

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>
192001 Raynatedford	15.9 ^m	X	124.97102	96.76266	312.29517	4.77010	0.0253814	0.21480627	2.7612437	20	2 24.7	19.6
192002 2005 XB ₁₁₇	16.7	X	9.37456	0.96652	348.53192	1.63737	0.2094865	0.25749802	2.4469220	20	11 30.7	19.2
192003 2005 YH ₁	15.9	X	128.15668	192.05874	344.79355	6.99271	0.0873236	0.24560087	2.5253182	20	8 24.4	19.5
192004 2005 YH ₂₄	16.7	X	330.44128	150.37942	127.75324	2.72704	0.2002891	0.23118483	2.6292376	20	5 8.3	19.3
192005 2005 YZ ₂₄	16.6	X	269.84719	256.13909	143.54412	2.33412	0.0547286	0.24411346	2.5355659	20	8 14.5	19.7
192006 2005 YO ₂₉	16.8	X	1.84135	256.75001	353.59855	2.06044	0.0180849	0.23177441	2.6247769	20	6 3.1	20.1
192007 2005 YO ₃₃	16.8	X	323.68193	91.85471	137.89458	1.44138	0.1149484	0.21936719	2.7228367	20	3 2.7	19.9
192008 2005 YJ ₃₅	16.5	X	43.00232	188.20114	112.06174	3.19137	0.1996108	0.25707765	2.4495887	20	11 11.2	19.7
192009 2005 YG ₄₁	17.4	X	301.57136	147.63783	196.04599	2.18296	0.1797214	0.31513096	2.1386612	20	6 27.1	19.2
192010 2005 YA ₄₂	16.8	X	287.19298	295.56192	34.12636	1.07747	0.0560649	0.23335298	2.6129262	20	6 1.1	20.0
192011 2005 YP ₄₂	16.1	X	324.18815	248.82977	253.34502	1.79800	0.1278236	0.20324931	2.8649475	20	—	—
192012 2005 YT ₆₀	16.4	X	130.59427	81.86194	354.12601	1.32827	0.0367342	0.22360120	2.6883550	20	4 7.7	20.1
192013 2005 YR ₆₁	15.6	X	284.69434	340.90153	289.21571	12.94458	0.0373298	0.22205902	2.7007876	20	3 6.5	19.6
192014 2005 YV ₆₆	15.7	X	271.27118	210.08518	104.42400	10.98361	0.1862400	0.22756368	2.6570563	20	4 8.3	19.8
192015 2005 YU ₇₀	16.8	X	27.13626	303.63174	313.68718	2.24077	0.1117781	0.24275868	2.5449907	20	8 1.2	19.4
192016 2005 YP ₇₂	17.0	X	53.96038	47.72693	289.86452	5.96076	0.1379894	0.26358852	2.4090828	20	—	—
192017 2005 YB ₇₇	14.7	X	113.54583	300.58508	293.00571	21.18707	0.2066545	0.17911551	3.1168357	20	10 7.7	20.3
192018 2005 YV ₁₀₉	15.7	X	243.90830	14.76956	264.13446	4.07188	0.1396973	0.21394237	2.7686721	20	1 27.7	20.1
192019 2005 YA ₁₁₆	16.3	X	28.92031	313.20418	45.01412	2.88958	0.2321793	0.26141585	2.4224125	20	—	—
192020 2005 YJ ₁₄₈	16.6	X	297.47585	309.41223	38.74406	3.30297	0.0766762	0.23966405	2.5668517	20	7 10.4	19.6
192021 2005 YN ₁₄₈	16.6	X	64.44973	230.69893	27.63940	3.47957	0.0507783	0.24465565	2.5318184	20	9 19.5	19.7
192022 2005 YG ₁₅₈	16.1	X	15.32687	154.41684	184.28042	2.14091	0.2228952	0.25673373	2.4517758	20	11 27.9	18.7
192023 2005 YK ₁₇₅	16.0	X	257.05313	219.17098	66.62443	3.06714	0.1883519	0.21759369	2.7376118	20	2 15.2	20.3
192024 2005 YA ₁₇₆	16.1	X	48.02052	159.17029	306.99882	3.02055	0.0631931	0.21311925	2.7757963	20	2 1.3	19.3
192025 2005 YH ₁₉₃	15.9	X	286.59764	296.26836	298.53115	2.99406	0.0451062	0.21209542	2.7847221	20	1 31.2	19.8
192026 2005 YM ₁₉₃	16.3	X	155.74527	141.74858	306.33355	3.02424	0.0456630	0.22937728	2.6430322	20	5 25.2	20.0
192027 2005 YG ₂₀₁	15.7	X	299.98771	175.01459	117.92711	14.27520	0.1733669	0.22681633	2.6628897	20	4 18.9	19.4
192028 2005 YO ₂₁₁	15.8	X	151.05925	290.01566	193.06188	12.37805	0.1215897	0.23801223	2.5787142	20	7 7.9	20.0
192029 2005 YS ₂₁₁	16.1	X	226.30151	290.69029	95.38588	10.01533	0.0850374	0.23280836	2.6169997	20	5 27.5	19.9
192030 2005 YS ₂₂₄	15.9	X	251.99471	192.49153	60.66041	3.33094	0.1396759	0.21341046	2.7732706	20	1 6.2	20.2
192031 2005 YU ₂₂₅	15.9	X	325.44230	159.15526	103.27183	13.88130	0.0608484	0.22900292	2.6459118	20	5 1.2	19.5
192032 2005 YF ₂₄₇	15.8	X	189.94417	267.01295	93.87838	6.60400	0.0862785	0.21992290	2.7182480	20	3 18.9	20.0
192033 2005 YG ₂₄₇	16.6	X	20.06732	9.43503	1.90426	2.68602	0.2372993	0.26185269	2.4197176	20	—	—
192034 2005 YL ₂₆₉	16.2	X	229.48616	273.33181	136.71998	15.49315	0.1344280	0.23568354	2.5956724	20	6 26.3	20.3
192035 2005 YV ₂₇₃	16.9	X	208.92008	50.25514	0.55264	1.82487	0.0531708	0.23192985	2.6236040	20	6 9.5	20.7
192036 2005 YW ₂₇₃	15.3	X	179.80731	263.53323	322.19594	11.89193	0.0808671	0.18834253	3.0141887	20	12 7.7	20.0
192037 2005 YU ₂₇₄	16.1	X	111.97988	324.44917	146.39471	4.17519	0.1952695	0.22324815	2.6911886	20	5 21.6	20.1
192038 2005 YE ₂₇₅	15.2	X	287.16402	306.52638	305.03411	12.03963	0.3119596	0.21282710	2.7783360	20	2 20.4	19.2
192039 2005 YM ₂₈₆	15.9	X	204.82938	151.37633	154.72610	8.49311	0.1205868	0.21159658	2.7890970	20	1 24.5	20.3
192040 2005 YF ₂₈₇	15.6	X	200.06151	164.10341	299.61147	10.62604	0.0441803	0.23749432	2.5824618	20	8 8.5	19.3
192041 2005 YG ₂₈₇	15.6	X	316.29319	308.14035	310.57535	13.90933	0.0992938	0.22417949	2.6837298	20	3 23.9	19.3
192042 2006 AP ₄	16.3	X	350.62286	198.39598	112.77534	8.04351	0.2014562	0.24297875	2.5434538	20	8 22.0	18.3
192043 2006 AK ₁₄	17.0	X	326.60521	230.06581	177.95751	1.05663	0.1776610	0.25687186	2.4508968	20	11 29.9	18.9
192044 2006 AH ₃₂	15.0	X	241.65609	204.04046	348.05461	14.22504	0.0301466	0.19539677	2.9411993	20	—	—
192045 2006 AX ₄₅	15.3	X	279.87651	124.37832	121.54109	13.65742	0.0602317	0.21411936	2.7671462	20	2 4.6	19.1
192046 2006 AE ₇₃	16.1	X	328.72487	273.54622	164.95509	7.12105	0.2475010	0.26262642	2.4149627	20	—	—
192047 2006 AX ₇₈	16.4	X	223.31568	43.97794	278.19491	4.85283	0.1501885	0.21938029	2.7227283	20	2 26.8	20.9
192048 2006 AY ₈₅	14.6	X	181.15830	164.91276	10.57121	17.83470	0.1093820	0.17770184	3.1333441	20	10 7.4	19.6
192049 2006 AY ₉₂	16.6	X	49.28031	245.00509	121.51141	5.56211	0.2721100	0.26659508	2.3909361	20	—	—
192050 2006 AJ ₉₃	16.1	X	287.23361	320.23715	316.12703	2.50239	0.1457364	0.22055726	2.7130334	20	3 8.6	19.9
192051 2006 AT ₉₅	15.7	X	200.72486	205.58846	144.74720	10.07679	0.0559616	0.21870526	2.7283729	20	3 16.2	19.7
192052 2006 AO ₉₆	16.1	X	276.43697	268.97930	173.93863	13.22229	0.2141294	0.25301713	2.4757271	20	10 2.3	18.6
192053 2006 AV ₉₆	16.2	X	36.54848	143.67839	27.04951	1.30398	0.0429546	0.22036740	2.7145915	20	4 7.3	19.6
192054 2006 BO ₁₂	16.1	X	132.20833	169.00132	158.72894	2.28080	0.0576371	0.19545275	2.9406377	20	—	—
192055 2006 BA ₃₆	15.7	X	261.56116	199.76970	114.20949	4.82637	0.0911720	0.22260191	2.6963946	20	4 5.4	19.5
192056 2006 BR ₄₀	16.1	X	79.43912	338.65923	142.03859	3.87150	0.0155648	0.21543223	2.7558924	20	3 30.1	19.8
192057 2006 BC ₄₁	15.7	X	144.46545	300.45346	73.05038	4.00266	0.0303872	0.21136081	2.7911707	20	2 7.7	19.6
192058 2006 BT ₄₃	16.4	X	106.54378	232.31587	149.81442	2.37634	0.0839973	0.20380091	2.8597757	20	1 10.2	20.3
192059 2006 BA ₄₅	15.9	X	216.39368	276.74367	150.01143	10.00524	0.1095047	0.23363533	2.6108207	20	7 4.9	19.9
192060 2006 BW ₅₈	16.2	X	141.14524	256.21458	141.86761	4.33200	0.1003821	0.21336363	2.7736764	20	3 12.3	20.2
192061 2006 BE ₆₀	15.9	X	104.42121	103.46303	318.53740	5.89166	0.0254347	0.21040124	2.7996508	20	2 16.5	19.7
192062 2006 BY ₇₉	14.6	X	49.76752	208.10511	127.80052	11.83953	0.0215761	0.18119737	3.0929160	20	11 25.1	19.1
192063 2006 BF ₈₃	15.4	X	252.12768	34.13417	146.70574	13.16362	0.0492715	0.19310083	2.9644671	20	—	—
192064 2006 BX ₈₃	16.5	X	224.03319	343.90662	28.77127	1.97090	0.0669800	0.22801365	2.6535595	20	5 6.9	20.3
192065 2006 BY ₈₃	16.8	X	356.58680	354.35975	22.33291	1.92759	0.1963909	0.25693080	2.4505220	20	12 15.5	19.3
192066 2006 BF ₉₀	15.4	X	128.28815	158.08556	140.21117	11.27581	0.0913537	0.18954872	3.0013880	20	—	—
192067 2006 BT ₉₀	15.9	X	121.71214	266.20435	105.63469	3.08310	0.0968232	0.20350358	2.8625605			

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>
192081 2006 BW ₁₄₂	15.4	X	19.36138	170.18474	154.26165	11.37401	0.1148881	0.17171715	3.2057300	20	10 12.6	19.6
192082 2006 BX ₁₄₅	15.9	X	79.67483	335.05086	118.91925	5.11551	0.0381678	0.21287302	2.7779364	20	2 28.4	19.6
192083 2006 BS ₁₅₅	15.8	X	76.03184	339.87312	116.57104	5.53911	0.0308396	0.21108288	2.7936202	20	2 26.1	19.5
192084 2006 BV ₁₅₅	15.0	X	94.74782	117.99884	137.40358	10.65681	0.0498788	0.17424600	3.1746377	20	10 15.5	19.7
192085 2006 BY ₁₆₃	15.8	X	212.88307	227.29636	132.61089	7.10348	0.0459650	0.22145246	2.7057170	20	4 12.3	19.7
192086 2006 BL ₁₆₆	15.7	X	168.42602	68.26913	324.72648	5.40367	0.0290599	0.21738864	2.7393330	20	3 27.5	19.6
192087 2006 BM ₁₆₇	15.4	X	64.18833	172.73300	143.37605	12.72932	0.0648742	0.18193301	3.0845729	20	11 24.8	20.0
192088 2006 BG ₁₆₉	15.6	X	114.74997	158.42724	150.08843	9.43836	0.0098152	0.18855933	3.0118780	20	—	—
192089 2006 BH ₁₈₃	15.5	X	187.24413	226.82307	121.43745	8.37547	0.0534609	0.21372057	2.7705872	20	2 27.9	19.6
192090 2006 BQ ₁₉₂	16.1	X	305.11209	189.44273	155.74406	6.01008	0.2424575	0.23714666	2.5849851	20	6 21.2	18.8
192091 2006 BQ ₁₉₆	15.7	X	162.84780	196.49654	163.78152	6.91341	0.0314231	0.20939442	2.8086178	20	2 11.2	19.6
192092 2006 BD ₂₀₀	15.7	X	88.67807	163.78627	123.87571	2.45663	0.1299637	0.17677681	3.1442654	20	11 21.8	20.5
192093 2006 BG ₂₀₀	16.9	X	36.22575	355.64535	357.13074	0.88169	0.1979101	0.26233511	2.4167502	20	—	—
192094 2006 BH ₂₀₃	15.9	X	189.85868	234.69887	26.35129	1.97673	0.0793203	0.19461650	2.9490555	20	—	—
192095 2006 BJ ₂₀₇	15.9	X	197.20097	39.30481	277.48133	2.73304	0.0867154	0.21057909	2.7980741	20	1 29.9	20.2
192096 2006 BX ₂₀₇	16.0	X	161.75266	127.76598	316.51467	13.27970	0.0808432	0.22721769	2.6597529	20	5 27.5	20.2
192097 2006 BF ₂₁₀	14.8	X	189.88372	358.39230	158.69826	28.09919	0.1421760	0.17506254	3.1647584	20	9 25.3	20.0
192098 2006 BT ₂₅₂	16.1	X	97.47074	211.23115	164.75156	2.22936	0.0839751	0.20169867	2.8796124	20	—	—
192099 2006 BS ₂₅₃	16.1	X	128.52459	8.44801	323.19847	1.31939	0.0516197	0.19753959	2.9198909	20	—	—
192100 2006 BA ₂₆₉	15.7	X	341.14611	5.28005	20.26526	11.51994	0.2578072	0.25453032	2.4659051	20	12 3.6	17.8
192101 2006 BO ₂₇₀	15.4	X	334.11388	142.02610	313.38609	10.24578	0.0216704	0.19224252	2.9732842	20	—	—
192102 2006 BY ₂₇₈	15.9	X	174.71631	28.10541	300.04263	1.06821	0.0642884	0.20302765	2.8670323	20	1 20.8	20.2
192103 2006 CL ₁₁	15.6	X	199.88652	183.86344	131.44157	6.19496	0.1101417	0.21148603	2.7900689	20	1 31.5	20.0
192104 2006 CK ₁₂	16.5	X	200.48993	95.94332	258.00635	0.54668	0.0743928	0.21841331	2.7307586	20	3 17.8	20.6
192105 2006 CL ₁₈	16.0	X	43.16357	138.21218	1.44885	3.68139	0.0445336	0.21337213	2.7736027	20	3 7.9	19.5
192106 2006 CE ₂₃	15.3	X	249.90398	337.32907	158.30633	4.49284	0.1187304	0.17484585	3.1673726	20	11 2.6	19.8
192107 2006 CD ₂₆	15.5	X	238.24238	189.04855	119.10889	4.89296	0.0817368	0.21609649	2.7502420	20	3 3.5	19.5
192108 2006 CO ₂₉	16.2	X	154.92989	265.61066	162.47928	4.09010	0.0729380	0.22357132	2.6885946	20	5 1.8	20.1
192109 2006 CK ₃₉	15.1	X	229.63105	211.38091	311.84769	8.40590	0.0662799	0.18297168	3.0728884	20	11 16.9	19.7
192110 2006 CR ₄₃	15.5	X	62.35470	296.52435	22.91466	6.16790	0.1988544	0.17702095	3.1413737	20	12 8.5	20.2
192111 2006 CT ₄₄	16.5	X	189.97654	346.19462	8.29590	4.60059	0.1196583	0.21825646	2.7320668	20	3 9.2	20.8
192112 2006 CX ₅₆	15.9	X	114.15487	127.73990	340.40932	10.49882	0.1169860	0.22174008	2.7033768	20	5 5.8	20.0
192113 2006 CS ₅₇	16.1	X	246.49406	123.43106	173.42600	2.18172	0.0104508	0.21231426	2.7828082	20	3 4.0	19.8
192114 2006 CR ₆₆	15.4	X	326.22396	277.24041	202.32610	3.82923	0.0249718	0.19324043	2.9630391	20	—	—
192115 2006 DG ₂	16.5	X	110.07559	267.33629	158.21779	1.83351	0.0857208	0.21287591	2.7779113	20	3 7.9	20.3
192116 2006 DM ₉	15.1	X	215.30846	227.37341	16.00783	12.90461	0.0227432	0.19539183	2.9412489	20	—	—
192117 2006 DF ₂₇	16.4	X	71.69685	185.51287	156.32845	3.54584	0.1063480	0.18402206	3.0611841	20	—	—
192118 2006 DN ₃₀	15.5	X	135.08303	93.79083	92.97247	1.37853	0.0460365	0.18523266	3.0478319	20	—	—
192119 2006 DG ₃₂	15.7	X	233.30163	233.30558	312.26361	0.83880	0.1127248	0.18604966	3.0389027	20	12 19.4	19.9
192120 2006 DB ₄₄	16.0	X	161.33507	122.29660	159.09598	10.55682	0.0233661	0.19240737	2.9715856	20	—	—
192121 2006 DG ₄₅	15.6	X	66.63580	313.28799	350.43039	4.35907	0.1116353	0.17666423	3.1456010	20	11 13.3	20.2
192122 2006 DB ₅₃	15.7	X	112.68831	297.69864	337.35808	8.82060	0.0647754	0.17909084	3.1171221	20	11 23.7	20.5
192123 2006 DJ ₅₉	15.9	X	156.89884	115.85040	323.34508	1.86021	0.0598661	0.22049277	2.7135624	20	5 15.8	19.8
192124 2006 DO ₅₉	16.1	X	8.07851	175.12104	275.64570	0.47886	0.0629512	0.19386562	2.9566654	20	—	—
192125 2006 DB ₆₉	15.4	X	338.43641	188.42759	303.04547	0.83465	0.0325533	0.19692330	2.9259797	20	—	—
192126 2006 DF ₇₄	14.9	X	5.78442	325.89887	110.88059	11.75557	0.0610290	0.19226874	2.9730138	20	—	—
192127 2006 DY ₇₇	16.1	X	248.33354	218.43461	153.31509	12.89721	0.2278942	0.22867331	2.6484537	20	5 20.3	20.5
192128 2006 DV ₉₄	16.4	X	337.46451	257.44832	103.58534	0.64153	0.0925588	0.23719953	2.5846009	20	10 2.9	19.2
192129 2006 DN ₉₈	15.7	X	84.61641	137.54594	159.82911	9.65168	0.1492045	0.17924486	3.1153361	20	12 2.4	20.6
192130 2006 DZ ₁₀₁	16.1	X	124.16769	267.57196	135.97017	4.92521	0.1133386	0.20991718	2.8039529	20	3 1.9	20.2
192131 2006 DD ₁₁₆	15.6	X	275.45592	242.25251	143.96708	3.60820	0.1674467	0.23168184	2.6254760	20	7 14.9	18.9
192132 2006 DK ₁₂₀	15.2	X	113.17039	207.83523	74.98394	3.24688	0.0450386	0.18178624	3.0862331	20	12 4.8	19.8
192133 2006 DZ ₁₂₀	15.4	X	172.09769	193.55602	35.27456	7.27344	0.0338780	0.18560411	3.0437641	20	12 5.4	19.9
192134 2006 DJ ₁₂₄	16.5	X	287.15743	193.97908	172.70371	6.02029	0.2929462	0.23587798	2.5942458	20	6 14.5	19.9
192135 2006 DF ₁₅₉	16.1	X	178.91144	222.94935	5.43564	1.99292	0.0472406	0.18316304	3.0707479	20	12 11.8	20.6
192136 2006 DS ₁₆₀	16.1	X	50.08447	188.48295	165.67161	6.64724	0.0538400	0.18414003	3.0598766	20	12 19.6	20.4
192137 2006 DZ ₁₈₇	15.5	X	41.12529	197.79840	109.02290	3.23292	0.0656211	0.16942353	3.2345974	20	10 12.1	19.9
192138 2006 DX ₁₉₅	15.8	X	228.67968	35.13902	175.92975	1.22210	0.1489041	0.18666949	3.0321719	20	—	—
192139 2006 DC ₁₉₈	14.9	X	265.89973	14.64613	134.52931	11.43682	0.0496466	0.18357822	3.0661162	20	12 19.8	19.2
192140 2006 EV ₂₆	15.2	X	355.13559	270.43295	161.35319	3.29156	0.0623331	0.19015739	2.9949799	20	—	—
192141 2006 EB ₄₁	15.7	X	134.58559	329.27278	236.74301	2.41907	0.0224069	0.16938315	3.2351114	20	9 23.2	20.4
192142 2006 FB ₂	14.8	X	183.59455	8.89773	171.28086	24.37831	0.0744878	0.17708293	3.1406407	20	10 21.3	19.8
192143 2006 FC ₈	16.3	X	127.57111	256.74222	186.27953	2.78097	0.1216516	0.21343341	2.7730718	20	4 24.4	20.3
192144 2006 FR ₉	15.1	X	302.38728	320.98279	169.42138	9.98916	0.1050289	0.18750967	3.0231075	20	—	—
192145 2006 FG ₂₁	15.7	X	190.42737	341.65343	8.69137	3.64978	0.1060212	0.21087474	2.7954582	20	3 4.9	19.9
192146 2006 FP ₂₂	15.3	X	129.99994	82.40155	179.82946	15.51281	0.0484086	0.17760463	3.1344874	20	11 29.9	20.2
192147 2006 FS ₄₀	15.9	X	76.45702	29.89203	30.44824	2.25060	0.0650576	0.20344854	2.8630768	20	1 16.5	19.6
192148 2006 FK ₄₃	15.5	X	293.25546	359.08433	150.91599	3.72377	0.1462879	0.18839426	3.0136370	20	—	—
192149 2006 FV ₄₇	14.8	X	94.70162	205.29144	121.78384	12.41405	0.0381408	0.18590724	3.0404545	20	—	—
192150 2006 GC ₄₀	14.8	X	229.09732	183.99646	6.98502	14.66235	0.0900743	0.18217127	3.0818829	20	12 17.4	19.5
192151 2006 HD ₅	14.6	X	15.72269	218.15062	178.91992	21.94850	0.0378844	0.17984308	3.1084238	20	12 25.2	19.3
192152 2006 HC ₇	15.3	X	34.83964	289.82096	207.40262	14.45838	0.0919987	0.20908340	2.8114024	20	2 19.6	19.0
192153 2006 HH ₈	15.5	X	334.82160	111.47261	345.60156	1.79020	0.0547053	0.18771756	3.0208752	20	—	—
192154 2006 HN ₉	14.5	X	85.19256	94.3								

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>		
192161	2007	CY ₃	16.6	X	18.22116	107.14722	147.01715	3.93528	0.2399902	0.24331389	2.5411177	20	7 28.5	18.8
192162	2007	CN ₄₁	16.0	X	71.44198	278.55442	330.26069	3.70923	0.1473448	0.25484104	2.4639003	20	9 28.6	19.3
192163	2007	CM ₄₂	16.9	X	87.81013	105.50431	155.66537	2.56179	0.1816954	0.26040604	2.4286710	20	11 7.6	20.5
192164	2007	DB ₁₁	16.8	X	57.27112	159.17238	159.06973	6.13572	0.1286723	0.26432795	2.4045879	20	12 12.7	20.2
192165	2007	DG ₁₃	16.7	X	181.71570	293.95741	316.19226	6.86314	0.1052609	0.27734265	2.3287611	20	—	—
192166	2007	DJ ₁₈	17.1	X	117.27772	273.13958	8.42706	0.46061	0.1978383	0.26850147	2.3796054	20	12 29.2	20.9
192167	2007	DQ ₁₈	16.3	X	72.10493	287.78099	340.24027	4.37083	0.1150053	0.25797273	2.4439192	20	10 20.6	19.6
192168	2007	DT ₅₃	17.5	X	330.73109	56.82301	188.95898	3.55425	0.0891554	0.30467451	2.1873182	20	3 29.9	19.7
192169	2007	DR ₇₅	16.6	X	35.84404	141.00923	146.19834	3.37477	0.1490312	0.25086794	2.4898467	20	10 5.9	19.6
192170	2007	DV ₈₂	16.7	X	117.61454	312.42900	277.08709	1.68432	0.1682701	0.25703877	2.4498357	20	10 24.2	20.6
192171	2007	DC ₈₃	16.7	X	191.73166	214.57349	349.09288	4.44567	0.1591531	0.26826389	2.3810101	20	12 1.9	20.2
192172	2007	DO ₁₀₅	17.3	X	92.93828	334.14035	342.07028	5.40559	0.2296296	0.27199776	2.3591696	20	—	—
192173	2007	EF ₄₂	16.9	X	306.23801	227.61346	21.93564	0.63589	0.1747537	0.22284971	2.6943954	20	2 23.6	20.3
192174	2007	EG ₅₁	16.4	X	94.56039	52.31010	198.03671	10.55125	0.0760866	0.25702617	2.4499158	20	10 21.7	19.7
192175	2007	EL ₇₂	16.9	X	315.11641	37.31262	149.05726	3.33268	0.0432882	0.28985188	2.2612677	20	—	—
192176	2007	ER ₁₄₉	16.6	X	79.05393	166.55065	139.80731	6.65689	0.1108716	0.26499416	2.4005560	20	12 19.6	20.0
192177	2007	EB ₁₈₂	17.4	X	275.24205	297.38015	232.79425	1.75142	0.1082636	0.27635096	2.3343290	20	—	—
192178	2007	Lijieshou	16.8	X	349.77281	75.77311	176.78984	5.23551	0.1660470	0.23438863	2.6052237	20	5 14.2	19.2
192179	2007	EQ ₂₁₀	15.9	X	260.69421	341.82589	297.70654	4.52963	0.2319242	0.22149355	2.7053824	20	2 5.4	20.3
192180	2007	ED ₂₁₃	15.5	X	112.22719	210.56546	341.93321	11.76527	0.1092467	0.24541469	2.5265953	20	8 28.8	19.2
192181	2007	EC ₂₁₄	16.2	X	63.60713	136.46986	206.20361	9.03938	0.2512726	0.26712128	2.3877951	20	—	—
192182	2007	EP ₂₁₇	15.4	X	241.41075	114.49797	202.82229	14.70741	0.2805483	0.21632915	2.7482698	20	2 27.5	20.5
192183	2007	FG ₁₂	15.9	X	49.27928	150.31619	145.08688	9.34030	0.0785944	0.25600305	2.4564388	20	10 28.2	19.2
192184	2007	FW ₃₅	15.8	X	345.27906	23.25097	181.92111	15.06560	0.1449357	0.22241147	2.6979336	20	2 25.7	19.0
192185	2007	FS ₄₃	17.0	X	198.45672	277.10540	7.39966	3.68507	0.1389649	0.27957726	2.3163356	20	—	—
192186	2007	GA ₅	16.5	X	190.31359	85.41741	214.54365	3.65897	0.0397173	0.20799029	2.8212442	20	1 1.5	20.7
192187	2007	GF ₉	17.5	X	139.73070	57.55089	215.00298	1.23059	0.0562698	0.26757529	2.3850934	20	—	—
192188	2007	GR ₉	16.7	X	282.93429	201.99902	339.43781	5.59799	0.1464970	0.28007841	2.3135717	20	—	—
192189	2007	GT ₂₃	15.9	X	72.63835	174.46732	113.04042	1.77723	0.1532559	0.17519202	3.1631989	20	11 7.4	20.5
192190	2007	GG ₃₃	14.9	X	98.98940	157.16148	64.77122	16.67518	0.0953855	0.17926643	3.1150861	20	10 27.7	19.9
192191	2007	GH ₃₉	15.5	X	100.80041	196.90038	64.77122	1.86320	0.1639368	0.17818912	3.1276292	20	11 6.1	20.5
192192	2007	GX ₄₅	15.9	X	120.74480	126.20064	172.81835	4.63296	0.1194777	0.18815930	3.0161453	20	—	—
192193	2007	GP ₄₈	15.7	X	11.39025	315.55964	211.87788	11.62660	0.0769441	0.21743677	2.7389287	20	2 21.8	19.2
192194	2007	GW ₅₃	15.9	X	305.38177	192.99302	177.34645	6.28263	0.3458796	0.23730022	2.5838698	20	7 9.1	18.6
192195	2007	GM ₇₁	16.6	X	125.11866	177.22337	100.12856	6.89838	0.1104679	0.26838608	2.3802873	20	12 30.9	20.0
192196	2007	HU ₂	16.6	X	8.33132	82.65566	201.09917	3.86181	0.0378541	0.24104826	2.5570156	20	7 30.5	19.7
192197	2007	HR ₄	15.9	X	238.25948	117.81645	166.10923	5.12781	0.1343469	0.21059888	2.7982444	20	1 29.1	20.4
192198	2007	HJ ₁₂	16.5	X	279.74370	284.88087	17.53507	2.05939	0.1639864	0.22387285	2.6861799	20	3 30.9	20.4
192199	2007	HE ₂₅	15.9	X	337.33886	159.56647	191.31394	4.11267	0.2734120	0.24040568	2.5615700	20	9 22.0	17.2
192200	2007	HN ₅₂	15.2	X	43.50256	142.40029	187.38597	9.97288	0.2113469	0.17468860	3.1692732	20	12 2.6	19.7
192201	2007	HA ₆₁	16.7	X	92.09856	38.35500	161.37409	5.39419	0.0751003	0.24069464	2.5595195	20	8 8.1	20.3
192202	2007	HP ₇₀	16.2	X	221.60911	98.20415	213.03729	4.05400	0.1457151	0.21204212	2.7851887	20	2 13.8	20.7
192203	2007	HH ₉₀	14.0	X	219.36170	322.98859	296.60520	7.67069	0.1911765	0.12482448	3.9652406	20	—	—
192204	2007	JN ₂₁	16.2	X	110.87528	2.91550	288.52884	2.41489	0.0699800	0.18503438	3.0500088	20	12 14.7	20.8
192205	2007	JJ ₂₇	15.1	X	85.87465	137.14012	116.38523	5.85882	0.1236685	0.17146842	3.2088293	20	10 10.2	19.9
192206	2007	JR ₂₈	16.4	X	139.36267	43.86736	179.50418	0.69663	0.1637168	0.17903491	3.1177711	20	10 26.6	21.6
192207	2007	JB ₃₃	16.2	X	154.01750	242.86210	146.74720	6.73142	0.0485544	0.21539083	2.7562456	20	3 11.3	20.2
192208	2007	Tzu Chi	14.9	X	78.04625	225.14900	53.60499	10.73378	0.0354699	0.17523405	3.1626931	20	10 21.4	19.4
192209	2007	JL ₃₈	16.4	X	162.28335	181.79540	193.43867	4.38570	0.1248674	0.21505953	2.7590755	20	3 6.2	20.6
192210	2007	JY ₄₁	15.0	X	157.16510	83.53496	148.88488	21.10976	0.1147783	0.18308936	3.0715716	20	11 26.8	20.3
192211	2007	KO ₃	14.6	X	62.98293	241.17752	84.75513	10.43777	0.0869010	0.18220075	3.0815504	20	12 5.4	19.1
192212	2007	LM ₁	16.1	X	346.98647	36.47766	193.22203	13.21279	0.1435483	0.22212430	2.7025885	20	4 5.9	18.9
192213	2007	LE ₂₈	16.0	X	75.95002	130.70357	157.21002	9.54725	0.0650561	0.17502373	3.1652262	20	11 2.9	20.6
192214	2007	LA ₃₄	15.0	X	164.34378	148.44565	117.87874	11.46623	0.0516609	0.19132006	2.9828337	20	—	—
192215	2007	MH ₁₉	13.2	X	284.43960	199.58487	222.03510	3.04371	0.1055233	0.08281337	5.2127760	20	9 3.6	20.0
192216	2007	ML ₂₀	15.6	X	77.45969	210.79500	145.46134	8.46535	0.0744448	0.19205222	2.9752479	20	—	—
192217	2007	PT ₉	13.0	X	7.29713	131.64226	216.31230	4.42462	0.1244719	0.08224756	5.2366560	20	10 2.8	19.3
192218	2007	PX ₄₅	12.7	X	102.03928	69.37714	179.28570	5.18388	0.0632401	0.08130138	5.2772067	20	9 30.4	19.7
192219	2007	RO ₂₃	14.9	X	150.39959	319.36431	329.72448	10.68620	0.1554069	0.17675339	3.1445431	20	—	—
192220	2007	Oicles	13.3	X	338.49586	182.99401	211.17555	12.77352	0.0605588	0.08273222	5.2161845	20	10 15.4	20.0
192221	2007	RQ ₂₇₈	12.3	X	26.09938	225.05428	106.84102	27.34822	0.0468017	0.08335350	5.1902326	20	10 17.6	19.4
192222	2007	RZ ₂₈₁	11.9	X	17.76560	274.75404	83.88943	18.64097	0.0655622	0.08131592	5.2765774	20	11 1.8	18.8
192223	2007	VM ₆	12.8	X	294.43216	186.07813	223.36927	3.57474	0.0791417	0.08198210	5.2479539	20	9 4.9	19.6
192224	2007	VO ₆	12.8	X	353.82603	195.31846	152.97739	15.01283	0.0625265	0.08297280	5.2060964	20	9 15.5	19.4
192225	2007	WT ₂₀	15.6	X	38.06269	10.64333	306.89430	8.24558	0.1645593	0.21032738	2.8003061	20	11 8.2	19.4
192226	2008	AB ₁₁₂	16.1	X	99.54742	265.20118	348.98528	2.33515	0.0548964	0.20623044	2.8372714	20	10 20.4	20.1
192227	2008	AD ₁₁₈	15.2	X	76.84743	58.41854	75.63911	15.35919	0.0701668	0.17633272	3.1495423	20	4 27.5	19.7
192228	2008	BE ₃₃	16.2	X	297.22764	32.96549	340.99001	1.30530	0.1232125	0.19575549	2.9376051	20	8 4.5	19.8
192229	2008	CA ₁₂	16.6	X	141.54433	18.52252	343.11798	12.53906	0.1922001	0.24221920	2.5487682	20	2 5.5	20.5
192230	2008	CQ ₄₀	17.4	X	244.19030	240.09489	183.28156	6.24519						

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>
192241 2008 DA ₇₀	15.1	X	79.70338	338.08615	151.66898	16.18615	0.0332889	0.17279372	3.1924008	20	4 19.8	19.8
192242 2008 DF ₈₅	16.7	X	220.87862	291.43730	46.37902	2.52004	0.0754187	0.24551879	2.5258810	20	3 18.9	20.3
192243 2008 EY ₃₂	15.6	X	121.75155	78.59119	53.86199	6.36626	0.0133504	0.17971568	3.1098926	20	6 6.9	20.0
192244 2008 EP ₃₉	16.1	X	193.16086	346.75061	241.46852	3.30807	0.1525204	0.21267832	2.7796316	20	12 23.8	20.4
192245 2008 EG ₅₀	16.6	X	68.53949	320.85251	8.89627	3.64925	0.0967272	0.21316939	2.7753611	20	12 23.8	20.7
192246 2008 EY ₅₇	16.7	X	348.83713	324.76500	289.67469	4.03638	0.1646436	0.25503495	2.4626512	20	5 11.4	18.8
192247 2008 EJ ₉₈	15.7	X	73.67406	341.78235	211.56163	5.53397	0.0539840	0.18506756	3.0496442	20	6 29.9	20.0
192248 2008 EK ₉₉	15.5	X	287.03855	350.65566	65.94682	12.93811	0.0335130	0.19724668	2.9227789	20	10 4.1	19.6
192249 2008 EC ₁₁₉	15.8	X	155.54908	261.98894	212.67047	7.49790	0.0728421	0.18580094	3.0416141	20	6 29.1	20.5
192250 2008 FS ₃₉	16.2	X	99.57808	141.82810	106.75001	3.00319	0.1696357	0.19290841	2.9664380	20	10 24.2	20.9
192251 2008 FF ₆₉	16.2	X	153.70921	154.27595	102.74344	2.84589	0.0907786	0.20572236	2.8419409	20	12 22.1	20.5
192252 2008 FC ₇₀	16.1	X	216.48424	217.13019	40.59354	8.01319	0.1491420	0.21755912	2.7379017	20	—	—
192253 2008 FK ₈₀	16.1	X	127.83623	312.28419	204.10691	3.70318	0.1432534	0.18461296	3.0546487	20	7 26.2	21.0
192254 2008 GB ₂₀	17.0	X	167.75288	212.60102	63.19833	6.37166	0.1146071	0.29214287	2.2494302	20	—	—
192255 2008 GM ₃₆	15.6	X	200.19382	3.47547	159.32715	6.11649	0.0194723	0.19652284	2.9299532	20	10 25.1	19.8
192256 2008 GS ₅₄	17.2	X	149.16254	149.86128	36.71376	7.24626	0.0502896	0.27469685	2.3436905	20	10 4.8	20.3
192257 2008 GD ₆₀	15.3	X	310.21719	217.51469	139.98369	10.16971	0.0916158	0.18398898	3.0615510	20	8 4.7	19.2
192258 2008 GB ₇₆	16.8	X	288.02449	203.08064	300.81949	0.75757	0.0343176	0.21529659	2.7570498	20	—	—
192259 2008 GR ₁₀₇	16.1	X	239.65742	7.42730	146.31488	8.94971	0.1522387	0.20956842	2.8070629	20	11 15.8	20
192260 2008 GQ ₁₃₄	15.9	X	242.71647	280.79391	319.52191	4.22646	0.1348955	0.22253128	2.6969652	20	—	—
192261 2008 HB ₆	16.4	X	31.87664	68.66257	168.46224	3.51981	0.0169726	0.17735958	3.1373739	20	6 26.1	20.7
192262 2008 HO ₈	13.1	X	231.99179	181.91302	186.34540	22.26777	0.1182215	0.08367640	5.1768715	20	5 11.6	20.5
192263 2008 HZ ₁₆	15.9	X	258.82219	156.29673	107.27984	7.42234	0.1908672	0.22828310	2.6514710	20	1 19.2	20.2
192264 2008 HV ₃₈	17.1	X	150.98491	42.86359	200.56672	1.75687	0.1817851	0.28312545	2.2969424	20	12 14.4	20.7
192265 2008 KH ₁₅	16.9	X	295.17202	165.57985	193.81120	13.31848	0.0610946	0.25600326	2.4564375	20	7 22.7	20.1
192266 2008 KN ₃₁	17.0	X	339.87806	272.80262	142.92736	6.75406	0.1228151	0.28173539	2.3044915	20	—	—
192267 2008 KT ₃₃	15.7	X	173.73736	351.66429	189.32185	10.59796	0.0467648	0.19115388	2.9845622	20	10 12.4	20.0
192268 2008 LD ₁₂	13.5	X	131.43758	16.60884	93.15674	13.61069	0.0554316	0.08239103	5.2305749	20	5 28.4	20.6
192269 2008 OB ₄	15.6	X	253.25293	351.73941	282.67044	6.19730	0.1719525	0.21684817	2.7438827	20	1 28.4	20.0
192270 7642 P-L	15.8	X	309.03108	0.59877	15.98863	18.82884	0.2154384	0.24555910	2.5256046	20	9 3.3	18.4
192271 3310 T-1	16.4	X	141.55374	256.02872	3.01167	26.64766	0.1863396	0.27134630	2.3629441	20	12 23.0	20.9
192272 1132 T-2	16.2	X	221.96506	188.45201	211.17910	2.75009	0.1976480	0.22566446	2.6719435	20	5 30.3	20.6
192273 2299 T-2	16.8	X	150.44521	333.34680	358.16177	2.33617	0.2032457	0.26080611	2.4261866	20	1 4.2	20.3
192274 1169 T-3	17.3	X	121.42840	65.30323	346.87420	8.62711	0.2096887	0.26364471	2.4087405	20	3 14.9	20.6
192275 2227 T-3	15.0	X	55.30464	14.83191	359.45633	11.38791	0.0889352	0.18805473	3.0172633	20	—	—
192276 2498 T-3	15.7	X	284.11949	270.54041	10.20174	8.50800	0.2403253	0.22173010	2.7034579	20	3 1.6	19.9
192277 3126 T-3	15.7	X	174.38865	15.21607	37.11036	5.62526	0.1594883	0.22092974	2.7099832	20	5 3.8	20.0
192278 3148 T-3	16.5	X	60.10684	68.05679	29.24155	6.42349	0.1658795	0.28515382	2.8603070	20	2 7.5	18.4
192279 3153 T-3	17.3	X	101.62575	285.61293	123.19369	1.49018	0.1995998	0.28528110	2.2853570	20	2 11.9	19.6
192280 3534 T-3	16.8	X	146.41781	340.83547	19.94335	3.35582	0.2409561	0.26297680	2.4128173	20	2 9.6	20.6
192281 1978 UC ₇	15.9	X	254.70334	41.84448	359.20825	2.65793	0.2174210	0.23039870	2.6352149	20	7 1.9	19.7
192282 1979 MY ₄	16.8	X	113.92134	64.83182	276.34436	11.12151	0.2546474	0.27459989	2.3442422	20	—	—
192283 1981 EE ₃	16.2	X	216.01577	149.02274	307.49395	8.74109	0.1768965	0.23693075	2.5865552	20	8 6.5	20.3
192284 1981 EL ₁₁	16.7	X	102.47727	266.82646	258.41018	4.39582	0.0718278	0.30802851	2.1714114	20	7 8.4	19.3
192285 1981 EU ₁₂	16.3	X	196.73438	297.36525	230.07623	2.90377	0.1529482	0.23934780	2.5691123	20	10 18.7	20.1
192286 1981 ES ₁₅	15.8	X	356.84430	263.41589	338.80451	10.33094	0.2379996	0.22852584	2.6495930	20	5 3.3	18.1
192287 1981 EL ₂₂	16.8	X	335.55695	176.20511	351.21298	5.10266	0.1633517	0.27430368	2.3459295	20	—	—
192288 1981 EF ₃₄	16.1	X	235.25213	217.98389	283.44725	2.95616	0.1497606	0.24079257	2.5588254	20	10 28.2	19.4
192289 1981 EQ ₄₅	16.7	X	204.05429	73.20717	191.78495	6.39725	0.0677227	0.27088612	2.3656194	20	—	—
192290 1989 QT	15.3	X	200.63228	337.98923	29.93640	18.69294	0.1524170	0.21353588	2.7721845	20	4 7.1	19.8
192291 1990 QX ₁₉	15.7	X	256.72978	45.12200	240.62245	8.00091	0.1300241	0.21890448	2.7266723	20	2 15.0	20.0
192292 1990 RC ₇	16.6	X	119.87205	209.52667	142.12329	2.60987	0.2279007	0.27666534	2.3325603	20	—	—
192293 Dominikbrunner	16.0	X	183.52999	166.82137	255.07820	4.24478	0.1550329	0.21954871	2.7213357	20	5 24.3	20.3
192294 1991 TE ₁₅	17.1	X	85.85549	238.70523	158.76697	2.63417	0.2624791	0.28394534	2.2925187	20	1 10.9	19.0
192295 1991 TN ₁₅	17.5	X	126.81914	198.42824	176.10914	4.28562	0.1359549	0.28613184	2.2808248	20	1 19.0	20.4
192296 1991 TA ₁₆	17.3	X	357.77749	228.05013	109.11940	3.10097	0.2256282	0.27165705	2.3611417	20	10 31.4	19.2
192297 1992 DX ₉	16.4	X	290.58340	17.41478	190.81411	6.79465	0.1033282	0.27622181	2.3350566	20	—	—
192298 1992 ES ₂	16.6	X	218.29332	223.05327	353.62973	5.42758	0.1471544	0.26931526	2.3748093	20	—	—
192299 1992 EW ₄	16.1	X	75.35194	186.06634	356.86380	9.15676	0.2450101	0.21788582	2.7351642	20	7 21.6	20.1
192300 1992 SY ₉	17.2	X	199.66073	43.47145	165.10457	0.88250	0.0292269	0.25381238	2.4705530	20	12 30.8	20.3
192301 1992 SQ ₁₀	18.3	X	327.30561	244.93724	36.89200	3.01752	0.1458441	0.31050114	2.1598682	20	5 11.1	19.7
192302 1993 BL ₈	17.2	X	171.27314	315.52041	119.25342	4.85182	0.1197224	0.30163399	2.2019926	20	5 29.4	20.4
192303 1993 FJ ₇	16.9	X	46.04657	85.80482	102.95926	3.29017	0.0850519	0.29519901	2.2338780	20	5 20.2	19.1
192304 1993 FK ₄₀	15.4	X	355.97008	49.49369	178.67766	12.18082	0.1627793	0.22009347	2.7168435	20	4 22.3	18.2
192305 1993 FE ₄₅	16.4	X	168.79503	149.67176	17.50197	2.73777	0.0802896	0.23311335	2.6147165	20	9 23.9	20.2
192306 1993 FB ₈₀	16.2	X	54.75427	189.85863	18.36710	7.25070	0.1967495	0.22449191	2.6812393	20	7 20.8	19.6
192307 1993 RM ₁₆	16.0	X	112.60925	217.47968	171.09416	4.14954	0.2140156	0.19836115	2.9118230	20	2 12.3	20.2
192308 1993 TK ₇	17.0	X	305.57594	214.05639	270.72808	4.23073	0.1030133	0.26152156	2.4217597	20	—	—
192309 1993 TK ₂₆	15.7	X	122.16137	338.47016	27.97311	14.59632	0.2037883	0.19670613	2.9281329	20	1 31.9	20.4
192310 1993 TN ₂₆	16.0	X	129.20549	331.36341	46.70929	6.11816	0.2585642	0.27225000	2.3577122	20	2 17.2	19.5
192311 1993 TS ₂₉	17.0	X	34.27659	291.76821	96.64697	2.73401	0.1897824	0.26298952	2.4127394	20	—	—
192312 1994 AT ₉	17.1	X	295.27054	97.40384	46.21919	2.03663	0.1360972	0.25651552	2.4531661	20	—	—
192313 1994 AV ₁₃	16.5	X	358.13863	27.05309	91.20397	3.25110	0.1729646	0.26062717	2.4272971	20	—	—
192314 1994 CN ₁	16.8	X	340.35742	240.45493	269.76503	2.47507	0.1368807	0.26075440	2.4265074	20	—	—

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>
192321 1994 SE ₁₁	16.6	X	281.32148	180.57571	110.18330	1.71065	0.0383369	0.21428614	2.7657101	20	4 6.3	20.3
192322 1994 SN ₁₁	16.4	X	136.70384	104.75704	29.64598	5.08125	0.0544480	0.21910381	2.7250184	20	7 4.3	20.3
192323 1994 SD ₁₂	17.6	X	214.93091	280.34393	13.93872	8.71687	0.1511864	0.28559444	2.2836851	20	1 13.3	21.2
192324 1994 TD ₇	17.4	X	161.28267	279.69492	20.26586	7.04850	0.1915740	0.28060717	2.3106644	20	—	—
192325 1994 UL ₈	16.8	X	331.26184	165.52704	0.54112	3.53550	0.1264598	0.27933082	2.3176978	20	—	—
192326 1994 UT ₈	15.9	X	257.78027	41.38469	251.66546	3.05507	0.0774797	0.21022307	2.8012323	20	3 4.3	19.9
192327 1994 VS ₃	15.8	X	310.10943	250.75987	14.62227	8.80300	0.0828362	0.21305619	2.7763440	20	4 4.2	19.3
192328 1994 WV ₅	16.5	X	221.49400	173.95089	204.75941	1.97802	0.0926419	0.21444476	2.7643461	20	5 10.7	20.7
192329 1995 BE ₁₄	17.3	X	344.70211	271.75724	248.84498	1.26620	0.1228239	0.27286374	2.3541755	20	—	—
192330 1995 BN ₁₅	17.0	X	288.74589	149.49444	358.49144	2.88042	0.1194736	0.26578173	2.3958114	20	—	—
192331 1995 CB ₆	17.7	X	38.99628	169.74962	232.62785	1.47848	0.2542211	0.26961515	2.3730480	20	—	—
192332 1995 FA	16.7	X	157.97967	357.58015	195.55751	5.82064	0.1019845	0.25326666	2.4741007	20	10 17.6	20.4
192333 1995 FG ₅	16.1	X	84.47356	6.52477	4.19648	13.02195	0.1984207	0.26632806	2.3925339	20	—	—
192334 1995 GU ₆	16.1	X	228.93538	11.24083	153.88854	6.02102	0.1045672	0.17920847	3.1157578	20	11 16.7	20.8
192335 1995 HD ₄	16.1	X	242.72100	42.05771	103.31377	3.95919	0.1280101	0.25578007	2.4578663	20	11 20.9	19.1
192336 1995 KK ₃	15.3	X	124.76987	245.55217	57.16709	3.61349	0.0460084	0.17876727	3.1208822	20	—	—
192337 1995 ME ₂	16.8	X	273.58796	135.57528	21.97642	5.54461	0.1549693	0.23308577	2.6149228	20	6 18.7	20.4
192338 1995 MM ₅	15.4	X	226.24427	7.57967	186.37538	9.49676	0.0325473	0.17759057	3.1346528	20	12 24.8	20.0
192339 1995 OD ₄	16.7	X	242.80377	77.52740	320.64128	4.02947	0.2721616	0.23001935	2.6381114	20	6 9.6	21.1
192340 1995 OE ₁₄	16.5	X	338.69826	58.67106	228.15980	3.48540	0.2000454	0.23384894	2.6092305	20	6 8.4	18.8
192341 1995 QF ₆	16.0	X	230.37198	184.24990	262.41366	5.23198	0.1868680	0.23567366	2.5957449	20	8 6.2	20.0
192342 1995 SP ₁₄	15.5	X	144.18422	186.13304	304.07038	6.36942	0.0989225	0.23463193	2.6034224	20	8 27.1	19.4
192343 1995 SU ₁₄	12.9	X	290.01856	240.13796	206.42596	2.20280	0.0634802	0.08079484	5.2992406	20	10 14.2	19.7
192344 1995 SY ₁₅	16.4	X	2.75334	72.89348	180.18265	3.92828	0.1603812	0.23055787	2.6340019	20	6 11.7	18.9
192345 1995 SG ₂₄	13.3	X	264.92734	54.33212	67.84955	2.90695	0.0203293	0.08065255	5.3054716	20	10 30.9	20.2
192346 1995 ST ₃₁	16.9	X	214.04270	251.09909	163.60012	12.96201	0.2577609	0.22782346	2.6550361	20	6 9.0	21.8
192347 1995 SK ₃₂	15.6	X	12.98998	300.54836	343.51576	14.73873	0.1259470	0.23545917	2.5973211	20	8 20.0	18.4
192348 1995 SY ₃₇	17.1	X	240.60120	208.31101	190.82221	0.97933	0.1397835	0.22975739	2.6401163	20	6 22.7	20.8
192349 1995 SV ₄₄	17.0	X	130.26383	307.56607	200.96231	1.26375	0.0438585	0.22809097	2.6529597	20	7 13.9	20.6
192350 1995 SW ₄₉	16.3	X	340.29441	104.17998	166.75249	7.92631	0.1261160	0.23042570	2.6350091	20	5 26.6	19.2
192351 1995 SM ₅₁	16.6	X	336.05492	272.72499	7.13247	2.48560	0.1155338	0.22766586	2.6562612	20	5 30.5	19.6
192352 1995 SE ₈₆	15.6	X	273.36063	209.13200	180.94048	14.09719	0.2574304	0.23116354	2.6293990	20	7 2.3	19.5
192353 1995 TS ₁	15.7	X	332.47140	280.48242	8.10190	10.16278	0.1617483	0.22981880	2.6396460	20	5 29.7	18.7
192354 1995 TV ₂	15.9	X	231.68374	37.20319	6.63271	13.25638	0.2466695	0.22781567	2.6550966	20	6 7.2	20.6
192355 1995 TL ₃	15.8	X	183.68766	356.38984	23.91723	9.87478	0.1924849	0.22058798	2.7127815	20	4 4.7	20.3
192356 1995 UB ₁₂	16.8	X	148.04443	110.56492	333.34629	1.02735	0.0665780	0.22284030	2.6944713	20	5 12.3	20.5
192357 1995 UY ₁₆	15.8	X	284.62779	316.94433	60.71678	8.66701	0.2078084	0.22988435	2.6391441	20	7 10.7	19.1
192358 1995 VT ₄	17.0	X	214.55333	116.06100	71.00466	5.82217	0.1565774	0.30395020	2.1907917	20	5 9.0	20.3
192359 1995 VY ₇	16.4	X	11.17187	204.64101	56.03182	3.56426	0.1232039	0.22563456	2.6721795	20	7 8.4	19.3
192360 1995 VN ₁₁	15.6	X	349.05044	172.12140	76.95007	6.90235	0.1468462	0.22391667	2.6858295	20	5 9.3	18.4
192361 1995 UB ₁₇	16.9	X	204.88671	36.47905	40.55717	1.87746	0.2207814	0.22488958	2.6780776	20	6 29.6	21.5
192362 1995 VC ₁₈	16.2	X	328.11166	16.58220	238.33922	3.90514	0.0615903	0.21970513	2.7200439	20	4 17.7	19.7
192363 1995 WR ₉	15.9	X	0.29366	242.35516	33.35199	6.15509	0.0977857	0.22776791	2.6554677	20	7 9.9	19.0
192364 1995 WB ₁₆	16.9	X	228.88350	349.04318	41.42224	5.99991	0.1663700	0.30591408	2.1814055	20	5 26.2	20.0
192365 1995 WU ₂₅	16.4	X	236.79271	17.74726	3.92903	5.44783	0.0889113	0.22458204	2.6805219	20	5 30.8	20.4
192366 1995 XP ₃	15.3	X	195.51457	257.91488	87.54698	13.38044	0.2660825	0.21744833	2.7388316	20	3 9.7	20.4
192367 1995 YF ₂₅	15.7	X	159.75135	42.76070	66.95068	12.71250	0.1558891	0.22297271	2.6934045	20	7 1.4	20.1
192368 1995 AT ₅	16.4	X	200.29997	200.18777	99.92919	6.64214	0.1754457	0.28520809	2.2857470	20	1 6.0	19.9
192369 1996 AC ₆	16.1	X	146.63581	23.98737	81.92211	3.66293	0.1424126	0.21728683	2.7401885	20	6 13.5	20.3
192370 1996 AG ₁₀	16.2	X	177.20014	125.01265	259.05546	2.65111	0.1096920	0.21256220	2.7806438	20	3 30.8	20.6
192371 1996 AD ₁₂	16.0	X	188.85371	65.32594	339.57866	12.87160	0.2245704	0.21597921	2.7512375	20	5 2.5	21.0
192372 1996 AB ₁₄	16.0	X	177.06308	0.67927	16.32124	6.22100	0.0664375	0.20897128	2.8124079	20	3 22.9	20.0
192373 1996 BL ₆	16.2	X	246.86761	329.11065	13.72795	3.14674	0.0818226	0.21482970	2.7610430	20	4 23.1	20.1
192374 1996 BP ₆	15.8	X	200.79948	20.54255	72.72291	15.06020	0.2267934	0.22844358	2.6502291	20	7 17.2	20.5
192375 1996 BR ₇	16.4	X	88.14758	39.85541	39.86014	2.68332	0.0217120	0.20741017	2.8265023	20	2 19.6	20.3
192376 1996 EH ₆	16.5	X	321.52021	185.00356	333.70220	1.55179	0.0794314	0.19814006	2.9139886	20	—	—
192377 1996 EL ₁₁	16.2	X	152.97403	48.74945	5.15774	4.15025	0.1031679	0.20998139	2.8033813	20	4 12.3	20.3
192378 1996 FZ ₁₀	16.9	X	357.53462	44.38163	77.02764	3.12809	0.1154302	0.27878983	2.3206952	20	—	—
192379 1996 GS ₅	15.9	X	220.18923	145.38355	165.53166	6.25896	0.0559514	0.20066291	2.8895129	20	2 17.2	20.2
192380 1996 GR ₁₁	15.3	X	165.57048	148.14282	166.25958	12.24162	0.0427236	0.19529206	2.9422506	20	—	—
192381 1996 HT ₄	16.7	X	48.19086	350.38342	52.41724	7.12847	0.1144612	0.27433531	2.3457492	20	—	—
192382 1996 JM ₈	17.4	X	174.43797	75.88922	145.82006	2.54400	0.1510824	0.26485771	2.4013805	20	12 8.2	20.9
192383 1996 JD ₁₀	17.0	X	43.57565	317.36342	173.06660	6.69917	0.1427503	0.28224545	2.3017143	20	2 18.8	19.0
192384 1996 KN ₂	16.6	X	79.99793	211.98392	150.10697	6.50104	0.1364459	0.26836500	2.3804120	20	—	—
192385 1996 RO ₁₂	16.4	X	130.75149	105.07392	170.12955	4.83863	0.1912248	0.25844576	2.4409363	20	12 30.6	20.4
192386 1996 RE ₁₄	13.3	X	271.91757	267.76945	174.74019	6.21277	0.0377858	0.08197495	5.2482592	20	9 22.6	20.2
192387 1996 RV ₁₅	15.9	X	119.86160	5.02001	302.72659	0.85963	0.1527259	0.17568995	3.1572194	20	—	—
192388 1996 RD ₂₉	13.0	X	254.01451	262.21304	192.53601	7.17449	0.0809234	0.08083200	5.2976161	20	9 9.4	20.0
192389 1996 RT ₂₉	12.4	X	190.96864	143.39178	21.18074	22.78756	0.0111989	0.08175288	5.2577589	20	10 2.1	19.4
192390 1996 RO ₃₀	12.9	X	248.69303	126.25106	326.23140	9.49772	0.0217499	0.08297522	5.2059955	20	9 7.8	19.9
192391 1996 TQ ₂	15.6	X	354.54188	264.54836	136.67747	3.34248	0.1965872	0.16969900	3.2310959	20	12 14.7	19.3
192392 1996 TM ₁₈	15.9	X	78.55851	257.92288	25.30574	3.52864	0.0542133	0.24701821	2.5156491	20	11 8.9	19.2
192393 1996 TT ₂₂	13.5	X	12.65528	338.67271	7.77526	4.18479	0.0316852	0.08032595	5.3198426	20	10 3.6	20.3
192394 1996 TJ ₃₅	16.5	X	332.94582	218.72490	248.85786	5.03351	0.0808436	0.2579239				

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>
192401 1997 AR ₈	15.4	X	311.54817	60.74441	300.02239	10.62547	0.2060958	0.23448833	2.6044852	20	8 2.1	17.8
192402 1997 AW ₁₂	15.5	X	135.97734	196.98098	313.32363	12.26113	0.1374314	0.22888405	2.6468279	20	7 30.5	19.4
192403 1997 BQ ₄	16.1	X	311.52813	308.76455	298.24035	4.84278	0.0104256	0.21853055	2.7297819	20	3 20.2	19.9
192404 1997 EE ₁₉	16.6	X	281.25019	128.24785	198.06521	2.01943	0.1415715	0.22236445	2.6983140	20	5 6.5	20.2
192405 1997 EU ₂₁	16.6	X	348.37679	67.18627	198.78136	0.70757	0.0534280	0.22250000	2.6972180	20	6 4.7	19.8
192406 1997 EK ₂₆	16.6	X	205.95902	23.48145	353.13159	5.82540	0.0516988	0.21776072	2.7362116	20	4 20.5	20.7
192407 1997 EY ₃₀	16.4	X	108.99160	297.07200	191.84329	1.42313	0.0266574	0.21942789	2.7223345	20	5 19.3	20.1
192408 1997 GD ₁	16.6	X	293.21643	167.71679	189.64621	4.72440	0.0156254	0.22511519	2.6762880	20	7 22.7	20.1
192409 1997 GX ₁₃	16.4	X	198.57143	288.20547	211.09905	5.01305	0.2826304	0.23265484	2.6181508	20	9 4.8	21.1
192410 1997 GD ₂₅	16.2	X	195.82992	37.78712	9.53044	1.63230	0.0640032	0.22032034	2.7149780	20	5 19.6	20.2
192411 1997 GX ₃₁	17.4	X	20.54897	7.48745	184.12261	3.11646	0.0343073	0.30072529	2.2064262	20	4 5.7	19.6
192412 1997 HQ ₇	17.4	X	236.48151	266.46650	15.29613	3.93371	0.1709401	0.28958006	2.2626825	20	1 15.7	20.9
192413 1997 HN ₉	15.4	X	187.55371	244.30317	222.76164	16.30747	0.1548941	0.22394921	2.6855693	20	7 19.8	20.1
192414 1997 LG ₁₇	17.4	X	251.05108	61.66131	211.44366	5.22076	0.2163361	0.28918501	2.2647427	20	1 14.0	21.1
192415 1997 LM ₁₈	17.0	X	214.56767	132.85367	165.74646	6.51116	0.2441868	0.28654547	2.2786293	20	1 16.1	20.9
192416 1997 MA ₁	17.1	X	304.18076	199.31948	77.60032	23.16571	0.0638002	0.38230926	1.8801515	20	4 17.2	19.5
192417 1997 NS ₇	16.1	X	116.05411	141.74352	165.72752	3.56205	0.1211162	0.18568489	3.0428812	20	—	—
192418 1997 PC ₃	15.1	X	19.96988	237.55562	155.48160	14.34122	0.2327197	0.17990975	3.1076559	20	—	—
192419 1997 SM ₁₈	16.2	X	38.50882	83.27556	351.93273	10.51994	0.2094071	0.27263402	2.3554977	20	—	—
192420 1997 SP ₂₀	16.3	X	324.52801	53.65620	15.72721	6.99326	0.1398876	0.26122097	2.4236172	20	12 26.9	18.8
192421 1997 SU ₂₀	15.6	X	97.47104	297.43704	24.24692	6.39988	0.1151946	0.17913112	3.1166546	20	—	—
192422 1997 SH ₂₁	17.6	X	339.25981	146.23313	290.30385	0.80101	0.1685674	0.26344838	2.4099370	20	—	—
192423 1997 SM ₂₆	13.3	X	155.56153	206.00655	345.68017	8.38260	0.0448963	0.08287935	5.2100092	20	9 19.7	20.3
192424 1997 SL ₃₀	16.8	X	43.00195	37.96309	16.81529	6.38569	0.1225758	0.26913984	2.3758411	20	—	—
192425 1997 ST ₃₅	15.7	X	75.72457	80.63901	358.59054	11.92602	0.1621746	0.19159810	2.9799473	20	2 25.9	19.5
192426 1997 TJ ₃	15.5	X	356.25753	77.76774	6.83437	4.72886	0.1392939	0.18024549	3.1037955	20	—	—
192427 1997 TD ₄	17.3	X	5.03580	100.64562	313.56822	0.51345	0.1606603	0.26487098	2.4013002	20	—	—
192428 1997 TZ ₅	15.4	X	108.79546	252.47449	43.11025	6.14325	0.1259599	0.17915651	3.1163602	20	12 19.4	20.3
192429 1997 TO ₉	16.9	X	215.63746	353.89975	214.83318	5.81725	0.0953995	0.26543918	2.3978722	20	—	—
192430 1997 TD ₁₃	18.0	X	77.57874	43.59978	344.85330	2.36022	0.1869684	0.27295069	2.3536755	20	—	—
192431 1997 TS ₂₁	17.7	X	118.75347	305.59753	19.36049	1.05058	0.1930571	0.27020501	2.3695931	20	—	—
192432 1997 TA ₂₄	17.5	X	356.49480	63.11608	28.68131	2.62632	0.1715640	0.26657264	2.3910703	20	—	—
192433 1997 TL ₂₆	16.6	X	69.77045	41.54855	29.20815	7.07082	0.1094026	0.27382541	2.3486604	20	1 11.4	19.1
192434 1997 US ₁	15.4	X	314.69015	202.41901	216.68881	12.29086	0.0486237	0.17237858	3.1975243	20	10 31.7	19.6
192435 1997 UJ ₂	16.6	X	61.48047	308.90779	57.95274	8.05441	0.1339861	0.26588007	2.3952207	20	—	—
192436 1997 UU ₆	17.1	X	306.31898	103.33357	40.84256	3.40485	0.1260835	0.26669964	2.3903111	20	—	—
192437 1997 UA ₁₆	16.0	X	339.30285	98.44532	28.14621	7.70877	0.1261366	0.18159838	3.0883611	20	—	—
192438 1997 UN ₂₇	16.9	X	95.17998	53.98125	303.81787	2.35324	0.2171362	0.27056224	2.3675069	20	—	—
192439 Cilek	17.0	X	3.42606	203.08757	210.79697	1.58288	0.2027311	0.26294052	2.4130392	20	—	—
192440 1997 VH ₇	16.3	X	358.16161	30.18789	39.26418	6.16265	0.1346323	0.26402705	2.4064145	20	—	—
192441 1997 WH ₁	16.0	X	216.12792	94.05463	260.02050	4.04034	0.2299159	0.28547517	2.2843211	20	3 23.6	19.8
192442 1997 WJ ₃	12.6	X	1.96684	120.79854	223.70788	21.98260	0.0801044	0.08343420	5.1868854	20	9 15.2	19.4
192443 1997 WY ₅	16.2	X	201.91270	165.44010	75.06709	5.62349	0.1774711	0.26597546	2.3946479	20	—	—
192444 1997 WY ₉	17.5	X	20.84278	294.44020	111.51411	2.36764	0.1689557	0.26430961	2.4046991	20	—	—
192445 1997 WG ₁₄	15.7	X	4.49292	341.32478	105.34904	2.52750	0.1597718	0.17881339	3.1203455	20	—	—
192446 1997 WA ₁₅	17.7	X	49.96246	63.63742	340.78177	0.48401	0.1698177	0.26836807	2.3803938	20	—	—
192447 1997 WR ₁₅	16.7	X	98.19419	173.86389	131.36182	1.96058	0.1882670	0.26365653	2.4086684	20	—	—
192448 1997 WY ₁₅	13.3	X	10.66705	182.03846	190.55083	4.11915	0.0694204	0.08320233	5.1965176	20	11 2.5	19.9
192449 1997 WG ₂₀	17.1	X	111.48739	120.39926	187.17117	1.93747	0.2172544	0.26604475	2.3942321	20	—	—
192450 Xinjiangdaxue	14.4	X	329.91866	321.39536	55.14117	23.23371	0.0533244	0.16795742	3.2533934	20	10 10.6	19.1
192451 1997 WQ ₄₂	16.1	X	279.78628	61.59244	16.41520	2.36903	0.1835086	0.25379109	2.4706912	20	10 5.1	18.7
192452 1997 YQ ₂	15.0	X	61.06883	126.75161	257.25894	10.53985	0.3151482	0.18076899	3.0978004	20	—	—
192453 1998 BV ₃	17.0	X	272.62565	41.78327	26.44416	0.39909	0.0777205	0.24732057	2.5135984	20	9 24.7	20.0
192454 1998 BQ ₅	15.7	X	67.63480	299.45145	128.09915	5.97081	0.1516602	0.17889001	3.1194546	20	1 27.8	19.6
192455 1998 BQ ₂₀	15.5	X	348.76075	285.15042	122.78868	2.17730	0.1688851	0.16921568	3.2372456	20	12 10.2	19.1
192456 1998 BU ₂₃	15.8	X	147.97582	52.05937	131.71131	1.37024	0.0564740	0.24461473	2.5321007	20	9 23.8	19.3
192457 1998 BM ₃₃	15.3	X	123.01984	105.15700	77.81057	5.78640	0.1946023	0.23890981	2.5722513	20	9 3.9	19.5
192458 1998 DG ₁	15.0	X	42.89814	54.56229	12.18766	16.67447	0.3381645	0.17800924	3.1297358	20	1 4.1	17.9
192459 1998 DS ₆	15.6	X	80.29162	335.03952	291.95723	12.95543	0.1406480	0.24538429	2.5268039	20	10 25.8	19.6
192460 1998 DT ₁₆	15.2	X	244.45195	327.01096	275.13817	8.03670	0.0341384	0.17496440	3.1659417	20	—	—
192461 1998 DE ₁₉	17.5	X	336.21311	299.30489	124.07997	3.09955	0.1960748	0.25434830	2.4670815	20	—	—
192462 1998 EZ ₇	16.2	X	137.24182	349.04554	170.73409	14.04369	0.1416078	0.23817251	2.5775571	20	8 11.2	20.3
192463 1998 FU ₄	16.4	X	98.25331	33.31509	199.26825	7.30305	0.1521367	0.23862319	2.5743106	20	10 6.3	20.4
192464 1998 FJ ₈	15.9	X	145.21841	189.15531	359.80604	8.73759	0.0489363	0.24252021	2.5466588	20	9 26.0	19.5
192465 1998 FM ₁₄	16.3	X	63.28638	236.37111	314.38119	3.26074	0.2459213	0.23019536	2.6367665	20	7 15.4	19.6
192466 1998 FJ ₁₆	16.4	X	176.50163	138.38016	24.52010	8.55860	0.1139663	0.24201076	2.5502315	20	9 27.9	20.3
192467 1998 FH ₂₈	15.8	X	29.71147	224.43909	349.45453	11.60388	0.2259639	0.22866529	2.6485157	20	6 16.3	18.6
192468 1998 FH ₄₀	15.2	X	146.17976	190.96899	4.95551	6.93058	0.0316873	0.24247021	2.5470089	20	10 5.9	18.7
192469 1998 FF ₄₈												

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>
192481 1998 GQ ₂	15.8	X	133.71735	162.56729	47.82969	13.77733	0.1791136	0.24158207	2.5532475	20	10 17.8	20.1
192482 1998 GS ₈	14.4	X	356.99540	82.78966	51.48114	25.91406	0.3330351	0.17366381	3.1817289	20	—	—
192483 1998 HS ₂	16.1	X	211.16622	332.97025	160.78456	4.09301	0.1961726	0.24090343	2.5580403	20	9 18.0	19.9
192484 1998 HE ₄	16.4	X	279.04766	183.46232	155.56558	6.55344	0.1091522	0.22786401	2.6547211	20	5 26.9	20.0
192485 1998 HM ₅	16.3	X	290.33602	260.60655	169.81584	7.13975	0.1505054	0.24373684	2.5381772	20	10 17.6	19.0
192486 1998 HP ₇	15.6	X	35.95961	75.73171	67.68369	21.45067	0.3332897	0.26690441	2.3890884	20	4 5.9	17.5
192487 1998 HG ₁₁	15.8	X	31.14243	207.64452	25.18603	18.43252	0.0827276	0.23038398	2.6353271	20	6 28.3	19.4
192488 1998 HK ₂₂	15.8	X	114.86052	146.84850	24.94073	6.16468	0.1408654	0.23437053	2.6053579	20	8 7.9	19.8
192489 1998 HU ₂₂	16.3	X	154.01301	132.04629	39.05472	10.70729	0.1925896	0.23977539	2.5660571	20	9 18.1	20.7
192490 1998 HU ₂₃	16.6	X	112.90297	228.44896	317.71071	3.35443	0.0954549	0.23574189	2.5952441	20	8 17.8	20.4
192491 1998 HU ₂₇	16.0	X	85.64628	276.51141	307.69849	2.37897	0.0362579	0.23653813	2.5894167	20	8 27.3	19.5
192492 1998 HA ₃₅	16.2	X	144.03896	69.99640	100.27613	5.25701	0.1995147	0.23815138	2.5777096	20	9 5.9	20.5
192493 1998 HG ₄₂	16.0	X	335.55738	174.80114	134.43380	4.97845	0.0164974	0.23178117	2.6247258	20	7 17.6	19.4
192494 1998 HF ₆₂	15.4	X	21.54370	228.26123	33.63508	13.53472	0.1494633	0.23053600	2.6341685	20	8 8.5	18.6
192495 1998 HJ ₆₄	16.1	X	82.38236	132.06141	45.22154	4.07385	0.1032009	0.22963116	2.6410837	20	6 30.1	19.6
192496 1998 HS ₆₆	16.2	X	188.83916	35.21066	102.01476	3.92932	0.0786731	0.23855148	2.5748265	20	9 9.8	19.8
192497 1998 HJ ₈₉	17.4	X	40.12638	26.81219	205.20055	6.06123	0.2450059	0.31843680	2.1238339	20	8 15.4	19.5
192498 1998 KA ₇	15.7	X	10.72483	18.20530	229.99616	10.82386	0.2066419	0.22563607	2.6721676	20	6 23.5	18.2
192499 1998 KT ₁₀	16.0	X	220.95644	39.35373	94.51946	14.45483	0.0613057	0.23982912	2.5656738	20	10 21.8	19.8
192500 1998 KT ₁₅	15.4	X	97.73447	11.11686	216.03490	14.17295	0.1265552	0.23573730	2.5952778	20	9 23.2	19.4
192501 1998 KD ₁₇	16.1	X	194.35842	292.18157	219.51367	26.67923	0.2232728	0.23923369	2.5699292	20	9 16.8	20.9
192502 1998 KN ₂₆	16.0	X	278.18289	269.79246	36.92754	12.95419	0.2065539	0.22134888	2.7065611	20	4 2.1	20.0
192503 1998 KO ₃₂	16.2	X	247.00062	163.88727	125.97735	3.83193	0.3045065	0.21273646	2.7791251	20	2 3.8	21.1
192504 1998 MC ₁₄	16.1	X	267.41426	154.49152	168.06006	9.84753	0.1844825	0.21863914	2.7288779	20	4 11.4	20.2
192505 1998 MU ₁₄	16.2	X	351.89515	175.79084	66.96825	3.89502	0.0817211	0.22325515	2.6911323	20	5 7.9	19.3
192506 1998 MS ₁₅	16.1	X	269.49357	67.79718	243.42671	3.48266	0.0938660	0.22017479	2.7161744	20	4 7.4	20.0
192507 1998 MQ ₃₇	16.4	X	172.16723	43.63084	297.64099	5.92094	0.2901567	0.29470816	2.2363577	20	2 5.5	20.2
192508 1998 OP ₁₃	17.1	X	195.36138	207.84931	145.31227	5.37513	0.1898965	0.29820037	2.2188636	20	3 7.4	20.6
192509 1998 QL ₅	16.9	X	159.92494	140.47557	273.21835	3.83646	0.1374226	0.30010740	2.2094537	20	4 16.3	20.1
192510 1998 QX ₂₉	15.3	X	170.89077	43.67087	307.75030	14.06588	0.1560774	0.20420805	2.8559733	20	2 15.7	20.0
192511 1998 QR ₇₃	15.1	X	161.06695	146.37072	233.02575	9.51068	0.1530411	0.20524998	2.8462998	20	3 9.6	19.9
192512 1998 QB ₇₆	15.3	X	214.22383	358.10614	319.89554	14.81807	0.1372673	0.20521237	2.8466475	20	2 16.3	19.9
192513 1998 QZ ₁₀₃	17.1	X	205.00717	250.93551	68.74204	4.70953	0.2079931	0.29532383	2.2332485	20	2 4.2	20.7
192514 1998 RP ₁₂	16.1	X	115.27651	179.08225	189.80474	2.41370	0.0825925	0.19647747	2.9304044	20	1 5.8	20.1
192515 1998 RS ₁₅	17.0	X	306.27473	75.59925	234.60465	3.63613	0.1826831	0.30720243	2.1753023	20	5 10.6	19.2
192516 1998 RK ₁₆	17.3	X	286.23469	352.56448	301.04805	4.24438	0.1770556	0.30465598	2.1874069	20	3 16.3	20.1
192517 1998 RF ₂₀	14.9	X	148.22249	218.82713	157.33493	15.72606	0.1525080	0.20373815	2.8603630	20	2 26.6	19.3
192518 1998 RW ₂₉	15.0	X	209.35770	151.31666	356.96404	14.05082	0.1839719	0.21042471	2.7994425	20	4 11.9	19.7
192519 1998 RE ₄₈	16.9	X	249.76371	21.66630	301.98049	2.96059	0.1326368	0.30089403	2.2056013	20	3 21.2	20.1
192520 1998 RS ₆₃	17.0	X	157.06754	285.02692	101.41524	2.56696	0.2196897	0.29477107	2.2630395	20	3 17.8	20.4
192521 1998 RK ₆₇	16.6	X	226.69653	17.20633	341.28617	7.58352	0.1734239	0.30072590	2.2064233	20	4 8.2	20.1
192522 1998 RJ ₇₆	16.6	X	247.81791	200.43009	149.61503	4.60433	0.2306965	0.30309740	2.1948992	20	4 17.8	19.9
192523 1998 RT ₈₀	17.0	X	252.17000	347.60558	355.56382	2.26832	0.2013239	0.30339105	2.1934827	20	4 13.2	20.0
192524 1998 RY ₈₀	17.0	X	294.54276	57.07708	239.65668	4.57109	0.1431533	0.30488296	2.1863211	20	4 6.8	19.5
192525 1998 SM ₁₂	16.5	X	246.67467	160.30728	181.37975	4.77655	0.2195432	0.30181524	2.2011110	20	4 5.5	19.8
192526 1998 SP ₁₅	16.3	X	35.93091	269.42877	212.90934	1.34695	0.0093912	0.20243443	2.8726307	20	2 4.1	20.1
192527 1998 ST ₁₇	17.1	X	206.71554	202.77854	154.54581	3.72619	0.1645116	0.29796890	2.2200125	20	3 22.9	20.3
192528 1998 SG ₄₁	15.7	X	333.90538	158.60930	345.57724	2.70470	0.0296915	0.19646023	2.9305757	20	—	—
192529 1998 SU ₄₈	17.2	X	278.53655	205.77095	342.26435	1.96806	0.0423113	0.28319967	2.2965411	20	—	—
192530 1998 SE ₅₂	17.3	X	313.80533	226.96201	357.76719	4.53183	0.1564777	0.29673626	2.2261562	20	1 24.6	19.9
192531 1998 SC ₆₂	16.8	X	177.68786	41.20264	313.67785	5.93919	0.2153177	0.29449181	2.2374529	20	2 22.5	20.3
192532 1998 SZ ₆₃	16.5	X	194.03328	336.08049	27.87973	10.46152	0.1985545	0.29640381	2.2278205	20	3 22.5	20.1
192533 1998 SB ₇₀	16.9	X	148.80713	266.79480	80.61542	4.17842	0.2029363	0.29148358	2.2528208	20	1 19.7	20.0
192534 1998 SN ₈₀	16.7	X	164.56429	56.78169	304.96991	4.83496	0.1690756	0.29353325	2.2423213	20	2 16.5	20.0
192535 1998 SW ₈₅	17.7	X	161.36635	311.04602	17.60211	2.13920	0.2020168	0.29024672	2.2592164	20	1 7.0	21.0
192536 1998 SF ₈₈	17.4	X	135.99527	96.91446	286.71843	4.50083	0.1720112	0.29216613	2.2493108	20	2 14.8	20.4
192537 1998 SL ₈₉	17.3	X	188.96706	86.05647	305.86686	3.33659	0.1676351	0.29945086	2.2126820	20	4 17.6	20.8
192538 1998 SE ₉₇	17.1	X	203.77219	222.94163	133.02820	2.49436	0.1749796	0.29787533	2.2204774	20	3 18.4	20.5
192539 1998 SC ₁₁₉	16.5	X	163.88954	42.67115	14.19757	6.46747	0.1089395	0.29815585	2.2190844	20	4 23.8	19.5
192540 1998 SN ₁₂₀	17.2	X	201.40284	221.03427	181.58238	3.71019	0.1565070	0.30136916	2.2032825	20	5 16.6	20.5
192541 1998 SY ₁₂₄	16.7	X	204.51261	203.45855	173.49360	5.21738	0.1597987	0.29919275	2.2139544	20	4 15.8	20.0
192542 1998 SO ₁₄₄	17.4	X	213.49332	352.15282	16.31801	4.48828	0.1548418	0.29899793	2.2149160	20	4 11.9	20.5
192543 1998 SD ₁₄₆	15.1	X	32.76109	216.10371	192.12399	9.63810	0.0911695	0.18873453	3.0100137	20	—	—
192544 1998 SM ₁₅₇	17.3	X	187.65803	257.30659	118.89176	2.16065	0.1860990	0.29710137	2.2243320	20	3 30.1	20.8
192545 1998 SS ₁₆₀	16.7	X	116.22761	37.54351	22.71580	8.20051	0.1366630	0.29203774	2.2499700	20	3 10.8	19.5
192546 1998 TE ₁	17.0	X	308.05483	227.23403	36.56612	5.20824	0.1185174	0.29789238	2.2203927	20	3 18.5	19.4
192547 1998 TW ₆	17.9	X	254.27699	259.32151	20.40217	5.29628	0.3386012	0.29701212	2.2247776	20	1 20.6	22.0
192548 1998 TE ₇	16.4	X	211.99331	42.05943	18.44066	1.42617	0.2232618	0.21364037	2.7712806	20	6 14.5	21.0
192549 1998 TJ ₁₄	16.3	X	206.73894	126.06488	187.14590	1.35516	0.0627449	0.20111242	2.8852058	20	2 5.7	20.6
192550 1998 TC ₂₀	16.8	X	80.50863	77.90136	322.95928	0.56817	0.1658002	0.19382082	2.9571210	20	1 12.6	20.3
192551 1998 TY ₂₄	16.4	X	76.64810	225.19546	116.05441	0.28489	0.1396805	0.18810878	3.0166853	20	—	—
192552 1998 TP ₂₆	15.2	X	156.95594	277.71058	35.71917	12.02871	0.1236303	0.19301681	2.9653272	20	—	—
192553 1998 TH ₂₇	17.9	X	166.00404	19.26507	15.92415	3.25257	0.1718042	0.29678253	2.2259248	20	4 1.9	21.0

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>
192561 1998 VA ₉	17.3	X	151.36149	122.71938	276.62668	2.17269	0.2352945	0.29373978	2.2412701	20	3 27.8	20.8
192562 1998 VP ₁₇	16.6	X	123.74626	174.97938	225.32630	4.22461	0.1811119	0.28990812	2.2609752	20	2 23.6	19.5
192563 1998 WZ ₆	17.3	X	45.02033	110.68406	68.73712	24.75522	0.4077927	0.56321771	1.4521735	20	7 28.7	18.6
192564 1998 WL ₂₂	17.3	X	192.52169	129.03591	233.82695	3.88459	0.2472505	0.29495672	2.2351012	20	3 15.7	21.1
192565 1998 WS ₃₄	17.6	X	101.16602	312.66785	95.14539	4.24922	0.1502407	0.28295400	2.2978702	20	2 2.8	20.0
192566 1998 WA ₃₅	16.2	X	121.82534	93.44340	303.35918	0.78132	0.0948433	0.19814514	2.9139388	20	2 17.9	20.4
192567 1998 WD ₃₅	16.2	X	155.86444	350.42966	35.59371	2.61519	0.0981699	0.20124635	2.8839255	20	3 13.9	20.4
192568 1998 WZ ₃₅	16.8	X	184.47224	251.08127	45.84278	10.76332	0.1903923	0.28714294	2.2754674	20	—	—
192569 1998 WB ₃₆	15.9	X	311.64963	117.83291	49.36708	9.46359	0.0455323	0.19212237	2.9745237	20	—	—
192570 1998 WS ₃₆	16.5	X	14.42779	152.77449	272.75850	5.46922	0.0946512	0.27314362	2.3525670	20	—	—
192571 1998 WR ₃₈	15.2	X	194.45112	52.27813	229.08842	10.38832	0.0979778	0.19213483	2.9743950	20	—	—
192572 1998 WS ₄₀	15.1	X	136.85862	0.52858	235.78592	17.79319	0.1080278	0.17761021	3.1344218	20	11 5.9	20.1
192573 1998 XL	16.0	X	180.93989	286.31711	75.55519	9.01313	0.1943572	0.29171084	2.2516506	20	3 10.3	19.7
192574 1998 XQ ₆	15.2	X	119.20516	99.38340	233.08811	10.23805	0.0431788	0.18825197	3.0151553	20	—	—
192575 1998 XM ₂₀	15.2	X	287.92321	154.74709	269.05186	2.81053	0.1176209	0.17051839	3.2207367	20	9 20.9	19.4
192576 1998 XB ₂₂	15.4	X	297.92278	91.47790	108.81456	3.22710	0.1411826	0.18482779	3.0522812	20	—	—
192577 1998 XT ₂₅	16.3	X	78.38999	242.17393	232.22864	1.94097	0.1004435	0.19928455	2.9028212	20	3 31.9	20.2
192578 1998 XU ₆₁	17.2	X	94.02514	4.25400	80.77301	5.41506	0.1898543	0.28903822	2.2655094	20	3 24.1	19.8
192579 1998 XN ₆₂	14.5	X	338.31424	87.84300	335.49460	24.68507	0.2495018	0.17931716	3.1144987	20	12 23.4	18.1
192580 1998 XB ₉₈	14.9	X	61.67923	289.34629	62.63609	22.99160	0.0914849	0.18402274	3.0611766	20	—	—
192581 1998 YH ₁₆	15.3	X	254.03803	233.39081	285.33759	3.72626	0.1437770	0.17445922	3.1720506	20	11 30.0	19.6
192582 1998 YF ₁₈	15.6	X	92.94085	262.43000	125.28871	3.68348	0.1116174	0.19169561	2.9789367	20	1 5.9	19.5
192583 1998 AY ₉	17.3	X	70.51372	179.87376	287.56014	19.95113	0.0301560	0.37686630	1.8982111	20	1 30.6	19.1
192584 1999 AY ₁₄	16.4	X	90.01144	248.04202	116.43513	10.11982	0.1287790	0.27520947	2.3407793	20	—	—
192585 1999 AX ₂₂	15.0	X	316.30960	91.33980	38.84887	25.74291	0.2485753	0.17902244	3.1179160	20	—	—
192586 1999 AV ₂₉	16.5	X	61.17506	29.27614	123.65687	6.26116	0.1930300	0.28667108	2.2779637	20	5 11.4	18.8
192587 1999 AA ₃₁	15.6	X	8.80366	314.69168	127.08136	11.97194	0.1955752	0.18213088	3.0823385	20	—	—
192588 1999 BH ₁	16.9	X	108.51990	134.08918	275.47552	4.76099	0.2313983	0.28637825	2.2795163	20	2 24.7	19.7
192589 1999 BM ₁₁	15.1	X	232.08280	160.24757	41.66462	1.51182	0.1308337	0.17334242	3.1856604	20	12 27.3	19.5
192590 1999 BW ₁₁	16.7	X	213.51989	230.49930	325.68544	4.56216	0.1460407	0.26327878	2.4109719	20	12 18.1	19.8
192591 1999 CE ₈	15.1	X	315.79441	156.25684	317.31997	9.60862	0.1879377	0.17648213	3.1477645	20	—	—
192592 1999 CB ₁₁	16.5	X	31.03223	111.30097	305.47489	22.45142	0.2776457	0.27454404	2.3445601	20	—	—
192593 1999 CJ ₂₆	14.9	X	8.44406	294.00179	135.42351	13.90540	0.1241935	0.17902205	3.1179204	20	—	—
192594 1999 CO ₃₇	15.3	X	46.84819	94.69540	0.72482	4.53392	0.1795928	0.18661730	3.0327372	20	2 1.4	18.6
192595 1999 CS ₄₇	14.4	X	304.74671	341.14493	149.91211	15.68694	0.2408726	0.17656679	3.1467582	20	—	—
192596 1999 CU ₈₇	16.2	X	294.51098	218.77386	335.18283	5.17701	0.2047907	0.27415055	2.3468030	20	—	—
192597 1999 CW ₉₅	15.8	X	32.38721	22.63013	84.34722	3.24774	0.3013485	0.18669466	3.0318994	20	1 25.1	18.0
192598 1999 CV ₁₂₆	14.4	X	340.32290	28.71199	98.80528	25.37090	0.2226125	0.18042479	3.1017390	20	—	—
192599 1999 CT ₁₃₇	16.8	X	193.02379	104.41771	148.94734	6.64672	0.0788823	0.26867137	2.3786021	20	—	—
192600 1999 CE ₁₄₇	17.4	X	337.05676	148.11179	344.23984	0.99674	0.1255437	0.27205460	2.3588410	20	—	—
192601 1999 CK ₁₅₉	16.2	X	218.61028	46.66079	165.31434	2.64069	0.1544414	0.26592384	2.3949578	20	—	—
192602 1999 EQ ₂	17.5	X	306.14653	349.85973	154.62502	1.46498	0.1161912	0.26889671	2.3772730	20	—	—
192603 1999 EA ₉	17.2	X	67.29340	119.80205	340.05430	4.04300	0.1237116	0.28161166	2.3051664	20	2 17.9	19.4
192604 1999 EO ₁₃	15.3	X	151.37863	304.64645	338.06977	8.47771	0.0545988	0.17475293	3.1684954	20	—	—
192605 1999 FE ₁₂	14.6	X	29.03272	48.05626	350.02347	9.41689	0.2260088	0.17561566	3.1581098	20	—	—
192606 1999 FE ₄₂	15.3	X	235.62805	217.80216	298.35564	2.08556	0.3006166	0.16921063	3.2373100	20	10 17.6	20.6
192607 1999 FB ₆₀	16.4	X	353.75207	48.99601	28.56804	4.38246	0.0576219	0.26360651	2.4089732	20	—	—
192608 1999 FH ₆₀	16.4	X	310.90117	9.53888	148.33456	6.47157	0.1679793	0.27360191	2.3499392	20	—	—
192609 1999 GY ₃	15.8	X	318.82597	256.30344	8.36554	28.49543	0.3452558	0.23150377	2.6268221	20	3 12.9	19.2
192610 1999 GH ₁₀	16.4	X	302.11669	160.01683	12.48918	6.66960	0.1029719	0.27038222	2.3685577	20	—	—
192611 1999 GX ₂₆	16.3	X	343.02955	49.98297	120.53978	3.00028	0.1601106	0.27482585	2.3429571	20	—	—
192612 1999 GT ₃₉	16.0	X	318.62552	141.78849	43.97396	11.61698	0.1961308	0.27366749	2.3495638	20	—	—
192613 1999 GL ₄₆	16.1	X	300.94831	61.08112	94.02421	5.89436	0.1197031	0.26659644	2.3909279	20	—	—
192614 1999 GY ₅₄	15.5	X	306.91158	104.08653	8.02296	10.91445	0.1335448	0.17186625	3.2038757	20	12 19.5	19.5
192615 1999 GP ₅₆	17.2	X	176.98092	178.49946	16.92973	3.10974	0.0934564	0.25672869	2.4518080	20	11 9.8	20.6
192616 1999 GF ₅₈	16.4	X	260.39980	274.85919	271.57364	2.18206	0.1717600	0.26558457	2.3969970	20	—	—
192617 1999 HX ₉	16.2	X	251.97111	7.71648	214.00833	7.38111	0.1281197	0.26741624	2.3860390	20	—	—
192618 1999 JP ₄	16.8	X	252.13243	3.14166	233.46982	20.44545	0.0441896	0.36147008	1.9517363	20	—	—
192619 1999 JQ ₄	15.7	X	7.45095	112.39437	45.45255	23.88129	0.2355940	0.27567413	2.3381482	20	1 9.2	18.2
192620 1999 JV ₅	16.3	X	82.01102	71.32491	62.64705	21.48907	0.2597517	0.28297866	2.2977367	20	5 24.7	19.0
192621 1999 JN ₁₁	15.5	X	298.53128	88.60130	228.94079	27.28221	0.3509460	0.23143975	2.6273065	20	4 12.0	19.3
192622 1999 JW ₂₆	16.0	X	236.57083	313.03937	222.10755	10.70727	0.2042937	0.26038691	2.4287899	20	12 10.6	19.0
192623 1999 JR ₃₆	16.3	X	14.70308	211.01584	58.05248	4.95427	0.1896009	0.23948876	2.5681041	20	8 8.1	18.8
192624 1999 JJ ₄₄	16.2	X	134.43244	210.35629	42.36330	10.61379	0.1860587	0.25347891	2.4727194	20	12 5.0	20.4
192625 1999 JS ₁₀₁	16.4	X	178.16764	215.25134	47.79435	11.95849	0.2118955	0.26100571	2.4249496	20	—	—
192626 1999 JR ₁₃₃	16.3	X	1.02828	60.48838	167.45022	8.58066	0.2315780	0.23348973	2.6119059	20	4 29.6	18.4
192627 1999 KS	16.7	X	8.75343	130.21649	158.92217	6.07161	0.2691365	0.24016465	2.5632836	20	9 6.5	18.7
192628 1999 KK ₃	16.9	X	183.82107	332.28866	202.40827	3.25445	0.1423408	0.25231705	2.4803044	20	10 18.1	20.4
192629 1999 KM ₁₁	16.1	X	55.56389	219.48355	83.08649	8.48248	0.2443258	0.24699631	2.5157978	20	12 1.3	19.8
192630 1999 LL	15.9	X	17.54856	78.42328	235.18527	15.14608	0.2012936	0.24130463	2.5552042	20	10 16.4	18.9
192631 1999 LG ₂₉	16.0	X	41.72835	176.83894	117.39740	7.85235	0.2269153	0.24444928	2.5332432	20	11 5.5	19.5
192632 1999 NL ₅₃	15.3	X	357.86132	59.66761	255.59340	12.26409	0.2579546	0.23665718	2.5885482	20	9 10.3	17.7
192633 1999 NT ₅₆	15.1	X	330.78091	87.85904	241.30756	12.03070	0.1930511	0.23265450	2.6181534	20	7 24.1	17.8
192634 1999 NF ₆₀	15.4	X	286.04854	92.54986	241.79514	11.03913	0.3171824	0.22928230	2.6437621	20	4 25.4	19.3
192635 1999 QT	16.2	X	210.72139	48.33477	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>
192641 1999 <i>RG</i> ₂₃	15.8	X	265.41324	342.65117	11.09610	5.03922	0.1228595	0.22505845	2.6767378	20	5 24.0	19.5
192642 1999 <i>RD</i> ₃₂	16.3	X	318.04888	300.00187	309.95397	6.79779	0.7696826	0.22924476	2.6440507	20	—	—
192643 1999 <i>RG</i> ₃₉	15.7	X	262.05500	79.10643	322.75254	11.97473	0.2723887	0.22715608	2.6602338	20	7 5.4	19.7
192644 1999 <i>RS</i> ₃₉	15.5	X	272.52050	161.68733	213.08001	7.77476	0.2165748	0.22923302	2.6441409	20	6 17.6	19.3
192645 1999 <i>RJ</i> ₄₇	16.0	X	234.39129	26.05479	325.64412	13.10035	0.2684363	0.22351745	2.6890266	20	4 1.3	20.8
192646 1999 <i>RZ</i> ₆₇	16.5	X	240.96955	134.97540	190.09064	3.97105	0.2232379	0.22065356	2.7122440	20	3 14.3	20.9
192647 1999 <i>RU</i> ₇₁	16.0	X	349.54031	261.01534	54.60158	2.46751	0.1571045	0.23360785	2.6110254	20	8 21.7	18.4
192648 1999 <i>RO</i> ₇₆	16.0	X	232.95021	236.28847	159.11939	2.59630	0.0908935	0.22604167	2.6689011	20	6 14.6	19.8
192649 1999 <i>RV</i> ₇₈	15.3	X	235.61731	60.01994	329.83211	12.96073	0.1808927	0.22526998	2.6750619	20	5 29.6	19.8
192650 1999 <i>RF</i> ₈₀	15.8	X	207.19790	52.58471	324.20961	9.13999	0.0777334	0.22075734	2.7113939	20	4 18.5	20.1
192651 1999 <i>RS</i> ₈₀	16.1	X	213.61017	205.26028	230.29161	1.41409	0.1863582	0.22704535	2.6610986	20	7 7.3	20.4
192652 1999 <i>RM</i> ₈₁	15.5	X	296.60570	328.21447	346.47812	10.00175	0.0829996	0.22541862	2.6738859	20	5 17.3	19.2
192653 1999 <i>RD</i> ₁₀₃	15.6	X	309.10435	129.51568	211.66610	12.38993	0.2204026	0.23089330	2.6314503	20	6 24.9	18.6
192654 1999 <i>RJ</i> ₁₀₆	16.0	X	227.51051	49.53950	315.69603	2.73389	0.1776630	0.22142459	2.7059441	20	4 22.3	20.3
192655 1999 <i>RQ</i> ₁₀₇	15.7	X	154.40029	189.75924	185.71819	16.13307	0.2590153	0.21311057	2.7758717	20	3 7.2	20.5
192656 1999 <i>RF</i> ₁₂₁	15.9	X	269.78138	117.61124	187.76920	12.54476	0.2703704	0.22380176	2.6867487	20	3 10.5	20.4
192657 1999 <i>RD</i> ₁₂₅	15.8	X	306.10150	308.02446	339.32475	10.75099	0.1577606	0.22516059	2.6759282	20	4 10.6	19.4
192658 1999 <i>RU</i> ₁₃₀	15.7	X	231.27206	9.15650	319.46077	11.92729	0.1565044	0.22017794	2.7161485	20	3 10.5	20.2
192659 1999 <i>RJ</i> ₁₃₄	15.8	X	241.94686	208.87044	191.66141	7.58887	0.2406138	0.22713897	2.6603674	20	6 15.3	20.1
192660 1999 <i>RD</i> ₁₅₀	15.5	X	237.59900	57.60441	337.55458	11.94752	0.1779755	0.22658365	2.6647123	20	6 9.1	19.9
192661 1999 <i>RU</i> ₁₅₅	15.8	X	288.21116	171.20408	180.60287	14.95301	0.1678943	0.22886837	2.6469487	20	6 15.9	19.5
192662 1999 <i>RK</i> ₁₆₁	15.8	X	309.53054	130.30529	212.82391	6.41044	0.1021392	0.23098422	2.6307597	20	7 16.3	19.0
192663 1999 <i>RS</i> ₁₆₉	16.0	X	250.53203	100.35254	255.03497	2.71446	0.2168140	0.22404490	2.6848046	20	4 28.9	20.3
192664 1999 <i>RK</i> ₁₇₉	15.4	X	278.51527	11.82539	13.82066	10.58739	0.1999604	0.23005159	2.6378649	20	7 16.2	19.0
192665 1999 <i>RS</i> ₁₈₁	16.2	X	198.56664	64.58457	335.51578	1.14572	0.0912297	0.2222512	2.6994417	20	5 12.5	20.1
192666 1999 <i>RC</i> ₁₈₉	16.8	X	271.78483	149.58193	194.50763	1.59508	0.2156131	0.22570941	2.6715887	20	5 7.7	20.7
192667 1999 <i>RC</i> ₁₉₉	15.4	X	289.89606	30.61881	302.70906	11.82203	0.1978845	0.22773397	2.6557315	20	5 15.3	19.1
192668 1999 <i>RQ</i> ₁₉₉	15.6	X	300.86465	52.20263	296.71129	10.47374	0.2013031	0.22962195	2.6411544	20	6 26.6	18.6
192669 1999 <i>RD</i> ₂₀₃	15.4	X	175.45362	154.64296	247.09762	11.73804	0.1052203	0.21896856	2.7261403	20	4 18.1	19.8
192670 1999 <i>RR</i> ₂₀₆	15.6	X	250.61390	136.97990	233.49532	11.58007	0.3092748	0.22421437	2.6834515	20	5 9.7	20.2
192671 1999 <i>RF</i> ₂₁₃	15.3	X	111.41045	104.20663	328.85634	11.66506	0.1278652	0.21140488	2.7907829	20	3 20.5	19.4
192672 1999 <i>RW</i> ₂₁₉	15.7	X	298.70170	71.79924	250.56083	5.13199	0.2063977	0.22759511	2.6568117	20	5 14.1	18.9
192673 1999 <i>RD</i> ₂₂₂	15.4	X	303.49222	339.92172	289.86124	12.87258	0.2206186	0.22408624	2.6844744	20	3 3.1	19.2
192674 1999 <i>RB</i> ₂₂₄	15.6	X	249.19248	72.44968	288.25320	5.81616	0.2151318	0.22393984	2.6856441	20	5 3.2	19.9
192675 1999 <i>RG</i> ₂₂₆	15.5	X	168.00799	76.34922	321.97154	13.66990	0.1502939	0.21739463	2.7392826	20	4 3.9	20.1
192676 1999 <i>RK</i> ₂₃₉	15.8	X	264.64174	199.58627	157.08432	16.18295	0.2467546	0.22506781	2.6766636	20	5 16.2	20.2
192677 1999 <i>RR</i> ₂₅₂	16.0	X	290.72371	118.04192	211.21764	8.79051	0.3025896	0.22716738	2.6601456	20	4 28.2	19.7
192678 1999 <i>SM</i> ₁₀	15.5	X	262.65789	131.08407	239.85926	12.00259	0.2719253	0.22706083	2.6609777	20	5 25.3	19.5
192679 1999 <i>SO</i> ₁₂	15.8	X	313.31111	163.10828	182.29902	4.55996	0.2476152	0.23320364	2.6140417	20	7 6.1	18.3
192680 1999 <i>SE</i> ₁₇	15.7	X	270.73088	88.67016	294.36209	10.28436	0.2143469	0.22891357	2.6466003	20	6 27.6	19.4
192681 1999 <i>SJ</i> ₂₁	16.3	X	139.23592	56.95268	351.63546	3.19685	0.0811130	0.21255462	2.7807099	20	3 20.0	20.4
192682 1999 <i>SF</i> ₂₆	16.1	X	279.18292	81.55522	227.52596	4.10977	0.0333519	0.21897946	2.7260498	20	4 26.8	19.8
192683 1999 <i>SO</i> ₂₇	15.4	X	280.63435	126.42363	265.80352	15.57451	0.2036770	0.22995593	2.6385964	20	7 21.1	18.8
192684 1999 <i>TW</i> ₆	15.4	X	264.26313	309.25424	22.72030	14.62265	0.1751402	0.22132136	2.7067855	20	4 17.7	19.5
192685 1999 <i>TA</i> ₈	15.8	X	209.02749	225.64973	138.46802	5.01145	0.2725880	0.21784063	2.7355425	20	4 5.4	20.7
192686 <i>Aljuroma</i>	15.4	X	276.51220	76.77786	255.14860	11.28207	0.3807787	0.22597806	2.6694709	20	4 3.3	20.0
192687 1999 <i>TC</i> ₂₁	15.7	X	178.95267	153.92725	224.32742	6.20062	0.1427366	0.21437429	2.7649519	20	3 25.7	20.2
192688 1999 <i>TQ</i> ₂₂	16.3	X	268.79054	260.13210	85.20071	1.99140	0.1315476	0.22395419	2.6855295	20	5 17.4	20.0
192689 1999 <i>TF</i> ₂₅	15.8	X	283.97142	126.02229	225.90165	3.13655	0.1133241	0.22525260	2.6751995	20	6 18.3	19.3
192690 1999 <i>TO</i> ₃₅	15.4	X	287.35586	359.71823	19.07801	13.51573	0.2902979	0.22900555	2.6458915	20	7 2.7	19.0
192691 1999 <i>TY</i> ₃₉	15.5	X	231.23981	219.04612	153.45002	10.26682	0.1764848	0.22008906	2.7168797	20	5 9.4	20.0
192692 1999 <i>TH</i> ₄₁	15.6	X	275.33868	141.76188	212.40998	11.83150	0.2125192	0.22437572	2.6821649	20	5 26.0	19.4
192693 1999 <i>TH</i> ₄₂	16.5	X	15.13239	16.75705	296.85699	1.34397	0.0904495	0.23544921	2.5973943	20	9 26.8	19.6
192694 1999 <i>TM</i> ₄₄	16.3	X	168.10109	65.27831	325.13410	2.54693	0.1005776	0.21434645	2.7651913	20	3 29.2	20.6
192695 1999 <i>TB</i> ₄₈	16.4	X	280.78256	274.94576	41.58202	2.91839	0.2073299	0.22332564	2.6905661	20	4 13.8	20.1
192696 1999 <i>TO</i> ₅₄	16.0	X	81.51605	243.53913	230.75466	2.47467	0.0435269	0.21319792	2.7751134	20	3 26.3	19.7
192697 1999 <i>TB</i> ₆₀	16.6	X	194.16903	21.45014	336.87298	2.84367	0.1140647	0.21646336	2.7471337	20	3 16.6	20.9
192698 1999 <i>TF</i> ₆₀	16.5	X	264.81892	162.97920	192.49612	5.97285	0.0493793	0.22526174	2.6751271	20	6 7.3	20.2
192699 1999 <i>TL</i> ₆₀	16.2	X	156.17153	133.92750	323.76036	1.62601	0.0941144	0.22286159	2.6942997	20	6 10.3	20.1
192700 1999 <i>TJ</i> ₆₁	16.4	X	161.79047	58.53554	341.85372	4.60903	0.0089928	0.21758344	2.7376977	20	3 28.4	20.2
192701 1999 <i>TR</i> ₆₃	16.2	X	186.06266	350.83232	50.61738	1.51290	0.0787324	0.21642780	2.7474345	20	5 1.4	20.1
192702 1999 <i>TR</i> ₆₇	16.1	X	76.74199	248.54462	171.37244	2.07864	0.0581149	0.20330837	2.8643926	20	1 14.7	19.8
192703 1999 <i>TD</i> ₇₇	15.9	X	266.08965	97.03501	228.42546	4.17942	0.1174657	0.21892194	2.7265273	20	4 19.2	19.9
192704 1999 <i>TQ</i> ₇₈	16.4	X	191.20319	248.93956	178.00994	3.87828	0.0538109	0.22286422	2.6942785	20	6 10.0	20.2
192705 1999 <i>TN</i> ₈₁	16.6	X	160.58828	95.76688	352.07042	8.49858	0.0422880	0.22294556	2.6936231	20	5 29.3	20.6
192706 1999 <i>TX</i> ₉₀	15.5	X	224.63525	316.65032	43.33986	9.71806	0.1699026	0.22023174	2.7157062	20	4 16.6	19.9
192707 1999 <i>TM</i> ₉₄	15.7	X	301.62199	252.73432	51.03343	5.47333	0.2514330	0.22515188	2.6759973	20	4 17.4	19.1
192708 1999 <i>TW</i> ₁₀₂	15.9	X	64.34315	227.57619	87.94087	8.97348	0.2626011	0.24206678	2.5498380	20	12 25.2	20.0
192709 1999 <i>TM</i> ₁₀₅	16.6	X	217.30942	184.61803	191.62437	4.57312	0.3182234	0.21929980	2.7233945	20	4 22.7	21.5
192710 1999 <i>TF</i> ₁₀₇	15.9	X	250.93212	163.83178	256.54904	11.94736	0.2695670	0.22878477	2.6475935	20	7 14.0	20.1
192711 1999 <i>TJ</i> ₁₀₇	15.4	X	237.13420	70.355								

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>
192721 1999 TH ₁₄₅	15.7	X	186.34953	237.33003	186.05299	12.56172	0.2744619	0.21989065	2.7185138	20	5 29.3	20.8
192722 1999 TW ₁₄₅	15.4	X	213.22695	337.15468	35.57741	7.51653	0.1638893	0.21945777	2.7220874	20	4 20.8	19.9
192723 1999 TS ₁₄₉	16.4	X	197.16931	142.46710	197.51625	7.94139	0.2977925	0.21466212	2.7624797	20	2 25.8	21.6
192724 1999 TF ₁₅₇	15.7	X	288.49943	116.61356	200.83297	6.65878	0.0751096	0.22350318	2.6891410	20	5 15.4	19.2
192725 1999 TZ ₁₅₉	16.4	X	261.11978	115.25365	221.58777	3.27236	0.1226474	0.22288441	2.6941158	20	4 27.8	20.3
192726 1999 TJ ₁₆₁	16.0	X	249.05062	46.52847	285.44135	2.35174	0.1003754	0.21941569	2.7224355	20	4 9.3	20.1
192727 1999 TS ₁₆₉	16.2	X	164.13701	54.43418	328.16821	2.74519	0.1773699	0.21322634	2.7748668	20	3 19.9	20.8
192728 1999 TU ₁₆₉	16.0	X	194.75015	132.49791	280.01377	1.94674	0.0718254	0.22049621	2.7135342	20	5 25.0	19.9
192729 1999 TR ₁₈₂	16.1	X	226.29632	197.62132	257.88200	3.36892	0.1703698	0.22968606	2.6406628	20	8 15.0	20.1
192730 1999 TR ₁₈₈	16.3	X	223.61697	60.96946	323.73402	8.02734	0.2338894	0.22080071	2.7110388	20	5 7.7	21.1
192731 1999 TG ₁₉₀	15.6	X	237.28466	57.71651	301.11624	13.17810	0.1455273	0.22068999	2.7119455	20	4 21.4	20.1
192732 1999 TF ₁₉₂	15.8	X	163.13034	63.79767	314.33112	6.38643	0.2584201	0.21196796	2.7858383	20	3 16.1	20.7
192733 1999 TV ₁₉₂	15.2	X	279.16715	289.25592	23.92678	15.91116	0.1980673	0.22043837	2.7140088	20	4 9.5	19.2
192734 1999 TR ₁₉₃	15.4	X	285.74367	358.59683	353.24550	12.67908	0.0871878	0.22409194	2.6844288	20	6 25.8	19.1
192735 1999 TK ₁₉₃	15.6	X	158.35838	166.45988	262.10635	7.46638	0.2345779	0.21532376	2.7568179	20	5 11.7	20.3
192736 1999 TQ ₂₀₁	16.2	X	30.38418	47.73012	228.04055	4.36099	0.2875982	0.23569561	2.5955838	20	9 29.2	19.1
192737 1999 TR ₂₀₅	15.3	X	187.73545	323.37072	23.38086	9.21744	0.1616231	0.21094541	2.7948339	20	3 1.9	20.0
192738 1999 TU ₂₁₂	15.5	X	235.67430	275.38198	6.68554	9.12934	0.1639484	0.21146579	2.7902470	20	1 26.7	20.1
192739 1999 TZ ₂₁₃	15.5	X	125.58678	100.47305	27.99776	11.89128	0.0312477	0.22164211	2.7041734	20	6 7.6	19.4
192740 1999 TF ₂₁₄	15.8	X	240.63546	334.06439	38.94554	6.58163	0.0441801	0.22191480	2.7019576	20	5 29.6	19.6
192741 1999 TX ₂₁₄	15.7	X	249.42545	202.30984	180.73152	6.32552	0.0776802	0.22398928	2.6852490	20	6 19.8	19.6
192742 1999 TL ₂₁₅	16.1	X	178.12240	204.07116	191.04501	8.80068	0.1666906	0.21596312	2.7513742	20	4 17.5	20.6
192743 1999 TG ₂₂₅	16.6	X	234.02579	83.06895	199.90280	2.06612	0.1682023	0.21410600	2.7672612	20	1 22.5	21.0
192744 1999 TQ ₂₂₅	15.5	X	308.99633	304.26780	346.99246	8.26403	0.1290989	0.22474192	2.6792505	20	4 26.3	18.9
192745 1999 TO ₂₂₆	16.0	X	146.34154	33.07410	8.38555	5.77391	0.0325058	0.21256214	2.7806443	20	3 15.4	19.8
192746 1999 TT ₂₃₇	16.0	X	281.11076	81.34765	185.15650	15.48365	0.2540063	0.21792985	2.7347958	20	2 3.9	20.5
192747 1999 TX ₂₄₂	15.5	X	320.58089	296.08679	22.45142	9.04911	0.1428582	0.22662283	2.6640918	20	6 25.9	18.6
192748 1999 TX ₂₄₉	15.7	X	252.28996	23.35150	316.58365	5.29965	0.1182876	0.22102101	2.7092370	20	4 19.7	19.8
192749 1999 TN ₂₅₁	15.9	X	202.33749	101.98463	318.56950	4.63951	0.1600081	0.22251504	2.6970964	20	6 8.9	20.3
192750 1999 TR ₂₅₄	16.4	X	115.55016	71.75405	350.14892	3.89721	0.0600217	0.21084354	2.7957340	20	3 6.7	20.2
192751 1999 TF ₂₅₅	16.1	X	239.79181	105.51414	250.39176	0.93633	0.0889201	0.22253632	2.6969245	20	5 1.6	19.8
192752 1999 TH ₂₅₆	15.7	X	158.50913	246.67344	188.20342	24.48292	0.2331282	0.21848435	2.7301666	20	5 22.2	20.8
192753 1999 TD ₂₅₉	15.4	X	304.49242	128.60172	194.62276	14.79701	0.1762796	0.22603912	2.6689902	20	5 31.3	18.8
192754 1999 TU ₂₆₂	16.2	X	220.25467	113.02569	216.53056	5.26218	0.0966836	0.21406121	2.7676472	20	3 6.7	20.5
192755 1999 TL ₂₆₅	15.2	X	288.18214	78.36162	265.82087	12.73447	0.2010839	0.22772456	2.6558047	20	5 30.1	18.8
192756 1999 TQ ₂₆₈	15.6	X	213.54200	5.47844	287.40147	7.23138	0.1983356	0.21157467	2.7892896	20	1 16.9	20.3
192757 1999 TH ₂₇₀	15.9	X	241.09420	35.73109	335.44663	7.94689	0.1461324	0.22233387	2.6985614	20	5 14.3	20.1
192758 1999 TU ₂₇₁	15.3	X	130.99684	241.04537	234.94001	8.33226	0.1021366	0.21969621	2.7201176	20	6 7.1	19.3
192759 1999 TK ₂₈₀	15.6	X	209.59055	217.38447	181.32156	13.25465	0.2634970	0.22348165	2.6893137	20	5 17.5	20.5
192760 1999 TR ₂₈₉	15.5	X	162.21983	343.47607	52.11595	9.91768	0.1658701	0.21283541	2.7782637	20	4 6.7	20.0
192761 1999 TR ₂₉₂	15.4	X	185.60458	173.06295	247.03967	7.54141	0.2189915	0.21888108	2.7268667	20	5 23.6	20.0
192762 1999 TR ₂₉₃	15.9	X	188.00766	69.52750	14.31373	8.95172	0.1845150	0.22015502	2.7163370	20	6 24.7	20.5
192763 1999 TR ₂₉₇	16.0	X	151.40181	243.79876	186.72427	4.79307	0.1489722	0.21408225	2.7674658	20	5 5.9	20.3
192764 1999 TF ₃₀₂	15.5	X	289.45200	7.28266	307.29554	11.22229	0.0867072	0.22347644	2.6893555	20	5 5.7	19.3
192765 1999 TV ₃₁₃	16.0	X	347.16829	292.09767	347.59624	8.92291	0.0646290	0.22702161	2.6612842	20	6 22.3	19.3
192766 1999 TH ₃₁₅	16.3	X	323.20098	77.10814	43.64446	2.34681	0.0806967	0.24666346	2.5180606	20	—	—
192767 1999 TV ₃₁₉	16.4	X	129.23884	309.49035	201.80882	1.67752	0.1441549	0.22212904	2.7002201	20	7 23.9	20.5
192768 1999 TB ₃₂₀	15.6	X	236.41298	87.67567	253.05966	7.97970	0.1757460	0.21890607	2.7266591	20	3 29.5	20.2
192769 1999 TF ₃₂₁	15.7	X	118.74494	104.19971	316.39441	3.24605	0.0963802	0.21113633	2.7931488	20	3 12.6	19.5
192770 1999 TB ₃₂₂	15.9	X	169.42268	79.59908	338.81184	6.99387	0.2518207	0.21755917	2.7379013	20	5 6.9	20.8
192771 1999 UY ₆	16.0	X	284.47931	328.63965	12.74033	10.45752	0.0971394	0.22626373	2.6672236	20	6 4.9	19.7
192772 1999 UH ₁₁	15.9	X	231.48946	347.57578	313.99775	3.14233	0.0829783	0.20913847	2.8109089	20	2 16.1	20.1
192773 1999 UB ₁₂	16.0	X	65.33887	86.89837	51.72214	5.59342	0.1053485	0.21126411	2.7920224	20	4 16.1	19.5
192774 1999 UY ₁₂	16.2	X	226.57115	202.92103	207.61900	9.39321	0.2742879	0.22392896	2.6857312	20	6 11.5	20.9
192775 1999 UE ₁₆	16.3	X	205.42456	170.94714	257.66312	1.39956	0.1996861	0.22150349	2.7053015	20	6 20.4	20.6
192776 1999 UQ ₁₆	15.9	X	213.84858	186.11020	222.42504	10.09691	0.2623839	0.22088449	2.7103533	20	5 30.9	20.7
192777 1999 UJ ₁₇	16.6	X	257.59832	275.19859	56.23835	2.80882	0.0818401	0.22036787	2.7145876	20	4 22.5	20.3
192778 1999 UW ₁₉	16.2	X	29.57511	72.66738	189.09484	10.53039	0.2942708	0.23396582	2.6083615	20	9 8.7	19.0
192779 1999 UO ₂₄	15.3	X	249.07975	305.62607	356.28464	8.29542	0.2746157	0.21664971	2.7455581	20	2 22.1	20.0
192780 1999 UY ₂₄	15.9	X	143.71011	28.48323	14.86311	13.75112	0.1971674	0.21175711	2.7876872	20	3 29.9	20.4
192781 1999 UG ₂₅	17.1	X	204.02665	31.13557	8.68652	6.98137	0.3623435	0.21912209	2.7248668	20	5 8.3	22.4
192782 1999 UU ₂₅	16.1	X	231.54286	41.77030	15.27569	4.06157	0.2426341	0.22437352	2.6821824	20	6 26.3	20.5
192783 1999 UV ₂₆	15.7	X	193.91373	70.05950	267.86853	3.86782	0.1684689	0.21223323	2.7835165	20	2 20.7	20.4
192784 1999 UH ₂₇	15.8	X	224.10209	68.74029	357.95182	5.63095	0.0917204	0.22766390	2.6562764	20	7 16.8	19.7
192785 1999 UK ₃₀	16.5	X	163.93927	221.84227	178.08672	4.21048	0.0099555	0.21591395	2.7517918	20	4 1.5	20.1
192786 1999 UW ₃₀	16.7	X	230.17733	187.05355	181.55231	4.92772	0.1756500	0.22094263	2.7098778	20	5 1.5	20.9
192787 1999 UE ₃₄	17.0	X	118.70118	225.15036	190.42044	3.75159	0.0405192	0.21257246	2.7805543	20	3 24.1	20.7
192788 1999 UH ₃₄	16.4	X	91.74597	257.53410	199.85958	1.07173	0.0263233	0.21188193	2.7865923	20	3 16.3	20.1
192789 1999 UA ₃₅	16.1	X	123.02989	274.54720	200.35458	2.48191	0.1607206	0.21612620	2.7499899	20	6 2.8	20.2
192790 1999 UC ₃₅	16.6	X	224.86681	18.17979	48.45104	2.99380	0.0925539	0.22455585	2.6807304	20	7 16.7	20.5
192791 1999 UX ₄₁	15.4	X	241.98372	323.42695	26.36009	9.68443	0.1287543	0.21960339	2.7208840	20	4 21.9	19.3
192792 1999 UT ₄₅	15.6	X	126.53394	73.45847	8.81363	11.78245	0.1309602	0.21335570	2.7737451	20	4 19.9	19.9
192793 1999 UJ ₅₄	16.3	X	323.34293	13.43049	193.							

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>
192801 1999 VG ₄	15.5	X	190.23912	192.12884	165.99885	5.46758	0.1780823	0.21449121	2.7639471	20	3 14.2	20.0
192802 1999 VO ₁₆	16.1	X	181.43444	344.60530	7.37949	4.33186	0.2146586	0.21242103	2.7818756	20	3 1.4	20.9
192803 1999 VF ₂₁	16.1	X	209.58048	292.11787	91.25854	4.53905	0.2061674	0.21790176	2.7350308	20	4 30.3	20.8
192804 1999 VZ ₃₁	16.0	X	273.82917	15.88152	331.07869	0.61093	0.1107289	0.22101333	2.7092998	20	5 28.7	19.7
192805 1999 VX ₄₄	15.6	X	276.08060	105.36466	231.66855	12.48557	0.3007828	0.22484223	2.6784536	20	4 20.9	19.9
192806 1999 VR ₄₅	15.3	X	220.18075	64.04652	5.27176	4.48027	0.2564107	0.22306439	2.6926664	20	6 30.9	19.8
192807 1999 VX ₅₆	15.9	X	238.67758	355.16077	53.89087	3.82375	0.0803688	0.22418576	2.6836798	20	7 11.3	19.6
192808 1999 VO ₅₉	16.4	X	216.15696	131.07706	244.90588	2.37382	0.2091514	0.21811342	2.7332611	20	4 24.7	20.9
192809 1999 VW ₆₁	16.3	X	233.95987	158.07503	228.17055	5.22926	0.2170549	0.22157600	2.7047113	20	5 22.9	20.6
192810 1999 VL ₆₃	15.3	X	267.11636	203.35677	227.63143	10.03539	0.2274153	0.22952049	2.6419326	20	8 19.9	19.0
192811 1999 VC ₆₈	15.4	X	258.78443	325.86753	57.70026	9.83831	0.1911125	0.22344444	2.6896123	20	6 15.7	19.4
192812 1999 VO ₆₉	16.5	X	217.92650	169.86832	227.15690	1.42307	0.1248249	0.22020200	2.7159506	20	5 27.8	20.7
192813 1999 VO ₇₀	15.7	X	97.09104	260.02750	206.26454	3.28632	0.1696629	0.21050804	2.7987037	20	4 25.1	19.6
192814 1999 VG ₇₁	15.3	X	113.36599	331.76561	62.52870	12.27280	0.0524805	0.20432807	2.8548548	20	2 1.8	19.4
192815 1999 VP ₇₆	16.2	X	173.72134	167.43799	167.48228	2.27215	0.0341229	0.20472428	2.8511702	20	1 25.1	20.2
192816 1999 VR ₇₆	16.3	X	306.52446	89.73646	177.07306	2.42581	0.0404684	0.21317130	2.7753444	20	4 7.7	20.0
192817 1999 VJ ₇₉	15.7	X	121.16646	69.55961	35.76241	13.20902	0.1638494	0.21461604	2.7628752	20	5 17.5	20.0
192818 1999 VK ₈₁	16.0	X	191.59141	238.76716	218.08699	8.71845	0.2803640	0.21919770	2.7242402	20	7 9.5	21.1
192819 1999 VK ₈₂	15.6	X	244.61767	313.43596	36.71512	5.67866	0.1275302	0.22007235	2.7170172	20	4 25.9	19.6
192820 1999 VO ₈₂	15.6	X	272.70420	256.55754	45.71912	16.02760	0.2952524	0.21942148	2.7223876	20	3 16.9	20.2
192821 1999 VU ₈₂	15.9	X	315.98851	120.97539	190.79233	11.13755	0.2054191	0.22840722	2.6505103	20	5 30.1	19.0
192822 1999 VP ₈₈	16.1	X	157.94220	297.40794	105.03505	1.70320	0.0767392	0.21311056	2.7758718	20	4 2.9	20.1
192823 1999 VD ₈₉	15.7	X	146.49573	180.08571	220.09496	8.68671	0.1653870	0.21072146	2.7968137	20	3 22.9	20.1
192824 1999 VD ₉₁	15.6	X	207.59862	190.14582	214.90168	8.81564	0.0709495	0.22107092	2.7088293	20	5 30.8	19.7
192825 1999 VT ₉₁	15.2	X	267.51285	227.29065	97.11081	15.10158	0.2140563	0.22016574	2.7162488	20	4 16.0	19.6
192826 1999 VO ₉₄	15.7	X	171.08415	231.62816	212.49579	8.81411	0.1438888	0.21993675	2.7181339	20	6 9.9	20.2
192827 1999 VJ ₉₇	15.9	X	248.88055	109.22326	221.92409	12.52938	0.1438292	0.21752943	2.7381508	20	4 2.7	20.1
192828 1999 VJ ₉₉	16.1	X	216.59222	282.45040	44.60358	8.64993	0.1741350	0.21349886	2.7725050	20	3 3.7	20.8
192829 1999 VL ₁₀₀	16.1	X	170.91598	238.93330	233.04957	8.95796	0.1513957	0.22048784	2.7136029	20	7 12.9	20.6
192830 1999 VU ₁₀₁	15.5	X	210.40002	145.65626	231.22752	4.93532	0.0524044	0.21564123	2.7541115	20	4 27.6	19.5
192831 1999 VY ₁₀₁	16.3	X	145.23753	202.27187	209.75467	1.77518	0.1130164	0.21138544	2.7909540	20	4 2.9	20.4
192832 1999 VF ₁₀₂	16.4	X	167.60023	7.19749	58.16897	5.52132	0.1387561	0.21588683	2.7520223	20	5 13.8	20.7
192833 1999 VP ₁₀₇	16.5	X	318.94895	345.32631	51.56736	2.84294	0.1138910	0.23225880	2.6211262	20	10 20.6	19.1
192834 1999 VZ ₁₁₇	15.5	X	3.73506	354.23379	197.68448	14.68347	0.0517286	0.21464218	2.7626508	20	3 17.1	19.1
192835 1999 VB ₁₁₈	15.9	X	275.83629	51.05069	193.43600	8.30731	0.0478347	0.21047840	2.7989665	20	1 28.3	20.0
192836 1999 VC ₁₂₁	16.4	X	200.12956	333.99759	25.14837	4.29998	0.1149731	0.21468054	2.7623218	20	3 24.9	20.6
192837 1999 VL ₁₂₅	15.9	X	87.58926	97.58390	44.70072	9.03773	0.0918459	0.21496117	2.7599171	20	5 17.7	19.6
192838 1999 VQ ₁₃₀	16.7	X	118.08932	46.94599	35.77606	4.95733	0.0984236	0.21761671	2.7866381	20	4 10.8	20.7
192839 1999 VK ₁₃₂	16.5	X	111.14393	349.40865	118.29587	2.32963	0.0426758	0.21344920	2.7729351	20	4 27.2	20.3
192840 1999 VN ₁₃₇	15.7	X	92.66255	90.05705	33.01236	4.06747	0.0401790	0.21410864	2.7672385	20	4 21.9	19.2
192841 1999 VV ₁₃₈	16.1	X	247.68976	304.10670	76.06849	7.26823	0.0626360	0.22054965	2.7130958	20	6 15.5	19.8
192842 1999 VC ₁₄₃	16.4	X	183.77729	146.62038	241.62450	3.21711	0.1397966	0.21549072	2.7553937	20	4 12.0	20.7
192843 1999 VM ₁₄₈	15.6	X	197.67108	123.36266	241.63885	4.76371	0.0557628	0.21319923	2.7751020	20	3 27.4	19.7
192844 1999 VD ₁₅₂	16.4	X	167.01619	11.73870	75.07574	4.54418	0.1693821	0.21740750	2.7391745	20	6 9.6	21.0
192845 1999 VX ₁₅₄	16.2	X	262.68400	90.19934	304.27113	1.20292	0.2082367	0.22813651	2.6526067	20	7 3.3	19.8
192846 1999 VK ₁₅₅	16.0	X	296.83274	314.86378	312.51352	2.70248	0.0463753	0.21511134	2.7586325	20	3 23.8	19.6
192847 1999 VK ₁₅₆	15.2	X	109.25195	241.84383	237.09406	12.31130	0.1600764	0.21296312	2.7771529	20	5 24.0	19.2
192848 1999 VD ₁₅₇	15.5	X	215.69925	297.33111	50.80744	4.61451	0.1152261	0.21220834	2.7837341	20	3 27.8	19.8
192849 1999 VS ₁₆₁	15.7	X	219.23276	47.68261	40.54054	14.17918	0.2156372	0.22413202	2.6841088	20	7 31.1	20.3
192850 1999 VH ₁₆₆	16.0	X	313.97749	357.75156	300.12937	2.31880	0.0195985	0.21848466	2.7301641	20	5 31.3	19.4
192851 1999 VL ₁₇₅	15.5	X	313.90408	245.11704	30.88908	14.64739	0.2264538	0.22065734	2.7122130	20	4 4.4	18.7
192852 1999 VO ₁₇₆	15.2	X	248.07366	63.21810	41.05331	30.39343	0.2966039	0.23071291	2.6328217	20	9 24.5	19.7
192853 1999 VU ₁₇₆	15.8	X	152.63840	6.82582	34.85252	6.51947	0.0515278	0.21270935	2.7793612	20	3 26.1	19.7
192854 1999 VA ₁₇₈	15.5	X	240.92141	60.95958	36.84163	30.35619	0.2946653	0.22902338	2.6457542	20	9 9.7	20.3
192855 1999 VT ₁₈₇	15.7	X	208.73456	124.90901	204.33497	7.08393	0.2293232	0.21209933	2.7846879	20	2 21.8	20.6
192856 1999 VG ₁₉₀	15.6	X	157.86824	172.22106	225.04265	9.38589	0.2074596	0.21083354	2.7958224	20	4 1.5	20.3
192857 1999 VX ₁₉₈	15.4	X	172.40469	320.24915	85.68275	9.11465	0.1135716	0.21542683	2.7559385	20	4 26.8	19.8
192858 1999 VT ₂₀₁	15.8	X	132.88475	69.78802	24.97183	8.50199	0.2658276	0.21275776	2.7789396	20	5 24.2	20.6
192859 1999 VB ₂₁₃	16.6	X	124.79143	184.29198	203.14627	1.39203	0.0859465	0.20642001	2.8355340	20	2 7.4	20.6
192860 1999 VS ₂₁₉	15.9	X	132.74599	81.78978	10.07507	15.12810	0.0220827	0.21987481	2.7186443	20	4 25.5	19.8
192861 1999 VO ₂₂₀	15.2	X	134.68328	165.34169	247.34588	11.87383	0.1279984	0.21087598	2.7954473	20	3 20.3	19.7
192862 1999 VE ₂₂₃	15.7	X	136.11703	238.75041	194.78484	12.72439	0.1840531	0.21260008	2.7803135	20	4 28.0	20.1
192863 1999 WR ₅	16.1	X	166.90579	63.33645	34.08329	9.41987	0.2196033	0.22015631	2.7163264	20	6 23.2	20.9
192864 1999 WP ₉	15.3	X	212.05670	317.39453	90.08648	10.19171	0.1599270	0.22116334	2.7080746	20	6 2.8	19.6
192865 1999 WL ₁₅	15.9	X	300.47392	32.91095	226.98717	13.47243	0.1621992	0.21389899	2.7690464	20	2 26.6	20.0
192866 1999 WS ₁₆	15.5	X	179.02257	77.61619	25.89751	6.74429	0.1842379	0.22295680	2.6935326	20	7 12.7	20.0
192867 1999 WS ₁₈	16.4	X	313.35431	276.95823	52.83301	5.98839	0.0538847	0.22390442	2.6859274	20	7 11.0	19.7
192868 1999 WZ ₁₈	16.5	X	117.76423	169.82795	203.68302	1.48209	0.0802485	0.20354794	2.8621446	20	1 12.9	20.3
192869 1999 XB ₁₄	16.3	X	192.75718	284.20726	138.52441	8.05395	0.3377325	0.21803401	2.7339247	20	6 1.2	21.5
192870 1999 XE ₁₉	15.4	X	206.26248	344.86160	41.81640	10.50319	0.2164480	0.21982780	2.7190319	20	4 29.9	20.1
192871 1999 XV ₂₀	15.9	X	292.14677	144.12753	248.52772	2.66824	0.2545984	0.23096077	2.6309377	20	8 3.6	18.8
192872 1999 XK ₂₅	15.2	X	183.12086	323.61027	62.98402	14.78871	0.1662096	0.21403994	2.7678305	20	4 16.5	19.9
192873 1999 XJ ₂₇	15.0	X	193.46602	309.42023	69.37455</							

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>
192881 1999 XR ₅₉	15.4	X	147.45129	232.93098	247.64740	10.96552	0.1144264	0.21723967	2.7405851	20	6 30.5	19.6
192882 1999 XT ₆₁	15.8	X	311.32664	302.24006	79.91546	15.92282	0.1414611	0.22892905	2.6464810	20	9 22.3	19.0
192883 1999 XT ₆₇	15.4	X	233.90185	269.80898	88.29590	10.32900	0.1413528	0.21586573	2.7522017	20	4 27.8	19.8
192884 1999 XJ ₇₅	15.4	X	185.85106	299.79814	87.28430	9.39022	0.2788062	0.21344072	2.7730085	20	4 18.6	20.5
192885 1999 XA ₉₄	15.1	X	238.31595	184.59682	290.51558	21.59055	0.1168972	0.22566547	2.6719356	20	9 17.4	19.5
192886 1999 XR ₁₀₀	15.0	X	248.15553	122.43815	283.37597	9.71790	0.2008067	0.22137883	2.7063170	20	7 2.5	18.9
192887 1999 XZ ₁₀₃	15.1	X	210.27538	132.83263	265.15792	11.84006	0.2087809	0.21787380	2.7352648	20	5 16.0	19.8
192888 1999 XB ₁₁₃	15.2	X	287.66356	12.33121	313.38448	13.46260	0.1496116	0.22209124	2.7005264	20	5 7.6	19.2
192889 1999 XA ₁₁₅	15.2	X	177.84398	132.46934	278.44763	13.20944	0.3410072	0.21599592	2.7510956	20	5 4.6	20.6
192890 1999 XP ₁₁₅	15.5	X	222.32392	155.24216	255.68999	13.71161	0.1584342	0.22222927	2.6994080	20	6 16.3	19.7
192891 1999 XK ₁₁₇	15.8	X	307.55092	75.33610	313.26568	4.21235	0.3148927	0.23101828	2.6305011	20	8 18.4	18.1
192892 1999 XZ ₁₁₈	16.5	X	193.21352	22.20894	32.97457	2.06993	0.2193061	0.21772749	2.7364900	20	5 23.5	21.1
192893 1999 XM ₁₂₂	15.6	X	283.28152	79.43721	315.10428	5.01703	0.2097637	0.22812585	2.6526893	20	7 31.5	18.6
192894 1999 XU ₁₃₀	15.6	X	348.48816	76.32459	288.52814	13.43205	0.2222975	0.23289641	2.6163400	20	11 2.3	18.3
192895 1999 XS ₁₃₄	15.8	X	279.25342	315.50915	101.76652	14.16768	0.2267545	0.22889062	2.6467772	20	8 28.1	19.2
192896 1999 XW ₁₃₇	16.0	X	173.78941	115.22395	240.63122	12.64588	0.1157508	0.20869004	2.8149341	20	2 18.5	20.7
192897 1999 XH ₁₄₂	14.7	X	271.34488	62.35936	275.26047	32.25237	0.1594752	0.21697488	2.7428143	20	5 1.5	19.2
192898 1999 XB ₁₄₅	16.0	X	301.72318	104.53770	232.02371	6.02070	0.1352505	0.22443502	2.6816925	20	6 20.1	19.1
192899 1999 XE ₁₄₆	15.7	X	261.24901	255.88536	68.23533	7.67460	0.0339893	0.21488805	2.7605432	20	4 25.9	19.5
192900 1999 XN ₁₅₁	15.6	X	161.45581	224.97803	84.48425	2.90141	0.0190132	0.19343513	2.9610505	20	—	—
192901 1999 XR ₁₅₁	15.4	X	180.62326	177.86004	10.32010	1.79449	0.0854068	0.17847829	3.1242501	20	10 23.8	20.2
192902 1999 XC ₁₅₆	15.8	X	160.71600	179.63957	244.93899	8.48940	0.2599197	0.21326733	2.7745113	20	5 10.0	20.8
192903 1999 XX ₁₇₇	15.6	X	221.28163	7.55058	57.54609	4.35634	0.1680562	0.21826398	2.7320040	20	7 2.9	19.8
192904 1999 XG ₁₈₅	15.9	X	145.47858	61.95254	341.52760	6.49640	0.3205671	0.21036539	2.7999688	20	4 5.4	20.9
192905 1999 XU ₂₁₀	15.8	X	146.59351	115.55278	303.73660	14.95965	0.3037332	0.21071717	2.7968517	20	4 19.1	21.1
192906 1999 XJ ₂₁₃	15.6	X	146.70309	314.73302	133.15728	9.35792	0.2555221	0.21312817	2.7757189	20	5 29.9	20.6
192907 1999 XU ₂₁₃	15.7	X	97.82119	4.72230	116.26587	8.66320	0.1724916	0.20978134	2.8051633	20	5 17.8	19.8
192908 1999 XG ₂₂₃	16.8	X	166.54036	24.46929	64.03595	4.41072	0.1691930	0.21778503	2.7360080	20	6 11.1	21.1
192909 1999 XD ₂₂₇	15.8	X	115.11656	127.88095	288.99781	0.61589	0.1813877	0.20382291	2.8595699	20	3 16.0	20.0
192910 1999 XE ₂₃₃	15.4	X	175.19321	235.69188	131.43824	8.91831	0.3035745	0.21158491	2.7891996	20	3 18.4	20.5
192911 1999 XB ₂₃₇	15.7	X	49.93242	141.94661	315.08601	1.69575	0.1257021	0.20280735	2.8691082	20	1 30.2	19.1
192912 1999 XU ₂₄₅	16.1	X	203.65671	254.10915	121.91389	8.91300	0.3586887	0.21644282	2.7473075	20	4 16.3	21.5
192913 1999 XC ₂₄₇	16.1	X	257.21504	42.43913	264.73925	3.25683	0.0516545	0.21187143	2.7866844	20	3 23.9	20.0
192914 1999 XY ₂₄₇	15.7	X	174.08151	306.81313	103.27716	8.95603	0.2227565	0.21415324	2.7668542	20	5 5.7	20.6
192915 1999 XD ₂₅₁	16.4	X	78.26725	67.29516	345.29452	1.37044	0.0970093	0.19726127	2.9226367	20	1 14.2	20.0
192916 1999 XR ₂₅₆	15.5	X	192.32929	50.70999	49.70120	14.41941	0.1848008	0.22060568	2.7126364	20	7 22.0	20.2
192917 1999 YA ₄	15.0	X	182.83509	52.43234	347.87959	25.59652	0.1949319	0.21274868	2.7790187	20	4 14.7	20.1
192918 1999 YV ₉	15.6	X	132.87816	342.44912	94.04800	5.53684	0.0425255	0.21188134	2.7865975	20	4 15.6	19.5
192919 1999 YH ₁₀	16.4	X	100.55629	288.56499	206.97902	3.64545	0.0535509	0.21446113	2.7642055	20	5 21.3	20.1
192920 1999 YT ₁₀	16.4	X	166.92665	218.87781	204.57983	3.93306	0.0484824	0.21445920	2.7642221	20	5 7.8	20.4
192921 1999 YD ₁₁	16.4	X	108.13271	316.99807	160.34375	3.17446	0.1331485	0.21209731	2.7847055	20	5 18.2	20.4
192922 1999 YM ₁₄	15.0	X	94.95190	151.92737	328.57247	12.53465	0.1470279	0.21070320	2.7969753	20	5 1.9	19.2
192923 1999 YY ₁₄	15.5	X	162.06386	45.88283	56.13365	24.63602	0.2787777	0.21747365	2.7386190	20	6 23.4	20.7
192924 1999 YU ₂₀	15.1	X	269.71269	223.27908	302.74176	8.57038	0.0682454	0.18667722	3.0320882	20	—	—
192925 1999 YU ₂₅	16.2	X	22.95923	291.57087	173.62573	0.30190	0.0446210	0.19820987	2.9133044	20	—	—
192926 2000 AN ₅	15.7	X	201.33816	65.46257	99.01399	8.55829	0.2405109	0.22424883	2.6831766	20	10 15.3	20.3
192927 2000 AH ₆	15.2	X	138.69523	311.21126	85.46232	6.16832	0.1673903	0.20395078	2.8583746	20	3 17.4	19.7
192928 2000 AP ₆	16.0	X	164.45736	227.11203	199.44082	7.15710	0.2609938	0.21581186	2.7526596	20	5 16.7	20.9
192929 2000 AT ₄₄	12.5	X	263.85591	352.04903	102.55666	8.67110	0.0811730	0.08075279	5.3010800	20	9 25.0	19.5
192930 2000 AV ₅₂	15.8	X	214.56722	179.10876	252.51178	12.97421	0.2221113	0.22256348	2.6967051	20	6 29.7	20.4
192931 2000 AW ₇₁	15.3	X	131.43731	197.52885	258.74440	8.11457	0.1639600	0.21211401	2.7845593	20	5 18.1	19.7
192932 2000 AO ₉₂	14.9	X	171.55488	125.52345	283.88071	24.32359	0.1879828	0.21549161	2.7553861	20	4 20.6	20.1
192933 2000 AN ₁₁₁	15.8	X	167.28516	309.48475	127.93448	13.84501	0.1611900	0.21294438	2.7773158	20	6 1.0	20.5
192934 2000 AY ₁₂₁	14.7	X	206.38060	253.32036	281.72242	16.30597	0.1134579	0.18049156	3.1009739	20	10 27.8	19.8
192935 2000 AZ ₁₄₉	15.6	X	174.17546	235.36650	166.96231	7.79879	0.3067482	0.21159552	2.7891063	20	4 26.9	20.8
192936 2000 AV ₁₅₃	15.1	X	296.06261	138.90629	284.78425	14.57867	0.1102201	0.23062715	2.6334743	20	10 9.4	18.5
192937 2000 AS ₁₇₀	15.8	X	179.30364	256.19878	134.28315	9.15803	0.2925733	0.21344702	2.7729539	20	4 17.7	21.0
192938 2000 AJ ₁₈₅	12.8	X	278.63435	301.59630	154.49752	15.91126	0.1036850	0.08185497	5.2533864	20	10 10.2	19.7
192939 2000 AK ₁₈₈	15.3	X	207.42544	249.55783	140.21875	13.88288	0.2144806	0.21676088	2.7446193	20	5 9.2	20.2
192940 2000 AG ₂₀₆	15.5	X	196.23511	299.55682	104.52966	5.58144	0.0686606	0.21249709	2.7812117	20	5 17.7	19.6
192941 2000 AD ₂₀₇	15.5	X	22.91048	136.44946	288.83578	7.66215	0.0394056	0.19132268	2.9828065	20	—	—
192942 2000 AB ₂₁₉	13.3	X	321.32418	72.89443	327.14449	2.48345	0.0516654	0.08155238	5.2663731	20	9 30.6	20.0
192943 2000 AJ ₂₂₃	16.8	X	166.12511	144.74553	306.94404	1.16976	0.2681193	0.21430862	2.7655167	20	6 16.4	21.8
192944 2000 AC ₂₂₆	16.1	X	300.33849	208.20239	313.59022	1.46319	0.1011547	0.19157279	2.9802097	20	—	—
192945 2000 AD ₂₂₇	16.1	X	237.38381	288.70346	303.52268	1.37076	0.0870842	0.18726678	3.0257211	20	—	—
192946 2000 AQ ₂₃₀	15.6	X	213.61343	110.25633	317.19794	23.82081	0.2956438	0.21736997	2.7394898	20	6 24.4	20.8
192947 2000 AR ₂₅₀	16.2	X	268.81778	333.60264	181.77735	0.64068	0.1249739	0.18423557	3.0588186	20	12 20.9	20.1
192948 2000 BA	17.2	X	119.72209	270.01933	141.59013	3.70987	0.1408538	0.29832674	2.2182369	20	2 29.8	19.9
192949 2000 BP ₁	15.5	X	170.01362	164.08366	57.24814	0.84599	0.0807305	0.18040596	3.1019548	20	11 21.9	20.2
192950 2000 BQ ₂	14.9	X	117.23812	173.27993	320.49613	8.46562	0.3739588	0.20625796	2.7370189	20	7 8.5	20.1
192951 2000 BK ₇	15.2	X	70.34868	276.13771	111.11239	10.55751	0.0633384	0.19169125	2.9789818	20	—	—
192952 2000 BZ ₁₈	16.5	X	18.74988	211.66120	356.71825	5.45636	0.3007036	0.29941846	2.2128416	20	5 13.7	16.9
192953 2000 BJ ₂₁	17.1	X	69.24770	214.27893	304.54491	3.70666						

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>
192961 2000 CH ₈₀	16.6 ^m	X	133.57297	189.92649	319.42192	4.62586	0.0611316	0.31015037	2.1614964	20	7 26.9	19.2
192962 2000 CF ₁₀₁	16.3	X	11.38336	42.22269	114.51832	3.43880	0.0694606	0.19926097	2.9030503	20	2 15.8	19.9
192963 2000 CO ₁₁₀	16.6	X	274.82900	290.22664	318.00983	8.22149	0.1452241	0.29178552	2.2512664	20	1 12.0	19.7
192964 2000 CF ₁₂₇	12.3	X	290.59447	139.26894	307.39861	23.67444	0.0861635	0.08125126	5.2793767	20	9 29.3	19.4
192965 2000 CP ₁₂₉	17.1	X	292.06819	284.75726	308.18497	3.10828	0.1491485	0.29218859	2.2491955	20	1 9.7	20.2
192966 2000 CS ₁₄₀	12.6	X	334.78906	74.20536	300.10423	5.29863	0.0566189	0.07935543	5.3631294	20	9 16.4	19.5
192967 2000 DF ₉	16.1	X	330.89772	353.52210	165.37815	1.17614	0.0186714	0.19205799	2.9751883	20	—	—
192968 2000 DP ₉	15.9	X	36.75756	85.30944	325.36607	9.99754	0.1082842	0.18819966	3.0157141	20	—	—
192969 2000 DH ₁₀	17.2	X	195.45213	233.09538	147.75521	7.10385	0.0992478	0.30207462	2.1998508	20	4 13.6	20.3
192970 2000 DV ₁₀	16.2	X	286.06939	214.20442	333.19243	1.04141	0.0717887	0.18908137	3.0063316	20	—	—
192971 2000 DE ₁₄	15.3	X	91.89018	152.08300	161.90843	5.68273	0.1460320	0.17768842	3.1335020	20	12 26.2	20.3
192972 2000 DH ₂₀	15.8	X	188.26604	190.24961	312.72821	4.07952	0.1021610	0.21972544	2.7198763	20	9 9.7	19.8
192973 2000 DL ₂₃	15.9	X	59.72488	149.88546	328.99547	7.93172	0.1256119	0.19976231	2.8981911	20	3 12.7	19.4
192974 2000 DF ₃₀	17.2	X	121.12135	240.16042	250.95430	1.54484	0.0473833	0.30548861	2.1834305	20	6 10.5	19.5
192975 2000 DC ₃₃	15.5	X	274.11549	163.49710	318.96508	6.45492	0.1206427	0.18011087	3.1053420	20	11 15.0	19.7
192976 2000 DB ₃₇	15.7	X	259.93603	353.74035	137.03142	2.59114	0.1522707	0.17915955	3.1163250	20	11 4.7	20.0
192977 2000 DM ₃₉	16.5	X	271.05288	292.60373	324.52010	7.84160	0.1293526	0.29153342	2.2525641	20	1 21.1	19.7
192978 2000 DO ₄₁	15.5	X	305.74858	281.43445	146.37693	5.42446	0.1559580	0.17845195	3.1245575	20	10 24.6	19.2
192979 2000 DG ₅₀	15.3	X	304.36433	326.39534	158.46314	10.56444	0.0858055	0.18345132	3.0675300	20	—	—
192980 2000 DF ₅₇	16.6	X	179.21590	178.64998	302.40854	1.08831	0.1891280	0.21479962	2.7613008	20	8 1.9	21.1
192981 2000 DK ₅₇	17.1	X	48.26446	221.14580	332.98684	4.56510	0.0651942	0.30236591	2.1984377	20	5 27.5	19.4
192982 2000 DX ₅₉	14.9	X	153.15533	241.23676	344.24111	12.40387	0.1665593	0.17305991	3.1891265	20	11 3.8	20.4
192983 2000 DK ₆₄	16.8	X	263.57633	321.15031	217.75578	1.83868	0.1012388	0.28052268	2.3111283	20	—	—
192984 2000 DM ₆₄	15.3	X	219.56796	19.58530	180.36848	5.85917	0.1922590	0.17883146	3.1201354	20	12 6.6	20.2
192985 2000 DA ₆₅	15.1	X	241.57688	206.10697	343.32463	9.52398	0.1310987	0.18110912	3.0939206	20	12 25.9	19.6
192986 2000 DM ₆₅	15.2	X	251.85263	43.12815	158.77458	13.78200	0.0397240	0.18523115	3.0478484	20	—	—
192987 2000 DD ₆₇	15.3	X	72.33916	73.38921	331.79353	10.74420	0.1760238	0.19139086	2.9820980	20	1 9.6	19.0
192988 2000 DN ₇₀	15.9	X	327.63312	342.38765	159.58190	5.80563	0.1793141	0.18800980	3.0177440	20	—	—
192989 2000 DX ₇₂	15.8	X	319.11718	163.31815	354.15141	3.60261	0.1347844	0.18796029	3.0182739	20	—	—
192990 2000 DK ₇₅	15.5	X	31.11464	99.45791	353.81766	8.44101	0.0596818	0.19026396	2.9938614	20	—	—
192991 2000 DG ₇₈	16.9	X	114.64160	253.62755	191.09166	3.65879	0.0870165	0.29779285	2.2208874	20	3 31.7	19.6
192992 2000 DR ₈₇	15.7	X	335.01977	60.55538	89.26642	6.23913	0.1106730	0.19087919	2.9874249	20	—	—
192993 2000 DF ₉₀	16.5	X	163.97246	236.78532	160.38393	2.37530	0.0737481	0.20387887	2.8598977	20	4 3.1	20.6
192994 2000 DQ ₉₀	15.9	X	82.32676	51.30537	321.24605	8.91387	0.1181913	0.18949999	3.0019025	20	—	—
192995 2000 DT ₉₂	18.0	X	151.49431	251.65983	169.89137	2.01893	0.1341481	0.30138810	2.2031902	20	4 19.9	21.1
192996 2000 DW ₁₀₈	16.7	X	293.25514	190.22687	16.86607	4.92472	0.0859254	0.28923252	2.2644947	20	—	—
192997 2000 DP ₁₀₉	16.9	X	111.20210	172.67153	342.37569	5.89927	0.0483327	0.30640315	2.1790836	20	7 3.4	19.5
192998 2000 DJ ₁₁₀	15.8	X	38.38519	310.02322	139.93897	5.82394	0.1523470	0.19265786	2.9690093	20	1 4.7	19.0
192999 2000 DG ₁₁₁	15.0	X	308.98885	280.36494	156.36497	17.37529	0.1113526	0.17910239	3.1169880	20	11 16.8	19.2
193000 2000 DW ₁₁₂	15.7	X	189.97685	58.50239	195.15823	1.42830	0.1336913	0.18157407	3.0886367	20	—	—
193001 2000 DZ ₁₁₄	16.1	X	102.42357	180.45256	142.31320	2.15408	0.0268904	0.18378518	3.0638140	20	—	—
193002 2000 DZ ₁₁₆	15.0	X	170.94558	91.83380	169.49687	11.12345	0.0289941	0.18181498	3.0859077	20	—	—
193003 2000 EO ₂	15.7	X	8.73256	350.63031	140.82465	3.76954	0.1510175	0.19289194	2.9666069	20	1 6.0	19.0
193004 2000 E ₅	15.4	X	54.68167	22.82143	338.27791	9.74074	0.1717835	0.18140918	3.0905081	20	—	—
193005 2000 ER ₅	15.8	X	56.05638	61.70343	359.37304	1.47318	0.1663084	0.19150029	2.9809619	20	—	—
193006 2000 ES ₉	16.6	X	247.91297	98.27497	173.76923	7.32298	0.1311176	0.28948204	2.2631932	20	1 14.0	20.0
193007 2000 ER ₁₁	14.5	X	210.96790	164.18624	345.74321	26.08802	0.1113998	0.17522497	3.1628023	20	9 28.2	19.5
193008 2000 EH ₁₆	17.0	X	105.30778	115.52802	338.57770	2.87083	0.1544025	0.30077824	2.2061673	20	4 10.5	19.7
193009 2000 EA ₁₈	15.0	X	272.36897	69.98165	112.11564	12.55670	0.1027941	0.18530204	3.0470711	20	—	—
193010 2000 EJ ₁₈	15.5	X	158.83232	7.06615	88.27203	10.24740	0.1139761	0.20901853	2.8119840	20	6 11.2	19.7
193011 2000 EO ₁₉	14.8	X	187.50842	205.07939	24.33125	17.37914	0.1679276	0.17711788	3.1402274	20	12 9.3	20.1
193012 2000 EF ₂₅	15.5	X	118.91618	99.13561	182.03529	15.62207	0.0550674	0.17434119	3.1734820	20	12 9.2	20.5
193013 2000 EP ₂₆	16.0	X	346.33104	167.55133	357.81092	22.50870	0.1252363	0.28915339	2.2649078	20	—	—
193014 2000 EC ₃₃	16.3	X	261.66607	286.94464	9.19014	6.23850	0.2026599	0.29447722	2.2375268	20	2 24.5	19.6
193015 2000 EN ₃₇	15.7	X	289.95651	331.55434	179.70550	12.83206	0.2620869	0.18344183	3.0676358	20	12 30.5	19.2
193016 2000 EQ ₃₈	14.8	X	205.11873	7.73010	182.49892	15.41838	0.2105953	0.17492986	3.1663585	20	11 11.8	20.1
193017 2000 EF ₄₂	15.4	X	285.26549	306.83713	180.98241	17.71699	0.1173071	0.17917173	3.1161838	20	12 10.9	19.7
193018 2000 EV ₄₂	14.7	X	124.02288	73.47693	177.16588	14.98251	0.1046101	0.17057775	3.2199896	20	11 12.4	19.9
193019 2000 EX ₄₂	16.8	X	57.62924	357.88180	175.71722	6.65831	0.1020169	0.29955742	2.2121572	20	5 20.2	19.1
193020 2000 EE ₅₁	15.2	X	139.83080	294.95922	338.92775	9.57079	0.0613287	0.17846466	3.1244091	20	12 22.9	20.0
193021 2000 EU ₅₂	16.7	X	92.19113	102.75280	347.70784	5.89642	0.1423797	0.29643176	2.2276805	20	3 16.3	19.0
193022 2000 EA ₅₇	15.4	X	77.28913	304.15223	185.68896	7.43729	0.2670970	0.20191172	2.8775864	20	5 16.9	19.4
193023 2000 ET ₅₇	15.3	X	305.12364	327.31941	201.07065	4.56553	0.2129748	0.18672651	3.0315546	20	—	—
193024 2000 ET ₆₀	16.9	X	22.51861	178.56457	346.21957	5.88939	0.1226315	0.29422525	2.2388041	20	2 28.5	18.7
193025 2000 EQ ₆₁	15.9	X	346.95993	165.14920	344.20922	3.83378	0.1131673	0.18981836	2.9985450	20	—	—
193026 2000 EJ ₆₆	15.5	X	276.53394	173.35934	19.39433	6.24538	0.1163091	0.18473486	3.0533047	20	—	—
193027 2000 EX ₆₇	16.2	X	358.50979	279.92929	201.82905	4.06583	0.2124264	0.18963452	3.0004827	20	—	—
193028 2000 EX ₇₀	14.7	X	253.67789	166.91418	19.11160	11.52632	0.1875322	0.18394310	3.0620601	20	12 29.5	19.0
193029 2000 EB ₇₄	15.7	X	97.00098	351.58377	329.93915	6.46557	0.1737045	0.18169043	3.0873178	20	—	—
193030 2000 EU ₇₄	15.7	X	97.25771	144.27854	182.65520	0.83638	0.1529259	0.17962763	3.1109089	20	—	—
193031 2000 EV ₇₆	16.6	X	359.92217	166.37711	41.96754	6.35597	0.1162744	0.29726437	2.2235188	20	3 25.7	18.5
193032 2000 ED ₈₀	17.4	X	118.64127	111.49997	4.14752	4.95047	0.0982267	0.30298385	2.1954475	20	5 20.6	20.3
193033 2000 EV ₉₁	15.5	X	189.47132	134.81803	344.30455	14.01602	0.2980035	0.21600992	2.7509767	20	8 8.5	20.6
193034 2000 ED ₁₁₅	16.8	X	239.69425	223.23164	188.25674	2.45945	0.1248902	0.3				

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>
193041 2000 ER ₁₆₀	15.8	X	311.35944	281.03783	167.39414	5.27322	0.1246310	0.18005134	3.1060264	20	12 1.3	19.5
193042 2000 EO ₁₆₂	17.3	X	314.30261	43.26852	168.10526	2.46661	0.1055026	0.29080705	2.2563134	20	1 14.2	19.9
193043 2000 EF ₁₇₄	14.9	X	186.01797	206.82607	50.51286	26.62071	0.2300106	0.17850615	3.1239250	20	—	—
193044 2000 FL ₂	17.6	X	250.52576	180.04264	81.67246	0.81043	0.0340908	0.28684555	2.2770399	20	1 11.0	20.6
193045 2000 FE ₆	16.8	X	189.20470	310.69388	17.78116	5.92624	0.2258407	0.28509404	2.2863566	20	2 4.1	20.6
193046 2000 FS ₈	15.3	X	37.33864	219.51751	190.25661	11.98102	0.1892242	0.18329276	3.0692989	20	—	—
193047 2000 FW ₁₁	14.4	X	9.56983	152.92772	4.64312	27.84716	0.1420682	0.19604672	2.9346952	20	2 25.1	18.1
193048 2000 FW ₁₄	15.4	X	151.14321	261.38634	41.26174	22.55865	0.2577933	0.27662484	2.3327880	20	—	—
193049 2000 FJ ₂₇	15.5	X	313.21046	311.55226	193.01826	16.06482	0.1147434	0.18366814	3.0651154	20	—	—
193050 2000 FS ₂₈	15.1	X	226.92718	9.40729	225.72726	6.46066	0.0679225	0.18231922	3.0802154	20	—	—
193051 2000 FB ₂₉	16.8	X	14.12882	256.30274	269.92035	1.45632	0.1691039	0.29235532	2.2483403	20	2 9.2	18.5
193052 2000 FE ₃₃	16.6	X	231.97559	200.15722	41.41705	7.31042	0.0748409	0.28196140	2.3032599	20	—	—
193053 2000 FE ₃₉	16.4	X	73.97560	97.16843	48.05235	5.62522	0.0988114	0.29767211	2.2214879	20	5 1.7	18.5
193054 2000 FR ₄₃	14.7	X	151.97478	57.78915	162.27283	14.04726	0.0531898	0.17118443	3.2123773	20	11 4.4	19.7
193055 2000 FJ ₄₅	16.5	X	173.54437	151.81296	106.50096	5.52595	0.2036215	0.27425660	2.3461980	20	—	—
193056 2000 FY ₅₀	17.1	X	128.95416	308.08980	1.11375	2.06254	0.2455073	0.27416635	2.3467129	20	—	—
193057 2000 FW ₅₁	17.2	X	118.77641	259.20308	28.99833	1.74102	0.1816491	0.27052058	2.3677500	20	—	—
193058 2000 FE ₆₄	14.9	X	182.53502	185.91185	25.81711	11.64283	0.0789362	0.17425885	3.1744817	20	11 20.0	19.8
193059 2000 FS ₆₆	15.7	X	280.52164	303.28018	181.32622	18.04094	0.1475604	0.17919093	3.1159612	20	11 27.2	20.0
193060 2000 GL	16.2	X	122.96635	268.70725	33.14275	4.36049	0.2087921	0.27140681	2.3625929	20	—	—
193061 2000 GP	15.9	X	296.17971	45.60948	169.13985	1.90644	0.1628752	0.18867393	3.0106582	20	1 6.1	20.2
193062 2000 GJ ₅	15.1	X	292.17920	160.67070	345.78258	8.82955	0.2271818	0.18229297	3.0805111	20	—	—
193063 2000 GF ₇	15.1	X	209.22833	216.33607	26.08483	7.79247	0.0725772	0.18075434	3.0979678	20	—	—
193064 2000 GD ₉	17.1	X	51.83559	141.59025	359.53821	5.24418	0.1235630	0.29582413	2.2307299	20	3 20.5	19.1
193065 2000 GB ₁₂	15.3	X	255.81650	317.70203	199.33371	5.07696	0.0963037	0.17823281	3.1271181	20	12 8.5	19.5
193066 2000 GW ₁₃	15.5	X	181.24847	76.05218	187.40548	9.34850	0.0427307	0.18055496	3.1002480	20	—	—
193067 2000 GZ ₁₃	15.7	X	307.13519	65.46212	48.81461	1.87038	0.1714694	0.18110368	3.0939826	20	12 24.0	19.1
193068 2000 GE ₁₅	16.4	X	89.31229	127.46355	12.66320	7.61524	0.0344399	0.29955092	2.2121893	20	5 4.1	18.9
193069 2000 GS ₁₇	17.0	X	153.38426	205.77896	57.39540	2.18303	0.1592207	0.27279727	2.3545579	20	—	—
193070 2000 GB ₂₁	17.2	X	313.90339	217.7433	8.44589	5.69535	0.1665510	0.29025675	2.2591644	20	1 26.9	20.0
193071 2000 GJ ₂₃	15.4	X	298.70875	140.95072	23.01697	6.11987	0.1233360	0.18385743	3.0630113	20	—	—
193072 2000 GF ₂₄	17.3	X	225.20744	23.70746	203.03713	1.71728	0.1617900	0.27808218	2.3246305	20	—	—
193073 2000 GN ₂₅	17.4	X	185.74106	256.88985	12.85704	4.87962	0.2205277	0.27665359	2.3326263	20	—	—
193074 2000 GF ₂₆	14.8	X	74.97842	351.45308	17.34572	17.97922	0.0760475	0.18023968	3.1038623	20	—	—
193075 2000 GX ₂₉	17.1	X	171.11639	250.10033	10.44600	0.53189	0.1750579	0.27404598	2.3473999	20	—	—
193076 2000 GT ₃₀	15.7	X	295.17099	334.09106	176.55003	0.74285	0.1056688	0.18156954	3.0886881	20	—	—
193077 2000 GV ₃₀	17.5	X	305.76677	190.79940	20.87564	2.78863	0.1716182	0.28740251	2.2740972	20	—	—
193078 2000 GB ₃₁	17.0	X	331.69052	37.18811	185.82507	5.20368	0.0884055	0.29265012	2.2468301	20	2 26.8	19.4
193079 2000 GD ₃₄	16.1	X	352.61174	137.32139	15.96167	2.77804	0.1455130	0.18990354	2.9976483	20	1 9.2	19.7
193080 2000 GW ₃₆	15.1	X	257.97908	138.44705	40.26031	2.86397	0.0369226	0.17955387	3.1117608	20	—	—
193081 2000 GZ ₃₆	17.9	X	299.90101	19.04596	178.18463	1.90765	0.1538338	0.28534687	2.2850058	20	—	—
193082 2000 GS ₃₇	17.0	X	103.49611	54.23471	226.66131	0.64549	0.1752840	0.26716338	2.3875443	20	12 15.9	20.9
193083 2000 GD ₄₄	17.4	X	260.09861	187.44105	35.71995	2.57791	0.1334167	0.28229763	2.3014307	20	—	—
193084 2000 GA ₅₃	16.7	X	124.12809	78.01313	212.23384	5.52711	0.2206782	0.26990187	2.3713671	20	—	—
193085 2000 GO ₆₃	15.8	X	247.62613	25.32457	182.69638	4.17882	0.1060953	0.18029686	3.1032060	20	—	—
193086 2000 GP ₆₄	16.4	X	123.52089	87.59937	194.47075	4.86689	0.2077839	0.26877299	2.3780025	20	—	—
193087 2000 GW ₇₃	14.9	X	194.62149	215.60646	27.70418	15.04782	0.2029329	0.17545590	3.1600266	20	12 31.9	20.3
193088 2000 GV ₇₄	14.8	X	204.57866	157.76135	41.47668	10.39299	0.0872405	0.17284003	3.1918306	20	11 28.3	19.6
193089 2000 GE ₇₆	15.2	X	202.83715	345.55390	213.71622	7.46959	0.1392905	0.17271959	3.1933141	20	11 23.7	20.2
193090 2000 GF ₈₀	17.1	X	248.35929	45.56836	214.68332	5.24043	0.1425481	0.28480495	2.2879035	20	—	—
193091 2000 GP ₈₀	15.1	X	221.85181	166.44963	21.09724	8.89794	0.0685524	0.17526151	3.1623627	20	12 5.9	19.8
193092 2000 GN ₉₉	16.6	X	196.68075	336.07825	254.62298	3.62730	0.1319105	0.27452707	2.3446567	20	—	—
193093 2000 GJ ₁₀₃	15.3	X	345.94688	92.52414	54.11635	4.57793	0.1947373	0.18865837	3.0108237	20	—	—
193094 2000 GT ₁₁₀	17.0	X	240.39616	244.79819	333.25753	3.44443	0.1518003	0.27910077	2.3189712	20	—	—
193095 2000 GB ₁₁₂	16.4	X	81.74137	67.75760	68.79660	4.22040	0.0733257	0.29772660	2.2212168	20	4 27.4	18.8
193096 2000 GD ₁₁₃	17.3	X	213.66706	246.85614	27.56911	7.73706	0.2086711	0.28076910	2.3097759	20	—	—
193097 2000 GE ₁₁₅	16.8	X	290.74725	80.90828	139.11221	3.57491	0.1343174	0.28722688	2.2750240	20	—	—
193098 2000 GM ₁₁₈	15.7	X	249.02978	271.35382	335.26656	4.20859	0.1196414	0.18758941	3.0222508	20	—	—
193099 2000 GW ₁₁₉	17.2	X	182.76077	12.23112	11.40246	6.91992	0.1597554	0.29562440	2.2317345	20	4 2.4	20.4
193100 2000 GN ₁₂₁	17.4	X	83.02813	271.33718	202.04323	2.38059	0.0860286	0.29483898	2.2356962	20	3 26.6	19.7
193101 2000 GT ₁₂₁	17.5	X	253.17243	187.84244	85.96373	0.73576	0.1306954	0.28795354	2.2711951	20	1 23.0	20.6
193102 2000 GT ₁₂₁	15.7	X	103.88946	131.86090	169.51922	2.38794	0.0742820	0.17420315	3.1751582	20	12 17.3	20.4
193103 2000 GD ₁₂₃	17.0	X	161.45975	149.56601	133.05453	1.20633	0.1995562	0.27326423	2.3518747	20	—	—
193104 2000 GL ₁₂₈	17.0	X	319.14633	33.32734	197.53393	7.07684	0.0809600	0.29226198	2.2488190	20	2 18.9	19.7
193105 2000 GD ₁₃₁	16.9	X	98.14806	318.66402	20.49712	4.60434	0.1371382	0.27430908	2.3458987	20	—	—
193106 2000 GT ₁₃₂	16.0	X	115.96989	242.97228	50.24638	23.16474	0.2561545	0.26848520	2.3797015	20	—	—
193107 2000 GE ₁₃₅	15.0	X	225.65052	168.87156	49.26674	16.96688	0.0655086	0.17909098	3.1171203	20	—	—
193108 2000 GB ₁₃₈	14.8	X	249.32751	133.56577	30.44487	22.74236	0.0282539	0.17565984	3.1575802	20	12 12.9	19.6
193109 2000 GP ₁₅₁	14.8	X	74.17318	292.00175	24.23883	9.71034	0.0509681	0.17064150	3.2191876	20	11 27.2	19.5
193110 2000 GZ ₁₅₁	15.6	X	189.27220	207.50297	348.34499	2.33085	0.1800844	0.17378780	3.1802153	20	11 3.6	20.8
193111 2000 GC ₁₅₃	16.8	X	255.23864	275.48512	301.60020	4.51989	0.1051113	0.28133405	2.3066826	20	—	—
193112 2000 GU ₁₅₅	15.0	X	219.26954	171.76612	24.02656	17.17553	0.0627129	0.17642126	3.1484884	20	12 12.4	19.8
193113 2000 GF ₁₅₉	14.6	X	239.09466	333.10667	208.20586	27.35654	0.1294747	0.17877760	3.1207619	20	12 10.7	19.5
193114 2000 GE ₁₆₆	15.2	X	125.10101	120.31320	204.77168	14.67694	0.0341403	0.17956498	3.1116324	20	—	—
193115 2000 GY ₁₇₀	16.9	X	16.00237	193.68666	345.95436	5.9869						

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>
193121 2000 HG ₇	15.3 ^m	X	280.89756	308.99182	202.58801	17.27212	0.0549445	0.17855555	3.1233487	20	—	—
193122 2000 HT ₉	15.2	X	279.49978	160.99635	48.76966	17.93144	0.2056785	0.18394540	3.0620346	20	—	—
193123 2000 HC ₁₁	17.0	X	274.34199	188.71425	54.48957	5.51160	0.1992662	0.28464102	2.2887818	20	—	—
193124 2000 HK ₂₂	17.7	X	290.79633	38.52928	187.41365	1.22132	0.1642961	0.28621306	2.2803933	20	—	—
193125 2000 HL ₂₅	17.4	X	162.53466	236.16809	28.58982	2.92767	0.1962465	0.27188864	2.3598008	20	—	—
193126 2000 HN ₂₅	16.7	X	77.01226	242.30780	36.11083	3.31536	0.1875412	0.26183776	2.4198096	20	11 18.2	20.2
193127 2000 HQ ₂₅	17.6	X	227.46180	229.27381	27.60872	1.14873	0.2248601	0.27964118	2.3159826	20	—	—
193128 2000 HU ₂₅	15.6	X	245.37427	152.68956	43.07110	11.59259	0.0781228	0.17760668	3.1344633	20	—	—
193129 2000 HM ₂₈	17.3	X	264.99781	342.77419	251.89578	0.80734	0.1622704	0.28328737	2.2960671	20	—	—
193130 2000 HQ ₄₃	17.7	X	195.66776	9.24925	215.42983	0.81137	0.1298741	0.27191510	2.3596477	20	—	—
193131 2000 HZ ₄₄	16.8	X	308.95934	355.45647	161.98079	4.73912	0.1683625	0.28181339	2.3040663	20	—	—
193132 2000 HY ₄₇	15.1	X	222.69045	181.16138	61.89050	6.29417	0.1217045	0.17926916	3.1150545	20	—	—
193133 2000 HA ₅₀	16.8	X	108.34337	53.29573	236.99366	3.87808	0.2358751	0.26610949	2.3938438	20	—	—
193134 2000 HV ₅₆	15.1	X	271.12169	350.81551	202.24823	17.30388	0.2011578	0.18151686	3.0892857	20	—	—
193135 2000 HV ₅₉	17.3	X	253.92378	64.24044	206.45755	5.01921	0.1625507	0.28511195	2.2862608	20	1 16.9	20.8
193136 2000 HB ₆₂	15.4	X	254.20331	257.88290	231.84331	3.27190	0.1432089	0.17250706	3.1959365	20	10 25.9	20.0
193137 2000 HE ₆₂	17.4	X	128.89273	60.54937	224.81873	1.97394	0.2144049	0.26912784	2.3759117	20	—	—
193138 2000 HE ₆₂	16.9	X	115.82198	254.83354	216.12622	5.71583	0.1170190	0.29709103	2.2243836	20	5 14.8	19.6
193139 2000 HR ₆₃	17.2	X	172.74004	225.97058	22.70156	1.71880	0.1487489	0.27231975	2.3573096	20	—	—
193140 2000 HQ ₆₇	15.3	X	243.54683	191.26984	48.80295	10.96354	0.0258043	0.18390389	3.0624954	20	—	—
193141 2000 HT ₆₈	15.3	X	230.73412	124.51758	76.93313	2.58984	0.1174176	0.17566082	3.1575685	20	12 27.5	19.7
193142 2000 HK ₇₂	17.3	X	255.91485	200.79466	61.33453	3.60717	0.1922571	0.28458403	2.2890874	20	1 7.9	20.9
193143 2000 HV ₈₁	17.3	X	148.61600	72.46676	196.79059	1.97953	0.1791847	0.27054771	2.3675917	20	—	—
193144 2000 HR ₈₉	16.5	X	124.42269	77.35991	220.48084	4.95033	0.1815162	0.26937073	2.3744833	20	—	—
193145 2000 HN ₉₀	15.6	X	195.78399	231.66931	28.66835	5.80354	0.1193292	0.17886582	3.1197358	20	—	—
193146 2000 HV ₉₇	17.0	X	213.19332	286.30456	24.26869	5.29131	0.1999302	0.28420343	2.2911305	20	2 1.2	20.7
193147 2000 HZ ₉₉	16.7	X	163.64684	72.24671	168.88577	7.50203	0.2489664	0.26877750	2.3779758	20	12 16.9	20.9
193148 2000 JX ₃	16.2	X	141.93587	65.86936	196.88921	23.29718	0.1735503	0.26782503	2.3836104	20	12 25.5	20.6
193149 2000 JY ₄	16.1	X	150.20210	295.38028	14.16265	11.97745	0.2598173	0.27810505	2.3245031	20	—	—
193150 2000 JU ₈	17.0	X	147.98903	347.27727	314.47811	1.43305	0.2145319	0.27245825	2.3565106	20	—	—
193151 2000 JU ₂₁	17.2	X	275.36399	359.62887	238.24739	5.04986	0.1252748	0.28463718	2.2888024	20	—	—
193152 2000 JS ₂₂	16.6	X	179.69580	44.63181	224.56425	5.71420	0.1379365	0.27557980	2.3386818	20	—	—
193153 2000 JU ₂₅	15.5	X	294.88930	304.00357	228.51770	6.53313	0.1443884	0.18215865	3.0820252	20	—	—
193154 2000 JP ₄₃	15.1	X	121.58945	250.79482	44.56235	11.75598	0.0897176	0.17119689	3.2122214	20	12 28.0	20.2
193155 2000 JZ ₄₄	17.1	X	155.29713	154.99794	117.40412	1.56058	0.1924241	0.27068384	2.3667978	20	—	—
193156 2000 JD ₆₄	16.9	X	160.19829	43.94723	229.81108	5.42133	0.1436270	0.27157892	2.3615946	20	—	—
193157 2000 JT ₈₂	17.0	X	114.60800	77.49237	234.61961	3.87216	0.2314401	0.27002469	2.3706479	20	—	—
193158 Haechan	15.2	X	173.25391	99.17019	122.84303	6.68052	0.0906630	0.17185892	3.2039667	20	11 25.5	20.2
193159 2000 KL ₇	16.8	X	21.21010	102.42807	109.91128	4.94849	0.1224620	0.29473720	2.2362108	20	5 15.5	18.6
193160 2000 KR ₈	16.8	X	98.35302	228.08122	73.53521	3.22090	0.2146758	0.26646102	2.3917379	20	—	—
193161 2000 KS ₈	17.1	X	245.64366	179.93429	63.31340	6.10379	0.1271687	0.28098538	2.3085905	20	—	—
193162 2000 KU ₈	15.1	X	216.96493	113.71257	64.32361	2.28279	0.1272172	0.17187002	3.2038288	20	11 13.6	20.0
193163 2000 KS ₉	15.4	X	249.19721	146.70897	45.94999	4.01301	0.1212731	0.17727681	3.1383503	20	—	—
193164 2000 KT ₉	14.9	X	296.48000	76.06236	54.95766	10.86096	0.0480445	0.17523760	3.1626504	20	—	—
193165 2000 KZ ₉	17.2	X	132.51394	33.04438	257.67864	1.11762	0.2078801	0.26950232	2.3737103	20	—	—
193166 2000 KM ₂₉	16.8	X	129.23823	335.23725	263.95243	2.32368	0.1592899	0.26293954	2.4130451	20	11 16.6	20.7
193167 2000 KK ₄₁	16.6	X	124.63110	161.07375	126.24759	2.10660	0.1820329	0.26702379	2.3883763	20	—	—
193168 2000 KU ₄₂	16.7	X	117.80825	274.63795	47.91456	7.40142	0.1498532	0.27271778	2.3550154	20	—	—
193169 2000 KN ₄₉	15.2	X	13.99154	203.15526	230.76303	5.44421	0.1315078	0.17871498	3.1214910	20	—	—
193170 2000 KT ₄₉	15.4	X	300.92875	81.84696	56.74388	2.28880	0.0963686	0.17717942	3.1395003	20	—	—
193171 2000 KT ₅₁	15.3	X	294.15618	106.15274	59.37324	19.17438	0.1053731	0.17965771	3.1105616	20	—	—
193172 2000 LN ₈	16.8	X	140.73424	187.35142	103.87512	7.13097	0.2190823	0.26948966	2.3737846	20	—	—
193173 2000 LE ₉	16.8	X	180.82477	32.66527	202.68923	3.50341	0.2834329	0.26962844	2.3729700	20	12 21.0	20.7
193174 2000 LF ₂₂	15.3	X	300.80827	302.16634	194.60387	10.79118	0.0496728	0.17555566	3.1588293	20	—	—
193175 2000 OV ₇	16.2	X	74.83753	107.39858	168.14530	10.58650	0.2517716	0.25627472	2.4547026	20	11 20.2	20.3
193176 2000 OV ₁₀	15.9	X	141.72453	75.11552	285.82143	6.44026	0.2318963	0.27379094	2.3488575	20	1 31.9	19.5
193177 2000 OX ₁₈	14.8	X	233.12442	173.14540	126.21638	19.46487	0.1524400	0.18058229	3.0999352	20	2 15.8	19.8
193178 2000 PK ₅	17.6	X	100.87848	191.82488	227.21396	13.12959	0.7013260	0.36641813	1.9341259	20	4 21.3	21.0
193179 2000 PP ₁₄	16.7	X	157.16020	92.70985	264.15556	1.85812	0.1845076	0.27506419	2.3416034	20	2 6.7	20.2
193180 2000 PU ₂₅	17.0	X	231.75016	115.08308	169.93897	23.38142	0.0499221	0.37525667	1.9036354	20	1 1.9	19.8
193181 2000 PK ₂₈	15.9	X	33.99456	307.47960	99.47369	7.45148	0.1702349	0.26084790	2.4259275	20	—	—
193182 2000 QR	16.9	X	84.96521	43.01807	290.74991	1.38523	0.2271111	0.26076492	2.4264421	20	—	—
193183 2000 QE ₁₆	17.2	X	34.29564	199.02743	162.37891	2.46043	0.2266471	0.25667223	2.4521675	20	—	—
193184 2000 QV ₃₇	17.3	X	35.96002	115.14006	235.23036	1.46185	0.2296225	0.25619485	2.4552127	20	—	—
193185 2000 QN ₄₂	15.9	X	90.76934	98.72864	325.98136	12.09119	0.1500208	0.27250290	2.3562532	20	2 12.0	18.2
193186 2000 QY ₄₅	17.0	X	88.02388	84.11811	310.20969	2.48872	0.1637434	0.26777663	2.3838976	20	—	—
193187 2000 QZ ₅₁	17.2	X	64.68649	113.75639	205.29639	0.63606	0.1904686	0.25727924	2.4483089	20	12 26.1	21.0
193188 2000 QQ ₅₆	17.2	X	21.84107	110.48676	248.86869	1.04524	0.1988882	0.25476279	2.4644048	20	12 29.8	20.1
193189 2000 QS ₅₆	17.1	X	100.30731	293.48912	348.90189	1.75035	0.2025931	0.25862925	2.4397816	20	12 14.6	21.1
193190 2000 QY ₅₉	16.9	X	11.34723	289.80062	106.27817	2.33806	0.1783173	0.25717067	2.4489980	20	—	—
193191 2000 QT ₈₅	16.7	X	57.84903	137.73542	230.16912	2.47790	0.1926200	0.26045455	2.4283694	20	—	—
193192 2000 QS ₉₃	16.4	X	37.22889	180.47021	209.09580	4.32297	0.0811999	0.26132252	2.4229892	20	—	—
193193 2000 QD ₁₁₂	17.1	X	313.99884	176.90092	137.80191	0.28015	0.3081639	0.24133787	2.5549696	20	5 10.4	19.9
193194 2000 QH ₁₁₈	16.3	X	282.31291	204.70959	181.60890	17.48201	0.2393250	0.24172575	2.5522356	20	7 11.8	19.9
193195 2000 QP ₁₂₄	16.2	X	79.67854	344.96074	351.35939	6.01169	0.1337433	0.26042970	2.4285239	20	—	—</

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>
193201 2000 <i>QR</i> ₁₄₇	17.1	X	38.57838	144.95806	311.60633	19.19976	0.0489686	0.37128172	1.9171982	20	—	—
193202 2000 <i>QE</i> ₁₅₅	16.5	X	29.48889	56.59487	272.87507	3.44861	0.1248583	0.25382518	2.4704700	20	11 18.4	19.4
193203 2000 <i>QF</i> ₁₅₉	16.3	X	51.99656	109.24932	243.94112	5.50280	0.1397164	0.25828630	2.4419408	20	—	—
193204 2000 <i>QE</i> ₁₇₂	17.0	X	290.37350	31.97211	344.78455	12.64125	0.2986572	0.24152119	2.5536765	20	7 4.7	20.3
193205 2000 <i>QC</i> ₁₉₂	16.0	X	358.58796	1.06281	20.29875	11.35173	0.1610635	0.25380315	2.4706129	20	12 17.9	18.9
193206 2000 <i>QL</i> ₁₉₄	17.1	X	79.41864	85.28933	237.74110	5.23664	0.2237883	0.25915366	2.4364892	20	—	—
193207 2000 <i>QU</i> ₁₉₇	16.7	X	359.72472	343.21845	29.34195	1.80027	0.1852763	0.25286471	2.4767218	20	12 11.8	19.2
193208 2000 <i>QJ</i> ₂₀₄	16.2	X	56.06127	347.45044	21.61267	5.80484	0.1599276	0.25954109	2.4340639	20	—	—
193209 2000 <i>QK</i> ₂₀₆	15.8	X	356.55672	318.35290	349.80225	14.66457	0.1268907	0.24413272	2.5354325	20	8 26.9	18.4
193210 2000 <i>QZ</i> ₂₀₈	16.2	X	28.32809	145.11464	246.47164	1.47957	0.1982721	0.25856979	2.4401556	20	—	—
193211 2000 <i>QC</i> ₂₁₂	17.0	X	114.20130	21.48224	345.77060	0.69622	0.2034069	0.26761800	2.3848396	20	1 7.4	19.8
193212 2000 <i>QE</i> ₂₂₄	16.2	X	244.70797	91.06652	337.34861	10.47158	0.2847925	0.23966875	2.5668182	20	7 21.7	20.3
193213 2000 <i>QZ</i> ₂₂₆	16.0	X	46.24929	107.97208	262.81275	5.39893	0.1447882	0.26056980	2.4276533	20	—	—
193214 2000 <i>QB</i> ₂₃₀	17.0	X	39.88490	272.35417	63.76244	3.13908	0.2270169	0.25374921	2.4709630	20	12 25.3	20.5
193215 2000 <i>QG</i> ₂₃₂	16.3	X	295.28536	345.82821	356.91178	15.04459	0.1814450	0.23951466	2.5679190	20	6 9.1	19.8
193216 2000 <i>RC</i>	16.9	X	284.83065	68.16376	176.00124	23.28290	0.0435524	0.37685822	1.8982382	20	1 12.1	19.5
193217 2000 <i>RM</i> ₈	16.7	X	247.37909	87.57367	177.85131	22.00797	0.0757285	0.37436373	1.9066613	20	1 5.7	19.6
193218 2000 <i>RP</i> ₂₅	16.2	X	356.57583	120.68552	275.36680	3.19747	0.1970006	0.25323968	2.4742764	20	—	—
193219 2000 <i>RG</i> ₂₉	15.7	X	74.62080	148.57276	238.73034	6.56891	0.1490418	0.26339923	2.4102368	20	—	—
193220 2000 <i>RR</i> ₃₀	16.1	X	300.43200	14.77338	326.64848	11.76508	0.2556582	0.24031281	2.5622300	20	6 3.2	19.3
193221 2000 <i>RZ</i> ₃₄	16.3	X	248.96561	65.28366	322.06517	3.89956	0.2931271	0.23596739	2.5935904	20	5 30.1	20.7
193222 2000 <i>RS</i> ₃₆	17.2	X	166.30760	219.07049	177.35954	22.25642	0.1209258	0.37667446	1.8988556	20	3 27.2	19.3
193223 2000 <i>RJ</i> ₄₄	16.5	X	316.76864	34.43923	323.53297	7.13076	0.2890637	0.24278131	2.5448325	20	7 30.8	18.1
193224 2000 <i>RK</i> ₄₅	16.9	X	296.50667	203.08932	205.06577	7.52461	0.2830467	0.24357504	2.5393011	20	8 30.4	19.2
193225 2000 <i>RL</i> ₄₇	16.2	X	88.88622	104.21921	260.62399	1.99452	0.1969430	0.26111046	2.4243387	20	—	—
193226 2000 <i>RM</i> ₄₉	15.8	X	83.92149	48.90581	280.77403	5.14146	0.1044188	0.25732607	2.4480119	20	—	—
193227 2000 <i>RP</i> ₅₃	17.0	X	113.18907	220.32881	187.94848	22.66527	0.0479378	0.37144014	1.9166530	20	1 13.6	19.5
193228 2000 <i>RZ</i> ₅₇	16.3	X	14.50099	191.54686	205.58619	7.11770	0.1160361	0.25532625	2.4607778	20	—	—
193229 2000 <i>RF</i> ₆₀	16.0	X	83.54679	8.39832	276.54890	7.98905	0.2295585	0.25579308	2.4577829	20	12 4.6	20.1
193230 2000 <i>RO</i> ₈₂	16.0	X	335.92438	149.05810	207.49354	14.36001	0.1927015	0.24693268	2.5162300	20	9 24.8	18.2
193231 2000 <i>RU</i> ₈₃	15.9	X	20.85997	131.32380	288.92568	7.01487	0.0622185	0.26081558	2.4261279	20	—	—
193232 2000 <i>RB</i> ₉₁	16.4	X	319.77688	119.35740	268.41268	5.61146	0.2448898	0.24579247	2.5240057	20	10 2.0	18.2
193233 2000 <i>RE</i> ₁₀₃	15.5	X	330.30967	96.83285	243.46325	10.41589	0.2085293	0.24406433	2.5359061	20	8 10.1	17.8
193234 2000 <i>SY</i>	14.7	X	242.65433	141.89636	315.88047	27.16757	0.2867254	0.23874213	2.5734556	20	8 18.9	18.9
193235 2000 <i>SE</i> ₂	15.9	X	40.54591	29.88977	28.90062	9.52892	0.3584813	0.26160613	2.4212378	20	—	—
193236 2000 <i>SY</i> ₇	16.5	X	167.06328	251.75162	263.10820	5.76726	0.0697991	0.24217797	2.5490574	20	9 3.8	20.3
193237 2000 <i>SB</i> ₉	17.3	X	352.75809	292.53845	188.58562	21.43699	0.0908477	0.36630171	1.9345357	20	—	—
193238 2000 <i>ST</i> ₂₁	17.4	X	196.99923	139.35518	187.95393	24.70136	0.0856439	0.37330832	1.9102532	20	1 17.1	20.4
193239 2000 <i>SB</i> ₂₂	17.1	X	175.09195	294.43384	28.64132	25.19259	0.0915986	0.36856208	1.9266180	20	—	—
193240 2000 <i>SC</i> ₂₄	17.0	X	165.38530	287.27834	21.80867	20.38304	0.0766876	0.36554306	1.9372114	20	—	—
193241 2000 <i>ST</i> ₃₃	14.3	X	141.52625	277.29419	146.45290	7.36619	0.2683976	0.12536361	3.9538639	20	4 30.1	20.9
193242 2000 <i>SC</i> ₃₅	16.9	X	64.84766	292.31218	27.35250	2.56053	0.1854519	0.25564944	2.4587034	20	12 26.3	20.7
193243 2000 <i>SS</i> ₄₂	16.5	X	85.65200	91.73823	20.80608	21.14108	0.1070371	0.37244660	1.9131985	20	3 30.4	18.0
193244 2000 <i>SP</i> ₄₅	15.8	X	86.32631	125.58570	243.40364	12.01438	0.2010525	0.26489187	2.4011740	20	—	—
193245 2000 <i>SE</i> ₅₁	16.8	X	264.99574	59.33157	349.52976	13.16856	0.1904178	0.24159150	2.5531811	20	8 2.8	20.3
193246 2000 <i>SS</i> ₅₉	16.9	X	15.35899	204.06588	207.55961	3.27985	0.1622910	0.25744075	2.4472848	20	—	—
193247 2000 <i>SC</i> ₆₂	16.5	X	44.43112	182.82416	177.85258	6.40692	0.1677579	0.25619438	2.4552157	20	—	—
193248 2000 <i>SA</i> ₇₅	14.0	X	159.46545	16.49196	42.94536	9.50274	0.2710362	0.12569671	3.9468756	20	5 5.3	20.6
193249 2000 <i>SJ</i> ₇₅	16.1	X	276.71201	313.83242	117.01127	4.40525	0.1645705	0.24459856	2.5322123	20	9 22.8	18.9
193250 2000 <i>SV</i> ₇₆	16.7	X	305.21525	132.09630	314.13347	3.15647	0.2043430	0.25185216	2.4833557	20	12 7.4	18.5
193251 2000 <i>SF</i> ₇₇	16.0	X	176.57596	172.74133	286.67477	1.96918	0.0970952	0.23670997	2.5881633	20	7 5.4	19.8
193252 2000 <i>SZ</i> ₇₇	17.0	X	87.35027	42.91915	18.82531	1.22117	0.1229516	0.26919721	2.3755035	20	1 29.7	19.6
193253 2000 <i>SW</i> ₇₈	17.2	X	102.94201	341.83346	334.36198	1.77795	0.2221331	0.26033530	2.4291109	20	—	—
193254 2000 <i>SV</i> ₇₉	16.9	X	41.81299	180.47801	156.86010	3.51467	0.1881572	0.25356432	2.4721641	20	12 23.9	20.3
193255 2000 <i>SR</i> ₈₅	15.5	X	340.90245	281.83692	96.28679	4.29792	0.0641949	0.24775205	2.5106792	20	11 4.1	18.4
193256 2000 <i>SG</i> ₁₀₄	16.4	X	23.72797	167.50936	207.61518	1.44731	0.1908485	0.25420347	2.4680184	20	—	—
193257 2000 <i>SK</i> ₁₀₆	16.2	X	327.51067	179.98072	192.52739	3.39600	0.1183540	0.24613091	2.5216915	20	10 3.4	18.7
193258 2000 <i>SC</i> ₁₂₀	16.5	X	292.51045	191.23171	188.22407	9.98501	0.1950423	0.24072081	2.5593340	20	7 25.8	19.6
193259 2000 <i>SP</i> ₁₂₀	15.4	X	293.37929	321.53013	102.83947	2.82415	0.1658083	0.24573634	2.5243901	20	10 12.6	17.8
193260 2000 <i>SK</i> ₁₂₃	15.6	X	277.07831	298.86568	128.55710	5.35726	0.1657510	0.24333645	2.5409606	20	9 17.9	18.6
193261 2000 <i>SZ</i> ₁₅₀	16.9	X	298.53259	33.42128	15.17053	3.22783	0.2694723	0.24405506	2.5359704	20	9 11.4	18.9
193262 2000 <i>ST</i> ₁₅₁	15.3	X	122.16806	178.15935	41.42040	4.56285	0.0483383	0.24498762	2.5295307	20	10 10.5	18.7
193263 2000 <i>SJ</i> ₁₅₅	15.5	X	317.93445	255.99548	159.57914	4.82174	0.1719096	0.24730217	2.5137231	20	11 19.7	17.7
193264 2000 <i>SQ</i> ₁₅₅	16.2	X	55.78135	276.60456	125.76040	3.63389	0.2546179	0.25958969	2.4337600	20	—	—
193265 2000 <i>SH</i> ₁₅₉	17.0	X	246.73727	19.54345	56.18021	1.27277	0.1605914	0.24102755	2.5571621	20	8 16.5	20.5
193266 2000 <i>SN</i> ₁₆₃	16.6	X	62.71396	188.18607	243.22721	1.30657	0.1668137	0.26292512	2.4131334	20	1 6.7	18.6
193267 2000 <i>SY</i> ₁₇₁	15.8	X	184.63462	97.84828	324.21043	13.47462	0.1622320	0.23028235	2.6361025	20	5 22.4	20.3
193268 2000 <i>SQ</i> ₁₇₄	14.1	X	140.18866	174.17741	272.44101	9.53607	0.2531498	0.12538682	3.9533761	20	5 20.9	20.7
193269 2000 <i>SK</i> ₁₈₀	15.7	X	350.76975	71.07529	237.58668	12.02456	0.1936520	0.24131669	2.5551191	20	8 8.4	18.3
193270 2000 <i>SL</i> ₁₈₃	16.9	X	305.71114	39.09471	302.60970	2.80472	0.2237262	0.24184923	2.5513668	20	6 20.5	19.4
193271 2000 <i>SC</i> ₁₈₄	16.0	X	277.90906	211.46571	221.15350	4.70517	0.1606363	0.24422944	2.5347631	20	9 23.9	18.9
193272 2000 <i>SM</i> ₁₈₈	16.6	X	262.45356	135.04416	298							

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>		
193281	2000	<i>SD</i> ₂₁₄	16.7	X	297.31382	195.01822	187.83104	10.35600	0.1220010	0.24385808	2.5373358	20	8 20.3	19.6
193282	2000	<i>SU</i> ₂₁₅	15.6	X	248.26399	188.21788	191.55208	9.81364	0.0627127	0.18595417	3.0399430	20	6 15.4	20.1
193283	2000	<i>SP</i> ₂₂₀	15.8	X	357.97498	286.85979	124.26508	7.38009	0.1046138	0.25357790	2.4720758	20	—	—
193284	2000	<i>SU</i> ₂₂₆	16.0	X	42.13760	313.73751	108.34961	7.83313	0.2213519	0.25893311	2.4378725	20	—	—
193285	2000	<i>SC</i> ₂₂₇	15.6	X	44.99902	303.53915	73.24387	12.92210	0.2223046	0.25493097	2.4633209	20	—	—
193286	2000	<i>SX</i> ₂₃₁	16.1	X	272.73108	267.28512	184.16245	17.88436	0.2479966	0.24532729	2.5271953	20	9 29.6	18.7
193287	2000	<i>SY</i> ₂₃₁	16.8	X	49.27236	62.82997	38.20509	26.87351	0.1414545	0.36556307	1.9371407	20	—	—
193288	2000	<i>SD</i> ₂₃₂	17.1	X	104.63959	254.97835	186.01726	21.83394	0.2051603	0.37014594	1.9211181	20	3 24.5	18.6
193289	2000	<i>SL</i> ₂₃₂	15.0	X	346.85788	336.34525	64.64493	13.87295	0.2037029	0.24540206	2.5266820	20	12 29.0	17.6
193290	2000	<i>SO</i> ₂₃₂	17.2	X	162.33083	153.29530	199.24044	21.25940	0.0937295	0.37077116	1.9189578	20	1 10.1	20.0
193291	2000	<i>SU</i> ₂₃₆	14.5	X	159.59789	227.44361	191.11213	9.26079	0.3054181	0.12529846	3.9552345	20	5 6.9	21.3
193292	2000	<i>SL</i> ₂₃₈	16.0	X	162.35900	71.87266	191.07327	7.14892	0.0883296	0.25975176	2.4327476	20	—	—
193293	2000	<i>SO</i> ₂₃₉	14.7	X	154.53382	37.28189	26.74599	3.12051	0.2318255	0.12556296	3.9496780	20	5 5.4	21.2
193294	2000	<i>SO</i> ₂₄₀	16.2	X	96.96419	176.98788	229.34750	19.67788	0.0879537	0.36863922	1.9263492	20	—	—
193295	2000	<i>SK</i> ₂₄₂	16.9	X	249.53147	260.80514	150.23915	5.69571	0.2693698	0.23927730	2.5696169	20	7 2.9	20.9
193296	2000	<i>SR</i> ₂₄₅	17.1	X	305.93742	205.08327	166.41846	7.97922	0.2321809	0.24386571	2.5372829	20	8 3.5	19.5
193297	2000	<i>SY</i> ₂₄₉	17.0	X	56.28970	271.14781	73.81736	2.52109	0.2015152	0.25635912	2.4541637	20	—	—
193298	2000	<i>SG</i> ₂₆₄	16.5	X	43.51208	319.01609	21.91971	6.74236	0.1424973	0.25387398	2.4701534	20	12 24.5	20.0
193299	2000	<i>SB</i> ₂₇₃	16.0	X	2.29085	80.01530	220.27259	6.20620	0.2329182	0.24315671	2.5422127	20	8 31.1	18.1
193300	2000	<i>SO</i> ₂₇₅	15.5	X	277.92378	8.34665	50.76333	10.97617	0.2139622	0.24155144	2.5534633	20	9 3.4	18.7
193301	2000	<i>SN</i> ₂₇₆	15.7	X	296.35042	157.46792	254.82294	14.44947	0.0779353	0.24559122	2.5253844	20	10 2.1	19.0
193302	2000	<i>SU</i> ₂₇₇	16.3	X	336.30418	116.29518	243.33907	3.32943	0.2004208	0.24478986	2.5308929	20	10 1.6	18.3
193303	2000	<i>SF</i> ₂₇₈	15.9	X	41.05338	338.49801	16.44778	6.33174	0.1529165	0.25261929	2.4783257	20	—	—
193304	2000	<i>SO</i> ₂₇₉	16.0	X	327.42271	234.46511	95.31915	10.81445	0.1955601	0.24130766	2.5551828	20	7 23.9	18.2
193305	2000	<i>SS</i> ₂₈₁	16.1	X	304.97975	210.46692	255.74734	5.30161	0.0702823	0.25675351	2.4516499	20	—	—
193306	2000	<i>SD</i> ₂₈₅	13.4	X	115.19505	211.79714	247.20423	17.18690	0.2281971	0.12367177	3.9898417	20	5 13.3	19.6
193307	2000	<i>SD</i> ₂₉₄	15.4	X	288.80210	160.59275	229.98897	31.99397	0.1447022	0.23960470	2.5672756	20	8 1.2	19.4
193308	2000	<i>SG</i> ₃₀₀	16.3	X	280.19230	99.28204	284.60960	3.14904	0.0847368	0.24036676	2.5618466	20	8 1.7	19.3
193309	2000	<i>SP</i> ₃₀₃	16.1	X	200.70871	97.06831	325.64906	9.05740	0.2348706	0.23179356	2.6246323	20	6 6.9	20.8
193310	2000	<i>SR</i> ₃₀₃	16.1	X	26.45225	67.37020	293.27863	6.82767	0.1910114	0.25219869	2.4810804	20	—	—
193311	2000	<i>SY</i> ₃₀₄	13.9	X	127.81920	183.13395	259.97570	6.90603	0.2192703	0.12396295	3.9835913	20	5 4.5	20.2
193312	2000	<i>SK</i> ₃₀₅	16.2	X	295.06228	87.34795	324.38175	4.03077	0.2532080	0.24432513	2.5341012	20	9 9.6	18.4
193313	2000	<i>SK</i> ₃₀₈	16.3	X	186.09279	106.28889	304.02523	8.24848	0.1367621	0.22960030	2.6413204	20	5 9.6	20.7
193314	2000	<i>SK</i> ₃₀₉	16.4	X	244.67234	12.45880	10.04259	5.72700	0.3218614	0.23358085	2.6112266	20	5 17.3	21.0
193315	2000	<i>SO</i> ₃₁₇	15.7	X	9.38176	354.82868	280.99606	13.48303	0.0842642	0.24146177	2.5540955	20	7 23.2	18.6
193316	2000	<i>SW</i> ₃₁₇	16.1	X	30.22446	87.42983	258.46552	13.40038	0.1601895	0.25333000	2.4736882	20	12 16.8	19.3
193317	2000	<i>SS</i> ₃₂₂	16.2	X	196.77360	132.83368	320.99784	13.53811	0.1846887	0.23753882	2.5821392	20	7 17.9	20.5
193318	2000	<i>SV</i> ₃₂₂	14.6	X	145.88467	1.99042	310.19704	17.55844	0.0857999	0.16337841	3.3139016	20	—	—
193319	2000	<i>SA</i> ₃₂₅	16.3	X	209.03610	70.14920	63.36362	1.45625	0.0477800	0.24502946	2.5292428	20	10 1.9	19.6
193320	2000	<i>SE</i> ₃₂₈	15.9	X	213.67776	238.96266	232.38406	14.62057	0.1073167	0.23914419	2.5705704	20	8 12.9	20.0
193321	2000	<i>SN</i> ₃₃₄	16.1	X	151.67156	33.57678	232.32282	4.27418	0.1659903	0.26005143	2.4308783	20	—	—
193322	2000	<i>SM</i> ₃₆₆	16.8	X	50.81634	294.04230	25.19694	10.22303	0.2103217	0.25326036	2.4741417	20	12 12.5	20.5
193323	2000	<i>SS</i> ₃₆₇	14.0	X	111.50310	103.83181	356.04189	9.18728	0.2234043	0.12424216	3.9776208	20	5 8.1	20.2
193324	2000	<i>ST</i> ₃₇₆	16.2	X	349.09601	267.39508	68.97436	12.77499	0.2673558	0.24396530	2.5365923	20	10 12.7	18.3
193325	2000	<i>TE</i> ₃	17.4	X	41.35274	161.86995	173.01173	2.64938	0.1875220	0.25404466	2.4690469	20	12 20.4	20.7
193326	2000	<i>TA</i> ₁₀	16.6	X	9.67042	20.60189	12.18038	6.19299	0.0889162	0.25408373	2.4687937	20	—	—
193327	2000	<i>TO</i> ₁₁	16.5	X	218.69051	27.91594	41.14235	2.41960	0.1535587	0.23601443	2.5932458	20	7 7.3	20.5
193328	2000	<i>TW</i> ₁₄	16.1	X	204.94569	204.34209	215.85027	3.37679	0.1444521	0.23300852	2.6155007	20	6 12.3	20.1
193329	2000	<i>TZ</i> ₂₁	15.8	X	327.52163	310.49735	53.33742	15.07655	0.1979045	0.24303839	2.5430377	20	9 28.1	18.3
193330	2000	<i>TM</i> ₂₆	16.7	X	266.50728	218.04702	159.03054	3.47896	0.1585164	0.23820013	2.5773578	20	6 22.1	20.1
193331	2000	<i>TN</i> ₂₉	16.1	X	324.98030	121.29207	233.02063	25.15625	0.3647250	0.24328182	2.5413410	20	7 21.1	18.4
193332	2000	<i>TP</i> ₃₅	15.0	X	178.39713	102.87800	310.30875	1.17415	0.2617656	0.12771677	3.9051473	20	5 10.8	21.7
193333	2000	<i>TS</i> ₃₆	16.5	X	280.50099	318.67081	87.50775	3.04222	0.0661839	0.24223941	2.5486264	20	9 8.1	19.5
193334	2000	<i>TL</i> ₄₉	17.1	X	357.30344	38.05639	24.06577	5.82076	0.2140466	0.25571470	2.4582851	20	—	—
193335	2000	<i>TB</i> ₆₅	16.5	X	282.90131	31.40239	26.03208	4.09911	0.1179722	0.24412150	2.5355102	20	9 20.1	19.3
193336	2000	<i>TB</i> ₆₇	17.2	X	32.36160	214.91945	135.60054	3.69107	0.1948496	0.25360724	2.4718851	20	12 30.5	20.4
193337	2000	<i>TZ</i> ₆₇	16.6	X	30.59755	120.81658	222.05036	6.69316	0.1869502	0.25130961	2.4869286	20	12 16.9	19.9
193338	2000	<i>UR</i> ₄	15.6	X	356.60010	300.65574	46.38379	9.74460	0.1890169	0.24514165	2.5284710	20	10 29.6	17.8
193339	2000	<i>UU</i> ₅	15.5	X	292.30869	301.66618	52.16984	11.96890	0.1614935	0.23573554	2.5952907	20	6 25.4	18.8
193340	2000	<i>UU</i> ₅	15.6	X	350.29011	288.40033	93.95900	2.91053	0.1440158	0.24788126	2.5098066	20	12 2.1	18.1
193341	2000	<i>UE</i> ₇	16.0	X	281.64409	71.29529	20.05492	1.76952	0.0998092	0.24729295	2.5137856	20	11 6.5	18.9
193342	2000	<i>UG</i> ₇	16.8	X	85.05523	303.25584	77.61160	1.48890	0.2018182	0.26187203	2.4195985	20	—	—
193343	2000	<i>UZ</i> ₁₁	16.4	X	35.78313	270.40261	85.17373	8.07474	0.2529587	0.25516479	2.4618158	20	—	—
193344	2000	<i>UX</i> ₁₄	15.1	X	299.41757	138.27786	257.32756	12.30214	0.1380932	0.24240789	2.5474453	20	9 4.7	18.3
193345	2000	<i>UC</i> ₁₇	16.7	X	276.57293	231.07508	223.46124	12.35995	0.2614222	0.24494622	2.5298157	20	10 4.9	19.6
193346	2000	<i>UD</i> ₁₈	16.2	X	148.74055	320.37620	143.41991	5.06743	0.2404671	0.22803944	2.6533594	20	6 17.7	20.8
193347	2000	<i>UL</i> ₁₉	15.5	X	250.79643	263.23748	217.43365	27.09462	0.3158497	0.24244807	2.5471639	20	9 23.1	19.5
193348	2000	<i>US</i> ₂₁	16.2	X	23.16661	326.85746	83.69382	3.88687	0.2240321	0.25609982	2.4558200	20	—	—

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>
193361 2000 UC ₅₂	16.0	X	26.19578	345.96797	64.26252	3.26167	0.1925208	0.25562036	2.4588899	20	—	—
193362 2000 UT ₅₉	15.6	X	357.61713	181.31193	239.52294	11.86918	0.1818923	0.25404626	2.4690365	20	—	—
193363 2000 UL ₆₂	16.3	X	0.41092	335.11983	357.00424	5.95234	0.2455882	0.24593285	2.5230451	20	10 20.7	18.4
193364 2000 UC ₆₃	16.6	X	246.10323	73.11053	340.43160	3.04083	0.2858435	0.23640541	2.5903857	20	7 1.6	20.6
193365 2000 UV ₆₅	16.0	X	9.98644	65.83326	239.54992	7.22556	0.2941880	0.24554405	2.5257078	20	10 8.0	18.3
193366 2000 UJ ₆₇	16.3	X	326.51417	326.69727	3.58398	5.27386	0.1752602	0.23995050	2.5648085	20	7 25.4	18.7
193367 2000 UC ₇₁	16.4	X	110.99826	126.90745	241.48059	3.70679	0.2101738	0.26418603	2.4054490	20	1 5.8	19.2
193368 2000 UL ₇₁	16.1	X	351.27255	314.53969	8.08636	5.72188	0.2314509	0.24264422	2.5457910	20	9 13.5	17.9
193369 2000 UH ₇₃	15.4	X	229.38067	61.22766	61.90097	6.85296	0.2675016	0.23902171	2.5714484	20	9 17.9	19.5
193370 2000 UH ₈₃	15.8	X	87.73258	130.68116	138.07502	3.29971	0.0241763	0.24712131	2.5149494	20	10 30.8	19.0
193371 2000 UM ₈₈	15.0	X	73.77777	182.60156	58.36411	8.93255	0.1891784	0.24098366	2.5574726	20	9 30.3	18.8
193372 2000 UV ₉₈	16.0	X	158.07083	72.90096	268.13896	6.21658	0.1552956	0.26656202	2.3911337	20	1 16.9	19.5
193373 2000 UF ₁₀₅	16.5	X	8.73393	274.44998	108.36680	4.80163	0.2792244	0.25245813	2.4793803	20	—	—
193374 2000 UT ₁₀₇	16.1	X	87.37457	276.66484	115.07276	6.87614	0.1626409	0.26282258	2.4137610	20	—	—
193375 2000 UB ₁₀₈	16.4	X	90.12557	294.69525	114.38399	6.11919	0.1019690	0.26583229	2.3955076	20	1 13.5	18.9
193376 2000 UP ₁₀₉	15.4	X	246.60163	11.76278	95.00405	7.97284	0.2773996	0.24070959	2.5594135	20	9 14.0	19.2
193377 2000 VD ₁	15.9	X	330.82023	152.80855	222.54182	11.04373	0.1624775	0.24455476	2.5325147	20	10 12.4	18.3
193378 2000 VY ₁₆	15.6	X	222.34808	211.74408	214.67709	14.27686	0.1130351	0.23376744	2.6098369	20	7 8.3	19.8
193379 2000 VP ₁₉	16.2	X	190.09228	320.02409	160.37308	5.16266	0.1673846	0.23557895	2.5964407	20	8 12.4	20.3
193380 2000 VY ₂₃	16.1	X	320.17884	190.05392	199.56709	3.55180	0.1154144	0.24438471	2.5336893	20	10 14.7	18.7
193381 2000 VK ₂₄	15.8	X	314.06119	219.03761	206.19361	0.91121	0.1400744	0.24714881	2.5147629	20	11 24.8	18.2
193382 2000 VO ₂₄	15.9	X	318.93355	99.35956	319.13083	1.14618	0.1031347	0.24693529	2.5162123	20	11 23.5	18.6
193383 2000 VT ₂₇	15.8	X	246.49868	353.54460	74.72409	6.70140	0.2859433	0.23655406	2.5893005	20	7 21.6	19.8
193384 2000 VW ₂₈	15.8	X	290.27589	279.85347	122.91073	4.90249	0.2120842	0.24046454	2.5611520	20	8 26.4	18.5
193385 2000 VC ₃₀	15.9	X	271.36061	237.35683	179.90647	5.27034	0.2390286	0.23852863	2.5749910	20	8 9.2	19.1
193386 2000 VV ₃₀	16.1	X	15.75783	11.63295	73.36424	14.96011	0.2475138	0.25625897	2.4548031	20	—	—
193387 2000 VD ₃₅	15.8	X	208.80579	358.20225	67.57157	14.82724	0.2282509	0.23036828	2.6354468	20	6 17.6	20.3
193388 2000 VM ₃₅	16.2	X	114.91987	104.32687	241.55783	3.62300	0.2040488	0.26119098	2.4238027	20	—	—
193389 2000 VV ₄₄	16.9	X	91.25274	357.88350	54.83221	23.89790	0.0747156	0.36460790	1.9405224	20	—	—
193390 2000 VX ₄₄	14.9	X	114.04754	282.53404	236.67256	27.43154	0.1432732	0.23046204	2.6347320	20	7 10.6	19.4
193391 2000 VQ ₄₅	15.6	X	82.70938	258.70256	8.44772	5.82338	0.1371603	0.24574280	2.5243458	20	11 1.2	19.3
193392 2000 VA ₅₄	15.7	X	285.50327	192.17781	255.27657	11.02986	0.2223452	0.24520060	2.5280657	20	10 17.1	18.5
193393 2000 VX ₆₁	16.8	X	54.55739	107.29006	337.61753	18.22715	0.0905967	0.36274775	1.9471507	20	—	—
193394 2000 WX ₁	16.1	X	215.61753	178.21362	248.00436	4.12258	0.1968852	0.23133520	2.6280981	20	6 26.7	20.4
193395 2000 WU ₆	16.7	X	301.82188	27.21197	356.64347	5.59137	0.2691502	0.24096382	2.5576130	20	8 10.7	19.0
193396 2000 WH ₈	15.8	X	277.83226	25.58128	24.91370	4.98557	0.1244858	0.23849505	2.5752326	20	8 17.1	18.9
193397 2000 WQ ₉	15.9	X	180.93309	66.26400	82.49469	5.76890	0.1970360	0.23504714	2.6003555	20	9 11.1	20.2
193398 2000 WY ₁₃	14.6	X	179.10947	151.53957	249.84845	9.57201	0.2764245	0.12488841	3.9638873	20	4 27.1	21.4
193399 2000 WG ₁₅	16.1	X	227.96576	219.65786	252.71322	10.32172	0.1530426	0.23927809	2.5696113	20	9 6.6	20.2
193400 2000 WC ₁₈	15.9	X	177.99288	136.58222	46.58406	5.52690	0.0985667	0.24314010	2.5423285	20	10 25.1	19.7
193401 2000 WA ₂₀	15.8	X	300.92607	142.36848	247.86272	3.26447	0.1122057	0.23961532	2.5671997	20	9 7.9	18.8
193402 2000 WK ₂₅	16.7	X	210.03174	229.64056	236.03683	2.79409	0.2087494	0.23628445	2.5912698	20	8 9.3	20.8
193403 2000 WK ₂₉	17.1	X	37.01952	56.99434	47.55099	22.87127	0.0602371	0.36590641	1.9359288	20	—	—
193404 2000 WS ₂₉	16.5	X	225.49171	105.31689	206.61968	22.56547	0.1716489	0.37316664	1.9107367	20	1 27.2	19.9
193405 2000 WV ₃₀	16.1	X	265.72670	134.84451	214.56327	10.10678	0.2349894	0.23261939	2.6184168	20	5 5.5	20.0
193406 2000 WL ₃₆	15.7	X	318.70783	266.86591	96.70774	15.29291	0.1982433	0.23950007	2.5680233	20	9 2.1	18.3
193407 2000 WT ₃₇	15.7	X	225.70765	150.52486	178.79210	6.20128	0.1819648	0.22334278	2.6904284	20	3 8.5	20.2
193408 2000 WB ₃₈	16.4	X	297.14386	237.68439	122.12342	4.95656	0.2714675	0.23804302	2.5784917	20	6 23.4	19.2
193409 2000 WF ₃₈	15.9	X	266.57770	296.53621	133.03627	4.74844	0.1315015	0.23981161	2.5657987	20	9 9.1	19.0
193410 2000 WS ₅₀	15.3	X	253.04931	326.45921	91.55214	14.99593	0.1732308	0.23156494	2.6263595	20	7 29.9	19.2
193411 2000 WR ₅₃	16.6	X	242.93925	32.52829	66.10911	9.25744	0.1280493	0.24008897	2.5638222	20	9 21.1	20.2
193412 2000 WV ₅₉	15.5	X	206.57853	233.76400	259.38490	11.23449	0.2405909	0.23552931	2.5968054	20	9 2.5	20.1
193413 2000 WH ₆₁	15.2	X	288.99414	292.88913	97.95977	13.16223	0.2813936	0.23742757	2.5829458	20	7 24.3	18.2
193414 2000 WQ ₆₅	15.7	X	48.18602	234.49951	62.72491	7.33016	0.1251326	0.24335814	2.5408097	20	10 31.6	19.0
193415 2000 WB ₆₇	17.5	X	59.02928	259.32079	214.92007	19.80335	0.0913639	0.36847444	1.9269235	20	1 25.0	19.6
193416 2000 WZ ₆₇	15.7	X	0.01506	334.31144	1.27164	8.61713	0.1961913	0.24269670	2.5454240	20	10 16.1	18.2
193417 2000 WJ ₆₉	15.6	X	143.14206	250.40868	312.54358	7.73738	0.0436782	0.24377658	2.5379013	20	10 8.2	19.2
193418 2000 WY ₆₉	15.6	X	231.44822	132.25297	258.53650	14.36463	0.2004503	0.23271559	2.6176951	20	5 27.2	19.8
193419 2000 WG ₈₅	16.1	X	337.28496	203.28437	281.18612	4.70841	0.0953395	0.25577603	2.4578921	20	—	—
193420 2000 WX ₈₇	15.2	X	241.53706	137.74698	297.37422	13.21682	0.1756472	0.23339685	2.6125988	20	8 4.3	19.0
193421 2000 WD ₈₈	15.3	X	244.56813	164.12692	288.33087	17.50313	0.2664374	0.23617187	2.5920932	20	8 14.6	19.5
193422 2000 WT ₈₈	14.7	X	341.65651	76.71328	322.63772	11.46448	0.2773928	0.24410405	2.5356310	20	12 29.2	16.9
193423 2000 WS ₉₂	16.6	X	296.54587	135.91775	265.97642	0.40578	0.2038870	0.24102586	2.5571741	20	9 6.1	19.2
193424 2000 WZ ₉₂	16.2	X	59.60480	307.04261	74.13657	3.51300	0.2026100	0.25631235	2.4544623	20	—	—
193425 2000 WA ₉₃	15.4	X	274.75711	321.51243	69.74050	14.52977	0.0800637	0.23560658	2.5962377	20	8 9.8	19.0
193426 2000 WL ₉₃	15.8	X	307.36679	134.41851	278.55278	3.05727	0.0527974	0.24293391	2.5437668	20	10 27.0	19.0
193427 2000 WB ₉₇	15.8	X	259.09367	177.53306	245.02451	2.58167	0.1539546	0.23669054	2.5883050	20	8 13.3	19.2
193428 2000 WE ₁₀₁	15.2	X	223.27491	348.60281	82.98218	6.91147	0.2264153	0.23137307	2.6278113	20	7 8.8	19.6
193429 2000 WJ ₁₀₂	17.1	X	289.10246	316.02942	182.64177	9.72538	0.0328838	0.35412176	1.9786439	20	—	—
193430 2000 WP ₁₀₈	15.2	X	112.09265	206.91406	266.43009	13.21512	0.0658154	0.22399670	2.6851897	20	5 5.2	19.1
193431 2000 WX ₁₀₈	15.7	X	259.99469	165.46549	286.89690	6.69091	0.1585547	0.24155421	2.5534438	20	9 21.6	19.0
193432 2000 WA ₁₁₁	16.2	X	268.12958	103.90168	338.41268	3.36471	0.2274835	0.24121297	2.5558515	20	9 11.7	19.2
193433 2000 WE ₁₁₃	15.7	X	332.59647	7.16307	28.21719	3.97941	0.0792995	0.24458056	2.5323365	20	11 12.5	18.5
193434 2000 WZ												

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>
193441 2000 WO ₁₂₇	16.0	X	268.34067	334.76156	74.24622	2.73388	0.1302662	0.23700934	2.5859834	20	8 13.6	19.2
193442 2000 WC ₁₂₉	16.3	X	216.87706	207.19367	266.09666	2.90343	0.1633373	0.23874329	2.5734472	20	8 29.6	20.1
193443 2000 WC ₁₃₁	16.3	X	324.79410	258.69195	72.19206	5.48361	0.3134847	0.23986139	2.5654437	20	6 29.7	18.2
193444 2000 WL ₁₃₅	15.0	X	348.89903	336.04725	27.00609	7.58740	0.2406824	0.24221715	2.5487826	20	11 10.2	17.0
193445 2000 WJ ₁₃₆	16.5	X	7.15136	105.60072	30.62749	5.18447	0.1660787	0.26219606	2.4176046	20	—	—
193446 2000 WR ₁₃₉	15.9	X	17.00962	234.55520	64.55423	4.34019	0.0608633	0.23921942	2.5700314	20	9 9.7	19.0
193447 2000 WS ₁₄₀	16.2	X	215.30726	69.65571	69.64566	6.03910	0.2066611	0.23883386	2.5727966	20	9 30.4	20.2
193448 2000 WG ₁₄₃	15.8	X	242.06842	274.25302	180.16029	14.31923	0.2443656	0.23856187	2.5747518	20	8 21.6	19.7
193449 2000 WW ₁₄₆	13.7	X	158.88564	321.35269	96.63896	13.68584	0.3441184	0.12453205	3.9714457	20	5 9.9	20.8
193450 2000 WQ ₁₅₁	16.1	X	263.59750	287.90637	114.95330	6.24050	0.3245792	0.23510209	2.5999504	20	6 30.0	19.8
193451 2000 WB ₁₅₈	15.2	X	315.62333	53.07299	34.76430	8.56008	0.2254514	0.24501826	2.5293198	20	—	—
193452 2000 WO ₁₆₈	15.7	X	272.76698	126.30672	276.17697	2.03518	0.2516357	0.23422648	2.6064259	20	7 20.5	18.9
193453 2000 WV ₁₆₉	15.3	X	190.93457	178.04775	268.31067	13.74562	0.0641247	0.23269996	2.6178123	20	7 4.1	19.0
193454 2000 WW ₁₇₄	15.7	X	343.47352	166.05268	201.23389	14.57707	0.1994589	0.24450612	2.5328505	20	11 2.9	17.9
193455 2000 WH ₁₈₁	15.6	X	250.52681	6.33142	26.75546	22.61056	0.1089889	0.23442751	2.6049356	20	6 30.9	19.7
193456 2000 XZ ₁	16.7	X	40.15921	228.30855	256.49006	18.15924	0.0911490	0.36765696	1.9297788	20	1 7.9	18.2
193457 2000 XJ ₂	17.0	X	59.11202	159.73222	122.33855	1.04898	0.2951289	0.23995806	2.5647546	20	10 19.1	20.2
193458 2000 XQ ₄	16.5	X	296.53607	22.42825	3.12454	8.97453	0.2058277	0.23991954	2.5650291	20	8 15.7	19.2
193459 2000 XK ₅	15.6	X	120.11935	219.96512	289.59465	13.26075	0.0461409	0.23112729	2.6296739	20	7 3.6	19.1
193460 2000 XE ₆	17.1	X	277.85250	96.12386	324.60899	4.42506	0.3308079	0.24034089	2.5620304	20	8 9.9	20.0
193461 2000 XZ ₆	16.6	X	306.64750	32.76249	38.58638	9.04588	0.2794058	0.24537926	2.5268385	20	11 7.8	17.9
193462 2000 XE ₇	15.7	X	222.45441	143.04607	311.86472	7.06353	0.1357405	0.23544908	2.5973953	20	8 14.9	19.5
193463 2000 XF ₁₀	15.2	X	307.47338	292.83926	63.62057	14.42139	0.2212398	0.23377278	2.6097971	20	7 18.4	18.1
193464 2000 XH ₁₂	15.4	X	30.78416	186.32660	326.98323	5.95973	0.2125711	0.21461970	2.7628438	20	3 14.5	17.9
193465 2000 XJ ₁₃	15.6	X	173.94696	76.84460	81.61403	3.99033	0.1874997	0.23384674	2.6092469	20	9 16.4	20.0
193466 2000 XA ₁₆	15.6	X	236.24310	98.13124	319.86894	11.35182	0.1499875	0.23543328	2.5975115	20	7 13.6	19.4
193467 2000 XK ₁₇	15.6	X	198.05246	154.18268	306.22667	9.28273	0.0984934	0.23244293	2.6197418	20	7 29.9	19.6
193468 2000 XL ₁₇	16.0	X	287.03256	63.63196	25.17907	7.23224	0.2600952	0.24386975	2.5372548	20	10 19.5	18.0
193469 2000 XL ₁₈	14.9	X	317.69941	105.53960	294.88394	12.83933	0.1906557	0.24450936	2.5328281	20	10 15.4	17.6
193470 2000 XJ ₁₉	15.4	X	253.49075	102.39399	311.42243	11.78744	0.1665736	0.23566262	2.5958260	20	7 25.3	19.0
193471 2000 XR ₂₀	15.8	X	227.13506	86.23725	303.11980	10.83394	0.0567851	0.22913988	2.6448574	20	6 2.1	19.6
193472 2000 XH ₂₂	16.0	X	306.52663	323.33333	39.34327	13.57329	0.2951029	0.23932609	2.5692676	20	7 13.3	18.8
193473 2000 XV ₂₄	15.3	X	315.89647	327.69013	44.43915	13.95246	0.1854104	0.23963408	2.5670658	20	9 13.0	18.0
193474 2000 XH ₂₅	15.7	X	191.86345	129.35581	308.19177	10.50177	0.2340540	0.22889158	2.6467698	20	6 19.5	20.4
193475 2000 XO ₂₇	15.4	X	322.45816	336.34803	57.43364	16.63399	0.1191744	0.24147480	2.5540036	20	10 29.1	18.1
193476 2000 XR ₃₁	16.2	X	262.19298	111.42578	281.40126	15.05431	0.2383763	0.23486569	2.6016947	20	6 26.9	20.0
193477 2000 XO ₃₆	15.4	X	196.08171	130.24985	332.46212	11.84358	0.1096729	0.23377308	2.6097949	20	8 1.6	19.3
193478 2000 XN ₃₇	14.3	X	354.98796	330.42470	41.43309	15.61206	0.2631063	0.24437747	2.5337393	20	12 9.6	16.9
193479 2000 XG ₄₁	15.8	X	202.68789	74.73177	345.84635	12.65602	0.1429968	0.22986037	2.6393277	20	6 9.1	20.3
193480 2000 XL ₄₁	15.4	X	341.62104	350.22800	22.57809	15.53737	0.1882612	0.24416943	2.5351784	20	11 1.1	17.7
193481 2000 XU ₄₂	15.2	X	304.28814	53.67219	20.43892	13.05609	0.2093642	0.24422397	2.5348010	20	11 8.8	17.4
193482 2000 XQ ₄₃	15.5	X	145.52980	118.22372	346.20557	15.25451	0.0754057	0.22506460	2.6766891	20	6 3.6	19.7
193483 2000 XN ₄₆	15.3	X	336.96750	11.65275	8.21927	13.27206	0.1866895	0.24446203	2.5331550	20	10 31.2	17.6
193484 2000 XY ₅₂	15.5	X	306.32615	341.46878	26.81368	10.42260	0.2122743	0.23730483	2.5838363	20	8 8.7	18.3
193485 2000 XD ₅₃	15.8	X	125.61587	109.99736	20.70473	11.65283	0.1293045	0.22380928	2.6866886	20	6 22.4	20.0
193486 2000 XF ₅₃	15.4	X	211.70736	325.12554	54.89500	15.10980	0.1212943	0.22331935	2.6906165	20	5 1.9	19.5
193487 2000 XL ₅₃	16.6	X	203.43719	172.60238	226.75577	1.96790	0.1381915	0.22687721	2.6624133	20	5 15.3	20.7
193488 2000 YQ	14.9	X	309.69410	330.40396	32.95275	20.34057	0.3087333	0.23806231	2.5783525	20	7 23.0	17.8
193489 2000 YT ₁	16.2	X	232.09707	87.26903	344.67931	11.18143	0.1410507	0.23512348	2.5997926	20	7 29.8	20.1
193490 2000 YW ₅	15.3	X	278.96972	56.23953	314.33745	13.31511	0.1320796	0.23123866	2.6288295	20	7 6.2	18.8
193491 2000 YE ₆	16.0	X	231.06587	78.09355	33.54176	4.95121	0.1937808	0.23807812	2.5782384	20	9 11.7	19.7
193492 2000 YH ₆	16.0	X	227.69424	47.43224	61.00807	6.27972	0.2466818	0.23680574	2.5874655	20	8 30.3	20.1
193493 2000 YZ ₇	16.9	X	235.96917	261.49462	181.29483	3.77352	0.2100862	0.23568253	2.5956798	20	8 5.2	20.9
193494 2000 YX ₉	15.6	X	338.74211	83.95815	293.53897	2.83191	0.1909197	0.24384157	2.5734503	20	11 4.3	17.8
193495 2000 YK ₁₀	15.4	X	223.13358	199.88129	269.18378	12.56358	0.2083453	0.23671355	2.5881373	20	8 21.2	19.7
193496 2000 YA ₁₆	15.6	X	165.74567	161.44373	2.32385	4.54775	0.1725890	0.23169264	2.6253944	20	9 14.3	19.9
193497 2000 YR ₁₆	16.7	X	108.17630	30.77430	268.56520	16.37212	0.0760285	0.35050614	1.9922277	20	—	—
193498 2000 YS ₁₇	16.1	X	261.92513	291.98625	88.70388	6.01556	0.1448980	0.23189862	2.6238395	20	6 22.9	19.6
193499 2000 YL ₂₀	15.3	X	184.41281	188.64528	275.62817	11.86773	0.1207063	0.22868955	2.6483284	20	7 17.6	19.5
193500 2000 YX ₂₂	16.2	X	275.61474	192.50640	173.26312	1.86597	0.2888400	0.23243180	2.6198254	20	5 30.4	20.1
193501 2000 YL ₂₃	14.7	X	190.25699	131.32816	284.05348	7.16592	0.2945623	0.12424488	3.9775629	20	5 20.5	21.6
193502 2000 YR ₂₄	15.9	X	294.31704	129.12424	291.23340	1.49104	0.1919391	0.24025062	2.5626721	20	9 30.6	18.3
193503 2000 YC ₂₇	15.5	X	203.63557	251.57329	215.15488	21.41955	0.0738253	0.22924160	2.6440750	20	8 7.9	19.9
193504 2000 YH ₃₆	15.9	X	295.92207	157.24113	250.51682	3.28615	0.2363728	0.24008084	2.5638802	20	9 6.3	18.5
193505 2000 YP ₃₆	15.5	X	200.30045	145.99676	293.39573	3.60437	0.2032408	0.22965313	2.6409153	20	6 29.5	20.0
193506 2000 YY ₃₈	16.2	X	158.88890	330.55760	128.18741	2.60591	0.0943696	0.22491140	2.6779044	20	6 14.9	20.2
193507 2000 YF ₄₀	15.6	X	156.00984	155.31469	277.60726	14.30234	0.1159885	0.22168169	2.7038515	20	5 7.6	20.0
193508 2000 YG ₄₆	16.2	X	238.08337	345.27359	109.80502	5.78116	0.2331556	0.23622063	2.5917364	20	8 23.4	20.1
193509 2000 YV ₄₆	15.7	X	218.79518	358.67825	89.26373	4.34608	0.1545359	0.23219652	2.6215948	20	8 1.4	19.6
193510 2000 YL ₅₀	16.2	X	270.06144	304.35370	132.94811	5.45503	0.2619989	0.23881771	2.5729126	20	9 3.1	19.3
193511 2000 YS ₅₀	15.3	X	283.84018	151.35227	293.23689	12.48964	0.1102499	0.24112728	2.5564570	20	10 22.9	18.6
193512 2000 YG ₅₂	15.4	X	315.92834	253.06530	99.58978	9.68061	0.0934963	0.23278302	2.6171896	20	8 15.6	18.5
193513 2000 YF ₅₃	15.7	X	271.71983	340.70175	99.86670	9.96999						

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>
193521 2000 YG ₆₃	15.5	X	141.78950	4.95673	114.93470	14.87912	0.0954211	0.22312397	2.6921871	20	6 24.4	19.6
193522 2000 YL ₆₆	16.8	X	55.92160	310.02772	121.54322	24.76500	0.0867691	0.36260871	1.9476484	20	—	—
193523 2000 YE ₇₃	15.6	X	135.83465	52.85981	88.64470	6.82860	0.1232055	0.22846454	2.6500670	20	7 17.9	19.7
193524 2000 YZ ₇₄	16.5	X	237.09155	211.51860	224.73475	0.96983	0.1686016	0.23521065	2.5991503	20	8 3.3	20.2
193525 2000 YL ₈₀	15.5	X	333.20819	97.92396	270.76795	13.10965	0.2690097	0.24228481	2.5483081	20	10 2.7	17.6
193526 2000 YB ₈₃	15.5	X	141.36306	200.62167	261.94818	13.02231	0.0511801	0.22500311	2.6771767	20	5 27.6	19.3
193527 2000 YU ₈₃	16.3	X	267.46385	311.59999	111.90548	6.01088	0.3136288	0.23821315	2.5772639	20	8 2.9	19.7
193528 2000 YB ₈₆	16.3	X	285.18129	277.41034	132.38098	2.47482	0.2596137	0.23903272	2.5713695	20	8 18.0	19.2
193529 2000 YN ₈₆	16.3	X	213.22081	192.69702	258.12323	1.92970	0.1847752	0.23255532	2.6188977	20	7 26.6	20.5
193530 2000 YM ₉₁	15.2	X	294.66144	265.77074	94.37503	12.98891	0.3249279	0.23493488	2.6011838	20	6 11.1	18.3
193531 2000 YZ ₉₁	15.5	X	261.91324	201.85107	258.59372	7.77682	0.1299239	0.24084285	2.5584693	20	10 10.5	18.8
193532 2000 YC ₉₆	16.4	X	209.57423	309.43818	141.01418	3.00200	0.1748478	0.23023749	2.6364448	20	7 23.4	20.5
193533 2000 YD ₉₇	15.5	X	252.90305	100.65640	297.03994	11.98216	0.2069869	0.23053480	2.6341776	20	6 27.3	19.5
193534 2000 YQ ₁₀₉	15.9	X	117.25914	166.72196	302.96690	6.58063	0.0948405	0.22005536	2.7171571	20	5 10.9	20.0
193535 2000 YS ₁₀₉	12.7	X	216.50271	179.64389	306.52899	10.32902	0.0774889	0.08388260	5.1683844	20	9 4.2	19.9
193536 2000 YT ₁₀₉	15.9	X	220.18032	4.66767	94.56129	8.65922	0.1410290	0.23328729	2.6134167	20	8 20.9	19.8
193537 2000 YU ₁₁₂	16.3	X	233.07542	9.06028	84.64617	4.46399	0.2009772	0.23451090	2.6043181	20	8 20.0	20.2
193538 2000 YX ₁₁₂	16.6	X	205.25824	13.20016	73.39530	3.46337	0.1819040	0.22931054	2.6435449	20	7 14.5	20.8
193539 2000 YJ ₁₁₃	15.4	X	261.21622	277.12003	106.74522	14.12407	0.2115481	0.23057532	2.6338690	20	6 17.9	19.3
193540 2000 YN ₁₁₃	15.4	X	293.11838	299.04776	101.20966	13.82790	0.2051517	0.23717666	2.5848325	20	9 2.1	18.4
193541 2000 YO ₁₁₃	15.2	X	9.20229	281.60041	75.35230	4.72697	0.2810431	0.24320331	2.5418879	20	12 18.7	17.9
193542 2000 YC ₁₁₄	16.1	X	171.49627	186.33868	355.36600	2.65972	0.1214415	0.23648132	2.5898314	20	10 12.9	20.1
193543 2000 YT ₁₁₅	15.9	X	269.86582	347.74199	96.39631	6.46219	0.2642613	0.23879375	2.5730847	20	9 14.2	19.1
193544 2000 YL ₁₁₇	16.2	X	209.04085	138.31016	336.85630	2.94262	0.1575219	0.23238833	2.6201521	20	8 25.4	20.2
193545 2000 YN ₁₁₇	15.6	X	71.01759	195.72071	312.96753	7.68009	0.1407784	0.21630189	2.7485006	20	5 8.9	19.3
193546 2000 YJ ₁₂₀	15.5	X	201.39992	110.09841	324.58753	12.19060	0.2403461	0.22792698	2.6542321	20	6 23.9	20.2
193547 2000 YY ₁₂₀	15.9	X	176.18902	29.00663	75.78679	15.04543	0.1400569	0.22957820	2.6414899	20	7 11.6	20.2
193548 2000 YD ₁₂₁	16.3	X	192.89337	169.93666	245.08277	3.21351	0.2851632	0.22743474	2.6580604	20	5 22.2	21.0
193549 2000 YE ₁₂₂	15.9	X	263.43524	341.58081	70.92737	5.72623	0.0547798	0.23557609	2.5964617	20	8 25.2	19.3
193550 2000 YM ₁₂₅	15.5	X	167.57155	51.12054	351.97467	11.68363	0.2101439	0.21990934	2.7183598	20	4 14.4	20.2
193551 2000 YX ₁₂₅	15.9	X	217.99617	31.65636	60.75729	8.06307	0.1242694	0.23174491	2.6249996	20	8 11.6	19.9
193552 2000 YR ₁₂₆	16.6	X	224.89858	47.60437	29.99251	4.10320	0.2683101	0.23111598	2.6297597	20	7 15.1	21.0
193553 2000 YF ₁₃₂	15.9	X	218.51250	333.61762	89.19399	4.08198	0.0916306	0.22624035	2.6674074	20	7 3.8	19.7
193554 2000 YH ₁₃₃	16.4	X	276.39877	218.95963	173.07754	13.35451	0.3133446	0.23745604	2.5827393	20	7 1.1	20.2
193555 2000 YL ₁₃₆	16.3	X	214.05025	252.09390	193.34937	16.45147	0.2147106	0.23343218	2.6123352	20	7 15.8	20.9
193556 2000 YX ₁₃₉	15.7	X	147.81880	92.31424	9.72096	15.52161	0.1414107	0.22248853	2.6973106	20	6 6.8	20.2
193557 2001 AS ₃	15.8	X	165.95081	35.23867	125.76256	11.72761	0.0938594	0.23300490	2.6155278	20	9 15.9	19.8
193558 2001 AA ₄	15.4	X	210.98370	279.11647	124.11639	13.09119	0.1844314	0.22635354	2.6665180	20	5 28.5	20.0
193559 2001 AM ₄	16.3	X	220.47177	333.18621	126.45924	10.51109	0.2756444	0.23354390	2.6115020	20	8 7.1	20.7
193560 2001 AW ₁₀	15.7	X	252.56996	72.60407	289.81589	4.77761	0.0658780	0.22497850	2.6773719	20	5 28.0	19.5
193561 2001 AG ₁₁	16.3	X	242.77247	276.89427	159.92213	4.99285	0.3205174	0.23450843	2.6043364	20	7 23.5	20.5
193562 2001 AZ ₁₁	14.7	X	348.75461	66.40114	283.85029	11.57245	0.2814376	0.23846137	2.5754751	20	10 19.9	16.9
193563 2001 AO ₁₂	15.2	X	182.77807	154.95720	283.14706	10.69123	0.1605377	0.22477722	2.6789700	20	6 13.3	19.5
193564 2001 AW ₁₅	15.7	X	202.45848	343.19984	114.61198	13.06268	0.1209077	0.22947535	2.6422791	20	7 30.2	19.6
193565 2001 AJ ₂₇	15.2	X	80.35112	149.91148	43.37000	7.52907	0.3663801	0.22065627	2.7122218	20	8 24.5	19.7
193566 2001 AR ₃₀	16.3	X	218.48294	15.48912	74.97649	6.49232	0.2696100	0.23305080	2.6151844	20	7 26.2	20.7
193567 2001 AE ₃₂	15.6	X	265.23242	342.52133	80.02599	6.85681	0.1175186	0.23610601	2.5925752	20	9 1.4	19.0
193568 2001 AO ₃₃	15.6	X	258.72856	292.72566	79.09776	9.92666	0.2453770	0.23002044	2.6381031	20	5 26.2	19.6
193569 2001 AB ₃₄	16.0	X	203.79024	358.89562	70.98989	5.85659	0.1808166	0.22752203	2.6573805	20	6 21.4	20.2
193570 2001 AR ₃₆	12.2	X	223.56552	151.07771	323.61047	24.78726	0.0853357	0.08245840	5.2277257	20	8 27.9	19.5
193571 2001 AG ₄₀	16.4	X	248.71606	22.02769	68.34772	4.67794	0.1913013	0.23618265	2.5920142	20	9 4.7	20.0
193572 2001 AW ₄₀	15.9	X	242.29499	326.16831	132.78368	6.15765	0.2325757	0.23623103	2.5916604	20	9 1.6	19.6
193573 2001 AM ₄₂	16.5	X	283.73122	26.57319	36.55625	5.01550	0.2742259	0.23975209	2.5662233	20	9 3.9	19.3
193574 2001 BB	15.1	X	79.65012	43.70103	82.88447	6.03996	0.1105942	0.21421601	2.7663137	20	4 22.3	18.7
193575 2001 BF	15.4	X	56.70733	63.47500	104.40165	10.09475	0.0875336	0.21560508	2.7544193	20	5 12.3	19.0
193576 2001 BG	16.5	X	218.36234	1.26782	80.78463	5.71582	0.2497369	0.22967520	2.6407461	20	7 16.2	20.9
193577 2001 BY ₁	16.5	X	213.12095	316.71326	139.76547	5.39989	0.1916652	0.23175458	2.6249266	20	8 2.3	20.6
193578 2001 BH ₂	16.0	X	50.78777	297.82605	191.43541	11.48721	0.1055512	0.21144316	2.7904460	20	3 8.9	19.5
193579 2001 BS ₂	16.7	X	99.35849	123.81186	319.33909	18.59562	0.0254362	0.36570112	1.9366532	20	2 14.6	18.3
193580 2001 BM ₆	15.6	X	131.92540	39.06458	72.81854	6.62875	0.0902593	0.22194083	2.7017464	20	6 1.6	19.4
193581 2001 BW ₉	16.4	X	267.06983	264.44745	123.54961	17.78420	0.2887066	0.23306475	2.6150800	20	6 20.6	20.4
193582 2001 BF ₁₁	15.7	X	151.75396	195.82077	284.29598	12.78355	0.1958060	0.22298495	2.6933059	20	7 8.4	20.2
193583 2001 BG ₂₁	15.9	X	283.07956	26.32828	17.32469	4.34687	0.0895674	0.23390645	2.6088028	20	9 3.7	19.0
193584 2001 BL ₂₂	15.2	X	175.37870	201.16145	288.73338	11.66337	0.2173907	0.23069083	2.6329897	20	8 7.4	19.8
193585 2001 BB ₂₆	15.5	X	86.45551	221.03163	286.79757	4.98352	0.0779182	0.21835760	2.7312231	20	5 21.3	19.1
193586 2001 BT ₃₇	16.0	X	279.16631	113.74359	290.35273	0.81600	0.2171896	0.23511253	2.5998734	20	8 6.7	19.2
193587 2001 BQ ₃₈	16.1	X	200.04439	311.42984	127.28009	6.73646	0.2775351	0.22661809	2.6644424	20	6 25.5	20.9
193588 2001 BE ₄₀	15.0	X	351.56834	163.51444	80.79550	10.87013	0.1419734	0.21653433	2.7465333	20	5 9.4	18.0
193589 2001 BS ₄₂	15.6	X	217.88630	274.78647	161.53576	12.11658	0.2456846	0.22945182	2.6424597	20	7 7.6	20.3
193590 2001 BQ ₄₅	15.3	X	202.00729	208.21150	236.63624	11.05544	0.1588199	0.22884788	2.6471067	20	7 8.1	19.7
193591 2001 BV ₄₅	15.5	X	255.58787	253.76681	198.60281	9.51253	0.1332837	0.23733156	2.5836423	20	9 21.3	18.8
193592 2001 BN ₄₆	12.8	X	226.33554	296.34317	202.89831	11.68231	0.0739978	0.08422466	5.1543813	20	10 1.3	19.8
193593 2001 BR ₄₆	15.2	X	334.37475	330.22749	264.08165	12.35677	0					

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>
193601 2001 BQ ₆₈	15.5	X	331.28655	76.63460	351.20990	10.28068	0.3112393	0.24439198	2.5336391	20	—	—
193602 2001 BL ₇₀	12.6	X	266.43450	155.10665	276.17383	4.42632	0.1006970	0.08255544	5.2236280	20	8 24.8	19.6
193603 2001 BU ₇₁	15.8	X	238.05523	175.83924	243.46336	2.51566	0.2893987	0.23108104	2.6300248	20	6 30.7	20.0
193604 2001 BG ₇₃	16.0	X	134.45905	304.12714	203.15108	12.48896	0.2023743	0.22359850	2.6883767	20	7 24.5	20.7
193605 2001 BX ₇₅	15.8	X	49.41157	294.59607	192.69178	7.15618	0.1768368	0.21023862	2.8010942	20	3 12.9	18.7
193606 2001 BF ₇₈	14.8	X	296.89326	90.52095	200.37534	8.97393	0.1755050	0.21679769	2.7443086	20	4 4.8	18.4
193607 2001 BH ₈₂	15.7	X	330.37179	34.65031	55.74918	7.73168	0.1847738	0.24552844	2.5258149	20	—	—
193608 2001 CD ₂	16.0	X	282.01918	58.47197	17.31441	4.87111	0.2581039	0.23833935	2.5763541	20	9 20.6	18.6
193609 2001 CA ₇	15.5	X	321.21368	75.61480	337.84289	10.89550	0.3030130	0.24206873	2.5498243	20	11 17.9	17.1
193610 2001 CS ₈	15.5	X	257.12320	359.32073	101.63578	4.98208	0.2080132	0.23624821	2.5915347	20	9 27.4	18.9
193611 2001 CQ ₁₂	15.8	X	143.60786	27.19493	111.95921	5.35022	0.2471170	0.22415613	2.6839163	20	7 27.5	20.5
193612 2001 CG ₁₃	15.5	X	4.93171	125.24533	76.48874	4.17087	0.1199396	0.21137348	2.7910592	20	4 3.8	18.6
193613 2001 CW ₁₃	15.0	X	338.25783	33.89112	337.61135	10.65837	0.2734524	0.23903123	2.5713802	20	10 25.1	17.0
193614 2001 CZ ₁₃	15.8	X	42.14291	167.80898	344.58578	7.63638	0.1584957	0.21222546	2.7835844	20	3 31.1	19.0
193615 2001 CY ₁₆	15.5	X	87.07591	32.55719	115.46328	9.96475	0.0341938	0.21740451	2.7391996	20	5 19.7	19.3
193616 2001 CZ ₁₇	15.4	X	133.21597	35.86792	137.21091	14.27836	0.1027946	0.22826160	2.6516375	20	8 24.5	19.3
193617 2001 CO ₁₈	16.0	X	208.24901	294.52755	156.15467	5.11817	0.1517246	0.22866368	2.6485281	20	7 23.5	20.1
193618 2001 CP ₁₉	16.0	X	172.42772	242.07500	223.70412	11.28219	0.2475289	0.22508195	2.6765515	20	7 6.5	20.9
193619 2001 CL ₂₁	15.5	X	243.04971	75.45890	338.25747	7.45990	0.1247439	0.23009998	2.6374951	20	7 18.5	19.3
193620 2001 CZ ₂₁	15.9	X	149.96448	116.74102	10.107075	2.14135	0.1497311	0.22506135	2.6776148	20	7 14.5	20.1
193621 2001 CU ₂₄	15.9	X	139.64681	142.63125	338.17409	7.61122	0.1875999	0.22175818	2.7032297	20	6 29.0	20.4
193622 2001 CR ₂₅	15.4	X	219.52581	273.42816	116.99013	12.40720	0.2121483	0.22298899	2.6932734	20	5 19.3	20.1
193623 2001 CC ₂₆	16.7	X	94.29737	172.72075	355.93633	1.91293	0.1189119	0.22059294	2.7127408	20	7 5.7	20.5
193624 2001 CW ₂₆	15.4	X	215.19282	55.54341	56.10594	13.48837	0.2107396	0.23059328	2.6337323	20	8 29.2	19.9
193625 2001 CD ₂₉	15.4	X	225.99212	319.89359	121.88670	13.98873	0.2342831	0.23031311	2.6358677	20	7 23.3	19.6
193626 2001 CV ₃₁	15.2	X	168.76871	87.26345	27.70499	27.41644	0.2192112	0.22521622	2.6754876	20	7 25.2	20.4
193627 2001 CD ₃₃	15.5	X	214.34187	353.33418	75.91227	15.24116	0.1322729	0.22670527	2.6637592	20	7 3.9	19.6
193628 2001 CQ ₃₃	15.3	X	134.32894	117.69151	44.34872	15.62635	0.1384307	0.22564134	2.6721260	20	8 19.8	19.8
193629 2001 CY ₃₃	15.6	X	257.70059	22.71207	63.77089	13.96125	0.2216574	0.23581037	2.5947416	20	9 12.1	19.4
193630 2001 CY ₃₄	15.6	X	257.96433	61.82767	91.07757	13.60947	0.0989177	0.24183209	2.5514874	20	12 22.6	18.6
193631 2001 CA ₃₇	17.0	X	234.39574	131.04836	337.47834	4.94585	0.2419577	0.23581312	2.5947214	20	9 3.0	20.9
193632 2001 CU ₃₇	16.3	X	202.28267	292.97963	106.18726	23.85387	0.1174889	0.37330306	1.9102712	20	5 21.6	19.2
193633 2001 CY ₃₉	15.0	X	272.75699	296.20905	87.88317	14.39721	0.1430282	0.22889110	2.6467735	20	7 12.5	18.5
193634 2001 CS ₄₄	15.3	X	173.85820	0.45783	82.82190	14.12175	0.1037938	0.22073680	2.7115621	20	6 11.1	19.3
193635 2001 CQ ₄₅	15.3	X	140.79432	349.57822	94.83404	15.06739	0.1363776	0.21649388	2.7468754	20	5 15.5	19.7
193636 2001 CS ₄₅	15.5	X	95.98993	103.62198	50.73230	13.77854	0.1483748	0.21779262	2.7359445	20	6 21.3	19.6
193637 2001 CQ ₄₈	16.2	X	209.22238	128.01831	308.88664	2.85722	0.1693413	0.22824949	2.6517312	20	7 6.4	20.4
193638 2001 DY ₂	16.0	X	30.34398	171.69404	339.92664	21.15588	0.0463182	0.36288088	1.9466744	20	2 15.8	17.6
193639 2001 DK ₁₃	15.3	X	61.88652	27.61817	115.20376	9.14125	0.1640880	0.21091092	2.7951385	20	4 28.3	18.8
193640 2001 DJ ₁₅	15.2	X	51.88512	64.67317	128.58006	13.81947	0.0267828	0.21743999	2.7389016	20	5 31.5	19.1
193641 2001 DH ₁₆	12.4	X	279.36359	356.31262	90.80112	7.34034	0.0443228	0.08091025	5.2942003	20	10 8.4	19.3
193642 2001 DH ₁₈	15.2	X	8.46885	193.88312	7.47191	12.00516	0.0706308	0.21078454	2.7962557	20	4 6.3	18.6
193643 2001 DK ₁₈	15.2	X	238.65520	353.44513	100.52765	7.74863	0.2742129	0.23303027	2.6153380	20	8 18.1	19.4
193644 2001 DL ₂₂	15.4	X	139.89723	22.38479	105.87655	11.02719	0.1723759	0.21963184	2.7206490	20	7 7.0	19.8
193645 2001 DL ₂₃	15.7	X	12.30709	198.24595	341.48293	8.86601	0.0874264	0.21046796	2.7990591	20	3 14.2	18.9
193646 2001 DF ₂₆	15.8	X	241.25168	76.35234	26.19043	5.03026	0.2475150	0.23488032	2.6015866	20	9 3.9	19.7
193647 2001 DB ₂₈	15.8	X	186.47450	341.61400	137.43649	5.76572	0.1068409	0.22675558	2.6633652	20	8 9.9	19.6
193648 2001 DT ₃₀	15.2	X	107.32195	336.11694	138.29933	13.72839	0.0994077	0.21476189	2.7616242	20	5 12.8	19.4
193649 2001 DA ₃₈	15.4	X	221.02699	170.97843	259.28060	3.44716	0.1939293	0.22893376	2.6464447	20	7 7.0	19.6
193650 2001 DU ₃₈	16.0	X	183.49199	218.37651	235.14945	4.40230	0.1873397	0.22567091	2.6718926	20	7 2.4	20.4
193651 2001 DL ₄₁	15.0	X	168.66969	30.71082	154.55352	13.78067	0.2136655	0.18142176	3.0903651	20	10 9.5	20.4
193652 2001 DX ₄₁	15.8	X	182.77546	121.41653	340.76302	2.30781	0.0709932	0.22449143	2.6812432	20	7 16.3	19.7
193653 2001 DB ₄₂	15.6	X	251.11218	30.65871	136.66933	3.18270	0.1680269	0.19117239	2.9843695	20	12 7.9	19.5
193654 2001 DV ₄₂	16.4	X	164.98497	325.14798	153.93559	2.34116	0.2615571	0.22478576	2.6789021	20	7 18.7	21.2
193655 2001 DV ₄₄	16.1	X	170.17627	296.94793	148.31062	2.40965	0.1295047	0.22055185	2.7130778	20	6 10.3	20.3
193656 2001 DK ₄₅	16.0	X	140.44535	157.03373	346.74022	1.77346	0.1414313	0.22285466	2.6943555	20	7 26.2	20.2
193657 2001 DP ₄₈	15.6	X	270.46507	47.82186	85.35353	8.36483	0.1065376	0.24219480	2.5489394	20	12 14.3	18.5
193658 2001 DH ₅₀	15.7	X	144.15959	43.68287	57.62763	8.35942	0.1016591	0.22003819	2.7172984	20	6 1.9	19.7
193659 2001 DX ₅₃	16.3	X	179.07143	131.77305	315.96729	2.95659	0.2983538	0.22443229	2.6817142	20	6 21.1	21.1
193660 2001 DB ₅₅	16.4	X	21.49764	305.27892	135.21520	2.86601	0.0647722	0.19907459	2.9048619	20	—	—
193661 2001 DH ₅₆	15.8	X	190.33601	216.11552	144.10629	4.29750	0.1077655	0.21084706	2.7957029	20	3 17.1	20.1
193662 2001 DA ₆₀	16.1	X	291.00972	308.22847	190.09560	1.94494	0.0595158	0.24581191	2.5238726	20	—	—
193663 2001 DG ₆₂	15.8	X	9.78913	21.86289	155.88838	8.84900	0.1495894	0.20913823	2.8109110	20	3 8.2	18.7
193664 2001 DR ₆₂	16.2	X	223.01316	286.64044	150.58521	2.61858	0.1885170	0.22857975	2.6491764	20	7 18.3	20.4
193665 2001 DU ₆₂	15.5	X	142.14755	273.91579	151.89414	9.91664	0.1387681	0.21544715	2.7557652	20	4 22.5	19.9
193666 2001 DE ₆₃	16.5	X	192.43873	338.25712	160.29988	2.20715	0.1154664	0.23072007	2.6327672	20	9 10.3	20.3
193667 2001 DU ₆₄	16.0	X	248.16191	291.43413	162.37967	8.42008	0.2785445	0.23524681	2.5988840	20	8 24.5	19.8
193668 2001 DJ ₆₆	15.6	X	100.60477	191.39935	326.12847	12.17275	0.1554946	0.21886655	2.7269874	20	7 4.8	19.7
193669 2001 DV ₆₆	15.8	X	65.02195	333.29733	146.65026	4.74738	0.0549439	0.20940421	2.8085302	20	3 15.1	19.3
193670 2001 DY ₇₆	13.3	X	334.63322	244.43636	157.72046	9.47687	0.0731141	0.08061612	5.3070698	20	10 21.7	20.0
193671 2001 DV ₈₄	16.5	X	100.11241	68.82127	194.07540	3.99265	0.1453518	0.17522353	3.1628196	20	11 5.3	21.5
193672 2001 DA ₉₁	16.2	X	325.65408	293.80323	158.22418	7.98877	0.2322710	0.20333284	2.8641628	20	1 1.4	20.0
193673 2001 DQ ₉₆	15.9	X	296.64999	266.52223	276.85740	7.76500	0.2608568	0.24257925	2.5462456	20		

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>		
193681	2001	EE ₈	15.8	X	254.20840	22.10129	63.27600	3.67642	0.2168867	0.23233591	2.6205462	20	8 31.1	19.3
193682	2001	EH ₁₄	14.5	X	151.62492	191.49455	27.92801	18.01346	0.2170606	0.18002577	3.1063205	20	10 30.4	19.8
193683	2001	EO ₁₄	15.6	X	307.04267	346.64869	108.06665	13.22115	0.2094625	0.24090679	2.5580166	20	12 20.9	17.7
193684	2001	EP ₁₅	15.0	X	271.79433	61.43356	20.67943	28.47945	0.1744876	0.23611240	2.5925284	20	10 2.6	18.2
193685	2001	EG ₁₆	16.4	X	227.04614	91.34136	48.83829	3.09436	0.2717426	0.23524523	2.5988956	20	10 3.7	20.4
193686	2001	EP ₂₅	15.6	X	168.01143	250.56561	210.01673	9.70280	0.1649725	0.22297535	2.6933832	20	6 27.0	20.2
193687	2001	ET ₂₇	16.4	X	28.10663	125.84261	359.84922	2.56417	0.1886678	0.20445493	2.8536738	20	2 1.4	19.0
193688	2001	FY ₂	15.9	X	67.61367	297.30629	199.58864	6.68380	0.2490661	0.21153175	2.7896669	20	5 9.5	19.4
193689	2001	FQ ₄	16.1	X	222.55206	256.41931	86.72757	2.80116	0.0469216	0.21023328	2.8011416	20	4 1.3	20.0
193690	2001	FE ₁₀	16.0	X	54.49531	337.13284	199.66874	8.05204	0.2495167	0.21252745	2.7809469	20	6 12.7	19.4
193691	2001	FG ₁₁	15.3	X	171.54535	271.99398	5.03166	10.92502	0.0401592	0.19123038	2.9837662	20	—	—
193692	2001	FA ₁₃	15.2	X	207.91160	161.84739	140.86820	2.84491	0.0526494	0.19961751	2.8995925	20	1 25.8	19.4
193693	2001	FZ ₂₄	15.6	X	56.40406	336.60992	172.51323	7.26012	0.1927173	0.21065766	2.7973784	20	4 30.3	18.9
193694	2001	FK ₂₅	15.0	X	148.71188	246.33950	355.00426	26.78333	0.2007335	0.18075838	3.0979216	20	11 13.1	20.7
193695	2001	FU ₂₉	15.6	X	133.74651	254.66662	229.63842	10.45887	0.2442123	0.22029980	2.7151468	20	6 29.5	20.4
193696	2001	FN ₃₇	15.6	X	156.27683	59.35069	178.34020	8.77347	0.2341739	0.18158760	3.0884833	20	11 26.7	21.1
193697	2001	FA ₄₂	15.5	X	27.53506	174.97109	8.22338	14.59657	0.1276833	0.20915366	2.8107728	20	4 13.4	18.7
193698	2001	FR ₄₅	15.3	X	97.16404	126.10406	7.56476	13.35438	0.1428569	0.21281852	2.7784107	20	5 22.8	19.5
193699	2001	FQ ₅₂	15.4	X	150.99754	117.72604	5.79814	9.61431	0.1627069	0.21857444	2.7294164	20	7 13.0	20.0
193700	2001	FV ₅₇	15.1	X	45.33794	190.72201	343.88588	12.23475	0.2654825	0.20989752	2.8041281	20	5 23.1	18.3
193701	2001	FH ₅₈	17.0	X	260.87466	222.79997	44.64588	6.81659	0.2224474	0.30272051	2.1967206	20	1 15.8	20.5
193702	2001	FS ₆₂	16.3	X	248.93601	43.57270	109.54977	4.80551	0.1515391	0.23909271	2.5709393	20	12 1.9	19.5
193703	2001	FI ₆₃	15.1	X	206.88325	188.22892	87.19814	3.22637	0.0643916	0.19585146	2.9366454	20	—	—
193704	2001	FQ ₆₅	15.2	X	193.18313	240.82393	18.94311	12.35160	0.1842270	0.18935341	3.0034516	20	—	—
193705	2001	FT ₆₉	15.2	X	198.16804	115.52778	157.72185	11.34357	0.19716739	0.19278924	2.9676603	20	—	—
193706	2001	FB ₇₅	14.6	X	152.77391	248.09217	17.53902	27.25443	0.1603208	0.18471304	3.0535451	20	12 24.3	20.1
193707	2001	FK ₇₉	15.5	X	293.70322	103.04347	96.34730	3.54295	0.0766717	0.19864473	2.9090511	20	—	—
193708	2001	FE ₈₀	15.6	X	90.10655	321.00660	231.28704	9.15694	0.2308701	0.21782380	2.7356833	20	8 10.4	20.0
193709	2001	FG ₈₂	16.1	X	89.92838	256.21973	246.96622	6.23721	0.2500485	0.21461409	2.7628919	20	6 14.1	20.1
193710	2001	FT ₈₂	15.3	X	331.74837	217.15726	314.91532	6.71215	0.0935906	0.19976534	2.8981618	20	1 6.3	19.1
193711	2001	FC ₈₃	14.8	X	190.60665	69.40136	191.02836	11.19657	0.0797518	0.19103289	2.9858223	20	—	—
193712	2001	FO ₈₄	15.6	X	89.38599	30.02134	8.94422	10.01537	0.0482670	0.19878393	2.9076928	20	1 6.9	19.7
193713	2001	FG ₈₇	15.1	X	220.71283	93.06932	148.23456	11.45891	0.0429884	0.19171114	2.9787758	20	—	—
193714	2001	FA ₉₀	16.2	X	107.44924	260.18905	44.27278	2.12282	0.0440387	0.18467870	3.0539237	20	12 24.6	20.7
193715	2001	FP ₉₁	15.6	X	346.83176	229.90909	1.12947	6.53066	0.0702833	0.21141652	2.7906804	20	4 12.8	19.0
193716	2001	FF ₁₀₀	15.2	X	148.51550	264.30070	315.79486	23.83231	0.2702576	0.18060504	3.0996748	20	10 19.1	21.2
193717	2001	FP ₁₀₂	16.0	X	354.83582	147.01798	95.11200	9.05418	0.1712192	0.21000678	2.8031556	20	5 11.6	18.9
193718	2001	FW ₁₀₆	15.8	X	238.40491	87.96444	356.59775	13.93822	0.1574531	0.22964461	2.6409804	20	8 21.6	19.7
193719	2001	FY ₁₀₆	15.9	X	287.99066	53.90739	26.60215	4.63366	0.2512860	0.23772938	2.5807592	20	10 9.4	18.1
193720	2001	FE ₁₀₇	15.7	X	313.62870	220.43010	73.95145	4.33705	0.0405181	0.21541992	2.7559975	20	5 24.2	19.2
193721	2001	FI ₁₀₇	15.4	X	124.10296	143.16055	10.61657	8.84577	0.0329003	0.22000194	2.7175969	20	7 13.9	19.3
193722	2001	FR ₁₁₁	15.5	X	138.55695	79.66527	172.99988	9.98421	0.0730488	0.18297793	3.0728184	20	11 29.1	20.3
193723	2001	FP ₁₁₂	15.8	X	305.31959	83.83530	112.38227	1.76870	0.0818589	0.20019787	2.8939859	20	1 3.6	19.6
193724	2001	FT ₁₁₃	15.7	X	112.87465	81.86787	186.12100	20.80593	0.2683730	0.17796032	3.1303094	20	11 30.4	21.5
193725	2001	FR ₁₁₄	15.7	X	102.86179	126.66319	35.68225	9.96177	0.1006288	0.21754612	2.7380108	20	7 5.8	19.8
193726	2001	FQ ₁₃₉	15.1	X	183.31381	218.94727	21.45142	13.18328	0.0917381	0.18501516	3.0502200	20	12 28.1	19.9
193727	2001	FS ₁₃₉	17.4	X	326.66623	62.29339	179.30118	4.56826	0.1356831	0.30832733	2.1700082	20	3 7.9	19.5
193728	2001	FI ₁₄₉	15.6	X	77.04590	278.03162	183.63299	14.78667	0.1343799	0.20678718	2.8321764	20	3 17.9	19.2
193729	2001	FZ ₁₅₃	15.3	X	41.72831	265.73806	272.02346	6.75374	0.1889297	0.20975606	2.8053886	20	5 10.6	18.5
193730	2001	FE ₁₅₆	15.7	X	55.93483	177.36018	33.97965	9.60010	0.0955680	0.21794905	2.7346351	20	7 9.1	19.4
193731	2001	FP ₁₆₂	15.7	X	230.44715	263.80196	171.94063	10.21468	0.2307252	0.22770165	2.6559828	20	7 18.5	20.2
193732	2001	FF ₁₆₈	16.0	X	130.12151	239.21378	37.62996	1.12390	0.1734512	0.18295731	3.0730494	20	12 19.4	21.0
193733	2001	FX ₁₆₉	15.6	X	149.16091	127.11960	178.43658	10.54459	0.1453522	0.19113070	2.9848036	20	—	—
193734	2001	FY ₁₇₉	15.7	X	130.62674	59.68368	68.42621	9.85598	0.1467331	0.21829007	2.7317863	20	6 25.8	20.0
193735	2001	FD ₁₈₀	15.4	X	77.37817	84.47230	93.98787	10.65124	0.0756960	0.21632366	2.7483162	20	6 20.1	18.9
193736	2001	Henrythroop	15.9	X	139.88165	302.17599	6.21018	2.82416	0.1279210	0.18981048	2.9986280	20	—	—
193737	2001	FY ₁₈₅	14.8	X	167.53267	239.66928	46.51363	7.50161	0.1585476	0.19194911	2.9763133	20	—	—
193738	2001	FT ₁₈₆	15.3	X	348.83485	316.04795	143.42484	10.59181	0.0409820	0.19380777	2.9572537	20	—	—
193739	2001	FQ ₁₈₇	16.3	X	204.54374	145.99433	165.04704	2.31149	0.0750747	0.20059831	2.8901332	20	1 31.8	20.8
193740	2001	FK ₁₈₈	15.5	X	298.37746	342.70041	118.35337	13.69995	0.1699368	0.24108334	2.5567676	20	12 14.1	18.1
193741	2001	HY ₁₉	15.9	X	168.05988	70.57076	180.60434	16.97860	0.1433465	0.18622929	3.0369483	20	12 22.8	21.1
193742	2001	HE ₃₃	15.3	X	167.71991	207.07273	39.80629	10.80797	0.2614330	0.18072811	3.0982674	20	12 11.7	20.8
193743	2001	HG ₅₄	15.1	X	130.28729	197.21710	101.70200	14.44307	0.1612806	0.18202406	3.0835443	20	—	—
193744	2001	HW ₅₆	14.2	X	47.64905	290.67864	45.41903	27.21893	0.2301923	0.17399833	3.1776495	20	12 11.1	19.1
193745	2001	HX ₅₈	14.7	X	79.47308	194.90297	66.81099	21.94074	0.0976399	0.17240747	3.1971671	20	10 18.0	19.7
193746	2001	JB ₃	14.9	X	117.56306	36.99059	192.24102	13.83127	0.1162893	0.17212048	3.2007200	20	10 10.7	19.8
193747	2001	JZ ₃	15.7	X	30.08268	54.50139	126.84109	2.69182	0.1890998	0.20578866	2.8413305	20	4 25.8	18.5
193748	2001	JS ₉	14.7	X	16.76904	296.43536	63.05447	10.09643	0.0830317	0.17411610	3.1762165	20	11 15.8	18.9
193749	2001	KG	16.3	X	216.96867	260.27365	55.49173	7.82436	0.3084828	0.29722907	2.2236949	20	2 10.1	20.5
193750	2001	KC ₃	15.5	X	205.27963	143.07								

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>		
193761	2001	<i>KB</i> ₇₄	15.5 ^m	X	145.71264	97.41352	217.40759	9.12881	0.0968276	0.18554347	3.0444272	20	—	—
193762	2001	<i>KO</i> ₇₄	15.1	X	188.16757	338.64287	247.26689	11.01467	0.1273670	0.18104400	3.0946625	20	12 12.3	19.9
193763	2001	<i>LF</i> ₁₂	14.3	X	144.68344	359.03638	269.27341	21.82458	0.0902457	0.17349468	3.1837963	20	12 20.0	19.1
193764	2001	<i>LG</i> ₁₃	17.1	X	234.60265	193.90515	121.30619	6.30402	0.3025732	0.29829384	2.2184000	20	2 19.4	21.1
193765	2001	<i>MQ</i>	14.5	X	86.56591	84.20420	243.99953	26.38934	0.1903655	0.17855556	3.1233487	20	—	—
193766	2001	<i>MW</i> ₁	16.7	X	297.06543	332.42739	274.73370	5.80680	0.1113492	0.29803068	2.2197057	20	2 5.8	19.5
193767	2001	<i>ME</i> ₁₃	16.6	X	244.36328	148.66914	131.58976	8.01893	0.2215064	0.29307310	2.2446678	20	1 17.4	20.3
193768	2001	<i>MW</i> ₁₆	17.2	X	230.10272	247.54442	57.55011	6.30337	0.1919793	0.29530150	2.2333611	20	2 8.3	20.8
193769	2001	<i>MH</i> ₂₃	16.7	X	288.06066	209.11184	98.52119	5.67183	0.2343254	0.30351641	2.1928787	20	4 4.5	19.5
193770	2001	<i>NK</i>	17.1	X	265.70121	40.66183	234.08745	3.80726	0.1492676	0.29729074	2.2233873	20	2 1.9	20.2
193771	2001	<i>NW</i> ₂	14.9	X	180.22499	213.86413	1.38169	8.69048	0.0575341	0.17183442	3.2042712	20	11 22.8	19.8
193772	2001	<i>NK</i> ₄	14.2	X	324.86366	343.84246	114.85961	23.81826	0.0637565	0.17432651	3.1736602	20	—	—
193773	2001	<i>OX</i>	16.6	X	257.08982	189.79615	105.00575	6.14874	0.1496011	0.29812836	2.2192208	20	2 22.3	19.7
193774	2001	<i>OK</i> ₅	16.4	X	201.41535	120.41403	229.60743	6.94059	0.1512871	0.29371763	2.2413828	20	3 4.9	19.9
193775	2001	<i>OL</i> ₅	16.2	X	228.86843	33.84395	249.61526	7.00665	0.1968694	0.29092547	2.2557011	20	1 8.7	19.9
193776	2001	<i>OT</i> ₁₁	16.8	X	309.10225	278.04826	324.86392	7.41316	0.1708797	0.29984612	2.2107371	20	2 8.7	19.5
193777	2001	<i>OG</i> ₁₅	17.1	X	207.40200	238.12596	68.76845	6.59482	0.2101684	0.29169166	2.2517493	20	1 21.6	20.9
193778	2001	<i>OM</i> ₁₆	17.3	X	236.40303	129.51754	175.99493	7.08007	0.1895875	0.29592674	2.2302142	20	2 10.5	21.0
193779	2001	<i>OT</i> ₁₇	16.7	X	208.26981	89.62198	246.13161	4.53260	0.1800843	0.29519230	2.2339118	20	2 22.9	20.2
193780	2001	<i>OX</i> ₂₄	17.1	X	211.09737	157.85442	137.61032	6.33596	0.2150182	0.29057032	2.2575388	20	1 9.5	20.9
193781	2001	<i>OR</i> ₂₅	17.0	X	246.17063	78.15577	230.72571	4.53543	0.1803480	0.29759496	2.2218718	20	2 23.2	20.4
193782	2001	<i>OA</i> ₃₄	17.0	X	169.85337	309.61936	66.66474	6.96398	0.2486447	0.29247719	2.2477157	20	3 20.1	20.8
193783	2001	<i>OT</i> ₃₄	17.2	X	319.16299	229.74141	40.83982	6.00023	0.1639481	0.30377596	2.1916294	20	4 6.5	19.2
193784	2001	<i>OT</i> ₄₀	17.0	X	239.97136	216.05071	65.61750	8.19751	0.1755257	0.29186955	2.2508343	20	1 18.7	20.6
193785	2001	<i>OX</i> ₄₄	16.7	X	17.33999	1.18926	252.18262	5.41269	0.1438532	0.31004801	2.1619721	20	7 17.2	18.4
193786	2001	<i>OP</i> ₄₈	16.8	X	273.96549	9.94686	289.33585	6.91351	0.0923663	0.29879488	2.2159193	20	3 19.3	19.8
193787	2001	<i>OJ</i> ₅₁	17.3	X	258.02190	183.27148	88.72743	3.79631	0.1613173	0.29558797	2.2319179	20	1 22.9	20.4
193788	2001	<i>OZ</i> ₅₃	15.9	X	192.96335	139.68843	123.79038	22.92234	0.2014607	0.28251206	2.3002660	20	—	—
193789	2001	<i>OB</i> ₅₉	17.1	X	107.02169	248.89479	115.28141	3.51640	0.2586791	0.28283891	2.2984935	20	—	—
193790	2001	<i>OL</i> ₇₂	16.2	X	191.10342	353.96848	357.73992	5.05340	0.1759125	0.29044232	2.2582020	20	3 2.1	19.6
193791	2001	<i>OE</i> ₇₃	16.3	X	230.57815	174.28068	140.14586	8.88274	0.1970133	0.29301042	2.2449879	20	2 18.4	19.9
193792	2001	<i>OE</i> ₇₉	17.0	X	198.94627	295.25706	75.23677	4.90910	0.1755722	0.29498953	2.2349354	20	4 3.4	20.4
193793	2001	<i>OR</i> ₇₉	17.6	X	286.89830	240.69985	39.59693	5.80479	0.1749729	0.29993024	2.2103237	20	3 4.9	20.4
193794	2001	<i>OB</i> ₈₇	16.8	X	86.69826	202.47609	135.06855	6.92086	0.2410513	0.27486211	2.3427510	20	—	—
193795	2001	<i>OF</i> ₉₈	16.7	X	171.98144	266.26861	22.45697	5.91906	0.2340277	0.28391715	2.2926705	20	—	—
193796	2001	<i>OB</i> ₁₀₄	17.1	X	201.45179	204.66833	138.05131	5.77005	0.2129356	0.29400760	2.2399089	20	2 29.2	20.8
193797	2001	<i>OO</i> ₁₀₆	16.2	X	197.03826	57.42253	302.13864	6.25982	0.1653329	0.29314495	2.2443010	20	3 13.2	19.7
193798	2001	<i>PF</i> ₈	17.2	X	244.11267	248.89471	46.85830	6.80857	0.2200230	0.29502110	2.2347760	20	2 7.9	20.9
193799	2001	<i>PE</i> ₁₂	17.2	X	156.51619	248.82782	98.07505	7.28662	0.1994506	0.28565082	2.2833846	20	1 26.1	20.5
193800	2001	<i>PM</i> ₁₂	16.5	X	144.61454	345.78293	70.85258	9.89419	0.1487476	0.29191091	2.2506217	20	4 11.7	19.8
193801	2001	<i>PV</i> ₁₃	17.7	X	185.96343	79.17015	274.35574	3.77070	0.1980529	0.29231505	2.2485468	20	2 26.7	21.3
193802	2001	<i>PS</i> ₁₇	17.1	X	195.91446	249.05421	62.03949	7.59062	0.2031205	0.28970544	2.2620296	20	1 17.2	20.8
193803	2001	<i>PF</i> ₁₉	16.7	X	72.13840	46.84924	62.42790	7.11062	0.0269581	0.29468742	2.2364627	20	2 28.8	19.3
193804	2001	<i>PQ</i> ₂₀	16.5	X	180.40427	244.66652	44.52689	7.31960	0.1554893	0.28470027	2.2884642	20	—	—
193805	2001	<i>PA</i> ₂₁	16.8	X	345.53885	103.95736	156.26630	2.25510	0.1339779	0.30518807	2.1848637	20	5 16.8	18.4
193806	2001	<i>PO</i> ₂₁	17.1	X	354.01968	231.59520	160.02461	2.41708	0.1485953	0.30868301	2.1683409	20	7 7.3	18.5
193807	2001	<i>PM</i> ₂₂	16.4	X	67.70545	250.40828	136.82861	9.98750	0.2212460	0.27834471	2.3231686	20	—	—
193808	2001	<i>PK</i> ₂₃	17.0	X	152.06611	259.45611	44.41563	5.33531	0.1792580	0.28236806	2.3010480	20	—	—
193809	2001	<i>PQ</i> ₂₇	16.9	X	292.63800	7.06098	284.89732	4.57842	0.1562427	0.30017868	2.2091040	20	3 25.3	19.6
193810	2001	<i>PA</i> ₃₉	14.9	X	75.35071	246.18459	57.55973	16.51615	0.1593210	0.16550078	3.2855092	20	11 26.7	19.9
193811	2001	<i>PP</i> ₄₂	16.8	X	120.94574	282.86370	74.74425	8.64911	0.1414138	0.28279204	2.2987474	20	—	—
193812	2001	<i>PV</i> ₅₀	17.0	X	155.73558	343.52302	30.24292	4.69821	0.2462894	0.29006597	2.2601549	20	3 3.5	20.5
193813	2001	<i>PM</i> ₅₂	16.5	X	182.40072	263.20212	51.41527	7.87824	0.1286180	0.28671077	2.2775534	20	1 4.7	19.8
193814	2001	<i>PV</i> ₅₇	17.0	X	288.19545	107.09330	169.42635	5.56625	0.1438382	0.29769212	2.2213883	20	3 2.6	19.6
193815	2001	<i>PW</i> ₅₇	17.5	X	161.64566	191.00076	167.51176	4.68148	0.1839313	0.28823760	2.2697026	20	2 11.4	20.8
193816	2001	<i>PM</i> ₆₅	16.3	X	259.35710	298.57848	284.92483	11.13248	0.0602400	0.28279241	2.2987455	20	—	—
193817	2001	<i>PR</i> ₆₅	16.5	X	29.44883	90.98160	322.12470	5.99360	0.0800529	0.27684983	2.3315239	20	—	—
193818	2001	<i>QH</i>	16.5	X	252.24187	356.50818	313.15077	5.59841	0.1771632	0.29689573	2.2253590	20	3 1.9	20.0
193819	2001	<i>QE</i> ₈	16.6	X	265.47931	332.86183	319.71509	8.34389	0.1180361	0.29680972	2.2257889	20	2 27.9	19.7
193820	2001	<i>QV</i> ₉	17.6	X	256.57623	127.36534	167.08619	5.25075	0.1929223	0.29621221	2.2287811	20	2 15.4	21.0
193821	2001	<i>QN</i> ₁₇	17.5	X	186.43370	50.19276	291.24535	2.04148	0.1936570	0.29134715	2.2535241	20	2 13.3	20.9
193822	2001	<i>QD</i> ₂₀	17.0	X	184.78340	194.54741	141.36509	3.98799	0.2746615	0.28920886	2.2646182	20	2 8.9	20.9
193823	2001	<i>QL</i> ₂₆	16.7	X	167.10820	216.61881	118.33251	4.85623	0.2029125	0.28641953	2.2792972	20	1 20.6	20.2
193824	2001	<i>QO</i> ₂₆	16.5	X	146.45071	310.71903	11.44121	6.29325	0.1706265	0.28204177	2.3028223	20	—	—
193825	2001	<i>QT</i> ₂₇	16.3	X	184.54847	357.69109	343.88729	3.48848	0.1798947	0.28726327	2.2748319	20	2 12.4	19.7
193826	2001	<i>QM</i> ₃₂	15.1	X	92.68508	82.15524	294.88972	3.96798	0.1593434	0.17534356	3.1613762	20	1 2.8	19.2
193827	2001	<i>QX</i> ₃₄	17.1	X	194.47793	14.83521	289.61198	2.04616	0.1674341	0.28981965	2.2614353	20	1 5.2	20.4
193828	2001	<i>QC</i> ₃₅	17.3	X	151.58137	32.92485	315.45835	4.29281	0.2885634	0.28704775	2.2759705	20	1 30.6	21.0
193829	2001	<i>QX</i> ₃₈	17.4											

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>		
193841	2001	<i>QJ</i> ₆₃	16.2	X	35.15840	179.56889	216.28799	2.07844	0.2037488	0.27297794	2.3535189	20	—	—
193842	2001	<i>QX</i> ₆₇	17.0	X	186.67150	214.27404	180.45410	4.84211	0.1310279	0.29709212	2.2243782	20	4 21.6	20.1
193843	2001	<i>QU</i> ₇₂	16.5	X	149.85656	54.75133	221.42630	22.78290	0.2522764	0.27817117	2.3241347	20	—	—
193844	2001	<i>QR</i> ₈₁	16.4	X	88.64184	144.36191	223.35474	6.94041	0.2507501	0.27618978	2.3352371	20	—	—
193845	2001	<i>QL</i> ₁₀₀	17.3	X	262.65245	249.23904	83.88592	5.26777	0.2014141	0.30254721	2.1975594	20	4 13.9	20.3
193846	2001	<i>QZ</i> ₁₀₃	16.2	X	191.48712	141.28398	249.10370	7.41530	0.3414492	0.29649226	2.2273774	20	4 18.0	20.5
193847	2001	<i>QG</i> ₁₀₉	16.7	X	204.21758	299.65154	49.59685	7.27734	0.1781107	0.29553518	2.2321836	20	3 13.2	20.2
193848	2001	<i>QL</i> ₁₀₉	17.4	X	234.54195	300.91093	39.82028	8.35958	0.1791101	0.29661703	2.2267527	20	3 29.3	20.8
193849	2001	<i>QK</i> ₁₁₁	17.0	X	74.05562	23.39320	6.69298	1.37507	0.2491375	0.27838180	2.3229623	20	—	—
193850	2001	<i>QT</i> ₁₁₂	16.5	X	124.15639	139.36283	225.62816	7.82652	0.1499757	0.28261520	2.2997063	20	1 5.1	19.4
193851	2001	<i>QM</i> ₁₁₄	16.7	X	206.00433	71.87266	236.03209	4.43929	0.1457412	0.28924640	2.2644222	20	1 18.4	20.2
193852	2001	<i>QS</i> ₁₁₄	17.0	X	143.87969	128.97661	205.64576	7.44581	0.1470486	0.28286587	2.2983475	20	—	—
193853	2001	<i>QY</i> ₁₁₅	16.5	X	156.32115	66.01171	284.49228	5.16689	0.1615500	0.28591886	2.2819573	20	1 25.3	19.7
193854	2001	<i>QH</i> ₁₁₇	16.2	X	151.80183	6.95319	308.01841	6.37439	0.1345785	0.28015945	2.3131255	20	—	—
193855	2001	<i>QZ</i> ₁₂₀	17.0	X	193.13059	322.90059	347.21342	5.95806	0.1269862	0.28945990	2.2633086	20	1 10.1	20.4
193856	2001	<i>QX</i> ₁₂₃	17.0	X	117.58915	303.70147	43.96971	3.65182	0.2428837	0.28110802	2.3079190	20	—	—
193857	2001	<i>QY</i> ₁₂₅	17.4	X	117.16021	293.69471	70.82112	2.89623	0.2385013	0.28192952	2.3034335	20	1 10.5	20.2
193858	2001	<i>QD</i> ₁₂₇	17.0	X	184.37389	62.94512	249.15032	5.50213	0.2073122	0.28795722	2.2711757	20	1 7.2	20.6
193859	2001	<i>QZ</i> ₁₂₈	16.7	X	125.56268	201.23583	212.59457	5.71675	0.1589303	0.29060808	2.2573432	20	3 11.9	19.8
193860	2001	<i>QT</i> ₁₃₃	16.7	X	149.99682	120.49158	242.08386	5.60114	0.2287060	0.28671846	2.2777127	20	2 8.0	20.3
193861	2001	<i>QD</i> ₁₃₇	15.6	X	349.58478	218.00473	221.67203	10.74094	0.1701202	0.26890103	2.3772475	20	—	—
193862	2001	<i>QK</i> ₁₄₁	14.7	X	232.37744	317.46719	261.07557	15.43728	0.1790051	0.17711672	3.1402412	20	—	—
193863	2001	<i>QY</i> ₁₄₁	16.4	X	144.34525	178.32906	160.94189	11.09862	0.0888921	0.28215322	2.3022159	20	—	—
193864	2001	<i>QA</i> ₁₄₂	16.2	X	144.45177	293.86643	40.33700	5.05879	0.2041573	0.28055457	2.3109532	20	—	—
193865	2001	<i>QS</i> ₁₄₂	17.1	X	119.75423	145.43653	201.71915	6.53255	0.1394444	0.28091958	2.3089510	20	—	—
193866	2001	<i>QC</i> ₁₄₃	17.2	X	81.05473	220.14469	184.07592	2.39083	0.1596034	0.28144830	2.3060584	20	—	—
193867	2001	<i>QO</i> ₁₄₅	17.5	X	19.98187	290.35905	174.64109	4.11163	0.1831743	0.27950525	2.3167334	20	—	—
193868	2001	<i>QC</i> ₁₄₉	17.1	X	192.62615	341.74292	343.49558	5.91808	0.2153165	0.29084545	2.2561148	20	2 1.2	20.7
193869	2001	<i>QD</i> ₁₅₃	16.9	X	109.23986	92.38949	305.61722	3.26123	0.1632583	0.28392212	2.2926437	20	2 1.7	19.3
193870	2001	<i>QF</i> ₁₅₄	17.2	X	184.64637	201.29103	81.76882	4.98946	0.2480879	0.28357443	2.2945173	20	—	—
193871	2001	<i>QA</i> ₁₅₆	16.8	X	101.62852	99.03092	302.36280	4.14712	0.0890166	0.28572618	2.2829831	20	1 14.3	19.1
193872	2001	<i>QO</i> ₁₅₆	17.0	X	102.38203	180.69440	191.39327	5.67078	0.1850240	0.28134835	2.3066045	20	—	—
193873	2001	<i>QK</i> ₁₅₇	16.9	X	339.00854	59.46008	189.18910	1.84450	0.1720098	0.30240242	2.1982607	20	4 6.7	18.5
193874	2001	<i>QA</i> ₁₆₁	17.1	X	165.22489	60.35344	339.01606	1.94020	0.1512527	0.29449961	2.2374134	20	4 4.9	20.3
193875	2001	<i>QW</i> ₁₆₁	17.2	X	106.14266	347.47807	31.79015	3.50456	0.1790893	0.28277168	2.2988578	20	1 5.6	19.6
193876	2001	<i>QW</i> ₁₆₆	17.2	X	128.76485	340.25464	24.03107	6.73955	0.1711128	0.28493573	2.2872033	20	1 15.6	20.2
193877	2001	<i>QF</i> ₁₇₄	16.4	X	195.80753	328.62451	338.28503	6.02525	0.1312592	0.28484014	2.2877150	20	1 9.5	19.8
193878	2001	<i>QT</i> ₁₇₈	16.6	X	150.77059	214.58143	163.36709	3.08616	0.2517898	0.28597653	2.2816505	20	3 3.2	20.0
193879	2001	<i>QQ</i> ₁₇₉	17.4	X	187.69483	356.06069	10.32029	3.01488	0.2404913	0.29261215	2.2470245	20	3 18.3	21.2
193880	2001	<i>QE</i> ₁₈₀	16.8	X	111.51704	280.02636	80.57105	3.35517	0.2310530	0.28029857	2.3123600	20	—	—
193881	2001	<i>QT</i> ₁₈₀	17.0	X	138.00748	307.49571	52.32078	10.40045	0.2248064	0.28508808	2.2863884	20	1 28.9	20.4
193882	2001	<i>QW</i> ₁₈₂	16.3	X	93.79355	62.55192	352.28805	22.56389	0.1885903	0.28528019	2.2853618	20	2 15.6	19.0
193883	2001	<i>QC</i> ₁₈₃	16.4	X	133.47463	219.55415	140.05363	11.27093	0.2595217	0.28193409	2.3034086	20	1 24.8	19.6
193884	2001	<i>QZ</i> ₁₈₆	16.5	X	191.66137	320.62102	30.23133	3.19671	0.1819773	0.28997228	2.2606417	20	3 2.1	19.9
193885	2001	<i>QN</i> ₂₀₁	17.2	X	153.91818	14.56039	302.03918	3.53766	0.1780111	0.28199236	2.3030913	20	—	—
193886	2001	<i>QO</i> ₂₀₂	17.2	X	247.72313	304.71609	73.65507	2.55271	0.1031066	0.30540811	2.1838141	20	6 8.8	19.9
193887	2001	<i>QO</i> ₂₀₃	15.4	X	281.71849	18.59504	281.67594	8.30651	0.0472322	0.19639049	2.9312695	20	4 14.1	19.6
193888	2001	<i>QL</i> ₂₀₆	17.5	X	167.20142	209.36539	143.51788	3.95582	0.1513387	0.28886306	2.2664251	20	2 7.7	20.8
193889	2001	<i>QW</i> ₂₀₈	17.2	X	233.37336	336.50139	350.84883	2.79495	0.1402875	0.29651015	2.2272878	20	3 10.1	20.5
193890	2001	<i>QK</i> ₂₁₅	16.9	X	133.38187	207.89994	149.21762	3.90192	0.1849036	0.28344850	2.2951969	20	1 11.9	20.0
193891	2001	<i>QM</i> ₂₁₅	17.2	X	281.87717	124.59248	153.15992	3.32784	0.1482100	0.29624830	2.2286001	20	2 25.5	20.0
193892	2001	<i>QZ</i> ₂₁₅	16.8	X	61.90788	357.48371	27.79962	2.43608	0.2100815	0.27555112	2.3388440	20	—	—
193893	2001	<i>QF</i> ₂₁₈	16.7	X	85.35069	221.63285	150.19280	7.81397	0.1459023	0.27850527	2.3222756	20	—	—
193894	2001	<i>QH</i> ₂₂₅	17.0	X	110.20295	63.41383	338.81410	5.75598	0.1475859	0.28478037	2.2880351	20	2 7.4	19.6
193895	2001	<i>QJ</i> ₂₂₆	16.4	X	124.75369	120.51083	265.42856	4.66126	0.1708056	0.28499318	2.2868959	20	2 5.2	19.3
193896	2001	<i>QX</i> ₂₂₉	16.5	X	100.85025	160.39231	284.94512	5.13322	0.1212267	0.28975149	2.2617899	20	3 16.4	19.2
193897	2001	<i>QF</i> ₂₃₀	15.2	X	100.07041	82.78127	290.44671	8.37746	0.2419209	0.17060386	3.1527479	20	1 18.3	19.6
193898	2001	<i>QK</i> ₂₃₀	16.6	X	158.14053	123.78290	203.60183	6.98008	0.1588211	0.28450610	2.2895054	20	—	—
193899	2001	<i>QY</i> ₂₃₀	14.9	X	334.15915	153.97404	178.45049	17.44921	0.1055855	0.15256607	3.4686787	20	8 2.3	19.5
193900	2001	<i>QE</i> ₂₃₄	17.0	X	78.92729	189.17783	167.81193	5.84764	0.1748997	0.27520049	2.3408302	20	—	—
193901	2001	<i>QZ</i> ₂₃₇	16.4	X	58.78763	70.93269	344.43883	8.18747	0.1995424	0.27795667	2.3253303	20	—	—
193902	2001	<i>QJ</i> ₂₄₂	16.4	X	51.97949	209.96869	171.09863	5.34913	0.2421735	0.27286492	2.3541687	20	—	—
193903	2001	<i>QC</i> ₂₄₅	17.2	X	151.07734	163.19494	167.90237	6.69814	0.2129960	0.28256832	2.2999606	20	1 1.4	20.7
193904	2001	<i>QB</i> ₂₄₇	15.8	X	53.31250	24.83966	13.75105	11.65553	0.1597618	0.27429530	2.3459773	20	—	—
193905	2001	<i>QN</i> ₂₄₇	16.8	X	77.86816	287.63050	112.25135	2.73618	0.2230615	0.27743620	2.3282376	20	—	—
193906	2001	<i>QP</i> ₂₄₇	16.7	X	96.25131	321.98411	33.32612	3.12433	0.2539383	0.27612983	2.3355751	20	—	—
193907	2001	<i>QT</i> ₂₄₇	17.2	X	161.48113	239.08739	111.20426	2.11995	0.2294405	0.28517511	2.2859232	20	2 6.0	20.7
193908	2001	<i>QR</i> ₂₄₈	16.5	X	117.72049	22.15271	24.11696	7.29816	0.1753854	0.28390662	2.2927271	20	2 29.3	19.5
193909	2001	<i>QH</i>												

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>		
193921	2001	QE ₂₈₇	16.4	X	98.19920	86.07061	300.03588	3.86127	0.1450151	0.28182137	2.3040228	20	—	—
193922	2001	QC ₂₈₈	16.8	X	69.84867	99.98835	297.74901	6.04020	0.1084177	0.27969458	2.3156878	20	—	—
193923	2001	QY ₂₉₁	16.6	X	177.09044	44.05710	300.02418	1.50832	0.2164806	0.28691089	2.2766942	20	2 10.2	20.3
193924	2001	QR ₂₉₃	17.4	X	240.11613	255.60883	15.97139	2.87842	0.2235483	0.28840926	2.2688019	20	1 4.6	21.1
193925	2001	QC ₃₃₀	16.8	X	153.50431	355.11799	44.76398	5.08993	0.2144471	0.29109837	2.2548078	20	3 31.9	20.4
193926	2001	RW ₂	17.1	X	230.30635	119.20247	212.11960	3.13188	0.0787719	0.29441334	2.2378504	20	3 14.7	20.0
193927	2001	RQ ₅	17.1	X	215.83515	36.65802	245.57446	2.10026	0.2076427	0.28778886	2.2720614	20	—	—
193928	2001	RJ ₁₅	16.9	X	149.25618	76.38753	240.25808	8.56356	0.2304415	0.28152490	2.3056401	20	—	—
193929	2001	RF ₂₁	17.2	X	159.06467	36.64739	359.19814	3.91579	0.1591714	0.29255381	2.2473232	20	3 26.1	20.4
193930	2001	RF ₂₂	17.4	X	58.95529	204.47930	171.63228	1.24974	0.1966105	0.27502354	2.3418342	20	—	—
193931	2001	RM ₂₅	16.6	X	103.72810	113.13447	325.26610	4.00160	0.0332313	0.29145255	2.2529807	20	2 27.7	19.2
193932	2001	RO ₂₅	16.8	X	53.87851	227.59497	161.73848	6.30752	0.1262124	0.27610782	2.3356992	20	—	—
193933	2001	RR ₂₅	17.0	X	183.95491	316.68463	0.64512	3.58779	0.1432503	0.28712050	2.2755860	20	1 10.9	20.4
193934	2001	RU ₂₇	16.8	X	196.76500	91.49857	165.22353	6.20301	0.1603114	0.28253534	2.3001396	20	—	—
193935	2001	RX ₂₇	17.8	X	195.45211	138.28576	191.24451	1.06693	0.2391518	0.29084278	2.2561287	20	2 7.8	21.6
193936	2001	RG ₂₈	17.3	X	195.52190	121.29407	177.29942	4.37642	0.0877229	0.28642840	2.2792502	20	—	—
193937	2001	RQ ₂₈	17.7	X	118.81016	53.88376	344.80322	2.47352	0.1820615	0.28642497	2.2792684	20	2 18.3	20.6
193938	2001	RU ₃₀	17.1	X	77.94098	55.50437	335.51040	2.51486	0.1744727	0.27999195	2.3140479	20	—	—
193939	2001	RL ₃₂	17.0	X	130.13847	133.03496	180.61071	6.53812	0.1256711	0.27977726	2.3152316	20	—	—
193940	2001	RC ₃₄	17.7	X	249.98882	77.59872	228.16995	3.92127	0.2041942	0.29659411	2.2568674	20	2 21.7	21.1
193941	2001	RV ₃₄	16.8	X	119.85142	124.37122	290.66981	5.63897	0.1334594	0.28966687	2.2622304	20	3 2.2	19.6
193942	2001	RQ ₃₆	16.8	X	93.83789	153.42798	274.92520	2.80268	0.2143152	0.28520635	2.2857563	20	2 28.7	19.3
193943	2001	RV ₃₇	14.6	X	194.42467	305.30616	279.15560	4.83429	0.1339609	0.17190054	3.2034495	20	12 14.4	19.6
193944	2001	RY ₃₈	17.0	X	258.39005	81.84379	190.80428	6.06931	0.1495269	0.29292752	2.2454114	20	1 23.2	20.3
193945	2001	RT ₄₂	17.5	X	126.50723	89.28357	335.43622	6.04324	0.0560132	0.29138762	2.2533154	20	3 14.1	20.1
193946	2001	RH ₄₃	17.5	X	177.84147	63.22074	289.32581	6.10879	0.2306362	0.29009860	2.2599853	20	2 19.8	21.3
193947	2001	RA ₄₆	16.8	X	78.04542	262.97904	129.47616	3.06394	0.1723867	0.27889230	2.3201267	20	—	—
193948	2001	RQ ₄₇	16.1	X	221.35087	246.09279	10.63343	22.68248	0.2913873	0.28572848	2.2829708	20	—	—
193949	2001	RM ₅₂	16.8	X	274.82461	138.80760	333.96739	5.14851	0.0986902	0.29468287	2.2364857	20	2 17.3	19.7
193950	2001	RP ₅₆	17.5	X	247.44132	277.55240	157.17125	4.84717	0.1894675	0.29141573	2.2531705	20	1 16.1	21.0
193951	2001	RK ₅₈	15.3	X	170.85514	189.44087	75.51775	4.05996	0.1406896	0.17190264	3.2034235	20	—	—
193952	2001	RH ₆₂	17.2	X	150.62242	281.83913	126.16214	4.46200	0.1467087	0.29137899	2.2533599	20	4 3.9	20.4
193953	2001	RP ₆₄	16.4	X	27.75161	216.49835	249.88490	5.71402	0.1558853	0.28031206	2.3122859	20	—	—
193954	2001	RW ₆₅	16.8	X	56.28108	51.35517	301.46616	4.90627	0.1704459	0.27061536	2.3671971	20	—	—
193955	2001	RC ₆₈	16.9	X	250.65404	75.28203	233.51855	5.47984	0.2044327	0.29324354	2.2437979	20	2 13.4	20.5
193956	2001	RU ₆₈	16.4	X	247.17136	79.49991	232.97785	6.81023	0.1854106	0.29395212	2.2401907	20	2 27.7	20.0
193957	2001	RX ₇₂	16.6	X	130.39340	359.51744	353.40813	7.51939	0.1381499	0.28036917	2.3119718	20	—	—
193958	2001	RH ₇₄	16.5	X	123.55137	81.59014	205.80212	5.70274	0.2376908	0.27314484	2.3525600	20	—	—
193959	2001	RL ₈₀	17.0	X	141.97253	21.73630	298.78879	4.05441	0.1315259	0.28067206	2.3103083	20	—	—
193960	2001	RG ₈₁	16.3	X	64.99051	166.05591	221.29155	3.76447	0.1635370	0.27542450	2.3395608	20	—	—
193961	2001	RE ₈₃	16.5	X	77.22456	116.03866	315.01815	5.94247	0.1371045	0.28409935	2.2916901	20	1 25.2	18.5
193962	2001	RK ₈₆	17.4	X	205.36136	109.91178	223.11504	1.26311	0.2123075	0.29101716	2.2552273	20	2 19.2	21.2
193963	2001	RM ₈₈	17.0	X	156.95329	308.95589	30.24402	5.71472	0.1601369	0.28414027	2.2914701	20	1 13.4	20.3
193964	2001	RD ₉₀	17.6	X	167.85840	294.17725	64.58254	2.71327	0.2491290	0.28809092	2.2704729	20	2 23.8	21.2
193965	2001	RE ₉₀	17.4	X	166.57756	308.97588	32.10380	5.93383	0.1758907	0.28604028	2.2813115	20	1 27.6	20.8
193966	2001	RA ₉₂	17.0	X	283.71288	278.02046	21.44670	2.63298	0.1463120	0.29849758	2.2173904	20	3 28.9	19.7
193967	2001	RC ₉₃	16.9	X	113.33294	25.06657	33.08306	5.30568	0.1455771	0.28614295	2.2807658	20	3 5.5	19.7
193968	2001	RV ₉₃	16.7	X	170.12552	291.95765	44.67012	3.66714	0.1575657	0.28545010	2.2844549	20	1 23.1	20.0
193969	2001	RY ₉₄	16.2	X	93.42692	43.21316	333.54787	6.36329	0.1199294	0.27872293	2.3210665	20	—	—
193970	2001	RW ₉₈	17.2	X	179.89023	195.86966	162.79498	6.53664	0.1764972	0.29166089	2.2519077	20	2 28.5	20.7
193971	2001	RD ₉₉	17.2	X	148.33953	233.45139	99.35934	3.08936	0.1848352	0.28408042	2.2917919	20	—	—
193972	2001	RL ₁₀₂	17.1	X	175.64235	152.94860	164.88905	4.99511	0.0942192	0.28621389	2.2803888	20	—	—
193973	2001	RA ₁₀₃	17.7	X	143.91776	345.55065	336.63882	1.69356	0.2157956	0.28244892	2.3006087	20	—	—
193974	2001	RW ₁₀₄	17.2	X	66.15311	77.23898	351.46515	7.12643	0.1122852	0.28350267	2.2949045	20	—	—
193975	2001	RQ ₁₀₆	17.9	X	180.23416	262.58186	42.96147	3.98275	0.2190639	0.28553829	2.2839845	20	—	—
193976	2001	RV ₁₁₆	16.7	X	121.59554	63.12897	12.55443	4.95015	0.1177014	0.29163122	2.2520604	20	4 2.2	19.3
193977	2001	RG ₁₂₀	16.6	X	255.31436	139.69930	128.75208	6.82522	0.0927223	0.28989204	2.2610588	20	1 20.5	19.8
193978	2001	RD ₁₂₁	17.3	X	151.30209	275.63871	45.01302	2.92034	0.1989976	0.28242595	2.3007335	20	—	—
193979	2001	RK ₁₂₄	17.1	X	169.89213	272.49510	28.13287	2.09306	0.2229130	0.28319439	2.2965697	20	—	—
193980	2001	RL ₁₂₅	16.7	X	82.13722	348.40492	143.22314	6.09719	0.0594670	0.29497896	2.2349888	20	4 20.1	19.3
193981	2001	RB ₁₂₆	17.1	X	137.19955	316.75441	72.34139	3.24031	0.1716090	0.28732971	2.2744812	20	2 26.9	20.2
193982	2001	RK ₁₂₆	17.5	X	267.08383	159.87347	135.76441	5.92931	0.2352403	0.29731468	2.2232680	20	2 24.6	20.8
193983	2001	RE ₁₂₇	17.2	X	182.54501	253.82295	113.85530	4.14638	0.1275536	0.29183908	2.2509909	20	3 13.6	20.4
193984	2001	RU ₁₃₀	16.8	X	269.88595	222.26002	21.37606	4.51759	0.1869850	0.28943996	2.2634126	20	—	—
193985	2001	RQ ₁₃₂	15.4	X	99.74956	277.63397	85.56191	4.77318	0.1572155	0.17418522	3.1753761	20	—	—
193986	2001	RC ₁₃₄	16.2	X	43.15901	342.74458	156.22365	8.15335	0.1122795	0.28905534	2.2654199	20	2 29.5	18.2
193987	2001	RZ ₁₃₅	16.9	X	102.84647	10.93474	35.48057	5.38283	0.1291635	0.28398806	2.2922888	20	1 31.9	19.6
193988	2001	RC ₁₃₇	16.7	X	134.43731	250.88053	128.24318	5.79073	0.1528591	0.28521062	2.2857335	20	2 7.2	19.7
193989	2001	RC ₁₄₁	17.1	X	159.57926	289.22137	46.83143	5.80038	0.1980419	0.28444231	2.2898476	20	1 15.8	20.5
193990	2001	RQ ₁₄₇	16.9	X	177.39907	301.34001	29.27430	11.96091	0.1949293	0.28789536	2.2715010	20	1 27.8	20.7
193991	2001	RA ₁₄₉	16.6											

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>		
194001	2001	RV ₁₅₅	17.4	X	359.90023	165.95003	298.91902	1.21924	0.0776833	0.27764657	2.3270614	20	—	—
194002	2001	SG ₁	17.4	X	59.96925	100.46827	308.12534	1.83412	0.1757596	0.27694775	2.3309743	20	—	—
194003	2001	SP ₂	16.7	X	158.23308	88.79535	187.69696	5.40699	0.2512049	0.27753601	2.3276793	20	—	—
194004	2001	SB ₅	16.2	X	163.11318	303.36011	354.57767	7.38149	0.2454537	0.28004370	2.3137629	20	—	—
194005	2001	SH ₅	16.6	X	348.65465	297.05743	173.94159	22.68861	0.1783827	0.27558660	2.3386433	20	—	—
194006	2001	SG ₁₀	20.4	X	290.39038	101.60535	184.97036	4.25721	0.4243814	0.56533524	1.4485451	20	1 23.9	22.3
194007	2001	SX ₁₂	16.6	X	196.21292	293.14432	359.75128	5.75035	0.1633238	0.28539489	2.2847495	20	—	—
194008	2001	SE ₁₇	17.5	X	112.45101	330.51712	10.36638	4.57532	0.1738330	0.27809292	2.3245707	20	—	—
194009	2001	SE ₁₈	17.4	X	122.24908	272.49253	88.74711	1.98149	0.2240837	0.28153585	2.3055803	20	1 10.3	20.3
194010	2001	SC ₁₉	15.6	X	86.50260	258.89860	108.89500	2.64097	0.1788093	0.17212716	3.2006372	20	—	—
194011	2001	SX ₂₀	16.7	X	174.51396	268.60957	58.19251	3.26406	0.2549958	0.28558949	2.2837115	20	1 21.4	20.5
194012	2001	SX ₂₅	16.9	X	29.42294	51.18774	24.34771	3.19545	0.1587088	0.27597452	2.3364512	20	—	—
194013	2001	SO ₂₇	17.7	X	157.40466	326.76526	26.66694	2.67558	0.1753865	0.28554259	2.2839616	20	2 2.1	20.9
194014	2001	SS ₂₈	16.9	X	127.03481	22.38588	19.14467	6.79223	0.0904456	0.28662440	2.2782110	20	2 21.8	19.7
194015	2001	SK ₂₉	17.4	X	177.62910	144.90520	178.96234	3.50366	0.2051202	0.28560490	2.2836294	20	1 15.9	21.0
194016	2001	SR ₃₀	16.4	X	120.82445	19.32555	20.96288	4.75926	0.1772765	0.28491213	2.2873296	20	2 24.1	19.3
194017	2001	SX ₃₃	17.3	X	191.97352	153.04065	172.32627	3.15156	0.1429682	0.28702827	2.2760734	20	1 27.5	20.7
194018	2001	SD ₃₄	17.5	X	127.69389	144.28535	180.04696	6.37284	0.1802519	0.27772577	2.3266190	20	—	—
194019	2001	SQ ₃₄	17.0	X	94.71574	21.79248	20.92537	5.54621	0.1597344	0.28122526	2.3072775	20	1 19.2	19.5
194020	2001	SF ₃₆	17.4	X	55.12409	255.07559	130.95589	2.25390	0.1911403	0.27333151	2.3514888	20	—	—
194021	2001	SG ₃₆	16.9	X	246.86938	190.55042	108.87670	1.37072	0.2372378	0.29316860	2.2441803	20	2 11.7	20.3
194022	2001	SC ₃₈	15.6	X	328.53327	197.08168	173.28375	9.73807	0.1243793	0.20581088	2.8411260	20	9 23.8	18.7
194023	2001	SW ₃₉	16.7	X	102.58760	205.01461	160.85371	7.67624	0.1295814	0.27800548	2.3250581	20	—	—
194024	2001	SJ ₄₀	16.7	X	190.32699	246.55264	36.21317	10.07758	0.1342186	0.28042359	2.3116727	20	—	—
194025	2001	SN ₅₀	17.4	X	141.64101	319.59562	56.46064	6.61416	0.1796427	0.28505392	2.2865711	20	2 17.3	20.7
194026	2001	SG ₅₁	17.4	X	115.40760	318.09507	38.74457	3.59825	0.1833922	0.27986843	2.3147288	20	—	—
194027	2001	SH ₅₈	16.7	X	122.35246	178.30566	190.03817	3.23091	0.1499578	0.28126587	2.3070554	20	1 8.2	19.5
194028	2001	SO ₆₂	17.1	X	96.57422	211.95676	178.82283	0.95835	0.2435998	0.27884265	2.3204021	20	1 18.1	19.4
194029	2001	SK ₆₄	17.3	X	140.00675	182.05757	166.54161	3.45966	0.2613305	0.28168486	2.3047671	20	1 17.7	20.7
194030	2001	SN ₇₀	16.5	X	61.66720	301.26734	81.77422	8.40920	0.1933678	0.27158339	2.3615687	20	—	—
194031	2001	SQ ₇₅	17.0	X	155.86729	48.23153	280.14038	4.09950	0.1472578	0.28174918	2.3044163	20	—	—
194032	2001	SV ₇₇	16.3	X	229.32712	48.89578	175.60695	24.03400	0.2096965	0.28062931	2.3105429	20	—	—
194033	2001	SD ₇₈	17.0	X	37.46438	91.08526	3.25185	6.48459	0.1166989	0.28151336	2.3057030	20	—	—
194034	2001	SU ₇₈	16.9	X	112.84237	268.88827	176.71142	7.07605	0.1146889	0.29105930	2.2550096	20	4 5.4	19.6
194035	2001	SU ₈₁	16.6	X	359.24317	34.62033	182.64167	7.25124	0.0661576	0.29879466	2.2159205	20	4 9.0	18.7
194036	2001	SA ₈₄	16.9	X	298.88928	107.00015	199.14539	4.28946	0.0902254	0.30216168	2.1994282	20	5 9.6	19.3
194037	2001	SW ₈₄	17.3	X	222.07359	75.50006	206.33774	3.28348	0.1481688	0.28836597	2.2690290	20	1 1.9	20.9
194038	2001	SV ₈₇	15.1	X	332.54208	188.80584	174.24664	10.12871	0.1244339	0.15573894	3.4214057	20	9 10.4	19.2
194039	2001	SF ₈₈	16.3	X	85.40508	287.93149	181.40397	6.84645	0.0687857	0.29248217	2.2476902	20	3 22.2	18.4
194040	2001	SJ ₉₁	16.3	X	127.82257	172.22072	315.68869	3.25149	0.1142798	0.30011646	2.2094093	20	6 22.1	19.1
194041	2001	SZ ₉₃	16.8	X	130.61014	343.21424	334.46568	3.89946	0.1115489	0.27822612	2.3238287	20	—	—
194042	2001	SL ₉₅	17.3	X	202.23507	90.79394	194.79999	2.92974	0.1629782	0.28530008	2.2852556	20	—	—
194043	2001	SJ ₉₈	17.4	X	344.48560	38.20187	273.68235	1.61741	0.1970771	0.25658934	2.4526955	20	8 6.7	19.2
194044	2001	SV ₉₈	16.9	X	75.09439	304.54623	192.13179	4.84040	0.1133888	0.29347558	2.2426151	20	4 23.8	19.1
194045	2001	SV ₉₉	17.1	X	267.63949	2.12311	195.21669	6.27472	0.0410541	0.27916905	2.3185931	20	—	—
194046	2001	SB ₁₀₀	17.3	X	196.13952	41.35804	215.18902	3.67691	0.2006231	0.28053797	2.3110444	20	—	—
194047	2001	ST ₁₀₀	17.7	X	27.09323	152.63001	279.17145	2.14675	0.2121398	0.27504878	2.3416909	20	—	—
194048	2001	SK ₁₀₂	18.3	X	129.91724	113.11782	257.40022	1.21878	0.1865980	0.28371493	2.2937597	20	1 25.7	21.2
194049	2001	SD ₁₀₅	16.3	X	6.58816	151.13011	276.04308	5.02780	0.1022806	0.27150038	2.3620500	20	—	—
194050	2001	SF ₁₀₅	17.3	X	142.24185	97.62727	271.52757	2.91964	0.2266572	0.28456508	2.2891890	20	2 10.2	20.7
194051	2001	SV ₁₀₆	16.4	X	180.43677	25.53391	316.96435	5.37354	0.1925474	0.28613246	2.2808215	20	2 10.1	20.1
194052	2001	SJ ₁₀₆	16.4	X	54.11430	113.91938	330.24524	6.11294	0.0809078	0.28086187	2.3092672	20	—	—
194053	2001	SX ₁₁₆	16.9	X	127.34372	80.44539	262.13587	4.92735	0.1341640	0.28136006	2.3065405	20	—	—
194054	2001	SJ ₁₁₇	16.9	X	228.93953	345.98230	265.34469	4.37873	0.1512400	0.28453766	2.2893360	20	—	—
194055	2001	SS ₁₁₈	17.2	X	118.26286	57.38970	335.44842	8.38699	0.1077582	0.28544250	2.2844954	20	1 30.9	20.0
194056	2001	SW ₁₂₁	16.7	X	94.07475	144.76284	292.51112	4.77791	0.0620285	0.28800918	2.2709025	20	2 16.2	19.3
194057	2001	SX ₁₂₂	16.6	X	132.26791	126.04521	301.02432	5.65659	0.0851881	0.29343022	2.2428462	20	3 26.9	19.5
194058	2001	SA ₁₂₃	17.1	X	166.22041	53.32233	290.33154	3.81814	0.1352256	0.28746484	2.2737684	20	1 24.5	20.2
194059	2001	SY ₁₂₃	17.4	X	216.73470	13.66455	293.27075	3.45979	0.1421542	0.29042408	2.2582965	20	1 27.9	20.8
194060	2001	SQ ₁₂₅	16.7	X	107.31523	3.21554	329.85357	6.45304	0.1110309	0.27685820	2.3314769	20	—	—
194061	2001	SS ₁₂₅	17.1	X	256.88952	97.13980	190.68046	5.58452	0.2108424	0.29462273	2.2367900	20	2 5.4	20.6
194062	2001	SS ₁₂₆	16.8	X	77.76887	192.16885	339.77879	4.45003	0.0912917	0.30068136	2.2066411	20	6 15.7	19.3
194063	2001	SL ₁₂₈	17.2	X	56.80840	211.41878	201.09940	3.70889	0.2071757	0.27825923	2.3236444	20	—	—
194064	2001	SG ₁₂₉	17.2	X	190.51706	138.03000	204.93969	4.94642	0.2118114	0.29003141	2.2603344	20	2 18.1	21.0
194065	2001	SX ₁₂₉	17.0	X	198.69497	104.43127	193.95384	6.57610	0.1627829	0.28582822	2.2824397	20	1 1.2	20.7
194066	2001	SE ₁₃₀	17.0	X	5.49568	200.19762	338.23641	3.72067	0.0424497	0.29058980	2.2574379	20	2 23.0	19.2
194067	2001	SO ₁₃₉	14.5	X	351.79642	320.55259	4.78167	9.63738	0.0698849	0.15138148	3.4867507	20	8 26.7	19.1
194068	2001	SB ₁₄₀	17.4	X	150.43293	131.00422	189.78252	5.18029	0.1805624	0.28099839	2.3085192	20	—	—
194069	2001	SP ₁₄₁	17.4	X	49.50034	187.86116	250.34172	1.85288	0.1507889	0.28032178	2.3122324	20	—	—
194070	2001	SM ₁₄₂	16.8	X	90.18190	126.86874	324.84432	5.52738	0.0616404	0.28937760	2.2637377	20	3 2.1	19.2
194071	2001	SL ₁₄₄	17.3	X	67.20576									

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>
194081 2001 <i>SM</i> ₁₅₆	16.9	X	34.30168	104.85063	288.34787	3.60539	0.2387520	0.27155179	2.3617519	20	—	—
194082 2001 <i>SK</i> ₁₅₇	16.5	X	148.82318	37.96240	327.87761	6.53995	0.1477038	0.28558635	2.2837282	20	2 5.9	19.6
194083 2001 <i>SP</i> ₁₅₉	16.8	X	14.53466	146.27844	294.29383	2.23156	0.0747136	0.27520440	2.3408081	20	—	—
194084 2001 <i>SP</i> ₁₆₃	17.1	X	106.10012	164.96346	196.28628	7.52913	0.2263683	0.27818262	2.3240710	20	—	—
194085 2001 <i>SG</i> ₁₆₆	17.3	X	233.22335	71.64133	182.48074	4.39764	0.1594199	0.28536407	2.2849140	20	—	—
194086 2001 <i>SP</i> ₁₆₇	16.9	X	50.63452	177.90543	186.69560	6.86573	0.1310506	0.27125125	2.3634961	20	—	—
194087 2001 <i>ST</i> ₁₆₈	16.9	X	138.91899	138.33325	170.69963	3.15088	0.1792347	0.27615743	2.3354195	20	—	—
194088 2001 <i>SQ</i> ₁₇₁	16.6	X	160.37814	301.26076	28.39485	5.38005	0.1218569	0.28351523	2.2948367	20	—	—
194089 2001 <i>SE</i> ₁₇₄	16.7	X	180.58093	214.43619	74.59738	3.29758	0.2391727	0.28159168	2.3052755	20	—	—
194090 2001 <i>SH</i> ₁₇₆	17.1	X	62.07979	53.41858	28.04989	10.17882	0.1956999	0.27985449	2.3148057	20	1 23.3	19.1
194091 2001 <i>SH</i> ₁₈₂	17.8	X	165.93577	187.50116	142.35294	1.90838	0.1698824	0.28644294	2.2791730	20	1 10.1	21.2
194092 2001 <i>SG</i> ₁₈₆	17.4	X	174.67211	206.13563	107.96763	3.86541	0.2025066	0.28552902	2.2840339	20	1 1.7	21.0
194093 2001 <i>SA</i> ₁₉₉	17.6	X	144.26227	288.99469	100.23655	1.48298	0.2372190	0.28777607	2.2721287	20	3 10.9	21.1
194094 2001 <i>SG</i> ₂₀₁	16.4	X	148.14240	8.62207	40.72824	6.70212	0.0747966	0.29240344	2.2480936	20	3 27.2	19.3
194095 2001 <i>SS</i> ₂₀₄	16.7	X	128.71302	318.53619	18.52194	5.32521	0.1717678	0.28021550	2.3128171	20	—	—
194096 2001 <i>SS</i> ₂₀₆	17.0	X	113.12017	12.12028	47.17806	4.97860	0.1943966	0.28662759	2.2781941	20	3 14.0	19.9
194097 2001 <i>ST</i> ₂₀₇	17.1	X	297.65740	6.97126	170.94384	5.35501	0.0534053	0.28032338	2.3122236	20	—	—
194098 2001 <i>SV</i> ₂₀₈	17.2	X	183.37846	140.09119	145.03304	3.62688	0.1617789	0.28198484	2.3031323	20	—	—
194099 2001 <i>SG</i> ₂₀₈	17.1	X	114.81642	320.45605	60.39111	3.83530	0.1928733	0.28259100	2.2998376	20	1 22.9	19.8
194100 2001 <i>SW</i> ₂₁₀	17.0	X	76.34645	258.01834	129.68092	3.56725	0.2071286	0.27736426	2.3286402	20	—	—
194101 2001 <i>SE</i> ₂₁₂	18.2	X	176.73972	287.76230	24.09044	2.48767	0.2443153	0.28505573	2.2865614	20	1 4.0	21.8
194102 2001 <i>SX</i> ₂₁₂	17.5	X	177.64940	175.64818	169.25915	8.36327	0.1467105	0.28792713	2.2713340	20	2 6.5	20.9
194103 2001 <i>SW</i> ₂₁₄	17.0	X	186.74082	248.57727	117.99514	4.17461	0.1832081	0.29141394	2.2531797	20	3 18.0	20.5
194104 2001 <i>SF</i> ₂₁₅	16.9	X	146.35288	338.05161	29.23452	8.01614	0.1306082	0.28540969	2.2846705	20	2 5.7	20.1
194105 2001 <i>SJ</i> ₂₂₂	17.3	X	102.33205	351.23713	66.98942	2.46063	0.0818530	0.28533631	2.2850622	20	2 7.6	19.9
194106 2001 <i>SY</i> ₂₂₃	16.8	X	114.79433	25.52485	28.05691	4.74773	0.1184165	0.28609566	2.2810171	20	2 25.7	19.5
194107 2001 <i>SG</i> ₂₂₅	17.1	X	346.06053	266.38966	170.20667	4.78861	0.1804885	0.26911299	2.3759991	20	—	—
194108 2001 <i>SH</i> ₂₃₀	17.2	X	84.94000	200.38355	173.68193	2.36524	0.2326126	0.27636108	2.3342720	20	—	—
194109 2001 <i>SX</i> ₂₃₁	16.8	X	45.10932	268.11740	185.87972	1.20784	0.1748831	0.27919036	2.3184751	20	—	—
194110 2001 <i>SW</i> ₂₃₃	16.9	X	22.10628	301.29445	165.61699	4.88330	0.2003434	0.27687968	2.3313563	20	—	—
194111 2001 <i>SK</i> ₂₃₆	18.0	X	211.72028	169.61030	125.29209	1.33707	0.2416613	0.28822176	2.2697858	20	1 10.2	21.9
194112 2001 <i>SF</i> ₂₃₇	16.9	X	5.74633	177.23057	16.91876	7.36606	0.0612536	0.29236824	2.2482741	20	3 17.8	19.1
194113 2001 <i>SO</i> ₂₄₃	16.7	X	353.89631	354.57064	170.75951	6.99379	0.0477979	0.28566921	2.2832866	20	1 16.6	19.3
194114 2001 <i>SB</i> ₂₄₉	16.7	X	99.68741	346.83185	26.60642	9.60238	0.0749229	0.27753916	2.3276617	20	—	—
194115 2001 <i>SL</i> ₂₄₉	16.7	X	6.46462	329.62941	165.22197	3.18199	0.0967248	0.27973747	2.3154511	20	—	—
194116 2001 <i>SS</i> ₂₅₀	17.0	X	117.87724	199.09436	132.87816	2.82690	0.2312032	0.27668925	2.3324259	20	—	—
194117 2001 <i>SV</i> ₂₅₃	17.3	X	121.87182	207.26530	129.43760	3.33653	0.1720167	0.27688190	2.3313439	20	—	—
194118 2001 <i>SM</i> ₂₅₇	16.9	X	105.26714	228.18830	72.51793	2.37607	0.1736860	0.26999913	2.3707975	20	—	—
194119 2001 <i>SN</i> ₂₅₈	15.2	X	152.75609	61.25883	300.26580	7.99738	0.1084748	0.18151507	3.0893060	20	2 10.9	20.1
194120 2001 <i>SE</i> ₂₆₁	17.2	X	132.66283	106.91690	192.50961	2.44739	0.2536301	0.27607192	2.3359017	20	—	—
194121 2001 <i>SO</i> ₂₆₁	16.0	X	143.67685	65.45223	319.73537	6.83463	0.1119524	0.28339605	2.2954800	20	2 20.0	19.1
194122 2001 <i>SU</i> ₂₆₂	15.4	X	132.00957	23.97726	251.42719	23.43719	0.1607012	0.27137078	2.3628020	20	12 31.3	19.4
194123 2001 <i>SA</i> ₂₆₃	16.4	X	19.45018	326.83716	191.82966	24.99967	0.1693873	0.28747974	2.2736899	20	2 4.9	18.9
194124 2001 <i>SD</i> ₂₆₃	16.7	X	97.72940	262.91195	54.84443	10.29410	0.2071816	0.27191390	2.3596547	20	—	—
194125 2001 <i>SV</i> ₂₆₆	16.7	X	141.79702	316.34531	68.26012	3.08925	0.2271269	0.28437433	2.2902125	20	3 3.0	20.0
194126 2001 <i>SG</i> ₂₇₆	17.8	X	68.62485	200.38808	35.11689	26.67734	0.2477454	0.57473786	1.4327030	20	11 2.2	19.0
194127 2001 <i>SF</i> ₂₈₁	16.7	X	61.54448	69.23785	354.58200	5.15677	0.1562180	0.27756735	2.3275041	20	—	—
194128 2001 <i>SP</i> ₂₈₁	16.5	X	175.16453	102.06544	241.94707	7.54230	0.1436242	0.28539327	2.2847581	20	2 1.6	19.9
194129 2001 <i>SO</i> ₂₈₅	16.6	X	338.60253	108.98412	13.11424	6.71071	0.0811445	0.27432487	2.3458087	20	—	—
194130 2001 <i>SJ</i> ₂₉₃	16.8	X	344.03339	160.28696	350.98466	4.79292	0.0569416	0.28375569	2.2935401	20	—	—
194131 2001 <i>SE</i> ₂₉₉	15.6	X	281.96680	215.02500	192.92463	5.52975	0.1004207	0.15344107	3.4554794	20	8 23.7	20.4
194132 2001 <i>SK</i> ₃₀₀	17.3	X	104.62602	244.50723	248.81809	2.61007	0.0874060	0.29741478	2.2227691	20	5 27.4	19.9
194133 2001 <i>SG</i> ₃₀₁	17.5	X	318.72372	48.42846	191.15521	3.76967	0.1327573	0.29464578	2.2366734	20	2 23.1	19.9
194134 2001 <i>SJ</i> ₃₁₂	16.7	X	291.89319	249.66119	30.73590	7.17036	0.1213581	0.29733027	2.2231903	20	3 19.2	19.4
194135 2001 <i>SJ</i> ₃₁₄	16.1	X	328.99249	144.60680	319.92185	7.04764	0.0591657	0.27010898	2.3701548	20	—	—
194136 2001 <i>SD</i> ₃₁₅	16.7	X	328.19752	341.71679	282.70008	6.68826	0.1437526	0.29876448	2.2160696	20	4 11.4	18.8
194137 2001 <i>SF</i> ₃₁₅	16.4	X	68.38502	105.20890	22.74571	23.50402	0.2248289	0.28826089	2.2695804	20	4 16.6	18.5
194138 2001 <i>SX</i> ₃₁₈	17.6	X	176.83525	294.27875	6.17355	7.50847	0.1208135	0.28234006	2.3012001	20	—	—
194139 2001 <i>SQ</i> ₃₂₁	16.6	X	186.55133	36.51968	257.71168	6.63425	0.1322154	0.28313934	2.2968673	20	—	—
194140 2001 <i>ST</i> ₃₂₃	16.4	X	160.50636	157.60175	122.96178	6.25529	0.0983139	0.27653362	2.3333009	20	—	—
194141 2001 <i>SB</i> ₃₂₄	16.6	X	38.20605	183.81405	284.10849	6.26712	0.0690988	0.28248992	2.3003862	20	1 5.4	18.8
194142 2001 <i>SW</i> ₃₂₄	15.2	X	247.91036	270.96435	262.41058	4.67549	0.0385067	0.16839868	3.2477077	20	12 23.3	19.8
194143 2001 <i>SP</i> ₃₂₆	16.5	X	237.31863	254.99411	315.97925	6.07844	0.0557180	0.27739842	2.3284490	20	—	—
194144 2001 <i>SE</i> ₃₂₈	17.7	X	188.60399	124.59489	168.46351	5.25193	0.1757102	0.28666855	2.2779771	20	—	—
194145 2001 <i>SC</i> ₃₃₇	17.6	X	233.36040	162.23695	186.32562	1.29687	0.0939525	0.29673601	2.2261575	20	4 10.7	20.7
194146 2001 <i>SE</i> ₃₃₇	17.6	X	68.40670	97.98450	339.70475	2.65182	0.2086516	0.28175423	2.3043888	20	1 29.4	19.3
194147 2001 <i>SW</i> ₃₄₉	15.2	X	328.72654	313.81152	53.66538	6.71874	0.1239796	0.15374483	3.4509265	20	9 13.5	19.5
194148 2001 <i>SP</i> ₃₅₀	17.1	X	217.90401	283.72859	16.36837	5.19240	0.1718723	0.28632088	2.2798208	20	1 22.8	20.7
194149 2001 <i>TJ</i>	17.4	X	73.84437	43.57491	20.57478	2.42937	0.1510276	0.28094211	2.3088275	20	1 11.4	19.5
194150 2001 <i>TF</i> ₄	16.8	X	191.32956	141.77487	194.10286	6.42378	0.1568038	0.28739243	2.2741503	20	2 8.3	20.4
194151 2001 <i>TT</i> ₆	16.9	X	85.57814	227.13887	120.07478	4.60853	0.1766176	0.27345625	2.3507736	20	—	—
194152 2001 <i>TW</i> ₇	17.0	X	74.73479	348.18430	44.07975	10.18320	0.2153931	0.27527043	2.3404337	20		

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>		
194161	2001	TQ ₁₉	16.3	X	150.62606	68.70736	316.86212	6.82040	0.1037848	0.28551205	2.2841244	20	2 26.8	19.4
194162	2001	TK ₂₂	17.6	X	97.64575	58.76658	327.16802	1.46522	0.2232063	0.27939026	2.3173691	20	1 9.7	19.9
194163	2001	TV ₂₂	17.1	X	137.82054	325.95048	37.39504	5.05891	0.1478514	0.28336598	2.2956424	20	1 22.2	20.1
194164	2001	TE ₂₃	17.1	X	344.80090	126.91765	276.79545	1.77031	0.1771504	0.26409614	2.4059948	20	—	—
194165	2001	TQ ₂₆	16.6	X	66.66522	355.60530	7.24269	8.77218	0.1274656	0.27164616	2.3612049	20	—	—
194166	2001	TC ₂₈	16.3	X	104.17795	340.43528	355.99888	6.57300	0.1661616	0.27392283	2.3481035	20	—	—
194167	2001	TC ₃₁	15.8	X	271.81527	236.64582	330.72376	6.47533	0.0812380	0.27530277	2.3402504	20	—	—
194168	2001	TA ₃₂	16.0	X	293.33743	62.17795	356.52912	7.81048	0.1092236	0.25661848	2.4525099	20	10 10.1	18.5
194169	2001	TC ₃₂	16.2	X	104.49153	122.32722	251.94077	9.04283	0.1029065	0.27654096	2.3332596	20	—	—
194170	2001	TG ₃₆	16.5	X	49.33532	81.39277	18.04626	9.23568	0.2359743	0.27652853	2.3333296	20	1 27.0	18.1
194171	2001	TW ₃₇	15.9	X	61.84053	316.38075	41.83186	14.73391	0.2512626	0.26810319	2.3819614	20	—	—
194172	2001	TU ₃₈	15.8	X	54.62260	3.49786	292.96738	7.05519	0.2484694	0.26045679	2.4283555	20	11 23.9	19.5
194173	2001	TM ₄₄	16.2	X	31.38476	39.27509	38.06987	9.07063	0.1858592	0.27032919	2.3688674	20	—	—
194174	2001	TY ₄₉	17.4	X	128.06107	333.68689	348.77617	2.57704	0.2297307	0.27827931	2.3235326	20	—	—
194175	2001	TB ₅₁	17.2	X	179.97345	130.63377	197.00490	4.45349	0.2770602	0.28665406	2.2780538	20	1 25.7	21.1
194176	2001	TR ₅₁	17.1	X	54.24220	313.05187	103.56401	3.09492	0.2135897	0.27552148	2.3390118	20	—	—
194177	2001	TF ₅₃	16.9	X	99.70972	278.73403	87.38431	3.23121	0.2206838	0.27758063	2.3274299	20	—	—
194178	2001	TF ₅₄	16.5	X	76.39742	189.51610	197.18082	23.60680	0.2121767	0.27758692	2.3273947	20	—	—
194179	2001	TY ₅₇	17.0	X	273.83080	30.80957	243.77374	1.42812	0.1222199	0.29117389	2.2544179	20	2 14.9	20.0
194180	2001	TF ₅₉	17.1	X	100.16554	157.95773	220.43192	1.71440	0.2339862	0.27889688	2.3201013	20	1 4.5	19.3
194181	2001	TN ₅₉	16.4	X	24.42803	230.02077	197.43811	9.91218	0.0484525	0.27418975	2.3465793	20	—	—
194182	2001	TC ₆₀	16.4	X	94.13869	277.73980	81.83431	3.61495	0.1881345	0.27537455	2.3398437	20	—	—
194183	2001	TJ ₆₂	16.6	X	87.99139	25.67293	51.20126	4.89692	0.1726174	0.28286401	2.2983575	20	2 29.4	19.1
194184	2001	TM ₆₃	17.0	X	89.42430	356.24876	45.57958	4.26478	0.1163438	0.27914091	2.3187489	20	1 1.5	19.5
194185	2001	TV ₆₅	16.3	X	117.97293	121.94531	240.89937	2.37850	0.1763455	0.27893054	2.3199146	20	—	—
194186	2001	TE ₆₆	16.7	X	67.74067	3.56628	9.49456	2.19998	0.1803593	0.27255919	2.3559288	20	—	—
194187	2001	TH ₆₉	16.7	X	25.04456	207.43455	194.32807	4.51448	0.0767182	0.27083112	2.3659397	20	—	—
194188	2001	TV ₆₉	17.2	X	14.66693	113.30455	343.42145	0.95261	0.1935636	0.27475433	2.3433637	20	—	—
194189	2001	TQ ₇₀	16.6	X	167.55607	315.19937	58.05984	6.83735	0.1125757	0.28744725	2.2738612	20	3 6.5	19.9
194190	2001	TF ₇₃	17.2	X	35.52209	245.83188	186.46505	2.30763	0.1922934	0.27383283	2.3486179	20	—	—
194191	2001	TG ₇₅	17.5	X	109.92424	199.24993	200.90362	1.52624	0.2140202	0.28140030	2.3063206	20	2 13.5	20.2
194192	2001	TE ₇₈	16.3	X	117.95712	243.47694	68.70575	5.64450	0.2487214	0.27312245	2.3526886	20	—	—
194193	2001	TA ₈₁	16.5	X	316.33181	171.11573	278.89199	5.58873	0.0813034	0.26855441	2.3792926	20	—	—
194194	2001	TL ₈₁	16.6	X	72.13514	227.12661	252.31286	6.60004	0.0271034	0.29052297	2.2577840	20	3 6.8	19.3
194195	2001	TK ₈₂	16.6	X	213.49510	321.47278	320.82515	6.52581	0.1078063	0.28401524	2.2921425	20	—	—
194196	2001	TV ₈₂	17.0	X	167.49550	130.84289	202.10119	22.72924	0.2163401	0.28504729	2.2866065	20	1 15.0	21.1
194197	2001	TN ₈₅	17.1	X	41.58348	149.36449	286.05864	3.85272	0.2088161	0.27643122	2.3338771	20	—	—
194198	2001	TX ₈₅	16.8	X	146.37652	72.75587	250.31919	4.46651	0.0996814	0.27933900	2.3176526	20	—	—
194199	2001	TE ₈₈	17.7	X	98.82223	60.82141	328.61923	3.83255	0.1701251	0.28012165	2.3133336	20	1 7.7	20.1
194200	2001	TS ₉₀	16.7	X	137.50070	350.38656	338.23920	6.26331	0.1172284	0.27832926	2.3232546	20	—	—
194201	2001	TQ ₉₁	17.5	X	97.75202	191.48341	257.22423	2.07840	0.2191318	0.28578403	2.2826750	20	4 4.1	20.2
194202	2001	TE ₉₃	16.8	X	101.97436	34.47396	333.08481	6.00457	0.1186966	0.27773080	2.3265908	20	—	—
194203	2001	TE ₉₇	16.7	X	133.64800	65.64416	273.07105	2.11329	0.1677061	0.27871128	2.3211312	20	—	—
194204	2001	TE ₉₈	16.3	X	144.80020	73.93976	230.20873	5.34301	0.2034433	0.27671787	2.3322651	20	—	—
194205	2001	TV ₉₈	16.6	X	154.67808	109.08510	204.89085	6.04408	0.1279265	0.27837293	2.3230116	20	—	—
194206	2001	TD ₉₉	17.3	X	64.50629	183.21800	205.24439	3.95891	0.1044757	0.28007508	2.3135900	20	—	—
194207	2001	TG ₉₉	14.0	X	236.90196	281.58428	338.71639	6.18779	0.0484418	0.12410769	3.9804936	20	1 19.2	19.8
194208	2001	TT ₁₀₁	17.2	X	29.47969	60.31367	34.37168	1.71897	0.1650047	0.27704922	2.3304051	20	—	—
194209	2001	TJ ₁₀₄	17.1	X	80.47340	248.57652	172.36604	2.13481	0.1872600	0.27858286	2.3218445	20	1 24.1	19.1
194210	2001	TW ₁₁₀	17.2	X	128.03128	107.76110	290.91693	2.39302	0.2443724	0.28434921	2.2903474	20	3 6.5	20.5
194211	2001	TE ₁₁₁	16.8	X	28.88464	50.60509	8.72415	6.39964	0.0937479	0.27222526	2.3578550	20	—	—
194212	2001	TH ₁₁₄	17.2	X	136.50289	38.14568	334.22792	7.17425	0.2925918	0.28279865	2.2987116	20	2 16.9	20.7
194213	2001	TA ₁₂₃	16.1	X	23.11180	205.80176	222.73912	24.77943	0.2028517	0.27142523	2.3624860	20	—	—
194214	2001	TD ₁₂₄	16.6	X	77.90053	141.50049	267.58667	7.79704	0.2028950	0.27914011	2.3187533	20	1 3.5	18.3
194215	2001	TE ₁₂₄	14.8	X	309.47930	327.60547	311.77251	11.71696	0.1155812	0.19201831	2.9755982	20	4 12.0	18.9
194216	2001	TM ₁₃₃	17.2	X	110.83045	288.22339	116.75961	6.79889	0.1127539	0.28282414	2.2985735	20	2 6.6	19.8
194217	2001	TW ₁₃₃	16.4	X	185.69468	217.77796	104.35675	7.17425	0.2010773	0.28491964	2.2872894	20	1 21.7	20.1
194218	2001	TU ₁₃₅	17.0	X	176.37966	45.06286	260.07940	6.37884	0.1340113	0.28178514	2.3042203	20	—	—
194219	2001	TD ₁₃₇	16.3	X	154.62054	233.99871	115.42044	8.44299	0.1863294	0.28451417	2.2894621	20	1 25.8	19.5
194220	2001	TK ₁₃₉	16.4	X	269.87456	233.98606	39.41430	7.63611	0.0754933	0.29266158	2.2467715	20	2 18.5	19.4
194221	2001	TN ₁₄₁	17.1	X	204.37880	249.87779	48.96975	5.93770	0.1807066	0.28609373	2.2810273	20	1 8.7	20.8
194222	2001	TX ₁₄₃	17.1	X	155.86495	148.67095	154.10953	6.81735	0.1363817	0.27850366	2.3222846	20	—	—
194223	2001	TE ₁₄₅	16.9	X	67.53439	25.97255	87.02961	5.17288	0.0988921	0.28659267	2.2783791	20	3 7.2	19.2
194224	2001	TR ₁₄₅	17.2	X	58.59881	268.05590	165.55816	5.48424	0.1341493	0.27928827	2.3179332	20	—	—
194225	2001	TX ₁₄₅	14.9	X	357.68570	271.01578	107.20424	6.44032	0.0166323	0.15852307	3.3812276	20	11 6.1	19.7
194226	2001	TQ ₁₄₇	16.7	X	19.72517	39.43750	81.48170	5.69611	0.0305239	0.28137645	2.3064509	20	—	—
194227	2001	TW ₁₄₇	17.0	X	187.33606	172.51728	138.73475	5.00115	0.2562218	0.28543893	2.2845145	20	1 11.7	21.0
194228	2001	TL ₁₅₀	17.2	X	75.50829	290.27236	70.04077	6.18412	0.1906946	0.27310181	2.3528071	20	—	—
194229	2001	TR ₁₅₀	17.5	X	89.91346	232.40134	162.77192	6.62581	0.1089865	0.27878177	2.3207399	20	—	—
194230	2001	TF ₁₅₂	16.8	X	89.91111	312.96067	56.81037	7.80989	0.1223482	0.27561931	2.3384583	20	—	—
194231	2001	TW ₁₅₄	16.6	X	111.43504	341.18700	121.06982	6.72395	0.1414210	0.29015191	2.2597			

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>
194241 2001 <i>TO</i> ₁₇₉	16.9	X	42.75285	132.11019	326.62403	2.16327	0.1385324	0.27957220	2.3163636	20	—	—
194242 2001 <i>TG</i> ₁₈₉	16.9	X	94.61263	44.47155	324.99198	3.97087	0.1879505	0.27562416	2.3384308	20	—	—
194243 2001 <i>TQ</i> ₁₉₀	16.8	X	330.91726	160.84277	271.07333	2.59959	0.1952717	0.26374830	2.4081097	20	—	—
194244 2001 <i>TX</i> ₁₉₀	16.9	X	17.31446	139.23297	261.10662	4.41012	0.1233686	0.26712598	2.3877671	20	—	—
194245 2001 <i>TZ</i> ₁₉₀	16.7	X	111.99661	47.66537	7.29494	5.90858	0.1472767	0.28273664	2.2990478	20	2 28.3	19.5
194246 2001 <i>TG</i> ₁₉₂	16.5	X	155.83973	89.15664	319.87366	4.96207	0.1680819	0.28708889	2.2757530	20	4 7.9	20.0
194247 2001 <i>TM</i> ₁₉₅	16.5	X	98.59717	150.72590	158.76719	13.50963	0.0366052	0.26822586	2.3812352	20	—	—
194248 2001 <i>TA</i> ₁₉₉	15.9	X	170.00774	203.14993	104.63771	7.67712	0.1344097	0.28198826	2.3031136	20	—	—
194249 2001 <i>TL</i> ₁₉₉	16.9	X	108.94692	356.47320	79.20397	6.59338	0.1405993	0.28783381	2.2718248	20	3 24.5	19.7
194250 2001 <i>TB</i> ₂₀₄	16.5	X	67.42238	34.55022	64.38020	6.59088	0.1552454	0.28510351	2.2863059	20	2 23.9	18.7
194251 2001 <i>TS</i> ₂₀₄	16.8	X	96.02001	359.74178	93.22004	7.01621	0.1431210	0.28790379	2.2714567	20	3 31.6	19.5
194252 2001 <i>TX</i> ₂₀₅	16.4	X	38.56884	294.15395	139.93001	12.70051	0.2104126	0.27437937	2.3454981	20	—	—
194253 2001 <i>TW</i> ₂₁₂	16.4	X	25.15537	41.00855	342.52772	6.77927	0.1374883	0.26744986	2.3858390	20	—	—
194254 2001 <i>TF</i> ₂₂₄	17.0	X	147.91688	318.44119	10.69413	5.52001	0.1314122	0.27849165	2.3223514	20	—	—
194255 2001 <i>TU</i> ₂₂₇	17.1	X	163.69806	214.28987	107.19194	4.38545	0.1695178	0.28317929	2.2966513	20	—	—
194256 2001 <i>TH</i> ₂₃₀	16.4	X	209.39810	214.43990	118.70144	8.18920	0.1789882	0.29132039	2.2536621	20	2 25.2	19.9
194257 2001 <i>TV</i> ₂₃₁	17.8	X	59.57883	78.72741	339.42985	1.85874	0.1253190	0.27711444	2.3300395	20	—	—
194258 2001 <i>TG</i> ₂₃₅	17.1	X	232.63070	302.25930	81.91026	9.08722	0.1795309	0.29854863	2.2171377	20	5 22.4	20.2
194259 2001 <i>TQ</i> ₂₃₇	17.1	X	85.52451	276.94617	136.22013	4.83199	0.0807086	0.28302715	2.2974742	20	1 4.9	19.5
194260 2001 <i>TC</i> ₂₄₀	17.1	X	98.40437	226.49962	102.61190	3.45094	0.2329530	0.27303908	2.3531675	20	—	—
194261 2001 <i>TP</i> ₂₅₀	17.0	X	39.85968	115.04084	43.31740	6.55123	0.0503964	0.29101382	2.2552445	20	3 22.7	19.4
194262 2001 Nové Zámky	17.0	X	286.15677	109.37466	109.65043	5.32620	0.1024714	0.28355869	2.2946022	20	1 2.8	19.6
194263 2001 <i>UL</i>	16.3	X	113.74612	249.07596	190.12678	21.13605	0.3005561	0.28346551	2.2951051	20	4 23.3	19.8
194264 2001 <i>UY</i>	16.4	X	43.44520	245.68968	213.69937	23.85781	0.2915268	0.27871792	2.3210943	20	—	—
194265 2001 <i>UB</i> ₁	17.3	X	97.55131	180.38904	216.64819	2.23325	0.2120204	0.27885106	2.3203554	20	1 22.5	19.6
194266 2001 <i>UV</i> ₁	16.1	X	26.53915	143.18143	349.02278	24.47609	0.1979882	0.28332981	2.2958378	20	1 27.2	18.4
194267 2001 <i>UJ</i> ₃	17.0	X	103.44846	238.11982	133.28769	5.35658	0.1669881	0.27796884	2.3252624	20	—	—
194268 2001 <i>UY</i> ₄	18.2	X	253.84339	107.74893	160.75738	5.43727	0.7874987	0.56274012	1.4529950	20	—	—
194269 2001 <i>UU</i> ₇	16.6	X	100.32813	126.00728	293.61969	5.23626	0.0966711	0.28416733	2.2913246	20	2 7.1	19.2
194270 2001 <i>UT</i> ₁₀	16.6	X	80.89254	153.29355	197.40165	5.89735	0.1287303	0.26870817	2.3783849	20	—	—
194271 2001 <i>UN</i> ₁₂	16.7	X	121.18194	168.64506	257.39098	6.21562	0.0739069	0.28700490	2.2761970	20	3 9.6	19.7
194272 2001 <i>UU</i> ₁₂	16.4	X	28.47728	233.96724	195.61369	5.44092	0.1114794	0.27156477	2.3616766	20	—	—
194273 2001 <i>UH</i> ₁₃	17.1	X	115.57423	183.76868	203.15887	2.54583	0.2563493	0.28049157	2.3112992	20	2 8.8	20.1
194274 2001 <i>UL</i> ₁₆	16.0	X	312.41273	138.43787	294.37690	5.93163	0.1086004	0.25693841	2.4504736	20	12 5.5	18.6
194275 2001 <i>UJ</i> ₂₁	16.0	X	79.62560	108.84600	224.25748	13.47566	0.1034265	0.27183505	2.3601109	20	—	—
194276 2001 <i>UJ</i> ₂₄	16.5	X	196.48017	21.88675	309.89374	6.33573	0.1311794	0.28750772	2.2735423	20	2 8.7	19.9
194277 2001 <i>UC</i> ₂₈	17.4	X	193.89883	304.31848	49.47224	5.51687	0.1253196	0.28998921	2.2605537	20	3 8.2	20.7
194278 2001 <i>UN</i> ₂₉	17.4	X	104.44195	207.70547	138.79917	5.48355	0.2508907	0.27631121	2.3345529	20	—	—
194279 2001 <i>UX</i> ₃₀	16.4	X	202.24641	221.05511	107.11969	7.07320	0.2205175	0.28884556	2.2665167	20	2 13.1	20.1
194280 2001 <i>UC</i> ₃₃	17.1	X	122.74696	266.27687	116.53979	4.15077	0.2245506	0.28207463	2.3026434	20	2 8.7	20.1
194281 2001 <i>UP</i> ₃₅	16.4	X	114.45708	211.82872	112.96516	7.30064	0.1943949	0.27366963	2.3495516	20	—	—
194282 2001 <i>UE</i> ₄₂	16.3	X	347.16271	158.90947	43.92272	5.79228	0.1519030	0.28936454	2.2638058	20	2 18.4	18.5
194283 2001 <i>UZ</i> ₄₂	17.0	X	354.96011	264.01733	203.11456	1.06285	0.1144109	0.27363680	2.3497395	20	—	—
194284 2001 <i>UB</i> ₄₇	16.7	X	54.10438	319.12990	155.06170	2.57552	0.1788744	0.28123567	2.3072206	20	2 20.5	18.5
194285 2001 <i>UB</i> ₄₇	17.2	X	64.85447	196.56491	194.90030	6.99714	0.1237126	0.27356956	2.3501284	20	—	—
194286 2001 <i>UF</i> ₄₉	17.2	X	133.63536	205.53699	160.90909	2.63579	0.2397953	0.28131452	2.3067894	20	1 31.6	20.5
194287 2001 <i>UL</i> ₄₉	16.8	X	50.93412	257.61412	169.65186	6.87123	0.1761477	0.27485314	2.3428020	20	—	—
194288 2001 <i>UU</i> ₄₉	16.3	X	266.90257	262.93348	88.75869	7.71097	0.2356402	0.29945000	2.2126863	20	5 9.8	19.4
194289 2001 <i>UN</i> ₅₂	17.2	X	27.07113	208.21018	202.95891	1.69869	0.1906861	0.27017858	2.3697477	20	—	—
194290 2001 <i>UP</i> ₅₂	16.8	X	107.87424	293.03357	51.84087	7.79974	0.1624439	0.27486925	2.3427104	20	—	—
194291 2001 <i>UC</i> ₅₄	15.8	X	85.21179	295.63482	111.61785	10.21687	0.2156361	0.27643171	2.3338744	20	1 18.5	17.9
194292 2001 <i>UE</i> ₅₅	16.9	X	145.02260	223.94324	84.19435	3.44836	0.2385904	0.27829410	2.3234503	20	—	—
194293 2001 <i>UE</i> ₆₀	16.9	X	171.27615	155.77640	243.12400	7.28541	0.1252594	0.29287232	2.2456936	20	4 7.5	20.3
194294 2001 <i>UH</i> ₆₀	16.3	X	144.95322	346.53458	303.29880	6.48957	0.1086426	0.27508682	2.3414750	20	—	—
194295 2001 <i>UK</i> ₆₀	17.1	X	93.76852	88.68740	297.21581	5.79350	0.1206987	0.27942365	2.3171845	20	—	—
194296 2001 <i>US</i> ₆₁	17.0	X	74.58232	130.91590	15.98685	5.48049	0.0651407	0.29252058	2.2474934	20	4 28.1	19.5
194297 2001 <i>UG</i> ₆₂	17.4	X	157.82880	317.01391	10.43918	2.71696	0.2049573	0.28167413	2.3048256	20	1 3.6	20.7
194298 2001 <i>UA</i> ₆₃	17.0	X	87.32026	186.45246	217.34527	1.54671	0.1613042	0.27860741	2.3217080	20	1 7.2	19.2
194299 2001 <i>UJ</i> ₆₄	17.1	X	54.62569	146.98899	271.21030	5.26648	0.1897608	0.27574996	2.3377196	20	—	—
194300 2001 <i>UO</i> ₆₄	16.4	X	164.08432	344.64191	310.81335	8.49771	0.1646963	0.27838319	2.3229545	20	—	—
194301 2001 <i>UP</i> ₆₅	16.4	X	85.94519	24.84603	36.89633	7.23949	0.1858314	0.27885232	2.3203484	20	2 7.7	18.8
194302 2001 <i>UJ</i> ₆₅	16.4	X	353.32983	63.75225	22.86171	5.23950	0.2016631	0.26732707	2.3865695	20	—	—
194303 2001 <i>UB</i> ₆₇	16.8	X	300.68566	185.62497	36.67176	4.84635	0.0867199	0.28497847	2.2869746	20	1 16.5	19.7
194304 2001 <i>UV</i> ₇₁	16.9	X	3.39527	210.72317	355.05013	5.30088	0.0811067	0.29338935	2.2430545	20	3 27.4	19.0
194305 2001 <i>UR</i> ₇₅	17.2	X	40.19694	9.75192	59.96374	8.09312	0.1371714	0.27390977	2.3481781	20	—	—
194306 2001 <i>UW</i> ₇₅	17.2	X	38.20333	223.42630	192.56326	3.98165	0.2407369	0.27177097	2.3604819	20	—	—
194307 2001 <i>UW</i> ₇₈	17.0	X	96.21262	173.28452	157.55274	2.76905	0.2186996	0.27270765	2.3550737	20	—	—
194308 2001 <i>UF</i> ₈₂	17.0	X	76.09922	160.76039	195.18443	4.45776	0.1633101	0.27131219	2.3631421	20	—	—
194309 2001 <i>UR</i> ₈₅	17.7	X	72.77226	218.47596	185.57435	2.27547	0.2034442	0.27676327	2.3320100	20	—	—
194310 2001 <i>UE</i> ₈₇	17.1	X	285.67791	264.82494	226.03252	2.59259	0.0788519	0.26596063	2.3947369	20	—	—
194311 2001 <i>UR</i> ₈₉	16.2	X	35.20339	116.97524	349.05649	22.98713	0.2764680	0.27634059	2.3343874	20	—	—
194312 2001 <i>UJ</i> ₉₂	17.2	X	48.20060	41.75902	37.27549	3.00388	0.1749117	0.27638288	2.3341493	20	—	—
194313 2001 <i>UH</i> ₉₂	17.3	X	81.39491	103.38350	280.79882	2.						

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>		
194321	2001	UH ₁₁₇	17.0	X	4.74076	36.64080	51.79702	4.51560	0.1281420	0.27093414	2.3653399	20	—	—
194322	2001	UR ₁₁₇	17.1	X	114.34594	146.28607	218.11768	2.37166	0.1925401	0.27794126	2.3254162	20	—	—
194323	2001	UV ₁₁₇	16.8	X	39.15878	27.17890	43.90772	4.41011	0.2148514	0.27355910	2.3501844	20	—	—
194324	2001	UL ₁₁₈	17.0	X	37.51448	35.35057	59.98378	3.56715	0.1630364	0.27598371	2.3363994	20	—	—
194325	2001	UP ₁₂₀	17.3	X	112.68048	130.21142	203.59153	6.17555	0.1385204	0.27366861	2.3495574	20	—	—
194326	2001	UA ₁₂₂	16.4	X	87.38546	207.41452	223.15342	5.77317	0.0812281	0.28073540	2.3099607	20	1 30.9	19.1
194327	2001	UJ ₁₂₂	16.8	X	43.96991	17.22073	76.93625	3.26297	0.1731851	0.27639449	2.3340839	20	—	—
194328	2001	UG ₁₃₀	17.2	X	35.31296	318.01950	176.01559	2.49619	0.1103497	0.28394000	2.2925474	20	2 9.8	19.4
194329	2001	UQ ₁₃₁	17.0	X	134.06334	112.67729	198.90766	3.65785	0.2390885	0.27538921	2.3397607	20	—	—
194330	2001	UN ₁₃₃	17.0	X	210.18480	83.94387	213.42686	12.47207	0.0710424	0.28362626	2.2942378	20	1 7.2	20.4
194331	2001	UZ ₁₃₃	17.7	X	57.67196	253.10690	210.14649	1.22156	0.1818216	0.28134135	2.3066428	20	2 10.7	19.6
194332	2001	UO ₁₃₄	17.3	X	26.58793	29.69437	38.47283	1.89567	0.1634113	0.27181006	2.3602556	20	—	—
194333	2001	UT ₁₃₄	16.5	X	296.26190	305.44698	204.62939	5.58565	0.1073814	0.26981578	2.3718715	20	—	—
194334	2001	UL ₁₃₆	16.4	X	40.81565	14.48030	62.38942	6.06299	0.2317961	0.27306083	2.3530425	20	—	—
194335	2001	UX ₁₃₇	16.8	X	199.17411	226.48191	41.92948	4.44200	0.1380911	0.27841599	2.3227721	20	—	—
194336	2001	UV ₁₃₉	16.9	X	97.80906	77.60298	259.69601	3.61046	0.1866567	0.27134962	2.3629248	20	—	—
194337	2001	UJ ₁₄₀	17.1	X	92.82298	79.06158	76.76464	10.33660	0.1836423	0.28879538	2.2667792	20	4 26.5	19.7
194338	2001	UZ ₁₄₅	16.9	X	120.73889	214.23496	209.53675	6.91591	0.0794762	0.28538252	2.2848155	20	3 8.2	19.8
194339	2001	UR ₁₄₆	16.8	X	69.24494	159.08598	208.16548	6.15074	0.1174606	0.27082242	2.3659904	20	—	—
194340	2001	UK ₁₄₉	16.8	X	47.07638	345.45372	55.14900	7.62522	0.1114599	0.27123037	2.3636174	20	—	—
194341	2001	UH ₁₅₁	17.0	X	32.81749	319.38771	125.88672	2.99616	0.1897485	0.27359722	2.3499661	20	—	—
194342	2001	UU ₁₅₁	16.8	X	333.81916	206.96066	244.32828	0.72662	0.1690188	0.26565827	2.3965536	20	—	—
194343	2001	UE ₁₅₂	17.3	X	102.31410	290.89746	76.99709	4.04355	0.1744213	0.27561574	2.3384785	20	—	—
194344	2001	UP ₁₅₂	16.4	X	291.61733	303.06515	213.14176	5.28608	0.1646970	0.26724945	2.3870316	20	—	—
194345	2001	UR ₁₅₄	16.4	X	103.85723	209.97896	210.38169	5.94324	0.0829820	0.28103293	2.3083301	20	2 10.2	19.3
194346	2001	US ₁₅₅	17.1	X	80.95754	126.32328	218.03087	1.49779	0.2097513	0.27082764	2.3659600	20	—	—
194347	2001	UA ₁₅₆	17.5	X	78.63903	193.96245	192.58506	2.58973	0.1896714	0.27479317	2.3431428	20	—	—
194348	2001	US ₁₅₆	16.9	X	143.55709	181.69505	139.37876	2.69670	0.2475957	0.27753048	2.3277103	20	—	—
194349	2001	UG ₁₅₇	16.5	X	336.71534	164.23752	61.29122	4.17114	0.0979233	0.28730723	2.2745999	20	3 12.9	18.8
194350	2001	UV ₁₅₇	17.2	X	121.32197	147.83663	222.16597	1.62827	0.2341347	0.27957428	2.3163521	20	1 21.9	20.3
194351	2001	UY ₁₅₇	16.6	X	24.94517	54.55679	49.25172	1.65256	0.1581617	0.27486995	2.3427065	20	—	—
194352	2001	UT ₁₅₉	17.3	X	42.89819	219.77074	211.48733	2.23774	0.1832147	0.27356472	2.3501522	20	—	—
194353	2001	UJ ₁₆₁	16.9	X	198.25034	302.56326	137.53731	3.04966	0.1152726	0.29739577	2.2228638	20	7 4.8	19.9
194354	2001	UQ ₁₆₄	17.1	X	81.74496	296.78498	101.12123	4.13752	0.1752823	0.27705386	2.3303791	20	—	—
194355	2001	US ₁₆₅	16.7	X	171.88745	222.22390	102.41422	6.24928	0.2043503	0.28424594	2.2909022	20	1 12.7	20.0
194356	2001	UW ₁₆₉	16.5	X	106.98885	285.28171	16.50445	6.86664	0.1274447	0.26950013	2.3737232	20	—	—
194357	2001	UL ₁₇₀	17.0	X	31.90728	83.97734	282.52730	1.02510	0.2008879	0.26659797	2.3909188	20	—	—
194358	2001	UM ₁₇₀	17.4	X	24.70038	211.04391	239.35330	2.33292	0.1957194	0.27403419	2.3474673	20	—	—
194359	2001	UQ ₁₇₀	16.6	X	319.49764	140.13811	7.09578	2.30462	0.1480286	0.27224952	2.3577150	20	—	—
194360	2001	UB ₁₇₂	17.2	X	106.76198	47.13241	40.21594	4.81150	0.0182350	0.28964417	2.2623486	20	3 16.3	19.8
194361	2001	UC ₁₇₅	17.6	X	59.57730	258.61915	133.08370	3.00858	0.1983258	0.27435206	2.3456537	20	—	—
194362	2001	UX ₁₇₅	17.0	X	305.99199	327.14675	194.07557	5.61815	0.1388229	0.27203221	2.3589704	20	—	—
194363	2001	UC ₁₇₇	16.3	X	295.99246	355.19920	219.22677	5.86064	0.1249363	0.28253478	2.3001427	20	—	—
194364	2001	UX ₁₇₇	17.2	X	6.31127	4.17890	63.61606	3.38079	0.1745685	0.26946181	2.3739482	20	—	—
194365	2001	UG ₁₇₈	16.7	X	141.78918	300.99831	91.34878	6.77671	0.1650218	0.28761348	2.2729849	20	3 8.2	19.9
194366	2001	UW ₁₈₃	17.1	X	175.31296	239.09637	97.88103	5.96088	0.2591563	0.28568520	2.2832014	20	2 3.8	20.8
194367	2001	UR ₁₈₇	17.3	X	257.28609	266.93534	37.78268	5.74815	0.1567459	0.29442631	2.2377847	20	3 6.8	20.5
194368	2001	UQ ₁₈₉	17.2	X	126.67710	111.48718	327.19790	1.84584	0.1197644	0.29136565	2.2534287	20	4 12.1	20.0
194369	2001	UG ₁₉₅	17.4	X	73.17926	272.48539	192.33464	4.45765	0.1191096	0.28524453	2.2855523	20	3 3.5	19.6
194370	2001	UF ₁₉₆	16.4	X	297.27535	82.52274	17.85385	6.53533	0.0986458	0.26304043	2.4124281	20	12 20.8	18.9
194371	2001	UJ ₁₉₆	16.8	X	211.26800	295.47229	6.34310	5.56164	0.0530786	0.28242844	2.3007200	20	1 17.9	19.9
194372	2001	UW ₂₀₁	17.5	X	146.62986	24.31408	265.51159	1.18459	0.2754381	0.27662171	2.3328056	20	—	—
194373	2001	UE ₂₀₅	16.6	X	88.13648	328.36872	9.03436	4.05647	0.0593041	0.26982394	2.3718237	20	—	—
194374	2001	UM ₂₁₀	17.0	X	266.36114	139.64628	344.75755	2.58100	0.0979358	0.26550481	2.3974770	20	12 3.4	19.7
194375	2001	UY ₂₁₁	17.0	X	233.05582	67.97026	219.94283	4.73128	0.1701316	0.28651155	2.2788092	20	1 18.6	20.7
194376	2001	US ₂₁₂	17.2	X	28.46339	93.86673	52.68045	7.40279	0.1244523	0.28290499	2.2981356	20	2 17.9	19.3
194377	2001	UJ ₂₁₃	17.3	X	24.74823	36.13953	77.60802	3.06549	0.1714304	0.27867148	2.3213522	20	—	—
194378	2001	UE ₂₁₅	16.8	X	258.80681	347.10291	193.34058	2.16034	0.1064723	0.26906484	2.3762826	20	—	—
194379	2001	UH ₂₁₇	17.0	X	316.17623	53.95072	95.94649	2.31682	0.0797460	0.27331452	2.3515863	20	—	—
194380	2001	UO ₂₂₁	17.2	X	83.99874	181.48518	210.26664	6.56296	0.1156162	0.27494005	2.3423082	20	—	—
194381	2001	VY ₁	16.2	X	341.49865	156.32487	115.07901	1.75421	0.1863702	0.27002714	2.3706336	20	—	—
194382	2001	VL ₂	16.2	X	37.07939	25.58792	71.47779	3.46816	0.1674880	0.27502051	2.3418514	20	—	—
194383	2001	VE ₃	17.1	X	148.26674	273.76434	32.67195	7.36017	0.1404351	0.27518361	2.3409259	20	—	—
194384	2001	VK ₃	14.8	X	85.37210	163.86119	297.19847	1.67236	0.1636356	0.12508843	3.9596604	20	4 7.5	20.4
194385	2001	VD ₄	16.6	X	20.95139	182.37278	241.77502	11.08248	0.2470405	0.26957064	2.3733092	20	—	—
194386	2001	VG ₅	16.9	X	71.47138	279.99482	248.66253	13.65946	0.6107488	0.28131819	2.3067694	20	8 4.9	21.4
194387	2001	VY ₆	16.6	X	15.57708	83.36953	30.66196	6.00123	0.0330955	0.27735902	2.3286695	20	—	—
194388	2001	VG ₇	16.4	X	0.60152	229.48751	222.84308	5.75365	0.0710686	0.27165809	2.3611358	20	—	—
194389	2001	VR ₉	17.1	X	37.94527	178.56200	272.65051	2.51469	0.1370664	0.27484109	2.3428705	20	—	—
194390	2001	VG ₁₀	16.4	X	268.83778	43.77646	193.59754	4.12349	0.1112278	0.28089885	2.3090646	20	—	—
194391	2001	VB ₁₄	16.6	X	340.62903	167.42600	322.36386	4.74059	0.0572914	0.27278343	2.3546375	20	—	—

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>		
194401	2001	VS ₂₄	16.7	X	44.20488	38.16308	21.22643	2.66656	0.1544570	0.27260389	2.3556713	20	—	—
194402	2001	VK ₂₆	16.2	X	9.00864	322.41595	43.28842	5.72494	0.2046355	0.26176217	2.4202755	20	12 23.3	18.9
194403	2001	VM ₂₇	16.5	X	110.49028	108.92009	219.12534	1.54682	0.2319132	0.27223246	2.3578135	20	—	—
194404	2001	VP ₃₀	16.5	X	81.45840	328.29217	30.94654	2.66970	0.2567277	0.27180755	2.3602701	20	—	—
194405	2001	VA ₃₃	16.7	X	82.69197	94.42908	286.08501	1.51655	0.1947484	0.27343426	2.3508997	20	—	—
194406	2001	VB ₃₃	16.2	X	156.19213	172.11207	258.72564	3.63887	0.1686040	0.28952199	2.2629850	20	5 8.7	19.7
194407	2001	VG ₃₃	17.1	X	48.83928	29.94479	37.69879	3.53903	0.2024148	0.27335530	2.3513524	20	—	—
194408	2001	VR ₃₅	16.0	X	354.81413	69.13452	60.98436	4.89784	0.1923140	0.27154416	2.3617961	20	—	—
194409	2001	VY ₃₅	16.4	X	81.42860	284.92099	63.51234	4.20838	0.2551723	0.27006948	2.3703859	20	—	—
194410	2001	VA ₃₈	17.4	X	69.33471	19.16403	90.35463	1.68577	0.1406621	0.28248166	2.3004310	20	3 9.8	19.6
194411	2001	VG ₄₀	16.5	X	58.11963	306.33033	91.43968	5.54925	0.1431796	0.27145499	2.3623133	20	—	—
194412	2001	VJ ₄₆	15.2	X	32.92168	175.83679	251.67531	12.23252	0.1480403	0.26917081	2.3756588	20	—	—
194413	2001	VS ₄₆	16.1	X	152.42100	163.56836	247.17006	4.49663	0.1805591	0.28500708	2.2868216	20	4 8.5	19.7
194414	2001	VZ ₅₀	16.3	X	166.83516	18.74150	261.55746	10.76600	0.0459261	0.27221458	2.3579167	20	—	—
194415	2001	VN ₅₃	16.7	X	78.15297	138.51297	269.07519	5.32797	0.1100273	0.27753247	2.3276991	20	—	—
194416	2001	VO ₅₆	16.7	X	25.83681	140.07341	263.20331	5.20067	0.1048649	0.26914403	2.3758164	20	—	—
194417	2001	VJ ₅₆	17.4	X	86.37704	92.39501	320.05229	4.83769	0.1521753	0.27955091	2.3164812	20	1 17.4	19.6
194418	2001	VG ₅₇	17.1	X	346.10908	344.06844	138.44420	2.74647	0.1460105	0.27250889	2.3562187	20	—	—
194419	2001	VH ₅₉	16.3	X	37.58424	153.99841	263.04203	3.71370	0.1286829	0.27229053	2.3574782	20	—	—
194420	2001	VY ₅₉	16.7	X	160.46430	350.32525	330.10739	4.88259	0.2326126	0.27995167	2.3142699	20	—	—
194421	2001	VM ₆₁	17.1	X	38.27491	107.26009	0.72620	5.29518	0.1845545	0.27717932	2.3296758	20	1 6.9	18.8
194422	2001	VR ₆₁	17.1	X	78.53767	131.42899	267.70276	6.57918	0.1026578	0.27572998	2.3378325	20	—	—
194423	2001	VC ₆₂	16.9	X	77.17482	66.62080	29.35844	7.17693	0.1237781	0.28231022	2.3013622	20	3 3.2	19.3
194424	2001	VV ₆₂	16.6	X	175.04339	277.18952	40.28600	12.32542	0.1337777	0.27971428	2.3155791	20	1 2.1	20.1
194425	2001	VK ₆₅	16.5	X	344.10771	141.27219	293.75251	3.28743	0.2128411	0.26542683	2.3979466	20	—	—
194426	2001	VF ₆₆	16.6	X	95.35441	44.50052	324.78505	1.71531	0.2292148	0.27518423	2.3409224	20	—	—
194427	2001	VZ ₆₈	17.5	X	82.59831	109.88719	330.30268	1.29101	0.1921650	0.28118028	2.3075236	20	2 26.0	19.7
194428	2001	VY ₇₀	16.6	X	333.50576	68.68247	30.79231	6.92768	0.0931301	0.26682572	2.3895581	20	—	—
194429	2001	VR ₇₁	16.7	X	318.55259	199.39103	332.19040	3.76885	0.0560771	0.27834814	2.3231495	20	—	—
194430	2001	VO ₇₇	16.9	X	97.86942	330.50235	93.92931	4.93659	0.2111029	0.28227018	2.3015799	20	3 3.9	19.5
194431	2001	VP ₈₀	16.5	X	8.90261	61.55266	28.81906	6.77669	0.1122549	0.27226421	2.3576302	20	—	—
194432	2001	VJ ₈₂	16.6	X	0.09915	115.96261	347.69792	6.42708	0.1654196	0.27422830	2.3463594	20	—	—
194433	2001	VY ₈₂	17.2	X	83.79914	116.09921	305.19573	3.64127	0.1501752	0.28072471	2.3100193	20	1 24.7	19.3
194434	2001	VH ₈₃	17.3	X	14.40567	118.80382	307.71912	1.75487	0.2046747	0.27016042	2.3698539	20	—	—
194435	2001	VF ₈₆	16.6	X	281.42825	237.21883	284.54566	4.59491	0.0916456	0.26813786	2.3817561	20	—	—
194436	2001	VQ ₈₇	16.9	X	69.80995	311.30530	82.93181	6.37945	0.2364898	0.27564034	2.3383393	20	—	—
194437	2001	VP ₈₈	17.1	X	101.23928	286.24281	111.23188	3.46301	0.1713037	0.27981202	2.3150399	20	1 22.7	19.4
194438	2001	VF ₁₀₀	17.0	X	168.37577	25.36836	312.16000	2.14367	0.1840888	0.28132561	2.3067288	20	1 24.2	20.3
194439	2001	VD ₁₀₆	16.8	X	17.93972	157.03423	245.74067	6.73740	0.1062739	0.26804426	2.3823105	20	—	—
194440	2001	VU ₁₀₇	17.1	X	10.43652	112.80902	2.55341	3.38958	0.1383994	0.27400044	2.3476600	20	—	—
194441	2001	VV ₁₀₈	17.8	X	358.40816	184.23461	240.66767	2.34989	0.1608491	0.26685687	2.3893721	20	—	—
194442	2001	VB ₁₁₀	17.6	X	356.06416	76.81058	22.01971	1.69097	0.1424031	0.26980455	2.3719373	20	—	—
194443	2001	VN ₁₁₀	16.3	X	153.97694	104.50073	269.30300	5.24712	0.1263831	0.28334666	2.2957468	20	2 16.9	19.6
194444	2001	VY ₁₁₁	16.8	X	0.64768	35.89457	58.79777	4.68519	0.1234808	0.26986955	2.3715564	20	—	—
194445	2001	VX ₁₁₁	17.0	X	67.70218	343.30006	53.19711	8.00427	0.0942329	0.27282664	2.3543889	20	—	—
194446	2001	VJ ₁₁₂	17.7	X	34.35978	71.01556	353.87308	2.39113	0.1798649	0.27136881	2.3628134	20	—	—
194447	2001	VP ₁₁₃	16.7	X	288.16008	84.05693	52.42883	2.07840	0.1268235	0.26427400	2.4049152	20	—	—
194448	2001	VA ₁₁₄	16.0	X	137.22420	207.29872	289.58712	3.89149	0.2061889	0.24031954	2.5621821	20	7 17.9	20.3
194449	2001	VP ₁₁₅	17.5	X	40.43197	70.87510	7.38406	2.46616	0.1669964	0.27341442	2.3510134	20	—	—
194450	2001	VF ₁₁₆	16.7	X	89.28919	327.35847	33.96160	4.93899	0.1658810	0.27179980	2.3603150	20	—	—
194451	2001	VC ₁₁₇	16.2	X	17.59696	125.91913	345.95016	2.31341	0.1407698	0.27349590	2.3505465	20	—	—
194452	2001	VP ₁₁₇	17.2	X	337.52892	125.07549	316.17790	1.40634	0.1915928	0.26419072	2.4054205	20	—	—
194453	2001	VK ₁₁₇	17.2	X	79.75209	120.38962	279.12245	3.71145	0.2273107	0.27520957	2.3407787	20	—	—
194454	2001	VW ₁₁₇	16.3	X	23.09482	3.43484	46.32961	5.92264	0.2520861	0.26766162	2.3845805	20	—	—
194455	2001	VO ₁₂₀	16.3	X	80.36565	2.96235	71.51150	5.81919	0.1899505	0.27740793	2.3283958	20	2 17.1	18.6
194456	2001	VT ₁₂₀	16.5	X	113.01934	13.55633	41.58948	4.31442	0.2173575	0.28025280	2.3126118	20	3 11.7	19.6
194457	2001	VX ₁₂₃	17.2	X	10.89413	275.61789	172.21201	3.75831	0.1667740	0.27079398	2.3661560	20	—	—
194458	2001	VX ₁₂₄	16.7	X	51.92126	123.51101	306.64231	5.72365	0.0818109	0.27458963	2.3443006	20	—	—
194459	2001	WE ₂	16.7	X	332.79445	158.29193	313.76126	4.11022	0.3730753	0.26369223	2.4084511	20	—	—
194460	2001	WO ₂	17.0	X	131.91418	117.91184	215.52293	10.44207	0.2806220	0.27728131	2.3291045	20	—	—
194461	2001	WF ₃	17.0	X	87.33368	146.64775	223.03347	0.90060	0.1750728	0.27510150	2.3413917	20	—	—
194462	2001	WZ ₃	17.8	X	17.79963	204.99330	230.94379	0.47322	0.1637754	0.27060067	2.3672828	20	—	—
194463	2001	WL ₇	16.4	X	254.46497	303.80456	206.83189	3.34262	0.1074127	0.26275796	2.4141567	20	12 19.5	19.0
194464	2001	WU ₉	16.4	X	319.03560	272.59214	193.58240	6.27457	0.1770892	0.26436655	2.4043539	20	—	—
194465	2001	WJ ₁₁	17.2	X	118.93058	299.82931	81.04923	6.00214	0.2204325	0.28031513	2.3122690	20	2 2.3	20.1
194466	2001	WO ₁₁	16.9	X	10.99991	345.20514	82.84760	5.40080	0.1581149	0.26895610	2.3769230	20	—	—
194467	2001	WU ₁₁	17.0	X	27.50525	359.09937	144.72212	3.33580	0.1068567	0.28091434	2.3089797	20	2 8.1	19.1
194468	2001	WY ₁₁	17.2	X	88.13445	196.34783	177.37190	2.93862	0.1525083	0.27396427	2.3478666	20	—	—
194469	2001	WB ₁₄	16.2	X	68.46500	196.74939	241.32124	6.50324	0.2132875	0.27521247	2.3407623	20	1 29.2	18.2
194470	2001	WF ₁₅	16.4	X	304.67001	81.58662	1.28718	13.54165	0.1395774	0.25749018	2.4469716	20	12 2.3	19.1
194471	2001	WF ₁₉	17.0	X	40.59948	216.76938	259.83411	1.45475	0.1799967	0.27952357	2.3166322	20	1 24.4	18.5
194472	2001	WJ ₁₉	17.5	X	33.31228									

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>		
194481	2001	WA ₃₇	17.2	X	203.61366	100.81466	221.26757	9.03917	0.1800065	0.28559104	2.2837032	20	2 1.8	21.0
194482	2001	WG ₃₉	16.3	X	80.40503	296.91515	95.89427	10.35886	0.2354818	0.27455656	2.3444888	20	—	—
194483	2001	WR ₄₅	17.1	X	101.52903	139.66493	234.70302	2.65762	0.1360222	0.27644875	2.3337785	20	—	—
194484	2001	WT ₄₆	17.4	X	305.21264	247.16198	236.29269	2.30153	0.1703619	0.26483836	2.4014974	20	—	—
194485	2001	WW ₄₆	16.6	X	188.75015	344.42901	250.33021	5.57937	0.0916398	0.26662513	2.3907564	20	—	—
194486	2001	WN ₄₇	16.0	X	317.52498	85.87474	352.84603	7.30626	0.1437904	0.25873412	2.4391223	20	12 26.5	18.5
194487	2001	WM ₅₃	16.4	X	271.58148	324.86436	231.42469	6.09771	0.0661482	0.27417129	2.3466846	20	—	—
194488	2001	WC ₅₅	16.3	X	133.18711	46.64542	233.01109	6.36909	0.0938683	0.26774088	2.3841098	20	—	—
194489	2001	WS ₅₅	17.2	X	93.74746	3.77724	37.33503	3.69501	0.1942534	0.27883312	2.3204550	20	1 21.1	19.6
194490	2001	WJ ₅₉	16.6	X	160.49041	28.39851	265.86576	2.60243	0.1290400	0.27393789	2.3480174	20	—	—
194491	2001	WQ ₆₀	17.5	X	345.37113	101.83605	19.65714	1.15790	0.1621694	0.27119785	2.3638063	20	—	—
194492	2001	WV ₆₃	17.3	X	121.84714	75.56313	274.62264	1.42883	0.2038142	0.27637429	2.3341976	20	—	—
194493	2001	WY ₆₄	17.5	X	61.14793	234.46896	209.44376	2.64478	0.1505949	0.27973128	2.3154583	20	1 15.5	19.4
194494	2001	WN ₇₂	18.2	X	57.69509	202.95762	181.90321	1.84514	0.2209895	0.27175856	2.3605538	20	—	—
194495	2001	WS ₇₃	16.8	X	252.94847	46.68564	98.44402	2.50325	0.1215723	0.26345280	2.4099101	20	12 7.8	19.3
194496	2001	WY ₇₇	17.4	X	55.44278	41.37011	73.54813	1.35928	0.1469465	0.28074149	2.3099273	20	2 21.7	19.2
194497	2001	WV ₈₀	17.1	X	65.02924	224.03335	168.62880	1.91556	0.0787378	0.27185261	2.3600093	20	—	—
194498	2001	WO ₈₁	16.7	X	248.80769	93.32786	80.92798	2.54248	0.1256674	0.26382017	2.4076723	20	—	—
194499	2001	WX ₈₁	17.2	X	312.33449	8.56441	115.12402	2.24040	0.1308216	0.26601725	2.3943971	20	—	—
194500	2001	WF ₈₂	16.4	X	201.37939	165.08321	78.35588	5.12018	0.1490473	0.27087236	2.3656996	20	—	—
194501	2001	WJ ₈₅	15.0	X	117.69778	303.71779	152.69588	1.57568	0.2046040	0.12631386	3.9340093	20	5 11.3	21.0
194502	2001	WE ₈₇	16.8	X	126.53438	68.29097	267.78330	4.06356	0.1862486	0.27697035	2.3308475	20	—	—
194503	2001	WM ₈₇	17.2	X	0.04214	56.50920	359.78705	2.40127	0.1851908	0.26648012	2.3916237	20	—	—
194504	2001	WX ₈₇	16.3	X	305.26870	190.40136	1.83808	4.33006	0.1688800	0.27537511	2.3398405	20	—	—
194505	2001	WO ₈₈	17.1	X	166.23323	323.82843	17.48000	2.91288	0.2306574	0.28220210	2.3019500	20	1 31.1	20.8
194506	2001	WD ₉₀	16.8	X	143.10009	327.82829	20.48810	7.15812	0.1340491	0.27934680	2.3176094	20	1 7.2	20.0
194507	2001	WR ₉₂	17.1	X	312.64968	10.85842	126.18370	2.25929	0.0642481	0.27085085	2.3658248	20	—	—
194508	2001	WF ₉₉	17.4	X	44.23850	279.03897	129.57733	4.33669	0.2032261	0.27128806	2.3632822	20	—	—
194509	2001	WZ ₉₉	17.3	X	327.57963	281.65091	173.32570	1.42867	0.1503593	0.26420405	2.4053396	20	—	—
194510	2001	WV ₁₀₀	17.6	X	167.60090	291.84952	52.22599	3.22980	0.1510432	0.28212537	2.3023674	20	1 29.9	21.0
194511	2001	WY ₁₀₁	17.1	X	91.92630	163.37875	224.62357	1.68354	0.0543376	0.27550417	2.3391097	20	—	—
194512	2001	XR	14.7	X	150.77707	264.52364	150.08274	2.22899	0.1986563	0.12547970	3.9514250	20	4 21.6	20.9
194513	2001	XR ₂	15.1	X	158.67305	69.31069	304.96493	20.88863	0.3139362	0.28350807	2.2948754	20	2 29.1	19.4
194514	2001	XS ₆	17.6	X	19.01610	260.62686	195.56687	2.04852	0.1661905	0.27395483	2.3479206	20	—	—
194515	2001	XV ₆	15.5	X	318.39255	116.84114	70.88677	22.75744	0.3312796	0.26968900	2.3726147	20	—	—
194516	2001	XD ₈	17.3	X	43.54734	317.65325	98.07786	2.32327	0.1652040	0.27087356	2.3656926	20	—	—
194517	2001	XZ ₈	15.7	X	25.84184	141.55777	332.46240	4.02108	0.1048465	0.27528291	2.3403629	20	—	—
194518	2001	XC ₉	16.5	X	82.43462	5.57664	35.74970	6.50343	0.1223428	0.27503795	2.3417524	20	—	—
194519	2001	XD ₁₁	16.3	X	16.56267	296.81681	86.37694	7.82445	0.1242697	0.26257183	2.4152975	20	—	—
194520	2001	XL ₁₂	16.3	X	26.23934	346.75674	40.48297	7.03981	0.1239060	0.26506949	2.4001012	20	—	—
194521	2001	XA ₁₃	16.3	X	35.35444	358.65234	14.60306	8.85856	0.1195570	0.26303199	2.4124797	20	—	—
194522	2001	XF ₁₄	16.4	X	325.58274	28.78961	25.36288	7.00699	0.1495725	0.25812284	2.4429716	20	12 4.1	18.7
194523	2001	XC ₁₇	16.0	X	87.50931	339.50594	55.40177	7.46822	0.1430306	0.27435024	2.3456641	20	—	—
194524	2001	XO ₁₇	16.3	X	97.43251	14.99430	353.57547	6.04135	0.1019145	0.27151886	2.3619428	20	—	—
194525	2001	XV ₁₇	16.5	X	72.38159	48.51312	46.38139	5.68195	0.1381551	0.27868298	2.3212883	20	2 24.9	18.8
194526	2001	XJ ₂₀	16.5	X	1.65508	353.18666	53.30789	6.94868	0.1337375	0.26189815	2.4194376	20	—	—
194527	2001	XX ₂₀	15.6	X	324.84800	102.65375	338.68812	6.26298	0.1090631	0.26028505	2.4294235	20	—	—
194528	2001	XR ₂₅	16.0	X	115.55749	45.80134	64.21508	6.91950	0.1506692	0.28417739	2.2912705	20	5 17.6	19.1
194529	2001	XV ₃₂	16.7	X	44.23285	161.03396	232.68450	5.51851	0.1092284	0.26981722	2.3718630	20	—	—
194530	2001	XQ ₃₄	15.9	X	46.16307	40.46503	326.21490	9.34659	0.1646749	0.26600949	2.3944437	20	—	—
194531	2001	XD ₃₇	16.6	X	6.49217	79.57083	357.26033	7.34364	0.0814292	0.26790471	2.3831378	20	—	—
194532	2001	XA ₄₀	16.5	X	79.58733	68.68566	7.88475	6.69961	0.2054333	0.27811573	2.3244436	20	2 21.0	18.7
194533	2001	XP ₄₀	15.8	X	222.36461	225.49309	348.33714	9.50391	0.0501823	0.26450322	2.4035255	20	—	—
194534	2001	XT ₄₁	16.2	X	4.59705	10.54520	20.72373	8.08024	0.1172963	0.26049295	2.4281307	20	—	—
194535	2001	XN ₄₅	16.2	X	276.09947	122.37228	348.85244	8.15391	0.0829952	0.25624950	2.4548636	20	11 27.9	19.1
194536	2001	XO ₄₇	16.4	X	327.83146	82.12954	54.42202	8.72225	0.2394464	0.26490403	2.4011005	20	—	—
194537	2001	XB ₄₉	16.7	X	336.52927	43.76928	72.87191	2.36529	0.1376723	0.26924348	2.3752314	20	—	—
194538	2001	XC ₄₉	16.8	X	336.59195	101.79919	67.98311	3.94021	0.0994081	0.27719658	2.3295791	20	—	—
194539	2001	XP ₄₉	16.9	X	57.93105	324.89604	73.36396	4.84371	0.2348925	0.27263222	2.3555081	20	—	—
194540	2001	XP ₅₁	17.1	X	25.07036	280.69171	75.75359	2.67442	0.1771869	0.26241648	2.4162506	20	12 29.1	20.0
194541	2001	XU ₅₂	16.5	X	93.73150	150.76454	190.16662	8.92029	0.2342986	0.26984227	2.3717162	20	—	—
194542	2001	XZ ₆₀	16.7	X	81.61251	315.58587	84.41221	8.12865	0.1125828	0.27445170	2.3450860	20	—	—
194543	2001	XW ₆₃	16.2	X	159.91430	132.16743	261.94867	6.82228	0.1866926	0.28427399	2.2907514	20	3 23.7	19.8
194544	2001	XO ₆₅	16.6	X	349.39069	162.00315	271.74741	1.54390	0.1644570	0.26311499	2.4119724	20	—	—
194545	2001	XN ₆₆	16.4	X	327.19234	199.82783	248.10835	2.34779	0.1542386	0.26102772	2.4248132	20	—	—
194546	2001	XH ₆₇	16.9	X	33.20662	238.51429	248.25980	2.58778	0.1726014	0.27579459	2.3374673	20	1 24.1	18.5
194547	2001	XT ₆₇	16.6	X	28.26962	321.80494	113.25874	2.25301	0.1607027	0.26880523	2.3778123	20	—	—
194548	2001	XC ₇₂	16.2	X	37.67171	327.53830	161.55149	7.48201	0.2197016	0.27757107	2.3274834	20	2 8.0	17.6
194549	2001	XE ₇₂	16.8	X	40.25877	350.46047	97.26912	6.46532	0.1381510	0.27515966	2.3410618	20	—	—
194550	2001	XW ₇₃	16.9	X	344.82011	319.53087	166.64546	2.25895	0.1687689	0.27057705	2.3674205	20	—	—
194551	2001	XM ₇₄	17.3	X	38.38305	268.91597	178.35936	2.44735	0.1795905	0.27417220	2.3466794	20	—	—
194552	2001	XU ₇₄	17.2	X	69.30358	264.93686	126.71140							

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>		
194561	2001	<i>XF</i> ₈₈	16.4	X	5.34923	331.62986	97.24307	6.18311	0.2090294	0.26460761	2.4028934	20	—	—
194562	2001	<i>XS</i> ₈₉	16.9	X	344.15157	94.92829	24.92521	1.73365	0.1415874	0.27097710	2.3650899	20	—	—
194563	2001	<i>XU</i> ₈₉	16.5	X	197.94583	63.09208	266.05416	6.83835	0.1412595	0.28461190	2.2889379	20	2 5.5	20.0
194564	2001	<i>XY</i> ₈₉	18.1	X	38.24956	94.99605	332.57799	1.05132	0.1672746	0.27285369	2.3542333	20	—	—
194565	2001	<i>XC</i> ₉₁	17.5	X	26.33442	88.68930	20.80085	2.71396	0.1593731	0.27535931	2.3399300	20	—	—
194566	2001	<i>XH</i> ₉₁	16.8	X	321.68619	91.47163	40.25913	2.88604	0.1638624	0.26850956	2.3795576	20	—	—
194567	2001	<i>XR</i> ₉₁	17.3	X	20.75762	30.43669	56.42849	2.26681	0.1525932	0.27205700	2.3588271	20	—	—
194568	2001	<i>XT</i> ₉₁	16.9	X	104.07447	89.13681	261.74925	3.88675	0.2606639	0.27488343	2.3426299	20	—	—
194569	2001	<i>XQ</i> ₉₂	17.2	X	72.59352	289.44029	66.39269	2.87369	0.2205960	0.27002115	2.3706687	20	—	—
194570	2001	<i>XS</i> ₉₂	16.7	X	169.64457	300.22162	54.05030	6.89734	0.1387545	0.28314161	2.2968550	20	2 14.9	20.1
194571	2001	<i>XL</i> ₉₃	16.5	X	298.76494	187.19268	355.25468	2.07564	0.1537723	0.27179842	2.3603229	20	—	—
194572	2001	<i>XR</i> ₉₄	16.3	X	216.15958	133.46526	53.73159	6.82933	0.0672354	0.26206429	2.4184149	20	12 20.5	19.4
194573	2001	<i>XY</i> ₉₄	16.8	X	34.91688	2.37103	57.23823	5.78904	0.1381696	0.27070405	2.3666800	20	—	—
194574	2001	<i>XB</i> ₉₅	17.4	X	16.13626	39.19169	67.38839	3.14695	0.1830810	0.27280469	2.3545152	20	—	—
194575	2001	<i>XR</i> ₉₅	16.8	X	73.15236	320.88844	42.95935	2.13123	0.1971493	0.27007531	2.3703517	20	—	—
194576	2001	<i>XP</i> ₉₇	16.9	X	88.84959	339.73625	63.28443	2.82822	0.1951435	0.27628020	2.3347275	20	1 15.7	19.1
194577	2001	<i>XR</i> ₉₈	16.4	X	18.44567	37.00404	60.44583	3.21298	0.1414406	0.26905379	2.3763476	20	—	—
194578	2001	<i>XQ</i> ₉₈	16.4	X	189.16214	311.28990	68.13852	7.76449	0.1134661	0.28771592	2.2724454	20	4 6.8	19.7
194579	2001	<i>XX</i> ₁₀₁	16.1	X	123.70016	114.67375	304.57001	5.03256	0.0956913	0.28050365	2.3112329	20	3 8.9	19.1
194580	2001	<i>XY</i> ₁₀₂	16.9	X	260.04999	240.71631	93.46226	8.77571	0.2439374	0.29430872	2.2383808	20	4 10.8	20.4
194581	2001	<i>XK</i> ₁₀₄	15.4	X	192.20437	37.26380	258.00791	27.01045	0.1774868	0.27696836	2.3308587	20	—	—
194582	2001	<i>XG</i> ₁₀₆	17.1	X	32.53042	152.74020	228.07293	2.55322	0.1366875	0.26600168	2.3944906	20	—	—
194583	2001	<i>XK</i> ₁₀₇	16.7	X	269.01090	301.79689	209.08174	1.92751	0.1219245	0.26249507	2.4157683	20	—	—
194584	2001	<i>XU</i> ₁₀₇	16.7	X	357.55876	99.73215	264.72474	3.38231	0.2033879	0.25854571	2.4403071	20	12 1.3	19.0
194585	2001	<i>XS</i> ₁₀₈	16.3	X	344.81065	40.43209	29.05754	4.79033	0.1695335	0.26171129	2.4205891	20	—	—
194586	2001	<i>XK</i> ₁₁₀	17.5	X	81.91759	176.35248	189.36892	1.99403	0.2586425	0.27323006	2.3520708	20	—	—
194587	2001	<i>XD</i> ₁₁₁	16.4	X	304.33010	242.47035	222.67031	5.86408	0.0163890	0.26338339	2.4103334	20	—	—
194588	2001	<i>XH</i> ₁₁₁	16.7	X	78.36225	348.64621	59.13253	7.70814	0.1046265	0.27434134	2.3457148	20	—	—
194589	2001	<i>XV</i> ₁₁₄	16.7	X	333.95057	127.50002	346.53481	3.70150	0.1096605	0.26574678	2.3960215	20	—	—
194590	2001	<i>XA</i> ₁₁₇	16.1	X	258.07071	71.51628	44.21326	6.44638	0.0928376	0.25360358	2.4719089	20	11 6.7	19.2
194591	2001	<i>XE</i> ₁₁₇	16.5	X	327.35106	27.70856	66.15831	5.31237	0.1640973	0.26110280	2.4243484	20	—	—
194592	2001	<i>XH</i> ₁₁₇	16.3	X	85.30168	51.46066	323.79085	6.67940	0.2289565	0.27002677	2.3706358	20	—	—
194593	2001	<i>XL</i> ₁₁₈	16.0	X	82.49608	326.81959	69.41513	5.57140	0.2506500	0.27206109	2.3588035	20	1 4.2	17.9
194594	2001	<i>XW</i> ₁₁₈	15.6	X	108.32728	56.07430	358.48967	5.83401	0.2636052	0.27685103	2.3315172	20	3 10.7	18.7
194595	2001	<i>XB</i> ₁₁₉	16.1	X	257.77268	83.99266	56.02743	6.03814	0.1422547	0.25566768	2.4585865	20	12 2.2	18.8
194596	2001	<i>XG</i> ₁₂₀	16.5	X	125.83335	233.82630	106.39518	3.41404	0.1792442	0.27764007	2.3270977	20	—	—
194597	2001	<i>XL</i> ₁₂₁	17.1	X	341.56365	217.28225	224.15238	4.11272	0.1133871	0.26632183	2.3925718	20	—	—
194598	2001	<i>XQ</i> ₁₂₄	16.7	X	289.05974	91.52596	84.46244	5.17201	0.0672549	0.27307036	2.3529872	20	—	—
194599	2001	<i>XT</i> ₁₂₄	17.0	X	325.06158	21.60039	87.91795	2.29336	0.1426718	0.26763691	2.3847272	20	—	—
194600	2001	<i>XW</i> ₁₂₇	16.8	X	359.57984	271.98858	105.27276	2.21617	0.2071337	0.26135486	2.4227894	20	12 24.8	19.3
194601	2001	<i>XC</i> ₁₂₉	17.2	X	37.48708	264.04874	190.41771	1.81364	0.1811647	0.27466059	2.3438968	20	—	—
194602	2001	<i>XR</i> ₁₂₉	16.7	X	351.67038	58.95736	81.06600	1.75835	0.1605254	0.27319896	2.3522493	20	—	—
194603	2001	<i>XX</i> ₁₂₉	17.3	X	121.15124	286.83274	86.88715	1.44454	0.2200524	0.27896799	2.3197070	20	1 25.4	20.1
194604	2001	<i>XU</i> ₁₃₀	16.7	X	341.80387	267.02790	215.07119	3.06970	0.1441613	0.26966697	2.3727440	20	—	—
194605	2001	<i>XX</i> ₁₃₀	16.8	X	299.30943	272.62859	220.40232	5.71303	0.0655604	0.26596095	2.3947350	20	—	—
194606	2001	<i>XG</i> ₁₃₁	16.3	X	223.89051	339.88524	232.23589	4.21552	0.1398401	0.26564698	2.3966215	20	—	—
194607	2001	<i>XZ</i> ₁₃₁	16.9	X	328.60114	56.36523	74.56500	2.26231	0.1368078	0.26883400	2.3776427	20	—	—
194608	2001	<i>XF</i> ₁₃₃	17.4	X	335.64515	345.73128	149.84837	2.75797	0.1893137	0.26978597	2.3720462	20	—	—
194609	2001	<i>XF</i> ₁₃₃	17.4	X	17.24178	354.37333	83.25549	2.37782	0.1567082	0.26976192	2.3721871	20	—	—
194610	2001	<i>XG</i> ₁₃₅	17.2	X	56.89109	175.85291	202.84844	1.87384	0.2127155	0.26954557	2.3734564	20	—	—
194611	2001	<i>XW</i> ₁₃₅	16.8	X	27.84389	274.70993	232.20681	6.51648	0.0869195	0.28002923	2.3138426	20	2 10.6	19.4
194612	2001	<i>XF</i> ₁₃₆	17.6	X	138.31935	145.67033	215.02384	1.99521	0.2384294	0.27973108	2.3154864	20	1 28.8	21.0
194613	2001	<i>XE</i> ₁₃₉	17.4	X	62.89056	296.27011	84.01639	2.28285	0.1991961	0.27015510	2.3698850	20	—	—
194614	2001	<i>XD</i> ₁₄₀	17.2	X	25.95251	37.63120	112.15309	0.30451	0.1457423	0.27876959	2.3280875	20	2 14.2	18.9
194615	2001	<i>XB</i> ₁₄₃	16.6	X	244.66986	348.79853	173.10956	0.94497	0.1370540	0.26005992	2.4308254	20	12 14.8	19.5
194616	2001	<i>XN</i> ₁₄₇	17.1	X	32.01216	230.71138	200.25031	2.04547	0.1676193	0.27064849	2.3670039	20	—	—
194617	2001	<i>XU</i> ₁₄₇	17.4	X	86.80576	204.27641	194.01774	1.76271	0.2062444	0.27555649	2.3388136	20	1 6.3	19.5
194618	2001	<i>XV</i> ₁₄₇	16.9	X	347.51810	184.82122	233.88495	3.02116	0.1663877	0.26274227	2.4142528	20	—	—
194619	2001	<i>XQ</i> ₁₄₉	16.6	X	18.90136	355.73056	101.08391	2.29273	0.1540551	0.27129072	2.3632668	20	—	—
194620	2001	<i>XW</i> ₁₄₉	16.6	X	101.50535	79.98936	261.82461	4.83609	0.1925881	0.27015259	2.3698997	20	—	—
194621	2001	<i>XP</i> ₁₅₀	16.7	X	101.81383	259.84247	93.61095	6.81031	0.2466142	0.27279881	2.3545490	20	—	—
194622	2001	<i>XE</i> ₁₅₁	16.9	X	300.58799	19.08292	123.72862	1.29087	0.1467234	0.26484863	2.4014354	20	—	—
194623	2001	<i>XG</i> ₁₅₁	17.0	X	292.12024	238.67115	252.45145	3.05489	0.1677892	0.26211554	2.4180997	20	—	—
194624	2001	<i>XV</i> ₁₅₂	17.6	X	103.01204	213.34694	180.85534	2.47608	0.2126439	0.27748508	2.3279642	20	1 27.2	20.2
194625	2001	<i>XM</i> ₁₅₄	16.1	X	115.89999	93.20741	256.63034	4.05204	0.2594127	0.27423897	2.3462985	20	—	—
194626	2001	<i>XR</i> ₁₅₄	17.3	X	36.55217	174.54821	283.82068	0.47752	0.1554227	0.27378240	2.3489063	20	—	—
194627	2001	<i>XV</i> ₁₅₆	16.9	X	36.18782	209.52986	269.24402	1.29622	0.1629846	0.27568866	2.3380661	20	1 18.8	18.7
194628	2001	<i>XJ</i> ₁₅₇	16.6	X	39.13798	295.36901	100.26950	3.93969	0.1937372	0.26742968	2.3859590	20	—	—
194629	2001	<i>XD</i> ₁₅₈	16.6	X	325.17216	356.71531	133.30667	2.82423	0.1585017	0.26630668	2.3926619	20	—	—
194630	2001	<i>XA</i> ₁₅₉	16.6	X	328.40279	262.27646	190							

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>		
194641	2001	<i>XS</i> ₁₆₉	16.6	X	18.43840	342.10423	144.14426	2.68100	0.1625482	0.27354939	2.3502400	20	—	—
194642	2001	<i>XH</i> ₁₇₀	17.9	X	49.06243	227.17782	209.47342	1.37655	0.1626807	0.27366459	2.3495804	20	—	—
194643	2001	<i>XO</i> ₁₇₂	16.9	X	277.17692	336.85086	156.58450	2.07603	0.1478293	0.25929845	2.4355820	20	12 27.1	19.1
194644	2001	<i>XS</i> ₁₇₂	16.2	X	274.35824	310.65609	224.55116	2.64739	0.0698551	0.26493577	2.4009087	20	—	—
194645	2001	<i>XX</i> ₁₇₂	16.3	X	77.74999	123.62676	245.13648	4.83891	0.1586047	0.26827343	2.3809536	20	—	—
194646	2001	<i>XE</i> ₁₇₃	17.0	X	32.87833	259.24422	160.44171	1.37878	0.1787982	0.26835961	2.3804439	20	—	—
194647	2001	<i>XV</i> ₁₇₃	16.4	X	56.43994	308.29054	100.67976	7.64886	0.1066999	0.26967387	2.3727035	20	—	—
194648	2001	<i>XQ</i> ₁₇₅	17.1	X	352.44983	244.12730	232.28012	1.29963	0.1393844	0.26812701	2.3818204	20	—	—
194649	2001	<i>XS</i> ₁₇₅	17.2	X	49.77379	334.73479	116.31994	2.90474	0.1660972	0.27395942	2.3478944	20	1 5.9	18.9
194650	2001	<i>XB</i> ₁₇₆	17.0	X	305.61458	333.92577	137.95335	2.89363	0.1679188	0.26069294	2.4268887	20	—	—
194651	2001	<i>XE</i> ₁₇₇	17.1	X	34.11414	210.35315	206.47226	2.30673	0.2229474	0.26842870	2.3800354	20	—	—
194652	2001	<i>XL</i> ₁₇₇	16.7	X	314.28463	276.10677	167.26276	2.32709	0.1966664	0.25913859	2.4365836	20	12 28.7	18.4
194653	2001	<i>XS</i> ₁₇₇	16.8	X	62.93351	142.74393	259.47587	6.27836	0.2262336	0.27106433	2.3645825	20	—	—
194654	2001	<i>XY</i> ₁₇₇	16.7	X	52.41173	125.30382	268.97393	4.01432	0.2374097	0.26874269	2.3781812	20	—	—
194655	2001	<i>XG</i> ₁₈₀	16.1	X	234.71253	27.55731	149.18490	4.08078	0.0959271	0.25811585	2.4430158	20	12 26.3	19.2
194656	2001	<i>XK</i> ₁₈₀	16.4	X	42.44089	315.25562	146.10851	4.03662	0.1334207	0.27353117	2.3503443	20	1 5.4	18.4
194657	2001	<i>XQ</i> ₁₈₀	16.9	X	315.50825	2.07906	157.23400	3.17206	0.0861026	0.26773754	2.3841297	20	—	—
194658	2001	<i>XR</i> ₁₈₀	16.6	X	38.25071	157.07590	245.16203	5.22555	0.1062427	0.26541008	2.3980474	20	—	—
194659	2001	<i>XX</i> ₁₈₀	16.9	X	359.06531	319.49113	116.00809	5.37074	0.2039796	0.26480028	2.4012726	20	—	—
194660	2001	<i>XA</i> ₁₈₁	16.4	X	268.52809	202.60646	253.87965	3.07839	0.1728167	0.25339700	2.4732522	20	10 12.9	19.2
194661	2001	<i>XH</i> ₁₈₁	16.7	X	334.45298	260.21334	260.25517	0.44989	0.1257313	0.27026598	2.3692368	20	—	—
194662	2001	<i>XL</i> ₁₈₃	16.8	X	352.44095	228.82326	218.97845	2.47453	0.1126176	0.26415354	2.4056462	20	—	—
194663	2001	<i>XP</i> ₁₈₄	16.7	X	3.93836	170.69624	272.38284	1.65709	0.1251183	0.26536549	2.3983161	20	—	—
194664	2001	<i>XV</i> ₁₈₅	16.9	X	5.40697	344.42739	143.43382	2.17113	0.1168508	0.27178989	2.3603724	20	—	—
194665	2001	<i>XN</i> ₁₈₆	17.3	X	27.64435	0.38829	89.40423	2.29933	0.1536049	0.27054341	2.3676168	20	—	—
194666	2001	<i>XL</i> ₁₈₇	16.6	X	257.18028	256.86193	242.84666	3.68463	0.1102372	0.25652839	2.4530840	20	12 6.4	19.5
194667	2001	<i>XB</i> ₁₉₀	16.6	X	348.69843	348.97356	164.46776	2.75500	0.1874687	0.27035759	2.3687015	20	—	—
194668	2001	<i>XL</i> ₁₉₀	16.3	X	90.56250	272.90926	117.04295	5.29221	0.2629223	0.27356074	2.3501750	20	1 11.6	18.6
194669	2001	<i>XW</i> ₁₉₂	16.3	X	357.36123	215.43498	270.58890	3.31210	0.1418909	0.26880504	2.3778135	20	—	—
194670	2001	<i>XN</i> ₁₉₃	15.6	X	264.69393	291.92411	257.74475	5.74675	0.1901889	0.26160702	2.4212323	20	—	—
194671	2001	<i>XT</i> ₁₉₃	16.8	X	341.24844	332.96393	130.38821	2.99714	0.1399278	0.26392550	2.4070317	20	—	—
194672	2001	<i>XA</i> ₁₉₄	16.7	X	128.18461	155.58574	261.15094	2.05767	0.1490744	0.28055424	2.3109550	20	3 19.3	19.9
194673	2001	<i>XQ</i> ₁₉₅	16.4	X	149.61122	126.31231	270.96165	3.13160	0.1433459	0.28082623	2.3094626	20	3 16.2	19.7
194674	2001	<i>XR</i> ₁₉₅	16.7	X	75.63736	153.01610	273.65488	3.62424	0.2135481	0.27442631	2.3452306	20	1 28.4	18.7
194675	2001	<i>XP</i> ₁₉₇	16.4	X	343.43313	342.17112	117.29725	10.30541	0.1415909	0.26312060	2.4119380	20	—	—
194676	2001	<i>XY</i> ₁₉₇	15.9	X	149.17077	128.97620	291.22324	5.22626	0.2103694	0.28407277	2.2918331	20	4 18.9	19.6
194677	2001	<i>XP</i> ₁₉₈	16.4	X	3.39915	298.10916	121.30055	6.45593	0.1237419	0.26218765	2.4176563	20	—	—
194678	2001	<i>XK</i> ₁₉₉	16.4	X	181.13257	315.81372	113.71885	7.56285	0.0751843	0.28892173	2.2661183	20	6 2.4	19.5
194679	2001	<i>XA</i> ₂₀₂	16.7	X	132.53527	331.13545	97.01058	6.30271	0.1432086	0.28284290	2.2984719	20	4 12.3	19.9
194680	2001	<i>XJ</i> ₂₀₄	16.9	X	9.17464	166.55086	329.30222	3.26096	0.1603818	0.27408117	2.3471990	20	—	—
194681	2001	<i>XX</i> ₂₀₄	17.0	X	303.40369	335.92923	165.26951	5.41016	0.1354440	0.26620369	2.3932790	20	—	—
194682	2001	<i>XG</i> ₂₁₄	16.1	X	114.72909	176.04898	253.33718	6.76393	0.1165925	0.28034798	2.3120883	20	3 12.6	19.1
194683	2001	<i>XA</i> ₂₁₅	15.9	X	11.00245	316.86459	118.53779	10.73025	0.1842025	0.26690875	2.3890625	20	—	—
194684	2001	<i>XR</i> ₂₁₅	17.2	X	328.70690	55.07182	74.16574	3.28807	0.1496613	0.26868054	2.3785479	20	—	—
194685	2001	<i>XQ</i> ₂₁₇	17.1	X	350.39432	298.15048	98.07348	1.66870	0.2130167	0.25879794	2.4387213	20	—	—
194686	2001	<i>XT</i> ₂₂₀	16.7	X	86.96324	64.61103	266.69553	5.53025	0.1507639	0.26804145	2.3823272	20	—	—
194687	2001	<i>XZ</i> ₂₂₀	17.5	X	21.08975	44.13599	64.31683	3.82292	0.1698801	0.27415282	2.3467901	20	—	—
194688	2001	<i>XK</i> ₂₂₁	16.1	X	218.50527	312.50224	243.29191	12.93086	0.1396391	0.26419680	2.4053836	20	12 23.9	19.3
194689	2001	<i>XE</i> ₂₂₄	16.9	X	124.72162	266.83074	65.17291	4.13127	0.2626022	0.27533919	2.3400440	20	—	—
194690	2001	<i>XY</i> ₂₂₄	16.6	X	124.78115	347.72499	326.79253	2.99022	0.0834991	0.26924231	2.3752383	20	—	—
194691	2001	<i>XU</i> ₂₂₅	17.1	X	295.89804	190.71336	270.19305	1.59626	0.1632703	0.26061984	2.4273425	20	12 15.3	19.2
194692	2001	<i>XS</i> ₂₂₆	16.8	X	99.38383	53.41166	342.52181	2.76449	0.1417646	0.27741424	2.3283605	20	1 13.7	19.2
194693	2001	<i>XB</i> ₂₂₇	16.4	X	319.09105	166.33023	49.35315	7.38278	0.0521849	0.28125321	2.3071246	20	2 9.7	19.3
194694	2001	<i>XF</i> ₂₂₇	17.3	X	110.71624	334.40527	53.82229	4.44305	0.1201972	0.27790603	2.3266127	20	1 16.6	20.0
194695	2001	<i>XW</i> ₂₂₇	16.9	X	359.40137	136.08951	1.36026	3.42899	0.1134788	0.27439678	2.3453988	20	—	—
194696	2001	<i>XG</i> ₂₂₈	16.9	X	148.10679	39.81631	305.03440	2.41378	0.1733653	0.27847940	2.3224195	20	1 12.5	19.9
194697	2001	<i>XO</i> ₂₂₉	16.3	X	40.69219	52.18208	266.14743	6.70091	0.0912450	0.25724572	2.4485216	20	11 13.8	19.5
194698	2001	<i>XD</i> ₂₃₁	16.6	X	86.17181	68.90194	275.11121	7.88845	0.1446938	0.26846419	2.3798256	20	—	—
194699	2001	<i>XZ</i> ₂₃₁	17.4	X	351.52865	76.52187	3.80484	1.21598	0.1450751	0.26614057	2.3936574	20	—	—
194700	2001	<i>XL</i> ₂₃₂	17.0	X	102.43924	21.64788	345.86579	2.30768	0.1981079	0.27470485	2.3436450	20	—	—
194701	2001	<i>XT</i> ₂₃₂	17.4	X	54.89167	48.27031	13.75272	2.78048	0.1892850	0.27358520	2.3500349	20	—	—
194702	2001	<i>XN</i> ₂₃₅	16.6	X	88.59172	92.37649	266.03619	3.08813	0.0596154	0.26901871	2.3765542	20	—	—
194703	2001	<i>XS</i> ₂₃₅	16.1	X	210.73922	162.17134	31.46366	3.01838	0.1612785	0.25903278	2.4372471	20	12 8.2	19.3
194704	2001	<i>XX</i> ₂₃₅	17.2	X	348.01645	78.78193	34.61811	1.93447	0.1351294	0.26892053	2.3771326	20	—	—
194705	2001	<i>XO</i> ₂₃₆	17.3	X	74.49566	48.55810	28.55636	2.67794	0.1841151	0.27774301	2.3265227	20	2 7.6	19.4
194706	2001	<i>XP</i> ₂₃₆	16.8	X	272.18216	174.93923	353.23278	2.33829	0.0883631	0.26537332	2.3982689	20	—	—
194707	2001	<i>XL</i> ₂₃₇	16.5	X	252.92949	118.48169	8.16881	2.85029	0.1230003	0.25661315	2.4525438	20	11 9.3	19.3
194708	2001	<i>XK</i> ₂₃₈	16.3	X	316.03946	46.21173	27.94635	1.69172	0.1668844	0.25909462	2.4368593	20	12 17.0	18.1
194709	2001	<i>XB</i> ₂₃₉	16.5	X	242.86458	89.14945	283.06448	6.12844	0.1950383	0.29547768	2.3234733	20	5 12.7	19.8

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>
194721 2001 XG ₂₄₈	16.0	X	91.94395	300.43880	286.93397	7.29341	0.0944285	0.24399763	2.5363683	20	9 13.7	19.7
194722 2001 XH ₂₅₀	16.5	X	322.03215	64.63000	94.10062	6.17479	0.1551798	0.26937688	2.3744471	20	—	—
194723 2001 XR ₂₅₃	16.5	X	47.65571	1.93533	96.01036	3.20426	0.1844403	0.27507153	2.3415618	20	1 12.9	17.9
194724 2001 XR ₂₅₇	14.2	X	79.18939	235.99699	241.54108	10.39595	0.1500499	0.12418880	3.9787602	20	4 16.4	19.8
194725 2001 XE ₂₅₈	16.4	X	238.05847	356.87672	215.15994	7.72839	0.0680324	0.26968921	2.3726135	20	—	—
194726 2001 XT ₂₅₈	17.4	X	75.04790	293.13812	132.29966	5.68601	0.1981758	0.27793450	2.3254540	20	1 22.6	19.2
194727 2001 XU ₂₅₉	16.4	X	163.84744	231.79635	88.38979	10.87119	0.2568919	0.28084054	2.3093842	20	1 4.6	20.0
194728 2001 XG ₂₆₃	17.1	X	90.58163	90.06849	238.33391	1.66745	0.2366935	0.26988135	2.3714873	20	—	—
194729 2001 XX ₂₆₃	17.2	X	44.78986	222.48613	230.52332	7.23380	0.1359297	0.27675985	2.3320292	20	—	—
194730 2001 XO ₂₆₅	16.9	X	89.19539	229.73542	146.36254	3.01836	0.1968776	0.27114007	2.3641421	20	—	—
194731 2001 YB	17.1	X	70.63248	214.85521	169.89528	2.18342	0.2115995	0.27104000	2.3647240	20	—	—
194732 2001 YL ₃	15.6	X	262.92931	32.99510	57.82729	13.68703	0.2035414	0.25146144	2.4859275	20	9 30.0	18.8
194733 2001 YH ₅	16.5	X	149.78869	280.21967	75.57914	6.64457	0.1627112	0.28438203	2.2901712	20	1 27.6	19.7
194734 2001 YS ₇	16.7	X	72.82333	13.57345	11.72422	5.55898	0.0886430	0.27154906	2.3617677	20	—	—
194735 2001 YQ ₈	16.8	X	65.09040	304.66438	93.96683	9.01249	0.1016487	0.26932298	2.3747639	20	—	—
194736 2001 YS ₁₄	16.7	X	109.72265	88.80628	241.08137	5.19710	0.2445022	0.27135531	2.3628918	20	—	—
194737 2001 YL ₁₆	17.5	X	20.16797	200.93797	265.08620	0.47492	0.1440612	0.27210440	2.3585532	20	—	—
194738 2001 YD ₁₈	16.8	X	25.29147	197.68933	271.31346	0.61279	0.1365958	0.27235260	2.3571201	20	—	—
194739 2001 YD ₂₀	17.6	X	351.83467	164.47230	285.14662	2.27125	0.1459843	0.26797754	2.3827059	20	—	—
194740 2001 YE ₂₀	16.5	X	291.09771	114.26613	341.75750	2.93980	0.1587640	0.25969858	2.4330797	20	11 27.1	18.6
194741 2001 YH ₂₀	14.8	X	61.56400	109.47289	13.66487	2.82885	0.1770093	0.12325653	3.9987977	20	4 6.1	20.0
194742 2001 YN ₂₀	14.7	X	84.17448	198.91212	279.29014	1.63187	0.1757470	0.12570319	3.9467399	20	4 28.1	20.3
194743 2001 YQ ₂₁	14.6	X	80.59080	66.32853	69.01541	3.73445	0.1384327	0.12497971	3.9619565	20	5 10.1	20.2
194744 2001 YQ ₂₁	17.5	X	51.26752	71.75940	17.93785	3.09861	0.1919867	0.27665229	2.3326337	20	1 8.5	19.1
194745 2001 YF ₂₂	16.4	X	357.94070	2.52121	17.89811	2.35864	0.1552710	0.26604610	2.3942240	20	—	—
194746 2001 YJ ₂₅	16.2	X	235.38457	276.35767	304.49092	4.41752	0.1250201	0.26892976	2.3770782	20	—	—
194747 2001 YV ₂₅	17.7	X	51.15199	144.91484	294.80023	1.97014	0.1345830	0.27514328	2.3411547	20	—	—
194748 2001 YJ ₂₈	17.1	X	122.40620	310.79135	37.79427	3.24998	0.2041089	0.27586360	2.3370775	20	—	—
194749 2001 YU ₃₁	16.6	X	31.63373	300.97441	22.70068	1.63430	0.1840004	0.25808173	2.4432311	20	11 24.1	19.6
194750 2001 YC ₃₃	17.0	X	288.75651	138.44844	359.70847	2.03017	0.1589493	0.26312422	2.4119159	20	—	—
194751 2001 YT ₃₈	16.7	X	345.86720	72.23975	32.59871	2.93554	0.0877020	0.26778742	2.3838336	20	—	—
194752 2001 YU ₄₁	16.3	X	156.38983	295.56721	321.05911	5.47534	0.0651375	0.26007057	2.4307590	20	—	—
194753 2001 YU ₄₃	16.6	X	233.44037	127.49081	32.59818	1.83769	0.1321704	0.25755407	2.4465670	20	11 26.5	19.8
194754 2001 YD ₄₄	16.7	X	44.82549	145.93106	317.43086	1.53127	0.1369944	0.27588007	2.3369845	20	1 13.2	18.4
194755 2001 YJ ₄₄	16.0	X	147.02451	221.00062	294.44877	5.64624	0.2635193	0.24225848	2.5484927	20	8 18.7	20.6
194756 2001 YZ ₄₄	16.5	X	53.42909	0.80275	48.43500	3.54569	0.1795588	0.27140913	2.3625794	20	—	—
194757 2001 YJ ₄₆	17.0	X	88.88009	325.87395	74.02667	5.87412	0.1943498	0.27575133	2.3377118	20	1 11.2	19.3
194758 2001 YX ₄₇	16.4	X	31.10011	86.22079	275.94364	4.49146	0.1099565	0.26121025	2.4236835	20	—	—
194759 2001 YC ₄₉	17.0	X	44.71346	60.62816	30.91453	2.96688	0.1878145	0.27437972	2.3454960	20	—	—
194760 2001 YU ₄₉	16.8	X	134.86499	352.82858	18.60520	2.00156	0.1823866	0.27882656	2.3204914	20	2 2.7	19.8
194761 2001 YF ₅₀	17.0	X	66.02136	151.59156	276.71166	3.32389	0.0574307	0.27448896	2.3448738	20	—	—
194762 2001 YK ₅₂	16.5	X	324.79247	245.26282	277.31143	3.90097	0.0308589	0.27249952	2.3562727	20	—	—
194763 2001 YS ₅₂	16.1	X	340.06142	150.74737	273.87566	7.32877	0.1028129	0.26150755	2.4218462	20	—	—
194764 2001 YV ₅₂	16.8	X	271.14315	180.16616	298.08621	1.73246	0.1584876	0.25744923	2.4472311	20	11 21.7	19.3
194765 2001 YK ₅₄	16.0	X	11.13048	100.77923	14.13682	2.24343	0.1648985	0.27146725	2.3622422	20	—	—
194766 2001 YG ₅₆	16.8	X	79.30333	295.91003	60.61045	6.27663	0.2403057	0.26995313	2.3710669	20	—	—
194767 2001 YR ₅₉	16.1	X	303.44994	7.08405	108.50739	3.76621	0.1288655	0.25963284	2.4334904	20	—	—
194768 2001 YZ ₅₉	17.0	X	28.76573	28.17791	29.84408	2.76748	0.2031883	0.26841689	2.3801052	20	—	—
194769 2001 YB ₆₄	17.2	X	356.77525	170.46779	286.08809	1.47513	0.1793849	0.26708302	2.3880231	20	—	—
194770 2001 YE ₆₄	16.6	X	36.76028	128.07008	337.97343	1.85589	0.1633096	0.27389788	2.3482460	20	—	—
194771 2001 YW ₆₄	17.3	X	25.00901	22.36490	41.72201	2.78659	0.1662563	0.26770667	2.3843129	20	—	—
194772 2001 YZ ₆₄	16.7	X	76.08416	99.74989	295.89599	2.77010	0.1608458	0.27194056	2.3595004	20	—	—
194773 2001 YC ₆₇	16.5	X	261.95788	144.62604	353.28492	3.30483	0.1089970	0.25778265	2.4451205	20	12 11.5	19.2
194774 2001 YD ₆₉	16.4	X	310.40311	82.94809	35.24350	1.41120	0.1425556	0.26218307	2.4176845	20	—	—
194775 2001 YD ₇₀	17.0	X	319.39492	105.50305	312.59480	5.25631	0.1164228	0.25649570	2.4532924	20	11 26.2	19.6
194776 2001 YG ₇₂	17.2	X	304.04889	93.56753	24.13799	2.67844	0.1358865	0.26099643	2.4250070	20	—	—
194777 2001 YA ₇₄	17.4	X	78.30307	48.31378	355.20338	1.96048	0.1647890	0.27252788	2.3561093	20	—	—
194778 2001 YP ₈₀	15.8	X	241.17811	38.14016	102.47638	7.50622	0.0756622	0.25440139	2.4667382	20	11 21.1	18.9
194779 2001 YW ₈₀	16.4	X	309.77012	195.88931	311.98436	1.58236	0.1413112	0.26476136	2.4019630	20	—	—
194780 2001 YV ₈₁	16.4	X	262.63186	166.74696	359.92719	1.50621	0.1253243	0.26012512	2.4304192	20	—	—
194781 2001 YA ₈₂	16.3	X	321.15684	171.08430	296.39485	8.67650	0.1808704	0.26216200	2.4178140	20	—	—
194782 2001 YN ₈₂	16.6	X	134.68934	324.55805	77.09703	7.23611	0.1633437	0.28054777	2.3109906	20	3 13.7	19.9
194783 2001 YZ ₈₂	16.9	X	347.51260	116.78169	13.06028	2.54585	0.1529001	0.26817971	2.3815083	20	—	—
194784 2001 YE ₈₃	16.2	X	213.85632	75.74580	288.50331	9.83481	0.1817907	0.28720745	2.2751267	20	4 1.4	20.0
194785 2001 YQ ₈₃	16.7	X	162.33836	317.94540	94.47431	2.90406	0.1736955	0.28588281	2.2821491	20	4 22.7	20.1
194786 2001 YR ₈₄	16.5	X	29.18931	9.56515	106.18565	4.74762	0.1347887	0.27271237	2.3550465	20	1 1.3	18.7
194787 2001 YD ₈₇	16.3	X	348.50870	72.82296	39.26503	2.95575	0.1382962	0.26611633	2.3938028	20	—	—
194788 2001 YG ₈₈	16.9	X	241.97549	108.96887	64.42925	2.09330	0.1258583	0.25807589	2.4432679	20	12 27.6	19.6
194789 2001 YU ₈₉	16.9	X	314.70634	327.57990	84.11274	2.81322	0.1593980	0.25449868	2.4661095	20	11 8.7	18.9
194790 2001 YV ₈₉	14.2	X	35.27067	43.75228	297.21853	16.78492	0.0651730	0.14681213	3.5587277	20	11 3.6	19.4
194791 2001 YB ₉₀	16.5	X	252.61232	104.60185	76.33848	3.56900	0.1197833	0.26008266	2.4306837	20	—	—
194792 2001 YL ₉₀	16.4	X	252.62806	211.25945	310.10966	5.58567	0.0949387	0.25829404	2.4418920	20	—	—
194793 2001 YJ ₉₀	17.2	X	340.03850	199.67185	312.87437	0.62184	0.1187915	0.26951049	2.3736623	20	—	—
194794 2001 YN ₉₁	16.2	X	307.38289	345.00107	116.67667	3.81115	0.1362716	0.25857078	2.4401494	20	—	—
194795 2001 YU ₉₄	17.4	X	33.17176	142.24820	290.55863	1.06400	0.1900937	0.2694748				

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>
194801 2001 YX ₁₀₁	16.2	X	77.03826	272.67499	66.92856	9.60569	0.2513018	0.26595722	2.3947574	20	—	—
194802 2001 YT ₁₀₂	17.0	X	30.32777	254.58771	194.65208	1.73294	0.1512907	0.27122478	2.3636498	20	—	—
194803 2001 YJ ₁₀₃	16.5	X	295.91354	250.89401	239.91867	1.42889	0.1134912	0.26177495	2.4201967	20	—	—
194804 2001 YL ₁₀₃	16.8	X	5.44862	309.36282	125.33338	2.87067	0.1417553	0.26568236	2.3964088	20	—	—
194805 2001 YS ₁₀₃	15.9	X	20.20779	249.51775	219.95761	3.38919	0.1641874	0.27153958	2.3618227	20	—	—
194806 2001 YA ₁₀₄	17.1	X	9.77839	247.01869	175.01027	1.40806	0.1519513	0.26472868	2.4021607	20	—	—
194807 2001 YH ₁₀₄	15.9	X	114.41240	329.41348	240.15871	1.09150	0.1418501	0.24449686	2.5329145	20	9 23.2	19.7
194808 2001 YC ₁₀₆	16.5	X	332.67777	228.20420	260.07215	3.47969	0.1359615	0.26583623	2.3954840	20	—	—
194809 2001 YD ₁₀₆	17.1	X	68.65134	236.93192	164.41953	2.60775	0.1788900	0.27066327	2.3669178	20	—	—
194810 2001 YQ ₁₀₆	16.5	X	290.72016	239.26462	242.05660	4.35272	0.0419083	0.25869924	2.4393416	20	—	—
194811 2001 YS ₁₀₆	17.2	X	47.56628	245.57449	168.52663	2.19400	0.2039294	0.26909607	2.3760987	20	—	—
194812 2001 YC ₁₀₇	16.6	X	43.93662	177.86777	246.97941	3.80811	0.2106189	0.26958027	2.3732527	20	—	—
194813 2001 YL ₁₀₉	16.0	X	321.30333	233.44701	239.28116	1.80116	0.1433232	0.26169299	2.4207020	20	—	—
194814 2001 YS ₁₀₉	16.5	X	289.08710	129.32742	17.18278	2.50038	0.1458988	0.26093740	2.4253727	20	—	—
194815 2001 YR ₁₁₂	15.4	X	127.32128	293.25611	273.15827	11.75730	0.1265444	0.24348080	2.5399562	20	9 25.3	19.6
194816 2001 YJ ₁₁₆	17.2	X	345.91287	314.61764	113.04021	2.95672	0.1854208	0.26120325	2.4237268	20	—	—
194817 2001 YC ₁₁₇	16.0	X	295.82895	65.81942	45.72099	2.68956	0.1304918	0.25825506	2.4421377	20	12 31.8	18.3
194818 2001 YP ₁₁₇	16.3	X	307.00617	130.11693	358.62304	1.88913	0.1624804	0.26146766	2.4220925	20	—	—
194819 2001 YQ ₁₁₇	16.0	X	272.42771	126.84261	70.60360	3.17905	0.1460281	0.26450719	2.4035015	20	—	—
194820 2001 YD ₁₁₇	16.5	X	300.49257	16.02868	74.82453	5.13689	0.1574453	0.25669986	2.4519915	20	12 8.4	18.4
194821 2001 YT ₁₂₀	15.6	X	5.69504	119.71205	295.30749	22.05981	0.2810691	0.26218491	2.4176731	20	—	—
194822 2001 YC ₁₂₃	16.5	X	73.85929	43.80554	354.52887	5.04031	0.1449124	0.27324300	2.3519966	20	—	—
194823 2001 YY ₁₂₃	16.4	X	83.24567	30.75021	40.02629	6.80513	0.1031180	0.27805587	2.3247772	20	2 2.7	19.0
194824 2001 YU ₁₂₄	17.1	X	29.45084	145.02456	356.24458	4.39772	0.1260487	0.27822480	2.3238361	20	2 9.9	19.2
194825 2001 YD ₁₂₇	16.3	X	281.77843	95.04545	4.63794	5.00456	0.0745096	0.25666786	2.4521953	20	11 22.6	19.1
194826 2001 YJ ₁₂₈	16.7	X	128.48506	312.76054	24.29905	4.81706	0.2471625	0.27440028	2.3453789	20	—	—
194827 2001 YS ₁₃₀	16.5	X	355.20301	66.07271	55.25506	6.60106	0.0981924	0.26870043	2.3784305	20	—	—
194828 2001 YM ₁₃₁	16.2	X	316.77207	130.51945	48.47543	5.10970	0.0889955	0.27135859	2.3628728	20	—	—
194829 2001 YX ₁₃₁	16.3	X	323.89572	201.63809	304.45470	6.69245	0.1570674	0.27000717	2.3707505	20	—	—
194830 2001 YL ₁₄₁	16.4	X	162.17850	7.07881	252.02649	5.69943	0.1004503	0.26510549	2.3998839	20	—	—
194831 2001 YO ₁₄₃	16.7	X	90.31067	353.97551	337.79396	3.94968	0.2441833	0.26879911	2.3778484	20	—	—
194832 2001 YY ₁₅₁	16.9	X	10.51299	8.79180	18.82022	4.47678	0.2213804	0.26200818	2.4187602	20	—	—
194833 2001 YL ₁₅₂	15.4	X	100.30360	179.52537	32.86114	8.48180	0.1526457	0.24317303	2.5420989	20	9 17.1	19.3
194834 2001 YY ₁₅₅	16.3	X	279.58024	93.78993	30.35030	10.51407	0.1046494	0.25930430	2.4355455	20	12 21.9	19.1
194835 2001 YZ ₁₅₇	16.8	X	184.78921	164.49921	39.87615	2.91642	0.1569402	0.25379421	2.4706710	20	11 23.9	20.6
194836 2001 YP ₁₆₁	17.0	X	7.82234	277.57942	142.15252	5.67873	0.1289234	0.26257742	2.4152632	20	—	—
194837 2002 AJ	16.8	X	170.65874	342.24401	85.20831	5.51699	0.1791887	0.28846534	2.2685079	20	5 20.1	20.4
194838 2002 AU ₃	16.3	X	119.01533	129.14652	284.55667	1.90495	0.2308771	0.27880800	2.3205944	20	3 15.5	19.5
194839 2002 AB ₄	14.8	X	177.38158	230.59216	264.49046	23.88943	0.2895297	0.24021306	2.5629392	20	8 6.5	19.9
194840 2002 AA ₆	16.5	X	299.61279	188.52650	299.35225	3.76099	0.0757208	0.26244326	2.4160862	20	—	—
194841 2002 AP ₁₀	16.9	X	323.75628	43.74425	94.00678	4.07699	0.1740830	0.26557616	2.3970476	20	—	—
194842 2002 AX ₁₀	16.6	X	335.60850	137.24215	308.89064	1.93686	0.1792763	0.26101599	2.4248859	20	—	—
194843 2002 AW ₁₂	16.5	X	319.57113	302.02941	145.74115	2.63929	0.1543056	0.25762630	2.4461097	20	—	—
194844 2002 AB ₁₃	17.2	X	14.20502	169.52479	293.05182	0.79111	0.1372177	0.26720606	2.3872900	20	—	—
194845 2002 AW ₁₅	16.4	X	354.46188	0.61464	142.64373	5.63278	0.1151170	0.27148413	2.3621443	20	—	—
194846 2002 AY ₁₆	16.2	X	79.15134	269.15868	138.82568	6.51104	0.1115683	0.27246702	2.3564601	20	—	—
194847 2002 AM ₁₇	16.7	X	90.39862	257.67553	102.01576	6.88780	0.1932079	0.26813424	2.3817775	20	—	—
194848 2002 AU ₁₈	15.2	X	84.43034	90.61353	336.23154	5.93540	0.1859187	0.27407518	2.3472332	20	2 10.9	17.6
194849 2002 AN ₂₀	16.8	X	18.23351	84.04829	351.16441	4.55541	0.2370506	0.26709292	2.3879641	20	—	—
194850 2002 AW ₂₃	16.8	X	292.08915	308.73524	186.37998	1.90050	0.1501688	0.26013802	2.4303388	20	—	—
194851 2002 AU ₂₄	15.9	X	354.67334	112.66549	274.33665	13.53507	0.1859709	0.25669736	2.4520074	20	12 25.2	18.4
194852 2002 AZ ₂₄	15.8	X	141.89640	316.43050	203.83769	3.76704	0.1945300	0.23978044	2.5660210	20	8 18.9	20.2
194853 2002 AB ₂₅	15.9	X	113.35725	328.99136	162.94864	5.74885	0.1549717	0.23270609	2.6177664	20	6 14.3	19.8
194854 2002 AC ₂₅	16.5	X	23.23557	194.25492	182.12437	4.73553	0.2176609	0.25981864	2.4323301	20	—	—
194855 2002 AE ₂₈	15.8	X	174.68066	181.34053	323.64587	4.71206	0.0913038	0.24355410	2.5394466	20	9 1.3	19.5
194856 2002 AM ₂₈	16.1	X	314.68261	79.44144	33.68160	7.33217	0.0819489	0.25996061	2.4314444	20	—	—
194857 2002 AL ₂₉	15.6	X	45.97558	195.15265	268.10090	23.80068	0.1626558	0.27852636	2.3221584	20	1 10.2	17.7
194858 2002 AB ₃₂	16.5	X	325.35876	274.18226	193.20438	1.88245	0.1663732	0.26028430	2.4294282	20	—	—
194859 2002 AQ ₃₅	16.9	X	276.48833	164.92025	298.80148	0.54365	0.1445834	0.25560114	2.4590132	20	11 11.9	19.4
194860 2002 AF ₃₆	14.0	X	109.10778	7.65947	93.30643	4.02331	0.1955337	0.12563247	3.9482209	20	5 8.3	20.0
194861 2002 AX ₃₈	16.4	X	344.02386	306.15770	142.20164	7.00963	0.1015792	0.26235767	2.4166117	20	—	—
194862 2002 AY ₃₉	16.2	X	303.94424	246.30826	268.27439	6.14961	0.0573190	0.26408498	2.4060626	20	—	—
194863 2002 AA ₄₀	16.8	X	343.81807	264.05543	190.36815	2.29480	0.1479334	0.26290415	2.4132617	20	—	—
194864 2002 AY ₄₀	16.7	X	174.78512	121.45505	261.66124	3.43737	0.1697010	0.28209391	2.3025386	20	3 24.6	20.2
194865 2002 AL ₄₂	16.9	X	328.71631	322.62922	213.14586	1.94312	0.1785747	0.27060485	2.3672584	20	—	—
194866 2002 AN ₄₂	16.7	X	293.51190	229.64723	175.45369	2.31694	0.2124656	0.25155212	2.4853300	20	9 5.5	19.1
194867 2002 AO ₄₂	17.9	X	31.82892	295.68617	138.78751	3.43822	0.1708736	0.26923689	2.3752701	20	—	—
194868 2002 AH ₄₅	16.1	X	185.89694	41.30988	166.89235	2.93494	0.1375267	0.25390040	2.4699820	20	12 2.3	19.7
194869 2002 AH ₅₀	16.1	X	58.06953	261.04450	291.51879	3.65348	0.1229631	0.23186830	2.6240683	20	6 19.7	19.4
194870 2002 AP ₅₀	16.8	X	80.09040	231.73937	281.20877	3.51716	0.0824708	0.28424740	2.2908943	20	5 19.5	19.5
194871 2002 AD ₅₁	16.5	X	310.69263	353.77055	146.77831	1.42770	0.1337336	0.26303877	2.4124383	20	—	—
194872 2002 AE ₅₆	17.5	X	4.00711	168.25979	302.18530	1.31197	0.1474442	0.26760161	2.3849369	20	—	—
194873 2002 AJ ₅₆	16.9	X	29.39667	322.12634	124.72322	2.84011	0.1819513	0.26881321	2.3777653	20	—	—
194874 2002 AV ₅₆	15.5	X	68.22980	326.13373	293.85022	10.56148	0.2478979	0.24308031	2.5427453	20	10 16.1	19.6
194875 2002 AJ ₅₇	16.4	X	304.21404	320.51314	139.42120	3.85761	0.1146684	0.25700				

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>		
194881	2002	AQ ₇₂	17.1	X	34.52200	59.16274	0.78220	1.25162	0.1753182	0.26855225	2.3793054	20	—	—
194882	2002	AA ₇₆	17.1	X	258.67928	85.30381	91.87781	2.28682	0.1215376	0.26120726	2.4237020	20	—	—
194883	2002	AU ₇₆	17.1	X	193.32975	170.21498	26.62928	3.23333	0.1437869	0.25381195	2.4705558	20	11 24.1	20.8
194884	2002	AW ₇₆	17.1	X	34.71381	69.32557	29.44435	2.71293	0.1709038	0.27214119	2.3583406	20	—	—
194885	2002	AJ ₇₇	16.6	X	217.78262	194.69904	13.38295	2.34631	0.1597681	0.25858378	2.4400676	20	—	—
194886	2002	AK ₇₈	17.2	X	357.28776	133.90518	324.78842	5.14486	0.1663335	0.26651015	2.3914440	20	—	—
194887	2002	AT ₇₉	16.8	X	76.79950	282.79091	86.59846	6.12169	0.1232178	0.26675138	2.3900020	20	—	—
194888	2002	AM ₈₁	16.8	X	3.91588	247.53608	191.28612	4.60846	0.2021912	0.26684560	2.3894394	20	—	—
194889	2002	AY ₈₁	16.9	X	7.44268	228.88509	219.07988	5.03809	0.2018604	0.26773548	2.3841419	20	—	—
194890	2002	AQ ₈₃	16.1	X	295.59675	276.27802	217.53356	4.09375	0.1413368	0.26147048	2.4220751	20	—	—
194891	2002	AW ₈₃	15.6	X	15.74972	78.56498	133.99192	12.93024	0.0935160	0.23072189	2.6327534	20	5 9.9	18.9
194892	2002	AP ₉₀	16.4	X	128.71883	220.47338	320.42064	3.87400	0.1140496	0.24135125	2.5548751	20	8 29.9	20.1
194893	2002	AX ₉₄	16.3	X	231.40690	161.19823	11.79471	2.43867	0.1471210	0.25591863	2.4569790	20	12 8.1	19.3
194894	2002	AM ₉₅	17.6	X	65.21450	104.60558	328.55927	1.64781	0.1527530	0.27349852	2.3505314	20	1 10.2	19.7
194895	2002	AR ₉₅	17.2	X	103.44139	151.21816	317.45960	1.52937	0.0724536	0.28293133	2.2979929	20	4 17.3	20.0
194896	2002	AM ₉₅	17.1	X	3.36892	57.89522	27.19168	2.65250	0.1991900	0.26604068	2.3942566	20	—	—
194897	2002	AF ₉₆	16.8	X	300.18985	85.24974	47.46429	2.66576	0.1216430	0.26141249	2.4224333	20	—	—
194898	2002	AB ₉₇	17.1	X	26.59203	327.93643	90.60436	2.37677	0.1744049	0.26604196	2.3942489	20	—	—
194899	2002	AG ₉₇	17.2	X	34.81447	24.83227	81.48397	2.25830	0.1504192	0.27235265	2.3571197	20	—	—
194900	2002	AB ₉₈	17.3	X	42.33082	79.23324	16.40602	1.48080	0.1429145	0.27223153	2.3578188	20	—	—
194901	2002	AY ₉₈	15.9	X	195.18929	122.56905	3.56906	3.09191	0.1422104	0.24473995	2.5312370	20	8 28.4	19.8
194902	2002	AG ₉₉	16.2	X	288.50717	74.24892	5.41157	3.63656	0.0631364	0.25258204	2.4785693	20	11 5.7	19.2
194903	2002	AP ₁₀₃	17.4	X	346.71332	43.46476	36.32323	2.51205	0.1951336	0.26245011	2.4160442	20	—	—
194904	2002	AR ₁₀₅	17.2	X	341.81692	298.73578	110.22893	2.51878	0.1792963	0.25794979	2.4440641	20	—	—
194905	2002	AO ₁₀₅	17.3	X	264.35261	180.98105	325.68030	0.91015	0.1383257	0.25715589	2.4490918	20	12 23.7	19.9
194906	2002	AM ₁₀₆	17.0	X	151.04549	295.39636	117.71025	3.76734	0.1274074	0.28290646	2.2981276	20	4 9.8	20.3
194907	2002	AC ₁₀₇	16.8	X	354.51201	314.94894	104.92415	5.80940	0.1764141	0.26097869	2.4251169	20	—	—
194908	2002	AV ₁₀₇	16.3	X	344.67919	287.10537	122.11960	3.30925	0.0919097	0.25675703	2.4516275	20	12 26.5	19.1
194909	2002	AC ₁₁₀	16.3	X	259.29137	68.37733	101.99629	2.54668	0.1221859	0.25852652	2.4404279	20	—	—
194910	2002	AD ₁₁₂	16.3	X	279.69952	40.02395	117.09003	7.96064	0.0262503	0.26074204	2.4265841	20	—	—
194911	2002	AE ₁₁₃	16.8	X	14.50430	345.17646	103.11803	3.21899	0.1806651	0.26662729	2.3907435	20	—	—
194912	2002	AG ₁₁₄	16.0	X	78.91157	80.72970	307.57362	5.73014	0.1220355	0.26824237	2.3811374	20	—	—
194913	2002	AT ₁₁₅	16.5	X	35.22407	356.35646	33.99878	2.83575	0.2087137	0.26297684	2.4128170	20	—	—
194914	2002	AT ₁₂₀	15.7	X	118.19904	81.32268	119.27081	6.38961	0.0619415	0.24179391	2.5517560	20	9 12.5	19.3
194915	2002	AD ₁₂₁	17.2	X	341.30732	81.58674	33.12665	2.55277	0.1565917	0.26425222	2.4050473	20	—	—
194916	2002	AS ₁₂₁	16.3	X	8.18917	92.63087	12.63801	2.91362	0.1350413	0.26685774	2.3893669	20	—	—
194917	2002	AY ₁₂₁	17.0	X	348.45038	123.17456	332.13597	5.29889	0.1489315	0.26289561	2.4133140	20	—	—
194918	2002	AC ₁₂₂	16.4	X	312.31336	56.04719	41.45920	2.74778	0.1290042	0.26736364	2.4460461	20	—	—
194919	2002	AU ₁₂₂	16.7	X	125.09863	318.77315	83.31716	3.60736	0.2305104	0.27771507	2.3266787	20	3 9.9	20.0
194920	2002	AB ₁₂₄	15.9	X	333.50668	85.63505	325.22945	9.21015	0.2509585	0.25595249	2.4567623	20	12 29.1	17.8
194921	2002	AO ₁₂₄	16.6	X	316.12785	27.08847	67.57414	3.03223	0.1398118	0.25796517	2.4439670	20	—	—
194922	2002	AK ₁₂₅	17.0	X	268.14003	270.03544	328.08550	17.30383	0.0432122	0.37530350	1.9034770	20	—	—
194923	2002	AH ₁₂₆	17.0	X	4.81492	108.52214	310.87497	5.77318	0.1266658	0.26203482	2.4185963	20	—	—
194924	2002	AP ₁₂₈	16.7	X	122.23977	351.16015	58.01474	3.92826	0.2176230	0.27808623	2.3246080	20	3 14.6	19.9
194925	2002	AS ₁₂₈	15.8	X	186.66890	161.41720	218.30428	28.42422	0.1098239	0.24098954	2.5574309	20	8 11.5	19.5
194926	2002	AM ₁₃₃	16.4	X	230.16965	263.06189	336.19228	6.32475	0.1049829	0.25318905	2.4746062	20	10 28.1	19.5
194927	2002	AL ₁₃₄	14.5	X	91.68503	5.71791	118.39649	3.86020	0.1749578	0.12370939	3.9890329	20	5 15.1	20.2
194928	2002	AQ ₁₃₄	16.7	X	277.64686	35.20064	132.66661	1.91157	0.1246010	0.26392092	2.4070596	20	—	—
194929	2002	AD ₁₃₇	16.6	X	235.50834	350.99047	232.16641	2.24300	0.1080872	0.26433379	2.4045525	20	—	—
194930	2002	AG ₁₃₇	17.4	X	52.44000	301.17783	123.68715	1.88212	0.1638961	0.27081401	2.3660393	20	—	—
194931	2002	AJ ₁₃₉	16.3	X	326.44369	55.42134	28.09104	4.06923	0.0927343	0.25767935	2.4457739	20	—	—
194932	2002	AQ ₁₃₉	17.3	X	248.70321	70.42548	117.12552	3.26180	0.0866757	0.26144766	2.4222162	20	—	—
194933	2002	AP ₁₄₁	16.5	X	299.76709	195.30487	266.80379	1.82977	0.0593907	0.25835782	2.4414901	20	12 26.9	19.4
194934	2002	AQ ₁₄₃	17.1	X	44.70120	139.54527	262.37916	0.95866	0.1835323	0.26704860	2.3882283	20	—	—
194935	2002	AP ₁₄₄	17.9	X	359.86517	171.36852	276.91283	0.47498	0.1454191	0.26517180	2.3994838	20	—	—
194936	2002	AE ₁₄₆	16.9	X	230.84878	289.95933	264.45050	1.48853	0.1165944	0.25879376	2.4387476	20	—	—
194937	2002	AH ₁₄₇	15.8	X	1.14886	236.90306	315.94243	7.72395	0.1575492	0.22515697	2.6759569	20	3 6.2	18.6
194938	2002	AG ₁₄₉	17.0	X	312.50151	72.36600	12.92213	2.45246	0.0730684	0.25765472	2.4459297	20	12 23.6	19.7
194939	2002	AH ₁₅₀	17.0	X	339.12797	32.05249	5.39894	1.34046	0.1902084	0.25645138	2.4535751	20	12 11.4	19.1
194940	2002	AU ₁₅₀	16.5	X	290.83088	53.84866	59.63061	2.99168	0.1699014	0.25645265	2.4535670	20	12 21.4	18.6
194941	2002	AW ₁₅₀	16.5	X	240.54516	206.11103	312.49382	2.02105	0.1445360	0.25358988	2.4719979	20	12 1.1	19.5
194942	2002	AE ₁₅₂	16.5	X	278.40288	151.01239	13.20561	2.41939	0.1671994	0.25944724	2.4346508	20	—	—
194943	2002	AF ₁₅₂	16.8	X	248.85189	91.62872	60.70860	2.69966	0.1583220	0.25391498	2.4698875	20	12 2.7	19.7
194944	2002	AB ₁₅₃	16.0	X	104.85716	173.09178	322.57236	7.82390	0.1263255	0.23029001	2.6360440	20	6 4.6	19.8
194945	2002	AM ₁₅₄	16.4	X	330.74752	53.45481	67.82310	2.51465	0.1604754	0.26227889	2.4170956	20	—	—
194946	2002	AD ₁₅₇	16.1	X	95.85768	293.98700	278.34206	4.32012	0.0712180	0.23998726	2.5645466	20	8 28.1	19.8
194947	2002	AR ₁₅₈	15.4	X	133.85914	294.36449	255.17022	3.54157	0.0991182	0.24210142	2.5495948	20	9 13.7	19.2
194948	2002	AE ₁₆₀	16.2	X	341.21227	210.84842	201.32697	1.68250	0.1744736	0.25666584	2.4522082	20	—	—
194949	2002	AW ₁₆₀	16.3	X	19.29762	322.58656	149.40416	7.22908	0.1555504	0.26928017	2.3750156	20	—	—
194950	2002	AX ₁₆₀	15.5	X	153.76441	203.57317	295.09408	11.63837	0.1760825	0.23823330	2.5771186	20	8 1.5	19.7
194951	2002	AV ₁₆₁	16.5	X	14.63602	183.68145	213.83843	1.35412	0.1795564	0.25946802				

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>
194961 2002 AS ₁₇₂	16.3	X	24.04226	277.85407	107.72333	10.20948	0.2465310	0.26181409	2.4199555	20	—	—
194962 2002 AM ₁₇₃	17.4	X	300.65403	107.23013	338.31301	1.58082	0.1802156	0.25589972	2.4571000	20	11 28.6	19.3
194963 2002 AD ₁₇₄	16.5	X	195.34647	148.87011	81.10406	3.16868	0.1498800	0.25698732	2.4501627	20	—	—
194964 2002 AV ₁₇₄	16.6	X	95.01799	253.37671	115.28800	3.35734	0.2302279	0.26972720	2.3723908	20	—	—
194965 2002 AX ₁₇₄	16.5	X	43.61320	41.85885	332.33303	1.08882	0.1894583	0.26207127	2.4183720	20	—	—
194966 2002 AU ₁₇₆	17.4	X	298.06513	41.48201	77.96713	3.17162	0.1808613	0.25842098	2.4410923	20	—	—
194967 2002 AN ₁₇₇	16.0	X	22.79799	353.82061	74.48055	2.16270	0.1505566	0.26475438	2.4020052	20	—	—
194968 2002 AQ ₁₇₈	16.2	X	186.15241	66.59394	86.31884	1.68375	0.1258503	0.24448193	2.5330176	20	9 23.8	20.0
194969 2002 AJ ₁₇₉	15.3	X	156.35218	140.87955	50.17418	3.17502	0.0883345	0.24477999	2.5309609	20	10 12.8	19.0
194970 Máraí	16.5	X	334.07355	104.40208	146.37930	2.43335	0.1341701	0.22723349	2.6596296	20	4 14.3	19.3
194971 2002 AY ₁₈₀	16.5	X	11.78013	96.32817	326.72541	13.16790	0.2089342	0.26626119	2.3929345	20	—	—
194972 2002 AJ ₁₈₅	16.8	X	39.39173	337.98962	58.76331	2.28203	0.1817057	0.26601059	2.3944371	20	—	—
194973 2002 AF ₁₈₇	15.4	X	3.07453	187.43698	50.08932	8.75311	0.1853034	0.22876169	2.6477716	20	5 18.1	17.8
194974 2002 AL ₁₈₉	15.7	X	22.88437	38.35560	203.31865	12.98629	0.2105575	0.23113321	2.6296290	20	7 10.4	18.6
194975 2002 AO ₁₉₀	17.2	X	300.04039	257.82625	191.03254	0.68438	0.1573375	0.25640858	2.4538482	20	12 4.4	19.4
194976 2002 AW ₂₀₀	17.7	X	330.71031	304.88302	160.47406	1.71719	0.1675631	0.26248932	2.4158036	20	—	—
194977 2002 AT ₂₀₂	15.7	X	326.24205	327.16161	298.39611	13.19354	0.1650096	0.22658401	2.6647096	20	4 8.3	19.2
194978 2002 AU ₂₀₂	17.5	X	12.45439	197.77024	276.29184	0.66116	0.1339128	0.26891623	2.3771580	20	—	—
194979 2002 AE ₂₀₃	15.5	X	113.00888	280.95289	163.54516	12.84940	0.1952111	0.17675453	3.1445296	20	4 19.1	20.3
194980 2002 AS ₂₀₃	16.7	X	321.42427	10.74457	337.30093	4.47945	0.0857156	0.24060985	2.5601208	20	8 17.9	19.6
194981 2002 AU ₂₀₃	16.5	X	3.02213	291.62836	31.10605	0.70597	0.0727967	0.23919012	2.5702413	20	9 20.0	19.3
194982 Fúria	15.9	X	319.09911	45.48130	14.29963	10.18310	0.2319743	0.25618690	2.4552635	20	11 29.8	17.7
194983 2002 BK	15.7	X	61.32141	256.20359	17.73473	4.21422	0.1521032	0.24253580	2.5465496	20	10 19.3	19.0
194984 2002 BO ₁	15.6	X	66.88541	231.12131	0.51605	3.78327	0.1158456	0.23681669	2.5873857	20	8 26.2	19.0
194985 2002 BR ₁	16.7	X	338.83826	181.34708	302.94902	1.74207	0.1409096	0.26500365	2.4004988	20	—	—
194986 2002 BC ₂	17.3	X	4.92171	285.44447	172.42524	2.29051	0.1468047	0.26605122	2.3941933	20	—	—
194987 2002 BE ₆	16.1	X	86.35063	254.45931	105.42895	10.36600	0.1510809	0.26609088	2.3939554	20	—	—
194988 2002 BY ₆	15.9	X	123.87572	169.11228	347.57081	8.64213	0.0988635	0.23801050	2.5787266	20	7 25.4	19.7
194989 2002 BZ ₆	14.3	X	149.58503	14.72345	62.53926	9.97265	0.2552230	0.12603070	3.9398996	20	5 18.4	20.9
194990 2002 BS ₇	17.0	X	285.00191	4.93447	110.80902	4.04101	0.1389617	0.25558160	2.4591385	20	12 15.8	19.5
194991 2002 BW ₇	16.4	X	300.28051	131.91530	343.24896	2.10134	0.1593992	0.25785938	2.4446354	20	—	—
194992 2002 BH ₈	16.9	X	297.51326	95.11687	44.10173	2.01819	0.1368168	0.25988073	2.4319426	20	—	—
194993 2002 BJ ₁₁	16.5	X	326.33848	185.85864	280.89601	0.71721	0.1472749	0.26037841	2.4288427	20	—	—
194994 2002 BN ₁₄	15.7	X	154.53107	252.76291	290.26061	3.94852	0.0844048	0.24334750	2.5408837	20	9 27.3	19.6
194995 2002 BJ ₁₅	16.4	X	157.64519	264.64721	249.86342	1.76451	0.0982413	0.24109467	2.5566875	20	8 25.7	20.3
194996 2002 BH ₁₆	16.3	X	167.18874	263.91725	264.75562	3.17716	0.1775901	0.24276612	2.5449387	20	9 20.4	20.4
194997 2002 BJ ₁₇	17.4	X	251.40879	214.51222	302.15195	0.33498	0.1312541	0.25602273	2.4563129	20	12 17.4	19.9
194998 2002 BS ₁₈	16.2	X	349.57986	37.04347	88.88891	3.88536	0.0986894	0.26643875	2.3918712	20	—	—
194999 2002 BO ₂₇	16.5	X	57.63151	69.62407	343.59043	8.87651	0.1986511	0.27007567	2.3703496	20	—	—
195000 2002 BZ ₂₇	16.0	X	220.69934	168.90491	36.44175	7.46602	0.0642330	0.25871909	2.4392168	20	—	—
195001 2002 BA ₂₈	16.8	X	94.82285	344.95856	48.96483	6.14240	0.2535578	0.27332441	2.3515295	20	1 24.7	19.3
195002 2002 BS ₂₈	16.5	X	291.38191	97.16320	26.83640	10.02201	0.1532736	0.25874786	2.4390360	20	—	—
195003 2002 BA ₂₉	16.0	X	255.22849	122.61729	16.41705	9.68128	0.0880637	0.25474928	2.4644920	20	12 3.2	19.1
195004 2002 CX ₃	16.4	X	295.84511	99.11009	4.55279	6.11977	0.2082674	0.25589580	2.4571251	20	12 13.7	18.4
195005 2002 CA ₄	16.2	X	158.96977	136.93801	45.01628	4.92910	0.1636265	0.24316745	2.5421378	20	10 3.2	20.3
195006 2002 CW ₅	16.1	X	203.45032	152.80819	325.13676	3.22417	0.0554840	0.24272561	2.5452219	20	9 1.7	19.5
195007 2002 CW ₇	16.9	X	349.65773	257.25040	221.00023	0.46635	0.1351982	0.26402519	2.4064258	20	—	—
195008 2002 CQ ₁₂	16.5	X	144.87309	253.36364	297.07179	3.14891	0.1514386	0.24243565	2.5472509	20	9 27.5	20.7
195009 2002 CK ₁₃	15.9	X	325.73873	309.97068	174.22736	23.47057	0.3336230	0.26110420	2.4243397	20	—	—
195010 2002 CF ₁₅	16.4	X	82.89410	247.05624	348.27958	2.41873	0.0502998	0.24147929	2.5539719	20	9 11.0	19.7
195011 2002 CB ₁₆	16.0	X	81.05639	93.52550	132.69766	5.21412	0.1019697	0.23897770	2.5717641	20	9 4.6	19.5
195012 2002 CF ₁₇	16.6	X	270.98441	135.71311	334.76624	5.79758	0.1029421	0.25413011	2.4684934	20	11 15.7	19.6
195013 2002 CL ₁₇	16.5	X	336.45994	97.22733	27.15581	2.77199	0.1470542	0.26509265	2.3999614	20	—	—
195014 2002 CM ₁₈	16.5	X	309.44537	83.64098	41.55432	6.57744	0.0537755	0.25925877	2.4358306	20	—	—
195015 2002 CR ₂₁	16.8	X	355.60834	265.31364	130.02355	4.35461	0.1596316	0.25646502	2.4534881	20	—	—
195016 2002 CU ₂₁	17.0	X	358.85142	152.94686	295.98307	0.93850	0.1527207	0.26381920	2.4076782	20	—	—
195017 2002 CW ₂₂	16.5	X	188.18883	159.94201	328.94811	3.94969	0.1399996	0.24134507	2.5549187	20	8 23.8	20.4
195018 2002 CW ₂₃	17.3	X	283.32347	298.84804	208.87894	4.41198	0.2314546	0.25911451	2.4367346	20	—	—
195019 2002 CX ₂₆	16.5	X	334.53358	94.76815	339.32748	7.88684	0.1933535	0.26018437	2.4300502	20	—	—
195020 2002 CE ₂₇	17.1	X	8.02531	47.83511	51.04212	3.41557	0.1565654	0.26705564	2.3881863	20	—	—
195021 2002 CG ₂₇	16.8	X	16.13007	67.71960	22.57030	4.53264	0.1428786	0.26729668	2.3867504	20	—	—
195022 2002 CZ ₂₇	15.2	X	33.72008	275.12483	326.18939	16.07391	0.1841348	0.23403860	2.6078207	20	8 2.3	18.0
195023 2002 CO ₂₈	15.8	X	90.49654	196.71671	326.68047	10.94739	0.0975003	0.23271480	2.6177011	20	6 21.6	19.5
195024 2002 CK ₃₁	15.9	X	30.97973	273.45414	349.89466	12.96411	0.0548017	0.23852638	2.5750072	20	8 12.3	19.1
195025 2002 CL ₃₁	16.8	X	350.25654	70.42266	0.20889	8.28366	0.2138277	0.26121593	2.4236484	20	—	—
195026 2002 CY ₃₆	16.7	X	119.61002	138.66697	274.09721	1.68262	0.2204838	0.27732564	2.3288564	20	3 13.8	19.8
195027 2002 CJ ₃₉	16.7	X	94.62788	228.75923	286.08271	0.65487	0.1868012	0.28395314	2.2924767	20	6 28.6	19.8
195028 2002 CD ₄₀	15.0	X	129.20709	205.77196	317.27412	13.38615	0.0888089	0.23498118	2.6008421	20	8 6.0	18.8
195029 2002 CD ₄₁	17.2	X										

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>
195041 2002 CV ₅₈	13.1	X	68.81805	145.26791	127.80310	9.00931	0.0364459	0.08367613	5.1768826	20	9 20.8	20.0
195042 2002 CM ₆₀	17.4	X	291.12012	58.93278	86.65578	4.14937	0.1294954	0.26038959	2.4287732	20	—	—
195043 2002 CP ₆₁	16.0	X	189.11362	122.53318	358.07600	11.20294	0.1576146	0.24171830	2.5522881	20	8 16.9	20.1
195044 2002 CX ₆₅	16.0	X	227.33741	49.29693	41.72794	10.21491	0.0404544	0.24142588	2.5543486	20	9 3.7	19.6
195045 2002 CU ₆₆	17.4	X	1.23030	73.73488	41.67895	3.05045	0.1554870	0.26779265	2.3838026	20	—	—
195046 2002 CS ₆₈	17.0	X	30.45190	92.16093	310.25215	0.86334	0.1937001	0.26341673	2.4101301	20	—	—
195047 2002 CF ₆₉	17.2	X	291.38703	40.27893	59.96487	1.97943	0.1503277	0.25537671	2.4604536	20	12 3.9	19.5
195048 2002 CW ₇₀	16.6	X	181.78445	241.63662	329.89536	2.31604	0.0717498	0.25246811	2.4793150	20	12 7.1	19.9
195049 2002 CL ₇₁	16.9	X	354.29887	358.52563	63.89343	2.22230	0.1750280	0.25998587	2.4312869	20	—	—
195050 2002 CH ₇₂	17.5	X	293.69722	105.67743	327.51881	2.97901	0.2101843	0.25275169	2.4774601	20	10 19.2	19.5
195051 2002 CB ₇₃	16.7	X	142.77820	290.97521	105.58279	3.10206	0.1585509	0.27796733	2.3252708	20	3 12.9	19.9
195052 2002 CJ ₇₃	16.1	X	342.40176	254.78382	351.65214	2.11305	0.0074803	0.22857110	2.6492432	20	5 1.4	19.4
195053 2002 CE ₇₄	15.6	X	60.69669	231.15796	332.40189	12.64270	0.0900928	0.23250008	2.6193125	20	7 6.4	19.1
195054 2002 CZ ₇₄	17.2	X	329.05585	140.83700	1.03580	0.98551	0.1291511	0.26450593	2.4035091	20	—	—
195055 2002 CU ₇₆	17.2	X	337.60641	339.27631	117.97730	1.65008	0.1782852	0.26118153	2.4238612	20	—	—
195056 2002 CN ₈₀	12.9	X	192.21720	42.35749	127.50271	3.22676	0.0089917	0.08544921	5.1050190	20	10 6.9	19.8
195057 2002 CY ₈₀	16.4	X	180.85555	155.25959	6.97709	3.12748	0.1395703	0.24435376	2.5339032	20	9 28.6	20.1
195058 2002 CK ₈₂	15.9	X	116.46298	298.71833	338.25373	7.23163	0.0830067	0.25069414	2.4909973	20	12 17.3	19.6
195059 2002 CZ ₈₂	16.2	X	94.36741	180.99067	81.80415	3.19423	0.0629969	0.24545047	2.5263497	20	11 3.6	19.7
195060 2002 CA ₈₄	17.4	X	310.73038	6.24536	136.81058	2.15089	0.1363252	0.26107708	2.4245076	20	—	—
195061 2002 CA ₈₆	16.5	X	124.20211	113.93948	93.00768	0.47905	0.0636540	0.24317784	2.5420654	20	9 26.1	20.1
195062 2002 CU ₈₆	16.3	X	87.67025	111.69962	149.41209	2.43985	0.1201769	0.24494948	2.5297933	20	10 30.5	19.9
195063 2002 CH ₈₇	16.9	X	44.79952	124.42588	70.75589	0.48064	0.1017870	0.22877289	2.6476852	20	5 29.9	20.1
195064 2002 CB ₈₈	16.1	X	36.00142	135.17351	108.17406	3.61298	0.1121986	0.23373620	2.6100695	20	7 26.1	19.1
195065 2002 CA ₉₁	16.4	X	345.55767	3.24972	57.58336	1.92699	0.1634841	0.25678870	2.4514259	20	—	—
195066 2002 CK ₉₁	16.6	X	245.64167	65.76886	30.09965	3.51618	0.1088997	0.24568212	2.5247614	20	9 20.3	19.8
195067 2002 CY ₉₁	16.7	X	21.26786	285.48752	144.34485	5.40745	0.2120548	0.26389214	2.4072346	20	—	—
195068 2002 CJ ₉₄	16.3	X	326.42534	323.16955	12.23656	2.57174	0.0403323	0.23747309	2.5826156	20	8 10.6	19.3
195069 2002 CN ₉₅	16.1	X	93.82262	167.94617	338.86048	4.09710	0.1450538	0.22876388	2.6477547	20	6 9.0	19.9
195070 2002 CJ ₉₆	16.4	X	8.79776	319.34380	137.81241	3.09972	0.1562539	0.26433426	2.4045496	20	—	—
195071 2002 CV ₉₆	16.9	X	325.26296	78.90799	54.74504	1.48975	0.1456409	0.26188905	2.4194936	20	—	—
195072 2002 CW ₉₇	16.4	X	12.22192	43.38612	17.70708	2.83839	0.2104234	0.26083160	2.4260286	20	—	—
195073 2002 CP ₉₉	16.1	X	195.25429	82.62297	76.74606	3.24623	0.0580021	0.24524777	2.5277416	20	10 18.5	19.5
195074 2002 CQ ₉₉	16.8	X	0.39160	82.25704	38.05338	2.88606	0.1725111	0.26573978	2.3960636	20	—	—
195075 2002 CH ₁₀₀	16.9	X	275.83745	357.42864	138.23179	2.87264	0.1356569	0.25453825	2.4658539	20	12 27.4	19.2
195076 2002 CC ₁₀₅	16.4	X	208.45400	80.29419	70.70765	2.34756	0.0745199	0.24528953	2.5274547	20	10 21.1	19.8
195077 2002 CR ₁₀₅	16.3	X	188.80097	339.14789	154.69987	4.76019	0.1518062	0.24055957	2.5604775	20	8 30.2	20.1
195078 2002 CV ₁₀₅	15.5	X	287.42065	265.89253	2.27678	8.83685	0.1093197	0.21815288	2.7329315	20	3 6.2	19.2
195079 2002 CL ₁₀₇	16.7	X	128.24230	62.81171	129.62959	5.16221	0.1540294	0.23765594	2.5812908	20	9 17.3	20.8
195080 2002 CX ₁₀₇	16.3	X	93.07964	5.34909	82.29888	3.42783	0.1293255	0.27373570	2.3491735	20	3 16.7	19.0
195081 2002 CY ₁₀₇	16.8	X	15.66932	172.58398	350.91606	20.02702	0.0453462	0.37942829	1.8896567	20	2 9.7	18.6
195082 2002 CC ₁₀₈	16.2	X	247.59350	15.90251	143.15462	5.21147	0.1030949	0.25145592	2.4859639	20	12 18.2	19.1
195083 2002 CD ₁₀₈	15.8	X	87.80448	57.60591	155.38549	10.75660	0.1390220	0.23349534	2.6118641	20	8 29.2	19.3
195084 2002 CL ₁₀₉	13.0	X	275.90499	92.94144	346.41020	4.38527	0.1101807	0.08505647	5.1207214	20	9 14.2	19.7
195085 2002 CM ₁₀₉	16.3	X	6.49286	80.25301	146.54425	5.42486	0.1813252	0.22421417	2.6834531	20	5 12.1	18.8
195086 2002 CO ₁₀₉	16.6	X	81.68063	233.47226	18.36745	2.15738	0.1800103	0.23880951	2.5729715	20	10 16.6	20.5
195087 2002 CB ₁₁₂	15.2	X	138.97861	4.25633	171.31476	22.23301	0.0081773	0.23600741	2.5932972	20	8 27.8	18.9
195088 2002 CP ₁₁₂	16.2	X	170.73600	108.55885	34.22679	2.11529	0.0707570	0.24162925	2.5529151	20	8 27.1	19.9
195089 2002 CW ₁₁₅	16.7	X	355.37827	253.47882	144.98427	9.75988	0.1102124	0.25470352	2.4647871	20	12 30.1	19.6
195090 2002 CL ₁₁₆	16.3	X	308.83802	36.42871	113.20441	11.68756	0.2033080	0.26139169	2.4225618	20	—	—
195091 2002 CH ₁₁₈	16.6	X	248.16177	277.96799	174.04661	1.93293	0.1653720	0.24503080	2.5292335	20	9 8.4	19.7
195092 2002 CN ₁₁₈	16.8	X	28.10236	279.82564	119.57945	2.10915	0.1815398	0.26281458	2.4138100	20	—	—
195093 2002 CZ ₁₁₈	16.5	X	208.48373	279.20028	279.46537	1.11054	0.1376714	0.25503271	2.4626657	20	12 14.5	19.9
195094 2002 CR ₁₁₉	16.2	X	81.74716	9.05349	248.41861	3.00160	0.0169630	0.24650186	2.5191609	20	10 4.1	19.5
195095 2002 CG ₁₂₁	16.8	X	157.76737	267.61628	267.70743	1.72355	0.1431512	0.24388197	2.5371701	20	9 21.5	20.7
195096 2002 CU ₁₂₄	16.5	X	140.55662	13.36717	181.58470	2.61981	0.1064695	0.24266909	2.5456171	20	9 30.1	20.2
195097 2002 CW ₁₂₄	17.3	X	355.97280	170.86895	292.33186	1.35645	0.1682398	0.26421834	2.4052529	20	—	—
195098 2002 CE ₁₂₅	16.2	X	213.91990	294.78537	200.48270	2.96076	0.0700009	0.24609544	2.5219337	20	10 6.8	19.7
195099 2002 CF ₁₂₆	16.0	X	18.80140	270.02302	323.43948	10.65346	0.1589650	0.22827798	2.6515106	20	6 15.0	18.9
195100 2002 CX ₁₂₈	16.0	X	274.89521	2.36862	281.94907	3.25152	0.0179589	0.22355208	2.6887489	20	3 20.2	19.7
195101 2002 CY ₁₂₉	16.7	X	326.28076	265.75334	194.23967	2.67569	0.1308676	0.25877940	2.4388378	20	—	—
195102 2002 CB ₁₃₀	16.2	X	31.92930	56.38159	166.06032	8.24214	0.1210889	0.22913779	2.6448734	20	6 19.5	19.4
195103 2002 CE ₁₃₀	17.2	X	327.46208	242.80292	256.55762	0.70533	0.1354866	0.26361609	2.4089148	20	—	—
195104 2002 CN ₁₃₀	12.3	X	305.88818	71.45650	331.03823	31.32582	0.0887279	0.08417253	5.1565094	20	9 4.8	19.0
195105 2002 CC ₁₃₂	17.0	X	344.54584	223.72520	266.43860	1.36144	0.2053299	0.26483845	2.4014969	20	—	—
195106 2002 CN ₁₃₂	16.3	X	132.36605	32.28496	167.01402	1.85975	0.1236398	0.24051169	2.5608173	20	9 27.6	20.3
195107 2002 CL ₁₃₃	16.8	X	346.84371	272.38190	169.77264	2.09334	0.1927295	0.25891589	2.4379806	20	—	—
195108 2002 CN ₁₃₅	16.0	X	320.84638	26.23040	231.99761	2.54708	0.0374949	0.22728693	2.6592127	20	4 14.5	19.3
195109 2002 CN ₁₃₆	16.4	X	336.80630	292.34745	155.71707	8.84818	0.2134015	0.26178440	2.4201384	20	—	—
195110 2002 CN ₁₃₇	16.0	X	170.97925	19.12318	215.07175	4.82061	0.0329341	0.25538329	2.4604114	20	12 27.7	19.2
195111 2002 CQ ₁₃₇	16.7	X	275.57972	262.06250	246.27730	3.87628	0.1500881	0.25809516	2.4431463	20	—	—
195112 2002 CU ₁₃₇	17.1	X	5.50345	289.31378	184.73049	4.88621	0.1800234	0.26779710	2.3837761	20	—	—
195113 2002 CF ₁₃₉	16.5	X	170.53319	306.26401	192.98297	3.74138	0.1926896	0.24086740	2.5582955	20	8 17.6	20.9
195114 2002 CJ ₁₃₉	16.6	X	117.71756	264.76014	243.58348	3.71875	0.1599199	0.23348				

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>
195121 2002 CB ₁₅₄	16.5	X	336.19683	157.06338	147.61679	2.09615	0.0215394	0.23246588	2.6195693	20	7 12.0	19.7
195122 2002 CZ ₁₅₆	16.2	X	253.38987	121.70259	69.64780	3.14636	0.1468955	0.25948111	2.4344389	20	—	—
195123 2002 CG ₁₅₇	16.0	X	28.98439	337.81614	313.63995	0.63214	0.1084706	0.24133059	2.5550209	20	9 21.6	18.9
195124 2002 CW ₁₅₇	15.8	X	38.64108	315.64060	356.14900	5.30379	0.1807643	0.24538665	2.5267877	20	11 12.8	19.1
195125 2002 CX ₁₅₈	16.9	X	2.00599	82.22633	326.70254	1.38994	0.2079820	0.25993425	2.4316088	20	—	—
195126 2002 CY ₁₅₈	12.9	X	273.52464	295.78472	137.91615	13.52169	0.0856971	0.08432100	5.1504545	20	9 10.7	19.7
195127 2002 CZ ₁₅₈	16.5	X	23.04165	109.92484	336.91220	8.78160	0.1816729	0.26568800	2.3963749	20	—	—
195128 2002 CH ₁₅₉	16.7	X	353.06947	14.10391	78.59393	3.10791	0.1517931	0.26128727	2.4232072	20	—	—
195129 2002 CJ ₁₅₉	15.7	X	84.66093	95.77577	121.30729	5.91672	0.0640118	0.23615120	2.5922444	20	8 22.1	19.1
195130 2002 CY ₁₅₉	16.4	X	283.10167	153.06849	11.84611	6.01107	0.1301285	0.26296088	2.4129146	20	—	—
195131 2002 CP ₁₆₃	16.0	X	142.40072	175.27366	29.73655	3.84278	0.1298717	0.24445927	2.5331741	20	10 15.3	19.9
195132 2002 CT ₁₆₃	15.3	X	348.25868	258.12546	340.56206	12.63894	0.2561373	0.22354866	2.6887763	20	4 2.7	17.7
195133 2002 CO ₁₆₈	16.4	X	172.96303	154.15662	8.93666	7.03040	0.1773671	0.24274831	2.5450632	20	9 21.2	20.4
195134 2002 CR ₁₆₈	16.5	X	2.20088	119.19716	108.63612	7.33623	0.2220191	0.27768532	2.3268449	20	4 30.3	18.0
195135 2002 CE ₁₇₁	16.1	X	86.73888	130.77927	43.40010	4.71912	0.1814720	0.22969941	2.6405606	20	7 13.5	19.8
195136 2002 CK ₁₇₂	16.6	X	225.14765	123.05045	77.11036	3.60272	0.1311188	0.25524415	2.4613055	20	—	—
195137 2002 CA ₁₇₇	16.5	X	247.41634	153.39313	47.33577	2.10062	0.1303974	0.26117153	2.4239231	20	—	—
195138 2002 CG ₁₇₉	16.6	X	126.33092	217.84948	337.93787	4.29180	0.0900184	0.24239711	2.5475209	20	9 14.5	20.3
195139 2002 CH ₁₈₁	17.4	X	55.66428	28.57852	15.88347	2.52351	0.2131837	0.26770745	2.3843083	20	—	—
195140 2002 CP ₁₈₇	17.2	X	17.61118	92.61266	356.90870	2.19499	0.1713450	0.26641965	2.3919855	20	—	—
195141 2002 CN ₁₈₉	16.5	X	88.81138	157.06716	82.22723	2.76753	0.1561117	0.24221954	2.5487658	20	10 7.7	20.3
195142 2002 CM ₁₉₂	16.7	X	63.15086	269.59941	341.45963	2.38223	0.0419480	0.24087335	2.5582534	20	9 4.7	20.0
195143 2002 CS ₁₉₄	16.3	X	81.26846	124.99492	137.98780	2.86650	0.0370976	0.24518351	2.5281832	20	10 16.1	19.7
195144 2002 CZ ₁₉₉	16.8	X	357.53321	42.92107	357.40463	4.57522	0.1510996	0.25597636	2.4566096	20	—	—
195145 2002 CX ₂₀₀	17.0	X	344.68481	288.98233	131.79902	1.88807	0.1707176	0.25735514	2.4478275	20	—	—
195146 2002 CS ₂₀₁	15.4	X	11.53788	349.62158	333.03551	14.91414	0.1368015	0.24345228	2.5401546	20	10 4.7	18.5
195147 2002 CX ₂₀₁	16.5	X	357.28851	312.16997	109.78159	4.66532	0.1450609	0.25893451	2.4378637	20	—	—
195148 2002 CM ₂₀₂	16.9	X	89.39325	198.41251	29.79458	2.35347	0.1134141	0.23914688	2.5705511	20	9 18.3	20.4
195149 2002 CW ₂₀₆	16.1	X	319.69257	336.29341	84.60999	3.54108	0.1601012	0.25311516	2.4750878	20	12 2.3	18.2
195150 2002 CA ₂₀₇	16.8	X	312.11282	88.83193	40.61743	1.80419	0.1333698	0.26006408	2.4307995	20	—	—
195151 2002 CQ ₂₀₈	17.0	X	39.69947	33.24746	32.76858	1.02002	0.1889569	0.26579328	2.3957420	20	—	—
195152 2002 CW ₂₁₀	12.9	X	269.33486	85.78161	1.68156	8.99441	0.0552471	0.08478056	5.1318252	20	9 23.2	19.7
195153 2002 CG ₂₁₃	12.8	X	34.26422	340.30059	347.46769	10.03208	0.0731429	0.08447848	5.1440515	20	10 10.1	19.4
195154 2002 CW ₂₁₅	15.9	X	298.67591	243.96960	350.45549	8.70590	0.1610575	0.21525665	2.7573908	20	1 31.6	19.9
195155 2002 CB ₂₁₆	17.5	X	0.90165	27.27139	75.40575	2.03660	0.1623020	0.26364383	2.4087458	20	—	—
195156 2002 CK ₂₁₇	16.4	X	60.95607	114.82571	124.49489	3.78998	0.0725232	0.23526218	2.5987708	20	8 21.3	19.6
195157 2002 CZ ₂₁₇	16.0	X	157.67711	92.77679	340.42547	21.65662	0.0538867	0.22731259	2.6590126	20	4 27.6	20.3
195158 2002 CG ₂₁₈	16.7	X	123.81504	70.15709	111.17906	2.46771	0.0747609	0.23674830	2.5878840	20	8 23.3	20.3
195159 2002 CY ₂₂₂	16.6	X	65.31348	2.31877	213.07174	1.98687	0.1236545	0.23352712	2.6116271	20	7 31.9	19.9
195160 2002 CE ₂₂₅	15.9	X	318.88519	293.54219	333.88064	11.92863	0.1438321	0.22401326	2.6850573	20	4 4.3	19.3
195161 2002 CA ₂₂₆	16.2	X	72.80319	0.80310	160.26354	8.64440	0.1179780	0.22941308	2.6427572	20	5 29.4	19.7
195162 2002 CY ₂₂₆	16.1	X	294.56574	271.25807	241.88132	5.33643	0.0791433	0.26168305	2.4207633	20	—	—
195163 2002 CR ₂₃₀	16.1	X	161.18457	78.83522	41.37062	3.64317	0.0841520	0.22836806	2.6508133	20	7 16.1	20.0
195164 2002 CJ ₂₃₃	16.4	X	216.79762	290.68284	281.77976	5.09129	0.0488241	0.25797637	2.4438962	20	—	—
195165 2002 CT ₂₃₄	16.6	X	95.11429	149.20902	116.29812	3.17812	0.0407900	0.19524871	2.9426861	20	10 28.1	20.7
195166 2002 CF ₂₃₅	16.1	X	301.83831	42.31603	321.17736	5.58488	0.2548413	0.24550617	2.5295676	20	7 11.8	18.5
195167 2002 CT ₂₃₅	12.5	X	293.27259	64.88093	350.10485	21.36814	0.0413872	0.08386565	5.1690807	20	9 15.1	19.3
195168 2002 CB ₂₃₇	16.1	X	202.67185	132.57427	58.16301	6.56515	0.0632286	0.25200874	2.4823269	20	12 6.1	19.5
195169 2002 CN ₂₃₇	16.0	X	10.19832	60.64406	160.38836	8.44511	0.1674850	0.22265184	2.6959915	20	5 11.9	18.7
195170 2002 CF ₂₄₀	16.2	X	74.02549	42.75011	178.15997	11.43241	0.1197423	0.23340721	2.6125215	20	8 18.0	19.9
195171 2002 CE ₂₄₂	15.4	X	322.91119	299.24755	339.63525	15.48538	0.1939163	0.22392194	2.6857873	20	4 16.8	18.8
195172 2002 CN ₂₄₂	15.7	X	336.49510	284.05144	307.38088	11.64053	0.1290567	0.22134144	2.7066217	20	3 16.1	19.1
195173 2002 CZ ₂₄₃	16.9	X	304.14044	215.40536	290.31559	2.22206	0.1566102	0.25887309	2.4382493	20	—	—
195174 2002 CF ₂₄₄	15.5	X	81.86573	26.04284	171.57163	13.00020	0.0343000	0.23146951	2.6270813	20	7 14.9	19.2
195175 2002 CA ₂₄₆	15.4	X	96.85991	276.31712	301.58992	11.99684	0.1042063	0.23759258	2.5817497	20	9 5.8	19.3
195176 2002 CT ₂₄₈	15.9	X	98.42692	133.92045	261.33016	3.82828	0.2350376	0.27058731	2.3673607	20	1 26.5	18.5
195177 2002 CE ₂₅₀	16.5	X	331.65985	145.00693	137.45372	2.90538	0.1710063	0.22851338	2.6496894	20	5 21.3	19.1
195178 2002 CS ₂₅₄	15.9	X	68.31168	156.25351	87.40792	7.04291	0.1522860	0.24099887	2.5573650	20	9 22.2	19.5
195179 2002 CR ₂₅₈	16.1	X	9.99961	195.88447	235.24232	4.74735	0.1281718	0.26372942	2.4082247	20	—	—
195180 2002 CL ₂₆₃	16.6	X	309.07130	225.85483	165.13622	3.58687	0.0916653	0.24409274	2.5357094	20	9 28.7	19.2
195181 2002 CQ ₂₆₃	16.4	X	331.02773	121.83172	158.40134	4.58371	0.1092936	0.22960753	2.6412650	20	5 24.4	19.4
195182 2002 CX ₂₆₃	17.2	X	77.85153	113.70928	145.09441	4.67976	0.1117286	0.24206206	2.5498711	20	10 16.0	20.8
195183 2002 CP ₂₆₆	16.1	X	175.07414	239.19054	144.59681	5.96057	0.0365556	0.22435011	2.6823690	20	3 27.8	19.9
195184 2002 CP ₂₆₇	15.6	X	302.64876	144.58959	140.50962	16.17262	0.2905781	0.22410765	2.6843033	20	3 22.2	19.4
195185 2002 CM ₂₆₉	16.2	X	39.41058	302.17352	86.19391	3.26744	0.1926704	0.25946758	2.4345236	20	—	—
195186 2002 CK ₂₇₂	16.2	X	319.33534	76.61701	63.17580	7.17247	0.1005640	0.26155507	2.4215529	20	—	—
195187 2002 CO ₂₇₃	16.6	X	18.90436	299.99649	338.44161	3.82900	0.0814871	0.23576052	2.5951074	20	8 14.1	19.6
195188 2002 CS ₂₇₃	13.1	X	22.30046	0.83192	329.70751	4.68832	0.0973130	0.08427949	5.1521455	20	10 1.6	19.5
195189 2002 CD ₂₇₄	16.2	X	106.95425	118.94187	129.65285	4.99996	0.1087343	0.24364096	2.5388430	20	11 4.1	20.0
195190 2002 CR ₂₇₇	16.3	X	8.82705	358.14119	293.55239	1.82994	0.1830498	0.23652640	2.5885202	20	8 26.6	18.8
195191 Constantine s ang	17.3	X	325.60357	202.25272	226.40128	0.81430	0.1628837	0.25632422	2.4543865	20	12 27.4	19.2
195192 2002 CN ₂₈₄	17.0	X	341.68443	205.86406	229.24157	0.59147	0.1709565	0.25745861	2.4471716	20	—	—
195193 2002 CO ₂₈₄	16.9	X	17.42515	316.21687	291.30707	1.07781	0.0949870	0.22974114	2.6402408	20	6 27.8	19.9
195194 2002 CF ₂₈₈	16.2	X	49.80578	168.85864								

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>
195201 2002 CR ₂₉₆	16.1	X	358.98219	198.51529	140.88752	3.56959	0.0594820	0.24245691	2.5471020	20	10 7.8	19.2
195202 2002 CF ₃₀₁	15.9	X	281.91598	293.64230	333.49817	5.62567	0.0519561	0.21908754	2.7251533	20	3 3.8	19.5
195203 2002 CN ₃₀₁	16.1	X	349.63982	314.79487	313.00244	4.11721	0.2186604	0.22716232	2.6601851	20	6 1.9	18.2
195204 2002 CR ₃₀₆	14.3	X	185.19193	297.75926	98.68795	8.66256	0.1780500	0.12560443	3.9488086	20	4 30.4	20.7
195205 2002 DH	17.5	X	187.33488	55.87314	328.97377	20.54987	0.0622211	0.38634663	1.8670300	20	3 19.8	19.9
195206 2002 DF ₁	15.8	X	169.15177	119.97901	55.67871	8.40344	0.0475469	0.24395748	2.5366466	20	10 11.1	19.3
195207 2002 DN ₂	14.9	X	214.04774	340.68613	114.94657	30.60468	0.1302395	0.23991317	2.5650746	20	8 9.1	18.9
195208 2002 DZ ₃	15.1	X	108.74261	345.26938	87.93322	25.82161	0.3026020	0.27487745	2.3426638	20	4 23.9	19.2
195209 2002 DC ₄	15.7	X	59.58648	101.12803	50.13220	23.40943	0.2732999	0.28102696	2.3083628	20	5 16.7	17.8
195210 2002 DV ₅	16.1	X	94.95675	157.92743	223.11892	5.52477	0.2075080	0.27048958	2.3679309	20	—	—
195211 2002 DQ ₆	16.9	X	119.45829	209.90860	196.45806	1.50134	0.2367122	0.27591490	2.3367878	20	3 8.0	20.1
195212 2002 DX ₈	15.7	X	117.14720	181.53945	43.33784	13.20697	0.1925680	0.24246370	2.5470545	20	10 20.4	19.8
195213 2002 DV ₉	15.8	X	83.15990	180.32410	21.76635	14.32898	0.1803768	0.23422089	2.6064674	20	8 21.8	19.8
195214 2002 DL ₁₁	16.4	X	346.73619	211.98234	215.95277	1.53217	0.1772030	0.25780556	2.4449756	20	—	—
195215 2002 DP ₁₁	16.7	X	64.48166	316.83073	135.68551	1.47639	0.1441790	0.27101378	2.3648765	20	2 6.1	18.8
195216 2002 DR ₁₁	16.1	X	354.22769	51.61903	165.50655	12.88598	0.2271250	0.22394569	2.6855975	20	3 26.2	18.4
195217 2002 DU ₁₁	13.1	X	206.85788	191.81083	31.63225	4.64803	0.0169824	0.08413859	5.1578958	20	9 25.0	20.1
195218 2002 DX ₁₂	12.7	X	293.98437	71.38801	358.60659	10.11236	0.0513855	0.08483004	5.1298294	20	10 1.5	19.4
195219 2002 DN ₁₃	16.5	X	341.73139	268.89736	350.78201	3.28235	0.1695257	0.22578591	2.6709852	20	5 5.3	19.2
195220 2002 DZ ₁₃	16.1	X	16.32501	270.80427	32.02859	3.02639	0.1724054	0.23921686	2.5700498	20	9 27.6	18.9
195221 2002 DD ₁₄	17.5	X	340.29967	246.98261	215.14740	0.72035	0.1484779	0.26098163	2.4250987	20	—	—
195222 2002 DL ₁₄	16.6	X	268.42490	333.97074	69.12606	1.97462	0.1222992	0.24130207	2.5552223	20	8 6.8	19.8
195223 2002 DE ₁₇	16.3	X	326.68923	25.07548	65.40431	10.76476	0.1922723	0.25824519	2.4422000	20	—	—
195224 2002 DS ₁₇	17.2	X	303.22839	59.87433	46.55625	2.00992	0.1445322	0.25575904	2.4580010	20	—	—
195225 2002 DZ ₁₇	16.9	X	305.68323	72.93122	31.20807	1.62646	0.1498191	0.25572746	2.4582034	20	—	—
195226 2002 DG ₁₈	16.1	X	246.81197	320.53987	335.94547	4.63539	0.0345259	0.21920282	2.7241977	20	2 29.7	20.0
195227 2002 DH ₁₈	17.2	X	1.82279	236.85496	210.67791	0.79518	0.1705816	0.26222347	2.4174361	20	—	—
195228 2002 DJ ₁₈	16.3	X	140.78642	144.47374	20.75617	13.68111	0.1042679	0.23727127	2.5840799	20	8 28.7	20.4
195229 2002 DT ₁₉	16.4	X	337.81710	60.92229	180.20329	11.89272	0.2163501	0.22220256	2.6996244	20	3 26.8	19.0
195230 2002 ER ₄	12.8	X	291.95778	56.01671	351.22606	7.49727	0.0925169	0.08138423	5.2736244	20	8 31.0	19.5
195231 2002 EU ₄	16.5	X	275.00407	65.81373	350.33099	22.20008	0.0805201	0.24200348	2.5502826	20	9 10.8	19.5
195232 2002 EB ₈	12.7	X	245.47402	273.95956	180.19708	12.57732	0.0667309	0.08021032	5.3249545	20	8 31.9	19.8
195233 2002 EK ₁₀	16.2	X	203.41597	292.54551	170.60695	22.48376	0.1723817	0.23968477	2.5667038	20	8 1.4	20.6
195234 2002 EG ₁₁	15.2	X	352.21858	234.19846	350.75025	8.50739	0.1021784	0.22025373	2.7155254	20	4 8.9	18.5
195235 2002 EU ₁₂	15.7	X	31.51782	179.24473	8.82793	16.92085	0.1054632	0.22281680	2.6946607	20	4 22.4	18.9
195236 2002 EL ₁₄	16.2	X	215.00581	295.74417	202.04100	6.33051	0.1598538	0.24547784	2.5261620	20	9 30.0	19.8
195237 2002 ET ₁₅	15.7	X	280.30639	21.07567	252.30424	7.54109	0.1718939	0.21778063	2.7360449	20	2 20.1	20.0
195238 2002 EV ₁₆	15.9	X	264.41106	90.04194	61.78075	7.09232	0.0624730	0.25504069	2.4626143	20	—	—
195239 2002 ES ₁₇	16.4	X	10.60179	104.18269	153.55931	4.77737	0.1139726	0.22871534	2.6481293	20	7 1.7	19.2
195240 2002 EG ₂₂	15.9	X	255.94503	261.81382	12.47077	12.91766	0.1838826	0.21323242	2.7748141	20	2 5.1	20.5
195241 2002 EM ₂₂	15.6	X	14.82351	248.94322	23.21026	10.24668	0.0972386	0.23238069	2.6202095	20	8 3.4	18.8
195242 2002 EY ₂₄	16.4	X	149.87065	145.80541	23.43056	1.33083	0.0266318	0.23830141	2.5766275	20	9 5.5	19.9
195243 2002 EF ₃₀	16.6	X	288.78001	36.52350	102.18377	3.20172	0.1629602	0.25569087	2.4584379	20	—	—
195244 2002 EP ₃₄	16.3	X	142.87249	182.01003	27.84797	8.59049	0.1924962	0.24229786	2.5482165	20	10 21.4	20.5
195245 2002 EN ₃₇	13.1	X	147.02296	157.65974	65.69762	4.10307	0.0705669	0.08239945	5.2302188	20	10 19.1	20.2
195246 2002 ES ₄₀	15.4	X	313.60139	209.48751	9.26805	8.8982	0.2133103	0.21219540	2.7838473	20	1 23.6	19.2
195247 2002 EE ₄₁	16.6	X	83.87042	136.12447	295.10055	2.29672	0.1004481	0.27100600	2.3649218	20	2 2.1	19.0
195248 2002 EQ ₄₁	16.4	X	245.56294	178.31559	251.93025	2.23644	0.2278294	0.24338848	2.5405985	20	7 28.8	20.2
195249 2002 EJ ₄₂	16.7	X	203.38015	174.82261	320.33110	3.92057	0.1916793	0.24328323	2.5413312	20	9 11.3	20.7
195250 2002 EG ₄₆	16.0	X	331.96893	263.87852	334.01944	5.34384	0.0776261	0.22079521	2.7110839	20	3 28.5	19.4
195251 2002 EL ₄₆	16.4	X	4.11954	358.72510	121.92297	4.69411	0.0702339	0.22206890	2.7007705	20	4 13.8	19.5
195252 2002 EK ₄₈	17.5	X	203.85830	305.74529	186.94492	3.48465	0.1436617	0.24252464	2.5466278	20	9 13.2	21.3
195253 2002 EA ₄₉	16.4	X	79.96768	190.40934	41.43722	2.51973	0.0698100	0.23805203	2.5784267	20	9 6.1	19.9
195254 2002 EM ₄₉	15.8	X	323.27054	317.67471	340.64598	7.57230	0.1195636	0.22962196	2.6411543	20	6 2.3	18.9
195255 2002 EU ₅₀	17.1	X	67.77774	102.77997	358.53788	0.67414	0.1888359	0.27264178	2.3554530	20	3 2.9	19.0
195256 2002 ER ₅₁	15.8	X	137.46980	311.06566	143.48753	13.58118	0.1471299	0.23080426	2.6321270	20	5 24.7	20.1
195257 2002 EM ₅₂	16.3	X	48.74932	119.26669	152.71270	4.69123	0.1608055	0.23676629	2.5877529	20	10 2.9	19.6
195258 2002 EN ₅₂	13.4	X	170.56138	70.06726	117.60467	0.82853	0.0986420	0.08210924	5.2425355	20	10 1.6	20.7
195259 2002 EY ₅₃	17.1	X	70.39995	189.43792	248.42833	0.86484	0.1539697	0.26968578	2.3726336	20	1 27.7	19.3
195260 2002 ED ₅₄	16.8	X	98.92338	266.97771	301.07322	1.48260	0.1267015	0.23533174	2.5982586	20	9 2.5	20.5
195261 2002 EW ₅₄	16.3	X	92.22630	231.06834	359.55596	7.21182	0.1578282	0.23691209	2.5866911	20	9 27.8	20.3
195262 2002 EB ₅₅	14.9	X	314.43147	200.59106	12.70470	12.01188	0.1582893	0.21198322	2.7857046	20	1 27.4	18.8
195263 2002 ET ₅₅	16.3	X	64.12424	292.29334	277.49249	3.59745	0.0821702	0.23286187	2.6165987	20	7 16.1	19.6
195264 2002 EN ₅₆	16.7	X	78.88699	44.87381	180.34902	4.37291	0.1865131	0.23526953	2.5987166	20	9 9.6	20.3
195265 2002 EX ₅₆	16.4	X	40.38167	19.77730	213.89355	2.62611	0.0704617	0.23206128	2.6226133	20	7 12.2	19.5
195266 2002 EQ ₆₀	17.0	X	225.14733	1.05514	206.80910	3.89228	0.1445556	0.25479734	2.4641820	20	—	—
195267 2002 ET ₆₀	16.3	X	158.64133	303.80800	206.26194	4.99438	0.0905563	0.23801602	2.5786868	20	8 19.6	20.1
195268 2002 EY ₆₀	16.5	X	139.32394	280.34178	200.56204	4.64598	0.0926535	0.23120547	2.6290811	20	6 22.1	20.3
195269 2002 EZ ₆₀	12.8	X	304.51133	83.20539	315.58840	5.10263	0.0503113	0.08157683	5.2653208	20	9 8.3	19.5
195270 2002 EG ₆₂	16.1	X	116.90965	175.45557	335.75116	4.39125	0.0478015	0.23119157	2.6291864	20	7 1.9	19.7
195271 2002 EX ₆₂	17.0	X	7.95181	274.26802	169.30220	0.57315	0.1756539	0.26170505	2.4206276	20	—	—
195272 2002 EP ₆₃	16.2	X	284.01679	101.89148	335.18650	4.89807	0.0515991	0.24600966	2.5225200	20	10 24.9	19.4
195273 2002 EY ₆₃	13.0	X	281.98399	243.29972	192.03893	8.89760	0.0768100	0.08280064	5.2133106	20	9 21.4	19.8
195274 2002 EY ₆₅	16.7	X	134.63446									

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>		
195281	2002	EU ₇₃	15.9	X	149.64242	354.77780	191.96690	8.56609	0.0983148	0.23905549	2.5712062	20	9 27.9	19.9
195282	2002	EA ₇₄	15.7	X	165.21073	90.87813	8.14386	22.17780	0.0272719	0.22802887	2.6534413	20	6 19.2	19.9
195283	2002	ES ₇₅	15.6	X	24.95463	308.12685	305.45398	7.94919	0.1933655	0.22997520	2.6384491	20	8 1.9	18.1
195284	2002	EC ₇₆	13.2	X	193.84851	350.82390	179.63207	13.36151	0.0372899	0.08224059	5.2369516	20	10 7.3	20.3
195285	2002	EY ₇₈	16.2	X	172.70255	236.11810	267.28881	4.16081	0.0964903	0.23882068	2.5728912	20	8 26.1	20.1
195286	2002	EC ₇₉	12.8	X	224.74667	278.28095	209.35096	11.48987	0.1060662	0.08213519	5.2414308	20	9 12.1	20.1
195287	2002	EV ₇₉	13.2	X	21.53305	192.97189	161.30527	8.08000	0.0444092	0.08362027	5.1791878	20	10 26.4	19.9
195288	2002	ET ₈₂	16.4	X	256.50798	223.06344	201.86401	2.71364	0.0340506	0.23864603	2.5741463	20	9 1.4	19.7
195289	2002	EZ ₈₂	15.8	X	200.02984	351.39628	350.97864	11.41826	0.0704487	0.21676043	2.7446231	20	3 4.5	19.7
195290	2002	EC ₈₃	15.6	X	220.83047	47.18172	356.17058	21.97622	0.0782133	0.23021650	2.6366051	20	6 8.6	20.0
195291	2002	EN ₈₃	15.9	X	276.51554	278.44321	17.33218	4.83282	0.0588506	0.22267360	2.6958159	20	4 2.3	19.4
195292	2002	EB ₈₅	16.0	X	282.72938	241.66752	166.04123	13.25368	0.0596796	0.24032896	2.5621151	20	9 12.9	19.1
195293	2002	EO ₈₅	16.2	X	169.42690	359.24786	151.98049	3.22313	0.0546240	0.23825464	2.5769647	20	9 5.1	19.8
195294	2002	EE ₈₆	16.0	X	337.15629	23.60750	174.70569	9.34175	0.1212571	0.21477120	2.7615444	20	2 8.2	19.5
195295	2002	ER ₈₇	15.5	X	322.48529	134.70757	143.33346	5.27944	0.0661975	0.22414163	2.6840321	20	5 13.1	18.8
195296	2002	EF ₈₈	16.6	X	162.15305	99.87080	47.24007	4.50669	0.1085276	0.23620530	2.5918486	20	8 23.5	20.5
195297	2002	EB ₈₈	16.0	X	71.39671	5.36898	178.93970	13.29256	0.0902963	0.22672520	2.6636031	20	6 22.2	19.8
195298	2002	EY ₉₀	16.2	X	23.72997	67.41210	161.01291	8.08964	0.1292527	0.22615357	2.6680897	20	6 14.7	19.2
195299	2002	EB ₉₂	16.7	X	84.24580	56.00448	160.28742	1.98104	0.1049621	0.23385869	2.6091580	20	8 24.7	20.3
195300	2002	EA ₉₃	16.5	X	82.14300	182.12325	37.87294	2.35066	0.1063589	0.23627708	2.5913236	20	8 28.8	20.1
195301	2002	EH ₉₄	16.4	X	344.52428	87.18847	153.13614	4.84963	0.0674980	0.22411038	2.6842816	20	4 24.8	19.6
195302	2002	EK ₉₄	17.8	X	341.65131	291.31936	165.07321	4.80078	0.2031658	0.26030683	2.4292880	20	—	—
195303	2002	EW ₉₅	15.6	X	348.20796	312.32295	3.11165	9.69302	0.0730271	0.23600027	2.5933495	20	8 19.1	18.6
195304	2002	EJ ₉₆	17.6	X	184.37715	135.14373	33.04081	1.68877	0.1225673	0.24400206	2.5363375	20	10 10.8	21.3
195305	2002	EE ₉₆	16.4	X	345.38887	116.53246	161.18787	2.31757	0.1732670	0.22592630	2.6698787	20	6 11.4	18.8
195306	2002	EF ₁₀₀	15.4	X	137.14995	292.33859	178.80293	21.55919	0.0170230	0.22702285	2.6612745	20	6 1.9	19.5
195307	2002	EC ₁₀₂	15.9	X	119.39732	174.04577	40.54017	13.49227	0.0753626	0.24051751	2.5607760	20	10 5.4	19.7
195308	2002	EK ₁₀₆	12.5	X	260.30661	38.94942	63.41840	8.79380	0.0329625	0.08248926	5.2264217	20	10 5.9	19.5
195309	2002	EJ ₁₀₆	12.5	X	327.46291	284.69059	112.22714	13.02720	0.0082475	0.08224382	5.2368144	20	10 13.5	19.5
195310	2002	ES ₁₀₈	16.6	X	23.13161	2.15575	53.33767	2.01728	0.1773466	0.25999281	2.4312437	20	—	—
195311	2002	EN ₁₀₉	16.0	X	219.39843	1.27299	10.31870	5.41122	0.1161351	0.22650952	2.6652937	20	4 25.9	20.1
195312	2002	EW ₁₀₉	12.8	X	349.81504	223.29995	148.40945	8.07890	0.0362994	0.08238605	5.2307856	20	10 7.4	19.6
195313	2002	ED ₁₁₂	16.7	X	48.78332	136.08748	72.36800	2.59201	0.1400285	0.22771813	2.6558547	20	6 30.4	19.6
195314	2002	EU ₁₁₂	17.2	X	223.06620	89.06595	13.84263	4.65730	0.1005581	0.24119204	2.5559993	20	9 2.2	20.7
195315	2002	EF ₁₁₃	13.5	X	191.73375	50.04479	125.84669	4.68882	0.0103116	0.08276482	5.2148145	20	10 13.3	20.4
195316	2002	EL ₁₁₃	16.6	X	251.90164	306.84964	129.25748	4.02684	0.1495115	0.24220931	2.5488376	20	8 25.5	20.0
195317	2002	ES ₁₁₄	16.6	X	183.47058	86.94805	328.25927	2.28074	0.1028269	0.22783673	2.6549330	20	5 15.2	20.6
195318	2002	EE ₁₁₆	12.5	X	37.12537	301.45199	9.09792	14.76077	0.0496172	0.08286103	5.2107773	20	9 25.7	19.3
195319	2002	EV ₁₁₆	17.3	X	4.37049	17.36505	75.68227	2.09476	0.1635402	0.26225459	2.4172449	20	—	—
195320	2002	EJ ₁₁₆	16.8	X	315.67664	261.34567	38.72241	3.28138	0.0585717	0.22833301	2.6510845	20	6 1.1	19.9
195321	2002	EQ ₁₁₇	16.2	X	271.47633	13.93367	224.22365	2.14794	0.1125990	0.21342489	2.7731456	20	1 9.5	20.4
195322	2002	EF ₁₂₁	15.6	X	229.59498	357.37071	357.54019	14.11834	0.1224009	0.22344168	2.6896345	20	4 12.1	19.8
195323	2002	EL ₁₂₃	16.4	X	50.46085	299.19383	289.67014	3.75851	0.1661101	0.22955083	2.6416999	20	8 4.8	19.6
195324	2002	EO ₁₂₃	13.0	X	303.49758	55.06338	7.67750	6.44807	0.0868189	0.08352543	5.1831076	20	10 1.8	19.5
195325	2002	EH ₁₂₆	15.7	X	145.68532	158.18428	319.65533	21.56103	0.0473308	0.23295620	2.6158924	20	6 26.1	19.7
195326	2002	ES ₁₂₇	15.6	X	225.93205	324.03724	348.59019	11.22523	0.1278752	0.21837802	2.7310528	20	2 22.8	19.8
195327	2002	EY ₁₂₇	16.4	X	305.88142	142.27588	132.60940	4.09377	0.0632611	0.22463721	2.6800830	20	4 14.9	19.8
195328	2002	EG ₁₂₈	15.8	X	305.58011	354.21866	356.11288	9.89750	0.2132582	0.23760432	2.5816647	20	7 7.0	18.7
195329	2002	EN ₁₂₈	16.1	X	63.61004	171.57011	132.55819	2.89657	0.0371120	0.24620605	2.5211783	20	11 16.4	19.5
195330	2002	EO ₁₂₈	16.1	X	36.94197	5.53588	145.28990	4.28335	0.0398027	0.21983875	2.7189417	20	3 13.2	19.4
195331	2002	EP ₁₂₈	16.4	X	302.80957	43.18338	352.65956	5.88004	0.1157783	0.24378580	2.5378373	20	9 21.3	19.0
195332	2002	EZ ₁₃₂	16.4	X	193.92030	84.73539	339.35960	4.87398	0.0800278	0.23182480	2.6243965	20	6 7.7	20.4
195333	2002	EE ₁₃₅	16.4	X	174.34209	176.60769	355.74251	3.50918	0.0633835	0.24202230	2.5501504	20	10 7.7	20.1
195334	2002	EG ₁₃₅	16.5	X	210.14244	314.68257	178.21309	8.44789	0.1243270	0.24271543	2.5452930	20	9 22.7	20.1
195335	2002	EZ ₁₃₅	16.7	X	194.57589	285.62154	159.65410	2.35996	0.0648691	0.23368709	2.6104351	20	7 7.7	20.5
195336	2002	EV ₁₃₉	15.5	X	289.97400	123.97431	159.96921	6.54369	0.0479024	0.21879712	2.7275642	20	4 7.9	19.2
195337	2002	EG ₁₄₂	12.7	X	284.45555	17.38278	37.85301	4.47667	0.0808976	0.08188433	5.2521305	20	9 2.5	19.5
195338	2002	EW ₁₄₂	16.5	X	22.10308	204.74301	18.50142	3.46976	0.0867237	0.22665820	2.6641281	20	5 29.9	19.7
195339	2002	EF ₁₄₃	16.3	X	153.39371	107.74339	7.81120	2.80154	0.1114196	0.23201758	2.6229426	20	7 1.9	20.2
195340	2002	EM ₁₄₆	16.3	X	75.60611	106.70897	132.43532	2.62535	0.0696059	0.23624088	2.5915883	20	9 9.6	19.6
195341	2002	ER ₁₄₆	16.3	X	212.86011	79.29205	69.10873	2.02603	0.1013425	0.24463141	2.5319856	20	10 19.5	19.7
195342	2002	EQ ₁₄₇	17.1	X	137.11733	136.09214	3.90109	2.03401	0.1381016	0.23266531	2.6180722	20	7 18.4	21.2
195343	2002	EH ₁₄₈	16.7	X	172.17747	96.84726	66.28440	2.53270	0.0585101	0.24066283	2.5597450	20	9 25.3	20.3
195344	2002	ER ₁₅₀	16.5	X	114.03413	210.08752	50.73164	3.18326	0.0863113	0.24460922	2.5321388	20	11 23.5	20.2
195345	2002	EP ₁₅₁	16.3	X	65.72552	170.82522	22.47517	3.52378	0.1189952	0.22676978	2.6632541	20	7 1.6	19.6
195346	2002	ET ₁₅₁	16.2	X	352.33083	23.78571	197.45162	4.77006	0.0997521	0.22004442	2.7172472	20	4 6.9	19.3
195347	2002	EV ₁₅₁	15.4	X	230.58107	243.88924	3.23603	12.82345	0.1374254	0.20453488	2.8529301	20	—	—
195348	2002	EX ₁₅₂	15.3	X	151.62768	9.28609	202.88852	14.35063	0.1222983	0.24543066	2.5264857	20	11 3.2	19.2
195349	2002	EC ₁₅₄	15.8	X	290.43718	25.76959	358.01916	15.26948	0.0861604	0.23855990	2.5747660	20	8 23.1	19.0
195350														

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>		
195361	2002	FO ₁₃	16.7	X	151.12588	185.57927	16.57847	5.58961	0.1484165	0.24106545	2.5568941	20	10 18.8	20.6
195362	2002	FH ₁₅	15.6	X	110.12245	191.83598	45.97015	9.94630	0.0720637	0.24141196	2.5544468	20	10 21.8	19.2
195363	2002	FF ₂₄	15.5	X	306.66501	265.16098	3.78985	11.79779	0.1734139	0.21815557	2.7329091	20	3 21.3	19.1
195364	2002	FH ₂₅	15.7	X	33.37694	204.25366	38.46268	18.50798	0.1314130	0.23051444	2.6343327	20	7 29.8	19.2
195365	2002	FM ₂₅	15.8	X	27.91946	157.44145	72.71892	13.82361	0.2464072	0.22598450	2.6694202	20	7 12.3	18.5
195366	2002	FS ₂₆	15.9	X	72.46209	188.51989	17.48029	13.72332	0.0915033	0.23356072	2.6113766	20	7 29.8	19.6
195367	2002	FJ ₂₇	15.3	X	324.52246	184.46813	124.70820	13.08657	0.1898995	0.23016689	2.6369839	20	6 14.9	18.1
195368	2002	FR ₂₈	16.1	X	27.20821	161.32972	89.25269	6.12099	0.1804458	0.22896223	2.6462253	20	8 1.2	18.8
195369	2002	FZ ₂₉	16.2	X	122.28773	135.06990	347.71071	8.57400	0.0847967	0.22763074	2.6565344	20	6 2.5	20.1
195370	2002	FF ₃₀	16.0	X	308.01795	206.88485	61.66334	13.71035	0.1352623	0.22223784	2.6993387	20	4 3.9	19.6
195371	2002	FS ₃₁	16.9	X	112.30291	152.24440	46.91496	6.13195	0.1532228	0.23571339	2.5954533	20	9 11.3	20.9
195372	2002	FY ₃₁	16.2	X	86.38968	152.28912	99.60709	5.47709	0.1092988	0.24015641	2.5633422	20	10 17.2	19.9
195373	2002	FH ₃₂	16.0	X	92.42551	196.86159	40.65556	6.48217	0.0428357	0.23972425	2.5664202	20	9 27.5	19.5
195374	2002	FX ₃₂	16.2	X	284.42738	61.08050	64.53299	6.02574	0.0848973	0.25439087	2.4668062	20	—	—
195375	2002	FY ₃₂	15.4	X	112.06854	315.45191	326.88754	5.80306	0.2563922	0.18996377	2.9970147	20	12 15.3	20.7
195376	2002	FD ₃₄	15.9	X	37.79655	165.78069	56.53813	10.43195	0.1266714	0.22610764	2.6684509	20	6 29.8	19.1
195377	2002	FJ ₃₇	15.3	X	315.43187	214.25774	102.37027	13.27685	0.1663179	0.22960031	2.6413203	20	6 11.5	18.2
195378	2002	FV ₃₇	15.8	X	123.17111	195.00771	39.40123	14.22951	0.1196596	0.24249423	2.5468407	20	11 1.3	19.6
195379	2002	FD ₄₀	15.3	X	207.66135	226.45960	75.43060	7.68875	0.1237947	0.20872296	2.8146381	20	1 24.7	19.8
195380	2002	GY	15.5	X	103.67634	158.18764	4.05037	29.12224	0.0728634	0.23006605	2.6377544	20	7 10.0	19.9
195381	2002	GL ₁	16.5	X	273.37009	183.38991	309.29390	4.22298	0.1729062	0.25276334	2.4773840	20	12 13.1	19.0
195382	2002	GY ₄	15.4	X	297.38934	121.74896	172.16093	26.18854	0.0978404	0.21881464	2.7274186	20	4 25.7	19.3
195383	2002	GJ ₅	17.1	X	308.14313	233.51477	45.66659	21.04157	0.0826736	0.38231711	1.8801257	20	4 15.5	18.8
195384	2002	GP ₆	16.8	X	84.91765	31.60288	24.86438	21.27199	0.0904505	0.37091442	1.9184636	20	—	—
195385	2002	GN ₇	16.0	X	130.79391	162.93682	48.98399	7.80310	0.1999270	0.23776412	2.5805078	20	10 15.6	20.3
195386	2002	GY ₇	15.7	X	7.83856	51.01411	176.68198	13.39800	0.2151588	0.22128757	2.7070609	20	5 18.5	18.3
195387	2002	GN ₈	15.5	X	256.79818	286.00281	2.05303	19.96658	0.2025876	0.21267604	2.7796514	20	2 22.9	20.1
195388	2002	GK ₉	15.6	X	132.37034	9.55315	195.37894	16.63835	0.1422960	0.23733184	2.5836403	20	10 4.2	19.7
195389	2002	GQ ₉	16.8	X	105.47718	335.32368	53.51191	23.84214	0.1134283	0.36899696	1.9251040	20	—	—
195390	2002	GJ ₁₀	16.1	X	288.97923	313.53708	358.88608	5.92053	0.0448259	0.22736685	2.6585895	20	5 10.8	19.8
195391	2002	GV ₁₀	16.6	X	74.47673	14.92856	21.29070	20.38623	0.0866967	0.36789778	1.9289365	20	—	—
195392	2002	GJ ₁₁	15.7	X	331.10274	146.94238	94.56986	4.89368	0.0732437	0.21765812	2.7370715	20	4 6.6	19.1
195393	2002	GK ₁₂	15.8	X	22.19645	205.12581	17.00006	16.45337	0.1253296	0.22209798	2.7004718	20	5 27.2	19.1
195394	2002	GF ₁₄	15.5	X	294.22115	58.45131	205.06565	8.62164	0.1103840	0.21385836	2.7693970	20	3 4.9	19.4
195395	2002	GU ₁₄	16.6	X	107.29103	213.84109	20.94817	5.18328	0.1928665	0.23884522	2.5727150	20	10 20.6	20.6
195396	2002	GH ₁₅	15.8	X	194.53801	120.12771	40.48472	4.37164	0.0207800	0.24295109	2.5436468	20	10 21.9	19.1
195397	2002	GB ₁₆	15.5	X	267.52946	257.47288	15.61626	9.12484	0.1275634	0.21423284	2.7661689	20	2 18.7	19.7
195398	2002	GV ₁₇	15.6	X	125.45562	154.14455	48.02964	12.30081	0.1754561	0.23533503	2.5982344	20	10 1.2	19.9
195399	2002	GK ₂₀	14.8	X	187.54362	287.04336	32.97297	15.07397	0.1572450	0.20447507	2.8534864	20	2 1.9	19.7
195400	2002	GO ₂₀	16.1	X	122.57865	154.77461	14.36509	5.30807	0.1615973	0.23092241	2.6312291	20	8 13.4	20.2
195401	2002	GO ₂₁	15.8	X	163.01266	138.68369	33.60936	13.60451	0.2008135	0.23772368	2.5808004	20	9 26.9	20.2
195402	2002	GV ₂₁	16.2	X	128.45003	345.74927	222.00562	12.15975	0.2389586	0.23601015	2.5932771	20	10 5.3	20.8
195403	2002	GU ₂₂	16.3	X	141.09251	303.76276	274.79476	3.93591	0.2232414	0.23956720	2.5675435	20	10 28.9	20.7
195404	2002	GY ₂₃	15.6	X	343.62214	199.07923	24.17654	7.50046	0.2198526	0.21671140	2.7450371	20	3 14.9	18.3
195405	2002	Lentylar	17.4	X	261.13724	256.09709	166.61205	10.50341	0.1690861	0.24344793	2.5401849	20	8 14.3	20.8
195406	2002	GT ₃₅	16.4	X	275.91617	350.19055	1.14864	3.64350	0.0954420	0.22876856	2.6477186	20	6 8.5	20.0
195407	2002	GJ ₃₇	16.5	X	64.87521	352.19385	190.95839	2.13047	0.1274621	0.22660134	2.6645737	20	6 17.3	19.9
195408	2002	GW ₃₇	16.1	X	291.63460	246.77512	12.60522	3.36135	0.0431437	0.21466468	2.7624578	20	3 9.3	19.9
195409	2002	GK ₃₈	15.5	X	228.57226	337.00300	14.36565	6.12552	0.0562478	0.22159156	2.7045846	20	4 15.3	19.3
195410	2002	GO ₃₈	16.4	X	35.56968	51.26875	185.00328	3.80600	0.0908009	0.22720501	2.6598519	20	7 10.6	19.5
195411	2002	GX ₃₈	15.8	X	281.06553	66.93986	192.71277	14.72340	0.1590624	0.21184982	2.7868739	20	2 6.5	20.2
195412	2002	GF ₃₉	12.4	X	301.05694	151.58299	278.34916	6.09284	0.0860132	0.08506750	5.1202786	20	10 4.4	19.1
195413	2002	GC ₄₀	16.2	X	34.34244	244.80581	4.79239	6.89690	0.2005577	0.22857210	2.6492355	20	8 17.4	19.2
195414	2002	GF ₄₀	16.6	X	58.39125	314.63730	284.32064	1.05529	0.1521361	0.23151743	2.6267188	20	8 28.3	20.1
195415	2002	GJ ₄₀	12.5	X	285.40743	203.13537	225.61859	8.63739	0.0505536	0.07982111	5.3422499	20	9 17.8	19.6
195416	2002	GA ₄₁	15.8	X	67.22642	19.74998	220.96893	10.79752	0.1734331	0.23438854	2.6052244	20	9 11.1	19.6
195417	2002	GQ ₄₂	16.0	X	85.25225	161.16906	31.76397	8.61181	0.0680203	0.22930015	2.6436248	20	7 22.2	19.7
195418	2002	GU ₄₂	16.2	X	87.62717	154.36434	47.46010	2.68422	0.0782650	0.23076318	2.6324394	20	8 6.7	19.8
195419	2002	GL ₄₃	16.2	X	122.87264	113.81220	10.13521	3.42705	0.0674386	0.22604044	2.6689798	20	6 3.8	19.9
195420	2002	GT ₄₃	16.0	X	45.54768	224.97902	350.96192	7.57690	0.0794086	0.22623549	2.6674456	20	6 27.1	19.4
195421	2002	GW ₄₄	15.7	X	307.09766	351.12203	285.44878	5.44230	0.1333884	0.21969092	2.7201613	20	4 3.6	19.2
195422	2002	GN ₄₆	15.7	X	319.92813	126.84023	97.80564	6.31584	0.1060114	0.21444373	2.7643550	20	2 23.7	19.2
195423	2002	GQ ₄₆	16.5	X	83.00281	210.59108	22.73421	6.16670	0.0731147	0.23472688	2.6027203	20	9 12.9	20.0
195424	2002	GN ₄₉	16.2	X	122.80636	287.72353	262.06332	7.62860	0.1076559	0.23704209	2.5857453	20	8 30.9	20.2
195425	2002	GL ₅₀	15.8	X	99.31466	205.50077	331.05362	10.75595	0.1275773	0.23065960	2.6332273	20	7 25.9	19.6
195426	2002	GU ₅₁	16.0	X	287.57974	139.21846	142.82854	3.20695	0.0297451	0.21854084	2.7296961	20	4 4.5	19.6
195427	2002	GY ₅₁	16.0	X	351.75278	148.58013	158.38753	4.26860	0.0533899	0.23139306	2.6276600	20	8 7.3	19.2
195428	2002	GW ₅₄	16.5	X	69.61479	2.41623	207.44149	4.41614	0.1065380	0.22878137	2.6476197	20	7 26.4	20.1
195429	2002	GQ ₅₈	16.5	X	143.54292	166.70330	27.91581	4.82496	0.1250777	0.23808395	2.5781963	20	10 3.2	20.4
195430	2002	GP ₆₀	15.6	X	225.496									

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>
195441 2002 GN ₇₃	15.6 ^m	X	306.61032	184.42502	87.07009	5.85049	0.0710273	0.21887601	2.7269088	20	4 11.7	19.2
195442 2002 GT ₇₅	16.3	X	227.91900	226.22809	265.46173	2.22786	0.1617332	0.24298805	2.5433889	20	10 5.6	20.0
195443 2002 GF ₇₆	15.8	X	344.84134	60.78538	108.05843	12.32927	0.0982303	0.26360406	2.4089881	20	1 6.9	18.5
195444 2002 GG ₇₇	15.8	X	254.27281	261.13042	37.82081	13.11228	0.1894515	0.21369719	2.7707894	20	3 4.8	20.4
195445 2002 GQ ₇₈	15.5	X	119.79102	52.51910	124.53707	14.99615	0.0361315	0.22954136	2.6417725	20	8 8.5	19.2
195446 2002 GH ₇₉	15.7	X	110.48428	301.24717	206.07414	11.60940	0.1360378	0.22869822	2.6482614	20	6 27.5	19.8
195447 2002 GY ₈₁	15.8	X	341.44400	79.97476	148.89768	5.72484	0.0577542	0.21810474	2.7333336	20	4 5.9	19.2
195448 2002 GD ₈₂	16.5	X	94.71302	103.94679	79.44653	4.92098	0.0880534	0.22885698	2.6470365	20	7 22.7	20.1
195449 2002 GZ ₈₄	15.4	X	337.80043	191.61554	60.81153	13.41153	0.1408559	0.21901162	2.7257830	20	4 26.0	18.5
195450 2002 GA ₈₅	15.7	X	191.49752	62.80095	98.78589	8.13470	0.0839395	0.24019223	2.5630874	20	10 16.6	19.5
195451 2002 GX ₈₅	15.7	X	192.13202	54.31729	35.20180	22.52359	0.0463414	0.23041352	2.6351019	20	7 15.0	19.9
195452 2002 GQ ₉₀	15.7	X	260.93203	270.09994	47.16917	5.86480	0.0504925	0.21999864	2.7176241	20	4 13.2	19.3
195453 2002 GA ₉₂	15.8	X	274.94211	294.92811	342.94387	7.00993	0.1885699	0.21391694	2.7688914	20	2 22.7	19.8
195454 2002 GP ₉₂	17.0	X	193.99956	125.38699	20.83147	5.59547	0.1156973	0.23959227	2.5673644	20	9 23.9	20.8
195455 2002 GH ₉₃	15.9	X	189.92058	191.32698	214.43212	4.72435	0.0560852	0.22345893	2.6894960	20	5 11.6	19.6
195456 2002 GR ₉₃	15.6	X	178.72357	79.55468	11.54279	22.03231	0.0544595	0.22836289	2.6508533	20	6 27.8	19.9
195457 2002 GE ₉₄	16.5	X	196.59990	263.19489	234.72570	2.94189	0.2155176	0.24037869	2.5617618	20	9 6.4	20.8
195458 2002 GC ₉₅	15.8	X	293.48817	76.83507	2.74399	7.77685	0.1130001	0.24480050	2.5308195	20	11 5.3	18.7
195459 2002 GE ₉₉	15.8	X	160.31595	260.73237	214.27742	8.65879	0.0286644	0.22995378	2.6386129	20	7 4.8	19.6
195460 2002 GA ₁₀₃	16.6	X	137.40910	297.96405	216.10829	3.30481	0.1275320	0.23261227	2.6184702	20	8 3.7	20.6
195461 2002 GD ₁₀₄	16.1	X	205.53982	21.23943	103.62826	5.46119	0.1252353	0.23748062	2.5825611	20	9 8.9	19.9
195462 2002 GL ₁₀₄	15.9	X	116.53321	354.71194	172.96965	13.95210	0.0939374	0.22891917	2.6465571	20	7 25.9	20.0
195463 2002 GS ₁₀₄	15.6	X	333.34397	122.94371	138.10504	9.95277	0.1170682	0.21858752	2.7239375	20	5 3.4	18.9
195464 2002 GT ₁₀₄	15.3	X	328.42086	100.23620	172.20157	12.06807	0.1043455	0.21919986	2.7242222	20	5 11.5	18.7
195465 2002 GH ₁₁₁	16.0	X	345.75978	109.39418	146.09355	4.75099	0.0850505	0.22237964	2.6981911	20	5 16.7	19.2
195466 2002 GR ₁₁₂	15.9	X	118.87545	41.95582	132.64552	6.78093	0.0825604	0.23020986	2.6366558	20	8 8.1	19.7
195467 2002 GT ₁₁₄	12.1	X	315.51945	355.14091	49.42817	10.46865	0.0438552	0.07917283	5.3713725	20	10 3.6	19.0
195468 2002 GM ₁₁₅	16.1	X	202.66808	9.91517	136.13925	7.65442	0.0859256	0.24150460	2.5537935	20	10 8.3	19.8
195469 2002 GY ₁₁₅	15.8	X	243.09382	135.96972	158.16010	5.63021	0.0591698	0.21241342	2.7819421	20	2 20.9	19.9
195470 2002 GY ₁₁₈	16.8	X	192.01696	51.58587	140.95417	4.68397	0.0880013	0.24649747	2.5191909	20	11 23.4	20.4
195471 2002 GV ₁₁₉	15.9	X	37.40131	234.66445	40.17747	15.58888	0.0987990	0.23317604	2.6142479	20	9 17.5	19.4
195472 2002 GF ₁₂₄	16.0	X	38.96988	122.32870	182.61888	6.65506	0.1563083	0.24129768	2.5552533	20	11 2.9	19.2
195473 2002 GY ₁₂₅	16.0	X	275.53620	73.73936	211.28091	7.36837	0.2813825	0.21362729	2.7713937	20	2 18.9	20.7
195474 2002 GL ₁₂₆	15.8	X	197.47222	72.22596	194.03963	13.33703	0.1992626	0.20070661	2.8890936	20	—	—
195475 2002 GQ ₁₂₆	17.0	X	144.97658	357.00540	169.33524	1.18991	0.0999509	0.23596213	2.5936289	20	8 27.7	20.9
195476 2002 GT ₁₂₇	16.2	X	7.65657	33.46974	257.66738	2.49758	0.0781474	0.23180458	2.6245491	20	8 11.4	19.2
195477 2002 GK ₁₂₉	16.3	X	284.93890	263.94712	350.88612	3.19421	0.0469800	0.21386575	2.7693333	20	2 23.4	20.0
195478 2002 GV ₁₂₉	16.4	X	161.03953	270.65458	217.45874	2.99271	0.1792973	0.23344336	2.6122518	20	7 26.0	20.7
195479 2002 GX ₁₃₀	16.3	X	248.78574	234.92146	230.27792	1.46961	0.0464353	0.24132959	2.5550280	20	10 14.6	19.6
195480 2002 GK ₁₃₂	16.4	X	351.62055	274.25024	270.69324	0.78597	0.1085123	0.21394276	2.7686686	20	2 16.2	19.6
195481 2002 GO ₁₃₂	16.3	X	290.83544	315.50752	334.71072	2.68310	0.1709590	0.21712653	2.7415370	20	3 27.3	20.1
195482 2002 GF ₁₃₄	15.9	X	221.55621	166.08576	219.64121	5.15781	0.0466273	0.22555275	2.6728257	20	5 23.6	19.5
195483 2002 GV ₁₃₇	15.6	X	137.27552	80.14766	61.81671	14.27467	0.0440996	0.22934417	2.6432865	20	7 15.6	19.5
195484 2002 GK ₁₃₉	15.8	X	317.04290	229.09735	5.19345	6.53453	0.0143591	0.21701552	2.7424719	20	3 14.1	19.3
195485 2002 GG ₁₄₂	15.5	X	311.52616	193.04184	51.86083	10.08625	0.0948252	0.21391161	2.7689374	20	3 14.1	19.2
195486 2002 GP ₁₄₅	16.3	X	228.42664	166.85835	218.18611	5.14137	0.0144001	0.22572701	2.6714499	20	6 3.8	19.8
195487 2002 GF ₁₄₆	15.9	X	347.93293	202.17816	90.93203	3.59190	0.0326795	0.23045705	2.6347701	20	7 13.2	19.1
195488 2002 GB ₁₄₉	15.8	X	184.39982	328.24042	17.65476	6.13095	0.0256016	0.21438133	2.7648914	20	2 21.1	19.7
195489 2002 GH ₁₅₀	15.7	X	232.04845	202.71495	197.52362	13.10296	0.1798152	0.23027785	2.6361368	20	6 11.1	20.0
195490 2002 GO ₁₅₀	12.9	X	274.84157	225.99888	237.05044	2.04447	0.1039471	0.08271824	5.2167720	20	10 9.6	19.6
195491 2002 GR ₁₅₁	15.9	X	80.90597	88.96648	110.00127	3.92166	0.0243112	0.22800248	2.6536461	20	7 15.3	19.4
195492 2002 GO ₁₆₀	16.3	X	24.60658	147.51394	115.73462	6.54835	0.1565458	0.22919827	2.6444082	20	8 11.3	19.1
195493 2002 GK ₁₆₁	16.6	X	69.15005	142.40268	84.39998	5.44734	0.1103995	0.22975884	2.6401052	20	8 22.4	20.1
195494 2002 GP ₁₆₂	16.2	X	219.60599	288.67138	170.01931	1.66602	0.0341344	0.23589419	2.5941269	20	8 29.3	19.4
195495 2002 GY ₁₆₂	12.8	X	308.99380	261.73004	182.44547	9.76204	0.1107867	0.08472101	5.1342298	20	11 1.3	19.2
195496 2002 GM ₁₆₄	15.7	X	68.14893	18.15812	200.14540	13.18860	0.0109531	0.22913421	2.6449010	20	7 19.1	19.6
195497 2002 GL ₁₆₅	16.2	X	60.16377	34.61117	192.87579	4.21387	0.1251893	0.22761362	2.6566676	20	8 9.4	19.6
195498 2002 GX ₁₆₈	16.1	X	5.13530	263.08365	2.27560	10.65744	0.1029552	0.22538572	2.6741460	20	7 4.1	19.3
195499 2002 GJ ₁₆₉	16.3	X	226.21702	105.97931	4.95870	5.54076	0.0751510	0.23831175	2.5765530	20	9 18.8	19.6
195500 2002 GK ₁₇₀	16.5	X	172.35351	251.49280	251.11666	2.83868	0.2038999	0.23585474	2.5944162	20	8 22.7	20.9
195501 2002 GT ₁₇₀	16.4	X	155.37747	123.54257	16.78811	7.72136	0.1333138	0.23253903	2.6190200	20	8 8.6	20.6
195502 2002 GY ₁₇₂	15.4	X	305.78070	215.10958	77.93529	10.50949	0.0710354	0.22123526	2.7074876	20	5 9.1	18.9
195503 2002 GJ ₁₇₄	15.9	X	142.97900	311.08522	167.31351	9.61308	0.1180971	0.23010814	2.6374327	20	6 24.6	20.1
195504 2002 GM ₁₇₇	16.0	X	228.73769	263.34821	176.43917	21.75693	0.0650321	0.23414331	2.6070431	20	8 8.5	20.0
195505 2002 GT ₁₇₉	13.3	X	303.14166	264.60549	180.27937	4.28592	0.0618642	0.08323164	5.1952973	20	10 29.4	19.9
195506 2002 GW ₁₈₁	15.3	X	241.45287	222.71602	81.45470	10.22057	0.1388091	0.21025193	2.8009760	20	3 1.4	19.8
195507 2002 GN ₁₈₂	16.4	X	284.97581	202.01805	68.83626	5.14529	0.0555187	0.21671539	2.7450033	20	3 15.6	20.1
195508 2002 HJ	15.5	X	331.68701	73.23041	160.93499	7.38335	0.0752398	0.21753652	2.7380914	20	3 27.1	18.9
195509 2002 HT ₄	17.1	X	28.30582	295.88205	187.53552	23.68296	0.1579814	0.37447768	1.9062744	20	—	—
195510 2002 HX ₄	15.1	X	271.23992	250.34264	16.97438	7.71844	0.1938488	0.21046945	2.7990458	20	2 8.4	19.5
195511 2002 HV ₅	16.9	X	41.30348	282.02543	200.29881	1.97338	0.1600201	0.26830763	2.3807513	20	2 5.9	18.8
195512 2002 HH ₆	15.6	X	69.79088	336.62946	241.44038	11.77251	0.1208120	0.23216139	2.6218593	20	8 5.7	19.4
195513 2002 HY ₇	15.9	X	88.82190	14.53432	166.38349	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>
195521 2002 JV ₁₆	15.4	X	359.67047	27.14275	171.83725	9.38381	0.1795408	0.21547063	2.7555650	20	3 15.1	18.0
195522 2002 JW ₁₆	16.2	X	217.39908	105.30428	29.29839	9.95104	0.0442180	0.24156412	2.5533740	20	10 14.2	19.6
195523 2002 JW ₁₉	15.7	X	240.46174	192.58667	129.92498	6.92144	0.0498034	0.21358286	2.7717780	20	3 28.1	19.7
195524 2002 JN ₂₀	15.5	X	3.26222	121.73590	77.31428	6.43563	0.0187918	0.21565602	2.7539855	20	4 1.3	19.2
195525 2002 JN ₂₁	15.6	X	85.98650	356.63005	225.59914	13.28538	0.1086192	0.22941954	2.6427076	20	8 29.2	19.6
195526 2002 JF ₂₄	16.3	X	85.82685	101.15969	96.91941	3.61816	0.1346577	0.22790812	2.6543785	20	8 6.8	20.0
195527 2002 JC ₂₇	16.3	X	128.25149	166.59454	56.88873	5.91836	0.1702048	0.23787571	2.5797007	20	10 25.8	20.5
195528 2002 JT ₂₇	16.0	X	143.09026	1.18735	184.50918	7.49494	0.1415121	0.23397699	2.6082785	20	9 20.0	20.0
195529 2002 JQ ₂₈	15.1	X	222.42628	55.43026	230.78938	15.94387	0.0775888	0.20425063	2.8555763	20	1 16.2	19.7
195530 2002 JV ₂₈	16.0	X	97.23606	74.35382	210.77884	7.97228	0.2926616	0.18307028	3.0717851	20	12 9.2	21.4
195531 2002 JY ₂₉	15.5	X	337.89121	178.94795	61.06711	9.22659	0.0987299	0.21624540	2.7489793	20	4 13.3	18.8
195532 2002 JA ₃₅	15.5	X	115.23827	87.64828	64.61580	22.94821	0.0412092	0.22365108	2.6879553	20	6 27.5	19.5
195533 2002 JQ ₃₇	16.4	X	128.45223	272.43894	276.60427	3.59389	0.1578913	0.23379198	2.6096543	20	9 9.4	20.5
195534 2002 JB ₄₀	15.8	X	181.47246	283.12980	232.73912	10.79004	0.2307225	0.24196515	2.5505519	20	9 12.2	20.3
195535 2002 JJ ₄₁	15.3	X	100.90694	302.17791	220.16858	14.59956	0.1226727	0.22713333	2.6604114	20	7 3.3	19.4
195536 2002 JC ₄₄	15.3	X	336.88533	314.84552	244.96802	7.15941	0.2392963	0.21342492	2.7731453	20	1 23.2	18.5
195537 2002 JJA ₄₄	14.9	X	295.27094	279.03005	3.59896	9.23300	0.1753625	0.21608087	2.7503745	20	3 23.4	18.4
195538 2002 JO ₄₅	15.9	X	188.26115	260.73588	31.16936	20.31608	0.2566722	0.19884535	2.9070941	20	—	—
195539 2002 JQ ₄₅	16.2	X	87.20385	332.83058	253.00420	3.40536	0.0800107	0.23232952	2.6205942	20	9 4.8	19.9
195540 2002 JG ₄₆	16.4	X	77.15534	340.10588	270.29069	2.58033	0.0342919	0.23454161	2.6040908	20	9 19.0	19.8
195541 2002 JM ₄₆	15.9	X	89.00338	343.85237	232.60671	10.01284	0.1957271	0.23190751	2.6237725	20	9 5.8	20.1
195542 2002 JO ₄₈	15.9	X	39.38023	316.06597	250.09873	4.24138	0.1052349	0.22158404	2.7046458	20	6 6.2	19.1
195543 2002 JO ₅₆	15.9	X	294.06754	39.63101	310.28646	1.76383	0.1104006	0.22499598	2.6772333	20	7 1.1	19.0
195544 2002 JP ₅₇	15.5	X	263.02798	251.82628	49.26153	9.36960	0.1430458	0.21146188	2.7902813	20	3 18.7	19.8
195545 2002 JG ₆₀	15.6	X	302.62866	200.96138	55.89044	5.98508	0.0305538	0.21401975	2.7680047	20	3 24.4	19.3
195546 2002 JE ₆₂	15.6	X	305.44160	44.79938	197.73736	8.10578	0.1851490	0.21271828	2.7792834	20	2 10.8	19.6
195547 2002 JN ₆₂	16.0	X	160.73453	117.18967	71.04614	14.81822	0.0855372	0.23711907	2.5851856	20	10 18.9	20.1
195548 2002 JP ₆₅	15.6	X	154.20491	202.89262	78.28157	8.89357	0.2918029	0.18988915	2.9977997	20	—	—
195549 2002 JP ₆₆	15.8	X	12.96091	31.68899	193.49111	5.23808	0.0455500	0.21922780	2.7239908	20	5 17.6	19.2
195550 2002 JB ₆₇	15.4	X	293.97720	50.94933	204.21412	6.81123	0.0638669	0.21048348	2.7989214	20	3 1.5	19.4
195551 2002 JE ₆₇	15.5	X	334.31634	187.38563	56.53970	4.87480	0.0382223	0.21645178	2.7472316	20	4 16.9	19.0
195552 2002 JL ₆₇	15.0	X	78.15913	264.51352	70.42962	17.23713	0.3552688	0.18274455	3.0754341	20	—	—
195553 2002 JA ₆₈	16.2	X	150.67391	174.36700	28.83473	13.28828	0.0968112	0.24088390	2.5581786	20	10 20.8	19.9
195554 2002 JD ₆₈	17.7	X	87.40401	316.05656	207.88521	21.31097	0.0310793	0.38613835	1.8677013	20	6 8.2	19.8
195555 2002 JR ₆₈	16.0	X	142.66722	180.00420	53.60725	13.37747	0.2206885	0.24311108	2.5425308	20	11 18.4	20.2
195556 2002 JB ₆₉	14.9	X	304.71952	206.82049	69.01150	14.08293	0.1102749	0.21832929	2.7314592	20	4 12.9	18.6
195557 2002 JH ₆₉	15.5	X	310.28916	199.02306	86.16564	10.25779	0.1219662	0.21984199	2.7189149	20	4 29.1	19.0
195558 2002 JB ₇₁	15.9	X	146.93904	0.77297	162.49046	8.70759	0.1256777	0.23326167	2.6136080	20	8 25.8	20.0
195559 2002 JT ₇₁	15.5	X	135.59758	346.85600	186.64612	12.83920	0.2115164	0.23339576	2.6126069	20	8 29.2	19.9
195560 2002 JK ₇₂	15.6	X	17.16016	18.97538	146.97831	8.92070	0.1311486	0.21384657	2.7694989	20	3 5.5	18.5
195561 2002 JR ₇₃	15.9	X	1.31494	20.74652	189.34968	11.21625	0.2147221	0.21583349	2.7524757	20	4 1.8	18.1
195562 2002 JN ₇₆	16.3	X	83.89627	324.18134	221.87032	8.07508	0.1452220	0.22817109	2.6523386	20	7 17.8	20.2
195563 2002 JX ₇₆	16.1	X	131.60368	151.64647	26.24434	5.18413	0.1232986	0.23455960	2.6039576	20	8 31.8	20.0
195564 2002 JC ₇₇	15.6	X	353.51977	357.60439	213.91275	13.35422	0.0856399	0.21777975	2.7360522	20	3 24.9	19.0
195565 2002 JB ₇₈	16.4	X	111.76539	152.37056	25.40372	6.31882	0.1965321	0.23149676	2.6268752	20	8 17.3	20.6
195566 2002 JR ₈₀	16.3	X	344.31633	235.58917	38.96978	2.54488	0.1148476	0.22315377	2.6919474	20	6 7.1	19.3
195567 2002 JA ₈₁	16.5	X	356.99099	39.48379	226.45723	3.51120	0.1907437	0.22281325	2.6946894	20	6 18.8	19.0
195568 2002 JB ₈₁	15.5	X	215.53770	226.60204	217.90720	21.39181	0.0517868	0.23151874	2.6267089	20	7 26.3	19.7
195569 2002 JQ ₈₂	16.0	X	274.30456	128.99204	213.67679	5.25269	0.0243789	0.22385357	2.6863342	20	6 6.4	19.6
195570 2002 JF ₈₄	15.2	X	244.46852	280.57475	41.55769	13.02209	0.1818760	0.21296614	2.7771266	20	3 23.3	19.8
195571 2002 JT ₈₄	15.6	X	273.48048	266.61398	30.60292	10.09630	0.1088896	0.21465650	2.7625280	20	3 27.7	19.5
195572 2002 JY ₈₄	16.4	X	195.68384	53.38887	249.66998	3.50278	0.2564404	0.20062835	2.8898448	20	1 16.4	21.5
195573 2002 JW ₉₂	15.7	X	250.93302	58.77358	258.20610	3.61942	0.0630425	0.21356684	2.7719167	20	3 27.4	19.7
195574 2002 JG ₉₇	15.7	X	331.54700	219.13715	85.17697	14.67023	0.0914844	0.22581366	2.6707665	20	6 29.6	18.9
195575 2002 JH ₉₇	15.3	X	258.33012	223.09895	82.65479	15.46926	0.1833878	0.21340972	2.7732770	20	3 19.1	19.9
195576 2002 JT ₉₉	16.6	X	338.15382	275.66431	247.62837	18.80738	0.0616239	0.36896447	1.9252170	20	—	—
195577 2002 JU ₉₉	15.3	X	165.56497	348.05454	64.31372	13.83296	0.0846184	0.21838252	2.7310153	20	4 27.0	19.5
195578 2002 JB ₁₀₀	15.0	X	39.28111	136.59501	176.47103	16.10666	0.2345579	0.17666157	3.1456326	20	11 13.3	19.5
195579 2002 JB ₁₀₁	14.9	X	60.98064	99.58132	173.02317	25.00548	0.2932836	0.17684476	3.1434599	20	10 28.7	20.0
195580 2002 JY ₁₀₁	15.7	X	290.85876	238.02101	62.91808	13.51681	0.1504735	0.21522788	2.7576366	20	4 19.3	19.6
195581 2002 JX ₁₀₃	16.0	X	30.31367	57.85174	196.79318	9.21759	0.1658412	0.22668543	2.6639147	20	8 5.9	19.2
195582 2002 JY ₁₀₉	16.3	X	21.67330	210.44685	9.66946	1.91968	0.1272429	0.21946075	2.7220629	20	5 28.2	19.3
195583 2002 JQ ₁₁₈	15.6	X	136.60801	111.58641	68.80051	15.13913	0.0928226	0.23637896	2.5905790	20	9 14.7	19.8
195584 2002 JG ₁₁₉	15.6	X	24.44914	345.88499	182.35915	17.50944	0.1455903	0.21518603	2.7579941	20	3 20.9	18.6
195585 2002 JS ₁₁₉	15.3	X	116.97745	54.30585	131.60722	12.47902	0.1110303	0.23274684	2.6174608	20	8 24.9	19.2
195586 2002 JE ₁₂₁	15.5	X	177.87155	322.65350	131.34829	14.94555	0.1409169	0.22763450	2.6565052	20	6 29.5	19.9
195587 2002 JF ₁₂₁	15.6	X	72.47922	210.62431	91.92471	16.07901	0.1701102	0.238				

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>		
195601	2002	<i>JU</i> ₁₄₈	15.9	X	266.51260	274.01388	354.44815	3.49709	0.0575897	0.20993007	2.8038382	20	2 17.6	19.9
195602	2002	<i>KN</i> ₁	16.3	X	95.63564	297.47307	276.68038	3.09209	0.1272794	0.23248055	2.6194592	20	9 5.5	20.2
195603	2002	<i>KO</i> ₂	15.8	X	62.47884	330.34199	204.42905	11.20181	0.1220347	0.22222313	2.6994578	20	6 1.8	19.3
195604	2002	<i>KX</i> ₂	15.9	X	134.13721	143.44137	47.37293	6.41200	0.0459558	0.23453151	2.6041655	20	9 17.5	19.6
195605	2002	<i>KY</i> ₉	15.7	X	186.37563	115.34670	58.23428	10.35659	0.0600979	0.24037237	2.5618067	20	10 26.6	19.4
195606	2002	<i>KO</i> ₁₀	15.4	X	222.93880	307.04832	62.84753	6.91589	0.0500454	0.21741463	2.7391146	20	5 5.0	19.2
195607	2002	<i>KS</i> ₁₀	16.4	X	112.06215	351.48065	220.84909	5.33168	0.0902373	0.23236846	2.6203015	20	9 17.5	20.4
195608	2002	<i>KO</i> ₁₁	16.4	X	178.97867	27.18788	243.50005	19.18509	0.0500495	0.36075409	1.9543179	20	—	—
195609	2002	<i>KM</i> ₁₃	15.8	X	114.27880	98.88803	49.80364	4.15754	0.0180918	0.22462136	2.6802091	20	6 20.4	19.3
195610	2002	<i>LS</i> ₁	16.3	X	158.74712	17.69980	151.24893	4.68690	0.1792751	0.23451229	2.6043078	20	9 14.9	20.6
195611	2002	<i>LP</i> ₁₂	15.3	X	253.65025	83.11210	231.87091	11.70901	0.1520804	0.20950632	2.8076177	20	3 16.5	19.8
195612	2002	<i>LB</i> ₁₄	15.1	X	194.87898	36.08711	258.53454	11.00168	0.1808420	0.19866889	2.9088153	20	1 4.7	20.0
195613	2002	<i>LQ</i> ₁₆	16.0	X	308.67478	251.45823	351.77700	0.55367	0.2189759	0.21015799	2.8018106	20	2 13.8	19.6
195614	2002	<i>LG</i> ₂₀	14.9	X	107.90674	225.00325	90.18458	12.23177	0.3427503	0.18283653	3.0744026	20	—	—
195615	2002	<i>LN</i> ₂₀	15.6	X	315.43022	30.30074	289.73495	8.74902	0.3263101	0.21636056	2.7480037	20	5 16.0	18.7
195616	2002	<i>LD</i> ₂₅	14.8	X	54.37526	102.27606	224.35456	14.92563	0.2137896	0.18035581	3.1025298	20	12 11.6	19.5
195617	2002	<i>LP</i> ₂₅	15.5	X	315.03864	224.32697	86.30962	14.44979	0.0721486	0.22011626	2.7166559	20	6 13.8	18.8
195618	2002	<i>LA</i> ₃₂	15.0	X	163.43604	137.63719	138.56025	5.95121	0.3039184	0.18760989	3.0220309	20	—	—
195619	2002	<i>LN</i> ₃₇	15.0	X	88.49308	154.62949	120.88801	24.58080	0.2576806	0.17847230	3.1243200	20	11 26.1	20.6
195620	2002	<i>LQ</i> ₄₁	15.2	X	42.00759	2.09011	191.61285	8.08425	0.1830338	0.21792938	2.7347997	20	6 4.7	18.3
195621	2002	<i>LN</i> ₄₄	15.9	X	181.49483	133.58290	38.60232	4.41535	0.1156011	0.23818341	2.5774785	20	10 13.1	19.7
195622	2002	<i>LC</i> ₄₅	15.3	X	4.39350	151.01925	97.73236	14.38625	0.0563661	0.22133918	2.7066401	20	6 7.2	18.7
195623	2002	<i>LO</i> ₄₆	14.8	X	150.21004	60.02178	239.55919	15.52155	0.1603713	0.18853251	3.0121636	20	—	—
195624	2002	<i>LZ</i> ₅₀	15.2	X	225.11828	219.24661	136.26215	9.99289	0.1728748	0.21385924	2.7693895	20	4 13.9	19.8
195625	2002	<i>LQ</i> ₅₄	14.6	X	43.67605	65.08273	241.95192	17.91433	0.1471683	0.17221517	3.1995466	20	10 23.5	19.1
195626	2002	<i>LA</i> ₅₈	15.1	X	86.71411	0.88113	98.09688	14.56819	0.0033315	0.21100338	2.7943219	20	3 15.9	19.2
195627	2002	<i>LS</i> ₆₀	16.1	X	190.24216	243.09414	258.94443	5.90442	0.1419701	0.23482037	2.6020294	20	9 7.9	20.4
195628	2002	<i>LA</i> ₆₂	15.0	X	118.87508	5.70737	271.63558	10.54135	0.0602123	0.18054723	3.1003365	20	12 4.9	19.7
195629	2002	<i>MB</i> ₅	16.1	X	143.50061	14.31876	248.73531	2.37601	0.2565594	0.18389993	3.0625394	20	12 14.8	21.6
195630	2002	<i>NE</i> ₃	15.5	X	83.72833	326.30312	344.72872	2.89114	0.1643047	0.17915072	3.1164274	20	12 16.9	20.5
195631	2002	<i>NG</i> ₃	15.9	X	78.67490	7.87241	310.16763	8.08338	0.1594346	0.17909668	3.1170542	20	12 20.1	20.7
195632	2002	<i>NQ</i> ₃	15.2	X	89.55545	111.64267	189.49135	18.12219	0.1656902	0.17790760	3.1309278	20	12 11.5	20.4
195633	2002	<i>NM</i> ₄	15.0	X	67.29217	219.12480	144.12900	11.40051	0.1284479	0.18298480	3.0727415	20	—	—
195634	2002	<i>NP</i> ₄	15.2	X	116.75565	79.27097	233.63424	3.13650	0.1098162	0.18540028	3.0459946	20	—	—
195635	2002	<i>NB</i> ₆	15.8	X	327.89582	44.21368	286.23779	6.05926	0.0551428	0.21928589	2.7235097	20	8 1.1	19.1
195636	2002	<i>ND</i> ₈	15.2	X	80.55312	108.80835	266.19853	7.87478	0.2300564	0.18542914	3.0456785	20	—	—
195637	2002	<i>NM</i> ₁₀	15.0	X	106.36527	230.71872	125.68908	9.55158	0.0849287	0.19016575	2.9948921	20	—	—
195638	2002	<i>NT</i> ₁₆	14.7	X	56.74086	94.58780	241.01490	20.60668	0.2140715	0.17544555	3.1601508	20	12 21.9	19.6
195639	2002	<i>NE</i> ₂₄	14.6	X	135.16911	3.33816	306.82079	12.07487	0.1142437	0.18527523	3.0473650	20	—	—
195640	2002	<i>NU</i> ₂₇	14.4	X	10.43443	249.80600	148.91647	26.42571	0.2510577	0.17423166	3.1748119	20	—	—
195641	2002	<i>NU</i> ₂₇	14.3	X	100.25031	326.79564	322.78836	23.44852	0.1952136	0.17618903	3.1512544	20	12 8.9	19.8
195642	2002	<i>NM</i> ₂₈	15.0	X	73.31513	74.61643	273.77764	8.96670	0.1051592	0.18205762	3.0831653	20	—	—
195643	2002	<i>NN</i> ₂₉	14.9	X	87.54579	223.78676	113.71114	13.67230	0.2392639	0.18169780	3.0872343	20	—	—
195644	2002	<i>NC</i> ₃₄	15.4	X	137.98098	332.12146	17.45651	3.11113	0.2563393	0.19129594	2.9830845	20	1 28.5	20.3
195645	2002	<i>NB</i> ₃₆	15.0	X	60.25417	134.47084	243.76226	8.47655	0.1693314	0.18249524	3.0782344	20	—	—
195646	2002	<i>NN</i> ₃₆	14.8	X	72.87897	232.00040	148.17339	17.47767	0.2284131	0.18516331	3.0485928	20	—	—
195647	2002	<i>NW</i> ₃₆	15.4	X	62.40871	183.57023	238.17608	8.29182	0.0681303	0.19182055	2.9776430	20	—	—
195648	2002	<i>NV</i> ₃₉	15.6	X	161.39559	206.83887	106.68373	5.34292	0.1215392	0.19106615	2.9854757	20	—	—
195649	2002	<i>NB</i> ₄₄	15.8	X	110.05333	178.05392	189.51377	1.33131	0.1933662	0.18925503	3.0016381	20	1 14.4	20.0
195650	2002	<i>NQ</i> ₄₅	15.8	X	117.09363	176.39907	142.40685	6.38454	0.2634908	0.18474658	3.0531755	20	—	—
195651	2002	<i>NR</i> ₅₈	15.3	X	9.45596	215.23870	162.65452	9.58941	0.1780725	0.17548210	3.1597120	20	12 10.6	19.3
195652	2002	<i>NV</i> ₅₈	15.9	X	29.92304	290.59679	162.25519	9.94230	0.0581864	0.19139725	2.9820316	20	—	—
195653	2002	<i>NX</i> ₅₈	15.9	X	40.10281	225.06536	161.44332	12.86612	0.2045286	0.18058642	3.0998880	20	—	—
195654	2002	<i>NZ</i> ₅₈	16.2	X	173.34962	186.00264	136.50016	2.94795	0.1121862	0.19442230	2.9510189	20	1 16.6	20.7
195655	2002	<i>NO</i> ₅₉	16.2	X	92.80818	187.65573	85.36727	5.70911	0.1427864	0.23152250	2.6266805	20	11 19.3	20.1
195656	2002	<i>NR</i> ₅₉	15.8	X	142.48629	237.44360	43.47010	0.31662	0.1698830	0.18503791	3.0499700	20	—	—
195657	2002	Zhuangqining	15.6	X	98.79421	49.47189	266.30549	9.59826	0.0682237	0.18108703	3.0941722	20	12 29.3	20.1
195658	2002	<i>NV</i> ₆₁	15.1	X	140.97127	161.31757	179.25023	12.64730	0.1404790	0.19198816	2.9759097	20	1 7.6	19.8
195659	2002	<i>NF</i> ₆₂	16.1	X	236.19978	260.26193	55.74751	2.63396	0.0435541	0.20507807	2.8478901	20	3 14.7	20.1
195660	2002	<i>NB</i> ₆₃	16.5	X	254.96857	252.70221	54.69552	2.81350	0.0741483	0.20580603	2.8411707	20	3 22.4	20.5
195661	2002	<i>NH</i> ₆₅	16.1	X	129.83978	298.42712	64.19966	3.46127	0.0828430	0.19321234	2.9633263	20	1 16.7	20.3
195662	2002	<i>NW</i> ₆₆	15.9	X	123.59827	47.71636	299.24470	9.54033	0.1203932	0.19027873	2.9937065	20	—	—
195663	2002	<i>NN</i> ₆₇	15.7	X	129.32059	235.17228	97.35174	3.69214	0.1569054	0.18821049	3.0155983	20	—	—
195664	2002	<i>OM</i>	14.8	X	116.39252	115.77877	251.01872	9.64841	0.2181783	0.18869555	3.0104282	20	1 21.4	19.4
195665	2002	<i>OU</i> ₄	14.8	X	88.58136	139.60600	255.69746	14.22911	0.0870056	0.19242432	2.9714111	20	1 4.3	18.8
195666	2002	<i>OT</i> ₅	16.0	X	89.17267	83.01901	209.14670	9.30497	0.2089308	0.17761534	3.1343614	20	12 4.5	21.1
195667	2002	<i>OJ</i> ₆	14.8	X	139.22631	0.30591	272.30759	13.87621	0.1433183	0.18147965	3.0897079	20	12 21.6	19.8
195668	2002	<i>OY</i> ₆	14.6	X	8.22799	128.92111	266.94110	10.17691	0.0796606	0.17691380	3.1426420	20	12 18.3	18.6
195669	2002	<i>OS</i> ₉	15.1	X	130.61731	4.35397	287.02216	8.98015</						

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>
195681 2002 OD ₃₀	15.5	X	95.61801	141.75307	224.21188	7.60300	0.1556280	0.18560200	3.0437871	20	—	—
195682 2002 OE ₃₀	15.0	X	112.76440	351.27089	262.38019	7.51441	0.1073126	0.17374833	3.1806969	20	11 1.2	20.0
195683 2002 OL ₃₀	15.8	X	84.72012	226.93745	179.47238	2.10484	0.2626617	0.18938936	3.0030715	20	2 9.2	19.7
195684 2002 PY	14.3	X	25.51625	106.01931	238.89470	22.21534	0.1806636	0.17039216	3.2223272	20	11 21.4	18.4
195685 2002 PW ₂	15.1	X	161.94692	91.50554	227.63627	12.11790	0.1767328	0.19033346	2.9931326	20	1 5.2	20.1
195686 2002 PR ₄	15.1	X	40.14088	186.47852	191.16980	11.51217	0.1877807	0.17917233	3.1161768	20	—	—
195687 2002 PT ₄	15.3	X	188.31474	18.72367	223.46391	9.55376	0.0880251	0.18471328	3.0535426	20	—	—
195688 2002 PS ₅	15.3	X	149.93578	126.76519	195.73850	10.06208	0.1112774	0.18851328	3.0123684	20	—	—
195689 2002 PP ₈	14.8	X	187.95292	272.23522	278.81410	13.93211	0.1503662	0.17963130	3.1108665	20	10 26.8	20.1
195690 2002 PF ₁₀	15.5	X	347.69614	166.90181	287.66405	8.15200	0.0192028	0.18445145	3.0564315	20	—	—
195691 2002 PS ₁₀	14.7	X	357.71394	82.51113	305.89013	13.88925	0.0713983	0.17445425	3.1721108	20	11 20.4	19.1
195692 2002 PJ ₁₁	16.0	X	119.18269	196.55864	178.87839	3.52701	0.1949273	0.19120906	2.9839879	20	2 1.9	20.4
195693 2002 PC ₁₂	15.8	X	77.20493	141.37469	184.19526	4.69474	0.1531764	0.17979089	3.1090254	20	12 26.5	20.7
195694 2002 PJ ₁₂	15.2	X	351.79290	195.64824	291.48162	9.38069	0.0652641	0.19022684	2.9942509	20	—	—
195695 2002 PU ₁₆	15.0	X	71.02444	88.32720	265.00958	4.34279	0.1563935	0.18192283	3.0846880	20	—	—
195696 2002 PM ₁₈	15.4	X	120.33854	68.19468	201.12947	4.63095	0.0992022	0.17897977	3.1184115	20	11 29.5	20.2
195697 2002 PR ₂₃	15.6	X	0.22303	63.69407	309.35562	8.08427	0.0809977	0.17375098	3.1806646	20	11 5.3	19.9
195698 2002 PC ₂₅	15.0	X	61.37082	55.09876	300.48460	3.84847	0.1510283	0.17981255	3.1087756	20	—	—
195699 2002 PP ₂₅	15.9	X	187.69133	107.03540	172.80599	1.90759	0.1374678	0.19027992	2.9936940	20	—	—
195700 2002 PY ₂₆	14.9	X	54.51751	125.62325	287.41852	9.01347	0.1215789	0.18698265	3.0287855	20	—	—
195701 2002 PH ₂₈	14.8	X	296.12636	122.69159	289.95720	9.55134	0.1027154	0.16888521	3.2414672	20	9 16.5	19.3
195702 2002 PB ₃₀	15.4	X	26.75219	59.85341	306.10419	9.16478	0.0673284	0.17629466	3.1499955	20	12 3.9	19.8
195703 2002 PQ ₃₂	15.3	X	127.41633	155.10225	161.52159	11.39244	0.1002183	0.18459374	3.0548607	20	—	—
195704 2002 PH ₃₅	15.3	X	57.87241	89.79410	314.22270	9.33018	0.0473476	0.18723811	3.0260299	20	—	—
195705 2002 PJ ₃₅	14.9	X	302.40040	192.21873	312.66502	9.95435	0.0385437	0.18487389	3.0517737	20	—	—
195706 2002 PO ₃₆	15.4	X	24.80464	170.99351	313.25742	9.56228	0.0552832	0.19408847	2.9544018	20	1 25.9	19.1
195707 2002 PQ ₃₆	14.5	X	347.24629	278.21934	155.39950	17.42815	0.2578335	0.17703868	3.1411640	20	—	—
195708 2002 PV ₃₈	15.8	X	83.61000	57.69636	244.18847	4.18172	0.1344153	0.17675737	3.1444959	20	12 3.2	20.6
195709 2002 PP ₄₀	14.4	X	23.51468	125.97117	240.68782	23.61924	0.1057827	0.17585772	3.1552111	20	12 5.8	18.7
195710 2002 PA ₄₇	15.0	X	46.74474	115.89615	278.97321	8.88314	0.1099135	0.18117558	3.0931640	20	—	—
195711 2002 PL ₄₇	15.0	X	51.55300	79.83915	287.53853	8.86666	0.1011839	0.17803869	3.1293907	20	—	—
195712 2002 PD ₄₉	15.0	X	83.65614	96.91396	260.47893	8.10401	0.0734598	0.18197934	3.0840494	20	—	—
195713 2002 PO ₄₉	14.9	X	114.63168	10.58205	315.43499	16.03415	0.1142517	0.18152728	3.0891675	20	—	—
195714 2002 PM ₅₃	15.2	X	115.57078	317.13954	337.75988	13.25022	0.1334959	0.18006360	3.1058855	20	12 26.9	20.4
195715 2002 PE ₅₇	14.9	X	55.80994	157.94559	169.49681	15.99225	0.2315349	0.17317093	3.1877632	20	12 16.0	20.0
195716 2002 PM ₅₇	14.6	X	36.78009	171.29665	167.63128	18.47358	0.1629814	0.17077184	3.2175493	20	11 29.8	19.3
195717 2002 PD ₅₈	14.3	X	43.57058	210.21220	168.16215	21.54159	0.1960711	0.17651554	3.1473673	20	—	—
195718 2002 PJ ₅₉	14.8	X	78.71922	38.99735	348.92003	9.06082	0.1523785	0.18431606	3.0579280	20	—	—
195719 2002 PV ₅₉	14.5	X	61.92634	218.42576	160.63126	18.11016	0.2126267	0.17957373	3.1115314	20	—	—
195720 2002 PF ₆₁	14.6	X	52.26060	150.91734	236.38362	11.84681	0.0998675	0.18143751	3.0901864	20	—	—
195721 2002 PG ₆₁	14.8	X	34.67458	30.43219	342.05705	26.09562	0.0662685	0.17508861	3.1644443	20	12 25.3	19.7
195722 2002 PK ₆₃	15.0	X	84.51954	41.13687	323.00337	9.41002	0.0970307	0.18496279	3.0507958	20	—	—
195723 2002 PL ₆₉	14.9	X	127.48242	63.15545	243.32260	9.32509	0.1452467	0.18206466	3.0830859	20	—	—
195724 2002 PM ₇₀	15.3	X	58.66990	98.25399	284.11050	14.95448	0.1415460	0.18133868	3.0913089	20	—	—
195725 2002 PM ₇₁	15.7	X	105.53875	36.81017	227.60669	9.18872	0.2499687	0.17784577	3.1316534	20	11 18.9	20.9
195726 2002 PY ₇₄	14.8	X	26.34367	215.31974	178.58219	4.58228	0.1666962	0.17737907	3.1371441	20	—	—
195727 2002 PP ₇₅	15.1	X	62.63714	67.09160	327.86056	10.55255	0.1269824	0.18623364	3.0369009	20	—	—
195728 2002 PY ₇₅	16.0	X	187.50772	304.05131	344.99016	4.64000	0.1591036	0.19172446	2.9786378	20	—	—
195729 2002 PO ₇₅	15.5	X	17.25508	31.27799	357.80857	12.36078	0.0914685	0.1745782	3.1362159	20	12 24.1	19.9
195730 2002 PL ₈₀	14.7	X	51.81492	165.15268	254.76983	10.85178	0.1650598	0.18302049	3.0723421	20	—	—
195731 2002 PB ₈₂	15.0	X	102.13198	142.66093	164.32824	4.63506	0.1858740	0.17950853	3.1122847	20	12 30.2	20.1
195732 2002 PK ₈₈	15.5	X	53.46270	158.10729	167.70441	3.94463	0.2141967	0.17333297	3.1857762	20	12 9.0	20.1
195733 2002 PB ₉₀	14.8	X	17.33888	147.73977	178.89620	15.46438	0.0847913	0.17445618	3.1720874	20	11 25.5	19.1
195734 2002 PU ₉₀	14.4	X	44.15942	252.74527	217.43066	17.82847	0.2806511	0.17960280	3.1111955	20	—	—
195735 2002 PE ₉₁	15.1	X	35.24856	354.78813	354.25597	10.24882	0.2063823	0.17363565	3.1820728	20	12 13.1	19.6
195736 2002 PA ₉₂	15.3	X	33.93588	156.02643	232.95017	14.60317	0.1361846	0.17945203	3.1129379	20	—	—
195737 2002 PQ ₉₂	14.8	X	319.15919	216.37497	243.03071	15.07292	0.0043187	0.17938620	3.1136995	20	12 26.5	19.3
195738 2002 PV ₉₂	14.9	X	116.26232	40.20898	226.99635	16.39319	0.1664845	0.17584965	3.1553077	20	11 25.9	20.1
195739 2002 PF ₉₃	14.6	X	82.05241	104.39922	261.52024	14.86281	0.1528251	0.18189488	3.0850040	20	—	—
195740 2002 PN ₉₅	15.2	X	126.76776	208.44165	142.98583	10.55937	0.0944192	0.19011291	2.9954470	20	1 1.2	19.7
195741 2002 PN ₉₈	15.4	X	30.69722	251.78716	157.49685	5.14803	0.2852047	0.18075326	3.0979801	20	—	—
195742 2002 PD ₁₀₁	15.6	X	20.98753	147.86520	226.93514	9.57299	0.2150851	0.17620649	3.1510463	20	12 27.4	19.7
195743 2002 PW ₁₀₁	15.1	X	127.80147	26.74238	259.33861	7.85472	0.0519727	0.18105511	3.0945359	20	12 24.3	19.7
195744 2002 PB ₁₀₂	15.1	X	92.78141	42.57699	284.74318	11.49912	0.1371931	0.18091380	3.0961471	20	—	—
195745 2002 PS ₁₀₂	15.6	X	72.28422	86.81432	244.54354	8.94839	0.1515726	0.17825538	3.1268541	20	12 27.4	20.3
195746 2002 PZ ₁₀₂	15.5	X	50.66222	189.24121	198.74079	12.03159	0.1496259	0.18319762	3.0703614	20	—	—
195747 2002 PD ₁₀₃	15.3	X	109.83880	49.26646	120.60783	5.82789	0.1592844	0.17564647	3.1577405	20	11 11.7	20.3
195748 2002 PK ₁₀₃	14.8	X	312.99287	161.68861	302.89684	20.73334	0.0806079	0.17961491	3.1110557	20	12 27.4	18.9
195749 2002 PZ ₁₀₃	14.9	X	288.64216	187.43653	277.93624	10.15864	0.0595432	0.17633990	3.1494568	20	11 21.2	19.2
195750 2002 PA ₁₀₄	14.7	X	314.62626	124.54258	296.24192	16.24123	0.1230514	0.17209073	3.2010889	20	10 21.6	19.0
195751 2002 PM ₁₀₄	15.4	X	128.55559	140.66546	202.61472	10.25297	0.1178201	0.18791982	3.0187072	20	—	—
195752 2002 PU ₁₀₄	15.2	X	97.72444	73.62894	197.42893	9.62445	0.0804469	0.17344132	3.1844493	20	11 6.8	20.0
195753 2002 PX ₁₀₄	15.4	X	124.73916	107.48732	190.08880	11.93996	0.1356601	0.18140199	3.0905897	20	—	—
195754 2002 PZ ₁₀₄	15.6	X	114.00109	145.48690	241.90937	7.82259	0.1021880	0.19131742	2.9828612	20	1 27.9	20.0
195755 2002 PB ₁₀₅	15.2	X</										

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>
195761 2002 PZ ₁₁₁	15.2	X	103.79254	214.86234	138.14986	9.47167	0.1096362	0.18590445	3.0404850	20	—	—
195762 2002 PW ₁₁₇	15.4	X	52.29617	178.33617	185.00242	9.75036	0.1113410	0.17981402	3.1087588	20	—	—
195763 2002 PT ₁₁₈	15.4	X	91.43437	155.67252	182.18258	9.35477	0.1021286	0.18136098	3.0910556	20	—	—
195764 2002 PF ₁₂₁	15.2	X	114.72312	143.93420	181.89380	10.05587	0.0485225	0.18291127	3.0735650	20	—	—
195765 2002 PK ₁₂₁	14.7	X	290.65497	266.95394	169.54898	19.14726	0.1446771	0.16947240	3.2339755	20	10 11.5	18.9
195766 2002 PT ₁₂₂	15.0	X	202.39991	139.78896	279.01855	7.17874	0.0967452	0.20838426	2.8176872	20	6 9.7	19.4
195767 2002 PN ₁₂₅	15.1	X	46.74654	79.31086	318.21908	15.33668	0.2235176	0.18127700	3.0920101	20	—	—
195768 2002 PQ ₁₂₅	14.9	X	96.38178	194.32513	152.67158	14.95239	0.1218473	0.18334502	3.0687156	20	—	—
195769 2002 PO ₁₂₇	15.2	X	43.02870	261.14604	122.42777	6.08739	0.1657553	0.18012168	3.1052177	20	—	—
195770 2002 PG ₁₂₉	15.1	X	166.71570	221.89424	84.24946	7.37750	0.2262111	0.18809568	3.0168253	20	—	—
195771 2002 PK ₁₃₁	14.7	X	129.27809	27.84352	259.98441	17.30737	0.1105523	0.17875226	3.1210569	20	12 27.9	19.6
195772 2002 PG ₁₃₃	15.3	X	146.08396	359.44584	311.61216	9.96341	0.0900592	0.18703948	3.0281719	20	—	—
195773 2002 PD ₁₃₆	14.7	X	28.07480	302.92009	106.70978	11.27132	0.1638093	0.18050610	3.1008074	20	—	—
195774 2002 PL ₁₃₇	15.4	X	58.83345	193.59217	135.84561	6.20736	0.1574417	0.17486404	3.1671530	20	12 12.4	20.1
195775 2002 PF ₁₄₁	14.7	X	137.68963	23.92206	261.10239	17.63078	0.1294142	0.18140229	3.0905863	20	—	—
195776 2002 PJ ₁₅₁	15.2	X	80.26192	253.23232	128.59457	11.48895	0.0449330	0.18875428	3.0098037	20	—	—
195777 Sheepman	15.1	X	158.21644	193.56238	112.66343	10.02178	0.0773401	0.18937951	3.0031756	20	—	—
195778 2002 PC ₁₅₆	15.8	X	149.48703	292.59463	71.86136	1.28543	0.0987798	0.19541829	2.9409834	20	2 10.6	20.3
195779 2002 PM ₁₅₇	15.4	X	145.08806	309.57673	324.52631	8.43253	0.0712123	0.18232447	3.0801562	20	12 29.7	20.1
195780 2002 PA ₁₆₀	15.9	X	93.11100	31.24080	62.14594	2.89381	0.0329722	0.20084258	2.8877894	20	3 16.7	19.8
195781 2002 PL ₁₆₂	16.1	X	83.77749	74.51295	338.02316	4.48023	0.1747836	0.19039087	2.9925308	20	2 3.5	19.8
195782 2002 PS ₁₆₂	15.5	X	111.79096	325.48301	357.10603	3.83851	0.0798936	0.18334213	3.0687478	20	—	—
195783 2002 PO ₁₆₃	16.7	X	93.19070	155.50953	123.55872	0.38090	0.2733863	0.17700909	3.1415141	20	11 27.3	21.8
195784 2002 PZ ₁₆₃	15.1	X	307.05584	309.41266	125.50275	11.39114	0.0626505	0.17573971	3.1566235	20	11 13.7	19.4
195785 2002 PA ₁₆₄	14.9	X	13.87576	74.19773	323.67641	9.87918	0.1331155	0.17903810	3.1177341	20	—	—
195786 2002 PY ₁₆₆	14.9	X	156.74729	0.34890	195.59627	12.55080	0.1004249	0.17111503	3.2132458	20	10 8.2	19.7
195787 2002 PN ₁₆₈	16.2	X	154.45082	2.62534	235.72733	0.37780	0.1311578	0.17843808	3.1247194	20	11 25.3	21.3
195788 2002 PH ₁₇₁	16.0	X	64.32008	238.35302	140.22736	6.72203	0.1309929	0.18370020	3.0647588	20	—	—
195789 2002 PM ₁₇₁	15.9	X	13.79237	140.28018	289.42261	3.99975	0.0161386	0.18669454	3.0319006	20	—	—
195790 2002 PC ₁₇₂	15.7	X	59.50234	255.53951	62.83621	2.78331	0.1523308	0.17389814	3.1788700	20	11 28.6	20.2
195791 2002 PU ₁₇₂	16.3	X	278.75252	273.30402	8.59179	1.59347	0.0349949	0.20342952	2.8632553	20	3 23.2	20.1
195792 2002 PS ₁₇₆	16.1	X	178.19275	121.55105	170.41193	3.18289	0.1294955	0.19026636	2.9938363	20	—	—
195793 2002 PR ₁₇₉	15.9	X	293.70837	107.87338	155.52565	2.47004	0.0525428	0.20278648	2.8693050	20	3 16.6	19.8
195794 2002 PJ ₁₈₁	15.8	X	235.25931	247.16302	349.26244	6.09250	0.0256093	0.19029685	2.9935165	20	—	—
195795 2002 QD ₂	15.7	X	41.94510	160.35508	217.13658	4.23141	0.1374563	0.17895869	3.1186564	20	—	—
195796 2002 QE ₃	15.2	X	173.46630	344.05190	288.40830	9.44787	0.0765137	0.18472867	3.0533729	20	—	—
195797 2002 QJ ₃	15.4	X	252.71206	357.66168	182.38206	6.83251	0.0552194	0.18238336	3.0794932	20	—	—
195798 2002 QF ₄	15.3	X	32.63831	260.73003	155.84514	11.37343	0.0172861	0.18441873	3.0567930	20	—	—
195799 2002 QW ₇	15.4	X	277.03855	255.80319	115.14823	11.14276	0.0978028	0.21312769	2.7757231	20	7 6.5	19.1
195800 2002 QD ₈	15.1	X	133.93786	272.94322	16.80435	12.08288	0.1315287	0.18111615	3.0938405	20	—	—
195801 2002 QE ₈	14.7	X	93.77977	199.17321	132.39280	18.34221	0.1867309	0.17978106	3.1091387	20	—	—
195802 2002 QG ₉	14.7	X	101.65426	279.78492	358.11142	17.01131	0.1224723	0.17502080	3.1652616	20	11 15.9	19.9
195803 2002 QC ₁₁	15.0	X	102.08318	274.29214	313.49902	24.12326	0.1762271	0.17333816	3.1857126	20	9 23.2	20.8
195804 2002 QB ₁₂	15.0	X	340.74636	149.54413	274.44312	4.52183	0.1855328	0.17585955	3.1551892	20	12 19.8	18.3
195805 2002 QN ₁₄	15.1	X	352.71561	132.97862	263.49404	8.01982	0.0739992	0.17404219	3.1771156	20	11 25.8	19.3
195806 2002 QP ₁₆	15.5	X	38.49217	100.74707	317.74986	12.65195	0.3205655	0.18082733	3.0971341	20	—	—
195807 2002 QF ₁₇	18.6	X	345.98907	308.81175	57.63866	4.82551	0.3374824	0.33219780	2.0647694	20	—	—
195808 2002 QN ₁₇	15.4	X	73.48943	14.33082	323.02521	8.27105	0.0693781	0.17991759	3.1075655	20	12 28.2	19.9
195809 2002 QL ₁₈	15.1	X	35.62739	220.90663	170.57662	16.42782	0.1475837	0.17782714	3.1318722	20	—	—
195810 2002 QP ₁₈	15.8	X	82.44511	358.37216	36.99412	2.68115	0.1271328	0.18682614	3.0304767	20	1 4.7	19.6
195811 2002 QA ₁₉	15.6	X	39.52385	288.22682	82.78630	3.54352	0.1012796	0.17711352	3.1402790	20	12 31.7	19.9
195812 2002 QL ₁₉	15.0	X	115.33936	239.86248	108.96714	4.62582	0.1186568	0.18573713	3.0423107	20	—	—
195813 2002 QY ₁₉	15.5	X	104.91345	99.69088	264.19016	4.30300	0.1389462	0.18545247	3.0454231	20	—	—
195814 2002 QB ₂₀	15.0	X	308.58484	130.87958	301.88654	9.01791	0.0738508	0.17143549	3.0292402	20	11 3.9	19.4
195815 2002 QJ ₂₁	15.3	X	98.67709	187.36956	168.70166	11.60449	0.1032762	0.18327734	3.0694710	20	—	—
195816 2002 QP ₂₁	15.8	X	84.91226	301.22807	27.31126	1.73954	0.1902287	0.17955169	3.1117859	20	—	—
195817 2002 QP ₂₂	15.6	X	55.64414	27.01274	318.49470	8.19234	0.2019801	0.17621144	3.1509873	20	—	—
195818 2002 QU ₂₇	15.1	X	108.29097	334.94117	356.97910	8.79842	0.0441354	0.18351765	3.0667909	20	—	—
195819 2002 QY ₃₀	15.7	X	66.06918	271.18345	76.79694	2.57197	0.1603025	0.17829345	3.1264089	20	—	—
195820 2002 QF ₃₁	15.6	X	96.72159	330.63908	30.23736	4.81621	0.0917350	0.18525025	3.0476389	20	—	—
195821 2002 QL ₃₅	15.8	X	40.96324	241.70387	129.04606	7.78676	0.1783961	0.17639051	3.1488543	20	—	—
195822 2002 QV ₃₆	15.7	X	8.26063	314.99050	134.66818	2.78641	0.1608982	0.18070496	3.0985321	20	—	—
195823 2002 QA ₃₇	15.0	X	1.87297	254.40887	165.00470	16.05610	0.1261648	0.17603400	3.1531044	20	—	—
195824 2002 QB ₃₇	16.0	X	26.87523	9.52219	114.38133	2.03570	0.1252446	0.18969049	2.9998924	20	1 29.5	19.5
195825 2002 QJ ₄₀	14.9	X	339.77407	271.31449	110.76240	6.31212	0.1471871	0.16882709	3.2422111	20	10 23.6	18.7
195826 2002 QQ ₄₅	14.7	X	31.07932	297.76879	31.78368	13.79874	0.2699294	0.17031968	3.2232413	20	11 20.9	19.0
195827 2002 QE ₄₈	16.0	X	35.86272	57.85124	311.34281	0.77175	0.1470127	0.17782731	3.1318702	20	12 31.6	20.2
195828 2002 QZ ₅₃	15.5	X	29.63844	37.42688	39.98086	1.28160	0.2086417	0.18351563	3.0668134	20	—	—
195829 2002 QH ₅₅	15.2	X	109.02857	174.67092	127.91915	9.40316	0.1081271	0.17905576	3.1175292	20	12 27.1	20.0
195830 2002 QX ₅₆	16.0	X	111.04233	207.96920	72.18283	1.90535	0.1425521	0.17728509	3.1382527	20	12 4.8	21.0
195831 2002 QN ₅₉	15.7	X	22.62838	267.19723	173.13814	9.94699	0.0633350	0.18577035	3.0419480	20	—	—
195832 2002 QO ₅₉	15.7	X	31.17972	273.70925	176.30711	9.20994	0.0229856	0.18910910	3.0060377	20	—	—
195833 2002 QE ₆₂	15.9	X	345.17076	66.88547	325.99060	7.51927	0.0446642	0.17278786	3.1924730	20	11 6.7	20.4
195834 2002 QJ ₆₂	15.9	X	100.49523	35.65158	335.81875	5.29283	0.1255098	0.18689254	3.0297589	20	—	—
195835 2002 QI ₆₂	15.8	X	108.69497	185.08926	15							

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>
195841 2002 QF ₆₈	16.2	X	87.79353	229.16400	113.85011	2.30814	0.0859056	0.18122967	3.0925484	20	—	—
195842 2002 QD ₆₉	15.6	X	45.52196	255.56709	126.29083	10.23800	0.0849459	0.18032220	3.1029153	20	—	—
195843 2002 QA ₇₁	15.5	X	25.91821	31.96254	328.85826	9.14077	0.0564305	0.17468452	3.1693226	20	11 23.4	20.0
195844 2002 QA ₇₂	15.5	X	329.82697	130.30456	327.58998	9.22162	0.1382538	0.17967756	3.1103325	20	—	—
195845 2002 QB ₇₂	16.0	X	103.75491	172.09717	104.01851	1.68401	0.1496420	0.17588562	3.1548774	20	11 24.0	21.0
195846 2002 QM ₇₂	15.9	X	260.26527	51.25096	151.62226	10.63640	0.0378175	0.18728885	3.0254834	20	—	—
195847 2002 QJ ₇₅	15.6	X	27.01848	293.68332	133.45386	4.20326	0.1465125	0.18309927	3.0714608	20	—	—
195848 2002 QL ₇₇	16.0	X	152.62462	276.22062	77.20008	3.24741	0.0321389	0.19380461	2.9572859	20	1 25.7	20.2
195849 2002 QO ₇₇	15.3	X	344.01371	94.16106	337.22188	16.35040	0.0982041	0.17914617	3.1164802	20	—	—
195850 2002 QH ₇₈	16.2	X	127.62496	56.70907	185.33125	0.97441	0.1161493	0.17614188	3.1518168	20	11 4.8	21.2
195851 2002 QH ₇₉	15.3	X	260.15659	271.95743	281.43646	5.51136	0.1195793	0.18804693	3.0173467	20	—	—
195852 2002 QN ₇₉	15.8	X	43.65042	62.14787	282.86146	7.70623	0.0719338	0.17766272	3.1338041	20	12 1.2	20.2
195853 2002 QA ₈₀	16.0	X	105.92312	302.44057	355.96714	4.75741	0.1376727	0.17900772	3.1180868	20	12 20.9	21.0
195854 2002 QO ₈₀	15.7	X	148.61395	209.80169	33.63238	3.06849	0.0728138	0.17709552	3.1404877	20	11 25.4	20.5
195855 2002 QS ₈₀	15.9	X	155.20552	229.44212	28.73609	5.33133	0.1025194	0.17996607	3.1070075	20	12 19.2	20.7
195856 2002 QE ₈₃	16.4	X	207.02674	70.13131	186.59010	5.61058	0.1516518	0.18936886	3.0032881	20	—	—
195857 2002 QO ₈₅	16.1	X	110.68647	151.58432	183.61058	4.88766	0.0746283	0.18432476	3.0578319	20	—	—
195858 2002 QU ₈₆	16.0	X	106.80147	88.92320	178.83144	8.54025	0.1485586	0.17551405	3.1593286	20	11 18.4	21.1
195859 2002 QM ₈₈	16.1	X	130.98355	270.99408	10.66049	10.13522	0.0990370	0.17907883	3.1172614	20	12 23.4	21.1
195860 2002 QN ₈₉	15.3	X	69.48933	25.47447	309.73064	8.64453	0.0447568	0.17814290	3.1281701	20	12 17.1	19.8
195861 2002 QC ₉₀	15.2	X	161.89212	213.83423	122.67331	9.87320	0.0873993	0.19104911	2.9856533	20	1 20.4	19.8
195862 2002 QR ₉₀	15.2	X	56.19061	292.34348	27.07254	8.28992	0.0366505	0.17225404	3.1990653	20	11 8.9	19.6
195863 2002 QV ₉₀	15.3	X	112.86445	260.97972	27.22392	8.51327	0.0372500	0.17628582	3.1501009	20	12 7.7	19.9
195864 2002 QR ₉₂	16.1	X	183.22822	196.20774	79.00262	2.32050	0.1449771	0.18702851	3.0282904	20	—	—
195865 2002 QK ₉₆	15.5	X	31.80415	175.28905	280.15702	10.92224	0.0948874	0.19054527	2.9909140	20	—	—
195866 2002 QJ ₉₇	16.1	X	47.21825	22.25614	92.22439	3.16670	0.0524012	0.19661358	2.9290517	20	2 13.8	19.8
195867 2002 QN ₉₈	15.9	X	9.77555	87.01109	332.82159	8.48626	0.0905558	0.18146206	3.0899075	20	—	—
195868 2002 QW ₉₈	15.4	X	302.02259	86.88888	4.45968	15.41794	0.0792090	0.17432808	3.1736411	20	11 16.1	19.8
195869 2002 QK ₁₀₂	15.6	X	205.23842	194.90232	12.83376	1.48302	0.0506262	0.17762031	3.1343030	20	12 15.0	20.2
195870 2002 QZ ₁₁₆	16.2	X	83.48769	138.21971	184.46809	5.40368	0.1228367	0.17873289	3.1212824	20	12 26.1	21.1
195871 2002 QY ₁₂₄	16.2	X	80.16892	79.77243	272.38716	2.80504	0.1270731	0.18256232	3.0774803	20	—	—
195872 2002 QT ₁₂₅	16.2	X	149.20037	259.05241	52.59282	2.52434	0.0553666	0.18795754	3.0183033	20	—	—
195873 2002 RD	14.7	X	339.96298	325.06604	104.80300	13.14444	0.0691703	0.17452556	3.1712467	20	12 19.7	18.8
195874 2002 RC ₁	15.4	X	352.03138	252.18088	190.15577	13.35505	0.1074397	0.17755513	3.1350699	20	—	—
195875 2002 RQ ₃	14.6	X	341.83366	254.53675	156.56972	26.71246	0.2828999	0.17160145	3.2071707	20	12 14.8	18.3
195876 2002 RT ₃	15.0	X	19.63623	80.29663	331.84714	8.95505	0.1030217	0.17974587	3.1095445	20	—	—
195877 2002 RB ₆	14.9	X	342.00651	132.74872	326.03720	9.46613	0.0651082	0.18177592	3.0863498	20	—	—
195878 2002 RC ₆	15.7	X	82.53528	218.44083	175.32584	4.93269	0.1262792	0.18589360	3.0406033	20	1 14.8	19.5
195879 2002 RO ₇	15.0	X	51.41918	209.40119	130.43944	6.51032	0.1570198	0.17550222	3.1594705	20	12 16.3	19.6
195880 2002 RG ₁₁	15.3	X	115.77455	145.59332	164.50290	4.88274	0.1438012	0.18096525	3.0955603	20	—	—
195881 2002 RN ₁₂	15.0	X	61.12095	342.71014	343.56786	5.78089	0.1648986	0.17251435	3.1958464	20	12 10.4	19.7
195882 2002 RT ₁₂	15.7	X	77.08281	191.12643	156.89974	1.32718	0.2006420	0.17773589	3.1329439	20	—	—
195883 2002 RY ₁₂	14.6	X	4.57666	270.83599	181.63238	15.97333	0.2470311	0.17768299	3.1335658	20	—	—
195884 2002 RB ₁₅	15.2	X	74.07294	170.70599	179.05157	3.24660	0.1005932	0.17781862	3.1319722	20	—	—
195885 2002 RZ ₁₅	15.1	X	31.19792	96.31049	343.79828	12.43685	0.2801512	0.18097883	3.0954054	20	—	—
195886 2002 RG ₁₆	15.1	X	124.58947	275.09672	338.13894	12.77039	0.1223652	0.17517985	3.1633455	20	11 14.3	20.7
195887 2002 RU ₁₈	15.3	X	347.78684	264.37223	113.49478	2.92169	0.1303150	0.16795225	3.2534603	20	10 29.4	19.1
195888 2002 RE ₂₀	15.0	X	47.28023	338.37687	17.15423	10.62466	0.2056134	0.17412635	3.1760918	20	—	—
195889 2002 RC ₂₂	15.2	X	81.73860	32.40530	352.93377	10.22702	0.1163616	0.18428969	3.0582197	20	—	—
195890 2002 RJ ₂₂	14.8	X	108.67217	305.46441	347.25849	16.37949	0.2033002	0.17762288	3.1342726	20	12 20.6	20.3
195891 2002 RL ₂₄	15.3	X	3.55116	233.41655	192.10910	3.65603	0.1659510	0.17751507	3.1355416	20	—	—
195892 2002 RM ₂₄	15.1	X	34.91647	70.67991	334.02287	10.26924	0.0915597	0.18016084	3.1047677	20	—	—
195893 2002 RH ₃₀	14.8	X	68.34943	15.42514	333.13749	18.46845	0.0656046	0.17740125	3.1368827	20	—	—
195894 2002 RA ₃₁	15.0	X	98.78235	57.64315	218.16506	4.81353	0.0840930	0.17214975	3.2003572	20	11 12.8	19.8
195895 2002 RK ₃₃	14.9	X	25.16737	174.45367	184.44418	6.59014	0.1388925	0.17174400	3.2053958	20	12 3.4	19.2
195896 2002 RY ₃₄	15.8	X	332.53336	61.34182	299.10748	5.62990	0.0525098	0.22022007	2.7158021	20	9 17.2	19.3
195897 2002 RZ ₃₆	14.8	X	333.15281	110.88733	304.06876	4.92390	0.1312134	0.17233074	3.1981160	20	11 20.1	18.6
195898 2002 RH ₃₉	15.6	X	133.48138	291.13553	353.02462	10.14581	0.2434002	0.18180003	3.0860770	20	—	—
195899 2002 RP ₃₉	14.7	X	343.68851	274.45481	145.37416	13.78352	0.2952303	0.17331499	3.1859966	20	12 29.8	17.8
195900 Rogersbury	15.0	X	4.56867	239.89458	117.20701	6.73898	0.1154271	0.16933178	3.2357657	20	10 30.8	19.1
195901 2002 RU ₄₃	15.3	X	104.17785	334.82604	357.90952	9.47467	0.0741898	0.18113172	3.0936633	20	—	—
195902 2002 RY ₄₄	15.4	X	15.26195	295.36716	81.34992	2.21842	0.1644199	0.17276428	3.1927634	20	12 14.1	19.4
195903 2002 RP ₄₇	15.2	X	90.21021	244.18072	145.73555	11.19092	0.0434571	0.18648089	3.0342160	20	—	—
195904 2002 RB ₄₈	15.3	X	86.38436	290.85528	2.57954	9.43105	0.1868013	0.17360292	3.1824728	20	11 28.4	20.4
195905 2002 RB ₅₅	14.8	X	67.55192	47.01815	323.73307	10.63261	0.0273905	0.17942323	3.1132711	20	—	—
195906 2002 RG ₅₆	14.8	X	39.20880	238.50568	189.75366	22.61165	0.1646745	0.18131598	3.0915670	20	—	—
195907 2002 RC ₆₄	14.6	X	83.56952	322.17106	27.91893	17.73313	0.2135909	0.17765201	3.1339301	20	—	—
195908 2002 RK ₆₄	14.8	X	43.45584	0.30734	49.07590	10.73111	0.2118505	0.17603453	3.1530980	20	—	—
195909 2002 RF ₇₀	15.1	X	145.94382	120.45342	225.83817	8.09458	0.1079903	0.19055318	2.9908313	20	1 15.7	19.7
195910 2002 RS ₇₀	15.0	X	24.64399	238.53481	240.23739	9.56795	0.0542345	0.19110844	2.9850353	20	1 16.5	19.1
195911 2002 RD ₇₁	15.0	X	18.21110	145.85920	264.12683	8.15281	0.0728028	0.17856839	3.1231990	20	—	—
195912 2002 RJ ₇₁	15.9	X	96.31491	134.08987	232.88325	8.13956	0.1431134	0.18422383	3.0589486	20	—	—
195913 2002 RG ₇₃	15.4	X	294.76091	127.17341	336.54523	8.57204	0.0657842	0.17459024	3.1704633	20	11 25.5	19.8
195914 2002 RS ₇₅	14.8	X	79.13502	33.20411	333.43986	9.26255	0.0542504	0.18182336	3.0858130	20	—	—
195915 2002 RT ₇₇	15.0	X	41.06830	6								

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>
195921 2002 RZ ₈₅	15.0	X	44.23734	233.86699	174.68011	17.09906	0.2263263	0.17897215	3.1185000	20	—	—
195922 2002 RB ₈₆	16.0	X	65.98550	338.60720	30.46609	1.71745	0.2431280	0.17853626	3.1235738	20	—	—
195923 2002 RF ₉₂	15.9	X	65.69960	341.75933	7.10179	4.38323	0.1665490	0.17589965	3.1547097	20	—	—
195924 2002 RJ ₉₂	15.6	X	188.98688	73.86085	224.46979	1.69504	0.0381382	0.18702053	3.0283765	20	1 1.7	20.1
195925 2002 RQ ₉₄	14.6	X	30.78410	43.08725	13.51682	15.86014	0.0583859	0.17870505	3.1216066	20	—	—
195926 2002 RR ₉₅	15.5	X	76.02134	163.69610	198.11714	4.85120	0.1955180	0.17852057	3.1237568	20	—	—
195927 2002 RW ₁₀₉	15.1	X	315.79045	169.18026	285.71109	4.57144	0.1676166	0.17246404	3.1964679	20	12 11.6	18.7
195928 2002 RZ ₁₀₉	14.6	X	318.37952	122.12030	292.00720	5.46974	0.1118783	0.16822658	3.2499223	20	10 24.0	18.7
195929 2002 RJ ₁₁₀	15.5	X	103.88456	148.70505	195.96546	9.86744	0.0648739	0.18301106	3.0724477	20	—	—
195930 2002 RO ₁₁₃	15.0	X	61.97944	219.63843	172.57868	11.50934	0.0850405	0.18323555	3.0699377	20	—	—
195931 2002 RG ₁₁₅	15.4	X	351.79925	144.61636	259.72117	4.20970	0.1296005	0.17363017	3.1821398	20	12 8.7	19.1
195932 2002 RM ₁₁₇	14.8	X	49.71998	9.84463	21.32326	17.02062	0.0954749	0.17867145	3.1219980	20	—	—
195933 2002 RL ₁₁₉	15.6	X	260.77058	247.19044	132.04440	4.87406	0.1134454	0.21114939	2.7930336	20	6 23.6	19.5
195934 2002 RW ₁₂₁	14.7	X	68.49350	276.98273	111.76842	14.39408	0.1020937	0.18363234	3.0655138	20	—	—
195935 2002 RC ₁₂₂	15.1	X	98.15995	345.91432	56.36130	11.37718	0.0784649	0.18870437	3.0103344	20	1 29.5	19.4
195936 2002 RO ₁₂₃	15.1	X	345.48461	37.40229	51.36560	7.83554	0.1525130	0.17541743	3.1604885	20	—	—
195937 2002 RM ₁₂₇	14.6	X	346.92947	177.06676	265.65322	14.99441	0.0653419	0.17994466	3.1072539	20	—	—
195938 2002 RG ₁₂₈	15.0	X	340.97479	197.63933	241.61151	14.22477	0.2588023	0.17542934	3.1603455	20	—	—
195939 2002 RX ₁₂₈	14.8	X	20.19163	72.01762	20.11668	21.61208	0.1543031	0.18370724	3.0646804	20	—	—
195940 2002 RO ₁₃₀	14.5	X	41.93401	242.02523	118.73572	17.57736	0.1030162	0.17538657	3.1608592	20	12 23.4	19.0
195941 2002 RS ₁₃₀	15.4	X	27.42252	176.81149	233.62590	9.54385	0.1105200	0.18098724	3.0953095	20	—	—
195942 2002 RA ₁₃₂	14.9	X	15.62748	236.80960	227.27908	14.82855	0.1453975	0.18344017	3.0676543	20	—	—
195943 2002 RM ₁₃₃	14.3	X	24.15725	283.53664	141.15388	16.41445	0.2554729	0.17977382	3.1301510	20	—	—
195944 2002 RJ ₁₃₄	14.9	X	6.30072	250.99842	135.61757	14.39465	0.2826865	0.17117918	3.2124429	20	12 29.5	18.7
195945 2002 RV ₁₃₆	15.1	X	18.07539	36.42784	18.53047	16.74781	0.1256600	0.17806158	3.1291225	20	—	—
195946 2002 RB ₁₃₇	16.0	X	101.01147	156.16207	144.31375	2.84991	0.0969603	0.17621491	3.1509459	20	12 15.5	20.9
195947 2002 RL ₁₃₉	15.1	X	11.15401	343.50488	36.91159	15.70893	0.2500769	0.17170628	3.2058652	20	12 23.4	19.2
195948 2002 RG ₁₄₅	15.7	X	26.39203	317.03172	106.27305	2.57062	0.0592899	0.18097894	3.0954041	20	—	—
195949 2002 RE ₁₄₆	15.0	X	340.84367	123.16687	346.78814	16.34029	0.2060789	0.17790679	3.1309373	20	—	—
195950 2002 RO ₁₄₉	15.7	X	68.77009	186.58672	181.47885	6.54095	0.1447237	0.17957561	3.1115096	20	—	—
195951 2002 RJ ₁₅₃	15.1	X	296.81168	308.19877	236.25497	9.18695	0.0092891	0.18556142	3.0442309	20	—	—
195952 2002 RN ₁₅₃	15.3	X	123.01687	143.27408	208.30831	16.31017	0.0990948	0.18488483	3.0516534	20	—	—
195953 2002 RK ₁₅₇	15.3	X	182.37789	56.61794	183.64455	10.47310	0.1735962	0.18028342	3.1033603	20	12 20.4	20.5
195954 2002 RD ₁₆₂	16.0	X	117.68202	108.24746	180.40728	4.93616	0.1223316	0.17736552	3.1373038	20	12 19.5	21.0
195955 2002 RG ₁₆₃	15.7	X	8.11954	247.17078	169.58922	5.16550	0.1291122	0.17703407	3.1412185	20	—	—
195956 2002 RP ₁₆₄	15.8	X	84.55404	284.89992	355.60875	5.36660	0.1174096	0.17092165	3.2156689	20	11 4.7	20.7
195957 2002 RJ ₁₆₅	15.2	X	80.60058	64.68981	305.12623	7.89988	0.1485989	0.18407268	3.0606229	20	—	—
195958 2002 RO ₁₆₆	15.6	X	70.97594	358.15784	355.76610	2.31440	0.0611485	0.17821916	3.1272778	20	—	—
195959 2002 RP ₁₆₇	15.0	X	324.19891	266.54859	178.43094	11.55730	0.0643415	0.17470778	3.1690412	20	12 16.0	19.4
195960 2002 RA ₁₆₉	15.3	X	18.24710	69.58902	358.24389	9.36431	0.0799412	0.17993870	3.1073225	20	—	—
195961 2002 RY ₁₆₉	15.5	X	34.65462	70.84012	325.23057	14.79020	0.2520366	0.17847699	3.1242652	20	—	—
195962 2002 RF ₁₇₂	15.0	X	68.59545	311.12906	25.90894	10.25131	0.0542906	0.17627536	3.1502255	20	12 18.1	19.6
195963 2002 RD ₁₇₄	15.1	X	60.10727	196.91431	215.79190	8.86301	0.2058936	0.18357861	3.0661119	20	1 1.5	18.7
195964 2002 RO ₁₇₄	15.3	X	357.56060	110.96148	274.00455	3.54744	0.0254058	0.17211929	3.2007347	20	11 14.3	19.8
195965 2002 RW ₁₇₄	15.4	X	114.74769	20.22023	269.38241	4.76285	0.1581933	0.17727965	3.1383169	20	12 19.5	20.4
195966 2002 RZ ₁₇₅	15.8	X	149.32424	88.24515	206.59188	9.90039	0.1124494	0.18270295	3.0759009	20	—	—
195967 2002 RC ₁₇₆	14.7	X	16.35609	89.20448	329.22939	12.92565	0.2403216	0.17686218	3.1432534	20	—	—
195968 2002 RU ₁₇₆	15.8	X	69.50620	151.01727	189.36549	10.95018	0.0925577	0.17624457	3.1505924	20	12 27.8	20.6
195969 2002 RV ₁₇₈	16.2	X	37.42523	59.58091	22.56651	0.92615	0.1528988	0.18227281	3.0807382	20	—	—
195970 2002 RL ₁₈₄	14.8	X	124.63578	34.64547	264.66980	10.21769	0.0680487	0.17837665	3.1254368	20	—	—
195971 2002 RT ₁₈₄	15.5	X	242.28936	51.62424	222.79074	11.28935	0.0826717	0.19327608	2.9626748	20	1 24.7	20.2
195972 2002 RH ₁₈₅	14.8	X	29.29543	135.41882	205.47629	16.01832	0.1063079	0.16959898	3.2323662	20	11 12.4	19.2
195973 2002 RH ₁₈₆	14.9	X	51.99006	188.26011	214.55998	15.56922	0.1166194	0.18080118	3.0974326	20	—	—
195974 2002 RK ₁₈₆	15.0	X	340.83195	230.69844	222.73760	14.39910	0.1698673	0.17580765	3.1558102	20	—	—
195975 2002 RW ₁₈₆	15.2	X	106.72791	111.79304	231.33061	10.33504	0.0973038	0.18130944	3.0916414	20	—	—
195976 2002 RO ₁₉₀	15.0	X	39.72290	88.76221	345.70145	10.81720	0.1349153	0.18342419	3.0678325	20	—	—
195977 2002 RG ₁₉₂	15.4	X	332.01878	315.54002	98.84903	2.72362	0.1896828	0.17131463	3.2107494	20	11 19.3	18.7
195978 2002 RG ₁₉₃	15.4	X	91.57881	272.71778	356.89213	4.40959	0.1405266	0.17114698	3.2128458	20	11 1.9	20.3
195979 2002 RU ₁₉₃	15.5	X	301.79491	84.67745	349.86324	8.59464	0.1306667	0.16963841	3.2318653	20	10 21.9	19.6
195980 2002 RL ₁₉₆	15.2	X	3.54365	235.60327	218.46647	12.20961	0.1957046	0.17932993	3.1143508	20	—	—
195981 2002 RU ₁₉₆	15.8	X	73.58442	274.71137	72.24474	2.52686	0.1540845	0.17884581	3.1199685	20	—	—
195982 2002 RS ₁₉₇	15.2	X	355.90809	274.25921	167.48870	11.75769	0.0811106	0.17901373	3.1180171	20	—	—
195983 2002 RU ₂₀₀	15.2	X	86.80508	319.54785	62.05840	8.62963	0.1143993	0.18436824	3.0573511	20	—	—
195984 2002 RR ₂₀₄	15.4	X	123.68090	281.79897	348.84639	6.01832	0.1091801	0.17641313	3.1485852	20	12 2.6	20.4
195985 2002 RE ₂₁₁	15.0	X	121.41374	282.93572	3.27642	25.77929	0.2091250	0.17936746	3.1139164	20	12 23.6	20.7
195986 2002 RO ₂₁₆	15.0	X	108.86650	285.68381	11.18967	8.99801	0.0940468	0.17764388	3.1340257	20	12 18.6	19.9
195987 2002 RC ₂₁₉	15.3	X	122.66771	310.31575	349.23258	3.50491	0.1516283	0.18097801	3.0954148	20	—	—
195988 2002 RG ₂₁₉	15.6	X	43.93622	298.41286	87.74155	2.51348	0.1685458	0.17947513	3.1126709	20	—	—
195989 2002 RX ₂₁₉	15.7	X	75.77343	282.11042	45.59868	1.56172	0.1710369	0.17677851	3.1442451	20	12 28.9	20.4
195990 2002 RZ ₂₁₉	15.4	X	80.43783	256.56790	101.59360	4.13190	0.0790476	0.18136908	3.0909635	20	—	—
195991 2002 RV ₂₂₀	15.4	X	31.54202	24.79391	14.49095	9.20441	0.0812331	0.17910801	3.1169228	20	—	—
195992 2002 RO ₂₂₄	15.3	X	64.18333	303.00204	94.96034	10.38229	0.0883912	0.17778778	3.1323343	20	—	—
195993 2002 RZ ₂₂₄	15.1	X	163.92225	219.86838	56.45403	10.53524	0.1113689	0.18893832	3.0078489	20	1 1.1	19.8
195994 2002 RL ₂₂₈	15.4	X	69.79724	219.04874	116.39144	11.02159	0.0804636	0.17641153	3.1486042	20	12 22.1	20.0
195995 2002 RK ₂₂₉	14.7	X	5									