

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>		
120001	2002	YL ₁₅	16.1	X	7.69212	189.03582	248.71895	4.31313	0.1147199	0.28019992	2.3129028	20	—	—
120002	2002	YD ₂₀	16.3	X	266.78375	208.08286	267.57504	3.18640	0.0699679	0.27149128	2.3621028	20	11 27.3	18.7
120003	2002	YU ₂₃	16.2	X	258.76452	328.09924	92.54924	3.92875	0.1594528	0.26240296	2.4163336	20	8 14.5	19.2
120004	2002	YB ₂₄	16.7	X	352.32461	145.74315	313.82323	1.09131	0.1829880	0.28189536	2.3036196	20	—	—
120005	2002	YB ₃₁	16.5	X	271.14967	237.39061	228.11911	1.72154	0.1582590	0.26913615	2.3758628	20	11 7.1	18.5
120006	2002	YK ₃₁	16.6	X	238.43760	358.60976	137.86819	0.62465	0.1399946	0.26702804	2.3883509	20	11 2.9	19.5
120007	2002	YV ₃₁	16.0	X	11.21923	284.11964	119.75033	10.27779	0.2604301	0.27651721	2.3339333	20	—	—
120008	2003	AN ₅	16.0	X	191.96339	102.64072	119.54817	7.37155	0.0707730	0.27375561	2.3490596	20	—	—
120009	2003	AV ₅	14.8	X	242.76546	140.27357	129.43919	22.40747	0.0403403	0.22965800	2.6408780	20	1 20.8	18.6
120010	2003	AV ₅	15.6	X	263.70665	297.48749	133.35794	3.15228	0.1908714	0.26171613	2.4205593	20	8 30.2	18.3
120011	2003	AY ₅	15.8	X	275.66518	10.98606	115.29614	6.64939	0.1487481	0.26985924	2.3716168	20	12 18.1	17.9
120012	2003	AR ₇	15.7	X	332.19925	199.21738	251.30167	18.07809	0.0631520	0.27588536	2.3369546	20	—	—
120013	2003	AU ₁₇	15.9	X	221.98700	39.98329	44.00946	8.12200	0.0838697	0.25627383	2.4547082	20	8 11.9	19.4
120014	2003	AT ₂₁	16.3	X	357.52328	36.05886	355.85801	4.55950	0.1379303	0.27307649	2.3529526	20	—	—
120015	2003	AO ₂₄	17.0	X	21.78744	1.88506	67.12264	1.41815	0.0451633	0.28332222	2.2958788	20	—	—
120016	2003	AY ₂₇	16.3	X	242.57982	343.05945	148.64484	2.68260	0.0664084	0.26746420	2.3857537	20	11 14.6	19.2
120017	2003	AR ₃₇	16.2	X	6.43979	134.57780	264.21599	6.04802	0.1027106	0.27519068	2.3408858	20	—	—
120018	2003	AV ₃₈	16.0	X	96.50695	195.82943	153.45080	6.52469	0.1850991	0.28109376	2.3079970	20	—	—
120019	2003	AF ₃₉	16.0	X	23.57594	133.90727	253.54961	5.59619	0.1302933	0.27645636	2.3337356	20	—	—
120020	2003	AV ₄₀	16.2	X	352.32771	181.95596	284.64762	10.51219	0.1449859	0.28029984	2.3123531	20	—	—
120021	2003	AW ₄₀	16.5	X	95.28360	265.33462	170.24939	4.49098	0.1306559	0.29253309	2.2474294	20	2 27.1	18.9
120022	2003	AA ₄₁	16.0	X	32.22513	234.79596	262.49115	6.21030	0.1199003	0.29010677	2.2599429	20	2 2.6	18.0
120023	2003	AW ₄₄	16.0	X	82.91964	9.26552	35.53242	3.73815	0.1010375	0.28854969	2.2680657	20	—	—
120024	2003	AN ₅₀	16.1	X	323.42371	315.29894	79.23975	6.54618	0.0951165	0.26736626	2.3863363	20	11 5.2	18.5
120025	2003	AT ₅₂	16.2	X	141.44194	296.26681	67.25040	5.91237	0.1895784	0.29140469	2.2532274	20	1 30.9	19.4
120026	2003	AR ₅₅	16.5	X	41.63199	96.56873	309.87303	7.30394	0.1238837	0.28060376	2.3106831	20	—	—
120027	2003	AZ ₅₇	16.1	X	181.57044	103.07576	84.73507	4.00961	0.1168057	0.26382959	2.4076150	20	11 6.2	19.7
120028	2003	AK ₅₈	16.3	X	229.42387	29.93120	92.30512	5.82365	0.1415118	0.26285242	2.4135783	20	10 5.1	19.6
120029	2003	AD ₆₀	14.6	X	70.60098	337.99940	320.00273	12.70813	0.2230299	0.26309111	2.4121183	20	12 9.4	18.6
120030	2003	AF ₆₅	16.5	X	343.19348	96.27934	14.01898	7.50770	0.1282217	0.28103746	2.3083053	20	—	—
120031	2003	AZ ₆₈	15.2	X	298.93913	127.97654	108.10937	16.11303	0.0804345	0.23314888	2.6144509	20	2 11.8	18.8
120032	2003	AD ₆₉	15.9	X	354.02167	324.79634	129.21106	5.94297	0.0140881	0.22255477	2.6967754	20	—	—
120033	2003	AZ ₇₀	15.2	X	38.51424	18.61658	292.41124	12.82631	0.2322576	0.20592858	2.8400433	20	11 9.1	19.2
120034	2003	AK ₇₁	16.0	X	269.09239	42.29223	240.56272	3.04449	0.2065227	0.23556513	2.5965422	20	2 16.9	20.1
120035	2003	AB ₇₅	16.2	X	281.08363	152.09286	8.96539	7.81316	0.0462880	0.27801247	2.3250191	20	—	—
120036	2003	AM ₈₉	14.9	X	335.33687	227.48365	84.54133	23.95694	0.2370420	0.25799015	2.4438092	20	7 9.7	16.8
120037	2003	AG ₉₁	16.2	X	342.84512	6.13369	75.10803	7.19035	0.1144010	0.27637061	2.3342184	20	—	—
120038	2003	Franlainsher	16.6	X	77.84350	62.73760	309.54178	7.24462	0.1611776	0.28058242	2.3108003	20	—	—
120039	2003	BA ₂	15.9	X	337.65634	267.81314	113.53859	7.28334	0.1264537	0.26708961	2.3879839	20	11 14.2	18.3
120040	2003	Pagliarini	16.3	X	341.15221	22.25578	233.29326	5.60377	0.2006411	0.24016378	2.5632898	20	4 23.5	18.5
120041	2003	BS ₆	16.2	X	157.36798	257.84211	186.23293	5.16757	0.1057125	0.24778215	2.5104758	20	5 26.4	19.9
120042	2003	BQ ₉	17.0	X	343.11970	220.88561	200.31323	2.66587	0.1953371	0.27487364	2.3426855	20	—	—
120043	2003	BA ₁₁	14.9	X	165.73478	162.28598	337.44977	10.58642	0.0355358	0.19654667	2.9297164	20	8 14.2	19.1
120044	2003	BX ₂₀	16.2	X	303.45495	64.73310	22.14894	4.12198	0.2161017	0.26924183	2.3752410	20	12 12.0	17.7
120045	2003	BB ₂₅	15.4	X	293.61283	100.50096	168.92337	14.44300	0.0903748	0.23584826	2.5944637	20	3 15.5	18.7
120046	2003	BT ₂₆	15.4	X	264.29203	257.65515	306.81428	7.45455	0.1276649	0.21992011	2.7182710	20	—	—
120047	2003	BR ₂₇	16.5	X	26.92448	299.55521	150.63309	5.82851	0.1527155	0.28190674	2.3035576	20	—	—
120048	2003	BJ ₂₉	16.8	X	30.58519	118.73940	293.54350	1.58492	0.1598301	0.28022419	2.3127692	20	—	—
120049	2003	BT ₂₉	15.2	X	351.36068	305.49823	292.42533	3.28381	0.0943810	0.18565634	3.0431932	20	4 29.5	19.1
120050	2003	BE ₄₀	16.1	X	323.21664	33.97341	343.07894	1.71078	0.2102840	0.26463372	2.4027353	20	10 4.6	17.7
120051	2003	BO ₆₆	15.5	X	289.99360	145.88933	140.94886	4.42559	0.0209897	0.23865108	2.5741101	20	4 14.6	18.8
120052	2003	BD ₆₇	16.2	X	143.24929	182.01656	344.04419	1.37463	0.1264660	0.25327643	2.4740371	20	8 28.2	20.0
120053	2003	BR ₆₉	16.4	X	128.57537	131.77836	109.19711	3.10005	0.1681563	0.26238417	2.4164490	20	11 19.3	20.2
120054	2003	BR ₇₁	16.2	X	91.02539	125.86746	276.79744	7.37637	0.1190203	0.28580635	2.2825561	20	1 3.7	18.3
120055	2003	BD ₇₆	15.3	X	168.69955	247.32633	35.15786	12.64863	0.1533964	0.21876523	2.7278293	20	—	—
120056	2003	BA ₇₉	14.8	X	228.18026	163.04488	88.75670	14.24745	0.2115165	0.22247813	2.6973947	20	—	—
120057	2003	BJ ₈₂	16.9	X	343.31928	138.53698	7.51678	5.54962	0.1510026	0.28439316	2.2901115	20	—	—
120058	2003	BZ ₈₃	16.0	X	8.10817	334.77235	232.70362	0.64049	0.1075238	0.23656491	2.5892213	20	4 13.1	18.6
120059	2003	BA ₈₄	16.0	X	323.73333	356.22702	103.87053	2.72790	0.1847854	0.27273128	2.3549377	20	—	—
120060	2003	BP ₈₄	16.4	X	100.93664	305.96702	84.86632	6.36679	0.1884838	0.28650474	2.2788453	20	1 14.7	18.7
120061	2003	CO ₁	8.9	X	51.86281	116.92496	78.41936	19.71580	0.4732080	0.01034887	20.8548660	20	7 28.2	21.7
120062	2003	CQ ₄	16.0	X	73.77031	133.52851	97.46682	9.99835	0.1765520	0.25298247	2.4759532	20	9 17.9	19.6
120063	2003	CE ₅	16.3	X	187.97514	125.92386	94.14267	5.91840	0.1429815	0.26955355	2.3734095	20	12 21.5	19.6
120064	2003	CD ₆	16.3	X	354.93973	323.41076	73.04195	4.95221	0.2132815	0.27179598	2.3603371	20	—	—
120065	2003	CM ₆	15.6	X	249.81260	194.78876	8.13779	4.38777	0.1576932	0.21820717	2.7324782	20	—	—
120066	2003	CH ₁₆	16.4	X	260.02035	162.70723	268.06152	1.68317	0.1784846	0.26057852	2.4275991	20	8 25.1	19.4
120067	2003	CQ ₁₈	15.3	X	216.51835	188.96784	155.42955	15.31180	0.1853791	0.23470314	2.6028958	20	3 20.5	19.7
120068	2003	DC ₁	15.5	X	256.17654	181.37836	130.83860	6.84134	0.1348630	0.23780944	2.5801799	20	3 22.1	19.3
120069	2003	DZ ₃	16.2	X	303.49637	33.67498	23.72007	1.41393	0.2251349	0.26453782	2.4033159	20	10 20.6	17.6
120070	2003	DC ₈	16.0	X	205.44964	102.81372	169.91585	3.58785	0.1806027	0.21864837	2.7288011	20	—	—
120071	2003	DM ₁₆	15.2	X	50.18560	9.8								

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>
120081 2003 <i>ED</i> ₁₂	15.0	X	20.91605	253.50568	352.84521	10.17915	0.1887306	0.18465478	3.0541874	20	7 11.7	18.5
120082 2003 <i>EN</i> ₁₂	15.9	X	130.52358	170.76830	334.25960	5.00531	0.1479560	0.24512383	2.5285935	20	7 19.9	19.9
120083 2003 <i>EH</i> ₁₇	15.8	X	22.99833	339.76318	183.01601	3.97074	0.1650506	0.23225086	2.6211859	20	3 7.5	18.2
120084 2003 <i>EW</i> ₂₀	15.7	X	254.46788	35.24956	155.98031	2.30564	0.1441637	0.21428953	2.7656810	20	—	—
120085 2003 <i>EO</i> ₂₃	15.5	X	229.03240	149.00787	71.32724	5.16372	0.1456822	0.21349391	2.7725478	20	—	—
120086 2003 <i>EU</i> ₂₄	15.8	X	307.36323	71.26054	133.89600	4.94619	0.0417675	0.22571572	2.6715390	20	1 18.3	19.4
120087 2003 <i>ET</i> ₂₅	15.0	X	337.55788	257.63585	5.04579	18.31040	0.1935792	0.17960932	3.1111203	20	4 25.3	18.7
120088 2003 <i>EW</i> ₃₂	15.4	X	215.05611	184.50850	163.09186	5.39328	0.1729002	0.23371929	2.6101954	20	3 22.2	19.5
120089 2003 <i>EA</i> ₃₄	15.5	X	258.33149	194.70641	161.52494	11.50902	0.0453875	0.18607574	3.0386187	20	6 1.8	20.0
120090 2003 <i>EB</i> ₃₅	15.7	X	9.55505	316.03621	256.06714	3.39930	0.1680385	0.23473656	2.6026487	20	4 21.7	18.0
120091 2003 <i>EH</i> ₃₅	15.0	X	9.02703	63.95739	205.27968	8.72904	0.0873134	0.18600925	3.0393429	20	7 9.6	19.0
120092 2003 <i>EB</i> ₃₆	15.3	X	113.56069	114.26906	41.88168	3.07099	0.1566585	0.18711007	3.0274102	20	7 14.4	19.9
120093 2003 <i>EE</i> ₃₈	15.4	X	279.93732	44.36912	204.61986	12.77196	0.1181795	0.22743376	2.6580680	20	1 26.1	19.5
120094 2003 <i>ET</i> ₃₉	15.5	X	335.54045	169.27792	70.41278	13.56546	0.2204694	0.23249656	2.6193389	20	3 26.7	18.5
120095 2003 <i>EN</i> ₄₂	16.0	X	2.12354	250.38964	150.76897	3.31406	0.2568148	0.27105445	2.3646399	20	—	—
120096 2003 <i>EG</i> ₄₇	15.2	X	303.16850	65.75370	209.93002	13.68489	0.0853686	0.23690493	2.5867432	20	4 4.6	18.5
120097 2003 <i>EG</i> ₅₀	15.4	X	336.32774	146.21243	13.54039	16.08726	0.0653279	0.22109232	2.7086545	20	—	—
120098 2003 <i>EJ</i> ₅₀	14.9	X	28.27263	97.22603	176.31223	9.65989	0.0598150	0.18840546	3.0135176	20	8 11.3	18.9
120099 2003 <i>EV</i> ₅₅	14.4	X	297.41842	154.01886	155.62054	16.83986	0.0043516	0.18072540	3.0982985	20	5 30.5	19.1
120100 2003 <i>ES</i> ₅₇	14.3	X	2.90085	55.71162	162.28280	25.85881	0.0674294	0.17425352	3.1745464	20	4 29.3	18.8
120101 2003 <i>FP</i> ₅	14.9	X	59.99831	1.26413	228.99743	8.09003	0.0610136	0.18712035	3.0272994	20	7 28.8	19.2
120102 2003 <i>FU</i> ₅	15.4	X	348.99853	193.91970	358.53014	12.71024	0.0478279	0.22782787	2.6550018	20	2 29.2	18.8
120103 Dolero	15.3	X	215.76473	200.42237	46.83649	18.05834	0.2018971	0.21402078	2.7679957	20	—	—
120104 2003 <i>FG</i> ₉	14.9	X	125.40902	317.91535	101.72439	16.22613	0.1070173	0.23443414	2.6048865	20	3 28.1	18.9
120105 2003 <i>FM</i> ₁₁	16.1	X	84.79782	294.08217	66.07531	1.42336	0.0832107	0.21329628	2.7742603	20	—	—
120106 2003 <i>FK</i> ₁₅	15.4	X	301.83866	199.98957	355.72068	6.26729	0.2489306	0.22126484	2.7072464	20	—	—
120107 2003 <i>FH</i> ₁₇	16.3	X	156.99429	198.08420	117.20585	3.26929	0.2256622	0.27358598	2.3500304	20	—	—
120108 2003 <i>FP</i> ₂₄	15.5	X	349.98160	208.70788	182.42064	8.35188	0.0562763	0.20711139	2.8292201	20	11 24.2	19.2
120109 2003 <i>FQ</i> ₂₉	16.1	X	342.83506	130.65440	334.98076	3.31737	0.0615314	0.21582438	2.7525532	20	—	—
120110 2003 <i>FZ</i> ₂₉	15.3	X	273.81184	151.05883	34.48477	9.85139	0.0890645	0.21674016	2.7447942	20	—	—
120111 2003 <i>FN</i> ₃₈	14.9	X	299.61484	136.11595	200.02386	11.22213	0.2156944	0.18391366	3.0623869	20	6 3.4	18.9
120112 Elizabethacton	16.0	X	329.54509	127.76988	49.64009	3.81663	0.1598711	0.22301470	2.6930664	20	—	—
120113 2003 <i>FJ</i> ₅₈	15.2	X	226.02023	284.92573	25.31607	15.31223	0.0912551	0.23008892	2.6375796	20	2 25.9	19.4
120114 2003 <i>FZ</i> ₆₄	16.5	X	98.20758	35.91605	85.38441	4.39081	0.0725641	0.29315614	2.2442439	20	4 30.0	19.2
120115 2003 <i>FW</i> ₆₅	15.2	X	38.57335	232.20735	51.76166	11.08546	0.0871890	0.19234455	2.9722326	20	9 20.8	19.3
120116 2003 <i>FR</i> ₇₅	15.8	X	355.79172	286.83771	238.28502	6.13171	0.2064111	0.22808089	2.6530378	20	1 11.8	18.7
120117 2003 <i>FZ</i> ₈₀	16.1	X	82.12399	142.29073	20.61347	13.33776	0.1034703	0.24004312	2.5641487	20	6 7.4	19.7
120118 2003 <i>FF</i> ₈₃	14.8	X	75.27301	68.59787	37.55450	22.49661	0.0594727	0.22742819	2.6581115	20	3 21.3	18.6
120119 2003 <i>FK</i> ₈₄	15.6	X	24.80531	245.08029	302.61378	8.78311	0.1239450	0.23403660	2.6078356	20	4 10.5	18.7
120120 Kankelborg	15.8	X	175.13394	7.85284	160.30027	2.17031	0.0053248	0.19852069	2.9102627	20	9 30.9	19.7
120121 Libbyadelman	15.2	X	149.33838	183.70590	340.55190	6.14612	0.1074448	0.19292676	2.9662499	20	8 26.5	19.8
120122 2003 <i>FE</i> ₈₈	15.6	X	117.24382	51.60488	83.77887	6.29921	0.1790476	0.24124301	2.5556393	20	6 25.1	19.4
120123 2003 <i>FT</i> ₉₂	16.0	X	54.76591	350.91861	170.36450	13.66325	0.1059239	0.23399335	2.6081569	20	5 1.8	19.3
120124 2003 <i>FO</i> ₉₈	15.6	X	26.58500	214.75842	309.34914	7.85988	0.0420906	0.22990909	2.6389548	20	3 10.5	19.1
120125 2003 <i>FR</i> ₁₀₀	14.6	X	4.03764	227.37882	45.75741	9.70472	0.1049500	0.18499178	3.0504771	20	7 10.3	18.4
120126 2003 <i>FH</i> ₁₀₁	15.4	X	27.75287	68.60830	177.64848	8.56353	0.0694030	0.18541480	3.0458356	20	7 6.9	19.5
120127 2003 <i>FJ</i> ₁₀₁	15.7	X	330.17038	42.35943	132.65550	10.77812	0.0394659	0.22516380	2.6759028	20	1 9.9	19.3
120128 2003 <i>FP</i> ₁₀₆	14.6	X	289.24121	227.31289	52.45943	6.80677	0.1113966	0.17088801	3.2160910	20	3 28.2	19.1
120129 2003 <i>FT</i> ₁₁₇	16.0	X	103.40927	0.39583	125.16259	6.55301	0.1069210	0.23923105	2.5699481	20	5 20.4	19.6
120130 2003 <i>FL</i> ₁₁₉	16.1	X	130.51273	312.90427	175.23865	7.77875	0.1524126	0.24135297	2.5548630	20	6 26.7	20.2
120131 2003 <i>FX</i> ₁₁₉	16.0	X	70.20126	232.11986	355.75287	0.74286	0.1401582	0.18763188	3.0217947	20	8 22.9	20.2
120132 2003 <i>FJ</i> ₁₂₈	4.6	X	33.17187	175.14868	341.87402	11.79501	0.2492164	0.00283339	49.4612470	20	4 16.3	20.7
120133 2003 <i>GJ</i> ₄	15.3	X	319.96144	156.49406	8.45169	4.98068	0.0964167	0.21955449	2.7212879	20	—	—
120134 2003 <i>GP</i> ₆	15.9	X	183.59080	34.97438	137.82022	5.62185	0.1495343	0.25454586	2.4656756	20	10 17.6	19.8
120135 2003 <i>GF</i> ₇	16.5	X	248.97817	309.56812	177.93448	3.24389	0.2020479	0.26236171	2.4165869	20	10 25.9	19.5
120136 2003 <i>GY</i> ₁₂	15.6	X	91.76316	164.19164	73.17671	2.61523	0.0736834	0.19246285	2.9710145	20	9 22.6	19.8
120137 2003 <i>GW</i> ₁₄	15.3	X	194.36354	214.40549	115.43370	15.71990	0.0937249	0.22579647	2.6709020	20	2 12.5	19.4
120138 2003 <i>GB</i> ₁₇	14.4	X	301.86400	354.43797	274.55781	13.84970	0.1295818	0.17416562	3.1756144	20	3 17.5	19.1
120139 2003 <i>GV</i> ₂₀	15.0	X	6.27067	181.90714	353.42960	12.45538	0.1608294	0.22705941	2.6609888	20	2 25.3	17.6
120140 2003 <i>GB</i> ₂₁	14.6	X	329.69417	254.69593	64.29945	11.93039	0.1241606	0.18468158	3.0538919	20	7 13.4	18.4
120141 Lucaslara	15.9	X	227.45015	251.94493	356.51829	4.65007	0.1100026	0.21379536	2.7699410	20	—	—
120142 2003 <i>GL</i> ₃₈	15.0	X	206.18678	187.19163	68.02681	10.55360	0.2418019	0.21140689	2.7907652	20	—	—
120143 2003 <i>GG</i> ₄₂	14.5	X	302.22619	3.89921	263.17410	17.37190	0.1855089	0.17321530	3.1872189	20	3 5.9	19.3
120144 2003 <i>GM</i> ₄₃	15.0	X	95.04441	244.95344	71.11613	10.20986	0.1297950	0.20469826	2.8514119	20	—	—
120145 2003 <i>GZ</i> ₄₇	14.4	X	348.53424	276.02370	49.75232	22.03761	0.1604102	0.18595715	3.0399105	20	9 9.1	18.3
120146 2003 <i>GY</i> ₄₉	15.2	X	186.79426	285.08724	321.51412	11.44896	0.1094734	0.20972960	2.8056246	20	—	—

ELEMENTS AND OPPOSITION DATES IN 2020

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Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>
120161 2003 <i>HB</i> ₃₁	14.5 ^m	X	323.90174	49.38689	211.08705	8.81639	0.0384871	0.17425815	3.1744902	20	4 25.3	18.7
120162 2003 <i>HN</i> ₃₆	15.8	X	40.65772	181.74698	166.90738	2.21697	0.0735423	0.20300726	2.8672243	20	12 8.8	19.6
120163 2003 <i>HG</i> ₄₄	14.9	X	298.28548	288.37132	44.84522	18.68583	0.0851107	0.18090505	3.0962469	20	6 13.9	19.3
120164 2003 <i>HV</i> ₄₅	14.5	X	312.26446	227.20461	50.05613	20.00561	0.1050505	0.17450110	3.1715430	20	4 26.0	18.7
120165 2003 <i>HE</i> ₄₆	14.6	X	6.83168	27.96518	215.42569	17.13417	0.1537023	0.18074490	3.0980757	20	6 4.4	18.3
120166 2003 <i>HC</i> ₄₇	14.1	X	302.41466	103.10548	217.79105	22.03938	0.0533561	0.17705010	3.1410289	20	6 9.5	18.7
120167 2003 <i>HT</i> ₄₇	14.9	X	340.22031	258.32448	51.90978	17.00168	0.0984240	0.18158458	3.0885175	20	7 22.9	19.0
120168 2003 <i>HW</i> ₅₂	15.8	X	49.54290	69.50334	48.72635	4.07097	0.0235547	0.22296019	2.6935053	20	2 16.8	19.3
120169 2003 <i>HD</i> ₅₃	14.8	X	282.64293	302.29865	42.21431	12.02085	0.0974224	0.17929751	3.1147262	20	6 6.4	19.2
120170 2003 <i>JO</i> ₅	15.2	X	329.23482	115.54701	200.37836	10.16036	0.0898587	0.18172923	3.0868785	20	7 8.2	19.3
120171 2003 <i>JT</i> ₆	15.4	X	287.06520	113.64715	70.74560	7.99197	0.1372304	0.21287516	2.7779178	20	—	—
120172 2003 <i>JU</i> ₉	15.2	X	284.22850	82.24369	208.21404	3.65857	0.1181782	0.17129275	3.2110229	20	3 30.8	19.9
120173 2003 <i>JA</i> ₁₀	14.7	X	268.02933	264.43287	55.50052	16.19840	0.1873210	0.17230969	3.1983765	20	4 14.7	19.6
120174 Jeffjenny	15.6	X	253.61836	216.90810	105.05677	14.13262	0.1727340	0.22803769	2.6533729	20	4 2.1	20.0
120175 2003 <i>KB</i> ₁₁	14.4	X	28.76642	104.23931	175.39466	4.02822	0.2472587	0.12431138	3.9761441	20	9 6.2	19.2
120176 2003 <i>KQ</i> ₃₀	15.3	X	168.71544	263.35128	187.64289	11.54901	0.0851494	0.17995724	3.1071091	20	6 14.9	20.2
120177 2003 <i>LW</i> ₃	15.1	X	91.95268	167.63301	357.70183	11.70145	0.2197057	0.23892914	2.5721126	20	7 15.2	19.1
120178 2003 <i>OP</i> ₃₂	3.9	X	72.34403	71.89770	183.01572	27.13514	0.1091258	0.00343685	43.4872645	20	8 31.3	20.2
120179 2003 <i>QY</i> ₇₅	13.4	X	10.49077	87.02000	322.55787	10.11450	0.1967127	0.12566559	3.9475273	20	—	—
120180 2003 <i>QH</i> ₁₀₄	15.3	X	321.01450	166.12360	120.55950	14.67992	0.1110190	0.22380924	2.6866889	20	5 20.6	18.8
120181 2003 <i>UR</i> ₂₉₂	7.0	X	16.10302	247.52260	146.41967	2.71956	0.1715420	0.00537475	32.2773121	20	11 20.9	21.3
120182 2003 <i>VQ</i> ₂	16.0	X	266.52668	55.06676	38.25933	8.92723	0.0870955	0.22854100	2.6494759	20	10 16.7	19.4
120183 2003 <i>YR</i> ₁₃₈	14.5	X	287.19928	258.76143	322.41428	15.96532	0.2799619	0.17592719	3.1543805	20	—	—
120184 2004 <i>BB</i> ₄₅	16.8	X	309.88881	272.47610	313.74536	17.67108	0.0661137	0.36784111	1.9291346	20	1 23.8	18.6
120185 2004 <i>BB</i> ₉₆	15.5	X	210.79859	197.80552	32.62140	26.50091	0.2294221	0.28435170	2.2903341	20	—	—
120186 Suealeman	15.2	X	119.55478	295.75410	343.77054	21.98528	0.2233542	0.27985483	2.3148037	20	—	—
120187 2004 <i>CO</i> ₃	15.4	X	43.05965	342.47749	175.06800	10.74640	0.1019488	0.19133479	2.9826807	20	4 8.7	19.1
120188 Amyaqueche	16.6	X	254.05815	270.32271	311.17401	2.64517	0.1159487	0.29429782	2.2384360	20	—	—
120189 2004 <i>CY</i> ₈₄	16.2	X	240.60237	120.89820	110.52382	7.05767	0.0894510	0.29357989	2.2420838	20	—	—
120190 2004 <i>CL</i> ₉₇	16.1	X	64.70186	291.47977	355.67830	2.44137	0.1713577	0.27040273	2.3684379	20	11 16.1	19.5
120191 Tombagg	15.9	X	208.12281	51.01629	115.98023	4.62310	0.1653048	0.27816181	2.3241869	20	11 6.4	19.2
120192 2004 <i>CM</i> ₁₀₆	15.5	X	152.24894	55.95507	185.75809	16.53589	0.3097401	0.21647624	2.7470247	20	12 1.8	20.8
120193 2004 <i>DM</i> ₆	16.2	X	164.68960	235.83736	351.10915	3.98884	0.0983777	0.28005776	2.3136854	20	12 10.9	19.4
120194 2004 <i>DR</i> ₁₁	16.2	X	65.97816	41.97224	204.28756	0.73378	0.1525113	0.26584220	2.3954481	20	9 22.0	19.3
120195 2004 <i>DL</i> ₁₅	16.6	X	236.54840	18.87330	279.22807	3.15872	0.1460915	0.30739456	2.1743958	20	2 2.4	19.6
120196 Kevinballou	16.1	X	163.31316	39.17297	191.73059	8.55916	0.1619444	0.27823501	2.3237792	20	12 10.8	19.7
120197 2004 <i>DU</i> ₃₇	16.9	X	331.77911	196.16867	0.94808	19.15553	0.0403403	0.36259264	1.9477060	20	1 24.6	19.3
120198 2004 <i>DT</i> ₄₂	16.5	X	12.75239	293.52975	182.77069	22.19773	0.1170721	0.35746043	1.9663043	20	—	—
120199 2004 <i>DN</i> ₄₃	16.3	X	124.59913	76.47503	135.92704	7.04845	0.0812591	0.27065483	2.3669669	20	10 11.4	19.7
120200 2004 <i>DE</i> ₆₀	16.8	X	119.74574	103.30326	158.18852	3.16577	0.1343592	0.27861239	2.3216804	20	12 8.4	20.2
120201 2004 <i>ES</i> ₂	15.6	X	118.94020	217.49654	46.41728	12.98559	0.1761114	0.27174380	2.3606392	20	12 7.9	19.4
120202 2004 <i>EL</i> ₆	16.4	X	260.72985	322.09366	343.89745	5.36084	0.1714878	0.30671930	2.1775860	20	3 6.8	19.4
120203 2004 <i>EE</i> ₇	16.6	X	216.28150	323.10371	178.78465	6.25909	0.0769963	0.27436127	2.3456012	20	10 24.2	19.6
120204 2004 <i>EY</i> ₁₃	15.0	X	284.27878	109.31873	156.66876	11.81857	0.1976020	0.18092686	3.0959982	20	2 19.3	19.7
120205 2004 <i>EF</i> ₂₇	16.2	X	146.97864	16.41509	206.10001	3.92305	0.1419210	0.27204073	2.3589212	20	11 14.7	19.8
120206 2004 <i>EA</i> ₃₀	15.9	X	356.34174	298.81403	18.74617	2.64673	0.1927433	0.26415434	2.4056413	20	9 18.3	17.6
120207 2004 <i>EG</i> ₃₁	16.1	X	122.24317	63.18271	191.01261	8.98897	0.1445008	0.27388671	2.3483099	20	12 1.6	19.8
120208 Brentbarbee	16.3	X	134.18946	114.92126	165.58019	4.48339	0.1492191	0.28020831	2.3128566	20	—	—
120209 2004 <i>ES</i> ₃₆	16.6	X	131.26749	282.84195	314.45547	1.38833	0.1692029	0.27234045	2.3571902	20	11 17.5	20.2
120210 2004 <i>EN</i> ₃₉	15.6	X	231.29013	330.44456	350.98063	12.14869	0.1897289	0.24392953	2.5368403	20	3 3.6	19.6
120211 2004 <i>ES</i> ₃₉	16.3	X	72.06855	81.66962	213.25221	1.76243	0.2190680	0.27178094	2.3604242	20	12 8.9	19.8
120212 2004 <i>EM</i> ₅₄	16.5	X	132.47425	129.81075	178.18712	6.40722	0.1424285	0.28350952	2.2948675	20	—	—
120213 2004 <i>EF</i> ₅₆	16.3	X	197.44727	334.06201	242.22817	3.74322	0.1710857	0.28045919	2.3114771	20	12 26.1	19.6
120214 Danteberdeguez	15.5	X	81.65003	119.98692	144.85835	4.88414	0.0669507	0.20900529	2.8121028	20	10 17.3	19.5
120215 Kevinberry	16.4	X	154.83277	221.99639	29.09459	6.10970	0.1913296	0.27646758	2.3336725	20	12 25.5	20.2
120216 2004 <i>EW</i> ₉₅	6.3	X	2.88757	205.08300	25.74999	29.27649	0.3200646	0.00394354	39.6775969	20	5 9.5	20.7
120217 2004 <i>FL</i>	16.2	X	176.16083	170.94937	190.85209	21.43526	0.0890182	0.36622658	1.9348003	20	2 10.3	19.0
120218 Richardberry	16.9	X	178.43761	276.55183	195.22617	21.64786	0.0834522	0.38550138	1.8697581	20	7 29.2	19.7
120219 2004 <i>FZ</i> ₁₅	16.0	X	150.31953	344.09209	24.82029	21.15750	0.0789913	0.36251492	1.9479843	20	1 31.5	18.7
120220 2004 <i>FP</i> ₁₇	15.6	X	215.53462	330.85696	241.25604	23.97279	0.1707370	0.28501471	2.2867808	20	—	—
120221 2004 <i>FJ</i> ₁₈	14.7	X	308.50334	194.37928	76.45340	9.28951	0.2390017	0.18280915	3.0747095	20	3 24.3	18.9
120222 2004 <i>FD</i> ₂₃	16.5	X	7.56068	334.63642	357.17152	1.25297	0.1956008	0.26868980	2.3784933	20	11 3.1	18.8
120223 2004 <i>FZ</i> ₂₈	16.8	X	355.75260	187.58006	44.11845	22.77857	0.0252347	0.37116366	1.9176047	20	4 25.8	18.3
120224 2004 <i>FB</i> ₃₉	16.0	X	348.25671	258.35751	304.28662	4.40997	0.0998449	0.24257081	2.5463046	20	2 29.9	19.0
120225 2004 <i>FK</i> ₄₅	16.4	X	260.75009	196.42286	81.89835	3.94463	0.1423490	0.29956444	2.2121227	20	2 4.3	19.5
120226 2004 <i>FR</i> ₄₉	16.8	X	34.22923	346.66235	276.97940	1.58207	0.1707601	0.25941199	2.4348713	20	9 2.6	19.4
120227 2004 <i>FZ</i> ₅₀	16.5	X	132.85722	252.55406	54.35079	6.90401	0.2116605	0.28170324	2.3046669	20	—	—
120228 2004 <i>FB</i> ₅₂	16.8	X	177.45579	140.17919	159.85730	6.68794	0.1329355	0.29062886	2.2572356	20	—	—
120229 2004 <i>FX</i> ₅₇	15.6	X	238.78684	317.65407	283.24697	12.07066	0.2081502	0.23124234	2.6288016	20	—	—
120230 2004 <i>FQ</i> ₆₃	16.6	X	245.47964	216.16991	111.58273	3.91328	0.1448840	0.30598246	2.1810805	20	3 24.2	19.6
120231 2004 <i>FF</i> ₆₄	15.3	X	52.04501	116.75526	181.33788	12.65782	0.1171005	0.20641940	2.8355396	20	10 29.9	19.2
120232 2004 <i>FH</i> ₆₅	16.7	X	169.72358	232.98204	26.09625	6.95632	0.1016008	0.28150721	2.3057366	20	—	

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Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>
120241 2004 <i>FM</i> ₁₀₂	16.2	X	43.59257	227.05161	40.19177	15.70827	0.1820202	0.25920752	2.4361517	20	10 1.9	19.4
120242 2004 <i>FE</i> ₁₀₉	16.3	X	17.24589	69.97118	189.69463	7.29132	0.0829367	0.25738952	2.4476096	20	7 14.6	19.1
120243 2004 <i>FG</i> ₁₁₀	16.5	X	288.75734	17.44760	204.18023	4.31197	0.1287154	0.29510823	2.2343361	20	—	—
120244 2004 <i>FG</i> ₁₂₂	16.7	X	202.74066	55.29149	181.35896	6.46815	0.1673211	0.28175871	2.3043644	20	—	—
120245 2004 <i>FC</i> ₁₂₇	16.5	X	114.24921	124.07680	182.26548	7.10584	0.1369436	0.28146165	2.3059855	20	—	—
120246 2004 <i>FM</i> ₁₃₉	16.0	X	210.26641	302.66884	333.18913	4.94562	0.1367154	0.29014540	2.2597424	20	—	—
120247 2004 <i>FR</i> ₁₃₉	16.7	X	175.04235	71.63501	173.03495	2.28813	0.1746265	0.27802839	2.3249304	20	—	—
120248 2004 <i>FR</i> ₁₄₀	16.7	X	307.75147	325.36550	305.05350	5.20897	0.1123011	0.30739993	2.1743705	20	3 22.4	19.0
120249 2004 <i>GQ</i> ₁	16.4	X	163.23284	81.63031	216.14175	5.95939	0.1316157	0.28742163	2.2739963	20	—	—
120250 2004 <i>GU</i> ₄	16.2	X	141.73527	251.71668	69.00992	6.44011	0.1335849	0.28482987	2.2877700	20	—	—
120251 2004 <i>GB</i> ₆	14.4	X	116.02689	356.24075	349.40915	16.30982	0.3328032	0.22156791	2.7047771	20	1 11.6	18.7
120252 2004 <i>GA</i> ₁₀	16.8	X	106.24331	178.56788	93.40535	3.34383	0.1837645	0.26917342	2.3756435	20	12 8.3	20.4
120253 2004 <i>GO</i> ₁₄	15.9	X	202.12996	326.14385	333.16015	7.36708	0.1237543	0.22962019	2.6411678	20	1 13.8	20.0
120254 2004 <i>GX</i> ₁₄	15.9	X	184.54068	327.93109	295.20502	9.92757	0.1417240	0.28258395	2.2998758	20	—	—
120255 2004 <i>GG</i> ₁₇	15.0	X	146.82259	223.03299	88.72504	23.37073	0.1956421	0.28116045	2.3076321	20	—	—
120256 2004 <i>GV</i> ₁₇	16.8	X	45.78353	48.35857	268.62824	1.55324	0.1965838	0.27050677	2.3678306	20	12 7.4	19.8
120257 2004 <i>FR</i> ₁₈	15.5	X	271.72978	333.72828	258.34497	13.06039	0.2035832	0.23727599	2.5840457	20	—	—
120258 2004 <i>GS</i> ₁₈	14.5	X	233.77459	139.65785	176.66037	12.55243	0.2227295	0.17691103	3.1426748	20	2 29.7	19.9
120259 2004 <i>GB</i> ₂₀	16.6	X	273.22913	273.35847	7.18857	2.91641	0.1668204	0.23921654	2.5700520	20	2 24.2	20.3
120260 2004 <i>GL</i> ₂₀	16.8	X	140.69892	33.79389	214.36596	3.97873	0.1234323	0.27476102	2.3433256	20	12 11.3	20.3
120261 2004 <i>GS</i> ₂₇	15.7	X	222.56772	206.51098	111.66511	13.84795	0.1673882	0.23465402	2.6032590	20	2 24.9	20.0
120262 2004 <i>GP</i> ₂₉	16.2	X	164.68644	152.49447	210.80032	5.77788	0.1916934	0.29671187	2.2262782	20	2 18.7	19.7
120263 2004 <i>GJ</i> ₃₀	16.5	X	58.25469	76.51603	189.04907	5.49444	0.0949287	0.26181970	2.4199209	20	9 29.3	19.4
120264 2004 <i>GJ</i> ₄₅	16.5	X	315.30765	124.58892	220.55907	4.91520	0.0317142	0.26234347	2.4166989	20	8 7.6	19.5
120265 2004 <i>GE</i> ₅₅	17.8	X	135.33340	301.49441	343.94340	1.67342	0.2151953	0.27277612	2.3291336	20	—	—
120266 2004 <i>GF</i> ₅₉	16.6	X	256.74173	228.91044	51.01176	7.28425	0.0575220	0.29855565	2.2171029	20	2 11.7	19.5
120267 2004 <i>GP</i> ₆₈	15.9	X	170.44340	142.15860	184.37853	12.08488	0.2072870	0.22766576	2.6562619	20	1 18.4	20.5
120268 2004 <i>GE</i> ₇₂	16.5	X	88.12372	329.87826	263.80957	2.99858	0.0911463	0.26189347	2.4194664	20	9 21.9	19.8
120269 2004 <i>GE</i> ₇₅	16.6	X	26.54938	259.25263	18.78423	16.00731	0.1624296	0.25765227	2.4459453	20	9 16.5	19.4
120270 2004 <i>GW</i> ₈₀	17.1	X	202.41866	160.23341	176.40160	5.89687	0.1645555	0.30327811	2.1940272	20	2 18.8	20.4
120271 2004 <i>HM</i> ₃	15.1	X	201.87494	125.17279	195.07577	12.96946	0.2020837	0.22921898	2.6442489	20	2 3.8	19.8
120272 2004 <i>HK</i> ₅	15.7	X	83.73043	86.88777	245.78550	6.32708	0.1292754	0.27953250	2.3165829	20	—	—
120273 2004 <i>HP</i> ₅	15.1	X	66.26480	332.13156	346.82010	8.28079	0.2441942	0.20951158	2.8075706	20	12 23.7	19.7
120274 2004 <i>HE</i> ₆	16.5	X	140.17304	97.69026	120.81729	2.27683	0.1354916	0.26769818	2.3843633	20	11 2.9	20.1
120275 2004 <i>HB</i> ₈	16.6	X	195.96673	216.46702	75.53354	4.90153	0.1662759	0.29185411	2.2509137	20	—	—
120276 2004 <i>HU</i> ₉	16.7	X	263.21620	160.57448	14.62394	4.58627	0.1332907	0.28418082	2.2912521	20	—	—
120277 2004 <i>HV</i> ₉	16.2	X	204.18771	236.38303	23.13586	6.28443	0.0949716	0.28506875	2.2864918	20	—	—
120278 2004 <i>HL</i> ₁₇	17.0	X	236.75310	227.18868	24.57482	6.63836	0.1594007	0.28820007	2.2698997	20	—	—
120279 2004 <i>HG</i> ₁₈	16.2	X	49.43299	106.61200	46.00526	21.15079	0.0724555	0.36409580	1.9423416	20	4 2.4	18.1
120280 2004 <i>HP</i> ₃₂	16.3	X	137.55501	256.37484	73.82301	6.18999	0.2086685	0.28478652	2.2880022	20	—	—
120281 2004 <i>HV</i> ₃₂	17.1	X	187.81150	82.71147	193.64033	3.70642	0.1934074	0.28654373	2.2786385	20	—	—
120282 2004 <i>HB</i> ₃₄	15.5	X	166.70601	131.63381	187.04219	11.69894	0.1742496	0.22381508	2.6866421	20	1 5.0	20.0
120283 2004 <i>HK</i> ₃₅	15.9	X	122.56216	144.65534	138.93159	5.72567	0.0983873	0.21676687	2.7445688	20	12 25.1	20.2
120284 2004 <i>HO</i> ₄₃	17.0	X	82.24502	57.60189	209.23705	1.69857	0.1537985	0.26579033	2.3957598	20	11 6.9	20.6
120285 Brentbos	15.1	X	144.86371	303.96167	59.43936	15.64757	0.1296180	0.23409671	2.6073891	20	2 7.8	19.2
120286 2004 <i>HX</i> ₅₆	14.7	X	262.53043	237.22564	90.99849	27.53834	0.3891731	0.17957866	3.1114744	20	4 8.8	20.6
120287 2004 <i>HO</i> ₅₉	14.0	X	320.63563	57.13500	241.41152	1.46394	0.2076149	0.12480294	3.9656967	20	5 19.6	18.9
120288 2004 <i>HK</i> ₆₁	16.1	X	46.15924	292.19554	347.94839	6.84399	0.1206812	0.26147036	2.4220758	20	10 5.0	19.1
120289 2004 <i>HM</i> ₆₁	16.9	X	264.25431	63.54032	207.72785	6.51103	0.1659337	0.29483840	2.2356991	20	1 25.4	20.3
120290 2004 <i>HB</i> ₆₂	15.8	X	313.24148	202.74110	73.41588	7.03661	0.1457397	0.24230174	2.5481893	20	4 14.9	18.8
120291 2004 <i>HA</i> ₇₅	15.1	X	203.51219	131.05438	199.07407	4.75738	0.1472226	0.17048274	3.2211857	20	2 23.6	20.3
120292 2004 <i>JA</i> ₉	17.4	X	71.48228	279.78775	322.96825	1.59917	0.1722320	0.25993192	2.4316234	20	9 25.4	20.8
120293 2004 <i>JQ</i> ₉	15.8	X	188.02323	197.09053	124.33185	5.22125	0.0986776	0.22977340	2.6399937	20	1 24.7	19.7
120294 2004 <i>JW</i> ₁₅	16.1	X	297.00314	10.19008	224.98558	2.49941	0.1598766	0.23419190	2.6066825	20	1 24.8	19.7
120295 2004 <i>JO</i> ₁₆	16.0	X	197.90692	133.01719	173.16351	4.41979	0.2038881	0.22664631	2.6642212	20	1 18.1	20.6
120296 2004 <i>JH</i> ₁₇	16.2	X	145.10513	210.96877	36.43374	6.38595	0.0834880	0.27255347	2.3559618	20	12 15.0	19.6
120297 2004 <i>JD</i> ₂₂	15.9	X	61.86318	6.24721	8.83128	1.81612	0.2598673	0.27826468	2.3236140	20	—	—
120298 2004 <i>JY</i> ₂₄	15.5	X	101.58210	269.34294	59.74961	11.26372	0.2114032	0.21355145	2.7720498	20	—	—
120299 Billylynch	16.2	X	59.02142	208.76023	169.99026	6.73051	0.1301410	0.27954395	2.3165196	20	—	—
120300 2004 <i>JV</i> ₃₁	15.4	X	272.81457	119.33527	158.39429	12.87169	0.1636657	0.23510571	2.5999237	20	2 19.6	19.4
120301 2004 <i>JL</i> ₃₄	17.1	X	248.76792	35.10595	199.59969	6.23709	0.1964683	0.28749370	2.2736162	20	—	—
120302 2004 <i>JA</i> ₃₆	17.5	X	75.03502	64.25471	183.34301	4.44249	0.1905422	0.26094519	2.4253245	20	10 9.1	20.8
120303 2004 <i>JY</i> ₃₇	15.3	X	217.84482	234.51761	122.00611	15.63013	0.2308609	0.23621482	2.5917789	20	4 8.1	20.0
120304 2004 <i>JP</i> ₄₃	17.1	X	131.76057	56.17255	206.35545	2.35168	0.1700839	0.27234582	2.3571591	20	12 19.2	20.7
120305 2004 <i>KF</i>	16.4	X	343.48208	114.23045	48.09131	7.73111	0.0452563	0.29150222	2.2527248	20	—	—
120306 2004 <i>KE</i> ₆	15.8	X	246.97587	287.07778	67.66697	14.10378	0.1056398	0.24481365	2.5307289	20	5 8.8	19.5
120307 2004 <i>KX</i> ₉	16.1	X	46.09565	357.60559	265.65978	5.51831	0.1184951	0.25700631	2.4500420	20	9 8.8	19.1
120308 Deebadel	15.5	X	67.43179	127.50856	178.09348	11.89837	0.0666272	0.20599233	2.8394574	20	11 19.9	19.7
120309 2004 <i>KX</i> ₁₅	15.0	X	162.21396	167.27180	200.57048	12.23879	0.2470659	0.22759850	2.6567852	20	3 1.5	19.8
120310 2004 <i>KY</i> ₁₆	15.4	X	305.99033	167.32223	103.62991	15.57768	0.1502447	0.23936285	2.5690046	20	4 1.8	19.0
120311 2004 <i>LX</i> ₂	15.7	X	198.79272	83.27506	178.86610	11.27280	0.1604702	0.21967072	2.7203280	20	—	—
120312 2004 <i>LY</i> ₂	15.8	X	217.95187	109.45839	182.86030	16.94433	0.1771502	0.22615151	2.6681059	20	1 16.5	20.5

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>
120321 2004 <i>LH</i> ₃₀	15.1	X	185.04925	38.39915	226.82893	13.11446	0.0979422	0.21308992	2.7760511	20	—	—
120322 2004 <i>MG</i> ₂	15.8	X	154.82366	160.40987	141.95105	10.07258	0.0957006	0.21888820	2.7268075	20	—	—
120323 2004 <i>MQ</i> ₂	16.0	X	228.41228	202.64393	179.24763	1.55218	0.2237296	0.23666975	2.5884565	20	5 12.0	20.1
120324 Falusandrás	16.7	X	347.49696	113.70393	139.76502	3.66313	0.0572263	0.24448533	2.5329941	20	5 17.3	19.7
120325 2004 <i>MH</i> ₇	15.7	X	189.67108	216.06376	147.94600	12.40224	0.2014272	0.23330332	2.6132970	20	3 22.2	20.2
120326 2004 <i>NK</i> ₃	15.6	X	48.12910	275.98927	71.64285	3.04231	0.0842031	0.20252187	2.8718038	20	12 17.8	19.4
120327 2004 <i>NV</i> ₁₀	15.0	X	16.33018	178.83366	97.45015	8.52126	0.2312573	0.18627299	3.0364733	20	8 20.8	18.2
120328 2004 <i>NP</i> ₁₆	14.7	X	247.43251	159.41657	330.77773	12.48848	0.1520734	0.25989141	2.4318760	20	10 27.7	18.1
120329 2004 <i>ND</i> ₁₇	14.2	X	34.09381	113.36209	152.47617	3.53423	0.1383797	0.12431078	3.9761569	20	8 14.0	19.3
120330 2004 <i>NO</i> ₂₅	15.3	X	318.43940	119.92227	247.14851	2.42455	0.0772787	0.18787778	3.0191575	20	8 31.1	19.1
120331 2004 <i>NP</i> ₂₆	15.6	X	291.99214	189.57966	142.81321	5.47019	0.1369437	0.17826353	3.1267588	20	5 31.2	19.8
120332 2004 <i>OS</i> ₂	15.2	X	145.10507	306.29844	140.70589	13.45823	0.1912385	0.23542269	2.5975894	20	5 25.4	19.7
120333 2004 <i>OY</i> ₁₁	15.6	X	291.83305	246.65410	4.25815	6.00966	0.3325466	0.22949486	2.6421294	20	1 21.3	20.0
120334 2004 <i>OS</i> ₁₂	14.9	X	299.59733	43.18463	258.52522	4.23848	0.1664424	0.17496483	3.1659366	20	4 25.5	19.2
120335 2004 <i>OP</i> ₁₄	15.1	X	228.82426	280.15558	267.21390	9.77182	0.0944550	0.20379414	2.8598390	20	12 18.2	18.9
120336 2004 <i>PX</i> ₅₃	14.0	X	357.87016	258.62426	71.80285	5.02702	0.1636860	0.12436846	3.9749274	20	9 9.9	18.7
120337 2004 <i>PN</i> ₅₆	15.5	X	283.22831	84.91982	175.30276	14.80777	0.1106153	0.22936937	2.6430930	20	2 14.9	19.3
120338 2004 <i>PX</i> ₆₅	14.3	X	173.79333	299.04895	160.88122	22.67569	0.0591494	0.17513286	3.1639112	20	7 1.4	19.4
120339 2004 <i>PM</i> ₇₁	15.8	X	97.68598	184.77165	109.84575	3.16813	0.0417533	0.20045125	2.8915467	20	12 5.6	20.0
120340 2004 <i>PD</i> ₁₀₆	15.3	X	44.79442	90.25090	214.27104	8.15162	0.1433441	0.19173905	2.9784867	20	10 27.6	19.4
120341 2004 <i>QX</i> ₁₂	15.1	X	110.57592	176.01325	39.98862	10.84023	0.0635226	0.18756739	3.0224873	20	9 19.4	19.6
120342 2004 <i>RU</i> ₁₁₃	15.4	X	42.46341	181.90284	340.62154	8.20306	0.0821447	0.22969802	2.6405712	20	4 4.3	18.6
120343 2004 <i>RU</i> ₁₃₇	14.8	X	4.34723	29.19459	247.66918	10.69893	0.1379925	0.18070753	3.0985027	20	7 13.6	18.5
120344 2004 <i>RU</i> ₁₅₀	15.4	X	61.67552	230.55962	111.81852	3.03510	0.0991033	0.19490136	3.9461813	20	12 27.4	19.5
120345 2004 <i>RQ</i> ₁₉₃	14.7	X	233.63442	208.20918	278.44791	9.02214	0.0705801	0.18420871	2.0591160	20	10 5.4	19.3
120346 2004 <i>RG</i> ₃₁₉	14.7	X	323.73457	38.74935	227.97025	10.97726	0.0189311	0.16982135	3.2295439	20	5 4.7	19.1
120347 Salacia	4.0	X	123.08397	312.34115	279.88005	23.92100	0.1063551	0.00359679	42.1883849	20	9 16.4	20.6
120348 2004 <i>TY</i> ₃₆₄	4.3	X	272.35783	359.56524	140.34213	24.83278	0.0628886	0.00407866	38.7963399	20	11 14.5	20.3
120349 Kalas	15.1	X	203.99597	119.09522	110.41968	13.51227	0.0717409	0.18272558	3.0756469	20	—	—
120350 Richburns	16.1	X	299.31701	146.12956	107.15389	6.98970	0.1079819	0.25315686	2.4748160	20	2 28.0	19.3
120351 Beckymasterson	15.7	X	314.58605	199.16405	117.84316	4.33966	0.3121349	0.25779116	2.4450667	20	5 15.1	18.0
120352 Gordonwong	16.2	X	117.23644	199.31068	109.39186	6.16720	0.2826446	0.28633376	2.2797524	20	—	—
120353 Katrinajackson	16.7	X	29.80206	144.18620	162.03142	5.50517	0.2389895	0.27127999	2.3633291	20	11 11.8	19.6
120354 Mikejones	17.0	X	127.46738	126.13961	144.45460	1.22748	0.2023090	0.28460711	2.2889636	20	12 27.1	20.5
120355 2005 <i>MD</i> ₅	14.6	X	75.27331	63.46853	297.78164	22.87001	0.2672582	0.27683264	2.3316205	20	—	—
120356 2005 <i>MS</i> ₈	16.2	X	32.87126	214.79228	157.93592	8.17191	0.2090591	0.27931576	2.3177811	20	—	—
120357 2005 <i>MZ</i> ₁₅	16.6	X	150.92037	316.63683	296.01571	4.63941	0.1462964	0.28642300	2.2792788	20	12 28.3	19.8
120358 2005 <i>MN</i> ₃₆	16.5	X	6.44124	235.65321	93.70530	3.08272	0.2232075	0.26947789	2.3738537	20	11 3.9	18.7
120359 2005 <i>ME</i> ₄₁	16.0	X	261.91313	239.99666	141.99046	5.22456	0.1950520	0.25702173	2.4499440	20	6 18.4	19.5
120360 2005 <i>MT</i> ₄₃	14.7	X	137.51505	158.05824	261.44072	8.07855	0.1913040	0.16091163	3.3476838	20	—	—
120361 Guido	15.1	X	115.69657	92.10662	158.22821	12.43659	0.1810378	0.22539248	2.6740926	20	—	—
120362 2005 <i>NK</i> ₈	16.0	X	329.29011	232.12847	137.95371	8.77283	0.1394536	0.26838678	2.3802833	20	10 13.7	18.2
120363 2005 <i>NU</i> ₁₇	13.8	X	302.64624	262.95710	77.95801	10.58886	0.3096930	0.12415568	3.9794676	20	5 29.8	19.1
120364 Stevecooley	15.3	X	131.23254	58.24965	314.07009	13.50752	0.1498463	0.22798293	2.6533798	20	2 2.0	18.9
120365 2005 <i>NP</i> ₄₈	16.0	X	77.18726	213.41126	136.79174	10.02335	0.2399854	0.28320321	2.2965220	20	—	—
120366 2005 <i>NC</i> ₅₆	15.3	X	359.10246	319.84922	87.32002	22.94417	0.2370871	0.27830613	2.3233833	20	—	—
120367 Grabow	16.4	X	149.20655	174.50411	167.62415	6.30907	0.2200488	0.29445725	2.2376280	20	1 12.1	19.6
120368 Philippcoulter	15.9	X	130.70919	129.86922	199.96229	12.57795	0.2732557	0.22367705	2.6877473	20	—	—
120369 2005 <i>NW</i> ₉₄	17.5	X	20.26234	172.27488	195.70376	2.27007	0.2060882	0.27422562	2.3463747	20	—	—
120370 2005 <i>OS</i> ₁	16.2	X	248.51599	269.43183	2.16508	20.63414	0.0699584	0.36995599	1.9217756	20	1 10.9	19.0
120371 2005 <i>OB</i> ₁₆	16.5	X	301.46403	235.80964	174.46110	2.29064	0.1787696	0.26767470	2.3845028	20	10 10.8	18.2
120372 2005 <i>PY</i>	16.1	X	295.47250	42.27555	0.82201	6.47383	0.1018923	0.26704566	2.3882459	20	9 25.7	18.6
120373 2005 <i>PA</i> ₂	15.2	X	194.52590	198.88518	148.15897	18.75956	0.2157363	0.23535755	2.5980687	20	3 4.7	19.6
120374 2005 <i>PL</i> ₂	15.4	X	341.37992	345.37266	357.35646	9.41722	0.2770381	0.26315086	2.4117531	20	9 28.8	16.4
120375 Kugel	16.7	X	79.28854	97.52905	229.92904	2.75953	0.2201965	0.27928683	2.3179412	20	—	—
120376 2005 <i>PY</i> ₆	15.9	X	325.77313	2.98016	54.23480	10.92145	0.1377902	0.27312602	2.3526681	20	12 14.3	18.1
120377 2005 <i>PW</i> ₁₄	15.5	X	306.77777	314.67209	50.91029	2.59862	0.1123740	0.19457596	2.9494651	20	8 10.4	19.0
120378 2005 <i>QL</i> ₉	16.3	X	147.54634	326.97757	12.49305	6.44231	0.1937627	0.22676117	2.6633214	20	1 15.9	20.5
120379 2005 <i>QO</i> ₉	15.0	X	249.73794	356.62245	315.88957	4.14808	0.1198613	0.17648281	3.1477563	20	3 17.7	19.8
120380 2005 <i>QP</i> ₁₀	16.3	X	355.80887	325.07673	46.43534	3.07495	0.2280125	0.26934895	2.3746113	20	12 16.3	18.6
120381 2005 <i>QQ</i> ₂₂	15.3	X	59.81104	242.58148	170.03662	15.47687	0.2734160	0.21992852	2.7182017	20	—	—
120382 2005 <i>QD</i> ₂₅	17.0	X	253.19848	281.98114	43.28691	3.46592	0.1080996	0.24315293	2.5422390	20	4 5.3	20.5
120383 2005 <i>QD</i> ₂₆	14.6	X	245.19117	168.97565	161.79412	8.87604	0.1780561	0.17593045	3.1543415	20	4 2.1	19.6
120384 2005 <i>QU</i> ₂₉	16.6	X	7.20537	166.40294	222.37047	2.00741	0.1751302	0.27422648	2.3463698	20	—	—
120385 2005 <i>QB</i> ₃₆	15.2	X	314.94260	127.01588	177.48950	9.85092	0.0721738	0.18395008	3.0619826	20	6 5.8	19.4
120386 2005 <i>QE</i> ₃₈	16.1	X	62.55424	248.15841	180.11942	14.12359	0.0339142	0.22490429	2.6779609	20	—	—
120387 2005 <i>QL</i> ₃₈	16.5	X	59.40491	89.07433	194.85250	1.83171	0.2061718	0.26918127	2.3755973	20	11 11.2	19.8
120388 2005 <i>QD</i> ₃₉	15.0	X	333.99905	314.51602	321.76531	9.28636	0.1107734	0.18802023	3.0176324	20	5 20.5	19.0
120389 2005 <i>QK</i> ₇₉	15.4	X	347.63597	122.84452	180.98221	9.23336	0.0567150	0.19123742	2.9836930	20	7 22.4	19.4
120390 2005 <i>QL</i> ₇₉	16.3	X	310.89340	40.79916	334.08383	6.21363	0.1399110	0.26224226	2.4173207	20	9 5.8	18.6
120391 2005 <i>QU</i> ₈₀	15.0	X	219.46735	332.57408	27.89296	13.19792	0.2266371	0.17648940	3.1476779	20	4 11.1	20.2
120392 2005 <i>QF</i> ₈₆	16.5	X	40.06068	62.10583	334.17070	5.04975	0.2153299	0.27695705	2.3309221	20	—	—
120393 2005 <i>QH</i> ₈₈	17.0	X	209.97848	203.87764								

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Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>
120401 2005 <i>RT</i> ₆	16.7	X	138.66302	254.45282	155.77455	7.77823	0.1290409	0.30001275	2.2099184	20	3 21.5	19.6
120402 2005 <i>RY</i> ₈	15.2	X	293.73969	157.38026	151.81097	2.93485	0.2005373	0.18132088	3.0915112	20	4 24.1	19.3
120403 2005 <i>RE</i> ₂₄	15.4	X	193.82840	356.42606	359.74319	13.30877	0.1845631	0.23340400	2.6125455	20	3 14.4	19.6
120404 2005 <i>RH</i> ₃₃	16.7	X	251.42195	218.92264	213.15729	2.03885	0.1612435	0.25782689	2.4448407	20	8 17.6	20.0
120405 Svyatylyivka	15.6	X	73.57720	48.11192	273.97547	7.53161	0.1445411	0.20952539	2.8074473	20	12 24.3	19.9
120406 2005 <i>SV</i> ₁₅	16.0	X	10.83768	326.13641	222.04946	3.87570	0.1876243	0.23701004	2.5859784	20	3 17.3	18.3
120407 2005 <i>SV</i> ₂₀	16.6	X	187.94140	234.45145	147.21529	4.87648	0.1062954	0.30369618	2.1920132	20	4 5.4	19.6
120408 2005 <i>SX</i> ₃₇	15.4	X	354.15186	134.10059	152.46722	1.92613	0.1902213	0.18881673	3.0091400	20	7 11.5	18.3
120409 2178 <i>P-L</i>	16.7	X	29.69756	316.11384	349.58020	6.28240	0.2228340	0.26359323	2.4090540	20	11 2.4	19.6
120410 2225 <i>P-L</i>	16.0	X	1.32992	103.60765	330.81893	6.62227	0.1004246	0.26688498	2.3892043	20	—	—
120411 2857 <i>P-L</i>	15.4	X	343.06276	91.42499	172.16868	5.47721	0.2414786	0.24293628	2.5437502	20	5 8.3	17.4
120412 3017 <i>P-L</i>	14.6	X	355.24629	173.93771	316.85708	13.00557	0.2261423	0.21924722	2.7238299	20	—	—
120413 4815 <i>P-L</i>	15.9	X	203.85630	29.88996	30.23481	3.45805	0.1254086	0.24251910	2.5466666	20	6 11.7	19.7
120414 4880 <i>P-L</i>	16.7	X	23.10459	286.24889	10.06626	11.01659	0.3221108	0.26345427	2.4090911	20	10 27.1	19.5
120415 6057 <i>P-L</i>	15.4	X	279.64146	70.10834	332.65403	4.08132	0.2337458	0.24479263	2.5308738	20	8 4.5	18.3
120416 6123 <i>P-L</i>	16.2	X	308.31414	191.96432	181.35982	12.73758	0.2321503	0.26213454	2.4179829	20	8 13.4	18.4
120417 6264 <i>P-L</i>	16.5	X	255.59178	324.79896	355.62706	2.00115	0.2352139	0.24182613	2.5515294	20	3 19.4	20.7
120418 6633 <i>P-L</i>	15.6	X	344.30945	239.73828	156.73864	3.36001	0.1784834	0.19861300	2.9093610	20	11 28.4	18.6
120419 2308 <i>T-1</i>	16.3	X	164.00606	219.53662	14.32800	7.20201	0.1690847	0.27166996	2.3610670	20	12 12.2	20.1
120420 4133 <i>T-1</i>	16.5	X	3.23543	96.60741	123.77482	2.52407	0.1215356	0.30236308	2.1984514	20	4 19.1	18.2
120421 1604 <i>T-2</i>	15.8	X	273.04501	2.29182	342.17611	7.33226	0.1971680	0.24781813	2.5102328	20	5 8.4	19.5
120422 2023 <i>T-2</i>	17.3	X	49.89846	165.26143	195.53829	7.91098	0.2184541	0.27726156	2.3292151	20	—	—
120423 2061 <i>T-2</i>	17.1	X	73.66966	208.75046	169.66517	0.16813	0.1399925	0.27939053	2.3173676	20	—	—
120424 2099 <i>T-2</i>	15.7	X	70.39330	59.92324	2.26560	10.70030	0.2036791	0.21760869	2.7374859	20	1 28.7	18.9
120425 2113 <i>T-2</i>	15.7	X	245.25716	252.69561	177.93015	1.94515	0.18242150	0.18427823	3.0583465	20	7 23.4	20.5
120426 3080 <i>T-2</i>	16.6	X	40.42863	312.54662	11.21083	6.05439	0.1543905	0.27529095	2.3403174	20	12 4.2	19.7
120427 1155 <i>T-3</i>	15.0	X	212.46374	43.34504	342.77676	10.88646	0.2790315	0.17594061	3.1542201	20	4 28.4	20.8
120428 2128 <i>T-3</i>	14.8	X	279.77366	90.84784	215.91503	7.79746	0.1201617	0.17681339	3.1438316	20	4 13.7	19.2
120429 2225 <i>T-3</i>	16.8	X	288.86656	116.99344	316.07542	3.32129	0.2155275	0.25225649	2.4807013	20	10 7.4	19.3
120430 2303 <i>T-3</i>	16.5	X	102.51058	161.42885	217.13671	5.82045	0.1838088	0.28395193	2.2924832	20	—	—
120431 2448 <i>T-3</i>	15.3	X	33.34745	98.19600	357.34158	4.86570	0.1383312	0.21407411	2.7675360	20	—	—
120432 2614 <i>T-3</i>	14.9	X	295.37693	278.89302	359.28839	8.26357	0.1096394	0.17543683	3.1602555	20	3 29.9	19.3
120433 3132 <i>T-3</i>	14.7	X	296.74946	307.64860	30.76364	16.17961	0.1097518	0.17878470	3.1206794	20	6 15.6	19.1
120434 3202 <i>T-3</i>	14.3	X	41.06613	196.07398	24.46429	24.22051	0.1388996	0.17775238	3.1327502	20	7 3.2	18.8
120435 3310 <i>T-3</i>	15.0	X	186.88703	57.30109	40.19016	4.86555	0.0824462	0.17701880	3.1413992	20	7 12.6	19.8
120436 4589 <i>T-3</i>	15.8	X	106.60579	341.03786	90.52130	4.70652	0.1801927	0.21752240	2.7382098	20	3 26.5	19.7
120437 5101 <i>T-3</i>	15.1	X	11.81887	346.82528	135.70619	10.15804	0.2383662	0.21398461	2.7683076	20	—	—
120438 1978 <i>NU</i>	15.8	X	141.22902	10.54911	285.10865	10.97642	0.2568878	0.26835643	2.3804627	20	—	—
120439 1978 <i>VJ</i> ₄	16.3	X	304.43725	170.19989	235.45814	4.02849	0.1845568	0.25646953	2.4534593	20	10 3.8	18.4
120440 1978 <i>VU</i> ₉	16.1	X	294.15465	13.87201	53.80895	3.90171	0.1605831	0.25688940	2.4507852	20	10 22.1	18.3
120441 1979 <i>MZ</i> ₇	17.1	X	232.84085	176.31517	160.16629	3.02472	0.1294948	0.28273637	2.2990492	20	3 20.0	20.8
120442 1981 <i>DW</i>	15.7	X	39.29851	266.01626	302.37216	8.63104	0.1158154	0.23032541	2.6357739	20	6 10.6	18.8
120443 1981 <i>DK</i> ₂	15.6	X	55.69914	223.22555	313.40240	6.50109	0.2667666	0.22975924	2.6401021	20	6 17.7	18.7
120444 1981 <i>EQ</i> ₁₃	15.3	X	71.20630	203.25626	337.27315	12.40540	0.2317247	0.23089455	2.6314408	20	7 12.2	19.0
120445 1981 <i>EU</i> ₁₆	16.4	X	6.64685	141.37505	325.58820	4.62574	0.1827593	0.27333248	2.3514833	20	—	—
120446 1981 <i>EF</i> ₂₁	15.9	X	189.67568	14.56972	169.31771	9.29646	0.0943487	0.23996167	2.5647289	20	11 9.1	19.7
120447 1981 <i>EP</i> ₃₂	15.8	X	221.85067	291.03403	344.48230	9.81646	0.2363259	0.27181179	2.6024456	20	—	—
120448 1981 <i>EO</i> ₄₃	15.1	X	140.40947	226.64586	350.13116	3.89203	0.0714022	0.18859191	3.0115310	20	10 17.5	19.8
120449 1981 <i>ED</i> ₄₄	16.0	X	24.35710	110.63392	342.97246	6.13342	0.0885413	0.27282878	2.3543766	20	—	—
120450 1982 <i>SV</i>	15.9	X	329.29182	244.83935	188.95382	21.82163	0.3675794	0.26210617	2.4181573	20	—	—
120451 1983 <i>QU</i>	17.3	X	78.83366	62.93585	327.03145	5.08292	0.1624936	0.27697065	2.3308458	20	—	—
120452 1988 <i>NA</i>	15.3	X	349.40611	81.57408	169.60892	30.23120	0.3816902	0.21447267	2.7641063	20	4 19.5	17.5
120453 1988 <i>RE</i> ₁₂	13.1	X	266.96951	162.96338	174.33308	15.28581	0.1388094	0.08346103	5.1857737	20	5 10.0	20.2
120454 1988 <i>SJ</i> ₂	12.6	X	307.59517	127.56371	169.23515	15.27514	0.0534331	0.08299534	5.2051538	20	5 21.8	19.5
120455 1989 <i>GF</i> ₂	15.6	X	8.47008	18.43417	217.87175	11.20452	0.1280057	0.22436411	2.6822575	20	5 28.1	18.5
120456 1989 <i>JB</i>	15.2	X	26.55530	138.81852	82.73511	25.84966	0.2328536	0.28768400	2.2726135	20	6 24.6	16.7
120457 1990 <i>QZ</i> ₂	15.7	X	82.91515	12.43818	352.78652	2.13695	0.2396729	0.27390651	2.3481968	20	—	—
120458 1990 <i>SN</i> ₅	16.2	X	142.72115	246.25822	65.15805	2.34045	0.2635077	0.27600080	2.3363030	20	—	—
120459 1990 <i>SQ</i> ₆	16.5	X	30.16145	203.44150	144.90541	4.42905	0.1950297	0.26755280	2.3852270	20	12 28.7	19.5
120460 Hambach	16.3	X	44.59888	358.06840	22.48467	3.38643	0.2442299	0.26963707	2.3729194	20	—	—
120461 1990 <i>TK</i> ₉	16.9	X	188.98551	10.93226	350.83141	5.53080	0.1860330	0.28246031	2.3005469	20	3 12.7	20.3
120462 Amanohashidate	15.8	X	16.06992	165.70535	207.16082	4.48354	0.2426339	0.26635142	2.3923940	20	—	—
120463 1991 <i>GQ</i> ₄	16.5	X	47.22434	0.99261	219.59534	1.67770	0.1377145	0.31017792	2.1613684	20	7 20.9	18.4
120464 1991 <i>PV</i> ₅	16.6	X	160.56210	197.23299	133.08380	4.12515	0.2227032	0.28956696	2.2627507	20	1 9.8	20.0
120465 1991 <i>TO</i> ₁₅	16.2	X	220.34030	333.73061	35.94110	0.55211	0.2744367	0.22657339	2.6647928	20	4 17.9	20.9
120466 1991 <i>VS</i> ₇	16.0	X	220.09984	259.25042	69.12334	4.52354	0.1888228	0.22302496	2.6929838	20	3 5.1	20.5
120467 1991 <i>VM</i> ₉	15.9	X	104.34595	265.23320	98.68604	2.83463	0.0917725	0.21373808	2.7704360	20	—	—
120468 1991 <i>VO</i> ₉	16.2	X	148.05170	224.41786	159.59789	2.73041	0.0799703	0.21966540	2.7203719	20	2 27.8	20.1
120469 1992 <i>DG</i> ₉	16.5	X	70.26765	251.71403	195.75559	3.52225	0.2291606	0.28156155	2.3054400	20	2 19.3	18.4
120470 1992 <i>DY</i> ₁₀	16.4	X	208.61964	299.05281	247.69491	3.95729	0.0217500	0.26703498	2.3883096	20	12 18.4	19.2
120471 1992 <i>EN</i> ₂	17.1	X	84.46138	311.65693	149.43459	3.49416	0.1621983	0.28318123	2.2966408	20	3 26.5	19.5
120472 1992 <i>ET</i> ₇	16.5	X	215.20805	83.78222	59.16215	5.52771	0.1578915	0.26404934	2.4062791	20	10 12.7	19.9
120473 1992 <i>EE</i> ₉	15.2	X	51.76306	162.01953	48.01068	3.50135	0.1039898	0.18332746	3.0689115	20	6 29.6	19.3
120474 1992 <i>EH</i>												

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Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>
120481 Johannwalter	16.8 ^m	X	199.13332	325.36341	337.31774	2.12401	0.1981542	0.26484312	2.4014686	20	1 11.6	20.8
120482 1992 TA	16.8	X	311.87899	80.74653	355.21653	25.99777	0.2891861	0.39167454	1.8500600	20	—	—
120483 1993 BW ₈	16.0	X	30.29493	136.15580	99.80825	3.56312	0.1464771	0.22822520	2.6519194	20	7 9.7	19.0
120484 1993 FR ₇	15.9	X	301.23884	88.31983	74.91356	3.96840	0.0778285	0.20993160	2.8038246	20	—	—
120485 1993 FW ₇	16.8	X	31.81950	90.98676	106.77058	3.13975	0.0951365	0.29445680	2.2376302	20	5 9.9	18.9
120486 1993 FG ₁₁	15.5	X	257.30301	121.56815	141.33332	5.56906	0.1229503	0.21357715	2.7718274	20	1 23.5	19.6
120487 1993 FP ₁₂	15.3	X	70.42533	309.38710	163.06574	7.63580	0.2472984	0.21997870	2.7177883	20	4 10.9	18.6
120488 1993 FZ ₁₆	16.0	X	70.23929	239.16373	175.75270	13.36584	0.1274500	0.22132727	2.7067372	20	5 6.3	19.6
120489 1993 FL ₁₉	15.8	X	70.53545	109.74122	161.61699	11.07119	0.1358809	0.23151033	2.6267725	20	10 26.3	19.7
120490 1993 FA ₂₄	16.3	X	316.91060	234.33828	289.00212	0.70323	0.1645791	0.21114397	2.7930814	20	—	—
120491 1993 FM ₂₉	16.5	X	34.21020	335.62855	297.96522	3.55751	0.1437915	0.30072016	2.2064513	20	9 18.6	18.7
120492 1993 FO ₃₀	16.4	X	145.84526	352.29964	259.64922	3.68898	0.1569264	0.27339323	2.3511349	20	12 19.4	19.9
120493 1993 FJ ₄₅	15.9	X	1.66134	51.10510	167.39356	3.71797	0.1145414	0.22040705	2.7142659	20	4 19.9	18.9
120494 1993 FZ ₄₅	15.9	X	27.87464	159.77106	356.19103	2.83487	0.0650075	0.21769210	2.7367866	20	3 7.3	19.2
120495 1993 FZ ₄₆	16.0	X	109.78043	125.34967	5.55590	3.65230	0.1120359	0.22417862	2.6837368	20	6 2.5	19.8
120496 1993 FB ₅₀	16.1	X	186.28865	129.87059	354.52295	9.14686	0.0648130	0.30330411	2.1939018	20	8 28.7	18.9
120497 1993 FF ₅₀	16.0	X	181.57496	320.22036	337.75513	2.00497	0.2115807	0.28109717	2.3079784	20	—	—
120498 1993 FD ₅₃	15.7	X	293.71558	156.01809	26.41132	7.35238	0.0342531	0.21092573	2.7950077	20	—	—
120499 1993 NA	16.6	X	238.89643	79.81240	193.49709	4.55786	0.1854302	0.27935607	2.3175581	20	1 6.8	20.4
120500 1993 OM	15.0	X	7.95890	124.65579	260.64785	9.15769	0.0634995	0.19205077	2.9752629	20	12 7.1	18.7
120501 1993 PA ₈	16.0	X	81.47135	63.13661	285.44411	3.69644	0.2515295	0.26692082	2.3889905	20	—	—
120502 1993 QD ₉	16.5	X	329.47664	22.26216	357.90261	4.66629	0.1891472	0.25726751	2.4483834	20	10 22.2	18.4
120503 1993 RW ₃	15.6	X	200.29882	50.15344	298.50513	11.13374	0.2690518	0.24254475	2.5464870	20	3 4.4	20.3
120504 1993 SS ₁₀	16.4	X	66.14123	54.21634	354.22992	3.17167	0.1781707	0.26846118	2.3798434	20	—	—
120505 1993 ST ₁₀	16.5	X	118.75122	180.78157	140.42787	0.99296	0.1786816	0.26748708	2.3856177	20	—	—
120506 1993 TO ₁	14.2	X	345.09865	350.69491	36.66355	25.04215	0.2112900	0.25743577	2.4473164	20	12 4.6	16.8
120507 1993 TK ₁₄	16.6	X	79.69790	219.63215	125.40098	1.35691	0.2204413	0.26508884	2.3999844	20	—	—
120508 1993 TC ₁₆	15.8	X	283.32324	267.81267	166.71052	4.11740	0.2449382	0.18117153	3.0932100	20	9 12.1	19.6
120509 1993 TJ ₁₆	16.1	X	289.85435	27.10326	19.94691	5.85527	0.0928474	0.25428187	2.4675111	20	9 22.2	18.8
120510 1993 TU ₁₆	15.4	X	282.21949	318.75116	53.18365	2.22814	0.1846586	0.17565049	3.1576923	20	6 29.9	19.8
120511 1993 TA ₂₀	15.7	X	220.08200	306.11332	96.73862	2.77484	0.0735541	0.24669708	2.5178318	20	6 11.1	19.0
120512 1993 TW ₂₀	16.8	X	128.10723	204.36846	124.65429	2.01012	0.2049073	0.26867571	2.3785764	20	—	—
120513 1993 TJ ₂₅	14.9	X	333.24150	335.56693	36.15586	12.04963	0.1458166	0.18113652	3.0936086	20	10 2.1	18.5
120514 1993 TY ₂₆	16.2	X	49.71800	229.53444	77.14305	3.92266	0.2242682	0.25905754	2.4370918	20	11 29.9	19.5
120515 1993 TX ₃₁	16.7	X	13.69177	244.19434	140.09323	3.30838	0.1898558	0.26052527	2.4279299	20	—	—
120516 1993 TY ₃₃	16.4	X	29.79892	268.45864	170.13819	5.00595	0.1823851	0.26621795	2.3931935	20	—	—
120517 1993 UU ₈	14.8	X	73.42921	275.09432	74.11132	10.87775	0.0439858	0.18852418	3.0122523	20	—	—
120518 1993 VC ₇	16.1	X	319.78067	46.50153	3.03876	4.87402	0.1993000	0.25581155	2.4576646	20	11 14.8	18.1
120519 1994 AM ₇	15.8	X	221.72146	235.19250	114.34924	13.37074	0.1633742	0.23584391	2.5944956	20	4 5.3	20.2
120520 1994 AW ₁₄	16.4	X	79.81888	295.55288	316.60762	1.99203	0.0811633	0.24575658	2.5242514	20	10 3.5	19.8
120521 1994 CY ₁₁	15.9	X	184.36810	92.06939	12.22773	3.85128	0.2248960	0.24056856	2.5604137	20	7 17.8	20.3
120522 1994 NU ₂	17.0	X	22.55744	42.26751	260.34857	1.42438	0.2232645	0.30792697	2.1718887	20	10 30.7	19.1
120523 1994 PR ₄	15.4	X	290.98942	28.64379	309.17418	4.40595	0.2134329	0.18456879	3.0551359	20	5 22.9	19.5
120524 1994 PW ₄	15.7	X	230.39503	31.83071	331.88800	4.36457	0.1688098	0.18021747	3.1041173	20	4 24.5	20.7
120525 1994 PV ₆	16.6	X	303.23244	29.89746	319.71717	3.67742	0.1776974	0.30111444	2.2045248	20	7 10.9	18.2
120526 1994 PB ₇	17.1	X	90.68448	12.49664	300.81751	1.41663	0.2125559	0.27607668	2.3358748	20	—	—
120527 1994 PZ ₇	16.3	X	67.03028	86.19715	334.15027	5.29664	0.1438663	0.28246377	2.3005281	20	—	—
120528 1994 PD ₁₂	15.7	X	192.15656	180.42469	156.54594	4.95687	0.1705014	0.21186168	2.7867699	20	2 18.5	20.1
120529 1994 PH ₂₀	16.1	X	190.01999	336.32334	333.05777	3.03427	0.1666337	0.28580252	2.2825765	20	1 8.0	19.6
120530 1994 PJ ₂₁	16.8	X	51.85294	350.57056	352.54873	2.34664	0.2406880	0.27366483	2.3495790	20	—	—
120531 1994 PV ₂₆	16.5	X	23.47559	357.05373	5.70827	2.98009	0.2233352	0.27234906	2.3571404	20	—	—
120532 1994 PX ₃₈	17.2	X	262.98712	183.70569	150.90813	3.73101	0.1897108	0.29605264	2.2295819	20	4 16.9	20.3
120533 1994 PM ₃₉	17.0	X	5.93173	340.88467	307.97516	3.07882	0.1119709	0.30292120	2.1957502	20	8 18.6	18.9
120534 1994 RS ₅	17.2	X	113.77155	75.78232	245.02303	1.42450	0.1219652	0.27795021	2.3253663	20	—	—
120535 1994 RO ₆	16.1	X	47.05729	180.23878	304.18923	2.55127	0.0399629	0.20985803	2.8044799	20	2 21.7	19.6
120536 1994 RV ₁₀	16.4	X	310.40714	174.85874	354.10754	6.98525	0.0496904	0.28099502	2.3085377	20	—	—
120537 1994 RO ₂₉	15.3	X	81.94957	173.19445	161.65779	2.33785	0.0624409	0.20014091	2.8945350	20	—	—
120538 1994 SP ₅	15.6	X	167.55112	35.11904	172.79025	4.01164	0.0702888	0.19329594	2.9624718	20	11 7.2	20.0
120539 1994 SQ ₅	15.6	X	24.54532	137.34676	20.57117	4.13740	0.0391089	0.21040618	2.7996069	20	3 6.5	19.1
120540 1994 SK ₁₃	15.0	X	11.40066	65.14673	262.27768	8.72764	0.1087753	0.18951395	3.0017551	20	9 29.3	18.9
120541 1994 TX ₃	17.1	X	54.33159	278.13725	190.14060	3.85223	0.1710836	0.28330047	2.2959963	20	2 8.8	19.0
120542 1994 TX ₈	16.5	X	316.44867	348.21077	197.90771	2.26100	0.0947581	0.28113199	2.3078787	20	—	—
120543 1994 UC ₇	16.8	X	358.72651	156.50469	346.83894	1.99283	0.1692259	0.27908883	2.3190373	20	—	—
120544 1994 WK	15.8	X	233.71921	316.76441	65.42171	22.81739	0.0940988	0.36882066	1.9257174	20	5 27.7	17.8
120545 1994 WS	16.0	X	315.80166	297.95222	49.42117	1.98310	0.2181782	0.29822142	2.2187591	20	7 30.2	17.1
120546 1994 WJ ₈	14.9	X	73.00322	210.83484	105.11371	10.14869	0.0975652	0.19100070	2.9861577	20	12 8.4	19.3
120547 1994 YJ ₃	16.8	X	290.06770	159.15366	310.08765	1.93974	0.1374490	0.26424566	2.4050871	20	12 19.1	18.9
120548 1995 BO	15.8	X	291.68032	213.93059	312.77759	10.19440	0.1776074	0.26749213	2.3855876	20	—	—
120549 1995 BL ₁₀	16.7	X	272.88765	27.26551	30.59940	1.54520	0.1738112	0.25662361	2.4524772	20	8 27.7	19.6
120550 1995 BS ₁₀	16.3	X	340.61880	185.84816	106.75076	4.21322	0.1125746	0.28667984	2.2779173	20	7 1.0	18.0
120551 1995 BX ₁₀	14.8	X	126.21394	159.23544	124.07063	11.81508	0.1262325	0.18405682	3.0607987	20	12 23.0	19.8
120552 1995 CY ₂	14.8	X	271.08080	326.56568	171.88995	3.41948	0.0623242	0.18575383	3.0421283	20	12 11.9	18.9
120553 1995 CZ	15.3	X	316.93867	233.77751	156.71763	5.39652	0.2435478	0.18094625	3.0957769	20	9 14.6	18.4
120554 1995 CW ₅	15.0	X	298.09730	250.88066	147.24537	10.56167	0.2028303	0.17914639	3.1164776	20	8 24.9	18.7
120555 1995 CV ₈	17.2	X	93.24366									

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>
120561 1995 <i>EJ</i> ₅	15.1	X	29.55788	177.45625	157.20737	9.32112	0.1259121	0.17642496	3.1484444	20	11 10.9	19.4
120562 1995 <i>FP</i> ₄	16.3	X	151.96181	222.76633	96.86188	2.32664	0.1963525	0.26586374	2.3953187	20	—	—
120563 1995 <i>FY</i> ₄	15.9	X	178.52809	296.72474	26.28517	4.52303	0.2980701	0.26836113	2.3804349	20	1 24.3	20.1
120564 1995 <i>FD</i> ₅	16.6	X	290.46474	39.10657	44.88502	2.79340	0.1477274	0.25867830	2.4394732	20	11 9.4	18.7
120565 1995 <i>FX</i> ₅	16.1	X	324.59618	140.39450	156.54914	6.05227	0.0893290	0.24353004	2.5396138	20	6 8.7	19.1
120566 1995 <i>FB</i> ₆	17.1	X	265.10818	100.31327	40.57884	1.91786	0.1271054	0.26095261	2.4252785	20	12 19.6	19.5
120567 1995 <i>FU</i> ₆	15.6	X	202.56124	21.75310	76.05202	2.63250	0.1244949	0.17145509	3.2089957	20	7 26.6	20.6
120568 1995 <i>FX</i> ₁₂	16.3	X	118.02187	120.98538	184.46347	1.80673	0.0708264	0.25965413	2.4333573	20	—	—
120569 1995 Huangrunqian	14.7	X	179.52416	36.26709	143.81319	11.32639	0.1767535	0.17728237	3.1382847	20	10 13.2	20.0
120570 1995 <i>GK</i> ₂	15.7	X	77.50647	132.24484	149.82903	5.24802	0.1490674	0.17272725	3.1932198	20	11 6.4	20.6
120571 1995 <i>HF</i> ₁	17.0	X	285.20274	333.79162	125.97859	4.08585	0.1370955	0.25737859	2.4476789	20	11 24.7	19.5
120572 1995 <i>MQ</i> ₄	15.7	X	23.41700	287.40417	265.14149	9.26485	0.0382541	0.22812979	2.6526588	20	4 12.9	19.2
120573 1995 <i>MU</i> ₇	16.5	X	206.36944	69.92496	173.71037	6.29590	0.0795791	0.25934708	2.4352776	20	—	—
120574 1995 <i>OB</i> ₁₀	17.5	X	343.40215	214.06519	96.01248	1.97039	0.1843806	0.31570387	2.1360731	20	8 13.1	18.3
120575 1995 <i>QD</i>	15.8	X	79.18659	210.05146	169.93807	10.14025	0.1834208	0.21119260	2.7926526	20	—	—
120576 1995 <i>QK</i> ₂	15.2	X	274.94628	333.27403	345.57606	13.63472	0.2398312	0.22858054	2.6491703	20	3 31.9	19.4
120577 1995 <i>QU</i> ₅	16.4	X	96.68047	334.06680	300.57595	10.00000	0.2265178	0.24615317	2.5215394	20	11 30.7	20.7
120578 1995 <i>QV</i> ₁₂	16.1	X	153.93007	63.78601	340.39057	8.27171	0.2578752	0.21926411	2.7236901	20	4 7.8	20.9
120579 1995 <i>QB</i> ₁₅	16.2	X	141.30417	4.38082	181.62783	7.90510	0.0892134	0.24003686	2.5641932	20	9 18.2	19.8
120580 1995 <i>SF</i>	17.2	X	253.37605	186.48825	206.43563	1.53813	0.1740022	0.31000040	2.1621934	20	6 27.4	19.9
120581 1995 <i>SN</i> ₇	16.4	X	24.23465	277.04736	307.76198	0.44699	0.0263544	0.22828878	2.6514269	20	5 31.7	19.5
120582 1995 <i>SB</i> ₁₂	15.8	X	328.83242	85.65692	181.99508	3.11970	0.0672319	0.22749288	2.6576075	20	5 7.1	19.0
120583 1995 <i>SS</i> ₁₅	15.9	X	248.07781	33.52025	185.58110	3.51891	0.0792533	0.21295026	2.7772646	20	—	—
120584 1995 <i>SU</i> ₁₅	15.7	X	160.12463	41.62264	213.51526	0.74759	0.1033308	0.24764626	2.5113941	20	—	—
120585 1995 <i>SA</i> ₂₄	15.9	X	51.85485	347.58291	191.90828	3.63507	0.0750679	0.21963879	2.7205916	20	3 22.9	19.1
120586 1995 <i>SE</i> ₂₅	16.0	X	104.22816	327.11605	127.85107	3.14311	0.0367966	0.22054428	2.7131399	20	3 31.8	19.7
120587 1995 <i>SM</i> ₃₁	15.1	X	64.67797	322.02202	281.24873	11.93154	0.0746334	0.23714167	2.5850213	20	8 25.7	18.8
120588 1995 <i>SK</i> ₃₄	15.7	X	241.54472	325.11762	357.83130	13.28301	0.0253674	0.22305184	2.6927674	20	3 27.2	19.4
120589 1995 <i>SP</i> ₃₄	16.3	X	299.35560	290.64740	159.37616	2.39001	0.0334302	0.20301830	2.8671204	20	11 26.8	20.2
120590 1995 <i>ST</i> ₄₂	15.9	X	139.12942	343.10518	51.61236	3.11603	0.0753008	0.21784622	2.7354957	20	3 3.3	19.7
120591 1995 <i>SE</i> ₅₁	15.7	X	22.75622	285.55830	222.68265	1.52245	0.0240780	0.21667699	2.7453277	20	2 17.6	19.3
120592 1995 <i>SM</i> ₅₂	16.0	X	218.93793	34.53013	209.86783	3.08356	0.0417473	0.20956900	2.8070578	20	—	—
120593 1995 <i>SR</i> ₆₂	16.4	X	7.52593	164.01591	53.79295	2.56416	0.0386127	0.22422628	2.6833565	20	4 28.4	19.8
120594 1995 <i>SD</i> ₇₂	16.2	X	216.08381	317.13791	15.70085	2.57158	0.0781434	0.21963785	2.7205994	20	3 9.1	20.3
120595 1995 <i>TK</i> ₆	16.0	X	75.75214	119.18766	23.00253	9.22932	0.0792241	0.21978717	2.7193670	20	4 28.6	19.6
120596 1995 <i>UM</i> ₁₂	15.8	X	288.10140	303.57687	4.27293	2.16852	0.1257062	0.22545831	2.6735720	20	4 22.4	19.2
120597 1995 <i>UW</i> ₁₄	15.9	X	152.77653	70.41287	250.15994	2.99764	0.0950221	0.20992051	2.8039233	20	—	—
120598 1995 <i>UU</i> ₁₇	16.1	X	146.36732	62.39398	358.41777	8.51941	0.1449613	0.22072899	2.7116260	20	4 15.1	20.3
120599 1995 <i>UN</i> ₃₅	16.0	X	66.80410	22.86987	41.10507	13.97448	0.2133986	0.21027444	2.8007761	20	1 28.8	19.4
120600 1995 <i>UE</i> ₅₆	17.1	X	263.98123	34.33782	291.99898	1.48742	0.0907478	0.30329822	2.1939302	20	4 16.7	19.8
120601 1995 <i>UN</i> ₇₃	16.8	X	209.90693	249.94506	58.87629	6.38168	0.2169071	0.29753594	2.2221656	20	1 25.9	20.5
120602 1995 <i>VZ</i> ₁	15.6	X	165.94655	340.23979	65.61535	5.89342	0.1120943	0.21933254	2.7231235	20	4 18.4	19.8
120603 1995 <i>VN</i> ₄	16.3	X	223.23571	257.96122	79.17038	4.82825	0.2816051	0.22193429	2.7017994	20	3 15.1	21.1
120604 1995 <i>VF</i> ₇	16.4	X	310.36134	165.73948	73.27015	3.16986	0.1096814	0.29606528	2.2295184	20	2 16.4	18.9
120605 1995 <i>VX</i> ₇	16.0	X	8.15716	95.50444	62.61395	1.11529	0.0110452	0.21324514	2.7747037	20	2 12.8	19.6
120606 1995 <i>VH</i> ₁₁	15.6	X	265.69280	203.31915	136.76468	3.78550	0.0910971	0.22480150	2.6787771	20	5 13.3	19.2
120607 1995 <i>VH</i> ₁₇	16.5	X	188.62531	234.88296	52.89562	8.03813	0.1272413	0.28929289	2.2641796	20	—	—
120608 1995 <i>VW</i> ₁₁	15.5	X	204.23095	143.10740	96.46317	7.11807	0.0194694	0.20397473	2.8581508	20	—	—
120609 1995 <i>VW</i> ₁₂	15.8	X	314.49596	176.56647	144.44097	4.07669	0.1597300	0.22741934	2.6581804	20	6 16.2	18.8
120610 1995 <i>WF</i> ₁₅	17.8	X	73.17521	21.46504	239.01004	1.21116	0.1214958	0.31565084	2.1363123	20	10 24.0	20.5
120611 1995 <i>WB</i> ₁₇	16.3	X	109.41299	127.96125	321.81210	2.41393	0.0599544	0.21809253	2.7334357	20	4 1.7	19.9
120612 1995 <i>WF</i> ₁₈	16.8	X	267.22017	107.70450	284.60662	1.26167	0.1473896	0.30969197	2.1636288	20	7 20.9	18.8
120613 1995 <i>WV</i> ₁₉	15.5	X	43.52943	312.34915	158.99222	4.22107	0.0663152	0.21123413	2.7922866	20	2 1.4	18.8
120614 1995 <i>WZ</i> ₂₄	16.5	X	100.67210	35.51568	262.76844	6.21033	0.1192409	0.28128301	2.3069617	20	—	—
120615 1995 <i>WO</i> ₂₇	15.6	X	167.46511	16.06873	30.21407	3.76801	0.0755375	0.22090862	2.7101559	20	4 16.9	19.6
120616 1995 <i>WE</i> ₃₃	15.5	X	127.64877	288.03638	152.56987	3.71640	0.1595336	0.21852256	2.7298484	20	4 26.0	19.6
120617 1995 <i>XE</i> ₄	15.8	X	36.06474	18.60484	108.88443	5.89073	0.0760450	0.21156307	2.7893915	20	2 13.6	19.1
120618 1995 <i>YD</i> ₅	14.0	X	71.68468	260.05790	84.70252	3.91756	0.2716114	0.12486419	3.9643997	20	—	—
120619 1995 <i>YU</i> ₁₀	16.4	X	65.77885	153.63270	273.51275	5.22131	0.1529101	0.28610879	2.2809473	20	—	—
120620 1995 <i>YT</i> ₂₀	15.7	X	308.48961	253.87821	147.64438	3.39883	0.2340311	0.18985410	2.9981687	20	9 15.6	18.8
120621 1996 <i>AS</i> ₁₃	15.2	X	239.70287	289.05615	116.41222	10.45863	0.2087653	0.17979309	3.1089999	20	6 21.8	20.1
120622 1996 <i>AD</i> ₁₄	16.1	X	107.83708	344.88628	4.57945	7.01181	0.1364398	0.27907147	2.3191335	20	—	—
120623 1996 <i>BM</i> ₆	16.7	X	26.24821	318.11490	28.45214	3.01892	0.2532617	0.27320160	2.3522342	20	12 31.7	19.8
120624 1996 <i>EM</i> ₂	14.9	X	308.11081	120.05167	315.54399	10.11920	0.0300012	0.18945210	3.0024085	20	11 13.7	19.2
120625 1996 <i>ES</i> ₆	16.5	X	0.03666	163.75314	350.51300	5.61553	0.0990301	0.28334801	2.2957395	20	1 6.8	18.9
120626 1996 <i>EE</i> ₈	15.1	X	99.59008	333.68910	357.48739	11.15179	0.0977094	0.19125193	2.98			

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>
120641 1996 PH ₄	15.9 ^m	X	234.39470	85.86156	310.31319	2.92984	0.2530694	0.23903119	2.5713804	20	6 1.2	20.0
120642 1996 PY ₅	16.6	X	190.24151	181.88409	125.50649	2.10468	0.1915596	0.26906618	2.3762747	20	1 8.7	20.4
120643 Rudimandl	16.5	X	112.72985	34.62934	317.05855	1.14536	0.2439929	0.26180864	2.4199890	20	—	—
120644 1996 RM ₃	15.2	X	200.18176	34.15229	358.01572	6.91048	0.3694609	0.23346437	2.6120950	20	4 26.5	20.3
120645 1996 RA ₁₀	16.8	X	344.39656	251.57050	40.33040	1.65052	0.0798263	0.24205989	2.5498864	20	7 5.7	19.6
120646 1996 RE ₁₇	16.4	X	202.76810	255.62317	358.18031	2.06932	0.1854967	0.26348507	2.4097133	20	—	—
120647 1996 SZ ₃	15.8	X	229.60726	311.83487	7.51560	4.06979	0.2658066	0.23194698	2.6234748	20	2 26.5	20.4
120648 1996 SE ₄	15.3	X	269.04014	187.41432	237.65764	10.19515	0.1114332	0.24129538	2.5552695	20	9 3.3	18.8
120649 1996 TZ ₃	16.2	X	168.23123	260.75755	62.15283	3.11146	0.1921963	0.26512099	2.3997904	20	1 8.9	19.9
120650 1996 TV ₇	15.1	X	89.52804	161.16604	33.69210	13.38226	0.0988018	0.23825935	2.5769307	20	8 8.1	18.9
120651 1996 TA ₁₀	15.7	X	261.38405	110.46076	199.34937	3.89146	0.1887254	0.23289864	2.6163233	20	3 16.0	19.7
120652 1996 TF ₁₆	16.2	X	242.80577	238.28682	258.25604	5.15096	0.0843161	0.25135576	2.4866242	20	11 13.3	19.4
120653 1996 TB ₁₉	15.4	X	331.35852	168.78041	225.44063	2.41817	0.1729035	0.24702219	2.5156221	20	11 14.9	17.6
120654 1996 TU ₂₆	16.0	X	97.15772	358.29523	16.04679	4.32151	0.0378693	0.26080925	2.4261671	20	—	—
120655 1996 TZ ₂₉	16.0	X	12.21488	7.44185	200.75337	0.97495	0.1431579	0.22925795	2.6439492	20	4 22.9	18.4
120656 1996 TV ₄₅	17.0	X	268.86481	15.10140	31.44176	2.10899	0.0803306	0.24071414	2.5593812	20	8 19.3	20.1
120657 1996 UP ₂	16.4	X	152.22853	134.32632	37.48218	0.27413	0.0689747	0.23385647	2.6091744	20	6 23.6	20.1
120658 1996 UQ ₂	16.7	X	215.86670	275.15175	217.80330	8.93000	0.1329615	0.28487466	2.2875302	20	10 2.2	19.8
120659 1996 UX ₂	16.1	X	13.60715	64.29125	305.69210	4.10666	0.2064959	0.21024687	2.8010209	20	12 20.5	19.4
120660 1996 VA	15.8	X	343.36448	85.98496	12.57129	5.99047	0.1849349	0.21366704	2.7710500	20	—	—
120661 1996 VZ ₂	15.5	X	115.68801	274.16763	49.91991	9.63828	0.1645361	0.21487184	2.7606820	20	—	—
120662 1996 VK ₉	13.8	X	345.67659	318.84876	97.79741	9.84861	0.2573028	0.12427237	3.9769761	20	12 5.3	18.0
120663 1996 VN ₁₅	16.0	X	29.34197	345.19219	75.32869	1.58107	0.0588992	0.21388802	2.7691410	20	—	—
120664 1996 VR ₁₅	16.2	X	251.81135	3.36848	62.98739	2.23796	0.1440399	0.23988159	2.5652996	20	8 12.9	19.6
120665 1996 XT	15.4	X	96.88114	312.60133	66.88433	10.01583	0.1970473	0.21730259	2.7400561	20	1 9.2	18.9
120666 1996 XL ₄	15.8	X	222.82118	115.02183	269.16183	10.04367	0.3123359	0.23379746	2.6096135	20	5 3.0	20.6
120667 1996 XB ₈	15.3	X	48.96618	149.59663	84.89707	9.87564	0.0399306	0.19310341	2.9644406	20	7 20.4	19.3
120668 1996 XM ₈	16.6	X	147.17739	320.29946	356.49097	6.31665	0.1260742	0.25883897	2.4384636	20	—	—
120669 1996 XT ₁₃	16.1	X	347.33192	180.29188	59.70389	2.74606	0.0103951	0.22376873	2.6870131	20	4 30.6	19.7
120670 1996 XM ₂₁	15.6	X	135.93796	178.12955	3.68979	6.37379	0.1390911	0.23837374	2.5761063	20	9 10.1	19.5
120671 1996 XT ₂₅	14.8	X	165.41360	283.18659	75.14842	13.74753	0.2057926	0.22344895	2.6895761	20	2 29.0	19.5
120672 1997 AK	16.2	X	129.32940	173.43858	322.02119	2.17569	0.2699767	0.22662901	2.6643568	20	7 12.8	20.7
120673 1997 AA ₆	15.4	X	236.44727	124.00590	263.15293	11.61471	0.1701111	0.23448361	2.6045201	20	5 30.1	19.5
120674 1997 AV ₇	16.1	X	68.05832	180.64500	275.52207	3.25103	0.0649381	0.21572231	2.7534214	20	2 15.7	19.6
120675 1997 AO ₁₀	16.0	X	18.24704	265.94170	123.54793	3.14890	0.0202243	0.20300383	2.8672566	20	12 23.3	19.9
120676 1997 AO ₁₆	15.8	X	155.96396	147.18809	251.10627	13.10739	0.1790416	0.22118667	2.7078841	20	3 26.8	20.4
120677 1997 AW ₂₀	16.6	X	35.55041	325.37362	285.32194	2.38035	0.1283255	0.31190867	2.1533655	20	8 16.1	18.6
120678 1997 BB ₄	15.7	X	173.35303	128.93516	313.13544	3.29794	0.0250026	0.22679554	2.6630524	20	6 7.8	19.4
120679 1997 BW ₄	15.7	X	88.52981	327.45577	107.10915	11.40553	0.2764381	0.21791734	2.7349004	20	3 25.4	19.6
120680 1997 BT ₅	15.5	X	326.45975	150.23807	333.03639	1.32118	0.0336111	0.20495421	2.8490374	20	—	—
120681 1997 BB ₆	15.5	X	295.45588	307.10507	312.36464	9.79802	0.0173290	0.21782122	2.7357050	20	3 12.8	19.3
120682 1997 CZ ₁	15.1	X	38.11431	242.24814	323.30148	12.10103	0.2947752	0.21971292	2.7199796	20	7 5.7	18.0
120683 1997 CJ ₆	15.7	X	80.69329	250.82345	145.15130	3.44761	0.0993664	0.21198468	2.7856918	20	—	—
120684 1997 CA ₉	16.4	X	135.68824	85.17808	332.43791	6.41702	0.2278975	0.21998203	2.7177609	20	4 7.4	20.9
120685 1997 CM ₉	15.9	X	148.95868	45.83244	338.12483	8.55300	0.2104029	0.21682136	2.7441089	20	3 9.9	20.4
120686 1997 CY ₁₀	16.9	X	7.33779	306.27043	307.98018	1.25313	0.0633568	0.31087600	2.1581316	20	6 21.3	18.6
120687 1997 CJ ₁₁	16.0	X	41.58056	286.65738	126.53772	9.81776	0.1587148	0.20940934	2.8084844	20	—	—
120688 1997 CM ₂₃	16.2	X	28.91584	322.89202	311.16966	3.63508	0.0726745	0.31584253	2.1354479	20	9 1.4	18.2
120689 1997 EG ₅	16.3	X	18.97293	31.69986	185.37070	1.04753	0.1066500	0.21822724	2.7323106	20	5 18.1	19.4
120690 1997 EE ₉	15.6	X	289.06967	331.00116	4.36894	12.50180	0.1084356	0.22148734	2.7054330	20	5 31.4	19.3
120691 1997 EZ ₂₈	16.0	X	218.40124	163.62205	16.30223	1.74208	0.0374705	0.19563180	2.9388432	20	12 2.3	20.1
120692 1997 EA ₃₇	15.2	X	342.30154	69.21910	131.76224	11.89731	0.2213915	0.21427663	2.7657920	20	2 8.2	18.2
120693 1997 GN ₁	15.8	X	97.78727	128.90518	356.33724	5.39380	0.0770262	0.21726237	2.7403942	20	5 5.1	19.6
120694 1997 GV ₅	15.0	X	34.41467	195.65682	35.13758	9.24132	0.1477387	0.21836874	2.7311302	20	7 10.4	18.3
120695 1997 GU ₄₀	17.0	X	7.75511	213.79316	65.34101	3.12091	0.1533669	0.30500835	2.1857219	20	8 14.0	18.5
120696 1997 HH	15.7	X	328.89656	282.33581	42.62784	1.27703	0.1811421	0.17753707	3.1352825	20	7 13.8	19.1
120697 1997 HP ₁	15.2	X	187.19175	226.98970	198.16128	11.72625	0.0514651	0.17803261	3.1294620	20	6 3.2	20.0
120698 1997 HG ₁₃	16.3	X	95.47816	30.12867	204.89571	2.09927	0.1441986	0.26872035	2.3783130	20	10 10.1	19.6
120699 1997 HM ₁₄	15.8	X	228.00606	326.11214	13.92887	3.54885	0.1000298	0.21388890	2.7691334	20	3 29.4	20.0
120700 1997 HO ₁₆	15.8	X	53.53673	269.47157	195.01943	3.78558	0.0673585	0.20958444	2.8069199	20	2 6.9	19.4
120701 1997 HR ₁₆	16.1	X	75.42766	332.56007	42.67862	2.55787	0.0303719	0.19864720	2.9090270	20	—	—
120702 1997 JC ₅	14.9	X	207.70021	264.94396	177.87626	16.39051	0.1009708	0.17731387	3.1379131	20	7 12.8	20.0
120703 1997 JM ₁₃	16.9	X	290.73180	110.85634	112.41176	1.00438	0.1447665	0.29052368	2.2577804	20	—	—
120704 1997 KO ₃	15.1	X	322.55415	30.82386	92.57489	8.82035	0.0866240	0.19721164	2.9231270	20	—	—
120705 1997 LH ₁₄	16.3	X	145.99283	61.15801	136.66199	2.85317	0.1497941	0.27067276	2.3668624	20	10 14.1	19.9
120706 1997 MD ₁	14.7	X	90.77041	31.89601	178.19836	9.00881	0.0928787	0.17922329	3.1155860	20	8 15.9	19.3
120707 1997 ML ₁	14.8	X	6.79131	206.47420	108.85084	14.09854	0.2102712	0.17781004	3.1320729	20	9 25.5	18.5
120708 1997 MA ₂	16.5	X	72.26829	214.20584	135.88800	3.57252	0.3050976	0.27440502	2.3474054	20	—	—
120709 1997 MC ₅	16.1	X	116.68969	79.57666	245.27993	3.53218	0.1712866	0.27579217	2.3374811	20	—	—
120710 1997 MX ₈	16.6	X	83.20693	51.99578	296.55693	6.30154	0.1242051	0.27222265	2.3578701	20	—	—
120711 1997 MC ₉	15.2	X	66.82383	139.85803	140.72780	7.70110	0.0666234	0.17713490	3.1400263	20	10 14.9	19.7
120712 1997 MH ₉	15.4	X	354.30087	32.12201	297.30029	5.04060	0.1724215	0.17279308	3.1924087	20	9 4.4	19.3
120713 1997 QO ₂	15.9	X	188.63363	198.08827	143.37273	23.91610	0.1703283	0.28327280	2.2961458	20	2 15.8	19.4
120714 1997 SQ ₃	16.3	X	231.50432	335.90568	5.71710	8.57641	0.1460264	0.28685561	2.2769866	20	3 27.1	19.6
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ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>
120721 1997 SP ₁₃	16.4	X	210.98208	136.21604	275.32291	3.31998	0.2463585	0.24543115	2.5264823	20	6 1.5	20.6
120722 1997 SV ₁₃	15.2	X	83.00372	291.94062	321.66360	5.01820	0.0750968	0.16995657	3.2278307	20	9 26.2	20.0
120723 1997 SA ₁₆	15.6	X	145.03239	110.81144	329.94725	1.21542	0.1253104	0.23983960	2.5655990	20	5 8.8	19.5
120724 1997 SV ₁₆	17.1	X	298.66968	239.80510	219.21589	1.67217	0.1683137	0.26313360	2.4118586	20	12 19.2	18.9
120725 1997 SL ₁₈	16.7	X	42.88854	92.87703	348.55537	5.98497	0.1706933	0.27439022	2.3454363	20	—	—
120726 1997 SR ₃₀	16.0	X	60.18554	8.89743	2.81694	2.32779	0.2250815	0.26874851	2.3781469	20	—	—
120727 1997 SF ₃₂	14.7	X	341.90346	132.34572	196.76057	5.60447	0.0430006	0.16849287	3.2464972	20	8 14.5	19.1
120728 1997 SG ₃₂	16.0	X	354.40120	230.33629	143.53679	4.07793	0.0985889	0.26127670	2.4232726	20	11 26.1	18.7
120729 1997 SH ₃₂	16.5	X	338.15720	39.10270	96.12392	3.03936	0.1439042	0.27254153	2.3560306	20	—	—
120730 Zhouyouyuan	17.0	X	110.06020	144.04777	230.21119	1.44072	0.2355015	0.27614262	2.3355030	20	1 14.2	19.6
120731 1997 TY ₂	16.2	X	297.09934	54.59258	348.50833	2.06801	0.1925255	0.25542601	2.4601371	20	9 14.1	18.4
120732 1997 TS ₃	16.0	X	225.80143	328.64052	10.96947	5.28948	0.1655841	0.24158563	2.5532224	20	3 21.6	20.2
120733 1997 TN ₅	15.8	X	318.61764	344.11371	82.14243	2.45313	0.1605843	0.26100099	2.4249788	20	12 11.1	17.7
120734 1997 TH ₉	16.5	X	208.56709	216.18768	1.89603	3.33057	0.0990067	0.26619072	2.3933567	20	—	—
120735 Ogawakiyoshi	15.7	X	351.57543	131.48937	245.38718	0.34001	0.1999052	0.26062859	2.4272882	20	12 8.7	17.7
120736 1997 TA ₁₇	15.3	X	215.20332	73.89982	306.18719	5.42733	0.1572735	0.24358566	2.5392273	20	4 28.7	19.5
120737 1997 TL ₁₇	15.4	X	206.31821	183.48158	233.84419	11.57585	0.1553095	0.24489198	2.5301892	20	6 9.3	19.5
120738 1997 TO ₁₇	16.5	X	217.00610	224.10218	161.49655	6.15752	0.0998159	0.28927066	2.2642956	20	5 14.3	19.6
120739 1997 TE ₂₆	15.2	X	65.48070	47.45287	264.99177	3.10086	0.2140239	0.26341092	2.4101655	20	12 22.2	18.9
120740 1997 UE ₁₆	16.6	X	233.65810	257.40135	27.90809	6.42840	0.1274130	0.23612857	2.5924100	20	1 23.1	21.0
120741 Iijimayuichi	16.2	X	138.29512	193.09136	172.72712	4.79071	0.2514072	0.23294386	2.6159847	20	2 10.3	20.5
120742 1997 VW ₁	17.4	X	50.21872	188.03806	211.50557	1.66157	0.2191540	0.26791480	2.3830779	20	—	—
120743 1997 VN ₅	15.9	X	138.59882	345.24327	66.62452	8.80729	0.1887311	0.23447828	2.6045596	20	4 5.7	20.0
120744 1997 WX ₄	17.1	X	207.64565	211.26188	219.34965	0.58812	0.1588397	0.24587914	2.5234126	20	6 27.7	21.1
120745 1997 WR ₉	16.4	X	209.17692	285.37700	115.25031	2.38273	0.1821238	0.24301721	2.5431854	20	5 20.9	20.6
120746 1997 WC ₁₀	16.4	X	350.18622	273.32383	177.12641	2.52082	0.1380404	0.26462540	2.4027857	20	—	—
120747 1997 WE ₁₁	16.9	X	70.72209	334.20101	44.51304	2.27750	0.1839243	0.26872513	2.3782848	20	—	—
120748 1997 WB ₁₂	16.8	X	97.66621	159.33721	181.41734	2.08230	0.2306159	0.26824722	2.3811087	20	—	—
120749 1997 WR ₁₂	16.3	X	248.62290	205.36164	267.51974	0.95502	0.1026881	0.25612866	2.4556357	20	10 18.8	19.1
120750 1997 WX ₁₉	15.5	X	53.96601	161.14273	93.22802	16.11453	0.0808181	0.24338117	2.5406494	20	9 10.9	19.1
120751 1997 WH ₂₁	15.5	X	309.70040	210.88283	182.86700	2.39291	0.2067143	0.25340563	2.4731961	20	9 25.1	17.5
120752 1997 WW ₂₄	16.5	X	52.49000	136.79132	221.60603	2.40071	0.2593512	0.26518033	2.3994323	20	—	—
120753 1997 WV ₂₈	17.0	X	258.45598	198.15650	82.94257	4.03897	0.1388779	0.27918417	2.3185094	20	2 8.4	20.4
120754 1997 WL ₃₁	16.3	X	37.81733	229.49560	160.98808	2.09070	0.2418306	0.26529182	2.3987601	20	—	—
120755 1997 WH ₃₉	16.2	X	41.55101	36.93996	89.35927	1.74704	0.1481271	0.27345048	2.3508067	20	2 12.4	18.0
120756 1997 XN ₇	16.7	X	178.41556	160.08056	207.17872	1.88279	0.1554535	0.28012725	2.3133027	20	3 8.6	20.2
120757 1997 YS ₇	16.3	X	254.32619	122.08385	111.27484	3.09562	0.1688869	0.26418572	2.4054508	20	—	—
120758 1997 YO ₁₃	15.6	X	36.83190	322.27135	285.48434	11.61688	0.1382439	0.23727965	2.5840191	20	8 3.9	18.6
120759 1997 YY ₁₇	15.9	X	193.42491	9.12507	321.64511	4.94352	0.1745107	0.22718413	2.6600148	20	2 12.2	20.1
120760 1997 YQ ₁₈	15.6	X	59.12167	133.81962	138.17769	15.69827	0.0660407	0.24446312	2.5331475	20	10 7.7	19.2
120761 1998 AX ₁	14.6	X	324.80181	140.33344	300.07055	1.60356	0.2167656	0.12485760	3.9645393	20	11 20.9	19.0
120762 1998 AQ ₄	15.4	X	164.97542	37.76491	303.69868	13.14577	0.0842838	0.22453339	2.6809091	20	1 24.8	19.2
120763 1998 BW ₅	15.7	X	74.52092	266.46319	125.06798	3.81748	0.1682810	0.21977198	2.7194923	20	—	—
120764 1998 BV ₈	15.5	X	193.18903	5.35315	69.36714	3.84043	0.1725386	0.23926428	2.5697101	20	6 18.4	19.7
120765 1998 BD ₁₃	15.7	X	111.03046	34.71281	94.54839	3.44731	0.1540514	0.23487765	2.6016064	20	6 7.8	19.5
120766 1998 BA ₁₆	15.2	X	69.66024	54.64897	120.31838	30.17827	0.1744975	0.23329432	2.6133642	20	6 24.9	18.9
120767 1998 BS ₂₆	15.8	X	191.80981	235.93615	129.60311	3.56161	0.1303259	0.23145980	2.6271548	20	3 24.2	19.8
120768 1998 BM ₂₉	16.0	X	355.98291	10.07269	114.49497	2.40065	0.1334667	0.26359866	2.4090210	20	—	—
120769 1998 CM ₁	16.6	X	234.16862	108.90295	328.05817	20.32136	0.0694498	0.37539265	1.9031757	20	8 28.1	18.4
120770 1998 DB ₇	15.8	X	88.43060	155.23236	196.74605	5.79458	0.1373455	0.25931118	2.4355024	20	—	—
120771 1998 DD ₈	15.0	X	230.03076	265.46181	126.59868	11.80935	0.2681402	0.23964387	2.5669959	20	5 25.8	19.5
120772 1998 DM ₁₅	15.5	X	87.97678	95.59295	62.50260	4.00970	0.2096504	0.23185002	2.6242062	20	6 26.6	19.2
120773 1998 DA ₁₉	16.4	X	147.90388	49.26975	10.66925	2.62720	0.1786593	0.23058453	2.6337989	20	4 19.4	20.7
120774 1998 DD ₂₀	15.0	X	357.51639	186.79135	252.36943	4.55727	0.2472922	0.26473864	2.4021004	20	—	—
120775 1998 DB ₂₃	14.8	X	179.67179	50.03583	323.44027	13.38109	0.1533005	0.22951055	2.6420089	20	3 16.5	19.2
120776 1998 DQ ₂₃	16.1	X	198.09022	96.22285	10.05985	21.23176	0.0766729	0.36958409	1.9230646	20	9 2.0	18.5
120777 1998 DZ ₂₅	16.4	X	168.17565	331.68155	23.03302	3.17900	0.1278225	0.22275934	2.6951241	20	2 17.8	20.6
120778 1998 DQ ₃₄	16.4	X	113.18863	161.23403	22.7824	3.89606	0.2351188	0.23658076	2.5891056	20	8 27.9	20.7
120779 1998 ET ₈	15.2	X	123.05533	252.74986	330.93588	11.28704	0.0796683	0.24343408	2.5402812	20	10 11.7	19.1
120780 1998 EY ₁₀	15.9	X	29.35112	188.82338	58.11714	5.16369	0.2968655	0.23089043	2.6314720	20	8 22.2	18.6
120781 1998 EL ₁₁	15.7	X	46.76419	191.28125	38.45106	5.73867	0.2355741	0.23205180	2.6226847	20	8 15.9	18.9
120782 1998 EM ₁₂	14.6	X	87.30887	103.77977	3.46699	21.85380	0.0826349	0.22603590	2.6690155	20	3 28.6	18.1
120783 1998 EN ₁₉	16.0	X	185.74908	128.94729	340.84057	5.15345	0.1778559	0.24006151	2.5640178	20	7 27.4	20.2
120784 1998 EY ₂₀	15.7	X	67.84606	44.36296	154.24322	6.36840	0.2295337	0.23265769	2.6181294	20	7 28.6	19.3
120785 1998 FT ₃	16.4	X	233.39753	73.47366	15.26125	1.96270	0.1729490	0.24363315	2.5388972	20	8 16.9	20.1
120786 1998 FO ₇	16.3	X	138.28692	248.32605	2.36535	5.64694	0.1125151	0.24805401	2.5086412	20	12 6.1	20.3
120787 1998 FS ₁₂	15.5	X	64.80460	16.66982	183.96846	4.31055	0.1675198	0.23194883	2.6234609	20	7 17.4	18.9
120788 1998 FD ₁₆	15.5	X	80.43916	64.06909	144.90319	12.11294	0.1263879	0.23509187	2.6000257	20	8 13.1	19.0
120789 1998 FQ ₂₄	14.7	X	1.81179	101.47927	342.05281	12.39035	0.1906276	0.21422337	2.7662504	20	—	—
120790 1998 FX ₂₅	15.6	X	158.16038	128.78202	334.08710	4.03233	0.2311629	0.23573468	2.5952970	20	6 23.9	20.0
120791 1998 FP ₂₈	15.7	X	122.99283	327.37255	169.34099	3.96604	0.2060993	0.23404947	2.6077399	20	7 4.3	19.9
120792 1998 FE ₃₅	15.7	X	199.45478	261.50676	181.41311	4.27386	0.2771735	0.23836198	2.5761910	20	6 30.1	20.2
120793 1998 FT ₃₇	15.4	X	12.60754	125.48314	114.10980	3.11385	0.1175341	0.23037214	2.6354174	20	6 9.1	18.3
120794 1998 FX ₅₃	16.1	X	193.85528	255.26796	252.40733	2.95596	0.2268992	0.24330020	2.54			

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Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>
120801 1998 FU ₇₂	16.0 ^m	X	237.55839	106.97241	147.73316	5.42800	0.0359267	0.21529221	2.7570872	20	—	—
120802 1998 FV ₉₄	15.3	X	139.84820	234.81359	14.23991	11.15480	0.1511720	0.24638192	2.5199784	20	12 3.6	19.5
120803 1998 FY ₁₁₄	15.4	X	92.05632	312.93435	233.32636	9.09543	0.1578799	0.23233823	2.6205287	20	7 28.8	19.4
120804 1998 FJ ₁₂₅	15.7	X	138.55821	95.94596	77.28793	4.80954	0.2222405	0.23752966	2.5822056	20	9 5.7	20.1
120805 1998 FF ₁₃₈	16.0	X	64.87859	214.04804	8.21770	4.13530	0.1380040	0.23316735	2.6143128	20	8 14.3	19.4
120806 1998 GE ₆	15.4	X	104.37738	125.49607	70.80654	14.21429	0.1154422	0.23606346	2.5928867	20	8 30.9	19.5
120807 1998 HK	16.8	X	81.55823	316.35256	206.26347	21.44260	0.0959947	0.36281138	1.9469230	20	6 8.4	19.1
120808 1998 HL ₇	16.0	X	17.39088	115.77388	56.50446	23.02481	0.0574203	0.35450729	1.9772091	20	3 11.4	18.5
120809 1998 HU ₇	15.6	X	143.80750	205.38867	23.83171	5.94854	0.1953259	0.24259957	2.5461034	20	11 13.4	19.9
120810 1998 HA ₁₂	15.3	X	74.55251	229.62343	331.74972	2.51354	0.0825828	0.23097562	2.6308249	20	7 19.7	18.8
120811 1998 HT ₁₇	16.2	X	110.72398	254.49060	323.25579	3.97443	0.1700894	0.23797823	2.5789598	20	9 29.9	20.2
120812 1998 HZ ₂₄	15.1	X	304.20748	89.72201	84.65145	13.45900	0.1427901	0.21154757	2.7895277	20	—	—
120813 1998 HW ₂₈	16.0	X	40.63000	281.76113	155.35646	4.43015	0.1678916	0.21543398	2.7558775	20	—	—
120814 1998 HW ₃₇	16.3	X	85.56857	287.88557	300.23363	3.10022	0.1954654	0.23533335	2.5982468	20	9 20.4	20.2
120815 1998 HB ₄₂	16.0	X	14.72585	164.32790	107.00917	5.56158	0.1949371	0.23614735	2.5922726	20	10 25.4	18.8
120816 1998 HN ₄₂	15.2	X	90.05936	94.09849	37.47031	13.34962	0.1259428	0.22789281	2.6544973	20	5 10.7	18.9
120817 1998 HW ₅₅	15.9	X	88.09972	102.69316	82.76338	2.37620	0.1279404	0.23153628	2.6265763	20	7 22.5	19.4
120818 1998 HA ₆₈	16.0	X	60.89014	314.37557	248.47386	4.51016	0.1883921	0.22962407	2.6411381	20	7 18.1	19.4
120819 1998 HA ₈₇	15.9	X	29.87432	296.71743	288.47178	2.24939	0.0954595	0.22764202	2.6564466	20	6 16.5	19.0
120820 1998 HL ₈₉	15.0	X	6.63221	302.24730	206.91345	13.51992	0.0837048	0.21666342	2.7454423	20	1 21.7	18.7
120821 1998 HY ₉₄	15.2	X	355.71141	217.11716	41.51478	14.03613	0.2202289	0.22576503	2.6711499	20	5 31.4	17.5
120822 1998 HK ₉₆	16.2	X	86.28647	66.09416	176.54846	5.54963	0.2406026	0.23564315	2.5959690	20	10 16.2	20.4
120823 1998 HZ ₁₀₇	15.2	X	34.32094	229.73931	54.85473	12.48723	0.1129505	0.23520106	2.5992210	20	9 27.2	18.6
120824 1998 HG ₁₀₉	15.8	X	51.77638	98.70536	145.67282	12.00773	0.1968609	0.23222297	2.6213958	20	9 4.6	19.1
120825 1998 HE ₁₁₁	15.9	X	131.79545	93.34680	115.17071	5.63542	0.1665497	0.23915588	2.5704866	20	10 12.2	20.1
120826 1998 HH ₁₁₂	15.2	X	137.61234	103.03850	113.96148	13.15488	0.1230803	0.24085943	2.5583519	20	10 30.6	19.4
120827 1998 HZ ₁₁₅	15.2	X	276.75679	85.94986	123.04992	8.00005	0.0711959	0.21217498	2.7840259	20	—	—
120828 1998 HE ₁₂₂	15.0	X	29.64006	105.61895	80.69153	13.95107	0.2055382	0.22417981	2.6837273	20	5 6.7	17.7
120829 1998 HV ₁₂₄	15.3	X	43.10561	161.89841	73.02791	16.20365	0.1233074	0.22947459	2.6422849	20	7 29.7	18.8
120830 1998 HB ₁₃₀	15.6	X	297.32936	168.01393	19.91404	2.56710	0.0870197	0.21459587	2.7630483	20	—	—
120831 1998 HN ₁₃₀	15.8	X	29.28206	117.37987	14.55138	12.91347	0.1211362	0.22066899	2.7121175	20	2 12.9	19.0
120832 1998 HQ ₁₃₃	16.1	X	147.94410	52.75110	99.21269	4.63014	0.1478657	0.23679525	2.5875419	20	8 15.0	20.2
120833 1998 HF ₁₄₆	15.5	X	287.81567	133.02986	155.99982	5.45565	0.1387615	0.22090071	2.7102206	20	3 28.6	19.2
120834 1998 HG ₁₄₆	16.4	X	102.39168	173.19535	82.70449	4.52156	0.2013864	0.23898739	2.5716946	20	11 12.6	20.6
120835 1998 HM ₁₅₃	15.0	X	285.46776	128.19010	102.92753	10.30531	0.0864700	0.21463027	2.7627530	20	1 20.1	19.0
120836 1998 KL ₇	15.7	X	176.37000	19.51303	197.63762	4.35504	0.1772229	0.24408805	2.5357418	20	11 29.2	19.7
120837 1998 KE ₉	15.4	X	87.08930	99.07638	169.39631	13.04438	0.1795733	0.23789903	2.5795321	20	11 14.3	19.6
120838 1998 KN ₃₁	16.2	X	64.80330	120.16846	97.99867	7.36780	0.1849946	0.22984116	2.6394748	20	8 16.1	19.8
120839 1998 KX ₃₈	15.1	X	66.80724	129.98328	51.10435	14.02969	0.1884669	0.22622275	2.6675457	20	6 26.5	18.7
120840 1998 KH ₄₃	16.3	X	34.54688	290.26119	191.32318	14.65939	0.2510541	0.21751926	2.7382362	20	2 4.2	18.8
120841 1998 KC ₅₂	15.1	X	58.15859	37.91311	140.38420	14.41419	0.1890548	0.22531782	2.6746832	20	6 12.6	18.6
120842 1998 KD ₅₅	15.7	X	146.16586	96.99230	140.81418	5.59453	0.2323585	0.24137068	2.5547380	20	11 27.1	20.1
120843 1998 KM ₅₇	15.1	X	110.25148	91.64563	94.86394	4.60266	0.1899317	0.23364063	2.6107812	20	8 25.6	19.2
120844 1998 KL ₆₀	15.5	X	359.33521	100.00327	139.28502	13.33344	0.1699715	0.22362777	2.6881421	20	5 18.3	18.4
120845 1998 KU ₆₃	15.4	X	133.09802	40.72730	133.32236	5.66649	0.1806114	0.23430268	2.6058608	20	8 29.8	19.5
120846 1998 KM ₆₇	15.9	X	335.88031	151.21425	104.33792	8.12390	0.1826371	0.22218068	2.6998016	20	4 21.9	18.8
120847 1998 MG	14.9	X	12.04897	45.24689	293.72265	9.92919	0.1671163	0.18472995	3.0533588	20	10 21.1	18.7
120848 1998 MM ₃₃	16.6	X	318.24162	188.70952	102.43587	6.50870	0.1994066	0.30991691	2.1625817	20	5 2.2	18.4
120849 1998 OJ ₃	15.9	X	133.74468	209.75591	226.30587	3.86511	0.0423526	0.21375192	2.7703164	20	4 12.6	19.7
120850 1998 OO ₈	14.9	X	47.87775	38.79991	303.80127	7.84417	0.1021065	0.18865517	3.0108578	20	12 10.3	19.1
120851 1998 OF ₁₂	15.4	X	333.16061	293.74900	326.87748	8.21408	0.2140803	0.21896686	2.7261544	20	4 10.7	18.5
120852 1998 OQ ₁₅	15.2	X	23.48681	302.42575	298.42610	10.57200	0.2741715	0.22329239	2.6908331	20	7 23.0	17.4
120853 1998 QK ₄	16.8	X	128.72234	287.91372	75.44751	8.83648	0.1916758	0.29186073	2.2508796	20	1 15.4	19.6
120854 1998 QO ₁₂	16.0	X	285.48762	125.18071	170.93579	6.82649	0.2107396	0.30515545	2.1850194	20	3 16.7	18.8
120855 1998 QO ₂₃	15.0	X	288.40520	232.65421	143.33921	19.79816	0.2604794	0.17441014	3.1726456	20	7 2.5	19.5
120856 1998 QP ₂₅	14.8	X	81.54992	33.51710	341.18603	11.48449	0.0704494	0.19607583	2.9344047	20	—	—
120857 1998 QX ₄₃	15.4	X	74.81921	258.32940	91.13326	2.80478	0.2513910	0.19076859	2.9885794	20	—	—
120858 1998 QT ₄₄	17.0	X	14.79506	82.27405	248.01139	1.45848	0.1894323	0.31815476	2.1250889	20	11 25.8	19.2
120859 1998 QT ₄₉	15.1	X	49.29562	223.31727	139.21945	11.23197	0.2393396	0.18854889	3.0119891	20	—	—
120860 1998 QW ₅₉	16.0	X	74.67597	151.93718	166.12562	4.32487	0.1659828	0.18738374	3.0244619	20	12 18.5	20.6
120861 1998 QA ₇₄	14.7	X	331.18369	91.00085	279.55575	9.86317	0.1729064	0.17933871	3.1142492	20	9 15.1	18.4
120862 1998 QL ₇₅	14.6	X	73.77762	79.85927	174.27146	8.89025	0.1223200	0.19097115	2.9864658	20	—	—
120863 1998 QF ₉₄	14.3	X	275.36958	235.70147	153.18931	27.60521	0.2248638	0.17408137	3.1766389	20	7 7.9	19.3
120864 1998 QK ₉₉	16.3	X	41.03869	356.04151	29.39260	3.34707	0.1346420	0.23531549	2.5983783	20	—	—
120865 1998 QN ₁₀₆	15.9	X	238.67974	279.94580	24.31947	5.58363	0.1973018	0.29856725	2.2170455	20	2 14.1	19.4
120866 1998 RL ₂	15.9	X	335.88759	146.94661	125.31589	5.56229	0.1219497	0.30546354	2.1835499	20	5 19.1	17.8
120867 1998 RM ₂	16.4	X	268.99989	317.20971	61.71084	4.19915	0.1795308	0.30801415	2.1714789	20	6 27.3	18.9
120868 1998 RA ₁₃	17.2	X	129.65146	347.99119	6.44072	1.30679	0.2331577	0.28814887	2.2701685	20	1 10.5	20.2
120869 1998 RZ ₁₅	16.2	X	310.11721	247.75181	74.16560	3.39762	0.1926848	0.30795067	2.1717773	20	6 4.7	17.8
120870 1998 RM ₁₆	16.8	X	295.54747	39.78285	283.49612	2.12684	0.1635341	0.30818893	2.1706578	20	5 15.9	19.0
120871 1998 RT ₁₉	16.7	X	327.01512	80.81079	243.90172	2.36331	0.1501472	0.31165935	2.1545138	20	7 25.8	18.1
120872 1998 RD ₂₃	16.8	X	261.12797	221.96891	85.41608	3.88131	0.2020226	0.30231328	2.1986929	20	3 8.8	20.0
120873 1998 RH ₂₆	16.3	X	222.88663	285.73764	55.94208	3.96323	0.1617971	0.30022414	2.2088809	20	3 19.1	19.6
120874 1998 RM _{27</}												

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Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>
120881 1998 RG ₄₅	14.9	X	311.06327	96.88327	179.19478	9.13647	0.1282817	0.21272778	2.7792007	20	4 14.7	18.3
120882 1998 RM ₄₈	15.1	X	7.19587	130.69646	277.80871	2.55606	0.0839717	0.18830335	3.0146069	20	—	—
120883 1998 RH ₄₉	16.1	X	185.77361	333.88173	327.48642	1.14511	0.1371824	0.19952445	2.9004940	20	1 4.4	20.6
120884 1998 RY ₅₀	14.7	X	307.17777	80.11272	341.70117	9.67588	0.0807048	0.18215687	3.0820452	20	10 20.3	18.8
120885 1998 RY ₅₃	14.7	X	297.90626	65.47588	317.90648	7.82146	0.1928862	0.17470135	3.1691189	20	8 5.8	18.6
120886 1998 RV ₆₇	16.5	X	159.78781	198.80170	212.91141	3.54973	0.2162459	0.29683729	2.2256511	20	4 19.9	20.1
120887 1998 RF ₇₀	16.4	X	192.70450	291.43558	33.52304	4.66675	0.1674020	0.29374858	2.2412254	20	1 30.2	19.9
120888 1998 RM ₇₀	16.0	X	98.81418	267.54536	134.03474	7.08513	0.0903601	0.28968735	2.2621237	20	1 9.1	18.5
120889 1998 RT ₇₅	16.4	X	198.31666	166.79921	163.52955	6.61780	0.1723396	0.29459967	2.2369067	20	2 8.6	19.9
120890 1998 SU	15.2	X	191.31154	276.52583	38.27117	2.30075	0.0584971	0.19825970	2.9128162	20	1 23.5	19.4
120891 1998 SD ₁	17.0	X	78.98502	216.74632	188.21892	5.80881	0.1485977	0.28523029	2.2856284	20	—	—
120892 1998 SO ₃	15.2	X	231.04914	28.25961	80.81311	6.69435	0.1330544	0.17740919	3.1367890	20	9 10.3	20.0
120893 1998 SN ₈	16.7	X	329.71558	64.77749	189.04835	4.39248	0.1082617	0.30136104	2.2033220	20	4 7.4	18.8
120894 1998 SK ₁₃	16.7	X	179.06709	316.41335	90.34719	4.29529	0.1356210	0.29955023	2.2121926	20	4 30.3	20.0
120895 1998 ST ₁₄	16.4	X	213.76846	229.43649	113.94740	2.98509	0.2361598	0.29758124	2.2219401	20	3 10.9	20.2
120896 1998 SX ₁₉	15.3	X	99.38564	121.05840	183.60504	0.78605	0.0131082	0.18936334	3.0033465	20	12 14.3	19.6
120897 1998 SO ₂₁	15.1	X	272.14002	71.50507	12.36304	3.26764	0.1608876	0.17853981	3.1235324	20	9 21.3	19.2
120898 1998 SL ₂₁	15.1	X	293.32926	101.86427	272.65435	2.25610	0.0678177	0.17194504	3.2028969	20	8 4.1	19.4
120899 1998 SN ₂₁	16.8	X	312.14685	312.99257	346.08617	2.76306	0.1251686	0.30383268	2.1913566	20	5 13.1	18.8
120900 1998 SP ₂₅	16.5	X	290.32048	279.16561	56.72983	4.56223	0.2383299	0.30668594	2.1777439	20	5 14.3	18.7
120901 1998 SD ₂₆	16.2	X	191.82529	248.28912	106.84974	4.91999	0.1665647	0.29551400	2.2322903	20	3 7.7	19.6
120902 1998 SL ₂₈	16.7	X	28.83902	265.95880	31.60120	5.77580	0.2276790	0.27022814	2.3694579	20	10 25.7	19.4
120903 1998 SV ₃₁	15.4	X	81.28683	199.29702	158.74508	1.86699	0.1820234	0.19277427	2.9678140	20	—	—
120904 1998 SW ₃₁	15.7	X	214.33243	334.34978	207.25070	0.89827	0.0274535	0.18727149	3.0256703	20	11 29.3	19.9
120905 1998 SY ₃₂	16.0	X	318.30897	354.86865	41.51838	1.02116	0.0370337	0.18123952	3.0924364	20	10 10.7	20.0
120906 1998 SL ₃₉	15.6	X	232.18385	339.87194	168.60800	1.38876	0.1080364	0.18443594	3.0566028	20	10 30.6	19.9
120907 1998 SW ₄₀	14.9	X	278.29529	352.68150	299.50154	0.96472	0.2392483	0.16658209	3.2712759	20	3 11.4	20.0
120908 1998 SO ₄₁	15.5	X	285.52974	153.34661	210.03483	0.40318	0.1825032	0.17181284	3.2045396	20	6 23.4	19.8
120909 1998 SO ₅₈	15.4	X	291.43325	142.94104	176.96509	13.29260	0.2676582	0.21569051	2.7536920	20	4 24.8	19.3
120910 1998 SR ₅₉	16.4	X	291.26071	219.95040	141.51333	4.80342	0.1083509	0.30867656	2.1683711	20	7 19.4	18.6
120911 1998 SP ₆₅	16.3	X	168.62393	236.64879	88.66633	4.53484	0.2057639	0.28961955	2.2624768	20	1 10.0	19.8
120912 1998 SP ₇₅	14.9	X	279.71764	125.07123	182.03072	12.49552	0.1940719	0.21061099	2.7977916	20	4 3.6	18.8
120913 1998 SE ₇₈	16.6	X	168.44949	183.08798	248.28282	2.86798	0.1096242	0.30167738	2.2017815	20	5 20.1	19.7
120914 1998 SZ ₇₈	15.2	X	67.36149	170.75493	222.63269	1.11389	0.0896061	0.19413200	2.9539602	20	—	—
120915 1998 SX ₈₁	16.9	X	255.37420	204.26531	213.55094	1.69522	0.1073705	0.31063079	2.1592672	20	8 17.4	19.3
120916 1998 SB ₈₃	16.0	X	213.71653	310.27985	340.97519	4.52056	0.1517258	0.29254706	2.2473578	20	1 6.3	19.4
120917 1998 SV ₈₃	15.7	X	0.70979	32.54720	3.16825	2.31301	0.1560814	0.18521101	3.0480694	20	12 18.3	19.2
120918 1998 SA ₈₄	17.0	X	44.68732	275.19031	167.66974	4.48997	0.2353695	0.28551338	2.2841173	20	—	—
120919 1998 SU ₈₅	16.5	X	272.84307	308.23734	10.11672	5.37234	0.0961918	0.30258784	2.1973626	20	4 16.3	19.1
120920 1998 SY ₈₅	17.1	X	283.93391	355.78955	22.82234	2.07349	0.2115663	0.30974907	2.1633629	20	7 15.7	19.1
120921 1998 SW ₉₂	16.7	X	46.16926	167.13187	189.81683	2.55828	0.1062946	0.27774430	2.3265155	20	—	—
120922 1998 SO ₉₃	17.1	X	264.00639	338.59245	14.09856	2.70876	0.1916390	0.30519747	2.1848188	20	5 10.4	20.1
120923 1998 SM ₉₉	15.0	X	1.62659	30.89800	358.67384	9.94027	0.0855865	0.18416089	3.0596456	20	12 1.8	19.1
120924 1998 SS ₁₀₄	16.1	X	295.31064	191.57022	53.13609	6.52343	0.0933691	0.29611834	2.2292521	20	2 7.8	18.9
120925 1998 SC ₁₀₇	14.7	X	328.92528	334.38873	349.65781	3.51347	0.1840006	0.17323554	3.1869705	20	7 12.3	18.2
120926 1998 SH ₁₀₇	16.5	X	162.13401	124.78691	208.08576	2.44055	0.2127020	0.29029261	2.2589783	20	1 13.2	19.8
120927 1998 SJ ₁₀₈	14.7	X	310.97295	9.30748	352.56649	6.58615	0.1528108	0.17380674	3.1799843	20	8 5.8	18.6
120928 1998 SP ₁₀₉	16.0	X	120.24457	154.35373	236.65052	6.23214	0.1044800	0.28992069	2.2609098	20	1 25.9	19.8
120929 1998 SM ₁₁₄	16.6	X	206.58393	261.32627	154.46611	5.51004	0.1575651	0.30323804	2.1942205	20	6 8.7	19.9
120930 1998 SX ₁₂₁	16.3	X	214.36112	98.77202	217.54682	5.34830	0.2174837	0.29502888	2.2347367	20	2 4.4	20.0
120931 1998 SU ₁₂₃	16.7	X	289.13639	349.70433	20.22067	3.78702	0.1721763	0.30899256	2.1668925	20	7 19.4	18.8
120932 1998 SL ₁₃₁	16.4	X	168.83618	114.75221	227.13310	4.71650	0.1533208	0.29095752	2.255340	20	1 24.9	19.7
120933 1998 SL ₁₄₇	16.6	X	324.79022	246.59498	86.70342	1.82148	0.2050580	0.30988470	2.1627316	20	8 1.3	17.4
120934 1998 SE ₁₄₉	14.8	X	148.19369	142.15345	155.36591	1.87627	0.0430782	0.19265418	2.9690471	20	—	—
120935 1998 SG ₁₅₀	15.0	X	255.98540	239.03254	196.73498	6.36786	0.0726061	0.17698943	3.1417467	20	8 31.7	19.4
120936 1998 SJ ₁₅₃	15.3	X	98.36672	154.11236	166.31411	2.33600	0.2443570	0.18991758	2.9975005	20	—	—
120937 1998 SD ₁₅₅	16.4	X	197.71281	127.64635	194.08531	4.88783	0.2174214	0.29378262	2.2410522	20	1 29.2	20.2
120938 1998 SB ₁₆₂	15.1	X	3.05475	201.00657	156.80982	7.87425	0.1174530	0.18003052	3.1062659	20	10 31.7	19.0
120939 1998 SV ₁₆₂	15.3	X	152.27028	65.34776	281.70914	0.94447	0.1132216	0.19764407	2.9188618	20	1 24.3	19.6
120940 1998 TN ₁₂	15.6	X	78.56174	59.99925	265.84532	0.46423	0.1114780	0.18457956	3.0550171	20	12 25.1	20.2
120941 1998 TB ₁₇	16.8	X	321.23469	7.43239	270.24158	2.04128	0.1202905	0.30210560	2.1997004	20	4 26.5	18.9
120942 Rendafuzhong	17.4	X	14.23087	162.76332	164.28033	2.39166	0.2340498	0.31664783	2.1318258	20	11 28.1	19.4
120943 1998 TN ₂₂	15.0	X	216.43933	246.37078	209.46028	3.61445	0.0904810	0.17088056	3.2161844	20	8 8.3	20.0
120944 1998 TH ₂₃	14.8	X	251.07425	68.44399	19.76567	17.87341	0.1107084	0.17609478	3.1523787	20	9 13.6	19.5
120945 1998 TJ ₂₆	14.9	X	293.75547	339.15328	29.89098	6.81237	0.0998224	0.17024626	3.2241680	20	7 26.8	19.3
120946 1998 TZ ₂₈	17.0	X	273.21069	339.45098	27.43181	3.17945	0.2068973	0.30606156	2.1807047	20	6 10.1	19.4
120947 1998 TN ₂₉	17.1	X	231.54265	6.71141	321.44333	0.84776	0.1751296	0.29692094	2.2252331	20	3 7.4	20.5
120948 1998 TZ ₃₇	15.1	X	58.55452	307.43040	48.23976	1.72440	0.0713627	0.18768074	3.0212703	20	—	—
120949 1998 UU ₃	16.5	X	57.20231	272.15390	22.10690	2.62175	0.2157727	0.27552477	2.3389932	20	11 23.5	19.9
120950 1998 UY ₆	16.4	X	182.88984	271.33032	46.83762	4.66010	0.1926340	0.29057852	2.2574963	20	1 13.7	19.9
120951 1998 UA ₉	16.8	X	358.45480	86.79581	346.43674	1.75510	0.2026860	0.27692217	2.3311178	20	—	—
120952 1998 UV ₁₄	16.4	X	144.88364	269.22667	47.68340	8.44583	0.1632027	0.28419111	2.2911968	20	—	—
120953 1998 UQ ₂₂	14.9	X	320.47637	312.93095	66.86363	5.44389	0.1314360	0.17619483	3.1511853	20	9 18.8	18.7
120954 1998 UD ₂₅	16.5	X	50.18557	3								

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>
120961 1998 VJ ₄	14.7	X	125.23763	232.99092	45.97971	11.09592	0.0606419	0.18304121	3.0721102	20	12 13.1	19.4
120962 1998 VM ₁₁	13.8	X	295.47026	236.88443	121.89743	1.93245	0.1765487	0.12393995	3.9840841	20	6 30.2	18.9
120963 1998 VE ₁₂	15.3	X	85.87642	246.76689	105.80298	6.02456	0.2860358	0.19015951	2.9949576	20	—	—
120964 1998 VK ₂₂	16.5	X	169.39925	62.56166	307.15552	2.16945	0.1805104	0.29269819	2.2465841	20	3 3.4	19.8
120965 1998 VV ₂₇	16.8	X	7.02582	249.59428	190.16566	2.76157	0.2461884	0.27792667	2.3254976	20	—	—
120966 1998 VT ₂₉	16.1	X	86.43040	142.45879	297.83630	3.37233	0.2879077	0.28741413	2.2740359	20	3 17.7	18.5
120967 1998 VL ₃₀	16.7	X	131.80307	333.98714	68.95253	2.66390	0.2176548	0.29044420	2.2581922	20	3 14.9	19.8
120968 1998 VH ₃₂	16.3	X	353.12503	306.46943	106.32464	6.11831	0.2460605	0.27314485	2.3525600	20	—	—
120969 1998 VM ₃₈	16.0	X	122.11764	306.66955	43.73367	6.13214	0.1836244	0.28488887	2.2874541	20	—	—
120970 1998 VR ₄₃	16.6	X	19.39934	328.69234	106.00441	3.17984	0.1773395	0.27555559	2.3388187	20	—	—
120971 1998 VN ₄₉	14.6	X	6.43474	18.56960	18.18788	9.56989	0.0845566	0.18350378	3.0669454	20	12 18.7	18.7
120972 1998 WE ₄	16.3	X	170.87504	64.15846	310.34684	4.30682	0.1375051	0.29293666	2.2453648	20	3 7.5	19.6
120973 1998 WW ₄	15.0	X	64.80932	352.53489	97.55841	24.26700	0.2154536	0.28650614	2.2788378	20	2 15.4	17.3
120974 1998 WW ₈	15.6	X	353.25364	116.73750	66.45195	5.56049	0.1784932	0.28513658	2.2861291	20	1 26.1	17.7
120975 1998 WE ₁₉	16.8	X	206.12985	16.09673	45.43276	7.57559	0.1404939	0.30124952	2.2038658	20	6 15.8	20.0
120976 1998 WL ₂₅	15.3	X	324.84427	277.41013	22.98062	0.40583	0.2971576	0.17006808	3.2264196	20	5 14.9	18.7
120977 1998 WN ₂₈	16.2	X	8.90581	169.64961	276.20256	5.37749	0.1307671	0.27467492	2.3438153	20	—	—
120978 1998 WU ₃₅	17.0	X	79.77908	285.94581	42.76643	6.75567	0.1463299	0.27655763	2.3331659	20	—	—
120979 1998 XU	17.0	X	44.89256	163.90494	208.53153	1.41746	0.2401514	0.27708822	2.3301864	20	—	—
120980 1998 XY ₅	16.9	X	346.43532	151.43540	187.21487	1.56377	0.1687900	0.31101523	2.1574875	20	10 10.5	18.1
120981 1998 XZ ₅	17.0	X	100.50056	115.27450	194.15785	2.18493	0.1856395	0.27631080	2.3345552	20	—	—
120982 1998 XE ₆	16.8	X	14.29025	356.66056	89.44623	4.02940	0.1569441	0.27913982	2.3187550	20	—	—
120983 1998 XG ₇	15.0	X	73.12326	199.87784	85.27822	4.14733	0.0818347	0.17653489	3.1471372	20	10 28.4	19.5
120984 1998 XN ₇	16.3	X	266.49111	276.07470	102.66259	2.47853	0.1491712	0.30459236	2.1877115	20	6 29.6	18.9
120985 1998 XT ₁₅	16.0	X	212.82133	321.88303	353.69519	5.31453	0.2062163	0.29077711	2.2564683	20	2 5.9	19.7
120986 1998 XM ₁₇	15.7	X	15.45779	218.39521	238.36235	21.63604	0.1135436	0.27854787	2.3220389	20	—	—
120987 1998 XA ₁₈	14.8	X	321.29942	320.01377	61.03947	9.47325	0.0853213	0.17436788	3.1731583	20	9 26.5	19.0
120988 1998 XM ₁₈	15.5	X	254.59051	339.79051	119.48572	0.66474	0.1427410	0.17464163	3.1698414	20	9 20.2	19.9
120989 1998 XG ₂₁	16.8	X	85.82494	133.86336	273.03956	3.78198	0.1824903	0.28143121	2.3061517	20	1 11.7	19.0
120990 1998 XP ₂₁	16.7	X	151.15445	339.63959	107.97600	5.47756	0.0957542	0.29275204	2.2463087	20	5 20.9	19.8
120991 1998 XQ ₂₁	16.5	X	344.65234	101.51130	285.13010	4.75260	0.0902280	0.26457716	2.4030777	20	11 26.5	19.2
120992 1998 XS ₂₃	15.1	X	229.17780	247.89838	182.92612	4.09789	0.1042330	0.16752435	3.2589980	20	7 27.9	19.9
120993 1998 XC ₂₅	16.6	X	68.26518	47.34925	114.73675	1.88747	0.0871616	0.29528402	2.2334492	20	5 16.6	18.9
120994 1998 XQ ₄₉	16.3	X	359.73992	78.85536	16.78997	7.83977	0.1403265	0.27590533	2.3368418	20	—	—
120995 1998 XQ ₆₂	15.1	X	39.01627	192.03305	336.23334	24.83236	0.1879893	0.28698095	2.2763236	20	3 29.7	17.5
120996 1998 XE ₇₉	16.2	X	77.11594	345.41510	113.48962	7.85302	0.1283916	0.28767949	2.2726372	20	3 7.2	18.5
120997 1998 XT ₉₆	17.1	X	50.08322	316.62750	111.46946	3.34714	0.1815698	0.27852964	2.3221402	20	—	—
120998 1998 YB ₂	16.3	X	20.32794	248.27004	313.88715	5.11489	0.1055797	0.28683293	2.2771067	20	4 21.3	18.4
120999 1998 YC ₂	15.5	X	342.91137	32.83998	115.27555	12.50716	0.0828149	0.27669592	2.3323884	20	—	—
121000 1998 YG ₂	15.7	X	63.87480	110.32549	305.94761	5.29650	0.1866815	0.27829839	2.3234264	20	—	—
121001 Liangshanxichang	16.7	X	67.97230	6.93505	94.99278	4.11250	0.1052035	0.28764345	2.2728271	20	2 19.9	19.0
121002 1998 YZ ₁₅	16.4	X	8.34056	278.77667	278.13867	3.51477	0.0678237	0.28660486	2.2783145	20	3 22.6	18.7
121003 1998 YT ₁₉	16.5	X	305.79790	50.68810	33.70607	1.04572	0.1799602	0.26712893	2.3877495	20	12 13.8	18.3
121004 1998 YX ₂₇	16.6	X	118.72406	317.63877	80.51612	3.42746	0.1682407	0.28516198	2.2859934	20	2 16.7	19.4
121005 1998 YM ₃₁	13.7	X	2.47904	99.65869	211.77602	7.91176	0.1639481	0.12539436	3.9532175	20	8 19.6	18.5
121006 1999 AG ₁	17.0	X	282.38474	315.77385	281.69631	2.44685	0.1399100	0.27945503	2.3170110	20	1 7.6	20.2
121007 1999 AT ₉	15.8	X	135.63127	292.57146	113.94953	11.01000	0.3310127	0.28711467	2.2756168	20	4 6.8	19.8
121008 Michellecrigger	15.7	X	141.35499	70.13719	359.50030	26.12636	0.2306827	0.29046845	2.2580666	20	4 16.3	19.6
121009 1999 AV ₁₀	14.3	X	123.11755	231.74184	53.34133	6.89863	0.2797096	0.18834755	3.0141352	20	12 26.4	19.8
121010 1999 AG ₁₈	16.8	X	89.00065	133.42059	304.19578	5.37065	0.1010557	0.28278586	2.2987809	20	2 16.2	19.3
121011 1999 AW ₁₈	16.6	X	215.32175	62.40079	289.88188	6.30585	0.2088191	0.29080232	2.2563379	20	3 19.6	20.5
121012 1999 AP ₁₉	16.6	X	359.99863	67.50168	128.16007	0.98257	0.1158905	0.26583469	2.3954932	20	—	—
121013 1999 AG ₂₁	16.2	X	38.82156	16.19167	136.04924	4.11750	0.1617302	0.28460904	2.2889532	20	3 18.8	17.9
121014 1999 AJ ₂₂	16.2	X	51.03599	30.98503	58.36499	7.41927	0.1421881	0.27806967	2.3247003	20	1 4.1	18.2
121015 1999 AO ₂₇	16.6	X	285.74452	283.85351	213.04828	1.49062	0.1543116	0.26889485	2.3772840	20	—	—
121016 Christopharnold	15.4	X	36.35848	331.24343	98.37964	26.24668	0.2823427	0.27825438	2.3236714	20	—	—
121017 1999 BG ₄	16.2	X	212.20297	203.24521	351.49401	2.43241	0.1022697	0.26576097	2.3959362	20	12 21.5	19.3
121018 1999 BC ₆	16.1	X	39.05351	317.26896	156.14218	7.47275	0.1694204	0.27804489	2.3248384	20	1 15.2	17.9
121019 Minodamato	16.2	X	122.65866	60.77853	323.58075	4.04520	0.1381705	0.28199578	2.3030727	20	1 29.2	19.0
121020 1999 BV ₈	16.2	X	252.48775	337.38593	150.70938	4.42669	0.1775088	0.26204164	2.4185543	20	11 5.7	19.1
121021 1999 BB ₁₃	16.1	X	283.05489	331.14928	227.45745	1.45938	0.1767090	0.27354824	2.3502466	20	—	—
121022 Galliano	16.7	X	268.88984	18.76059	137.40152	3.27519	0.1322200	0.26675027	2.3900086	20	—	—
121023 1999 BV ₂₅	15.2	X	241.40988	196.66931	235.49917	4.89082	0.0533580	0.30178385	2.2012636	20	8 24.5	17.8
121024 1999 BK ₂₆	17.5	X	62.99537	78.08717	337.61345	1.49246	0.2210889	0.27959712	2.3162260	20	—	—
121025 1999 BV ₂₆	17.3	X	49.32089	137.65768	305.68637	0.62153	0.2085810	0.28022737	2.3127517	20	—	—
121026 1999 BH ₂₇	16.7	X	248.65031	31.24023	116.20315	3.16391	0.1409929	0.26526728	2.3989080	20	12 2.3	19.4
121027 1999 BS ₂₇	16.7	X	105.49169	155.73686	254.27522	6.01910	0.0865375	0.28730958	2.2745875	20	1 29.1	19.4
121028 1999 BB ₂₉	15.7	X	335.75379	56.53419	310.73705	5.17988	0.1319291	0.25956403	2.4339204	20	10 12.3	18.1

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>
121041 1999 CD ₁₅	15.9 ^m	X	153.27659	45.68267	340.62093	25.07056	0.1860138	0.28700991	2.2761705	20	3 7.6	19.4
121042 1999 CA ₁₆	16.0	X	42.20755	337.00557	110.68276	25.21369	0.1800729	0.27697229	2.3308366	20	—	—
121043 1999 CD ₂₄	16.6	X	35.98098	318.13580	126.77235	3.79523	0.2126919	0.27770567	2.3267312	20	—	—
121044 1999 CM ₂₆	16.4	X	260.50298	226.64546	350.94350	3.14221	0.1991033	0.27184908	2.3600297	20	—	—
121045 1999 CV ₂₉	13.9	X	283.71408	330.65410	139.34373	9.60501	0.1910343	0.12586603	3.9433351	20	10 28.3	19.2
121046 1999 CD ₃₄	16.1	X	128.76337	146.02937	341.89145	2.27721	0.0992655	0.24609961	2.5219052	20	6 20.4	19.6
121047 1999 CM ₄₁	15.6	X	75.42499	128.51241	31.32896	4.59272	0.1284157	0.28870346	2.2672603	20	5 30.5	18.2
121048 1999 CF ₄₂	15.6	X	169.29300	44.64082	352.67318	6.26015	0.1685575	0.28772322	2.2724070	20	4 6.5	19.1
121049 1999 CD ₄₆	16.7	X	63.50243	98.04331	18.45911	0.50515	0.1536432	0.282877309	2.2983083	20	3 10.8	18.8
121050 1999 CX ₄₉	15.6	X	354.19540	121.04334	83.17889	7.32795	0.1333576	0.28259662	2.2998071	20	3 10.1	17.8
121051 1999 CG ₅₀	15.6	X	0.29237	165.49364	353.41407	6.20784	0.0921215	0.27845531	2.3225534	20	1 16.6	18.1
121052 1999 CP ₅₁	15.7	X	325.04752	3.20775	87.44108	3.53398	0.1882809	0.26770090	2.3843472	20	—	—
121053 1999 CA ₅₄	16.6	X	356.95004	119.97881	27.89975	2.55446	0.1582544	0.27673948	2.3321437	20	—	—
121054 1999 CX ₇₃	16.4	X	38.77186	335.24721	168.47324	6.79265	0.1980723	0.28241647	2.3007850	20	3 5.8	17.8
121055 1999 CZ ₇₅	15.8	X	226.10833	259.52626	314.33668	8.24994	0.1505625	0.26683434	2.3895066	20	—	—
121056 1999 CA ₈₀	15.8	X	309.59089	295.59165	296.74626	8.43098	0.1685016	0.27916317	2.3186256	20	1 28.4	18.7
121057 1999 CA ₈₉	17.0	X	18.51630	44.57415	117.35035	2.87530	0.1394411	0.28238076	2.3009790	20	2 17.7	18.9
121058 1999 CD ₉₂	16.5	X	350.91670	47.52481	39.09860	3.64697	0.2022509	0.27190204	2.3597233	20	—	—
121059 1999 CO ₉₃	16.7	X	290.02523	333.49322	150.10715	0.88034	0.1648183	0.26701883	2.3884059	20	—	—
121060 1999 CH ₁₁₁	16.5	X	23.01177	310.27802	204.62848	2.00009	0.1705816	0.28150793	2.3057327	20	2 13.5	18.1
121061 1999 CY ₁₁₂	16.7	X	321.92277	347.56217	193.75758	2.16061	0.1558926	0.27584886	2.3371608	20	—	—
121062 1999 CF ₁₁₆	16.3	X	179.63487	255.29863	298.71879	2.06190	0.1410931	0.25875992	2.4389602	20	11 7.5	19.8
121063 1999 CO ₁₂₁	15.5	X	55.35934	82.93181	90.59342	23.87266	0.1579543	0.28853650	2.2681349	20	5 29.8	18.0
121064 1999 CW ₁₃₂	16.8	X	353.95076	77.98104	115.76546	0.72166	0.1208155	0.28327431	2.2961377	20	2 19.6	19.1
121065 1999 CX ₁₃₂	17.0	X	286.19976	288.14766	311.93407	2.95236	0.1515443	0.28074645	2.3099001	20	1 21.7	20.3
121066 1999 CW ₁₃₅	14.4	X	245.07815	15.24414	344.67630	14.88980	0.1763221	0.24280509	2.5446664	20	4 26.5	18.6
121067 1999 CN ₁₄₅	17.1	X	306.59676	296.12998	190.85641	0.75190	0.1384245	0.26785440	2.3834362	20	—	—
121068 1999 CT ₁₄₇	15.2	X	313.75535	316.34778	59.75488	2.03700	0.1601582	0.17309605	3.1886825	20	8 27.9	19.0
121069 1999 CK ₁₄₉	16.8	X	31.78089	147.52680	330.80369	2.18539	0.1810595	0.27789780	2.3256587	20	1 7.4	18.4
121070 1999 CS ₁₄₉	15.8	X	315.19492	287.25546	340.80859	8.57223	0.2126181	0.28287020	2.2983240	20	3 24.1	18.2
121071 1999 CT ₁₄₉	16.0	X	318.31350	273.65718	158.68409	1.27919	0.1161269	0.26221350	2.4174974	20	12 18.2	18.2
121072 1999 DP ₃	16.6	X	330.47403	344.29204	190.78944	2.79642	0.1011205	0.27660960	2.3328737	20	—	—
121073 1999 EL ₁₂	15.5	X	301.25734	315.47070	129.36424	7.45391	0.1783995	0.26214073	2.4179448	20	12 3.7	17.6
121074 1999 FA ₂	14.3	X	292.87493	96.03743	347.17067	2.72248	0.2218467	0.12335902	3.9965824	20	9 30.3	19.3
121075 1999 FA ₃	16.3	X	359.44699	123.58074	9.88056	2.50129	0.1423788	0.27291249	2.3538951	20	—	—
121076 1999 FB ₃	16.1	X	192.75192	273.89322	12.82083	1.33908	0.1735213	0.26684124	2.3894654	20	—	—
121077 1999 FG ₃	16.2	X	256.62084	37.13564	183.08033	2.81860	0.1640464	0.26795306	2.3828511	20	—	—
121078 1999 FP ₃	15.9	X	35.62944	311.91737	180.28867	23.43095	0.1879584	0.27820972	2.3239201	20	2 3.9	18.2
121079 1999 FP ₄	16.5	X	357.94094	271.95903	192.24470	7.69284	0.2060846	0.27025072	2.3693259	20	—	—
121080 1999 FO ₆	16.1	X	314.28938	76.28481	23.26743	5.07924	0.1934306	0.26337380	2.4103919	20	—	—
121081 1999 FN ₇	15.2	X	326.90065	299.56117	178.33070	22.87905	0.2602332	0.27035323	2.3687270	20	—	—
121082 1999 FP ₁₃	16.9	X	344.18996	150.12066	359.47557	2.50595	0.1496044	0.27437572	2.3455189	20	—	—
121083 1999 FV ₁₆	17.2	X	199.23496	253.04220	259.94550	0.29786	0.1309756	0.25625365	2.4548371	20	10 7.7	20.9
121084 1999 FY ₁₆	15.5	X	307.79959	338.46105	3.19301	4.22996	0.1417899	0.24654331	2.5188786	20	7 9.2	18.3
121085 1999 FA ₁₈	16.7	X	312.93898	104.98740	134.03658	1.32110	0.1685044	0.27717762	2.3296854	20	2 11.9	19.2
121086 1999 FB ₁₈	16.1	X	15.17924	293.34809	160.40123	2.02400	0.1995165	0.27061991	2.3671706	20	—	—
121087 1999 FO ₁₈	15.8	X	321.74279	154.83716	6.82575	8.59183	0.2148493	0.27205662	2.3588293	20	—	—
121088 1999 FX ₂₀	16.2	X	300.73600	96.44571	79.05577	3.10999	0.1529769	0.26986488	2.3715838	20	—	—
121089 1999 Vysší Brod	15.8	X	104.66394	103.81655	345.77038	8.88112	0.1859285	0.28350562	2.2948886	20	4 7.1	18.8
121090 1999 FM ₂₇	16.0	X	337.26562	99.73926	62.46782	2.81573	0.1551038	0.27341623	2.3510030	20	—	—
121091 1999 FG ₃₄	15.9	X	341.19451	64.73464	86.43042	3.27430	0.1627975	0.27287505	2.3541104	20	—	—
121092 1999 FG ₄₀	15.9	X	276.46241	226.81135	325.64056	4.53373	0.1393008	0.27016718	2.3698143	20	—	—
121093 1999 FO ₄₆	15.8	X	220.71774	194.43517	30.95753	2.89273	0.1470804	0.26579904	2.3957074	20	—	—
121094 1999 FY ₄₈	15.6	X	155.53044	159.36195	13.01703	8.37959	0.0810162	0.25282175	2.4770024	20	9 19.6	19.1
121095 1999 FM ₄₉	16.3	X	354.62645	66.21757	82.26603	3.54669	0.1063471	0.27577005	2.3376060	20	—	—
121096 1999 FG ₅₁	15.9	X	250.86737	317.96785	313.25495	4.62203	0.2187948	0.27435716	2.3456246	20	1 14.7	19.6
121097 1999 FM ₅₄	16.2	X	261.27267	355.17358	259.40256	5.30264	0.0828255	0.27532459	2.3401268	20	1 11.8	19.5
121098 1999 FL ₅₅	15.9	X	81.47019	82.56902	341.64466	5.02432	0.1285745	0.27721861	2.3294557	20	1 23.6	18.2
121099 1999 FV ₅₅	16.2	X	217.03720	96.06904	128.45272	3.04657	0.1145110	0.26572119	2.3961753	20	—	—
121100 1999 FS ₆₂	16.2	X	117.14511	195.23739	43.49727	1.00739	0.1636328	0.25313823	2.4749374	20	11 4.1	20.1
121101 1999 FA ₆₃	16.4	X	263.69646	263.34194	325.72180	1.86831	0.1297798	0.27157822	2.3615987	20	—	—
121102 1999 FE ₆₃	16.1	X	230.35298	58.87224	114.92855	6.64089	0.1297295	0.26116858	2.4239413	20	12 12.7	19.1
121103 1999 Ericneilsen	15.3	X	47.12324	333.15514	6.18584	18.22417	0.1820480	0.21088331	2.7953825	20	12 21.3	19.7
121104 1999 GQ	16.4	X	335.13565	146.05619	4.99860	4.79714	0.1615648	0.27254952	2.3559845	20	—	—
121105 1999 GL ₁	15.5	X	33.38557	132.64889	113.47649	4.15375	0.2525805	0.23994452	2.5648511	20	8 19.8	18.1
121106 1999 GW ₁	16.4	X	114.25221	78.09223	189.52546	2.12004	0.1621307	0.25502136	2.4627387	20	12 7.1	20.2
121107 1999 GF ₅	14.7	X	40.45540	49.84799	99.66056	23.32493	0.2165493	0.28174094	2.3044613	20	4 9.3	17.2
121108 1999 GA ₇	15.3	X	357.72790	15.04130	194.28299	21.17225	0.1415390	0.27973461	2.3154669	20	3 17.7	17.5
121109 1999 GV ₇	15.9	X	328.38459	277.18961	259.85260	4.56081	0.1634388	0.27475821	2.3433415	20	—	—
121110 1999 GO ₁₂	16.0	X	231.53893	125.24361	187.18785	0.59045	0.2037472	0.27430164	2.3459411	20	2 17.5	19.8
121111 1999 GD ₁₆	16.3	X	328.05130	211.26136	24.94294	4.73409	0.1030685	0.27975803	2.3153377	20	3 13.7	18.7
121112 1999 GG ₂₅	15.8	X	288.44507	163.63753	60.81794	3.11840	0.1687810	0.27349719	2.3505390	20	—	—
121113 1999 GM ₂₅	15.3	X	236.71837	215.62610	25.63746	13.69590	0.1279643	0.22231423	2.6987203	20	—	—
121114 1999 GD ₂₈	15.5	X	32.40600	71.73982	81.61785	4.05162	0.1263389	0.27921756	2.3183245	20	3 6.5	17.5
121115 1999 GO ₃₁	16.5	X	242.72673	90.2244								

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Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>
121121 1999 <i>HJ</i> ₃	16.9	X	22.49871	172.82040	71.56321	23.29374	0.0291041	0.38077844	1.8851872	20	7 1.1	18.7
121122 1999 <i>HW</i> ₃	16.4	X	299.40159	294.48894	261.99384	2.41494	0.1949025	0.27007094	2.3703773	20	—	—
121123 1999 <i>HK</i> ₄	15.9	X	126.84213	175.31624	123.18471	0.72619	0.0470008	0.21310132	2.7759520	20	—	—
121124 1999 <i>HZ</i> ₈	16.3	X	247.62677	320.21565	240.44525	1.26128	0.1261961	0.26498921	2.4005859	20	—	—
121125 1999 <i>HW</i> ₉	16.1	X	206.97861	300.52760	247.88009	1.64402	0.1324759	0.25836649	2.4414355	20	12 1.1	19.4
121126 1999 <i>JO</i> ₂	16.1	X	296.95567	91.39416	105.01186	4.86168	0.1762540	0.27102561	2.3648077	20	—	—
121127 1999 <i>JF</i> ₃	16.3	X	225.40415	301.96984	284.36269	1.56525	0.1344279	0.26334215	2.4105851	20	—	—
121128 1999 <i>JO</i> ₃	15.7	X	198.19703	278.88861	359.32754	9.46744	0.2239795	0.26578926	2.3957662	20	—	—
121129 1999 <i>JV</i> ₄	15.2	X	39.13701	258.38775	229.44528	21.94696	0.2813464	0.27707037	2.3302865	20	2 2.3	17.2
121130 1999 <i>JB</i> ₅	15.9	X	225.80048	225.49188	49.54413	6.92878	0.0919383	0.26843921	2.3799733	20	—	—
121131 1999 <i>JE</i> ₉	15.8	X	257.18552	40.01863	92.08893	12.09055	0.1908106	0.25841170	2.4411507	20	11 17.2	18.6
121132 1999 Garydavis	15.9	X	7.79742	1.43808	167.89862	7.21960	0.1128690	0.27580756	2.3373941	20	2 9.2	18.3
121133 1999 <i>JN</i> ₁₄	15.6	X	236.95204	241.37640	12.96057	9.72911	0.2155509	0.26724018	2.3870868	20	—	—
121134 1999 <i>JT</i> ₁₆	16.3	X	58.64088	81.89022	57.09203	5.09248	0.1617089	0.23204098	2.6227662	20	4 13.1	19.1
121135 1999 <i>JJ</i> ₂₆	16.2	X	269.20485	175.78420	71.66674	2.95492	0.2409003	0.22404067	2.6848383	20	1 5.9	20.6
121136 1999 <i>JJ</i> ₂₇	15.9	X	310.30805	189.80077	61.29350	6.00681	0.1155843	0.27723681	2.3293538	20	3 7.9	18.7
121137 1999 <i>JF</i> ₃₂	16.1	X	298.09053	149.95737	76.97555	3.18148	0.1606750	0.27287053	2.3541364	20	1 10.5	19.4
121138 1999 <i>JB</i> ₃₃	16.2	X	238.06874	134.25428	67.04528	3.23412	0.1608992	0.26254846	2.4154408	20	—	—
121139 1999 <i>JF</i> ₃₄	16.0	X	318.18715	234.51151	331.66154	4.37457	0.1783848	0.27337700	2.3512279	20	1 5.5	18.9
121140 1999 <i>JZ</i> ₃₉	16.3	X	206.58141	199.12563	47.33051	3.13511	0.1313941	0.26259464	2.4151576	20	—	—
121141 1999 <i>JE</i> ₄₀	15.4	X	69.53168	16.25245	220.78211	5.87494	0.1772532	0.24367686	2.5385937	20	9 12.3	19.0
121142 1999 <i>JQ</i> ₄₀	16.4	X	238.31261	132.35837	115.64410	2.17169	0.1476043	0.26689649	2.3891357	20	—	—
121143 1999 <i>JX</i> ₄₄	16.2	X	224.32401	192.05002	50.66540	6.95183	0.0756002	0.26451823	2.4034346	20	—	—
121144 1999 <i>JT</i> ₄₅	16.5	X	284.41844	64.15941	181.30192	1.98516	0.1812463	0.27246493	2.3564721	20	1 16.1	19.9
121145 1999 <i>JJ</i> ₅₉	15.5	X	219.08278	83.39758	75.90228	9.38845	0.2671702	0.26444169	2.4038983	20	—	—
121146 1999 <i>JT</i> ₆₇	15.8	X	232.50332	102.72271	80.48104	4.66546	0.2006117	0.26099433	2.4250200	20	12 16.4	18.9
121147 1999 <i>JK</i> ₆₉	15.6	X	214.97571	136.61436	107.54678	6.44534	0.2009150	0.26403590	2.4063606	20	—	—
121148 1999 <i>JC</i> ₇₁	15.7	X	309.21754	70.44556	107.34559	7.72438	0.0551846	0.26918942	2.3755494	20	—	—
121149 1999 <i>JQ</i> ₇₂	16.1	X	260.46922	89.42469	125.45830	3.34114	0.1321278	0.26678592	2.3897957	20	—	—
121150 1999 <i>JV</i> ₇₂	15.8	X	126.74968	154.83152	142.07926	3.94830	0.2646540	0.25647423	2.4534294	20	—	—
121151 1999 <i>JH</i> ₇₄	15.9	X	263.21965	115.27536	91.72731	7.20900	0.0843513	0.26582803	2.3955332	20	—	—
121152 1999 <i>JU</i> ₈₂	15.6	X	280.84074	165.54656	109.21514	10.92439	0.2424313	0.27484017	2.3428757	20	2 14.0	19.1
121153 1999 <i>JK</i> ₈₈	16.2	X	6.31250	118.25556	108.97460	4.24738	0.1520183	0.28091894	2.3089544	20	5 8.9	18.0
121154 1999 <i>JU</i> ₉₀	15.9	X	181.93727	118.53915	128.58255	4.70918	0.0805351	0.25978016	2.4325703	20	—	—
121155 1999 <i>JH</i> ₉₅	15.4	X	320.01039	165.84869	76.77778	14.40771	0.1472515	0.22980564	2.6397467	20	3 16.6	18.9
121156 1999 <i>JJ</i> ₉₆	16.2	X	282.26783	68.22060	156.76120	9.48940	0.1882391	0.27008989	2.3702664	20	—	—
121157 1999 <i>JT</i> ₉₇	16.0	X	24.19874	0.56892	159.23758	10.82260	0.1589790	0.27638225	2.3341528	20	2 26.4	17.8
121158 1999 <i>JH</i> ₉₈	15.3	X	159.95915	190.53086	107.22862	10.33851	0.1960828	0.21391282	2.7689270	20	—	—
121159 1999 <i>JJ</i> ₁₀₀	15.2	X	36.64559	125.42514	95.84778	28.97626	0.1196459	0.23717392	2.5847870	20	6 26.1	18.1
121160 1999 <i>JL</i> ₁₀₂	16.2	X	285.09366	93.36997	165.91796	5.18303	0.1087182	0.27497969	2.3420831	20	2 11.7	19.1
121161 1999 <i>JK</i> ₁₁₁	16.3	X	214.50418	84.95966	175.01280	5.57334	0.1642578	0.26403793	2.4063484	20	—	—
121162 1999 <i>JY</i> ₁₁₃	14.8	X	105.16895	252.54444	78.33957	8.58932	0.2342640	0.20974957	2.8054465	20	—	—
121163 1999 <i>JM</i> ₁₁₈	15.9	X	173.75348	152.43234	124.11279	2.28579	0.1771056	0.26044044	2.4284571	20	—	—
121164 1999 <i>JO</i> ₁₁₈	16.0	X	160.22321	171.11442	98.01618	3.46899	0.2028599	0.25784518	2.4447252	20	—	—
121165 1999 <i>JU</i> ₁₂₀	15.9	X	124.64951	196.38045	109.07327	3.54509	0.1958895	0.25631978	2.4544149	20	—	—
121166 1999 <i>JC</i> ₁₂₅	15.7	X	133.11748	176.59891	160.03211	2.85482	0.2343248	0.26170043	2.4206561	20	—	—
121167 1999 <i>JE</i> ₁₃₅	15.5	X	354.80092	33.18407	105.67598	13.70384	0.0711397	0.26996531	2.3709956	20	—	—
121168 1999 <i>KS</i> ₁	16.3	X	184.12382	207.23359	53.80524	1.97036	0.1582691	0.26218696	2.4176605	20	—	—
121169 1999 <i>KA</i> ₂	16.3	X	20.37936	327.67153	203.48878	2.09817	0.1192256	0.27736830	2.3286175	20	3 6.9	18.3
121170 1999 <i>KG</i> ₇	16.0	X	198.88715	119.03658	136.29135	4.87760	0.1216869	0.26274495	2.4142364	20	—	—
121171 1999 <i>KE</i> ₉	16.4	X	235.69132	335.53028	216.96690	1.71301	0.1550092	0.26147604	2.4220408	20	—	—
121172 1999 <i>KZ</i> ₁₁	15.5	X	48.55431	209.45732	60.16271	8.59023	0.1556523	0.24320776	2.5418569	20	10 2.7	18.8
121173 1999 <i>KE</i> ₁₃	15.5	X	276.18632	170.35388	73.67774	13.59533	0.1373825	0.22349443	2.6892112	20	1 19.2	19.6
121174 1999 <i>KK</i> ₁₄	15.4	X	177.44872	161.95314	95.81781	8.08520	0.0992563	0.25861560	2.4398675	20	—	—
121175 1999 <i>KU</i> ₁₅	15.8	X	325.61401	172.80473	52.11550	6.26835	0.0815773	0.27466762	2.3438568	20	2 28.7	18.6
121176 1999 <i>LH</i> ₅	15.9	X	334.41219	114.00717	137.82046	21.50783	0.2380710	0.28031465	2.3122716	20	4 1.1	18.4
121177 1999 <i>LV</i> ₆	15.0	X	301.00667	270.60289	187.01709	24.52191	0.2731119	0.25646250	2.4535042	20	12 14.3	17.3
121178 1999 <i>LS</i> ₈	16.1	X	302.51681	17.10377	183.15273	6.74414	0.1517573	0.26958969	2.3731974	20	—	—
121179 1999 <i>LX</i> ₁₄	16.1	X	41.56756	148.88139	130.16113	9.33631	0.1587956	0.24355316	2.5394532	20	10 6.2	19.4
121180 1999 <i>LX</i> ₁₅	16.3	X	205.26800	258.33509	115.90123	23.91762	0.0892082	0.36938121	1.9237687	20	4 22.6	19.4
121181 1999 <i>LC</i> ₂₅	16.1	X	231.46605	167.49798	87.83506	5.72766	0.1751659	0.26488228	2.4012319	20	—	—
121182 1999 <i>LQ</i> ₃₁	16.3	X	41.28241	158.00271	128.68905	7.12872	0.2068904	0.24378795	2.5378224	20	10 22.9	19.6
121183 1999 <i>LT</i> ₃₆	16.3	X	177.89825	122.29705	128.49713	9.00241	0.1774187	0.25838078	2.4413455	20	—	—
121184 1999 <i>NH</i>	16.3	X	156.49345	120.44555	292.75395	20.11611	0.0396948	0.36585935	1.9360948	20	3 16.1	19.0
121185 1999 <i>NP</i>	16.1	X	221.47333	260.69826	3.69679	2.09865	0.1909753	0.26238606	2.4164373	20	—	—
121186 1999 <i>NR</i> ₁	16.0	X	9.89626	94.33509	153.06690	23.67743	0.1109566	0.37374831	1.9087537	20	6 25.2	18.0
121187 1999 <i>NJ</i> ₁₃	15.7	X	9.53684	13.38016	291.62885	3.14601	0.2771415					

ELEMENTS AND OPPOSITION DATES IN 2020

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Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>
121201 1999 NR ₄₁	16.5 ^m	X	286.48259	228.75590	121.07843	25.22589	0.0836666	0.37244855	1.9131919	20	7 2.4	18.2
121202 1999 NG ₄₆	15.3	X	13.10628	149.83404	151.35772	5.44134	0.2652394	0.23940866	2.5686769	20	10 5.9	17.7
121203 1999 NB ₄₉	15.3	X	24.14888	148.95023	154.42339	3.96637	0.2323992	0.23967772	2.5667541	20	10 22.4	18.1
121204 1999 OK ₂	15.7	X	204.47018	44.84081	299.44653	17.55931	0.0644818	0.35727781	1.9669743	20	2 18.0	18.3
121205 1999 PG ₁	15.4	X	339.91743	183.28175	142.71983	2.67695	0.2651286	0.18652222	3.0337678	20	8 3.9	17.9
121206 1999 PO ₃	15.3	X	209.30284	24.25445	341.69721	8.95892	0.2231352	0.22102845	2.7091763	20	4 3.9	20.0
121207 1999 PX ₃	16.7	X	308.08536	351.61578	110.57382	17.28806	0.0785186	0.37041224	1.9201972	20	5 11.3	18.9
121208 1999 PZ ₄	16.1	X	309.17598	94.89450	233.51156	1.73850	0.2999639	0.23030736	2.6359116	20	5 9.3	19.2
121209 1999 QJ ₁	14.8	X	280.01016	284.84298	159.49080	10.92566	0.0636686	0.19182656	2.9775808	20	10 21.5	18.8
121210 1999 QG ₂	15.8	X	270.21960	157.71418	108.15801	8.39355	0.3335440	0.26764434	2.3846831	20	1 16.9	19.9
121211 Nikeshadavis	15.8	X	43.73413	132.99564	180.98578	4.58446	0.2374000	0.24230035	2.5481991	20	12 1.5	19.4
121212 1999 RP ₅	16.3	X	340.47856	96.23253	338.90524	1.04139	0.1018664	0.19787921	2.9165490	20	—	—
121213 1999 RR ₆	15.4	X	64.58870	326.14732	352.97000	5.99824	0.0133668	0.19503138	2.9448717	20	11 19.7	19.5
121214 1999 RQ ₇	15.9	X	66.87197	251.93377	156.16417	3.24193	0.1429309	0.20375332	2.8602210	20	—	—
121215 1999 RA ₈	15.6	X	316.41419	168.39192	161.87086	4.53155	0.1418711	0.22880626	2.6474278	20	7 5.4	18.5
121216 1999 RP ₉	15.5	X	258.06063	133.96631	159.50668	2.75731	0.0707060	0.21793073	2.7347885	20	3 6.8	19.4
121217 1999 RV ₁₀	14.7	X	233.50452	84.66643	317.83786	16.38285	0.1731583	0.17940006	3.1135931	20	6 15.8	19.9
121218 1999 RJ ₁₁	16.1	X	170.34536	63.34242	342.40701	18.64322	0.0937435	0.36338503	1.9448735	20	4 3.4	18.7
121219 1999 RL ₁₁	15.7	X	329.06278	159.47252	150.83639	12.63987	0.1958288	0.23161377	2.6259904	20	6 24.7	18.4
121220 1999 RK ₁₃	15.8	X	2.67230	353.08531	343.79483	5.44381	0.2858433	0.23775912	2.5805440	20	11 5.8	18.3
121221 1999 RO ₁₃	15.5	X	330.59026	199.64761	144.02059	2.96731	0.2336674	0.18596796	3.0397927	20	8 9.3	18.1
121222 1999 RG ₁₄	16.5	X	131.43727	79.43754	160.73302	26.19773	0.0568692	0.38509739	1.8710655	20	12 20.7	19.3
121223 1999 RQ ₁₅	16.8	X	275.01120	80.03386	346.00230	19.35346	0.1277949	0.37803416	1.8942997	20	10 6.9	18.4
121224 1999 RA ₂₁	16.6	X	191.85545	22.40576	348.71928	18.42135	0.0848762	0.36027425	1.9560528	20	3 16.9	18.9
121225 1999 RZ ₂₇	14.6	X	339.34930	123.71378	200.16448	16.58269	0.2350442	0.18504820	3.0498569	20	7 26.7	18.0
121226 1999 RZ ₂₈	16.8	X	271.40854	227.83705	175.45359	22.21964	0.0997835	0.37478371	1.9052366	20	8 31.3	18.3
121227 1999 RA ₂₉	16.1	X	355.01698	29.69497	352.96128	22.98414	0.0172154	0.38454181	1.8728673	20	—	—
121228 1999 RQ ₂₉	15.9	X	213.71167	24.88031	316.42679	17.94433	0.0683495	0.36103134	1.9533172	20	2 26.3	18.3
121229 1999 RC ₃₀	14.8	X	349.99540	305.03071	324.54929	27.57388	0.1673428	0.22894790	2.6463357	20	6 9.6	18.2
121230 1999 RH ₃₀	16.5	X	230.33522	60.71111	318.14004	22.57725	0.0864716	0.36726912	1.9311371	20	5 30.9	19.5
121231 1999 RD ₃₁	16.3	X	158.80847	55.30108	357.21221	24.43367	0.0836132	0.35888681	1.9610909	20	3 31.4	18.8
121232 Zerin	15.0	X	67.24209	214.50384	296.01819	11.89405	0.1095801	0.21783453	2.7355935	20	4 28.9	18.8
121233 1999 RU ₃₆	15.5	X	57.60701	253.35019	153.38363	12.91107	0.0943003	0.20411981	2.8567964	20	—	—
121234 1999 RM ₃₇	14.8	X	37.74727	322.16720	343.82356	28.58856	0.0577997	0.23956352	2.5675698	20	10 2.1	18.5
121235 1999 RB ₃₉	16.0	X	13.69321	322.09909	355.87846	4.52692	0.2563814	0.23806108	2.5783614	20	10 25.9	18.7
121236 Adrianagutierrez	15.8	X	230.84905	275.62247	41.08239	21.64014	0.0760885	0.35635578	1.9703657	20	3 4.2	18.8
121237 Zachdolch	15.0	X	293.32130	287.04425	106.88611	9.56400	0.3195626	0.18054876	3.1003190	20	7 23.5	18.8
121238 1999 RM ₄₀	17.1	X	142.41975	86.89860	345.25862	18.75553	0.1033656	0.36140665	1.9519647	20	4 7.8	19.7
121239 1999 RQ ₄₁	15.4	X	58.65041	292.89772	35.26587	2.32043	0.1084315	0.19601456	2.9350162	20	12 8.1	19.5
121240 1999 RG ₄₄	14.8	X	315.93741	186.60588	141.04602	10.30107	0.2589134	0.18301068	3.0724519	20	6 12.6	18.4
121241 1999 RW ₄₆	15.4	X	307.59674	13.00011	311.04164	2.77793	0.3534162	0.23119534	2.6291578	20	5 3.9	18.5
121242 1999 RR ₄₈	15.4	X	358.30153	333.56446	334.28333	8.80583	0.2548830	0.23636764	2.5906617	20	9 5.8	17.3
121243 1999 RQ ₅₀	15.6	X	66.14056	185.85026	124.54882	7.57980	0.1866845	0.24501024	2.5293751	20	12 14.8	19.5
121244 1999 RE ₅₁	15.4	X	145.14468	165.47124	151.29536	7.76906	0.2388355	0.25568229	2.4584928	20	—	—
121245 1999 RO ₅₁	15.6	X	23.76466	109.81863	198.01261	3.98610	0.1965441	0.23899877	2.5716129	20	10 20.5	18.4
121246 1999 RU ₅₅	15.3	X	252.76210	106.42422	146.19495	21.98524	0.2017412	0.26339138	2.4102847	20	—	—
121247 1999 RX ₅₈	15.5	X	129.25643	67.32864	313.63779	9.08609	0.1383109	0.21158793	2.7891730	20	2 10.3	19.7
121248 1999 RR ₆₃	15.9	X	115.73451	47.41845	334.40287	8.43629	0.1739789	0.20943765	2.8082313	20	2 3.2	19.8
121249 1999 RC ₆₅	15.4	X	253.21291	216.17862	170.90530	3.84002	0.0812980	0.22871940	2.6480979	20	6 29.5	19.1
121250 1999 RF ₆₆	15.7	X	102.27879	67.09088	347.18531	7.16104	0.2287974	0.21041816	2.7995006	20	3 4.7	19.5
121251 1999 RO ₇₁	15.2	X	320.32469	230.60121	123.01638	3.11734	0.0836888	0.18553909	3.0444751	20	8 16.9	19.1
121252 1999 RS ₇₁	14.8	X	269.33392	32.36275	352.79242	15.90659	0.2229311	0.18081793	3.0972413	20	6 26.7	19.6
121253 1999 RW ₇₁	14.7	X	194.20729	61.29497	352.21654	18.83130	0.2229274	0.17411702	3.1762052	20	5 16.3	20.5
121254 1999 RK ₇₆	15.4	X	127.68758	52.92261	176.24380	5.30576	0.1443872	0.24079263	2.5588250	20	10 31.9	19.4
121255 1999 RM ₈₃	14.8	X	250.92237	6.75461	7.66275	10.08786	0.1049060	0.17790243	3.1309884	20	6 4.2	19.6
121256 1999 RL ₈₅	16.0	X	357.77206	159.50805	151.21804	4.86755	0.1840060	0.23366761	2.6105802	20	9 2.0	18.2
121257 1999 RQ ₉₁	15.0	X	155.57837	72.81996	4.20858	12.68305	0.1357155	0.21932902	2.7231527	20	5 12.1	19.4
121258 1999 RL ₉₄	14.6	X	81.68308	253.34191	17.91506	10.17521	0.0776595	0.19052276	2.9911497	20	10 20.6	18.8
121259 1999 RC ₉₅	15.3	X	319.28424	285.09397	2.71165	8.35110	0.1357500	0.22461795	2.6802363	20	5 7.5	18.6
121260 1999 RR ₉₆	15.9	X	102.38069	70.15699	210.71607	5.01241	0.2227052	0.24516613	2.5283027	20	12 13.4	20.2
121261 1999 RY ₉₇	15.4	X	138.22635	206.68425	168.90677	4.18597	0.1120460	0.21020599	2.8013841	20	2 10.5	19.6
121262 1999 RE ₉₈	15.0	X	295.76064	41.99840	19.63556	10.76656	0.1078336	0.18840433	3.0135296	20	10 6.5	18.8
121263 1999 RO ₉₈	15.2	X	320.74385	335.54030	45.26336	5.28832	0.1439307	0.18719042	3.0265438	20	9 21.3	18.6
121264 1999 RP ₁₀₅	15.6	X	43.70071	319.93472	328.09786	13.86200	0.1930666	0.23815904	2.5776543	20	10 13.9	19.3
121265 1999 RT ₁₀₆	14.9	X	248.48413	78.97089	327.43690	17.96300	0.2790777	0.17784238	3.1316932	20	6 26.0	20.2
121266 1999 RU ₁₀₆	15.2	X	353.00952	331.92350	316.01641	13.89078	0.1891143	0.22995746	2.6385848	20	7 17.9	17.6
121267 1999 RX ₁₀₆	15.3	X	320.07559	89.35150	255.96644	1.93075	0.0794099	0.18330233	3.0691920	20	8 4.5	19.2
121268 1999 RD ₁₀₈	15.4	X	152.86758	56.93635	206.55769	11.32414	0.2019872	0.24952096	2.4987992	20	12 31.9	19.8
121269 1999 RK ₁₀₈	14.8	X	225.80334	6.85969	270.40535	8.30332	0.1218883	0.21174228	2.7878174	20	1 10.2	19.3
121270 1999 RT ₁₁₃	15.5	X	197.86168	93.19204	247.77873	4.01346	0.0656544	0.21642149	2.7474879	20	2 26.5	19.6
121271 1999 RD ₁₁₄	15.2	X	119.24205	87.96742	245.92838	6.62099	0.1730803	0.20479507	2.8505132	20	—	—
121272 1999 RB ₁₁₅	15.5	X	164.53849	50.40130	294.85818	4.72277	0.0740930	0.21243170	2.7817825	20	1 29.4	19.6
121273 1999 RN ₁₁₈	15.7	X	76.48309	4.22757	288.41473	4.05352	0.1678142	0.24433631	2.5340239	20	11 30.3	19.5
121274 199												

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Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>
121281 1999 <i>RW</i> ₁₄₈	15.2	X	136.75665	339.92282	330.42390	4.81149	0.1645145	0.20522072	2.8465703	20	—	—
121282 1999 <i>RC</i> ₁₅₃	14.9	X	356.45132	336.57028	317.65374	9.49433	0.2103794	0.18558100	3.0440168	20	7 29.6	17.9
121283 1999 <i>RE</i> ₁₅₃	15.1	X	318.53042	9.34619	309.47728	9.96877	0.1839092	0.18252288	3.0779237	20	6 15.4	18.8
121284 1999 <i>RQ</i> ₁₅₇	15.3	X	180.36579	29.69049	357.37689	13.35830	0.2351712	0.21813527	2.7330786	20	4 6.7	20.2
121285 1999 <i>RB</i> ₁₆₁	15.3	X	279.37409	19.98754	11.16245	1.86234	0.2113774	0.18109757	3.0940522	20	7 17.6	19.6
121286 1999 <i>RG</i> ₁₆₁	15.4	X	81.17535	82.89540	212.98620	3.34816	0.1616454	0.24432743	2.5340853	20	12 8.9	19.2
121287 1999 <i>RU</i> ₁₆₄	15.4	X	55.65672	184.96261	223.96045	4.42249	0.1692164	0.20353982	2.8622207	20	—	—
121288 1999 <i>RT</i> ₁₇₁	15.7	X	14.82056	145.79796	159.88165	13.66934	0.1747119	0.23589778	2.5941006	20	9 30.5	18.5
121289 1999 <i>RS</i> ₁₇₄	15.4	X	260.39169	263.93509	127.44697	2.08204	0.2649672	0.17922384	3.1155797	20	6 18.2	20.3
121290 1999 <i>RK</i> ₁₇₆	15.5	X	42.60317	77.77728	313.32551	3.07645	0.1830648	0.19942540	2.9014543	20	—	—
121291 1999 <i>RN</i> ₁₇₆	15.2	X	284.47705	173.65450	198.55061	3.82158	0.1647863	0.18126952	3.0920952	20	7 5.9	19.4
121292 1999 <i>RR</i> ₁₈₀	15.8	X	47.83978	275.00555	40.82764	4.48166	0.2064335	0.24128767	2.5553239	20	12 2.9	19.4
121293 1999 <i>RL</i> ₁₈₂	15.2	X	192.07956	356.61847	347.24799	13.54662	0.2048581	0.21504814	2.7591729	20	2 29.1	19.9
121294 1999 <i>RW</i> ₁₈₂	16.0	X	27.33256	330.61023	340.72517	1.64914	0.1888495	0.23775113	2.5806017	20	10 28.3	18.9
121295 1999 <i>RW</i> ₁₈₅	16.2	X	68.23063	317.53289	349.88679	4.97841	0.1293078	0.24280987	2.5446330	20	12 5.3	20.0
121296 1999 <i>RH</i> ₁₉₃	15.3	X	36.73413	338.71351	52.22638	2.75166	0.1157963	0.19985421	2.8973025	20	—	—
121297 1999 <i>RU</i> ₁₉₅	14.4	X	314.75232	0.80020	318.33835	21.95690	0.0867257	0.18129441	3.0918122	20	6 25.6	18.8
121298 1999 <i>RK</i> ₁₉₈	15.0	X	279.32498	112.95692	266.54588	8.65906	0.2757782	0.18158021	3.0885671	20	6 22.4	19.3
121299 1999 <i>RL</i> ₂₀₂	14.9	X	286.85321	162.22369	229.72482	8.67615	0.1760529	0.18242701	3.0790019	20	7 31.1	19.0
121300 1999 <i>RM</i> ₂₀₂	14.8	X	177.62561	33.53654	328.90526	11.59187	0.0876179	0.21386658	2.7693261	20	3 3.2	18.9
121301 1999 <i>RT</i> ₂₀₂	15.0	X	262.07840	147.66932	247.66897	8.41458	0.0604273	0.18061588	3.0995508	20	7 20.5	19.4
121302 1999 <i>RN</i> ₂₀₃	14.5	X	92.63891	245.88825	340.15707	26.85402	0.1379827	0.23454425	2.6040712	20	9 14.3	18.5
121303 1999 <i>RB</i> ₂₀₅	15.0	X	227.78440	43.92005	289.27697	12.34299	0.1951349	0.21799481	2.7342525	20	3 8.9	19.8
121304 1999 <i>RA</i> ₂₀₆	15.0	X	229.22910	23.24167	308.20739	7.41747	0.2159334	0.21818213	2.7326873	20	3 10.4	19.8
121305 1999 <i>RH</i> ₂₀₆	14.6	X	331.36449	52.42379	328.90639	9.60766	0.1517919	0.18087386	3.0966029	20	6 30.2	18.1
121306 1999 <i>RQ</i> ₂₀₇	15.2	X	156.61290	49.00635	299.48293	6.65459	0.2323908	0.20981022	2.8049058	20	2 6.1	19.9
121307 1999 <i>RT</i> ₂₀₇	14.6	X	57.97361	70.09478	237.73398	8.72896	0.0304414	0.19080477	2.9882016	20	10 30.9	18.7
121308 1999 <i>RD</i> ₂₀₈	14.4	X	220.99108	140.87521	265.86976	11.12915	0.2320995	0.17444589	3.1722121	20	6 4.5	19.7
121309 1999 <i>RG</i> ₂₀₉	15.4	X	243.32315	58.77104	321.23879	7.57194	0.2348273	0.17550955	3.1593825	20	5 20.5	20.7
121310 1999 <i>RJ</i> ₂₀₉	14.9	X	247.64403	121.67143	329.49819	10.39381	0.1825840	0.17413583	3.1759766	20	4 28.2	20.0
121311 1999 <i>RR</i> ₂₀₉	15.1	X	318.78770	90.80578	270.87631	9.14134	0.1456585	0.18337683	3.0683607	20	8 15.1	18.9
121312 1999 <i>RS</i> ₂₀₉	14.7	X	278.01637	133.40687	273.60438	8.78490	0.1114624	0.18283465	3.0744237	20	8 16.8	19.0
121313 Tamsin	16.5	X	336.29538	89.07558	215.12320	1.06888	0.0832885	0.22884331	2.6471420	20	7 8.4	19.6
121314 1999 <i>RW</i> ₂₁₇	15.5	X	343.26921	12.87248	329.21515	3.85751	0.2106010	0.23707715	2.5854904	20	9 18.9	17.4
121315 Mikelentz	15.7	X	264.73122	6.28048	291.85477	2.91540	0.2033709	0.22236358	2.6983210	20	3 3.9	19.8
121316 1999 <i>RC</i> ₂₁₉	15.3	X	250.92656	205.05623	123.44107	5.88471	0.1434988	0.22106847	2.7088493	20	4 6.4	19.4
121317 1999 <i>RE</i> ₂₂₅	14.9	X	330.63289	119.71390	298.06262	4.52767	0.2242637	0.19175991	2.9782707	20	11 27.9	17.6
121318 1999 <i>RY</i> ₂₄₂	15.5	X	72.05290	257.14774	50.25959	8.22088	0.2377099	0.24389326	2.5370918	20	12 20.0	19.6
121319 1999 <i>RN</i> ₂₄₇	16.0	X	142.04947	218.93637	141.33225	10.35007	0.2330243	0.21175578	2.7876989	20	2 8.2	20.5
121320 1999 <i>RR</i> ₂₄₉	15.7	X	280.46891	58.70346	342.67171	2.80587	0.1538951	0.18341353	3.0679514	20	8 10.6	19.6
121321 1999 <i>SH</i>	15.5	X	255.13519	339.62200	17.64692	4.30983	0.2851976	0.22368035	2.6877209	20	4 28.9	20.0
121322 1999 <i>SQ</i> ₁	16.2	X	324.75523	337.96706	13.75082	2.50890	0.2285938	0.23174460	2.6250020	20	8 17.8	18.3
121323 1999 <i>SJ</i> ₃	14.5	X	254.04782	62.28530	294.16165	23.32618	0.2442684	0.17592317	3.1544286	20	4 24.6	20.0
121324 1999 <i>SQ</i> ₅	16.2	X	156.59522	298.73509	157.61728	23.52411	0.1742317	0.36444809	1.9410896	20	6 17.2	19.6
121325 1999 <i>SU</i> ₅	16.2	X	344.93093	308.00005	29.49513	21.68360	0.0701852	0.37598132	1.9011886	20	10 14.3	17.5
121326 1999 <i>SG</i> ₁₂	14.5	X	316.30716	79.30402	245.91135	21.27238	0.2718478	0.18121229	3.0927462	20	6 4.9	17.9
121327 Andreweaker	15.7	X	305.22885	342.19627	43.12461	1.67789	0.1933299	0.18423152	3.0588635	20	8 22.5	19.1
121328 Devlynrfennell	14.8	X	211.61037	160.17348	311.20230	8.79423	0.0938835	0.18326179	3.0696447	20	8 22.7	19.4
121329 Getzandanner	15.1	X	297.34415	73.90262	273.19094	12.78555	0.1909550	0.18134568	3.0912295	20	6 17.9	19.1
121330 1999 <i>SW</i> ₁₆	15.4	X	284.87935	150.87623	232.26119	7.01578	0.2213682	0.18111408	3.0938641	20	7 11.2	19.6
121331 Savannahsalazar	15.1	X	273.07035	194.13945	176.13508	10.22434	0.0616135	0.17897455	3.1184721	20	7 3.4	19.6
121332 Jasonhair	14.9	X	271.32593	39.96020	284.90503	4.05393	0.1323999	0.17588154	3.1549262	20	4 23.5	19.5
121333 1999 <i>TF</i> ₃	15.9	X	69.91772	28.85995	31.67735	2.33784	0.0656178	0.20586862	2.8405948	20	1 7.2	19.5
121334 1999 <i>TQ</i> ₃	15.0	X	242.55285	86.49265	329.35557	9.73219	0.0585518	0.18014047	3.1050018	20	7 26.6	19.5
121335 1999 <i>TO</i> ₄	16.6	X	248.51738	56.40103	9.56951	21.12396	0.0861987	0.37342206	1.9098653	20	9 11.5	18.4
121336 1999 <i>TF</i> ₆	14.9	X	258.64287	351.10794	27.64606	7.25175	0.1604839	0.17719687	3.1392942	20	6 12.5	19.6
121337 1999 <i>TW</i> ₈	15.1	X	307.98854	312.94093	353.37258	11.90115	0.0344332	0.22483225	2.6785328	20	5 29.9	18.9
121338 1999 <i>TY</i> ₈	15.6	X	310.61101	163.00908	177.23015	3.01945	0.2253494	0.18211845	3.0824787	20	6 24.4	19.2
121339 1999 <i>TQ</i> ₁₅	15.7	X	119.40526	162.77453	203.53836	1.62326	0.1072810	0.20553385	2.8436784	20	1 9.5	19.7
121340 1999 <i>TO</i> ₁₇	15.8	X	138.36753	19.39677	30.85522	20.92093	0.1123493	0.35417711	1.9784377	20	3 22.7	18.4
121341 1999 <i>TB</i> ₁₉	15.1	X	8.77300	211.42827	205.29177	4.92461	0.1557322	0.19503751	2.9448101	20	—	—
121342 1999 <i>TV</i> ₁₉	14.7	X	222.57210	257.33069	43.88332	14.01254	0.0409925	0.21015806	2.8018100	20	2 14.7	19.0
121343 1999 <i>TH</i> ₂₇	15.3	X	153.69176	354.88560	21.19817	7.00385	0.2357747	0.21031317	2.8004323	20	3 9.9	20.1
121344 1999 <i>TB</i> ₂₉	15.4	X	359.13818	136.56040	200.52051	4.11583	0.1246996	0.23524234	2.5989169	20	10 7.9	18.3
121345 1999 <i>TA</i> ₃₂	15.5	X	330.32195	109.22928	207.72415	8.14948	0.0904170	0.22742621	2.6581269	20	7 14.4	18.7
121346 1999 <i>TB</i> ₃₃	15.1	X	237.55783	132.41904	301.10920	1.00833						

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>
121361 1999 <i>TJ</i> ₆₀	15.6	X	342.71862	95.24129	299.73314	0.90477	0.1027331	0.19225613	2.9731438	20	11 15.6	19.3
121362 1999 <i>TB</i> ₆₁	15.2	X	99.37398	231.48459	322.11650	3.20896	0.0698809	0.18217939	3.0817913	20	8 4.5	19.6
121363 1999 <i>TK</i> ₆₁	16.1	X	32.37558	269.60360	203.98502	3.24263	0.0550849	0.20939486	2.8086139	20	1 18.9	19.7
121364 1999 <i>TH</i> ₆₂	15.4	X	174.50608	167.96330	41.10785	9.27505	0.0192802	0.18937299	3.0032445	20	11 16.1	19.8
121365 1999 <i>TB</i> ₆₅	16.2	X	90.67445	62.59825	185.57471	2.47583	0.1093425	0.23770534	2.5809331	20	10 14.4	19.9
121366 1999 <i>TZ</i> ₆₅	14.9	X	310.52895	94.06442	238.28713	3.56215	0.1834921	0.17941512	3.1133649	20	6 19.9	18.8
121367 1999 <i>TK</i> ₆₇	15.9	X	74.50941	40.79758	340.99215	1.54596	0.0254790	0.20036479	2.8923784	20	—	—
121368 1999 <i>TP</i> ₆₉	15.2	X	130.02317	331.77383	329.52585	0.89896	0.0445058	0.19773969	2.9179207	20	—	—
121369 1999 <i>TJ</i> ₇₀	15.4	X	190.21475	110.30288	6.23882	1.01739	0.1296625	0.17821888	3.1272810	20	8 6.4	20.4
121370 1999 <i>TK</i> ₇₂	15.6	X	260.38140	230.18805	74.55572	4.57705	0.0556400	0.21350537	2.7724487	20	3 28.2	19.5
121371 1999 <i>TE</i> ₇₇	15.6	X	167.60469	23.87789	11.13635	2.24404	0.0793957	0.21354896	2.7720714	20	4 3.3	19.6
121372 1999 <i>TD</i> ₇₉	15.5	X	29.11510	126.69309	159.75176	2.77532	0.0782782	0.18454032	3.0554501	20	9 2.2	19.4
121373 1999 <i>TB</i> ₈₀	15.7	X	219.02270	72.96921	84.00112	2.17948	0.1437003	0.19040508	2.9923819	20	10 23.7	20.2
121374 1999 <i>TG</i> ₈₀	17.3	X	223.33042	172.43776	178.44312	5.03398	0.1565843	0.26617930	2.3934252	20	4 1.3	20.8
121375 1999 <i>TK</i> ₈₀	14.8	X	118.03541	114.89057	24.48766	12.16806	0.0908285	0.17379335	3.1801476	20	6 19.7	19.7
121376 1999 <i>TX</i> ₈₃	16.0	X	213.34293	125.48847	146.54502	1.99259	0.1738737	0.26048169	2.4282007	20	—	—
121377 1999 <i>TF</i> ₈₅	15.8	X	161.59697	345.07982	292.22954	0.88160	0.0384750	0.20170472	2.8795548	20	—	—
121378 1999 <i>TO</i> ₈₇	15.8	X	138.94783	195.19136	121.40988	3.23960	0.0443113	0.19814371	2.9139528	20	—	—
121379 1999 <i>TV</i> ₈₇	15.4	X	7.09252	358.85430	64.87426	10.81714	0.0473917	0.19413824	2.9538969	20	—	—
121380 1999 <i>TJ</i> ₈₉	15.8	X	335.59753	312.32018	10.01512	1.54466	0.2037919	0.23135851	2.6279215	20	7 29.2	18.1
121381 1999 <i>TJ</i> ₉₄	15.6	X	115.64680	206.12819	137.03027	3.51287	0.2130716	0.20329419	2.8645258	20	—	—
121382 1999 <i>TU</i> ₉₇	16.0	X	139.98569	243.24714	81.93785	4.46549	0.1219394	0.25159935	2.4850189	20	—	—
121383 1999 <i>TJ</i> ₁₀₀	15.2	X	318.48618	152.11940	177.58769	5.48528	0.1601115	0.18129781	3.0917736	20	7 2.9	18.9
121384 1999 <i>TM</i> ₁₀₄	15.0	X	310.68984	99.40814	226.36171	8.63224	0.2174096	0.17988044	3.1079934	20	6 6.2	18.8
121385 1999 <i>TC</i> ₁₁₄	15.6	X	26.33777	180.21401	210.78240	0.83782	0.2033103	0.19629678	2.9322024	20	—	—
121386 1999 <i>TP</i> ₁₁₄	15.7	X	29.21545	195.76918	191.62660	3.45156	0.2643652	0.19611888	2.9339752	20	—	—
121387 1999 <i>TE</i> ₁₁₇	15.0	X	218.68597	183.23571	208.56786	6.09840	0.1215385	0.17386417	3.1792840	20	5 23.1	19.9
121388 1999 <i>TJ</i> ₁₁₇	15.1	X	186.76117	79.07947	246.00170	2.71804	0.0903386	0.21025477	2.8009507	20	1 29.1	19.4
121389 1999 <i>TY</i> ₁₁₇	14.7	X	258.84470	134.95891	240.21401	6.18613	0.1762597	0.17719368	3.1393318	20	6 7.1	19.4
121390 1999 <i>TA</i> ₁₁₈	15.0	X	148.95543	12.45255	347.84624	9.16764	0.1675257	0.20940435	2.8085290	20	2 11.3	19.4
121391 1999 <i>TP</i> ₁₁₈	15.5	X	160.95633	69.32736	338.16246	4.59127	0.0473130	0.21643319	2.7473889	20	4 7.9	19.5
121392 1999 <i>TU</i> ₁₁₈	15.9	X	278.75873	51.29063	339.31370	0.56459	0.2350181	0.18020024	3.1043152	20	7 12.1	20.0
121393 1999 <i>TA</i> ₁₂₀	15.4	X	255.10734	32.85264	290.55800	3.94052	0.0613060	0.21861311	2.7290945	20	4 9.2	19.4
121394 1999 <i>TM</i> ₁₂₀	15.4	X	58.45908	319.49502	4.02438	13.73576	0.1780371	0.24145353	2.5541536	20	12 20.5	19.4
121395 1999 <i>TQ</i> ₁₂₂	15.9	X	40.06236	150.61432	163.60910	5.68157	0.2925285	0.23940363	2.5687129	20	12 4.5	19.6
121396 1999 <i>TW</i> ₁₂₃	14.7	X	251.40724	158.09492	200.30534	15.73026	0.1338864	0.17403196	3.1772401	20	5 15.6	19.6
121397 1999 <i>TR</i> ₁₂₅	14.9	X	321.09277	57.48441	336.70040	6.55697	0.0523791	0.18834993	3.0141098	20	10 9.6	18.8
121398 1999 <i>TR</i> ₁₂₉	16.4	X	310.18133	357.27505	339.27473	1.69601	0.1089863	0.22893337	2.6464477	20	7 8.7	19.5
121399 1999 <i>TO</i> ₁₂₉	15.9	X	164.29527	78.45406	301.60684	1.69586	0.0695214	0.21469270	2.7622174	20	3 10.8	20.0
121400 1999 <i>TR</i> ₁₂₉	16.3	X	42.39145	294.16627	359.01349	13.61440	0.1986367	0.23763582	2.5814365	20	10 22.4	19.8
121401 1999 <i>TX</i> ₁₂₉	15.3	X	119.72566	50.05068	350.90805	5.22255	0.0310934	0.21138283	2.7909769	20	2 11.6	19.0
121402 1999 <i>TK</i> ₁₃₁	15.3	X	87.90332	150.25587	0.47617	13.28050	0.1131276	0.22039002	2.7144057	20	5 30.1	19.3
121403 1999 <i>TL</i> ₁₃₁	15.7	X	240.32176	123.11554	200.79413	5.93892	0.0510773	0.21759866	2.7375701	20	3 25.7	19.5
121404 1999 <i>TV</i> ₁₃₂	16.1	X	123.85239	143.98534	325.52154	1.80408	0.1841538	0.26497458	2.4006743	20	5 29.3	19.7
121405 1999 <i>TZ</i> ₁₃₄	14.5	X	97.37832	69.18412	200.17418	9.91076	0.0739279	0.19065562	2.9897599	20	11 6.6	19.0
121406 1999 <i>TR</i> ₁₃₅	15.7	X	106.08202	66.20210	271.57124	1.16941	0.0967968	0.20028709	2.8931264	20	—	—
121407 1999 <i>TB</i> ₁₃₈	15.7	X	99.49015	210.49921	2.27639	4.54575	0.1020814	0.22961203	2.6412304	20	9 7.4	19.6
121408 1999 <i>TB</i> ₁₃₉	16.0	X	274.45475	341.47643	11.19229	2.57432	0.0704796	0.22350058	2.6891618	20	6 12.5	19.5
121409 1999 <i>TD</i> ₁₄₀	15.6	X	231.68465	290.46464	16.01613	3.03315	0.2269412	0.21394737	2.7686289	20	2 15.9	20.3
121410 1999 <i>TH</i> ₁₄₁	15.7	X	25.09469	64.49805	24.38066	6.46955	0.1110520	0.20213245	2.8754911	20	—	—
121411 1999 <i>TR</i> ₁₄₁	15.1	X	209.08752	27.16087	19.83194	3.44374	0.0727329	0.17171263	3.2057862	20	6 2.7	19.9
121412 1999 <i>TV</i> ₁₄₁	15.7	X	192.38731	319.42937	19.09596	3.97585	0.1057654	0.21260859	2.7802393	20	2 22.2	19.9
121413 1999 <i>TV</i> ₁₄₂	16.1	X	323.44869	74.68934	248.48830	0.77909	0.2147891	0.22955392	2.6416762	20	6 29.1	18.6
121414 1999 <i>TA</i> ₁₄₄	15.5	X	352.26583	119.91900	260.25728	3.89724	0.1981614	0.19061392	2.9901959	20	11 19.5	18.6
121415 1999 <i>TR</i> ₁₄₄	15.5	X	279.04876	171.00042	182.26633	5.73636	0.1914487	0.17872367	3.1213897	20	6 1.6	19.9
121416 1999 <i>TG</i> ₁₄₆	15.5	X	107.22977	9.08791	359.33907	1.66887	0.1002139	0.20443394	2.8538691	20	—	—
121417 1999 <i>TL</i> ₁₄₆	15.3	X	38.80382	50.96634	358.06870	9.43861	0.0622882	0.19994122	2.8964620	20	—	—
121418 1999 <i>TO</i> ₁₄₇	15.6	X	289.45613	341.74123	69.34917	5.72568	0.2420004	0.18379588	3.0636951	20	8 25.1	19.4
121419 1999 <i>TW</i> ₁₄₇	15.0	X	268.73176	6.15374	313.35854	4.29356	0.1689014	0.17398307	3.1778354	20	4 9.2	19.9
121420 1999 <i>TD</i> ₁₄₈	15.3	X	273.56264	190.21242	212.71705	9.14746	0.0970240	0.18239787	3.0793299	20	8 7.9	19.8
121421 1999 <i>TR</i> ₁₄₈	15.0	X	350.70736	120.21044	183.65072	2.44994	0.1535761	0.18204496	3.0833083	20	7 28.0	18.5
121422 1999 <i>TD</i> ₁₄₉	15.4	X	253.03556	27.99978	34.43970	1.58418	0.1637303	0.18058117	3.0999480	20	8 1.2	19.8
121423 1999 <i>TR</i> ₁₄₉	16.1	X	83.93712	88.30946	272.18047	0.55707	0.2473148	0.20050179	2.8910607	20	—	—
121424 1999 <i>TP</i> ₁₅₁	15.8	X	227.26874	265.59813	179.87048	6.22602	0.3041805	0.17651390	3.1473867	20	7 19.9	21.4
121425 1999 <i>TP</i> ₁₅₂	15.2	X	271.11210	303.51833	50.68002	10.95740	0.2450859	0.17644128	3.1482502	20	5 16.2	19.9
121426 1999 <i>TX</i> ₁₅₃	15.7	X	327.87668	264.41883	61.64957	3.89435	0.1947006	0.22936159	2.6431527	20	7 17.3	18.1
121427 1999 <i>TJ</i> ₁₅₈	14.5	X	254.44541	10.01073	21.47495	20.51638	0.1947243	0.17608692	3.1524726	20	6 18.1	19.7
121428 1999 <i>TY</i> ₁₆₂	15.7	X	140.40954	240.23870	168.26962	4.58276	0.0750560	0.21305498	2.7763545	20	3 21.3	19.8
121429 1999 <i>TL</i> ₁₆₄	15.2	X	43.00134	35.41983	221.66016	12.07139	0.0839110	0.22979347	2.6398399	20	8 15.3	18.8
121430 1999 <i>TZ</i> ₁₆₅	15.8	X	246.04214	58.86184	312.18376	4.34557	0.0996825	0.22340884	2.6898980	20	5 26.8	19.7
121431 1999 <i>TX</i> ₁₆₈	15.7	X	226.85881	157.74998	220.51371	6.21605	0.0310411	0.22113598	2.7082980	20	5 21.9	19.3
121432 1999 <i>TG</i>												

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Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>
121441 1999 TA ₁₈₅	14.7	X	286.41084	121.83995	276.43185	12.46981	0.1279424	0.18269249	3.0760183	20	8 13.4	18.9
121442 1999 TE ₁₈₆	16.3	X	132.58086	89.79387	358.75525	19.48214	0.0880496	0.35952889	1.9587553	20	4 18.2	18.8
121443 1999 TP ₁₈₆	14.9	X	292.07394	134.33177	259.25133	9.55558	0.0874263	0.18267522	3.0762122	20	8 21.5	19.1
121444 1999 TN ₁₈₈	14.9	X	302.65664	29.23116	344.46567	12.25512	0.2397539	0.18145207	3.0900210	20	7 28.2	18.7
121445 1999 TH ₁₈₉	14.6	X	224.68830	176.53801	289.68104	9.34018	0.0623965	0.18248184	3.0783851	20	8 31.7	19.2
121446 1999 TR ₁₈₉	14.8	X	244.01982	52.64205	334.13817	9.41179	0.0988445	0.17469428	3.1692044	20	6 14.1	19.6
121447 1999 TO ₁₉₁	14.8	X	290.64281	88.96692	358.75203	12.56423	0.1561325	0.18782740	3.0196974	20	10 21.4	18.6
121448 1999 TR ₁₉₁	14.5	X	280.41086	329.06488	351.93012	10.13746	0.2412968	0.17448713	3.1717123	20	4 13.2	19.3
121449 1999 TU ₁₉₃	15.3	X	268.91136	18.59653	21.56384	10.33761	0.1027919	0.17876017	3.1209649	20	8 4.4	19.8
121450 1999 TO ₁₉₄	14.9	X	39.02705	52.04071	314.85106	8.00058	0.1085108	0.19284955	2.9670415	20	12 31.9	19.0
121451 1999 TP ₁₉₇	14.6	X	319.70944	48.42987	331.99281	5.22469	0.1419491	0.18322254	3.0700829	20	9 14.5	18.2
121452 1999 TW ₁₉₈	15.3	X	199.14436	28.63954	357.01476	12.27515	0.0626822	0.21700567	2.7425549	20	4 21.5	19.4
121453 1999 TE ₁₉₉	15.2	X	314.33072	26.40100	19.83533	9.59124	0.0877459	0.18618220	3.0374604	20	10 15.3	19.0
121454 1999 TA ₂₀₂	15.5	X	342.22540	80.18243	344.54237	9.59835	0.1549500	0.19557558	2.9394064	20	12 29.6	19.0
121455 1999 TM ₂₀₅	15.8	X	304.19782	322.22760	354.22437	2.20422	0.0695891	0.22255163	2.6968008	20	6 5.2	19.2
121456 1999 TQ ₂₀₆	15.2	X	333.22451	98.31713	323.75405	12.53088	0.2181407	0.19292376	2.9662807	20	12 10.2	18.3
121457 1999 TU ₂₀₆	16.5	X	243.64693	71.66989	326.30974	18.15229	0.0948993	0.36890102	1.9254377	20	7 12.1	18.7
121458 1999 TX ₂₀₆	17.0	X	103.89297	109.01240	326.32123	18.05668	0.0932722	0.35484953	1.9759376	20	2 22.8	18.6
121459 1999 TQ ₂₀₇	14.3	X	198.39236	229.61381	264.00066	18.10910	0.1304947	0.18314071	3.0709975	20	8 25.9	19.5
121460 1999 TW ₂₀₇	14.4	X	214.05348	112.02681	322.94910	22.37194	0.1845010	0.17537098	3.1610465	20	7 10.6	19.8
121461 1999 TX ₂₀₈	16.4	X	103.14892	150.34940	342.52261	19.13036	0.0674445	0.36099259	1.9534570	20	5 10.5	19.0
121462 1999 TB ₂₀₉	14.6	X	2.51057	352.77216	353.00073	11.21097	0.1445010	0.18566619	3.0430855	20	10 12.8	18.3
121463 1999 TE ₂₀₉	15.0	X	251.23432	5.68306	320.93999	12.15905	0.2500200	0.21675190	2.7446951	20	3 28.8	19.4
121464 1999 TO ₂₀₉	14.7	X	284.23397	42.19485	336.44634	13.21852	0.1899288	0.17759673	3.1345804	20	7 13.5	19.1
121465 1999 TJ ₂₁₄	15.4	X	111.22197	72.13975	26.90015	5.75806	0.0267440	0.21588598	2.7520295	20	4 12.8	19.0
121466 1999 TQ ₂₁₄	15.1	X	317.01749	268.69363	78.51552	2.57602	0.1846846	0.18142861	3.0902874	20	7 22.5	18.5
121467 1999 TT ₂₁₇	14.5	X	222.92732	15.66211	61.89987	11.96011	0.0731137	0.17668311	3.1453769	20	7 29.9	19.3
121468 Msovinskihaskell	15.2	X	293.95599	262.81582	181.71998	15.01661	0.2378629	0.18894981	3.0077269	20	10 17.6	18.6
121469 Sarahauha	15.3	X	167.46416	260.00633	54.57263	2.80500	0.0579343	0.20612565	2.8382328	20	—	—
121470 1999 TJ ₂₂₃	14.6	X	254.87152	201.31848	153.69019	9.84209	0.0923700	0.17524267	3.1625893	20	5 21.3	19.4
121471 1999 TO ₂₂₅	16.1	X	290.20032	44.48317	253.46228	1.50024	0.0375385	0.22201523	2.7011427	20	4 25.8	19.6
121472 1999 TS ₂₂₅	16.1	X	101.96646	269.85991	333.79633	3.39700	0.1366104	0.23894218	2.5720190	20	10 21.6	20.0
121473 1999 TC ₂₂₆	15.5	X	344.05044	90.99680	28.23456	6.58827	0.0321068	0.19959895	2.8997722	20	—	—
121474 1999 TE ₂₂₈	15.5	X	84.77115	287.32922	209.41031	5.97796	0.0106106	0.21551656	2.7551735	20	4 25.2	19.1
121475 1999 TK ₂₂₈	14.8	X	318.28215	249.14831	67.39440	16.83860	0.2753391	0.17874839	3.1211020	20	5 28.3	18.3
121476 1999 TE ₂₃₂	15.3	X	286.33280	283.71891	77.20456	5.91384	0.1639470	0.17972949	3.1097333	20	6 24.3	19.4
121477 1999 TX ₂₃₂	15.9	X	346.58223	171.33161	208.34991	2.42026	0.1469821	0.18934127	3.0035799	20	11 4.2	19.3
121478 1999 TG ₂₃₃	14.6	X	305.50063	75.81413	248.58488	12.72514	0.2578512	0.22869369	2.6482965	20	5 18.9	17.8
121479 Hendershot	14.9	X	266.11439	316.65003	103.93726	6.05209	0.1553856	0.18075814	3.0979243	20	8 16.8	19.3
121480 Dolanhhighsmith	15.3	X	138.14992	224.54297	158.94582	4.66068	0.1156021	0.20918710	2.8104732	20	2 20.9	19.6
121481 Reganhoward	15.3	X	173.41901	237.56826	154.47191	7.00216	0.0525737	0.21471463	2.7620293	20	4 6.9	19.3
121482 1999 TC ₂₄₁	14.8	X	263.26944	7.68984	39.11694	18.38326	0.1293300	0.17928944	3.1148197	20	8 4.8	19.6
121483 Griffinjayne	14.8	X	258.99374	278.78726	72.58637	11.84258	0.2230110	0.17379316	3.1801500	20	5 6.3	19.8
121484 1999 TP ₂₄₃	15.2	X	343.49417	199.33049	104.86262	3.12930	0.0362174	0.17951748	3.1121813	20	7 18.1	19.4
121485 1999 TF ₂₄₄	15.1	X	332.54217	134.27740	183.60182	5.23368	0.1693573	0.18232391	3.0801625	20	7 11.2	18.5
121486 Sarahkirby	16.6	X	312.60480	270.32696	44.60885	22.00055	0.0630548	0.36689741	1.9324412	20	6 17.2	18.6
121487 1999 TY ₂₅₃	15.2	X	22.57564	81.04315	303.85030	10.30157	0.0993686	0.19474174	2.9477910	20	—	—
121488 1999 TH ₂₅₄	14.6	X	171.69877	22.17768	331.15177	20.66685	0.1600337	0.21071697	2.7968534	20	2 20.9	19.2
121489 1999 TP ₂₅₅	15.4	X	286.22147	20.13813	350.91200	3.34544	0.0322278	0.18212501	3.0824046	20	7 28.0	19.7
121490 1999 TQ ₂₅₅	15.6	X	106.10780	233.30082	190.08439	3.52111	0.0854581	0.21249233	2.7812533	20	2 28.3	19.4
121491 1999 TV ₂₅₆	15.4	X	288.39036	341.47091	26.03309	1.65189	0.0919265	0.18008118	3.1056833	20	7 17.3	19.6
121492 1999 TN ₂₆₂	15.4	X	5.58287	30.76919	320.31010	5.34418	0.2443460	0.19004848	2.9961240	20	11 9.7	18.6
121493 1999 TO ₂₆₃	15.9	X	131.73654	314.86184	12.36811	0.59462	0.0487337	0.20100072	2.8862746	20	—	—
121494 1999 TE ₂₆₇	14.9	X	4.80502	78.74040	231.35950	11.80399	0.1576257	0.18548785	3.0450358	20	8 28.6	18.7
121495 1999 TQ ₂₆₇	14.5	X	135.99421	78.35843	255.43841	13.67354	0.1598942	0.20513104	2.8473999	20	—	—
121496 1999 TB ₂₆₉	14.7	X	304.23088	169.35932	262.77371	10.84129	0.1080350	0.19020317	2.9944993	20	10 30.1	18.5
121497 1999 TN ₂₇₀	14.8	X	308.29919	48.91870	286.44481	8.29434	0.1787941	0.17945133	3.1129461	20	6 21.3	18.5
121498 1999 TB ₂₇₂	14.9	X	355.01717	84.61084	341.57810	12.97521	0.0733641	0.19549925	2.9401714	20	—	—
121499 1999 TD ₂₇₂	14.7	X	53.18432	340.44244	352.48584	10.09926	0.0613438	0.19230702	2.9726193	20	11 28.1	19.0
121500 1999 TF ₂₇₃	14.4	X	277.50719	100.76166	273.88413	21.08092	0.2854225	0.18023519	3.1039138	20	6 13.5	18.9
121501 1999 TH ₂₇₃	15.5	X	341.01450	274.15749	290.68047	17.35801	0.0739445	0.35753188	1.9660424	20	2 2.1	17.3
121502 1999 TR ₂₇₃	13.9	X	347.62164	323.46666	312.23736	15.95969	0.1961664	0.17809940	3.1286795	20	6 10.8	17.5
121503 1999 TZ ₂₈₉	15.2	X	123.79764	109.50463	7.37334	12.45449	0.0872190	0.21837722	2.7310595	20	5 25.9	19.4
121504 1999 TU ₂₉₂	15.3	X	322.67343	83.50547	4.84903	9.92472	0.0686278	0.19319711	2.9634820	20	12 22.9	19.3
121505 Andrewliounis	16.0	X	151.64854	351.72019	18.64756	4.47681	0.0869818	0.21071675	2.7968554	20	2 18.4	20.1
121506 Chrislorentson	15.0	X	0.43801	315.27545	310.10827	11.85088	0.1104229	0.22720416	2.6598584	20	6 25.4	18.0
121507 1999 TU ₃₀₄	15.1	X	38.85919	194.95148	31.08787	13.87620	0.2372322	0.22336531	2.6902475	20	7 30.7	18.5
121508 1999 TY ₃₀₇	15.5	X	289.25476	217.94960	59.17633	2.84787	0.0793282	0.21789789	2.7350632	20	3 23.9	19.1
121509 1999 TW ₃₀₈	15.0	X	52.97449	61.65480	334.82505	13.46579	0.1645679	0.20419003	2.8561414	20	—	—
121510 1999 TS ₃₀₉	15.6	X	31.41686	142.80075	183.53506	1.63918	0.1029809	0.19456351	2.9495910	20	11 1.3	19.4
121511 1999 TD ₃₁₉	16.6	X	25.02070	66.93321	182.20025	5.28262	0.0395009	0.27346423	2.3507279	20	7 9.0	19.4
121512 1999 TR ₃₂₂	16.6	X	154.88705	101.85213	329.48923	17.88547	0.1048070	0.36111045	1.9530319	20	4 21.5	19.5
121513 1999 UJ ₆	15.4	X	307.59149	163.90415	225.27770	1.23714	0.2053035	0.18305632	3.0719412	20	8 28.8	19.0

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Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>
121521 1999 UT ₂₇	15.2 ^m	X	354.96524	27.21874	4.31990	9.46595	0.1129820	0.19325816	2.9628579	20	11 29.5	18.9
121522 1999 UU ₂₇	15.9	X	287.06292	265.97407	3.62076	2.97845	0.1328861	0.21854915	2.7296269	20	3 3.2	19.5
121523 1999 UP ₂₈	15.7	X	75.86821	76.94815	152.67508	1.88350	0.1009400	0.23033393	2.6357089	20	8 31.3	19.1
121524 1999 UA ₂₉	15.4	X	297.77754	320.94433	28.93997	14.30064	0.1080239	0.22754932	2.6571680	20	7 9.4	19.0
121525 1999 UE ₂₉	16.1	X	259.76350	156.73362	165.46480	3.45544	0.1481135	0.22004757	2.7172212	20	4 5.5	20.1
121526 1999 UN ₃₀	15.2	X	152.10751	40.19350	42.31683	4.56427	0.1279421	0.17002230	3.2269987	20	5 19.5	20.3
121527 1999 UV ₃₀	15.6	X	181.56050	319.70553	43.20129	5.45039	0.0789021	0.21360277	2.7716058	20	3 11.9	19.8
121528 1999 UX ₃₂	15.9	X	199.65245	315.70736	26.08240	2.16350	0.0983160	0.21248951	2.7812779	20	3 3.5	20.0
121529 1999 UY ₃₃	15.7	X	253.64978	44.11847	37.11066	2.81913	0.1609435	0.18208121	3.0828989	20	8 26.9	20.2
121530 1999 UG ₃₆	15.7	X	357.37716	345.74476	274.65358	2.13187	0.0507237	0.22590232	2.6700676	20	6 10.9	18.7
121531 1999 UV ₃₆	16.0	X	74.55588	103.95289	333.96329	3.42622	0.0861100	0.21025064	2.8009875	20	2 6.5	19.5
121532 1999 UD ₄₀	15.1	X	285.09425	9.13628	324.82196	11.08698	0.0847155	0.22567453	2.6718640	20	5 28.5	18.9
121533 1999 UJ ₄₀	15.0	X	22.57883	98.12890	21.65000	15.20248	0.1047028	0.20391398	2.8587184	20	1 17.9	18.7
121534 1999 UJ ₄₁	15.7	X	268.06758	277.78949	0.49641	4.65820	0.0117126	0.21582834	2.7525195	20	3 7.8	19.4
121535 1999 UQ ₄₁	15.7	X	307.96689	104.34040	329.61756	3.77675	0.1700612	0.18937496	3.0032237	20	11 3.4	19.1
121536 1999 UY ₄₆	14.7	X	67.99679	296.73596	18.45543	15.02672	0.1298619	0.23915058	2.5705246	20	12 12.6	18.7
121537 LorenzDavid	14.7	X	241.67247	205.51924	218.03493	12.99797	0.2371101	0.17497017	3.1658721	20	7 9.9	20.0
121538 1999 UA ₄₉	14.8	X	264.65497	97.93767	280.00066	5.03656	0.1756360	0.17667027	3.1455293	20	6 17.1	19.4
121539 1999 UD ₅₀	15.2	X	238.92607	164.87881	187.83923	3.49408	0.0372489	0.21762387	2.7373586	20	5 3.1	18.9
121540 Jamesmarsh	14.8	X	232.25119	157.40541	164.32681	10.05020	0.1481736	0.21302828	2.7765865	20	3 8.5	19.2
121541 1999 UZ ₅₁	15.0	X	100.45368	121.78317	55.90333	14.19997	0.0861132	0.22220809	2.6995796	20	7 23.6	19.1
121542 Alindamashiku	15.2	X	303.09938	250.40419	200.81890	9.82162	0.0640065	0.19073941	2.9888842	20	11 28.9	19.1
121543 1999 VG ₁	15.2	X	249.63745	356.74867	48.77078	2.02681	0.2498180	0.17592437	3.1544142	20	6 26.7	20.2
121544 1999 VJ ₁	15.0	X	235.15121	167.58544	215.24123	8.36420	0.1209720	0.17288011	3.1913372	20	5 28.9	19.9
121545 1999 VA ₃	15.4	X	109.46954	341.85033	162.11399	2.09063	0.1351288	0.16824467	3.2496892	20	6 21.5	20.2
121546 1999 VU ₁₁	15.2	X	305.58282	77.33894	292.17473	8.62619	0.1558851	0.18182653	3.0857771	20	8 4.1	19.0
121547 Fenghuotongxin	16.4	X	221.80843	263.66994	50.73395	22.13340	0.0744258	0.35354939	1.9807789	20	2 16.4	19.5
121548 1999 VH ₃₁	14.9	X	275.62936	350.81052	62.68583	10.73791	0.1687180	0.17949635	3.1124256	20	8 21.5	19.3
121549 1999 VC ₃₂	15.4	X	62.31428	122.78219	264.00102	0.82993	0.1615553	0.19759368	2.9193579	20	—	—
121550 1999 VQ ₃₂	15.5	X	359.23424	343.39195	265.55666	0.86795	0.1333770	0.18684295	3.0302950	20	11 10.5	19.0
121551 1999 VT ₃₃	15.0	X	214.06050	220.56612	229.69787	6.47406	0.1222640	0.17484890	3.1673358	20	7 26.7	20.0
121552 1999 VU ₃₆	14.5	X	14.82177	282.65157	72.34494	10.77650	0.0981912	0.18575613	3.0421032	20	11 13.2	18.4
121553 1999 VL ₃₉	15.6	X	59.60903	211.06030	177.67139	1.29464	0.1481205	0.19679826	2.9272190	20	—	—
121554 1999 VN ₃₉	15.4	X	54.27107	294.49187	54.45915	2.91591	0.1055296	0.19109066	2.9852205	20	12 26.8	19.7
121555 1999 VF ₄₁	14.9	X	1.74582	25.64185	63.75057	10.99560	0.0803672	0.19627432	2.9324260	20	—	—
121556 1999 VX ₄₁	14.8	X	274.84899	39.32541	300.60432	2.95690	0.1639939	0.17513710	3.1638601	20	5 12.9	19.3
121557 Paulmason	15.1	X	282.00278	134.11223	215.87668	9.38027	0.2283139	0.17729811	3.1380991	20	5 26.6	19.6
121558 1999 VR ₄₇	14.7	X	55.31511	87.70244	290.09833	8.77259	0.1677824	0.19726832	2.9225671	20	—	—
121559 1999 VL ₄₈	15.5	X	297.27633	72.70305	20.08901	12.57770	0.1379485	0.18922943	3.0047633	20	11 11.2	19.2
121560 1999 VZ ₄₈	15.4	X	297.30761	62.05801	341.57736	4.16279	0.1725586	0.18290037	3.0736872	20	9 4.7	19.1
121561 1999 VN ₅₁	14.8	X	286.00649	246.16792	29.92763	8.85200	0.1801463	0.21485231	2.7608493	20	3 7.3	18.8
121562 1999 VQ ₅₁	15.0	X	292.57173	76.93974	349.38874	4.50159	0.1686682	0.18467282	3.0539885	20	9 27.4	18.8
121563 1999 VV ₅₁	15.0	X	91.04971	326.12946	13.16988	1.75173	0.1146022	0.19596037	2.9355572	20	—	—
121564 1999 VS ₅₅	16.0	X	172.27974	176.10161	215.49231	1.97957	0.1904373	0.21416427	2.7667593	20	4 7.7	20.6
121565 1999 VV ₅₅	15.9	X	241.80385	250.91073	96.64629	0.95042	0.1200429	0.21861190	2.7291046	20	4 20.8	20.1
121566 1999 VH ₅₉	14.5	X	304.01388	78.79876	229.69511	15.54263	0.2554597	0.17520794	3.1630073	20	4 26.9	18.7
121567 1999 VG ₆₀	15.2	X	324.11954	49.44579	45.11778	11.86580	0.0918460	0.19324158	2.9630273	20	—	—
121568 1999 VN ₆₂	15.4	X	94.48552	126.27125	202.72685	1.16665	0.0821387	0.19547471	2.9404175	20	—	—
121569 1999 VT ₆₉	15.6	X	26.99203	248.62573	199.92942	1.50088	0.0351339	0.20088586	2.8873746	20	—	—
121570 1999 VU ₇₄	15.8	X	14.75555	223.99748	94.89127	2.67454	0.1347295	0.18663417	3.0325544	20	10 1.8	19.4
121571 1999 VC ₇₆	15.4	X	320.49289	146.29698	153.88004	1.49445	0.1451076	0.17354773	3.1831475	20	5 29.6	19.4
121572 1999 VB ₈₇	15.3	X	306.76542	274.04377	101.03317	21.32283	0.2844873	0.18066026	3.0990432	20	7 26.9	18.9
121573 1999 VZ ₈₇	15.6	X	265.45451	265.99719	85.13311	23.41821	0.1005886	0.36457963	1.9406227	20	5 28.5	17.7
121574 1999 VS ₉₀	15.5	X	298.02576	161.18174	198.41491	3.97924	0.1204470	0.22769917	2.6560021	20	7 18.7	18.8
121575 1999 VV ₉₀	15.6	X	53.45554	20.99725	26.82244	1.09791	0.1961434	0.20027373	2.8932551	20	—	—
121576 1999 VL ₉₇	15.4	X	190.40885	212.01551	49.85831	2.72576	0.0503751	0.19881791	2.9073616	20	—	—
121577 1999 VO ₉₇	15.7	X	23.76299	184.30959	213.47353	1.41198	0.1064971	0.19444576	2.9507816	20	—	—
121578 1999 VG ₉₈	15.0	X	152.45299	233.67883	222.05620	10.13092	0.0770042	0.16979536	3.2298735	20	6 3.1	19.9
121579 1999 VO ₉₈	15.5	X	257.62538	88.88498	37.74720	4.16491	0.0560088	0.18861557	3.0112792	20	11 10.9	19.6
121580 1999 VR ₉₉	15.2	X	248.74728	88.20860	221.83430	4.76316	0.1405977	0.21402013	2.7680013	20	3 8.7	19.6
121581 1999 VK ₁₀₁	15.1	X	159.27937	45.50749	78.29617	1.92478	0.1131421	0.17232775	3.1981531	20	7 16.1	20.1
121582 1999 VT ₁₀₁	15.6	X	291.61656	17.98552	55.86984	5.50814	0.1108895	0.18537859	3.0462322	20	10 16.1	19.5
121583 1999 VO ₁₀₂	15.9	X	287.38778	70.59943	226.17034	0.99333	0.0532626	0.21618416	2.7494984	20	4 18.7	19.6
121584 1999 VV ₁₀₂	15.8	X	357.22307	153.91302	212.76320	0.92012	0.1735173	0.18720749	3.0263599	20	11 7.4	18.9
121585 1999 VE ₁₀₃	15.6	X	43.28895	100.21701	224.05899	1.66169	0.1252396	0.18806187	3.0171870	20	11 15.9	19.8
121586 1999 VS ₁₀₄	15.3	X	164.77971	100.04882	33.33714	0.41041	0.1131271	0.17562326	3.1580187	20	8 2.3	20.2
121587 1999 VJ ₁₀₅	15.7	X	35.55835	118.87698	247.34603	1.50428	0.1425728	0.19154974	2.9804489	20	12 30.5	19.7
121588 1999 VL ₁₀₅	15.1	X	31.72092	350.85215	45.71898	2.52958	0.0913448	0.19413607	2.9539188	20	—	—
121589 1999 VJ ₁₁₀	16.2	X	309.97223	234.18546	214.91105	1.00379	0.0850857	0.18897370	3.0074735	20	12 3.7	20.0
121590 1999 VM ₁₁₀	14.9	X	3.77710	6.38455	240.53103	9.23378	0.0494679	0.16949797	3.2336502	20	6 1.9	19.1
121591 1999 VN ₁₁₁	15.2	X	247.69905	240.54751	163.87181	1.06657	0.1461072	0.17368758	3.1814385	20	7 4.8	19.9
121592 1999 VJ ₁₁₃	15.1	X	310.48605	317.67378	66.15561	12.07595	0.1000901	0.18021107	3.1041908	20	9 15.3	19.2
121593 Kevinmiller	14.6	X	236.11627	27.74268	342.71963	10.29264	0.1284732	0.17265691	3.1940869	20	5 9.7	19.8
121594 Zubritsky	14.3	X	172.65139	89.36152	1.59039	19.76502	0.1					

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>
121601 1999 VP ₁₃₆	14.6	X	162.82200	314.09964	65.87282	17.61631	0.0894260	0.16003780	3.3598586	20	3 25.2	20.0
121602 1999 VU ₁₃₆	15.1	X	124.09558	251.86884	239.24009	4.21359	0.1007417	0.16959830	3.2323749	20	6 17.8	20.0
121603 1999 VV ₁₃₆	15.1	X	73.10178	209.73995	66.42495	2.78512	0.2005894	0.18645973	3.0344455	20	11 1.7	19.7
121604 1999 VF ₁₃₇	15.6	X	84.28245	99.96371	219.54644	1.80046	0.0817277	0.19168715	2.9790244	20	12 22.2	20.0
121605 1999 VF ₁₃₈	14.8	X	207.59913	58.67212	41.96458	17.13664	0.2335242	0.17569875	3.1571141	20	8 2.7	20.4
121606 1999 VG ₁₄₀	15.9	X	302.02600	298.88968	245.26024	2.50939	0.0725659	0.20312234	2.8661413	20	—	—
121607 1999 VG ₁₄₂	14.6	X	11.75184	236.89525	6.28970	0.26092	0.1294417	0.17219490	3.1997977	20	6 11.9	18.2
121608 Mikemoreau	14.6	X	298.74910	53.09210	280.68562	4.47914	0.2385039	0.17722143	3.1390042	20	5 25.1	18.7
121609 Josephnicholas	14.0	X	167.99956	177.00551	298.41530	16.32801	0.1588933	0.17512111	3.1640528	20	7 15.3	19.2
121610 1999 VW ₁₄₇	14.8	X	294.21513	325.69903	10.46457	9.16258	0.1107995	0.17699197	3.1417166	20	6 9.8	19.2
121611 1999 VD ₁₄₉	15.0	X	10.94273	237.20651	107.99581	2.36582	0.1578170	0.18564919	3.0432713	20	11 1.2	18.6
121612 1999 VD ₁₅₀	15.5	X	261.20933	7.08711	38.17675	8.54889	0.2559877	0.17715717	3.1397632	20	7 8.1	20.4
121613 1999 VC ₁₅₁	15.0	X	13.27136	338.71976	39.83420	11.33725	0.1347415	0.18994710	2.9971900	20	12 13.1	18.9
121614 1999 VA ₁₅₃	15.3	X	18.49577	244.78174	91.18495	3.75218	0.2408221	0.18675011	3.0312992	20	11 13.7	18.9
121615 Marknoteware	14.7	X	345.81451	229.25229	124.54388	10.50085	0.2520826	0.18377996	3.0638720	20	10 6.9	17.7
121616 1999 VA ₁₅₅	15.7	X	77.34630	107.13008	222.87919	1.72740	0.1997819	0.19784936	2.9168423	20	—	—
121617 1999 VG ₁₅₇	15.3	X	337.48797	195.18486	241.56411	3.19754	0.0598384	0.19236734	2.9719978	20	12 28.7	19.0
121618 1999 VL ₁₅₈	15.7	X	224.59231	126.30890	260.85763	2.37405	0.1062528	0.21975009	2.7196729	20	5 23.4	19.6
121619 1999 VV ₁₆₃	15.2	X	316.06836	328.14631	32.57217	5.57808	0.1677458	0.18104348	3.0946684	20	8 12.7	18.8
121620 1999 VB ₁₆₆	14.9	X	87.19944	114.11228	226.67662	10.76397	0.1093834	0.19693676	2.9258464	20	—	—
121621 1999 VP ₁₆₇	15.0	X	238.64811	17.25662	26.48040	4.59471	0.1805405	0.17344826	3.1843643	20	6 20.7	19.9
121622 1999 VT ₁₆₇	14.8	X	68.92672	293.54854	46.14191	12.02515	0.0940663	0.19174458	2.9784295	20	12 30.9	19.3
121623 1999 VH ₁₆₉	15.4	X	283.42146	52.64579	350.26921	2.08831	0.1879030	0.17917817	3.1161091	20	8 22.9	19.5
121624 1999 VN ₁₇₃	15.3	X	233.86323	46.33032	42.66736	16.20576	0.1821784	0.17817466	3.1277985	20	8 18.4	20.4
121625 1999 VW ₁₇₇	15.0	X	312.64135	242.83721	80.91336	7.30601	0.2060395	0.17862197	3.1225745	20	6 8.4	18.8
121626 1999 VR ₁₇₈	15.2	X	82.83671	359.52738	67.94798	16.16556	0.1307337	0.20580015	2.8412248	20	2 18.1	19.2
121627 1999 VO ₁₈₂	15.3	X	239.49732	287.57333	252.19167	2.39004	0.0787944	0.19101808	2.9859766	20	12 20.9	19.4
121628 1999 VP ₁₈₃	15.5	X	95.02800	191.85931	156.72444	0.98244	0.1000133	0.19706532	2.9245738	20	—	—
121629 1999 VZ ₁₈₃	15.3	X	279.14339	324.51645	111.93968	2.16702	0.1327118	0.18449164	3.0559876	20	9 27.4	19.4
121630 1999 VD ₁₈₇	16.0	X	342.47141	267.80099	152.81405	2.67925	0.2559203	0.19101516	2.9860070	20	12 31.7	18.8
121631 Josephnuth	14.7	X	246.21954	315.68097	130.13841	12.90788	0.1322238	0.18027259	3.1034845	20	8 28.2	19.3
121632 1999 VS ₁₉₆	14.8	X	162.62658	213.11731	176.58705	12.51166	0.1487020	0.21139053	2.7909091	20	3 27.4	19.2
121633 Ronperison	14.9	X	298.61567	298.55334	71.60396	9.88138	0.1855152	0.18051937	3.1006554	20	7 23.1	18.8
121634 1999 VX ₁₉₉	15.1	X	277.97231	276.42613	100.96541	17.38623	0.2846658	0.17773268	3.1329817	20	6 17.8	19.7
121635 1999 VQ ₂₀₀	14.5	X	247.51807	66.28216	335.82751	8.87535	0.2286022	0.17498110	3.1657403	20	6 23.1	19.6
121636 1999 VT ₂₀₈	15.9	X	293.41114	41.53608	328.73105	1.01306	0.1086438	0.17935098	3.1141071	20	7 25.3	19.9
121637 Druscillaperry	15.1	X	271.30229	57.54560	342.17701	4.28574	0.1244441	0.17840090	3.1251535	20	7 31.5	19.3
121638 1999 VK ₂₁₆	14.3	X	179.83231	270.85790	238.94002	15.14667	0.2084851	0.18023723	3.1038904	20	8 28.0	19.9
121639 1999 VT ₂₁₇	15.2	X	159.63073	26.37797	69.37104	2.22259	0.1486458	0.16998778	3.2274356	20	6 12.9	20.3
121640 1999 VF ₂₂₁	15.2	X	12.62786	321.74407	33.61003	10.16138	0.0779146	0.18781945	3.0197826	20	11 5.8	19.2
121641 1999 VK ₂₂₅	14.8	X	250.18993	37.84653	76.26057	13.16642	0.2433192	0.18422753	3.0589076	20	9 28.2	19.6
121642 1999 VJ ₂₂₇	14.2	X	230.40894	126.24545	274.16781	25.76971	0.1828594	0.17581421	3.1557317	20	6 9.8	19.4
121643 1999 WN ₁	14.6	X	237.54829	98.22367	71.60400	9.78866	0.0390612	0.18980854	2.9986485	20	12 11.5	18.7
121644 1999 WN ₆	14.6	X	304.84099	329.48180	86.56128	7.16630	0.1334390	0.18404247	3.0609578	20	10 12.8	18.3
121645 1999 WQ ₇	14.9	X	199.21641	350.61794	138.37128	1.94353	0.1800496	0.17763950	3.1340772	20	8 27.3	20.1
121646 1999 WZ ₇	13.6	X	167.80912	130.37939	18.72432	17.26211	0.1667837	0.17882167	3.1202492	20	8 31.9	18.9
121647 1999 WF ₁₀	15.6	X	111.82676	22.20237	26.13169	8.03813	0.0164958	0.20999836	2.8032303	20	2 11.3	19.5
121648 1999 WF ₁₁	15.8	X	64.05816	179.92227	189.53581	1.74853	0.1108995	0.19517285	2.9434486	20	—	—
121649 1999 WK ₁₇	15.8	X	166.19279	32.81791	357.07382	2.56504	0.1279160	0.21469360	2.7622098	20	3 28.7	20.1
121650 1999 WR ₁₈	15.9	X	279.79501	341.68186	50.95510	1.13731	0.1729727	0.17880891	3.1203977	20	7 25.7	20.1
121651 1999 WY ₁₈	15.0	X	75.40543	193.10911	60.67643	4.58312	0.1443199	0.18260313	3.0770218	20	10 2.3	19.5
121652 1999 WE ₁₉	16.0	X	167.05367	274.56005	42.61698	2.62129	0.0554306	0.20302210	2.8670846	20	—	—
121653 1999 XV	16.1	X	221.92242	293.68386	72.36930	23.30203	0.1016524	0.36187752	1.9502711	20	4 28.8	18.9
121654 Michaelprzyby	14.9	X	163.26617	14.35153	89.67198	6.41211	0.0968139	0.17060922	3.2195936	20	6 25.1	19.8
121655 Nitapszcolka	15.5	X	204.74179	277.01208	166.37897	1.61077	0.2214558	0.17147662	3.2087271	20	7 5.5	20.9
121656 Jamesrogers	14.0	X	259.55820	61.67097	64.77495	16.94397	0.1798403	0.18615876	3.0377153	20	10 31.3	18.2
121657 1999 XL ₆	15.1	X	265.05035	49.66976	5.64051	2.58810	0.1966788	0.17795859	3.1303297	20	8 1.8	19.5
121658 1999 XU ₈	16.3	X	208.43832	259.03011	90.81160	24.01040	0.1203121	0.35513926	1.9748628	20	3 23.9	19.7
121659 Blairrussell	14.3	X	258.12809	127.33659	252.86103	15.67860	0.2431170	0.17553598	3.1590654	20	6 4.6	19.2
121660 1999 XW ₁₉	16.3	X	175.28848	338.96746	40.52640	21.26684	0.0825651	0.35731995	1.9668197	20	3 23.8	19.1
121661 1999 XQ ₂₁	15.0	X	280.69740	318.98567	103.90353	16.89858	0.2841342	0.17962185	3.1109756	20	8 21.5	19.3
121662 1999 XP ₂₆	15.4	X	95.75158	46.96172	353.80851	1.60478	0.1691358	0.20433101	2.8548275	20	2 1.4	19.0
121663 1999 XC ₃₁	15.4	X	301.22264	248.11203	185.70605	6.31205	0.1665717	0.18501705	3.0501993	20	10 24.1	18.9
121664 1999 XG ₃₈	14.4	X	271.03177	282.59833	83.59131	12.03927	0.1250544	0.17251495	3.1958390	20	6 16.7	18.9
121665 1999 XR ₃₈	14.0	X	290.26451	333.99736	101.11715	13.86144	0.2973075	0.18134278	3.0912624	20	9 22.2	17.9
121666 1999 XM ₄₀	15.3	X	259.71008	177.41567	253.63072	4.44299	0.1360427	0.18070116	3.0985756	20	8 21.3	19.7
121667 1999 XQ ₄₀	15.6	X	235.99547	301.74392	29.11743	2.44220	0.2759076	0.21708159	2.7419154	20	3 15.7	20.3
121668 1999 XN ₄₅	15.2	X	265.71128	218.81282	239.71726	4.33394	0.1509217	0.18431181	3.0579751	20	10 1.5	19.4
121669 1999 XD ₄₆	15.5	X	13.70091	71.36486	36.21598	2.50824	0.1022407	0.19953060	2.9004344	20	—	—
121670 1999 XU ₄₆	14.8	X	21.91771	68.98167	16.64918	1.78705	0.0632943	0.19828547	2.9125638	20	—	—
121671 1999 XG ₄₇	15.3	X	308.37519	158.64437	280.37530	2.18512	0.1712840	0.18759730	3.0221661	20	11 11.3	18.6
121672 1999 XM ₄₇	15.4	X	18.52781	21.86545	6.96308	1.43891	0.1042441	0.19124978	2.9835644	20	12 30.8	19.2
121673 1999 XF ₅₁	15.0	X	204.83200	11.49516	69.23232	1.91093	0.1367227	0.17201211	3.2020642	20	7 6.9	20.1
121674 1999 XS ₅₂	15.0	X	253.44251	21.05102	63.							

ELEMENTS AND OPPOSITION DATES IN 2020

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Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>
121681 1999 XO ₅₈	14.8 ^m	X	162.20725	26.34559	74.62527	14.27130	0.0965429	0.16890393	3.2412277	20	6 19.6	19.9
121682 1999 XH ₅₉	14.8	X	308.48245	264.41608	68.52006	13.59698	0.0720088	0.17314983	3.1880221	20	7 2.2	19.1
121683 1999 XF ₆₀	15.5	X	303.62174	312.44223	88.53913	3.04179	0.1619583	0.18183228	3.0857120	20	9 14.8	19.2
121684 1999 XH ₆₀	14.8	X	344.52569	270.00575	78.98150	9.74587	0.2121233	0.18207949	3.0829184	20	9 25.6	18.0
121685 1999 XL ₆₀	14.7	X	135.54759	300.47034	210.63585	3.39939	0.1141883	0.17163574	3.2067436	20	7 24.7	19.7
121686 1999 XM ₆₁	15.8	X	265.44097	293.72263	135.88691	2.08618	0.1576025	0.17971474	3.1099035	20	8 25.8	20.1
121687 1999 XT ₆₂	15.4	X	258.56154	256.61722	243.76420	2.77415	0.0715657	0.18788815	3.0190464	20	11 27.0	19.2
121688 1999 XA ₆₃	15.3	X	264.91981	233.59259	234.06232	9.00831	0.1218747	0.18459334	3.0548650	20	10 16.1	19.6
121689 1999 XB ₆₄	14.6	X	356.31553	250.58753	108.05486	12.19152	0.0696932	0.18228955	3.0805496	20	10 22.7	18.8
121690 1999 XP ₆₄	15.1	X	214.15028	205.41881	249.09169	12.20594	0.1589038	0.17474612	3.1685777	20	7 27.3	20.4
121691 1999 XY ₆₄	15.2	X	345.08734	341.27784	82.88620	2.61197	0.2184860	0.19024084	2.9941040	20	—	—
121692 1999 XD ₆₅	15.7	X	322.89499	165.01003	222.82790	2.66258	0.1938612	0.18309248	3.0715367	20	9 27.2	19.0
121693 1999 XF ₆₆	15.1	X	288.84607	33.95988	74.28819	9.26721	0.2457202	0.18682810	3.0304555	20	11 7.8	18.5
121694 1999 XF ₆₇	15.1	X	147.19380	31.94486	111.99862	2.19450	0.1122835	0.17191748	3.2032391	20	7 28.7	20.2
121695 1999 XP ₆₈	14.9	X	230.70097	233.59085	247.02938	10.88211	0.1696432	0.18053951	3.1004249	20	9 11.7	19.9
121696 1999 XD ₆₉	14.8	X	181.53235	81.23971	79.77420	6.13774	0.1004902	0.17916118	3.1163060	20	9 25.2	19.7
121697 1999 XD ₇₃	14.4	X	198.82265	356.28605	101.46994	5.69321	0.1091454	0.17245162	3.1966214	20	7 23.6	19.3
121698 1999 XM ₇₃	15.0	X	298.69157	151.62449	253.37886	8.50440	0.0692572	0.18037823	3.1022727	20	9 17.0	19.3
121699 1999 XS ₇₆	15.7	X	19.99300	251.09118	133.52069	1.22073	0.3183302	0.19091128	2.9870901	20	—	—
121700 1999 XX ₇₇	15.0	X	291.73092	47.47813	69.44081	11.58530	0.0755645	0.18895464	3.0076758	20	12 12.1	18.9
121701 1999 XR ₇₈	14.9	X	184.77565	234.58275	251.53934	3.70890	0.1289247	0.17514525	3.1637620	20	8 11.0	19.9
121702 1999 XU ₈₀	15.2	X	78.10259	313.97109	82.77251	3.20153	0.0723522	0.19801626	2.9152031	20	—	—
121703 1999 XZ ₈₃	14.5	X	296.76033	351.90686	102.64836	15.70267	0.2157733	0.18504085	3.0499377	20	11 11.8	18.2
121704 1999 XW ₈₈	14.7	X	204.23707	196.07544	276.81757	4.28053	0.1356047	0.17410370	3.1763673	20	8 13.3	19.7
121705 1999 XY ₉₀	14.9	X	271.82661	129.26804	280.00975	6.82736	0.2588521	0.17529644	3.1619426	20	7 22.7	19.4
121706 1999 XE ₉₅	14.8	X	204.75967	49.11194	106.31500	11.30592	0.1738464	0.17787246	3.1313402	20	10 8.3	20.0
121707 1999 XY ₉₉	14.6	X	307.25378	289.06898	87.89374	19.69520	0.2386082	0.17825836	3.1268193	20	8 10.1	18.5
121708 1999 XT ₁₀₀	13.9	X	237.92513	136.76167	276.22806	23.67319	0.2546259	0.17165613	3.2064896	20	6 24.9	19.1
121709 1999 XJ ₁₀₆	14.6	X	206.12511	99.23742	93.90709	11.42520	0.0513841	0.18356203	3.0662965	20	12 1.4	19.1
121710 1999 XB ₁₁₂	14.7	X	246.89122	348.64720	66.35331	11.73144	0.2025585	0.17438533	3.1729465	20	7 11.3	19.7
121711 1999 XW ₁₁₂	13.9	X	282.20589	70.65986	272.91369	24.62009	0.2757755	0.17685481	3.1433407	20	5 8.9	18.9
121712 1999 XS ₁₁₃	13.7	X	180.73238	123.85472	5.64373	16.58548	0.1808862	0.17670820	3.1450792	20	8 18.2	19.1
121713 1999 XT ₁₁₃	14.2	X	211.84136	157.80824	273.28951	17.19911	0.1480139	0.17333653	3.1857326	20	6 30.6	19.1
121714 1999 XZ ₁₁₅	14.6	X	276.46878	109.79860	286.98196	9.39403	0.1451228	0.17925226	3.1152503	20	7 29.2	19.0
121715 Katiesalamy	15.4	X	258.62684	87.63815	304.07912	3.65380	0.1592300	0.17516290	3.1635494	20	6 29.8	20.1
121716 Victorsank	14.2	X	255.03314	113.01369	254.71159	15.81027	0.1739654	0.17389212	3.1789433	20	5 24.7	19.0
121717 Josephschepis	15.0	X	294.67071	154.94041	276.71181	9.98690	0.1363800	0.18580969	3.0415186	20	10 7.9	19.1
121718 Ashleycroggins	14.6	X	225.88525	98.93875	43.85795	16.20382	0.0786909	0.18459029	3.0548987	20	10 22.7	19.0
121719 Georgeshaw	15.2	X	228.81539	192.50755	260.67720	12.79402	0.1675665	0.17759154	3.1346414	20	8 7.4	20.3
121720 1999 XF ₁₃₁	15.3	X	29.59648	88.01775	299.82815	8.91663	0.1210481	0.19146258	2.9813533	20	—	—
121721 1999 XY ₁₃₁	14.7	X	248.95656	148.52472	302.56412	9.86528	0.1223495	0.17891027	3.1192190	20	9 2.5	19.3
121722 1999 XZ ₁₃₇	15.1	X	134.02555	11.30168	240.76596	5.33193	0.1219989	0.18859025	3.0115488	20	11 24.3	19.9
121723 1999 XL ₁₃₉	15.2	X	191.34444	22.43957	47.65407	5.80818	0.1325193	0.17302699	3.1895309	20	6 10.6	20.2
121724 1999 XG ₁₄₁	15.1	X	214.71155	209.43737	286.61461	4.09831	0.1157933	0.17707018	3.1407914	20	9 22.1	19.9
121725 Aphidas	8.6	X	221.55833	215.73018	103.91478	6.78547	0.04656919	0.01299110	17.9214086	20	2 28.1	22.6
121726 1999 XU ₁₄₈	15.9	X	249.20371	96.61381	225.69280	3.05356	0.0969941	0.21371360	2.7706475	20	3 29.3	20.0
121727 1999 XQ ₁₅₅	15.2	X	62.98757	324.44899	183.35922	3.45701	0.0356278	0.20982236	2.8047977	20	4 14.7	18.8
121728 1999 XV ₁₆₀	14.8	X	271.02454	198.27029	264.69898	9.36979	0.2030695	0.18192648	3.0846468	20	10 3.2	19.1
121729 1999 XV ₁₆₅	14.7	X	274.95791	0.30882	98.99387	18.81935	0.1677984	0.17967498	3.1103624	20	10 23.3	19.1
121730 1999 XM ₁₇₀	15.6	X	311.64353	99.77764	9.55874	3.21857	0.2098943	0.23581694	2.5946934	20	—	—
121731 1999 XU ₁₇₀	14.6	X	234.31221	336.29940	80.10588	14.29860	0.2545624	0.17155186	3.2077887	20	6 25.2	19.9
121732 1999 XB ₁₇₁	14.4	X	271.60993	310.95277	73.03667	9.47923	0.2210710	0.17330947	3.1860641	20	6 26.3	19.0
121733 1999 XR ₁₇₂	14.3	X	174.58102	183.76971	299.89247	17.04754	0.1195085	0.17043662	3.2217669	20	7 29.5	19.5
121734 1999 XF ₁₇₈	14.4	X	220.55357	195.72659	302.82047	16.32552	0.1652108	0.17830979	3.1262180	20	9 19.7	19.6
121735 1999 XD ₁₈₅	14.7	X	302.74676	64.43260	307.91207	12.02175	0.1907073	0.17872738	3.1213466	20	7 30.3	18.2
121736 1999 XR ₁₈₆	14.2	X	213.55169	133.62246	282.74161	17.52848	0.0853551	0.17100787	3.2145879	20	6 19.6	19.2
121737 1999 XY ₁₉₀	14.7	X	239.91630	125.53953	292.01262	9.42943	0.2084118	0.17271034	3.1934282	20	7 6.5	19.8
121738 1999 XF ₁₉₁	14.6	X	165.88888	194.07118	300.21916	14.07156	0.1608554	0.17230944	3.1983795	20	8 3.0	19.8
121739 1999 XT ₁₉₁	15.0	X	222.42952	59.23512	42.08526	10.31114	0.1931303	0.17613617	3.1518849	20	8 18.3	20.2
121740 1999 XU ₁₉₆	15.0	X	351.70103	29.79506	23.29540	5.19918	0.1529939	0.18780789	3.0199065	20	12 26.6	18.6
121741 1999 XT ₁₉₈	14.8	X	315.58925	27.10678	18.87716	6.83504	0.1676447	0.18348304	3.0671765	20	10 11.1	18.1
121742 1999 XX ₂₀₃	14.9	X	291.16583	106.19916	319.74852	15.33216	0.2200055	0.18108151	3.0942351	20	9 10.9	18.8
121743 1999 XH ₂₀₅	14.5	X	316.65341	71.99103	344.64087	11.22891	0.1778480	0.18269285	3.0760143	20	10 21.4	18.0
121744 1999 XV ₂₀₅	14.0	X	162.17497	69.14625	91.72269	34.23685	0.1758391	0.17175406	3.2052707	20	9 15.7	19.9
121745 1999 XN ₂₀₇	15.1	X	89.73963	268.46845	84.52816	23.75627	0.2834137	0.28969255	2.2620967	20	—	—
121746 1999 XV ₂₀₇	14.4	X	127.68102	2.39633	32.68128	9.26219	0.1472053	0.15417104	3.4445634	20	3 7.6	19.7
121747 1999 XY ₂₁₀	14.9	X	232.10190	71.27895	30.04818	11.03733	0.1240119	0.17704226	3.1411217	20	9 4.5	19.7
121748 1999 XA ₂₁₂	15.1	X	276.63302	91.63062	318.25335	15.06973	0.2343956	0.17686361	3.1432365	20	8 3.9	19.4
121749 1999 XU ₂₁₇	15.1	X	130.63419	168.01596	101.60177	4.61899	0.1318323	0.18238348	3.0794917	20	12 10.9	20.0
121750 1999 XE ₂₂₂	14.8	X	289.57880	356.61967	62.85563	15.33065	0.0598270	0.18146716	3.0898497	20	10 6.6	19.2
121751 1999 XO ₂₂₈	15.0	X	158.07608	94.60075	67.32379	1.81852	0.1435488	0.17252851	3.1956715	20	8 31.4	20.1
121752 1999 XV ₂₃₄	14.9	X	288.16776	181.98100	216.33993	10.19978	0.1549568	0.17948091	3.1126040	20	8 12.6	19.1
121753 1999 XP ₂₄₇	14.7	X	200.67196	205.93287	213.50884	13.41648	0.0925574	0.16954092	3.2331042</			

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Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>
121761 1999 YZ ₆	14.5	X	188.60225	125.60044	324.76014	16.63121	0.1876629	0.16863009	3.2447357	20	7 4.6	20.1
121762 1999 YW ₈	14.9	X	156.54416	119.50592	91.23277	11.61899	0.0513492	0.17942943	3.1131993	20	10 31.6	19.7
121763 1999 YA ₁₀	14.7	X	261.94920	292.22348	92.63125	6.37655	0.1544293	0.17466771	3.1695258	20	6 25.4	19.3
121764 1999 YH ₁₃	15.6	X	182.02565	168.80776	310.38966	4.12494	0.1212087	0.17018327	3.2249635	20	8 1.3	20.6
121765 1999 YF ₁₅	15.1	X	297.94759	227.29685	90.23893	6.15760	0.1726927	0.17269773	3.1935837	20	5 15.2	19.3
121766 1999 YG ₁₅	15.4	X	359.95876	179.82461	191.94472	2.53847	0.1110914	0.18669928	3.0318493	20	11 12.7	19.1
121767 1999 YK ₁₅	15.9	X	67.69705	250.25593	159.85657	2.41648	0.0639851	0.19979056	2.8979179	20	—	—
121768 1999 YH ₁₇	15.5	X	139.12703	23.71202	169.82948	1.03085	0.1223383	0.17159999	3.2071890	20	9 19.1	20.4
121769 1999 YF ₂₃	14.9	X	250.44723	157.06936	283.35561	16.20989	0.1748521	0.17580289	3.1558671	20	8 12.5	19.8
121770 2000 AV ₂	14.1	X	38.80209	3.91749	300.40161	21.11129	0.0647752	0.17579609	3.1559485	20	9 22.4	18.9
121771 2000 AN ₃	14.7	X	184.47940	61.96465	32.76010	11.16364	0.0958129	0.16706278	3.2649980	20	7 6.1	19.9
121772 2000 AA ₂₀	16.1	X	91.23159	293.46354	303.14347	0.82368	0.0734008	0.32087016	2.1130827	20	10 8.2	18.4
121773 2000 AZ ₂₃	14.6	X	195.17245	31.35762	64.27917	5.91793	0.1085967	0.16977036	3.2301905	20	7 17.7	19.7
121774 2000 AU ₂₄	15.5	X	288.08709	96.50075	3.18361	1.05793	0.2016214	0.18429530	3.0581577	20	10 29.6	18.9
121775 2000 AF ₂₉	14.7	X	185.12469	172.72404	313.90919	3.93635	0.0973870	0.17226762	3.1988972	20	8 13.9	19.6
121776 2000 AH ₃₀	14.0	X	178.63164	287.26956	298.54552	12.71591	0.1588383	0.18167980	3.0874382	20	11 30.9	19.2
121777 2000 AA ₃₂	14.9	X	302.19760	94.72720	308.80856	14.23516	0.2347352	0.19031131	3.1178129	20	8 29.1	18.6
121778 2000 AB ₃₇	15.1	X	275.61222	146.23393	311.70892	7.69644	0.1206190	0.18175774	3.0865556	20	10 15.9	19.4
121779 2000 AO ₄₀	16.3	X	257.14842	347.58602	36.24475	3.18089	0.0499336	0.31238572	2.1511727	20	7 10.3	18.5
121780 2000 AG ₅₁	14.5	X	64.37441	345.61598	287.88710	8.74188	0.0580403	0.17612589	3.1520076	20	9 23.9	19.1
121781 2000 AA ₅₅	14.6	X	233.41367	330.39153	112.69476	6.79932	0.1409201	0.17288929	3.1912243	20	8 7.9	19.5
121782 2000 AL ₆₆	14.2	X	197.33720	119.71551	340.66681	10.83113	0.0876037	0.16760766	3.2579179	20	7 28.4	19.3
121783 2000 AM ₈₀	14.6	X	298.77125	302.25533	107.46149	11.70552	0.1143561	0.17936245	3.1139744	20	9 28.2	18.8
121784 2000 AS ₈₂	14.4	X	355.02931	235.89925	110.16106	18.39040	0.1404443	0.17845886	3.1244768	20	10 11.6	18.5
121785 2000 AM ₈₃	14.3	X	163.79820	36.64837	109.54045	8.37050	0.1526945	0.17194324	3.2029191	20	8 18.5	19.6
121786 2000 AB ₈₉	14.4	X	229.42460	319.53381	123.08544	29.17070	0.1701887	0.17207994	3.2012226	20	7 30.4	19.3
121787 2000 AB ₉₁	15.5	X	45.05047	260.20774	125.70522	14.82061	0.1730989	0.23748897	2.5825005	20	—	—
121788 2000 AN ₁₀₁	15.0	X	218.37338	344.24141	94.39132	12.46005	0.1977789	0.17355617	3.1830443	20	7 13.1	20.2
121789 2000 AE ₁₀₃	14.7	X	238.53840	305.99182	104.30790	9.09051	0.1934947	0.17341126	3.1848173	20	6 27.6	19.8
121790 2000 AS ₁₀₄	14.8	X	333.13274	290.69778	100.97645	14.35128	0.1299244	0.18493315	3.0511217	20	11 1.3	18.6
121791 2000 AS ₁₁₅	14.5	X	54.26760	272.07893	131.57514	15.88875	0.0180323	0.19140988	2.9819005	20	—	—
121792 2000 AY ₁₁₈	16.0	X	31.05374	189.64486	255.21708	4.33273	0.1662979	0.24272166	2.5452495	20	—	—
121793 2000 AT ₁₁₉	14.7	X	232.69152	270.67521	135.94249	19.48710	0.3382022	0.17023075	3.2243638	20	6 10.1	20.6
121794 2000 AD ₁₂₄	14.2	X	245.76238	19.71028	129.51436	18.85944	0.2887412	0.18047129	3.1012061	20	10 29.9	19.2
121795 2000 AR ₁₂₅	14.6	X	204.64372	258.29490	285.87632	4.08409	0.1714375	0.17845067	3.1245724	20	11 4.3	19.7
121796 2000 AQ ₁₃₂	13.9	X	20.67247	40.92251	285.68640	15.97311	0.2152941	0.17991493	3.1075962	20	10 22.9	18.0
121797 2000 AQ ₁₅₀	14.3	X	267.91272	318.85647	138.56464	19.24402	0.1977425	0.18122504	3.0926011	20	10 2.8	18.7
121798 2000 AS ₁₅₈	14.7	X	154.64697	89.90153	90.38074	10.32653	0.0442743	0.17498701	3.1656691	20	9 22.7	19.5
121799 2000 AB ₁₅₉	15.1	X	265.00692	117.67238	303.65057	10.86876	0.2083252	0.17544578	3.1601480	20	8 5.8	19.7
121800 2000 AQ ₁₆₀	14.4	X	138.32515	270.07494	295.47554	12.96503	0.0549006	0.17604566	3.1529651	20	9 23.3	19.4
121801 2000 AO ₁₆₁	15.1	X	241.83586	34.84219	31.51834	4.74195	0.2066445	0.17072169	3.2181794	20	7 20.1	20.1
121802 2000 AP ₁₆₂	16.3	X	246.11534	21.44710	7.47059	4.89006	0.1257658	0.31185479	2.1536135	20	6 18.9	19.1
121803 2000 AC ₁₆₇	14.5	X	132.03822	309.01600	233.48635	10.62593	0.0764589	0.17059950	3.2197159	20	8 22.4	19.5
121804 2000 AK ₁₆₈	15.3	X	304.15515	183.86671	218.44453	4.23036	0.1174933	0.17792433	3.1307315	20	9 18.9	19.1
121805 2000 AS ₁₆₈	16.2	X	345.14379	305.74999	132.72407	6.08358	0.0853138	0.30525606	2.1845392	20	5 13.7	18.3
121806 2000 AH ₁₈₇	14.6	X	300.16153	266.87934	106.42355	22.11358	0.3377243	0.18024495	3.1038017	20	7 3.1	18.3
121807 2000 AW ₁₈₇	15.2	X	237.01300	278.20746	131.70878	14.24912	0.2860079	0.17355163	3.1830998	20	6 18.9	20.7
121808 2000 AN ₁₈₉	14.5	X	295.15910	305.66879	131.08438	17.42443	0.1955745	0.18412001	3.0600983	20	10 19.9	18.4
121809 2000 AA ₁₉₄	14.7	X	241.48957	298.32246	157.03203	14.47282	0.1946878	0.17628285	3.1501362	20	8 24.5	19.5
121810 2000 AU ₂₁₄	14.7	X	307.47113	335.42631	84.50375	10.41518	0.1263925	0.18406630	3.0606936	20	10 23.9	18.5
121811 2000 AD ₂₁₇	16.9	X	8.43353	325.90012	109.64274	4.80440	0.0872960	0.28785742	2.2717006	20	—	—
121812 2000 AP ₂₂₂	14.5	X	292.29416	239.45105	85.93467	22.14806	0.0422909	0.16844615	3.2470975	20	6 9.6	19.1
121813 2000 AW ₂₂₆	15.1	X	171.29885	211.67870	300.74890	3.62955	0.1173484	0.17155081	3.2078019	20	8 30.2	20.1
121814 2000 AM ₂₃₁	14.5	X	268.67904	254.46551	128.67959	14.61389	0.0203136	0.16689480	3.2671884	20	7 20.2	19.0
121815 2000 AE ₂₃₂	15.4	X	286.29738	316.35237	74.25915	1.61853	0.1599477	0.17487976	3.1669632	20	8 3.0	19.5
121816 2000 AE ₂₃₈	14.7	X	216.74946	7.25626	84.91960	20.89812	0.0768306	0.17484568	3.1673747	20	8 11.2	19.7
121817 Sztarmáry	15.0	X	232.04772	356.84399	95.20449	16.06806	0.1958633	0.17426804	3.1743700	20	8 14.4	20.2
121818 2000 AB ₂₄₇	17.0	X	1.13460	141.36749	85.73252	23.73755	0.0548879	0.35764125	1.9656415	20	5 6.9	19.2
121819 2000 AH ₂₄₇	14.7	X	290.82577	129.75590	349.87172	10.01158	0.1658214	0.18472568	3.0534058	20	12 2.1	18.5
121820 2000 AE ₂₄₉	15.4	X	225.02888	276.32419	189.70713	0.56191	0.1444064	0.17732384	3.1377954	20	8 26.4	20.3
121821 2000 AL ₂₅₁	15.2	X	7.28316	5.51715	84.18893	3.27320	0.0559081	0.19489620	2.9462333	20	—	—
121822 2000 BT	14.2	X	151.82589	219.71848	268.92737	8.08265	0.0747046	0.16656803	3.2714600	20	7 11.8	19.1
121823 2000 BA ₁	16.0	X	190.97209	44.02968	343.73462	18.74055	0.0874575	0.35412227	1.9786420	20	4 3.2	18.7
121824 2000 BU ₉	14.9	X	77.46931	74.90383	136.01672	6.04778	0.2122628	0.16356081	3.3114374	20	8 17.9	19.8
121825 2000 BV ₉	17.3	X	235.06571	264.45289	140.70139	1.77493	0.0659921	0.31160764	2.1547521	20	7 6.8	19.8
121826 2000 BA ₁₀	15.3	X	159.45786	114.25223	134.51256	6.74154	0.2041719	0.17902068	3.1179364	20	12 10.9	20.6
121827 2000 BG ₁₂	14.7	X	342.98210	253.19441	136.73854	7.44813	0.0565529	0.17824097	3.1270226	20	11 7.4	18.9
121828 2000 BH ₁₃	15.1	X	258.92134	305.19698	139.05217	1.83786	0.1486790	0.17609725	3.1523493	20	9 6.2	19.6
121829 2000 BU ₁₅	16.2	X	105.99259	82.35574	30.20748	5.00261	0.0728131	0.30394421	2.1908205	20	4 25.9	18.6
121830 2000 BG ₂₀	15.3	X	285.74450	258.55805	142.62377	2.07889	0.1810102	0.17354170	3.1832212	20	8 12.1	19.4
121831 2000 BV ₂₀	14.7	X	97.47756	111.72476	124.57845	19.54050	0.1486052	0.17137167	3.2100369	20	10 9.0	20.0
121832 2000 BZ ₂₁	15.6	X	20.61872	245.41576	121.40761	1.84004	0.1779294	0.18140565	3.0905481	20	12 14.1	19.5
121833 2000 BO ₂₃	15.1	X	298.43866	51.82604	11.01324	16.40099	0.2439310	0.1810				

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>
121841 2000 BX ₄₉	15.2	X	358.25211	229.05365	117.19375	7.86354	0.1720257	0.17739579	3.1369470	20	10 14.2	18.8
121842 2000 CD ₆	16.1	X	56.31223	60.28939	123.13987	24.45250	0.0692663	0.35564268	1.9729987	20	6 3.6	18.5
121843 2000 CQ ₆	14.2	X	176.59121	288.57590	285.76973	25.26439	0.1015792	0.18083727	3.0970206	20	11 17.1	19.4
121844 2000 CQ ₉	14.9	X	258.95313	212.61673	248.02710	4.40727	0.1107335	0.17889645	3.1193796	20	9 30.2	19.2
121845 2000 CS ₉	15.4	X	265.17874	181.67704	234.99717	3.01768	0.2279451	0.17433900	3.1735086	20	7 28.4	20.1
121846 2000 CJ ₁₄	16.3	X	339.65844	32.15082	242.51655	3.40394	0.0842429	0.30690051	2.1767287	20	6 1.5	18.0
121847 2000 CS ₂₂	14.7	X	201.76494	63.29311	148.20808	17.07089	0.0350140	0.18220505	3.0815020	20	12 19.9	19.4
121848 2000 CN ₂₃	16.1	X	316.42046	250.07665	164.99057	5.99503	0.1228753	0.27604986	2.3360261	20	11 25.6	18.3
121849 2000 CB ₂₄	14.9	X	183.52598	185.51825	301.19585	3.28731	0.0712001	0.16935659	3.2354496	20	8 12.8	19.7
121850 2000 CA ₂₈	16.2	X	303.60614	277.52115	305.28788	3.07369	0.0580065	0.29348361	2.2425741	20	1 22.8	18.6
121851 2000 CO ₃₁	16.0	X	161.48036	179.05365	168.77159	3.98200	0.1278723	0.29370791	2.2414323	20	1 22.8	19.0
121852 2000 CU ₃₁	15.0	X	252.86259	342.67839	147.33683	15.44685	0.1683331	0.17920796	3.1157637	20	10 27.8	19.7
121853 2000 CT ₃₄	14.8	X	169.93707	67.38118	162.13320	7.76610	0.1134286	0.17926325	3.1151231	20	12 1.2	19.8
121854 2000 CE ₄₄	14.4	X	164.82047	51.14215	166.52219	12.94330	0.1158406	0.17483052	3.1675579	20	11 11.5	20.0
121855 2000 CX ₅₂	15.6	X	267.39952	79.15983	167.19241	10.24931	0.1133784	0.28927469	2.2642746	20	1 3.2	18.9
121856 2000 CX ₅₄	14.8	X	56.53951	180.93764	103.15974	1.94225	0.0516465	0.17340917	3.1848428	20	10 1.8	19.2
121857 2000 CO ₆₄	14.8	X	162.83558	92.25512	115.86320	8.32387	0.1854794	0.17489990	3.1667200	20	10 31.0	20.2
121858 2000 CV ₆₄	14.9	X	232.93689	328.23795	113.15017	7.86026	0.1207037	0.17113563	3.2129880	20	8 7.4	19.8
121859 2000 CG ₆₆	14.9	X	288.64645	22.53418	9.87196	6.03575	0.1469380	0.17248923	3.1961566	20	8 12.3	19.1
121860 2000 CK ₆₆	16.0	X	299.00192	355.88397	256.55475	6.32396	0.0950151	0.29592640	2.2302159	20	2 17.1	18.8
121861 2000 CW ₆₉	15.4	X	211.24774	12.57438	134.40076	1.20856	0.1654484	0.17576923	3.1562701	20	9 29.7	20.2
121862 2000 CT ₇₂	14.8	X	264.60924	352.49695	133.14558	10.44273	0.0667909	0.18223103	3.0812090	20	11 19.3	19.2
121863 2000 CO ₇₅	16.2	X	111.29452	206.45033	181.18344	8.74807	0.2857676	0.29624204	2.2286315	20	2 5.6	19.0
121864 2000 CK ₇₆	14.4	X	350.68878	264.95030	132.66582	11.44129	0.0599895	0.18022426	3.1040393	20	11 28.2	18.7
121865 Dauvergne	16.6	X	95.30760	69.10242	188.01094	4.76749	0.2017166	0.26518427	2.3994086	20	11 11.7	20.4
121866 2000 CE ₈₃	15.0	X	226.96244	138.17024	8.17742	1.68421	0.0953915	0.17646104	3.1480152	20	10 21.7	19.5
121867 2000 CB ₈₆	15.8	X	342.32845	117.33062	330.35519	3.82241	0.2167493	0.28337245	2.2956075	20	—	—
121868 2000 CQ ₉₀	16.0	X	330.83694	18.52405	236.96031	6.60797	0.1423999	0.30155040	2.2023995	20	4 3.6	18.0
121869 2000 CF ₉₁	14.7	X	241.82294	30.11222	156.10745	10.10505	0.1864105	0.18086270	3.0967302	20	12 15.1	19.3
121870 2000 CK ₉₈	14.9	X	186.94406	75.28490	117.21767	6.58415	0.0954098	0.17883069	3.1201443	20	11 6.5	19.8
121871 2000 CH ₉₉	15.6	X	175.34901	70.29244	135.99117	2.63289	0.1262426	0.17620328	3.1510846	20	11 7.9	20.5
121872 2000 CE ₁₀₀	14.5	X	83.92282	305.08726	315.89729	13.38833	0.1574220	0.17182760	3.2043560	20	10 11.3	19.6
121873 2000 CA ₁₀₁	15.4	X	297.88532	259.66000	111.38021	2.31898	0.1910617	0.17257324	3.1951194	20	7 20.1	19.2
121874 2000 CJ ₁₁₆	16.9	X	338.95530	7.75949	79.50412	4.00776	0.1738063	0.28291924	2.2980584	20	—	—
121875 2000 CQ ₁₁₆	14.5	X	158.32959	49.65726	114.96624	14.70129	0.0256137	0.16925169	3.2367864	20	9 5.5	19.3
121876 2000 CT ₁₁₇	14.6	X	256.99657	92.41547	315.28851	10.21067	0.0432748	0.16781886	3.2551840	20	8 2.9	19.1
121877 2000 CG ₁₂₀	16.4	X	83.58508	183.75699	250.56299	3.72941	0.0645919	0.29452491	2.2372853	20	1 26.6	18.8
121878 2000 CQ ₁₂₂	15.0	X	263.16736	358.44817	65.66100	2.45790	0.1503473	0.17385153	3.1794381	20	8 17.2	19.5
121879 2000 CF ₁₃₂	16.2	X	76.20289	346.79073	342.03868	1.86418	0.2327052	0.27632978	2.3344483	20	—	—
121880 2000 CV ₁₃₄	16.6	X	161.62705	140.33710	143.89990	2.79376	0.2300395	0.28104919	2.3082411	20	—	—
121881 2000 DC ₁	14.1	X	195.12321	27.21398	75.73732	26.60409	0.1207645	0.16760115	3.2580023	20	7 27.0	19.6
121882 2000 DW ₁	17.3	X	3.37685	172.32010	141.82350	1.66926	0.0969462	0.31421569	2.1428123	20	9 25.8	19.2
121883 2000 DA ₂	14.9	X	197.63043	67.22160	99.94761	0.69995	0.0784137	0.17518514	3.1632818	20	10 17.0	19.7
121884 2000 DA ₃	14.5	X	314.34640	65.31523	40.29113	9.74551	0.1043139	0.18223826	3.0811275	20	12 28.4	18.4
121885 2000 DQ ₆	14.1	X	124.90819	138.43487	348.99646	13.91834	0.1168858	0.16112949	3.3446655	20	6 14.9	19.4
121886 2000 DF ₁₀	16.4	X	39.17020	9.36970	144.75329	3.24041	0.0509311	0.29760339	2.2218299	20	3 12.2	18.5
121887 2000 DY ₁₁	17.1	X	333.96719	181.34812	9.11189	1.40567	0.0456684	0.29037604	2.2585456	20	1 23.5	19.5
121888 2000 DL ₁₂	17.2	X	285.96916	254.26702	43.94487	1.07276	0.1804614	0.29591163	2.2302901	20	3 25.3	19.9
121889 2000 DL ₁₇	17.2	X	153.56698	59.74578	196.33012	3.07307	0.1604796	0.32309416	2.1033747	20	—	—
121890 2000 DK ₂₁	14.4	X	115.62593	285.30135	327.72741	13.12560	0.1984291	0.17309707	3.1886699	20	11 5.2	20.0
121891 2000 DP ₂₁	14.7	X	266.53674	114.93043	138.66863	7.96923	0.0629729	0.17342358	3.1846664	20	9 11.5	19.2
121892 2000 DC ₂₅	16.8	X	317.07354	172.35752	323.62728	2.23961	0.1107270	0.28451231	2.2894720	20	—	—
121893 2000 DM ₂₅	14.1	X	126.42346	292.93871	322.78178	15.38961	0.1274453	0.17539724	3.1607311	20	11 15.0	19.4
121894 2000 DC ₂₈	15.0	X	143.42670	236.16052	333.56915	4.72728	0.1301591	0.17194795	3.2028606	20	10 10.7	20.1
121895 2000 DJ ₂₉	14.3	X	325.96606	274.50727	150.31934	13.05705	0.0852471	0.17980231	3.1088937	20	11 27.5	18.5
121896 2000 DW ₃₃	16.3	X	232.71871	121.44046	168.63805	7.62698	0.1509215	0.29118914	2.2543392	20	1 20.9	19.9
121897 2000 DZ ₃₄	16.4	X	63.22557	103.13646	120.47795	2.05830	0.1502284	0.25901408	2.4373644	20	8 17.4	19.5
121898 2000 DG ₃₅	16.3	X	51.21509	63.58434	347.86744	5.04588	0.1339550	0.28700782	2.2761815	20	—	—
121899 2000 DM ₃₆	14.9	X	258.32114	93.84580	337.40117	6.87984	0.1098612	0.17157086	3.2075519	20	8 25.1	19.4
121900 2000 DU ₃₇	15.2	X	243.57119	317.27920	155.00335	1.35147	0.1610525	0.17553453	3.1590828	20	9 21.1	19.8
121901 2000 DT ₄₄	14.2	X	95.23765	118.59379	331.27395	9.18747	0.0484782	0.15068626	3.4974668	20	3 17.7	19.2
121902 2000 DV ₄₄	16.1	X	129.57584	73.85699	166.72696	4.33266	0.2204020	0.26860902	2.3789701	20	11 21.2	20.1
121903 2000 DZ ₅₀	16.5	X	174.01053	58.66794	0.68544	2.86088	0.1298442	0.30417624	2.1897063	20	5 9.4	19.7
121904 2000 DS ₅₁	14.7	X	193.19712	144.51210	19.67309	0.89175	0.1252567	0.17308432	3.1888266	20	10 5.4	19.7
121905 2000 DE ₅₆	16.4	X	330.29580	300.17753	4.91456	2.77687	0.1696112	0.30560257	2.1828876	20	6 25.9	17.8
121906 2000 DB ₆₂	15.3	X	166.79113	353.61581	165.09051	10.47044	0.1235928	0.16853898	3.2459050	20	9 2.9	20.4
121907 2000 DX ₆₄	14.9	X	256.79737	245.06501	186.83382	0.98078	0.1404824	0.17058334	3.2199191	20	8 19.0	19.3
121908 2000 DD ₆₅	14.7	X	258.99938	242.25401	177.80839	3.27155	0.1308835	0.16849680	3.2464467	20	8 7.5	19.4
121909 2000 DR ₆₅	16.9	X	175.98698	104.86340	152.16351	2.18323	0.1807223	0.27730647	3.2289637	20	—	—
121910 2000 DV ₆₆	16.3	X	233.06952	315.84020	338.22203	1.69327	0.1622263	0.29071161	2.2568072	20	1 27.4	19.7
121911 2000 DG ₆₇	15.0	X	99.40995	302.67464	324.04952	5.07146	0.0797747	0.17230279	3.1984619	20	10 31.0	19.8
121912 2000 DZ ₆₇	16.6	X	181.47287	231.91919	7.41062	2.25531	0.1592255	0.27568161	2.3381059	20	—	—
121913 2000 DN ₆₈	16.4	X	325.38557	258.68403	340.52174	2.67155	0.1329533	0.29551624	2.2322790	20	3 4.9	18.5
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ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>
121921 2000 DA ₈₉	17.1	X	175.70961	158.91869	156.53469	1.21859	0.1207768	0.28890042	2.2662297	20	—	—
121922 2000 DT ₉₁	17.0	X	280.15129	285.61557	340.67247	3.54034	0.1597233	0.29280901	2.2460173	20	2 7.9	20.1
121923 2000 DZ ₉₆	14.6	X	163.30729	45.89515	168.91378	5.91311	0.1259770	0.17621223	3.1509779	20	11 7.5	19.6
121924 2000 DH ₉₈	16.6	X	169.51870	328.51205	100.87229	4.22303	0.1197220	0.30508564	2.1853527	20	5 19.9	19.7
121925 2000 DX ₉₈	14.7	X	173.74194	155.78287	14.01959	6.44506	0.0688754	0.17168814	3.2060910	20	9 25.5	19.6
121926 2000 DO ₁₀₃	14.5	X	189.49873	139.06873	104.98728	7.84435	0.1299217	0.18040483	3.1019678	20	—	—
121927 2000 DX ₁₀₃	16.2	X	148.26921	14.21389	32.15174	5.83809	0.1497042	0.29862170	2.2167760	20	3 29.3	19.3
121928 2000 DV ₁₀₄	16.4	X	218.20267	181.96878	90.72444	4.50331	0.0718344	0.28710562	2.2756646	20	—	—
121929 2000 DB ₁₀₅	17.2	X	336.52871	149.70225	79.93950	5.36049	0.1185390	0.29633649	2.2281579	20	3 15.3	19.4
121930 2000 DW ₁₀₅	16.1	X	235.12284	308.39230	96.11726	5.27979	0.1323870	0.30925894	2.1656480	20	6 26.9	18.9
121931 2000 DY ₁₁₄	17.4	X	33.79859	12.33057	330.21903	0.32051	0.0761628	0.32334377	2.1022921	20	12 23.1	19.7
121932 2000 DW ₁₁₇	16.8	X	155.54693	5.60449	27.32146	0.87541	0.1243220	0.29678767	2.2258992	20	3 15.9	19.7
121933 2000 EG ₁	14.9	X	149.38355	268.28010	312.09833	4.07970	0.1430392	0.17465022	3.1697375	20	10 28.9	20.0
121934 2000 EP ₃	15.0	X	319.37705	41.69136	54.00091	1.52682	0.1229760	0.18166723	3.0875808	20	12 23.3	18.7
121935 2000 EN ₄	14.8	X	1.30863	4.43616	322.05592	4.60231	0.1418978	0.17035198	3.2228339	20	9 13.8	18.6
121936 2000 ER ₆	17.0	X	156.77626	135.73353	95.73943	1.34851	0.0871580	0.27078840	2.3661885	20	12 7.5	20.1
121937 2000 EP ₉	16.2	X	244.73332	100.57442	279.08101	2.04278	0.1276745	0.30769441	2.1729829	20	5 28.6	19.2
121938 2000 EX ₁₁	15.8	X	258.50988	164.44274	98.73827	8.79395	0.1465220	0.29123093	2.2541235	20	1 13.5	19.0
121939 2000 EE ₁₃	13.9	X	174.43924	76.26591	130.07778	20.73519	0.2426362	0.17355931	3.1830058	20	11 9.3	19.8
121940 2000 EW ₁₆	16.0	X	180.54697	284.99026	311.49337	1.65774	0.1644596	0.27447563	2.3449496	20	—	—
121941 2000 ER ₁₈	14.9	X	210.68038	20.59294	96.22703	3.33662	0.1376234	0.17144278	3.2091493	20	8 26.6	19.9
121942 2000 ES ₂₃	16.2	X	41.99102	131.62171	190.07705	3.75554	0.1426334	0.26707857	2.3880497	20	12 1.5	19.2
121943 2000 EV ₂₇	14.6	X	35.40673	78.53804	125.27851	18.09491	0.1372086	0.15695927	3.4036488	20	6 4.2	19.1
121944 2000 EJ ₂₈	16.4	X	334.92710	160.24570	77.87087	9.15953	0.0826746	0.29812583	2.2192334	20	4 1.9	18.8
121945 2000 EK ₃₁	14.1	X	180.30076	174.51551	2.69913	10.46096	0.0214396	0.17362452	3.1822088	20	10 11.3	18.7
121946 2000 EO ₃₁	14.2	X	296.81715	41.66592	4.69599	22.06482	0.1134409	0.17209903	3.2009860	20	9 17.7	18.4
121947 2000 EC ₃₆	17.0	X	231.94442	50.82883	230.64208	0.67860	0.0946871	0.28909412	2.2652174	20	1 11.9	20.3
121948 2000 EH ₃₇	15.9	X	206.00047	246.57950	346.97426	5.34120	0.1084998	0.27774931	2.3264875	20	—	—
121949 2000 ET ₄₂	16.5	X	350.53016	20.10827	170.21498	5.96141	0.0912940	0.29235940	2.2483194	20	2 9.3	18.9
121950 2000 EA ₄₃	15.8	X	161.16484	82.44767	181.86849	5.15265	0.1806054	0.27402560	2.3475163	20	—	—
121951 2000 ES ₄₅	15.8	X	179.77804	56.59339	182.49417	10.02679	0.1907912	0.27344003	2.3508666	20	—	—
121952 2000 EX ₄₈	16.6	X	209.63198	1.52992	223.55137	2.36188	0.1211566	0.27686808	2.3314214	20	—	—
121953 2000 EP ₅₀	15.9	X	177.33757	317.38870	6.75479	3.94139	0.0812989	0.28687140	2.2769031	20	1 7.8	19.0
121954 2000 EQ ₅₀	16.5	X	255.02345	314.92650	6.11251	4.32148	0.0603126	0.29722849	2.2236978	20	4 2.4	19.0
121955 2000 ED ₅₃	15.2	X	210.18214	23.17645	205.69672	1.20544	0.1806417	0.18426201	3.0585260	20	—	—
121956 2000 EH ₅₄	16.6	X	264.79533	210.98929	109.58616	4.73064	0.1820346	0.29440782	2.2378784	20	4 2.1	19.7
121957 2000 ES ₅₄	15.9	X	140.02529	243.25625	73.52883	6.11299	0.1960525	0.27640658	2.3340158	20	—	—
121958 2000 EP ₅₈	15.9	X	97.42117	126.99795	146.04164	2.76132	0.1628843	0.26654192	2.3912540	20	11 30.7	19.5
121959 2000 EL ₆₇	16.5	X	188.75538	297.68869	307.93422	1.15271	0.1224692	0.27612738	2.3355889	20	—	—
121960 2000 EN ₆₈	16.8	X	85.55511	64.68355	197.81900	3.16846	0.1874402	0.26346185	2.4098549	20	11 7.7	20.3
121961 2000 EZ ₇₉	15.8	X	244.01899	191.18327	98.88475	4.70594	0.1701834	0.29170793	2.2516656	20	2 1.6	19.1
121962 2000 EJ ₈₁	16.7	X	175.08132	139.75146	83.00974	2.81446	0.1418408	0.27330862	2.3516201	20	12 12.3	20.1
121963 2000 EF ₈₇	15.4	X	200.12652	317.54279	322.69272	4.01528	0.1300593	0.28271757	2.2991511	20	—	—
121964 2000 EC ₉₉	14.8	X	65.16898	296.82345	324.82677	13.91532	0.0138159	0.17082450	3.2168880	20	9 4.8	19.4
121965 2000 EF ₉₉	16.6	X	93.05146	351.93984	334.73428	3.15561	0.2507168	0.27621465	2.3350969	20	—	—
121966 2000 EC ₁₀₃	16.0	X	239.38821	247.48961	9.72867	4.59962	0.1188592	0.28603318	2.2813492	20	—	—
121967 2000 EP ₁₀₈	16.2	X	255.40412	215.33146	34.16482	6.57516	0.1656012	0.28856846	2.2679674	20	—	—
121968 2000 EU ₁₀₈	14.7	X	133.69547	120.92520	185.31619	9.78341	0.0779220	0.17989172	3.1078635	20	—	—
121969 2000 ES ₁₁₀	16.2	X	228.48941	174.81132	28.35206	7.34759	0.0736206	0.27772119	2.3266446	20	—	—
121970 2000 EK ₁₁₂	15.2	X	203.92572	269.16321	181.49344	1.50078	0.1240173	0.16684172	3.2678813	20	7 18.2	20.4
121971 2000 EF ₁₁₃	16.1	X	305.60601	138.27898	42.64163	6.51870	0.0979629	0.28481367	2.2878567	20	—	—
121972 2000 ES ₁₁₇	14.3	X	185.06849	141.34783	6.12485	24.53491	0.1049261	0.17080563	3.2171249	20	9 14.2	19.4
121973 2000 EW ₁₁₈	16.1	X	280.96881	165.22407	66.17945	8.19319	0.0799933	0.29046628	2.2580778	20	1 3.2	19.0
121974 2000 ED ₁₁₉	14.9	X	226.30244	9.33052	121.45268	15.81808	0.2183211	0.17540235	3.1606696	20	9 24.9	20.1
121975 2000 EA ₁₂₆	15.7	X	148.50300	257.26707	13.57033	9.01092	0.1996136	0.27411926	2.3469816	20	—	—
121976 2000 EH ₁₂₉	16.5	X	210.19566	105.53568	136.98542	2.82005	0.1809003	0.27894391	2.3198405	20	—	—
121977 2000 EK ₁₃₅	14.6	X	91.42989	302.21841	13.35886	21.84409	0.2831552	0.27053293	2.3676779	20	—	—
121978 2000 ED ₁₄₀	16.3	X	144.07001	16.13248	70.13428	23.50611	0.0688812	0.36190504	1.9501722	20	5 13.3	18.6
121979 2000 EM ₁₄₉	16.7	X	204.61373	21.69111	69.18509	1.91035	0.0279503	0.31092463	2.1579065	20	8 7.4	19.2
121980 2000 ET ₁₅₆	15.5	X	113.28737	337.28688	318.03077	6.58970	0.2078301	0.27095624	2.3652113	20	—	—
121981 2000 EH ₁₅₉	14.9	X	92.02306	126.22266	157.61486	9.76981	0.0674623	0.17484978	3.1673252	20	11 16.1	19.7
121982 2000 EP ₁₆₀	15.2	X	96.46399	116.37956	193.64408	0.71546	0.1569505	0.17671260	3.1450270	20	12 26.5	20.3
121983 2000 EN ₁₆₄	16.6	X	289.65408	267.75178	330.11424	3.58268	0.0964870	0.29040977	2.2583707	20	1 20.7	19.6
121984 2000 ED ₁₆₇	16.6	X	95.04689	77.62767	55.26294	4.96977	0.0761994	0.30230865	2.1987153	20	5 11.4	18.8
121985 2000 EP ₁₇₂	16.7	X	78.85748	114.34501	170.31416	2.86128	0.1600728	0.26754115	2.3852962	20	11 27.3	20.1
121986 2000 ER ₁₈₀	16.1	X	322.02773	175.53184	35.57451	8.37499	0.0558837	0.29363323	2.2418123	20	2 5.2	18.8
121987 2000 EU ₁₈₈	15.4	X	171.43954	185.26616	160.62043	16.65012	0.2982453	0.24275681	2.5450038	20	2 14.7	20.0
121988 2000 FW ₈	15.7	X	199.40642	137.09646	156.27363	0.88310	0.1706963	0.18408005	3.0605412	20	1 9.5	20.8
121989 2000 FV ₉	16.1	X	34.16493	301.47561	15.61989	6.65817	0.1285893	0.26433577	2.4045405	20	11 10.1	19.0
121990 2000 FX ₁₁	13.9	X	149.72907	142.44404	140.21645	24.06708	0.2365491	0.17844233	3.1286698	20	—	—
121991 2000 FC ₁₇	16.4	X	252.78595	149.52692	85.68183	3.99161	0.1417220	0.28402865	2.2920704	20	—	—
121992 2000 FS ₂₀	15.6	X	221.46690	134.23304	139.46631	7.11587	0.1184002	0.28461813	2.2889045	20	—	—
121993 2000 FX ₂₇	16.8	X	172.11474	321.38293	293.90150	1.44550	0.2326437	0.27330650	2.3516323	20	—	—
121994 2000 FV ₂₈	16.9	X	41.34012	242.10574	328.87559	4.39549	0.0758192	0.30099498	2.2051081	20	6 13.	

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>		
122001	2000	FQ ₅₀	17.5	X	51.25609	300.11735	0.14829	3.71655	0.1347128	0.31304564	2.1481484	20	11 21.6	20.2
122002	2000	FQ ₅₃	16.6	X	151.74563	342.99010	316.65294	2.54743	0.2428866	0.28078439	2.3096921	20	—	—
122003	2000	FP ₅₅	16.5	X	225.93397	216.07409	79.48323	6.34544	0.1258389	0.28707046	2.2758504	20	1 24.6	19.8
122004	2000	FF ₅₈	16.2	X	183.58251	207.14531	54.77505	6.00432	0.1699380	0.27703087	2.3305080	20	—	—
122005	2000	FT ₆₄	15.4	X	154.67189	19.12790	282.62881	5.25284	0.1488910	0.27731749	2.3289020	20	—	—
122006	2000	FN ₇₃	16.9	X	312.98370	186.43331	184.59149	4.73971	0.2091411	0.26447396	2.4037028	20	8 27.0	18.8
122007	2000	GC ₇	15.9	X	78.77109	261.41294	32.16084	2.87016	0.1646080	0.26644252	2.3918486	20	12 7.6	19.4
122008	2000	GL ₇	16.9	X	170.58844	64.08744	183.75906	2.07571	0.1878311	0.27306493	2.3530190	20	—	—
122009	2000	GG ₁₀	16.6	X	240.15473	99.55172	168.62008	4.06672	0.1148215	0.28679634	2.2773004	20	1 3.1	19.8
122010	2000	GG ₂₆	16.1	X	212.29507	321.71773	22.65095	3.08893	0.1869742	0.29197303	2.2503024	20	3 11.7	19.8
122011	2000	GL ₂₈	16.0	X	17.50354	314.77537	348.05604	2.16338	0.1925804	0.25838251	2.4413346	20	10 5.7	18.5
122012	2000	GB ₃₄	16.2	X	156.89868	260.70245	18.94557	2.44832	0.1451537	0.27475196	2.3433771	20	—	—
122013	2000	GO ₃₄	16.3	X	36.17801	43.52948	16.40241	7.35140	0.0970982	0.28059356	2.3107391	20	—	—
122014	2000	GT ₃₄	16.3	X	234.52855	329.58318	15.14800	4.65384	0.1771605	0.29461934	2.2368072	20	3 31.9	19.8
122015	2000	GP ₃₅	15.8	X	196.91888	233.45509	9.63464	6.76795	0.0983240	0.27619459	2.3532100	20	—	—
122016	2000	GP ₄₂	15.9	X	159.31662	28.95044	13.33505	8.52767	0.0745275	0.29400096	2.2399426	20	3 29.0	18.8
122017	2000	GA ₄₂	15.9	X	76.32062	290.36965	22.33792	2.59432	0.2277576	0.26684189	2.3894615	20	—	—
122018	2000	GA ₄₃	16.8	X	91.42512	79.32763	180.99701	1.19311	0.1528327	0.26321946	2.4113341	20	11 7.6	20.2
122019	2000	GY ₄₃	16.2	X	183.07161	275.74085	30.47724	5.67891	0.1745663	0.28131994	2.3067598	20	—	—
122020	2000	GS ₄₄	16.9	X	118.42556	329.38715	170.29583	2.15024	0.0459663	0.30192758	2.2005649	20	6 19.3	19.6
122021	2000	GD ₄₅	16.6	X	28.88169	310.68130	182.98631	3.81028	0.0937841	0.28970985	2.2620066	20	1 23.8	18.7
122022	2000	GY ₄₇	16.0	X	149.97376	293.09351	24.30372	3.83482	0.1412275	0.27859894	2.3217551	20	—	—
122023	2000	GC ₄₈	17.1	X	43.67202	329.47713	184.29709	1.28661	0.0744201	0.29383017	2.2408105	20	3 20.4	19.3
122024	2000	GC ₅₀	16.6	X	15.34223	108.66764	186.64620	2.54832	0.1786287	0.25637505	2.4540621	20	9 17.9	19.1
122025	2000	GR ₅₄	15.7	X	94.21956	311.81317	19.98205	6.76159	0.1206145	0.27302110	2.3532708	20	—	—
122026	2000	GV ₅₄	15.1	X	337.27614	335.34224	19.32047	7.92271	0.1477080	0.21138672	2.7909427	20	9 20.4	17.9
122027	2000	GD ₅₉	15.9	X	63.81827	276.70824	36.34802	4.41123	0.2118815	0.26463627	2.4027199	20	12 21.3	19.5
122028	2000	GR ₅₉	16.3	X	134.91126	67.56648	195.64307	6.05965	0.0839644	0.26970768	2.3725052	20	12 23.8	19.8
122029	2000	GE ₆₀	16.7	X	204.00583	234.04358	20.11751	2.26771	0.1478098	0.27726325	2.3292057	20	—	—
122030	2000	GB ₆₁	16.9	X	15.87995	196.54179	41.63807	2.67915	0.1539640	0.29954384	2.2122241	20	6 18.3	18.5
122031	2000	GU ₆₁	16.4	X	113.77582	243.31741	41.46013	2.63155	0.1575611	0.26889729	2.3772696	20	12 29.8	20.0
122032	2000	GS ₆₄	15.9	X	191.07831	145.49143	29.87777	5.18003	0.1400143	0.26757122	2.3851175	20	10 28.6	19.1
122033	2000	GU ₆₅	16.1	X	145.62381	273.23333	46.40705	0.64546	0.1747290	0.27694281	2.3310020	20	—	—
122034	2000	GL ₆₈	15.8	X	137.47774	253.87996	32.25271	5.45632	0.0787543	0.27270076	2.3551133	20	—	—
122035	2000	GP ₆₈	16.3	X	118.16545	112.39273	174.89748	1.35862	0.1784123	0.26880973	2.3777858	20	—	—
122036	2000	GC ₆₉	15.3	X	216.52173	108.46014	202.70798	3.45260	0.1426230	0.23660992	2.5888929	20	2 7.1	19.5
122037	2000	GO ₆₉	15.4	X	87.45513	158.41367	204.65580	6.24414	0.1112401	0.27642601	2.3339065	20	—	—
122038	2000	GJ ₇₅	16.3	X	138.65484	62.81932	166.63500	2.76726	0.1590214	0.26531923	2.3985949	20	11 14.6	20.1
122039	2000	GN ₇₆	16.0	X	181.94625	238.93477	8.53032	2.73914	0.1260185	0.27303036	2.3532176	20	—	—
122040	2000	GU ₇₆	16.9	X	103.55241	239.98326	17.59732	1.63759	0.1490150	0.31244346	2.1509076	20	11 23.4	20.0
122041	2000	GP ₇₇	16.1	X	44.36183	96.09620	193.76570	6.74917	0.1291324	0.25993879	2.4315805	20	10 19.5	18.9
122042	2000	GG ₇₉	15.8	X	93.35329	335.24451	31.36690	5.00306	0.2000492	0.27661362	2.3328511	20	—	—
122043	2000	GV ₇₉	15.4	X	216.02077	88.95586	201.61753	5.34833	0.1803799	0.28652564	2.2787345	20	1 7.2	19.1
122044	2000	GK ₈₂	17.1	X	51.08068	108.87703	162.71629	1.03760	0.1467819	0.30664899	2.1779188	20	10 14.3	19.6
122045	2000	GF ₉₀	16.8	X	298.28341	148.42433	50.24998	10.27427	0.1770388	0.28468186	2.2885629	20	—	—
122046	2000	GW ₉₀	16.5	X	353.57891	164.87755	81.02826	5.50442	0.1758738	0.29676355	2.2601198	20	5 8.4	17.9
122047	2000	GH ₉₂	16.4	X	332.02949	155.74286	88.82509	8.71051	0.0966525	0.29421952	2.2388331	20	4 4.9	18.8
122048	2000	GE ₁₀₅	15.6	X	88.72828	205.80893	49.91335	5.55606	0.2824385	0.26055937	2.4277181	20	11 8.4	19.5
122049	2000	GK ₁₁₂	15.6	X	41.09019	269.50880	36.00566	3.50055	0.1691065	0.26226136	2.4172033	20	11 10.9	18.6
122050	2000	GL ₁₁₅	16.0	X	167.32701	176.39388	94.11110	3.27130	0.1901360	0.27567219	2.3381592	20	—	—
122051	2000	GE ₁₂₂	15.8	X	60.59356	196.00252	112.78453	7.69320	0.1422602	0.26278768	2.4139747	20	12 6.1	19.3
122052	2000	GM ₁₂₅	14.9	X	104.33617	153.24137	148.44326	7.13687	0.1185296	0.26872558	2.3782822	20	—	—
122053	2000	GC ₁₄₀	15.5	X	46.14335	238.02835	41.57079	14.17469	0.2059600	0.25833126	2.4416575	20	10 21.4	18.6
122054	2000	GD ₁₄₄	16.0	X	163.43573	307.19995	32.02233	5.25985	0.2123503	0.28337646	2.2955858	20	1 25.2	19.5
122055	2000	GK ₁₄₅	16.0	X	109.67240	284.63567	107.77467	7.59347	0.1111694	0.28245082	2.3005984	20	1 17.8	18.6
122056	2000	GR ₁₄₇	16.4	X	148.99790	330.17450	319.56339	3.33203	0.2825040	0.27821174	2.3239088	20	—	—
122057	2000	GR ₁₄₉	16.5	X	235.76677	314.64665	4.16818	0.52497	0.1515447	0.29327120	2.2436569	20	3 1.2	19.9
122058	2000	GK ₁₅₀	17.6	X	6.18285	132.99518	209.29346	1.32882	0.0046159	0.31417920	2.1429783	20	10 29.9	19.7
122059	2000	GU ₁₅₃	16.2	X	133.79611	329.99609	296.99956	5.63759	0.1192303	0.27066824	2.3668888	20	12 27.3	19.6
122060	2000	GT ₁₅₆	16.6	X	171.32737	174.73577	35.90793	2.14694	0.0754934	0.26909058	2.3761310	20	11 27.2	19.7
122061	2000	GR ₁₆₄	16.8	X	315.56442	255.14160	215.30760	2.35481	0.1199768	0.27853627	2.3221033	20	—	—
122062	2000	GK ₁₆₈	16.0	X	33.14755	198.54516	105.74257	4.06803	0.1806690	0.26040897	2.4286527	20	11 2.1	18.9
122063	2000	GS ₁₇₃	16.1	X	165.13596	33.53133	278.76547	4.12196	0.1422148	0.28053816	2.3110433	20	—	—
122064	2000	GZ ₁₇₃	16.8	X	184.58065	345.30817	276.39636	4.38310	0.2424750	0.27553359	2.3389433	20	—	—
122065	2000	GX ₁₇₇	16.9	X	282.15835	345.61126	48.38965	4.61804	0.0170868	0.30984998	2.1628931	20	9 11.0	19.2
122066	2000	GG ₁₇₉	17.4	X	343.84209	297.08066	190.11153	5.15607	0.1749087	0.28537990	2.2848295	20	—	—
122067	2000	HJ ₅	16.9	X	52.64312	221.36918	61.23060	3.28608	0.1063004	0.30872055	2.1681651	20	10 26.8	19.5
122068	2000	HH ₆	16.8	X	348.48705	107.47440	226.97906	1.51257	0.2128707	0.25620299	2.4551607	20	9 26.0	18.7
122069	2000	HK ₆	16.2	X	56.78473	118.80475	220.38750	1.45835	0.2486069	0.26556616	2.3971078	20	—	—
122070	2000	HW ₆	16.3	X	326.08423	72.83521	47.05512	4.60957	0.0695321	0.27643234	2.3338708	20	—	—
122071	2000	HZ ₉	16.3	X										

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Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>
122081 2000 HU ₃₉	16.9	X	357.45966	160.54447	142.42993	3.95981	0.2131366	0.30106461	2.2047681	20	9 8.4	18.0
122082 2000 HD ₄₁	16.1	X	129.34080	201.27489	82.50245	14.12158	0.2004308	0.26876037	2.3780769	20	—	—
122083 2000 HC ₄₄	15.8	X	183.54881	221.97250	50.34772	5.49688	0.0755426	0.27920807	2.3183770	20	—	—
122084 2000 HJ ₄₅	16.8	X	51.90241	88.31161	56.47009	4.65474	0.0910897	0.29369336	2.2415063	20	3 25.5	18.9
122085 2000 HN ₄₅	16.4	X	166.18826	173.39811	49.68827	6.64559	0.0877836	0.26924294	2.3752345	20	12 6.1	19.8
122086 2000 HT ₄₅	16.5	X	299.75005	197.09640	57.42416	6.01628	0.0485270	0.29174315	2.2514844	20	3 6.8	19.2
122087 2000 HL ₄₆	16.7	X	305.00709	22.27563	237.99662	1.46012	0.1173612	0.29162956	2.2520690	20	3 6.8	19.3
122088 2000 HH ₄₇	16.1	X	139.83025	44.68705	218.75134	5.98423	0.0981026	0.26910321	2.3760567	20	12 28.4	19.5
122089 2000 HT ₄₈	15.7	X	51.76730	227.07451	219.36244	3.33008	0.0809374	0.28363093	2.2942126	20	—	—
122090 2000 HC ₅₀	15.8	X	35.12079	69.04462	239.01278	3.91739	0.2050062	0.25852664	2.4404272	20	11 11.3	18.8
122091 2000 HV ₅₀	16.2	X	67.91828	83.95223	187.60694	0.95499	0.1563100	0.25927096	2.4357542	20	10 27.7	19.7
122092 2000 HZ ₅₀	17.0	X	68.32938	17.69150	243.34220	1.69448	0.1340295	0.30756307	2.1736015	20	10 18.8	19.6
122093 2000 HQ ₆₀	16.5	X	291.65992	278.00908	36.05089	3.26171	0.2164139	0.24592318	2.5231113	20	4 21.0	19.5
122094 2000 HU ₆₀	16.4	X	112.73855	312.31194	13.19357	2.38731	0.2154575	0.27237872	2.3569693	20	—	—
122095 2000 HL ₆₂	16.7	X	181.65876	200.96351	49.48784	3.14657	0.1603939	0.27257104	2.3558605	20	—	—
122096 2000 HU ₆₃	16.8	X	151.40413	66.61688	250.17211	1.77514	0.1833973	0.27749872	2.3278879	20	—	—
122097 2000 HW ₆₉	16.1	X	89.35404	340.83358	317.61605	1.93485	0.1915449	0.26679993	2.3897120	20	12 25.6	20.0
122098 2000 HA ₇₀	16.5	X	7.27462	274.42706	256.74231	4.96197	0.1306752	0.29116137	2.2544826	20	2 5.1	18.5
122099 2000 HC ₇₁	16.8	X	352.07352	248.68422	300.40599	1.79974	0.1917555	0.29052730	2.2577616	20	1 27.6	18.7
122100 2000 HN ₇₁	16.0	X	93.71633	222.12659	79.02673	6.44772	0.0666196	0.26818367	2.3814849	20	12 26.1	19.4
122101 2000 HG ₇₂	15.9	X	114.42567	237.23265	65.67076	7.02071	0.1426763	0.27008446	2.3702982	20	—	—
122102 2000 HM ₇₆	15.7	X	63.54546	194.96990	88.66488	7.86687	0.1010758	0.26090697	2.4255614	20	11 3.3	19.0
122103 2000 HQ ₇₆	16.2	X	72.01632	49.57407	111.61106	6.04002	0.0790600	0.29668668	2.2264042	20	5 21.0	18.6
122104 2000 HV ₈₄	15.8	X	166.82915	355.44817	283.80372	6.60383	0.1138723	0.27697217	2.3308373	20	—	—
122105 2000 HZ ₈₅	16.3	X	204.24547	41.35587	180.71852	7.05369	0.0876630	0.27289103	2.3540185	20	—	—
122106 2000 HC ₈₆	16.1	X	78.21225	218.02067	94.66739	7.59081	0.3170670	0.26349842	2.4096319	20	—	—
122107 2000 HR ₉₂	16.2	X	242.28707	246.94995	69.11571	3.25806	0.3305289	0.23760543	2.5816566	20	2 28.9	20.9
122108 2000 HQ ₉₃	16.3	X	123.64466	147.83016	183.65468	2.37457	0.1774818	0.27464151	2.3440053	20	—	—
122109 2000 HJ ₉₄	16.4	X	71.33858	224.59430	39.02957	5.47270	0.0826795	0.25962623	2.4335317	20	10 12.8	19.5
122110 2000 HN ₉₆	16.3	X	326.73932	157.75805	16.49296	6.69350	0.1112096	0.28450325	2.2895207	20	—	—
122111 2000 HU ₉₉	16.1	X	185.37845	152.40181	75.98578	6.80489	0.0724439	0.27028565	2.3691218	20	—	—
122112 2000 JV ₅	15.9	X	115.74299	272.90344	69.86280	7.60246	0.1714837	0.27550357	2.3391131	20	—	—
122113 2000 JE ₁₀	15.2	X	242.83570	152.22852	88.19025	25.15465	0.2193281	0.27935312	2.3175745	20	—	—
122114 2000 JB ₁₂	16.8	X	333.70754	311.14223	227.42759	4.87221	0.1032276	0.28691609	2.2766667	20	—	—
122115 2000 JE ₁₂	16.2	X	285.29299	205.73337	57.65751	6.45784	0.1457637	0.28900359	2.2656904	20	2 14.5	19.3
122116 2000 JL ₁₂	15.4	X	71.87191	57.42704	217.81229	23.09684	0.1372385	0.25916912	2.4363923	20	11 3.6	18.8
122117 2000 JZ ₁₂	15.4	X	41.70599	270.47560	72.52955	4.39195	0.2455393	0.26383934	2.4075557	20	—	—
122118 2000 JN ₁₃	17.0	X	71.30402	92.62100	112.64435	0.94361	0.0576667	0.30171287	2.2016088	20	7 21.2	19.2
122119 2000 JP ₁₄	16.4	X	51.50800	267.49828	52.65251	4.13416	0.2490538	0.31012301	2.1616235	20	12 31.3	19.6
122120 2000 JJ ₁₅	16.5	X	213.77434	339.26234	225.83110	3.83232	0.1112073	0.27190778	2.3596900	20	—	—
122121 2000 JQ ₁₅	15.7	X	96.24751	189.10197	87.96193	9.16764	0.0907909	0.26554006	2.3972648	20	11 30.2	19.0
122122 2000 JM ₁₆	15.3	X	131.51308	174.08938	179.48425	6.77471	0.1318339	0.27995515	2.3142507	20	—	—
122123 2000 JN ₁₆	16.0	X	147.95454	170.08386	103.97142	3.22673	0.1802228	0.27087060	2.3657098	20	—	—
122124 2000 JQ ₁₆	16.1	X	277.38494	151.17569	65.14091	7.31953	0.0571831	0.26387379	2.2993885	20	—	—
122125 2000 JO ₁₇	15.5	X	102.89670	219.40723	62.91291	7.52136	0.1248406	0.26728792	2.3868025	20	12 14.7	19.1
122126 2000 JG ₁₉	16.3	X	229.00799	353.03094	306.70701	6.30852	0.1940035	0.28462649	2.2888597	20	1 30.3	20.1
122127 2000 JO ₁₉	15.5	X	256.98807	189.17945	128.00936	14.86056	0.3223379	0.23842353	2.5757476	20	3 14.2	20.1
122128 2000 JW ₂₁	16.1	X	137.87146	305.17589	336.60103	1.87875	0.1616890	0.27027090	2.3692080	20	—	—
122129 2000 JX ₂₁	15.8	X	57.81083	304.89465	330.47011	1.65476	0.1509561	0.25876863	2.4389055	20	10 19.1	18.9
122130 2000 JE ₂₈	16.7	X	223.63403	353.64952	288.23320	2.14146	0.2267908	0.28116645	2.3075992	20	1 4.5	20.5
122131 2000 JF ₃₄	16.1	X	85.85211	180.93067	10.57545	2.06407	0.1006825	0.25256665	2.4786700	20	7 25.7	19.3
122132 2000 JO ₃₄	16.5	X	51.68588	76.92447	44.07653	6.74051	0.0731584	0.28868732	2.2673448	20	2 18.6	18.9
122133 2000 JW ₃₄	16.2	X	221.01472	68.31222	249.10026	2.86182	0.1959144	0.28497970	2.2869681	20	2 12.9	19.8
122134 2000 JF ₃₅	16.3	X	87.24978	195.18900	52.22455	6.93960	0.0926924	0.25964432	2.4334187	20	10 13.1	19.6
122135 2000 JR ₃₆	16.6	X	36.50989	184.71119	39.50263	6.70562	0.1331939	0.29852807	2.2172394	20	7 6.7	18.7
122136 2000 JB ₃₈	16.0	X	43.27613	276.64959	41.04098	2.97672	0.1788317	0.26080893	2.4261692	20	11 30.6	19.2
122137 2000 JL ₃₈	16.8	X	281.59770	156.99793	42.93357	3.95178	0.1204180	0.28065979	2.3103756	20	—	—
122138 2000 JQ ₃₈	15.6	X	93.45140	161.40087	237.43867	9.84503	0.1283143	0.28059037	2.3107566	20	1 3.5	18.1
122139 2000 JF ₃₉	16.2	X	67.35107	322.15535	318.12479	0.72502	0.1722598	0.25946688	2.4345279	20	11 8.8	19.5
122140 2000 JP ₄₀	14.9	X	217.35199	218.17471	47.94498	16.78213	0.2083389	0.18061164	3.0995994	20	—	—
122141 2000 JQ ₄₁	15.5	X	56.53072	297.73621	55.61548	6.84184	0.1561176	0.27006262	2.3704260	20	—	—
122142 2000 JW ₄₁	17.0	X	150.69556	215.19640	53.99093	2.10405	0.1685821	0.27082044	2.3660019	20	—	—
122143 2000 JY ₄₁	16.7	X	95.44129	20.76973	256.71934	0.72851	0.1612228	0.26418481	2.4054564	20	12 3.3	20.4
122144 2000 JY ₄₂	16.7	X	89.66328	236.77577	64.56020	3.99929	0.1943238	0.26531211	2.3986378	20	12 29.2	20.4
122145 2000 JK ₄₃	17.3	X	44.70108	91.69793	211.42288	2.96056	0.1651606	0.30870774	2.1682251	20	11 22.1	19.9
122146 2000 JT ₄₄	16.1	X	84.55710	305.06769	27.66896	1.59532	0.2017693	0.26777727	2.3838938	20	—	—
122147 2000 JC ₄₅	16.0	X	119.78747	249.06421	62.36567	10.24402	0.0986070	0.27128269	2.3633134	20	—	—
122148 2000 JE ₄₅	16.5	X	38.67284	245.37984	67.71376	3.05887	0.2185343	0.25887664	2.4382270	20	11 24.7	19.7
122149 2000 JN ₄₅	17.1	X	128.18946	123.50102	39.39086	3.53188	0.0898962	0.30384669	2.1912893	20	8 11.4	19.9
122150 2000 JY ₄₅	16.0	X	120.73450	316.87858	64.62701	6.97097	0.1395970	0.28082254	2.3094828	20	1 24.4	18.9
122151 2000 JJ ₄₆	15.6	X	350.92557	33.98105	212.80095	3.51198	0.1260633	0.24551482	2.5259082	20	5 8.6	18.1
122152 2000 JA ₅₃	16.7	X	320.53308	10.39584	236.83450	4.39349	0.1822667	0.29054621	2.2576637	20	2 27.8	19.3
122153 2000 JO ₅₇	15.0	X	293.66872	109.44680	205.82138	6.76012	0.2389950	0.24359048	2.5391938	20	4 22.1	18.1
122154 2000 JS ₅₉	15.4	X	79.65639	4.48433	317.96409	5.18367	0.1341434	0.26849226	2.3796598	20	—	—
122155 2000 JY ₆												

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Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>		
122161	2000	<i>JQ</i> ₃₄	16.4	X	15.60956	159.20496	132.30862	1.81095	0.1989850	0.25517689	2.4617379	20	9 16.8	18.8
122162	2000	<i>KX</i> ₁	15.8	X	264.65600	88.99366	233.07406	6.23338	0.2144508	0.24052081	2.5607525	20	3 30.1	19.9
122163	2000	<i>KA</i> ₂	16.2	X	83.68755	118.93279	166.25415	3.76031	0.1522352	0.31063935	2.1592275	20	12 9.9	19.2
122164	2000	<i>KA</i> ₃	14.9	X	270.74809	101.29944	230.70797	26.43204	0.2818124	0.24108066	2.5567865	20	4 9.0	19.3
122165	2000	<i>KJ</i> ₃	16.3	X	268.73023	195.85921	86.20097	4.12665	0.1943074	0.23830052	2.5766340	20	2 19.5	20.3
122166	2000	<i>KD</i> ₇	15.1	X	231.17904	236.61853	85.74485	5.46344	0.2975157	0.23482124	2.6020230	20	3 2.1	19.8
122167	2000	<i>KZ</i> ₇	16.1	X	243.07584	221.52830	96.17814	11.80304	0.2452556	0.23678506	2.5876161	20	3 10.6	20.7
122168	2000	<i>KO</i> ₉	16.9	X	213.58686	226.61293	39.89067	3.29377	0.1470021	0.27866439	2.3213915	20	—	—
122169	2000	<i>KL</i> ₁₀	16.2	X	274.90818	70.97349	69.13981	2.42161	0.0822888	0.27208121	2.3586872	20	—	—
122170	2000	<i>KR</i> ₁₁	16.0	X	260.08574	104.44602	58.04039	7.75058	0.0545569	0.27228362	2.3575181	20	—	—
122171	2000	<i>KZ</i> ₁₃	15.9	X	131.96328	20.76173	227.65301	5.71442	0.0423762	0.26558494	2.3969948	20	12 1.6	19.1
122172	2000	<i>KJ</i> ₁₈	16.6	X	9.95688	219.14950	73.63917	6.62263	0.1697753	0.30178902	2.2012385	20	9 16.5	18.5
122173	2000	<i>KC</i> ₂₈	16.4	X	340.68650	295.29539	236.58542	6.22922	0.0506955	0.28319662	2.2965576	20	1 6.6	19.1
122174	2000	<i>KC</i> ₃₁	15.9	X	129.65534	161.21112	64.33938	0.96401	0.1146075	0.26128486	2.4232221	20	10 30.6	19.4
122175	2000	<i>KL</i> ₃₄	16.0	X	92.73513	167.31315	102.35031	3.50115	0.1948354	0.26138321	2.4226142	20	11 23.5	19.8
122176	2000	<i>KK</i> ₃₅	15.6	X	220.03240	267.42630	78.92817	13.92680	0.2704082	0.23681663	2.5873862	20	3 28.2	20.4
122177	2000	<i>KU</i> ₃₅	16.8	X	359.79033	130.11953	146.29605	5.40289	0.1672901	0.29852946	2.2172326	20	7 19.5	18.3
122178	2000	<i>KZ</i> ₃₇	15.9	X	88.55082	169.38541	167.61564	3.84912	0.1007227	0.22074113	2.7115267	20	—	—
122179	2000	<i>KT</i> ₃₈	16.1	X	352.91284	173.81024	238.97318	5.59072	0.1094698	0.26975514	2.3722269	20	—	—
122180	2000	<i>KV</i> ₄₃	17.4	X	346.74340	247.68861	246.99067	10.18119	0.1956032	0.47825579	1.6194314	20	—	—
122181	2000	<i>KZ</i> ₄₆	15.3	X	248.52918	228.73390	105.56548	15.30625	0.3097594	0.23787644	2.5796954	20	4 1.5	20.1
122182	2000	<i>KM</i> ₄₉	16.9	X	234.25561	261.54756	52.43668	3.18838	0.1834777	0.28662495	2.2782081	20	2 23.2	20.4
122183	2000	<i>KY</i> ₅₇	16.6	X	164.27948	133.04254	125.25184	4.78698	0.1314480	0.27148817	2.3621208	20	—	—
122184	2000	<i>KA</i> ₅₈	15.9	X	88.33929	211.33348	87.84939	9.01676	0.1427279	0.26580865	2.3956497	20	12 22.4	19.5
122185	2000	<i>KF</i> ₅₈	16.1	X	238.85322	167.96026	110.46527	7.52923	0.1050217	0.28446249	2.2897393	20	1 15.9	19.3
122186	2000	<i>KC</i> ₆₀	15.8	X	149.99057	209.74281	71.38224	13.85991	0.1690109	0.22196825	2.7015239	20	—	—
122187	2000	<i>KW</i> ₆₁	16.3	X	66.95747	280.86436	64.60905	2.87919	0.1398541	0.26908495	2.3761642	20	—	—
122188	2000	<i>KM</i> ₆₃	15.4	X	80.12137	181.82779	136.64798	6.93602	0.1460356	0.26672369	2.3901674	20	—	—
122189	2000	<i>KP</i> ₇₀	16.0	X	330.53966	32.97698	188.86065	13.37003	0.2062361	0.24123313	2.5557091	20	2 10.6	19.3
122190	2000	<i>KY</i> ₇₄	16.3	X	163.06305	175.42256	93.58242	3.69039	0.1369564	0.27171248	2.3608206	20	—	—
122191	2000	<i>KV</i> ₇₉	16.5	X	346.17775	141.72328	109.55685	7.09144	0.1267206	0.29383051	2.2408087	20	5 6.7	18.5
122192	2000	<i>KK</i> ₈₂	16.0	X	48.29634	207.65994	199.43434	5.72966	0.1463171	0.27535813	2.3399367	20	—	—
122193	2000	<i>LJ</i> ₁	15.6	X	296.75138	146.52984	160.97747	5.23909	0.2483097	0.29164575	2.2519856	20	4 12.6	18.2
122194	2000	<i>LS</i> ₁	16.1	X	119.75513	206.63478	112.60249	6.94228	0.1151540	0.27353513	2.3503217	20	—	—
122195	2000	<i>LU</i> ₂	16.3	X	233.15499	2.25563	286.56752	5.13727	0.2609017	0.27975127	2.3153750	20	1 19.2	20.4
122196	2000	<i>LE</i> ₇	16.6	X	1.84827	129.24087	123.04906	6.22143	0.1266475	0.29711106	2.2242837	20	6 9.6	18.5
122197	2000	<i>LV</i> ₉	15.7	X	346.14096	121.85146	114.55779	24.16869	0.1385877	0.29119692	2.2542991	20	4 22.8	18.6
122198	2000	<i>LE</i> ₁₆	15.4	X	200.16804	354.69135	262.84411	24.24259	0.1986128	0.27456747	2.3444267	20	—	—
122199	2000	<i>LS</i> ₂₀	15.5	X	186.56144	74.77978	231.44703	10.86976	0.2911886	0.22421500	2.6834465	20	1 10.9	20.6
122200	2000	<i>LD</i> ₂₁	14.9	X	284.31010	91.96926	127.84448	22.54510	0.2437835	0.27936937	2.3174846	20	—	—
122201	2000	<i>LG</i> ₂₁	15.4	X	250.31330	91.41567	221.62824	10.76343	0.2095581	0.23344245	2.6122586	20	3 4.7	19.8
122202	2000	<i>LX</i> ₂₁	16.0	X	357.98763	72.18698	191.84540	5.74696	0.1653665	0.29320301	2.2440047	20	6 21.1	17.6
122203	2000	<i>LT</i> ₂₆	15.5	X	251.19820	108.75209	205.25448	2.37572	0.2633627	0.23325619	2.6136490	20	3 5.8	19.9
122204	2000	<i>LD</i> ₂₈	16.0	X	36.86505	34.32523	266.13948	1.65004	0.2164374	0.30155177	2.2023929	20	11 14.0	18.7
122205	2000	<i>LO</i> ₃₀	16.0	X	326.11146	135.19706	169.48828	6.82604	0.2382690	0.29314877	2.2442815	20	6 3.9	17.6
122206	2000	<i>LH</i> ₃₁	14.8	X	275.24176	202.50512	117.71952	14.57007	0.1752179	0.23711090	2.5852450	20	4 22.3	18.8
122207	2000	<i>LQ</i> ₃₂	15.9	X	52.86405	136.98985	169.45873	6.37267	0.1186769	0.26073593	2.4266220	20	11 21.1	19.2
122208	2000	<i>LY</i> ₃₅	14.9	X	241.62504	200.45806	105.07546	18.00975	0.2161180	0.23155381	2.6264437	20	2 25.4	19.5
122209	2000	<i>MY</i> ₂	15.6	X	254.14602	278.22693	91.84822	3.32457	0.2172347	0.24124268	2.5556416	20	5 22.0	19.3
122210	2000	<i>NL</i> ₃	15.2	X	223.84657	53.31467	284.14516	11.47249	0.1750423	0.23304106	2.6152573	20	3 10.7	19.8
122211	2000	<i>ND</i> ₄	16.0	X	7.83280	152.45176	280.18500	8.55792	0.1334428	0.26550041	2.3975035	20	—	—
122212	2000	<i>NG</i> ₄	16.8	X	206.48515	35.52547	234.34104	2.38019	0.2146232	0.27381287	2.3487321	20	—	—
122213	2000	<i>NE</i> ₇	16.5	X	71.55039	164.14321	156.29487	4.14336	0.2076835	0.25974207	2.4328081	20	—	—
122214	2000	<i>NR</i> ₇	15.4	X	199.19080	201.39068	156.64134	4.60484	0.1911110	0.23145727	2.6271740	20	3 21.1	19.9
122215	2000	<i>NE</i> ₁₀	15.3	X	246.69666	323.24970	32.95833	16.43755	0.1839860	0.23788938	2.5796019	20	4 28.5	19.3
122216	2000	<i>NG</i> ₁₂	15.3	X	204.33434	93.26192	239.13421	11.56195	0.2889200	0.22749242	2.6576111	20	2 18.2	20.4
122217	2000	<i>NR</i> ₁₃	15.6	X	296.80680	73.12980	238.22885	2.69411	0.2001069	0.23900924	2.5715379	20	4 26.8	18.8
122218	2000	<i>NY</i> ₁₅	16.9	X	186.23917	175.15933	99.32312	3.93731	0.1592288	0.26998350	2.3708891	20	—	—
122219	2000	<i>NF</i> ₁₆	15.3	X	29.56375	60.33960	334.14297	6.51690	0.1097715	0.26152638	2.4217299	20	—	—
122220	2000	<i>NT</i> ₁₆	16.5	X	150.20727	287.50774	66.28560	4.42841	0.2241001	0.27242852	2.3566821	20	2 2.1	20.1
122221	2000	<i>ND</i> ₂₀	14.9	X	248.67216	258.01195	123.97189	14.99951	0.2312922	0.24048302	2.5610208	20	6 2.2	19.1
122222	2000	<i>ND</i> ₂₂	16.1	X	117.04290	190.26701	111.77436	3.86260	0.2091538	0.26488411	2.4012209	20	—	—
122223	2000	<i>NM</i> ₂₂	15.2	X	242.32504	44.44176	286.44748	12.41927	0.1911463	0.23336213	2.6128579	20	3 17.5	19.7
122224	2000	<i>NL</i> ₂₃	15.8	X	347.69453	314.45707	317.86932	6.28112	0.1691725	0.29218742	2.2492015	20	6 8.8	17.5
122225	2000	<i>NO</i> ₂₄	15.8	X	15.83794	323.74166	290.38732	6.24942	0.2176349	0.29542695	2.2327288	20	7 25.9	17.2
122226	2000	<i>NX</i> ₂₆	15.2	X	269.32743	238.69182	126.77795	14.66799	0.2193295	0.24053123	2.5606786	20	6 4.2	19.0
122227	2000	<i>OJ</i> ₂	14.8	X	243.79240	54.36802	242.10278	30.89411	0.2756482	0.23074621	2.6325684	20	1 27.5	20.1
122228	2000	<i>OA</i> ₂	16.2	X	192.99358	107.36885	287.48306	3.28140	0.2957821	0.23250162	2.6193009	20	4 26.7	21.0
122229	2000	<i>OC</i> ₂	16.4	X	185.30886	164.49044								

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>		
122241	2000	OA ₁₇	16.1	X	132.11203	37.69002	308.28443	3.46304	0.1700809	0.27016860	2.3698060	20	—	—
122242	2000	OL ₁₇	15.3	X	283.51183	282.82562	18.93967	3.72251	0.2557932	0.23710303	2.5853022	20	3 21.9	19.2
122243	2000	OG ₁₈	15.8	X	298.46969	152.75757	132.52630	8.33106	0.1474572	0.28681812	2.2771851	20	4 2.2	18.6
122244	2000	OS ₁₉	15.2	X	261.64277	124.00476	212.24683	4.31151	0.1506519	0.23836732	2.5761525	20	4 23.6	18.8
122245	2000	OS ₂₁	15.8	X	322.96384	135.38588	143.56926	24.19391	0.1817600	0.28996211	2.2606945	20	5 3.0	18.7
122246	2000	OT ₂₁	15.1	X	168.30223	65.23455	308.31180	26.80893	0.2172621	0.22744446	2.6579847	20	3 1.4	20.0
122247	2000	OM ₂₇	15.7	X	252.61951	27.37289	280.10675	2.91971	0.2399688	0.23317779	2.6142348	20	2 29.3	20.1
122248	2000	OE ₂₉	15.5	X	224.84968	194.50741	178.47448	6.42670	0.3281587	0.23494225	2.6011294	20	4 23.8	20.2
122249	2000	OR ₃₀	15.3	X	108.43816	104.77510	215.82740	6.76063	0.2224375	0.21444055	2.7643823	20	—	—
122250	2000	OP ₃₁	15.6	X	218.05114	166.61692	146.74992	12.10055	0.1653604	0.22901809	2.6457950	20	2 12.3	19.8
122251	2000	OV ₃₁	15.1	X	246.40091	33.05828	291.40335	13.84217	0.1225120	0.23385828	2.6091610	20	3 18.1	19.4
122252	2000	OM ₃₈	15.5	X	321.83477	42.30853	272.60483	12.51716	0.1671723	0.24307504	2.5427821	20	6 20.3	17.7
122253	2000	OW ₃₈	15.7	X	230.71191	115.80485	265.33016	11.60796	0.2183350	0.23647380	2.5898863	20	5 11.6	20.0
122254	2000	OW ₃₉	15.3	X	276.27172	152.88078	169.89523	12.26188	0.1971640	0.23865074	2.5741125	20	4 19.6	19.1
122255	2000	OB ₄₁	14.8	X	158.52336	195.94734	207.03390	12.46157	0.2900319	0.22888792	2.6467980	20	4 13.7	19.4
122256	2000	OA ₄₂	15.4	X	25.14758	186.36973	250.59442	4.78022	0.1588083	0.26498280	2.4006247	20	—	—
122257	2000	OM ₄₂	14.5	X	158.48422	94.05017	307.16706	14.37132	0.17376612	0.22862771	2.6488059	20	3 27.1	18.9
122258	2000	OD ₄₄	15.6	X	189.39485	2.70760	285.45305	8.39462	0.3395588	0.27218436	2.3580912	20	—	—
122259	2000	OH ₄₄	15.8	X	243.99772	182.31940	172.54664	6.67096	0.2793033	0.28442099	2.2899621	20	4 17.4	19.6
122260	2000	OY ₄₄	15.0	X	156.50531	211.40978	177.58450	13.55428	0.3031178	0.22461415	2.6802665	20	3 28.6	19.8
122261	2000	OK ₄₅	15.4	X	84.29216	89.39404	239.12931	9.30897	0.1137424	0.26028226	2.4294409	20	—	—
122262	2000	ON ₄₆	16.2	X	205.23421	314.91081	330.40295	6.67568	0.2176053	0.27284393	2.3542894	20	—	—
122263	2000	OX ₄₉	14.3	X	358.55526	137.86877	342.34278	22.34224	0.1745318	0.26470496	2.4023042	20	—	—
122264	2000	OO ₅₂	15.1	X	168.58705	224.82210	171.95655	7.04001	0.1167144	0.27699331	2.3307187	20	4 6.1	18.4
122265	2000	OZ ₅₂	15.6	X	86.43024	106.31112	266.23497	0.92208	0.2374621	0.26191397	2.4193402	20	—	—
122266	2000	OR ₅₃	15.6	X	238.20627	27.66850	262.06933	13.01918	0.2348487	0.22709049	2.6607460	20	1 26.5	20.3
122267	2000	OP ₅₄	15.4	X	62.02803	147.02137	299.33594	4.49659	0.0864079	0.27560227	2.3385546	20	1 16.7	17.7
122268	2000	OF ₅₇	15.5	X	233.72612	8.75359	332.08744	4.18732	0.1446939	0.23425335	2.6062266	20	3 30.3	19.6
122269	2000	OH ₅₈	16.3	X	122.84584	18.98468	349.76094	4.57553	0.1435179	0.27103232	2.3647687	20	1 11.7	19.3
122270	2000	OF ₅₈	16.0	X	284.13510	68.52124	324.61010	5.54462	0.2482765	0.24443555	2.5333380	20	7 26.2	18.9
122271	2000	OD ₆₁	14.5	X	183.58315	96.26302	290.34201	13.29919	0.1135102	0.22988480	2.6391407	20	4 2.5	18.9
122272	2000	PV	15.8	X	161.95198	232.51317	143.79612	2.73672	0.2884074	0.22721093	2.6598056	20	3 16.7	20.5
122273	2000	PT ₁	16.2	X	289.64484	238.04054	145.74327	7.29894	0.2488527	0.24445664	2.5331923	20	7 19.9	19.2
122274	2000	PH ₃	16.2	X	359.23427	64.97627	191.71437	5.77097	0.1603931	0.29276619	2.2462363	20	6 11.3	17.8
122275	2000	PG ₄	16.2	X	80.71307	203.53977	98.19390	2.60642	0.1818335	0.25917243	2.4363716	20	12 19.8	19.9
122276	2000	PJ ₄	16.2	X	244.19653	181.87697	131.94101	9.90405	0.1404849	0.28267266	2.2993946	20	3 7.2	19.6
122277	2000	PY ₄	14.5	X	77.99685	23.30291	32.17440	36.44273	0.1731365	0.21450196	2.7638547	20	2 15.5	18.9
122278	2000	PD ₅	16.8	X	182.25628	129.28774	129.82604	0.66324	0.1927301	0.26940606	2.3742756	20	—	—
122279	2000	PE ₇	14.9	X	279.22222	322.07781	307.52234	12.76405	0.0884397	0.23241943	2.6199184	20	2 22.9	18.6
122280	2000	PQ ₈	16.5	X	289.13762	101.66193	181.09019	4.02127	0.2113659	0.28362059	2.2942683	20	3 4.0	19.5
122281	2000	PS ₁₂	15.4	X	212.53145	92.92986	255.34607	12.73746	0.1015133	0.23059499	2.6337192	20	3 15.9	19.7
122282	2000	PD ₁₄	16.5	X	53.84240	229.56709	109.97324	3.07439	0.2196111	0.25903385	2.4372404	20	—	—
122283	2000	PH ₁₄	15.5	X	171.75398	48.46789	315.45498	6.24735	0.2487970	0.22784805	2.6548450	20	3 5.2	20.1
122284	2000	PO ₁₄	15.5	X	177.28433	83.90278	298.14595	10.87810	0.1949253	0.23105098	2.6302529	20	3 25.2	20.1
122285	2000	PM ₁₆	16.5	X	177.60372	351.57493	35.29595	0.90986	0.2925901	0.22977421	2.6399874	20	4 8.3	21.3
122286	2000	PQ ₁₆	16.8	X	214.02248	43.83261	226.65704	1.42586	0.2027085	0.27431293	2.3458768	20	—	—
122287	2000	PZ ₁₆	15.9	X	70.86787	105.63261	138.25073	7.76410	0.1612986	0.30088387	2.2056509	20	10 4.3	18.8
122288	2000	PG ₁₇	16.0	X	232.73719	267.24998	133.85439	7.28187	0.1542373	0.24053860	2.5606263	20	6 15.8	19.9
122289	2000	PQ ₁₈	16.0	X	82.33030	278.35806	23.43827	2.10560	0.1979717	0.25864055	2.4397106	20	12 22.3	19.8
122290	2000	PS ₁₈	15.9	X	236.31760	6.11134	316.97621	4.98075	0.1471030	0.23202101	2.6229167	20	3 10.7	20.1
122291	2000	PN ₁₉	15.9	X	99.83812	179.15546	115.40014	8.56538	0.2004480	0.26000822	2.4311476	20	12 29.0	19.8
122292	2000	PG ₂₀	15.5	X	255.19819	184.01762	129.94504	14.85677	0.1731315	0.23308976	2.6148930	20	3 22.0	19.7
122293	2000	PP ₂₀	14.6	X	135.10063	55.90981	348.84566	14.53520	0.1140943	0.22663740	2.6642910	20	3 12.6	18.3
122294	2000	PS ₂₀	15.3	X	191.09731	194.29898	115.80521	13.14227	0.1774725	0.22362550	2.6881603	20	1 17.5	19.7
122295	2000	PH ₂₁	16.2	X	137.12338	150.60215	132.96065	7.64233	0.0787137	0.26400808	2.4065298	20	—	—
122296	2000	PM ₂₂	15.4	X	214.19604	247.18902	108.11140	14.11330	0.1976566	0.23043400	2.6349457	20	4 5.3	20.1
122297	2000	PJ ₂₃	15.8	X	312.34734	112.89849	158.98417	4.94432	0.1303890	0.28677356	2.2774210	20	4 4.4	18.1
122298	2000	PP ₂₅	14.9	X	285.99605	138.83575	240.68366	15.05494	0.2902341	0.24295492	2.5436201	20	6 29.1	18.3
122299	2000	PQ ₂₅	15.3	X	201.64470	70.76584	269.07121	14.43961	0.3025394	0.22793756	2.6541500	20	2 22.9	20.5
122300	2000	QF ₃	16.0	X	169.79867	209.77534	148.43763	3.63725	0.1819130	0.22490989	2.6779164	20	2 25.2	20.3
122301	2000	QQ ₃	15.9	X	253.14094	63.07495	354.41862	4.26473	0.2488223	0.24107439	2.5568309	20	7 19.1	19.7
122302	2000	QO ₄	15.1	X	112.11606	237.20732	145.85933	3.22076	0.1957296	0.21882046	2.7273702	20	1 31.5	19.0
122303	2000	QA ₅	15.3	X	303.35931	18.59272	335.23610	5.44999	0.1410816	0.24237521	2.5476743	20	7 19.7	18.2
122304	2000	QT ₅	16.6	X	249.82429	318.12359	344.09758	6.38542	0.1454580	0.28022783	2.3127492	20	2 25.1	19.9
122305	2000	QV ₅	15.5	X	322.95985	117.82574	352.43600	6.11954	0.0850015	0.26112720	2.4241974	20	—	—
122306	2000	QD ₆	15.7	X	136.52402	13.48387	318.85321	6.10302	0.1326570	0.26665943	2.3905514	20	—	—
122307	2000	QE ₈	15.9	X	4.83992	88.99574	208.06761	1.29442	0.2343527	0.24565102	2.5249746	20	9 4.6	17.9
122308	2000	QJ ₈	15.9	X	309.14863	307.11520	339.14965	7.20584	0.1316758	0.28546725	2.2843634	20	4 15.4	18.5
122309	2000	QV ₈	16.0	X	93.12467	45.30013	317.10451	5.58512	0.1302683	0.26523445	2.3991060	20	—	—
122310	2000	QJ ₉	14.9	X	276.05535	311.09107	311.30438	12.83768	0.1135757					

ELEMENTS AND OPPOSITION DATES IN 2020

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Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>		
122321	2000	QB ₁₄	16.9	X	187.28962	144.79778	133.82888	1.95401	0.1787904	0.27087532	2.3656823	20	—	—
122322	2000	QQ ₁₅	16.7	X	310.41252	357.11936	319.06301	3.11317	0.2435090	0.24163384	2.5528828	20	5 16.9	19.5
122323	2000	QZ ₁₇	16.4	X	299.47011	255.13046	123.22692	2.87409	0.1871432	0.24523390	2.5278369	20	8 10.8	18.7
122324	2000	QO ₁₉	15.6	X	111.41275	56.07177	340.05236	13.85294	0.0950393	0.22206479	2.7007408	20	2 4.9	19.3
122325	2000	QP ₁₉	15.5	X	204.68288	355.00972	348.95707	4.17293	0.2113083	0.22879714	2.6474981	20	3 8.1	20.0
122326	2000	QH ₂₀	16.7	X	103.90540	146.10686	185.10999	2.32770	0.1739366	0.26269813	2.4145233	20	—	—
122327	2000	QO ₂₀	15.9	X	56.33951	36.24219	340.54294	1.47324	0.1785026	0.26048714	2.4281668	20	—	—
122328	2000	QJ ₂₁	15.5	X	111.62931	200.79823	150.17634	7.02893	0.0852221	0.21756198	2.7378778	20	—	—
122329	2000	QZ ₂₂	16.1	X	18.86969	23.08372	306.22089	5.73186	0.1100536	0.25142463	2.4861701	20	10 28.6	19.0
122330	2000	QL ₂₃	16.0	X	287.74074	84.60779	289.59757	5.22481	0.1591662	0.24264155	2.5458097	20	7 18.8	19.1
122331	2000	QY ₂₄	15.1	X	160.53489	67.08273	345.64307	11.40924	0.1806309	0.22744231	2.6580014	20	4 18.0	19.6
122332	2000	QY ₂₆	15.1	X	176.49298	79.00712	298.83100	3.45998	0.2322881	0.22816575	2.6523800	20	3 24.8	19.7
122333	2000	QE ₂₇	16.6	X	103.37345	201.50484	130.75933	3.07752	0.2248674	0.26351559	2.4095272	20	—	—
122334	2000	QM ₂₈	16.9	X	161.22019	198.78653	133.91085	2.97153	0.2219119	0.27076134	2.3663422	20	1 15.7	20.5
122335	2000	QX ₂₈	15.2	X	48.74463	233.18438	169.85052	10.38275	0.0446425	0.21362850	2.7713833	20	—	—
122336	2000	QS ₃₄	14.8	X	12.43520	162.64927	346.30603	28.43965	0.0811774	0.22458447	2.6805026	20	2 12.8	18.3
122337	2000	QA ₃₅	16.7	X	22.99865	23.65630	311.68882	2.22626	0.1251684	0.25279310	2.4771896	20	11 16.8	19.8
122338	2000	QD ₃₆	15.9	X	11.17558	216.73191	162.78202	5.02679	0.1986903	0.25619409	2.4552175	20	—	—
122339	2000	QG ₃₆	16.0	X	234.87717	44.40316	291.83930	2.88215	0.2978723	0.23314724	2.6144632	20	3 17.1	20.7
122340	2000	QL ₃₆	14.5	X	119.99164	45.75874	306.05869	4.62272	0.1364476	0.17006944	3.2264023	20	1 3.1	19.1
122341	2000	QT ₃₆	16.5	X	252.89175	359.13390	293.03847	3.51094	0.1257387	0.28087460	2.3091975	20	2 15.3	19.8
122342	2000	QT ₃₇	16.5	X	31.13290	123.86063	188.59687	2.36795	0.2130402	0.25249083	2.4791662	20	11 12.6	19.5
122343	2000	QK ₃₈	15.2	X	29.70907	50.54918	331.47244	5.80696	0.1269652	0.25940922	2.4348887	20	—	—
122344	2000	QR ₃₈	15.6	X	203.49626	32.94312	328.14325	4.01148	0.0762368	0.23182480	2.6243966	20	3 27.8	19.5
122345	2000	QW ₃₈	16.0	X	103.76273	348.45972	286.59151	2.06312	0.1527106	0.25825101	2.4421633	20	12 6.4	19.9
122346	2000	QY ₃₈	16.2	X	153.66170	182.33446	183.86407	1.79306	0.2869967	0.22389863	2.6859737	20	2 27.0	20.9
122347	2000	QC ₄₀	16.8	X	138.95761	326.93129	340.92430	2.12372	0.1929516	0.26664545	2.3906350	20	—	—
122348	2000	QT ₄₀	15.5	X	300.46645	306.13674	331.62437	6.63289	0.1790713	0.23596007	2.5936440	20	3 19.4	19.0
122349	2000	QH ₄₁	15.9	X	228.92710	54.55685	296.03483	3.05509	0.1490210	0.23342828	2.6123643	20	4 6.4	20.0
122350	2000	QB ₄₂	15.4	X	234.98367	92.38974	336.52305	9.58526	0.3482445	0.23937315	2.5689309	20	7 7.2	20.0
122351	2000	QH ₄₄	15.6	X	196.19581	150.90794	148.88276	6.66405	0.1264562	0.27313420	2.3526212	20	1 1.2	19.2
122352	2000	QK ₄₄	16.9	X	132.04801	186.74403	98.98936	0.40549	0.1822439	0.26327915	2.4109696	20	—	—
122353	2000	QT ₄₄	16.0	X	258.67749	63.09461	338.46182	12.41998	0.1847408	0.24197256	2.5504999	20	7 14.9	19.7
122354	2000	QX ₄₄	15.9	X	45.46303	114.70949	145.43537	6.17394	0.1738295	0.29805135	2.2196031	20	9 24.6	18.4
122355	2000	QU ₄₇	16.2	X	123.30870	300.93735	347.51991	1.88104	0.1682316	0.26189850	2.4194354	20	—	—
122356	2000	QW ₄₈	15.2	X	124.16450	260.86632	159.80393	12.15001	0.1702532	0.22572549	2.6714619	20	3 30.1	19.2
122357	2000	QH ₄₉	16.5	X	84.18864	48.65147	352.24631	1.11379	0.1847010	0.26764073	2.3847044	20	1 4.4	18.6
122358	2000	QM ₄₉	16.8	X	233.70005	176.71163	134.84671	1.42296	0.3228621	0.28019035	2.3129555	20	2 14.1	20.9
122359	2000	QS ₅₀	15.7	X	187.62534	32.73142	348.78076	5.20450	0.1619027	0.23013994	2.6371898	20	4 6.4	20.0
122360	2000	QJ ₅₁	16.5	X	166.72025	2.09255	343.69846	3.84981	0.1360018	0.27322018	2.3521275	20	1 30.8	20.0
122361	2000	QF ₅₂	15.6	X	71.95013	233.70433	157.52666	9.89600	0.2135020	0.21479312	2.7613564	20	20 20.0	—
122362	2000	QG ₅₂	17.1	X	79.30037	349.59664	355.33981	2.10277	0.2182064	0.26124654	2.4234590	20	—	—
122363	2000	QK ₅₂	16.3	X	208.52537	64.27185	314.65568	1.80512	0.2397034	0.23230650	2.6207674	20	4 20.3	21.0
122364	2000	QH ₅₄	16.3	X	149.78919	291.88440	30.63986	2.93181	0.1835841	0.26873982	2.3781981	20	—	—
122365	2000	QL ₅₄	16.5	X	153.67867	176.15901	133.01614	2.95360	0.2075688	0.26808909	2.3820449	20	—	—
122366	2000	QC ₅₇	15.4	X	119.58024	132.04049	105.47337	3.02409	0.0130469	0.20296314	2.8676398	20	10 21.3	19.3
122367	2000	QW ₅₇	15.6	X	168.43690	258.26827	113.17292	3.86685	0.0928827	0.22803202	2.6534169	20	3 7.1	19.5
122368	2000	QZ ₅₇	15.3	X	16.17375	35.56710	8.70841	6.81052	0.1169606	0.26043035	2.4285198	20	—	—
122369	2000	QK ₅₈	16.6	X	200.03726	285.93201	41.72283	3.37062	0.1749780	0.27667554	2.3325030	20	2 10.9	20.4
122370	2000	QA ₅₉	17.0	X	141.99500	231.61977	52.40782	3.56457	0.1785722	0.26430502	2.4047270	20	—	—
122371	2000	QH ₆₀	15.4	X	207.08410	322.77107	359.09851	14.12240	0.1686423	0.22746121	2.6578542	20	2 17.7	19.9
122372	2000	QO ₆₀	15.8	X	32.06686	297.65635	88.97360	2.74867	0.1639225	0.25869562	2.4393643	20	—	—
122373	2000	QN ₆₁	16.1	X	169.33513	171.30638	151.80481	4.01425	0.1305600	0.27016304	2.3698386	20	1 3.8	19.4
122374	2000	QO ₆₃	16.0	X	204.56699	200.52822	115.18223	7.74595	0.1304297	0.27459971	2.3442432	20	1 29.9	19.6
122375	2000	QO ₆₄	16.2	X	327.32095	181.30277	114.26569	7.68668	0.1786525	0.28973165	2.2618932	20	6 1.2	18.0
122376	2000	QO ₆₅	15.5	X	146.15965	221.44034	109.48426	9.52893	0.2759138	0.21813049	2.7331185	20	1 11.6	20.1
122377	2000	QU ₆₅	16.0	X	202.78493	283.42169	82.32199	6.76693	0.2573302	0.22917596	2.6445798	20	4 4.1	20.7
122378	2000	QA ₆₆	14.6	X	92.84773	165.20336	21.34921	19.18768	0.1604448	0.23932029	2.5693092	20	8 12.8	18.8
122379	2000	QG ₆₇	13.7	X	343.54624	49.75444	20.41442	12.56070	0.1455327	0.25688453	2.4508162	20	—	—
122380	2000	QA ₇₀	15.1	X	207.32788	5.21471	343.82134	15.24747	0.2654829	0.22914728	2.6448005	20	3 13.5	19.8
122381	2000	QH ₇₀	16.5	X	269.97680	228.40259	159.96584	18.40656	0.2804492	0.23967988	2.5667387	20	6 24.8	20.5
122382	2000	QT ₇₀	15.0	X	156.81698	292.33262	152.43761	30.23391	0.3055504	0.23076127	2.6324539	20	6 8.1	20.4
122383	2000	QW ₇₀	16.0	X	289.01503	187.09284	162.48914	7.12191	0.2757086	0.24080552	2.5587337	20	5 28.4	19.4
122384	2000	QU ₇₁	15.5	X	292.04006	342.04898	324.48764	6.27397	0.1901740	0.23739624	2.5831730	20	4 12.6	19.0
122385	2000	QG ₇₂	16.9	X	280.28100	83.98441	189.93514	2.33829	0.1464441	0.28161271	2.3051607	20	2 19.7	20.1
122386	2000	QK ₇₂	15.5	X	171.37751	90.00896	314.25116	3.74464	0.0986423	0.23126826	2.6286052	20	4 17.2	19.5
122387	2000	QQ ₇₂	16.2	X	228.34360	65.52383	319.87047	2.92824	0.2763192	0.23506048	2.6002572	20	5 11.7	20.6
122388	2000	QV ₇₂	16.8	X	158.49933	51.43312	228.12566	1.79983	0.1987565	0.26592344	2.3949602	20	—	—
122389	2000	QW ₇₄	16.4	X	73.07067	189.06179	172.02359	2.68767	0.2082754	0.26142491	2.4223566	20	—	—
122390	2000	QH ₇₅	15.5	X	185.85244	171.89572	161.95913	4.41338	0.0879850	0.2246047				

ELEMENTS AND OPPOSITION DATES IN 2020

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Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>		
122401	2000	QS ₈₁	16.3	X	97.63176	344.31871	322.74441	3.95123	0.1279844	0.25928672	2.4356556	20	—	—
122402	2000	QD ₈₃	14.9	X	101.56134	209.05911	169.48335	9.10942	0.2370877	0.21617189	2.7496025	20	1 18.4	18.7
122403	2000	QL ₈₃	15.8	X	150.55718	17.33592	351.98881	6.87158	0.1469803	0.27236032	2.3570755	20	2 14.8	19.1
122404	2000	QE ₈₆	16.0	X	228.83683	6.13538	298.28276	5.87329	0.1236319	0.27777942	2.3263194	20	2 6.8	19.5
122405	2000	QZ ₈₆	16.0	X	124.15850	12.32587	301.00395	5.59003	0.1225992	0.26408344	2.4060719	20	—	—
122406	2000	QB ₈₇	15.6	X	54.74513	76.18490	309.46930	6.86253	0.1101929	0.26257182	2.4152975	20	—	—
122407	2000	QN ₈₇	15.9	X	131.87468	51.26970	242.08312	2.47693	0.1618868	0.26333814	2.4106096	20	—	—
122408	2000	QV ₈₈	15.0	X	102.80638	233.64506	324.44384	13.07349	0.0710544	0.24479567	2.5308528	20	8 19.7	18.3
122409	2000	QE ₈₉	15.0	X	25.22324	115.87214	310.00274	10.03195	0.0469417	0.26395703	2.4068400	20	—	—
122410	2000	QD ₉₀	15.3	X	233.87399	139.94777	176.55810	13.76406	0.1095112	0.22919360	2.6444441	20	3 3.4	19.2
122411	2000	QV ₉₀	16.1	X	101.15804	16.77382	324.61874	13.31224	0.1869638	0.26322952	2.4112726	20	—	—
122412	2000	QV ₉₁	15.8	X	190.19519	61.10584	318.93227	11.57751	0.1871270	0.23008986	2.6375725	20	4 2.6	20.4
122413	2000	QT ₉₂	15.5	X	294.21411	117.30820	257.26615	2.82304	0.1681932	0.24272926	2.5451964	20	7 28.1	18.4
122414	2000	QO ₉₃	15.8	X	299.80226	79.73621	264.33740	2.65970	0.0478989	0.24230875	2.5481402	20	7 11.5	18.8
122415	2000	QF ₉₄	16.1	X	269.68932	90.65588	296.48216	5.99513	0.1722774	0.24138536	2.5546344	20	7 8.5	19.5
122416	2000	QQ ₉₅	16.6	X	98.14671	198.61819	153.44954	3.01354	0.2015540	0.26326732	2.4110418	20	—	—
122417	2000	QV ₉₆	16.3	X	161.10755	294.25869	26.89980	2.45890	0.2206141	0.26965687	2.3728032	20	1 1.9	20.0
122418	2000	QP ₉₇	16.1	X	299.44834	220.80782	154.98266	8.03099	0.2460074	0.24309184	2.5426649	20	7 25.7	18.7
122419	2000	QB ₉₉	15.2	X	51.95236	299.93763	142.29341	8.72262	0.2947801	0.21463300	2.7627296	20	1 29.4	17.4
122420	2000	QQ ₁₀₀	15.6	X	267.62002	275.42784	121.92595	5.21469	0.2571082	0.23992790	2.5649696	20	7 6.5	19.2
122421	2000	QZ ₁₀₁	15.7	X	64.04824	205.73945	56.68473	6.48227	0.2589141	0.29990894	2.2104283	20	10 30.8	18.8
122422	2000	QN ₁₀₂	16.4	X	96.18587	231.63851	114.42111	4.00309	0.2119609	0.26206724	2.4183968	20	—	—
122423	2000	QM ₁₀₄	15.4	X	279.07769	296.66746	127.66324	9.13884	0.0893175	0.24652328	2.5190150	20	10 1.4	18.5
122424	2000	QU ₁₀₄	15.3	X	201.55008	36.25768	7.04007	32.55888	0.1912423	0.23196141	2.6233661	20	4 30.6	20.3
122425	2000	QO ₁₀₇	16.3	X	52.60453	265.46510	129.99472	3.90206	0.1279520	0.26305731	2.4123249	20	—	—
122426	2000	QY ₁₀₇	16.0	X	152.02752	227.07978	186.88944	4.51172	0.1539720	0.28015131	2.3131703	20	4 12.8	19.2
122427	2000	QE ₁₀₈	15.2	X	215.52641	257.35365	81.29159	4.45874	0.1495303	0.22963268	2.6410721	20	3 14.2	19.4
122428	2000	QO ₁₀₈	15.6	X	95.00965	253.36576	56.16188	4.65871	0.1312978	0.20950738	2.8076082	20	12 29.3	19.9
122429	2000	QC ₁₀₉	16.1	X	289.60458	241.94453	138.79828	11.37459	0.1629269	0.24335108	2.5408588	20	7 30.6	18.8
122430	2000	QM ₁₁₁	15.7	X	19.91432	187.11437	352.20657	6.28561	0.0693811	0.27978150	2.3152082	20	3 18.7	18.1
122431	2000	QP ₁₁₁	15.4	X	85.57528	204.13852	167.51510	9.53817	0.1804584	0.21401545	2.7680417	20	—	—
122432	2000	QL ₁₁₄	16.4	X	215.14405	270.87351	355.61739	2.25316	0.1608040	0.27063296	2.3670945	20	—	—
122433	2000	QB ₁₁₅	16.0	X	26.88387	119.64702	148.15148	5.41810	0.1204762	0.25500569	2.4628397	20	—	—
122434	2000	QO ₁₁₅	15.2	X	215.75505	122.26923	180.04379	14.26697	0.1341684	0.22489685	2.6780199	20	1 26.9	19.7
122435	2000	QJ ₁₂₀	16.2	X	289.33229	64.46438	293.76633	2.44672	0.1836794	0.24025038	2.5626738	20	6 24.1	19.2
122436	2000	QU ₁₂₀	16.0	X	299.96519	77.99018	292.99057	6.05868	0.2298657	0.24253392	2.5465628	20	7 22.9	18.4
122437	2000	QW ₁₂₀	15.5	X	209.25818	132.69886	301.25603	6.90515	0.1626479	0.23725874	2.5841709	20	7 6.2	19.4
122438	2000	QC ₁₂₂	16.2	X	295.11621	334.31087	327.12694	6.32005	0.1973066	0.28545524	2.2844274	20	4 5.5	19.1
122439	2000	QS ₁₂₃	15.8	X	290.66477	45.59929	343.19795	5.48977	0.2694087	0.24149438	2.5538655	20	7 27.2	18.6
122440	2000	QV ₁₂₅	17.2	X	270.93287	55.92482	313.31615	2.81994	0.2082202	0.23919029	2.5702400	20	6 9.4	20.8
122441	2000	QH ₁₂₆	15.2	X	30.30410	43.86448	24.62537	7.31241	0.1031022	0.26196178	2.4190458	20	—	—
122442	2000	QU ₁₃₁	15.7	X	167.50408	23.81333	16.56070	14.09032	0.2527770	0.22601537	2.6691772	20	4 14.7	20.4
122443	2000	QX ₁₃₁	15.9	X	241.43043	26.38840	344.82938	4.09702	0.2301288	0.23691915	2.5866397	20	5 7.9	20.2
122444	2000	QX ₁₃₃	16.1	X	354.17260	216.23424	106.29996	4.59582	0.1721221	0.24815335	2.5079716	20	9 17.1	18.4
122445	2000	QO ₁₃₄	16.1	X	234.54183	272.07232	5.93618	5.10758	0.0474409	0.27544042	2.3394707	20	1 15.3	19.2
122446	2000	QW ₁₃₄	15.4	X	258.26496	25.63284	37.06852	4.73058	0.1635700	0.24546671	2.5262383	20	8 15.2	18.7
122447	2000	QA ₁₃₆	15.1	X	319.43237	88.65461	38.98695	6.23277	0.1388143	0.26113181	2.4241688	20	—	—
122448	2000	QP ₁₃₆	16.1	X	285.48340	106.41477	169.03933	5.06032	0.1545330	0.28373407	2.2936565	20	2 26.8	19.1
122449	2000	QG ₁₃₇	15.6	X	175.86729	109.14671	270.22252	13.40078	0.1130324	0.22997062	2.6384841	20	3 16.6	20.0
122450	2000	QW ₁₃₈	15.4	X	96.12745	56.60029	355.37338	14.99020	0.1216822	0.21911081	2.7249603	20	2 11.5	19.1
122451	2000	QY ₁₃₈	16.5	X	83.06938	170.91573	179.98969	1.90081	0.1886233	0.26064724	2.4271724	20	—	—
122452	2000	QO ₁₃₉	15.3	X	127.32501	6.12862	12.81669	7.26919	0.1197975	0.26988976	2.3714380	20	1 29.3	18.4
122453	2000	QX ₁₃₉	15.9	X	132.33846	262.12622	72.29649	3.27087	0.2212182	0.21593655	2.7515999	20	—	—
122454	2000	QV ₁₄₀	15.6	X	223.98915	224.70231	162.70695	4.41212	0.1777049	0.23358746	2.6111773	20	5 18.9	19.8
122455	2000	QK ₁₄₁	15.8	X	176.26538	342.15466	26.45892	5.40491	0.2759868	0.22544452	2.6736810	20	3 18.2	20.6
122456	2000	QP ₁₄₁	16.0	X	28.55614	223.06982	148.38342	6.96293	0.1385458	0.25499420	2.4629136	20	—	—
122457	2000	QE ₁₄₂	15.0	X	246.06194	12.68496	5.67092	13.39896	0.0682534	0.23586978	2.5943059	20	6 8.4	18.9
122458	2000	QV ₁₄₄	16.3	X	253.91473	221.67905	59.63951	2.89623	0.1967371	0.27776965	2.3263739	20	1 30.9	20.0
122459	2000	QX ₁₄₄	16.3	X	267.92334	313.77933	78.84480	2.62601	0.2159865	0.23998107	2.5645907	20	7 6.8	19.8
122460	2000	QB ₁₄₆	12.0	X	324.98504	104.85170	163.21603	17.89241	0.0791202	0.08272289	5.2165766	20	5 9.2	18.8
122461	2000	QD ₁₄₆	15.4	X	219.59537	259.57447	157.74683	14.55760	0.1871099	0.23584522	2.5944860	20	6 20.9	19.8
122462	2000	QB ₁₄₇	15.5	X	10.65076	207.10357	21.02662	8.71496	0.1305363	0.28510845	2.2862795	20	5 15.3	17.5
122463	2000	QP ₁₄₈	15.3	X	71.38903	158.06200	157.62302	8.71471	0.3214086	0.30992475	2.1625453	20	—	—
122464	2000	QD ₁₄₉	15.9	X	27.71631	49.55308	318.32452	6.54926	0.1179073	0.25643513	2.4536787	20	—	—
122465	2000	QY ₁₄₉	15.9	X	156.00317	160.88607	248.59862	5.33812	0.0549784	0.22861250	2.6489234	20	4 3.9	19.7
122466	2000	QM ₁₅₀	15.0	X	283.69997	24.38489	347.16814	13.73258	0.1768207	0.23908937	2.5709633	20	7 8.8	18.5
122467	2000	QC ₁₅₁	15.6	X	275.43673	16.61830	343.97027	5.36339	0.2915826	0.23693538	2.5865216	20	5 21.1	19.3
122468	2000	QO ₁₅₄	15.3	X	199.23486	79.13925	285.97352	13.87836	0.0812983	0.23112042	2.6297260	20	3 21.8	19.6
122469	2000	QK ₁₅₅	15.2	X	189.14157	108.45127	271.04549	10.69549	0.1441580	0.23234160	2.6205035	20	4 1.3	19.6
122470	2000	QO ₁₅₅	15.5	X	165.91074	102.17670</								

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>
122481 2000 QS ₁₆₈	15.4	X	277.83546	254.36484	311.13475	5.94906	0.0886012	0.26965840	2.3727943	20	—	—
122482 2000 QB ₁₆₉	16.5	X	174.95946	40.15058	294.13918	2.61339	0.1884617	0.27292779	2.3538072	20	1 27.2	20.2
122483 2000 QK ₁₇₀	15.6	X	216.31296	45.23734	304.47074	3.35100	0.0577918	0.23020130	2.6367211	20	3 28.2	19.4
122484 2000 QF ₁₇₁	16.1	X	120.82529	347.74367	294.46875	4.15648	0.1928746	0.26001879	2.4310817	20	12 31.5	20.1
122485 2000 QK ₁₇₁	16.4	X	268.17367	333.81498	295.36109	4.44480	0.1559416	0.27827268	2.3235695	20	1 31.1	19.9
122486 2000 QW ₁₇₁	15.7	X	9.80081	104.19511	333.21607	6.03631	0.0797607	0.26159700	2.4212941	20	—	—
122487 2000 QX ₁₇₁	16.4	X	185.24081	345.81394	327.29082	4.41765	0.1537670	0.27145171	2.3623323	20	1 9.6	20.0
122488 2000 QJ ₁₇₂	15.6	X	348.54685	154.98177	277.75164	6.29777	0.0869713	0.26076423	2.4264464	20	—	—
122489 2000 QZ ₁₇₄	15.4	X	172.54728	111.98091	243.73724	2.31365	0.1694324	0.22564210	2.6721200	20	2 22.7	19.6
122490 2000 QF ₁₇₅	16.0	X	267.74802	180.98788	218.87437	4.37134	0.1243589	0.24347668	2.5399849	20	7 29.7	19.4
122491 2000 QV ₁₇₅	15.6	X	153.06703	62.38695	299.08067	4.81656	0.0718421	0.22368451	2.6876875	20	2 3.8	19.4
122492 2000 QP ₁₇₉	16.3	X	251.23591	97.37748	154.31951	6.88767	0.1039653	0.27209356	2.3586158	20	—	—
122493 2000 QJ ₁₈₀	15.1	X	204.16625	109.43978	354.81986	21.42615	0.0997713	0.24243102	2.5472833	20	8 19.9	19.0
122494 2000 QS ₁₈₀	14.7	X	109.41893	188.38399	257.08974	8.64176	0.1501816	0.21828521	2.7318268	20	4 6.2	18.8
122495 2000 QG ₁₈₁	14.5	X	164.29431	64.94822	58.39584	27.40246	0.1440822	0.22923223	2.6441470	20	7 28.0	19.2
122496 2000 QM ₁₈₄	15.9	X	278.19457	324.05152	71.48780	4.42215	0.2360945	0.24368695	2.5385236	20	7 22.7	18.9
122497 2000 QP ₁₈₅	15.7	X	152.71622	257.81910	97.18613	6.18193	0.1895921	0.22306642	2.6926501	20	2 8.2	20.0
122498 2000 QL ₁₈₆	16.2	X	8.39131	268.09843	10.36007	6.63247	0.1969764	0.29520314	2.2338571	20	8 20.9	17.8
122499 2000 QC ₁₉₀	16.0	X	291.31500	16.50660	354.47234	15.14639	0.1333664	0.24335879	2.5408051	20	7 30.6	19.2
122500 2000 QB ₁₉₄	15.3	X	293.96952	146.69424	140.23689	14.19655	0.1507662	0.23462187	2.6034969	20	4 3.4	18.9
122501 2000 QJ ₁₉₄	15.7	X	109.20329	309.41530	37.79025	3.89026	0.2544439	0.21567883	2.7537914	20	—	—
122502 2000 QO ₁₉₅	16.3	X	179.15333	320.65362	347.12282	6.88376	0.1292515	0.27063740	2.3670686	20	—	—
122503 2000 QN ₁₉₆	16.9	X	132.04035	212.74629	143.98950	4.86367	0.1399589	0.27038950	2.3685151	20	1 5.9	19.9
122504 2000 QU ₁₉₆	16.4	X	203.57709	354.14269	345.87240	5.83884	0.2052995	0.27823925	2.3237556	20	2 28.3	20.2
122505 2000 QP ₁₉₇	16.5	X	8.70947	236.70932	49.31515	2.19076	0.1721623	0.29561467	2.2317835	20	8 29.0	18.1
122506 2000 QH ₁₉₇	16.4	X	264.83789	244.74577	9.00036	2.79562	0.1208449	0.27667573	2.3325019	20	1 12.4	19.6
122507 2000 QP ₁₉₈	16.8	X	128.56810	234.69850	107.85689	2.26895	0.1897106	0.26781178	2.3836891	20	—	—
122508 2000 QD ₁₉₈	16.3	X	203.55273	154.17192	138.79065	7.43976	0.1322869	0.27302234	2.3532637	20	—	—
122509 2000 QS ₁₉₉	15.3	X	142.90689	78.79845	348.66368	12.58013	0.1499063	0.22945969	2.6423993	20	4 17.3	19.6
122510 2000 QT ₁₉₉	16.5	X	292.20504	203.01678	94.71448	2.04174	0.2072055	0.28636044	2.2796108	20	3 30.1	19.4
122511 2000 QP ₂₀₀	16.3	X	258.37147	243.83320	123.22888	5.14284	0.2047168	0.23820026	2.5773569	20	5 24.8	20.1
122512 2000 QB ₂₀₁	16.5	X	216.78111	249.25658	75.85817	3.07655	0.2181595	0.27837423	2.3230044	20	2 21.7	20.3
122513 2000 QO ₂₀₁	16.5	X	143.49739	228.48077	78.43751	3.03826	0.2185878	0.26646085	2.3917390	20	—	—
122514 2000 QW ₂₀₂	16.7	X	163.06129	258.66304	63.48223	3.15595	0.2412340	0.27047835	2.3679964	20	1 6.5	20.4
122515 2000 QX ₂₀₃	16.3	X	237.59456	284.49910	13.62230	6.41502	0.1555939	0.27780728	2.3261639	20	2 9.5	20.0
122516 2000 QN ₂₀₄	16.8	X	137.66649	297.41586	27.51852	1.38739	0.2027561	0.26684707	2.3894306	20	—	—
122517 2000 QW ₂₀₅	16.0	X	164.53773	248.91967	165.29623	3.07225	0.1960498	0.22859436	2.6490635	20	4 29.5	20.4
122518 2000 QZ ₂₀₅	15.9	X	242.41772	77.89537	340.00641	0.98386	0.1873886	0.23941783	2.5686113	20	7 14.5	19.6
122519 2000 QJ ₂₀₆	15.7	X	3.85188	79.81663	1.37834	3.38469	0.0594125	0.26140557	2.4224760	20	—	—
122520 2000 QN ₂₀₆	15.3	X	153.79655	83.10327	357.75042	14.50508	0.0712701	0.23207035	2.6225450	20	5 9.8	19.4
122521 2000 QR ₂₀₆	15.5	X	268.91810	261.87553	140.62975	2.76833	0.1069313	0.24226543	2.5484439	20	8 8.4	18.8
122522 2000 QK ₂₀₇	14.9	X	107.14470	208.60460	352.82504	10.41195	0.0251129	0.24306446	2.5428559	20	8 26.9	18.3
122523 2000 QV ₂₀₇	16.1	X	127.92618	55.46051	5.20257	3.00644	0.2858309	0.22289222	2.6940528	20	4 11.3	20.4
122524 2000 QW ₂₀₈	16.1	X	151.69636	113.46014	177.93675	4.44564	0.1243749	0.26572079	2.3961777	20	—	—
122525 2000 QF ₂₀₉	16.6	X	236.67013	81.42818	330.74355	10.17217	0.2258512	0.23893089	2.5721000	20	6 27.7	20.8
122526 2000 QM ₂₀₉	16.7	X	40.11992	104.33106	279.57593	1.48096	0.1996508	0.25922181	2.4360621	20	—	—
122527 2000 QD ₂₁₀	16.6	X	112.56568	152.49877	188.51730	2.62069	0.1249286	0.26427290	2.4049218	20	—	—
122528 2000 QP ₂₁₀	15.8	X	163.66982	36.83915	357.67535	1.75818	0.2142267	0.22646508	2.6656424	20	4 4.4	20.2
122529 2000 QD ₂₁₁	16.4	X	229.93083	313.47852	19.12984	2.63026	0.1793608	0.27969464	2.3156875	20	3 13.5	19.8
122530 2000 QP ₂₁₁	16.7	X	221.81176	236.77685	157.27611	5.78716	0.2379751	0.23357643	2.6112595	20	5 21.8	21.1
122531 2000 QJ ₂₁₂	16.4	X	251.93713	199.23602	98.89245	1.11159	0.0963626	0.27931483	2.3177863	20	2 26.1	19.5
122532 2000 QB ₂₁₅	15.4	X	70.29400	280.02150	143.75933	9.08362	0.1756562	0.21735083	2.7396506	20	1 19.6	18.6
122533 2000 QE ₂₁₅	15.5	X	98.96339	255.26668	154.93214	13.30504	0.1639380	0.21963828	2.7205958	20	2 13.3	19.0
122534 2000 QJ ₂₁₅	17.1	X	102.88365	224.49377	128.80792	2.00610	0.2023520	0.26415741	2.4056227	20	—	—
122535 2000 QN ₂₁₆	15.6	X	172.10850	332.94780	69.59726	3.23568	0.1127329	0.22975128	2.6401631	20	4 19.2	19.7
122536 2000 QY ₂₁₆	15.8	X	279.43281	51.97420	6.59501	13.50072	0.0318553	0.24699818	2.5157851	20	9 27.9	19.0
122537 2000 QX ₂₁₈	15.8	X	281.71665	343.81034	355.74551	3.15260	0.1635670	0.24089093	2.5581289	20	5 20.0	19.3
122538 2000 QM ₂₂₀	16.5	X	126.86181	212.26767	153.13583	6.49872	0.1190224	0.27077767	2.3662511	20	1 7.5	19.5
122539 2000 QN ₂₂₀	15.6	X	216.78550	110.58819	315.22885	2.59080	0.1742406	0.23962295	2.5671452	20	6 29.5	19.7
122540 2000 QS ₂₂₀	16.0	X	129.69913	255.54560	146.46728	11.19544	0.1460339	0.22526968	2.6750643	20	3 9.3	19.9
122541 2000 QM ₂₂₁	16.2	X	36.36565	336.49464	48.12294	2.02999	0.1947923	0.25970628	2.4330316	20	—	—
122542 2000 QJ ₂₂₂	15.2	X	29.39582	33.48871	13.34705	12.17581	0.1755917	0.26134281	2.4228638	20	—	—
122543 2000 QX ₂₂₃	16.3	X	80.57437	7.14237	332.20376	5.65309	0.1455523	0.26178714	2.4201215	20	—	—
122544 2000 QK ₂₂₄	15.8	X	33.67058	36.47308	339.97851	6.18927	0.1493956	0.25667832	2.4521287	20	—	—
122545 2000 QA ₂₂₅	16.2	X	83.77305	55.62042	153.39019	8.15268	0.1369728	0.29557380	2.2319892	20	8 25.1	19.0
122546 2000 QT ₂₂₆	14.6	X	183.23101	195.34604	171.04618	28.79456	0.1339565	0.22934714	2.6432638	20	3 16.3	18.7
122547 2000 QC ₂₂₈	15.5	X	131.02125	8.52545	37.09297	2.80984	0.2354996	0.22274036	2.6952772	20	3 12.6	19.3
122548 2000 QK ₂₂₈	16.8	X	203.33901	64.31208	314.89780	5.03895	0.2368641	0.23101188	2.6305497	20	4 15.2	21.4
122549 2000 QD ₂₂₉	16.3	X	305.18253	261.58562	11.69684	4.39353	0.2463663	0.23554325	2.5967029	20	3 12.4	19.5
122550 2000 QH ₂₃₀	15.4	X	158.84181	219.61435	160.29710	14.65752	0.1059055	0.22386129	2.6862724	20	3 7.9	19.4
122551 2000 QN ₂₃₀	16.0	X	105.09295	221.27792	126.21223	7.35803	0.1422034	0.26266904	2.4147015	20	—	—
122552 2000 QS ₂₃₁	16.5	X	339.88208	151.34721	171.38399	0.66407	0.1393941	0.24611388	2.5218078	20	8 12.4	18.7
122553 2000 QH ₂₄₄	16.0	X	284.09955	234.20972	137.84367	2.60017	0.0373201	0.24212452	2.5494326	20	7 29.6	19.

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Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>		
122561	2000	RP ₂	15.1	X	295.01896	39.66013	11.26907	1.29167	0.1234898	0.24605154	2.5222337	20	9 29.7	17.6
122562	2000	RB ₃	15.1	X	124.87641	38.36655	5.03596	13.44600	0.1016494	0.22146344	2.7056276	20	3 2.7	19.0
122563	2000	RG ₅	15.0	X	131.78227	132.78915	200.91027	11.54141	0.1948004	0.21487874	2.7606228	20	—	—
122564	2000	RY ₅	15.5	X	271.33702	248.49649	162.84499	2.74442	0.2081007	0.24057317	2.5603809	20	8 7.1	18.8
122565	2000	RK ₆	16.2	X	201.32645	45.22832	259.11701	3.60558	0.1524087	0.27129657	2.3632329	20	1 12.7	19.7
122566	2000	RM ₆	15.7	X	166.39572	47.81016	4.03822	12.71170	0.1687076	0.22710770	2.6606116	20	4 22.5	20.1
122567	2000	RX ₇	16.1	X	237.07701	323.65563	45.76056	3.11084	0.2392638	0.23209042	2.6223938	20	5 2.7	20.3
122568	2000	RL ₈	15.5	X	304.36368	301.62574	338.19228	23.76151	0.2019982	0.28439097	2.2901232	20	3 14.0	18.4
122569	2000	RR ₁₁	15.0	X	92.57028	343.22785	61.60027	11.04849	0.1491999	0.21185364	2.7868404	20	1 31.9	18.8
122570	2000	RG ₁₂	14.7	X	221.17518	47.57307	285.05122	12.19921	0.2850752	0.22867524	2.6484389	20	2 28.9	19.8
122571	2000	RE ₁₃	15.2	X	260.96839	147.95884	268.59466	12.16332	0.2383245	0.24317144	2.5421100	20	7 24.4	18.8
122572	2000	RT ₁₃	15.6	X	204.37711	159.15096	192.59178	14.10699	0.1409333	0.22932415	2.6434404	20	3 16.3	19.9
122573	2000	RC ₁₆	14.6	X	21.51765	260.35652	331.10635	21.64264	0.0557320	0.23727338	2.5840664	20	6 6.7	18.3
122574	2000	RG ₁₆	16.1	X	158.66919	19.66168	272.24083	5.87166	0.1192311	0.26552135	2.3973774	20	—	—
122575	2000	RM ₁₆	15.1	X	181.75803	35.76568	297.05624	8.22703	0.0886240	0.22314457	2.6920213	20	1 31.6	19.2
122576	2000	RV ₁₇	16.1	X	278.99248	48.74975	228.69185	4.71172	0.2460766	0.28225381	2.3016688	20	2 10.5	19.8
122577	2000	RL ₁₈	15.0	X	124.24987	80.64354	324.30670	12.47710	0.2004667	0.22232500	2.6986332	20	3 8.4	19.2
122578	2000	RG ₂₀	16.1	X	27.09302	32.76680	303.87567	6.90132	0.1191511	0.25199886	2.4823919	20	11 22.4	19.3
122579	2000	RQ ₂₀	15.2	X	208.20005	97.10275	313.71697	11.05002	0.2066709	0.23415901	2.6069266	20	5 29.8	19.8
122580	2000	RG ₂₃	16.4	X	69.06567	16.02216	327.41527	4.41874	0.1879608	0.25803656	2.4435162	20	—	—
122581	2000	RJ ₂₄	12.0	X	316.33010	11.79279	254.49495	10.59370	0.0733687	0.08382199	5.1708753	20	4 20.4	18.8
122582	2000	RG ₂₅	15.2	X	80.02879	123.95763	301.16976	13.68564	0.0498452	0.22074074	2.7115298	20	1 21.9	18.8
122583	2000	RV ₂₅	16.1	X	176.04068	6.40467	308.37874	9.27767	0.2559473	0.27127455	2.3633607	20	1 9.9	20.1
122584	2000	RY ₂₅	15.4	X	231.61955	100.16710	203.99364	13.73139	0.1513233	0.22705623	2.6610136	20	2 10.3	20.0
122585	2000	RZ ₂₅	15.6	X	127.30536	156.40168	250.65950	7.84951	0.1068719	0.22382679	2.6865484	20	3 2.8	19.5
122586	2000	RJ ₂₆	16.0	X	300.84432	22.52210	240.67548	7.01333	0.2378475	0.28306964	2.2972443	20	2 14.5	19.2
122587	2000	RT ₂₆	16.5	X	44.00022	344.24941	315.45563	6.03181	0.1738318	0.25009022	2.4950059	20	11 2.8	19.9
122588	2000	RE ₂₇	15.8	X	190.46271	81.09417	319.90138	11.67022	0.1859795	0.23077610	2.6323411	20	4 29.2	20.5
122589	2000	RN ₂₇	15.3	X	268.94204	71.54483	317.65165	11.55215	0.1494825	0.24028398	2.5624499	20	7 15.6	18.7
122590	2000	RV ₂₈	15.5	X	208.70636	37.48497	217.47864	11.50110	0.0923333	0.21671658	2.7449933	20	—	—
122591	2000	RV ₂₈	15.4	X	334.35482	29.25485	323.40683	14.15375	0.1295462	0.24578639	2.5240473	20	9 11.2	18.0
122592	2000	RE ₂₉	12.0	X	318.99166	84.32989	198.37914	28.46440	0.0513054	0.08400489	5.1633673	20	5 17.8	18.9
122593	2000	RS ₃₀	15.8	X	300.64530	47.34739	335.82379	11.81331	0.1152014	0.24405961	2.5359388	20	8 30.2	18.3
122594	2000	RT ₃₁	16.0	X	261.49654	71.16744	253.50126	3.82048	0.1997821	0.28305331	2.2973327	20	3 29.4	19.5
122595	2000	RB ₃₄	16.0	X	60.25124	58.34566	310.51403	1.33714	0.2136388	0.25771947	2.4455200	20	—	—
122596	2000	RG ₃₅	14.6	X	221.07610	220.58502	6.12802	14.65127	0.1060194	0.26059874	2.4274736	20	—	—
122597	2000	RN ₃₅	15.9	X	179.75943	17.91931	337.80037	4.67204	0.1594058	0.22406595	2.6846364	20	2 29.8	20.3
122598	2000	RR ₃₇	15.4	X	256.89364	32.39832	351.56304	12.26264	0.2711421	0.23472828	2.6027099	20	6 2.9	19.7
122599	2000	RS ₃₇	15.4	X	178.68452	56.12119	358.94664	12.56920	0.2596582	0.22602749	2.6690818	20	5 7.9	20.4
122600	2000	RE ₃₈	16.3	X	48.62625	354.56251	21.43642	2.64053	0.2171686	0.25780403	2.4449853	20	—	—
122601	2000	RT ₃₉	14.3	X	290.67741	259.52327	53.90351	14.62949	0.1190259	0.22829531	2.6513764	20	5 6.2	17.7
122602	2000	RJ ₄₀	15.8	X	283.86392	39.40157	309.84313	9.03678	0.1579084	0.23811457	2.5779752	20	6 6.8	19.3
122603	2000	RM ₄₀	14.9	X	323.69870	68.59794	303.86393	8.12090	0.1456245	0.24592416	2.5231046	20	9 20.3	17.4
122604	2000	RP ₄₁	15.1	X	129.55139	42.06597	287.67952	6.76732	0.2213304	0.21457594	2.7632194	20	—	—
122605	2000	RL ₄₂	15.6	X	151.17572	327.35877	334.31639	13.84747	0.1984206	0.26447210	2.4037141	20	—	—
122606	2000	RN ₄₃	15.6	X	231.69733	93.41784	332.16037	11.85605	0.1847458	0.23705362	2.5856614	20	7 15.6	19.7
122607	2000	RT ₄₃	15.0	X	265.36719	72.74984	322.57158	10.91421	0.1577815	0.23874232	2.5734542	20	7 17.9	18.5
122608	2000	RF ₄₆	15.4	X	342.79239	50.89528	308.62057	4.25720	0.1931092	0.24542147	2.5265488	20	10 15.8	17.7
122609	2000	RM ₄₆	15.3	X	300.85019	10.27574	353.78144	7.46006	0.1863731	0.23969061	2.5666621	20	7 24.2	18.1
122610	2000	RQ ₄₆	15.4	X	128.23183	171.97801	232.38667	9.50139	0.2703186	0.21945020	2.7221500	20	3 18.8	20.0
122611	2000	RT ₄₆	15.2	X	285.05078	13.37200	334.28739	3.96767	0.2757191	0.23692821	2.5865738	20	5 17.8	18.8
122612	2000	RS ₄₇	15.2	X	243.32408	43.45879	325.53152	10.68356	0.2197907	0.23318788	2.6141594	20	5 4.9	19.6
122613	2000	RU ₄₈	14.5	X	260.10409	94.35205	259.89664	11.02165	0.2951602	0.23310225	2.6147996	20	4 26.6	18.9
122614	2000	RF ₄₉	15.7	X	254.35134	80.16439	268.78109	11.78689	0.2155215	0.23692134	2.5866238	20	4 21.1	19.9
122615	2000	RG ₄₉	16.0	X	210.42354	217.53327	148.57953	4.81379	0.0582497	0.23224662	2.6212178	20	4 14.9	19.7
122616	2000	RG ₅₁	16.1	X	269.30074	165.75023	201.58294	3.20653	0.3354209	0.23657203	2.5891693	20	5 20.1	20.2
122617	2000	RT ₅₄	14.7	X	346.66930	345.22475	334.97819	10.53546	0.1372161	0.24034963	2.5619683	20	8 22.6	17.1
122618	2000	RT ₅₅	14.5	X	346.19023	71.15768	77.03933	10.02691	0.1118011	0.20938027	2.8087444	20	—	—
122619	2000	RV ₅₈	15.7	X	317.65863	69.93012	272.42737	2.18404	0.0754103	0.24065817	2.5597780	20	8 2.8	18.6
122620	2000	RY ₆₁	14.9	X	202.75022	291.01264	56.77328	15.38275	0.2190393	0.22185555	2.7024387	20	3 19.6	19.8
122621	2000	RL ₆₃	16.0	X	260.90020	154.40129	157.62615	5.76091	0.0973515	0.28418742	2.2912166	20	3 26.5	18.9
122622	2000	RS ₆₄	15.2	X	153.36499	216.91774	210.12598	13.25701	0.1321372	0.23045803	2.6347626	20	5 1.7	19.1
122623	2000	RK ₆₇	16.1	X	178.41147	269.07656	62.11014	2.91899	0.2482111	0.27037567	2.3685959	20	1 30.9	20.1
122624	2000	RJ ₆₉	16.6	X	69.72722	269.34970	92.68792	2.46060	0.2021141	0.25987266	2.4319930	20	—	—
122625	2000	RE ₇₀	16.6	X	79.84652	257.59488	81.95460	3.68902	0.2340693	0.25924308	2.4359289	20	—	—
122626	2000	RT ₇₁	15.2	X	282.14877	248.97486	14.75590	23.68328	0.2180869	0.27807177	2.3246886	20	2 13.9	19.1
122627	2000	RV ₇₂	15.6	X	154.50235	66.39216	356.31359	9.70611	0.1926273	0.22767968	2.6561537	20	4 26.8	20.1
122628	2000	RD ₇₃	16.3	X	173.29056	106.44386	198.69612	0.29791	0.1996730	0.26870976	2.3783755	20	—	—
122629	2000	RD ₇₇	14.6	X	180.89985	58.09596	279.26832	26.88905	0.2113409	0.22238856	2.6981189	20	2 1.5	19.5
122630	2000	RO ₇₈	16.3	X	260.91535	185.43962	319.09780							

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
122641 2000 RE ₈₄	15.7	X	194.00531	81.85381	325.49260	10.08462	0.1962954	0.23503794	2.6004234	20	5 11.5	20.2
122642 2000 RK ₈₄	16.1	X	230.94346	123.92512	281.87711	2.86874	0.1418776	0.23797844	2.5789583	20	6 20.7	19.7
122643 2000 RO ₈₄	16.1	X	213.33555	282.47635	325.21581	5.36686	0.1063879	0.26700609	2.3884818	20	—	—
122644 2000 RP ₈₄	16.4	X	62.84709	13.56692	279.10649	2.18997	0.1678689	0.25294045	2.4762274	20	11 17.8	19.8
122645 2000 RC ₈₆	16.8	X	34.92250	292.47810	71.15568	2.92055	0.1868859	0.25496989	2.4630702	20	—	—
122646 2000 RO ₈₆	15.6	X	157.60398	78.99612	338.70628	12.33567	0.1588201	0.22763416	2.6565078	20	4 19.4	20.1
122647 2000 RB ₈₇	16.4	X	73.93622	9.28878	349.70505	8.31781	0.1309079	0.26010286	2.4305578	20	—	—
122648 2000 RE ₈₇	16.5	X	115.57471	134.96691	320.15442	1.70027	0.2198974	0.26411736	2.4058659	20	—	—
122649 2000 RX ₈₇	15.9	X	114.79333	122.00386	266.88221	3.87519	0.1215998	0.21965674	2.7204434	20	1 30.8	19.7
122650 2000 RL ₈₉	15.8	X	273.58580	301.64703	289.37819	5.69727	0.0713526	0.27179911	2.3603190	20	—	—
122651 2000 RT ₈₉	16.4	X	86.94698	355.15535	303.96986	6.49481	0.1646519	0.25710369	2.4494233	20	12 20.9	20.2
122652 2000 RH ₉₀	15.5	X	106.27268	103.32503	341.40694	12.95672	0.0477142	0.22654462	2.6650184	20	3 17.9	19.1
122653 2000 RH ₉₁	15.1	X	123.23465	28.45148	339.93541	13.88225	0.1054400	0.21755279	2.7379549	20	1 18.1	19.1
122654 2000 RH ₉₂	14.8	X	80.65795	83.56837	344.85058	8.60607	0.1364918	0.21742615	2.7390179	20	2 10.3	18.2
122655 2000 RN ₉₃	16.5	X	248.69502	233.37391	153.11234	4.50646	0.2304303	0.23680186	2.5874938	20	6 5.5	20.5
122656 2000 RV ₉₃	15.8	X	101.24908	245.82403	126.84688	5.87215	0.1744162	0.21606706	2.7504917	20	1 2.6	19.2
122657 2000 RW ₉₃	15.4	X	116.96765	74.98770	5.32998	14.84813	0.0278377	0.22829070	2.6514121	20	3 25.7	18.9
122658 2000 RA ₉₄	15.9	X	272.99046	38.88527	272.64892	3.36945	0.0765816	0.23302161	2.6154028	20	4 13.5	19.4
122659 2000 RM ₉₇	14.8	X	214.96222	132.12117	237.68446	12.44474	0.2175183	0.23166425	2.6256089	20	4 13.4	19.3
122660 2000 RE ₉₈	15.0	X	308.37867	53.56225	290.74762	11.90676	0.1959790	0.24128937	2.5553120	20	7 4.9	17.5
122661 2000 RH ₉₈	14.4	X	193.94140	247.09664	296.72317	12.36153	0.1128854	0.25232031	2.4802830	20	11 7.9	18.2
122662 2000 RK ₉₈	14.7	X	200.34461	124.87583	322.93340	21.53237	0.1106525	0.23800851	2.5787410	20	7 20.5	18.7
122663 2000 RX ₉₈	15.5	X	281.13394	85.27506	308.11898	14.34529	0.1728794	0.24226808	2.5484254	20	8 2.6	18.4
122664 2000 RZ ₉₈	15.4	X	218.50232	56.84321	262.10387	13.35822	0.1032653	0.22615711	2.6680618	20	2 15.3	19.8
122665 2000 RS ₉₉	16.1	X	54.53315	16.43281	278.08573	9.25636	0.1969934	0.25146026	2.4859352	20	11 12.9	19.7
122666 2000 RX ₉₉	15.8	X	262.37433	73.26649	289.30318	13.06577	0.1532400	0.23729769	2.5838882	20	5 27.9	19.6
122667 2000 RU ₁₀₀	14.4	X	210.11717	74.13546	279.69683	10.63040	0.2053911	0.22822142	2.6519486	20	3 18.5	19.2
122668 2000 RB ₁₀₁	14.9	X	80.22711	137.45944	290.64303	12.41968	0.1499052	0.21754838	2.7379919	20	2 6.2	18.3
122669 2000 RN ₁₀₁	15.1	X	158.00035	219.72810	250.75463	12.68184	0.0625723	0.23541569	2.5976409	20	6 27.4	18.9
122670 2000 RU ₁₀₁	15.2	X	174.77154	130.99965	275.43288	10.60656	0.1879744	0.22824818	2.6517414	20	4 24.1	19.8
122671 2000 RY ₁₀₁	15.2	X	114.47585	64.00463	320.80174	12.98245	0.1837900	0.21758176	2.7377118	20	2 4.9	19.0
122672 2000 RP ₁₀₂	14.8	X	109.94270	240.73863	310.82732	11.96438	0.0916918	0.24082399	2.5586029	20	8 19.6	18.4
122673 2000 RZ ₁₀₂	15.5	X	227.61099	226.14342	222.03849	12.87873	0.1375705	0.24118719	2.5560336	20	8 7.8	19.6
122674 2000 RG ₁₀₃	15.7	X	154.47753	90.05342	306.00263	13.67458	0.1183487	0.22525470	2.6751829	20	3 16.4	20.0
122675 2000 RL ₁₀₃	15.8	X	268.61599	51.21762	302.04473	12.49100	0.2298696	0.23680801	2.5874490	20	5 9.8	19.9
122676 2000 RS ₁₀₃	15.2	X	69.63832	175.90212	266.90649	8.88717	0.2173229	0.21684615	2.7438997	20	2 18.2	18.5
122677 2000 RG ₁₀₄	15.6	X	99.73979	103.91226	293.47291	11.77860	0.2083760	0.21625391	2.7489071	20	2 3.6	19.3
122678 2000 RK ₁₀₄	15.0	X	160.21199	101.37312	303.98532	12.18225	0.1351428	0.22587045	2.6703187	20	4 4.3	19.4
122679 2000 RQ ₁₀₄	15.8	X	209.51602	44.67829	321.69325	13.07695	0.1659349	0.22870628	2.6481993	20	4 2.3	20.3
122680 2000 RX ₁₀₅	16.5	X	35.82294	192.92892	128.25350	4.36346	0.1573540	0.25180077	2.4836936	20	11 22.3	19.7
122681 2000 SW	15.6	X	267.07735	345.96213	190.15008	2.48399	0.1112726	0.26041712	2.4286021	20	—	—
122682 2000 SG ₁	14.9	X	227.89910	89.54767	262.33478	26.94380	0.0894088	0.23064179	2.6333629	20	4 3.0	19.4
122683 2000 SH ₁	14.6	X	186.50880	0.33092	279.78153	27.57589	0.1494017	0.26662239	2.3907728	20	—	—
122684 2000 SJ ₃	15.6	X	251.64524	210.28064	104.22816	11.81174	0.2067265	0.28213032	2.3023405	20	3 13.3	19.4
122685 2000 SP ₃	15.6	X	133.10482	50.38056	42.14212	13.45828	0.2649687	0.22858766	2.6491153	20	5 21.4	20.1
122686 2000 SW ₃	15.9	X	291.71019	319.32959	42.87410	11.49025	0.1423854	0.24195529	2.5506212	20	7 12.4	19.1
122687 2000 SX ₃	15.5	X	221.33987	290.37573	84.11503	12.65146	0.1833981	0.23255716	2.6188838	20	5 3.1	19.9
122688 2000 SK ₇	15.6	X	234.44173	60.45929	353.43592	3.61604	0.1331242	0.23582676	2.5946214	20	7 6.8	19.4
122689 2000 SO ₇	16.1	X	223.27738	323.33024	274.74149	5.59225	0.0840530	0.26330290	2.4108246	20	—	—
122690 2000 SC ₁₁	15.7	X	167.00691	87.57536	352.36974	21.86493	0.1001810	0.23310954	2.6147451	20	5 23.1	20.1
122691 2000 SP ₁₁	16.8	X	61.65081	354.73741	10.25304	2.49740	0.2280437	0.25819546	2.4425135	20	—	—
122692 2000 SC ₁₂	15.8	X	244.98825	337.35035	342.04678	6.56913	0.2062992	0.28342760	2.2953097	20	3 7.7	19.4
122693 2000 SE ₁₂	16.4	X	242.71105	215.07613	162.36852	6.72891	0.3151514	0.23786249	2.5797962	20	5 13.3	20.9
122694 2000 SQ ₁₂	15.8	X	182.28078	292.57343	115.97643	5.58494	0.1879625	0.23224068	2.6212625	20	5 8.5	20.2
122695 2000 SY ₁₃	15.8	X	260.02811	156.06099	271.98697	12.76636	0.1474876	0.24507933	2.5288997	20	8 18.9	19.5
122696 2000 SC ₁₆	15.6	X	278.33922	53.24329	275.63269	8.47502	0.0371789	0.23459204	2.6037176	20	5 20.6	19.2
122697 2000 SL ₁₆	16.4	X	209.34077	101.39671	303.17774	3.17666	0.2400509	0.23312697	2.6146147	20	5 22.4	20.8
122698 2000 SW ₁₆	16.0	X	215.85498	53.60343	273.65799	5.09394	0.1601155	0.22695597	2.6617973	20	2 25.2	20.4
122699 2000 SX ₁₉	15.6	X	170.97863	164.09020	245.04975	7.26236	0.1550445	0.22845363	2.6501513	20	4 25.4	19.9
122700 2000 SA ₂₀	15.8	X	353.82144	150.28892	255.08698	5.26962	0.1235344	0.25327145	2.4740695	20	—	—
122701 2000 SM ₂₂	16.2	X	234.16175	222.63368	209.61939	3.64235	0.1859401	0.23950032	2.5680215	20	7 23.4	20.0
122702 2000 SV ₂₄	15.6	X	281.85935	81.37003	326.10575	3.02570	0.1706753	0.24247211	2.5469956	20	8 24.7	18.5
122703 2000 SQ ₂₇	15.7	X	86.51600	124.39917	278.00953	3.72991	0.1138469	0.21706158	2.7420839	20	1 10.9	19.2
122704 2000 SL ₂₉	15.8	X	74.58115	144.03125	204.04163	2.76867	0.1707201	0.21003343	2.8029182	20	—	—
122705 2000 SU ₂₉	15.9	X	124.97975	189.49101	184.13424	5.26384	0.0862984	0.21984615	2.7188806	20	1 19.1	19.8
122706 2000 SA ₃₀	15.8	X	64.33252	244.07803	149.32335	5.42434	0.1675970	0.21263022	2.7800507	20	—	—
122707 2000 SQ ₃₀	15.7	X	200.16525	293.69747	147.93353	4.27413	0.2665151	0.23502823	2.6004950	20	6 29.5	20.4
122708 2000 SR ₃₀	16.											

ELEMENTS AND OPPOSITION DATES IN 2020

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Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>
122721 2000 SG ₃₉	16.1	X	355.57774	209.22186	114.35605	5.02760	0.2008479	0.24553439	2.5257741	20	9 24.7	18.3
122722 2000 SA ₄₀	15.5	X	117.19798	253.31179	124.55703	5.82136	0.1262024	0.21717449	2.7411334	20	1 21.9	19.4
122723 2000 SC ₄₀	15.8	X	238.36251	152.49434	139.49932	6.71566	0.1045450	0.27395850	2.3478996	20	2 2.8	19.0
122724 2000 SJ ₄₁	16.4	X	99.44383	262.79609	95.59247	3.12186	0.0925506	0.26321936	2.4113347	20	—	—
122725 2000 SX ₄₁	16.3	X	30.68218	162.22671	122.53552	4.09754	0.1360253	0.29468779	2.2364608	20	10 1.6	18.6
122726 2000 SB ₄₃	13.9	X	285.85169	99.90362	27.00828	13.68382	0.1139576	0.25442571	2.4665810	20	—	—
122727 2000 SD ₄₃	16.4	X	72.64125	290.33424	60.36772	3.36408	0.1932205	0.25855084	2.4402749	20	—	—
122728 2000 SJ ₄₃	15.4	X	187.10321	103.00733	262.01773	9.93507	0.1729846	0.22776438	2.6554952	20	3 13.5	20.0
122729 2000 SL ₄₃	16.6	X	333.03888	218.83562	132.66877	3.64569	0.1028195	0.24533323	2.5271545	20	9 13.8	19.2
122730 2000 SO ₄₅	15.7	X	70.56248	42.37705	274.05332	15.26735	0.0554156	0.25647101	2.4534499	20	12 15.1	19.1
122731 2000 SA ₄₆	15.6	X	284.35319	66.85939	284.37044	13.87969	0.1053868	0.23696515	2.5863049	20	6 20.0	18.8
122732 2000 SY ₄₆	15.3	X	170.32801	139.50700	206.23560	11.12228	0.2052151	0.22431358	2.6826602	20	2 8.6	20.0
122733 2000 SK ₄₇	12.4	X	199.65761	207.36245	189.16482	22.01831	0.0408524	0.08528239	5.1116738	20	5 15.9	19.6
122734 2000 SL ₄₉	16.2	X	246.25479	24.95337	235.39028	6.20960	0.0926222	0.27264541	2.3554321	20	1 2.4	19.5
122735 2000 SW ₄₉	16.2	X	278.95439	83.54744	328.89249	7.89957	0.1634470	0.24448296	2.5330104	20	8 28.3	19.2
122736 2000 SY ₄₉	16.1	X	172.37503	113.87105	278.57181	4.25834	0.1070599	0.22814231	2.6525617	20	4 3.3	20.2
122737 2000 SC ₅₀	15.9	X	312.77421	32.92874	261.52419	3.76388	0.1256480	0.23705534	2.5856489	20	5 5.2	18.8
122738 2000 SA ₅₂	16.2	X	290.96482	105.24717	315.08108	3.82027	0.1315783	0.24751747	2.5122652	20	10 3.3	18.9
122739 2000 ST ₅₂	16.2	X	179.30200	102.74701	327.31641	4.24851	0.1886345	0.23261780	2.6184287	20	5 30.0	20.7
122740 2000 SY ₅₃	16.0	X	316.48747	246.92296	346.84928	7.49941	0.0634355	0.27771999	2.3266512	20	2 27.2	18.7
122741 2000 SZ ₅₃	15.4	X	145.80301	110.05987	204.86823	3.52315	0.0809963	0.21512521	2.7585139	20	—	—
122742 2000 SC ₅₄	16.0	X	216.88514	62.65538	263.14331	2.38597	0.0991280	0.22662389	2.6643969	20	2 27.2	20.1
122743 2000 SR ₅₄	15.8	X	221.05600	91.69084	358.26690	14.78542	0.0784593	0.24218832	2.5489848	20	8 20.0	19.5
122744 2000 SX ₅₄	17.1	X	167.17751	341.66154	335.60500	0.72733	0.2026847	0.26958033	2.3732523	20	1 1.1	20.8
122745 2000 SC ₅₅	15.8	X	17.16277	311.06353	185.65773	4.70816	0.0399731	0.22118782	2.7078748	20	1 24.7	19.2
122746 2000 SD ₅₅	15.6	X	20.38572	112.02670	199.35374	1.45272	0.0834862	0.19730217	2.9222328	20	9 24.6	19.3
122747 2000 ST ₅₅	15.9	X	114.13210	116.74267	316.84829	2.57149	0.0851999	0.22504277	2.6768621	20	3 20.8	19.7
122748 2000 SX ₅₆	16.9	X	345.07756	93.66715	297.79706	0.29997	0.2312107	0.25080305	2.4902761	20	12 18.5	18.8
122749 2000 SG ₅₉	15.5	X	41.54742	201.63653	212.52217	4.23780	0.0615945	0.21234877	2.7825067	20	—	—
122750 2000 SA ₆₀	16.2	X	165.15982	90.09127	324.22470	1.36480	0.0827010	0.22939255	2.6429149	20	4 23.9	20.0
122751 2000 SL ₆₁	16.6	X	267.94195	232.90670	151.30657	4.84301	0.1855034	0.23884603	2.5727092	20	6 29.5	20.2
122752 2000 SY ₆₁	15.6	X	334.94583	130.63874	8.20540	6.54817	0.0697685	0.26468949	2.4023978	20	—	—
122753 2000 SB ₆₂	15.9	X	24.94946	312.95711	21.61752	3.00638	0.1558303	0.20079024	2.8890683	20	11 10.8	19.5
122754 2000 SM ₆₂	15.1	X	85.33880	110.78417	7.56402	11.92623	0.2187012	0.22471720	2.6794470	20	4 28.9	18.8
122755 2000 SO ₆₂	16.6	X	242.22030	172.20520	208.68641	1.79353	0.1093738	0.23574812	2.5951984	20	6 4.2	20.2
122756 2000 SR ₆₃	16.2	X	293.21527	198.26699	203.33655	2.09449	0.1275015	0.24491072	2.5300602	20	9 11.3	18.9
122757 2000 SP ₆₄	16.0	X	339.96402	194.52521	118.80856	3.75182	0.1950939	0.24217730	2.5490622	20	7 26.7	18.0
122758 2000 SD ₆₅	16.8	X	256.71541	226.84351	174.37829	4.73271	0.2173170	0.23885599	2.5726377	20	7 3.9	20.5
122759 2000 SQ ₆₅	15.0	X	178.16068	353.25615	42.44021	4.01986	0.0244223	0.17901949	3.1179501	20	4 16.7	19.5
122760 2000 SE ₆₆	15.9	X	237.08240	11.15950	29.18834	1.67734	0.1478722	0.23657688	2.5891339	20	6 19.6	19.8
122761 2000 SE ₆₆	15.8	X	12.10143	5.13261	345.88375	1.47774	0.0842979	0.19992311	2.8966369	20	11 3.4	19.5
122762 2000 SU ₆₇	16.5	X	178.46509	154.31381	151.69749	2.63169	0.2023641	0.26938245	2.3744144	20	—	—
122763 2000 SW ₆₉	15.6	X	70.22536	209.85111	168.79685	2.70492	0.1226838	0.21095030	2.7947907	20	—	—
122764 2000 SX ₆₉	16.3	X	117.65289	129.69512	180.05556	2.74915	0.1889432	0.26088508	2.4256970	20	—	—
122765 2000 SE ₇₁	15.6	X	248.19777	335.11725	67.44642	3.42929	0.0744933	0.23798817	2.5788880	20	7 16.3	19.1
122766 2000 SG ₇₁	15.7	X	184.64678	303.62590	27.67791	5.46168	0.0584591	0.22111842	2.7084413	20	2 3.6	19.6
122767 2000 SJ ₇₁	16.8	X	185.46811	162.17145	151.75046	1.95570	0.2009294	0.27086585	2.3657374	20	1 12.6	20.4
122768 2000 SQ ₇₃	15.9	X	237.70263	232.57272	105.93655	4.63301	0.0486448	0.22882155	2.6473098	20	4 12.9	19.6
122769 2000 SE ₇₄	16.0	X	358.57482	216.70267	129.46387	4.97701	0.1537220	0.24735090	2.5133929	20	10 29.3	18.6
122770 2000 SB ₇₅	15.3	X	175.26591	5.41017	58.86374	5.44109	0.0985593	0.23025654	2.6362995	20	5 18.9	19.3
122771 2000 SF ₇₅	15.3	X	7.00832	308.48403	48.26695	8.32443	0.1508157	0.19909594	2.9046542	20	11 11.5	18.6
122772 2000 SF ₇₆	15.4	X	151.53504	229.37186	86.42199	4.22870	0.2147833	0.21533778	2.7566983	20	—	—
122773 2000 SK ₇₇	15.4	X	342.90889	279.42209	191.13029	10.11897	0.1328549	0.21109303	2.7935307	20	—	—
122774 2000 SV ₇₈	16.5	X	179.32448	317.33412	330.97381	1.89502	0.1988716	0.26762854	2.3847770	20	—	—
122775 2000 SA ₇₉	15.8	X	137.82122	256.56440	75.31203	2.84732	0.0985215	0.21517170	2.7581165	20	—	—
122776 2000 SP ₇₉	16.0	X	46.36109	33.04443	172.25165	6.52070	0.0359937	0.28478048	2.2880345	20	6 8.4	18.7
122777 2000 SX ₇₉	15.6	X	339.22481	145.59499	20.17522	5.34634	0.1741896	0.26834157	2.3805506	20	—	—
122778 2000 SL ₈₀	16.2	X	196.71298	154.63311	161.49568	5.96437	0.1399618	0.27204090	2.3589202	20	1 22.0	19.7
122779 2000 SX ₈₀	15.9	X	148.75567	213.70668	52.32131	6.48698	0.1107612	0.25816690	2.4426937	20	—	—
122780 2000 ST ₈₂	15.3	X	104.42763	37.45074	165.20810	6.57502	0.0587161	0.24029529	2.5623545	20	8 25.8	18.8
122781 2000 SJ ₈₄	16.2	X	17.50032	224.61371	174.64857	5.92213	0.1143277	0.25586771	2.4573050	20	—	—
122782 2000 SU ₈₄	15.6	X	103.39792	344.97301	32.07220	4.65560	0.3064955	0.21532639	2.7567955	20	1 31.6	19.5
122783 2000 SY ₈₅	16.6	X	245.86631	300.43682	105.08282	3.90718	0.2019259	0.23667867	2.5883915	20	6 29.9	20.6
122784 2000 SO ₈₇	15.9	X	197.28827	148.74455	172.60396	11.67817	0.1852814	0.27191106	2.3596710	20	1 29.3	19.9
122785 2000 SQ ₈₇	15.6	X	207.86415	217.64183	83.58032	6.34965	0.2513782	0.23101989	2.6304888	20	5 18.3	20.2
122786 2000 SE ₈₉	15.4	X	135.86043	126.48484	328.90087	12.01843	0.1405517	0.22748317	2.6576832	20	5 16.1	19.7
122787 2000 SF ₉₀	15.8	X	300.20390	141.38643	280.76441	13.89959	0.1526002	0.25076266	2.4905435	20	10 16.5	18.8
122788 2000 SE ₉₁	15.9	X	220.85366	115.00613	285.81270	11.71375	0.2017357	0.23610962	2.5925487	20	5 29.5	20.3
122789 2000 SP ₉₁	15.8	X	240.78164	66.94570	312.82979	13.32382	0.1942046	0.23649584	2.5897254	20	5 19.8	20.2
122790 2000 SY ₉₁	15.3	X	154.83438	147.42979	289.51748	12.94467	0.2429705	0.23064843	2.6333124	20	5 17.4	20.0
122791 2000 SJ ₉₂	15.6	X	283.03842	139.46365	239.09281	9.10727	0.1184695	0.24233804	2.5479349	20	7 21.8	18.8
122792 2000 SX ₉₂	15.3	X	331.57011	246.39710	287.91270	9.73515	0.0516295	0.27115072	2.3640802	20	—	—
122793 2000 SQ ₉₃	15.5	X	146.12705	80.96403	276.03188	8.09438	0.0796324	0.22040906	2.7142494	20	1 22.0	19.3
122794 2000 ST ₉₃	15.6	X	100.17505	237.90979	211.8541							

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Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>
122801 2000 SS ₉₆	15.8 ^m	X	217.32362	107.06910	285.68175	8.55436	0.0631027	0.23483448	2.6019252	20	5 25.7	19.6
122802 2000 SS ₉₇	15.4	X	2.03544	85.87100	323.01597	5.48548	0.0564312	0.25627300	2.4547135	20	—	—
122803 2000 SN ₉₈	15.8	X	116.91049	143.85598	241.44132	2.88203	0.1289669	0.21871613	2.7282375	20	1 30.1	19.7
122804 2000 SG ₉₉	16.2	X	258.94161	76.47380	263.67443	3.01156	0.2582972	0.23447279	2.6046002	20	4 12.8	20.3
122805 2000 SP ₉₉	15.4	X	67.29565	82.72238	353.77838	10.28608	0.1601121	0.21685271	2.7438444	20	2 5.1	18.6
122806 2000 SR ₉₉	15.8	X	86.09681	154.69834	257.27340	2.75755	0.1036285	0.21719331	2.7409751	20	1 20.7	19.3
122807 2000 SS ₉₉	16.5	X	259.06516	0.12716	342.90342	5.43929	0.2309028	0.23443951	2.6048468	20	4 18.5	20.7
122808 2000 SW ₉₉	16.2	X	179.23615	346.14579	351.91522	6.26982	0.1425724	0.27220656	2.3579630	20	2 4.1	19.7
122809 2000 SB ₁₀₀	15.5	X	89.72123	135.93723	223.41037	3.65009	0.0853188	0.21129673	2.7917350	20	—	—
122810 2000 SS ₁₀₀	15.2	X	93.42332	114.83423	294.09911	8.87004	0.0987767	0.21623146	2.7490974	20	1 26.2	18.7
122811 2000 SK ₁₀₁	15.8	X	192.16462	343.66233	64.77441	5.47567	0.2157452	0.23161723	2.6259642	20	5 14.9	20.2
122812 2000 SO ₁₀₁	16.3	X	322.46833	147.40382	130.73895	6.73542	0.1187049	0.28584014	2.2823763	20	5 4.9	18.6
122813 2000 SU ₁₀₂	15.6	X	198.08251	266.31674	356.62969	5.38968	0.0508730	0.21387189	2.7692803	20	—	—
122814 2000 SS ₁₀₃	16.4	X	213.94540	19.42628	278.44449	1.92413	0.1732150	0.27278207	2.3546453	20	1 16.6	20.1
122815 2000 SS ₁₀₃	16.2	X	138.82054	67.62189	236.25236	2.42925	0.1478474	0.26272838	2.4143379	20	—	—
122816 2000 SE ₁₀₄	15.6	X	264.16379	112.39140	257.66351	1.13233	0.1302477	0.18656983	3.0332516	20	6 12.8	19.8
122817 2000 SS ₁₀₄	15.5	X	88.05180	101.18561	12.99038	7.95418	0.1911537	0.22396252	2.6854628	20	4 24.8	19.1
122818 2000 SH ₁₀₅	15.4	X	94.53192	35.72058	57.18408	4.84641	0.1681487	0.22151222	2.7052304	20	4 5.5	19.0
122819 2000 SS ₁₀₅	15.7	X	182.37963	114.38904	355.59588	10.98327	0.2306307	0.23588136	2.5942210	20	7 25.3	20.3
122820 2000 SQ ₁₀₆	15.7	X	180.78306	247.75029	186.37567	7.59274	0.1766188	0.23171681	2.6252118	20	6 6.9	20.1
122821 2000 SA ₁₀₇	15.4	X	267.76433	48.15039	348.94797	3.05064	0.1896054	0.23965878	2.5668894	20	7 17.4	18.8
122822 2000 SC ₁₀₇	15.6	X	219.74652	227.98563	208.40003	3.73568	0.2182249	0.23649699	2.5897170	20	7 11.2	19.7
122823 2000 SG ₁₀₇	16.5	X	70.50546	357.13359	351.04684	5.01077	0.1222397	0.25770459	2.4456142	20	—	—
122824 2000 SK ₁₀₇	16.4	X	144.25688	7.77556	322.51309	1.94613	0.1802340	0.26642880	2.3919307	20	—	—
122825 2000 SQ ₁₀₇	16.2	X	352.87120	59.40693	359.79307	6.05710	0.1110117	0.25476172	2.4644117	20	—	—
122826 2000 SB ₁₀₈	16.1	X	250.68369	184.09322	217.54890	0.58699	0.1487799	0.23799414	2.5788448	20	7 6.9	19.7
122827 2000 SU ₁₀₈	15.9	X	184.05126	159.31854	179.12159	2.38271	0.1510563	0.27262508	2.3555492	20	2 7.3	19.5
122828 2000 SC ₁₀₉	16.2	X	86.10450	199.27445	168.31299	2.43951	0.1539579	0.26189853	2.4194353	20	—	—
122829 2000 SL ₁₁₀	16.8	X	132.13444	113.78271	202.82426	1.96085	0.1991548	0.26334699	2.4105555	20	—	—
122830 2000 SY ₁₁₀	15.9	X	203.68840	129.75517	183.12273	6.39714	0.1258905	0.27192790	2.3595736	20	1 23.8	19.5
122831 2000 ST ₁₁₂	15.4	X	207.88381	10.86303	18.64527	14.24058	0.0899843	0.23092339	2.6312217	20	5 5.4	19.4
122832 2000 SK ₁₁₃	16.2	X	160.40150	150.06556	151.08495	1.64587	0.0953490	0.26370753	2.4083579	20	—	—
122833 2000 SV ₁₁₅	16.0	X	299.84769	278.82284	52.87936	2.80522	0.1586643	0.23732207	2.5837112	20	6 6.4	19.0
122834 2000 SL ₁₁₆	16.4	X	194.08011	152.87967	167.53337	2.55595	0.2318965	0.27236844	2.3570286	20	1 28.1	20.4
122835 2000 SO ₁₁₆	16.2	X	237.86841	346.73564	39.73488	1.84421	0.1546652	0.23420479	2.6065868	20	6 1.3	19.9
122836 2000 SO ₁₁₇	16.7	X	177.62310	274.34494	54.32153	3.73357	0.2499996	0.27097477	2.3651035	20	1 27.6	20.7
122837 2000 SO ₁₁₉	15.0	X	330.54643	173.92284	43.43971	10.58046	0.1157416	0.27410704	2.3470513	20	2 22.8	17.8
122838 2000 SQ ₁₂₀	16.1	X	176.10304	307.52968	68.79388	3.22952	0.2418887	0.22481754	2.6786497	20	3 26.3	20.7
122839 2000 SU ₁₂₀	15.4	X	80.88325	323.04465	39.88217	9.31903	0.2002925	0.20971840	2.8057245	20	—	—
122840 2000 SH ₁₂₁	14.9	X	187.98431	346.97670	74.73875	15.08543	0.2613807	0.22686322	2.6625227	20	4 11.5	19.6
122841 2000 SY ₁₂₁	15.7	X	242.54982	26.23301	45.51391	4.65881	0.1792684	0.23876999	2.5732553	20	8 4.7	19.4
122842 2000 SC ₁₂₂	14.3	X	169.03100	147.85621	34.07562	16.01707	0.1004338	0.24508451	2.5288640	20	10 15.9	18.1
122843 2000 SL ₁₂₄	15.4	X	98.69893	8.84750	48.64031	5.80977	0.1274223	0.21762841	2.7373206	20	2 20.6	19.1
122844 2000 ST ₁₂₅	16.1	X	330.48770	162.18031	154.45522	1.30245	0.1786296	0.24073436	2.5592379	20	7 9.9	18.5
122845 2000 SM ₁₂₆	15.6	X	60.92673	244.80345	12.68554	8.70958	0.0477306	0.24336530	2.5407598	20	9 14.0	18.9
122846 2000 SY ₁₂₆	15.7	X	278.39236	248.39923	129.86923	5.46195	0.2815941	0.23811124	2.5779992	20	6 20.5	19.1
122847 2000 SK ₁₂₇	16.0	X	287.76686	227.77267	77.18856	2.48509	0.2093178	0.28370537	2.2938112	20	4 3.5	18.8
122848 2000 SU ₁₂₇	15.5	X	39.61023	354.33435	24.60878	8.06930	0.0853247	0.25603748	2.4562186	20	—	—
122849 2000 SC ₁₂₈	15.5	X	232.11693	321.12941	57.99568	5.13166	0.0685360	0.23218513	2.6216806	20	5 24.9	19.1
122850 2000 SL ₁₂₉	15.6	X	140.61909	101.61585	223.04270	14.38653	0.2996785	0.21779053	2.7359619	20	—	—
122851 2000 ST ₁₂₉	15.1	X	237.54208	52.58597	248.54665	12.76439	0.1728463	0.22843642	2.6502844	20	2 9.4	19.7
122852 2000 ST ₁₃₀	15.6	X	122.70344	336.34307	286.39401	13.94377	0.1092466	0.25643673	2.4536685	20	12 7.9	19.4
122853 2000 SD ₁₃₁	15.3	X	82.88418	194.58972	248.34645	12.90372	0.1455180	0.22158163	2.7046654	20	2 24.6	19.0
122854 2000 SP ₁₃₁	15.4	X	294.97292	24.24327	294.46118	14.65189	0.1379376	0.23667484	2.5884195	20	5 11.2	18.9
122855 2000 SQ ₁₃₁	15.2	X	160.86517	136.08114	287.48551	20.93791	0.1041794	0.23073151	2.6326802	20	4 25.7	19.7
122856 2000 SS ₁₃₁	15.3	X	186.74819	126.44242	256.50547	11.75788	0.2661659	0.22799772	2.6536830	20	4 5.4	20.3
122857 2000 SK ₁₃₂	15.6	X	87.78254	130.17162	303.48504	14.49740	0.2166958	0.21877594	2.7277403	20	3 1.9	19.4
122858 2000 SL ₁₃₂	15.8	X	252.63226	87.72617	290.10211	11.95151	0.1217200	0.23656241	2.5892395	20	6 11.0	19.5
122859 2000 SP ₁₃₂	15.4	X	257.05790	53.78649	268.37103	11.39684	0.2700702	0.23259909	2.6185691	20	3 14.6	20.0
122860 2000 ST ₁₃₂	12.4	X	258.33970	59.78528	271.34566	13.92295	0.0564980	0.08338829	5.1887888	20	4 27.7	19.5
122861 2000 SZ ₁₃₃	15.7	X	123.47378	153.81128	268.40632	7.76237	0.0239295	0.22504782	2.6768221	20	3 6.1	19.5
122862 2000 SJ ₁₃₄	12.7	X	253.21498	16.96859	320.58564	12.11314	0.0961515	0.08140057	5.2729190	20	4 23.1	20.0
122863 2000 SY ₁₃₄	16.3	X	134.34636	206.74371	299.46167	8.59256	0.0973394	0.28752717	2.2734398	20	7 23.7	19.3
122864 2000 SJ ₁₃₅	15.6	X	225.91817	160.99621	302.95601	7.61483	0.1176330	0.24339117	2.5405798	20	8 31.8	19.2
122865 2000 SX ₁₃₅	15.6	X	273.74002	52.20323	241.92940	11.66328	0.2206995	0.28102140	2.3083932	20	2 25.5	19.3
122866 2000 SD ₁₃₆	16.1	X	77.13536	16.10368	286.53762	5.13865	0.1386403	0.25408493	2.4687860	20	12 12.7	19.7
122867 2000 SG ₁₃₆	15.8	X	101.44002	133.44339	306.99795	9.54135	0.1749313	0.22140546	2.7061000	20	3 23.0	19

ELEMENTS AND OPPOSITION DATES IN 2020

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Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>		
122881	2000	SB ₁₄₅	16.5	X	198.26139	11.68955	302.87363	1.80413	0.2015795	0.27222595	2.3578511	20	1 24.1	20.2
122882	2000	SJ ₁₄₅	15.9	X	311.94580	324.89176	357.17982	3.47016	0.3075445	0.24017018	2.5632442	20	5 16.5	18.6
122883	2000	SL ₁₄₅	16.3	X	243.01043	47.02633	348.31064	1.69295	0.2265614	0.23578230	2.5949476	20	6 10.8	20.2
122884	2000	SQ ₁₄₅	14.8	X	87.90188	216.56487	4.50641	4.68019	0.1482544	0.24181939	2.5515767	20	9 11.6	18.4
122885	2000	SA ₁₄₆	16.7	X	257.34602	36.07407	346.20073	2.04120	0.2564140	0.23662106	2.5888117	20	6 4.9	20.6
122886	2000	SD ₁₄₆	16.5	X	253.36103	128.36947	243.31451	2.73578	0.1806234	0.23519220	2.5992862	20	5 27.1	20.3
122887	2000	SF ₁₄₈	15.6	X	71.35895	322.05876	108.47101	3.87784	0.1677570	0.21552038	2.7551409	20	2 2.3	18.6
122888	2000	SQ ₁₄₉	15.6	X	126.55080	69.86050	20.41720	15.08877	0.0935343	0.22629273	2.6669957	20	4 25.6	19.5
122889	2000	SO ₁₄₉	15.8	X	120.62349	166.81600	202.97270	1.94236	0.2016975	0.21626541	2.7488097	20	1 25.6	19.7
122890	2000	SN ₁₅₀	15.5	X	265.79891	106.13100	330.32256	1.63262	0.1034982	0.24378731	2.5378268	20	9 20.8	18.5
122891	2000	SF ₁₅₂	16.0	X	238.94537	178.60679	185.76224	2.42753	0.1921529	0.23217446	2.6217609	20	5 2.3	20.0
122892	2000	SU ₁₅₂	15.4	X	356.41065	125.93566	227.38074	3.48248	0.0553706	0.24632459	2.5203695	20	10 21.4	18.3
122893	2000	SF ₁₅₄	14.9	X	65.59135	1.02488	29.80358	10.10344	0.1640513	0.21005238	2.8027496	20	—	—
122894	2000	SS ₁₅₅	16.2	X	218.18253	244.21638	154.78778	5.14033	0.2272914	0.23146309	2.6271299	20	5 25.2	20.6
122895	2000	SB ₁₅₆	16.1	X	225.22287	231.08912	199.52948	2.96510	0.2036992	0.23628405	2.5912726	20	7 10.7	20.1
122896	2000	SL ₁₅₆	14.3	X	134.17186	68.52151	20.00145	17.89636	0.0177768	0.17733523	3.1376611	20	4 25.2	18.8
122897	2000	SO ₁₅₆	15.4	X	48.50113	18.53195	43.51690	4.74572	0.0903780	0.21153033	2.7896793	20	—	—
122898	2000	SU ₁₅₇	16.0	X	215.74217	99.21655	298.81595	4.07381	0.0924308	0.23380461	2.6095603	20	5 28.3	19.9
122899	2000	SX ₁₅₇	15.0	X	57.35502	55.11726	286.69317	13.76942	0.1555673	0.20503913	2.8482508	20	12 31.6	19.1
122900	2000	SB ₁₅₈	15.5	X	282.98810	46.18518	216.29936	13.08364	0.1706170	0.23793576	2.5792666	20	6 23.9	18.9
122901	2000	SO ₁₆₁	15.7	X	220.90009	221.41997	102.42311	3.40350	0.0758502	0.22757299	2.6569838	20	3 3.3	19.5
122902	2000	SN ₁₆₂	15.7	X	269.07111	329.48748	58.83859	6.03890	0.1859669	0.23855186	2.5748238	20	7 7.3	19.2
122903	2000	SG ₁₆₅	15.3	X	147.90026	96.70117	268.79421	9.40338	0.1209899	0.22102856	2.7091754	20	2 5.7	19.5
122904	2000	SR ₁₆₅	15.8	X	39.65738	96.57110	302.86572	10.04529	0.1473520	0.20863236	2.8154529	20	—	—
122905	2000	SO ₁₆₅	15.5	X	182.13220	181.24499	252.75856	7.99797	0.1121091	0.23267593	2.6179925	20	6 7.8	19.5
122906	2000	SW ₁₆₅	15.7	X	299.50563	62.86313	305.59537	7.39710	0.1476919	0.24130596	2.5551948	20	8 1.2	18.3
122907	2000	SC ₁₆₆	16.0	X	239.81999	99.95721	255.12502	6.09196	0.1932926	0.23241455	2.6199550	20	4 19.0	20.3
122908	2000	SM ₁₆₆	16.3	X	239.88974	64.64457	322.14586	6.48484	0.2025213	0.23499870	2.6007129	20	5 29.1	20.5
122909	2000	SZ ₁₆₆	15.2	X	225.16352	348.25059	279.18986	8.19421	0.1642990	0.21860723	2.7291434	20	—	—
122910	2000	SR ₁₆₇	15.6	X	209.11152	308.59481	341.01945	8.62096	0.0558131	0.26869353	2.3784713	20	1 5.8	19.0
122911	2000	SX ₁₆₇	15.9	X	137.72664	226.51906	228.05390	7.47695	0.2412200	0.22684573	2.6626596	20	5 28.3	20.4
122912	2000	SL ₁₆₈	15.5	X	168.11961	58.80703	292.00924	4.74872	0.1332405	0.22082404	2.7108479	20	2 11.3	19.6
122913	2000	SV ₁₆₈	16.1	X	249.04542	86.69724	341.71814	4.47477	0.2168327	0.23932897	2.5692471	20	8 2.0	19.7
122914	2000	SL ₁₆₉	14.4	X	63.21914	257.16714	7.18055	13.26875	0.1416200	0.24407129	2.5358579	20	10 6.9	17.9
122915	2000	SZ ₁₇₁	15.6	X	60.57816	119.97415	328.89517	14.99016	0.1432263	0.21617095	2.7496104	20	2 7.1	18.7
122916	2000	SY ₁₇₂	14.4	X	37.23408	267.14057	271.13992	27.02816	0.1304808	0.23308993	2.6148917	20	4 16.6	18.0
122917	2000	SF ₁₇₃	15.1	X	126.18881	65.66118	277.26584	16.09360	0.1531967	0.21585190	2.7523192	20	—	—
122918	2000	SN ₁₇₃	15.0	X	213.00905	65.05359	285.32944	10.83192	0.1824559	0.22828638	2.6514455	20	3 17.2	19.6
122919	2000	SU ₁₇₃	15.0	X	16.82384	241.28957	286.57032	11.70076	0.1298930	0.22354990	2.6887663	20	2 27.4	18.2
122920	2000	SC ₁₇₄	15.7	X	200.41228	153.06435	303.04906	11.14541	0.1154517	0.23765128	2.5813245	20	7 26.1	19.6
122921	2000	SM ₁₇₄	15.4	X	334.75668	339.39768	279.25722	11.09493	0.0689786	0.23216829	2.6218073	20	4 28.7	18.9
122922	2000	SN ₁₇₄	15.1	X	215.04252	195.82875	277.10750	10.69973	0.1182736	0.24249863	2.5468099	20	8 28.1	19.1
122923	2000	SV ₁₇₄	16.0	X	222.14737	115.16631	311.90795	8.54111	0.1090353	0.23623599	2.5916241	20	7 13.3	19.7
122924	2000	SG ₁₇₅	16.4	X	42.48628	11.88759	334.34340	7.96305	0.2583613	0.25358651	2.4720198	20	—	—
122925	2000	SN ₁₇₅	15.3	X	181.69485	66.29826	1.27283	14.38503	0.1373804	0.23034770	2.6356038	20	5 25.9	19.8
122926	2000	SZ ₁₇₅	15.6	X	111.55861	345.38558	318.49199	5.56990	0.1052068	0.25629755	2.4545568	20	—	—
122927	2000	SD ₁₇₆	15.0	X	271.80895	117.30710	316.29786	7.25948	0.1298736	0.19313400	2.9641276	20	9 11.5	19.0
122928	2000	SG ₁₇₇	16.2	X	99.86651	16.30852	345.37296	6.09802	0.1398540	0.26180586	2.4200062	20	—	—
122929	2000	SO ₁₇₇	14.7	X	211.17354	265.87856	249.41126	9.67600	0.0720152	0.19620866	2.9330801	20	10 18.3	19.0
122930	2000	SV ₁₈₁	16.2	X	239.98487	357.08098	45.93063	5.46537	0.2045255	0.23781878	2.5801124	20	6 19.9	20.3
122931	2000	SM ₁₈₃	15.9	X	235.50427	23.53147	221.47887	6.35678	0.0814619	0.26931095	2.3748346	20	—	—
122932	2000	SO ₁₈₃	16.5	X	133.40685	174.66176	163.13973	8.09574	0.2010791	0.26708658	2.3880019	20	—	—
122933	2000	SB ₁₈₄	15.4	X	15.13292	237.25961	221.70094	7.02164	0.1823432	0.21029360	2.8006059	20	—	—
122934	2000	SS ₁₈₅	15.7	X	99.39915	38.09896	0.96305	1.45739	0.0834292	0.21768201	2.7368712	20	1 20.3	19.3
122935	2000	SA ₁₈₆	16.0	X	184.45111	244.18897	192.49974	8.46795	0.1854659	0.23279528	2.6170977	20	6 13.0	20.4
122936	2000	SV ₁₈₆	16.0	X	67.86763	14.00754	280.37701	9.55694	0.2137889	0.25325434	2.4741809	20	11 29.9	19.8
122937	2000	SU ₁₈₇	14.3	X	315.60780	93.60469	37.64256	23.67551	0.0631757	0.25918014	2.4363232	20	—	—
122938	2000	SV ₁₈₉	15.7	X	140.68086	215.60116	228.09042	7.67723	0.2835603	0.22544553	2.6736731	20	5 19.8	20.4
122939	2000	SM ₁₉₁	15.5	X	344.07456	85.23484	47.20520	4.94282	0.0170197	0.21594516	2.7515267	20	—	—
122940	2000	SP ₁₉₁	16.1	X	251.63735	99.37737	145.42712	6.83300	0.0810718	0.27004662	2.3705196	20	—	—
122941	2000	SE ₁₉₂	15.4	X	115.21532	262.64542	56.23487	5.14825	0.0295111	0.20964764	2.8063558	20	—	—
122942	2000	SP ₁₉₂	16.8	X	264.74543	275.24299	114.57642	1.92187	0.1707368	0.23889725	2.5723415	20	7 5.5	20.2
122943	2000	SZ ₁₉₂	15.8	X	87.56945	8.67743	6.77056	3.86112	0.1132497	0.21234618	2.7825293	20	—	—
122944	2000	SA ₁₉₃	14.8	X	328.30209	32.54118	184.84801	13.05781	0.1377112	0.22435080	2.6823635	20	2 15.1	18.2
122945	2000	SA ₁₉₄	15.8	X	78.27807	237.96347	145.42714	1.11321	0.0892818	0.21440367	2.7646993	20	—	—
122946	2000	SL ₁₉₄	15.7	X	335.08551	317.43813	161.66069	2.84157	0.1373654	0.26202122	2.4186799	20	—	—
122947	2000	SH ₁₉₅	16.6	X	103.49359	210.44736	185.43529	4.41714	0.0867996	0.26928607	2.3749809	20	1 11.4	19.5
122948	2000	SU ₁₉₅	15.9	X	44.41396	81.40480	335.50488	1.48196	0.0472657	0.21387313	2.7692695	20	—	—
122949	2000	SC ₁₉₈	16.4	X	287.49103	272.54933	103.56640	0.54420	0.1981377	0.24133429	2.5549948	20	7 14.6	19.3
122950	2000	SD ₂₀₀	15.7	X	272.56773	325.21390	75.98190							

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ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>		
122961	2000	SW ₂₁₄	16.9	X	306.58124	209.52247	138.45287	1.65119	0.1274781	0.24095828	2.5576521	20	7 17.2	19.7
122962	2000	SG ₂₁₅	12.5	X	309.68887	324.16908	335.12747	2.56336	0.0700908	0.08475605	5.1328145	20	5 21.9	19.1
122963	2000	SK ₂₁₅	16.1	X	311.97892	225.00268	7.03678	5.07093	0.1956132	0.27814993	2.3242531	20	1 29.6	19.1
122964	2000	SD ₂₁₆	15.8	X	16.09565	264.86426	190.97962	7.39855	0.1928325	0.21160898	2.7889880	20	—	—
122965	2000	SF ₂₁₈	15.2	X	129.43127	42.91770	43.62000	22.47733	0.0557194	0.22656213	2.6648811	20	4 25.4	18.9
122966	2000	SN ₂₁₉	15.7	X	260.86489	214.41630	116.69091	7.91245	0.2387681	0.23212987	2.6220966	20	4 10.5	20.0
122967	2000	SS ₂₁₉	15.8	X	239.20609	260.64507	137.90448	8.03319	0.1941419	0.23469921	2.6029249	20	6 15.3	19.9
122968	2000	SO ₂₂₁	15.7	X	243.74805	315.27781	63.81448	15.00843	0.2028827	0.23363253	2.6108451	20	5 24.2	19.6
122969	2000	SW ₂₂₂	16.1	X	203.33069	114.07784	201.93657	5.51621	0.0630099	0.22194020	2.7017515	20	2 1.5	20.1
122970	2000	SU ₂₂₃	16.2	X	237.55537	279.48712	190.65840	3.22332	0.1425773	0.24471942	2.5313785	20	9 22.4	19.6
122971	2000	SQ ₂₂₅	14.9	X	177.83521	346.40245	120.47948	7.50741	0.2404721	0.23165581	2.6256727	20	7 14.1	19.4
122972	2000	ST ₂₂₈	16.0	X	168.30142	227.62102	184.12740	2.99116	0.1201007	0.22734631	2.6587497	20	4 26.9	20.1
122973	2000	SD ₂₂₉	16.1	X	161.48190	5.78343	5.54555	1.64175	0.0337508	0.22197186	2.7014946	20	2 23.3	19.7
122974	2000	SO ₂₂₉	15.7	X	284.32681	6.36180	16.03426	4.06867	0.1408227	0.23966739	2.5668279	20	7 29.8	18.9
122975	2000	SE ₂₃₀	16.2	X	240.58563	6.77159	38.45687	2.09252	0.2249945	0.23553807	2.5967410	20	6 21.5	20.1
122976	2000	SH ₂₃₀	16.3	X	141.01789	333.10597	354.98620	1.14839	0.1935595	0.26469131	2.4023867	20	—	—
122977	2000	SV ₂₃₀	16.1	X	24.63486	337.02482	26.24951	1.94210	0.0480562	0.25167765	2.4845035	20	12 14.8	19.3
122978	2000	SN ₂₃₄	16.3	X	147.78246	182.84490	122.29805	6.74168	0.1219253	0.26464674	2.4026565	20	—	—
122979	2000	SX ₂₃₄	16.5	X	69.24895	6.62460	1.83417	4.61801	0.1210648	0.26197798	2.4189461	20	—	—
122980	2000	SS ₂₃₈	15.8	X	239.63533	261.46575	145.32682	8.00789	0.1186874	0.23630652	2.5911084	20	7 4.3	19.5
122981	2000	SL ₂₃₉	15.6	X	163.01765	316.45291	19.90968	6.03904	0.0547792	0.21795802	2.7345601	20	1 16.3	19.6
122982	2000	SD ₂₄₁	15.6	X	289.82157	28.86491	257.73330	13.42241	0.1630544	0.23480965	2.6021087	20	3 14.8	19.5
122983	2000	SG ₂₄₂	16.5	X	50.70267	22.85567	174.42110	2.82094	0.1901505	0.26197117	2.4189880	20	—	—
122984	2000	SR ₂₄₂	16.1	X	275.37614	285.30096	96.12250	3.24653	0.2107584	0.24081782	2.5586466	20	7 1.9	19.2
122985	2000	SE ₂₄₄	15.9	X	314.19619	220.54643	11.93548	4.82546	0.1403415	0.27941364	2.3172398	20	2 10.7	18.8
122986	2000	SG ₂₄₄	15.5	X	121.48351	270.63941	163.29208	15.13512	0.1027889	0.22645173	2.6657472	20	4 5.4	19.3
122987	2000	SL ₂₄₄	15.5	X	338.38810	104.86950	28.96968	2.47512	0.1429736	0.26539632	2.3981304	20	—	—
122988	2000	SO ₂₄₄	16.0	X	189.41836	223.92041	45.61444	1.71801	0.1668313	0.26756410	2.3851598	20	—	—
122989	2000	ST ₂₄₅	15.9	X	114.10634	16.01414	29.51645	8.08024	0.0764937	0.22181835	2.7027408	20	2 17.9	19.7
122990	2000	SE ₂₄₆	16.2	X	224.72956	153.90294	90.73598	4.15027	0.1247328	0.26712956	2.3877458	20	—	—
122991	2000	SE ₂₄₇	15.8	X	103.01189	1.82778	35.70762	6.16207	0.0502898	0.21881838	2.7273875	20	1 19.3	19.5
122992	2000	SN ₂₄₇	15.5	X	359.34158	115.74785	132.47376	6.61761	0.0822849	0.28743488	2.2739264	20	5 29.1	17.8
122993	2000	SR ₂₄₇	15.7	X	177.94797	48.14856	352.73831	14.52576	0.1026641	0.23043272	2.6349555	20	4 16.9	20.1
122994	2000	SN ₂₄₉	15.2	X	80.14478	45.42546	37.16983	11.07981	0.1913722	0.21951316	2.7216295	20	3 10.9	18.7
122995	2000	SK ₂₅₀	15.7	X	223.63339	309.49837	134.48186	6.77082	0.1641666	0.23953579	2.5677679	20	7 30.7	19.4
122996	2000	SN ₂₅₁	15.6	X	94.89891	197.55323	345.19351	3.87162	0.0726020	0.23761900	2.5815583	20	7 20.6	19.0
122997	2000	SZ ₂₅₁	16.2	X	186.61367	23.92093	78.38434	5.41948	0.1330584	0.23641583	2.5903096	20	7 19.5	20.3
122998	2000	SK ₂₅₂	15.9	X	133.20524	232.13272	167.34641	8.89369	0.1814005	0.22146037	2.7056526	20	3 12.6	19.8
122999	2000	SM ₂₅₂	16.3	X	154.92037	246.22714	80.99918	3.59923	0.1775144	0.26739560	2.3861617	20	—	—
123000	2000	SS ₂₅₂	16.4	X	144.23135	241.16479	90.93374	2.47990	0.1873695	0.26636206	2.3923303	20	—	—
123001	2000	SV ₂₅₃	15.6	X	299.11351	311.68929	107.80609	2.60982	0.0735773	0.19859596	2.9095273	20	10 15.0	19.1
123002	2000	SS ₂₅₅	16.4	X	147.68800	193.02598	234.38200	0.56450	0.1603490	0.22697583	2.6616420	20	4 27.7	20.6
123003	2000	SC ₂₅₈	16.1	X	286.59021	339.54255	2.82385	4.06625	0.1929005	0.23702883	2.5858417	20	5 25.9	19.4
123004	2000	SH ₂₅₈	15.3	X	12.04363	107.61785	13.84905	13.16918	0.1331327	0.21396137	2.7685081	20	—	—
123005	2000	SZ ₂₅₈	16.2	X	251.68963	44.60883	323.70095	1.40839	0.1453308	0.23400858	2.6080437	20	5 24.7	19.9
123006	2000	SD ₂₅₉	16.1	X	193.54305	295.97181	113.73414	5.45495	0.1572966	0.23018730	2.6368280	20	5 19.7	20.4
123007	2000	SD ₂₆₀	15.9	X	101.38468	277.88557	87.31741	5.63511	0.2137173	0.21263018	2.7800511	20	—	—
123008	2000	ST ₂₆₀	16.4	X	241.79090	214.45466	167.67818	4.65055	0.2961691	0.23393135	2.6086177	20	5 19.1	20.9
123009	2000	SJ ₂₆₀	16.2	X	264.72073	142.70352	170.83791	4.48665	0.2342697	0.28029681	2.3123698	20	3 16.9	19.7
123010	2000	SF ₂₆₂	16.1	X	115.05309	108.30337	245.56273	2.57863	0.1468625	0.21647638	2.7470235	20	—	—
123011	2000	SL ₂₆₂	15.5	X	26.81375	35.74740	26.23294	6.21532	0.0961712	0.21098284	2.7945033	20	—	—
123012	2000	SO ₂₆₂	15.3	X	97.28338	50.51323	36.36972	13.32831	0.1599700	0.22255505	2.6967731	20	4 2.1	19.0
123013	2000	SV ₂₆₄	15.5	X	172.09202	309.32261	149.81885	3.51244	0.1692419	0.23358875	2.6111677	20	6 29.9	19.9
123014	2000	SB ₂₆₅	15.9	X	198.09881	34.74849	47.93837	4.53237	0.2450499	0.23386820	2.6090872	20	6 30.3	20.3
123015	2000	SW ₂₆₅	15.0	X	166.55944	88.74862	48.57529	13.78432	0.1422403	0.23805210	2.5784262	20	8 19.7	19.4
123016	2000	SA ₂₆₆	15.8	X	143.67289	289.39185	77.54194	4.41178	0.1917951	0.21933698	2.7230867	20	2 14.9	20.0
123017	2000	SD ₂₆₆	15.5	X	88.11307	40.32955	48.59092	13.37263	0.1254436	0.22048892	2.7135940	20	3 21.6	19.2
123018	2000	SG ₂₆₇	15.8	X	52.98675	290.08151	288.94500	1.76603	0.0711105	0.23674593	2.5879012	20	7 11.5	18.8
123019	2000	SX ₂₆₈	15.1	X	288.54598	284.55509	114.78804	3.74044	0.1248037	0.24187235	2.5512043	20	9 2.0	17.9
123020	2000	SV ₂₇₀	15.7	X	157.71404	283.51290	54.28341	5.69189	0.1691697	0.21770371	2.7366893	20	1 22.3	20.0
123021	2000	SV ₂₇₂	15.5	X	261.13475	121.11228	297.30820	1.31947	0.0948016	0.19071169	2.9891739	20	8 15.8	19.7
123022	2000	SV ₂₇₂	16.0	X	129.22407	70.51899	320.94247	2.17239	0.1109931	0.21977490	2.7194683	20	2 19.3	19.9
123023	2000	SE ₂₇₃	15.1	X	359.22393	130.00828	17.20500	9.41266	0.1109999	0.21584336	2.7523918	20	1 11.1	18.6
123024	2000	SM ₂₇₆	15.3	X	220.00663	32.77602	284.98452	13.22848	0.0773285	0.22546527	2.6735169	20	2 17.2	19.5
123025	2000	SB ₂₇₉	15.6	X	267.15214	243.73827	136.26593	1.25431	0.2170779	0.23508678	2.6000633	20	6 18.2	19.3
123026	2000	SZ ₂₇₉	15.5	X	262.52746	257.91648	119.73123	14.09873	0.1787257	0.23596897	2.5935788	20	6 16.4	19.3
123027	2000	SC ₂₈₀	15.1	X	290.05827	12.63791	333.79234	7.66033	0.2051894	0.23569172	2.5956123	20	6 3.3	18.5
123028	2000	SD ₂₈₂	16.0	X	132.73653	91.07689	293.81907	4.03493	0.1294331	0.22138375	2.7062768	20	2 16.2	19.9
123029	2000	SO ₂₈₂	16.1	X	119.72664	90.68154	261.16660	3.78219	0.0644016	0.21571527	2.7534813	20	—	—
123030	2000	SH ₂₈₃	16.7	X	258.58597									

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>		
123041	2000	SP ₂₉₁	15.9	X	170.12410	91.19411	293.63918	2.85801	0.0890055	0.22578297	2.6710085	20	3 22.5	19.8
123042	2000	SR ₂₉₁	15.4	X	331.74179	283.10465	214.95392	6.89845	0.1770229	0.21173363	2.7878933	20	—	—
123043	2000	SV ₂₉₁	16.0	X	108.77755	285.28771	4.89360	10.38421	0.1608230	0.25664985	2.4523100	20	12 30.4	20.1
123044	2000	SK ₂₉₂	16.2	X	273.18894	34.94308	333.09027	11.30732	0.1945043	0.23705877	2.5856240	20	6 12.5	19.9
123045	2000	SO ₂₉₂	15.4	X	6.17056	170.15455	287.01257	8.45356	0.1180219	0.20927835	2.8096562	20	—	—
123046	2000	SG ₂₉₄	15.0	X	175.70783	49.28290	15.97778	13.80573	0.1936556	0.22707688	2.6608523	20	5 17.9	19.7
123047	2000	ST ₂₉₄	15.3	X	331.61711	7.61944	338.47877	10.55282	0.1384223	0.24147633	2.5539928	20	8 31.2	17.6
123048	2000	SY ₂₉₄	15.8	X	175.89337	21.95687	8.90518	13.90696	0.2559816	0.22460669	2.6803258	20	4 9.3	20.6
123049	2000	SA ₂₉₅	14.9	X	190.77155	94.02348	22.56260	13.53612	0.1348409	0.23486997	2.6016630	20	8 16.8	19.2
123050	2000	SL ₂₉₅	14.9	X	291.42309	327.07416	29.59236	15.62234	0.1333829	0.23505568	2.6002925	20	7 4.5	18.4
123051	2000	SN ₂₉₅	14.7	X	104.79497	27.26516	24.00345	16.44619	0.2314528	0.21548623	2.7554320	20	3 10.5	18.8
123052	2000	SY ₂₉₅	14.8	X	210.87013	118.95288	269.80913	7.36455	0.1723787	0.22755210	2.6571464	20	5 5.9	19.2
123053	2000	SV ₂₉₇	15.8	X	154.40224	224.93049	219.04842	10.56532	0.2027654	0.22934241	2.6433001	20	5 27.5	20.2
123054	2000	SH ₂₉₈	16.2	X	251.10661	289.87587	313.04753	4.15824	0.1199352	0.26922277	2.3753531	20	—	—
123055	2000	SR ₂₉₈	15.8	X	258.88988	49.48120	255.61207	5.82565	0.1328422	0.27937935	2.3174294	20	3 6.8	19.2
123056	2000	SO ₃₀₀	15.6	X	95.84480	100.19168	256.47890	4.84011	0.0806089	0.21145921	2.7903048	20	—	—
123057	2000	SY ₃₀₀	15.4	X	231.27654	289.65827	238.88527	5.83747	0.0991913	0.25306434	2.4754191	20	12 9.1	18.4
123058	2000	SZ ₃₀₀	15.7	X	310.69312	197.71194	3.69961	6.89242	0.0426450	0.26951282	2.3736486	20	1 11.5	18.8
123059	2000	SV ₃₀₁	15.5	X	7.46737	334.68426	334.97407	3.82955	0.0089555	0.24218215	2.5490281	20	9 2.7	18.7
123060	2000	SZ ₃₀₁	15.9	X	116.70019	174.18443	200.98979	4.15375	0.1559082	0.22054237	2.1315555	20	3 9.3	19.9
123061	2000	SV ₃₀₂	15.7	X	196.89225	222.96005	241.76235	12.84709	0.1168543	0.23787344	2.5797171	20	7 28.9	19.9
123062	2000	SY ₃₀₂	16.1	X	205.06263	127.57674	336.45959	6.80746	0.1792808	0.23853886	2.5749173	20	8 7.1	20.2
123063	2000	SL ₃₀₃	15.3	X	283.04983	25.41706	218.37217	11.04009	0.1096496	0.22297080	2.6934199	20	1 24.9	19.4
123064	2000	SN ₃₀₃	16.1	X	187.96521	3.42207	310.38244	3.05883	0.1456754	0.26972656	2.3723945	20	1 12.5	19.5
123065	2000	SY ₃₀₃	16.0	X	154.75477	82.14208	302.05150	8.46219	0.0849776	0.22594991	2.6696927	20	3 2.9	19.9
123066	2000	SG ₃₀₄	15.5	X	164.42605	145.38975	244.64067	6.97578	0.3226861	0.22470638	2.6795330	20	4 1.7	20.5
123067	2000	SZ ₃₀₄	16.2	X	279.80288	40.99342	359.42157	13.11038	0.2017266	0.24124308	2.5556388	20	8 11.3	19.4
123068	2000	SY ₃₀₅	15.9	X	93.93210	61.36780	352.45653	8.88596	0.1617724	0.21721696	2.7407761	20	2 14.4	19.4
123069	2000	SS ₃₀₆	15.7	X	148.90730	332.26039	339.30287	6.08884	0.1189593	0.26331935	2.4107242	20	—	—
123070	2000	SO ₃₀₉	15.5	X	64.78440	325.20207	162.50441	8.41628	0.2336405	0.22416188	2.6838704	20	4 20.9	18.7
123071	2000	ST ₃₁₀	14.9	X	263.95673	114.71838	292.47598	13.93378	0.0908921	0.24018534	2.5631364	20	8 7.0	18.4
123072	2000	SE ₃₁₁	14.3	X	286.23349	166.43483	270.21470	12.54447	0.1328617	0.24629493	2.5205718	20	10 14.4	17.4
123073	2000	SF ₃₁₁	14.8	X	240.81935	149.19493	285.52436	12.57924	0.1316753	0.23929525	2.5694884	20	8 7.5	18.6
123074	2000	SG ₃₁₁	14.3	X	24.50223	325.01297	314.02042	13.51345	0.1651469	0.24123469	2.5556980	20	8 31.9	17.2
123075	2000	SA ₃₁₂	15.7	X	286.97245	97.05261	296.25627	15.70130	0.1171895	0.24253941	2.5465244	20	8 16.1	18.9
123076	2000	SK ₃₁₂	15.1	X	263.55472	45.11157	310.95594	13.94824	0.1814473	0.23543212	2.5975200	20	5 13.8	19.2
123077	2000	SF ₃₁₃	15.4	X	190.13835	113.45928	249.15128	13.30903	0.1470134	0.22548808	2.6733367	20	3 11.9	20.1
123078	2000	SZ ₃₁₃	14.5	X	209.82688	213.49365	254.58708	15.03509	0.1093135	0.23960620	2.5672649	20	8 14.6	18.6
123079	2000	SG ₃₁₅	14.9	X	220.29650	81.85175	309.92194	12.84191	0.0655931	0.23313272	2.6145718	20	5 25.9	18.9
123080	2000	SA ₃₁₆	15.0	X	274.62253	138.41245	261.09666	14.88304	0.1905793	0.24291845	2.5438747	20	7 24.9	18.4
123081	2000	SN ₃₁₆	15.3	X	196.51576	153.69779	251.65378	12.64625	0.1473682	0.23272540	2.6176215	20	5 15.1	19.5
123082	2000	SD ₃₁₉	14.9	X	255.63702	114.01998	321.13405	11.67587	0.1315857	0.24069490	2.5595177	20	8 28.9	18.4
123083	2000	SL ₃₁₉	14.8	X	177.40935	117.05606	279.37916	11.60255	0.1897962	0.22560098	2.6724447	20	4 12.7	19.5
123084	2000	SV ₃₁₉	15.3	X	153.46934	140.81161	297.72515	8.34518	0.1541808	0.22636153	2.6664553	20	5 14.9	19.6
123085	2000	ST ₃₂₀	15.5	X	79.77347	160.31097	239.81453	4.31646	0.1691345	0.21312552	2.7757419	20	1 6.2	18.7
123086	2000	SH ₃₂₁	15.1	X	121.60275	248.66283	216.96076	8.02569	0.3173675	0.22427277	2.6829857	20	6 3.3	19.7
123087	2000	SQ ₃₂₇	16.4	X	266.93489	336.34448	346.39945	4.85652	0.2126304	0.28194198	2.3033657	20	3 31.7	19.9
123088	2000	SU ₃₂₇	15.7	X	314.39223	154.25311	285.11263	5.41575	0.1878537	0.19944843	2.9012309	20	11 26.3	18.8
123089	2000	SL ₃₂₈	16.1	X	223.85360	81.33115	29.95774	6.05122	0.1910952	0.24322567	2.5417321	20	9 4.9	19.9
123090	2000	SQ ₃₂₈	15.8	X	195.32287	227.64097	185.63331	14.74235	0.0993569	0.23126766	2.6286098	20	5 27.8	20.0
123091	2000	SE ₃₂₉	16.6	X	249.98568	349.45567	212.85137	0.52783	0.1295424	0.26461268	2.4028627	20	—	—
123092	2000	SZ ₃₃₃	15.7	X	225.50786	49.23092	11.09336	28.86792	0.1930718	0.23779184	2.5803072	20	7 1.8	20.4
123093	2000	SD ₃₃₅	15.7	X	46.63547	324.34049	121.28089	6.05122	0.0749148	0.21692129	2.7432661	20	1 3.5	18.9
123094	2000	SL ₃₃₆	16.2	X	183.66507	3.41055	336.81832	4.37407	0.2795828	0.27285149	2.3542459	20	2 15.2	20.3
123095	2000	SV ₃₃₆	15.8	X	231.83791	342.37549	321.37667	3.87706	0.2488540	0.27443231	2.3451964	20	2 6.2	19.8
123096	2000	SJ ₃₃₈	16.4	X	237.54918	206.15174	342.79766	3.15195	0.0745261	0.25913480	2.4366074	20	—	—
123097	2000	SE ₃₄₀	15.4	X	3.39392	179.10651	356.50662	25.39398	0.1057813	0.27687035	2.3314087	20	2 23.3	18.1
123098	2000	SJ ₃₄₀	15.9	X	169.34402	339.90474	70.99389	3.19166	0.0971918	0.23093788	2.6311116	20	4 26.1	19.8
123099	2000	SF ₃₄₂	15.8	X	77.99786	58.73758	328.44571	3.39305	0.0985394	0.21411689	2.6716774	20	—	—
123100	2000	SC ₃₄₃	16.1	X	186.14193	16.66865	73.19019	4.13202	0.1615343	0.23352736	2.6116253	20	7 1.5	20.2
123101	2000	SQ ₃₄₄	15.2	X	25.28710	245.69382	13.01323	7.10129	0.0107737	0.18850963	3.0124073	20	7 17.4	19.4
123102	2000	SU ₃₄₄	15.3	X	200.98428	271.25188	78.97765	10.76720	0.1761593	0.22771815	2.6558546	20	3 18.5	19.9
123103	2000	SJ ₃₄₇	15.0	X	276.68208	43.74369	304.32369	13.88947	0.1146145	0.23423216	2.6063838	20	6 1.6	18.7
123104	2000	SV ₃₄₈	14.7	X	7.20454	159.90422	52.46991	14.36343	0.0317799	0.23089117	2.6314664	20	4 23.3	18.0
123105	2000	SS ₃₄₉	15.7	X	312.69301	329.01936	33.66989	12.55753	0.1636614	0.24472512	2.5313393	20	8 23.9	18.5
123106	2000	SX ₃₄₉	16.1	X	240.18108	216.47155	143.76365	13.60863	0.2796589	0.23417186	2.6068312	20	4 25.8	20.8
123107	2000	SF ₃₅₀	15.2	X	163.01720	223.28409	115.40935	10.66173	0.2425343	0.22078431	2.7111731	20	1 31.9	19.9
123108	2000	SM ₃₅₁	15.7	X	203.03817	306.53044	117.06814	11.29993	0.2443197	0.23318831	2.6141562	20	6 11.6	20.3
123109	2000	SQ ₃₅₅	15.6	X	159.53185	327.40719	50.22078	12.78717	0.1749932	0.22362535	2.6881616	20	3	

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Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>		
123121	2000	TA ₃	16.2	X	354.85860	94.93138	191.78262	1.92531	0.1196394	0.24147703	2.5539878	20	7 16.6	18.8
123122	2000	TS ₄	15.8	X	238.58790	249.40274	359.62681	4.55847	0.1072924	0.21888133	2.7268646	20	—	—
123123	2000	TD ₅	16.1	X	164.24416	74.25465	242.07946	1.37527	0.0841042	0.21721234	2.7408149	20	—	—
123124	2000	TZ ₅	16.1	X	298.16334	18.91737	214.44222	1.83302	0.1695310	0.27537520	2.3398400	20	1 16.6	19.2
123125	2000	TQ ₇	16.6	X	218.28005	73.20389	347.50813	1.47326	0.1399963	0.23597801	2.5935126	20	6 26.9	20.6
123126	2000	TS ₇	16.3	X	248.42892	249.44581	13.64586	2.11066	0.1856236	0.27317316	2.3523975	20	1 4.3	19.9
123127	2000	TA ₈	16.8	X	135.67217	152.82004	162.17315	2.86547	0.1853820	0.26398909	2.4066451	20	—	—
123128	2000	TW ₈	15.6	X	321.95472	130.86950	195.78905	0.75525	0.0230736	0.18849230	3.0125920	20	7 18.9	19.7
123129	2000	TX ₁₁	15.8	X	87.81544	229.51504	178.93340	6.36164	0.0249638	0.21738716	2.7393454	20	1 7.8	19.6
123130	2000	TY ₁₁	15.8	X	266.19382	187.03671	13.38608	13.64946	0.1624792	0.26345600	2.4098905	20	—	—
123131	2000	TD ₁₂	16.6	X	16.73448	218.77101	27.67049	2.51520	0.1121717	0.28641826	2.2793040	20	6 29.6	18.7
123132	2000	TK ₁₂	15.0	X	347.41265	258.06389	67.05325	11.66664	0.1137002	0.19221040	2.9736154	20	8 28.7	18.7
123133	2000	TH ₁₃	15.1	X	336.82942	81.97290	195.18866	7.81433	0.1433979	0.18565186	3.0432422	20	5 27.3	18.7
123134	2000	TW ₈	15.7	X	357.37408	86.57486	28.98975	3.73679	0.0480223	0.21268172	2.7796014	20	—	—
123135	2000	TS ₁₃	16.2	X	107.02279	94.25684	355.37705	1.57171	0.2423396	0.22206217	2.7007621	20	4 23.3	20.1
123136	2000	TA ₁₆	16.5	X	273.23672	313.98892	59.02836	0.89245	0.1159074	0.23728253	2.5839982	20	7 2.4	19.7
123137	2000	TK ₁₇	15.9	X	205.32873	346.63861	39.87893	5.67265	0.1448953	0.22935308	2.6432181	20	4 30.6	20.2
123138	2000	TZ ₁₇	15.7	X	304.91167	161.70680	31.47359	2.32548	0.0840589	0.26558052	2.3970214	20	—	—
123139	2000	TB ₁₈	15.8	X	182.53682	78.13264	29.07291	4.84796	0.1959007	0.23380197	2.6095799	20	7 20.6	20.1
123140	2000	TD ₁₈	15.9	X	244.07251	65.85843	359.71364	1.30694	0.0452450	0.23923069	2.5699507	20	8 15.9	19.3
123141	2000	TK ₁₈	16.3	X	189.17416	133.96169	273.78458	0.87936	0.2009917	0.22897613	2.6461182	20	5 11.3	20.6
123142	2000	TN ₁₈	15.4	X	74.71651	16.80983	11.98007	3.07147	0.0978505	0.21095767	2.7947256	20	—	—
123143	2000	TX ₁₈	16.5	X	258.25530	113.95447	246.33083	1.13166	0.1657312	0.23410176	2.6073516	20	5 19.4	20.3
123144	2000	TY ₁₉	15.8	X	131.15867	277.59493	119.93793	9.21298	0.2178173	0.22124262	2.7074277	20	3 14.9	20.1
123145	2000	TU ₂₁	17.0	X	92.20334	299.06997	13.65306	1.37959	0.1988455	0.25718479	2.4489083	20	—	—
123146	2000	TB ₂₄	16.1	X	182.52891	126.01192	160.82006	6.81812	0.1581756	0.26688968	2.3891763	20	—	—
123147	2000	TL ₂₅	15.8	X	119.59383	80.19288	16.79346	12.68919	0.2348265	0.22345579	2.6895212	20	5 11.0	20.2
123148	2000	TY ₂₅	15.8	X	87.47419	13.31408	17.02100	5.35831	0.0675446	0.21476257	2.7616183	20	—	—
123149	2000	TK ₂₉	14.9	X	356.08830	67.54115	336.25968	12.74457	0.1009675	0.20066607	2.8894826	20	12 20.6	18.7
123150	2000	TJ ₃₂	16.2	X	295.56106	254.64739	287.05878	3.66068	0.1403545	0.26482806	2.4015597	20	—	—
123151	2000	TJ ₃₃	14.5	X	16.55626	198.83553	295.71667	18.67403	0.1022327	0.21504009	2.7592418	20	1 20.5	17.8
123152	2000	TQ ₃₇	16.0	X	121.26818	174.76868	104.65356	5.57436	0.3015065	0.26164550	2.4209949	20	12 29.2	20.3
123153	2000	TK ₃₈	16.3	X	350.17758	181.91132	101.66371	5.52350	0.1855841	0.29188441	2.2507579	20	7 6.9	17.6
123154	2000	TH ₃₉	15.2	X	234.38498	263.50251	42.75276	12.38421	0.1703395	0.22806608	2.6531528	20	2 24.3	19.7
123155	2000	TL ₄₀	15.6	X	300.50878	148.88545	112.59961	7.04745	0.0691127	0.27980694	2.3150679	20	3 15.6	18.4
123156	2000	TM ₄₃	16.3	X	276.10763	252.14583	99.48828	5.95717	0.2269995	0.23767631	2.5811433	20	5 21.8	19.8
123157	2000	TG ₄₅	15.8	X	194.85484	316.43315	125.24438	9.72689	0.1264824	0.23594552	2.5937507	20	6 30.7	19.8
123158	2000	TS ₄₅	16.1	X	156.76889	206.28884	121.09679	8.91737	0.1412545	0.26850034	2.3796120	20	—	—
123159	2000	TZ ₄₅	16.6	X	246.66326	80.08561	325.42394	3.65900	0.1344236	0.23869506	2.5737939	20	7 9.9	20.3
123160	2000	TO ₄₆	16.0	X	290.56023	198.47539	49.55475	3.26781	0.1791624	0.27719039	2.3296138	20	1 26.9	19.2
123161	2000	TD ₄₇	16.2	X	254.64218	353.34392	75.86672	4.42583	0.1500328	0.24221011	2.5488320	20	8 20.9	19.5
123162	2000	TV ₄₇	15.5	X	113.25817	276.49789	81.90164	7.23243	0.1645358	0.21448078	2.7640366	20	—	—
123163	2000	TV ₄₈	16.0	X	203.91323	19.93762	55.54544	6.36162	0.1664932	0.23597550	2.5935309	20	6 29.8	20.2
123164	2000	TZ ₅₀	15.9	X	227.36252	283.91543	99.89956	8.13553	0.0984789	0.23222466	2.6213831	20	5 24.5	19.7
123165	2000	TK ₅₁	14.8	X	55.33915	291.57289	160.73523	13.39802	0.1955535	0.21489886	2.7604506	20	2 5.6	17.7
123166	2000	TU ₅₁	16.3	X	195.55690	38.24293	221.28855	1.55085	0.1547208	0.26355413	2.4092923	20	—	—
123167	2000	TY ₅₃	16.5	X	286.16291	227.14680	116.58679	7.10481	0.3108084	0.23824706	2.5770194	20	5 12.5	20.1
123168	2000	TC ₅₄	16.2	X	222.77747	203.19291	37.56107	5.55340	0.1511708	0.26333442	2.4106322	20	—	—
123169	2000	TS ₅₇	15.4	X	45.98263	321.65225	78.35636	10.78673	0.1897119	0.21008788	2.8024340	20	—	—
123170	2000	TA ₅₈	15.2	X	65.59298	226.90155	161.71078	12.62557	0.0956502	0.21042461	2.7994434	20	—	—
123171	2000	TL ₅₈	15.4	X	136.01491	247.69128	115.01702	10.49957	0.1496271	0.21700084	2.7425956	20	1 28.0	19.4
123172	2000	TA ₅₉	16.0	X	270.89996	281.36536	121.97956	9.92223	0.1268234	0.24059854	2.5602010	20	8 9.9	19.1
123173	2000	TK ₆₁	15.9	X	215.38675	248.99714	128.82344	11.31681	0.2056045	0.23088169	2.6315384	20	5 1.1	20.5
123174	2000	TU ₆₁	15.4	X	214.54219	356.61347	56.17391	14.32650	0.1424703	0.23442938	2.6049218	20	6 10.9	19.5
123175	2000	TD ₆₃	15.6	X	207.26949	64.85172	289.32615	14.06606	0.1273234	0.22852590	2.6495926	20	3 15.9	20.1
123176	2000	TO ₆₃	15.8	X	56.48445	172.43438	229.56042	3.84091	0.0911112	0.21098879	2.7944508	20	—	—
123177	2000	TD ₆₆	16.3	X	327.01796	53.83916	23.83049	2.18940	0.0439662	0.20280790	2.8691029	20	12 17.8	19.9
123178	2000	TV ₆₆	17.0	X	336.79329	217.78734	130.49427	3.39315	0.1614769	0.24544777	2.5263682	20	9 16.9	19.3
123179	2000	TM ₆₇	15.4	X	133.21898	96.20216	25.90177	28.08633	0.2028768	0.22982384	2.6396073	20	6 22.0	20.3
123180	2000	TP ₆₈	15.7	X	88.87605	320.15048	105.22755	15.46335	0.2013969	0.21783963	2.7355508	20	3 2.2	19.5
123181	2000	UW ₂	15.4	X	286.89139	306.30772	57.29098	1.61855	0.1023652	0.23568438	2.5956663	20	7 11.5	18.4
123182	2000	UY ₃	16.5	X	115.87882	355.70329	334.35723	2.04702	0.1973997	0.26115281	2.4240389	20	—	—
123183	2000	UQ ₄	15.7	X	182.14385	43.82050	35.64772	11.29958	0.1289624	0.23021166	2.6366421	20	6 13.3	19.9
123184	2000	UQ ₆	15.1	X	185.50398	146.43693	238.74215	2.90391	0.2347126	0.22621627	2.6675967	20	4 10.4	19.9
123185	2000	UJ ₇	15.7	X	291.18777	316.61651	71.64786	2.20565	0.2569719	0.18973380	2.9994359	20	7 23.9	19.4
123186	2000	UB ₉	15.6	X	95.67267	343.94268	54.68186	9.38224	0.3012679	0.21408888	2.7674088	20	2 20.6	19.5
123187	2000	UV ₁₀	15.9	X	263.32028	335.12609	32.80513	2.53496	0.0694225	0.23464437	2.6033304	20	6 18.8	19.4
123188	2000	UW ₁₀	15.8	X	218.39940	356.36376	327.91729	5.71907	0.2488647	0.27541973	2.3395878	20	2 20.2	19.9
123189	2000	UP ₁₃	16.1	X	223.46640	339.79834	35.57027	3.05314	0.2339214	0.22968023	2.6407076	20	4 28.9	20.6
123190	2000	UK ₁₄	16.0	X	254.43471	32.23551	15.57150	1.74986	0.1460787	0.23654641	2.5893563	20	7 20.9</	

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Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>		
123201	2000	UK ₂₄	15.8	X	278.26585	275.29991	143.53911	3.33385	0.2147282	0.24143627	2.5542753	20	8 28.1	18.8
123202	2000	UG ₂₅	16.3	X	301.26584	234.18489	90.56801	4.76021	0.2668822	0.23723732	2.5843265	20	5 12.6	19.3
123203	2000	UV ₂₇	15.6	X	252.90733	130.94921	286.92096	9.61325	0.1918717	0.24078206	2.5588999	20	7 24.8	19.2
123204	2000	UX ₂₇	16.3	X	174.30117	94.60161	349.08313	5.04024	0.1510293	0.23193247	2.6235842	20	6 11.9	20.5
123205	2000	UZ ₂₇	15.3	X	101.33242	169.24851	229.49944	11.48267	0.0448161	0.21826654	2.7319827	20	1 13.6	19.1
123206	2000	UA ₂₈	15.8	X	329.28936	353.60797	278.28556	4.74879	0.2552802	0.23647668	2.5898653	20	4 13.1	18.3
123207	2000	UC ₂₈	15.9	X	203.35952	192.52329	220.92337	8.28303	0.0704279	0.23316027	2.6143658	20	6 5.8	19.7
123208	2000	UU ₂₉	15.0	X	304.04085	309.83846	53.09749	28.84275	0.1178564	0.23866485	2.5740111	20	8 21.4	18.8
123209	2000	UV ₃₂	16.2	X	196.19680	219.75477	189.19403	2.83101	0.0988776	0.22872439	2.6480594	20	5 21.9	20.1
123210	2000	UW ₃₄	16.0	X	78.83178	83.27555	245.41638	2.26748	0.1917877	0.25579544	2.4577678	20	—	—
123211	2000	UX ₃₆	15.0	X	332.22354	109.29373	40.38043	8.04905	0.1254979	0.21079755	2.7961407	20	—	—
123212	2000	UY ₃₆	15.8	X	231.24516	199.38635	195.80138	3.29084	0.0637590	0.23259446	2.6186039	20	6 15.3	19.4
123213	2000	UK ₃₇	15.3	X	109.51290	346.72393	48.52648	14.04522	0.1383574	0.21581885	2.7526002	20	2 11.3	19.4
123214	2000	UX ₃₇	15.5	X	279.07909	280.92550	69.77952	1.57452	0.2398429	0.18518296	3.0483772	20	5 21.7	19.7
123215	2000	UG ₃₈	15.2	X	211.03398	313.63602	36.28769	14.13693	0.1930753	0.22560430	2.6724185	20	3 25.9	19.8
123216	2000	UZ ₃₉	16.6	X	256.08172	287.37721	137.51096	0.72794	0.1543823	0.23930937	2.5693874	20	8 13.9	20.0
123217	2000	UF ₄₀	15.2	X	135.98419	50.42080	269.58082	2.64643	0.2804727	0.21268041	2.7796134	20	—	—
123218	2000	UN ₄₀	15.1	X	48.32028	30.16338	58.58362	9.62194	0.1526281	0.21309542	2.7760032	20	1 17.8	18.2
123219	2000	UC ₄₁	15.7	X	188.31447	69.04485	345.85370	1.91545	0.1441678	0.22867838	2.6484146	20	5 19.6	20.0
123220	2000	UR ₄₁	15.2	X	332.05478	52.87880	47.63328	7.35001	0.0712092	0.20423924	2.8556826	20	—	—
123221	2000	UQ ₄₄	15.5	X	85.59240	11.77813	47.37124	13.63937	0.0944611	0.21464440	2.7626318	20	2 2.8	19.3
123222	2000	UX ₄₆	15.3	X	278.87750	317.44446	46.61478	9.75032	0.1463049	0.18462331	3.0545344	20	6 20.7	19.6
123223	2000	UH ₄₇	15.8	X	300.74197	323.05338	50.04525	4.24911	0.1857896	0.23968071	2.5667328	20	8 6.3	18.5
123224	2000	UR ₄₈	16.1	X	228.36519	115.97301	275.95237	1.80099	0.1884684	0.23138788	2.6276992	20	5 26.7	20.3
123225	2000	UV ₄₈	16.0	X	91.02599	273.03539	95.05737	4.92667	0.2056630	0.25584703	2.4574374	20	—	—
123226	2000	UD ₄₉	15.8	X	163.61807	138.76842	191.35433	1.79062	0.1911610	0.26596666	2.3947007	20	1 12.7	19.3
123227	2000	UP ₄₉	15.4	X	81.07214	290.30542	56.44205	5.58931	0.0958745	0.25492414	2.4633648	20	—	—
123228	2000	UE ₅₀	15.4	X	101.54899	239.80391	74.04971	6.95333	0.2837815	0.25629339	2.4545833	20	—	—
123229	2000	UT ₅₂	14.8	X	6.79214	58.40115	53.88742	4.58027	0.0568119	0.20952807	2.8074233	20	—	—
123230	2000	UL ₅₃	15.6	X	215.57956	308.63236	129.38596	2.90963	0.1883484	0.23419140	2.6066862	20	7 12.5	19.6
123231	2000	UC ₅₅	15.9	X	217.35790	325.54096	73.62374	6.51840	0.2048501	0.23066401	2.6331938	20	5 25.1	20.2
123232	2000	UQ ₅₆	15.8	X	55.52912	159.00534	249.83677	8.15770	0.1478118	0.21183827	2.7869752	20	—	—
123233	2000	US ₅₆	15.1	X	181.17504	245.76154	235.77657	12.35501	0.0873694	0.23956633	2.5675497	20	8 4.1	19.2
123234	2000	UO ₅₇	16.0	X	226.19750	124.88468	287.31367	3.51534	0.0901094	0.23561606	2.5961680	20	6 29.2	19.8
123235	2000	UP ₅₇	15.5	X	137.16963	347.51273	316.51980	3.48975	0.0526752	0.20950345	2.8076433	20	—	—
123236	2000	UH ₅₇	15.8	X	220.01857	79.80152	339.19182	4.29261	0.2095253	0.23427059	2.6060988	20	6 21.0	20.0
123237	2000	UN ₅₈	15.2	X	53.01133	256.21164	229.37643	13.54202	0.3686621	0.21640264	2.7476474	20	4 17.5	18.0
123238	2000	UH ₅₈	15.6	X	272.49136	173.80695	278.85906	3.32307	0.1189706	0.24659973	2.5184944	20	10 20.6	18.5
123239	2000	UQ ₅₈	15.7	X	84.87780	48.23628	348.44362	4.32235	0.1680695	0.21370904	2.7706869	20	1 10.6	19.1
123240	2000	UU ₅₉	15.9	X	263.97228	318.22710	344.46726	5.91820	0.2515252	0.27967411	2.3158008	20	3 1.2	19.7
123241	2000	UL ₆₀	16.0	X	274.79198	79.26876	308.76941	2.07534	0.1454490	0.23885858	2.5726190	20	7 21.1	19.0
123242	2000	US ₆₁	16.2	X	250.42136	58.10384	336.68522	3.30357	0.3008343	0.23591309	2.5939884	20	6 9.5	20.5
123243	2000	UW ₆₃	16.3	X	244.04719	17.90299	339.43264	4.43471	0.2199847	0.23182067	2.6244277	20	4 23.6	20.5
123244	2000	UY ₆₄	16.0	X	126.94078	143.99162	241.14584	4.09732	0.1365404	0.21868999	2.7284549	20	2 10.7	20.1
123245	2000	UC ₆₅	15.4	X	185.12682	313.25101	258.50696	5.59953	0.0952970	0.25251313	2.4790202	20	12 9.1	18.7
123246	2000	UO ₆₅	15.6	X	58.41786	206.21499	243.29628	3.94311	0.0623870	0.21682650	2.7440655	20	1 24.0	19.0
123247	2000	UL ₆₇	15.3	X	353.28147	252.63799	232.92347	12.11422	0.1650207	0.21035625	2.8000499	20	—	—
123248	2000	UT ₆₇	15.4	X	96.88764	257.67240	242.57597	11.07476	0.2000306	0.22586622	2.6703521	20	6 11.7	19.2
123249	2000	UK ₆₈	16.0	X	280.09792	51.56437	311.21299	9.30794	0.1379097	0.23625853	2.5914592	20	6 24.9	19.4
123250	2000	UN ₆₈	15.5	X	105.31534	36.43019	327.97808	3.21495	0.1108640	0.21291661	2.7775572	20	—	—
123251	2000	UP ₆₈	15.7	X	174.55387	12.25752	14.67447	2.67464	0.1177187	0.22446344	2.6814661	20	4 1.6	19.6
123252	2000	UQ ₆₉	15.1	X	312.85466	119.52935	253.95846	7.89716	0.1107423	0.19131744	2.9828610	20	8 25.5	19.0
123253	2000	UC ₇₀	15.4	X	114.69326	76.31646	264.35727	5.81214	0.1377705	0.21050679	2.7987148	20	—	—
123254	2000	UT ₇₀	15.7	X	268.42023	20.77014	12.73708	4.60623	0.2189128	0.23778266	2.5803736	20	7 8.8	19.3
123255	2000	UM ₇₁	15.4	X	251.51454	310.83797	31.40104	14.59375	0.1543060	0.23001419	2.6381509	20	4 20.2	19.4
123256	2000	US ₇₃	15.2	X	155.99341	100.73936	263.44238	0.89986	0.0926378	0.21863190	2.7289382	20	2 13.1	19.1
123257	2000	UT ₇₃	15.6	X	206.39795	357.96963	35.55121	3.73316	0.1849419	0.22944986	2.6424748	20	5 8.6	20.0
123258	2000	UO ₇₄	16.0	X	83.28185	22.83059	12.03778	3.36104	0.0980085	0.21293309	2.7774139	20	—	—
123259	2000	UV ₇₄	15.5	X	203.32071	66.66196	22.10262	3.57975	0.1496843	0.18386859	3.0628873	20	7 15.7	20.4
123260	2000	UR ₇₆	16.1	X	168.65703	32.04277	53.37878	3.01724	0.1825134	0.23089719	2.6314207	20	6 9.5	20.5
123261	2000	UO ₇₇	15.8	X	334.76064	224.93768	87.20427	5.57554	0.1369633	0.23741112	2.5830651	20	7 15.8	18.3
123262	2000	UH ₇₈	15.6	X	90.12957	27.82410	343.83840	1.01907	0.1655655	0.20991973	2.8039303	20	—	—
123263	2000	UO ₇₈	15.1	X	155.15879	164.29268	238.27323	14.05225	0.1173264	0.22215232	2.7000314	20	3 27.9	19.5
123264	2000	US ₇₈	15.0	X	139.83350	100.86371	27.67727	0.88720	0.1192194	0.17817387	3.1278077	20	7 2.9	19.8
123265	2000	UA ₈₀	14.3	X	99.48742	205.35168	60.72428	14.75071	0.1239936	0.24458595	2.5322993	20	11 17.9	17.9
123266	2000	UY ₈₁	16.0	X	82.68113	230.81710	155.12339	4.87560	0.0780990	0.21227649	2.7831382	20	—	—
123267	2000	UK ₈₂	14.6	X	96.16270	215.31529	242.51018	9.05557	0.2090247	0.21794167	2.7346969	20	4 15.9	18.5
123268	2000	UQ ₈₂	15.3	X	77.19529	220.23399	28.01932	16.34351	0.0798481	0.24556028	2.5255965	20	9 30.7	18.8
123269	2000	UT ₈₄	16.2	X	230.57902	291.71218	110.63390	3.07658	0.1540218	0.23399676	2.6081315	20	6 14.6	20.1
123270	2000	UB ₈₅	16.0	X	261.84408	283.44624	87.49350	2.19944	0.1655613	0.2351				

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>		
123281	2000	UY ₉₆	15.4	X	31.45318	198.05874	270.38841	5.32447	0.0514078	0.21376198	2.7702294	20	1 10.5	19.0
123282	2000	US ₉₇	15.3	X	143.09071	359.33208	13.98094	9.28850	0.1621829	0.21787929	2.7352189	20	2 21.2	19.6
123283	2000	UH ₉₈	15.7	X	183.41726	57.80194	345.32900	3.01320	0.1799585	0.22684949	2.6626301	20	4 29.8	20.2
123284	2000	UZ ₉₈	15.7	X	132.23307	164.27543	288.93297	7.00909	0.1326158	0.22478241	2.6789288	20	5 10.8	19.9
123285	2000	UE ₉₉	15.5	X	121.94927	334.01537	10.43210	7.66603	0.1160636	0.26102879	2.4248066	20	—	—
123286	2000	UG ₉₉	16.0	X	324.05441	25.68364	326.81330	3.97282	0.2801913	0.24201547	2.5501983	20	8 12.3	17.4
123287	2000	UK ₉₉	16.0	X	109.00472	38.86333	345.22785	4.64102	0.1284190	0.21382955	2.7696458	20	1 21.7	19.8
123288	2000	UV ₉₉	16.0	X	252.68501	302.09404	353.12707	3.10755	0.1973699	0.27417884	2.3466416	20	2 15.9	19.6
123289	2000	UC ₁₀₀	15.9	X	286.39476	41.07671	298.83992	3.59319	0.2442319	0.23499940	2.6007077	20	5 14.1	19.3
123290	Manoa		14.9	X	12.22962	255.36149	33.93796	15.93640	0.1372733	0.23723858	2.5843173	20	9 3.7	18.0
123291	2000	UH ₁₀₁	15.3	X	113.52935	323.93339	30.27544	9.18378	0.2857703	0.21215653	2.7841873	20	1 12.6	19.5
123292	2000	UT ₁₀₁	16.0	X	88.23919	98.04258	314.14561	5.04700	0.1270367	0.21461991	2.7628419	20	1 28.6	19.5
123293	2000	JU ₁₀₂	15.1	X	54.12486	152.29971	25.61833	14.14858	0.1817647	0.22510620	2.6763593	20	5 29.4	18.4
123294	2000	UX ₁₀₂	15.8	X	106.59790	30.34456	346.52166	2.98304	0.1054920	0.21215407	2.7842088	20	1 5.9	19.5
123295	2000	UH ₁₀₃	14.8	X	265.28942	144.63218	257.99085	13.14021	0.1034167	0.23662079	2.5888136	20	7 29.7	18.5
123296	2000	UJ ₁₀₄	15.2	X	260.47724	94.05842	255.33847	13.92176	0.2316414	0.23102455	2.6304535	20	4 27.5	19.5
123297	2000	UC ₁₀₅	15.5	X	263.27014	6.84362	47.43459	16.50564	0.1188537	0.24196896	2.5505251	20	8 24.3	19.2
123298	2000	UB ₁₁₀	15.2	X	125.39454	330.84528	82.93154	14.45149	0.1531003	0.21874027	2.7280368	20	3 27.1	19.5
123299	2000	UG ₁₁₁	15.7	X	79.99703	287.92854	156.85566	3.25843	0.1735215	0.21618132	2.7495225	20	3 5.8	19.0
123300	2000	UF ₁₁₂	15.7	X	8.90203	224.79940	153.41925	2.67549	0.0703005	0.20032257	2.8927848	20	12 2.9	19.4
123301	2000	UK ₁₁₂	15.9	X	143.80361	255.92933	225.94449	8.20329	0.1354871	0.23216986	2.6217956	20	6 30.2	20.0
123302	2000	UV ₁₁₂	15.3	X	345.30406	133.84016	57.91452	11.40675	0.1847763	0.21535463	2.7565544	20	2 10.7	18.6
123303	2000	VT	16.1	X	305.41648	95.75744	62.92941	3.44787	0.0396362	0.20880886	2.8138662	20	—	—
123304	2000	VO	16.1	X	130.78122	328.62302	100.47502	24.00704	0.0927969	0.36866749	1.9262507	20	4 10.9	19.0
123305	2000	VZ ₁	17.0	X	174.25271	85.88975	52.25045	25.43666	0.0253000	0.38853798	1.8600034	20	10 1.7	19.6
123306	2000	VC ₃	17.1	X	73.63582	154.98615	138.01124	0.89880	0.1307405	0.24816624	2.5078848	20	11 25.4	20.8
123307	2000	VZ ₄	16.0	X	184.84433	54.63668	42.46970	3.11379	0.1995870	0.23278079	2.6172063	20	7 8.9	20.5
123308	2000	VT ₆	16.2	X	205.54182	225.07875	53.82463	5.06223	0.1049025	0.26506226	2.4001448	20	—	—
123309	2000	VV ₆	15.0	X	298.09279	49.45524	49.48803	7.29705	0.0965134	0.19993255	2.8965457	20	11 29.8	18.5
123310	2000	VF ₇	15.5	X	44.08340	84.04226	37.03427	7.59560	0.2295369	0.21574812	2.7532017	20	3 4.4	18.1
123311	2000	VV ₇	15.3	X	217.14762	10.70082	15.67284	1.87746	0.1230273	0.17970936	3.1099656	20	5 13.7	20.1
123312	2000	VY ₇	15.9	X	351.04833	78.88454	341.01859	1.24673	0.0925650	0.25278586	2.4772369	20	—	—
123313	2000	VZ ₇	15.0	X	188.86276	242.15017	38.22567	9.36041	0.0925016	0.21207387	2.7849107	20	—	—
123314	2000	VC ₈	15.5	X	254.53459	200.88991	239.06241	1.34480	0.1005954	0.19104062	2.9857417	20	9 2.9	19.7
123315	2000	VT ₈	15.9	X	245.02763	205.08629	167.76474	2.24591	0.0745274	0.23224391	2.6212382	20	6 1.4	19.4
123316	2000	VR ₉	15.5	X	229.74248	294.92898	21.94781	2.14049	0.0774711	0.22272708	2.6953844	20	3 3.9	19.3
123317	2000	VU ₉	15.4	X	14.57134	103.86153	44.07943	5.45040	0.0980415	0.21657938	2.7461524	20	2 6.9	18.6
123318	2000	VC ₁₀	15.3	X	34.13527	98.39991	45.89722	14.80682	0.1971484	0.21728851	2.7401744	20	3 18.1	18.2
123319	2000	VN ₁₀	15.9	X	264.66010	183.27689	195.87337	3.41170	0.2156189	0.23614230	2.5923095	20	6 14.5	19.6
123320	2000	VP ₁₅	15.9	X	172.37568	172.97447	158.94730	3.45544	0.2129797	0.26820323	2.3813691	20	1 23.8	19.6
123321	2000	VF ₁₇	16.1	X	168.30945	291.37327	165.28556	4.05877	0.1476856	0.22935098	2.6432342	20	6 23.1	20.3
123322	2000	VS ₁₉	15.5	X	25.04384	25.21851	217.59057	9.92154	0.0479146	0.23305416	2.6151593	20	6 28.2	18.9
123323	2000	UV ₁₉	15.9	X	142.95667	274.76560	219.56916	12.13161	0.1448018	0.23161050	2.6260151	20	7 13.9	20.3
123324	2000	VA ₂₀	15.9	X	154.85809	197.79898	204.59801	2.14779	0.0638986	0.22312442	2.6921834	20	3 27.5	19.7
123325	2000	VE ₂₀	15.4	X	130.27813	104.67784	42.35859	12.47340	0.1996496	0.23042383	2.6350233	20	7 27.5	19.9
123326	2000	VE ₂₂	15.5	X	115.81239	247.95922	233.42026	10.06311	0.2129630	0.22537519	2.6742293	20	6 8.7	19.8
123327	2000	VT ₂₃	14.6	X	27.92043	225.90628	46.22176	15.19118	0.0617703	0.23722267	2.5844328	20	8 25.4	18.1
123328	2000	VL ₃₀	15.6	X	288.25687	291.53086	132.57132	5.25918	0.0575265	0.24276287	2.5449615	20	10 16.8	18.7
123329	2000	VC ₃₁	15.2	X	163.32322	7.74678	52.56415	12.65270	0.1696845	0.22493076	2.6777508	20	5 5.1	19.5
123330	2000	VA ₃₈	15.0	X	98.38540	342.19221	89.66473	12.86243	0.2911807	0.21462556	2.7627935	20	4 5.9	19.3
123331	2000	VC ₄₀	16.1	X	162.92969	105.36436	275.39844	5.32998	0.1380146	0.22363504	2.6880838	20	3 11.8	20.5
123332	2000	VQ ₄₁	15.5	X	339.81902	287.96008	242.42725	4.02165	0.0877542	0.21565923	2.7539583	20	1 12.3	18.9
123333	2000	VF ₄₂	16.1	X	230.12982	66.42034	338.58517	2.17785	0.0976283	0.23384935	2.6092274	20	6 23.3	19.8
123334	2000	VY ₄₂	15.6	X	209.89372	98.25966	276.02732	1.93564	0.1147724	0.22754438	2.6572065	20	4 20.0	19.8
123335	2000	VQ ₄₃	15.5	X	123.79824	243.42097	229.97496	13.86721	0.1691353	0.22661109	2.6644972	20	6 2.3	19.6
123336	2000	VD ₄₅	15.4	X	105.01038	67.34026	55.46454	7.79401	0.1519569	0.22514032	2.6760889	20	5 22.7	19.1
123337	2000	VE ₄₆	15.6	X	125.83012	254.98460	247.54592	11.65226	0.2137749	0.22903156	2.6456913	20	7 12.7	20.0
123338	2000	VT ₄₇	16.6	X	226.12490	244.06710	129.61197	2.13849	0.2229149	0.23053210	2.6341982	20	4 30.5	21.1
123339	2000	VY ₅₂	15.0	X	197.14834	82.69315	321.82334	5.16867	0.1186520	0.22863963	2.6487138	20	5 14.5	19.1
123340	2000	VW ₅₃	15.7	X	237.36468	97.74073	346.78614	3.39556	0.1764075	0.23798961	2.5788775	20	8 14.9	19.4
123341	2000	VQ ₅₄	15.7	X	168.04795	53.77508	314.73532	4.13497	0.1309411	0.22026310	2.7154484	20	3 3.4	19.8
123342	2000	VS ₅₄	15.8	X	71.08298	68.49032	20.80335	9.39352	0.1932113	0.21512288	2.7585338	20	3 5.0	19.1
123343	2000	VT ₅₇	14.3	X	172.13151	102.43139	47.48335	9.90125	0.0945864	0.18558048	3.0440224	20	9 4.8	19.1
123344	2000	VA ₅₈	15.6	X	91.37422	65.48336	350.02362	5.10089	0.1061994	0.21507700	2.7589261	20	2 4.1	19.1
123345	2000	VF ₆₀	15.5	X	184.02110	72.79362	38.83578	12.56717	0.1330420	0.23414582	2.6070245	20	8 1.7	19.8
123346	2000	VG ₆₀	16.1	X	73.37612	51.64988	174.64476	3.43972	0.0375946	0.24360890	2.5390657	20	10 8.2	19.3
123347	2000	VP ₆₀	15.4	X	10.86132	225.03888	212.40513	1.49268	0.0978767	0.20178075	2.8788314	20	—	—
123348	2000	VY ₆₀	15.1	X	255.99601	249.71501	68.80419	2.42410	0.1539353	0.17716029	3.1397263	20	3 30.4	20.0
123349	2000	VP ₆₁	14.9	X	102.11817	45.17255	19.13268	34.32063	0.3017506	0.21505943	2.7590764	20	4 1.2	19.1
123350	2000	VQ ₁	15.1	X	141.55695	324.42209	65.96658							

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>		
123361	2000	WK ₂₈	15.0	X	178.22011	336.40283	81.09826	15.04211	0.2356146	0.22726897	2.6593528	20	5 17.5	19.7
123362	2000	WM ₂₈	15.2	X	175.05459	323.19481	83.39689	15.43830	0.1349758	0.22580861	2.6708062	20	5 2.7	19.6
123363	2000	WO ₃₀	15.6	X	114.61566	237.65404	199.78682	8.02154	0.1139794	0.22025764	2.7154932	20	3 31.1	19.5
123364	2000	WN ₃₁	14.8	X	245.72841	200.26199	207.63413	10.68379	0.0866053	0.18311231	3.0713149	20	7 12.7	19.4
123365	2000	WU ₃₁	15.1	X	54.52778	31.44943	80.94154	17.51288	0.1410191	0.21494996	2.7600131	20	3 7.1	18.7
123366	2000	WE ₃₂	15.0	X	230.12632	252.99722	92.17960	14.13856	0.1987651	0.22612994	2.6682755	20	4 7.3	19.6
123367	2000	WK ₃₂	15.3	X	89.80961	299.12665	182.92639	6.29116	0.2131669	0.21999507	2.7176535	20	5 13.9	19.1
123368	2000	WX ₃₂	14.8	X	172.32257	45.88904	92.55036	15.41461	0.1349769	0.18372510	3.0644819	20	8 20.3	19.9
123369	2000	WV ₃₅	14.8	X	97.19502	325.85491	93.00381	14.81563	0.1340259	0.21427324	2.7658211	20	2 24.2	18.7
123370	2000	WZ ₃₅	15.7	X	70.37908	287.97919	145.21587	5.62441	0.1522504	0.21189354	2.7864905	20	2 1.8	18.8
123371	2000	WD ₃₆	15.2	X	216.71967	192.50956	229.88084	13.32044	0.0811754	0.23055079	2.6340558	20	6 30.3	19.2
123372	2000	WA ₃₇	14.9	X	154.69373	167.08046	230.89698	11.39396	0.1379041	0.21943725	2.7222572	20	3 24.4	19.3
123373	2000	WV ₃₉	16.1	X	299.06055	230.29997	154.53520	4.16057	0.2179989	0.24008066	2.5638814	20	8 13.2	18.6
123374	2000	WE ₄₄	15.3	X	26.65670	69.09196	65.17110	10.25550	0.1652416	0.21491533	2.7603095	20	2 11.3	18.3
123375	2000	WU ₄₄	15.5	X	307.90288	246.42404	169.81237	2.16490	0.0996640	0.19474753	2.9477325	20	10 20.2	18.9
123376	2000	WA ₄₄	15.4	X	229.19317	28.14130	89.27268	3.15848	0.1005727	0.19113635	2.9847447	20	9 22.2	19.7
123377	2000	WA ₄₅	16.1	X	241.87692	280.60990	108.77699	3.10989	0.1384204	0.23271957	2.6176653	20	6 11.7	19.8
123378	2000	WU ₅₁	16.5	X	47.08685	150.95754	56.56336	1.99790	0.0713520	0.22817698	2.6522930	20	6 15.8	19.7
123379	2000	WJ ₅₃	15.9	X	253.35845	186.48596	236.85605	1.47637	0.0670066	0.18674700	3.0313329	20	8 15.5	20.2
123380	2000	WV ₅₃	16.3	X	162.08162	194.84740	67.68046	3.15062	0.1700021	0.25348373	2.4726880	20	—	—
123381	2000	WK ₅₇	14.5	X	152.63984	51.21825	82.13694	14.71397	0.1488267	0.22992397	2.6388409	20	7 26.8	18.8
123382	2000	WR ₅₈	15.2	X	150.47438	157.38323	255.94429	11.18024	0.1751489	0.22049983	2.7135045	20	4 10.4	19.8
123383	2000	WV ₅₈	14.8	X	228.05305	311.82692	90.86106	10.17094	0.1702553	0.22982923	2.6395661	20	6 11.2	18.8
123384	2000	WG ₆₀	15.1	X	118.89946	341.09515	98.37915	10.64857	0.1547407	0.21868358	2.7285060	20	4 18.7	19.3
123385	2000	WO ₆₂	16.5	X	224.35316	107.25022	260.45462	18.49083	0.0677398	0.37533959	1.9031644	20	4 18.9	19.1
123386	2000	WV ₆₂	14.5	X	23.09499	245.67380	139.23340	16.24419	0.2631526	0.20264050	2.8706829	20	—	—
123387	2000	WO ₆₆	15.1	X	236.97358	105.97062	257.25662	14.88526	0.2312020	0.22931874	2.6434820	20	4 22.3	19.6
123388	2000	WR ₆₉	15.3	X	45.33286	210.62187	258.88668	10.64214	0.1246409	0.21564584	2.7540722	20	2 1.3	18.6
123389	2000	WG ₇₁	15.3	X	131.22098	109.52881	301.55172	6.63137	0.0868402	0.22040110	2.7143148	20	3 11.2	19.3
123390	2000	WT ₇₁	15.6	X	201.43191	293.82972	323.41572	6.23899	0.1087429	0.25949698	2.4345104	20	—	—
123391	2000	WX ₇₁	15.3	X	182.78821	197.55406	263.34125	9.60949	0.1510866	0.23221405	2.6214630	20	7 11.3	19.5
123392	2000	WF ₇₂	15.3	X	325.75250	112.71764	284.33103	7.22407	0.0263667	0.19537119	2.9414561	20	10 21.1	19.4
123393	2000	WH ₇₂	15.0	X	305.49647	308.84498	258.47916	14.45323	0.0928259	0.21527253	2.7572553	20	1 10.9	19.0
123394	2000	WU ₇₃	16.1	X	179.93331	117.00674	329.07317	3.66771	0.0724514	0.23090825	2.6313367	20	6 21.6	19.9
123395	2000	WA ₇₅	15.8	X	242.73207	19.71802	1.96589	3.64835	0.0490413	0.23141865	2.6274662	20	6 13.0	19.3
123396	2000	WF ₇₅	14.7	X	238.50959	170.90931	32.45530	12.93102	0.1127469	0.20451916	2.8530763	20	—	—
123397	2000	WB ₇₈	15.7	X	318.50912	24.20885	302.82111	3.93032	0.2289803	0.23721758	2.5844698	20	6 22.6	18.0
123398	2000	WL ₇₉	15.5	X	11.25754	311.57708	1.83557	2.21522	0.0974587	0.24051171	2.5612431	20	9 22.9	18.3
123399	2000	WP ₈₀	15.8	X	324.00692	314.68041	13.86667	3.89950	0.1795138	0.23689066	2.5868471	20	7 15.4	18.2
123400	2000	WY ₈₀	15.7	X	153.79244	17.19537	22.73613	3.81172	0.1828018	0.22146223	2.7056374	20	4 1.7	19.9
123401	2000	WM ₈₃	15.7	X	333.88472	16.32934	277.01688	4.91095	0.0877666	0.23274520	2.6174731	20	6 19.1	18.8
123402	2000	WS ₈₃	15.5	X	157.85065	80.21236	288.34723	5.01261	0.0379132	0.21769659	2.7367490	20	2 14.5	19.3
123403	2000	WH ₈₆	15.5	X	199.32593	353.06681	33.47405	2.39608	0.0964615	0.22306118	2.6926923	20	4 26.1	19.5
123404	2000	WS ₈₈	15.0	X	71.24576	145.42482	318.69434	11.82693	0.2351522	0.21194006	2.7860828	20	3 22.5	18.5
123405	2000	WD ₉₀	14.8	X	326.58135	223.41960	62.04235	14.38874	0.0839537	0.22854812	2.6494208	20	5 25.7	17.9
123406	2000	WJ ₉₀	15.6	X	78.04909	0.71081	68.30882	6.80010	0.0957550	0.21323540	2.7747282	20	2 2.5	19.1
123407	2000	WG ₉₄	15.4	X	192.63345	95.19600	263.16066	7.00351	0.0261094	0.21898418	2.7260107	20	3 10.9	19.5
123408	2000	WZ ₉₄	15.2	X	213.46236	20.70378	79.39833	4.16516	0.0908031	0.18425576	3.0585951	20	8 14.1	19.8
123409	2000	WJ ₉₅	14.2	X	247.77481	48.57299	68.00952	10.85846	0.0289582	0.19194396	2.9763666	20	10 25.6	18.4
123410	2000	WV ₉₆	14.9	X	65.85296	183.22479	257.49447	6.90922	0.1994510	0.21180882	2.7872335	20	2 8.6	18.1
123411	2000	WM ₉₇	14.8	X	194.75811	3.34759	67.73060	3.92001	0.2110020	0.17713568	3.1400171	20	6 13.3	20.1
123412	2000	WZ ₉₇	15.8	X	272.21523	99.78879	272.53183	3.84253	0.3442988	0.23525530	2.5988214	20	5 27.5	19.8
123413	2000	WT ₉₈	14.9	X	109.05591	140.47175	273.50320	10.73239	0.1239605	0.21377952	2.7700779	20	2 21.2	18.9
123414	2000	WM ₉₉	15.1	X	287.45053	58.58104	56.30264	2.62703	0.0881837	0.19693516	2.9258622	20	12 4.7	18.8
123415	2000	WN ₉₉	15.7	X	113.47126	162.76279	268.93088	4.09045	0.1036732	0.21785931	2.7353861	20	3 19.5	19.6
123416	2000	WF ₁₀₀	15.4	X	14.61319	85.33332	286.17233	2.00268	0.1244204	0.24669480	2.5178473	20	12 22.1	18.4
123417	2000	WN ₁₀₃	16.1	X	192.06685	242.25247	174.92891	7.62031	0.1815472	0.22853925	2.6494894	20	5 27.3	20.6
123418	2000	WT ₁₀₃	15.4	X	82.54516	270.23063	213.11501	8.53716	0.1280822	0.22044360	2.7139659	20	4 21.7	18.7
123419	2000	WX ₁₀₃	15.6	X	273.97418	355.38227	77.09362	12.44533	0.0674011	0.24161662	2.5530041	20	10 10.2	19.0
123420	2000	WN ₁₀₅	15.8	X	16.91624	64.23392	252.64904	2.90181	0.1259716	0.24197988	2.5504484	20	10 9.9	18.6
123421	2000	WV ₁₀₅	15.5	X	47.56255	23.70710	63.28917	8.74985	0.1951581	0.21111322	2.7933526	20	1 17.6	18.3
123422	2000	WF ₁₀₆	16.1	X	344.50528	231.47638	93.66413	1.32196	0.1859800	0.23908746	2.5709770	20	8 26.8	18.3
123423	2000	WV ₁₀₇	15.2	X	180.26028	60.89212	277.62368	8.10686	0.1407209	0.21783493	2.7355902	20	2 7.3	19.7
123424	2000	WQ ₁₀₈	15.9	X	160.54710	204.72093	296.59250	6.34594	0.1414051	0.23308285	2.6149447	20	8 10.8	20.0
123425	2000	WM ₁₁₀	16.1	X	240.20111	87.01565	305.67784	3.75123	0.1604014	0.23216411	2.6218388	20	6 11.3	19.9
123426	2000	WE ₁₁₁	15.9	X	214.00038	98.15899	348.57115	4.08333	0.1654712	0.23361122	2.6110003	20	7 25.1	19.9
123427	2000	WX ₁₁₁	15.6	X	137.15524	77.03573	301.29123	5.30301	0.1377368	0.21577340	2.7529867	20	2 14.5	19.7
123428	2000	WJ ₁₁₂	15.9	X	282.77893	10.26088	16.59073	4.56768	0.0761574	0.23670790	2.5881785	20	8 13.3	19.1
123429	2000	WB ₁₁₅	15.5	X	70.92892	124.97681	290.51707	7.55410	0.1185338	0.21004618	2.8028049	20	1 7.1	18.8

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>
123441 2000 <i>WP</i> ₁₂₆	16.3	X	243.41165	193.61444	188.57450	1.59216	0.1152453	0.23119691	2.6291460	20	6 6.6	20.1
123442 2000 <i>WU</i> ₁₂₉	16.2	X	179.59025	76.25773	37.96143	3.47981	0.1269551	0.23336103	2.6128661	20	7 28.3	20.3
123443 2000 <i>WZ</i> ₁₂₉	15.1	X	2.79120	53.99614	346.93931	11.75862	0.1648364	0.19746216	2.9206542	20	—	—
123444 2000 <i>WF</i> ₁₃₁	15.1	X	331.71640	107.66584	229.05579	9.70753	0.0730719	0.18711383	3.0273697	20	8 8.3	19.2
123445 2000 <i>WL</i> ₁₃₁	16.1	X	210.05272	266.50178	119.64981	3.00287	0.1485173	0.22791459	2.6543282	20	5 5.7	20.3
123446 2000 <i>WQ</i> ₁₃₁	15.7	X	282.19277	264.64771	156.44395	9.96776	0.1759688	0.19107875	2.9853445	20	9 5.6	19.5
123447 2000 <i>WZ</i> ₁₃₁	15.5	X	292.33741	24.24878	88.29362	3.29355	0.0176643	0.20094106	2.8868459	20	12 15.7	19.5
123448 2000 <i>WR</i> ₁₃₂	15.6	X	119.12890	18.37074	15.39743	14.88928	0.2179990	0.21704684	2.7422080	20	3 1.4	19.8
123449 2000 <i>WK</i> ₁₃₃	15.8	X	185.57422	335.69751	345.70779	6.98180	0.1284287	0.26811183	2.3819103	20	1 20.3	19.4
123450 2000 <i>WZ</i> ₁₃₃	15.3	X	294.14843	65.22817	286.86728	8.32003	0.2244909	0.23744698	2.5828050	20	6 15.7	18.4
123451 2000 <i>WF</i> ₁₃₄	15.9	X	10.16407	128.64526	298.64986	6.82948	0.1688088	0.20473463	2.8510741	20	—	—
123452 2000 <i>WJ</i> ₁₃₄	15.3	X	175.23181	183.75277	278.06940	11.65170	0.1180504	0.23157103	2.6263135	20	7 6.3	19.3
123453 2000 <i>WF</i> ₁₃₅	14.6	X	280.14298	313.06268	56.22618	15.33181	0.1904087	0.23330742	2.6132664	20	6 23.5	18.1
123454 2000 <i>WS</i> ₁₃₅	15.6	X	246.48107	278.99392	105.86647	13.33102	0.1985512	0.23435155	2.6054985	20	6 5.8	19.7
123455 2000 <i>WF</i> ₁₃₆	15.7	X	181.02599	212.44838	323.56133	2.52447	0.1759335	0.24196014	2.5505872	20	10 12.5	19.8
123456 2000 <i>WO</i> ₁₃₇	15.6	X	337.61039	182.94569	166.96064	7.06731	0.1266082	0.24088586	2.5581647	20	9 18.6	17.9
123457 2000 <i>WN</i> ₁₃₈	15.7	X	108.35402	141.20615	261.30436	1.93979	0.1127650	0.21533691	2.7567056	20	2 8.6	19.5
123458 2000 <i>WW</i> ₁₃₈	16.0	X	80.30203	220.05096	232.83402	6.89996	0.1897543	0.21657898	2.7461559	20	3 16.2	19.5
123459 2000 <i>WQ</i> ₁₃₉	15.9	X	33.12639	44.09972	67.75493	3.56851	0.1438325	0.21289357	2.7777577	20	1 20.1	18.9
123460 2000 <i>WQ</i> ₁₄₁	14.4	X	166.57258	345.61622	59.87352	10.93183	0.2320309	0.22040935	2.7142470	20	4 23.7	19.1
123461 2000 <i>WT</i> ₁₄₂	15.7	X	195.83252	314.18865	140.13781	11.66656	0.1258922	0.23321668	2.6139442	20	7 17.5	19.8
123462 2000 <i>WY</i> ₁₄₂	15.3	X	149.85857	331.41304	134.91100	14.12612	0.1314799	0.22809947	2.6528938	20	6 18.2	19.6
123463 2000 <i>WC</i> ₁₄₃	15.3	X	125.50217	295.51660	161.66160	14.47021	0.0651132	0.22400144	2.6851518	20	5 6.9	19.3
123464 2000 <i>WO</i> ₁₄₄	16.3	X	271.35336	248.90376	169.93460	2.39586	0.2004635	0.23914486	2.5705656	20	8 18.8	19.6
123465 2000 <i>WH</i> ₁₄₅	15.5	X	46.95768	342.40002	117.87205	11.43452	0.1846757	0.21385492	2.7694267	20	1 29.8	18.3
123466 2000 <i>WZ</i> ₁₄₅	15.5	X	193.35744	261.97820	108.82751	11.26659	0.1499323	0.22614858	2.6681289	20	4 5.6	20.0
123467 2000 <i>WZ</i> ₁₄₆	14.8	X	64.42068	324.51420	126.04752	13.69239	0.1236784	0.21500924	2.7590557	20	2 12.6	18.0
123468 2000 <i>WS</i> ₁₄₇	15.8	X	283.73519	275.88529	57.47891	1.59265	0.1715592	0.18142893	3.0902837	20	5 15.2	20.0
123469 2000 <i>WC</i> ₁₄₈	14.4	X	80.32440	85.10028	93.07691	17.33179	0.0712266	0.17363946	3.1820263	20	6 21.8	18.7
123470 2000 <i>WR</i> ₁₄₈	15.8	X	181.94954	287.29730	102.37385	9.95511	0.2701653	0.22643681	2.6658642	20	4 18.9	20.7
123471 2000 <i>WE</i> ₁₄₉	15.2	X	93.05423	323.67260	116.46815	9.93875	0.1352534	0.21736301	2.7395483	20	3 15.7	18.9
123472 2000 <i>WD</i> ₁₅₄	15.6	X	142.67840	83.77817	306.29842	7.75725	0.1843330	0.22007053	2.7170322	20	3 7.3	20.0
123473 2000 <i>WH</i> ₁₅₄	15.7	X	123.91154	60.90097	20.64743	13.31448	0.1243237	0.22245519	2.6975801	20	4 16.8	19.6
123474 2000 <i>WO</i> ₁₅₄	15.4	X	102.44170	52.07005	21.73717	12.37057	0.1586082	0.21822497	2.7323296	20	3 21.9	19.2
123475 2000 <i>WB</i> ₁₅₅	15.3	X	130.04534	74.06709	284.65401	11.47443	0.1437252	0.21460265	2.7629901	20	1 15.3	19.2
123476 2000 <i>WC</i> ₁₅₅	14.5	X	336.63502	216.43686	280.37084	11.54574	0.0963416	0.20947424	2.8079043	20	—	—
123477 2000 <i>WR</i> ₁₆₁	15.1	X	178.82658	277.13252	201.59434	12.47391	0.2209171	0.23199417	2.6231191	20	7 26.8	19.9
123478 2000 <i>WU</i> ₁₆₁	13.9	X	100.06208	92.19527	80.60408	22.74482	0.2640100	0.17785321	3.1315661	20	8 3.5	19.3
123479 2000 <i>WD</i> ₁₆₂	14.4	X	137.04952	122.85190	101.77361	17.73978	0.1340548	0.24338758	2.5406048	20	11 10.1	18.7
123480 2000 <i>WE</i> ₁₆₂	15.1	X	171.00711	238.17022	103.04627	17.32009	0.2481358	0.21838643	2.7309827	20	2 12.5	20.0
123481 2000 <i>WV</i> ₁₆₂	15.6	X	316.20291	234.98412	148.38045	6.89667	0.2619588	0.24274050	2.5451178	20	9 17.1	17.3
123482 2000 <i>WL</i> ₁₆₃	15.5	X	73.77609	12.35343	53.92496	2.79686	0.0557130	0.21308984	2.7760517	20	1 17.6	19.1
123483 2000 <i>WX</i> ₁₆₄	15.6	X	120.69104	333.36977	140.00807	12.15469	0.0752076	0.22525520	2.6751789	20	5 23.1	19.6
123484 2000 <i>WE</i> ₁₆₆	15.8	X	139.49683	285.04834	194.23611	4.03266	0.1358868	0.22800404	2.6536340	20	6 23.1	19.9
123485 2000 <i>WF</i> ₁₆₆	15.9	X	173.59599	327.44949	149.26305	2.71825	0.1298610	0.23237376	2.6202616	20	7 23.9	19.9
123486 2000 <i>WS</i> ₁₆₆	14.8	X	160.51686	172.98795	207.34679	8.04511	0.0848477	0.16991673	3.2283353	20	3 10.6	19.9
123487 2000 <i>WY</i> ₁₆₆	15.4	X	189.17994	225.70952	164.90474	3.04621	0.0874813	0.22566055	2.6719744	20	4 21.5	19.3
123488 2000 <i>WD</i> ₁₇₀	15.8	X	261.12809	49.13061	343.24477	11.92165	0.1435339	0.23633321	2.5909133	20	7 11.0	19.4
123489 2000 <i>WO</i> ₁₇₀	15.7	X	325.28741	340.02242	14.37210	3.41355	0.0709507	0.23942409	2.5685666	20	9 4.0	18.7
123490 2000 <i>WS</i> ₁₇₀	15.6	X	221.24783	321.81347	1.16395	2.42141	0.0691779	0.22060499	2.7126421	20	3 2.6	19.4
123491 2000 <i>WV</i> ₁₇₀	14.9	X	188.29923	19.61742	121.28028	6.74590	0.1111342	0.18850497	3.0124569	20	9 6.8	19.6
123492 2000 <i>WL</i> ₁₇₁	15.6	X	163.83820	253.18877	100.13239	10.25780	0.2178110	0.22102357	2.7092161	20	2 19.3	20.2
123493 2000 <i>WU</i> ₁₇₁	15.3	X	259.67584	290.65751	114.02950	13.77653	0.0944748	0.23772177	2.5808143	20	7 31.8	18.6
123494 2000 <i>WJ</i> ₁₇₃	14.7	X	76.77845	151.71587	283.12190	6.80058	0.2014093	0.21023394	2.8011358	20	2 19.2	18.2
123495 2000 <i>WK</i> ₁₇₃	14.6	X	213.20392	153.79663	278.95483	13.43209	0.1106812	0.17689693	3.1428418	20	7 6.7	19.5
123496 2000 <i>WL</i> ₁₇₅	14.5	X	97.21173	124.90182	97.43677	28.73919	0.1727186	0.23598697	2.5934470	20	10 10.1	19.2
123497 2000 <i>WP</i> ₁₇₅	14.5	X	314.39961	349.10638	124.05152	9.31794	0.1661606	0.20081990	2.8880068	20	—	—
123498 2000 <i>WN</i> ₁₇₈	16.1	X	191.59421	121.27985	11.35523	2.92807	0.1198719	0.23776748	2.5804835	20	9 2.9	19.9
123499 2000 <i>WY</i> ₁₇₈	14.5	X	144.62210	249.97846	258.19704	14.37523	0.1093098	0.17785715	3.1315198	20	7 26.9	19.6
123500 2000 <i>WY</i> ₁₇₉	16.8	X	56.90749	178.95705	173.63470	2.34483	0.2277393	0.25388415	2.4700874	20	—	—
123501 2000 <i>WM</i> ₁₈₀	14.9	X	140.50713	331.04114	90.69655	16.29362	0.1669392	0.22137502	2.7063480	20	4 22.5	19.4
123502 2000 <i>WV</i> ₁₈₀	15.5	X	141.54546	121.13373	271.34832	8.26454	0.2066317	0.22001956	2.7174518	20	3 9.8	20.1
123503 2000 <i>WW</i> ₁₈₀	16.2	X	300.22713	341.07404	2.89443	4.72645	0.2167228	0.23701588	2.5859359	20	6 14.8	19.2
123504 2000 <i>WE</i> ₁₈₁	15.0	X	242.50641	312.32877	231.29780	11.34891	0.1203760	0.20064920	2.8896446	20	12 24.9	19.1
123505 2000 <i>WO</i> ₁₈₁	16.3	X	91.15586	226.48402	105.63796	3.80619	0.1942382	0.25596824	2.4566615	20	—	—
123506 2000 <i>WA</i> ₁₈₂	15.0	X	76.06572	216.46037	118.08210	16.23036	0.2856597	0.20504393	2.8482063	20	—	—
123507 2000 <i>WP</i> ₁₈₂	15.0	X	124.13494	235.11247	113.48345	14.43243	0.2169638	0.21375681	2.7702741	20	1 6.6	19.0
123508 2000 <i>WU</i> ₁₈₂	15.4	X	286.17793	269.61374	105.07869	13.97503	0.2036883	0.24030899	2.5622571	20	7 9.4	18.6
123509 2000 <i>WK</i> ₁₈₃	6.6	X	332.66897	293.62105	185.75401	1.97004	0.0396208	0.00336137	44.1359032	20	12 22.3	22.9
123510 2000 <i>WV</i> ₁₈₄	15.2	X	227.18711	278.65939	100.11081	13.16608	0.2239632	0.23350177	2.6118161	20	5 11.3	19.7
123511 2000 <i>WP</i> ₁₈₅	15.7	X										

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Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>		
123521	2000	<i>XD</i> ₄	14.5	X	315.73494	44.65935	283.11130	13.37151	0.1889920	0.23625375	2.5914942	20	6 24.8	17.1
123522	2000	<i>XA</i> ₅	15.9	X	248.18689	41.31324	347.59444	6.70694	0.1920316	0.23348895	2.6119117	20	6 11.0	19.9
123523	2000	<i>XY</i> ₇	15.2	X	136.35750	41.17205	10.36131	7.45116	0.3254952	0.21893702	2.7264022	20	4 9.7	20.0
123524	2000	<i>XW</i> ₉	15.2	X	218.78477	299.05487	40.29382	11.54514	0.1556002	0.21866667	2.7286488	20	3 21.2	19.7
123525	2000	<i>XB</i> ₁₀	14.3	X	89.05919	145.86504	83.95575	25.10003	0.1610672	0.17996279	3.1070452	20	10 1.9	19.6
123526	2000	<i>XO</i> ₁₂	15.1	X	147.17876	237.24657	340.12743	12.53692	0.1169856	0.24060903	2.5601266	20	10 28.9	19.2
123527	2000	<i>XQ</i> ₁₂	15.0	X	57.71843	141.80687	52.02948	18.18070	0.0582185	0.22472520	2.6793834	20	6 7.9	18.6
123528	2000	<i>XZ</i> ₁₂	15.6	X	185.40825	86.31677	298.99245	5.19132	0.1378794	0.22284075	2.6944676	20	4 7.9	20.0
123529	2000	<i>XA</i> ₁₃	15.0	X	247.51734	46.21668	314.96296	13.42573	0.2254010	0.22852823	2.6495745	20	4 27.0	19.6
123530	2000	<i>XL</i> ₁₃	14.6	X	276.14164	192.13830	6.53213	10.08389	0.1958451	0.19829293	2.9124908	20	—	—
123531	2000	<i>XT</i> ₁₃	15.7	X	164.55142	127.07657	344.72730	22.92602	0.1183441	0.37537598	1.9032320	20	7 25.2	18.6
123532	2000	<i>XZ</i> ₁₃	16.5	X	176.90281	24.01569	86.05814	3.43416	0.0816939	0.23077717	2.6323330	20	7 20.1	20.2
123533	2000	<i>XX</i> ₁₅	15.0	X	197.21503	75.49361	310.01572	14.26943	0.0658749	0.22673425	2.6635322	20	4 15.5	19.3
123534	2000	<i>XD</i> ₁₆	15.7	X	92.92188	67.72165	343.74829	12.10132	0.2021876	0.21486981	2.7606994	20	2 16.4	19.3
123535	2000	<i>XF</i> ₁₆	15.0	X	76.87354	136.80548	357.09982	12.74679	0.1106747	0.22229421	2.6988823	20	4 20.4	18.7
123536	2000	<i>XU</i> ₁₇	15.1	X	60.62014	97.55469	322.51771	11.68203	0.1566094	0.21072365	2.7967944	20	1 1.9	18.4
123537	2000	<i>XE</i> ₁₈	15.2	X	187.64145	353.64972	28.98437	16.82873	0.2049332	0.22458273	2.6850165	20	4 11.4	19.7
123538	2000	<i>XR</i> ₁₉	15.2	X	241.08999	20.30927	10.43463	11.90206	0.1661025	0.23175927	2.6248912	20	6 7.3	19.4
123539	2000	<i>XV</i> ₁₉	14.9	X	332.41575	356.23825	29.75659	15.86743	0.1252858	0.19279222	2.9676298	20	10 19.4	18.1
123540	2000	<i>XN</i> ₂₀	15.5	X	128.14857	43.54889	16.65548	12.21184	0.2251355	0.21921339	2.7241101	20	4 6.1	19.8
123541	2000	<i>XS</i> ₂₀	15.4	X	176.59845	157.77096	6.53085	9.21829	0.0966410	0.23887319	2.5725142	20	9 28.5	19.0
123542	2000	<i>XM</i> ₂₁	15.7	X	128.94224	336.46255	0.12494	6.11733	0.2085030	0.26091918	2.4254857	20	—	—
123543	2000	<i>XG</i> ₂₂	15.5	X	70.29647	129.15051	306.67604	8.06495	0.1419767	0.21262132	2.7801283	20	2 3.5	18.7
123544	2000	<i>XK</i> ₂₂	14.8	X	251.11010	323.56497	43.08655	15.29830	0.0981380	0.22947725	2.6422645	20	5 25.6	18.6
123545	2000	<i>XN</i> ₂₂	15.0	X	24.70703	198.79254	300.69719	8.17030	0.1027750	0.21373735	2.7699550	20	2 8.9	18.3
123546	2000	<i>XK</i> ₂₃	15.0	X	48.59443	175.53594	335.86179	11.95470	0.1588407	0.21893748	2.7263983	20	4 6.3	18.2
123547	2000	<i>XS</i> ₂₃	14.9	X	315.22875	326.31291	26.24454	11.64766	0.1474558	0.23740381	2.5831181	20	8 12.7	17.8
123548	2000	<i>XT</i> ₂₄	14.9	X	221.22861	144.59118	305.51294	15.79378	0.1201197	0.18375776	3.0641187	20	8 4.6	19.6
123549	2000	<i>XF</i> ₂₅	14.9	X	299.83913	309.57846	38.52153	12.67498	0.1943516	0.23433948	2.6055880	20	6 23.7	18.1
123550	2000	<i>XK</i> ₂₅	15.3	X	230.25244	53.08355	332.57103	11.20853	0.2129417	0.22949013	2.6421656	20	5 15.2	19.8
123551	2000	<i>XU</i> ₂₆	16.1	X	74.64871	122.57516	305.49288	12.41549	0.2313467	0.21173608	2.7878719	20	2 11.9	19.3
123552	2000	<i>XD</i> ₂₉	14.1	X	189.77417	337.97671	62.49387	14.76828	0.1550821	0.17259356	3.1948685	20	5 6.9	19.3
123553	2000	<i>XN</i> ₂₉	14.7	X	100.63451	150.47532	332.20573	12.58472	0.1392675	0.21998073	2.7177716	20	5 11.2	18.8
123554	2000	<i>XL</i> ₃₀	15.6	X	74.62894	82.89610	18.52662	7.62245	0.1898121	0.21552602	2.7550929	20	3 23.7	18.8
123555	2000	<i>XP</i> ₃₀	15.0	X	306.84463	7.76341	37.84192	14.57815	0.0954598	0.24182098	2.5515656	20	10 17.3	17.9
123556	2000	<i>XW</i> ₃₀	16.1	X	195.32144	41.75069	8.65171	6.67189	0.2159865	0.22746279	2.6578419	20	5 17.9	20.7
123557	2000	<i>XJ</i> ₃₂	15.2	X	112.64640	23.68206	354.28325	7.72859	0.2371378	0.21179457	2.7873586	20	2 3.7	19.2
123558	2000	<i>XD</i> ₃₃	13.7	X	63.21509	105.76160	74.82774	19.08913	0.1276723	0.17045433	3.2215437	20	6 9.8	18.1
123559	2000	<i>XG</i> ₃₃	15.4	X	77.06128	138.71164	327.66888	11.63467	0.1232372	0.21485471	2.7608287	20	3 17.9	19.0
123560	2000	<i>XT</i> ₃₃	14.8	X	199.38501	109.08793	25.20239	11.65726	0.1291459	0.23511969	2.5998206	20	9 15.7	18.8
123561	2000	<i>XD</i> ₃₄	14.9	X	353.23186	40.69034	51.20739	15.63471	0.1797675	0.20117120	2.8846437	20	—	—
123562	2000	<i>XU</i> ₃₄	14.1	X	166.20174	149.51317	47.56730	11.32025	0.3039801	0.18311150	3.0713240	20	10 19.3	19.7
123563	2000	<i>XY</i> ₃₄	14.8	X	29.48943	60.07759	353.65515	12.75409	0.2367028	0.20193821	2.8773347	20	—	—
123564	2000	<i>XK</i> ₃₅	15.4	X	358.67038	1.79240	45.99199	9.54329	0.1776472	0.19690938	2.9261176	20	—	—
123565	2000	<i>XP</i> ₃₅	14.8	X	120.08521	31.28679	1.58250	11.66513	0.3063192	0.21455114	2.7634323	20	3 7.2	19.2
123566	2000	<i>XR</i> ₃₅	14.8	X	200.33989	60.85479	315.46267	15.41138	0.2082613	0.22680240	2.6629987	20	4 4.1	19.6
123567	2000	<i>XV</i> ₃₅	15.1	X	261.04656	74.36124	322.17178	14.22557	0.0760289	0.23608587	2.5927226	20	7 26.9	18.6
123568	2000	<i>XZ</i> ₃₅	14.5	X	311.18331	5.13431	318.22082	13.35898	0.1745807	0.23520410	2.5991986	20	6 10.9	17.6
123569	2000	<i>XK</i> ₃₆	15.3	X	199.72818	27.64439	336.19260	13.22800	0.1979964	0.22483840	2.6784840	20	3 23.7	19.9
123570	2000	<i>XP</i> ₃₆	15.5	X	58.39385	106.31585	339.24928	12.57713	0.1769081	0.21246060	2.7815302	20	2 4.8	18.5
123571	2000	<i>XV</i> ₃₆	14.8	X	22.88470	350.65494	325.96241	13.29259	0.1391498	0.24219888	2.5489107	20	10 14.9	18.1
123572	2000	<i>XZ</i> ₃₆	15.7	X	252.99362	50.42287	312.87976	12.34449	0.2065711	0.23260868	2.6184971	20	5 8.5	20.1
123573	2000	<i>XG</i> ₃₇	14.6	X	174.07658	71.80052	338.29028	12.36661	0.0861116	0.22491346	2.6778880	20	4 23.4	18.8
123574	2000	<i>XJ</i> ₃₇	15.1	X	39.96212	26.69460	296.99753	14.26263	0.1476101	0.24743331	2.5128348	20	11 25.5	18.7
123575	2000	<i>XA</i> ₃₈	14.5	X	235.82458	347.32996	58.99608	19.18442	0.2646190	0.17875397	3.1210370	20	6 12.0	19.8
123576	2000	<i>XV</i> ₃₈	16.7	X	356.15745	259.71595	294.77097	17.24910	0.0644593	0.36873448	1.9260174	20	2 9.8	18.5
123577	2000	<i>XJ</i> ₃₉	15.1	X	120.80659	81.66445	6.38850	11.82217	0.1331539	0.22025988	2.7154748	20	4 20.6	19.2
123578	2000	<i>XV</i> ₃₉	14.7	X	166.10281	42.93167	28.96071	13.44211	0.1671350	0.22394183	2.6856282	20	5 18.2	19.2
123579	2000	<i>XA</i> ₄₀	14.8	X	168.78832	142.72822	295.75891	21.37241	0.0451570	0.22749049	2.6576262	20	5 28.0	19.0
123580	2000	<i>XK</i> ₄₀	14.7	X	199.67092	62.44026	333.76460	14.43811	0.1101615	0.22706200	2.6609685	20	5 1.9	19.1
123581	2000	<i>XO</i> ₄₀	15.0	X	144.98097	138.38862	303.46547	17.17196	0.0952022	0.22466414	2.6798689	20	5 2.3	19.4
123582	2000	<i>XQ</i> ₄₀	15.0	X	297.43441	41.53879	324.47526	14.66012	0.1338198	0.23695237	2.5863979	20	7 29.6	18.1
123583	2000	<i>XR</i> ₄₀	14.0	X	138.52833	83.19039	304.46484	14.23046	0.2993655	0.21885224	2.7271062	20	3 6.9	18.9
123584	2000	<i>XT</i> ₄₀	14.3	X	329.29363	29.38211	347.41872	13.99888	0.1729446	0.24306966	2.5428196	20	10 7.2	16.8
123585	2000	<i>XD</i> ₄₁	14.8	X	196.13712	89.19193	1.74593	12.86205	0.1535821	0.23116484	2.6293891	20	7 15.9	19.2
123586	2000	<i>XH</i> ₄₁	15.0	X	219.13206	41.50931	332.18294	12.57696	0.1747692	0.22731820	2.6589688	20	4 20.3	19.6
123587	2000	<i>XK</i> ₄₂	15.2	X	235.40931	1.44229	7.56006	13.55594	0.1699721	0.22769514	2.6560334	20	5 1.8	19.5
123588	2000	<i>XM</i> ₄₂	14.9	X	140.58810	34.24552	2.47847	14.11785	0.2139999	0.21782				

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Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>		
123601	2000	YT ₅	15.1	X	338.24403	335.92851	38.85190	13.70150	0.0993666	0.19264500	2.9691414	20	10 16.1	18.7
123602	2000	YG ₇	15.5	X	93.81676	342.73316	90.07523	10.10616	0.1785249	0.21319034	2.7751792	20	3 15.5	19.4
123603	2000	YV ₇	14.0	X	54.17294	237.85888	323.07481	15.42196	0.1670308	0.17256450	3.1952272	20	7 2.5	18.3
123604	2000	YY ₉	15.9	X	281.56353	63.13792	334.50714	1.65711	0.1114899	0.23707603	2.5854985	20	8 19.4	18.7
123605	2000	YU ₁₀	14.9	X	333.48784	233.20789	324.11244	7.34175	0.1752418	0.21053301	2.7984824	20	1 28.1	18.3
123606	2000	YF ₁₁	15.8	X	167.96433	325.83840	85.49024	13.02657	0.1803527	0.22341770	2.6898269	20	5 2.3	20.4
123607	2000	YA ₁₂	14.7	X	189.46004	21.25645	112.25531	19.25109	0.2503599	0.18109822	3.0940448	20	8 25.0	20.2
123608	2000	YC ₁₃	16.1	X	266.33751	5.96720	7.55077	1.95493	0.2513587	0.23396958	2.6083335	20	6 3.6	19.8
123609	2000	YJ ₁₃	14.6	X	339.96546	254.26978	69.26822	9.40514	0.3290837	0.18810947	3.0166779	20	7 30.0	16.8
123610	2000	YV ₁₃	14.9	X	237.99669	153.41466	285.66844	11.76959	0.1688423	0.18207753	3.0829405	20	8 2.1	19.7
123611	2000	YX ₁₄	15.9	X	282.48477	295.93391	104.79301	1.25170	0.0494414	0.23787772	2.5796862	20	9 4.1	19.1
123612	2000	YL ₁₆	15.0	X	211.15009	335.84455	98.03069	6.44597	0.1296773	0.17752692	3.1354021	20	7 5.2	19.9
123613	2000	YQ ₁₇	15.2	X	96.46205	109.83758	296.06540	4.56923	0.0674872	0.21179822	2.7873265	20	1 23.2	18.7
123614	2000	YZ ₁₇	15.3	X	117.01995	26.87627	84.85081	14.72078	0.2105095	0.22436547	2.6822466	20	5 29.8	19.6
123615	2000	YS ₂₀	15.6	X	303.21750	12.44225	0.39807	1.59923	0.0960133	0.23675018	2.5878703	20	8 21.5	18.4
123616	2000	YG ₂₃	17.4	X	105.14495	201.89418	278.87857	1.35948	0.1646497	0.27030819	2.3689901	20	5 21.4	20.4
123617	2000	YK ₂₄	15.3	X	49.09950	249.26300	289.34782	8.04205	0.0841500	0.21877411	2.7277554	20	5 8.8	18.8
123618	2000	YS ₂₅	14.5	X	8.31377	53.42895	284.19953	14.65995	0.2225806	0.24158668	2.5532150	20	11 5.8	17.5
123619	2000	YA ₂₆	15.2	X	343.70845	95.54512	74.18619	8.60164	0.1630729	0.21016626	2.8017371	20	1 9.4	18.6
123620	2000	YP ₂₆	15.1	X	122.97877	329.67863	112.92289	13.57496	0.1829743	0.22097838	2.7095855	20	4 30.7	19.5
123621	2000	YK ₂₇	14.6	X	256.24778	241.16080	121.91900	15.63190	0.0544095	0.17404656	3.1770625	20	6 7.4	19.4
123622	2000	YF ₂₈	15.3	X	192.75895	284.97742	132.05191	13.43562	0.1501494	0.22805083	2.6532710	20	5 30.2	19.8
123623	2000	YJ ₃₁	14.8	X	51.86064	238.17717	49.08730	2.73537	0.1706035	0.18151204	3.0893403	20	10 17.8	19.1
123624	2000	YO ₃₂	16.6	X	280.41569	234.87571	107.65262	24.38163	0.1359017	0.37946720	1.8895275	20	6 3.7	18.7
123625	2000	YQ ₃₆	15.5	X	77.25560	63.51041	110.26297	9.57510	0.0661909	0.22318373	2.6917064	20	6 12.9	19.0
123626	2000	YY ₄₀	15.1	X	273.00754	317.09421	114.39426	2.10921	0.1659478	0.18816771	3.0160554	20	9 7.6	19.2
123627	2000	YA ₄₃	14.5	X	176.30082	315.88931	95.56515	6.59249	0.1108617	0.17134269	3.2103989	20	5 7.3	19.6
123628	2000	YK ₄₄	15.2	X	228.69801	107.32666	285.40499	0.23952	0.2123341	0.17751713	3.1355174	20	5 26.6	20.3
123629	2000	YR ₄₆	14.0	X	280.89732	45.80401	285.80753	25.07792	0.2005352	0.17620132	3.1511080	20	4 28.7	19.1
123630	2000	YU ₄₆	15.2	X	144.25062	347.96947	98.87475	7.79072	0.0596744	0.22150055	2.7053254	20	5 13.8	19.1
123631	2000	YA ₄₇	15.1	X	156.53300	136.87103	288.10449	11.40107	0.0677823	0.22067712	2.7120509	20	4 23.4	19.3
123632	2000	YO ₄₇	15.4	X	91.33191	325.90145	125.03751	10.01841	0.2035694	0.21469408	2.7622056	20	4 7.4	19.3
123633	2000	YT ₄₇	15.7	X	143.31120	65.88909	313.51577	3.75505	0.1310274	0.21367393	2.7709904	20	2 22.1	19.7
123634	2000	YV ₄₇	15.7	X	233.94453	68.61428	48.80424	1.97114	0.2365903	0.18734015	3.0249310	20	9 10.6	20.4
123635	2000	YH ₅₀	16.0	X	172.73189	61.69358	346.05307	1.99932	0.0732370	0.22053383	2.7132256	20	4 23.8	19.9
123636	2000	YO ₅₂	15.0	X	25.50153	61.26711	97.77843	16.80410	0.0595685	0.21338193	2.7735178	20	3 16.4	18.8
123637	2000	YR ₅₂	15.0	X	144.07284	178.98917	358.35898	1.01621	0.1069764	0.18161189	3.0882079	20	9 4.9	19.8
123638	2000	YJ ₅₃	14.6	X	155.32732	51.92260	104.82685	11.20662	0.0631062	0.18034540	3.1026491	20	8 23.8	19.3
123639	2000	YY ₅₄	15.9	X	239.06231	73.88804	83.23743	1.75710	0.1807444	0.19111800	2.9849358	20	11 9.5	20.1
123640	2000	YU ₅₆	14.7	X	301.91059	218.18090	100.34238	17.85269	0.1024206	0.17629293	3.1500162	20	6 3.2	19.0
123641	2000	YJ ₅₈	15.2	X	299.12761	218.55778	121.20018	14.02616	0.1659632	0.22909691	2.6451881	20	6 17.2	18.5
123642	2000	YR ₅₈	15.1	X	87.28081	82.95126	105.72414	16.57061	0.1172251	0.22506213	2.6767086	20	7 24.0	18.8
123643	2000	YW ₆₀	15.7	X	73.17823	316.16350	124.81557	8.82181	0.2034192	0.21081778	2.7959618	20	2 26.7	19.0
123644	2000	YR ₆₁	14.7	X	196.06017	191.63956	285.12565	8.73533	0.0678445	0.18028965	3.1032887	20	8 13.1	19.4
123645	2000	YQ ₆₃	15.1	X	225.94417	332.35898	106.78967	4.03551	0.1673072	0.17877708	3.1207681	20	7 23.6	19.9
123646	2000	YW ₆₃	14.7	X	111.13379	1.11221	132.18667	2.43221	0.1087875	0.17002365	3.2269816	20	6 7.4	19.5
123647	2000	Tomáško	16.4	X	37.27678	93.62805	99.21224	6.10814	0.0484004	0.22003086	2.7173588	20	5 10.8	19.9
123648	2000	YN ₆₆	16.8	X	152.94558	27.65339	87.96719	21.89879	0.0734554	0.37915355	1.8905694	20	7 5.0	18.8
123649	2000	YT ₆₆	16.0	X	292.66291	70.93285	340.16228	1.88464	0.0698311	0.23923032	2.5699534	20	9 30.3	18.9
123650	2000	YH ₇₁	15.0	X	56.34282	66.34377	79.73455	13.98470	0.1252385	0.21861827	2.7290516	20	4 20.3	18.5
123651	2000	YB ₇₃	14.5	X	158.13451	226.78116	251.80537	15.62391	0.1737662	0.17653519	3.1471337	20	7 7.5	19.9
123652	2000	YC ₇₃	15.0	X	283.53883	285.11065	95.57260	3.19794	0.1727372	0.18513349	3.0489201	20	7 15.8	19.0
123653	2000	YU ₇₃	14.5	X	235.40566	20.61204	99.91091	10.41680	0.0782382	0.18985373	2.9981726	20	10 9.8	18.9
123654	2000	YG ₇₄	15.3	X	82.95634	299.28052	125.65024	7.35922	0.1220669	0.21224147	2.7834444	20	2 6.4	18.8
123655	2000	YK ₇₄	15.5	X	247.28382	115.51546	279.79931	2.95535	0.1532258	0.23228372	2.6209387	20	6 23.8	19.2
123656	2000	YO ₇₄	15.3	X	48.81105	344.37424	116.42912	9.29904	0.1855313	0.21120069	2.7925813	20	2 7.1	18.1
123657	2000	YL ₇₅	15.0	X	50.57237	245.66817	167.32824	2.16132	0.0721694	0.20555382	2.8434942	20	—	—
123658	2000	YX ₇₅	15.2	X	206.72086	95.04783	39.96112	1.44709	0.1595129	0.18716340	3.0268351	20	9 12.9	20.0
123659	2000	YJ ₇₆	16.3	X	216.10851	128.54841	288.15824	1.50544	0.1399581	0.22997188	2.6384745	20	6 19.2	20.4
123660	2000	YM ₇₇	15.3	X	315.38092	28.15025	59.27011	2.91810	0.0640086	0.19689747	2.9262356	20	12 12.1	19.0
123661	2000	YT ₇₇	14.9	X	71.36428	159.94467	252.83064	11.33597	0.1707917	0.20905664	2.8116423	20	1 9.2	18.3
123662	2000	YM ₇₈	14.7	X	334.94243	327.29408	77.44427	10.92290	0.0263731	0.19378631	2.9574721	20	11 16.7	18.8
123663	2000	YQ ₇₈	15.2	X	288.79782	66.96694	304.20232	2.88843	0.2417889	0.23605623	2.5929396	20	7 1.7	18.1
123664	2000	YC ₇₉	14.7	X	275.81181	176.42791	264.13507	11.91650	0.0612561	0.19035248	2.9929332	20	10 2.2	19.0
123665	2000	YL ₇₉	15.1	X	205.19610	8.65175	89.35099	13.44437	0.1411220	0.23243366	2.6198114	20	8 2.7	19.2
123666	2000	YX ₇₉	15.1	X	82.04959	137.92206	263.69294	8.32338	0.1688787	0.20958762	2.8068916	20	1 11.9	18.6
123667	2000	YR ₈₀	14.6	X	110.52314	269.55601	271.63102	9.53401	0.1651143	0.17838840	3.1252995	20	8 7.9	19.7
123668	2000	YB ₈₁	15.5	X	89.93444	6.12608	83.18312	6.03501	0.1327740	0.21707313	2.7419867	20	3 22.4	19.2
123669	2000	YH ₈₂	15.5	X	109.93569	177.01716	261.20182	8.47297	0.0806342	0.21748296	2.7385408	20	3 18.1	19.5

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>
123681 2000 YE ₉₃	14.8	X	171.84620	314.68771	106.79926	29.24142	0.1629841	0.22367859	2.6877350	20	5 23.9	19.7
123682 2000 YA ₉₅	15.4	X	149.89246	263.53542	92.26808	5.28963	0.1164024	0.21070060	2.7969983	20	2 1.0	19.5
123683 2000 YF ₉₅	14.7	X	330.19169	41.17977	285.05203	8.15631	0.0974681	0.17971894	3.1098550	20	7 23.8	18.5
123684 2000 YK ₉₅	14.7	X	77.49019	174.18878	104.72261	10.62965	0.1133789	0.18682646	3.0304733	20	11 3.3	19.3
123685 2000 YN ₉₆	14.8	X	251.64824	166.46238	286.70445	10.21508	0.0931883	0.18548904	3.0450228	20	9 11.6	19.3
123686 2000 YA ₉₇	14.9	X	186.19747	65.01718	118.26432	12.73225	0.1858809	0.18590179	3.0405140	20	10 25.0	20.1
123687 2000 YA ₉₈	17.1	X	199.55909	307.86539	114.49992	22.52644	0.0909661	0.37710886	1.8973971	20	6 17.7	19.6
123688 2000 YG ₉₉	15.2	X	90.77237	335.16637	109.35936	5.51735	0.0394763	0.21166742	2.7884747	20	3 2.8	18.9
123689 2000 YL ₉₉	14.6	X	256.23432	112.57796	297.50140	8.18441	0.0231541	0.17880122	3.1204871	20	8 7.2	19.1
123690 2000 YO ₉₉	15.3	X	326.69577	291.86394	118.08401	6.43850	0.2210310	0.19195337	2.9762693	20	11 11.1	18.2
123691 2000 YJ ₁₀₁	15.0	X	152.76592	342.27149	114.88904	15.90355	0.0854883	0.22586174	2.6703874	20	6 8.3	19.2
123692 2000 YN ₁₀₁	14.9	X	106.90985	344.88237	112.23186	18.02195	0.1096411	0.21934437	2.7230256	20	4 25.1	19.1
123693 2000 YQ ₁₀₁	15.3	X	57.80539	341.75349	136.00266	10.81144	0.2126011	0.21372067	2.7705864	20	3 24.8	18.4
123694 2000 YG ₁₀₁	15.2	X	142.04445	293.44490	131.73886	17.38477	0.1917972	0.21929995	2.7233933	20	4 29.1	19.9
123695 2000 YC ₁₀₂	14.4	X	346.44861	79.22010	137.09445	15.20007	0.2493751	0.21144581	2.7904227	20	3 7.8	17.2
123696 2000 YA ₁₀₃	15.0	X	15.71179	56.45612	149.33446	15.07730	0.1770422	0.21460905	2.7629352	20	5 4.5	18.1
123697 2000 YV ₁₀₃	14.4	X	301.52793	303.94101	128.50888	13.66102	0.2586682	0.18920422	3.0050302	20	10 17.1	17.8
123698 2000 YQ ₁₀₄	14.0	X	153.62463	84.11410	141.74401	26.18715	0.2348188	0.18095143	3.0957178	20	11 17.5	19.9
123699 2000 YF ₁₀₅	13.5	X	60.18263	274.42271	357.04710	21.92297	0.1709304	0.17394744	3.1782692	20	10 2.3	18.1
123700 2000 YF ₁₀₇	14.3	X	236.40105	271.41582	92.24700	16.57438	0.2360066	0.17592532	3.1544028	20	5 3.3	19.8
123701 2000 YQ ₁₀₈	14.7	X	325.98474	110.90353	94.15525	13.27076	0.1347449	0.21021449	2.8013086	20	2 3.4	18.3
123702 2000 YE ₁₀₉	15.0	X	326.40461	253.55164	97.86804	11.96963	0.1903314	0.18451285	3.0557535	20	8 18.7	18.4
123703 2000 YB ₁₁₁	15.2	X	194.71269	187.55339	310.94760	5.74524	0.0991598	0.18366508	3.0651495	20	9 6.7	20.0
123704 2000 YL ₁₁₁	14.6	X	212.07753	18.08822	101.51490	12.59702	0.0901288	0.18357609	3.0661400	20	9 9.5	19.4
123705 2000 YF ₁₁₂	15.7	X	245.88608	347.83709	35.27568	2.34231	0.1924403	0.22835222	2.6509358	20	6 1.3	19.6
123706 2000 YE ₁₁₄	15.6	X	1.73340	40.99358	41.89442	2.51816	0.0382645	0.20047644	2.8913045	20	—	—
123707 2000 YD ₁₁₆	14.9	X	169.45056	89.10212	110.25648	6.13005	0.1089565	0.18534474	3.0466030	20	10 28.9	19.7
123708 2000 YE ₁₁₇	14.9	X	54.93710	180.71618	326.65635	11.63511	0.1268363	0.21294769	2.7772870	20	4 7.1	18.5
123709 2000 YZ ₁₁₈	15.0	X	211.76023	356.47825	115.37675	9.84788	0.1345802	0.18258473	3.0772285	20	8 23.6	19.8
123710 2000 YQ ₁₂₀	14.0	X	150.74805	142.36442	0.24241	16.61513	0.1368533	0.17379714	3.1801014	20	8 6.6	19.3
123711 2000 YC ₁₂₁	15.1	X	111.91125	79.00805	84.87961	13.10938	0.1157288	0.22725166	2.6594878	20	7 20.9	19.1
123712 2000 YO ₁₂₂	15.3	X	101.45438	209.73099	218.04896	12.48123	0.1581260	0.21610957	2.7501310	20	3 5.8	19.3
123713 2000 YU ₁₂₂	15.4	X	156.03344	199.60889	217.43441	14.32996	0.0912073	0.22191400	2.7019641	20	4 18.1	19.5
123714 2000 YH ₁₂₄	14.8	X	221.93504	206.54171	232.24519	8.18620	0.1113337	0.18358191	3.0660751	20	7 21.9	19.5
123715 2000 YT ₁₂₄	15.4	X	122.89116	269.02911	236.19469	12.84433	0.0710360	0.22893951	2.6464004	20	7 1.5	19.3
123716 2000 YP ₁₂₅	14.7	X	151.76042	120.33583	53.43537	11.91475	0.1181084	0.18055206	3.1002812	20	9 14.5	19.8
123717 2000 YX ₁₂₆	14.9	X	44.39446	230.34602	322.36358	11.53711	0.0992089	0.21779192	2.7359503	20	5 22.4	18.5
123718 2000 YS ₁₂₈	15.9	X	85.97079	44.23705	56.94369	3.94440	0.1067334	0.21321113	2.7749988	20	3 27.3	19.5
123719 2000 YD ₁₃₂	14.6	X	75.84183	66.28719	121.15770	17.38573	0.0370280	0.17131383	3.2107594	20	6 23.9	19.2
123720 2000 YP ₁₃₃	15.9	X	116.14500	301.57017	109.88820	5.58706	0.0694772	0.21282129	2.7783865	20	2 26.1	19.7
123721 2000 YZ ₁₃₃	14.9	X	115.04443	267.05344	110.14474	25.35031	0.1934882	0.21341078	2.7732678	20	1 28.9	18.9
123722 2000 YX ₁₃₄	14.9	X	49.58388	206.36165	310.59521	11.75164	0.1674198	0.22182766	2.7026652	20	4 15.9	18.2
123723 2000 YD ₁₃₅	15.8	X	299.27045	220.28520	170.14609	5.43286	0.2538873	0.24112604	2.5564657	20	8 15.3	18.3
123724 2000 YK ₁₃₅	14.9	X	187.87757	100.23281	10.43024	17.08942	0.2089143	0.17906556	3.1174154	20	7 31.8	20.4
123725 2000 YU ₁₃₅	15.8	X	77.91979	322.35520	91.36186	5.50609	0.1988577	0.21099169	2.7944251	20	1 27.5	19.0
123726 2000 YK ₁₃₆	15.3	X	225.28569	238.32691	150.38543	19.56742	0.1902614	0.23031523	2.6358515	20	5 24.7	20.0
123727 2000 YQ ₁₃₇	13.7	X	190.44452	122.28155	310.57498	27.53751	0.0681524	0.16944433	3.2343327	20	6 19.1	19.0
123728 2000 YS ₁₄₂	14.7	X	187.67357	74.24168	44.88838	22.63761	0.1866931	0.17908074	3.1172392	20	8 14.8	20.3
123729 2001 AM ₅	14.4	X	216.01642	114.37699	290.14943	14.76045	0.2048505	0.17464179	3.1698395	20	5 29.6	19.9
123730 2001 AS ₇	15.0	X	194.66389	356.16015	123.10788	15.06046	0.1595068	0.18125954	3.0922087	20	8 13.7	20.0
123731 2001 AH ₈	15.1	X	216.15545	144.62598	283.57017	14.35759	0.0500538	0.17788455	3.1311983	20	7 9.4	19.8
123732 2001 AU ₈	14.7	X	129.65636	343.40751	261.49948	8.32274	0.0609933	0.18899627	3.0072340	20	11 8.3	19.2
123733 2001 AT ₉	15.3	X	157.73119	48.85053	132.17740	14.72790	0.1246980	0.23275557	2.6135042	20	10 3.9	19.6
123734 2001 AE ₁₀	14.8	X	216.86562	341.43475	118.37076	4.13717	0.1062796	0.18224631	3.0810368	20	8 15.0	19.4
123735 2001 AH ₁₀	15.2	X	218.74272	173.56464	268.15164	8.98147	0.1486794	0.17882272	3.1202371	20	7 19.5	20.2
123736 2001 AQ ₁₁	15.2	X	236.24520	256.72768	189.22436	3.49788	0.2186626	0.18273131	3.0755827	20	8 5.0	20.1
123737 2001 AW ₁₁	14.4	X	147.34126	55.67660	128.94285	15.26157	0.1620529	0.18119128	3.0929853	20	9 22.6	19.6
123738 2001 AZ ₁₄	14.8	X	116.03358	82.78567	138.43411	14.80681	0.1496544	0.23140714	2.6275534	20	10 14.2	19.2
123739 2001 AC ₁₈	14.4	X	158.96971	359.94613	148.46402	19.72902	0.3288355	0.17709767	3.1404665	20	8 17.0	20.3
123740 2001 AO ₁₈	14.2	X	122.68672	203.93570	356.85589	4.87495	0.1368824	0.17480457	3.1678713	20	9 13.4	19.2
123741 2001 AN ₁₉	16.5	X	74.09424	117.84144	141.55940	3.12120	0.1636278	0.23360528	2.6110446	20	10 16.9	20.3
123742 2001 AQ ₂₀	15.6	X	156.21037	5.14354	108.66918	12.70899	0.1276178	0.22751090	2.6574672	20	7 2.8	19.6
123743 2001 AT ₂₁	15.9	X	197.49449	8.77803	40.06466	4.08557	0.0919626	0.22438339	2.6821038	20	5 22.4	19.8
123744 2001 AT ₂₂	15.2	X	209.92617	136.97809	49.94114	5.15382	0.0333489	0.19328799	2.9625531	20	11 30.6	19.3
123745 2001 AA ₂₃	15.2	X	100.75853	245.07831	130.65765	13.23735	0.0835911	0.20407976	2.8571701	20	—	—
123746 2001 AC ₂₃	15.0	X	127.72356	146.48879	74.69464	6.77090	0.0862417	0.18574925	3.0421784	20	10 13.9	19.7
123747 2001 AV ₂₅	16.8	X	174.41166	103.61313	358.45186	19.61559	0.1007626	0.37842338	1.8930006	20	7 21.1	19.6
123748 2001 AJ ₂₆	15.4	X	92.51842	167.07014	312.81225	14.25911	0.0940977	0.21911622	2.7249155	20	4 17.8	19.5
123749 2001 AK ₂₆	14.6	X	328.63080	16.37217	68.55810	12.93690	0.0018320	0.19679119	2.9272891	20	12 25.9	18.8
123750 2001 AT ₂₆	15.3	X	143.62327	181.32422	349.48105	7.20715	0.1203730	0.23145819	2.6271670	20	9 2.1	19.3
123751 2001 AR ₂₇	15.1	X	86.26145	15.58779	61.24718	10.11436	0.1365016	0.21191977	2.7862606	20	3 4.6	18.9
123752 2001 AB ₂₈	14.7	X	52.75721	144.56999	51.64053	10.18331	0.1794760	0.22052020	2.7133374	20	6 25.0	18.0
123753 2001 AP ₃₂	14.											

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Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>	
123761	2001 AD ₄₁	15.3	X	41.63903	17.54069	118.00436	14.86174	0.1627103	0.21039991	2.7996625	20	3 15.5	18.6
123762	2001 AU ₄₁	16.0	X	168.81082	80.93218	305.27756	19.25156	0.1083290	0.36692094	1.9323586	20	3 3.3	18.7
123763	2001 AH ₄₂	16.0	X	351.71922	87.31907	115.79437	25.20214	0.1080437	0.36111603	1.9530118	20	2 21.7	17.9
123764	2001 AW ₄₃	15.5	X	302.05445	141.83113	113.55640	5.01320	0.0499498	0.21363958	2.7712875	20	3 18.4	19.2
123765	2001 AJ ₄₆	16.6	X	245.64282	196.85336	56.59618	23.70642	0.0481026	0.35895405	1.9608460	20	—	—
123766	2001 AH ₄₈	15.7	X	291.59173	359.23769	84.88014	2.58828	0.0339785	0.18873854	3.0099711	20	11 6.0	19.8
123767	2001 AR ₄₈	16.1	X	175.41601	116.13494	313.77262	19.19088	0.0832252	0.37376121	1.9087098	20	5 20.4	19.0
123768	2001 AG ₅₀	15.8	X	284.92663	40.49071	65.39220	3.05150	0.1397948	0.19264669	2.9691241	20	11 12.8	19.4
123769	2001 AZ ₅₀	15.4	X	43.70156	296.69056	118.16777	7.18333	0.0766937	0.20222912	2.8745746	20	—	—
123770	2001 AN ₅₃	15.3	X	303.96895	137.34003	104.63095	6.68948	0.0931100	0.20975899	2.8053625	20	2 26.9	19.1
123771	2001 BL	15.4	X	87.20808	13.94307	72.84527	5.02985	0.0765667	0.21005882	2.8026924	20	3 7.2	19.1
123772	2001 BQ ₂	14.6	X	331.33511	213.88092	2.65424	25.23891	0.1301153	0.20988451	2.8042439	20	3 4.3	18.2
123773	2001 BB ₆	14.3	X	157.41506	8.42453	96.74227	16.99062	0.1994999	0.17171187	3.2057957	20	6 24.0	19.6
123774	2001 BQ ₆	15.0	X	147.93683	128.71970	52.06466	5.81295	0.1069756	0.18219820	3.0815792	20	9 15.7	19.9
123775	2001 BA ₇	15.4	X	337.38306	160.16638	72.25620	4.26724	0.1051840	0.21505858	2.7590836	20	3 31.1	18.8
123776	2001 BF ₇	15.5	X	101.04175	77.45949	319.15877	8.26781	0.2450138	0.20992874	2.8038501	20	2 12.3	19.2
123777	2001 BH ₇	14.9	X	203.63280	144.76570	311.90213	16.61236	0.1227289	0.17827654	3.1266067	20	7 27.4	19.8
123778	2001 BN ₁₂	16.3	X	268.71781	177.72790	183.97838	2.44135	0.1766657	0.23312552	2.6146256	20	6 1.7	19.8
123779	2001 BW ₁₂	14.4	X	101.76802	144.64038	38.96867	11.38486	0.0882429	0.17342205	3.1846851	20	7 30.9	19.3
123780	2001 BJ ₁₃	16.1	X	72.25917	166.66942	299.67519	2.96885	0.0635331	0.21245102	2.7816138	20	3 5.9	19.7
123781	2001 BU ₁₄	15.0	X	323.40115	300.79048	143.45456	10.52187	0.0869051	0.19183393	2.9775046	20	12 19.2	18.8
123782	2001 BM ₁₅	14.1	X	276.82942	44.38970	326.28497	25.01655	0.1908231	0.17519501	3.1631629	20	6 24.3	19.0
123783	2001 BP ₁₆	15.1	X	59.63004	320.67828	111.80448	16.08080	0.1711833	0.20502671	2.8483658	20	1 12.4	18.7
123784	2001 BE ₁₇	15.0	X	35.09082	47.91287	118.49464	14.42706	0.1042944	0.21869229	2.7284358	20	4 11.3	18.5
123785	2001 BP ₁₇	15.8	X	246.69914	39.92298	328.25698	3.14325	0.2041890	0.22721342	2.6597862	20	5 12.0	19.9
123786	2001 BS ₁₇	14.9	X	113.35482	180.41794	43.36760	3.22214	0.1723889	0.18173848	3.0867737	20	10 5.9	19.9
123787	2001 BG ₂₂	15.7	X	171.52854	102.23319	8.57500	3.44163	0.0686684	0.22761972	2.6566201	20	7 15.3	19.6
123788	2001 BG ₂₂	15.6	X	120.55423	327.73931	129.89382	14.62371	0.1710790	0.21923280	2.7239494	20	5 15.1	20.0
123789	2001 BL ₂₅	15.3	X	46.17551	213.89267	281.25346	3.23287	0.1194639	0.21133477	2.7914000	20	3 10.8	18.7
123790	2001 BD ₃₅	15.0	X	220.11345	333.24739	144.03313	7.29718	0.1995238	0.18255421	3.0775715	20	8 31.5	19.8
123791	2001 BH ₃₅	15.0	X	349.39277	315.16428	153.43020	13.77952	0.2221753	0.19870405	2.9084721	20	—	—
123792	2001 BU ₃₇	15.3	X	354.44540	317.57409	133.69652	2.84683	0.0362046	0.19877376	2.9077920	20	—	—
123793	2001 BG ₃₉	15.3	X	121.41973	228.14091	114.21239	2.86288	0.0795237	0.20039824	2.8920566	20	—	—
123794	2001 BE ₄₂	14.9	X	52.36712	146.42777	89.08516	8.81763	0.1415654	0.22500181	2.6771870	20	8 15.9	18.4
123795	2001 BF ₄₂	15.5	X	13.65801	166.63296	346.87387	6.32904	0.0910908	0.20973634	2.8055645	20	2 13.3	18.7
123796	2001 BD ₄₃	14.4	X	219.12774	131.79026	305.13852	26.56658	0.1969382	0.17677301	3.1443104	20	7 14.9	19.6
123797	2001 BV ₄₃	15.1	X	303.21422	146.12757	320.65173	8.57966	0.0604917	0.19042831	2.9921386	20	12 17.7	19.0
123798	2001 BL ₄₇	14.9	X	249.44017	276.56680	188.64024	8.79487	0.1076088	0.18478272	3.0527775	20	9 27.1	19.3
123799	2001 BK ₄₈	13.9	X	46.06593	256.13236	261.65396	13.45234	0.0912708	0.16254118	3.3252714	20	4 7.7	18.5
123800	2001 BL ₄₈	14.8	X	153.12915	217.21957	265.65392	13.12220	0.1518670	0.17276493	3.1927555	20	7 8.6	20.1
123801	2001 BK ₅₄	14.4	X	62.83352	311.05894	326.28564	10.65181	0.1337346	0.17899696	3.1182118	20	10 7.8	19.1
123802	2001 BC ₅₆	15.7	X	235.49781	315.88927	85.20155	2.70255	0.0214275	0.22414205	2.6840287	20	7 3.8	19.2
123803	2001 BP ₅₆	14.7	X	140.59040	226.16978	339.13660	5.64863	0.1191781	0.18147133	3.0898024	20	10 3.7	19.6
123804	2001 BA ₆₀	15.1	X	71.46885	8.96861	158.95698	8.65042	0.2269399	0.21557985	2.7546343	20	6 21.6	18.9
123805	2001 BZ ₆₀	15.9	X	54.86671	256.28303	264.59681	20.46658	0.1156747	0.37003866	1.9214894	20	4 9.3	18.0
123806	2001 BY ₆₃	14.7	X	96.77231	38.29780	155.27985	14.66424	0.0884601	0.22419749	2.6835862	20	8 5.6	18.6
123807	2001 BH ₆₄	15.2	X	352.93291	57.71331	154.09185	11.82610	0.1858650	0.21025347	2.8009624	20	3 22.3	18.1
123808	2001 BJ ₆₄	14.2	X	51.60115	282.35166	314.23150	21.53827	0.1188542	0.17173878	3.2054607	20	8 4.9	18.5
123809	2001 BY ₆₄	14.7	X	249.81084	156.11743	275.92846	16.80577	0.1655999	0.17982740	3.1086045	20	8 3.4	19.5
123810	2001 BM ₆₅	14.4	X	124.99476	282.63986	292.98954	16.35631	0.1342944	0.17955027	3.1118024	20	9 24.3	19.7
123811	2001 BC ₆₇	14.6	X	196.24082	201.07434	262.38806	7.63174	0.1626832	0.17570700	3.1570152	20	7 23.7	19.8
123812	2001 BE ₆₇	14.2	X	194.87410	275.68242	269.82801	7.97275	0.2268244	0.18432541	3.0578246	20	10 24.2	19.5
123813	2001 BC ₆₈	14.4	X	185.82597	101.94280	344.16369	16.28550	0.1910489	0.17183354	3.2042822	20	6 25.9	20.0
123814	2001 BC ₇₁	15.1	X	288.28180	217.76464	332.26526	5.03917	0.1923578	0.19899970	2.9055907	20	—	—
123815	2001 BD ₇₂	15.7	X	358.00412	311.53128	146.94028	4.65671	0.1836405	0.19900085	2.9055795	20	—	—
123816	2001 BU ₇₃	15.5	X	178.01245	256.19148	144.31481	5.67861	0.0564034	0.21771876	2.7365632	20	4 23.1	19.5
123817	2001 BG ₇₄	15.5	X	192.94900	43.38385	63.88571	1.40285	0.1122401	0.17774285	3.1328622	20	7 29.5	20.5
123818	Helenzier	15.5	X	54.97031	325.17576	117.58209	3.02723	0.0169787	0.20446459	2.8535839	20	1 10.7	19.4
123819	2001 BS ₇₇	15.1	X	321.45823	108.28063	311.11930	8.49736	0.0406461	0.18937168	3.0032584	20	11 11.3	19.2
123820	2001 BV ₇₈	14.6	X	228.58944	52.14300	86.83180	11.73322	0.0554549	0.19258781	2.9697292	20	10 27.6	19.0
123821	2001 BH ₈₀	15.2	X	101.26493	90.34646	94.12058	11.91503	0.1389640	0.22907107	2.6453870	20	8 8.9	19.2
123822	2001 BS ₈₀	14.6	X	153.23870	355.66323	140.20281	17.23240	0.0548238	0.18023058	3.1039667	20	7 22.5	19.2
123823	2001 BW ₈₀	15.4	X	149.89903	258.06802	124.71923	7.26163	0.2502582	0.21413149	2.7670416	20	3 15.7	20.1
123824	2001 CU ₃	14.4	X	245.84656	305.71302	134.99306	23.89553	0.1485919	0.18059875	3.0997468	20	8 18.2	19.0
123825	2001 CL ₄	14.6	X	35.60198	177.34604	355.85918	7.76097	0.1494339	0.21171589	2.7880491	20	4 16.3	17.7
123826	2001 CH ₆	15.0	X	258.46456	84.68095	340.41941	7.96089	0.0954878	0.18022506	3.1040301	20	8 21.1	19.2
123827	2001 CJ ₆	14.3	X	161.03002	177.34268	331.24781	15.44728	0.0605726	0.17699629	3.1416655	20	8 17.8	19.1
123828	2001 CJ ₉	14.5	X	188.81921	178.49798	347.79986	9.74393	0.0581172	0.18236705	3.0796768	20	10 5.9	19.2
123829	2001 CN ₉	14.8	X	305.50105	153.11166	137.05009	17.87369	0.0752560	0.21440377	2.7646985	20	5 8.7	18.8
123830	2001 CU ₁₀	14.6	X	29.68324	344.86728	340.60485	10.01970	0.1060312	0.18478866	3.0527121	20	10 22.5	18.8
123831	2001 CB ₁₃	14.8	X	183.58335	170.10217	15.20342	5.98631	0.1292195	0.18428586	3.0582621	20	10 21.5	19.6
123832	2001 CU ₁₄	15.3	X	240.33072									

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Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>		
123841	2001	CR ₂₂	14.6 ^m	X	205.63790	74.33666	323.14526	12.57226	0.1397354	0.17083885	3.2167079	20	5 11.7	20.0
123842	2001	CT ₂₇	15.1	X	190.88730	88.48458	339.81580	24.93184	0.2375899	0.17329546	3.1862358	20	6 3.1	21.1
123843	2001	CZ ₂₇	14.3	X	114.46667	244.74507	0.85794	13.65978	0.2219201	0.18079793	3.0974697	20	10 29.7	19.6
123844	2001	CN ₂₉	14.5	X	240.74033	69.11601	341.98557	13.35129	0.0417322	0.17465846	3.1696377	20	7 21.9	19.2
123845	2001	CD ₃₀	15.1	X	290.99915	40.73782	102.13708	10.39409	0.0858304	0.19532071	2.9419628	20	—	—
123846	2001	CQ ₃₁	16.2	X	137.38900	339.54366	116.41007	23.53235	0.0632902	0.37108719	1.9178681	20	5 22.6	18.9
123847	2001	CO ₃₂	14.8	X	211.42251	46.43893	63.73441	14.85317	0.1528876	0.17905570	3.11175298	20	8 24.1	20.0
123848	2001	CX ₃₄	15.1	X	245.50394	49.07873	56.49135	12.16187	0.1237207	0.18435421	3.0575061	20	9 27.1	19.7
123849	2001	CS ₃₅	16.1	X	321.35700	13.29687	359.09785	23.54563	0.0968521	0.38593261	1.8683650	20	10 16.7	17.6
123850	2001	CV ₃₆	14.9	X	131.67439	84.95402	151.31069	22.84349	0.0389624	0.18348937	3.0671060	20	11 5.9	19.8
123851	2001	CB ₃₇	15.4	X	322.39300	152.08767	106.60618	2.84540	0.1274765	0.21549034	2.7553970	20	4 8.4	18.7
123852	2001	Janboda	15.3	X	231.28956	17.69484	174.42302	5.63426	0.2696250	0.18864180	3.0110000	20	12 2.2	20.0
123853	2001	CP ₃₇	14.5	X	162.06611	86.51973	70.08229	22.85377	0.0736269	0.17904251	3.1176829	20	9 9.2	19.7
123854	2001	CB ₃₈	14.5	X	332.39807	259.89337	24.81799	29.77927	0.3820706	0.21269798	2.7794602	20	4 17.7	17.0
123855	2001	CE ₃₈	13.9	X	118.46872	117.83962	118.73995	26.21261	0.2897654	0.17496735	3.1659061	20	11 8.7	20.0
123856	2001	CD ₃₉	14.6	X	190.42814	49.92321	99.50975	14.36412	0.1358203	0.18310389	3.0714091	20	9 22.2	19.7
123857	2001	CB ₄₃	14.5	X	307.29843	24.85543	106.36246	15.58989	0.0909251	0.19232501	2.9724339	20	—	—
123858	2001	CB ₄₈	15.1	X	157.90461	117.56649	145.77907	9.93218	0.0542538	0.19140977	2.9819016	20	12 31.9	19.6
123859	2001	CO ₄₈	14.6	X	166.87260	315.16093	124.31023	15.96554	0.0574613	0.17030296	3.2234523	20	6 1.2	19.6
123860	2001	Davederrick	14.5	X	141.91308	100.38558	138.79119	9.74953	0.0946132	0.18498947	3.0505025	20	11 18.5	19.4
123861	2001	DB ₂	15.4	X	84.53836	16.73587	17.44302	1.07583	0.0146958	0.20048112	2.8912594	20	—	—
123862	2001	DF ₃	16.5	X	245.40728	339.43007	352.88505	18.46453	0.0988819	0.36750293	1.9303179	20	3 24.1	18.7
123863	2001	DD ₅	14.9	X	268.91682	57.11318	101.84737	11.03160	0.0332277	0.19326339	2.9628045	20	—	—
123864	2001	DV ₆	15.1	X	346.09500	312.33810	274.20110	6.80803	0.2509040	0.21131955	2.7915340	20	3 14.2	17.9
123865	2001	DK ₇	14.4	X	152.07229	109.97404	56.51839	6.20501	0.1050676	0.17591599	3.1545143	20	9 2.1	19.4
123866	2001	DO ₉	15.2	X	345.36655	48.61723	3.39173	9.71504	0.0939570	0.19102931	2.9858595	20	12 9.5	19.1
123867	2001	DE ₁₂	15.8	X	252.12878	22.74964	58.10063	3.20320	0.0948628	0.23088161	2.6315390	20	9 9.3	19.2
123868	2001	DJ ₁₃	14.3	X	140.00848	82.68168	154.49891	26.84736	0.1238611	0.18096603	3.0955514	20	11 17.4	19.7
123869	2001	DR ₁₃	14.4	X	132.85239	129.49045	100.26367	7.06831	0.1013868	0.17931345	3.1145416	20	10 28.9	19.3
123870	2001	DD ₁₉	15.3	X	357.41480	21.40470	102.92230	9.46287	0.2659956	0.20156764	2.8808601	20	—	—
123871	2001	DM ₂₂	13.9	X	159.50877	86.47883	30.79651	22.36087	0.0277850	0.16855879	3.2456508	20	7 6.9	19.0
123872	2001	DH ₂₃	15.7	X	296.35195	263.57238	245.78859	5.06455	0.1635879	0.19668262	2.9283662	20	—	—
123873	2001	DC ₂₇	15.7	X	18.02959	170.38868	355.98129	3.06133	0.0372757	0.20881194	2.8138385	20	3 7.4	19.3
123874	2001	DQ ₂₈	15.1	X	183.22131	151.07814	41.51863	3.31221	0.1217415	0.18386586	3.0629177	20	10 30.9	19.8
123875	2001	DQ ₂₉	14.9	X	88.06147	157.36003	45.03940	5.45315	0.1001362	0.17154281	3.2079016	20	8 7.1	19.6
123876	2001	DV ₂₉	14.7	X	12.41994	36.83041	4.23555	10.95218	0.1095694	0.19159106	2.9800203	20	—	—
123877	2001	DM ₃₁	14.9	X	182.33344	249.48585	358.77698	11.73858	0.0347354	0.19126873	2.9833673	20	—	—
123878	2001	DQ ₃₁	14.8	X	250.95688	280.03030	311.02815	10.93807	0.0596719	0.17408416	3.1766049	20	7 28.2	19.4
123879	2001	DP ₃₄	15.3	X	38.54995	55.17406	137.22949	10.14666	0.1136597	0.21709911	2.7417679	20	5 20.6	18.7
123880	2001	DG ₃₄	15.5	X	193.57232	248.18994	136.25038	11.75647	0.0963512	0.21735889	2.7395829	20	4 22.5	19.9
123881	2001	DH ₃₇	15.2	X	41.37389	81.84405	333.53362	6.32937	0.3218561	0.20310922	2.8662646	20	—	—
123882	2001	DS ₃₉	15.1	X	195.60244	25.37270	149.88239	6.48433	0.1096412	0.18527296	3.0473899	20	10 25.6	19.8
123883	2001	DE ₄₀	15.3	X	351.01564	120.44992	289.92479	10.04213	0.0831243	0.19256715	2.9699416	20	12 17.0	19.0
123884	2001	DJ ₄₂	14.8	X	330.51165	100.52784	325.97664	9.75175	0.1020988	0.19003733	2.9962412	20	12 5.1	18.7
123885	2001	DM ₄₂	15.3	X	211.45742	332.55548	322.14137	1.22373	0.0222149	0.20348348	2.8627490	20	1 20.1	19.4
123886	2001	DE ₄₅	14.5	X	117.90349	251.48287	339.62791	18.49256	0.0232359	0.18067653	3.0988572	20	9 30.0	19.1
123887	2001	DX ₄₅	15.2	X	150.65230	62.33623	169.42811	8.11354	0.2147324	0.18208530	3.0828529	20	11 16.6	20.6
123888	2001	DJ ₄₉	14.8	X	142.73359	47.47154	94.14261	10.37075	0.0365776	0.17321503	3.1872222	20	7 17.2	19.5
123889	2001	DT ₄₉	14.8	X	165.80915	175.38009	24.57332	10.56342	0.0206113	0.18489729	3.0515162	20	10 25.0	19.2
123890	2001	DB ₅₁	14.8	X	341.17051	175.40126	39.41668	9.99626	0.1330567	0.20951691	2.8075231	20	3 13.6	18.2
123891	2001	DL ₅₁	14.9	X	2.35570	137.36486	105.93025	15.87621	0.1336429	0.21585396	2.7523016	20	5 30.0	18.1
123892	2001	DM ₅₁	14.6	X	156.29126	113.91432	63.09064	9.38332	0.1426060	0.17937564	3.1138217	20	9 21.3	19.7
123893	2001	DW ₅₂	15.4	X	102.48409	66.42161	356.69426	7.18551	0.2165448	0.21232887	2.7826805	20	3 14.1	19.2
123894	2001	DR ₅₃	14.9	X	259.32369	320.60968	191.11286	8.81614	0.0888406	0.18916802	3.0054136	20	12 10.4	19.0
123895	2001	DW ₅₆	15.7	X	224.09453	338.48150	346.32937	4.04638	0.0724220	0.20932731	2.8092181	20	3 8.3	19.9
123896	2001	DX ₅₈	16.5	X	183.55997	19.61337	52.87343	22.56449	0.0755832	0.37159756	1.9161117	20	6 4.8	18.8
123897	2001	DG ₆₀	15.7	X	279.43849	321.39790	333.87476	3.66980	0.0496893	0.21479754	2.7613186	20	4 5.7	19.5
123898	2001	DU ₆₁	14.9	X	37.86593	27.79399	164.08923	8.35640	0.1482823	0.21460814	2.7629430	20	5 21.9	18.1
123899	2001	DP ₆₂	14.7	X	143.56331	19.86828	166.79955	5.79904	0.1173991	0.17883703	3.1200705	20	9 15.9	19.6
123900	2001	DD ₆₃	14.5	X	315.97049	74.14487	325.66444	9.35008	0.1264709	0.18487016	3.0518147	20	10 2.4	18.3
123901	2001	DB ₆₆	15.2	X	296.65140	147.88965	319.79892	8.48816	0.1014887	0.19045886	2.9918186	20	12 5.5	19.1
123902	2001	DH ₆₈	15.2	X	199.54914	71.57080	118.82929	1.89708	0.1392248	0.18558812	3.0439389	20	11 12.4	19.9
123903	2001	DC ₇₀	15.0	X	149.40357	257.97375	322.83141	6.63818	0.0364773	0.18260741	3.0769737	20	10 28.9	19.6
123904	2001	DZ ₇₅	15.4	X	295.76236	312.95166	125.86932	2.16727	0.0626646	0.18585257	3.0410508	20	11 1.9	19.3
123905	2001	DR ₇₆	14.8	X	188.28518	63.31365	98.95589	14.12325	0.1001320	0.17976674	3.1093038	20	10 7.6	19.8
123906	2001	DS ₇₆	15.1	X	211.26775	41.31775	161.39744	10.32546	0.0497155	0.18964299	3.0003933	20	12 19.3	19.5
123907	2001	DB ₇₈	15.2	X	85.23873	155.59512	139.41284	11.92039	0.1168957	0.18614057	3.0379131	20	11 29.4	20.0
123908	2001	DM ₇₉	14.7	X	232.15000	228.00674	274.14544	9.27852	0.0898168	0.18535441	3.0464971	20	10 21.4	19.2
123909	2001	DQ ₈₃	15.9	X	234.40047	78.55770	80.60152	1.95863	0.1316167	0.18628033	3.0363935	20	11 12.2	20.3
123910	2001	DT ₈₈	14.7	X	197.4									

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>		
123921	2001	DT ₁₀₄	15.2	X	161.19002	73.41651	142.53829	10.04732	0.0245477	0.18633004	3.0358534	20	11 12.3	19.7
123922	2001	DJ ₁₀₆	15.3	X	219.20606	32.09210	166.82414	2.43671	0.0722313	0.18857211	3.0117418	20	12 20.3	19.6
123923	2001	DQ ₁₀₆	14.4	X	81.82270	126.23020	165.91719	18.17081	0.0631628	0.17794764	3.1304580	20	11 15.9	19.2
123924	2001	ET ₁	14.8	X	228.55855	102.50497	103.81720	12.15548	0.1962233	0.19059657	2.9903773	20	12 24.5	19.3
123925	2001	EA ₂	14.0	X	72.43271	104.99238	113.89702	16.95784	0.0895432	0.17118074	3.2124235	20	8 6.3	18.5
123926	2001	EB ₃	15.6	X	157.18699	83.73827	98.52159	2.20737	0.1136647	0.17810577	3.1286050	20	9 24.4	20.5
123927	2001	ER ₄	15.2	X	183.57365	140.94916	100.21133	3.10148	0.1808976	0.18742472	3.0240210	20	12 23.2	20.1
123928	2001	ED ₆	15.1	X	336.07892	257.59075	15.19006	12.75486	0.1140799	0.21381788	2.7697466	20	5 16.9	18.5
123929	2001	EM ₆	14.8	X	232.29467	354.78118	150.63614	18.01662	0.1357595	0.18392566	3.0622537	20	10 28.3	19.6
123930	2001	EP ₆	14.1	X	4.74391	304.85828	7.41778	21.69899	0.1550215	0.17167774	3.2062205	20	9 10.7	18.0
123931	2001	ED ₈	14.5	X	124.67044	222.96655	16.29559	10.64913	0.0463385	0.18040169	3.1020037	20	10 24.7	19.1
123932	2001	EV ₁₁	15.4	X	353.24867	201.62441	251.91168	4.80089	0.2142323	0.19725735	2.9226755	20	—	—
123933	2001	EE ₁₄	14.6	X	303.44939	235.83170	52.71110	12.57254	0.2158618	0.21072073	2.7968201	20	4 9.9	18.4
123934	2001	EU ₁₄	14.5	X	99.97158	88.07255	118.05602	12.09849	0.0728108	0.17237732	3.1975399	20	8 22.4	19.2
123935	2001	EX ₁₄	14.6	X	157.54219	86.21934	133.74650	17.31870	0.0827540	0.18134429	3.0912452	20	11 13.8	19.7
123936	2001	EA ₁₅	15.2	X	225.98019	76.49966	50.82614	15.46685	0.2480582	0.18256363	3.0774656	20	9 20.9	20.4
123937	2001	ER ₁₆	15.5	X	353.95912	16.31050	4.66702	23.25270	0.0606872	0.38674274	1.8657550	20	—	—
123938	2001	EB ₁₇	16.2	X	334.04056	224.29192	71.35536	22.43142	0.0546650	0.37370204	1.9089112	20	6 29.2	17.8
123939	2001	EP ₁₇	14.6	X	145.17937	85.57040	115.55533	26.19430	0.2597161	0.17494097	3.1662244	20	10 17.8	20.6
123940	2001	EL ₁₈	14.4	X	92.91579	172.83160	27.86201	7.10452	0.0997046	0.17112198	3.2131588	20	8 11.5	19.1
123941	2001	EM ₁₈	14.2	X	135.15775	56.86858	150.52989	17.54350	0.1717362	0.17983209	3.1085505	20	10 8.7	19.5
123942	2001	EV ₁₈	15.1	X	150.76062	309.22105	169.21238	12.93257	0.1113414	0.22209510	2.7004951	20	7 1.8	19.5
123943	2001	EW ₁₉	15.3	X	245.30976	82.72642	100.32592	3.49593	0.0305157	0.19065327	2.9897845	20	—	—
123944	2001	EU ₂₀	14.4	X	281.18203	105.35022	334.29294	9.05776	0.1074251	0.18365224	3.0652923	20	10 3.1	18.5
123945	2001	EM ₂₁	14.7	X	126.28773	105.64644	292.40852	4.02964	0.1320026	0.17521246	3.1629529	20	8 30.5	19.6
123946	2001	ER ₂₃	14.7	X	92.09530	39.62973	191.63155	4.25920	0.1600484	0.17382152	3.1798041	20	9 21.1	19.5
123947	2001	EK ₂₄	16.2	X	67.25088	112.72293	344.70686	19.14689	0.0880167	0.35733215	1.9667749	20	2 1.2	18.0
123948	2001	EQ ₂₅	15.0	X	288.90942	206.30665	306.31153	9.41176	0.0712264	0.19229801	2.9727121	20	—	—
123949	2001	EC ₂₆	15.1	X	201.77819	18.01982	169.11331	9.96231	0.0406898	0.18475265	3.0531087	20	11 21.4	19.6
123950	2001	FJ ₃	15.1	X	225.94264	352.77932	162.82258	5.82290	0.1371874	0.18348322	3.0671745	20	10 29.2	19.6
123951	2001	FC ₄	14.5	X	301.45435	347.67360	146.00004	12.39307	0.0434820	0.19063804	2.9899437	20	—	—
123952	2001	FX ₄	16.5	X	232.69091	246.67320	182.08963	22.17441	0.1149305	0.37792363	1.8946690	20	8 2.8	19.0
123953	2001	FT ₇	15.4	X	129.83384	281.66988	78.33899	2.92350	0.1293191	0.19988668	2.8969888	20	1 18.1	19.6
123954	2001	FV ₇	16.6	X	130.60066	274.29569	180.19904	22.40251	0.0892613	0.36676065	1.9329215	20	5 7.5	19.1
123955	2001	FC ₁₀	15.4	X	131.87539	17.07980	179.30783	1.33448	0.1692833	0.17491781	3.1665039	20	9 18.1	20.4
123956	2001	FY ₁₀	14.5	X	123.05841	251.51955	352.86559	9.80096	0.0266133	0.18009182	3.1055610	20	10 25.9	19.1
123957	2001	FD ₁₁	16.6	X	51.90438	138.58830	179.17951	9.56665	0.0791716	0.17985693	3.1082642	20	11 12.3	19.0
123958	2001	FC ₁₂	14.6	X	226.61202	226.98601	179.99462	21.53954	0.0946550	0.37270164	1.9123256	20	6 25.8	19.4
123959	2001	FH ₁₂	14.3	X	164.39069	3.87172	178.22950	16.25819	0.1420499	0.17745862	3.1362065	20	9 30.4	19.3
123960	2001	FF ₁₃	15.1	X	181.94518	47.68216	130.62910	1.90041	0.1258258	0.17963999	3.1107661	20	10 12.8	20.0
123961	2001	FW ₁₃	14.1	X	54.48258	125.80037	167.58481	4.99519	0.1259064	0.17549332	3.1595773	20	10 21.9	18.4
123962	2001	FL ₁₄	15.2	X	271.68314	164.82493	16.88598	5.55731	0.1810870	0.19251535	2.9704744	20	—	—
123963	2001	FU ₁₅	15.2	X	200.67075	126.32327	123.01763	0.68515	0.0696075	0.19048704	2.9915236	20	—	—
123964	2001	FZ ₁₆	14.7	X	116.51928	76.57703	132.36539	2.77770	0.1653460	0.17306929	3.1890112	20	9 19.8	19.7
123965	2001	FD ₁₇	15.3	X	348.42260	297.47338	180.40563	1.81513	0.0630585	0.19443347	2.9509059	20	—	—
123966	2001	FF ₂₂	14.4	X	142.64857	25.53225	146.61735	6.90589	0.1412873	0.17150664	3.2083526	20	8 28.9	19.6
123967	2001	FX ₂₂	15.5	X	225.08132	101.09666	100.48250	2.78334	0.1989588	0.18598537	3.0396030	20	12 13.9	20.1
123968	2001	FQ ₂₆	14.8	X	281.59629	152.56687	350.37166	9.58234	0.0359777	0.18781297	3.0198520	20	—	—
123969	2001	FM ₂₇	15.2	X	164.80049	36.15151	210.14596	6.81401	0.2446315	0.18275622	3.0753032	20	12 11.2	20.6
123970	2001	FQ ₂₇	14.2	X	102.41224	308.55992	357.80186	10.96277	0.1647638	0.18192169	3.0847009	20	12 30.1	19.3
123971	2001	FX ₂₇	14.8	X	179.80528	200.81293	16.20319	9.82451	0.0137868	0.18635671	3.0355638	20	11 30.5	19.2
123972	2001	FM ₂₈	14.8	X	80.03636	103.03577	137.34971	6.28800	0.0185618	0.17504581	3.1649601	20	9 2.1	19.2
123973	2001	FQ ₂₈	15.1	X	233.60275	108.82514	29.23926	9.19855	0.1455553	0.18321497	3.10701675	20	10 14.9	19.7
123974	2001	FW ₂₈	14.6	X	91.34338	204.29105	57.86280	6.32292	0.1571382	0.17553164	3.1591174	20	10 28.7	19.4
123975	2001	FV ₃₀	14.5	X	203.18224	116.12470	72.57409	3.03465	0.0281592	0.18377787	3.0638952	20	11 24.1	18.9
123976	2001	FV ₃₃	14.3	X	139.18957	283.66886	312.67276	11.03104	0.1109145	0.18284457	3.0743125	20	11 5.6	19.4
123977	2001	FO ₃₄	15.1	X	14.31923	205.52559	337.92628	4.16178	0.0339074	0.20885986	2.8134081	20	3 22.9	18.6
123978	2001	FF ₃₇	15.1	X	127.21435	281.12646	227.07270	2.52750	0.1097928	0.16877350	3.2428974	20	7 12.6	20.0
123979	2001	FB ₃₈	14.4	X	126.42660	259.16469	327.79099	8.85817	0.1842306	0.17768424	3.1335510	20	10 16.3	19.8
123980	2001	FH ₃₉	14.7	X	263.36105	279.70146	328.12301	9.49075	0.1053704	0.20102826	2.8860109	20	1 17.1	19.1
123981	2001	FJ ₄₂	15.0	X	190.71231	198.21526	359.74458	7.89401	0.0435409	0.18302349	3.0723085	20	11 16.8	19.7
123982	2001	FA ₄₄	14.5	X	281.90086	57.22881	200.65944	7.67576	0.2645483	0.20095856	2.8866782	20	1 27.3	19.2
123983	2001	FW ₄₆	15.2	X	192.30178	254.82374	327.06158	3.72224	0.2797213	0.18445422	3.0564009	20	12 1.4	20.5
123984	2001	FQ ₅₁	14.2	X	80.16010	94.27662	188.19224	22.41843	0.0420291	0.17737332	3.1372119	20	10 28.9	18.8
123985	2001	FK ₅₂	14.9	X	213.81748	295.77731	216.47918	9.97480	0.1800445	0.18099560	3.0952142	20	10 5.8	19.9
123986	2001	FC ₅₆	14.5	X	86.55199	292.48886	351.15237	7.23591	0.1395157	0.17743282	3.1365105	20	11 13.2	19.4
123987	2001	FO ₅₈	14.4	X	62.89803	330.56460	296.83427	12.96838	0.1576592	0.17347521	3.1840345	20	9 25.8	19.2
123988	2001	FF ₆₂	14.9	X	275.14765	298.87568	156.88698	10.94328	0.0873967	0.18339464	3.0681620	20	10 24.8	19.1
123989	2001	FG ₆₂	14.8	X	122.67894	89.37897	155.12784	10.20429	0.0414557	0.18056835	3.1000948	20	11 2.4	19.4
123990	2001	FH ₆₂												