ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
	m		°	°	°	°		°				
60001 Adélka	14.7	X	314.35207	285.48909	43.23359	1.65910	0.1553279	0.17967779	3.1103299	20	6 25.5	18.4
60002 1999 TU_5	13.9	X	111.23574	351.87937	71.88143	5.45571	0.1014678	0.20918712	2.8104730	20	3 12.5	17.9
60003 1999 TM_7	16.3	X	206.63949	325.86558	34.05769	3.56715	0.1723267	0.31195541	2.1531504	20	3 25.4	19.4
60004 1999 TC_{13}	14.0	X	282.08292	285.87060	55.05307	2.09194	0.2019452	0.17520313	3.1630652	20	5 18.4	18.5
60005 1999 TW_{15}	14.3	X	2.93906	94.55542	205.73706	5.15458	0.1633267	0.18219333	3.0816341	20	8 14.9	17.8
60006 Holgermandel	13.9	X	24.78697	226.98155	23.94619	17.15938	0.1753729	0.18044047	3.1015593	20	7 27.5	17.9
60007 1999 TO_{16}	14.4	X	31.74785	143.90783	111.93411	0.45873	0.1346677	0.18079793	3.0974698	20	8 3.4	18.2
60008 Jarda	14.2	X	303.53896	173.96569	191.39412	1.52315	0.1279415	0.18146671	3.0898548	20	7 30.9	17.9
60009 1999 TL_{17}	15.5	X	57.73906	179.51855	168.19264	14.83358	0.0990892	0.24272475	2.5452279	20	—	—
60010 1999 TK_{18}	14.9	X	235.91956	49.40998	282.73421	6.39651	0.3466241	0.22007929	2.7169602	20	3 9.8	20.1
60011 1999 TA_{20}	15.1	X	274.84642	121.37670	130.99999	4.45690	0.0426664	0.21046594	2.7990769	20	2 8.8	19.0
60012 1999 TU_{26}	14.6	X	315.24858	205.45035	218.94611	12.76176	0.1505224	0.18857503	3.0117108	20	11 7.0	17.8
60013 1999 TW_{26}	14.6	X	25.05741	298.26433	17.53153	5.79281	0.1881648	0.18671458	3.0316837	20	10 19.4	18.2
60014 1999 TW_{27}	15.0	X	200.50056	111.98292	293.10829	1.29703	0.2083708	0.26561485	2.3968148	20	5 16.8	19.0
60015 1999 TD_{31}	14.2	X	307.69188	280.09521	354.29405	5.07723	0.0110622	0.21854658	2.7296484	20	4 20.8	18.0
60016 1999 TJ_{33}	14.4	X	296.41448	6.06910	9.65383	9.96872	0.0846975	0.18180684	3.0859999	20	8 13.4	18.5
60017 1999 TP_{36}	13.9	X	318.76331	216.07999	187.31793	9.93608	0.0462217	0.18634265	3.0357165	20	10 21.8	17.8
60018 1999 TN_{37}	15.6	X	135.71897	239.58710	130.43893	7.89727	0.2377440	0.25526350	2.4611811	20	2 10.7	19.4
60019 1999 TW_{38}	14.0	X	191.96914	231.19849	193.20055	9.74923	0.2166473	0.17246463	3.1964605	20	6 3.9	19.5
60020 1999 TN_{39}	15.0	X	236.32798	215.37047	112.45924	8.80158	0.1021703	0.21544256	2.7558044	20	3 26.8	19.2
60021 1999 TT_{42}	15.1	X	45.56486	21.55092	190.23087	5.37104	0.1001747	0.17832907	3.1259927	20	6 21.9	19.2
60022 1999 TX_{44}	14.5	X	212.05299	117.00044	5.24553	7.85672	0.0353207	0.18402184	3.0611866	20	9 14.4	18.9
60023 1999 TC_{45}	14.4	X	15.07562	58.87021	215.33647	10.67253	0.1977373	0.18139460	3.0906736	20	8 3.1	18.0
60024 1999 TW_{47}	15.0	X	281.20708	285.11901	134.08201	1.78039	0.1311820	0.18520388	3.0481476	20	9 7.6	19.1
60025 1999 TY_{52}	14.9	X	222.40091	343.86518	357.98580	0.80751	0.2090015	0.17396772	3.1780223	20	3 22.8	20.1
60026 1999 TC_{72}	14.5	X	352.50695	55.26319	207.25236	4.63914	0.1454632	0.17536144	3.1611613	20	6 4.1	18.1
60027 1999 TP_{80}	16.2	X	91.22301	269.81003	61.73658	2.55077	0.1351278	0.24637643	2.5200159	20	—	—
60028 1999 TB_{81}	15.4	X	154.85985	340.46305	164.20500	4.39652	0.0942752	0.22729102	2.6591808	20	8 8.8	19.5
60029 1999 TM_{88}	14.0	X	270.35109	328.17061	337.71703	4.77000	0.1570687	0.17404989	3.1770219	20	3 27.6	18.8
60030 1999 TE_{89}	15.2	X	161.79079	229.55376	156.97044	5.67119	0.0754459	0.21509979	2.7587312	20	3 18.1	19.2
60031 1999 TH_{89}	14.6	X	358.31082	227.80718	96.26689	2.96875	0.1568415	0.18652186	3.0337716	20	9 12.3	17.9
60032 1999 TJ_{92}	14.7	X	138.43549	232.87639	158.57622	7.46654	0.2228798	0.21123919	2.7922420	20	3 12.8	19.1
60033 1999 TV_{92}	16.4	X	227.39264	247.04043	72.88851	4.32074	0.1169988	0.31108150	2.1571811	20	2 25.0	19.4
60034 1999 TX_{92}	15.6	X	297.50558	235.11537	72.62579	5.81602	0.1564691	0.27178769	2.3603851	20	4 30.5	18.4
60035 1999 TO_{93}	15.1	X	355.44801	291.47513	54.12317	5.09989	0.1540320	0.23545672	2.5973391	20	10 18.5	17.6
60036 1999 TD_{94}	14.0	X	333.19430	253.78429	48.90886	5.72189	0.1532558	0.18002582	3.1063199	20	6 23.1	17.5
60037 1999 TH_{94}	16.1	X	243.27729	191.85070	136.98717	2.94982	0.2465123	0.26727067	2.3869053	20	3 17.8	20.0
60038 1999 TR_{94}	14.1	X	242.96284	300.00985	46.80576	9.45330	0.1854383	0.17315830	3.1879182	20	4 18.4	19.2
60039 1999 TS_{94}	16.2	X	258.55701	262.99395	88.70225	4.72545	0.1795328	0.27107786	2.3645038	20	5 7.2	19.5
60040 1999 TK_{96}	14.5	X	210.70132	315.75940	56.86933	6.88163	0.0458383	0.21861562	2.7290737	20	4 24.6	18.3
60041 1999 TF_{100}	13.9	X	258.74529	319.53038	34.40814	8.29338	0.0783285	0.17625569	3.1504598	20	5 22.5	18.4
60042 1999 TF_{102}	12.8	X	3.43703	244.77631	172.25134	18.16139	0.0632914	0.14693093	3.5568091	20	12 27.2	17.9
60043 1999 TT_{102}	14.1	X	294.20959	197.08015	118.53976	16.98411	0.2581880	0.17536412	3.1611290	20	4 30.9	18.8
60044 1999 TA_{103}	14.2	X	354.70067	211.75124	102.47653	15.56697	0.1866259	0.18309689	3.0714874	20	8 26.6	17.7
60045 1999 TD_{104}	14.6	X	78.39935	283.36791	8.19915	12.98951	0.1787324	0.24005452	2.5640675	20	11 28.3	18.7
60046 1999 TL_{104}	16.1	X	224.18142	146.93004	200.16713	4.57898	0.1876272	0.26493425	2.4009179	20	3 25.8	19.9
60047 1999 TQ_{104}	14.3	X	121.25234	24.82562	221.21650	9.34349	0.0457757	0.19011662	2.9954081	20	11 1.2	18.6
60048 1999 TS_{104}	16.1	X	121.25968	6.67253	316.65704	3.07865	0.1631307	0.29701647	2.2247559	20	—	—
60049 1999 TW_{105}	13.6	X	280.33093	295.18396	34.62151	21.41243	0.1175222	0.17218341	3.1999401	20	5 10.6	18.3
60050 1999 TJ_{106}	14.0	X	241.52280	126.59257	199.41140	18.83022	0.0960228	0.17369389	3.1813616	20	3 28.2	18.9
60051 1999 TN_{106}	13.9	X	268.71459	136.75812	216.04155	21.48292	0.1542125	0.17960102	3.1112162	20	5 24.3	18.5
60052 1999 TM_{107}	13.7	X	1.50701	352.28426	306.95695	8.45054	0.0745208	0.18421981	3.0589931	20	8 7.5	17.6
60053 1999 TB_{109}	13.7	X	140.06422	247.21505	237.08382	15.09750	0.0262202	0.17865838	3.1221502	20	6 19.9	18.3
60054 1999 TF_{110}	15.0	X	203.69097	339.78141	286.82164	3.91124	0.1528172	0.30238882	2.1983267	20	—	—
60055 1999 TB_{112}	14.5	X	184.05751	101.11233	251.95804	2.90577	0.0882439	0.21379235	2.7699671	20	2 27.9	18.8
60056 1999 TG_{116}	15.0	X	11.53882	354.21076	295.60189	1.10975	0.2189865	0.18487673	3.0517425	20	8 25.1	18.2
60057 1999 TZ_{117}	13.4	X	333.33262	314.60445	352.87879	13.18750	0.1359025	0.18008960	3.1055864	20	7 3.8	17.3
60058 1999 TE_{118}	15.2	X	117.30985	170.95476	270.21927	3.52453	0.0360639	0.21505495	2.7591147	20	3 27.6	19.1
60059 1999 TG_{118}	15.7	X	73.99936	29.58873	243.22855	4.67542	0.1496276	0.28509825	2.2863340	20	11 8.1	18.7
60060 1999 TS_{118}	14.7	X	223.77943	123.44701	224.21220	4.44070	0.0713504	0.21768024	2.7368860	20	4 3.8	18.7
60061 1999 TY_{118}	16.3	X	15.97819	275.65971	192.41947	2.05990	0.1158637	0.29936202	2.2131197	20	—	—
60062 1999 TE_{119}	14.5	X	287.57847	248.60621	76.45979	2.24099	0.1874628	0.17697465	3.1419216	20	5 7.7	18.9
60063 1999 TN_{121}	14.6	X	54.89040	144.78108	176.53299	8.45299	0.2109571	0.19305780	2.9649075	20	12 9.2	19.1
60064 1999 TG_{123}	14.6	X	47.01152	318.58301	131.25136	2.90122	0.0357781	0.20607027	2.8387413	20	1 9.8	18.4
60065 1999 TR_{123}	14.1	X	308.50786	96.24360	197.00588	13.44685	0.1979155	0.17578360	3.1560980	20	4 24.8	18.1
60066 1999 TM_{124}	14.6	X	352.72093	222.34963	81.19029	2.41557	0.1770995	0.18182980	3.0857400	20	8 2.3	17.8
60067 1999 TH_{126}	14.8	X	359.67882	285.17010	19.73825	4.31690	0.1659708	0.18390639	3.0624676	20	8 19.5	18.1
60068 1999 TN_{127}	14.3	X	208.63990	347.38729	120.25114	2.14056	0.1155556	0.18042990	3.1016804	20	8 14.8	19.1
60069 1999 TK_{129}	15.1	X	113.98581	105.20220	194.75311	8.77589	0.1590700	0.19946578	2.9010627	20	—	—
60070 1999 TY_{129}	16.7	X	305.49407	85.00687	215.58030	1.75345	0.1942588	0.27295630	2.3536432	20	4 24.1	19.1
60071 1999 TY_{131}	15.4	X	75.50105	148.14542	238.44952	1.04607	0.0996768	0.20283018	2.8688929	20	—	—
60072 1999 TN_{132}	15.9	X	332.11743	47.02655	224.48386	2.53070	0.1604723	0.27208841	2.3586456	20	5 3.9	17.9
60073 1999 TQ_{135}	14.9	X	271.60510	164.30039	292.42057	1.47733	0.0709015	0.18876704	3.0096681	20	10 20.4	18.9
60074 1999 TV_{137}	15.9	X	126.64325	322.20066	352.80487	2.05131	0.0699403	0.24758725	2.5117931	20	—	—
60075 1999 TZ_{142}	15.1	X	74.73336	96.19245	201.59850	13.52151	0.1581447	0.19460729	2.9491485	20	11 26.2	19.7
60076 1999 TC_{143}	14.8	X	29.23147	123.82728	30.81614	2.83827	0.1645010	0.26203072	2.4186215	20	3 5.0	16.7
60077 1999 TZ_{143}	14.8	X	321.60757	191.31915	204.92212	14.97914	0.1036093	0.18871320	3.0102405	20	10 13.2	18.4
60078 1999 TS_{146}	14.0	X	85.09504	22.01494	175.10228	10.30608	0.0363537	0.17837943	3.1254043	20	7 15.7	18.6
60079 1999 TB_{147}	14.5	X	307.67799	168.11002	169.54339	11.45052	0.0978516	0.17953523	3.1119761	20	7 3.8	18.7
60080 1999 TG_{149}	14.2	X	268.86284	118.38506	179.49399	13.12898	0.1489630	0.17112300	3.2131461	20	3 18.9	19.0

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
	m		°	°	°	°		°				
60081 1999 TV_{149}	15.3	X	185.50746	357.08727	49.84293	4.13515	0.0576294	0.21905019	2.7254630	20	5 7.8	19.3
60082 1999 TL_{150}	14.8	X	287.87233	233.64429	17.36655	3.82520	0.0437988	0.21259789	2.7803326	20	2 23.8	18.5
60083 1999 TG_{151}	14.4	X	79.11952	191.44076	147.09507	4.89874	0.0809574	0.19627218	2.9324473	20	—	—
60084 1999 TT_{151}	14.9	X	188.42166	235.48992	123.49777	2.81922	0.0393909	0.21289349	2.7777584	20	3 12.3	18.8
60085 1999 TA_{152}	14.5	X	346.66977	140.29991	182.26068	13.10434	0.2184369	0.18333819	3.0687918	20	8 13.7	17.7
60086 1999 TC_{152}	15.8	X	287.45189	132.96446	169.50998	6.29083	0.1216398	0.26779526	2.3837871	20	4 14.6	18.7
60087 1999 TY_{152}	14.9	X	63.35625	315.08437	14.39820	10.01903	0.0979327	0.19236487	2.9720233	20	12 11.9	19.3
60088 1999 TR_{153}	14.5	X	237.64415	21.91962	94.18517	3.08542	0.2329591	0.18478903	3.0527079	20	9 13.4	19.2
60089 1999 TK_{154}	14.9	X	33.16995	199.71369	200.02563	8.72780	0.1505677	0.19676977	2.9275016	20	—	—
60090 1999 TC_{156}	16.1	X	8.42240	237.13602	173.98530	5.33484	0.1244873	0.28949457	2.2631279	20	—	—
60091 1999 TG_{156}	14.3	X	282.54923	215.49711	127.34042	4.15055	0.1154757	0.22256301	2.6967088	20	6 3.9	17.8
60092 1999 TJ_{157}	14.3	X	61.36532	332.16874	294.60961	1.71409	0.0590703	0.18685146	3.0302029	20	9 17.4	18.6
60093 1999 TR_{157}	14.4	X	231.52198	108.91996	212.54694	8.09481	0.0278658	0.16825756	3.2495234	20	3 17.2	19.2
60094 1999 TQ_{161}	14.8	X	107.67807	163.66168	133.41428	2.98446	0.0628578	0.19504729	2.9447116	20	12 19.8	19.1
60095 1999 TX_{162}	14.3	X	9.03892	194.00534	55.92456	4.16900	0.1259737	0.17665892	3.1456641	20	6 16.2	18.0
60096 1999 TG_{166}	15.6	X	33.98824	79.35998	229.23631	9.43362	0.1494380	0.28417207	2.2912991	20	11 7.5	18.1
60097 1999 TZ_{166}	15.4	X	3.90551	350.39626	259.67717	4.44375	0.2230483	0.27384341	2.3485574	20	6 12.9	16.5
60098 1999 TM_{170}	14.8	X	109.26235	138.94492	202.18093	11.64113	0.0772315	0.20062838	2.8898445	20	—	—
60099 1999 TW_{173}	14.5	X	269.82690	209.17442	142.20420	3.06228	0.1056037	0.22202326	2.7010776	20	5 30.9	18.3
60100 1999 TV_{175}	15.1	X	84.42988	168.96911	284.66760	2.90302	0.0378220	0.20993426	2.8038009	20	3 2.7	18.8
60101 1999 TJ_{176}	14.8	X	19.10123	99.04457	213.82523	1.50938	0.1071562	0.18441647	3.0568180	20	9 24.9	18.7
60102 1999 TY_{182}	16.0	X	145.44291	18.01909	296.11505	3.41292	0.2155172	0.29918511	2.2139921	20	—	—
60103 1999 TP_{187}	14.1	X	313.88948	52.76562	333.14046	14.54159	0.0420500	0.18486844	3.0518337	20	9 17.2	18.4
60104 1999 TZ_{194}	14.7	X	243.04433	209.89935	317.04893	1.46922	0.1013844	0.19144554	2.9815302	20	12 6.5	18.9
60105 1999 TJ_{197}	15.6	X	163.57555	219.93398	305.47091	2.96066	0.0924212	0.27584913	2.3371592	20	9 18.9	18.8
60106 1999 TT_{201}	15.1	X	152.96724	227.38334	203.14286	6.46059	0.0658283	0.21960218	2.7208940	20	5 1.7	18.9
60107 1999 TY_{201}	13.8	X	296.33106	356.06243	198.40868	13.48929	0.0527324	0.15972091	3.3643012	20	—	—
60108 1999 TF_{205}	14.7	X	355.56860	277.65009	28.87342	10.93460	0.0826592	0.17915987	3.1163212	20	8 13.5	18.8
60109 1999 TO_{212}	14.4	X	339.22324	46.10486	260.64282	3.60618	0.1444576	0.17989923	3.1077769	20	7 10.4	17.8
60110 1999 TB_{213}	14.8	X	30.51018	167.14407	323.48169	3.28435	0.0922328	0.20897911	2.8123376	20	2 8.8	18.2
60111 1999 TL_{213}	14.4	X	352.98461	320.96261	349.91823	10.17886	0.1066385	0.18334227	3.0687463	20	8 14.0	18.1
60112 1999 TZ_{216}	17.0	X	278.14820	295.22284	45.70046	1.91887	0.1646876	0.31916199	2.1206155	20	5 16.2	19.3
60113 1999 TB_{217}	14.5	X	342.68189	119.41765	204.83806	10.80382	0.1042894	0.22740742	2.6582733	20	8 13.6	17.7
60114 1999 TD_{222}	14.2	X	278.38154	149.23612	213.08604	14.10963	0.1164589	0.17939738	3.1135702	20	6 21.6	18.7
60115 1999 TK_{222}	14.2	X	20.77773	110.63127	243.20389	9.08627	0.1036938	0.19278859	2.9676670	20	11 20.5	18.0
60116 1999 TW_{222}	13.7	X	311.07796	332.80290	109.55175	11.18940	0.0735918	0.19027696	2.9937251	20	11 29.8	17.6
60117 1999 TZ_{222}	14.0	X	26.87965	305.00185	308.40475	9.28794	0.0746583	0.18075405	3.0979710	20	7 17.2	18.0
60118 1999 TQ_{223}	16.4	X	67.72045	227.55317	140.41082	4.88572	0.1386143	0.29495137	2.2351282	20	—	—
60119 1999 TU_{223}	15.0	X	333.85712	101.49019	168.16725	12.83157	0.2454921	0.22551269	2.6731422	20	4 28.5	17.7
60120 1999 TW_{227}	15.1	X	67.52045	262.11818	19.34836	1.31916	0.1139016	0.18654829	3.0334851	20	10 21.7	19.4
60121 1999 TE_{235}	15.5	X	27.54255	0.91955	166.70992	2.71983	0.1069114	0.26100503	2.4249538	20	3 18.8	17.9
60122 1999 TU_{239}	14.2	X	358.14442	141.35163	168.91343	10.65585	0.0885096	0.18180204	3.0860542	20	8 16.5	18.2
60123 1999 TU_{240}	14.2	X	309.31530	180.35901	128.16296	6.22835	0.1549746	0.17620165	3.1511040	20	5 22.9	18.2
60124 1999 TG_{243}	13.8	X	300.26346	261.27443	77.45130	18.92943	0.2024058	0.17720798	3.1391629	20	6 9.0	17.9
60125 1999 TW_{246}	15.3	X	274.38464	259.50222	218.92624	1.59183	0.0459169	0.19479278	2.9472760	20	11 25.6	19.3
60126 1999 TU_{251}	15.3	X	142.42471	168.42581	210.59454	4.45154	0.0224745	0.21245254	2.7816006	20	2 7.9	19.3
60127 1999 TQ_{254}	13.7	X	239.76549	262.89056	104.06595	14.63523	0.0879113	0.17272020	3.1933066	20	5 21.1	18.6
60128 1999 TS_{254}	13.6	X	281.26079	183.48671	115.27878	16.73931	0.0643846	0.16968481	3.2312761	20	4 22.4	18.5
60129 1999 TG_{256}	14.8	X	298.47683	138.67633	202.76680	11.25284	0.0958864	0.18042444	3.1017429	20	6 25.4	19.1
60130 1999 TP_{256}	15.1	X	303.03488	229.34749	177.98339	1.98088	0.0720582	0.18800523	3.0177928	20	10 1.9	18.9
60131 1999 TY_{256}	14.5	X	36.22717	10.03005	220.36350	4.75238	0.0695032	0.17953358	3.1119953	20	6 28.6	18.7
60132 1999 TN_{259}	14.3	X	283.58184	151.24097	133.54682	2.36991	0.1285098	0.17039901	3.2222409	20	3 23.2	18.8
60133 1999 TM_{266}	15.0	X	115.20412	279.69501	233.46977	13.67387	0.0474493	0.22512511	2.6762094	20	6 29.7	18.9
60134 1999 TO_{272}	14.6	X	300.89002	42.78691	1.69099	9.35669	0.0776726	0.18522036	3.0479668	20	9 23.9	18.5
60135 1999 TS_{279}	14.2	X	132.81909	56.19309	47.61746	1.26334	0.1212455	0.17133600	3.2104824	20	5 26.1	19.1
60136 1999 TV_{279}	14.0	X	248.63751	204.76548	98.79936	2.05011	0.1652409	0.17052829	3.2206121	20	3 5.0	19.0
60137 1999 TC_{280}	14.0	X	266.24436	236.59971	71.84307	2.54702	0.1626159	0.17339425	3.1850256	20	3 28.3	18.8
60138 1999 TV_{280}	15.9	X	336.58674	221.98211	65.42122	3.35307	0.1962427	0.27575408	2.3376963	20	6 4.9	17.5
60139 1999 TP_{285}	16.7	X	245.99519	233.30982	118.85131	4.53376	0.1002658	0.31482178	2.1400613	20	5 1.7	19.3
60140 1999 TA_{288}	14.8	X	350.21564	219.65517	161.00998	2.61543	0.0966113	0.18886815	3.0085939	20	11 8.8	18.4
60141 1999 TE_{290}	13.9	X	3.26612	85.19609	198.99209	15.79344	0.2239642	0.17925776	3.1151867	20	7 25.0	17.4
60142 1999 TS_{290}	13.8	X	242.39528	316.56658	79.38362	10.49480	0.0815230	0.17384462	3.1795223	20	6 25.9	18.5
60143 1999 TV_{292}	14.5	X	212.85649	198.88774	277.40372	6.80482	0.1248945	0.18117909	3.0931240	20	8 25.8	19.4
60144 1999 TN_{293}	15.3	X	97.02277	37.28420	243.36811	7.98501	0.1464533	0.23842423	2.5757426	20	12 3.3	19.3
60145 1999 TB_{313}	16.9	X	101.46887	110.47775	164.11480	2.18017	0.1089411	0.28419832	2.2911580	20	12 6.8	20.3
60146 1999 TF_{316}	15.4	X	118.29632	231.54094	40.93943	5.13114	0.1556264	0.24130686	2.5551884	20	12 13.4	19.5
60147 1999 TC_{320}	14.2	X	350.29168	315.28987	349.53295	8.61455	0.1002444	0.18064063	3.0992677	20	7 31.5	18.0
60148 Seanurban	15.3	X	206.46548	225.74864	337.23048	0.95966	0.0527017	0.19532862	2.9418835	20	12 14.5	19.6
60149 1999 UC_{2}	14.7	X	83.01770	312.35254	23.99296	2.38502	0.0700779	0.19678095	2.9273906	20	—	—
60150 1999 UY_{2}	16.6	X	108.02727	213.26008	190.16772	4.37086	0.1555235	0.30331816	2.1938340	20	2 1.7	18.9
60151 1999 UZ_{6}	16.2	X	101.72152	260.79722	96.71080	5.99493	0.2071931	0.29494773	2.2351466	20	—	—
60152 1999 UG_{13}	13.7	X	28.27279	78.19071	207.11586	9.49583	0.0639450	0.18434200	3.0576412	20	8 25.5	17.9
60153 1999 UV_{13}	13.6	X	313.29571	19.46335	269.69050	4.22404	0.1506636	0.17636777	3.1491249	20	5 1.3	17.5
60154 1999 UB_{14}	16.4	X	307.70204	238.97546	85.10287	3.36203	0.2223242	0.27396245	2.3478771	20	5 28.9	18.7
60155 1999 UJ_{17}	14.5	X	120.48674	314.38223	186.68661	5.28620	0.0634695	0.17693358	3.1424077	20	6 22.4	19.1
60156 1999 UK_{18}	15.2	X	242.57722	194.67735	133.72827	2.59067	0.0765506	0.21771127	2.7366259	20	4 2.4	19.0
60157 1999 UT_{23}	13.6	X	170.95197	261.73533	230.08522	15.19357	0.1925122	0.17775976	3.1326635	20	7 31.8	19.1
60158 1999 UH_{24}	13.6	X	274.23290	58.09010	234.94119	15.11697	0.0463182	0.16806955	3.2519462	20	3 28.3	18.5
60159 1999 UL_{24}	14.7	X	299.22956	65.65342	249.79297	9.25764	0.2214817	0.22447634	2.6813633	20	5 1.9	18.1
60160 1999 UQ_{25}	13.8	X	188.32351	154.45389	243.56425	4.01062	0.1441770	0.21598254	2.7512092	20	4 28.6	18.3

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Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
	m		°	°	°	°		°				
60161 1999 UZ_{25}	16.2	*X*	133.84984	127.31836	252.14111	2.71313	0.1557106	0.30422003	2.1894961	20	2 3.4	18.8
60162 1999 UE_{26}	14.1	*X*	18.52544	62.39528	233.27136	9.92293	0.1459517	0.18408566	3.0604790	20	9 1.5	18.0
60163 1999 UE_{28}	14.7	*X*	307.69619	66.43373	194.47843	5.02438	0.1246854	0.17306380	3.1890786	20	3 23.1	18.8
60164 1999 UF_{28}	15.3	*X*	317.49079	251.97080	203.54849	1.85426	0.0531620	0.19683519	2.9268529	20	12 25.4	19.1
60165 1999 UZ_{30}	14.2	*X*	286.72489	157.88353	99.18049	2.61538	0.1712926	0.16831535	3.2487795	20	2 17.3	19.0
60166 1999 UC_{31}	15.2	*X*	270.53012	208.19986	79.33613	2.69429	0.1494183	0.17005271	3.2266140	20	3 9.9	20.1
60167 1999 UN_{33}	14.2	*X*	322.72994	4.65019	212.48543	7.09341	0.1448167	0.21109443	2.7935184	20	2 7.8	17.9
60168 1999 UV_{41}	14.9	*X*	215.13668	112.43395	243.83425	5.06317	0.0369298	0.21848029	2.7302005	20	4 6.0	18.8
60169 1999 UH_{44}	15.2	*X*	172.91293	223.80847	7.98661	7.40086	0.0518254	0.28800485	2.2709253	20	—	—
60170 1999 US_{45}	15.5	*X*	131.72938	250.64660	261.39340	6.48190	0.0401907	0.27168825	2.3609610	20	7 21.9	18.5
60171 1999 UP_{47}	14.1	*X*	89.00392	8.60963	277.39653	7.82693	0.0702918	0.19175153	2.9783575	20	11 14.8	18.6
60172 1999 UY_{48}	13.9	*X*	324.25515	302.97180	351.40652	15.58154	0.0702255	0.17583167	3.1555227	20	6 1.8	18.4
60173 1999 UV_{50}	14.8	*X*	157.56374	323.61803	77.48581	7.37451	0.0405999	0.21271036	2.7793525	20	4 1.2	18.8
60174 1999 UV_{56}	14.4	*X*	21.00789	187.57622	93.39324	3.04124	0.1537563	0.18129727	3.0917797	20	8 23.4	18.0
60175 1999 VQ_{1}	14.4	*X*	327.69129	256.12594	33.32962	16.01295	0.2122865	0.17679341	3.1440685	20	5 15.0	18.0
60176 1999 VY_{5}	15.5	*X*	43.70264	341.93750	66.24545	8.55676	0.1414763	0.29245703	2.2478190	20	—	—
60177 1999 VU_{6}	15.0	*X*	180.38725	135.65454	56.09730	2.36668	0.1030230	0.28300365	2.2976014	20	11 13.6	18.2
60178 1999 VY_{6}	15.1	*X*	66.58547	267.49663	118.09111	13.63346	0.2071152	0.24708126	2.5152211	20	—	—
60179 1999 VE_{7}	14.5	*X*	4.21829	259.00168	46.75263	2.57149	0.1722822	0.18254955	3.0776239	20	8 29.3	17.8
60180 1999 VK_{8}	15.1	*X*	312.56957	292.88996	63.87105	1.07541	0.1789928	0.18032342	3.1029013	20	7 28.1	18.8
60181 1999 VV_{9}	13.7	*X*	281.98390	205.10357	173.10380	17.83031	0.2097140	0.17929936	3.1147047	20	7 3.2	18.3
60182 1999 VS_{10}	14.0	*X*	254.34824	301.08283	107.65921	7.44844	0.1024312	0.27172917	2.3607239	20	7 31.8	16.8
60183 Falcone	15.0	*X*	113.59628	252.15034	92.35180	3.16783	0.0779533	0.19974098	2.8983974	20	—	—
60184 1999 VM_{16}	15.1	*X*	61.76709	308.19447	222.26474	12.66773	0.0686656	0.21762036	2.7373880	20	5 17.4	18.6
60185 1999 VY_{21}	15.6	*X*	232.90571	50.75731	175.12500	2.35065	0.0870454	0.29326138	2.2437070	20	—	—
60186 Las Cruces	12.9	*X*	169.33186	60.60642	41.75621	14.78488	0.1769204	0.17356312	3.1829593	20	6 29.9	18.4
60187 1999 VL_{23}	14.9	*X*	356.07961	211.62432	222.01033	23.57806	0.2645726	0.28933733	2.2639478	20	—	—
60188 1999 VH_{25}	15.0	*X*	296.63423	19.69040	21.63369	3.24007	0.1685977	0.27666555	2.3325591	20	9 19.8	16.8
60189 1999 VM_{27}	13.5	*X*	18.71341	44.74536	226.88794	13.24428	0.1216401	0.17973579	3.1096607	20	7 27.9	17.6
60190 1999 VG_{31}	13.7	*X*	53.45063	214.02166	63.41147	10.28322	0.0204392	0.18026052	3.1036231	20	9 20.8	18.2
60191 1999 VP_{35}	15.3	*X*	185.90537	115.61924	233.47914	5.92792	0.0825534	0.25600340	2.4564366	20	2 19.2	19.0
60192 1999 VU_{42}	16.2	*X*	84.31304	246.76644	7.17439	4.17532	0.2107368	0.28217580	2.3020930	20	10 29.9	19.6
60193 1999 VJ_{43}	15.5	*X*	266.56217	99.60839	21.15329	5.95808	0.1106375	0.28624295	2.2802345	20	12 2.5	17.8
60194 1999 VU_{43}	15.0	*X*	282.05725	309.93414	45.45064	1.35376	0.2700885	0.17857738	3.1230942	20	5 26.8	19.5
60195 1999 VM_{44}	14.8	*X*	285.30204	67.34506	252.06014	4.45745	0.0551127	0.22028953	2.7152312	20	5 15.4	18.3
60196 1999 VG_{52}	14.9	*X*	230.28940	63.00094	268.90697	3.30642	0.0751930	0.21248404	2.7813256	20	3 21.6	19.2
60197 1999 VO_{52}	14.3	*X*	39.96365	295.00023	72.48604	11.74951	0.1920269	0.23945964	2.5683123	20	—	—
60198 1999 VT_{54}	15.0	*X*	174.77754	214.99996	214.50101	9.59945	0.0389458	0.21890166	2.7266958	20	5 25.0	18.9
60199 1999 VF_{56}	16.0	*X*	267.02700	266.51919	61.60098	2.12399	0.2052850	0.26851884	2.3795027	20	4 11.5	19.2
60200 1999 VV_{56}	14.9	*X*	4.97409	230.89801	70.95473	2.67753	0.2920440	0.18375280	3.0641739	20	9 8.3	17.5
60201 1999 VD_{58}	14.6	*X*	155.83070	326.61218	49.45013	5.18523	0.1201817	0.20897932	2.8123358	20	3 4.4	18.9
60202 1999 VU_{58}	13.4	*X*	335.00955	67.33685	228.36878	11.32332	0.1722866	0.17541653	3.1604993	20	6 14.6	17.0
60203 1999 VK_{59}	16.6	*X*	6.79935	105.56991	267.62168	0.86438	0.1419451	0.28525082	2.2855187	20	12 27.5	18.8
60204 1999 VO_{63}	13.8	*X*	349.75143	223.75064	241.44846	0.89016	0.0755881	0.19752377	2.9200467	20	—	—
60205 1999 VS_{64}	14.4	*X*	125.45285	70.08513	57.69468	5.38922	0.0819284	0.16964393	3.2317952	20	6 13.0	19.1
60206 1999 VZ_{68}	16.4	*X*	70.37938	79.68451	230.75286	4.65102	0.1530355	0.28616588	2.2806439	20	12 23.4	19.7
60207 1999 VA_{69}	15.0	*X*	155.88908	263.72455	41.52378	2.52275	0.0521580	0.19945609	2.9011567	20	—	—
60208 1999 VQ_{72}	13.6	*X*	299.33799	65.18073	231.39908	4.51933	0.1553570	0.17479085	3.1680371	20	4 20.8	18.0
60209 1999 VR_{75}	15.9	*X*	41.17468	186.55953	147.96393	1.12459	0.1484451	0.23718456	2.5847097	20	12 10.5	19.3
60210 1999 VN_{76}	15.7	*X*	90.37676	126.47493	95.45196	3.08389	0.1718216	0.27340926	2.3510430	20	9 22.7	19.1
60211 1999 VX_{77}	16.2	*X*	336.03303	306.44944	25.86179	2.60145	0.1064863	0.27512147	2.3412784	20	8 26.3	18.3
60212 1999 VB_{79}	13.8	*X*	337.19137	276.91374	32.54547	7.95690	0.0120173	0.17649589	3.1476009	20	7 18.9	18.3
60213 1999 VE_{79}	15.7	*X*	44.24359	340.23260	238.59974	5.49323	0.0641126	0.26913655	2.3758604	20	6 27.8	18.4
60214 1999 VO_{81}	14.4	*X*	28.71537	94.10155	203.81015	13.91038	0.2281546	0.18775068	3.0205199	20	10 7.9	18.2
60215 1999 VQ_{81}	15.2	*X*	203.05941	264.79276	203.72117	4.33296	0.2069664	0.27425439	2.3462106	20	8 8.7	19.1
60216 1999 VG_{82}	16.4	*X*	292.55839	96.35330	216.24716	4.33998	0.3148590	0.27252000	2.3561547	20	4 3.1	19.5
60217 1999 VC_{89}	15.8	*X*	276.77012	110.29488	205.27994	3.25822	0.0849661	0.26552584	2.3973504	20	4 22.6	18.6
60218 1999 VP_{92}	14.3	*X*	314.69049	104.81507	201.26960	3.38369	0.1692303	0.17823645	3.1270755	20	5 24.9	18.1
60219 1999 VY_{93}	15.1	*X*	336.74640	348.86751	29.64425	3.30240	0.0616834	0.18746349	3.0236040	20	10 14.6	19.0
60220 1999 VA_{95}	16.0	*X*	130.46749	265.00035	31.43880	3.46416	0.0740711	0.24547458	2.5261843	20	—	—
60221 1999 VY_{96}	15.3	*X*	247.27825	277.04311	39.83767	2.44275	0.0938374	0.21509108	2.7588057	20	3 22.4	19.2
60222 1999 VB_{115}	13.6	*X*	29.20918	314.43839	336.99177	8.88401	0.0834732	0.18334097	3.0687608	20	9 8.4	17.5
60223 1999 VD_{118}	15.3	*X*	66.23790	12.71117	63.30888	2.89828	0.0663558	0.20675616	2.8324597	20	1 21.9	19.0
60224 1999 VE_{118}	15.6	*X*	76.96408	111.95944	179.70248	4.07491	0.2547666	0.24144025	2.5542473	20	12 7.4	19.7
60225 1999 VK_{122}	16.7	*X*	247.60685	230.58369	65.61260	8.01314	0.1539322	0.30722212	2.1752094	20	2 14.6	20.0
60226 1999 VF_{126}	15.7	*X*	9.15917	167.87841	36.75996	2.77261	0.0073574	0.21735278	2.7396342	20	4 13.5	19.2
60227 1999 VD_{133}	14.5	*X*	14.60805	266.05978	5.26024	11.13043	0.1486294	0.18322509	3.0700545	20	8 1.5	18.2
60228 1999 VL_{145}	14.4	*X*	55.32149	108.42306	198.53445	9.95461	0.1128028	0.19009875	2.9955957	20	11 9.3	18.6
60229 1999 VZ_{145}	16.4	*X*	297.82131	277.96000	184.68948	3.34022	0.0333725	0.28854681	2.2680808	20	—	—
60230 1999 VD_{146}	16.0	*X*	99.70339	109.98599	210.75315	13.36003	0.1287667	0.24470535	2.5314756	20	—	—
60231 1999 VK_{148}	15.2	*X*	41.50923	240.12734	153.95241	2.12200	0.1305785	0.19603681	2.9347940	20	—	—
60232 1999 VL_{148}	13.8	*X*	252.29168	147.71936	209.61731	8.16409	0.2131189	0.12512057	3.9589824	20	5 7.1	19.9
60233 1999 VZ_{153}	14.6	*X*	155.99508	338.22805	176.23938	12.14946	0.1772079	0.22237150	2.6982569	20	8 21.9	19.1
60234 1999 VK_{157}	16.3	*X*	275.54249	107.59908	212.31246	20.29920	0.1211648	0.36503097	1.9390228	20	4 14.7	18.3
60235 1999 VO_{163}	13.6	*X*	95.23684	314.49583	38.57920	10.34881	0.0968586	0.15099182	3.4927467	20	—	—
60236 1999 VH_{165}	15.1	*X*	309.12057	24.38571	17.00719	4.09648	0.0335997	0.18398729	3.0615698	20	10 5.3	19.2
60237 1999 VS_{167}	16.0	*X*	342.81311	45.65354	272.16611	4.51741	0.1331395	0.27406846	2.3472716	20	8 13.4	18.0
60238 1999 VQ_{174}	15.9	*X*	90.25514	129.78363	197.14939	11.19955	0.1365656	0.24546840	2.5262267	20	—	—
60239 1999 VE_{176}	16.0	*X*	31.39727	252.63641	146.25424	7.10362	0.1278453	0.29188684	2.2507454	20	—	—
60240 1999 VO_{178}	14.9	*X*	205.20671	245.18002	127.71204	7.57447	0.0505016	0.21618627	2.7494805	20	4 20.4	19.0

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	m		°	°	°	°		°				
60241 1999 VJ_{180}	15.6	X	60.81236	207.87381	111.30579	6.70304	0.2361769	0.28864778	2.2675519	20	—	—
60242 1999 VJ_{184}	14.9	X	323.58090	239.47569	71.36495	4.03382	0.0746830	0.22390396	2.6859311	20	6 27.4	18.1
60243 1999 VM_{184}	15.3	X	331.82292	283.76405	58.68391	5.61848	0.0769416	0.22923902	2.6440948	20	8 29.0	18.4
60244 1999 VN_{186}	16.2	X	343.03338	200.95689	202.87619	7.68405	0.1205393	0.28556548	2.2838395	20	12 29.1	18.6
60245 1999 VA_{190}	15.9	X	325.56013	157.81435	231.13771	6.10822	0.0607238	0.27908524	2.3190573	20	10 31.2	18.2
60246 1999 VP_{190}	15.7	X	313.57773	93.58205	217.47450	5.91676	0.1417383	0.26892343	2.3771156	20	6 3.0	18.0
60247 1999 VW_{193}	14.8	X	130.73507	302.94740	224.83984	12.20501	0.1086147	0.22581917	2.6707230	20	8 9.2	19.1
60248 1999 VW_{197}	15.2	X	146.79333	203.18227	182.31836	11.75635	0.2052389	0.25817688	2.4426307	20	3 6.2	19.0
60249 1999 VC_{199}	13.6	X	287.04434	223.71482	85.64354	18.18643	0.1103587	0.17121572	3.2119859	20	5 5.2	18.3
60250 1999 VO_{200}	14.3	X	282.71637	248.01196	130.17843	17.66051	0.1179078	0.17740019	3.1368951	20	7 18.7	18.7
60251 1999 VO_{202}	14.4	X	166.12133	296.40706	214.89508	15.78791	0.1791573	0.17967152	3.1104022	20	8 20.3	19.8
60252 1999 VP_{204}	16.0	X	204.93394	354.98300	251.77802	1.78814	0.1351479	0.24683989	2.5168606	20	—	—
60253 1999 VB_{225}	14.3	X	340.95052	192.73953	142.13231	6.51832	0.1682900	0.18184030	3.0856213	20	8 22.6	17.5
60254 1999 VO_{226}	13.9	X	268.27384	291.43572	119.45151	13.40210	0.0785774	0.17851954	3.1237687	20	8 18.6	18.3
60255 1999 WO_{4}	15.5	X	11.83498	231.16398	159.13635	4.05271	0.1540270	0.28549501	2.2842153	20	—	—
60256 1999 WB_{20}	14.3	X	145.05782	0.86457	150.27865	9.98781	0.0286448	0.17450218	3.1715299	20	7 30.4	18.8
60257 1999 WB_{25}	12.9	X	233.13159	37.83774	91.39383	2.27895	0.0333202	0.08631717	5.0707391	20	10 3.9	19.7
60258 1999 XL_{4}	13.9	X	288.75362	295.06450	81.80327	6.05600	0.1633387	0.17784267	3.1316898	20	7 19.4	18.1
60259 1999 XY_{5}	15.3	X	135.74778	2.79825	254.50850	3.57871	0.1866182	0.28493376	2.2872139	20	12 18.2	18.8
60260 1999 XO_{6}	15.7	X	163.66331	200.05086	277.62349	5.38171	0.0630295	0.26843819	2.3799793	20	7 16.2	18.9
60261 1999 XC_{14}	14.7	X	327.14274	246.82156	121.99878	10.68044	0.0751874	0.18089782	3.0963295	20	9 20.2	18.8
60262 1999 XB_{18}	13.8	X	23.34265	326.32269	26.40633	10.93730	0.1160969	0.19213255	2.9744186	20	11 21.9	17.8
60263 1999 XB_{20}	14.3	X	309.05305	323.11348	53.01802	13.55812	0.1937287	0.23075813	2.6324778	20	9 1.0	17.2
60264 1999 XX_{21}	15.1	X	304.52927	263.57919	220.83071	3.39682	0.2137453	0.23392512	2.6086640	20	—	—
60265 1999 XY_{22}	13.5	X	299.65282	269.92966	55.77763	6.38277	0.2130495	0.17681850	3.1437711	20	5 20.3	17.7
60266 1999 XB_{25}	13.0	X	236.45132	213.87305	63.52075	12.60997	0.0742695	0.15840347	3.3829293	20	2 2.9	18.3
60267 1999 XF_{27}	14.0	X	178.96411	152.45817	63.13326	11.07538	0.0441602	0.18971497	2.9996344	20	11 28.2	18.2
60268 1999 XU_{38}	13.4	X	206.02589	300.16934	39.14778	13.43632	0.0708073	0.16915395	3.2380331	20	3 16.4	18.4
60269 1999 XN_{46}	16.0	X	348.82587	129.83678	249.35015	5.59698	0.1293777	0.28253039	2.3001665	20	12 3.9	18.2
60270 1999 XJ_{54}	16.0	X	118.46339	202.01793	84.50624	6.89193	0.1046931	0.28674942	2.2775487	20	—	—
60271 1999 XN_{56}	16.3	X	102.97006	232.75878	93.35485	1.70209	0.2180780	0.29193447	2.2505006	20	—	—
60272 1999 XT_{64}	16.4	X	183.06491	288.90398	78.63152	2.69644	0.1918784	0.30695998	2.1764476	20	3 14.8	19.7
60273 1999 XM_{70}	15.4	X	291.51104	251.02310	236.54589	4.28009	0.1496650	0.23664580	2.5886312	20	—	—
60274 1999 XJ_{82}	15.6	X	244.69340	50.43594	101.49325	3.80791	0.0553740	0.23468221	2.6030506	20	12 7.4	18.8
60275 1999 XH_{85}	15.1	X	303.40692	102.50916	282.23503	5.56893	0.1426122	0.27363754	2.3497353	20	9 5.5	17.4
60276 1999 XL_{85}	15.8	X	111.25937	291.02457	90.55000	6.59131	0.1364401	0.29574929	2.2311062	20	1 6.3	18.1
60277 1999 XH_{89}	15.3	X	270.39462	39.88102	99.26363	4.29979	0.1102250	0.23343539	2.6123112	20	12 19.1	18.2
60278 1999 XE_{91}	15.3	X	199.74930	287.69959	256.77174	3.16971	0.1076022	0.27705724	2.3303602	20	11 24.5	18.4
60279 1999 XQ_{92}	15.5	X	53.12062	47.72671	117.20290	5.44322	0.1227767	0.25576578	2.4579578	20	5 4.6	18.2
60280 1999 XZ_{94}	15.0	X	270.53582	68.92240	101.66606	4.58351	0.1875664	0.23392783	2.6086438	20	—	—
60281 1999 XF_{95}	15.9	X	205.96900	85.12585	13.05488	2.64863	0.1388045	0.26900157	2.3766552	20	8 5.2	19.4
60282 1999 XK_{96}	15.4	X	118.35259	75.46952	46.76968	3.07666	0.1313860	0.26136073	2.4227531	20	6 3.9	18.7
60283 1999 XB_{101}	15.1	X	228.94868	237.04113	287.28073	5.15546	0.0465632	0.28000980	2.3139496	20	12 15.4	17.9
60284 1999 XY_{102}	14.6	X	235.58216	96.56389	88.52156	13.61398	0.1073730	0.23396982	2.6083317	20	12 29.6	17.9
60285 1999 XR_{106}	15.1	X	149.77433	164.81025	262.02195	5.45870	0.1001504	0.26265791	2.4147697	20	4 21.6	18.5
60286 1999 XG_{107}	14.4	X	261.76904	7.15538	60.18323	5.31279	0.0466865	0.18156529	3.0887363	20	9 6.3	18.7
60287 1999 XV_{111}	15.7	X	59.70616	41.38764	272.23998	3.30453	0.2300883	0.28426109	2.2908207	20	12 23.7	19.2
60288 1999 XW_{114}	12.6	X	320.44050	130.45659	267.52795	23.33179	0.0670507	0.18538367	3.0461765	20	10 4.8	17.1
60289 1999 XS_{125}	14.5	X	65.10987	260.72389	30.92051	9.87454	0.0847799	0.18467561	3.0539577	20	10 26.9	18.9
60290 1999 XJ_{127}	13.9	X	51.78842	265.17167	106.63128	14.37158	0.1813461	0.19456299	2.9495961	20	—	—
60291 1999 XV_{140}	15.7	X	215.90712	211.85770	107.02617	7.38158	0.1523116	0.25160158	2.4850043	20	2 17.1	19.7
60292 1999 XO_{143}	15.3	X	34.59985	258.78225	231.81669	8.68183	0.1901607	0.29447894	2.2375181	20	1 24.9	16.9
60293 1999 XZ_{148}	16.1	X	165.04119	291.91831	247.70455	2.94686	0.0845266	0.27730237	2.3289866	20	10 10.3	19.3
60294 1999 XZ_{152}	16.7	X	348.15020	204.65144	209.80429	6.26913	0.0878064	0.28433229	2.2904383	20	—	—
60295 1999 XL_{154}	14.8	X	155.35674	63.65570	241.98828	14.75018	0.0829505	0.24506387	2.5290060	20	—	—
60296 1999 XF_{156}	15.4	X	327.80803	307.58776	190.16359	3.05640	0.1147490	0.24251834	2.5466719	20	—	—
60297 1999 XD_{157}	15.9	X	314.28400	253.80227	126.63316	3.96929	0.0941513	0.27556831	2.3387468	20	9 30.3	18.1
60298 1999 XF_{168}	14.9	X	287.62205	62.88894	285.44062	5.65777	0.1432312	0.26926079	2.3751296	20	6 14.7	17.6
60299 1999 XX_{174}	15.3	X	245.59704	113.60880	21.13787	5.25393	0.1231645	0.22865805	2.6485716	20	11 3.6	18.8
60300 1999 XV_{176}	13.4	X	45.79422	34.32848	303.31437	22.89761	0.2070644	0.27972603	2.3155143	20	—	—
60301 1999 XL_{178}	15.3	X	119.68466	88.34999	82.07043	6.53384	0.0658694	0.26469080	2.4023899	20	8 6.4	18.6
60302 1999 XM_{180}	15.5	X	203.85555	7.80119	44.08147	8.62215	0.1336800	0.30898559	2.1669251	20	5 30.7	18.7
60303 1999 XW_{184}	14.1	X	305.77114	333.72076	43.92124	20.73070	0.2492528	0.17997359	3.1069209	20	8 12.7	18.1
60304 1999 XT_{189}	15.8	X	31.57943	57.92429	329.77084	5.87855	0.1303199	0.28733207	2.2744688	20	—	—
60305 1999 XU_{190}	15.3	X	213.37354	115.21034	3.31044	5.14300	0.1742585	0.27277041	2.3547125	20	9 6.6	18.8
60306 1999 XW_{190}	14.0	X	22.77682	315.05213	60.17784	11.56342	0.1063511	0.18787407	3.0191973	20	12 18.2	18.0
60307 1999 XR_{193}	14.4	X	351.66008	301.67898	55.07234	10.52864	0.0699327	0.18017192	3.1046404	20	10 11.2	18.5
60308 1999 XH_{204}	15.5	X	317.60870	197.17685	339.30420	6.78275	0.0643260	0.29262497	2.2469589	20	—	—
60309 1999 XZ_{206}	14.6	X	245.11819	261.32151	37.03385	6.39223	0.1938593	0.30197770	2.2003215	20	2 12.7	18.0
60310 1999 XD_{215}	14.8	X	324.62199	250.98926	113.43361	13.57950	0.1820510	0.22616931	2.6679658	20	9 14.6	17.6
60311 1999 XS_{216}	15.7	X	320.44796	262.61857	103.29436	7.52768	0.1268017	0.27263101	2.3555150	20	9 19.9	17.9
60312 1999 XM_{218}	16.3	X	242.92051	38.19011	293.48893	3.29116	0.1825464	0.30601436	2.1809289	20	3 20.1	19.7
60313 1999 XW_{218}	12.6	X	267.71194	326.93581	123.34849	3.38490	0.0766695	0.08089809	5.2947307	20	9 22.5	19.5
60314 1999 XU_{226}	14.3	X	359.97732	349.07677	329.88758	3.05192	0.1693072	0.17351338	3.1835675	20	9 4.8	17.9
60315 1999 XF_{227}	16.1	X	276.25034	324.87220	286.55641	6.04202	0.0997255	0.29639741	2.2278525	20	1 20.2	19.1
60316 1999 XU_{228}	15.3	X	21.37604	306.70936	85.09392	4.52144	0.1224099	0.23579576	2.5948488	20	—	—
60317 1999 XD_{234}	16.7	X	99.55036	204.89885	147.57877	5.99856	0.1942846	0.29494263	2.2351724	20	—	—
60318 1999 XB_{235}	13.4	X	236.33974	251.18533	121.32441	7.12979	0.2005055	0.12313750	4.0013742	20	5 13.1	19.7
60319 1999 XL_{242}	15.2	X	331.52449	99.85440	339.25756	12.41172	0.1310432	0.23480952	2.6021096	20	—	—
60320 1999 XG_{253}	15.0	X	46.17601	210.48566	93.95330	3.51596	0.1742456	0.18508395	3.0494642	20	11 2.7	19.2

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
	m		°	°	°	°		°				
60321 1999 XK_{254}	16.5	X	35.45872	40.32495	282.33013	1.72268	0.1729065	0.27648936	2.3335499	20	11 30.4	19.3
60322 1999 XB_{257}	12.0	X	275.12328	289.21998	128.99161	10.31393	0.0237154	0.08403110	5.1622935	20	9 2.6	18.8
60323 1999 YC_{8}	15.7	X	160.70802	220.09088	103.70675	4.56439	0.1917674	0.29363066	2.2418254	20	—	—
60324 1999 YX_{10}	16.0	X	354.77122	187.58794	111.57918	5.03963	0.1968392	0.22528507	2.6749425	20	8 7.5	18.4
60325 1999 YQ_{12}	16.0	X	35.52551	322.62314	311.57038	1.67300	0.0581949	0.26772442	2.3842075	20	9 3.2	18.7
60326 1999 YB_{23}	15.4	X	250.82960	256.66199	202.52285	6.01417	0.0684284	0.27750842	2.3278336	20	10 12.9	18.1
60327 2000 AW_{5}	15.2	X	321.29914	218.78097	94.63485	4.05762	0.0845232	0.21641164	2.7475713	20	6 25.9	18.5
60328 2000 AH_{7}	12.1	X	241.61482	159.15849	299.69418	10.34979	0.0593463	0.08253791	5.2243675	20	8 31.9	19.2
60329 2000 AL_{11}	14.2	X	306.97270	272.48712	77.45850	10.28476	0.0939154	0.17494690	3.1661528	20	7 21.3	18.4
60330 2000 AG_{17}	15.8	X	160.76851	118.03118	32.99331	2.54408	0.1471883	0.26860030	2.3790216	20	8 28.7	19.5
60331 2000 AS_{29}	14.5	X	72.86827	152.02489	56.09931	5.98131	0.1122150	0.21415521	2.7668372	20	7 31.5	18.3
60332 2000 AJ_{35}	15.8	X	82.26413	316.35710	85.50225	5.98553	0.1330123	0.29472099	2.2362928	20	—	—
60333 2000 AY_{40}	15.4	X	343.82737	124.43843	17.13777	4.05256	0.1670037	0.24137060	2.5547386	20	—	—
60334 2000 AN_{42}	15.4	X	17.62041	228.44513	87.78449	24.56994	0.0630826	0.36279154	1.9469940	20	11 10.6	17.8
60335 2000 AR_{42}	16.4	X	183.11571	103.24706	111.78823	24.01616	0.0923559	0.37509325	1.9041882	20	—	—
60336 2000 AK_{46}	14.5	X	209.26704	129.08197	104.17038	11.49706	0.2238399	0.23615212	2.5922377	20	—	—
60337 2000 AF_{51}	15.1	X	193.38187	327.20000	322.38357	8.19855	0.0973730	0.24220946	2.5488365	20	—	—
60338 2000 AW_{56}	15.7	X	58.98244	307.09071	111.68180	3.76433	0.1588797	0.24396517	2.5365932	20	—	—
60339 2000 AP_{62}	14.7	X	5.76243	198.39772	121.37856	16.26015	0.0697534	0.21998678	2.7177218	20	9 22.7	18.3
60340 2000 AF_{63}	15.9	X	143.73834	348.78649	71.36616	4.06801	0.1097619	0.30229888	2.1987627	20	4 8.1	18.8
60341 2000 AQ_{64}	14.9	X	235.95257	142.60272	53.32657	4.80478	0.1211184	0.23251265	2.6192181	20	—	—
60342 2000 AH_{68}	15.9	X	2.63981	323.14272	90.34733	8.17519	0.1521182	0.28800264	2.2709369	20	—	—
60343 2000 AY_{72}	15.9	X	126.67636	343.13663	148.65810	2.95107	0.1273687	0.26326398	2.4110623	20	6 26.2	19.4
60344 2000 AS_{73}	15.6	X	147.09299	21.68087	135.79894	2.89889	0.1384359	0.26833769	2.3805735	20	8 22.7	19.1
60345 2000 AD_{76}	15.2	X	286.21946	161.15620	229.34351	6.28043	0.1181161	0.27285966	2.3541990	20	8 16.8	17.9
60346 2000 AB_{77}	14.8	X	310.38972	200.69540	194.39968	1.95323	0.2891757	0.18083694	3.0970244	20	8 29.6	17.7
60347 2000 AD_{78}	16.2	X	25.04303	282.76274	121.31345	7.18126	0.2184854	0.28842457	2.2687216	20	—	—
60348 2000 AT_{81}	15.5	X	36.27663	300.42308	227.34181	5.37505	0.0721726	0.25459512	2.4654867	20	3 31.0	18.4
60349 2000 AS_{83}	15.2	X	238.47484	287.40537	139.40298	2.01337	0.0711040	0.22034519	2.7147739	20	8 4.2	18.9
60350 2000 AC_{86}	15.9	X	276.75889	337.17280	237.25470	2.03693	0.1043923	0.29039532	2.2584456	20	—	—
60351 2000 AG_{87}	15.7	X	328.66452	134.54263	237.49557	1.68066	0.1770638	0.27439917	2.3453853	20	10 13.2	17.3
60352 2000 AC_{88}	15.9	X	189.15546	324.84228	151.29268	3.46015	0.1189706	0.26681852	2.3896011	20	8 11.1	19.3
60353 2000 AN_{88}	15.7	X	181.12912	201.62376	186.53004	1.71357	0.0919549	0.30366764	2.1921505	20	4 4.4	18.5
60354 2000 AP_{88}	15.6	X	141.68748	127.49906	290.93588	2.20570	0.1753065	0.25495690	2.4631539	20	4 9.4	19.4
60355 2000 AE_{91}	16.1	X	54.53775	213.71663	138.30422	5.43075	0.2642775	0.28590935	2.2820079	20	—	—
60356 2000 AC_{93}	15.4	X	102.48630	159.83062	83.54069	23.46642	0.0526996	0.36381215	1.9433510	20	11 16.9	17.9
60357 2000 AG_{96}	14.6	X	33.13768	346.97598	310.91606	14.89849	0.0623283	0.22004640	2.7172308	20	9 18.3	18.4
60358 2000 AR_{98}	14.5	X	317.84139	105.81763	95.80774	7.20989	0.0740298	0.25608932	2.4558872	20	1 18.1	17.6
60359 2000 AJ_{100}	13.6	X	317.25154	248.87739	111.27387	6.56121	0.1899375	0.18115297	3.0934214	20	8 9.9	16.9
60360 2000 AN_{100}	15.7	X	338.15655	301.38614	86.03339	6.89889	0.1972122	0.28299920	2.2976255	20	12 6.1	17.5
60361 2000 AT_{100}	14.7	X	322.10366	289.67470	97.73203	11.25013	0.1077123	0.18441587	3.0568246	20	10 8.0	18.6
60362 2000 AU_{103}	13.8	X	27.74442	160.57410	102.34534	13.25813	0.1359818	0.22209556	2.7004914	20	8 14.3	17.0
60363 2000 AT_{105}	14.7	X	193.81137	277.21344	242.64378	11.56485	0.1806582	0.22577851	2.6710436	20	9 28.9	19.2
60364 2000 AE_{108}	15.1	X	48.62310	78.39000	123.36465	4.60002	0.0301387	0.21246114	2.7815255	20	6 5.1	18.8
60365 2000 AT_{109}	15.8	X	299.34696	32.28990	259.05390	6.18956	0.0960078	0.30747832	2.1740009	20	4 12.9	18.2
60366 2000 AX_{114}	15.7	X	288.30295	57.57874	155.49461	5.26397	0.1136021	0.29201205	2.2501020	20	—	—
60367 2000 AN_{115}	15.1	X	114.71518	97.15909	136.92827	14.78899	0.0554184	0.22439922	2.6819776	20	10 22.3	19.2
60368 2000 AQ_{119}	14.5	X	263.54920	1.62005	161.59633	9.67220	0.0821600	0.18545542	3.0453908	20	12 29.2	18.7
60369 2000 AJ_{120}	16.0	X	179.27491	300.91191	184.29488	2.21983	0.1395015	0.26629867	2.3927099	20	8 11.4	19.5
60370 2000 AG_{126}	14.6	X	231.96293	1.86132	154.90369	9.76853	0.1359008	0.17959135	3.1113279	20	11 7.5	19.3
60371 2000 AN_{139}	15.0	X	284.83743	284.77254	139.47330	5.07735	0.0754322	0.28029345	2.3123882	20	10 17.6	17.5
60372 2000 AG_{141}	15.4	X	69.60621	149.03118	250.16278	6.18021	0.1213084	0.28939156	2.2636649	20	—	—
60373 2000 AC_{144}	15.0	X	122.29225	150.03264	272.63146	3.69003	0.1544183	0.29822889	2.2187221	20	3 18.4	17.9
60374 2000 AY_{144}	16.2	X	166.29637	90.33211	145.18398	24.25384	0.0457310	0.37332068	1.9102110	20	—	—
60375 2000 AY_{146}	14.8	X	349.09569	84.62011	269.42664	20.32495	0.1595287	0.37040114	1.9202355	20	11 29.9	16.3
60376 2000 AH_{150}	15.7	X	264.96569	200.47285	185.89932	7.82957	0.1242140	0.26771511	2.3842628	20	7 8.6	18.9
60377 2000 AC_{165}	12.7	X	321.95312	244.34122	38.22650	14.42962	0.1399524	0.17584629	3.1553479	20	5 7.5	16.7
60378 2000 AL_{165}	13.7	X	222.79438	325.08051	103.57535	18.05437	0.1900242	0.17402473	3.1773281	20	7 5.4	18.8
60379 2000 AL_{167}	14.0	X	56.56205	64.57407	243.99970	13.65614	0.1104876	0.17767315	3.1336814	20	11 7.8	18.4
60380 2000 AY_{168}	14.8	X	171.90510	281.03272	207.35410	8.85301	0.1528343	0.22110351	2.7085631	20	8 2.7	19.3
60381 2000 AX_{180}	12.6	X	3.41210	152.39456	159.49267	12.76395	0.1459653	0.12432873	3.9757744	20	8 23.0	17.4
60382 2000 AR_{182}	15.4	X	1.56249	216.42366	235.61623	6.45078	0.0540444	0.28725748	2.2748625	20	—	—
60383 2000 AR_{184}	11.1	X	42.52758	70.44513	248.09756	15.13616	0.0727470	0.08136007	5.2746686	20	10 7.9	18.1
60384 2000 AU_{185}	13.9	X	220.91480	310.19104	110.65631	11.16322	0.0618884	0.17491177	3.1665768	20	7 4.7	18.5
60385 2000 AC_{195}	15.5	X	297.66534	341.65860	221.34713	7.88540	0.1518883	0.29034795	2.2586913	20	—	—
60386 2000 AV_{202}	14.0	X	199.51814	308.31452	275.67954	14.49841	0.1905431	0.22825229	2.6517096	20	12 24.6	18.1
60387 2000 AM_{207}	14.6	X	80.57060	104.34332	311.33996	8.17127	0.0660827	0.19368985	2.9584539	20	1 18.3	18.5
60388 2000 AY_{217}	13.2	X	280.80244	354.56671	112.45644	1.96396	0.0575291	0.08517484	5.1159762	20	10 28.4	19.8
60389 2000 AO_{220}	16.4	X	255.46950	126.39253	311.50855	4.61998	0.1307341	0.27214099	2.3583417	20	9 6.4	19.3
60390 2000 AD_{223}	16.3	X	265.75992	211.11344	99.71831	2.95146	0.1799128	0.30634153	2.1793758	20	3 19.5	19.3
60391 2000 AQ_{224}	16.0	X	54.78194	152.34502	98.16051	4.51822	0.1265849	0.26982582	2.3718126	20	9 12.3	18.9
60392 2000 AK_{227}	15.8	X	56.85915	95.15119	316.48618	5.41023	0.1524032	0.28837025	2.2690065	20	—	—
60393 2000 AX_{232}	14.7	X	276.29260	179.09803	52.16357	4.99060	0.1362398	0.24311486	2.5425044	20	—	—
60394 2000 AY_{234}	15.6	X	213.65280	276.23877	268.50441	5.83602	0.0488115	0.27955713	2.3164468	20	12 21.7	18.3
60395 2000 AJ_{237}	13.0	X	257.23911	188.57436	300.86295	9.19043	0.0777635	0.17673741	3.1447326	20	11 5.5	17.6
60396 2000 AG_{243}	15.9	X	257.49368	303.89261	142.79241	26.37310	0.1688673	0.36883248	1.9256763	20	10 17.9	18.0
60397 2000 AH_{243}	15.0	X	293.44813	229.46435	265.99260	9.74133	0.1591410	0.23240992	2.6199899	20	—	—
60398 2000 AG_{251}	13.4	X	162.31107	58.88983	119.35616	1.82804	0.1480089	0.12663579	3.9273392	20	9 18.9	19.5
60399 2000 AY_{253}	12.6	X	301.00650	298.69062	119.05939	4.28806	0.1272572	0.08205114	5.2450099	20	9 19.9	19.1
60400 2000 BA_{8}	15.2	X	286.55692	7.70653	343.34472	6.40608	0.1430248	0.26601431	2.3944148	20	6 16.8	18.1

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Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
	m		°	°	°	°		°				
60401 2000 BQ_{21}	11.8	X	315.55550	114.99363	313.92544	8.55322	0.0404054	0.08178031	5.2565832	20	10 23.8	18.7
60402 2000 BL_{27}	15.6	X	235.06368	31.78575	139.32472	5.15887	0.1035193	0.27769346	2.3267994	20	12 23.9	18.3
60403 2000 BK_{30}	15.0	X	214.86719	279.90275	140.05632	6.67085	0.0826129	0.21336267	2.7736847	20	6 26.2	19.2
60404 2000 BR_{37}	16.8	X	29.72655	292.74617	118.80697	1.46031	0.1275973	0.28686805	2.2769208	20	—	—
60405 2000 BV_{51}	15.6	X	34.98909	299.14083	103.58204	2.99635	0.1463157	0.23653055	2.5894720	20	—	—
60406 Albertosuci	15.5	X	83.63350	264.55353	142.94527	4.15376	0.1407333	0.29086383	2.2560198	20	—	—
60407 2000 CZ_{1}	14.4	X	78.38302	115.20459	152.85869	8.66034	0.0312129	0.17264054	3.1942888	20	10 7.4	19.0
60408 2000 CB_{6}	15.8	X	234.33423	182.46089	238.02493	5.95147	0.0855391	0.26813983	2.3817445	20	7 21.2	19.0
60409 2000 CO_{6}	15.9	X	68.63518	187.45019	168.57762	5.81754	0.1893290	0.28653411	2.2786895	20	—	—
60410 2000 CG_{16}	14.9	X	233.47315	27.71877	185.26827	0.72575	0.0788248	0.18743279	3.0239342	20	—	—
60411 2000 CP_{20}	15.3	X	96.87302	85.99884	142.52083	2.59804	0.1795144	0.26550248	2.3974911	20	10 6.9	19.0
60412 2000 CT_{22}	14.4	X	181.61355	92.71160	155.49067	9.79151	0.0258623	0.18445130	3.0564332	20	—	—
60413 2000 CQ_{23}	15.5	X	352.81927	305.05764	157.59785	8.36765	0.0825393	0.23751231	2.5823313	20	—	—
60414 2000 CS_{23}	14.9	X	197.53153	53.03314	193.33594	3.69209	0.1035613	0.23374361	2.6100143	20	—	—
60415 2000 CP_{24}	14.5	X	245.59174	45.96500	140.27824	15.25701	0.0471130	0.23305331	2.6151656	20	—	—
60416 2000 CZ_{25}	15.8	X	17.04702	216.23186	308.23569	3.94676	0.0952125	0.29624456	2.2286188	20	2 16.6	17.8
60417 2000 CD_{27}	15.2	X	133.17010	133.06840	156.16410	14.95789	0.0815640	0.23120575	2.6290790	20	—	—
60418 2000 CU_{28}	14.2	X	213.51738	37.52759	147.66315	17.92001	0.1630461	0.17847472	3.1242917	20	11 20.6	19.4
60419 2000 CY_{28}	15.0	X	151.27324	324.77444	157.10640	1.41507	0.1389832	0.26059602	2.4274905	20	7 9.7	18.8
60420 2000 CC_{30}	15.7	X	91.16086	85.81846	312.52901	6.07432	0.0462865	0.28971715	2.2619687	20	—	—
60421 2000 CZ_{31}	12.2	X	305.34914	273.24302	174.09232	6.69309	0.0314499	0.08158740	5.2648661	20	11 6.9	19.1
60422 2000 CR_{35}	15.1	X	261.22528	253.69183	172.65328	7.45360	0.2168530	0.27059664	2.3673063	20	8 14.7	18.1
60423 Chvojen	16.9	X	313.69608	132.20546	143.24935	23.87430	0.0645565	0.35132957	1.9891136	20	4 26.8	19.5
60424 2000 CY_{48}	16.2	X	110.11747	269.69692	184.50773	4.09369	0.1030077	0.30025455	2.2087318	20	4 10.9	18.9
60425 2000 CA_{49}	14.8	X	312.94311	164.38648	182.30333	5.16170	0.0213099	0.21433831	2.7652613	20	8 3.2	18.5
60426 2000 CJ_{49}	15.0	X	229.89445	310.29327	158.71328	13.84934	0.1349715	0.22106440	2.7088825	20	9 10.9	18.8
60427 2000 CV_{50}	16.3	X	181.88231	192.23472	244.10269	1.39010	0.1963181	0.25985541	2.4321006	20	6 10.2	20.1
60428 2000 CZ_{50}	15.3	X	243.24263	287.62800	162.12690	15.22973	0.0465240	0.21931054	2.7233056	20	9 14.4	19.0
60429 2000 CJ_{52}	15.4	X	321.89879	71.22300	196.86798	2.56459	0.1579855	0.29940879	2.2128893	20	4 7.2	17.5
60430 2000 CF_{55}	15.3	X	306.16737	99.24676	261.11056	0.92735	0.0916264	0.21804282	2.7338511	20	8 5.9	18.6
60431 2000 CO_{58}	14.5	X	85.27008	154.44529	79.31155	8.70621	0.1373719	0.26040104	2.4287021	20	9 30.6	18.1
60432 2000 CV_{61}	15.6	X	289.80595	290.48647	192.03162	6.57750	0.0595834	0.27775149	2.3264753	20	—	—
60433 2000 CZ_{61}	14.7	X	101.27120	70.95757	177.45792	13.81950	0.1445568	0.21807159	2.7336107	20	10 28.3	19.0
60434 2000 CJ_{63}	14.3	X	232.21928	238.41168	322.80764	12.15095	0.1323531	0.22966630	2.6408143	20	—	—
60435 2000 CH_{65}	15.2	X	26.79154	30.21534	329.76441	12.78784	0.1888298	0.22899478	2.6459745	20	12 30.2	18.8
60436 2000 CY_{70}	14.5	X	221.50495	308.43445	193.34066	12.09297	0.0923738	0.22198160	2.7014155	20	10 18.7	18.2
60437 2000 CU_{76}	16.1	X	290.64595	179.74177	36.25982	1.78182	0.1164983	0.28873735	2.2670829	20	—	—
60438 2000 CF_{78}	14.8	X	325.18361	19.40508	321.40951	2.48625	0.1085644	0.21495082	2.7600057	20	8 8.6	18.0
60439 2000 CS_{81}	15.8	X	40.46235	71.53404	327.74600	3.32925	0.1599939	0.28502764	2.2867116	20	—	—
60440 2000 CY_{82}	13.9	X	185.60229	106.52065	134.60839	7.15706	0.1426083	0.18072300	3.0983259	20	12 26.3	18.9
60441 2000 CB_{83}	16.0	X	130.90828	75.10255	88.92559	2.30469	0.1198455	0.26216183	2.4178151	20	8 13.7	19.5
60442 2000 CQ_{83}	14.7	X	227.35512	134.21739	359.18517	5.84188	0.0605197	0.22320204	2.6915592	20	10 17.2	18.5
60443 2000 CH_{85}	14.7	X	225.05738	71.46096	348.13358	8.75715	0.1434161	0.21419537	2.7664914	20	7 2.7	19.0
60444 2000 CV_{85}	13.8	X	261.86557	157.65006	118.95911	3.36906	0.0569604	0.19696728	2.9255441	20	2 23.9	17.9
60445 2000 CA_{87}	14.7	X	80.30632	243.67594	355.71993	3.08178	0.0333652	0.21618902	2.7494572	20	9 7.7	18.5
60446 2000 CA_{88}	14.3	X	177.81993	131.98310	111.04510	2.37900	0.1571033	0.17909603	3.1170618	20	12 20.3	19.3
60447 2000 CL_{90}	15.4	X	7.01755	240.65007	142.21004	10.19901	0.1451648	0.22972821	2.6403399	20	12 24.4	18.7
60448 2000 CU_{91}	15.7	X	60.17132	285.45358	154.66627	3.73313	0.1352877	0.29093346	2.2556598	20	1 3.4	17.5
60449 2000 CA_{92}	14.0	X	161.68840	49.79714	21.17355	1.87400	0.0220011	0.20422399	2.8558247	20	5 9.4	18.1
60450 2000 CG_{93}	15.1	X	56.71420	280.23272	148.50238	5.28669	0.1672427	0.28833737	2.2691790	20	—	—
60451 2000 CH_{93}	14.4	X	221.38280	40.44535	154.36832	18.00473	0.0868464	0.22704229	2.6611226	20	12 26.1	18.4
60452 2000 CV_{96}	16.2	X	249.30780	260.00574	194.82902	6.45277	0.2463508	0.27229341	2.3574616	20	9 3.4	19.4
60453 2000 CR_{102}	15.5	X	27.73560	230.04809	193.59774	3.31461	0.2157309	0.23818255	2.5774846	20	—	—
60454 2000 CH_{105}	6.4	X	303.12507	292.69584	320.44853	1.17027	0.0886303	0.00334233	44.3033216	20	3 27.1	22.7
60455 2000 CY_{106}	15.1	X	173.28306	161.93488	103.99677	5.14686	0.1971443	0.23272877	2.6175963	20	—	—
60456 2000 CD_{108}	14.0	X	213.38413	325.10017	203.92027	14.15875	0.1312108	0.17825388	3.1268717	20	10 31.7	18.7
60457 2000 CS_{108}	15.2	X	137.07649	278.07271	195.34732	13.54647	0.1604086	0.25839297	2.4412687	20	6 15.3	19.2
60458 2000 CM_{114}	6.7	X	343.18933	251.99911	312.42209	19.74881	0.4032261	0.00215874	59.2928441	20	2 26.8	22.5
60459 2000 CE_{120}	15.7	X	17.79686	196.39158	230.39153	5.36617	0.0854205	0.23849137	2.5752592	20	—	—
60460 2000 DJ_{2}	15.1	X	57.94524	172.54078	123.23627	5.67283	0.0933016	0.21512452	2.7585198	20	11 1.8	18.9
60461 2000 DH_{4}	15.9	X	357.50632	134.07746	105.83973	5.24459	0.0836514	0.30245936	2.1979849	20	5 11.9	17.8
60462 2000 DM_{4}	15.1	X	13.16607	229.85831	114.81426	8.86913	0.1264956	0.27218650	2.3580789	20	11 23.5	17.8
60463 2000 DC_{5}	14.2	X	144.21638	321.47084	6.16149	8.62009	0.0768918	0.18936614	3.0033169	20	—	—
60464 2000 DU_{6}	15.4	X	46.97497	322.72448	65.03269	6.06246	0.2635282	0.23735893	2.5834437	20	—	—
60465 2000 DM_{9}	14.9	X	194.66315	161.99512	151.03712	2.61925	0.0908043	0.19410777	2.9542060	20	1 25.3	19.4
60466 2000 DK_{12}	15.8	X	58.69220	178.00155	163.96250	3.04459	0.1923067	0.27239453	2.3568781	20	—	—
60467 2000 DB_{14}	15.1	X	60.44763	346.20886	335.83315	5.09949	0.1769898	0.27255537	2.3559508	20	12 27.9	18.5
60468 2000 DD_{18}	14.7	X	260.05864	80.25380	338.23455	12.33430	0.0955534	0.21879624	2.7275715	20	8 19.3	18.3
60469 2000 DF_{22}	16.5	X	73.83169	303.49709	97.40574	1.01646	0.0789426	0.28887005	2.2663886	20	—	—
60470 2000 DW_{23}	16.5	X	2.25390	99.77911	319.91794	5.00976	0.1458170	0.28247350	2.3004753	20	—	—
60471 2000 DT_{25}	15.5	X	345.94566	277.95553	349.58054	1.82667	0.1689513	0.25479502	2.4641970	20	5 26.9	17.6
60472 2000 DY_{26}	15.3	X	308.27458	25.16608	157.48674	4.81770	0.1362789	0.23957996	2.5674524	20	—	—
60473 2000 DY_{27}	14.1	X	26.22094	158.01064	148.93029	5.52838	0.0576298	0.17043311	3.2218111	20	9 21.3	18.4
60474 2000 DT_{32}	15.0	X	44.89224	190.29286	251.36879	0.41935	0.0680473	0.19195319	2.9762711	20	1 1.2	18.9
60475 2000 DC_{36}	14.7	X	354.31939	252.06341	156.53318	1.10012	0.0694725	0.18069843	3.0986068	20	12 14.9	18.8
60476 2000 DV_{36}	15.4	X	246.46143	243.94928	148.04285	4.04769	0.0834103	0.21219231	2.7838743	20	6 26.7	19.4
60477 2000 DE_{37}	14.5	X	250.94891	269.42724	149.16281	13.66542	0.0918010	0.21670691	2.7450750	20	8 5.1	18.4
60478 2000 DK_{37}	15.3	X	2.81460	198.18322	124.11728	2.98223	0.0712678	0.21740482	2.7391970	20	9 16.2	18.7
60479 2000 DX_{37}	15.8	X	46.98968	179.73151	152.97766	2.98474	0.0813010	0.22493114	2.6777478	20	12 3.3	19.4
60480 2000 DD_{38}	14.7	X	91.65138	85.99411	158.20864	12.66648	0.0670479	0.16958708	3.2325175	20	9 27.8	19.5

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Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
	m		°	°	°	°		°				
60481 2000 DF_{42}	15.0	X	321.01030	320.59214	1.72932	1.55913	0.1481520	0.21115977	2.7929421	20	6 30.9	17.9
60482 2000 DN_{42}	16.8	X	47.04384	260.04157	153.76129	5.89659	0.1700604	0.28697259	2.2763678	20	—	—
60483 2000 DD_{44}	15.6	X	278.60087	296.48333	149.30696	3.68397	0.1656804	0.22509215	2.6764707	20	10 12.1	18.6
60484 2000 DM_{55}	16.1	X	242.62451	358.78086	136.74393	2.78263	0.1115032	0.27359909	2.3499554	20	11 14.3	18.9
60485 2000 DM_{63}	16.1	X	131.65012	228.63764	174.97087	7.65879	0.0887363	0.29491474	2.2353133	20	2 25.3	18.8
60486 2000 DS_{66}	15.5	X	162.87452	270.03083	140.15137	2.69446	0.0822782	0.20292410	2.8680076	20	4 19.1	19.8
60487 2000 DM_{70}	16.4	X	313.52900	317.78318	160.10401	6.03965	0.1747092	0.28131296	2.3067979	20	—	—
60488 2000 DF_{74}	15.0	X	317.43079	157.92130	226.62473	1.77714	0.0758107	0.21864552	2.7288248	20	9 27.9	18.4
60489 2000 DP_{74}	15.2	X	59.25034	137.46768	182.13578	5.85102	0.0371566	0.22265234	2.6959875	20	11 25.8	19.0
60490 2000 DX_{74}	14.5	X	183.02348	30.70534	328.27847	5.11258	0.0872140	0.24507655	2.5289188	20	3 2.9	18.1
60491 2000 DD_{78}	15.3	X	84.63892	287.10353	341.58606	1.99599	0.1435074	0.26622947	2.3931245	20	11 9.9	18.7
60492 2000 DG_{82}	15.5	X	349.98670	122.85679	355.98104	6.35768	0.0643177	0.28708582	2.2757693	20	—	—
60493 2000 DC_{83}	15.0	X	81.56224	342.12509	85.13223	3.77188	0.1325804	0.24531236	2.5272978	20	2 3.8	17.8
60494 2000 DE_{88}	15.6	X	270.25482	175.02124	12.31073	2.77019	0.1192062	0.23410840	2.6073023	20	—	—
60495 2000 DF_{88}	14.6	X	55.01490	236.90304	22.55221	2.31222	0.1833042	0.26119003	2.4238086	20	9 30.5	17.6
60496 2000 DC_{89}	16.2	X	53.98543	78.16457	286.75762	0.15118	0.0996167	0.23202500	2.6228867	20	—	—
60497 2000 DH_{91}	14.1	X	77.09982	155.10383	165.76729	12.06086	0.1326719	0.17656648	3.1467619	20	12 18.9	19.0
60498 2000 DC_{92}	14.3	X	225.00889	51.00553	178.10476	5.86810	0.0916777	0.18203254	3.0834485	20	—	—
60499 2000 DN_{94}	15.2	X	132.71593	178.74445	92.19765	3.06090	0.0402839	0.22841910	2.6504184	20	12 22.3	18.9
60500 2000 DW_{95}	16.1	X	301.73992	10.70696	107.53711	3.06940	0.1211232	0.28076926	2.3097750	20	—	—
60501 2000 DN_{96}	14.2	X	71.12534	3.38219	290.83333	5.98923	0.1419250	0.17504665	3.1649500	20	11 10.1	18.9
60502 2000 DT_{96}	16.1	X	251.10983	75.93297	326.81754	5.80608	0.0958790	0.26449858	2.4035536	20	7 19.4	19.3
60503 2000 DY_{100}	14.1	X	104.86745	201.31222	132.40621	12.48455	0.1136589	0.18317759	3.0705852	20	—	—
60504 2000 DL_{102}	14.3	X	67.18466	289.72741	39.71475	6.44483	0.1120710	0.22618425	2.6678483	20	12 26.7	18.3
60505 2000 DB_{104}	16.0	X	91.35290	31.31270	25.33432	5.20915	0.1134814	0.29172817	2.2515615	20	1 24.2	18.3
60506 2000 DH_{104}	15.1	X	71.09734	313.98413	62.24717	5.23699	0.1879451	0.28333134	2.2958295	20	—	—
60507 2000 DG_{106}	15.3	X	13.83416	265.47596	98.11378	6.73090	0.1312872	0.27269088	2.3551703	20	12 19.1	17.9
60508 2000 DJ_{107}	14.5	X	180.48916	170.07141	131.92540	11.07117	0.1154464	0.18618206	3.0374618	20	1 1.1	19.4
60509 2000 EA_{2}	15.6	X	199.49416	43.89437	30.75637	0.56597	0.1719779	0.26152860	2.4217162	20	6 24.8	19.4
60510 2000 EV_{3}	15.8	X	210.72679	205.15263	286.79973	0.72724	0.1003416	0.21924245	2.7238695	20	9 21.2	19.7
60511 2000 EF_{4}	16.2	X	277.21720	0.63861	42.38999	22.26316	0.0855537	0.36257283	1.9477769	20	9 29.8	18.3
60512 2000 EU_{8}	15.2	X	210.39614	54.61913	158.20509	11.59327	0.0226789	0.18212157	3.0824435	20	12 31.1	19.7
60513 2000 EK_{11}	16.3	X	51.67552	5.79411	2.54871	3.56222	0.1067618	0.27940583	2.3172830	20	—	—
60514 2000 EC_{12}	15.2	X	155.34122	63.34138	42.14319	4.61112	0.0596714	0.21011551	2.8021883	20	6 17.7	19.3
60515 2000 EQ_{14}	15.8	X	351.11038	283.97573	162.99577	1.76078	0.1513420	0.28187087	2.3037530	20	—	—
60516 2000 EX_{16}	14.2	X	245.89595	193.37878	345.63580	8.22126	0.0825816	0.18004807	3.1060640	20	12 24.9	18.7
60517 2000 EC_{18}	15.8	X	192.03274	171.95807	48.21962	7.53218	0.0582840	0.27683129	2.3316280	20	—	—
60518 2000 ET_{19}	16.0	X	280.88780	66.65449	93.79436	6.61378	0.1242823	0.28021421	2.3128241	20	—	—
60519 2000 EU_{25}	15.1	X	39.85750	248.27763	14.61120	2.04152	0.1743196	0.25730117	2.4481698	20	9 12.2	17.8
60520 2000 ET_{32}	14.1	X	84.71747	37.34757	359.31750	10.73801	0.1065183	0.19086434	2.9875798	20	1 7.4	18.2
60521 2000 EM_{34}	13.9	X	57.39344	184.73162	128.83208	14.57740	0.1170783	0.22081835	2.7108944	20	11 29.2	18.0
60522 2000 EP_{35}	14.0	X	148.53914	239.44601	44.08600	11.35232	0.1536116	0.17804850	3.1292758	20	—	—
60523 2000 EM_{37}	16.0	X	204.99933	235.28216	301.50784	1.70150	0.1376555	0.27147471	2.3621989	20	11 15.3	19.3
60524 2000 EA_{40}	14.6	X	178.21186	4.34495	79.25272	2.01256	0.0765589	0.20674300	2.8325799	20	6 15.8	18.8
60525 2000 EW_{40}	14.7	X	110.28834	0.37460	175.60529	11.94434	0.0726388	0.20865536	2.8152460	20	7 25.8	18.9
60526 2000 EU_{41}	15.3	X	179.31982	9.31062	8.89032	3.38719	0.0685288	0.24677327	2.5173135	20	3 23.4	18.7
60527 2000 EE_{43}	14.5	X	267.58115	89.78529	122.42348	2.07733	0.1014620	0.18525685	3.0475665	20	—	—
60528 2000 EN_{44}	15.6	X	217.39244	308.45619	288.57731	1.96591	0.0373475	0.23133984	2.6280630	20	—	—
60529 2000 EU_{47}	16.2	X	358.12740	43.89412	198.40058	4.18794	0.0821978	0.29897764	2.2150162	20	5 15.9	18.1
60530 2000 ED_{48}	14.7	X	107.68804	201.21083	187.65507	10.96016	0.1733322	0.23766618	2.5812166	20	1 25.2	18.3
60531 2000 EF_{50}	15.0	X	114.03118	198.89552	125.21088	11.58895	0.2114770	0.23142594	2.6274111	20	—	—
60532 2000 EX_{50}	14.5	X	304.77821	125.43426	63.62148	28.09453	0.0798109	0.23569519	2.5955869	20	—	—
60533 2000 EC_{55}	14.8	X	146.07725	217.22495	153.59244	8.49096	0.0839307	0.23804261	2.5784947	20	2 6.7	18.5
60534 2000 EB_{56}	16.2	X	290.09440	114.99842	357.31168	5.46375	0.0784640	0.27727691	2.3291292	20	—	—
60535 2000 EM_{56}	15.5	X	133.70473	25.21677	181.22921	1.28448	0.1280101	0.26522093	2.3991875	20	10 11.2	19.0
60536 2000 EE_{58}	16.3	X	231.25020	284.61331	246.16491	1.45692	0.1175184	0.27441410	2.3453002	20	12 14.8	19.1
60537 2000 ED_{59}	16.7	X	198.49575	306.97174	240.47694	1.55959	0.1429646	0.27120147	2.3637853	20	11 21.7	20.0
60538 2000 EX_{60}	14.8	X	201.75217	158.20708	194.31630	4.98322	0.2733393	0.24519270	2.5281200	20	3 13.8	19.3
60539 2000 EB_{61}	14.8	X	320.26163	145.96541	307.29661	1.37610	0.1498487	0.18058715	3.0998796	20	12 21.0	18.2
60540 2000 EZ_{61}	16.4	X	56.75776	276.09854	178.49322	4.92668	0.1197590	0.29072224	2.2567522	20	1 17.2	18.4
60541 2000 EN_{63}	14.6	X	23.93789	318.09253	20.46649	5.09310	0.1660871	0.21875930	2.7278786	20	11 19.9	17.9
60542 2000 EQ_{66}	15.5	X	79.07570	154.25657	116.08683	2.59139	0.1670943	0.26405719	2.4062314	20	11 9.8	19.0
60543 2000 ET_{77}	15.9	X	223.57790	190.25361	72.53157	2.30736	0.1895620	0.28489702	2.2874105	20	—	—
60544 2000 EP_{78}	14.9	X	315.51705	28.26838	98.44525	4.38654	0.0630751	0.23360102	2.6110763	20	—	—
60545 2000 ES_{83}	14.4	X	44.23095	294.59230	113.37649	11.13383	0.0552102	0.18476826	3.0529367	20	—	—
60546 2000 EE_{85}	14.7	X	268.54944	186.67060	286.07576	11.78378	0.1076583	0.22623851	2.6674218	20	11 5.9	18.3
60547 2000 EF_{86}	15.0	X	201.02029	98.75369	141.43793	6.57377	0.1761771	0.27656592	2.3331193	20	—	—
60548 2000 EH_{86}	15.6	X	254.17614	224.16408	215.70546	5.06290	0.1332607	0.26793904	2.3829342	20	9 5.9	18.7
60549 2000 EL_{87}	15.2	X	146.54632	248.83854	336.56494	4.68948	0.1752751	0.26820506	2.3813583	20	11 14.6	19.1
60550 2000 EX_{87}	15.3	X	248.36501	23.91378	144.80640	3.52973	0.1441054	0.22698185	2.6615950	20	12 18.7	18.6
60551 2000 EQ_{88}	14.6	X	77.03629	238.86443	124.91778	10.90510	0.0835339	0.18496482	3.0507735	20	—	—
60552 2000 EO_{89}	15.0	X	260.53275	250.53224	44.14299	2.73426	0.0365158	0.19862206	2.9092725	20	3 18.1	19.1
60553 2000 ED_{91}	14.8	X	59.35399	85.23734	217.44384	5.79633	0.1303025	0.26717964	2.3874474	20	11 25.8	18.1
60554 2000 EZ_{93}	14.8	X	242.70612	281.16995	216.14090	11.90945	0.1307816	0.22372067	2.6873979	20	11 2.1	18.4
60555 2000 EJ_{94}	15.1	X	94.98340	327.55158	277.77038	5.13657	0.0786401	0.26454758	2.4032568	20	10 13.8	18.5
60556 2000 EL_{95}	14.2	X	228.84835	282.95819	340.92485	13.78749	0.0909211	0.23530205	2.5984772	20	—	—
60557 2000 EW_{95}	16.6	X	337.10774	238.51718	43.81023	2.33624	0.1920448	0.29982786	2.2108268	20	5 28.4	18.0
60558 Echeclus	9.5	X	52.49093	162.91199	173.26422	4.34299	0.4570619	0.02814755	10.7030848	20	12 19.9	19.5
60559 2000 EN_{98}	15.3	X	104.63163	126.52445	176.15255	1.03988	0.1419516	0.18058375	3.0999184	20	12 25.2	20.3
60560 2000 EQ_{103}	15.4	X	197.64471	235.84802	4.66069	5.38021	0.1940048	0.27713023	2.3299510	20	—	—

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
	m		°	°	°	°		°				
60561 2000 EX_{104}	16.5	X	301.42434	134.88130	99.29807	6.70992	0.1518728	0.28997685	2.2606179	20	1 22.7	19.3
60562 2000 EH_{106}	14.8	X	173.71254	87.54171	151.69409	12.14466	0.0345491	0.22549744	2.6732627	20	12 29.9	18.7
60563 2000 EF_{107}	16.3	X	355.04015	77.54781	118.21757	4.43101	0.1216580	0.29414562	2.2392081	20	2 23.8	18.2
60564 2000 ER_{108}	16.1	X	262.69498	106.06583	85.38870	6.81840	0.0651103	0.28353162	2.2947483	20	—	—
60565 2000 EB_{109}	14.7	X	26.14556	336.12363	160.40100	7.97730	0.1398958	0.24137137	2.5547332	20	2 1.9	17.2
60566 2000 EH_{109}	14.7	X	190.33467	174.60244	300.39773	11.41007	0.0539470	0.21484671	2.7608973	20	8 8.9	18.8
60567 2000 EL_{110}	14.8	X	58.29995	194.63880	63.21723	10.03808	0.1890907	0.21220126	2.7837960	20	9 30.9	18.8
60568 2000 ED_{111}	15.1	X	256.76752	336.63244	122.15719	9.97286	0.0810407	0.22034852	2.7147465	20	10 13.1	18.8
60569 2000 EH_{112}	15.9	X	303.10675	44.84476	326.15157	2.12897	0.2054230	0.26885447	2.3775220	20	8 6.7	18.0
60570 2000 ET_{113}	14.9	X	91.01432	48.08287	341.88666	3.64484	0.1518381	0.18901894	3.0069936	20	1 13.2	18.8
60571 2000 ER_{116}	15.7	X	81.27781	302.44020	340.01886	2.15228	0.1579986	0.26640941	2.3920468	20	11 25.4	19.3
60572 2000 EB_{117}	14.2	X	171.19612	36.44230	203.55449	12.29696	0.2217468	0.22193034	2.7018315	20	12 15.1	19.0
60573 2000 ED_{118}	14.4	X	324.59039	278.87359	111.27323	15.72791	0.1433234	0.22422361	2.6833778	20	10 26.6	17.6
60574 2000 EK_{119}	13.8	X	140.64385	174.45930	118.39168	19.18590	0.1698447	0.18080892	3.0973443	20	—	—
60575 2000 EY_{121}	14.7	X	163.66058	242.89139	46.01373	3.30132	0.1635383	0.23265098	2.6181797	20	—	—
60576 2000 EJ_{122}	14.6	X	205.06163	210.00333	116.55853	3.16094	0.1045990	0.19565594	2.9386014	20	2 21.2	19.1
60577 2000 EW_{122}	14.5	X	101.63868	105.24158	169.47311	8.56227	0.1532008	0.17181645	3.2044947	20	11 21.6	19.6
60578 2000 ED_{123}	15.0	X	17.00437	95.12210	37.67228	14.44353	0.1457544	0.24120646	2.5558975	20	1 13.6	17.9
60579 2000 EK_{127}	14.6	X	316.88957	232.52812	104.19513	5.85398	0.0879764	0.21056832	2.7981696	20	7 21.3	17.8
60580 2000 ER_{127}	16.1	X	219.88066	23.25769	146.21743	7.79645	0.1324910	0.27307771	2.3529456	20	11 27.2	19.2
60581 2000 EE_{128}	14.7	X	314.09149	302.43238	60.07611	3.52359	0.0653980	0.21421015	2.7663642	20	8 25.9	18.1
60582 2000 EB_{130}	16.1	X	271.21915	209.03123	45.56053	3.70194	0.1316304	0.28941921	2.2635207	20	1 17.8	19.3
60583 2000 EQ_{132}	16.5	X	317.91282	229.31197	2.26863	3.69191	0.0819386	0.29348871	2.2425482	20	2 21.3	18.8
60584 2000 EW_{132}	14.5	X	134.96282	340.05993	2.99662	8.88142	0.1924874	0.23484082	2.6018784	20	1 6.4	18.4
60585 2000 EZ_{132}	16.7	X	157.93896	281.66879	164.91483	1.88726	0.0542934	0.30269062	2.1968652	20	5 27.1	19.4
60586 2000 EZ_{136}	15.3	X	62.90758	3.59098	115.50381	3.30182	0.1034123	0.24536274	2.5269519	20	3 13.2	18.1
60587 2000 EL_{139}	15.3	X	354.65093	190.02304	187.67649	6.41643	0.3165566	0.22419310	2.6836213	20	12 21.6	17.9
60588 2000 EQ_{139}	14.7	X	47.34731	195.24428	57.46848	7.05864	0.1093798	0.25790061	2.4443748	20	9 1.8	17.7
60589 2000 EU_{139}	14.1	X	235.61732	324.57954	165.52922	25.90219	0.1361785	0.17252339	3.1957347	20	10 9.5	19.0
60590 2000 EE_{140}	14.5	X	327.21267	260.57576	109.15440	9.16608	0.0312909	0.21695668	2.7429677	20	9 29.5	18.2
60591 2000 EV_{141}	15.6	X	253.63890	71.39240	91.28741	8.89039	0.2016704	0.27595852	2.3365416	20	12 24.9	17.9
60592 2000 EE_{146}	15.2	X	4.25143	274.83485	94.31252	6.98260	0.0285983	0.22611497	2.6683932	20	11 17.8	18.6
60593 2000 EN_{146}	16.3	X	323.98815	128.93610	87.65055	5.25909	0.1235532	0.29415880	2.2391412	20	2 2.4	18.7
60594 2000 ER_{147}	15.3	X	358.80152	237.00962	221.87325	2.78993	0.1726465	0.23387733	2.6090193	20	—	—
60595 2000 EN_{150}	13.9	X	190.15387	69.62275	280.47597	11.98157	0.2002082	0.24428051	2.5344098	20	2 25.9	18.4
60596 2000 EZ_{150}	15.6	X	239.43017	208.89238	245.22822	1.71428	0.1402324	0.26671619	2.3902122	20	9 5.7	18.8
60597 2000 EJ_{154}	14.4	X	222.70742	60.01529	195.89648	11.77816	0.2019449	0.23233477	2.6205548	20	—	—
60598 2000 EX_{154}	14.6	X	327.90965	78.01515	55.87887	15.75182	0.0528725	0.23243389	2.6198097	20	—	—
60599 2000 EY_{154}	15.1	X	227.79388	72.54637	125.46777	11.15408	0.0870237	0.22670912	2.6637291	20	—	—
60600 2000 EG_{157}	15.0	X	303.82939	110.45308	120.09773	13.98943	0.1376546	0.23997298	2.5646483	20	1 30.6	18.5
60601 2000 EQ_{157}	15.2	X	112.01563	238.05310	276.57196	7.46222	0.1008271	0.25581499	2.4576426	20	7 7.1	18.6
60602 2000 EV_{161}	14.9	X	5.36972	244.64628	159.24240	15.16237	0.1388741	0.22942240	2.6426857	20	—	—
60603 2000 EF_{163}	15.9	X	83.80130	320.83976	322.66396	4.10057	0.2055356	0.26713198	2.3877314	20	12 2.8	19.7
60604 2000 EP_{164}	15.6	X	315.58526	207.63062	185.10022	6.64242	0.1103961	0.26862923	2.3788508	20	10 18.2	17.7
60605 2000 EZ_{167}	14.0	X	90.53948	207.13458	85.69880	10.60162	0.0622192	0.17522279	3.1628286	20	11 23.6	18.7
60606 2000 EC_{171}	14.5	X	355.53004	263.62587	118.20609	11.82956	0.0320182	0.22285668	2.6943392	20	11 23.7	18.2
60607 2000 EA_{172}	15.3	X	209.59052	332.07158	247.92238	3.90668	0.1330677	0.27683572	2.3316031	20	—	—
60608 2000 EE_{173}	8.5	X	13.58909	235.69403	294.21592	5.94691	0.5415577	0.00284160	49.3659083	20	4 27.4	22.6
60609 Kerryprice	14.9	X	277.51510	27.90195	133.57653	14.32388	0.0581954	0.23226206	2.6211017	20	—	—
60610 2000 EB_{181}	15.2	X	53.89632	294.93126	108.87526	12.74658	0.2454760	0.23897566	2.5717787	20	—	—
60611 2000 ED_{185}	14.3	X	163.91595	221.98177	64.64892	12.35710	0.0711276	0.18202793	3.0835005	20	—	—
60612 2000 EE_{190}	15.2	X	45.23144	186.17923	159.27027	11.11046	0.0829488	0.17643325	3.1483458	20	12 6.9	19.8
60613 2000 EO_{196}	15.6	X	309.07819	247.43932	181.04020	11.37174	0.1716016	0.22544898	2.6736458	20	11 13.3	18.4
60614 Tomshea	14.6	X	57.38254	3.94408	305.97096	5.96805	0.0988521	0.21963505	2.7206225	20	11 16.5	18.5
60615 2000 EV_{205}	14.6	X	177.43827	306.44130	47.53937	4.11943	0.2324774	0.24106706	2.5568827	20	2 29.1	19.0
60616 2000 FH_{1}	13.5	X	143.91970	272.65749	34.54780	16.03131	0.2672707	0.18013470	3.1050681	20	—	—
60617 2000 FM_{3}	16.0	X	319.74763	197.18269	74.40081	9.11560	0.2285122	0.29673839	2.2261456	20	4 1.9	18.3
60618 2000 FP_{3}	15.5	X	192.75028	45.25629	126.48138	7.06909	0.0619821	0.26923687	2.3752702	20	11 6.3	18.8
60619 2000 FZ_{4}	16.1	X	213.83981	316.05610	43.82449	0.93126	0.1276714	0.24662324	2.5183343	20	4 5.4	19.9
60620 2000 FD_{8}	6.6	X	328.36648	81.26708	184.86009	19.52019	0.2255582	0.00338217	43.9547582	20	4 28.9	22.2
60621 2000 FE_{8}	6.9	X	33.22560	143.69144	3.99389	5.87984	0.4008846	0.00239073	55.3923035	20	4 28.7	23.1
60622 Pritchet	16.5	X	336.22842	81.61456	115.29212	3.70815	0.0631212	0.29119182	2.2543254	20	2 2.0	18.7
60623 2000 FW_{13}	15.2	X	79.43631	185.01924	66.18627	8.73125	0.0690474	0.26518942	2.3993775	20	10 8.6	18.5
60624 2000 FT_{14}	16.5	X	134.12636	320.94062	175.15383	22.55258	0.0702948	0.35362645	1.9804911	20	7 8.9	19.5
60625 2000 FA_{17}	13.7	X	18.41441	151.38365	149.93154	11.79783	0.1844851	0.21183251	2.7870257	20	9 27.4	16.9
60626 2000 FU_{21}	15.1	X	184.62757	232.74844	106.85573	7.54600	0.2307009	0.28831690	2.2692864	20	2 13.3	18.8
60627 2000 FJ_{23}	15.6	X	152.00389	162.32189	122.55692	10.53325	0.2116277	0.27424262	2.3462777	20	—	—
60628 2000 FX_{24}	14.9	X	217.75891	184.96629	75.98241	10.18287	0.1974918	0.28048337	2.3113443	20	—	—
60629 2000 FX_{25}	15.9	X	304.90799	38.48909	160.13340	7.03209	0.0465188	0.28651941	2.2787675	20	—	—
60630 2000 FY_{25}	15.5	X	90.76857	199.20574	112.17570	4.00176	0.0958262	0.27153002	2.3618781	20	—	—
60631 2000 FC_{26}	14.6	X	112.03944	245.20726	25.95499	10.52762	0.1176958	0.22027238	2.7153721	20	11 29.3	18.9
60632 2000 FE_{27}	15.9	X	353.66437	295.55447	171.75428	6.80390	0.0626216	0.28175876	2.3043641	20	—	—
60633 2000 FF_{27}	16.3	X	335.06554	105.69137	22.05687	7.16179	0.0468725	0.28165231	2.3049447	20	—	—
60634 2000 FW_{27}	15.8	X	239.87488	223.40898	220.78822	5.34287	0.0971181	0.26378977	2.4078573	20	8 28.1	19.1
60635 2000 FD_{30}	15.0	X	179.37855	304.21361	47.71525	3.00194	0.1354846	0.24048102	2.5610350	20	2 24.0	18.9
60636 2000 FH_{30}	14.2	X	139.19102	164.95002	181.06018	15.32743	0.1474818	0.23372672	2.6101400	20	1 6.5	18.3
60637 2000 FX_{30}	16.2	X	71.24849	20.65094	107.17473	3.77875	0.1056236	0.29750859	2.2223018	20	4 3.8	18.4
60638 2000 FF_{31}	14.1	X	248.01030	115.71136	93.25062	10.15408	0.0884852	0.18412168	3.0600799	20	—	—
60639 2000 FW_{31}	15.5	X	26.57089	199.83812	87.92457	9.34297	0.1867543	0.25945849	2.4345804	20	10 4.8	18.3
60640 2000 FE_{34}	15.0	X	92.11336	228.96752	79.66034	3.61097	0.0489748	0.22339020	2.6900476	20	12 21.8	18.8

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
	m		°	°	°	°		°				
60641 2000 FP_{35}	14.6	X	105.58634	172.92184	126.03453	4.97527	0.1296630	0.22231138	2.6987433	20	12 29.2	18.7
60642 2000 FP_{37}	15.1	X	52.79908	220.97815	70.35367	5.87850	0.2080903	0.26164762	2.4209818	20	11 12.9	18.4
60643 2000 FU_{37}	15.7	X	150.89316	130.55687	57.83337	7.18332	0.1987613	0.26458756	2.4030147	20	10 7.4	19.7
60644 2000 FY_{37}	14.9	X	202.27744	94.31069	49.26507	9.92612	0.1186324	0.21758583	2.7376776	20	9 29.5	19.1
60645 2000 FU_{38}	15.3	X	131.61739	180.83142	67.51513	3.26363	0.1582335	0.26761525	2.3848559	20	12 1.0	19.0
60646 2000 FJ_{39}	14.2	X	273.99600	120.06450	113.56542	3.00107	0.0401484	0.18826678	3.0149972	20	1 19.4	18.5
60647 2000 FA_{40}	15.7	X	129.01510	190.72846	79.31082	4.83839	0.1769935	0.26946364	2.3739374	20	12 25.3	19.6
60648 2000 FY_{40}	14.8	X	64.10959	145.01648	98.54910	5.12492	0.0479636	0.20998515	2.8033479	20	8 25.9	18.6
60649 2000 FZ_{41}	15.2	X	299.80583	207.52433	39.02987	6.73459	0.0517846	0.24252222	2.5466447	20	3 1.5	18.6
60650 2000 FF_{42}	15.0	X	299.28418	311.94254	154.60097	4.76998	0.1764127	0.22659774	2.6646019	20	12 16.1	17.7
60651 2000 FU_{42}	15.7	X	135.68473	121.98287	61.47733	3.07335	0.1485280	0.26293975	2.4130439	20	9 15.3	19.4
60652 2000 FG_{43}	15.7	X	105.30732	182.89292	79.92959	3.77421	0.1672322	0.26649555	2.3915313	20	11 25.4	19.5
60653 2000 FA_{45}	16.0	X	198.98634	161.37711	95.88828	6.05476	0.0500611	0.28002943	2.3138414	20	—	—
60654 2000 FP_{45}	14.7	X	240.72594	123.62888	148.05028	7.87986	0.1769660	0.23631566	2.5910415	20	1 12.1	18.9
60655 2000 FV_{45}	14.6	X	72.92568	208.68591	54.85487	10.00124	0.1152510	0.21383232	2.7696219	20	10 14.0	18.6
60656 2000 FF_{47}	14.5	X	204.73006	171.08108	154.20190	14.49975	0.0765155	0.24005253	2.5640817	20	2 13.3	18.2
60657 2000 FT_{47}	14.2	X	303.80060	244.77713	154.88414	13.13156	0.0326004	0.21574574	2.7532220	20	10 4.3	17.9
60658 2000 FG_{48}	15.4	X	204.31537	347.69405	124.01275	2.05687	0.1411295	0.26253976	2.4154942	20	8 20.2	18.8
60659 2000 FX_{49}	15.9	X	53.90124	359.73824	244.12551	6.01721	0.1530591	0.30446759	2.1883091	20	9 4.7	18.5
60660 2000 FL_{50}	15.8	X	41.47973	52.95118	270.96130	1.70763	0.1735071	0.31479623	2.1401771	20	12 18.5	18.3
60661 2000 FF_{57}	14.6	X	201.31975	293.49723	92.78724	3.21910	0.0892930	0.20292709	2.8679794	20	4 29.9	19.0
60662 2000 FX_{61}	16.0	X	67.08866	69.49286	66.78150	5.23903	0.0465755	0.24774167	2.5107492	20	4 5.5	19.1
60663 2000 FZ_{65}	16.1	X	275.27962	159.94413	156.65157	5.34472	0.2315061	0.29491631	2.2353053	20	4 1.2	19.1
60664 2000 FX_{72}	14.4	X	75.95686	51.43048	173.43503	9.38334	0.1215674	0.21431231	2.7654850	20	8 24.8	18.3
60665 2000 FL_{73}	15.4	X	300.80506	359.19118	338.08965	1.88608	0.2005616	0.25623090	2.4549824	20	6 9.2	18.2
60666 2000 FT_{73}	15.5	X	180.58647	331.67785	123.44318	13.91149	0.1608922	0.26018074	2.4300728	20	7 3.9	19.4
60667 2000 GQ_{1}	16.6	X	66.34025	137.18112	15.64288	2.15847	0.1257380	0.29633286	2.2281761	20	5 4.5	18.7
60668 2000 GJ_{3}	14.9	X	31.69692	28.76145	16.02489	23.58418	0.2073810	0.27845506	2.3225548	20	—	—
60669 Georgpick	15.3	X	320.66354	219.85892	100.29540	7.68746	0.1994811	0.30050179	2.2075201	20	6 24.4	16.7
60670 2000 GX_{5}	16.2	X	252.54153	34.96934	228.46602	2.73756	0.1295797	0.28744203	2.2738887	20	1 8.8	19.6
60671 2000 GP_{9}	14.6	X	41.06704	123.68876	173.86649	11.47459	0.1398292	0.21548241	2.7554646	20	10 20.2	18.2
60672 2000 GE_{10}	15.6	X	253.03318	31.63099	68.53734	1.45908	0.1183524	0.22076704	2.7113145	20	9 30.1	19.1
60673 2000 GH_{10}	15.2	X	274.81865	285.70303	171.09998	6.33197	0.0516335	0.22223897	2.6993295	20	11 5.8	18.7
60674 2000 GN_{10}	14.9	X	237.07268	19.97829	173.65812	6.32750	0.1104666	0.18000435	3.1065669	20	12 27.3	19.3
60675 2000 GA_{12}	15.9	X	177.77719	102.03046	317.58344	1.57791	0.1672142	0.25369251	2.4713312	20	5 15.4	19.8
60676 2000 GQ_{14}	15.4	X	123.43852	138.80552	151.42395	1.36986	0.0900848	0.22461287	2.6802766	20	—	—
60677 2000 GO_{18}	15.9	X	94.58469	78.02390	218.48640	1.43707	0.2152039	0.26820208	2.3813759	20	12 28.9	19.7
60678 2000 GA_{23}	15.6	X	23.58372	26.85390	41.10240	2.65569	0.2029529	0.23338776	2.6126667	20	—	—
60679 2000 GE_{24}	14.7	X	186.02967	25.98856	356.63501	1.39957	0.1220455	0.19804119	2.9149584	20	4 8.6	19.4
60680 2000 GW_{27}	15.1	X	178.93459	300.30311	31.30695	3.86259	0.2026219	0.23566600	2.5958012	20	2 2.6	19.4
60681 2000 GE_{31}	16.0	X	347.74975	295.51818	25.25797	4.95898	0.2238779	0.30539332	2.1838846	20	9 18.9	16.9
60682 2000 GU_{31}	14.5	X	67.87662	189.40258	141.88739	1.90496	0.1566852	0.17151848	3.2082050	20	12 22.6	19.3
60683 2000 GL_{33}	16.1	X	119.82834	11.94604	202.40923	7.12993	0.1319852	0.31159095	2.1548291	20	10 13.5	19.1
60684 2000 GA_{34}	16.0	X	157.27764	113.15415	202.65065	5.63503	0.1592100	0.27958055	2.3163174	20	—	—
60685 2000 GP_{34}	16.6	X	198.29541	86.54962	197.58079	6.32947	0.1424648	0.28094804	2.3087950	20	—	—
60686 2000 GN_{35}	14.8	X	97.33045	154.86649	204.33572	14.08404	0.1296235	0.22971368	2.6404512	20	—	—
60687 2000 GS_{35}	15.3	X	347.15201	216.74369	214.61722	5.21851	0.1705983	0.22766774	2.6562466	20	—	—
60688 2000 GY_{35}	14.7	X	132.14470	153.83091	252.82753	1.18851	0.1095997	0.19373638	2.9579802	20	3 14.1	19.0
60689 2000 GG_{37}	15.9	X	55.33863	159.35214	130.76266	8.43630	0.2620580	0.30949306	2.1645557	20	11 29.7	19.2
60690 2000 GD_{38}	15.8	X	298.71925	56.50712	189.65198	7.00963	0.1128599	0.29049163	2.2579464	20	2 7.3	18.7
60691 2000 GJ_{38}	14.7	X	197.98954	136.62722	25.33616	12.40468	0.0594131	0.16940010	3.2348957	20	10 12.4	19.4
60692 2000 GC_{40}	15.6	X	19.90323	140.52076	33.32820	1.04138	0.0589307	0.29315356	2.2442571	20	3 9.8	17.9
60693 2000 GX_{40}	14.7	X	167.98030	26.52442	13.13543	1.41533	0.0848220	0.19735123	2.9217485	20	4 10.6	19.2
60694 2000 GG_{41}	15.3	X	50.77399	243.76901	203.49787	4.88068	0.2509783	0.23993459	2.5649219	20	1 19.1	17.3
60695 2000 GM_{42}	15.5	X	294.11130	352.99996	11.19787	8.45642	0.1994935	0.30539148	2.1838934	20	7 15.1	17.6
60696 2000 GQ_{43}	14.5	X	155.72343	285.60678	38.62198	3.41758	0.1594551	0.23126496	2.6286302	20	—	—
60697 2000 GG_{45}	15.7	X	244.41965	61.49017	34.83224	6.25603	0.2468980	0.26760327	2.3849271	20	9 3.8	19.0
60698 2000 GB_{46}	15.7	X	327.38803	243.26945	182.15606	2.87097	0.1602291	0.22361157	2.6882720	20	12 13.1	18.4
60699 2000 GN_{47}	15.7	X	335.24481	263.43340	207.23726	8.39473	0.1631290	0.23124073	2.6288138	20	—	—
60700 2000 GL_{50}	15.8	X	301.59644	36.75800	98.69829	0.87972	0.1474584	0.27864628	2.3214921	20	—	—
60701 2000 GQ_{51}	15.2	X	121.59114	185.19730	150.14889	2.43502	0.0905108	0.22897514	2.6461259	20	—	—
60702 2000 GU_{52}	14.1	X	356.22795	29.73219	19.32810	12.21592	0.0759162	0.17448901	3.1716895	20	12 15.6	18.5
60703 2000 GU_{53}	14.9	X	250.85899	102.57609	194.76801	9.89160	0.0248711	0.19316674	2.9637927	20	3 8.8	19.2
60704 2000 GK_{55}	14.6	X	349.56201	311.65777	32.12523	16.20255	0.2500748	0.21008000	2.8025040	20	10 8.7	17.0
60705 2000 GU_{55}	14.7	X	239.55675	212.32869	39.93336	4.61268	0.1687009	0.23287701	2.6164854	20	—	—
60706 2000 GB_{56}	14.8	X	38.68411	146.06242	74.39385	3.22342	0.0688890	0.20267664	2.8703416	20	6 20.0	18.3
60707 2000 GP_{56}	14.8	X	23.48295	322.78529	174.02738	1.70702	0.0485968	0.19012248	2.9953465	20	2 8.4	18.8
60708 2000 GC_{57}	15.0	X	126.74686	309.57957	10.66296	2.07855	0.0877667	0.22702509	2.6612569	20	—	—
60709 2000 GN_{57}	15.7	X	166.11607	303.27666	24.84908	7.13534	0.1476574	0.28171671	2.3045934	20	1 7.9	19.1
60710 2000 GU_{57}	16.3	X	13.03908	325.03013	328.48671	1.39967	0.1417416	0.30512632	2.1851584	20	9 14.6	18.1
60711 2000 GS_{59}	14.8	X	99.18975	272.40396	48.05744	2.87058	0.0698707	0.22359180	2.6884304	20	—	—
60712 2000 GM_{60}	13.9	X	0.39297	51.26638	27.21535	17.14889	0.1101710	0.17952814	3.1120581	20	—	—
60713 2000 GK_{61}	16.5	X	287.02788	169.41622	187.93606	1.91805	0.1528442	0.30352266	2.1928485	20	6 26.9	18.7
60714 2000 GN_{62}	16.4	X	236.83989	80.46882	236.38212	1.06402	0.2617989	0.28808654	2.2704960	20	2 23.5	20.2
60715 2000 GX_{64}	16.5	X	316.23326	104.33931	40.91541	3.99002	0.0998922	0.28058883	2.3107651	20	—	—
60716 2000 GD_{65}	15.6	X	128.85332	162.40225	42.06821	3.17417	0.1042232	0.26197535	2.4189623	20	10 3.3	19.1
60717 2000 GZ_{66}	16.5	X	37.27406	225.98091	18.47449	6.75559	0.1065105	0.30264778	2.1970725	20	8 8.2	18.8
60718 2000 GN_{69}	16.1	X	109.18801	87.75056	57.29876	0.76037	0.1143959	0.25220395	2.4810459	20	6 22.2	19.4
60719 2000 GQ_{69}	16.9	X	148.08335	171.04739	46.66735	0.46033	0.1139962	0.31488470	2.1397761	20	11 17.3	19.5
60720 2000 GC_{72}	16.3	X	181.04199	164.91846	64.66726	3.27183	0.1742563	0.27111540	2.3642855	20	12 23.4	19.8

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
	m		°	°	°	°		°				
60721 2000 GA_{73}	13.8	X	80.16076	69.73009	204.21771	9.04118	0.1640923	0.21319843	2.7751090	20	11 6.7	18.1
60722 2000 GE_{73}	15.0	X	194.50598	21.79985	209.67617	12.95544	0.1307497	0.22440456	2.6819351	20	—	—
60723 2000 GU_{73}	16.4	X	344.05265	260.96601	14.19027	4.32724	0.1786051	0.29784310	2.2206376	20	6 3.4	17.8
60724 2000 GE_{74}	16.7	X	42.38661	326.25047	206.07783	5.52848	0.0847309	0.29490786	2.2353480	20	4 16.7	18.8
60725 2000 GH_{74}	14.5	X	305.83669	303.01509	209.65435	4.27172	0.1106014	0.18132736	3.0914377	20	—	—
60726 2000 GE_{75}	15.7	X	176.89708	136.39336	197.21060	6.28571	0.1351884	0.28326125	2.2962082	20	1 22.0	19.1
60727 2000 GO_{75}	15.6	X	289.01650	264.77828	44.24542	5.09349	0.1675570	0.29455792	2.2371181	20	4 16.2	18.2
60728 2000 GS_{76}	15.9	X	284.74685	97.86365	215.53166	7.29880	0.2029003	0.29384720	2.2407239	20	4 9.4	18.9
60729 2000 GZ_{78}	16.1	X	87.73633	14.57896	47.22192	7.95924	0.0954921	0.28611341	2.2809227	20	1 24.9	18.6
60730 2000 GC_{79}	16.3	X	117.79535	82.43577	167.74199	0.60279	0.1327970	0.26483660	2.4015080	20	11 19.7	19.8
60731 2000 GQ_{79}	15.9	X	269.12054	118.67294	211.59123	6.78799	0.2038296	0.29417771	2.2390453	20	4 14.4	18.9
60732 2000 GK_{80}	14.1	X	332.49557	49.00014	40.73187	0.65118	0.1463835	0.18014889	3.1049051	20	—	—
60733 2000 GL_{80}	15.3	X	208.11294	299.45834	35.48526	12.30818	0.3001132	0.28823062	2.2697393	20	3 1.5	19.6
60734 2000 GT_{80}	16.5	X	102.79031	38.33957	202.27926	2.26621	0.0681568	0.31244194	2.1509146	20	10 27.1	19.3
60735 2000 GF_{82}	14.9	X	151.98881	277.59084	33.64129	21.73192	0.3298521	0.27442705	2.3452264	20	—	—
60736 2000 GJ_{82}	15.3	X	77.66656	165.91377	110.05589	2.73059	0.1654904	0.26197125	2.4189875	20	11 14.9	18.9
60737 2000 GB_{87}	14.8	X	67.04798	279.25480	169.90662	10.08493	0.1116032	0.24067147	2.5596837	20	2 5.9	17.8
60738 2000 GK_{87}	14.8	X	155.93491	128.59311	131.30186	4.03385	0.1343826	0.22334959	2.6903737	20	12 29.5	19.0
60739 2000 GR_{87}	14.6	X	181.30644	229.70931	64.33812	10.35689	0.0562145	0.18312122	3.0712153	20	—	—
60740 2000 GU_{89}	15.2	X	47.60427	256.51872	139.60240	4.30889	0.1164960	0.23002561	2.6380636	20	—	—
60741 2000 GY_{90}	14.7	X	163.83330	234.46416	100.49131	8.16465	0.1223428	0.23378265	2.6097237	20	1 18.0	18.6
60742 2000 GY_{91}	13.4	X	113.51970	123.23050	180.10210	16.58062	0.2029142	0.22043434	2.7140419	20	—	—
60743 2000 GU_{92}	14.9	X	198.61083	135.49002	101.65592	3.91693	0.0530910	0.22937206	2.6430723	20	—	—
60744 2000 GB_{93}	15.0	X	140.54788	231.68034	106.89252	7.61614	0.2378634	0.28095330	2.3087662	20	1 3.6	18.1
60745 2000 GQ_{93}	14.4	X	192.94801	60.20672	63.92154	15.38400	0.1367020	0.21351013	2.7724075	20	8 27.9	19.1
60746 2000 GA_{95}	15.5	X	358.94451	22.69545	323.04658	3.87693	0.1065332	0.31141861	2.1556240	20	11 4.7	17.6
60747 2000 GW_{95}	15.7	X	341.82857	268.86053	353.40150	4.32556	0.1406983	0.29649161	2.2273807	20	5 8.9	17.6
60748 2000 GC_{96}	14.1	X	300.65568	356.14067	231.85519	7.82070	0.0865594	0.23806165	2.5783573	20	1 27.9	17.7
60749 2000 GF_{96}	15.3	X	209.41304	40.19332	230.48896	7.23380	0.1557697	0.27878582	2.3207174	20	—	—
60750 2000 GQ_{98}	15.5	X	224.30406	156.67595	343.92687	6.32647	0.1153179	0.26891649	2.3771564	20	10 22.2	18.7
60751 2000 GU_{98}	15.0	X	216.61727	0.83280	207.06064	11.44941	0.1279444	0.22638214	2.6662934	20	12 28.8	18.9
60752 2000 GM_{99}	15.7	X	296.08737	251.42368	277.16718	2.96793	0.1714081	0.28184612	2.3038879	20	—	—
60753 2000 GA_{101}	15.8	X	207.84474	308.09066	326.19188	4.09307	0.1358221	0.28226424	2.3016122	20	—	—
60754 2000 GH_{101}	15.3	X	116.80686	266.69016	339.17921	7.36655	0.0808648	0.26687146	2.3892850	20	11 8.8	18.8
60755 2000 GU_{101}	14.3	X	70.96620	101.57936	345.04130	9.15934	0.0704265	0.19215312	2.9742063	20	2 14.7	18.2
60756 2000 GM_{104}	16.2	X	19.08903	356.01052	182.11333	6.83431	0.0483585	0.29299740	2.2450544	20	3 14.0	18.4
60757 2000 GK_{107}	15.2	X	1.36178	271.19497	71.08199	5.20214	0.1696421	0.30927389	2.1655782	20	11 16.3	17.1
60758 2000 GP_{108}	14.9	X	325.01321	188.30252	149.35576	6.13903	0.1985988	0.30320563	2.1943768	20	8 8.7	16.2
60759 2000 GA_{112}	14.7	X	34.31467	55.49971	188.02616	15.05534	0.0982298	0.20533721	2.8454936	20	7 16.2	18.6
60760 2000 GC_{113}	14.3	X	257.62956	318.77235	170.98361	13.35164	0.0596690	0.17488435	3.1669078	20	11 14.6	18.9
60761 2000 GK_{113}	15.9	X	116.65642	332.03772	317.04595	6.92014	0.1076802	0.27112890	2.3642070	20	—	—
60762 2000 GA_{115}	15.2	X	349.62412	246.20705	56.18548	3.04434	0.1899971	0.25643450	2.4536828	20	8 5.5	17.0
60763 2000 GN_{118}	17.0	X	162.59527	228.68187	269.27318	1.32842	0.0487944	0.30983495	2.1629631	20	8 16.2	19.7
60764 2000 GV_{122}	13.8	X	276.76490	79.94609	185.78746	10.87276	0.1667861	0.23851338	2.5751007	20	2 6.3	17.8
60765 2000 GE_{124}	15.6	X	131.68713	144.25450	141.85487	6.27831	0.1868436	0.26979905	2.3719695	20	—	—
60766 2000 GU_{124}	13.8	X	281.56507	3.23054	177.07036	13.28489	0.1067242	0.22987321	2.6392294	20	—	—
60767 2000 GU_{133}	15.1	X	329.89815	84.83283	56.75775	22.12061	0.2067173	0.28228949	2.3014749	20	—	—
60768 2000 GY_{136}	14.7	X	236.76307	310.82851	179.24211	8.81453	0.1044520	0.21750946	2.7383184	20	10 20.5	18.4
60769 2000 GF_{143}	15.7	X	20.74102	146.60923	146.08642	7.45722	0.1925373	0.25586467	2.4573244	20	9 29.0	18.3
60770 2000 GL_{143}	14.6	X	228.06806	104.80632	188.44474	20.88716	0.1609571	0.28480434	2.2879067	20	1 18.9	18.7
60771 2000 GS_{154}	15.4	X	92.75659	290.70283	284.30684	4.65488	0.0563147	0.25969224	2.4331193	20	8 28.1	18.7
60772 2000 GY_{155}	15.2	X	146.36659	174.69683	146.81730	2.85717	0.0328963	0.23185494	2.6241691	20	—	—
60773 2000 GD_{158}	14.4	X	158.89528	214.35426	107.96491	4.25689	0.1552673	0.18482252	3.0523391	20	1 7.2	19.2
60774 2000 GW_{159}	15.1	X	239.53927	197.02164	350.14358	10.94181	0.0660953	0.22693613	2.6619524	20	—	—
60775 2000 GG_{160}	14.0	X	46.21929	138.91077	296.70839	9.46213	0.1046903	0.18810932	3.0166795	20	—	—
60776 2000 GP_{160}	15.4	X	340.85812	336.46649	159.92913	3.84904	0.1197368	0.23479035	2.6022513	20	—	—
60777 2000 GS_{162}	14.5	X	28.22018	256.43553	149.04112	11.76871	0.1925157	0.22901431	2.6458241	20	—	—
60778 2000 GU_{162}	16.1	X	114.43348	120.50092	81.26555	3.46256	0.1179725	0.26006975	2.4307641	20	9 15.8	19.7
60779 2000 GY_{162}	14.6	X	160.97117	222.68347	81.01249	8.34296	0.1105970	0.22870906	2.6481778	20	—	—
60780 2000 GA_{164}	15.3	X	147.36273	118.89851	133.78736	6.99257	0.0922272	0.26838200	2.3803115	20	12 23.6	18.8
60781 2000 GD_{164}	15.1	X	232.53942	1.90316	183.75949	13.08301	0.1186272	0.22369938	2.6875684	20	12 22.0	19.0
60782 2000 GJ_{166}	15.8	X	320.95398	300.01583	70.25217	1.45511	0.0833459	0.21257426	2.7805386	20	9 13.9	19.1
60783 2000 GB_{171}	16.2	X	168.12457	144.05651	152.12805	3.65894	0.0514066	0.28002571	2.3138620	20	—	—
60784 2000 GC_{178}	15.6	X	314.85620	359.08823	260.09422	4.73709	0.1579736	0.29571300	2.2312887	20	3 10.4	18.2
60785 2000 GT_{179}	15.5	X	284.46334	235.22871	103.15825	5.50652	0.1884358	0.29853582	2.2172011	20	5 19.6	18.1
60786 2000 GP_{182}	15.7	X	181.30558	236.63569	116.71028	7.42886	0.1378166	0.28556464	2.2838440	20	2 23.9	19.0
60787 2000 GW_{183}	15.3	X	304.44648	21.20794	85.27728	15.10918	0.0609968	0.22528762	2.6749223	20	12 28.9	18.5
60788 2000 HW	16.3	X	198.31154	105.08351	296.22304	0.83034	0.1735855	0.29764484	2.2216236	20	5 10.3	19.8
60789 2000 HW_1	15.6	X	148.00713	97.62870	183.77165	6.15527	0.1023186	0.27140844	2.3625834	20	—	—
60790 2000 HD_4	15.5	X	178.57539	334.87450	210.29258	2.01634	0.1013034	0.26546096	2.3977410	20	10 31.0	18.8
60791 2000 HM_6	15.9	X	178.16975	143.49798	237.11157	2.22975	0.1879817	0.28983677	2.2613462	20	3 25.6	19.4
60792 2000 HS_6	15.0	X	64.96600	29.80326	8.89637	0.47202	0.1680995	0.17958274	3.1114273	20	—	—
60793 2000 HQ_7	14.6	X	288.95856	334.81708	74.40570	8.79490	0.1133805	0.21417460	2.7666703	20	9 17.8	18.2
60794 2000 HR_7	14.7	X	221.35340	93.32103	201.20798	1.31104	0.0693534	0.18719120	3.0265354	20	1 31.3	19.4
60795 2000 HO_8	16.7	X	16.19408	2.39695	199.13665	2.25641	0.0930646	0.29462288	2.2367893	20	4 14.3	18.5
60796 2000 HB_9	15.6	X	129.41561	128.32522	187.16527	2.79422	0.2563058	0.27195251	2.3594313	20	—	—
60797 2000 HR_{10}	15.9	X	18.49343	265.41611	54.78679	3.15441	0.1949290	0.30692181	2.1766280	20	11 14.7	18.1
60798 2000 HV_{10}	15.4	X	80.59236	218.67874	225.03650	4.20275	0.0936955	0.28693756	2.2765531	20	2 9.1	17.9
60799 2000 HV_{11}	15.4	X	314.93415	323.61548	229.24923	2.39172	0.0549419	0.23603728	2.5930784	20	1 8.5	18.8
60800 2000 HJ_{12}	16.6	X	66.01292	267.23553	43.29255	0.95178	0.1944139	0.31268613	2.1497946	20	12 28.3	19.6

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
	m		°	°	°	°		°				
60801 2000 HA_{15}	15.1	X	18.20192	262.91154	80.24264	6.72685	0.2063042	0.26318185	2.4115638	20	12 6.9	18.0
60802 2000 HK_{15}	14.7	X	217.11503	143.58108	210.58708	11.05089	0.3018053	0.24052901	2.5606943	20	3 24.9	19.4
60803 2000 HF_{18}	15.1	X	12.37388	37.04478	40.25232	3.64438	0.1563039	0.22906796	2.6454110	20	—	—
60804 2000 HD_{23}	16.7	X	39.46251	172.86511	66.36806	5.49679	0.0700466	0.30232309	2.1986453	20	7 26.7	19.0
60805 2000 HS_{23}	15.2	X	215.24492	230.67835	76.27955	8.23023	0.2292560	0.28205531	2.3027486	20	1 29.6	19.2
60806 2000 HT_{25}	15.5	X	330.84768	123.16565	218.26849	3.93679	0.1729994	0.30448037	2.1882479	20	9 1.4	16.8
60807 2000 HN_{26}	14.7	X	321.22321	326.94969	47.64851	5.60749	0.1045727	0.21172780	2.7879445	20	9 21.1	17.9
60808 2000 HQ_{26}	14.6	X	126.05081	71.94291	195.55045	3.75357	0.1014564	0.16966569	3.2315189	20	12 1.3	19.6
60809 2000 HG_{28}	14.8	X	209.81368	177.81600	64.70406	25.07133	0.2017046	0.27535268	2.3399676	20	—	—
60810 2000 HT_{28}	15.1	X	310.03381	308.97797	32.70489	2.17100	0.0505253	0.20497502	2.8488446	20	7 21.4	18.7
60811 2000 HE_{30}	14.2	X	357.26528	338.93576	101.28928	14.79845	0.2172535	0.22931372	2.6435205	20	—	—
60812 2000 HL_{30}	14.5	X	201.21267	82.85600	147.31333	14.12590	0.1074698	0.22544268	2.6736955	20	—	—
60813 2000 HG_{31}	14.5	X	265.33365	84.44390	122.38886	15.49524	0.0999033	0.23216398	2.6218398	20	—	—
60814 2000 HG_{32}	16.1	X	198.90581	175.14027	21.05746	2.58240	0.1537689	0.26999523	2.3708204	20	12 1.4	19.4
60815 2000 HY_{32}	14.1	X	356.66711	309.01618	99.56724	22.64423	0.0557469	0.22126880	2.7072141	20	12 28.4	17.4
60816 2000 HO_{34}	17.0	X	140.13900	166.81078	5.11451	1.96318	0.0964048	0.30854553	2.1689850	20	9 6.9	20.0
60817 2000 HR_{37}	14.5	X	167.72964	311.02496	83.52784	23.17290	0.0368382	0.24200376	2.5502807	20	4 12.7	18.6
60818 2000 HM_{38}	15.5	X	207.65609	183.45035	163.66715	4.58555	0.2146821	0.23775454	2.5805771	20	3 13.8	19.7
60819 2000 HY_{38}	14.9	X	66.02736	145.37120	149.11676	4.97303	0.0442976	0.21338517	2.7734897	20	11 2.4	18.7
60820 2000 HZ_{39}	16.7	X	103.47740	72.88846	156.74269	2.22524	0.0932209	0.31041243	2.1602797	20	10 14.8	19.5
60821 2000 HD_{40}	15.2	X	91.52383	289.06813	123.79893	3.11697	0.1089854	0.23658201	2.5890965	20	1 27.4	18.3
60822 2000 HX_{42}	14.5	X	95.53953	122.47969	189.65992	5.27221	0.1278569	0.17071209	3.2183000	20	12 24.6	19.6
60823 2000 HB_{43}	15.5	X	178.84939	259.84012	63.41964	3.87597	0.1333765	0.23323434	2.6138122	20	1 19.9	19.6
60824 2000 HG_{43}	16.0	X	278.43984	94.18414	207.03092	7.17387	0.1691801	0.29188248	2.2507678	20	3 20.1	19.1
60825 2000 HW_{45}	15.9	X	130.81814	198.29279	48.15725	5.59844	0.0554977	0.26788179	2.3832737	20	11 27.4	19.0
60826 2000 HO_{46}	17.0	X	146.13982	276.00861	235.56488	3.29253	0.0691033	0.30592610	2.1813484	20	8 13.3	19.8
60827 2000 HW_{46}	15.0	X	149.99124	253.81311	71.50743	3.09417	0.0971473	0.22940198	2.6428424	20	—	—
60828 2000 HX_{46}	15.9	X	296.85214	113.00459	208.79168	6.15444	0.1671963	0.29702106	2.2247330	20	5 16.8	18.2
60829 2000 HY_{46}	16.3	X	146.55129	92.13518	59.67508	3.43811	0.1362488	0.25775008	2.4453264	20	8 14.9	20.0
60830 2000 HZ_{47}	16.6	X	97.54849	163.37715	80.14298	2.59718	0.0270930	0.31047417	2.1599933	20	10 21.5	19.0
60831 2000 HL_{48}	14.7	X	19.98205	100.51507	226.57525	7.38997	0.1332680	0.21108466	2.7936046	20	10 23.5	18.1
60832 2000 HU_{48}	15.9	X	341.47943	323.99239	46.08259	5.42122	0.0894421	0.31104570	2.1573466	20	11 10.7	17.7
60833 2000 HB_{49}	14.9	X	139.26333	5.24595	217.03934	8.28468	0.0922888	0.21530807	2.7569518	20	10 28.5	18.9
60834 2000 HL_{49}	16.4	X	350.86581	143.93357	58.23637	4.46215	0.1806214	0.29114511	2.2545665	20	2 18.9	18.4
60835 2000 HU_{49}	15.7	X	113.76502	251.67641	48.28036	1.84390	0.1882883	0.26847955	2.3797349	20	—	—
60836 2000 HZ_{49}	14.7	X	247.49501	316.28292	232.35440	9.70840	0.0527886	0.17622716	3.1507999	20	—	—
60837 2000 HU_{53}	15.9	X	322.97594	261.03891	65.07727	5.44120	0.2246780	0.29897284	2.2150399	20	7 8.1	17.2
60838 2000 HD_{55}	14.4	X	155.93955	205.45790	112.78669	2.16670	0.1506508	0.17753307	3.1353296	20	—	—
60839 2000 HB_{56}	15.5	X	131.17613	196.63889	185.99655	5.10706	0.1417253	0.28465821	2.2886897	20	2 4.8	18.5
60840 2000 HD_{57}	16.0	X	344.19400	7.93131	138.23146	4.77923	0.1654291	0.28437265	2.2902216	20	—	—
60841 2000 HN_{57}	14.7	X	15.16481	288.23611	58.72585	8.85210	0.1997602	0.21253786	2.7808561	20	11 22.4	17.9
60842 2000 HP_{61}	15.5	X	86.13076	257.27648	56.70878	10.29416	0.1709542	0.26725750	2.3869837	20	—	—
60843 2000 HS_{61}	15.8	X	157.55469	167.87995	211.52748	7.36122	0.1417129	0.28751386	2.2735100	20	2 28.7	19.2
60844 2000 HF_{62}	17.4	X	197.47979	63.10519	47.53581	2.60634	0.0709075	0.30726751	2.1749952	20	8 22.4	20.0
60845 2000 HP_{62}	15.1	X	140.17570	305.80308	81.17980	6.85999	0.1622607	0.28489133	2.2874409	20	2 28.3	18.3
60846 2000 HB_{63}	15.6	X	328.27483	196.70099	130.21681	3.10611	0.1540590	0.30314583	2.1946654	20	8 1.4	16.8
60847 2000 HC_{64}	15.2	X	103.41939	326.55526	261.74833	4.13933	0.0767291	0.31059829	2.1594178	20	10 8.7	17.9
60848 2000 HQ_{64}	15.3	X	340.56016	203.93800	345.11625	4.63246	0.1558800	0.24037774	2.5617685	20	1 25.4	18.1
60849 2000 HV_{64}	16.2	X	93.48136	310.79938	337.68972	2.38022	0.1008484	0.31580484	2.1356178	20	12 22.4	19.0
60850 2000 HE_{65}	15.3	X	281.76198	81.70982	105.23144	2.41296	0.0993030	0.23164107	2.6257840	20	—	—
60851 2000 HN_{65}	14.9	X	204.92975	273.10498	85.28835	5.49224	0.1794086	0.28916061	2.2648701	20	3 25.2	18.5
60852 2000 HU_{65}	15.5	X	43.12503	159.07564	75.74062	6.06510	0.0833630	0.25208340	2.4818368	20	7 23.2	18.4
60853 2000 HZ_{65}	16.3	X	144.53400	72.01612	203.19827	3.50421	0.1500772	0.26960076	2.3731324	20	—	—
60854 2000 HE_{66}	14.9	X	53.19782	240.00031	173.20165	2.10348	0.0308679	0.22860231	2.6490021	20	—	—
60855 2000 HU_{66}	16.2	X	186.78732	140.99207	194.50407	1.74182	0.1388746	0.28371248	2.2937729	20	2 4.5	19.5
60856 2000 HA_{68}	15.6	X	98.20408	87.77625	93.82890	7.15689	0.0780300	0.25461130	2.4653822	20	7 25.2	18.9
60857 2000 HD_{68}	15.3	X	54.89752	310.59736	138.13345	13.99963	0.1422593	0.23528050	2.5986358	20	1 21.2	18.2
60858 2000 HE_{68}	15.0	X	141.64440	172.20793	164.07836	12.73482	0.2241841	0.27611475	2.3356601	20	—	—
60859 2000 HF_{68}	15.7	X	336.72884	166.58180	161.49037	3.68529	0.2031229	0.30251495	2.1977156	20	8 25.2	16.7
60860 2000 HR_{72}	16.8	X	238.64260	211.49210	11.64206	7.42920	0.0580759	0.27912093	2.3188595	20	—	—
60861 2000 HJ_{73}	14.9	X	246.50428	170.89097	106.42191	12.75457	0.0236183	0.23870350	2.5737332	20	2 5.5	18.4
60862 2000 HJ_{74}	15.8	X	276.77539	234.00405	110.82776	7.53723	0.1278661	0.29707596	2.2244588	20	5 28.5	18.5
60863 2000 HK_{75}	15.5	X	101.17257	211.51894	114.92590	3.81545	0.0862519	0.22305195	2.6927665	20	—	—
60864 2000 HM_{75}	13.4	X	81.18799	158.05970	206.56227	18.20221	0.1494460	0.17614635	3.1517634	20	—	—
60865 2000 HG_{76}	16.4	X	230.27939	73.11921	165.30723	2.70958	0.1971070	0.27790084	2.3256417	20	—	—
60866 2000 HM_{79}	14.9	X	75.95627	177.30302	228.84648	14.47419	0.0619454	0.23258859	2.6186479	20	—	—
60867 2000 HD_{81}	15.4	X	209.60681	51.25010	307.48703	2.40877	0.1349968	0.29122818	2.2541377	20	3 26.4	18.7
60868 2000 HG_{81}	15.8	X	288.28905	60.66844	147.50067	23.15220	0.1573848	0.28321545	2.2964558	20	—	—
60869 2000 HZ_{82}	14.8	X	116.23852	113.58258	173.55791	3.00754	0.1164191	0.16993083	3.2281567	20	12 14.9	19.9
60870 2000 HC_{83}	16.3	X	96.78182	72.75427	47.63136	7.92553	0.0707863	0.29480456	2.2358702	20	4 25.6	18.8
60871 2000 HE_{83}	16.1	X	229.88793	312.11616	93.06537	1.32436	0.0748335	0.30121205	2.2040485	20	6 28.1	18.9
60872 2000 HE_{86}	14.7	X	18.71596	166.67758	171.69448	8.40715	0.2220602	0.21048875	2.7988747	20	11 21.6	18.1
60873 2000 HL_{86}	15.3	X	227.68934	261.43448	75.31809	6.83902	0.1645474	0.28939392	2.2636526	20	3 19.8	18.8
60874 2000 HT_{86}	15.2	X	144.80163	95.02882	123.71313	3.09134	0.0075566	0.21546015	2.7556544	20	10 30.8	18.9
60875 2000 HV_{86}	16.1	X	245.36278	345.46508	202.71911	6.74133	0.1775201	0.27534872	2.3399901	20	—	—
60876 2000 HD_{88}	14.0	X	159.02416	231.27055	74.57833	7.28177	0.0477658	0.17909841	3.1170342	20	—	—
60877 2000 HD_{89}	16.2	X	153.79630	90.49765	76.05417	2.30813	0.1336634	0.26080406	2.4261993	20	9 10.5	19.8
60878 2000 HW_{89}	16.0	X	256.58354	17.35734	56.61858	1.45534	0.0637872	0.30848475	2.1692699	20	9 22.2	18.2
60879 2000 HE_{90}	15.3	X	237.21504	274.86441	49.10330	3.63738	0.1396560	0.23919769	2.5701870	20	3 15.9	19.2
60880 2000 HG_{90}	15.4	X	252.33597	186.70688	175.96359	2.34747	0.1806006	0.24626230	2.5207944	20	5 14.6	19.0

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Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
	m		°	°	°	°		°				
60881 2000 HE_{94}	16.5	X	155.50978	140.80419	10.72226	2.14697	0.0967261	0.30680547	2.1771782	20	8 27.3	19.5
60882 2000 HM_{95}	15.9	X	249.01638	269.45325	283.29054	4.24811	0.1113674	0.27699537	2.3307071	20	—	—
60883 2000 HK_{101}	14.6	X	57.21937	268.09052	75.90398	10.28495	0.1963293	0.21696085	2.7429326	20	—	—
60884 2000 JH_{6}	16.0	X	326.46383	117.29017	246.44788	1.10844	0.1321811	0.30975043	2.1633565	20	10 3.4	17.5
60885 2000 JX_{6}	14.5	X	179.73692	96.02847	168.35681	17.53466	0.0619698	0.17413812	3.1759487	20	—	—
60886 2000 JB_{10}	16.3	X	36.49269	273.69047	44.53247	5.71521	0.2426793	0.30843929	2.1694830	20	12 12.2	19.2
60887 2000 JS_{12}	16.1	X	75.49201	218.64457	248.03220	3.59875	0.1011134	0.29050618	2.2578710	20	3 5.7	18.4
60888 2000 JA_{14}	15.3	X	284.02943	249.45795	37.50104	5.40743	0.1217874	0.28961484	2.2625013	20	3 18.3	18.1
60889 2000 JC_{15}	16.0	X	269.83884	331.76525	220.25111	5.91495	0.1011185	0.27746947	2.3280515	20	—	—
60890 2000 JK_{17}	16.2	X	296.05009	176.86179	100.65052	4.67339	0.1753524	0.29089605	2.2558532	20	3 12.9	18.9
60891 2000 JL_{18}	15.8	X	169.27598	54.41928	281.33382	2.98026	0.1877689	0.28213513	2.3023142	20	1 22.6	19.1
60892 2000 JH_{19}	14.3	X	92.18805	206.07840	166.68025	15.10813	0.1360919	0.23002310	2.6380828	20	—	—
60893 2000 JH_{21}	14.9	X	228.58255	349.24043	311.51749	3.16046	0.0378628	0.23817289	2.5775544	20	2 10.9	18.6
60894 2000 JP_{21}	15.5	X	291.98616	337.97132	333.14395	3.11209	0.1176303	0.29586358	2.2305316	20	4 29.5	18.1
60895 2000 JM_{22}	16.1	X	3.64889	28.04151	260.48003	4.73506	0.1927160	0.30206643	2.1998905	20	8 21.5	17.6
60896 2000 JB_{23}	14.5	X	113.11929	322.83982	352.42310	11.48860	0.1945286	0.22229795	2.6988521	20	—	—
60897 2000 JP_{24}	15.6	X	6.25461	311.42407	357.44235	7.04426	0.0837558	0.30610076	2.1805185	20	9 18.5	17.3
60898 2000 JQ_{25}	16.1	X	249.40823	85.42947	319.39763	4.35757	0.0033802	0.30446054	2.1883429	20	8 7.0	18.6
60899 2000 JN_{26}	15.0	X	13.93105	337.49897	300.70696	5.55280	0.1212138	0.25325539	2.4741741	20	8 10.5	17.4
60900 2000 JR_{26}	15.5	X	207.91101	193.75284	324.03901	4.50872	0.1716526	0.26733173	2.3865418	20	10 18.7	18.9
60901 2000 JX_{26}	15.8	X	39.96362	250.77011	19.06536	6.29520	0.0353509	0.30595396	2.1812160	20	9 8.6	18.1
60902 2000 JX_{27}	13.9	X	58.53871	28.66692	317.31433	4.40538	0.1178416	0.16966925	3.2314737	20	12 24.8	18.6
60903 2000 JS_{28}	15.0	X	263.31951	11.20727	317.63745	4.64098	0.1056408	0.24480203	2.5308090	20	4 18.9	18.6
60904 2000 JG_{29}	16.4	X	26.60572	166.22175	5.61229	2.99699	0.1086356	0.29210393	2.2496301	20	3 19.1	18.3
60905 2000 JP_{29}	15.7	X	26.09805	213.35499	20.86788	3.76983	0.1066132	0.29898065	2.2150014	20	6 28.2	17.7
60906 2000 JG_{30}	15.5	X	209.84442	110.48814	269.67622	3.06921	0.1029259	0.29415028	2.2391845	20	4 25.2	18.6
60907 2000 JL_{30}	15.6	X	121.96958	94.66718	332.28142	1.16436	0.1182890	0.28993682	2.2608260	20	3 21.4	18.5
60908 2000 JP_{30}	15.8	X	205.92861	162.97886	10.58091	2.83262	0.1069518	0.26749999	2.3855409	20	11 15.1	19.1
60909 2000 JH_{31}	15.3	X	133.54609	119.79592	246.23992	6.14027	0.1246997	0.28096304	2.3087128	20	1 15.0	18.2
60910 2000 JJ_{31}	16.2	X	238.45840	177.10391	7.08961	2.62791	0.1299722	0.27321779	2.3521412	20	—	—
60911 2000 JO_{31}	16.3	X	300.36921	260.05733	34.65073	4.56597	0.1146264	0.29401133	2.2398899	20	4 20.2	18.8
60912 2000 JJ_{33}	15.7	X	249.57675	324.21889	295.38058	2.67373	0.1151989	0.28252840	2.3001773	20	1 2.9	18.8
60913 2000 JR_{34}	14.8	X	58.97236	9.10518	37.32491	5.17367	0.0885447	0.22924179	2.6440735	20	—	—
60914 2000 JL_{35}	15.8	X	48.26070	132.21272	25.20745	1.74350	0.0759901	0.24350429	2.5397929	20	4 7.9	18.7
60915 2000 JT_{35}	15.5	X	61.77265	163.86361	240.39071	5.20357	0.0854119	0.27760213	2.3273097	20	—	—
60916 2000 JL_{37}	14.7	X	199.72613	146.59406	243.75200	5.84542	0.1475746	0.29224317	2.2489155	20	4 27.0	18.1
60917 2000 JK_{38}	16.7	X	350.62978	24.33197	237.77113	7.94274	0.0568167	0.29730985	2.2232921	20	6 3.2	18.8
60918 2000 JZ_{38}	16.5	X	321.55814	351.30146	244.59623	3.60119	0.0804080	0.29002437	2.2603710	20	3 1.5	19.2
60919 2000 JY_{39}	15.6	X	46.29763	215.23267	343.76890	0.30188	0.0418605	0.24702676	2.5155911	20	5 29.7	18.7
60920 2000 JV_{40}	15.1	X	116.12880	285.07686	61.94844	7.00980	0.1887038	0.27497852	2.3420898	20	—	—
60921 2000 JY_{40}	15.7	X	306.44350	315.81532	65.69538	5.73649	0.1648311	0.30678642	2.1772684	20	9 19.8	17.2
60922 2000 JF_{41}	15.3	X	40.27166	284.94808	80.80837	3.52473	0.2161673	0.26705359	2.3881986	20	—	—
60923 2000 JR_{43}	15.5	X	26.33214	307.43788	75.18824	3.59906	0.1754608	0.26960441	2.3731110	20	—	—
60924 2000 JF_{44}	16.0	X	297.73091	265.14025	26.61058	2.70769	0.2745641	0.29060513	2.2573585	20	3 18.1	18.9
60925 2000 JB_{45}	15.6	X	191.87658	224.20051	90.08337	2.92042	0.1107422	0.23205835	2.6226354	20	1 20.4	19.7
60926 2000 JH_{45}	13.8	X	51.62557	134.47587	226.92704	4.44013	0.1591337	0.16962063	3.2320912	20	—	—
60927 2000 JQ_{45}	14.6	X	176.48285	347.15388	242.88220	3.26124	0.0368866	0.17068129	3.2186872	20	12 9.3	19.2
60928 2000 JR_{45}	15.8	X	266.60212	120.45332	181.52942	0.47476	0.0848990	0.28980375	2.2615180	20	3 19.6	18.7
60929 2000 JO_{46}	15.1	X	177.84434	202.76463	241.90312	6.39946	0.1321738	0.29935037	2.2131772	20	6 18.2	18.4
60930 2000 JX_{46}	14.6	X	304.54071	266.46687	13.83836	12.32606	0.2105478	0.24305574	2.5429167	20	3 26.2	17.7
60931 2000 JH_{47}	14.8	X	137.87853	293.80486	349.10902	8.64853	0.1096838	0.22195956	2.7015944	20	—	—
60932 2000 JY_{49}	14.9	X	263.86350	26.25110	278.58376	8.32363	0.0627293	0.24238420	2.5476113	20	3 22.1	18.5
60933 2000 JK_{51}	15.5	X	233.11351	120.62535	283.07852	5.04737	0.1157271	0.30015544	2.2092180	20	6 25.0	18.3
60934 2000 JL_{51}	14.3	X	355.77133	75.84646	263.41618	2.85760	0.0569642	0.15996851	3.3608287	20	9 15.2	18.8
60935 2000 JN_{51}	15.6	X	280.54509	29.48291	314.98500	3.29940	0.1800195	0.29618906	2.2288972	20	5 21.9	18.1
60936 2000 JT_{52}	14.7	X	291.43931	325.30804	353.74908	5.90190	0.1236330	0.29450174	2.2374026	20	5 8.7	17.4
60937 2000 JQ_{53}	14.5	X	107.88021	7.63794	286.95216	4.95063	0.1192497	0.21726212	2.7403963	20	12 24.8	18.8
60938 2000 JF_{54}	16.6	X	58.73833	356.28703	245.55625	4.55429	0.0818851	0.30471226	2.1871376	20	8 28.6	19.2
60939 2000 JH_{54}	16.0	X	117.10835	180.99977	79.07033	3.48172	0.1555322	0.26496406	2.4007378	20	12 1.9	19.7
60940 2000 JJ_{54}	15.7	X	197.26694	182.37803	69.76253	4.98146	0.1200943	0.27522536	2.3406892	20	—	—
60941 2000 JQ_{54}	15.6	X	197.98689	105.45521	205.79600	5.43561	0.1331316	0.28173359	2.3045014	20	1 15.4	19.1
60942 2000 JZ_{54}	15.4	X	113.62832	152.71661	153.53860	2.39641	0.1858282	0.26878568	2.3779276	20	—	—
60943 2000 JV_{55}	15.1	X	154.90766	272.09042	164.71188	2.81977	0.1220789	0.29506971	2.2345305	20	5 14.2	18.1
60944 2000 JB_{56}	14.9	X	104.33295	254.16473	104.81642	4.28981	0.2736468	0.27253077	2.3560926	20	—	—
60945 2000 JV_{56}	15.9	X	240.75395	105.06372	199.96515	5.31407	0.1532354	0.28559752	2.2836687	20	2 16.3	19.4
60946 2000 JY_{57}	15.3	X	308.89928	141.25952	82.63157	5.18163	0.1958247	0.23717080	2.5848097	20	1 20.7	18.9
60947 2000 JH_{58}	14.5	X	126.67924	176.35756	88.00077	9.53849	0.2023518	0.21603424	2.7507703	20	12 8.5	19.1
60948 2000 JE_{61}	15.2	X	158.02353	269.35860	48.69033	13.97230	0.2675341	0.27429650	2.3459705	20	—	—
60949 2000 JM_{61}	15.6	X	85.73761	342.07929	12.60960	0.66739	0.0938606	0.32054927	2.1144927	20	—	—
60950 2000 JP_{61}	15.0	X	96.35981	232.10758	42.51171	1.69807	0.1246866	0.31169469	2.1543509	20	12 7.3	17.8
60951 2000 JA_{62}	15.3	X	180.03596	201.80700	158.26678	2.40577	0.1444616	0.28555258	2.2839083	20	2 29.7	18.8
60952 2000 JM_{62}	15.1	X	272.21430	328.42452	226.95039	13.32262	0.0937134	0.23193438	2.6235699	20	—	—
60953 2000 JT_{62}	13.5	X	354.17576	28.17690	20.96740	18.67447	0.1472074	0.17374574	3.1807285	20	12 18.1	17.7
60954 2000 JF_{63}	15.3	X	37.82213	348.01879	355.13914	2.50483	0.2301899	0.26344500	2.4099576	20	—	—
60955 2000 JG_{65}	15.6	X	297.73683	121.60166	155.94805	7.52105	0.1307988	0.29056493	2.2575667	20	3 21.3	18.3
60956 2000 JT_{69}	15.3	X	212.39511	160.13198	108.13514	24.42598	0.1263372	0.28087907	2.3091730	20	—	—
60957 2000 JD_{71}	15.0	X	332.75576	315.79507	229.96750	13.48907	0.0324698	0.24051482	2.5607950	20	1 21.4	18.7
60958 2000 JD_{72}	16.8	X	8.58882	129.08253	95.71348	6.48678	0.1972699	0.29558926	2.2319114	20	5 10.8	18.1
60959 2000 JH_{73}	15.4	X	354.24919	149.81398	144.27617	7.22781	0.1240860	0.30005681	2.2097021	20	8 3.4	17.0
60960 2000 JC_{74}	15.1	X	198.51340	84.12688	189.72891	5.55814	0.1415109	0.27701725	2.3305845	20	—	—

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Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
	m		°	°	°	°		°				
60961 2000 JY_{74}	15.4	X	303.32663	182.59224	146.65789	10.01034	0.1854183	0.29778809	2.2209111	20	6 6.8	17.7
60962 2000 JB_{76}	16.2	X	72.74871	123.48224	116.72987	1.97381	0.1279141	0.30597494	2.1811162	20	9 25.7	18.9
60963 2000 JL_{76}	15.6	X	228.05636	41.93109	191.77264	2.08791	0.1663676	0.27627472	2.3347584	20	—	—
60964 2000 JS_{76}	15.3	X	279.20385	298.34748	346.33033	5.34437	0.1117266	0.24126845	2.5554597	20	3 12.6	18.6
60965 2000 JA_{77}	15.8	X	134.82521	344.04268	35.06119	0.70576	0.0607807	0.28454231	2.2893111	20	1 25.8	18.5
60966 2000 JH_{80}	16.5	X	199.58262	41.63680	49.82426	5.33703	0.1241301	0.30451743	2.1880704	20	7 23.8	19.5
60967 2000 JJ_{80}	16.0	X	32.67639	2.67798	52.99166	5.31770	0.1242674	0.27580556	2.3374054	20	—	—
60968 2000 JY_{82}	16.3	X	313.70339	27.35761	295.63685	1.37215	0.2219950	0.29743849	2.2226510	20	6 8.2	18.1
60969 2000 JO_{83}	16.4	X	153.35431	108.78224	126.68837	2.23205	0.1401096	0.26708032	2.3880392	20	12 5.9	20.1
60970 2000 JA_{85}	15.3	X	302.16425	300.40003	134.75846	3.93529	0.0707938	0.21923440	2.7239361	20	11 14.0	18.7
60971 2000 JM_{85}	16.3	X	71.76897	353.97362	178.81590	4.21099	0.0988214	0.29773162	2.2211919	20	6 9.6	18.8
60972 Matenko	14.8	X	156.65422	81.09884	221.58798	11.79891	0.1628252	0.22336474	2.6902521	20	—	—
60973 2000 KC_{2}	14.3	X	40.44339	339.89197	99.54277	25.61186	0.1988929	0.28598288	2.2816168	20	—	—
60974 2000 KC_{3}	15.6	X	106.50068	242.60310	185.13555	5.12193	0.1308432	0.28698889	2.2762816	20	3 3.6	18.2
60975 2000 KR_{3}	14.6	X	276.53222	289.93485	221.84814	13.66017	0.0414772	0.22312805	2.6921542	20	—	—
60976 2000 KW_{5}	15.2	X	125.68672	175.79012	198.97401	5.53172	0.1635635	0.28042670	2.3116556	20	1 22.2	18.2
60977 2000 KE_{6}	16.5	X	8.68272	90.53481	143.01952	3.21417	0.1170564	0.29562087	2.2317523	20	5 23.3	18.2
60978 2000 KP_{7}	14.4	X	117.84392	134.66604	238.10291	11.68586	0.2740324	0.22641062	2.6660698	20	1 30.2	18.6
60979 2000 KW_{7}	14.9	X	149.20934	240.17725	102.50408	8.05268	0.1468433	0.27755450	2.3275760	20	1 7.9	18.0
60980 2000 KF_{9}	15.8	X	49.58019	179.13148	167.22118	2.19317	0.2161904	0.26547862	2.3976347	20	—	—
60981 2000 KP_{12}	15.9	X	158.71488	340.74608	71.31771	2.59960	0.0439028	0.29189565	2.2507001	20	4 9.0	18.7
60982 2000 KQ_{13}	16.0	X	62.72982	18.16384	66.99054	4.38496	0.1167233	0.28420348	2.2911303	20	1 17.6	18.1
60983 2000 KP_{13}	15.6	X	182.80502	164.92290	233.46545	5.54391	0.1538964	0.29241125	2.2480536	20	4 21.1	18.9
60984 2000 KQ_{13}	15.0	X	224.91960	106.35502	206.60175	3.24284	0.0815839	0.18809996	3.0167796	20	2 24.3	19.6
60985 2000 KW_{14}	14.3	X	59.70629	297.26096	56.18699	6.51519	0.1246257	0.16968076	3.2313276	20	—	—
60986 2000 KN_{17}	15.2	X	247.89176	49.74205	254.65523	2.33197	0.1770233	0.23716892	2.5848233	20	2 25.8	19.3
60987 2000 KW_{18}	14.6	X	230.40384	317.99681	247.68437	8.29892	0.0392189	0.17449356	3.1716343	20	—	—
60988 2000 KR_{19}	15.9	X	72.16805	356.15956	59.35402	2.85175	0.0482812	0.27952195	2.3166412	20	—	—
60989 2000 KJ_{22}	16.4	X	303.23284	253.13770	75.31338	2.71023	0.2019967	0.29610007	2.2293438	20	5 31.2	18.1
60990 2000 KU_{22}	15.5	X	201.91265	266.82555	258.25264	2.46346	0.2014185	0.26603431	2.3942948	20	10 19.8	19.0
60991 2000 KK_{24}	15.1	X	191.13355	151.27198	230.67337	3.42198	0.1529699	0.28916979	2.2648222	20	4 7.7	18.6
60992 2000 KO_{24}	15.4	X	332.90251	23.86241	73.33098	7.85373	0.0817804	0.27192330	2.3596003	20	—	—
60993 2000 KP_{24}	15.2	X	16.58574	35.81200	74.68213	7.40133	0.1018644	0.28017329	2.3130493	20	—	—
60994 2000 KA_{26}	15.7	X	65.64518	328.68670	252.23100	5.82640	0.0943019	0.30137511	2.2032535	20	8 9.1	18.2
60995 2000 KD_{26}	16.5	X	67.10541	205.30015	83.76063	0.79578	0.1949338	0.30870231	2.1682506	20	12 1.2	19.5
60996 2000 KK_{26}	16.3	X	56.15051	105.50346	69.77668	8.13648	0.1235656	0.29506345	2.2345622	20	5 22.7	18.3
60997 2000 KU_{27}	15.5	X	246.95974	158.10269	238.29732	4.47651	0.1383030	0.29899745	2.2149184	20	6 28.7	18.4
60998 2000 KE_{28}	15.9	X	288.28739	247.67748	161.58320	1.15772	0.0392401	0.30753451	2.1737361	20	10 8.7	17.8
60999 2000 KC_{30}	16.3	X	337.78348	207.02518	77.58743	7.12975	0.1863556	0.29588176	2.2304402	20	6 4.7	17.6
61000 2000 KD_{31}	15.2	X	256.45292	71.78722	239.13932	1.56690	0.1379822	0.23853130	2.5749717	20	3 17.0	19.0
61001 2000 KJ_{31}	16.0	X	179.26759	258.74298	49.52320	2.85741	0.2235778	0.27600566	2.3362755	20	1 1.5	19.8
61002 2000 KS_{32}	15.5	X	316.01324	75.58754	229.95431	1.70303	0.0823830	0.29566588	2.2315258	20	6 7.7	17.7
61003 2000 KU_{32}	16.2	X	138.92171	85.41355	61.57086	1.70987	0.0597614	0.30111933	2.2045010	20	7 29.8	19.1
61004 2000 KH_{33}	15.6	X	217.71196	184.99829	88.30285	4.72820	0.2315499	0.27750909	2.3278299	20	—	—
61005 2000 KA_{35}	15.6	X	125.32033	170.29477	169.50464	6.73974	0.1849283	0.27357431	2.3500973	20	—	—
61006 2000 KR_{35}	16.6	X	24.77314	22.42201	215.79846	3.55568	0.1264881	0.29793690	2.2201715	20	7 4.1	18.5
61007 2000 KV_{35}	16.2	X	235.92786	91.93177	165.25050	5.73611	0.0784882	0.27988484	2.3146383	20	—	—
61008 2000 KE_{36}	15.4	X	151.95066	71.34014	225.57969	6.55842	0.1241104	0.27206132	2.3588021	20	—	—
61009 2000 KH_{36}	15.6	X	314.37532	174.86571	126.48268	6.31711	0.2280574	0.29382745	2.2408243	20	5 6.5	17.7
61010 2000 KR_{36}	15.5	X	193.95348	166.03675	162.06097	10.60567	0.1444690	0.23303767	2.6152826	20	2 7.2	19.8
61011 2000 KJ_{40}	15.7	X	302.68144	341.08629	66.47036	3.33698	0.1831612	0.26125027	2.4234360	20	10 8.0	17.6
61012 2000 KP_{41}	15.4	X	66.69202	193.86320	171.20861	7.57362	0.1336833	0.26984223	2.3717165	20	—	—
61013 2000 KR_{41}	14.9	X	264.63117	42.80688	208.72177	3.99579	0.0982148	0.23379945	2.6095987	20	1 16.3	18.7
61014 2000 KV_{41}	16.0	X	171.36709	98.22274	172.29654	2.39325	0.1853925	0.27194796	2.3594576	20	—	—
61015 2000 KJ_{42}	15.0	X	241.89240	200.37504	142.58211	15.03429	0.1625839	0.24053063	2.5606828	20	4 15.1	19.2
61016 2000 KT_{42}	16.8	X	261.01344	200.52700	231.87021	3.95897	0.0830609	0.30992417	2.1625480	20	9 21.0	19.0
61017 2000 KX_{42}	15.6	X	143.58033	2.58615	57.36144	5.23159	0.1209219	0.24299592	2.5433340	20	4 12.1	19.3
61018 2000 KA_{46}	15.6	X	56.87263	179.60330	97.81083	6.28243	0.0677268	0.25829665	2.4418756	20	10 12.5	18.8
61019 2000 KU_{46}	15.1	X	142.56250	52.92209	164.13011	7.50372	0.0717637	0.26179861	2.4200508	20	11 4.4	18.6
61020 2000 KC_{47}	13.8	X	144.79778	220.24112	149.04229	10.50173	0.0675127	0.18208814	3.0828208	20	2 8.9	18.4
61021 2000 KS_{49}	15.7	X	57.71706	15.94714	55.89071	5.18367	0.1736183	0.28186345	2.3037934	20	—	—
61022 2000 KY_{49}	15.6	X	119.89891	177.00589	206.03758	6.18880	0.1201163	0.28079573	2.3096298	20	1 19.1	18.5
61023 2000 KV_{50}	15.4	X	179.68598	47.28778	269.38764	2.53430	0.1920539	0.27713212	2.3299404	20	1 9.7	19.1
61024 2000 KJ_{52}	13.9	X	92.59043	177.45785	207.45244	9.83364	0.1102614	0.18105331	3.0945564	20	1 2.8	18.2
61025 2000 KU_{52}	14.9	X	264.12136	258.93179	216.24051	7.42950	0.1521143	0.21914250	2.7246976	20	10 28.9	18.1
61026 2000 KG_{53}	15.6	X	39.21476	322.04183	259.11933	8.85784	0.0644539	0.29704075	2.2246346	20	6 24.4	17.8
61027 2000 KP_{53}	15.4	X	271.63394	51.71810	265.58751	4.04044	0.1538528	0.24129736	2.5552555	20	4 7.9	19.1
61028 2000 KR_{53}	14.9	X	42.35363	99.72359	256.18755	5.92099	0.1629717	0.26372852	2.4082301	20	—	—
61029 2000 KG_{55}	15.3	X	127.79090	210.33362	142.55517	4.57122	0.2669539	0.27440396	2.3453579	20	1 12.5	18.4
61030 2000 KN_{55}	16.1	X	6.38180	90.55820	148.85521	2.76125	0.1248433	0.29557186	2.2319990	20	5 28.2	17.9
61031 2000 KQ_{55}	16.2	X	326.74234	96.31863	103.88462	3.99186	0.1212873	0.28578735	2.2826573	20	1 15.2	18.7
61032 2000 KC_{56}	15.7	X	199.42399	199.71547	99.22893	5.50153	0.1528121	0.27873394	2.3210054	20	1 3.8	19.1
61033 2000 KG_{56}	15.5	X	256.23273	233.74280	85.21013	7.80688	0.1611566	0.28868239	2.2673707	20	3 26.2	18.8
61034 2000 KX_{56}	14.4	X	299.25930	103.70634	167.19533	2.55877	0.0810024	0.19094520	2.9867364	20	3 30.2	18.5
61035 2000 KN_{57}	15.7	X	216.33476	359.71019	10.43832	0.84467	0.0741280	0.19625294	2.9326390	20	4 25.6	20.0
61036 2000 KC_{59}	15.7	X	56.67854	184.43765	201.62472	5.55151	0.1177866	0.27295804	2.3536332	20	—	—
61037 2000 KG_{59}	15.5	X	141.27072	208.74755	107.63549	4.44483	0.0252354	0.22661846	2.6644395	20	—	—
61038 2000 KU_{59}	14.7	X	310.49678	10.47477	67.96002	9.98673	0.0677395	0.21870244	2.7283513	20	11 29.5	17.9
61039 2000 KW_{59}	14.2	X	239.47789	34.09013	137.66428	2.69734	0.1439049	0.17372781	3.1809474	20	11 29.1	18.7
61040 2000 KQ_{60}	14.5	X	117.63808	97.22633	205.24466	11.43073	0.0712147	0.17211766	3.2007549	20	12 30.6	19.5

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
	m		°	°	°	°		°				
61041 2000 KR_{60}	15.2	X	241.95606	202.77060	136.81586	5.93643	0.2656728	0.24082514	2.5585947	20	3 31.4	19.6
61042 2000 KB_{61}	12.7	X	82.35916	266.91133	100.48267	9.54492	0.2681354	0.12395425	3.9837779	20	1 3.3	17.9
61043 2000 KJ_{61}	15.4	X	38.87462	227.13409	101.02012	7.41581	0.2657300	0.25965860	2.4333295	20	12 20.6	18.8
61044 2000 KT_{62}	14.2	X	291.01881	108.49525	112.67439	12.79379	0.0583766	0.18526517	3.0474753	20	1 22.7	18.4
61045 2000 KU_{62}	16.2	X	212.41595	154.23044	170.56641	9.27539	0.1575907	0.28444210	2.2898487	20	2 14.9	19.8
61046 2000 KB_{63}	15.4	X	103.83517	200.00895	202.33162	15.47629	0.1369248	0.23296157	2.6158522	20	1 30.9	19.2
61047 2000 KJ_{63}	16.4	X	47.21411	21.15002	178.21876	6.95899	0.0371018	0.29720840	2.2237980	20	6 1.4	18.9
61048 2000 KV_{63}	14.7	X	61.84232	175.50710	163.37096	9.14317	0.1657960	0.21732177	2.7398948	20	—	—
61049 2000 KF_{65}	15.6	X	341.55864	8.87433	116.21010	5.07741	0.0788453	0.22939127	2.6429247	20	—	—
61050 2000 KM_{72}	15.6	X	229.71267	264.73292	103.42911	1.96610	0.1232825	0.29191582	2.2505964	20	5 1.8	18.6
61051 2000 KC_{73}	15.3	X	64.03540	65.98392	152.18784	7.31542	0.0947926	0.29593015	2.2301971	20	8 3.9	17.8
61052 2000 KF_{73}	15.3	X	102.27716	224.56588	109.76168	1.70537	0.2283992	0.26467058	2.4025122	20	—	—
61053 2000 KQ_{73}	14.3	X	287.59340	308.37000	192.85818	17.51166	0.1306843	0.17765488	3.1338963	20	12 26.8	18.6
61054 2000 KR_{74}	15.0	X	168.85685	219.16191	92.05806	15.61246	0.0859311	0.22945390	2.6424438	20	—	—
61055 2000 KJ_{75}	15.2	X	194.54767	357.53435	205.09505	9.17553	0.1330933	0.21996964	2.7178630	20	11 28.6	19.3
61056 2000 KN_{75}	15.1	X	210.22977	189.67149	136.93548	10.05813	0.1593282	0.23538217	2.5978875	20	2 21.9	19.2
61057 2000 KD_{76}	15.1	X	249.87777	201.93294	161.77930	14.74577	0.1298106	0.24527032	2.5275867	20	5 22.1	19.0
61058 2000 KT_{78}	15.9	X	120.98634	172.07887	180.66180	4.82918	0.1921428	0.27472324	2.3435404	20	—	—
61059 2000 LX	15.0	X	130.85919	226.84144	173.63223	8.35784	0.1619396	0.27664805	2.3326575	20	3 3.3	18.1
61060 2000 LH_{1}	15.4	X	287.26505	146.82277	147.02837	5.83829	0.2121740	0.28945570	2.2633305	20	3 18.1	18.4
61061 2000 LX_{1}	14.7	X	185.44845	243.34435	99.11632	23.76529	0.2404389	0.27984187	2.3148752	20	2 22.5	19.0
61062 2000 LF_{2}	15.5	X	150.14565	240.77518	167.98994	2.06432	0.1247927	0.28773936	2.2723220	20	3 31.9	18.7
61063 2000 LN_{4}	14.5	X	128.96968	189.31008	121.61936	13.85856	0.1756558	0.21994573	2.7180599	20	—	—
61064 2000 LW_{4}	15.1	X	302.72779	141.66469	161.98028	5.73371	0.1873169	0.29245810	2.2478135	20	4 26.6	17.5
61065 2000 LE_{5}	16.0	X	4.22869	94.37451	149.24727	6.70597	0.1280112	0.29442566	2.2377880	20	5 31.7	17.9
61066 2000 LV_{5}	16.1	X	164.34378	217.74033	5.43759	2.22459	0.1647062	0.26637276	2.3922662	20	11 29.0	19.7
61067 2000 LQ_{6}	15.4	X	140.92771	316.54589	129.09540	4.58064	0.1053760	0.29319755	2.2440326	20	5 10.0	18.5
61068 2000 LR_{6}	15.8	X	22.68050	12.10596	105.80092	6.55096	0.0746471	0.28177178	2.3042931	20	—	—
61069 2000 LS_{7}	15.0	X	238.06707	88.14454	205.49457	6.38672	0.1489495	0.28258327	2.2998795	20	1 30.7	18.7
61070 2000 LV_{7}	14.2	X	112.69351	97.87839	208.73641	7.39296	0.2579235	0.21622050	2.7491903	20	—	—
61071 2000 LS_{8}	15.8	X	107.65076	88.69114	187.49344	2.47228	0.1012643	0.31292435	2.1487034	20	12 20.9	18.7
61072 2000 LW_{8}	15.7	X	213.60686	88.23252	237.35351	4.60366	0.1893561	0.28301610	2.2975340	20	2 16.2	19.5
61073 2000 LB_{9}	15.1	X	257.43173	192.81930	89.09400	15.52015	0.1266649	0.23532694	2.5982939	20	2 17.8	19.2
61074 2000 LR_{9}	14.2	X	255.89476	105.25179	265.45287	13.07860	0.1864546	0.24177371	2.5518981	20	5 27.5	18.0
61075 2000 LQ_{10}	14.3	X	291.67402	194.53191	174.70455	14.62706	0.1781137	0.24456016	2.5324774	20	7 13.2	17.5
61076 2000 LP_{14}	14.3	X	216.91374	180.61264	83.73959	14.13806	0.1220731	0.22764805	2.6563997	20	—	—
61077 2000 LU_{15}	16.2	X	305.96930	39.42670	176.53234	5.71263	0.0683766	0.28010199	2.3134419	20	1 16.3	19.1
61078 2000 LZ_{15}	15.5	X	180.34895	215.49304	106.50533	6.46119	0.2795021	0.27332365	2.3515339	20	1 22.2	19.4
61079 2000 LY_{17}	15.2	X	280.02701	69.13369	225.70110	5.05369	0.1838574	0.28709702	2.2757100	20	3 11.3	18.5
61080 2000 LW_{19}	15.8	X	252.72803	144.59278	154.96493	7.27637	0.2199762	0.28299556	2.2976452	20	2 18.1	19.5
61081 2000 LZ_{19}	16.0	X	222.97683	17.47018	226.19383	6.10871	0.1854633	0.27348669	2.3505992	20	—	—
61082 2000 LB_{20}	15.0	X	21.01832	101.52428	214.26686	6.11901	0.1347240	0.25285410	2.4767911	20	10 19.7	17.6
61083 2000 LE_{20}	15.2	X	118.68707	142.87757	198.38794	6.25981	0.1640952	0.26857868	2.3791493	20	—	—
61084 2000 LF_{20}	13.6	X	218.78032	22.00921	263.04055	14.99041	0.1569316	0.17720488	3.1391996	20	1 14.4	18.8
61085 2000 LL_{21}	15.5	X	321.98677	83.19106	187.77497	5.25604	0.2227404	0.28919606	2.2646850	20	4 1.2	17.3
61086 2000 LU_{21}	16.3	X	335.47473	87.36583	225.71799	4.90046	0.1807430	0.29535151	2.2331090	20	7 20.7	17.7
61087 2000 LY_{21}	13.8	X	126.49838	188.48497	240.84438	12.00600	0.1647728	0.22997077	2.6384829	20	4 5.8	17.9
61088 2000 LZ_{21}	14.9	X	53.71751	209.63579	154.17691	11.07770	0.2869660	0.25960036	2.4336934	20	—	—
61089 2000 LO_{22}	14.8	X	45.73847	273.72694	176.20240	9.47036	0.0689125	0.18303427	3.0721879	20	1 13.2	18.9
61090 2000 LN_{23}	14.6	X	167.25622	126.66352	211.68788	23.26904	0.2211663	0.27739031	2.3284944	20	1 21.1	18.9
61091 2000 LU_{27}	15.1	X	106.24388	38.76240	302.20260	1.77276	0.1988109	0.26477161	2.4019010	20	—	—
61092 2000 LV_{27}	15.0	X	98.61540	0.98408	337.69291	2.21567	0.1775910	0.26359805	2.4090247	20	—	—
61093 2000 LW_{27}	15.6	X	173.46718	311.76756	44.86609	2.96149	0.2483570	0.27535800	2.3399374	20	2 26.7	19.5
61094 2000 LH_{28}	14.5	X	76.84964	185.60485	141.69100	8.92977	0.2211375	0.20967099	2.8061474	20	—	—
61095 2000 LP_{28}	15.1	X	320.97634	206.44414	123.86765	8.49250	0.1933159	0.29347280	2.2426292	20	7 13.9	16.5
61096 2000 LS_{28}	15.2	X	106.87563	227.24325	98.89980	3.69540	0.1843273	0.26341087	2.4101658	20	—	—
61097 2000 LT_{28}	15.6	X	36.49074	171.46841	133.44015	24.57732	0.0610516	0.35629162	1.9706023	20	11 18.4	18.5
61098 2000 LY_{28}	14.7	X	119.83288	45.45644	282.44134	6.14370	0.1191981	0.26554131	2.3972573	20	—	—
61099 2000 LG_{29}	15.0	X	309.74608	181.21687	135.19321	4.52910	0.2645738	0.24137760	2.5546892	20	5 15.0	17.8
61100 2000 LJ_{29}	15.8	X	144.63001	158.53595	154.23573	0.89236	0.2108560	0.26742822	2.3859677	20	—	—
61101 2000 LD_{30}	16.3	X	41.38058	182.50618	96.48746	5.98473	0.1865415	0.30204697	2.1999850	20	10 20.1	18.9
61102 2000 LM_{30}	13.3	X	61.99623	80.56554	256.61604	15.91023	0.1301483	0.15853456	3.3810642	20	12 16.9	18.3
61103 2000 LP_{30}	14.6	X	118.74405	198.04400	155.12765	17.74746	0.1990556	0.22502495	2.6770034	20	1 2.2	18.6
61104 2000 LU_{30}	15.4	X	148.82130	130.45037	210.47446	5.91792	0.1486861	0.27152601	2.3619014	20	1 5.4	18.7
61105 2000 LN_{31}	15.5	X	345.64224	5.68942	21.32841	4.21771	0.1395451	0.31303710	2.1481874	20	12 22.2	17.4
61106 2000 LQ_{31}	15.0	X	210.97140	111.63728	229.84453	7.74159	0.0949572	0.23156620	2.6263500	20	3 9.1	19.1
61107 2000 LR_{31}	15.8	X	297.82376	117.90263	168.49412	5.99641	0.1507102	0.28723515	2.2749804	20	3 30.6	18.5
61108 2000 LT_{31}	14.6	X	227.43654	177.91120	188.67485	4.67476	0.2640350	0.23519127	2.5992930	20	4 20.4	19.2
61109 2000 LU_{31}	15.6	X	134.87146	183.20703	146.77721	6.73041	0.1638783	0.26898214	2.3767696	20	—	—
61110 2000 LC_{32}	15.7	X	227.82606	188.93531	134.08548	6.74475	0.1936048	0.28148796	2.3058418	20	2 28.5	19.4
61111 2000 LD_{33}	15.3	X	262.75069	180.24162	173.35413	4.11165	0.1949317	0.29487286	2.2355249	20	5 11.9	18.2
61112 2000 LO_{33}	16.0	X	238.20005	38.55575	203.47130	6.93057	0.0713261	0.27850709	2.3222655	20	—	—
61113 2000 LP_{33}	15.1	X	241.37546	144.95249	169.52394	24.63572	0.1955979	0.28602366	2.2813998	20	2 27.0	18.8
61114 2000 LJ_{34}	14.9	X	243.89354	171.38254	229.19018	9.60141	0.1336337	0.24206842	2.5498265	20	6 28.5	18.7
61115 2000 LQ_{34}	14.2	X	77.31505	124.21803	256.03429	12.11036	0.1557030	0.21658575	2.7460986	20	—	—
61116 2000 LT_{34}	15.8	X	301.85857	90.18934	161.00596	8.81738	0.1048433	0.28336763	2.2956335	20	2 22.1	18.4
61117 2000 LX_{34}	15.8	X	133.01692	153.65098	177.37992	6.03038	0.1398674	0.27651977	2.3333788	20	—	—
61118 2000 LV_{35}	14.9	X	223.65161	208.11948	132.07005	5.14048	0.1641269	0.28231020	2.3013624	20	3 18.9	18.5
61119 2000 LJ_{36}	15.7	X	176.59177	2.17743	195.08693	6.35326	0.1146310	0.26559336	2.3969441	20	11 13.4	19.2
61120 2000 LL_{36}	14.8	X	293.90840	133.71407	138.67425	9.40423	0.0620595	0.24108662	2.5567444	20	3 26.3	18.2

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Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
	m		°	°	°	°		°				
61121 2000 MU	15.8	X	180.77880	340.33813	321.17946	1.56032	0.2188205	0.27374417	2.3491250	20	—	—
61122 2000 MM_1	15.6	X	321.06617	313.21790	320.92093	4.39512	0.1313777	0.28978013	2.2616409	20	4 17.9	18.0
61123 2000 MN_1	14.6	X	94.94948	250.49292	78.14330	6.45651	0.3045890	0.26243504	2.4161367	20	—	—
61124 2000 MX_1	15.7	X	298.01204	278.54946	311.12046	2.68530	0.1227499	0.28228490	2.3014999	20	1 17.4	18.6
61125 2000 MK_2	15.8	X	116.98155	290.72887	43.84770	2.92518	0.2162739	0.26753137	2.3853543	20	—	—
61126 2000 MN_4	14.2	X	165.06845	13.11137	342.03270	3.37346	0.2386122	0.22633236	2.6666843	20	2 20.6	18.8
61127 2000 MH_5	14.5	X	169.53246	184.04910	144.36219	6.18305	0.1109978	0.27200796	2.3591106	20	1 8.6	17.9
61128 2000 MB_6	14.9	X	309.19377	320.36695	282.85081	3.09473	0.1849963	0.23872877	2.5735515	20	2 14.4	18.2
61129 2000 MD_6	15.3	X	196.96584	77.58073	108.63673	3.21785	0.1514955	0.26647600	2.3916483	20	11 17.5	18.6
61130 2000 NK	15.8	X	345.31486	88.39744	199.31179	1.70977	0.0862190	0.29487727	2.2355026	20	7 3.6	17.7
61131 2000 NN_1	15.0	X	5.18447	232.00546	143.41638	6.66237	0.1311769	0.25708545	2.4495391	20	12 18.1	17.8
61132 2000 NC_2	15.6	X	134.68023	330.29146	343.56186	2.34904	0.1784861	0.26850861	2.3795632	20	—	—
61133 2000 NL_2	15.7	X	276.42755	66.34457	262.90865	2.92757	0.1527196	0.28935427	2.2638594	20	4 28.8	18.6
61134 2000 NP_2	15.5	X	78.71913	143.16092	137.78339	7.10487	0.1191919	0.25763791	2.4460362	20	11 18.3	19.1
61135 2000 NT_2	15.2	X	346.46300	199.13345	113.12245	3.19431	0.1221322	0.24705136	2.5154241	20	8 10.4	17.5
61136 2000 NC_4	14.6	X	121.44373	221.72151	236.89166	3.56130	0.2507077	0.23477501	2.6023646	20	5 19.6	18.8
61137 2000 NR_4	15.7	X	280.01949	95.43293	160.27020	3.25158	0.1364281	0.28179809	2.3041497	20	1 28.0	18.9
61138 2000 NX_4	15.8	X	311.53935	298.01019	323.73506	3.66885	0.1092692	0.28681062	2.2772248	20	3 19.8	18.4
61139 2000 NO_5	15.5	X	193.53368	196.36523	155.71590	4.74578	0.2330170	0.27604225	2.3360691	20	3 6.3	19.4
61140 2000 NR_5	14.5	X	318.42065	86.14481	256.73623	6.03065	0.2915076	0.24308809	2.5426910	20	7 6.7	16.5
61141 2000 NZ_5	14.1	X	283.72703	27.53116	270.24246	12.57138	0.1669598	0.23767596	2.5811459	20	3 21.2	18.1
61142 2000 NW_6	15.0	X	77.36611	133.14537	146.86580	4.72443	0.1905176	0.30656276	2.1783272	20	11 29.8	18.2
61143 2000 ND_7	14.6	X	211.62285	119.86571	255.84186	5.20055	0.1716676	0.18594225	3.0400728	20	4 22.1	19.6
61144 2000 NW_8	16.2	X	346.40509	130.59844	156.63350	3.95384	0.1465032	0.29425986	2.2386285	20	7 3.9	17.8
61145 2000 NX_8	14.8	X	291.20457	74.66770	305.66557	5.67077	0.1812546	0.29241525	2.2480331	20	8 4.4	16.8
61146 2000 NO_{10}	15.2	X	51.95411	221.06884	104.49663	1.64028	0.2156611	0.25760332	2.4462551	20	12 24.3	18.8
61147 2000 ND_{11}	14.8	X	36.52360	85.80978	272.58505	1.95724	0.1922872	0.25860219	2.4399518	20	—	—
61148 2000 NL_{11}	15.4	X	94.01440	158.92372	157.31998	0.99281	0.2125603	0.26251498	2.4156461	20	—	—
61149 2000 NU_{11}	15.0	X	234.83047	175.87619	169.87010	9.14663	0.1806131	0.28949637	2.2631185	20	4 4.1	18.4
61150 2000 NV_{11}	15.7	X	149.69370	207.71403	146.00238	8.11012	0.1498555	0.27933994	2.3176474	20	1 21.9	19.1
61151 2000 NV_{12}	16.1	X	283.22643	64.81269	215.98974	3.63492	0.1151140	0.28373179	2.2936689	20	3 6.6	19.1
61152 2000 NE_{13}	15.4	X	36.26102	111.96185	258.82752	3.76533	0.1957691	0.25842606	2.4410603	20	—	—
61153 2000 NV_{13}	15.7	X	266.18222	18.76813	298.27970	4.99803	0.1812251	0.28504225	2.2866335	20	3 25.3	19.0
61154 2000 NW_{13}	14.3	X	29.62675	106.89420	311.47486	8.04824	0.1513195	0.21357992	2.7718035	20	—	—
61155 2000 NH_{14}	14.9	X	72.53830	175.02145	137.06165	6.85060	0.0855166	0.25774089	2.4453846	20	12 15.8	18.4
61156 2000 NJ_{14}	14.2	X	155.15878	185.17229	310.46157	9.53758	0.1059650	0.24386708	2.5372734	20	7 30.6	17.8
61157 2000 NE_{15}	15.5	X	129.54986	198.59485	129.60037	6.27376	0.2485939	0.26704240	2.3882653	20	—	—
61158 2000 NN_{15}	15.2	X	334.05781	225.44851	99.45880	4.22440	0.1237560	0.24546524	2.5262484	20	8 5.3	17.7
61159 2000 NZ_{16}	16.0	X	188.33556	212.93893	79.08307	3.67316	0.1685788	0.27200044	2.3591541	20	—	—
61160 2000 NH_{18}	14.6	X	180.66037	92.50371	324.48987	10.33278	0.0169732	0.23765479	2.5812991	20	5 10.5	18.4
61161 2000 NP_{18}	16.1	X	325.15338	247.08861	95.53333	3.37974	0.1725552	0.24627318	2.5207202	20	8 11.7	18.2
61162 2000 NV_{18}	16.0	X	9.10729	164.82341	97.38706	4.55770	0.1452396	0.29383416	2.2407902	20	7 14.2	17.6
61163 2000 NY_{18}	16.2	X	154.04894	170.00957	117.88914	3.61492	0.1785130	0.26720896	2.3872728	20	—	—
61164 2000 NM_{19}	15.8	X	49.15075	128.23398	129.02280	6.10282	0.1376543	0.29869544	2.2164111	20	9 20.3	18.3
61165 2000 NR_{19}	14.8	X	208.10632	205.80448	134.37141	10.45262	0.2155359	0.22968377	2.6406804	20	3 8.4	19.4
61166 2000 NU_{19}	14.2	X	9.69460	215.89282	302.81391	13.02915	0.1906003	0.22903007	2.6457027	20	2 1.3	16.5
61167 2000 NJ_{20}	14.6	X	141.65578	190.00269	141.11221	5.38683	0.1420737	0.22109170	2.7086596	20	—	—
61168 2000 NU_{20}	15.9	X	324.11698	120.31016	126.80801	8.86941	0.1166197	0.28674842	2.2775541	20	3 22.6	18.4
61169 2000 NY_{20}	15.2	X	35.46900	21.29236	285.06693	5.71037	0.1449574	0.25348151	2.4727024	20	10 27.8	18.4
61170 2000 NZ_{20}	15.1	X	101.77641	202.52920	151.41806	2.69872	0.1358734	0.21772220	2.7365343	20	—	—
61171 2000 NA_{21}	14.5	X	61.85442	9.89217	313.23051	5.57057	0.1290990	0.25786456	2.4446027	20	12 22.2	18.0
61172 2000 NE_{21}	13.9	X	6.34044	329.95888	288.76568	14.42005	0.0607858	0.24014303	2.5634375	20	6 24.5	16.9
61173 2000 NB_{22}	15.9	X	203.60482	175.84319	109.23807	6.32046	0.1801393	0.27521503	2.3407478	20	—	—
61174 2000 NN_{22}	15.6	X	288.91071	108.14562	214.62563	5.73202	0.2141249	0.28873790	2.2670801	20	4 27.7	18.3
61175 2000 NO_{22}	14.1	X	296.90792	29.50562	286.20551	12.88768	0.1355428	0.23914224	2.5705843	20	5 10.9	17.7
61176 2000 NZ_{22}	15.8	X	277.65207	219.77350	133.91242	4.51922	0.0830884	0.29267201	2.2467181	20	6 18.5	18.4
61177 2000 NJ_{23}	15.2	X	169.13278	111.63371	328.36243	6.36030	0.1379044	0.28639600	2.2794221	20	6 1.6	18.6
61178 2000 NT_{23}	15.1	X	37.52539	228.98430	150.67692	1.74350	0.1870918	0.26106919	2.4245565	20	—	—
61179 2000 NL_{24}	15.5	X	62.04799	157.60794	173.97128	2.69634	0.2034824	0.25911909	2.4367059	20	—	—
61180 2000 NQ_{24}	15.0	X	116.40923	211.31011	129.69865	7.25472	0.1461834	0.26776991	2.3839375	20	—	—
61181 2000 NT_{24}	16.5	X	207.97395	138.38530	146.36340	2.55603	0.2106519	0.27528191	2.3403686	20	—	—
61182 2000 NJ_{25}	14.5	X	244.94342	253.96450	110.08716	7.76540	0.2058657	0.23806115	2.5783608	20	5 8.6	18.6
61183 2000 NB_{26}	16.0	X	205.94458	222.44457	139.13975	4.61965	0.1590996	0.28279912	2.2987091	20	3 29.6	19.6
61184 2000 NO_{26}	14.5	X	182.12438	142.31673	221.97782	2.24379	0.1279390	0.22948385	2.6422139	20	3 11.1	18.7
61185 2000 NS_{26}	14.6	X	277.31785	38.75214	299.06104	9.33660	0.1254785	0.18998519	2.9967893	20	5 17.2	19.0
61186 2000 NA_{27}	14.7	X	79.45172	225.32009	127.35283	8.75446	0.2174095	0.21297785	2.7770248	20	—	—
61187 2000 NM_{27}	14.9	X	260.21432	293.41891	93.33653	5.49370	0.3122750	0.24052732	2.5607063	20	6 7.7	18.9
61188 2000 NT_{27}	15.9	X	161.25403	88.92349	177.18863	1.28926	0.1596424	0.26618239	2.3934067	20	—	—
61189 Ohsadaharu	14.5	X	142.66544	79.54912	247.05628	5.49292	0.1184003	0.26762533	2.3847960	20	—	—
61190 Johnschutt	15.4	X	212.34803	353.72018	87.33332	5.07945	0.0675704	0.30081077	2.2060082	20	7 29.2	18.2
61191 2000 OA	16.0	X	87.37453	160.35427	81.90019	4.06036	0.0600978	0.30310926	2.1948419	20	10 9.5	18.6
61192 2000 OU	15.8	X	219.37588	357.35364	295.67089	11.73529	0.1893389	0.27725878	2.3292307	20	1 15.1	19.5
61193 2000 OQ_1	15.8	X	191.84783	249.88178	234.02748	5.36591	0.1210040	0.29669407	2.2263673	20	8 24.8	19.0
61194 2000 OU_1	15.8	X	244.03550	282.43006	288.78021	6.09000	0.0699485	0.26951917	2.3736113	20	—	—
61195 Martinoli	15.5	X	182.76588	255.66611	352.68716	3.98666	0.2139434	0.26669170	2.3903585	20	—	—
61196 2000 OD_3	16.3	X	201.70610	71.48514	213.08101	2.31496	0.1962123	0.27419640	2.3465414	20	—	—
61197 2000 OG_3	12.8	X	128.82384	101.38035	315.55721	15.72278	0.2175103	0.17577359	3.1562178	20	3 27.3	18.1
61198 2000 ON_3	15.3	X	57.84605	96.86579	162.71965	5.92301	0.1466829	0.30032534	2.2083847	20	10 6.3	18.0
61199 2000 OA_4	15.7	X	252.43801	85.43151	173.69639	6.21525	0.1491496	0.27704426	2.3304330	20	1 3.6	19.3
61200 2000 OC_4	15.6	X	259.57130	95.04448	166.28415	7.29938	0.1995213	0.27898984	2.3195859	20	1 9.4	19.4

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Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
	m		°	°	°	°		°				
61201 2000 OK_4	15.1	X	237.98801	72.75970	236.71888	5.40306	0.1451692	0.28039458	2.3118322	20	2 19.4	18.8
61202 2000 OM_4	15.0	X	77.60028	139.32552	197.51148	5.72510	0.1309667	0.26096443	2.4252053	20	—	—
61203 2000 OY_4	15.1	X	71.51547	77.06157	217.91454	5.69129	0.0955270	0.25525768	2.4612185	20	11 23.2	18.5
61204 2000 OP_5	15.4	X	179.52404	67.28407	199.14769	5.05020	0.1924420	0.26752197	2.3854102	20	—	—
61205 2000 OL_6	15.2	X	176.39329	61.61637	255.50059	7.87902	0.1020535	0.27418315	2.3466170	20	—	—
61206 2000 OS_6	15.2	X	345.48682	327.06418	258.45880	4.59254	0.0697258	0.28609703	2.2810098	20	3 26.1	17.6
61207 2000 OZ_7	14.3	X	220.44034	39.84738	302.16306	11.36894	0.3107665	0.22957526	2.6415124	20	3 10.1	19.4
61208 Stonařov	15.6	X	230.98150	268.26176	88.52854	5.44180	0.1895352	0.28482540	2.2877939	20	4 15.4	19.1
61209 2000 OM_9	15.8	X	200.20126	199.20604	103.49713	6.11627	0.1545906	0.27568337	2.3380960	20	1 9.7	19.4
61210 2000 OU_9	15.9	X	339.99557	198.67942	114.78168	6.61982	0.2364931	0.29774329	2.2211338	20	8 6.4	16.6
61211 2000 OH_{10}	15.0	X	241.23107	83.59359	120.94362	6.58558	0.1819613	0.27174710	2.3606201	20	—	—
61212 2000 OJ_{10}	15.4	X	295.31711	247.01744	125.59074	5.72608	0.1952929	0.29651315	2.2272728	20	7 29.2	17.4
61213 2000 OK_{10}	16.1	X	26.52342	66.61015	271.00245	3.04885	0.2143039	0.30528940	2.1843802	20	12 22.5	18.7
61214 2000 OQ_{10}	15.3	X	109.75996	125.25700	185.35982	1.00691	0.1751699	0.26473205	2.4021403	20	—	—
61215 2000 OX_{10}	15.6	X	178.84555	67.93276	234.78170	2.66011	0.1861310	0.27360151	2.3499415	20	—	—
61216 2000 OA_{11}	16.1	X	38.02254	180.25220	130.29278	7.78218	0.2341439	0.30433486	2.1889453	20	12 3.8	19.1
61217 2000 OF_{11}	15.7	X	228.86330	8.90906	263.70246	3.52771	0.1829635	0.27750337	2.3278619	20	—	—
61218 2000 OH_{11}	15.1	X	34.87993	40.12135	282.70522	6.11012	0.2041833	0.25553890	2.4594125	20	11 29.3	18.2
61219 2000 ON_{12}	16.6	X	358.66944	174.25425	132.02096	5.22761	0.2102798	0.29823342	2.2186996	20	9 17.7	18.0
61220 2000 OO_{12}	16.8	X	242.62912	151.99956	163.51418	2.02476	0.2327069	0.28309236	2.2971214	20	2 28.6	20.6
61221 2000 OZ_{12}	15.7	X	48.32689	157.54408	120.47725	2.92062	0.1652333	0.25271408	2.4777059	20	10 13.9	18.8
61222 2000 OC_{13}	15.4	X	96.53040	312.40747	303.56223	5.99225	0.0670178	0.25612120	2.4556834	20	10 26.9	19.0
61223 2000 OL_{13}	15.9	X	139.10119	95.06648	262.37937	2.68238	0.1051622	0.27390611	2.3481990	20	1 10.1	19.0
61224 2000 OO_{13}	14.9	X	73.76024	110.76799	283.19862	5.73712	0.0512246	0.27037754	2.3685850	20	—	—
61225 2000 OP_{13}	15.0	X	210.31020	78.14542	280.87461	4.38232	0.1849675	0.23347997	2.6119787	20	3 28.5	19.4
61226 2000 OR_{13}	13.3	X	59.57860	153.03167	296.45465	21.25307	0.0326893	0.22678345	2.6631470	20	1 21.6	16.8
61227 2000 OS_{13}	16.0	X	236.98763	98.51024	143.86088	4.19778	0.1516365	0.27463948	2.3440169	20	—	—
61228 2000 OX_{13}	15.3	X	327.73220	247.64094	303.91404	5.83561	0.1260304	0.28007933	2.3135666	20	1 5.4	17.9
61229 2000 OA_{14}	16.1	X	200.49012	325.71999	319.28998	2.17876	0.2137530	0.27440926	2.3453277	20	—	—
61230 2000 OG_{14}	15.8	X	315.70072	192.05613	135.81995	6.67885	0.1368283	0.29438236	2.2380075	20	7 5.6	17.7
61231 2000 OA_{15}	15.8	X	175.61839	148.07004	143.91064	7.57917	0.1162108	0.27111554	2.3642847	20	—	—
61232 2000 OB_{15}	16.1	X	253.27532	116.50410	156.98954	3.46725	0.1295587	0.27987380	2.3146992	20	1 23.2	19.3
61233 2000 ON_{15}	15.1	X	313.21363	240.82374	120.30119	3.12224	0.1474742	0.24741059	2.5129886	20	8 17.8	17.6
61234 2000 OR_{15}	15.4	X	338.58939	328.35393	276.32574	1.86845	0.1645847	0.28872353	2.2671553	20	3 31.7	17.5
61235 2000 OT_{15}	14.6	X	51.71546	240.88168	146.19049	7.55604	0.1368188	0.26439046	2.4042089	20	—	—
61236 2000 ON_{16}	14.8	X	60.12455	351.70324	11.54274	2.43931	0.2229211	0.26120315	2.4237274	20	—	—
61237 2000 OP_{16}	15.8	X	106.04666	134.10984	143.34750	1.88209	0.1739222	0.26005795	2.4308377	20	12 12.9	19.7
61238 2000 OF_{17}	15.7	X	282.30227	191.16555	117.28007	8.85613	0.1295977	0.28701648	2.2761358	20	4 16.5	18.7
61239 2000 OP_{17}	15.9	X	298.93228	179.68683	108.44685	1.24136	0.1028465	0.28716231	2.2753651	20	4 11.3	18.3
61240 2000 OT_{17}	15.3	X	12.62447	286.11665	109.61713	3.43895	0.1937494	0.25870932	2.4392782	20	—	—
61241 2000 OW_{17}	15.1	X	248.65625	327.77628	334.24352	4.96012	0.1545718	0.28164406	2.3049897	20	2 22.3	18.3
61242 2000 OX_{17}	15.0	X	336.42136	220.45460	116.45874	3.84408	0.1696428	0.24750481	2.5123508	20	8 29.2	17.0
61243 2000 OJ_{18}	14.4	X	77.67340	63.83154	316.28806	4.45594	0.0865142	0.21705816	2.7421128	20	—	—
61244 2000 OM_{19}	15.3	X	27.18727	191.07020	161.59237	6.41913	0.1385024	0.25765256	2.4459434	20	12 19.9	18.4
61245 2000 ON_{22}	15.7	X	238.79270	161.57708	174.89353	4.03144	0.2691038	0.28021946	2.3127952	20	3 20.8	19.7
61246 2000 OX_{22}	15.6	X	250.47855	293.05357	349.57451	3.59347	0.1555972	0.28180994	2.3040851	20	1 31.4	19.2
61247 2000 OF_{23}	14.5	X	262.32281	221.18027	99.79646	11.78055	0.1675857	0.23729323	2.5839205	20	4 9.0	18.5
61248 2000 OH_{23}	15.1	X	332.56642	327.35423	343.82023	5.12248	0.1674911	0.24593263	2.5230466	20	7 8.5	17.5
61249 2000 OO_{23}	15.0	X	13.20387	225.53836	79.57753	1.29347	0.1341907	0.30082166	2.2059550	20	10 2.5	16.9
61250 2000 OV_{23}	14.9	X	203.38263	247.46913	110.24136	14.96367	0.1283890	0.23306037	2.6151128	20	3 31.2	19.3
61251 2000 OE_{24}	15.4	X	177.99699	227.55549	118.40351	8.59802	0.2177383	0.27717649	2.3296917	20	2 15.9	19.2
61252 2000 OK_{24}	15.0	X	321.22386	316.29567	19.98002	4.06743	0.1424381	0.24650514	2.5191386	20	7 27.5	17.5
61253 2000 OM_{24}	14.6	X	256.59009	342.93261	317.67761	6.51861	0.1327998	0.28366702	2.2940180	20	2 28.7	17.9
61254 2000 OC_{25}	15.2	X	95.13417	276.10007	104.48960	7.59825	0.1294149	0.27021564	2.3695310	20	—	—
61255 2000 OJ_{25}	15.6	X	208.40583	240.36858	93.07679	6.23715	0.1591009	0.28006148	2.3136649	20	2 26.3	19.2
61256 2000 OT_{25}	15.9	X	241.86557	275.05553	62.66209	4.48970	0.2907410	0.28418944	2.2912058	20	3 25.2	19.8
61257 2000 OY_{25}	16.3	X	135.97518	217.75002	105.35763	2.36841	0.2022731	0.26899683	2.3766831	20	—	—
61258 2000 OD_{26}	16.0	X	264.10149	235.88565	71.49864	1.17638	0.2253677	0.28528280	2.2853479	20	3 9.5	19.5
61259 2000 OG_{26}	14.8	X	202.91308	287.09626	100.85632	3.66988	0.1902228	0.23554111	2.5967187	20	4 30.1	19.2
61260 2000 OF_{27}	16.2	X	188.04940	134.79786	167.90738	2.18208	0.2101215	0.27337051	2.3512651	20	1 1.4	20.1
61261 2000 OO_{27}	15.6	X	344.47228	203.18528	76.13255	4.43862	0.1755215	0.29300916	2.2449944	20	6 13.4	16.9
61262 2000 OJ_{28}	15.6	X	210.48246	114.39612	222.34078	4.40162	0.1903536	0.28078872	2.3096683	20	2 27.6	19.4
61263 2000 OR_{28}	15.0	X	304.81909	105.73421	196.04354	6.90437	0.1884456	0.24073315	2.5592465	20	4 28.6	18.1
61264 2000 OH_{29}	14.5	X	144.64803	223.09096	158.89754	15.28300	0.1931489	0.22638291	2.6662874	20	3 2.9	18.5
61265 2000 ON_{29}	15.7	X	119.26994	194.29106	190.35165	6.22084	0.0958027	0.27408235	2.3471923	20	1 18.1	18.7
61266 2000 OY_{29}	14.1	X	203.43983	84.47226	279.27884	12.27495	0.1827848	0.23231834	2.6206783	20	3 24.2	18.7
61267 2000 OC_{30}	15.4	X	127.20533	156.84267	224.20086	5.64657	0.1110828	0.27424671	2.3462544	20	1 25.5	18.4
61268 2000 OG_{30}	14.3	X	260.89247	298.66175	283.24312	12.71399	0.1498938	0.17489008	3.1668387	20	—	—
61269 2000 OK_{30}	15.2	X	7.86088	149.09620	220.41461	4.26732	0.1961309	0.25526224	2.4611892	20	12 23.3	18.0
61270 2000 OC_{31}	16.2	X	267.29021	83.16702	198.19125	6.76025	0.1035081	0.28203949	2.3028347	20	2 18.0	19.5
61271 2000 OE_{31}	15.3	X	335.17082	55.00210	204.06175	6.19559	0.1597162	0.28938357	2.2637066	20	4 19.3	17.3
61272 2000 OR_{31}	15.5	X	79.40354	148.21322	221.35649	5.33376	0.1281480	0.26552709	2.3973429	20	—	—
61273 2000 OL_{32}	16.0	X	241.78824	155.34524	170.65632	6.38968	0.1490640	0.28294058	2.2979429	20	3 17.7	19.3
61274 2000 OE_{33}	16.5	X	47.23981	69.49625	228.09551	4.38564	0.1323816	0.30389946	2.1910356	20	11 11.7	19.1
61275 2000 OE_{34}	15.4	X	203.96298	162.09132	199.62165	5.07839	0.1744645	0.23182848	2.6243687	20	3 28.4	19.7
61276 2000 OH_{34}	15.4	X	69.14350	139.44015	202.27398	5.31065	0.1284538	0.26089184	2.4256551	20	—	—
61277 2000 OS_{34}	15.3	X	204.36259	226.55137	194.42558	5.43203	0.1158172	0.23924596	2.5698413	20	6 14.3	19.2
61278 2000 OU_{34}	15.3	X	226.49734	63.63293	160.50511	11.55574	0.1574136	0.26926645	2.3750963	20	—	—
61279 2000 OF_{35}	16.0	X	3.18502	127.55946	235.80616	2.50943	0.1016777	0.30376551	2.1916796	20	12 7.1	18.0
61280 2000 OH_{35}	15.2	X	326.96166	149.46480	275.99613	4.29550	0.1118147	0.30601730	2.1809149	20	—	—

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	m		°	°	°	°		°				
61281 2000 OK_{35}	16.4	X	291.96842	161.24157	169.99005	5.67394	0.1755800	0.28976624	2.2617131	20	5 22.7	18.9
61282 2000 OE_{36}	15.3	X	180.06466	163.92417	218.51546	5.98781	0.1135465	0.28092507	2.3089209	20	3 27.2	18.7
61283 2000 OX_{37}	14.6	X	114.23511	137.13039	203.60996	8.91030	0.1955760	0.21712701	2.7415331	20	—	—
61284 2000 OF_{39}	15.2	X	236.55779	149.76136	175.69818	15.16392	0.1460660	0.23214893	2.6219531	20	3 15.5	19.2
61285 2000 OL_{39}	14.8	X	93.19617	178.29289	210.90018	9.02768	0.1598144	0.21874124	2.7280287	20	1 8.3	18.4
61286 2000 OL_{41}	16.0	X	276.32255	63.81000	211.28851	7.35493	0.1087283	0.28214423	2.3022648	20	2 19.1	19.3
61287 2000 OR_{41}	14.6	X	286.57163	95.31771	227.24633	10.36249	0.0474464	0.23826660	2.5768785	20	5 23.2	17.8
61288 2000 OE_{42}	14.9	X	100.26442	84.98645	204.33878	5.26091	0.0763226	0.25816600	2.4426993	20	12 16.8	18.5
61289 2000 OU_{42}	16.2	X	59.00550	116.98960	232.65291	3.49427	0.1533625	0.30897785	2.1669613	20	—	—
61290 2000 OX_{42}	13.9	X	348.79931	152.13359	288.03278	8.24933	0.1369774	0.21006309	2.8026544	20	—	—
61291 2000 OA_{43}	15.0	X	141.96864	322.67639	307.19790	8.68451	0.2162631	0.26286177	2.4135211	20	—	—
61292 2000 OL_{43}	14.7	X	33.10272	56.82758	258.69648	5.47877	0.1458965	0.25188316	2.4831519	20	11 7.1	17.7
61293 2000 OZ_{43}	15.1	X	114.36122	351.03158	305.58084	10.81980	0.1555665	0.26077995	2.4263489	20	—	—
61294 2000 OK_{44}	15.6	X	155.72742	24.89127	296.62720	6.01369	0.1333018	0.26884360	2.3775861	20	—	—
61295 2000 OX_{44}	14.9	X	128.01470	146.69718	175.38278	14.48595	0.2087063	0.26504941	2.4002224	20	—	—
61296 2000 ON_{45}	15.9	X	315.32123	79.52206	241.06371	7.22762	0.1776135	0.29154882	2.2524847	20	6 15.9	17.8
61297 2000 OD_{46}	16.1	X	291.92938	33.40020	273.04891	8.66124	0.2008442	0.28754609	2.2733401	20	4 5.9	19.2
61298 2000 OG_{46}	14.9	X	262.91141	176.75209	165.52112	9.84301	0.1913319	0.23575547	2.5951444	20	4 30.7	18.9
61299 2000 OQ_{46}	15.1	X	260.91657	32.88365	286.69633	1.75894	0.2120123	0.28314043	2.2968614	20	3 21.8	18.7
61300 2000 OJ_{47}	15.2	X	87.96198	221.46634	135.75517	2.50713	0.2232396	0.26206724	2.4183968	20	—	—
61301 2000 ON_{47}	14.7	X	292.37615	213.43459	167.33890	13.88499	0.1742297	0.24234817	2.5478639	20	7 31.7	17.7
61302 2000 OS_{47}	15.4	X	224.33565	245.16989	156.43635	8.39939	0.2200157	0.28481669	2.2878406	20	6 3.6	19.1
61303 2000 OY_{47}	15.3	X	109.48598	204.44603	127.59565	4.24693	0.2281704	0.26257459	2.4152806	20	—	—
61304 2000 OJ_{48}	15.6	X	122.49789	207.91082	147.87900	2.83919	0.2056593	0.26581583	2.3956065	20	1 3.3	18.5
61305 2000 OV_{48}	15.4	X	170.77466	312.18030	35.22847	4.18836	0.2529079	0.22275377	2.6951690	20	2 18.3	20.1
61306 2000 OF_{49}	15.6	X	253.57941	284.47181	36.89434	5.96377	0.2613283	0.28206947	2.3026715	20	3 16.6	19.3
61307 2000 OJ_{49}	14.6	X	241.13205	348.00156	4.00948	15.07765	0.1343140	0.23251448	2.6192043	20	4 18.8	18.7
61308 2000 ON_{49}	15.4	X	78.41638	270.40641	95.30268	5.87935	0.2313580	0.26092553	2.4254463	20	—	—
61309 2000 OF_{50}	14.6	X	93.25821	306.10446	14.49653	14.69114	0.2222456	0.25862219	2.4398260	20	—	—
61310 2000 OQ_{50}	15.4	X	266.47532	280.75965	35.78647	3.84755	0.2072876	0.28243647	2.3006764	20	3 26.2	18.7
61311 2000 OR_{50}	15.6	X	113.17512	262.05608	82.67838	3.34892	0.2306886	0.26448715	2.4036229	20	—	—
61312 2000 OS_{50}	14.5	X	150.46398	185.98541	101.79793	3.64978	0.1947180	0.26359070	2.4090695	20	—	—
61313 2000 OF_{51}	14.5	X	187.56519	114.65238	240.58526	11.69227	0.1424249	0.22729113	2.6591799	20	3 1.3	19.1
61314 2000 OH_{51}	14.7	X	123.79306	11.76635	275.81046	12.05735	0.2251355	0.26201278	2.4187319	20	—	—
61315 2000 OM_{51}	15.5	X	120.69977	37.08350	277.81245	11.78490	0.1926280	0.26349539	2.4096504	20	—	—
61316 2000 ON_{51}	14.5	X	180.35293	42.12001	250.77787	10.70764	0.2026768	0.26971407	2.3724677	20	—	—
61317 2000 OO_{51}	14.4	X	150.76932	39.73614	291.23911	14.58631	0.1750722	0.21884711	2.7271488	20	1 7.2	18.6
61318 2000 OV_{51}	14.7	X	33.77167	125.06643	248.74752	10.58581	0.2625822	0.25698578	2.4501724	20	—	—
61319 2000 OW_{51}	14.3	X	1.55231	343.64322	321.66817	12.65344	0.1771145	0.24415342	2.5352892	20	8 30.8	16.6
61320 2000 OZ_{51}	15.0	X	248.46395	191.93044	130.71196	2.47509	0.2339439	0.27977820	2.3152264	20	3 14.5	18.6
61321 2000 OO_{54}	16.1	X	251.26927	183.48637	132.52467	6.02054	0.1881451	0.28425574	2.2908495	20	3 12.7	19.5
61322 2000 OT_{54}	16.4	X	216.28543	305.15580	281.53246	0.57743	0.1368434	0.26925784	2.3751469	20	—	—
61323 2000 OZ_{54}	15.9	X	77.73584	354.30683	294.25514	1.03383	0.1519672	0.25742002	2.4474162	20	11 27.6	19.3
61324 2000 OO_{56}	16.0	X	241.73577	197.60077	61.70229	2.92058	0.1966507	0.27656477	2.3331257	20	—	—
61325 2000 OV_{56}	14.6	X	304.92811	6.82541	333.63153	9.96289	0.0959204	0.19391529	2.9561605	20	7 6.9	18.5
61326 2000 OP_{57}	16.2	X	335.80631	177.60026	95.10755	2.43691	0.0932793	0.29023995	2.2592516	20	5 21.6	18.1
61327 2000 OR_{57}	15.3	X	132.36292	336.81979	8.10290	2.21359	0.0890235	0.22063892	2.7123640	20	—	—
61328 2000 OD_{58}	14.3	X	136.71185	34.85110	327.60616	7.67924	0.0696276	0.17390611	3.1787728	20	1 25.9	18.9
61329 2000 OG_{58}	14.7	X	248.39779	59.54050	335.40009	8.97216	0.0958794	0.19213613	2.9743816	20	7 1.8	19.1
61330 2000 OT_{58}	15.7	X	55.65306	198.74949	122.53151	3.35319	0.2027749	0.25673483	2.4517688	20	12 21.2	19.2
61331 2000 OH_{59}	15.9	X	146.39823	228.39950	147.10923	4.32957	0.1890980	0.27475763	2.3433449	20	2 20.7	19.4
61332 2000 OL_{59}	16.2	X	231.25345	115.99846	197.29054	0.19644	0.2330445	0.28028303	2.3124456	20	2 16.9	20.1
61333 2000 OP_{59}	15.3	X	263.80990	169.67796	136.36446	3.81388	0.1058029	0.23394674	2.6085033	20	3 25.2	18.9
61334 2000 OS_{59}	15.7	X	211.87991	182.71628	181.69714	3.42246	0.1754611	0.28241582	2.3007885	20	4 6.1	19.3
61335 2000 OT_{59}	15.1	X	202.93640	234.22352	145.38293	15.26822	0.0836974	0.23412753	2.6071602	20	4 26.5	19.2
61336 2000 OT_{67}	15.4	X	106.30182	325.55053	315.44528	7.05522	0.0814581	0.26070021	2.4268436	20	12 13.5	19.0
61337 2000 OE_{68}	15.5	X	314.29696	208.93851	94.77621	4.96334	0.1466944	0.24178630	2.5518095	20	5 23.9	18.2
61338 2000 PK	14.3	X	109.49453	277.79647	167.35190	11.12852	0.0705927	0.17741221	3.1367534	20	4 3.4	18.8
61339 2000 PA_{1}	14.5	X	236.74473	205.48411	103.20299	7.02666	0.1561612	0.18216371	3.0819681	20	3 1.5	19.5
61340 2000 PY_{2}	14.9	X	94.74806	156.13263	212.20435	5.13555	0.1473180	0.21760302	2.7375335	20	—	—
61341 2000 PC_{3}	15.9	X	225.89284	298.52304	337.96829	5.97282	0.1166812	0.27555353	2.3388304	20	1 1.9	19.5
61342 Lovejoy	15.8	X	142.23884	228.94442	90.79624	3.16880	0.2099054	0.26879883	2.3778500	20	—	—
61343 2000 PC_{5}	15.5	X	330.88253	205.04245	116.41969	9.11736	0.2683714	0.29255438	2.2473203	20	7 16.1	16.2
61344 2000 PT_{5}	16.3	X	2.90684	174.01141	116.92740	4.70550	0.1200638	0.29658156	2.2269303	20	8 17.6	18.2
61345 2000 PU_{5}	15.6	X	118.97538	132.33305	178.96744	2.27265	0.1979559	0.26476111	2.4019645	20	—	—
61346 2000 PD_{8}	15.3	X	260.04641	359.34970	14.34138	5.53158	0.2859731	0.23663093	2.5887397	20	5 23.2	19.3
61347 2000 PE_{8}	14.7	X	203.92947	267.81156	93.31407	8.05877	0.2370171	0.22781586	2.6550951	20	3 31.6	19.5
61348 2000 PF_{8}	13.9	X	249.36384	173.96992	214.87385	14.65469	0.1305675	0.23704225	2.5857441	20	6 19.6	17.9
61349 2000 PD_{9}	14.4	X	183.38733	285.41409	56.61556	14.38532	0.2198608	0.22704006	2.6611400	20	2 25.3	19.2
61350 2000 PL_{9}	14.5	X	317.48628	276.66961	67.12301	15.81336	0.1363672	0.24577053	2.5241559	20	8 4.8	17.4
61351 2000 PS_{9}	15.7	X	77.80714	200.31561	143.83450	1.74339	0.1981213	0.26077095	2.4264047	20	—	—
61352 2000 PY_{9}	14.4	X	204.98225	293.14793	77.44351	7.31257	0.3038724	0.23045094	2.6348166	20	4 10.6	19.3
61353 2000 PE_{10}	15.3	X	17.26456	260.74220	104.90506	7.87834	0.1766935	0.25427144	2.4675786	20	12 28.5	18.1
61354 2000 PY_{10}	15.0	X	331.43708	244.40848	115.39272	12.74881	0.1690482	0.24695582	2.5160728	20	9 29.4	17.6
61355 2000 PD_{11}	14.1	X	209.00842	322.82357	86.16988	11.71847	0.1309428	0.18523718	3.0477822	20	6 3.2	18.9
61356 2000 PG_{11}	15.2	X	267.36291	241.77568	32.35797	13.42681	0.1456977	0.22909842	2.6451765	20	2 19.2	19.4
61357 2000 PZ_{11}	14.7	X	18.09521	168.27886	128.10706	18.06824	0.1828518	0.24663513	2.5182534	20	10 1.1	17.8
61358 2000 PK_{12}	14.9	X	301.55924	236.20200	132.74152	14.75026	0.1873408	0.24351037	2.5397506	20	7 30.5	17.3
61359 2000 PW_{13}	15.0	X	246.55597	161.64369	195.79737	2.14165	0.0562305	0.23966810	2.5668229	20	5 15.8	18.4
61360 2000 PB_{14}	15.1	X	36.96988	125.39994	284.07245	4.64126	0.0562153	0.21750150	2.7383852	20	—	—

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	m		°	°	°	°		°				
61361 2000 PB_{18}	15.4	X	254.37111	260.04280	112.22425	4.87126	0.2273237	0.23934750	2.5691145	20	5 24.5	19.3
61362 2000 PO_{19}	15.2	X	40.63773	287.74969	53.28354	5.59883	0.0924375	0.25635735	2.4541750	20	12 14.3	18.4
61363 2000 PT_{19}	15.8	X	288.77999	318.71112	9.28410	7.26939	0.1541985	0.28924528	2.2644281	20	5 12.8	18.4
61364 2000 PH_{20}	14.9	X	2.92611	161.83505	105.57586	6.68764	0.1512507	0.29266717	2.2467429	20	7 9.0	16.6
61365 2000 PW_{20}	15.2	X	205.89534	152.45461	143.14836	2.92348	0.2143127	0.27209055	2.3586332	20	1 7.7	19.1
61366 2000 PE_{21}	14.8	X	31.50587	254.69115	162.28489	4.85098	0.1057795	0.21586600	2.7521993	20	—	—
61367 2000 PG_{22}	14.9	X	233.23846	256.26638	86.27816	8.86578	0.1650151	0.23255804	2.6188773	20	4 5.8	19.1
61368 2000 PH_{22}	15.2	X	305.85738	245.38674	82.94550	7.77969	0.1813270	0.29095742	2.2555360	20	6 8.9	17.4
61369 2000 PO_{22}	14.3	X	129.51564	340.06670	356.85512	8.79801	0.1512102	0.21391693	2.7688915	20	—	—
61370 2000 PU_{22}	15.6	X	296.66649	294.99174	68.78692	3.23899	0.1729616	0.24550385	2.5259835	20	7 17.1	18.4
61371 2000 PO_{23}	15.2	X	124.02101	319.74939	329.37963	5.11031	0.0767741	0.26157408	2.4214356	20	—	—
61372 2000 PQ_{23}	16.0	X	176.72469	152.36368	155.22664	2.81524	0.2020979	0.27154133	2.3618125	20	—	—
61373 2000 PG_{24}	15.7	X	93.93554	188.04931	135.66838	6.60433	0.1493343	0.26050068	2.4280827	20	—	—
61374 2000 PA_{25}	15.3	X	262.16074	283.83277	339.50780	3.43162	0.2324535	0.27831034	2.3233599	20	1 13.4	19.0
61375 2000 PE_{25}	14.8	X	314.53853	278.33165	50.29435	4.66053	0.1975811	0.24035396	2.5619375	20	6 21.9	17.3
61376 2000 PC_{28}	15.1	X	101.37612	304.95793	65.68603	8.98333	0.1462931	0.26644343	2.3918432	20	—	—
61377 2000 PO_{28}	15.9	X	286.28682	57.45637	232.83654	6.07677	0.1338563	0.28490235	2.2873820	20	3 19.5	19.0
61378 2000 PU_{28}	15.4	X	73.92742	203.98439	112.74757	2.46537	0.1862450	0.26052365	2.4279400	20	—	—
61379 2000 PG_{29}	14.9	X	236.71014	279.34758	98.60614	8.51220	0.2101232	0.23685886	2.5870786	20	5 17.4	19.1
61380 2000 PH_{29}	15.6	X	44.82924	271.48213	92.93477	7.58428	0.1278534	0.25936740	2.4351504	20	—	—
61381 2000 PL_{29}	15.2	X	123.46276	285.90039	25.65232	6.26847	0.0384659	0.21456079	2.7633495	20	—	—
61382 2000 PR_{29}	15.2	X	298.29495	196.43972	75.64395	6.16843	0.1942828	0.28398477	2.2923065	20	3 7.3	18.1
61383 2000 QB	16.3	X	70.75518	340.65433	67.52081	2.33777	0.1750033	0.26738236	2.3862405	20	—	—
61384 Arturoromer	16.1	X	111.94435	150.48308	182.88992	2.23138	0.1946362	0.26379554	2.4078222	20	—	—
61385 2000 QG_{1}	15.4	X	299.87851	351.24877	355.82222	4.66032	0.2876824	0.24194360	2.5507034	20	6 5.6	18.4
61386 Namikoshi	15.6	X	145.37515	169.60344	159.83433	2.72444	0.2155975	0.26822488	2.3812409	20	—	—
61387 2000 QR_{2}	15.2	X	102.81132	219.88230	145.90365	6.76591	0.0910171	0.21772038	2.7365496	20	—	—
61388 2000 QA_{3}	15.4	X	237.52236	335.16641	0.03366	2.87233	0.1722365	0.23221459	2.6214589	20	3 26.5	19.5
61389 2000 QD_{3}	15.7	X	217.39725	136.67738	152.75594	7.03122	0.1108907	0.27389876	2.3482410	20	1 8.6	19.3
61390 2000 QR_{3}	15.8	X	263.75482	144.25959	107.42917	1.16695	0.1706600	0.27633729	2.3344060	20	1 4.4	19.2
61391 2000 QT_{3}	16.0	X	355.33895	316.64473	13.18509	2.28941	0.1593159	0.24774006	2.5107602	20	9 27.1	18.4
61392 2000 QC_{4}	16.1	X	206.31318	16.69942	300.17695	0.50876	0.1512613	0.27550686	2.3390945	20	2 1.6	19.5
61393 2000 QD_{4}	15.6	X	82.30525	120.55752	192.23334	1.42082	0.1749542	0.25806284	2.4433503	20	—	—
61394 2000 QY_{4}	15.9	X	236.22559	135.37431	171.42358	7.68028	0.1237988	0.27826279	2.3236246	20	2 16.9	19.4
61395 2000 QZ_{4}	16.0	X	100.09845	32.21348	237.92124	1.26607	0.1878587	0.25591104	2.4570276	20	11 28.7	19.8
61396 2000 QD_{5}	15.3	X	99.81332	350.82068	329.36429	3.40901	0.1948462	0.21090151	2.7952217	20	—	—
61397 2000 QF_{5}	15.1	X	79.30519	37.37194	314.75071	1.48366	0.2170474	0.26103309	2.4247800	20	—	—
61398 2000 QJ_{5}	15.3	X	293.84356	1.65570	315.10540	0.98840	0.1033796	0.23706543	2.5855755	20	5 15.9	18.5
61399 2000 QZ_{5}	15.9	X	253.30785	139.04370	151.14899	3.56402	0.0932280	0.27834803	2.3231502	20	2 17.1	19.1
61400 Voxandreae	15.1	X	81.55778	272.62218	214.53907	11.12628	0.1324550	0.23104327	2.6303114	20	4 25.8	18.4
61401 Schiff	15.2	X	253.27205	21.16253	350.82577	2.23665	0.1069952	0.23767420	2.5811586	20	6 5.5	18.8
61402 Franciseveritt	16.3	X	346.15569	337.40244	336.08246	1.94276	0.1665361	0.24447634	2.5330562	20	8 11.8	18.3
61403 2000 QG_{9}	14.4	X	34.87180	267.51526	130.76859	9.34152	0.1589405	0.20876916	2.8142228	20	—	—
61404 Očenášek	14.7	X	164.44997	137.36275	202.43193	6.61033	0.2382534	0.21950913	2.7216628	20	1 31.7	19.5
61405 2000 QT_{9}	15.7	X	204.04323	148.29418	167.25656	2.21372	0.0415757	0.22258208	2.6965548	20	2 2.8	19.4
61406 2000 QZ_{9}	15.7	X	247.11311	38.99935	309.19134	2.21700	0.0745550	0.28759763	2.2730684	20	4 28.4	18.7
61407 2000 QK_{10}	15.7	X	271.96314	168.25896	154.72279	2.66130	0.1868610	0.23774253	2.5806640	20	4 14.4	19.3
61408 2000 QR_{11}	14.8	X	41.25527	255.32182	327.91827	11.29287	0.0246708	0.24190052	2.5510062	20	6 24.7	18.2
61409 2000 QW_{11}	15.3	X	179.47490	42.55685	301.24433	1.28987	0.1088694	0.22679218	2.6630787	20	2 12.8	19.2
61410 2000 QX_{11}	16.0	X	216.49865	89.22248	164.41192	0.91380	0.1453446	0.27179217	2.3603591	20	—	—
61411 2000 QC_{12}	15.5	X	302.66912	279.37868	316.37970	4.83855	0.0871765	0.28052663	2.3111067	20	2 5.8	18.3
61412 2000 QF_{12}	14.7	X	133.84173	265.58497	135.76510	2.45160	0.2509985	0.17571917	3.1568695	20	3 25.1	19.8
61413 2000 QG_{12}	16.1	X	214.99972	193.09718	134.63526	2.30793	0.1634458	0.27951072	2.3167032	20	2 22.9	19.6
61414 2000 QH_{12}	15.3	X	90.00576	21.90647	352.35266	2.10643	0.2090032	0.26635572	2.3923682	20	—	—
61415 2000 QK_{12}	15.8	X	292.78842	190.79358	136.83920	4.44007	0.1545324	0.24048641	2.5609967	20	5 22.8	18.9
61416 2000 QL_{12}	16.1	X	5.77599	101.83770	130.42636	3.32127	0.2898215	0.29192946	2.2505263	20	5 16.9	16.5
61417 2000 QP_{13}	16.1	X	270.12587	86.28594	149.35430	9.84580	0.1672311	0.27680530	2.3317739	20	—	—
61418 2000 QR_{13}	14.5	X	149.13081	192.54911	154.21950	6.02849	0.1471992	0.17315128	3.1880044	20	1 26.3	19.5
61419 2000 QM_{14}	16.0	X	177.54467	267.88673	153.09221	2.92273	0.1779595	0.28505236	2.2865794	20	5 18.0	19.6
61420 2000 QN_{14}	15.3	X	205.16001	261.85411	139.03236	3.42372	0.1922075	0.23539393	2.5978009	20	5 17.8	19.6
61421 2000 QU_{14}	15.0	X	189.69942	20.71635	355.28569	1.43719	0.1472945	0.23111847	2.6297408	20	4 2.5	19.0
61422 2000 QN_{15}	15.0	X	299.76503	122.64862	291.97556	1.30370	0.0382960	0.20266126	2.8704868	20	10 11.6	18.7
61423 2000 QS_{15}	14.8	X	130.78745	243.19525	150.48121	1.72413	0.1882815	0.17466970	3.1695017	20	3 7.6	19.8
61424 2000 QX_{15}	16.6	X	273.64995	20.86189	354.76504	1.97362	0.1691576	0.29169448	2.2517348	20	6 30.5	19.0
61425 2000 QA_{16}	15.9	X	350.98126	247.59193	128.52216	3.46845	0.2200496	0.25216448	2.4813048	20	12 7.0	18.1
61426 2000 QP_{16}	15.4	X	192.12268	293.92751	135.33715	6.30195	0.1650919	0.28692707	2.2766086	20	6 11.9	18.9
61427 2000 QR_{16}	15.5	X	241.92841	265.83965	126.46809	4.19567	0.1958387	0.23884433	2.5727214	20	6 9.6	19.5
61428 2000 QA_{17}	16.5	X	265.69961	136.43801	177.13434	4.10070	0.1396151	0.28440195	2.2900643	20	3 28.2	19.6
61429 2000 QF_{17}	15.7	X	205.28461	185.56013	207.81174	2.65767	0.2044904	0.23378629	2.6096966	20	5 7.4	20.1
61430 2000 QJ_{17}	15.1	X	342.63729	250.50676	150.92757	7.53221	0.2117832	0.25363270	2.4717197	20	12 26.6	17.5
61431 2000 QY_{17}	14.5	X	115.41113	125.84886	122.82451	2.99760	0.0173104	0.20444999	2.8537197	20	10 30.7	18.4
61432 2000 QS_{18}	15.6	X	38.82844	48.66850	344.04894	3.86053	0.0797458	0.21195222	2.7859762	20	—	—
61433 2000 QY_{18}	15.9	X	181.94788	138.01325	122.28747	3.03133	0.1777569	0.26690166	2.3891048	20	—	—
61434 2000 QB_{19}	15.4	X	358.80786	131.59067	174.71764	1.26856	0.1194628	0.24584049	2.5236770	20	8 24.3	17.9
61435 2000 QC_{19}	15.1	X	250.06588	109.71604	159.89562	7.60088	0.0803588	0.22590024	2.6700839	20	1 25.4	19.0
61436 2000 QD_{19}	15.3	X	152.23264	175.88576	157.71186	7.23965	0.1367023	0.27009297	2.3702484	20	—	—
61437 2000 QQ_{19}	15.5	X	103.85793	169.26019	136.82233	3.06076	0.1222252	0.26058759	2.4275428	20	—	—
61438 2000 QE_{20}	14.0	X	184.92255	64.87903	341.65594	4.38547	0.1771842	0.18160329	3.0883054	20	5 5.8	19.2
61439 2000 QM_{22}	16.5	X	355.99318	173.00091	120.89489	4.84977	0.2144536	0.29519643	2.2338910	20	8 16.7	17.6
61440 2000 QE_{23}	14.6	X	324.22643	142.46054	184.11656	10.18980	0.1260012	0.19315038	2.9639600	20	7 12.2	18.3

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
	m		°	°	°	°		°				
61441 2000 QW_{23}	15.2	X	87.89965	74.92626	359.73232	3.12878	0.0808455	0.22347730	2.6893486	20	2 18.5	18.7
61442 2000 QK_{24}	16.0	X	150.75557	221.35818	161.14167	6.48511	0.0771791	0.22462329	2.6801937	20	2 28.1	19.9
61443 2000 QW_{24}	15.7	X	256.71935	357.87101	286.65004	2.03858	0.2142708	0.27841907	2.3227550	20	2 3.8	19.3
61444 Katokimiko	15.3	X	351.46054	171.27468	140.29928	5.70773	0.2509870	0.24505461	2.5290697	20	8 27.7	16.9
61445 2000 QF_{25}	15.6	X	141.73009	40.13738	260.24196	1.69831	0.1912201	0.26420427	2.4053383	20	—	—
61446 2000 QH_{27}	15.2	X	353.91004	118.66376	152.52650	7.44861	0.1582568	0.24080533	2.5587350	20	6 21.2	17.6
61447 2000 QN_{27}	15.9	X	117.94861	148.45258	170.27846	3.95446	0.2095547	0.26361836	2.4089010	20	—	—
61448 2000 QR_{27}	15.9	X	233.40127	316.70505	346.88808	4.17756	0.1008085	0.27717552	2.3296972	20	2 13.2	19.1
61449 2000 QX_{27}	16.2	X	337.22197	216.17176	142.44940	2.84278	0.1222246	0.24775932	2.5106300	20	10 3.1	18.6
61450 2000 QC_{28}	15.0	X	16.06184	167.98821	163.40787	5.91478	0.2183189	0.20055736	2.8905267	20	11 4.9	18.4
61451 2000 QD_{29}	14.2	X	161.37974	325.57813	102.98284	2.52597	0.1919896	0.17980408	3.1088733	20	5 14.8	19.3
61452 2000 QH_{29}	15.9	X	275.14731	352.36768	9.01728	2.38862	0.1887363	0.23892998	2.5721065	20	6 6.9	19.4
61453 2000 QL_{29}	15.3	X	242.21130	299.04724	0.58412	4.48687	0.1544673	0.27807013	2.3246977	20	2 14.6	18.7
61454 2000 QE_{30}	14.7	X	342.31875	326.60751	10.36361	11.99189	0.1275179	0.24540746	2.5266449	20	9 12.3	17.2
61455 2000 QF_{30}	14.9	X	168.45705	182.53858	88.46743	3.55106	0.1476409	0.26379370	2.4078334	20	—	—
61456 2000 QH_{30}	14.3	X	304.16419	270.96282	50.07793	3.55760	0.1955514	0.23899146	2.5716654	20	5 22.7	17.0
61457 2000 QM_{30}	15.7	X	276.54095	191.02758	98.90568	4.62923	0.2001420	0.28174762	2.3044248	20	3 3.9	18.9
61458 2000 QT_{30}	15.5	X	60.87463	253.59697	145.20984	8.84246	0.1960719	0.26234937	2.4166627	20	—	—
61459 2000 QW_{30}	15.0	X	122.10936	129.41644	196.43141	7.28386	0.2380476	0.26556813	2.3970959	20	—	—
61460 2000 QX_{30}	16.1	X	246.76158	151.39817	127.01404	6.73814	0.1384039	0.27794321	2.3254053	20	1 22.9	19.4
61461 2000 QA_{31}	14.3	X	137.21901	301.33550	74.53124	7.25943	0.1135588	0.22360758	2.6883039	20	2 11.6	18.3
61462 2000 QH_{31}	14.6	X	276.96441	302.53315	39.46843	4.30023	0.1546876	0.18905281	3.0066344	20	5 19.6	18.9
61463 2000 QT_{31}	15.1	X	272.30977	325.13285	9.36375	8.17274	0.2054924	0.23747377	2.5826108	20	4 24.4	18.8
61464 2000 QC_{32}	15.2	X	202.49925	55.51520	105.18292	7.00534	0.0870794	0.25345726	2.4728601	20	10 28.9	18.7
61465 2000 QY_{32}	15.2	X	294.87363	330.32137	31.61471	9.77752	0.0214181	0.24294346	2.5437001	20	8 6.8	18.6
61466 2000 QZ_{32}	14.8	X	95.56727	221.49943	56.96726	9.23036	0.1110913	0.25561292	2.4589376	20	11 29.3	18.3
61467 2000 QD_{33}	14.3	X	138.27252	322.38112	108.25228	12.78912	0.1505467	0.17861241	3.1226859	20	4 29.1	19.4
61468 2000 QM_{33}	15.9	X	71.06214	270.41088	86.51558	7.42126	0.1343441	0.26187227	2.4195970	20	—	—
61469 2000 QJ_{35}	15.2	X	252.94643	9.76430	265.97720	3.11058	0.1493522	0.27715388	2.3298184	20	1 24.6	18.6
61470 2000 QK_{35}	14.8	X	271.04966	83.32392	283.47548	3.83352	0.1925933	0.23822497	2.5771786	20	6 8.7	18.4
61471 2000 QQ_{35}	15.8	X	212.92500	325.04574	317.08647	4.21586	0.2237104	0.27375721	2.3490504	20	—	—
61472 2000 QS_{35}	14.2	X	152.91274	261.58769	111.38066	2.48989	0.2066993	0.17373454	3.1808653	20	3 5.2	19.4
61473 2000 QT_{35}	14.6	X	256.97355	335.38477	205.21408	3.79138	0.0096622	0.21158346	2.7892123	20	—	—
61474 2000 QA_{36}	14.6	X	49.19863	302.03742	151.58293	13.31269	0.1419358	0.22294424	2.6936338	20	1 20.1	17.7
61475 2000 QH_{37}	14.8	X	224.58913	219.65343	179.21309	2.70078	0.2105037	0.18743896	3.0238678	20	5 30.9	19.9
61476 2000 QJ_{37}	15.2	X	136.13022	246.19950	164.54067	2.40417	0.0258481	0.22973394	2.6402960	20	3 11.5	18.9
61477 2000 QS_{37}	15.0	X	23.74854	281.45242	151.28195	7.69549	0.2148931	0.21399346	2.7682314	20	—	—
61478 2000 QC_{38}	15.8	X	6.93301	276.50190	327.59037	1.59980	0.1428791	0.29086842	2.2559960	20	6 6.2	17.5
61479 2000 QH_{39}	15.3	X	84.44548	89.31751	289.27982	1.77088	0.1121934	0.26656806	2.3910976	20	—	—
61480 2000 QY_{39}	14.3	X	293.52210	323.03414	328.33758	9.89683	0.0894644	0.18631312	3.0360372	20	4 11.5	18.6
61481 2000 QN_{40}	14.9	X	312.53362	163.10648	321.67821	3.41427	0.0203281	0.21428207	2.7657452	20	—	—
61482 2000 QU_{40}	15.6	X	213.06183	89.83732	174.30548	4.78339	0.0998304	0.27116360	2.3640054	20	—	—
61483 2000 QP_{41}	15.2	X	312.44222	316.64415	176.41873	2.75427	0.0082198	0.21532773	2.7567840	20	—	—
61484 2000 QY_{41}	14.8	X	261.24469	228.09300	150.57513	9.79901	0.1165810	0.19082482	2.9879923	20	6 22.7	19.2
61485 2000 QH_{42}	15.4	X	222.31993	210.44023	176.30485	1.68350	0.1561248	0.23609211	2.5926769	20	5 17.1	19.4
61486 2000 QQ_{42}	14.8	X	326.01608	163.78422	195.82901	1.50932	0.1067455	0.19773802	2.9179371	20	9 2.6	18.2
61487 2000 QB_{43}	15.7	X	306.39619	354.35579	254.95984	1.47817	0.0715207	0.23164078	2.6257862	20	3 8.0	19.1
61488 2000 QB_{45}	15.5	X	175.93135	309.44838	339.92036	7.34240	0.1135493	0.26888303	2.3773536	20	—	—
61489 2000 QN_{46}	15.4	X	53.44562	0.14884	323.57709	1.08931	0.0764319	0.20573962	2.8417820	20	11 24.3	19.4
61490 2000 QH_{47}	14.8	X	36.18320	65.99602	352.38125	4.85549	0.0050423	0.21602710	2.7508309	20	—	—
61491 2000 QJ_{47}	15.5	X	318.12987	288.73945	347.39340	5.39106	0.0933153	0.23679545	2.5875405	20	4 25.4	18.6
61492 2000 QL_{48}	15.2	X	127.98559	131.93003	189.85995	0.92432	0.1850724	0.26581614	2.3956047	20	—	—
61493 2000 QO_{48}	15.4	X	274.96918	196.15908	155.06263	8.37035	0.1864273	0.23917877	2.5703226	20	5 26.5	19.0
61494 2000 QG_{49}	15.3	X	220.52917	351.47907	343.74890	2.72941	0.1072221	0.23001158	2.6381708	20	3 13.8	19.2
61495 2000 QJ_{49}	16.3	X	234.55445	165.54563	108.19794	0.89575	0.1889913	0.27583523	2.3372377	20	1 4.6	19.9
61496 2000 QO_{49}	14.7	X	124.65704	299.72435	152.49800	10.47024	0.0878722	0.23158211	2.6262297	20	5 1.5	18.6
61497 2000 QH_{50}	15.2	X	9.92743	12.73168	2.71486	2.02958	0.0715742	0.20540552	2.8448627	20	12 1.4	18.8
61498 2000 QM_{50}	15.1	X	47.72860	91.88099	155.19573	15.20420	0.0564295	0.24410029	2.5356570	20	8 9.7	18.2
61499 2000 QD_{51}	15.0	X	322.39599	329.65164	19.23750	1.80810	0.0871998	0.19515450	2.9436331	20	8 15.0	18.6
61500 2000 QV_{51}	15.8	X	195.66456	14.00057	215.67169	2.11217	0.1222725	0.26448993	2.4036060	20	—	—
61501 2000 QB_{52}	15.9	X	238.22696	318.19043	257.18886	1.89316	0.1206339	0.26775494	2.3840264	20	—	—
61502 2000 QM_{53}	14.4	X	301.92732	354.50041	341.75123	10.92431	0.1529045	0.19181949	2.9776540	20	6 16.2	18.4
61503 2000 QN_{53}	15.8	X	138.05580	295.98138	353.67502	5.50264	0.1289299	0.26381349	2.4077130	20	—	—
61504 2000 QS_{53}	15.7	X	245.54976	302.89360	359.60127	4.08316	0.1900706	0.28056933	2.3108721	20	2 18.8	19.4
61505 2000 QX_{53}	15.7	X	260.00364	269.68573	35.45325	1.94230	0.1563213	0.28249681	2.3003488	20	3 9.4	19.0
61506 2000 QQ_{54}	15.0	X	68.83659	242.96354	88.16039	3.46183	0.2036256	0.25798918	2.4438153	20	—	—
61507 2000 QS_{54}	15.2	X	16.06059	215.18830	132.15346	7.50098	0.1444019	0.25183315	2.4834807	20	11 28.2	18.2
61508 2000 QZ_{54}	14.9	X	115.07502	187.87065	112.06102	4.60321	0.0713770	0.21116066	2.7929343	20	—	—
61509 2000 QC_{55}	14.8	X	3.82274	208.91284	345.91272	15.08218	0.0818133	0.23138124	2.6277494	20	3 17.5	17.9
61510 2000 QF_{55}	15.6	X	276.66776	329.75582	33.30011	3.78227	0.1951372	0.24035903	2.5619015	20	6 10.2	18.9
61511 2000 QG_{55}	14.4	X	348.33188	242.26695	350.48966	13.49795	0.0508505	0.23438474	2.6052526	20	4 13.2	17.7
61512 2000 QD_{57}	16.4	X	89.01655	198.71974	138.98871	7.27712	0.1286661	0.26203903	2.4185704	20	—	—
61513 2000 QP_{57}	14.8	X	6.36579	354.14544	21.25724	2.31039	0.0751267	0.20630844	2.8365562	20	11 27.0	18.3
61514 2000 QU_{57}	15.2	X	349.24146	295.42439	123.96771	5.62578	0.0910487	0.25918618	2.4362854	20	—	—
61515 2000 QY_{57}	15.5	X	282.07671	319.84071	81.46584	4.77312	0.1645957	0.24605192	2.5222311	20	8 19.9	18.3
61516 2000 QA_{58}	15.6	X	211.69960	37.79849	8.69743	7.20094	0.0911733	0.28825349	2.2696192	20	6 3.5	18.8
61517 2000 QC_{58}	15.3	X	155.07680	30.82803	12.95787	5.00811	0.0395004	0.23066652	2.6331747	20	3 27.5	18.9
61518 2000 QZ_{58}	14.7	X	248.42603	48.30159	39.34325	4.92059	0.0970639	0.19847163	2.9107423	20	9 9.5	18.7
61519 2000 QE_{59}	15.4	X	201.45839	227.66997	44.38716	4.66315	0.0434764	0.21952706	2.7215146	20	—	—
61520 2000 QH_{59}	15.1	X	32.06530	105.98117	124.41568	15.57838	0.0475866	0.24029539	2.5623538	20	6 23.8	18.4

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Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
	m		°	°	°	°		°				
61521 2000 QJ_{59}	15.0	X	271.94054	235.14516	39.67580	7.00019	0.1246445	0.28080903	2.3095569	20	2 18.2	18.3
61522 2000 QL_{59}	15.0	X	160.85224	336.43408	48.15688	7.19582	0.1566109	0.22739623	2.6583605	20	3 21.3	19.3
61523 2000 QO_{60}	15.3	X	6.04592	317.10920	129.75791	5.65585	0.0909955	0.21377908	2.7700817	20	—	—
61524 2000 QR_{60}	15.5	X	210.10867	275.09662	5.48279	5.18881	0.1706584	0.27266094	2.3553427	20	—	—
61525 2000 QA_{61}	14.4	X	53.11517	336.08526	47.86497	8.08936	0.1581260	0.21180771	2.7872433	20	—	—
61526 2000 QL_{61}	14.7	X	306.46228	128.47236	14.97706	5.12152	0.0569838	0.21341095	2.7732664	20	—	—
61527 2000 QP_{61}	14.5	X	230.74703	230.79400	159.80298	7.98071	0.0996266	0.18582076	3.0413978	20	6 5.5	19.2
61528 2000 QU_{61}	15.6	X	79.63471	200.66831	134.93998	7.49642	0.1505434	0.25925888	2.4358299	20	—	—
61529 2000 QY_{61}	15.5	X	92.72276	202.35118	114.74895	3.74331	0.1835615	0.25979116	2.4325016	20	—	—
61530 2000 QJ_{62}	15.8	X	68.29306	243.24721	78.49469	5.55157	0.2075527	0.25698463	2.4501798	20	—	—
61531 2000 QR_{62}	14.9	X	323.28010	163.79867	16.46190	8.35054	0.0872220	0.22153286	2.7050623	20	1 2.6	18.5
61532 2000 QS_{62}	14.2	X	96.18143	309.81251	116.61815	5.82504	0.1561364	0.17155059	3.2078046	20	3 8.3	18.7
61533 2000 QC_{63}	14.3	X	57.83594	335.20455	43.18343	8.77760	0.2312513	0.21032716	2.8003080	20	—	—
61534 2000 QJ_{63}	15.2	X	90.92447	302.32709	80.26381	7.54424	0.0649581	0.21646495	2.7471201	20	—	—
61535 2000 QN_{63}	15.6	X	129.45588	263.54220	68.70872	5.87037	0.0718752	0.26569786	2.3963156	20	—	—
61536 2000 QR_{63}	15.0	X	75.35782	235.89810	114.75747	7.19888	0.1594027	0.26029903	2.4293365	20	—	—
61537 2000 QZ_{63}	15.5	X	63.06537	246.08120	67.17801	6.90465	0.1355486	0.25468736	2.4648914	20	12 10.7	18.9
61538 2000 QA_{64}	14.9	X	120.19658	239.34468	119.07039	9.99151	0.1204381	0.21728982	2.7401634	20	—	—
61539 2000 QB_{64}	15.5	X	55.80211	92.81981	96.57054	8.21883	0.0453235	0.28535872	2.2849425	20	5 31.9	18.0
61540 2000 QD_{64}	15.9	X	67.21430	247.19457	119.63337	9.47620	0.1695045	0.26073101	2.4266525	20	—	—
61541 2000 QF_{64}	13.6	X	159.23439	319.20982	132.07189	15.63677	0.2446251	0.18099402	3.0952322	20	6 12.3	19.2
61542 2000 QH_{64}	14.9	X	359.19789	177.19909	132.39917	13.85416	0.1489873	0.24531294	2.5272939	20	9 4.9	17.4
61543 2000 QM_{64}	14.5	X	58.56255	324.47937	122.13499	10.32443	0.1070859	0.21936927	2.7228196	20	1 25.3	17.6
61544 2000 QZ_{64}	15.6	X	151.20252	235.35122	85.24731	6.44784	0.2593720	0.26826145	2.3810245	20	—	—
61545 2000 QD_{65}	15.4	X	337.30785	260.89254	42.70877	8.67372	0.1842393	0.24182350	2.5515478	20	7 5.0	17.8
61546 2000 QT_{65}	14.7	X	188.58428	248.67178	87.73598	5.87321	0.2260567	0.27451122	2.3447470	20	2 13.9	18.6
61547 2000 QO_{66}	15.4	X	25.80073	211.05283	72.71268	5.31753	0.1073174	0.24724537	2.5141080	20	9 9.9	18.3
61548 2000 QW_{67}	14.3	X	24.72581	80.06609	132.15733	10.36679	0.0337046	0.18424822	3.0586787	20	5 19.7	18.6
61549 2000 QJ_{68}	14.2	X	39.74459	184.13360	356.16637	14.80430	0.0520409	0.23250818	2.6192517	20	4 18.9	17.7
61550 2000 QK_{70}	15.6	X	328.12955	98.97386	159.01374	22.90404	0.3042181	0.28671751	2.2777178	20	3 9.3	17.8
61551 2000 QJ_{71}	14.5	X	335.65315	94.33056	315.53863	7.58166	0.0405443	0.20614988	2.8380105	20	11 23.8	18.4
61552 2000 QT_{71}	15.5	X	142.02045	334.97623	274.24564	1.63843	0.1575146	0.25960754	2.4336485	20	12 10.1	19.2
61553 2000 QE_{72}	15.3	X	45.17648	182.71560	163.45791	6.17125	0.1455122	0.25665707	2.4522640	20	—	—
61554 2000 QH_{72}	16.3	X	317.11835	13.26212	284.80591	1.63714	0.1556357	0.28946211	2.2632971	20	5 16.6	18.4
61555 2000 QC_{73}	15.4	X	150.26857	153.81791	166.23346	3.76801	0.1494979	0.21846674	2.7303134	20	—	—
61556 2000 QY_{73}	15.5	X	321.08095	299.83367	306.60077	4.32546	0.0563462	0.23216964	2.6217972	20	3 25.4	18.8
61557 2000 QG_{74}	15.0	X	104.55860	44.82003	314.22803	4.36716	0.0772653	0.21621301	2.7492538	20	—	—
61558 2000 QM_{74}	15.3	X	133.74750	5.04875	295.40029	2.57278	0.0735282	0.21318551	2.7752211	20	—	—
61559 2000 QQ_{74}	17.0	X	205.35784	32.14555	291.67940	1.42998	0.2157028	0.27656307	2.3331353	20	2 9.6	21.0
61560 2000 QT_{74}	15.9	X	138.40513	162.91692	173.05205	2.49040	0.1852677	0.26828490	2.3808858	20	—	—
61561 2000 QY_{74}	15.4	X	89.72198	163.41941	166.77338	7.39667	0.1301623	0.26085006	2.4259141	20	—	—
61562 2000 QR_{75}	15.4	X	288.61546	167.23506	157.49735	7.72861	0.1675815	0.28797487	2.2710829	20	5 10.6	18.2
61563 2000 QU_{75}	14.9	X	13.03734	123.70903	266.28023	0.45857	0.1817320	0.20610404	2.8384313	20	—	—
61564 2000 QA_{76}	15.7	X	155.23049	49.43245	172.95203	8.45809	0.2140481	0.25771628	2.4455402	20	11 19.1	19.9
61565 2000 QB_{76}	15.1	X	333.55499	3.98233	308.03501	2.41653	0.0743762	0.24221098	2.5488258	20	7 17.0	18.0
61566 2000 QR_{76}	14.4	X	221.63829	67.77981	320.92293	2.29641	0.1726846	0.18495106	3.0509248	20	5 17.4	19.4
61567 2000 QW_{76}	14.5	X	116.58949	80.54333	337.25487	4.18808	0.1725364	0.17373287	3.1808857	20	3 19.4	19.4
61568 2000 QB_{77}	15.2	X	149.71168	155.70846	162.34506	3.15314	0.0994464	0.26744529	2.3858662	20	—	—
61569 2000 QL_{77}	16.1	X	154.77322	349.71002	307.18723	1.35935	0.1215539	0.26588890	2.3951676	20	—	—
61570 2000 QQ_{77}	15.0	X	260.95305	27.37409	194.66939	2.19968	0.0443234	0.21933314	2.7231185	20	—	—
61571 2000 QD_{78}	14.7	X	306.96318	66.22192	19.09937	1.97286	0.0377645	0.20567472	2.8423798	20	11 30.6	18.3
61572 2000 QA_{79}	15.1	X	121.81242	191.72459	142.17035	4.80937	0.0884025	0.21502873	2.7593390	20	—	—
61573 2000 QB_{79}	15.4	X	161.97846	255.38335	24.13600	2.46135	0.1839207	0.26546087	2.3977416	20	—	—
61574 2000 QE_{79}	15.2	X	326.74543	147.58075	334.58805	5.24123	0.1097582	0.26226681	2.4171698	20	—	—
61575 2000 QW_{79}	15.0	X	160.24904	220.91995	167.96940	8.07981	0.2008444	0.22574923	2.6712746	20	3 26.4	19.3
61576 2000 QG_{80}	14.1	X	167.36262	207.74450	188.94169	5.26163	0.1911366	0.17741175	3.1367589	20	4 11.9	19.2
61577 2000 QL_{81}	15.4	X	335.99653	145.46832	193.77053	1.47995	0.1329175	0.19590761	2.9360843	20	8 21.4	18.6
61578 2000 QU_{81}	15.2	X	77.25238	326.41037	0.51516	1.94382	0.1061756	0.20847640	2.8168569	20	12 29.9	19.3
61579 2000 QZ_{81}	15.2	X	310.41753	10.21503	306.69082	2.10242	0.1289264	0.23949558	2.5680553	20	6 7.3	18.1
61580 2000 QP_{82}	14.9	X	263.22081	264.09096	167.50331	11.14735	0.1103277	0.19617309	2.9334348	20	9 2.7	18.9
61581 2000 QR_{82}	16.2	X	217.60999	145.00927	153.45791	3.62146	0.1112431	0.27442430	2.3452420	20	1 20.1	19.7
61582 2000 QX_{82}	13.7	X	130.55212	232.21015	202.59429	5.13330	0.1419104	0.17673096	3.1448092	20	4 20.6	18.6
61583 2000 QH_{83}	15.6	X	213.50939	244.41371	156.84306	2.64243	0.1362976	0.28467395	2.2886053	20	5 28.2	19.0
61584 2000 QR_{83}	14.6	X	227.98006	137.34402	172.01666	12.53189	0.2436432	0.22761179	2.6566819	20	2 12.1	19.3
61585 2000 QB_{84}	15.9	X	299.03848	325.06306	12.14966	3.61102	0.1988785	0.23986581	2.5654122	20	6 5.9	18.9
61586 2000 QC_{84}	15.2	X	135.03627	161.56923	140.41126	2.73750	0.2163063	0.26382846	2.4076219	20	—	—
61587 2000 QJ_{84}	15.3	X	139.32491	356.61442	346.93249	3.66601	0.1035748	0.21756613	2.7378429	20	1 2.9	19.1
61588 2000 QD_{85}	15.7	X	200.34619	3.69966	218.44302	5.74540	0.0861143	0.26280457	2.4138713	20	—	—
61589 2000 QL_{85}	15.3	X	60.24231	238.99908	180.43152	6.08343	0.1930227	0.21674481	2.7447550	20	—	—
61590 2000 QR_{85}	14.8	X	31.57701	180.08544	280.58195	4.04654	0.0801478	0.22026802	2.7154079	20	—	—
61591 2000 QS_{86}	14.4	X	297.80452	164.57462	183.91404	11.10739	0.1201818	0.19198748	2.9759167	20	6 30.8	18.4
61592 2000 QT_{86}	16.0	X	302.83395	76.73707	216.78824	4.90744	0.1179309	0.28670192	2.2778003	20	4 21.7	18.2
61593 2000 QZ_{87}	15.4	X	149.36697	102.75806	239.98557	3.38031	0.1447566	0.22074042	2.7115324	20	1 15.6	19.5
61594 2000 QB_{88}	14.8	X	338.21251	120.18283	182.64675	5.85334	0.2631381	0.24376029	2.5380143	20	6 27.8	16.6
61595 2000 QT_{89}	13.9	X	149.05998	201.46085	205.62691	4.53808	0.1439046	0.17753962	3.1352525	20	4 4.9	18.8
61596 2000 QV_{89}	15.7	X	341.97218	78.63412	207.98066	4.44934	0.1571006	0.29121925	2.2541838	20	6 21.4	17.3
61597 2000 QW_{90}	16.3	X	206.76544	42.55929	246.90027	3.99702	0.1794724	0.27282558	2.3543950	20	—	—
61598 2000 QJ_{91}	15.2	X	357.11794	4.00023	301.83617	3.79524	0.1613453	0.24511679	2.5286420	20	8 22.5	17.4
61599 2000 QR_{91}	14.6	X	229.40638	61.89453	284.60146	2.68048	0.1319028	0.23152047	2.6266959	20	4 3.1	18.6
61600 2000 QS_{91}	15.5	X	270.42632	81.90589	188.99633	4.51438	0.1431851	0.27872777	2.3210396	20	2 4.9	18.8

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Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
	m		°	°	°	°		°				
61601 2000 QW_{91}	15.4	X	135.32373	90.62034	273.92549	5.69493	0.0527852	0.22154532	2.7049609	20	1 15.9	19.1
61602 2000 QB_{92}	14.2	X	222.62808	162.85236	188.05108	10.25629	0.1076224	0.18111217	3.0938859	20	4 8.1	19.0
61603 2000 QL_{92}	14.7	X	92.40180	11.78419	330.13166	9.54748	0.2505365	0.21166606	2.7884866	20	—	—
61604 2000 QO_{92}	14.5	X	54.74465	195.91100	183.65221	9.38178	0.1631023	0.21025453	2.8009529	20	—	—
61605 2000 QQ_{92}	15.0	X	88.89866	38.77573	299.09148	3.35740	0.0746172	0.21051495	2.7986425	20	—	—
61606 2000 QR_{92}	15.1	X	339.59397	5.69458	269.23726	2.51719	0.1765498	0.23906178	2.5711611	20	5 24.2	17.4
61607 2000 QD_{93}	14.9	X	164.38751	191.17875	180.17502	13.37613	0.1930965	0.22444459	2.6816162	20	3 6.5	19.3
61608 2000 QQ_{93}	15.2	X	73.83587	115.06521	216.61389	3.09037	0.1088928	0.20954981	2.8072292	20	—	—
61609 2000 QQ_{94}	16.2	X	177.01657	170.32754	107.86393	3.49387	0.1584685	0.26838609	2.3802873	20	—	—
61610 2000 QK_{95}	12.3	X	200.82160	32.75002	354.43200	12.23829	0.0954218	0.08153128	5.2672818	20	4 28.7	19.8
61611 2000 QR_{96}	15.2	X	164.34006	260.83239	103.68353	2.86887	0.2191864	0.22412772	2.6841431	20	3 1.9	19.8
61612 2000 QC_{97}	15.1	X	107.85664	8.58913	21.83301	5.44989	0.1239492	0.21910804	2.7249833	20	1 27.4	18.8
61613 2000 QY_{97}	14.4	X	176.89928	273.30935	77.68549	3.50620	0.0898930	0.22422497	2.6833670	20	2 20.0	18.5
61614 2000 QC_{98}	14.0	X	199.19435	43.01114	12.25742	9.84529	0.1331462	0.18395109	3.0619715	20	5 29.4	19.1
61615 2000 QE_{98}	15.8	X	255.70701	163.36653	120.01982	3.38466	0.1317231	0.27760488	2.3272944	20	2 8.3	19.2
61616 2000 QH_{98}	14.3	X	147.05614	22.44680	24.96593	5.67074	0.1462205	0.17596799	3.1538928	20	4 4.6	19.2
61617 2000 QJ_{98}	15.4	X	120.13477	18.79640	25.59842	2.57783	0.2113632	0.27142298	2.3624990	20	3 4.8	18.5
61618 2000 QT_{98}	15.0	X	126.54565	187.38972	145.28831	8.01494	0.0923051	0.21476219	2.7616216	20	—	—
61619 2000 QA_{99}	14.4	X	220.00889	214.53151	151.79306	12.00191	0.1826574	0.18178040	3.0862991	20	4 23.0	19.6
61620 2000 QW_{100}	15.3	X	85.99337	357.60283	47.92204	6.24495	0.0434968	0.21793579	2.7347461	20	1 5.3	18.9
61621 2000 QY_{100}	15.7	X	9.02793	196.02878	107.41723	5.47137	0.1237963	0.24512297	2.5285995	20	9 11.4	18.4
61622 2000 QD_{101}	14.1	X	262.82703	265.74780	139.84690	11.99770	0.0963321	0.19126578	2.9833980	20	7 31.9	18.2
61623 2000 QP_{101}	15.6	X	39.15264	263.82635	88.99784	4.65644	0.1995095	0.25494462	2.4632329	20	—	—
61624 2000 QQ_{101}	14.8	X	200.75904	331.39900	76.77914	5.12734	0.0586471	0.23395854	2.6084155	20	5 27.2	18.5
61625 2000 QW_{101}	14.4	X	194.84339	234.95677	16.97248	13.39938	0.0269801	0.21234580	2.7825326	20	—	—
61626 2000 QA_{102}	15.0	X	273.94322	172.67467	148.56537	14.76158	0.1688425	0.23442046	2.6049879	20	4 21.1	18.9
61627 2000 QD_{102}	13.9	X	285.19456	179.20697	137.50581	10.92791	0.0717366	0.18445296	3.0564148	20	5 14.2	18.3
61628 2000 QF_{102}	15.2	X	349.41733	99.80993	46.53578	8.97092	0.0625461	0.26822763	2.3812247	20	—	—
61629 2000 QK_{102}	15.6	X	211.64763	159.38370	127.94545	7.24127	0.1017355	0.27078516	2.3662074	20	—	—
61630 2000 QP_{102}	15.0	X	224.17470	256.62105	91.73475	4.47551	0.1258833	0.22991856	2.6388824	20	4 4.4	19.0
61631 2000 QX_{102}	14.7	X	256.71627	278.90940	115.59818	8.40990	0.1672186	0.23872791	2.5735577	20	7 2.2	18.2
61632 2000 QZ_{102}	14.6	X	189.08615	251.78898	68.98026	7.22134	0.0679931	0.22131047	2.7068742	20	1 26.5	18.6
61633 2000 QG_{103}	15.6	X	138.48895	251.38113	48.19267	6.97487	0.1538884	0.26268650	2.4145946	20	—	—
61634 2000 QY_{103}	14.4	X	81.81635	67.31791	35.58509	5.60679	0.1729937	0.17307571	3.1889324	20	4 5.4	18.7
61635 2000 QA_{104}	15.3	X	134.94907	126.56174	137.72997	9.58411	0.1621200	0.25854873	2.4402881	20	12 22.2	19.3
61636 2000 QD_{104}	15.6	X	7.36480	46.72230	75.08196	5.34067	0.0747350	0.26731449	2.3866444	20	—	—
61637 2000 QJ_{104}	15.4	X	236.92616	294.99483	65.93828	3.99041	0.1112819	0.23332925	2.6131034	20	5 3.2	19.1
61638 2000 QO_{104}	15.4	X	142.52472	178.72653	107.36392	7.56350	0.1138031	0.26089830	2.4256151	20	—	—
61639 2000 QX_{104}	14.8	X	201.41873	181.37309	151.44333	12.94048	0.1724296	0.22485206	2.6783755	20	2 21.7	19.0
61640 2000 QT_{105}	13.3	X	44.41964	135.72576	56.07392	14.37366	0.1929100	0.23220018	2.6215673	20	6 5.5	16.1
61641 2000 QS_{106}	15.7	X	266.13787	92.28060	137.21196	6.87835	0.0780165	0.27259052	2.3557483	20	—	—
61642 2000 QE_{107}	14.1	X	103.12641	207.38066	247.64229	4.17345	0.1514292	0.17746810	3.1360948	20	4 15.7	18.7
61643 2000 QN_{108}	16.0	X	225.28187	238.10368	82.01281	3.12579	0.2568318	0.27925948	2.3180925	20	2 21.4	19.9
61644 2000 QE_{109}	14.9	X	59.62557	209.73191	6.62011	13.30964	0.0936793	0.24139037	2.5545991	20	7 26.6	18.4
61645 2000 QT_{109}	15.5	X	242.69247	127.85605	214.36600	3.17997	0.1451639	0.23206237	2.6226051	20	4 11.3	19.3
61646 2000 QC_{110}	16.4	X	240.76702	100.73522	195.81185	2.21379	0.0918538	0.27836768	2.3230408	20	2 10.8	19.8
61647 2000 QJ_{110}	15.1	X	289.41872	229.21265	315.73958	4.10779	0.0486291	0.21885011	2.7271239	20	—	—
61648 2000 QK_{111}	15.7	X	149.04303	115.30907	146.58155	2.94395	0.1345768	0.26116724	2.4239496	20	—	—
61649 2000 QO_{111}	15.0	X	325.25247	231.18957	159.64052	5.55810	0.1209969	0.19985450	2.8972998	20	10 16.2	18.4
61650 2000 QQ_{111}	15.7	X	169.42453	341.56730	291.79267	2.28529	0.1492520	0.26527561	2.3988578	20	—	—
61651 2000 QW_{111}	14.1	X	118.62834	288.74339	161.09783	15.03932	0.2713283	0.17584823	3.1553247	20	5 12.7	19.5
61652 2000 QO_{112}	14.8	X	129.71302	205.01054	227.49402	1.34773	0.0251243	0.22900063	2.6459295	20	3 31.0	18.5
61653 2000 QU_{112}	15.4	X	204.25504	144.70573	147.43312	4.20012	0.0573500	0.22087114	2.7104625	20	1 5.9	19.3
61654 2000 QB_{113}	14.6	X	246.66852	83.80303	324.44533	7.82669	0.0974593	0.19154007	2.9805492	20	7 16.8	18.9
61655 2000 QF_{113}	14.9	X	349.63314	136.05012	170.74584	10.28090	0.0117668	0.19328191	2.9626152	20	7 29.6	19.1
61656 2000 QR_{113}	15.3	X	276.69461	140.62628	156.17242	4.03504	0.0264586	0.23180491	2.6245466	20	4 9.2	18.8
61657 2000 QZ_{113}	15.2	X	345.11345	242.36075	173.06377	2.25710	0.0835688	0.20561921	2.8428913	20	12 18.5	18.6
61658 2000 QJ_{114}	15.9	X	207.04368	105.92381	144.80915	3.07732	0.1286291	0.26687774	2.3892475	20	—	—
61659 2000 QK_{114}	15.9	X	113.44287	357.30433	304.94733	0.48417	0.1427182	0.26048876	2.4281568	20	—	—
61660 2000 QP_{114}	14.3	X	161.11961	110.54985	353.73071	10.59123	0.0747094	0.18598656	3.0395900	20	6 23.3	19.1
61661 2000 QC_{115}	15.8	X	279.11401	144.32481	165.02009	5.80723	0.1878320	0.28413724	2.2914864	20	4 1.9	18.7
61662 2000 QQ_{115}	15.1	X	285.98448	125.62927	246.98754	3.54103	0.1560521	0.24148603	2.5539244	20	7 13.7	18.1
61663 2000 QB_{116}	15.2	X	87.34527	320.86192	106.04109	9.71988	0.0906733	0.27181519	2.3602259	20	2 1.3	17.8
61664 2000 QE_{116}	14.8	X	146.69800	354.31172	10.08298	6.01886	0.0416226	0.22235216	2.6984133	20	1 30.4	18.6
61665 2000 QZ_{116}	15.4	X	273.54815	311.11383	275.09137	4.19132	0.0925114	0.27489361	2.3425720	20	—	—
61666 2000 QS_{117}	13.7	X	210.51467	92.59478	297.19063	8.34176	0.1152620	0.18211734	3.0824913	20	5 9.7	18.7
61667 2000 QD_{118}	14.1	X	55.59862	256.75486	304.07789	8.11056	0.1457870	0.23759263	2.5817493	20	7 2.3	17.1
61668 2000 QF_{118}	14.3	X	162.59558	240.60945	207.19006	10.03776	0.1153262	0.18344073	3.0676481	20	6 5.6	19.2
61669 2000 QR_{118}	14.5	X	248.19926	89.96438	320.56489	9.75158	0.0695053	0.19064863	2.9898330	20	7 25.4	18.7
61670 2000 QA_{119}	15.4	X	247.00072	64.06983	247.96782	3.18242	0.1165092	0.22959300	2.6413764	20	3 10.3	19.5
61671 2000 QH_{119}	15.5	X	297.09944	74.14393	243.28418	4.36117	0.1428795	0.23734059	2.5835768	20	5 15.4	18.6
61672 2000 QQ_{120}	14.1	X	287.88257	126.59468	239.91786	5.00623	0.1044995	0.19036373	2.9928152	20	7 12.7	18.0
61673 2000 QN_{121}	15.0	X	230.85616	120.43217	258.79286	2.73961	0.1029177	0.23431428	2.6057748	20	5 20.1	18.9
61674 2000 QX_{121}	14.0	X	262.05943	222.51330	277.92252	6.52633	0.1190844	0.20438701	2.8543060	20	11 28.5	17.6
61675 2000 QQ_{122}	15.4	X	23.92638	61.92092	322.69390	5.94210	0.0831745	0.30596553	2.1811610	20	—	—
61676 2000 QM_{123}	13.9	X	129.66105	296.71528	197.66558	21.76040	0.0430148	0.23460778	2.6036011	20	6 22.7	18.0
61677 2000 QC_{124}	14.7	X	205.94458	251.99824	193.80383	9.66095	0.0582057	0.18903516	3.0068215	20	7 18.1	19.3
61678 2000 QE_{124}	14.1	X	219.44058	190.29879	186.94042	9.25254	0.1120238	0.18244548	3.0787941	20	5 7.5	18.9
61679 2000 QH_{124}	14.7	X	106.56139	273.54158	150.65901	6.52734	0.1415503	0.17372146	3.1810249	20	3 14.5	19.2
61680 2000 QJ_{124}	15.4	X	34.88059	46.21750	225.44121	3.11708	0.1199945	0.24460517	2.5321667	20	9 3.8	18.4

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
	m		°	°	°	°		°				
61681 2000 QO_{124}	14.9	X	335.86931	297.06900	61.27690	2.94691	0.0878752	0.19892915	2.9062776	20	9 20.1	18.3
61682 2000 QV_{124}	14.9	X	356.04556	217.65826	189.13043	6.19087	0.1170366	0.25852746	2.4404220	20	—	—
61683 2000 QX_{125}	15.4	X	164.42285	281.82202	207.35885	2.39388	0.0522981	0.24121918	2.5558076	20	7 30.7	18.9
61684 2000 QB_{126}	14.4	X	123.29405	344.20552	350.69987	4.82318	0.0519343	0.21443715	2.7644116	20	—	—
61685 2000 QJ_{126}	15.9	X	158.48296	197.00792	113.45227	3.09851	0.2076408	0.26722447	2.3871804	20	—	—
61686 2000 QV_{126}	15.0	X	273.30774	3.35411	3.71156	2.02174	0.1049499	0.18980619	2.9986732	20	6 24.3	19.1
61687 2000 QY_{126}	14.1	X	259.50004	166.39550	162.03438	22.54762	0.0792042	0.18250312	3.0781458	20	4 27.4	18.9
61688 2000 QC_{127}	14.9	X	84.83945	342.94913	337.57912	6.19108	0.1396417	0.25792898	2.4441956	20	—	—
61689 2000 QH_{127}	14.4	X	208.31799	184.21746	185.89225	13.02768	0.1965610	0.22903063	2.6456984	20	4 12.8	18.8
61690 2000 QV_{127}	14.7	X	231.20980	339.52684	5.60627	9.08772	0.2173917	0.22966590	2.6408174	20	3 30.1	19.2
61691 2000 QV_{128}	14.3	X	300.91796	310.62746	207.06022	12.11376	0.0755296	0.21341517	2.7732298	20	—	—
61692 2000 QE_{129}	15.1	X	104.88840	222.43365	287.54349	4.87592	0.0594099	0.23949764	2.5680407	20	6 15.9	18.5
61693 2000 QT_{130}	14.1	X	197.82750	227.78875	123.22863	14.97232	0.2358182	0.23223616	2.6212966	20	3 15.3	18.8
61694 2000 QB_{132}	14.9	X	160.82620	135.17525	102.19757	3.35452	0.0096969	0.20603626	2.8390538	20	12 9.6	18.7
61695 2000 QD_{132}	16.4	X	314.20283	295.62981	5.51744	3.79819	0.1576791	0.29090005	2.2558325	20	5 14.7	18.5
61696 2000 QL_{132}	15.8	X	134.68881	266.01620	95.12395	3.67911	0.1814307	0.27168160	2.3609995	20	1 20.8	19.1
61697 2000 QR_{132}	16.4	X	114.48541	310.55447	21.58835	3.98163	0.2075801	0.26591330	2.3950211	20	—	—
61698 2000 QU_{132}	16.0	X	229.64237	194.06122	101.87332	4.51224	0.1736090	0.27847417	2.3224486	20	1 27.9	19.7
61699 2000 QV_{132}	16.5	X	119.65249	240.96225	42.49531	1.69694	0.1907472	0.26214644	2.4179097	20	—	—
61700 2000 QG_{133}	14.4	X	265.76796	288.48826	23.57904	5.42905	0.1302864	0.18583362	3.0412575	20	4 3.5	18.8
61701 2000 QH_{133}	14.9	X	216.58495	14.31424	37.04830	4.19653	0.0438335	0.24072480	2.5593057	20	6 20.9	18.3
61702 2000 QL_{133}	15.1	X	59.62076	240.76727	123.20271	6.32482	0.0859160	0.26212771	2.4180249	20	—	—
61703 2000 QW_{133}	15.6	X	151.07773	221.14460	66.72221	3.12546	0.2057991	0.26674754	2.3900249	20	—	—
61704 2000 QN_{134}	15.7	X	228.41837	251.91717	104.18857	2.78273	0.1826766	0.23396108	2.6083967	20	4 13.6	19.8
61705 2000 QZ_{134}	15.7	X	178.41365	216.81398	36.41084	4.31888	0.1095200	0.26516524	2.3995234	20	—	—
61706 2000 QD_{136}	15.7	X	57.12608	244.73102	102.07594	4.70575	0.1155584	0.25730777	2.4481280	20	—	—
61707 2000 QU_{137}	16.2	X	183.73923	159.58414	156.54165	6.68922	0.1483380	0.27121216	2.3637231	20	1 10.4	19.9
61708 2000 QF_{138}	14.6	X	267.61309	304.63645	82.91712	2.66339	0.1480464	0.18924301	3.0046196	20	7 7.4	18.9
61709 2000 QM_{138}	15.5	X	206.19320	123.83550	162.27196	4.38369	0.0894204	0.26983091	2.3717828	20	—	—
61710 2000 QQ_{138}	14.5	X	29.73514	289.17353	147.40177	2.50916	0.0704634	0.21356740	2.7719118	20	—	—
61711 2000 QR_{139}	15.3	X	247.53344	221.11656	163.84486	12.10367	0.1023442	0.23706318	2.5855919	20	6 17.6	19.2
61712 2000 QT_{139}	15.6	X	308.35676	226.35109	79.57889	2.79643	0.2046675	0.23787192	2.5797281	20	5 7.2	18.5
61713 2000 QJ_{141}	15.3	X	72.81137	243.46538	65.96948	2.96645	0.1698481	0.25497058	2.4630658	20	12 19.8	18.9
61714 2000 QW_{141}	15.7	X	155.31220	211.02378	96.12437	2.29875	0.1937032	0.26626742	2.3928971	20	—	—
61715 2000 QX_{141}	15.1	X	312.32989	306.10867	15.93816	8.72722	0.1828514	0.23952250	2.5678629	20	6 8.6	18.1
61716 2000 QC_{142}	14.3	X	234.27825	273.07670	167.73105	9.80527	0.0648823	0.19162233	2.9796961	20	8 14.3	18.6
61717 2000 QU_{142}	14.9	X	175.35774	295.20572	119.43576	3.28090	0.0952132	0.23029372	2.6360156	20	5 7.7	18.9
61718 2000 QY_{142}	14.4	X	348.14762	341.98106	115.16987	5.46204	0.0312357	0.21066567	2.7973074	20	—	—
61719 2000 QK_{143}	16.1	X	231.77230	265.38831	7.36659	1.84494	0.2409105	0.27378648	2.3488830	20	—	—
61720 2000 QM_{143}	14.7	X	160.39466	247.35918	159.96816	3.00462	0.0797180	0.22766174	2.6562932	20	4 11.2	18.5
61721 2000 QT_{144}	15.1	X	181.18384	142.37112	157.65983	8.41376	0.0904840	0.21825688	2.7320633	20	—	—
61722 2000 QY_{144}	14.2	X	131.77627	49.71167	17.19041	9.81968	0.1189268	0.17609730	3.1523487	20	4 9.6	19.0
61723 2000 QJ_{145}	15.1	X	13.86320	133.02185	130.45551	5.86487	0.2021062	0.24176260	2.5519763	20	7 27.8	17.3
61724 2000 QL_{145}	15.3	X	334.26119	353.18998	99.26926	3.56084	0.1665699	0.25695166	2.4503893	20	—	—
61725 2000 QY_{145}	14.2	X	341.45999	347.14708	152.61185	9.85827	0.0990280	0.21560837	2.7543913	20	—	—
61726 2000 QK_{146}	14.7	X	41.03149	281.11239	20.08618	13.16663	0.1015059	0.19875374	2.9079874	20	10 13.6	18.5
61727 2000 QU_{146}	14.7	X	237.78604	33.18234	24.50258	9.19557	0.0895784	0.18984643	2.9982495	20	7 20.5	19.2
61728 2000 QT_{147}	14.6	X	37.58776	222.98660	176.21971	25.43678	0.1440375	0.21114265	2.7930931	20	—	—
61729 2000 QX_{147}	14.8	X	210.23613	88.07265	335.25632	21.75892	0.0825077	0.23784657	2.5799113	20	6 30.2	19.0
61730 2000 QJ_{148}	15.6	X	163.35921	288.30591	328.49657	7.66176	0.1799581	0.26204180	2.4185533	20	—	—
61731 2000 QV_{148}	14.3	X	49.14855	291.07892	64.41931	16.32760	0.1861214	0.20948870	2.8077751	20	—	—
61732 2000 QB_{150}	14.4	X	138.97986	218.03885	315.17456	9.10999	0.0331086	0.19328871	2.9625457	20	8 21.6	18.6
61733 2000 QU_{150}	14.0	X	339.50570	111.36100	208.33687	13.05128	0.1965536	0.24167123	2.5526195	20	7 30.8	16.5
61734 2000 QA_{151}	15.2	X	208.64377	93.13829	283.95195	6.10596	0.1342690	0.27856665	2.3219345	20	4 17.5	18.8
61735 2000 QQ_{151}	16.3	X	298.66626	135.03273	186.95716	3.14358	0.1261705	0.29088723	2.2558988	20	5 27.5	18.7
61736 2000 QL_{152}	14.7	X	37.31773	184.99112	179.44351	6.79721	0.1701501	0.26026839	2.4295272	20	—	—
61737 2000 QQ_{152}	14.5	X	334.33995	6.51545	275.36614	8.79311	0.0833565	0.19193264	2.9764836	20	6 2.3	18.2
61738 2000 QS_{152}	16.5	X	316.86859	141.58118	200.73947	4.75502	0.1944729	0.29492345	2.2352693	20	7 23.9	18.1
61739 2000 QT_{152}	15.9	X	32.57753	71.82165	183.59885	3.81237	0.1387192	0.29642857	2.2276964	20	8 17.7	18.1
61740 2000 QD_{153}	14.9	X	67.62705	133.00249	251.97105	4.37308	0.0721539	0.21627729	2.7487090	20	—	—
61741 2000 QK_{153}	15.9	X	243.41713	67.80249	197.28610	5.67842	0.0912713	0.27592681	2.3367206	20	1 4.8	19.3
61742 2000 QM_{153}	15.8	X	275.73824	56.06223	192.47801	4.90001	0.0572915	0.27773162	2.3265863	20	1 22.8	18.8
61743 2000 QV_{153}	15.1	X	125.66677	127.43136	180.21986	6.21172	0.0532949	0.21443839	2.7644009	20	—	—
61744 2000 QD_{154}	14.4	X	233.50212	74.31964	249.90298	9.91086	0.0342561	0.18184973	3.0855146	20	3 18.6	19.1
61745 2000 QF_{154}	14.7	X	238.66414	196.82996	190.37388	10.18880	0.2226019	0.23950111	2.5680158	20	5 28.9	18.9
61746 2000 QB_{155}	14.9	X	331.29895	27.98310	185.77308	16.82193	0.0856339	0.23026618	2.6362258	20	2 20.9	18.5
61747 2000 QJ_{155}	14.6	X	217.15080	123.93467	245.05712	10.41428	0.0608499	0.18636402	3.0354844	20	4 24.7	19.2
61748 2000 QY_{155}	14.5	X	278.90049	263.06359	243.27698	7.80083	0.0988988	0.21206975	2.7849467	20	—	—
61749 2000 QU_{156}	15.1	X	319.69127	65.23896	189.56113	14.19091	0.0379453	0.23346402	2.6120977	20	4 9.2	18.4
61750 2000 QD_{157}	15.3	X	64.97251	315.05088	212.02873	8.32279	0.0243308	0.23516766	2.5994670	20	5 10.8	18.7
61751 2000 QN_{157}	15.1	X	1.32543	44.23262	195.91208	8.48085	0.1550952	0.23874608	2.5734272	20	5 20.2	17.6
61752 2000 QT_{157}	16.0	X	135.11730	92.52149	213.95708	6.65827	0.2027052	0.26548035	2.3976243	20	—	—
61753 2000 QD_{159}	14.3	X	147.38094	204.11581	183.32598	16.07690	0.1089844	0.17611105	3.1521847	20	3 7.6	19.2
61754 2000 QP_{159}	14.7	X	57.28721	317.24216	189.70423	9.60813	0.1237605	0.23058499	2.6337954	20	4 15.9	17.7
61755 2000 QE_{160}	15.4	X	239.20402	354.20818	291.82717	8.75305	0.0960112	0.22651796	2.6652275	20	2 1.4	19.3
61756 2000 QJ_{160}	15.5	X	234.08381	89.04308	221.00184	6.02231	0.2101700	0.27940674	2.3172780	20	2 13.8	19.4
61757 2000 QS_{160}	15.4	X	222.80672	7.30979	233.12330	6.49764	0.0682417	0.26975484	2.3722287	20	—	—
61758 2000 QA_{164}	14.2	X	143.15566	134.42186	286.98432	12.37659	0.1031722	0.23096271	2.6309230	20	4 4.1	18.4
61759 2000 QB_{164}	14.7	X	74.48759	168.36831	262.28184	8.18012	0.0663057	0.22330138	2.6907609	20	1 21.1	18.2
61760 2000 QG_{165}	14.7	X	76.71243	98.00227	309.63020	7.78593	0.0646273	0.21847920	2.7302095	20	—	—

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Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
	m		°	°	°	°		°				
61761 2000 QS_{165}	14.9	X	0.10348	344.14683	199.24813	9.13901	0.0664347	0.22803090	2.6534256	20	2 26.3	18.3
61762 2000 QT_{165}	15.3	X	41.60861	157.93796	217.16482	6.00937	0.0304607	0.20968844	2.8059918	20	—	—
61763 2000 QF_{166}	15.0	X	207.70975	159.35187	297.75329	8.32461	0.0711109	0.19258899	2.9697171	20	8 3.8	19.4
61764 2000 QT_{166}	14.9	X	130.29924	64.79251	269.61794	4.33509	0.0689747	0.21665105	2.7455468	20	—	—
61765 2000 QA_{167}	15.0	X	189.21113	307.42702	267.61814	3.67539	0.0477139	0.20884748	2.8135192	20	12 12.9	19.0
61766 2000 QX_{167}	15.2	X	323.66346	56.54165	232.44259	5.10853	0.2509059	0.23988410	2.5652818	20	4 30.4	17.8
61767 2000 QB_{168}	14.7	X	80.50518	70.32828	321.67657	12.99106	0.0282054	0.21687765	2.7436341	20	—	—
61768 2000 QK_{168}	15.2	X	204.77290	216.62089	214.71220	5.38012	0.0975166	0.23814561	2.5777512	20	6 28.9	19.1
61769 2000 QM_{168}	14.5	X	180.97867	200.71938	182.57021	13.85960	0.1025361	0.17944442	3.1130260	20	4 6.7	19.3
61770 2000 QE_{170}	14.4	X	243.21445	74.85123	323.40628	8.19084	0.0750038	0.18909830	3.0061522	20	7 2.3	18.8
61771 2000 QJ_{170}	16.1	X	301.74640	36.31033	258.29165	1.96007	0.1565709	0.28629614	2.2799521	20	4 14.3	18.6
61772 2000 QL_{170}	15.9	X	343.86798	246.20394	187.83951	4.65634	0.0835587	0.25833945	2.4416059	20	—	—
61773 2000 QJ_{171}	15.1	X	66.68042	308.72204	329.42676	10.14594	0.0246018	0.19948157	2.9009096	20	10 1.9	19.2
61774 2000 QV_{171}	14.3	X	180.07031	25.08753	339.84021	8.62612	0.1472247	0.17633137	3.1495583	20	3 13.9	19.3
61775 2000 QK_{172}	15.3	X	317.79663	111.14132	191.89802	9.22043	0.0702073	0.24038691	2.5617034	20	6 8.4	18.5
61776 2000 QP_{172}	15.0	X	74.31110	304.58241	255.62341	6.29934	0.1197276	0.24298506	2.5434097	20	7 22.4	18.3
61777 2000 QW_{172}	15.2	X	267.17186	77.09070	284.44703	5.99579	0.0717800	0.24019962	2.5630348	20	6 15.0	18.5
61778 2000 QA_{174}	15.9	X	244.99213	156.79214	269.79047	4.68729	0.1402179	0.29379385	2.2409951	20	8 7.3	18.8
61779 2000 QV_{174}	14.7	X	135.25544	282.34075	189.66639	11.10093	0.0570616	0.18565736	3.0431820	20	6 3.4	19.3
61780 2000 QQ_{175}	15.0	X	131.80341	263.29164	260.60525	4.72773	0.0455894	0.24366866	2.5386506	20	8 5.6	18.6
61781 2000 QH_{177}	14.7	X	46.30620	225.08306	180.69984	9.31582	0.1599767	0.21282630	2.7783430	20	—	—
61782 2000 QN_{177}	15.6	X	285.40779	15.70190	238.53631	3.23054	0.0386266	0.22637486	2.6663506	20	2 20.9	19.4
61783 2000 QU_{177}	15.7	X	48.97297	235.54623	180.79256	7.21549	0.1089755	0.26492162	2.4009942	20	—	—
61784 2000 QL_{178}	15.0	X	134.21781	230.80865	219.95521	7.08079	0.1265231	0.23277724	2.6172329	20	5 11.3	18.7
61785 2000 QM_{178}	14.4	X	172.13379	246.73396	190.13481	10.87340	0.2136883	0.18412593	3.0600328	20	6 3.2	19.8
61786 2000 QZ_{178}	14.6	X	359.38811	303.61537	175.17401	12.89140	0.1660813	0.21710941	2.7416812	20	—	—
61787 2000 QK_{179}	14.8	X	191.95886	283.54130	152.44851	1.60020	0.0748221	0.18642802	3.0347896	20	6 20.9	19.2
61788 2000 QP_{181}	14.2	X	46.44834	180.05575	253.69152	12.80883	0.1453341	0.25865280	2.4396335	20	—	—
61789 2000 QM_{182}	13.8	X	111.75943	234.32778	241.28882	4.09801	0.1435034	0.17105882	3.2139496	20	5 20.9	18.7
61790 2000 QO_{182}	15.0	X	246.23209	237.17825	266.53590	5.49737	0.1754232	0.24370858	2.5383734	20	11 11.3	18.2
61791 2000 QV_{182}	14.4	X	208.47550	278.45240	32.93971	9.66129	0.2089435	0.21708394	2.7418956	20	2 6.6	19.2
61792 2000 QA_{183}	15.2	X	37.17570	65.71966	347.12202	4.15231	0.0613458	0.21278664	2.7786881	20	—	—
61793 2000 QB_{183}	14.8	X	226.98150	278.81487	148.07411	10.57653	0.0914367	0.18846588	3.0128734	20	7 16.3	19.4
61794 2000 QD_{183}	15.3	X	342.81658	286.62504	140.35712	7.48110	0.0965941	0.26063359	2.4272571	20	—	—
61795 2000 QF_{183}	15.5	X	204.00724	180.38084	173.53794	1.23115	0.1069185	0.23120379	2.6290938	20	3 20.5	19.6
61796 2000 QM_{183}	14.7	X	284.82570	229.61830	171.35664	10.24870	0.0584495	0.19527855	2.9423863	20	8 30.2	18.5
61797 2000 QO_{183}	15.7	X	238.94426	339.53475	30.58776	3.77619	0.2269399	0.28559992	2.2836559	20	5 4.5	19.2
61798 2000 QY_{183}	15.3	X	95.43945	345.59549	17.74230	3.27007	0.0762542	0.21734935	2.7396630	20	—	—
61799 2000 QC_{184}	15.4	X	158.96139	273.61056	77.97411	3.41046	0.2997672	0.27302688	2.3532376	20	2 12.5	19.3
61800 2000 QU_{184}	14.8	X	96.19259	308.28234	127.69383	13.89998	0.1525313	0.22522507	2.6754175	20	3 16.5	18.5
61801 2000 QV_{184}	15.2	X	205.93256	337.87990	57.52719	3.69442	0.1456932	0.28505328	2.2865745	20	5 11.5	18.4
61802 2000 QA_{185}	14.7	X	256.70014	241.06531	129.44046	9.62802	0.1059761	0.18964163	3.0004077	20	6 9.1	19.2
61803 2000 QL_{185}	15.3	X	336.51998	281.44956	125.18251	13.02651	0.1608710	0.25441626	2.4666421	20	12 17.2	17.8
61804 2000 QO_{185}	15.0	X	227.21646	166.55001	99.46725	7.12365	0.0842930	0.27317335	2.3523964	20	—	—
61805 2000 QR_{185}	15.9	X	65.72204	246.27904	79.16558	5.75320	0.1180544	0.25803503	2.4435258	20	12 28.0	19.2
61806 2000 QZ_{185}	15.5	X	251.45038	323.90504	15.66849	3.56646	0.1851480	0.23526160	2.5987750	20	4 12.9	19.4
61807 2000 QC_{186}	15.3	X	289.84646	208.85113	88.31054	3.20467	0.0410394	0.23525099	2.5988532	20	4 24.8	18.6
61808 2000 QD_{187}	15.7	X	197.67605	160.42489	87.81992	7.32219	0.1975141	0.26808949	2.3820426	20	—	—
61809 2000 QG_{187}	15.3	X	50.92876	305.26119	44.66214	6.71660	0.1465304	0.25824875	2.4421775	20	—	—
61810 2000 QM_{187}	15.8	X	220.28356	266.99357	81.79177	6.14773	0.1726269	0.28145511	2.3060212	20	3 27.9	19.4
61811 2000 QQ_{187}	15.0	X	236.84966	99.00945	116.70777	7.13186	0.0633535	0.26651403	2.3914208	20	—	—
61812 2000 QP_{189}	15.6	X	130.68574	168.72931	84.06862	7.22290	0.0724704	0.25701155	2.4500087	20	12 4.0	19.1
61813 2000 QQ_{189}	14.9	X	243.98916	261.53612	129.95560	14.88868	0.1394523	0.23894738	2.5719816	20	6 18.3	18.9
61814 2000 QX_{189}	15.2	X	123.59268	256.57589	95.81521	5.30882	0.0915344	0.26832543	2.3806460	20	—	—
61815 2000 QZ_{189}	15.3	X	94.63589	314.91223	102.14535	5.94455	0.2179521	0.27049746	2.3678849	20	2 20.4	18.0
61816 2000 QR_{190}	15.3	X	262.83114	272.03319	43.14227	5.71032	0.2216650	0.28400441	2.2922008	20	3 20.4	18.8
61817 2000 QV_{190}	15.3	X	86.60197	202.21301	84.60531	6.93011	0.1088979	0.25565039	2.4586974	20	12 1.2	18.8
61818 2000 QW_{190}	15.8	X	310.81669	264.44673	69.09466	5.48542	0.1800183	0.29202244	2.2500486	20	6 28.0	17.7
61819 2000 QT_{191}	15.9	X	313.35421	197.00593	114.98249	8.07484	0.1505779	0.29007878	2.2600883	20	6 3.8	18.0
61820 2000 QV_{191}	13.8	X	352.22911	249.58657	106.34733	11.15198	0.0975765	0.15083671	3.4951408	20	10 8.1	18.5
61821 2000 QW_{191}	15.0	X	56.98814	292.04389	118.61778	11.30087	0.0244828	0.26682105	2.3895859	20	—	—
61822 2000 QF_{192}	14.4	X	189.27664	333.87906	43.87573	9.83636	0.1403487	0.18029597	3.1032163	20	4 9.5	19.5
61823 2000 QF_{193}	14.6	X	127.11788	346.03137	59.79611	2.84578	0.1808659	0.17489860	3.1667358	20	3 18.7	19.5
61824 2000 QU_{193}	14.6	X	116.99009	316.78641	105.23751	4.45045	0.2336493	0.22403887	2.6848527	20	3 31.6	18.7
61825 2000 QV_{193}	15.0	X	338.48948	353.56360	94.31490	4.97244	0.0677654	0.21081905	2.7959505	20	—	—
61826 2000 QC_{194}	15.5	X	5.72080	321.44554	101.47598	3.66726	0.1493752	0.26050585	2.4280506	20	—	—
61827 2000 QZ_{194}	15.3	X	31.97744	169.13615	106.55191	3.05554	0.0283487	0.24740398	2.5130334	20	8 25.6	18.4
61828 2000 QC_{195}	15.5	X	288.42029	240.36210	354.47519	6.44825	0.1665481	0.27898780	2.3195972	20	1 9.2	18.9
61829 2000 QL_{195}	15.8	X	172.83332	271.05981	80.14141	3.04000	0.0863592	0.22492524	2.6777945	20	2 15.4	19.7
61830 2000 QA_{196}	14.9	X	294.67147	311.94925	109.62891	4.55178	0.1016546	0.19930282	2.9026438	20	10 9.3	18.5
61831 2000 QB_{196}	15.0	X	330.28849	210.88818	47.89877	5.16310	0.1172161	0.23531010	2.5984179	20	4 20.6	18.0
61832 2000 QL_{196}	15.0	X	78.30486	233.76842	317.89442	4.67594	0.0672105	0.24163731	2.5528583	20	7 9.7	18.4
61833 2000 QM_{196}	15.3	X	338.71352	48.17485	146.42336	6.74920	0.0733316	0.27837346	2.3230086	20	2 2.4	17.7
61834 2000 QS_{196}	16.0	X	291.80500	346.96190	31.66211	1.72573	0.2214327	0.24370942	2.5383675	20	7 22.1	18.6
61835 2000 QX_{196}	15.2	X	303.69380	54.06871	332.63380	1.20243	0.0851553	0.19766908	2.9186156	20	9 5.6	18.9
61836 2000 QA_{197}	15.3	X	50.40544	63.29225	357.53835	5.23171	0.1446307	0.26618445	2.3933944	20	—	—
61837 2000 QC_{197}	15.6	X	157.78370	225.42329	35.65681	2.63009	0.1592273	0.26342335	2.4100897	20	—	—
61838 2000 QL_{197}	15.3	X	257.55117	55.59397	120.91065	0.60115	0.0119371	0.21316728	2.7753793	20	—	—
61839 2000 QA_{198}	15.8	X	139.95479	183.20267	78.53966	2.53941	0.1614022	0.26098299	2.4250903	20	12 23.6	19.7
61840 2000 QL_{198}	15.1	X	167.37222	262.79786	157.05844	5.02829	0.0873416	0.23279072	2.6171318	20	5 5.9	19.0

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Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
	m		°	°	°	°		°				
61841 2000 QW_{199}	14.8	X	53.54022	174.63765	355.18643	10.68965	0.0559282	0.23376129	2.6098827	20	4 27.2	18.2
61842 2000 QE_{200}	15.4	X	47.27400	29.32756	47.31062	4.18902	0.0947832	0.21807336	2.7335958	20	—	—
61843 2000 QT_{200}	15.8	X	123.18206	253.97961	124.94504	3.47975	0.0896976	0.22120079	2.7077689	20	1 24.9	19.4
61844 2000 QU_{200}	14.6	X	110.96916	242.98943	145.67923	10.06714	0.0950957	0.17088108	3.2161779	20	1 29.8	19.3
61845 2000 QW_{200}	14.8	X	202.78809	357.16048	10.58068	5.40318	0.1323749	0.18099743	3.0951933	20	4 7.2	19.8
61846 2000 QH_{201}	14.9	X	37.12557	11.61624	36.92354	5.53979	0.0584617	0.21319527	2.7751365	20	—	—
61847 2000 QW_{201}	15.7	X	194.51163	131.25188	124.40566	3.41218	0.1333868	0.26667251	2.3904732	20	—	—
61848 2000 QG_{202}	14.5	X	229.10319	275.70746	97.64257	2.54351	0.1037711	0.18504648	3.0498759	20	5 12.3	19.0
61849 2000 QP_{202}	15.5	X	142.25640	197.46102	68.89828	3.09365	0.1754934	0.26126716	2.4233315	20	12 30.9	19.3
61850 2000 QZ_{202}	15.4	X	226.33294	323.76844	48.68348	4.03944	0.0779236	0.23454544	2.6040624	20	5 8.5	19.2
61851 2000 QA_{204}	16.4	X	54.98005	349.97230	40.17180	3.25140	0.1216190	0.31211401	2.1524209	20	—	—
61852 2000 QB_{204}	14.8	X	332.60802	306.81778	74.12374	3.09067	0.0794066	0.19989073	2.8969497	20	10 15.2	18.4
61853 2000 QO_{204}	15.4	X	248.83933	24.45562	233.17936	6.05686	0.1222840	0.27422760	2.3463634	20	—	—
61854 2000 QQ_{204}	14.5	X	164.52405	250.84157	193.76703	9.53011	0.1649960	0.18341688	3.0679140	20	6 5.1	19.6
61855 2000 QE_{205}	15.1	X	52.14864	60.40127	288.63890	0.75077	0.0994136	0.20664597	2.8334665	20	12 27.4	18.9
61856 2000 QJ_{205}	14.9	X	53.89835	93.29720	314.79948	1.10957	0.0898045	0.21370605	2.7707128	20	—	—
61857 2000 QL_{205}	14.9	X	80.84000	123.69840	191.97368	1.73771	0.0699019	0.20647149	2.8350626	20	12 15.9	19.1
61858 2000 QM_{205}	16.1	X	131.10759	147.80614	167.48095	2.12421	0.1861175	0.26449185	2.4035944	20	—	—
61859 2000 QS_{205}	14.8	X	227.69716	335.30313	54.86892	0.91283	0.1760076	0.18489122	3.0515830	20	5 25.2	19.6
61860 2000 QT_{205}	15.9	X	322.11863	294.64589	10.76003	1.77238	0.1879776	0.24004573	2.5641301	20	6 2.4	18.3
61861 2000 QA_{207}	15.2	X	225.98141	310.78461	355.60386	14.35469	0.0899471	0.22537104	2.6742622	20	2 18.6	19.3
61862 2000 QA_{208}	14.9	X	262.77062	29.46443	4.90820	10.28331	0.1164745	0.18967926	3.0000107	20	7 17.3	19.3
61863 2000 QJ_{208}	16.0	X	56.06154	34.43522	0.56457	0.82916	0.1907225	0.26105137	2.4246668	20	—	—
61864 2000 QL_{208}	14.8	X	261.66508	328.10900	26.42677	8.36341	0.0689659	0.18533143	3.0467489	20	5 27.8	19.2
61865 2000 QO_{210}	15.1	X	57.49723	140.97002	151.70836	2.77222	0.0438284	0.20134985	2.8829371	20	10 17.3	19.1
61866 2000 QE_{211}	16.5	X	176.34450	273.05748	19.06544	1.16547	0.1252630	0.26817170	2.3815558	20	—	—
61867 2000 QQ_{211}	14.9	X	144.65258	321.01572	116.59102	3.35215	0.0262537	0.22989483	2.6390639	20	4 27.9	18.5
61868 2000 QN_{212}	15.4	X	333.74102	0.79705	23.66307	1.85228	0.0968031	0.20022529	2.8937217	20	10 20.4	18.7
61869 2000 QO_{212}	15.1	X	8.16699	252.57780	155.51493	2.27026	0.0665573	0.20827861	2.8186400	20	—	—
61870 2000 QV_{212}	15.5	X	94.06961	218.26907	163.04152	3.34923	0.1052481	0.21650807	2.7467554	20	—	—
61871 2000 QE_{213}	15.8	X	40.91763	286.21472	142.78048	4.98450	0.0659268	0.26567463	2.3964553	20	—	—
61872 2000 QH_{213}	14.8	X	298.30775	351.61577	88.61393	3.14549	0.0501592	0.20324579	2.8649806	20	11 12.0	18.5
61873 2000 QN_{213}	14.8	X	331.81775	40.08338	12.30481	5.97279	0.0737562	0.20369321	2.8607836	20	11 22.1	18.4
61874 2000 QX_{213}	14.7	X	257.69018	152.84081	156.04126	11.26091	0.1303926	0.18172788	3.0868937	20	3 23.7	19.3
61875 2000 QS_{214}	15.8	X	227.22287	114.66299	148.39706	3.47785	0.1220203	0.27093878	2.3653129	20	—	—
61876 2000 QN_{215}	14.8	X	75.41859	292.36836	24.64266	2.37187	0.0495241	0.20566290	2.8424887	20	12 8.6	18.7
61877 2000 QU_{215}	14.9	X	257.65248	233.99003	108.56400	2.89377	0.1038731	0.18441762	3.0568053	20	5 5.8	19.3
61878 2000 QD_{216}	14.8	X	250.17164	30.46537	21.60633	9.79635	0.0648659	0.19065529	2.9897633	20	8 1.9	19.2
61879 2000 QQ_{216}	14.7	X	317.42417	255.74633	111.15501	1.89628	0.0303646	0.19577670	2.9373930	20	9 4.8	18.6
61880 2000 QC_{217}	14.7	X	184.74659	27.89870	30.35894	10.02590	0.1036760	0.18228616	3.0805878	20	5 19.8	19.6
61881 2000 QS_{217}	14.0	X	233.48026	316.87084	44.48951	10.74100	0.1259635	0.17556401	3.1587292	20	4 30.3	19.0
61882 2000 QA_{218}	13.9	X	321.36679	342.26193	52.49243	9.29394	0.0268247	0.19053507	2.9910208	20	10 17.4	18.0
61883 2000 QU_{218}	15.3	X	220.97387	87.71190	121.32457	7.74788	0.1006652	0.26643008	2.3919231	20	—	—
61884 2000 QJ_{219}	14.8	X	144.11038	323.90171	61.48463	1.95562	0.1951418	0.17608793	3.1524605	20	3 11.1	20.0
61885 2000 QN_{219}	15.1	X	193.80079	268.86761	70.17059	2.70500	0.0463699	0.22839792	2.6505822	20	2 21.3	18.8
61886 2000 QV_{219}	16.0	X	210.35999	342.68455	30.74035	3.84662	0.1930062	0.23361078	2.6110035	20	4 17.3	20.3
61887 2000 QF_{220}	15.2	X	107.80260	150.62914	297.73676	2.82923	0.1346717	0.22922143	2.6442300	20	4 7.3	18.9
61888 2000 QO_{220}	15.1	X	80.36712	138.55516	320.59704	1.79306	0.0330437	0.22801285	2.6535656	20	3 2.6	18.3
61889 2000 QL_{221}	15.9	X	186.04016	277.91559	25.04089	5.40681	0.1746235	0.27261251	2.3556216	20	—	—
61890 2000 QZ_{221}	15.7	X	7.46041	155.77326	95.24494	7.98909	0.1158166	0.29077411	2.2564838	20	6 18.4	17.6
61891 2000 QO_{222}	15.4	X	183.91170	208.34925	85.41683	10.10450	0.1486114	0.27099399	2.3649916	20	—	—
61892 2000 QQ_{222}	14.8	X	145.16932	238.27688	75.01277	10.14924	0.1575525	0.26768060	2.3844677	20	—	—
61893 2000 QX_{222}	15.4	X	123.45600	249.88821	84.82391	7.48392	0.1143870	0.26656177	2.3911352	20	—	—
61894 2000 QT_{224}	14.4	X	285.98046	321.88619	66.13162	10.26338	0.0485091	0.24332735	2.5410240	20	8 28.3	17.8
61895 2000 QV_{224}	13.7	X	164.88107	43.02028	58.55237	10.12037	0.0457376	0.23620953	2.5918176	20	6 23.9	17.4
61896 2000 QG_{227}	12.7	X	236.25691	116.68779	245.67567	6.24042	0.0619906	0.08421623	5.1547250	20	5 11.6	19.6
61897 2000 QY_{227}	16.1	X	324.27166	345.43706	0.21352	2.68244	0.1460935	0.24355848	2.5394162	20	8 16.1	18.5
61898 2000 QZ_{227}	15.5	X	204.15148	27.35461	200.29749	6.43297	0.0678817	0.26466156	2.4025668	20	—	—
61899 2000 QN_{228}	15.6	X	181.18324	34.65700	286.89313	2.78849	0.0762080	0.22232616	2.6986238	20	1 17.6	19.6
61900 2000 QQ_{228}	15.3	X	9.40881	291.06852	215.85639	1.34185	0.1529803	0.22306135	2.6926909	20	1 20.3	18.2
61901 2000 QX_{228}	15.4	X	98.53672	49.28412	58.30355	1.63053	0.0213806	0.23028810	2.6360585	20	4 5.9	18.8
61902 2000 QH_{229}	14.9	X	212.90168	112.36362	331.54145	10.20492	0.0508761	0.19161634	2.9797582	20	7 28.6	19.3
61903 2000 QA_{230}	15.3	X	208.82410	49.35913	50.80665	6.83823	0.0054555	0.24324992	2.5415632	20	8 25.2	18.7
61904 2000 QD_{230}	15.6	X	161.62320	267.24043	74.49676	4.50306	0.0837273	0.22020571	2.7159202	20	1 22.9	19.5
61905 2000 QF_{230}	15.0	X	106.71497	322.79885	35.87410	10.56341	0.0623145	0.21411610	2.7671742	20	—	—
61906 2000 QJ_{230}	14.9	X	178.71163	143.89354	131.00250	7.19686	0.0199394	0.21247014	2.7814469	20	—	—
61907 2000 QK_{230}	14.7	X	255.06795	237.33530	143.35675	9.84414	0.0796298	0.18671771	3.0316499	20	6 22.8	19.1
61908 2000 QT_{230}	15.3	X	28.03276	175.81849	145.23292	2.49303	0.1246911	0.20036163	2.8924089	20	10 25.8	19.0
61909 2000 QR_{231}	15.4	X	196.47974	261.25379	184.33421	4.64722	0.1599986	0.24042229	2.5614521	20	7 5.5	19.5
61910 2000 QW_{243}	15.0	X	87.76286	287.26175	137.59991	8.12020	0.1800786	0.22181840	2.7027404	20	2 20.7	18.4
61911 2000 QP_{244}	16.4	X	218.70914	308.46916	315.79890	1.99128	0.1385917	0.27315597	2.3524962	20	—	—
61912 Storrs	15.1	X	59.88891	282.15551	146.42036	9.01248	0.0479875	0.21869981	2.7283733	20	—	—
61913 Lanning	15.7	X	214.36514	359.63820	313.59069	1.62538	0.0579173	0.22696836	2.6617004	20	2 11.1	19.3
61914 2000 RK	14.7	X	240.79501	166.08134	231.36432	14.24960	0.1289863	0.24066291	2.5597445	20	6 21.1	18.5
61915 2000 RO	14.3	X	150.98086	169.17455	270.93466	12.06041	0.0893824	0.18357306	3.0661736	20	5 11.7	19.0
61916 2000 RB_1	15.5	X	71.21776	111.85107	179.54385	4.91293	0.1395669	0.25223748	2.4808260	20	11 23.3	19.1
61917 2000 RH_1	16.1	X	166.41009	335.57407	342.21670	1.98846	0.2062516	0.26909592	2.3760996	20	1 1.5	19.8
61918 2000 RR_1	14.8	X	265.47472	304.99363	274.74788	10.99046	0.1177701	0.22075082	2.7114473	20	—	—
61919 2000 RU_1	15.7	X	216.88466	291.71400	341.92286	2.19804	0.1528122	0.27040106	2.3684476	20	—	—
61920 2000 RV_1	16.0	X	108.95473	341.56503	335.80541	2.04321	0.1742066	0.26073919	2.4266018	20	—	—

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
	m		°	°	°	°		°				
61921 2000 RW_{1}	16.3	X	338.01471	328.80285	355.58926	4.80447	0.1516887	0.29313622	2.2443456	20	8 21.0	17.7
61922 2000 RA_{2}	14.2	X	7.47827	276.58782	9.44288	8.84862	0.0196021	0.24016106	2.5633092	20	8 5.1	17.5
61923 2000 RF_{2}	16.1	X	319.78863	322.86922	346.77625	3.09226	0.1492401	0.28872425	2.2671515	20	6 11.2	18.0
61924 2000 RL_{2}	13.5	X	119.23539	66.20198	1.83935	4.14805	0.1515560	0.17288856	3.1912332	20	4 1.5	18.2
61925 2000 RA_{3}	14.0	X	174.82407	209.48292	190.18207	21.56385	0.0563293	0.17784698	3.1316392	20	4 19.6	18.7
61926 2000 RN_{3}	13.8	X	230.80676	201.16483	191.51536	9.52902	0.0886760	0.18423306	3.0588464	20	6 8.7	18.5
61927 2000 RZ_{3}	14.5	X	203.14180	73.67341	191.86040	8.62849	0.1132111	0.21494385	2.7600654	20	—	—
61928 2000 RP_{4}	14.6	X	220.93184	320.31568	43.07744	13.24533	0.3065561	0.22951528	2.6419726	20	4 12.6	19.4
61929 2000 RB_{5}	15.4	X	125.68049	138.47398	178.69641	5.85603	0.1250911	0.26179944	2.4200457	20	—	—
61930 2000 RP_{5}	13.9	X	262.66534	131.55035	202.47639	14.09782	0.1805997	0.18242581	3.0790154	20	4 21.3	18.5
61931 2000 RS_{5}	15.4	X	117.75603	15.79675	30.34894	2.65088	0.2178022	0.26952674	2.3735669	20	3 5.5	18.5
61932 2000 RN_{6}	16.6	X	298.06162	219.11780	129.42098	0.66468	0.1843234	0.28912629	2.2650493	20	6 26.1	18.7
61933 2000 RR_{6}	14.9	X	111.76548	152.12491	184.84910	11.74012	0.1927033	0.21121859	2.7924235	20	—	—
61934 2000 RA_{7}	15.7	X	193.74703	296.83941	20.61886	4.13700	0.2491704	0.27148033	2.3621663	20	1 26.6	19.7
61935 2000 RT_{7}	13.5	X	128.42967	325.23066	121.31073	5.98210	0.1374660	0.17297227	3.1902035	20	5 4.4	18.4
61936 2000 RZ_{7}	15.4	X	327.33312	278.90627	61.53208	2.00441	0.2558672	0.24186578	2.5512505	20	8 4.2	17.0
61937 2000 RK_{9}	14.5	X	196.57198	295.12608	79.80251	8.29047	0.2891099	0.22528564	2.6749379	20	4 10.9	19.5
61938 2000 RT_{9}	15.3	X	114.62816	327.68645	69.69278	7.02676	0.0927063	0.26438848	2.4042209	20	2 2.7	18.3
61939 2000 RA_{11}	15.3	X	250.93100	314.57036	85.42276	3.12722	0.1638502	0.23293512	2.6160502	20	7 2.9	18.9
61940 2000 RB_{11}	14.4	X	302.70727	327.87978	101.25670	3.39213	0.1348183	0.19327710	2.9626644	20	10 26.3	17.9
61941 2000 RE_{11}	14.8	X	0.39807	270.20882	207.89569	4.34533	0.0415204	0.30792167	2.1719136	20	—	—
61942 2000 RP_{12}	15.5	X	47.19307	275.12366	36.35618	5.70669	0.1699946	0.29925504	2.2136472	20	12 3.8	18.4
61943 2000 RT_{12}	14.9	X	146.91317	146.38922	217.45482	6.92797	0.1474952	0.27218705	2.3580757	20	1 30.8	18.4
61944 2000 RM_{13}	15.1	X	178.27477	352.83627	261.19421	7.31164	0.1770786	0.26503874	2.4002868	20	—	—
61945 2000 RO_{13}	14.5	X	247.14071	159.44763	248.88486	10.11698	0.0916903	0.19135855	2.9824337	20	7 14.8	18.9
61946 2000 RQ_{13}	15.0	X	148.30540	270.51498	202.56636	12.79372	0.1401024	0.23661407	2.5888626	20	6 23.7	19.3
61947 2000 RG_{14}	14.3	X	204.85307	221.63164	230.34686	9.73829	0.0774994	0.19137697	2.9822424	20	7 22.6	18.9
61948 2000 RA_{15}	14.0	X	103.98302	248.01700	200.50830	14.08877	0.1677047	0.17582985	3.1555445	20	4 12.2	18.5
61949 2000 RL_{16}	15.1	X	59.25778	162.33413	206.33592	8.71866	0.1422221	0.26010077	2.4305709	20	—	—
61950 2000 RQ_{16}	14.1	X	141.32127	89.38061	313.55481	11.28631	0.1473309	0.17522822	3.1627633	20	3 19.4	19.2
61951 2000 RE_{17}	15.0	X	187.33415	157.44245	207.68804	12.47834	0.0086045	0.22801658	2.6535367	20	3 12.6	18.7
61952 2000 RG_{17}	15.1	X	263.76703	165.80365	199.72700	12.20205	0.1948294	0.23801818	2.5786712	20	5 29.9	19.0
61953 2000 RK_{17}	14.2	X	71.87977	222.30203	278.81045	8.57440	0.0594725	0.18015827	3.1047973	20	4 18.8	18.6
61954 2000 RB_{18}	14.9	X	236.56009	154.63692	208.22015	8.53450	0.0520309	0.18432492	3.0578300	20	5 12.7	19.3
61955 2000 RK_{18}	14.4	X	5.26773	254.06134	328.39047	14.77890	0.0771256	0.23357581	2.6112642	20	4 22.1	17.8
61956 2000 RS_{18}	15.3	X	176.19243	260.24277	330.69690	18.99789	0.2235341	0.26075076	2.4265300	20	12 15.0	19.7
61957 2000 RE_{19}	13.8	X	108.68703	225.71248	201.64136	16.95125	0.1121022	0.17397914	3.1778832	20	3 12.9	18.5
61958 2000 RR_{19}	13.9	X	216.89576	43.80891	301.94059	8.87451	0.0241898	0.22923473	2.6441278	20	3 22.4	17.7
61959 2000 RS_{19}	14.2	X	86.80819	268.99465	208.78858	12.87333	0.1921120	0.17634731	3.1493686	20	5 2.4	18.6
61960 2000 RV_{19}	13.7	X	205.60391	177.62995	233.12237	7.68018	0.1189654	0.18471061	3.0535719	20	6 1.9	18.4
61961 2000 RC_{20}	13.8	X	186.23071	143.19928	319.83894	9.69423	0.0634779	0.18919484	3.0051295	20	7 20.6	18.2
61962 2000 RV_{20}	15.0	X	134.78329	6.31068	253.74815	6.07481	0.0744265	0.25673015	2.4517986	20	12 17.1	18.3
61963 2000 RY_{20}	14.8	X	189.08276	23.47473	247.84476	5.51938	0.0437611	0.21525917	2.7573693	20	—	—
61964 2000 RQ_{21}	14.5	X	134.21429	194.57866	194.69883	7.19876	0.1703928	0.22209509	2.7004952	20	2 26.8	18.7
61965 2000 RS_{22}	14.1	X	224.58740	124.28854	331.56768	9.87003	0.0574161	0.19317157	2.9637432	20	8 24.4	18.3
61966 2000 RU_{22}	16.1	X	250.55457	151.57245	225.16057	4.22514	0.2305668	0.23627458	2.5913419	20	5 25.3	20.0
61967 2000 RV_{23}	14.9	X	53.87180	67.57051	309.84752	4.87976	0.0612587	0.20912988	2.8109859	20	—	—
61968 2000 RW_{23}	16.1	X	130.31897	42.54927	260.14727	2.75449	0.2516281	0.26314610	2.4117822	20	—	—
61969 2000 RG_{24}	15.2	X	17.17098	19.59099	224.38626	8.23523	0.1545289	0.24015812	2.5633301	20	6 27.2	17.8
61970 2000 RV_{24}	14.6	X	349.20292	357.00608	255.40203	8.53103	0.0387053	0.18511773	3.0490933	20	5 18.7	18.7
61971 2000 RW_{24}	16.5	X	218.41830	209.70309	266.90907	7.09176	0.0745189	0.29645753	2.2275513	20	9 20.2	19.4
61972 2000 RB_{26}	15.1	X	308.60410	255.20898	206.15611	5.90844	0.1341372	0.25503208	2.4626698	20	—	—
61973 2000 RY_{26}	14.1	X	252.84741	128.68359	277.12332	8.64261	0.0897034	0.19008373	2.9957536	20	7 19.8	18.5
61974 2000 RC_{27}	14.8	X	235.39609	30.84558	202.34874	8.58841	0.1015850	0.21586518	2.7522063	20	—	—
61975 2000 RJ_{27}	14.1	X	50.47215	355.32727	243.24481	8.71877	0.0243431	0.19042131	2.9922119	20	7 22.2	18.3
61976 2000 RS_{27}	15.1	X	353.55418	94.27914	186.45239	16.79268	0.2546543	0.24139678	2.5545539	20	7 4.5	17.4
61977 2000 RK_{28}	15.5	X	167.93136	331.74447	321.67687	3.71263	0.2246608	0.26676221	2.3899373	20	—	—
61978 2000 RN_{28}	15.0	X	215.64718	86.17496	209.09404	4.94884	0.0430511	0.22068833	2.7119591	20	1 21.3	19.0
61979 2000 RO_{28}	15.5	X	233.43978	161.69268	190.62060	5.44621	0.1746308	0.28155436	2.3054792	20	4 10.9	19.1
61980 2000 RZ_{29}	14.8	X	226.01975	357.50957	242.72434	6.90998	0.0851513	0.21583173	2.7524907	20	—	—
61981 2000 RB_{30}	14.1	X	202.63337	201.47624	322.88258	10.10215	0.0740608	0.20047866	2.8912831	20	10 18.1	18.5
61982 2000 RL_{30}	13.7	X	157.62566	95.74816	327.81926	15.34183	0.0938770	0.17887478	3.1196316	20	4 23.1	18.8
61983 2000 RN_{30}	14.5	X	29.93195	290.91242	279.10331	7.48393	0.0727131	0.23347066	2.6120482	20	5 22.4	17.6
61984 2000 RR_{30}	14.6	X	169.18480	66.25890	331.20959	12.49672	0.1043700	0.17753120	3.1353516	20	4 5.5	19.7
61985 2000 RW_{30}	14.4	X	345.48061	345.65728	308.93807	8.07503	0.1020677	0.23990977	2.5650988	20	7 11.8	17.0
61986 2000 RY_{30}	14.5	X	188.16856	18.19470	261.45364	5.93366	0.1026667	0.26628049	2.3928189	20	—	—
61987 2000 RD_{31}	13.6	X	80.15550	206.08825	298.23282	8.29117	0.1632931	0.17785639	3.1315287	20	5 21.1	18.0
61988 2000 RN_{32}	14.5	X	178.66446	349.44960	335.34088	10.16043	0.0525575	0.21966974	2.7203361	20	1 19.9	18.5
61989 2000 RP_{32}	14.7	X	83.29538	155.58732	202.91518	12.79544	0.1370169	0.21084948	2.7956815	20	—	—
61990 2000 RG_{33}	14.3	X	291.09258	349.12901	348.89943	10.73029	0.1521226	0.18746008	3.0236407	20	5 31.7	18.5
61991 2000 RL_{33}	14.8	X	83.40781	50.75290	272.28549	4.12662	0.1194890	0.25664802	2.4523217	20	—	—
61992 2000 RN_{33}	14.7	X	117.13475	41.31469	336.43115	8.75604	0.1435030	0.21717092	2.7411634	20	1 26.0	18.5
61993 2000 RR_{33}	14.6	X	178.88364	339.00066	337.34595	4.76046	0.0563215	0.21815588	2.7329064	20	1 8.9	18.6
61994 2000 RT_{33}	14.8	X	124.49104	231.91953	193.94275	11.29181	0.1771932	0.22322608	2.6913660	20	4 4.5	18.8
61995 2000 RG_{34}	15.8	X	148.14032	83.93683	284.77578	5.60549	0.1368564	0.27160270	2.3614567	20	2 7.3	19.2
61996 2000 RO_{34}	15.3	X	355.17170	108.77737	223.35874	7.98628	0.1361149	0.24592399	2.5231058	20	9 24.2	18.0
61997 2000 RR_{34}	15.2	X	35.13173	318.76830	308.23611	5.02976	0.2252960	0.24456016	2.5324774	20	9 14.5	18.2
61998 2000 RT_{34}	15.3	X	328.50991	80.86303	327.96136	5.25964	0.0321257	0.25116604	2.4878762	20	11 23.6	18.4
61999 2000 RT_{35}	15.3	X	216.46472	135.57776	201.63058	13.68051	0.1134198	0.22675278	2.6633871	20	3 9.7	19.6
62000 2000 RA_{36}	14.4	X	109.24771	272.68070	180.99612	10.94739	0.1134933	0.17459482	3.1704079	20	4 19.2	19.1

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Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
	m		°	°	°	°		°				
62001 2000 RK_{36}	15.5	X	215.75943	164.20678	155.37380	3.69524	0.0739027	0.22388090	2.6861155	20	2 20.4	19.6
62002 2000 RT_{37}	14.5	X	116.93901	342.03617	336.50542	26.70176	0.1706927	0.21494333	2.7600698	20	—	—
62003 2000 RB_{38}	14.8	X	83.39714	353.63166	13.26339	7.16253	0.1040772	0.21166755	2.7884735	20	—	—
62004 2000 RG_{38}	15.4	X	265.60586	295.01214	39.37784	2.42003	0.1424543	0.23381106	2.6095123	20	4 26.9	19.1
62005 2000 RP_{38}	14.7	X	217.26906	337.05229	49.27505	6.55727	0.1137787	0.27781420	2.3261252	20	5 12.8	17.8
62006 2000 RQ_{38}	15.1	X	107.83989	4.96047	53.86475	10.83417	0.2526565	0.26790738	2.3831219	20	3 20.4	18.5
62007 2000 RP_{39}	15.8	X	175.19366	285.34010	31.75860	2.80535	0.2116541	0.26799965	2.3825749	20	1 9.2	19.6
62008 2000 RR_{39}	13.3	X	121.84307	84.52429	52.64865	6.37277	0.1058226	0.17556302	3.1587410	20	6 23.4	18.0
62009 2000 RX_{39}	13.7	X	198.06386	189.67980	209.93221	28.45279	0.1924294	0.17743912	3.1364362	20	5 10.4	19.1
62010 2000 RX_{40}	13.9	X	336.23239	64.74595	262.79181	8.78735	0.0735378	0.19176947	2.9781718	20	8 4.4	17.8
62011 2000 RG_{41}	14.5	X	42.28701	153.66221	242.61785	8.15664	0.0790783	0.20937987	2.8087479	20	—	—
62012 2000 RJ_{41}	14.2	X	269.70969	7.45521	314.76957	8.91754	0.0847785	0.18226935	3.0807772	20	4 21.9	18.7
62013 2000 RM_{41}	15.3	X	199.55814	38.57259	267.22019	6.94276	0.1690069	0.27172524	2.3607467	20	1 12.9	18.9
62014 2000 RJ_{42}	14.2	X	328.19754	75.22556	260.66416	8.42017	0.1453326	0.19178508	2.9780101	20	7 29.6	17.8
62015 2000 RN_{42}	13.9	X	253.31147	56.02130	270.11015	8.37885	0.0433518	0.17943145	3.1131759	20	4 13.5	18.5
62016 2000 RP_{42}	13.9	X	322.02016	95.75537	251.04567	9.09852	0.1210018	0.19174111	2.9784654	20	8 3.9	17.6
62017 2000 RR_{42}	14.2	X	228.29139	353.40212	339.52191	13.50908	0.1434831	0.17813164	3.1283020	20	3 17.7	19.3
62018 2000 RV_{42}	14.0	X	306.27124	141.40494	229.17645	9.47787	0.1048271	0.19210136	2.9747405	20	8 11.7	17.9
62019 2000 RQ_{44}	13.9	X	86.51834	217.57648	238.31267	10.14697	0.0778435	0.17267003	3.1939252	20	3 14.8	18.5
62020 2000 RT_{45}	15.4	X	38.65904	115.63898	236.31477	3.54957	0.1405483	0.30283399	2.1961718	20	—	—
62021 2000 RL_{46}	15.6	X	247.54329	85.02370	270.36345	1.83920	0.1821412	0.28203043	2.3028840	20	4 27.5	19.0
62022 2000 RA_{48}	13.3	X	182.74281	61.00943	339.19479	12.04688	0.2275162	0.17653547	3.1471304	20	4 23.3	18.9
62023 2000 RQ_{48}	14.8	X	296.30093	119.36180	237.93986	13.78715	0.1580174	0.23756697	2.5819353	20	7 5.5	18.0
62024 2000 RF_{50}	14.5	X	314.10277	302.25392	37.29690	13.15603	0.1578785	0.23812189	2.5779224	20	7 17.0	17.5
62025 2000 RQ_{50}	13.4	X	170.48706	61.33935	39.81868	7.36728	0.1019537	0.18005308	3.1060064	20	6 29.4	18.4
62026 2000 RZ_{50}	14.0	X	262.69848	328.73813	40.11887	17.52905	0.2098148	0.18386207	3.0629597	20	5 26.9	18.8
62027 2000 RW_{52}	15.0	X	18.09816	19.80800	77.26786	7.42105	0.1100342	0.25782327	2.4448636	20	—	—
62028 2000 RE_{53}	15.1	X	65.04177	345.40941	94.13507	6.25845	0.0227801	0.22148440	2.7054569	20	1 17.7	18.6
62029 2000 RD_{55}	13.5	X	228.74214	44.37097	304.34849	10.33532	0.2272389	0.17810859	3.1285719	20	3 29.5	19.0
62030 2000 RK_{56}	14.0	X	305.00016	310.20003	345.19061	11.76149	0.2116726	0.23329003	2.6133962	20	4 10.6	17.5
62031 2000 RS_{56}	15.3	X	296.35943	65.56724	126.00128	4.27553	0.0190415	0.21550191	2.7552984	20	—	—
62032 2000 RG_{58}	15.2	X	109.55775	286.36632	358.08156	12.61953	0.0525471	0.20405618	2.8573902	20	12 5.7	19.7
62033 2000 RC_{59}	15.8	X	250.05244	125.17905	211.90455	3.31372	0.2286579	0.28233194	2.3012442	20	4 1.9	19.2
62034 2000 RE_{60}	15.8	X	153.02048	153.42354	180.65350	2.11544	0.1897792	0.26831703	2.3806957	20	1 6.9	19.3
62035 2000 RC_{62}	14.7	X	139.85649	114.54482	233.91124	12.65726	0.2050477	0.21246574	2.7814853	20	1 17.5	19.2
62036 2000 RJ_{62}	13.0	X	302.11715	229.01755	65.87298	17.45169	0.0902583	0.17527828	3.1621610	20	5 6.4	17.3
62037 2000 RQ_{62}	14.4	X	24.68094	131.66476	134.23705	4.92822	0.2134580	0.28469378	2.2884990	20	9 3.2	16.4
62038 2000 RX_{63}	14.1	X	133.28944	235.54682	234.11154	4.04317	0.1250444	0.18003360	3.1062305	20	6 3.3	18.8
62039 2000 RZ_{63}	14.1	X	246.99935	108.06561	256.12736	5.18924	0.1918941	0.18393950	3.0621001	20	5 9.8	19.0
62040 2000 RA_{64}	15.5	X	83.57197	116.88767	323.23150	4.55839	0.1950030	0.26812091	2.3818565	20	2 29.3	18.1
62041 2000 RD_{65}	15.2	X	326.41562	49.29441	285.30417	1.42843	0.0297646	0.24184979	2.5513630	20	8 9.1	18.1
62042 2000 RF_{65}	15.5	X	246.21149	254.48924	0.74680	23.80602	0.2962528	0.27361922	2.3498401	20	—	—
62043 2000 RH_{65}	13.9	X	106.94928	246.49919	170.29634	8.72754	0.0947256	0.17027077	3.2238585	20	2 27.4	18.5
62044 2000 RU_{65}	14.7	X	328.89598	197.04538	181.42234	10.50256	0.1554683	0.19564549	2.9387061	20	10 2.7	17.8
62045 2000 RV_{65}	15.7	X	135.09197	159.66415	170.39728	6.66976	0.1347618	0.26398054	2.4066971	20	—	—
62046 2000 RA_{66}	15.4	X	225.77906	170.76754	161.34195	8.14381	0.2435027	0.27780886	2.3261550	20	3 6.7	19.3
62047 2000 RE_{66}	15.9	X	130.32971	214.45478	113.26214	4.33987	0.3389404	0.26487944	2.4012491	20	—	—
62048 2000 RC_{67}	15.6	X	121.47120	22.48321	7.64518	2.62984	0.1721093	0.26814877	2.3816915	20	2 11.7	18.6
62049 2000 RH_{67}	15.8	X	94.28898	254.85575	129.51914	2.95319	0.2085040	0.26355140	2.4093089	20	1 2.9	18.1
62050 2000 RM_{67}	15.0	X	283.48988	290.92319	69.95406	5.48085	0.2209404	0.23732203	2.5837115	20	6 12.6	18.2
62051 2000 RV_{68}	14.3	X	201.66686	14.81049	13.58120	9.67303	0.0837961	0.18150643	3.0894040	20	4 30.4	19.2
62052 2000 RA_{69}	15.3	X	342.84728	232.43683	163.29267	1.22058	0.1046923	0.25112624	2.4881391	20	12 4.6	18.0
62053 2000 RB_{69}	13.9	X	126.17339	216.64522	194.23060	4.78184	0.1587039	0.17195249	3.2028043	20	3 19.8	18.9
62054 2000 RD_{69}	14.1	X	148.90722	9.61398	356.45212	5.16521	0.1516864	0.17085951	3.2164485	20	2 19.6	19.2
62055 2000 RF_{69}	14.9	X	130.39156	135.84892	192.45266	7.22047	0.1767930	0.21413049	2.7670502	20	—	—
62056 2000 RS_{69}	14.2	X	250.02083	164.66951	183.87014	9.52296	0.0828125	0.18216855	3.0819135	20	5 7.9	18.8
62057 2000 RY_{69}	15.2	X	356.07164	260.54080	55.43100	1.80943	0.2054795	0.24458846	2.5322820	20	9 12.0	17.2
62058 2000 RN_{70}	14.8	X	32.25802	27.89261	45.10259	4.15228	0.0842871	0.21271166	2.7793411	20	—	—
62059 2000 RO_{70}	15.8	X	326.09120	260.59741	39.58857	2.81147	0.1899501	0.23903433	2.5713579	20	6 2.2	18.1
62060 2000 RB_{71}	15.9	X	135.53680	184.23597	155.71330	9.68190	0.2308275	0.26667310	2.3904697	20	1 1.2	19.4
62061 2000 RU_{71}	15.2	X	307.63879	199.53931	147.03842	5.37744	0.1943823	0.24058760	2.5602786	20	7 6.3	17.9
62062 2000 RV_{71}	15.0	X	311.63136	312.17413	21.01195	13.41142	0.1539790	0.23953336	2.5677853	20	7 1.2	18.1
62063 2000 RA_{72}	15.8	X	56.76981	297.81278	5.31390	6.14071	0.1844659	0.29985812	2.2106781	20	12 4.9	19.0
62064 2000 RA_{73}	15.2	X	133.53813	137.21186	307.23141	0.91388	0.2238630	0.27658371	2.3330192	20	5 9.3	18.9
62065 2000 RH_{73}	14.3	X	72.16999	300.55955	178.57092	2.89756	0.0472320	0.22547579	2.6734338	20	3 20.2	17.8
62066 2000 RM_{73}	14.8	X	191.41501	202.63454	125.49688	3.04355	0.0476831	0.22283042	2.6945509	20	2 4.7	18.6
62067 2000 RG_{74}	13.7	X	4.95561	197.25474	36.69870	15.16871	0.0544169	0.23179893	2.6245918	20	5 13.8	16.9
62068 2000 RF_{75}	15.3	X	70.26977	19.47747	0.55204	4.90834	0.0715500	0.21291124	2.7776040	20	—	—
62069 2000 RK_{76}	14.8	X	90.45363	304.80788	145.38391	28.08315	0.1265031	0.22842869	2.6503442	20	3 23.4	18.6
62070 2000 RC_{77}	13.5	X	27.11481	192.22163	69.00973	10.42793	0.0248845	0.18239175	3.0793987	20	7 24.0	17.8
62071 Voegtli	15.0	X	319.85900	195.18595	159.04485	12.97066	0.2022567	0.24278747	2.5447895	20	8 12.0	17.2
62072 2000 RD_{78}	14.9	X	294.09242	103.14516	218.83332	7.98256	0.2125647	0.23698493	2.5861610	20	5 6.4	18.1
62073 2000 RX_{78}	15.0	X	161.81610	69.41210	242.72399	5.31568	0.1403413	0.26636453	2.3923155	20	—	—
62074 2000 RL_{79}	13.6	X	339.52002	337.23020	334.70266	21.70212	0.0470451	0.23684261	2.5871970	20	8 2.8	16.9
62075 2000 RO_{79}	14.0	X	202.64319	99.72147	223.27896	11.65911	0.2761763	0.22679993	2.6630180	20	2 7.2	19.1
62076 2000 RH_{80}	14.0	X	106.12773	230.02462	226.62016	12.01252	0.1422832	0.17717155	3.1395933	20	4 20.0	18.7
62077 2000 RE_{81}	15.0	X	346.73923	0.59561	242.27689	14.15081	0.0650618	0.23507739	2.6001325	20	4 27.7	18.2
62078 2000 RS_{81}	14.3	X	91.47790	287.33714	218.41435	12.64169	0.0940886	0.23380575	2.6095518	20	5 29.1	17.9
62079 2000 RX_{81}	13.3	X	140.75919	62.71195	294.21511	14.01295	0.0723341	0.17039826	3.2222503	20	1 22.8	17.9
62080 2000 RG_{82}	14.5	X	78.38234	212.91186	229.11942	11.92412	0.0519604	0.22262992	2.6961685	20	2 5.5	18.3

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	m		°	°	°	°		°				
62081 2000 RS_{82}	14.4	X	140.09623	184.04979	216.03757	11.51766	0.1841965	0.22407619	2.6845546	20	3 16.8	18.7
62082 2000 RZ_{82}	15.0	X	184.16806	192.47989	222.65264	13.72419	0.1362836	0.23321536	2.6139540	20	5 16.9	19.1
62083 2000 RF_{84}	15.6	X	7.15741	252.96127	128.34210	6.17979	0.2222912	0.25605910	2.4560803	20	—	—
62084 2000 RA_{86}	14.2	X	210.73137	324.21799	18.90093	9.25034	0.0847212	0.17580073	3.1558930	20	3 20.6	19.1
62085 2000 RO_{87}	15.2	X	251.05232	357.15612	181.52365	2.73846	0.1229168	0.25958800	2.4337706	20	—	—
62086 2000 RY_{87}	14.5	X	115.45379	30.87122	288.98011	4.49660	0.0418026	0.21129499	2.7917504	20	—	—
62087 2000 RC_{88}	14.3	X	135.89675	85.79317	270.61509	11.15589	0.0162015	0.21914318	2.7246919	20	1 2.1	17.9
62088 2000 RY_{88}	14.4	X	160.77254	240.29105	256.76012	8.54664	0.1268558	0.19104571	2.9856887	20	8 1.2	19.2
62089 2000 RM_{89}	15.4	X	23.71645	69.65482	217.07420	7.42703	0.0831763	0.24504054	2.5291665	20	8 31.5	18.5
62090 2000 RR_{91}	15.4	X	137.27504	132.72480	206.58815	8.66660	0.1984151	0.21654701	2.7464261	20	1 5.1	19.7
62091 2000 RW_{91}	16.0	X	203.12098	48.29896	223.39298	2.54356	0.1620350	0.26783570	2.3835471	20	—	—
62092 2000 RM_{92}	15.4	X	215.38305	128.04334	241.28855	5.38759	0.1395905	0.27938016	2.3174249	20	4 15.4	18.9
62093 2000 RQ_{92}	15.6	X	323.84526	263.54012	45.15084	5.77819	0.1582386	0.23914244	2.5705829	20	6 15.2	18.2
62094 2000 RU_{92}	14.7	X	189.10503	74.14333	230.95114	4.63852	0.0503966	0.21797350	2.7344307	20	1 4.9	18.6
62095 2000 RW_{92}	14.4	X	212.92040	321.45859	59.13351	1.46337	0.1689037	0.18069371	3.0986608	20	4 30.9	19.6
62096 2000 RF_{94}	14.4	X	163.92316	335.24542	296.74737	3.28239	0.0266169	0.20960834	2.8067066	20	—	—
62097 2000 RJ_{94}	15.4	X	12.72127	133.35393	182.04683	3.39035	0.1745135	0.24639272	2.5199048	20	10 10.9	17.9
62098 2000 RO_{94}	16.0	X	79.53537	184.41926	220.82165	1.68619	0.1043749	0.26547630	2.3976487	20	—	—
62099 2000 RP_{94}	16.1	X	148.22822	101.87974	186.95756	2.18212	0.1883605	0.26290878	2.4132334	20	—	—
62100 2000 RA_{95}	15.3	X	319.91813	233.29033	53.34013	4.25748	0.2543535	0.23713131	2.5850966	20	4 20.8	18.1
62101 2000 RC_{95}	13.9	X	153.37738	61.73029	27.45954	11.45530	0.2131507	0.17855072	3.1234051	20	5 30.8	19.4
62102 2000 RE_{95}	15.0	X	344.24300	48.73674	57.97839	2.86921	0.1556361	0.25927352	2.4357382	20	—	—
62103 2000 RS_{95}	15.1	X	37.80718	297.76029	115.69188	4.99706	0.0978153	0.21061121	2.7977896	20	—	—
62104 2000 RZ_{95}	17.0	X	207.66513	184.03697	145.78737	2.72575	0.2246453	0.27615945	2.3354081	20	2 19.0	21.0
62105 2000 RN_{96}	14.4	X	290.86221	357.73117	314.35931	13.56774	0.1948912	0.23609496	2.5926561	20	4 13.4	18.2
62106 2000 RC_{97}	14.6	X	328.99442	72.59393	200.16429	22.47524	0.2215830	0.28835707	2.2690757	20	4 18.8	16.5
62107 2000 RF_{97}	13.3	X	188.26770	127.26248	285.22548	21.01219	0.1052519	0.18355342	3.0663924	20	5 15.6	18.4
62108 2000 RS_{97}	13.6	X	299.35490	337.73293	247.13606	22.06416	0.0801548	0.17359843	3.1825276	20	1 27.1	18.5
62109 2000 RT_{97}	14.4	X	96.44694	210.28213	227.23337	20.90036	0.0458620	0.22350919	2.6890928	20	2 19.4	18.6
62110 2000 RX_{97}	13.8	X	330.08098	358.32770	272.71149	15.12877	0.0895217	0.23445472	2.6047341	20	5 7.3	17.2
62111 2000 RG_{99}	14.0	X	49.78918	258.99095	250.92726	12.71578	0.1238998	0.22727420	2.6593120	20	4 1.5	17.3
62112 2000 RM_{99}	13.7	X	290.22676	167.83039	274.48375	11.49385	0.1454063	0.19984537	2.8973880	20	10 16.9	17.5
62113 2000 RP_{99}	13.8	X	92.56150	195.31411	229.14903	13.58379	0.1112239	0.17055945	3.2202199	20	2 16.8	18.6
62114 2000 RV_{99}	12.1	X	247.96132	64.79724	278.55763	16.13101	0.1800574	0.08337330	5.1894106	20	4 15.5	19.6
62115 2000 RW_{99}	14.2	X	288.61230	130.68530	251.87360	10.96573	0.1763749	0.24271427	2.5453012	20	7 25.9	17.4
62116 2000 RC_{101}	14.3	X	3.19537	28.48995	255.46519	13.75722	0.0972826	0.24015093	2.5633813	20	7 22.9	17.3
62117 2000 RC_{102}	13.2	X	125.47062	221.02223	210.69074	27.15733	0.1938181	0.17350762	3.1836380	20	4 16.4	18.2
62118 2000 RG_{102}	13.9	X	111.62011	177.17091	289.52669	10.68518	0.0425652	0.17814912	3.1280974	20	4 22.6	18.5
62119 2000 RH_{102}	14.0	X	259.78774	81.12666	285.48379	9.37912	0.1477747	0.18566118	3.0431403	20	5 31.4	18.5
62120 2000 RL_{102}	14.6	X	200.96884	223.93772	225.22201	15.19168	0.1141252	0.23755330	2.5820343	20	7 13.7	18.8
62121 2000 RO_{102}	14.9	X	250.01654	123.24343	221.35220	13.49135	0.1312304	0.23276592	2.6173178	20	4 23.2	18.7
62122 2000 RS_{102}	13.9	X	41.62915	284.00705	312.52922	11.45926	0.1638035	0.23944465	2.5684195	20	8 3.3	16.7
62123 2000 RC_{103}	14.3	X	257.10185	46.91867	285.80641	8.53407	0.0641129	0.23231632	2.6206935	20	4 21.0	18.0
62124 2000 RP_{103}	13.9	X	244.91178	186.90932	233.00829	14.22703	0.0851889	0.24067033	2.5596918	20	7 28.5	17.8
62125 2000 RU_{104}	14.1	X	236.25811	21.60008	313.31529	11.31929	0.1364501	0.17880979	3.1203874	20	3 25.4	19.2
62126 2000 RW_{104}	14.1	X	226.12608	69.51790	310.87268	11.49000	0.1186926	0.18170883	3.0871095	20	5 12.7	19.1
62127 2000 RY_{105}	15.4	X	244.72128	241.35428	143.84535	9.69884	0.0666226	0.23783771	2.5799755	20	6 19.2	19.1
62128 2000 SO_{1}	12.3	X	198.20421	44.16822	333.16508	26.69116	0.2242916	0.17673922	3.1447112	20	3 30.6	18.2
62129 2000 SR_{1}	14.9	X	107.43949	230.07328	107.06721	24.15832	0.2751145	0.26164062	2.4210250	20	—	—
62130 2000 SS_{1}	15.6	X	291.44844	140.96145	203.48386	4.24839	0.2938206	0.23929063	2.5695215	20	5 20.8	19.0
62131 2000 SH_{4}	14.1	X	292.63356	338.98154	33.10569	11.07786	0.1074386	0.18996694	2.9969812	20	7 31.6	18.2
62132 2000 SJ_{4}	15.7	X	145.17656	295.59300	39.48078	6.78338	0.1444348	0.26645684	2.3917629	20	—	—
62133 2000 SD_{5}	15.1	X	236.00670	284.87583	25.54740	22.99438	0.2157349	0.27868102	2.3212992	20	3 1.6	19.3
62134 2000 SJ_{5}	14.7	X	223.92666	336.87301	356.97940	10.26517	0.1080517	0.17750997	3.1356016	20	3 19.4	19.6
62135 2000 SA_{6}	14.8	X	260.46126	221.58853	58.35431	24.78593	0.2177522	0.27858244	2.3218468	20	2 10.4	19.0
62136 2000 SR_{6}	15.6	X	184.38453	52.69962	283.14911	5.06492	0.2020680	0.27694604	2.3309839	20	2 5.6	19.4
62137 2000 SM_{7}	14.0	X	40.90243	142.21087	349.40670	13.09590	0.0878086	0.17026563	3.2239235	20	3 3.6	18.0
62138 2000 SO_{8}	15.9	X	92.13011	85.54290	62.60110	7.31982	0.0444631	0.28395731	2.2924543	20	5 24.5	18.5
62139 2000 SB_{12}	15.6	X	295.01403	313.66084	7.19927	2.99074	0.2362090	0.24089973	2.5580666	20	5 1.0	18.7
62140 2000 SG_{12}	15.7	X	173.24312	246.79846	90.68827	3.57789	0.2584020	0.27454610	2.3445484	20	2 3.5	19.5
62141 2000 SK_{12}	15.0	X	189.22285	350.69574	26.19137	4.38657	0.2147776	0.28053874	2.3110401	20	4 2.1	18.6
62142 2000 SQ_{13}	15.1	X	193.46676	189.89986	73.94564	4.82744	0.0061947	0.21472928	2.7619037	20	—	—
62143 2000 SJ_{14}	14.7	X	297.64291	269.65762	263.16509	11.65800	0.0787557	0.21809207	2.7334395	20	—	—
62144 2000 SU_{15}	14.9	X	57.79878	256.21861	228.03239	12.31318	0.1261062	0.22371276	2.6874613	20	3 11.2	18.4
62145 2000 SH_{16}	13.2	X	107.09831	148.97928	299.20595	7.19843	0.1558339	0.12494724	3.9626428	20	4 12.7	19.1
62146 2000 SV_{16}	14.9	X	41.75602	74.39147	211.55936	10.39760	0.0071645	0.19575649	2.9375952	20	9 7.9	19.2
62147 2000 SB_{18}	14.6	X	72.81181	260.44587	274.02344	7.69772	0.0787101	0.18343636	3.0676968	20	6 8.2	18.8
62148 2000 SQ_{18}	15.2	X	116.53384	24.96800	311.02931	12.91828	0.0204240	0.21344894	2.7729373	20	—	—
62149 2000 ST_{19}	13.3	X	233.07463	94.78381	292.55132	9.11679	0.1701173	0.18388811	3.0626706	20	5 26.3	18.3
62150 2000 SE_{20}	14.2	X	125.96349	187.38619	326.33798	13.29005	0.0739406	0.18455705	3.0552655	20	7 18.8	18.8
62151 2000 SZ_{20}	15.0	X	137.20964	66.58326	267.37590	6.85384	0.1606273	0.26505662	2.4001789	20	—	—
62152 2000 SC_{21}	14.5	X	288.78732	87.88521	254.28280	2.80241	0.1197071	0.23665126	2.5885914	20	6 10.9	17.5
62153 2000 SD_{21}	14.6	X	98.32079	167.76761	211.01119	12.51500	0.0653895	0.21404362	2.7677988	20	—	—
62154 2000 SH_{22}	14.7	X	232.37846	298.20330	136.09917	12.37663	0.1305536	0.18967318	3.0000749	20	7 27.8	19.3
62155 2000 SD_{23}	15.4	X	153.03624	231.97613	202.11333	3.62574	0.1657750	0.27760040	2.3273194	20	5 11.2	18.8
62156 2000 SL_{23}	14.8	X	211.39131	177.84388	180.96350	13.55337	0.1924254	0.22552156	2.6730721	20	4 1.6	19.2
62157 2000 SH_{24}	16.2	X	290.85695	68.87094	195.75945	21.11295	0.0279726	0.37452737	1.9061058	20	2 21.2	18.4
62158 2000 SK_{25}	15.0	X	311.72265	205.90366	214.61072	13.48436	0.0980159	0.25529686	2.4609667	20	11 17.5	17.5
62159 2000 SO_{25}	14.6	X	111.89222	171.94350	248.25601	10.91145	0.1660514	0.22581239	2.6707764	20	3 7.6	18.6
62160 2000 ST_{25}	15.2	X	250.62433	134.16817	191.73052	13.88389	0.1702416	0.23417970	2.6067730	20	3 27.3	19.2

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
	m		°	°	°	°		°				
62161 2000 SU_{25}	15.5	X	278.58172	317.87864	243.61685	7.64081	0.0707147	0.27134226	2.3629676	20	—	—
62162 2000 SJ_{26}	14.3	X	5.29702	76.80050	245.17864	10.95635	0.0499183	0.19745397	2.9207349	20	9 7.8	18.4
62163 2000 SE_{27}	14.1	X	139.02530	219.53195	239.96846	11.37607	0.1188610	0.18111310	3.0938753	20	5 27.1	18.9
62164 2000 SB_{28}	14.4	X	201.83338	135.83368	329.10966	8.70816	0.0291609	0.19159131	2.9800177	20	8 12.0	18.5
62165 2000 SM_{29}	14.5	X	178.08961	89.98912	314.36986	4.10159	0.1703096	0.18034506	3.1026531	20	4 27.3	19.7
62166 2000 SM_{30}	16.4	X	287.72725	290.58487	5.09698	0.99735	0.1760505	0.28424924	2.2908844	20	3 25.2	19.2
62167 2000 SG_{31}	15.6	X	90.49451	228.68204	182.51494	2.67159	0.0735315	0.21945079	2.7221451	20	1 21.1	19.2
62168 2000 SK_{32}	15.8	X	201.98345	120.60345	128.25654	3.02638	0.1917758	0.26576410	2.3959174	20	—	—
62169 2000 SZ_{32}	15.8	X	141.65573	231.91031	126.26230	2.71754	0.0998732	0.21941391	2.7224502	20	1 22.1	19.5
62170 2000 SD_{33}	15.7	X	191.07071	156.32786	129.40491	4.29198	0.1521906	0.26846068	2.3798464	20	—	—
62171 2000 SH_{33}	15.0	X	168.95880	275.49805	100.10091	3.25356	0.1112067	0.22515377	2.6759823	20	3 14.2	19.0
62172 2000 SV_{34}	16.0	X	243.83884	198.25257	140.74193	0.96269	0.1689128	0.23239250	2.6201208	20	4 7.0	20.1
62173 2000 SW_{34}	14.5	X	118.76537	310.89337	155.20746	2.93781	0.0463984	0.18083211	3.0970795	20	5 6.3	18.9
62174 2000 SX_{35}	15.1	X	309.69771	217.43996	161.52837	1.63680	0.0678270	0.19534719	2.9416970	20	9 5.9	18.9
62175 2000 SZ_{35}	16.1	X	309.70564	142.10501	175.31531	3.95055	0.1698465	0.23908636	2.5709848	20	6 1.3	18.9
62176 2000 SJ_{36}	15.1	X	281.62106	294.84552	33.10346	8.89127	0.0985595	0.23531386	2.5983902	20	5 13.7	18.5
62177 2000 SG_{37}	15.1	X	136.70180	219.26828	112.84561	3.18784	0.0846895	0.21518735	2.7579828	20	—	—
62178 2000 SN_{37}	15.3	X	172.91966	236.64404	153.57237	3.32292	0.0808518	0.22780761	2.6551592	20	4 3.3	19.1
62179 2000 SR_{37}	15.0	X	4.77862	223.16639	23.78798	15.37213	0.1089220	0.23595239	2.5937003	20	5 31.7	18.1
62180 2000 SA_{38}	14.9	X	218.12467	59.02488	30.92131	10.01530	0.0575640	0.19060490	2.9902902	20	8 13.3	19.4
62181 2000 SC_{38}	14.9	X	62.86310	258.05097	116.14726	3.81861	0.0628565	0.20965415	2.8062977	20	—	—
62182 2000 SD_{38}	15.1	X	191.27952	310.23891	163.67948	5.05342	0.0419707	0.24152726	2.5536338	20	8 12.8	18.6
62183 2000 SM_{38}	15.5	X	26.31492	90.93856	152.82588	3.58510	0.0518936	0.23787225	2.5797257	20	7 3.0	18.6
62184 2000 SQ_{38}	14.7	X	208.71573	340.09200	91.15101	4.90554	0.0779172	0.23682477	2.5873269	20	7 5.2	18.4
62185 2000 SK_{39}	14.4	X	282.27444	344.32272	35.63524	11.64848	0.1175399	0.18992613	2.9974105	20	7 24.9	18.6
62186 2000 SS_{39}	16.3	X	148.97032	222.24475	121.83247	4.65201	0.1408888	0.31853982	2.1233760	20	1 1.4	18.9
62187 2000 SB_{40}	14.9	X	174.55954	213.67331	87.64507	6.41738	0.1024716	0.21597474	2.7512755	20	—	—
62188 2000 SK_{41}	14.6	X	181.56733	43.95417	100.06692	4.02674	0.0484294	0.19374900	2.9578517	20	9 6.7	19.0
62189 2000 SQ_{41}	14.4	X	78.02175	181.51996	43.80792	9.96299	0.0210361	0.19099813	2.9861846	20	8 16.9	18.7
62190 Augusthorch	14.9	X	323.82921	271.60960	33.71051	5.95122	0.2932540	0.23935072	2.5690914	20	5 17.7	17.2
62191 2000 SX_{45}	15.1	X	311.19600	345.15025	276.25604	13.66469	0.0835512	0.23389771	2.6088677	20	3 21.5	18.9
62192 2000 SL_{46}	15.0	X	201.32632	222.94923	221.86657	12.69142	0.1254503	0.24144888	2.5541864	20	7 9.1	19.2
62193 2000 SS_{47}	13.0	X	96.08224	155.04047	286.62705	11.99072	0.1739701	0.17415206	3.1757792	20	3 20.1	17.8
62194 2000 SV_{47}	15.0	X	321.03397	295.03632	262.18445	7.61716	0.0686597	0.22489467	2.6780372	20	1 20.8	18.6
62195 2000 SM_{48}	14.8	X	219.74528	161.54426	223.82314	11.05102	0.1287661	0.23550603	2.5969765	20	5 14.5	18.7
62196 2000 SD_{49}	14.9	X	308.21798	129.45062	192.78466	10.19209	0.0404231	0.18892847	3.0079534	20	6 22.1	19.1
62197 2000 SQ_{51}	14.1	X	125.09641	217.22255	292.98820	11.18002	0.1287494	0.18656990	3.0332508	20	7 15.7	18.8
62198 2000 SS_{52}	14.8	X	60.11704	209.68005	36.10955	8.68970	0.0348024	0.24351745	2.5397014	20	8 28.0	18.2
62199 2000 SC_{53}	14.4	X	207.99601	2.72532	33.24052	10.58711	0.0883150	0.18348745	3.0671273	20	5 16.7	19.1
62200 2000 SX_{53}	15.4	X	134.07555	254.83294	231.91024	2.15948	0.0528062	0.23580823	2.5947573	20	6 20.6	18.8
62201 2000 SW_{54}	12.3	X	269.26462	130.46210	185.22903	4.61490	0.0593305	0.08211839	5.2421459	20	4 26.1	19.2
62202 2000 SY_{54}	15.0	X	301.32523	10.96693	200.43444	1.43586	0.0660614	0.22207838	2.7006307	20	1 15.6	18.6
62203 2000 SA_{55}	14.2	X	298.65825	157.87051	359.70404	3.61432	0.0473535	0.21332219	2.7740356	20	—	—
62204 2000 SP_{55}	15.3	X	323.62087	202.78057	331.92599	4.34457	0.0521058	0.21935466	2.7229404	20	1 1.1	19.0
62205 2000 SQ_{56}	16.4	X	241.00053	58.25672	202.82927	1.96600	0.1824068	0.27283551	2.3543379	20	—	—
62206 2000 SQ_{58}	15.3	X	168.76797	115.01117	333.40839	1.24728	0.1568647	0.18238658	3.0794569	20	6 12.5	20.2
62207 2000 SX_{58}	15.3	X	182.03907	123.21878	357.35056	3.49995	0.0923188	0.24037268	2.5618045	20	8 9.7	19.0
62208 2000 SL_{60}	15.3	X	221.86508	211.52553	358.79566	3.75133	0.0441685	0.21005930	2.8026881	20	—	—
62209 2000 SF_{61}	15.8	X	323.35073	254.03496	91.79598	2.82312	0.1156561	0.24270217	2.5453857	20	8 16.9	18.5
62210 2000 SN_{61}	15.6	X	335.39846	137.17802	140.48045	1.82347	0.0858663	0.23625003	2.5915214	20	5 29.6	18.6
62211 2000 SO_{61}	15.1	X	21.44799	288.17750	159.97476	2.94721	0.0722762	0.21374635	2.7703645	20	—	—
62212 2000 SA_{62}	15.3	X	235.86605	46.43644	181.68735	9.28950	0.2810214	0.26756213	2.3851715	20	—	—
62213 2000 SL_{63}	14.3	X	190.79154	271.31846	123.72717	3.51092	0.1069376	0.17962404	3.1109503	20	4 30.7	19.2
62214 2000 SU_{63}	15.1	X	130.11036	317.52611	195.25037	5.78561	0.0490641	0.23802556	2.5786178	20	7 19.4	18.8
62215 2000 SY_{63}	14.9	X	195.97866	141.18529	132.74060	4.44835	0.0343682	0.21479190	2.7613669	20	—	—
62216 2000 SE_{64}	15.9	X	211.35141	181.70581	117.89150	3.45553	0.1703815	0.27260462	2.3556671	20	1 16.5	19.6
62217 2000 SJ_{64}	15.5	X	11.91739	53.53655	187.41016	13.58462	0.1188074	0.23615551	2.5922129	20	6 10.5	18.6
62218 2000 SA_{65}	15.4	X	55.55328	244.73533	10.14382	6.49250	0.1589987	0.24501965	2.5293103	20	9 19.5	18.5
62219 2000 SY_{65}	14.9	X	163.39900	13.48346	17.39979	3.61949	0.1212415	0.17573780	3.1566463	20	3 29.8	19.9
62220 2000 ST_{66}	14.2	X	229.05231	191.27879	195.27901	9.19020	0.1017065	0.18409943	3.0603264	20	5 29.2	18.9
62221 2000 SA_{67}	15.5	X	262.40493	269.97199	78.22415	2.89973	0.3148045	0.23574058	2.5952537	20	4 22.6	19.6
62222 2000 SB_{67}	15.5	X	358.05478	281.99544	25.24535	14.84860	0.1329828	0.24304688	2.5429785	20	9 2.8	18.4
62223 2000 SG_{67}	15.1	X	235.22947	198.61159	7.44199	12.94821	0.0094476	0.21041145	2.7995602	20	—	—
62224 2000 SJ_{67}	15.5	X	348.71078	285.88618	8.71219	4.39968	0.0852409	0.23966250	2.5668628	20	7 18.2	18.4
62225 2000 SZ_{67}	15.6	X	126.32115	216.52726	52.84525	3.16533	0.1798324	0.25723288	2.4486031	20	12 20.0	19.5
62226 2000 SD_{68}	15.0	X	300.48192	292.02518	151.05926	2.41091	0.0457963	0.20166580	2.8799253	20	11 18.6	18.6
62227 2000 SQ_{68}	16.2	X	133.62690	221.12981	182.05989	6.81219	0.0991624	0.27307240	2.3529761	20	3 2.1	19.2
62228 2000 SK_{69}	15.9	X	109.08261	238.58298	99.41791	2.56520	0.1957341	0.26238758	2.4164281	20	—	—
62229 2000 SV_{70}	15.4	X	119.23023	242.02579	114.13437	2.84391	0.0854954	0.21479980	2.7612992	20	—	—
62230 2000 SN_{71}	15.1	X	203.47314	181.40052	66.72926	5.41124	0.0207439	0.21131057	2.7916131	20	—	—
62231 2000 SQ_{71}	15.1	X	122.56850	228.52364	158.00766	6.53196	0.0902504	0.21881779	2.7273925	20	2 2.2	18.8
62232 2000 SM_{72}	14.9	X	204.60288	281.66034	36.71787	14.77372	0.1227934	0.22258733	2.6965124	20	2 14.2	19.4
62233 2000 SP_{72}	14.6	X	193.92336	2.69277	31.09562	14.93654	0.1531597	0.22947528	2.6422796	20	4 27.6	18.9
62234 2000 SA_{73}	14.7	X	299.63500	309.10073	107.17308	3.13409	0.0949900	0.19660643	2.9291228	20	10 9.3	18.3
62235 2000 SJ_{73}	15.8	X	118.45140	232.65370	72.22647	3.85799	0.1918879	0.25997685	2.4313432	20	—	—
62236 2000 SK_{73}	14.3	X	186.64949	296.12539	52.11607	6.41423	0.1582271	0.17384709	3.1794922	20	3 5.0	19.5
62237 2000 SU_{73}	15.9	X	155.27979	155.32310	145.19566	5.24232	0.1973572	0.26460434	2.4029131	20	—	—
62238 2000 SF_{74}	15.5	X	146.01912	250.91902	73.86281	6.53254	0.1069946	0.21468610	2.7622741	20	—	—
62239 2000 SQ_{74}	14.6	X	94.33356	311.23597	38.85855	9.69759	0.1625560	0.21073697	2.7966764	20	—	—
62240 2000 SM_{75}	15.8	X	207.99418	216.81001	106.03381	3.95298	0.2017058	0.27443434	2.3451848	20	2 11.8	19.5

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	m		°	°	°	°		°				
62241 2000 SW_{75}	13.2	X	138.09840	25.39707	43.23190	11.41480	0.2118559	0.12395941	3.9836673	20	4 27.8	19.5
62242 2000 SH_{76}	16.0	X	140.72934	219.35401	116.90567	3.62670	0.2354910	0.26650017	2.3915037	20	1 2.7	19.3
62243 2000 SO_{76}	14.1	X	359.13500	149.85880	162.24134	10.46827	0.0889516	0.19192122	2.9766016	20	8 22.6	17.7
62244 2000 SM_{77}	14.1	X	142.22581	104.02419	330.10948	2.48911	0.2332530	0.12693598	3.9211449	20	5 7.1	20.5
62245 2000 SQ_{77}	15.7	X	42.24122	127.00900	339.04598	1.20325	0.0246811	0.22031432	2.7150275	20	1 21.2	19.3
62246 2000 SK_{78}	15.4	X	1.86856	233.65452	21.23681	4.98643	0.1395843	0.23758462	2.5818074	20	6 11.3	17.9
62247 2000 SZ_{78}	15.4	X	246.31014	179.56798	8.80971	1.64229	0.0145590	0.20976584	2.8053015	20	—	—
62248 2000 SQ_{79}	14.0	X	55.37166	119.94856	27.95456	13.52927	0.0904648	0.17570562	3.1570317	20	4 13.4	18.0
62249 2000 SU_{79}	15.8	X	352.42153	219.49043	95.62739	1.71534	0.1186496	0.24356134	2.5393963	20	8 26.1	18.4
62250 2000 SY_{80}	15.2	X	164.73773	350.59591	104.55385	4.77055	0.0305470	0.23417351	2.6068190	20	6 15.2	18.7
62251 2000 SG_{81}	14.5	X	304.32425	194.39257	131.41249	4.81047	0.1335881	0.18745796	3.0236636	20	6 9.4	18.5
62252 2000 SW_{82}	15.2	X	164.13435	305.09195	51.43983	7.06077	0.0308415	0.22027189	2.7153762	20	2 10.5	19.1
62253 2000 SM_{83}	14.9	X	237.48672	269.91816	178.62303	10.30876	0.0641511	0.19278874	2.9676655	20	8 28.2	19.3
62254 2000 SR_{83}	16.0	X	20.16804	154.35961	144.77104	2.77159	0.1978621	0.24613936	2.5216337	20	10 4.9	18.6
62255 2000 SV_{83}	15.4	X	99.26088	250.34284	116.53995	1.63259	0.0846808	0.21347969	2.7726710	20	—	—
62256 2000 SC_{84}	16.3	X	251.27871	190.53692	182.67358	7.67484	0.2034092	0.23545740	2.5973341	20	5 25.5	20.3
62257 2000 SH_{85}	14.8	X	207.53510	258.84073	162.07310	10.14085	0.2115708	0.18216376	3.0819675	20	6 12.6	20.1
62258 2000 SJ_{85}	14.9	X	12.35147	222.38477	113.41061	5.92123	0.1110317	0.19703068	2.9249165	20	10 21.0	18.5
62259 2000 SQ_{85}	15.0	X	42.95204	347.95210	78.46884	5.51384	0.0509323	0.21215728	2.7841807	20	—	—
62260 2000 SS_{85}	14.4	X	94.15248	305.34475	103.86144	4.85048	0.0476935	0.21714830	2.7413538	20	1 21.2	18.1
62261 2000 SX_{85}	15.7	X	157.29875	355.30863	122.14914	3.99139	0.0689386	0.28460682	2.2889651	20	7 9.4	18.8
62262 2000 SO_{86}	14.4	X	245.45250	59.68352	48.25116	13.31413	0.1108960	0.19487925	2.9464041	20	10 2.8	18.7
62263 2000 SD_{87}	14.9	X	246.28219	302.18155	94.88637	5.53000	0.1874782	0.23594739	2.5937369	20	6 20.9	18.5
62264 2000 SA_{88}	14.4	X	46.02413	185.58258	177.39570	13.65552	0.0888704	0.20399832	2.8579305	20	—	—
62265 2000 SX_{88}	13.8	X	211.81538	9.32858	289.62681	18.10527	0.1321698	0.17428922	3.1741129	20	1 25.2	18.9
62266 2000 SZ_{88}	16.1	X	10.30708	123.32778	351.92870	6.77256	0.0720083	0.26695213	2.3888037	20	—	—
62267 2000 SA_{90}	14.3	X	247.58787	106.91438	249.47192	12.54297	0.1149607	0.23585248	2.5944328	20	5 6.9	18.1
62268 2000 SQ_{90}	15.1	X	118.48512	72.35844	238.55705	8.87077	0.3330631	0.26409949	2.4059744	20	—	—
62269 2000 SD_{91}	13.0	X	113.34582	12.27318	258.53291	15.97219	0.0660079	0.20121307	2.8842435	20	11 25.6	17.4
62270 2000 SJ_{91}	14.9	X	196.06694	227.83402	193.95028	9.50053	0.0692105	0.18699428	3.0286599	20	6 8.3	19.6
62271 2000 SC_{93}	15.0	X	300.38838	336.11276	248.98959	9.91030	0.1568514	0.22599352	2.6693492	20	1 16.3	18.9
62272 2000 SQ_{96}	15.3	X	345.36467	267.79827	246.52732	7.43310	0.0514781	0.22018674	2.7160762	20	1 2.9	18.8
62273 2000 ST_{97}	14.4	X	130.96327	216.19970	203.73828	14.94700	0.0249002	0.17573070	3.1567314	20	3 19.2	19.1
62274 2000 SH_{98}	15.0	X	286.18517	252.55388	294.40034	2.94585	0.0177233	0.21534771	2.7566135	20	—	—
62275 2000 SK_{98}	14.5	X	62.68264	218.18197	342.85681	8.79265	0.0501441	0.18584643	3.0411177	20	6 25.9	18.8
62276 2000 SN_{100}	14.6	X	40.15628	55.45109	250.63804	12.55328	0.1203771	0.24736717	2.5132827	20	10 28.8	17.9
62277 2000 SX_{100}	13.8	X	120.98174	176.17201	270.60506	14.37013	0.0748115	0.17424920	3.1745989	20	4 12.1	18.7
62278 2000 ST_{103}	14.4	X	158.48809	312.79053	205.81962	9.64688	0.1255047	0.19158298	2.9801041	20	8 25.2	19.3
62279 2000 SA_{105}	15.7	X	158.01747	242.49154	62.53862	3.44930	0.1733271	0.26495089	2.4008174	20	—	—
62280 2000 SX_{105}	16.0	X	66.51220	234.94050	340.46077	1.33662	0.0974128	0.28886685	2.2664053	20	8 4.4	18.6
62281 2000 SD_{106}	15.1	X	248.35260	356.21042	209.84275	5.72051	0.0144739	0.21180863	2.7872351	20	—	—
62282 2000 SS_{106}	14.6	X	186.52869	228.71659	207.14218	4.78422	0.1656444	0.18210933	3.0825816	20	6 13.3	19.7
62283 2000 SY_{107}	15.5	X	99.67976	317.81711	4.28246	2.96831	0.1071178	0.20826473	2.8187652	20	—	—
62284 2000 SD_{108}	15.1	X	269.32976	38.37485	13.02522	1.31478	0.1690498	0.19080274	2.9882228	20	8 6.9	19.3
62285 2000 SZ_{109}	15.2	X	120.49023	86.30439	204.47831	5.67168	0.1307860	0.25762049	2.4461464	20	—	—
62286 2000 SE_{110}	15.4	X	210.88680	63.19705	201.29616	4.90360	0.2094541	0.26774228	2.3841015	20	—	—
62287 2000 SG_{110}	13.9	X	69.04230	149.31149	357.21156	1.33562	0.1124125	0.17591168	3.1545658	20	5 2.8	18.0
62288 2000 SH_{110}	15.0	X	221.06793	3.71619	214.55523	2.11352	0.1367083	0.25996986	2.4313868	20	—	—
62289 2000 SX_{110}	15.3	X	176.06957	245.49662	34.71404	2.53697	0.1940196	0.26487719	2.4012627	20	—	—
62290 2000 SZ_{111}	16.9	X	154.18117	273.13942	45.90416	0.45918	0.2290451	0.26690324	2.3890954	20	—	—
62291 2000 SN_{112}	15.4	X	305.43295	272.03631	15.13450	9.58150	0.1805669	0.23326757	2.6135640	20	4 9.4	18.7
62292 2000 SO_{113}	15.2	X	229.52990	123.81638	170.86709	4.90384	0.1437115	0.22307543	2.6925776	20	1 31.9	19.6
62293 2000 SR_{113}	15.2	X	342.90160	211.38927	126.44634	2.66510	0.1142638	0.19342762	2.9611272	20	9 2.1	18.6
62294 2000 ST_{113}	15.0	X	64.99195	22.23381	37.99116	6.57077	0.0300405	0.21507360	2.7589552	20	—	—
62295 2000 SV_{114}	15.8	X	322.37118	185.51468	142.50250	0.69588	0.1685532	0.29043221	2.2582544	20	7 16.5	17.4
62296 2000 SU_{115}	15.6	X	41.83708	69.07136	30.56938	6.70034	0.0635464	0.26656240	2.3911315	20	1 4.1	18.3
62297 2000 SF_{116}	13.9	X	117.75709	88.20986	53.51074	5.69245	0.1109014	0.18094920	3.0957433	20	6 25.4	18.6
62298 2000 SK_{116}	14.1	X	337.78941	292.44708	69.11406	3.12408	0.1111999	0.19502359	2.9449502	20	9 27.0	17.6
62299 2000 SN_{116}	15.3	X	95.36815	330.36526	45.49372	3.49291	0.1753352	0.26358183	2.4091235	20	—	—
62300 2000 SY_{116}	13.4	X	187.43091	324.91291	36.98949	15.03320	0.0256537	0.17361146	3.1823684	20	3 23.2	18.2
62301 2000 SE_{117}	15.7	X	116.54870	193.10925	122.85497	2.97547	0.1956280	0.26049975	2.4280885	20	—	—
62302 2000 SJ_{117}	15.0	X	176.45452	86.86486	55.85260	4.83772	0.0691250	0.29110476	2.2547748	20	9 10.2	17.9
62303 2000 SL_{117}	14.2	X	81.62288	41.44033	65.28368	5.35532	0.0419702	0.17248423	3.1962184	20	3 23.8	18.6
62304 2000 SM_{117}	15.4	X	356.54516	239.59803	77.33507	3.37478	0.1269282	0.24284069	2.5444177	20	9 7.5	18.0
62305 2000 SP_{117}	15.0	X	91.68928	287.87643	68.96443	4.51658	0.1038417	0.21030076	2.8005424	20	—	—
62306 2000 SS_{117}	14.9	X	201.18533	172.53964	159.27309	5.42014	0.0348133	0.22182041	2.7027241	20	2 19.8	18.8
62307 2000 SA_{118}	15.0	X	197.62152	94.90833	189.02703	5.71667	0.0738945	0.21531386	2.7569024	20	—	—
62308 2000 SH_{118}	14.0	X	65.94768	272.21874	189.89779	11.98832	0.0666339	0.16920239	3.2374151	20	2 25.6	18.5
62309 2000 SL_{118}	15.0	X	55.47997	344.62989	37.87555	6.22060	0.1372177	0.25857564	2.4401188	20	—	—
62310 2000 SP_{118}	15.2	X	284.97550	247.82951	70.43563	3.35343	0.1212509	0.23305330	2.6151657	20	5 3.8	18.5
62311 2000 SF_{119}	14.3	X	225.01290	184.00071	194.72298	10.80272	0.1199505	0.18103593	3.0947545	20	5 14.3	19.1
62312 2000 SL_{119}	15.7	X	64.26043	150.16527	183.17765	5.57682	0.1361110	0.25429582	2.4674209	20	—	—
62313 2000 SM_{119}	14.4	X	143.99945	337.98747	39.11513	12.87169	0.1719759	0.22023422	2.7156858	20	3 1.3	18.8
62314 2000 SU_{119}	14.1	X	85.44573	358.12288	182.43757	9.70077	0.0336968	0.18313662	3.0710432	20	6 25.7	18.6
62315 2000 SV_{119}	14.6	X	187.90260	245.72406	65.93732	5.59956	0.1009413	0.21804602	2.7338244	20	1 15.2	18.8
62316 2000 SO_{120}	14.5	X	153.35468	9.97451	55.28951	5.68722	0.1299126	0.17595771	3.1540157	20	4 30.9	19.5
62317 2000 SU_{121}	15.2	X	128.38611	225.95032	156.08612	5.43343	0.1305553	0.21799838	2.7342226	20	2 8.9	19.2
62318 2000 SZ_{121}	14.7	X	290.85989	246.74343	38.79457	10.10137	0.0530969	0.22801679	2.6535351	20	4 10.1	18.3
62319 2000 SD_{122}	15.9	X	221.54014	173.27768	142.75024	2.71681	0.2153325	0.27508118	2.3415070	20	2 13.5	19.7
62320 2000 SC_{123}	15.2	X	127.81278	203.41375	184.86628	9.58252	0.1246360	0.21845004	2.7304525	20	2 13.6	19.2

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	m		°	°	°	°		°				
62321 2000 SP_{123}	13.5	X	28.82812	207.88121	46.98668	16.09344	0.1084607	0.23715504	2.5849242	20	8 6.2	16.9
62322 2000 ST_{123}	15.4	X	249.83536	156.19432	170.58285	7.46321	0.1415218	0.22877853	2.6476417	20	4 1.3	19.3
62323 2000 SX_{123}	14.9	X	112.47393	299.16468	71.21069	5.74712	0.0710525	0.21389943	2.7690426	20	—	—
62324 2000 SY_{123}	14.4	X	186.23162	18.66912	99.37123	4.26505	0.0729992	0.18684170	3.0303085	20	8 7.6	19.0
62325 2000 SC_{124}	14.7	X	208.94348	239.33648	110.99952	4.39862	0.0512371	0.22469527	2.6796214	20	3 25.2	18.5
62326 2000 SE_{124}	15.3	X	319.42963	288.08790	66.37693	5.77407	0.1665444	0.24161218	2.5530354	20	8 19.8	17.7
62327 2000 SH_{124}	14.2	X	265.53778	121.58053	199.85780	11.90692	0.0208476	0.17796541	3.1302497	20	4 30.2	18.7
62328 2000 SM_{124}	15.3	X	276.12281	215.00827	105.14096	2.79791	0.1010586	0.23108402	2.6300021	20	4 28.3	18.9
62329 2000 SN_{124}	15.5	X	319.44044	242.13746	63.82681	4.05445	0.1833380	0.23648691	2.5897905	20	5 29.9	18.3
62330 2000 SF_{125}	13.4	X	103.73624	353.98413	108.96403	6.71183	0.1227495	0.17261176	3.1946440	20	4 26.7	18.1
62331 2000 ST_{126}	14.9	X	277.65625	102.31563	36.37721	2.41217	0.0229212	0.20581494	2.8410886	20	12 30.2	18.6
62332 2000 SX_{126}	15.3	X	79.84918	145.70476	182.98692	12.03994	0.2198533	0.25559526	2.4590509	20	—	—
62333 2000 SE_{127}	14.8	X	267.27290	150.00581	181.54306	9.42025	0.0838835	0.18208576	3.0828476	20	5 6.9	19.3
62334 2000 SF_{127}	16.1	X	217.01287	224.94217	55.20385	3.08499	0.2019123	0.27056863	2.3674696	20	—	—
62335 2000 SJ_{127}	15.8	X	294.52760	103.45169	91.31679	2.38651	0.1224106	0.26571707	2.3962001	20	—	—
62336 2000 SM_{127}	14.6	X	207.83197	243.24430	176.64019	11.57649	0.0610444	0.18111920	3.0938058	20	6 19.1	19.4
62337 2000 SW_{127}	15.0	X	266.86943	7.25887	63.92114	3.93017	0.0787866	0.19326235	2.9628151	20	9 13.9	19.0
62338 2000 SN_{128}	15.1	X	280.28067	277.09997	37.24357	10.21946	0.1570915	0.23168700	2.6254370	20	4 17.5	18.7
62339 2000 SX_{129}	14.9	X	335.31141	42.73194	243.56904	12.16774	0.1337794	0.23978714	2.5659733	20	6 6.7	17.5
62340 2000 SO_{130}	14.6	X	107.69743	23.25948	219.60405	16.32809	0.0442667	0.20106003	2.8857069	20	10 12.9	18.8
62341 2000 SE_{131}	15.2	X	271.30278	26.33182	280.04928	11.52561	0.0485237	0.23156025	2.6263950	20	4 4.1	19.0
62342 2000 SD_{132}	14.8	X	325.37632	358.31091	259.53960	13.37193	0.1055490	0.23222805	2.6213575	20	4 6.3	18.3
62343 2000 SQ_{132}	14.4	X	105.89949	297.08304	232.91554	21.49358	0.0679360	0.23707094	2.5855355	20	7 9.8	18.4
62344 2000 SA_{134}	14.7	X	271.08577	37.75140	322.93454	10.49945	0.0624473	0.18718032	3.0266527	20	6 19.8	19.1
62345 2000 SW_{134}	14.6	X	83.79321	265.62965	273.68201	8.54601	0.0305711	0.18609469	3.0384125	20	6 21.9	18.7
62346 2000 SN_{135}	14.6	X	87.61838	156.55399	284.44532	6.81716	0.0365446	0.17206550	3.2014017	20	2 22.9	19.1
62347 2000 SL_{138}	14.4	X	328.85306	47.04150	254.16645	11.41678	0.0842686	0.18654289	3.0335437	20	6 19.7	18.3
62348 2000 SB_{142}	13.9	X	259.88810	144.50586	267.80843	9.66900	0.0965430	0.18926099	3.0044292	20	8 3.1	18.2
62349 2000 SH_{142}	13.7	X	227.76888	199.20526	266.85449	9.19246	0.0656825	0.19245640	2.9710809	20	9 4.1	18.2
62350 2000 SA_{143}	15.3	X	312.06109	328.39674	300.16282	2.61135	0.0483398	0.22919327	2.6444466	20	4 13.6	18.6
62351 2000 SB_{143}	16.0	X	338.73891	88.13987	291.53352	2.08182	0.1307281	0.29798033	2.2199558	20	11 20.8	17.8
62352 2000 SG_{143}	13.9	X	152.36874	147.52380	262.50498	8.33518	0.0920201	0.17465472	3.1696830	20	4 5.2	18.9
62353 2000 SH_{143}	13.5	X	200.33681	130.62033	227.94653	21.82612	0.1371957	0.17555414	3.1588475	20	3 20.5	19.0
62354 2000 SQ_{143}	14.6	X	120.65879	313.43613	237.77616	8.89632	0.0457654	0.19239951	2.9716666	20	8 20.7	19.0
62355 2000 SX_{144}	15.2	X	17.15064	71.05778	292.36898	1.97021	0.2124327	0.20141237	2.8823405	20	12 15.6	18.8
62356 2000 SG_{146}	15.2	X	148.06445	17.39503	285.58975	2.42209	0.0734201	0.21140140	2.7908134	20	—	—
62357 2000 SP_{146}	15.3	X	299.46929	139.76488	250.40976	1.69844	0.1205382	0.19273434	2.9682238	20	8 28.9	19.1
62358 2000 SY_{147}	14.9	X	54.06857	174.40373	213.32827	3.84602	0.1385110	0.20867344	2.8150834	20	—	—
62359 2000 SB_{148}	14.8	X	146.85069	32.00941	10.59317	6.35065	0.1719072	0.17284167	3.1918104	20	3 31.2	20.0
62360 2000 SL_{148}	15.3	X	87.92764	132.14278	212.98527	5.82768	0.1530032	0.25918964	2.4362637	20	—	—
62361 2000 SX_{148}	15.3	X	143.09303	70.92059	233.95743	1.22155	0.2055041	0.26293884	2.4130494	20	—	—
62362 2000 SZ_{148}	16.0	X	92.91506	9.17930	3.33968	0.96310	0.1740095	0.26281171	2.4138276	20	—	—
62363 2000 SG_{149}	14.8	X	32.09068	247.65452	41.26129	1.71041	0.0963943	0.19347250	2.9606692	20	9 14.2	18.6
62364 2000 SN_{149}	14.2	X	213.76750	326.72280	26.18106	10.78721	0.0766536	0.17648787	3.1476962	20	4 4.2	18.9
62365 2000 SY_{149}	15.1	X	145.33395	314.84087	22.59341	9.72256	0.1861219	0.21621168	2.7492651	20	1 12.4	19.5
62366 2000 SD_{150}	15.4	X	312.09944	147.03510	205.75832	8.35603	0.1100773	0.24047026	2.5611114	20	8 2.6	18.4
62367 2000 SF_{150}	14.8	X	334.17980	56.13383	281.25589	0.98819	0.0711279	0.19088987	2.9873135	20	8 17.3	18.6
62368 2000 SG_{150}	14.8	X	247.40837	209.32083	209.17766	8.66754	0.0569369	0.18852386	3.0122557	20	8 1.2	19.2
62369 2000 SK_{150}	14.8	X	245.08266	331.81117	14.28730	1.43587	0.0273496	0.22971031	2.6404770	20	5 1.9	18.2
62370 2000 SM_{150}	15.7	X	217.25656	79.49299	215.81364	4.00127	0.2295663	0.27242610	2.3566961	20	1 15.6	19.7
62371 2000 SR_{150}	14.8	X	307.37409	128.73076	210.93553	8.16498	0.1048321	0.18763766	3.0217327	20	7 5.0	18.8
62372 2000 SX_{150}	14.6	X	87.18231	145.55630	215.61444	5.56331	0.0638156	0.20960946	2.8066965	20	—	—
62373 2000 SE_{151}	14.5	X	233.59919	177.45646	203.50647	2.16008	0.0976656	0.18228872	3.0805589	20	5 26.9	19.1
62374 2000 SW_{151}	14.4	X	180.25529	31.50676	31.04060	11.07467	0.0239184	0.18014832	3.1049116	20	5 20.1	19.0
62375 2000 SG_{152}	15.3	X	19.92673	350.66029	180.06922	2.26218	0.0767321	0.27297785	2.3535194	20	3 7.1	17.7
62376 2000 SU_{153}	14.4	X	324.26776	143.10604	194.56706	9.01211	0.1135912	0.18950763	3.0018218	20	7 27.7	18.2
62377 2000 SJ_{154}	14.5	X	15.22741	15.05432	210.79418	13.00204	0.1191112	0.23039027	2.6352791	20	5 25.3	17.4
62378 2000 SN_{154}	15.7	X	173.41550	133.49285	175.53975	1.92007	0.2113828	0.26703569	2.3883053	20	—	—
62379 2000 SA_{155}	14.5	X	356.48002	280.49544	50.70775	10.14298	0.0927305	0.19281543	2.9673916	20	9 19.9	18.3
62380 2000 SF_{155}	13.7	X	130.06601	313.21098	204.26297	22.53515	0.1410891	0.18304521	3.0720655	20	7 25.1	19.0
62381 2000 SO_{155}	13.8	X	355.65777	216.87497	52.39370	16.77497	0.0933453	0.18336178	3.0685286	20	6 17.5	17.8
62382 2000 SM_{156}	14.2	X	178.88475	310.10111	199.88358	10.92095	0.0968764	0.19123444	2.9837240	20	9 4.6	19.0
62383 2000 SS_{156}	14.5	X	255.18014	243.19499	192.91210	9.68142	0.0848875	0.19066808	2.9896296	20	8 30.4	18.7
62384 2000 SX_{156}	14.5	X	190.40818	96.06670	292.43273	19.84872	0.0318020	0.18390581	3.0624740	20	4 11.7	19.4
62385 2000 ST_{157}	14.9	X	309.38333	17.65588	266.79904	15.47710	0.1558330	0.23371970	2.6101923	20	4 9.5	18.6
62386 2000 SR_{161}	14.8	X	223.20501	335.24593	25.13207	15.63287	0.2557834	0.23190945	2.6237578	20	4 10.4	19.4
62387 2000 SQ_{162}	14.7	X	265.15108	191.56563	155.58544	16.00017	0.1389258	0.23471148	2.6028342	20	5 18.1	18.7
62388 2000 SW_{162}	14.9	X	287.66253	284.40162	74.59545	7.62385	0.1994095	0.23536250	2.5980323	20	6 19.5	18.2
62389 2000 SE_{165}	13.8	X	340.58879	285.97910	252.51953	12.30489	0.1129174	0.22178746	2.7029917	20	1 17.0	17.3
62390 2000 SA_{166}	14.0	X	25.65802	1.52357	234.25033	14.00180	0.0553001	0.23491420	2.6013365	20	6 19.9	17.3
62391 2000 SK_{167}	14.5	X	252.65830	76.30987	259.37681	8.26302	0.1300085	0.18118741	3.0930293	20	4 15.1	19.3
62392 2000 SW_{168}	14.4	X	58.42673	258.58209	346.20697	7.13055	0.1601315	0.24139891	2.5545388	20	9 8.3	17.5
62393 2000 SM_{169}	15.5	X	174.29813	282.74680	26.35670	1.51695	0.0990963	0.21720826	2.7408493	20	—	—
62394 2000 SU_{169}	14.2	X	25.07226	27.92751	213.51940	14.83650	0.0791884	0.23437015	2.6053607	20	6 28.5	17.6
62395 2000 SZ_{169}	14.6	X	339.96641	23.49998	211.79533	14.21808	0.0457725	0.22676018	2.6633292	20	4 9.6	18.1
62396 2000 SE_{170}	13.7	X	285.35455	65.43069	217.32565	12.03365	0.1634441	0.22785755	2.6547712	20	3 8.2	17.7
62397 2000 SM_{170}	13.9	X	292.92598	279.96615	214.83595	14.23780	0.1021294	0.20404670	2.8574786	20	—	—
62398 2000 SR_{170}	14.2	X	278.18641	9.88713	30.57239	9.45949	0.1188107	0.18963159	3.0005135	20	8 16.2	18.3
62399 2000 SV_{170}	15.6	X	314.29425	144.99316	212.73845	2.58419	0.0869095	0.24038117	2.5617442	20	8 18.0	18.6
62400 2000 SA_{171}	15.4	X	297.43179	109.07817	215.83181	6.63937	0.2203700	0.23604333	2.5930341	20	5 14.2	18.5

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
	m		°	°	°	°		°				
62401 2000 SD_{171}	15.4	X	63.26330	318.17773	250.44253	2.70095	0.0702923	0.28407445	2.2918240	20	7 14.4	18.0
62402 2000 SM_{171}	15.2	X	121.19327	124.57603	201.73762	1.45991	0.1549929	0.21014723	2.8019063	20	—	—
62403 2000 SL_{172}	14.2	X	210.29822	354.45234	42.53144	6.52396	0.2212379	0.17512083	3.1640561	20	5 15.4	19.6
62404 2000 SQ_{173}	14.6	X	245.31862	140.51301	240.78386	14.08240	0.1470513	0.23553826	2.5967396	20	6 3.7	18.3
62405 2000 SR_{175}	14.0	X	197.76357	133.45408	315.53585	8.52975	0.0265187	0.18529029	3.0471999	20	7 17.4	18.4
62406 2000 SN_{176}	14.6	X	355.94677	292.17178	263.84814	6.19532	0.0717637	0.27315814	2.3524837	20	2 29.5	17.4
62407 2000 SO_{176}	15.9	X	164.50364	165.52779	279.34336	4.86522	0.0951577	0.28032369	2.3122219	20	6 2.8	19.1
62408 2000 SU_{176}	13.1	X	146.63404	131.14439	308.59437	7.42187	0.2196761	0.12484983	3.9647038	20	5 15.2	19.6
62409 2000 SR_{177}	14.0	X	313.66755	16.33652	353.67290	10.06248	0.1070947	0.19123062	2.9837637	20	8 28.9	17.7
62410 2000 SN_{178}	14.6	X	217.29444	88.54633	227.12245	16.42514	0.1522597	0.22233395	2.6985607	20	2 9.3	19.4
62411 2000 SX_{178}	14.9	X	310.16698	250.22025	356.85693	6.83123	0.0821171	0.27411493	2.3470063	20	3 5.3	17.5
62412 2000 SY_{178}	13.7	X	101.85610	163.41477	329.13590	4.73719	0.0806794	0.17610896	3.1522095	20	5 21.5	18.2
62413 2000 SE_{179}	13.8	X	7.13384	253.31455	22.02609	14.17985	0.0372040	0.18469446	3.0537499	20	7 17.6	18.2
62414 2000 SV_{179}	15.5	X	312.62999	325.08432	4.11338	6.11776	0.1603748	0.28716401	2.2753561	20	6 28.1	17.7
62415 2000 SA_{180}	14.1	X	220.00727	32.86818	26.77995	13.03470	0.1295996	0.18229097	3.0805336	20	6 26.5	19.1
62416 2000 SS_{180}	14.8	X	229.30917	322.96765	295.80953	8.96333	0.2134444	0.21781049	2.7357948	20	—	—
62417 2000 ST_{181}	15.1	X	241.96454	215.34200	133.34296	16.86454	0.0930737	0.23320068	2.6140637	20	4 30.9	19.2
62418 2000 SR_{182}	14.5	X	69.91476	303.39457	61.06041	18.07450	0.1606337	0.21024255	2.8010593	20	—	—
62419 2000 SX_{183}	15.3	X	304.41615	291.51264	122.41570	1.60016	0.0964354	0.19935978	2.9020909	20	10 13.2	18.8
62420 2000 SH_{184}	15.7	X	256.00388	253.12976	72.58491	5.24053	0.0865811	0.23163724	2.6258130	20	4 13.7	19.4
62421 2000 SJ_{184}	14.8	X	144.39815	136.28753	30.70084	12.17502	0.0369081	0.19283296	2.9672118	20	8 27.6	19.3
62422 2000 SK_{184}	16.0	X	240.25742	140.42085	143.71804	7.50913	0.1115764	0.27448913	2.3448727	20	1 25.1	19.4
62423 2000 SM_{184}	14.5	X	82.63501	74.40613	154.07602	9.60915	0.0481957	0.19338055	2.9616076	20	8 26.4	18.7
62424 2000 SX_{184}	14.3	X	271.97224	324.51766	148.99143	12.66925	0.0022174	0.20237183	2.8732231	20	11 26.1	18.5
62425 2000 SM_{186}	14.4	X	335.77704	265.66958	51.22918	12.23554	0.1055814	0.19046529	2.9917513	20	7 24.7	18.2
62426 2000 SX_{186}	11.7	X	28.26563	351.41291	214.39722	31.21030	0.0784512	0.08242657	5.2290711	20	5 17.9	18.4
62427 2000 SH_{187}	14.9	X	112.85342	317.55730	62.14050	6.30758	0.0960633	0.21692353	2.7432472	20	1 15.7	18.6
62428 2000 SM_{187}	15.8	X	16.57381	124.38488	162.89304	2.41986	0.1141291	0.24265352	2.5457260	20	8 27.3	18.6
62429 2000 SQ_{187}	14.8	X	338.09858	235.64914	68.19251	13.46809	0.2659644	0.24103767	2.5570905	20	6 28.6	16.6
62430 2000 SV_{187}	13.8	X	164.32581	301.55504	68.27934	11.21884	0.1332495	0.17232117	3.1982344	20	3 12.4	19.1
62431 2000 SG_{188}	15.0	X	267.50137	213.47338	160.68933	1.00278	0.0636039	0.18622835	3.0369585	20	7 1.9	19.1
62432 2000 SH_{188}	13.9	X	120.27937	40.03488	38.07139	0.97153	0.1861575	0.17254615	3.1954537	20	4 18.7	18.9
62433 2000 SO_{188}	15.6	X	131.38926	175.77079	120.43400	3.39935	0.1865555	0.25913964	2.4365770	20	—	—
62434 2000 SW_{189}	14.1	X	5.74449	336.62840	252.18891	11.30126	0.1121622	0.18056418	3.1001425	20	5 11.4	17.8
62435 2000 SN_{190}	15.1	X	22.83610	285.03978	198.58393	8.36227	0.0718207	0.22146959	2.7055775	20	1 14.4	18.5
62436 2000 SR_{192}	14.5	X	11.69781	254.38680	38.31696	11.37086	0.0792930	0.19127596	2.9832922	20	8 22.3	18.5
62437 2000 SY_{198}	15.8	X	0.19922	70.15141	169.28955	0.96547	0.0411374	0.23352201	2.6116652	20	5 17.0	19.0
62438 2000 SF_{199}	15.2	X	287.86861	13.11757	19.41258	2.79077	0.0937280	0.19278879	2.9676649	20	8 20.2	18.9
62439 2000 SK_{200}	15.2	X	240.38066	31.54930	181.77074	2.79417	0.0188633	0.21173811	2.7878540	20	—	—
62440 2000 SR_{201}	15.7	X	266.74339	245.73787	340.79819	3.38863	0.0547736	0.21868562	2.7284912	20	—	—
62441 2000 SX_{202}	15.2	X	83.04277	218.33582	51.12281	2.74256	0.0344049	0.19860321	2.9094565	20	10 17.6	19.4
62442 2000 SA_{204}	15.1	X	320.24559	186.75314	142.25199	1.73472	0.0453150	0.18874454	3.0099072	20	7 17.8	19.1
62443 2000 SN_{204}	16.3	X	167.85042	273.02226	18.46448	2.51018	0.1974242	0.26550288	2.3974887	20	—	—
62444 2000 SO_{206}	15.3	X	204.73090	237.03819	56.96324	3.42680	0.1628907	0.21879590	2.7275743	20	1 10.9	19.8
62445 2000 SF_{207}	15.7	X	95.35229	238.81750	85.01656	7.00009	0.1373308	0.25718768	2.4488900	20	—	—
62446 2000 SH_{207}	14.8	X	164.50670	85.46924	219.02216	2.63132	0.0754878	0.21269987	2.7794438	20	—	—
62447 2000 SR_{207}	16.3	X	142.15326	58.16722	183.53206	4.42453	0.1373012	0.30338430	2.1935152	20	12 9.8	19.5
62448 2000 SC_{208}	15.5	X	355.65115	274.24868	18.99958	7.98387	0.1766611	0.23986182	2.5654406	20	8 4.1	17.9
62449 2000 SD_{208}	15.4	X	149.42128	99.58956	224.57829	3.96206	0.1577231	0.21442994	2.7644735	20	—	—
62450 2000 SE_{208}	14.4	X	289.96352	16.19697	21.79971	2.62953	0.0613998	0.19173906	2.9784867	20	9 3.6	18.3
62451 2000 SN_{208}	15.5	X	6.18686	231.10805	355.17423	5.72716	0.1345223	0.23447149	2.6046099	20	5 5.3	18.2
62452 2000 SO_{209}	14.5	X	67.84815	310.92386	85.88226	6.76652	0.0494454	0.21299325	2.7768909	20	—	—
62453 2000 SP_{209}	15.1	X	336.78600	264.66488	118.49678	6.78940	0.1432590	0.19819422	2.9134577	20	10 27.5	18.4
62454 2000 SQ_{209}	14.2	X	225.72496	342.61850	52.49872	10.85791	0.0918337	0.18397929	3.0616586	20	6 4.1	18.8
62455 2000 SK_{210}	15.9	X	302.67163	153.14334	147.04462	9.24130	0.2579854	0.28624744	2.2802107	20	4 11.0	18.6
62456 2000 SL_{210}	14.1	X	141.66737	54.27413	62.69414	11.60764	0.0276826	0.18338255	3.0682969	20	6 13.1	18.5
62457 2000 SO_{210}	15.4	X	185.85638	339.84677	75.61290	7.68495	0.1693627	0.28074654	2.3098996	20	5 18.7	19.0
62458 2000 SP_{211}	15.2	X	262.76545	164.25559	154.50595	12.40889	0.1910542	0.23151262	2.6267552	20	4 1.1	19.3
62459 2000 SX_{211}	15.2	X	82.15602	235.10963	132.31070	8.71015	0.2353124	0.21098047	2.7945242	20	—	—
62460 2000 SY_{211}	15.1	X	41.98819	199.97030	79.51466	10.14986	0.1720052	0.24560234	2.5253082	20	10 11.3	18.4
62461 2000 SH_{212}	14.9	X	123.10264	248.75462	66.13312	10.53133	0.0925152	0.20994452	2.8037095	20	—	—
62462 2000 SO_{212}	15.1	X	261.37784	276.84570	77.54656	8.84903	0.1555456	0.23455260	2.6040094	20	5 17.9	18.8
62463 2000 SS_{212}	14.2	X	103.88652	264.24489	70.50651	11.51890	0.2858728	0.21126155	2.7920450	20	—	—
62464 2000 SF_{213}	14.9	X	35.85180	29.10229	80.65636	8.70395	0.0560637	0.21738145	2.7393933	20	1 19.3	18.4
62465 2000 SJ_{213}	14.2	X	175.76046	345.54046	93.07316	11.74044	0.0554041	0.18181551	3.0859017	20	6 7.2	18.8
62466 2000 SR_{213}	14.2	X	179.51888	270.11688	133.10157	9.75604	0.1443692	0.17735978	3.1373715	20	5 2.3	19.4
62467 2000 SW_{213}	14.2	X	156.01797	293.02272	123.27149	10.23379	0.0839240	0.17571557	3.1569126	20	4 23.9	19.1
62468 2000 SA_{214}	13.8	X	1.34792	251.29242	60.06156	18.13377	0.0588153	0.24147043	2.5540344	20	9 12.0	17.3
62469 2000 SD_{215}	15.6	X	26.29932	54.35774	68.15403	1.30270	0.0252356	0.21969797	2.7201031	20	1 21.0	19.2
62470 2000 SH_{216}	13.3	X	157.35998	353.71297	40.65698	16.85924	0.2064818	0.17380578	3.1799960	20	4 6.5	18.7
62471 2000 SP_{216}	15.5	X	316.45681	183.83032	122.31196	6.21091	0.1975182	0.28735907	2.2743263	20	5 23.5	17.5
62472 2000 SO_{217}	14.7	X	346.35307	12.17971	137.14626	8.95583	0.1587235	0.21385886	2.7693928	20	—	—
62473 2000 SZ_{217}	14.2	X	251.28290	359.39253	69.72541	11.20390	0.0773930	0.19031914	2.9932828	20	8 25.0	18.6
62474 2000 SP_{218}	14.5	X	141.90637	180.56207	111.65798	9.26000	0.1949393	0.21022923	2.8011776	20	—	—
62475 2000 SB_{219}	13.6	X	203.87545	210.98016	182.84613	22.31728	0.0884263	0.17905077	3.1175870	20	5 14.2	18.7
62476 2000 SH_{219}	14.0	X	177.87224	147.47218	86.88052	12.83133	0.0528437	0.20413224	2.8566804	20	12 22.0	18.1
62477 2000 SJ_{219}	14.6	X	66.32620	276.53273	125.18233	10.20621	0.0801019	0.21124919	2.7921539	20	—	—
62478 2000 SK_{219}	15.0	X	291.54810	234.16816	100.25884	9.56952	0.1015466	0.23487326	2.6016388	20	6 7.9	18.3
62479 2000 SD_{220}	14.2	X	287.33927	305.77978	76.87873	10.72159	0.1340036	0.18894830	3.0077430	20	8 1.1	18.2
62480 2000 SU_{220}	14.8	X	212.14396	200.69651	161.25837	11.53809	0.2382233	0.17791120	3.1308856	20	4 8.3	20.3

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Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
	m		°	°	°	°		°				
62481 2000 SC_{221}	14.0	X	159.56481	316.75086	58.45227	22.70454	0.0672103	0.17067794	3.2187294	20	3 17.7	19.2
62482 2000 SE_{221}	14.5	X	107.28307	325.67999	76.98147	10.55976	0.1265149	0.21689421	2.7434944	20	2 13.7	18.4
62483 2000 SG_{221}	13.9	X	45.70568	232.93995	159.12652	11.04760	0.1402861	0.15695049	3.4037757	20	—	—
62484 2000 SN_{221}	14.4	X	151.39653	182.82996	128.09541	10.47733	0.1494403	0.21239165	2.7821321	20	—	—
62485 2000 SX_{221}	14.3	X	137.28837	232.69413	97.84302	13.23506	0.1301306	0.21231894	2.7827673	20	—	—
62486 2000 SC_{222}	15.1	X	238.70669	213.37921	128.17712	10.65261	0.1111212	0.22744956	2.6579450	20	4 14.6	19.2
62487 2000 SP_{222}	15.4	X	88.12938	261.20561	130.15897	9.77992	0.1737420	0.21250722	2.7811233	20	1 8.6	18.9
62488 2000 SN_{223}	15.7	X	49.50657	211.54950	193.98238	4.17280	0.0757807	0.21104025	2.7939965	20	—	—
62489 2000 SS_{223}	14.1	X	121.97166	288.79205	166.07770	3.06370	0.2013217	0.12511409	3.9591192	20	5 13.5	20.2
62490 2000 SL_{224}	14.9	X	283.14535	197.18457	128.51621	2.13209	0.1689635	0.18434395	3.0576196	20	5 5.8	19.1
62491 2000 SN_{224}	14.8	X	175.72278	122.68708	35.59681	8.39235	0.1504897	0.24210536	2.5495671	20	9 21.1	18.8
62492 2000 ST_{224}	14.7	X	27.16029	46.16523	203.21294	6.61591	0.0887677	0.18845586	3.0129803	20	7 12.0	18.6
62493 2000 SK_{225}	15.0	X	198.75195	140.73096	161.72715	2.80609	0.0624038	0.21763090	2.7372996	20	1 13.0	18.9
62494 2000 SP_{225}	14.1	X	178.39608	329.50594	133.72142	8.29721	0.0355447	0.18329283	3.0692981	20	7 10.5	18.5
62495 2000 SQ_{226}	15.5	X	226.43948	255.86361	134.86971	6.89366	0.1571494	0.28172230	2.3045629	20	5 27.3	19.0
62496 2000 SA_{227}	14.8	X	285.26272	179.18929	175.40022	13.23849	0.1853319	0.23542043	2.5976060	20	6 13.2	18.4
62497 2000 SJ_{228}	16.1	X	180.54758	297.19569	0.55301	3.81192	0.1992576	0.26737985	2.3862554	20	—	—
62498 2000 SL_{228}	14.8	X	7.77440	236.69626	208.46179	3.33294	0.0604012	0.20955268	2.8072036	20	—	—
62499 2000 SK_{229}	16.0	X	136.10390	235.85994	195.85313	5.75073	0.1087698	0.27535467	2.3399563	20	4 14.8	19.1
62500 2000 SL_{229}	14.8	X	257.26531	276.92421	20.97712	4.08850	0.1056908	0.22591227	2.6699892	20	3 8.1	18.7
62501 2000 SP_{229}	15.1	X	49.64734	205.32826	234.32481	0.84756	0.0464256	0.21430241	2.7655701	20	—	—
62502 2000 SZ_{229}	15.2	X	330.94892	226.38936	106.76939	2.14993	0.1433269	0.19039069	2.9925327	20	8 2.9	18.5
62503 Tomcave	14.9	X	47.12185	310.74376	185.05679	14.22684	0.1681071	0.22158515	2.7046368	20	3 18.5	17.8
62504 2000 SZ_{233}	14.3	X	197.80241	345.45667	32.42608	15.71309	0.1152395	0.17964120	3.1107522	20	4 16.5	19.2
62505 2000 SF_{234}	14.8	X	48.86521	322.46807	131.20134	9.36789	0.0721070	0.21841470	2.7307470	20	1 16.7	18.1
62506 2000 SJ_{234}	14.2	X	265.33870	290.11080	50.73338	11.97803	0.1314502	0.18493207	3.0511336	20	5 8.3	18.7
62507 2000 SL_{235}	15.4	X	347.35349	352.89289	20.31993	1.95338	0.0544987	0.20050745	2.8910063	20	10 25.1	19.1
62508 2000 SV_{235}	14.5	X	145.81710	140.76314	10.05741	10.49337	0.0632341	0.18923506	3.0047037	20	8 7.6	19.1
62509 2000 SH_{237}	16.3	X	266.64602	167.93852	175.38946	0.64478	0.1231703	0.23378243	2.6097254	20	5 12.9	19.7
62510 2000 SW_{237}	14.1	X	315.42030	241.35366	71.67440	13.25151	0.0486756	0.18549913	3.0449124	20	6 18.7	18.2
62511 2000 SU_{239}	16.2	X	2.78946	128.06424	206.22306	5.59781	0.0987586	0.24566809	2.5248576	20	10 9.3	18.8
62512 2000 SF_{241}	14.6	X	82.43791	261.68559	199.25632	8.80634	0.0640303	0.17496763	3.1659028	20	3 16.4	19.0
62513 2000 SL_{241}	15.1	X	92.56982	296.16191	25.54427	5.35216	0.2837399	0.26241920	2.4162340	20	—	—
62514 2000 SX_{241}	15.9	X	158.08782	245.38380	34.21580	6.93353	0.0878602	0.26402306	2.4064388	20	—	—
62515 2000 SX_{242}	15.3	X	332.21156	179.50547	106.42615	5.00352	0.1642859	0.23940684	2.5686899	20	5 28.5	17.9
62516 2000 SN_{243}	15.3	X	69.55543	313.07730	58.63586	4.30134	0.1028258	0.21181180	2.7872073	20	—	—
62517 2000 SY_{244}	15.6	X	133.82489	1.92608	114.98584	3.15176	0.0991801	0.23393795	2.6085686	20	6 11.5	19.3
62518 2000 SM_{245}	14.6	X	293.45717	149.34422	27.37692	9.17465	0.0827160	0.21587536	2.7521198	20	—	—
62519 2000 SX_{246}	15.9	X	272.59828	122.81121	137.36046	3.07319	0.2039468	0.27725435	2.3292555	20	1 20.2	19.5
62520 2000 SV_{247}	15.7	X	112.05113	0.76426	350.68619	1.55817	0.0907301	0.21560131	2.7544514	20	—	—
62521 2000 SW_{247}	16.1	X	153.91207	315.26841	165.50613	6.13567	0.0807588	0.28799462	2.2709791	20	7 9.8	19.3
62522 2000 SL_{248}	15.7	X	63.40410	165.49592	77.90365	4.82364	0.0878655	0.24391216	2.5369607	20	9 4.8	19.0
62523 2000 SW_{249}	15.5	X	231.54087	145.84942	139.99940	4.28396	0.0645387	0.22234816	2.6984457	20	1 27.5	19.4
62524 2000 SL_{250}	14.6	X	118.52800	326.39311	148.52367	10.48342	0.0288866	0.18111953	3.0938021	20	5 17.0	19.2
62525 2000 SD_{251}	15.2	X	196.22985	170.77171	137.22767	6.20023	0.0855666	0.22031503	2.7150216	20	1 17.3	19.3
62526 2000 SS_{251}	14.4	X	171.15359	102.80727	44.75362	11.16316	0.0488556	0.19250673	2.9705630	20	9 3.2	18.9
62527 2000 SV_{251}	15.3	X	21.25334	299.75545	146.71191	5.04982	0.0374275	0.21309581	2.7759999	20	—	—
62528 2000 SG_{252}	14.5	X	284.09875	312.48222	22.41430	11.46713	0.1107367	0.18590406	3.0404892	20	5 23.9	18.8
62529 2000 SA_{253}	16.1	X	170.39906	231.89811	85.22663	3.40873	0.1500425	0.26774233	2.3841012	20	—	—
62530 2000 SU_{253}	15.8	X	238.49456	144.16147	126.40764	4.78080	0.0448358	0.22061387	2.7125693	20	1 17.9	19.7
62531 2000 SH_{254}	15.1	X	204.77044	9.89571	114.31406	4.93393	0.1899857	0.24219870	2.5489120	20	9 1.5	19.1
62532 2000 ST_{254}	14.8	X	349.61102	311.08384	139.41838	3.56401	0.0249462	0.21013100	2.8020506	20	—	—
62533 2000 SN_{255}	16.1	X	15.94083	179.94166	128.50712	2.10272	0.0935293	0.24553754	2.5257524	20	9 24.9	19.0
62534 2000 SR_{255}	14.9	X	44.43323	209.90986	102.61870	3.44185	0.0972467	0.19941357	2.9015691	20	11 2.3	18.8
62535 2000 SU_{257}	14.1	X	216.88149	86.52853	27.68071	10.64020	0.0801802	0.19279589	2.9675921	20	9 9.6	18.5
62536 2000 SZ_{257}	15.3	X	353.35879	70.61283	327.87059	1.71128	0.1059351	0.20175559	2.8790707	20	12 9.8	18.7
62537 2000 SG_{258}	15.1	X	153.07915	243.26649	61.86258	4.90336	0.0835144	0.21236136	2.7823967	20	—	—
62538 2000 SS_{258}	15.2	X	349.93872	282.39214	147.30005	7.22528	0.0476926	0.20506832	2.8479804	20	—	—
62539 2000 SR_{259}	14.3	X	153.63532	145.53775	21.01545	10.86152	0.0317701	0.19050763	2.9913080	20	9 5.1	18.7
62540 2000 SX_{259}	14.8	X	188.91715	211.45532	182.12127	16.58655	0.0961706	0.17721143	3.1391223	20	4 28.3	19.8
62541 2000 SY_{259}	14.4	X	86.76887	356.66706	216.73355	12.68721	0.1010882	0.23835624	2.5762323	20	8 19.0	18.2
62542 2000 SO_{260}	14.8	X	69.38397	80.01819	179.46596	9.60010	0.1617245	0.24343529	2.5402728	20	10 13.1	18.3
62543 2000 SW_{260}	15.1	X	224.88573	222.34261	8.13257	10.20244	0.1157997	0.21259590	2.7803499	20	—	—
62544 2000 SD_{261}	14.7	X	2.40346	236.68754	33.11556	9.73059	0.0760705	0.18657231	3.0332247	20	7 1.5	18.6
62545 2000 ST_{261}	15.3	X	337.56934	127.79951	167.28278	9.68599	0.1214100	0.23640455	2.5903920	20	6 25.4	18.2
62546 2000 SV_{261}	15.8	X	124.55891	290.27022	175.76993	5.84590	0.0753304	0.27749410	2.3279137	20	5 15.0	18.8
62547 2000 SW_{261}	15.6	X	140.10216	206.75096	181.87794	11.74927	0.0480658	0.21976990	2.7195094	20	2 18.8	19.6
62548 2000 SB_{262}	16.9	X	92.48551	105.79817	202.14599	0.69754	0.1865306	0.25857868	2.4400997	20	—	—
62549 2000 SZ_{262}	15.4	X	296.57425	315.37947	36.43215	15.33703	0.1914816	0.23945698	2.5683313	20	6 23.9	18.7
62550 2000 SM_{263}	15.5	X	18.60598	265.03830	346.47239	4.08946	0.1305445	0.23938131	2.5688725	20	7 10.8	18.1
62551 2000 SP_{263}	14.2	X	15.28441	334.15727	195.80596	14.18009	0.1421546	0.17427084	3.1743361	20	3 9.8	18.1
62552 2000 SL_{264}	14.9	X	55.65662	164.51322	134.79497	2.78771	0.0834178	0.19989355	2.8969224	20	10 28.9	18.8
62553 2000 SQ_{264}	15.8	X	167.89360	171.43338	89.46634	3.06016	0.1883866	0.26159661	2.4212965	20	—	—
62554 2000 SR_{264}	14.5	X	113.29766	77.76759	59.25212	3.83964	0.0981486	0.18170448	3.0871587	20	6 12.9	19.0
62555 2000 SE_{265}	15.3	X	269.11905	186.94359	63.92121	4.69773	0.1351473	0.22269716	2.6956257	20	1 19.9	19.4
62556 2000 SB_{266}	15.7	X	185.21568	189.60300	176.74571	10.81006	0.0551473	0.22434704	2.6823935	20	3 16.1	19.5
62557 2000 SP_{267}	15.6	X	128.25546	329.12501	41.02418	6.18715	0.0894666	0.21713399	2.7414742	20	1 22.3	19.5
62558 2000 SD_{268}	16.5	X	130.14015	232.23251	154.03768	3.53642	0.1597411	0.26915363	2.3757600	20	2 13.9	19.6
62559 2000 SP_{268}	15.8	X	74.90910	347.02606	100.99397	2.26044	0.1483557	0.26793377	2.3829654	20	2 20.3	18.3
62560 2000 SZ_{268}	14.4	X	216.61875	212.78705	73.12582	7.53425	0.1020268	0.21780670	2.7358266	20	1 12.6	18.6

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	m		°	°	°	°		°				
62561 2000 SF_{269}	15.1	X	109.92043	330.48669	92.98240	4.01689	0.1658277	0.26982974	2.3717897	20	3 12.8	18.1
62562 2000 SR_{269}	15.5	X	291.49801	232.01746	111.80691	3.99272	0.2547628	0.23756240	2.5819683	20	5 26.5	18.7
62563 2000 SS_{270}	15.5	X	166.15569	158.86611	142.33414	5.06616	0.1451138	0.21402351	2.7679722	20	—	—
62564 2000 SJ_{271}	15.5	X	294.64033	227.53487	94.57993	5.71963	0.2085026	0.23538620	2.5978578	20	5 9.6	18.9
62565 2000 SU_{272}	15.0	X	139.01063	42.70036	275.31331	1.48921	0.0867598	0.21228367	2.7830755	20	—	—
62566 2000 SA_{274}	14.8	X	330.39725	141.06539	208.48048	10.33581	0.0849590	0.19128398	2.9832088	20	8 23.9	18.7
62567 2000 SJ_{274}	15.2	X	231.68452	127.70836	200.98283	14.05373	0.1549845	0.22634319	2.6665993	20	3 12.3	19.5
62568 2000 SM_{274}	15.5	X	166.30363	135.30078	199.57700	2.21642	0.0984016	0.21714044	2.7414200	20	1 19.9	19.7
62569 2000 SR_{274}	15.2	X	182.58559	301.79334	38.00063	5.79046	0.0788960	0.21963043	2.7206606	20	2 13.3	19.3
62570 2000 SX_{274}	15.5	X	261.62238	163.07925	159.99493	4.90114	0.1279581	0.22934711	2.6432640	20	4 11.2	19.2
62571 2000 SY_{274}	14.9	X	164.33072	259.76406	78.85624	4.76406	0.0978374	0.21711627	2.7416235	20	1 23.7	18.9
62572 2000 SC_{276}	15.8	X	28.01581	246.48673	48.50166	5.65608	0.1361434	0.29388760	2.2405185	20	10 12.1	18.1
62573 2000 SR_{276}	14.4	X	349.86065	303.61503	15.82526	9.30114	0.0750304	0.19043019	2.9921189	20	8 21.9	18.2
62574 2000 SF_{277}	14.8	X	99.75726	196.27433	213.25547	13.57463	0.1697237	0.21561020	2.7543757	20	2 10.8	18.8
62575 2000 SL_{278}	14.1	X	272.62734	63.51511	214.49121	12.00149	0.1639822	0.22438115	2.6821217	20	2 17.2	18.4
62576 2000 ST_{278}	14.2	X	12.07866	269.91240	45.73727	10.65165	0.0464414	0.19087996	2.9874168	20	9 18.9	18.3
62577 2000 SU_{279}	15.0	X	240.59558	232.52179	116.40749	11.28468	0.1778638	0.23107376	2.6300800	20	4 20.5	19.3
62578 2000 SA_{280}	15.0	X	266.58186	235.72343	120.07444	16.03524	0.2072749	0.23571738	2.5954240	20	5 22.8	19.0
62579 2000 SA_{281}	14.8	X	266.63618	172.88927	190.77912	13.76835	0.1837048	0.24140237	2.5545145	20	6 1.6	18.6
62580 2000 SD_{281}	14.4	X	254.27377	126.87058	262.10293	8.95775	0.1042651	0.19020335	2.9944974	20	6 28.5	18.8
62581 2000 SL_{282}	15.2	X	295.40668	262.49293	295.84651	7.96790	0.0381031	0.21851653	2.7298986	20	—	—
62582 2000 SO_{289}	14.8	X	233.49994	228.75575	337.74345	8.72069	0.0399037	0.21079923	2.7961258	20	—	—
62583 2000 SJ_{293}	14.1	X	234.39870	330.96694	357.69568	15.02753	0.1689641	0.17633316	3.1495370	20	3 19.4	19.2
62584 2000 SP_{293}	13.8	X	89.63363	146.95788	13.11749	22.32992	0.0472152	0.17854356	3.1234886	20	5 31.7	18.6
62585 2000 SR_{293}	13.7	X	167.42102	75.80937	340.60134	10.30550	0.0289741	0.17590768	3.1546137	20	4 25.0	18.4
62586 2000 SN_{297}	14.5	X	155.47492	238.36986	229.74392	10.24009	0.0920755	0.18351901	3.0667757	20	6 21.6	19.3
62587 2000 ST_{299}	14.2	X	31.63775	293.37716	222.84482	8.60076	0.0350422	0.17416385	3.1756359	20	3 13.5	18.6
62588 2000 SE_{301}	14.7	X	94.31131	251.74886	235.46579	4.29589	0.0864754	0.17704258	3.1411178	20	5 7.4	19.1
62589 2000 SA_{302}	14.5	X	34.14327	67.65287	219.64561	8.99110	0.0069563	0.19230496	2.9726405	20	8 29.9	18.7
62590 2000 SB_{303}	14.8	X	164.69310	245.23822	214.09612	9.66847	0.1195008	0.18239186	3.0793974	20	6 21.1	19.7
62591 2000 ST_{303}	15.1	X	172.43747	34.15800	355.17583	15.17266	0.1284466	0.22496920	2.6774457	20	3 30.7	19.4
62592 2000 SA_{304}	15.2	X	239.16850	139.57283	230.49087	12.65967	0.1752528	0.23451628	2.6042783	20	5 10.6	19.3
62593 2000 SD_{305}	14.1	X	44.55974	257.02880	267.58208	7.31901	0.1289866	0.17454854	3.1709683	20	4 20.1	18.2
62594 2000 SX_{305}	14.4	X	7.69302	351.74196	294.14524	9.99427	0.0635093	0.18986085	2.9980976	20	7 29.6	18.3
62595 2000 SW_{306}	14.3	X	29.11085	341.13390	217.68765	13.64556	0.1168360	0.22892737	2.6464939	20	5 10.6	17.3
62596 2000 SL_{309}	14.3	X	327.70687	94.31597	226.61198	13.97106	0.1324777	0.23621834	2.5917532	20	7 11.1	17.3
62597 2000 SB_{311}	14.4	X	198.57362	50.67174	323.29258	16.78606	0.1848140	0.17707720	3.1407085	20	4 2.0	19.9
62598 2000 SW_{313}	14.3	X	334.77101	314.76580	324.72395	12.94859	0.1754730	0.23507731	2.6001330	20	5 16.8	17.3
62599 2000 SA_{318}	15.5	X	195.42793	125.44133	253.54914	5.18048	0.1647932	0.27708432	2.3302083	20	4 7.4	19.3
62600 2000 SG_{318}	15.2	X	243.21013	204.56838	135.17721	15.79289	0.1306395	0.23140802	2.6275467	20	4 16.6	19.4
62601 2000 SH_{318}	14.7	X	119.40918	32.08388	72.78441	14.80217	0.0849498	0.22947528	2.6422796	20	5 11.1	18.5
62602 2000 SJ_{318}	15.4	X	90.97764	232.15438	95.30928	10.51450	0.1865651	0.25941885	2.4348284	20	—	—
62603 2000 SD_{320}	14.8	X	355.43413	98.60885	56.83268	2.00340	0.1176486	0.22257003	2.6966522	20	1 12.1	17.8
62604 2000 SU_{320}	13.7	X	173.23068	22.06919	13.18829	9.22756	0.0958841	0.17538714	3.1608525	20	4 11.4	18.5
62605 2000 SV_{320}	14.0	X	316.83425	304.83911	11.59928	9.53340	0.0910110	0.18569271	3.0427958	20	6 20.9	18.0
62606 2000 SK_{325}	14.6	X	96.49755	95.38164	344.36923	12.72734	0.1401552	0.17298529	3.1900435	20	3 18.2	19.2
62607 2000 SZ_{330}	14.8	X	191.88603	319.95810	130.57323	3.83931	0.0395861	0.18416704	3.0595775	20	7 10.3	19.1
62608 2000 SD_{332}	14.5	X	267.78250	128.72945	140.65091	2.16988	0.1206435	0.17011982	3.2257654	20	2 16.8	19.3
62609 2000 SF_{333}	15.1	X	326.81636	75.03399	44.94899	5.13336	0.0215641	0.21312249	2.7757682	20	—	—
62610 2000 SV_{333}	14.2	X	323.95241	254.08827	82.26709	10.81035	0.0582583	0.19241073	2.9715510	20	8 3.9	18.1
62611 2000 SX_{334}	14.4	X	290.73130	230.92368	93.99970	9.45102	0.0727365	0.18626497	3.0365604	20	5 29.5	18.6
62612 2000 SQ_{335}	14.4	X	330.56884	323.04246	290.82606	9.10316	0.0278359	0.18020794	3.1042267	20	4 22.4	18.8
62613 2000 SF_{336}	14.3	X	80.88361	140.25594	20.25967	10.79554	0.0254001	0.17924845	3.1152945	20	5 21.4	18.7
62614 2000 SS_{339}	15.2	X	121.41592	159.55741	217.33205	9.12247	0.2258472	0.21695261	2.7430020	20	2 4.2	19.4
62615 2000 SA_{340}	14.6	X	206.81855	98.26217	192.89216	8.95683	0.1614241	0.21741085	2.7391464	20	1 7.9	19.3
62616 2000 SF_{343}	15.1	X	208.90921	93.54683	89.49405	3.22936	0.0104913	0.20114068	2.8849355	20	11 29.9	19.0
62617 2000 SW_{344}	14.7	X	147.72083	335.31262	113.61246	16.13256	0.0532571	0.23253533	2.6190478	20	5 22.8	18.7
62618 2000 SD_{348}	14.3	X	255.43817	322.68340	79.36806	14.48127	0.0820529	0.19015200	2.9950365	20	7 21.7	18.6
62619 2000 SE_{348}	14.4	X	122.88443	12.80502	66.35535	13.81303	0.1560877	0.22622587	2.6675211	20	4 22.1	18.5
62620 2000 SA_{350}	14.2	X	209.12081	252.26919	143.16311	17.11662	0.1397135	0.18213022	3.0823459	20	5 21.2	19.4
62621 2000 SC_{350}	14.5	X	326.34355	322.18599	72.34114	14.77776	0.0356996	0.19946143	2.9011048	20	10 28.3	18.5
62622 2000 SQ_{350}	15.0	X	268.95134	206.09280	78.78336	15.07000	0.1979738	0.22972570	2.6403591	20	2 28.7	19.3
62623 2000 SS_{350}	14.5	X	204.53609	218.69976	112.86416	12.75317	0.1931589	0.22593500	2.6698101	20	2 25.7	19.1
62624 2000 SX_{350}	14.8	X	200.31157	290.57887	117.56305	15.94976	0.1513676	0.23289071	2.6163827	20	5 27.2	19.2
62625 2000 SG_{351}	15.0	X	10.06009	157.18005	121.64721	14.40079	0.1460853	0.24166006	2.5526981	20	8 7.1	17.5
62626 2000 SK_{351}	14.9	X	238.29127	254.59750	118.67017	12.20046	0.2067932	0.23410702	2.6073125	20	5 15.3	19.2
62627 2000 SH_{352}	14.8	X	142.24642	82.91167	34.92884	10.23504	0.0296865	0.23875409	2.5733696	20	6 15.9	18.4
62628 2000 SL_{352}	14.8	X	267.00320	236.90022	53.98928	13.37619	0.2356315	0.23063662	2.6334022	20	3 1.7	19.2
62629 2000 SO_{354}	14.2	X	174.53725	289.18741	24.89985	17.94657	0.0759261	0.16986198	3.2290289	20	1 12.5	19.4
62630 2000 SZ_{354}	14.4	X	140.30104	11.56456	96.28488	11.80135	0.0734342	0.18250495	3.0781252	20	6 5.5	19.0
62631 2000 SM_{355}	15.2	X	179.24126	224.71474	71.39453	10.40535	0.1942375	0.21790265	2.7350234	20	—	—
62632 2000 SB_{356}	14.7	X	60.99494	348.95388	96.97725	10.46043	0.1775543	0.21683860	2.7439634	20	2 8.4	17.7
62633 2000 SC_{356}	14.1	X	241.20832	277.26060	49.82045	17.61560	0.1136413	0.17942863	3.1132086	20	4 4.7	19.0
62634 2000 SL_{356}	15.1	X	68.46138	2.13751	81.26183	13.46120	0.1537628	0.21781537	2.7357540	20	2 16.8	18.5
62635 2000 SO_{356}	15.3	X	159.37896	292.94739	134.94727	16.89559	0.1896805	0.17745025	3.1363052	20	5 16.9	20.8
62636 2000 SX_{356}	15.7	X	180.21350	269.63742	56.69872	7.92018	0.1404157	0.27410668	2.3470534	20	1 21.0	19.3
62637 2000 SZ_{356}	15.4	X	151.45184	299.97975	44.82060	5.98303	0.1623450	0.27226299	2.3576372	20	1 16.8	18.8
62638 2000 SJ_{357}	15.1	X	237.39266	279.51488	85.97821	15.50392	0.0878513	0.23225150	2.6211811	20	5 15.5	19.0
62639 2000 SS_{357}	14.6	X	187.83038	334.27422	101.58281	14.55876	0.0721013	0.23400068	2.6081024	20	6 17.9	18.5
62640 2000 SR_{358}	13.9	X	28.37640	323.56926	52.27648	15.60494	0.0064806	0.20545313	2.8444232	20	12 16.3	18.0

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Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
	m		°	°	°	°		°				
62641 2000 SZ_{358}	14.3	X	288.88904	258.22812	120.28738	12.05440	0.0973574	0.19080873	2.9881603	20	8 1.6	18.1
62642 2000 SN_{359}	14.1	X	121.62830	168.75564	312.74025	10.25691	0.0612391	0.18125878	3.0922174	20	5 28.4	18.8
62643 2000 SH_{360}	14.3	X	184.14978	285.83782	115.13771	17.26014	0.1142695	0.18076539	3.0978415	20	5 6.9	19.5
62644 2000 SP_{360}	14.6	X	259.34881	232.47810	123.49360	14.99176	0.1047790	0.18527934	3.0473200	20	5 27.6	19.3
62645 2000 SW_{360}	15.2	X	39.97838	165.63527	222.64213	3.67276	0.0790661	0.21064043	2.7975309	20	—	—
62646 2000 SO_{361}	15.1	X	303.55078	260.92214	24.33057	14.50258	0.2008602	0.23497064	2.6009199	20	4 3.5	18.3
62647 2000 SY_{362}	14.7	X	271.14143	4.66143	84.37830	6.82729	0.0179041	0.20076452	2.8885379	20	10 23.1	18.7
62648 2000 SC_{363}	14.8	X	265.64222	177.30068	194.00088	15.19622	0.1472010	0.24043451	2.5613653	20	6 14.8	18.6
62649 2000 SS_{363}	15.1	X	84.46990	286.60291	77.65015	6.94919	0.0745461	0.21439226	2.7647974	20	—	—
62650 2000 SV_{363}	15.6	X	151.09500	233.30091	22.13374	11.94402	0.0489568	0.25962919	2.4335132	20	—	—
62651 2000 SB_{364}	14.2	X	237.73045	30.16283	39.08329	10.70232	0.0785078	0.19300808	2.9654167	20	8 7.8	18.7
62652 2000 SC_{364}	15.2	X	5.42996	348.13485	73.41865	7.11476	0.1228274	0.25946236	2.4345562	20	—	—
62653 2000 SP_{364}	14.7	X	63.61496	336.38417	87.14415	12.59432	0.0560096	0.21742317	2.7390429	20	—	—
62654 2000 SX_{364}	16.0	X	160.40412	210.88803	35.80327	2.71187	0.1753462	0.26024523	2.4296713	20	12 22.9	19.8
62655 2000 SY_{364}	15.4	X	40.79248	299.26326	112.37280	3.04901	0.0376642	0.21328461	2.7743614	20	—	—
62656 2000 SJ_{365}	14.9	X	271.58080	30.92072	89.73947	3.24474	0.0203761	0.20534888	2.8453858	20	11 30.3	18.6
62657 2000 SK_{365}	14.6	X	135.05383	31.16274	32.46187	6.51169	0.1151736	0.17699525	3.1416778	20	4 9.8	19.4
62658 2000 SN_{365}	14.5	X	92.50518	66.11515	21.42861	9.58603	0.0713460	0.17538991	3.1608191	20	3 17.7	18.9
62659 2000 SU_{365}	15.3	X	260.18247	304.08906	126.78481	2.81585	0.0897470	0.19208587	2.9749005	20	9 1.6	19.3
62660 2000 SV_{365}	16.0	X	85.57041	346.81425	135.97435	6.43740	0.1135894	0.27464904	2.3439625	20	4 23.0	18.8
62661 2000 SK_{366}	16.2	X	104.49985	121.32879	154.00536	8.02836	0.2650499	0.25634891	2.4542289	20	12 12.5	20.6
62662 2000 SN_{366}	14.6	X	233.59375	85.48593	21.70730	12.86587	0.0895479	0.19585515	2.9366085	20	9 18.9	18.9
62663 2000 SY_{366}	15.1	X	273.50491	160.83532	55.33926	8.17577	0.0657130	0.26687237	2.3892796	20	—	—
62664 2000 SP_{367}	15.3	X	0.53498	173.08277	286.38686	5.01985	0.0513073	0.21444282	2.7643628	20	—	—
62665 2000 SU_{370}	13.9	X	257.29976	203.65056	117.13046	19.01963	0.2026075	0.18029808	3.1031920	20	4 5.3	19.1
62666 Rainawessen	13.7	X	242.91349	97.25244	263.62429	9.40051	0.1792568	0.17881538	3.1203224	20	5 1.9	18.7
62667 2000 TC	14.1	X	216.64255	191.60948	213.49675	11.33930	0.1740669	0.23080509	2.6321207	20	6 2.9	18.4
62668 2000 TR_{2}	14.8	X	134.04399	52.22025	350.86744	8.68404	0.0935680	0.17574530	3.1565566	20	3 12.2	19.3
62669 2000 TT_{2}	15.1	X	277.97529	242.06291	200.39578	1.62926	0.0657365	0.20117533	2.8846042	20	10 14.7	18.9
62670 2000 TK_{8}	15.8	X	276.57007	184.94165	13.28261	5.06030	0.0998498	0.21494380	2.7600658	20	—	—
62671 2000 TE_{10}	14.8	X	201.68063	273.58245	132.70486	1.87584	0.0596922	0.18209935	3.0826942	20	5 26.2	19.4
62672 2000 TY_{10}	14.4	X	294.49546	237.95998	55.90644	10.57295	0.0624131	0.18131178	3.0916147	20	4 26.9	18.6
62673 2000 TZ_{10}	15.5	X	100.88278	140.42292	173.45014	2.03304	0.0617340	0.20660948	2.8338002	20	—	—
62674 2000 TL_{11}	15.4	X	101.05615	251.34456	39.34162	2.37046	0.0435952	0.20311544	2.8662061	20	12 4.8	19.6
62675 2000 TL_{12}	14.8	X	232.00464	307.10040	127.35321	9.14322	0.0197467	0.18927977	3.0042305	20	8 10.9	18.9
62676 2000 TQ_{13}	14.7	X	153.76888	167.68671	20.29472	10.76018	0.0715910	0.19497545	2.9454349	20	9 30.3	19.0
62677 2000 TE_{14}	15.0	X	138.71915	20.74022	68.75731	3.15652	0.1744092	0.17643013	3.1483829	20	5 18.8	20.1
62678 2000 TD_{15}	15.4	X	4.09616	239.14029	179.77740	1.88252	0.1125507	0.20515217	2.8472043	20	—	—
62679 2000 TK_{15}	14.7	X	123.01329	21.90490	18.65392	4.91493	0.0536678	0.16945840	3.2341536	20	2 23.8	19.3
62680 2000 TV_{15}	14.6	X	288.62639	87.52450	205.26570	9.57491	0.0362658	0.17825815	3.1268217	20	4 20.2	19.0
62681 2000 TJ_{17}	15.0	X	25.49817	184.88556	163.93917	2.11653	0.0690451	0.19953374	2.9004039	20	11 18.3	18.7
62682 2000 TP_{17}	15.8	X	104.32873	317.50936	39.16600	4.95805	0.0806170	0.21132288	2.7915047	20	—	—
62683 2000 TG_{19}	14.9	X	338.07423	236.76462	54.59446	10.53052	0.1794049	0.24052147	2.5607478	20	6 15.2	17.3
62684 2000 TJ_{19}	14.5	X	3.63862	341.61139	52.13920	11.18708	0.1544516	0.20442419	2.8539598	20	12 26.1	18.1
62685 2000 TR_{19}	15.3	X	302.37215	178.08561	95.85395	5.62914	0.2388994	0.28375726	2.2935316	20	3 7.7	18.2
62686 2000 TD_{20}	13.7	X	108.92957	329.28486	87.30898	10.05134	0.1381433	0.22056468	2.7129726	20	3 6.6	17.6
62687 2000 TB_{21}	14.4	X	52.43532	93.89827	115.25763	10.88635	0.0248344	0.18473561	3.0532964	20	6 19.1	18.7
62688 2000 TQ_{21}	14.0	X	278.95579	226.15868	89.48908	11.98110	0.0664038	0.18162556	3.0880529	20	5 6.1	18.4
62689 2000 TV_{22}	14.9	X	163.06416	95.40128	333.56760	8.31036	0.0880033	0.18044859	3.1014662	20	5 9.4	19.8
62690 2000 TS_{23}	15.5	X	130.33141	346.43690	198.88380	2.04402	0.0321648	0.19153283	2.9806242	20	8 26.9	19.8
62691 2000 TA_{24}	14.6	X	179.58432	277.75065	73.71122	4.72932	0.2368277	0.22533124	2.6745770	20	2 29.3	19.3
62692 2000 TE_{24}	12.3	X	322.43579	36.58282	246.70394	19.13047	0.0568778	0.08258172	5.2225198	20	5 21.4	18.9
62693 2000 TM_{24}	15.7	X	150.94602	243.45422	164.21548	6.07722	0.0109165	0.22652298	2.6651882	20	3 25.7	19.2
62694 2000 TV_{24}	15.1	X	153.33423	229.95537	208.34140	21.48273	0.0492950	0.22933181	2.6433816	20	5 11.1	18.9
62695 2000 TW_{24}	15.1	X	170.30682	212.87450	342.67510	4.36368	0.0783358	0.19837048	2.9117317	20	10 24.0	19.6
62696 2000 TT_{25}	14.9	X	131.09439	259.46875	214.65163	0.31149	0.1578553	0.17976512	3.1093224	20	6 9.2	19.9
62697 2000 TV_{25}	15.7	X	179.79232	271.00644	180.70361	1.09484	0.0982892	0.18410502	3.0602645	20	6 27.1	20.5
62698 2000 TO_{28}	14.7	X	119.00726	57.60385	155.34665	9.90958	0.0096359	0.19337096	2.9617056	20	9 17.7	18.9
62699 2000 TQ_{28}	15.3	X	313.55759	322.39242	29.30956	14.27125	0.1739826	0.24401960	2.5362160	20	8 6.6	18.2
62700 2000 TA_{30}	16.3	X	199.61474	166.85744	118.54456	3.25366	0.2021313	0.26847751	2.3797469	20	—	—
62701 2000 TS_{32}	14.4	X	151.19405	242.55350	210.55132	21.12506	0.1894029	0.17932592	3.1143972	20	6 3.6	19.8
62702 2000 TU_{32}	14.7	X	320.47374	301.38806	60.71350	11.30758	0.1184420	0.19238009	2.9718665	20	9 1.9	18.5
62703 2000 TG_{34}	13.9	X	261.63706	19.41320	26.30829	10.24084	0.2793863	0.18191879	3.0847337	20	7 6.6	18.8
62704 2000 TT_{35}	15.6	X	214.67589	11.94875	262.88123	0.99576	0.0397439	0.21650063	2.7468183	20	—	—
62705 2000 TY_{36}	14.9	X	320.03243	120.45241	152.85779	1.32666	0.0675305	0.18458399	3.0549682	20	5 2.9	18.8
62706 2000 TD_{38}	14.7	X	240.65817	334.41636	25.15008	14.23881	0.1726102	0.23471644	2.6027975	20	4 27.0	18.8
62707 2000 TF_{38}	15.3	X	94.17911	256.38317	85.90872	7.26530	0.1514997	0.26235217	2.4166455	20	—	—
62708 2000 TX_{38}	15.4	X	149.65400	268.83967	71.52520	6.90814	0.1317902	0.26957666	2.3732739	20	1 5.1	18.6
62709 2000 TR_{39}	15.3	X	239.00266	209.00082	136.68067	10.76218	0.1070638	0.23338606	2.6126793	20	4 19.9	19.3
62710 2000 TF_{40}	15.3	X	16.26045	244.92926	30.46304	15.40779	0.1023385	0.24287512	2.5441773	20	8 16.6	18.5
62711 2000 TK_{42}	14.3	X	100.81552	84.64897	43.15392	11.05529	0.0955378	0.18064424	3.0992264	20	5 16.4	18.8
62712 2000 TO_{42}	15.2	X	220.48573	154.87309	94.78095	7.26762	0.0498983	0.21624236	2.7490050	20	—	—
62713 2000 TS_{42}	15.5	X	137.65288	302.44013	33.98039	13.40461	0.2263918	0.26749785	2.3855537	20	—	—
62714 2000 TB_{43}	12.0	X	181.22728	352.76512	71.40484	8.94974	0.0404820	0.08208001	5.2437798	20	5 26.3	19.1
62715 2000 TR_{43}	14.1	X	250.31144	3.79046	60.89942	11.78802	0.0886032	0.19161886	2.9797321	20	8 16.4	18.5
62716 2000 TS_{44}	14.5	X	148.63174	6.55351	65.72193	8.24611	0.0896167	0.17936538	3.1139405	20	5 3.0	19.2
62717 2000 TW_{44}	14.3	X	153.45023	320.62323	34.62971	18.10517	0.1790475	0.17148247	3.2086541	20	2 20.7	19.8
62718 2000 TR_{45}	14.4	X	212.82337	311.31931	68.31195	10.42196	0.0880402	0.18205006	3.0832506	20	5 5.5	19.1
62719 2000 TB_{47}	14.8	X	339.72631	354.00540	118.12999	5.37075	0.0245100	0.21168252	2.7883420	20	—	—
62720 2000 TH_{48}	16.1	X	74.67581	10.63120	161.73343	7.63083	0.1175975	0.28354295	2.2946871	20	6 16.6	18.9

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	m		°	°	°	°		°				
62721 2000 TM_{50}	14.7	X	241.13077	331.69131	123.71545	11.45895	0.0818736	0.19273675	2.9681991	20	9 13.2	19.0
62722 2000 TQ_{50}	14.9	X	204.89493	202.10652	77.85588	10.00296	0.1202052	0.21636575	2.7479598	20	—	—
62723 2000 TG_{51}	15.3	X	204.45247	175.98758	147.72995	11.82370	0.0540872	0.22108297	2.7087309	20	2 13.7	19.1
62724 2000 TL_{51}	14.7	X	296.19946	282.72557	91.04799	9.94828	0.0989310	0.18966700	3.0001401	20	8 7.4	18.7
62725 2000 TW_{51}	14.5	X	334.67661	163.96503	113.21393	10.45814	0.0521390	0.18190406	3.0849002	20	6 1.2	18.6
62726 2000 TN_{55}	13.3	X	160.65312	210.70069	106.16770	28.69363	0.0993635	0.16150554	3.3394717	20	1 2.2	18.3
62727 2000 TQ_{55}	15.1	X	106.12099	219.04660	158.14842	11.88342	0.0725120	0.21320986	2.7750099	20	—	—
62728 2000 TV_{56}	14.4	X	210.86476	10.11522	45.85756	15.18459	0.0949971	0.23554194	2.5967126	20	6 13.9	18.4
62729 2000 TY_{58}	14.6	X	212.94371	269.15312	112.81097	11.99654	0.0812076	0.18025560	3.1036796	20	5 11.2	19.5
62730 2000 TE_{59}	15.0	X	260.07367	217.31662	99.14146	9.23093	0.2980517	0.28209096	2.3025546	20	3 15.2	18.9
62731 2000 TO_{59}	14.3	X	278.13369	262.24024	90.56787	17.07636	0.0600615	0.18464462	3.0542994	20	6 18.8	18.6
62732 2000 TQ_{59}	14.5	X	311.19845	166.47335	115.39192	15.37566	0.0778985	0.23069389	2.6329664	20	5 4.8	18.1
62733 2000 TX_{59}	13.6	X	111.08377	63.23143	105.63508	17.36208	0.1544046	0.18371420	3.0646031	20	7 27.5	18.4
62734 2000 TX_{60}	14.9	X	276.89866	318.48419	61.75825	15.23284	0.0987246	0.23920337	2.5701463	20	7 23.5	18.4
62735 2000 TY_{60}	14.4	X	20.07279	102.05466	123.34943	12.56392	0.0277900	0.23222152	2.6214067	20	5 29.9	18.0
62736 2000 TZ_{60}	15.6	X	136.05138	226.25984	118.05907	9.19900	0.2542580	0.26687672	2.3892536	20	1 10.1	19.1
62737 2000 TR_{61}	13.8	X	153.28777	355.62420	95.05562	12.63673	0.0682194	0.18055191	3.1002829	20	5 29.8	18.5
62738 2000 TW_{61}	14.5	X	258.58607	301.57285	87.64723	11.73786	0.1334685	0.18728660	3.0255076	20	6 30.2	18.7
62739 2000 TW_{62}	14.6	X	227.66394	274.18277	61.91361	6.15044	0.1112370	0.17591479	3.1545287	20	3 28.7	19.5
62740 2000 TU_{64}	14.8	X	165.23067	330.65162	142.28814	5.78605	0.1628007	0.18421963	3.0589951	20	7 9.2	19.9
62741 2000 TR_{66}	14.7	X	311.21860	330.51377	250.00209	0.29246	0.0876373	0.17063521	3.2192666	20	2 13.1	19.0
62742 2000 TD_{68}	15.8	X	34.51798	54.26497	203.64795	2.17889	0.1281691	0.24003611	2.5641986	20	8 15.8	18.8
62743 2000 UA_{1}	14.3	X	4.35665	83.91733	224.99441	15.68294	0.0758882	0.23956978	2.5675250	20	8 26.4	17.8
62744 2000 UX_{1}	13.6	X	34.87727	17.93665	55.77011	9.25250	0.0324075	0.15992148	3.3614876	20	—	—
62745 2000 UY_{1}	15.9	X	161.88323	277.39460	92.67785	4.03350	0.1717362	0.27113733	2.3641581	20	2 29.5	19.5
62746 2000 UE_{2}	14.3	X	0.32100	307.81958	74.39585	2.70353	0.1106104	0.19840216	2.9114217	20	11 29.3	17.7
62747 2000 UB_{3}	15.4	X	340.13024	258.78527	44.49158	8.03297	0.2277065	0.23913059	2.5706678	20	7 8.7	17.5
62748 2000 UV_{3}	14.3	X	352.93132	219.59314	26.99091	13.89467	0.0886665	0.18025456	3.1036915	20	5 12.2	18.2
62749 2000 UM_{4}	16.2	X	80.76804	198.74822	143.01404	3.03534	0.1669119	0.25649012	2.4533280	20	—	—
62750 2000 UO_{4}	14.6	X	268.99171	247.01215	59.83724	12.50938	0.0721773	0.22654609	2.6650069	20	4 10.4	18.4
62751 2000 UD_{5}	16.0	X	47.60389	250.52526	229.42051	0.68785	0.1363272	0.26623164	2.3931115	20	2 14.6	18.1
62752 2000 UB_{6}	15.7	X	5.83111	111.25506	225.39337	3.33382	0.1969755	0.24709477	2.5151295	20	11 1.5	18.1
62753 2000 UM_{7}	13.6	X	140.14108	290.35313	218.25370	9.75741	0.0704970	0.18393698	3.0621281	20	7 22.6	18.3
62754 2000 US_{7}	14.6	X	275.52611	297.46183	41.80995	11.78348	0.2056787	0.23368350	2.6104619	20	5 6.0	18.2
62755 2000 UF_{8}	15.2	X	134.90891	237.93074	226.75981	4.11120	0.0543038	0.27839605	2.3228830	20	5 22.8	18.0
62756 2000 UN_{8}	14.8	X	23.81429	201.91149	177.42103	2.09590	0.1369027	0.20167571	2.8798309	20	—	—
62757 2000 UU_{8}	15.6	X	132.97259	301.21130	39.99838	6.75508	0.1413364	0.26287133	2.4134626	20	—	—
62758 2000 UH_{9}	14.7	X	175.03912	179.41459	258.16663	1.35404	0.1828704	0.17709981	3.1404411	20	6 5.2	19.9
62759 2000 UK_{9}	13.3	X	154.56611	23.71500	53.34910	16.63969	0.1147194	0.17485030	3.1673189	20	5 14.8	18.2
62760 2000 UR_{9}	12.9	X	160.05295	323.37606	56.23596	22.22369	0.0521990	0.16873290	3.2434176	20	3 22.1	18.1
62761 2000 UA_{12}	14.1	X	176.04348	321.12850	59.57972	13.22515	0.2086272	0.22682331	2.6628351	20	4 4.0	18.8
62762 2000 UB_{12}	14.7	X	315.67736	53.20746	57.84809	14.68283	0.1753639	0.25690219	2.4507039	20	—	—
62763 2000 UG_{12}	15.0	X	170.28912	76.36339	219.20724	3.32191	0.0782755	0.21210401	2.7846468	20	—	—
62764 2000 UL_{13}	13.8	X	150.97487	159.44009	233.16012	11.00755	0.1109901	0.17219944	3.1997415	20	3 15.0	18.9
62765 2000 UH_{14}	14.2	X	302.12461	237.60953	69.24052	10.94721	0.0779064	0.18295078	3.0731225	20	5 20.4	18.4
62766 2000 UB_{15}	15.2	X	235.64634	117.43976	257.49495	5.61918	0.1111971	0.28033060	2.3121839	20	5 18.2	18.4
62767 2000 UQ_{17}	15.6	X	261.70333	26.98258	64.92513	12.35613	0.1332824	0.24401516	2.5362468	20	10 8.6	18.9
62768 2000 UT_{17}	15.4	X	297.28868	278.89183	93.29278	5.86634	0.2085314	0.24016108	2.5633090	20	7 24.4	18.1
62769 2000 UB_{18}	15.3	X	131.67027	201.47639	139.57766	7.13460	0.0700734	0.21278426	2.7787089	20	—	—
62770 2000 UK_{18}	13.9	X	8.78303	64.01180	127.23809	5.65632	0.0876472	0.17302474	3.1895585	20	3 31.9	18.0
62771 2000 UN_{18}	14.2	X	21.79072	182.01843	3.58167	10.41325	0.0381537	0.17164557	3.2066211	20	4 7.4	18.6
62772 2000 UY_{19}	15.1	X	306.09294	253.99226	80.77838	2.96216	0.0924685	0.18653197	3.0336621	20	6 29.4	19.1
62773 2000 UB_{20}	16.2	X	174.81026	258.12029	44.22815	3.25292	0.2111604	0.26652755	2.3913399	20	—	—
62774 2000 UE_{20}	14.9	X	354.00788	168.93361	123.95130	1.25812	0.1107240	0.18779653	3.0200282	20	7 19.5	18.5
62775 2000 UG_{20}	15.5	X	107.66732	201.85160	197.60013	5.29487	0.0620080	0.21689605	2.7434788	20	1 26.6	19.3
62776 2000 UR_{20}	14.7	X	336.17114	247.62381	43.11774	10.82330	0.1041801	0.18494055	3.0510404	20	6 14.8	18.5
62777 2000 UE_{21}	14.7	X	235.29454	296.80812	80.06827	3.00428	0.1990323	0.18177875	3.0863177	20	5 14.7	19.6
62778 2000 UU_{21}	14.8	X	338.97646	142.83868	198.71831	9.54486	0.1019470	0.19136651	2.9823510	20	8 27.5	18.6
62779 2000 UC_{22}	14.2	X	125.98204	14.06971	87.12471	7.44793	0.0445741	0.17640374	3.1486969	20	5 9.6	18.8
62780 2000 UF_{22}	14.2	X	198.44432	201.75430	54.24611	13.66014	0.2072449	0.21101260	2.7942405	20	—	—
62781 2000 UE_{23}	14.7	X	352.88690	243.17316	73.05941	9.76115	0.0319704	0.18849170	3.0125983	20	8 21.3	18.9
62782 2000 UF_{23}	16.0	X	9.24708	14.72714	111.42908	4.89356	0.1324158	0.26250554	2.4157041	20	—	—
62783 2000 UO_{23}	14.2	X	276.61239	244.86107	119.22154	4.01077	0.2612192	0.18615036	3.0378067	20	6 2.4	18.5
62784 2000 UW_{23}	14.2	X	222.05007	262.50351	71.64493	11.84372	0.1547861	0.17476628	3.1683340	20	3 22.3	19.5
62785 2000 UC_{24}	16.0	X	328.28214	244.50354	105.97762	5.24161	0.2155346	0.29272711	2.2464362	20	9 13.9	17.1
62786 2000 UQ_{24}	15.3	X	304.56772	247.32122	87.35086	8.44027	0.2128429	0.23715210	2.5849455	20	6 9.9	18.3
62787 2000 UH_{25}	15.3	X	321.57146	147.37018	171.91924	4.82068	0.3054610	0.23952326	2.5678575	20	6 3.7	17.5
62788 2000 UW_{25}	15.2	X	220.68478	43.59572	76.42587	9.70812	0.1201840	0.24082505	2.5585954	20	9 23.7	19.0
62789 2000 UZ_{25}	13.5	X	278.99204	88.28001	216.12352	21.04253	0.1074058	0.17705536	3.1409667	20	4 10.9	18.2
62790 2000 UL_{26}	15.4	X	136.86366	160.14718	177.16507	6.97078	0.2408633	0.26423451	2.4051547	20	—	—
62791 2000 UT_{26}	14.3	X	124.28967	302.77488	151.07727	6.57577	0.1093586	0.17278878	3.1924616	20	5 6.1	19.1
62792 2000 UV_{28}	15.1	X	349.28689	240.32894	64.09754	14.23489	0.1747933	0.24157633	2.5532880	20	8 9.9	17.8
62793 2000 UZ_{28}	16.3	X	165.78118	194.12025	90.03644	1.53794	0.2056745	0.26274645	2.4142272	20	—	—
62794 Scheirich	14.6	X	211.93392	312.64234	62.69983	3.61135	0.1144317	0.17658939	3.1464897	20	4 26.9	19.5
62795 2000 UY_{34}	14.6	X	356.58791	318.67403	25.54121	9.78538	0.0730370	0.19429219	2.9523363	20	10 2.8	18.3
62796 2000 UO_{35}	15.8	X	94.67628	249.02522	55.54646	2.82162	0.1855242	0.25479227	2.4642147	20	—	—
62797 2000 UH_{36}	14.7	X	298.84327	339.76101	49.51477	3.44446	0.1038144	0.19081210	2.9881251	20	8 31.3	18.4
62798 2000 UO_{36}	15.0	X	200.19499	216.43120	60.13637	4.63858	0.0581088	0.21276998	2.7788332	20	—	—
62799 2000 UQ_{36}	16.0	X	125.85977	275.57158	41.80738	3.10545	0.2061041	0.26085149	2.4259053	20	—	—
62800 2000 UT_{36}	14.9	X	177.70839	47.78145	43.27029	10.07903	0.0814740	0.18122831	3.0925640	20	6 23.8	19.7

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
	m		°	°	°	°		°				
62801 2000 UV_{36}	15.3	X	310.09226	240.14803	223.90296	1.15478	0.0319746	0.20281421	2.8690435	20	12 27.9	18.9
62802 2000 UG_{37}	15.0	X	282.12362	152.94704	194.69300	4.24497	0.1810492	0.23522957	2.5990110	20	5 30.5	18.5
62803 2000 UU_{37}	14.3	X	250.19833	275.89200	216.67879	1.37186	0.0620154	0.19744580	2.9208154	20	11 10.3	18.2
62804 2000 UF_{38}	13.8	X	201.72189	329.25784	34.80840	11.12282	0.0694394	0.17404201	3.1771178	20	4 6.3	18.6
62805 2000 UP_{39}	14.9	X	65.00079	251.02423	171.30478	2.30946	0.0574316	0.21292884	2.7774509	20	—	—
62806 2000 UW_{39}	15.3	X	29.69200	325.06982	65.92737	3.09329	0.0869048	0.20410254	2.8569575	20	—	—
62807 2000 UL_{40}	14.6	X	165.12627	313.03034	153.68308	5.46955	0.1293457	0.18079673	3.0974834	20	6 30.9	19.5
62808 2000 UQ_{40}	14.7	X	300.95338	321.57643	111.25777	3.08378	0.0844738	0.19667619	2.9284301	20	11 2.6	18.3
62809 2000 UE_{42}	16.7	X	342.14500	175.89894	174.08704	1.98767	0.0701512	0.29271952	2.2464750	20	10 5.8	18.9
62810 2000 UH_{42}	14.9	X	159.86186	272.66872	59.79871	6.60051	0.0857956	0.21473435	2.7618602	20	1 10.7	19.0
62811 2000 UX_{42}	15.2	X	14.19242	296.73397	81.85493	3.26607	0.0792374	0.20003676	2.8955396	20	12 11.2	18.9
62812 2000 UC_{43}	15.0	X	288.88768	148.56561	89.46980	3.14483	0.0240693	0.21823378	2.7322560	20	2 10.4	18.8
62813 2000 UH_{43}	14.9	X	268.49309	208.95626	102.48010	2.18766	0.1403965	0.22787784	2.6546137	20	4 2.3	18.6
62814 2000 UK_{43}	15.7	X	233.67693	79.63870	52.89891	5.25779	0.1054736	0.24450831	2.5328354	20	10 24.0	19.0
62815 2000 UW_{43}	15.2	X	186.50289	122.15503	243.84097	5.95682	0.1284197	0.27345922	2.3507566	20	3 12.1	18.8
62816 2000 UC_{44}	14.4	X	330.90001	264.59634	40.81741	12.16556	0.0774677	0.18369485	3.0648182	20	6 29.4	18.5
62817 2000 UH_{45}	14.8	X	38.04791	84.29774	204.46287	8.17002	0.0624986	0.19090190	2.9871880	20	9 14.6	18.9
62818 2000 US_{45}	16.2	X	353.33792	72.07391	73.36391	3.66072	0.1130851	0.26244094	2.4161005	20	—	—
62819 2000 UV_{45}	14.9	X	198.77480	264.73485	59.86518	8.40461	0.1131498	0.21908491	2.7251751	20	2 13.0	19.2
62820 2000 UF_{46}	13.9	X	182.32132	79.56739	333.88374	2.51659	0.2197929	0.12641805	3.9318474	20	5 13.4	20.4
62821 2000 UE_{47}	15.4	X	252.79744	204.76573	204.71543	1.69758	0.0219483	0.23648485	2.5898056	20	8 7.9	18.9
62822 2000 UV_{48}	14.6	X	269.36571	145.98380	227.43161	5.89299	0.0862815	0.18334213	3.0687478	20	6 29.4	19.0
62823 2000 UE_{49}	14.2	X	172.60945	169.07341	210.56733	6.30897	0.1027367	0.17123741	3.2117147	20	3 23.3	19.1
62824 2000 UG_{49}	14.5	X	192.52217	239.08115	64.36533	10.32804	0.1864123	0.21552126	2.7551334	20	1 13.0	19.2
62825 2000 UT_{49}	14.5	X	197.77478	257.59742	164.39938	1.31014	0.1663974	0.17872691	3.1213521	20	6 6.4	19.6
62826 2000 UU_{50}	14.7	X	244.24278	110.10256	239.50441	13.38855	0.1476910	0.22772084	2.6558336	20	4 20.4	19.0
62827 2000 UX_{50}	14.2	X	341.55845	73.66076	240.70616	11.84714	0.1691957	0.23643298	2.5901844	20	7 26.9	16.9
62828 2000 UN_{53}	14.2	X	114.86141	328.54218	133.85680	3.07801	0.1549923	0.17241146	3.1971177	20	5 10.3	19.1
62829 2000 UP_{53}	14.3	X	241.19745	264.56150	89.72490	5.97148	0.1615615	0.17933460	3.1142967	20	4 27.9	19.2
62830 2000 UZ_{53}	15.9	X	23.78854	156.06929	167.89596	3.92260	0.2249623	0.29710388	2.2243195	20	11 30.9	18.4
62831 2000 UM_{54}	14.1	X	260.45686	278.96720	80.39152	9.66893	0.1228159	0.18144579	3.0900923	20	5 27.6	18.6
62832 2000 UN_{54}	13.5	X	77.55542	56.75551	72.18794	10.97811	0.1176592	0.17030529	3.2234229	20	4 26.9	18.0
62833 2000 UB_{56}	14.4	X	272.13390	107.14250	238.82230	13.06463	0.1646031	0.23093097	2.6311640	20	5 17.1	18.0
62834 2000 UC_{56}	14.5	X	185.43771	133.72864	213.64164	10.79142	0.1772536	0.22002769	2.7173849	20	2 22.1	19.1
62835 2000 UC_{58}	15.3	X	63.19272	164.53038	299.93612	5.07617	0.0996509	0.21899397	2.7259295	20	2 22.7	18.5
62836 2000 UC_{59}	14.0	X	69.16413	237.46581	5.37257	8.69042	0.2251007	0.24244608	2.5471779	20	9 27.9	17.8
62837 2000 UJ_{59}	15.2	X	28.49125	156.51613	302.40697	4.48309	0.0567775	0.21375909	2.7702544	20	—	—
62838 2000 UB_{60}	15.9	X	253.05939	320.59272	344.17949	4.50201	0.2676222	0.27871762	2.3210960	20	2 22.8	19.6
62839 2000 UX_{60}	14.4	X	8.81229	265.54285	8.09703	9.77069	0.0667721	0.18621591	3.0370938	20	7 18.5	18.5
62840 2000 UB_{61}	15.3	X	74.51347	188.96552	275.37798	4.04222	0.0659206	0.22054272	2.7131527	20	3 4.9	18.8
62841 2000 UN_{61}	14.9	X	317.94915	317.50211	354.80026	6.22734	0.1484017	0.23619993	2.5918878	20	6 10.4	17.7
62842 2000 UF_{63}	15.1	X	268.17173	30.34385	296.26576	3.01342	0.1428803	0.23108448	2.6299987	20	4 18.4	18.9
62843 2000 UC_{64}	15.0	X	173.58592	292.19974	348.22979	12.14911	0.1694007	0.21135962	2.7911812	20	—	—
62844 2000 UK_{64}	14.6	X	111.21945	268.37318	245.39809	8.86990	0.0566991	0.18265991	3.0763841	20	6 26.4	19.1
62845 2000 UB_{67}	15.5	X	246.32090	328.35626	347.74455	3.71996	0.1438978	0.22689003	2.6623130	20	3 13.9	19.4
62846 2000 UX_{67}	13.9	X	332.44312	199.07132	358.02321	4.49007	0.0661036	0.16864532	3.2445404	20	2 16.7	18.2
62847 2000 UL_{68}	16.1	X	99.88283	47.19669	341.59932	6.23467	0.1268332	0.26516985	2.3994956	20	1 5.3	18.8
62848 2000 US_{71}	13.8	X	247.05652	90.00363	245.19195	9.09053	0.0827658	0.17705002	3.1410298	20	4 14.1	18.5
62849 2000 UA_{72}	14.7	X	46.18884	32.95884	241.64322	9.92239	0.1657948	0.24191892	2.5508769	20	9 29.1	18.1
62850 2000 UC_{72}	15.2	X	50.44305	247.11637	346.51653	2.78717	0.0806029	0.28499730	2.2868739	20	8 4.3	17.7
62851 2000 UM_{72}	14.3	X	183.90461	123.06199	261.11635	4.15488	0.1211589	0.22461433	2.6802651	20	4 5.5	18.5
62852 2000 UM_{76}	15.1	X	79.03627	261.19458	77.42780	12.94333	0.2305419	0.25652983	2.4530748	20	—	—
62853 2000 UO_{76}	14.4	X	311.33451	14.69021	21.47595	3.12815	0.1093882	0.19202787	2.9754994	20	9 27.7	18.1
62854 2000 UW_{76}	14.7	X	93.88695	348.65401	152.86162	1.34035	0.1151617	0.17651096	3.1474217	20	5 29.5	19.2
62855 2000 UE_{77}	14.1	X	2.33631	53.60100	216.84381	11.17551	0.1795826	0.23549126	2.5970852	20	7 6.9	16.7
62856 2000 UL_{77}	16.1	X	33.09455	195.62609	112.93248	3.94500	0.1024835	0.29517789	2.2339845	20	11 2.9	18.6
62857 2000 UM_{77}	15.8	X	358.73591	188.53883	120.76164	3.08706	0.1965946	0.24149552	2.5538575	20	9 5.9	18.0
62858 2000 UT_{78}	14.1	X	25.58906	183.73500	51.45042	7.30522	0.1240421	0.17982091	3.1086793	20	6 24.6	17.9
62859 2000 UW_{78}	14.1	X	85.94555	121.18200	65.81008	5.87034	0.0925340	0.17982611	3.1086194	20	7 14.1	18.5
62860 2000 UJ_{80}	14.2	X	79.92238	20.76852	230.63768	8.84744	0.0379945	0.19105462	2.9855959	20	9 16.1	18.6
62861 2000 UO_{80}	15.0	X	299.56112	52.50858	223.63863	11.10801	0.1134936	0.22613788	2.6682130	20	3 26.0	18.6
62862 2000 UE_{81}	14.4	X	112.34071	30.84584	88.31859	6.59804	0.0950365	0.17499785	3.1655383	20	5 21.2	19.0
62863 2000 UG_{81}	15.4	X	221.15238	350.68426	120.13993	4.35703	0.1028220	0.23982527	2.5657013	20	9 10.1	18.9
62864 2000 UG_{82}	15.2	X	342.55591	347.36388	342.75251	7.51787	0.2781979	0.24183757	2.5514489	20	9 2.6	16.4
62865 2000 UL_{82}	15.2	X	177.05609	303.55342	15.92580	12.50502	0.1939950	0.22254209	2.6968778	20	1 20.9	19.9
62866 2000 UX_{82}	14.6	X	145.62447	284.65732	138.08926	4.17066	0.0472548	0.17509082	3.1644176	20	4 15.0	19.2
62867 2000 UG_{83}	15.5	X	42.36920	344.15426	90.47630	5.69757	0.0476083	0.21266988	2.7797051	20	—	—
62868 2000 UV_{83}	14.7	X	111.60066	238.06666	139.44170	5.00602	0.0867567	0.21389518	2.7690793	20	1 9.4	18.5
62869 2000 UO_{84}	14.4	X	107.99280	351.92045	207.51156	14.25131	0.0954728	0.18848269	3.0126943	20	8 20.7	19.1
62870 2000 UD_{86}	14.6	X	150.28573	45.63633	100.97352	5.98717	0.0307245	0.18610654	3.0382834	20	8 2.6	18.9
62871 2000 UA_{87}	14.8	X	293.79979	217.82746	193.00107	9.80379	0.0608194	0.19286600	2.9668728	20	9 24.2	18.7
62872 2000 UC_{87}	15.5	X	78.65503	202.13558	77.17351	7.06761	0.1974133	0.29829431	2.2183977	20	11 28.6	18.7
62873 2000 UK_{87}	15.4	X	302.15716	102.49728	206.41680	11.70068	0.1573912	0.23238687	2.6201631	20	5 10.2	18.7
62874 2000 UV_{88}	14.9	X	297.06545	134.66392	87.19838	4.94622	0.0460908	0.21790221	2.7350270	20	1 28.2	18.6
62875 2000 UB_{89}	14.7	X	131.86563	133.80290	65.86246	13.01034	0.0355372	0.19140280	2.9819741	20	9 24.2	19.2
62876 2000 UH_{90}	15.3	X	317.96986	303.66876	94.95723	7.47888	0.1306009	0.19568240	2.9383366	20	10 14.9	18.8
62877 2000 UQ_{90}	13.3	X	169.60728	5.54355	45.79877	11.05832	0.0991690	0.17362331	3.1822236	20	4 28.9	18.3
62878 2000 UY_{90}	15.0	X	163.74605	234.09448	65.00974	7.04040	0.1829565	0.21630219	2.7484981	20	—	—
62879 2000 UN_{91}	15.2	X	277.10653	78.08182	255.86404	4.92940	0.0538458	0.23254159	2.6190007	20	5 24.1	18.5
62880 2000 US_{91}	14.5	X	305.56331	213.93033	5.89929	7.39742	0.0791107	0.16898232	3.2402253	20	2 9.3	19.1

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	m		°	°	°	°		°				
62881 2000 UA_{92}	14.5	X	270.88631	293.04226	13.08840	13.87889	0.1633581	0.17868284	3.1218653	20	3 29.5	19.2
62882 2000 UC_{93}	16.2	X	117.65352	149.29660	322.78092	3.76627	0.0911458	0.27724694	2.3292970	20	5 13.7	19.2
62883 2000 UQ_{93}	14.1	X	325.05347	41.66584	237.97419	18.69165	0.0464455	0.18028970	3.1032882	20	5 20.3	18.3
62884 2000 UY_{93}	14.5	X	51.88163	210.16551	12.11538	10.90383	0.0218778	0.18295714	3.0730512	20	7 5.9	18.9
62885 2000 UK_{94}	15.1	X	80.93960	221.69034	13.53162	5.80783	0.1336513	0.29060562	2.2573560	20	9 26.9	18.1
62886 2000 UV_{95}	14.7	X	1.92219	70.60674	263.15220	8.04808	0.0782471	0.19277817	2.9677739	20	9 20.8	18.6
62887 2000 UX_{95}	14.3	X	96.46491	329.34570	261.90257	7.84421	0.0891671	0.19085410	2.9876867	20	9 16.4	18.9
62888 2000 UX_{96}	14.6	X	4.07150	27.85112	236.02492	11.87784	0.2305242	0.23495533	2.6010329	20	7 3.9	16.8
62889 2000 UZ_{96}	14.9	X	310.64464	320.53164	353.20623	4.54456	0.1402775	0.23404877	2.6077451	20	5 31.5	17.9
62890 2000 UZ_{99}	14.1	X	287.87368	67.91897	258.44185	9.67306	0.0869032	0.18061888	3.0995165	20	5 23.8	18.3
62891 2000 UK_{100}	15.9	X	307.09448	349.49010	5.33000	5.47255	0.1633234	0.28856043	2.2680095	20	7 31.1	17.8
62892 2000 UZ_{100}	14.9	X	257.40777	66.51197	259.42787	10.64913	0.1834967	0.22782734	2.6550059	20	3 28.8	19.3
62893 2000 UM_{101}	15.7	X	6.91584	193.54608	347.72345	6.33655	0.0388316	0.27166294	2.3611076	20	3 3.4	18.2
62894 2000 UP_{101}	14.7	X	138.27883	261.59846	231.62259	12.83561	0.1293790	0.18041536	3.1018471	20	7 5.6	19.7
62895 2000 UR_{102}	15.4	X	122.37817	49.31249	9.58320	3.24792	0.1153723	0.21923490	2.7239319	20	3 17.9	19.3
62896 2000 UC_{103}	14.9	X	155.42034	66.34511	9.72615	5.34012	0.1086512	0.22537552	2.6742267	20	5 12.0	18.9
62897 2000 UL_{103}	14.3	X	315.36230	284.39761	35.73272	13.89863	0.1768046	0.23437089	2.6053552	20	6 11.4	17.3
62898 2000 UA_{104}	15.6	X	186.41226	199.43143	289.22204	4.93835	0.0547187	0.28663281	2.2781664	20	8 29.4	18.5
62899 2000 UT_{104}	14.3	X	228.61480	358.77169	315.75002	6.52182	0.2146080	0.22145625	2.7056862	20	2 20.8	19.0
62900 2000 UG_{105}	14.5	X	321.27305	279.43621	67.43766	10.96035	0.1110734	0.19127182	2.9833352	20	8 11.4	18.3
62901 2000 UL_{105}	15.0	X	298.77472	94.44312	169.03428	11.04041	0.0923380	0.22636515	2.6664268	20	3 15.0	18.4
62902 2000 UH_{106}	15.3	X	192.35723	252.62992	105.17496	6.89260	0.0725301	0.22380332	2.6867362	20	3 17.0	19.3
62903 2000 UK_{106}	14.8	X	342.69413	160.48748	173.10981	9.90298	0.0626789	0.19073636	2.9889161	20	8 24.4	18.7
62904 2000 UZ_{106}	14.8	X	229.89174	28.98519	77.70732	11.17779	0.0632529	0.19173804	2.9784972	20	9 18.9	19.3
62905 2000 UQ_{107}	14.6	X	200.09070	51.75678	84.19425	11.83363	0.0549131	0.19133343	2.9826948	20	9 21.9	19.2
62906 2000 UR_{107}	14.4	X	297.47974	222.60641	106.26563	10.06453	0.0626012	0.18298464	3.0727434	20	6 13.8	18.5
62907 2000 UC_{108}	15.7	X	57.78787	8.52801	139.89517	6.66167	0.1106775	0.27375939	2.3490379	20	4 15.8	18.2
62908 2000 UH_{108}	15.1	X	204.93319	192.28804	186.65544	14.33028	0.1053985	0.17720757	3.1391679	20	4 25.8	20.0
62909 2000 UY_{108}	15.8	X	47.97449	26.40371	139.74902	6.39425	0.1404068	0.27270426	2.3550932	20	4 29.4	18.2
62910 2000 UK_{109}	13.4	X	134.98153	4.15894	91.38069	11.13085	0.0693703	0.17484875	3.1673377	20	5 16.4	18.2
62911 2000 UR_{109}	14.3	X	300.09342	192.78036	200.19032	12.21191	0.1387073	0.19010375	2.9955433	20	8 28.3	18.3
62912 2000 UD_{110}	15.2	X	19.04745	223.39859	114.26488	7.15344	0.1732738	0.24615491	2.5215275	20	11 22.7	18.2
62913 2000 UK_{110}	15.3	X	208.77957	95.29211	189.03729	6.24151	0.0257897	0.21443814	2.7644031	20	1 1.8	19.4
62914 2000 VX_{2}	14.3	X	347.03830	326.28819	49.46693	10.36945	0.1065741	0.19437883	2.9514589	20	10 30.8	17.7
62915 2000 VY_{2}	13.8	X	247.73390	333.66563	55.35566	11.57639	0.1202311	0.18141058	3.0904921	20	6 18.1	18.5
62916 2000 VW_{3}	15.4	X	301.82756	264.78534	19.29863	2.62449	0.1448602	0.22995170	2.6386288	20	4 6.7	18.7
62917 2000 VR_{8}	14.2	X	310.68461	174.61727	48.58145	13.76168	0.0547481	0.16945947	3.2341401	20	2 27.5	18.9
62918 2000 VY_{9}	15.0	X	209.83726	248.80876	189.18957	1.39018	0.0603567	0.18393117	3.0621925	20	7 13.9	19.5
62919 2000 VH_{10}	16.0	X	19.34170	352.66224	67.89076	3.60661	0.1786699	0.25640057	2.4538992	20	—	—
62920 2000 VB_{12}	14.4	X	89.98467	33.72680	94.35204	2.91475	0.0816578	0.17355424	3.1830679	20	5 3.7	18.8
62921 2000 VJ_{12}	14.3	X	148.10094	236.76256	62.11354	12.37835	0.1676148	0.20962891	2.8065229	20	—	—
62922 2000 VV_{12}	14.3	X	292.00952	146.37471	90.54959	0.41794	0.0711848	0.16783475	3.2549785	20	2 12.2	18.7
62923 2000 VC_{13}	14.7	X	69.03578	64.12558	208.86200	8.97557	0.0194658	0.19262704	2.9693261	20	9 29.5	18.8
62924 2000 VU_{13}	14.3	X	110.56571	256.58157	184.28819	4.55070	0.0730745	0.17027079	3.2238583	20	3 29.6	19.0
62925 2000 VE_{14}	14.4	X	208.31694	180.54942	145.05611	2.03581	0.1737202	0.17168483	3.2061322	20	2 23.4	19.6
62926 2000 VK_{14}	15.0	X	18.89711	117.07576	89.19038	4.90420	0.1856733	0.27518847	2.3408984	20	5 5.1	16.6
62927 2000 VT_{14}	14.8	X	324.77974	343.34655	67.49754	12.94473	0.0457321	0.19683699	2.9268350	20	11 11.7	18.6
62928 2000 VV_{14}	15.5	X	162.44139	232.91735	202.46202	8.23797	0.0996329	0.22721514	2.6597728	20	5 20.6	19.6
62929 2000 VO_{15}	15.4	X	164.33192	207.65382	186.29173	2.02664	0.0974420	0.22266084	2.6959189	20	3 29.9	19.5
62930 2000 VP_{15}	14.5	X	102.57858	167.24218	58.46581	10.77090	0.0537178	0.18986644	2.9980388	20	9 22.4	19.0
62931 2000 VJ_{16}	14.9	X	198.62724	344.20440	64.01706	8.25960	0.1001431	0.27923634	2.3182206	20	5 22.7	18.0
62932 2000 VF_{18}	13.9	X	84.53629	102.57250	93.86559	9.08426	0.0958088	0.18140790	3.0905226	20	7 25.2	18.3
62933 2000 VR_{21}	15.4	X	315.07151	173.96029	64.27483	3.16471	0.1692495	0.27264991	2.3554062	20	2 15.9	18.2
62934 2000 VS_{21}	14.5	X	356.15255	179.56957	57.62777	6.30733	0.0783596	0.17695736	3.1421262	20	5 8.9	18.5
62935 2000 VP_{22}	15.9	X	114.35562	168.24829	349.52615	1.94900	0.1604539	0.28076896	2.3097766	20	7 22.4	19.1
62936 2000 VF_{23}	13.8	X	31.98888	160.57764	40.91034	7.65284	0.0851491	0.17643043	3.1483793	20	5 16.2	17.8
62937 2000 VG_{23}	16.0	X	98.99419	183.16309	140.78394	3.05678	0.2219512	0.25646224	2.4535058	20	—	—
62938 2000 VJ_{23}	15.2	X	152.12816	218.04285	244.45077	4.16851	0.1115958	0.27946270	2.3169686	20	6 14.0	18.4
62939 2000 VP_{23}	15.2	X	240.98988	93.73855	235.59243	3.12809	0.1394275	0.22646774	2.6656215	20	3 24.3	19.2
62940 2000 VS_{23}	15.4	X	306.13453	286.48382	38.69070	7.87502	0.2022427	0.23583959	2.5945273	20	5 29.9	18.5
62941 2000 VB_{24}	14.7	X	135.57172	57.93728	251.91220	2.96282	0.1921373	0.20923143	2.8100762	20	—	—
62942 2000 VC_{25}	14.8	X	305.51971	151.93898	176.08497	0.95503	0.1218366	0.23400125	2.6080981	20	6 16.6	17.8
62943 2000 VY_{25}	14.3	X	338.04269	254.09618	37.24077	10.34255	0.1206450	0.18428759	3.0582430	20	6 17.9	18.1
62944 2000 VF_{28}	14.7	X	93.07444	294.86864	71.06330	13.46515	0.1319138	0.20853661	2.8163146	20	—	—
62945 2000 VH_{28}	15.2	X	113.84155	294.92310	84.54313	8.04072	0.0907595	0.26322932	2.4112739	20	1 6.7	18.1
62946 2000 VG_{30}	14.4	X	140.57235	138.82090	226.17266	12.26426	0.2052729	0.21418419	2.7665877	20	2 5.4	19.0
62947 2000 VV_{31}	14.0	X	228.14050	7.43623	59.83102	11.00578	0.1300562	0.18275617	3.0753038	20	7 15.8	18.8
62948 2000 VE_{32}	14.1	X	317.54228	335.65488	70.23531	10.38297	0.0447432	0.19368825	2.9584702	20	10 27.1	18.1
62949 2000 VS_{33}	14.0	X	310.71233	64.95772	74.27111	15.88632	0.1010120	0.20373022	2.8604371	20	—	—
62950 2000 VD_{34}	13.3	X	206.69002	301.52270	71.75418	23.42340	0.1359852	0.17445096	3.1721507	20	4 27.4	18.6
62951 2000 VE_{34}	15.0	X	298.48473	115.70227	221.11524	7.65341	0.1614888	0.23345890	2.6121358	20	6 11.4	18.1
62952 2000 VV_{34}	14.7	X	298.66941	301.77308	70.72731	13.39132	0.2747605	0.23898075	2.5717423	20	7 15.6	17.6
62953 2000 VR_{35}	14.5	X	20.67414	264.35813	73.37227	10.60427	0.0669439	0.19329538	2.9624776	20	10 30.1	18.5
62954 2000 VD_{36}	13.4	X	153.30223	14.01463	113.56956	16.20253	0.1062841	0.17573061	3.1567325	20	7 14.5	18.3
62955 2000 VZ_{36}	15.2	X	41.87409	348.39313	130.35889	7.26822	0.1061612	0.26106937	2.4245553	20	2 1.9	17.4
62956 2000 VK_{37}	15.3	X	250.05587	129.47944	253.65770	5.19154	0.1415620	0.28075184	2.3098705	20	6 13.0	18.2
62957 2000 VR_{37}	15.4	X	148.21755	314.60614	110.29009	3.40724	0.2133335	0.27116645	2.3639888	20	4 28.7	19.2
62958 2000 VX_{37}	13.6	X	227.78836	300.72176	99.50101	18.81796	0.1597064	0.17633753	3.1494851	20	6 9.8	18.7
62959 2000 VV_{39}	14.3	X	167.65510	91.69106	319.56036	3.35471	0.1413735	0.12611254	3.9381948	20	4 27.6	20.5
62960 2000 VP_{40}	15.5	X	45.92022	315.03651	358.90895	0.93464	0.1085171	0.19820058	2.9133954	20	11 5.8	19.5

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	m		°	°	°	°		°				
62961 2000 VO_{42}	15.6	X	309.25197	234.18986	240.15737	4.97141	0.0944256	0.25340819	2.4731794	20	—	—
62962 2000 VA_{43}	14.0	X	230.99516	267.40105	26.65681	12.78343	0.0981076	0.16914424	3.2381571	20	2 16.0	19.2
62963 2000 VW_{43}	15.5	X	36.37929	325.22332	321.03210	3.39961	0.1613518	0.24296464	2.5435523	20	10 3.0	18.6
62964 2000 VE_{44}	15.6	X	350.81646	304.05617	350.76403	3.11426	0.3027846	0.23998674	2.5645502	20	7 27.1	16.7
62965 2000 VH_{44}	15.4	X	73.46116	8.71767	302.65655	1.02110	0.0880062	0.20186237	2.8780553	20	12 3.4	19.6
62966 2000 VB_{45}	14.8	X	139.52892	285.02154	224.98366	10.32756	0.2465952	0.18198929	3.0839370	20	7 31.7	20.3
62967 2000 VM_{45}	15.6	X	36.08168	121.87583	29.48976	6.54389	0.0893422	0.27141034	2.3625724	20	3 10.5	18.0
62968 2000 VD_{48}	14.5	X	39.26146	77.89795	246.66920	9.51127	0.1501780	0.19647265	2.9304523	20	11 16.0	18.5
62969 2000 VN_{49}	14.7	X	252.18791	338.48997	35.19343	0.62072	0.1844536	0.18112064	3.0937894	20	5 28.0	19.5
62970 2000 VY_{49}	15.9	X	112.70114	56.98683	55.50913	2.84586	0.1573429	0.27274394	2.3548648	20	5 18.2	19.1
62971 2000 VZ_{49}	14.6	X	204.67104	84.08225	10.00889	0.99683	0.1816335	0.18128708	3.0918955	20	7 21.1	19.5
62972 2000 VU_{50}	14.9	X	118.95839	294.82997	53.83199	9.82635	0.1732551	0.20959885	2.8067913	20	—	—
62973 2000 VP_{51}	15.1	X	200.14272	18.08736	111.24758	6.65269	0.0134782	0.19112598	2.9848527	20	9 13.5	19.3
62974 2000 VA_{52}	14.4	X	138.79972	272.50487	266.12344	8.32077	0.0811062	0.18809181	3.0168667	20	8 27.4	19.2
62975 2000 VB_{52}	15.7	X	307.17763	354.08829	308.15840	4.64068	0.2810576	0.23427797	2.6060440	20	4 14.0	18.9
62976 2000 VO_{52}	15.2	X	25.24394	329.26261	308.75720	3.69235	0.2210013	0.23991277	2.5650774	20	9 12.9	17.9
62977 2000 VS_{52}	14.5	X	324.03094	318.02763	8.18304	6.32752	0.0514697	0.18517795	3.0484321	20	7 20.7	18.5
62978 2000 VW_{52}	14.3	X	339.48518	38.65760	252.38532	14.35885	0.1199444	0.23416932	2.6068501	20	6 22.1	17.0
62979 2000 VZ_{52}	15.4	X	254.42083	14.67811	267.62857	8.79306	0.1342185	0.27152449	2.3619102	20	2 2.9	19.0
62980 2000 VT_{53}	15.1	X	54.61383	324.13354	315.71350	4.02416	0.1073347	0.24252217	2.5466451	20	10 10.5	18.4
62981 2000 VK_{56}	14.7	X	317.05559	346.85558	30.35898	4.65386	0.0400323	0.19006588	2.9959411	20	9 17.2	18.7
62982 2000 VW_{58}	14.5	X	331.59264	264.74036	77.52636	14.01527	0.1908112	0.23464882	2.6032975	20	8 29.9	17.2
62983 2000 VB_{59}	15.1	X	173.60659	59.58193	242.41678	4.49743	0.1112460	0.21274963	2.7790104	20	—	—
62984 2000 VV_{59}	13.5	X	325.84872	51.29029	235.62750	14.97665	0.0236646	0.17838174	3.1253773	20	6 1.9	17.7
62985 2000 VX_{60}	14.6	X	346.61167	26.85876	220.06114	4.75644	0.0854061	0.17773854	3.1329128	20	5 6.3	18.5
62986 2000 WM	15.6	X	252.46853	214.37692	132.96759	7.57460	0.1479014	0.28149974	2.3057775	20	4 29.7	19.0
62987 2000 WP_{1}	14.6	X	27.06699	303.92939	58.41444	12.85584	0.1902947	0.25501396	2.4627864	20	—	—
62988 2000 WB_{2}	14.2	X	331.54165	351.58947	202.26828	10.92385	0.0352160	0.17172267	3.2056613	20	2 10.2	18.9
62989 2000 WC_{2}	13.5	X	232.07728	133.93322	273.92849	12.26475	0.1177189	0.18197033	3.0841512	20	6 25.6	18.2
62990 2000 WM_{2}	14.2	X	130.87384	85.49412	80.06569	15.28960	0.1227636	0.18536747	3.0463540	20	8 13.5	19.2
62991 2000 WG_{7}	15.5	X	246.59108	224.11190	106.38716	7.44303	0.2289331	0.27867859	2.3213127	20	3 25.9	19.3
62992 2000 WY_{9}	14.5	X	316.72913	241.97246	129.67023	1.31828	0.0924875	0.18808555	3.0169336	20	9 4.0	18.2
62993 2000 WL_{12}	14.2	X	267.99651	246.15711	111.65844	13.58295	0.1328326	0.23225688	2.6211406	20	6 4.1	17.9
62994 2000 WZ_{14}	14.8	X	305.29315	288.93327	53.79856	9.71883	0.1526284	0.18414205	3.0598542	20	6 30.3	18.7
62995 2000 WD_{16}	14.7	X	273.43742	240.06435	54.61786	10.55137	0.2087166	0.22497732	2.6773813	20	3 14.3	18.9
62996 2000 WG_{16}	16.1	X	315.98001	27.24059	54.99609	6.17642	0.0967635	0.29905908	2.2146140	20	—	—
62997 2000 WD_{17}	15.0	X	205.69790	87.62428	351.65967	0.61590	0.1567713	0.18023039	3.1039689	20	7 5.1	20.0
62998 2000 WK_{18}	13.6	X	134.48256	353.05750	81.17874	9.51831	0.0973641	0.17143439	3.2092539	20	4 23.5	18.5
62999 2000 WK_{19}	14.6	X	204.00351	192.53500	155.40802	13.98977	0.3164092	0.22497769	2.6773784	20	3 12.9	19.6
63000 2000 WZ_{20}	14.6	X	203.55789	188.89223	270.32666	5.80450	0.1011382	0.17979701	3.1089548	20	7 29.5	19.5
63001 2000 WW_{21}	15.0	X	253.95397	270.07509	79.19238	12.33150	0.1862227	0.23191656	2.6237042	20	5 2.2	19.1
63002 2000 WH_{22}	14.0	X	223.77350	257.57029	202.22943	10.61292	0.1170284	0.18758262	3.0223238	20	8 17.9	18.8
63003 2000 WY_{22}	14.6	X	253.35798	163.87972	195.03569	10.89361	0.1348937	0.18090046	3.0962993	20	5 18.1	19.3
63004 2000 WA_{23}	14.7	X	7.17536	143.85086	208.96644	11.43006	0.0646141	0.19483265	2.9468739	20	10 27.2	18.6
63005 2000 WF_{23}	14.2	X	1.20313	178.62545	96.41872	12.39004	0.0280099	0.18220464	3.0815065	20	7 4.8	18.3
63006 2000 WE_{24}	14.5	X	276.07726	173.11629	187.79741	8.79449	0.2199014	0.18314267	3.0709755	20	6 3.8	19.0
63007 2000 WF_{30}	13.8	X	215.98695	278.61952	69.85577	21.34106	0.0952252	0.17392535	3.1785383	20	4 10.3	19.0
63008 2000 WH_{31}	14.2	X	118.35222	4.12305	147.65145	6.16131	0.1348665	0.17736767	3.1372785	20	7 10.4	19.0
63009 2000 WH_{32}	13.8	X	47.37021	302.38781	84.48112	16.08475	0.1516960	0.20455344	2.8527576	20	—	—
63010 2000 WQ_{33}	14.5	X	291.51664	283.74021	95.32954	15.71503	0.0223738	0.18537778	3.0462410	20	8 19.4	18.9
63011 2000 WZ_{36}	15.7	X	228.59406	352.03282	130.44477	5.94008	0.0907809	0.29008867	2.2600369	20	10 16.2	18.5
63012 2000 WU_{37}	15.6	X	205.72992	177.40061	107.46794	7.22627	0.1015034	0.26297158	2.4128492	20	—	—
63013 2000 WO_{38}	15.3	X	242.67525	135.68014	162.98666	6.58451	0.1194781	0.27006583	2.3704072	20	2 14.8	18.7
63014 2000 WJ_{39}	15.0	X	17.45628	153.38760	131.50310	5.83696	0.1289889	0.28528999	2.2853095	20	9 5.4	17.2
63015 2000 WK_{39}	13.6	X	17.85472	116.97443	94.68982	18.42211	0.0389027	0.17246292	3.1964818	20	5 13.3	18.2
63016 2000 WE_{40}	14.3	X	335.73315	268.78387	103.60167	12.24461	0.1152610	0.19092855	2.9869099	20	10 12.4	18.1
63017 2000 WB_{41}	14.5	X	321.04503	245.52630	182.17778	7.12280	0.1650635	0.24564469	2.5250179	20	12 12.9	16.9
63018 2000 WO_{41}	13.6	X	31.57717	113.12961	104.50868	19.97788	0.0484992	0.17398954	3.1777566	20	6 6.7	18.0
63019 2000 WY_{41}	15.2	X	178.54722	268.26973	71.52981	5.18759	0.1140098	0.21926022	2.7237223	20	2 10.2	19.5
63020 2000 WW_{44}	15.8	X	121.86495	46.91715	135.19434	1.74587	0.1655325	0.28480831	2.2878854	20	9 1.6	19.1
63021 2000 WK_{46}	14.8	X	344.02849	133.25603	219.85305	7.95163	0.1263602	0.19168779	2.9790176	20	9 21.5	18.3
63022 2000 WV_{46}	14.2	X	348.24563	66.66967	162.63980	5.43792	0.0811124	0.17283155	3.1919349	20	4 17.9	18.3
63023 2000 WB_{48}	15.0	X	345.25537	94.81220	190.31459	4.94918	0.0974658	0.27942998	2.3171495	20	6 27.9	17.3
63024 2000 WH_{48}	15.0	X	126.10020	273.14611	116.38684	8.63256	0.2331261	0.21485045	2.7608652	20	3 1.7	19.4
63025 2000 WC_{52}	14.7	X	63.95298	125.86402	64.82579	2.86572	0.0736245	0.17729245	3.1381658	20	6 16.5	19.0
63026 2000 WF_{54}	15.0	X	92.76686	323.04251	257.18440	5.20241	0.1184515	0.28808187	2.2705205	20	9 14.6	18.2
63027 2000 WL_{56}	15.6	X	325.47790	58.52496	64.36474	5.40632	0.0662447	0.30644912	2.1788657	20	—	—
63028 2000 WF_{57}	14.1	X	259.08582	277.74532	78.44710	10.95459	0.0772657	0.17937996	3.1137717	20	5 28.0	18.6
63029 2000 WH_{57}	13.9	X	124.38999	92.56483	80.21889	16.75656	0.0414784	0.18276126	3.0752466	20	8 8.4	18.6
63030 2000 WK_{58}	15.0	X	316.74190	260.58543	109.44507	2.68731	0.1787750	0.18805245	3.0172877	20	8 25.1	18.3
63031 2000 WC_{62}	14.4	X	321.07675	252.24837	116.37867	11.76353	0.1149236	0.19097893	2.9863847	20	9 9.7	18.1
63032 Billschmitt	13.6	X	223.55162	241.17668	159.81159	16.47344	0.2302359	0.18172084	3.0869734	20	6 2.6	19.1
63033 2000 WM_{65}	14.9	X	169.95920	231.08187	29.33452	8.14283	0.1817011	0.21061207	2.7977820	20	—	—
63034 2000 WV_{67}	14.6	X	200.79049	71.98630	22.15475	12.13763	0.1161849	0.17912739	3.1166980	20	7 24.3	19.7
63035 2000 WX_{67}	14.4	X	333.33783	313.02670	6.95676	10.23795	0.0787691	0.18386658	3.0629096	20	7 26.3	18.4
63036 2000 WL_{69}	14.9	X	259.69979	272.38987	3.26281	13.07533	0.2430100	0.22319335	2.6916291	20	2 4.2	19.5
63037 2000 WB_{70}	15.6	X	305.25107	69.99061	340.10469	6.50989	0.0975477	0.29513074	2.2342225	20	10 28.7	17.7
63038 2000 WP_{70}	14.1	X	222.16985	157.33009	269.90989	9.59779	0.0762784	0.18396262	3.0618435	20	7 12.3	18.6
63039 2000 WS_{71}	14.2	X	301.84956	344.31980	271.00885	10.87362	0.0484851	0.17223549	3.1992950	20	3 13.9	18.9
63040 2000 WT_{74}	14.4	X	31.96731	195.80877	39.28356	10.13837	0.0560775	0.18086011	3.0967598	20	6 27.6	18.6

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
	m		°	°	°	°		°				
63041 2000 WH_{77}	14.9	X	174.62499	157.92820	326.86855	4.30354	0.1367100	0.18279401	3.0748793	20	8 2.0	19.7
63042 2000 WP_{79}	15.1	X	77.83372	288.88041	15.05348	2.50516	0.0595283	0.19729064	2.9223467	20	11 24.6	19.3
63043 2000 WZ_{83}	15.3	X	259.95449	42.03157	272.88153	5.69524	0.1116872	0.27599575	2.3363314	20	3 23.5	18.5
63044 2000 WR_{86}	15.6	X	220.67519	340.36637	12.56237	2.20104	0.2199581	0.27345451	2.3507836	20	3 28.9	19.5
63045 2000 WO_{91}	14.2	X	357.40806	196.46512	70.05167	6.43935	0.1244459	0.17949919	3.1123927	20	6 18.3	17.9
63046 2000 WJ_{93}	14.5	X	180.47444	122.08271	297.89837	0.74295	0.0945833	0.17513502	3.1638852	20	5 19.3	19.5
63047 2000 WQ_{93}	15.6	X	354.65231	30.79383	323.10873	0.93931	0.0656379	0.24191338	2.5509158	20	10 19.6	18.4
63048 2000 WU_{94}	14.4	X	177.27886	329.44518	67.78710	14.47176	0.1068913	0.17194934	3.2028435	20	4 23.9	19.5
63049 2000 WC_{95}	14.8	X	347.93373	346.16281	51.84166	2.57591	0.1123669	0.19625741	2.9325945	20	11 29.6	18.2
63050 2000 WG_{96}	13.8	X	51.34711	1.30674	72.33264	11.19498	0.0915157	0.15789603	3.3901734	20	1 9.6	18.3
63051 2000 WR_{96}	15.1	X	295.35770	240.65868	90.29005	3.58269	0.2869745	0.23322621	2.6138730	20	5 9.2	18.5
63052 2000 WB_{98}	15.1	X	299.87872	278.72869	68.77436	4.74352	0.2252642	0.23418148	2.6067598	20	6 17.9	18.1
63053 2000 WU_{99}	15.5	X	250.32561	54.55362	308.83749	2.39959	0.1369797	0.22882816	2.6472588	20	5 17.4	19.4
63054 2000 WG_{100}	14.6	X	56.69258	68.70804	71.91161	6.28436	0.0398399	0.21767611	2.7369206	20	3 30.2	18.2
63055 2000 WP_{107}	14.6	X	263.67356	182.45553	351.74916	5.83902	0.0089427	0.20455358	2.8527562	20	—	—
63056 2000 WQ_{110}	13.7	X	229.65471	282.56463	56.45484	16.37473	0.1057473	0.17289542	3.1911488	20	4 7.9	18.8
63057 2000 WB_{112}	15.3	X	297.17231	308.82823	15.35823	5.49431	0.1462889	0.28166528	2.3048739	20	5 22.8	17.8
63058 2000 WC_{112}	14.9	X	341.03053	275.55099	282.65968	8.03680	0.0588921	0.21651144	2.7467270	20	2 19.5	18.6
63059 2000 WA_{118}	14.7	X	334.21399	291.34076	64.18340	11.99762	0.2851586	0.24039174	2.5616690	20	9 30.5	16.5
63060 2000 WD_{118}	14.6	X	356.10896	293.99545	71.33760	15.54166	0.1124673	0.24216882	2.5491217	20	11 15.1	17.5
63061 2000 WH_{118}	14.4	X	16.95364	148.08110	64.42054	10.39416	0.0952442	0.21999516	2.7176528	20	5 8.7	17.5
63062 2000 WL_{118}	14.6	X	79.07862	75.29709	52.07737	7.27033	0.1242045	0.21743750	2.7389226	20	4 23.3	18.0
63063 2000 WU_{120}	14.6	X	79.14473	110.92405	66.96605	12.48197	0.1186862	0.22197132	2.7014990	20	6 28.1	18.3
63064 2000 WC_{121}	14.5	X	254.82666	250.73774	63.32105	3.03803	0.1103171	0.17297835	3.1901288	20	3 28.9	19.3
63065 2000 WS_{121}	15.0	X	193.97761	181.96713	129.92723	12.16506	0.1327992	0.21455455	2.7634031	20	1 21.7	19.5
63066 2000 WQ_{122}	14.8	X	72.21071	191.72687	73.87121	10.69764	0.0502260	0.18842654	3.0132928	20	10 5.1	19.2
63067 2000 WZ_{122}	14.0	X	241.76643	247.08236	80.79001	12.81882	0.2840205	0.22288029	2.6941490	20	3 21.7	18.9
63068 Moraes	14.2	X	175.91138	236.82421	216.42623	27.90078	0.2887036	0.17715854	3.1397470	20	6 20.9	20.2
63069 2000 WG_{125}	15.1	X	350.81572	182.53131	152.05807	3.54886	0.0836126	0.18928676	3.0041566	20	9 9.3	18.6
63070 2000 WH_{125}	13.7	X	46.23136	356.09666	233.21815	14.86627	0.2155643	0.18024591	3.1037907	20	7 28.3	18.0
63071 2000 WM_{125}	14.3	X	247.39932	23.09932	267.38749	11.97539	0.0300189	0.16927695	3.2364644	20	2 23.3	19.2
63072 2000 WP_{125}	15.3	X	251.61598	315.02617	56.56873	4.58290	0.2440836	0.28043981	2.3115836	20	5 17.5	18.8
63073 2000 WQ_{125}	15.1	X	56.60964	240.42691	242.57756	9.85463	0.0912535	0.21730464	2.7400388	20	3 4.1	18.6
63074 2000 WU_{125}	13.6	X	301.81332	355.48954	346.59334	8.39982	0.0037687	0.18351171	3.0668570	20	7 15.8	17.9
63075 2000 WC_{126}	14.2	X	327.72164	265.19467	15.44801	14.39793	0.0804533	0.18015219	3.1048672	20	5 17.7	18.4
63076 2000 WV_{127}	14.0	X	225.09287	281.53021	100.78813	10.05307	0.1888966	0.18291599	3.0735121	20	5 15.2	19.1
63077 2000 WT_{128}	15.2	X	194.92445	276.43609	348.17644	3.24274	0.0548529	0.21246307	2.7815086	20	—	—
63078 2000 WC_{130}	13.8	X	210.23469	256.18999	349.80588	11.41463	0.1361474	0.20083857	2.8878279	20	—	—
63079 2000 WY_{130}	15.2	X	14.05941	94.70529	232.15136	4.27279	0.1692406	0.24390804	2.5369893	20	10 27.1	18.0
63080 2000 WW_{132}	13.9	X	47.70941	131.61924	4.41650	15.81921	0.0397263	0.16879401	3.2426348	20	3 15.6	18.3
63081 2000 WP_{133}	14.7	X	34.15735	68.06135	341.81185	7.60985	0.0730451	0.25701405	2.4499928	20	—	—
63082 2000 WU_{133}	14.6	X	52.78794	158.99015	289.64707	8.22544	0.1244375	0.21354821	2.7720779	20	1 20.8	17.8
63083 2000 WG_{134}	13.9	X	286.32557	334.76314	15.45071	11.26114	0.1303249	0.18412887	3.0600002	20	6 14.5	18.2
63084 2000 WP_{134}	14.8	X	329.16721	328.25724	353.74778	8.57010	0.0285468	0.18459161	3.0548841	20	7 24.7	19.0
63085 2000 WM_{135}	14.3	X	193.74118	58.26316	25.39073	12.06490	0.0845426	0.17655327	3.1469188	20	7 2.6	19.3
63086 2000 WQ_{135}	13.6	X	207.73599	316.04646	78.23714	18.05836	0.1478281	0.17320520	3.1873427	20	5 17.0	18.8
63087 2000 WC_{137}	12.9	X	298.49718	233.51579	86.60984	20.96189	0.0052612	0.17891343	3.1191823	20	6 11.5	17.2
63088 2000 WM_{139}	14.1	X	312.73635	192.01355	44.31088	6.60122	0.1240782	0.16975057	3.2304416	20	3 3.6	18.5
63089 2000 WX_{139}	15.3	X	343.44976	97.34536	77.13249	5.75456	0.0564650	0.21538042	2.7563344	20	1 28.4	18.9
63090 2000 WY_{139}	16.6	X	305.37730	233.58054	87.08841	1.12989	0.1607838	0.28418639	2.2912222	20	5 30.4	19.0
63091 2000 WZ_{141}	14.3	X	6.45752	33.61727	170.58975	17.52817	0.0229072	0.17437658	3.1730527	20	4 14.7	18.8
63092 2000 WJ_{142}	14.0	X	339.73367	185.69494	142.03686	15.93918	0.2066982	0.19140754	2.9819248	20	8 9.4	16.7
63093 2000 WM_{142}	14.5	X	244.69004	291.60222	104.19209	18.21804	0.0766829	0.18442895	3.0566801	20	6 29.8	19.0
63094 2000 WP_{142}	13.8	X	145.49588	9.14505	161.05269	10.20880	0.0697848	0.18580603	3.0415585	20	8 27.1	18.4
63095 2000 WS_{142}	15.0	X	223.34201	141.71330	179.00505	15.64695	0.1098682	0.22113382	2.7083156	20	2 26.9	19.3
63096 2000 WX_{142}	14.8	X	221.24704	238.55364	131.54270	12.36748	0.2431663	0.22905116	2.6455403	20	4 25.3	19.5
63097 2000 WK_{143}	14.7	X	353.82106	36.14500	233.66628	14.98617	0.1848908	0.18142916	3.0902812	20	6 15.1	18.1
63098 2000 WC_{146}	14.6	X	189.30501	329.48335	142.42685	13.02307	0.0947938	0.18448570	3.0560532	20	7 31.7	19.2
63099 2000 WM_{146}	13.8	X	272.23044	222.22193	151.22477	16.80117	0.2594050	0.18438097	3.0572103	20	6 11.3	18.6
63100 2000 WP_{146}	14.0	X	210.93499	246.79489	152.57663	21.54231	0.0604560	0.17634416	3.1494060	20	5 31.9	19.1
63101 2000 WT_{146}	13.7	X	151.54293	325.38977	80.66831	22.61507	0.0087069	0.22482079	2.6786239	20	4 6.3	17.9
63102 2000 WD_{149}	14.4	X	248.40525	305.26351	103.97285	13.66114	0.0814644	0.18437407	3.0572866	20	7 21.0	18.7
63103 2000 WG_{149}	14.4	X	269.29204	214.44265	111.39458	18.37728	0.1681414	0.18108180	3.0942318	20	4 27.8	19.3
63104 2000 WR_{151}	14.6	X	184.82844	269.23076	94.51054	12.23528	0.2183321	0.22580879	2.6708049	20	3 22.1	19.4
63105 2000 WW_{151}	14.9	X	314.39218	217.70078	182.92668	9.60494	0.1105294	0.19315336	2.9639295	20	10 9.1	18.3
63106 2000 WE_{152}	15.1	X	185.90055	283.25421	118.09257	13.61616	0.2845807	0.22758466	2.6568930	20	5 6.3	20.1
63107 2000 WX_{152}	14.6	X	287.92906	315.24618	4.88876	11.02228	0.1227566	0.18201026	3.0837001	20	5 7.2	19.0
63108 2000 WB_{154}	14.2	X	287.00504	357.54394	356.82024	9.94638	0.0924429	0.18474307	3.0532142	20	6 28.7	18.5
63109 2000 WK_{154}	14.1	X	243.96164	30.95270	354.42410	9.87137	0.0970335	0.18186452	3.0853474	20	6 11.9	18.8
63110 2000 WQ_{158}	14.6	X	322.36878	134.10287	175.28134	9.81060	0.1707427	0.23344423	2.6122453	20	6 12.7	17.5
63111 2000 WG_{161}	14.0	X	153.13996	301.20779	136.35253	11.62119	0.0661704	0.17452009	3.1713129	20	5 15.1	18.9
63112 2000 WS_{161}	14.5	X	231.36395	244.48257	123.01918	9.83778	0.1122370	0.17802584	3.1295413	20	5 9.8	19.4
63113 2000 WB_{163}	14.5	X	16.76384	204.64264	80.04676	11.62037	0.0557888	0.18545677	3.0453760	20	8 14.4	18.6
63114 2000 WA_{164}	15.2	X	45.75517	240.74623	62.13660	5.66068	0.2481432	0.24468591	2.5316096	20	11 21.0	18.7
63115 2000 WH_{165}	15.3	X	323.79077	130.37902	82.64648	8.12510	0.1921830	0.27124314	2.3635432	20	1 20.9	18.2
63116 2000 WT_{165}	14.8	X	134.40257	196.36858	194.32854	13.24517	0.1759338	0.21706854	2.7420253	20	2 28.9	19.2
63117 2000 WJ_{169}	14.3	X	232.62656	314.32841	66.01144	7.17804	0.0766828	0.17770589	3.1332965	20	5 26.8	18.9
63118 2000 WR_{171}	13.1	X	86.13092	64.86997	105.06460	17.43711	0.1664496	0.17805128	3.1292432	20	7 2.2	17.5
63119 2000 WX_{171}	14.4	X	205.49716	350.04129	102.34189	14.43903	0.1284528	0.23682935	2.5872935	20	7 26.5	18.4
63120 2000 WW_{172}	14.6	X	246.46105	314.91609	72.83848	14.20415	0.1878859	0.22867937	2.6484070	20	6 8.4	18.7

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Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
	m		°	°	°	°		°				
63121 2000 WL_{173}	13.7	X	152.66396	347.94202	111.84247	16.63425	0.0476842	0.17218378	3.1999355	20	6 8.9	18.6
63122 2000 WR_{173}	15.1	X	287.99283	237.84764	82.02432	14.05590	0.1694704	0.23308424	2.6149342	20	5 6.6	18.7
63123 2000 WB_{174}	14.8	X	274.34590	232.43509	165.83874	11.59491	0.0940278	0.18738148	3.0244862	20	8 5.4	19.1
63124 2000 WK_{174}	13.9	X	170.98126	37.42194	121.88033	10.53741	0.0733647	0.18895166	3.0077073	20	9 14.4	18.5
63125 2000 WV_{174}	13.9	X	30.68800	338.28383	202.85421	16.59929	0.0832536	0.17078955	3.2173269	20	4 19.2	18.1
63126 2000 WV_{181}	14.6	X	307.43200	202.26963	96.33796	33.95570	0.1736804	0.23192346	2.6236522	20	5 17.2	18.4
63127 2000 WW_{181}	15.6	X	295.89512	204.39186	159.97325	14.00390	0.1979876	0.23829618	2.5766652	20	7 10.2	18.7
63128 2000 WD_{182}	14.7	X	201.68751	288.11219	150.54711	16.82397	0.1194924	0.17960711	3.1111458	20	7 2.5	19.8
63129 Courtemanche	15.4	X	347.84044	349.06487	78.10808	3.25784	0.0548787	0.20092746	2.8869761	20	—	—
63130 2000 WA_{184}	15.8	X	294.90350	239.53810	301.71351	6.16084	0.0532873	0.25994714	2.4315285	20	—	—
63131 2000 WG_{186}	15.3	X	313.07672	13.04518	224.76806	11.11986	0.0949814	0.27034482	2.3687761	20	2 18.1	18.5
63132 2000 WF_{188}	14.8	X	161.38282	37.98336	83.53045	3.02109	0.0254449	0.18308407	3.0716307	20	7 13.9	19.1
63133 2000 WH_{188}	14.6	X	65.11886	7.61694	25.60062	13.99148	0.2596783	0.21365517	2.7711526	20	—	—
63134 2000 WU_{190}	15.9	X	71.85356	261.74800	186.15987	1.18192	0.0671675	0.21574184	2.7532551	20	2 11.5	19.2
63135 2000 WX_{190}	15.4	X	144.29583	212.43725	62.43250	14.92543	0.2241619	0.25823361	2.4422730	20	—	—
63136 2000 WD_{191}	14.1	X	261.92670	289.77535	101.67834	12.06734	0.1745271	0.18612289	3.0381056	20	7 1.5	18.4
63137 2000 WM_{191}	14.7	X	72.03472	75.22213	183.76022	7.72897	0.1771181	0.24228444	2.5483106	20	10 16.8	18.4
63138 2000 WQ_{191}	14.5	X	150.07092	350.94125	99.13416	10.16889	0.0743611	0.17690146	3.1427882	20	5 25.9	19.3
63139 2000 WR_{191}	14.7	X	301.17802	214.42173	178.89814	9.60459	0.0829577	0.19124667	2.9835967	20	9 9.1	18.4
63140 2000 WT_{191}	15.1	X	301.62502	232.01788	116.32316	10.09934	0.1648302	0.23749483	2.5824580	20	7 3.0	17.9
63141 2000 WD_{192}	13.9	X	148.34087	273.35583	149.51739	15.08085	0.1748377	0.17327367	3.1865030	20	4 30.2	19.3
63142 2000 XZ	15.4	X	300.66687	305.03957	248.91556	18.56657	0.0611113	0.35486128	1.9758940	20	—	—
63143 2000 XS_{1}	15.2	X	345.44621	286.82675	92.17250	9.54156	0.0691972	0.24167432	2.5525977	20	11 12.6	18.3
63144 2000 XQ_{3}	14.2	X	250.24642	0.10146	33.25228	18.64641	0.1846140	0.18344277	3.0676253	20	6 17.2	19.2
63145 Choemuseon	14.7	X	285.02270	198.27503	92.69830	2.31287	0.1598647	0.17312351	3.1883453	20	3 28.2	19.3
63146 2000 XM_{14}	13.6	X	120.72096	17.75939	87.45701	11.17153	0.1072918	0.17011105	3.2258762	20	5 16.3	18.5
63147 2000 XF_{19}	14.4	X	264.77850	359.34441	357.55471	8.77254	0.0738232	0.18013349	3.1050820	20	6 2.9	18.9
63148 2000 XQ_{19}	14.3	X	354.23945	340.16637	12.69248	9.56655	0.0640101	0.19206471	2.9751189	20	10 7.5	18.2
63149 2000 XM_{22}	13.7	X	176.23509	346.60515	47.80663	15.35548	0.0393716	0.17127489	3.2112460	20	4 16.9	18.5
63150 2000 XH_{23}	14.1	X	234.32595	287.63668	40.88958	13.81601	0.1107227	0.17148759	3.2085902	20	3 28.9	19.1
63151 2000 XR_{23}	14.4	X	311.06586	279.47397	32.11189	12.87766	0.0776281	0.17951272	3.1122363	20	6 5.3	18.7
63152 2000 XC_{27}	14.2	X	268.69342	306.87295	51.24062	17.01497	0.2345616	0.23133269	2.6281171	20	5 18.5	18.1
63153 2000 XF_{28}	15.5	X	215.58342	39.08984	347.51186	6.41472	0.1348545	0.27640935	2.3340002	20	5 7.8	19.1
63154 2000 XR_{37}	14.4	X	228.00390	52.98126	20.69798	14.74805	0.1546884	0.18016324	3.1047401	20	7 24.4	19.5
63155 2000 XZ_{39}	13.9	X	205.01051	50.95360	338.45297	16.65498	0.1855315	0.17673724	3.1447346	20	4 26.4	19.4
63156 Yicheon	14.4	X	277.32267	259.62698	83.85860	10.49480	0.0975654	0.17885328	3.1198816	20	5 31.6	18.6
63157 2000 YL_{2}	13.8	X	248.02136	261.26562	61.55681	10.89541	0.2689674	0.28360305	2.2943629	20	3 16.8	17.8
63158 2000 YA_{4}	16.1	X	116.69968	325.98206	207.75863	1.31693	0.0183206	0.22849104	2.6498620	20	7 27.8	19.7
63159 2000 YF_{6}	14.4	X	288.61621	290.12716	64.29957	11.37831	0.1390178	0.18173417	3.0868225	20	6 22.4	18.5
63160 2000 YN_{8}	15.8	X	118.32436	206.87996	112.05082	7.76661	0.2549624	0.30516066	2.1849945	20	—	—
63161 2000 YZ_{10}	14.6	X	139.41405	195.19487	355.04282	7.54039	0.2070667	0.18175819	3.0865506	20	9 19.2	19.7
63162 Davidčapek	13.8	X	218.11533	294.37650	84.16273	17.47052	0.1592720	0.17588782	3.1548511	20	5 9.0	19.1
63163 Jerusalem	14.2	X	199.89517	22.11848	109.27318	25.18456	0.2085438	0.28442059	2.2899642	20	9 15.8	18.2
63164 2000 YU_{14}	15.8	X	329.68389	315.63128	22.16451	3.33016	0.3067799	0.28768812	2.2725918	20	8 14.6	16.1
63165 2000 YY_{14}	14.2	X	103.06349	14.58880	245.81310	8.93934	0.0478390	0.19300356	2.9654629	20	10 28.4	18.5
63166 2000 YW_{17}	14.4	X	248.08264	303.26410	105.40014	11.14840	0.1024835	0.18508053	3.0495018	20	7 16.9	18.8
63167 2000 YY_{17}	14.9	X	41.09308	219.17039	141.71598	7.82864	0.1686949	0.25338178	2.4733513	20	—	—
63168 2000 YH_{20}	16.1	X	317.61464	358.80803	208.83611	1.63032	0.0396175	0.26545119	2.3977999	20	1 28.3	19.1
63169 2000 YM_{31}	15.8	X	355.86440	5.06374	318.99751	3.63032	0.1407311	0.23234391	2.6204860	20	9 12.6	18.4
63170 2000 YE_{33}	15.6	X	151.85525	245.88380	84.50209	4.05556	0.2184470	0.30657783	2.1782558	20	—	—
63171 2000 YU_{40}	14.9	X	47.32664	290.07764	180.58812	1.01675	0.0814256	0.21122020	2.7924094	20	2 7.5	18.3
63172 2000 YN_{41}	14.0	X	290.71700	187.51937	111.93412	16.70962	0.0854391	0.17041160	3.2220821	20	5 1.7	18.8
63173 2000 YX_{52}	14.7	X	4.15600	54.89558	103.02312	9.63735	0.0363246	0.21028719	2.8006629	20	2 7.8	18.4
63174 2000 YB_{55}	15.6	X	68.07856	322.87574	70.70993	2.24596	0.0985616	0.30488416	2.1863154	20	—	—
63175 2000 YS_{55}	12.4	X	272.37982	185.10546	249.04192	5.32615	0.0122871	0.08603698	5.0817421	20	9 14.9	19.2
63176 2000 YN_{59}	12.4	X	228.32313	188.83755	315.19936	2.81211	0.0136652	0.08638599	5.0680454	20	10 14.9	19.2
63177 2000 YJ_{63}	13.9	X	141.13788	346.02654	115.40540	13.81436	0.1320641	0.16982522	3.2294948	20	6 3.9	19.1
63178 2000 YJ_{69}	14.4	X	165.54171	320.61001	112.92867	4.94986	0.1602380	0.17483424	3.1675128	20	5 23.8	19.5
63179 2000 YZ_{77}	14.6	X	342.07237	270.52022	111.68572	11.83048	0.0978034	0.19212527	2.9744937	20	11 3.3	18.4
63180 2000 YK_{81}	14.3	X	323.59446	239.53454	81.23668	10.60129	0.0747594	0.18204802	3.0832737	20	7 9.2	18.4
63181 2000 YN_{81}	13.7	X	340.73781	142.93631	98.45443	10.64507	0.1417384	0.17125876	3.2114477	20	4 20.8	17.8
63182 2000 YM_{84}	15.2	X	337.74627	249.60329	114.43665	8.86902	0.1422823	0.24012800	2.5635444	20	10 15.0	17.9
63183 2000 YK_{88}	13.9	X	88.29819	51.74275	105.67347	6.30966	0.0725442	0.17226409	3.1989409	20	6 6.1	18.4
63184 2000 YL_{91}	12.8	X	297.63598	221.49448	102.02988	9.40122	0.1433189	0.12462985	3.9693678	20	5 27.5	18.2
63185 2000 YW_{93}	15.0	X	266.39850	246.60196	195.01771	1.52706	0.0841681	0.18831692	3.0144620	20	9 22.9	19.1
63186 2000 YB_{94}	14.9	X	203.02611	313.87424	57.52702	1.22654	0.1915286	0.17191654	3.2032507	20	4 11.5	20.1
63187 2000 YJ_{94}	15.5	X	326.35283	258.00906	244.85501	2.06917	0.0943333	0.20282383	2.8689528	20	—	—
63188 2000 YE_{96}	15.4	X	183.07305	350.92002	143.59753	1.78946	0.1793274	0.18112585	3.0937301	20	8 19.9	20.4
63189 2000 YC_{97}	14.6	X	95.29778	257.70935	117.58443	15.67348	0.1635316	0.20464466	2.8519097	20	—	—
63190 2000 YB_{103}	14.3	X	250.06583	351.13222	145.76637	15.52157	0.0731212	0.18999155	2.9967225	20	11 16.9	18.8
63191 2000 YP_{106}	15.7	X	275.20944	11.27666	341.54334	2.03073	0.1261449	0.23064288	2.6333546	20	6 4.9	19.2
63192 2000 YZ_{107}	15.0	X	300.47044	157.08719	66.33438	3.80573	0.0151113	0.21154812	2.7895229	20	2 9.3	18.9
63193 2000 YY_{118}	12.6	X	237.20805	24.20045	101.01341	10.77883	0.0982659	0.08529211	5.1112855	20	9 30.5	19.7
63194 2000 YB_{120}	14.2	X	224.38941	259.02729	129.14072	12.41569	0.0132147	0.18010825	3.1053721	20	6 4.7	18.8
63195 2000 YN_{120}	11.5	X	216.28000	172.87071	325.54860	18.92693	0.0455602	0.08287528	5.2101799	20	9 16.8	18.7
63196 2000 YY_{121}	14.7	X	107.87022	231.07834	106.60194	15.73891	0.1431186	0.21076281	2.7964479	20	—	—
63197 2000 YP_{122}	13.8	X	262.79934	289.67359	126.51773	11.78930	0.1499272	0.18628610	3.0363307	20	8 7.2	18.1
63198 2000 YY_{122}	14.2	X	267.92544	254.96211	133.80516	10.86457	0.0934833	0.18339900	3.0681134	20	7 16.6	18.5
63199 2000 YJ_{123}	15.5	X	274.49969	85.00003	106.04606	17.67783	0.1888865	0.19982598	2.8975754	20	—	—
63200 2000 YE_{124}	13.7	X	312.93980	161.61520	72.96495	23.52779	0.0282845	0.16863487	3.2446744	20	3 25.5	18.7

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Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
	m		°	°	°	°		°				
63201 2000 YH_{129}	14.5	X	137.57639	103.85751	75.65765	2.14542	0.0841656	0.17976127	3.1093669	20	8 31.7	19.1
63202 2000 YR_{131}	12.3	X	286.06355	338.79800	99.96186	1.98541	0.0786043	0.08479700	5.1311618	20	9 30.7	18.9
63203 2000 YA_{132}	15.2	X	151.13366	207.61982	104.66255	3.15913	0.0585783	0.20089106	2.8873248	20	—	—
63204 2000 YE_{135}	14.2	X	164.31081	67.15569	113.82245	9.75419	0.0261284	0.19078272	2.9884319	20	10 6.2	18.6
63205 2000 YG_{139}	12.5	X	228.51393	350.06470	136.99495	4.27432	0.0478503	0.08584291	5.0893982	20	9 25.2	19.4
63206 2000 YF_{143}	14.9	X	122.40314	220.82208	227.96473	11.23650	0.2077947	0.21652356	2.7466244	20	5 4.3	19.1
63207 2001 AK_{6}	16.1	X	247.24993	160.95065	213.96586	6.32390	0.1248454	0.27792442	2.3255102	20	5 31.6	19.2
63208 2001 AJ_{10}	14.6	X	173.08719	0.40671	132.60745	12.44871	0.0625067	0.17911931	3.1167917	20	8 11.1	19.1
63209 2001 AP_{11}	15.7	X	282.70536	232.16681	148.31032	7.17101	0.1204070	0.28211083	2.3024465	20	7 29.6	18.3
63210 2001 AH_{13}	12.1	X	298.37762	269.26537	143.04606	12.92931	0.0812317	0.08358185	5.1807749	20	9 16.7	18.8
63211 2001 AU_{13}	14.9	X	264.93053	142.08723	169.63802	6.29065	0.0179662	0.21631005	2.7484315	20	4 16.0	18.6
63212 2001 AT_{17}	15.3	X	357.31197	7.50350	163.89010	6.56984	0.1133926	0.25636305	2.4541386	20	1 28.8	18.0
63213 2001 AY_{18}	14.8	X	347.94311	89.03609	146.15907	4.54195	0.0761784	0.21670022	2.7451315	20	4 22.9	18.1
63214 2001 AP_{20}	14.4	X	209.67158	257.00808	166.79519	8.03833	0.1387956	0.17832311	3.1260624	20	6 20.9	19.4
63215 2001 AD_{25}	15.3	X	225.77746	304.59786	174.93780	1.58417	0.1208191	0.18419035	3.0593192	20	9 16.1	19.9
63216 2001 AF_{26}	14.3	X	57.72706	268.36719	67.49661	13.45146	0.0944870	0.19558863	2.9392757	20	12 13.9	18.5
63217 2001 AU_{29}	15.1	X	273.32376	326.37156	54.41860	5.08456	0.1732165	0.28426033	2.2908248	20	7 6.9	17.8
63218 2001 AZ_{29}	14.9	X	221.40992	19.24492	327.66374	5.62191	0.2101718	0.27317117	2.3524089	20	3 20.6	18.9
63219 2001 AD_{32}	14.6	X	112.70934	28.70708	60.54114	4.21388	0.1347782	0.21794815	2.7346427	20	4 17.6	18.5
63220 2001 AU_{32}	14.6	X	12.01237	297.41000	79.68505	12.18680	0.1608645	0.19502771	2.9449087	20	12 15.6	18.3
63221 2001 AZ_{32}	13.9	X	12.77139	252.03844	95.06349	18.30552	0.1403935	0.18994507	2.9972113	20	11 11.6	17.9
63222 2001 AM_{36}	15.4	X	53.24834	297.84757	52.49000	6.40322	0.1748593	0.29717292	2.2239750	20	—	—
63223 2001 AV_{36}	14.7	X	254.94502	77.40110	96.87956	9.59789	0.1450851	0.24378047	2.5378743	20	—	—
63224 2001 AQ_{37}	13.9	X	335.46912	269.06049	25.17856	13.57845	0.0540380	0.17211868	3.2007423	20	6 21.8	18.4
63225 2001 BL_{2}	15.7	X	175.28273	234.27012	148.09097	23.62624	0.1084720	0.36794271	1.9287795	20	3 20.3	18.2
63226 2001 BC_{4}	16.1	X	202.59178	187.04669	356.40652	7.04436	0.0579364	0.29052767	2.2577597	20	12 5.5	19.1
63227 2001 BG_{6}	14.4	X	151.23164	13.74648	159.76822	10.08184	0.0300668	0.18253736	3.0777609	20	9 5.8	18.9
63228 2001 BF_{9}	14.7	X	56.05907	130.58843	125.86910	14.93111	0.1159158	0.22727482	2.6593072	20	9 16.8	18.4
63229 2001 BP_{9}	14.5	X	29.29366	271.38208	95.55851	10.47079	0.0786989	0.19249214	2.9707131	20	12 15.1	18.6
63230 2001 BT_{14}	14.8	X	81.49143	158.57460	63.03789	2.07643	0.1182216	0.17425941	3.1744748	20	8 25.0	19.4
63231 2001 BA_{15}	12.4	X	204.93489	14.72549	129.79684	6.68652	0.0577353	0.07949656	5.3567800	20	9 19.5	19.6
63232 2001 BK_{15}	14.3	X	162.76742	167.95125	345.12723	5.53293	0.0865994	0.17774031	3.1328920	20	8 25.0	19.1
63233 2001 BO_{17}	16.1	X	245.22568	54.18294	159.38045	6.74481	0.1285507	0.30190230	2.2006878	20	—	—
63234 2001 BB_{20}	12.1	X	141.26399	247.20982	330.19987	14.79823	0.0706643	0.08254604	5.2240245	20	9 30.1	19.4
63235 2001 BV_{20}	13.8	X	329.68256	12.76807	121.30666	6.73830	0.0336546	0.14782842	3.5423986	20	—	—
63236 2001 BX_{20}	16.0	X	25.26644	114.53695	95.56529	2.35285	0.1342991	0.26713352	2.3877222	20	5 20.8	18.2
63237 2001 BA_{23}	15.3	X	294.36676	117.63572	329.70178	0.96977	0.0631147	0.19183641	2.9774788	20	11 10.7	19.1
63238 2001 BL_{24}	15.0	X	351.69217	264.14087	127.05159	14.33856	0.0890893	0.24197357	2.5504927	20	12 10.4	18.2
63239 2001 BD_{25}	11.9	X	232.32581	185.51456	297.13674	6.22481	0.0662651	0.08302115	5.2040749	20	9 17.9	19.1
63240 2001 BG_{26}	15.2	X	294.76039	278.96762	125.44770	15.21267	0.1570913	0.23620088	2.5918809	20	9 18.6	18.2
63241 2001 BJ_{26}	12.0	X	191.30347	33.31525	128.94449	25.76867	0.0477718	0.08185291	5.2534744	20	9 30.9	19.4
63242 2001 BJ_{27}	15.3	X	16.84731	301.38875	143.93844	5.67729	0.0921624	0.20091949	2.8870524	20	—	—
63243 2001 BW_{27}	15.3	X	244.75833	35.26572	149.25159	5.49028	0.0305130	0.24553640	2.5257603	20	—	—
63244 2001 BO_{28}	15.5	X	159.21297	237.02410	154.15497	2.75524	0.1956222	0.26621411	2.3932166	20	3 25.3	19.2
63245 2001 BP_{30}	15.3	X	223.14547	320.21533	151.86888	1.73707	0.1822479	0.18350667	3.0669131	20	8 28.9	20.2
63246 2001 BG_{32}	15.5	X	5.95686	77.91465	335.44930	2.26459	0.1743721	0.24640951	2.5197904	20	—	—
63247 2001 BN_{34}	15.9	X	198.42847	209.31300	322.03056	6.16464	0.1114357	0.28550367	2.2841691	20	11 4.2	19.1
63248 2001 BP_{34}	15.0	X	183.04184	40.70390	158.79827	15.20762	0.1984697	0.23400968	2.6080355	20	11 14.3	19.5
63249 2001 BW_{35}	12.9	X	56.77359	235.56226	25.31607	9.05576	0.1181425	0.12712939	3.9171669	20	9 9.2	18.3
63250 2001 BP_{36}	14.8	X	136.75829	165.15874	196.75458	8.97943	0.3072293	0.21358849	2.7717294	20	2 9.5	19.6
63251 2001 BG_{38}	14.8	X	109.73382	260.17273	299.35206	3.73788	0.1065762	0.17664624	3.1458146	20	8 26.1	19.6
63252 2001 BL_{41}	11.5	X	268.06401	130.10235	280.87810	12.53682	0.2946120	0.03196115	9.8337949	20	7 10.1	21.6
63253 2001 BG_{50}	14.8	X	117.47939	249.83723	278.78736	11.62306	0.1281068	0.22093192	2.7099654	20	7 30.4	18.9
63254 2001 BW_{54}	15.0	X	335.10176	194.91935	124.39581	9.52633	0.2336478	0.28810800	2.2703832	20	7 29.6	16.1
63255 2001 BX_{63}	15.4	X	116.14301	41.51832	165.20029	7.66819	0.2519939	0.27800813	2.3250433	20	10 2.6	19.3
63256 2001 BY_{77}	14.5	X	13.27400	356.65897	203.04583	12.62046	0.1259897	0.21397875	2.7683582	20	4 13.6	17.4
63257 2001 BJ_{79}	12.3	X	283.09479	301.69299	131.74517	12.80523	0.0628170	0.08301436	5.2043587	20	9 25.8	19.2
63258 2001 BT_{80}	14.7	X	215.94877	237.53638	187.54640	13.36796	0.1668700	0.17985236	3.1083169	20	6 25.9	19.9
63259 2001 BS_{81}	13.1	X	176.85167	181.22869	8.01641	2.22824	0.0336426	0.08393475	5.1662434	20	10 9.6	20.0
63260 2001 CN	15.5	X	73.02510	308.65575	121.75782	25.67583	0.0837096	0.36260990	1.9476442	20	—	—
63261 2001 CA_{2}	14.5	X	206.05291	18.35864	121.06396	10.44667	0.0447038	0.18206201	3.0831158	20	9 30.8	19.1
63262 2001 CM_{3}	15.1	X	208.71747	167.49472	130.01726	7.75821	0.1239751	0.25367130	2.4714690	20	1 13.2	18.8
63263 2001 CC_{4}	14.3	X	255.39730	333.75180	133.42504	12.84668	0.0967467	0.18481183	3.0524569	20	10 13.9	18.7
63264 2001 CP_{5}	15.8	X	70.90541	114.93761	127.08762	7.71469	0.0785755	0.27845337	2.3225642	20	9 16.6	18.8
63265 2001 CP_{12}	12.5	X	241.97848	26.47933	92.20556	8.09931	0.1223377	0.08276011	5.2150123	20	9 24.0	19.7
63266 2001 CV_{16}	14.2	X	76.11298	213.51966	61.35030	6.06464	0.1353953	0.18141061	3.0904918	20	10 26.8	18.8
63267 2001 CC_{17}	16.2	X	160.74023	189.71756	51.33969	4.14206	0.1165592	0.29026116	2.2591415	20	12 26.2	19.5
63268 2001 CU_{22}	15.8	X	77.98304	206.44043	124.50814	7.76751	0.1669381	0.29525794	2.2335807	20	—	—
63269 2001 CE_{24}	12.3	X	307.94069	256.61124	155.90123	7.40683	0.0783583	0.08459206	5.1394462	20	9 28.5	18.8
63270 2001 CR_{28}	14.3	X	46.81049	168.26413	107.94565	11.61717	0.0575414	0.17818346	3.1276954	20	9 14.7	18.7
63271 2001 CN_{34}	13.6	X	302.49555	317.81415	74.50404	18.52508	0.2979042	0.23535460	2.5980904	20	8 27.2	16.5
63272 2001 CC_{49}	12.3	X	273.46730	351.37006	81.91475	9.72973	0.0416342	0.08357137	5.1812082	20	9 18.2	19.2
63273 2001 DH_{4}	11.5	X	107.35691	259.19052	356.38075	9.40921	0.1270687	0.08285275	5.2111242	20	10 17.2	18.8
63274 2001 DB_{18}	14.1	X	236.88435	9.09339	115.79540	12.12076	0.0424151	0.18281966	3.0745917	20	10 21.0	18.7
63275 2001 DD_{21}	15.7	X	259.06237	33.93702	85.35053	6.47346	0.1057140	0.28735025	2.2743729	20	11 21.2	18.0
63276 2001 DP_{22}	14.7	X	201.39403	295.28413	147.52389	13.78806	0.1556362	0.22898291	2.6460660	20	7 6.8	19.1
63277 2001 DG_{23}	15.0	X	245.07318	328.88745	160.02926	12.21463	0.0860688	0.23862106	2.5743260	20	11 7.6	18.5
63278 2001 DJ_{29}	12.6	X	213.15032	342.62814	165.15931	12.57499	0.1276389	0.08256828	5.2230867	20	9 25.9	20.0
63279 2001 DW_{34}	12.8	X	267.08441	229.66174	223.83981	1.94740	0.1011680	0.08392116	5.1668009	20	9 20.6	19.6
63280 2001 DT_{37}	14.6	X	136.06969	48.16550	155.84599	10.29330	0.0321856	0.18331567	3.0690431	20	9 28.0	19.0

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
	m		°	°	°	°		°				
63281 2001 DF_{38}	15.6	X	188.37443	62.40203	179.37816	5.69661	0.2433545	0.24257616	2.5462672	20	—	—
63282 2001 DP_{45}	16.2	X	231.96200	213.05303	325.90951	5.04574	0.0835402	0.29133306	2.2535967	20	—	—
63283 2001 DA_{46}	14.4	X	186.32358	241.15056	130.16539	4.53542	0.0555760	0.16004986	3.3596898	20	3 30.2	19.5
63284 2001 DM_{46}	12.6	X	275.04647	306.56328	134.59980	3.42098	0.1578589	0.08162986	5.2630401	20	9 9.6	19.4
63285 2001 DW_{62}	14.6	X	129.52547	144.35856	147.47269	10.16676	0.0538494	0.19158481	2.9800851	20	—	—
63286 2001 DZ_{68}	12.1	X	329.26866	221.61016	173.87761	6.40491	0.1031950	0.08081026	5.2985663	20	10 3.9	18.6
63287 2001 DT_{79}	12.1	X	304.02304	201.09336	235.21887	17.29414	0.0762725	0.08294857	5.2071105	20	10 16.1	18.9
63288 2001 DW_{79}	14.6	X	84.49616	53.29102	236.56138	9.76265	0.0636622	0.18355764	3.0663454	20	11 13.3	19.1
63289 2001 DJ_{81}	15.5	X	41.08226	66.17876	103.55068	6.89510	0.0402986	0.26130538	2.4230952	20	4 13.2	18.4
63290 2001 DS_{87}	12.3	X	158.44539	88.82392	111.86177	6.54830	0.0639064	0.08108554	5.2865673	20	10 6.6	19.6
63291 2001 DU_{87}	12.6	X	251.27589	58.12990	65.08382	7.95660	0.0655519	0.08406194	5.1610308	20	10 14.4	19.5
63292 2001 DQ_{89}	12.1	X	305.22400	271.78745	143.08798	13.41061	0.0583482	0.08274866	5.2154935	20	10 1.5	18.9
63293 2001 DT_{89}	13.6	X	37.59355	137.60176	145.18346	3.25697	0.1630558	0.12595043	3.9415734	20	9 13.2	18.7
63294 2001 DQ_{90}	12.4	X	285.13615	316.22738	117.45432	32.81373	0.0355369	0.08519187	5.1152943	20	10 9.9	19.6
63295 2001 DY_{101}	15.6	X	302.51163	293.05412	102.32662	7.89586	0.1727290	0.28503477	2.2866735	20	9 29.1	17.5
63296 2001 EK	15.7	X	88.87839	54.73746	151.54858	2.51455	0.1528171	0.27193184	2.3595509	20	8 27.1	19.0
63297 2001 EE_{5}	15.7	X	171.31419	183.88785	32.54640	4.52501	0.1297601	0.23475194	2.6025351	20	11 23.8	19.8
63298 2001 EH_{6}	15.7	X	337.04312	200.40711	72.84226	5.48372	0.2237932	0.26337891	2.4103608	20	5 10.0	17.6
63299 2001 EH_{8}	15.3	X	1.93087	124.48095	153.99812	9.41535	0.1512589	0.21811010	2.7332888	20	7 16.8	18.2
63300 2001 EV_{8}	15.2	X	62.96009	261.37850	29.27784	3.00245	0.2440412	0.27880767	2.3205961	20	11 28.1	18.6
63301 2001 EJ_{12}	14.8	X	4.34619	111.89865	167.33205	15.08382	0.1038677	0.21625828	2.7488701	20	7 18.9	18.3
63302 2001 EA_{14}	14.0	X	258.36343	293.72064	54.51168	10.43197	0.2072809	0.21634294	2.7481529	20	4 30.9	18.3
63303 2001 EL_{20}	16.3	X	67.14245	339.83527	271.81190	1.31478	0.1847754	0.27504625	2.3417053	20	10 5.8	19.5
63304 2001 EQ_{23}	14.9	X	48.00018	26.24596	183.31555	8.61384	0.1370875	0.21596906	2.7513237	20	6 28.9	18.4
63305 Bobkepple	14.7	X	359.88550	134.80777	179.69361	5.55668	0.1530085	0.17183165	3.2043057	20	8 27.5	18.5
63306 2001 FT_{8}	15.3	X	151.73646	81.74317	193.57642	2.44104	0.2704229	0.28311546	2.2969965	20	—	—
63307 2001 FG_{9}	15.4	X	143.28587	338.45967	175.59531	5.32502	0.0699269	0.27359492	2.3499793	20	8 10.7	18.6
63308 2001 FU_{11}	16.0	X	358.13813	204.54640	74.62014	3.33902	0.1471248	0.26705999	2.3881605	20	7 15.9	18.0
63309 2001 FV_{19}	15.9	X	51.72089	243.43155	315.68649	1.64466	0.1528525	0.26578104	2.3958156	20	6 25.4	18.4
63310 2001 FS_{21}	15.5	X	307.02934	124.20840	102.76508	6.11469	0.0733242	0.25259010	2.4785166	20	2 7.5	18.7
63311 2001 FD_{24}	15.5	X	318.63121	319.29789	226.30734	19.90323	0.0565694	0.35599670	1.9716905	20	—	—
63312 2001 FH_{24}	14.0	X	85.26628	29.27085	244.01998	9.48916	0.1909202	0.17712522	3.1401408	20	11 6.3	19.0
63313 2001 FV_{28}	14.8	X	229.84251	292.35638	35.73554	10.09426	0.2589217	0.25542199	2.4601629	20	3 10.0	19.2
63314 2001 FJ_{33}	15.0	X	162.20925	60.26536	158.66234	14.84296	0.0362585	0.23726544	2.5841222	20	11 26.8	18.9
63315 2001 FV_{34}	16.3	X	17.01419	87.78711	159.24545	3.44001	0.1747839	0.26697392	2.3886737	20	7 6.6	18.3
63316 2001 FK_{35}	14.2	X	159.63298	283.60779	317.29234	1.84446	0.1545916	0.18395379	3.0619415	20	12 2.9	19.2
63317 2001 FQ_{36}	16.1	X	12.35827	22.25433	217.07186	1.51214	0.1869845	0.26476405	2.4019467	20	6 13.8	17.8
63318 2001 FR_{36}	15.5	X	86.43255	75.97773	195.93377	1.74804	0.1721653	0.22872816	2.6480303	20	11 13.2	19.6
63319 2001 FH_{37}	16.3	X	121.17786	281.96910	303.09994	1.55523	0.1957867	0.27861791	2.3216497	20	10 25.6	20.1
63320 2001 FX_{44}	15.0	X	201.64298	68.69238	154.06667	2.93290	0.2670350	0.18536418	3.0463901	20	12 11.1	20.1
63321 2001 FF_{47}	15.4	X	192.55545	52.89037	191.10047	25.98196	0.0687361	0.24050407	2.5608713	20	—	—
63322 2001 FO_{48}	15.9	X	235.01633	271.64869	9.50187	7.27319	0.1847908	0.29938225	2.2130200	20	1 12.8	19.4
63323 2001 FC_{51}	16.0	X	211.33813	145.37121	156.26535	2.33455	0.2171754	0.29964682	2.2117172	20	1 16.2	19.6
63324 2001 FH_{51}	15.8	X	158.81647	51.10765	190.56171	3.49356	0.1103887	0.23411068	2.6072854	20	12 13.9	19.8
63325 2001 FU_{51}	15.9	X	31.94486	48.72713	192.88873	2.55168	0.1398046	0.26652354	2.3913639	20	7 22.8	18.2
63326 2001 FV_{53}	15.6	X	82.96118	207.85383	343.61658	2.04085	0.1137876	0.26738919	2.3861999	20	7 24.7	18.6
63327 2001 FS_{54}	16.3	X	21.57253	69.42319	147.12108	2.92612	0.1421797	0.26428379	2.4048558	20	5 24.6	18.4
63328 2001 FU_{54}	16.1	X	330.23131	125.29174	124.63651	1.96807	0.1557326	0.26036111	2.4289504	20	3 30.9	18.7
63329 2001 FJ_{55}	14.9	X	166.81381	312.77498	220.87961	11.18198	0.1302053	0.22630243	2.6669195	20	9 24.4	19.3
63330 2001 FZ_{59}	15.9	X	0.42477	269.36947	157.07103	6.74737	0.0536726	0.29349907	2.2424954	20	—	—
63331 2001 FC_{60}	15.6	X	298.63950	206.83756	22.11991	6.63405	0.0857058	0.25459985	2.4654562	20	1 29.2	18.9
63332 2001 FY_{62}	15.1	X	67.70766	140.68963	136.46507	7.09340	0.0887085	0.27911637	2.3188848	20	11 1.7	18.2
63333 2001 FV_{65}	16.1	X	212.09594	137.20735	140.63815	5.20759	0.1601836	0.29781803	2.2207622	20	—	—
63334 2001 FH_{66}	14.5	X	159.21211	319.65674	174.03735	22.35270	0.1676504	0.17176078	3.2051870	20	7 26.6	20.1
63335 2001 FD_{67}	15.4	X	112.55283	256.20326	37.99387	6.94434	0.2059772	0.28500876	2.2868126	20	—	—
63336 2001 FL_{67}	15.9	X	351.32830	308.47750	141.19797	3.96014	0.1041008	0.29501316	2.2348161	20	—	—
63337 2001 FW_{67}	15.2	X	130.95965	119.45823	40.67244	7.27987	0.0178209	0.22021196	2.7158688	20	7 30.5	19.0
63338 2001 FX_{74}	15.4	X	356.72258	183.16972	66.37738	3.60807	0.0861506	0.26263419	2.4149151	20	5 24.7	17.8
63339 2001 FP_{75}	15.7	X	186.39189	224.72368	62.31872	6.27363	0.2112247	0.24217757	2.5490603	20	—	—
63340 2001 FY_{76}	15.8	X	86.66516	4.31954	161.59423	6.71619	0.0520163	0.26580011	2.3957010	20	6 13.4	18.9
63341 2001 FD_{77}	14.1	X	122.25512	274.39464	27.84061	27.95382	0.3860315	0.23136904	2.6278418	20	—	—
63342 2001 FH_{77}	15.0	X	147.47937	260.28941	39.57373	13.33867	0.0568879	0.24002498	2.5642779	20	—	—
63343 2001 FO_{85}	15.2	X	189.51988	117.65653	144.46516	1.72433	0.1037755	0.18933460	3.0036504	20	—	—
63344 2001 FX_{86}	14.5	X	41.58506	251.43650	43.80859	13.01016	0.2017780	0.22344619	2.6895982	20	10 27.9	18.1
63345 2001 FD_{91}	15.3	X	204.63428	0.60298	166.85883	10.02532	0.1905829	0.23144581	2.6272607	20	10 25.1	19.5
63346 2001 FU_{92}	15.3	X	14.98153	161.38930	107.39302	6.71128	0.0848213	0.27022125	2.3694982	20	7 28.3	17.8
63347 2001 FA_{94}	14.2	X	244.43306	257.62184	130.44217	12.81235	0.0465723	0.16762103	3.2577447	20	6 23.4	19.0
63348 2001 FC_{94}	16.0	X	39.46421	94.55960	126.15316	7.39465	0.0888345	0.26725895	2.3869750	20	6 26.8	18.6
63349 2001 FY_{101}	15.8	X	176.11598	355.13016	227.63126	7.50161	0.1360574	0.23608203	2.5927507	20	12 6.8	19.9
63350 2001 FL_{106}	14.0	X	18.69636	69.02031	227.46628	4.34939	0.1259865	0.17292270	3.1908131	20	9 1.5	18.0
63351 2001 FW_{117}	16.2	X	226.67629	120.84349	183.25604	4.46704	0.1742728	0.30177505	2.2013064	20	1 31.2	19.8
63352 2001 FG_{129}	15.0	X	185.09345	41.53574	192.17643	12.73711	0.1802449	0.23508735	2.6000590	20	12 24.1	19.3
63353 2001 FZ_{135}	15.9	X	265.00283	234.86716	286.20213	5.60520	0.0288657	0.29015031	2.2597168	20	—	—
63354 2001 FU_{140}	14.0	X	70.61776	129.92275	197.96692	14.70806	0.1655538	0.17903538	3.1177657	20	12 23.2	19.0
63355 2001 FN_{143}	14.3	X	174.57584	87.36043	181.21871	20.52360	0.3082071	0.18354159	3.0665241	20	—	—
63356 2001 FG_{149}	14.5	X	175.20105	146.73646	161.43844	11.05838	0.0974955	0.19281457	2.9674004	20	—	—
63357 2001 FS_{157}	15.4	X	169.13142	224.85032	41.10556	13.62450	0.1561731	0.23818811	2.5774446	20	—	—
63358 2001 FX_{157}	14.7	X	139.03771	167.54759	144.19995	11.07699	0.1003357	0.18891470	3.0080996	20	—	—
63359 2001 FQ_{159}	15.8	X	99.68761	207.18012	37.67216	2.65220	0.1042400	0.22583963	2.6705617	20	10 17.8	19.8
63360 2001 FS_{162}	14.8	X	17.87362	67.50210	172.18785	9.25009	0.1766834	0.21795040	2.7346239	20	6 23.9	17.7

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Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
	m		°	°	°	°		°				
63361 2001 FR_{171}	15.5	X	33.84261	226.55616	130.12318	3.04778	0.1337121	0.28323126	2.2963703	20	—	—
63362 2001 FD_{177}	14.2	X	45.87608	287.14831	71.32537	11.93843	0.1348611	0.18535356	3.0465064	20	12 30.8	18.5
63363 2001 FC_{184}	16.4	X	135.01984	128.32333	171.41288	6.07072	0.1331851	0.28844769	2.2686004	20	—	—
63364 2001 HH_{2}	15.8	X	300.75132	269.06721	45.85953	2.74772	0.1276956	0.31289747	2.1488265	20	5 18.4	17.9
63365 2001 HH_{3}	15.8	X	320.26008	103.58362	171.20271	2.37588	0.1988325	0.25813291	2.4429081	20	4 11.7	18.1
63366 2001 HK_{4}	15.7	X	150.59774	120.32942	192.95609	6.23354	0.1558059	0.28920775	2.2646240	20	—	—
63367 2001 HS_{6}	15.8	X	195.52244	240.98572	69.40620	7.72771	0.2301519	0.24310236	2.5425915	20	1 21.9	20.3
63368 2001 HQ_{7}	14.3	X	149.32714	39.64365	210.89787	8.71865	0.0545107	0.17961347	3.1110723	20	12 5.8	19.1
63369 2001 HT_{7}	14.9	X	346.73050	194.54845	59.96300	4.28077	0.0397616	0.20879047	2.8140314	20	5 18.0	18.5
63370 2001 HS_{9}	15.5	X	349.76374	187.26739	85.77366	3.73379	0.1687813	0.26170192	2.4206469	20	6 14.9	17.3
63371 2001 HN_{18}	15.1	X	351.26934	233.64004	85.22371	2.03628	0.0806183	0.21834759	2.7313066	20	8 24.2	18.3
63372 2001 HG_{29}	14.6	X	127.49028	207.57466	66.96735	2.62083	0.1179198	0.17847790	3.1242546	20	12 12.3	19.5
63373 2001 HS_{35}	13.6	X	24.89135	87.22796	250.14673	6.10706	0.0969657	0.17241293	3.1970995	20	10 30.1	17.8
63374 2001 HX_{35}	15.8	X	50.70195	66.11136	203.96642	4.76931	0.1386225	0.27020955	2.3695666	20	10 3.1	18.7
63375 2001 HY_{37}	14.6	X	19.97016	184.30330	119.88492	7.01884	0.2121482	0.21761066	2.7374694	20	10 10.4	17.7
63376 2001 HA_{38}	15.9	X	204.13809	212.58653	82.15427	10.22383	0.2044262	0.29443358	2.2377479	20	1 2.5	19.4
63377 2001 HL_{40}	14.2	X	161.07835	164.39034	112.04753	12.79207	0.0485498	0.18578116	3.0418300	20	—	—
63378 2001 HY_{43}	14.6	X	82.63417	145.55015	206.76095	9.71462	0.0961347	0.18537187	3.0463058	20	—	—
63379 2001 HN_{45}	14.5	X	47.70155	0.92722	282.89627	13.95349	0.2636618	0.22387856	2.6861343	20	10 22.9	18.6
63380 2001 HE_{51}	15.7	X	257.81495	345.93693	314.89676	4.62554	0.0899175	0.25564503	2.4587317	20	3 8.4	19.2
63381 2001 HJ_{53}	15.6	X	262.34039	182.91854	139.65698	4.22783	0.1916557	0.30651122	2.1785714	20	3 30.4	18.7
63382 2001 HZ_{54}	16.1	X	266.07811	133.79983	90.21838	4.83073	0.1268704	0.29656716	2.2270024	20	—	—
63383 2001 HD_{56}	15.9	X	174.05011	165.44528	158.74743	7.91550	0.1626808	0.29495273	2.2351213	20	1 8.7	19.3
63384 2001 HG_{57}	15.0	X	62.32409	140.46997	113.80255	12.62900	0.0722140	0.22169078	2.7037776	20	9 15.1	18.8
63385 2001 HL_{66}	15.1	X	89.77650	211.92562	112.87790	7.29860	0.1961227	0.23029928	2.6359732	20	—	—
63386 2001 HW_{66}	14.9	X	16.98678	254.37833	198.03710	21.44471	0.1009954	0.24318830	2.5419925	20	—	—
63387 Brazos Bend	14.9	X	249.51411	333.49286	60.34956	6.48261	0.2253074	0.26608155	2.3940114	20	6 15.9	18.4
63388 2001 HE_{67}	15.0	X	83.18097	195.08368	128.72486	17.74627	0.1687999	0.23232575	2.6206226	20	—	—
63389 Noshiro	14.7	X	46.24608	145.03096	96.43041	8.10544	0.1538259	0.21417726	2.7666474	20	8 15.3	18.2
63390 2001 JP_{5}	14.8	X	185.30295	124.96599	109.78142	5.83971	0.1784957	0.18218154	3.0817670	20	12 16.9	19.9
63391 2001 JG_{6}	14.7	X	294.95895	154.46015	50.68494	10.70788	0.0187344	0.19602168	2.9349451	20	1 12.8	18.9
63392 2001 JE_{7}	14.3	X	187.20809	280.35942	66.32643	15.09989	0.3213579	0.19589516	2.9362087	20	3 8.9	20.0
63393 2001 JS_{7}	16.0	X	258.44739	212.22775	121.87586	3.42759	0.1468516	0.30898484	2.1669286	20	4 15.8	18.8
63394 2001 JL_{8}	14.9	X	263.16853	340.10252	289.02339	0.99037	0.0271468	0.19924741	2.9031820	20	2 18.4	19.0
63395 2001 JX_{9}	14.5	X	314.75826	115.67006	220.44973	7.69470	0.1472732	0.21231370	2.7828131	20	7 8.0	17.9
63396 2001 KX	15.6	X	31.59599	59.72654	235.90683	4.23666	0.2269850	0.26849747	2.3796290	20	10 25.7	18.4
63397 2001 KK_{2}	15.2	X	127.38390	155.31863	145.87966	8.17308	0.1470293	0.23453239	2.6041590	20	—	—
63398 2001 KZ_{9}	15.3	X	109.96296	357.24017	214.63008	5.65641	0.0777084	0.21945390	2.7221195	20	9 11.8	19.3
63399 2001 KH_{11}	15.3	X	338.20123	94.41106	199.03037	4.92170	0.2070928	0.26015448	2.4302364	20	6 18.4	17.2
63400 2001 KJ_{13}	15.0	X	154.06392	178.32237	97.45893	4.60410	0.1630588	0.17983689	3.1084951	20	—	—
63401 2001 KK_{15}	15.2	X	292.83023	223.17243	88.03077	7.65782	0.1430100	0.25774390	2.4453655	20	5 2.7	18.2
63402 2001 KU_{24}	15.5	X	38.90970	287.56357	42.47778	7.35853	0.1354451	0.27490564	2.3425037	20	12 8.0	18.4
63403 2001 KT_{30}	15.1	X	318.09600	306.77376	31.51389	1.90881	0.0990347	0.21395428	2.7685693	20	7 24.9	18.3
63404 2001 KK_{31}	15.4	X	170.09240	148.01599	133.67724	8.25564	0.1308228	0.23722891	2.5843876	20	—	—
63405 2001 KP_{33}	15.6	X	162.05204	254.23215	86.59126	9.92802	0.2131248	0.24275334	2.5450281	20	1 30.6	19.8
63406 2001 KN_{34}	15.6	X	171.47494	157.55965	158.21259	2.41062	0.1160716	0.24158650	2.5532163	20	—	—
63407 2001 KZ_{35}	15.8	X	135.81049	127.50642	152.00754	3.35191	0.0978685	0.23094479	2.6310591	20	—	—
63408 2001 KA_{38}	15.2	X	169.61037	157.61096	147.53196	10.13889	0.2576010	0.23704430	2.5857292	20	—	—
63409 2001 KY_{38}	15.4	X	312.80510	207.88060	104.38108	7.86897	0.2470171	0.25817884	2.4426184	20	5 17.9	17.9
63410 2001 KQ_{39}	13.9	X	190.36273	52.47885	210.70110	16.39305	0.1632499	0.18367793	3.0650065	20	—	—
63411 2001 KK_{41}	14.4	X	178.07209	275.04227	261.05520	10.15432	0.1322310	0.22474621	2.6792164	20	10 6.7	18.9
63412 2001 KQ_{44}	15.1	X	1.79295	234.39451	105.68879	13.43639	0.2502913	0.26892047	2.3771330	20	11 19.7	17.6
63413 2001 KK_{47}	14.8	X	85.62548	75.69297	275.03510	5.13047	0.2712803	0.23065374	2.6332720	20	—	—
63414 2001 KF_{55}	15.2	X	77.04825	159.24072	97.50789	8.19846	0.1167491	0.27317787	2.3523704	20	10 20.4	18.5
63415 2001 KH_{55}	15.2	X	179.12832	188.07111	138.08933	7.35193	0.2461102	0.24288615	2.5441002	20	1 26.9	19.6
63416 2001 KU_{56}	15.5	X	154.28448	170.74668	143.15705	9.46625	0.1573457	0.23896343	2.5718665	20	—	—
63417 2001 KR_{58}	14.4	X	290.23935	248.24253	122.91029	10.39435	0.2765853	0.20991050	2.8040125	20	6 26.9	18.1
63418 2001 KW_{62}	14.7	X	193.27377	187.20449	116.35173	15.06015	0.1763980	0.24132366	2.5550699	20	1 9.6	18.9
63419 2001 KP_{64}	15.4	X	141.27351	142.16147	159.88889	14.34670	0.1788947	0.23364048	2.6107823	20	—	—
63420 2001 KB_{65}	14.8	X	11.11462	254.60768	101.40783	22.26769	0.2808024	0.27416427	2.3467247	20	12 29.6	17.4
63421 2001 KC_{67}	15.0	X	89.22406	11.67198	279.12862	8.21129	0.1307726	0.22048487	2.7136272	20	12 3.0	19.2
63422 2001 KL_{70}	14.6	X	139.92516	101.80383	246.27039	13.67200	0.1352664	0.23322300	2.6138969	20	1 7.6	18.5
63423 2001 KY_{72}	15.4	X	66.10116	236.98046	355.62044	0.79094	0.0127058	0.21564234	2.7541020	20	8 7.4	19.1
63424 2001 KW_{73}	16.1	X	226.64802	157.63196	120.96062	3.44300	0.0620550	0.24563221	2.5251035	20	1 10.0	19.8
63425 2001 LV_{5}	15.5	X	328.58393	195.20420	127.55331	6.35484	0.2618639	0.26435285	2.4044369	20	7 7.6	17.0
63426 2001 LU_{13}	14.9	X	196.23970	196.94985	86.03939	15.69744	0.1036055	0.23910028	2.5708850	20	—	—
63427 2001 MB	15.5	X	271.05619	261.44438	105.99967	3.58585	0.1915199	0.25568020	2.4585062	20	6 10.3	18.6
63428 2001 MC_{1}	14.6	X	20.67501	242.52662	97.06440	10.10125	0.2998652	0.21557117	2.7547081	20	12 8.7	18.0
63429 2001 MH_{5}	15.4	X	145.48471	351.62796	329.41571	4.31416	0.1584508	0.28110975	2.3079095	20	—	—
63430 2001 MR_{6}	15.6	X	18.14128	303.93795	83.76670	5.09922	0.1682119	0.27360085	2.3499453	20	—	—
63431 2001 ML_{14}	14.9	X	155.35014	221.29439	130.63018	13.57304	0.2112691	0.23498523	2.6008123	20	2 6.3	19.0
63432 2001 MY_{14}	15.6	X	356.00037	235.76237	86.72877	2.35598	0.1795568	0.26171724	2.4205524	20	9 24.1	17.6
63433 2001 MZ_{17}	14.9	X	131.30649	88.95659	250.03846	12.14539	0.1053683	0.23036369	2.6354819	20	—	—
63434 2001 MD_{21}	15.1	X	20.73650	80.78436	276.83062	5.59828	0.1547995	0.27068723	2.3667781	20	12 23.8	17.9
63435 2001 MU_{21}	16.2	X	330.13290	359.88180	8.49799	3.70029	0.1284263	0.26502330	2.4003801	20	10 6.9	18.4
63436 2001 MO_{23}	15.1	X	161.04485	31.44734	321.64355	2.98548	0.2843689	0.23532416	2.5983144	20	2 16.5	19.6
63437 2001 MY_{23}	14.7	X	151.60093	16.64816	321.54182	11.47060	0.1947707	0.23266938	2.6180417	20	1 17.9	18.8
63438 2001 MY_{28}	15.0	X	120.33812	262.70673	113.05096	12.54749	0.1894161	0.23461071	2.6035794	20	1 29.8	18.7
63439 2001 MD_{29}	15.7	X	60.33476	251.10701	122.91840	3.98387	0.1690991	0.27740853	2.3283924	20	—	—
63440 2001 MD_{30}	15.2	X	256.67255	205.79611	229.43760	19.98183	0.0881888	0.36526873	1.9381812	20	9 23.1	17.4

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Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
	m		°	°	°	°		°				
63441 2001 NV_2	15.6	X	176.88668	321.33817	103.13698	7.21858	0.0901875	0.25162817	2.4848292	20	5 22.2	19.2
63442 2001 NO_6	13.8	X	150.04977	118.67290	257.08527	26.81502	0.1562588	0.23701419	2.5859482	20	2 11.5	18.4
63443 2001 NH_7	15.4	X	346.21960	234.95193	194.86362	21.69438	0.0457404	0.23102075	2.6304823	20	—	—
63444 2001 ND_8	14.2	X	77.75239	23.23032	311.86298	5.53605	0.0165375	0.17308445	3.1888250	20	12 21.9	18.7
63445 2001 NL_9	15.6	X	119.61804	37.40794	269.25079	4.21804	0.1706433	0.22695746	2.6617857	20	—	—
63446 2001 NV_9	16.2	X	117.65675	213.78214	257.92934	2.44850	0.0731433	0.30215380	2.1994665	20	5 11.1	18.6
63447 2001 NG_{11}	15.2	X	29.03415	78.56032	255.54390	3.87698	0.2352633	0.26838432	2.3802978	20	12 14.9	18.3
63448 2001 NF_{14}	15.6	X	166.84357	37.09390	319.84351	11.45034	0.2004731	0.23848225	2.5753248	20	2 19.5	19.9
63449 2001 NO_{14}	16.7	X	211.97965	193.93546	139.28486	3.66390	0.1971245	0.29478530	2.2359675	20	2 25.7	20.2
63450 2001 NP_{17}	14.2	X	142.12193	78.62401	325.68484	22.63691	0.1718195	0.24193200	2.5507849	20	3 14.7	18.4
63451 2001 OB	14.9	X	187.30530	78.61489	302.54303	10.81739	0.1524694	0.24561303	2.5252349	20	3 31.3	19.2
63452 2001 OO_2	16.3	X	312.29250	223.77711	148.23007	23.30150	0.0983250	0.36675032	1.9329578	20	10 10.9	18.1
63453 2001 OQ_4	16.3	X	303.96945	218.83765	45.39636	7.35068	0.0951105	0.29603490	2.2296709	20	3 18.8	18.9
63454 2001 OB_5	13.3	X	105.72597	132.24294	279.47897	15.13010	0.2294305	0.18042590	3.1017262	20	2 29.3	18.2
63455 2001 OD_5	14.0	X	173.87021	72.56325	267.83143	12.37769	0.1172351	0.18336020	3.0685462	20	2 4.4	19.0
63456 2001 OS_5	14.3	X	168.25549	129.22550	223.41960	10.40210	0.1204260	0.18447875	3.0561299	20	2 13.7	19.3
63457 2001 OG_6	14.9	X	87.21779	329.59695	281.76078	11.27380	0.0866501	0.21256264	2.7806399	20	10 1.7	19.2
63458 2001 OT_6	13.5	X	303.32028	224.82099	291.78296	9.10596	0.0629258	0.17523930	3.1626299	20	—	—
63459 2001 OT_7	14.4	X	98.26778	133.08836	206.40258	5.85581	0.1155466	0.17272880	3.1932007	20	—	—
63460 2001 OA_8	15.5	X	80.34720	84.09024	264.21411	5.79370	0.1521225	0.27607491	2.3358848	20	—	—
63461 2001 OJ_8	14.5	X	191.56403	61.79908	279.87126	8.79152	0.1163637	0.18790614	3.0188537	20	2 22.4	19.4
63462 2001 OE_9	14.2	X	139.07092	137.16164	276.66088	8.87967	0.1944593	0.18750836	3.0231217	20	4 3.1	19.2
63463 2001 OR_{12}	15.9	X	329.66978	79.77272	277.50570	5.10929	0.1242322	0.26290973	2.4132276	20	9 14.9	18.3
63464 2001 OL_{16}	14.8	X	244.24641	49.12821	40.41597	12.80453	0.1272998	0.25814718	2.4428181	20	9 14.6	18.2
63465 2001 OL_{19}	14.6	X	115.42934	113.29491	235.89049	8.73555	0.0942380	0.17936776	3.1139129	20	—	—
63466 2001 OM_{21}	14.9	X	27.42259	24.13590	314.12417	5.49496	0.0530907	0.21300459	2.7767924	20	11 5.4	18.7
63467 2001 OS_{21}	15.5	X	183.12416	348.93956	330.38772	3.08988	0.2513828	0.23448438	2.6045144	20	1 23.7	19.9
63468 2001 OY_{21}	15.5	X	41.48206	190.93324	129.85819	2.14957	0.1916621	0.26630365	2.3926801	20	12 6.1	18.7
63469 2001 OP_{22}	15.2	X	164.43839	202.43707	47.57779	6.82072	0.2008633	0.22903558	2.6456603	20	12 23.3	19.7
63470 2001 OH_{23}	14.5	X	39.85695	72.50104	21.69020	7.91759	0.0500553	0.18383414	3.0632700	20	1 12.1	18.6
63471 2001 OD_{25}	14.9	X	161.38913	44.41231	296.06959	10.29551	0.1834164	0.23451021	2.6043232	20	1 25.9	19.0
63472 2001 OY_{25}	15.3	X	155.16348	260.62274	135.26537	4.29811	0.2300448	0.24108785	2.5567357	20	4 1.1	19.5
63473 2001 OZ_{25}	14.8	X	211.41926	194.25893	192.59763	1.02663	0.1097534	0.19761726	2.9191257	20	5 9.6	19.4
63474 2001 OR_{27}	16.4	X	108.84570	344.80470	44.23360	7.42614	0.1146826	0.28729922	2.2746422	20	1 12.6	19.0
63475 2001 OB_{32}	14.0	X	152.81177	93.87764	303.87710	8.65574	0.1138361	0.19063347	2.9899915	20	3 21.7	18.8
63476 2001 OL_{37}	15.1	X	359.26762	282.65565	60.47485	10.12577	0.1661124	0.21232863	2.7826826	20	10 19.8	18.1
63477 2001 OG_{38}	14.5	X	25.28404	119.47185	8.47981	10.38215	0.0831008	0.18561021	3.0436974	20	2 5.2	18.4
63478 2001 OR_{39}	15.9	X	5.20247	332.53021	57.25018	6.40026	0.2387134	0.26818683	2.3814662	20	—	—
63479 2001 OL_{40}	14.6	X	62.26397	324.30264	123.86993	9.17078	0.0977788	0.23322623	2.6138728	20	1 29.7	17.6
63480 2001 OD_{42}	15.8	X	142.71886	332.28330	289.04104	6.49223	0.0915863	0.27137087	2.3628015	20	12 30.3	19.1
63481 2001 OE_{42}	15.6	X	150.46299	137.47609	233.49749	2.55904	0.1127173	0.23408957	2.6074421	20	2 14.9	19.4
63482 2001 OW_{42}	15.0	X	88.68140	174.09791	207.70524	13.03990	0.1488648	0.22583763	2.6705775	20	—	—
63483 2001 OJ_{43}	16.1	X	7.39694	225.51478	180.55446	9.82642	0.2219038	0.26865757	2.3786835	20	—	—
63484 2001 OV_{48}	14.6	X	331.11865	217.72616	112.88386	12.16729	0.0871198	0.20556776	2.8433657	20	8 5.5	18.0
63485 2001 OO_{49}	14.5	X	159.15084	166.96281	173.93981	9.38339	0.1304318	0.18334257	3.0687429	20	1 25.6	19.4
63486 2001 OH_{55}	15.0	X	20.13513	292.16119	44.74245	8.79768	0.1654330	0.21427400	2.7658146	20	11 11.7	18.3
63487 2001 OU_{55}	14.3	X	160.36029	51.34601	304.84202	5.13040	0.1343070	0.18143994	3.0901587	20	2 14.6	19.1
63488 2001 OT_{56}	13.1	X	132.73309	195.76895	130.31214	8.30918	0.1385485	0.12477046	3.9663850	20	—	—
63489 2001 OB_{57}	13.7	X	84.40641	58.03602	318.37254	11.60236	0.2106610	0.17599906	3.1535217	20	—	—
63490 2001 OP_{59}	15.0	X	90.83471	291.48406	97.18653	3.95401	0.1572590	0.23276738	2.6173068	20	1 2.5	17.8
63491 2001 OY_{60}	14.2	X	129.61989	306.12057	16.66036	2.86484	0.2268621	0.12391123	3.9846998	20	—	—
63492 2001 OL_{62}	14.6	X	60.57997	249.09698	180.85707	9.54133	0.1256161	0.18215237	3.0820960	20	1 14.9	18.6
63493 2001 OY_{62}	15.0	X	336.95093	28.01969	9.53076	2.62422	0.1865533	0.26002471	2.4310448	20	12 7.7	16.9
63494 2001 OX_{63}	14.7	X	1.48145	299.90617	87.67061	6.18078	0.0629941	0.21883106	2.7272822	20	12 8.3	18.0
63495 2001 OH_{64}	14.5	X	125.76307	91.25143	254.50672	9.04869	0.0926689	0.17987443	3.1080627	20	—	—
63496 2001 ON_{64}	15.7	X	21.19680	354.47941	283.87244	7.40016	0.0846764	0.26085658	2.4258737	20	8 17.8	18.6
63497 2001 OG_{65}	14.6	X	149.16954	352.71540	49.32469	9.55043	0.1766253	0.18780466	3.0199411	20	4 4.4	19.5
63498 2001 OQ_{65}	14.1	X	87.15092	38.91111	317.55069	14.90983	0.0734394	0.17554668	3.1589371	20	—	—
63499 2001 ON_{69}	15.4	X	226.00492	240.73434	136.90350	12.31010	0.1932985	0.24730497	2.5137041	20	5 10.3	19.7
63500 2001 OS_{69}	15.9	X	166.18779	199.63143	134.23935	5.15588	0.2589275	0.23372419	2.6101589	20	1 27.7	20.4
63501 2001 OD_{70}	15.4	X	344.28157	286.46165	111.67503	3.32196	0.2050852	0.26572521	2.3961511	20	12 28.9	17.4
63502 2001 OD_{72}	16.2	X	72.86196	36.57157	308.01219	1.31684	0.2483747	0.27244806	2.3565694	20	—	—
63503 2001 OE_{72}	15.8	X	291.79602	26.62576	335.69111	5.96564	0.2268748	0.30593930	2.1812856	20	6 30.2	17.8
63504 2001 OO_{78}	14.2	X	159.35463	48.53808	359.86896	10.15898	0.1122970	0.19187601	2.9770692	20	4 11.8	18.8
63505 2001 OP_{79}	15.1	X	115.83790	340.41480	357.97418	9.76087	0.1352846	0.22850499	2.6497542	20	—	—
63506 2001 OH_{81}	15.0	X	219.17332	125.84635	252.61812	10.77036	0.2521551	0.24382586	2.5375594	20	4 25.9	19.5
63507 2001 OL_{81}	15.5	X	35.92133	63.48051	276.69639	1.96155	0.2623677	0.27016698	2.3698155	20	—	—
63508 2001 OQ_{81}	14.5	X	299.06395	141.81917	294.96645	8.59717	0.1916325	0.21560980	2.7543792	20	10 24.0	17.6
63509 2001 OW_{83}	14.7	X	323.79058	343.74641	106.13165	11.78255	0.0779195	0.21779466	2.7359274	20	—	—
63510 2001 OG_{89}	15.0	X	52.31335	317.84676	130.44653	5.08813	0.2150090	0.23280475	2.6170267	20	1 23.9	17.1
63511 2001 OV_{92}	15.9	X	124.41681	115.39982	50.29785	3.98742	0.0911677	0.25931650	2.4354690	20	8 7.2	19.4
63512 2001 OZ_{95}	15.1	X	261.35811	153.95539	325.74568	6.89014	0.0530126	0.26935822	2.3745568	20	11 24.9	18.1
63513 2001 OV_{96}	15.8	X	13.05462	49.18149	250.06293	17.59157	0.0597680	0.36488726	1.9395319	20	9 11.5	18.1
63514 2001 OY_{99}	14.8	X	173.61970	38.08965	317.63007	8.37990	0.0109223	0.18845263	3.0130147	20	2 19.3	19.1
63515 2001 OE_{100}	15.4	X	241.01059	322.66280	8.70330	1.90362	0.1388406	0.24638874	2.5199319	20	3 26.9	19.2
63516 2001 OL_{103}	13.6	X	205.47388	124.57125	119.36856	18.44974	0.1141804	0.17420514	3.1751341	20	—	—
63517 2001 OM_{104}	13.8	X	135.88784	337.25777	359.59774	16.12975	0.1010101	0.17755200	3.1351067	20	—	—
63518 2001 OM_{105}	14.4	X	258.71115	39.14390	279.50676	9.91319	0.1434351	0.19220916	2.9736282	20	3 27.2	19.1
63519 2001 OJ_{107}	15.0	X	120.83752	100.09127	311.42940	5.30963	0.1663893	0.28619893	2.2804683	20	3 4.7	17.9
63520 2001 PF	14.0	X	260.20187	2.70092	347.05536	16.51582	0.0996271	0.19608686	2.9342947	20	5 10.5	18.6

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
	m		°	°	°	°		°				
63521 2001 PL	14.2	X	36.52540	253.31738	215.77213	21.21181	0.1376371	0.23269209	2.6178713	20	1 11.1	17.6
63522 2001 PP	14.2	X	144.11655	201.78410	129.49577	12.67001	0.2642135	0.18084706	3.0969088	20	1 13.4	19.3
63523 2001 PH_{1}	15.8	X	146.50584	55.60259	314.75964	3.27676	0.2465928	0.23620390	2.5918588	20	2 22.4	19.9
63524 2001 PP_{2}	15.0	X	182.50572	278.57124	63.12757	3.95760	0.1268851	0.23847395	2.5753846	20	2 14.7	18.9
63525 2001 PU_{2}	14.7	X	267.05493	113.60325	275.24250	3.99814	0.1230179	0.20303593	2.8669543	20	7 12.4	18.5
63526 2001 PO_{7}	14.7	X	32.16758	70.58760	280.26486	7.98482	0.0933462	0.21946122	2.7220589	20	12 7.1	18.2
63527 2001 PM_{8}	16.3	X	72.27504	163.98826	144.20034	24.44113	0.0646264	0.37339013	1.9099742	20	—	—
63528 Kocherhans	14.2	X	168.04067	108.18560	270.93301	7.80515	0.0417334	0.18989141	2.9977759	20	3 10.8	18.8
63529 2001 PY_{19}	14.4	X	304.27862	1.35722	342.71340	8.33958	0.3261657	0.20371268	2.8606013	20	5 31.4	17.9
63530 2001 PG_{20}	14.5	X	150.55239	283.74498	196.85888	17.02849	0.0831859	0.20037846	2.8922469	20	6 30.9	19.2
63531 2001 PW_{20}	14.7	X	217.51710	292.40037	93.75496	3.29125	0.0839514	0.19702448	2.9249779	20	5 17.2	19.1
63532 2001 PJ_{22}	14.2	X	195.31776	309.01136	316.46680	8.71347	0.0575029	0.17574720	3.1565338	20	—	—
63533 2001 PY_{22}	15.5	X	131.15828	275.90014	115.47494	8.11481	0.1231353	0.23717630	2.5847697	20	2 23.1	19.1
63534 2001 PR_{24}	14.8	X	72.95755	17.60730	51.04691	1.25617	0.1697432	0.17866793	3.1220389	20	2 9.1	18.8
63535 2001 PY_{24}	16.1	X	187.00255	114.86170	317.91913	5.39296	0.1033865	0.30174463	2.2014544	20	6 12.1	19.1
63536 2001 PS_{25}	14.7	X	155.79480	305.07268	126.99633	12.55700	0.1969144	0.19062670	2.9900622	20	5 17.6	19.9
63537 2001 PS_{33}	13.8	X	113.91525	18.12100	42.21768	11.38912	0.1080206	0.18585734	3.0409988	20	3 16.9	18.3
63538 2001 PG_{38}	13.2	X	271.60147	158.61163	39.64938	16.89961	0.1193301	0.17940792	3.1134481	20	—	—
63539 2001 PH_{39}	14.8	X	175.74385	255.66699	85.79989	12.60144	0.1844297	0.23659725	2.5889853	20	2 12.8	19.2
63540 2001 PN_{39}	15.9	X	331.36365	336.81828	94.68684	12.52286	0.2003790	0.26944798	2.3740294	20	—	—
63541 2001 PY_{41}	15.1	X	132.89152	255.66896	211.03310	13.21927	0.0811190	0.24564391	2.5250233	20	5 26.7	18.7
63542 2001 PE_{45}	13.9	X	67.49943	239.31792	172.69765	5.38419	0.1737383	0.17494562	3.1661683	20	1 11.2	17.9
63543 2001 PJ_{45}	15.3	X	42.88383	247.02895	176.81730	2.46213	0.0797409	0.22644870	2.6657709	20	—	—
63544 2001 PD_{47}	14.5	X	137.22675	99.96145	306.12218	0.53273	0.2514062	0.18491873	3.0512803	20	3 31.8	19.7
63545 2001 PB_{48}	15.6	X	23.04454	55.02479	348.27847	23.32484	0.2844099	0.27284865	2.3542622	20	—	—
63546 2001 PX_{53}	14.8	X	41.03628	12.93322	132.04635	13.38531	0.0873467	0.19058341	2.9905150	20	3 21.5	18.7
63547 2001 PD_{57}	14.0	X	318.57128	328.35903	155.34267	10.75745	0.1219425	0.17407896	3.1766683	20	—	—
63548 2001 PD_{58}	14.5	X	75.07051	274.85796	83.35115	5.14371	0.1604642	0.17103320	3.2142705	20	—	—
63549 2001 PJ_{63}	15.8	X	126.17950	60.27504	352.45369	2.79495	0.1835004	0.23337577	2.6127561	20	3 20.6	19.7
63550 2001 PX_{64}	15.8	X	107.95825	43.82779	34.56600	3.08816	0.0745345	0.23926988	2.5696700	20	3 18.6	19.2
63551 2001 QS_{1}	16.5	X	236.17736	155.14079	260.82226	1.71852	0.1091015	0.30773759	2.1727796	20	7 17.9	19.2
63552 2001 QC_{4}	15.3	X	26.18406	46.72440	333.35266	3.51078	0.1030623	0.22070896	2.7117901	20	—	—
63553 2001 QV_{6}	16.6	X	86.51766	34.67239	249.11923	1.56395	0.0644226	0.32180413	2.1089922	20	12 7.2	18.9
63554 2001 QA_{8}	14.1	X	8.00239	176.18517	161.51777	7.11340	0.0463812	0.15970327	3.3645489	20	10 2.4	18.6
63555 2001 QD_{8}	14.9	X	227.22987	101.45868	264.83518	2.06575	0.0724763	0.19529038	2.9422675	20	5 2.6	19.1
63556 2001 QE_{10}	16.1	X	229.68900	229.96746	159.09102	5.74325	0.1610895	0.30204754	2.1999823	20	5 27.7	19.3
63557 2001 QN_{10}	16.8	X	332.24791	332.80353	351.44301	0.88763	0.1304193	0.30996823	2.1623430	20	8 8.8	18.4
63558 2001 QR_{10}	16.6	X	314.32443	201.32886	133.92025	4.73841	0.1493137	0.30856970	2.1688717	20	7 14.8	18.2
63559 2001 QH_{13}	15.7	X	321.94223	37.76433	351.71291	1.81399	0.1331379	0.26263419	2.4149151	20	10 21.9	17.8
63560 2001 QK_{13}	17.3	X	268.35923	355.31780	12.27762	1.70700	0.1559850	0.30481840	2.1866298	20	6 12.9	19.7
63561 2001 QL_{13}	15.8	X	328.15514	252.30974	132.06759	2.47921	0.2217496	0.26212700	2.4180292	20	11 1.2	17.3
63562 2001 QA_{15}	15.6	X	144.74725	7.29832	19.17986	2.93708	0.1180564	0.23797948	2.5789507	20	3 1.3	19.4
63563 2001 QU_{15}	15.5	X	290.13464	230.21595	107.67806	3.55341	0.1988783	0.25304880	2.4755205	20	5 25.3	18.4
63564 2001 QW_{17}	14.7	X	177.38298	6.34013	19.00111	3.63499	0.2222213	0.18859991	3.0114458	20	4 6.6	19.9
63565 2001 QP_{18}	15.0	X	225.25089	15.01519	354.52118	9.55990	0.1228286	0.19373775	2.9579663	20	4 27.8	19.8
63566 2001 QT_{18}	14.4	X	156.55980	239.05693	155.04862	9.63561	0.1407045	0.18628034	3.0363934	20	3 29.4	19.2
63567 2001 QK_{19}	15.8	X	134.84858	232.62962	184.80547	3.72161	0.1534306	0.29084282	2.2561284	20	3 28.9	18.9
63568 2001 QA_{21}	14.1	X	46.67440	321.01773	58.47210	2.31320	0.1567802	0.16840670	3.2476045	20	—	—
63569 2001 QK_{22}	14.5	X	130.50877	286.48210	166.87037	13.70423	0.2059468	0.23935156	2.5690854	20	5 20.4	18.8
63570 2001 QN_{22}	14.7	X	144.11051	6.49399	346.43985	7.82385	0.1158021	0.23027120	2.6361876	20	1 20.6	18.6
63571 2001 QC_{23}	14.9	X	315.97513	279.76412	127.67496	2.80248	0.1922812	0.26099919	2.4249900	20	11 7.2	16.6
63572 2001 QD_{23}	15.8	X	171.31308	214.80992	137.80223	3.68118	0.1791836	0.28715757	2.2753901	20	2 13.9	19.1
63573 2001 QG_{23}	14.4	X	168.54640	56.96525	357.15167	4.11798	0.3071546	0.23882377	2.5728690	20	5 3.2	19.1
63574 2001 QH_{25}	15.7	X	302.93905	279.39183	99.17283	4.32900	0.1475892	0.31022363	2.1611561	20	9 7.5	17.3
63575 2001 QQ_{27}	14.7	X	147.54487	84.90418	11.56460	12.86861	0.1449448	0.24191415	2.5509104	20	5 30.5	18.9
63576 2001 QS_{27}	15.8	X	153.62414	199.60226	194.95928	6.12771	0.1391120	0.28834996	2.2691130	20	3 16.7	19.0
63577 2001 QU_{27}	15.3	X	44.27072	34.09590	358.75981	6.84265	0.1143580	0.27195411	2.3594220	20	—	—
63578 2001 QD_{28}	14.9	X	312.88222	250.20776	161.03715	2.00338	0.1680227	0.26036976	2.4288966	20	11 5.8	16.9
63579 2001 QO_{29}	14.5	X	89.41328	148.85959	15.02479	6.94540	0.1021427	0.29544507	2.2326375	20	6 22.6	17.3
63580 2001 QW_{29}	14.9	X	22.00338	302.12574	110.13971	3.06220	0.2037798	0.26968150	2.3726587	20	—	—
63581 2001 QC_{30}	15.8	X	71.88101	201.23776	149.26115	2.52812	0.2274496	0.27098815	2.3650256	20	—	—
63582 2001 QL_{30}	14.6	X	162.81179	226.04832	185.64072	3.90508	0.3140884	0.18376555	3.0640322	20	4 29.8	20.2
63583 2001 QP_{31}	15.2	X	141.81364	186.00963	158.76949	10.78719	0.2830867	0.28213243	2.3023289	20	1 16.4	18.8
63584 2001 QY_{33}	14.4	X	68.93102	131.46848	262.39516	8.22746	0.0897142	0.17421529	3.1750107	20	—	—
63585 2001 QB_{44}	14.7	X	206.30366	222.40769	147.04817	10.89030	0.1171275	0.19359863	2.9593832	20	4 16.4	19.5
63586 2001 QK_{44}	14.8	X	130.24686	8.53596	30.69698	1.68789	0.1752511	0.18567749	3.0429621	20	3 11.8	19.6
63587 2001 QH_{47}	14.9	X	102.16059	67.62864	351.90865	3.65701	0.0499290	0.18558511	3.0439719	20	2 18.5	19.2
63588 2001 QB_{49}	17.0	X	320.75542	46.23081	323.51065	2.09090	0.1650403	0.31357682	2.1457218	20	10 1.2	18.1
63589 2001 QX_{49}	14.3	X	284.72160	112.06636	142.13816	11.28304	0.0804145	0.18928304	3.0041959	20	2 20.8	18.6
63590 2001 QM_{59}	16.3	X	78.31744	194.78967	125.03657	3.56350	0.2282373	0.27292820	2.3538048	20	—	—
63591 2001 QF_{61}	14.3	X	78.02283	210.22176	204.06579	1.65938	0.1690491	0.18038213	3.1022279	20	1 28.2	18.3
63592 2001 QM_{61}	15.5	X	90.39467	100.62970	306.20809	5.12353	0.1551790	0.28476643	2.2881098	20	1 15.1	17.6
63593 2001 QZ_{62}	15.6	X	50.45344	194.51091	163.18720	6.59656	0.1391789	0.27203598	2.3589487	20	—	—
63594 2001 QU_{63}	14.6	X	104.46388	243.14752	90.68553	2.49448	0.1738510	0.17144104	3.2091709	20	—	—
63595 2001 QW_{63}	16.2	X	81.37125	240.73143	180.62154	6.46003	0.0918247	0.28383964	2.2930878	20	1 10.4	18.7
63596 2001 QG_{64}	15.5	X	353.62216	222.17163	157.05302	8.50438	0.2316005	0.21166320	2.7885117	20	12 4.5	18.4
63597 2001 QH_{65}	14.4	X	178.15108	255.58723	150.37780	12.91684	0.2339418	0.23945714	2.5683302	20	5 4.4	19.1
63598 2001 QJ_{65}	14.8	X	86.73264	46.19178	260.32886	7.28681	0.0839333	0.22159029	2.7045950	20	12 15.9	18.8
63599 2001 QN_{65}	14.8	X	228.07405	242.68896	280.48472	5.74856	0.0346259	0.21735163	2.7396439	20	11 28.4	18.5
63600 2001 QY_{65}	13.6	X	355.30303	237.91363	316.16256	8.80912	0.0351746	0.18766517	3.0214374	20	3 10.5	17.8

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Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
	m		°	°	°	°		°				
63601 2001 QD_{66}	15.2	X	139.76369	310.30572	315.36228	6.16388	0.0852821	0.27307251	2.3529754	20	—	—
63602 2001 QE_{67}	14.6	X	107.20577	324.10681	23.49988	14.11360	0.2001831	0.22440810	2.6819069	20	—	—
63603 2001 QG_{67}	14.2	X	70.48874	306.40358	89.84529	7.02900	0.2107279	0.22300918	2.6931108	20	—	—
63604 2001 QC_{68}	13.7	X	165.85271	335.19172	58.15069	14.57724	0.1538279	0.23408038	2.6075104	20	4 8.4	18.0
63605 Budperry	16.1	X	279.16827	284.29543	179.57031	26.22542	0.0945283	0.37482943	1.9050817	20	—	—
63606 2001 QK_{69}	13.4	X	199.14103	326.40144	285.11092	10.28474	0.0880400	0.17416154	3.1756640	20	—	—
63607 2001 QG_{70}	15.6	X	17.12264	117.96470	267.59899	5.12678	0.1564836	0.26922071	2.3753653	20	—	—
63608 2001 QD_{72}	15.9	X	37.70370	0.20772	18.20547	2.29726	0.2173533	0.27012874	2.3700392	20	—	—
63609 Francoisecolas	14.7	X	102.69179	271.15654	194.30465	2.04383	0.1095331	0.19115234	2.9845783	20	4 23.4	18.8
63610 2001 QT_{75}	14.6	X	162.62810	249.64680	181.13822	4.28542	0.1958364	0.23840074	2.5759118	20	5 18.2	18.9
63611 2001 QX_{75}	15.2	X	123.56240	276.93794	205.17113	4.21773	0.0946984	0.29299264	2.2450787	20	6 6.7	18.1
63612 2001 QK_{76}	15.4	X	315.28098	157.40471	215.57250	6.98708	0.1630418	0.25474951	2.4644905	20	9 5.7	17.8
63613 2001 QO_{76}	13.8	X	98.05061	87.83708	217.96524	10.95092	0.0988416	0.21337949	2.7735390	20	12 25.5	18.2
63614 2001 QF_{77}	14.3	X	220.79600	189.85688	203.50108	13.70776	0.1704134	0.24274641	2.5450765	20	5 23.8	18.4
63615 2001 QB_{78}	14.7	X	358.15629	211.93945	248.40714	5.11322	0.1842376	0.26973090	2.3723690	20	—	—
63616 2001 QN_{78}	14.4	X	91.72819	212.42198	200.93395	13.87298	0.1202054	0.22575057	2.6712640	20	1 28.0	18.1
63617 2001 QO_{78}	15.5	X	218.68835	174.13518	177.79339	6.71227	0.2011430	0.29121977	2.2541811	20	3 26.0	19.0
63618 2001 QP_{78}	15.4	X	20.41924	330.51308	89.43841	3.45069	0.2022040	0.26869431	2.3784667	20	—	—
63619 2001 QV_{78}	14.9	X	151.77305	321.86065	30.18152	10.59981	0.0921913	0.27965748	2.3158926	20	1 18.7	18.2
63620 2001 QW_{78}	14.0	X	4.37571	170.47689	241.62704	5.04647	0.1340467	0.26556301	2.3971268	20	—	—
63621 2001 QZ_{78}	15.1	X	345.51097	13.98228	358.80902	2.25534	0.2027465	0.25865725	2.4396055	20	11 19.2	17.0
63622 2001 QE_{79}	14.1	X	169.75658	14.69268	34.95818	12.21601	0.0828111	0.18311717	3.0712606	20	4 25.4	18.7
63623 2001 QN_{79}	15.3	X	327.74377	81.72529	317.34130	1.97327	0.1322591	0.26021176	2.4298797	20	11 16.2	17.7
63624 2001 QX_{79}	15.6	X	33.24282	52.32552	13.63597	2.33226	0.1882893	0.27160474	2.3614449	20	—	—
63625 2001 QC_{80}	15.3	X	342.78689	228.13682	29.52960	3.69037	0.0304260	0.29360360	2.2419631	20	5 14.4	17.6
63626 2001 QH_{80}	14.5	X	100.14949	346.66525	21.00527	9.45177	0.2209542	0.22225131	2.6992296	20	1 1.4	18.1
63627 2001 QJ_{80}	15.6	X	129.47852	334.04010	10.41670	4.41762	0.1889519	0.27666088	2.3325853	20	—	—
63628 2001 QN_{80}	14.5	X	193.67070	65.54905	179.10004	10.65626	0.0336003	0.17202235	3.2019371	20	—	—
63629 2001 QU_{80}	14.2	X	134.92372	2.48594	317.82865	12.65335	0.1579013	0.22546143	2.6735473	20	—	—
63630 2001 QE_{83}	14.6	X	16.94994	173.10371	252.27543	4.29545	0.2650278	0.27077264	2.3662803	20	—	—
63631 2001 QY_{83}	14.6	X	142.73763	175.91841	212.11226	4.95006	0.3159558	0.23283063	2.6168328	20	3 15.8	19.1
63632 2001 QG_{84}	15.0	X	118.71543	215.56219	204.02303	15.05453	0.1741752	0.23238649	2.6201659	20	3 18.0	18.9
63633 2001 QR_{84}	15.1	X	160.84214	110.57733	342.15660	3.86067	0.0963632	0.29466038	2.2365995	20	6 9.5	18.3
63634 2001 QU_{86}	14.9	X	166.78312	54.49341	337.86668	21.82243	0.0693481	0.23851921	2.5750588	20	3 20.0	18.9
63635 2001 QM_{88}	15.7	X	242.81328	324.47542	152.93353	5.51032	0.1154433	0.21366971	2.7710269	20	10 9.8	19.5
63636 2001 QJ_{90}	15.8	X	165.64974	305.22315	94.29760	8.07097	0.1047828	0.28864595	2.2675615	20	4 8.3	19.1
63637 2001 QT_{90}	15.0	X	278.14376	164.68532	240.08675	19.25741	0.0742086	0.36621503	1.9348410	20	9 9.9	17.2
63638 2001 QM_{92}	14.5	X	81.55487	67.82512	7.76799	8.90228	0.0854494	0.18427531	3.0583788	20	2 19.6	18.7
63639 2001 QQ_{93}	14.8	X	41.03829	19.93283	50.80311	8.57976	0.2074614	0.21919390	2.7242716	20	—	—
63640 2001 QM_{94}	16.4	X	202.92043	223.81690	182.00776	2.68511	0.1428954	0.29868811	2.2164474	20	5 22.8	19.5
63641 2001 QE_{97}	13.6	X	314.28949	303.61077	321.88062	9.01514	0.0353746	0.19091118	2.9870911	20	4 13.5	17.8
63642 2001 QK_{97}	14.6	X	65.00347	140.42216	320.68190	5.83405	0.1643209	0.28395540	2.2924646	20	2 19.5	16.6
63643 2001 QC_{99}	14.9	X	162.45639	333.32186	350.52466	9.29983	0.2099603	0.22863340	2.6487620	20	1 12.5	19.3
63644 2001 QY_{99}	16.1	X	172.17553	297.46392	232.80837	20.94341	0.0570455	0.36948107	1.9234220	20	10 23.5	18.3
63645 2001 QY_{101}	15.8	X	125.27617	12.52677	32.18131	2.90008	0.2122001	0.28466135	2.2886728	20	3 9.9	19.0
63646 2001 QA_{102}	15.6	X	66.75129	227.65065	185.47375	6.77173	0.1911579	0.22397408	2.6853705	20	1 1.7	18.5
63647 2001 QD_{104}	13.8	X	81.31833	279.00942	80.38867	2.31600	0.2183023	0.17138927	3.2098172	20	—	—
63648 2001 QP_{104}	15.6	X	238.04177	31.26396	307.71252	5.50084	0.1634314	0.29368726	2.2415373	20	3 25.9	19.0
63649 2001 QT_{105}	15.1	X	324.91887	213.27387	203.76396	6.19091	0.1380865	0.26133562	2.4229083	20	12 9.4	17.4
63650 2001 QN_{106}	14.8	X	51.44305	179.20400	211.95332	5.58894	0.1487989	0.17248732	3.1961803	20	—	—
63651 2001 QS_{107}	14.6	X	98.02095	217.14146	159.84435	4.72683	0.2041837	0.22409641	2.6843931	20	1 6.3	17.9
63652 2001 QG_{108}	15.5	X	294.28423	348.28421	148.55694	3.34251	0.0042537	0.21976569	2.7195442	20	—	—
63653 2001 QQ_{109}	15.0	X	9.69563	249.72967	51.76282	7.13270	0.1706312	0.26208204	2.4183057	20	9 21.1	17.4
63654 2001 QD_{113}	13.5	X	333.68523	196.34408	335.79957	23.56312	0.1848695	0.17893832	3.1188930	20	1 6.4	17.9
63655 2001 QV_{113}	15.8	X	29.39292	146.21572	352.27916	4.17363	0.1610201	0.23352380	2.6116518	20	2 15.4	18.2
63656 2001 QC_{114}	15.6	X	100.37449	325.43980	264.56196	7.20512	0.0577220	0.26430387	2.4047340	20	9 26.3	19.1
63657 2001 QV_{114}	15.6	X	136.17755	205.56180	214.79695	8.83568	0.1619059	0.29153135	2.2525747	20	4 2.6	18.7
63658 2001 QJ_{115}	14.6	X	236.65288	63.52898	272.63806	7.50057	0.1063507	0.19132146	2.9828192	20	3 30.7	19.4
63659 2001 QM_{116}	15.4	X	20.17114	140.70670	237.89466	5.48161	0.0994318	0.21637938	2.7478444	20	12 26.3	19.0
63660 2001 QV_{119}	13.8	X	232.48562	320.71251	96.07600	3.30713	0.0432750	0.20003810	2.8955266	20	7 16.9	17.9
63661 2001 QC_{120}	14.0	X	116.80931	247.06004	154.82467	11.04616	0.0654532	0.18122909	3.0925551	20	2 16.1	18.4
63662 2001 QE_{120}	15.8	X	105.91713	46.15210	25.26497	4.01896	0.1614476	0.28888536	2.2663085	20	3 14.9	18.4
63663 2001 QQ_{120}	14.1	X	73.15496	102.69053	271.23228	8.73936	0.0477867	0.17665371	3.1457259	20	—	—
63664 2001 QQ_{121}	15.1	X	310.88471	40.36287	83.74871	4.47478	0.1240710	0.22490359	2.6779664	20	—	—
63665 2001 QC_{124}	16.1	X	45.70422	335.67556	75.19117	3.05407	0.1936789	0.27764480	2.3270713	20	—	—
63666 2001 QD_{129}	15.6	X	20.93986	146.78780	268.79517	5.99827	0.0948495	0.27636298	2.3342613	20	—	—
63667 2001 QK_{130}	14.5	X	165.97107	150.29714	193.41781	10.25636	0.1727616	0.18329538	3.0692696	20	2 5.6	19.7
63668 2001 QP_{131}	14.9	X	180.64628	242.58284	178.12663	14.37788	0.2482941	0.24432239	2.5341202	20	5 22.6	19.6
63669 2001 QS_{131}	15.8	X	14.18828	257.00985	108.39885	3.40335	0.1797428	0.26622250	2.3931663	20	12 27.8	18.4
63670 2001 QY_{131}	14.0	X	309.67772	283.89922	287.71995	8.48010	0.0245226	0.18452737	3.0555931	20	2 5.3	18.3
63671 2001 QK_{132}	14.8	X	173.33485	163.66197	190.93326	9.73074	0.0940733	0.18516612	3.0485620	20	2 21.2	19.5
63672 2001 QM_{134}	14.8	X	16.91029	301.20021	219.15960	13.53855	0.1296656	0.23567658	2.5957235	20	2 15.4	17.9
63673 2001 QL_{135}	15.5	X	182.19277	55.13722	303.93511	5.03062	0.1236840	0.28878265	2.2668458	20	2 27.6	18.8
63674 2001 QO_{136}	15.1	X	77.22427	174.38342	319.74174	10.70926	0.0800005	0.23924349	2.5698590	20	4 14.3	18.6
63675 2001 QY_{137}	15.4	X	87.36790	93.64078	284.64514	5.97848	0.1278533	0.27610202	2.3357319	20	—	—
63676 2001 QM_{139}	15.2	X	210.85432	95.96580	263.54852	7.45367	0.1900389	0.29195735	2.2503830	20	3 24.7	18.9
63677 2001 QY_{139}	14.9	X	93.71837	41.01155	323.99778	6.21955	0.1398626	0.27432720	2.3457954	20	—	—
63678 2001 QL_{140}	13.7	X	250.61559	81.21383	255.04378	9.04193	0.1195281	0.18939076	3.0030566	20	4 14.3	18.3
63679 2001 QN_{145}	16.8	X	296.83161	244.06735	194.70508	0.98809	0.1491145	0.26415717	2.4056242	20	11 16.0	19.0
63680 2001 QD_{147}	14.5	X	166.32521	278.84503	97.51920	10.05676	0.1687844	0.18171769	3.0870091	20	3 21.8	19.7

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Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
	m		°	°	°	°		°				
63681 2001 QE_{147}	14.9	X	302.41029	328.01290	148.25225	10.01975	0.1275393	0.26610773	2.3938543	20	—	—
63682 2001 QZ_{147}	14.3	X	192.97718	322.20355	43.87750	14.56079	0.1892543	0.23712461	2.5851454	20	3 30.3	18.7
63683 2001 QJ_{150}	14.4	X	138.60056	333.55346	113.60243	8.27855	0.2947468	0.18423868	3.0587843	20	5 24.8	19.8
63684 2001 QL_{152}	14.4	X	346.32163	211.09257	73.68922	3.10861	0.0482990	0.19667769	2.9284152	20	6 27.1	18.2
63685 2001 QT_{152}	15.7	X	27.61724	188.55370	321.37856	4.26395	0.0500644	0.23664075	2.5886680	20	2 24.1	18.7
63686 2001 QY_{152}	16.1	X	112.09105	89.96762	340.82467	1.91046	0.1686912	0.28957424	2.2627128	20	3 21.5	19.0
63687 2001 QH_{154}	14.5	X	153.29689	245.09652	322.87837	14.21939	0.0673930	0.21001035	2.8031236	20	10 17.5	19.0
63688 2001 QR_{154}	14.2	X	307.18641	353.03028	163.11290	12.29834	0.1110329	0.17532062	3.1616518	20	—	—
63689 2001 QK_{155}	16.0	X	171.28732	169.83655	187.16577	5.91591	0.1450512	0.28995364	2.2607386	20	2 15.1	19.3
63690 2001 QY_{156}	14.9	X	138.05910	262.40559	185.11590	9.27683	0.1050542	0.19280678	2.9674803	20	5 11.6	19.4
63691 2001 QY_{157}	15.1	X	209.42978	245.76865	190.11390	1.79531	0.0706438	0.20105661	2.8857397	20	7 10.8	19.2
63692 2001 QQ_{160}	16.7	X	342.33787	153.05220	258.37993	0.48985	0.1728590	0.26891017	2.3771937	20	—	—
63693 2001 QN_{161}	16.0	X	193.01929	264.06966	114.33753	3.70279	0.1158928	0.24340122	2.5405099	20	4 10.1	19.9
63694 2001 QB_{167}	15.0	X	121.24160	147.24303	111.00723	8.99734	0.0195694	0.21761655	2.7374200	20	11 22.5	18.9
63695 2001 QM_{168}	15.2	X	127.56267	16.67635	8.71877	5.72366	0.1498769	0.27955044	2.3164838	20	2 9.5	18.3
63696 2001 QV_{169}	15.7	X	67.80302	215.51141	250.90747	4.78101	0.1145612	0.28342982	2.2952977	20	2 23.7	18.0
63697 2001 QY_{177}	14.5	X	227.18216	120.66811	142.51566	10.93223	0.0455832	0.18324340	3.0698500	20	1 2.4	19.1
63698 2001 QK_{179}	14.6	X	97.36861	270.68878	132.08363	4.48861	0.2899945	0.22616454	2.6680034	20	2 20.9	18.2
63699 2001 QG_{181}	13.4	X	261.00287	296.22634	41.08749	13.61620	0.1767815	0.19145614	2.9814201	20	4 24.1	17.8
63700 2001 QR_{181}	14.7	X	175.30159	18.23148	26.95901	4.97196	0.2155501	0.23832861	2.5764315	20	4 26.3	19.1
63701 2001 QA_{182}	15.7	X	102.03185	21.26562	10.58584	12.89818	0.1438194	0.28139120	2.3063703	20	1 14.5	18.5
63702 2001 QK_{182}	14.6	X	311.81029	252.65443	123.03324	7.00374	0.1354673	0.25325144	2.4741998	20	9 11.1	17.0
63703 2001 QB_{185}	14.6	X	112.58812	149.92879	240.42697	12.32592	0.1141195	0.18207154	3.0830082	20	1 30.8	19.3
63704 2001 QS_{187}	15.2	X	341.66562	271.92398	190.33600	22.52762	0.2783006	0.27283611	2.3543344	20	—	—
63705 2001 QJ_{195}	15.1	X	301.77392	29.75441	76.15197	11.54003	0.2207205	0.21633584	2.7482131	20	12 12.2	17.5
63706 2001 QS_{196}	15.2	X	293.03538	235.48362	314.32984	23.63417	0.1767296	0.27953875	2.3165483	20	—	—
63707 2001 QX_{197}	14.6	X	91.43544	196.49151	222.57686	15.05072	0.1016560	0.22800173	2.6536519	20	1 30.3	18.4
63708 2001 QA_{198}	15.6	X	143.27437	164.14762	228.80104	6.16153	0.1382440	0.28540060	2.2847190	20	3 1.5	18.9
63709 2001 QY_{198}	15.5	X	137.13140	335.38132	5.98683	6.49646	0.1330834	0.27773751	2.3265534	20	—	—
63710 2001 QC_{200}	16.0	X	184.29622	149.95824	223.87539	3.58817	0.1695595	0.28884978	2.2664946	20	3 21.7	19.6
63711 2001 QD_{200}	15.6	X	232.55165	174.68883	301.73418	3.67215	0.0228044	0.30933731	2.1652822	20	10 23.1	18.1
63712 2001 QH_{200}	15.0	X	241.71334	100.18261	252.10821	13.79352	0.1578133	0.24378191	2.5378643	20	4 18.4	19.1
63713 2001 QY_{206}	14.5	X	338.42276	142.14400	31.05425	1.86010	0.1440467	0.18318690	3.0704811	20	1 14.1	18.2
63714 2001 QF_{208}	16.9	X	185.20103	302.80420	108.30761	5.17139	0.1196706	0.29896588	2.2150743	20	5 12.7	20.0
63715 2001 QL_{212}	16.4	X	61.40709	100.23587	323.39523	1.97979	0.2136173	0.27961265	2.3161402	20	—	—
63716 2001 QV_{216}	15.7	X	21.81625	296.24942	1.62449	4.87725	0.0910421	0.26019906	2.4299587	20	9 20.7	18.3
63717 2001 QT_{220}	15.1	X	34.48691	186.15389	240.80133	7.60299	0.1793312	0.22705173	2.6610488	20	—	—
63718 2001 QT_{225}	14.5	X	122.06798	147.01112	273.37445	8.86285	0.0543962	0.18484460	3.0520961	20	3 9.6	19.1
63719 2001 QV_{225}	13.9	X	35.73706	215.07522	269.58623	8.92049	0.0483228	0.18158873	3.0884705	20	2 8.5	18.2
63720 2001 QS_{228}	15.8	X	45.65611	59.10462	351.02003	6.48243	0.1359458	0.27612719	2.3355899	20	—	—
63721 2001 QH_{234}	14.9	X	19.26082	297.20925	149.18958	0.88258	0.1659573	0.17158780	3.2073409	20	—	—
63722 2001 QK_{235}	14.4	X	132.34761	207.39246	184.54501	9.28242	0.2769019	0.18075532	3.0979565	20	3 13.2	19.5
63723 2001 QN_{235}	16.5	X	80.69388	231.89944	142.07799	6.54599	0.1479720	0.27852965	2.3221401	20	—	—
63724 2001 QO_{235}	14.2	X	127.91550	206.27165	207.34486	9.08194	0.0667918	0.18326779	3.0695776	20	3 12.3	18.7
63725 2001 QP_{235}	14.3	X	173.57966	179.58026	208.53089	9.09379	0.0985952	0.18653869	3.0335892	20	4 2.6	18.9
63726 2001 QQ_{235}	14.6	X	34.75948	18.14281	358.84201	4.46347	0.1239974	0.21944586	2.7221859	20	—	—
63727 2001 QO_{237}	14.8	X	274.01560	0.68701	45.09110	2.38435	0.0680276	0.20421445	2.8559136	20	8 23.4	18.5
63728 2001 QW_{237}	16.1	X	293.96669	274.38115	160.52414	2.31644	0.1807528	0.26237091	2.4165304	20	11 1.0	18.0
63729 2001 QG_{238}	15.4	X	1.52965	152.58756	161.89822	2.96265	0.2334851	0.25976414	2.4326703	20	9 30.2	17.1
63730 2001 QB_{239}	14.9	X	223.95727	183.95792	338.02723	2.02043	0.1626597	0.26565897	2.3965494	20	11 13.7	18.1
63731 2001 QE_{241}	14.4	X	169.82142	334.87124	182.86137	1.84123	0.0111821	0.20630604	2.8365782	20	9 10.9	18.2
63732 2001 QR_{241}	14.3	X	202.93589	140.70209	145.56968	2.50298	0.0543366	0.17787286	3.1313354	20	1 4.3	18.9
63733 2001 QK_{244}	14.3	X	308.69154	59.38244	156.42517	2.18392	0.0367323	0.18174761	3.0866703	20	2 9.6	18.7
63734 2001 QN_{246}	15.5	X	104.24943	43.60241	353.74029	3.25958	0.2200026	0.28145825	2.3060040	20	2 4.4	18.0
63735 2001 QQ_{246}	14.9	X	71.87750	330.64769	354.50698	9.33357	0.2067292	0.21677362	2.7445117	20	—	—
63736 2001 QF_{249}	14.4	X	173.76134	338.31706	88.45951	2.81217	0.2263099	0.18712945	3.0272012	20	5 22.9	19.5
63737 2001 QN_{249}	16.1	X	51.21576	4.47906	44.51443	5.14550	0.1345160	0.27464859	2.3439651	20	—	—
63738 2001 QA_{251}	14.7	X	19.47776	325.72270	58.34771	9.96726	0.0225638	0.21875155	2.7279430	20	12 22.1	18.4
63739 2001 QD_{251}	16.1	X	176.12791	164.62382	231.80608	7.99005	0.1320922	0.29819417	2.2188943	20	4 9.9	19.5
63740 2001 QO_{251}	15.7	X	24.25019	65.77320	187.75922	8.33624	0.0622496	0.25771757	2.4455321	20	7 14.9	18.7
63741 2001 QV_{254}	16.0	X	314.06060	4.59990	85.25900	9.22714	0.0751017	0.27263334	2.3555016	20	—	—
63742 2001 QK_{256}	14.4	X	176.53995	240.17567	147.71029	9.98754	0.1910630	0.18718622	3.0265891	20	4 11.5	19.6
63743 2001 QL_{256}	14.2	X	143.31346	256.28530	140.09699	9.54855	0.0955673	0.18400636	3.0613582	20	3 15.9	18.8
63744 2001 QT_{256}	15.6	X	113.78778	298.76600	122.76951	5.41726	0.2242793	0.23357013	2.6113065	20	3 26.1	19.4
63745 2001 QU_{258}	15.9	X	31.30713	217.99332	237.49219	6.22756	0.1142088	0.28062706	2.3105552	20	—	—
63746 2001 QF_{263}	15.3	X	102.45615	238.04520	157.73139	6.64137	0.1767897	0.27979206	2.3151499	20	1 21.9	18.0
63747 2001 QG_{263}	14.7	X	150.92811	345.63141	71.75707	5.60860	0.2279503	0.23593789	2.5938066	20	4 23.9	19.0
63748 2001 QH_{263}	15.7	X	274.43137	1.40400	60.27149	3.34580	0.1778852	0.25628154	2.4546590	20	9 5.3	18.5
63749 2001 QU_{263}	15.2	X	78.61674	340.76684	38.39629	7.33451	0.1617723	0.27450084	2.3448061	20	—	—
63750 2001 QG_{264}	15.7	X	164.73449	253.68961	82.54940	5.59752	0.1663334	0.28228455	2.3015017	20	1 17.9	19.1
63751 2001 QX_{264}	15.3	X	263.45696	210.03325	141.51069	2.77541	0.0746546	0.19986276	2.8972199	20	5 27.6	19.4
63752 2001 QA_{265}	15.1	X	27.53424	197.66137	189.45361	8.23624	0.0433614	0.21849909	2.7300438	20	—	—
63753 2001 QE_{265}	16.1	X	326.21473	217.87348	227.31786	2.18125	0.1381189	0.26888666	2.3773323	20	—	—
63754 2001 QP_{267}	15.7	X	180.07717	256.99707	232.87055	18.88061	0.0939087	0.36012425	1.9565959	20	8 21.2	18.7
63755 2001 QZ_{267}	15.2	X	78.37423	241.22687	188.00815	11.02674	0.2386690	0.17771150	3.1332306	20	2 25.2	19.3
63756 2001 QM_{269}	15.4	X	156.49966	201.87738	148.08982	7.31584	0.2262898	0.28356823	2.2945508	20	1 31.2	19.0
63757 2001 QK_{277}	14.4	X	195.21965	3.53462	25.54631	9.44707	0.1116209	0.19184096	2.9774318	20	4 25.1	19.0
63758 2001 QP_{277}	13.9	X	106.33847	332.94896	36.00875	11.75600	0.2030506	0.17635406	3.1492883	20	1 17.8	18.6
63759 2001 QB_{280}	14.2	X	52.71704	341.69216	87.25188	5.71581	0.1939886	0.17471487	3.1689554	20	1 11.6	17.8
63760 2001 QP_{282}	15.7	X	261.94008	268.61575	93.47379	5.18192	0.2132264	0.30038749	2.2080801	20	5 20.2	18.8

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
	m		°	°	°	°		°				
63761 2001 QR_{282}	15.5	X	113.29198	255.58936	138.00221	6.94731	0.1340986	0.28131357	2.3067946	20	1 27.9	18.2
63762 2001 QX_{282}	15.8	X	324.21272	347.93505	8.58992	20.16044	0.0691535	0.36330257	1.9451678	20	9 29.7	16.8
63763 2001 QB_{283}	15.6	X	53.75756	146.78158	202.93531	5.55290	0.0278099	0.22207981	2.7006190	20	12 24.1	19.4
63764 2001 QT_{283}	16.0	X	49.82783	3.91723	1.66518	2.00613	0.2188292	0.27054642	2.3675992	20	—	—
63765 2001 QM_{284}	14.7	X	241.64899	20.70891	72.33331	9.49378	0.1977527	0.25309842	2.4751969	20	9 3.3	18.3
63766 2001 QQ_{284}	15.1	X	349.63716	263.82843	152.49265	6.69928	0.0841057	0.21834914	2.7312937	20	12 30.1	18.5
63767 2001 QF_{291}	15.0	X	132.25604	251.04897	181.63765	4.06377	0.2337873	0.23622064	2.5917364	20	4 26.2	19.1
63768 2001 QP_{291}	15.9	X	151.14401	30.71379	14.14424	4.29330	0.1891666	0.23645002	2.5900599	20	4 4.5	20.0
63769 2001 QU_{291}	15.0	X	251.23552	83.58027	332.53464	0.99566	0.1652708	0.25182726	2.4835194	20	7 26.2	18.4
63770 2001 QM_{293}	15.6	X	129.54483	39.78218	12.13421	4.72392	0.1637677	0.23448877	2.6044819	20	3 21.6	19.5
63771 2001 QA_{294}	15.2	X	16.87507	209.65178	200.48895	3.64195	0.2021030	0.22145855	2.7056674	20	—	—
63772 2001 QO_{295}	14.2	X	46.66331	301.28195	75.30413	14.11613	0.1586406	0.21442549	2.7645118	20	—	—
63773 2001 QP_{295}	15.9	X	306.95990	199.01792	257.70801	0.67285	0.1404175	0.26539159	2.3981589	20	—	—
63774 2001 QX_{295}	15.7	X	91.20414	278.96024	194.41045	7.31061	0.0598728	0.28990372	2.2609981	20	4 4.6	18.1
63775 2001 QH_{296}	14.7	X	308.64924	276.79826	197.59135	9.10664	0.1775334	0.21372938	2.7705111	20	—	—
63776 2001 QF_{297}	14.7	X	229.31901	264.49987	100.37060	14.96278	0.2048482	0.24126678	2.5554714	20	4 29.1	19.1
63777 2001 RD_{1}	14.6	X	61.61800	185.73932	333.25120	8.98062	0.0120505	0.19302723	2.9652205	20	4 20.6	18.9
63778 2001 RY_{1}	14.6	X	189.10580	168.65395	181.46723	8.28304	0.0685800	0.18577394	3.0419088	20	3 3.2	19.1
63779 2001 RX_{3}	15.7	X	34.43226	206.75576	225.61499	1.35523	0.0757412	0.22651045	2.6652864	20	—	—
63780 2001 RW_{4}	16.0	X	266.11871	157.24773	246.69650	4.21544	0.1039390	0.25625743	2.4548129	20	8 6.6	19.1
63781 2001 RL_{5}	16.0	X	125.82627	246.62469	201.75816	5.44873	0.1203477	0.29333927	2.2433097	20	4 25.9	18.8
63782 2001 RU_{6}	16.0	X	29.71281	279.73088	180.10506	2.98668	0.1094024	0.27921816	2.3183212	20	—	—
63783 2001 RK_{8}	15.4	X	315.29966	124.96666	286.36451	3.19072	0.0593927	0.21180927	2.7872296	20	10 29.3	18.8
63784 2001 RK_{9}	14.9	X	107.21815	212.55634	239.88530	23.24259	0.2213441	0.28864078	2.2675886	20	4 19.3	18.3
63785 2001 RM_{11}	15.0	X	274.64651	11.79463	34.48877	2.29976	0.0620634	0.20231697	2.8737424	20	8 25.5	18.8
63786 2001 RO_{11}	15.0	X	138.34937	46.10707	19.06353	7.27031	0.2887532	0.18265943	3.0763895	20	4 25.7	20.3
63787 2001 RW_{16}	15.4	X	336.31993	11.31179	9.63458	9.51373	0.1623301	0.20918952	2.8104516	20	10 21.6	18.3
63788 2001 RL_{17}	15.8	X	82.57084	213.49433	172.54795	3.41111	0.1438980	0.27836243	2.3230700	20	—	—
63789 2001 RD_{18}	16.6	X	295.61846	227.65573	156.00210	23.31423	0.0876086	0.36537243	1.9378145	20	9 20.8	18.0
63790 2001 RE_{18}	16.6	X	29.32466	311.35765	96.73621	0.55846	0.2111188	0.27504775	2.3416968	20	—	—
63791 2001 RG_{18}	15.5	X	79.19714	276.00286	170.26099	7.92605	0.1220424	0.23651804	2.5895633	20	2 23.8	18.5
63792 2001 RY_{18}	15.0	X	350.65933	346.08988	166.05104	13.34074	0.1679070	0.23432294	2.6057106	20	—	—
63793 2001 RF_{19}	14.9	X	313.98026	148.24640	184.02658	1.89505	0.0732351	0.20281972	2.8689915	20	7 10.9	18.4
63794 2001 RH_{20}	16.8	X	255.11585	114.33859	297.77228	1.17887	0.1794612	0.25522355	2.4614379	20	7 23.5	20.0
63795 2001 RL_{21}	15.3	X	293.38955	314.85520	25.50949	2.13886	0.0796035	0.20077236	2.8884627	20	6 20.6	19.0
63796 2001 RJ_{23}	15.4	X	275.16604	0.80566	147.52330	2.87574	0.1112921	0.22183826	2.7025791	20	—	—
63797 2001 RX_{25}	14.6	X	268.81704	297.90837	148.56062	4.48357	0.0711016	0.21100689	2.7942910	20	10 9.9	18.2
63798 2001 RL_{26}	16.2	X	263.54773	288.55635	147.65811	5.15828	0.1913542	0.25921886	2.4360806	20	9 6.2	19.2
63799 2001 RS_{26}	14.8	X	158.02854	331.32004	50.25350	1.74136	0.2462968	0.18479747	3.0526150	20	3 20.3	20.1
63800 2001 RJ_{27}	14.7	X	153.24330	321.38358	61.43343	1.83016	0.0940238	0.18500148	3.0503704	20	3 8.4	19.3
63801 2001 RM_{27}	14.2	X	291.53574	270.94178	144.62180	5.80608	0.0857294	0.20929575	2.8095005	20	9 29.8	17.7
63802 2001 RV_{28}	16.1	X	264.22661	345.63942	71.66332	1.74154	0.1088120	0.25828406	2.4419550	20	8 25.1	19.0
63803 2001 RC_{29}	16.5	X	22.06145	207.32285	249.98165	1.25166	0.1623880	0.28019929	2.3129063	20	—	—
63804 2001 RA_{31}	15.9	X	48.45276	275.30292	148.35929	4.10282	0.2242726	0.22582377	2.6706867	20	—	—
63805 2001 RV_{36}	16.1	X	250.56095	317.12561	268.88470	3.77940	0.1257273	0.28557249	2.2838021	20	—	—
63806 2001 RG_{37}	14.9	X	166.38864	351.29812	292.45175	6.55740	0.1280538	0.17556728	3.1586899	20	—	—
63807 2001 RZ_{38}	14.4	X	22.15359	231.38628	210.23466	4.09634	0.1657861	0.17305005	3.1892476	20	—	—
63808 2001 RF_{44}	15.6	X	145.41163	300.42778	69.91070	7.37436	0.1532786	0.28392714	2.2926167	20	2 10.9	18.9
63809 2001 RU_{44}	15.0	X	359.41436	271.13250	185.06796	6.12318	0.0794117	0.27052330	2.3677341	20	—	—
63810 2001 RL_{45}	14.2	X	115.19025	161.00589	169.28011	1.74728	0.1738586	0.17117460	3.2125003	20	—	—
63811 2001 RU_{45}	15.5	X	66.00022	30.96134	55.44132	4.45429	0.1129303	0.28327426	2.2961379	20	1 25.8	17.7
63812 2001 RW_{45}	16.0	X	66.82735	352.75712	28.00453	3.28932	0.1359306	0.22211286	2.7003512	20	—	—
63813 2001 RX_{45}	15.9	X	4.46548	31.62295	38.09541	5.01173	0.1386672	0.27164917	2.3611874	20	—	—
63814 2001 RY_{45}	15.4	X	4.72690	197.29115	222.06063	4.29811	0.2144281	0.26892426	2.3771107	20	—	—
63815 2001 RX_{46}	16.2	X	88.18722	182.21908	120.37082	24.00260	0.0586719	0.37106003	1.9179617	20	—	—
63816 2001 RC_{48}	14.2	X	15.59830	350.98371	258.43960	0.84023	0.0601212	0.19628044	2.9323650	20	6 23.5	17.8
63817 2001 RP_{60}	16.1	X	4.63555	258.82822	149.26588	8.03355	0.2161443	0.26889413	2.3772882	20	—	—
63818 2001 RV_{63}	16.1	X	256.61320	275.56678	184.53014	4.77879	0.1440004	0.25938428	2.4350448	20	10 7.4	19.1
63819 2001 RJ_{64}	14.9	X	132.78112	105.93877	275.70680	7.20024	0.0841958	0.18015958	3.1047822	20	2 10.6	19.6
63820 2001 RQ_{64}	15.5	X	290.64021	9.30554	239.78483	7.11080	0.0258582	0.23715627	2.5849153	20	2 19.5	19.2
63821 2001 RF_{65}	13.8	X	183.11012	207.86343	220.62661	9.82130	0.0932108	0.19256146	2.9700001	20	6 2.1	18.4
63822 2001 RQ_{68}	13.9	X	195.85205	157.19152	245.89657	8.00613	0.0486927	0.19087868	2.9874302	20	5 15.1	18.2
63823 2001 RL_{70}	16.4	X	9.01337	54.56633	321.86980	5.29613	0.1410622	0.26554958	2.3972075	20	12 29.4	19.1
63824 2001 RZ_{70}	15.5	X	351.50115	257.70286	235.13152	6.22615	0.0669592	0.27877408	2.3207825	20	—	—
63825 2001 RA_{71}	15.8	X	271.97044	65.08840	312.63588	3.67416	0.1915144	0.30407891	2.1901735	20	6 27.8	18.3
63826 2001 RD_{71}	15.7	X	115.30994	182.66477	212.90507	6.69539	0.1809279	0.28307968	2.2971900	20	2 6.9	18.7
63827 2001 RP_{71}	16.1	X	110.22840	6.93561	323.90585	1.79543	0.0794747	0.27446564	2.3450066	20	—	—
63828 2001 RS_{71}	15.8	X	273.79138	191.28385	336.27146	3.18380	0.0753996	0.27278636	2.3546207	20	—	—
63829 2001 RM_{72}	14.8	X	296.14332	350.13507	212.06380	7.99925	0.0868664	0.22894373	2.6463679	20	—	—
63830 2001 RO_{72}	14.2	X	347.25295	337.92684	5.32183	8.01395	0.0711584	0.20478607	2.8505967	20	9 18.0	17.6
63831 2001 RY_{73}	15.7	X	97.76646	167.16216	332.21382	6.00901	0.0914796	0.29550668	2.2323272	20	5 25.8	18.5
63832 2001 RL_{74}	14.2	X	77.18748	260.77836	209.87836	15.58076	0.2033992	0.17917453	3.1161513	20	4 11.3	18.3
63833 2001 RW_{74}	15.1	X	31.99228	131.07644	207.40487	3.84274	0.0800270	0.21074124	2.7966387	20	11 17.8	18.6
63834 2001 RU_{75}	14.9	X	356.36875	252.62757	185.06442	5.59445	0.1041974	0.26919902	2.3754929	20	—	—
63835 2001 RW_{75}	16.1	X	52.59121	230.76388	175.68353	3.91249	0.2300544	0.27336500	2.3512968	20	—	—
63836 2001 RY_{75}	15.4	X	202.99688	0.72922	42.77236	11.35214	0.1566751	0.24180433	2.5516827	20	5 17.9	19.5
63837 2001 RA_{76}	15.6	X	280.85100	236.79571	187.21701	1.98777	0.1656184	0.25533602	2.4607151	20	9 19.2	18.0
63838 2001 RC_{76}	15.5	X	179.04357	54.86602	136.68470	3.05375	0.0674978	0.31250435	2.1506282	20	11 22.2	18.1
63839 2001 RM_{76}	14.8	X	165.31015	10.78710	50.45389	17.06741	0.1492155	0.23806135	2.5783594	20	5 6.8	18.8
63840 2001 RS_{76}	15.4	X	185.96054	333.15343	77.05782	5.25901	0.1475847	0.23969295	2.5666454	20	5 12.6	19.4

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63841 2001 RX_{76}	15.1	X	127.69465	252.90212	145.73834	4.74483	0.1409985	0.22983434	2.6395270	20	2 29.8	18.9
63842 2001 RD_{77}	14.8	X	358.88656	339.99339	77.70972	6.11768	0.1954840	0.26584323	2.3954419	20	—	—
63843 2001 RO_{77}	14.5	X	168.61208	320.40093	100.11751	5.49909	0.1748572	0.23775734	2.5805568	20	5 10.7	18.8
63844 2001 RK_{80}	15.4	X	204.52451	239.20597	157.14723	2.20723	0.1745317	0.24302366	2.5431405	20	5 11.7	19.4
63845 2001 RV_{81}	14.4	X	53.84650	255.58933	213.74442	12.32244	0.1522023	0.22689316	2.6622885	20	2 15.6	17.6
63846 2001 RY_{82}	15.1	X	331.72753	261.70861	297.69453	6.13723	0.1439555	0.23838343	2.5760365	20	1 26.4	18.1
63847 2001 RU_{83}	16.9	X	119.99778	103.54407	316.73290	0.65226	0.0965772	0.28914034	2.2649759	20	3 6.7	19.6
63848 2001 RE_{86}	14.7	X	108.21011	1.38813	24.15693	2.65788	0.1742128	0.17675855	3.1444819	20	2 3.1	19.1
63849 2001 RV_{86}	15.8	X	21.70941	58.64184	345.98897	3.96580	0.1515138	0.27126543	2.3634137	20	—	—
63850 2001 RY_{86}	15.8	X	2.99205	191.65427	242.67076	3.55328	0.1130568	0.27265290	2.3553889	20	—	—
63851 2001 RH_{87}	16.0	X	272.24989	123.69586	322.76515	1.85854	0.1398764	0.26042456	2.4285558	20	10 11.9	18.6
63852 2001 RZ_{87}	14.6	X	221.52033	279.48308	137.43758	2.70249	0.1054126	0.19637217	2.9314518	20	6 27.1	19.1
63853 2001 RT_{88}	16.0	X	4.22637	55.09825	45.89094	5.14642	0.0834837	0.27697485	2.3308223	20	—	—
63854 2001 RU_{88}	15.8	X	355.81508	284.98918	129.92240	2.72231	0.2391874	0.21533429	2.7567280	20	—	—
63855 2001 RB_{90}	16.1	X	7.77543	1.20252	77.54752	3.84613	0.1883249	0.27327243	2.3518277	20	—	—
63856 2001 RD_{91}	14.5	X	205.93207	26.20751	10.22788	9.30831	0.0967327	0.19296369	2.9658715	20	5 13.7	19.1
63857 2001 RZ_{91}	15.3	X	10.56519	232.54569	162.79462	5.58672	0.0672501	0.21700135	2.7425913	20	12 30.2	18.9
63858 2001 RN_{92}	16.6	X	213.58825	10.53775	22.42325	2.32460	0.0884099	0.29922400	2.2138002	20	5 18.7	19.6
63859 2001 RR_{93}	15.7	X	284.84606	285.85475	166.95090	6.48906	0.1415250	0.26302819	2.4125029	20	11 15.9	18.2
63860 2001 RS_{93}	14.7	X	258.49765	229.53026	125.58988	3.13793	0.0701920	0.19445141	2.9507245	20	5 26.7	18.9
63861 2001 RU_{93}	15.9	X	309.70722	290.70376	149.10242	4.53542	0.1715751	0.26447577	2.4036919	20	12 14.8	17.9
63862 2001 RL_{100}	14.9	X	28.26763	7.23138	62.48450	1.23709	0.1983160	0.17211357	3.2008056	20	—	—
63863 2001 RM_{102}	16.7	X	167.42515	8.26746	34.32271	5.42488	0.1512892	0.29413315	2.2392714	20	4 12.7	19.8
63864 2001 RX_{107}	16.2	X	228.74761	335.59765	125.65844	1.11810	0.1814099	0.25819204	2.4425351	20	8 28.3	19.8
63865 2001 RC_{109}	15.0	X	136.36737	91.96147	348.79174	1.21828	0.0414060	0.19109285	2.9851976	20	4 23.1	19.2
63866 2001 RB_{111}	14.6	X	132.30475	276.96012	128.92910	4.84387	0.1209190	0.18456118	3.0552199	20	3 17.6	19.2
63867 2001 RN_{115}	14.6	X	355.93023	56.63866	98.10950	2.37125	0.0304496	0.18140073	3.0906040	20	1 27.5	18.8
63868 2001 RC_{119}	16.6	X	106.40126	319.13028	133.65310	4.78694	0.1203652	0.29185644	2.2509017	20	4 8.9	19.3
63869 2001 RN_{121}	16.3	X	117.56097	270.72606	149.48241	4.98893	0.1254995	0.28863333	2.2676276	20	3 8.8	19.1
63870 2001 RN_{123}	16.1	X	310.41534	237.22439	151.86300	2.84816	0.1803649	0.25965242	2.4333680	20	9 24.6	18.1
63871 2001 RB_{133}	15.4	X	78.02948	286.92356	73.38084	4.43144	0.1158152	0.22264626	2.6960366	20	—	—
63872 2001 RT_{134}	15.6	X	92.73866	31.40937	57.80990	5.37114	0.1855679	0.23456056	2.6039505	20	3 31.5	19.0
63873 2001 RF_{135}	15.1	X	269.12486	41.22817	30.21333	9.83081	0.1373599	0.20589322	2.8403685	20	9 12.5	18.9
63874 2001 RT_{135}	15.4	X	116.23658	282.66914	137.64059	4.98006	0.2217026	0.23380309	2.6095716	20	3 26.2	19.2
63875 2001 RY_{135}	14.3	X	35.47582	352.86724	94.66143	3.84015	0.1547586	0.17340626	3.1848785	20	1 1.8	18.0
63876 2001 RK_{140}	14.6	X	352.39201	58.99838	65.13198	6.94828	0.1317325	0.17295185	3.1904546	20	—	—
63877 2001 RA_{141}	15.6	X	355.72556	16.87437	104.79225	4.80137	0.0877675	0.27879317	2.3206766	20	—	—
63878 2001 RH_{141}	15.1	X	1.12215	349.07682	24.62812	12.30604	0.1920416	0.26484491	2.4014578	20	12 20.1	17.9
63879 2001 RM_{142}	15.2	X	157.59428	277.37745	84.51850	15.91489	0.2425841	0.23484629	2.6018380	20	2 28.2	19.8
63880 2001 RX_{142}	14.2	X	357.87061	247.31171	159.25994	8.17595	0.2304583	0.21162142	2.7888788	20	—	—
63881 2001 RD_{145}	15.2	X	123.02677	56.84806	295.20230	11.73438	0.1429554	0.23108880	2.6299659	20	—	—
63882 2001 RX_{152}	14.2	X	332.10036	43.99615	74.02131	15.24854	0.1094524	0.22361579	2.6882381	20	—	—
63883 2001 SO	13.9	X	259.63186	340.61795	57.31575	2.79351	0.0808622	0.19917367	2.9038985	20	7 21.7	17.8
63884 2001 SF_{1}	14.9	X	11.59231	98.47444	248.33293	1.51358	0.0354845	0.20994351	2.8037185	20	10 25.0	18.6
63885 2001 SU_{2}	15.5	X	285.48742	74.39359	58.10905	3.04311	0.1042971	0.26835536	2.3804690	20	—	—
63886 2001 SY_{2}	15.6	X	55.10865	48.61584	32.86830	7.05946	0.0962955	0.28014545	2.3132026	20	—	—
63887 2001 SH_{3}	13.2	X	34.19438	143.95959	15.34682	12.06759	0.1400699	0.18294525	3.0731845	20	3 30.9	16.8
63888 2001 SJ_{3}	14.2	X	23.74549	114.15353	21.87353	5.18255	0.1034044	0.17804737	3.1292890	20	2 12.8	18.0
63889 2001 SK_{3}	14.7	X	18.46899	183.32623	111.06117	3.12423	0.0663869	0.20232169	2.8736977	20	8 30.2	18.2
63890 2001 SU_{3}	16.1	X	186.35078	255.33887	127.22476	3.71857	0.0993908	0.24362621	2.5389455	20	4 8.3	19.9
63891 2001 SN_{4}	14.2	X	343.82738	144.61707	332.22492	18.43235	0.1206599	0.17249830	3.1960446	20	—	—
63892 2001 SX_{4}	13.3	X	205.74298	282.23261	63.27274	14.93879	0.2312239	0.18560640	3.0437390	20	3 20.9	18.8
63893 2001 SY_{4}	14.2	X	272.82541	199.59427	168.24586	16.56046	0.3502039	0.19753500	2.9199361	20	5 25.2	19.1
63894 2001 SN_{5}	16.2	X	299.12046	179.53217	248.14122	1.06230	0.1657266	0.26188812	2.4194994	20	10 31.9	18.2
63895 2001 SZ_{5}	14.3	X	290.38814	126.64657	98.92545	5.37671	0.0913183	0.18245760	3.0786577	20	1 23.4	18.6
63896 2001 SE_{9}	15.6	X	129.17226	303.41817	60.56999	5.38731	0.1866128	0.28257612	2.2999183	20	1 17.7	18.6
63897 Ofunato	15.6	X	122.96453	348.72744	37.84036	5.98080	0.1788459	0.28371710	2.2937481	20	2 9.5	18.6
63898 2001 SL_{10}	15.0	X	310.29297	282.71576	84.53909	3.30556	0.0326343	0.20504301	2.8482148	20	8 28.1	18.8
63899 2001 SG_{12}	15.8	X	182.48940	202.11238	275.28513	6.74254	0.1210629	0.25522318	2.4614403	20	8 3.2	19.5
63900 2001 SB_{14}	15.6	X	124.86428	28.03098	8.23493	4.72773	0.2270471	0.28561506	2.2835752	20	2 29.3	18.7
63901 2001 SJ_{14}	14.3	X	292.72636	2.50561	174.67685	9.40514	0.0423307	0.17444568	3.1722147	20	—	—
63902 2001 SZ_{14}	15.7	X	232.88336	162.70665	1.46932	4.88459	0.0811811	0.26898178	2.3767717	20	12 11.7	18.6
63903 2001 SM_{17}	14.6	X	308.69619	142.74677	45.00851	1.74215	0.1272385	0.17781047	3.1320678	20	—	—
63904 2001 SR_{17}	16.7	X	359.64089	208.48020	69.65950	1.49143	0.1404950	0.30640481	2.1790757	20	7 21.5	18.0
63905 2001 SF_{18}	15.9	X	61.69769	102.00174	24.44109	4.26709	0.0870871	0.28971518	2.2619789	20	3 13.8	18.0
63906 2001 SN_{19}	14.8	X	12.49372	56.35272	177.99618	1.22046	0.0614139	0.19491886	2.9460050	20	5 29.6	18.6
63907 2001 SJ_{20}	15.4	X	113.02906	79.63200	29.95471	5.45221	0.0877919	0.29337757	2.2431145	20	5 3.8	18.0
63908 2001 SM_{20}	14.7	X	295.76738	198.81721	144.62378	2.55117	0.0885853	0.19783384	2.9169949	20	6 26.7	18.5
63909 2001 SU_{22}	15.8	X	43.02939	53.85661	336.98289	4.78072	0.0810798	0.22050641	2.7134505	20	—	—
63910 2001 SQ_{30}	15.2	X	291.71865	21.70727	97.09356	1.83658	0.1184148	0.21504747	2.7591787	20	12 19.2	18.2
63911 2001 SV_{30}	14.7	X	14.83961	330.53652	174.46144	6.97711	0.0774791	0.17894509	3.1188144	20	2 6.9	18.8
63912 2001 SB_{31}	16.1	X	26.15808	30.40163	35.47800	5.14051	0.1077522	0.27455608	2.3444916	20	—	—
63913 2001 SG_{32}	14.9	X	92.36041	355.96212	91.31248	2.57088	0.1173770	0.18104458	3.0946559	20	3 21.9	19.3
63914 2001 SP_{33}	15.7	X	243.59626	319.05119	181.69357	2.24926	0.1271340	0.26393853	2.4069525	20	11 17.6	18.4
63915 2001 SG_{34}	15.9	X	271.91044	351.33397	177.98155	5.85862	0.0397374	0.27367825	2.3495022	20	—	—
63916 2001 SE_{35}	15.4	X	111.64022	312.04591	133.04733	3.11833	0.1848242	0.23542718	2.5975563	20	4 16.8	19.1
63917 2001 SJ_{37}	15.0	X	325.15622	298.06251	62.99016	3.00738	0.0685016	0.20409900	2.8569905	20	9 8.3	18.5
63918 2001 SU_{37}	14.6	X	24.01160	353.85392	106.90307	5.01215	0.1012112	0.17255454	3.1953502	20	—	—
63919 2001 SR_{39}	15.3	X	13.74368	358.49321	42.78107	6.43034	0.1326497	0.26894915	2.3769640	20	—	—
63920 2001 SC_{40}	16.3	X	106.24551	21.37864	55.85484	6.05900	0.1744856	0.28633452	2.2797483	20	3 27.4	19.1

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	m		°	°	°	°		°				
63921 2001 SK_{40}	15.6	X	309.27076	101.43769	62.20862	5.76133	0.0782729	0.27716077	2.3297798	20	—	—
63922 2001 SQ_{40}	15.1	X	353.59625	292.99184	161.91356	7.43922	0.0987455	0.21985178	2.7188342	20	—	—
63923 2001 SV_{41}	12.1	X	61.82753	3.12054	159.27617	9.67376	0.0814548	0.08434516	5.1494709	20	5 14.1	18.8
63924 2001 SO_{42}	16.6	X	338.38079	217.41956	126.15125	2.33354	0.1976691	0.25862063	2.4398358	20	9 16.9	18.4
63925 2001 SW_{44}	15.0	X	350.45228	54.52413	30.16031	8.20879	0.1651995	0.21828774	2.7318058	20	—	—
63926 2001 SQ_{45}	14.6	X	19.73950	4.90389	36.79173	9.00489	0.1581189	0.21758004	2.7377262	20	—	—
63927 2001 SU_{45}	16.1	X	119.08983	46.56437	23.18462	0.82947	0.0656151	0.23608641	2.5927186	20	3 19.5	19.6
63928 2001 SY_{46}	15.4	X	67.79560	270.95155	123.15821	3.26417	0.0928099	0.22389348	2.6860149	20	—	—
63929 2001 ST_{47}	16.7	X	41.89412	313.13699	135.12324	1.85226	0.1375872	0.27898953	2.3195876	20	—	—
63930 2001 SZ_{47}	16.0	X	283.55703	321.55106	182.19881	6.45917	0.0768216	0.27074559	2.3664379	20	—	—
63931 2001 SH_{48}	16.3	X	317.50385	305.25441	147.62161	4.91613	0.1846874	0.26691986	2.3889962	20	—	—
63932 2001 SZ_{48}	14.6	X	274.72600	121.97474	174.93964	9.32339	0.0338050	0.18750240	3.0231857	20	4 8.9	18.9
63933 2001 SA_{52}	14.6	X	116.71601	163.71203	126.68301	6.21222	0.0109231	0.21554856	2.7549008	20	12 23.9	18.5
63934 2001 SQ_{53}	15.6	X	304.36732	108.30137	64.30018	4.62582	0.0762752	0.27761484	2.3272387	20	—	—
63935 2001 SV_{53}	15.0	X	153.10471	220.95872	76.91580	4.51825	0.0791014	0.22279039	2.6948737	20	—	—
63936 2001 SA_{54}	13.7	X	203.83680	350.12851	43.53726	10.70184	0.0746820	0.19000861	2.9965431	20	5 11.0	18.1
63937 2001 SB_{54}	15.4	X	133.56218	53.88265	32.66653	13.46573	0.1432408	0.23858122	2.5746126	20	5 4.5	19.2
63938 2001 SE_{54}	16.3	X	207.64173	268.76107	136.90179	4.76126	0.1467322	0.29749139	2.2223875	20	5 27.9	19.6
63939 2001 SD_{55}	16.1	X	161.11126	282.69921	147.85920	5.81594	0.1126299	0.29365351	2.2417091	20	5 13.2	19.3
63940 2001 SR_{55}	14.4	X	157.42226	195.41157	150.34079	7.30731	0.2157606	0.17841770	3.1249574	20	2 5.8	19.6
63941 2001 SP_{56}	15.9	X	238.84977	248.10538	161.97139	5.63095	0.1101142	0.30247523	2.1979080	20	7 11.8	18.6
63942 2001 SQ_{56}	14.3	X	350.94650	163.07551	140.20901	4.44540	0.1358346	0.20043405	2.8917121	20	7 29.9	17.6
63943 2001 SR_{56}	14.7	X	336.52811	176.05700	115.78418	3.63176	0.0661769	0.19532796	2.9418900	20	6 20.9	18.3
63944 2001 SQ_{57}	15.4	X	15.30375	153.45419	155.72588	2.84590	0.1821795	0.25876788	2.4389102	20	10 11.2	17.7
63945 2001 ST_{57}	14.7	X	128.61537	253.32846	23.26881	4.29972	0.0711450	0.21512305	2.7585324	20	12 21.9	18.8
63946 2001 SC_{58}	16.6	X	35.44567	75.57825	25.66780	2.55184	0.1705156	0.27907241	2.3191283	20	—	—
63947 2001 ST_{58}	15.7	X	40.04593	275.70839	191.50860	6.91507	0.0579724	0.28136064	2.3065373	20	1 6.6	18.3
63948 2001 SL_{59}	15.8	X	325.45003	32.01305	170.45138	3.36845	0.0956743	0.28495854	2.2870813	20	1 19.9	18.5
63949 2001 SX_{60}	16.3	X	117.77794	73.33553	24.44720	4.48552	0.0457216	0.29239267	2.2481488	20	4 17.6	19.0
63950 2001 SG_{61}	15.5	X	350.08725	30.60743	34.51599	1.82470	0.1694750	0.26774690	2.3840741	20	—	—
63951 2001 SP_{62}	15.0	X	95.29171	49.77597	7.71259	0.45273	0.1825343	0.17623595	3.1506951	20	2 26.7	19.4
63952 2001 SU_{64}	14.6	X	59.28122	283.60463	200.26798	13.09553	0.0907193	0.23259481	2.6186012	20	3 9.6	17.9
63953 2001 SY_{64}	14.5	X	353.25384	164.78867	151.09862	2.56735	0.0699961	0.20053924	2.8907008	20	8 19.5	17.8
63954 2001 SB_{65}	14.7	X	309.95589	272.83910	50.50474	2.71401	0.0731428	0.19520170	2.9431585	20	6 22.6	18.4
63955 2001 SP_{65}	12.0	X	329.59467	219.83249	45.21831	20.25086	0.1283977	0.08391162	5.1671927	20	5 3.8	18.3
63956 2001 SJ_{67}	16.1	X	79.98507	250.00638	182.74659	6.64890	0.0808438	0.28122767	2.3072643	20	1 23.1	18.6
63957 2001 SS_{67}	15.9	X	233.40607	227.51621	150.19283	3.73650	0.1938920	0.29731982	2.2232423	20	5 13.3	19.2
63958 2001 SV_{67}	15.7	X	140.83689	259.32854	142.54381	5.83702	0.1634466	0.28627582	2.2800600	20	3 17.8	18.9
63959 2001 SW_{67}	15.0	X	5.92556	300.04556	173.89805	9.90712	0.1825640	0.22095606	2.7097680	20	—	—
63960 2001 SG_{68}	14.5	X	37.79915	77.67339	201.43875	12.19989	0.1073835	0.20123583	2.8840260	20	9 8.6	18.3
63961 2001 SK_{68}	15.0	X	170.26359	5.29726	40.31112	15.47433	0.0960601	0.23769839	2.5809835	20	4 20.9	18.9
63962 2001 SS_{68}	16.4	X	306.78803	226.19714	153.02716	5.09466	0.1320217	0.30767725	2.1730637	20	9 16.9	18.0
63963 2001 SZ_{68}	15.7	X	104.33393	351.25954	57.65201	6.51726	0.2620135	0.28115709	2.3076504	20	2 29.7	18.6
63964 2001 SM_{69}	15.8	X	90.18274	293.96011	164.39396	4.71097	0.2401844	0.23037756	2.6353761	20	4 16.8	19.3
63965 2001 SV_{70}	15.7	X	312.15288	217.03578	186.06798	9.64441	0.1276310	0.25713392	2.4492313	20	10 24.1	18.0
63966 2001 SY_{70}	14.3	X	94.67326	340.92220	82.11585	8.73579	0.1879115	0.28045578	2.3114958	20	2 24.4	17.0
63967 2001 SF_{71}	15.5	X	286.43861	12.65896	148.69635	6.54573	0.0610100	0.26920835	2.3754380	20	—	—
63968 2001 SG_{71}	15.3	X	0.79128	26.86589	119.22941	7.19529	0.0736213	0.27764141	2.3270902	20	—	—
63969 2001 SL_{71}	14.5	X	199.86304	106.29853	200.47896	13.42181	0.0870143	0.22701476	2.6613377	20	1 16.2	18.8
63970 2001 SG_{72}	15.0	X	0.48922	298.33539	182.08711	6.88095	0.0655897	0.27429804	2.3459617	20	—	—
63971 2001 SV_{72}	15.5	X	9.42296	208.91288	178.64398	6.12164	0.0404695	0.21251822	2.7810274	20	12 14.9	19.3
63972 2001 SB_{73}	15.7	X	10.02109	8.45101	110.43535	6.00871	0.1037062	0.27474906	2.3433936	20	—	—
63973 2001 SS_{75}	14.5	X	327.57259	167.75947	234.84822	8.90259	0.1468730	0.15755050	3.3951284	20	10 21.3	18.5
63974 2001 SB_{77}	15.8	X	274.10476	171.18956	309.69016	4.94199	0.1495848	0.26609116	2.3939537	20	12 4.7	18.3
63975 2001 SH_{77}	16.3	X	17.34351	85.80846	345.32944	6.75342	0.0750519	0.27467466	2.3438167	20	—	—
63976 2001 SM_{78}	16.3	X	177.72013	89.57062	354.24064	0.78120	0.1182774	0.24730351	2.5137140	20	6 16.1	20.1
63977 2001 SQ_{79}	14.1	X	291.72056	218.41989	275.80896	3.19862	0.1256834	0.17156334	3.2076457	20	12 24.2	18.1
63978 2001 SE_{83}	16.6	X	98.26378	258.32278	198.46604	6.06682	0.1380214	0.29199361	2.2501967	20	4 3.5	19.0
63979 2001 SC_{86}	14.8	X	76.67017	129.26809	201.64494	4.76425	0.0804595	0.16871281	3.2436751	20	12 22.1	19.6
63980 2001 SW_{92}	16.2	X	207.22398	269.85092	196.93879	1.74238	0.1298682	0.25555289	2.4593227	20	8 16.2	19.9
63981 2001 SA_{95}	16.2	X	304.71636	217.23636	244.59583	1.66104	0.1802681	0.26808349	2.3820781	20	—	—
63982 2001 SR_{104}	16.6	X	52.99506	245.93608	198.20241	2.98677	0.2094342	0.28021732	2.3128070	20	1 2.3	17.9
63983 2001 SM_{105}	14.5	X	304.94234	175.59632	354.34891	12.47008	0.1030877	0.22364376	2.6880140	20	—	—
63984 2001 SP_{105}	15.4	X	343.41983	208.49249	344.10349	6.44903	0.1071393	0.28619121	2.2805093	20	2 2.7	17.7
63985 2001 SQ_{105}	15.1	X	261.70976	204.42759	222.90612	6.17682	0.1894268	0.25415449	2.4683355	20	8 18.1	18.5
63986 2001 SE_{106}	15.8	X	153.12329	49.54914	340.97045	6.76003	0.1422724	0.28742527	2.2739771	20	3 11.4	19.1
63987 2001 SP_{106}	14.6	X	80.42226	201.15533	217.57389	21.41617	0.0272162	0.22749658	2.6575787	20	1 5.8	18.6
63988 2001 SF_{107}	15.7	X	122.14669	25.28367	307.46566	6.35786	0.1478472	0.27448412	2.3449013	20	—	—
63989 2001 SJ_{107}	14.3	X	50.71494	206.32655	239.92830	12.83151	0.1271786	0.22392077	2.6857966	20	1 9.6	17.5
63990 2001 SA_{108}	14.2	X	281.92123	86.39910	264.02619	9.56290	0.1275072	0.19303918	2.9650982	20	6 10.5	18.0
63991 2001 SB_{108}	13.8	X	193.87125	179.05517	241.39072	12.47009	0.2378058	0.24113610	2.5563946	20	5 30.5	18.3
63992 2001 SY_{108}	14.3	X	336.42077	140.55026	288.78662	8.00609	0.1778915	0.20963769	2.8064446	20	12 31.8	17.1
63993 2001 SO_{109}	14.6	X	354.17102	95.39824	320.69728	5.54335	0.1564388	0.26372379	2.4082589	20	—	—
63994 2001 SQ_{109}	14.8	X	52.24509	25.81300	357.33618	8.92609	0.2842889	0.21650876	2.7467496	20	—	—
63995 2001 SF_{110}	15.2	X	27.64305	98.62418	273.94303	7.05322	0.1783014	0.26584972	2.3954029	20	—	—
63996 2001 SU_{110}	15.5	X	117.33563	351.25911	3.14882	6.81189	0.1312881	0.27557374	2.3387161	20	—	—
63997 2001 SX_{110}	15.6	X	94.50259	30.29915	354.34602	7.04829	0.1097020	0.27553758	2.3389206	20	—	—
63998 2001 SL_{111}	14.2	X	307.43036	136.30335	273.61095	8.52668	0.2207655	0.20312707	2.8660967	20	9 24.3	17.4
63999 2001 SD_{113}	14.7	X	60.61323	39.30761	47.69336	13.28765	0.1456922	0.17186087	3.2039425	20	2 17.4	19.0
64000 2001 SD_{115}	14.8	X	306.14839	183.95024	39.60135	4.85003	0.2226816	0.23481257	2.6020871	20	1 13.9	18.4