.13013	6.28754	0.2871841	0.23647876	2.5898501	20	—	—
298528 2003 WS_{78}	17.1	X	358.87179	52.55503	330.05796	4.22259	0.2125459	0.23489766	2.6014586	20	12 22.9	19.9
298529 2003 WE_{81}	16.7	X	76.08014	23.08999	307.20487	3.87680	0.3247070	0.24205740	2.5499039	20	—	—
298530 2003 WM_{91}	17.3	X	33.43992	238.55125	142.43308	3.45586	0.2221957	0.24043159	2.5613860	20	—	—
298531 2003 WG_{97}	16.9	X	352.17521	254.24205	187.37648	3.59703	0.2713352	0.23951952	2.5678842	20	—	—
298532 2003 WA_{99}	17.2	X	39.77760	44.10218	342.34154	3.82480	0.2972807	0.24249539	2.5468325	20	—	—
298533 2003 WG_{104}	17.0	X	18.02495	333.32337	79.03937	5.61360	0.2590754	0.24060199	2.5601765	20	—	—
298534 2003 WN_{111}	17.2	X	61.91574	339.17758	9.13942	2.37490	0.2105216	0.24078203	2.5589001	20	—	—
298535 2003 WM_{114}	15.9	X	19.74566	7.71133	269.43775	8.16794	0.0189527	0.21925580	2.7237589	20	8 2.3	19.5
298536 2003 WT_{115}	16.0	X	25.63955	111.02021	251.16692	27.51620	0.2165726	0.23592368	2.5939107	20	12 30.7	19.7
298537 2003 WB_{118}	15.6	X	41.62138	64.91136	281.91876	6.66337	0.2138597	0.23573511	2.5952939	20	—	—
298538 2003 WF_{121}	16.7	X	30.60860	354.53939	42.94822	4.83071	0.3162364	0.24086510	2.5583118	20	—	—
298539 2003 WM_{121}	17.2	X	36.57593	37.96284	357.24056	4.97729	0.2810952	0.24106168	2.5569207	20	—	—
298540 2003 WJ_{124}	16.4	X	17.77709	110.37551	274.74785	11.55736	0.2069888	0.23569682	2.5955749	20	—	—
298541 2003 WM_{126}	16.9	X	10.64257	46.00840	20.36012	5.32192	0.3044358	0.23897049	2.5718158	20	—	—
298542 2003 WK_{128}	17.1	X	68.20693	50.57789	287.77869	3.02193	0.1976944	0.24216072	2.5491785	20	—	—
298543 2003 WK_{130}	16.5	X	357.75688	331.79423	54.77170	6.64920	0.2292497	0.23397017	2.6083291	20	12 28.7	19.2
298544 2003 WN_{133}	16.2	X	272.97188	27.95959	81.73994	4.42055	0.1255327	0.23046322	2.6347230	20	11 11.6	19.2
298545 2003 WC_{136}	16.2	X	25.30894	328.18569	65.69809	3.53248	0.1544332	0.23866361	2.5740200	20	—	—
298546 2003 WN_{136}	16.8	X	26.29329	302.53387	69.88077	12.68810	0.2839345	0.23767133	2.5811794	20	—	—
298547 2003 WX_{140}	16.2	X	334.46420	140.28255	255.75572	11.52618	0.1755018	0.22974240	2.6402311	20	11 17.1	18.7
298548 2003 WA_{147}	16.6	X	23.40423	280.41431	76.40949	11.84155	0.1703475	0.23426377	2.6061493	20	12 18.3	19.8
298549 2003 WC_{147}	17.1	X	17.54279	307.53172	107.34538	3.54380	0.1980569	0.24064588	2.5598652	20	—	—
298550 2003 WG_{148}	15.7	X	45.51641	3.47013	4.62637	15.36609	0.1759635	0.24083168	2.5585484	20	—	—
298551 2003 WV_{149}	15.9	X	327.66877	185.52903	232.26721	21.40368	0.0614548	0.23278435	2.6171796	20	12 1.7	19.1
298552 2003 WH_{151}	16.8	X	30.16309	156.68758	211.60972	10.93137	0.1046153	0.23620927	2.5918195	20	12 31.5	20.4
298553 2003 WJ_{159}	16.2	X	64.65921	219.09249	152.11305	11.86933	0.2121558	0.24332118	2.5410669	20	—	—
298554 2003 WJ_{165}	17.1	X	58.23997	284.30469	77.43427	4.15728	0.2549220	0.24152648	2.5536393	20	—	—
298555 2003 WW_{171}	16.2	X	28.89721	232.44052	178.59210	14.42411	0.1817099	0.24262096	2.5459537	20	—	—
298556 2003 WM_{188}	15.1	X	184.82630	241.92003	268.99651	24.00939	0.1822155	0.21701257	2.7424968	20	8 30.6	20.2
298557 2003 XC_{2}	17.1	X	333.75151	346.04384	110.78498	4.43674	0.2380374	0.23789882	2.5795336	20	—	—
298558 2003 XQ_{3}	17.0	X	50.38645	192.41028	178.21471	4.98018	0.2371288	0.24048543	2.5610037	20	—	—
298559 2003 XX_{7}	16.4	X	65.36710	339.81377	8.01616	6.05976	0.3139499	0.24074770	2.5591433	20	—	—
298560 2003 XM_{8}	15.8	X	30.01824	89.90826	328.71064	11.61688	0.2022707	0.24312156	2.5424577	20	—	—

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Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
	m		°	°	°	°		°				
298561 2003 XV_8	15.8	X	65.22412	46.43161	325.13511	13.20877	0.2098458	0.24315208	2.5422449	20	—	—
298562 2003 XR_9	15.9	X	337.65245	128.55482	329.43570	13.41546	0.1482374	0.23749296	2.5824716	20	—	—
298563 2003 XC_{10}	16.6	X	9.34500	57.90992	12.52761	12.51893	0.2510147	0.23935969	2.5690272	20	—	—
298564 2003 XM_{19}	16.5	X	345.02228	51.01421	29.95389	12.69837	0.2747874	0.23524944	2.5988646	20	—	—
298565 2003 XZ_{20}	17.0	X	261.45832	53.13160	50.36463	2.90034	0.1803334	0.22662843	2.6643613	20	10 7.7	20.5
298566 2003 XU_{31}	16.3	X	164.92935	122.66980	71.35353	10.35974	0.0663596	0.22701296	2.6613518	20	10 26.6	20.3
298567 2003 XH_{39}	16.1	X	10.91821	69.51194	6.62662	15.06498	0.1921114	0.23882799	2.5728387	20	—	—
298568 2003 XK_{39}	16.8	X	341.12831	282.96578	133.78841	6.64527	0.2739579	0.23495378	2.6010443	20	—	—
298569 2003 XU_{40}	16.8	X	69.43208	312.39833	58.60401	1.87098	0.1687436	0.24306234	2.5428706	20	—	—
298570 2003 XK_{43}	16.6	X	354.59365	136.71184	295.63618	3.34453	0.1925276	0.23711438	2.5852197	20	—	—
298571 2003 YC_6	15.9	X	307.36553	167.32484	277.45140	14.91721	0.1006559	0.23328369	2.6134436	20	12 6.4	19.0
298572 2003 YV_7	16.5	X	316.42550	160.76964	282.05216	5.21412	0.2718972	0.23072067	2.6327627	20	12 20.9	18.1
298573 2003 YA_8	16.9	X	60.37813	47.30619	280.23165	16.86490	0.0627939	0.35108113	1.9900518	20	—	—
298574 2003 YX_9	16.6	X	340.52396	291.88879	90.63890	9.49934	0.2306834	0.22892838	2.6464861	20	11 18.3	18.9
298575 2003 YL_{11}	17.0	X	29.49380	28.57947	12.30734	5.05342	0.3142000	0.24045416	2.5612257	20	—	—
298576 2003 YX_{11}	16.2	X	241.10728	169.50414	312.62035	13.87918	0.0639121	0.22428006	2.6829275	20	10 13.5	20.2
298577 2003 YB_{12}	16.8	X	301.63871	134.02039	317.02358	11.94721	0.2238269	0.23006280	2.6377793	20	11 22.2	19.4
298578 2003 YC_{20}	16.3	X	325.62071	342.97217	79.47227	5.76853	0.1372768	0.22843494	2.6502959	20	12 6.3	19.1
298579 2003 YV_{21}	16.0	X	152.07569	245.03560	299.14017	10.62740	0.0241128	0.21719848	2.7409316	20	9 18.8	20.0
298580 2003 YA_{25}	16.2	X	359.18900	327.29748	83.14816	4.08854	0.1422973	0.23491061	2.6013630	20	—	—
298581 2003 YE_{27}	15.7	X	251.50311	179.52064	288.17009	13.09448	0.1393166	0.22212782	2.7002299	20	9 26.5	19.8
298582 2003 YG_{29}	16.3	X	287.13891	337.89335	99.15166	12.85911	0.1633484	0.22495612	2.6775495	20	10 20.4	19.6
298583 2003 YS_{32}	16.7	X	320.41313	356.44153	117.34194	6.90487	0.1680761	0.23816113	2.5776392	20	—	—
298584 2003 YZ_{33}	16.4	X	307.27205	246.22383	218.98702	11.21328	0.1485206	0.23469288	2.6029716	20	—	—
298585 2003 YF_{35}	16.6	X	355.74376	227.77488	226.63103	10.37445	0.1516703	0.24047184	2.5611001	20	—	—
298586 2003 YF_{43}	16.9	X	278.29376	331.53113	106.21737	5.16632	0.2269652	0.22341183	2.6898740	20	9 21.4	20.0
298587 2003 YG_{47}	16.5	X	336.79812	298.40221	96.93882	6.74097	0.2368605	0.22868763	2.6483432	20	11 28.1	18.6
298588 2003 YF_{56}	16.0	X	308.11215	159.31910	257.18911	13.61816	0.0943316	0.22746405	2.6578321	20	10 24.8	19.3
298589 2003 YL_{56}	16.3	X	222.74191	265.04031	229.10595	3.61398	0.2456293	0.22205039	2.7008576	20	9 20.9	20.6
298590 2003 YC_{62}	16.7	X	302.46539	316.35142	114.92693	3.18744	0.1970271	0.22710441	2.6606372	20	10 31.9	19.1
298591 2003 YE_{64}	16.0	X	303.01284	178.65128	281.45215	14.62351	0.0975232	0.23025427	2.6363167	20	12 19.6	18.9
298592 2003 YS_{64}	16.5	X	354.79889	150.14467	270.49008	12.34740	0.2252436	0.23473102	2.6026897	20	—	—
298593 2003 YA_{71}	15.6	X	242.39428	150.78378	266.48657	19.59369	0.1210811	0.21701766	2.7424539	20	7 16.3	19.8
298594 2003 YZ_{88}	16.2	X	50.53113	140.81137	230.89069	4.77412	0.2906690	0.23881625	2.5729231	20	—	—
298595 2003 YC_{105}	16.0	X	298.09344	306.15884	169.45530	5.06423	0.2990518	0.22807004	2.6531220	20	12 16.5	17.9
298596 2003 YM_{114}	16.2	X	305.93142	179.75351	266.85034	4.46390	0.1203701	0.22856305	2.6493054	20	12 3.9	19.1
298597 2003 YT_{120}	16.8	X	296.22834	75.38032	14.78645	3.66778	0.0715571	0.22799162	2.6537303	20	11 24.9	20.1
298598 2003 YP_{123}	16.3	X	42.97305	88.84113	256.13564	11.34664	0.2023872	0.23553939	2.5967314	20	12 31.4	20.0
298599 2003 YN_{124}	16.8	X	292.30784	37.09076	325.30498	3.97856	0.0915532	0.21308399	2.7761026	20	7 18.6	20.4
298600 2003 YM_{129}	16.3	X	321.26190	83.41114	329.93948	11.61820	0.2995465	0.22736580	2.6585977	20	11 7.5	18.2
298601 2003 YM_{131}	16.0	X	15.36095	310.32827	50.71865	14.08965	0.1223099	0.22969488	2.6405952	20	12 2.6	19.3
298602 2003 YY_{131}	16.0	X	13.48054	96.98525	309.00412	16.26086	0.1894284	0.23594922	2.5937235	20	—	—
298603 2003 YC_{132}	16.8	X	264.44689	93.77294	31.14606	7.55914	0.2293476	0.22633078	2.6666968	20	10 31.2	19.9
298604 2003 YG_{133}	16.4	X	4.71681	6.85830	51.43028	5.43249	0.2344682	0.23413878	2.6070767	20	—	—
298605 2003 YB_{135}	15.9	X	337.14898	331.75858	78.72149	14.02873	0.2195866	0.22914739	2.6447996	20	12 18.4	18.1
298606 2003 YO_{137}	16.6	X	334.49841	126.80181	309.03222	4.86915	0.1992039	0.23217961	2.6217222	20	—	—
298607 2003 YZ_{137}	15.9	X	317.30270	286.12390	111.35081	13.46929	0.1661279	0.22264653	2.6960344	20	10 20.5	18.9
298608 2003 YH_{143}	16.2	X	219.10315	158.85357	315.74689	13.11259	0.1214537	0.21954496	2.7213667	20	9 2.6	20.3
298609 2003 YH_{144}	16.6	X	309.33881	295.47307	114.18651	4.82776	0.1715168	0.22544458	2.6736805	20	10 17.5	19.3
298610 2003 YY_{146}	15.9	X	31.70127	80.30417	301.54308	12.98241	0.1117752	0.23958195	2.5674381	20	—	—
298611 2003 YK_{151}	15.6	X	336.55443	356.11857	54.00224	15.41677	0.1754666	0.22887466	2.6469003	20	12 10.4	18.3
298612 2003 YA_{154}	16.1	X	26.49955	58.16246	341.87183	14.77106	0.2712049	0.23693305	2.5865386	20	—	—
298613 2003 YH_{169}	17.1	X	3.53384	70.78199	351.29313	3.96050	0.3198801	0.23701207	2.5859636	20	—	—
298614 2003 YD_{179}	13.3	X	288.95194	355.45485	311.35463	7.05409	0.0594517	0.08016086	5.3271446	20	5 5.2	20.3
298615 2004 AE_8	17.0	X	36.04247	281.12088	129.26973	13.94192	0.3471092	0.24332138	2.5410656	20	—	—
298616 2004 AG_9	15.9	X	28.15623	170.37184	214.09788	13.12876	0.1773931	0.23798683	2.5788976	20	—	—
298617 2004 AH_{12}	15.9	X	134.67255	107.96635	102.51808	11.01076	0.0284949	0.21902614	2.7256625	20	10 13.4	19.9
298618 2004 AO_{13}	17.2	X	242.78831	165.73878	326.13997	1.79663	0.1283950	0.22359369	2.6884152	20	10 25.6	20.9
298619 2004 AW_{15}	16.6	X	237.08956	90.31749	318.11085	3.40948	0.0684668	0.20979744	2.8050197	20	7 9.2	20.7
298620 2004 AS_{19}	16.7	X	327.67842	336.30768	47.06691	2.36650	0.0685134	0.22105015	2.7089990	20	10 14.5	19.9
298621 2004 AF_{26}	16.7	X	338.05314	240.08525	215.62606	11.06172	0.1705792	0.23786104	2.5798067	20	—	—
298622 2004 BA_1	16.6	X	336.15899	222.43686	137.85061	6.95282	0.0372438	0.21718574	2.7410388	20	9 27.4	20.2
298623 2004 BZ_2	17.0	X	355.61668	56.09278	338.85511	4.23067	0.3488667	0.23198856	2.6231614	20	—	—
298624 2004 BH_{10}	15.7	X	105.57175	243.82757	336.13290	11.83447	0.2115681	0.20959405	2.8068342	20	9 25.6	20.4
298625 2004 BC_{13}	16.4	X	204.19969	5.20347	118.67748	5.98890	0.1087697	0.21462599	2.7627898	20	9 4.7	20.6
298626 2004 BD_{14}	16.3	X	240.93391	147.51580	328.85982	6.71942	0.0334889	0.21948272	2.7218812	20	10 14.1	20.1
298627 2004 BB_{15}	16.5	X	246.82653	159.12821	309.10359	8.06391	0.1049358	0.22054095	2.7131672	20	9 29.5	20.3
298628 2004 BA_{19}	15.4	X	9.82908	120.57452	277.76111	12.83305	0.1565026	0.23651284	2.5896013	20	—	—
298629 2004 BV_{19}	16.7	X	325.64918	93.14328	340.24773	4.40578	0.2041937	0.23046567	2.6347043	20	12 26.6	19.1
298630 2004 BF_{27}	17.5	X	302.17249	39.93834	67.75950	14.07210	0.2054362	0.22977402	2.6399889	20	12 22.4	19.9
298631 2004 BO_{27}	16.1	X	349.80651	315.05768	73.69036	5.04911	0.1505929	0.22750970	2.6574765	20	12 4.0	18.9
298632 2004 BG_{36}	16.3	X	3.62280	306.88527	81.94659	3.80282	0.2972402	0.23079793	2.6321751	20	—	—
298633 2004 BD_{37}	16.8	X	240.07929	118.25330	335.28751	1.55613	0.1660833	0.21696872	2.7428662	20	8 28.4	20.9
298634 2004 BS_{37}	16.3	X	314.23790	104.50097	343.70498	3.38383	0.2385053	0.22883830	2.6471807	20	12 21.8	18.3
298635 2004 BM_{41}	16.1	X	127.34521	227.21652	301.09707	10.78734	0.0262697	0.20948860	2.8077759	20	8 2.2	20.0
298636 2004 BD_{42}	16.5	X	250.83672	137.34704	339.27733	8.73776	0.2365968	0.22080575	2.7109976	20	9 27.9	20.5
298637 2004 BY_{53}	16.5	X	238.57835	346.70619	101.20448	6.46309	0.0591031	0.21502627	2.7593601	20	9 5.4	20.4
298638 2004 BA_{54}	16.3	X	351.04245	288.59780	116.02120	13.78107	0.1532176	0.22876475	2.6477480	20	12 28.9	19.2
298639 2004 BZ_{54}	16.5	X	277.45674	130.70585	292.92185	4.00920	0.1519343	0.21886986	2.7269598	20	9 7.4	20.0
298640 2004 BQ_{77}	16.6	X	252.75589	98.39047	320.23543	3.21818	0.0914749	0.21332091	2.7740467	20	8 8.2	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		°	°	°	°		°				
298641 2004 BV_{78}	17.0	X	249.89024	20.87084	71.93945	2.50350	0.0315902	0.21776058	2.7362128	20	9 29.5	20.6
298642 2004 BT_{83}	14.6	X	310.62665	239.20235	339.05107	25.77073	0.2253099	0.17822892	3.1271635	20	1 28.9	19.2
298643 2004 BA_{88}	15.8	X	263.61279	340.78331	141.20253	16.42734	0.2543403	0.22180368	2.7028600	20	10 27.8	19.5
298644 2004 BG_{90}	16.4	X	25.70989	145.04589	255.68265	5.56720	0.3251769	0.23764423	2.5813756	20	—	—
298645 2004 BT_{90}	16.0	X	175.76958	266.51273	284.11716	2.20153	0.1283101	0.21734189	2.7397258	20	10 24.8	20.3
298646 2004 BH_{94}	16.2	X	244.49720	315.60204	177.95051	9.73533	0.1834351	0.22059159	2.7127519	20	10 24.1	20.0
298647 2004 BG_{102}	15.2	X	328.96162	269.66650	330.53019	14.79153	0.1842435	0.18570562	3.0426548	20	3 13.8	19.0
298648 2004 BX_{105}	16.2	X	298.49507	333.93876	79.30161	6.21149	0.1096127	0.22050410	2.7134694	20	10 8.5	19.4
298649 2004 BA_{107}	16.8	X	261.28415	34.12079	83.74498	3.20593	0.1608170	0.22392351	2.6857748	20	10 29.2	20.0
298650 2004 BZ_{110}	16.1	X	166.30424	342.79419	189.97627	8.11954	0.1695596	0.21372810	2.7705222	20	9 22.9	20.6
298651 2004 BJ_{113}	16.4	X	352.24569	35.69615	30.59898	12.72975	0.1613049	0.23258531	2.6186726	20	—	—
298652 2004 BV_{118}	16.1	X	294.32829	27.87421	58.43299	14.30511	0.2682190	0.22561125	2.6723636	20	10 28.9	18.5
298653 2004 BJ_{148}	16.5	X	199.65257	61.61880	93.86655	3.83197	0.0046898	0.21843596	2.7305698	20	10 20.5	20.1
298654 2004 BO_{158}	16.7	X	1.62474	25.87418	348.20126	4.57063	0.3503527	0.22963627	2.6410446	20	—	—
298655 2004 CS_{2}	16.0	X	176.03405	334.37987	189.60456	8.58909	0.0831114	0.21343907	2.7730227	20	9 24.2	20.2
298656 2004 CW_{10}	16.1	X	263.22595	131.54957	308.10992	5.63838	0.0306271	0.21583738	2.7524427	20	9 25.6	19.9
298657 2004 CV_{13}	15.5	X	326.24656	259.72155	327.06814	13.05207	0.1473454	0.18603543	3.0390576	20	2 29.1	19.5
298658 2004 CB_{19}	16.5	X	193.63120	231.69115	299.83190	4.03759	0.0957450	0.22011252	2.7166867	20	10 21.2	20.5
298659 2004 CL_{23}	17.1	X	311.50821	21.77919	15.23859	2.78766	0.1614542	0.22067652	2.7120558	20	9 30.4	19.7
298660 2004 CT_{28}	16.9	X	269.71808	325.83793	108.48583	3.96072	0.0861478	0.21849672	2.7300636	20	9 24.7	20.4
298661 2004 CW_{32}	16.7	X	324.60675	39.36106	320.58492	5.39050	0.0747821	0.21504896	2.7591659	20	9 4.3	20.1
298662 2004 CB_{42}	16.0	X	173.56521	160.18324	345.89385	11.47119	0.1795454	0.21141923	2.7906566	20	8 29.3	20.5
298663 2004 CT_{42}	16.3	X	174.96132	162.01170	355.72904	4.60869	0.0955714	0.21137360	2.7910582	20	9 15.2	20.6
298664 2004 CL_{56}	16.2	X	157.41920	24.36265	139.88603	4.99300	0.0424394	0.20947443	2.8079026	20	9 5.3	20.2
298665 2004 CW_{57}	16.1	X	256.10185	9.85650	85.65430	8.97802	0.1535083	0.21970592	2.7200374	20	9 27.0	19.9
298666 2004 CE_{59}	16.3	X	167.51905	143.63252	21.88219	8.01866	0.1575057	0.21287456	2.7779230	20	9 18.2	20.8
298667 2004 CZ_{61}	16.3	X	336.88067	279.54662	117.20564	11.87235	0.2084413	0.22507181	2.6766319	20	11 28.4	18.9
298668 2004 CW_{65}	16.0	X	310.40210	356.92801	80.22008	6.81077	0.1183202	0.22639398	2.6662005	20	11 28.8	18.7
298669 2004 CD_{77}	15.9	X	272.22198	131.70731	326.96097	6.92728	0.1693265	0.22080720	2.7109857	20	10 13.2	19.3
298670 2004 CS_{82}	16.5	X	144.20920	282.05623	279.73671	2.85780	0.1107382	0.21370129	2.7707539	20	10 7.1	20.9
298671 2004 CA_{91}	16.4	X	322.57323	174.69599	197.86778	4.28490	0.0871085	0.21412574	2.7670912	20	9 18.2	19.5
298672 2004 CW_{100}	15.6	X	345.63228	203.38912	355.24801	16.93902	0.1891660	0.18336118	3.0685353	20	2 25.5	19.1
298673 2004 CF_{103}	16.7	X	233.85082	289.46488	190.71208	8.70238	0.2055807	0.21738896	2.7393303	20	9 18.8	20.7
298674 2004 CJ_{107}	16.3	X	278.81108	61.54215	348.15924	5.74000	0.0967413	0.21303200	2.7765542	20	8 31.7	19.7
298675 2004 CX_{109}	17.1	X	265.62384	114.28547	10.15562	7.99806	0.2595128	0.22270824	2.6955364	20	10 25.2	20.5
298676 2004 CU_{116}	16.1	X	215.25483	328.47554	147.84695	13.71689	0.1071759	0.21485485	2.7608275	20	9 6.9	20.2
298677 2004 CD_{122}	16.4	X	274.50514	76.93017	356.68007	4.84893	0.0057712	0.21530660	2.7569644	20	10 7.9	20.2
298678 2004 CK_{125}	16.4	X	264.25678	110.79923	258.62660	1.00182	0.0827163	0.20322095	2.8652140	20	6 19.3	20.5
298679 2004 DP_{15}	16.8	X	239.73673	118.20519	340.41751	8.54361	0.1337233	0.21549782	2.7553332	20	9 7.3	20.8
298680 2004 DJ_{25}	18.1	X	333.08950	252.02868	184.63580	6.73857	0.2686801	0.34952876	1.9959398	20	—	—
298681 2004 DL_{27}	16.5	X	315.65962	320.10962	93.53696	4.12191	0.0874597	0.21995873	2.7179528	20	11 5.7	19.7
298682 2004 DV_{30}	15.7	X	4.40202	242.88408	146.92310	15.23783	0.1794870	0.22630570	2.6668938	20	—	—
298683 2004 DK_{32}	16.2	X	292.55562	172.07324	274.61492	4.49096	0.1894005	0.22309033	2.6924576	20	10 30.7	19.0
298684 2004 DT_{35}	16.2	X	258.47333	235.44614	231.69843	4.23015	0.0688006	0.21816397	2.7328389	20	10 22.1	19.8
298685 2004 DA_{39}	16.3	X	123.31417	67.30493	133.74493	4.45942	0.0353685	0.21040306	2.7996346	20	9 12.1	20.2
298686 2004 DW_{41}	16.4	X	247.76051	286.58274	191.74242	5.61624	0.2370353	0.21884051	2.7272037	20	9 28.5	20.1
298687 2004 DS_{44}	16.1	X	291.37817	268.54363	163.10391	13.42339	0.1883714	0.22054872	2.7131035	20	10 11.5	19.1
298688 2004 DQ_{46}	16.1	X	298.69436	15.71323	216.77110	4.68831	0.1783445	0.18028354	3.1033588	20	1 27.9	20.6
298689 2004 DO_{61}	16.8	X	255.89027	136.38473	318.44439	3.18732	0.1990816	0.21805913	2.7337148	20	9 12.5	20.5
298690 2004 DX_{64}	16.4	X	256.69838	240.34143	192.19279	1.28326	0.0448148	0.21067202	2.7972513	20	9 7.2	20.3
298691 2004 DY_{67}	16.4	X	68.81821	210.20169	68.65499	4.10081	0.0677293	0.21647448	2.7470396	20	10 20.4	20.1
298692 2004 DL_{70}	16.4	X	208.68522	308.28261	171.28568	4.98589	0.1097063	0.21077466	2.7963431	20	9 1.2	20.5
298693 2004 EC_{6}	15.2	X	319.56477	171.41073	141.05407	14.68222	0.0962664	0.19755552	2.9197338	20	6 21.1	19.0
298694 2004 EL_{12}	16.2	X	179.46514	154.56575	351.53847	3.05296	0.0384693	0.20893308	2.8127508	20	9 7.5	20.3
298695 2004 EV_{13}	15.8	X	69.99766	163.58168	58.99190	7.03760	0.0500926	0.20162790	2.8802861	20	8 5.9	19.8
298696 2004 EM_{14}	15.9	X	92.02550	180.44244	38.48041	9.00138	0.0977498	0.20376993	2.8600656	20	9 6.9	20.1
298697 2004 EC_{18}	15.2	X	46.63758	131.12933	57.89766	16.06324	0.0475222	0.19131299	2.9829072	20	5 17.9	19.2
298698 2004 EH_{39}	16.0	X	251.61829	91.73951	352.50981	10.46930	0.1131942	0.21208529	2.7848108	20	9 7.2	19.9
298699 2004 EG_{48}	16.3	X	252.40603	300.50561	153.12629	9.96678	0.1733064	0.21505795	2.7590890	20	9 12.2	20.0
298700 2004 EX_{50}	16.0	X	326.15700	253.67494	355.98771	8.51231	0.0816213	0.18895773	3.0076429	20	4 6.6	19.9
298701 2004 EW_{54}	15.7	X	179.49715	250.20394	263.59665	11.40442	0.1063877	0.21054489	2.7983772	20	9 8.1	20.2
298702 2004 EL_{55}	15.3	X	323.23620	230.11352	327.01060	15.29418	0.1527297	0.17818195	3.1277131	20	1 24.4	19.5
298703 2004 EP_{55}	16.2	X	250.35011	260.61908	208.46198	15.70668	0.2122489	0.21668181	2.7452869	20	9 20.1	20.2
298704 2004 EQ_{66}	16.5	X	236.11882	121.52866	353.53671	7.87368	0.2609058	0.21518222	2.7580266	20	9 9.6	20.6
298705 2004 EY_{66}	15.4	X	252.20383	255.72821	15.75059	24.92920	0.2771731	0.17236481	3.1976945	20	2 1.7	21.3
298706 2004 EU_{89}	15.4	X	254.95640	260.64670	17.65652	26.02413	0.1516892	0.17727240	3.1384025	20	2 23.8	20.7
298707 2004 EV_{90}	16.1	X	92.38429	318.99928	169.91195	9.83171	0.0367848	0.18849702	3.0125416	20	5 2.4	20.4
298708 2004 EJ_{92}	16.4	X	313.37373	94.31956	345.72630	5.23084	0.2138646	0.22400299	2.6851394	20	12 3.8	18.8
298709 2004 ES_{100}	16.6	X	303.17258	249.40640	175.49215	9.45706	0.3065348	0.22121489	2.7076539	20	10 6.2	18.8
298710 2004 FZ_{12}	16.2	X	226.64883	153.04640	343.73645	12.76945	0.1519238	0.21511628	2.7585902	20	10 4.6	20.4
298711 2004 FU_{13}	15.6	X	33.95489	48.14213	163.62295	10.94465	0.0406099	0.19243194	2.9713326	20	5 31.3	19.7
298712 2004 FR_{14}	15.1	X	271.17248	250.86748	3.75531	25.10515	0.2668240	0.17371867	3.1810590	20	1 28.9	20.7
298713 2004 FC_{24}	15.9	X	317.33895	61.13840	200.05733	6.29150	0.1669503	0.18625548	3.0366635	20	3 29.6	19.8
298714 2004 FJ_{25}	15.8	X	315.28850	350.81665	225.80069	14.19259	0.1316575	0.17904129	3.1176971	20	2 1.4	20.3
298715 2004 FT_{35}	16.3	X	260.68699	67.03439	45.76302	4.60657	0.1809198	0.21733919	2.7397484	20	10 17.1	19.9
298716 2004 FS_{49}	16.5	X	311.20713	245.81523	342.00518	3.50370	0.2257793	0.17835176	3.1257275	20	2 2.1	20.6
298717 2004 FV_{57}	16.9	X	107.11281	324.37681	232.14447	0.96429	0.0108096	0.20315647	2.8658202	20	8 11.6	20.7
298718 2004 FM_{58}	16.7	X	121.24050	92.50469	57.66505	2.66631	0.1523556	0.19855979	2.9098807	20	7 14.7	21.2
298719 2004 FF_{62}	15.4	X	246.54527	42.07209	17.22141	15.09684	0.1317438	0.20419210	2.8561220	20	7 31.9	19.8
298720 2004 FY_{69}	15.5	X	235.34145	282.65101	16.98679	16.60549	0.2436751	0.17505747	3.1648195	20	2 19.3	21.1

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Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
	m		°	°	°	°		°				
298721 2004 FY_{72}	16.3	X	307.17269	86.18584	182.38381	4.96467	0.1420622	0.18649355	3.0340787	20	3 28.9	20.3
298722 2004 FT_{73}	18.4	X	329.27349	291.40708	353.01605	3.27438	0.1849143	0.31335649	2.1467275	20	5 12.3	19.8
298723 2004 FS_{93}	16.2	X	130.83087	142.40555	27.69610	8.45244	0.2183858	0.20275304	2.8696205	20	8 25.1	21.1
298724 2004 FH_{99}	16.5	X	280.12403	322.57907	304.20412	0.26206	0.0788208	0.18190438	3.0848965	20	3 2.0	20.7
298725 2004 FC_{102}	15.4	X	245.08118	259.62925	3.46697	25.59300	0.2451565	0.17034023	3.2229822	20	1 17.9	21.3
298726 2004 FH_{107}	16.1	X	359.90602	352.52797	205.95339	5.64075	0.1964850	0.18294796	3.0731541	20	3 17.0	19.3
298727 2004 FO_{108}	16.4	X	190.36237	316.88987	197.85548	7.54295	0.1597118	0.21004917	2.8027783	20	9 22.3	20.9
298728 2004 FP_{112}	15.9	X	259.55894	73.85780	190.48720	9.88202	0.0893526	0.17729755	3.1381057	20	2 2.3	20.7
298729 2004 FJ_{134}	15.8	X	308.72026	278.41692	316.74983	10.54359	0.1930137	0.17882943	3.1201590	20	2 11.3	19.9
298730 2004 FA_{140}	14.8	X	12.76823	177.67310	9.16944	30.95851	0.2228232	0.18253811	3.0777524	20	3 29.6	17.8
298731 2004 FN_{145}	16.1	X	333.33880	246.57700	34.85127	2.36846	0.0074009	0.19621685	2.9329986	20	6 5.9	20.1
298732 2004 FB_{148}	15.3	X	290.48106	286.56876	322.60771	15.40707	0.1899300	0.17890920	3.1192314	20	2 8.3	19.9
298733 2004 FF_{155}	16.4	X	346.91539	101.91717	118.41565	2.08439	0.0727678	0.18617169	3.0375747	20	4 3.2	20.2
298734 2004 GB_{5}	16.0	X	290.26256	131.98273	146.16281	4.47335	0.1417105	0.18112000	3.0937968	20	3 20.6	20.4
298735 2004 GB_{9}	16.0	X	326.42883	53.67710	218.12606	9.77346	0.0559830	0.18802573	3.0175735	20	5 11.3	19.8
298736 2004 GU_{14}	15.2	X	25.54885	190.33900	27.97602	17.25424	0.1239702	0.18781048	3.0198787	20	5 28.1	19.1
298737 2004 GQ_{35}	17.2	X	322.94515	342.14033	263.52679	5.83542	0.2615519	0.30322647	2.1942763	20	2 13.4	19.6
298738 2004 GD_{36}	15.6	X	282.72034	344.43642	252.68324	7.18315	0.1739513	0.17309322	3.1887173	20	1 17.8	20.5
298739 2004 GH_{41}	15.4	X	269.27022	283.48695	349.64800	17.04261	0.1484097	0.17663686	3.1459260	20	2 22.3	20.2
298740 2004 GT_{42}	16.0	X	346.19357	201.97298	25.70399	9.37607	0.0914761	0.18446164	3.0563189	20	4 10.0	19.9
298741 2004 GZ_{45}	16.4	X	349.60062	19.86094	186.66599	4.21902	0.1537874	0.18165951	3.0876681	20	3 12.9	19.8
298742 2004 GK_{54}	16.8	X	216.54438	170.50147	200.51203	2.78327	0.0307176	0.18744142	3.0238413	20	4 30.6	21.2
298743 2004 GM_{56}	15.9	X	230.79626	128.13005	212.28671	10.91656	0.0809318	0.18387256	3.0628432	20	4 3.6	20.5
298744 2004 GM_{62}	16.3	X	312.10091	172.71911	160.51242	2.23539	0.0931535	0.19622443	2.9329230	20	7 6.6	20.0
298745 2004 GL_{66}	15.8	X	121.04602	264.54972	206.84122	9.23449	0.1161186	0.19065576	2.9897584	20	5 23.4	20.3
298746 2004 GU_{66}	16.5	X	1.75826	8.78249	204.57953	3.45206	0.0412708	0.18551532	3.0447352	20	4 16.1	20.5
298747 2004 GU_{76}	17.1	X	294.33211	208.48279	100.40189	8.03604	0.3025007	0.30617195	2.1801805	20	4 5.1	20.0
298748 2004 GU_{78}	15.6	X	315.87304	124.07709	189.30023	10.20815	0.1242118	0.19309291	2.9645480	20	6 12.1	19.4
298749 2004 GA_{79}	15.7	X	337.10983	35.99138	175.98305	12.00215	0.1053426	0.18088296	3.0964991	20	3 4.6	19.6
298750 2004 GY_{82}	16.1	X	5.82984	8.63790	199.86727	9.82421	0.0743283	0.18654161	3.0335575	20	4 15.5	19.8
298751 2004 HC_{9}	17.8	X	315.37422	196.24478	104.13195	3.83798	0.1853105	0.31017708	2.1613723	20	5 12.7	19.5
298752 2004 HA_{17}	15.6	X	161.64145	127.94236	26.13782	15.40858	0.0853489	0.20301341	2.8671664	20	9 3.2	20.2
298753 2004 HU_{27}	15.7	X	334.55872	131.61894	107.23310	4.51038	0.1269406	0.18230693	3.0803538	20	4 4.9	19.5
298754 2004 HA_{42}	16.1	X	46.80017	290.04197	207.20736	8.46561	0.0487267	0.17911913	3.1167938	20	3 11.4	20.4
298755 2004 HB_{42}	16.0	X	245.14684	124.66011	205.38221	8.12874	0.0977920	0.18210865	3.0825893	20	4 5.8	20.6
298756 2004 HD_{45}	15.8	X	320.86249	60.47308	211.35979	15.49052	0.1641902	0.18471748	3.0534962	20	4 18.9	19.6
298757 2004 HW_{47}	15.4	X	91.97405	221.78539	291.09357	9.11795	0.0503851	0.18986231	2.9980822	20	5 31.5	19.6
298758 2004 HT_{56}	15.5	X	324.47031	53.51658	171.58281	30.36754	0.1089520	0.17785411	3.1315555	20	3 2.9	19.6
298759 2004 HP_{57}	16.5	X	239.31226	148.80447	138.13504	1.46528	0.1122487	0.17192485	3.2031476	20	2 9.2	21.5
298760 2004 HU_{67}	16.2	X	35.67556	324.03336	207.29811	3.76734	0.0451111	0.18483478	3.0522042	20	4 9.4	20.3
298761 2004 HL_{71}	16.5	X	341.53749	189.45517	18.32507	4.08510	0.1204568	0.18042505	3.1017360	20	3 6.5	20.3
298762 2004 HT_{77}	18.6	X	327.18378	259.76886	40.44745	2.23398	0.0859381	0.31446096	2.1416980	20	6 19.9	20.5
298763 2004 JD_{29}	15.3	X	261.72415	78.17241	220.92812	14.11598	0.1672250	0.17676179	3.1444434	20	3 6.2	20.4
298764 2004 JU_{33}	15.2	X	317.94581	42.12154	221.06482	17.04535	0.1023047	0.18126418	3.0921560	20	4 10.3	19.4
298765 2004 KC_{15}	15.4	X	300.78582	284.67035	3.59056	9.36376	0.0290203	0.18362272	3.0656208	20	4 27.7	19.8
298766 2004 LW_{16}	18.0	X	291.05288	237.18897	59.00669	3.83740	0.2359472	0.30157717	2.2022692	20	3 21.9	20.9
298767 2004 NS_{3}	17.3	X	270.14382	273.63670	23.09219	8.33247	0.2760341	0.29441759	2.2378289	20	2 28.1	20.9
298768 2004 NO_{4}	16.1	X	250.80787	291.39719	33.06718	28.06544	0.2382055	0.29056368	2.2575731	20	3 29.5	20.0
298769 2004 NE_{6}	17.8	X	271.81029	131.34631	165.37720	3.16097	0.2324774	0.29477343	2.2360276	20	2 29.9	21.2
298770 2004 NL_{10}	17.0	X	239.24777	195.85227	129.62817	7.92404	0.1811260	0.29168497	2.2517838	20	3 14.0	20.4
298771 2004 NE_{18}	17.8	X	224.06605	89.91288	216.37001	3.58407	0.2252643	0.28847452	2.2684597	20	2 1.1	21.5
298772 2004 OU_{3}	17.9	X	232.50378	180.91736	154.44141	6.06265	0.1971972	0.29188954	2.2507315	20	3 18.0	21.4
298773 2004 OK_{5}	17.4	X	284.57463	326.96194	314.76577	4.75532	0.1679681	0.29474929	2.2361497	20	3 1.3	20.5
298774 2004 PH_{1}	17.1	X	188.29005	274.70308	77.14960	5.80448	0.2106375	0.28533908	2.2850474	20	3 3.2	20.9
298775 2004 PH_{8}	17.8	X	184.92020	163.72111	176.54094	1.76758	0.2491676	0.28288757	2.2982299	20	2 13.5	21.6
298776 2004 PL_{8}	17.6	X	225.09970	40.52813	309.07655	0.73503	0.2390115	0.29104272	2.2550952	20	3 26.4	21.3
298777 2004 PQ_{17}	17.6	X	204.90560	310.43403	14.61752	2.61210	0.2209882	0.28547905	2.2843004	20	2 11.1	21.3
298778 2004 PC_{19}	17.5	X	192.62668	1.07036	326.35576	5.84731	0.2742596	0.28264166	2.2995628	20	2 5.5	21.5
298779 2004 PW_{20}	17.6	X	164.05862	96.17424	293.06375	5.70176	0.1119666	0.28800907	2.2709031	20	3 16.7	20.9
298780 2004 PP_{38}	17.6	X	219.40546	163.75795	144.04529	5.10581	0.1781851	0.28548537	2.2842667	20	1 31.9	21.3
298781 2004 PU_{43}	17.5	X	250.90170	322.22738	306.93101	7.82988	0.1357618	0.28521673	2.2857008	20	1 15.3	20.8
298782 2004 PX_{44}	17.1	X	245.32117	289.77072	352.00921	6.10325	0.1244904	0.28570753	2.2830824	20	1 27.4	20.4
298783 2004 PD_{45}	17.4	X	180.95554	328.31735	15.15441	3.86798	0.1754333	0.28253979	2.3001155	20	2 12.9	20.9
298784 2004 PU_{46}	17.7	X	184.25804	122.01396	214.98075	2.26876	0.2477845	0.28245746	2.3005624	20	2 8.6	21.6
298785 2004 PU_{47}	18.2	X	243.72531	125.68411	165.74830	5.19717	0.1968714	0.28918743	2.2647300	20	1 31.4	21.9
298786 2004 PS_{50}	18.0	X	239.60230	278.50204	24.26849	3.81092	0.1934764	0.28852850	2.2681768	20	2 13.4	21.5
298787 2004 PO_{81}	17.9	X	264.01660	166.09849	139.40501	3.49741	0.1755771	0.29287939	2.2456574	20	3 11.5	21.2
298788 2004 PO_{87}	17.4	X	224.69165	309.03776	2.09175	8.39770	0.2441321	0.28514597	2.2860790	20	2 11.4	21.3
298789 2004 PS_{98}	17.0	X	224.69687	305.33858	20.95389	6.74554	0.2141010	0.28831864	2.2692773	20	3 1.1	20.8
298790 2004 PC_{99}	17.4	X	183.49047	282.88685	54.70346	6.75033	0.2103230	0.28204508	2.3028043	20	2 10.8	21.2
298791 2004 PZ_{101}	16.7	X	191.10159	13.71217	313.48044	3.45255	0.2977719	0.27939921	2.3173196	20	2 4.6	20.8
298792 2004 PJ_{106}	16.8	X	243.78342	7.95160	279.36605	6.54872	0.1200476	0.28618841	2.2805242	20	1 29.9	20.2
298793 2004 QE_{3}	17.1	X	82.59844	18.37502	169.21674	6.61779	0.0604071	0.30289336	2.1958848	20	7 10.9	19.7
298794 2004 QH_{3}	17.3	X	292.24948	245.37726	21.79416	8.64379	0.1860425	0.29263623	2.2469013	20	2 22.9	20.3
298795 2004 QG_{6}	17.6	X	285.06602	297.22870	304.05975	7.00882	0.1429014	0.28751643	2.2734964	20	1 14.4	20.6
298796 2004 QY_{8}	17.1	X	225.79375	229.33455	83.88947	6.94098	0.1586696	0.28339673	2.2954764	20	2 16.8	20.7
298797 2004 QX_{9}	17.3	X	197.25783	229.46088	67.00693	4.87307	0.2443346	0.28020029	2.3129008	20	1 2.2	21.1
298798 2004 QA_{14}	16.5	X	210.62286	160.52027	184.55234	26.54599	0.2518373	0.28786335	2.2716694	20	3 8.1	20.6
298799 2004 QC_{19}	17.4	X	157.83804	122.55402	205.88361	2.78488	0.2106876	0.27576515	2.3376337	20	1 5.5	20.9
298800 2004 QT_{21}	17.3	X	284.55031	312.24787	304.50696	7.69920	0.2047433	0.28976289	2.2617306	20	1 26.1	20.5

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Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
	m		°	°	°	°		°				
298801 2004 QD_{22}	16.1	X	139.18269	189.99586	201.16606	22.94066	0.2481876	0.28182828	2.3039851	20	3 5.5	19.9
298802 2004 QR_{26}	17.4	X	199.47276	354.15242	22.10463	5.92647	0.1410001	0.28958629	2.2626500	20	4 9.5	20.8
298803 2004 RJ_{8}	17.2	X	183.47556	14.74982	338.50293	6.08284	0.1431987	0.27999960	2.3140058	20	2 25.0	20.6
298804 2004 RZ_{13}	17.7	X	214.89216	36.81236	302.22785	1.97447	0.1553564	0.28787669	2.2715993	20	3 6.4	21.1
298805 2004 RZ_{14}	17.8	X	256.29166	138.02617	172.34806	1.97333	0.2077606	0.29168687	2.2517740	20	3 6.2	21.2
298806 2004 RV_{25}	17.1	X	210.67786	178.80809	159.05834	6.92040	0.1382552	0.28490619	2.2873614	20	3 2.3	20.3
298807 2004 RS_{31}	17.0	X	127.14578	73.67297	2.02340	8.41007	0.1821907	0.28583348	2.2824117	20	4 15.1	20.2
298808 2004 RV_{33}	17.0	X	188.63208	335.71177	17.80301	6.05000	0.1887170	0.28463362	2.2888214	20	3 4.1	20.6
298809 2004 RF_{36}	17.2	X	128.50880	239.10710	70.88258	3.20690	0.2284281	0.26879946	2.3778463	20	—	—
298810 2004 RJ_{47}	17.1	X	177.32877	24.93942	346.21136	6.83167	0.1344085	0.28467192	2.2886162	20	3 11.4	20.6
298811 2004 RR_{51}	17.0	X	158.79264	4.91372	8.97909	7.08383	0.1424213	0.28161349	2.3051565	20	2 28.3	20.3
298812 2004 RZ_{56}	17.7	X	219.02045	55.94912	259.46519	2.37878	0.1619575	0.28496802	2.2870306	20	2 9.6	21.4
298813 2004 RS_{57}	17.2	X	119.92172	2.00624	42.88079	3.48759	0.2176129	0.27762313	2.3271924	20	3 6.1	20.3
298814 2004 RO_{60}	17.7	X	275.87606	105.33357	192.10501	2.13573	0.1821556	0.29242403	2.2479881	20	3 11.6	20.9
298815 2004 RX_{60}	17.3	X	168.65741	338.56350	20.66898	6.65420	0.2758679	0.28057186	2.3108583	20	2 28.2	21.3
298816 2004 RM_{62}	17.6	X	244.03575	143.50673	177.83250	2.87780	0.1821424	0.28974885	2.2618037	20	3 10.6	21.1
298817 2004 RP_{63}	17.7	X	215.90668	185.52038	163.26432	2.78604	0.2243321	0.28815968	2.2701118	20	3 19.3	21.5
298818 2004 RU_{64}	17.7	X	157.33698	33.08599	335.38021	2.92067	0.2155708	0.27986518	2.3147467	20	2 23.9	21.2
298819 2004 RN_{66}	17.2	X	148.15028	174.30485	176.04943	3.80489	0.1634114	0.27590111	2.3368657	20	1 17.9	20.5
298820 2004 RT_{71}	17.3	X	162.99443	318.46481	60.43391	3.59046	0.1697942	0.28200635	2.3030151	20	3 11.7	20.8
298821 2004 RS_{73}	17.1	X	250.15253	285.96387	20.39639	4.48075	0.1302510	0.28795268	2.2711996	20	3 3.3	20.2
298822 2004 RM_{74}	16.9	X	172.28555	28.14465	4.46931	5.80960	0.1135555	0.28580210	2.2825788	20	4 1.9	20.0
298823 2004 RA_{79}	17.3	X	147.82560	346.60893	343.02416	2.67362	0.2743162	0.27311211	2.3527480	20	1 4.9	20.8
298824 2004 RB_{80}	17.4	X	277.02021	292.37639	336.06534	1.57534	0.3736425	0.29093153	2.2556698	20	1 19.9	21.4
298825 2004 RD_{100}	17.5	X	192.93224	85.76507	226.03563	3.12498	0.1776890	0.27968198	2.3157574	20	1 13.9	21.1
298826 2004 RY_{102}	17.9	X	129.54638	85.69759	323.68033	7.12577	0.1512040	0.28166589	2.3048706	20	3 10.3	21.1
298827 2004 RO_{125}	17.6	X	85.17860	348.06312	186.96173	5.13870	0.0632174	0.29822980	2.2187176	20	6 26.5	20.2
298828 2004 RZ_{143}	17.2	X	121.48828	224.99790	151.01008	6.44922	0.1840872	0.27335206	2.3513709	20	1 23.6	20.1
298829 2004 RH_{147}	17.5	X	147.26731	241.02296	172.16002	4.94536	0.1505901	0.28445093	2.2898014	20	4 6.8	20.7
298830 2004 RF_{156}	17.5	X	192.61997	149.68915	230.52453	3.89152	0.2167531	0.28773044	2.2723690	20	4 7.2	21.3
298831 2004 RN_{160}	17.6	X	140.54243	11.77216	323.60568	4.86864	0.1505681	0.27207075	2.3587476	20	—	—
298832 2004 RA_{164}	17.2	X	167.28913	187.10584	204.43543	4.68829	0.2204933	0.28298409	2.2977073	20	4 1.0	20.7
298833 2004 RD_{164}	17.7	X	173.28369	101.44835	296.78194	3.64443	0.2161049	0.28739215	2.2741518	20	4 12.9	21.4
298834 2004 RT_{164}	17.1	X	125.46148	356.68844	47.27736	4.02420	0.2716066	0.27399042	2.3477173	20	3 17.5	20.6
298835 2004 RN_{178}	17.4	X	213.24757	97.48653	236.42535	4.61493	0.1872144	0.28581285	2.2825215	20	2 25.8	21.1
298836 2004 RQ_{179}	17.0	X	183.53775	164.46132	228.22770	6.23936	0.1018536	0.28819364	2.2699334	20	4 13.1	20.1
298837 2004 RO_{181}	16.9	X	187.37473	152.57479	202.09141	6.13624	0.2053614	0.28364586	2.2941321	20	3 1.2	20.8
298838 2004 RP_{186}	17.0	X	254.44588	325.01541	314.62253	6.09730	0.1051772	0.28375292	2.2935550	20	2 3.2	20.0
298839 2004 RP_{187}	17.0	X	138.16181	120.30440	253.45945	5.14270	0.1156849	0.27707779	2.3302449	20	1 29.8	20.2
298840 2004 RX_{187}	16.7	X	191.12464	60.10611	277.43261	6.10625	0.1477169	0.28125450	2.3071176	20	2 10.4	20.4
298841 2004 RM_{188}	16.9	X	185.50365	88.74933	280.92587	6.00639	0.1449742	0.28445051	2.2898036	20	3 15.1	20.4
298842 2004 RL_{189}	16.2	X	107.84877	262.57400	203.89991	21.27287	0.1773666	0.28411507	2.2916056	20	5 7.9	19.4
298843 2004 RX_{189}	16.8	X	128.61471	147.09132	242.47579	5.86171	0.1129873	0.27695757	2.3309192	20	2 6.8	19.9
298844 2004 RL_{191}	16.8	X	180.45772	310.43284	355.53705	24.52166	0.2096187	0.27466667	2.3438622	20	1 3.1	21.1
298845 2004 RM_{192}	16.5	X	206.65148	134.48471	220.15837	3.88767	0.1793927	0.28629227	2.2799726	20	3 17.8	20.2
298846 2004 RK_{196}	16.7	X	206.91889	37.42649	270.46127	6.17496	0.1188498	0.27904040	2.3193057	20	1 20.2	20.2
298847 2004 RD_{197}	17.1	X	183.86473	86.69009	291.98766	6.87457	0.2311105	0.28456148	2.2892083	20	3 26.7	21.1
298848 2004 RQ_{205}	17.4	X	154.01770	227.64918	116.59500	5.78812	0.2119240	0.27548999	2.3391900	20	1 22.1	20.7
298849 2004 RX_{214}	16.9	X	145.88281	177.32597	226.58068	10.59256	0.2376496	0.28156911	2.3053987	20	3 27.9	20.7
298850 2004 RX_{232}	17.9	X	206.49684	262.23562	25.64850	2.88587	0.2663901	0.27742551	2.3282974	20	—	—
298851 2004 RZ_{232}	17.3	X	3.76516	163.30490	20.73824	5.23527	0.0339217	0.28113367	2.3077786	20	3 3.3	19.8
298852 2004 RK_{235}	17.4	X	105.27275	135.64480	289.28715	2.34031	0.2058392	0.27819006	2.3240295	20	3 10.6	20.4
298853 2004 RZ_{235}	16.8	X	241.10675	91.91185	223.38898	3.44110	0.1258730	0.28621392	2.2803887	20	3 2.6	20.0
298854 2004 RF_{236}	16.8	X	255.65628	317.68029	343.75154	6.09602	0.1228479	0.28636980	2.2795611	20	3 2.1	19.7
298855 2004 RA_{237}	17.3	X	238.27170	307.74539	332.29434	5.87571	0.1694394	0.28274646	2.2989945	20	1 16.2	20.9
298856 2004 RT_{246}	16.9	X	123.37699	194.11054	212.38203	11.70679	0.1554298	0.27991165	2.3144905	20	2 26.8	20.2
298857 2004 RN_{250}	17.8	X	132.31057	68.77344	346.83919	4.91684	0.2198519	0.28000100	2.3139981	20	3 30.3	21.3
298858 2004 RO_{250}	17.1	X	153.68900	111.87264	256.85301	3.96227	0.2472282	0.27685363	2.3315026	20	2 21.9	20.8
298859 2004 RX_{250}	17.2	X	160.43458	270.08947	109.26977	1.40680	0.2200185	0.28027032	2.3125154	20	3 12.2	20.7
298860 2004 RP_{287}	17.5	X	142.33048	19.74506	14.02511	2.46226	0.2235654	0.27843139	2.3226865	20	3 14.2	20.9
298861 2004 RM_{292}	17.0	X	152.82210	26.86643	325.31179	6.00610	0.1435901	0.27539669	2.3397183	20	1 24.7	20.2
298862 2004 RW_{301}	17.3	X	236.64897	90.07570	147.27210	3.43301	0.1400773	0.27412255	2.3469628	20	—	—
298863 2004 RF_{306}	16.7	X	230.02624	306.56921	28.25045	8.09569	0.1951010	0.28700804	2.2761804	20	3 17.2	20.3
298864 2004 RW_{312}	17.5	X	160.01877	22.81667	326.00936	2.42122	0.1112091	0.27742970	2.3282739	20	1 24.1	20.5
298865 2004 RJ_{319}	17.6	X	189.49109	68.62197	320.09957	6.89688	0.1995368	0.28840129	2.2688437	20	4 12.8	21.3
298866 2004 RA_{326}	16.5	X	161.33134	93.68337	265.07245	7.48978	0.1865401	0.27580818	2.3373906	20	2 10.7	20.3
298867 2004 RH_{328}	14.4	X	319.38227	113.90526	313.21526	7.73700	0.1599445	0.12563052	3.9482618	20	10 27.4	19.4
298868 2004 RJ_{328}	17.3	X	182.12843	60.65253	298.97586	4.11720	0.1389549	0.28169474	2.3047132	20	2 29.7	20.9
298869 2004 RN_{333}	17.0	X	178.75140	242.74078	123.29372	6.01334	0.1888880	0.28336608	2.2956419	20	3 11.2	20.7
298870 2004 RQ_{334}	17.1	X	128.22282	309.00207	74.74221	4.94705	0.1329027	0.27796115	2.3253053	20	2 5.4	20.1
298871 2004 RR_{334}	17.7	X	206.36160	277.09464	90.36722	5.27286	0.1778594	0.28921874	2.2645666	20	4 6.9	21.3
298872 2004 RG_{337}	18.4	X	108.60675	90.65344	321.09430	0.79244	0.1828773	0.27500635	2.3419318	20	2 24.0	21.1
298873 2004 SE_{10}	17.3	X	180.32444	244.74864	79.54769	6.29496	0.1905278	0.28014552	2.3132022	20	1 20.1	21.0
298874 2004 SP_{15}	17.1	X	192.57975	261.92164	100.86122	5.96740	0.1348342	0.28506272	2.2865240	20	3 19.4	20.6
298875 2004 SB_{17}	17.0	X	187.80766	249.41457	78.27129	9.35741	0.1261892	0.27964402	2.3159670	20	1 29.0	20.5
298876 2004 SW_{23}	17.0	X	259.91056	286.45831	19.24046	9.20046	0.1738732	0.28765135	2.2727855	20	3 10.2	20.4
298877 Michaelreynolds	18.0	X	185.31074	64.15195	301.82888	1.89380	0.2418602	0.28355947	2.2945980	20	3 15.3	21.8
298878 2004 SJ_{29}	16.8	X	222.97463	317.42285	357.61320	6.23699	0.1486803	0.28374594	2.2935926	20	2 15.8	20.3
298879 2004 SJ_{32}	17.3	X	149.27227	319.55127	48.42281	3.62300	0.2162526	0.27704257	2.3304424	20	2 17.9	20.8
298880 2004 SE_{33}	17.2	X	151.84068	253.81503	121.35865	3.34100	0.2572982	0.27814249	2.3242945	20	3 2.8	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		°	°	°	°		°				
298881 2004 SS_{34}	17.2	X	289.86570	350.57678	236.89617	5.43548	0.1782619	0.28346644	2.2951000	20	—	—
298882 2004 SJ_{39}	16.6	X	198.31756	279.73347	27.18620	8.27247	0.2297564	0.27812210	2.3244081	20	1 17.0	20.6
298883 2004 SN_{39}	16.4	X	205.93765	281.40417	30.69117	6.76847	0.1530497	0.27837028	2.3230264	20	1 28.4	20.1
298884 2004 SC_{46}	17.2	X	172.98741	164.80469	223.79254	5.05023	0.2528810	0.28360797	2.2943364	20	4 2.6	21.0
298885 2004 SF_{46}	17.4	X	178.14610	93.32674	285.42150	2.27563	0.2224423	0.28328392	2.2960857	20	3 24.5	21.1
298886 2004 SU_{46}	17.1	X	199.49500	49.40415	288.37184	6.54398	0.1322423	0.28121777	2.3073185	20	2 18.2	20.7
298887 2004 SN_{48}	17.3	X	150.14756	57.01234	329.24525	4.78862	0.2482653	0.27763457	2.3271284	20	3 12.3	20.9
298888 2004 SD_{61}	17.2	X	156.32420	242.90912	123.53066	6.68982	0.2133009	0.27739281	2.3284804	20	2 21.8	20.7
298889 2004 TB_{8}	13.8	X	343.50384	333.79744	87.44625	14.27615	0.2589412	0.12560591	3.9487776	20	12 6.8	18.0
298890 2004 TA_{14}	17.0	X	159.26090	270.74234	96.14223	7.18801	0.1592069	0.27749781	2.3278930	20	2 22.1	20.5
298891 2004 TP_{18}	17.8	X	158.01219	242.31834	108.63241	3.28007	0.1893847	0.27638002	2.3341654	20	2 1.4	21.1
298892 2004 TX_{19}	17.4	X	193.92803	327.54367	24.82249	7.66425	0.1356131	0.28162882	2.3050728	20	3 7.5	20.9
298893 2004 TR_{31}	16.3	X	343.95539	164.64801	354.87150	6.29363	0.0809326	0.27191659	2.3596391	20	—	—
298894 2004 TZ_{34}	17.4	X	171.49625	332.60831	27.76382	5.53629	0.1611532	0.28020339	2.3128837	20	2 25.6	20.9
298895 2004 TD_{43}	17.7	X	88.53798	100.62101	322.25060	2.17184	0.1058742	0.27265283	2.3553894	20	1 29.6	20.3
298896 2004 TL_{45}	16.7	X	211.96704	295.04219	11.03068	2.51607	0.2242881	0.27929502	2.3178959	20	1 25.2	20.5
298897 2004 TX_{46}	17.5	X	223.21937	255.21815	27.11436	5.53798	0.1340026	0.27496457	2.3421690	20	1 6.5	21.1
298898 2004 TR_{48}	17.8	X	194.14516	302.15217	47.49400	2.05512	0.2526149	0.28245295	2.3005869	20	3 4.3	21.6
298899 2004 TR_{50}	18.1	X	73.26508	107.99433	339.27722	2.45559	0.1624668	0.27161122	2.3614073	20	2 17.2	20.3
298900 2004 TR_{56}	17.0	X	72.89398	254.78914	215.39008	4.33505	0.1242255	0.27914672	2.3187167	20	3 12.1	19.3
298901 2004 TU_{57}	17.1	X	59.30723	135.04276	357.91155	2.20378	0.1474639	0.28053194	2.3110775	20	3 27.2	19.2
298902 2004 TU_{63}	17.0	X	199.27484	136.73596	200.47117	5.83069	0.1531981	0.28098730	2.3085800	20	2 17.9	20.7
298903 2004 TV_{66}	17.8	X	146.90139	253.12793	121.76162	2.97755	0.2287224	0.27673544	2.3321664	20	2 24.6	21.3
298904 2004 TZ_{67}	17.0	X	127.27452	310.93004	91.26296	6.93057	0.2018558	0.27675358	2.3320644	20	3 10.7	20.4
298905 2004 TL_{71}	17.8	X	118.37508	144.83984	243.85428	1.61837	0.2029731	0.27398714	2.3477360	20	2 8.1	20.9
298906 2004 TB_{73}	17.0	X	226.58041	190.12981	24.11398	7.14792	0.0903603	0.26146492	2.4221095	20	—	—
298907 2004 TT_{75}	16.8	X	121.45286	198.27439	228.09244	7.33528	0.1693137	0.27802611	2.3249431	20	3 25.8	20.0
298908 2004 TR_{79}	17.1	X	130.03716	242.43618	196.90298	7.97864	0.1821311	0.28152719	2.3056275	20	4 26.4	20.4
298909 2004 TF_{83}	17.6	X	149.87209	185.90874	225.15749	2.56187	0.1623514	0.28287564	2.2982945	20	4 6.1	21.0
298910 2004 TN_{84}	17.3	X	202.26153	291.41411	10.42500	7.36616	0.1360205	0.27717219	2.3297158	20	1 11.2	21.0
298911 2004 TU_{89}	17.2	X	206.09748	255.96436	54.34950	5.56437	0.1392883	0.27956760	2.3163890	20	1 25.2	20.7
298912 2004 TF_{99}	18.0	X	113.98581	358.27894	50.82443	2.84688	0.1958222	0.27535982	2.3399272	20	3 1.7	21.1
298913 2004 TJ_{101}	17.4	X	212.37512	185.57122	64.45745	2.24724	0.1516182	0.26811248	2.3819064	20	—	—
298914 2004 TU_{102}	16.6	X	188.33368	284.09373	17.98396	7.21465	0.1843743	0.27301576	2.3533015	20	—	—
298915 2004 TD_{103}	17.3	X	155.62380	165.03987	221.94894	1.62663	0.1684489	0.27909220	2.3190187	20	3 12.4	20.6
298916 2004 TT_{103}	17.4	X	171.34182	221.18740	181.76456	5.84687	0.0983309	0.28594795	2.2818026	20	4 15.6	20.5
298917 2004 TO_{107}	17.4	X	181.43508	160.53077	188.59406	5.87605	0.1541963	0.28044565	2.3115515	20	2 16.6	21.0
298918 2004 TB_{114}	17.2	X	125.33849	21.66800	24.20698	3.25694	0.1645101	0.27545061	2.3394130	20	3 6.4	20.3
298919 2004 TB_{116}	16.8	X	133.58059	231.12302	137.91295	7.08905	0.1259444	0.27523059	2.3406595	20	1 20.9	19.9
298920 2004 TS_{117}	17.4	X	202.60032	162.41671	160.96759	5.34483	0.1800805	0.28037694	2.3119292	20	2 5.5	21.1
298921 2004 TM_{126}	17.1	X	142.27053	359.27288	45.79883	7.36250	0.1303588	0.28130638	2.3068339	20	3 22.2	20.3
298922 2004 TR_{126}	17.4	X	204.97277	196.39354	109.99963	5.45804	0.2380877	0.28028458	2.3124370	20	1 19.8	21.4
298923 2004 TK_{136}	17.4	X	160.46466	355.44660	338.90461	6.48236	0.1266326	0.27389207	2.3482793	20	1 8.9	20.8
298924 2004 TG_{148}	17.4	X	347.99565	222.89568	358.94256	5.32822	0.0827000	0.28600160	2.2815171	20	3 25.7	19.6
298925 2004 TD_{151}	17.1	X	291.49550	39.36891	201.32659	23.53328	0.1958764	0.28158773	2.3052971	20	1 10.6	21.1
298926 2004 TH_{151}	17.2	X	247.48268	238.67789	11.55699	6.84397	0.1166491	0.27452664	2.3446592	20	—	—
298927 2004 TJ_{158}	17.4	X	116.25720	154.08219	277.12784	2.18579	0.1385272	0.27760133	2.3273142	20	3 23.1	20.3
298928 2004 TK_{158}	17.7	X	165.16342	14.82787	13.13379	4.68352	0.2449061	0.28092511	2.3089207	20	3 27.8	21.5
298929 2004 TQ_{160}	17.5	X	156.03521	139.03617	254.84738	0.98176	0.2341653	0.28007523	2.3135892	20	3 26.3	21.2
298930 2004 TK_{162}	17.0	X	210.33321	89.20838	206.24158	6.19652	0.1153045	0.27399680	2.3476809	20	1 8.6	20.6
298931 2004 TK_{168}	17.4	X	177.55534	183.85575	176.39518	4.30388	0.1605515	0.28067972	2.3102662	20	2 28.1	21.0
298932 2004 TG_{176}	16.6	X	200.99457	116.02500	218.85118	5.69272	0.2508595	0.28020336	2.3128838	20	2 17.6	20.7
298933 2004 TR_{188}	17.1	X	209.23963	317.32989	268.78336	0.37171	0.1367929	0.26332260	2.4107044	20	—	—
298934 2004 TZ_{190}	17.4	X	108.56549	299.54027	188.08488	4.18795	0.1033565	0.28846723	2.2684980	20	5 27.7	20.3
298935 2004 TW_{205}	16.6	X	196.75137	250.38780	46.70218	13.95869	0.1581952	0.27056297	2.3675027	20	—	—
298936 2004 TU_{215}	18.2	X	144.03851	96.16425	326.07434	2.24740	0.1690148	0.28281376	2.2986298	20	4 14.9	21.5
298937 2004 TU_{231}	17.2	X	248.58126	252.79201	8.30469	5.86423	0.1626437	0.27560245	2.3385536	20	1 3.1	20.8
298938 2004 TO_{234}	17.7	X	64.19895	243.87885	201.94401	2.99131	0.1287924	0.27146341	2.3622645	20	1 23.7	19.9
298939 2004 TU_{235}	17.4	X	93.89771	53.00068	46.19409	5.08794	0.1588062	0.27817039	2.3241391	20	4 7.1	20.1
298940 2004 TQ_{237}	16.8	X	197.44391	255.82203	55.50321	4.57807	0.1820426	0.27644949	2.3337743	20	1 19.4	20.6
298941 2004 TW_{240}	17.1	X	230.52654	30.45608	290.61595	6.03314	0.1389178	0.28370428	2.2938171	20	2 26.8	20.6
298942 2004 TY_{253}	17.2	X	235.12141	242.72580	28.47458	2.40999	0.1917775	0.27875596	2.3208831	20	1 1.8	21.1
298943 2004 TJ_{274}	17.4	X	47.34710	69.83327	16.06952	2.80063	0.1552864	0.26670448	2.3902822	20	—	—
298944 2004 TL_{275}	17.5	X	60.19092	207.70236	248.15028	1.26353	0.1721314	0.27022145	2.3694971	20	2 5.9	19.5
298945 2004 TY_{286}	17.6	X	173.15392	154.61604	167.42993	3.51159	0.1507626	0.27475782	2.3433438	20	1 7.3	21.1
298946 2004 TZ_{293}	17.2	X	76.03109	217.11286	213.54187	6.49793	0.0472306	0.27131489	2.3631265	20	1 12.2	20.0
298947 2004 TD_{295}	17.2	X	112.47806	65.02585	337.03918	1.82520	0.2152971	0.27249081	2.3563229	20	2 21.3	20.0
298948 2004 TN_{295}	17.3	X	159.85061	14.23159	15.88890	2.67284	0.1449859	0.27897651	2.3196598	20	3 20.1	20.7
298949 2004 TL_{307}	17.1	X	54.69950	103.60499	317.83144	6.64400	0.1830825	0.26655454	2.3911785	20	—	—
298950 2004 TM_{314}	17.2	X	244.24941	23.37775	237.86114	3.88591	0.1344946	0.27653996	2.3332653	20	—	—
298951 2004 TF_{316}	17.4	X	205.53082	245.65776	33.38824	2.65795	0.1981868	0.27459311	2.3442808	20	—	—
298952 2004 TN_{319}	17.4	X	62.36161	266.76670	179.82389	1.01993	0.1506493	0.27120946	2.3637389	20	1 24.6	19.4
298953 2004 TG_{328}	16.6	X	228.95938	195.62936	117.51661	8.89355	0.1389340	0.28313424	2.2968949	20	2 19.6	20.1
298954 2004 TL_{335}	17.4	X	93.75237	45.35526	15.93199	1.51715	0.1793084	0.27233402	2.3572272	20	2 16.7	20.0
298955 2004 TN_{349}	17.3	X	55.34862	217.39441	200.76931	6.18917	0.0703290	0.26514241	2.3996611	20	—	—
298956 2004 TX_{353}	17.4	X	165.68718	86.98197	238.45022	1.63432	0.0581438	0.26825615	2.3810559	20	—	—
298957 2004 TW_{355}	16.5	X	144.78904	271.95173	99.21483	7.16103	0.2021136	0.27618324	2.3352740	20	2 16.8	20.0
298958 2004 TN_{367}	17.2	X	104.24191	16.29491	31.37509	6.22108	0.1279483	0.27171059	2.3608316	20	2 7.2	20.0
298959 2004 UV_{6}	16.8	X	26.47627	151.66716	265.55956	5.48683	0.1023901	0.26071507	2.4267514	20	—	—
298960 2004 VH_{3}	17.1	X	106.00123	322.74929	74.26905	3.47738	0.2152500	0.27123147	2.3636110	20	2 7.6	19.9

ELEMENTS AND OPPOSITION DATES IN 2020

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Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
	m		°	°	°	°		°				
298961 2004 VY_6	17.0	X	97.55212	280.04810	165.35716	3.42443	0.2082635	0.27469350	2.3437096	20	3 31.2	19.9
298962 2004 VV_{14}	16.9	X	78.52978	308.88481	140.72349	5.26910	0.1910897	0.27120523	2.3637634	20	3 6.6	19.2
298963 2004 VM_{15}	16.9	X	47.12940	234.55973	236.06439	8.97597	0.0347618	0.27132472	2.3630694	20	1 22.1	19.8
298964 2004 VK_{16}	17.5	X	132.45946	127.72098	278.44182	1.76402	0.1890445	0.27675544	2.3320540	20	3 15.3	20.8
298965 2004 VL_{17}	17.9	X	89.96088	11.36244	60.65490	3.19678	0.1988262	0.27258949	2.3557542	20	3 1.5	20.5
298966 2004 VN_{17}	16.9	X	123.91378	347.89347	67.03411	3.49263	0.1854113	0.27612921	2.3355786	20	3 19.9	20.1
298967 2004 VA_{19}	16.8	X	64.78108	357.01932	57.42390	7.29051	0.0802455	0.26511762	2.3998107	20	—	—
298968 2004 VS_{27}	17.6	X	122.07033	116.15037	274.93917	1.15149	0.2092803	0.27251046	2.3562096	20	2 16.8	20.8
298969 2004 VL_{28}	17.7	X	111.01584	183.74814	225.70057	1.49094	0.1895531	0.27262226	2.3555654	20	2 24.7	20.6
298970 2004 VN_{40}	17.5	X	140.38885	157.69843	202.22462	3.32301	0.1021207	0.27068466	2.3667931	20	1 14.5	20.6
298971 2004 VB_{42}	17.3	X	80.96632	358.64360	59.14687	2.97266	0.1643952	0.26893380	2.3770544	20	1 20.2	19.7
298972 2004 VS_{69}	17.1	X	356.90989	119.24782	341.42247	1.76026	0.0990238	0.25852463	2.4404398	20	—	—
298973 2004 VN_{72}	17.4	X	22.98856	114.51040	354.72844	1.15413	0.1234210	0.26488632	2.4012076	20	—	—
298974 2004 VV_{73}	17.0	X	118.06280	312.65953	113.13031	9.80833	0.1586270	0.27645056	2.3337683	20	3 27.2	20.3
298975 2004 VU_{81}	17.5	X	107.90530	0.16808	58.37506	4.44428	0.1271021	0.27403667	2.3474531	20	2 26.3	20.3
298976 2004 VB_{90}	18.0	X	138.04609	81.34141	332.65378	1.95499	0.1849063	0.27783893	2.3259872	20	3 31.1	21.5
298977 2004 VF_{112}	17.3	X	123.24839	5.05583	59.62167	3.17782	0.1566735	0.27648722	2.3335620	20	3 28.1	20.4
298978 2004 WM	17.0	X	145.41302	218.25642	182.91778	4.84734	0.1367501	0.27815994	2.3241973	20	3 17.8	20.3
298979 2004 WL_1	17.8	X	57.50695	40.41707	35.53905	1.22176	0.1920246	0.26625854	2.3929503	20	1 4.2	19.4
298980 2004 WD_5	17.0	X	72.29270	356.26430	70.35482	3.08425	0.1662470	0.26804629	2.3822985	20	1 17.6	19.1
298981 2004 WW_{10}	17.2	X	106.89592	95.06254	12.73359	6.66266	0.0657704	0.28107142	2.3081193	20	4 19.5	20.1
298982 2004 WA_{11}	17.4	X	52.25124	248.43756	196.61117	0.68044	0.1531288	0.26601908	2.3943861	20	1 3.8	19.3
298983 2004 WM_{11}	17.1	X	168.04074	297.80092	88.64944	6.45843	0.2379190	0.28067436	2.3102956	20	3 31.2	21.0
298984 2004 XM_6	16.0	X	188.19145	152.95562	222.51521	24.33442	0.1906778	0.28090993	2.3090039	20	3 25.1	20.1
298985 2004 XZ_8	17.0	X	103.88105	133.21993	308.53150	3.83134	0.2077784	0.27398607	2.3477422	20	3 31.5	20.2
298986 2004 XD_{13}	16.6	X	9.09785	34.02079	99.44081	3.15833	0.1568888	0.26283312	2.4136964	20	—	—
298987 2004 XB_{19}	15.1	X	18.18834	308.23893	92.30387	4.47178	0.2545825	0.12673324	3.9253256	20	—	—
298988 2004 XX_{19}	17.3	X	100.72162	6.04271	49.48914	2.98856	0.2007663	0.27005261	2.3704846	20	2 23.7	20.0
298989 2004 XZ_{19}	17.1	X	48.99686	22.11751	79.00615	3.33492	0.1734368	0.26621776	2.3931947	20	1 23.7	18.9
298990 2004 XY_{23}	17.4	X	160.49933	12.24524	16.49288	3.23608	0.2001388	0.27789095	2.3256969	20	3 22.7	20.8
298991 2004 XN_{24}	17.1	X	89.88258	347.89150	103.27614	3.27827	0.1257764	0.27372990	2.3492066	20	3 16.1	19.7
298992 2004 XJ_{26}	17.5	X	111.83471	80.05185	329.30453	2.88140	0.2341730	0.27038439	2.3685450	20	3 3.5	20.5
298993 2004 XO_{27}	16.9	X	78.22698	112.41563	303.07559	6.37587	0.1011150	0.26590524	2.3950695	20	1 3.9	19.3
298994 2004 XE_{28}	17.2	X	1.51662	145.76883	305.45881	0.58584	0.1584783	0.25628267	2.4546518	20	—	—
298995 2004 XH_{28}	17.3	X	114.48816	137.24194	290.76294	4.23705	0.1986458	0.27321610	2.3521510	20	3 24.2	20.5
298996 2004 XC_{29}	17.2	X	82.39689	117.59117	318.44198	5.17081	0.1837558	0.26747289	2.3857020	20	2 19.9	19.7
298997 2004 XD_{32}	17.1	X	1.39384	290.77840	188.34622	0.96265	0.1272369	0.26114980	2.4240575	20	—	—
298998 2004 XG_{53}	17.8	X	308.66634	299.84388	204.82014	0.33535	0.1299910	0.25441360	2.4666593	20	—	—
298999 2004 XE_{64}	17.4	X	12.06080	90.08564	349.86016	2.11847	0.1630322	0.25709389	2.4494855	20	—	—
299000 2004 XF_{79}	17.3	X	128.79906	116.34042	296.45249	2.19544	0.2292335	0.27456135	2.3444615	20	3 24.5	20.7
299001 2004 XH_{80}	16.7	X	82.77223	17.37509	69.04588	3.71253	0.1417344	0.26981953	2.3718495	20	3 1.9	19.3
299002 2004 XN_{87}	17.7	X	89.12663	12.79383	91.36016	3.36141	0.1957783	0.27489370	2.3425715	20	4 13.9	20.4
299003 2004 XP_{87}	15.3	X	350.62883	218.51223	193.12817	2.51538	0.2135075	0.12421665	3.9781654	20	12 5.9	19.8
299004 2004 XD_{88}	17.2	X	50.20164	90.60207	344.23655	3.18506	0.1255804	0.26112955	2.4241828	20	—	—
299005 2004 XJ_{92}	17.0	X	118.72974	354.78268	49.01501	5.75408	0.1874322	0.27205169	2.3588578	20	3 1.2	20.2
299006 2004 XW_{96}	15.8	X	150.80674	300.84283	289.74263	16.36467	0.1631224	0.23810241	2.5780630	20	11 19.6	20.2
299007 2004 XA_{100}	17.9	X	140.69056	11.39363	28.32623	1.54540	0.1914812	0.27244134	2.3566082	20	3 17.5	21.3
299008 2004 XQ_{104}	17.4	X	34.86568	336.01618	115.60009	1.55343	0.1885040	0.26228143	2.4170800	20	—	—
299009 2004 XD_{106}	17.0	X	84.48272	48.67010	31.75930	5.73035	0.2078233	0.27027670	2.3691741	20	3 7.6	19.5
299010 2004 XT_{111}	17.8	X	64.50011	197.05224	236.77774	4.56587	0.2034627	0.26780690	2.3837180	20	1 16.1	19.7
299011 2004 XO_{129}	17.0	X	11.79410	7.22996	72.27675	5.41477	0.0559383	0.25641879	2.4537830	20	—	—
299012 2004 XH_{135}	14.7	X	0.81037	16.30159	44.25801	9.25764	0.3102032	0.12511249	3.9591530	20	—	—
299013 2004 XC_{136}	17.6	X	127.02599	31.25094	7.14842	4.84337	0.2465766	0.27318375	2.3523366	20	3 8.4	21.0
299014 2004 XT_{143}	17.0	X	110.48748	93.04451	286.20177	4.93305	0.1171512	0.26621831	2.3931914	20	1 5.0	19.7
299015 2004 YB_4	17.1	X	111.35420	295.75005	90.79345	3.85015	0.1755107	0.26466175	2.4025656	20	1 26.0	20.0
299016 2004 YC_4	17.4	X	24.38670	23.37954	86.02276	3.13560	0.1455838	0.26031228	2.4292541	20	—	—
299017 2004 YX_6	17.5	X	109.04242	241.38918	170.03082	1.41794	0.1724112	0.27223698	2.3577873	20	2 22.8	20.2
299018 2004 YK_{21}	17.7	X	67.56082	153.91418	268.55400	0.41692	0.1708075	0.26070684	2.4268025	20	1 4.3	19.7
299019 2004 YD_{24}	17.4	X	63.70054	99.13628	290.92697	6.09950	0.1997286	0.25749888	2.4469165	20	—	—
299020 Chennaoui	16.8	X	242.17612	240.89885	281.72050	6.58056	0.1407963	0.24172058	2.5522721	20	12 6.3	20.2
299021 2005 AW_3	16.9	X	61.57694	1.87602	61.68238	2.97871	0.1775190	0.26132814	2.4229545	20	—	—
299022 2005 AP_{12}	16.4	X	233.62654	149.17346	38.74158	3.99226	0.1689112	0.24369310	2.5384809	20	12 24.3	19.7
299023 2005 AO_{15}	16.4	X	17.21990	37.38792	83.30461	4.49415	0.1342102	0.25947874	2.4344538	20	—	—
299024 2005 AU_{15}	16.2	X	230.33463	255.77821	281.40223	6.41406	0.1278888	0.24353236	2.5395977	20	12 12.2	19.5
299025 2005 AK_{16}	16.4	X	211.95893	266.66448	287.07774	6.29042	0.1476332	0.24212000	2.5494643	20	12 7.9	19.9
299026 2005 AL_{17}	16.9	X	59.07758	299.78165	124.44305	3.75302	0.1549568	0.26002927	2.4310164	20	—	—
299027 2005 AQ_{18}	16.8	X	54.26838	17.08880	57.99232	2.63195	0.1237933	0.26109055	2.4244242	20	—	—
299028 2005 AS_{26}	17.2	X	6.83722	21.44459	99.60510	2.30326	0.1463490	0.25715707	2.4490843	20	—	—
299029 2005 AU_{27}	16.1	X	96.99228	121.92665	114.77943	13.99661	0.1333538	0.22982229	2.6396193	20	10 14.5	20.3
299030 2005 AJ_{31}	16.8	X	323.66338	11.17168	123.04648	3.24970	0.1279460	0.25317364	2.4747067	20	—	—
299031 2005 AQ_{37}	17.1	X	268.35933	166.48248	313.38252	14.18051	0.0844699	0.24003024	2.5642404	20	11 22.1	20.6
299032 2005 AT_{37}	15.7	X	80.93600	131.23263	107.07788	13.79604	0.1644436	0.22398888	2.6852522	20	10 2.0	19.9
299033 2005 AH_{40}	16.9	X	355.54412	90.33583	357.51861	2.31146	0.1874903	0.25210028	2.4817260	20	—	—
299034 2005 AN_{41}	17.8	X	124.18010	232.31695	183.28937	1.01726	0.1733404	0.27081963	2.3660066	20	3 18.2	21.0
299035 2005 AT_{51}	16.5	X	356.14126	354.72799	151.87720	9.74701	0.1509393	0.25941909	2.4348269	20	—	—
299036 2005 AV_{52}	17.0	X	346.58162	164.23603	323.39098	5.82397	0.0926890	0.25479701	2.4641842	20	—	—
299037 2005 AU_{55}	17.2	X	80.64859	182.97077	229.15950	1.51401	0.1627558	0.26246645	2.4159440	20	1 11.8	19.7
299038 2005 AJ_{58}	17.3	X	24.87565	90.84661	352.16409	2.10251	0.1699478	0.25667655	2.4521400	20	—	—
299039 2005 AW_{61}	17.2	X	75.26225	56.75902	14.52684	2.60980	0.2094605	0.26297169	2.4128485	20	2 7.5	19.4
299040 2005 AC_{66}	18.0	X	53.88637	170.95152	279.04696	1.73566	0.1715843	0.26237743	2.4164904	20	1 17.1	20.0

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Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
	m		°	°	°	°		°				
299041 2005 AR_{66}	16.3	X	322.44070	14.23177	129.29518	5.53777	0.0777110	0.25348496	2.4726800	20	—	—
299042 2005 AA_{80}	16.7	X	174.92080	273.72760	336.88472	6.04002	0.1193583	0.24272997	2.5451914	20	—	—
299043 2005 BL	16.3	X	93.88770	70.52835	320.33766	5.44278	0.1399812	0.26012269	2.4304343	20	1 1.7	19.1
299044 2005 BC_{4}	16.2	X	196.98550	57.37371	167.75654	3.63617	0.1590179	0.24326718	2.5414430	20	12 29.6	19.9
299045 2005 BG_{10}	17.3	X	347.65483	204.30686	277.87104	1.71327	0.1589311	0.25388768	2.4700645	20	—	—
299046 2005 BP_{13}	17.0	X	73.88544	173.06776	279.53170	1.33135	0.1339173	0.26436720	2.4043499	20	2 22.0	19.3
299047 2005 BU_{18}	17.4	X	83.51202	302.02996	126.12777	2.98054	0.1297313	0.26366248	2.4086322	20	2 3.4	19.8
299048 2005 BH_{42}	17.0	X	214.73387	266.00860	313.63198	1.90054	0.0382410	0.24679050	2.5171963	20	—	—
299049 2005 BL_{49}	18.1	X	11.36697	165.36561	272.93024	0.20811	0.2023516	0.25232982	2.4802207	20	—	—
299050 2005 BS_{49}	16.8	X	263.04226	177.66489	320.43522	12.96914	0.1002811	0.23978939	2.5659572	20	12 8.9	20.1
299051 2005 CB_{3}	17.4	X	95.12913	95.94107	331.02452	2.13287	0.2016298	0.26606269	2.3941245	20	3 1.4	20.3
299052 2005 CT_{4}	16.6	X	241.07416	88.03004	113.74101	3.89326	0.1736157	0.24653895	2.5189083	20	—	—
299053 2005 CP_{5}	16.7	X	216.69821	163.12162	11.07840	4.35855	0.0810574	0.23716141	2.5848779	20	11 25.7	20.3
299054 2005 CJ_{8}	17.6	X	35.77717	16.31941	99.73106	2.69926	0.1613455	0.26187017	2.4196100	20	1 18.1	19.6
299055 2005 CK_{8}	16.7	X	91.74158	69.21571	350.77222	2.40798	0.1681613	0.26428133	2.4048707	20	2 11.3	19.2
299056 2005 CE_{13}	17.2	X	329.41066	86.98617	51.98487	1.90810	0.1322159	0.25203984	2.4821227	20	—	—
299057 2005 CE_{15}	17.3	X	28.37778	341.80695	114.64384	3.34248	0.1469840	0.25691748	2.4506067	20	—	—
299058 2005 CW_{16}	17.7	X	1.08206	131.45926	327.02459	1.26567	0.1336310	0.25224080	2.4808042	20	—	—
299059 2005 CP_{20}	16.9	X	342.62829	67.44334	79.22805	3.13814	0.1385352	0.25478204	2.4642807	20	—	—
299060 2005 CH_{29}	16.7	X	107.50297	299.31906	353.31306	5.67467	0.1317472	0.23749796	2.5824354	20	12 26.9	20.9
299061 2005 CE_{31}	13.9	X	155.46068	84.54363	12.51639	4.60090	0.0357817	0.08193328	5.2500383	20	6 4.4	21.0
299062 2005 CC_{34}	13.4	X	255.28625	17.28293	338.12469	8.49270	0.0652185	0.08388926	5.1681109	20	5 21.9	20.4
299063 2005 CK_{36}	16.2	X	145.57162	234.34899	326.00696	14.33329	0.0517063	0.22914422	2.6448240	20	10 2.5	20.3
299064 2005 CG_{48}	16.6	X	269.71718	191.29169	346.37600	3.98271	0.0965537	0.24547644	2.5261715	20	—	—
299065 2005 CM_{49}	16.3	X	228.30143	247.63895	318.99252	3.25512	0.0512389	0.24408353	2.5357731	20	—	—
299066 2005 CB_{50}	16.1	X	106.24381	276.59617	321.16146	11.65716	0.1357206	0.22623370	2.6674596	20	10 12.2	20.4
299067 2005 CL_{53}	17.4	X	35.38625	357.07084	90.65754	3.66045	0.1759578	0.25666391	2.4522205	20	—	—
299068 2005 CH_{60}	16.3	X	174.74944	356.22064	145.22059	13.83559	0.1052297	0.22563115	2.6722065	20	8 26.9	20.4
299069 2005 CD_{66}	16.8	X	114.92575	7.51809	183.84645	2.59040	0.1173875	0.22012214	2.7166075	20	8 26.9	20.9
299070 2005 CS_{66}	17.8	X	327.59960	322.55671	129.11723	1.27494	0.1011553	0.24354884	2.5394832	20	—	—
299071 2005 CW_{76}	16.6	X	316.06725	315.43416	129.85851	15.53463	0.0342087	0.24114012	2.5563662	20	12 24.3	20.0
299072 2005 DF_{3}	16.1	X	334.43091	324.50985	279.48223	4.37224	0.1324711	0.19099153	2.9862533	20	4 5.3	19.8
299073 2005 EK_{1}	17.2	X	61.68235	240.25362	161.56263	27.05055	0.0923361	0.37904262	1.8909383	20	—	—
299074 2005 EO_{9}	16.8	X	43.38235	127.61924	333.37726	9.82179	0.2115537	0.25848057	2.4407171	20	1 16.7	18.7
299075 2005 EX_{10}	17.2	X	216.10372	334.63265	199.11690	4.09531	0.1235861	0.23395569	2.6084367	20	11 19.8	20.8
299076 2005 EJ_{11}	16.4	X	20.79244	70.49143	32.04290	4.68827	0.1505056	0.25564341	2.4587421	20	—	—
299077 2005 EB_{12}	16.9	X	219.09114	24.85955	136.24811	9.22144	0.1191018	0.23391857	2.6087127	20	11 10.6	20.7
299078 2005 ES_{14}	16.5	X	105.99248	46.32430	160.49664	14.81289	0.1342951	0.21862421	2.7290021	20	9 8.6	20.5
299079 2005 EQ_{25}	16.5	X	247.34248	303.35426	159.53118	14.69662	0.1354926	0.22932786	2.6434119	20	9 26.6	20.1
299080 2005 EG_{27}	16.8	X	174.00537	196.14885	355.29954	6.21880	0.1992607	0.22789278	2.6544976	20	10 21.5	21.2
299081 2005 EK_{39}	17.2	X	346.32664	174.99223	154.71366	2.08868	0.0457203	0.22031608	2.7150130	20	8 29.9	20.3
299082 2005 EV_{41}	17.2	X	118.33650	76.10593	308.67024	1.74791	0.2444510	0.26400510	2.4065479	20	2 10.5	20.6
299083 2005 EV_{46}	15.9	X	227.38316	33.86478	170.60161	14.57474	0.0335739	0.24310940	2.5425425	20	—	—
299084 2005 EF_{47}	16.5	X	170.27411	30.21761	174.66570	4.19205	0.0873724	0.22977924	2.6399489	20	11 11.8	20.4
299085 2005 EY_{51}	16.0	X	275.14487	80.70634	11.01241	21.69404	0.1172073	0.22837891	2.6507294	20	10 16.7	19.4
299086 2005 EJ_{60}	16.6	X	192.93384	351.06782	194.43701	8.31599	0.1340771	0.23111756	2.6297477	20	11 8.4	20.5
299087 2005 EN_{61}	17.1	X	301.24682	188.90961	289.91513	4.86466	0.1903072	0.24207843	2.5497562	20	—	—
299088 2005 ET_{64}	15.8	X	69.27472	260.80635	333.04469	14.58228	0.0736510	0.21712133	2.7415808	20	8 23.2	19.4
299089 2005 EZ_{64}	16.6	X	279.62139	15.65639	118.58215	5.21761	0.1201548	0.23935807	2.5690388	20	12 28.1	19.2
299090 2005 EB_{65}	15.7	X	76.19112	213.56277	14.17589	13.17544	0.0691691	0.21517922	2.7580523	20	8 28.4	19.6
299091 2005 ES_{67}	15.8	X	354.84666	27.18135	1.78390	13.42465	0.0418663	0.23170378	2.6253103	20	11 28.0	19.4
299092 2005 EV_{69}	17.5	X	183.58100	96.04158	187.11842	21.30340	0.0890650	0.37581822	1.9017386	20	—	—
299093 2005 EJ_{77}	17.6	X	280.05125	148.80487	323.93096	2.15839	0.0761469	0.23518316	2.5993528	20	12 2.6	20.7
299094 2005 EY_{79}	15.9	X	116.34210	224.03831	359.85840	12.69010	0.1119282	0.22214248	2.7001111	20	10 6.7	20.1
299095 2005 EW_{81}	17.0	X	294.53076	269.29482	171.80616	8.62051	0.0511950	0.23274508	2.6174740	20	11 16.1	20.4
299096 2005 ET_{82}	17.0	X	312.59649	144.91750	334.35951	6.30032	0.1473272	0.24298687	2.5433971	20	—	—
299097 2005 EP_{88}	16.4	X	311.02396	67.30098	313.59298	5.42070	0.0491736	0.22376763	2.6870219	20	9 14.2	19.8
299098 2005 EJ_{90}	16.4	X	135.31071	63.86922	174.38770	12.35139	0.0474881	0.23082013	2.6320063	20	11 17.6	20.3
299099 2005 EQ_{93}	15.6	X	101.30843	134.62509	79.63092	13.87841	0.0811323	0.21688454	2.7435759	20	9 14.5	19.8
299100 2005 EC_{98}	16.3	X	216.80306	8.59156	191.24770	8.25536	0.0433484	0.23958264	2.5674332	20	—	—
299101 2005 EW_{108}	17.1	X	244.45757	168.82858	336.86156	11.16566	0.1931526	0.23500201	2.6006885	20	11 3.1	20.8
299102 2005 EX_{108}	15.8	X	85.79330	266.05943	321.64287	11.09641	0.1407555	0.21770662	2.7366650	20	9 9.9	19.8
299103 2005 EZ_{111}	16.3	X	181.88586	41.52159	143.35910	8.26662	0.1052554	0.22949618	2.6421192	20	10 31.1	20.4
299104 2005 ED_{116}	17.3	X	114.01650	110.35746	153.83145	3.09881	0.0259144	0.23016583	2.6369920	20	11 22.7	20.9
299105 2005 EV_{118}	16.0	X	240.65876	176.34039	327.81845	13.54339	0.0233786	0.23258289	2.6186907	20	11 22.3	19.8
299106 2005 ED_{129}	17.3	X	311.82288	257.42230	190.22946	3.13214	0.1661399	0.23832015	2.5764924	20	12 19.6	19.6
299107 2005 EY_{129}	16.4	X	88.89882	317.37643	318.08797	14.20342	0.1445622	0.23219853	2.6215798	20	11 13.2	20.7
299108 2005 EU_{130}	17.6	X	19.04180	104.73139	5.84578	4.61692	0.1799480	0.25445803	2.4663722	20	—	—
299109 2005 EY_{136}	15.7	X	56.69292	239.79716	22.65611	11.41946	0.1813659	0.21437584	2.7649386	20	9 30.9	19.4
299110 2005 EU_{137}	15.6	X	60.85561	319.76020	25.54427	14.91663	0.1266950	0.23574959	2.5951876	20	—	—
299111 2005 EZ_{137}	16.5	X	14.91154	118.47369	183.74393	8.74707	0.1583167	0.21326342	2.7745452	20	9 15.1	19.6
299112 2005 EQ_{142}	16.6	X	209.46759	168.83624	23.47131	13.61282	0.2021155	0.23269836	2.6178243	20	11 22.4	20.8
299113 2005 EN_{149}	16.5	X	353.51534	286.75956	40.18489	7.01181	0.0602272	0.21705370	2.7421503	20	9 9.7	19.9
299114 2005 ER_{149}	16.2	X	214.01425	164.78552	20.77660	13.77531	0.1083624	0.23261611	2.6184414	20	11 30.0	20.1
299115 2005 EP_{156}	16.5	X	232.92288	165.58183	6.68696	12.17789	0.1128500	0.23898590	2.5717053	20	12 8.3	20.1
299116 2005 EH_{157}	17.1	X	32.67040	105.62381	167.81437	1.52952	0.0403268	0.21669599	2.7451672	20	8 19.9	20.5
299117 2005 EX_{160}	16.4	X	305.70055	166.63586	176.77194	5.18389	0.0069314	0.21168798	2.7882941	20	7 21.2	20.1
299118 2005 EG_{162}	16.3	X	150.18931	216.15380	329.83620	8.24168	0.2701027	0.22085143	2.7106237	20	9 24.1	21.3
299119 2005 EL_{182}	17.8	X	38.22360	303.80117	182.10569	21.63932	0.0354064	0.38599678	1.8681580	20	1 6.3	20.1
299120 2005 EW_{184}	16.6	X	183.02274	339.23237	218.26916	3.85761	0.1251302	0.22851002	2.6497154	20	11 12.4	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		°	°	°	°		°				
299121 2005 ES_{188}	17.7	X	181.75769	271.91728	8.96840	20.67164	0.0530990	0.37175318	1.9155769	20	—	—
299122 2005 EC_{192}	17.0	X	118.94223	259.50379	330.69817	4.29844	0.1090710	0.22473555	2.6793012	20	10 17.8	21.2
299123 2005 EM_{197}	16.4	X	162.55045	298.20785	254.19672	1.16528	0.0729684	0.22469676	2.6796095	20	10 17.3	20.4
299124 2005 EL_{198}	17.0	X	77.41476	269.92992	343.63018	2.73391	0.1513788	0.21733960	2.7397450	20	10 7.3	21.1
299125 2005 ER_{199}	16.7	X	120.42756	221.58266	356.97894	3.59213	0.0376918	0.22286902	2.6942398	20	10 1.4	20.4
299126 2005 ED_{207}	16.9	X	152.36442	239.73553	347.78256	8.38452	0.0893811	0.22812967	2.6526597	20	11 16.9	21.1
299127 2005 EF_{213}	16.6	X	28.46022	137.89383	171.50622	5.53983	0.0651201	0.22205541	2.7008169	20	10 6.9	20.1
299128 2005 ET_{214}	15.9	X	20.96118	282.54229	331.73779	11.55479	0.1872383	0.21101526	2.7942170	20	7 26.0	18.9
299129 2005 EA_{217}	16.1	X	90.61596	184.80850	20.77039	12.21635	0.2545315	0.21569530	2.7536512	20	9 7.5	20.6
299130 2005 ED_{217}	15.7	X	89.02807	294.87732	15.81782	14.60656	0.1275950	0.23677715	2.5876738	20	12 31.2	19.9
299131 2005 EM_{217}	17.2	X	258.33589	67.76081	69.32385	4.24325	0.1539417	0.23585924	2.5943832	20	11 22.4	20.3
299132 2005 EH_{221}	17.3	X	253.75681	211.99409	1.96418	19.26139	0.0785008	0.37438406	1.9065922	20	—	—
299133 2005 ER_{221}	15.8	X	184.12259	332.91846	224.32643	13.64820	0.0434105	0.23229484	2.6208551	20	11 20.9	19.4
299134 Moggicecchi	17.2	X	314.25054	158.97545	314.87807	2.43199	0.0958184	0.24376331	2.5379934	20	—	—
299135 2005 ES_{237}	16.6	X	285.26794	77.70622	12.15881	6.58821	0.0598529	0.23151141	2.6267644	20	11 9.2	19.8
299136 2005 EY_{237}	16.6	X	91.34416	262.01923	3.95569	16.39350	0.0422491	0.22620855	2.6676573	20	10 23.2	20.5
299137 2005 EV_{239}	16.9	X	348.41687	1.41649	89.04805	1.92415	0.1391086	0.24402771	2.5361598	20	—	—
299138 2005 EA_{240}	17.2	X	26.07475	22.39266	8.08870	5.26583	0.1220868	0.23879318	2.5730888	20	—	—
299139 2005 EW_{241}	16.1	X	237.06125	23.47021	123.71646	11.76939	0.0763523	0.23417364	2.6068180	20	11 21.4	19.7
299140 2005 EH_{243}	17.8	X	143.69282	310.70799	8.71166	20.21728	0.0453956	0.37654304	1.8992974	20	—	—
299141 2005 EN_{246}	16.8	X	340.99026	354.94018	9.34372	6.21980	0.0447062	0.22456570	2.6806520	20	10 8.3	19.9
299142 2005 EN_{247}	16.5	X	204.72303	137.31045	3.61919	7.73037	0.0623651	0.22504570	2.6768389	20	9 30.6	20.2
299143 2005 ED_{260}	16.8	X	94.05726	53.32926	163.56359	3.56804	0.0288106	0.21484311	2.7609281	20	8 25.3	20.6
299144 2005 EG_{264}	16.7	X	17.32104	279.16901	354.36208	8.28172	0.1208266	0.21140934	2.7907436	20	8 8.2	20.0
299145 2005 EE_{266}	17.0	X	11.03360	97.16999	343.33641	3.31513	0.1303251	0.24370501	2.5383981	20	—	—
299146 2005 EU_{266}	15.6	X	329.13394	87.34359	11.58025	22.33523	0.0417997	0.23710797	2.5852663	20	—	—
299147 2005 EH_{270}	17.2	X	23.69771	72.18927	24.80767	22.36501	0.0224221	0.37731426	1.8967084	20	—	—
299148 2005 EK_{273}	16.6	X	151.09825	348.76654	196.15846	4.94622	0.0624587	0.22147471	2.7055358	20	9 24.6	20.6
299149 2005 EA_{276}	16.3	X	200.08713	194.09612	318.65698	13.38700	0.1834620	0.22787629	2.6546257	20	9 23.9	20.8
299150 2005 EM_{279}	16.1	X	149.96853	225.27481	305.91565	12.02115	0.1962542	0.22266668	2.6958718	20	9 3.8	20.8
299151 2005 EB_{284}	15.8	X	61.32893	252.13704	13.70673	13.68803	0.1736466	0.22091145	2.7101327	20	10 8.4	19.4
299152 2005 EG_{290}	16.2	X	9.66648	262.61645	27.11466	12.68528	0.0804950	0.21111616	2.7933267	20	8 18.1	19.9
299153 2005 EX_{298}	17.1	X	3.85200	52.46000	357.07830	3.19745	0.2681080	0.24577526	2.5241236	20	—	—
299154 2005 EQ_{323}	16.4	X	175.63738	340.81547	194.62886	11.63837	0.1302664	0.22265352	2.6959779	20	10 7.7	20.7
299155 2005 EK_{330}	16.4	X	161.06494	157.94697	45.21028	5.66574	0.0839963	0.22717388	2.6600948	20	10 30.0	20.2
299156 2005 FD_{4}	15.9	X	150.15143	78.81371	148.08868	14.00582	0.1316841	0.22690068	2.6622296	20	11 19.5	20.4
299157 2005 FO_{11}	16.5	X	80.33994	111.08899	91.99682	10.30430	0.1627233	0.21000443	2.8031763	20	8 10.8	20.6
299158 2005 GD_{6}	16.5	X	274.15455	259.06606	191.15992	13.72808	0.0643370	0.22494866	2.6776087	20	10 25.9	19.9
299159 2005 GF_{7}	16.7	X	51.12155	197.36064	68.98676	5.38980	0.0800690	0.21426086	2.7659277	20	9 14.2	20.4
299160 2005 GK_{12}	16.5	X	100.17068	155.46718	69.33462	2.34092	0.1663140	0.21685266	2.7438448	20	9 28.6	20.6
299161 2005 GL_{12}	15.7	X	84.15839	253.36546	32.61177	14.05216	0.1439833	0.22400712	2.6851064	20	11 21.6	19.9
299162 2005 GM_{12}	15.6	X	117.23315	164.39889	32.96074	9.83811	0.0711134	0.21648396	2.7469593	20	9 7.2	19.7
299163 2005 GF_{15}	17.2	X	309.66359	74.06529	23.51358	2.48875	0.1739916	0.23878667	2.5731355	20	12 30.0	19.4
299164 2005 GD_{19}	16.9	X	183.14435	182.01353	18.45093	2.24548	0.1332812	0.22943061	2.6426226	20	11 15.0	21.0
299165 2005 GT_{20}	16.2	X	15.31156	123.84434	213.72184	5.77679	0.0737472	0.21805744	2.7337289	20	10 24.6	19.6
299166 2005 GC_{28}	16.0	X	101.80973	54.38874	206.28462	14.06691	0.0379423	0.22332949	2.6905352	20	11 3.2	19.7
299167 2005 GL_{36}	16.7	X	262.46222	56.48199	27.60390	3.82349	0.0439660	0.22207266	2.7006770	20	10 3.1	20.2
299168 2005 GJ_{37}	16.6	X	270.05885	287.95776	207.84665	12.38419	0.0992512	0.23225316	2.6211686	20	12 14.9	20.0
299169 2005 GR_{37}	16.6	X	231.07341	228.27470	291.43613	5.01461	0.2594673	0.23217860	2.6217297	20	10 29.7	20.5
299170 2005 GX_{40}	16.5	X	322.34066	287.28176	53.12817	4.23921	0.1015752	0.21076328	2.7964437	20	8 4.7	19.8
299171 2005 GC_{47}	16.6	X	285.27190	132.13417	2.13166	2.26487	0.0778696	0.23772297	2.5808056	20	—	—
299172 2005 GR_{49}	16.7	X	326.66034	255.60743	200.24460	14.49520	0.1605862	0.23796995	2.5790195	20	—	—
299173 2005 GH_{56}	16.7	X	48.34478	50.49022	196.57159	8.86687	0.0792953	0.21292052	2.7775232	20	8 9.1	20.4
299174 2005 GK_{58}	15.9	X	60.92505	190.73061	31.52332	16.72485	0.0912704	0.20869183	2.8149180	20	8 4.7	20.0
299175 2005 GT_{60}	15.8	X	33.15720	48.67995	227.19455	12.62330	0.1435319	0.21063606	2.7975696	20	9 1.4	19.5
299176 2005 GM_{71}	16.0	X	1.25733	260.83867	18.31860	8.68967	0.1229020	0.20897496	2.8123749	20	7 17.7	19.3
299177 2005 GW_{74}	15.8	X	165.47476	350.93375	187.96058	14.82352	0.0283548	0.22054902	2.7131010	20	10 4.9	19.6
299178 2005 GC_{76}	17.2	X	291.86376	358.39098	193.41421	22.05105	0.0374214	0.37570255	1.9021290	20	—	—
299179 2005 GG_{77}	16.6	X	148.98559	310.09391	214.86808	8.16336	0.1368078	0.21729548	2.7401159	20	8 26.3	21.1
299180 2005 GB_{81}	17.3	X	319.86770	112.26167	14.03431	3.11547	0.1373243	0.23994343	2.5648589	20	—	—
299181 2005 GW_{92}	16.8	X	42.89913	185.48611	108.83989	2.10687	0.0608472	0.21661610	2.7458421	20	10 5.5	20.4
299182 2005 GW_{97}	15.9	X	342.37031	15.36554	50.97484	14.01931	0.1981885	0.23398276	2.6082355	20	—	—
299183 2005 GN_{105}	17.4	X	237.19028	23.61881	113.46062	2.57193	0.0613448	0.22696519	2.6617251	20	11 6.5	21.0
299184 2005 GY_{105}	16.6	X	6.30717	320.63131	47.73390	6.85187	0.0431986	0.22537386	2.6742398	20	11 18.9	19.9
299185 2005 GV_{109}	15.8	X	338.44802	125.96826	210.46787	7.48720	0.2168368	0.21022097	2.8012510	20	8 19.8	18.4
299186 2005 GH_{115}	17.1	X	328.42600	81.29638	25.36643	4.45860	0.1643980	0.23924958	2.5698154	20	—	—
299187 2005 GU_{118}	15.6	X	13.22324	10.93392	24.73189	22.56193	0.0476692	0.23386303	2.6091257	20	—	—
299188 2005 GO_{127}	16.7	X	279.30996	301.42175	214.49497	13.49257	0.1119634	0.23794396	2.5792073	20	—	—
299189 2005 GT_{127}	17.5	X	311.08705	334.18337	202.16164	21.96141	0.0167859	0.37749897	1.8960896	20	—	—
299190 2005 GB_{134}	16.1	X	337.36976	140.89788	189.83998	9.24048	0.2361724	0.20920020	2.8103559	20	8 7.3	18.7
299191 2005 GZ_{136}	16.0	X	194.94247	303.92792	186.97886	12.79614	0.1049925	0.21735958	2.7395771	20	8 31.1	20.2
299192 2005 GV_{141}	16.6	X	279.16018	327.08142	187.42252	6.27915	0.0474641	0.24263643	2.5458455	20	—	—
299193 2005 GA_{146}	16.3	X	29.13069	86.50589	213.38961	8.48806	0.1414556	0.21495392	2.7599792	20	10 2.3	19.7
299194 2005 GG_{146}	17.0	X	68.44822	324.23933	263.87207	1.71058	0.1469662	0.21066885	2.7972793	20	8 23.5	20.8
299195 2005 GP_{148}	16.4	X	238.28513	128.47221	37.98767	12.00414	0.1173610	0.23246606	2.6195680	20	12 5.6	20.0
299196 2005 GP_{163}	17.0	X	194.08008	309.47662	193.91707	2.17296	0.0614192	0.22019228	2.7160306	20	9 20.7	20.8
299197 2005 GJ_{165}	16.5	X	117.68318	356.36081	187.99423	3.54561	0.1344726	0.21410771	2.7672465	20	8 21.4	20.7
299198 2005 GQ_{172}	16.3	X	79.01525	47.80499	37.28869	12.54406	0.3416056	0.25971118	2.4330010	20	3 31.9	19.2
299199 2005 GN_{206}	16.3	X	217.95685	102.18856	33.26388	3.17178	0.0639814	0.22192524	2.7018729	20	10 9.6	19.9
299200 2005 GB_{219}	16.4	X	44.45314	94.69923	191.95782	3.57514	0.0622589	0.21752467	2.7381908	20	9 26.5	20.0

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Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
	m		°	°	°	°		°				
299201 2005 GN_{222}	16.5	X	17.93258	164.36665	171.99200	5.61185	0.0785553	0.22072584	2.7116519	20	10 29.7	19.8
299202 2005 HR_{1}	16.5	X	59.26865	80.62924	149.79590	13.52097	0.1653507	0.20972513	2.8056645	20	8 17.7	20.3
299203 2005 HY_{2}	16.1	X	286.99500	229.11656	214.79952	16.01391	0.1533389	0.22759077	2.6568454	20	10 24.1	19.0
299204 2005 HV_{6}	16.1	X	11.43162	124.33618	195.76279	12.82229	0.2206158	0.21666500	2.7454290	20	10 15.4	19.0
299205 2005 HN_{9}	16.5	X	174.99569	347.23885	193.98667	3.64250	0.0582494	0.22283170	2.6945406	20	10 18.1	20.2
299206 2005 JO_{11}	17.1	X	284.47925	283.52890	211.72970	2.28492	0.1438724	0.23641836	2.5902911	20	—	—
299207 2005 JO_{23}	17.4	X	277.47622	7.53930	208.40733	21.35588	0.0761660	0.37851228	1.8927042	20	—	—
299208 2005 JG_{36}	16.2	X	100.78386	4.80042	212.97625	13.33459	0.1029886	0.21183253	2.7870255	20	9 8.5	20.5
299209 2005 JN_{36}	16.8	X	14.14891	116.78747	147.95768	15.84000	0.2372174	0.20211886	2.8756200	20	7 29.0	19.7
299210 2005 JO_{37}	16.4	X	336.54934	238.20908	193.62140	21.49195	0.0667546	0.23592591	2.5938944	20	—	—
299211 2005 JH_{43}	16.4	X	82.36940	179.15457	67.84852	4.66894	0.0445677	0.21479792	2.7613153	20	9 23.9	20.2
299212 2005 JN_{48}	16.7	X	36.43648	118.39193	170.73076	5.76048	0.0567714	0.21199476	2.7856035	20	9 17.4	20.4
299213 2005 JN_{50}	16.6	X	334.20338	187.10600	188.21013	4.54609	0.0197905	0.21896853	2.7261406	20	10 12.6	20.1
299214 2005 JO_{50}	16.5	X	351.98198	250.21341	75.95084	5.36787	0.0706101	0.21197206	2.7858024	20	9 5.3	19.9
299215 2005 JQ_{52}	16.6	X	287.48915	167.45595	218.32342	3.65620	0.0778249	0.21229480	2.7829783	20	8 12.4	20.2
299216 2005 JY_{62}	16.9	X	266.77197	165.02153	222.30549	1.15522	0.0690493	0.20665476	2.8333862	20	7 18.4	20.8
299217 2005 JV_{71}	15.7	X	57.16627	348.48904	262.54481	15.17949	0.1595362	0.21296761	2.7771138	20	9 2.4	19.8
299218 2005 JR_{74}	16.7	X	210.12320	2.89599	113.89478	2.03245	0.0191302	0.21440756	2.7646659	20	9 10.4	20.4
299219 2005 JP_{75}	16.3	X	114.65459	204.65880	29.51314	5.28495	0.1238958	0.21888287	2.7268518	20	10 20.4	20.4
299220 2005 JA_{78}	15.8	X	357.74988	179.14410	94.22100	7.37528	0.0214242	0.20408344	2.8571358	20	6 28.7	19.6
299221 2005 JJ_{79}	16.4	X	342.28710	94.24390	266.87653	1.67048	0.0880347	0.21552171	2.7551296	20	10 5.1	19.7
299222 2005 JZ_{86}	17.1	X	102.13759	134.90674	136.15581	1.47332	0.0320120	0.22754170	2.6572274	20	11 16.6	20.9
299223 2005 JD_{93}	16.3	X	176.47940	177.55856	356.34475	11.48803	0.1057020	0.22219474	2.6996877	20	10 5.4	20.5
299224 2005 JG_{93}	16.6	X	216.54138	202.71583	333.29088	3.22504	0.2037163	0.22924404	2.6440562	20	11 10.9	20.6
299225 2005 JL_{97}	16.1	X	275.40155	307.14670	68.45027	13.41840	0.0929564	0.20610852	2.8383901	20	7 11.6	20.0
299226 2005 JE_{110}	16.5	X	304.58608	353.37318	39.73202	6.02961	0.0930442	0.21872801	2.7281387	20	9 21.2	19.7
299227 2005 JQ_{113}	17.0	X	285.37837	285.76475	208.62614	7.24801	0.1356012	0.23441166	2.6050531	20	—	—
299228 2005 JH_{119}	16.4	X	50.27742	130.26039	138.19972	5.14367	0.0193387	0.21119930	2.7925935	20	9 4.3	20.1
299229 2005 JB_{123}	16.1	X	342.72362	210.47468	231.33202	7.43908	0.1993678	0.23420441	2.6065896	20	—	—
299230 2005 JR_{130}	16.3	X	33.65349	208.77398	63.70840	4.94411	0.0636883	0.21052910	2.7985171	20	8 25.2	19.9
299231 2005 JT_{130}	16.6	X	327.66333	259.81985	119.28043	1.95910	0.0962861	0.21801870	2.7340528	20	10 8.2	19.6
299232 2005 JJ_{132}	15.9	X	144.50211	198.65504	2.97360	13.30863	0.1396955	0.21881986	2.7273753	20	10 7.7	20.4
299233 2005 JO_{150}	16.9	X	200.90958	340.27679	168.95435	5.14613	0.0922084	0.21981954	2.7191000	20	10 4.3	20.9
299234 2005 KP	16.5	X	12.48934	81.58617	212.37930	11.89362	0.1049859	0.20699065	2.8303202	20	8 19.1	20.1
299235 2005 LH_{14}	15.7	X	322.33581	120.03186	139.84058	9.27540	0.0171825	0.18591837	3.0403332	20	4 27.6	20.0
299236 2005 LM_{29}	15.9	X	342.61404	86.86364	241.98096	5.08578	0.0402182	0.20863802	2.8154020	20	8 19.1	19.5
299237 2005 LT_{43}	16.6	X	17.25965	237.48600	60.83873	3.79821	0.0806493	0.20959822	2.8067969	20	9 6.4	20.1
299238 2005 LP_{48}	14.7	X	201.01449	79.54310	278.28444	24.66595	0.3279699	0.17461496	3.1701641	20	3 9.9	21.1
299239 2005 MZ_{7}	15.4	X	217.87725	76.77920	277.28017	14.73570	0.2677847	0.17767892	3.1336137	20	3 23.6	21.2
299240 2005 MU_{15}	15.6	X	252.84089	41.47415	254.93415	8.36415	0.1949325	0.18447559	3.0561648	20	2 21.3	20.6
299241 2005 ME_{20}	15.6	X	286.22246	36.93394	268.29113	13.03974	0.0929847	0.18555794	3.0442690	20	4 19.6	20.1
299242 2005 ME_{22}	15.7	X	226.79682	218.22390	125.53786	11.80397	0.1043919	0.17993407	3.1073758	20	4 8.4	20.6
299243 2005 MP_{22}	16.0	X	235.10538	258.69554	121.38992	4.48901	0.1882343	0.18552062	3.0446772	20	5 20.0	21.0
299244 2005 MY_{28}	15.7	X	236.22399	80.11697	256.81226	9.05552	0.0894451	0.18080531	3.0973855	20	4 2.2	20.5
299245 2005 MB_{29}	15.9	X	217.00948	95.17283	262.64468	9.01988	0.1142412	0.18001473	3.1064476	20	4 6.2	20.9
299246 2005 MR_{37}	16.0	X	228.12519	65.56037	297.39993	7.45853	0.0749529	0.18357181	3.0661876	20	4 27.2	20.7
299247 2005 MR_{38}	15.8	X	35.00498	250.25081	303.09848	9.88264	0.0445536	0.18462156	3.0545538	20	5 3.3	20.0
299248 2005 MW_{39}	15.5	X	257.03807	172.07706	125.89631	18.19044	0.1860710	0.17884346	3.1199957	20	3 6.7	20.6
299249 2005 MO_{42}	15.4	X	221.57946	71.78279	266.00893	10.23818	0.1491128	0.17764336	3.1340317	20	3 14.8	20.6
299250 2005 MZ_{46}	15.6	X	353.22009	292.16259	307.09556	7.67796	0.1805695	0.18911973	3.0059251	20	4 27.7	19.0
299251 2005 MN_{50}	15.9	X	251.34908	2.59043	291.65218	8.26894	0.1191238	0.17715405	3.1398001	20	2 25.2	20.8
299252 2005 MV_{53}	15.0	X	234.08885	249.30204	54.11218	25.05131	0.3357694	0.17462868	3.1699982	20	2 23.2	21.2
299253 2005 NO_{5}	16.3	X	218.48358	218.67207	134.48489	2.01242	0.0967623	0.17993578	3.1073561	20	4 7.6	21.1
299254 2005 NU_{7}	15.4	X	160.07099	102.74354	290.84478	11.34213	0.2057728	0.17343893	3.1844786	20	3 27.9	21.0
299255 2005 NN_{8}	16.1	X	191.77588	70.10557	289.33767	8.05287	0.0950511	0.17561062	3.1581702	20	3 14.9	21.1
299256 2005 NS_{11}	14.9	X	196.70252	232.70611	88.91403	17.24147	0.1956571	0.17690424	3.1427552	20	2 12.9	20.4
299257 2005 NG_{24}	15.7	X	165.68296	138.19699	263.74795	8.15000	0.1174484	0.17822285	3.1272346	20	4 10.3	20.8
299258 2005 NK_{36}	16.3	X	272.08053	188.29827	137.77739	12.37506	0.1165614	0.18500508	3.0503309	20	5 4.0	20.9
299259 2005 NZ_{42}	16.4	X	254.51068	96.77033	207.55640	2.94422	0.1762524	0.18048225	3.1010805	20	3 7.9	21.3
299260 2005 NE_{43}	15.7	X	286.82908	63.00964	233.59237	4.02342	0.1070833	0.18451421	3.0557384	20	4 10.8	20.1
299261 2005 NM_{48}	15.7	X	249.67198	250.94753	107.54663	11.91828	0.1931370	0.18629862	3.0361947	20	5 10.2	20.6
299262 2005 NT_{51}	15.8	X	239.24954	142.80417	229.19497	3.93862	0.1913777	0.18661508	3.0327613	20	5 12.6	20.5
299263 2005 NF_{58}	15.5	X	246.02266	81.01856	271.40212	8.48605	0.1140491	0.18565489	3.0432091	20	4 30.6	20.3
299264 2005 NT_{58}	16.3	X	258.03684	217.39873	122.96801	2.93198	0.0920494	0.18625025	3.0367204	20	5 5.1	20.7
299265 2005 NJ_{60}	15.8	X	81.16877	241.43794	315.35166	5.03192	0.0655707	0.19507041	2.9444790	20	7 17.5	19.9
299266 2005 NS_{61}	15.8	X	104.02383	145.25571	313.46898	13.55227	0.0610025	0.17801089	3.1297165	20	4 3.0	20.5
299267 2005 NZ_{63}	16.0	X	213.62364	154.16010	204.62134	4.53062	0.1412100	0.18004286	3.1061239	20	4 6.4	21.0
299268 2005 NS_{75}	16.8	X	227.09858	66.84206	258.06681	0.24814	0.1621845	0.17860719	3.1227467	20	3 9.0	21.9
299269 2005 NR_{78}	16.4	X	237.11190	107.40940	287.46119	1.39783	0.1388618	0.18997645	2.9968813	20	6 12.7	20.9
299270 2005 NW_{82}	15.7	X	255.06234	5.67781	338.30209	12.53414	0.1179265	0.18663171	3.0325811	20	4 26.3	20.5
299271 2005 NU_{85}	15.3	X	50.09318	204.63576	292.15858	9.03377	0.0595847	0.17861114	3.1227007	20	3 13.8	19.6
299272 2005 NE_{99}	16.6	X	324.62614	77.34896	180.29788	4.61423	0.1536166	0.18623034	3.0369368	20	4 8.4	20.3
299273 2005 NQ_{100}	15.5	X	165.84118	307.99090	122.96691	18.77857	0.1900665	0.18244339	3.0788176	20	5 25.9	20.9
299274 2005 NO_{122}	16.4	X	278.00498	178.66452	136.88456	1.25319	0.2228334	0.18528313	3.0472784	20	4 9.6	21.0
299275 2005 NT_{122}	15.4	X	215.80838	268.90186	42.18376	25.25525	0.3098317	0.17295072	3.1904686	20	2 22.2	21.6
299276 2005 NF_{123}	15.8	X	222.20267	67.50801	237.54326	12.73341	0.2729048	0.17297787	3.1901347	20	2 3.7	21.7
299277 2005 NN_{123}	15.5	X	241.26307	64.35578	289.77045	8.49616	0.1163138	0.18389561	3.0625873	20	4 26.5	20.3
299278 2005 OD	15.3	X	221.09278	280.54586	83.18186	17.85712	0.1683581	0.18235156	3.0798511	20	4 25.6	20.5
299279 2005 OY_{2}	14.7	X	214.40268	67.88853	273.29707	24.97096	0.2850545	0.17414000	3.1759258	20	2 29.6	20.9
299280 2005 OJ_{5}	15.9	X	233.30191	215.30342	165.96175	4.18640	0.1451527	0.18476439	3.0529794	20	5 23.2	20.6

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Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
	m		°	°	°	°		°				
299281 2005 ON_{16}	16.1	X	302.83426	129.26175	161.85655	3.65409	0.1938960	0.18538629	3.0461478	20	4 13.9	20.0
299282 2005 OX_{16}	15.4	X	188.53570	146.02176	247.67390	8.16515	0.0698644	0.17982972	3.1085778	20	4 24.0	20.1
299283 2005 OD_{18}	15.4	X	247.19013	156.57275	176.95594	8.26134	0.0922860	0.17905412	3.1175481	20	4 14.9	20.0
299284 2005 OK_{27}	14.8	X	198.94595	264.03865	124.50345	18.67334	0.1704663	0.17655100	3.1469458	20	5 5.4	20.3
299285 2005 OL_{31}	15.5	X	214.98745	285.96761	76.62815	16.82784	0.2538237	0.17760687	3.1344611	20	4 15.9	21.2
299286 2005 PO_{7}	16.1	X	243.43453	216.65764	104.18914	2.69241	0.1645735	0.17833532	3.1259197	20	3 20.2	21.1
299287 2005 PB_{10}	15.8	X	296.29227	123.05595	145.54097	8.41149	0.2178134	0.18152934	3.0891441	20	3 5.5	20.1
299288 2005 PJ_{11}	16.5	X	319.05771	147.54628	141.70346	1.34294	0.1323910	0.18698739	3.0287342	20	5 14.3	20.1
299289 2005 PV_{11}	15.5	X	269.57285	136.84873	141.27450	10.33349	0.0365620	0.17425469	3.1745322	20	3 11.8	20.1
299290 2005 PQ_{14}	15.8	X	298.24731	302.35422	350.75373	6.98283	0.1450248	0.18358141	3.0660807	20	4 14.3	20.0
299291 2005 PK_{17}	15.8	X	149.49419	92.20624	319.26383	25.04072	0.1370572	0.17510104	3.1642946	20	3 27.1	21.2
299292 2005 PZ_{18}	15.3	X	219.75253	187.38123	131.91499	10.11497	0.0742048	0.17350589	3.1836592	20	3 2.3	20.1
299293 2005 QJ	15.4	X	234.24536	168.97844	166.61964	9.72057	0.0947422	0.17811952	3.1284439	20	4 3.8	20.1
299294 2005 QR_{1}	16.3	X	207.63932	207.25442	159.19540	11.55083	0.2363781	0.17669397	3.1452481	20	4 10.5	21.8
299295 2005 QT_{1}	15.9	X	259.85917	152.93047	174.43151	5.64678	0.1003906	0.18197977	3.0840445	20	4 20.3	20.5
299296 2005 QF_{6}	15.3	X	268.87675	339.13654	334.71791	18.09592	0.0752775	0.17914529	3.1164903	20	4 7.2	20.1
299297 2005 QV_{13}	15.7	X	190.25921	203.94787	161.19201	5.75344	0.1798773	0.17191526	3.2032667	20	3 25.7	21.0
299298 2005 QN_{29}	15.5	X	199.16517	118.14574	252.67768	7.95616	0.0992007	0.17586642	3.1551071	20	4 5.8	20.5
299299 2005 QL_{31}	15.3	X	208.62276	93.55226	269.25735	13.79878	0.2686813	0.17655680	3.1468768	20	3 28.3	21.2
299300 2005 QN_{34}	15.9	X	245.92914	320.27439	336.31638	5.73746	0.0159444	0.17121248	3.2120263	20	3 6.4	20.4
299301 2005 QX_{37}	14.4	X	266.63724	294.12554	353.35437	25.26937	0.2302936	0.17506596	3.1647173	20	2 29.9	19.5
299302 2005 QD_{41}	15.6	X	199.47273	27.51153	334.41925	19.14374	0.1721347	0.17266223	3.1940214	20	3 21.7	21.2
299303 2005 QO_{47}	15.8	X	266.34485	345.98050	7.97455	7.34917	0.1085221	0.18395396	3.0619396	20	5 27.2	20.3
299304 2005 QX_{48}	15.4	X	195.21939	335.95002	14.38739	9.47312	0.1135795	0.17029371	3.2235691	20	3 14.1	20.4
299305 2005 QL_{49}	16.0	X	216.37276	194.00955	143.25633	8.81944	0.1867083	0.17255192	3.1953825	20	3 15.6	21.3
299306 2005 QQ_{49}	15.2	X	229.22190	199.12819	157.19543	23.29871	0.1428928	0.17703156	3.1412482	20	4 23.6	20.5
299307 2005 QL_{50}	16.0	X	199.28220	8.31247	11.77386	9.12359	0.1029735	0.17447332	3.1718797	20	4 18.4	21.0
299308 2005 QM_{50}	15.6	X	195.85582	19.35747	4.36976	17.66600	0.0736813	0.17464811	3.1697630	20	4 16.4	20.6
299309 2005 QZ_{52}	15.6	X	228.90493	8.13963	323.24390	4.56424	0.1142139	0.17555172	3.1588765	20	3 19.8	20.6
299310 2005 QF_{63}	15.9	X	195.27646	270.20420	81.92511	1.49545	0.1386502	0.17120636	3.2121029	20	3 14.7	21.0
299311 2005 QF_{72}	16.2	X	213.24201	221.18788	145.90529	1.91098	0.1945670	0.17643002	3.1483842	20	4 14.9	21.4
299312 2005 QN_{84}	15.7	X	165.70588	11.73268	347.13224	7.08779	0.0247255	0.16823688	3.2497897	20	2 19.3	20.4
299313 2005 QZ_{84}	15.8	X	257.34437	134.19512	179.59338	9.67438	0.0771428	0.17626146	3.1503912	20	4 3.5	20.3
299314 2005 QH_{90}	15.3	X	157.04602	63.19162	315.51163	14.65682	0.1091125	0.17120907	3.2120691	20	3 3.9	20.4
299315 2005 QU_{94}	15.6	X	210.15572	205.15372	145.34106	7.02850	0.2112770	0.17488941	3.1668467	20	3 24.9	21.0
299316 2005 QY_{94}	16.0	X	205.74761	333.84923	347.94889	4.24580	0.2041972	0.17116435	3.2126285	20	2 17.3	21.5
299317 2005 QM_{96}	16.0	X	232.33746	326.42566	357.41638	7.04330	0.1625545	0.17543325	3.1602985	20	3 13.1	20.9
299318 2005 QX_{99}	16.1	X	153.47167	72.95461	324.06887	9.40702	0.1187635	0.17022485	3.2244383	20	3 23.7	21.2
299319 2005 QP_{103}	15.8	X	183.93533	231.22898	188.78157	9.56574	0.0775106	0.17956782	3.1115996	20	5 24.5	20.6
299320 2005 QB_{104}	16.0	X	162.89404	90.64385	326.72426	8.33836	0.0847030	0.17544486	3.1601591	20	4 24.3	20.9
299321 2005 QU_{108}	16.0	X	217.53771	72.67166	293.34386	3.52584	0.0350130	0.17679783	3.1440161	20	4 23.7	20.6
299322 2005 QB_{112}	15.3	X	199.15324	198.96434	171.32686	17.60691	0.2179185	0.17313000	3.1882656	20	4 8.6	20.8
299323 2005 QX_{118}	16.4	X	210.34380	234.19743	147.85003	3.25856	0.0154222	0.18053815	3.1004405	20	5 8.9	20.8
299324 2005 QM_{136}	15.9	X	48.65536	176.80950	5.23256	14.57086	0.0155597	0.17735902	3.1373805	20	5 3.3	20.4
299325 2005 QR_{141}	15.7	X	270.65764	126.10927	127.94586	5.80414	0.0662068	0.16843087	3.2472939	20	2 8.7	20.5
299326 2005 QV_{153}	15.3	X	172.61822	17.43310	39.52623	11.18329	0.0670292	0.17643596	3.1483135	20	5 6.5	20.0
299327 2005 QG_{160}	15.1	X	219.37512	318.33315	4.89102	27.31544	0.2211982	0.17231318	3.1983333	20	3 7.3	20.7
299328 2005 QL_{166}	15.9	X	290.34479	75.60254	244.78362	8.34202	0.0727102	0.18652256	3.0337641	20	5 21.7	19.8
299329 2005 QE_{172}	15.2	X	238.20451	103.11673	193.43754	11.93110	0.1719289	0.16966257	3.2315584	20	2 12.7	20.6
299330 2005 QE_{174}	15.6	X	221.53029	96.13440	244.96183	3.40595	0.1688741	0.17470035	3.1691310	20	3 21.5	20.9
299331 2005 QN_{174}	15.4	X	229.90897	144.23434	180.56662	27.63495	0.2043460	0.17471021	3.1690118	20	3 8.4	20.8
299332 2005 QK_{183}	15.6	X	213.70622	76.33025	247.49413	6.29406	0.0921579	0.16890701	3.2411884	20	2 25.5	20.7
299333 2005 QF_{187}	16.0	X	190.71593	190.00793	198.88901	8.30537	0.0952259	0.17671113	3.1450444	20	4 22.7	20.8
299334 2005 QY_{187}	15.8	X	248.99080	54.53850	232.20589	5.13334	0.1780974	0.17244533	3.1966991	20	2 11.0	20.9
299335 2005 RL_{1}	15.5	X	239.29490	224.16544	119.25595	10.46613	0.1048639	0.18142798	3.0902945	20	4 20.5	20.4
299336 2005 RG_{7}	15.3	X	209.03507	101.20928	240.70044	5.11436	0.1590925	0.17195074	3.2028260	20	3 11.6	20.7
299337 2005 RZ_{19}	15.7	X	183.38536	255.36506	167.02378	13.55233	0.2910549	0.17498950	3.1656391	20	5 27.1	21.6
299338 2005 RN_{42}	15.8	X	220.31972	207.05810	125.76248	4.79115	0.2113682	0.17267672	3.1938426	20	3 12.4	21.1
299339 2005 RZ_{43}	15.2	X	221.69599	124.63209	228.26137	15.28601	0.1338922	0.17516766	3.1634922	20	4 4.9	20.4
299340 2005 SP_{16}	16.0	X	125.91141	270.25837	197.22993	8.82398	0.0408583	0.17503924	3.1650393	20	5 16.3	20.6
299341 2005 SK_{18}	16.0	X	35.94804	176.34293	8.54198	9.18409	0.0221665	0.17368931	3.1814175	20	4 23.8	20.4
299342 2005 SS_{101}	17.6	X	92.27455	221.18639	308.99924	3.63075	0.0771916	0.31367578	2.1452705	20	7 3.3	19.9
299343 2005 SH_{124}	15.8	X	192.23861	340.95575	14.72073	10.59787	0.0736631	0.16857604	3.2454293	20	3 17.7	20.7
299344 2005 SX_{141}	16.1	X	122.57490	5.41781	99.58546	2.73130	0.1571943	0.17042882	3.2218651	20	5 21.1	21.0
299345 2005 SE_{153}	15.5	X	152.70749	323.91229	34.10976	10.37864	0.0793634	0.15815701	3.3864428	20	2 12.9	20.7
299346 2005 SG_{177}	17.9	X	319.88395	310.83860	336.16585	4.08574	0.2384953	0.31750874	2.1279704	20	4 14.7	19.6
299347 2005 SO_{177}	15.9	X	233.83159	32.63522	217.47259	9.95533	0.0320350	0.15541476	3.4261618	20	—	—
299348 2005 SU_{179}	15.3	X	149.26225	102.65090	2.61116	15.56981	0.2090026	0.17533963	3.1614233	20	6 16.7	20.9
299349 2005 SG_{196}	16.1	X	80.53783	356.66142	120.00512	0.91971	0.1442711	0.16621686	3.2760661	20	4 16.4	20.6
299350 2005 SK_{196}	16.0	X	281.26404	246.77081	16.34977	8.28597	0.1597095	0.17084569	3.2166220	20	2 21.9	20.8
299351 2005 ST_{209}	15.5	X	189.51954	69.12465	255.00828	6.80525	0.2698139	0.16618763	3.2764503	20	2 5.9	21.4
299352 2005 SQ_{225}	16.2	X	116.36656	199.99285	214.11044	14.48495	0.1216290	0.15939426	3.3688959	20	3 6.9	21.4
299353 2005 SR_{235}	14.9	X	78.08581	201.85939	216.29063	15.80640	0.0807100	0.15363123	3.4526274	20	1 21.7	20.0
299354 2005 SM_{242}	15.8	X	173.78269	177.69705	213.14578	15.13995	0.0647688	0.16897220	3.2403546	20	4 5.5	20.7
299355 2005 SX_{249}	15.3	X	220.44993	186.35404	156.43289	10.63523	0.0663972	0.17345044	3.1843377	20	3 31.8	20.2
299356 2005 SG_{251}	15.7	X	218.97377	295.24458	11.15914	6.92547	0.2114972	0.17076993	3.2175733	20	2 11.6	21.2
299357 2005 SB_{252}	15.6	X	137.66337	70.06715	359.47160	16.44613	0.1098806	0.17129450	3.2110009	20	4 13.6	20.6
299358 2005 SP_{255}	15.5	X	252.11766	123.27225	170.10306	11.72542	0.1102213	0.17169572	3.2059967	20	2 28.7	20.4
299359 2005 SG_{259}	15.2	X	206.16801	318.45687	37.30093	17.11309	0.1804377	0.17210387	3.2009260	20	4 1.3	20.6
299360 2005 SR_{267}	15.5	X	180.89569	93.84636	313.89224	13.89024	0.2075573	0.17432250	3.1737089	20	4 30.2	21.2

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		°	°	°	°		°				
299361 2005 TT_{21}	15.5	X	303.18941	269.83937	24.58957	10.86638	0.0639979	0.17743503	3.1364845	20	5 5.1	19.8
299362 2005 TK_{27}	17.9	X	299.63629	279.57312	65.27848	3.81051	0.1755729	0.32008646	2.1165304	20	6 26.4	19.6
299363 2005 TV_{47}	15.7	X	114.02918	258.07824	199.32380	21.26162	0.0371073	0.16946625	3.2340538	20	4 18.8	20.3
299364 2005 TD_{83}	15.3	X	185.31810	170.82200	230.20366	11.27820	0.1125674	0.17116126	3.2126671	20	4 30.9	20.5
299365 2005 TE_{99}	15.6	X	182.67900	186.42500	213.74058	11.70528	0.1865675	0.17344107	3.1844523	20	4 28.4	21.0
299366 2005 TZ_{190}	15.5	X	356.43037	218.01898	27.09234	13.27050	0.0231973	0.17667494	3.1454739	20	5 17.2	19.9
299367 2005 UA_{41}	18.1	X	295.43339	80.74450	219.62537	4.71801	0.0207938	0.30480941	2.1866728	20	5 6.6	20.4
299368 2005 UL_{84}	15.7	X	80.95930	16.78778	46.61688	6.69632	0.0797207	0.15420107	3.4441162	20	2 7.1	20.5
299369 2005 UJ_{168}	18.3	X	320.66167	55.02601	275.53952	0.42947	0.0957985	0.31983813	2.1176258	20	7 28.4	20.0
299370 2005 UT_{193}	15.7	X	176.40820	138.86313	164.90147	2.10439	0.0277360	0.15265861	3.4672768	20	—	—
299371 2005 UD_{217}	15.0	X	214.09699	325.00506	31.57136	15.08923	0.0692858	0.17198855	3.2023566	20	4 10.3	19.9
299372 2005 UA_{225}	15.5	X	99.90089	112.30506	238.31482	8.64065	0.1201444	0.14703927	3.5550618	20	—	—
299373 2005 UV_{241}	17.7	X	344.66750	344.86835	284.64388	3.79118	0.1228189	0.30916350	2.1660937	20	5 30.7	19.4
299374 2005 UB_{261}	17.4	X	9.22933	320.95721	213.93400	4.70181	0.0359310	0.29333541	2.2433294	20	2 21.4	19.8
299375 2005 UL_{268}	18.0	X	301.05666	208.09367	131.23584	1.43622	0.1717250	0.31841199	2.1239442	20	6 20.4	19.5
299376 2005 UG_{371}	17.7	X	1.19688	346.88370	239.36549	3.93469	0.1033878	0.30286064	2.1960429	20	4 22.8	19.4
299377 2005 UT_{388}	18.2	X	350.39249	314.45661	7.49447	4.14896	0.1160389	0.32678705	2.0874984	20	9 18.3	19.4
299378 2005 UL_{425}	14.9	X	166.56558	300.76012	36.28637	11.88825	0.0592557	0.15432581	3.4422600	20	2 1.8	20.2
299379 2005 UR_{500}	14.8	X	38.67783	35.38120	73.39689	11.29959	0.0512768	0.15411133	3.4454531	20	2 3.6	19.6
299380 2005 UT_{508}	18.1	X	321.46481	48.74839	271.23977	2.99160	0.0949484	0.31585967	2.1353706	20	7 11.2	19.6
299381 2005 UP_{515}	15.2	X	354.68691	308.17986	181.00703	18.58869	0.2498862	0.14586474	3.5741203	20	—	—
299382 2005 VF_{3}	17.5	X	302.91543	139.71214	158.88526	3.63656	0.1814458	0.31091100	2.1579696	20	4 18.4	19.7
299383 2005 VC_{73}	17.5	X	169.42307	201.65394	205.18922	4.84974	0.1115674	0.30096119	2.2052731	20	4 17.7	20.5
299384 2005 VM_{135}	17.3	X	280.21491	38.25256	276.14876	3.81977	0.1560143	0.30592966	2.1813314	20	4 10.0	20.2
299385 2005 WA_{14}	18.5	X	122.43096	43.71212	72.27736	1.96818	0.0543716	0.30360094	2.1924716	20	5 21.9	20.8
299386 2005 WP_{20}	18.2	X	226.53266	93.51419	327.12779	2.08552	0.1125586	0.31353747	2.1459013	20	7 12.5	20.7
299387 2005 WH_{28}	17.7	X	348.13384	340.59042	260.94731	6.38953	0.0931131	0.30197222	2.2003481	20	4 21.1	19.7
299388 2005 WO_{87}	17.1	X	349.77059	272.43846	272.41797	5.75897	0.1205691	0.28500506	2.2868324	20	1 28.1	19.5
299389 2005 WM_{88}	16.8	X	108.94899	200.88439	265.97639	5.68636	0.1070170	0.29364552	2.2417498	20	4 26.0	19.6
299390 2005 WU_{88}	15.9	X	311.26761	357.75874	56.86755	11.23551	0.1016984	0.19314020	2.9640641	20	10 25.3	19.6
299391 2005 WE_{130}	17.9	X	304.58756	74.32452	238.51374	2.47463	0.1705080	0.31232055	2.1514719	20	5 13.9	19.7
299392 2005 WY_{140}	17.7	X	129.69750	173.72385	276.97492	6.29892	0.1176162	0.29532221	2.2332567	20	4 30.8	20.8
299393 2005 WY_{142}	17.3	X	157.34584	325.49935	110.95305	6.73705	0.0950358	0.30294593	2.1956307	20	5 16.0	20.3
299394 2005 WT_{152}	17.6	X	332.64330	8.28964	304.54562	1.44174	0.1343916	0.31511403	2.1387379	20	7 20.2	18.6
299395 2005 WN_{163}	17.6	X	131.41807	154.73029	288.32752	2.56244	0.0833483	0.29851225	2.2173178	20	4 18.7	20.5
299396 2005 XD_{33}	17.7	X	95.71506	51.35548	102.24670	1.66033	0.0412399	0.30408932	2.1901235	20	6 6.6	20.1
299397 2005 XP_{42}	17.3	X	283.35288	173.82092	78.30559	5.52063	0.1330513	0.29099422	2.2553458	20	1 28.0	20.3
299398 2005 XV_{68}	17.8	X	9.36614	288.95021	285.01684	2.78100	0.0943369	0.29908418	2.2144902	20	4 18.9	19.8
299399 2005 XN_{90}	18.4	X	172.83114	111.16099	321.30532	2.57378	0.1084460	0.30200728	2.2001778	20	5 26.1	21.4
299400 2005 XR_{110}	17.5	X	72.28342	71.09331	345.13761	3.99091	0.0241575	0.26814502	2.3817137	20	—	—
299401 2005 YH_{3}	18.2	X	128.91422	119.94438	354.39874	0.38723	0.0780158	0.29877940	2.2159959	20	5 31.0	20.7
299402 2005 YJ_{3}	17.6	X	221.05852	300.37329	101.73484	3.57824	0.1339956	0.30528346	2.1844085	20	6 6.6	20.6
299403 2005 YL_{15}	17.0	X	293.16911	70.89053	114.95450	6.85867	0.1451081	0.27127819	2.3633396	20	—	—
299404 2005 YV_{15}	17.0	X	272.70317	94.23988	117.90977	5.78850	0.1689335	0.27160991	2.3614150	20	—	—
299405 2005 YK_{23}	17.5	X	240.54535	349.62305	280.37435	5.88942	0.0912415	0.28116385	2.3076135	20	1 7.8	20.7
299406 2005 YN_{34}	18.1	X	47.05784	279.27012	220.53741	1.59143	0.1513401	0.28642595	2.2792632	20	3 12.6	19.7
299407 2005 YA_{36}	16.6	X	229.11643	162.31714	113.79320	9.31631	0.1646811	0.27933125	2.3176955	20	1 2.7	20.1
299408 2005 YC_{47}	17.5	X	196.37473	80.74196	307.14163	6.66582	0.0838762	0.29625864	2.2285482	20	4 18.3	20.7
299409 2005 YO_{52}	17.9	X	121.95979	231.39463	222.64226	2.22001	0.0438201	0.29343317	2.2428311	20	4 17.5	20.6
299410 2005 YZ_{53}	17.7	X	145.59980	176.77368	280.98059	3.90411	0.0813728	0.29988515	2.2105453	20	5 28.4	20.6
299411 2005 YN_{58}	15.6	X	1.82801	175.18319	230.61534	2.47448	0.1228822	0.12641867	3.9318346	20	12 11.4	20.5
299412 2005 YO_{59}	17.4	X	301.49971	290.85246	284.60953	7.15922	0.1282168	0.27830289	2.3234014	20	1 2.8	20.2
299413 2005 YD_{84}	17.3	X	245.55788	235.09249	125.98220	6.82887	0.2249108	0.30425400	2.1893331	20	5 1.9	20.6
299414 2005 YG_{84}	17.4	X	47.91929	262.74500	278.06367	5.73905	0.1205892	0.29247572	2.2477233	20	5 13.9	19.5
299415 2005 YC_{88}	17.5	X	259.34173	210.14918	112.35873	7.67335	0.1102342	0.29548613	2.2324307	20	4 8.4	20.5
299416 2005 YW_{90}	17.7	X	277.15477	338.34080	225.88881	1.45182	0.1489276	0.27111880	2.3642658	20	—	—
299417 2005 YG_{91}	17.5	X	189.27910	110.87462	260.28278	3.20519	0.2264340	0.29471836	2.2363061	20	3 23.1	21.1
299418 2005 YE_{93}	17.6	X	323.21847	330.94641	211.16108	3.19635	0.1679002	0.27625363	2.3348773	20	—	—
299419 2005 YS_{102}	18.1	X	277.22773	228.75086	144.33486	1.49154	0.1811488	0.31342094	2.1464332	20	6 30.7	20.1
299420 2005 YW_{105}	17.4	X	274.46048	124.75853	115.09322	2.85045	0.1083396	0.28137842	2.3064402	20	1 4.9	20.4
299421 2005 YM_{109}	15.5	X	329.46142	228.47880	211.67840	1.58155	0.0864155	0.12534310	3.9542953	20	12 3.8	20.6
299422 2005 YL_{161}	17.6	X	138.05888	301.88015	134.95868	6.22799	0.0550025	0.29453938	2.2372120	20	4 19.7	20.5
299423 2005 YE_{170}	17.3	X	198.60903	153.02861	251.15264	4.84087	0.1061548	0.30129044	2.2036662	20	5 16.1	20.3
299424 2005 YQ_{176}	17.5	X	219.27316	292.27345	292.77458	1.32043	0.1276049	0.26576368	2.3959199	20	—	—
299425 2005 YT_{177}	15.7	X	312.49515	258.16721	192.46724	0.05907	0.1505443	0.12429287	3.9765389	20	11 17.4	20.4
299426 2005 YX_{250}	17.6	X	232.33503	69.12502	277.12060	5.92505	0.1538615	0.29686353	2.2255199	20	3 29.6	21.1
299427 2005 YN_{271}	17.9	X	16.18427	260.81685	259.77603	4.41062	0.1301834	0.28319547	2.2965638	20	2 8.4	20.0
299428 2005 YO_{290}	17.7	X	74.49893	7.49010	130.42650	3.98035	0.0995699	0.28876405	2.2669432	20	4 23.8	20.1
299429 2006 AO_{6}	17.3	X	88.16829	182.68423	336.92205	5.62780	0.0703979	0.29842423	2.2177538	20	6 8.5	20.0
299430 2006 AL_{14}	17.3	X	264.86796	313.15844	270.64668	1.68396	0.1563325	0.27115250	2.3640699	20	—	—
299431 2006 AQ_{20}	17.9	X	127.74249	116.50109	354.06105	5.66638	0.1735204	0.29770430	2.2213278	20	6 2.1	21.1
299432 2006 AC_{37}	17.1	X	184.04345	189.05639	112.80707	9.62693	0.2006543	0.27400545	2.3476314	20	—	—
299433 2006 AS_{39}	18.5	X	86.89572	180.53423	296.99093	2.64188	0.1003684	0.29119955	2.2542855	20	4 9.2	21.1
299434 2006 AT_{46}	15.1	X	330.33885	206.49900	214.71165	2.07793	0.2209786	0.12497228	3.9621136	20	11 8.4	19.3
299435 2006 AL_{53}	17.3	X	314.89737	295.80667	274.55544	4.03151	0.1037848	0.28053891	2.3110392	20	1 15.8	20.0
299436 2006 AF_{54}	17.6	X	351.35543	348.32917	186.76364	2.68201	0.1606198	0.28037674	2.3119302	20	1 12.4	19.7
299437 2006 AY_{57}	17.7	X	74.33958	253.14240	257.28104	2.32757	0.1460835	0.29187011	2.2508314	20	5 18.2	20.1
299438 2006 AN_{59}	18.6	X	210.51256	18.21075	11.61339	1.20731	0.1725208	0.30026796	2.2086660	20	5 6.7	21.9
299439 2006 AW_{62}	18.8	X	219.16832	26.89811	10.86379	2.04822	0.1809278	0.30503466	2.1855962	20	5 25.3	22.0
299440 2006 AJ_{78}	16.6	X	278.11559	33.15449	162.46481	12.60084	0.1211316	0.26409833	2.4059815	20	—	—

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	m		°	°	°	°		°				
299441 2006 AQ_{78}	18.0	X	305.96910	224.26797	320.48129	2.56019	0.1136448	0.27415095	2.3468007	20	—	—
299442 2006 BZ_{6}	18.0	X	300.85610	253.11310	301.42549	1.28128	0.1554467	0.27267046	2.3552878	20	—	—
299443 2006 BK_{10}	15.5	X	356.67006	84.68752	336.28884	2.02324	0.1737848	0.12655236	3.9290649	20	12 25.4	20.3
299444 2006 BB_{11}	14.8	X	339.00481	60.28783	12.44046	2.80355	0.1933788	0.12469051	3.9680803	20	12 8.8	19.2
299445 2006 BA_{18}	17.2	X	171.15911	321.22544	107.25127	7.55424	0.1698784	0.29814306	2.2191479	20	5 22.6	20.6
299446 2006 BG_{37}	17.2	X	211.91889	172.83984	119.91504	4.51851	0.1950523	0.27628930	2.3346763	20	1 8.5	21.0
299447 2006 BY_{41}	13.4	X	240.12882	199.45695	163.20707	24.45718	0.0421117	0.08421151	5.1549177	20	5 22.7	20.6
299448 2006 BE_{45}	16.9	X	213.70479	342.45038	327.70911	7.23874	0.1235821	0.27663321	2.3327409	20	1 31.9	20.5
299449 2006 BN_{45}	17.6	X	327.78624	18.38039	150.58794	7.48703	0.1015858	0.27201940	2.3590445	20	—	—
299450 2006 BT_{46}	17.0	X	247.87768	256.54570	309.03438	3.04750	0.0856135	0.26355331	2.4092973	20	—	—
299451 2006 BC_{47}	17.1	X	60.34872	146.10538	319.35107	5.21091	0.1115560	0.28142381	2.3061921	20	2 11.6	19.0
299452 2006 BZ_{51}	17.9	X	67.14880	126.84645	326.68460	2.80201	0.0702871	0.28102595	2.3083683	20	2 1.9	20.1
299453 2006 BS_{55}	17.7	X	189.53472	92.43563	314.47095	6.54809	0.1247525	0.29679575	2.2258587	20	5 7.4	21.1
299454 2006 BG_{56}	17.6	X	231.67856	202.96307	354.61885	1.26403	0.1389177	0.26003166	2.4310015	20	—	—
299455 2006 BA_{60}	17.7	X	129.90732	139.09014	348.54511	3.31356	0.1120307	0.29647234	2.2274772	20	6 23.9	20.7
299456 2006 BT_{62}	16.8	X	347.85489	38.89898	128.96204	7.23684	0.0334984	0.27766197	2.3269753	20	1 15.6	19.4
299457 2006 BE_{70}	17.6	X	36.04400	105.38678	43.44839	3.41117	0.1651152	0.28377279	2.2934479	20	3 7.5	19.2
299458 2006 BK_{71}	16.8	X	232.60335	238.59032	60.10044	5.53381	0.1945640	0.27981251	2.3150372	20	2 3.5	20.5
299459 2006 BX_{80}	17.2	X	202.44569	157.90986	81.16250	3.45829	0.1373659	0.25845361	2.4408868	20	—	—
299460 2006 BQ_{81}	17.0	X	204.28294	210.34545	59.32568	3.46366	0.1438858	0.26428326	2.4048590	20	—	—
299461 2006 BZ_{87}	17.7	X	239.79745	201.51611	33.63611	1.64027	0.1422621	0.26749658	2.3855612	20	—	—
299462 2006 BC_{94}	17.8	X	307.81529	274.40415	267.24019	1.28972	0.1157470	0.27010098	2.3702016	20	—	—
299463 2006 BD_{94}	16.9	X	357.87822	231.54407	313.56073	4.97839	0.0950042	0.28053875	2.3110401	20	2 16.3	19.2
299464 2006 BS_{102}	17.6	X	237.91452	318.08804	277.40578	1.44165	0.1437802	0.26669697	2.3903271	20	—	—
299465 2006 BL_{103}	14.0	X	233.58258	207.19905	156.96318	17.52481	0.0375997	0.08421889	5.1546166	20	5 17.6	21.2
299466 2006 BG_{106}	17.6	X	165.26808	309.58157	105.21036	3.02258	0.1440656	0.29533905	2.2331718	20	4 27.0	20.8
299467 2006 BD_{115}	17.1	X	224.96797	47.33745	211.97346	2.05161	0.1695844	0.26761949	2.3848307	20	—	—
299468 2006 BH_{115}	17.3	X	294.47779	75.30815	157.69063	7.11145	0.0703184	0.27800118	2.3250821	20	1 24.3	20.2
299469 2006 BO_{115}	17.5	X	251.61976	65.46221	180.56672	3.23875	0.1435584	0.27055372	2.3675566	20	—	—
299470 2006 BM_{119}	17.4	X	255.18031	323.87062	237.17906	1.75493	0.1363059	0.26334364	2.4105760	20	—	—
299471 2006 BZ_{119}	17.1	X	182.86635	95.14572	302.02080	5.78982	0.0984626	0.29137215	2.2533952	20	4 16.3	20.4
299472 2006 BF_{132}	16.8	X	79.38956	320.13328	159.27938	6.34525	0.0455002	0.28418092	2.2912515	20	3 26.3	19.3
299473 2006 BO_{132}	13.9	X	338.65588	328.09103	291.01959	1.02159	0.0605919	0.08127032	5.2785510	20	5 13.9	20.5
299474 2006 BY_{136}	16.9	X	224.57179	242.71842	326.61188	8.53349	0.1491192	0.26000398	2.4311740	20	—	—
299475 2006 BQ_{140}	17.2	X	120.31165	284.09245	153.81148	8.34264	0.0808870	0.28518988	2.2858443	20	4 1.3	20.1
299476 2006 BP_{143}	17.1	X	192.71537	128.75392	157.56216	2.50818	0.2128069	0.26589592	2.3951254	20	—	—
299477 2006 BU_{147}	17.6	X	7.33085	282.00867	245.04055	5.10492	0.1016990	0.28049827	2.3112624	20	2 4.0	19.9
299478 2006 BC_{148}	17.9	X	80.72085	188.32895	306.92438	4.27603	0.0984521	0.28950619	2.2630674	20	4 25.1	20.4
299479 2006 BX_{160}	14.0	X	340.58081	73.27588	184.45734	6.13689	0.1029927	0.08257134	5.2229573	20	5 13.7	20.4
299480 2006 BB_{165}	17.4	X	64.51617	1.15348	154.49935	2.95176	0.0969666	0.28846735	2.2684974	20	5 3.1	19.7
299481 2006 BZ_{170}	17.1	X	200.00243	226.64390	139.38602	6.28596	0.1301328	0.29204804	2.2499171	20	3 29.8	20.4
299482 2006 BX_{171}	17.5	X	176.59625	45.05632	245.00534	1.59139	0.1843803	0.26906696	2.3762701	20	—	—
299483 2006 BP_{182}	17.9	X	240.68568	124.43192	95.66233	2.00978	0.1512597	0.26354794	2.4093301	20	—	—
299484 2006 BX_{182}	14.5	X	355.40383	267.76097	143.41731	11.80459	0.2810375	0.12402159	3.9823356	20	12 20.8	18.8
299485 2006 BM_{184}	17.3	X	11.71741	130.30264	74.23817	2.40416	0.0891218	0.28948608	2.2631722	20	4 12.1	19.2
299486 2006 BP_{185}	18.0	X	224.20686	27.77506	240.24240	1.63197	0.0562148	0.27199957	2.3591591	20	—	—
299487 2006 BU_{188}	16.7	X	255.00450	173.36107	78.51040	5.22195	0.1264025	0.27101051	2.3648955	20	—	—
299488 2006 BD_{192}	17.1	X	288.91729	21.44139	171.59129	5.00991	0.1609696	0.26913356	2.3758781	20	—	—
299489 2006 BD_{194}	17.3	X	276.71165	79.97842	165.08236	5.47240	0.0851557	0.27745750	2.3281184	20	1 16.6	20.4
299490 2006 BR_{195}	17.6	X	234.47878	90.28517	179.01963	3.79216	0.1403275	0.27236342	2.3570576	20	—	—
299491 2006 BY_{198}	12.9	X	328.76760	289.43100	344.50038	28.99332	0.0548552	0.08270973	5.2171298	20	5 5.9	20.0
299492 2006 BQ_{201}	17.3	X	251.12416	117.44031	98.19233	2.68381	0.1290636	0.26615036	2.3935987	20	—	—
299493 2006 BA_{202}	17.3	X	216.40314	248.91039	18.57790	2.23104	0.2026968	0.26813726	2.3817596	20	—	—
299494 2006 BJ_{212}	17.5	X	94.42392	316.70616	139.22757	4.91491	0.0679686	0.28353587	2.2947253	20	3 18.9	20.1
299495 2006 BC_{224}	16.7	X	311.94726	3.51407	154.86786	6.44301	0.0527865	0.26866120	2.3786621	20	—	—
299496 2006 BY_{226}	17.9	X	53.95331	322.22850	159.17679	4.76633	0.0941447	0.28093077	2.3088896	20	2 22.2	19.9
299497 2006 BF_{227}	18.0	X	8.03749	171.99789	325.18613	0.82507	0.1179452	0.27431839	2.3458457	20	—	—
299498 2006 BH_{227}	18.5	X	90.84257	335.27850	134.58358	1.04781	0.1477559	0.28650446	2.2788468	20	4 14.5	21.0
299499 2006 BV_{227}	17.6	X	276.99444	224.56628	2.98536	1.01048	0.1361683	0.27037198	2.3686175	20	—	—
299500 2006 BX_{232}	17.9	X	169.97520	335.50054	87.24692	4.50685	0.1424499	0.29677926	2.2259412	20	5 12.2	21.1
299501 2006 BA_{237}	17.2	X	169.80786	264.23813	43.97354	2.64387	0.1840598	0.27113538	2.3641694	20	—	—
299502 2006 BO_{242}	17.0	X	291.31146	132.91060	61.27428	2.38399	0.1153200	0.27032960	2.3688650	20	—	—
299503 2006 BV_{245}	17.3	X	146.95715	226.98367	59.07105	1.20859	0.1988036	0.25918624	2.4362850	20	—	—
299504 2006 BC_{264}	17.8	X	288.88782	141.20984	70.11269	2.25808	0.1288781	0.27045599	2.3681270	20	—	—
299505 2006 BB_{269}	17.0	X	285.81302	178.03003	7.53182	11.95087	0.1817471	0.26636215	2.3923297	20	—	—
299506 2006 CH_{3}	17.2	X	198.29586	161.67105	148.19189	6.72633	0.2295750	0.27781309	2.3261314	20	1 18.1	21.2
299507 2006 CN_{5}	17.0	X	352.43074	56.21205	145.96486	7.11474	0.0396879	0.28619318	2.2804989	20	3 10.1	19.5
299508 2006 CK_{6}	17.5	X	239.71385	58.10639	184.67708	2.16621	0.1639791	0.26825737	2.3810487	20	—	—
299509 2006 CJ_{10}	17.3	X	312.29721	224.70200	332.57132	8.31451	0.0792995	0.27833336	2.3232318	20	—	—
299510 2006 CV_{12}	16.7	X	257.79328	307.67098	315.31543	6.61119	0.0917457	0.27795290	2.3253513	20	1 18.9	19.9
299511 2006 CQ_{17}	12.5	X	306.53137	298.58126	331.72608	27.75713	0.0591168	0.08145809	5.2704364	20	4 2.3	19.6
299512 2006 CA_{21}	17.6	X	215.41554	123.33354	146.76103	6.72565	0.1072450	0.27190582	2.3597014	20	—	—
299513 2006 CY_{25}	17.2	X	289.50303	122.19230	105.03645	2.98281	0.0986642	0.27735734	2.3286789	20	1 7.8	20.3
299514 2006 CT_{27}	18.2	X	197.98002	35.74220	323.83115	2.92982	0.1296463	0.28960705	2.2625419	20	3 16.2	21.5
299515 2006 CD_{46}	17.4	X	252.11753	270.31142	4.60705	1.75220	0.2057948	0.27816326	2.3241788	20	1 20.4	21.2
299516 2006 CW_{49}	17.3	X	124.80734	124.17508	295.13727	5.82383	0.0868304	0.28664524	2.2781006	20	3 7.8	20.2
299517 2006 CO_{57}	16.7	X	319.92286	23.92320	137.40683	8.96042	0.0168363	0.26860071	2.3790192	20	—	—
299518 2006 CX_{63}	17.7	X	294.65866	327.33860	277.64312	1.98282	0.0707608	0.28996765	2.2606657	20	2 8.2	20.5
299519 2006 CQ_{66}	17.5	X	170.44070	69.52295	196.31613	1.01688	0.1571892	0.25965871	2.4333288	20	—	—
299520 2006 CA_{68}	17.5	X	335.16593	182.37021	329.30262	1.10336	0.1138069	0.26981294	2.3718881	20	—	—

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Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
	m		°	°	°	°		°				
299521 2006 DL_1	17.0	X	126.66886	124.30473	0.66381	6.03514	0.1198498	0.29636697	2.2280051	20	6 16.6	20.1
299522 2006 DY_1	17.0	X	154.94207	313.75116	345.10354	6.79022	0.1005909	0.26391498	2.4070957	20	—	—
299523 2006 DF_2	13.1	X	282.44120	336.84151	338.22054	23.45578	0.1293757	0.08296284	5.2065132	20	4 18.8	20.3
299524 2006 DW_4	13.7	X	308.17147	139.94261	154.13709	10.05391	0.0739837	0.08187920	5.2523502	20	5 16.9	20.5
299525 2006 DQ_{15}	17.3	X	191.44978	250.67131	45.83121	2.75849	0.2154182	0.26874550	2.3781646	20	—	—
299526 2006 DD_{17}	17.3	X	257.68813	233.82810	16.22297	4.62430	0.0671438	0.27389314	2.3482732	20	1 4.7	20.5
299527 2006 DZ_{20}	16.9	X	311.26681	338.12132	169.96372	9.55668	0.1231181	0.26445626	2.4038101	20	—	—
299528 2006 DF_{21}	17.7	X	175.05822	62.13885	315.77425	4.73836	0.1202456	0.28805296	2.2706724	20	3 15.4	20.9
299529 2006 DS_{21}	17.3	X	164.18163	38.21232	358.43427	5.98600	0.1612171	0.28736726	2.2742831	20	4 1.1	20.5
299530 2006 DB_{26}	16.7	X	31.42517	171.70458	351.70561	24.75178	0.1194211	0.28486509	2.2875814	20	3 14.9	18.6
299531 2006 DF_{31}	16.4	X	331.02243	230.72173	339.62239	10.21488	0.0528880	0.27907869	2.3190936	20	2 17.7	19.1
299532 2006 DS_{31}	17.5	X	193.44199	255.25787	341.44438	2.41371	0.1544303	0.25486624	2.4637380	20	—	—
299533 2006 DD_{32}	17.4	X	26.63333	297.69468	203.86550	0.83104	0.1203116	0.27778697	2.3262772	20	2 3.2	19.3
299534 2006 DV_{33}	17.1	X	101.93257	199.16790	152.09180	3.16276	0.0991198	0.26049986	2.4280878	20	—	—
299535 2006 DC_{41}	16.5	X	19.47166	357.56321	186.30970	12.02386	0.1440167	0.28305229	2.2973382	20	3 24.8	18.1
299536 2006 DO_{47}	18.1	X	187.72946	311.63060	312.37604	1.21677	0.1987301	0.25973363	2.4328608	20	—	—
299537 2006 DC_{50}	13.4	X	232.89712	214.20576	150.34503	22.35025	0.0102653	0.08245559	5.2278442	20	5 21.3	20.6
299538 2006 DN_{50}	16.2	X	280.90980	183.73291	17.83282	12.10577	0.0654874	0.26573067	2.3961183	20	—	—
299539 2006 DD_{54}	17.3	X	173.81880	273.75429	4.78473	4.61404	0.1891855	0.25771304	2.4455607	20	—	—
299540 2006 DK_{58}	17.6	X	11.61530	346.06073	177.89931	4.60475	0.1431928	0.27786720	2.3258294	20	2 5.3	19.6
299541 2006 DP_{63}	17.5	X	330.51196	153.86770	12.99060	1.56472	0.1201198	0.27029605	2.3690610	20	—	—
299542 2006 DC_{79}	17.5	X	257.38824	31.69278	191.43372	2.49783	0.1411634	0.26546231	2.3977329	20	—	—
299543 2006 DE_{80}	16.7	X	141.23172	327.60463	342.58277	10.63805	0.2735407	0.25765602	2.4459215	20	—	—
299544 2006 DL_{80}	17.1	X	196.46999	325.16484	339.47204	7.18387	0.1163301	0.26978855	2.3720311	20	1 9.0	20.7
299545 2006 DZ_{84}	17.2	X	217.41194	343.52721	276.99071	1.43100	0.1020083	0.26478746	2.4018051	20	—	—
299546 2006 DD_{96}	17.9	X	113.18661	81.39461	1.14082	2.55304	0.1866836	0.28350272	2.2949042	20	4 10.8	21.0
299547 2006 DQ_{99}	13.4	X	243.74709	342.30526	3.23227	11.20570	0.1088875	0.08168775	5.2605532	20	4 23.3	20.7
299548 2006 DS_{118}	17.1	X	302.77229	20.20196	175.42285	6.65977	0.0578179	0.26952812	2.3735588	20	—	—
299549 2006 DT_{118}	16.8	X	341.20974	119.95760	68.31047	4.84923	0.1179377	0.27527036	2.3404341	20	1 24.0	19.3
299550 2006 DN_{120}	17.0	X	116.38504	324.29944	141.07860	6.43293	0.0968653	0.28931353	2.2640719	20	5 7.1	19.9
299551 2006 DH_{127}	13.7	X	332.21037	58.34139	202.91374	3.73217	0.0724590	0.08280781	5.2130095	20	5 7.9	20.3
299552 2006 DN_{127}	13.9	X	345.24797	251.38571	350.11870	4.08461	0.0757903	0.08415653	5.1571627	20	4 30.4	20.5
299553 2006 DP_{132}	17.3	X	173.57418	208.13125	73.43640	3.34970	0.2028456	0.25917435	2.4363595	20	—	—
299554 2006 DG_{138}	17.4	X	189.70095	229.77533	90.44807	3.67553	0.1286048	0.27209189	2.3586254	20	1 21.2	21.0
299555 2006 DX_{141}	17.5	X	180.28215	15.80383	29.51205	3.51282	0.1456062	0.29075936	2.2565601	20	4 28.3	20.9
299556 2006 DD_{146}	17.7	X	168.39324	133.49522	154.01430	2.68932	0.1952875	0.25881403	2.4386202	20	—	—
299557 2006 DS_{148}	17.7	X	6.78664	321.82270	193.30035	2.92592	0.1364749	0.27532922	2.3401005	20	1 15.5	19.9
299558 2006 DY_{151}	16.6	X	319.94898	230.69500	345.25417	4.79286	0.0883719	0.27552413	2.3389968	20	2 4.3	19.3
299559 2006 DB_{156}	17.4	X	169.40861	145.98196	140.58814	2.88266	0.2051697	0.25898581	2.4375418	20	—	—
299560 2006 DQ_{156}	17.2	X	218.01768	89.42011	157.04627	6.88749	0.0719109	0.26308866	2.4121333	20	—	—
299561 2006 DY_{171}	17.4	X	273.87591	196.16093	33.11257	2.96706	0.1397226	0.26899728	2.3766805	20	—	—
299562 2006 DQ_{175}	17.5	X	203.50599	314.45896	9.69927	6.46919	0.1445903	0.27558445	2.3386554	20	2 10.3	21.2
299563 2006 DS_{190}	17.4	X	105.03143	54.71618	18.43821	8.99950	0.1709307	0.28013831	2.3132419	20	3 19.4	20.2
299564 2006 DX_{192}	16.9	X	60.96762	318.96481	169.30641	6.32450	0.0992311	0.28026240	2.3125590	20	3 16.9	19.1
299565 2006 DD_{193}	16.6	X	146.94850	296.89643	10.45301	6.95926	0.1264545	0.25774309	2.4453707	20	—	—
299566 2006 DG_{193}	16.4	X	246.74275	235.22138	11.94056	5.98323	0.0729848	0.26643341	2.3919032	20	—	—
299567 2006 DU_{203}	16.7	X	311.66425	197.23066	46.25414	7.39991	0.0785923	0.28092661	2.3089124	20	3 5.4	19.5
299568 2006 DG_{208}	17.3	X	83.68990	80.76173	190.74684	10.78023	0.2623606	0.23540938	2.5976873	20	11 19.8	21.7
299569 2006 DM_{211}	17.5	X	217.43892	209.11093	20.12418	2.45393	0.1291110	0.25659724	2.4526452	20	—	—
299570 2006 DV_{214}	17.5	X	138.95812	82.25951	338.75489	6.34169	0.0914189	0.28797932	2.2710595	20	3 29.3	20.6
299571 2006 ES_1	17.7	X	178.68153	45.07715	25.33391	3.81512	0.1148001	0.29529536	2.2333921	20	5 29.8	21.0
299572 2006 EZ_{30}	12.6	X	252.45546	336.18059	7.13586	17.84958	0.0796037	0.08034040	5.3192050	20	4 30.2	19.9
299573 2006 ED_{40}	17.4	X	160.69909	341.87886	315.78426	3.89225	0.1632600	0.25933410	2.4353588	20	—	—
299574 2006 EY_{45}	17.5	X	193.74398	316.79208	318.05435	1.62652	0.1682573	0.26248912	2.4158048	20	—	—
299575 2006 EE_{58}	13.5	X	207.76159	51.18571	341.98886	8.58380	0.0269499	0.08181824	5.2549585	20	5 16.9	20.6
299576 2006 EO_{63}	17.3	X	230.50494	53.39367	219.79915	5.80515	0.0990778	0.26756653	2.3851454	20	1 2.5	20.8
299577 2006 FK_8	16.9	X	128.90771	237.37050	195.45430	6.96696	0.0980117	0.28053710	2.3110491	20	4 5.6	19.8
299578 2006 FX_{30}	16.6	X	275.28588	72.35345	165.31142	6.00085	0.0892308	0.27154658	2.3617821	20	1 6.1	19.9
299579 2006 FD_{39}	16.7	X	215.32654	224.76338	25.27580	7.00917	0.0926777	0.26054746	2.4277921	20	—	—
299580 2006 FO_{40}	17.5	X	190.76653	343.17454	253.85033	1.96770	0.1120657	0.25595730	2.4567315	20	—	—
299581 2006 FU_{42}	17.5	X	104.15894	62.33685	190.43791	13.46051	0.2489040	0.23525321	2.5988368	20	11 13.3	22.1
299582 2006 GQ_2	18.0	X	288.42435	64.54531	13.89447	25.83465	0.4658230	0.67229781	1.2905106	20	—	—
299583 2006 GK_{11}	16.8	X	260.51017	308.27498	180.89859	9.90250	0.0217679	0.24622456	2.5210520	20	12 7.3	20.2
299584 2006 GY_{12}	17.7	X	101.99424	139.53762	124.78609	3.49784	0.1783612	0.23788115	2.5796614	20	11 20.9	21.8
299585 2006 GA_{14}	17.1	X	270.32913	53.67658	175.00958	6.26765	0.0768135	0.26559673	2.3969239	20	—	—
299586 2006 GW_{18}	17.2	X	28.77796	52.44908	46.70945	6.78585	0.0823264	0.26564769	2.3966173	20	—	—
299587 2006 GT_{19}	17.8	X	103.60688	119.65860	160.42538	4.43974	0.1608695	0.24045137	2.5612455	20	12 10.3	21.9
299588 2006 GJ_{25}	17.6	X	98.01940	109.23007	181.00814	1.77701	0.2113895	0.24027777	2.5624790	20	12 19.5	21.8
299589 2006 GD_{41}	17.1	X	43.57502	113.71989	152.89856	13.73908	0.3440619	0.22527383	2.6750314	20	10 17.5	20.9
299590 2006 HA_{11}	16.6	X	81.20049	162.06769	101.25886	5.49853	0.2435265	0.23187724	2.6240009	20	11 6.3	20.9
299591 2006 HC_{13}	16.8	X	85.61341	121.02184	145.72165	5.10771	0.1771793	0.23403923	2.6078160	20	11 8.8	20.8
299592 2006 HT_{28}	17.1	X	76.39631	307.42309	98.90567	5.92984	0.1170283	0.26213773	2.4179632	20	—	—
299593 2006 HX_{29}	16.4	X	216.83714	26.67663	209.37415	13.43192	0.1460228	0.25800970	2.4436858	20	—	—
299594 2006 HL_{34}	17.6	X	49.51051	102.65147	48.66005	4.18073	0.1610408	0.27965838	2.3158877	20	4 9.6	19.6
299595 2006 HF_{35}	16.8	X	62.54648	267.81990	52.67949	6.82888	0.2843139	0.23391316	2.6087529	20	12 30.2	21.1
299596 2006 HR_{36}	16.2	X	57.28478	115.71714	211.65992	27.24611	0.2730493	0.23328521	2.6134323	20	12 28.2	20.9
299597 2006 HH_{42}	16.0	X	167.42224	253.08406	289.58443	7.14728	0.2748684	0.23709792	2.5853393	20	10 2.7	20.8
299598 2006 HB_{45}	17.5	X	189.84440	224.09362	56.84549	2.22213	0.1723689	0.25854917	2.4402854	20	—	—
299599 2006 HO_{50}	16.7	X	217.44917	47.02340	211.59494	5.88001	0.1265598	0.26072249	2.4267054	20	—	—
299600 2006 HM_{67}	16.6	X	75.06833	97.96576	215.32195	11.28913	0.2170822	0.23730612	2.5838270	20	12 26.2	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		°	°	°	°		°				
299601 2006 HL_{69}	16.4	X	75.48547	117.16121	196.86608	2.73925	0.1988041	0.23685714	2.5870912	20	12 26.8	20.6
299602 2006 HC_{71}	16.9	X	337.51701	144.61084	188.51234	8.83215	0.2348167	0.22108359	2.7087258	20	8 14.3	19.2
299603 2006 HR_{73}	17.1	X	63.49148	91.81776	207.38824	11.90076	0.1783366	0.23295973	2.6158659	20	11 25.5	21.0
299604 2006 HL_{74}	16.6	X	78.92779	339.11031	79.17889	7.07284	0.1237752	0.26344196	2.4099762	20	1 12.6	19.1
299605 2006 HO_{76}	16.1	X	38.76830	178.14876	100.19082	13.85997	0.2099917	0.22375839	2.6870959	20	10 9.6	19.8
299606 2006 HS_{77}	17.4	X	59.10515	297.22086	159.19088	1.62794	0.0844255	0.27252572	2.3561217	20	1 26.3	19.8
299607 2006 HQ_{81}	17.4	X	143.81914	278.68791	350.98930	1.47396	0.1546783	0.24464817	2.5318700	20	—	—
299608 2006 HL_{83}	16.6	X	86.00323	253.33684	79.41938	8.19596	0.1751841	0.24274891	2.5450590	20	—	—
299609 2006 HJ_{87}	17.5	X	98.52302	101.01273	199.18724	4.15291	0.2361995	0.24288603	2.5441010	20	—	—
299610 2006 HP_{88}	16.6	X	107.26404	105.47001	142.09560	5.17253	0.1486064	0.23368289	2.6104664	20	11 4.1	20.7
299611 2006 HZ_{89}	16.5	X	33.38200	157.53426	119.10184	15.30697	0.2449476	0.22294537	2.6936246	20	10 4.3	20.1
299612 2006 HE_{92}	16.7	X	104.64082	104.86711	148.03097	4.47129	0.1233114	0.23427891	2.6060370	20	11 6.1	20.7
299613 2006 HY_{93}	16.5	X	14.99819	152.06568	169.03393	11.75578	0.0805883	0.22861060	2.6489381	20	10 7.2	19.8
299614 2006 HB_{98}	17.3	X	155.21206	233.47554	4.76292	1.99361	0.0626255	0.24267921	2.5455463	20	12 9.4	20.8
299615 2006 HE_{110}	15.5	X	139.16514	297.66453	270.83921	28.39015	0.1406756	0.23947219	2.5682226	20	10 3.4	20.3
299616 2006 JE_{4}	16.0	X	270.28877	226.00790	211.71960	12.70652	0.0502017	0.23527681	2.5986631	20	10 4.3	19.4
299617 2006 JX_{6}	17.6	X	93.20820	63.75938	206.36574	7.11446	0.1569776	0.23501619	2.6005838	20	11 17.7	21.6
299618 2006 JR_{12}	17.1	X	254.66706	63.86309	118.87547	4.99358	0.1498041	0.25243752	2.4795152	20	—	—
299619 2006 JG_{17}	17.3	X	119.65943	62.01342	207.31851	4.61893	0.1787555	0.23935601	2.5690535	20	12 11.6	21.5
299620 2006 JS_{25}	17.4	X	229.64469	43.79219	206.78281	0.75834	0.1412564	0.25933972	2.4353237	20	—	—
299621 2006 JW_{31}	17.2	X	84.48527	127.58338	172.19064	4.46083	0.2384042	0.23578328	2.5949404	20	12 20.6	21.5
299622 2006 JS_{32}	16.6	X	347.07992	202.41620	139.39884	10.60857	0.0650303	0.22780078	2.6552123	20	9 21.8	19.8
299623 2006 JH_{34}	17.3	X	34.61989	259.55277	197.59583	3.01286	0.1292814	0.26316197	2.4116853	20	—	—
299624 2006 JS_{35}	17.4	X	74.65280	156.38602	148.81983	3.38010	0.2057907	0.23477652	2.6023534	20	12 16.0	21.6
299625 2006 JT_{43}	17.1	X	77.97587	164.10462	133.18311	5.01268	0.1972904	0.23584216	2.5945084	20	12 9.5	21.1
299626 2006 JH_{50}	16.8	X	330.07256	87.37817	36.69687	8.07517	0.0517149	0.25644099	2.4536414	20	—	—
299627 2006 JK_{54}	16.5	X	107.72462	188.29015	67.56735	13.34450	0.2138710	0.23516705	2.5994716	20	11 17.5	20.8
299628 2006 JB_{56}	16.4	X	97.45703	146.26042	114.10432	13.76882	0.1513170	0.23385509	2.6091848	20	11 13.5	20.7
299629 2006 JD_{61}	17.4	X	68.45999	78.11324	205.96584	2.72351	0.2113597	0.23242948	2.6198429	20	11 15.0	21.4
299630 2006 JF_{68}	16.6	X	103.69031	45.61372	241.28607	10.56919	0.0607274	0.23958439	2.5674207	20	12 12.4	20.2
299631 2006 JP_{68}	17.3	X	63.69654	203.45951	215.07441	5.56972	0.1124323	0.26305882	2.4123157	20	—	—
299632 2006 KU_{2}	17.3	X	46.40455	69.69926	203.30335	5.33208	0.2198757	0.22449668	2.6812014	20	10 6.3	20.9
299633 2006 KK_{3}	17.3	X	98.42173	93.48142	207.03921	11.42975	0.2726057	0.24109275	2.5567010	20	—	—
299634 2006 KC_{8}	16.3	X	4.22478	109.56746	234.34856	11.77469	0.2931002	0.22549517	2.6732806	20	11 18.8	18.7
299635 2006 KH_{16}	16.1	X	187.53753	53.36799	151.84567	15.14556	0.1410743	0.24139607	2.5545589	20	11 30.3	20.3
299636 2006 KR_{18}	16.7	X	164.33946	142.93903	107.38437	9.37352	0.0943281	0.24681621	2.5170215	20	—	—
299637 2006 KX_{28}	17.5	X	73.24618	204.10840	67.92527	2.23825	0.1975317	0.23019044	2.6368041	20	11 3.3	21.5
299638 2006 KC_{30}	16.7	X	113.81984	135.92506	157.46577	8.03704	0.1620103	0.24180447	2.5516817	20	—	—
299639 2006 KW_{35}	16.6	X	349.96411	92.07645	168.86858	12.91987	0.2213288	0.21081837	2.7959565	20	5 26.3	19.4
299640 2006 KW_{36}	16.8	X	268.82174	98.71077	100.95902	3.42772	0.1362469	0.25733138	2.4479783	20	—	—
299641 2006 KR_{52}	15.6	X	49.53623	54.48870	221.60359	12.02110	0.1218957	0.22608944	2.6685941	20	9 27.0	19.3
299642 2006 KP_{60}	16.1	X	32.35472	245.77233	88.30933	15.42426	0.1101658	0.23276798	2.6173023	20	11 24.7	19.6
299643 2006 KE_{61}	17.0	X	103.39235	50.77216	217.53832	11.44516	0.1804197	0.23453895	2.6041105	20	11 26.2	21.3
299644 2006 KG_{65}	16.2	X	62.03481	145.30287	138.44473	11.92965	0.2318515	0.23077935	2.6323164	20	11 13.8	20.4
299645 2006 KO_{73}	16.0	X	44.62896	250.48827	111.30746	13.40647	0.3191824	0.23527590	2.5986698	20	—	—
299646 2006 KG_{84}	16.1	X	44.19867	73.47391	222.76548	14.67384	0.1257004	0.22841789	2.6504277	20	10 19.3	19.5
299647 2006 KR_{84}	17.8	X	107.77681	105.45395	200.67266	4.27314	0.1329516	0.24550527	2.5259737	20	—	—
299648 2006 KC_{89}	16.7	X	78.45397	164.18526	110.40797	15.16286	0.2410549	0.22983046	2.6395567	20	11 19.7	21.2
299649 2006 KT_{93}	16.3	X	61.63179	140.18122	223.55776	12.46352	0.2912128	0.24103530	2.5571073	20	—	—
299650 2006 KG_{97}	16.1	X	44.45090	26.33830	252.63178	11.97380	0.1396515	0.21897017	2.7261269	20	9 22.7	19.9
299651 2006 KO_{103}	16.2	X	87.11339	342.77552	259.83521	8.56783	0.1661280	0.22760861	2.6567066	20	10 3.8	20.4
299652 2006 KE_{116}	16.6	X	0.90122	90.14969	229.94302	13.59204	0.2048881	0.22290070	2.6939845	20	9 17.0	19.6
299653 2006 KG_{121}	16.3	X	151.41819	237.56780	2.08448	12.22416	0.1267541	0.24113533	2.5564001	20	12 2.1	20.5
299654 2006 LV_{1}	16.6	X	28.40214	134.61322	124.91414	18.67528	0.2549308	0.21439954	2.7647349	20	8 29.1	19.8
299655 2006 MG	16.8	X	5.79978	187.99660	150.14681	5.56296	0.2177317	0.22712610	2.6604679	20	11 3.6	19.6
299656 2006 MP_{3}	16.0	X	172.37742	106.89386	125.04277	15.23333	0.1767930	0.24199877	2.5503157	20	12 14.4	20.3
299657 2006 ME_{7}	16.3	X	345.68966	231.26666	120.48320	14.84205	0.1315973	0.21882430	2.7273383	20	10 8.9	19.6
299658 2006 OV	16.0	X	220.22989	117.34075	233.42589	10.08136	0.0598574	0.19298041	2.9657002	20	4 4.4	20.5
299659 2006 OR_{18}	16.0	X	49.54014	301.84181	333.28015	10.93687	0.1465326	0.22004006	2.7172830	20	9 27.5	19.8
299660 2006 OK_{20}	16.3	X	341.47538	268.60116	45.97362	8.28560	0.2302829	0.21095844	2.7947188	20	7 29.9	18.9
299661 2006 OX_{20}	16.0	X	224.39078	139.35276	319.81917	2.73031	0.0543289	0.20989765	2.8041269	20	8 30.1	19.8
299662 2006 OE_{21}	16.6	X	207.00592	204.74230	217.51877	1.29322	0.1070813	0.19527467	2.9424253	20	6 18.3	21.2
299663 2006 OO_{21}	15.7	X	295.62714	301.36575	48.65995	15.63152	0.1619321	0.20517481	2.8469949	20	6 23.3	19.5
299664 2006 PS_{4}	16.0	X	323.76683	259.11507	96.87896	8.64968	0.2372922	0.21086665	2.7955297	20	8 19.1	18.6
299665 2006 PE_{7}	15.5	X	249.26347	79.88232	331.70186	14.08799	0.1669296	0.20630641	2.8365747	20	7 17.9	19.8
299666 2006 PY_{11}	16.5	X	326.49342	60.96818	284.53902	3.31568	0.0847080	0.21033070	2.8002767	20	8 17.2	19.9
299667 2006 PC_{40}	16.0	X	323.51165	237.57217	138.02746	7.31438	0.3216054	0.21265049	2.7798741	20	9 9.3	17.7
299668 2006 QV_{1}	16.4	X	29.20201	280.91400	56.59986	2.35448	0.0813908	0.22190489	2.7020381	20	11 15.2	19.9
299669 2006 QW_{6}	16.0	X	271.02584	90.43464	341.90493	8.15297	0.1589197	0.21199651	2.7855881	20	9 9.0	19.4
299670 2006 QU_{7}	15.9	X	311.60314	250.94432	159.59043	11.23388	0.3017252	0.21403291	2.7678912	20	10 6.1	18.1
299671 2006 QQ_{13}	16.1	X	38.32947	343.37010	313.92624	5.59555	0.0571245	0.21964951	2.7205031	20	9 29.2	19.7
299672 2006 QG_{15}	16.0	X	346.25377	51.34535	309.35862	11.77508	0.0852280	0.21798442	2.7343394	20	10 5.3	19.6
299673 2006 QG_{16}	16.4	X	22.02527	306.11161	338.67773	7.25587	0.2069280	0.21393938	2.7686978	20	9 10.4	19.3
299674 2006 QM_{21}	16.1	X	82.34009	96.99674	185.57501	6.31508	0.0494191	0.22257115	2.6966431	20	11 9.1	19.8
299675 2006 QT_{27}	16.2	X	299.64457	348.04160	347.94344	17.44099	0.1421448	0.20255896	2.8714532	20	6 13.4	20.2
299676 2006 QE_{32}	16.2	X	302.73712	85.87702	303.50715	6.24062	0.2316449	0.21064443	2.7974955	20	8 19.4	19.0
299677 2006 QQ_{42}	15.7	X	253.61155	304.00487	78.32538	3.38730	0.1141569	0.20008847	2.8950407	20	6 18.4	19.9
299678 2006 QG_{46}	16.4	X	315.39526	217.60619	138.93483	8.80163	0.2352067	0.21009558	2.8023655	20	7 27.8	19.2
299679 2006 QN_{61}	16.2	X	318.43379	174.74225	196.38527	5.61500	0.0642730	0.21230107	2.7829235	20	9 10.1	19.6
299680 2006 QB_{67}	16.6	X	355.88246	312.28761	324.13115	1.08790	0.0299348	0.20209909	2.8758075	20	6 30.2	20.2

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	m		°	°	°	°		°				
299681 2006 QN_{74}	16.3	X	201.48969	244.70889	152.58316	12.80869	0.2384158	0.19075004	2.9887731	20	5 12.3	21.7
299682 2006 QQ_{79}	16.0	X	341.16827	212.56545	174.56823	11.80867	0.1859908	0.21817550	2.7327426	20	11 18.5	18.9
299683 2006 QW_{81}	16.2	X	59.68189	304.22370	5.97240	6.21882	0.0518918	0.21948415	2.7218693	20	11 12.9	20.0
299684 2006 QB_{90}	16.5	X	284.49370	67.48495	340.25568	7.19328	0.1208280	0.21072221	2.7968070	20	9 1.9	19.9
299685 2006 QQ_{93}	16.2	X	40.23925	101.94556	180.24339	9.04110	0.0815530	0.21560661	2.7544063	20	9 17.1	19.8
299686 2006 QP_{94}	16.9	X	359.90508	173.40157	142.03316	12.96025	0.2053383	0.21222345	2.7836020	20	9 14.1	19.6
299687 2006 QB_{96}	16.0	X	270.54997	294.97096	78.81843	9.04293	0.2241238	0.20137668	2.8826810	20	6 12.4	20.0
299688 2006 QN_{100}	16.6	X	295.87303	179.60178	183.02941	7.49276	0.1119628	0.20546466	2.8443168	20	7 18.6	20.4
299689 2006 QY_{100}	15.1	X	195.27414	20.10349	316.01940	16.35471	0.2098379	0.18083337	3.0970651	20	2 21.1	20.4
299690 2006 QT_{104}	16.5	X	226.23858	265.67240	168.88784	4.58497	0.0483377	0.21053312	2.7984815	20	7 31.5	20.4
299691 2006 QX_{106}	16.5	X	281.91555	200.49032	203.32805	2.77216	0.1719677	0.20886009	2.8134060	20	8 14.2	20.1
299692 2006 QE_{107}	15.9	X	298.69564	84.32130	270.23200	1.98538	0.1562403	0.20465048	2.8518557	20	7 6.4	19.4
299693 2006 QZ_{110}	15.1	X	116.02969	264.03263	229.13623	21.10561	0.2032915	0.17797385	3.1301507	20	6 19.7	20.3
299694 2006 QU_{120}	16.2	X	325.09179	95.76697	273.27586	7.69984	0.1671771	0.21235112	2.7824861	20	9 9.3	19.2
299695 2006 QB_{137}	16.2	X	49.22160	27.61342	257.30021	3.92794	0.1386895	0.21600324	2.7510335	20	10 10.5	19.8
299696 2006 QJ_{139}	15.9	X	345.66715	209.52634	161.06620	14.26653	0.0793886	0.21968667	2.7201963	20	10 29.0	19.4
299697 2006 QK_{139}	16.2	X	272.46399	209.72377	205.68508	4.53651	0.0749060	0.21324418	2.7747121	20	8 31.4	19.8
299698 2006 QC_{145}	16.4	X	214.36428	257.61876	166.30833	6.47259	0.2139011	0.19675342	2.9276637	20	6 21.2	21.3
299699 2006 QG_{148}	15.9	X	43.15621	245.17910	16.82470	5.15932	0.0706336	0.20667803	2.8331735	20	8 24.8	19.6
299700 2006 QA_{149}	15.7	X	260.37938	243.85838	149.54808	6.43122	0.0594688	0.20188246	2.8778643	20	7 18.8	19.8
299701 2006 QW_{151}	16.6	X	208.12756	87.06466	339.56675	1.39033	0.0486318	0.20102179	2.8860728	20	6 29.3	20.8
299702 2006 QG_{156}	16.8	X	292.34736	90.49760	294.93963	2.72407	0.1036082	0.20870098	2.8148358	20	8 15.9	20.4
299703 2006 QH_{156}	16.3	X	311.01477	189.05348	180.53068	4.41810	0.0882381	0.20997280	2.8034578	20	8 25.3	19.7
299704 2006 QS_{156}	16.8	X	234.35827	200.24511	167.36276	10.25377	0.0934638	0.19442300	2.9510118	20	5 13.5	21.3
299705 2006 QS_{161}	16.3	X	346.34562	356.14641	0.12499	1.73215	0.1107409	0.21265090	2.7798705	20	10 6.3	19.5
299706 2006 QW_{163}	16.7	X	47.05246	145.58251	159.94330	4.05917	0.0305308	0.21802446	2.7340046	20	10 21.6	20.3
299707 2006 QF_{164}	16.1	X	318.90337	104.22526	224.56164	13.83595	0.1681866	0.20532005	2.8456521	20	6 30.9	19.5
299708 2006 QB_{165}	16.4	X	344.33744	137.95258	197.95761	4.63338	0.0869416	0.21073863	2.7966618	20	9 2.2	19.7
299709 2006 QH_{166}	16.1	X	239.29705	352.72468	343.49767	17.14175	0.1817345	0.18818644	3.0158553	20	3 26.3	21.1
299710 2006 QT_{169}	16.6	X	276.68211	180.71426	163.63651	8.72450	0.1674244	0.19945903	2.9011282	20	5 22.8	20.8
299711 2006 QS_{176}	14.8	X	222.16665	84.01422	170.30675	32.49821	0.0710814	0.16922895	3.2370764	20	—	—
299712 2006 QQ_{182}	16.2	X	86.01548	87.80086	158.71936	3.36602	0.0625762	0.21391863	2.7688769	20	9 28.3	19.9
299713 2006 QO_{183}	15.3	X	244.01645	83.88172	254.32911	10.35372	0.1102008	0.18891128	3.0081359	20	4 9.9	20.1
299714 2006 QQ_{184}	16.8	X	274.11358	301.58319	46.49961	2.63890	0.0656639	0.19685775	2.9266292	20	6 6.3	20.8
299715 2006 QG_{187}	15.3	X	279.57036	236.29839	97.93638	12.67270	0.0813194	0.19077138	2.9885503	20	5 26.7	19.5
299716 2006 RN_{6}	15.9	X	155.55444	218.08747	197.14376	13.03029	0.0877301	0.18257093	3.0773836	20	4 18.4	20.6
299717 2006 RF_{7}	15.9	X	122.94717	240.29095	190.91839	9.13459	0.0849903	0.17822279	3.1272353	20	4 1.9	20.3
299718 2006 RH_{15}	16.4	X	306.78786	74.50455	296.91040	8.22592	0.2028727	0.20978400	2.8051396	20	8 5.6	19.5
299719 2006 RU_{15}	15.8	X	181.89544	112.41634	276.94632	8.99856	0.1310264	0.18576364	3.0420212	20	4 9.8	20.9
299720 2006 RL_{19}	16.1	X	221.83800	38.77833	327.34339	6.11151	0.2481442	0.18829409	3.0147057	20	4 14.5	21.4
299721 2006 RH_{21}	16.7	X	306.97964	265.60604	8.13852	4.86649	0.2101167	0.19276526	2.9679064	20	3 24.4	20.5
299722 2006 RP_{26}	16.7	X	214.88929	294.25158	145.60511	2.82370	0.1067213	0.19734683	2.9217919	20	7 18.8	21.2
299723 2006 RB_{27}	16.0	X	261.78472	158.95971	184.28732	14.30472	0.1183625	0.19146523	2.9813258	20	5 10.8	20.5
299724 2006 RG_{33}	16.3	X	307.43896	143.58606	181.93156	1.63027	0.0735518	0.20126885	2.8837105	20	6 21.9	19.9
299725 2006 RY_{33}	16.0	X	182.13331	58.60717	341.72135	7.96353	0.1646391	0.18692779	3.0293780	20	4 24.3	21.1
299726 2006 RN_{38}	16.3	X	262.59539	217.61780	171.18596	3.91191	0.1668132	0.20249583	2.8720500	20	6 30.2	20.3
299727 2006 RX_{41}	16.9	X	342.95822	337.41052	352.82247	1.53339	0.0759528	0.20555041	2.8435256	20	8 23.9	20.3
299728 2006 RT_{48}	15.7	X	359.71730	212.88088	8.37232	8.21675	0.0751803	0.18576880	3.0419649	20	4 20.7	19.7
299729 2006 RA_{49}	15.8	X	20.55961	176.29492	10.49644	5.77604	0.0997019	0.18163046	3.0879974	20	4 9.8	19.7
299730 2006 RZ_{51}	16.2	X	95.43691	282.82762	194.05520	9.67841	0.0681520	0.18105859	3.0944963	20	4 24.4	20.5
299731 2006 RC_{52}	15.7	X	36.49858	142.22135	21.25267	10.75296	0.1552241	0.17742890	3.1365567	20	4 10.6	19.4
299732 2006 RN_{54}	16.6	X	187.48182	12.79116	50.48207	2.69063	0.0694437	0.18922528	3.0048072	20	5 30.9	21.2
299733 2006 RE_{56}	16.9	X	166.10976	306.38749	180.26642	1.87015	0.0111748	0.19882685	2.9072744	20	7 26.5	21.0
299734 2006 RJ_{58}	16.5	X	257.02828	54.02672	282.83315	0.28238	0.0562271	0.18962095	3.0006257	20	5 2.7	20.6
299735 2006 RC_{59}	16.1	X	246.49783	341.00365	4.63782	13.26491	0.1039372	0.18903834	3.0067878	20	4 22.0	20.7
299736 2006 RV_{63}	15.2	X	169.19051	29.02232	8.18209	9.98241	0.0468033	0.18123827	3.0924506	20	4 7.2	19.8
299737 2006 RT_{68}	16.2	X	293.36847	17.90039	12.88592	6.15911	0.0215747	0.20865214	2.8152750	20	9 6.8	20.0
299738 2006 RA_{70}	16.6	X	277.36141	129.01604	185.79991	9.37393	0.0418540	0.19066525	2.9896592	20	5 3.9	20.8
299739 2006 RB_{71}	16.9	X	180.22902	58.84064	5.67322	1.29689	0.0882225	0.19042886	2.9921328	20	5 24.4	21.4
299740 2006 RA_{73}	17.0	X	239.72971	39.88517	4.44436	1.63252	0.0658475	0.19838655	2.9115744	20	7 6.7	21.2
299741 2006 RX_{75}	16.4	X	301.48343	282.65257	7.82149	9.02592	0.0904277	0.19122763	2.9837948	20	4 23.0	20.4
299742 2006 RO_{79}	16.6	X	230.85488	27.57316	27.80219	2.09054	0.0649811	0.19866840	2.9088200	20	7 10.6	20.7
299743 2006 RY_{80}	16.0	X	306.23285	93.27742	180.41232	20.80013	0.0317227	0.18808206	3.0169710	20	4 21.2	20.3
299744 2006 RB_{83}	16.7	X	207.69373	123.56558	258.32478	1.24473	0.0979986	0.18786264	3.0193197	20	4 29.9	21.4
299745 2006 RJ_{84}	16.8	X	157.52347	295.32596	187.58026	8.56863	0.0568041	0.19647673	2.9304116	20	7 11.1	21.2
299746 2006 RS_{84}	16.5	X	181.85279	59.43572	357.46545	1.52528	0.1364564	0.18768775	3.0211950	20	5 16.6	21.4
299747 2006 RY_{86}	16.1	X	184.17309	124.34414	14.03520	6.95818	0.2065573	0.20285161	2.8686908	20	8 28.6	21.0
299748 2006 RP_{93}	15.8	X	129.28955	265.57684	202.60755	16.30216	0.1331091	0.18478806	3.0527186	20	5 29.8	20.7
299749 2006 RB_{94}	15.6	X	125.27552	84.12272	345.69213	4.56334	0.1190493	0.17742323	3.1366236	20	4 5.2	20.3
299750 2006 RU_{94}	16.9	X	233.83598	100.93954	249.90610	2.32749	0.0936920	0.18629620	3.0362211	20	4 19.1	21.6
299751 2006 RX_{96}	16.7	X	296.39054	30.34023	346.06831	1.37112	0.0794488	0.20282697	2.8689231	20	8 13.4	20.3
299752 2006 RM_{100}	16.1	X	324.82321	347.01657	3.40118	18.51873	0.0934761	0.20915423	2.8107676	20	8 29.2	19.6
299753 2006 RR_{100}	16.2	X	329.31822	327.49149	29.73664	9.28096	0.1610020	0.21056678	2.7981832	20	9 10.1	19.2
299754 2006 RX_{104}	16.5	X	183.67685	8.43392	42.70712	1.53355	0.1634944	0.18575351	3.0421318	20	5 11.7	21.3
299755 Ericmontellese	16.8	X	214.38240	177.87095	191.90547	8.39133	0.0356268	0.18648132	3.0342113	20	4 27.0	21.2
299756 Kerryaileen	16.5	X	328.79069	215.02827	13.94506	0.88204	0.1015554	0.18256237	3.0774798	20	3 15.3	20.4
299757 2006 RR_{120}	16.7	X	204.15179	269.50507	181.51050	7.31899	0.2052610	0.19822334	2.9131725	20	7 14.9	21.7
299758 2006 RZ_{120}	16.7	X	291.39387	129.86686	228.73625	1.05593	0.0691103	0.19932325	2.9024455	20	7 13.6	20.4
299759 2006 RE_{122}	16.2	X	30.37445	70.62233	175.03340	4.78381	0.0502649	0.20131817	2.8832396	20	7 9.2	20.1
299760 2006 SS_{4}	14.9	X	265.18294	323.36742	34.44762	17.69059	0.2129397	0.19166100	2.9792952	20	5 15.2	19.5

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	m		°	°	°	°		°				
299761 2006 SM_6	16.1	X	325.05192	144.79302	223.62978	3.64035	0.0820336	0.21209760	2.7847029	20	9 15.7	19.5
299762 2006 SR_8	15.7	X	140.89133	65.89598	356.88983	20.63995	0.2274724	0.17758122	3.1347629	20	4 14.8	21.1
299763 2006 SE_{12}	15.4	X	235.65315	5.68167	17.36573	16.13370	0.2517022	0.19014824	2.9950760	20	5 13.3	20.6
299764 2006 SX_{13}	16.4	X	152.31025	68.65019	355.95043	2.39832	0.0832011	0.18473473	3.0533062	20	4 24.6	21.0
299765 2006 SC_{15}	15.3	X	133.90470	196.71180	197.00242	13.01447	0.1238910	0.17537461	3.1610029	20	3 1.5	20.3
299766 2006 SX_{20}	16.0	X	267.28737	172.76240	221.98810	5.03457	0.0840700	0.20369227	2.8607925	20	7 25.2	20.0
299767 2006 SK_{21}	16.2	X	342.13215	171.77974	145.24519	2.80333	0.0898724	0.20543349	2.8446044	20	8 3.5	19.5
299768 2006 SO_{24}	15.1	X	91.41889	221.37084	250.16516	8.42483	0.0134992	0.18342716	3.0677993	20	3 31.1	19.6
299769 2006 SH_{30}	16.6	X	301.19726	188.09785	219.40017	5.32152	0.0284342	0.21755607	2.7379273	20	10 7.4	20.3
299770 2006 SW_{31}	16.8	X	206.53736	248.28666	193.75445	7.44606	0.1742067	0.19565993	2.9385615	20	7 7.7	21.7
299771 2006 SC_{32}	16.5	X	282.15319	80.62076	195.46818	9.53308	0.0757959	0.18393522	3.0621476	20	3 14.6	20.8
299772 2006 SZ_{38}	16.4	X	273.18078	173.56526	206.06932	8.56289	0.1053023	0.20050078	2.8910704	20	7 9.5	20.6
299773 2006 SD_{39}	15.8	X	285.32628	336.64152	11.06493	11.15029	0.0902039	0.19926110	2.9030491	20	6 16.6	19.9
299774 2006 SF_{40}	16.5	X	259.67146	311.94049	57.13456	2.88628	0.1336402	0.19722877	2.9229578	20	6 5.7	20.7
299775 2006 ST_{45}	16.0	X	272.12427	47.63786	24.00527	9.13263	0.1452784	0.20884816	2.8135131	20	9 15.2	19.7
299776 2006 SK_{57}	15.2	X	198.04170	166.63983	209.50620	12.82744	0.1728396	0.18399844	3.0614462	20	4 11.9	20.2
299777 2006 SN_{63}	17.3	X	240.01515	103.87673	280.92734	0.97148	0.0963394	0.19631455	2.9320253	20	6 7.8	21.7
299778 2006 SO_{64}	16.4	X	2.45861	164.07316	158.77944	5.27672	0.0432268	0.21012338	2.8021183	20	9 12.4	19.9
299779 2006 SN_{65}	17.0	X	305.09689	210.37135	215.65640	8.22182	0.1982565	0.21833320	2.7314266	20	10 25.0	19.7
299780 2006 SK_{72}	16.3	X	213.16631	261.67369	89.69051	2.05746	0.1242031	0.18204770	3.0832773	20	3 30.0	21.2
299781 2006 SE_{73}	15.9	X	232.45047	127.62738	188.74397	9.82170	0.0648264	0.17833790	3.1258894	20	3 9.1	20.6
299782 2006 SG_{74}	16.1	X	177.18332	222.27519	186.30579	10.89288	0.1130109	0.18366487	3.0651518	20	5 4.2	21.0
299783 2006 SV_{74}	16.3	X	264.62279	152.74073	182.29146	9.48331	0.0910814	0.18940342	3.0029228	20	5 6.9	20.7
299784 2006 SD_{75}	16.9	X	246.97307	194.57558	124.10473	2.49363	0.2115312	0.18556150	3.0442301	20	3 16.4	21.8
299785 2006 SC_{77}	16.5	X	160.82372	259.05361	212.15831	1.87859	0.0118668	0.19833471	2.9120818	20	6 29.7	20.7
299786 2006 SU_{81}	17.3	X	234.24974	268.17316	160.16415	0.67338	0.1505411	0.19885653	2.9069852	20	7 20.9	21.5
299787 2006 SE_{83}	16.6	X	217.87196	239.22337	181.18376	9.88272	0.1101886	0.19500240	2.9451635	20	6 26.8	21.3
299788 2006 SZ_{83}	16.4	X	152.35831	267.70724	183.87310	10.08152	0.0836997	0.18844505	3.0130955	20	5 30.2	21.1
299789 2006 SE_{87}	16.3	X	101.46294	272.34070	195.89840	16.28064	0.0814100	0.18040805	3.1019308	20	4 23.0	20.7
299790 2006 SV_{89}	16.1	X	142.97992	252.79903	208.72194	8.69124	0.1215351	0.18562747	3.0435088	20	6 3.3	20.9
299791 2006 SL_{93}	16.2	X	143.84623	50.12394	344.17579	0.46578	0.1632587	0.17446066	3.1720331	20	3 17.9	21.2
299792 2006 SY_{93}	16.4	X	326.78691	250.59016	55.37137	1.83406	0.0111501	0.19357446	2.9596295	20	6 29.5	20.5
299793 2006 SR_{94}	16.6	X	266.59475	221.00403	154.80092	2.16940	0.1033323	0.19569137	2.9382468	20	6 27.4	20.7
299794 2006 SC_{95}	16.3	X	278.49532	205.19501	135.43625	1.11696	0.1078329	0.19290644	2.9664582	20	5 27.3	20.4
299795 2006 SE_{95}	16.5	X	314.11633	59.57776	200.05378	10.09597	0.0744960	0.18338179	3.0683053	20	4 5.5	20.6
299796 2006 SY_{96}	17.2	X	177.62278	32.41962	19.84081	1.68062	0.2010100	0.18373231	3.0644017	20	5 7.9	22.4
299797 2006 SA_{97}	15.9	X	272.50320	301.94766	21.76857	11.54038	0.1248137	0.18949516	3.0019536	20	4 24.0	20.2
299798 2006 SD_{99}	16.8	X	270.90088	144.15613	198.40023	3.90737	0.1898444	0.19335275	2.9618915	20	5 9.2	21.2
299799 2006 SA_{102}	16.6	X	255.00506	166.11469	200.21800	4.43945	0.1096641	0.19666434	2.9285477	20	5 31.5	20.8
299800 2006 SP_{106}	15.7	X	16.89472	340.01642	193.55480	12.06622	0.0748306	0.17842174	3.1249101	20	3 16.9	19.7
299801 2006 SD_{108}	16.2	X	334.57102	156.08474	208.51364	5.76709	0.0312610	0.21147800	2.7901395	20	9 26.1	19.9
299802 2006 SV_{108}	16.6	X	133.17447	91.04143	32.71888	2.74257	0.0685167	0.18935071	3.0034801	20	6 15.9	21.0
299803 2006 SF_{109}	16.3	X	218.81706	27.86537	32.81822	8.60336	0.0412649	0.19429720	2.9522855	20	7 5.7	20.7
299804 2006 SF_{114}	15.9	X	307.78767	216.25501	179.93264	6.09077	0.0172467	0.21201006	2.7854695	20	10 3.0	19.5
299805 2006 ST_{118}	15.8	X	251.74337	308.53493	358.76930	6.42155	0.1271366	0.18244450	3.0788051	20	3 14.3	20.4
299806 2006 SQ_{120}	16.0	X	187.93362	295.94134	114.94019	7.49607	0.2102691	0.18636145	3.0355123	20	5 16.9	21.3
299807 2006 SS_{120}	15.9	X	268.48399	307.25420	67.36455	8.88597	0.1025662	0.19722818	2.9229636	20	6 28.4	20.0
299808 2006 SZ_{120}	16.7	X	199.19143	232.24692	171.36777	9.70846	0.2860371	0.18670326	3.0318063	20	5 15.6	22.3
299809 2006 SS_{125}	15.5	X	266.70794	193.03450	131.00430	12.63187	0.1035651	0.19022964	2.9942215	20	4 27.2	20.0
299810 2006 SD_{129}	15.6	X	195.20140	238.33408	169.52795	9.00830	0.1117799	0.18803080	3.0175193	20	5 21.1	20.4
299811 2006 SH_{129}	15.5	X	128.37338	238.63650	175.52500	9.36277	0.0919904	0.17676296	3.1444296	20	3 19.3	20.2
299812 2006 SA_{132}	15.5	X	106.49001	122.24952	296.83535	9.77450	0.1037491	0.17383243	3.1796710	20	2 27.3	20.2
299813 2006 SG_{132}	15.9	X	176.24220	185.36079	260.21461	7.99192	0.0715566	0.19286318	2.9669017	20	6 15.9	20.3
299814 2006 SC_{134}	15.7	X	231.71486	183.57101	169.38714	13.10387	0.1081558	0.18543873	3.0455735	20	4 21.8	20.5
299815 2006 SM_{143}	16.2	X	14.85716	294.84227	259.15831	1.36933	0.0581838	0.18314388	3.0709620	20	4 9.3	20.3
299816 2006 SA_{150}	16.6	X	115.62328	129.88115	333.97393	1.52216	0.2345646	0.17853691	3.1235662	20	5 19.4	21.7
299817 2006 SQ_{154}	15.4	X	244.03837	8.13026	291.67798	8.28288	0.1080194	0.18307686	3.0717115	20	2 24.8	20.2
299818 2006 SP_{156}	16.5	X	213.87514	256.11814	192.64195	1.60447	0.0328734	0.20435456	2.8546081	20	8 5.4	20.5
299819 2006 SJ_{157}	16.7	X	254.23917	8.00177	1.95648	7.47400	0.0944722	0.19579902	2.9371698	20	6 4.4	21.0
299820 2006 SO_{157}	16.5	X	141.08996	112.05206	8.89041	15.68927	0.1667894	0.19109049	2.9852222	20	6 28.8	21.6
299821 2006 SW_{158}	16.2	X	127.66729	284.64909	177.76699	11.25768	0.0663423	0.18773092	3.0207319	20	5 15.6	20.7
299822 2006 SB_{161}	16.4	X	299.37015	303.35487	45.95857	6.74080	0.1056806	0.19866634	2.9088401	20	7 8.4	20.2
299823 2006 SF_{161}	16.6	X	299.13127	275.65855	34.18515	11.05909	0.0175804	0.18985888	2.9981183	20	5 25.6	20.8
299824 2006 SY_{162}	15.9	X	153.62056	30.28703	28.92899	16.44090	0.1006931	0.18058272	3.0999302	20	4 20.9	20.8
299825 2006 SR_{166}	17.2	X	239.11408	205.44824	207.28975	6.11105	0.2110102	0.19751601	2.9201233	20	6 29.5	22.0
299826 2006 SC_{168}	15.5	X	54.55692	170.55017	330.47372	4.51309	0.0953439	0.18062008	3.0995027	20	4 1.2	19.4
299827 2006 ST_{170}	15.9	X	319.74554	216.04668	339.20004	1.75950	0.0845090	0.17404127	3.1771268	20	1 24.9	20.1
299828 2006 SM_{173}	15.6	X	91.54663	214.52006	358.74200	14.92995	0.0848074	0.20500958	2.8485244	20	8 28.5	19.8
299829 2006 SF_{176}	16.2	X	295.55220	41.05321	354.86605	6.73637	0.0714313	0.21046569	2.7990792	20	9 9.9	19.6
299830 2006 SX_{178}	16.9	X	285.35843	270.68352	22.57184	6.76718	0.2775010	0.19181007	2.9777514	20	3 15.5	21.4
299831 2006 SF_{183}	16.9	X	161.86692	24.83900	42.29412	0.45805	0.1281935	0.18492273	3.0512364	20	5 10.4	21.8
299832 2006 SB_{188}	16.1	X	152.16152	240.75384	171.86062	6.64754	0.0099526	0.18345253	3.0675166	20	4 5.9	20.4
299833 2006 SE_{191}	16.8	X	265.00399	6.55600	16.99358	8.09679	0.0850406	0.19979833	2.8978427	20	7 9.9	21.0
299834 2006 SH_{195}	15.5	X	27.18724	308.15831	204.00349	14.15143	0.1784765	0.17338214	3.1851739	20	3 8.5	19.2
299835 2006 ST_{195}	16.6	X	148.77775	174.36161	295.92576	0.26568	0.0344474	0.19370189	2.9583314	20	6 14.6	20.8
299836 2006 SH_{196}	16.4	X	141.51060	188.64129	261.05319	0.20922	0.1230202	0.18623844	3.0368488	20	5 17.7	21.1
299837 2006 SX_{199}	16.8	X	262.09494	313.18248	21.60284	2.06183	0.0330306	0.19002088	2.9964141	20	5 9.2	21.1
299838 2006 SO_{200}	16.4	X	130.38978	209.78823	206.90781	9.73966	0.1063369	0.17592196	3.1544429	20	3 24.4	21.1
299839 2006 SY_{200}	16.5	X	147.46021	54.39583	15.55465	2.77895	0.1057896	0.18129567	3.0917978	20	4 27.9	21.3
299840 2006 SO_{203}	16.6	X	198.43024	203.77493	175.43856	1.75420	0.0920277	0.18659016	3.0330313	20	4 18.1	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		°	°	°	°		°				
299841 2006 SQ_{203}	16.6	X	159.99194	46.26871	51.56999	3.44327	0.1771940	0.18873031	3.0100586	20	6 16.7	21.6
299842 2006 SL_{204}	16.0	X	194.09785	242.77909	178.13539	9.34157	0.1020824	0.19094192	2.9867705	20	6 4.5	20.8
299843 2006 SK_{216}	16.1	X	33.43432	13.41153	178.76791	11.32164	0.0597129	0.18605261	3.0388706	20	5 6.9	20.2
299844 2006 SW_{220}	16.2	X	208.19305	259.43744	196.56466	1.68810	0.0242373	0.20566614	2.8424588	20	8 8.6	20.3
299845 2006 SX_{221}	16.4	X	226.86664	269.58105	182.22010	1.93743	0.0433190	0.20641389	2.8355900	20	8 24.6	20.4
299846 2006 SE_{227}	16.1	X	168.93915	85.35793	342.59212	9.73865	0.0860330	0.18834091	3.0142061	20	5 13.8	20.9
299847 2006 SK_{228}	16.3	X	235.56301	222.84455	204.93194	10.50315	0.0988393	0.20092898	2.8869616	20	7 25.0	20.7
299848 2006 SC_{238}	16.6	X	254.11874	341.83017	38.15255	2.38024	0.1135043	0.19653743	2.9298083	20	6 15.9	20.8
299849 2006 SD_{240}	16.0	X	201.74135	355.57286	17.22567	12.13493	0.1363194	0.18527743	3.0473409	20	4 11.6	20.8
299850 2006 ST_{244}	16.2	X	208.73283	257.16850	123.09656	3.00806	0.0484232	0.18800876	3.0177551	20	5 2.8	20.5
299851 2006 SP_{245}	16.8	X	177.99036	337.93054	76.07650	2.66374	0.0974133	0.18714734	3.0270083	20	5 9.9	21.5
299852 2006 SC_{254}	16.8	X	33.20215	215.90835	30.33029	2.31865	0.0417753	0.19835030	2.9119292	20	7 14.2	20.6
299853 2006 ST_{254}	16.4	X	221.43274	260.64132	169.46440	1.87252	0.0603549	0.19787797	2.9165612	20	7 18.1	20.7
299854 2006 SM_{256}	16.0	X	279.12172	98.84630	211.34702	7.33495	0.0844045	0.18842647	3.0132936	20	4 22.4	20.0
299855 2006 SW_{258}	16.7	X	353.28276	321.89581	354.43621	1.58625	0.0589496	0.20360316	2.8616271	20	8 20.6	20.1
299856 2006 SU_{259}	16.6	X	120.52527	297.24278	196.11786	4.94654	0.2743301	0.18492121	3.0512531	20	7 1.6	21.8
299857 2006 SW_{261}	15.9	X	157.46968	189.31183	200.87502	9.44278	0.0739821	0.17613615	3.1518852	20	3 18.5	20.7
299858 2006 SP_{262}	15.8	X	71.26872	316.65608	205.97639	13.57215	0.1256246	0.18168150	3.0874191	20	5 29.7	20.1
299859 2006 SX_{262}	16.5	X	270.96118	107.16727	204.94548	8.38450	0.1293165	0.18547818	3.0451417	20	4 8.6	21.0
299860 2006 SK_{267}	15.7	X	132.55813	115.54163	307.23457	3.84275	0.1517585	0.17609854	3.1523338	20	4 7.0	20.7
299861 2006 SK_{268}	15.9	X	351.04719	343.17772	297.97287	4.30875	0.1004281	0.19555463	2.9396163	20	6 28.7	19.4
299862 2006 SC_{269}	16.9	X	162.14450	155.93736	284.55081	4.39590	0.2113517	0.18398382	3.0616083	20	5 29.2	22.2
299863 2006 SP_{273}	15.8	X	201.68580	192.27531	224.66823	9.14565	0.0755991	0.18759454	3.0221957	20	6 7.7	20.4
299864 2006 ST_{273}	16.1	X	159.19768	186.17878	218.94557	8.44295	0.0856176	0.17591217	3.1545600	20	4 8.2	21.0
299865 2006 SX_{273}	16.5	X	157.87314	66.51906	50.18949	7.15544	0.2300889	0.18417394	3.0595010	20	7 9.8	21.9
299866 2006 SF_{275}	15.8	X	175.85508	187.23151	189.06889	8.71508	0.0726474	0.17872890	3.1213289	20	3 21.9	20.6
299867 2006 SN_{282}	16.2	X	204.16280	204.49915	159.52181	11.59627	0.1815328	0.18644067	3.0346524	20	4 5.6	21.3
299868 2006 SR_{289}	15.7	X	227.36231	219.89655	142.86552	13.97523	0.0982044	0.18737201	3.0245881	20	5 2.0	20.5
299869 2006 SA_{290}	15.1	X	210.15948	221.30299	142.41433	28.49136	0.1297989	0.18484011	3.0521455	20	4 17.3	20.4
299870 2006 SY_{292}	16.0	X	187.33669	67.73719	345.73056	8.26658	0.1270135	0.18952218	3.0016682	20	5 15.4	20.9
299871 2006 SL_{293}	15.7	X	51.96848	197.86755	324.34778	5.57815	0.0258047	0.18639014	3.0352008	20	4 15.5	19.9
299872 2006 SB_{294}	16.2	X	230.97664	154.67001	194.83061	11.18318	0.1671793	0.18819662	3.0157465	20	4 10.0	21.1
299873 2006 SM_{297}	16.3	X	240.25462	356.52413	356.32909	1.29806	0.1109395	0.19016602	2.9948893	20	4 26.9	20.8
299874 2006 SU_{297}	15.9	X	261.49272	285.98125	27.55033	10.74096	0.1355973	0.18755757	3.0225929	20	4 1.3	20.4
299875 2006 SV_{297}	15.7	X	207.29010	299.24255	51.27874	8.59500	0.1525048	0.18197019	3.0841528	20	3 25.5	20.8
299876 2006 SR_{302}	17.1	X	248.55838	57.54636	337.52544	5.44010	0.2283687	0.19717259	2.9235130	20	6 15.2	21.7
299877 2006 SB_{304}	16.6	X	213.80315	352.26429	52.06445	3.35685	0.0548152	0.19194005	2.9764070	20	6 6.3	21.0
299878 2006 SH_{312}	16.1	X	225.68569	330.14618	27.74827	4.43497	0.1467675	0.18389998	3.0625388	20	4 16.3	21.0
299879 2006 SU_{313}	16.5	X	296.07121	205.59035	77.12111	1.86434	0.0789019	0.18656491	3.0333049	20	4 10.9	20.7
299880 2006 SP_{314}	16.1	X	189.23648	191.11128	155.76004	3.23931	0.0626177	0.17683770	3.1435435	20	3 1.4	20.9
299881 2006 SQ_{319}	16.6	X	262.52097	222.97947	117.72864	3.93237	0.1412593	0.19129111	2.9831347	20	5 4.7	21.0
299882 2006 SV_{325}	15.7	X	92.11920	272.38927	191.99489	9.84101	0.2083563	0.17428558	3.1741571	20	4 24.8	20.2
299883 2006 SL_{332}	16.3	X	241.28174	314.19476	23.43124	10.55629	0.0622905	0.18251404	3.0780230	20	4 14.7	20.7
299884 2006 SP_{332}	15.7	X	146.24755	217.43572	222.80993	10.92796	0.0478277	0.18196033	3.0842642	20	5 5.5	20.1
299885 2006 SE_{333}	15.9	X	21.64785	5.33635	178.98674	10.99170	0.0196850	0.18272335	3.0756720	20	4 7.3	20.1
299886 2006 SG_{333}	16.3	X	322.68911	281.58361	70.34458	3.03357	0.0845425	0.20511062	2.8475889	20	8 21.9	19.7
299887 2006 ST_{335}	16.0	X	254.76250	115.48691	170.84174	11.88569	0.0332881	0.17807496	3.1289658	20	3 1.6	20.6
299888 2006 SL_{339}	16.0	X	235.34356	226.43219	130.13322	4.51442	0.0930675	0.18874438	3.0099089	20	4 30.2	20.6
299889 2006 SC_{341}	15.7	X	57.46313	329.65848	172.01412	10.03163	0.0592312	0.18035576	3.1025304	20	4 5.2	19.8
299890 2006 SD_{341}	16.2	X	160.68652	221.56672	175.19318	9.47008	0.1104401	0.18034809	3.1026183	20	4 3.1	20.9
299891 2006 SN_{345}	16.4	X	102.00805	162.24271	321.63316	3.39637	0.0533313	0.18366815	3.0651153	20	5 6.8	20.8
299892 2006 SF_{346}	16.1	X	140.80917	188.11664	279.28834	3.74933	0.1398870	0.18619483	3.0373229	20	6 8.9	21.0
299893 2006 SP_{348}	16.3	X	278.94769	350.81728	340.57047	0.34551	0.1030099	0.19198647	2.9759272	20	5 16.3	20.4
299894 2006 SZ_{351}	15.8	X	232.90360	104.60813	325.02643	5.04301	0.0502553	0.20087993	2.8874315	20	8 2.8	19.8
299895 2006 SN_{352}	16.0	X	281.16856	321.33416	344.48738	8.63738	0.0466895	0.18731826	3.0251667	20	4 21.4	20.3
299896 2006 SP_{360}	16.4	X	231.68458	157.15128	201.77253	9.31501	0.1037465	0.18479691	3.0526211	20	4 27.4	21.0
299897 2006 SE_{369}	16.0	X	159.40484	70.93122	349.34420	3.87466	0.1718041	0.18230661	3.0803574	20	4 30.5	21.2
299898 2006 SB_{373}	16.3	X	235.25041	147.20361	196.34343	4.45165	0.2821233	0.18363191	3.0655186	20	3 30.2	21.7
299899 2006 SH_{373}	16.5	X	268.68279	232.81091	132.19890	3.30100	0.0906260	0.19751606	2.9201227	20	6 18.0	20.6
299900 2006 SJ_{373}	16.1	X	260.66615	163.67056	151.98353	5.21359	0.0448412	0.18715121	3.0269666	20	4 13.9	20.4
299901 2006 SJ_{374}	16.3	X	163.46386	47.58271	50.77448	12.91631	0.1306870	0.18971496	2.9996344	20	6 18.4	21.2
299902 2006 SR_{374}	16.3	X	252.57351	165.44001	151.23326	11.47806	0.0802658	0.18343332	3.0677307	20	4 2.9	20.9
299903 2006 SJ_{375}	16.2	X	345.48928	232.88740	82.05689	3.13333	0.0592257	0.20359767	2.8616785	20	8 7.3	19.8
299904 2006 SJ_{377}	15.4	X	236.25144	219.32470	134.75208	10.19224	0.0859973	0.18671581	3.0316704	20	5 1.0	20.1
299905 2006 SM_{380}	15.5	X	220.75015	151.57848	166.13479	16.07466	0.0852597	0.17531115	3.1617658	20	2 27.2	20.4
299906 2006 SO_{380}	15.8	X	109.83665	318.03034	164.81315	16.14059	0.0687409	0.18191998	3.0847202	20	5 21.9	20.5
299907 2006 SX_{382}	16.2	X	284.34004	121.66977	173.53128	10.46200	0.0197481	0.18670989	3.0317345	20	4 21.7	20.5
299908 2006 ST_{390}	16.9	X	308.93069	109.36116	229.24602	1.20662	0.0735478	0.20084164	2.8877984	20	7 11.8	20.4
299909 2006 SZ_{391}	15.7	X	213.90518	232.77876	188.68374	13.16139	0.2452591	0.18838992	3.0136833	20	6 16.1	21.1
299910 2006 SB_{394}	15.5	X	89.72519	210.85993	235.91599	8.89713	0.1075268	0.17205963	3.2014746	20	3 12.4	20.0
299911 2006 SV_{397}	15.1	X	3.37180	304.10544	229.79583	15.54819	0.1501713	0.17156444	3.2076320	20	2 18.9	19.3
299912 2006 SK_{398}	16.3	X	317.52658	137.52972	193.12503	5.71378	0.0968296	0.20218007	2.8750395	20	7 10.9	19.8
299913 2006 SZ_{400}	15.5	X	356.39752	325.94115	231.90764	12.16461	0.1565571	0.17697303	3.1419407	20	3 9.2	19.4
299914 2006 SW_{404}	16.0	X	233.84911	142.17176	181.63492	5.55174	0.1479280	0.17917266	3.1161729	20	3 14.4	20.9
299915 2006 SD_{405}	16.3	X	242.44732	148.36970	196.73784	2.26609	0.1655061	0.18345587	3.0674793	20	4 15.6	21.1
299916 2006 SG_{406}	16.3	X	283.30776	24.99514	31.64501	6.54305	0.0666596	0.21027670	2.8007561	20	9 22.2	19.9
299917 2006 SR_{407}	16.6	X	193.48321	77.68113	347.18745	9.72577	0.0984772	0.19342575	2.9611463	20	6 6.6	21.4
299918 2006 SQ_{409}	16.6	X	164.80315	79.56320	342.85521	5.01595	0.1311565	0.18445017	3.0564456	20	5 5.9	21.5
299919 2006 TZ	15.6	X	233.20614	142.22331	203.37364	8.68542	0.0893443	0.18228986	3.0805460	20	4 13.2	20.1
299920 2006 TZ_2	16.3	X	336.16985	249.12154	48.10064	2.89103	0.0399215	0.19798038	2.9155553	20	6 29.4	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		°	°	°	°		°				
299921 2006 TM_4	16.1	X	238.94125	99.29711	348.91231	14.69336	0.1198372	0.20512270	2.8474770	20	8 27.7	20.3
299922 2006 TY_6	16.1	X	154.80628	212.19014	214.67289	8.83734	0.0832416	0.18218108	3.0817722	20	5 1.1	20.6
299923 2006 TP_8	17.5	X	204.26100	16.37530	59.17940	1.01353	0.3141719	0.18875005	3.0098487	20	6 22.7	22.9
299924 2006 TW_8	16.5	X	164.46246	219.40299	192.79327	0.60356	0.1733930	0.18136960	3.0909576	20	4 26.7	21.6
299925 2006 TW_{10}	16.1	X	156.83391	9.39092	32.94113	11.54818	0.0927941	0.17760435	3.1344906	20	4 6.1	20.9
299926 2006 TE_{11}	15.4	X	147.40187	198.98980	232.89990	8.74706	0.0596332	0.17938390	3.1137261	20	4 26.6	20.0
299927 2006 TC_{15}	16.0	X	127.39322	173.45171	255.12887	2.09296	0.0860421	0.17803997	3.1293758	20	4 2.8	20.5
299928 2006 TQ_{18}	15.7	X	315.25130	79.54554	196.51684	8.65711	0.0919345	0.18778212	3.0201827	20	4 26.9	19.6
299929 2006 TG_{21}	16.4	X	183.36204	216.75906	172.81687	1.65386	0.1822068	0.18060951	3.0996237	20	4 16.4	21.6
299930 2006 TZ_{23}	16.2	X	230.56405	159.47095	204.36509	8.84397	0.0524859	0.18493335	3.0511196	20	5 6.9	20.6
299931 2006 TH_{27}	16.8	X	161.60502	36.61920	32.29674	0.18066	0.2047227	0.18154842	3.0889277	20	5 15.1	22.0
299932 2006 TF_{33}	15.6	X	300.17093	31.90105	212.96204	8.08345	0.0553025	0.17585826	3.1552046	20	2 29.9	20.2
299933 2006 TJ_{34}	15.5	X	256.95519	95.71582	225.69932	11.01345	0.0343833	0.18183701	3.0856585	20	4 15.1	19.9
299934 2006 TH_{35}	16.1	X	105.08383	225.77714	237.34955	4.22297	0.1481208	0.17571105	3.1569667	20	4 28.2	20.8
299935 2006 TH_{38}	16.4	X	200.23601	312.69259	58.09431	1.73047	0.1901586	0.18132359	3.0914804	20	4 8.3	21.6
299936 2006 TU_{38}	17.0	X	179.42909	223.45864	184.92376	1.24116	0.1869556	0.18200172	3.0837965	20	5 5.3	22.1
299937 2006 TU_{39}	16.4	X	170.24951	18.27461	30.61807	2.05220	0.0716341	0.18066840	3.0989501	20	4 24.7	21.0
299938 2006 TP_{40}	16.6	X	111.04741	98.14572	3.67607	0.54311	0.1512236	0.17687879	3.1430567	20	5 3.8	21.2
299939 2006 TP_{42}	16.4	X	254.93446	106.76976	217.10737	2.02799	0.0325921	0.18077281	3.0977568	20	4 17.2	20.8
299940 2006 TG_{43}	16.5	X	238.15422	268.74083	65.34728	0.61994	0.2364605	0.18388522	3.0627026	20	3 24.7	21.6
299941 2006 TK_{43}	16.2	X	222.01378	106.37361	221.34141	9.92783	0.1008662	0.17632795	3.1495991	20	3 7.7	21.2
299942 2006 TB_{48}	15.1	X	241.10777	142.57662	217.05657	15.34146	0.0843285	0.18610395	3.0383117	20	5 10.2	19.7
299943 2006 TX_{50}	15.9	X	208.29151	274.99006	57.52715	4.78239	0.0452574	0.17253226	3.1956253	20	3 7.4	20.6
299944 2006 TD_{52}	15.4	X	134.93129	206.58614	217.66267	9.81635	0.0772733	0.17432922	3.1736273	20	4 4.6	20.1
299945 2006 TU_{53}	16.0	X	142.33078	255.74362	139.78737	2.10623	0.1903241	0.17213372	3.2005559	20	3 20.9	21.2
299946 2006 TR_{54}	15.3	X	220.11791	326.20210	23.00317	13.74407	0.0911290	0.18095285	3.0957017	20	4 5.2	20.0
299947 2006 TC_{55}	15.6	X	207.52922	227.69501	147.56806	6.06926	0.2616681	0.18398774	3.0615648	20	4 19.1	21.1
299948 2006 TT_{56}	15.4	X	228.34731	152.89906	213.48517	8.64567	0.0953053	0.18635038	3.0356325	20	5 3.3	19.9
299949 2006 TD_{59}	15.6	X	315.43531	10.32597	263.65499	5.80410	0.0530284	0.18388941	3.0626562	20	4 27.1	19.8
299950 2006 TQ_{59}	15.6	X	272.49707	42.12862	237.16419	8.92709	0.0865626	0.17650812	3.1474554	20	3 3.9	20.3
299951 2006 TM_{60}	16.0	X	243.34436	313.42384	37.59437	6.58281	0.1754864	0.18600842	3.0393518	20	4 22.7	20.7
299952 2006 TS_{60}	16.6	X	181.54648	264.28782	114.81422	2.71203	0.0859863	0.17811939	3.1284454	20	4 2.2	21.3
299953 2006 TP_{63}	15.2	X	207.21640	359.71780	12.34805	13.24123	0.0406797	0.18383536	3.0632564	20	4 17.8	19.8
299954 2006 TX_{65}	16.0	X	168.90219	214.98831	210.84782	12.23905	0.0729734	0.18559104	3.0439070	20	5 15.0	20.6
299955 2006 TC_{68}	15.7	X	184.24176	39.77603	318.75259	8.86158	0.0666603	0.17758518	3.1347163	20	3 7.3	20.5
299956 2006 TD_{71}	15.7	X	159.15647	196.33106	223.32630	8.69001	0.0345393	0.18326021	3.0696622	20	4 23.2	20.1
299957 2006 TB_{72}	16.0	X	225.06992	72.38615	305.52586	8.79499	0.1150146	0.18822953	3.0153950	20	5 9.3	20.9
299958 2006 TB_{73}	15.0	X	211.61853	125.08059	240.13066	14.87023	0.0685453	0.18244474	3.0788024	20	4 12.4	19.8
299959 2006 TM_{76}	15.6	X	235.27179	94.60571	295.27926	9.20997	0.1910012	0.19093323	2.9868612	20	5 29.9	20.5
299960 2006 TY_{77}	16.1	X	169.20799	62.15856	343.63381	5.90418	0.0828293	0.18298545	3.0727344	20	4 17.9	20.9
299961 2006 TU_{78}	15.4	X	220.72169	351.67572	20.39584	10.62175	0.1223866	0.18600328	3.0394079	20	4 28.3	20.2
299962 2006 TV_{78}	15.6	X	260.75026	318.51743	13.59137	5.51026	0.0622397	0.18626465	3.0365639	20	4 29.5	20.0
299963 2006 TH_{79}	15.8	X	244.10806	114.98056	217.07733	14.99799	0.1361154	0.18163745	3.0879182	20	4 1.9	20.6
299964 2006 TQ_{79}	15.8	X	186.43971	105.13684	248.03701	9.27758	0.1038547	0.17550327	3.1594579	20	3 2.2	20.9
299965 2006 TK_{81}	16.1	X	77.19692	184.15202	12.03638	9.18661	0.0594699	0.19086189	2.9876054	20	7 11.7	20.4
299966 2006 TS_{82}	15.4	X	6.46660	195.26621	13.41029	11.36519	0.0345167	0.18072335	3.0983219	20	4 15.3	19.6
299967 2006 TS_{90}	16.0	X	86.03278	127.27108	338.22970	2.39304	0.0767096	0.17218997	3.1998588	20	3 29.4	20.5
299968 2006 TV_{90}	15.7	X	203.51871	307.27971	39.77636	13.16626	0.1358533	0.17635536	3.1492728	20	3 20.7	20.9
299969 2006 TL_{93}	15.9	X	291.85470	248.01534	21.75858	11.17257	0.0414073	0.17907408	3.1173165	20	3 27.5	20.2
299970 2006 TG_{95}	16.3	X	118.65070	255.84426	187.45792	4.92723	0.1110604	0.17809489	3.1287323	20	4 15.4	20.9
299971 2006 TS_{95}	16.3	X	239.97207	324.91558	23.01755	5.99304	0.2276838	0.18748037	3.0234225	20	4 11.6	21.1
299972 2006 TP_{96}	15.4	X	122.72532	149.46457	297.33438	8.60274	0.0746461	0.17840419	3.1251151	20	4 15.2	20.1
299973 2006 TG_{100}	16.4	X	226.42135	13.07431	350.26725	3.74377	0.1700696	0.18603066	3.0391097	20	4 20.8	21.4
299974 2006 TQ_{102}	16.3	X	220.77597	355.31451	16.94468	2.80113	0.0575785	0.18505646	3.0497662	20	5 4.3	20.7
299975 2006 TF_{110}	16.0	X	87.65565	273.25953	237.31682	8.57462	0.1401520	0.18181594	3.0858969	20	6 5.8	20.4
299976 2006 TT_{111}	16.3	X	197.48198	186.85961	152.69637	11.05314	0.2167091	0.17821061	3.1273777	20	3 1.3	21.7
299977 2006 TA_{112}	15.9	X	147.84406	342.41555	83.54465	11.44173	0.0867451	0.18056177	3.1001700	20	4 27.0	20.7
299978 2006 TH_{112}	15.6	X	8.34086	93.49653	83.49558	12.84626	0.0738393	0.17442283	3.1724918	20	3 17.6	19.9
299979 2006 TT_{119}	15.6	X	222.43673	96.85831	190.68018	24.59736	0.3250152	0.17299554	3.1899175	20	1 15.8	21.8
299980 2006 TD_{121}	15.8	X	314.99595	144.57077	138.18088	12.84203	0.1995071	0.18887631	3.0085072	20	4 23.9	19.7
299981 2006 TM_{121}	16.3	X	266.90060	78.63161	195.62984	9.32296	0.0346617	0.17383783	3.1796052	20	2 29.1	21.0
299982 2006 TC_{124}	15.9	X	324.04512	222.87282	60.67106	7.61652	0.1929480	0.19143783	2.9816103	20	5 6.7	19.3
299983 2006 TW_{125}	16.6	X	277.42182	277.05639	31.08903	3.09859	0.3189031	0.18897141	3.0074978	20	3 20.2	21.5
299984 2006 TC_{126}	17.5	X	208.20207	5.84908	15.94437	1.25297	0.2038495	0.18367517	3.0650372	20	4 26.6	22.7
299985 2006 UQ_8	15.5	X	131.13507	219.07264	230.29984	15.41254	0.2264440	0.17593972	3.1542306	20	5 15.6	20.6
299986 2006 UN_9	15.9	X	98.96373	275.07198	213.05851	9.07079	0.1800488	0.17712685	3.1401215	20	5 27.5	20.6
299987 2006 UW_{11}	16.1	X	209.92041	267.92791	81.08370	2.84986	0.0778579	0.17896588	3.1185728	20	3 26.3	20.8
299988 2006 UT_{13}	16.5	X	158.02300	272.05496	134.67616	2.05327	0.1377936	0.17716148	3.1397122	20	4 13.8	21.4
299989 2006 UF_{14}	16.8	X	209.04037	352.56276	64.66285	4.83747	0.2542067	0.18814957	3.0162492	20	6 6.5	22.1
299990 2006 UE_{15}	15.4	X	222.13881	154.80932	206.91171	9.20326	0.0717371	0.18162096	3.0881051	20	4 22.7	19.9
299991 2006 UV_{15}	15.6	X	269.62628	249.63553	64.22577	10.75306	0.0407358	0.18087500	3.0965898	20	4 24.8	20.0
299992 2006 UY_{15}	15.9	X	134.42245	273.86442	164.26526	3.16185	0.1014075	0.17655719	3.1468723	20	4 25.6	20.6
299993 2006 US_{19}	16.3	X	199.91724	47.29169	15.71606	9.94685	0.0994258	0.19024899	2.9940184	20	6 10.9	21.0
299994 2006 UK_{20}	17.4	X	137.36593	145.00261	289.30860	1.86824	0.2409409	0.17819629	3.1275453	20	5 3.1	22.6
299995 2006 UJ_{24}	16.7	X	169.89900	57.65208	335.38363	2.04276	0.1000122	0.17943313	3.1131565	20	4 5.5	21.5
299996 2006 UL_{26}	16.4	X	145.56006	84.53900	347.19690	1.02808	0.1758542	0.17956788	3.1115989	20	5 3.1	21.3
299997 2006 UE_{27}	16.3	X	80.30607	266.63052	224.19335	1.75008	0.0322518	0.18020451	3.1042661	20	4 16.2	20.6
299998 2006 UU_{28}	16.1	X	265.70306	89.48687	212.44267	9.90619	0.1217557	0.18347292	3.0672893	20	3 20.5	20.8
299999 2006 UE_{30}	16.2	X	1.34189	48.08105	215.07339	9.70274	0.0678755	0.19318288	2.9636276	20	6 19.9	20.1
300000 2006 UW_{30}	16.8	X	221.24564	304.90191	31.17174	1.40236	0.1770345	0.18122809	3.0925664	20	3 16.6	21.9