

ELEMENTS AND OPPOSITION DATES IN 2021

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2021 JULY 5.0 TT

Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>		
228001	2007	MD ₅	15.7	X	48.50452	203.88125	201.77165	15.20879	0.0347853	0.17877566	3.1207846	21	—	—
228002	2007	MP ₇	15.8	X	85.09824	282.36802	76.48318	8.20228	0.0344604	0.17765871	3.1338513	21	—	—
228003	2007	MF ₁₂	15.9	X	284.90655	55.31296	136.19119	4.14208	0.0611224	0.17643832	3.1482855	21	—	—
228004	2007	QC ₅	13.5	X	346.92437	325.84566	94.76259	4.42523	0.0709567	0.08532844	5.1098346	21	11 22.4	19.9
228005	2007	QR ₁₂	13.0	X	72.47269	325.75330	357.73363	6.62502	0.0222847	0.08169948	5.2600496	21	11 9.7	20.0
228006	2007	RL ₆	13.0	X	22.46794	106.41940	277.75276	5.91161	0.0999013	0.08257811	5.2226720	21	11 27.8	19.5
228007	2007	RE ₂₇	13.4	X	359.01615	211.55425	194.88392	7.27582	0.0844593	0.08130060	5.2772406	21	11 22.1	19.9
228008	2007	RG ₁₅₇	13.1	X	14.54183	28.60267	5.87457	6.95094	0.0415958	0.08188287	5.2521929	21	11 23.8	19.9
228009	2007	RL ₁₆₂	12.7	X	21.36415	131.17126	267.61062	6.52617	0.0495446	0.08324848	5.1945967	21	12 8.7	19.4
228010	2007	RL ₁₆₄	13.3	X	358.08380	153.53410	254.17214	3.38664	0.0073455	0.08194611	5.2494906	21	11 19.4	20.2
228011	2007	RB ₂₈₈	12.9	X	324.03000	39.92187	23.47365	3.79109	0.0378621	0.07893187	5.3822986	21	10 27.7	19.8
228012	2008	CE ₁₉₂	17.3	X	161.23629	338.27687	349.34033	18.13872	0.0968581	0.36140380	1.9519749	21	—	—
228013	2008	DK ₁₇	16.4	X	22.88667	156.36669	160.74777	6.33482	0.1058218	0.25630056	2.4545375	21	10 9.1	19.1
228014	2008	ER ₄₁	17.2	X	172.03826	248.97220	49.48402	2.56547	0.2095031	0.27549434	2.3391654	21	—	—
228015	2008	ED ₁₃₉	16.9	X	139.39558	36.76502	208.39383	6.65524	0.0714535	0.26143898	2.4222697	21	11 25.4	20.3
228016	2008	EH ₁₄₇	17.7	X	292.36646	95.13498	213.40121	3.21987	0.1885965	0.30563937	2.1827124	21	3 31.6	20.4
228017	2008	ES ₁₄₈	17.4	X	203.00728	334.55053	337.42443	1.72274	0.2219449	0.28479319	2.2879664	21	1 15.6	21.2
228018	2008	FO ₈	17.4	X	45.38274	30.53035	45.88172	22.79592	0.0873719	0.35423824	1.9782101	21	—	—
228019	2008	FC ₁₅	16.0	X	271.33571	265.15026	52.70681	15.43772	0.2795375	0.22107634	2.7087851	21	3 28.6	20.6
228020	2008	FQ ₁₅	16.4	X	113.73443	231.74790	76.82067	9.75189	0.1325579	0.26441463	2.4040624	21	—	—
228021	2008	FV ₁₅	16.1	X	328.39995	240.87231	50.11985	13.72855	0.2581319	0.22810515	2.6528498	21	4 29.3	18.8
228022	2008	FM ₅₄	17.5	X	357.60128	166.05028	111.55548	2.02507	0.1047757	0.31024217	2.1610700	21	6 20.5	19.1
228023	2008	FZ ₆₉	15.9	X	323.26007	282.55078	41.46430	11.81519	0.2034643	0.23279939	2.6170669	21	6 13.6	18.8
228024	2008	FQ ₇₁	17.1	X	111.53795	299.66435	17.26162	5.15374	0.2432099	0.27086762	2.3657271	21	—	—
228025	2008	FG ₇₃	16.7	X	164.15571	221.37182	94.16765	5.35603	0.1546985	0.27760633	2.3272863	21	—	—
228026	2008	FF ₉₄	17.4	X	301.74220	240.41458	86.03551	5.77837	0.1057906	0.30804296	2.1713435	21	5 25.7	19.8
228027	2008	FF ₉₆	17.0	X	338.35948	156.22478	179.13068	3.02214	0.3353780	0.23977751	2.5660420	21	7 20.9	18.3
228028	2008	FY ₁₁₇	17.3	X	97.78561	278.82725	21.14146	0.99141	0.1443736	0.25859085	2.4400232	21	12 22.7	20.8
228029	2008	MANIAC	17.4	X	91.65281	70.36189	212.83300	0.30925	0.2377378	0.25493246	2.4633113	21	12 2.8	21.2
228030	2008	GO ₁	17.3	X	187.29039	12.17697	38.87825	21.55421	0.0717447	0.38024203	1.8869598	21	4 24.9	19.3
228031	2008	GS ₁	16.4	X	59.31212	50.21811	205.43154	6.08060	0.2569606	0.23983676	2.5656193	21	9 26.8	19.8
228032	2008	GS ₂₀	16.8	X	187.08522	241.88791	38.86637	6.50112	0.2149291	0.27691437	2.3111616	21	—	—
228033	2008	GZ ₄₀	16.6	X	18.22082	224.15642	80.62262	5.44523	0.2075194	0.24190969	2.5509417	21	9 27.1	19.1
228034	2008	GG ₄₅	17.0	X	196.48072	351.77675	275.28636	1.32765	0.1620672	0.27392005	2.3481193	21	—	—
228035	2008	GJ ₅₇	16.8	X	262.95698	239.51324	42.65837	2.91605	0.1680231	0.21641563	2.7475376	21	2 10.4	21.1
228036	2008	GO ₅₉	17.7	X	229.60486	136.08177	136.86035	2.14783	0.1492670	0.28030184	2.3123421	21	—	—
228037	2008	GQ ₆₈	17.0	X	154.96201	210.18987	91.96820	6.05363	0.1209753	0.27011209	2.3701366	21	—	—
228038	2008	GE ₇₉	16.4	X	255.38003	255.39697	57.61180	8.91494	0.2833061	0.21406789	2.7675896	21	3 7.5	21.3
228039	2008	GQ ₈₁	16.9	X	336.61926	250.87362	66.07455	5.54338	0.2938150	0.23120286	2.6291008	21	6 19.1	18.8
228040	2008	GX ₉₇	16.9	X	217.67252	82.13425	225.31424	6.30491	0.1207016	0.28511152	2.2862631	21	1 18.3	20.3
228041	2008	GO ₁₁₁	17.0	X	311.06259	223.49635	41.48568	6.23043	0.1523036	0.29677012	2.2259869	21	3 5.7	19.7
228042	2008	GW ₁₁₉	16.6	X	29.75909	63.67945	211.36655	12.81311	0.1721897	0.23709429	2.5853657	21	8 20.7	19.7
228043	2008	GO ₁₃₈	17.5	X	216.94092	68.97335	205.67465	6.01462	0.0895401	0.27983108	2.3149347	21	—	—
228044	2008	HD ₅	17.4	X	156.34555	236.06138	54.24125	3.31203	0.2181107	0.26895031	2.3769571	21	—	—
228045	2008	HW ₁₂	14.6	X	41.37292	253.51876	86.70058	17.71989	0.2931676	0.17339055	3.1850708	21	12 16.2	18.9
228046	2008	HM ₁₈	16.3	X	343.30607	175.10737	143.91514	8.64747	0.2005620	0.23612617	2.5924276	21	7 22.1	18.6
228047	2008	HH ₂₁	17.6	X	46.67010	286.40841	221.53435	21.07205	0.0750403	0.36788203	1.9289916	21	1 29.4	19.9
228048	2008	HE ₂₁	17.5	X	250.93125	271.39255	79.08726	4.90896	0.2023598	0.30111201	2.2045367	21	4 14.5	20.9
228049	2008	HE ₃₁	17.2	X	335.56545	108.52454	190.61032	2.84582	0.1881426	0.23027387	2.6361671	21	6 4.9	19.9
228050	2008	HD ₃₄	16.5	X	102.31626	291.57574	79.89827	12.78693	0.2152080	0.27143672	2.3624193	21	—	—
228051	2008	HQ ₃₆	16.8	X	139.03641	156.50664	150.78641	6.89757	0.1357062	0.26629645	2.3927232	21	—	—
228052	2008	HZ ₄₁	17.6	X	334.75449	60.15001	216.10217	4.18594	0.1031410	0.30297463	2.1954921	21	5 3.8	19.7
228053	2008	HK ₆₇	16.8	X	329.53309	68.63341	207.96416	4.03160	0.1555509	0.22577453	2.6710750	21	4 26.1	19.6
228054	2008	HB ₇₀	17.4	X	8.96357	263.66122	3.56483	3.70003	0.1775025	0.30712832	2.1756522	21	6 30.2	18.6
228055	2008	JV ₉	16.6	X	89.91779	297.33594	59.61569	10.31638	0.1307174	0.26712863	2.3877513	21	—	—
228056	2008	JU ₁₁	17.3	X	194.63114	139.59231	141.15903	2.89778	0.1137496	0.27302559	2.3532450	21	—	—
228057	2008	JA ₂₀	17.4	X	173.19429	52.47932	213.08121	0.82026	0.1586251	0.26711290	2.3878451	21	—	—
228058	2008	JV ₂₄	16.7	X	244.12254	102.98821	184.26777	7.74776	0.0891179	0.28432169	2.2904952	21	1 20.4	20.0
228059	2008	JH ₃₄	16.1	X	90.90714	34.73422	168.22852	13.96847	0.1247588	0.23938536	2.5688435	21	8 6.3	19.7
228060	2008	KB	17.6	X	346.69562	221.66643	14.10163	2.16962	0.0955497	0.29859498	2.2169082	21	3 24.5	19.8
228061	2008	KR ₉	16.5	X	171.30299	149.42440	215.18498	5.84858	0.0529537	0.21130058	2.7917011	21	2 17.2	20.6
228062	2008	KZ ₂₃	16.5	X	111.18051	285.14301	171.11356	5.31417	0.0567834	0.21924298	2.7238650	21	4 4.5	20.2
228063	2008	LU	16.9	X	351.24187	255.48495	71.63960	4.73556	0.2918571	0.23814755	2.5777372	21	9 1.3	18.3
228064	2008	LU ₇	15.5	X	229.56966	176.21472	106.17975	16.46251	0.1184415	0.20550516	2.8439431	21	1 14.0	20.0
228065	2008	LF ₁₁	16.6	X	309.59962	121.58340	198.50939	1.52099	0.0619948	0.22209300	2.7005121	21	6 8.7	19.9
228066	2008	OM ₂	16.4	X	37.47517	140.44743	133.55557	6.01869	0.1016924	0.23079246	2.6322167	21	8 27.5	19.4
228067	2008	OL ₇	15.1	X	221.05701	296.59557	295.32777	9.65696	0.0526796	0.18337428	3.0683891	21	—	—
228068	2008	OF ₈	17.0	X	338.20930	46.91115	242.31966	2.56336	0.2139027	0.22122469	2.7075739	21	5 22.8	19.6
228069	2008	OF ₉	15.6	X	173.68610	223.71181	138.73648	11.36265	0.1238147	0.19788630	2.9164793	21	2 27.2	20.1
228070	2008	OL ₂₀	15.6	X	112.12377	157.48020	167.30295	9.95092	0.0767356	0.17681944	3.1437599	21	—	—
228071	2008</													

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Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>
228081 2008 QS ₂₈	15.5	X	116.56114	303.77471	92.38514	3.17341	0.0638969	0.19013163	2.9952504	21	1 31.1	19.6
228082 2008 QK ₃₀	15.4	X	164.14523	58.19479	250.66486	7.57493	0.0678915	0.18337348	3.0683980	21	—	—
228083 2008 QO ₃₈	16.0	X	198.38810	114.29663	283.69172	4.98060	0.0734822	0.20395898	2.8582980	21	5 1.7	20.4
228084 2008 RV ₃	13.8	X	75.00110	111.95182	203.69249	3.67657	0.0207175	0.08351869	5.1833866	21	11 6.2	20.6
228085 2008 RT ₂₉	13.4	X	22.77936	192.83222	182.51928	4.34505	0.0320255	0.08468035	5.1358729	21	11 14.7	20.1
228086 2008 RX ₇₈	13.2	X	13.00474	116.41274	256.32880	7.93711	0.0241051	0.08042114	5.3156442	21	10 28.0	20.1
228087 2008 RL ₁₀₀	15.0	X	345.96538	328.96307	146.92084	10.99924	0.0519013	0.18017301	3.1046279	21	—	—
228088 2008 RM ₁₀₅	13.6	X	169.57119	50.83342	187.42226	2.64595	0.0025993	0.08170822	5.2596746	21	11 22.1	20.5
228089 2008 RV ₁₂₆	13.5	X	106.67764	82.24294	207.88652	5.14583	0.0724507	0.08309211	5.2011118	21	11 18.0	20.6
228090 2008 RE ₁₂₇	12.9	X	352.40525	143.33765	262.78441	7.94766	0.0165951	0.08227707	5.2354036	21	11 10.7	19.8
228091 2008 SS ₂	15.3	X	101.34691	306.51551	34.25316	10.31615	0.1061162	0.17850882	3.1238938	21	—	—
228092 2008 SY ₆	15.7	X	320.64278	250.01190	111.18954	5.44781	0.1270957	0.22103600	2.7091146	21	8 16.8	18.6
228093 2008 SV ₉	14.9	X	276.66353	91.36688	198.72017	3.14944	0.1151873	0.12496160	3.9623394	21	3 21.0	20.6
228094 2008 SJ ₁₈	16.4	X	277.33923	140.07201	147.69026	2.62055	0.0425937	0.20324359	2.8650012	21	3 19.9	20.3
228095 2008 SF ₂₄	13.5	X	356.18599	34.10038	357.08030	3.66748	0.1261128	0.08283914	5.2116950	21	10 31.6	19.8
228096 2008 SA ₂₇	13.3	X	147.65294	49.33883	192.05942	9.62679	0.0934632	0.08354261	5.1823972	21	11 6.8	20.6
228097 2008 SQ ₃₁	13.5	X	3.09392	112.73892	284.44053	6.07688	0.0291824	0.08124706	5.2795588	21	11 15.4	20.0
228098 2008 SM ₃₈	13.4	X	82.54326	285.27222	28.65754	7.33053	0.0066421	0.08079650	5.2991681	21	11 9.2	20.4
228099 2008 SC ₅₁	13.9	X	24.11729	71.63642	305.74939	0.22670	0.0774203	0.08372905	5.1747012	21	11 21.1	20.5
228100 2008 SM ₁₄₈	15.5	X	329.73035	47.52474	309.15788	13.36827	0.1388241	0.22380559	2.6867181	21	8 21.5	18.5
228101 2008 SP ₁₅₄	13.1	X	50.57085	296.21851	54.04399	4.63831	0.0621642	0.08493488	5.1256073	21	11 21.5	19.9
228102 2008 SY ₁₇₂	12.4	X	298.26797	236.56525	222.30091	26.14133	0.0652703	0.08445283	5.1450933	21	11 3.7	19.0
228103 2008 SA ₁₉₂	13.0	X	13.03063	288.82309	114.13158	4.37415	0.0291815	0.08238135	5.2309846	21	12 2.7	19.7
228104 2008 SF ₁₉₇	13.4	X	45.58250	263.71039	117.96926	2.51405	0.0408685	0.08336759	5.1896477	21	12 17.3	20.2
228105 2008 SA ₂₂₄	13.5	X	289.89742	74.22051	49.96404	5.09604	0.0223280	0.08377957	5.1726208	21	11 26.0	20.3
228106 2008 SZ ₂₂₉	13.0	X	346.35817	190.05048	216.56379	10.30143	0.0719250	0.08120126	5.2815438	21	11 5.1	19.5
228107 2008 SS ₂₃₁	13.8	X	31.18398	112.29968	253.60181	4.67259	0.0282178	0.08345329	5.1860942	21	11 12.2	20.5
228108 2008 SU ₂₇₇	13.2	X	308.75573	210.19372	238.83690	1.60404	0.0915304	0.08299788	5.2050477	21	11 2.6	19.6
228109 2008 TA ₅	15.8	X	127.99629	203.87320	276.18555	1.11946	0.0597304	0.20357998	2.8618444	21	5 27.1	19.7
228110 Eudorus	13.6	X	15.92672	322.20685	73.67133	1.46815	0.0343563	0.08025431	5.3230081	21	11 27.8	20.4
228111 2008 TK ₁₀	13.5	X	45.92393	328.41682	34.68062	8.51479	0.0284956	0.08368287	5.1766046	21	11 25.1	20.3
228112 2008 TG ₃₅	13.4	X	352.90052	205.85298	199.23359	5.40473	0.0962404	0.08147871	5.2695472	21	11 12.5	19.8
228113 2008 TZ ₅₀	13.1	X	31.58983	297.59913	66.34696	1.84618	0.0335988	0.08041591	5.3158746	21	11 11.2	20.0
228114 2008 TB ₆₁	12.6	X	19.35504	292.42228	91.30474	14.02780	0.0192354	0.08443536	5.1458028	21	11 21.0	19.5
228115 2008 TK ₇₆	13.4	X	301.91525	275.89968	188.68430	7.40289	0.0749417	0.08204916	5.2450943	21	11 14.2	20.1
228116 2008 TK ₈₂	13.3	X	359.34053	51.08376	358.75934	6.96078	0.0102823	0.08414168	5.1577694	21	11 22.1	20.1
228117 2008 TJ ₉₃	13.2	X	43.44305	193.92503	170.44428	4.93335	0.0431521	0.08416411	5.1568533	21	11 27.4	20.0
228118 2008 TZ ₁₁₁	12.9	X	3.34283	133.90764	272.73577	6.85777	0.0604038	0.08107358	5.2870875	21	11 25.4	19.6
228119 2008 TM ₁₃₆	13.4	X	14.00672	16.97150	25.20927	5.09839	0.0515694	0.08118523	5.2822390	21	12 2.8	20.1
228120 2008 TV ₁₃₉	13.1	X	88.96441	67.35069	251.08835	4.67125	0.0657771	0.08182959	5.2544724	21	11 28.9	20.1
228121 2008 TN ₁₇₅	13.9	X	349.00850	199.97733	226.26919	7.70404	0.0422994	0.08376928	5.1730441	21	11 30.4	20.6
228122 2008 UH ₁₁	13.4	X	333.72269	57.64333	5.86739	4.18397	0.0418401	0.08156038	5.2660288	21	11 7.7	20.2
228123 2008 UH ₄₅	13.7	X	331.63209	40.81369	52.05413	5.92685	0.0959608	0.08265523	5.2194230	21	12 5.7	20.1
228124 2008 YC ₇	13.0	X	336.07122	197.58842	207.41789	12.06543	0.2053854	0.08257301	5.2228870	21	10 14.1	18.8
228125 2008 YV ₃₀	12.4	X	341.07479	338.40915	86.23737	10.77357	0.0424556	0.08424415	5.1535863	21	11 20.8	19.1
228126 2009 ON ₁	14.6	X	32.23416	232.62317	108.00991	33.45871	0.0781428	0.17023070	3.2243645	21	11 18.6	19.6
228127 2009 PL	17.1	X	140.99061	354.34362	315.13748	3.05927	0.2387536	0.27812045	2.3244173	21	—	—
228128 2009 PN ₈	16.8	X	97.83855	196.54764	127.65851	3.05001	0.2193674	0.2697615	2.3726901	21	—	—
228129 2009 PL ₁₂	15.9	X	195.15677	350.95494	349.38015	4.43027	0.0685895	0.21067696	2.7972075	21	2 17.7	19.9
228130 2009 PE ₁₇	16.8	X	107.94870	133.22771	173.78172	1.29387	0.1897266	0.26963867	2.3729100	21	—	—
228131 2009 QE ₁	16.3	X	166.43547	232.02734	127.28786	4.38275	0.1982802	0.20912373	2.8110409	21	2 19.4	20.9
228132 2009 QC ₁₃	17.1	X	334.40935	70.36915	327.68569	8.17104	0.1632183	0.25268324	2.4779075	21	11 5.9	19.5
228133 Ripoll	17.6	X	117.00182	6.25692	305.49998	1.70578	0.1874873	0.27201439	2.3590734	21	—	—
228134 2009 QG ₄₃	15.6	X	240.54790	268.27096	8.40757	7.68532	0.1542964	0.21003313	2.8029209	21	1 17.2	20.2
228135 Sodnik	16.8	X	202.55068	32.10745	348.47970	2.91612	0.1049554	0.21521810	2.7577201	21	4 13.9	21.1
228136 Billary	17.1	X	196.38675	135.29490	210.01088	3.27386	0.1048498	0.29099584	2.2553374	21	2 12.6	20.4
228137 2009 RY ₃₂	17.0	X	226.05023	336.62418	340.27076	1.33236	0.0624625	0.20552732	2.8437386	21	2 22.3	21.2
228138 2009 RB ₃₃	17.0	X	162.71740	305.11479	14.69024	6.98660	0.1322452	0.27731184	2.3289336	21	—	—
228139 2009 RS ₃₃	16.2	X	329.75229	145.17781	198.13876	11.73910	0.0913300	0.23657753	2.5891292	21	8 6.1	19.4
228140 2009 RT ₃₃	12.9	X	357.88544	181.17480	208.19045	20.03551	0.1339894	0.08343769	5.1867407	21	11 3.0	19.1
228141 2009 RM ₃₇	15.9	X	63.11055	357.73582	4.66629	0.77123	0.1266475	0.18092010	3.0960753	21	—	—
228142 2009 RZ ₄₅	17.4	X	31.78716	97.47033	324.01539	1.31336	0.0881516	0.26754265	2.3852873	21	—	—
228143 2009 RE ₅₀	16.3	X	9.76298	96.21745	307.14302	0.44452	0.0943963	0.17450247	3.1715264	21	12 22.3	20.2
228144 2009 RP ₅₀	16.2	X	127.11265	149.72315	196.75243	4.56400	0.2035225	0.19185022	2.9773360	21	—	—
228145 2009 RU ₅₁	17.6	X	223.04586	15.71870	24.80004	2.62473	0.1976065	0.30716777	2.1754659	21	5 21.6	20.9
228146 2009 RX ₅₅	17.3	X	103.89219	229.38869	142.48696	2.74281	0.2202621	0.27424873	2.3462429	21	—	—
228147 2009 SB ₁₈	16.1	X	284.62153	142.54609	206.38903	14.55862	0.3444580	0.22996866	2.6384990	21	5 3.7	20.2
228148 2009 SH ₁₉	12.2	X	312.58633	317.49666	102.72866	5.48603	0.0313635	0.08121132	5.2811072	21	10 14.4	19.0
228149 2009 ST ₂₈	17.2	X	82.85751	339.98214	10.39662	3.04282	0.2340223	0.26764995	2.3846498	21	—	—
228150 2009 SJ ₃₈	13.6	X	331.30426	49.69174	7.23985	3.35259	0.1208536	0.08287289	5.2102801	21	10 25.1	19.9
228151 2009 SU ₃₉	16.0	X	2.38901	113.51760	305.07212	0.39144	0.1577126	0.17491633	3.1665218	21	—	—
228152 2009 SL ₄₄	16.8	X	194.42390	3.76071	249.57199	4.68771	0.1060766	0.26809921	2.3819850	21	—	—
228153 2009 SV ₄₈	16.4	X	329.38613	88.92413	215.57388	7.91478	0.1606578	0.22969755	2.6405748	21	6 4.8	19.4
228154 2009 SZ ₄₈	18.1	X	254.55604	169.73458	236.12576	0.70135</						

ELEMENTS AND OPPOSITION DATES IN 2021

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Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>
228161 2009 SF ₁₃₈	17.1	X	218.14799	142.63179	210.02448	1.62817	0.0882588	0.21226234	2.7832620	21	3 27.5	21.1
228162 2009 SO ₁₄₁	13.6	X	300.53414	76.90685	0.99966	4.25466	0.0244428	0.08253986	5.2242855	21	10 17.6	20.4
228163 2009 SN ₁₄₃	15.5	X	131.04582	62.34086	203.16579	6.97344	0.0277680	0.17225483	3.1990555	21	11 25.6	20.1
228164 2009 SY ₁₆₆	17.7	X	243.95767	91.57911	220.21369	6.01225	0.1644178	0.29910400	2.2143923	21	2 14.7	21.3
228165 Mezentsev	16.1	X	182.46675	27.99562	58.21707	10.00471	0.1132402	0.22305709	2.6927252	21	6 15.3	20.2
228166 2009 ST ₁₇₀	17.1	X	230.70202	53.50465	242.27212	3.14948	0.1935219	0.28907318	2.2653267	21	1 16.6	20.6
228167 2009 SQ ₁₈₆	15.9	X	331.52669	23.33897	86.10363	3.95339	0.0393160	0.17985148	3.1083270	21	—	—
228168 2009 SZ ₁₈₈	17.2	X	231.03926	268.56454	15.80808	4.87430	0.1738330	0.29150713	2.2526995	21	1 3.8	20.8
228169 2009 SP ₂₀₄	15.6	X	292.22981	234.42696	252.44764	1.94750	0.1325929	0.17221118	3.1995690	21	12 6.6	19.6
228170 2009 SS ₂₀₅	17.4	X	206.35007	286.67591	170.15274	0.51249	0.1076765	0.22958065	2.6414711	21	7 25.0	21.1
228171 2009 SG ₂₁₁	17.1	X	358.99708	273.71261	26.77426	3.74373	0.1421946	0.23680545	2.5874676	21	8 1.1	19.6
228172 2009 SK ₂₁₂	16.9	X	180.51618	359.54205	21.28044	2.18045	0.2599935	0.21035873	2.8000279	21	3 29.6	21.7
228173 2009 SV ₂₃₂	15.1	X	65.99468	187.39146	155.33244	10.75850	0.0751174	0.17791905	3.1307935	21	12 19.5	19.8
228174 2009 SG ₂₃₃	15.4	X	92.86395	228.61690	169.79643	10.64105	0.1351145	0.19133194	2.9827102	21	1 11.7	19.5
228175 2009 SC ₂₃₄	17.0	X	98.55356	159.47852	224.33612	5.11544	0.2278763	0.27278422	2.3546330	21	—	—
228176 2009 SP ₂₆₃	17.4	X	48.08755	275.61541	104.28818	2.81002	0.1922204	0.26401747	2.4064727	21	—	—
228177 2009 SK ₂₇₅	15.9	X	59.35329	341.76742	34.57252	5.11636	0.1439900	0.18184529	3.0855648	21	—	—
228178 2009 SA ₂₈₅	16.8	X	231.28197	190.03956	189.09091	3.30420	0.1996383	0.22420166	2.6835529	21	5 6.6	21.1
228179 2009 TF ₄	17.5	X	79.48515	187.71733	203.65636	0.48460	0.1848456	0.27013928	2.3699775	21	—	—
228180 Puertollano	17.4	X	247.48333	153.61897	219.20659	4.29986	0.1761088	0.30708580	2.1758930	21	5 10.7	20.4
228181 2009 TF ₉	15.3	X	104.04930	87.69415	255.80017	8.49878	0.0541490	0.18180511	3.0860194	21	—	—
228182 2009 TQ ₁₆	17.3	X	70.94559	168.95505	214.53947	2.54335	0.1885779	0.26727379	2.3868867	21	—	—
228183 2009 TQ ₂₀	16.5	X	280.79583	193.03466	161.62810	3.74033	0.1374971	0.22872985	2.6480173	21	6 3.8	20.2
228184 2009 TR ₂₀	16.7	X	131.17067	289.71264	40.41026	7.18534	0.1329921	0.27292967	2.3537964	21	—	—
228185 2009 TD ₂₇	17.1	X	35.01425	340.78473	97.41651	5.70967	0.1678288	0.26963926	2.3729065	21	—	—
228186 2009 TP ₃₁	17.0	X	139.17212	328.16310	52.01516	7.52907	0.1983450	0.28383482	2.2931138	21	2 11.1	20.2
228187 2009 TQ ₃₅	15.6	X	86.94168	197.07265	218.84524	12.72815	0.1138488	0.19031892	2.9932850	21	1 20.1	19.8
228188 2009 UA ₂₁	16.3	X	295.84216	11.90997	4.32049	7.52336	0.1592887	0.23427855	2.6060397	21	7 23.9	19.6
228189 2009 UT ₃₆	17.1	X	201.25388	118.09003	195.40442	2.13307	0.1454641	0.28402421	2.2920943	21	1 12.1	20.5
228190 2009 UY ₃₈	15.7	X	290.85440	87.88200	106.98063	2.71183	0.0471773	0.18407554	3.0605912	21	—	—
228191 2009 UX ₇₂	16.3	X	263.71248	325.39035	45.04298	6.90789	0.0441459	0.22156246	2.7048214	21	6 15.8	19.9
228192 2009 UM ₈₂	16.7	X	273.76143	211.43349	196.38824	3.90626	0.0756307	0.23290538	2.6162728	21	8 14.2	20.0
228193 2693 P-L	15.6	X	68.60611	211.56437	177.78817	11.31455	0.2204267	0.18145036	3.0900404	21	—	—
228194 3046 P-L	15.7	X	32.04422	1.91748	318.67114	8.25360	0.1792508	0.24333476	2.5409724	21	10 31.9	18.9
228195 6675 P-L	16.1	X	325.69778	69.42672	9.21975	5.26846	0.2690401	0.24422771	2.5347750	21	12 24.8	17.7
228196 7574 P-L	15.3	X	78.24282	351.09367	34.03633	7.02778	0.2597969	0.18180403	3.0860317	21	—	—
228197 2149 T-3	15.5	X	315.92648	79.60042	217.46291	10.92977	0.1346712	0.21856167	2.7295227	21	5 6.9	18.7
228198 3200 T-3	16.6	X	131.67703	22.14882	32.73547	7.78690	0.1201603	0.28050179	2.3112431	21	3 10.3	19.6
228199 3765 T-3	15.5	X	110.39476	168.73450	189.98306	11.52754	0.0608740	0.18596253	3.0398519	21	—	—
228200 4088 T-3	16.3	X	213.57725	203.71815	168.15216	9.71288	0.2068276	0.21617486	2.7495772	21	4 14.4	21.0
228201 4106 T-3	17.0	X	171.40817	314.17794	97.72004	3.48624	0.2282614	0.21509029	2.7588125	21	4 28.3	21.7
228202 5058 T-3	16.2	X	269.85829	291.32888	52.25533	11.29543	0.2002300	0.21847267	2.7302640	21	4 30.2	20.3
228203 5772 T-3	15.1	X	64.22254	297.49906	85.41997	9.21989	0.0493148	0.18431080	3.0579862	21	—	—
228204 1993 VM ₇	15.0	X	174.42454	233.15685	23.43530	16.94042	0.0489482	0.18203118	3.0834638	21	—	—
228205 1994 JP ₂	16.9	X	196.57808	138.13263	61.93976	4.96211	0.1892673	0.23572156	2.5953933	21	11 17.3	21.0
228206 1995 BY ₈	16.0	X	340.06602	125.46102	93.21213	3.29068	0.2398011	0.19289964	2.9665279	21	3 17.9	20.0
228207 1995 CM ₄	16.5	X	79.96184	260.98450	186.56196	1.60258	0.0857895	0.19066915	2.9896185	21	2 18.3	20.3
228208 1995 MR ₂	17.0	X	238.10088	135.42292	254.19497	6.10671	0.1107768	0.29827221	2.2185073	21	5 29.8	19.9
228209 1995 TF ₄	17.5	X	218.66289	307.97434	14.91039	3.48579	0.1986857	0.28713549	2.2755068	21	2 10.9	21.2
228210 1995 UT ₅₉	16.5	X	210.47011	11.82993	20.95399	4.20503	0.0828535	0.21494730	2.7600358	21	5 8.2	20.5
228211 1995 VR ₅	16.3	X	248.48481	335.14519	68.27420	8.90428	0.1615486	0.21896958	2.7261318	21	6 25.9	20.3
228212 1995 YG ₉	16.6	X	290.13673	114.36173	124.97139	7.17147	0.0681213	0.27576309	2.3376453	21	1 15.9	19.8
228213 1995 YG ₁₇	16.8	X	209.31460	285.40296	81.07956	7.30910	0.2121917	0.28807074	2.2705790	21	3 31.6	20.6
228214 1996 AO ₁₄	17.5	X	336.54515	149.43879	8.69154	2.55974	0.1167184	0.27171241	2.3608210	21	—	—
228215 1996 DD ₂	17.6	X	108.53531	230.16877	199.01176	2.11364	0.2051768	0.27733585	2.3287992	21	3 8.8	20.2
228216 1996 LJ ₃	15.2	X	82.57191	227.27173	188.83467	9.82222	0.0259951	0.18518100	3.0483987	21	1 7.2	19.5
228217 1996 RU ₁₆	16.7	X	258.54733	257.66168	178.51163	2.55719	0.0234369	0.23560900	2.5962198	21	9 10.6	20.1
228218 1996 TJ ₁₇	15.3	X	269.64891	267.49662	320.80060	7.96948	0.0462748	0.17476448	3.1683558	21	1 2.8	20.0
228219 1996 VG ₃₃	16.1	X	292.83628	55.11135	50.88366	5.28453	0.2851016	0.23669597	2.5882654	21	11 3.5	18.2
228220 1996 VB ₃₆	17.6	X	161.15479	124.27992	304.93476	5.08991	0.1226519	0.30092260	2.2054617	21	4 25.8	20.8
228221 1996 XO ₇	16.6	X	282.40522	213.19523	185.81755	3.17395	0.2245431	0.22987485	2.6392168	21	7 21.6	20.1
228222 1996 XG ₃₀	16.9	X	211.01608	32.70265	76.84237	2.74317	0.0899787	0.22785697	2.6547757	21	8 18.3	20.7
228223 1997 GS ₁₅	17.4	X	33.24882	181.86224	22.66637	4.14969	0.1764781	0.28897209	2.2658550	21	5 8.6	18.8
228224 1998 DK ₁₂	16.5	X	298.34189	283.91375	128.02343	4.91081	0.2162496	0.23391868	2.6087118	21	9 7.7	19.2
228225 1998 HM ₁₆	16.3	X	333.37023	210.36301	101.23856	3.00270	0.0761307	0.22177214	2.7031162	21	7 1.8	19.5
228226 1998 HO ₁₉	16.5	X	163.13036	224.88473	316.64515	1.98251	0.1863562	0.23040833	2.6351414	21	9 25.5	20.8
228227 1998 HF ₂₅	15.9	X	347.68772	131.62499	129.95203	2.94324	0.2186160	0.21608501	2.7503394	21	5 2.7	18.5
228228 1998 HM ₈₀	16.6	X	186.83687	134.79383	23.35841	7.04527	0.2587447	0.23062296	2.6335063	21	9 17.6	21.2
228229 1998 MO ₁₇	16.6	X	150.97751	48.34806	133.92316	2.87838	0.1619210	0.21967999	2.7202514	21	9 16.5	20.9
228230 1998 QL ₇₄	16.2	X	199.70101	114.23438	267.63139	6.03985	0.1225755	0.28644757	2.2791485	21	4 4.2	19.7
228231 1998 QT ₁₀₁	17.3	X	112.28515	241.04103	108.46153	2.48317	0.3030853	0.27266041	2.3553457	21	—	—
228232 1998 RX ₁₀	16.2	X	185.67793	301.19174	16.73653	1.71861	0.0640991	0.19111807	2.9849350	21	1 14.5	20.7
228233 1998 RG ₁₃	16.3	X	87.83973	45.80063	36.96908	1.19509	0.0383092	0.19193094	2.9765012	21	2 17.3	20.2
228234 1998 SC ₇	17.4	X	191.92466	145.73566	208.46339	0.77383	0.1902691	0.28253296	2.3001541	21	2 25.4	20.8
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Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>
228241 1998 <i>UO</i> ₁₁	17.6	X	93.36516	352.89027	58.12045	3.54644	0.1674256	0.27303014	2.3532189	21	1 14.2	19.9
228242 1998 <i>UQ</i> ₁₇	16.6	X	112.98070	71.34094	313.31834	5.96319	0.1611004	0.27391148	2.3481683	21	1 7.5	19.1
228243 1998 <i>US</i> ₁₇	17.2	X	157.71872	71.38792	274.81642	2.05156	0.2103632	0.27598946	2.3363670	21	1 17.5	20.4
228244 1998 <i>UD</i> ₄₂	16.8	X	163.33150	312.35841	59.21298	3.90002	0.1732949	0.27860565	2.3217178	21	2 22.2	20.2
228245 1998 <i>VL</i> ₄₈	16.9	X	159.92015	223.35056	65.46520	7.35105	0.1047474	0.26664520	2.3906364	21	—	—
228246 1998 <i>WC</i> ₄₆	15.0	X	344.40943	22.22212	101.01450	17.22311	0.2448249	0.17442520	3.1724630	21	—	—
228247 1998 <i>XH</i> ₁₀	15.2	X	55.23011	42.15912	68.43783	10.26333	0.1127287	0.18662423	3.0326621	21	2 20.5	19.1
228248 1998 <i>XD</i> ₁₃	15.3	X	114.61097	331.99609	61.05329	10.51415	0.0334990	0.18587959	3.0407560	21	1 23.0	19.7
228249 1998 <i>XO</i> ₃₅	15.3	X	80.02545	151.33892	254.10976	14.28080	0.2830914	0.18346457	3.0673823	21	1 22.6	19.2
228250 1998 <i>YD</i> ₂₀	15.9	X	41.01972	333.00317	80.25821	2.20674	0.1660076	0.17534102	3.1614067	21	—	—
228251 1999 <i>AY</i> ₁₁	17.0	X	32.12291	200.66089	290.32993	3.43142	0.0988906	0.26829104	2.3808495	21	1 14.1	19.4
228252 1999 <i>AO</i> ₃₂	17.8	X	39.99430	109.99171	317.83423	2.13405	0.2116298	0.26398549	2.4066670	21	—	—
228253 1999 <i>CT</i> ₁₃₆	17.5	X	349.46882	38.01706	130.42643	3.00374	0.1400879	0.26603274	2.3943042	21	—	—
228254 1999 <i>CL</i> ₁₄₁	16.7	X	109.54425	257.88142	129.58142	9.44985	0.2062241	0.26780475	2.3837308	21	1 14.2	19.4
228255 1999 <i>ET</i> ₇	16.0	X	327.31311	110.04677	78.66214	0.35746	0.1368927	0.17544688	3.1601348	21	1 10.6	20.2
228256 1999 <i>EE</i> ₁₂	16.4	X	78.39021	1.78985	112.66097	5.57402	0.1694427	0.26912985	2.3759059	21	3 25.6	18.8
228257 1999 <i>JL</i> ₁₁₁	16.5	X	122.35408	164.12384	94.29915	7.39746	0.2338022	0.23929956	2.5694575	21	11 26.9	20.9
228258 1999 <i>NV</i> ₅₆	15.4	X	227.69815	99.42693	261.62177	9.52375	0.2309161	0.21090994	2.7951472	21	4 6.4	20.3
228259 1999 <i>PL</i> ₃	15.9	X	232.77655	301.50471	129.88211	13.36338	0.3894399	0.21620616	2.7493118	21	6 29.1	21.1
228260 1999 <i>RM</i> ₅₉	16.2	X	224.35518	196.10045	150.77291	9.13047	0.2311366	0.20952885	2.8074164	21	3 23.9	21.1
228261 1999 <i>RJ</i> ₈₂	17.5	X	328.08393	116.21708	240.42529	2.61702	0.1550277	0.31267743	2.1498345	21	8 28.6	18.9
228262 1999 <i>TX</i> ₆₇	16.1	X	37.96730	205.25437	67.31125	4.55817	0.0496976	0.21514244	2.7583666	21	8 19.3	19.6
228263 1999 <i>TH</i> ₁₂₈	16.6	X	161.12684	84.97019	128.66253	4.76801	0.1366198	0.28458726	2.2890700	21	—	—
228264 1999 <i>TM</i> ₁₃₀	17.0	X	75.81551	81.46328	212.77182	2.16471	0.1089780	0.31915919	2.1206280	21	11 29.3	19.7
228265 1999 <i>TF</i> ₁₇₄	17.3	X	248.62212	237.30813	142.63406	2.81309	0.1786667	0.30255264	2.1975330	21	5 22.3	20.4
228266 1999 <i>TZ</i> ₁₉₅	16.9	X	303.23737	61.45200	283.11467	5.36492	0.1886368	0.30603843	2.1808146	21	6 9.7	19.0
228267 1999 <i>TC</i> ₂₀₀	16.2	X	65.38667	265.73084	236.73274	19.68798	0.3105872	0.29016521	2.2596395	21	5 2.3	18.0
228268 1999 <i>TR</i> ₂₁₉	15.7	X	176.45899	70.05025	332.79430	6.54916	0.2124064	0.20590531	2.8402573	21	4 17.5	20.6
228269 1999 <i>TO</i> ₂₃₃	15.9	X	221.26896	136.78687	260.16064	8.02231	0.1631416	0.21163292	2.7887778	21	5 21.1	20.4
228270 1999 <i>TT</i> ₂₆₀	17.1	X	350.34324	49.79018	255.00964	1.90709	0.1459221	0.31043118	2.1601927	21	7 20.9	18.4
228271 1999 <i>TG</i> ₂₆₆	16.0	X	239.00082	111.79434	247.49658	8.41700	0.2946865	0.21124451	2.7921951	21	4 11.2	21.1
228272 1999 <i>TM</i> ₃₁₃	17.2	X	206.47135	75.92325	345.05192	3.38710	0.1930541	0.21263693	2.7799922	21	6 5.3	21.8
228273 1999 <i>UJ</i> ₂₈	16.0	X	108.43096	78.05883	30.84484	15.14890	0.1098409	0.20530093	2.8458288	21	4 24.8	20.1
228274 1999 <i>UV</i> ₄₃	16.2	X	246.34870	89.12872	262.04752	6.10707	0.3096269	0.21020404	2.8014014	21	4 6.1	21.2
228275 1999 <i>VG</i> ₅₇	15.4	X	146.77774	106.90835	218.02441	9.55836	0.1099239	0.19268413	2.9687395	21	—	—
228276 1999 <i>VB</i> ₆₅	15.3	X	89.22211	169.50746	224.81440	14.40440	0.1646386	0.19218462	2.9738813	21	1 4.1	19.3
228277 1999 <i>VD</i> ₁₀₈	15.6	X	162.08445	334.21398	57.86808	12.93412	0.1634911	0.20036618	2.8923560	21	3 30.5	20.4
228278 1999 <i>WJ</i> ₁₁	17.1	X	190.04934	238.02871	225.90067	4.10256	0.0818064	0.30232630	2.1986298	21	7 17.7	20.0
228279 1999 <i>WS</i> ₂₇	16.0	X	209.19688	271.78439	117.73315	2.36438	0.1063794	0.20579598	2.8412631	21	5 4.2	20.4
228280 1999 <i>XK</i> ₄₈	15.6	X	146.11670	336.24550	74.37616	9.78211	0.2082106	0.20039202	2.8921164	21	4 8.9	20.4
228281 1999 <i>XA</i> ₁₁₈	17.1	X	242.69182	348.35998	42.77227	5.37185	0.1814448	0.30223371	2.1990788	21	5 29.7	20.2
228282 1999 <i>XH</i> ₁₄₉	16.0	X	73.02329	247.29034	242.56251	3.74689	0.0588200	0.19991969	2.8966699	21	3 28.3	19.8
228283 2000 <i>AO</i> ₆₀	17.2	X	59.73148	254.44069	297.22232	5.08952	0.3621066	0.28704887	2.2759645	21	7 20.9	19.6
228284 2000 <i>AJ</i> ₁₇₆	15.2	X	198.18310	269.11893	125.20054	13.18933	0.1078331	0.20341938	2.8633504	21	5 3.6	19.9
228285 2000 <i>AW</i> ₁₇₉	16.0	X	34.20707	290.74877	270.24308	20.02685	0.2205736	0.28779901	2.2720080	21	5 6.1	17.8
228286 2000 <i>BZ</i> ₁	16.5	X	76.31225	127.07549	308.01175	2.64901	0.2077956	0.18877618	3.0095710	21	2 14.7	20.2
228287 2000 <i>BE</i> ₃	15.4	X	332.35619	75.03807	112.99487	4.04085	0.2702439	0.18411396	3.0601654	21	—	—
228288 2000 <i>BZ</i> ₃₃	15.7	X	42.48843	136.30278	350.03885	3.15272	0.0970048	0.18862445	3.0111847	21	2 15.2	19.2
228289 2000 <i>BG</i> ₃₄	17.1	X	96.99121	150.79957	10.77874	2.38141	0.0853962	0.29126314	2.2539574	21	6 12.7	19.8
228290 2000 <i>CS</i> ₆₉	14.1	X	353.14356	89.18831	313.97055	5.33785	0.0604199	0.07954492	5.3546086	21	11 7.6	20.9
228291 2000 <i>CX</i> ₉₅	17.4	X	135.01787	353.74901	129.01389	1.31953	0.1445456	0.29270426	2.2465531	21	6 14.4	20.6
228292 2000 <i>DS</i> ₁₀	16.3	X	33.39524	295.54687	162.56376	0.52625	0.2196431	0.18524865	3.0476564	21	—	—
228293 2000 <i>DK</i> ₁₄	15.8	X	261.49888	195.54308	18.17251	0.37962	0.2012024	0.17645532	3.1408833	21	—	—
228294 2000 <i>DT</i> ₅₂	17.0	X	140.84036	119.84622	325.48378	3.63772	0.1400353	0.28762266	2.2729366	21	4 28.3	20.1
228295 2000 <i>DV</i> ₆₀	17.4	X	302.42278	70.20328	123.81938	1.96411	0.1304995	0.27276628	2.3547362	21	—	—
228296 2000 <i>DD</i> ₉₅	16.9	X	12.36944	123.89914	3.53100	4.48583	0.1798237	0.27640043	2.3340504	21	—	—
228297 2000 <i>DO</i> ₁₀₀	16.8	X	1.33046	154.12029	47.71475	3.74441	0.1572246	0.28120708	2.3073769	21	2 24.2	18.9
228298 2000 <i>EX</i> ₄	17.6	X	106.55474	92.05376	15.61659	0.65098	0.1161556	0.28616019	2.2806742	21	4 14.1	20.3
228299 2000 <i>EX</i> ₂₃	17.4	X	27.62527	160.39707	348.68480	2.29028	0.1427945	0.27809629	2.3245519	21	1 27.5	19.2
228300 2000 <i>EH</i> ₅₂	15.5	X	248.28853	89.00635	183.32117	0.85847	0.0936042	0.18215845	3.0820274	21	1 25.0	20.3
228301 2000 <i>EA</i> ₅₄	15.8	X	326.84894	187.20989	341.45274	1.63732	0.0276142	0.18257470	3.0773412	21	—	—
228302 2000 <i>EO</i> ₅₇	16.0	X	22.33745	230.07618	277.60930	0.58540	0.2618472	0.18580224	3.0415999	21	2 7.4	18.5
228303 2000 <i>GT</i> ₃₆	16.7	X	124.16965	19.59573	8.97681	3.56467	0.1404970	0.27366764	2.3495629	21	1 25.9	19.6
228304 2000 <i>GE</i> ₄₁	16.0	X	309.37551	317.85023	205.38246	3.22557	0.1488394	0.17543566	3.1602696	21	—	—
228305 2000 <i>GY</i> ₁₂₈	17.2	X	231.49825	210.48929	13.69862	1.88311	0.1528425	0.21833436	2.7314169	21	—	—
228306 2000 <i>HT</i> ₇₈	15.0	X	297.34293	111.60302	91.69975	18.26954	0.1172486	0.17765043	3.1339486	21	—	—
228307 2000 <i>HB</i> ₉₄	17.0	X	127.06890	271.89792	51.13341	4.50487	0.0730030	0.26041880	2.4285916	21	—	—
228308 2000 <i>HE</i> ₉₈	17.2	X	9.99209	55.12606	74.76259	3.21499	0.1485504	0.27207346	2.3587320	21	—	—
228309 2000 <i>JA</i> ₄₃	16.5	X	125.09329	233.87305	54.09413	9.66052	0.2278453	0.25426281	2.4676345	21	—	—
228310 2000 <i>JV</i> ₄₄	16.5	X	256.59861	111.30151	52.00021	5.39819	0.1365579	0.25926676	2.4357805	21	12 20.9	19.4
228311 2000 <i>LB</i> ₃₁	16.2	X	157.02660	218.99154	99.06186	12.37152	0.2636029	0.26022330	2.4298078	21	—	—
228312 2000 <i>OS</i> ₈	16.6	X	273.54210	7.31537	309.27499	18.						

ELEMENTS AND OPPOSITION DATES IN 2021

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2021 JULY 5.0 TT

Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>	
228321	2000	QQ ₁₃₀	16.9	X	36.99954	13.13620	312.94007	1.88676	0.1320314	0.24028550	2.5624241	21 11 10.7	20.1
228322	2000	QU ₂₀₃	16.1	X	305.37239	323.70678	355.65236	13.08036	0.2494437	0.22748363	2.6576795	21 4 26.5	19.7
228323	2000	QP ₂₀₄	16.4	X	285.89507	171.33319	218.92657	4.32445	0.2323218	0.23057450	2.6338753	21 7 12.9	19.9
228324	2000	QK ₂₁₂	17.0	X	20.56306	201.35434	150.59404	5.34595	0.2279061	0.23998524	2.5645610	21 12 7.9	20.0
228325	2000	QS ₂₂₄	15.5	X	9.42813	87.62286	259.61499	11.71165	0.2200687	0.23869893	2.5737661	21 11 7.6	18.2
228326	2000	QK ₂₄₃	16.9	X	290.91183	99.76153	330.88190	3.41580	0.2418013	0.23703687	2.5857832	21 9 15.1	19.6
228327	2000	RN ₁₈	15.9	X	300.75608	83.88289	294.89661	5.02489	0.3547147	0.23071665	2.6327932	21 6 28.9	19.0
228328	2000	RO ₁₉	15.8	X	316.11170	68.83135	305.39891	9.61370	0.1288014	0.23297336	2.6157639	21 8 24.2	18.6
228329	2000	RC ₂₁	16.8	X	337.14148	106.83629	259.86251	2.77290	0.2861642	0.23467032	2.6031385	21 9 19.2	18.3
228330	2000	RQ ₃₄	16.1	X	326.70133	44.16144	286.46899	2.82096	0.2836857	0.23031040	2.6358884	21 6 18.7	18.3
228331	2000	RD ₈₆	16.0	X	327.37690	210.80306	128.64419	5.99271	0.2530635	0.23070787	2.6328601	21 7 9.9	18.3
228332	2000	RL ₉₉	16.0	X	282.76163	100.64378	292.26276	10.17480	0.3094159	0.22910362	2.6451365	21 7 1.9	19.7
228333	2000	SW ₁₉	16.3	X	322.39054	98.15920	308.31338	9.88392	0.2406802	0.23475305	2.6025268	21 10 11.6	18.7
228334	2000	SK ₂₈	15.9	X	250.24306	196.01406	227.62619	12.47588	0.1558192	0.22893342	2.6464473	21 7 21.5	20.0
228335	2000	SV ₆₄	15.9	X	266.80581	216.35437	185.19588	14.24025	0.1149023	0.22859991	2.6490207	21 7 19.4	19.8
228336	2000	SE ₇₆	16.4	X	326.52925	303.52760	66.53143	4.58035	0.2257633	0.23218611	2.6216732	21 9 3.6	18.6
228337	2000	SS ₇₆	16.1	X	318.49095	259.97988	75.29165	5.77729	0.2753919	0.22893879	2.6464059	21 6 10.2	18.8
228338	2000	SZ ₉₈	16.3	X	295.85722	88.01836	264.91369	3.62029	0.1359149	0.22750302	2.6575286	21 6 22.2	19.6
228339	2000	SL ₁₀₀	16.0	X	303.13613	36.01239	347.00520	14.19924	0.1996332	0.22981638	2.6396645	21 8 10.4	19.0
228340	2000	SS ₁₂₉	16.6	X	58.68128	52.33247	278.64203	11.86203	0.2239664	0.24339080	2.5405823	21 12 27.5	20.3
228341	2000	SK ₁₃₆	16.5	X	252.76796	128.33334	271.31286	3.35238	0.2436830	0.22567973	2.6718230	21 6 16.7	20.6
228342	2000	SN ₁₃₆	16.3	X	14.32532	63.28597	295.38857	8.37747	0.2236490	0.23801358	2.5787044	21 12 4.4	19.1
228343	2000	SN ₁₃₉	15.5	X	319.68756	98.96663	237.04152	12.60363	0.2298323	0.22863576	2.6487438	21 6 21.1	18.4
228344	2000	SN ₁₄₅	16.1	X	25.22885	346.03018	4.95172	5.53189	0.2374559	0.23882894	2.5728319	21 12 13.5	19.2
228345	2000	SG ₁₈₀	15.9	X	301.85985	26.30589	0.35247	13.26942	0.1815558	0.22978106	2.6399350	21 8 17.2	19.0
228346	2000	SG ₁₈₄	16.1	X	345.92594	87.04558	268.75944	11.83985	0.2496794	0.23519326	2.5992784	21 9 21.2	18.4
228347	2000	SK ₁₉₈	16.4	X	305.12755	50.32607	8.10441	2.54487	0.1410192	0.23550449	2.5969879	21 10 9.4	19.2
228348	2000	SY ₂₂₄	16.0	X	222.12820	260.56637	195.76306	12.20780	0.1313993	0.22778405	2.6553422	21 8 5.2	20.2
228349	2000	SV ₂₇₈	16.0	X	256.42061	1.49990	49.34682	10.52370	0.3051750	0.22470825	2.6795182	21 6 27.9	20.4
228350	2000	SV ₂₈₂	16.1	X	275.14720	140.80416	252.38283	9.67512	0.1812100	0.22831368	2.6512342	21 7 9.9	19.8
228351	2000	SK ₂₉₀	17.0	X	330.88548	79.91030	328.08650	3.92328	0.2566070	0.23633185	2.5909232	21 11 12.3	18.7
228352	2000	SK ₃₀₃	15.9	X	282.92871	26.38854	327.37655	7.13328	0.2876302	0.22533113	2.6455779	21 5 11.8	20.0
228353	2000	SL ₃₀₆	16.2	X	354.39970	97.84893	221.56585	11.42821	0.1476400	0.23108140	2.6300221	21 8 13.5	19.2
228354	2000	SD ₃₁₅	15.9	X	294.00870	81.29571	277.81473	11.29929	0.1412707	0.22731999	2.6589549	21 6 27.3	19.1
228355	2000	SK ₃₁₆	16.1	X	38.25787	55.92171	242.09635	13.08513	0.1296715	0.23585546	2.5944109	21 9 30.1	19.5
228356	2000	TN ₁₄	17.3	X	333.05426	337.08108	35.80636	2.41091	0.2405128	0.23325840	2.6136325	21 9 22.6	19.3
228357	2000	TC ₂₂	16.5	X	295.30471	199.64348	129.58660	2.91961	0.2331578	0.22486845	2.6782454	21 5 5.7	20.2
228358	2000	TL ₆₅	17.0	X	343.13359	15.39167	3.49645	2.89522	0.1906416	0.23499413	2.6007466	21 10 26.5	19.2
228359	2000	TZ ₆₆	16.1	X	299.32504	52.79633	62.95597	4.86642	0.1097774	0.24211647	2.5494891	21 12 23.8	18.7
228360	2000	UA ₃	16.2	X	231.12443	52.94864	47.55614	8.33666	0.2927050	0.22600419	2.6692651	21 8 11.9	20.8
228361	2000	UQ ₂₂	16.5	X	350.38370	269.64483	76.72649	5.52331	0.3151090	0.23339706	2.6125972	21 10 6.1	17.9
228362	2000	UA ₇₃	15.7	X	226.97076	167.23820	235.60656	12.83638	0.0903491	0.22045866	2.7138423	21 6 8.5	19.7
228363	2000	UD ₈₈	15.7	X	347.53922	261.93106	52.28066	7.17646	0.2407824	0.22898170	2.6460753	21 7 25.7	17.8
228364	2000	VH ₂₂	16.3	X	276.48583	156.39668	234.55075	4.77148	0.1657267	0.22619696	2.6679631	21 7 11.7	20.0
228365	2000	VB ₅₆	16.0	X	195.93529	187.57061	256.77630	10.52768	0.1234438	0.21975770	2.7196102	21 6 26.7	20.2
228366	2000	VO ₆₂	16.7	X	275.87619	298.29997	92.41031	4.45686	0.2897919	0.22588000	2.6702435	21 6 23.4	20.7
228367	2000	VS ₆₄	16.6	X	300.24515	318.23228	65.72874	2.88196	0.2151891	0.22858880	2.6491065	21 7 31.1	19.6
228368	2000	WK ₁₀	18.5	X	213.33675	244.50086	57.95838	14.73540	0.2702650	0.54793893	1.4790446	21 1 6.0	21.5
228369	2000	WU ₁₂	16.1	X	229.21884	338.37133	112.69076	17.34190	0.2613197	0.22357236	2.6885863	21 7 29.2	20.6
228370	2000	WJ ₂₇	15.7	X	339.78100	219.75755	98.67323	10.47329	0.0152532	0.21815260	2.7329339	21 7 25.9	19.3
228371	2000	WB ₄₆	16.2	X	244.32381	209.85510	196.29007	5.04878	0.1767824	0.22243799	2.6977192	21 6 23.4	20.4
228372	2000	WM ₅₂	16.2	X	198.62612	177.78580	243.75702	8.01539	0.1572374	0.21778521	2.7360065	21 5 31.3	20.6
228373	2000	WG ₆₂	15.7	X	323.84989	270.74896	93.74989	15.04587	0.2315465	0.23116659	2.6293758	21 8 20.2	18.3
228374	2000	WU ₆₆	15.9	X	281.44480	146.83058	254.93643	16.21153	0.1746888	0.22565247	2.6720381	21 7 26.9	19.7
228375	2000	WH ₇₀	16.2	X	263.20509	103.45588	290.28804	6.12529	0.2390475	0.22494648	2.6776260	21 6 20.3	20.2
228376	2000	WJ ₇₁	15.5	X	246.29973	199.73863	263.73518	12.55014	0.0699709	0.22986422	2.6392982	21 9 16.4	19.4
228377	2000	WM ₇₁	16.4	X	260.63357	93.75344	267.38988	10.69912	0.1924429	0.22130957	2.7068816	21 5 10.4	20.6
228378	2000	WN ₇₁	15.3	X	264.60817	269.79814	244.07023	21.09272	0.0734110	0.24078026	2.5589127	21 12 22.6	18.6
228379	2000	WN ₈₂	16.2	X	244.88655	42.35018	42.31621	5.86883	0.1446819	0.22514005	2.6760910	21 8 19.9	20.1
228380	2000	WH ₈₅	16.7	X	252.59357	128.18583	307.82081	2.68525	0.1656586	0.22503741	2.6769046	21 8 11.8	20.6
228381	2000	WM ₁₃₃	15.7	X	277.80344	14.13940	22.91371	14.01840	0.1910721	0.22668047	2.6639535	21 7 23.2	19.6
228382	2000	WC ₁₄₉	15.9	X	239.56067	249.40341	164.30916	11.76670	0.1893783	0.22256334	2.6967062	21 6 27.1	20.3
228383	2000	WO ₁₈₇	15.7	X	275.74326	83.05341	268.44795	14.50942	0.3192378	0.22410242	2.6843451	21 4 27.2	20.2
228384	2000	XD ₁₄	16.4	X	273.45878	331.28995	89.76675	3.28386	0.0764241	0.22575637	2.6712183	21 9 3.4	19.8
228385	2000	XW ₂₀	16.0	X	239.52578	174.05421	306.10893	8.02047	0.1877059	0.22805092	2.6532703	21 9 17.2	20.0
228386	2000	YW ₁₉	15.8	X	211.34408	264.09911	159.08623	13.33855	0.1703110	0.21868947	2.7284593	21 6 14.9	20.5
228387	2000	YY ₃₅	15.8	X	160.47431	350.11556	117.40893	9.98259	0.2639034	0.21451365	2.7637543	21 6 26.4	20.7
228388	2000	YM ₆₀	15.9	X	114.72681	36.36162	117.46454	9.80807	0.1936437	0.21132270	2.7915063	21 7 9.5	20.2
228389	2000	YV ₁₀₆	15.8	X	157.73896	353.07439	83.47550	28.87872	0.2114410	0.21257471	2.7805347	21 5 22.3	20.7
228390	2000	YW ₁₁₂	15.3	X	147.47479	8.19425	100.90316	10.47846	0.1140591	0.21184573	2.7869097	21 6 10.1	19.6
228391	2000	YT ₁₂₇	15.9	X									

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Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>		
228401	2001	DY ₈₀	15.0	X	302.07609	187.42402	35.69127	10.77527	0.0698368	0.19404497	2.9548434	21	1 29.9	19.3
228402	2001	EP ₁	15.3	X	185.07775	338.37388	89.87861	10.79911	0.2677160	0.21118705	2.7927016	21	5 29.1	20.3
228403	2001	EA ₃	15.6	X	165.88913	270.86207	136.66690	4.01070	0.0532179	0.20066169	2.8895247	21	4 10.6	19.8
228404	2001	EQ ₁₇	16.7	X	121.74416	107.07897	49.95760	24.71144	0.2460700	0.30546493	2.1835433	21	8 3.6	20.7
228405	2001	FL ₂	15.6	X	131.25410	4.87720	99.08854	7.42000	0.1556133	0.20564639	2.8426409	21	5 22.1	20.0
228406	2001	FH ₁₃₉	16.0	X	85.64617	146.18258	342.73838	1.44342	0.0162395	0.19861219	2.9093688	21	4 8.5	19.9
228407	2001	FF ₁₄₆	15.1	X	295.11414	257.81510	317.45958	8.98724	0.0412601	0.18943970	3.0025394	21	1 14.4	19.4
228408	2001	FT ₁₅₇	16.7	X	326.03212	171.49857	87.75426	6.69551	0.1991154	0.29361340	2.2419132	21	3 12.4	19.2
228409	2001	FM ₁₈₄	15.2	X	336.30927	248.61392	350.67223	10.85641	0.0569203	0.19846169	2.9108395	21	3 30.6	19.0
228410	2001	HS ₅₈	16.7	X	351.61384	344.44940	270.80475	6.08936	0.1457426	0.29656673	2.2270045	21	4 24.6	18.7
228411	2001	KQ ₅₃	15.6	X	239.32797	165.06856	74.33848	6.54024	0.1244424	0.17978455	3.1090984	21	—	—
228412	2001	KD ₇₉	15.6	X	346.49024	124.74715	194.93816	10.33800	0.1526669	0.24689161	2.5165091	21	7 31.1	18.2
228413	2001	LU ₁₇	16.5	X	206.73020	214.47736	78.56617	11.62487	0.2828672	0.27496599	2.3421609	21	—	—
228414	2001	MR ₂₁	17.5	X	144.38481	248.57473	77.01589	3.45559	0.1995250	0.26909413	2.3761101	21	—	—
228415	2001	NV ₄	15.3	X	269.73948	306.84596	110.82838	5.34282	0.1877474	0.18077300	3.0977546	21	1 21.6	20.2
228416	2001	OJ ₅₇	16.4	X	133.80101	1.52703	314.11238	3.90803	0.2407067	0.26577939	2.3958255	21	—	—
228417	2001	OK ₅₉	16.1	X	172.25215	50.31499	293.67182	4.92684	0.2178944	0.27420984	2.3464647	21	2 1.7	20.0
228418	2001	OA ₆₄	16.2	X	161.29319	228.75685	116.60824	7.51477	0.2260213	0.27197104	2.3593241	21	1 22.5	19.8
228419	2001	OE ₆₅	16.1	X	121.15910	18.04590	317.96893	11.82907	0.2902505	0.26459604	2.4029634	21	—	—
228420	2001	ON ₈₀	16.7	X	103.29846	269.21871	108.84040	3.87974	0.1999082	0.26541705	2.3980055	21	—	—
228421	2001	OL ₉₇	16.1	X	126.20812	254.70430	104.11329	7.18886	0.1757391	0.26839247	2.3802496	21	—	—
228422	2001	OO ₁₁₁	14.7	X	304.57971	272.18879	305.26487	13.21382	0.1946619	0.17966291	3.1105017	21	1 9.7	19.2
228423	2001	PB ₁₉	16.6	X	58.96088	292.29500	88.35253	8.61957	0.1772417	0.26220610	2.4175429	21	—	—
228424	2001	PH ₂₂	17.1	X	181.96544	277.07445	17.97230	2.27234	0.2161807	0.26943643	2.3740973	21	—	—
228425	2001	PQ ₂₈	16.6	X	104.82949	325.88332	6.79371	3.19527	0.2648947	0.26267571	2.4146606	21	—	—
228426	2001	PC ₃₀	16.7	X	208.46952	64.82526	277.39821	10.24332	0.0367241	0.27927091	2.3180292	21	2 18.3	19.9
228427	2001	PQ ₄₆	15.7	X	108.50389	86.20913	285.06483	21.20586	0.2723939	0.26612787	2.3937336	21	1 2.7	18.2
228428	2001	PE ₅₂	16.9	X	206.04387	286.00369	57.38745	4.05740	0.1231443	0.27822470	2.3238367	21	2 25.9	20.3
228429	2001	PV ₅₃	17.5	X	102.78742	248.89243	66.66924	4.39411	0.2569156	0.26173526	2.4204413	21	—	—
228430	2001	PC ₆₂	16.3	X	127.97232	66.39365	323.40506	6.24074	0.1169129	0.27172125	2.3607699	21	1 29.0	19.1
228431	2001	QZ	17.2	X	75.85298	75.96676	291.24188	1.88243	0.1871311	0.26197392	2.4189711	21	—	—
228432	2001	QD ₃₈	17.0	X	165.25391	23.93206	289.77163	1.60165	0.2025901	0.26997435	2.3709426	21	—	—
228433	2001	QN ₄₁	17.3	X	139.22728	105.02457	260.61417	1.22459	0.2491236	0.27091476	2.3654527	21	1 28.3	20.5
228434	2001	QQ ₄₅	17.6	X	100.43983	211.97374	114.70057	2.89987	0.2096114	0.26212867	2.4180189	21	—	—
228435	2001	QR ₅₉	16.4	X	175.74612	292.29826	358.94222	6.00002	0.1467000	0.26846690	2.3798096	21	—	—
228436	2001	QH ₇₁	18.0	X	224.13748	126.95889	289.13299	15.57304	0.1345014	0.38758003	1.8630669	21	6 16.8	20.2
228437	2001	QV ₈₆	16.5	X	101.25159	78.28327	269.68662	11.28026	0.1094054	0.26224028	2.4173328	21	—	—
228438	2001	QC ₁₃₃	16.5	X	192.55907	62.22285	231.04366	6.51630	0.1287923	0.26986675	2.3175728	21	—	—
228439	2001	QA ₁₄₇	16.4	X	322.87433	346.38749	35.12642	16.01537	0.1444160	0.24454011	2.5326158	21	9 27.8	19.1
228440	2001	QK ₁₄₉	17.0	X	139.48474	329.94398	33.26181	3.48463	0.1845779	0.27104648	2.3646863	21	1 18.5	20.1
228441	2001	QK ₁₅₇	16.8	X	81.53352	131.87131	248.30531	1.81299	0.1996001	0.26372140	2.4082735	21	—	—
228442	2001	QJ ₁₅₉	17.2	X	98.00560	328.88251	17.42032	1.53947	0.1963427	0.26258879	2.4151935	21	—	—
228443	2001	QB ₁₆₂	17.1	X	76.84042	325.36354	43.77861	2.43399	0.2028759	0.26203177	2.4186150	21	—	—
228444	2001	QT ₁₆₅	16.9	X	339.12799	179.31628	78.69136	5.44066	0.1760199	0.28763122	2.2728915	21	4 6.4	19.0
228445	2001	QH ₁₆₇	17.0	X	220.10590	209.81855	130.12744	6.60784	0.1480764	0.27935546	2.3175615	21	3 6.9	20.6
228446	2001	QJ ₁₆₇	17.0	X	118.34622	312.01487	78.11781	2.34975	0.1884027	0.27008122	2.3703172	21	1 28.0	19.7
228447	2001	QK ₁₇₂	16.3	X	126.61120	142.73505	241.60654	5.31272	0.1184014	0.27103055	2.3647789	21	1 18.2	19.2
228448	2001	QA ₁₇₄	16.4	X	49.62297	136.10872	258.80875	7.26939	0.2304231	0.25889185	2.4381315	21	—	—
228449	2001	QF ₁₇₉	16.2	X	111.97494	72.74329	283.80077	4.60666	0.1325273	0.26204169	2.4185540	21	—	—
228450	2001	QH ₁₉₅	17.3	X	71.40176	260.55318	110.16064	3.04322	0.2316223	0.26180489	2.4200121	21	—	—
228451	2001	QF ₂₁₀	16.4	X	79.99023	33.71301	3.10730	1.89660	0.1470468	0.26375560	2.4080653	21	—	—
228452	2001	QA ₂₁₇	17.0	X	101.83714	9.78498	13.04211	2.18719	0.2217671	0.26561876	2.3967913	21	—	—
228453	2001	QC ₂₁₇	16.9	X	158.37684	333.09103	27.72822	2.42255	0.1506018	0.27178056	2.3604263	21	2 1.1	20.2
228454	2001	QY ₂₄₅	16.4	X	50.28218	206.70939	178.62716	4.12760	0.2942364	0.25701385	2.4499941	21	—	—
228455	2001	QE ₂₅₂	17.0	X	142.36828	250.37201	108.79838	2.96117	0.1897973	0.27031979	2.3689223	21	1 16.6	20.0
228456	2001	QF ₂₅₈	16.4	X	221.99485	46.58455	220.28093	10.01659	0.1857276	0.27028010	2.3691542	21	—	—
228457	2001	QB ₂₇₅	16.6	X	207.84387	235.95808	58.00664	7.33047	0.0894999	0.27241829	2.3567411	21	—	—
228458	2001	QC ₂₇₅	16.9	X	299.36569	206.87219	81.10918	6.92871	0.1804560	0.28516301	2.2859879	21	3 20.6	19.9
228459	2001	QN ₃₂₃	16.7	X	140.07835	68.98041	292.30359	5.70175	0.1478700	0.26791212	2.3830938	21	1 11.4	19.8
228460	2001	RH ₁	17.2	X	94.10299	217.66025	180.69421	1.12318	0.1826219	0.26670146	2.3903003	21	—	—
228461	2001	RN ₂₄	16.7	X	51.08723	262.85098	176.02095	2.01654	0.1849551	0.26589595	2.3951253	21	—	—
228462	2001	RJ ₂₈	17.3	X	107.76628	234.88824	159.79405	2.35034	0.1567304	0.26892228	2.3771223	21	1 13.1	19.9
228463	2001	RR ₄₆	17.2	X	269.90065	344.08189	20.61596	24.37178	0.0652361	0.38685513	1.8653936	21	5 28.4	19.6
228464	2001	RY ₅₂	17.4	X	70.77479	316.47032	45.17298	2.13519	0.1949250	0.25998881	2.4312686	21	—	—
228465	2001	RV ₅₅	16.5	X	142.09866	246.71673	111.14262	4.35857	0.1451324	0.26907783	2.3762061	21	1 8.7	19.5
228466	2001	RF ₈₃	16.7	X	44.35450	94.91999	316.06323	6.03779	0.1843308	0.26068604	2.4269316	21	—	—
228467	2001	RT ₉₀	16.5	X	126.24404	278.38943	67.40466	3.29615	0.2011318	0.26530555	2.3986773	21	—	—
228468	2001	RB ₁₁₃	17.3	X	28.02798	73.06023	347.83891	1.94775	0.1731391	0.25990409	2.4317970	21	—	—
228469	2001	RN ₁₅₃	16.9	X	147.76238	261.66113	102.22146	5.66293	0.1470731	0.26977619	2.3721035	21	1 23.8	20.1
228470	2001	SK ₂	17.2	X	87.31257	21.43022	356.33195	1.48725	0.2197816	0.26198573	2.4188984	21	—	—
228471	2001	SU ₁₉	17.1	X	102.56941	349.72852	16.							

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Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>		
228481	2001	SB ₇₈	17.2	X	62.79924	230.27561	190.55292	1.56447	0.1859092	0.26406712	2.4061711	21	—	—
228482	2001	SF ₉₀	17.3	X	118.72358	220.85998	202.97696	0.75119	0.1690982	0.27293800	2.3537484	21	3 10.4	20.2
228483	2001	SL ₁₀₉	16.3	X	139.45418	65.07666	240.13588	4.32390	0.1084718	0.25989195	2.4318727	21	—	—
228484	2001	SX ₁₂₀	16.4	X	82.56505	253.33992	210.05541	5.87972	0.1781555	0.27246618	2.3564649	21	3 12.1	18.8
228485	2001	SC ₁₂₈	17.1	X	48.64349	198.15320	195.98070	2.26816	0.1547027	0.25926416	2.4357968	21	—	—
228486	2001	SH ₁₆₆	17.5	X	36.16744	119.95732	284.65986	0.56667	0.1747044	0.25870004	2.4393365	21	—	—
228487	2001	SL ₁₇₁	17.5	X	64.74717	170.01139	179.42761	2.54206	0.2006383	0.25713279	2.4492385	21	—	—
228488	2001	SD ₁₇₂	16.9	X	53.05832	205.89529	182.84497	1.04143	0.1911859	0.25886616	2.4382929	21	—	—
228489	2001	SW ₂₁₀	17.0	X	100.94415	276.63767	101.50058	3.35832	0.2219898	0.26439366	2.4041894	21	—	—
228490	2001	SL ₂₁₁	17.4	X	68.37469	281.63997	141.78761	0.60221	0.1779415	0.26465120	2.4026295	21	—	—
228491	2001	SU ₂₂₈	17.0	X	109.14649	204.05199	126.63757	2.32580	0.1944960	0.26050097	2.4280809	21	—	—
228492	2001	ST ₂₃₃	16.6	X	28.99843	346.32111	96.90590	2.33280	0.1286830	0.26060715	2.4274213	21	—	—
228493	2001	SL ₂₄₁	16.4	X	195.76164	53.88633	188.74430	5.88231	0.0715529	0.25870084	2.4393151	21	—	—
228494	2001	SV ₂₅₂	16.0	X	78.70283	321.91037	39.42160	6.84518	0.1508301	0.25797787	2.4438868	21	—	—
228495	2001	SA ₂₆₆	16.5	X	290.07744	195.73282	206.58572	12.93166	0.1695694	0.24113058	2.5564336	21	8 12.7	19.9
228496	2001	SA ₂₈₂	16.1	X	144.07504	248.53764	102.23839	14.18071	0.3013183	0.26697953	2.3886402	21	1 22.1	19.7
228497	2001	ST ₂₈₅	16.7	X	329.69671	338.14956	13.21048	5.24297	0.0730168	0.24139530	2.5545643	21	8 25.4	19.6
228498	2001	SO ₂₈₆	16.0	X	73.81717	282.13559	89.19609	8.10910	0.2430012	0.25731803	2.4480629	21	—	—
228499	2001	SS ₂₈₈	16.4	X	280.49949	212.53804	215.09546	14.30541	0.0848410	0.24482500	2.5306507	21	9 17.5	19.7
228500	2001	SU ₂₈₉	15.9	X	96.63671	103.94407	271.35293	5.93253	0.1261989	0.26391832	2.4070754	21	—	—
228501	2001	SW ₃₄₇	16.5	X	158.18505	53.70074	254.42327	10.27654	0.1133274	0.26555762	2.3971592	21	—	—
228502	2001	TE ₂	20.3	X	352.39949	35.72810	171.12228	7.62573	0.1966678	0.87383128	1.0835551	21	—	—
228503	2001	TX ₇	16.5	X	102.06826	283.23664	81.41509	3.11128	0.2109276	0.26106966	2.4245535	21	—	—
228504	2001	TG ₁₆	16.5	X	57.65469	296.47639	98.91639	7.72705	0.1879378	0.25906566	2.4374009	21	—	—
228505	2001	TF ₂₁	16.7	X	226.68957	128.82695	232.54315	19.33919	0.0878050	0.37746621	1.8961994	21	3 24.6	19.4
228506	2001	TM ₂₇	17.2	X	111.91817	46.33670	310.79328	1.72093	0.2376911	0.26279548	2.4139269	21	—	—
228507	2001	TV ₃₆	16.2	X	274.06737	12.63512	13.44559	9.44362	0.1941641	0.23535684	2.5980739	21	6 29.0	19.9
228508	2001	TS ₅₂	17.2	X	51.68086	261.14808	100.91931	3.36473	0.2139035	0.25539306	2.4603487	21	—	—
228509	2001	TP ₅₄	16.6	X	41.65451	123.02308	329.34716	4.47907	0.1980832	0.26418168	2.4054754	21	—	—
228510	2001	TU ₉₁	16.9	X	102.76433	81.66370	309.71109	1.26346	0.2183144	0.26435223	2.4044407	21	1 4.0	19.4
228511	2001	TZ ₉₃	17.1	X	121.06297	50.19282	289.86493	1.96776	0.2207406	0.26280107	2.4138927	21	—	—
228512	2001	TH ₁₀₄	16.4	X	294.74401	175.89854	215.52978	13.08852	0.1592696	0.23956876	2.5675324	21	8 5.7	19.7
228513	2001	TL ₁₂₇	16.4	X	143.90208	55.97528	249.51977	9.37628	0.2438729	0.26431476	2.4046679	21	—	—
228514	2001	TL ₁₄₀	16.3	X	132.69459	285.80041	83.52397	5.54870	0.1411046	0.26864081	2.3787824	21	1 11.9	19.3
228515	2001	TA ₁₉₃	15.6	X	296.09800	97.30440	339.46695	5.19482	0.2067615	0.24150203	2.5538116	21	10 9.2	18.2
228516	2001	TN ₁₉₆	17.1	X	168.13368	297.63491	59.32741	22.97503	0.1465038	0.37023808	1.9207993	21	1 22.3	19.8
228517	2001	TX ₂₁₇	16.6	X	14.41000	136.55792	330.20212	3.81900	0.1545845	0.26315716	2.4117147	21	—	—
228518	2001	TC ₂₃₃	16.7	X	61.60896	234.01552	135.74479	6.85611	0.1535845	0.25722657	2.4486431	21	—	—
228519	2001	TA ₂₃₈	16.6	X	314.80718	95.68469	301.05441	5.40236	0.1025278	0.24634844	2.5202068	21	9 28.0	19.4
228520	2001	UJ	17.0	X	138.81255	5.20151	39.78429	23.34844	0.0982972	0.37113394	1.9177071	21	2 27.1	19.7
228521	2001	UX ₂	17.4	X	107.13858	241.51714	78.59932	5.99622	0.2090188	0.25944757	2.4346488	21	—	—
228522	2001	UY ₂₅	16.2	X	7.20484	102.01212	318.18826	5.73242	0.1631612	0.25422747	2.4678631	21	—	—
228523	2001	UX ₂₉	16.3	X	138.93525	203.58480	144.95083	6.71475	0.2519470	0.26641910	2.3919888	21	1 7.5	19.6
228524	2001	UP ₃₁	17.0	X	112.74124	240.08568	75.97124	3.33761	0.2233051	0.25941302	2.4348649	21	—	—
228525	2001	UE ₄₃	17.0	X	301.75991	2.36918	63.94537	3.38573	0.1483702	0.24562256	2.5251696	21	10 17.3	19.5
228526	2001	UC ₈₃	16.7	X	20.37873	295.86963	121.93847	3.17293	0.1880776	0.25465567	2.4650959	21	—	—
228527	2001	UN ₁₀₁	16.6	X	32.60821	30.20279	77.00774	3.28728	0.0867939	0.26503971	2.4002810	21	—	—
228528	2001	UT ₁₁₃	17.0	X	48.53279	13.45124	85.17536	3.11285	0.1530066	0.26375562	2.4080652	21	—	—
228529	2001	UE ₁₁₆	16.8	X	280.30192	10.72813	48.07807	5.77552	0.1641003	0.24038114	2.5617443	21	8 29.8	20.0
228530	2001	UO ₁₁₈	16.8	X	87.44989	226.73796	98.29330	3.00007	0.1787285	0.25398355	2.4694429	21	—	—
228531	2001	UV ₁₃₆	17.0	X	59.65905	16.24934	47.52368	2.90625	0.1780226	0.26368742	2.4084804	21	—	—
228532	2001	VF ₁₉	17.2	X	244.58263	208.37225	238.75824	4.03397	0.2296159	0.23756988	2.5819141	21	8 8.8	21.2
228533	2001	VR ₁₉	16.2	X	245.35307	205.31900	240.53526	7.11253	0.1565140	0.23816638	2.5776013	21	8 15.1	20.0
228534	2001	VO ₃₅	16.6	X	266.78344	24.68068	56.78999	13.15427	0.2477760	0.23863052	2.5742579	21	9 2.1	20.4
228535	2001	VL ₅₅	14.4	X	151.30089	193.36919	262.17009	7.79337	0.1752315	0.12675625	3.9248505	21	6 2.4	20.6
228536	2001	VJ ₆₃	16.8	X	315.12739	356.19877	22.07316	4.25763	0.2702933	0.24183268	2.5514833	21	8 13.1	19.1
228537	2001	VX ₈₀	16.4	X	292.91075	113.59505	286.93845	1.82367	0.1817191	0.24011214	2.5636573	21	8 16.8	19.2
228538	2001	VO ₉₅	16.0	X	12.32218	337.20871	163.11091	10.21707	0.1792045	0.26202321	2.4166677	21	—	—
228539	2001	VS ₁₀₀	16.8	X	352.98181	102.63941	45.79499	4.15486	0.1479972	0.26173258	2.4204578	21	—	—
228540	2001	VX ₁₀₉	16.8	X	254.19205	6.20698	47.05040	6.34294	0.1248523	0.23553207	2.5967851	21	7 22.1	20.5
228541	2001	WU ₇	16.7	X	59.77936	306.58837	111.03460	5.90931	0.0924222	0.25937155	2.4351245	21	—	—
228542	2001	WS ₁₈	17.3	X	281.97313	148.36080	258.32523	2.35485	0.2412415	0.23988267	2.5652920	21	7 29.3	20.5
228543	2001	WP ₃₀	16.7	X	83.15183	232.13502	92.28405	3.35246	0.2183369	0.25360912	2.4718729	21	—	—
228544	2001	WR ₅₃	16.6	X	199.33629	272.93871	231.69734	7.66954	0.1213382	0.24007594	2.5639150	21	9 14.0	20.5
228545	2001	WJ ₅₆	16.6	X	94.33255	80.28943	247.29379	6.07434	0.1164097	0.25426960	2.4675905	21	—	—
228546	2001	WW ₇₆	16.9	X	24.41343	252.24078	246.92284	0.45869	0.1292829	0.26417618	2.4055088	21	1 11.2	19.2
228547	2001	WM ₉₅	16.9	X	326.77653	95.90598	243.51263	3.47235	0.1445414	0.23825184	2.5769849	21	7 23.4	19.6
228548	2001	XE ₂	16.5	X	40.38489	212.75451	286.72635	17.61371	0.0782515	0.36669217	1.9331622	21	1 11.9	17.8
228549	2001	XA ₃	16.8	X	190.84993	92.80595	266.59386	19.07000	0.0748691	0.36983081	1.9222092	21	2 2.3	19.4
228550	2001	XL ₁₅	17.4	X	31.16571	33.93503	38.86026	3.22575	0.1666788	0.25643393	2.4536864	21	—	—
228551	2001	XH ₂₃	16.9	X	291.33739	113.86054	344.41342	3.83424	0.2632835	0.24344909</				

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Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>
228561 2001 XC ₁₃₇	15.9	X	58.19593	223.86880	96.13233	3.52168	0.2089242	0.24680932	2.5170684	21	12 12.3	19.3
228562 2001 XD ₁₅₃	16.0	X	105.27668	111.36921	223.88249	3.38161	0.2159389	0.25475460	2.4644576	21	—	—
228563 2001 XZ ₁₅₄	16.0	X	1.73978	301.76741	107.75624	2.85645	0.1140291	0.24819169	2.5077133	21	—	—
228564 2001 XP ₁₈₇	16.3	X	340.77564	272.42243	105.66969	5.95577	0.1643255	0.24019668	2.5630557	21	10 24.5	18.7
228565 2001 XQ ₁₈₈	16.1	X	322.60018	307.18422	117.99267	7.54054	0.0740630	0.24222747	2.5487102	21	11 26.1	19.1
228566 2001 XW ₁₉₉	16.8	X	294.64244	210.70991	248.88239	3.84705	0.2277032	0.24234210	2.5479064	21	11 7.8	19.1
228567 2001 XH ₂₀₂	16.4	X	296.24039	236.00204	277.31506	5.36623	0.0973389	0.25301667	2.4757301	21	—	—
228568 2001 XR ₂₀₇	14.3	X	170.26450	348.27142	99.06770	11.95841	0.2468574	0.12526213	3.9559990	21	6 11.1	20.9
228569 2001 XV ₂₁₉	15.6	X	54.86129	316.90954	260.39105	10.77743	0.1326562	0.22984579	2.6394393	21	7 7.7	18.7
228570 2001 XA ₂₂₁	16.8	X	24.47331	275.09868	63.61971	5.53839	0.2099199	0.24627310	2.5207207	21	11 23.8	19.5
228571 2001 XN ₂₂₃	14.6	X	180.66099	77.71584	343.16759	4.08937	0.1088521	0.12563725	3.9481208	21	5 16.3	20.6
228572 2001 YY ₄	17.6	X	77.34589	110.88823	8.82644	10.15571	0.2265829	0.36578766	1.9363477	21	3 19.5	18.0
228573 2001 YC ₈	16.2	X	323.64169	47.68795	100.50649	6.94177	0.1423034	0.25531352	2.4608596	21	—	—
228574 2001 YV ₅₇	16.4	X	23.59319	280.22078	68.44481	6.76926	0.2822263	0.24651626	2.5190629	21	12 17.4	19.3
228575 2001 YW ₅₈	16.9	X	23.35186	138.49652	301.17836	3.19486	0.1619768	0.25510965	2.4621705	21	—	—
228576 2001 YR ₇₂	15.5	X	327.02260	72.37444	282.52804	12.57835	0.2282049	0.23614608	2.5922819	21	8 3.8	18.0
228577 2001 YM ₈₈	16.2	X	28.84890	270.29017	101.17424	15.71303	0.1590727	0.24570086	2.5246331	21	—	—
228578 2001 YB ₉₂	15.9	X	350.79779	43.05227	302.98107	5.42855	0.3413896	0.24014038	2.5634563	21	10 3.9	17.0
228579 2001 YF ₉₂	17.0	X	146.79056	316.22531	105.20392	25.18136	0.0762878	0.36787537	1.9290149	21	3 31.3	19.9
228580 2001 YP ₉₆	16.1	X	324.19046	45.42390	35.63430	4.52372	0.1729695	0.24471362	2.5314185	21	12 20.8	18.4
228581 2001 YL ₁₀₀	15.8	X	347.88500	271.08276	96.66503	12.68873	0.1480606	0.24135950	2.5548169	21	10 26.9	18.6
228582 2001 YJ ₁₁₂	16.1	X	283.65564	79.01767	324.92548	6.41052	0.1520062	0.23492196	2.6012792	21	8 12.6	19.4
228583 2001 YA ₁₂₁	16.3	X	286.44651	346.23201	93.99509	11.76339	0.0949474	0.23851179	2.5751122	21	10 22.2	19.6
228584 2001 YA ₁₂₇	15.9	X	10.58234	43.77055	344.30893	4.26665	0.1360270	0.24670977	2.5177454	21	12 28.1	18.8
228585 2001 YO ₁₆₁	16.2	X	107.68191	155.57256	100.29987	6.77768	0.0948117	0.24127574	2.5554082	21	11 9.3	20.0
228586 2002 AG ₄	17.5	X	87.69248	55.20390	87.20071	23.35780	0.0973767	0.37002811	1.9215259	21	5 7.4	19.7
228587 2002 AP ₇	19.5	X	144.54135	283.49133	98.57394	23.86816	0.0933201	0.61847380	1.3643376	21	—	—
228588 2002 AJ ₂₆	16.6	X	152.39618	94.69665	352.79305	2.70768	0.0755076	0.21906454	2.7253440	21	5 13.7	20.6
228589 2002 AG ₃₅	16.7	X	27.59019	126.03472	279.31597	5.86562	0.1148188	0.25102972	2.4887768	21	—	—
228590 2002 AE ₃₈	16.5	X	331.77103	298.49449	121.41915	6.74448	0.1446989	0.24526889	2.5275965	21	12 5.8	19.0
228591 2002 AG ₅₁	16.5	X	234.77317	195.72746	288.23400	6.51831	0.1502097	0.23583902	2.5945314	21	9 22.2	20.5
228592 2002 AY ₅₁	16.7	X	256.89236	226.74199	280.90664	2.08299	0.1229705	0.24167130	2.5526190	21	11 28.3	19.9
228593 2002 AQ ₅₆	16.6	X	251.19989	240.10986	248.31812	3.65115	0.1278093	0.23984081	2.5655905	21	10 24.4	19.9
228594 2002 AE ₆₆	16.4	X	177.05749	311.29273	248.03004	2.12960	0.1520589	0.23662670	2.5887705	21	10 31.3	20.6
228595 2002 AV ₇₁	15.9	X	247.16553	20.25359	94.76688	14.79162	0.1189594	0.23855210	2.5748221	21	10 12.1	19.7
228596 2002 AG ₇₈	16.3	X	271.89054	264.10810	85.52736	6.04485	0.0147898	0.22382535	2.6865600	21	6 3.8	19.9
228597 2002 AQ ₉₆	17.0	X	281.54025	14.19755	86.55760	4.57624	0.1633600	0.24081563	2.5586621	21	10 28.7	19.9
228598 2002 AC ₉₈	17.3	X	313.05992	101.85599	318.32872	2.95048	0.2774609	0.24162477	2.5529467	21	10 11.4	19.2
228599 2002 AF ₁₁₅	16.2	X	264.38496	320.95573	123.32222	13.08590	0.1066866	0.23478586	2.6022844	21	9 21.8	19.8
228600 2002 AF ₁₃₈	16.8	X	216.27324	221.44224	195.00297	0.69215	0.1271692	0.22716468	2.6601667	21	6 11.9	20.9
228601 2002 AR ₁₆₃	16.5	X	324.38375	118.90864	294.60859	3.48057	0.2273989	0.24015371	2.5633615	21	11 5.2	18.4
228602 2002 AH ₁₆₄	16.3	X	308.26114	130.79775	269.26938	3.72999	0.2408787	0.23601305	2.5932559	21	9 1.6	18.9
228603 2002 AB ₁₇₇	16.6	X	260.62529	164.27508	308.07263	4.89022	0.1997952	0.23787729	2.5796893	21	10 2.6	20.2
228604 2002 AC ₁₇₈	16.7	X	287.94248	316.79512	118.33505	6.30282	0.2131671	0.23743218	2.5829123	21	9 25.6	19.6
228605 2002 AS ₁₈₇	15.4	X	111.12757	103.75047	93.10318	11.61274	0.1893789	0.22216176	2.6999549	21	9 3.4	19.8
228606 2002 BU ₂	16.0	X	142.69148	123.70019	349.95073	11.21173	0.1193001	0.22216863	2.6998993	21	6 8.7	20.3
228607 2002 BH ₅	15.8	X	213.36026	135.81819	15.59753	11.88321	0.1252112	0.23573136	2.5953213	21	10 10.0	19.6
228608 2002 BT ₅	15.8	X	311.38882	120.93256	336.98456	8.29470	0.2079883	0.24514646	2.5284379	21	12 17.3	18.0
228609 2002 BW ₁₈	16.5	X	320.98410	10.71061	84.89386	10.12776	0.0977821	0.24479720	2.5308423	21	—	—
228610 2002 BO ₁₉	16.4	X	222.34172	97.30158	68.39427	4.63217	0.1564328	0.23641047	2.5930488	21	11 4.5	20.1
228611 2002 BC ₂₄	16.2	X	98.13102	122.81362	18.49944	9.00805	0.1102515	0.21830093	2.7316958	21	5 21.8	20.0
228612 2002 BZ ₃₁	16.8	X	251.70948	351.02111	108.82924	3.34649	0.0720537	0.23528574	2.5958973	21	9 27.8	20.2
228613 2002 CY ₅	16.7	X	245.92867	309.67230	162.45061	7.22772	0.1874738	0.23409600	2.6073944	21	9 19.1	20.4
228614 2002 CV ₃₀	16.4	X	296.57726	47.03244	43.12437	4.02631	0.1975508	0.24081291	2.5586813	21	11 2.5	18.6
228615 2002 CH ₃₅	16.0	X	251.46471	45.25469	99.70859	15.12207	0.1056633	0.23829598	2.5766667	21	11 23.7	19.5
228616 2002 CR ₃₅	16.2	X	222.43812	84.57723	55.47273	6.13835	0.1256180	0.23441907	2.6049982	21	10 7.9	20.0
228617 2002 CS ₃₉	16.7	X	147.11433	73.08147	304.45231	17.45832	0.1211844	0.35973991	1.9579892	21	1 19.3	18.4
228618 2002 CC ₄₉	16.8	X	293.76904	84.78207	320.24246	2.23222	0.2500009	0.23560493	2.5962497	21	8 13.0	19.8
228619 2002 CE ₇₃	16.4	X	309.97990	85.47739	335.27518	3.44265	0.1481714	0.23807878	2.5782336	21	10 20.2	19.1
228620 2002 CA ₇₅	16.5	X	320.72760	94.94411	327.23120	4.56961	0.1854919	0.24005361	2.5640740	21	11 11.1	18.9
228621 2002 CT ₈₂	16.5	X	225.16384	118.71158	17.23250	2.67682	0.1500441	0.23382992	2.6093720	21	9 30.7	20.4
228622 2002 CR ₉₇	16.3	X	267.00777	353.41020	119.76834	3.26947	0.1701342	0.23709436	2.5853652	21	10 21.4	19.5
228623 2002 CO ₁₀₂	16.2	X	136.47907	57.66808	134.33604	4.30911	0.1403503	0.22583820	2.6705729	21	9 15.1	20.3
228624 2002 CD ₁₀₆	16.1	X	231.29832	41.23727	86.97657	3.02240	0.0945221	0.23181221	2.6244916	21	10 5.6	19.7
228625 2002 CB ₁₂₆	16.6	X	312.54311	183.52836	257.56752	3.24201	0.2643041	0.24127993	2.5553786	21	11 17.2	18.3
228626 2002 CP ₁₄₂	16.2	X	283.89715	283.58866	159.64541	4.91109	0.0971770	0.23841482	2.5758104	21	10 17.3	19.2
228627 2002 CB ₁₅₈	16.1	X	199.44496	62.94230	111.04073	2.96775	0.0626244	0.23452042	2.6042476	21	10 30.5	19.8
228628 2002 CS ₁₈₅	16.8	X	117.70441	145.12835	55.60206	2.39079	0.1474118	0.22637569	2.6663441	21	9 7.8	20.8
228629 2002 CH ₂₁₅	16.6	X	224.97862	140.15667	351.06926	3.11467	0.1754229	0.23289046	2.6163846	21	9 21.2	20.6
228630 2002 CR ₂₂₇	16.5	X	322.92292	144.98352	263.81971	4.91236	0.2374584	0.23960622	2.5672647	21	10 23.2	18.3
228631 2002 CB ₂₃₄	15.4	X	188.97738	124.11645	86.99860	12.47910	0.1792693	0.23854317	2.5748863	21	11 26.3	19.5
228632 2002 CQ ₂₅₁	15.9	X	291.59019	1.88326	119.52090	13.94772	0.1109094	0.24215611	2.5492108	21	12 19.8	18.9
228633 2002 CS ₂₅₅	16.1	X	191.44565	115.29462	340.83527	9.04960	0.0873308	0.2233917				

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Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>		
228641	2002	ET ₁₉	15.6	X	204.76126	25.76575	115.74651	12.91575	0.1329990	0.23049303	2.6344958	21	9 22.7	19.8
228642	2002	EK ₂₄	16.4	X	232.53390	73.75770	355.40304	2.46257	0.0601448	0.22337104	2.6902015	21	7 23.8	20.2
228643	2002	EP ₃₃	16.3	X	253.13776	352.69922	103.95897	5.56694	0.1493009	0.23263798	2.6182773	21	9 14.6	19.9
228644	2002	EY ₃₃	16.9	X	255.93751	73.24579	21.50243	5.16264	0.2371849	0.23333249	2.6130792	21	9 2.5	20.7
228645	2002	EW ₄₃	16.8	X	193.78729	208.41145	353.74510	3.88850	0.1829088	0.23409830	2.6073773	21	11 16.2	21.0
228646	2002	EA ₅₃	16.7	X	128.41957	111.73234	78.73966	2.17764	0.1396898	0.22429165	2.6828351	21	9 4.8	20.7
228647	2002	EJ ₆₄	16.0	X	103.99907	291.79132	334.00468	8.31393	0.1210488	0.23002031	2.6381041	21	11 7.8	20.1
228648	2002	EQ ₇₅	16.4	X	280.73441	190.16269	281.59200	7.93533	0.1180569	0.23806113	2.5783610	21	11 13.9	19.5
228649	2002	ER ₈₅	16.1	X	147.50673	133.21687	9.09695	12.65874	0.0917563	0.22062533	2.7124753	21	7 24.9	20.4
228650	2002	EU ₉₂	15.4	X	305.94354	236.11789	344.28280	14.35860	0.0924484	0.20478826	2.8505764	21	1 26.5	19.5
228651	2002	EQ ₁₀₁	16.0	X	128.26726	78.43220	110.47125	11.06319	0.1237654	0.22470976	2.6795062	21	9 4.1	20.2
228652	2002	EP ₁₂₀	16.6	X	288.04097	114.78971	320.72774	3.44438	0.2070810	0.23524352	2.5989082	21	9 22.4	19.7
228653	2002	EZ ₁₂₉	15.7	X	116.43889	274.76846	221.02533	10.49395	0.2107630	0.21885060	2.7271199	21	6 19.6	20.0
228654	2002	EQ ₁₄₆	16.1	X	354.11329	148.23307	83.10590	2.62700	0.0721356	0.20925881	2.8098311	21	4 16.3	19.4
228655	2002	FS ₂₅	15.8	X	281.58569	9.27032	98.76772	13.68927	0.2641150	0.23584386	2.5944959	21	9 29.8	19.1
228656	2002	FE ₃₁	15.5	X	5.71420	142.34202	91.54401	15.80841	0.1798967	0.21130817	2.7916343	21	5 10.1	18.5
228657	2002	EP ₃₆	16.0	X	250.03660	38.81214	89.22586	14.60998	0.1988913	0.23400264	2.6080878	21	10 20.0	19.9
228658	2002	GP ₂	15.7	X	119.34297	152.75504	121.90327	10.64446	0.0577247	0.23296651	2.6158152	21	12 6.2	19.6
228659	2002	GZ ₃	16.1	X	237.03843	104.50678	24.22864	26.88423	0.2772049	0.23188621	2.6239331	21	9 28.8	20.4
228660	2002	GP ₁₁	15.9	X	137.31437	74.15300	94.40163	10.81007	0.2194556	0.21995282	2.7180015	21	8 23.4	20.6
228661	2002	GJ ₂₂	16.4	X	277.53247	338.98199	146.59978	5.59173	0.2453531	0.23772356	2.5808013	21	11 11.8	19.4
228662	2002	GA ₃₇	16.1	X	107.30039	158.85907	90.48084	5.36029	0.1195994	0.22750067	2.6575468	21	10 26.8	20.1
228663	2002	GU ₇₁	16.0	X	262.51361	91.50050	21.94772	12.05110	0.2482782	0.23506477	2.6002256	21	10 3.4	19.3
228664	2002	GM ₇₆	16.6	X	269.17277	113.12235	87.32693	6.05316	0.2070394	0.24185832	2.5513029	21	—	—
228665	2002	GX ₁₁₄	16.0	X	90.35596	140.37443	114.59802	5.42248	0.0214192	0.22583769	2.6705707	21	10 3.5	19.6
228666	2002	GG ₁₃₁	16.5	X	119.72189	300.43056	202.20858	2.87478	0.0316427	0.21417080	2.7667030	21	6 11.8	20.3
228667	2002	GK ₁₄₄	15.9	X	243.91847	4.93043	108.48105	12.20927	0.1660039	0.22921589	2.6442727	21	9 26.0	19.9
228668	2002	JF ₅	15.6	X	34.94924	143.20660	43.81108	13.01607	0.0383680	0.20598993	2.8394794	21	4 19.6	19.2
228669	2002	JT ₁₀	15.5	X	93.98062	53.17443	112.65687	14.60023	0.1497830	0.21188835	2.7885361	21	6 26.9	19.4
228670	2002	JY ₂₁	15.4	X	158.72448	208.67421	92.36247	11.01979	0.3028010	0.18158524	3.0851001	21	—	—
228671	2002	JX ₅₉	14.8	X	140.28911	73.48348	230.43429	17.95668	0.1370560	0.18214739	3.0821522	21	—	—
228672	2002	JP ₆₁	15.5	X	43.60024	140.87226	67.18951	14.40553	0.1480788	0.20977654	2.8052061	21	6 8.5	18.6
228673	2002	JR ₇₅	15.3	X	165.33296	289.56056	54.22205	10.69104	0.0370452	0.19360183	2.9593506	21	1 22.4	19.7
228674	2002	JZ ₈₀	16.1	X	93.52848	170.48775	27.86204	3.72598	0.1265207	0.21684597	2.7439013	21	8 6.2	19.9
228675	2002	JT ₈₆	15.3	X	131.20531	56.40519	231.51215	11.95520	0.1634156	0.17946339	3.1128066	21	12 26.1	20.5
228676	2002	JK ₉₁	15.3	X	150.43330	281.12755	53.39502	9.39100	0.1007438	0.18901683	3.0070159	21	—	—
228677	2002	JW ₁₁₈	15.6	X	223.12004	27.97145	114.96674	14.55984	0.1185631	0.23082342	2.6319813	21	10 17.5	19.7
228678	2002	JW ₁₂₂	15.6	X	37.97789	68.75827	140.17687	10.82960	0.0497751	0.21053536	2.7984616	21	5 24.7	19.4
228679	2002	KH ₁₄	16.2	X	194.70720	45.51620	189.88271	14.91460	0.0952224	0.23342286	2.6124047	21	—	—
228680	2002	KX ₁₅	16.1	X	141.69481	79.96655	226.57918	12.00987	0.1416651	0.18238030	3.0795276	21	—	—
228681	2002	LX ₆	15.7	X	201.16313	7.27625	118.35488	8.15933	0.0386429	0.21810754	2.7333102	21	9 1.5	19.6
228682	2002	LR ₅₀	15.3	X	282.07242	337.32396	247.84715	9.69640	0.0491222	0.18643187	3.0347479	21	1 8.1	19.7
228683	2002	NJ ₂₄	14.8	X	104.10186	80.04721	273.85801	8.37732	0.2226744	0.17411861	3.1761860	21	—	—
228684	2002	NK ₅₅	14.7	X	105.85844	55.74767	290.25996	26.05749	0.2583627	0.17406558	3.1768310	21	—	—
228685	2002	ND ₆₁	14.9	X	231.17385	139.36409	112.38751	17.50899	0.0362096	0.18140880	3.0905123	21	—	—
228686	2002	NZ ₆₄	15.4	X	85.12923	308.95413	102.38997	16.10942	0.2339582	0.18168810	3.0873443	21	2 5.9	19.4
228687	2002	OA ₈	15.7	X	203.09873	344.11364	294.83607	4.28784	0.1291097	0.18186315	3.0853628	21	—	—
228688	2002	OF ₁₀	15.4	X	183.30089	47.77285	279.09338	10.41206	0.0520769	0.18280499	3.0747562	21	1 21.5	20.0
228689	2002	OR ₁₆	17.7	X	295.16935	79.79798	226.93582	5.52574	0.1763531	0.30312736	2.1947546	21	4 2.8	20.5
228690	2002	OE ₂₈	17.6	X	211.87579	244.30138	149.17475	3.83284	0.1623297	0.30066951	2.2066991	21	5 5.1	21.0
228691	2002	OR ₂₈	17.1	X	201.89335	126.42510	262.22189	6.58370	0.1729216	0.29692062	2.2252346	21	4 15.3	20.7
228692	2002	PL ₁₂	15.1	X	55.93518	141.20790	285.38858	16.03160	0.0753033	0.18022689	3.1040091	21	—	—
228693	2002	PN ₁₇	17.9	X	248.69071	115.09534	235.20945	0.33261	0.2086219	0.30048905	2.2075825	21	4 9.3	21.2
228694	2002	PE ₉₂	15.0	X	178.91533	18.19459	257.49675	15.15471	0.0229666	0.17578493	3.1560821	21	—	—
228695	2002	PU ₉₂	17.9	X	232.54184	76.96424	251.01237	1.56768	0.3234809	0.29393730	2.2402659	21	2 23.6	22.1
228696	2002	PX ₉₅	17.0	X	352.03284	14.29085	291.02674	5.22427	0.0868566	0.30993319	2.1625060	21	7 26.5	18.6
228697	2002	PP ₁₇₀	17.9	X	3.81419	247.49815	15.09905	3.42517	0.1441743	0.30663134	2.1780024	21	6 6.3	19.3
228698	2002	PF ₁₈₇	17.5	X	262.49155	269.96200	99.62735	7.33486	0.1034619	0.30464041	2.1874814	21	6 2.7	20.2
228699	2002	PX ₁₈₇	16.1	X	234.43017	181.86313	75.06631	2.43630	0.0843588	0.18341983	3.0678811	21	—	—
228700	2002	QH ₄₄	17.4	X	308.30768	283.19448	60.29291	5.19003	0.1970292	0.30736888	2.1745169	21	6 15.3	19.2
228701	2002	QR ₅₇	17.6	X	301.20308	242.27293	142.71264	2.71972	0.1071547	0.31078250	2.1585644	21	8 27.1	19.3
228702	2002	QH ₆₆	17.4	X	213.11001	275.69203	126.36819	2.47489	0.1221883	0.30110433	2.2045742	21	5 18.5	20.4
228703	2002	QM ₈₃	15.8	X	99.22257	95.97316	309.92126	9.38555	0.1127636	0.18063764	3.0993019	21	1 29.6	19.9
228704	2002	QC ₉₃	15.4	X	101.39192	260.50603	130.63416	10.88615	0.1320350	0.17796245	3.1302844	21	1 17.4	19.6
228705	2002	QY ₉₈	15.8	X	277.45278	212.70678	71.13025	6.53484	0.1448614	0.19104608	2.9856849	21	3 6.6	20.4
228706	2002	QA ₁₀₅	15.9	X	21.02888	22.90530	19.96785	0.87078	0.1301773	0.16837431	3.2480210	21	—	—
228707	2002	QB ₁₂₃	15.6	X	106.50539	19.02105	298.50030	5.95793	0.0154802	0.17258343	3.1949936	21	12 27.6	20.2
228708	2002	RG ₅₄	15.0	X	67.96953	233.71632	151.72039	6.79922	0.1371251	0.17023340	3.2243304	21	—	—
228709	2002	RN ₇₄	17.4	X	189.89608	327.67498	338.21477	2.98997	0.2165458	0.28573041	2.2829605	21	—	—
228710	2002	RF ₁₄₈	15.5	X	155.12685	235.92181	90.42177	1.88406	0.1					

ELEMENTS AND OPPOSITION DATES IN 2021

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2021 JULY 5.0 TT

Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>
228721 2002 TV ₂₆	17.9	X	147.96630	195.05384	204.86121	1.80762	0.1908029	0.28645066	2.2791321	21	3 13.2	21.2
228722 2002 TZ ₃₇	16.8	X	244.95248	316.96140	47.66838	4.87583	0.1739992	0.29647800	2.2274488	21	4 28.0	19.9
228723 2002 TE ₄₀	16.7	X	192.16693	328.09419	63.05982	4.55542	0.1571581	0.29146731	2.2529047	21	4 13.7	20.1
228724 2002 TZ ₅₁	16.9	X	111.37441	333.81818	57.24576	3.31353	0.2119808	0.27836157	2.3230748	21	1 21.5	19.4
228725 2002 TW ₇₅	17.1	X	207.09888	134.40244	309.24079	3.26220	0.0899866	0.30152703	2.2025133	21	7 10.4	20.0
228726 2002 TK ₇₇	17.2	X	234.73049	30.40437	288.35395	2.07736	0.2235540	0.29131181	2.2537063	21	2 16.4	20.8
228727 2002 TF ₉₈	17.0	X	288.55351	306.40753	350.31569	2.16524	0.0572343	0.29516603	2.2340444	21	3 31.0	19.6
228728 2002 TM ₁₁₉	15.1	X	38.28666	144.55721	285.32947	7.09530	0.0540969	0.17008997	3.2261427	21	—	—
228729 2002 TH ₁₂₁	16.6	X	150.94345	152.85180	251.74082	7.10706	0.1410260	0.28747299	2.2737254	21	3 13.8	19.9
228730 2002 TX ₁₂₄	16.9	X	82.45896	275.85554	246.31454	6.95936	0.0462784	0.29731112	2.2232857	21	5 15.1	19.4
228731 2002 TV ₁₃₀	15.5	X	119.02703	86.45702	278.80774	3.95240	0.0500501	0.17514061	3.1638179	21	—	—
228732 2002 TQ ₁₃₂	17.3	X	50.32776	20.30871	256.35738	3.88776	0.1760560	0.31142697	2.1555854	21	10 9.2	19.7
228733 2002 TY ₁₃₂	17.1	X	227.13760	127.27682	266.15059	4.57488	0.1857255	0.29830833	2.2183282	21	5 16.9	20.4
228734 2002 TV ₁₅₄	15.2	X	155.10548	78.94881	259.96232	8.66031	0.0768838	0.17858460	3.1230100	21	1 8.8	19.8
228735 2002 TP ₁₆₉	15.1	X	141.21061	72.17802	330.09579	14.90794	0.0526499	0.18266564	3.0763197	21	3 4.7	19.7
228736 2002 TY ₂₀₄	17.1	X	183.53376	282.21389	129.75901	5.10552	0.0451741	0.29437227	2.2380586	21	4 29.5	19.9
228737 2002 TB ₂₁₁	16.7	X	261.80098	316.31307	37.18771	5.10064	0.1683622	0.29767294	2.2217004	21	4 30.8	19.7
228738 2002 TU ₂₅₇	17.6	X	270.02345	292.19581	63.98634	4.08961	0.2097602	0.29943487	2.2127608	21	5 9.4	20.5
228739 2002 TV ₂₇₅	16.5	X	327.69070	91.62803	239.20140	3.23888	0.2025581	0.30480196	2.1867084	21	7 4.6	18.0
228740 2002 TT ₂₈₁	17.1	X	198.79864	13.07007	339.59974	5.07729	0.1838987	0.28839385	2.2688827	21	2 28.9	20.6
228741 2002 TQ ₂₈₂	16.9	X	172.62095	94.58087	283.60551	4.22146	0.1295174	0.28680574	2.2772506	21	3 3.4	20.2
228742 2002 TA ₂₈₇	16.9	X	231.24299	115.28991	271.20166	4.85612	0.0816229	0.29562322	2.2317405	21	5 19.2	19.8
228743 2002 TZ ₂₉₀	16.7	X	221.66406	61.21738	267.79808	4.83617	0.1936368	0.28853287	2.2681539	21	2 17.4	20.4
228744 2002 UO ₃₇	17.0	X	135.51423	59.78610	269.20131	1.70918	0.1454112	0.27564717	2.3383007	21	—	—
228745 2002 UE ₄₀	16.9	X	157.16698	308.73847	109.42585	7.27063	0.0814029	0.28881997	2.2666506	21	4 9.8	20.0
228746 2002 UQ ₅₁	15.9	X	174.88085	23.82301	259.37184	9.38006	0.1816894	0.17674845	3.1446017	21	—	—
228747 2002 VH ₃	16.8	X	157.51464	172.27803	273.01369	3.69328	0.0949981	0.29208536	2.2497255	21	5 13.9	19.9
228748 2002 VA ₄	17.2	X	192.67951	111.70941	278.23142	4.18666	0.2030238	0.29073815	2.2566699	21	4 9.4	20.8
228749 2002 VY ₈	16.5	X	222.06493	59.90196	275.83678	5.34841	0.2095389	0.28998614	2.2605696	21	2 25.4	20.2
228750 2002 VH ₉	16.6	X	244.63766	249.18056	125.26549	6.41348	0.1087204	0.29535088	2.2331122	21	5 18.9	19.6
228751 2002 VY ₃₀	17.0	X	173.47398	323.17368	52.07007	5.40451	0.1557559	0.28506481	2.2865128	21	3 7.6	20.4
228752 2002 VG ₃₁	17.1	X	158.99762	193.62944	216.99768	5.14485	0.1969722	0.28718664	2.2752366	21	4 7.3	20.4
228753 2002 VT ₃₂	16.6	X	194.47135	190.50463	219.92871	6.08465	0.0713294	0.29174753	2.2514618	21	5 9.6	19.5
228754 2002 VZ ₃₅	17.3	X	181.47744	169.99836	260.78421	2.05146	0.1915103	0.29207600	2.2497735	21	5 24.6	20.9
228755 2002 VK ₅₄	16.8	X	140.95546	214.70721	216.93761	6.14000	0.0925539	0.28752887	2.2734308	21	4 4.5	19.8
228756 2002 VM ₇₄	16.9	X	181.21116	276.11933	64.29652	7.00199	0.1996318	0.28411285	2.2916175	21	2 1.6	20.5
228757 2002 VF ₈₀	17.3	X	162.73824	262.71427	106.23203	3.51528	0.2356050	0.28367079	2.2939976	21	2 22.2	20.9
228758 2002 VZ ₈₃	16.2	X	168.37314	198.65108	86.48817	7.20703	0.1122074	0.28506205	2.2865276	21	3 12.7	19.5
228759 2002 VC ₉₀	17.0	X	320.25415	259.05849	67.11344	5.35662	0.1210945	0.30112203	2.2044878	21	6 24.1	19.1
228760 2002 VW ₉₁	16.3	X	272.88959	256.28078	73.18858	9.42465	0.1998267	0.29450238	2.2373994	21	4 11.9	19.6
228761 2002 VJ ₁₀₂	17.3	X	287.62863	34.07622	317.92542	1.49573	0.1536173	0.30089917	2.2055762	21	6 2.8	19.9
228762 2002 VR ₁₀₂	17.1	X	203.93240	171.25725	251.54227	4.72983	0.0603970	0.29627764	2.2284529	21	6 7.8	19.8
228763 2002 VN ₁₀₄	16.8	X	223.46568	112.92114	288.35249	3.42144	0.1078151	0.29551974	2.2322614	21	5 28.9	19.8
228764 2002 VL ₁₂₈	16.7	X	183.69964	168.16364	198.87733	3.24305	0.1274710	0.28474726	2.2882125	21	3 1.8	20.0
228765 2002 VH ₁₃₁	14.7	X	102.61302	105.64665	142.15010	26.17869	0.1326661	0.18035513	3.1025376	21	3 20.2	19.3
228766 2002 VS ₁₄₆	17.4	X	161.14960	125.95937	199.09685	0.86812	0.1903837	0.27874789	2.3209280	21	—	—
228767 2002 WX ₅	17.1	X	291.54353	60.61331	335.59566	5.71463	0.1563569	0.30584208	2.1817478	21	8 18.6	19.0
228768 2002 WQ ₁₇	16.3	X	96.91630	26.69625	81.26161	26.16400	0.2290037	0.28375133	2.2935636	21	5 3.3	19.6
228769 2002 WP ₂₁	17.2	X	12.10252	307.37071	153.82753	2.60324	0.1611549	0.27030711	2.3689964	21	—	—
228770 2002 WR ₂₅	17.0	X	79.05227	273.74184	214.02497	7.68580	0.0682059	0.28533284	2.2850807	21	3 22.5	19.6
228771 2002 XU ₁₈	16.4	X	159.98546	109.82649	308.83268	9.80825	0.0771085	0.28659423	2.2783709	21	4 3.9	19.7
228772 2002 XL ₂₀	16.7	X	250.04588	53.25058	268.56407	6.09581	0.1372671	0.28942370	2.2634973	21	3 7.3	20.0
228773 2002 XT ₂₃	17.1	X	148.13039	0.69073	25.53059	6.70222	0.1623986	0.28215547	2.3022036	21	2 24.4	20.4
228774 2002 XR ₂₉	16.8	X	123.41740	301.45162	128.56190	5.64230	0.1950855	0.28306068	2.2972928	21	3 29.8	19.8
228775 2002 XK ₃₅	17.2	X	106.10072	144.29764	263.41265	4.86776	0.1578739	0.27834372	2.3231741	21	1 25.5	19.8
228776 2002 XD ₄₂	17.8	X	99.94799	330.07378	131.99441	0.70095	0.1663033	0.28293540	2.2979709	21	4 5.7	20.5
228777 2002 XZ ₄₃	17.5	X	159.64337	82.36512	356.25129	2.79788	0.1228900	0.28946845	2.2632641	21	5 9.4	20.6
228778 2002 XJ ₅₂	16.6	X	195.68179	268.25552	95.29200	6.36681	0.1760803	0.28536300	2.2849197	21	3 15.2	20.3
228779 2002 XP ₅₃	16.7	X	141.03323	12.58978	93.55494	8.09207	0.0511526	0.29108819	2.2548604	21	5 20.9	19.5
228780 2002 XS ₈₄	15.3	X	106.43058	292.87379	263.69141	10.55435	0.2558629	0.23592838	2.5938763	21	8 26.1	19.7
228781 2002 XM ₉₆	17.0	X	122.26049	51.61504	77.19204	6.08497	0.0997714	0.29071259	2.2568021	21	6 2.3	19.9
228782 2002 XO ₁₀₄	17.7	X	159.85327	267.42550	137.86389	1.37079	0.2312537	0.28629451	2.2799607	21	4 5.2	21.4
228783 2002 XX ₁₀₈	17.5	X	98.61570	76.21558	354.69935	2.38304	0.1674991	0.28017057	2.3130643	21	2 18.8	19.8
228784 2002 XP ₁₀₉	17.3	X	200.68770	88.73454	308.81555	4.24966	0.1652716	0.29159859	2.2522284	21	4 26.7	20.7
228785 2002 YG ₇	16.2	X	60.74759	323.22094	124.49414	6.50769	0.1934723	0.27248997	2.3563278	21	1 5.3	18.0
228786 2002 YJ ₉	16.6	X	197.97647	279.19445	92.49482	4.63582	0.2005810	0.28603951	2.2813156	21	3 27.3	20.3
228787 2002 YH ₁₀	16.3	X	83.35465	113.54049	271.89085	6.00869	0.1905840	0.26985366	2.3716495	21	—	—
228788 2002 YM ₁₇	16.5	X	0.66139	259.32804	255.78007	5.36321	0.0469770	0.27580654	2.3373998	21	—	—
228789 2002 YW ₂₀	16.2	X	29.47704	43.02210	100.48824	25.10108	0.2311091	0.27508909	2.3414621	21	1 15.1	17.8
228790 2002 YJ ₂₄	16.5	X	129.83423	296.95503	102.23480	7.59303	0.1169174	0.27810438	2.3245068	21	2 13.1	19.4
228791 2002 YQ ₂₉	16.9	X	30.37755	24.65592	93.56442	3.31139	0.1496408	0.27162381	2.3613344	21	—	—
228792 2002 YM ₃₀	16.7	X	174.62278	136.29209	269.06467	5.14535	0.1052055	0.28530286	2.2852408	21	4 8.5	19.9
228793 2002 YM ₃₃	16.7	X	138.27229	153.24653	279.26364	5.61187	0.0523029	0.28609332	2.2810295	21	3 25.6	19.7
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ELEMENTS AND OPPOSITION DATES IN 2021

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2021 JULY 5.0 TT

Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>
228801 2003 AB ₅₅	16.7	X	140.81300	338.23889	74.02168	6.91101	0.2050987	0.28108021	2.3080712	21	3 28.3	20.1
228802 2003 AP ₆₁	16.8	X	31.34672	325.27522	161.81276	6.65491	0.1566555	0.27242041	2.3567289	21	1 1.1	18.9
228803 2003 AX ₆₂	16.4	X	193.17186	250.60718	102.65258	7.36460	0.1355990	0.28027974	2.3124636	21	2 26.4	19.9
228804 2003 AE ₆₃	16.6	X	308.67234	72.70322	111.92256	7.25663	0.0416172	0.26929904	2.3749047	21	—	—
228805 2003 AW ₇₈	16.7	X	115.22050	154.72012	266.02611	3.31356	0.1108041	0.27624625	2.3349188	21	2 18.5	19.5
228806 2003 AA ₈₂	16.0	X	119.97756	15.55591	84.30252	23.94600	0.1500090	0.28137429	2.3064627	21	5 7.5	19.5
228807 2003 AZ ₈₂	16.2	X	102.95049	115.33936	306.16569	9.01715	0.1815261	0.27556888	2.3387436	21	2 13.2	18.8
228808 2003 AR ₈₈	16.5	X	236.93641	45.77420	286.42389	5.21991	0.1659581	0.28410283	2.2916714	21	3 7.6	20.0
228809 2003 AP ₉₁	16.9	X	93.49464	2.96682	55.47284	7.72104	0.2065311	0.27434615	2.3456874	21	2 2.8	19.3
228810 2003 BZ ₂	16.5	X	155.58945	294.35569	108.74288	23.83046	0.3052319	0.28262644	2.2996453	21	4 15.6	21.0
228811 2003 BR ₆	16.3	X	81.10638	148.65274	273.38407	5.90611	0.0986653	0.27229339	2.3574617	21	—	—
228812 2003 BM ₁₄	16.7	X	65.67483	182.24878	259.39834	4.34080	0.1128487	0.27181496	2.3602272	21	1 1.5	18.9
228813 2003 BL ₁₇	16.5	X	54.43622	92.37760	44.04289	5.49447	0.1700105	0.27487076	2.3427018	21	3 10.9	18.4
228814 2003 BP ₁₇	17.0	X	53.17046	210.89193	306.84723	3.02791	0.1727771	0.27791655	2.3255541	21	4 5.9	19.0
228815 2003 BW ₂₄	16.6	X	77.00691	224.65639	243.52735	5.42893	0.1757298	0.27580030	2.3374351	21	3 6.9	19.0
228816 2003 BE ₂₈	16.9	X	313.82986	179.25668	261.52527	2.41129	0.1385552	0.25548759	2.4597417	21	12 2.8	18.9
228817 2003 BN ₃₁	16.7	X	105.58994	313.09751	139.91492	6.40842	0.1501023	0.27894701	2.3198233	21	4 1.1	19.4
228818 2003 BC ₃₈	17.2	X	61.47782	102.35743	358.85397	2.22274	0.1637033	0.27393602	2.3480281	21	1 26.6	18.9
228819 2003 BH ₅₅	17.1	X	17.40559	97.73876	94.52258	3.28658	0.1120530	0.27762424	2.3271862	21	3 18.3	19.2
228820 2003 BJ ₅₅	17.1	X	289.44046	129.40229	78.06526	3.27557	0.1777361	0.26549300	2.3975481	21	—	—
228821 2003 BV ₅₇	16.9	X	5.48390	166.76944	321.20147	1.55599	0.1515436	0.26809461	2.3820123	21	—	—
228822 2003 BR ₆₂	16.7	X	55.21540	341.82922	89.47792	7.29485	0.1800276	0.26901033	2.3766036	21	—	—
228823 2003 BF ₆₅	17.5	X	11.64293	221.75795	217.78496	1.12245	0.1485173	0.26382858	2.4062121	21	—	—
228824 2003 BR ₆₆	17.3	X	325.41821	172.76315	326.28077	2.79500	0.1635290	0.26224385	2.4171309	21	—	—
228825 2003 BK ₇₄	16.4	X	345.77950	53.61428	94.89016	10.49789	0.1597611	0.26704958	2.3882205	21	—	—
228826 2003 BC ₈₀	16.2	X	44.73927	17.21491	74.55281	8.00298	0.0427509	0.26832215	2.3806655	21	—	—
228827 2003 BV ₈₆	16.9	X	55.69665	25.24351	117.84918	3.43082	0.1096227	0.27555650	2.3881362	21	3 16.2	19.2
228828 2003 CS ₁₂	16.7	X	65.28486	86.48983	335.99845	5.16862	0.1281040	0.26825128	2.3810847	21	—	—
228829 2003 CO ₁₄	17.1	X	256.71801	324.36443	221.71578	3.14986	0.1493508	0.25769348	2.4456845	21	—	—
228830 2003 DP	16.7	X	48.60271	177.54435	268.69890	1.82312	0.1549958	0.26806209	2.3822049	21	—	—
228831 2003 DN ₂	17.2	X	285.07002	26.30184	158.73970	1.57768	0.1273216	0.26100838	2.4249330	21	—	—
228832 2003 DE ₃	17.5	X	66.78556	132.65597	340.05738	2.13684	0.1436291	0.27386404	2.3484395	21	2 21.5	19.6
228833 2003 DV ₃	17.4	X	74.14156	326.37571	131.32169	1.30428	0.1796423	0.27313541	2.3526142	21	2 18.2	19.3
228834 2003 DL ₈	17.4	X	10.90191	90.04544	20.96873	1.88767	0.1312697	0.26476613	2.4019341	21	—	—
228835 2003 DU ₈	17.8	X	76.29003	313.20838	154.97545	3.50611	0.2507809	0.27547326	2.3392847	21	3 23.1	19.8
228836 2003 DW ₈	16.7	X	309.55142	114.08089	98.68012	3.14325	0.1524462	0.26698919	2.3885826	21	—	—
228837 2003 EY ₆	17.4	X	11.33286	234.36959	300.48848	0.67808	0.1172136	0.27195358	2.3594251	21	2 7.5	19.5
228838 2003 EG ₁₂	17.1	X	8.90023	288.85675	245.23494	2.10111	0.1843202	0.27102096	2.3648347	21	1 23.9	19.3
228839 2003 EG ₁₄	16.6	X	29.36574	357.71580	80.28415	5.75520	0.0970270	0.26339503	2.4102624	21	—	—
228840 2003 EV ₁₉	17.1	X	328.37196	197.86125	312.18375	2.13589	0.1721098	0.26265033	2.4148162	21	—	—
228841 2003 EZ ₂₄	17.3	X	89.42129	50.62258	64.25303	3.85969	0.2412875	0.27763596	2.3271207	21	4 22.8	19.9
228842 2003 EN ₃₂	16.2	X	69.27847	319.49110	340.71555	8.46509	0.0953592	0.24427956	2.5344164	21	11 11.6	19.9
228843 2003 ES ₄₆	16.8	X	285.95277	118.20074	70.51491	6.29900	0.1403569	0.26057377	2.4276286	21	—	—
228844 2003 EX ₅₁	17.2	X	58.31717	38.45095	67.12060	3.27463	0.1644117	0.27012909	2.3700371	21	1 28.4	19.0
228845 2003 EQ ₅₄	16.9	X	6.13177	329.76454	171.08159	1.04759	0.1305143	0.26373355	2.4081995	21	—	—
228846 2003 EG ₆₀	16.8	X	347.42239	98.01817	83.27375	6.09902	0.1720262	0.26676875	2.3898983	21	—	—
228847 2003 FW	16.5	X	349.19826	83.21410	77.28713	23.96374	0.2554160	0.26640543	2.3920706	21	—	—
228848 2003 FC ₃₁	16.6	X	246.92290	118.80849	66.12509	7.05881	0.0773306	0.25468475	2.4649083	21	—	—
228849 2003 FP ₃₇	16.9	X	54.92999	160.25317	331.85797	2.47981	0.1060671	0.27111198	2.3643054	21	2 25.1	18.9
228850 2003 FZ ₅₁	16.1	X	259.63792	162.69755	98.34539	8.06298	0.2017101	0.26350211	2.4096094	21	1 3.1	20.1
228851 2003 FD ₆₅	16.7	X	14.08159	54.68535	70.63557	6.47994	0.1340136	0.26445566	2.4038137	21	—	—
228852 2003 FJ ₇₇	16.6	X	195.86810	253.38126	301.46532	3.00720	0.1119498	0.24613683	2.5216510	21	11 16.8	20.3
228853 2003 FU ₈₄	16.3	X	312.52884	220.83170	321.75948	6.59773	0.0916212	0.26258929	2.4151904	21	—	—
228854 2003 FP ₉₈	17.1	X	290.97750	66.55795	98.31740	3.34232	0.1600175	0.25762302	2.4461304	21	—	—
228855 2003 FK ₁₀₉	17.3	X	18.07650	56.76379	104.36438	3.04273	0.1530470	0.26854610	2.3793417	21	1 28.6	19.2
228856 2003 FN ₁₁₆	16.7	X	34.99044	44.45951	48.95269	3.13841	0.1756710	0.26508535	2.4000054	21	—	—
228857 2003 FD ₁₂₀	16.5	X	68.05259	43.61735	114.79060	7.14226	0.0518818	0.27844984	2.3225838	21	4 23.9	19.2
228858 2003 GL	16.7	X	70.56283	247.52969	189.07174	22.33927	0.1117908	0.37331090	1.9102444	21	—	—
228859 2003 GY ₃	17.1	X	134.87493	258.85985	201.26818	2.21276	0.1984170	0.27982960	2.3149429	21	5 20.4	20.4
228860 2003 GX ₄	16.4	X	40.02783	44.78417	186.29907	7.18880	0.1482918	0.27997662	2.3141324	21	7 5.3	18.7
228861 2003 GG ₁₂	17.0	X	275.05760	253.11471	276.56017	1.75749	0.1929798	0.25558943	2.4590883	21	—	—
228862 2003 GX ₃₁	14.3	X	339.58923	136.00108	48.93758	10.73341	0.2258433	0.10380779	4.4838329	21	2 1.0	19.8
228863 2003 GO ₃₂	16.4	X	281.59069	15.67790	129.10381	4.89705	0.0677742	0.25168642	2.4844458	21	—	—
228864 2003 GL ₃₅	17.4	X	11.31735	72.01552	72.55332	3.06934	0.1571423	0.26641457	2.3920159	21	—	—
228865 2003 GT ₄₇	17.0	X	310.77718	126.11924	67.86313	2.79037	0.1577187	0.26204684	2.4185223	21	—	—
228866 2003 HM ₄	15.9	X	357.94839	219.92680	77.28981	12.92062	0.1816792	0.22428961	2.6828514	21	7 25.2	18.6
228867 2003 HS ₇	16.0	X	304.45308	53.59240	198.41033	8.45640	0.1035751	0.21260487	2.7802717	21	2 23.4	20.0
228868 2003 HB ₁₂	15.9	X	242.43631	151.18697	111.03722	11.65179	0.2288639	0.25683087	2.4511576	21	—	—
228869 2003 HU ₂₁	16.2	X	106.37433	333.38009	194.57833	6.87154	0.1720729	0.22748254	2.6576880	21	7 15.4	20.2
228870 2003 HL ₂₇	16.8	X	323.58624	113.98422	80.17832	6.04912	0.1587638	0.26272623	2.4143511	21	—	—
228871 2003 HQ ₃₁	16.0	X	170.79687	1.06905	226.88580	6.24306	0.0941470	0.24436718	2.5338105	21	12 3.8	19.6
228872 2003 HS ₃₈	15.9	X	134.56312	312.73299	262.09460	12.73393	0.2334902	0.23815906	2.5776541	21	10 9.7	20.6
228873 2003 HD ₄₅	16.2	X	48.31366	74.73114	47.83203	11.21305	0.2632474	0.26809979	2.3819816	21	2 13.9	17.8
228874 2003 HD ₅₂	16.2	X	2.64793	248.61145	73.35248	12.85180	0.0849026	0.23091611	2.6309313	21	9 12.6	19.5
228875 2003 KX ₃	15.8	X	336.19016	5.32724	280.77966	8.38838	0.2671776	0.21802172</				

ELEMENTS AND OPPOSITION DATES IN 2021

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2021 JULY 5.0 TT

Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>
228881 2003 OT ₈	14.8	X	95.97341	57.53389	271.68370	16.12524	0.3338368	0.17750394	3.1356727	21	—	—
228882 2003 OW ₁₇	15.5	X	210.66440	252.99871	86.07627	4.75087	0.1686149	0.20032304	2.8927803	21	3 6.3	20.4
228883 Cliffsimak	15.3	X	119.47566	123.05552	234.88125	9.39928	0.1075839	0.18844615	3.0130838	21	—	—
228884 2003 QK ₁₅	15.7	X	176.71413	91.37543	250.36203	8.54452	0.1133009	0.19286506	2.9668825	21	2 1.6	20.5
228885 2003 QZ ₂₄	15.2	X	94.65432	76.18950	308.84316	6.98547	0.3229736	0.18434841	3.0575703	21	1 28.1	19.2
228886 2003 QF ₂₈	15.3	X	87.58582	318.79583	329.81166	10.55363	0.1904459	0.17398264	3.1778406	21	11 18.1	20.4
228887 2003 QR ₃₁	16.1	X	322.76091	34.95807	286.95403	2.28312	0.0962178	0.21407842	2.7674989	21	6 27.1	19.3
228888 2003 QA ₆₇	15.9	X	21.51005	271.34425	333.74794	3.36799	0.0464387	0.21109245	2.7935359	21	6 15.1	19.4
228889 2003 QH ₇₀	15.4	X	153.27018	10.63709	1.12953	10.11314	0.1295310	0.18983621	2.9983570	21	2 21.4	20.0
228890 2003 QH ₇₈	15.1	X	150.05010	65.82802	318.13799	8.89535	0.1513435	0.19212609	2.9744852	21	3 1.3	19.8
228891 2003 QU ₉₉	15.0	X	127.43265	199.74992	158.51830	24.54852	0.2287101	0.18762150	3.0219062	21	1 18.4	19.9
228892 2003 QL ₁₁₅	15.5	X	28.49789	339.36508	62.77013	11.61473	0.2070880	0.17568969	3.1572226	21	—	—
228893 Gerevich	16.3	X	307.33776	178.14359	146.06496	4.87353	0.1031376	0.20990929	2.8040233	21	6 6.0	19.8
228894 2003 RD ₁₁	14.9	X	98.80664	234.60512	116.09243	11.34088	0.1469549	0.18206070	3.0831305	21	—	—
228895 2003 RQ ₂₂	15.3	X	91.35292	152.44050	246.88894	12.92113	0.2117472	0.18502706	3.0500893	21	1 20.8	19.4
228896 2003 SF ₁₁	16.6	X	247.71854	353.73875	279.77910	19.33658	0.0588739	0.35729440	1.9669134	21	—	—
228897 2003 SG ₂₂	15.4	X	66.07543	86.47654	296.70561	8.74817	0.0970975	0.17856960	3.1231850	21	—	—
228898 2003 SB ₂₉	15.2	X	116.35378	75.40772	287.51116	7.73802	0.1469699	0.18373296	3.0643944	21	1 3.1	19.5
228899 2003 SG ₅₈	15.5	X	133.88868	141.68393	224.67701	12.02058	0.1597143	0.18927082	3.0043252	21	1 23.3	20.2
228900 2003 ST ₆₉	15.5	X	195.20474	82.42995	203.27619	4.70965	0.0398991	0.18459913	3.0548011	21	—	—
228901 2003 SG ₇₁	15.2	X	45.66579	203.39554	251.30318	7.73000	0.0839916	0.18685959	3.0301150	21	1 9.1	19.0
228902 2003 SS ₇₉	15.1	X	63.80953	198.95968	199.23072	17.29550	0.1945844	0.17990964	3.1076571	21	—	—
228903 2003 SN ₁₀₇	15.4	X	101.49046	102.63879	261.33238	4.91053	0.1372600	0.18060985	3.0996198	21	—	—
228904 2003 SO ₁₃₃	15.1	X	63.99829	125.00551	283.69895	8.44078	0.0836029	0.18371803	3.0645605	21	—	—
228905 2003 SL ₁₄₀	15.1	X	62.90977	328.44434	94.67241	4.67687	0.2903585	0.18112092	3.0937863	21	1 21.9	18.2
228906 2003 SC ₁₄₁	15.0	X	45.80222	149.36636	252.58874	9.22172	0.2043534	0.17633874	3.1494707	21	—	—
228907 2003 SO ₁₄₅	15.6	X	119.17923	56.13039	318.99205	10.05437	0.1680087	0.18515541	3.0486796	21	1 24.3	20.0
228908 2003 ST ₁₄₅	15.1	X	97.18239	87.18076	268.92470	13.77482	0.0797722	0.18045583	3.1013833	21	—	—
228909 2003 SZ ₁₄₅	15.2	X	39.02197	147.54314	277.41786	13.66756	0.0753738	0.18076811	3.0978104	21	—	—
228910 2003 SC ₁₅₃	15.5	X	254.62633	253.40376	78.51779	6.95006	0.0728344	0.20184070	2.8782613	21	4 16.1	19.7
228911 2003 SA ₁₆₄	14.9	X	134.44586	272.85053	19.87777	11.07841	0.0762597	0.17423788	3.1747364	21	—	—
228912 2003 SH ₁₆₉	15.5	X	89.90617	207.86357	135.62585	6.25656	0.1386785	0.17752240	3.1354552	21	—	—
228913 2003 SD ₁₈₄	15.7	X	120.41281	321.29993	12.08566	2.83655	0.0619835	0.18004937	3.1060491	21	—	—
228914 2003 ST ₂₀₀	15.6	X	28.94653	359.94732	38.51161	1.90722	0.1504944	0.17252188	3.1957534	21	—	—
228915 2003 SF ₂₀₆	15.7	X	52.37878	135.92253	211.48092	8.63223	0.0878424	0.17438819	3.1729118	21	12 9.8	20.2
228916 2003 SF ₂₁₄	15.3	X	23.58767	48.84899	51.51020	10.61483	0.1077885	0.17854689	3.1234497	21	—	—
228917 2003 SU ₂₁₇	15.9	X	96.13714	195.04684	190.38648	5.75808	0.1187329	0.18254157	3.0777135	21	—	—
228918 2003 SM ₂₂₅	15.2	X	95.39431	187.55502	187.57800	10.06189	0.1147195	0.18084762	3.0969024	21	—	—
228919 2003 SN ₂₂₅	16.0	X	36.24800	312.67709	102.98259	1.71950	0.1960781	0.17692992	3.1424511	21	—	—
228920 2003 SJ ₂₃₄	15.4	X	345.68221	14.15862	72.39030	5.80591	0.1470854	0.17425923	3.1744770	21	—	—
228921 2003 SZ ₂₃₈	15.1	X	321.22533	54.44308	358.49328	16.92900	0.1095689	0.16629034	3.2751011	21	10 15.1	19.3
228922 2003 SL ₂₄₅	16.1	X	125.71079	3.08614	319.38261	0.61191	0.1664904	0.18080490	3.0973902	21	—	—
228923 2003 SB ₂₅₄	15.1	X	103.23563	119.65300	267.27375	8.32755	0.1306805	0.18281688	3.0746229	21	1 12.7	19.3
228924 2003 ST ₂₅₆	15.7	X	155.67505	110.98943	267.96316	0.64895	0.0583429	0.19371763	2.9581711	21	2 22.3	20.0
228925 2003 SE ₂₆₇	15.2	X	165.22016	71.34402	286.22856	7.44448	0.1274406	0.18870999	3.0102746	21	2 11.4	20.0
228926 2003 SQ ₂₇₅	16.2	X	103.02966	326.38089	36.55048	0.73786	0.1656923	0.18077873	3.0976891	21	—	—
228927 2003 SY ₂₈₄	16.0	X	44.67143	104.10793	295.92267	6.44617	0.1470392	0.17767825	3.1336215	21	—	—
228928 2003 SN ₂₈₅	15.6	X	94.13842	115.76502	267.73775	8.52595	0.2207056	0.18141097	3.0904877	21	1 10.2	19.6
228929 2003 SF ₂₉₉	14.4	X	65.14727	113.35217	259.20296	14.60935	0.2250760	0.17539784	3.1607239	21	—	—
228930 2003 SC ₃₁₀	16.1	X	46.37074	275.56027	112.09919	2.50181	0.1967603	0.17518475	3.1632865	21	—	—
228931 2003 SU ₃₁₀	15.3	X	28.80923	84.87550	3.09593	15.35097	0.2370089	0.18071380	3.0984311	21	—	—
228932 2003 SJ ₃₁₉	15.9	X	143.43392	98.91322	287.11871	5.99237	0.2045896	0.19183046	3.2751404	21	3 1.8	20.7
228933 2003 SJ ₃₂₀	15.0	X	222.51781	175.41597	48.16339	8.90913	0.0264720	0.17799336	3.1299220	21	—	—
228934 2003 SP ₃₃₀	16.3	X	190.08022	217.01508	58.59810	4.55608	0.1274633	0.18328722	3.0693606	21	—	—
228935 2003 SK ₃₅₀	14.8	X	194.60730	227.40327	43.77581	12.05272	0.0353353	0.18128490	3.0919204	21	—	—
228936 2003 SC ₃₉₀	16.0	X	341.83290	50.48501	65.94420	5.97611	0.1136879	0.17800175	3.1298237	21	—	—
228937 2003 SG ₄₁₁	16.2	X	241.58024	89.23703	194.69794	1.16989	0.0396918	0.19274240	2.9681411	21	2 2.4	20.6
228938 2003 TR	15.5	X	100.09931	79.39100	309.75998	6.37338	0.1027874	0.18312924	3.0711257	21	1 9.0	19.6
228939 2003 TQ ₆	15.3	X	182.15347	272.86880	86.98511	11.78053	0.1148116	0.19325044	2.9629368	21	3 8.5	20.1
228940 2003 TP ₁₄	15.2	X	107.44916	276.87367	100.09185	6.77239	0.2468273	0.18290468	3.0736388	21	1 23.7	19.6
228941 2003 TU ₁₆	15.7	X	98.60065	132.57728	246.71019	8.82576	0.1369025	0.18299437	3.0726345	21	—	—
228942 2003 TB ₁₈	15.3	X	117.73849	40.26419	284.53005	8.71765	0.0833568	0.17886442	3.1197520	21	—	—
228943 2003 TX ₄₉	15.3	X	100.90541	202.49615	152.51496	19.35540	0.1317913	0.18036401	3.1024358	21	—	—
228944 2003 TD ₅₄	15.2	X	303.58535	77.85099	52.58866	10.09780	0.0578086	0.17465821	3.1696408	21	—	—
228945 2003 TC ₅₇	14.9	X	112.88090	66.14998	269.17233	12.54914	0.1608897	0.17892579	3.1190386	21	—	—
228946 2003 TD ₅₇	14.9	X	66.92035	141.88535	259.29898	14.70424	0.0638540	0.17981447	3.1087536	21	—	—
228947 2003 TQ ₅₉	15.3	X	51.43455	186.45855	246.06162	8.97868	0.2069321	0.18213747	3.0822641	21	—	—
228948 2003 UX ₈	14.9	X	62.18200	105.24947	327.95337	21.94110	0.2092254	0.18136040	3.0910622	21	1 27.2	18.5
228949 2003 UD ₅₃	15.2	X	77.73624	71.86664	269.28259	9.52064	0.2074643	0.17308539	3.1888134	21	—	—
228950 2003 UT ₅₄	15.2	X	142.11826	76.42094	289.48485	9.68579	0.2559874	0.18540627	3.0459289	21	2 6.1	20.2
228951 2003 UA ₇₅	15.1	X	62.79595	135.33175	270.59162	8.39895	0.0788019	0.18047258	3.1011914	21	—	—
228952 2003 UM ₇₇	15.8	X	33.90901	129.28859	261.57782	9.37693	0.2073588	0.17261926	3.1945514	21	—	—
228953 2003 UA ₈₂	15.1	X	60.09566	324.90089	90.33251	10.73711	0.0593161	0.17964559	3.1107015	21	—	—
228954 2003 UQ ₈₅	16.1	X	87.57459	249.90723	124.36491	2.16525	0.2055726	0.17828914	3.1264594	21	—	—
228955 2003 UO ₉₉	14.9	X	70.04769	322.28212	100.31172	12.79351	0.0818056	0.17940346	3.113499			

ELEMENTS AND OPPOSITION DATES IN 2021

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2021 JULY 5.0 TT

Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>
228961 2003 <i>UM</i> ₁₂₅	15.0	X	57.74249	359.35952	67.31594	12.38738	0.1267096	0.18103647	3.0947483	21	—	—
228962 2003 <i>UT</i> ₁₃₃	14.9	X	99.37037	98.75907	240.80919	15.13168	0.0563753	0.17624928	3.1505363	21	—	—
228963 2003 <i>UX</i> ₁₃₈	15.6	X	64.68545	286.47588	137.16848	5.25495	0.1389256	0.18390649	3.0624665	21	1 4.9	19.4
228964 2003 <i>UN</i> ₁₃₉	15.7	X	140.18646	269.21282	56.81381	14.54194	0.1367242	0.18198014	3.0840403	21	—	—
228965 2003 <i>UC</i> ₁₄₃	15.5	X	45.93804	82.93200	301.73466	4.04672	0.1573440	0.17261760	3.1945720	21	—	—
228966 2003 <i>UD</i> ₁₆₁	15.5	X	52.68758	9.84654	39.07353	5.61588	0.1523560	0.17732733	3.1377543	21	—	—
228967 2003 <i>UR</i> ₁₆₂	15.7	X	33.62389	24.78525	110.36369	4.16056	0.2756349	0.18273418	3.0755504	21	2 21.7	18.3
228968 2003 <i>UW</i> ₁₇₀	15.4	X	32.78981	225.38877	228.80911	9.08504	0.0527217	0.18081531	3.0972713	21	—	—
228969 2003 <i>UT</i> ₁₈₄	15.2	X	11.99768	137.13983	29.58057	14.47887	0.0638744	0.18780173	3.0199725	21	2 27.9	19.3
228970 2003 <i>UT</i> ₁₉₆	15.4	X	214.13316	356.40119	341.92301	1.53418	0.0415616	0.19217719	2.9739579	21	3 9.5	19.6
228971 2003 <i>UH</i> ₁₉₉	15.1	X	35.08079	187.43408	212.99230	12.70862	0.1044954	0.17467187	3.1694756	21	—	—
228972 2003 <i>UL</i> ₂₀₈	15.5	X	6.50786	324.88351	151.94916	1.99108	0.2519209	0.17630800	3.1498366	21	—	—
228973 2003 <i>UV</i> ₂₁₇	15.5	X	95.91111	302.00281	114.00197	4.03654	0.0609228	0.18568474	3.0428929	21	1 29.8	19.6
228974 2003 <i>UV</i> ₂₂₄	15.4	X	17.20497	116.00605	324.63052	4.28020	0.1636759	0.17557903	3.1585480	21	—	—
228975 2003 <i>UB</i> ₂₅₀	15.6	X	5.95643	24.58396	73.94954	6.03292	0.1331604	0.17603027	3.1531489	21	—	—
228976 2003 <i>UK</i> ₂₆₆	14.7	X	155.66291	240.87267	37.58642	11.84259	0.0629297	0.17347965	3.1839802	21	—	—
228977 2003 <i>UL</i> ₂₇₁	14.8	X	311.93383	32.58185	102.02917	17.73346	0.1499316	0.17185211	3.2040513	21	—	—
228978 2003 <i>UP</i> ₂₇₂	15.6	X	87.72015	280.67595	138.71248	5.34578	0.1079696	0.18316754	3.0706975	21	1 29.6	19.6
228979 2003 <i>UD</i> ₂₇₄	15.2	X	139.76419	253.35047	104.66926	9.98554	0.1822905	0.18309817	3.0714731	21	1 27.2	19.9
228980 2003 <i>UZ</i> ₂₈₉	15.8	X	52.12017	269.00895	101.71602	2.57613	0.1717019	0.17117916	3.2124432	21	—	—
228981 2003 <i>UC</i> ₃₁₆	15.2	X	122.55018	193.39754	138.58294	8.77922	0.0561197	0.17762186	3.1342847	21	—	—
228982 2003 <i>UF</i> ₃₁₆	16.0	X	335.78447	166.19301	280.92813	3.02684	0.1677745	0.16919933	3.2374541	21	12 26.6	19.6
228983 2003 <i>UU</i> ₃₂₂	16.0	X	172.24729	222.66002	78.38779	2.97116	0.1320094	0.18293883	3.0732563	21	—	—
228984 2003 <i>UA</i> ₃₇₅	15.4	X	228.59309	315.36673	241.91566	5.21769	0.0250127	0.17776915	3.1325532	21	12 25.7	19.8
228985 2003 <i>VR</i> ₇	15.8	X	60.69121	206.88174	172.37358	1.25532	0.1981905	0.17372361	3.1809986	21	—	—
228986 2003 <i>VP</i> ₁₁	14.9	X	93.28476	127.49523	254.52681	25.82969	0.1374610	0.18038973	3.1021408	21	—	—
228987 2003 <i>WP</i> ₅	15.2	X	74.43061	348.82596	50.77922	5.56520	0.1420820	0.17751882	3.1354974	21	—	—
228988 2003 <i>WN</i> ₁₀	15.9	X	124.77409	118.71143	286.68436	8.07089	0.0416028	0.18581642	3.0414452	21	2 15.4	20.2
228989 2003 <i>WW</i> ₁₁	15.2	X	58.19016	123.91063	296.02520	9.94350	0.1299753	0.17695891	3.1421078	21	—	—
228990 2003 <i>WV</i> ₃₆	15.4	X	59.79392	192.11841	272.93642	9.55865	0.0703350	0.18410538	3.0602605	21	2 8.6	19.5
228991 2003 <i>WH</i> ₅₅	15.0	X	345.30204	220.23708	264.69772	9.99445	0.0487630	0.17460966	3.1702283	21	—	—
228992 2003 <i>WV</i> ₇₁	15.2	X	157.85453	54.66693	296.10301	10.08447	0.3020101	0.18665193	3.0323621	21	2 9.0	20.5
228993 2003 <i>WJ</i> ₇₂	15.6	X	138.81062	107.99313	276.36387	10.21609	0.0516814	0.18371002	3.0646495	21	2 7.5	20.1
228994 2003 <i>WO</i> ₈₇	14.7	X	14.66305	91.21585	6.16005	15.84070	0.3495370	0.16979006	3.2294007	21	—	—
228995 2003 <i>WO</i> ₉₅	14.9	X	73.42105	329.92001	64.57275	12.44931	0.0732696	0.17664911	3.1457805	21	—	—
228996 2003 <i>WF</i> ₁₀₁	15.8	X	77.10768	160.94721	294.11173	7.62108	0.0833239	0.18650403	3.0339650	21	2 21.9	19.9
228997 2003 <i>WJ</i> ₁₀₁	14.6	X	159.83289	250.62154	84.91265	22.65054	0.1170081	0.18290907	3.0735897	21	1 13.7	19.5
228998 2003 <i>WJ</i> ₁₁₂	15.2	X	352.23134	154.44540	274.46558	8.79721	0.1289794	0.16850331	3.2463631	21	12 29.3	19.2
228999 2003 <i>WN</i> ₁₄₁	14.4	X	64.32932	292.62057	85.72244	18.07525	0.2230934	0.17097842	3.2149571	21	—	—
229000 2003 <i>WQ</i> ₁₄₈	14.8	X	8.44985	16.84203	78.17506	29.16234	0.1228323	0.17540677	3.1606166	21	—	—
229001 2003 <i>WL</i> ₁₅₅	15.4	X	145.53203	233.93903	105.18330	11.05253	0.0839642	0.18080125	3.0974319	21	1 10.7	20.2
229002 2003 <i>WN</i> ₁₆₉	14.7	X	32.36478	327.26088	86.22241	26.44265	0.2250814	0.17263052	3.1944125	21	—	—
229003 2003 <i>WZ</i> ₁₇₀	14.8	X	113.80239	268.42976	104.73636	17.57832	0.1578066	0.18073518	3.0981867	21	1 14.4	19.2
229004 2003 <i>WL</i> ₁₇₈	16.0	X	269.51963	133.74111	49.36724	6.00697	0.0833359	0.17586732	3.1550963	21	—	—
229005 2003 <i>WX</i> ₁₈₈	14.7	X	68.14505	120.84398	269.65580	21.77241	0.1557940	0.17934435	3.1141838	21	—	—
229006 2003 <i>WT</i> ₁₉₂	15.2	X	45.16820	3.61432	83.52589	17.21295	0.1136295	0.17811540	3.1284922	21	1 3.3	19.1
229007 2003 <i>XF</i> ₁₁	16.9	X	162.97756	173.94913	116.01279	8.62096	0.8471288	0.30262127	2.1972008	21	—	—
229008 2003 <i>XT</i> ₁₁	15.2	X	39.59765	229.41205	224.12007	17.12560	0.2412012	0.17604970	3.1529169	21	1 4.0	18.6
229009 2003 <i>XJ</i> ₂₂	14.7	X	44.75483	66.88696	351.49981	21.68355	0.2100142	0.17589341	3.1547842	21	—	—
229010 2003 <i>XJ</i> ₂₆	15.3	X	348.87590	44.63175	103.20324	9.97064	0.1111841	0.17602795	3.1531765	21	—	—
229011 2003 <i>YF</i>	16.6	X	163.62729	232.25899	126.68667	24.78331	0.0937948	0.35325865	1.9818655	21	1 11.9	18.9
229012 2003 <i>YD</i> ₁₄	15.2	X	37.63165	32.40588	65.33135	15.86775	0.2545127	0.17457593	3.1706366	21	1 10.9	18.4
229013 2003 <i>YR</i> ₂₃	15.3	X	95.43021	92.08256	281.49420	18.49125	0.2148780	0.17679833	3.1440102	21	1 1.1	19.4
229014 2003 <i>YU</i> ₂₇	14.5	X	344.23569	206.62989	264.43546	25.05946	0.1000778	0.17298515	3.1900452	21	—	—
229015 2003 <i>YV</i> ₄₅	14.9	X	64.38097	126.59226	282.00590	16.11950	0.3161012	0.17736729	3.1372830	21	1 9.5	17.9
229016 2003 <i>YW</i> ₄₉	15.2	X	319.82106	104.44254	50.12491	0.81154	0.1326599	0.17102489	3.2143747	21	—	—
229017 2003 <i>YS</i> ₆₁	15.2	X	23.45404	326.33084	116.69571	6.29700	0.1435963	0.17188172	3.2036834	21	—	—
229018 2003 <i>YT</i> ₆₁	14.7	X	330.46777	268.15284	259.21629	14.22303	0.1933061	0.17251740	3.1958087	21	—	—
229019 2003 <i>YD</i> ₆₅	14.6	X	353.77194	109.91454	117.04781	17.10471	0.1890474	0.18112384	3.0937530	21	4 11.8	18.4
229020 2003 <i>YU</i> ₆₈	17.0	X	299.38768	144.56013	204.06159	1.83558	0.1694812	0.31165420	2.1545375	21	6 13.2	19.2
229021 2003 <i>YG</i> ₉₂	14.7	X	38.79882	304.77143	97.35261	20.29926	0.2058125	0.17236977	3.1976333	21	—	—
229022 2003 <i>YO</i> ₁₀₀	15.1	X	77.70329	117.62666	316.71786	13.49639	0.2154805	0.17652515	3.1472530	21	2 17.9	19.0
229023 2003 <i>YT</i> ₁₆₀	14.8	X	357.07488	85.66942	89.38375	25.93113	0.2640272	0.17869590	3.1217131	21	1 21.5	18.4
229024 2003 <i>YT</i> ₁₆₄	15.7	X	43.98895	341.29268	77.74256	1.43277	0.1775933	0.17424154	3.1746918	21	—	—
229025 2004 <i>BJ</i> ₁₃	17.4	X	175.22067	197.00521	288.41750	2.34328	0.0552636	0.30972046	2.1634961	21	7 31.6	20.1
229026 2004 <i>BS</i> ₃₂	17.8	X	154.37018	151.77456	338.47425	3.74815	0.0333829	0.30743638	2.1741986	21	7 10.6	20.3
229027 2004 <i>BK</i> ₄₆	15.3	X	100.76312	311.96217	144.13780	6.71400	0.1029156	0.18138636	3.0907672	21	4 3.7	19.7
229028 2004 <i>CZ</i> ₃	16.9	X	272.17572	27.91891	350.29456	4.62154	0.1410904	0.30994110	2.1624692	21	6 22.0	19.5
229029 2004 <i>CS</i> ₄₅	16.4	X	300.84446	256.82597	357.62911	6.07895	0.1554066	0.28901469	2.2656323	21	2 6.1	19.3
229030 2004 <i>CQ</i> ₅₈	15.1	X	79.14491	129.12559	339.56928	9.90390	0.0924794	0.17878817	3.1206390	21	3 16.9	19.4
229031 2004 <i>DE</i> ₃₃	16.4	X	252.48956	258.72222	355.96317	7.57693	0.1179044	0.27901052	2.3194712	21	—	—
229032 2004 <i>DN</i> ₃₄	15.5	X	92.31324	312.80183	122.36174	6.02004	0.1802003	0.17651667	3.1473538	21	3 9.7	19.8
229033 2004												

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Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>
229041 2004 EJ ₉₄	17.0	X	162.65789	55.57835	70.47300	3.75458	0.0678374	0.30366966	2.1921408	21	7 17.1	19.7
229042 2004 EQ ₉₈	16.5	X	152.83996	193.43891	163.80917	10.58325	0.2317218	0.28132916	2.3067094	21	1 26.7	19.9
229043 2004 EG ₁₀₂	17.6	X	235.83326	240.87196	59.11935	1.66585	0.0941339	0.28353108	2.2947512	21	1 30.1	20.8
229044 2004 FX ₈	16.3	X	215.54161	264.29467	69.27793	6.93034	0.1503296	0.28327277	2.2961460	21	2 23.7	19.9
229045 2004 FM ₁₁	17.1	X	40.67758	243.93166	301.41130	6.28202	0.0975197	0.29241235	2.2480480	21	4 12.6	19.4
229046 2004 FB ₂₃	16.8	X	120.24563	270.61189	3.65326	6.13301	0.1082780	0.26023711	2.4297219	21	12 10.9	20.6
229047 2004 FP ₂₈	17.2	X	243.18141	137.96524	101.43158	2.38492	0.1482805	0.27198154	2.3592634	21	—	—
229048 2004 FE ₃₄	17.2	X	62.93628	314.66336	244.60745	3.45955	0.1384686	0.29696588	2.2250085	21	6 25.9	19.2
229049 2004 FH ₃₆	17.2	X	302.87946	184.24899	79.09404	3.35560	0.1456389	0.28535597	2.2849572	21	2 22.1	20.1
229050 2004 FK ₅₇	14.7	X	136.95171	123.90807	349.72920	7.71661	0.1051856	0.12693930	3.9210765	21	6 4.5	20.7
229051 2004 FR ₆₀	17.2	X	306.37332	152.33811	126.73523	7.38948	0.1940116	0.28471008	2.2884117	21	3 13.9	20.1
229052 2004 FH ₆₄	17.0	X	305.36518	206.13718	48.50441	5.11064	0.1337270	0.28407287	2.2918325	21	2 16.3	19.9
229053 2004 FS ₆₇	16.3	X	257.47843	74.26929	157.27325	7.92644	0.0926507	0.27359153	2.3499987	21	—	—
229054 2004 FT ₈₅	17.1	X	186.57635	337.36885	108.61434	7.42786	0.0449797	0.30275531	2.1965523	21	6 19.2	19.8
229055 2004 FD ₁₁₂	17.4	X	19.78725	117.56922	118.17710	0.47016	0.1225547	0.29477680	2.2360106	21	5 28.4	19.0
229056 2004 FC ₁₂₆	17.5	X	303.10393	252.00843	12.34600	3.28748	0.1013964	0.28633993	2.2797197	21	3 1.5	20.2
229057 2004 FB ₁₃₇	16.6	X	239.31603	207.96832	69.17387	10.58072	0.2007691	0.27480935	2.3430509	21	1 4.1	20.6
229058 2004 FR ₁₄₂	17.3	X	6.87346	173.26841	40.50701	2.72298	0.1844997	0.28768157	2.2726263	21	3 21.0	18.8
229059 2004 FA ₁₆₅	17.9	X	203.52017	33.82250	331.40035	0.49730	0.1713370	0.29209727	2.2496643	21	3 20.3	21.3
229060 2004 GM ₄	17.6	X	30.56017	162.55106	39.59624	3.40351	0.1004778	0.29099393	2.2553473	21	4 24.5	19.6
229061 2004 GJ ₁₂	16.8	X	281.67293	11.34565	255.22256	4.96878	0.1394929	0.28149279	2.3058154	21	1 30.9	20.1
229062 2004 GB ₂₄	17.0	X	267.69725	162.00784	99.76521	5.41930	0.1205104	0.27802308	2.3249600	21	1 14.2	20.4
229063 2004 GP ₃₁	17.0	X	225.58270	201.83844	52.81686	3.05641	0.1835037	0.26965768	2.3727985	21	—	—
229064 2004 GJ ₃₃	16.8	X	321.91028	12.19304	215.02259	5.02461	0.1210676	0.28192218	2.3034735	21	1 29.8	19.6
229065 2004 GK ₄₆	17.5	X	197.33182	177.63230	98.53803	1.56888	0.1093513	0.26973442	2.3723484	21	—	—
229066 2004 GM ₄₆	16.7	X	161.51485	318.17407	45.47358	4.63438	0.1255468	0.27885280	2.3203458	21	2 5.3	19.9
229067 2004 GZ ₅₉	17.3	X	13.78272	36.26064	164.38632	3.35327	0.1014770	0.28704014	2.2760107	21	3 21.4	19.3
229068 2004 GD ₇₁	17.3	X	146.13123	220.10865	70.79230	5.41019	0.1858914	0.26180779	2.4199943	21	—	—
229069 2004 GK ₇₉	17.3	X	339.46258	242.11028	59.48726	2.46684	0.0735149	0.29915497	2.2141408	21	6 26.7	19.2
229070 2004 HJ ₈	17.1	X	53.49331	109.83814	72.70539	5.34312	0.0889379	0.29143058	2.2530939	21	5 6.9	19.2
229071 2004 HS ₃₄	16.4	X	241.00515	196.43362	76.24735	8.13643	0.0965595	0.27641032	2.3339948	21	1 1.5	19.8
229072 2004 HO ₃₆	16.7	X	11.49406	87.49814	106.64097	6.52273	0.0435791	0.28536724	2.2848971	21	3 14.9	19.3
229073 2004 HO ₅₇	17.3	X	93.27939	24.36310	76.62275	2.58712	0.1725066	0.28444028	2.2898585	21	3 26.9	19.8
229074 2004 JL ₆	16.9	X	283.85540	343.83919	252.02843	4.61551	0.1890111	0.27539305	2.3397389	21	—	—
229075 2004 JX ₁₈	17.0	X	328.96039	333.85258	240.79241	4.40530	0.0919995	0.28016376	2.3131018	21	1 27.7	19.7
229076 2004 JO ₅₀	16.6	X	158.80097	325.84190	50.51915	7.52881	0.1341511	0.27881715	2.3205436	21	2 21.6	19.9
229077 2004 LA ₁₃	17.2	X	291.02475	157.63046	93.60018	8.69567	0.1461745	0.27967668	2.3157867	21	1 23.6	20.5
229078 2004 LY ₁₅	15.5	X	21.77156	200.46032	114.50427	15.19414	0.2199622	0.23859053	2.5745456	21	10 25.3	18.7
229079 2004 LH ₁₇	16.6	X	296.33342	325.15000	271.54808	5.09551	0.1067045	0.27599786	2.3363196	21	1 14.7	19.8
229080 2004 LS ₁₉	16.5	X	111.39132	325.98512	55.65327	7.77955	0.1073869	0.26991144	2.3713110	21	—	—
229081 2004 MV ₅	16.8	X	12.70543	298.77665	294.75190	4.80211	0.1188204	0.28464744	2.2887474	21	5 8.2	18.8
229082 2004 NR ₆	15.8	X	267.95631	229.16018	127.07242	10.38917	0.2159520	0.22085960	2.7105569	21	5 14.4	20.1
229083 2004 NE ₁₁	15.9	X	303.69931	247.71474	89.71085	8.32903	0.2941812	0.22581135	2.6707847	21	5 18.8	19.3
229084 2004 NL ₁₁	16.2	X	6.18419	248.96467	100.52242	9.70652	0.1838304	0.23866793	2.5739889	21	11 5.6	18.9
229085 2004 NC ₁₃	17.1	X	16.63255	308.78819	259.35390	5.39974	0.2562805	0.28369098	2.2938888	21	3 25.8	18.4
229086 2004 NG ₁₄	17.2	X	353.23604	80.14376	246.54659	2.94463	0.2415641	0.23417990	2.6067716	21	8 29.4	19.1
229087 2004 NS ₁₆	16.5	X	79.65266	70.10381	240.90027	3.04561	0.1023869	0.24734805	2.5134122	21	12 12.0	19.8
229088 2004 NM ₃₁	16.4	X	238.66634	197.30965	101.91259	11.87572	0.2064041	0.26976047	2.3721957	21	1 31.8	20.4
229089 2004 OG ₈	16.1	X	187.98820	24.14785	295.96595	11.30426	0.1004517	0.26529930	2.3987150	21	1 8.3	19.4
229090 2004 PQ ₁₀	16.7	X	11.82037	57.22374	298.25073	11.33515	0.2137105	0.23972785	2.5663963	21	11 22.9	19.6
229091 2004 PV ₃₆	16.4	X	343.09567	239.04411	275.45570	5.25203	0.0675884	0.26171144	2.4205882	21	—	—
229092 2004 PL ₉₅	16.5	X	335.82908	52.82110	254.57235	6.56457	0.2346756	0.22798337	2.6537944	21	6 11.4	18.9
229093 2004 PV ₁₁₂	15.8	X	264.06781	1.03269	118.87023	15.48613	0.0457364	0.24226727	2.5484311	21	11 19.1	19.4
229094 2004 QT ₄	16.3	X	274.91668	283.52813	101.07729	4.55976	0.2438508	0.22253904	2.6969025	21	6 20.6	20.2
229095 2004 QC ₇	16.0	X	230.21178	252.37412	127.11235	18.31456	0.2200322	0.21778128	2.7360394	21	5 11.4	20.9
229096 2004 QQ ₇	16.8	X	36.33406	291.97350	346.49574	2.52768	0.1016708	0.23057827	2.6338465	21	8 31.3	19.9
229097 2004 QC ₉	15.5	X	229.86970	329.57213	17.10434	6.56347	0.3353849	0.21055004	2.7983316	21	3 23.2	20.7
229098 2004 QO ₁₈	16.4	X	286.97767	264.82549	66.20436	13.38741	0.2803317	0.22341456	2.6898521	21	4 25.1	20.5
229099 2004 RM ₁₃	16.6	X	260.24243	190.44603	170.34806	5.01900	0.1258992	0.21979775	2.7192797	21	5 20.2	20.5
229100 2004 RC ₂₆	15.9	X	315.02527	268.86960	101.38834	12.58587	0.2257144	0.22939885	2.6428665	21	8 7.1	18.5
229101 2004 RU ₂₈	16.4	X	245.62332	54.62137	353.67152	6.60110	0.2490758	0.22269028	2.6956813	21	6 20.5	20.9
229102 2004 RV ₃₁	16.6	X	359.76467	198.92747	112.72684	4.06038	0.183370	0.23039196	2.6352662	21	8 17.9	19.3
229103 2004 RC ₃₂	16.1	X	299.97131	215.40901	154.15547	5.31938	0.0721535	0.22837983	2.6507222	21	7 31.2	19.4
229104 2004 RW ₃₃	16.6	X	43.64376	242.85281	49.38789	4.52236	0.1688386	0.23519937	2.5992334	21	10 12.9	19.8
229105 2004 RP ₃₉	16.4	X	231.06373	0.16563	25.74688	2.48967	0.3098162	0.21735039	2.7396543	21	5 8.1	21.2
229106 2004 RJ ₄₀	16.5	X	221.01114	298.23601	185.62035	7.20940	0.1527282	0.23178030	2.6247325	21	9 9.1	20.5
229107 2004 RZ ₄₉	16.5	X	239.45957	204.25217	166.35170	3.78409	0.2086414	0.21736673	2.7395170	21	5 3.6	21.0
229108 2004 RA ₅₁	16.4	X	3.40718	171.41513	125.52419	3.48477	0.2492958	0.22960593	2.6412772	21	8 9.5	18.2
229109 2004 RQ ₅₆	17.1	X	7.30741	100.45056	216.13664	3.10292	0.1328774	0.23174341	2.6250110	21	9 7.3	19.8
229110 2004 RG ₆₄	16.5	X	246.54562	37.31683	333.55885	2.64293	0.2105792	0.21810461	2.7333348	21	5 8.0	20.8
229111 2004 RR ₇₄	16.5	X	276.00814	296.60858	104.52586	3.68838	0.1811844	0.22536812	2.6742852	21	7 23.7	20.1
229112 2004 RV ₇₅	16.4	X	236.03774	338.94088	20.59644	7.84412	0.1579012	0.21429651	2.7656209	21	4 18.7	20.7
229113 2004 RN ₈₂	17.2	X	254.16208	153.08441	262.19732	0.75346	0.2414383	0.22376708	2.6870263	21	7 8.3	21.2
229114 2004 RE ₈₉	1											

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Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>
229121 2004 RQ ₁₃₆	15.6	X	280.12333	108.72003	239.61011	7.96170	0.2477956	0.22118777	2.7078752	21	5 9.3	19.5
229122 2004 RM ₁₃₈	15.7	X	247.87259	259.10703	225.45692	14.04614	0.0585779	0.23890112	2.5723137	21	10 25.3	19.0
229123 2004 RC ₁₃₉	15.8	X	256.97617	71.53680	270.52316	10.67205	0.1484213	0.21711626	2.7416235	21	4 14.9	20.3
229124 2004 RV ₁₅₇	16.5	X	186.64239	0.93494	275.85737	5.33353	0.0944199	0.25408043	2.4688152	21	—	—
229125 2004 RE ₁₆₂	16.8	X	18.70611	50.69867	303.37534	10.17916	0.1922836	0.23762429	2.5815200	21	11 29.4	19.9
229126 2004 RP ₁₇₆	15.3	X	252.09298	151.44848	232.16440	8.22239	0.1925970	0.22108585	2.7087074	21	6 1.2	19.5
229127 2004 RD ₁₇₈	16.1	X	252.07967	165.39162	226.05404	6.29689	0.0552001	0.22334308	2.6904260	21	6 27.4	19.8
229128 2004 RG ₁₇₈	15.8	X	252.72796	148.45789	298.99797	9.79108	0.1347594	0.22940497	2.6428195	21	8 28.2	19.6
229129 2004 RR ₁₈₇	16.5	X	1.64341	99.53730	264.00170	7.29361	0.1000358	0.23517723	2.5993965	21	10 31.3	19.6
229130 2004 RR ₁₉₁	15.2	X	248.41468	115.80019	240.14329	6.51686	0.2375664	0.21548759	2.7554204	21	4 19.0	19.8
229131 2004 RC ₂₀₆	16.2	X	269.64266	73.96705	298.29827	7.99492	0.2741861	0.21987491	2.7186435	21	5 25.0	20.6
229132 2004 RH ₂₁₈	15.9	X	348.10560	60.85737	275.36811	10.16106	0.1993856	0.22869495	2.6482867	21	8 25.5	18.4
229133 2004 RQ ₂₁₈	16.1	X	34.16657	35.08734	297.68897	11.46808	0.1837859	0.23561297	2.5961907	21	11 21.4	19.6
229134 2004 RU ₂₁₈	15.9	X	273.28245	101.23684	301.11584	13.17817	0.1289886	0.22347650	2.6893551	21	7 28.9	19.4
229135 2004 RO ₂₁₉	15.5	X	243.06666	65.84772	288.41198	11.50926	0.1183358	0.21373885	2.7704293	21	4 17.7	19.9
229136 2004 RM ₂₂₇	16.8	X	198.20828	120.08451	310.90198	3.26129	0.1066932	0.21581010	2.7526746	21	6 12.9	21.1
229137 2004 RK ₂₆₉	17.1	X	13.56702	34.45753	272.71919	1.08453	0.0665678	0.23162917	2.6258740	21	9 13.6	20.1
229138 2004 RF ₂₈₉	15.6	X	303.70132	157.69935	275.65498	21.22263	0.0722819	0.23583026	2.5945957	21	10 29.2	19.2
229139 2004 RF ₂₉₂	16.1	X	77.58118	125.99624	311.82338	8.41965	0.1820459	0.19771731	2.9181409	21	2 13.7	19.7
229140 2004 RQ ₂₉₂	16.3	X	276.59464	226.32949	89.89566	6.31206	0.2317093	0.21499773	2.7596042	21	4 1.6	20.6
229141 2004 RD ₂₉₉	17.0	X	339.88433	338.64086	23.84296	1.15039	0.1001458	0.23191973	2.6236803	21	9 24.2	19.6
229142 2004 RH ₃₁₁	15.8	X	225.74113	336.42320	45.48454	6.55595	0.1319354	0.21345326	2.7728999	21	5 8.7	20.0
229143 2004 RO ₃₁₅	15.9	X	275.70623	262.84698	87.20653	11.87185	0.2225638	0.22165880	2.7040376	21	5 13.5	20.0
229144 2004 RF ₃₁₈	16.1	X	69.25269	24.82525	312.45397	7.65080	0.1810092	0.24105760	2.5569496	21	—	—
229145 2004 RD ₃₂₆	15.4	X	217.59447	125.88982	269.88303	12.45832	0.1684439	0.21134160	2.7913399	21	5 15.0	20.1
229146 2004 SV ₁	16.1	X	185.50898	171.41721	276.33130	12.08903	0.1468031	0.21763217	2.7372890	21	6 21.2	20.5
229147 2004 SD ₁₃	16.1	X	321.47685	309.25037	46.88073	5.02448	0.0748873	0.22840516	2.6505262	21	8 18.0	19.3
229148 2004 SP ₁₇	16.1	X	106.88439	200.36264	96.79193	9.35301	0.2311564	0.24539761	2.5267125	21	12 29.8	20.4
229149 2004 SN ₂₃	16.7	X	266.02372	140.97352	195.99128	3.69834	0.0980391	0.21409675	2.7673410	21	4 29.3	20.5
229150 2004 ST ₃₁	16.7	X	240.16042	57.40569	323.34710	2.70159	0.1147454	0.21763762	2.7372433	21	5 22.9	20.8
229151 2004 SY ₃₇	15.9	X	250.95595	269.10944	105.43345	4.93008	0.0907956	0.21651611	2.7466875	21	5 31.2	19.8
229152 2004 SY ₄₀	15.5	X	81.97237	355.10414	22.17673	10.50817	0.1122444	0.18965046	3.0003146	21	—	—
229153 2004 SZ ₄₃	15.8	X	230.68269	172.29643	250.30418	3.93527	0.1526028	0.21986461	2.7187284	21	7 2.6	20.0
229154 2004 SG ₄₉	15.7	X	223.99388	240.20818	133.23379	15.87209	0.1131167	0.21369603	2.7707993	21	5 3.7	20.3
229155 2004 SP ₅₄	15.9	X	222.46695	285.84540	88.41567	5.82947	0.1729758	0.21207285	2.7849197	21	4 26.4	20.4
229156 2004 TU	16.0	X	176.00168	60.32496	7.77841	3.25680	0.0764805	0.21302932	2.7765775	21	5 15.7	20.2
229157 2004 TC ₂	16.0	X	263.95597	328.84748	3.69829	5.98254	0.0709195	0.21423155	2.7654055	21	4 22.4	20.0
229158 2004 TF ₄	16.6	X	296.15124	272.58816	53.12585	1.57479	0.0984692	0.21780651	2.7358281	21	5 22.3	20.2
229159 2004 TW ₁₄	16.0	X	275.88364	61.75853	248.11623	7.84537	0.2379723	0.21300158	2.7768186	21	3 16.7	20.6
229160 2004 TW ₄₂	16.6	X	186.75874	333.51796	250.28004	2.78192	0.1200460	0.23969265	2.5666475	21	12 12.4	20.2
229161 2004 TL ₅₂	15.9	X	60.74056	89.65423	289.47236	0.77980	0.1025051	0.18419481	3.0592698	21	—	—
229162 2004 TU ₆₅	16.0	X	298.48919	310.47688	34.62132	6.76891	0.0961909	0.22142783	2.7059176	21	6 21.4	19.5
229163 2004 TC ₆₇	16.1	X	317.39461	237.97299	94.75447	6.16578	0.2700611	0.22341740	2.6898293	21	6 6.1	18.8
229164 2004 TA ₇₅	15.9	X	237.31451	0.38903	29.91309	3.44698	0.1465179	0.21526393	2.7573286	21	5 29.5	20.1
229165 2004 TK ₇₅	16.1	X	333.30093	152.89922	206.58196	3.53967	0.1293073	0.22664537	2.6642286	21	9 4.5	18.8
229166 2004 TP ₉₆	16.5	X	201.74222	294.25186	119.90808	0.62920	0.0656195	0.21423269	2.7661701	21	5 27.5	20.4
229167 2004 TM ₉₇	16.5	X	31.88733	213.11480	38.91955	3.92660	0.0390823	0.21956224	2.7212239	21	7 10.5	20.0
229168 2004 TP ₁₂₉	16.5	X	206.23423	344.64628	75.47166	4.55292	0.1842517	0.21689207	2.7435125	21	6 4.7	21.1
229169 2004 TR ₁₃₀	15.5	X	10.87178	224.29934	52.10193	13.33133	0.1038398	0.22244406	2.6976701	21	7 17.3	18.8
229170 2004 TR ₁₃₆	16.0	X	227.77345	140.46781	294.04028	5.12652	0.1200413	0.22068872	2.7119559	21	7 18.2	19.9
229171 2004 TW ₁₃₆	15.6	X	196.65890	128.10814	259.18302	4.70361	0.0823544	0.20914907	2.8108139	21	4 15.9	20.0
229172 2004 TR ₁₃₈	15.9	X	310.00450	72.45413	258.87964	8.20514	0.0580246	0.22109814	2.7086069	21	6 25.1	19.2
229173 2004 TA ₁₅₁	16.2	X	182.29060	291.44668	170.02726	3.48488	0.1616683	0.21785938	2.7353855	21	7 4.9	20.8
229174 2004 TA ₁₅₅	16.7	X	212.07805	43.84675	351.94094	2.43195	0.0791261	0.21383342	2.7696124	21	5 14.1	20.9
229175 2004 TV ₁₅₇	16.3	X	204.89122	124.64979	274.49837	3.27112	0.0782259	0.21097814	2.7945448	21	5 10.6	20.5
229176 2004 TW ₁₅₇	15.9	X	10.74294	7.63692	265.12699	3.92148	0.1251261	0.21904471	2.7255085	21	7 10.2	18.8
229177 2004 TF ₁₅₈	16.7	X	170.37110	145.28512	287.96388	2.40911	0.0790388	0.21009077	2.8024082	21	5 16.6	20.8
229178 2004 TD ₁₆₀	16.5	X	330.09597	36.33454	246.21040	3.35210	0.0324740	0.21263403	2.7800176	21	5 21.9	20.1
229179 2004 TD ₁₆₆	16.4	X	296.13497	136.98187	210.10889	4.45664	0.0217513	0.22153926	2.7050103	21	7 1.8	20.0
229180 2004 TU ₁₇₇	17.0	X	322.40756	32.46023	307.45183	1.17263	0.1065009	0.22539192	2.6740969	21	7 21.2	20.0
229181 2004 TX ₁₇₈	16.7	X	48.34208	224.88274	47.45908	1.03577	0.0603384	0.22860387	2.6489901	21	9 3.9	19.9
229182 2004 TK ₁₈₇	16.2	X	118.59540	280.92561	205.51302	3.81247	0.1549400	0.21127222	2.7919510	21	6 4.8	20.4
229183 2004 TH ₁₈₈	16.7	X	312.31749	72.46723	204.81182	3.51701	0.0182790	0.21172483	2.7879706	21	4 22.5	20.4
229184 2004 TV ₁₉₆	16.5	X	314.11624	67.38866	205.65416	3.79653	0.0183426	0.20973349	2.8055900	21	4 19.4	20.2
229185 2004 TH ₂₁₀	15.9	X	251.81557	33.78383	338.71208	4.70115	0.1263176	0.21672698	2.7449055	21	5 23.4	20.1
229186 2004 TO ₂₁₉	16.3	X	238.91488	178.10602	203.69634	8.43658	0.0359661	0.21555531	2.7548433	21	6 1.5	20.2
229187 2004 TP ₂₁₉	16.9	X	218.85223	53.36630	4.45320	1.48903	0.0768321	0.21733486	2.7397848	21	6 20.0	20.9
229188 2004 TF ₂₂₁	16.0	X	209.12691	28.58959	71.80740	10.83536	0.2216647	0.22041906	2.7141674	21	7 27.7	20.7
229189 2004 TH ₂₂₂	15.6	X	250.43938	291.79277	80.71678	14.18923	0.2474926	0.21666275	2.7454479	21	5 14.6	20.2
229190 2004 TN ₂₂₅	16.8	X	101.27077	201.26314	51.31043	1.43156	0.1526722	0.23493871	2.6011556	21	10 26.4	20.7
229191 2004 TD ₂₄₁	15.8	X	145.64520	161.35205	252.93331	7.19711	0.2075889	0.20404225	2.8575203	21	4 5.2	20.6
229192 2004 TN ₂₅₆	16.2	X	128.25127	129.65015	356.42205	3.78197	0.0501600	0.21322793	2.7748531	21	6 2.1	20.2
229193 2004 TE ₂₇₆	16.3	X	129.75059	184.67442	52.39340	3.84721	0.0658777	0.				

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Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>
229201 2004 UA ₁₀	17.1	X	30.79892	292.83400	230.21497	18.70152	0.1038689	0.37716527	1.8972079	21	1 19.3	19.0
229202 2004 VR ₆	15.5	X	316.32574	230.74281	215.72046	10.55061	0.0509415	0.17579758	3.1559307	21	11 29.7	19.8
229203 2004 VA ₈	16.5	X	206.94547	270.32524	121.26903	2.05365	0.0907467	0.20966666	2.8061860	21	5 4.6	20.8
229204 2004 VJ ₁₄	16.1	X	287.56015	288.52297	82.24807	3.45524	0.2064775	0.22021691	2.7158280	21	6 23.6	19.8
229205 2004 VN ₂₄	15.9	X	21.43748	121.52712	314.86865	5.00552	0.1804182	0.18452896	3.0555756	21	—	—
229206 2004 VE ₂₅	15.7	X	170.37540	137.07759	270.82939	4.86215	0.0610594	0.20543377	2.8446018	21	4 12.3	20.0
229207 2004 VW ₂₉	16.1	X	11.83611	196.71412	61.27853	11.37584	0.1491215	0.21516142	2.7582044	21	6 20.9	19.0
229208 2004 VA ₃₅	16.5	X	186.08819	268.77787	119.71144	3.06622	0.0758151	0.20553896	2.8436313	21	4 9.6	20.7
229209 2004 VL ₄₈	15.8	X	190.68815	270.46478	82.50150	10.79635	0.1536351	0.20076948	2.8884903	21	3 8.2	20.7
229210 2004 VJ ₅₂	15.5	X	102.06159	60.54001	90.16321	8.22191	0.0702865	0.20879991	2.8139465	21	6 5.7	19.3
229211 2004 VS ₅₄	15.4	X	65.01002	265.02289	134.80039	21.74917	0.2234523	0.18731070	3.0252481	21	—	—
229212 2004 VJ ₅₉	15.5	X	86.15836	65.33996	296.54792	3.75449	0.1735567	0.18539473	3.0460554	21	—	—
229213 2004 VF ₆₅	15.9	X	352.14590	237.91919	96.04712	5.22247	0.0928241	0.22266800	2.6958611	21	9 5.9	19.0
229214 2004 VG ₆₇	16.7	X	305.34185	20.42196	254.59766	0.97900	0.0318170	0.20569977	2.8421491	21	4 8.4	20.4
229215 2004 VN ₆₉	15.5	X	2.17473	49.91428	70.87008	11.24199	0.0272733	0.18693032	3.0293506	21	—	—
229216 2004 VK ₇₂	15.5	X	290.08438	247.85873	77.30005	6.00827	0.1250268	0.21250301	2.7811602	21	5 10.8	19.2
229217 2004 VJ ₇₃	15.8	X	72.91408	210.90009	123.06103	15.94760	0.2997298	0.24063272	2.5599585	21	—	—
229218 2004 VW ₇₇	15.8	X	141.85853	345.63623	108.75712	3.20901	0.1442451	0.20608862	2.8385728	21	5 19.1	20.1
229219 2004 VW ₈₃	16.6	X	340.56916	271.72627	64.98335	4.62484	0.1169847	0.22305344	2.6927545	21	8 19.6	19.5
229220 2004 VA ₈₄	16.5	X	109.70069	29.09007	69.99412	3.05973	0.0260159	0.20329492	2.8645189	21	4 4.0	20.5
229221 2004 WW ₂	16.4	X	239.96390	298.90770	120.68675	3.88456	0.1158261	0.21840330	2.7308421	21	7 12.7	20.4
229222 2004 XX ₃	15.8	X	226.88536	320.42446	73.58707	5.42845	0.0767691	0.21153470	2.7896409	21	5 29.6	19.8
229223 2004 XB ₅	15.2	X	83.06929	241.11886	261.22824	12.25433	0.0422577	0.20314033	2.8659720	21	4 22.7	19.3
229224 2004 XD ₉	15.0	X	23.65183	5.85164	64.98822	19.36645	0.0315369	0.18219677	3.0815952	21	—	—
229225 2004 XU ₁₆	16.3	X	113.34894	189.49860	281.29283	8.80839	0.0810149	0.20383569	2.8594504	21	4 26.9	20.4
229226 2004 XT ₁₇	15.9	X	304.07742	84.23276	276.66592	5.19353	0.0359871	0.21725409	2.7404638	21	7 29.4	19.5
229227 2004 XE ₁₈	15.2	X	65.26373	96.08181	79.64828	14.12746	0.0527121	0.20580794	2.8411531	21	5 19.5	19.0
229228 2004 XC ₂₇	15.9	X	172.49279	10.56104	97.45155	3.91658	0.0193236	0.21166606	2.7884867	21	7 1.8	19.8
229229 2004 XT ₃₂	15.9	X	144.38813	82.10745	82.22975	6.87423	0.1744623	0.21287050	2.7779583	21	8 21.2	20.5
229230 2004 XU ₃₆	16.0	X	179.95139	288.46703	53.44780	2.32642	0.1335344	0.19472495	2.9479604	21	2 9.5	20.6
229231 2004 XS ₄₀	14.9	X	127.34431	282.06007	64.54766	13.45961	0.1896128	0.18786283	3.0193176	21	—	—
229232 2004 XV ₆₀	16.3	X	286.99353	169.43015	289.04272	2.98678	0.0716514	0.22603597	2.6690150	21	11 10.1	19.7
229233 2004 XV ₆₄	15.7	X	232.82673	108.81199	293.08860	8.17322	0.1666830	0.21347988	2.7726694	21	6 9.0	20.0
229234 2004 XN ₆₅	16.2	X	194.86194	2.94894	13.53902	1.87887	0.1073824	0.20364388	2.8612456	21	4 3.0	20.7
229235 2004 XU ₆₈	15.1	X	27.86912	8.53564	79.76193	9.26664	0.0666308	0.18552031	3.0446806	21	—	—
229236 2004 XM ₇₆	15.5	X	258.28444	239.69184	86.16899	16.00837	0.1551258	0.20435888	2.8545678	21	4 9.5	20.2
229237 2004 XG ₇₉	16.3	X	229.87691	37.38316	24.98445	2.10979	0.0630881	0.21449002	2.7639573	21	7 10.8	20.2
229238 2004 XY ₈₀	15.2	X	353.11972	208.96574	269.64989	15.01080	0.1543814	0.18089324	3.0963817	21	—	—
229239 2004 XY ₈₄	15.8	X	53.33204	118.69094	307.67870	4.01267	0.1532229	0.18448759	3.0560324	21	—	—
229240 2004 XZ ₉₈	15.9	X	21.69283	65.15877	62.03350	3.20790	0.1666361	0.18533428	3.0467177	21	1 13.2	19.3
229241 2004 XF ₁₁₄	16.6	X	244.07010	22.87669	12.13057	1.27018	0.1009566	0.21343322	2.7730734	21	6 17.0	20.5
229242 2004 XV ₁₁₉	16.4	X	118.29323	6.38795	109.98193	2.18137	0.1186156	0.20023529	2.8936254	21	5 18.9	20.5
229243 2004 XJ ₁₂₂	15.8	X	214.09198	297.16847	120.87862	5.81478	0.1122008	0.21295591	2.7772155	21	6 13.3	20.1
229244 2004 XA ₁₂₃	15.4	X	342.00643	76.22164	91.33444	10.88693	0.1021246	0.18810863	3.0166868	21	1 6.3	19.2
229245 2004 XK ₁₂₃	15.1	X	346.84331	82.37532	79.09909	11.98235	0.1661386	0.18598913	3.0395620	21	—	—
229246 2004 XQ ₁₂₆	15.8	X	26.66167	289.82257	239.53304	2.96783	0.1355446	0.19404249	2.9548685	21	3 15.6	19.2
229247 2004 XX ₁₃₁	15.8	X	97.14135	83.84777	24.12586	6.29415	0.1871992	0.19740812	2.9211871	21	4 21.7	19.9
229248 2004 XU ₁₃₅	15.2	X	61.90736	239.72596	288.52707	9.34601	0.1948459	0.19843332	2.9111169	21	5 21.9	18.8
229249 2004 XE ₁₅₇	15.3	X	126.15170	277.02357	76.30396	12.16278	0.1079112	0.18526591	3.0474672	21	—	—
229250 2004 XP ₁₇₀	15.1	X	158.08278	271.01545	96.40523	13.04276	0.1326497	0.19090212	2.9871856	21	2 22.2	19.9
229251 2004 XQ ₁₈₂	15.7	X	329.31486	52.22210	279.46380	10.90927	0.1864093	0.22193310	2.7018091	21	7 11.4	18.4
229252 2004 YW ₃	15.0	X	282.05991	49.27924	101.87332	9.16705	0.0545524	0.17276838	3.1927129	21	12 31.2	19.4
229253 2004 YK ₄	15.3	X	65.68950	329.57613	119.13128	20.52283	0.2561061	0.18868637	3.0105259	21	2 26.5	18.9
229254 2004 YL ₁₄	16.4	X	329.77266	57.31451	66.52752	1.35200	0.1969401	0.17576705	3.1562961	21	—	—
229255 Andrewelliott	16.4	X	206.02996	322.41905	100.01293	3.47121	0.0467994	0.20692763	2.8308948	21	6 13.3	20.5
229256 2005 AW ₂	15.4	X	46.06391	89.84951	108.81320	9.80630	0.0347034	0.19888580	2.9066999	21	5 21.6	19.4
229257 2005 AF ₁₃	16.0	X	152.60875	46.73780	93.28878	10.20861	0.1248092	0.21263971	2.7799680	21	7 25.7	20.3
229258 2005 AR ₁₃	15.2	X	231.09421	138.78767	77.61934	12.35421	0.0877943	0.17474461	3.1685959	21	—	—
229259 2005 AA ₁₄	15.7	X	223.25450	134.48010	317.24653	12.79188	0.1632804	0.21255940	2.7806682	21	8 1.5	20.1
229260 2005 AJ ₁₇	15.4	X	29.28452	77.34867	119.34662	17.88185	0.0523003	0.19680800	2.9271224	21	5 1.9	19.6
229261 2005 AW ₁₉	15.4	X	6.83412	7.54153	106.21363	7.15068	0.1372846	0.17994301	3.1072729	21	—	—
229262 2005 AT ₂₀	15.3	X	82.85075	159.16622	279.11317	8.26526	0.1318727	0.18810601	3.0167149	21	2 14.7	19.4
229263 2005 AN ₂₁	15.4	X	352.34552	18.77607	86.75084	6.39765	0.1093050	0.17636092	3.1492065	21	—	—
229264 2005 AR ₃₁	15.9	X	157.22546	278.13813	157.29394	2.33422	0.0515112	0.20007676	2.8951536	21	5 4.8	20.2
229265 2005 AT ₃₄	15.4	X	71.47569	105.86781	280.68071	8.43941	0.0846960	0.17818787	3.1276439	21	—	—
229266 2005 AC ₃₆	15.0	X	342.23620	359.70040	133.14194	12.31564	0.0532747	0.17829784	3.1263576	21	—	—
229267 2005 AM ₃₈	15.7	X	307.38894	339.01247	284.46551	9.48941	0.0440268	0.19411280	2.9541549	21	3 22.1	20.0
229268 2005 AF ₅₀	15.3	X	5.15621	251.06887	265.25731	8.35444	0.0487474	0.18667922	3.0320666	21	1 27.6	19.4
229269 2005 AJ ₅₅	15.2	X	353.60552	5.35176	118.24710	10.85867	0.0399147	0.18064560	3.0992108	21	—	—
229270 2005 AZ ₆₀	15.1	X	36.37847	322.61768	122.24531	12.14433	0.0762108	0.18004052	3.1061508	21	—	—
229271 2005 AH ₆₈	15.5	X	36.20594	191.89556	267.88591	6.96448	0.2433614	0.18281364	3.0746592	21	1 5.2	18.4
229272 2005 AK ₆₈	15.6	X	44.43408	48.65878	88.97218	6.82668	0.1826206	0.18748595	3.0233625	21	3 15.1	19.0
229273 2005 AQ ₆₈	14.5	X	332.83706	45.49221	142.74727	13.78368	0.2294034	0.17721432	3.1390881	21	1 3.6	18.8
229274 2005 AY ₇₆	15.6	X	96.06181	286.62598	101.16754	7.67818	0.1167920	0.18052868	3.1005488</			

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Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>
229281 2005 CE ₁	14.9 ^m	X	14.76140	149.39689	282.21394	17.73919	0.1202507	0.17403925	3.1771515	21	—	—
229282 2005 CT ₇	16.9	X	117.03232	164.94455	275.74492	18.38209	0.0920602	0.37131482	1.9170842	21	2 18.3	19.1
229283 2005 CX ₈	15.5	X	280.57341	143.46935	84.65037	6.24053	0.0872137	0.18096790	3.0955300	21	1 8.2	20.0
229284 2005 CJ ₉	15.5	X	336.81038	126.09834	99.02996	7.29634	0.0408023	0.18993349	2.9973331	21	3 22.5	19.6
229285 2005 CQ ₁₂	16.1	X	356.10083	203.03469	249.99987	2.74966	0.1137784	0.17433193	3.1735945	21	—	—
229286 2005 C _J ₃₅	15.7	X	166.16267	354.35938	9.96542	3.08604	0.1046633	0.18684091	3.0303170	21	2 21.9	20.4
229287 2005 CG ₃₆	15.9	X	349.17540	147.79977	41.40299	2.53900	0.1028093	0.18548875	3.0450260	21	2 14.0	19.8
229288 2005 CM ₃₈	16.5	X	159.85403	180.40998	265.71485	18.27101	0.0899169	0.37915737	1.8905567	21	5 10.3	18.9
229289 2005 CO ₅₇	15.0	X	311.94761	271.16239	283.24774	9.11116	0.0972985	0.17973118	3.1097139	21	1 2.8	19.4
229290 2005 CX ₆₀	16.0	X	7.14201	57.12660	125.52265	0.61441	0.0731480	0.18813358	3.0164202	21	3 5.2	19.9
229291 2005 CY ₆₃	15.9	X	25.18258	356.57953	106.40592	2.69823	0.1816170	0.17984016	3.1084575	21	—	—
229292 2005 CG ₆₉	16.3	X	22.16738	272.02742	196.24180	0.34909	0.0633214	0.18196790	3.0841786	21	—	—
229293 2005 CS ₇₉	15.9	X	313.40146	332.07415	255.16400	0.59070	0.1054990	0.18285023	3.0742490	21	2 11.0	20.1
229294 2005 EH ₂	17.1	X	159.31212	64.65257	358.70300	20.76984	0.1049244	0.37228603	1.9137486	21	4 3.2	19.4
229295 2005 EN ₂	15.6	X	41.62263	129.81779	307.10123	9.20824	0.2130340	0.17760423	3.1344921	21	—	—
229296 2005 EQ ₅	15.2	X	309.46913	69.93265	98.44292	2.92668	0.1252985	0.17157373	3.2075162	21	—	—
229297 2005 EZ ₆	16.0	X	12.70950	295.08416	133.80967	1.20992	0.0996776	0.16802074	3.2525760	21	—	—
229298 2005 EE ₂₀	16.2	X	7.92861	9.18168	143.76606	1.59711	0.1221249	0.18113571	3.0936178	21	1 25.9	20.0
229299 2005 EF ₃₀	15.6	X	45.06056	286.55542	141.74630	10.70488	0.2278426	0.17664576	3.1458202	21	—	—
229300 2005 EL ₄₁	15.1	X	288.27451	109.16004	112.69418	16.34334	0.0897009	0.17664213	3.1458634	21	1 9.6	19.6
229301 2005 ED ₄₂	16.3	X	318.80260	348.78675	164.12047	1.63802	0.1373519	0.17558844	3.1584362	21	—	—
229302 2005 EF ₄₉	15.8	X	38.66187	227.27992	263.86491	2.11420	0.1584096	0.18339185	3.0681932	21	2 17.9	19.2
229303 2005 EE ₈₀	15.1	X	53.10855	11.70747	133.25891	13.19953	0.1562236	0.18541752	3.0458057	21	4 8.6	18.9
229304 2005 EX ₉₃	16.8	X	103.38554	63.58898	42.05332	21.46384	0.1023234	0.36829667	1.9275435	21	4 3.4	18.8
229305 2005 EN ₉₅	15.8	X	74.19528	312.09564	114.41450	7.87179	0.2356929	0.18421430	3.0509541	21	2 7.0	19.3
229306 2005 EQ ₁₀₀	15.0	X	69.97768	338.56612	88.25196	7.99369	0.0523460	0.17527534	3.1621964	21	1 10.6	19.2
229307 2005 EH ₁₅₃	17.3	X	41.08918	27.79166	35.66119	21.36667	0.1002853	0.35456071	1.9770105	21	—	—
229308 2005 EN ₁₅₈	15.8	X	32.09840	51.44354	10.73154	0.62074	0.1245485	0.16951774	3.2333988	21	—	—
229309 2005 EF ₁₉₆	16.7	X	305.75205	138.36609	195.00719	5.66516	0.1220075	0.25677707	2.4514999	21	6 11.3	19.6
229310 2005 EL ₂₇₆	14.7	X	43.44434	332.53995	122.32761	17.30210	0.2032870	0.17538061	3.1609309	21	1 10.8	18.6
229311 2005 EG ₂₈₁	15.5	X	334.53142	38.92638	114.35364	6.48678	0.0858701	0.17303404	3.1894443	21	—	—
229312 2005 GQ ₃₅	15.2	X	8.90321	77.18544	87.04590	11.07390	0.0507470	0.18100497	3.0951073	21	2 18.6	19.4
229313 2005 GQ ₆₄	15.5	X	45.96411	34.58975	90.19881	15.28697	0.1830917	0.18248220	3.0783811	21	3 5.1	19.2
229314 2005 GW ₉₄	18.2	X	22.33777	187.78056	91.84547	1.81881	0.1371804	0.31731398	2.1288411	21	8 21.9	19.8
229315 2005 GQ ₁₂₃	16.6	X	81.96023	67.94793	120.30053	23.99359	0.0848210	0.37835591	1.8932256	21	7 1.7	18.4
229316 2005 JB ₆₉	15.2	X	342.45418	85.96273	94.08673	25.47985	0.2997826	0.17452087	3.1713035	21	—	—
229317 2005 MJ ₁₂	17.1	X	61.75827	232.90552	85.86462	3.91949	0.1387768	0.32151104	2.1102737	21	12 19.6	19.8
229318 2005 MH ₁₅	17.3	X	193.83466	74.25617	262.62709	3.68881	0.1420256	0.28390527	2.2927344	21	2 2.3	20.8
229319 2005 ML ₁₇	17.3	X	143.43703	91.68198	295.20048	3.96930	0.1827144	0.28219360	2.3019962	21	2 18.3	20.4
229320 2005 MZ ₃₁	17.0	X	235.45695	213.82057	77.99067	3.39866	0.1660341	0.28598931	2.2215826	21	1 17.7	20.4
229321 2005 NL ₂	16.8	X	302.00227	33.77494	268.11722	7.71481	0.1922948	0.29694203	2.2251277	21	3 31.5	19.7
229322 2005 NV ₁₁	17.7	X	236.56358	306.63384	115.70639	1.65362	0.1436274	0.30619119	2.1800892	21	7 10.1	20.5
229323 2005 NL ₁₃	17.7	X	258.27636	120.36672	183.77779	1.94893	0.1572906	0.29239232	2.2481506	21	2 22.0	21.1
229324 2005 NV ₄₅	17.9	X	175.47969	55.79380	272.98529	1.61001	0.2098086	0.27956814	2.3163860	21	1 12.3	21.4
229325 2005 NL ₆₀	16.4	X	226.92464	321.63487	32.06565	2.76467	0.2511376	0.28900615	2.2656770	21	3 26.0	20.3
229326 2005 NM ₆₀	16.7	X	207.75000	237.93194	105.06277	6.25740	0.1941596	0.28415112	2.2914118	21	2 27.7	20.4
229327 2005 NR ₇₄	17.5	X	188.19629	96.84005	292.84672	7.03546	0.1078000	0.29272707	2.2464364	21	3 31.3	20.8
229328 2005 NT ₉₅	17.5	X	179.06900	281.52022	111.17361	5.50597	0.1200454	0.29189874	2.2506842	21	4 2.2	20.7
229329 2005 NZ ₉₈	17.9	X	260.28821	48.87253	248.11877	1.96733	0.1840626	0.29135039	2.2535074	21	2 12.8	21.4
229330 2005 OS	16.8	X	213.90521	249.69143	12.40400	6.77957	0.1085746	0.27767522	2.3269013	21	—	—
229331 2005 OS ₁₂	16.9	X	67.96342	55.90081	353.62148	5.62283	0.2502188	0.26808132	2.3820910	21	—	—
229332 2005 OH ₂₇	17.3	X	297.62922	83.14012	196.10352	3.12451	0.1310893	0.29223156	2.2489751	21	3 7.6	19.9
229333 2005 QC ₂	16.9	X	198.86030	53.03872	319.81065	5.21760	0.1754933	0.28842692	2.2687093	21	3 24.1	20.7
229334 2005 QV ₄	17.0	X	129.33510	91.38270	288.04746	3.57372	0.2403181	0.27500816	2.3249215	21	2 2.0	20.0
229335 2005 QY ₉	17.1	X	143.89728	162.74818	199.95402	5.99848	0.1245086	0.27725122	2.3292731	21	1 11.4	20.2
229336 2005 QW ₁₀	16.9	X	77.48078	333.63015	320.38833	0.70802	0.1844042	0.25750873	2.4468541	21	11 28.6	20.5
229337 2005 QP ₁₂	16.7	X	144.99830	207.96286	182.66941	6.01962	0.1859764	0.28074007	2.3099351	21	2 25.6	19.8
229338 2005 QS ₁₄	17.9	X	96.46601	71.37014	318.99791	1.26419	0.2140788	0.27133951	2.3629835	21	—	—
229339 2005 QM ₁₅	17.2	X	131.46780	62.53562	307.33766	2.56018	0.0756875	0.27580072	2.3374327	21	—	—
229340 2005 QQ ₂₁	16.6	X	209.03528	237.19268	110.32176	5.42208	0.1599492	0.28544457	2.2844844	21	3 5.8	20.2
229341 2005 QK ₂₉	17.4	X	58.75487	231.16451	163.56221	5.38192	0.2180275	0.26442583	2.4039945	21	—	—
229342 2005 QM ₃₂	17.8	X	145.94797	197.48919	113.38570	1.71003	0.2311368	0.27046137	2.3680955	21	—	—
229343 2005 QG ₃₃	17.3	X	105.23196	61.15348	314.32940	1.08767	0.2159126	0.27125256	2.3634885	21	—	—
229344 2005 QH ₃₈	17.4	X	260.27417	83.38409	245.37290	2.06877	0.1370052	0.29071435	2.2567931	21	3 29.7	20.5
229345 2005 QJ ₄₅	15.7	X	340.05485	252.26982	106.96080	2.99088	0.0973561	0.18473420	3.0533119	21	9 15.2	19.3
229346 2005 QF ₄₉	17.1	X	78.75311	40.81073	287.12795	1.37243	0.1989085	0.26080932	2.4261667	21	—	—
229347 2005 QC ₅₀	16.4	X	131.95729	244.93414	99.32183	6.01005	0.1512330	0.27071425	2.3666206	21	—	—
229348 2005 QH ₅₁	16.5	X	190.51184	216.48287	110.24578	7.08361	0.1517310	0.27853002	2.3221381	21	1 20.1	19.9
229349 2005 QR ₅₂	16.7	X	39.73200	0.81046	55.43955	1.97453	0.1595118	0.26397729	2.4067169	21	—	—
229350 2005 QV ₅₂	17.0	X	158.27805	354.87364	323.03147	2.68453	0.2380259	0.27499623	2.3419892	21	—	—
229351 2005 QE ₅₅	17.3	X	164.58279	264.93991	120.58748	3.60891	0.2455710	0.28199100	2.3030987	21	3 17.7	20.9
229352 2005 QB ₅₇	17.4	X	72.43521	78.84927	316.13576	4.02932	0.2318864	0.26790792	2.3831187	21	—	—
229353 2005 QN ₆₅	16.6	X	126.39248	148.69711	202.92633	5.23664	0.2599952	0.27099693	2.3649745	21	—	—
229354 2005 QX ₆₇	16.9	X	151.76511	326.05778	56.56593	6.03074	0.2042995	0.28129522	2.3068949	21	2 28.5	20.3

ELEMENTS AND OPPOSITION DATES IN 2021

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2021 JULY 5.0 TT

Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>		
229361	2005	<i>QU</i> ₁₀₆	17.6	X	174.89295	231.72728	95.47993	4.00950	0.2144250	0.27738377	2.3285310	21	1 10.8	21.1
229362	2005	<i>QW</i> ₁₁₂	16.6	X	67.84584	307.34557	71.84475	5.08190	0.2667107	0.26381569	2.4076996	21	—	—
229363	2005	<i>QY</i> ₁₅₆	16.5	X	305.20777	352.08858	282.97577	9.22169	0.1382077	0.29145781	2.2529536	21	3 6.2	19.6
229364	2005	<i>QY</i> ₁₇₀	16.6	X	113.09309	82.59947	245.33774	4.86120	0.2456644	0.26627224	2.3928682	21	—	—
229365	2005	<i>QK</i> ₁₇₁	16.3	X	167.45988	65.18099	276.91163	5.02099	0.1327426	0.27621188	2.3351125	21	1 14.1	19.6
229366	2005	<i>QE</i> ₁₈₀	17.1	X	92.64857	122.95574	220.69391	3.09505	0.1688841	0.26541428	2.3980221	21	—	—
229367	2005	<i>QM</i> ₁₈₈	17.6	X	126.04611	120.92317	354.80830	3.41055	0.1145531	0.28916439	2.2648503	21	5 20.3	20.5
229368	2005	<i>RC</i> ₃	16.4	X	242.35147	181.06435	86.35872	5.54954	0.1771703	0.27868254	2.3212907	21	—	—
229369	2005	<i>RF</i> ₅	17.2	X	68.77100	213.42922	87.52706	3.61731	0.0870488	0.31923733	2.1202819	21	11 27.4	19.7
229370	2005	<i>RZ</i> ₇	17.4	X	181.26714	18.65886	345.70876	1.39726	0.2441647	0.28109511	2.3079896	21	3 3.9	21.2
229371	2005	<i>RS</i> ₈	17.4	X	106.64131	228.91724	176.05371	2.22839	0.1990973	0.27297103	2.3535586	21	1 31.4	20.0
229372	2005	<i>RM</i> ₉	16.7	X	328.67051	240.16010	58.42441	4.98297	0.1941388	0.29828124	2.2184625	21	5 13.5	18.6
229373	2005	<i>RG</i> ₁₁	17.0	X	106.44194	73.73906	272.44507	3.98416	0.2069215	0.26605739	2.3941563	21	—	—
229374	2005	<i>RM</i> ₁₁	16.1	X	143.89640	346.47590	339.51726	5.42424	0.1968472	0.26993382	2.3711799	21	—	—
229375	2005	<i>RG</i> ₂₅	16.9	X	188.20458	65.50791	255.04130	5.85621	0.2196940	0.27755597	2.3275678	21	1 13.5	20.7
229376	2005	<i>SP</i>	17.0	X	135.57184	243.05122	281.03534	3.63232	0.0445374	0.30041063	2.2079667	21	8 3.1	19.8
229377	2005	<i>SJ</i> ₆	17.1	X	85.22215	165.75586	332.40823	3.45839	0.0571762	0.28392038	2.2926530	21	4 15.4	19.8
229378	2005	<i>SN</i> ₈	17.2	X	11.36261	289.89769	3.54326	3.50167	0.2404763	0.30410129	2.1900660	21	9 5.3	18.1
229379	2005	<i>SZ</i> ₉	17.2	X	46.19205	229.35563	199.21022	1.53891	0.2040941	0.26380446	2.4077679	21	—	—
229380	2005	<i>SX</i> ₁₀	16.5	X	249.26044	70.40108	236.48151	3.75006	0.1195288	0.22151083	2.7052417	21	2 26.9	20.6
229381	2005	<i>SR</i> ₁₄	16.5	X	197.17975	272.56457	54.17943	6.79494	0.1490570	0.28019138	2.3129498	21	1 27.9	20.0
229382	2005	<i>SE</i> ₅₀	17.8	X	95.62018	13.50750	19.16736	2.39041	0.0909654	0.26859109	2.3790760	21	—	—
229383	2005	<i>SV</i> ₅₂	17.0	X	65.78471	318.70153	98.29661	3.41776	0.1746110	0.26746991	2.3857198	21	—	—
229384	2005	<i>SB</i> ₆₀	17.0	X	61.42508	271.42825	175.26955	2.04161	0.1486606	0.27032751	2.3688772	21	1 3.4	19.1
229385	2005	<i>SV</i> ₆₁	17.3	X	3.99437	101.36136	176.86336	4.71591	0.1843994	0.26534771	2.2984232	21	—	—
229386	2005	<i>SL</i> ₆₈	16.7	X	112.92825	263.74250	218.45010	4.38705	0.1323512	0.28624045	2.2802478	21	5 16.7	19.4
229387	2005	<i>SG</i> ₇₀	17.3	X	84.49605	85.24215	303.91532	0.65076	0.1937104	0.26830311	2.3807781	21	—	—
229388	2005	<i>SY</i> ₇₀	17.1	X	130.27613	304.20074	96.53205	4.10157	0.0252085	0.27888618	2.3201606	21	1 31.3	19.9
229389	2005	<i>SY</i> ₇₉	17.9	X	128.26125	105.54605	75.94277	0.90659	0.0534832	0.30238718	2.1983346	21	8 20.9	20.6
229390	2005	<i>SH</i> ₈₈	16.8	X	353.73318	232.87808	71.74934	5.14847	0.2122219	0.30446441	2.3838244	21	8 1.2	17.8
229391	2005	<i>SA</i> ₉₁	17.7	X	91.33272	104.35354	8.53822	2.00860	0.0922665	0.28025903	2.3125776	21	3 26.8	20.3
229392	2005	<i>SA</i> ₁₀₃	16.5	X	165.84510	85.69621	300.24894	3.27102	0.1238600	0.28035364	2.3120572	21	3 7.3	19.7
229393	2005	<i>SW</i> ₁₁₇	16.7	X	113.88909	260.65054	72.61424	7.14239	0.1427328	0.26558693	2.3969828	21	—	—
229394	2005	<i>SF</i> ₁₂₃	16.7	X	104.56321	37.71371	2.98283	4.49955	0.1957541	0.27173413	2.3606952	21	1 23.9	19.3
229395	2005	<i>SK</i> ₁₂₄	16.8	X	118.29985	210.82523	302.85019	4.91132	0.0781182	0.29540096	2.2328597	21	6 30.3	19.5
229396	2005	<i>SA</i> ₁₂₉	16.9	X	7.47523	64.21651	34.88927	2.76816	0.1549501	0.26239991	2.4163523	21	—	—
229397	2005	<i>SM</i> ₁₃₄	16.8	X	116.15393	143.44796	298.22075	4.10542	0.1768086	0.28137555	2.3064558	21	3 29.3	19.7
229398	2005	<i>SL</i> ₁₄₀	17.2	X	179.92438	205.18948	80.44770	2.43071	0.1613046	0.26960114	2.3731302	21	—	—
229399	2005	<i>SP</i> ₁₄₉	17.0	X	175.62107	314.07752	52.75647	3.52434	0.2242937	0.27908225	2.3190738	21	3 3.1	20.7
229400	2005	<i>SW</i> ₁₄₉	17.8	X	74.90845	60.91268	51.45569	3.32626	0.1646996	0.27613288	2.3355579	21	3 12.7	19.9
229401	2005	<i>SJ</i> ₁₅₂	16.5	X	261.94756	298.11486	53.99001	12.52118	0.3185595	0.22969309	2.6406090	21	4 22.5	21.0
229402	2005	<i>SJ</i> ₁₉₅	17.7	X	176.79044	28.69209	268.96655	0.58345	0.1909682	0.27217746	2.3581311	21	—	—
229403	2005	<i>SB</i> ₂₀₉	16.4	X	178.67281	268.14851	60.27232	8.47975	0.1618465	0.27491532	2.3424487	21	1 12.8	20.0
229404	2005	<i>SU</i> ₂₁₃	16.5	X	184.40575	34.28165	293.26974	9.06841	0.0819266	0.27511168	2.3413339	21	1 10.1	19.6
229405	2005	<i>SL</i> ₂₁₅	16.6	X	58.58792	138.21494	104.52853	4.01078	0.1731826	0.26185392	2.4197100	21	—	—
229406	2005	<i>SX</i> ₂₂₁	16.5	X	56.44066	266.74365	109.52626	10.64019	0.1770873	0.26140563	2.4224757	21	—	—
229407	2005	<i>SU</i> ₂₂₄	17.2	X	29.54776	267.93291	192.71768	4.96071	0.1996787	0.26666506	2.3905177	21	—	—
229408	2005	<i>SS</i> ₂₂₉	17.1	X	25.88050	248.59279	173.08812	6.10020	0.1988120	0.26040667	2.4286671	21	—	—
229409	2005	<i>SB</i> ₂₃₇	17.4	X	210.73295	67.70235	257.91005	1.77933	0.2585978	0.28069179	2.3102000	21	2 7.4	21.3
229410	2005	<i>SD</i> ₂₃₈	17.2	X	267.97696	274.23489	310.54888	1.85872	0.0807485	0.26865287	2.3787112	21	—	—
229411	2005	<i>SD</i> ₂₄₃	16.9	X	89.44950	79.87019	350.21394	1.87107	0.1770622	0.27197700	2.3592897	21	2 5.7	19.0
229412	2005	<i>SM</i> ₂₄₉	17.0	X	256.83456	343.58086	224.27266	0.98816	0.1672773	0.26211134	2.4181255	21	—	—
229413	2005	<i>SE</i> ₂₅₇	16.9	X	320.03520	159.35041	117.65149	3.07818	0.2638292	0.23266549	2.6180709	21	3 24.9	20.1
229414	2005	<i>SS</i> ₂₆₄	17.5	X	25.26018	306.34797	158.36899	3.86302	0.1824528	0.26743472	2.3859291	21	—	—
229415	2005	<i>SP</i> ₂₇₈	16.9	X	13.04732	87.19088	65.56864	3.93181	0.1210912	0.27384791	2.3485317	21	1 8.8	19.1
229416	2005	<i>TT</i> ₃	16.8	X	59.11607	317.40719	82.32644	6.28036	0.1443307	0.26366120	2.4086400	21	—	—
229417	2005	<i>TN</i> ₁₀	16.1	X	153.80337	95.64134	253.50465	4.71813	0.2493828	0.27382091	2.3486861	21	1 20.9	19.6
229418	2005	<i>TY</i> ₁₀	17.6	X	23.84086	105.14297	314.59858	1.37321	0.1838111	0.25881429	2.4386186	21	—	—
229419	2005	<i>TZ</i> ₁₇	16.9	X	29.52639	349.12349	74.59343	3.37669	0.1732120	0.26158238	2.4213843	21	—	—
229420	2005	<i>TH</i> ₂₃	16.7	X	186.09900	301.70537	59.80188	4.55263	0.1286033	0.28065443	2.3104050	21	3 1.1	20.1
229421	2005	<i>TT</i> ₂₆	17.4	X	17.69191	315.13533	181.37866	2.36338	0.1394868	0.26873553	2.3782234	21	—	—
229422	2005	<i>TJ</i> ₃₉	17.3	X	213.26943	240.90533	56.22453	3.22515	0.1860512	0.27608427	2.3358320	21	1 6.3	20.9
229423	2005	<i>TG</i> ₄₁	16.2	X	312.99387	356.53486	82.04754	17.60285	0.1422141	0.24129223	2.5552917	21	11 26.7	18.8
229424	2005	<i>TT</i> ₄₈	17.0	X	139.22335	300.22969	67.60395	3.18472	0.2392507	0.27241657	2.3567510	21	1 30.9	20.3
229425	2005	Grosspointer	16.7	X	199.13571	156.97808	300.19707	2.68306	0.1583781	0.22982759	2.6395786	21	7 15.8	20.7
229426	2005	<i>TB</i> ₅₂	16.4	X	242.76504	222.75231	239.25436	8.35836	0.0852783	0.24117872	2.5560934	21	9 11.7	20.1
229427	2005	<i>TT</i> ₅₂	16.5	X	313.23949	36.08459	251.86481	5.56442	0.1337150	0.29043669	2.2582311	21	4 9.0	19.1
229428	2005	<i>TP</i> ₇₁	16.7	X	120.75702	318.86840	67.19574	3.12563	0.2163015	0.27398543	2.3477458	21	1 29.5	19.5
229429	2005	<i>TA</i> ₇₂	16.7	X	322.45953	195.33801	123.61446	6.03230	0.1470258	0.30064430				

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Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>
229441 2005 UJ ₈	16.9	X	134.03515	284.37979	76.33604	3.48793	0.2318557	0.26996700	2.3709857	21	1 15.1	20.1
229442 2005 UC ₁₄	17.1	X	299.06204	77.21947	90.89732	2.45376	0.1233648	0.26356760	2.4092102	21	—	—
229443 2005 UA ₅₁	17.2	X	140.97921	89.73035	297.79048	2.21627	0.2409740	0.27483422	2.3429095	21	2 24.8	20.7
229444 2005 UF ₅₄	16.2	X	299.44787	148.10791	202.04286	9.43410	0.0968021	0.23375261	2.6099473	21	6 28.9	19.6
229445 2005 UH ₅₉	16.7	X	289.39011	196.16235	193.23063	9.72093	0.2052993	0.23675430	2.5878403	21	7 20.1	20.1
229446 2005 UZ ₇₀	16.4	X	2.22785	220.78516	285.95881	6.14600	0.0480813	0.27060262	2.3672714	21	—	—
229447 2005 UH ₇₂	16.5	X	257.92512	11.72075	251.89481	12.80720	0.0808128	0.27488890	2.3425988	21	1 7.0	19.9
229448 2005 UW ₉₇	16.7	X	278.14485	130.27649	63.18644	10.00653	0.1576523	0.26107231	2.4245371	21	—	—
229449 2005 UY ₁₁₀	16.8	X	304.43804	184.98646	330.00445	1.63961	0.1527069	0.25649245	2.4533132	21	—	—
229450 2005 UK ₁₁₅	17.5	X	1.36184	214.66123	225.25569	5.84879	0.1423044	0.25740100	2.4475368	21	—	—
229451 2005 UH ₁₄₈	16.7	X	211.69618	35.06449	236.26852	5.81565	0.1303126	0.26707633	2.3880630	21	—	—
229452 2005 UT ₁₆₁	16.9	X	84.12300	326.87795	69.59670	2.56349	0.1891825	0.26541016	2.3980470	21	—	—
229453 2005 UJ ₁₆₂	16.2	X	107.04341	266.42299	112.74800	6.73467	0.1551861	0.26734510	2.3864622	21	—	—
229454 2005 UY ₁₆₂	16.5	X	96.82087	11.39508	88.57885	6.83224	0.1834890	0.27599403	2.3363411	21	4 5.6	19.3
229455 2005 UM ₁₈₀	16.1	X	112.49287	294.86505	222.21189	13.29103	0.0535861	0.22512108	2.6762413	21	6 23.2	20.0
229456 2005 UN ₁₉₀	17.3	X	275.25452	310.18043	235.94456	1.66953	0.1565334	0.25867192	2.4395133	21	—	—
229457 2005 UZ ₁₉₁	17.2	X	15.69032	247.24907	266.84682	1.40999	0.1201835	0.26963893	2.3729085	21	1 16.2	19.3
229458 2005 UC ₁₉₆	17.0	X	259.09601	340.64951	209.47517	4.08170	0.0988006	0.25871711	2.4392292	21	—	—
229459 2005 UM ₁₉₆	17.0	X	281.08417	180.06080	61.08023	2.84112	0.1812271	0.27392414	2.3480960	21	—	—
229460 2005 UO ₁₉₆	17.5	X	71.01913	278.03139	167.64200	1.02722	0.1584748	0.26983469	2.3717607	21	1 22.4	19.6
229461 2005 UG ₂₁₇	17.1	X	16.35908	66.71823	52.79254	2.74524	0.1408626	0.26617971	2.3934228	21	—	—
229462 2005 UU ₂₁₇	17.4	X	48.38947	119.84500	79.45378	3.98301	0.1443117	0.28499518	2.2868852	21	5 31.4	19.3
229463 2005 UZ ₂₂₁	17.6	X	284.26365	225.52428	291.57542	2.28901	0.1294392	0.25663509	2.4524041	21	—	—
229464 2005 UK ₂₂₆	17.0	X	276.77158	352.45773	213.29487	4.57657	0.0903212	0.26439309	2.4041929	21	—	—
229465 2005 UO ₂₅₀	17.1	X	70.09003	71.57231	301.22074	4.62668	0.1522039	0.26108781	2.4244412	21	—	—
229466 2005 UO ₂₅₂	16.3	X	233.63634	4.79612	15.34767	6.25307	0.0432640	0.22517966	2.6757772	21	5 20.1	20.1
229467 2005 UT ₂₅₂	16.4	X	77.67990	175.43664	261.09950	6.45335	0.0940229	0.26970961	2.3724939	21	1 13.3	19.0
229468 2005 UE ₂₅₃	17.3	X	14.77723	83.78470	359.34928	1.07172	0.1568201	0.25936879	2.4351417	21	—	—
229469 2005 UV ₂₅₃	17.1	X	321.87565	126.21641	229.53531	6.61579	0.2189145	0.23994640	2.5648377	21	7 27.0	19.5
229470 2005 UT ₂₆₇	17.6	X	287.86687	96.33736	60.23044	7.96163	0.1091845	0.25600264	2.4564415	21	—	—
229471 2005 UX ₂₇₂	17.8	X	15.58457	38.51568	77.27846	5.98952	0.0814118	0.26403014	2.4063957	21	—	—
229472 2005 UA ₂₇₅	15.5	X	290.90307	324.54890	56.33499	32.98972	0.1706616	0.23460112	2.6036504	21	7 20.9	19.5
229473 2005 UY ₂₇₈	16.7	X	137.74337	175.67148	210.38560	3.81873	0.1486842	0.27346225	2.3507393	21	2 7.5	19.8
229474 2005 UB ₂₈₈	17.6	X	292.51051	52.99374	106.03998	3.42017	0.1318863	0.25910813	2.4367746	21	—	—
229475 2005 UY ₂₉₃	17.1	X	13.82370	319.23782	268.79423	3.70961	0.1173692	0.28549081	2.2842377	21	5 2.0	19.1
229476 2005 UU ₂₉₆	16.7	X	245.10387	69.15177	97.35309	10.54769	0.0870032	0.24142152	2.5543793	21	10 11.7	20.2
229477 2005 UX ₂₉₇	16.1	X	83.94354	309.06903	230.66384	11.66956	0.2216076	0.22127514	2.7071623	21	7 10.4	20.1
229478 2005 UN ₂₉₉	17.4	X	86.13495	358.28232	53.83156	3.40601	0.1107957	0.26709707	2.3879394	21	—	—
229479 2005 UJ ₃₀₂	16.7	X	359.42697	244.33995	139.59484	4.60585	0.1138639	0.24747563	2.5125483	21	12 2.3	19.4
229480 2005 UO ₃₁₈	16.9	X	233.63557	255.23380	313.33446	1.40552	0.1608234	0.25733823	2.4479347	21	—	—
229481 2005 UM ₃₂₃	17.5	X	91.10950	322.06403	95.72117	2.43944	0.1591772	0.27059441	2.3673193	21	1 19.1	19.7
229482 2005 UD ₃₃₇	17.3	X	265.18912	120.90479	48.59322	1.90602	0.1277958	0.25629638	2.4545642	21	—	—
229483 2005 UY ₃₄₉	17.4	X	86.29534	304.84572	109.24377	3.61533	0.1836051	0.26793445	2.3829614	21	1 9.2	19.4
229484 2005 UO ₃₆₉	17.1	X	81.20719	308.16270	110.74889	2.31656	0.1688860	0.26714315	2.3876648	21	1 4.7	19.3
229485 2005 UN ₃₈₆	16.4	X	82.08115	2.05275	75.23621	13.14773	0.2027368	0.27139725	2.3626483	21	2 12.1	18.8
229486 2005 UC ₃₈₇	16.8	X	270.60306	266.62847	33.72193	2.70338	0.0566586	0.27995250	2.3142653	21	3 15.9	19.8
229487 2005 UQ ₄₀₃	17.2	X	15.72270	44.15897	90.43750	2.21386	0.1210713	0.26992586	2.3712266	21	—	—
229488 2005 UJ ₄₃₈	16.5	X	311.42463	309.45534	62.39831	6.71769	0.2766057	0.23802519	2.5786205	21	7 23.7	19.1
229489 2005 UR ₄₄₅	17.0	X	21.69661	68.18269	76.46293	5.69615	0.2422401	0.26628534	2.3927898	21	—	—
229490 2005 UD ₄₅₂	15.7	X	129.32841	251.97372	269.56912	11.03047	0.1536790	0.21948366	2.7218734	21	7 27.9	20.0
229491 2005 UR ₄₅₆	17.0	X	45.96719	223.82075	260.32083	2.45272	0.1180924	0.27182177	2.3601878	21	1 27.3	19.0
229492 2005 UU ₄₆₁	16.0	X	152.71245	40.90220	104.13998	7.82408	0.2024761	0.21795068	2.7346215	21	8 4.2	20.5
229493 2005 UJ ₄₈₃	16.5	X	233.00543	251.36718	59.14858	7.37892	0.1346905	0.28089849	2.3090665	21	2 11.6	20.1
229494 2005 US ₄₉₉	17.0	X	342.40106	198.53055	105.08195	7.90035	0.1608161	0.29895347	2.2151356	21	6 28.1	18.4
229495 2005 UG ₅₀₈	15.8	X	197.57383	60.78532	5.44163	2.43859	0.0306029	0.21067260	2.7972461	21	6 8.0	19.7
229496 2005 UH ₅₀₉	17.2	X	317.44606	334.66392	261.23935	1.86794	0.0940904	0.27501775	2.3418670	21	2 11.3	20.1
229497 2005 VW ₄	17.6	X	65.34244	214.58713	247.18141	0.50784	0.1465604	0.27094022	2.3653045	21	2 2.9	19.7
229498 2005 VX ₁₃	16.9	X	336.96966	319.26161	159.30447	7.20519	0.0568444	0.25962866	2.4335165	21	—	—
229499 2005 UW ₄₇	17.0	X	309.95159	151.93845	183.74990	2.73109	0.2110453	0.23458561	2.6037651	21	6 7.2	19.9
229500 2005 VZ ₅₀	16.7	X	25.48484	40.32758	78.38465	7.00279	0.1448685	0.26776149	2.3839875	21	—	—
229501 2005 VY ₅₅	16.6	X	196.61278	152.76739	280.41285	3.15132	0.0639237	0.22832507	2.6511460	21	6 14.9	20.5
229502 2005 VS ₈₀	16.9	X	45.12070	288.62753	85.65084	7.28495	0.1536306	0.25528618	2.4610353	21	—	—
229503 2005 WX ₁	16.8	X	112.59700	287.55067	115.31849	6.09679	0.1904572	0.27103558	2.3647497	21	2 6.6	19.4
229504 2005 WA ₄	16.6	X	287.59533	315.04172	128.25647	6.39615	0.2265321	0.24160114	2.5531131	21	10 5.1	19.3
229505 2005 WQ ₃₈	16.8	X	355.52257	130.30725	204.09318	2.63195	0.1495019	0.23595313	2.5936949	21	9 13.1	19.1
229506 2005 WO ₆₄	16.7	X	235.38219	26.51853	100.44306	5.43573	0.1833914	0.23431762	2.6057501	21	9 29.2	20.6
229507 2005 WF ₇₂	16.6	X	127.00873	329.05698	118.49097	12.90545	0.1069830	0.27853113	2.3221319	21	4 19.6	19.9
229508 2005 WC ₈₀	16.7	X	279.48324	298.77342	270.66798	4.96414	0.0817388	0.25946030	2.4345691	21	—	—
229509 2005 WM ₈₆	16.5	X	201.91580	84.54466	68.27989	12.62916	0.1277808	0.23779328	2.5802968	21	10 6.5	20.6
229510 2005 WO ₈₈	16.1	X	277.62000	297.82422	108.56428	14.33299	0.1780986	0.23078544	2.6322701	21	8 3.7	19.6
229511 2005 WX ₉₇	16.4	X	320.55704	214.00709	62.08324	2.95057	0.0469776	0.21562713	2.7542315	21	4 28.4	19.8
229512 2005 WU ₁₁₃	16.2	X	306.84993	39.84910	266.00078	12.06079	0.2308004	0.22602489	2.6691022	21	4 14.1	20.0
229513 2005 WZ ₁₂₃	17.3	X	334.27405	133.73155	44.71520	2.09676	0.1284326	0.26989851	2.3713868	21	—	—
229514 2005 WB ₁₄₈	16.3	X	6.45571	115.08214	225.83885	3.69906	0.1053586	0.23991220	2.5650815			

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229521 2005 <i>WG</i> ₁₉₅	16.6	X	353.70905	151.67138	225.40857	6.80267	0.2916802	0.24557115	2.5255220	21	12 5.1	18.4
229522 2005 <i>XQ</i> ₂	16.0	X	334.97848	312.21907	27.96165	5.97096	0.1454130	0.23501099	2.6006222	21	8 13.9	18.7
229523 2005 <i>XF</i> ₇	16.0	X	255.17337	279.08192	67.23433	13.37348	0.0797872	0.22222039	2.6994800	21	5 2.9	19.9
229524 2005 <i>XG</i> ₁₁	16.7	X	21.36738	30.06729	113.57620	3.54450	0.1446458	0.26597686	2.3946395	21	1 10.1	18.8
229525 2005 <i>XY</i> ₁₄	16.2	X	174.56514	274.62378	240.58524	10.71379	0.1462394	0.22980811	2.6397278	21	8 30.2	20.7
229526 2005 <i>XK</i> ₂₁	16.6	X	340.93231	342.90663	53.55016	8.82468	0.1350274	0.24381995	2.5376003	21	11 17.2	19.1
229527 2005 <i>XN</i> ₂₄	16.5	X	216.87789	165.89586	97.45609	9.54636	0.1333783	0.25637664	2.4540520	21	—	—
229528 2005 <i>XK</i> ₃₈	16.3	X	208.69853	326.75448	151.27400	2.68096	0.1500833	0.22230505	2.6987945	21	8 20.8	20.5
229529 2005 <i>XO</i> ₄₃	16.9	X	279.90095	288.95525	15.55252	2.87837	0.0301001	0.21668795	2.7452351	21	4 12.8	20.7
229530 2005 <i>XT</i> ₆₅	15.6	X	322.66755	112.62741	264.15132	25.31247	0.1262208	0.23598711	2.5934459	21	8 26.8	19.2
229531 2005 <i>XE</i> ₇₉	15.6	X	223.22457	48.50540	81.55854	13.66869	0.1195652	0.23069939	2.6329246	21	10 1.8	19.7
229532 2005 <i>YN</i> ₂₆	16.0	X	240.60076	208.21920	239.65249	12.94065	0.2338325	0.22865870	2.6485666	21	8 1.7	20.5
229533 2005 <i>YZ</i> ₃₃	16.4	X	187.31524	359.58750	115.07638	5.07720	0.0931294	0.22410605	2.6843162	21	7 28.5	20.3
229534 2005 <i>YO</i> ₃₆	16.0	X	61.46589	106.44662	99.31408	4.01958	0.0708587	0.21575775	2.7531198	21	6 23.6	19.6
229535 2005 <i>YQ</i> ₃₆	16.9	X	180.36371	142.44741	349.76059	1.03570	0.0592637	0.22500080	2.6771950	21	8 13.4	20.8
229536 2005 <i>YC</i> ₃₇	16.2	X	253.11911	52.95470	94.41997	4.98181	0.0409130	0.24398527	2.5364539	21	12 6.2	19.4
229537 2005 <i>YU</i> ₄₂	16.4	X	232.63328	287.80786	125.71282	3.56732	0.0596026	0.22254570	2.6968487	21	7 2.3	20.2
229538 2005 <i>YM</i> ₇₅	16.8	X	136.04089	169.13122	345.12821	2.77511	0.0561295	0.22280640	2.6947446	21	7 21.1	20.6
229539 2005 <i>YA</i> ₇₉	17.1	X	143.46469	86.58652	99.98640	2.37780	0.0818310	0.22835392	2.6509227	21	9 12.8	21.1
229540 2005 <i>YP</i> ₈₆	16.2	X	234.52445	355.27619	101.36292	13.57832	0.1415639	0.23093805	2.6311103	21	8 25.7	20.2
229541 2005 <i>YA</i> ₁₁₀	16.8	X	283.75669	266.42064	147.23684	2.55921	0.1678163	0.23317360	2.6142661	21	8 23.5	20.1
229542 2005 <i>YP</i> ₁₁₃	16.2	X	274.72217	275.24645	66.95830	5.76345	0.0606087	0.21764335	2.7371953	21	5 21.8	19.9
229543 2005 <i>YJ</i> ₁₁₅	16.5	X	207.19179	42.37468	89.90946	5.41832	0.1419387	0.22931445	2.6435149	21	9 10.1	20.6
229544 2005 <i>YP</i> ₁₁₈	16.2	X	358.25489	179.10477	100.71028	6.04490	0.1088530	0.21835089	2.7312790	21	6 27.2	19.1
229545 2005 <i>YU</i> ₁₂₁	16.2	X	230.40542	172.64928	283.16496	11.24577	0.1533807	0.23016468	2.6370008	21	8 11.2	20.3
229546 2005 <i>YQ</i> ₁₂₄	16.3	X	281.70344	333.18504	63.64234	6.94753	0.1592382	0.23077244	2.6323689	21	7 31.1	19.7
229547 2005 <i>YM</i> ₁₃₈	16.3	X	353.12821	245.53247	99.79094	7.55054	0.2357311	0.23670771	2.5881798	21	10 18.0	17.8
229548 2005 <i>YD</i> ₁₄₁	16.2	X	336.20424	199.94273	90.29278	5.90047	0.0834450	0.21903976	2.7255495	21	6 5.8	19.3
229549 2005 <i>YF</i> ₁₅₀	16.5	X	183.26363	74.24114	69.69517	4.00233	0.0508699	0.22781788	2.6550794	21	9 3.6	20.2
229550 2005 <i>YP</i> ₁₆₂	16.9	X	283.62784	226.11750	154.79665	2.22369	0.1102771	0.22803747	2.6533746	21	7 17.2	20.2
229551 2005 <i>YP</i> ₁₇₃	15.9	X	293.06687	320.52026	99.11089	14.73166	0.1518849	0.23301201	2.6154746	21	9 26.9	19.2
229552 2005 <i>YF</i> ₁₈₉	17.1	X	311.75772	284.84786	129.05673	2.26743	0.2033316	0.23919604	2.5701988	21	10 10.7	19.4
229553 2005 <i>YT</i> ₁₉₁	16.6	X	194.44814	132.64131	329.21784	2.80353	0.0591887	0.22184275	2.7025462	21	7 21.1	20.5
229554 2005 <i>YR</i> ₁₉₅	16.4	X	180.78840	269.69269	177.56564	3.95709	0.0621732	0.21936626	2.7228444	21	6 15.5	20.3
229555 2005 <i>YD</i> ₂₀₂	15.4	X	119.52416	300.83260	284.52238	11.56941	0.1104743	0.22803544	2.6533904	21	9 30.4	19.7
229556 2005 <i>YO</i> ₂₁₇	16.0	X	211.53893	309.11012	103.56291	9.44834	0.1053138	0.21862083	2.7290303	21	6 4.7	20.3
229557 2005 <i>YE</i> ₂₂₇	16.6	X	309.94635	92.02939	253.83073	3.75344	0.2169168	0.23234891	2.6204485	21	6 20.8	19.5
229558 2005 <i>YV</i> ₂₃₀	16.1	X	227.17059	70.50965	301.17191	3.98155	0.0774879	0.21223750	2.7834791	21	4 29.3	20.2
229559 2005 <i>YX</i> ₂₄₀	16.4	X	263.85331	261.47684	104.64363	9.63829	0.3305751	0.22470660	2.6795313	21	5 10.6	21.0
229560 2005 <i>YV</i> ₂₇₂	16.1	X	241.90463	311.34257	80.50897	6.84720	0.0279461	0.21918396	2.7243539	21	6 18.8	19.7
229561 2005 <i>YA</i> ₂₈₇	16.3	X	289.02092	267.69647	109.95153	10.68173	0.1248987	0.22713887	2.6603682	21	7 18.6	19.5
229562 2006 <i>AX</i> ₈	16.0	X	307.65288	22.44904	64.61481	14.50442	0.1318299	0.24033387	2.5620803	21	11 26.4	18.5
229563 2006 <i>AA</i> ₉	16.6	X	244.41451	308.56385	129.13303	3.61296	0.0550442	0.22814502	2.6525407	21	8 20.1	20.2
229564 2006 <i>AK</i> ₂₈	16.9	X	76.31781	327.20698	131.71416	5.26008	0.1248749	0.26912198	2.3759462	21	2 17.8	19.1
229565 2006 <i>AF</i> ₃₀	16.5	X	284.16214	145.96851	129.68338	11.75724	0.2241973	0.26744745	2.3858533	21	2 9.9	20.1
229566 2006 <i>AP</i> ₃₂	16.0	X	273.00821	177.08899	140.66837	6.10077	0.1531222	0.21213490	2.7843765	21	4 8.1	20.1
229567 2006 <i>AR</i> ₃₃	15.9	X	315.91490	257.09601	85.90017	12.58150	0.2247896	0.22809577	2.6529225	21	6 25.9	18.5
229568 2006 <i>AA</i> ₄₁	16.3	X	75.52761	161.77121	57.25530	2.67771	0.0612663	0.21960673	2.7208564	21	7 31.3	19.9
229569 2006 <i>AL</i> ₄₃	16.7	X	221.46431	334.34464	204.91188	1.79841	0.0425811	0.23935086	2.5690904	21	12 5.0	20.0
229570 2006 <i>AA</i> ₄₅	15.8	X	234.55938	346.58981	75.00336	15.86150	0.0463468	0.22099344	2.7094624	21	7 18.2	19.7
229571 2006 <i>AH</i> ₄₉	17.1	X	241.72407	76.54399	7.72596	2.34165	0.0592655	0.23030105	2.6359598	21	8 25.3	20.5
229572 2006 <i>AG</i> ₇₃	16.0	X	262.21159	74.79543	286.89971	4.98416	0.0610415	0.21646410	2.7471274	21	5 30.9	19.8
229573 2006 <i>AX</i> ₇₇	15.9	X	132.05767	30.19381	123.06545	10.07624	0.0433249	0.21822388	2.7323387	21	7 12.8	19.8
229574 2006 <i>AX</i> ₉₅	17.0	X	354.12903	123.44498	262.46240	0.76481	0.1540084	0.23956943	2.5675276	21	11 27.4	19.5
229575 2006 <i>BA</i> ₁	16.6	X	253.37213	204.34330	252.55832	4.39811	0.1235608	0.23299218	2.6156230	21	9 13.8	20.1
229576 2006 <i>BV</i> ₁₇	16.1	X	225.14605	231.91754	134.59565	3.69860	0.1133003	0.21262221	2.7801206	21	4 21.7	20.4
229577 2006 <i>BZ</i> ₁₉	15.8	X	120.27960	256.95512	267.00693	7.57857	0.1160500	0.21660743	2.7459154	21	7 19.4	19.9
229578 2006 <i>BD</i> ₃₈	16.3	X	293.78734	311.74448	90.03561	3.43918	0.0142010	0.22477422	2.6789938	21	9 14.8	19.8
229579 2006 <i>BU</i> ₇₉	15.1	X	155.50710	27.97492	358.22255	11.75175	0.0703588	0.19736476	2.9216149	21	3 5.6	19.4
229580 2006 <i>BT</i> ₈₁	16.4	X	10.93254	247.86295	40.96036	2.83648	0.0618895	0.21637680	2.7478662	21	7 31.8	19.8
229581 2006 <i>BW</i> ₈₉	15.8	X	232.29456	233.93469	125.81361	5.16752	0.1166530	0.20938208	2.8087281	21	4 21.4	20.1
229582 2006 <i>BD</i> ₉₂	16.0	X	140.75608	155.97541	103.62951	4.73990	0.1148365	0.23692209	2.5866183	21	12 10.7	20.1
229583 2006 <i>BF</i> ₉₆	16.5	X	37.33259	355.04099	147.60167	2.71762	0.0155367	0.19545928	2.9405722	21	2 23.4	20.6
229584 2006 <i>BR</i> ₁₁₄	16.0	X	329.30170	187.50187	292.22512	1.69674	0.0417537	0.18289733	3.0372111	21	—	—
229585 2006 <i>BP</i> ₁₂₇	16.6	X	260.82058	275.53191	160.87194	2.43445	0.1828553	0.22791790	2.6543026	21	8 19.9	20.3
229586 2006 <i>BN</i> ₁₄₅	16.3	X	197.11242	265.32032	172.37211	4.97750	0.1468070	0.21903373	2.7255996	21	6 19.5	20.7
229587 2006 <i>BA</i> ₁₄₇	16.5	X	273.76228	314.49228	113.29176	2.80796	0.1171185	0.22880238	2.6474577	21	9 6.3	19.8
229588 2006 <i>BL</i> ₁₄₈	15.7	X	177.57660	256.17257	283.69895	11.94356	0.0622146	0.22798549	2.6537779	21	10 4.4	19.8
229589 2006 <i>BW</i> ₁₄₈	16.2	X	175.49060	32.32517	66.37019	8.29588	0.0471150	0.21754144	2.7380500	21	6 23.9	20.2
229590 2006 <i>BU</i> ₁₆₂	16.0	X	46.11137	59.21145	132.09858	3.72006	0.0378602	0.20844415	2.8171474	21	5 10.1	19.6
229591 2006 <i>BX</i> ₁₇₆	15.6	X	283.00381	2								

ELEMENTS AND OPPOSITION DATES IN 2021

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2021 JULY 5.0 TT

Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>		
229601	2006	BE ₂₇₆	16.4	X	95.72282	224.63688	165.69092	2.28282	0.0633711	0.18696641	3.0289608	21	—	—
229602	2006	CO	16.1	X	170.00645	259.86036	183.94652	8.93184	0.1511775	0.21409995	2.7673133	21	6 2.6	20.7
229603	2006	CG ₁₀	15.2	X	90.85863	44.53277	102.83322	36.22404	0.1693377	0.20483194	2.8501711	21	6 9.9	19.6
229604	2006	CF ₂₂	16.7	X	347.69832	347.56159	92.55942	3.42639	0.1350992	0.24421297	2.5348770	21	—	—
229605	2006	CR ₃₇	16.1	X	113.95417	297.23699	302.48030	6.48741	0.2519744	0.22344243	2.6896284	21	10 24.9	20.8
229606	2006	DM ₁	17.1	X	251.92520	75.55454	64.82722	3.51583	0.1724342	0.23611520	2.5925079	21	11 4.4	20.4
229607	2006	DD ₁₀	15.5	X	70.60812	17.55230	116.02835	7.03675	0.0428242	0.20014242	2.8945204	21	4 1.9	19.4
229608	2006	DQ ₂₀	16.0	X	32.03364	92.09738	110.90376	1.24846	0.1168411	0.20385872	2.8952350	21	5 12.6	19.0
229609	2006	DR ₂₇	15.3	X	108.70297	222.22590	164.93475	15.46205	0.2597689	0.18972560	2.9995223	21	2 4.6	19.8
229610	2006	DR ₃₂	15.8	X	323.96981	116.56550	352.55326	2.14017	0.1481338	0.17830063	3.1263251	21	—	—
229611	2006	DZ ₃₂	16.1	X	6.32288	342.29797	183.16617	1.30754	0.0383250	0.19201745	2.9756071	21	2 10.9	20.1
229612	2006	DS ₃₆	16.2	X	181.40836	79.95613	326.14185	1.15781	0.0705897	0.20288665	2.8683605	21	4 24.6	20.6
229613	2006	DP ₅₃	16.3	X	175.40641	124.13252	202.71680	1.00629	0.1155547	0.19460257	2.9491962	21	2 8.5	20.8
229614	2006	DF ₅₉	16.3	X	160.59443	224.72371	203.75613	1.26104	0.0627668	0.20359135	2.8619738	21	4 29.8	20.4
229615	2006	DZ ₆₆	17.0	X	223.83178	207.15558	267.92471	5.80009	0.2969660	0.22709549	2.6607069	21	8 18.0	21.6
229616	2006	DK ₆₈	15.3	X	148.44159	271.01041	103.94497	16.26315	0.0716642	0.19267413	2.9688422	21	2 14.3	19.8
229617	2006	DY ₇₄	16.4	X	183.26139	218.00032	114.41043	3.73011	0.0881747	0.19325750	2.9628647	21	1 29.9	20.8
229618	2006	DT ₇₅	16.1	X	72.14498	342.29483	116.14554	2.67966	0.0723199	0.19547728	2.9403917	21	2 19.7	19.9
229619	2006	DH ₈₂	16.4	X	356.43952	115.19362	62.49445	0.70957	0.0447653	0.19310569	2.9644172	21	2 12.9	20.4
229620	2006	DZ ₈₃	16.0	X	177.89476	354.67031	311.95696	1.84501	0.0659320	0.18323685	3.0699231	21	—	—
229621	2006	DQ ₉₆	16.1	X	167.41533	246.54920	182.37258	1.87524	0.0509423	0.20315204	2.8658619	21	5 7.8	20.1
229622	2006	DQ ₁₂₁	15.5	X	254.19967	167.64841	113.29927	2.83196	0.0203369	0.19501500	2.9450366	21	2 15.6	19.5
229623	2006	DD ₁₂₈	16.2	X	60.90040	277.42331	99.75160	3.05056	0.1184052	0.18251968	3.0779596	21	—	—
229624	2006	DN ₁₃₃	16.4	X	126.29492	60.33818	73.06753	3.19593	0.0750291	0.21064349	2.7975038	21	6 13.1	20.4
229625	2006	DR ₁₄₃	16.1	X	105.96821	349.87318	23.82269	1.59787	0.2222294	0.18697563	3.0288612	21	1 13.6	20.3
229626	2006	DQ ₁₄₈	16.1	X	67.71392	267.23168	279.70624	0.96826	0.0315546	0.20666100	2.8333291	21	6 1.4	19.9
229627	2006	DF ₁₆₀	16.1	X	109.02885	213.07968	348.11275	6.15772	0.0781894	0.21691347	2.7433320	21	8 22.1	20.0
229628	2006	DA ₁₆₄	16.0	X	273.93344	171.85700	187.49685	4.23271	0.1176916	0.21246606	2.7814826	21	6 4.7	20.0
229629	2006	DF ₁₉₁	15.8	X	62.22950	71.16774	102.05224	3.00365	0.0208601	0.20211315	2.8756741	21	5 6.7	19.6
229630	2006	DR ₂₀₁	15.7	X	40.75982	144.96006	97.10623	9.96628	0.1039440	0.20908990	2.8113442	21	7 17.3	19.0
229631	Cluny		16.3	X	278.95176	291.05182	149.79183	13.31488	0.1196652	0.23191895	2.6236862	21	10 4.4	19.6
229632	2006	ED ₃₂	16.2	X	224.92218	136.74792	322.71165	5.07854	0.1575480	0.22311302	2.6922752	21	8 13.1	20.4
229633	2006	ED ₃₉	15.9	X	94.50445	269.83883	262.68680	6.54070	0.1593065	0.20936623	2.8088699	21	7 6.8	19.8
229634	2006	EE ₄₃	14.9	X	191.07943	192.05459	68.19301	13.01374	0.1778126	0.17248898	3.1961597	21	—	—
229635	2006	EC ₅₉	16.1	X	177.51518	196.69734	305.47738	3.73326	0.0533494	0.21881991	2.7273748	21	8 21.9	20.1
229636	2006	FS ₂	16.1	X	315.15853	215.95257	54.26310	2.84691	0.0041366	0.19866003	2.9089018	21	4 20.6	20.0
229637	2006	FU ₄	15.8	X	96.28161	137.22901	49.41604	8.44672	0.1472264	0.20975725	2.8053780	21	7 28.8	20.0
229638	2006	FN ₈	15.8	X	23.78739	256.48886	196.25266	9.44692	0.0826878	0.17998964	3.1067361	21	—	—
229639	2006	FZ ₈	15.8	X	214.63256	154.26622	74.03248	2.75768	0.0510674	0.17148146	3.2086666	21	—	—
229640	2006	FD ₁₁	15.6	X	309.25295	85.94481	57.66640	3.58699	0.1316813	0.17860264	3.1227997	21	—	—
229641	2006	FJ ₁₆	15.9	X	257.07926	278.00461	10.71983	6.26866	0.0645820	0.19196754	2.9761228	21	2 25.7	20.2
229642	2006	FU ₂₀	16.0	X	105.49809	268.24857	35.48632	2.94454	0.0681561	0.16853381	3.2459715	21	12 13.8	20.7
229643	2006	FC ₃₈	16.1	X	294.18564	185.93158	128.95546	2.95310	0.0603120	0.20415513	2.8564669	21	5 13.0	20.0
229644	2006	FO ₄₂	15.7	X	27.11907	75.42191	65.93282	3.23749	0.0894378	0.18940066	3.0029520	21	2 11.0	19.4
229645	2006	FD ₄₉	15.8	X	217.38497	26.11942	126.23750	16.42996	0.0701827	0.22686167	2.6625348	21	10 28.1	19.9
229646	2006	FE ₅₀	15.1	X	221.48188	243.33817	296.44882	28.39434	0.2004264	0.23329637	2.6133489	21	11 8.0	19.7
229647	2006	FF ₅₃	16.0	X	239.16004	7.84069	212.61363	2.71450	0.1037740	0.17373543	3.1808544	21	—	—
229648	2006	GG ₂	15.6	X	275.62130	98.97328	93.70973	4.76870	0.0301133	0.17872818	3.1213373	21	—	—
229649	2006	GC ₅	15.8	X	79.98165	83.82457	121.28920	5.00988	0.0376753	0.21027645	2.8007583	21	7 13.6	19.6
229650	2006	GY ₂₂	16.2	X	36.94542	145.96848	79.27004	3.18695	0.1254443	0.20304075	2.8669090	21	6 19.5	19.5
229651	2006	GR ₃₆	15.8	X	214.03754	287.83484	49.35187	3.45490	0.0110985	0.19281420	2.9674042	21	3 10.5	19.9
229652	2006	HX ₁	16.6	X	279.30354	100.54053	81.46750	5.74337	0.2177017	0.24149698	2.5538472	21	—	—
229653	2006	HQ ₆	15.4	X	339.82093	292.28033	211.57699	8.72280	0.1079644	0.18101096	3.0950391	21	—	—
229654	2006	HE ₁₈	15.5	X	320.46971	282.68971	203.70842	10.88508	0.0615798	0.17352162	3.1834668	21	—	—
229655	2006	HO ₃₂	16.1	X	202.11819	196.92408	196.17643	1.65670	0.0772768	0.20316911	2.8657013	21	5 1.5	20.4
229656	2006	HH ₃₄	16.0	X	26.77813	102.23873	54.18055	3.39469	0.1516612	0.19101617	2.9859965	21	3 2.6	19.3
229657	2006	HT ₃₉	14.8	X	318.55905	84.94435	62.84054	27.42081	0.1249562	0.17636278	3.1491845	21	—	—
229658	2006	HV ₄₁	15.1	X	229.36171	180.26300	105.18715	12.38079	0.0869793	0.17957944	3.1114654	21	1 23.0	19.9
229659	2006	HK ₄₉	15.8	X	53.96008	337.50992	100.84009	3.55059	0.1379975	0.18528060	3.0473061	21	1 6.0	19.1
229660	2006	HB ₁₁₀	15.8	X	185.43298	112.86781	37.79859	27.20800	0.2431605	0.21951619	2.7216045	21	9 21.0	21.0
229661	2006	JV ₄₆	14.8	X	275.21659	318.73065	231.65842	25.43033	0.1689048	0.17406839	3.1767968	21	—	—
229662	2006	KV ₁₂	15.0	X	215.35852	145.09867	143.07335	10.25438	0.0949192	0.17960770	3.1111390	21	1 11.4	19.9
229663	2006	KX ₂₀	14.9	X	271.14045	118.13160	97.03028	11.61348	0.0482886	0.17604678	3.1529518	21	—	—
229664	2006	KV ₄₀	16.1	X	111.84389	271.37306	137.84432	2.14759	0.0948763	0.18501124	3.0502631	21	2 14.9	20.5
229665	2006	MC ₂	15.5	X	271.16289	98.86865	119.25470	10.47576	0.0389194	0.17548442	3.1596841	21	—	—
229666	2006	QF ₃₃	16.6	X	200.04037	51.17781	283.38161	18.97202	0.0635544	0.36748489	1.9303811	21	1 15.3	18.8
229667	2006	SQ ₁₈₂	16.4	X	212.64742	184.14202	302.97288	0.50992	0.1154667	0.19108422	2.9852875	21	9 5.9	20.9
229668	2006	SQ ₄₀₈	17.8	X	42.28241	239.51244	61.49342	4.27105	0.2287601	0.26188367	2.4195268	21	11 4.9	20.6
229669	2006	TF ₄₁	17.8	X	344.18282	89.22333	217.89747	4.56608	0.1203977	0.31816767	2.1250314	21	7 11.1	19.4
229670	2006	TP ₅₈	17.6	X	3.30169	274.15820	229.40091	18.70379	0.0702095	0.35753175	1.9660428	21	—	

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Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>
229681 2007 CL ₅₂	17.0	X	108.12704	233.67170	231.58820	5.37750	0.1070366	0.28863951	2.2675952	21	4 9.7	19.6
229682 2007 CN ₅₂	16.6	X	326.54415	244.59587	307.63738	5.17021	0.0712913	0.27390643	2.3481972	21	—	—
229683 2007 CR ₆₂	17.1	X	304.93085	333.09448	247.05834	2.20725	0.1399497	0.27485673	2.3427816	21	—	—
229684 2007 DQ ₁₁	17.4	X	105.16491	330.81585	147.74955	8.19007	0.1733233	0.28988174	2.2611124	21	5 9.9	20.3
229685 2007 DK ₂₅	17.1	X	249.69623	264.72902	321.56218	2.21501	0.1433955	0.26361874	2.4088987	21	—	—
229686 2007 DP ₃₆	16.7	X	36.49342	131.60268	146.50370	2.74422	0.1754149	0.22881284	2.6473770	21	9 11.5	19.7
229687 2007 DO ₄₈	17.4	X	347.20194	240.14696	319.21065	1.84515	0.1611756	0.27743109	2.3282662	21	1 24.8	19.9
229688 2007 DL ₅₁	17.2	X	316.78731	171.39937	2.03181	2.59913	0.1321135	0.26716309	2.3875460	21	—	—
229689 2007 DQ ₅₇	17.1	X	272.06662	116.54120	89.47596	3.39585	0.1265971	0.26396571	2.4067873	21	—	—
229690 2007 DS ₇₀	17.1	X	92.32747	43.88903	358.25713	4.78889	0.2332370	0.27321430	2.3521613	21	1 10.5	19.2
229691 2007 DX ₇₈	17.4	X	149.85226	136.00827	356.09340	4.66571	0.0680691	0.29897065	2.2150507	21	7 9.8	20.2
229692 2007 DP ₈₂	17.8	X	31.85310	211.83461	207.82160	0.73175	0.1576696	0.26337830	2.4103645	21	—	—
229693 2007 DC ₈₈	17.4	X	86.65519	25.18157	67.12986	2.07176	0.1011689	0.28021588	2.3128150	21	2 20.2	19.7
229694 2007 DE ₉₇	16.4	X	223.44816	42.34582	337.39781	5.41031	0.0732874	0.22070209	2.7118464	21	5 4.7	20.5
229695 2007 DH ₁₀₅	16.1	X	15.44945	207.89302	47.24820	5.54880	0.0631148	0.21856572	2.7294890	21	6 20.3	19.4
229696 2007 DT ₁₀₆	16.9	X	45.44354	98.05417	71.47798	6.62767	0.0310337	0.28492534	2.2872589	21	4 1.8	19.5
229697 2007 EZ ₁₂	16.9	X	46.37038	77.75517	51.64985	2.64386	0.0961039	0.27907017	2.3191408	21	2 4.4	19.2
229698 2007 EL ₁₆	16.6	X	44.17144	25.41394	136.09615	6.56873	0.1073721	0.28232259	2.3012950	21	3 22.1	18.7
229699 2007 EW ₂₅	15.9	X	66.71117	187.43601	40.16322	7.22819	0.2112767	0.22485934	2.6783177	21	8 26.5	19.5
229700 2007 EQ ₂₉	16.9	X	340.72524	136.62774	104.18576	2.56002	0.1778119	0.28184302	2.3039048	21	3 12.9	19.1
229701 2007 EP ₄₁	18.4	X	187.99326	224.73480	196.93719	1.18384	0.1631159	0.29862450	2.2167621	21	5 18.3	21.6
229702 2007 EO ₄₈	15.8	X	96.38666	336.89030	103.79335	3.23536	0.0373068	0.20380658	2.8597226	21	2 24.1	19.7
229703 2007 EP ₆₉	17.4	X	300.20574	45.32982	141.79093	3.23500	0.1167842	0.26486769	2.4103201	21	—	—
229704 2007 EJ ₇₆	17.5	X	339.03415	279.48296	244.46912	1.24386	0.1622162	0.26863344	2.3788259	21	—	—
229705 2007 EX ₇₈	17.6	X	20.83351	15.53276	124.60738	2.91439	0.1248264	0.27400581	2.3476294	21	1 3.2	19.9
229706 2007 EV ₈₅	16.9	X	154.42940	157.80646	48.09694	9.62218	0.1014135	0.23858437	2.5745899	21	10 21.3	20.8
229707 2007 EE ₁₁₇	16.5	X	203.53144	316.62771	62.51556	5.94453	0.0686758	0.21053911	2.7984283	21	4 16.7	20.6
229708 2007 ED ₁₁₉	16.1	X	167.45625	152.58134	25.19889	13.77045	0.0888211	0.23560837	2.5962244	21	9 30.4	20.0
229709 2007 EZ ₁₁₉	17.0	X	169.92528	68.32159	53.96170	6.74697	0.0375626	0.22470184	2.6795691	21	7 19.8	20.8
229710 2007 ET ₁₂₀	16.6	X	313.22409	88.36938	16.02016	10.39438	0.2058155	0.25795582	2.4440286	21	—	—
229711 2007 EH ₁₃₃	17.1	X	88.34922	285.87704	164.48985	3.09670	0.1278386	0.27847413	2.3224488	21	2 23.1	19.5
229712 2007 EZ ₁₃₃	18.0	X	37.87231	121.60991	8.30750	2.48616	0.1477880	0.27556877	2.3387442	21	1 19.8	19.8
229713 2007 EJ ₁₄₁	17.2	X	100.51562	109.22661	333.91861	3.68667	0.1974315	0.28028222	2.3124500	21	3 14.8	19.8
229714 2007 EH ₁₄₇	16.5	X	100.74939	238.39353	34.28314	4.98993	0.1313774	0.24158879	2.5532002	21	11 17.9	20.3
229715 2007 EY ₁₆₇	17.5	X	86.53825	62.71724	45.59878	3.06529	0.1685952	0.28015286	2.3131618	21	3 26.5	19.9
229716 2007 ER ₁₆₉	17.9	X	320.36542	59.88224	107.02541	2.25571	0.1343109	0.26332699	2.4106776	21	—	—
229717 2007 EC ₁₇₂	15.5	X	214.49641	129.73836	193.71243	7.63171	0.2060326	0.20140484	2.8824123	21	2 14.7	20.6
229718 2007 EA ₁₇₉	17.2	X	15.08710	183.03332	338.75420	2.40959	0.1607277	0.27421916	2.3464115	21	1 21.0	19.2
229719 2007 EN ₂₁₀	17.5	X	359.17137	135.40199	23.70226	4.11040	0.1232459	0.27474795	2.3433999	21	—	—
229720 2007 EK ₂₁₉	16.3	X	116.50814	190.45053	147.86658	1.26939	0.2574833	0.18814785	3.0162676	21	—	—
229721 2007 FC ₃₈	16.8	X	12.74307	77.64099	93.39556	4.17342	0.1362780	0.27524004	2.3406060	21	2 2.6	19.0
229722 2007 GE	16.2	X	102.71171	50.72397	181.27932	6.30325	0.0456419	0.23412211	2.6072005	21	9 19.9	19.8
229723 2007 GG ₂	16.2	X	259.03201	265.00558	71.21662	3.88292	0.0594417	0.20911015	2.8111627	21	4 25.8	20.3
229724 2007 GQ ₇	17.5	X	299.66334	169.52434	15.33947	3.01108	0.1706150	0.26377130	2.4079697	21	—	—
229725 2007 GX ₁₆	16.7	X	148.39179	194.94667	357.02822	2.16123	0.1229702	0.23299153	2.6156279	21	9 25.2	20.6
229726 2007 GH ₁₇	16.0	X	12.12455	19.14857	239.42595	5.24632	0.0146980	0.21835603	2.7312362	21	6 18.7	19.5
229727 2007 GZ ₁₉	17.2	X	351.54622	264.65213	274.18623	1.84743	0.1506833	0.27018163	2.3697298	21	1 6.3	19.5
229728 2007 GX ₃₀	17.0	X	128.90365	313.42324	199.47151	1.71974	0.0660678	0.22278137	2.6949464	21	7 10.7	20.8
229729 2007 GB ₃₅	16.7	X	331.27447	64.15533	64.23988	7.24700	0.0783868	0.26151318	2.4218114	21	—	—
229730 2007 GP ₃₇	17.7	X	345.78196	1.27843	127.62949	2.59407	0.1424407	0.26200722	2.4187661	21	—	—
229731 2007 GN ₄₂	16.1	X	111.38129	284.05856	32.52741	1.54098	0.2036458	0.17462877	3.1699970	21	—	—
229732 2007 GY ₄₇	15.8	X	128.93749	155.60217	209.78144	9.96303	0.1140173	0.18826665	3.0149987	21	1 12.9	20.3
229733 2007 GK ₅₃	16.7	X	214.22165	231.47421	217.35906	1.71924	0.0350222	0.22603941	2.6689879	21	7 28.6	20.3
229734 2007 GT ₅₃	16.2	X	194.18225	142.36978	165.87838	4.67786	0.1640310	0.18823984	3.0152848	21	1 14.7	21.3
229735 2007 HK ₁	16.4	X	69.83593	304.35743	315.45341	1.00770	0.2091074	0.22860781	2.6489596	21	10 7.4	20.1
229736 2007 HK ₃	16.0	X	227.25600	357.06465	159.73006	13.85223	0.0863719	0.24222331	2.5487394	21	11 11.5	19.7
229737 Porthos	16.2	X	260.58556	190.49671	171.86056	7.36372	0.0806387	0.21652529	2.7466098	21	5 28.9	20.1
229738 2007 HW ₂₁	17.5	X	43.64008	150.08164	164.50576	2.32329	0.0907050	0.23294226	2.6159967	21	10 29.7	20.8
229739 2007 HB ₂₂	16.0	X	224.39559	326.15176	55.87905	7.32665	0.1143280	0.21245455	2.7815830	21	5 9.2	20.2
229740 2007 HO ₅₃	15.6	X	274.50285	269.37997	79.29991	9.74317	0.0205875	0.21491779	2.7602885	21	6 5.4	19.1
229741 2007 HM ₅₈	15.3	X	200.11930	237.28622	81.09907	11.36980	0.1134872	0.19547914	2.9403731	21	2 1.3	20.0
229742 2007 HV ₈₂	16.6	X	22.90154	120.01016	120.68939	6.84473	0.0812926	0.28572323	2.2829988	21	6 11.2	18.9
229743 2007 JA ₅	15.0	X	172.19954	18.53390	221.21915	16.30090	0.0977633	0.17380989	3.1799459	21	12 7.8	20.1
229744 2007 JQ ₈	16.1	X	207.02858	290.40340	56.89771	3.23787	0.0559220	0.20052469	2.8908406	21	3 12.9	20.4
229745 2007 JA ₁₅	16.3	X	273.42391	11.29969	250.78690	1.06651	0.0076676	0.19898114	2.9057714	21	2 15.3	20.2
229746 2007 JF ₁₇	15.5	X	216.12489	207.80132	107.55187	3.43479	0.0787498	0.19441615	2.9510812	21	2 11.9	20.0
229747 2007 JV ₁₈	15.8	X	289.22486	240.97168	93.93603	6.96220	0.1727309	0.21082991	2.7958545	21	5 16.0	19.6
229748 2007 JZ ₁₉	16.3	X	223.74754	173.02660	110.90920	3.01795	0.1674623	0.18970071	2.9997847	21	1 12.0	21.3
229749 2007 JH ₂₁	15.8	X	170.09838	321.82983	249.49635	11.85846	0.2316010	0.23951654	2.5679055	21	11 5.4	20.3
229750 2007 JC ₂₃	15.9	X	351.04291	48.47789	255.02545	5.24548	0.0531243	0.21985978	2.7187683	21	7 18.9	19.2
229751 2007 JK ₂₇	15.0	X	62.74382	276.46059	75.32001	18.64308	0.1245527	0.17051022	3.2208397	21	12 30.0	19.8
229752 2007 JL ₃₆	16.3	X	358.31968	42.61758	264.86582	4.01746	0.1000760	0.22098471	2.7095337	21	8 5.5	19.3
229753 2007 KA ₄	15.5	X	92.81278	278.25238	101.61330	10.35061	0.0693197	0.18342261	3.0678501	21	—	—
229754 2007 KO ₆	16.3	X	227.08903	293.24341	240.44090	5.49399	0.1143899</					

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Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>
229761 2007 RC ₂₈₈	13.6	X	45.05705	9.55026	3.65790	5.50791	0.0502767	0.08459737	5.1392310	21	12 8.1	20.4
229762 2007 GKúnlíhömíðimà	3.3	X	345.77298	346.34609	131.04384	23.38937	0.4860728	0.00157558	73.1434928	21	12 10.3	19.5
229763 2008 FZ ₅₂	17.4	X	228.42739	155.19034	162.24603	4.58073	0.1843182	0.28864529	2.2675650	21	2 10.5	21.0
229764 2008 FE ₈₈	16.9	X	207.19886	239.72616	26.36902	6.81821	0.0897813	0.27787407	2.3257911	21	—	—
229765 2008 FT ₉₅	17.0	X	101.56196	229.43353	109.72226	2.39052	0.2029318	0.27025773	2.3692850	21	—	—
229766 2008 GX ₇₆	17.1	X	279.55574	195.95733	119.25118	5.02682	0.1881857	0.29838010	2.2179725	21	3 29.9	20.1
229767 2008 HA ₃₃	17.5	X	191.99531	262.07198	68.79876	8.62386	0.1806581	0.28289772	2.2981750	21	1 29.6	21.2
229768 2008 HT ₆₈	17.2	X	256.30338	247.45103	93.92725	6.85153	0.1389529	0.29707039	2.2244866	21	4 15.1	20.4
229769 2008 JX ₁₉	15.5	X	4.51722	68.39036	249.46877	13.45242	0.2457057	0.23718140	2.5847326	21	9 8.8	18.0
229770 2008 JX ₃₀	16.8	X	330.54895	195.54178	159.98322	5.53855	0.2840770	0.23889175	2.5723809	21	8 9.8	18.5
229771 2008 JQ ₃₂	17.5	X	3.09340	189.21766	71.96246	2.65733	0.2251311	0.30445051	2.1883909	21	5 29.9	18.2
229772 2008 KX ₁₀	16.3	X	338.26330	185.84731	163.07260	5.85947	0.3406197	0.23812626	2.5778908	21	8 16.7	17.2
229773 2008 LW ₁₀	16.8	X	337.03174	122.76723	175.30475	3.41802	0.0817234	0.23047541	2.6346301	21	6 17.9	19.8
229774 2008 LY ₁₄	15.7	X	212.35205	90.01743	260.58075	11.50770	0.1551821	0.20546178	2.8443434	21	3 13.0	20.6
229775 2008 LM ₁₅	16.3	X	339.74305	204.34976	151.02931	4.48777	0.2590368	0.23852396	2.5750245	21	9 12.1	17.9
229776 2008 ME ₂	17.1	X	158.41804	256.04746	116.51963	7.60938	0.1359575	0.28244229	2.3006448	21	2 13.4	20.3
229777 2008 ENIAC	15.8	X	284.97046	359.40153	262.45773	9.14853	0.0787924	0.20410938	2.8568936	21	2 15.2	20.0
229778 2008 NX ₄	15.7	X	266.10555	281.32393	86.95257	11.06002	0.1938073	0.21519845	2.7578880	21	5 28.5	19.8
229779 2008 ON ₂₀	16.4	X	134.57200	177.21271	295.05485	3.29905	0.0182029	0.21169845	2.7882022	21	5 19.0	20.2
229780 2008 OJ ₂₁	16.0	X	119.34474	86.74676	6.59936	1.48514	0.0407964	0.20184625	2.8782086	21	4 9.6	19.9
229781 2008 ArthurMcDonald	15.4	X	142.57021	340.40376	308.45134	14.04992	0.0817248	0.17544596	3.1601460	21	—	—
229782 2008 PZ ₃	16.5	X	333.13355	36.66657	118.98605	2.86756	0.1984363	0.22718373	2.6600180	21	8 25.9	18.7
229783 2008 PG ₁₇	15.4	X	72.52210	215.30076	140.23574	9.93333	0.0761701	0.17426672	3.1743860	21	—	—
229784 2008 PM ₁₈	15.6	X	25.05756	217.91658	97.77269	21.20856	0.3535203	0.23282388	2.6168834	21	11 21.8	19.0
229785 2008 QR ₂	16.1	X	124.74325	86.39359	304.26428	9.33983	0.2151520	0.18741709	3.0241030	21	2 19.4	20.7
229786 2008 QU ₈	16.0	X	112.14444	281.51241	26.77404	0.58000	0.1388493	0.17221249	3.1995799	21	12 31.5	21.2
229787 2008 QV ₂₂	15.4	X	290.45108	331.91595	251.31647	9.27239	0.0476088	0.19179641	2.9778929	21	1 14.2	19.8
229788 2008 QW ₄₁	16.5	X	319.23859	222.58515	314.48018	2.78699	0.0988339	0.25957460	2.4338543	21	—	—
229789 2008 RH ₁₀	14.7	X	281.62473	357.42949	168.83804	10.60847	0.0280226	0.17331282	3.1860231	21	—	—
229790 2008 RH ₃₀	17.0	X	300.79255	5.36199	177.83333	1.16383	0.1172762	0.25799268	2.4437932	21	—	—
229791 2008 RP ₄₃	15.7	X	38.75819	24.50597	45.59188	1.96884	0.1512574	0.17327457	3.1864919	21	—	—
229792 2008 RD ₇₉	16.0	X	124.18329	81.06025	326.07655	2.16516	0.1198618	0.18790338	3.0188833	21	3 1.1	20.3
229793 2008 RB ₉₀	16.2	X	302.14981	62.72834	138.98536	5.56743	0.0492100	0.22076566	2.7113257	21	8 23.2	19.7
229794 2008 RR ₉₉	16.6	X	183.27387	341.28526	38.14244	2.06483	0.1292025	0.19604041	2.9347581	21	3 28.1	21.1
229795 2008 RM ₁₀₀	14.9	X	161.01858	274.12564	172.43554	7.70034	0.2410888	0.12430394	3.9763028	21	6 3.6	21.6
229796 2008 RC ₁₂₂	16.0	X	335.26988	140.72794	19.57227	4.44268	0.1062375	0.18208173	3.0828931	21	—	—
229797 2008 RT ₁₃₀	15.2	X	233.27065	247.05372	119.02440	13.11561	0.0506076	0.20301858	2.8671177	21	5 8.9	19.6
229798 2008 SK ₁₅	16.3	X	103.98263	152.00719	195.51418	1.50988	0.1074981	0.17788411	3.1312034	21	—	—
229799 2008 SN ₁₈	16.1	X	67.54831	234.71299	133.32258	1.18516	0.0914785	0.17368895	3.1814218	21	—	—
229800 2008 ST ₃₅	16.2	X	204.10580	332.54578	51.04351	1.04004	0.0710903	0.19960411	2.8997223	21	4 22.0	20.5
229801 2008 ST ₃₇	16.3	X	43.77019	201.92697	43.04868	3.14812	0.0211571	0.21358308	2.7717762	21	7 15.9	19.9
229802 2008 SP ₅₁	15.5	X	310.51038	288.17304	237.03836	4.00582	0.1410854	0.17541495	3.1605183	21	—	—
229803 2008 SL ₅₇	16.2	X	11.59032	89.78319	181.71072	2.31774	0.0464803	0.21195517	2.7859504	21	7 6.5	19.6
229804 2008 SO ₆₀	14.9	X	28.64454	153.54853	280.23984	4.10061	0.1617029	0.17160090	3.2071775	21	—	—
229805 2008 SC ₆₉	16.0	X	95.83670	18.54475	254.12922	5.01539	0.0927131	0.23281191	2.6169731	21	11 7.8	19.8
229806 2008 SX ₁₁₂	16.0	X	99.07278	98.74017	121.53477	4.00965	0.0255954	0.21868512	2.7284954	21	8 28.0	19.6
229807 2008 ST ₁₄₅	16.3	X	1.12913	161.40686	158.72131	4.66137	0.1289354	0.22369945	2.6875678	21	8 31.9	19.2
229808 2008 SB ₁₄₈	13.5	X	7.84270	6.20840	42.98581	1.79772	0.0629739	0.08210777	5.2425978	21	12 4.4	20.1
229809 2008 SA ₁₆₄	13.0	X	270.69201	300.40773	189.09291	12.60288	0.0247136	0.08195492	5.2491143	21	11 12.1	20.0
229810 2008 SE ₁₆₄	15.8	X	42.45839	352.72973	57.77142	2.05229	0.1558286	0.17007131	3.2263787	21	—	—
229811 2008 ST ₁₈₇	13.3	X	354.24781	125.82119	280.34052	3.77454	0.0690635	0.07942394	5.3600447	21	11 13.3	19.9
229812 2008 SC ₂₀₁	16.4	X	31.00049	168.24738	334.38309	1.94565	0.0471562	0.18451828	3.0556934	21	2 17.7	20.3
229813 2008 SW ₂₂₃	13.5	X	29.90259	35.28203	328.38679	6.05091	0.0778367	0.08299761	5.2050588	21	11 11.3	20.2
229814 2008 SQ ₂₄₆	16.2	X	238.13818	98.65685	266.75674	0.91009	0.0873908	0.20492302	2.8493265	21	5 4.7	20.5
229815 2008 SX ₂₅₆	14.8	X	177.14265	216.14172	71.08471	10.61926	0.1638546	0.17764646	3.1339954	21	—	—
229816 2008 SY ₂₆₁	13.8	X	19.32777	212.99052	176.64755	3.11232	0.0476160	0.08296545	5.2064042	21	11 26.8	20.5
229817 2008 SK ₂₈₅	16.1	X	33.34818	159.02948	106.07465	1.84939	0.0205495	0.21408851	2.7674120	21	7 28.2	19.6
229818 2008 TP ₄	16.4	X	335.42931	302.47194	13.82000	1.86562	0.0696200	0.21581815	2.7526061	21	7 12.7	19.8
229819 2008 TK ₁₃	16.4	X	59.33274	158.53293	311.44253	1.72709	0.1431368	0.18536866	3.0463410	21	2 24.5	20.1
229820 2008 TA ₈₄	16.0	X	232.06709	118.17134	332.68154	1.71607	0.1030820	0.21708437	2.7418920	21	8 15.2	19.8
229821 2008 TQ ₁₀₅	15.9	X	248.17918	293.65750	353.92244	2.07259	0.1102242	0.19009692	2.9956150	21	2 9.9	20.5
229822 2008 TA ₁₁₂	13.2	X	43.98908	113.29877	253.29805	6.04424	0.0461439	0.08212538	5.2418483	21	11 29.5	20.0
229823 2008 TA ₁₅₂	16.3	X	132.72550	313.81503	73.86247	3.44985	0.0827886	0.18602838	3.0391345	21	2 12.6	20.7
229824 2008 UQ ₁	14.8	X	162.26215	180.23301	127.68483	6.05915	0.0353608	0.17284055	3.1918242	21	—	—
229825 2008 UB ₅	15.2	X	103.23533	226.85030	45.48607	13.61771	0.2604155	0.23210693	2.6222694	21	11 26.3	19.7
229826 2008 UK ₈	13.2	X	328.16618	46.23267	19.45466	1.01521	0.0823432	0.08104522	5.2883208	21	11 2.1	19.6
229827 2008 UC ₅₆	16.4	X	272.77470	352.06922	32.72359	1.31132	0.0594293	0.20370744	2.8606504	21	4 26.8	20.2
229828 2008 UH ₁₂₄	15.3	X	227.67623	350								

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Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>		
229841	2009	SO ₁₁₄	17.3	X	126.95417	81.17540	238.44400	3.15519	0.2015795	0.27315140	2.3525224	21	—	—
229842	2009	SF ₁₄₃	16.1	X	299.29114	75.00953	197.55884	4.22972	0.0674045	0.21455713	2.7633809	21	3 21.8	19.8
229843	2009	SF ₁₄₇	17.3	X	209.14899	279.32068	46.06562	7.09530	0.1174165	0.28907258	2.2653298	21	2 5.2	20.7
229844	2009	ST ₂₀₄	17.9	X	346.34783	294.54495	218.41929	1.87592	0.1228884	0.27537478	2.3398424	21	—	—
229845	2009	ST ₂₂₉	16.4	X	171.72612	141.83176	257.22235	2.43217	0.0976428	0.21413097	2.7670461	21	4 4.9	20.7
229846	2009	SZ ₂₃₀	16.6	X	139.46801	228.13873	198.51595	4.64570	0.1497326	0.21138245	2.7909802	21	4 11.5	20.8
229847	2009	SR ₂₃₄	15.0	X	90.71952	328.23420	29.80641	13.07476	0.2564575	0.18357919	3.0661054	21	—	—
229848	2009	SW ₂₅₁	17.0	X	76.16084	359.39360	69.28178	3.26460	0.1233723	0.27276479	2.3547448	21	1 2.6	19.2
229849	2009	SK ₂₅₃	17.7	X	346.39792	153.00492	287.11944	0.44864	0.1645606	0.25893312	2.4378724	21	—	—
229850	2009	SP ₂₅₅	17.1	X	187.23732	297.28759	94.80618	24.83314	0.1024534	0.37834685	1.8932558	21	4 13.7	20.2
229851	2009	SQ ₂₆₇	12.5	X	321.88311	203.73409	222.15184	23.29877	0.0479808	0.08086130	5.2963364	21	10 27.2	19.3
229852	2009	SH ₂₇₅	17.5	X	340.09731	312.67518	104.67585	1.91810	0.1887502	0.25393720	2.4697434	21	12 24.1	19.4
229853	2009	SN ₂₇₅	16.0	X	355.75593	17.03304	103.39317	2.56367	0.1279793	0.18800902	3.0177523	21	—	—
229854	2009	SD ₂₇₆	16.4	X	247.87802	224.29968	149.55798	3.31595	0.0454588	0.22524942	2.6752247	21	5 31.6	20.1
229855	2009	ST ₂₈₈	15.3	X	58.28698	339.23973	30.01139	10.04422	0.0990893	0.18040256	3.1019938	21	—	—
229856	2009	SU ₃₃₉	15.9	X	274.35645	209.38856	236.06905	11.23320	0.1389631	0.23663658	2.5886985	21	9 22.9	19.5
229857	2009	SR ₃₄₆	15.7	X	71.04717	240.05886	51.97766	15.59066	0.0762820	0.24159164	2.5531801	21	11 5.0	19.1
229858	2009	TZ ₅	15.2	X	111.97401	279.86054	44.05750	12.33939	0.1416198	0.18181796	3.0858740	21	—	—
229859	2009	TD ₆	12.6	X	350.46714	343.05410	68.38594	10.05798	0.1347713	0.08215030	5.2407882	21	11 16.8	18.8
229860	2009	TA ₁₂	16.4	X	289.42461	312.24832	58.67046	13.54654	0.1867712	0.23187355	2.6240286	21	6 29.0	19.9
229861	2009	TL ₁₇	15.6	X	18.53159	298.20215	134.75396	5.84881	0.1199343	0.17887360	3.1196453	21	—	—
229862	2009	TY ₁₇	14.7	X	83.60529	262.34408	108.14143	17.44570	0.1139295	0.18138204	3.0908163	21	—	—
229863	2009	TC ₂₀	15.7	X	220.14471	216.62379	226.13950	16.59412	0.0325099	0.22711691	2.6605396	21	7 23.3	19.8
229864	2009	Sichouzhilu	15.0	X	71.72054	324.25904	36.22216	23.99258	0.1832208	0.18015797	3.1048007	21	—	—
229865	2009	TQ ₂₆	16.8	X	159.60143	299.77474	56.09586	7.00209	0.1974658	0.28553646	2.2839942	21	1 31.2	20.2
229866	2009	TV ₂₇	15.0	X	119.31109	244.97658	58.53143	16.04009	0.0828741	0.17647841	3.1478086	21	12 29.8	20.0
229867	2009	TS ₂₉	16.5	X	215.43520	6.58869	326.03758	4.33432	0.0754924	0.20841447	2.8167149	21	2 28.7	20.7
229868	2009	TS ₃₅	15.5	X	58.63478	178.35121	215.98034	15.75851	0.1285987	0.17982439	3.1086392	21	—	—
229869	2009	UZ ₄	15.8	X	51.92097	225.96608	197.64951	0.95110	0.1240047	0.18490165	3.0514683	21	—	—
229870	2009	UD ₁₂	15.6	X	73.54959	182.04158	224.05473	11.45719	0.0988235	0.18587110	3.0440887	21	—	—
229871	2009	UO ₂₆	17.4	X	198.59441	342.47220	56.42818	5.19025	0.1333959	0.29889711	2.2154141	21	4 28.7	20.5
229872	2009	UB ₃₀	15.9	X	331.85559	236.13634	219.25292	4.22308	0.1166906	0.17221580	3.1995388	21	12 30.1	19.9
229873	2009	UD ₃₀	15.4	X	149.44944	275.15130	46.38068	9.94559	0.1202728	0.18720461	3.0263909	21	—	—
229874	2009	UC ₃₁	15.6	X	47.38050	210.16414	223.74521	8.02314	0.0730114	0.18594887	3.0400007	21	—	—
229875	2009	UR ₃₃	15.4	X	256.75480	313.23302	225.45614	6.50685	0.1241650	0.17154509	3.2078732	21	12 22.3	19.8
229876	2009	UT ₃₄	15.2	X	266.17260	161.15295	61.89065	8.66690	0.0520782	0.18531488	3.0469303	21	—	—
229877	2009	UR ₃₅	16.2	X	161.57265	339.81196	235.47071	11.20227	0.0985676	0.24297774	2.5436322	21	11 7.3	20.0
229878	2009	UE ₄₀	12.9	X	321.24565	212.43276	226.08889	14.29137	0.1315506	0.08170263	5.2599145	21	11 3.5	19.2
229879	2009	UZ ₄₆	15.6	X	6.71384	223.93097	50.03829	19.26897	0.2806156	0.22821283	2.6520152	21	7 13.8	17.9
229880	2009	UM ₇₁	15.0	X	349.51062	230.40143	252.57411	9.14163	0.1134045	0.18089550	3.0963558	21	—	—
229881	2009	US ₇₁	16.4	X	233.93337	347.66393	60.88677	10.73132	0.2120696	0.22379729	2.6867845	21	6 12.5	20.8
229882	2009	UT ₇₁	15.9	X	109.38166	304.69089	134.12884	2.96195	0.0897682	0.20006340	2.8952826	21	3 18.2	19.8
229883	2009	UV ₇₂	15.7	X	305.87353	250.42421	60.31880	12.06261	0.1868789	0.22288445	2.6941154	21	5 3.6	19.2
229884	2009	UL ₈₂	16.0	X	240.33964	338.55672	49.21052	11.95793	0.0899603	0.22188718	2.7021819	21	6 2.8	20.0
229885	2009	UV ₈₂	16.6	X	324.77093	276.41348	103.20925	2.63394	0.0683457	0.23836020	2.5762038	21	9 26.3	19.5
229886	2009	UZ ₈₄	16.2	X	231.48985	253.71573	90.63898	4.72570	0.1023123	0.20962370	2.8065694	21	4 2.5	20.5
229887	2009	UA ₈₅	16.2	X	74.25203	221.09983	133.91649	2.94991	0.1483617	0.17566931	3.1574668	21	—	—
229888	2009	UZ ₈₈	17.1	X	201.58500	322.41253	61.31690	8.72103	0.0965324	0.29683024	2.2256863	21	4 14.0	20.3
229889	2009	UX ₁₀₂	15.5	X	1.92871	273.10654	41.78713	11.93722	0.1978153	0.23429811	2.6058947	21	9 8.7	18.0
229890	2009	UH ₁₁₀	17.6	X	114.21068	111.84917	262.37992	1.42407	0.2086464	0.27425580	2.3462025	21	1 1.9	20.1
229891	2009	UF ₁₁₁	15.7	X	11.39922	30.59879	56.48957	12.27830	0.1454750	0.17744334	3.1363865	21	—	—
229892	2009	VL ₁₂₇	15.9	X	72.19577	168.62082	258.34364	2.74230	0.0627922	0.18963651	3.0004617	21	1 10.8	19.8
229893	2009	UJ ₁₂₈	16.4	X	219.22966	165.13989	214.16265	3.87861	0.1163756	0.21398946	2.7682658	21	4 29.9	20.6
229894	2009	UC ₁₃₀	16.1	X	281.37560	22.99597	58.88895	29.29863	0.1312950	0.23895379	2.5719357	21	10 21.1	19.7
229895	2009	VK ₁	16.2	X	357.93084	244.12049	125.39147	8.01532	0.1097103	0.24308556	2.5427087	21	11 10.5	19.1
229896	2009	VE ₃	17.4	X	314.03008	218.94979	119.32893	3.67475	0.1189706	0.31190273	2.1533928	21	7 2.4	19.3
229897	2009	VL ₂₂	15.4	X	237.67425	39.86664	208.15650	5.13348	0.1161127	0.18487999	3.0517066	21	—	—
229898	2009	VG ₂₃	17.7	X	291.30970	275.10467	110.26601	1.42983	0.1909273	0.31715817	2.1295383	21	7 24.7	19.8
229899	2009	VW ₂₅	15.0	X	157.40527	244.69275	74.97105	12.91315	0.0345380	0.18644599	3.0345946	21	—	—
229900	2009	Emmagreaves	16.3	X	337.81879	230.35352	131.41938	6.94356	0.1571110	0.23793517	2.5792708	21	9 22.2	18.8
229901	2009	VD ₆₁	16.0	X	4.01606	144.18022	262.24476	2.92312	0.1051122	0.16879354	3.2426407	21	12 17.6	20.1
229902	2009	VA ₈₁	12.7	X	343.18825	325.51722	96.02574	8.38531	0.0200374	0.08250234	5.2258694	21	11 19.9	19.6
229903	2009	WH ₁₄	15.7	X	50.13482	291.11395	149.08246	3.13785	0.0529917	0.18369844	3.0647784	21	—	—
229904	2009	WO ₁₉	15.7	X	27.66399	156.37125	84.83882	10.49612	0.1063353	0.21950121	2.7217283	21	6 23.7	18.9
229905	2009	WC ₃₃	15.7	X	119.33501	306.47301	72.23614	10.06587	0.1310875	0.18814461	3.0163023	21	1 23.9	20.1
229906	2009	WE ₈₅	15.5	X	105.07346	303.19681	44.38889	16.45686	0.1780630	0.18082516	3.0971589	21	—	—
229907	2009	P-L	17.2	X	149.93217	357.62880	39.97926	3.50031	0.1573448	0.28361268	2.2943110	21	3 11.1	20.3
229908	2009	P-L	17.6	X	56.63972	51.56114	337.06622	0.79913	0.1983168	0.26278872	2.4139684	21	—	—
229909	2009	P-L	18.0	X	260.92302	115.29158	244.99384	2.32412	0.1868748	0.30374722	2.1917676	21	5 6.6	20.8
229910	2009	P-L	16.6	X	84.42371	353.95390	13.30040	6.99131	0.2061288	0.26343307	2.4100304	21	—	—
229911	2009													

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ECLIPTIC AND EQUINOX 2000.0, EPOCH 2021 JULY 5.0 TT

Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>
229921 1995 SC ₄₃	16.4	X	243.62505	65.99191	38.94006	4.64658	0.0847859	0.22612937	2.6682800	21	9 21.4	20.1
229922 1995 ST ₆₀	16.6	X	324.98582	185.23129	139.47593	2.83347	0.1501607	0.22249850	2.6972301	21	6 27.8	19.5
229923 1995 UQ ₄₀	17.5	X	102.20821	88.35228	4.57959	4.01429	0.0861954	0.28650992	2.2788178	21	3 13.2	20.0
229924 1995 UA ₅₉	16.5	X	324.11647	291.29251	93.18076	3.52019	0.0476336	0.22420454	2.6835299	21	10 1.7	19.9
229925 1996 EM ₁₁	17.2	X	75.99998	15.59180	151.18466	5.65188	0.0959042	0.28101185	2.3084455	21	5 23.6	19.8
229926 1996 FB ₁₁	17.5	X	10.68311	100.20615	98.93960	2.92347	0.1538255	0.27382653	2.3486540	21	3 12.9	19.4
229927 1996 TN ₉	16.1	X	289.30195	52.15738	20.39921	7.86626	0.1335139	0.23585611	2.5944062	21	10 4.6	18.9
229928 1997 AB ₂₁	16.7	X	357.95578	194.84966	161.67771	2.23887	0.0758414	0.22732196	2.6589395	21	10 15.1	19.7
229929 1997 GL ₅	16.6	X	225.40603	42.53574	4.78237	5.90882	0.0595695	0.21365794	2.7711287	21	6 15.1	20.6
229930 1997 ST ₁₆	16.2	X	30.59310	108.71917	356.14648	8.98185	0.1856424	0.26195318	2.4190988	21	—	—
229931 1997 SL ₃₁	16.1	X	57.91036	221.51035	177.11349	0.75665	0.1678297	0.17655907	3.1468499	21	—	—
229932 1997 TY ₁	16.3	X	359.98627	193.24478	245.19177	2.45944	0.1735219	0.25442111	2.4666108	21	—	—
229933 1997 TG ₂₇	16.7	X	68.25235	336.82209	47.47695	2.94972	0.2075712	0.25627495	2.4547010	21	—	—
229934 1998 BS ₂₂	17.1	X	285.73744	6.54756	120.10689	5.14786	0.0889878	0.24220234	2.5488865	21	12 18.7	20.1
229935 1998 KB ₄₃	15.4	X	24.71957	220.86520	91.06248	16.20993	0.1264179	0.22376069	2.6870774	21	10 11.6	19.0
229936 1998 QL ₂₁	16.7	X	224.86332	30.78446	329.33213	6.56405	0.1357064	0.28837120	2.2690015	21	4 1.3	20.2
229937 1998 RZ ₆	16.0	X	298.75691	188.16798	163.62000	6.13590	0.0746649	0.20993023	2.8038368	21	7 4.2	19.8
229938 1998 SJ ₈₇	17.1	X	238.43937	82.60399	257.59629	4.14774	0.1901673	0.28617190	2.2806119	21	3 18.2	20.7
229939 1998 SM ₉₅	16.6	X	172.50100	344.68816	33.70563	7.62379	0.1246361	0.28194906	2.3032721	21	3 9.3	19.9
229940 1998 SU ₁₁₅	16.9	X	184.36049	353.75918	342.64679	2.46093	0.2301735	0.27915635	2.3186634	21	1 31.3	20.6
229941 1998 SV ₁₅₂	17.1	X	218.60822	352.89407	344.73765	5.21207	0.1789051	0.28333322	2.2958194	21	2 28.5	20.6
229942 1998 SJ ₁₇₃	16.4	X	161.77146	246.61159	178.44405	1.89642	0.0641712	0.19977253	2.8980923	21	4 27.5	20.5
229943 1998 TH	17.0	X	192.55393	130.94706	228.53653	3.22466	0.2364049	0.28139722	2.3063374	21	3 5.1	21.0
229944 1998 UW	15.7	X	95.75502	121.22130	322.60883	24.19747	0.2643332	0.27720449	2.3295348	21	3 9.7	18.6
229945 1998 US	17.5	X	166.17464	43.55819	37.76834	2.12530	0.1826876	0.27987239	2.3147069	21	3 7.8	20.8
229946 1998 UZ ₉	17.7	X	48.34715	217.36197	182.07298	0.85025	0.1773215	0.26832508	2.3806481	21	—	—
229947 1998 VJ ₄₁	17.0	X	97.82191	340.16279	66.26647	3.07602	0.2071159	0.27245803	2.3565119	21	1 22.2	19.3
229948 1998 WC ₁₉	16.8	X	194.60232	55.02536	330.21423	1.27099	0.2215610	0.28261738	2.2996944	21	4 8.0	20.5
229949 1998 WV ₂₆	15.9	X	161.34793	100.99896	229.82931	4.24912	0.1669458	0.18576802	3.0419734	21	1 12.5	20.8
229950 1998 XD ₅	16.4	X	84.21787	141.23102	305.57136	6.41001	0.0610388	0.27412745	2.3469348	21	2 2.9	19.1
229951 1998 XU ₂₁	15.6	X	24.74856	40.65917	110.40964	6.41815	0.1047247	0.18205058	3.0832448	21	2 21.9	19.4
229952 1998 XM ₂₅	17.0	X	55.39935	150.16132	242.12986	9.11296	0.2626301	0.26619817	2.3933121	21	—	—
229953 1998 YB ₁₇	16.0	X	315.59278	23.12698	132.54605	3.49901	0.1309100	0.17328418	3.1863741	21	—	—
229954 1999 BC ₅	14.9	X	348.40035	132.21300	333.34352	18.92049	0.0851124	0.16964358	3.2317996	21	—	—
229955 1999 BS ₃₀	16.1	X	40.01849	114.56368	1.51982	1.12404	0.1371039	0.18012511	3.1051783	21	2 1.7	19.7
229956 1999 CS ₁₁₅	15.3	X	34.29511	170.06213	316.91307	22.12513	0.1167785	0.17763824	3.1340920	21	2 5.8	18.9
229957 1999 KF ₇	16.0	X	89.33975	195.55733	79.85131	10.98074	0.1781676	0.23787623	2.5796969	21	11 16.3	20.0
229958 1999 RD ₄₃	17.3	X	296.88695	264.54342	81.12480	8.15228	0.3530819	0.30729784	2.1748520	21	5 7.4	20.1
229959 1999 RV ₁₇₂	15.8	X	167.74661	326.79345	24.57924	8.36694	0.1971781	0.20185949	2.8780827	21	2 14.8	20.7
229960 1999 RP ₂₂₇	15.5	X	228.37498	23.56699	19.84491	9.23739	0.1577722	0.21493127	2.7601671	21	6 4.1	20.0
229961 1999 TS ₁₂	15.5	X	259.79675	351.04650	26.98782	9.91904	0.1498164	0.21315228	2.7755096	21	6 5.6	19.7
229962 1999 TS ₁₂₅	18.0	X	273.23475	125.88808	230.13453	3.76092	0.1933433	0.30505938	2.1854781	21	5 14.3	20.9
229963 1999 TX ₁₄₆	15.8	X	202.17359	26.63443	38.36254	8.56670	0.2802398	0.21092306	2.7950313	21	6 3.9	21.0
229964 1999 TA ₁₅₈	16.0	X	277.34411	81.04464	316.67703	4.03463	0.1263114	0.21870002	2.7283715	21	7 29.3	19.5
229965 1999 TY ₁₈₅	16.0	X	276.56506	67.16504	298.64277	7.53551	0.1678580	0.21484780	2.7608879	21	6 8.4	19.9
229966 1999 TH ₂₀₃	17.3	X	5.60278	350.12990	355.32169	3.59584	0.1104526	0.31526500	2.1380550	21	10 30.0	19.2
229967 1999 TU ₂₂₅	15.5	X	134.35881	318.40916	13.90796	7.97666	0.1076281	0.19293911	2.9661234	21	—	—
229968 1999 TB ₂₃₅	16.5	X	225.76362	232.03721	169.28660	2.46221	0.1905132	0.21193519	2.7861254	21	5 30.0	21.0
229969 1999 TN ₂₄₉	15.8	X	262.13433	84.60563	315.02863	6.23542	0.1551238	0.21703155	2.7423368	21	7 8.2	19.7
229970 1999 TR ₂₅₀	15.6	X	238.95791	191.03555	227.98701	11.78303	0.1376182	0.21598030	2.7512282	21	7 6.5	19.9
229971 1999 UX ₁₁	16.8	X	204.44785	27.85654	53.00553	5.13561	0.0386889	0.21198275	2.7857087	21	7 6.2	20.7
229972 1999 UO ₁₆	15.8	X	216.43998	80.86466	347.58508	1.30699	0.2313004	0.21193577	2.7861204	21	6 21.8	20.6
229973 1999 UX ₂₆	16.0	X	203.20468	46.71157	8.76590	7.86951	0.2292007	0.20972843	2.8056351	21	5 24.6	21.0
229974 1999 UR ₃₆	16.7	X	236.44558	83.39380	320.46692	2.78487	0.1005084	0.21570491	2.7535694	21	6 19.9	20.7
229975 1999 VC ₄₀	16.3	X	285.92111	305.33578	43.58345	5.90159	0.1557393	0.21352500	2.7722787	21	5 30.3	20.0
229976 1999 VP ₅₅	16.4	X	273.10640	140.52506	225.86549	1.62067	0.1589701	0.21371728	2.7706157	21	6 6.6	20.1
229977 1999 VM ₆₂	16.1	X	231.09207	347.76961	45.74810	4.13535	0.1021256	0.21046798	2.7990588	21	5 31.1	20.3
229978 1999 VJ ₁₁₉	16.6	X	190.94305	113.62318	4.20068	3.77901	0.0133212	0.21623089	2.7491022	21	8 9.6	20.3
229979 1999 VJ ₁₂₉	16.4	X	308.30017	72.32973	273.36401	3.30101	0.1262898	0.21624068	2.7490193	21	7 2.9	19.8
229980 1999 VV ₁₄₁	16.3	X	185.34779	106.78501	280.81855	0.94527	0.0847641	0.20370571	2.8606666	21	4 6.1	20.5
229981 1999 VC ₁₈₂	16.5	X	153.15580	225.15806	232.67895	2.35464	0.1191722	0.20618743	2.8376659	21	6 1.5	20.9
229982 1999 WG ₁₇	15.9	X	175.27603	47.86305	38.92515	7.84375	0.1944483	0.20971382	2.8057653	21	6 10.2	20.7
229983 1999 WU ₂₃	16.5	X	93.17462	146.80909	59.76195	5.14621	0.1354959	0.21152820	2.7896981	21	8 18.4	20.5
229984 1999 XN ₆₃	16.4	X	51.82720	152.39381	268.03493	1.91489	0.2279182	0.18888269	3.0084395	21	—	—
229985 1999 XQ ₇₈	17.0	X	157.69611	267.52534	251.62974	4.77792	0.0765490	0.30361163	2.1924201	21	8 24.6	19.9
229986 1999 XZ ₁₂₁	17.5	X	256.60693	45.90353	324.23193	4.88808	0.2922612	0.30324744	2.1941751	21	5 3.8	21.2
229987 1999 XU ₁₉₄	16.3	X	156.53635	77.94140	330.49960	6.23678	0.3124327	0.20043106	2.8917408	21	4 13.7	21.6
229988 1999 XO ₂₂₅	17.3	X	71.57272	333.84983	293.95276	4.30008	0.0909693	0.30362249	2.1923679	21	10 10.5	20.0
229989 1999 YR ₂	17.2	X	235.49173	86.98127	289.97859	7.49148	0.1099640	0.29495252	2.2351224	21	5 6.8	20.4
229990 1999 YB ₁₅	15.6	X	265.41455	273.39364	94.00022	7.82910	0.1801422	0.21108063	2.7936401	21	5 28.2	19.7
229991 2000 AH ₂₀₇	16.9	X	145.25096	216.08163	303.35865	6.04793	0.0591802	0.29765400	2.2215780	21	8 10.2	19.7
229992 2000 AW ₂₀₇	15.5	X	82.25800	332.65580	82.73077	10.64783	0.0597073	0.19206299	2.9751367	21	1 9.8	19.4
229993 2000 AK ₂₁₈	17.4	X	213.63189	342.69388	103.91392	5.07307	0.0992578	0.29973556	2.2112807	21	7 21.9	20.3
229994 2000 BJ ₉	16.0	X	207.75996	145.690								

ELEMENTS AND OPPOSITION DATES IN 2021

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2021 JULY 5.0 TT

Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>		
230001	2000	<i>DP</i> ₅₈	17.1	X	18.56997	272.82818	305.64104	2.63549	0.1203998	0.28515403	2.2860358	21	4 26.1	18.9
230002	2000	<i>DU</i> ₅₉	16.8	X	124.75657	107.86629	338.58467	7.29100	0.0673091	0.28426859	2.2907804	21	3 30.1	19.6
230003	2000	<i>DL</i> ₇₁	15.3	X	297.58986	139.74188	344.51442	14.14201	0.2381103	0.17406179	3.1768771	21	11 24.7	19.2
230004	2000	<i>DC</i> ₉₉	16.7	X	19.05814	85.60555	145.54141	6.71868	0.1659766	0.28691460	2.2766745	21	5 23.4	18.4
230005	2000	<i>DH</i> ₉₉	16.2	X	205.26163	99.50673	144.10210	7.03160	0.0897701	0.26692917	2.3889406	21	—	—
230006	2000	<i>DO</i> ₁₀₄	15.3	X	10.98703	136.08286	59.55432	6.43138	0.1184653	0.18927733	3.0042563	21	3 29.2	18.8
230007	2000	<i>EO</i> ₃₀	16.6	X	55.34233	154.37192	34.69332	7.21105	0.0759566	0.28714446	2.2754594	21	5 16.5	18.8
230008	2000	<i>EF</i> ₉₂	15.6	X	35.08853	321.25166	193.63461	7.50925	0.2812394	0.18784231	3.0195376	21	3 23.7	18.2
230009	2000	<i>EY</i> ₁₀₁	15.8	X	211.14620	5.17516	345.02113	8.56038	0.0977120	0.18828885	3.0147616	21	3 18.7	20.4
230010	2000	<i>FW</i> ₂₃	16.5	X	317.34683	124.02104	106.92453	8.11100	0.2234679	0.27552596	2.3389864	21	1 17.3	19.4
230011	2000	<i>FC</i> ₄₈	17.0	X	13.21330	136.07202	88.58761	7.36943	0.1577902	0.28261520	2.2997063	21	4 29.5	18.8
230012	2000	<i>FE</i> ₆₆	17.1	X	341.19843	83.82875	151.10070	3.18603	0.1159612	0.28008245	2.3135494	21	3 14.6	19.5
230013	2000	<i>GU</i> ₄₄	17.3	X	309.95533	94.33326	161.13669	2.68160	0.1924159	0.27700180	2.3306711	21	2 13.1	20.4
230014	2000	<i>GQ</i> ₅₄	16.8	X	239.20291	353.64813	209.97241	5.64108	0.0539651	0.26276475	2.4141152	21	—	—
230015	2000	<i>GB</i> ₇₂	15.3	X	222.64203	216.16579	76.63780	3.05451	0.1297961	0.17586483	3.1551260	21	1 24.5	20.4
230016	2000	<i>GP</i> ₁₁₂	15.5	X	359.35329	46.57759	165.75599	6.78287	0.1453598	0.18687696	3.0299273	21	3 28.4	18.8
230017	2000	<i>GE</i> ₁₆₄	14.8	X	269.90919	149.49647	86.90492	18.53511	0.1783311	0.17558198	3.1585137	21	—	—
230018	2000	<i>HO</i> ₇	16.5	X	232.68063	136.31997	78.75594	2.25048	0.1367616	0.26285228	2.4135792	21	—	—
230019	2000	<i>HE</i> ₁₇	16.3	X	43.16892	212.33237	188.58855	7.05662	0.1348268	0.21642409	2.7474659	21	—	—
230020	2000	<i>HM</i> ₃₃	16.7	X	353.05401	135.21043	76.00407	6.93662	0.0717000	0.27880348	2.3206194	21	3 9.5	19.3
230021	2000	<i>HS</i> ₇₈	16.3	X	219.77041	168.38546	109.89684	15.51129	0.2364899	0.26733873	2.3865002	21	—	—
230022	2000	<i>HW</i> ₉₀	15.6	X	297.15312	319.27707	222.10797	4.24739	0.1387701	0.17408664	3.1765748	21	—	—
230023	2000	<i>JW</i> ₃	17.1	X	185.30872	224.91342	66.21240	23.00340	0.0565666	0.35808346	1.9640229	21	—	—
230024	2000	<i>JK</i> ₆	14.9	X	334.15984	45.92632	109.18044	17.91469	0.1895985	0.17670691	3.1450945	21	—	—
230025	2000	<i>JB</i> ₅₅	16.9	X	273.40760	191.11747	72.82353	7.74006	0.2124040	0.27104284	2.3647074	21	1 17.6	20.6
230026	2000	<i>JJ</i> ₆₉	16.4	X	20.93576	126.80029	73.48157	1.04477	0.2131454	0.18695395	3.0290954	21	4 21.9	19.3
230027	2000	<i>KR</i> ₆₄	16.7	X	313.67031	118.74291	90.39492	6.21910	0.1745238	0.27169795	2.3690948	21	—	—
230028	2000	<i>KU</i> ₆₆	17.2	X	348.74547	89.64225	107.15890	23.18323	0.0471635	0.36758458	1.9300321	21	1 19.2	18.8
230029	2000	<i>KQ</i> ₈₁	16.4	X	224.50914	158.44135	87.43625	8.45850	0.0403912	0.26324210	2.4111958	21	—	—
230030	2000	<i>OK</i> ₅₅	16.7	X	335.22860	91.58362	145.40326	5.04561	0.0859143	0.27252052	2.3562760	21	2 23.3	19.3
230031	2000	<i>PG</i>	16.9	X	152.49801	236.81832	128.99564	24.18066	0.0952551	0.35618277	1.9710037	21	1 6.3	19.1
230032	2000	<i>QP</i> ₃	16.1	X	337.42134	45.00817	343.84004	13.39992	0.1276936	0.23830518	2.5766003	21	10 22.1	19.1
230033	2000	<i>QR</i> ₁₆	16.7	X	104.09590	185.19628	111.15745	1.50367	0.1742720	0.24694225	2.5161650	21	12 24.1	20.6
230034	2000	<i>QV</i> ₂₆	16.5	X	25.93635	33.36223	305.48259	3.19020	0.1674164	0.24044273	2.5613069	21	11 16.9	19.5
230035	2000	<i>QJ</i> ₃₄	15.5	X	341.90115	219.07714	143.60529	22.57039	0.1126478	0.23693466	2.5865268	21	10 5.2	18.7
230036	2000	<i>QG</i> ₇₈	16.0	X	284.02871	257.40522	343.59444	5.70566	0.0781139	0.26115504	2.4240251	21	1 13.9	19.4
230037	2000	<i>QQ</i> ₈₅	15.8	X	329.06060	96.90236	315.67674	11.24674	0.2947369	0.23799379	2.5788473	21	11 12.0	17.6
230038	2000	<i>QK</i> ₁₂₉	15.8	X	293.58687	258.06468	125.55331	17.92362	0.3074832	0.22848728	2.6498911	21	7 3.7	19.4
230039	2000	<i>QR</i> ₁₅₆	15.7	X	287.18110	76.63839	301.57414	13.68524	0.1389064	0.23097897	2.6307995	21	7 15.2	18.9
230040	2000	<i>QT</i> ₁₆₂	16.5	X	329.08207	177.74484	204.80312	5.61486	0.3222131	0.23564732	2.5959384	21	9 17.3	17.8
230041	2000	<i>QU</i> ₁₆₅	16.2	X	131.76348	65.64547	262.61857	5.35542	0.1679667	0.25249960	2.4791088	21	—	—
230042	2000	<i>QR</i> ₂₁₂	17.0	X	359.52579	26.00267	351.81882	3.48832	0.2527111	0.23899790	2.5716192	21	12 9.5	19.4
230043	2000	<i>QO</i> ₂₄₉	16.4	X	288.90551	105.41119	293.04457	8.00308	0.2692780	0.23244100	2.6197563	21	7 23.1	19.7
230044	2000	<i>RJ</i> ₅₆	16.3	X	49.46852	282.78027	4.87415	5.15936	0.2683049	0.23822288	2.5771938	21	10 27.8	19.7
230045	2000	<i>SZ</i> ₁₉	16.5	X	322.08643	38.42839	110.20250	4.81173	0.2673537	0.23072320	2.6327434	21	7 10.6	18.8
230046	2000	<i>SO</i> ₃₀	16.3	X	267.31739	75.75449	357.36989	12.56762	0.2208678	0.23144001	2.6273046	21	8 22.7	20.0
230047	2000	<i>SJ</i> ₄₀	16.3	X	276.31978	297.17327	135.42664	4.27587	0.2166801	0.23096590	2.6308988	21	8 31.3	19.7
230048	2000	<i>ST</i> ₉₉	16.5	X	292.46262	208.06817	227.80952	3.81903	0.1773196	0.23458991	2.6037333	21	10 5.6	19.3
230049	2000	<i>ST</i> ₁₀₅	16.9	X	280.44746	87.14565	332.70794	3.16959	0.2210925	0.23080070	2.6321540	21	8 18.3	20.1
230050	2000	<i>SU</i> ₁₀₉	16.0	X	284.48355	198.08684	196.79592	12.18621	0.1997284	0.22904286	2.6456043	21	7 20.7	19.7
230051	2000	<i>SZ</i> ₁₁₄	15.5	X	263.32209	154.14613	28.32034	2.00886	0.0610477	0.24580971	2.5238877	21	—	—
230052	2000	<i>SY</i> ₁₂₉	15.6	X	38.42879	91.24548	269.37380	13.91842	0.1636737	0.24326212	2.5414782	21	—	—
230053	2000	<i>SV</i> ₁₃₃	16.1	X	288.90334	104.16058	327.77068	12.34784	0.2435419	0.23307824	2.6149792	21	9 10.1	19.2
230054	2000	<i>SY</i> ₁₄₈	16.6	X	14.24463	166.59177	204.63035	4.29756	0.2277126	0.23859870	2.5744868	21	12 22.8	19.4
230055	2000	<i>SC</i> ₁₄₉	16.0	X	300.20158	195.79806	196.76252	7.45518	0.2390607	0.23030946	2.6358956	21	8 4.9	19.0
230056	2000	<i>SS</i> ₁₈₂	16.5	X	312.46715	206.68618	179.44890	3.47458	0.1408251	0.23246522	2.6195743	21	9 4.9	19.2
230057	2000	<i>SY</i> ₁₈₂	16.8	X	319.02978	230.86004	202.16314	2.56312	0.1834879	0.23816380	2.5776199	21	11 25.8	18.9
230058	2000	<i>SD</i> ₁₉₃	15.7	X	289.00070	63.04265	349.14006	13.61711	0.0961528	0.23494941	2.6010766	21	9 10.4	18.9
230059	2000	<i>SJ</i> ₂₅₀	16.1	X	320.63504	54.67861	37.24590	9.46171	0.1375726	0.24143453	2.5542876	21	12 27.9	18.8
230060	2000	<i>SO</i> ₂₆₅	16.2	X	240.45739	279.24161	161.20312	7.11570	0.2382417	0.22668834	2.6638919	21	7 26.5	20.4
230061	2000	<i>SH</i> ₂₈₈	15.9	X	293.29878	68.60926	318.56448	10.38140	0.1900126	0.22738464	2.6584508	21	7 28.9	19.0
230062	2000	<i>SM</i> ₃₁₀	16.0	X	338.15963	127.82941	261.58890	15.68805	0.1864598	0.23570962	2.5954809	21	10 27.8	18.7
230063	2000	<i>SH</i> ₃₅₀	16.4	X	302.62020	247.45211	157.27409	17.25449	0.2777383	0.23230596	2.6207715	21	8 22.5	19.2
230064	2000	<i>SN</i> ₃₅₂	16.6	X	339.68312	247.48696	116.83704	12.64750	0.2338810	0.23340885	2.6125093	21	10 3.6	18.9
230065	2000	<i>TM</i> ₄₈	16.2	X	257.00703	273.24263	136.87832	7.39835	0.2351071	0.22648034	2.6655227	21	7 5.1	20.2
230066	2000	<i>TR</i> ₅₉	16.0	X	40.72291	243.16939	119.14909	12.21076	0.2262094	0.24113431	2.5564073	21	—	—
230067	2000	<i>TG</i> ₇₂	16.6	X	336.95109	319.61881	100.31684	5.43732	0.1800459	0.23834259	2.5763307	21	12 15.2	18.8
230068	2000	<i>UM</i>	15.8	X	353.36699	332.02263	71.45903	16.77906	0.1340061	0.23856924	2.5746987	21	12	

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Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>		
230081	2000	WP ₃₈	15.8	X	246.98570	342.63359	91.32450	14.10167	0.1000762	0.22451683	2.6810409	21	8 15.0	19.7
230082	2000	WO ₄₂	16.5	X	322.18441	146.90068	230.70067	5.40901	0.1572912	0.23019011	2.6368066	21	9 6.5	19.2
230083	2000	WT ₅₃	16.1	X	209.17129	265.74475	70.47879	3.54218	0.0690898	0.20842720	2.8173001	21	2 28.8	20.3
230084	2000	WG ₉₁	15.9	X	314.49890	297.42649	59.18748	9.08587	0.1677287	0.22580000	2.6708742	21	7 25.6	18.9
230085	2000	WX ₁₀₆	15.4	X	321.98704	89.76825	267.10675	14.26183	0.3489067	0.22875581	2.6478170	21	7 5.4	17.6
230086	2000	WR ₁₃₁	16.2	X	250.88986	201.11281	181.09150	10.55498	0.3030910	0.22222399	2.6994509	21	5 20.9	20.9
230087	2000	WT ₁₃₂	16.7	X	236.59378	82.55233	307.22084	8.59061	0.2894683	0.22122252	2.7075916	21	5 15.8	21.7
230088	2000	WJ ₁₄₀	16.3	X	355.91174	292.71105	70.06248	6.13142	0.2099379	0.23334205	2.6130078	21	11 3.5	18.5
230089	2000	WP ₁₄₈	19.3	X	172.78453	237.93491	252.00800	21.27615	0.2642668	0.65091375	1.3186223	21	8 1.8	21.1
230090	2000	WA ₁₅₇	15.9	X	164.25020	87.27290	52.79793	12.20383	0.1690628	0.21983228	2.7189950	21	8 11.1	20.6
230091	2000	XH ₅	16.0	X	241.13578	49.95922	3.23985	9.63425	0.2048201	0.22250335	2.6971908	21	6 27.1	20.4
230092	2000	XD ₁₁	16.3	X	276.09355	127.90619	289.20452	16.24961	0.3212078	0.22835061	2.6509483	21	7 22.6	20.2
230093	2000	XG ₁₂	16.1	X	206.58129	204.99817	278.86155	12.73672	0.1967757	0.22309655	2.6924076	21	8 17.9	20.7
230094	2000	XX ₃₀	15.8	X	338.90698	66.34844	298.07569	11.45326	0.2814535	0.23082566	2.6319643	21	9 13.8	17.7
230095	2000	XJ ₄₁	15.7	X	304.71088	352.78870	11.27893	13.73197	0.2595403	0.22647071	2.6655982	21	7 2.5	19.1
230096	2000	XA ₄₆	15.9	X	279.76101	121.73021	312.14517	30.49832	0.2598197	0.22801368	2.6535592	21	8 20.4	19.6
230097	2000	YU ₁₃	16.0	X	235.68896	143.87891	283.78990	10.68166	0.1342786	0.21905586	2.7254160	21	7 15.9	19.9
230098	2000	YL ₄₁	15.6	X	298.49426	240.97537	124.50916	7.16400	0.0450080	0.21921786	2.7240731	21	7 27.6	19.0
230099	2000	YQ ₄₂	16.5	X	190.48126	142.81020	263.76920	6.01253	0.2808958	0.21326148	2.7756220	21	5 4.6	21.6
230100	2000	YF ₄₆	15.4	X	168.95029	252.77916	280.15904	12.27051	0.0549516	0.22321091	2.6914879	21	9 14.8	19.6
230101	2000	YK ₅₈	16.2	X	258.40499	336.48756	93.91097	9.30591	0.1695622	0.22334870	2.6903808	21	8 13.4	20.1
230102	2000	YY ₇₃	15.8	X	186.45047	53.52541	98.83971	12.75954	0.2278525	0.22242153	2.6978523	21	9 14.4	20.6
230103	2000	YH ₁₂₂	16.1	X	201.65890	298.38534	144.10818	10.83823	0.2579075	0.21938084	2.7227238	21	6 26.5	21.0
230104	2000	YR ₁₃₅	16.8	X	226.04857	53.17226	12.71635	4.89153	0.3385688	0.22003631	2.7171319	21	6 20.3	21.8
230105	2000	YW ₁₄₃	16.0	X	126.39957	304.35674	249.05961	4.15597	0.0232776	0.21508233	2.7588805	21	8 25.8	19.9
230106	2001	AZ ₈	15.9	X	266.24491	283.25116	129.11041	13.62029	0.1797479	0.22218594	2.6997590	21	7 25.9	19.5
230107	2001	AH ₂₂	15.7	X	188.97964	8.02677	129.76946	14.17124	0.1145555	0.22054620	2.7131241	21	8 30.1	19.9
230108	2001	AB ₂₅	15.2	X	109.87876	110.48586	129.96053	25.73039	0.2248508	0.22028371	2.7152790	21	11 2.1	20.3
230109	2001	AL ₂₇	16.0	X	212.43381	15.12898	72.85314	11.09113	0.1710386	0.21870545	2.7282363	21	7 16.9	20.5
230110	2001	AI ₃₆	15.5	X	269.78112	329.42539	90.82017	12.90332	0.1704747	0.22275018	2.6951980	21	8 15.1	19.3
230111	2001	BE ₁₀	19.1	X	258.29393	30.57145	297.77702	17.50691	0.3692340	1.31981715	0.8231144	21	—	—
230112	2001	BX ₁₃	16.4	X	198.22165	337.73103	147.68147	5.45164	0.0567090	0.21561317	2.7543504	21	8 25.1	20.2
230113	2001	BZ ₆₂	15.7	X	227.67855	138.02176	332.25031	8.31444	0.1316030	0.21943773	2.7222532	21	8 31.6	19.8
230114	2001	BR ₇₁	15.8	X	235.45587	310.13960	129.34018	5.88437	0.0940933	0.21833917	2.7313768	21	8 5.4	19.5
230115	2001	BO ₇₆	15.2	X	126.21433	297.84624	253.02714	12.67249	0.1434101	0.21383532	2.7695960	21	8 26.3	19.8
230116	2001	CD ₄₅	15.3	X	112.37543	115.47510	98.88637	14.42663	0.1942652	0.21370317	2.7707377	21	9 28.7	20.0
230117	2001	DA ₃	16.8	X	8.41433	342.90071	76.50589	5.89685	0.0921010	0.32911809	2.0776300	21	—	—
230118	2001	DB ₃	17.2	X	195.44674	264.56193	340.45848	24.51487	0.05611391	0.22458250	2.6805183	21	12 15.6	23.1
230119	2001	DQ ₃₈	15.5	X	145.26774	16.22743	149.28903	13.84522	0.1345789	0.21531661	2.7568789	21	8 18.9	19.8
230120	2001	DU ₄₄	15.4	X	124.55116	6.02611	150.23706	8.88416	0.1544625	0.21020491	2.8013937	21	7 18.2	19.8
230121	2001	DR ₈₃	16.2	X	221.68156	300.71300	148.29189	5.36085	0.0797253	0.21378412	2.7700381	21	8 2.4	20.3
230122	2001	FC ₁₂₁	15.7	X	178.03663	90.39285	54.53189	8.37344	0.2519916	0.21351536	2.7723622	21	8 27.5	20.7
230123	2001	KR ₃	16.6	X	97.00025	86.89823	216.08098	6.24705	0.2000944	0.26452235	2.4034097	21	12 29.4	20.6
230124	2001	MO ₁₄	16.7	X	187.05048	205.52078	139.84935	6.21643	0.2282678	0.27528821	2.3403329	21	2 13.4	20.6
230125	2001	MA ₁₅	16.5	X	199.71025	218.95926	111.29656	10.23256	0.2393536	0.27589085	2.3369236	21	2 6.7	20.4
230126	2001	MQ ₂₃	15.8	X	160.09659	261.63163	99.87554	9.61206	0.2394968	0.27259045	2.3557487	21	2 13.6	19.6
230127	2001	NK ₇	15.6	X	294.43436	216.26042	108.40347	9.81333	0.0821033	0.19176287	2.9782400	21	5 25.1	19.8
230128	2001	OX ₁₉	16.7	X	205.03175	257.63023	18.72306	6.32393	0.1464390	0.27134336	2.3629612	21	—	—
230129	2001	OX ₃₅	16.8	X	184.37278	261.40934	87.18786	7.96586	0.1465823	0.27619154	2.3352272	21	2 12.9	20.4
230130	2001	OB ₄₀	16.8	X	119.53675	228.27169	96.75219	8.51983	0.2284565	0.26362946	2.4088333	21	—	—
230131	2001	OK ₆₂	16.8	X	206.57304	67.74745	279.37385	3.28255	0.1854169	0.27980976	2.3150523	21	2 28.4	20.5
230132	2001	OC ₇₈	16.8	X	203.11553	292.21377	36.63758	7.55325	0.1426353	0.27675592	2.3320513	21	2 6.5	20.4
230133	2001	OD ₇₈	14.6	X	308.98987	252.41319	115.07542	19.01835	0.1013482	0.14617647	3.5690372	21	8 5.0	19.3
230134	2001	ON ₇₉	16.7	X	151.24698	320.22050	33.52407	5.76939	0.1677658	0.27382072	2.3486872	21	2 12.9	20.1
230135	2001	OD ₈₉	17.3	X	289.92881	191.20390	96.93663	3.44727	0.1714193	0.28465645	2.2886991	21	3 8.5	20.3
230136	2001	PH ₁₀	16.6	X	138.30144	238.68939	148.60957	5.09254	0.2947789	0.27221661	2.3579050	21	3 1.2	20.1
230137	2001	PR ₁₁	16.6	X	111.60329	233.76247	161.36340	10.85074	0.2264251	0.27015147	2.3699062	21	1 29.3	19.4
230138	2001	PX ₁₂	16.5	X	194.14905	20.40039	302.29184	6.09630	0.1323923	0.27551636	2.3390408	21	1 17.9	19.8
230139	2001	PY ₁₄	17.3	X	215.94580	51.30352	266.64252	5.64605	0.2048171	0.27659504	2.3329555	21	2 1.1	21.2
230140	2001	PG ₃₁	16.3	X	107.00005	161.42018	266.72207	11.96316	0.1525086	0.27371683	2.3492814	21	2 19.3	19.3
230141	2001	PW ₃₄	15.5	X	169.20215	117.81318	285.61562	13.80567	0.1896001	0.17825334	3.1268780	21	4 9.7	21.0
230142	2001	PJ ₅₁	16.7	X	135.42361	247.99652	117.38159	10.15508	0.2651926	0.27055056	2.3675751	21	1 26.7	19.9
230143	2001	QQ ₁₃	16.3	X	87.50220	42.85924	344.68549	8.71546	0.2168999	0.26436441	2.4043668	21	—	—
230144	2001	QX ₃₅	16.9	X	251.46574	358.83492	319.39561	5.25188	0.1846627	0.28280459	2.2986794	21	3 3.9	20.5
230145	2001	QH ₃₆	16.6	X	64.87307	69.65725	302.59177	8.78373	0.2725196	0.26122972	2.4235631	21	—	—
230146	2001	QD ₄₄	14.9	X	255.27854	322.95508	316.99786	10.58760	0.0850724	0.17896066	3.1186335	21	2 10.9	19.6
230147	2001	QG ₅₂	17.1	X	154.08528	200.37932	163.62974	2.84267	0.1947151	0.27149295	2.3620931	21	2 4.0	20.6
230148	2001	QA ₅₄	17.1	X	219.97986	186.47562	131.29614	5.20803	0.2079766	0.27717061	2.3297247	21	2 5.9	20.7
230149	2001	QX ₅₇	16.7	X	87.90531	344.83330	46.26528	3.25863	0.1937891	0.26580545	2.3956689	21	—	—
230150	2001													

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Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>		
230161	2001	QD ₂₂₇	16.4	X	66.27906	138.84478	268.12848	6.88020	0.1304052	0.26423723	2.4051382	21	—	—
230162	2001	QE ₂₄₄	16.2	X	145.68557	191.55137	167.11592	6.33122	0.1301288	0.26865250	2.3787135	21	1 11.3	19.4
230163	2001	QZ ₂₄₅	16.0	X	68.91920	31.81024	0.35577	6.54559	0.1586826	0.26076004	2.4264724	21	—	—
230164	2001	QC ₂₄₆	16.5	X	143.79553	181.78074	177.07248	2.86154	0.2783377	0.26806924	2.3821625	21	1 27.8	20.0
230165	2001	QO ₂₄₇	16.6	X	97.58549	351.27951	62.84255	3.19468	0.2089106	0.26612745	2.3937361	21	2 4.2	19.2
230166	2001	QD ₂₅₂	17.0	X	110.89407	335.42133	47.40959	2.08878	0.1923405	0.26828673	2.3808749	21	1 8.1	19.5
230167	2001	QH ₂₅₃	17.0	X	66.86449	308.35269	85.31078	2.39992	0.1822497	0.26283950	2.4136574	21	—	—
230168	2001	QO ₂₆₅	17.1	X	174.99357	78.61148	234.40894	2.38276	0.1938783	0.26895659	2.3769201	21	—	—
230169	2001	QT ₂₈₉	16.9	X	183.11110	39.71891	323.01691	2.38617	0.0488642	0.27790480	2.3256196	21	2 19.9	19.9
230170	2001	QH ₃₂₉	17.3	X	165.71444	238.96420	98.87093	2.76066	0.1863247	0.27074509	2.3664409	21	1 13.8	20.8
230171	2001	QO ₃₃₃	17.2	X	59.20173	167.79471	270.72281	8.14084	0.1767438	0.26744933	2.3858422	21	—	—
230172	2001	RO ₁₄	16.8	X	125.00969	234.07220	181.26410	3.63349	0.1501831	0.27306064	2.3530436	21	3 3.8	19.8
230173	2001	RC ₂₇	17.0	X	128.29976	45.57467	334.81419	2.44163	0.1875024	0.26941685	2.3742123	21	1 27.7	19.9
230174	2001	RX ₆₇	16.1	X	104.56007	163.68056	229.14130	5.28923	0.0934641	0.26617974	2.3934226	21	—	—
230175	2001	RC ₆₉	16.3	X	83.76893	41.13423	331.06521	6.28366	0.2359287	0.26079469	2.4262575	21	—	—
230176	2001	RU ₇₃	16.6	X	88.18256	92.16183	323.54342	4.15993	0.1958972	0.26569435	2.3963367	21	1 18.4	18.7
230177	2001	RX ₈₀	15.8	X	56.10674	335.14256	80.66339	11.71028	0.2435445	0.25889577	2.4381069	21	—	—
230178	2001	RV ₁₁₄	16.6	X	72.99234	291.01595	159.36321	6.27177	0.1881900	0.26985982	2.3716134	21	2 5.7	18.5
230179	2001	RQ ₁₁₈	17.0	X	143.12122	333.60132	25.43602	3.47716	0.1731202	0.26929167	2.3749480	21	1 16.1	20.1
230180	2001	RT ₁₂₉	16.5	X	85.96550	40.71037	20.93766	5.30245	0.2101705	0.26708595	2.3880056	21	1 26.4	18.7
230181	2001	RA ₁₃₄	16.3	X	44.35939	262.30922	151.83451	6.08310	0.2030342	0.26027543	2.4294834	21	—	—
230182	2001	RL ₁₃₈	17.3	X	255.45959	266.15111	32.65471	2.72212	0.2150762	0.27947577	2.3168964	21	2 12.4	21.1
230183	2001	RN ₁₅₂	16.8	X	35.85464	159.93196	124.69246	8.02344	0.2374125	0.29716879	2.2239956	21	10 14.1	19.2
230184	2001	RT ₁₅₅	17.0	X	117.35697	272.97555	116.43170	5.37356	0.1616382	0.26857752	2.3791561	21	1 21.2	19.7
230185	2001	SF ₈	15.3	X	269.24976	118.77197	148.05271	5.69293	0.0805704	0.17684145	3.1434990	21	2 11.4	19.9
230186	2001	SV ₁₇	17.0	X	103.14241	230.04908	142.32798	3.40608	0.1887368	0.26431948	2.4046392	21	—	—
230187	2001	SD ₄₃	17.3	X	108.76569	328.06017	51.65314	3.29273	0.2174191	0.26544659	2.3978275	21	1 5.5	20.0
230188	2001	SX ₅₅	16.5	X	107.84309	225.01097	153.48592	7.59105	0.1869204	0.26350647	2.4095828	21	—	—
230189	2001	SD ₅₆	16.7	X	147.96269	169.86673	148.21837	3.00096	0.2006196	0.26427287	2.4049220	21	—	—
230190	2001	SZ ₈₅	14.7	X	355.06302	226.71845	328.80739	26.42010	0.1330484	0.18078487	3.0976190	21	2 24.5	18.6
230191	2001	SF ₁₀₃	16.8	X	99.63466	50.37635	320.12624	3.72326	0.1949154	0.26312693	2.4118993	21	—	—
230192	2001	ST ₁₁₆	16.5	X	159.23841	44.02339	272.10778	5.37780	0.1058568	0.26730773	2.3866846	21	—	—
230193	2001	SF ₁₁₉	16.6	X	92.70433	142.23471	300.27572	6.71068	0.0760419	0.27254605	2.3560045	21	2 11.2	19.3
230194	2001	SH ₁₃₅	17.4	X	170.80911	341.26840	314.27864	0.83322	0.1820128	0.26589320	2.3951418	21	—	—
230195	2001	SA ₁₄₅	16.7	X	124.39002	352.90652	331.49128	4.76795	0.1182821	0.26234287	2.4167026	21	—	—
230196	2001	SR ₁₅₆	16.7	X	73.22098	101.70077	316.06882	6.62425	0.1685578	0.26485042	2.4014245	21	—	—
230197	2001	SP ₁₆₂	16.8	X	76.73197	356.00541	349.66187	3.34131	0.2175467	0.25731992	2.4480509	21	—	—
230198	2001	ST ₁₇₄	16.3	X	71.69364	281.17569	84.26286	2.33395	0.1947696	0.25901607	2.4373519	21	—	—
230199	2001	SK ₂₁₄	17.1	X	91.81755	220.39615	126.16791	3.00693	0.2177972	0.26031030	2.4292664	21	—	—
230200	2001	SY ₂₂₉	16.4	X	103.91921	354.77584	43.11764	3.24260	0.1835547	0.26594681	2.3948199	21	1 17.9	18.9
230201	2001	SL ₂₃₃	17.1	X	88.83327	347.86834	59.03455	3.18996	0.2087922	0.26436831	2.4043431	21	1 9.0	19.2
230202	2001	SY ₂₃₃	16.9	X	78.16641	264.03067	164.66956	4.23613	0.1761143	0.26523789	2.3990852	21	1 14.3	19.1
230203	2001	SX ₂₅₉	17.2	X	65.72349	266.66963	184.99936	2.74761	0.2009170	0.26888102	2.3773655	21	1 24.9	19.1
230204	2001	ST ₂₆₅	17.3	X	50.10134	102.04511	326.11384	1.12344	0.2032555	0.26053302	2.4278818	21	—	—
230205	2001	SA ₂₈₅	17.3	X	85.46554	54.28936	353.86313	3.17364	0.1248575	0.26544582	2.3978322	21	—	—
230206	2001	SL ₂₉₁	14.5	X	283.57046	308.73997	325.89532	26.23301	0.1560860	0.17860860	3.1227303	21	2 23.3	19.3
230207	2001	SR ₂₉₅	17.0	X	110.98548	225.88995	179.41407	5.74324	0.1019550	0.27054592	2.3676021	21	1 22.4	19.8
230208	2001	SY ₃₀₈	17.5	X	126.66873	273.34173	103.73052	2.22161	0.1797353	0.26901494	2.3765764	21	1 19.9	20.4
230209	2001	SW ₃₄₆	17.1	X	92.76661	118.85408	287.93225	5.33600	0.1235910	0.26601990	2.3943812	21	1 2.2	19.6
230210	2001	TK ₂	17.5	X	73.01225	83.82850	303.34685	1.57942	0.1982806	0.26113695	2.4241370	21	—	—
230211	2001	TR ₂₅	16.4	X	91.60198	190.27962	239.93544	6.42553	0.1096400	0.26790506	2.3831357	21	1 28.2	19.1
230212	2001	TM ₂₈	16.5	X	330.07899	15.19786	314.24996	3.18961	0.1249073	0.23851302	2.5751033	21	7 18.1	19.1
230213	2001	TP ₃₁	16.2	X	80.78198	112.38252	297.88537	4.58656	0.2225569	0.26200956	2.4187517	21	—	—
230214	2001	TY ₃₇	16.2	X	55.50570	12.64535	23.80524	6.52918	0.1115133	0.25486136	2.4637694	21	—	—
230215	2001	TT ₃₈	16.2	X	123.62464	36.17916	304.13948	5.92272	0.1400640	0.25979370	2.4324858	21	—	—
230216	2001	TL ₄₈	17.1	X	39.19202	280.14741	151.57708	1.75823	0.1542348	0.25869204	2.4393868	21	—	—
230217	2001	TD ₆₂	16.8	X	147.38565	296.95984	45.57041	2.62391	0.2252221	0.26627540	2.3928493	21	1 6.4	20.1
230218	2001	TM ₇₁	16.7	X	110.71980	319.24992	45.52064	3.94906	0.0971149	0.26242429	2.4162027	21	—	—
230219	2001	TN ₇₈	16.5	X	59.96877	337.10209	61.89786	3.82478	0.1774102	0.25808929	2.4431833	21	—	—
230220	2001	TD ₉₀	16.8	X	102.50607	104.71397	299.23021	4.33297	0.2167406	0.26604255	2.3942453	21	1 28.5	19.2
230221	2001	TY ₁₀₈	16.6	X	79.95778	86.43921	324.71426	5.80148	0.1404285	0.26360086	2.4090076	21	—	—
230222	2001	TV ₁₂₃	16.8	X	180.07884	138.04004	262.96943	7.39303	0.0988522	0.27773767	2.3265525	21	4 8.3	20.2
230223	2001	TV ₁₂₅	16.2	X	305.08961	77.37100	306.73541	7.86431	0.1660235	0.24193591	2.5507574	21	8 15.8	18.8
230224	2001	TS ₁₆₀	17.5	X	331.87188	216.77339	321.00618	0.67157	0.1261380	0.26384325	2.4075320	21	—	—
230225	2001	TM ₁₆₁	17.2	X	64.21946	192.86950	231.32447	1.98358	0.1812055	0.26374703	2.4081174	21	—	—
230226	2001	TQ ₁₈₈	17.4	X	181.60265	32.09554	332.71989	1.56588	0.2221039	0.27236336	2.3570579	21	3 4.3	21.3
230227	2001	TH ₁₉₂	16.8	X	53.03613	52.53450	17.98622	6.47416	0.1107141	0.26164855	2.4209761	21	—	—
230228	2001	TU ₁₉₅	16.0	X	73.38284	225.85625	129.33417	10.30432	0.1331056	0.25586596	2.4573162	21	—	—
230229	2001	TH ₁₉₉	16.5	X	196.41622	217.18921	138.17629	7.99759	0.1032114	0.27512377	2.3412654	21	3 2.5	19.8
230230	2001	TF ₂₀₀	16.8	X	205.95313	237.91041	92.24544	5.03945	0.1416712	0.27361910	2.3498408	21	2 9.6	20.4
230231	2001	TD ₂₅₈	16.9	X	148.52667	27.								

ELEMENTS AND OPPOSITION DATES IN 2021

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2021 JULY 5.0 TT

Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>
230241 2001 <i>UP</i> ₁₂₈	16.6	X	88.08959	321.94224	57.93907	6.74746	0.2286475	0.26254601	2.4154558	21	—	—
230242 2001 <i>UD</i> ₁₃₁	16.5	X	356.73901	89.11621	51.70495	5.52304	0.1395633	0.26166855	2.4208527	21	—	—
230243 2001 <i>UL</i> ₁₃₄	16.9	X	64.65994	220.15327	220.76317	6.48754	0.0497477	0.26444308	2.4038899	21	—	—
230244 2001 <i>UD</i> ₁₅₀	16.6	X	153.77743	167.35638	174.32306	2.18756	0.2242924	0.26535513	2.3983785	21	1 11.2	20.1
230245 2001 <i>UF</i> ₁₇₇	17.0	X	20.48844	74.18826	6.96715	0.98862	0.1601307	0.25822961	2.4422982	21	—	—
230246 2001 <i>UO</i> ₁₉₁	16.8	X	36.89710	77.56800	17.05861	6.73504	0.1128639	0.26364480	2.4087399	21	—	—
230247 2001 <i>VC</i> ₄	15.4	X	67.12893	353.57191	244.75703	16.79244	0.1344219	0.23458961	2.6037355	21	8 17.9	19.2
230248 2001 <i>VT</i> ₅	17.1	X	228.52903	204.80482	263.88784	2.56647	0.2379251	0.23785388	2.5798585	21	8 20.5	21.3
230249 2001 <i>WK</i> ₂₃	17.4	X	41.88757	25.57045	28.61460	2.53984	0.2077179	0.25659860	2.4526366	21	—	—
230250 2001 <i>VU</i> ₂₅	16.6	X	127.71554	12.81110	50.71969	7.14849	0.1144960	0.26931322	2.3748213	21	3 17.9	19.7
230251 2001 <i>VT</i> ₃₁	14.4	X	157.43192	16.98867	67.04602	16.87212	0.2684944	0.12362860	3.9907705	21	5 28.9	21.0
230252 2001 <i>VN</i> ₃₉	15.7	X	280.08533	160.73260	239.18708	21.11751	0.0575146	0.23682232	2.5873447	21	8 6.7	19.6
230253 2001 <i>VO</i> ₆₁	16.4	X	104.72201	80.51436	277.53404	5.42806	0.1325760	0.25950332	2.4343000	21	—	—
230254 2001 <i>VA</i> ₆₄	16.2	X	126.68199	101.02989	247.63775	5.29038	0.1621605	0.26164506	2.4209976	21	—	—
230255 2001 <i>VQ</i> ₈₅	17.2	X	23.72985	158.29075	308.80606	2.24147	0.1482829	0.26025974	2.4295810	21	—	—
230256 2001 <i>VM</i> ₁₀₄	16.8	X	109.69931	23.43070	347.17565	2.65127	0.2147392	0.26197724	2.4189506	21	—	—
230257 2001 <i>VA</i> ₁₀₅	16.8	X	356.48292	88.14864	35.43793	2.75554	0.1700584	0.25759038	2.4463370	21	—	—
230258 2001 <i>WB</i> ₈	16.9	X	38.57465	290.85335	158.45036	4.60879	0.1241374	0.25985715	2.4320898	21	—	—
230259 2001 <i>WZ</i> ₂₃	17.5	X	300.94651	191.96277	140.33270	3.33039	0.1125864	0.24454437	2.5325864	21	10 26.4	20.2
230260 2001 <i>WI</i> ₃₃	16.5	X	353.74806	355.65295	248.54129	2.97242	0.1171808	0.26039265	2.4287542	21	—	—
230261 2001 <i>WA</i> ₄₅	16.5	X	215.76144	279.79502	190.91188	10.96303	0.1580488	0.23691584	2.5866638	21	8 15.8	20.6
230262 2001 <i>WL</i> ₅₂	16.7	X	98.20868	87.97103	32.71762	2.53211	0.1567866	0.27289754	2.3539811	21	4 28.9	19.4
230263 2001 <i>WC</i> ₆₁	17.2	X	118.26469	3.74498	356.62819	1.56325	0.1911959	0.26208787	2.4182699	21	—	—
230264 2001 <i>WD</i> ₆₅	16.8	X	298.22091	22.62361	53.09072	11.22792	0.1258908	0.24627120	2.5207337	21	10 28.5	19.5
230265 2001 <i>WM</i> ₇₀	16.9	X	298.84734	354.81753	72.15852	4.60706	0.1107911	0.24428803	2.5343578	21	10 18.2	19.7
230266 2001 <i>WZ</i> ₇₂	17.0	X	331.41536	32.97755	73.32673	5.75982	0.0659825	0.25390786	2.4699336	21	—	—
230267 2001 <i>WD</i> ₉₃	16.7	X	88.55384	72.33319	344.69108	3.78484	0.1386774	0.26246127	2.4159757	21	1 13.5	19.2
230268 2001 <i>XO</i> ₄	16.8	X	124.01337	237.83530	264.75441	19.43822	0.0628455	0.37812228	1.8940054	21	6 17.3	18.3
230269 2001 <i>XZ</i> ₆	17.0	X	117.03734	284.48808	112.08457	26.88486	0.1835965	0.36235017	1.9485747	21	1 9.1	18.1
230270 2001 <i>XE</i> ₂₀	16.7	X	300.64331	54.84734	345.59078	4.00871	0.2758731	0.23920277	2.5701507	21	8 14.9	19.1
230271 2001 <i>XL</i> ₂₄	16.9	X	40.03305	98.63572	309.88817	6.35266	0.2558417	0.25350892	2.4725242	21	—	—
230272 2001 <i>XQ</i> ₃₈	17.0	X	158.68942	120.53058	283.24913	16.96863	0.1072825	0.37097543	1.9182533	21	2 27.4	19.6
230273 2001 <i>XU</i> ₅₇	17.1	X	38.75125	322.06164	129.67683	3.32742	0.1541459	0.25868249	2.4394468	21	—	—
230274 2001 <i>XC</i> ₅₈	16.9	X	304.08963	342.74654	83.16187	4.97062	0.2450654	0.24264811	2.5457638	21	10 8.7	19.1
230275 2001 <i>XD</i> ₇₇	17.0	X	108.30734	248.32829	117.23540	2.24878	0.1840019	0.26055956	2.4277169	21	—	—
230276 2001 <i>XJ</i> ₁₀₉	16.7	X	61.79390	191.88139	204.75487	1.72601	0.1815156	0.25678114	2.4514741	21	—	—
230277 2001 <i>XR</i> ₁₂₄	16.4	X	76.70030	253.56681	83.32207	7.22207	0.1654640	0.25422273	2.4678938	21	—	—
230278 2001 <i>XW</i> ₁₄₅	16.7	X	217.84967	64.98485	84.61607	5.17884	0.1971600	0.23919344	2.5702175	21	10 8.5	20.7
230279 2001 <i>XN</i> ₁₅₈	16.8	X	77.16213	217.21433	175.23559	1.45448	0.1864870	0.25716793	2.4490154	21	—	—
230280 2001 <i>XT</i> ₂₀₀	17.2	X	225.92854	54.81768	39.34076	4.38921	0.2364293	0.23416479	2.6068837	21	8 2.4	21.5
230281 2001 <i>XO</i> ₂₁₀	16.7	X	354.73308	349.11480	108.19006	8.15355	0.1739511	0.25263206	2.4782422	21	—	—
230282 2001 <i>XH</i> ₂₁₅	15.9	X	310.15406	131.19931	299.27689	28.75930	0.0972597	0.24044706	2.5612761	21	10 28.2	19.7
230283 2001 <i>XK</i> ₂₁₆	17.0	X	129.86143	288.67605	76.81360	3.42795	0.1920766	0.26217691	2.4177223	21	1 12.2	20.1
230284 2001 <i>XP</i> ₂₁₈	15.9	X	177.99910	243.34905	250.43527	12.00551	0.0785677	0.23547562	2.5972002	21	8 7.5	20.0
230285 2001 <i>XE</i> ₂₂₅	17.0	X	69.43955	37.39991	25.34465	1.77759	0.1950540	0.26070643	2.4268050	21	—	—
230286 2001 <i>XA</i> ₂₂₈	17.0	X	90.08644	38.62548	5.27253	3.31475	0.1713268	0.26142389	2.4223628	21	1 2.1	19.4
230287 2001 <i>XE</i> ₂₂₈	16.2	X	73.45607	99.91427	311.92048	3.75778	0.1337122	0.25973694	2.4328401	21	—	—
230288 2001 <i>XL</i> ₂₄₃	16.8	X	26.30012	305.27036	102.41830	8.75181	0.1752120	0.25021359	2.4941857	21	—	—
230289 2001 <i>XB</i> ₂₅₄	16.5	X	165.19682	139.93565	318.74487	17.90216	0.0801925	0.37417708	1.9072952	21	6 7.7	19.1
230290 2001 <i>YQ</i> ₁₃	16.1	X	68.52568	66.30413	309.87830	4.17098	0.1175895	0.25570315	2.4583591	21	—	—
230291 2001 <i>YB</i> ₃₁	16.5	X	250.18996	184.13366	57.87316	7.36481	0.0655257	0.26007708	2.4307185	21	—	—
230292 2001 <i>YJ</i> ₆₅	15.6	X	182.27597	59.64554	25.05934	2.43203	0.2396633	0.12532718	3.9546301	21	6 15.7	22.1
230293 2001 <i>YS</i> ₆₆	14.7	X	210.92976	358.40296	61.91930	6.36825	0.1974159	0.12694848	3.9208874	21	6 10.2	21.0
230294 2001 <i>YW</i> ₇₉	14.5	X	201.33690	128.99622	293.97448	7.31273	0.1763516	0.12484620	3.9647807	21	6 6.1	20.8
230295 2001 <i>YB</i> ₁₂₁	15.9	X	301.35693	340.33186	122.72067	14.30994	0.2110600	0.24407280	2.5358475	21	12 4.8	18.4
230296 2001 <i>YJ</i> ₁₅₄	15.6	X	27.55123	350.81683	358.56143	7.55878	0.2672258	0.24432575	2.5340970	21	12 21.0	18.9
230297 2002 <i>AT</i> ₁₇	17.1	X	186.62019	289.81157	119.35430	23.36916	0.0923349	0.37272326	1.9122517	21	5 4.3	20.1
230298 2002 <i>AE</i> ₁₈	16.6	X	33.50020	280.42059	148.35760	7.05938	0.1364656	0.25610811	2.4557670	21	—	—
230299 2002 <i>AZ</i> ₃₀	16.4	X	345.64780	289.43537	135.23704	12.22088	0.2189199	0.24563620	2.5250761	21	—	—
230300 2002 <i>AB</i> ₄₆	16.9	X	284.37556	190.47824	275.24060	1.89679	0.1127033	0.24179509	2.5517477	21	11 14.4	19.7
230301 2002 <i>AL</i> ₅₂	16.0	X	247.15665	194.56841	295.29563	7.96366	0.1097810	0.23820411	2.5773291	21	10 20.5	19.7
230302 2002 <i>AF</i> ₉₁	16.5	X	0.58098	223.66944	138.10229	4.05256	0.1357576	0.24008237	2.5638692	21	11 4.7	19.1
230303 2002 <i>AB</i> ₁₀₅	16.6	X	181.26962	35.44566	99.11882	3.22797	0.1497613	0.22941288	2.6427588	21	8 16.5	20.7
230304 2002 <i>AA</i> ₁₁₀	17.0	X	99.23057	326.37845	98.24835	3.78665	0.2144080	0.26168424	2.4207559	21	2 23.5	19.8
230305 2002 <i>AW</i> ₁₁₅	16.4	X	29.91367	287.08028	112.73044	11.61743	0.1422292	0.24735448	2.5133686	21	—	—
230306 2002 <i>AC</i> ₁₃₁	15.4	X	150.30083	223.87942	315.47866	14.98959	0.0999182	0.22957568	2.6415092	21	9 5.2	19.5
230307 2002 <i>AV</i> ₁₄₄	17.0	X	11.29188	317.52983	140.16934	3.87618	0.1454255	0.25285369	2.4767938	21	—	—
230308 2002 <i>AJ</i> ₁₆₁	16.4	X	303.97940	277.40415	135.51750	10.10264	0.2723832	0.23809723	2.5781004	21	9 12.2	18.9
230309 2002 <i>AT</i> ₁₆₉	15.3	X	189.32584	329.07164	110.04442	11.89773	0.2818990	0.12512854	3.9588143	21	6 15.0	22.1
230310 2002 <i>AJ</i> ₁₇₄	16.2	X	331.10449	56.69300	331.36561	5.82052	0.1076072	0.23744917	2.5827891	21	10 13.1	19.0
230311 2002 <i>BF</i> ₁	16.7	X	314.87067	121.68172	335.52376	4.22150	0.2393803	0.24440601	2.5335421	21	12 24.1	18.4
230312 2002 <i>BF</i> ₁₅	16.3	X	211.15131	42.41115	165.39967	4.62751	0.0853170	0.24199956	2.5503101	21	12	

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Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>
230321 2002 <i>CY</i> ₅₃	15.7	X	194.13075	221.51966	322.98749	12.13850	0.0868109	0.23476998	2.6024017	21	10 28.7	19.8
230322 2002 <i>CQ</i> ₇₇	16.3	X	158.99054	106.22731	139.61636	6.61660	0.1041212	0.23841547	2.5758056	21	12 12.7	20.2
230323 2002 <i>CW</i> ₇₇	16.4	X	172.62332	159.73125	349.21066	4.84854	0.0775828	0.22793438	2.6541746	21	8 26.9	20.2
230324 2002 <i>CU</i> ₈₃	16.0	X	217.26237	76.98027	140.53281	6.22810	0.0780080	0.24220350	2.5488783	21	—	—
230325 2002 <i>CR</i> ₈₄	16.1	X	190.83776	136.30388	128.59410	6.07034	0.0956521	0.24472018	2.5313733	21	—	—
230326 2002 <i>CH</i> ₈₆	16.3	X	342.56842	259.09470	126.64617	14.97134	0.2284935	0.23941683	2.5686184	21	11 16.3	18.8
230327 2002 <i>CV</i> ₈₆	16.4	X	278.67688	68.05517	320.10251	6.98157	0.1233729	0.22867595	2.6484334	21	7 19.5	19.8
230328 2002 <i>CN</i> ₉₁	16.1	X	269.67707	287.10587	142.47521	13.85070	0.1510847	0.23189187	2.6238905	21	8 28.8	19.5
230329 2002 <i>CA</i> ₉₈	16.4	X	233.19134	47.63040	149.26334	12.03920	0.1354718	0.24085528	2.5538313	21	12 29.2	20.0
230330 2002 <i>CS</i> ₁₀₀	16.9	X	267.45370	355.79693	136.44173	4.73186	0.1774200	0.23905072	2.5712404	21	11 15.9	19.9
230331 2002 <i>CC</i> ₁₀₉	16.9	X	271.29216	2.39026	114.37171	3.93054	0.1208329	0.23781412	2.5801460	21	11 9.2	20.0
230332 2002 <i>CT</i> ₁₁₉	15.8	X	220.13476	77.63801	132.09706	15.62617	0.0773278	0.24457224	2.5323940	21	—	—
230333 2002 <i>CD</i> ₁₂₄	17.0	X	236.93379	18.90648	171.64142	5.43668	0.2254089	0.24106059	2.5569284	21	12 13.3	20.5
230334 2002 <i>CM</i> ₁₄₂	14.8	X	185.39527	305.29071	146.15978	9.47290	0.2011553	0.12487622	3.9641451	21	6 26.2	21.3
230335 2002 <i>CD</i> ₁₄₄	16.4	X	290.20647	276.67350	161.92101	12.82523	0.3014318	0.23806200	2.5783547	21	9 16.8	19.0
230336 2002 <i>CJ</i> ₁₇₈	16.4	X	201.49278	178.29588	98.65517	4.16849	0.0692840	0.25157811	2.4851588	21	—	—
230337 2002 <i>CV</i> ₁₈₀	16.7	X	262.99242	43.04851	109.75014	4.06996	0.0812731	0.24271541	2.4552932	21	12 20.6	19.9
230338 2002 <i>CC</i> ₁₈₆	16.8	X	288.48789	111.70347	347.73417	4.61812	0.1225437	0.23974749	2.5662562	21	11 9.3	19.8
230339 2002 <i>CD</i> ₂₀₀	13.2	X	335.09499	63.15800	340.91914	13.73064	0.0449350	0.08510846	5.1186359	21	10 14.9	19.9
230340 2002 <i>CH</i> ₂₀₀	15.9	X	71.16236	291.34695	343.55838	5.14404	0.1242646	0.22991768	2.6388881	21	10 15.5	19.5
230341 2002 <i>CF</i> ₂₁₅	16.9	X	346.06249	97.48105	340.75386	6.57456	0.2446459	0.24533123	2.5271682	21	—	—
230342 2002 <i>CO</i> ₂₁₅	16.4	X	317.95072	257.45777	149.58785	5.74587	0.3103965	0.23756592	2.5819428	21	10 1.1	18.0
230343 2002 <i>CA</i> ₂₂₀	15.9	X	227.66984	132.19651	354.39437	12.76014	0.1192097	0.23113705	2.6295999	21	9 23.4	19.5
230344 2002 <i>CR</i> ₂₃₈	16.8	X	236.70197	261.68345	294.09859	3.62787	0.1418357	0.24066989	2.5596950	21	12 31.2	20.2
230345 2002 <i>CO</i> ₂₅₂	16.6	X	310.36997	98.38658	314.61253	11.50175	0.1794765	0.23662262	2.5888003	21	9 30.3	19.5
230346 2002 <i>CN</i> ₂₆₃	14.6	X	196.37927	148.12817	301.25349	4.66049	0.1059133	0.12519750	3.9573605	21	7 5.0	20.5
230347 2002 <i>CQ</i> ₂₇₃	15.8	X	245.58310	263.83417	251.87535	11.24483	0.1257854	0.23894611	2.5719908	21	11 22.6	19.0
230348 2002 <i>CM</i> ₂₇₇	17.0	X	311.01498	149.12588	322.12324	3.36831	0.0751127	0.24320842	2.5418523	21	—	—
230349 2002 <i>CL</i> ₂₈₇	16.2	X	214.51870	61.04996	74.79123	5.03510	0.0738352	0.23179194	2.6246446	21	9 29.2	19.9
230350 2002 <i>CE</i> ₂₈₈	15.5	X	259.33803	200.66429	163.53341	16.09417	0.2185223	0.21847431	2.7302503	21	5 15.8	20.1
230351 2002 <i>CN</i> ₂₈₉	16.0	X	330.41630	20.07484	1.96534	12.60018	0.1736318	0.23733409	2.5836239	21	10 2.3	18.4
230352 2002 <i>CH</i> ₂₉₇	16.5	X	288.63156	84.46346	143.84115	3.71868	0.1082174	0.25611855	2.4557003	21	—	—
230353 2002 <i>CK</i> ₃₀₂	15.7	X	219.64613	261.24589	303.61063	10.44071	0.2554843	0.23743773	2.5828721	21	12 7.7	19.8
230354 2002 <i>CH</i> ₃₁₀	15.9	X	78.20118	336.36255	320.36242	14.28240	0.0905920	0.23439894	2.6051473	21	11 13.9	19.9
230355 2002 <i>CW</i> ₃₁₄	17.2	X	297.92941	191.91079	274.32694	6.11682	0.2060830	0.24164640	2.5527944	21	11 27.6	19.5
230356 2002 <i>DG</i> ₁	16.0	X	130.17460	133.74185	126.66319	9.44381	0.0747887	0.23574230	2.5952410	21	12 1.7	20.0
230357 2002 <i>EJ</i> ₃₂	16.0	X	166.56993	139.16603	111.21635	3.88174	0.0674032	0.23961207	2.5672230	21	12 27.4	19.7
230358 2002 <i>EZ</i> ₃₆	17.1	X	292.49529	67.44744	54.72997	2.64093	0.1595300	0.24079218	2.5588282	21	12 15.7	19.6
230359 2002 <i>ER</i> ₅₅	16.7	X	135.01100	317.67121	179.31783	5.12412	0.1869672	0.22144172	2.7058045	21	7 6.9	21.0
230360 2002 <i>EK</i> ₅₆	16.8	X	270.01272	285.59989	199.56862	3.70598	0.1156574	0.23889069	2.5723885	21	11 18.7	19.9
230361 2002 <i>EA</i> ₆₁	16.5	X	46.53634	103.26433	180.59096	9.41839	0.1710330	0.27559714	2.3385837	21	10 11.4	19.2
230362 2002 <i>EP</i> ₈₄	16.2	X	118.00508	257.63445	35.69494	2.83660	0.0744057	0.23699331	2.5861000	21	12 27.6	20.0
230363 2002 <i>EU</i> ₈₄	17.3	X	189.67953	232.69959	1.60165	4.37272	0.1099390	0.28882644	2.2666167	21	—	—
230364 2002 <i>EF</i> ₁₀₁	15.8	X	292.78119	213.06799	273.01847	13.22141	0.0442176	0.24158498	2.5532270	21	12 31.6	19.0
230365 2002 <i>EX</i> ₁₀₁	15.6	X	313.00879	281.20140	131.95912	15.78333	0.1260349	0.23425017	2.6062502	21	10 25.1	18.8
230366 2002 <i>EP</i> ₁₁₃	16.5	X	237.76526	181.92544	301.21866	12.42172	0.2200060	0.23435824	2.6054489	21	9 13.2	20.6
230367 2002 <i>EK</i> ₁₃₈	16.2	X	323.66814	252.86100	147.81728	5.74828	0.0444540	0.23170205	2.6253234	21	10 24.4	19.4
230368 2002 <i>EY</i> ₁₅₂	16.4	X	264.84848	77.17554	351.97504	5.86482	0.0256006	0.22647394	2.6655728	21	9 9.1	19.9
230369 2002 <i>EU</i> ₁₅₅	16.7	X	241.84867	77.72791	10.05200	4.21802	0.1538169	0.22753792	2.6572568	21	8 18.3	20.5
230370 2002 <i>FQ</i> ₁	15.8	X	131.85499	166.81107	92.80864	15.41438	0.2168612	0.23196420	2.6233450	21	12 4.9	20.3
230371 2002 <i>FA</i> ₁₅	15.7	X	41.90560	171.52648	80.64476	11.47630	0.2586622	0.21707036	2.7420100	21	9 2.2	19.0
230372 2002 <i>FC</i> ₁₅	15.7	X	103.02463	352.93602	122.37019	13.01826	0.1300894	0.21362782	2.7713891	21	5 4.8	19.8
230373 2002 <i>FW</i> ₁₅	15.9	X	73.96385	134.26107	79.94702	7.79912	0.0299273	0.21938487	2.7226904	21	7 17.5	19.5
230374 2002 <i>GD</i> ₉	15.9	X	197.86582	89.70356	71.27516	4.43824	0.2114567	0.22929316	2.6466786	21	10 1.9	20.3
230375 2002 <i>GM</i> ₁₄	16.1	X	206.34954	304.95224	214.08085	11.96103	0.1838631	0.22849872	2.6498027	21	10 5.1	20.3
230376 2002 <i>GV</i> ₁₆	15.8	X	21.41974	194.54323	61.50275	4.45885	0.1368541	0.21431704	2.7654443	21	7 7.4	18.7
230377 2002 <i>GP</i> ₁₈	16.0	X	311.81954	68.90098	51.79699	11.95021	0.2183662	0.24160241	2.5531042	21	—	—
230378 2002 <i>GA</i> ₂₀	15.8	X	161.88293	333.93218	216.15237	7.48137	0.1468686	0.22608663	2.6686163	21	10 4.1	20.0
230379 2002 <i>GZ</i> ₅₁	16.3	X	165.35600	231.39569	57.61618	4.59389	0.1166388	0.23951906	2.5678875	21	—	—
230380 2002 <i>GU</i> ₅₂	15.6	X	184.37723	36.95643	195.67824	9.77408	0.0897336	0.18327714	3.0694733	21	12 13.8	20.4
230381 2002 <i>GV</i> ₇₇	16.7	X	78.68084	207.48839	60.16903	5.66432	0.2067024	0.27509852	2.3414086	21	11 2.4	20.0
230382 2002 <i>GN</i> ₇₈	16.2	X	85.48395	110.45611	282.79998	2.85664	0.0491173	0.24392873	2.5368459	21	—	—
230383 2002 <i>GH</i> ₈₃	16.0	X	138.02087	103.63785	115.52259	5.68423	0.1104272	0.22628690	2.6670415	21	10 20.6	20.1
230384 2002 <i>GP</i> ₁₀₃	15.9	X	27.40467	145.18783	150.01360	10.37760	0.2261987	0.21747781	2.7385841	21	9 29.2	18.9
230385 2002 <i>GX</i> ₁₁₇	16.2	X	242.93298	34.05647	91.67239	6.84801	0.1417565	0.23078121	2.6323022	21	10 11.9	20.0
230386 2002 <i>GC</i> ₁₂₀	15.9	X	333.27950	229.21938	84.30750	8.29746	0.1553868	0.21465047	2.7625797	21	6 26.4	18.7
230387 2002 <i>GH</i> ₁₂₁	15.9	X	301.27559	244.49402	72.00747	5.19988	0.0684940	0.21211601	2.7845418	21	5 22.5	19.6
230388 2002 <i>GG</i> ₁₂₂	15.7	X	266.18944	309.25787	259.30399	2.22027	0.0281114	0.19324317	2.9630111	21	—	—
230389 2002 <i>GR</i> ₁₂₆	17.0	X	255.17065	275.09310	244.31615	2.99988	0.2335994	0.23855085	2.5748311	21	11 23.9	20.1
230390 2002 <i>GA</i> ₁₄₄	16.1	X	174.52838	73.32334	124.10107	8.65166	0.1168217	0.23111794	2.6297448	21	10 31.4	20.3
230391 2002 <i>GV</i> ₁₅₁	16.5	X	186.61874	268.09517	325.87664	7.42066	0.1238666	0				

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230401 2002 JQ ₁₀₂	15.7	X	49.84797	170.08999	71.63632	8.049845	0.1074665	0.21270829	2.7793704	21	8 2.8	19.3
230402 2002 JJ ₁₁₀	16.4	X	202.55585	287.95742	252.93547	11.29908	0.2127713	0.23003806	2.6379684	21	10 25.4	20.8
230403 2002 JV ₁₂₁	15.7	X	103.97421	132.47683	145.56663	14.16045	0.1509580	0.22638253	2.6662904	21	11 30.7	20.1
230404 2002 JW ₁₃₀	15.5	X	250.20984	359.78723	60.55072	9.58305	0.0967167	0.21720699	2.7408600	21	7 31.1	19.5
230405 2002 JV ₁₄₁	16.2	X	308.72859	291.59791	24.20966	1.87698	0.0577867	0.21016719	2.8017289	21	6 2.2	19.9
230406 2002 JM ₁₄₄	15.9	X	203.91441	17.24239	136.20051	14.34103	0.1844882	0.22732783	2.6588937	21	10 2.1	20.3
230407 2002 KA ₂	15.9	X	228.86588	57.18812	82.29473	5.80620	0.2419363	0.23125851	2.6286790	21	10 1.8	20.1
230408 2002 KY ₂	16.7	X	229.99845	299.80970	217.20617	4.73350	0.2320683	0.23282174	2.6168994	21	10 22.4	20.8
230409 2002 KG ₉	15.9	X	132.92414	113.29443	118.66176	13.52320	0.1277294	0.22679540	2.6630535	21	11 3.9	20.3
230410 2002 KM ₉	15.4	X	167.11888	79.92801	117.68899	15.79958	0.3333292	0.22699704	2.6614762	21	10 23.5	20.7
230411 2002 LZ ₂₀	15.3	X	124.19676	125.37712	102.16761	17.19682	0.2270797	0.21978730	2.7193660	21	10 27.9	20.2
230412 2002 LV ₂₄	16.4	X	339.61116	196.09013	104.60538	15.43354	0.2129541	0.26002552	2.4310398	21	6 12.8	18.5
230413 2002 LE ₃₂	14.6	X	192.42328	41.60086	276.21435	21.84161	0.2155085	0.18509992	3.0492888	21	1 21.8	20.0
230414 2002 LW ₄₄	15.4	X	73.61996	61.94594	127.21916	12.36203	0.1292073	0.21125061	2.7921414	21	6 28.0	19.1
230415 Matthiasjung	16.8	X	356.77596	296.56974	1.95444	5.83442	0.1713474	0.31128478	2.1562418	21	7 29.4	18.0
230416 2002 NG ₂₆	15.1	X	119.36230	59.83437	302.73664	15.41014	0.2501604	0.17626989	3.1520906	21	1 20.7	19.8
230417 2002 NV ₃₇	15.5	X	196.85052	9.47491	100.01650	10.04260	0.1666374	0.18194231	3.0844679	21	—	—
230418 2002 NC ₅₂	17.5	X	350.42824	47.13978	294.31067	3.42035	0.1476219	0.31428524	2.1424962	21	9 25.2	18.9
230419 2002 OE ₈	15.5	X	157.61924	64.90042	285.36499	4.30980	0.1786603	0.18281328	3.0746632	21	2 1.8	20.5
230420 2002 PP ₆	18.9	X	94.22071	272.88767	151.03873	20.11824	0.6516411	0.27746069	2.3281006	21	4 4.1	22.8
230421 2002 PD ₁₇	15.5	X	135.86691	255.74704	144.58136	10.62694	0.1018508	0.18791235	3.0187872	21	3 5.3	20.0
230422 2002 PG ₂₀	15.6	X	107.75807	64.61448	292.93588	8.87753	0.0917568	0.17723592	3.1388330	21	—	—
230423 2002 PZ ₂₈	15.0	X	83.76438	84.82577	305.39546	14.48109	0.2421464	0.17546879	3.1598718	21	1 10.7	18.9
230424 2002 PD ₅₃	15.8	X	185.19048	2.15034	328.98495	0.69533	0.1016700	0.18422643	3.0589198	21	2 1.1	20.5
230425 2002 PT ₆₇	15.5	X	155.63251	221.25725	151.66310	10.46878	0.0836881	0.18622274	3.0370194	21	2 18.6	20.0
230426 2002 PD ₁₁₀	17.5	X	259.79745	250.00350	113.62771	6.19652	0.1973376	0.30295856	2.1955697	21	5 11.5	20.7
230427 2002 PO ₁₁₀	15.5	X	166.78628	50.75775	268.02594	9.20399	0.0475239	0.18017942	3.1054543	21	—	—
230428 2002 PY ₁₁₀	15.6	X	78.67498	276.49410	112.99465	11.08251	0.2477536	0.17478760	3.1680764	21	1 1.7	19.3
230429 2002 PC ₁₁₈	15.4	X	137.74872	92.61722	297.72903	10.33810	0.1190225	0.18411820	3.0601184	21	2 21.0	20.1
230430 2002 PD ₁₂₀	17.5	X	194.57416	58.64563	249.02349	4.29155	0.1259075	0.28671341	2.2777394	21	—	—
230431 2002 PB ₁₂₃	15.8	X	226.39468	73.89461	275.45484	9.41013	0.0893256	0.19311834	2.9642878	21	3 29.4	20.5
230432 2002 PC ₁₂₅	14.5	X	120.29026	94.43027	286.23432	14.88480	0.2484927	0.18120038	3.0928817	21	2 6.2	19.3
230433 2002 PD ₁₃₂	14.8	X	94.41239	239.75848	121.68139	16.53899	0.1828660	0.17378838	3.1802083	21	—	—
230434 2002 PV ₁₄₇	15.7	X	254.46428	358.91110	335.55051	5.98338	0.1361791	0.19486218	2.9465762	21	4 7.8	20.2
230435 2002 PQ ₁₅₃	17.6	X	302.97450	222.64729	120.50088	3.69297	0.1731046	0.30770430	2.1729364	21	6 10.4	19.7
230436 2002 PF ₁₅₆	15.1	X	46.54650	102.57516	315.63432	15.18510	0.2424465	0.17451529	3.1713710	21	—	—
230437 2002 PO ₁₅₉	15.8	X	135.41771	279.39553	114.58288	7.95352	0.1641231	0.18517579	3.0484559	21	3 5.6	20.5
230438 2002 PH ₁₆₁	15.5	X	207.31302	169.37171	120.38390	7.89406	0.0626815	0.18246313	3.0785956	21	1 5.1	20.2
230439 2002 PG ₁₆₃	15.6	X	240.59843	352.42308	313.40535	8.66210	0.0666932	0.19008399	2.9957509	21	2 24.5	20.2
230440 2002 PQ ₁₆₅	15.7	X	88.99644	284.75950	141.52093	9.73585	0.0860411	0.18233488	3.0800389	21	2 5.9	19.7
230441 2002 QT ₅₁	15.8	X	62.79120	246.89557	122.54056	1.75438	0.0932465	0.17007134	3.2263784	21	—	—
230442 2002 QH ₆₁	15.5	X	115.03196	95.77230	297.47123	7.71208	0.0830082	0.18123352	3.0925047	21	1 28.8	19.8
230443 2002 QN ₈₆	15.7	X	329.76128	261.57027	315.65291	9.13464	0.0514790	0.18905267	3.0066359	21	2 24.4	19.9
230444 2002 QJ ₉₁	16.3	X	313.17142	0.49443	64.19106	6.12957	0.1584769	0.21191313	2.7863188	21	10 28.7	19.2
230445 2002 QF ₁₀₀	15.3	X	57.96514	293.54603	142.15327	17.39973	0.2367953	0.17640121	3.1487270	21	1 21.7	18.8
230446 2002 QT ₁₀₂	15.5	X	90.39895	110.87800	317.29734	9.25155	0.1038689	0.17991282	3.1076205	21	2 12.6	19.7
230447 2002 QF ₁₀₉	16.1	X	102.03296	260.83556	146.38708	5.58646	0.1472294	0.18170439	3.0871597	21	2 8.1	20.3
230448 2002 QB ₁₁₇	15.9	X	93.25233	0.34723	170.85653	8.94355	0.2422048	0.20223576	2.8745117	21	7 13.9	20.4
230449 2002 QZ ₁₃₅	18.2	X	261.07973	249.98881	106.45072	5.98492	0.1946748	0.30260027	2.1973025	21	5 3.5	21.4
230450 2002 QT ₁₃₆	15.4	X	60.80097	105.38104	288.57600	6.59634	0.0453465	0.17306103	3.1891127	21	—	—
230451 2002 RB ₁₀	15.4	X	144.80015	229.56955	117.11196	2.06797	0.1644842	0.17888772	3.1194812	21	1 17.0	20.0
230452 2002 RF ₁₇	16.9	X	205.98335	325.19510	350.42656	5.40173	0.1847987	0.28852858	2.2681764	21	1 21.7	20.5
230453 2002 RO ₈₀	16.2	X	101.34887	353.36729	334.38767	4.57096	0.2592648	0.22224270	2.6992993	21	—	—
230454 2002 RE ₈₇	17.4	X	322.64148	177.99613	178.46368	4.49619	0.1910942	0.30860560	2.1687035	21	8 9.8	18.8
230455 2002 RE ₉₂	16.8	X	153.44386	91.37656	1.54042	6.31528	0.0896717	0.29684493	2.2256129	21	5 17.8	19.8
230456 2002 RZ ₁₁₄	15.3	X	162.03578	79.61125	293.51188	6.35647	0.0864826	0.18448626	3.0560470	21	2 23.9	20.1
230457 2002 RS ₁₁₈	15.5	X	242.48034	285.75291	96.58230	6.39610	0.0646489	0.19710517	2.9241795	21	6 3.9	19.8
230458 2002 RM ₁₂₀	17.2	X	16.90676	174.55233	103.91524	4.89738	0.2262354	0.30979983	2.1631266	21	8 22.3	18.3
230459 2002 RF ₁₂₉	15.3	X	80.27538	88.89370	324.48215	7.77931	0.1678221	0.17590651	3.1546277	21	1 23.0	19.3
230460 2002 RU ₁₄₁	17.7	X	299.34914	82.39176	286.29355	4.12719	0.1622223	0.30718794	2.1753707	21	7 16.9	19.5
230461 2002 RW ₁₄₂	15.8	X	240.34428	315.82813	325.57845	8.22497	0.1105679	0.18322812	3.0700207	21	1 27.8	20.5
230462 2002 RD ₁₄₄	15.6	X	103.41815	121.51882	333.84729	10.65672	0.0457178	0.18614153	3.0379028	21	3 22.5	19.9
230463 2002 RV ₁₄₉	15.4	X	212.85908	345.99365	310.67173	9.14770	0.2160502	0.18185770	3.0854244	21	1 19.0	20.6
230464 2002 RO ₁₅₁	15.5	X	48.83975	133.93516	290.45314	8.23762	0.0716686	0.17425808	3.1744910	21	—	—
230465 2002 RC ₁₅₃	15.5	X	129.67426	95.24413	327.35040	12.73918	0.0591824	0.18466460	3.0540791	21	3 15.1	20.1
230466 2002 RO ₁₇₂	15.8	X	157.67878	101.69091	260.09869	3.31558	0.1398476	0.18222765	3.0812472	21	2 11.8	20.7
230467 2002 RR ₁₇₂	15.2	X	118.04851	82.62674	276.28599	3.39346	0.1659103	0.17573651	3.1566618	21	1 4.3	19.8
230468 2002 RX ₁₇₃	15.7	X	138.74272	104.00266	302.31883	4.63306	0.1089765	0.18484980	3.0520388	21	3 13.4	20.3
230469 2002 RM ₁₇₅	17.4	X	185.40563	110.19478	303.21380	6.34588	0.2025335	0.29538021	2.2329643	21	5 3.0	21.1
230470 2002 RX ₂₂₃	15.9	X	226.15542	298.67735	18.18426	4.99167	0.1222531	0.18587775	3.0407761	21	2 24.3	20.8
230471 2002 RH ₂₂₈	16.6	X	101.89307	343.69790	51.51855	7.85635	0.0988178	0.28282674	2.2985594	21	—	—
230472 2002 RG ₂₄₁	15.5	X	94.99104	141.59799	325.70606	9.62290	0.0593783	0.18827247	3.10149365	21	3 27.8	19.7
230473 2002 SG ₁₅	14.9	X	186.65781	18.17636	293.66831	16.21770	0.1863354	0.17818279	3.2177033	21	1 15.2	20.2

ELEMENTS AND OPPOSITION DATES IN 2021

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2021 JULY 5.0 TT

Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>
230481 2002 TO ₅₁	16.7	X	308.73552	141.86580	198.65041	5.47807	0.2149162	0.30252639	2.1976602	21	6 8.7	18.8
230482 2002 TL ₅₄	16.7	X	205.08006	19.87090	45.33965	7.28628	0.0437699	0.29778960	2.2209036	21	6 12.7	19.6
230483 2002 TB ₆₅	16.4	X	32.73352	168.09013	240.93596	14.02304	0.0412435	0.17058924	3.2198450	21	—	—
230484 2002 TJ ₇₃	16.4	X	53.47070	148.52213	256.80898	6.12674	0.0934536	0.27353794	2.3503056	21	—	—
230485 2002 TH ₇₆	17.2	X	228.30701	182.48475	243.30230	4.28620	0.1503027	0.30149991	2.2026454	21	7 4.3	20.4
230486 2002 TM ₈₆	16.0	X	139.74429	190.47884	155.63790	1.09539	0.1839994	0.17652945	3.1472019	21	1 13.8	20.9
230487 2002 TT ₈₆	15.3	X	46.78662	181.42408	11.65162	10.16052	0.0380347	0.19031029	2.9933755	21	5 10.4	19.4
230488 2002 TL ₉₁	16.7	X	47.75378	166.24177	255.48485	5.60708	0.0988408	0.27440475	2.3453534	21	—	—
230489 2002 TG ₁₀₀	18.1	X	275.80371	233.02231	150.42040	2.44324	0.1326189	0.30463449	2.1875098	21	7 6.5	20.4
230490 2002 TO ₁₂₈	16.6	X	239.19935	119.01874	250.62839	5.08033	0.1838908	0.29787115	2.2204982	21	4 26.6	19.9
230491 2002 TF ₁₆₅	16.6	X	31.88115	332.87857	94.99366	7.38586	0.2388538	0.27243080	2.3566689	21	—	—
230492 2002 TO ₁₉₅	16.8	X	245.71473	341.18277	43.71215	7.56344	0.1401391	0.29817176	2.2190055	21	5 28.3	19.8
230493 2002 TP ₁₉₉	15.1	X	147.50334	45.72283	290.59724	9.71976	0.0447967	0.17385976	3.1793378	21	—	—
230494 2002 TO ₂₁₄	15.3	X	146.72568	201.44981	139.42763	9.12754	0.1982997	0.17497903	3.1657653	21	1 15.5	20.4
230495 2002 TE ₂₃₂	15.0	X	178.58930	42.20255	326.55424	15.78804	0.1028302	0.18357744	3.0661249	21	3 6.8	20.0
230496 2002 TQ ₂₄₂	16.9	X	180.48764	191.22711	232.73041	3.73064	0.1462684	0.29408714	2.2395050	21	5 13.5	20.2
230497 2002 TG ₂₅₈	17.9	X	193.67161	347.10393	53.65799	1.74631	0.2065383	0.29287700	2.2456696	21	5 3.3	21.5
230498 2002 TJ ₂₆₈	17.0	X	261.67949	96.01061	288.99995	4.16725	0.1700379	0.30269789	2.1968300	21	6 13.7	19.9
230499 2002 TH ₂₇₄	17.1	X	217.30505	123.42998	282.06099	3.74859	0.1495520	0.29708193	2.2244291	21	5 25.4	20.5
230500 2002 TM ₂₇₉	16.9	X	220.18387	73.39763	286.57803	6.08598	0.2112106	0.29295518	2.2452701	21	3 24.9	20.8
230501 2002 TR ₂₈₅	16.7	X	323.90015	72.48890	251.63886	7.23021	0.1774853	0.30263545	2.1971322	21	6 18.4	18.3
230502 2002 TR ₂₈₈	16.6	X	266.90845	28.40422	320.94933	4.99818	0.1836847	0.29718416	2.2239189	21	4 26.9	19.7
230503 2002 TC ₃₈₅	15.6	X	124.89389	62.07278	33.63167	9.01301	0.1990456	0.18509955	3.0492929	21	5 8.3	20.3
230504 2002 UG ₂	17.3	X	269.92678	247.04154	120.67509	7.62209	0.1826745	0.30134434	2.2304034	21	5 30.2	20.2
230505 2002 UH ₃₄	15.1	X	347.10516	243.92329	218.39460	8.17149	0.0516403	0.16477974	3.2950867	21	—	—
230506 2002 UG ₄₉	16.4	X	238.68838	69.28944	324.86635	6.90412	0.1455137	0.29618546	2.2289153	21	6 1.6	19.7
230507 2002 VQ ₉	16.8	X	173.86540	180.74342	298.90676	4.65320	0.0927833	0.29919124	2.2139618	21	7 21.5	19.8
230508 2002 VP ₁₇	17.1	X	223.13646	226.76222	164.22803	6.28240	0.2651708	0.29479548	2.2359161	21	5 9.2	20.9
230509 2002 VM ₁₉	16.9	X	134.42740	108.71636	228.48925	6.35805	0.1358703	0.27556791	2.3387491	21	—	—
230510 2002 VW ₃₇	17.1	X	211.64486	336.91423	84.13262	6.66720	0.1421201	0.29795230	2.2200950	21	6 10.7	20.3
230511 2002 VD ₃₈	17.6	X	288.56072	42.72207	331.57649	4.15326	0.1452809	0.30343375	2.1932769	21	7 11.1	19.9
230512 2002 VT ₄₀	17.5	X	202.33164	179.86358	248.36825	2.84040	0.0822846	0.29642903	2.2276941	21	6 12.7	20.5
230513 2002 VZ ₅₁	16.6	X	180.64090	249.70776	73.20661	8.83914	0.1608375	0.28183105	2.3039700	21	1 5.6	20.1
230514 2002 VQ ₆₀	17.5	X	267.61063	192.07193	153.93925	4.44048	0.1912653	0.29701767	2.2247499	21	4 26.4	20.5
230515 2002 VV ₉₄	17.3	X	290.95380	34.45356	292.17592	4.28589	0.2230075	0.29779304	2.2208865	21	4 18.5	20.2
230516 2002 VQ ₁₀₆	16.5	X	1.16407	305.32508	246.95029	6.41235	0.0510454	0.28567670	2.2832467	21	2 16.4	19.1
230517 2002 VE ₁₁₉	16.8	X	101.40555	34.31251	329.98089	4.12852	0.2352024	0.27376951	2.3489801	21	—	—
230518 2002 VC ₁₂₆	17.0	X	192.11738	100.73475	281.55490	6.03536	0.1164563	0.28869011	2.2673302	21	3 27.0	20.3
230519 2002 WY ₅	17.0	X	204.00596	8.38602	335.64967	5.65698	0.1116250	0.28640785	2.2793592	21	2 21.4	20.3
230520 2002 WE ₈	17.0	X	196.88134	170.97280	241.75099	6.82434	0.0859913	0.29239805	2.2481213	21	5 15.2	20.1
230521 2002 WM ₁₁	16.4	X	140.79432	178.63519	280.75206	23.44926	0.1823327	0.28639643	2.2794198	21	5 22.4	20.2
230522 2002 WM ₁₉	17.7	X	185.01037	7.32960	75.81801	3.23147	0.1044345	0.29462348	2.2367862	21	6 12.9	20.9
230523 2002 WN ₁₉	17.4	X	247.60704	268.27297	78.97067	3.33094	0.1913066	0.29330575	2.2434807	21	4 7.9	20.7
230524 2002 WD ₂₀	17.0	X	72.49349	315.18472	52.24197	3.10044	0.1941352	0.26981151	2.3718965	21	—	—
230525 2002 XW ₅	16.8	X	164.06764	341.30782	81.87344	3.72244	0.1097316	0.28960611	2.2625468	21	4 24.6	20.0
230526 2002 XB ₁₁	16.9	X	198.98200	313.46900	61.12241	6.84505	0.1284525	0.28779618	2.2720229	21	3 31.2	20.3
230527 2002 XF ₂₄	16.4	X	234.33952	99.33484	280.66232	4.36568	0.2027688	0.29423625	2.2387483	21	5 4.4	20.0
230528 2002 XZ ₂₆	17.2	X	175.53464	83.33702	1.17771	3.16049	0.1428749	0.29316018	2.2442233	21	6 4.7	20.6
230529 2002 XK ₂₈	16.4	X	295.56383	269.51281	85.51924	5.16855	0.2103690	0.30013997	2.2092939	21	6 9.9	18.7
230530 2002 XO ₃₅	15.6	X	46.42768	43.54374	104.31304	24.75657	0.2268855	0.27601533	2.3362209	21	3 29.1	18.2
230531 2002 XY ₆₆	18.1	X	127.07532	238.42698	250.84167	1.18584	0.1858726	0.28966971	2.2622156	21	6 18.8	21.2
230532 2002 YE ₇₆	16.3	X	186.78425	108.24433	308.15532	5.39436	0.1421357	0.28971883	2.2619599	21	5 7.9	19.7
230533 2002 XE ₉₅	17.4	X	216.18916	353.99112	87.16746	3.90271	0.1314898	0.29917790	2.2140276	21	7 14.6	20.6
230534 2002 XK ₉₈	15.4	X	107.26175	358.83063	65.14208	4.02424	0.0423112	0.17503468	3.1650943	21	2 23.3	19.9
230535 2002 XW ₉₉	16.9	X	201.78620	353.94757	65.78571	5.97459	0.0924033	0.29346537	2.2426671	21	5 30.7	19.9
230536 2002 YX ₅	17.3	X	162.84000	68.95469	0.49216	2.30843	0.1872410	0.28588666	2.2821287	21	5 5.1	20.9
230537 2002 YE ₁₅	16.8	X	77.07231	15.68286	104.49782	5.08492	0.0803672	0.27882690	2.3204895	21	3 16.1	19.3
230538 2002 YG ₁₆	16.8	X	307.66493	262.12770	71.83252	5.38833	0.2072513	0.29959935	2.2119508	21	5 28.6	18.8
230539 2002 YC ₂₃	17.0	X	306.43364	185.27253	286.04657	4.19883	0.1562579	0.25986934	2.4320137	21	—	—
230540 2002 YX ₂₄	17.1	X	175.01119	349.01667	96.49596	3.01006	0.1814096	0.29074072	2.2566566	21	6 7.2	20.5
230541 2002 YR ₂₅	16.7	X	195.82678	271.57715	92.84893	7.80639	0.2069523	0.28439131	2.2901214	21	3 18.2	20.5
230542 2003 AC ₂	16.7	X	136.87830	267.39284	134.70431	10.28218	0.1327285	0.27729982	2.3290009	21	2 28.0	19.7
230543 2003 AM ₃	16.3	X	115.26586	194.67280	272.16112	25.49579	0.2064755	0.28071615	2.3100663	21	5 4.7	20.0
230544 2003 AC ₅₅	17.1	X	46.46408	125.04101	34.83775	4.32049	0.1417848	0.27849229	2.3223478	21	3 26.1	19.1
230545 2003 AM ₆₁	16.7	X	149.44308	202.92576	229.17196	5.00671	0.1373620	0.28415555	2.2913879	21	4 21.0	19.9
230546 2003 AQ ₆₉	16.3	X	149.63403	98.26624	286.85004	6.22536	0.1324920	0.27836919	2.3230324	21	2 16.5	19.4
230547 2003 AY ₈₂	17.2	X	134.93164	266.41398	133.00081	4.15126	0.2211393	0.27891776	2.3199855	21	3 4.7	20.4
230548 2003 AT ₉₀	16.6	X	67.24926	77.16831	21.05622	6.82420	0.0914874	0.27358321	2.3500463	21	1 29.3	19.1
230549 2003 BH	20.5	X	205.71119	313.39738	119.77477	13.11445	0.3561044	0.56076562	1.4564038	21	6 12.1	22.6
230550 2003 BM	17.9	X	155.07501	298.05364	158.84939	1.28304	0.1729107	0.28824535	2.2696619	21	6 2.9	21.3
230551 2003 BD ₂	16.8	X	197.55088	125.43750	268.20617	3.50418	0.1807450	0.28648191	2.2789664	21	4 19.7	20.4
230552 2003 BK ₈	17.2	X	119.24004	288.13598	145.27348	5.94416	0.1912902	0.27989099	2.3146044	21	3 28.7	20.1
230553 2003 BS ₈	17.1	X	104.30198	171.69025	258.11739	5.33897	0.1967725	0.27740588	2.3284072	21	2 27.8	19.8
230554 2003 BS ₁₀	16.4	X										

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Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>		
230561	2003	BH ₄₇	15.6 ^m	X	0.20977	292.68899	123.14915	15.83015	0.1362782	0.20470405	2.8513581	21	—	—
230562	2003	BW ₅₀	17.6	X	98.37434	187.29451	316.31239	3.57132	0.1893948	0.28344046	2.2952403	21	6 5.1	20.4
230563	2003	BO ₅₁	16.7	X	139.09580	61.11626	357.57499	3.31700	0.1571893	0.27953245	2.3165831	21	3 25.5	19.9
230564	2003	BK ₅₄	16.9	X	27.49826	226.24300	250.91943	2.85311	0.0649922	0.26967193	2.3727149	21	—	—
230565	2003	BG ₅₅	16.5	X	116.90092	65.50755	331.28249	5.33630	0.1954160	0.27428832	2.3460171	21	2 4.3	19.3
230566	2003	BH ₅₈	17.0	X	33.64546	146.17890	49.41497	0.66317	0.1796800	0.27896682	2.3197135	21	4 26.8	18.3
230567	2003	BL ₅₈	16.8	X	335.90203	51.55380	129.78565	4.21500	0.1443432	0.26902609	2.3765107	21	—	—
230568	2003	BN ₅₈	17.2	X	31.40930	165.94018	325.54843	0.93016	0.1374012	0.27169395	2.3609280	21	1 10.3	19.2
230569	2003	BA ₆₀	16.7	X	81.39885	87.20089	22.20059	6.54076	0.2025930	0.27617834	2.3353016	21	3 26.1	19.0
230570	2003	BQ ₆₄	17.2	X	121.91853	124.13544	340.87117	2.39145	0.1581976	0.28387283	2.2929091	21	5 6.3	20.1
230571	2003	BS ₆₅	17.4	X	46.28063	307.29671	217.31429	3.99928	0.1340996	0.27827884	2.3235352	21	3 29.9	19.3
230572	2003	BF ₇₀	17.0	X	162.77129	348.04150	82.35414	3.89076	0.1342086	0.28444005	2.2898598	21	5 4.8	20.4
230573	2003	BR ₇₉	17.6	X	110.42480	79.85101	34.54174	1.11770	0.1445123	0.28192262	2.3034711	21	5 3.9	20.5
230574	2003	BK ₈₁	17.7	X	109.32379	274.85034	164.72276	2.35706	0.1984244	0.27816782	2.3241534	21	3 24.0	20.5
230575	2003	BN ₈₃	16.8	X	5.43595	332.27470	138.09851	5.24414	0.1399525	0.26466512	2.4025453	21	—	—
230576	2003	BE ₈₈	16.7	X	160.72180	146.41925	256.57113	6.20482	0.1590926	0.28088767	2.3091258	21	3 24.6	20.2
230577	2003	BZ ₈₈	16.5	X	134.05433	169.32112	283.50366	7.58943	0.0995308	0.28177382	2.3042820	21	4 24.6	19.7
230578	2003	CA ₃	16.8	X	116.59652	124.21471	27.97229	7.00575	0.1077084	0.28507619	2.2864520	21	6 29.9	19.9
230579	2003	CU ₃	16.7	X	87.85645	250.82526	133.72730	11.81101	0.2004941	0.26708709	2.3879989	21	—	—
230580	2003	CH ₄	16.9	X	130.26525	191.68253	229.26508	7.26671	0.1660049	0.27923978	2.3182016	21	3 16.7	20.2
230581	2003	CX ₅	17.3	X	98.83995	98.95514	355.49173	4.88696	0.1874379	0.27853275	2.3221229	21	3 27.3	19.7
230582	2003	CQ ₉	17.1	X	86.66301	248.46783	205.04308	4.61784	0.1939702	0.27579444	2.3374682	21	3 7.1	19.3
230583	2003	CO ₁₆	17.6	X	119.81173	290.58394	145.00269	6.01059	0.1478745	0.27813262	2.3243495	21	3 23.2	20.5
230584	2003	DS ₁₆	17.2	X	339.10440	333.37577	127.64209	2.08717	0.1438263	0.26021762	2.4298432	21	—	—
230585	2003	DY ₁₇	17.0	X	299.75512	92.96313	100.55149	6.32902	0.1675446	0.26456385	2.4031583	21	—	—
230586	2003	DE ₁₉	17.2	X	323.98885	272.15814	272.66614	1.30981	0.1783286	0.26556314	2.3971260	21	—	—
230587	2003	DW ₁₉	16.9	X	80.29905	86.64168	329.97636	5.94230	0.1048172	0.26751863	2.3854301	21	—	—
230588	2003	DB ₂₄	17.0	X	56.89595	341.36799	135.72866	3.18340	0.1417681	0.27236196	2.3750660	21	2 8.8	18.9
230589	2003	EM ₁₂	16.7	X	15.38177	210.88446	324.99314	4.69890	0.1473370	0.27070828	2.3666554	21	2 14.0	18.9
230590	2003	EE ₁₃	17.2	X	97.80802	314.12939	156.31107	2.73455	0.1787765	0.27831677	2.3233241	21	4 7.8	19.7
230591	2003	EO ₂₅	17.1	X	358.17820	104.61208	75.28939	3.34050	0.1590710	0.26941766	2.3742075	21	1 18.2	19.4
230592	2003	EH ₂₇	16.8	X	13.84383	119.77823	44.57838	3.20647	0.1570802	0.26980104	2.3719579	21	1 24.9	19.0
230593	2003	EF ₂₉	16.9	X	354.25000	27.53691	147.96423	5.80382	0.1342719	0.26793213	2.3829752	21	1 8.7	19.5
230594	2003	EF ₃₃	17.4	X	325.79408	209.62228	343.09615	1.66069	0.0941516	0.26727946	2.3868530	21	—	—
230595	2003	EM ₃₃	17.4	X	28.14885	139.43955	21.50655	2.94774	0.1446448	0.27171117	2.3608282	21	2 18.5	19.3
230596	2003	EQ ₃₅	17.2	X	25.26758	284.45482	244.06224	4.07870	0.1376850	0.27229599	2.3574467	21	2 20.6	19.4
230597	2003	ES ₄₅	17.0	X	15.40160	212.96190	329.26887	4.51071	0.1650291	0.27156114	2.3616977	21	2 21.8	19.0
230598	2003	EH ₅₂	16.7	X	28.19742	42.39928	124.81373	6.90866	0.1486860	0.27251584	2.3561786	21	2 28.8	18.6
230599	2003	FJ ₁	17.9	X	232.08506	182.07877	128.59096	20.97464	0.8173771	0.30817980	2.1707006	21	1 31.5	23.5
230600	2003	FR ₇	17.1	X	47.15292	117.29548	40.48466	3.23477	0.1597306	0.27269670	2.3551367	21	3 26.8	19.1
230601	2003	FQ ₁₂	16.8	X	7.78696	147.24196	56.76424	5.33503	0.2285718	0.27355388	2.3502143	21	3 7.2	18.5
230602	2003	FW ₂₀	16.6	X	294.88566	73.09075	136.69556	3.68225	0.1231750	0.26059319	2.4275080	21	—	—
230603	2003	FN ₂₂	16.5	X	228.26933	234.20477	173.90324	6.41156	0.0511269	0.22319938	2.6915806	21	5 13.9	20.4
230604	2003	FV ₂₅	15.9	X	105.22546	163.18392	178.06855	7.64756	0.1919282	0.25535675	2.4605819	21	—	—
230605	2003	FY ₃₈	17.3	X	352.88518	224.03958	326.92724	2.82218	0.1258699	0.26894095	2.3770123	21	1 30.1	19.7
230606	2003	FP ₄₀	16.5	X	82.94006	0.29346	127.23949	7.32512	0.0541362	0.27626667	2.3348088	21	4 2.4	19.2
230607	2003	FQ ₅₁	16.3	X	199.06033	215.52501	36.16448	6.90937	0.0691722	0.25370981	2.4712189	21	—	—
230608	2003	FC ₅₄	16.4	X	132.00121	218.71315	26.53323	7.32845	0.1778091	0.24088972	2.5581374	21	11 15.3	20.6
230609	2003	FP ₆₆	16.8	X	280.02937	102.49395	109.44305	3.56764	0.0936859	0.26042076	2.4285794	21	—	—
230610	2003	FF ₇₃	16.7	X	292.17075	87.53596	137.76113	2.97128	0.1694018	0.26288123	2.4134019	21	—	—
230611	2003	FV ₇₉	16.8	X	57.62105	60.40794	49.93968	4.51262	0.1686869	0.26861074	2.3789600	21	2 5.2	18.8
230612	2003	FJ ₈₀	16.5	X	56.16835	79.96016	83.68476	5.66263	0.1664162	0.27576785	2.3376185	21	4 26.1	18.6
230613	2003	FG ₈₁	16.9	X	332.97571	107.42146	83.31379	6.75295	0.1203443	0.26589645	2.3951223	21	1 1.4	19.8
230614	2003	FX ₈₂	16.7	X	79.42170	85.94925	32.54976	4.69010	0.1882870	0.27464743	2.3439717	21	4 2.7	19.0
230615	2003	FP ₈₈	16.6	X	296.46944	127.97869	114.82793	3.28434	0.1561779	0.26551228	2.3974321	21	1 19.4	19.9
230616	2003	FN ₁₀₀	16.5	X	318.83776	59.03840	144.12202	6.98379	0.0881083	0.26526273	2.3989354	21	1 3.8	19.7
230617	2003	FW ₁₀₄	17.2	X	42.58632	354.79305	155.56002	6.54980	0.1741242	0.27224636	2.3577332	21	3 4.7	19.0
230618	2003	FW ₁₁₆	16.9	X	74.85002	152.90990	341.90205	2.41307	0.1088295	0.27684156	2.3315703	21	4 3.7	19.4
230619	2003	FG ₁₁₉	16.6	X	328.27853	172.98873	42.95250	3.13496	0.1437392	0.26714448	2.3876568	21	1 25.8	19.6
230620	2003	FH ₁₃₀	17.3	X	266.58501	95.61355	151.42809	2.62931	0.1295224	0.26226613	2.4171740	21	—	—
230621	2003	FW ₁₃₀	16.8	X	294.38529	229.60687	358.16677	4.17770	0.0934148	0.26503544	2.4003068	21	1 6.0	20.0
230622	2003	GO ₁₄	16.6	X	287.43645	161.87925	74.65878	6.77532	0.0541098	0.26630867	2.3926500	21	1 13.6	19.8
230623	2003	GH ₂₇	16.7	X	24.39537	308.63746	203.40831	3.62628	0.1560823	0.26847454	2.3797645	21	1 25.6	18.9
230624	2003	GU ₃₉	16.8	X	4.37506	359.97768	137.47985	6.22581	0.1355780	0.26310465	2.4120356	21	—	—
230625	2003	HX ₁₄	16.7	X	313.25173	67.61006	165.67189	3.43965	0.1754584	0.26587232	2.3952672	21	1 23.1	19.9
230626	2003	HY ₁₈	17.2	X	354.11335	32.99538	154.82583	4.65992	0.1139949	0.26760107	2.3849401	21	1 28.7	19.7
230627	2003	HF ₄₅	17.0	X	268.96043	137.46133	87.02599	2.48944	0.1436376	0.25756947	2.4464694	21	—	—
230628	2003	HB ₅₄	17.1	X	297.18900	11.42401	202.89887	1.84712	0.1509329	0.26192922	2.4192463	21	—	—
230629	2003	HR ₅₅	16.7	X	6.28413	121.40517	37.09977	5.02761	0.1752818	0.26611640	2.3938024	21	—	—
230630	2003	KP ₃₆	15.8	X	140.06935	151.05641	85.59377	14.88049	0.1223041	0.23779033	2.5803181	21	11 15.9	19.9
230631	Just													

ELEMENTS AND OPPOSITION DATES IN 2021

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Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>		
230641	2003	QS ₁₁₄	15.4	X	146.61161	304.71798	70.30752	5.79841	0.0887610	0.19110426	2.9850788	21	2 13.6	19.9
230642	2003	QW ₁₁₄	16.5	X	211.65800	1.74275	320.83390	4.29837	0.0633066	0.19431208	2.9521347	21	2 15.1	20.7
230643	2003	RQ ₁₀	15.5	X	310.91996	47.35640	297.81104	6.73517	0.2362306	0.21222530	2.7835858	21	6 18.8	18.7
230644	2003	RP ₁₂	15.1	X	124.25202	76.14596	312.93144	11.82478	0.1730848	0.18942848	3.0026580	21	2 12.9	19.6
230645	2003	RZ ₁₅	16.3	X	353.59010	83.04042	241.03085	2.37110	0.1986096	0.21798777	2.7343113	21	8 22.8	18.8
230646	2003	RF ₁₉	15.9	X	251.29117	162.68142	222.08146	3.18547	0.1117718	0.20899537	2.8121918	21	6 11.1	20.0
230647	2003	SN ₁₁	15.8	X	105.39345	92.32422	208.46439	2.49510	0.2697479	0.17751542	3.1355375	21	12 25.8	21.2
230648		Zikmund	16.2	X	300.32090	182.90788	166.10684	3.79271	0.1122601	0.21210103	2.7846729	21	6 27.3	19.7
230649	2003	SM ₂₇	16.3	X	255.12220	91.42250	300.06628	3.02160	0.1103752	0.21067689	2.7972082	21	6 24.5	20.4
230650	2003	SC ₃₀	16.0	X	334.51106	7.82133	329.00457	5.02275	0.0762468	0.21562014	2.7542911	21	8 8.9	19.2
230651	2003	SF ₃₀	15.6	X	206.71576	100.91771	332.68607	3.63448	0.0898311	0.20959983	2.8067826	21	6 26.4	19.8
230652	2003	SH ₉₀	15.0	X	126.04746	265.70122	19.46354	11.25857	0.1419300	0.17673213	3.1447952	21	12 17.6	20.2
230653	2003	SD ₉₅	16.2	X	51.61118	1.91033	222.25832	6.15453	0.1468114	0.21070808	2.7969321	21	7 14.2	19.7
230654	2003	SO ₉₉	16.4	X	55.17135	173.85223	62.36885	3.01409	0.0739360	0.20892524	2.8128211	21	7 27.5	19.9
230655	2003	SM ₁₀₁	15.6	X	145.26886	96.44018	271.54669	9.09180	0.1181754	0.18966996	3.0001089	21	2 2.3	20.2
230656		Kovácspál	15.7	X	34.56231	99.21024	7.14122	10.62624	0.1412132	0.18645177	3.0345320	21	1 11.1	19.4
230657	2003	SN ₁₁₅	16.1	X	319.38685	354.06229	345.65339	4.75154	0.0673258	0.21415161	2.7668683	21	7 21.3	19.6
230658	2003	SC ₁₁₇	15.4	X	73.62711	167.83193	242.45467	9.81218	0.1436377	0.18323721	3.0699191	21	1 1.8	19.3
230659	2003	SA ₁₁₉	16.5	X	146.54068	30.19788	36.58148	1.91337	0.0155434	0.19777317	2.9175914	21	4 7.3	20.4
230660	2003	SO ₁₃₈	15.3	X	229.76972	78.71872	265.49388	3.92345	0.1104221	0.19772097	2.9181048	21	3 27.8	19.8
230661	2003	ST ₁₅₉	15.6	X	205.88353	114.58757	230.76127	4.00050	0.0567611	0.19763153	2.9189852	21	3 6.4	20.1
230662	2003	ST ₁₇₇	15.7	X	316.05860	32.19658	331.57399	5.06307	0.1306396	0.21588184	2.7520647	21	8 10.9	18.8
230663	2003	SV ₁₈₈	15.4	X	150.22776	308.31856	60.74056	6.53381	0.0839822	0.18986557	2.9980479	21	2 10.4	19.9
230664	2003	SX ₁₉₁	15.2	X	144.61767	76.98222	267.28708	7.89278	0.1491247	0.18415403	3.0597215	21	1 10.9	19.9
230665	2003	SO ₁₉₈	15.6	X	142.56847	120.49943	10.45472	7.87194	0.1506279	0.20456199	2.8526780	21	7 5.6	20.2
230666	2003	SL ₁₉₉	15.7	X	56.58197	208.83731	243.39510	4.61519	0.2239295	0.18282706	3.0745087	21	2 5.1	19.0
230667	2003	SZ ₂₀₀	15.9	X	337.51716	348.63838	305.60957	3.15083	0.0802905	0.20918730	2.8104714	21	6 13.8	19.4
230668	2003	SC ₂₀₁	16.4	X	348.94468	304.79650	359.60475	6.25335	0.0342788	0.21270586	2.7793916	21	7 20.0	20.0
230669	2003	SJ ₂₂₂	16.6	X	87.99558	287.58168	143.65389	1.35103	0.2605239	0.18478828	3.0527162	21	3 8.1	20.4
230670	2003	SU ₂₄₈	15.8	X	61.68703	253.76844	156.75452	0.81095	0.1619989	0.18037519	3.1023075	21	—	—
230671	2003	SH ₂₅₃	15.8	X	325.87018	128.82467	200.59718	4.35966	0.0731537	0.21291295	2.7775891	21	7 14.2	19.4
230672	2003	SC ₂₆₇	16.1	X	118.53738	28.90374	43.58943	2.29907	0.1971277	0.19163789	2.9795308	21	4 4.6	20.6
230673	2003	ST ₂₆₉	15.1	X	171.26701	330.14624	36.89242	13.83983	0.0948857	0.19181020	2.9777541	21	3 6.8	19.8
230674	2003	SV ₂₇₉	15.8	X	47.66190	343.74369	259.83306	8.34516	0.2341367	0.21512869	2.7584842	21	8 16.1	19.2
230675	2003	SC ₂₈₆	15.9	X	240.29971	5.66873	284.12780	6.61449	0.0597192	0.19095037	2.9866824	21	2 5.7	20.3
230676	2003	SP ₂₉₂	15.8	X	190.09210	37.31095	321.76459	8.92949	0.0963329	0.19415459	2.9537310	21	3 6.8	20.5
230677	2003	SO ₂₉₇	15.3	X	235.55473	105.97606	290.12051	15.16179	0.2297932	0.20633938	2.8362725	21	5 28.5	20.2
230678	2003	SK ₃₀₉	15.0	X	142.64184	278.89823	340.73980	7.28160	0.1714948	0.17537683	3.1609763	21	12 3.1	20.3
230679	2003	SG ₃₂₅	15.8	X	290.28596	245.55379	223.92423	4.50977	0.1355381	0.17221816	3.1995096	21	11 11.9	20.0
230680	2003	TD ₁	15.3	X	63.00206	190.69927	246.39512	18.04605	0.2626418	0.18280458	3.0747608	21	1 28.0	19.0
230681	2003	TQ ₃	16.1	X	63.25048	94.00953	335.50953	9.33329	0.2690855	0.18255816	3.0775271	21	1 28.9	19.3
230682	2003	TR ₂₀	15.4	X	24.36650	85.12632	310.64770	7.89864	0.2111371	0.17174508	3.2053824	21	—	—
230683	2003	TD ₂₁	15.8	X	116.28136	256.52937	131.98428	5.40389	0.2036904	0.18608075	3.0385643	21	2 9.6	20.2
230684	2003	TQ ₃₇	16.2	X	44.06437	288.55292	314.31236	7.79122	0.1134640	0.20929507	2.8095066	21	7 25.4	19.5
230685	2003	TK ₃₉	15.8	X	146.47223	173.83117	312.19876	5.18105	0.0081321	0.20589678	2.8403357	21	6 21.9	19.8
230686	2003	TC ₄₅	15.7	X	93.60555	235.26937	248.99629	9.16649	0.0296658	0.19669472	2.9282461	21	4 12.6	19.9
230687	2003	TK ₅₁	15.6	X	161.81706	81.04352	303.38447	8.02337	0.1665404	0.19222426	2.9734725	21	3 12.5	20.5
230688	2003	TH ₅₆	16.7	X	178.78720	184.31147	110.02146	6.20983	0.1093329	0.23867264	2.5739551	21	—	—
230689	2003	UY ₁₅	14.8	X	87.57707	170.93876	210.26159	17.70387	0.0758170	0.17778009	3.1324247	21	—	—
230690	2003	UX ₁₆	15.3	X	178.68506	49.24021	311.00506	10.74260	0.1720460	0.19112424	2.9848708	21	2 27.7	20.3
230691		Van Vogt	16.2	X	152.88311	306.36317	36.08498	0.42758	0.0661537	0.18416914	3.0595541	21	1 9.5	20.6
230692	2003	UG ₃₅	15.9	X	82.05860	199.71279	127.68109	6.39759	0.1327224	0.23028264	2.6361002	21	—	—
230693	2003	UF ₄₉	15.3	X	72.30149	314.92764	80.07095	3.23809	0.2202309	0.17849440	3.1240620	21	—	—
230694	2003	US ₅₅	15.2	X	50.62061	53.19893	31.99278	15.99166	0.2131344	0.17890469	3.1192839	21	1 21.7	18.9
230695	2003	UZ ₅₇	15.7	X	114.37002	107.82866	249.54525	8.74719	0.1183608	0.18163182	3.0879820	21	—	—
230696	2003	UG ₆₀	15.1	X	52.46230	142.93369	296.01696	10.96614	0.2002497	0.18074497	3.0980748	21	1 10.9	18.3
230697	2003	UT ₆₄	15.2	X	95.35197	304.90315	86.45623	16.08447	0.2623793	0.18205680	3.0831745	21	1 30.5	19.5
230698	2003	UB ₇₂	15.9	X	275.51386	239.60873	101.04747	6.90106	0.0610164	0.20366328	2.8610639	21	5 22.7	19.9
230699	2003	UO ₇₇	15.3	X	124.09836	144.09162	255.59897	9.41850	0.1136063	0.18745336	3.0237130	21	2 15.4	19.8
230700	2003	UB ₇₈	14.6	X	80.48227	104.91060	305.66149	6.28276	0.1749145	0.18165967	3.0876664	21	1 18.6	18.3
230701	2003	UP ₇₉	15.0	X	25.35962	112.09361	313.97808	15.44480	0.0877687	0.17745294	3.1362734	21	—	—
230702	2003	UC ₉₃	15.8	X	46.73389	31.93158	104.53003	21.22572	0.2056261	0.18296127	3.0730051	21	3 28.5	19.7
230703	2003	UJ ₁₀₀	15.3	X	169.81504	241.21815	93.55475	8.84573	0.1907775	0.18536413	3.0463906	21	1 27.9	20.3
230704	2003	UX ₁₀₄	15.9	X	278.21905	19.62015	256.99262	1.42619	0.0069270	0.19303717	2.9651188	21	3 11.9	20.0
230705	2003	UK ₁₂₀	17.2	X	139.35372	327.30869	14.22785	2.17059	0.1385398	0.23879703	2.5730611	21	—	—
230706	2003	UQ ₁₃₀	15.3	X	26.20055	171.24987	284.18237	16.58263	0.1805835	0.17992481	3.1074825	21	—	—
230707	2003	UW ₁₃₂	15.4	X	101.78689	69.36163	314.08273	4.56877	0.1464659	0.18002479	3.1063318	21	1 10.9	19.6
230708	2003	UX ₁₃₃	15.2	X	125.57821	61.50652	282.81265	9.09762	0.1739508	0.18144247	3.0901300	21	—	—
230709	2003	UK ₁₃₄	15.5	X	142.93856	11.42364	349.81479	6.32220	0.1560539	0.18576635	3.0419916	21	1 31.7	20.2
230710	2003	UL ₁₃₈	15.4	X	58.38429	300.51247								

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Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>
230721 2003 UA ₁₉₉	15.9	X	129.33049	159.59822	226.98863	5.70715	0.2749036	0.18731591	3.0251919	21	2 25.2	20.8
230722 2003 UD ₂₀₂	15.1	X	35.28608	243.19750	175.66996	8.02221	0.2434723	0.17483853	3.1674611	21	—	—
230723 2003 UO ₂₀₃	16.1	X	97.57730	187.35129	234.37706	3.23939	0.1309936	0.18532429	3.0468271	21	2 15.9	20.2
230724 2003 UO ₂₄₆	15.3	X	113.90751	334.61147	66.96659	9.28438	0.2016374	0.18439910	3.0570099	21	2 26.7	19.9
230725 2003 UN ₂₄₇	15.1	X	349.34923	123.55505	54.34051	11.84075	0.0247075	0.18777806	3.0202263	21	2 11.3	19.4
230726 2003 US ₂₆₆	14.9	X	131.06109	256.26733	52.11124	15.58952	0.0643670	0.17376292	3.1805189	21	—	—
230727 2003 UJ ₂₇₉	15.2	X	131.08280	348.43489	50.95823	10.08496	0.0807959	0.18996215	2.9970317	21	2 27.8	19.7
230728 2003 UE ₃₁₆	16.5	X	103.34190	304.77399	84.16771	0.96771	0.2238973	0.18203718	3.0833961	21	1 29.8	20.7
230729 2003 US ₃₁₆	16.0	X	35.99836	71.23135	30.69280	3.47558	0.1605212	0.17797033	3.1301920	21	1 9.0	19.4
230730 2003 UM ₃₂₀	15.4	X	205.94319	18.07054	284.26660	8.30643	0.0924403	0.18635132	3.0356223	21	1 17.4	20.0
230731 2003 UO ₃₂₈	15.6	X	311.59532	119.61932	327.89472	10.09411	0.1018498	0.17247795	3.1962961	21	11 16.6	19.8
230732 2003 VJ ₂	14.8	X	133.57567	56.64638	267.46887	22.28022	0.3284231	0.18041905	3.1018047	21	—	—
230733 2003 VC ₄	15.7	X	65.28661	176.25307	261.34702	8.33412	0.1723832	0.18103255	3.0947930	21	1 26.1	19.4
230734 2003 WF ₁	15.9	X	113.54269	339.77897	78.49831	2.57581	0.2027398	0.18613028	3.0380251	21	3 15.7	20.4
230735 2003 WO ₁	15.9	X	72.16241	182.15108	253.47446	3.14715	0.1521984	0.18144828	3.0900641	21	2 2.1	19.8
230736 Jalyhome	15.6	X	139.35992	313.83661	110.13116	11.06309	0.0821014	0.19043928	2.9920237	21	4 8.5	20.2
230737 2003 WX ₇	16.1	X	60.85764	251.67912	234.96962	1.36382	0.1880999	0.18451035	3.0557810	21	3 26.5	19.8
230738 2003 WO ₁₀	15.7	X	136.39379	106.73254	315.84000	6.28003	0.0412044	0.19009297	2.9956564	21	3 21.6	20.0
230739 2003 WU ₁₁	15.7	X	49.43304	100.35559	293.76552	7.62567	0.1449782	0.17281502	3.1921385	21	—	—
230740 2003 WZ ₁₉	15.0	X	6.02015	44.68197	29.56863	14.91413	0.2028891	0.17118526	3.2123668	21	—	—
230741 2003 WF ₂₇	15.4	X	25.77320	230.76004	264.63883	8.77944	0.0249992	0.18408065	3.0605346	21	1 30.2	19.7
230742 2003 WU ₂₇	15.5	X	42.77153	232.10292	245.97838	15.41262	0.1772992	0.18202384	3.0835467	21	2 3.6	19.3
230743 2003 WM ₃₀	14.9	X	352.53251	100.75762	45.09137	16.71914	0.2006731	0.17698312	3.1418213	21	—	—
230744 2003 WW ₃₄	15.4	X	76.88140	210.66569	259.26733	8.16970	0.0766780	0.18642938	3.0347748	21	3 9.7	19.6
230745 2003 WM ₅₇	15.7	X	68.99185	130.63950	260.86231	3.03209	0.0876475	0.17534185	3.1631396	21	—	—
230746 2003 WA ₆₆	15.5	X	140.43983	97.22533	308.32490	7.12929	0.1725709	0.18823892	3.0152947	21	3 18.9	20.3
230747 2003 WM ₇₅	15.4	X	95.16803	266.01576	112.71282	11.58169	0.2154903	0.17766507	3.1337765	21	1 6.7	19.4
230748 2003 WF ₁₀₂	15.4	X	36.74852	189.04302	201.64596	3.07512	0.1447742	0.17041999	3.2219764	21	—	—
230749 2003 WU ₁₁₁	15.6	X	120.70773	11.83216	357.49306	3.24493	0.1408779	0.18060069	3.0997246	21	1 16.1	20.0
230750 2003 WM ₁₁₈	15.2	X	32.33314	231.11175	271.72285	9.30920	0.1346338	0.18182351	3.0858112	21	2 18.0	18.9
230751 2003 WP ₁₃₂	15.4	X	36.99675	232.82482	260.92244	9.21773	0.2166715	0.18057173	3.1000560	21	2 18.4	18.7
230752 2003 WP ₁₃₄	15.7	X	11.20279	29.31973	57.18833	3.09018	0.1851197	0.17252687	3.1956918	21	—	—
230753 2003 WA ₁₅₉	15.5	X	2.86783	70.88290	58.95709	2.31457	0.1319029	0.17785113	3.1315904	21	—	—
230754 2003 WW ₁₆₃	16.4	X	25.11555	25.87630	66.70605	2.76523	0.2127666	0.17489864	3.1667353	21	—	—
230755 2003 WT ₁₆₉	16.1	X	140.78914	260.53024	173.19440	9.73107	0.1262725	0.24684014	2.5168588	21	4 18.4	19.7
230756 2003 WV ₁₆₉	15.5	X	101.80407	260.81227	114.81651	17.97656	0.1760400	0.17851879	3.1237774	21	1 5.9	19.8
230757 2003 WK ₁₇₀	15.1	X	67.09686	21.47598	104.75487	18.08540	0.1333034	0.18715611	3.0269137	21	4 7.1	19.4
230758 2003 WV ₁₇₁	15.6	X	106.01679	273.81937	104.04358	9.91140	0.2340612	0.18077942	3.0976812	21	1 21.7	19.9
230759 2003 WE ₁₈₃	15.3	X	203.92826	218.01030	90.22522	7.67691	0.2236425	0.18543655	3.0455974	21	1 25.3	20.7
230760 2003 WG ₁₈₉	15.2	X	83.00324	269.23637	123.01122	17.34543	0.2677608	0.18031652	3.1029805	21	1 13.3	19.0
230761 2003 WV ₁₈₉	15.1	X	41.00710	301.88684	128.97590	17.90147	0.2041963	0.17642073	3.1484948	21	—	—
230762 2003 WP ₁₉₂	14.2	X	88.16664	260.91512	99.52124	28.36419	0.2056473	0.16973848	3.2305949	21	—	—
230763 2003 XX ₁	14.7	X	73.38574	313.62900	67.22057	25.68158	0.2074286	0.17556673	3.1586966	21	—	—
230764 2003 YC ₁₂	16.6	X	336.54108	4.93883	108.89001	30.35015	0.0930591	0.33711948	2.0446241	21	—	—
230765 Albhaster	15.3	X	71.18677	194.61717	268.41534	8.19372	0.1279559	0.18205742	3.0831675	21	2 28.6	19.4
230766 2003 XQ ₁₉	15.6	X	102.07271	126.31964	280.21438	9.97086	0.1174092	0.18099759	3.0951915	21	2 1.0	19.9
230767 2003 XH ₂₂	16.3	X	10.38406	208.62375	299.82136	19.25619	0.0657573	0.34841868	2.0001770	21	—	—
230768 2003 XL ₃₅	15.4	X	24.03402	202.94011	285.84466	11.61251	0.2032990	0.17825578	3.1268494	21	1 19.3	18.6
230769 2003 YU ₁₀	15.6	X	112.37646	38.83855	3.61284	4.82420	0.1572758	0.18097820	3.0954126	21	2 17.7	20.0
230770 2003 YV ₁₀	15.2	X	333.52627	128.22814	23.92748	5.22655	0.1256027	0.17206130	3.2014539	21	—	—
230771 2003 YY ₂₃	14.8	X	319.35788	94.40543	72.29753	23.53089	0.1315245	0.17166335	3.2063997	21	—	—
230772 2003 YU ₂₅	15.7	X	42.29878	118.51906	283.15395	19.17612	0.2592071	0.17094196	3.2154142	21	—	—
230773 2003 YW ₅₆	15.1	X	29.81600	218.53288	259.75895	8.86938	0.0942913	0.17747643	3.1359967	21	1 16.8	19.0
230774 2003 YC ₆₃	14.9	X	52.54082	340.34249	122.8712	7.22432	0.1788887	0.17735920	3.1373784	21	2 10.5	18.4
230775 2003 YX ₇₁	15.1	X	12.50493	78.61072	79.55709	14.84023	0.1878540	0.17903602	3.1177583	21	2 10.8	18.7
230776 2003 YG ₇₄	15.0	X	21.39126	254.40565	267.96067	13.46038	0.1021243	0.18217887	3.0817971	21	2 22.1	19.1
230777 2003 YX ₁₀₄	15.3	X	56.18512	322.09007	116.88796	6.21916	0.1608697	0.17528985	3.1620219	21	1 15.3	19.1
230778 2003 YW ₁₁₈	15.1	X	92.13655	91.40033	301.81623	14.81367	0.2557424	0.17684926	3.1434065	21	1 25.9	19.3
230779 2003 YG ₁₂₇	15.4	X	111.94048	89.37671	315.21524	10.86570	0.1269109	0.18113205	3.0936596	21	2 13.3	19.9
230780 2003 YA ₁₃₉	15.1	X	325.41717	46.16854	126.63486	9.03136	0.0900905	0.17082127	3.2169286	21	—	—
230781 2003 YE ₁₃₉	15.1	X	100.35473	78.57024	297.89299	12.76958	0.2335232	0.18032897	3.1028376	21	1 13.1	19.3
230782 2003 YC ₁₄₅	14.8	X	340.74842	200.75648	327.99631	16.74867	0.1111803	0.17247478	3.1963352	21	1 12.2	19.2
230783 2003 YK ₁₄₅	14.8	X	335.91378	225.12546	319.84259	25.75245	0.1730198	0.17262316	3.1945033	21	1 18.9	19.1
230784 2003 YZ ₁₅₀	15.0	X	17.32809	116.57777	313.55776	30.65888	0.2545894	0.16791901	3.2538895	21	—	—
230785 2003 YC ₁₅₂	15.2	X	205.99121	352.06946	328.30346	15.22055	0.0813145	0.17901496	3.1180028	21	2 10.2	20.0
230786 2003 YO ₁₆₇	16.0	X	111.73953	109.25723	314.76653	9.93677	0.2725242	0.18708531	3.0276774	21	3 22.6	20.8
230787 2004 BE ₁₃	14.9	X	136.80493	141.02653	124.16327	16.35462	0.0640992	0.15527022	3.4282878	21	12 3.1	20.3
230788 2004 BV ₄₇	15.4	X	75.68639	301.00378	115.39428	11.00797	0.0559412	0.17262068	3.1945339	21	1 6.1	19.6
230789 2004 BT ₈₁	14.8	X	331.29670	214.09162	314.29722	21.24878	0.0803650	0.17090410	3.2158891	21	1 3.6	19.4
230790 2004 BT ₉₈	16.6	X	268.36970	140.71424	104.79268	4.13005	0.2035045	0.27832083	3.3233015	21	—	—
230791 2004 BC ₁₀₇	15.0	X	56.90023	124.28927	309.28321	17.99763	0.1055164	0.17172668	3.2056114	21	1 8.4	19.1
230792 2004 BL ₁₁₄	16.5	X	325.43422	249.53023	310.97953	5.94041	0.0782140	0.28404960	2.9219577	21	1 6.9	19.1
230793 2004 BQ ₁₃₉	15.4	X	328.98559	121.07215	120.23476	7.29550	0.1028622	0.18067410	3.0988850	21	3 25.6	19.5
230794 2004 BT ₁₄₈	15.4	X	136.80031	271.33445	178.34900	3.9190						

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Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>
230801 2004 ES ₇₉	16.6 ^m	X	77.89287	321.49644	242.60332	5.57231	0.1077451	0.29827883	2.2184744	21	7 20.8	19.2
230802 2004 FR ₁₃	16.6	X	211.80434	358.91221	284.20539	5.88891	0.1090532	0.27588521	2.3369555	21	—	—
230803 2004 FO ₄₁	16.2	X	210.25429	327.37319	30.78223	8.78399	0.1633217	0.28725299	2.2748862	21	3 21.1	19.7
230804 2004 FA ₆₈	16.8	X	54.33308	178.78728	70.41157	6.46006	0.0533403	0.30072477	2.2064288	21	8 17.4	19.2
230805 2004 FX ₁₀₄	16.5	X	324.78568	70.76697	88.46620	7.08883	0.1476630	0.27504393	2.3417184	21	—	—
230806 2004 FU ₁₁₆	16.9	X	45.12700	142.31512	108.96310	6.65140	0.1582876	0.29846191	2.2175671	21	8 22.6	19.1
230807 2004 FO ₁₃₆	16.7	X	294.02584	192.62693	59.88730	11.11151	0.1713885	0.28110036	2.3079609	21	1 27.4	20.1
230808 2004 GH ₂₁	16.7	X	168.00737	341.96967	117.04327	6.38837	0.0803167	0.29639384	2.2287704	21	6 15.2	19.6
230809 2004 GF ₇₉	17.0	X	164.66468	273.46368	277.26887	5.29425	0.0931057	0.31097142	2.1576901	21	10 16.2	19.9
230810 2004 HJ ₁₂	16.7	X	318.31322	246.22146	275.35661	7.73176	0.0939805	0.27287514	2.3541099	21	—	—
230811 2004 HG ₁₆	17.0	X	42.07706	333.64747	225.77341	4.18294	0.1098280	0.29012804	2.2598325	21	5 13.8	19.0
230812 2004 HN ₃₄	16.8	X	22.99289	120.88160	115.73079	5.80252	0.0916132	0.29190359	2.2506593	21	6 5.1	18.8
230813 2004 HX ₃₇	16.6	X	284.26099	217.04270	94.03346	4.78278	0.2305980	0.23069632	2.6329480	21	3 31.8	20.5
230814 2004 JK ₁₄	17.2	X	78.32843	73.24229	140.58339	5.48001	0.0936432	0.29692875	2.2251940	21	8 4.0	19.5
230815 2004 JD ₂₃	17.2	X	23.17136	312.41077	264.19665	2.59357	0.1138400	0.28950008	2.2630992	21	5 2.7	19.1
230816 2004 JN ₃₀	16.9	X	18.87790	102.26748	107.85470	3.50428	0.0986225	0.28667591	2.2779381	21	4 16.9	18.9
230817 2004 JH ₃₁	17.4	X	105.83731	113.20994	78.88732	5.74814	0.1032788	0.29828833	2.2184273	21	8 13.4	20.3
230818 2004 JZ ₃₃	17.2	X	348.45124	166.46905	99.38822	6.18582	0.1340753	0.28928583	2.2642164	21	5 13.1	19.2
230819 2004 LZ ₆	16.8	X	208.24328	191.43850	78.41999	7.32479	0.1508415	0.26623782	2.3930745	21	—	—
230820 2004 LY ₇	15.8	X	32.94258	253.55278	86.98003	13.00439	0.2044985	0.24338892	2.5405954	21	12 7.6	18.9
230821 2004 LT ₁₁	16.4	X	155.45788	63.19483	260.91985	8.58311	0.1206744	0.26620129	2.3932934	21	—	—
230822 2004 LO ₁₃	15.6	X	34.91613	9.10928	246.59229	11.73430	0.1309585	0.23632801	2.5909513	21	7 26.8	18.7
230823 2004 MR ₄	16.3	X	46.39264	278.44650	66.14374	9.33403	0.1969580	0.24608337	2.5220162	21	12 28.1	19.8
230824 2004 NO ₁₂	16.7	X	316.77963	339.52034	345.08401	6.24442	0.2240951	0.22739957	2.6583344	21	5 30.1	19.8
230825 2004 NM ₁₃	17.2	X	329.15559	122.16500	132.43925	5.96945	0.1372221	0.28048782	2.3113198	21	3 21.7	19.7
230826 2004 NX ₁₃	16.9	X	153.83138	199.83128	137.37456	5.70055	0.1265469	0.26224097	2.4173286	21	—	—
230827 2004 NM ₁₄	15.9	X	251.81939	168.64374	131.56889	13.73389	0.1532238	0.21490107	2.7234316	21	2 23.3	20.3
230828 2004 OE ₉	17.0	X	150.77780	359.96727	342.59155	1.16370	0.1788852	0.26124566	2.4604645	21	1 5.3	20.5
230829 2004 PB ₂₁	17.2	X	36.32315	91.41376	153.37454	6.85034	0.1393637	0.28782796	2.2718556	21	7 19.2	19.3
230830 2004 PE ₃₂	16.6	X	252.70167	300.08519	345.39885	6.23572	0.1324779	0.26894842	2.3769682	21	1 30.8	20.1
230831 2004 PV ₃₈	16.2	X	240.94940	224.56470	180.13430	7.99377	0.2797777	0.22137124	2.7063788	21	6 10.1	20.9
230832 2004 PB ₄₀	15.2	X	280.36757	33.42814	329.59302	17.94129	0.2392162	0.22332506	2.6905707	21	5 26.3	19.5
230833 2004 PY ₄₄	16.4	X	326.56938	288.26923	128.06455	11.18786	0.2180746	0.23778306	2.5803707	21	11 20.9	18.7
230834 2004 PD ₄₇	16.3	X	344.65328	303.63453	74.42111	4.68166	0.2022094	0.23754408	2.5821011	21	11 1.5	18.5
230835 2004 PP ₄₉	16.9	X	302.28455	294.30685	345.52228	5.41829	0.2297503	0.27808425	2.3246190	21	3 3.3	20.1
230836 2004 PO ₈₄	15.7	X	153.16587	34.40131	289.83748	8.92868	0.0721073	0.19929708	2.9026996	21	—	—
230837 2004 PO ₈₈	16.0	X	297.10880	67.33611	329.24627	11.66902	0.2077584	0.22831433	2.6512292	21	8 14.5	18.8
230838 2004 PU ₈₉	16.4	X	295.64507	180.72904	178.22108	3.41470	0.2863460	0.22429959	2.6827718	21	6 6.1	19.8
230839 2004 PE ₁₀₃	16.0	X	251.84797	43.44144	342.56355	16.39450	0.2380651	0.21892350	2.7265144	21	5 26.2	20.7
230840 2004 QV ₃	16.8	X	300.03986	350.82489	279.33253	6.23418	0.1027980	0.27415984	2.3467500	21	3 2.8	19.9
230841 2004 QP ₆	16.4	X	280.81742	49.76052	253.92807	2.71898	0.1644021	0.21929660	2.7234210	21	3 24.2	20.5
230842 2004 QD ₁₀	15.8	X	256.41774	245.86962	87.50085	6.95257	0.0831247	0.21639518	2.7477106	21	4 17.7	19.8
230843 2004 QG ₂₅	16.4	X	202.86439	145.65428	285.99550	12.70547	0.1784250	0.21858677	2.7293138	21	6 16.6	20.9
230844 2004 RR	15.6	X	21.52369	344.25195	359.36601	15.22961	0.0807961	0.23999701	2.5644771	21	10 29.6	19.0
230845 2004 RP ₂₀	17.3	X	258.39050	346.38423	291.62487	1.48601	0.1952149	0.26831385	2.3807145	21	1 21.9	21.1
230846 2004 RZ ₃₆	17.0	X	263.64132	275.27950	331.79144	1.63981	0.1806986	0.26475737	2.4019872	21	—	—
230847 2004 RQ ₃₇	16.7	X	32.42052	349.64541	23.13613	4.17614	0.1759893	0.24359074	2.5391919	21	—	—
230848 2004 RF ₄₂	16.7	X	207.72416	329.18497	116.73978	0.86126	0.1106464	0.21930078	2.7233864	21	7 12.1	20.9
230849 2004 RD ₅₃	17.1	X	30.50547	211.38225	140.75294	3.20850	0.1821713	0.23946982	2.5682395	21	12 14.6	20.2
230850 2004 RV ₇₀	16.4	X	214.50039	299.13510	315.48361	5.51937	0.0793970	0.25605353	2.4561160	21	—	—
230851 2004 RN ₈₀	17.1	X	318.27984	246.84424	13.36859	2.43590	0.1825743	0.27492563	2.3423901	21	3 5.2	20.0
230852 2004 RU ₈₁	17.1	X	342.21428	277.32994	108.31805	0.77710	0.1396289	0.23560462	2.5962520	21	11 2.6	19.4
230853 2004 RZ ₈₃	16.4	X	322.20696	73.05092	302.14734	16.56011	0.2184211	0.23178833	2.6246718	21	8 23.1	19.1
230854 2004 RQ ₁₀₁	16.4	X	302.87734	79.76335	342.52316	12.63610	0.1727086	0.23333261	2.6130783	21	10 1.9	19.4
230855 2004 RQ ₁₀₂	16.2	X	250.55961	251.40033	330.77289	6.02349	0.0692687	0.25507794	2.4623746	21	—	—
230856 2004 RB ₁₀₅	16.2	X	254.41722	109.13441	301.46545	7.46818	0.1909530	0.22296657	2.6934539	21	7 8.9	20.1
230857 2004 RU ₁₂₇	17.0	X	286.25101	231.35547	185.86907	1.74303	0.0916486	0.23198841	2.6231625	21	9 12.9	20.3
230858 2004 RN ₁₅₆	15.5	X	51.32241	173.71840	345.41781	24.79435	0.1887665	0.26837586	2.3803478	21	3 28.7	17.9
230859 2004 RG ₁₆₂	15.7	X	305.55355	66.49782	299.21864	11.18630	0.1235474	0.22681665	2.6628871	21	7 27.2	18.7
230860 2004 RZ ₁₆₅	16.9	X	23.01958	197.85315	18.33419	3.25360	0.1999943	0.28031888	2.3122484	21	5 5.6	18.4
230861 2004 RJ ₁₇₇	15.9	X	266.55775	132.17258	314.80436	12.58062	0.1486823	0.23179692	2.6246070	21	9 11.1	19.6
230862 2004 RA ₁₇₈	16.6	X	121.27410	49.01448	279.44599	7.86893	0.1418805	0.25137242	2.4865143	21	—	—
230863 2004 RS ₁₈₂	17.0	X	1.40012	308.37783	308.69885	5.60854	0.2162429	0.28114520	2.3077155	21	5 17.6	18.4
230864 2004 RR ₁₈₃	16.9	X	334.69516	61.99683	300.52811	3.53947	0.2425432	0.23074694	2.6325628	21	9 6.0	18.8
230865 2004 RN ₁₈₈	16.4	X	309.73414	162.27818	227.83928	8.23685	0.1824672	0.22933400	2.6433647	21	8 26.9	19.3
230866 2004 RE ₁₈₉	15.4	X	252.63818	112.86377	327.38545	12.51437	0.1406169	0.22621543	2.6676032	21	8 21.1	19.2
230867 2004 RM ₁₉₃	15.1	X	88.18058	97.29165	277.10416	7.44610	0.0877627	0.19017701	2.9947739	21	—	—
230868 2004 RT ₁₉₃	16.1	X	201.66205	97.80850	341.10058	7.72705	0.2279317	0.21701787	2.7424521	21	6 23.1	21.0
230869 2004 RJ ₁₉₆	15.5	X	232.42320	234.75296	214.91896	14.01595	0.0228797	0.22681941	2.6628655	21	8 19.1	19.4
230870 2004 RW ₁₉₈	16.9	X	116.29560	19.68913	327.34035	3.39718	0.0804111	0.25271724	2.4776852	21	—	—
230871 2004 RA ₁₉₉	16.1	X	226.92428	145.04938	259.71104	6.99888	0.3068035	0.21540941	2.7560871	21	5 28.0	20.9
230872 2004 RG ₁₉₉	16.1	X	260.51662	63.97026	317.83698	8.08538	0.2515210	0.21853760	2.7297231	21	5 30.7	20.5
230873 2004 RE ₂₀₈	15.5	X	282.28702	56.13943	266.89732	13.42676	0.1069523	0.21810378	2.7333416	21	4 25.3	19.6
230874 2004 RM _{210</}												

ELEMENTS AND OPPOSITION DATES IN 2021

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2021 JULY 5.0 TT

Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>		
230881	2004	RC ₃₀₃	16.7	X	242.08400	147.22397	315.61130	11.35996	0.2354720	0.22880384	2.6474464	21	8 24.9	20.7
230882	2004	RQ ₃₀₆	16.2	X	17.74330	255.39386	98.50472	6.21241	0.2451203	0.23401005	2.6080327	21	12 7.2	19.0
230883	2004	RK ₃₁₇	16.3	X	260.63491	48.12204	334.67185	4.88771	0.0692694	0.22124016	2.7074477	21	6 25.6	20.0
230884	2004	RB ₃₂₀	16.4	X	34.58120	92.93613	278.02221	8.68108	0.0513396	0.24272963	2.5451938	21	12 25.4	19.6
230885	2004	RF ₃₃₈	16.4	X	18.29464	274.44900	23.14124	3.23252	0.0514798	0.22547816	2.6734151	21	8 24.7	19.6
230886	2004	RZ ₃₄₀	16.2	X	357.70413	241.90882	123.72140	16.27456	0.1667660	0.23529205	2.5985508	21	11 12.6	19.3
230887	2004	RW ₃₄₅	15.8	X	259.22649	285.68880	135.61045	14.87532	0.2166455	0.22321436	2.6914602	21	7 24.1	19.9
230888	2004	SD ₁₀	16.4	X	312.51917	292.42643	99.27759	7.28475	0.1921541	0.23226291	2.6210953	21	9 11.2	19.1
230889	2004	SG ₂₆	14.9	X	155.92325	235.92534	275.64641	26.33176	0.1118028	0.22325218	2.6911563	21	8 1.5	19.5
230890	2004	SP ₃₁	16.5	X	291.82389	53.07932	352.72572	3.95967	0.1295200	0.22880654	2.6474256	21	8 31.4	19.7
230891	2004	SL ₃₂	15.9	X	205.72306	29.14034	36.56859	8.39393	0.2967896	0.21476854	2.7615671	21	6 6.9	20.9
230892	2004	SV ₅₂	16.3	X	153.24470	41.81885	287.64112	10.61567	0.2833551	0.25813492	2.4428955	21	1 3.6	20.1
230893	2004	TH ₂	16.2	X	297.55722	18.25378	30.89206	4.99021	0.0776773	0.23019725	2.6367521	21	9 22.8	19.5
230894	2004	TV ₄	15.4	X	41.79001	275.13546	34.61122	5.42918	0.1839544	0.17345303	3.1843060	21	10 24.9	19.4
230895	2004	TF ₁₂	16.0	X	253.40541	307.29994	74.43173	5.35824	0.1265338	0.21853711	2.7297272	21	6 7.4	19.8
230896	2004	TN ₁₈	15.4	X	341.80012	252.31676	101.66495	13.79929	0.2217812	0.22747682	2.6577326	21	9 21.9	17.9
230897	2004	TR ₂₃	15.9	X	204.01649	36.95782	285.44709	3.61476	0.0329288	0.19410628	2.9542211	21	—	—
230898	2004	TK ₃₄	17.1	X	270.66553	238.66439	232.56563	1.18059	0.0701339	0.23441299	2.6050432	21	11 6.2	20.3
230899	2004	TT ₄₆	16.8	X	320.90585	209.96022	359.36863	1.26842	0.1336104	0.25815401	2.4427750	21	1 10.0	19.9
230900	2004	TT ₅₉	16.2	X	275.47663	291.89369	26.95543	8.55938	0.2044075	0.21556777	2.7547372	21	4 4.5	20.4
230901	2004	TL ₆₃	16.5	X	276.94440	26.54632	20.24088	6.14737	0.1249023	0.22473658	2.6792930	21	8 13.0	20.1
230902	2004	TW ₆₇	15.9	X	232.61307	226.99716	151.59411	10.29399	0.1493855	0.21440622	2.7646774	21	5 13.4	20.4
230903	2004	TV ₆₉	16.0	X	265.69731	167.29277	200.73327	5.50616	0.0373578	0.22020766	2.7159041	21	6 17.3	19.7
230904	2004	TG ₇₅	16.8	X	48.43055	303.59106	43.51927	1.98715	0.1775742	0.23821772	2.5772310	21	12 29.6	20.4
230905	2004	TR ₈₈	16.8	X	246.53255	99.50729	56.40045	2.73338	0.0862727	0.23914999	2.5705288	21	11 30.3	20.2
230906	2004	TX ₈₉	16.9	X	276.28257	256.11407	146.68456	5.20756	0.1825299	0.22534919	2.6744350	21	7 25.3	20.3
230907	2004	TJ ₁₀₀	16.3	X	310.44412	317.68530	109.37311	5.60901	0.1132070	0.23358575	2.6111900	21	11 5.3	19.2
230908	2004	TJ ₁₇₂	16.2	X	308.34350	39.71481	316.87221	9.08686	0.1250485	0.22263348	2.6961397	21	7 20.1	19.4
230909	2004	TU ₁₇₅	16.2	X	14.97926	265.06958	69.58548	4.22902	0.1201069	0.23128088	2.6285095	21	10 18.6	19.1
230910	2004	TE ₁₉₄	16.8	X	256.95092	125.79224	346.56763	3.87633	0.1783740	0.22933900	2.6433263	21	10 1.8	20.5
230911	2004	TR ₂₀₁	16.5	X	206.25012	159.14977	342.30956	2.70293	0.0881090	0.22424650	2.6831952	21	9 21.6	20.5
230912	2004	TB ₂₂₃	15.8	X	5.09307	241.42661	144.75694	15.62383	0.1406056	0.23470634	2.6028721	21	12 15.9	19.1
230913	2004	TA ₂₄₃	15.7	X	322.74840	233.68557	95.91330	15.23493	0.1909806	0.22339956	2.6899725	21	6 25.0	18.3
230914	2004	TD ₂₆₀	16.5	X	330.93070	165.62066	200.38352	2.23646	0.1508332	0.22766789	2.6562454	21	9 9.1	19.2
230915	2004	TN ₂₆₁	16.7	X	249.55679	259.57659	183.89337	4.23141	0.2263783	0.22349688	2.6891915	21	8 9.5	20.8
230916	2004	TA ₂₇₆	16.7	X	196.13654	46.00611	41.89044	2.94866	0.1655135	0.21462374	2.7628091	21	7 1.1	21.2
230917	2004	TR ₂₇₆	16.7	X	206.99641	237.74129	192.58332	2.36501	0.1713910	0.21454338	2.7636020	21	6 18.6	21.2
230918	2004	TK ₃₀₀	15.6	X	124.81897	23.65488	259.54351	12.79765	0.0985534	0.23914392	2.5705723	21	12 23.0	19.4
230919	2004	TR ₃₀₀	15.7	X	255.26938	74.11777	300.17349	7.05501	0.1177323	0.21553027	2.7550567	21	5 31.2	19.8
230920	2004	TZ ₃₂₃	16.3	X	217.00247	33.81238	66.42431	3.77473	0.0424673	0.22015787	2.7163136	21	8 17.7	20.1
230921	2004	TA ₃₄₉	16.0	X	325.43375	43.36770	69.04264	6.72112	0.0812825	0.18105949	3.0944860	21	—	—
230922	2004	TL ₃₅₅	16.1	X	237.67549	331.81045	81.76519	9.43815	0.1676535	0.21995717	2.7179657	21	6 27.0	20.2
230923	2004	TL ₃₅₇	15.8	X	35.78340	218.14009	123.31814	15.63460	0.1392589	0.23467736	2.7030864	21	12 3.7	19.4
230924	2004	TZ ₃₆₁	15.4	X	22.16707	223.21470	234.84284	11.08740	0.0975937	0.19186395	2.9771939	21	—	—
230925	2004	TP ₃₆₆	16.8	X	255.43550	76.52944	341.92791	3.89637	0.0905940	0.22105161	2.7089870	21	8 3.4	20.6
230926	2004	UW ₈	16.5	X	351.23802	76.63591	315.71285	4.34935	0.1825288	0.23497416	2.6089399	21	11 26.4	19.3
230927	2004	VJ ₂₀	16.1	X	275.76771	310.82079	65.57392	6.78943	0.0673446	0.21901605	2.7257463	21	7 7.5	19.7
230928	2004	VD ₅₄	15.9	X	247.96955	72.11396	309.48166	10.50622	0.0565059	0.21598081	2.7512239	21	6 9.1	19.9
230929	2004	VJ ₅₅	15.9	X	199.53292	23.27167	83.36699	9.87693	0.0952254	0.21688135	2.7436029	21	8 1.8	20.1
230930	2004	VL ₇₂	16.0	X	299.76261	141.72882	233.72642	5.19191	0.0465857	0.22038090	2.7144807	21	8 9.7	19.6
230931	2004	VF ₇₃	15.3	X	324.39070	308.96207	191.74705	14.41083	0.2929553	0.18116474	3.0932873	21	—	—
230932	2004	VQ ₇₈	15.8	X	128.80884	17.36257	243.66376	8.57404	0.0570412	0.23636284	2.5906968	21	11 28.6	19.5
230933	2004	VQ ₈₃	15.9	X	163.20708	116.65375	66.74874	7.21936	0.2182136	0.22224987	2.6992412	21	10 1.5	20.6
230934	2004	WX ₆	14.9	X	83.43110	317.96978	55.79470	13.36638	0.2112876	0.18550580	3.0448393	21	—	—
230935	2004	WC ₈	16.2	X	183.09195	204.13312	217.46416	3.40230	0.0949257	0.20901260	2.8120372	21	5 16.8	20.3
230936	2004	XC ₂	15.8	X	230.08660	107.87267	321.42271	8.29040	0.1505845	0.21539908	2.7561752	21	7 12.3	20.1
230937	2004	XD ₂	15.9	X	172.91768	186.15711	293.80548	8.24089	0.2321527	0.21175350	2.7877189	21	7 20.1	20.7
230938	2004	XR ₇	15.0	X	321.66243	40.44524	64.76994	6.28802	0.1110364	0.17638461	3.1489246	21	12 27.9	18.9
230939	2004	XH ₁₀	16.4	X	252.31501	265.31137	107.27341	3.16311	0.2439619	0.21420242	2.7664308	21	5 14.5	21.0
230940	2004	XP ₁₇	15.6	X	124.09085	348.96181	80.44537	3.29084	0.0807840	0.19614747	2.9336901	21	3 24.2	19.8
230941	2004	XN ₂₂	15.7	X	206.05581	308.08509	128.39763	2.67815	0.0456557	0.21354372	2.7721167	21	7 1.5	19.7
230942	2004	XX ₂₉	16.0	X	225.91118	341.27919	86.79325	3.91820	0.1274884	0.21526845	2.7572901	21	7 7.3	20.1
230943	2004	XM ₃₃	15.9	X	76.14567	151.38460	226.36878	0.46142	0.1928651	0.18412060	3.0600919	21	—	—
230944	2004	XA ₃₅	16.4	X	242.42142	132.91559	296.43323	3.84353	0.1073716	0.21462704	2.7627807	21	7 29.2	20.3
230945	2004	XQ ₃₆	16.3	X	172.76233	254.06936	285.74384	2.47503	0.0405225	0.22303473	2.6929051	21	10 4.2	20.0
230946	2004	XT ₄₅	16.0	X	321.99090	229.01305	102.09890	8.15248	0.2803080	0.21857521	2.7294100	21	6 11.1	18.8
230947	2004	XY ₅₄	15.5	X	136.83574	82.85742	85.50188	16.93649	0.2191775	0.21070393	2.7969688	21	8 24.7	20.5
230948	2004	XG ₅₈	15.6	X	173.11549	96.52479	304.24005	11.52219	0.0975778	0.19917935	2.9038433	21	4 4.8	20.4
230949	2004	XY ₇₃	16.4	X	215.82742	144.36682	265.03753	7.86995	0.2069038	0.21238820	2.7821623	21	5 29.7	21.0
230950	2004													

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Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>
230961 2004 XC ₁₇₄	15.1	X	167.83892	228.74553	95.99778	13.16542	0.0955564	0.18570714	3.0426383	21	1 6.9	19.6
230962 2004 XJ ₁₇₇	15.0	X	180.83638	223.98135	97.58128	17.62064	0.0618128	0.18549560	3.0449510	21	1 14.4	19.6
230963 2004 XH ₁₈₂	16.4	X	227.47739	246.29649	162.73830	7.39210	0.2413065	0.21474793	2.7617438	21	6 7.4	21.2
230964 2004 XK ₁₉₁	15.3	X	316.61869	316.32623	300.55818	5.13761	0.1236183	0.18763836	3.0217252	21	3 18.2	19.3
230965 2004 XA ₁₉₂	4.2	X	2.97221	131.94115	328.54485	38.19022	0.2439865	0.00306789	46.9075363	21	1 16.9	19.8
230966 2004 YR ₁₅	16.1	X	311.91912	285.15945	323.72515	3.23599	0.1726540	0.19010928	2.9954851	21	2 24.6	20.3
230967 2004 YA ₁₉	14.9	X	38.47470	280.14263	114.08864	16.99954	0.0691031	0.17365790	3.1818011	21	—	—
230968 2004 YL ₂₀	15.8	X	107.98693	308.23563	115.00922	4.71362	0.2146678	0.19180989	2.9777533	21	3 16.6	20.1
230969 2004 YJ ₂₁	15.7	X	62.72042	0.36371	119.01977	11.88368	0.0548290	0.18930309	3.0039838	21	3 7.3	19.8
230970 2004 YA ₃₁	14.7	X	207.43423	183.42277	88.00860	13.69956	0.1288740	0.18070523	3.0985290	21	—	—
230971 2005 AF ₂	15.0	X	271.32216	129.08442	79.33146	17.66002	0.1884028	0.17779565	3.1322419	21	—	—
230972 2005 AG ₂	17.2	X	358.39120	168.97450	96.45054	23.44899	0.0626032	0.38251224	1.8794863	21	6 4.0	18.8
230973 2005 AM ₅	15.8	X	197.73009	91.52872	319.01389	13.66403	0.232854	0.20646193	2.8351501	21	5 11.4	21.2
230974 2005 AZ ₁₄	16.2	X	199.00082	148.59560	323.81457	2.43635	0.0451753	0.21180761	2.7872441	21	8 9.5	20.2
230975 Rogerfederer	15.7	X	156.35955	52.40208	105.82102	10.00220	0.0505076	0.21527759	2.7533764	21	8 21.1	19.7
230976 2005 AG ₂₈	16.2	X	221.34382	100.99350	344.92832	9.93564	0.2318053	0.21237290	2.7822959	21	7 19.9	20.9
230977 2005 AW ₃₂	16.8	X	69.46564	248.17351	298.62767	15.77953	0.0531200	0.38000506	1.8877441	21	5 26.5	18.6
230978 2005 AR ₄₁	15.4	X	104.33652	111.05658	270.64620	9.81504	0.1157061	0.18295323	3.0730950	21	1 6.1	19.5
230979 2005 AT ₄₂	16.5	X	122.59288	52.70252	157.01278	11.21025	0.6111102	0.20338137	2.8637071	21	10 14.1	22.7
230980 2005 AS ₄₇	16.3	X	213.40652	80.94462	117.77644	9.41289	0.2031523	0.22456713	2.6806406	21	11 30.2	20.6
230981 2005 AA ₆₂	15.0	X	70.65571	77.96114	318.73502	21.23229	0.1076800	0.17762479	3.1342502	21	—	—
230982 2005 AH ₇₆	16.3	X	62.89456	117.29014	75.52283	3.51538	0.0448920	0.19986704	2.8971785	21	6 4.9	20.2
230983 2005 AQ ₇₇	15.7	X	74.67757	342.03204	106.40725	7.38380	0.1491836	0.18663038	3.0259551	21	2 23.5	19.5
230984 2005 AP ₇₈	15.7	X	220.97401	202.36842	102.76928	7.33811	0.0491857	0.18477579	3.0528538	21	2 7.6	20.2
230985 2005 BY ₁₉	15.3	X	334.44135	119.66632	81.76412	8.02372	0.0786068	0.18621930	3.0370569	21	2 12.9	19.4
230986 2005 BF ₂₈	17.3	X	351.59169	173.45208	100.62298	24.07081	0.0331277	0.38190118	1.8814906	21	6 7.9	19.0
230987 2005 BD ₄₈	14.8	X	301.12312	105.48970	127.19804	22.22760	0.0909778	0.18304435	3.0720751	21	2 5.3	19.1
230988 2005 CJ ₄	15.1	X	22.89662	299.94163	135.62162	17.06840	0.2043073	0.17626932	3.1502975	21	—	—
230989 2005 CR ₁₀	15.4	X	61.82626	97.24377	346.30371	9.99476	0.0932407	0.18130003	3.0917483	21	1 24.7	19.5
230990 2005 CP ₁₃	15.2	X	116.78883	259.83931	113.39992	10.73520	0.0776715	0.17915101	3.1164240	21	1 7.3	19.4
230991 2005 CO ₁₄	16.3	X	7.90310	72.11788	113.07113	4.31223	0.0412696	0.18879850	3.0093338	21	3 12.4	20.3
230992 2005 CX ₁₄	15.6	X	73.37620	6.71372	130.10732	10.26040	0.0676613	0.19226547	2.9730475	21	4 15.1	19.7
230993 2005 CK ₂₃	15.6	X	17.05288	304.56891	254.35803	9.20690	0.0639958	0.19309764	2.9644991	21	4 5.4	19.6
230994 2005 CW ₄₂	15.4	X	311.44267	266.26936	265.74297	8.51522	0.1770062	0.17764224	3.1340450	21	—	—
230995 2005 CX ₄₂	15.2	X	24.43292	359.07263	140.86976	12.99827	0.0702541	0.18435745	3.0574704	21	2 4.9	19.2
230996 2005 CV ₅₆	15.7	X	110.77318	125.83159	334.89358	6.07795	0.0538947	0.19296577	2.9658501	21	4 8.7	19.9
230997 2005 CS ₆₂	16.2	X	35.79740	50.93414	89.93322	3.32444	0.1601157	0.18542549	3.0457184	21	2 27.8	19.5
230998 2005 CM ₆₅	15.3	X	357.04295	61.99910	133.36913	11.94748	0.0289452	0.18601838	3.0392434	21	3 12.9	19.5
230999 2005 CX ₆₅	15.6	X	112.61543	298.09497	141.10606	11.40035	0.0813975	0.18771309	3.0209231	21	3 25.3	20.0
231000 2005 CU ₇₀	15.7	X	59.42886	222.69461	280.72416	8.57380	0.0244922	0.19279263	2.9676255	21	3 21.1	19.9
231001 2005 EV ₅	15.4	X	61.94521	84.63451	60.12071	2.56499	0.0733169	0.18710091	3.0275090	21	4 7.1	19.2
231002 2005 ED ₁₀	15.5	X	1.50000	224.03879	345.50149	6.38954	0.0555559	0.18706693	3.0278757	21	3 30.5	19.4
231003 2005 EJ ₁₅	15.9	X	67.14714	329.86464	153.77392	2.80489	0.0394180	0.18597154	3.0397537	21	3 14.2	20.0
231004 2005 EK ₂₁	15.3	X	317.14138	143.37578	59.20683	3.29274	0.0183427	0.17971966	3.1098467	21	1 30.7	19.6
231005 2005 EU ₂₂	15.9	X	77.60062	277.32291	166.68703	16.44647	0.2098603	0.18456342	3.0551952	21	3 1.0	19.7
231006 2005 EE ₂₄	15.3	X	61.78887	348.02967	150.67572	13.50910	0.1532546	0.18799325	3.0179210	21	4 12.5	19.2
231007 2005 EU ₃₃	15.5	X	35.49878	90.33344	123.59359	12.25147	0.3848726	0.18777942	3.0202117	21	7 12.0	18.3
231008 2005 EP ₃₆	15.2	X	6.93080	232.42681	284.81349	11.56648	0.1046132	0.18149853	3.0894937	21	1 28.8	19.1
231009 2005 ES ₄₀	15.4	X	40.78217	288.72052	135.14940	2.33849	0.1459022	0.17272009	3.1933080	21	—	—
231010 2005 ET ₄₁	16.0	X	51.07551	176.84289	319.28794	0.75168	0.2562092	0.18534041	3.0466505	21	3 31.4	19.1
231011 2005 EJ ₄₇	16.3	X	14.93469	304.20310	277.31726	0.80334	0.2090044	0.18875947	3.0097486	21	5 8.3	19.1
231012 2005 ED ₆₁	16.6	X	359.93442	287.58892	319.26047	6.99207	0.1338169	0.25187511	2.4832048	21	5 4.9	19.3
231013 2005 EF ₆₄	16.0	X	2.97901	68.53231	64.88591	1.84657	0.1347292	0.17725487	3.1386094	21	—	—
231014 2005 EF ₆₈	14.8	X	72.53543	116.72268	327.28465	12.01328	0.0229798	0.17819117	3.1276052	21	2 1.3	19.1
231015 2005 EN ₇₂	15.1	X	337.83659	83.95496	111.83812	12.94861	0.0371437	0.18271999	3.0757097	21	2 15.6	19.4
231016 2005 EQ ₇₂	15.2	X	19.87734	150.45569	32.91468	11.33514	0.0480361	0.18789949	3.0189249	21	3 28.4	19.2
231017 2005 EH ₈₀	15.4	X	12.09252	74.02694	55.07380	10.35651	0.1918176	0.17709507	3.1404972	21	—	—
231018 2005 ER ₈₅	15.2	X	55.67455	15.83042	139.88122	10.76875	0.0419214	0.18886604	3.0086162	21	4 11.9	19.4
231019 2005 EP ₉₆	15.1	X	340.40775	117.60862	31.79849	6.70566	0.1206541	0.17333270	3.1857795	21	—	—
231020 2005 EW ₁₀₀	14.9	X	358.12331	9.87324	130.68099	10.37235	0.0600704	0.17459543	3.1704005	21	1 3.1	19.2
231021 2005 EZ ₁₀₁	14.9	X	28.32120	1.41170	146.84582	11.20936	0.0782730	0.18056487	3.1001345	21	2 22.5	18.8
231022 2005 EW ₁₃₁	15.6	X	344.96914	17.26981	159.08179	5.39438	0.1314925	0.17847508	3.1242876	21	1 19.2	19.5
231023 2005 EP ₁₃₈	15.3	X	20.21812	59.96409	119.15780	7.92794	0.0620818	0.18477172	3.0528986	21	3 23.9	19.3
231024 2005 EM ₁₄₉	15.2	X	16.38092	318.35426	146.78523	6.51677	0.0724749	0.17095871	3.2152043	21	—	—
231025 2005 EU ₁₅₂	16.1	X	35.34573	32.00265	102.46775	2.76862	0.1412558	0.17999710	3.1066504	21	2 18.3	19.6
231026 2005 EN ₁₈₉	15.5	X	25.46570	210.27495	290.98298	7.42173	0.0313142	0.18855416	3.0119330	21	2 6.1	19.5
231027 2005 EZ ₁₉₆	15.6	X	12.75211	298.89360	252.91689	7.39979	0.2081300	0.18484035	3.0521428	21	3 18.1	18.8
231028 2005 EZ ₂₁₅	15.4	X	162.17268	334.69571	32.28040	1.60911	0.0270172	0.17967218	3.1103946	21	2 15.4	19.7
231029 2005 ET ₂₂₁	15.0	X	43.95175	91.59499	324.98197	23.61774	0.2299652	0.17407992	3.1766566	21	—	—
231030 2005 EQ ₂₂₃	15.7	X	20.36302	342.98669	140.37104	2.22842	0.1463502	0.17595219	3.1540817	21	1 8.9	19.2
231031 2005 EM ₂₂₅	15.0	X	44.89319	353.33474	103.31670	14.27327	0.1705668	0.18246024	3.0786280	21	1 17.1	18.3
231032 2005 EL ₂₂₆	15.0	X	333.06525	138.78301	56.37020	10.68594	0.0397713	0.18120658	3.0928111	21	2 10.6	19.4
231033 2005 EH ₂₃₈	15.5	X	295.21526	155.70421	57.03239	2.22230	0.1530254	0.17422027	3.1749503	21	—	—
231034 2005 EG ₂₅₃	15.0	X	0.20988	285.13416								

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Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>
231041 2005 <i>EB</i> ₂₉₁	15.3	X	321.01007	24.60386	146.66297	12.10377	0.0974894	0.17211555	3.2007811	21	—	—
231042 2005 <i>EF</i> ₂₉₆	16.0	X	182.64462	295.26349	144.55082	6.56737	0.0422994	0.20101643	2.8861242	21	6 9.0	20.2
231043 2005 <i>FV</i> ₆	15.5	X	36.56285	49.45758	75.21426	10.10112	0.2753045	0.18126864	3.0921052	21	2 17.9	18.4
231044 2005 <i>GG</i> ₂	15.1	X	344.50099	96.35982	62.80043	14.18341	0.1986614	0.17711017	3.1403187	21	—	—
231045 2005 <i>GJ</i> ₄	15.4	X	350.60732	22.19150	157.47506	6.49391	0.0985496	0.17675384	3.1445377	21	2 4.6	19.6
231046 2005 <i>GZ</i> ₂₉	15.3	X	306.81696	85.15994	99.37255	5.99160	0.1130375	0.17114360	3.2128881	21	—	—
231047 2005 <i>GM</i> ₃₁	15.6	X	12.29550	68.85435	132.27216	6.51299	0.1397464	0.18473512	3.0533019	21	4 7.9	19.1
231048 2005 <i>GT</i> ₃₄	14.8	X	317.66831	116.76142	124.69213	16.26547	0.2155228	0.17815840	3.1279887	21	2 21.3	19.1
231049 2005 <i>GP</i> ₄₃	15.0	X	299.46789	297.45499	273.28802	8.34503	0.1314836	0.17370908	3.1811761	21	1 3.9	19.7
231050 2005 <i>GH</i> ₄₇	15.7	X	282.48709	204.35005	5.89365	4.83761	0.1240134	0.17109503	3.2134961	21	—	—
231051 2005 <i>GW</i> ₆₀	15.1	X	258.99458	111.46430	134.88015	9.05877	0.1072527	0.17344129	3.1844497	21	1 6.0	19.9
231052 2005 <i>GV</i> ₆₈	15.0	X	322.52603	63.62184	104.44454	17.57407	0.1100942	0.17139105	3.2097950	21	—	—
231053 2005 <i>GT</i> ₁₁₉	17.1	X	84.50840	247.23395	198.95390	21.42066	0.1125016	0.36104151	1.9532805	21	1 9.7	19.2
231054 2005 <i>GN</i> ₂₂₀	15.0	X	304.01496	288.93286	353.70401	15.86220	0.0713085	0.18584297	3.0411554	21	4 8.2	19.3
231055 2005 <i>GE</i> ₂₂₂	16.0	X	346.53570	288.96305	221.96286	4.23560	0.0401725	0.17165219	3.2065387	21	1 2.7	20.4
231056 2005 <i>JG</i> ₆₃	16.9	X	161.58459	355.09697	103.52382	24.43039	0.0803432	0.37223950	1.9139081	21	6 8.6	19.3
231057 2005 <i>JP</i> ₁₆₇	15.7	X	235.61699	47.43836	289.40406	5.02299	0.2889592	0.23431225	2.6057899	21	3 12.2	20.5
231058 2005 <i>LJ</i> ₃₄	16.2	X	48.39114	351.93011	191.25207	1.83373	0.1395582	0.18394209	3.0620713	21	5 14.9	20.0
231059 2005 <i>NP</i> ₇	17.0	X	148.34831	34.20108	129.57980	6.68503	0.1354585	0.27702629	2.3305337	21	—	—
231060 2005 <i>NM</i> ₄₆	17.8	X	169.08819	158.17610	295.20652	2.19680	0.1811645	0.27299581	2.3534162	21	—	—
231061 2005 <i>NF</i> ₆₇	17.1	X	282.50836	15.56446	300.27909	1.97066	0.1781817	0.29512293	2.2342619	21	4 1.1	20.1
231062 2005 <i>OY</i> ₅	16.8	X	191.04092	5.53978	325.04782	5.97278	0.1337937	0.28145299	2.3060327	21	1 24.5	20.2
231063 2005 <i>OC</i> ₁₉	17.4	X	164.32105	66.04113	300.85952	5.89034	0.2580231	0.27988048	2.3146623	21	2 20.4	21.2
231064 2005 <i>OF</i> ₁₉	17.1	X	132.06223	255.68425	100.71467	3.33708	0.2512671	0.27261948	2.3555815	21	1 9.0	20.0
231065 2005 <i>OG</i> ₂₈	17.1	X	194.66095	243.32809	141.17290	4.90904	0.1724554	0.28810001	2.2704252	21	4 8.4	20.6
231066 2005 <i>OR</i> ₂₈	16.7	X	124.79706	123.49109	202.28884	5.74301	0.1139433	0.26835839	2.3804511	21	—	—
231067 2005 <i>PD</i> ₁	17.2	X	178.65778	264.04166	111.07351	7.17146	0.1224447	0.28596733	2.2816994	21	3 10.5	20.5
231068 2005 <i>PQ</i> ₁₅	17.3	X	278.51176	247.21814	127.98229	5.29068	0.0989150	0.30271181	2.1967627	21	7 3.9	19.8
231069 2005 <i>QN</i> ₉	16.8	X	184.43914	355.00406	2.13152	4.87675	0.1825762	0.28191043	2.3035375	21	2 23.6	20.4
231070 2005 <i>QO</i> ₁₉	17.4	X	182.76963	67.19702	330.03684	4.57255	0.1742236	0.28794757	2.2712264	21	4 9.8	20.9
231071 2005 <i>QG</i> ₂₂	17.0	X	125.50256	269.40833	118.62630	2.84454	0.2080492	0.27591679	2.3367771	21	2 4.9	20.0
231072 2005 <i>QK</i> ₂₃	16.9	X	100.52594	6.47020	35.78027	2.78886	0.2141401	0.27204896	2.3588736	21	1 22.2	19.3
231073 2005 <i>QJ</i> ₃₇	17.0	X	148.02809	223.90450	200.49309	5.91085	0.1494188	0.28430428	2.2905887	21	4 11.0	20.2
231074 2005 <i>QQ</i> ₄₆	16.2	X	27.58683	187.57728	164.25307	6.54892	0.1438491	0.25569281	2.4584254	21	12 8.4	19.2
231075 2005 <i>QD</i> ₅₀	16.7	X	162.51306	335.16398	51.33756	6.08321	0.1678181	0.28136177	2.3065312	21	3 12.8	20.1
231076 2005 <i>QJ</i> ₅₀	16.5	X	237.18311	261.57773	137.60318	7.05188	0.1893419	0.29588377	2.2304301	21	6 5.4	19.9
231077 2005 <i>QS</i> ₅₀	16.9	X	209.77359	338.26122	28.22382	3.63849	0.2307425	0.28684231	2.2770570	21	3 28.9	20.6
231078 2005 <i>QJ</i> ₅₁	16.7	X	180.56571	308.53110	133.78045	5.82466	0.1677360	0.26995422	2.3710605	21	—	—
231079 2005 <i>QY</i> ₇₀	17.0	X	206.75972	55.42559	341.08097	4.52388	0.1152841	0.29162791	2.2520775	21	5 2.1	20.3
231080 2005 <i>QN</i> ₈₀	17.1	X	63.46839	252.97139	80.61531	2.60065	0.1764681	0.25927520	2.4357277	21	—	—
231081 2005 <i>QK</i> ₈₂	17.4	X	352.44483	100.45309	207.37199	2.78040	0.2145416	0.30560306	2.1828853	21	7 31.0	18.3
231082 2005 <i>QK</i> ₉₆	16.9	X	157.74433	315.64722	1.33674	6.20471	0.2226356	0.27390815	2.3481873	21	—	—
231083 2005 <i>QW</i> ₁₁₃	17.1	X	133.18222	278.48898	115.21764	3.07097	0.2307794	0.27621702	2.3350836	21	2 24.9	20.4
231084 2005 <i>QJ</i> ₁₆₅	16.5	X	316.35192	202.69055	98.35160	5.25872	0.1506539	0.23382269	2.6094258	21	5 10.5	19.6
231085 2005 <i>QX</i> ₁₇₀	16.6	X	293.15065	14.92856	288.78878	5.90716	0.1269894	0.29334699	2.2432704	21	4 2.6	19.6
231086 2005 <i>QA</i> ₁₇₈	16.6	X	112.00252	294.65093	120.10212	7.34477	0.0952566	0.27585482	2.3371271	21	2 5.6	19.2
231087 2005 <i>QO</i> ₁₈₀	17.9	X	311.31961	168.17070	154.87907	2.40917	0.0975762	0.29885567	2.2156189	21	6 7.1	20.0
231088 2005 <i>RM</i> ₈	17.6	X	134.21012	77.20879	335.79636	2.99553	0.2250386	0.27944414	2.3170712	21	3 20.2	20.8
231089 2005 <i>RZ</i> ₁₀	17.1	X	322.78657	45.68546	268.23132	4.63532	0.1322532	0.29939385	2.2129629	21	6 6.9	18.9
231090 2005 <i>RJ</i> ₁₁	16.6	X	226.25116	160.63540	224.69877	4.58527	0.1675634	0.29167251	2.2518479	21	5 7.3	19.8
231091 2005 <i>RQ</i> ₁₄	17.8	X	62.11445	215.59477	181.27511	1.11004	0.1886957	0.26595125	2.3947933	21	—	—
231092 2005 <i>RB</i> ₂₉	16.8	X	234.90645	223.56877	104.58641	5.08433	0.1903507	0.28708579	2.2757694	21	3 4.2	20.4
231093 2005 <i>RL</i> ₃₁	16.8	X	160.34592	261.45633	69.52512	4.84797	0.2533663	0.27359199	2.3499961	21	1 6.5	20.3
231094 2005 <i>SO</i> ₁₀	16.6	X	175.93203	291.04434	85.63990	6.41412	0.1853558	0.28298003	2.2972793	21	3 14.6	20.2
231095 2005 <i>SK</i> ₂₂	17.0	X	309.87018	277.03364	42.36574	4.06955	0.1913627	0.29836173	2.2180635	21	5 12.1	19.3
231096 2005 <i>SN</i> ₂₃	16.9	X	112.31858	357.41708	49.01534	4.63826	0.1872265	0.27483279	2.3429176	21	2 11.1	19.6
231097 2005 <i>SB</i> ₂₅	17.2	X	235.54065	263.43744	143.91871	6.52513	0.1335642	0.29652759	2.2272005	21	6 19.1	20.3
231098 2005 <i>SW</i> ₂₆	17.7	X	312.12682	242.67787	103.52518	2.33767	0.1452381	0.30160692	2.2021244	21	7 7.5	19.4
231099 2005 <i>SQ</i> ₃₁	16.9	X	76.56622	157.06083	36.78994	7.02126	0.1315450	0.29354143	2.2422797	21	7 10.0	19.5
231100 2005 <i>SF</i> ₄₁	17.6	X	91.00389	306.61812	120.58605	0.46668	0.1918244	0.27290388	2.3539446	21	2 6.0	19.6
231101 2005 <i>SV</i> ₅₀	16.3	X	288.08810	105.17915	198.14276	5.62445	0.0786634	0.22575093	2.6712612	21	4 14.2	19.9
231102 2005 <i>SZ</i> ₆₉	17.2	X	163.21667	343.90188	85.09055	3.14191	0.1720225	0.28506167	2.2865297	21	5 5.5	20.7
231103 2005 <i>SM</i> ₇₀	17.3	X	139.67907	18.45436	28.92696	2.41114	0.2370699	0.27980176	2.3150964	21	3 21.3	20.6
231104 2005 <i>SF</i> ₁₀₁	16.6	X	342.12302	173.15645	351.09608	6.21317	0.0936200	0.27104578	2.3646904	21	—	—
231105 2005 <i>SA</i> ₁₀₂	16.4	X	93.62182	119.32135	343.01656	6.48752	0.0619683	0.27993274	2.3143742	21	3 9.9	18.9
231106 2005 <i>SZ</i> ₁₁₆	17.6	X	121.84440	92.97438	281.73529	1.74114	0.1962110	0.27322037	2.3521265	21	1 11.8	20.3
231107 2005 <i>SO</i> ₁₁₇	16.9	X	210.92015	292.40256	72.43424	4.44884	0.1743483	0.28673059	2.2776485	21	3 29.5	20.4
231108 2005 <i>SR</i> ₁₂₄	16.9	X	20.06752	86.86542	2.63546	6.40582	0.0852193	0.26472485	2.4021839	21	—	—
231109 2005 <i>SB</i> ₁₃₁	17.2	X	171.57768	13.45680	20.92533	3.25193	0.2190703	0.28164669	2.3049753	21	3 31.9	20.8
231110 2005 <i>SV</i> ₁₃₂	17.7	X	84.18445	94.13687	338.35669	0.88438	0.1540004	0.27099784	2.3649692	21	1 27.2	19.7
231111 2005 <i>SD</i> ₁₄₄	16.9	X	98.13370	318.81660	132.68571	3.46454	0.0981313	0.27930872	2.3178201	21	3 8.7	19.3
231112 2005 <i>SU</i> ₁₄₇	17.7	X	1									

ELEMENTS AND OPPOSITION DATES IN 2021

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2021 JULY 5.0 TT

Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>
231121 2005 SA ₂₁₃	16.7	X	103.43775	237.77366	203.83224	6.85319	0.2318879	0.27495444	2.3422265	21	3 22.9	19.5
231122 2005 SY ₂₁₄	16.3	X	225.78056	137.96065	235.45580	7.43581	0.1874833	0.28901482	2.2656317	21	4 19.0	19.8
231123 2005 SD ₂₁₆	17.2	X	101.50732	210.31961	154.20004	1.39584	0.1994080	0.26627632	2.3928438	21	—	—
231124 2005 SH ₂₃₁	17.4	X	109.74540	170.45894	236.50967	0.59069	0.1782092	0.27191993	2.3596198	21	2 4.9	20.2
231125 2005 SP ₂₃₂	17.2	X	77.68073	220.16650	220.54555	1.54010	0.1942453	0.27019331	2.3696616	21	2 1.5	19.2
231126 2005 SC ₂₃₄	17.4	X	241.84336	141.10277	177.71477	1.89591	0.1487320	0.28554895	2.2839276	21	2 26.1	20.6
231127 2005 SX ₂₄₅	17.7	X	89.09921	91.31329	16.76317	2.22084	0.0826214	0.27926776	2.3180467	21	3 15.6	20.3
231128 2005 SM ₂₅₁	17.1	X	123.58207	241.46351	105.47987	3.08187	0.2602839	0.27063876	2.3670606	21	—	—
231129 2005 SN ₂₅₉	17.1	X	150.80972	304.76522	97.52145	4.78247	0.2547342	0.28140043	2.3063199	21	3 28.6	20.7
231130 2005 SG ₂₆₄	17.0	X	94.14778	268.46790	166.91229	2.92182	0.1621344	0.27578887	2.3374997	21	2 17.0	19.3
231131 2005 SM ₂₇₈	17.1	X	285.52547	228.80177	11.41857	2.95469	0.0354295	0.27574049	2.3377731	21	1 16.4	20.0
231132 2005 TV ₁₃	17.1	X	75.04570	168.25878	254.64945	1.89812	0.2322467	0.26847630	2.3797541	21	1 5.6	18.8
231133 2005 TW ₄₀	16.3	X	351.55956	46.46754	113.95845	6.40563	0.0732711	0.25907601	2.4369760	21	—	—
231134 2005 TU ₄₅	17.1	X	277.22469	76.89379	120.15331	28.54481	0.4954895	0.35535616	1.9740591	21	—	—
231135 2005 TE ₄₈	17.6	X	158.70580	18.03825	8.70100	2.76489	0.1110358	0.27908730	2.3190458	21	3 1.4	20.7
231136 2005 TV ₇₁	16.9	X	299.50477	243.73127	78.41754	4.94268	0.2080556	0.29852939	2.2172329	21	4 29.5	19.4
231137 2005 TM ₇₇	17.3	X	65.76714	255.44849	119.03586	3.06678	0.190198	0.26122229	2.4236090	21	—	—
231138 2005 TA ₁₀₄	16.7	X	308.74129	46.75694	285.65212	5.21700	0.1918044	0.29798206	2.2199471	21	5 30.3	18.9
231139 2005 TF ₁₃₁	17.6	X	56.22969	28.97734	64.06690	3.28048	0.1715344	0.26881499	2.3777547	21	1 4.2	19.5
231140 2005 TJ ₁₃₅	16.6	X	225.67573	199.79404	249.46965	4.06027	0.2060024	0.22655377	2.6649466	21	7 26.6	20.8
231141 2005 TJ ₁₄₁	17.6	X	127.08205	14.55844	137.59472	2.79798	0.0856484	0.29386300	2.2406436	21	7 10.1	20.4
231142 2005 TC ₁₅₁	17.5	X	80.51378	73.31044	122.89550	3.57609	0.0814225	0.29509576	2.2343990	21	7 9.6	19.9
231143 2005 TP ₁₅₉	16.7	X	59.62664	267.21030	238.90403	4.90387	0.1351699	0.27990382	2.3145336	21	3 25.9	19.0
231144 2005 UE ₄	16.8	X	222.69543	289.72030	55.30172	5.22258	0.1614441	0.28342678	2.2953141	21	3 16.0	20.4
231145 2005 UF ₄	17.1	X	107.86624	253.74120	242.24535	1.86190	0.1913128	0.26986999	2.3715538	21	1 20.6	19.6
231146 2005 UT ₁₄	16.8	X	154.20591	2.76074	39.42667	4.03728	0.1628055	0.27899450	2.3195600	21	3 22.7	20.1
231147 2005 UH ₁₅	17.9	X	355.27681	336.59877	169.18427	1.30056	0.1237384	0.26694133	2.3888681	21	—	—
231148 2005 UX ₁₅	17.2	X	51.72943	110.69118	54.33453	5.22771	0.0830160	0.28115266	2.3076747	21	4 8.1	19.4
231149 2005 UV ₁₆	16.8	X	115.09936	53.45287	45.84871	6.18510	0.0577893	0.28168262	2.3047793	21	4 7.3	19.5
231150 2005 UJ ₂₉	17.2	X	67.21846	17.67071	35.93871	2.66867	0.2226181	0.26431154	2.4046874	21	—	—
231151 2005 UR ₄₁	16.8	X	137.23203	278.01312	122.36972	2.79206	0.1977183	0.27578238	2.3375363	21	3 5.9	20.1
231152 2005 UM ₄₄	17.2	X	294.81195	188.74193	91.57974	2.82419	0.0272363	0.28205674	2.3027408	21	3 25.3	20.0
231153 2005 UK ₄₈	16.9	X	105.09617	49.89129	20.16948	6.90210	0.0852622	0.27352787	2.3503633	21	2 18.1	19.7
231154 2005 UQ ₄₈	17.1	X	348.45237	195.46133	312.07517	2.59223	0.0694324	0.26574860	2.3960106	21	—	—
231155 2005 UF ₅₁	16.6	X	297.03686	54.88429	278.75010	3.44371	0.2160077	0.23300386	2.6155356	21	5 13.9	20.1
231156 2005 UF ₆₁	16.9	X	249.17431	324.04184	81.56198	6.09880	0.1536887	0.29446235	2.2376021	21	6 30.2	19.8
231157 2005 UO ₆₃	17.5	X	258.48232	244.97463	214.10778	3.09699	0.1994301	0.23935872	2.5690342	21	9 13.9	20.8
231158 2005 UO ₆₆	16.9	X	213.44489	239.21537	165.69672	10.15075	0.2051146	0.22761434	2.6566620	21	5 24.1	21.5
231159 2005 UG ₆₈	16.4	X	105.60022	4.60277	67.83040	7.46956	0.0806868	0.27507465	2.3415440	21	2 21.8	19.2
231160 2005 UG ₆₈	17.0	X	119.63185	136.16327	345.63788	6.01984	0.1012654	0.28600927	2.2814764	21	5 17.9	19.9
231161 2005 UT ₇₃	16.8	X	38.76902	31.35018	78.61983	3.28782	0.1611840	0.26665242	2.3905933	21	—	—
231162 2005 UU ₇₃	17.1	X	60.47477	36.84172	52.17907	2.94860	0.1878259	0.26728517	2.3868189	21	1 9.3	18.8
231163 2005 UJ ₇₆	17.1	X	107.38446	151.75204	311.62469	8.42051	0.1655083	0.27877129	2.3207981	21	4 13.2	20.2
231164 2005 UJ ₇₈	17.0	X	107.65715	297.65832	130.79840	2.89989	0.1782761	0.27293960	2.3537393	21	3 4.4	19.7
231165 2005 UA ₇₉	16.5	X	268.29177	253.36676	90.40788	4.19438	0.2002776	0.29056787	2.2575515	21	4 23.7	19.8
231166 2005 UX ₁₀₂	17.2	X	42.87595	100.19699	60.07545	5.92768	0.1600670	0.27589967	2.3368738	21	3 27.9	19.1
231167 2005 UB ₁₀₆	16.9	X	342.43663	143.77250	88.85908	3.91603	0.1053002	0.28039066	2.3118538	21	3 16.6	19.4
231168 2005 UB ₁₀₉	16.9	X	187.66502	240.01573	138.20546	7.14910	0.0973408	0.28389510	2.2927892	21	4 4.9	20.2
231169 2005 UT ₁₁₃	17.6	X	70.89689	182.39808	246.02764	1.91973	0.2018516	0.26480964	2.4016711	21	—	—
231170 2005 UA ₁₂₂	16.9	X	221.35955	41.06579	29.47751	4.27174	0.1464789	0.23110253	2.6298618	21	7 4.5	21.1
231171 2005 UQ ₁₄₂	17.6	X	62.59755	250.35282	222.74325	0.56814	0.1381453	0.27195092	2.3594405	21	2 13.4	19.8
231172 2005 UZ ₁₄₃	18.0	X	92.66688	101.13584	20.59851	4.31802	0.1788722	0.28057655	2.3108325	21	4 24.8	20.7
231173 2005 UJ ₁₅₂	16.4	X	224.49580	16.83352	41.01573	7.59556	0.1793399	0.22901816	2.6457945	21	6 18.0	20.7
231174 2005 UH ₁₅₃	17.3	X	197.09223	201.20224	38.07627	3.18602	0.1893689	0.27708777	2.3301890	21	2 13.8	21.1
231175 2005 UG ₁₆₀	17.4	X	258.52925	182.15029	142.80606	3.53791	0.1883661	0.28821342	2.2698295	21	3 20.7	20.7
231176 2005 UU ₁₇₀	17.4	X	58.47411	63.97715	347.51711	1.68043	0.1009496	0.26247046	2.4159193	21	—	—
231177 2005 UK ₁₉₄	17.4	X	3.78293	78.23445	68.17826	2.19952	0.1283284	0.26872937	2.3782598	21	—	—
231178 2005 UJ ₂₀₆	17.6	X	30.90406	49.10981	57.00061	2.14475	0.1364167	0.26658089	2.3910209	21	—	—
231179 2005 UQ ₂₁₄	17.1	X	129.64162	315.92698	94.04427	5.33827	0.1526913	0.27667182	2.3325239	21	3 5.5	20.2
231180 2005 UU ₂₁₅	17.1	X	123.32379	354.99276	64.16721	3.20116	0.1980921	0.27527283	2.3404201	21	3 15.7	20.2
231181 2005 UJ ₂₂₆	16.9	X	6.94887	91.28324	218.37353	7.54691	0.1680761	0.23925484	2.5697777	21	8 28.9	19.5
231182 2005 UF ₂₃₀	17.6	X	12.43503	107.96333	120.71351	1.91642	0.1422045	0.28567981	2.2832301	21	5 1.8	19.3
231183 2005 UO ₂₃₀	16.6	X	146.94211	10.85907	59.68162	7.42803	0.0637422	0.28125104	2.3071365	21	4 11.8	19.6
231184 2005 UL ₂₅₂	16.6	X	106.48158	64.15663	19.87715	8.04864	0.0618928	0.27598084	2.3364156	21	3 7.3	19.4
231185 2005 UZ ₂₆₃	17.3	X	316.99821	219.65540	48.48808	6.22624	0.0955040	0.28595831	2.2817474	21	3 29.2	19.8
231186 2005 UH ₂₇₃	17.0	X	27.72951	41.69639	55.29794	7.21456	0.1284352	0.26121757	2.4236382	21	—	—
231187 2005 UG ₃₀₅	17.2	X	45.55055	333.39397	155.82063	7.21434	0.0629494	0.27126290	2.3634284	21	2 2.1	19.8
231188 2005 UR ₃₅₄	16.5	X	51.92459	175.95081	280.87975	5.86554	0.1612350	0.26692317	2.3889764	21	—	—
231189 2005 UH ₃₆₀	15.6	X	246.41766	100.90098	312.75025	7.06076	0.0298902	0.21965907	2.7204241	21	7 24.6	19.4
231190 2005 UO ₃₆₈	16.7	X	185.07100	199.74316	72.46874	7.12970	0.1245510	0.26115027	2.4240546	21	—	—
231191 2005 UW ₄₂₀	16.5	X	319.49396	188.04290	63.45753	7.00217	0.0819178	0.27922314	2.3182937	21	3 13.9	19.3
231192 2005 UO ₄₃₂	17.9	X	43.54015	351.28116	124.10821	1.95634	0.1297513	0.26801862	2.3824625	21	1 11.4	20.0
231193 2005 UL ₄₄₄	16.7	X	80.88878	221.03510	252.83097	4.85031	0.0918701	0.27501513	2.3418819	21	3 9.6	19.3
231194 2005 UB ₄₄₅	17.5	X	178.23583	237.13291								

ELEMENTS AND OPPOSITION DATES IN 2021

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2021 JULY 5.0 TT

Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>
231201 2005 UH ₅₁₁	17.0	X	140.98412	348.03025	75.06130	7.88872	0.0796335	0.27917513	2.3185594	21	3 28.8	20.1
231202 2005 VF ₄₂	16.5	X	210.49785	244.35152	119.92235	6.20334	0.1827393	0.28283229	2.2985293	21	3 29.4	20.2
231203 2005 VR ₄₂	16.7	X	72.34946	4.34871	105.47860	4.96282	0.1446563	0.27184039	2.3600800	21	3 2.5	18.9
231204 2005 VV ₄₂	16.9	X	92.46901	316.56658	105.13098	4.64602	0.1665981	0.27015112	2.3699083	21	1 28.7	19.1
231205 2005 VR ₄₉	17.1	X	192.45202	82.41358	302.31324	1.90276	0.2370257	0.28240462	2.3008493	21	4 5.5	21.1
231206 2005 VH ₉₉	16.0	X	267.86207	51.76038	14.82641	14.31798	0.2043295	0.23369593	2.6103693	21	8 19.9	19.8
231207 2005 VV ₁₁₉	15.7	X	149.05478	254.07438	324.12650	13.54744	0.1571594	0.22825251	2.6517079	21	10 21.7	20.3
231208 2005 VB ₁₂₄	16.7	X	22.16640	90.48806	81.31981	7.97467	0.0466526	0.27510386	2.3413783	21	3 2.2	19.4
231209 2005 WD ₃₂	17.2	X	316.60553	135.73074	52.61213	2.13576	0.1501097	0.26220316	2.4175610	21	—	—
231210 2005 WQ ₃₃	17.2	X	65.97226	153.87721	278.34380	3.77250	0.1690206	0.26403462	2.4063685	21	—	—
231211 2005 WA ₃₆	16.8	X	178.93028	256.55889	79.79646	8.07628	0.1206769	0.26941295	2.3742352	21	1 20.6	20.2
231212 2005 WK ₅₇	17.3	X	51.87386	314.21608	104.82607	10.06061	0.1215556	0.26190036	2.4194240	21	—	—
231213 2005 WX ₈₇	16.5	X	295.70556	110.99882	90.21255	3.78809	0.1371671	0.25805036	2.4434291	21	—	—
231214 2005 WD ₈₉	16.6	X	39.54037	239.92870	243.94244	5.42552	0.0560398	0.26889278	2.3772962	21	1 16.3	19.2
231215 2005 WU ₉₃	17.0	X	345.12656	144.53722	38.23591	2.97896	0.1471646	0.27206197	2.3587984	21	1 2.3	19.7
231216 2005 WM ₀₆	17.1	X	339.71121	119.15380	81.19202	2.28385	0.1290414	0.26810989	2.3819218	21	1 22.5	19.8
231217 2005 WV ₁₂₆	16.7	X	286.07865	247.58828	98.92903	5.47241	0.1748233	0.29285272	2.2457938	21	5 21.8	19.4
231218 2005 WY ₁₃₆	17.8	X	56.78300	234.51893	236.49435	1.35870	0.1683273	0.26990326	2.3713589	21	2 1.2	19.7
231219 2005 WW ₁₄₉	17.2	X	75.91034	23.64714	41.85936	4.68929	0.0563052	0.26495817	2.4007734	21	—	—
231220 2005 WS ₁₅₅	16.8	X	228.24053	348.11025	73.29601	4.75520	0.2555004	0.22823148	2.6518707	21	6 21.2	21.3
231221 2005 WM ₁₅₇	17.0	X	249.23121	137.68546	266.06392	2.70334	0.2330176	0.22796601	2.6539291	21	6 19.6	21.1
231222 2005 WR ₁₅₇	15.7	X	214.08555	236.46831	278.45100	10.69898	0.1151001	0.23551673	2.5968979	21	10 11.2	19.8
231223 2005 WD ₁₅₉	16.0	X	294.52280	34.60553	62.92740	17.24151	0.1314307	0.24157218	2.5533172	21	11 19.1	18.8
231224 2005 WW ₁₅₉	16.9	X	122.62903	259.99776	90.00878	3.31304	0.2039758	0.26318699	2.4415324	21	—	—
231225 2005 WS ₁₇₁	17.2	X	311.25698	13.86863	151.33665	1.54488	0.1174796	0.25727784	2.2183178	21	—	—
231226 2005 WZ ₁₇₄	16.2	X	92.46556	108.40021	80.89569	7.83738	0.1104114	0.22089608	2.7102585	21	7 21.2	20.0
231227 2005 WZ ₁₇₇	17.0	X	116.27037	281.98530	61.72157	2.93219	0.1937897	0.25823046	2.4422929	21	—	—
231228 2005 WV ₁₈₈	16.9	X	33.67682	3.04250	99.16467	6.36936	0.1641712	0.26292745	2.4213192	21	—	—
231229 2005 WE ₁₉₆	16.6	X	175.48052	183.31865	92.40155	8.19490	0.1090095	0.25221776	2.4809553	21	—	—
231230 2005 XA ₃	17.5	X	107.38307	53.80109	5.95986	1.34165	0.1736248	0.27108510	2.3644617	21	2 19.2	20.1
231231 2005 XC ₁₂	17.6	X	61.73696	293.34810	173.10554	1.36830	0.1262135	0.27045486	2.3681335	21	2 1.1	19.8
231232 2005 XB ₂₅	16.7	X	7.61520	88.04239	68.23234	6.00755	0.1705317	0.26482450	2.4015812	21	—	—
231233 2005 XZ ₃₇	16.0	X	235.33724	272.48091	78.02110	3.70044	0.0450863	0.21376378	2.7702139	21	4 17.2	19.9
231234 2005 XN ₃₈	15.8	X	327.59466	211.76633	152.43361	6.11440	0.0488367	0.22175281	2.7032733	21	9 7.4	19.1
231235 2005 XR ₄₁	16.4	X	20.04254	33.67193	122.15409	7.22981	0.1823064	0.26558358	2.3970030	21	1 21.9	18.4
231236 2005 XK ₅₄	17.5	X	358.02514	125.07352	38.14839	1.74859	0.1287823	0.26605805	2.3941524	21	—	—
231237 2005 XW ₈₄	16.5	X	82.25506	102.08999	301.84222	5.38815	0.0620278	0.25991445	2.4317323	21	—	—
231238 2005 YB ₇	16.1	X	25.29609	142.13173	317.68357	9.10798	0.1584641	0.25863499	2.4397455	21	—	—
231239 2005 YK ₉	17.7	X	8.92900	199.08186	305.87959	1.51869	0.1400770	0.26510089	2.3999117	21	—	—
231240 2005 YS ₂₅	17.1	X	328.00489	103.43389	171.79433	3.56411	0.1320465	0.26378227	2.4079029	21	1 26.3	19.8
231241 2005 YW ₃₅	16.6	X	262.08092	332.99426	275.16742	5.56298	0.1044950	0.26020924	2.4298954	21	—	—
231242 2005 YW ₄₇	17.0	X	344.19541	43.32735	77.19077	1.86253	0.1284040	0.25278759	2.4772255	21	—	—
231243 2005 YJ ₅₀	15.9	X	215.65124	340.54096	123.14118	15.12445	0.0621438	0.22729829	2.6591241	21	8 19.1	19.7
231244 2005 YW ₆₃	16.7	X	229.07603	325.77071	83.11730	2.98781	0.2010718	0.22425959	2.6830908	21	6 10.1	21.0
231245 2005 YL ₁₁₆	16.2	X	305.21935	272.17035	103.72137	10.50971	0.1078928	0.22843567	2.6502902	21	8 15.6	19.4
231246 2005 YN ₁₂₄	16.2	X	42.67034	97.31356	318.32043	7.79036	0.1417941	0.25532974	2.4607554	21	—	—
231247 2005 YB ₁₃₁	15.9	X	138.47132	150.60182	119.91139	12.43764	0.0966824	0.24010136	2.5637340	21	12 22.5	19.8
231248 2005 YJ ₁₃₁	16.8	X	29.76553	249.77359	120.48268	7.11448	0.2074949	0.24411068	2.5355851	21	—	—
231249 2005 YO ₁₃₈	16.7	X	236.99614	137.36003	100.92981	7.22460	0.1059819	0.25279570	2.4771725	21	—	—
231250 2005 YK ₁₄₁	16.1	X	278.56355	358.89362	307.83513	6.96954	0.1271283	0.21141966	2.7906528	21	3 28.8	20.2
231251 2005 YN ₁₄₅	16.0	X	11.52378	13.88871	341.78427	4.76127	0.3065185	0.24381747	2.5376175	21	12 11.4	18.7
231252 2005 YV ₁₅₂	15.9	X	22.24571	281.56033	86.28301	14.68630	0.1237679	0.24166947	2.5526319	21	12 15.1	18.9
231253 2005 YX ₁₅₂	15.8	X	265.19310	8.09641	91.16347	14.92451	0.1133215	0.23535394	2.5980952	21	10 15.7	19.4
231254 2005 YT ₁₅₈	17.1	X	253.86485	309.68354	187.36628	2.31545	0.1245329	0.24013104	2.5635227	21	11 10.4	20.4
231255 2005 YL ₁₆₈	15.8	X	49.49769	209.90436	172.63759	8.84552	0.2113011	0.25166139	2.4846105	21	—	—
231256 2005 YX ₁₉₁	16.4	X	157.82739	192.11428	99.86576	5.88242	0.0835400	0.24816263	2.5079091	21	—	—
231257 2005 YE ₁₉₆	15.8	X	267.88997	141.89413	311.87199	32.62349	0.2115449	0.23207103	2.6225398	21	8 31.1	19.9
231258 2005 YS ₁₉₉	15.7	X	175.77906	242.69594	300.96448	11.48389	0.1165758	0.23068668	2.6330213	21	10 5.6	20.0
231259 2005 YW ₂₀₃	16.6	X	318.90303	244.67225	132.91588	1.51650	0.0366270	0.23019087	2.6368008	21	9 14.4	19.7
231260 2005 YB ₂₁₁	15.7	X	237.34109	250.25886	268.89949	12.32841	0.1071448	0.23669951	2.5882396	21	11 17.9	19.3
231261 2005 YM ₂₂₉	15.2	X	215.05650	350.27199	100.16120	22.81727	0.0587495	0.21305676	2.7763391	21	7 31.0	19.4
231262 2005 YZ ₂₇₄	16.0	X	221.23287	271.03842	298.75718	10.03626	0.2500251	0.23773167	2.5807426	21	12 16.4	20.0
231263 2005 YD ₂₇₅	15.3	X	319.54867	9.51182	130.92909	4.98084	0.1788829	0.18365656	3.0652442	21	—	—
231264 2005 YJ ₂₈₉	16.9	X	109.41136	238.85759	168.36135	3.35742	0.1204877	0.26481983	2.4016094	21	1 27.6	19.6
231265 Saulperlmutter	16.2	X	308.01605	304.25093	337.08646	5.87855	0.0393022	0.20832894	2.8181860	21	4 16.7	20.0
231266 2006 AW ₁₃	16.2	X	25.76877	182.57715	124.35006	4.50628	0.1782460	0.22699789	2.6614696	21	10 6.2	19.1
231267 2006 AM ₁₆	15.9	X	167.71537	260.69917	318.40586	11.34856	0.1177077	0.23166360	2.6256138	21	11 12.9	20.2
231268 2006 AG ₂₁	15.7	X	132.76932	155.01036	87.29651	13.62894	0.1093538	0.23330780	2.6132636	21	11 14.6	19.8
231269 2006 AO ₂₁	15.5	X	109.50957	141.16384	71.29756	9.84141	0.0830103	0.22403807	2.6848591	21	9 11.8	19.5
231270 2006 AF ₃₁	16.2	X	199.82146	296.79216	87.04449	7.26739	0.0887621	0.21366191	2.7710944	21	4 19.5	20.4
231271 2006 AO ₄₂	15.9	X	99.66653	357.16589	297.28578	15.78170	0.1361196	0.23787310	2.5797196	21	12 14.5	20.0
231272 2006 AK ₄₆	17.0	X	239.10232	83.91509	172.50910	2.03816	0.1702746	0.25521344	2.4615029	21	—	—
231273 2006 AU ₆₃	16.8	X	47.77139	289.51599	72.12443	3.40843	0.0491083	0.24456458	2.5324469	21	12 30.5	20.2
231274 2006 AY ₆₈	16.6	X	46.25629	109.43580	107.42360	7						

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Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>
231281 2006 BW ₃₂	16.4	X	100.94717	250.89627	30.31835	2.43344	0.0326079	0.23166123	2.6256317	21	11 18.6	20.0
231282 2006 BF ₄₄	16.5	X	167.16611	76.92866	338.93687	4.31111	0.1068489	0.20673381	2.8326639	21	4 21.7	20.9
231283 2006 BZ ₄₅	16.7	X	199.77274	68.15667	150.57930	8.82768	0.0888517	0.23794434	2.5792046	21	12 23.0	20.4
231284 2006 BL ₅₇	16.7	X	210.26858	222.15493	6.18616	3.19959	0.1796640	0.24231209	2.5481168	21	—	—
231285 2006 BJ ₅₈	16.0	X	154.68226	107.12766	121.95703	14.26529	0.1401611	0.23230262	2.6207966	21	11 20.4	20.4
231286 2006 BN ₅₈	15.9	X	10.52573	151.88544	109.98361	8.41939	0.0585325	0.21391921	2.7688719	21	6 22.3	19.4
231287 2006 BW ₆₀	17.2	X	46.75094	191.04915	346.96861	4.66001	0.1856890	0.27000986	2.3707348	21	4 27.9	19.1
231288 2006 BZ ₈₀	16.8	X	227.87652	81.44575	64.62498	2.91114	0.0490858	0.23096770	2.6308851	21	10 29.6	20.4
231289 2006 BK ₉₅	17.0	X	249.41809	184.82372	278.08367	1.14815	0.1628639	0.22933153	2.6433836	21	9 12.7	20.8
231290 2006 BK ₉₉	16.5	X	49.93507	9.37794	316.01101	6.49953	0.1003023	0.23450960	2.6043277	21	11 20.3	20.1
231291 2006 BZ ₁₀₂	15.8	X	143.79326	311.09691	314.47609	14.16115	0.1090468	0.23746507	2.5826738	21	12 21.7	20.0
231292 2006 BZ ₁₀₇	17.0	X	339.48385	31.52024	340.78320	2.46297	0.0692176	0.23148861	2.6269369	21	10 6.3	20.0
231293 2006 BL ₁₁₇	16.4	X	278.94026	63.98611	205.29841	0.48372	0.0609153	0.19727147	2.9225359	21	2 24.5	20.7
231294 2006 BF ₁₂₄	16.4	X	116.89610	243.47208	336.49804	3.83198	0.1635781	0.22164201	2.7041742	21	9 29.7	20.7
231295 2006 BM ₁₂₆	16.1	X	268.85794	218.94236	153.55339	8.96929	0.2050851	0.21750005	2.7383974	21	6 4.7	20.3
231296 2006 BD ₁₂₈	16.9	X	223.08621	250.65429	237.98123	1.25395	0.1470642	0.22861115	2.6489338	21	9 18.1	20.9
231297 2006 BT ₁₄₁	16.6	X	37.56082	313.07190	5.20834	2.27757	0.0614729	0.22679929	2.6630230	21	10 19.6	20.0
231298 2006 BQ ₁₄₄	15.8	X	180.25985	286.06614	289.50423	12.25484	0.1184778	0.23445111	2.6047608	21	11 23.5	19.9
231299 2006 BH ₁₄₅	15.6	X	194.19556	164.62989	335.71473	13.85643	0.0651953	0.22448937	2.6812596	21	9 7.0	19.5
231300 2006 BF ₁₅₉	16.4	X	180.71557	292.77295	313.46944	8.54518	0.1688806	0.23819387	2.5774030	21	12 30.5	20.6
231301 2006 BU ₁₆₁	15.8	X	210.16421	261.09846	250.21024	10.21028	0.1328379	0.22976954	2.6400232	21	10 1.0	20.1
231302 2006 BM ₁₆₅	16.5	X	303.38784	189.21946	137.64581	3.74718	0.1026638	0.21268481	2.7795750	21	6 3.7	20.1
231303 2006 BV ₁₆₇	15.4	X	6.79781	298.20426	139.32671	11.49957	0.1088131	0.18321944	3.0701176	21	—	—
231304 2006 BK ₁₆₈	16.0	X	290.44528	68.24521	44.09342	8.07814	0.1505564	0.23894990	2.5719636	21	11 27.6	18.7
231305 2006 BK ₁₆₉	16.7	X	264.81086	318.51610	53.29466	0.47085	0.0874002	0.21477548	2.7615076	21	6 13.4	20.6
231306 2006 BQ ₁₇₈	16.4	X	66.66510	353.27726	322.97463	6.09202	0.1628206	0.23594623	2.5937455	21	12 8.7	20.2
231307 Peterfalk	16.7	X	182.77999	68.46327	170.73896	1.06830	0.0812121	0.20306127	2.8667159	21	3 24.1	21.1
231308 2006 BD ₁₉₀	17.2	X	250.58630	99.28089	29.23478	3.47592	0.1446160	0.23316656	2.6143188	21	10 21.3	20.8
231309 2006 BK ₁₉₀	15.8	X	276.52126	251.38040	126.98080	5.98647	0.0648524	0.21754615	2.7380106	21	7 10.9	19.5
231310 2006 BK ₁₉₁	16.0	X	113.01283	201.30347	349.67448	8.92243	0.1036889	0.21355110	2.7720528	21	8 17.3	20.0
231311 2006 BN ₂₁₄	16.3	X	310.55140	205.57912	230.18706	4.93352	0.2192527	0.23860994	2.5744059	21	11 7.4	18.4
231312 2006 BH ₂₅₅	16.4	X	173.17113	300.52088	167.09932	1.99278	0.0320404	0.21626749	2.7487921	21	7 2.6	20.3
231313 2006 BH ₂₆₃	16.3	X	239.27065	143.86644	338.60787	14.26819	0.2009989	0.23083271	2.6319107	21	9 18.9	20.3
231314 2006 BV ₂₆₇	16.3	X	288.38197	322.68081	116.39070	15.68062	0.1068872	0.23324012	2.6137690	21	10 22.9	19.8
231315 2006 BU ₂₆₈	15.9	X	154.26959	43.19151	38.52148	11.52298	0.1181537	0.21091633	2.7950908	21	5 11.6	20.2
231316 2006 BP ₂₈₁	16.4	X	29.08333	272.70387	22.63231	3.90836	0.0780518	0.22216580	2.6999222	21	9 9.7	19.7
231317 2006 CW ₅	16.8	X	58.31758	208.54180	152.38531	7.71098	0.0679832	0.24220861	2.5488425	21	—	—
231318 2006 CO ₄₀	16.3	X	316.02451	271.76301	87.84940	3.61878	0.0974871	0.21983573	2.7189665	21	8 9.7	19.5
231319 2006 CQ ₄₁	16.5	X	18.07647	59.30801	241.42191	2.48703	0.0859923	0.21871129	2.7282778	21	8 28.6	19.8
231320 2006 CM ₅₅	16.6	X	139.56856	336.71384	176.99933	1.92732	0.0410463	0.21818815	2.7326370	21	7 22.3	20.5
231321 2006 CL ₅₇	16.5	X	273.39195	46.73674	340.96167	4.69839	0.1569782	0.22045328	2.7138864	21	7 6.1	20.2
231322 2006 DF ₁	16.2	X	319.48504	106.40125	252.80943	5.64497	0.0514488	0.22200002	2.7012661	21	8 15.7	19.6
231323 2006 DM ₂	16.7	X	247.20808	66.16559	355.52418	1.40110	0.0618360	0.22049934	2.7135085	21	7 31.8	20.4
231324 2006 DQ ₃	16.3	X	268.08549	227.71204	189.91851	3.66813	0.0668764	0.22399413	2.6852102	21	8 20.8	19.9
231325 2006 DR ₇	15.2	X	39.31743	20.38106	13.92134	10.73612	0.0724427	0.17951961	3.1121567	21	—	—
231326 2006 DC ₈	16.4	X	226.51369	20.74886	15.26503	5.56201	0.0547533	0.20831826	2.8182823	21	6 1.6	20.5
231327 2006 DE ₃₃	16.3	X	147.90145	8.32920	176.59932	3.63177	0.0282047	0.22047609	2.6999222	21	9 11.5	20.1
231328 2006 DW ₃₈	16.2	X	166.71236	267.01086	35.28611	2.73430	0.1515792	0.18005959	3.1059316	21	—	—
231329 2006 DF ₅₃	17.0	X	280.52861	32.85253	358.28731	2.42932	0.1252140	0.21984225	2.7189128	21	7 25.4	20.4
231330 2006 DE ₆₆	16.2	X	229.11835	321.39842	123.26917	14.56240	0.2289075	0.22317272	2.6917950	21	7 23.0	20.7
231331 2006 DV ₈₆	16.0	X	97.02602	353.39117	25.21089	5.01766	0.1828466	0.18384438	3.0631562	21	1 3.4	20.1
231332 2006 DY ₁₄₄	16.8	X	261.59965	10.53339	4.65716	4.31175	0.0854085	0.21344841	2.7729418	21	6 13.8	20.8
231333 2006 DO ₁₇₉	16.1	X	233.74025	20.91078	16.46829	4.44721	0.0772892	0.21213036	2.7844162	21	6 10.2	20.2
231334 2006 DJ ₁₈₄	16.0	X	222.36068	37.62512	25.47727	7.01282	0.0726170	0.21317331	2.7753270	21	7 1.9	20.2
231335 2006 DF ₁₉₅	15.7	X	95.64979	97.83000	92.17241	13.83577	0.1268493	0.21356900	2.7718980	21	7 28.7	19.7
231336 2006 DL ₁₉₇	16.4	X	251.57517	240.01584	290.33639	9.98629	0.2255289	0.23812122	2.5779272	21	12 3.9	19.8
231337 2006 DE ₁₉₈	15.8	X	144.35670	42.38187	140.16037	12.96184	0.0936969	0.21665480	2.7455152	21	9 9.2	20.0
231338 2006 DW ₂₀₀	16.0	X	240.00410	25.84292	113.23256	12.70707	0.1284915	0.22985993	2.6393311	21	10 29.7	19.9
231339 2006 DS ₂₀₁	15.8	X	195.94765	19.24061	67.73320	8.99416	0.0418176	0.21810032	2.7333706	21	7 3.5	19.8
231340 2006 DS ₂₀₇	16.2	X	186.87678	96.62751	358.93785	11.78916	0.1590324	0.21331999	2.7740547	21	7 3.7	20.9
231341 2006 DP ₂₀₈	16.3	X	110.88548	257.44459	327.86390	4.42615	0.0576340	0.21897928	2.7260514	21	9 20.1	20.2
231342 2006 EL ₂₅	17.2	X	316.95282	203.21071	185.85150	2.04391	0.0922422	0.22758809	2.6568662	21	9 21.9	20.3
231343 2006 EF ₃₂	16.0	X	205.64006	161.07991	329.68358	8.95498	0.0925280	0.22365997	2.6878841	21	9 5.8	19.9
231344 2006 EZ ₃₂	16.5	X	267.34451	11.79562	35.36658	5.52613	0.0611899	0.21985188	2.7188334	21	8 9.8	20.2
231345 2006 EE ₅₂	16.4	X	200.58747	123.75243	342.26987	3.88066	0.0694244	0.21711402	2.7416423	21	8 2.5	20.5
231346 Taofanlin	16.3	X	172.99647	79.37948	51.09330	3.29403	0.1462171	0.21600967	2.7509789	21	8 3.3	20.8
231347 2006 FE ₇	16.0	X	286.75582	154.29258	64.22329	1.67956	0.0924429	0.18244483	3.0788013	21	1 2.6	20.5
231348 2006 FR ₁₅	15.8	X	310.71937	237.50187	41.80382	11.71792	0.0571512	0.19755440	2.9197449	21	4 20.4	19.7
231349 2006 FV ₁₅	16.1	X	188.64642	272.97629	185.31852	3.31144	0.0546383	0.21310887	2.7758865	21	7 8.6	20.1
231350 2006 FC ₂₆	16.5	X	217.42573	42.80709	27.67910	3.14303	0.0680808	0.21093694	2.7949086	21	7 6.1	20.5
231351 2006 FM ₃₇	15.9	X	222.53995	248.72533	264.27638	12.77432	0.1133786	0.22970131	2.6405459	21	10 18.5	20.0
231352 2006 FP ₃₉	16.3	X	14.38805	268.38782	3.36917	3.51427	0.0558291	0.21305929	2.7763171	21	7 12.6	19.8
231353 2006 GW ₁₁	15.9	X	77.54873	169.86962	56.48564	5.44478	0.1275035	0.21122914	2.7923306	21	8 24.	

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Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>
231361 2006 GM ₄₂	15.7	X	78.62656	138.85232	128.36535	9.85678	0.0580887	0.21921976	2.7240574	21	10 10.5	19.6
231362 2006 GO ₄₂	16.2	X	128.51322	352.71162	182.05574	9.24388	0.1915874	0.21234271	2.7825597	21	8 16.1	20.8
231363 2006 GO ₄₉	16.6	X	215.86220	279.35220	227.71779	1.46499	0.1920820	0.22790147	2.6544301	21	9 29.7	20.8
231364 2006 GA ₅₄	15.8	X	228.85546	177.64414	90.82074	3.71031	0.0482514	0.17837523	3.1254533	21	1 3.9	20.5
231365 2006 HL ₂	15.9	X	94.36771	155.32253	79.48649	5.69534	0.0650241	0.21576113	2.7530911	21	9 17.5	19.8
231366 2006 HQ ₇	15.4	X	85.59536	86.06165	128.38572	8.09696	0.0972753	0.21071437	2.7968765	21	8 12.2	19.3
231367 2006 HM ₁₇	15.0	X	55.75329	351.91577	128.02850	11.56864	0.0421035	0.19188347	2.9769921	21	2 23.1	19.0
231368 2006 HF ₁₈	16.2	X	35.48788	101.42860	142.71630	4.53192	0.0449348	0.20903697	2.8118187	21	7 4.5	19.9
231369 2006 HD ₂₂	15.8	X	11.75351	33.84476	127.27610	3.59083	0.1442398	0.18914030	3.0057072	21	2 8.8	19.1
231370 2006 HK ₂₄	16.8	X	104.27420	142.46965	88.95762	3.62140	0.1596982	0.21439122	2.7648063	21	10 3.5	21.0
231371 2006 HR ₂₇	15.6	X	64.09121	314.25767	133.10395	8.41568	0.1703630	0.18232860	3.0801097	21	2 7.7	19.1
231372 2006 HA ₃₆	16.5	X	44.96921	58.83301	211.50939	2.99038	0.0229932	0.21575086	2.7531785	21	8 19.4	20.2
231373 2006 HA ₄₀	15.3	X	206.40377	178.49627	84.63701	9.68736	0.0676725	0.17205188	3.2015708	21	—	—
231374 2006 HY ₄₁	15.9	X	42.34982	38.75907	128.13672	10.19481	0.0234710	0.19171667	2.9787185	21	4 6.7	20.1
231375 2006 HW ₄₉	16.2	X	200.38206	93.64007	31.24431	9.50470	0.1889089	0.22000044	2.7176093	21	8 23.7	20.8
231376 2006 HY ₆₁	15.9	X	201.51106	261.63918	82.11088	4.90637	0.0711217	0.18844122	3.0131363	21	3 5.1	20.5
231377 2006 HG ₉₅	15.3	X	91.18386	30.49370	65.64504	12.07309	0.0455579	0.18943760	3.0025616	21	3 17.7	19.6
231378 2006 HD ₁₀₇	15.3	X	47.68365	65.86262	73.48035	12.04184	0.0565596	0.18981548	2.9985753	21	3 14.9	19.4
231379 2006 HV ₁₃₃	15.8	X	98.38523	345.55331	9.90829	5.31224	0.0757214	0.17781783	3.1319815	21	—	—
231380 2006 JJ	15.7	X	62.61300	301.70892	242.38493	11.89702	0.1148793	0.20044719	2.8915857	21	6 2.7	19.4
231381 2006 JW ₁₂	15.5	X	180.96956	217.63407	90.95933	10.47568	0.0611894	0.17457323	3.1706694	21	1 1.2	20.2
231382 2006 JB ₃₆	15.6	X	261.10984	105.96639	73.06310	11.02725	0.0911862	0.16882372	3.2422543	21	—	—
231383 2006 JN ₄₂	16.4	X	15.86762	88.10912	121.48743	2.91550	0.0550333	0.19492773	2.9459156	21	4 22.6	20.2
231384 2006 JJ ₄₇	14.8	X	256.10043	332.87682	236.44472	16.20796	0.0882449	0.17298836	3.1900058	21	—	—
231385 2006 JN ₅₄	17.0	X	171.66657	130.70391	96.09971	6.72381	0.1330609	0.28970890	2.2620116	21	12 8.2	20.3
231386 2006 JU ₅₄	15.5	X	269.56171	337.47554	220.75489	4.34569	0.1113162	0.17244522	3.1967004	21	—	—
231387 2006 KW ₈	15.9	X	343.55638	172.36126	52.78248	5.85255	0.1104852	0.19068147	2.9894897	21	3 23.4	19.6
231388 2006 KB ₁₇	15.0	X	45.78554	323.42987	119.66062	11.11441	0.0737935	0.17599828	3.1535310	21	—	—
231389 2006 KO ₁₈	15.2	X	188.82684	222.46144	118.01773	10.98369	0.1133969	0.18347332	3.0672848	21	2 17.6	20.0
231390 2006 KP ₃₃	15.7	X	308.93127	79.03760	104.47278	1.95663	0.1444004	0.18429435	3.0581682	21	1 28.7	19.9
231391 2006 KA ₃₇	16.1	X	305.14815	78.10102	104.14118	2.26965	0.1238881	0.17702577	3.1413166	21	—	—
231392 2006 KP ₆₄	15.3	X	63.47865	82.14711	53.74438	10.97265	0.0518097	0.18907486	3.0064007	21	3 30.3	19.4
231393 2006 KM ₆₅	16.2	X	8.02754	244.46571	16.47146	4.24003	0.0583695	0.20852586	2.8164114	21	6 16.7	19.7
231394 2006 KO ₆₆	15.9	X	57.70311	288.47931	128.52000	1.43989	0.1579199	0.17395414	3.1781876	21	—	—
231395 2006 KM ₁₁₅	15.6	X	261.81206	62.95969	205.96618	4.01965	0.1147643	0.18188086	3.0851625	21	1 31.8	20.4
231396 2006 KR ₁₁₆	15.6	X	64.06566	333.35757	131.56652	4.13996	0.0581021	0.18359503	3.0659291	21	2 17.3	19.5
231397 2006 MB ₁₅	16.9	X	232.87493	83.58242	282.93616	18.21041	0.1309685	0.37945986	1.8895519	21	4 2.2	19.9
231398 2006 PX ₉	14.6	X	307.36410	164.00995	188.53795	0.23007	0.1288944	0.12596720	3.9412235	21	7 10.0	19.8
231399 2006 QH ₈₄	15.9	X	218.80751	243.68870	152.60139	11.72164	0.1141848	0.18226299	3.0808489	21	5 25.1	20.9
231400 2006 SE ₃₂	15.0	X	320.57278	159.21252	189.74059	2.55445	0.2564149	0.12399885	3.9828224	21	7 8.0	19.7
231401 2006 MP ₂₇₃	17.0	X	216.52220	268.95165	31.18690	6.59605	0.2402611	0.22707455	2.6608705	21	1 21.2	21.7
231402 2006 TP ₁₀₇	17.2	X	203.27581	39.96034	327.57871	19.67884	0.1065121	0.37138904	1.9168288	21	3 6.3	19.8
231403 2006 WR ₄	17.1	X	71.38362	40.59447	51.62707	22.31315	0.0880067	0.35460186	1.9768575	21	—	—
231404 2006 WA ₁₅₁	16.8	X	142.16921	265.36202	117.71220	24.74279	0.1140007	0.35874562	1.9616054	21	1 18.4	18.4
231405 2006 WZ ₂₀₁	17.7	X	241.81447	269.03468	111.35746	5.28901	0.1607687	0.30302327	2.1952571	21	5 17.9	20.8
231406 2006 YH ₉	18.2	X	128.63782	76.43182	310.59297	5.28854	0.2140588	0.28358596	2.2944551	21	2 6.3	20.9
231407 2006 YU ₁₀	16.8	X	76.56869	333.40677	94.31862	7.56795	0.1109783	0.28038513	2.3118841	21	—	—
231408 2007 AO ₃₀	16.3	X	288.80155	263.00627	227.34893	8.00579	0.0553016	0.26002699	2.4310306	21	—	—
231409 2007 BH ₉	15.4	X	126.14685	225.97975	90.81962	13.16715	0.0467863	0.19652663	2.9299156	21	—	—
231410 2007 BC ₇₆	17.0	X	41.90680	132.49483	134.95669	5.92077	0.1767339	0.30005685	2.2097019	21	9 14.9	19.1
231411 2007 CB ₂₆	16.9	X	284.91546	158.19770	82.10447	5.52012	0.1749926	0.27487277	2.3426905	21	—	—
231412 2007 CL ₄₁	16.9	X	0.76384	342.13675	141.49940	3.39418	0.1116279	0.27091737	2.3654375	21	—	—
231413 2007 CT ₄₁	17.4	X	34.70713	280.30975	325.96276	5.57035	0.1224367	0.29668931	2.2263910	21	7 18.0	19.3
231414 2007 DH ₄₀	16.5	X	25.59393	113.02172	106.46604	22.37573	0.1435207	0.28553233	2.2840163	21	5 24.9	19.0
231415 2007 DE ₄₂	17.4	X	72.35682	181.51887	308.34300	4.91463	0.1524114	0.28499749	2.2868729	21	3 26.1	19.7
231416 2007 DB ₄₉	17.5	X	3.76757	227.01563	255.76648	0.48768	0.1254604	0.26922270	2.3753536	21	—	—
231417 2007 DH ₆₃	17.2	X	335.19592	174.26054	128.58402	8.19577	0.0759041	0.29825686	2.2185834	21	6 21.0	19.4
231418 2007 EE ₁₂	16.9	X	335.24404	179.34015	8.21056	6.08802	0.1044270	0.27389123	2.3482840	21	1 1.3	19.8
231419 2007 EO ₃₈	16.6	X	122.27233	215.38343	147.99948	5.99892	0.1159185	0.26196731	2.4190118	21	—	—
231420 2007 EO ₅₀	17.8	X	165.07402	191.48432	234.08962	1.35523	0.1020678	0.28871212	2.2672150	21	4 26.9	20.7
231421 2007 EU ₅₅	15.7	X	320.26355	345.24843	13.16397	13.27709	0.2956054	0.23457955	2.6038100	21	7 21.3	18.3
231422 2007 EG ₆₅	17.1	X	154.81221	346.67398	151.23694	5.88504	0.0685619	0.29834261	2.2181583	21	7 22.9	20.1
231423 2007 EH ₇₆	17.2	X	340.20557	32.07945	209.31133	3.37183	0.1098938	0.28061997	2.3105941	21	3 21.7	19.6
231424 2007 EG ₇₉	16.2	X	152.83673	122.44479	203.64744	5.95332	0.1028849	0.26007148	2.4307534	21	—	—
231425 2007 EF ₁₀₅	17.3	X	120.30737	51.94533	164.87796	4.12670	0.0507247	0.30559900	2.1829046	21	9 30.8	20.0
231426 2007 EU ₁₀₉	17.0	X	32.07207	149.01998	51.41876	4.07989	0.1066559	0.28362485	2.2942454	21	4 26.6	18.8
231427 2007 EM ₁₁₂	17.0	X	87.61827	351.40665	171.44162	6.30818	0.0712318	0.28583117	2.2824240	21	5 30.9	19.7
231428 2007 ET ₁₁₂	16.5	X	155.10372	232.55995	223.78526	1.42083	0.0531693	0.21837488	2.7310790	21	5 27.7	20.2
231429 2007 ER ₁₂₂	17.4	X	118.78113	267.07293	308.25014	3.95129	0.1650044	0.30270938	2.1967744	21	10 1.8	20.8
231430 2007 EC ₁₂₇	16.7	X	320.31038	235.37623	14.19640	5.58496	0.1468763	0.28083524	2.3094132	21	2 27.4	19.3
231431 2007 ES ₁₃₀	17.5	X	318.59538	225.19721	355.68578	2.24975	0.1432193	0.27389227	2.3482781	21	1 17.7	20.3
231432 2007 EJ ₁₄₂	16.6	X	229.35195	288.88142	340.01988	6.22229	0.1110260	0.26414873	2.4056754	21	—	—
231433 2007 EV ₁₅₉	16.6	X	342.88162	119.28007	138.66261	5.71239	0.1455923	0.28534616	2.2850096	21	4 18.6	18.7
231434 2007 EF ₁₈₀	17.7	X	9.10718	350.40229	227.47205	4.65784	0.10688					

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Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>
231441 2007 GM ₂₉	16.9	X	152.32225	275.33885	343.48147	2.29084	0.1464234	0.24589836	2.5232810	21	12 21.3	21.0
231442 2007 GS ₃₂	16.9	X	4.69959	77.47265	102.82532	7.40445	0.0635028	0.27192224	2.3596064	21	2 11.9	19.5
231443 2007 GH ₄₀	17.2	X	155.16114	222.12889	73.99966	2.61270	0.0924905	0.25116603	2.4878763	21	—	—
231444 2007 GR ₄₃	17.5	X	216.90088	120.82354	194.41687	2.04616	0.2015572	0.26668313	2.3904097	21	1 31.8	21.5
231445 2007 GF ₆₀	17.6	X	92.03047	54.00232	4.64905	3.80838	0.0374317	0.26518477	2.3994056	21	1 7.3	20.4
231446 2007 GE ₇₅	16.0	X	66.88859	184.09582	84.46143	13.49047	0.1473038	0.23114008	2.6295769	21	10 14.7	19.9
231447 2007 HE ₁	15.7	X	343.72864	229.45118	44.70717	12.85380	0.0860423	0.21718595	2.7410370	21	5 24.0	19.1
231448 2007 HL ₄₆	17.3	X	87.32842	130.24067	112.22068	7.17331	0.1444102	0.29993017	2.2103240	21	10 8.3	20.3
231449 2007 HH ₅₁	16.9	X	186.38007	121.57028	100.06693	3.20634	0.0901865	0.24439654	2.5336075	21	12 12.7	20.4
231450 2007 HK ₅₈	14.9	X	157.39086	198.87535	68.81876	13.71636	0.1315883	0.17783655	3.1317617	21	12 25.5	20.0
231451 2007 HL ₇₂	17.1	X	287.13217	8.55646	220.21814	3.89916	0.1383769	0.26545730	2.3977630	21	—	—
231452 2007 HC ₇₄	16.4	X	345.73540	127.39104	110.70673	10.88821	0.1034977	0.27699035	2.3307353	21	4 4.3	19.1
231453 2007 HS ₈₂	16.7	X	313.55788	108.22613	115.92078	7.13509	0.0823935	0.26900829	2.3766156	21	1 25.4	19.8
231454 2007 HK ₉₅	17.0	X	329.72582	109.10733	145.01103	4.64559	0.1240822	0.27608363	2.3358356	21	3 24.2	19.5
231455 2007 JY ₈	16.1	X	253.32101	330.00411	59.58538	5.93997	0.0636132	0.21820326	2.7325108	21	6 25.8	19.8
231456 2007 JC ₁₅	17.4	X	356.09447	349.28150	239.83779	2.13935	0.1366821	0.27820306	2.3239571	21	3 28.3	19.4
231457 2007 JN ₃₁	17.1	X	193.78139	191.12459	73.19360	5.92667	0.1657607	0.25161837	2.4848937	21	—	—
231458 2007 LN ₁₉	15.6	X	124.65506	329.37511	260.53366	10.93300	0.1443316	0.23250429	2.6192808	21	10 16.4	19.9
231459 2007 LV ₂₄	16.7	X	350.04438	71.22775	85.73983	6.14167	0.1303576	0.26323812	2.4112201	21	—	—
231460 2007 MG ₇	16.6	X	64.68512	171.20660	124.05009	2.53582	0.1452684	0.22992360	2.6388438	21	11 8.5	20.2
231461 2007 MC ₂₆	16.7	X	10.50904	218.62074	95.78562	11.04184	0.1748278	0.28590262	2.2820437	21	10 2.8	18.9
231462 2007 OL ₇	15.4	X	182.89280	259.51536	109.34091	11.29448	0.0753811	0.18729249	3.0254442	21	3 18.5	20.1
231463 2007 PO	15.0	X	77.82644	294.65104	129.76164	17.95557	0.0961314	0.17759997	3.1345422	21	1 22.0	19.1
231464 2007 PR ₄	13.4	X	357.91184	213.75035	173.96725	10.16865	0.0583193	0.08207020	5.2441977	21	10 31.7	20.1
231465 2007 PS ₄	16.5	X	44.39777	51.53869	207.64577	4.39035	0.1222007	0.21141768	2.7906702	21	8 16.5	19.9
231466 2007 PJ ₁₃	16.1	X	100.94027	165.69053	124.97472	12.59407	0.1918078	0.22948249	2.6422243	21	12 14.5	20.5
231467 2007 PZ ₁₉	14.5	X	176.75176	8.95001	326.02912	15.44558	0.1398566	0.17747452	3.1360191	21	2 2.2	19.5
231468 2007 PT ₂₆	14.8	X	329.44282	206.36697	307.04870	26.72741	0.1573188	0.17555416	3.1588473	21	—	—
231469 2007 PR ₃₄	15.5	X	83.48191	109.45735	147.23076	13.83342	0.1372681	0.21894912	2.7263017	21	10 13.4	19.6
231470 Bedding	16.2	X	122.87824	64.01937	53.67060	2.62335	0.0651751	0.19593185	2.9358421	21	5 18.9	20.3
231471 2007 TP ₁₈₅	15.2	X	35.54464	252.30759	135.50335	3.23858	0.0584295	0.15317036	3.4595496	21	12 28.3	20.0
231472 2007 TX ₂₄₁	15.4	X	352.21038	266.01039	280.88554	3.86304	0.0940138	0.18053551	3.1004707	21	2 15.0	19.3
231473 2007 TL ₄₀₈	15.5	X	220.15094	298.04541	77.22281	10.89899	0.0445344	0.18131556	3.0915717	21	5 4.9	20.1
231474 2007 UX ₈₂	17.4	X	79.45455	16.44648	228.67159	2.01754	0.1445308	0.27288896	2.3540304	21	9 24.9	20.4
231475 2007 VO ₃	15.2	X	327.40823	275.74300	93.18828	10.86478	0.1703828	0.20489568	2.8495800	21	9 8.4	18.4
231476 2007 VC ₂₆₁	16.5	X	279.11587	143.07038	29.39503	9.60440	0.1548617	0.22107260	2.7088156	21	—	—
231477 2008 EH ₁₄₉	17.2	X	202.01742	352.22969	342.34996	6.46405	0.2065748	0.29196571	2.2503400	21	2 10.7	20.8
231478 2008 GB ₆₃	16.3	X	62.30435	286.57824	223.28196	3.10513	0.0474399	0.22679197	2.6630803	21	4 4.4	19.7
231479 2008 HQ ₄₅	16.7	X	234.86989	118.17905	199.83334	7.96423	0.2172999	0.21495937	2.7599325	21	2 22.3	21.5
231480 2008 HO ₆₁	16.6	X	339.68610	27.29499	234.81388	1.45134	0.1582165	0.22533995	2.6745081	21	4 22.4	19.1
231481 2008 JZ ₂₅	17.2	X	343.41657	34.62241	230.50008	7.06784	0.1544042	0.30085669	2.2057838	21	4 23.5	19.1
231482 2008 KL	17.3	X	322.74559	52.96340	235.18488	1.45628	0.1849908	0.29952259	2.2123287	21	4 16.4	19.2
231483 2008 OD ₁₈	14.8	X	149.07398	9.96769	268.21733	16.87157	0.1419053	0.17382847	3.1797193	21	12 29.4	20.0
231484 2008 OZ ₁₈	15.0	X	111.85413	275.06411	49.29278	27.13576	0.1543841	0.17909126	3.1171171	21	—	—
231485 2008 OA ₂₂	17.5	X	124.14970	359.25311	161.85971	3.28883	0.0389729	0.29584686	2.2306156	21	7 13.3	20.3
231486 Capetearrock	17.3	X	305.27497	170.13114	146.36002	4.86792	0.1945240	0.29260465	2.2470629	21	5 2.9	19.9
231487 2008 PQ ₃	16.1	X	20.23309	117.64133	233.95872	9.04950	0.0836124	0.24194115	2.5507206	21	11 14.3	19.0
231488 2008 PO ₆	15.9	X	98.22272	202.73501	159.56558	8.17519	0.1697841	0.25656105	2.4528758	21	—	—
231489 2008 PG ₁₅	17.3	X	46.10425	203.78963	153.89263	4.00204	0.1903993	0.24432070	2.5341318	21	—	—
231490 2008 QO ₇	16.3	X	300.19301	287.59768	138.54726	12.40818	0.1876646	0.23201146	2.6229887	21	10 10.1	19.2
231491 2008 QL ₁₇	16.8	X	286.28883	182.64662	174.69589	4.05797	0.1082654	0.21557639	2.7546637	21	6 19.3	20.5
231492 2008 QR ₁₈	15.6	X	126.47583	84.10620	274.87514	12.87399	0.2442930	0.18017147	3.1046457	21	1 19.8	20.4
231493 2008 QT ₁₉	13.2	X	345.50624	198.82009	195.69318	17.63884	0.0683252	0.08462175	5.1382439	21	10 22.9	19.8
231494 2008 QJ ₂₄	15.5	X	247.20469	155.99832	304.02758	13.07440	0.0545466	0.22609187	2.6685751	21	9 15.0	19.4
231495 2008 QJ ₂₇	16.1	X	256.78942	266.82978	107.37405	5.88020	0.1763824	0.21367127	2.7710135	21	5 27.9	20.3
231496 2008 QU ₂₉	16.9	X	152.71119	350.87801	342.63300	4.77187	0.1178614	0.26250426	2.4157120	21	—	—
231497 2008 QU ₃₃	16.5	X	6.34640	165.67902	161.73574	3.28812	0.1298467	0.22751900	2.6574041	21	9 22.5	19.4
231498 2008 QK ₃₈	16.4	X	333.35819	263.11255	118.78252	12.30114	0.2054855	0.23044170	2.6348871	21	10 15.2	19.0
231499 2008 QQ ₄₀	17.0	X	293.00323	12.14230	234.30656	2.17170	0.0499358	0.26975156	2.3722479	21	1 31.9	20.1
231500 2008 QY ₄₂	15.0	X	170.35970	25.32311	245.54283	8.97220	0.0479140	0.17202264	3.2019336	21	—	—
231501 2008 QV ₄₃	15.1	X	165.28621	333.32087	60.69533	11.30407	0.1517869	0.19772074	2.9181071	21	4 3.3	19.9
231502 2008 RD ₂	16.2	X	297.53044	216.54707	154.38669	2.48625	0.0958718	0.21963336	2.7206365	21	7 25.9	19.4
231503 2008 RN ₁₂	16.2	X	74.80037	270.02020	150.53248	6.08497	0.1464606	0.17881031	3.1203814	21	1 18.5	20.1
231504 2008 RZ ₁₄	16.3	X	132.60648	72.60786	327.66134	8.31781	0.1288292	0.18942260	3.0027201	21	3 2.0	20.8
231505 2008 RV ₃₃	16.3	X	65.96911	339.90864	120.95246	3.57736	0.0384781	0.20960789	2.8067106	21	6 5.5	19.9
231506 2008 RB ₄₃	16.9	X	137.71148	103.96145	169.81654	4.20625	0.0359210	0.24197106	2.5505104	21	12 25.3	20.4
231507 2008 RN ₄₄	16.1	X	139.12848	56.62646	24.37995	2.30755	0.0513905	0.19963376	2.8994351	21	4 19.7	20.2
231508 2008 RD ₅₁	17.3	X	353.08190	283.73769	249.54370	4.09932	0.0625227	0.26953789	2.3735015	21	1 13.6	20.1
231509 2008 RT ₆₉	13.0	X	312.60200	230.31745	195.78913	7.68310	0.0899832	0.08072174	5.3024393	21	10 13.3	19.5
231510 2008 RC ₈₄	16.7	X	249.11827	168.34756	252.12974	2.54101	0.0983160	0.22099436	2.7094549	21	7 26.5	20.4
231511 2008 RK ₁₀₂	16.1	X	138.18975	264.82211	134.04195	3.21724	0.1055790	0.18868137	3.0105791	21	3 5.8	20.6
231512 2008 RD ₁₀₉	15.1	X	79.60111	323.12797	77.15810	14.19571	0.1618436	0.17677050	3.1443401	21	1 3.6	19.1
231513 2008 RA ₁₁₃	16.0	X	199.44745	81.27457	320.02508	5.12885	0.0648696	0.20346266	2.8629443	21	5 9.9	20.3
231514 2008 RW ₁₁₃	16.2	X	1									

ELEMENTS AND OPPOSITION DATES IN 2021

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2021 JULY 5.0 TT

Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>
231521 2008 SF ₄₃	16.6 ^m	X	79.29476	276.60277	157.25255	1.18790	0.1855760	0.18297067	3.0728998	21	2 15.9	20.2
231522 2008 SD ₄₄	16.2	X	177.06572	25.79745	199.60574	4.96539	0.0602313	0.23696690	2.5862922	21	12 8.4	19.9
231523 2008 SX ₄₅	16.5	X	44.41863	154.89063	183.74677	5.05171	0.2461060	0.23628245	2.5912843	21	12 23.1	20.1
231524 2008 SA ₅₆	16.6	X	351.16004	158.91726	188.22020	3.99567	0.0836153	0.22327162	2.6910000	21	9 19.7	19.7
231525 2008 SX ₈₁	16.2	X	255.88441	85.82150	15.63986	6.57680	0.1306829	0.22211310	2.7003492	21	9 24.5	19.7
231526 2008 SV ₈₂	15.9	X	18.09986	47.27584	310.53510	12.17245	0.1790555	0.23248694	2.6194112	21	11 29.8	19.2
231527 2008 SU ₈₄	15.6	X	112.00834	357.00492	44.06043	2.96007	0.0436245	0.18055507	3.1002467	21	1 30.9	19.9
231528 2008 SV ₁₀₃	16.4	X	158.38139	97.04299	17.55351	2.08686	0.0244315	0.20644389	2.8353153	21	6 23.2	20.4
231529 2008 SG ₁₀₅	16.2	X	226.76799	347.45202	50.17730	2.80184	0.0745129	0.20455977	2.8526986	21	6 3.2	20.5
231530 2008 SR ₁₀₅	16.2	X	155.72408	27.87180	48.01349	2.57950	0.0885757	0.19692234	2.9259892	21	5 5.9	20.7
231531 2008 SL ₁₀₆	16.5	X	283.42981	227.83617	152.11531	1.70529	0.0894336	0.21381372	2.7697825	21	7 18.8	20.1
231532 2008 SK ₁₂₆	16.6	X	114.81383	143.28975	327.65966	2.50836	0.0805376	0.19588303	2.9363298	21	5 1.6	20.8
231533 2008 SR ₁₂₈	16.6	X	145.42942	177.19441	0.32784	5.35954	0.0130817	0.21694207	2.7430909	21	8 30.1	20.3
231534 2008 SS ₁₃₄	16.2	X	258.21921	255.76125	243.00228	4.65212	0.0948365	0.23618741	2.5919795	21	11 21.8	19.6
231535 2008 ST ₁₄₇	16.7	X	323.13042	153.45644	193.80145	2.02648	0.1038252	0.21921834	2.7240691	21	8 1.2	19.9
231536 2008 SV ₁₅₆	16.6	X	175.49183	57.10474	336.04877	0.98676	0.1457453	0.19852103	2.9102594	21	4 5.8	21.4
231537 2008 SB ₁₆₃	15.7	X	93.71572	299.00566	79.06999	2.15678	0.1657933	0.17604859	3.1529302	21	—	—
231538 2008 SO ₁₆₄	15.5	X	286.44933	219.87788	87.97738	3.28437	0.0466710	0.20292157	2.8680314	21	4 26.0	19.3
231539 2008 SG ₁₆₅	15.7	X	134.77431	206.91922	167.87770	4.82779	0.1054992	0.18276096	3.0752500	21	1 31.7	20.2
231540 2008 SU ₁₇₃	15.6	X	120.93364	97.34755	299.51433	12.77016	0.1136056	0.18636684	3.0354538	21	2 10.1	20.0
231541 2008 SF ₁₇₄	16.6	X	193.49362	242.74723	180.08519	1.94278	0.0562356	0.20318699	2.8655333	21	5 30.1	20.7
231542 2008 SV ₁₇₉	16.2	X	87.60293	85.52945	24.99290	3.13791	0.1315097	0.18900877	3.0071014	21	4 6.1	20.0
231543 2008 SR ₂₁₈	16.1	X	255.43998	70.43023	295.26515	2.80139	0.1159354	0.20957236	2.8070278	21	5 20.9	20.2
231544 2008 SO ₂₁₉	16.0	X	130.34475	15.34244	340.52744	4.73190	0.1545052	0.18054014	3.1004177	21	1 12.6	20.6
231545 2008 SR ₂₄₄	16.3	X	340.74916	194.65767	163.05939	6.56472	0.0639381	0.22445802	2.6815092	21	9 18.7	19.5
231546 2008 SU ₂₄₄	16.0	X	337.82519	317.51920	42.85188	6.74172	0.0343803	0.22401864	2.6850143	21	9 20.7	19.4
231547 2008 SU ₂₄₅	15.9	X	251.67456	287.28850	122.76058	5.66360	0.0678325	0.21359216	2.7716976	21	7 20.4	19.7
231548 2008 SO ₂₄₈	16.1	X	132.54865	112.50792	83.66974	2.80467	0.0075304	0.21943593	2.7222680	21	9 7.1	19.7
231549 2008 SS ₂₅₄	16.1	X	128.96405	27.29299	252.79402	8.81207	0.0485836	0.24191000	2.5509396	21	12 23.0	19.6
231550 2008 SV ₂₅₈	16.0	X	140.37530	264.72494	242.92943	6.40719	0.1638836	0.21087527	2.7954535	21	7 22.7	20.6
231551 2008 SJ ₂₆₆	15.5	X	317.64726	64.72654	124.56675	4.44434	0.0640200	0.17785405	3.1315562	21	1 8.4	19.7
231552 2008 SB ₂₆₉	15.4	X	143.37533	96.42880	278.27662	8.89350	0.0536773	0.18529315	3.0471685	21	2 2.2	19.9
231553 2008 SS ₂₇₄	16.6	X	181.01302	228.41471	20.03095	2.96709	0.0089505	0.21005604	2.8027171	21	6 17.0	20.3
231554 2008 SP ₂₉₆	16.8	X	142.33538	346.59182	124.68164	6.53093	0.0429531	0.28160832	2.3051847	21	5 29.3	19.7
231555 Christianeaurda	15.9	X	221.84891	37.86520	328.18925	4.03146	0.0517737	0.19699038	2.9253155	21	4 18.9	20.2
231556 2008 TT ₄	16.3	X	188.02049	262.38742	198.74398	4.28441	0.0188457	0.21323296	2.7748094	21	7 12.1	20.2
231557 2008 TQ ₂₇	15.9	X	4.73735	83.95994	13.86007	6.33302	0.1451555	0.17049251	3.2210627	21	—	—
231558 2008 TQ ₄₁	16.2	X	114.56915	77.70800	329.40156	9.86525	0.0834766	0.18417823	3.0594535	21	2 14.4	20.6
231559 2008 TC ₄₆	15.7	X	23.28446	186.39654	77.81364	5.53828	0.0591058	0.21026514	2.8008587	21	7 15.9	19.1
231560 2008 TV ₅₀	16.5	X	156.71831	250.87438	173.49922	2.02029	0.0738450	0.19714539	2.9237818	21	4 21.9	20.8
231561 2008 TH ₅₉	15.3	X	46.38800	37.86547	31.26371	8.89526	0.0355773	0.17392563	3.1785350	21	—	—
231562 2008 TE ₆₃	16.0	X	105.66082	105.88683	334.35958	0.29233	0.0294208	0.18861535	3.0112815	21	3 7.3	20.0
231563 2008 TR ₇₁	16.1	X	257.98633	26.02135	88.99521	4.86230	0.0562552	0.22675925	2.6633365	21	10 27.7	19.6
231564 2008 TA ₇₄	16.2	X	309.98060	339.16362	22.72312	6.06491	0.0563674	0.21463601	2.7627038	21	8 9.4	19.8
231565 2008 TP ₁₂₉	15.4	X	8.21476	134.95758	358.82311	8.06176	0.0475051	0.17849901	3.1240083	21	1 9.9	19.7
231566 2008 TQ ₁₄₆	16.2	X	19.42249	312.18188	141.75046	2.39321	0.1174818	0.17361684	3.1823026	21	—	—
231567 2008 TT ₁₆₃	16.4	X	284.08303	50.18189	280.81459	0.95669	0.0631450	0.20440004	2.8541846	21	5 19.2	20.2
231568 2008 TQ ₁₆₄	15.4	X	105.20691	200.71225	102.99002	16.21815	0.0943470	0.23692056	2.5866295	21	12 28.0	19.2
231569 2008 TU ₁₆₅	15.2	X	189.70838	219.24519	295.72924	14.38241	0.0632332	0.22040605	2.7142742	21	9 14.1	19.4
231570 2008 TF ₁₈₀	15.0	X	183.42107	236.03458	73.47931	12.03817	0.0765020	0.18303861	3.0721394	21	1 4.2	19.7
231571 2008 UP ₃	16.5	X	176.65409	290.57698	131.93822	2.90335	0.0870423	0.20040160	2.8920242	21	5 12.2	20.9
231572 2008 UN ₉	13.4	X	335.57696	41.69377	28.36249	4.57569	0.0232419	0.08474457	5.1332783	21	11 18.4	20.1
231573 2008 UK ₂₈	16.2	X	131.32655	36.77649	183.36625	2.75528	0.0093626	0.22189782	2.7020955	21	10 6.1	19.7
231574 2008 UF ₅₇	16.0	X	358.01687	118.76690	56.43280	6.87741	0.0894582	0.18321111	3.07202107	21	2 13.1	20.0
231575 2008 UO ₅₇	16.5	X	240.97538	172.76378	77.42237	2.22140	0.1436010	0.25537943	2.4604362	21	—	—
231576 2008 UX ₆₈	15.7	X	189.35238	305.47096	159.08727	7.76563	0.0271167	0.21184416	2.7869235	21	7 17.9	19.7
231577 2008 UQ ₉₄	16.0	X	5.64115	60.24661	312.22757	13.31108	0.1064524	0.23335637	2.6129009	21	11 17.6	19.4
231578 2008 UC ₁₅₅	16.1	X	341.99075	31.75482	181.91142	2.19779	0.0785390	0.18987478	2.9979510	21	3 6.9	20.1
231579 2008 UG ₁₇₀	15.1	X	27.57741	173.07309	266.17775	4.05028	0.1083058	0.17095322	3.2152731	21	—	—
231580 2008 UV ₁₈₁	16.0	X	182.50557	162.54078	172.23343	3.69889	0.0616516	0.18271295	3.0757887	21	1 31.2	20.6
231581 2008 UR ₁₉₆	15.7	X	272.62380	87.85731	131.60517	2.96320	0.0798799	0.17490004	3.1667184	21	—	—
231582 2008 US ₂₁₆	16.2	X	54.38039	349.90445	230.07757	1.06975	0.0182911	0.20732709	2.8272574	21	6 25.8	19.8
231583 2008 UY ₂₁₉	15.7	X	253.26766	297.06932	0.99908	2.04211	0.0461487	0.18803368	3.0174885	21	3 5.5	20.1
231584 2008 UG ₂₅₅	16.0	X	314.27666	178.28493	57.53708	4.05640	0.1291880	0.18602667	3.0391531	21	2 20.8	20.1
231585 2008 UH ₂₅₆	16.4	X	200.55898	236.66257	192.07008	1.71247	0.0500970	0.20299229	2.8673653	21	6 14.9	20.7
231586 2008 UP ₂₆₆	15.8	X	139.19701	312.61230	13.18581	4.51618	0.1119263	0.17163040	3.2068101	21	—	—
231587 2008 UL ₂₇₄	15.7	X	147.05741	12.95917	3.62107	1.35551	0.0677055	0.18116356	3.0933008	21	2 13.4	20.3
231588 2008 UH ₂₇₇	16.8	X	159.78358	210.37563	54.95590	0.70431	0.1757002	0.24236343	2.5477569	21	—	—
231589 2008 UZ ₃₁₁	14.8	X	240.49455	1.42114	270.86783	13.07824	0.0760273	0.17829152	3.1264315	21	1 16.9	19.6
231590 2008 UZ ₃₁₅	15.9	X	243.71413	82.06574	265.34084	4.98952	0.0776820	0.19940297	2.9016718	21	4 17.9	20.2
231591 2008 UP ₃₃₆	16.0	X	299.13782	288.81373	10.20069	2.23743	0.0563617	0.19694083	2.9258061	21	4 28.5	19.9
231592 2008 UG ₃₄₆	16.9	X	108.24297	340.94018	104.84058	3.68673	0.1687235	0.25634985	2.4542229	21	3 31.1	20.0
231593 2008 UH ₃₅₃	15.8	X	258.52678	129.86353	134.05904	1.78653	0.1262439	0.17903089	3.1178178	21	1 23.4</	

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Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>
231601 2009 BW ₆₈	17.2	X	164.10380	216.94318	178.25896	1.36791	0.1943798	0.25796919	2.4439416	21	3 26.7	21.2
231602 2009 BD ₁₃₁	17.0	X	357.20244	304.86782	117.08179	6.95406	0.0840248	0.29894497	2.2151776	21	—	—
231603 2009 CD ₁₆	17.1	X	139.13870	204.04657	218.58250	1.90945	0.1821675	0.25677224	2.4515307	21	4 4.8	20.8
231604 2009 FG ₇₄	17.4	X	28.13440	293.45083	345.23842	3.20849	0.0734057	0.26119229	2.4237946	21	8 17.3	19.9
231605 2009 HN ₆₀	16.2	X	345.50935	59.34934	153.59249	4.40614	0.1643642	0.23769982	2.5809731	21	2 19.0	19.0
231606 2009 HN ₁₀₂	15.9	X	131.10028	127.69086	79.12288	10.34627	0.0834647	0.18639663	3.0351304	21	9 26.0	20.6
231607 2009 JQ ₁₂	17.0	X	180.48081	128.88475	59.85497	2.65966	0.0524920	0.27602208	2.3361828	21	11 2.0	19.9
231608 2009 QK ₄	17.2	X	50.84780	53.16997	312.01524	5.11327	0.1543713	0.26435695	2.4044120	21	—	—
231609 2009 RV	16.0	X	76.73421	190.48495	191.54129	9.35036	0.1899988	0.18801410	3.0176980	21	—	—
231610 2009 RK ₁₂	14.0	X	314.83109	315.84510	109.44477	0.59889	0.1221976	0.08268599	5.2181282	21	10 12.5	20.5
231611 2009 RC ₆₂	15.2	X	42.98371	217.34462	199.38341	11.87619	0.1646194	0.18312014	3.0712274	21	—	—
231612 2009 RO ₆₄	13.3	X	224.71377	312.94235	205.96471	4.21055	0.0142730	0.08281368	5.2127633	21	10 25.2	20.1
231613 2009 SQ ₂₅	12.9	X	298.01179	262.34528	196.40852	13.05174	0.1196099	0.08614361	5.0775475	21	10 29.5	19.4
231614 2009 SY ₃₈	17.2	X	89.92586	340.22208	2.98498	4.91548	0.1771264	0.26656893	2.3910924	21	—	—
231615 2009 SK ₇₈	12.7	X	296.30200	242.07672	201.99503	25.43267	0.0980277	0.08397669	5.1645230	21	10 11.9	19.4
231616 2009 SR ₉₆	17.6	X	292.07914	253.53439	48.66211	4.83484	0.2238407	0.30182033	2.2010862	21	3 21.3	20.5
231617 2009 SJ ₁₀₂	17.7	X	164.01046	152.75807	216.33894	19.64839	0.1701377	0.37477012	1.9052826	21	1 25.9	20.5
231618 2009 SF ₁₀₄	17.3	X	135.74862	204.18925	88.54552	4.00683	0.2320936	0.26944984	2.3740185	21	—	—
231619 2009 SJ ₁₀₈	17.6	X	242.30858	210.28231	161.58300	1.47586	0.2124246	0.30541170	2.1837970	21	5 1.8	20.9
231620 2009 SY ₁₂₈	13.0	X	315.75400	6.51335	67.93082	3.10530	0.1245135	0.08300735	5.2046519	21	10 24.4	19.3
231621 2009 SB ₁₃₂	13.5	X	224.20176	0.52426	165.34843	5.36324	0.0639181	0.08404821	5.1615926	21	10 28.9	20.5
231622 2009 SX ₁₅₉	16.2	X	288.61641	307.25942	0.58334	8.27260	0.1174736	0.22035136	2.7147232	21	4 13.3	20.0
231623 2009 SR ₂₀₇	12.9	X	310.66871	237.18884	205.95264	18.69087	0.0986082	0.08484941	5.1290486	21	10 29.9	19.4
231624 2009 SN ₂₃₂	16.9	X	51.99785	357.30332	31.34961	11.54052	0.1787386	0.26723749	2.3871028	21	—	—
231625 2009 SO ₂₅₅	14.7	X	359.46424	319.47434	106.08311	27.31652	0.1458020	0.17235173	3.1978563	21	—	—
231626 2009 SU ₂₅₈	15.6	X	151.52058	223.92166	271.48745	11.34919	0.0657432	0.21297474	2.7770518	21	7 13.4	19.8
231627 2009 SU ₃₄₅	16.9	X	310.98491	55.34438	29.10887	3.64923	0.1764119	0.25439694	2.4667670	21	11 29.9	19.0
231628 2009 SY ₃₅₁	16.3	X	19.18810	196.94418	296.31400	3.18554	0.2077062	0.17934787	3.1141432	21	1 15.9	19.6
231629 2009 TH ₁₃	16.2	X	17.40774	120.25315	118.88824	4.81550	0.0411669	0.22290790	2.6939265	21	6 1.0	19.6
231630 2009 TW ₂₄	15.5	X	4.74824	228.84863	203.85529	8.99707	0.1968068	0.17872794	3.1213401	21	—	—
231631 2009 TV ₄₁	12.8	X	333.39647	123.24359	314.94292	9.51938	0.0589693	0.08508502	5.1195759	21	11 22.3	19.4
231632 2009 UZ ₁₂	15.7	X	105.36206	342.76751	55.89341	9.35898	0.0896365	0.19528293	2.9423423	21	1 24.5	19.8
231633 2009 UV ₂₆	15.4	X	124.82494	269.97349	65.32703	11.09278	0.137032	0.18374065	3.0643089	21	—	—
231634 2009 UD ₃₆	15.1	X	250.98054	343.72219	210.83382	10.20602	0.0338543	0.17914205	3.1165279	21	—	—
231635 2009 UV ₇₁	16.0	X	346.02590	251.28644	52.26205	4.32967	0.0453119	0.22803527	2.6533917	21	7 13.3	19.3
231636 2009 UP ₈₄	13.4	X	299.13605	24.64182	84.68874	6.53547	0.0276824	0.08131505	5.2766153	21	11 20.5	20.3
231637 2009 UK ₈₈	15.3	X	54.43726	214.58279	203.64357	11.27389	0.0792651	0.18426326	3.0585122	21	—	—
231638 2009 UY ₈₈	15.8	X	134.17794	190.91522	143.68558	2.39138	0.1364203	0.18809071	3.0168785	21	—	—
231639 2009 UC ₁₂₇	16.2	X	92.38119	284.59930	246.16139	6.43423	0.0846504	0.21797331	2.7344323	21	6 21.1	19.9
231640 2009 UJ ₁₂₉	17.4	X	150.22680	333.66169	6.88794	5.52215	0.1772548	0.27743388	2.3282506	21	—	—
231641 2009 UO ₁₃₈	16.2	X	45.47193	312.78531	82.24519	24.82967	0.2651594	0.26402216	2.4064442	21	—	—
231642 2009 UY ₁₄₀	16.0	X	244.97586	280.35551	97.28443	13.76768	0.1749890	0.21166221	2.7885204	21	5 22.6	20.5
231643 2009 VJ ₂	15.7	X	159.81143	222.91846	256.25933	24.26604	0.3258718	0.21513311	2.7584464	21	7 6.9	21.0
231644 2009 VV ₆₁	16.6	X	22.96655	253.20666	64.14553	3.61221	0.0963341	0.23817145	2.5756477	21	10 5.4	19.5
231645 2009 VQ ₈₈	16.2	X	295.30614	339.64866	304.67433	4.57582	0.0324671	0.20391420	2.8587164	21	4 5.4	20.3
231646 2009 VX ₁₀₃	15.6	X	150.83136	252.42610	94.55252	11.67729	0.1239010	0.18815214	3.0162218	21	1 18.4	20.1
231647 2009 VD ₁₁₀	15.4	X	94.99596	312.70825	61.85257	12.47108	0.1286470	0.18143616	3.0902017	21	—	—
231648 2009 VV ₁₁₂	16.0	X	46.19090	171.22729	214.37354	1.05184	0.0738144	0.17128990	3.2110585	21	—	—
231649 Korotkiy	16.0	X	276.10505	186.42347	207.19846	9.49459	0.0186042	0.22920936	2.6443229	21	8 4.7	19.6
231650 2009 WZ ₈	16.3	X	109.18334	84.90961	68.72107	7.14044	0.0066547	0.21794287	2.7346868	21	6 8.5	19.9
231651 2009 WE ₉	17.0	X	357.89498	322.12384	139.90917	2.07977	0.1162873	0.26198902	2.4188782	21	—	—
231652 2009 WE ₂₄	16.8	X	258.24606	119.77811	241.34862	4.26308	0.2028596	0.30404855	2.1903193	21	5 2.9	20.0
231653 2009 WH ₂₄	16.7	X	338.21920	190.94677	175.72309	2.68791	0.2504976	0.23968543	2.6566991	21	9 27.3	18.2
231654 2009 WD ₁₆₃	15.9	X	149.58392	254.30450	59.02540	5.75560	0.1818500	0.18230517	3.0803736	21	—	—
231655 2009 WW ₁₆₄	15.5	X	132.49717	59.61881	260.59849	3.99090	0.1329672	0.17802285	3.1295763	21	—	—
231656 2009 WT ₁₆₅	16.3	X	329.59834	207.60139	36.22831	2.50802	0.0135015	0.20131625	2.8832579	21	4 3.9	20.3
231657 2009 WE ₁₆₆	15.9	X	223.17411	32.26907	265.53426	3.09991	0.0256882	0.18978750	2.9988700	21	1 30.0	20.2
231658 2009 WG ₁₈₃	17.5	X	247.34719	308.88096	84.71983	7.40527	0.0965239	0.30721766	2.1752304	21	6 17.7	20.0
231659 2009 WE ₂₃₇	15.4	X	44.46070	295.57744	200.38109	7.89854	0.0263572	0.19642183	2.9309577	21	2 22.1	19.5
231660 2009 XK ₂	17.1	X	145.10523	221.96082	268.06925	5.36624	0.1011652	0.29509354	2.2344102	21	7 2.3	20.1
231661 2009 XQ ₁₉	15.1	X	359.26894	45.09640	113.54804	10.08805	0.0926553	0.17969807	3.1100958	21	1 23.1	19.1
231662 2009 XO ₂₁	15.4	X	107.02333	285.13999	281.89013	15.00627	0.0841964	0.21862186	2.7290218	21	8 20.2	19.6
231663 2009 XA ₂₂	15.0	X	71.68519	24.16762	85.91526	12.35205	0.0634698	0.18932601	3.0037413	21	3 11.4	19.2
231664 2009 YL ₆	13.1	X	335.88002	349.97372	48.67649	4.51728	0.0449968	0.08526574	5.1123392	21	10 16.2	19.6
231665 7602 P-L	15.5	X	91.68851	359.12878	28.51300	6.80062	0.2664662	0.18273540	3.0755368	21	1 21.2	19.5
231666 Aisymnos	12.7	X	294.31963	207.34368	237.21253	5.26801	0.0531827	0.08061422	5.3071531	21	10 13.9	19.5
231667 1981 EU ₅	17.0	X	46.96532	251.84418	252.27102	6.03939	0.1347044	0.27059644	2.3673074	21	2 26.4	19.2
231668 1981 EK ₂₈	15.9	X	286.48242	158.53598	351.73595	14.50028	0.1092274	0.23796041	2.5790885	21	—	—
231669 1993 FC ₅₀	15.7	X	289.85314	1.68069	186.19259	17.68786	0.0976389	0.23733008	2.5836530	21	—	—
231670 1993 UN ₅	15.7	X	47.98157	322.09997	74.75601	7.50566	0.1841218	0.18272732	3.0756274	21	—	—
231671 1994 AH ₁₀	15.8	X	172.48035	54.78563	325.08205	7.72430	0.1120387	0.18752726	3.0229185	21	3 15.6	20.6
231672 1994 EN ₄	15.9	X	193.85618	112.75765	172.12091	5.54372	0.1511180	0.24616030	2.5214907	21	—	—
231673 1994 LD ₆	14.8	X	33.21159	125.49925	68.74390	16.46612	0.2547888	0.18143577	3.0902061	21	5 17.8	17.8
231674 1994 PG ₆	16.4	X	102.82813	332.07115	328.85664	3.37348	0.2218327	0.22887479	2.6468992</			

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Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>
231681 1995 SX ₃₉	15.7	X	210.23896	320.26176	9.79121	3.58647	0.1049999	0.17407802	3.1766797	21	2 25.9	20.6
231682 1995 UK ₁₆	16.4	X	177.12915	54.19204	114.56533	3.28106	0.1386435	0.22230761	2.6987738	21	9 24.9	20.6
231683 1995 UD ₆₇	17.9	X	71.77134	283.14631	331.51976	2.97975	0.1208365	0.30294369	2.1956416	21	9 27.9	20.5
231684 1996 BV ₇	16.0	X	33.99764	354.25658	297.47710	7.90812	0.1147789	0.21456517	2.7633119	21	9 10.9	19.6
231685 1996 GL ₅	15.8	X	111.20762	355.30747	161.96658	6.11048	0.0153158	0.20331623	2.8643188	21	6 18.3	19.8
231686 1996 TG ₁₆	15.1	X	16.14931	203.48407	340.76336	15.60351	0.0312835	0.18142309	3.0903501	21	3 18.2	19.3
231687 1996 TV ₄₇	16.2	X	200.61845	255.40378	27.34000	2.62870	0.2025771	0.25138255	2.4864475	21	—	—
231688 1996 VG ₁	16.8	X	323.16656	37.84673	38.58174	4.03331	0.2240668	0.23790383	2.5794974	21	12 9.2	18.8
231689 1996 VV ₃₇	17.1	X	350.56605	254.01887	159.46192	5.34489	0.2656228	0.23877122	2.5732466	21	—	—
231690 1997 GA ₂₉	16.6	X	70.05479	88.94530	183.85290	5.38339	0.0165559	0.22042365	2.7141296	21	9 26.2	20.1
231691 1997 RX ₁₀	15.8	X	23.30275	58.33103	180.31531	4.49246	0.0542306	0.19902432	2.9053511	21	6 10.4	19.5
231692 1997 WK ₁₄	13.0	X	298.67383	31.83224	65.67915	13.05219	0.0379242	0.08038644	5.3171738	21	11 7.4	19.9
231693 1998 DR ₃₃	15.7	X	261.74104	7.58712	163.50461	13.53464	0.2000752	0.24225286	2.5485321	21	12 25.3	18.9
231694 1998 HJ ₁₆	16.4	X	212.99310	160.46948	87.10901	5.49032	0.1779474	0.24078381	2.5588875	21	—	—
231695 1998 HY ₄₁	16.5	X	209.93644	157.95656	67.10164	5.98809	0.1652062	0.23850852	2.5751357	21	—	—
231696 1998 HV ₁₂₇	16.0	X	182.92142	140.02379	15.05682	11.82275	0.1274805	0.22966216	2.6408461	21	9 16.0	20.1
231697 1998 MW ₂₃	16.4	X	12.31355	10.33429	290.44527	3.37446	0.0845510	0.21553248	2.7550378	21	8 19.1	19.7
231698 1998 QC ₂	15.1	X	350.99423	18.77030	305.85085	13.62936	0.2018506	0.21494064	2.7600928	21	8 15.4	17.6
231699 1998 QD ₈₅	16.4	X	202.39145	136.34142	251.16126	4.50029	0.2587949	0.28656261	2.2785385	21	4 16.1	20.3
231700 1998 SU ₁₂	16.4	X	140.97308	251.59152	156.21778	20.74011	0.3013637	0.27876625	2.3208260	21	4 1.4	20.3
231701 1998 SB ₂₁	17.6	X	176.03991	172.34711	216.83217	0.29945	0.1233361	0.28284409	2.2984654	21	3 23.4	20.9
231702 1998 SJ ₄₅	17.2	X	161.04996	234.70336	180.24022	4.80438	0.1506898	0.28353918	2.2947074	21	4 13.4	20.5
231703 1998 SE ₄₆	16.1	X	347.62246	309.11331	16.96041	3.69513	0.1002419	0.20903946	2.8117964	21	8 15.6	19.3
231704 1998 SP ₁₀₃	17.1	X	158.85827	14.46781	26.62361	6.54748	0.1925091	0.28186972	2.3037593	21	3 28.2	20.5
231705 1998 SX ₁₁₈	15.1	X	77.16681	337.04384	16.23720	13.28271	0.1132872	0.18010612	3.1053965	21	—	—
231706 1998 SH ₁₃₂	15.4	X	273.52917	12.45644	7.91593	15.50368	0.1444653	0.20619554	2.8375915	21	6 28.7	19.7
231707 1998 TP	15.6	X	171.67564	69.58978	44.77238	22.98568	0.2634127	0.28975292	2.1671825	21	7 15.8	20.0
231708 1998 UJ ₃₁	17.0	X	180.67877	232.66381	169.20770	1.46465	0.1837361	0.19645684	2.9306094	21	4 22.8	21.9
231709 1998 UK ₄₁	16.6	X	218.04634	290.78760	82.31462	4.39582	0.2566521	0.28586488	2.2822446	21	4 13.6	20.6
231710 1998 UL ₄₁	15.8	X	41.83097	254.10275	180.39597	9.92577	0.2841725	0.18283152	3.0744587	21	—	—
231711 1998 VS ₅₆	16.7	X	167.05423	188.01413	207.46180	5.86197	0.2174172	0.27982916	2.3149453	21	3 28.2	20.3
231712 1998 WZ ₄	15.2	X	92.23679	259.52879	100.37463	28.15881	0.3237768	0.22451887	2.6810247	21	—	—
231713 1998 YQ ₂₀	16.7	X	66.26956	56.44592	91.86630	4.76201	0.1146854	0.27431901	2.3458421	21	4 14.0	19.1
231714 1999 AZ ₁₂	15.9	X	76.90452	167.04873	298.11011	10.82191	0.1962821	0.18379953	3.0636545	21	3 19.6	20.0
231715 1999 AB ₁₄	17.6	X	354.58579	118.65385	102.65503	2.37985	0.1374369	0.27306863	2.3529977	21	3 16.9	19.9
231716 1999 BT ₂	15.5	X	14.16036	144.74689	322.37316	23.85419	0.3407716	0.26408328	2.4060729	21	—	—
231717 1999 CK ₉	15.5	X	350.77885	229.28791	313.53240	16.15785	0.1962074	0.17884327	3.1199980	21	1 29.5	19.0
231718 1999 CV ₁₁	16.7	X	333.56284	266.66382	301.69312	17.73836	0.0591421	0.35524539	1.9744694	21	1 15.6	18.7
231719 1999 CS ₅₇	15.9	X	353.23660	229.70466	346.28026	10.23400	0.2112295	0.26816289	2.3816079	21	2 24.2	18.2
231720 1999 CF ₇₈	15.4	X	26.79908	237.63864	299.51879	8.61201	0.2276828	0.18110665	3.0939487	21	3 28.9	18.6
231721 1999 CG ₇₈	14.9	X	275.78282	280.93467	325.06235	15.03266	0.1649701	0.17444319	3.1722449	21	1 19.3	19.9
231722 1999 CB ₁₁₅	15.2	X	22.07530	248.59601	288.42326	8.03024	0.1704624	0.18082719	3.0971356	21	3 17.4	18.7
231723 1999 CH ₁₃₇	16.3	X	260.97836	34.17803	215.69073	0.63665	0.1324947	0.17424603	3.1746373	21	1 9.9	21.2
231724 1999 CY ₁₄₆	17.4	X	43.38129	272.34554	212.01603	0.62487	0.1427676	0.26640557	2.3920698	21	1 24.9	19.6
231725 1999 CL ₁₅₆	17.4	X	306.35742	79.69225	154.88105	2.41332	0.1446033	0.26462731	2.4027741	21	1 21.3	20.6
231726 1999 EU	17.3	X	345.77467	267.81082	342.67177	2.28587	0.1546845	0.27269331	2.3551562	21	4 9.2	19.4
231727 1999 EO ₁	16.7	X	209.17744	354.72592	337.13779	5.91960	0.1385408	0.26618539	2.3933887	21	2 14.9	20.5
231728 1999 EE ₇	16.1	X	100.76823	126.75604	6.85899	26.29338	0.0926296	0.27317685	3.3523763	21	4 27.9	19.4
231729 1999 ER ₁₄	15.4	X	129.59598	43.62645	330.01674	8.49530	0.0679445	0.17611928	2.1520864	21	1 23.9	20.0
231730 1999 FL ₁₂	17.3	X	294.63681	19.77521	199.24309	0.79680	0.1323091	0.25959346	2.4337365	21	—	—
231731 1999 FT ₆₆	17.1	X	309.51036	251.23231	329.22739	4.68924	0.0639887	0.26398380	2.4066773	21	1 19.5	20.1
231732 1999 GD ₇	16.6	X	44.60535	268.46535	161.50551	6.39085	0.0972060	0.25650698	2.4532205	21	—	—
231733 1999 GU ₅₄	16.9	X	280.63124	246.64608	5.54645	2.25061	0.1690130	0.26185995	2.4196729	21	1 14.4	20.6
231734 1999 KQ ₂	17.4	X	314.50073	27.34758	164.92094	1.40273	0.1392269	0.25751047	2.4468431	21	—	—
231735 1999 LE ₁₅	14.8	X	22.78768	53.28083	119.06836	16.86472	0.1710999	0.17485855	3.1672193	21	3 25.7	18.6
231736 1999 MD	15.8	X	314.79917	230.21280	75.82658	6.30506	0.1419802	0.18038504	3.1021946	21	5 19.6	19.7
231737 1999 NA ₅₄	16.3	X	146.48338	128.26445	164.17427	12.66699	0.2925098	0.24187253	2.5512030	21	—	—
231738 1999 RK ₂₄	15.8	X	85.08036	339.52162	359.32796	11.23830	0.1694745	0.23493640	2.6011726	21	—	—
231739 1999 RA ₁₀₆	16.0	X	359.09435	50.02627	304.53642	7.85644	0.1707792	0.22586498	2.6703619	21	10 16.6	18.9
231740 1999 RD ₁₁₁	15.7	X	301.55278	56.20260	339.62358	16.58464	0.1845017	0.22075879	2.7113820	21	8 25.3	18.6
231741 1999 RX ₁₄₁	15.9	X	357.96122	86.56755	285.62008	1.68866	0.1787131	0.22841793	2.6504274	21	11 14.5	18.4
231742 1999 RC ₁₅₆	16.2	X	122.13399	9.30337	304.27079	4.74418	0.3061454	0.23923492	2.5699203	21	—	—
231743 1999 RL ₁₆₈	15.7	X	53.13725	10.08038	347.09774	10.38495	0.0792409	0.23358493	2.6111962	21	—	—
231744 1999 RT ₁₉₅	15.6	X	70.79487	22.11619	305.48332	13.12914	0.1570532	0.23350447	2.6117960	21	12 27.6	19.5
231745 1999 RR ₂₁₄	14.6	X	232.43049	265.96766	154.89657	8.95036	0.1740273	0.12463565	3.9692447	21	6 30.8	20.8
231746 1999 TO ₄₉	16.7	X	112.49940	251.61221	43.28733	4.37457	0.0642400	0.23187800	2.6239951	21	12 21.9	20.6
231747 1999 TF ₅₂	16.5	X	66.23903	23.51076	272.08740	1.91006	0.1614102	0.22625800	2.6672686	21	11 10.9	20.3
231748 1999 TR ₁₃₇	17.4	X	40.09281	70.72621	355.51545	3.21972	0.2059826	0.23598366	2.5934712	21	—	—
231749 1999 TN ₁₅₂	14.5	X	270.94232	331.23410	48.57472	6.66549	0.3155128	0.12432556	3.9758418	21	6 3.6	20.7
231750 1999 TE ₁₅₈	17.6	X	315.07774	68.43013	320.06165	2.96915	0.1875355	0.31180450	2.1538451	21	9 20.1	18.9
231751 1999 TA ₁₆₇	15.8	X	293.34322	146.20594	232.01891	7.91515	0.0643686	0.21877776	2.7277251	21	7 31.8	19.5
231752 1999 TF ₁₇₃	16.2	X	214.42566	152.32696	262.74980	2.42907	0.1890852	0.21134732	2.7912895	21	6 5.6	20.6
231753 1999 TA ₁₉₉	17.6	X	147.30817	20.52905	353.68903	2.97880	0.1832828	0.28921526	2.2645848	21	2 7.1	20.5
231754 1999 TL ₂₀₂	15.8	X	230.38957	244.73732	214.07998							

ELEMENTS AND OPPOSITION DATES IN 2021

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2021 JULY 5.0 TT

Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>
231761 1999 UE ₂₁	16.5	X	122.43931	209.03140	65.56597	3.79287	0.0436841	0.22991326	2.6389229	21	12 6.5	20.2
231762 1999 UT ₂₁	17.0	X	105.53505	223.49801	46.57410	0.77947	0.0576385	0.22590795	2.6700232	21	11 11.9	20.9
231763 1999 UH ₃₆	15.9	X	86.50879	316.77629	352.65907	12.00786	0.1559487	0.23285280	2.6166667	21	12 19.9	20.2
231764 1999 VB ₂₄	15.8	X	239.37160	167.37310	244.24183	7.17802	0.2189073	0.21325076	2.7746550	21	6 21.5	20.3
231765 1999 VH ₄₄	16.0	X	5.26270	357.53457	8.73273	4.46985	0.2911025	0.22618247	2.6678623	21	12 6.6	18.5
231766 1999 VL ₇₄	17.8	X	276.31880	232.10228	211.25615	2.34835	0.0590401	0.31297563	2.1484687	21	10 21.8	20.0
231767 1999 VS ₉₈	16.3	X	44.41024	72.61206	251.87421	0.87001	0.2332005	0.22642299	2.6659727	21	12 1.9	20.0
231768 1999 VR ₁₁₈	16.5	X	150.28010	219.40467	187.00248	1.77747	0.0841634	0.20066089	2.8895323	21	3 23.5	20.8
231769 1999 VS ₁₅₀	15.9	X	264.42675	87.59393	294.08211	1.36942	0.1495157	0.21374202	2.7704019	21	6 17.4	19.7
231770 1999 VX ₁₅₁	16.7	X	254.87353	303.20987	107.70043	2.05997	0.0682729	0.21421983	2.7662808	21	7 25.9	20.3
231771 1999 VW ₁₅₄	16.1	X	243.30956	61.58006	5.50104	12.54748	0.1421163	0.21817603	2.7327382	21	7 27.8	20.3
231772 1999 VY ₁₈₅	16.2	X	250.34659	172.89038	211.29619	5.17729	0.2078907	0.21190591	2.7863821	21	5 30.2	20.6
231773 1999 VP ₁₈₉	17.0	X	288.77399	184.16116	213.92085	5.33142	0.1599475	0.30766656	2.1731141	21	8 12.7	19.3
231774 1999 WH ₁₂	17.3	X	119.14796	43.59177	82.17712	6.23618	0.0655165	0.29498436	2.2349616	21	5 20.2	19.9
231775 1999 XM ₁₀	15.8	X	210.27208	79.89122	5.20344	7.93688	0.2737802	0.21163031	2.7888007	21	7 6.6	20.8
231776 1999 XM ₁₂₇	16.9	X	254.92986	312.29243	95.72026	4.54259	0.2064779	0.30199253	2.2002494	21	7 3.7	20.0
231777 1999 XM ₁₂₈	17.1	X	248.24149	13.59869	68.85486	7.05187	0.0982952	0.30641320	2.1790360	21	9 3.7	19.7
231778 1999 XQ ₂₁₇	17.8	X	215.61618	193.04534	291.61931	3.41883	0.0799468	0.30396726	2.1907098	21	9 17.0	20.5
231779 2000 AT ₅	16.3	X	68.23113	249.26938	313.82057	22.53103	0.1725068	0.29002889	2.2603475	21	7 21.4	18.9
231780 2000 BW ₄₀	16.4	X	192.28464	279.12119	128.54850	2.93863	0.0722522	0.19867563	2.9087495	21	5 10.3	20.7
231781 2000 CO ₇	16.3	X	237.00921	153.92285	331.08489	8.16786	0.2468269	0.21393777	2.7687117	21	9 14.8	20.6
231782 2000 CV ₁₄	16.8	X	341.47053	340.13424	139.71767	2.72688	0.2233999	0.22704451	2.6611052	21	—	—
231783 2000 CR ₁₅	15.8	X	102.79782	243.27547	286.76434	5.58257	0.1862497	0.20117925	2.8845667	21	7 16.7	20.0
231784 2000 CA ₂₄	15.2	X	304.65549	231.84149	311.09892	9.84520	0.1365095	0.18144149	3.0901411	21	—	—
231785 2000 CF ₄₀	16.9	X	247.25884	112.01198	288.33657	4.02287	0.1708898	0.29819011	2.2189145	21	6 18.4	19.9
231786 2000 CU ₉₇	17.5	X	233.28703	262.13321	137.10073	3.80167	0.1880428	0.29599057	2.2298936	21	6 1.1	20.9
231787 2000 CV ₉₉	17.1	X	218.79754	102.08218	323.08519	7.45995	0.0243872	0.29484728	2.2356542	21	7 5.1	19.8
231788 2000 CH ₁₀₁	16.5	X	188.27404	305.15351	149.69821	2.61872	0.0256082	0.20291281	2.8681140	21	7 4.5	20.6
231789 2000 CA ₁₃₁	16.2	X	225.25842	45.63576	325.70344	1.00892	0.0996861	0.19767091	2.8185975	21	4 27.7	20.5
231790 2000 CH ₁₃₄	16.4	X	180.09393	319.18068	151.84810	2.63374	0.0752199	0.20378257	2.9594773	21	7 15.2	20.5
231791 2000 DB ₅	15.2	X	47.29316	113.99749	129.42457	13.07671	0.1371407	0.20024823	2.8935007	21	8 2.8	18.8
231792 2000 DH ₈	18.5	X	192.61084	25.38143	159.16942	37.59758	0.3055237	0.39548660	1.8381525	21	11 9.6	22.1
231793 2000 DX ₈	16.0	X	163.73977	99.79543	323.60659	11.18761	0.0279378	0.19539393	2.9412279	21	4 19.6	20.4
231794 2000 DW ₁₃	17.0	X	230.62490	224.24833	165.37653	4.28924	0.1783805	0.29233537	2.2484426	21	5 17.8	20.3
231795 2000 DT ₆₂	17.7	X	126.90923	191.36096	329.47400	3.55718	0.1114105	0.29296177	2.2452365	21	7 25.8	20.5
231796 2000 DU ₆₃	17.3	X	93.94543	39.75981	206.07591	2.44430	0.1878061	0.29706438	2.2245167	21	10 20.3	20.5
231797 2000 DB ₉₂	16.7	X	169.12251	65.32554	343.91609	24.91870	0.2377440	0.28750250	2.2735698	21	4 5.6	20.9
231798 2000 EP ₂	16.5	X	256.71600	59.09475	351.72935	7.46312	0.0907154	0.29700209	2.2282777	21	7 29.5	19.2
231799 2000 EW ₉	14.7	X	311.96097	136.33846	44.51227	24.00213	0.2760668	0.17941249	3.1133954	21	—	—
231800 2000 ES ₁₉	16.4	X	236.88890	346.43528	132.36403	5.25252	0.1505594	0.21082769	2.7958741	21	9 21.2	20.6
231801 2000 EB ₂₀	15.7	X	64.76108	85.84230	177.11097	23.11461	0.2943957	0.29217351	2.2492729	21	10 27.4	19.2
231802 2000 ED ₅₂	17.5	X	32.32695	243.11546	332.65820	1.30645	0.0423193	0.28720062	2.2751627	21	5 15.9	20.0
231803 2000 ES ₉₆	15.9	X	28.67052	34.36297	134.02028	6.84439	0.1851696	0.18736201	3.0246957	21	3 25.3	19.1
231804 2000 EJ ₁₀₆	14.8	X	296.19028	152.16117	21.00574	23.72701	0.1976857	0.17594407	3.1541787	21	—	—
231805 2000 EQ ₁₁₅	15.4	X	200.43533	71.89210	170.50379	10.89614	0.0196708	0.17349968	3.1837351	21	—	—
231806 2000 EH ₁₂₃	15.7	X	330.90577	36.31937	136.54923	3.80430	0.1229416	0.18173019	3.0868675	21	—	—
231807 2000 EZ ₁₄₆	14.9	X	326.93827	46.62382	125.20806	17.00602	0.1418408	0.18089916	3.0963142	21	—	—
231808 2000 ES ₁₆₆	14.9	X	344.34629	9.22299	113.74878	13.67297	0.1759713	0.18046915	3.1012307	21	—	—
231809 2000 FP ₂₂	15.6	X	116.43379	34.08393	101.96998	9.89961	0.2430953	0.19600224	2.9351391	21	6 24.0	20.4
231810 2000 FX ₂₈	16.2	X	84.28645	283.03987	334.91519	6.41813	0.1761904	0.29527605	2.2334894	21	10 21.9	19.5
231811 2000 GQ ₂₁	15.6	X	250.58578	295.63262	16.06521	10.06290	0.0850886	0.18532217	3.0468504	21	3 17.5	20.1
231812 2000 GQ ₂₅	15.6	X	333.02937	80.66567	183.32647	1.28365	0.0956828	0.18958121	3.0010451	21	4 26.7	19.2
231813 2000 GJ ₄₃	16.6	X	28.83595	153.46448	70.95445	0.68274	0.1726003	0.19123599	2.9837078	21	6 9.1	19.7
231814 2000 GT ₇₄	16.6	X	81.65687	89.82323	188.82250	3.47623	0.3714760	0.20157305	2.8808086	21	11 24.5	21.5
231815 2000 GQ ₁₁₈	18.1	X	57.65088	233.13176	321.86875	1.73717	0.1012582	0.28696223	2.2764226	21	6 3.5	20.4
231816 2000 GC ₁₄₅	15.8	X	286.74458	87.26787	167.80779	0.35058	0.1290938	0.18053252	3.1005049	21	2 10.4	20.3
231817 2000 GH ₁₅₀	15.3	X	334.36107	254.90512	195.51920	22.06366	0.0951321	0.17020630	3.2246726	21	12 25.6	19.8
231818 2000 GX ₁₅₀	17.4	X	104.44519	288.88408	190.52439	5.99551	0.0619949	0.28265571	2.2994865	21	4 20.4	20.0
231819 2000 HH ₈₀	15.0	X	162.16416	228.17068	125.99406	12.25831	0.0270011	0.17760668	3.1344633	21	1 31.1	19.5
231820 2000 HH ₉₆	16.4	X	176.05980	188.37093	94.43035	6.98250	0.1330701	0.26151527	2.4217986	21	—	—
231821 2000 HS ₉₆	16.0	X	38.14016	16.50241	133.32707	24.30941	0.1610073	0.27673013	2.3321962	21	2 21.6	17.9
231822 2000 HP ₁₀₃	15.3	X	5.69185	62.84146	136.79631	10.24867	0.0476565	0.18489037	3.0515923	21	3 29.8	19.4
231823 2000 JL ₆	14.9	X	322.16010	83.41789	126.05556	17.54862	0.0915601	0.17960322	3.1111907	21	2 3.8	19.2
231824 2000 JU ₄₄	15.2	X	348.23773	315.71838	232.86122	8.11747	0.0364641	0.17936605	3.1139327	21	2 15.0	19.5
231825 2000 JW ₇₅	16.6	X	56.14553	85.74977	157.59049	5.49003	0.1974024	0.28852948	2.2681717	21	9 1.7	19.1
231826 2000 JW ₉₁	15.3	X	220.33871	176.24106	126.87115	10.41038	0.0713235	0.17831878	3.1261130	21	2 3.9	20.1
231827 2000 KG ₄₉	15.9	X	247.40092	251.47860	27.12143	1.71976	0.1502030	0.17643410	3.1483357	21	1 29.2	20.8
231828 2000 KV ₅₉	14.8	X	217.46463	212.61902	61.45050	18.47965	0.1570927	0.17156049	3.2076812	21	—	—
231829 2000 KZ ₆₅	15.4	X	340.36931	66.57976	180.28378	15.72084	0.1281997	0.18471622	3.0535101	21	4 14.1	19.2
231830 2000 LW ₁	16.0	X	341.13829	58.92230	244.73109	30.09221	0.3394829	0.23393808	2.6085677	21	5 30.8	17.6
231831 2000 OR ₁₀	15.6	X	320.91703	30.29306	300.64840	11.75813	0.3255470	0.23258172	2.6186995	21	5 27.9	18.5
231832 2000 OG ₆₉	17.2	X	161.16860	2.50302	333.04051	1.98467	0.2247733	0.25885437	2.4383669	21	1 12.4	20.9
231833 2000 PK ₂₇	15.1	X	151.05401	87.75943	327.19106	11.31767	0.1511454	0.17082664	3.2168611	21	4 6.9	20.3
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ELEMENTS AND OPPOSITION DATES IN 2021

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2021 JULY 5.0 TT

Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>
231841 2000 QT ₂₃₂	17.3	X	31.91889	80.05946	44.91890	2.16081	0.1472345	0.26134416	2.4228555	21	1 4.7	19.6
231842 2000 QW ₂₄₂	17.1	X	322.95354	339.94657	188.92005	1.82136	0.1168502	0.25473577	2.4645791	21	—	—
231843 2000 RZ ₆₂	16.5	X	228.86559	341.34709	354.19713	6.50676	0.1900420	0.26744383	2.3858748	21	3 8.5	20.2
231844 2000 RZ ₇₄	14.9	X	318.72194	121.18124	183.76407	21.94996	0.1038703	0.17996353	3.1070367	21	5 30.6	19.4
231845 2000 RV ₈₁	15.8	X	243.84951	244.43254	184.38500	29.47487	0.2628382	0.22832442	2.6511511	21	7 11.0	20.8
231846 2000 RC ₈₅	16.2	X	111.78219	17.87832	351.96456	11.53147	0.2119849	0.25328526	2.4739796	21	—	—
231847 2000 RJ ₈₇	16.7	X	312.47167	182.82815	170.10527	3.63324	0.2403485	0.23023519	2.6364624	21	7 1.5	19.6
231848 2000 SR ₃₁	17.2	X	6.24328	74.33227	343.99110	4.25724	0.2721130	0.24253696	2.5465415	21	—	—
231849 2000 SB ₄₁	15.3	X	267.25000	307.65327	31.41443	2.45129	0.1878378	0.17634110	3.1494425	21	4 24.8	20.2
231850 2000 SB ₄₈	15.9	X	90.79070	27.85678	304.18753	14.84940	0.1002844	0.24786364	2.5099255	21	—	—
231851 2000 SV ₆₁	16.8	X	279.08931	289.65203	19.86074	2.15552	0.2191814	0.26933864	2.3746719	21	3 19.6	20.2
231852 2000 SX ₉₄	16.4	X	255.76562	129.73071	263.46916	5.34815	0.2028269	0.22640255	2.6661332	21	6 15.9	20.2
231853 2000 SK ₁₀₀	16.7	X	344.74356	44.89573	309.76314	9.97778	0.2641997	0.23341914	2.6124325	21	9 18.1	18.6
231854 2000 SE ₁₃₀	16.0	X	64.90615	42.62991	267.47469	12.87241	0.1377782	0.24144729	2.5541976	21	11 26.9	19.6
231855 2000 SF ₁₃₈	16.6	X	284.71261	112.43159	267.57635	3.72143	0.2342755	0.22813695	2.6526032	21	6 27.8	20.0
231856 2000 SJ ₁₃₈	16.2	X	335.26357	154.15500	284.32108	3.45958	0.2804914	0.23940934	2.5686721	21	—	—
231857 2000 SJ ₁₅₄	15.8	X	305.66695	23.22067	25.62236	11.73760	0.2221747	0.23189832	2.6238418	21	9 19.4	18.4
231858 2000 SZ ₁₆₅	16.7	X	350.80106	83.99370	342.69805	12.74264	0.2431664	0.24069410	2.5595233	21	—	—
231859 2000 SM ₁₆₇	16.4	X	334.12038	31.75559	349.70958	11.51967	0.2916148	0.23419332	2.6066720	21	10 3.6	17.9
231860 2000 SZ ₁₈₅	17.1	X	175.07662	147.22695	196.68472	5.88438	0.1329788	0.25788284	2.4444871	21	1 26.3	20.7
231861 2000 SO ₂₃₆	16.4	X	121.73848	343.82410	16.23235	6.93213	0.1256265	0.25178759	2.4837802	21	—	—
231862 2000 SC ₂₅₁	16.9	X	70.53711	259.95277	91.37267	3.51865	0.2086715	0.24516236	2.5283286	21	—	—
231863 2000 SJ ₂₆₁	16.8	X	32.85663	250.92924	96.55437	4.53754	0.2489322	0.23943796	2.5684673	21	12 21.7	20.2
231864 2000 SD ₂₇₂	15.6	X	268.01653	82.55849	271.72840	11.94428	0.1633322	0.22361763	2.6882234	21	5 12.8	19.7
231865 2000 SY ₃₁₈	15.3	X	327.07001	104.21704	314.98942	11.45424	0.2388092	0.23506979	2.6001885	21	11 16.6	17.3
231866 2000 SF ₃₁₉	14.7	X	108.11219	355.29404	337.80018	14.57553	0.1175805	0.24504611	2.5291282	21	—	—
231867 2000 SW ₃₄₆	16.0	X	322.62211	128.98383	270.83646	11.79327	0.2555940	0.23410732	2.6073103	21	9 28.3	18.4
231868 2000 SY ₃₅₄	16.6	X	223.91794	167.07183	131.90329	11.98726	0.2433172	0.26091921	2.4254855	21	1 19.1	20.8
231869 2000 SG ₃₆₄	16.3	X	4.53161	321.54160	84.95299	7.06209	0.2179099	0.24255468	2.5464175	21	—	—
231870 2000 SZ ₃₆₄	14.4	X	84.52125	138.97530	167.22970	18.34781	0.0159361	0.14737110	3.5497233	21	11 18.0	19.7
231871 2000 TD ₁₃	16.2	X	216.21146	235.23277	198.66243	14.46434	0.2189665	0.22337035	2.6902070	21	6 27.7	21.0
231872 2000 TJ ₂₅	14.7	X	213.20396	350.31139	57.40248	12.76989	0.2571421	0.12525391	3.9561722	21	5 25.9	21.4
231873 2000 TB ₅₂	17.0	X	329.44652	58.30337	355.60430	1.48200	0.2047713	0.23638370	2.5905444	21	11 18.8	19.1
231874 2000 UP ₃	16.7	X	274.03464	182.70779	232.22305	4.48276	0.3277039	0.22785538	2.6547880	21	7 17.0	20.5
231875 2000 UZ ₁₅	16.3	X	292.16720	150.10952	205.38994	27.95660	0.1747492	0.22569282	2.6717197	21	6 11.8	20.4
231876 2000 UV ₄₃	16.4	X	298.43543	194.12499	238.76570	3.74733	0.2562195	0.23204356	2.6227468	21	9 28.3	19.0
231877 2000 UH ₆₆	16.7	X	334.59933	158.39272	254.49882	3.25654	0.1946261	0.23660809	2.5889062	21	11 29.5	18.9
231878 2000 UG ₇₇	16.5	X	300.33998	25.74887	29.81837	4.67424	0.2043984	0.23104459	2.6303014	21	9 18.7	19.2
231879 2000 UA ₉₃	16.4	X	203.54792	335.07767	332.40174	5.60650	0.1426295	0.25559470	2.4590545	21	1 12.7	20.2
231880 2000 UU ₁₁₂	16.7	X	355.70036	191.77050	205.82279	2.90184	0.1313316	0.23810710	2.5780291	21	12 13.8	19.4
231881 2000 UF ₁₁₄	17.2	X	306.61871	98.48637	287.08010	3.53013	0.3100597	0.22987581	2.6392095	21	7 26.3	19.7
231882 2000 VO	17.0	X	11.76736	156.15210	216.76692	4.04778	0.2051739	0.23711660	2.5852035	21	12 17.2	19.8
231883 2000 VS ₂	16.6	X	314.70138	43.65057	57.90538	4.18893	0.1184752	0.23807091	2.5782903	21	12 29.6	19.3
231884 2000 VE ₆	15.7	X	47.46630	15.01871	35.22555	1.85586	0.0245978	0.24603424	2.5235519	21	—	—
231885 2000 VH ₁₅	16.0	X	169.54502	137.60775	207.61385	5.38140	0.1501370	0.25424823	2.4677288	21	1 24.5	19.8
231886 2000 VK ₂₆	16.9	X	277.81107	191.27222	251.88123	3.93186	0.2863213	0.22957209	2.6415368	21	9 2.4	20.5
231887 2000 VR ₄₈	16.4	X	266.55499	43.64417	40.67658	6.40555	0.3273039	0.22736446	2.6586081	21	8 20.3	20.4
231888 2000 VR ₅₇	15.7	X	72.28212	8.93845	11.00757	3.50219	0.1755293	0.24394710	2.5367185	21	—	—
231889 2000 WW ₁₄	16.0	X	308.30613	121.74883	268.67995	8.04590	0.2104929	0.22870971	2.6481727	21	8 20.2	18.9
231890 2000 WM ₃₉	16.0	X	292.77994	300.00192	99.51160	14.02798	0.2639118	0.22724901	2.6595085	21	8 2.3	19.3
231891 2000 WJ ₄₂	16.5	X	1.54955	340.33982	71.39024	4.05965	0.1800119	0.23887499	2.5725013	21	—	—
231892 2000 WG ₇₀	16.1	X	202.76516	183.85499	257.53606	13.17387	0.1757154	0.22113448	2.7083102	21	6 27.6	20.5
231893 2000 WS ₇₃	15.8	X	311.02386	289.51067	32.76803	11.61892	0.1982867	0.22334558	2.6904059	21	5 20.8	19.1
231894 2000 WN ₈₅	15.9	X	57.43777	352.08310	37.48956	3.37745	0.1407836	0.24251630	2.5466861	21	—	—
231895 2000 WU ₁₁₃	16.2	X	274.33434	3.42671	47.59677	9.74375	0.2034055	0.22574703	2.6712919	21	8 3.8	20.0
231896 2000 WY ₁₁₇	15.3	X	359.36281	67.71022	295.59388	10.09708	0.2326122	0.23141285	2.6275101	21	11 8.9	17.9
231897 2000 WM ₁₃₈	16.1	X	149.56325	8.39520	55.54343	8.91750	0.2115639	0.21167522	2.7884061	21	4 24.6	20.7
231898 2000 WX ₁₄₇	15.8	X	84.47783	266.66072	93.97867	3.38161	0.2318653	0.24233547	2.5479529	21	—	—
231899 2000 WX ₁₅₆	15.8	X	341.69803	31.15874	45.79594	10.09709	0.1069898	0.23754263	2.5821116	21	—	—
231900 2000 WT ₁₈₀	15.4	X	264.65899	222.23573	131.08661	15.90618	0.2929774	0.17620821	3.1510258	21	5 4.6	20.8
231901 2000 XV ₂₂	15.9	X	255.27564	46.38557	48.98017	12.27644	0.1631883	0.22717745	2.6600670	21	9 17.2	19.8
231902 2000 XO ₂₆	15.5	X	330.95208	104.84852	312.51815	14.17639	0.1076270	0.23292194	2.6161489	21	11 21.7	18.8
231903 2000 XT ₃₉	15.9	X	304.26217	113.24201	1.53024	11.64116	0.1746557	0.23500142	2.6006929	21	12 25.6	18.7
231904 2000 XY ₅₀	15.8	X	310.17333	115.75690	311.75953	10.89026	0.2490392	0.23236953	2.6202934	21	10 12.1	18.5
231905 2000 YL	16.1	X	99.34567	62.38372	5.81615	15.39176	0.1365798	0.25132591	2.4868211	21	2 22.7	19.2
231906 2000 YN ₉	16.4	X	63.74867	22.56178	304.63953	2.81237	0.1149848	0.23565394	2.5958898	21	12 13.4	19.9
231907 2000 YX ₃₉	15.9	X	247.42412	177.10251	270.61876	8.04341	0.1734461	0.22336135	2.6902792	21	8 16.9	19.9
231908 2000 YP ₄₇	15.4	X	128.72465	214.40277	277.81710	13.28891	0.0489056	0.21220516	2.7837619	21	6 11.7	19.4
231909 2000 YY ₇₂	14.5	X	222.90029	311.79477	116.45445	7.12897	0.2416511	0.12400651	3.9826584	21	6 26.9	20.9
231910 2000 YU ₉₁	15.9	X	327.54157	69.96445	294.14420	12.56800	0.3006036	0.22687673	2.6624170	21	8 9.9	18.0
231911 2000 YW ₉₂	15.6	X	345.55153	269.82595	115.10288	12.27836	0.2039831	0.23141175	2.6275185	21	11 16.1	18.2
231912 2000 YP ₁₀₈	16.2	X	246.65850	40.54347	89.61416	9.01276	0.1492098	0.22800571	2.6536210	21	10 21.6	20.0
231913 2000 YH ₁₃₈	14.8	X	229.74877	275.68283	134.85458	11.53870	0.3403865	0.12514306	3.9585081	21	6 7.9	21.6
231914 2000 YT ₁₄₀	15.4											

ELEMENTS AND OPPOSITION DATES IN 2021

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Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>
231921 2001 CK ₁₆	15.6	X	226.02349	191.65324	331.60780	10.97589	0.1300745	0.22628964	2.6670199	21	11 1.5	19.8
231922 2001 CX ₂₅	16.1	X	162.45920	97.75260	121.01603	8.85995	0.2389882	0.22154919	2.7049294	21	11 10.9	21.0
231923 2001 CY ₃₂	15.6	X	174.76017	170.97513	44.58995	14.87175	0.2346193	0.22447949	2.6813383	21	11 12.9	20.1
231924 2001 CL ₃₇	15.8	X	323.27188	218.75789	132.24839	7.26920	0.0722952	0.21628499	2.7486438	21	8 10.8	19.1
231925 2001 CK ₃₉	15.6	X	257.06961	143.72846	6.62348	11.46293	0.1984980	0.22949380	2.6421375	21	11 14.7	19.2
231926 2001 CQ ₄₉	15.5	X	166.07381	25.58342	148.30952	26.06269	0.0845427	0.21690054	2.7434410	21	9 22.7	19.8
231927 2001 DU ₃₀	15.8	X	156.46917	34.71509	129.91119	9.88498	0.2233898	0.21472605	2.7619314	21	9 1.5	20.6
231928 2001 DY ₃₄	15.9	X	239.40756	155.96187	321.89189	5.86753	0.0429558	0.22309095	2.6924527	21	10 3.9	19.6
231929 2001 DP ₄₂	16.2	X	220.33787	47.51210	151.61453	2.65077	0.1318025	0.22815792	2.6524407	21	12 14.7	19.9
231930 2001 DG ₆₇	16.0	X	135.73000	228.91521	331.78500	7.98127	0.1504651	0.21610374	2.7501804	21	9 21.3	20.5
231931 2001 DF ₇₅	15.5	X	320.88668	257.68536	148.65776	16.05522	0.1622363	0.22563242	2.6721964	21	10 24.4	18.5
231932 2001 DN ₇₆	16.0	X	265.81626	124.60350	324.64770	5.38000	0.0716301	0.22170989	2.7036222	21	9 27.2	19.6
231933 2001 DO ₁₀₀	15.7	X	145.86208	289.76773	321.74971	12.52826	0.1861497	0.22503826	2.6768979	21	12 2.2	20.4
231934 2001 EB ₁₁	16.1	X	139.65549	53.86179	164.03985	13.60338	0.1867533	0.21649286	2.7468841	21	10 22.4	20.8
231935 2001 FO	15.7	X	154.70893	68.48281	120.72018	12.80111	0.1279462	0.21605229	2.7506171	21	10 2.2	20.2
231936 2001 FR ₇	16.2	X	26.03632	121.20505	135.27844	6.19474	0.1238011	0.20573190	2.8418531	21	7 14.4	19.6
231937 2001 FU ₃₂	17.7	X	28.05792	123.35456	181.72911	39.00330	0.8260270	0.44508907	1.6989141	21	—	—
231938 2001 FU ₁₀₄	16.1	X	164.03336	73.58802	59.50997	8.40493	0.1761131	0.21195002	2.7859954	21	7 30.7	20.8
231939 2001 FB ₁₂₉	15.4	X	140.99092	120.87792	134.76671	12.75474	0.2366713	0.21853877	2.7297134	21	12 6.5	20.4
231940 2001 FF ₁₄₁	15.7	X	46.15937	325.84275	192.71106	1.42660	0.0417665	0.19763385	2.9189624	21	3 28.1	19.3
231941 2001 FD ₁₄₂	16.2	X	138.11866	31.30075	182.50440	9.78635	0.1043157	0.21621359	2.7492489	21	10 11.1	20.4
231942 2001 FP ₁₇₀	15.9	X	224.01442	13.17398	173.05419	14.24602	0.1844051	0.22363221	2.6881066	21	11 27.9	20.2
231943 2001 FM ₁₇₂	15.1	X	198.59584	20.57275	155.67542	26.17174	0.1663010	0.21752652	2.7381752	21	10 26.6	19.9
231944 2001 HC ₄₄	17.1	X	8.43385	336.49927	206.31079	6.06979	0.1156206	0.29053436	2.2577251	21	2 6.9	19.3
231945 2001 HY ₅₇	16.0	X	179.17384	116.21956	117.13898	10.03521	0.1366271	0.22240580	2.6979795	21	12 13.3	20.3
231946 2001 KT ₁	15.6	X	154.28561	183.37123	94.22361	16.62813	0.1697977	0.22195444	2.7016360	21	—	—
231947 2001 KU ₁₉	15.9	X	151.70733	121.19976	168.99330	9.48814	0.3453882	0.22042314	2.7141339	21	—	—
231948 2001 KB ₆₆	15.8	X	31.67392	145.57608	97.13366	12.82518	0.1876739	0.20130023	2.8834109	21	7 13.1	18.9
231949 2001 NY ₅	15.2	X	179.92340	359.77958	341.15767	10.25595	0.0993870	0.17771815	3.1331524	21	2 9.6	20.0
231950 2001 NW ₁₁	15.0	X	257.85173	39.58564	263.99425	7.96052	0.1137621	0.18396270	3.0618426	21	3 6.9	19.9
231951 2001 OY ₆	14.7	X	209.11009	358.91556	306.31858	9.52031	0.1909957	0.17428987	3.1741049	21	1 26.2	19.8
231952 2001 OS ₁₅	16.9	X	258.80319	7.99399	1.21660	6.68927	0.2117358	0.28860634	2.2677689	21	5 12.8	20.4
231953 2001 OT ₂₅	15.3	X	267.49572	149.12574	145.00541	7.79579	0.2027449	0.18377216	3.0639587	21	3 1.3	20.1
231954 2001 OM ₄₂	16.9	X	177.62771	135.26240	231.89008	2.92611	0.2084404	0.27384039	2.3485747	21	3 1.8	20.7
231955 2001 OY ₅₀	15.3	X	211.91575	3.10215	324.35272	9.27729	0.0985589	0.18005050	3.1060360	21	2 22.0	20.2
231956 2001 OQ ₅₈	15.9	X	76.15577	333.16704	344.70830	10.62232	0.2514120	0.25620227	2.4551653	21	—	—
231957 2001 ON ₈₇	14.8	X	161.52817	358.35189	346.85851	19.17900	0.1384601	0.17114482	3.2128729	21	2 4.8	20.0
231958 2001 PF ₂₈	14.9	X	343.33895	255.44237	318.68961	14.96092	0.1682876	0.18371554	3.0645882	21	2 24.9	18.8
231959 2001 PT ₅₇	16.8	X	184.89361	206.10588	144.18815	7.65241	0.2366969	0.27465057	2.3439538	21	2 18.2	20.6
231960 2001 QA ₃	16.9	X	272.21992	190.29249	146.92577	12.41503	0.2388671	0.28685493	2.2769903	21	4 17.9	20.5
231961 2001 QS ₅	16.9	X	113.23227	241.50002	146.86619	3.63523	0.2423879	0.26887256	2.3774154	21	1 26.4	19.5
231962 2001 QX ₅	15.1	X	224.55110	344.26224	308.29355	8.51256	0.1525777	0.17587926	3.1549535	21	1 24.9	20.3
231963 2001 QU ₆	16.7	X	199.14703	72.07520	309.42244	6.33379	0.1509650	0.28100237	2.3084974	21	4 3.7	20.4
231964 2001 QT ₁₂	16.8	X	198.32762	279.40012	76.16011	3.89044	0.1866331	0.27827114	3.3235781	21	3 7.4	20.5
231965 2001 QP ₄₄	17.2	X	186.48355	227.85481	121.36891	4.15162	0.1759884	0.27621332	2.3351044	21	2 15.5	20.7
231966 2001 QZ ₄₅	17.3	X	280.97827	177.04983	162.07544	3.81995	0.1553226	0.28822584	2.3529644	21	5 7.8	20.1
231967 2001 QP ₄₈	15.2	X	255.61525	166.83082	143.72982	9.68775	0.1391436	0.18233212	3.0800701	21	3 16.6	20.0
231968 2001 QT ₈₀	15.0	X	226.59313	320.97190	333.19678	14.13210	0.2387361	0.17334724	3.1856013	21	1 28.9	20.6
231969 Sebauclair	15.1	X	195.36970	347.92754	327.09692	15.05819	0.0735699	0.17382198	3.1797984	21	1 26.6	20.0
231970 2001 QE ₁₀₁	14.9	X	238.38453	30.85449	265.20758	18.32165	0.1173320	0.17797940	3.1300857	21	2 4.1	20.2
231971 2001 QA ₁₀₈	17.3	X	224.51805	201.43949	143.77967	2.81316	0.2297455	0.27977766	2.3152294	21	3 14.9	21.2
231972 2001 QP ₁₀₈	15.7	X	327.49379	282.71952	326.00805	10.16676	0.1688264	0.18559599	3.0438528	21	3 16.1	19.7
231973 2001 QP ₁₁₄	14.7	X	342.38220	257.30543	319.20661	15.81626	0.0534658	0.17900521	3.1181160	21	3 9.7	19.0
231974 2001 QS ₁₂₄	15.0	X	163.53531	248.37599	119.03450	10.00030	0.0845502	0.17619748	3.1511538	21	2 24.1	19.8
231975 2001 QX ₁₂₉	17.1	X	56.64145	343.76606	302.08583	7.57716	0.2242836	0.30154313	2.2024349	21	11 3.9	20.1
231976 2001 QB ₁₃₁	15.2	X	177.89678	178.20069	182.41466	12.02900	0.1729198	0.17649115	3.1476572	21	3 2.7	20.5
231977 2001 QH ₁₅₆	15.2	X	323.95816	303.50280	322.93551	11.66678	0.1521619	0.18588899	3.0406536	21	4 2.7	19.3
231978 2001 QV ₁₇₃	15.2	X	347.80892	56.78994	185.00316	16.59937	0.1533598	0.18576050	3.0420555	21	4 16.9	18.7
231979 2001 QO ₂₀₀	16.9	X	202.75596	115.08229	330.57946	19.83397	0.1024441	0.38463111	1.8725774	21	7 13.4	19.4
231980 2001 QJ ₂₀₈	16.6	X	152.32856	351.43005	47.20564	2.48879	0.1199879	0.27666161	2.3325812	21	3 11.6	19.7
231981 2001 QU ₂₁₉	17.5	X	239.39876	74.99991	333.53096	18.24482	0.1388892	0.38462377	1.8726012	21	6 26.0	20.1
231982 2001 QP ₂₄₉	16.5	X	124.19344	357.88825	30.87626	2.73308	0.2110642	0.26708373	2.3880189	21	2 7.2	19.5
231983 2001 QC ₂₉₆	16.6	X	244.50975	194.62570	178.71352	8.44329	0.1557024	0.28253076	2.3001645	21	5 13.3	20.0
231984 2001 QX ₃₃₀	16.6	X	246.99673	59.06204	266.67893	6.11707	0.1604533	0.27782360	2.3260727	21	3 9.2	20.2
231985 2001 QT ₃₃₃	16.8	X	270.22191	172.58408	147.57397	9.86881	0.1635236	0.28063472	2.3105132	21	3 31.5	20.1
231986 2001 RY ₁₄	15.1	X	274.65246	301.78042	331.07196	25.78548	0.1554352	0.17864107	3.1223518	21	2 17.1	19.7
231987 2001 RV ₂₉	17.4	X	95.65296	64.33898	348.71350	1.94828	0.2327611	0.26786188	2.3833918	21	2 2.4	19.8
231988 2001 RC ₃₁	15.8	X	170.64215	326.50174	2.36823	2.58112	0.1714317	0.17124127	3.2116663	21	1 22.3	21.0
231989 2001 RJ ₃₄	16.9	X	138.02245	167.69435	229.84651	2.62094	0.2394953	0.27294446	2.3537113	21	3 6.2	20.4
231990 2001 RN ₇₉	16.4	X	103.19349	359.55956	26.50393	2.82092	0.2293932	0.26343856	2.4099969	21	1 7.4	18.8
231991 2001 RE ₁₀₁	17.3	X	12.58003	6.79369	12.41738	5.71932	0.2688186	0.25314519	2.4748921	21	—	—
231992 2001 RK ₁₀₂	17.3	X	59.02225	269.00392	19.26403	6.46453	0.1920950	0.30107358	2.2047243	21	11 7.3	20.1
231993 2001 RQ ₁₀₅	15.3	X	264.22827	322.52639	15.89349	9.62539	0.1416969	0.1				