

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>
144001	2004 AC ₅	16.9	X	46.82298	266.54632	126.12773	5.22530	0.1596387	0.29696933	2.2249913	20	—
144002	2004 AY ₅	15.8	X	89.72493	117.77212	61.56874	4.88493	0.0942159	0.26319460	2.4114860	20	7 13.5 18.9
144003	2004 AS ₆	16.2	X	354.59931	257.83523	47.36552	1.91773	0.0562587	0.21130146	2.7916934	20	8 8.6 19.7
144004	2004 AH ₇	16.8	X	225.45220	74.58517	40.16646	6.28690	0.1453318	0.27768784	2.3268308	20	9 21.1 19.9
144005	2004 AB ₈	16.5	X	197.86287	32.74973	89.74430	3.54385	0.1754607	0.27377097	2.3489717	20	8 27.3 20.1
144006	2004 AB ₉	15.9	X	294.64568	356.27737	235.02085	7.10968	0.2498115	0.24180266	2.5516944	20	1 5.2 19.8
144007	2004 AP ₉	15.3	X	345.51931	133.16019	266.49631	11.10845	0.0756709	0.22532763	2.6746056	20	12 3.4 18.6
144008	2004 AQ ₁₀	16.8	X	45.79233	249.76759	129.21990	6.37482	0.2037061	0.29614017	2.2291425	20	—
144009	2004 AX ₁₁	15.6	X	271.42403	73.72353	157.80856	6.85371	0.1251770	0.24271738	2.5452794	20	—
144010	2004 AG ₂₂	15.6	X	129.40118	331.22432	291.27227	4.12451	0.1622383	0.22470210	2.6795671	20	12 8.8 19.9
144011	2004 BT ₂	17.5	X	158.74385	169.25511	309.12229	1.56442	0.1648597	0.26691125	2.3890475	20	7 13.7 21.2
144012	2004 BM ₃	15.8	X	117.92052	253.62609	314.19584	6.19132	0.0762113	0.27316380	2.3524512	20	9 21.6 19.1
144013	2004 BH ₄	15.9	X	263.21356	242.01908	313.67178	4.42862	0.1005001	0.23445707	2.6047167	20	—
144014	2004 BM ₄	16.6	X	133.82834	108.68366	78.25826	2.39491	0.1353822	0.27130584	2.3631790	20	9 18.2 20.0
144015	2004 BG ₆	16.3	X	213.40098	41.72099	135.56856	2.83795	0.2033945	0.22526769	2.6750800	20	12 2.3 19.9
144016	2004 BC ₈	16.7	X	293.70267	211.41127	81.00498	6.50802	0.1026143	0.25948616	2.4344073	20	4 14.4 19.7
144017	2004 BS ₉	16.4	X	168.50551	342.61687	123.65461	1.97269	0.1385392	0.26607457	2.3940533	20	7 6.8 20.1
144018	2004 BW ₁₀	15.9	X	251.27431	302.92242	253.69785	5.54933	0.0775986	0.23387256	2.6090548	20	—
144019	2004 BK ₁₂	16.8	X	122.45632	261.28574	285.37557	2.74195	0.1142520	0.27021811	2.3695166	20	9 2.1 20.2
144020	2004 BO ₁₂	15.7	X	261.18952	253.06986	117.60978	2.97110	0.0352364	0.20581269	2.8411094	20	6 24.2 19.5
144021	2004 BX ₁₂	16.6	X	217.97203	227.71393	293.88845	2.10919	0.1664697	0.28222800	2.3018092	20	11 8.7 19.5
144022	2004 BW ₁₃	17.0	X	190.35948	97.75988	106.95731	4.82924	0.1469621	0.28342225	2.2953386	20	12 7.4 20.1
144023	2004 BZ ₁₃	17.2	X	355.28968	286.50776	142.80576	0.51762	0.1038424	0.29254030	2.2473924	20	—
144024	2004 BA ₁₄	16.3	X	343.60956	139.83837	320.82568	2.76045	0.0066506	0.23375097	2.6099595	20	—
144025	2004 BC ₁₅	16.1	X	107.92934	5.01357	41.20105	1.50669	0.0407777	0.24726371	2.5139837	20	1 29.6 19.3
144026	2004 BP ₁₅	16.3	X	209.28645	231.38745	158.27414	2.65505	0.1836509	0.26396653	2.4067823	20	5 6.9 20.1
144027	2004 BB ₁₉	16.0	X	166.87277	246.94640	71.21086	6.20976	0.0355159	0.24033527	2.5620703	20	—
144028	2004 BF ₂₀	15.3	X	117.85504	128.80014	34.67584	14.51457	0.1947278	0.26452988	2.4033640	20	8 10.6 19.4
144029	2004 BM ₂₀	15.9	X	21.39108	345.25528	67.05292	7.32459	0.1166219	0.23554149	2.5967159	20	—
144030	2004 BP ₂₀	16.6	X	308.00876	88.23262	333.76110	6.86420	0.0817628	0.28429036	2.2906635	20	11 18.7 19.0
144031	2004 BA ₂₁	16.8	X	282.85669	117.09374	292.38652	7.52599	0.1095138	0.27818018	2.3240846	20	9 9.9 19.3
144032	2004 BN ₂₂	16.2	X	301.11791	35.80712	306.04176	2.49050	0.2691966	0.27161085	2.3614095	20	6 4.0 18.5
144033	2004 BO ₂₂	16.2	X	345.31624	326.13710	305.00811	5.69432	0.1006719	0.26223829	2.4173451	20	6 4.7 18.7
144034	2004 BM ₂₃	15.9	X	323.56951	328.55585	131.14066	12.41512	0.0282001	0.22994179	2.6387046	20	—
144035	2004 BA ₂₄	16.6	X	180.16594	341.86758	117.83437	4.92223	0.1482511	0.26838737	2.3802797	20	7 9.8 20.4
144036	2004 BE ₂₄	15.8	X	125.71017	203.32757	117.54212	13.47080	0.1965159	0.23720062	2.5845930	20	—
144037	2004 BL ₂₄	16.8	X	236.32653	17.85748	121.92287	5.95591	0.1380070	0.28361908	2.2942765	20	11 10.7 19.5
144038	2004 BT ₂₄	16.8	X	95.41808	41.19227	184.05874	1.15820	0.1358988	0.27137094	2.3628011	20	9 26.9 20.2
144039	2004 BL ₂₅	16.6	X	128.60450	237.53002	288.28292	1.55617	0.1250806	0.26846364	2.3798289	20	8 13.2 20.0
144040	2004 BV ₂₅	16.3	X	333.28985	288.20913	130.39593	2.89531	0.0667580	0.22626092	2.6672457	20	12 10.2 19.4
144041	2004 BG ₂₆	16.5	X	358.44216	221.50527	221.30548	1.49375	0.0307161	0.23452533	2.6042112	20	—
144042	2004 BM ₂₆	17.3	X	341.52525	112.42432	301.45880	3.16996	0.1037618	0.28848250	2.2684179	20	—
144043	2004 BT ₂₆	16.7	X	348.32825	259.48836	112.40729	7.06039	0.1937559	0.28480101	2.2879246	20	12 3.9 18.7
144044	2004 BT ₂₇	16.3	X	139.51307	5.03897	153.55929	3.25989	0.0701475	0.26815298	2.3816666	20	8 12.9 19.5
144045	2004 BK ₂₇	15.8	X	7.45345	152.33009	3.39263	27.56670	0.1638040	0.24458373	2.5323147	20	2 8.3 19.0
144046	2004 BC ₂₈	16.0	X	35.28349	173.93224	60.88635	2.40534	0.1840651	0.26136012	2.4227569	20	7 20.6 18.3
144047	2004 BD ₂₈	16.1	X	23.90408	208.01946	1.30805	2.23744	0.1242992	0.25591207	2.4570210	20	5 14.9 18.4
144048	2004 BW ₂₉	15.1	X	35.35360	344.64272	326.78181	11.71077	0.0439315	0.21656125	2.7463057	20	10 8.2 18.9
144049	2004 BY ₂₉	15.6	X	67.56360	221.74179	115.40312	9.11758	0.1132780	0.22695263	2.6618234	20	—
144050	2004 BD ₃₀	16.8	X	182.92553	80.60346	13.75149	2.85461	0.1328111	0.26636056	2.3923393	20	7 6.3 20.4
144051	2004 BF ₃₀	16.2	X	342.81889	78.33995	17.04407	2.39483	0.0422327	0.23196224	2.6233598	20	—
144052	2004 BO ₃₀	16.2	X	249.93209	356.15385	4.30062	2.22976	0.2207959	0.26333209	2.4106465	20	5 3.3 19.8
144053	2004 BZ ₃₀	15.2	X	326.50277	152.37052	84.68717	3.18403	0.1565335	0.18839974	3.0135786	20	3 15.9 18.9
144054	2004 BM ₃₄	16.1	X	8.88532	329.92941	323.28669	6.27548	0.0910087	0.26996799	2.3709799	20	8 23.6 18.5
144055	2004 BR ₃₄	16.9	X	200.06901	124.60427	343.99471	2.36576	0.1470798	0.27237050	2.3570168	20	8 11.9 20.3
144056	2004 BH ₃₅	16.8	X	141.65717	84.65082	97.09884	3.35540	0.1336875	0.27223649	2.3577902	20	9 19.8 20.3
144057	2004 BJ ₃₆	16.2	X	147.86560	199.69062	335.06273	2.20781	0.1127564	0.27260268	2.3556782	20	9 14.7 19.7
144058	2004 BV ₃₇	15.0	X	341.31617	81.04697	321.91338	14.41193	0.0200419	0.22264348	2.6960590	20	11 24.2 18.9
144059	2004 BL ₄₀	16.7	X	301.71393	105.49933	289.27937	3.98575	0.2243112	0.27998366	2.3140936	20	9 9.2 18.3
144060	2004 BR ₄₁	15.7	X	189.36631	204.97550	45.47603	13.47038	0.2538183	0.22864630	2.6486623	20	—
144061	2004 BB ₄₂	16.6	X	102.46751	159.96862	357.39493	4.92737	0.1292255	0.26065597	2.4271182	20	7 3.8 19.9
144062	2004 BF ₄₂	16.9	X	256.49034	80.75852	34.89610	3.25736	0.1746124	0.28168571	2.3047625	20	10 28.6 19.0
144063	2004 BU ₄₂	16.6	X	205.74329	152.56428	338.92099	2.06167	0.1666876	0.27495636	2.3422156	20	9 15.3 20.1
144064	2004 BE ₄₃	16.8	X	187.88103	190.08838	328.73442	2.29989	0.1349514	0.27579725	2.3374523	20	10 4.7 20.2
144065	2004 BS ₄₃	16.5	X	264.35510	40.04689	100.33020	3.47449	0.0570393	0.28581433	2.2825137	20	—
144066	2004 BD ₄₄	16.0	X	231.66689	18.90189	42.95506	3.24342	0.1532826	0.26877500	2.3779906	20	7 13.6 19.3
144067	2004 BP ₄₄	16.2	X	95.45089	239.83440	225.35631	5.39485	0.0859481	0.25268388	2.4779033	20	4 4.9 19.3
144068	2004 BO ₄₅	16.1	X	185.07128	207.81896	272.45924	3.96113	0.1668182	0.27348851	2.3550588	20	8 9.5 19.7
144069	2004 BQ ₄₅	16.0	X	52.24368	28.67448	116.43307	8.11674	0.0943276	0.25447305	2.4662751	20	4 2.3 18.9
144070	2004 BV ₄₆	16.2	X	247.62880	121.56213	284.61653	5.41387	0.1118742	0.27103760	2.3647380	20	7 16.3 19.2
144071	2004 BY ₄₆	16.2	X	219.15830	261.45143	148.32251	11.47741	0.1833613	0.26727690	2.3868682	20	6 12.0 20.1
144072	2004 BE ₄₇	16.0	X	22.47115	139.92007	151.29281	2.45513	0.0272248	0.21406772	2.7675911	20	8 28.1 19.7
144073	2004 BB ₄₈	16.7	X	54.18332	250.36946	114.87401	5.90099	0.1453878	0.29401865	2.2398527	20	—
144074	2004 BQ ₄₈	16.5	X	350.11863	261.10341	272.02466	0.49961	0.0621616	0.24747549	2.5125493	20	1 2

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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>	
144081	2004 BR ₅₀	16.3	X	45.79280	83.31066	151.61487	2.74048	0.1424498	0.26385829	2.4074404	20	8 6.2	19.0
144082	2004 BP ₅₁	15.4	X	285.56911	342.50849	341.32768	1.94530	0.0642173	0.20068878	2.8892647	20	5 20.4	19.4
144083	2004 BR ₅₁	17.1	X	218.68710	294.88987	141.78290	3.61336	0.1534614	0.27057169	2.3674518	20	7 18.4	20.6
144084	2004 BX ₅₁	17.0	X	236.56993	185.18943	268.86500	1.20618	0.1672511	0.27627295	2.3347684	20	8 30.5	19.9
144085	2004 BO ₅₂	17.0	X	136.24580	38.04422	124.35614	0.65151	0.1549163	0.26916606	2.3756868	20	8 18.7	20.7
144086	2004 BF ₅₄	16.7	X	271.57030	88.94381	337.89254	4.28361	0.1278856	0.27868192	2.3212942	20	9 17.7	19.3
144087	2004 BR ₅₄	16.3	X	173.50777	95.50851	90.15805	0.78963	0.1402042	0.27711561	2.3300329	20	10 25.7	19.8
144088	2004 BV ₅₄	16.9	X	245.50311	326.39444	91.16156	3.80006	0.1130996	0.27246973	2.3564444	20	7 30.6	19.8
144089	2004 BV ₅₅	15.2	X	12.01927	6.06574	301.85635	8.55100	0.1362613	0.21245496	2.7815794	20	9 11.5	18.5
144090	2004 BN ₅₆	15.5	X	65.82628	150.84121	311.52780	11.93739	0.0954612	0.24685135	2.5167827	20	2 18.3	18.5
144091	2004 BP ₅₆	15.0	X	252.05337	69.77687	151.36260	9.49639	0.0386305	0.17453335	3.1711524	20	—	—
144092	2004 BP ₅₆	16.5	X	129.77703	73.30580	156.03284	1.54506	0.2130803	0.27493404	2.3423423	20	11 8.1	20.2
144093	2004 BZ ₅₆	16.9	X	202.69642	206.07531	252.63815	0.54274	0.1433588	0.27058773	2.3673583	20	7 31.9	20.2
144094	2004 BO ₅₈	16.2	X	150.80678	235.90738	233.23758	5.35494	0.0478064	0.26362132	2.4088829	20	6 17.8	19.5
144095	2004 BO ₅₈	16.5	X	176.41475	315.53336	174.34534	4.35080	0.1168328	0.27072212	2.3665747	20	8 15.5	20.0
144096	Wiesendangen	17.4	X	236.46351	261.60455	182.50516	1.16676	0.2180011	0.27581795	2.3373354	20	8 10.2	20.5
144097	2004 BB ₅₉	15.5	X	311.74020	307.64410	155.03957	15.05015	0.0856658	0.22930217	2.6436093	20	—	—
144098	2004 BE ₅₉	16.3	X	134.58954	296.31050	213.77356	3.90592	0.1612165	0.26617164	2.3934712	20	7 30.4	19.9
144099	2004 BO ₆₁	15.9	X	209.35435	325.49329	164.56506	2.73220	0.0096497	0.21717247	2.7411504	20	9 27.9	19.7
144100	2004 BN ₆₂	15.8	X	296.33713	228.88022	112.22312	13.47755	0.2448896	0.27121514	2.3637058	20	6 2.7	18.6
144101	2004 BX ₆₅	16.1	X	141.95864	176.33160	106.95698	3.54159	0.1757976	0.23133140	2.6281269	20	—	—
144102	2004 BH ₆₆	16.6	X	246.23038	232.63881	111.67798	7.18755	0.1360384	0.26179303	2.4200852	20	4 21.0	20.2
144103	2004 BS ₆₈	15.6	X	331.49010	175.85742	231.93169	25.72814	0.2251109	0.28849398	2.2683577	20	12 24.8	17.8
144104	2004 BN ₆₉	16.0	X	352.00181	164.97186	303.08160	7.28751	0.1671604	0.23511563	2.5998505	20	—	—
144105	2004 BV ₆₉	16.6	X	12.42680	114.74714	333.58993	6.70626	0.1333474	0.29915849	2.2141234	20	—	—
144106	2004 BW ₇₀	14.5	X	283.54162	275.62715	320.93861	14.78732	0.2059662	0.18077045	3.0977837	20	1 17.1	19.3
144107	2004 BZ ₇₀	16.4	X	145.56113	112.91250	358.77362	2.21349	0.1294444	0.26263113	2.4149339	20	6 19.9	20.1
144108	2004 BV ₇₁	16.0	X	15.66626	103.01008	233.49702	4.29436	0.0588787	0.21994470	2.7180684	20	10 21.6	19.4
144109	2004 BA ₇₂	16.2	X	137.42783	309.73939	259.90465	5.86204	0.0639498	0.27681230	2.3317347	20	10 17.8	19.6
144110	2004 BN ₇₂	15.3	X	354.13260	332.46847	258.55348	5.40716	0.0904025	0.25482733	2.4639887	20	4 19.9	18.1
144111	2004 BO ₇₂	16.1	X	188.98702	266.87604	171.19370	6.53022	0.0924240	0.26480020	2.4017281	20	6 21.6	19.6
144112	2004 BM ₇₅	16.2	X	173.92379	317.41712	203.87703	6.48754	0.1438036	0.27452348	2.3446772	20	9 22.4	19.7
144113	2004 BN ₇₅	15.7	X	348.63336	255.70292	241.23340	13.66264	0.0333214	0.24037335	2.5617997	20	—	—
144114	2004 BW ₇₅	16.2	X	163.69847	110.70399	94.36874	5.09087	0.0856103	0.27705930	2.3303486	20	11 13.8	19.5
144115	2004 BR ₇₆	15.7	X	228.76937	23.03808	248.86512	7.77350	0.0685345	0.24177181	2.5519115	20	1 3.8	19.4
144116	2004 BB ₇₇	16.3	X	172.14664	244.43535	127.20924	6.84170	0.1239077	0.25334031	2.4736212	20	3 11.4	20.1
144117	2004 BU ₇₉	16.1	X	223.83507	160.66152	253.77880	5.31172	0.1081103	0.26676770	2.3899045	20	6 28.2	19.5
144118	2004 BP ₈₁	16.1	X	64.33287	161.82689	83.19016	6.78165	0.0960497	0.27062157	2.3671609	20	9 14.6	19.1
144119	2004 BC ₈₂	16.3	X	341.89142	181.18908	152.46011	4.73765	0.0784055	0.21468776	2.7622598	20	8 28.0	19.6
144120	2004 BE ₈₂	16.3	X	271.62692	304.04573	199.00959	6.71680	0.0459022	0.28848821	2.2683880	20	—	—
144121	2004 BK ₈₂	15.7	X	299.66316	272.30352	169.53655	13.17761	0.0818727	0.22366257	2.6878633	20	11 20.9	19.2
144122	2004 BX ₈₂	15.0	X	135.18735	297.76785	356.42093	14.06526	0.0655960	0.22696580	2.6617204	20	—	—
144123	2004 BC ₈₄	16.0	X	153.78722	162.30427	134.13009	11.09488	0.0358406	0.23362439	2.6109021	20	—	—
144124	2004 BR ₈₆	15.1	X	201.20445	254.38519	335.86475	13.27529	0.0450252	0.22967408	2.6407547	20	—	—
144125	2004 BS ₈₆	16.9	X	23.71501	19.01916	339.27566	3.16557	0.1424242	0.28629610	2.2799523	20	12 31.5	19.6
144126	2004 BJ ₈₈	15.7	X	75.52775	38.40395	203.12505	5.45359	0.0603155	0.21156799	2.7893483	20	9 5.6	19.6
144127	2004 BM ₈₈	15.7	X	359.77801	83.16076	243.82724	4.72787	0.0065155	0.21432661	2.7653619	20	9 9.4	19.4
144128	2004 BW ₈₈	16.3	X	120.03963	189.47116	239.70295	5.53017	0.1281585	0.25284725	2.4768358	20	3 24.5	19.7
144129	2004 BA ₈₉	16.4	X	129.44906	167.12238	240.25316	5.00630	0.1937861	0.25209431	2.4817652	20	3 14.8	20.1
144130	2004 BM ₈₉	16.5	X	199.00752	251.72226	251.94806	4.79977	0.2012649	0.27541844	2.3395951	20	9 19.2	20.1
144131	2004 BN ₈₉	15.6	X	223.26921	178.49465	291.70664	7.90564	0.0696267	0.21384650	2.7694994	20	9 7.2	19.8
144132	2004 BO ₈₉	16.6	X	143.09938	344.04089	174.92701	5.15847	0.1490221	0.26774357	2.3840939	20	8 19.5	20.2
144133	2004 BT ₈₉	15.7	X	106.75681	7.64560	187.56413	7.69165	0.2331072	0.20410543	2.8569305	20	8 30.9	20.4
144134	2004 BZ ₈₉	17.1	X	209.52055	290.06427	255.50440	4.57517	0.1000617	0.28346666	2.2950988	20	12 10.7	19.9
144135	2004 BE ₉₀	16.3	X	270.48433	281.61539	168.65123	9.16319	0.1820202	0.28002302	2.3138768	20	10 15.5	18.6
144136	2004 BN ₉₀	16.4	X	167.88577	261.65446	173.71639	1.32015	0.1747129	0.26201320	2.4187293	20	5 27.4	20.3
144137	2004 BW ₉₀	15.6	X	145.09117	276.77331	304.86616	5.34173	0.0417536	0.21795793	2.7345609	20	10 31.8	19.6
144138	2004 BB ₉₁	15.5	X	215.87404	184.40290	320.61636	11.87099	0.0747045	0.21704149	2.7422531	20	10 10.5	19.6
144139	2004 BC ₉₁	16.9	X	193.23248	18.05125	139.01065	3.99268	0.1601717	0.27540789	2.3396549	20	10 8.5	20.3
144140	2004 BH ₉₂	16.2	X	244.94699	119.05251	281.49749	6.47959	0.1399510	0.26863276	2.3788300	20	7 1.0	19.2
144141	2004 BS ₉₂	16.1	X	261.15789	351.25170	243.73036	6.95354	0.1526854	0.23875513	2.5733622	20	—	—
144142	2004 BU ₉₂	16.0	X	302.68219	187.98314	179.12936	11.43020	0.2613562	0.27501681	2.3418724	20	7 17.7	18.4
144143	2004 BG ₉₃	15.5	X	76.40563	324.07419	209.60970	10.61605	0.0783239	0.19874650	2.9080580	20	6 12.3	19.6
144144	2004 BK ₉₃	15.8	X	137.58975	46.54428	82.08826	9.16777	0.1329702	0.26038379	2.4288093	20	7 4.4	19.4
144145	2004 BT ₉₃	15.8	X	336.86229	14.49826	238.18427	11.82256	0.1612004	0.25279164	2.4771991	20	4 12.2	18.4
144146	2004 BW ₉₃	16.6	X	269.61704	296.25998	161.96139	7.04819	0.0778217	0.28076413	2.3098032	20	11 11.1	19.2
144147	2004 BE ₉₄	14.8	X	286.73792	34.26964	168.03779	15.03657	0.1884362	0.17629729	3.1499642	20	—	—
144148	2004 BX ₉₄	14.9	X	92.86027	57.52441	281.15970	13.77409	0.1642228	0.22884591	2.6471220	20	—	—
144149	2004 BK ₉₅	15.3	X	256.54115	230.44149	301.15177	10.91933	0.0969734	0.22608553	2.6686249	20	—	—
144150	2004 BS ₉₅	16.4	X	217.98959	269.48383	71.45525	5.28971	0.1335565	0.31505026	2.1390264	20	3 13.9	19.4
144151	2004 BP ₉₆	16.9	X	314.90885	281.81241	144.50992	1.71908	0.1870455	0.28634743	2.2796798	20	12 15.7	18.5
144152	2004 BY ₉₆	16.1	X	150.55797	50.83854	133.6							

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Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>
144161 2004 BP ₁₀₁	15.1	X	260.16342	49.83096	170.99455	22.27006	0.1703396	0.17387295	3.1791770	20	—	—
144162 2004 BA ₁₀₂	16.2	X	107.00738	36.95088	133.64327	2.87060	0.1915925	0.26227202	2.4171378	20	8 2.2	19.7
144163 2004 BV ₁₀₃	16.4	X	210.37899	12.82024	52.80591	3.70954	0.1509258	0.26629969	2.3927038	20	6 25.0	20.0
144164 2004 BY ₁₀₃	15.7	X	57.20505	97.78154	97.77178	6.34203	0.1023964	0.25804019	2.4434933	20	6 20.2	18.3
144165 2004 BZ ₁₀₅	15.7	X	257.83331	81.85171	56.39558	4.66404	0.0318142	0.22567198	2.6718842	20	12 7.6	19.0
144166 2004 BE ₁₀₆	16.2	X	134.53685	48.35382	8.31277	3.64161	0.1447321	0.25434400	2.4671093	20	3 28.9	19.8
144167 2004 BQ ₁₀₆	15.3	X	218.09457	327.69906	314.20204	13.52625	0.0898717	0.24081757	2.5586483	20	1 7.2	19.2
144168 2004 BF ₁₀₇	15.7	X	211.75094	166.84382	4.49623	9.08877	0.1363262	0.22102652	2.7091920	20	11 4.7	19.9
144169 2004 BA ₁₀₇	16.3	X	82.69343	146.89260	63.97104	4.78859	0.1221313	0.26586483	2.3953122	20	8 23.7	19.5
144170 2004 BK ₁₀₈	16.4	X	171.02494	85.55166	42.11091	4.64753	0.1110902	0.26870336	2.3784133	20	8 9.6	19.9
144171 2004 BR ₁₀₈	16.8	X	256.73149	91.68792	62.06457	5.21139	0.1341853	0.28637695	2.2795232	20	—	—
144172 2004 BK ₁₁₀	15.8	X	91.04352	30.63452	106.44061	15.23999	0.0362289	0.25433408	2.4671734	20	5 12.6	19.2
144173 2004 BK ₁₁₁	15.6	X	21.93747	126.21983	351.95703	18.40534	0.1763278	0.24169580	2.5524465	20	—	—
144174 2004 BW ₁₁₁	16.2	X	97.33460	341.35078	80.51506	6.43474	0.1517431	0.24684545	2.5168227	20	2 24.5	19.4
144175 2004 BZ ₁₁₁	15.5	X	308.24714	84.07608	151.09674	2.10117	0.0978618	0.18687487	3.0299499	20	2 23.8	19.5
144176 2004 BN ₁₁₃	14.8	X	302.68194	333.30506	257.05368	8.16332	0.1419189	0.18109490	3.0940826	20	2 2.7	19.2
144177 2004 BQ ₁₁₃	15.6	X	194.21088	63.55387	153.38675	5.28612	0.2410955	0.21922930	2.7239783	20	12 6.1	20.2
144178 2004 BD ₁₁₄	16.6	X	158.54160	284.81920	207.42690	1.90737	0.1644720	0.26582415	2.3955565	20	7 30.9	20.3
144179 2004 BO ₁₁₄	16.5	X	97.29836	28.61834	179.80204	4.80687	0.1787869	0.26522179	2.3991823	20	9 9.7	19.9
144180 2004 BP ₁₁₄	14.7	X	356.25673	222.03432	303.37161	12.51506	0.0979530	0.18205811	3.0831597	20	2 3.6	18.5
144181 2004 BT ₁₁₅	15.3	X	76.01428	7.95041	34.16836	13.58845	0.1148580	0.24057482	2.5603693	20	—	—
144182 2004 BX ₁₁₅	16.5	X	175.38714	125.01950	347.24092	4.77684	0.1083756	0.26932385	2.3747588	20	7 23.9	19.9
144183 2004 BC ₁₁₆	16.4	X	265.44110	43.13716	38.78021	5.40419	0.0270037	0.27872588	2.3210501	20	10 17.5	19.2
144184 2004 BZ ₁₁₆	16.2	X	170.13377	10.06059	48.53206	7.13991	0.1114746	0.25956489	2.4339151	20	5 5.9	19.7
144185 2004 BC ₁₁₇	16.0	X	245.12658	136.00922	357.44667	11.40301	0.0342137	0.22218534	2.6997639	20	11 9.9	19.8
144186 2004 BQ ₁₁₉	15.5	X	255.90932	205.60536	48.02537	15.00416	0.1648872	0.23982258	2.5657204	20	1 5.3	19.8
144187 2004 BU ₁₁₉	15.6	X	305.70629	173.85043	28.61264	18.32116	0.1055830	0.24051272	2.5608100	20	1 1.8	19.5
144188 2004 BW ₁₁₉	15.9	X	1.18250	236.79222	221.46796	3.62580	0.2536392	0.23615748	2.5921985	20	—	—
144189 2004 BX ₁₁₉	16.3	X	151.24887	113.59344	81.57594	7.98752	0.1836987	0.27171402	2.3608117	20	10 17.9	20.2
144190 2004 BB ₁₂₀	15.3	X	147.51637	217.82020	38.37356	9.03298	0.0972758	0.22509753	2.6764280	20	12 18.4	19.3
144191 2004 BQ ₁₂₁	15.1	X	69.59565	327.07029	9.76486	28.36472	0.1130191	0.22569792	2.6716794	20	—	—
144192 2004 BT ₁₂₃	16.4	X	81.85385	346.82845	27.13282	5.58127	0.0526248	0.23047491	2.6346339	20	—	—
144193 2004 BY ₁₂₃	15.2	X	224.65539	94.08923	199.31291	13.38298	0.1181323	0.24147037	2.5540348	20	1 22.3	19.4
144194 2004 BA ₁₂₄	16.0	X	178.74048	27.20842	78.05942	8.92444	0.0613204	0.26738293	2.3862371	20	7 18.9	19.4
144195 2004 BV ₁₂₇	16.3	X	79.04199	27.06265	293.02042	2.38754	0.1132281	0.22813435	2.6526234	20	12 28.4	20.1
144196 2004 BX ₁₃₅	16.5	X	166.80195	335.02892	344.16081	3.51956	0.2115368	0.24236203	2.5477667	20	1 7.7	20.6
144197 2004 BZ ₁₃₉	17.3	X	254.91955	216.41465	169.11528	1.33969	0.1793215	0.27053579	2.3676613	20	6 17.1	20.6
144198 2004 BN ₁₄₇	16.3	X	195.50976	172.46200	128.27376	8.89267	0.0784899	0.24400959	2.5362854	20	1 4.2	20.0
144199 2004 BV ₁₆₁	16.4	X	109.82421	22.99880	341.56908	4.56395	0.0759253	0.23812824	2.5778765	20	—	—
144200 2004 CH	15.1	X	348.40579	334.43888	288.14404	7.13348	0.0990044	0.19877010	2.9078278	20	5 28.4	18.7
144201 2004 CO ₁	15.8	X	346.90496	57.84071	203.92806	2.69388	0.1464854	0.25754719	2.4466105	20	5 22.3	17.8
144202 2004 CR ₁	16.0	X	230.64402	280.60708	278.40020	2.78799	0.0656401	0.22899674	2.6459595	20	—	—
144203 2004 CD ₇	15.8	X	105.93626	249.51285	141.35154	15.68150	0.0703366	0.24260907	2.5460369	20	1 11.3	19.3
144204 2004 CF ₇	15.6	X	262.76339	239.28151	138.33796	7.33606	0.0801875	0.20625206	2.8370731	20	6 28.7	19.6
144205 2004 CS ₇	16.4	X	289.19816	241.77534	133.52525	3.94481	0.2084154	0.27281194	2.3544735	20	7 16.5	18.8
144206 2004 CB ₉	16.9	X	210.95810	9.29694	7.98697	2.72320	0.1923440	0.26139023	2.4225708	20	4 20.9	21.0
144207 2004 CT ₉	16.0	X	183.88472	131.62885	348.17169	5.29969	0.0112357	0.20989997	2.8041063	20	8 12.1	19.8
144208 2004 CS ₁₀	15.0	X	338.80362	203.76213	319.48276	15.59605	0.0503928	0.18101140	3.0950340	20	1 16.2	19.2
144209 2004 CB ₁₂	15.6	X	339.46002	180.89521	171.43648	6.75668	0.0618318	0.21290544	2.7776544	20	9 18.7	18.8
144210 2004 CH ₁₂	16.0	X	323.57128	30.89202	122.49499	2.24975	0.0506598	0.23651308	2.5895995	20	—	—
144211 2004 CM ₁₂	16.6	X	177.31594	290.43678	201.39190	1.03832	0.1304790	0.26913332	2.3758794	20	8 18.9	20.3
144212 2004 CS ₁₃	15.9	X	217.03292	187.22615	331.66920	3.30414	0.0579864	0.21986284	2.7187430	20	11 5.9	19.8
144213 2004 CD ₁₄	15.3	X	334.71750	305.89860	188.30900	0.64412	0.1736759	0.17531088	3.1617689	20	—	—
144214 2004 CE ₁₅	16.6	X	15.59243	142.10626	312.17300	4.21209	0.1608962	0.23739923	2.5831513	20	—	—
144215 2004 CJ ₁₅	16.3	X	323.57358	321.87804	144.67970	4.34437	0.0706339	0.23008192	2.6376331	20	—	—
144216 2004 CW ₁₆	16.0	X	197.73419	314.05536	358.26719	2.25166	0.1753787	0.24109475	2.5566869	20	1 24.3	20.1
144217 2004 CD ₁₈	15.5	X	101.28143	138.97340	123.50599	2.78949	0.0417088	0.21797418	2.7344250	20	11 4.5	19.4
144218 2004 CF ₁₈	15.8	X	49.22936	271.24328	130.88579	15.46432	0.0396359	0.23378897	2.6096767	20	—	—
144219 2004 CS ₂₂	17.4	X	355.25343	73.53070	38.77722	2.23865	0.1020090	0.29853104	2.2172248	20	—	—
144220 2004 CX ₂₂	16.2	X	252.61072	51.54146	341.13649	6.52323	0.1051527	0.26914805	2.3757928	20	7 5.9	19.3
144221 2004 CS ₂₆	16.9	X	140.69407	162.75914	5.18103	0.51631	0.1333773	0.26811467	2.3818935	20	8 29.6	20.2
144222 2004 CA ₂₇	16.6	X	128.08863	66.99283	171.40540	4.15133	0.1488192	0.27539737	2.3397144	20	11 17.8	20.1
144223 2004 CH ₃₃	15.9	X	29.04970	181.15605	101.06991	3.35668	0.0656146	0.21060996	2.7978007	20	8 30.8	19.4
144224 2004 CQ ₃₅	16.3	X	348.07019	135.85733	344.49935	14.18340	0.1305843	0.23563007	2.5960651	20	—	—
144225 2004 CL ₃₇	16.2	X	228.33766	163.33164	275.35867	1.72065	0.1650532	0.27032225	2.3689080	20	7 30.6	19.4
144226 2004 CZ ₃₇	16.1	X	231.77146	352.21438	109.67813	11.09407	0.1159303	0.27425201	2.3462242	20	9 17.4	19.3
144227 2004 CU ₄₁	15.0	X	104.25740	172.65182	300.68727	7.83602	0.0548915	0.19225547	2.9731506	20	4 23.9	19.3
144228 2004 CN ₄₃	16.1	X	249.15722	124.33740	333.73547	2.43773	0.0637782	0.21481188	2.7611957	20	9 28.1	19.7
144229 2004 CU ₄₉	16.6	X	172.43196	316.27207	306.88477	2.58966	0.1446050	0.28940192	2.2636109	20	—	—
144230 2004 CA ₅₁	16.4	X	103.96229	5.27957	185.47890	4.51427	0.1301653	0.26497276	2.4006853	20	8 18.8	19.9
144231 2004 CV ₅₂	15.9	X	49.62673	178.94076	50.88493	3.27084	0.1388390	0.26380176	2.4077844	20	8 5.8	18.6
144232 2004 CN ₅₄	16.1	X	77.98742	191.12771	16.06231	3.70749	0.1475916	0.26218447	2.4176759	20	8 14.9	19.3
144233 2004 CO ₅₄	16.6	X	197.50529	334.15183	124.29265	3.68570	0.1509473	0.26818090	2.3815013	20	7 25.7	20.2
144234 2004 CO ₅₅	16.5	X	183.58471	184.17320								

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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>
144241 2004 CD ₇₄	16.3	X	29.51080	141.99829	91.06518	2.37329	0.1440012	0.25867010	2.4395248	20	7 5.6	18.6
144242 2004 CE ₇₄	15.1	X	266.46589	217.13819	28.07716	1.96194	0.1477192	0.17907642	3.1172894	20	1 14.8	19.8
144243 2004 CA ₇₆	16.5	X	333.90315	252.06788	148.52905	6.09316	0.1723932	0.28475473	2.2881724	20	12 15.3	18.5
144244 2004 CW ₇₆	15.9	X	119.28778	138.74958	175.65129	2.38610	0.0647025	0.22924937	2.6440152	20	—	—
144245 2004 CU ₇₈	15.6	X	53.71696	172.45219	137.69319	3.29062	0.0487246	0.21688057	2.7436094	20	11 7.5	19.2
144246 2004 CZ ₇₈	16.2	X	226.18828	302.80184	136.88758	7.21454	0.0350266	0.26834589	2.3805250	20	8 15.7	19.2
144247 2004 CG ₇₉	15.6	X	233.82888	303.07616	111.82939	3.22439	0.0569179	0.20503075	2.8483283	20	7 14.5	19.6
144248 2004 CE ₈₀	15.6	X	252.34116	20.02439	145.07667	12.30218	0.0207109	0.22526917	2.6750683	20	—	—
144249 2004 CV ₈₂	16.5	X	266.16002	60.35032	347.55440	3.15914	0.1318308	0.27241540	2.3567577	20	8 11.9	19.1
144250 2004 CQ ₈₃	15.7	X	343.22021	57.96103	158.27575	0.95028	0.0349714	0.18947830	3.0021316	20	3 25.5	19.6
144251 2004 CU ₈₃	16.0	X	82.33585	103.22691	161.42042	4.14438	0.0191105	0.21473188	2.7618814	20	10 11.8	19.7
144252 2004 CC ₈₄	14.9	X	219.63936	113.77867	153.38563	15.87838	0.0914072	0.17610942	3.1522040	20	—	—
144253 2004 CV ₈₄	16.9	X	169.40176	161.35983	293.57851	3.84634	0.0666933	0.26287263	2.4134546	20	6 22.0	20.1
144254 2004 CK ₈₆	15.5	X	40.16641	13.04824	331.57509	15.41755	0.1517717	0.22154629	2.7049531	20	12 19.2	19.5
144255 2004 CF ₈₇	16.3	X	169.68302	239.22321	174.37700	7.13248	0.2158656	0.25916589	2.4364125	20	5 3.8	20.4
144256 2004 CL ₈₇	16.7	X	160.21920	164.56820	332.36577	3.10213	0.1200843	0.26687991	2.3892346	20	8 8.7	20.3
144257 2004 CH ₈₉	16.2	X	239.82340	210.29167	122.19598	15.63071	0.1614671	0.25560455	2.4589913	20	3 31.3	20.3
144258 2004 CN ₉₀	15.8	X	111.68883	46.81048	225.42398	7.24508	0.1063650	0.22012505	2.7165836	20	12 1.9	19.9
144259 2004 CY ₉₂	16.1	X	236.31431	222.84182	58.15688	3.51812	0.0888923	0.24464275	2.5319074	20	1 23.5	19.7
144260 2004 CK ₉₃	14.9	X	238.43028	271.57165	337.38938	18.11822	0.1586847	0.177114084	3.1399562	20	—	—
144261 2004 CX ₉₃	15.6	X	109.65732	124.16908	154.32685	13.80204	0.0749280	0.22050447	2.7134664	20	12 7.7	19.9
144262 2004 CY ₉₃	16.0	X	16.62835	177.81446	304.21920	8.61366	0.1205017	0.24120502	2.5559076	20	—	—
144263 2004 CR ₉₄	15.6	X	168.78737	244.87841	211.31899	5.38828	0.0206271	0.20084613	2.8877554	20	6 20.4	19.6
144264 2004 CF ₉₅	15.7	X	258.76400	253.56572	182.26935	3.48849	0.0713909	0.21338268	2.7735113	20	9 10.5	19.3
144265 2004 CH ₉₅	14.9	X	120.91797	23.87192	346.27470	15.24971	0.1203289	0.23802654	2.5786108	20	1 16.9	18.6
144266 2004 CZ ₉₅	16.4	X	215.66349	105.08912	325.33169	6.40147	0.0854843	0.26629375	2.3927394	20	7 14.1	19.7
144267 2004 CE ₉₆	15.0	X	152.92968	334.77669	322.59191	10.35750	0.0786903	0.16976120	3.2303067	20	—	—
144268 2004 CG ₉₆	14.8	X	66.51037	171.87095	157.34863	15.78947	0.1935275	0.22206345	2.7007517	20	—	—
144269 2004 CJ ₉₆	16.8	X	125.14694	338.92388	192.43571	2.12350	0.1257241	0.26559862	2.3969124	20	8 16.4	20.4
144270 2004 CM ₉₆	15.8	X	312.48864	109.40908	104.44344	9.94343	0.0666661	0.24141031	2.5544584	20	1 13.6	19.0
144271 2004 CY ₉₆	15.2	X	342.52537	33.85967	166.94974	18.22727	0.0861857	0.18534236	3.0466291	20	2 29.1	19.2
144272 2004 CA ₉₇	15.8	X	152.64845	98.29978	195.52266	8.97285	0.0624278	0.23286558	2.6165709	20	—	—
144273 2004 CG ₉₇	14.5	X	278.08963	226.50427	349.12519	21.43241	0.1661408	0.17335395	3.1855191	20	—	—
144274 2004 CQ ₉₇	15.7	X	194.48502	217.25174	8.43589	12.16617	0.0464140	0.22842495	2.6503732	20	—	—
144275 2004 CY ₉₈	15.1	X	276.24363	57.38873	166.03977	5.74471	0.0916666	0.17591376	3.1545410	20	1 5.1	19.8
144276 2004 CN ₉₉	16.3	X	219.05665	323.20152	134.71340	4.61854	0.1200539	0.27049525	2.3678978	20	8 21.3	19.4
144277 2004 CO ₁₀₀	16.5	X	216.57092	42.53520	56.97458	3.06223	0.1414305	0.27077141	2.3662875	20	8 19.2	19.8
144278 2004 CU ₁₀₀	16.8	X	98.25296	70.07388	74.64092	3.32666	0.1335568	0.25681284	2.4512723	20	6 10.9	19.9
144279 2004 CG ₁₀₁	15.6	X	159.54851	24.86866	183.39935	9.90359	0.1455312	0.21355495	2.7720196	20	11 1.5	20.1
144280 2004 CH ₁₀₁	16.2	X	12.90175	342.18014	177.15234	13.46263	0.0925685	0.24288753	2.5440906	20	2 10.2	19.3
144281 2004 CW ₁₀₃	15.2	X	15.67160	348.95566	194.10058	1.76353	0.1593359	0.18652489	3.0337389	20	3 28.9	18.5
144282 2004 CO ₁₀₄	14.7	X	315.93103	283.54201	298.18925	13.62126	0.0613240	0.18504122	3.0499337	20	2 18.1	19.0
144283 2004 CY ₁₀₆	15.2	X	267.77273	124.42159	313.80459	12.52934	0.1756301	0.21542653	2.7559410	20	9 5.9	19.0
144284 2004 CP ₁₀₇	16.8	X	74.91296	329.53004	201.42712	1.08808	0.1181371	0.25738164	2.4476596	20	6 13.9	19.7
144285 2004 CT ₁₀₈	15.6	X	103.11375	357.13010	170.33090	12.85968	0.1188765	0.22372572	2.6873574	20	—	—
144286 2004 CF ₁₀₉	14.8	X	317.75001	46.93960	174.52348	8.98184	0.0662874	0.18220229	3.0815331	20	2 22.9	18.9
144287 2004 CE ₁₁₀	15.7	X	225.81332	277.61186	310.74862	7.82025	0.0852559	0.22895519	2.6462796	20	—	—
144288 2004 CY ₁₁₀	16.7	X	209.85696	196.11582	258.21508	0.54270	0.1438457	0.26880538	2.3778115	20	8 2.6	20.1
144289 2004 CD ₁₁₃	15.9	X	286.85046	226.75113	353.36262	4.82475	0.1548016	0.24177476	2.5518907	20	—	—
144290 2004 CO ₁₁₆	16.4	X	139.74331	199.96911	256.38356	6.05090	0.0674383	0.26022341	2.4298071	20	5 18.2	19.7
144291 2004 CS ₁₁₆	15.6	X	112.64286	1.77363	253.94531	6.47788	0.1769805	0.21689517	2.7434863	20	11 15.3	20.2
144292 2004 CC ₁₁₆	17.1	X	46.84396	117.84008	101.95809	2.58237	0.1275286	0.26119857	2.4237558	20	7 13.8	19.7
144293 2004 CH ₁₂₁	15.9	X	189.55744	317.99613	280.07658	12.80887	0.0639718	0.22719830	2.6599042	20	—	—
144294 2004 CP ₁₂₁	16.5	X	237.69861	202.21482	134.54142	6.90653	0.1280590	0.25360418	2.4719050	20	4 2.5	20.2
144295 2004 CK ₁₂₈	17.0	X	95.95338	328.04185	251.03838	1.19787	0.1386156	0.27002707	2.3706340	20	9 18.8	20.2
144296 Steviewonder	16.0	X	113.59376	289.61610	263.28457	6.53901	0.1499696	0.26512367	2.3997742	20	8 31.6	19.7
144297 2004 DS	16.7	X	324.74905	73.09611	12.04362	4.63489	0.1815676	0.28902323	2.2655877	20	—	—
144298 2004 DY	15.1	X	130.21654	167.41141	345.31047	24.50664	0.2958313	0.26407104	2.4061472	20	8 14.6	19.6
144299 2004 DA ₃	15.8	X	139.76961	216.84477	147.55242	15.65286	0.1381970	0.24152692	2.5536362	20	1 28.3	19.6
144300 2004 DC ₃	16.4	X	70.71187	227.45292	346.79579	2.66868	0.0804786	0.26263125	2.4149332	20	8 3.9	19.3
144301 2004 DK ₄	16.5	X	214.86309	29.48120	99.59947	5.87282	0.1745156	0.27430415	2.3459268	20	9 24.6	19.9
144302 2004 DV ₄	16.1	X	264.13406	231.98292	12.83734	3.47988	0.1422224	0.23935463	2.5690635	20	1 4.2	19.9
144303 Mirellabreschi	16.7	X	38.37925	254.25016	164.53902	11.88449	0.0601636	0.23476159	2.6024637	20	—	—
144304 2004 DS ₇	16.2	X	77.44203	182.42903	157.16079	4.49685	0.1944487	0.22609198	2.6685742	20	—	—
144305 2004 DT ₈	16.4	X	54.93517	215.68083	354.65570	1.70117	0.1622162	0.25832520	2.4416956	20	7 19.0	19.3
144306 2004 DL ₁₁	16.3	X	197.72206	36.98085	74.02568	3.11519	0.1446215	0.26888193	2.3773601	20	8 13.4	19.8
144307 2004 DC ₁₁	16.6	X	300.23851	278.75965	299.30990	2.98536	0.1247336	0.24052342	2.5607340	20	1 11.7	20.2
144308 2004 DV ₁₁	16.7	X	198.27397	124.47373	323.54891	0.96192	0.1471223	0.26648057	2.3916209	20	7 12.8	20.2
144309 2004 DR ₁₂	16.9	X	248.65376	330.03994	142.80124	6.11261	0.1406480	0.27742230	2.3283153	20	10 20.1	19.6
144310 2004 DZ ₁₂	16.0	X	344.95353	346.02376	133.25023	8.53739	0.1483851	0.23309880	2.6148254	20	—	—
144311 2004 DJ ₁₄	15.7	X	199.51546	115.02443	52.85728	2.46325	0.0674062	0.21491186	2.7603393	20	10 27.3	19.8
144312 2004 DO ₁₄	17.1	X	184.93235	108.13458	145.50988	2.25523	0.1504964	0.26489924	2.4011295	20	7 6.8	20.8
144313 2004 DW ₁₅	14.8	X	139.66336	206.61151	343.54933	15.90459	0.1933571	0.23564200	2.5959774	20	1 17.9	18.8
144314 2004 DF ₁₆	16.5	X	129.35322	50.37114	153.26896	2.						

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>		
144321	2004	DJ ₁₉	15.9	X	352.41075	346.39339	138.09802	6.03232	0.0540448	0.23688883	2.5868604	20	—	—
144322	2004	DK ₂₀	16.3	X	214.62980	206.12220	277.33666	6.65532	0.0699734	0.27314924	2.3525347	20	9 22.1	19.5
144323	2004	DN ₂₀	15.9	X	57.64759	323.60983	271.64775	5.70190	0.1097196	0.26236819	2.4165471	20	8 16.8	19.0
144324	2004	DO ₂₀	16.2	X	182.14286	60.77791	55.14333	2.77958	0.1720373	0.26755210	2.3852311	20	8 2.6	19.9
144325	2004	DX ₂₀	16.3	X	240.42838	85.80410	30.29088	6.30687	0.0903541	0.27654285	2.3332491	20	10 18.5	18.8
144326	2004	DZ ₂₁	16.3	X	240.02686	31.91461	116.18177	6.56103	0.0980933	0.28041394	2.3117258	20	12 2.1	19.0
144327	2004	DD ₂₂	16.2	X	121.56140	89.62759	74.11517	3.84271	0.1215374	0.26248217	2.4158475	20	8 3.5	19.7
144328	2004	DU ₂₂	16.8	X	229.48945	39.73945	100.87725	3.88952	0.1133974	0.27832427	2.3232824	20	11 4.3	19.7
144329	2004	DD ₂₃	14.9	X	46.86198	270.87261	150.45921	14.99085	0.1058942	0.23241871	2.6199238	20	—	—
144330	2004	DE ₂₄	16.5	X	300.20680	208.86819	270.43333	5.79362	0.1513072	0.28723816	2.2749645	20	—	—
144331	2004	DR ₂₄	16.1	X	178.93737	314.89682	178.86087	6.02292	0.0640447	0.26773955	2.3841177	20	8 25.4	19.4
144332	2004	DV ₂₄	16.5	X	357.42041	186.36890	171.13750	55.89207	0.2897424	0.58065435	1.4229542	20	—	—
144333	2004	Marcinkiewicz	15.6	X	47.48316	348.38420	8.17175	13.01478	0.1501497	0.22357575	2.6885591	20	—	—
144334	2004	DM ₂₆	16.1	X	24.52837	28.76622	358.32604	5.69002	0.0313132	0.22642471	2.6659592	20	—	—
144335	2004	DS ₂₈	16.1	X	304.16020	65.75261	352.16839	5.38643	0.0824808	0.21832874	2.7314637	20	10 20.8	19.4
144336	2004	DE ₃₀	14.6	X	177.69850	307.60516	339.52495	15.01956	0.1244594	0.17110931	3.2133173	20	—	—
144337	2004	DD ₃₀	16.6	X	164.40812	117.08615	16.71055	3.39020	0.0813763	0.26676919	2.3898956	20	8 9.6	19.9
144338	2004	DO ₃₀	14.9	X	279.23143	22.76414	344.50500	14.89345	0.1525235	0.20492836	2.8492770	20	6 27.4	19.1
144339	2004	DY ₃₁	15.3	X	68.07615	290.28340	162.32629	10.00981	0.0753731	0.18029352	3.1032443	20	2 17.9	19.5
144340	2004	DG ₃₂	16.4	X	91.29869	335.35720	242.49453	4.29323	0.1454597	0.26707005	2.3881004	20	9 10.8	19.8
144341	2004	DS ₃₂	16.3	X	284.18015	196.54890	54.12818	2.01084	0.0901687	0.24343408	2.5402812	20	2 7.8	19.8
144342	2004	DW ₃₂	15.9	X	281.79140	95.72985	136.90580	6.77452	0.0624825	0.23985514	2.5654883	20	1 15.9	19.4
144343	2004	DM ₃₃	16.3	X	78.08286	164.70669	36.20439	2.03591	0.1176862	0.26017923	2.4300822	20	7 31.9	19.3
144344	2004	DQ ₃₃	16.5	X	221.59409	294.58443	139.77240	7.39125	0.1158231	0.26613232	2.3937069	20	7 21.9	19.8
144345	2004	DJ ₃₄	16.0	X	27.29272	61.65804	355.33231	9.60068	0.0865232	0.23158014	2.6262446	20	—	—
144346	2004	DH ₃₅	15.9	X	70.68913	326.65191	227.63703	5.53309	0.0776232	0.26015142	2.4302554	20	7 3.9	18.9
144347	2004	DO ₃₆	15.8	X	196.30309	277.06282	187.19371	8.09250	0.0088916	0.20571805	2.8419807	20	8 4.0	19.8
144348	2004	DR ₃₆	16.7	X	125.77303	249.37270	284.36189	1.27530	0.1496797	0.26500692	2.4004790	20	8 21.9	20.2
144349	2004	DU ₃₆	14.8	X	128.70819	18.49920	335.29091	15.17255	0.1318465	0.23484690	2.6018335	20	1 6.6	18.6
144350	2004	DV ₃₆	16.0	X	248.56530	257.26170	277.91789	2.75222	0.2080212	0.22485435	2.6783573	20	12 16.8	19.5
144351	2004	DY ₃₆	16.5	X	25.33362	134.14389	4.57326	6.03176	0.1376396	0.24299362	2.5433500	20	2 6.7	19.0
144352	2004	DY ₃₇	15.2	X	356.82706	84.50071	158.58099	10.79969	0.0452639	0.19152624	2.9806926	20	5 20.4	19.3
144353	2004	DY ₃₉	16.9	X	47.45754	58.74158	173.14064	1.16920	0.1502607	0.26001244	2.4311213	20	8 5.3	19.6
144354	2004	DB ₄₁	14.6	X	307.45276	74.63856	119.31004	6.57009	0.1260898	0.17503306	3.1651138	20	1 1.8	19.1
144355	2004	DH ₄₁	14.6	X	252.55817	51.82655	189.99245	9.48580	0.1817816	0.17117262	3.2125250	20	—	—
144356	2004	DJ ₄₁	15.0	X	62.05506	112.22771	147.81869	14.03592	0.1261530	0.20489334	2.8496016	20	9 26.2	19.0
144357	2004	DB ₄₂	16.1	X	339.86160	259.19772	302.08371	2.24846	0.1147593	0.24377589	2.5379061	20	2 13.7	18.9
144358	2004	DD ₄₂	16.2	X	7.84990	66.34022	115.56488	2.22938	0.0698905	0.24586713	2.5234947	20	3 8.4	19.0
144359	2004	DJ ₄₂	16.0	X	48.01135	157.36759	330.53878	14.93102	0.0702740	0.24531171	2.5273023	20	2 24.6	18.8
144360	2004	DF ₄₄	14.6	X	235.83777	252.45425	6.79993	25.61724	0.2353970	0.17111263	3.2132758	20	1 2.5	20.5
144361	2004	DV ₄₄	16.9	X	248.25284	317.77083	201.64150	10.91439	0.1938754	0.28537857	2.2848366	20	12 15.5	19.5
144362	2004	DG ₄₅	15.4	X	309.89270	21.19852	160.25016	16.77184	0.0319908	0.17843363	3.1247714	20	1 2.1	20.0
144363	2004	DX ₄₆	15.1	X	308.09718	289.38871	303.65384	8.52008	0.0304232	0.18437982	3.0572230	20	2 27.7	19.5
144364	2004	DE ₄₇	15.5	X	30.13420	126.08921	205.27531	6.56304	0.0344965	0.21515977	2.7582185	20	10 31.9	19.1
144365	2004	DN ₄₇	16.2	X	311.44116	359.40376	201.15175	7.15283	0.1040210	0.23988063	2.5653065	20	1 5.2	19.7
144366	2004	DA ₄₈	15.5	X	171.32541	246.63455	200.12708	1.68835	0.0291523	0.19791376	2.9162095	20	6 11.6	19.5
144367	2004	DG ₄₈	15.5	X	22.26781	190.22820	357.79905	1.44987	0.1834979	0.18764977	3.0216027	20	4 18.5	18.7
144368	2004	DK ₄₈	16.8	X	155.37023	333.87068	168.98805	3.06959	0.1670093	0.26547740	2.3976421	20	8 10.9	20.5
144369	2004	DW ₄₈	15.7	X	217.17982	216.55380	311.37156	2.41037	0.0542558	0.21865590	2.7287385	20	11 18.3	19.4
144370	2004	DH ₄₉	16.7	X	111.90600	0.96786	202.96196	0.49146	0.1239046	0.26660809	2.3908583	20	9 14.9	20.2
144371	2004	DJ ₄₉	15.6	X	313.38682	79.46628	343.01509	4.49691	0.0357007	0.21800905	2.7341334	20	11 12.1	19.2
144372	2004	DN ₅₁	16.7	X	190.84760	312.76548	140.91920	4.10488	0.1528707	0.26466891	2.4025223	20	7 12.0	20.3
144373	2004	DX ₅₂	16.1	X	198.45207	55.68349	61.45187	7.19108	0.1284418	0.26806970	2.3821598	20	8 26.0	19.7
144374	2004	DF ₅₅	16.7	X	245.90118	244.92081	37.79587	0.05141	0.0765570	0.24410418	2.5356302	20	2 4.9	20.2
144375	2004	DL ₅₆	15.7	X	21.52920	123.35710	157.19913	15.20161	0.1433592	0.20506704	2.8479923	20	8 24.0	19.0
144376	2004	DR ₅₉	15.7	X	42.00767	282.82124	46.45833	6.39956	0.0539167	0.21588920	2.7520022	20	11 15.8	19.7
144377	2004	DW ₅₉	17.6	X	332.12141	234.31683	193.48305	1.65670	0.1927906	0.28720450	2.2751423	20	—	—
144378	2004	DK ₆₀	16.0	X	253.07019	186.17735	245.36976	0.75312	0.0731826	0.21179769	2.7873312	20	8 27.9	19.9
144379	2004	DW ₆₀	15.1	X	236.63536	78.24899	160.47227	9.25228	0.0330538	0.17392200	3.1785792	20	—	—
144380	2004	DC ₆₁	16.7	X	332.00814	178.29002	330.86021	1.92169	0.0972964	0.23673239	2.5879999	20	—	—
144381	2004	DK ₆₁	15.8	X	118.83641	188.50306	157.84274	13.22734	0.1737097	0.23369241	2.6103955	20	—	—
144382	2004	DZ ₆₂	16.5	X	50.63289	201.77531	128.64089	6.27651	0.1168376	0.21992250	2.7182513	20	12 9.0	20.3
144383	2004	DK ₆₅	16.9	X	100.65349	182.67895	12.26274	1.13308	0.1205827	0.26407154	2.4061442	20	8 21.2	20.1
144384	2004	DZ ₆₅	16.4	X	186.49272	107.11129	99.85311	1.98931	0.0987069	0.21941506	2.7224407	20	11 27.9	20.3
144385	2004	DJ ₆₉	15.2	X	329.34911	9.09626	335.17124	6.97755	0.1255345	0.21216533	2.7841103	20	8 20.2	18.1
144386	2004	Emmabirath	17.5	X	345.93682	333.13439	73.96478	1.11509	0.1703200	0.28755120	2.2733131	20	—	—
144387	2004	DT ₇₁	15.4	X	137.42801	211.74367	114.64877	15.42873	0.1138558	0.23025976	2.6362748	20	—	—
144388	2004	DD ₇₂	15.5	X	204.06033	127.39496	164.82849	3.35288	0.2114411	0.17438616	3.1729364	20	1 12.7	20.9
144389	2004	DT ₇₂	16.2	X	192.99648	99.23367	173.06223	5.26751	0.1143178	0.23114204	2.6295620	20	—	—
144390	2004	DK ₇₅	17.0	X	253.45116	175.04212	227.56000	2.00255	0.2032355	0.26963845				

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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>
144401 2004 ED ₇	16.4	X	245.63661	26.05566	169.79233	3.24025	0.0921813	0.22666935	2.6640407	20	—	—
144402 2004 EG ₇	15.5	X	312.18658	81.09503	139.82378	1.78927	0.1219053	0.17933779	3.1142598	20	2 9.0	19.8
144403 2004 EH ₇	16.2	X	49.50679	308.39649	154.77698	5.73092	0.1514202	0.24160661	2.5530746	20	1 30.8	18.8
144404 2004 EK ₇	16.5	X	206.64556	56.25034	164.30572	5.39792	0.1130183	0.22294134	2.6936571	20	—	—
144405 2004 EP ₇	14.8	X	177.98440	157.53760	166.18216	9.75131	0.0653036	0.17470024	3.1691324	20	1 21.6	19.7
144406 2004 EQ ₈	15.8	X	60.20850	84.55853	7.08424	9.92700	0.0530660	0.23903347	2.5713641	20	1 29.3	19.1
144407 2004 EV ₈	15.6	X	198.92796	164.38795	61.18443	15.75813	0.1372745	0.22021071	2.7158791	20	12 28.9	19.8
144408 2004 EZ ₈	14.6	X	273.39186	18.35969	248.50165	7.93964	0.0360199	0.18036065	3.1024742	20	2 25.3	19.2
144409 2004 EC ₉	15.8	X	23.55952	306.74852	195.01190	9.70263	0.0863169	0.23958207	2.5674372	20	2 3.9	18.9
144410 2004 EF ₉	15.6	X	111.38211	352.40892	185.95285	6.57746	0.1413529	0.19855309	2.9099462	20	8 5.9	20.2
144411 2004 EW ₉	16.6	X	345.96078	8.16129	288.84192	8.78808	0.5337876	0.37110561	1.9178047	20	4 14.2*	16.6
144412 2004 EH ₁₀	15.5	X	94.05441	176.56977	167.30540	8.81113	0.1523350	0.22736912	2.6585718	20	—	—
144413 2004 EF ₁₁	16.6	X	296.23078	68.30783	6.95113	9.02921	0.1830083	0.28194254	2.3033626	20	11 8.9	18.4
144414 2004 EM ₁₁	14.6	X	305.12659	122.47230	139.51471	11.40602	0.1304795	0.18662932	3.0326071	20	3 22.7	18.7
144415 2004 ES ₁₁	15.3	X	104.31313	232.50199	27.03640	12.84681	0.1296962	0.21270539	2.7793957	20	11 7.2	19.6
144416 2004 EZ ₁₁	16.9	X	269.53659	103.63668	327.97596	5.05191	0.1623863	0.27642699	2.3339009	20	9 14.5	19.5
144417 2004 EU ₁₂	15.7	X	326.13362	216.51729	30.12832	5.09796	0.1712775	0.18654920	3.0334753	20	3 25.5	19.3
144418 2004 EF ₁₄	16.4	X	101.97403	101.90131	84.84033	5.43323	0.1360568	0.26164805	2.4209791	20	8 14.6	19.8
144419 2004 ER ₁₄	14.9	X	132.14068	151.26863	24.14682	15.50536	0.0750962	0.20446139	2.8536137	20	8 29.1	19.4
144420 2004 ET ₁₄	16.0	X	202.27387	146.03509	85.18476	6.02020	0.2315389	0.22255135	2.6968030	20	12 30.5	20.2
144421 2004 EU ₁₆	14.7	X	219.01252	205.10589	72.63830	5.84877	0.1135476	0.17204338	3.2016762	20	1 11.0	19.8
144422 2004 EL ₁₈	15.4	X	23.60099	299.88379	148.15893	13.71569	0.1252698	0.23182706	2.6243795	20	—	—
144423 2004 ET ₁₈	15.4	X	314.75380	143.90732	158.07959	11.26598	0.1093039	0.19589770	2.9361833	20	5 29.7	19.3
144424 2004 EU ₁₉	15.7	X	58.35545	186.07726	173.45138	6.82417	0.0721220	0.22425764	2.6831063	20	—	—
144425 2004 EH ₂₀	16.2	X	291.08307	274.67431	226.93000	1.49685	0.0353732	0.22733363	2.6588485	20	—	—
144426 2004 EG ₂₃	14.9	X	241.36661	302.26474	0.69015	16.59435	0.0996361	0.18190313	3.0849107	20	3 4.4	19.6
144427 2004 EC ₂₆	15.8	X	271.98744	147.64747	86.37632	6.86012	0.0963935	0.23997516	2.5646328	20	1 2.9	19.3
144428 2004 EC ₂₇	16.1	X	14.60920	102.49450	31.21082	3.04308	0.1422997	0.23823569	2.5771014	20	1 9.3	18.8
144429 2004 EK ₂₈	15.5	X	214.95616	132.04294	167.64201	5.98383	0.1219962	0.17737935	3.1371408	20	1 30.1	20.6
144430 2004 EM ₃₁	15.2	X	60.91696	309.40402	297.21872	8.35589	0.0909289	0.20230211	2.8738832	20	8 26.4	19.2
144431 2004 EP ₃₁	16.0	X	39.33913	25.23820	290.88814	5.60526	0.1151102	0.27058713	2.3673617	20	11 15.3	19.1
144432 2004 EP ₃₂	15.5	X	339.56262	247.27908	276.60329	10.15939	0.2110031	0.23804330	2.5784917	20	—	—
144433 2004 EC ₃₃	15.8	X	348.13883	264.46187	238.11058	14.37367	0.0747082	0.23477730	2.6023477	20	—	—
144434 2004 EF ₃₃	15.2	X	124.90337	91.90344	308.27412	12.78531	0.1423624	0.24033566	2.5620675	20	2 23.3	18.9
144435 2004 EF ₃₃	15.3	X	222.59876	341.42677	66.86113	2.98552	0.0400894	0.19829809	2.9124403	20	6 23.6	19.4
144436 2004 ED ₃₄	16.8	X	134.36403	118.50373	346.31329	8.60565	0.1604714	0.25687156	2.4508987	20	5 30.3	20.7
144437 2004 EH ₃₄	15.7	X	298.62093	50.20459	3.02300	3.87339	0.0966416	0.21394997	2.7686065	20	10 4.9	19.0
144438 2004 EA ₃₅	17.0	X	193.42079	195.21607	25.81952	6.01692	0.2310128	0.27976751	2.3152854	20	12 20.9	20.5
144439 2004 EB ₃₅	15.6	X	337.76916	259.45902	140.91266	6.67208	0.0312399	0.21586739	2.7521875	20	11 20.2	19.2
144440 2004 EC ₃₅	15.1	X	151.86759	233.11503	153.89679	10.78767	0.0331403	0.18128126	3.0919618	20	3 7.2	19.5
144441 2004 EM ₃₅	15.1	X	71.85766	52.60521	76.29984	6.02348	0.0506478	0.18484944	3.0520428	20	4 8.2	19.3
144442 2004 EA ₃₇	14.8	X	285.60225	136.55633	171.24708	10.38004	0.0998179	0.18838017	3.0137872	20	4 27.8	19.1
144443 2004 EG ₃₈	15.1	X	255.25019	51.11775	159.50502	3.49586	0.2088878	0.16636301	3.2741472	20	—	—
144444 2004 EN ₃₈	15.4	X	207.89484	45.90431	129.50370	6.52773	0.0541619	0.21604110	2.7507120	20	11 18.7	19.3
144445 2004 EQ ₃₈	15.1	X	25.70675	165.88972	48.98216	6.15995	0.1212784	0.19039188	2.9925203	20	5 27.4	18.7
144446 2004 EA ₃₉	14.6	X	285.85008	218.48544	40.44726	17.83838	0.1650656	0.17786682	3.1314063	20	2 26.8	19.5
144447 2004 EG ₃₉	15.8	X	211.62755	185.36107	350.07011	2.65896	0.0318669	0.21827373	2.7281743	20	11 23.9	19.6
144448 2004 EJ ₄₀	16.0	X	256.39714	298.19999	173.22090	13.11862	0.1205925	0.21711179	2.7416611	20	10 20.2	19.7
144449 2004 EV ₄₀	17.1	X	134.83460	155.97824	22.69120	1.89940	0.1139032	0.26647169	2.3916741	20	9 6.4	20.6
144450 2004 EX ₄₀	15.9	X	146.30462	309.64893	192.29476	1.46589	0.0694729	0.20172957	2.8793183	20	7 24.5	20.1
144451 2004 EA ₄₁	15.7	X	269.65662	244.02314	209.23557	3.65670	0.0350311	0.21482616	2.7610733	20	10 24.1	19.3
144452 2004 EC ₄₁	15.6	X	357.31896	284.13532	330.32033	3.56337	0.1860473	0.19229208	2.9727733	20	5 31.4	18.5
144453 2004 EQ ₄₁	16.0	X	15.23785	124.72523	316.54567	2.31614	0.0251026	0.22997581	2.6384444	20	—	—
144454 2004 EC ₄₂	16.7	X	184.05782	128.89835	352.39782	5.98165	0.1920512	0.26729643	2.3867519	20	8 11.3	20.5
144455 2004 EF ₄₂	15.3	X	121.27463	179.76691	6.56820	15.21559	0.0779383	0.20319592	2.8654493	20	8 28.8	19.7
144456 2004 EZ ₄₂	15.5	X	253.82773	350.92138	73.97472	3.15934	0.0239933	0.20553704	2.8436490	20	8 28.8	19.5
144457 2004 EQ ₄₃	14.9	X	334.23323	176.57719	32.87928	11.44819	0.1275295	0.17943238	3.1131652	20	3 1.3	19.0
144458 2004 ET ₄₃	16.7	X	81.60176	311.09558	253.66943	0.23387	0.1496661	0.26237362	2.4165137	20	8 14.8	19.9
144459 2004 EW ₄₃	15.5	X	292.08032	208.18544	351.72033	4.61623	0.0419507	0.17389693	3.1788847	20	1 2.9	20.0
144460 2004 EZ ₄₃	16.4	X	201.71998	40.49987	161.45579	4.79439	0.0501777	0.21986724	2.7187067	20	12 14.1	20.3
144461 2004 EO ₄₄	17.2	X	244.29144	107.63835	350.95065	1.92792	0.1660686	0.27512143	2.3412787	20	9 16.5	20.2
144462 2004 EP ₄₇	15.3	X	126.83899	27.05894	67.15858	3.20975	0.0497308	0.19058881	2.9904586	20	4 30.7	19.7
144463 2004 EA ₄₈	15.0	X	276.31675	115.78700	160.52939	16.86971	0.1098904	0.18397219	3.0617373	20	3 5.4	19.3
144464 2004 EL ₄₈	16.0	X	105.94098	230.10020	88.80660	3.48051	0.0553260	0.22440479	2.6819332	20	—	—
144465 2004 EM ₄₈	15.6	X	50.31925	343.35311	23.33677	6.31724	0.0406272	0.22296873	2.6934365	20	—	—
144466 2004 EO ₄₉	15.9	X	2.09790	3.80492	25.58273	3.11656	0.0750698	0.21891344	2.7265979	20	12 12.4	19.3
144467 2004 EV ₅₁	16.5	X	177.40245	50.12144	28.96044	2.32115	0.1468156	0.26079093	2.4262808	20	6 9.5	20.4
144468 2004 ET ₅₂	16.5	X	182.67996	87.11279	120.70993	3.80550	0.1194291	0.21752945	2.7381507	20	11 23.7	20.7
144469 2004 EC ₅₅	14.6	X	202.80172	62.94845	217.29475	14.89288	0.1487193	0.17086629	3.2163635	20	—	—
144470 2004 ED ₅₅	15.5	X	250.04151	257.26234	300.02712	11.06795	0.1126225	0.22786116	2.6547432	20	—	—
144471 2004 EE ₅₅	15.9	X	341.51320	215.05336	251.06060	9.39160	0.1417442	0.23111119	2.6297960	20	—	—
144472 2004 EW ₅₅	15.2	X	246.41746	117.57614	309.60238	10.17675	0.1325555	0.20625812	2.8370175	20	8 4.8	19.3
144473 2004 ED ₅₆	15.3	X	316.98038	209.73415	218.43219	8.32640	0.1188532	0.21799297	2.7342678	20	11 25.4	18.4
144474 2004 EE ₅₆	16.5	X	228.62109	256.16607	294.32472							

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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>
144481 2004 EV ₅₈	14.5	X	296.44771	313.98915	255.06239	14.60956	0.0648195	0.17514991	3.1637059	20	1 12.3	19.1
144482 2004 EW ₅₉	15.1	X	183.00982	163.94749	19.66847	9.23433	0.2006707	0.21252112	2.7810021	20	10 19.0	19.6
144483 2004 EE ₆₀	15.1	X	261.63466	215.72898	242.19433	6.02659	0.0968075	0.21195356	2.7859644	20	10 7.6	19.0
144484 2004 ER ₆₁	15.7	X	254.28676	207.65008	191.48103	1.68667	0.0686824	0.20289201	2.8683099	20	7 17.4	19.7
144485 2004 ES ₆₁	15.7	X	29.15309	50.31110	349.00643	12.62239	0.0683595	0.22590220	2.6700686	20	—	—
144486 2004 EC ₆₃	15.4	X	79.88253	187.47441	303.73498	3.01036	0.0329760	0.18964217	3.0004019	20	4 14.5	19.5
144487 2004 EO ₆₃	16.9	X	215.14774	233.48749	263.07606	1.58725	0.1648307	0.27433638	2.3457431	20	10 1.8	20.1
144488 2004 EP ₆₃	16.0	X	231.49882	177.48985	353.12264	5.42146	0.0114953	0.21972287	2.7198975	20	12 16.1	19.8
144489 2004 EV ₆₃	15.0	X	210.97413	150.87497	182.88248	11.20783	0.1341764	0.18122240	3.0926312	20	3 4.8	20.0
144490 2004 EX ₆₃	15.8	X	299.60728	249.61553	182.91473	8.65700	0.0975582	0.21589615	2.7519431	20	11 4.1	19.1
144491 2004 EF ₆₅	14.1	X	261.03549	151.54460	118.95406	19.51901	0.0770737	0.17997573	3.1068962	20	2 12.9	18.8
144492 2004 EO ₆₅	15.1	X	199.36120	247.56106	66.17275	14.38689	0.1751615	0.23900953	2.5715357	20	1 30.2	19.5
144493 2004 ES ₆₅	16.7	X	265.85671	112.37972	147.68562	1.90386	0.0658352	0.24105680	2.5569553	20	1 31.4	20.4
144494 2004 EW ₆₅	16.2	X	135.44329	112.20634	189.68273	3.27285	0.0700685	0.22638401	2.6662788	20	—	—
144495 2004 EP ₆₆	16.6	X	26.78435	227.06044	272.97636	1.83333	0.0960800	0.30262775	2.1971695	20	1 27.2	18.5
144496 Reingard	15.8	X	209.70959	193.18273	25.36552	12.20679	0.1279212	0.22414261	2.6840242	20	—	—
144497 2004 EO ₆₇	16.3	X	65.38988	301.23790	333.87496	2.97573	0.0634374	0.20967893	2.8060766	20	10 7.0	20.3
144498 2004 ES ₆₇	17.0	X	141.56780	277.44901	194.43624	3.76727	0.1475359	0.25898862	2.4375242	20	6 17.1	20.7
144499 2004 EE ₆₈	15.6	X	52.21882	328.91488	223.75664	1.37069	0.0167645	0.19616468	2.9335185	20	5 26.8	19.6
144500 2004 EV ₆₈	16.0	X	315.04004	76.56877	347.08969	7.62701	0.0595902	0.21910965	2.7249699	20	11 14.5	19.6
144501 2004 EF ₆₉	14.7	X	198.39050	342.60721	344.54713	17.75271	0.1972651	0.18082609	3.0971482	20	2 19.4	20.0
144502 2004 EO ₆₉	16.4	X	41.01370	40.54676	11.58210	2.02296	0.0763552	0.23071665	2.6327933	20	—	—
144503 2004 EY ₆₉	15.8	X	53.54142	224.96487	175.66354	10.99932	0.1813794	0.23210325	2.6222971	20	—	—
144504 2004 EA ₇₀	15.8	X	5.50084	15.33098	357.05961	9.27993	0.1443486	0.21740237	2.7392176	20	12 2.0	19.2
144505 2004 ES ₇₁	16.4	X	0.14206	262.80136	175.71284	14.83868	0.1461908	0.22936275	2.6431438	20	—	—
144506 2004 EY ₇₁	16.6	X	301.82565	48.22457	198.27479	1.18573	0.1222139	0.24403669	2.5360976	20	2 18.4	20.0
144507 2004 EZ ₇₁	15.1	X	67.56419	187.92131	178.74238	14.27954	0.2070388	0.22608447	2.6686332	20	—	—
144508 2004 EC ₇₂	15.5	X	354.24527	224.36530	178.02696	13.41977	0.0686307	0.22014097	2.7164526	20	12 18.3	19.2
144509 2004 ER ₇₃	15.4	X	19.15407	304.12380	58.43783	8.60901	0.0987602	0.21814382	2.7330071	20	12 4.6	18.9
144510 2004 EM ₇₅	15.7	X	272.25776	124.90743	131.59129	4.01629	0.1348256	0.17678955	3.1441143	20	2 3.9	20.3
144511 2004 EO ₇₅	14.9	X	215.04431	292.22414	27.09122	11.30106	0.1244125	0.17845616	3.1245083	20	2 27.4	20.0
144512 2004 EQ ₇₅	14.9	X	244.45238	319.66530	20.45885	17.45956	0.1359267	0.18746379	3.0236008	20	4 13.1	19.4
144513 2004 ES ₇₅	15.7	X	313.60467	189.86497	40.44273	4.07131	0.1377076	0.17883046	3.1201470	20	2 22.0	19.8
144514 2004 ET ₇₅	15.1	X	58.26986	2.40079	180.65780	10.78538	0.0629421	0.19021971	2.9943257	20	5 29.9	19.3
144515 2004 EY ₇₆	16.0	X	214.40516	80.60657	116.95573	3.54550	0.0768969	0.22169434	2.7037486	20	12 20.4	19.7
144516 2004 EH ₇₇	16.3	X	191.52082	263.66938	147.87425	5.85170	0.0566141	0.25642232	2.4537605	20	5 21.9	19.7
144517 2004 EM ₇₇	16.0	X	34.11321	192.25038	202.18302	4.48869	0.0805990	0.22604730	2.6689258	20	—	—
144518 2004 EF ₇₈	14.7	X	52.85228	22.43027	15.30733	14.24408	0.1376436	0.22915945	2.6447068	20	—	—
144519 2004 EM ₇₈	15.5	X	246.79561	298.95209	170.96303	13.54648	0.1220322	0.21427871	2.7657741	20	10 4.2	19.3
144520 2004 EO ₇₈	17.1	X	204.66526	325.80945	138.41550	2.59655	0.2021572	0.26829101	2.3808496	20	8 5.9	20.9
144521 2004 ED ₇₉	14.8	X	266.11766	283.28588	340.02670	9.09779	0.0407590	0.17758482	3.1347205	20	2 17.2	19.3
144522 2004 EF ₇₉	15.3	X	3.05706	274.35632	191.97068	21.35278	0.1096231	0.23038181	2.6353436	20	—	—
144523 2004 EK ₇₉	16.2	X	244.52410	85.19203	135.14205	3.31193	0.1293552	0.22708575	2.6607830	20	—	—
144524 2004 ER ₇₉	15.3	X	309.97925	250.64601	213.96375	13.74841	0.1024979	0.22121334	2.7076665	20	12 31.4	18.7
144525 2004 EF ₈₀	15.2	X	129.47159	224.86919	138.12083	15.35156	0.1108953	0.23775439	2.5805781	20	1 12.4	18.8
144526 2004 ER ₈₀	15.9	X	359.93074	346.23446	116.46609	4.90396	0.0731833	0.23414105	2.6070599	20	—	—
144527 2004 EX ₈₀	15.7	X	150.03164	188.55262	49.00274	6.65144	0.2337694	0.21597556	2.7512685	20	11 24.6	20.6
144528 2004 EF ₈₁	14.2	X	300.83027	160.59458	124.75499	11.56514	0.0187707	0.19011072	2.9954700	20	5 2.9	18.5
144529 2004 EH ₈₁	14.6	X	234.34979	122.42410	152.96344	22.74383	0.0350193	0.17608948	3.1524421	20	1 25.5	19.4
144530 2004 EG ₈₂	15.2	X	314.74757	178.14377	86.26408	3.51597	0.1702601	0.18625027	3.0367202	20	3 31.9	19.2
144531 2004 EN ₈₂	15.3	X	109.34311	215.20552	138.50473	13.65185	0.1712894	0.23134809	2.6280005	20	—	—
144532 2004 EX ₈₂	14.7	X	273.49971	287.84328	32.95422	16.71922	0.2153473	0.18623656	3.0368692	20	4 13.6	19.2
144533 2004 EB ₈₃	16.1	X	249.86905	189.98406	41.23496	4.19080	0.1253532	0.23469166	2.6029806	20	—	—
144534 2004 EM ₈₃	16.6	X	2.47405	313.06111	113.10119	5.66373	0.1382739	0.28677293	2.2774243	20	—	—
144535 2004 ER ₈₃	15.7	X	75.00345	248.07089	57.93007	7.04907	0.0463719	0.21458526	2.7631393	20	11 26.1	19.6
144536 2004 EZ ₈₃	16.1	X	279.76608	202.52533	304.66702	2.86447	0.1378988	0.22370472	2.6875257	20	—	—
144537 2004 EB ₈₄	15.6	X	61.56809	14.70382	21.50826	11.88339	0.0238869	0.22820112	2.6521059	20	—	—
144538 2004 EQ ₈₄	16.7	X	191.31175	25.84465	115.21943	4.41656	0.0681613	0.27160003	2.3614722	20	9 23.2	19.8
144539 2004 EZ ₈₅	16.4	X	18.23125	68.94732	58.11661	4.94933	0.1462970	0.23928240	2.5695804	20	1 5.9	18.9
144540 2004 EV ₈₆	16.5	X	208.21341	343.48066	83.62192	3.84650	0.1657627	0.26312451	2.4119141	20	6 23.7	20.1
144541 2004 EZ ₉₃	15.3	X	296.90229	219.23101	97.93722	5.58571	0.1194365	0.19302743	2.9652185	20	5 20.7	19.3
144542 2004 EQ ₉₄	15.2	X	299.23024	262.14470	61.20706	12.85366	0.0574838	0.19460449	2.9491768	20	6 8.2	19.2
144543 2004 EV ₉₄	14.8	X	355.57452	91.52585	150.45876	15.73042	0.0799059	0.18927346	3.0042973	20	5 18.2	18.9
144544 2004 EM ₉₅	16.4	X	104.97668	160.83285	28.53109	2.49622	0.1318519	0.26020648	2.4299125	20	8 20.2	19.8
144545 2004 EZ ₉₅	15.8	X	270.24807	154.02850	59.04186	15.45709	0.0465756	0.23446847	2.6046322	20	—	—
144546 2004 EP ₁₀₁	15.6	X	350.25149	195.64759	184.08344	12.37421	0.1510799	0.21672836	2.7448938	20	11 21.2	18.8
144547 2004 ED ₁₀₃	16.1	X	42.56458	216.64531	151.40196	4.99176	0.1087080	0.22270970	2.6955246	20	—	—
144548 2004 ED ₁₀₅	15.3	X	157.22569	191.27886	165.39020	11.05247	0.0676025	0.17880651	3.1204257	20	2 6.9	20.0
144549 2004 EJ ₁₁₂	15.2	X	35.14805	359.51884	129.05119	10.14494	0.0453090	0.17829672	3.1263708	20	2 17.1	19.4
144550 2004 EJ ₁₁₄	15.3	X	81.98986	277.93058	42.29580	18.17114	0.1827047	0.22045887	2.7138406	20	—	—
144551 2004 EL ₁₁₅	16.3	X	73.81734	26.58762	80.54559	5.57183	0.0541645	0.24751835	2.5122592	20	3 8.1	19.4
144552 Jackieue	15.5	X	72.73061	143.55071	139.03079	3.28345	0.0313999	0.21404604	2.7677780	20	10 24.5	19.3
144553 2004 FB ₆	15.8	X	299.86843	235.81701	176.58846	14.37084	0.0791615	0.21491488	2.7603134	20	10 9.9	19.2
144554 2004 FP ₆	15.9	X	319.45554	198.02642	350.37114	11.47289	0.10577					

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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>
144561 2004 FK ₁₂	15.6 ^m	X	221.20401	213.87270	274.55179	7.35604	0.2580003	0.21551673	2.7551721	20	9 8.3	20.2
144562 2004 FS ₁₂	16.2	X	58.85002	263.78918	203.63193	9.25346	0.2360511	0.24464482	2.5318931	20	3 3.9	18.6
144563 2004 FV ₁₂	16.1	X	279.89597	255.13462	274.28002	4.84302	0.0901399	0.28883312	2.2665818	20	—	—
144564 2004 FE ₁₃	15.6	X	84.36966	11.71751	300.02877	5.46474	0.1461403	0.27660875	2.3328784	20	—	—
144565 2004 FH ₁₃	15.3	X	147.47349	359.27982	233.07248	7.25044	0.1609413	0.21379887	2.7699108	20	11 17.5	19.6
144566 2004 FT ₁₃	16.0	X	221.25128	125.10733	47.83275	5.45989	0.0512597	0.21840361	2.7308395	20	11 30.1	19.7
144567 2004 FE ₁₄	15.7	X	8.32316	257.81054	199.33752	18.55816	0.0881711	0.23261812	2.6184263	20	—	—
144568 2004 FN ₁₄	15.7	X	125.87594	206.77415	358.55579	8.07920	0.2487389	0.20550000	2.8439907	20	9 29.4	20.8
144569 2004 FO ₁₄	15.3	X	19.36324	323.71696	250.98122	1.91313	0.1286089	0.18825411	3.0151325	20	5 17.1	18.5
144570 2004 FX ₁₈	15.5	X	287.01435	133.57692	8.76639	12.70283	0.1459242	0.22521119	2.6755274	20	—	—
144571 2004 FA ₂₀	16.3	X	87.92748	100.12499	344.23552	14.95821	0.1092314	0.24517547	2.5282385	20	3 3.2	19.2
144572 2004 FH ₂₀	16.4	X	181.11888	271.37165	279.16309	2.28551	0.1471337	0.21526358	2.7573317	20	10 28.6	20.7
144573 2004 FG ₂₁	14.9	X	313.67105	221.50784	342.25286	4.97305	0.1132489	0.17684081	3.1435067	20	1 23.8	19.1
144574 2004 FE ₂₂	16.5	X	56.87646	261.50251	347.39656	0.65142	0.0810894	0.20258910	2.8711684	20	8 25.6	20.3
144575 2004 FR ₂₅	14.8	X	321.22865	331.07100	218.91093	3.93645	0.1206633	0.17556030	3.1587736	20	1 14.2	19.0
144576 2004 FH ₂₇	16.6	X	78.85795	230.21560	232.01936	0.25148	0.0496365	0.24419525	2.5349997	20	3 5.1	19.6
144577 2004 FE ₂₈	16.5	X	6.99988	106.50484	187.82047	5.66584	0.0336380	0.20177251	2.8788508	20	8 7.8	20.4
144578 2004 FH ₂₈	15.8	X	352.27950	359.53679	14.36642	5.01836	0.0820724	0.21324212	2.7747300	20	11 6.0	19.3
144579 2004 FO ₃₂	16.4	X	12.54566	215.02821	221.09630	5.13575	0.0251329	0.22700511	2.6614131	20	—	—
144580 2004 FY ₃₂	16.8	X	179.62001	255.72085	236.95336	4.41070	0.1762187	0.26807106	2.3821518	20	8 18.9	20.8
144581 2004 FG ₃₄	16.7	X	159.25278	22.79120	92.18763	2.49415	0.1427038	0.26140210	2.4224975	20	7 9.1	20.5
144582 2004 FG ₃₅	16.7	X	311.25358	155.81418	299.53498	4.79473	0.1495749	0.28480106	2.2879243	20	—	—
144583 2004 FR ₃₅	15.5	X	59.95639	353.62677	173.69723	10.01238	0.0374163	0.18942884	3.0026542	20	5 9.1	19.7
144584 2004 FV ₃₅	14.3	X	106.32601	343.24812	18.09034	22.34589	0.0530969	0.16854622	3.2458120	20	—	—
144585 2004 FJ ₃₈	15.8	X	169.46945	260.27876	304.18228	3.96610	0.1070610	0.21406952	2.7675756	20	11 4.3	20.2
144586 2004 FP ₃₈	14.7	X	119.63580	52.41960	336.85169	8.93594	0.1560518	0.23761998	2.5815512	20	2 10.7	18.3
144587 2004 FV ₃₈	15.8	X	278.47499	257.74920	315.58816	3.61994	0.2063119	0.23222354	2.6213915	20	—	—
144588 2004 FY ₃₈	15.8	X	48.20496	95.20094	82.27436	1.69581	0.1258291	0.18912892	3.0058277	20	5 14.9	19.4
144589 2004 FJ ₄₁	15.5	X	307.12605	151.94836	283.36346	2.27116	0.0532935	0.21752166	2.7382161	20	11 20.2	18.8
144590 2004 FM ₄₁	16.1	X	119.93620	275.93983	209.55721	8.88112	0.2450857	0.25618619	2.4552680	20	6 20.8	20.1
144591 2004 FV ₄₁	15.9	X	259.20490	177.76002	98.57931	5.72807	0.1256527	0.24452346	2.5327308	20	2 8.4	19.7
144592 2004 FG ₄₂	16.0	X	71.55629	243.21324	53.52382	6.78667	0.0856294	0.21468334	2.7622977	20	11 15.7	20.0
144593 2004 FB ₄₄	16.1	X	206.45938	352.85291	231.76876	6.00198	0.2236558	0.22291234	2.6938907	20	12 27.0	20.2
144594 2004 FD ₄₄	16.4	X	218.53313	254.42093	193.00974	8.24932	0.1659163	0.26851754	2.3795104	20	7 29.5	20.2
144595 2004 FQ ₄₄	16.8	X	73.69786	51.62132	117.11767	3.44700	0.1746755	0.25399615	2.4693613	20	6 18.3	19.9
144596 2004 FR ₄₄	16.6	X	350.95638	331.01132	121.28872	4.16811	0.1263477	0.28959314	2.2626144	20	—	—
144597 2004 FS ₄₄	14.7	X	286.38936	61.36240	154.24338	9.76452	0.0330438	0.17443602	3.1723318	20	1 14.6	19.3
144598 2004 FY ₄₄	14.7	X	290.94560	57.24540	179.83633	17.13366	0.1098901	0.17568958	3.1572239	20	2 2.0	19.4
144599 2004 FZ ₄₄	15.8	X	205.50724	23.10609	127.96499	5.25682	0.1446946	0.21220247	2.7837855	20	10 7.1	20.2
144600 2004 FM ₄₅	15.9	X	10.27890	358.28050	111.10689	5.39094	0.2090373	0.23522802	2.5990223	20	—	—
144601 2004 FH ₄₆	15.8	X	84.52738	238.74117	151.77728	16.13534	0.1687687	0.23585526	2.5944123	20	—	—
144602 2004 FV ₄₇	16.4	X	276.46249	3.69022	229.72806	3.09897	0.0855117	0.24056129	2.5604653	20	1 7.8	20.0
144603 2004 FZ ₄₇	15.7	X	337.76740	274.69926	162.88609	14.82648	0.0569462	0.22776438	2.6554952	20	—	—
144604 2004 FW ₄₈	16.3	X	193.20739	124.47970	210.00072	3.12139	0.0266801	0.24246364	2.5470548	20	2 12.7	19.7
144605 2004 FX ₄₉	16.2	X	201.61704	330.96287	343.28281	2.63017	0.0315523	0.23792126	2.5793714	20	1 28.1	19.7
144606 2004 FF ₅₀	14.7	X	223.73813	295.42295	358.60343	12.92209	0.2180197	0.17322791	3.1870642	20	2 2.7	20.2
144607 2004 FW ₅₁	16.1	X	322.27916	62.57020	358.75911	14.21700	0.1477912	0.22076213	2.7113547	20	11 20.7	19.2
144608 2004 FN ₅₂	15.7	X	267.00058	161.00385	10.44119	14.11148	0.0273282	0.22584129	2.6705486	20	—	—
144609 2004 FT ₅₂	16.0	X	225.66639	203.59286	37.86594	4.91682	0.0217857	0.22909184	2.6452271	20	—	—
144610 2004 FV ₅₂	15.4	X	19.60364	229.77959	172.82342	10.65569	0.0947903	0.22393361	2.6856940	20	—	—
144611 2004 FZ ₅₂	16.7	X	348.00417	341.69356	112.81376	3.57333	0.1140375	0.28808870	2.2704846	20	—	—
144612 2004 FD ₅₆	16.3	X	125.90852	91.08623	135.81618	4.03992	0.1311028	0.20975057	2.8054376	20	10 23.1	20.7
144613 2004 FJ ₅₈	15.5	X	254.47293	124.19110	139.25822	1.90111	0.1740658	0.17388068	3.1790827	20	1 22.4	20.4
144614 2004 FM ₆₁	15.6	X	347.59898	222.29764	95.49027	3.29682	0.0617972	0.20280910	2.8690917	20	8 14.5	19.1
144615 2004 FD ₆₂	15.6	X	266.70826	23.23372	143.56327	3.04955	0.1380289	0.22539271	2.6740907	20	—	—
144616 2004 FJ ₆₂	16.3	X	272.57737	104.01109	149.47831	2.84866	0.1053465	0.23925699	2.5697623	20	1 26.5	19.9
144617 2004 FD ₆₃	16.1	X	39.15880	302.79325	186.39740	9.92768	0.1240066	0.24013940	2.5634633	20	2 14.3	18.9
144618 2004 FB ₆₅	15.6	X	258.93564	124.82643	41.62569	13.47699	0.0972625	0.22114845	2.7081962	20	—	—
144619 2004 FR ₆₅	16.2	X	307.54284	65.36417	72.27882	3.20694	0.1416133	0.22647680	2.6655505	20	—	—
144620 2004 FU ₆₅	15.6	X	130.53749	61.04028	99.12378	3.00600	0.0550750	0.19793715	2.9159798	20	7 29.4	19.9
144621 2004 FV ₆₆	15.4	X	158.03058	251.52972	120.96101	4.19542	0.2579290	0.24284247	2.5444053	20	3 7.5	19.7
144622 2004 FZ ₆₆	15.5	X	274.14175	337.43741	133.11842	6.07586	0.0198033	0.21711618	2.7416242	20	11 25.0	19.2
144623 2004 FO ₆₈	16.1	X	188.27742	191.42132	98.23717	3.31457	0.0550585	0.23012807	2.6372805	20	—	—
144624 2004 FP ₆₈	15.5	X	327.30997	165.92848	106.66728	3.56112	0.1722024	0.18847728	3.0127519	20	5 1.0	18.9
144625 2004 FK ₆₉	15.6	X	24.59520	195.30784	50.12981	2.47394	0.0738969	0.19436463	2.9516027	20	7 3.1	19.2
144626 2004 FG ₇₀	15.4	X	296.04056	206.89519	337.31518	2.14443	0.0128619	0.16936003	3.2354059	20	—	—
144627 2004 FK ₇₁	16.3	X	81.78253	218.06503	148.09378	3.15755	0.2272037	0.22868041	2.6483989	20	—	—
144628 2004 FE ₇₇	17.2	X	183.78820	69.94617	29.39217	0.4269						

ELEMENTS AND OPPOSITION DATES IN 2020

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Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>
144641 2004 FN ₉₄	16.8	X	232.05312	355.08396	144.50307	0.90646	0.1606155	0.27630658	2.3345790	20	10 28.5	19.5
144642 2004 FO ₉₆	15.6	X	82.12955	283.81631	141.26982	14.22052	0.0485207	0.23888112	2.5724572	20	1 20.7	19.0
144643 2004 FV ₉₇	15.3	X	281.66499	339.47380	109.27035	9.38375	0.1834993	0.21798069	2.7343706	20	10 20.4	18.6
144644 2004 FT ₉₉	16.0	X	21.17104	243.04616	24.51836	5.94563	0.0563217	0.19917793	2.9038571	20	7 28.6	19.8
144645 2004 FZ ₁₀₀	16.1	X	27.48117	21.20564	11.95794	2.46335	0.0690782	0.22325127	2.6911636	20	—	—
144646 2004 FB ₁₀₂	15.6	X	153.52134	257.29426	328.88243	6.26012	0.0744668	0.21313867	2.7756277	20	11 14.7	19.9
144647 2004 FT ₁₀₂	16.9	X	224.76626	24.78960	46.91192	3.68108	0.2139217	0.26765669	2.3846097	20	7 13.2	20.5
144648 2004 FH ₁₀₅	14.6	X	223.99516	53.53913	228.61113	26.59527	0.1821287	0.17172034	3.2056903	20	1 10.9	20.4
144649 2004 FO ₁₀₅	15.4	X	57.77107	154.24656	313.67550	13.26601	0.1076351	0.24014857	2.5633980	20	2 15.9	18.3
144650 2004 FX ₁₀₅	15.1	X	58.74838	230.63791	93.58828	10.49506	0.1083151	0.21615005	2.7497877	20	12 8.8	18.9
144651 2004 FE ₁₀₆	16.5	X	71.31824	321.48884	184.31290	4.42268	0.1129514	0.24669667	2.5178345	20	5 3.8	19.4
144652 2004 FF ₁₀₆	15.0	X	250.00351	61.38418	203.70467	12.22096	0.0827317	0.17140572	3.2096118	20	1 24.9	20.0
144653 2004 FD ₁₀₈	16.1	X	31.18736	35.45865	13.14723	8.79917	0.0834464	0.22658929	2.6646681	20	—	—
144654 2004 FV ₁₀₈	15.9	X	5.47907	2.40821	28.14708	6.48359	0.0509588	0.21679808	2.7443054	20	12 14.9	19.6
144655 2004 FE ₁₁₀	15.8	X	353.10526	233.52816	257.74580	4.05587	0.2740401	0.23467034	2.6031383	20	—	—
144656 2004 FS ₁₁₀	15.9	X	153.09839	160.88770	12.40892	9.29903	0.0660635	0.20462002	2.8521387	20	9 13.0	20.1
144657 2004 FT ₁₁₂	17.2	X	116.82879	206.42132	281.01770	1.09218	0.1345491	0.25561356	2.4589335	20	6 9.7	20.8
144658 2004 FF ₁₁₆	14.9	X	7.33965	95.68090	146.03646	11.07603	0.0647525	0.19175414	2.9783304	20	6 2.8	18.9
144659 2004 FP ₁₁₆	15.2	X	336.85940	6.45217	170.69054	17.48102	0.1488831	0.17523859	3.1626385	20	1 15.6	19.5
144660 2004 FO ₁₁₇	15.5	X	169.77831	103.62689	112.53654	9.91348	0.0755395	0.21273855	2.7791069	20	11 24.1	19.8
144661 2004 FU ₁₁₇	15.7	X	255.12974	56.39954	23.68539	4.55288	0.0393079	0.21091117	2.7951363	20	9 17.6	19.5
144662 2004 FA ₁₂₁	15.9	X	57.75530	226.82096	117.83613	8.59215	0.1129906	0.27776456	2.3264023	20	—	—
144663 2004 FT ₁₂₁	16.8	X	228.72887	177.05255	29.86232	2.68487	0.1037667	0.28438961	2.2901305	20	—	—
144664 2004 FV ₁₂₂	15.2	X	5.22425	5.30241	241.15645	10.41827	0.0763271	0.19174268	2.9784492	20	6 3.9	18.8
144665 2004 FO ₁₂₅	15.5	X	294.29395	121.68479	199.65328	10.11518	0.1105347	0.19203702	2.9754049	20	5 23.9	19.5
144666 2004 FQ ₁₂₅	16.3	X	24.52573	259.94741	251.62862	2.95328	0.1236945	0.24235429	2.5478210	20	2 19.9	19.0
144667 2004 FQ ₁₂₇	15.4	X	162.65160	165.69833	150.40809	1.69976	0.1203100	0.16890366	3.2412312	20	1 3.2	20.3
144668 2004 FK ₁₂₈	16.0	X	219.94421	94.45804	132.96150	3.07897	0.1465117	0.22321713	2.6914380	20	—	—
144669 2004 FM ₁₂₉	16.4	X	218.71950	344.40314	148.65909	10.51348	0.2068060	0.27392839	2.3480717	20	9 29.9	19.8
144670 2004 FB ₁₃₀	15.0	X	44.34304	246.18760	86.67127	13.57902	0.1531791	0.21143932	2.7904798	20	12 7.1	18.8
144671 2004 FE ₁₃₀	14.6	X	346.12810	108.60735	50.58586	18.27931	0.0633832	0.17447337	3.1718790	20	1 21.6	19.2
144672 2004 FS ₁₃₀	14.1	X	220.24121	282.65896	37.40481	26.45297	0.1874057	0.17841235	3.1250198	20	3 11.7	19.7
144673 2004 FA ₁₃₁	14.1	X	235.17838	240.01910	42.67141	28.36932	0.1248128	0.17445038	3.1721577	20	2 11.2	19.6
144674 2004 FN ₁₃₁	16.1	X	353.39860	170.77252	24.80597	4.19568	0.1280775	0.24166776	2.5526439	20	2 29.4	18.9
144675 2004 FZ ₁₃₂	14.9	X	97.01220	289.80161	151.08231	16.36452	0.0828121	0.18397323	3.0617258	20	3 15.6	19.2
144676 2004 FU ₁₃₄	14.8	X	40.33422	227.49834	353.15107	19.62788	0.1422497	0.19220009	2.9737217	20	7 6.6	18.9
144677 2004 FM ₁₃₆	15.6	X	298.85645	19.35468	127.72271	12.67176	0.1317310	0.22579788	2.6708909	20	—	—
144678 2004 FG ₁₃₇	16.4	X	223.74253	58.53516	351.98140	5.24184	0.2366241	0.26612927	2.3937251	20	6 11.5	20.3
144679 2004 FH ₁₄₀	15.6	X	308.80520	279.37867	222.67694	11.92267	0.1815131	0.23158199	2.6262306	20	—	—
144680 2004 FP ₁₄₀	15.9	X	159.23385	268.47542	308.74959	3.95839	0.0991768	0.21320022	2.7750935	20	11 9.9	20.2
144681 2004 FR ₁₄₁	16.4	X	79.11756	267.33875	264.41147	1.98579	0.1302536	0.25326930	2.4740835	20	6 22.8	19.4
144682 2004 FN ₁₄₂	15.6	X	14.06740	292.73642	166.74049	2.80954	0.0455786	0.22976003	2.6400961	20	—	—
144683 2004 FS ₁₄₂	15.1	X	307.16535	46.92285	186.90876	4.99693	0.0826171	0.17747853	3.1359719	20	2 22.9	19.4
144684 2004 FA ₁₄₃	15.2	X	325.97144	58.64759	27.56553	9.30644	0.2028000	0.22091096	2.7101368	20	—	—
144685 2004 FE ₁₄₄	15.0	X	152.37801	186.27176	319.91553	14.30827	0.0779073	0.20352384	2.8623706	20	8 7.3	19.3
144686 2004 FG ₁₄₄	14.5	X	31.08822	167.06409	310.09821	11.95328	0.1122729	0.17931825	3.1144861	20	1 29.5	18.3
144687 2004 FE ₁₄₅	15.5	X	348.03475	65.95529	103.23860	15.81400	0.0401471	0.23689979	2.5867806	20	1 25.5	18.8
144688 2004 FG ₁₄₅	16.0	X	330.91198	310.80750	200.94603	3.46180	0.1405930	0.23238425	2.6201828	20	—	—
144689 2004 FD ₁₄₆	14.5	X	203.97775	225.79928	79.55539	2.62664	0.1603870	0.16922070	3.2371815	20	1 28.9	19.8
144690 2004 FV ₁₄₇	14.7	X	17.91422	203.91091	349.90749	21.82838	0.0387321	0.18467856	3.0539252	20	4 4.9	19.0
144691 2004 FR ₁₅₄	15.2	X	66.94156	222.61636	304.40309	10.39500	0.0246622	0.19067618	2.9895450	20	5 10.6	19.6
144692 2004 Katemyr	16.3	X	232.40224	35.13876	195.21508	3.02908	0.1379942	0.22559722	2.6724744	20	—	—
144693 2004 GF	16.0	X	253.28037	337.32547	213.11005	16.85781	0.1312412	0.22483574	2.6785052	20	—	—
144694 2004 GL ₁	15.0	X	222.68995	286.79268	30.54118	10.93906	0.0730952	0.17833281	3.1259489	20	3 5.5	19.8
144695 2004 GY ₂	14.3	X	351.45026	129.26879	238.71171	32.67187	0.1672634	0.21366863	2.7710363	20	11 5.2	17.5
144696 2004 GZ ₃	16.5	X	315.00866	274.12882	212.25605	2.44843	0.0880105	0.22603062	2.6690571	20	—	—
144697 2004 GZ ₅	16.5	X	336.95819	106.14140	31.53934	1.39981	0.1114715	0.23331663	2.6131976	20	—	—
144698 2004 GX ₁₀	15.7	X	11.37116	351.87144	101.82742	16.53617	0.0828423	0.23155561	2.6264301	20	—	—
144699 2004 GE ₁₁	15.2	X	166.24932	318.16402	270.43922	11.89478	0.0250353	0.21481712	2.7611508	20	12 6.1	19.2
144700 2004 GF ₁₃	15.6	X	90.54272	356.85178	251.44480	3.59678	0.1404689	0.20483312	2.8501601	20	10 11.2	19.9
144701 2004 GF ₁₄	15.7	X	324.71959	25.21817	141.44578	7.89135	0.1403984	0.23233642	2.6205424	20	—	—
144702 2004 GS ₁₅	15.1	X	230.10553	64.94877	118.85517	13.46654	0.1186501	0.22045431	2.7138780	20	12 17.3	18.9
144703 2004 GY ₁₅	16.2	X	199.07584	24.52510	184.00191	7.99283	0.1458837	0.21787491	2.7352555	20	12 8.6	20.4
144704 2004 GA ₁₇	15.5	X	303.38227	351.60220	134.91021	14.75423	0.1943377	0.22398334	2.6852964	20	—	—
144705 2004 GE ₁₈	15.4	X	216.85082	95.58198	76.28658	10.51877	0.0435530	0.21669845	2.7451464	20	11 25.4	19.3
144706 2004 GF ₁₈	15.3	X	233.27468	98.13696	58.85890	13.89100	0.1437036	0.21423752	2.7661286	20	11 12.7	19.2
144707 2004 GG ₁₈	14.9	X	48.72133	45.90821	176.50638	22.47878	0.1055835	0.19202792	2.9754989	20	7 10.6	19.2
144708 2004 GM ₁₈	14.8	X	15.05293	51.56969	112.70492	11.64076	0.0685423	0.18134507	3.0912364	20	3 7.7	18.9
144709 2004 GL ₂₁	16.1	X	316.76067	329.95504	172.91531	8.15479	0.0755885	0.22588935	2.6701698	20	—	—
144710 2004 GR ₂₁	15.9	X	333.40112	11.93178	138.90837	7.64355	0.2286975	0.23178945	2.6246634	20	—	—
144711 2004 GV ₂₁	15.7	X	156.29230	353.2375	241.61408	8.27733	0.2338054	0.21614590	2.7498228	20	11 26.7	20.6
144712 2004 GN ₂₂	15.9	X	46.43654	158.54044	101.09901	2.33239	0.1587574	0.19822992	2.9131080	20	9 6.7	19.7
144713 2004 GF ₂₃	17.0	X	52.07018	11.06212	123.80190	5.70086	0.1620861	0.24437888	2.5337296	20	3 23.7	19.3
144714 2004 GH ₂₄	15.3	X	189.08579	117.1								

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>
144721 2004 GD ₃₄	14.8	X	0.30446	336.29547	209.99413	15.01051	0.0313451	0.17660356	3.1463214	20	3 8.2	19.3
144722 2004 GL ₃₄	15.1	X	343.15110	157.83220	312.62909	14.06440	0.0505535	0.22763677	2.6564875	20	—	—
144723 2004 GQ ₃₄	16.3	X	319.52061	226.79147	283.56939	1.93653	0.0996184	0.23060290	2.6336590	20	—	—
144724 2004 GX ₃₄	15.1	X	250.17934	65.15177	226.24387	15.64489	0.2145908	0.17702669	3.1413058	20	2 10.6	20.6
144725 2004 GL ₃₅	16.0	X	60.50802	80.14446	327.87652	2.97269	0.0183496	0.22847720	2.6499690	20	—	—
144726 2004 GN ₃₅	15.1	X	27.33059	321.92637	278.32914	9.36156	0.0944891	0.19303425	2.9651486	20	7 2.0	18.6
144727 2004 GS ₃₆	15.2	X	354.34363	354.97183	256.76665	5.19124	0.2508500	0.18687436	3.0299554	20	5 18.4	17.9
144728 2004 GE ₃₇	15.5	X	315.24392	19.30534	224.28204	10.83514	0.1032664	0.18100896	3.0950619	20	3 10.5	19.9
144729 2004 GU ₃₇	15.3	X	151.88709	358.14162	231.49570	12.74954	0.1270065	0.21134154	2.7913404	20	11 18.3	19.6
144730 2004 GZ ₃₈	14.7	X	213.12422	82.21871	219.91207	12.30542	0.1759366	0.17174976	3.2053242	20	1 28.1	20.3
144731 2004 GA ₃₉	16.1	X	189.03189	9.44673	207.67035	8.86301	0.0726040	0.21732797	2.7398427	20	12 14.8	20.2
144732 2004 GN ₄₀	15.6	X	0.82287	143.86531	6.24453	0.43304	0.1315849	0.17589923	3.1547147	20	1 22.5	19.2
144733 2004 GS ₄₀	15.8	X	227.71445	27.46299	139.30709	4.65600	0.0465693	0.21457029	2.7632679	20	12 1.5	19.6
144734 2004 GM ₄₁	15.9	X	96.90407	113.83502	58.22635	2.75341	0.0264704	0.19480457	2.9471571	20	6 29.2	20.1
144735 2004 GB ₄₂	16.0	X	148.04588	59.09858	210.95498	2.63137	0.1263767	0.21712704	2.7415328	20	—	—
144736 2004 GG ₄₂	15.7	X	219.12861	29.19092	138.66993	6.44151	0.0281837	0.21452766	2.7636340	20	11 25.6	19.6
144737 2004 GY ₄₂	15.2	X	282.38206	6.85794	143.67599	15.81416	0.1118524	0.22169951	2.7037066	20	—	—
144738 2004 GB ₅₀	16.0	X	312.88849	37.81665	251.93739	1.69956	0.0607350	0.18870789	3.0102970	20	5 14.4	19.9
144739 2004 GM ₅₀	15.8	X	50.10853	276.18734	358.35154	4.13167	0.1296543	0.20156237	2.8809104	20	9 25.9	19.7
144740 2004 GU ₅₁	15.7	X	254.91957	174.47464	117.72151	2.61205	0.2032177	0.17779873	3.1322058	20	2 22.6	20.6
144741 2004 GL ₅₉	15.2	X	311.58605	151.00869	116.34479	3.66812	0.2472020	0.18171680	3.0870191	20	3 19.6	19.2
144742 2004 GZ ₆₀	15.7	X	41.89223	143.39839	75.63634	3.35706	0.0703208	0.19151123	2.9808484	20	6 22.7	19.5
144743 2004 GD ₆₁	15.3	X	1.45246	165.96901	86.81630	3.09740	0.1922639	0.18813857	3.0163668	20	6 7.9	18.4
144744 2004 GC ₆₂	15.8	X	266.06931	308.34237	40.09370	2.89400	0.0218392	0.19242623	2.9713915	20	6 2.7	19.8
144745 2004 GR ₆₅	16.7	X	48.19011	182.49161	178.06963	1.42452	0.0448469	0.21823072	2.7322816	20	—	—
144746 2004 GA ₆₇	16.0	X	54.60713	35.50408	6.19758	3.79808	0.1396846	0.22746061	2.6578589	20	—	—
144747 2004 GX ₇₄	16.2	X	113.51294	340.47257	144.28474	7.65177	0.0910927	0.25213535	2.4814958	20	5 29.6	19.7
144748 2004 GR ₈₀	16.5	X	221.08014	262.92639	29.44603	2.73931	0.0715277	0.23830982	2.5765669	20	1 22.8	20.2
144749 2004 GF ₈₃	16.0	X	257.66287	321.27027	76.33275	3.29660	0.0949027	0.19892130	2.9063541	20	7 16.5	20.1
144750 2004 GN ₈₇	15.0	X	307.85782	203.43833	98.32358	12.37647	0.0681021	0.18992934	2.9973768	20	5 24.9	19.1
144751 2004 GZ ₈₇	15.5	X	214.87445	336.61390	256.98261	13.50480	0.1219228	0.22578875	2.6709628	20	—	—
144752 Plunge	15.5	X	328.51284	191.93934	103.61779	2.17918	0.0686643	0.19114542	2.9846503	20	6 13.4	19.2
144753 2004 HF ₁	15.4	X	215.91088	313.77698	123.94875	26.28205	0.3125602	0.26426999	2.4049395	20	7 6.5	19.8
144754 2004 HH ₂	16.9	X	38.39372	292.08616	279.82682	1.09325	0.1148769	0.25144250	2.4860523	20	6 14.7	19.5
144755 2004 HO ₃	14.6	X	324.22122	215.51758	12.06648	17.22429	0.0642087	0.17936487	3.1139464	20	3 16.0	18.8
144756 2004 HX ₄	16.3	X	6.89596	69.07298	52.54112	4.25467	0.0707091	0.23339308	2.6126269	20	—	—
144757 2004 HJ ₅	16.3	X	161.90449	249.38884	245.13906	5.79159	0.1547800	0.26350160	2.4096125	20	8 4.4	20.2
144758 2004 HR ₇	15.9	X	334.86617	347.87627	41.12837	6.89528	0.0295645	0.21125214	2.7921279	20	10 29.9	19.4
144759 2004 HH ₉	16.3	X	82.17707	296.71083	223.17241	7.17236	0.1083452	0.25189858	2.4830506	20	6 7.0	19.5
144760 2004 HQ ₉	15.5	X	237.51487	101.85388	29.76124	12.90679	0.1781086	0.21316776	2.7753752	20	10 12.7	19.5
144761 2004 HX ₉	16.1	X	295.07205	52.79484	100.70110	5.05118	0.1927099	0.22487835	2.6781668	20	—	—
144762 2004 HR ₁₀	15.1	X	331.40034	268.45917	202.74122	13.14237	0.1559198	0.22250593	2.6971700	20	—	—
144763 2004 HU ₁₁	15.1	X	308.18944	196.67752	51.62564	13.01529	0.1748201	0.17884223	3.1200101	20	3 7.8	19.5
144764 2004 HB ₁₆	14.9	X	329.99228	206.74576	117.04705	13.03230	0.0559665	0.19428624	2.9523965	20	7 25.1	18.6
144765 2004 HH ₁₇	15.7	X	9.10586	341.61397	164.17134	10.48143	0.1760060	0.23689725	2.5867991	20	1 11.6	18.5
144766 2004 HS ₁₇	14.9	X	10.40309	252.85415	14.64415	9.97443	0.0936419	0.19274739	2.9680899	20	7 14.4	18.7
144767 2004 HR ₁₉	15.8	X	314.82111	233.93171	37.72955	2.97163	0.1537201	0.18425055	3.0586528	20	4 11.6	19.5
144768 2004 HB ₂₀	15.4	X	66.96455	16.89582	19.06326	15.39259	0.1231458	0.22944308	2.6425269	20	—	—
144769 Zachariasen	15.6	X	260.78541	133.00368	147.65758	1.07664	0.0486357	0.17869497	3.1217239	20	2 29.7	20.2
144770 2004 HM ₂₂	15.9	X	95.25643	171.37303	17.28887	1.92999	0.0307824	0.19619269	2.9332394	20	7 20.0	19.9
144771 2004 HQ ₂₂	16.2	X	302.33118	216.06632	213.34856	2.99193	0.0801661	0.21223846	2.7834707	20	11 3.0	19.6
144772 2004 HB ₂₅	15.7	X	327.51238	210.17234	76.49190	3.28243	0.1027875	0.18951073	3.0017891	20	5 27.6	19.4
144773 2004 HG ₂₅	15.9	X	345.82428	61.49503	61.75401	4.81701	0.0558148	0.22838221	2.6507038	20	—	—
144774 2004 HQ ₂₅	16.2	X	266.40906	151.16229	89.07543	2.34885	0.0854399	0.23224728	2.6212128	20	1 6.9	19.9
144775 2004 HT ₂₅	15.1	X	325.03468	160.88688	62.48359	4.68943	0.0934336	0.17838462	3.1253437	20	3 6.7	19.2
144776 2004 HN ₂₆	15.9	X	13.77835	352.21766	119.38919	12.71074	0.1266880	0.23330060	2.6133173	20	—	—
144777 2004 HR ₂₇	15.5	X	351.21815	22.47066	188.87729	9.66851	0.0727336	0.18122608	3.0925893	20	3 28.3	19.5
144778 2004 HA ₂₈	14.9	X	276.96935	238.16144	52.04704	18.31085	0.1491728	0.17952727	3.1120682	20	3 27.4	19.7
144779 2004 HV ₂₈	16.0	X	107.56014	103.02512	222.98641	4.81380	0.0129421	0.22130091	2.7069522	20	—	—
144780 2004 HJ ₂₉	15.9	X	302.27055	127.00666	215.25662	7.74699	0.1023941	0.19436234	2.9516258	20	7 1.7	19.8
144781 2004 HZ ₂₉	16.7	X	248.55669	250.78227	259.46419	3.25758	0.0813245	0.27800788	2.3250447	20	12 18.4	19.1
144782 2004 HH ₃₀	15.1	X	292.64305	264.25097	32.53313	8.10605	0.0525170	0.18541978	3.0457810	20	4 27.1	19.3
144783 2004 HO ₃₀	15.0	X	303.73515	78.10211	214.19970	10.62193	0.1697816	0.18392481	3.0622632	20	4 19.0	19.1
144784 2004 HR ₃₀	16.0	X	343.61970	274.75794	227.71530	5.19427	0.1030732	0.23067947	2.6330762	20	—	—
144785 2004 HC ₃₁	15.6	X	17.29702	178.37065	329.15763	12.23285	0.1929921	0.24073838	2.5592094	20	2 1.6	17.7
144786 2004 HT ₃₅	15.7	X	146.88075	338.73595	227.45329	10.23340	0.0808376	0.20657017	2.8341596	20	10 13.6	20.1
144787 2004 HQ ₃₈	15.2	X	187.58680	3.35557	179.85496	12.83798	0.1382951	0.20996435	3.0163530	20	10 28.8	19.7
144788 2004 HX ₄₂	15.3	X	326.02462	250.91877	33.14424	10.46885	0.0447717	0.18813857	2.8036668	20	5 25.5	19.4
144789 2004 HF ₄₃	16.0	X	71.71896	227.05372	156.36621	6.54499	0.0266841	0.22348892	2.6892555	20	—	—
144790 2004 HT ₄₃	15.2	X	309.56123	83.79735	227.89813	10.70554	0.1228855	0.18993709	2.9972953	20	5 30.8	19.1
144791 2004 HY ₄₃	16.3	X	290.79308	14.05608	326.54078	4.80533	0.1526042	0.31335776	2.1467217	20	6 6.4	18.5
144792 2004 HD ₄₆	14.5	X	217.39881	61.21186	241.15706	25.90547	0.1998522	0.17098911	3.2148231	20	1 25.6	20.4
144793 2004 HD ₄₇	15.8	X	251.07335	18.83834	122.58253	7.87980	0.0878602	0.21699205	2.7426697	20	11 25.0	19.5
144794 2004 HF ₄₇	14.9	X	242.18257	239.30033	78.01041	12.23284	0.0964179					

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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>
144801 2004 HF ₅₅	16.0	X	86.20174	6.65972	87.20225	8.57185	0.1927769	0.24507128	2.5289550	20	3 31.7	19.3
144802 2004 HH ₅₅	14.5	X	215.56042	198.93395	128.99928	17.29647	0.2230414	0.17647107	3.1478960	20	3 4.1	20.0
144803 2004 HL ₅₆	13.9	X	152.18252	254.93722	128.71257	26.99644	0.1700168	0.17467926	3.1693861	20	3 19.6	19.3
144804 2004 HU ₅₈	15.9	X	9.14243	273.52952	213.09842	3.10643	0.0775681	0.23118704	2.6292208	20	—	—
144805 2004 HD ₅₉	15.2	X	220.85069	62.47449	220.58096	8.77067	0.0446646	0.16877654	3.2428585	20	1 18.9	20.2
144806 2004 HC ₆₁	15.5	X	319.07982	82.19285	196.04995	5.46202	0.2019313	0.18577748	3.0418701	20	4 19.6	19.2
144807 2004 HV ₆₃	15.9	X	260.13958	199.22921	111.78868	10.75683	0.1322821	0.23892156	2.5721669	20	3 27.7	19.8
144808 2004 HD ₆₄	15.5	X	359.78431	31.50945	110.77787	13.93481	0.2223200	0.23386167	2.6091358	20	—	—
144809 2004 HV ₇₂	15.7	X	241.67053	53.62583	222.22336	2.69632	0.1618813	0.17023877	3.2242626	20	1 25.9	20.9
144810 2004 HE ₇₄	14.9	X	152.37381	356.30787	28.99951	7.62690	0.0482970	0.17458591	3.1705158	20	3 9.7	19.6
144811 2004 HK ₇₄	15.6	X	157.67060	3.78753	265.99718	7.22564	0.0835072	0.21810193	2.7333571	20	—	—
144812 2004 JX	15.3	X	270.85836	76.21554	227.56030	8.44976	0.0289283	0.18109117	3.0941251	20	4 10.8	19.8
144813 2004 JU ₁	15.0	X	32.06031	249.96208	327.68030	7.14444	0.0649787	0.18782955	3.0196744	20	6 4.6	19.0
144814 2004 JL ₂	15.5	X	349.38736	305.16781	232.13597	3.66772	0.0709958	0.17411578	3.1762203	20	2 11.6	19.6
144815 2004 JP ₂	15.8	X	120.99920	217.48716	8.04632	8.36630	0.1058982	0.20529032	2.8459269	20	10 12.1	20.1
144816 2004 JL ₄	15.4	X	229.44748	274.97085	221.87794	14.79217	0.1930710	0.21127789	2.7919010	20	10 3.8	19.8
144817 2004 JB ₅	15.2	X	12.24844	216.24371	345.47902	11.39989	0.0543365	0.18203224	3.0834519	20	4 11.6	19.3
144818 2004 JD ₅	14.9	X	252.54249	248.91556	38.91707	9.78374	0.0521914	0.17419344	3.1752763	20	3 4.6	19.6
144819 2004 JS ₅	14.7	X	143.98687	8.80467	99.44204	12.21953	0.0691028	0.19244543	2.9711938	20	6 9.7	19.2
144820 2004 JW ₅	15.3	X	9.21067	18.75403	120.47278	27.06961	0.0693656	0.23390947	2.6087804	20	1 14.0	18.4
144821 2004 JB ₆	15.6	X	178.00419	120.76673	101.85861	26.58313	0.1928136	0.27470753	2.3436298	20	12 14.3	19.4
144822 2004 JF ₁₂	14.7	X	359.33488	275.31470	258.50772	9.13698	0.0794415	0.17854592	3.1234610	20	2 17.4	18.9
144823 2004 JU ₁₃	15.5	X	299.62637	205.05277	47.29599	2.02226	0.0883389	0.17819967	3.1275058	20	3 8.2	19.8
144824 2004 JZ ₁₃	14.9	X	238.22606	314.69466	37.63280	11.00826	0.0798605	0.18294285	3.0732113	20	4 27.8	19.5
144825 2004 JB ₁₅	15.1	X	259.90867	85.26971	183.52893	5.31694	0.1556711	0.17109010	3.2135579	20	2 4.2	20.1
144826 2004 JP ₁₅	16.7	X	189.71035	87.73658	96.89415	3.82044	0.1180455	0.27066387	2.3669142	20	11 12.0	20.0
144827 2004 JF ₁₆	15.5	X	38.57726	9.73035	206.66872	7.22885	0.0730961	0.18933093	3.0036892	20	6 14.7	19.4
144828 2004 JL ₁₆	15.7	X	182.90898	35.18945	200.32015	7.79356	0.1644507	0.21613629	2.7499043	20	12 22.2	20.2
144829 2004 JV ₁₆	16.2	X	35.79235	109.45832	51.05652	3.58661	0.1228577	0.24271387	2.5453040	20	3 28.1	18.8
144830 2004 JQ ₁₇	15.4	X	15.84789	304.23664	231.10847	3.98582	0.2163520	0.17999225	3.1067062	20	3 18.7	18.5
144831 2004 JN ₂₁	15.7	X	50.03802	140.20634	44.38853	9.75511	0.0514777	0.18660927	3.0328243	20	5 16.5	19.7
144832 2004 JE ₂₃	15.4	X	333.44925	177.90884	85.65107	2.35188	0.1122149	0.18477161	3.0528999	20	5 5.6	19.1
144833 2004 JM ₂₄	15.7	X	45.85813	196.04430	63.40685	1.57842	0.1059181	0.19783121	2.9170207	20	8 28.2	19.5
144834 2004 JR ₂₄	15.7	X	312.69374	289.45323	230.10559	10.56919	0.1317895	0.22788218	2.6545799	20	—	—
144835 2004 JC ₂₆	15.4	X	318.28756	25.15324	240.01468	15.87880	0.1983289	0.18144806	3.0900666	20	3 27.1	19.6
144836 2004 JR ₂₈	15.2	X	21.77115	213.84345	207.49834	11.65202	0.1916661	0.22480107	2.6787805	20	—	—
144837 2004 JG ₂₉	15.1	X	309.17457	205.26026	79.42770	6.98782	0.0820384	0.18360203	3.0658511	20	5 2.2	19.1
144838 2004 JM ₃₀	16.1	X	56.56486	160.11300	116.16238	3.47067	0.1986753	0.25973555	2.4328488	20	10 27.9	19.5
144839 2004 JJ ₃₁	15.2	X	338.72668	329.98982	211.92479	12.37499	0.2314277	0.23400245	2.6080892	20	—	—
144840 2004 JI ₃₅	12.4	X	32.41106	71.80444	251.58171	4.34182	0.0519955	0.07990705	5.3384190	20	10 1.3	19.2
144841 2004 JB ₃₇	15.2	X	248.26073	89.31108	237.99569	9.21369	0.0910690	0.18007855	3.1057135	20	4 4.5	19.9
144842 2004 JF ₃₇	14.9	X	194.77040	326.49885	351.94358	4.57356	0.1388262	0.16879291	3.2426488	20	2 5.4	20.1
144843 2004 JH ₃₈	15.6	X	70.49997	297.15427	179.20318	14.05074	0.1219829	0.24037016	2.5618224	20	3 23.4	18.4
144844 2004 JD ₄₁	16.5	X	167.68326	298.29272	297.34337	4.92601	0.0892485	0.27658744	2.3329982	20	12 26.2	19.8
144845 2004 JM ₄₂	15.9	X	271.89071	129.96518	154.40785	0.95715	0.1332956	0.17682443	3.1437008	20	3 7.6	20.5
144846 2004 JW ₄₆	16.4	X	25.22572	346.36205	340.19582	1.35983	0.0592589	0.20661570	2.8337433	20	10 19.6	20.0
144847 2004 JP ₄₉	16.0	X	321.47795	326.88196	254.91069	4.11898	0.0940173	0.17635628	3.1492618	20	2 24.6	20.2
144848 2004 KB ₃	15.5	X	257.17261	294.36644	42.60913	9.71891	0.0872598	0.18403612	3.0610283	20	4 29.6	20.0
144849 2004 KG ₃	15.0	X	276.40779	236.46948	63.90839	10.26331	0.0575527	0.18048352	3.1010660	20	4 14.9	19.4
144850 2004 KY ₅	16.2	X	225.82576	122.25270	112.39697	2.57115	0.0794547	0.22307057	2.6926167	20	—	—
144851 2004 KK ₇	14.3	X	289.63758	212.71593	116.46823	4.02830	0.2317453	0.12309485	4.0022983	20	5 11.3	19.8
144852 2004 KU ₇	15.2	X	281.47956	91.74796	226.76034	8.83794	0.0738260	0.18293035	3.0733513	20	5 5.1	19.4
144853 2004 KW ₈	15.4	X	2.58516	70.19549	194.60599	7.36085	0.0708787	0.18918751	3.0052071	20	6 24.1	19.3
144854 2004 KA ₁₀	15.1	X	204.71402	318.82603	261.42987	16.42194	0.1164110	0.21653642	2.7465157	20	12 29.7	19.1
144855 2004 KF ₁₀	15.5	X	332.42306	165.49444	16.59440	8.90901	0.1641745	0.17322536	3.1870954	20	1 17.5	19.7
144856 2004 KH ₁₀	15.9	X	279.05866	170.77889	91.31664	10.43312	0.0590431	0.23561216	2.5961966	20	2 24.6	19.6
144857 2004 LT ₇	15.6	X	286.23515	246.25234	75.09060	3.92083	0.2028966	0.23980826	2.5658226	20	4 27.3	19.0
144858 2004 LT ₉	15.2	X	277.38465	284.83435	285.02897	10.91535	0.1375074	0.22184211	2.7025479	20	—	—
144859 2004 LG ₁₀	16.6	X	189.47333	30.35818	104.99420	2.65170	0.1169265	0.26442955	2.4039720	20	9 7.6	20.2
144860 2004 LJ ₁₁	16.1	X	342.88490	152.67493	16.46094	2.42040	0.1145377	0.23347030	2.6120508	20	1 8.9	19.2
144861 2004 LA ₁₂	15.4	X	310.31307	199.43256	159.22755	39.42813	0.7491418	0.24808697	2.5084190	20	4 28.7	20.1
144862 2004 LK ₁₃	14.8	X	350.34845	7.49250	249.20590	9.29498	0.2561733	0.18475328	3.0531017	20	5 15.2	17.5
144863 2004 LW ₁₃	15.1	X	55.63425	16.24102	228.08497	10.15549	0.0728642	0.19234013	2.9722781	20	8 11.1	19.3
144864 2004 LC ₁₅	15.5	X	281.37086	215.21082	111.04210	13.47940	0.1959364	0.23865283	2.5740975	20	5 3.7	19.3
144865 2004 LD ₁₅	14.3	X	265.62486	239.36157	87.77978	18.53025	0.1391620	0.17515479	3.1636471	20	4 28.9	19.3
144866 2004 LX ₁₆	14.1	X	332.55066	69.18639	251.41669	9.81110	0.3126548	0.12497017	3.9621581	20	6 25.2	18.2
144867 2004 LA ₁₇	15.9	X	319.82708	321.41126	300.34842	3.35999	0.1420482	0.24106778	2.5568776	20	3 31.5	19.0
144868 2004 LW ₂₉	15.1	X	51.49477	309.91477	275.25540	9.74255	0.0114633	0.18209420	3.0827523	20	7 5.9	19.4
144869 2004 MQ	16.1	X	249.06548	19.50728	158.72020	4.97628	0.2185656	0.21916286	2.7245288	20	12 18.4	19.6
144870 2004 MA ₈	14.3	X	282.61824	185.48408	32.70395	13.15261	0.05468265	0.16660048	3.2710352	20	—	—
144871 2004 NN ₁	15.7	X	295.80544	147.57378	175.30427	1.73777	0.2084533	0.17820355	3.1274604	20	5 12.5	19.7
144872 2004 NN ₁₂	14.9	X	11.39275	209.04853	102.50528	11.31435	0.1281847	0.18852307	3.0122642	20	9 20.3	18.7
144873 2004 NT ₁₉	14.8	X	309.21612	52.25142	278.56333	16.55826	0.0953020	0.18168907	3.0873333	20	6 28.3	18.8
144874 2004 NV ₃₀	16.2	X	50.9									

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Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>
144881 2004 <i>RM</i> ₉₉	15.0	X	290.73315	48.82895	321.19816	6.28042	0.0525643	0.17865935	3.1221389	20	7 29.5	19.3
144882 2004 <i>RP</i> ₁₀₆	15.1	X	359.23684	38.48156	359.32125	14.92446	0.0999575	0.19120077	2.9840742	20	12 12.5	19.2
144883 2004 <i>RM</i> ₁₁₀	17.0	X	140.32170	280.84729	195.94272	21.35229	0.1031445	0.35870665	1.9617475	20	6 20.3	20.0
144884 2004 <i>RQ</i> ₁₁₃	16.1	X	168.53670	228.00209	158.01593	3.08193	0.1042709	0.22538151	2.6741793	20	3 25.3	20.0
144885 2004 <i>RH</i> ₁₁₆	14.4	X	177.88258	234.22141	138.91074	9.52280	0.1242360	0.15931688	3.3699867	20	3 26.2	19.8
144886 2004 <i>RJ</i> ₁₄₁	15.6	X	76.41434	2.15649	8.64151	1.92174	0.0811226	0.20372955	2.8604434	20	—	—
144887 2004 <i>RD</i> ₁₆₅	14.8	X	119.06786	204.17987	288.76058	12.20735	0.0485024	0.17351456	3.1835531	20	6 8.8	19.5
144888 2004 <i>RZ</i> ₁₉₂	14.6	X	333.43761	348.22618	334.50302	8.27298	0.0727543	0.17621096	3.1509930	20	7 28.0	18.7
144889 2004 <i>RZ</i> ₂₁₃	14.2	X	40.77683	322.14456	334.34605	21.39721	0.0658338	0.18261837	3.0768505	20	9 21.2	18.6
144890 2004 <i>RG</i> ₂₈₈	16.1	X	239.43729	244.30430	173.23567	4.66476	0.2558473	0.23344397	2.6122473	20	7 2.7	20.3
144891 2004 <i>RC</i> ₂₈₉	16.8	X	110.62033	289.17853	222.44848	19.45263	0.0869066	0.35844163	1.9627143	20	6 30.0	19.5
144892 2004 <i>SJ</i> ₃	15.7	X	185.33240	33.78856	220.93815	3.71088	0.2386121	0.21061243	2.7977788	20	—	—
144893 2004 <i>ST</i> ₄	16.8	X	319.59557	343.96853	17.50805	6.99273	0.2145204	0.30355946	2.1926713	20	9 11.6	17.7
144894 2004 <i>SY</i> ₅	13.9	X	299.63992	135.84223	305.48445	2.06401	0.1423664	0.12682344	3.9234641	20	10 18.6	18.8
144895 2004 <i>TO</i> ₆₅	15.7	X	163.89719	234.24116	124.87576	9.95097	0.1730118	0.21457167	2.7632560	20	2 22.9	20.1
144896 2004 <i>TT</i> ₃₀₈	17.0	X	320.48625	10.49932	292.91137	1.36165	0.1233244	0.29709011	2.2243882	20	6 6.5	18.9
144897 2004 <i>UX</i> ₁₀	4.4	X	100.52245	152.46517	147.83271	9.52885	0.0445934	0.00405242	38.9636381	20	11 11.2	20.4
144898 2004 <i>VD</i> ₁₇	18.8	X	174.56711	90.93434	224.01653	4.22377	0.5887798	0.53225313	1.5079626	20	1 5.7	20.7
144899 2004 <i>VX</i> ₃₄	15.8	X	186.63015	105.40257	60.04191	11.60339	0.0673085	0.24242119	2.5473522	20	10 17.9	19.5
144900 2004 <i>VG</i> ₆₄	18.3	X	174.68619	43.92129	208.86841	36.25711	0.6555885	1.03436328	0.9683239	20	—	—
144901 2004 <i>WG</i> ₁	17.4	X	240.31260	232.45774	42.01068	13.03951	0.5215175	0.46928943	1.6399938	20	—	—
144902 2004 <i>XO</i> ₁₂	16.4	X	330.14339	105.85026	94.73620	7.04390	0.0588488	0.26966891	2.3727326	20	2 3.7	19.2
144903 2004 <i>XD</i> ₂₂	15.1	X	90.80033	234.58517	255.60118	14.06567	0.1621505	0.21300261	2.7768096	20	5 16.4	19.0
144904 2004 <i>XD</i> ₂₆	15.8	X	162.22799	30.17278	58.32842	5.81403	0.0864276	0.21881180	2.7274422	20	6 4.5	19.8
144905 2004 <i>XY</i> ₂₇	16.0	X	104.42825	89.95783	89.03774	3.21405	0.0869634	0.22503509	2.6769230	20	7 28.2	19.8
144906 2004 <i>XE</i> ₁₂₈	16.2	X	311.29577	33.29121	359.70390	1.50974	0.0901700	0.23800757	2.5787478	20	10 3.3	19.0
144907 Whitehorne	16.0	X	35.29257	45.94938	31.33705	0.50215	0.1096297	0.19299195	2.9655819	20	—	—
144908 2004 <i>YH</i> ₃₂	12.9	X	229.40118	348.66874	47.72879	79.01833	0.5653173	0.04224005	8.1655687	20	5 7.6	23.7
144909 2004 <i>YO</i> ₃₃	15.7	X	266.00229	218.86280	287.17273	5.75976	0.2577543	0.18089867	3.0963197	20	11 13.8	19.9
144910 2005 <i>AX</i> ₁₅	15.5	X	65.98209	287.88754	178.76514	1.84945	0.0186300	0.20213462	2.8754705	20	2 23.7	19.3
144911 2005 <i>AS</i> ₂₇	16.0	X	65.20023	286.87869	346.57783	18.57485	0.0571100	0.35907077	1.9604210	20	10 22.4	18.5
144912 2005 <i>AY</i> ₃₂	15.7	X	288.26767	110.15893	34.75694	0.67802	0.1017628	0.18264446	3.0765575	20	—	—
144913 2005 <i>AB</i> ₃₉	15.5	X	283.99089	106.81669	105.78712	11.41455	0.0806948	0.19265292	2.9690601	20	—	—
144914 2005 <i>AK</i> ₄₀	15.8	X	270.42464	229.09179	47.27632	2.60145	0.0263853	0.20420955	2.8559593	20	3 8.2	19.8
144915 2005 <i>AQ</i> ₄₅	15.6	X	42.09484	265.81138	316.34719	22.17376	0.2319511	0.27898964	2.3195870	20	8 1.1	17.9
144916 2005 <i>AY</i> ₆₉	15.7	X	232.73429	253.36803	9.90881	1.98629	0.1540624	0.19165411	2.9793667	20	1 2.7	20.4
144917 2005 <i>BJ</i> ₆	16.6	X	98.62413	251.87039	317.03944	6.10540	0.2004333	0.28638740	2.2794677	20	9 14.1	20.1
144918 2005 <i>BV</i> ₂₆	16.6	X	155.50321	49.62408	146.82053	6.08215	0.1892504	0.29201438	2.2500900	20	10 24.3	20.2
144919 2005 <i>BA</i> ₂₇	16.3	X	72.75996	266.73245	11.97716	22.33080	0.1096700	0.35860356	1.9621234	20	11 16.0	19.2
144920 2005 <i>BN</i> ₂₉	16.8	X	307.95837	63.59592	343.89634	17.41361	0.1171194	0.36011157	1.9566418	20	11 15.5	18.7
144921 2005 <i>CE</i> ₂₅	16.3	X	119.35713	86.49570	129.78461	3.92340	0.1325930	0.28596106	2.2817328	20	10 14.0	19.6
144922 2005 <i>CK</i> ₃₈	17.3	X	299.19726	213.72399	8.75439	8.22902	0.4112502	0.31623825	2.1336661	20	—	—
144923 2005 <i>CQ</i> ₄₃	16.1	X	81.27335	238.09053	325.92889	3.61700	0.1706707	0.28063140	2.3105314	20	8 18.1	19.2
144924 2005 <i>CX</i> ₄₈	14.7	X	48.46590	276.17131	338.60145	17.87555	0.2295291	0.21454928	2.7634483	20	9 12.3	18.3
144925 2005 <i>CO</i> ₅₀	16.6	X	105.86925	34.05732	156.51880	5.65406	0.0966675	0.28292880	2.2980066	20	8 19.9	19.5
144926 2005 <i>CL</i> ₅₁	16.4	X	79.22466	292.57313	328.32929	7.07060	0.1171326	0.28867307	2.2674195	20	10 23.4	19.6
144927 2005 <i>CF</i> ₅₂	17.1	X	55.49567	290.36041	288.30557	1.68971	0.1476938	0.27660635	2.3328919	20	7 30.6	19.5
144928 2005 <i>CH</i> ₅₂	16.9	X	53.26699	344.48556	227.77732	1.65504	0.1193110	0.27579538	2.3374629	20	7 12.2	19.3
144929 2005 <i>CP</i> ₆₁	16.6	X	202.90031	264.41810	335.04704	17.11434	0.0704862	0.37374402	1.9087683	20	—	—
144930 2005 <i>CZ</i> ₆₇	16.4	X	104.80426	273.07573	108.39600	2.06984	0.1928391	0.25936983	2.4351352	20	1 13.4	19.1
144931 2005 <i>ED</i> ₂	16.5	X	261.33753	185.75600	345.99512	20.39189	0.0403555	0.37244262	1.9132122	20	—	—
144932 2005 <i>EQ</i> ₇	16.7	X	299.49171	78.39259	160.74028	2.77458	0.1358725	0.25681077	2.4512855	20	2 2.1	19.8
144933 2005 <i>EA</i> ₈	16.5	X	41.42278	321.87999	3.96289	8.26449	0.1533254	0.29042933	2.2582693	20	12 11.6	19.5
144934 2005 <i>EZ</i> ₉	17.0	X	28.09688	25.18645	191.26528	1.02996	0.1336061	0.27044312	2.3682021	20	6 5.4	19.1
144935 2005 <i>ES</i> ₁₀	16.4	X	341.46709	302.21890	327.85707	6.20634	0.0902522	0.27193945	2.3595068	20	5 26.4	18.9
144936 2005 <i>EQ</i> ₁₃	17.1	X	23.87479	218.05802	40.74745	2.85704	0.1998205	0.27559088	2.3386191	20	8 17.4	19.2
144937 2005 <i>EP</i> ₁₅	16.8	X	318.84339	242.64323	350.73516	3.78022	0.1222669	0.26165830	2.4209159	20	2 22.9	19.5
144938 2005 <i>EC</i> ₁₆	16.7	X	8.21853	63.19673	134.80649	1.36176	0.1089186	0.26517718	2.3994514	20	3 28.0	19.0
144939 2005 <i>EJ</i> ₁₆	16.9	X	174.54824	221.30209	349.84743	6.19172	0.0962569	0.29716259	2.2240265	20	12 4.8	20.0
144940 2005 <i>EO</i> ₁₉	16.0	X	115.80007	278.38594	355.22920	7.47957	0.2663020	0.22764144	2.6564512	20	12 13.1	20.8
144941 2005 <i>EW</i> ₂₃	16.1	X	305.49336	70.21587	168.91878	6.06727	0.0534288	0.26112523	2.4242096	20	2 21.4	19.0
144942 2005 <i>EB</i> ₂₄	16.6	X	91.55700	176.64651	45.51433	2.69716	0.1661033	0.28159767	2.3052428	20	9 24.1	19.9
144943 2005 <i>EG</i> ₂₄	15.9	X	30.65645	129.21738	149.28218	10.46910	0.2321457	0.27952126	2.3166450	20	10 7.6	18.5
144944 2005 <i>EY</i> ₂₆	16.9	X	322.17856	244.07832	11.88164	0.91980	0.1434448	0.26484519	2.4014561	20	3 26.4	19.4
144945 2005 <i>EC</i> ₂₉	16.8	X	319.92005	108.32643	358.88814	19.66551	0.0873569	0.37046531	1.9200138	20	—	—
144946 2005 <i>EJ</i> ₃₁	16.2	X	222.41307	266.55169								

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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>
144961 2005 EP ₇₇	16.6	X	44.43159	127.60636	141.82955	7.31267	0.1016366	0.28368664	2.2939122	20	9 22.4	19.2
144962 2005 EZ ₇₇	16.5	X	305.52029	10.42950	248.67515	2.02543	0.1516074	0.26324718	2.4111648	20	3 3.5	19.4
144963 2005 EZ ₇₉	16.3	X	307.03992	204.46049	30.07621	2.44219	0.1793148	0.25658612	2.4527161	20	1 31.6	19.6
144964 2005 EC ₈₀	16.5	X	323.18497	268.80502	13.28386	6.74843	0.1246835	0.27105689	2.3646257	20	5 6.7	19.0
144965 2005 EA ₈₆	16.3	X	348.99556	188.33918	98.97655	3.27655	0.2101486	0.27348735	2.3505954	20	7 8.7	17.7
144966 2005 EA ₉₀	16.1	X	302.01696	205.29672	100.73742	6.00448	0.1861430	0.26914596	2.3758051	20	5 1.0	18.8
144967 2005 EX ₉₂	15.6	X	232.46838	307.66094	3.81876	6.33472	0.1441857	0.25923779	2.4359620	20	2 22.9	19.3
144968 2005 EY ₉₃	14.8	X	212.81324	112.64092	161.75696	26.27020	0.2147125	0.17709092	3.1405462	20	—	—
144969 2005 EH ₉₅	16.4	X	204.39810	217.28983	17.10141	21.16596	0.0491097	0.37165737	1.9159061	20	—	—
144970 2005 EE ₁₀₁	16.2	X	290.87033	155.47031	126.09271	6.64227	0.2332684	0.26017663	2.4300984	20	3 6.5	19.6
144971 2005 EY ₁₀₈	16.3	X	77.71938	29.70642	222.88962	4.96541	0.1524394	0.28496560	2.2870435	20	10 16.6	19.5
144972 2005 EM ₁₁₉	16.5	X	53.95808	267.51704	23.67341	6.00863	0.1404146	0.28632772	2.2797844	20	11 7.8	19.3
144973 2005 EP ₁₂₄	16.5	X	160.62837	267.92419	340.79533	4.67255	0.1413274	0.29842903	2.2177300	20	—	—
144974 2005 EH ₁₂₅	16.8	X	304.83631	218.16341	175.35611	6.56159	0.0944952	0.28749005	2.2736355	20	10 4.5	18.9
144975 2005 EB ₁₂₆	16.3	X	258.42733	347.87526	329.52449	1.76059	0.2200758	0.26402436	2.4064308	20	3 17.7	20.0
144976 2005 EY ₁₂₆	16.4	X	166.97993	252.28666	14.10155	5.59495	0.1426167	0.29981690	2.2108807	20	—	—
144977 2005 EC ₁₂₇	17.2	X	95.11726	312.65977	336.84375	4.74818	0.1731766	0.29923771	2.2137326	20	12 25.0	20.7
144978 2005 EY ₁₃₁	16.4	X	228.56753	98.27536	354.80460	18.25295	0.0897286	0.35474805	1.9763144	20	9 12.3	18.2
144979 2005 EE ₁₃₇	16.1	X	301.74591	310.80314	22.62938	6.14784	0.2553139	0.26986997	2.3715540	20	5 24.7	18.6
144980 2005 EK ₁₃₉	16.0	X	143.28653	91.96845	145.91890	2.75943	0.1476592	0.22639481	2.6661939	20	11 22.9	20.3
144981 2005 EM ₁₄₂	16.8	X	50.10937	191.01358	95.34422	3.89670	0.1579537	0.28261560	2.2997041	20	10 31.9	19.7
144982 2005 EZ ₁₄₂	16.1	X	193.10081	133.05048	150.45696	6.59692	0.2151258	0.24179410	2.5517547	20	—	—
144983 2005 EM ₁₄₈	17.5	X	243.87768	203.49772	82.96448	3.01925	0.1654251	0.31785040	2.1264452	20	1 24.9	20.5
144984 2005 EK ₁₅₀	17.1	X	125.50523	266.25707	40.03129	7.14550	0.0661336	0.30165050	2.2019123	20	—	—
144985 2005 EE ₁₅₂	16.4	X	199.17854	94.47471	160.60692	5.12497	0.1550706	0.23967736	2.5667567	20	—	—
144986 2005 ET ₁₅₄	17.0	X	308.27698	200.89663	31.46054	2.74324	0.1486268	0.25603053	2.4562631	20	2 4.1	20.1
144987 2005 EC ₁₅₅	16.9	X	88.34294	289.91786	13.60584	3.95594	0.1693358	0.29242738	2.2479709	20	—	—
144988 2005 EC ₁₆₄	16.9	X	336.33113	75.80375	194.90708	1.87864	0.1962242	0.26595820	2.3947516	20	5 7.3	18.8
144989 2005 EY ₁₇₁	16.3	X	13.55536	9.45728	251.43046	7.07161	0.0786068	0.27601213	2.3362390	20	7 11.3	18.7
144990 2005 ES ₁₇₉	17.3	X	10.19660	50.67284	211.99439	1.64428	0.1449833	0.27378598	2.3488858	20	7 14.7	19.2
144991 2005 EH ₁₈₂	15.3	X	54.95096	108.49520	166.57925	7.96327	0.1931857	0.21728706	2.7401866	20	10 16.9	19.1
144992 2005 EM ₁₈₂	17.0	X	121.44079	33.99069	208.40869	5.01790	0.2090361	0.28837034	2.2690061	20	11 19.0	20.6
144993 2005 EH ₁₈₅	16.6	X	186.44124	280.58200	200.48816	21.23794	0.0620952	0.34749173	2.0037325	20	8 21.2	19.4
144994 2005 EO ₁₈₆	16.3	X	141.61461	190.11059	65.58341	6.51899	0.1675181	0.29389076	2.2405025	20	12 23.5	19.8
144995 2005 EA ₁₈₇	16.7	X	309.32295	308.12751	5.38547	6.66703	0.0998821	0.27025609	2.3692946	20	6 4.0	19.4
144996 2005 EA ₁₈₈	17.2	X	139.63416	206.36713	358.10751	5.22934	0.1770275	0.28627194	2.2800806	20	10 16.1	20.9
144997 2005 EY ₁₉₆	16.6	X	347.30594	134.77710	189.43810	7.61202	0.1380555	0.28045563	2.3114967	20	9 4.5	18.6
144998 2005 EY ₁₉₈	17.0	X	111.25482	78.82270	201.41078	6.88208	0.1456686	0.29229349	2.2486574	20	12 25.7	20.6
144999 2005 EJ ₁₉₉	15.5	X	19.54479	248.01934	17.58524	7.59545	0.1793190	0.20884035	2.8135832	20	8 8.3	18.6
145000 2005 EH ₂₀₀	16.4	X	88.85294	99.12679	144.88178	2.96577	0.2307468	0.27973117	2.3154859	20	10 25.1	20.0
145001 2005 EY ₂₀₃	17.2	X	130.17521	150.81435	115.48475	3.41659	0.0804342	0.30296828	2.1955228	20	12 30.5	20.0
145002 2005 EY ₂₀₄	16.6	X	264.37470	282.48475	357.62694	5.79432	0.1825305	0.25375043	2.4709552	20	2 12.4	20.3
145003 2005 EZ ₂₀₅	16.3	X	351.84445	321.14000	20.58727	7.83158	0.1442397	0.28479800	2.2879406	20	10 15.9	18.3
145004 2005 ER ₂₀₆	16.9	X	190.34411	199.51510	321.18192	2.45840	0.0619653	0.28964936	2.2623216	20	10 18.9	19.7
145005 2005 ES ₂₁₂	15.5	X	164.36329	78.16535	143.26016	14.61976	0.1411039	0.22691939	2.6620833	20	11 25.7	20.0
145006 2005 EH ₂₁₄	16.2	X	74.88219	297.27161	333.92023	6.24947	0.1159671	0.28564274	2.2834277	20	11 1.1	19.4
145007 2005 ER ₂₁₉	15.3	X	55.57563	98.31463	188.44769	10.93487	0.1976230	0.21670806	2.7450653	20	11 1.6	19.2
145008 2005 EO ₂₂₁	15.8	X	157.00205	193.50234	42.76834	27.16431	0.1373941	0.29078664	2.2564190	20	12 8.6	19.5
145009 2005 EW ₂₂₁	16.5	X	342.80833	75.68611	191.37002	5.83406	0.0795917	0.26888015	2.3773706	20	5 27.6	19.0
145010 2005 EE ₂₂₂	16.9	X	343.12476	35.18273	237.83639	0.99543	0.0539056	0.27124142	2.3635532	20	6 6.9	19.5
145011 2005 ET ₂₃₆	15.4	X	167.07143	232.95977	28.13306	14.57941	0.1633480	0.23312089	2.6146602	20	—	—
145012 2005 EY ₂₃₆	14.5	X	237.59794	276.12358	29.74220	18.22421	0.4016576	0.18421739	3.0590199	20	2 21.7	20.6
145013 2005 EO ₂₃₇	16.9	X	69.39581	323.43845	9.12550	6.47155	0.1448758	0.29850401	2.2173586	20	—	—
145014 2005 EC ₂₄₀	16.3	X	159.02574	164.08904	143.31143	2.52409	0.1351059	0.24396797	2.5365739	20	—	—
145015 2005 ES ₂₄₀	16.7	X	324.15524	11.45977	242.61804	1.58411	0.2048971	0.26787933	2.3832883	20	3 15.3	19.1
145016 2005 EE ₂₄₂	15.3	X	99.33774	208.79969	30.36639	11.10671	0.2444100	0.22098397	2.7095398	20	10 20.9	19.7
145017 2005 ED ₂₄₆	17.0	X	39.14632	240.64197	18.30380	2.32961	0.2069452	0.27675731	2.3320435	20	9 14.3	19.5
145018 2005 EP ₂₄₇	17.0	X	326.64422	280.87657	22.57497	1.55452	0.1959234	0.27160013	2.3614716	20	6 8.4	19.0
145019 2005 EB ₂₅₀	15.4	X	27.78170	202.95713	134.06731	5.68573	0.1871231	0.23067385	2.6331189	20	12 1.7	18.8
145020 2005 EA ₂₅₃	16.1	X	296.13757	306.74461	284.82680	3.03026	0.1232602	0.25333292	2.4736692	20	1 21.7	19.6
145021 2005 EB ₂₅₇	16.0	X	357.35398	271.96206	338.35019	13.19554	0.1152612	0.26895449	2.3769325	20	5 21.7	18.6
145022 2005 EC ₂₅₉	17.2	X	246.81111	164.44722	181.80706	1.43031	0.1330204	0.26664472	2.3906393	20	4 21.1	20.4
145023 2005 EB ₂₆₀	16.9	X	168.06143	167.31698	130.38909	1.51055	0.1115600	0.24077981	2.5589159	20	—	—
145024 2005 EU ₂₆₀	17.4	X	172.94783	271.64933	353.17272	2.92281	0.1388215	0.30283627	2.1961608	20	—	—
145025 2005 EH ₂₆₄	17.0	X	353.09916	28.37811	232.51914	1.45271	0.1612590	0.26900790	2.3766179	20	6 2.7	18.7
145026 2005 EK ₂₆₆	16.3	X	10.38192	117.36344	196.79019	7.98970	0.2181397	0.27871534	2.3211086	20	10 20.5	18.2
145027 2005 ET ₂₆₆	17.1	X	263.14562	23.95670	352.62612	3.27027	0.0899129	0.27451452	2.3447282	20	6 29.3	20.1
145028 2005 EY ₂₆₇	17.2	X	10.87527	346.88428	264.42629	1.54628	0.1706191	0.27005105	2.3704937	20	6 29.6	19.1
145029 2005 ER ₂₆₉	16.6	X	302.03309	39.02773	218.61361	5.70837	0.0906547	0.25876325	2.4389393	20	3 5.6	19.7
145030 2005 ET ₂₆₉	15.5	X	79.89876	329.34673	299.12891	10.82117	0.2410930	0.21935219	2.7229609	20	11 3.7	20.1
145031 2005 EB ₂₇₂	15.6	X	49.18579	102.14393	156.90228	9.04294	0.0718044	0.21536048	2.7565045	20	8 28.4	19.3
145032 2005 EX ₂₇₂	16.5	X	263.18297	179.26058	121.50660	5.67936	0.1898723	0.26191342	2.4193436	20	3 6.7	20.1
145033 2005 ET ₂₇₅	16.4	X	307.81172	85.93802	192.43286	12.81328	0.1761736	0.26439540	2.4041790	20	3 3	

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Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>
145041 2005 <i>FJ</i> ₆	17.3	X	64.01895	279.35287	355.56904	7.02731	0.1061651	0.28770748	2.2724898	20	10 23.5	20.3
145042 2005 <i>FO</i> ₆	16.4	X	94.22891	205.95234	62.34426	8.25078	0.1519200	0.28827843	2.2694883	20	11 24.3	19.8
145043 2005 <i>FE</i> ₇	16.3	X	280.91091	260.28253	20.27761	12.86784	0.1990012	0.25827148	2.4420342	20	3 2.3	19.9
145044 2005 <i>FH</i> ₇	16.5	X	22.51936	227.79452	61.38964	13.01071	0.1434820	0.27512124	2.3412797	20	9 28.3	19.3
145045 2005 <i>FP</i> ₇	16.1	X	259.74966	213.65292	79.72069	7.90992	0.1647703	0.25751001	2.4468460	20	2 27.6	19.9
145046 2005 <i>GD</i> ₂	16.8	X	333.35978	30.69537	24.26430	20.73667	0.1002407	0.36545323	1.9375289	20	—	—
145047 2005 <i>GW</i> ₃	15.8	X	89.03637	61.70275	174.06832	8.89385	0.0979987	0.21629405	2.7485671	20	9 22.4	19.7
145048 2005 <i>GR</i> ₄	16.6	X	235.64292	46.95631	126.52337	4.14990	0.0672401	0.29807298	2.2194957	20	—	—
145049 2005 <i>GR</i> ₆	17.0	X	211.74395	157.61068	66.07455	3.51316	0.1281410	0.30138193	2.2032202	20	—	—
145050 2005 <i>GN</i> ₇	16.3	X	84.32315	176.12079	99.03974	6.54352	0.1911919	0.28488736	2.2874622	20	11 26.6	19.9
145051 2005 <i>GT</i> ₁₀	16.1	X	153.65123	152.20183	169.17440	7.35308	0.0609153	0.24456482	2.5324452	20	—	—
145052 2005 <i>GY</i> ₁₀	16.6	X	59.62660	122.74789	96.80986	8.13002	0.0601249	0.27425619	2.3462003	20	7 23.9	19.3
145053 2005 <i>GX</i> ₁₁	15.4	X	95.76025	72.35304	156.98220	10.74823	0.0991436	0.21685088	2.7438599	20	9 23.6	19.4
145054 2005 <i>GD</i> ₁₂	16.2	X	169.68425	86.95608	112.85397	5.09626	0.0700371	0.29126297	2.2539582	20	11 17.8	19.1
145055 2005 <i>GQ</i> ₁₂	16.2	X	336.04084	214.06361	127.95859	4.69179	0.1542096	0.27935562	2.3175606	20	9 13.5	17.9
145056 2005 <i>GT</i> ₁₂	17.3	X	129.56341	52.37097	178.83669	2.84141	0.1055285	0.28818347	2.2699868	20	11 11.6	20.5
145057 2005 <i>GM</i> ₁₃	15.4	X	44.59605	134.01390	150.82615	12.39154	0.1685156	0.21445798	2.7642326	20	10 14.2	19.2
145058 2005 <i>GM</i> ₁₉	15.1	X	359.59008	302.67440	22.45076	11.45036	0.2288220	0.21303570	2.7765220	20	9 30.6	17.6
145059 2005 <i>GL</i> ₂₀	15.8	X	123.32069	234.21962	39.84872	3.97736	0.2349717	0.22537392	2.6742394	20	12 18.5	20.4
145060 2005 <i>GV</i> ₂₀	17.0	X	74.62245	317.75300	204.66827	1.74337	0.1334103	0.266611437	2.3938145	20	6 3.9	19.7
145061 2005 <i>GK</i> ₂₁	17.0	X	183.43863	232.91309	14.39438	3.92771	0.0792095	0.30044054	2.2078202	20	—	—
145062 Hashikami	15.5	X	86.80281	115.30017	143.24008	6.79421	0.1022435	0.21933854	2.7230738	20	10 21.9	19.5
145063 2005 <i>GZ</i> ₂₂	14.9	X	168.18259	109.41936	159.54834	15.26278	0.1496552	0.17024348	3.2242031	20	—	—
145064 2005 <i>GD</i> ₂₃	15.5	X	101.03249	228.46373	39.14079	12.25836	0.1878484	0.22332173	2.6905974	20	11 19.7	19.9
145065 2005 <i>GX</i> ₂₃	17.0	X	66.23198	302.23014	334.47073	5.90854	0.1716458	0.28967088	2.2622095	20	11 5.9	20.3
145066 2005 <i>GJ</i> ₂₆	16.1	X	74.81031	284.76310	20.63350	2.19338	0.1929470	0.22313454	2.6921020	20	12 12.8	20.3
145067 2005 <i>GO</i> ₂₇	16.6	X	49.70305	114.80619	193.58495	5.70488	0.1383858	0.28565888	2.2833416	20	11 27.2	19.5
145068 2005 <i>GF</i> ₃₀	16.0	X	265.04656	232.49079	77.69757	6.99578	0.1181949	0.26140876	2.4224564	20	3 30.8	19.4
145069 2005 <i>GG</i> ₃₁	16.4	X	36.77253	208.50743	71.12665	6.26806	0.2151408	0.27817896	2.3240914	20	10 14.5	19.1
145070 2005 <i>GR</i> ₃₂	16.5	X	11.07829	253.59367	26.56605	6.25476	0.1393176	0.27338253	2.3511962	20	8 16.8	18.7
145071 2005 <i>GW</i> ₃₂	16.0	X	166.16251	255.55914	43.66339	10.67836	0.1070506	0.23855995	2.5747656	20	—	—
145072 2005 <i>GX</i> ₃₂	16.5	X	156.15467	216.28073	51.38204	5.66696	0.1185315	0.29646940	2.2274919	20	—	—
145073 2005 <i>GY</i> ₃₂	16.7	X	178.39634	140.52992	94.46739	1.15071	0.0654422	0.29743433	2.2226717	20	—	—
145074 2005 <i>GO</i> ₃₃	16.1	X	55.11044	316.08700	349.68573	8.61849	0.2455619	0.28533370	2.2850761	20	12 10.4	19.6
145075 Zipernowsky	16.3	X	221.03892	21.14507	199.08199	11.29982	0.1159276	0.23682541	2.5873222	20	—	—
145076 2005 <i>GY</i> ₃₆	16.7	X	328.48487	156.72274	95.56668	2.27625	0.1559812	0.26083361	2.4260161	20	3 31.6	19.3
145077 2005 <i>GL</i> ₃₈	16.7	X	172.05258	247.06033	352.56360	7.48038	0.1438312	0.29604320	2.2296293	20	—	—
145078 2005 <i>GO</i> ₃₉	16.4	X	20.64971	168.15468	95.97566	6.95106	0.2171786	0.27183378	2.3601183	20	8 23.4	18.5
145079 2005 <i>GZ</i> ₄₃	16.8	X	32.12261	225.55643	206.33631	19.44421	0.1196196	0.37507504	1.9042499	20	—	—
145080 2005 <i>GG</i> ₄₅	16.4	X	93.43953	28.36084	280.82897	3.40827	0.1585009	0.29310240	2.2445182	20	—	—
145081 2005 <i>GY</i> ₄₉	16.6	X	315.18160	181.56346	168.19583	2.32608	0.2371495	0.27511687	2.3413045	20	7 24.5	18.1
145082 2005 <i>GE</i> ₅₀	16.5	X	121.36860	134.27146	185.89631	2.98770	0.1709112	0.23482094	2.6020252	20	—	—
145083 2005 <i>GB</i> ₅₃	15.9	X	58.58976	88.34747	213.97707	8.54039	0.0779221	0.21976337	2.7195633	20	11 7.7	19.5
145084 2005 <i>GE</i> ₅₃	16.5	X	353.36245	258.39568	38.19184	7.37319	0.1063214	0.27143490	2.3624299	20	8 5.1	18.9
145085 2005 <i>GY</i> ₅₃	16.1	X	188.69073	222.36522	20.16603	7.64934	0.1594129	0.23376835	2.6098301	20	—	—
145086 2005 <i>GC</i> ₅₄	15.5	X	92.06963	253.65125	36.38982	4.71737	0.2201403	0.22263195	2.6961521	20	12 11.6	20.0
145087 2005 <i>GK</i> ₅₄	16.6	X	87.60553	137.07520	190.43504	4.55919	0.1937838	0.29829535	2.2183925	20	—	—
145088 2005 <i>GW</i> ₅₄	16.8	X	196.24471	15.33722	338.57400	1.48092	0.2234032	0.25869078	2.4393947	20	3 11.1	21.0
145089 2005 <i>GY</i> ₅₉	17.0	X	13.97248	233.30379	191.46259	23.02329	0.0698471	0.36922377	1.9234155	20	—	—
145090 2005 <i>GF</i> ₆₀	16.7	X	17.82892	128.76714	314.98925	18.30764	0.1191428	0.37626594	1.9002297	20	—	—
145091 2005 <i>GM</i> ₆₄	16.6	X	357.54784	166.24301	115.28999	15.40678	0.2351353	0.27123378	2.3635975	20	7 25.0	17.8
145092 2005 <i>GR</i> ₆₆	16.3	X	3.60898	130.11696	195.36740	6.55490	0.1425699	0.28069211	2.3101982	20	10 12.5	18.3
145093 2005 <i>GS</i> ₇₃	15.5	X	144.39846	83.84978	172.98869	14.75047	0.0853986	0.22855431	2.6493730	20	12 17.9	19.8
145094 2005 <i>GM</i> ₇₃	15.6	X	137.70284	147.85331	128.08063	10.27036	0.0995429	0.22958004	2.6414758	20	—	—
145095 2005 <i>GB</i> ₇₄	15.2	X	261.61261	104.46941	154.86468	15.92999	0.1207943	0.18401322	3.0612822	20	1 26.8	20.0
145096 2005 <i>GP</i> ₇₄	17.0	X	165.84931	330.03005	208.53740	2.59199	0.0412274	0.28630791	2.2798896	20	10 14.7	19.9
145097 2005 <i>GU</i> ₇₄	16.6	X	124.47664	213.02349	55.94013	4.61469	0.1476124	0.29228058	2.2487236	20	12 24.4	20.1
145098 2005 <i>GJ</i> ₈₆	15.7	X	24.20960	220.12274	50.00289	8.69263	0.1888536	0.21026704	2.8008418	20	8 26.8	19.0
145099 2005 <i>GX</i> ₈₇	16.3	X	196.23891	350.65262	261.77340	2.40872	0.0875339	0.23797650	2.5789722	20	—	—
145100 2005 <i>GJ</i> ₈₈	16.6	X	72.25937	191.37236	19.51127	6.72375	0.0655106	0.27436209	2.3455965	20	8 1.9	19.5
145101 2005 <i>GM</i> ₈₈	16.2	X	93.69925	255.46246	17.67052	7.07099	0.0664287	0.22343179	2.6897138	20	11 9.7	20.0
145102 2005 <i>GU</i> ₉₀	16.7	X	59.39078	9.25334	232.29516	4.55624	0.1880034	0.27613679	2.3355358	20	9 11.7	19.7
145103 2005 <i>GC</i> ₉₆	16.6	X	40.37679	257.67641	108.50634	1.80965	0.1403559	0.29517321	2.2340082	20	—	—
145104 2005 <i>GU</i> ₁₀₁	16.9	X	293.43118	112.23122	202.77590	10.36759	0.2410248	0.26355207	2.4093049	20	4 20.3	20.0
145105 2005 <i>GW</i> ₁₀₁	16.2	X	237.64941	272.42023	35.16877	5.48919	0.1148090	0.25606962	2.4560131	20	2 25.9	19.8
145106 2005 <i>GF</i> ₁₀₅	15.7	X	65.79498	252.31731	62.35608	4.79808	0.1221586	0.22455182	2.6807624	20	12 7.6	19.4
145107 2005 <i>GG</i> ₁₀₅	16.9	X	138.16767	22.54704	183.64391	7.46210	0.0407286	0.28556575	2.2838380	20	10 18.8	19.7
145108 2005 <i>GB</i> ₁₁₃	15.9	X	171.19663	110.78982	144.93167	15.02789	0.1815008	0.23322223	2.6139027	20	—	—
145109 2005 <i>GL</i> ₁₁₃	17.0	X	356.77603	65.76625	195.39195	1.98733	0.1820968	0.27199462	2.3591878	20	6 12.2	18.5
145110 2005 <i>GF</i> ₁₁₇	16.3	X	262.08613	326.02786	15.20824	6.62503	0.1268421	0.26489077	2.4011806	20	5 1.2	19.5
145111 2005 <i>GN</i> ₁₁₉	15.8	X	280.90787	248.61193	300.31158	12.15479	0.1024352	0.24365197	2.5387665	20	—	—
145112 2005 <i>GK</i> ₁₂₁	17.1	X	246.99368	161.74736	94.25457	2.27141	0.1085931	0.31198813	2.152			

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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>
145121 2005 GC ₁₃₆	15.9	X	179.34177	147.69944	187.07355	15.16035	0.2454250	0.24374725	2.5381049	20	2 3.3	20.5
145122 2005 GD ₁₃₆	16.7	X	26.40254	178.88868	162.11242	7.06971	0.1840378	0.28467034	2.2886247	20	12 17.6	19.6
145123 2005 GD ₁₃₉	16.6	X	356.37773	0.97175	227.62599	3.98562	0.1580991	0.26182599	2.4198821	20	4 16.9	18.7
145124 2005 GT ₁₃₉	16.2	X	8.33284	163.66103	171.82708	4.80301	0.1251759	0.21720757	2.7408551	20	10 18.7	19.3
145125 2005 GU ₁₄₁	16.2	X	260.44056	251.55645	16.15625	6.11387	0.1178699	0.25395559	2.4696241	20	1 30.3	19.9
145126 2005 GV ₁₄₄	16.7	X	10.55312	295.78779	5.11216	6.10738	0.1302103	0.28297962	2.2977315	20	9 16.6	18.9
145127 2005 GL ₁₄₇	16.8	X	113.31022	259.34567	347.44138	2.19235	0.1170924	0.28694146	2.2765325	20	11 13.3	20.1
145128 2005 GG ₁₄₉	15.7	X	299.35851	240.78309	141.74934	5.36055	0.0817882	0.21344609	2.7729620	20	8 27.6	19.2
145129 2005 GH ₁₅₀	16.7	X	350.76221	195.08007	93.24391	5.28502	0.2303709	0.26747437	2.3856933	20	7 15.9	18.0
145130 2005 GF ₁₅₃	16.4	X	83.83057	226.84722	63.42243	10.58353	0.1444019	0.28653494	2.2786851	20	12 10.4	19.7
145131 2005 GM ₁₅₃	15.5	X	111.03198	175.38636	126.71680	16.35635	0.1163654	0.22709204	2.6607339	20	—	—
145132 2005 GZ ₁₅₇	16.2	X	105.27872	131.34135	147.36496	4.35884	0.1844236	0.22511724	2.6762718	20	12 8.7	20.5
145133 2005 GO ₁₅₈	16.4	X	155.51514	46.86865	236.70189	4.35052	0.2284921	0.23296725	2.6158096	20	—	—
145134 2005 GU ₁₆₀	15.9	X	132.36544	69.90220	191.39252	10.94727	0.2274786	0.22426347	2.6830598	20	12 10.9	20.7
145135 2005 GU ₁₆₁	16.4	X	30.79774	211.94445	85.93518	8.56655	0.1576035	0.28010507	2.3134249	20	10 23.7	19.1
145136 2005 GY ₁₆₁	15.8	X	65.72920	9.06696	281.23000	3.47694	0.1882353	0.21858073	2.7293640	20	11 13.7	19.9
145137 2005 GZ ₁₆₂	14.7	X	309.04225	66.43503	152.02306	14.42655	0.1932614	0.18542641	3.0457084	20	1 21.1	19.1
145138 2005 GB ₁₆₃	15.1	X	302.32430	51.47979	50.51417	22.70108	0.0408182	0.22952781	2.6418765	20	12 18.9	18.7
145139 2005 GV ₁₆₅	17.3	X	62.75021	170.79614	19.40695	1.46057	0.1209357	0.26970401	2.3725267	20	6 24.5	19.9
145140 2005 GV ₁₆₇	16.0	X	202.03192	200.18066	38.71230	3.10948	0.1435619	0.23439423	2.6051822	20	—	—
145141 2005 GF ₁₆₈	16.4	X	222.51630	67.74895	221.95867	4.71746	0.1498031	0.24532064	2.5272410	20	1 16.7	20.5
145142 2005 GX ₁₆₈	16.1	X	231.58728	49.36570	186.08617	1.29669	0.1181651	0.24125642	2.5555446	20	—	—
145143 2005 GL ₁₇₀	16.6	X	199.81797	69.87306	209.66672	6.13244	0.1096611	0.30717815	2.1754169	20	—	—
145144 2005 GU ₁₇₁	14.8	X	219.55137	218.73668	70.60974	18.02131	0.1796004	0.17836959	3.1255192	20	1 23.9	20.2
145145 2005 GX ₁₇₁	15.9	X	331.38504	294.41895	160.62866	5.25530	0.0664751	0.23613354	2.5923736	20	—	—
145146 2005 GC ₁₇₂	16.5	X	246.28238	289.08991	52.05682	3.94020	0.1890158	0.26205541	2.4184696	20	4 9.7	20.3
145147 2005 GD ₁₇₅	15.1	X	205.03175	335.39623	260.73362	3.31496	0.2967665	0.23542504	2.5975721	20	—	—
145148 2005 GR ₁₇₆	16.2	X	236.54916	158.20088	114.09827	5.52766	0.0656197	0.24728122	2.5138650	20	1 12.8	19.6
145149 2005 GX ₁₇₇	17.3	X	345.00017	305.59797	20.82901	2.89535	0.1830407	0.27562485	2.3384269	20	9 8.1	18.8
145150 2005 GX ₁₇₈	15.7	X	189.55055	298.06031	312.11800	14.17253	0.1584411	0.23458464	2.6037723	20	—	—
145151 2005 GH ₁₇₉	14.9	X	287.79768	89.55262	160.99441	15.19103	0.2447277	0.18512438	3.0490203	20	1 28.8	19.7
145152 2005 GS ₁₈₁	16.8	X	332.76508	309.84188	46.23062	5.48778	0.1545093	0.28182193	2.3040197	20	9 30.9	18.5
145153 2005 GJ ₁₈₂	15.9	X	217.31417	114.10571	162.42209	10.60046	0.1582647	0.24187625	2.5511769	20	—	—
145154 2005 GD ₂₀₁	16.7	X	149.07275	295.39930	11.83705	12.47802	0.2654916	0.23839322	2.5759659	20	—	—
145155 2005 HD	15.7	X	294.72558	124.67715	56.74457	5.53323	0.0631557	0.24268026	2.5455390	20	—	—
145156 2005 HO	16.5	X	107.31712	328.66072	356.57354	4.87778	0.1890056	0.23204455	2.6227394	20	—	—
145157 2005 HY ₁	17.1	X	93.72062	199.27485	68.97730	4.42995	0.2084114	0.28383386	2.2931189	20	11 26.4	20.8
145158 2005 HU ₃	16.4	X	310.31440	57.46874	156.19654	6.37863	0.0620877	0.25302114	2.4757009	20	1 24.9	19.5
145159 2005 HM ₄	16.5	X	84.83874	270.67105	80.58533	6.07361	0.1892287	0.29873294	2.2162256	20	—	—
145160 2005 HY ₄	15.0	X	203.86267	205.93422	86.35390	7.68449	0.1395557	0.17755821	3.1350337	20	1 13.0	20.0
145161 2005 HZ ₄	15.7	X	224.56393	323.05556	202.93558	12.17938	0.1000276	0.23735978	2.5834375	20	—	—
145162 2005 HG ₅	15.6	X	211.75473	115.09593	194.74273	8.63058	0.1786647	0.17954104	3.1119090	20	2 5.3	20.9
145163 2005 HT ₆	15.4	X	206.54251	316.24367	243.71524	4.08230	0.1851575	0.23032481	2.6357784	20	12 3.4	19.4
145164 2005 HA ₇	15.5	X	208.02228	350.31496	235.63386	6.86336	0.1104546	0.23250421	2.6192814	20	—	—
145165 2005 HS ₇	15.8	X	200.64689	314.94362	53.35219	6.72404	0.2048446	0.25713912	2.4491983	20	4 3.9	19.9
145166 2005 JL	16.8	X	77.98263	230.29420	68.42683	7.92762	0.1226284	0.28866364	2.2674689	20	12 14.2	20.0
145167 2005 JF ₁	16.7	X	47.65141	190.52827	94.53714	7.67347	0.1146211	0.27855304	2.3220102	20	10 22.1	19.6
145168 2005 JD ₃	16.0	X	145.06189	232.45056	56.56292	8.89503	0.1792440	0.22969041	2.6406295	20	—	—
145169 2005 JF ₃	17.0	X	258.80410	170.22289	69.13519	4.07157	0.1158003	0.30940187	2.1649810	20	—	—
145170 2005 JL ₃	17.1	X	61.15531	262.74778	162.91974	23.54999	0.0723291	0.37759527	1.8957673	20	—	—
145171 2005 JV ₃	15.9	X	287.22504	305.79652	29.27705	12.90680	0.2285686	0.26946226	2.3739455	20	5 8.7	19.0
145172 2005 JX ₃	16.0	X	91.16510	109.47366	175.75495	2.32008	0.1561769	0.22525465	2.6751833	20	12 1.9	20.1
145173 2005 JX ₄	16.6	X	264.30593	167.12675	153.72111	7.03048	0.1302616	0.25820527	2.4424517	20	4 10.2	20.1
145174 2005 JC ₅	15.9	X	246.82154	106.85447	146.25713	15.30535	0.0655732	0.24385383	2.5373653	20	1 1.1	19.8
145175 2005 JF ₅	16.3	X	13.97119	241.73941	176.61504	14.87806	0.1060496	0.23124946	2.6287476	20	—	—
145176 2005 JJ ₅	15.4	X	187.85984	58.32843	183.44909	12.89579	0.1428521	0.23144643	2.6272560	20	—	—
145177 2005 JX ₁₃	16.5	X	158.12198	349.72939	283.23729	3.77633	0.1133513	0.29948320	2.2125227	20	—	—
145178 2005 JN ₁₄	16.9	X	115.96802	344.90204	232.52455	5.93407	0.1560678	0.28218599	2.3020376	20	10 9.1	20.3
145179 2005 JB ₁₆	16.5	X	102.88409	232.94397	72.52567	8.70707	0.1502710	0.29300421	2.2450196	20	—	—
145180 2005 JA ₂₀	15.7	X	118.02819	184.12248	110.63618	12.61403	0.1751414	0.22763014	2.6565390	20	—	—
145181 2005 JK ₂₀	14.9	X	187.66164	208.20483	94.12071	18.38654	0.1813718	0.17455713	3.1708642	20	1 11.4	20.3
145182 2005 JT ₂₀	15.4	X	41.90752	190.63494	133.73996	9.83342	0.1720944	0.21856629	2.7294843	20	11 29.8	19.3
145183 2005 JD ₂₁	16.0	X	277.21159	7.77589	165.87557	14.02760	0.1865939	0.23863412	2.5742320	20	—	—
145184 2005 JK ₂₁	16.7	X	41.49912	273.18356	309.95772	0.61782	0.1344899	0.26897021	2.3768399	20	7 11.5	18.9
145185 2005 JP ₂₁	16.9	X	152.53945	3.34012	238.36070	5.11219	0.1636713	0.29133340	2.2535949	20	12 15.9	20.4
145186 2005 JQ ₂₁	17.4	X	166.36944	334.22308	266.83703	0.80713	0.1401488	0.29375816	2.2411767	20	12 30.9	20.5
145187 2005 JW ₂₂	15.7	X	87.62053	31.69573	250.35250	6.15247	0.1161184	0.22096976	2.7096560	20	11 19.6	19.6
145188 2005 JJ ₂₄	16.0	X	79.00763	218.78301	74.29245	4.25070	0.0897742	0.22110260	2.7085705	20	11 21.8	19.8
145189 2005 JM ₂₄	17.3	X	34.00845	37.04259	192.03165	2.18338	0.1602557	0.26811159	2.3819117	20	7 10.7	19.5
145190 2005 JR ₂₆	16.9	X	117.15663	331.29785	191.19753	6.06224	0.0696021	0.27176259	2.3605304	20	7 20.6	20.1
145191 2005 JG ₂₇	15.7	X	125.42237	77.42166	200.27332	8.33037	0.1029392	0.22731355	2.6590051	20	12 22.7	19.9
145192 2005 JO ₂₇	15.3	X	49.74974	263.91767	60.17450	14.55460	0.1960594	0.21855790	2.7295541	20	12 8.4	19.2
145193 2005 JL ₂₉	16.0	X	223.58812	113.47866	155.86209	4.34717	0.2329530	0.24039376	2.5616547	20	—	—
145194 2005 JM ₂₉	15.3	X	146.46695	64.71591	213.85902	12.09706	0.1643635	0.22796267	2.65			

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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>
145201 2005 JQ ₃₃	15.8 ^m	X	188.84582	321.88248	230.28117	12.60612	0.0314813	0.22400121	2.6851537	20	11 19.4	19.4
145202 2005 JS ₃₃	15.2	X	333.25759	150.71077	228.39739	8.31892	0.2966960	0.21346117	2.7728314	20	10 16.8	17.1
145203 2005 JZ ₃₃	16.2	X	23.28178	182.17484	125.35315	0.63654	0.0587521	0.21260353	2.7802834	20	9 23.8	19.7
145204 2005 JT ₃₄	16.5	X	119.40099	108.05896	151.07260	6.09511	0.0860116	0.28679448	2.2773102	20	12 6.6	19.8
145205 2005 JP ₃₆	16.7	X	252.61461	209.60211	235.41389	4.19315	0.0142546	0.28120516	2.3073874	20	10 3.1	19.5
145206 2005 JQ ₃₆	16.3	X	320.32892	17.30831	240.54614	4.18976	0.1923676	0.25780885	2.4449548	20	3 16.5	19.1
145207 2005 JS ₃₆	16.6	X	336.81322	146.45428	130.70953	2.93570	0.1780850	0.26289490	2.4133183	20	5 22.3	18.5
145208 2005 JY ₃₈	15.1	X	137.87647	279.04651	23.11422	11.40177	0.2759835	0.22988897	2.6391088	20	—	—
145209 2005 JY ₃₈	16.2	X	276.43472	242.87373	71.39832	1.34892	0.2786486	0.19207790	2.9749828	20	3 30.5	20.9
145210 2005 JZ ₃₈	15.5	X	26.97487	315.24212	48.13124	14.87752	0.2165414	0.22198772	2.7013659	20	—	—
145211 2005 JO ₃₉	17.0	X	324.78342	244.39869	32.44205	1.59774	0.2030002	0.26226014	2.4172108	20	4 21.4	19.0
145212 2005 JY ₄₃	15.3	X	142.06861	226.01201	56.27574	12.21861	0.1765191	0.22897903	2.6460958	20	—	—
145213 2005 JE ₄₄	16.2	X	330.17907	211.32554	56.37550	6.89571	0.1021591	0.26064141	2.4272086	20	5 3.9	18.6
145214 2005 JF ₄₄	15.0	X	87.01975	99.48783	202.75135	9.97534	0.2561437	0.22673639	2.6635155	20	—	—
145215 2005 JM ₄₆	17.8	X	40.10263	107.65250	247.68422	3.54870	0.1598619	0.28231303	2.3013470	20	11 26.5	20.8
145216 2005 JQ ₄₈	16.2	X	26.16891	194.20543	126.48346	5.40813	0.0987891	0.21473817	2.7618275	20	10 23.5	19.7
145217 2005 JZ ₄₈	15.4	X	154.43720	51.01046	222.27528	14.40630	0.1395221	0.23009526	2.6375312	20	—	—
145218 2005 JH ₄₉	15.7	X	118.08853	188.59592	171.30574	6.19260	0.3489860	0.23515626	2.5995511	20	1 25.8	19.7
145219 2005 JQ ₅₅	14.8	X	211.84053	232.66050	123.68149	14.55148	0.0853295	0.18963832	3.0004426	20	4 9.9	19.6
145220 2005 JC ₅₆	14.6	X	184.96297	191.07198	119.01790	20.13276	0.1254493	0.17515391	3.1636578	20	1 16.3	19.6
145221 2005 JT ₅₇	16.1	X	171.64201	305.55207	239.54982	4.36604	0.0146239	0.21991624	2.7183029	20	10 19.6	19.8
145222 2005 JY ₆₀	15.9	X	342.54530	139.06391	211.80280	7.17472	0.2336594	0.20988630	2.8042280	20	9 23.6	18.3
145223 2005 JS ₆₁	16.5	X	3.06088	254.47069	44.77445	7.44041	0.1247754	0.27256416	2.3559001	20	8 31.6	18.8
145224 2005 JR ₆₃	15.5	X	196.55746	36.89346	177.86083	26.41545	0.0642414	0.22839517	2.6506035	20	12 25.8	19.8
145225 2005 JO ₆₆	16.4	X	15.05284	236.70562	16.38320	7.33296	0.0982628	0.26821649	2.3812906	20	7 5.5	18.9
145226 2005 JE ₆₇	15.4	X	93.69887	247.36932	89.04851	14.76293	0.1992585	0.22937621	2.6430404	20	—	—
145227 2005 JG ₆₇	15.3	X	46.87127	148.88302	169.19924	11.87803	0.1217725	0.21896887	2.7261377	20	11 21.2	19.2
145228 2005 JF ₆₈	15.5	X	42.79494	154.84333	173.73223	15.09715	0.1426051	0.22104232	2.7090630	20	12 2.4	19.5
145229 2005 JT ₇₀	16.1	X	221.27088	142.47254	148.54171	8.99781	0.1134096	0.24616397	2.5214656	20	1 17.9	20.0
145230 2005 JM ₇₅	16.2	X	324.99966	181.41654	126.94246	15.64113	0.1895151	0.26817112	2.3815592	20	6 16.5	18.5
145231 2005 JX ₇₇	15.1	X	224.15388	261.87728	352.65001	9.22229	0.1857841	0.17446904	3.1719316	20	—	—
145232 2005 JU ₇₉	16.6	X	174.10988	317.26356	238.56170	6.99205	0.0299845	0.28744569	2.2738694	20	11 19.3	19.2
145233 2005 JB ₈₀	15.9	X	315.86815	344.70647	266.78804	0.96924	0.1934673	0.19056651	2.9906918	20	3 10.6	19.8
145234 2005 JQ ₈₀	15.1	X	180.00954	196.06387	168.64125	18.07017	0.2197823	0.18151361	3.0893225	20	3 16.8	20.4
145235 2005 JB ₈₃	16.6	X	310.39175	282.44793	170.51986	1.81293	0.0446954	0.22896881	2.6461746	20	12 21.7	19.8
145236 2005 JY ₈₄	16.9	X	192.57900	256.17310	25.64290	2.89598	0.1111299	0.24167280	2.5526084	20	—	—
145237 2005 JE ₈₅	16.3	X	211.88807	155.46652	95.41015	4.89909	0.1635998	0.30225576	2.1989718	20	—	—
145238 2005 JO ₈₇	15.5	X	278.02937	61.40210	207.01845	9.43548	0.0638611	0.18800726	3.0177711	20	2 29.2	20.0
145239 2005 JW ₈₈	15.6	X	153.01442	295.59256	289.89109	13.27739	0.1082786	0.22677719	2.6631960	20	11 14.4	20.0
145240 2005 JN ₉₁	16.0	X	192.47166	213.96834	4.22009	3.49346	0.1454473	0.23013060	2.6372612	20	12 15.1	20.1
145241 2005 JT ₉₁	16.9	X	349.30802	355.57779	271.66826	0.69346	0.1407489	0.26467614	2.4024786	20	6 5.3	18.9
145242 2005 JS ₉₂	15.5	X	142.67977	338.52841	271.48322	13.40224	0.0321280	0.22888041	2.6468559	20	12 7.9	19.1
145243 2005 JX ₉₅	17.0	X	23.99334	265.05333	54.93295	6.42991	0.0826530	0.28099106	2.3085593	20	10 29.8	19.5
145244 2005 JO ₉₈	14.9	X	158.90918	174.63640	167.04067	17.04656	0.0457594	0.17784899	3.1316156	20	1 20.2	19.8
145245 2005 JX ₁₀₂	15.1	X	241.42757	167.58188	144.60747	9.25407	0.2548308	0.18450490	3.0558412	20	3 1.7	20.4
145246 2005 JN ₁₀₃	16.7	X	304.65623	291.20704	21.52223	1.46792	0.1947499	0.26807792	2.3821111	20	5 10.7	19.4
145247 2005 JK ₁₀₅	16.2	X	203.10989	177.13725	98.78762	5.80335	0.1907842	0.24136224	2.5547976	20	—	—
145248 2005 JB ₁₀₆	17.3	X	333.29683	219.58965	208.82364	6.73878	0.0769896	0.29383685	2.2406393	20	—	—
145249 2005 JY ₁₀₉	16.6	X	311.40221	270.67650	26.33108	2.35105	0.2111031	0.26000538	2.4311653	20	4 26.1	19.2
145250 2005 JN ₁₁₂	15.9	X	41.65394	205.88105	102.76043	9.30119	0.2115979	0.21296813	2.7771093	20	11 14.9	19.8
145251 2005 JP ₁₁₂	16.0	X	164.81565	115.64954	203.45271	3.06672	0.2403572	0.23568433	2.5956666	20	1 7.8	20.3
145252 2005 JQ ₁₁₇	16.4	X	152.28254	323.48533	170.76635	6.24789	0.0627600	0.27218865	2.3580665	20	7 24.8	19.7
145253 2005 JJ ₁₁₈	16.2	X	348.88462	287.39120	176.28240	7.37154	0.1076052	0.23706683	2.5855653	20	—	—
145254 2005 JY ₁₁₉	15.7	X	212.36679	291.72141	181.19312	6.32442	0.0133248	0.21272284	2.7792438	20	9 6.9	19.6
145255 2005 JB ₁₂₂	15.8	X	100.94676	146.01443	170.88627	16.50765	0.1569931	0.22526320	2.6751156	20	—	—
145256 2005 JL ₁₂₅	15.2	X	197.84600	180.77735	123.71865	11.34424	0.0724399	0.17763321	3.1341511	20	1 20.5	20.0
145257 2005 JQ ₁₂₇	15.2	X	254.35675	223.41201	87.43654	11.12267	0.0931626	0.18938025	3.0031677	20	3 29.9	19.8
145258 2005 JT ₁₂₇	15.9	X	171.93130	82.41115	201.25006	5.37700	0.1790564	0.23342384	2.6123974	20	—	—
145259 2005 JA ₁₂₈	14.6	X	257.52416	198.20618	80.52033	15.10589	0.1190861	0.18448218	3.0560921	20	2 21.1	19.5
145260 2005 JJ ₁₂₈	15.6	X	96.18807	247.68218	84.98296	16.14221	0.1620820	0.22689858	2.6622461	20	—	—
145261 2005 JM ₁₃₀	15.7	X	70.87820	84.17580	235.80397	5.71483	0.1415211	0.22407787	2.6845412	20	12 21.6	19.7
145262 2005 JL ₁₃₁	16.5	X	260.24280	307.50075	56.22139	4.26308	0.0791693	0.26647336	2.3916641	20	6 7.5	19.6
145263 2005 JB ₁₃₃	15.9	X	122.68206	211.83389	163.62842	5.38234	0.3078440	0.23842613	2.5757289	20	2 13.2	19.8
145264 2005 JF ₁₃₃	15.8	X	40.62270	178.43616	158.66200	5.28631	0.1161182	0.21971780	2.7199394	20	12 5.0	19.5
145265 2005 JZ ₁₃₃	15.8	X	327.82518	100.42657	214.40712	12.68645	0.1037451	0.20289106	2.8683189	20	7 4.0	19.5
145266 2005 JE ₁₃₄	15.0	X	120.81238	223.02946	127.94587	14.08910	0.1995590	0.23299009	2.6156387	20	—	—
145267 2005 JW ₁₃₄	15.8	X	269.52482	229.96981	124.94018	4.18114	0.1440795	0.19898702	2.9057142	20	5 29.8	20.0
145268 2005 JZ ₁₃₆	15.5	X	204.70460	262.87177	25.81855	10.00960	0.1940836	0.17555730	3.1588096	20	1 11.1	21.0
145269 2005 JC ₁₃₈	15.1	X	158.98666	239.50132	110.28665	11.33867	0.2327122	0.17661840	3.1461452	20	2 15.1	20.5
145270 2005 JE ₁₃₈	15.3	X	194.01231	256.05924	102.00860	11.50247	0.1895413	0.18541129	3.0458740	20	3 24.2	20.6
145271 2005 JP ₁₃₈	17.1	X	236.74754	14.32915	189.25906	0.17676	0.0872778	0.30040449	2.2079968	20	—	—
145272 2005 JE ₁₃₉	15.1	X	197.57452	126.00596	207.58015	26.28276	0.1662543	0.18030169	3.1031506	20	2 17.1	20.7
145273 2005 JH ₁₃₉	15.4	X	96.07543	252.53471	21.88047	11.01199	0.1423270	0.21971281	2.7199806	20	11 18	

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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>		
145281	2005	<i>JH</i> ₁₅₆	16.9	X	2.30927	99.26791	189.32254	0.78550	0.1847649	0.26928075	2.3750122	20	8 13.5	18.6
145282	2005	<i>JM</i> ₁₆₀	15.6	X	312.05608	93.17173	166.39484	11.04168	0.0682834	0.19079247	2.9883300	20	4 5.3	19.6
145283	2005	<i>JF</i> ₁₆₃	17.1	X	281.35941	207.52192	163.40215	1.84432	0.0913963	0.27057938	2.3674069	20	7 17.3	19.8
145284	2005	<i>JY</i> ₁₆₅	17.4	X	23.44766	252.35537	133.75664	1.50889	0.1638355	0.29437627	2.2380383	20	—	—
145285	2005	<i>JN</i> ₁₆₇	16.1	X	252.11812	131.67470	119.44763	4.16276	0.0824763	0.24351796	2.5396978	20	1 3.0	19.6
145286	2005	<i>JP</i> ₁₆₇	15.8	X	151.09893	233.33738	40.14532	3.97151	0.1968320	0.22821964	2.6519625	20	—	—
145287	2005	<i>JN</i> ₁₇₅	16.7	X	67.63663	335.88159	62.27141	23.56017	0.0887379	0.37483309	1.9050692	20	—	—
145288	2005	<i>JL</i> ₁₇₇	17.0	X	305.51484	336.95106	36.27344	2.14978	0.0394086	0.27923664	2.3182189	20	9 7.6	19.6
145289	2005	<i>JU</i> ₁₇₇	16.6	X	124.83500	103.82568	205.48974	2.12487	0.0534610	0.23473899	2.6026308	20	—	—
145290	2005	<i>JX</i> ₁₇₇	16.3	X	311.30616	70.71452	205.42157	4.72206	0.1205035	0.25933921	2.4353268	20	4 11.1	18.8
145291	2005	<i>JO</i> ₁₇₈	17.4	X	113.98695	261.95784	44.24035	5.65704	0.1671161	0.29456169	2.2370990	20	—	—
145292	2005	<i>JA</i> ₁₇₉	16.1	X	129.18592	304.40289	74.06679	9.32543	0.0826330	0.24600423	2.5225570	20	1 28.9	19.6
145293	2005	<i>KE</i>	14.8	X	123.46764	257.38474	62.65131	15.49333	0.2232327	0.22812783	2.6526739	20	—	—
145294	2005	<i>KX</i> ₂	14.1	X	201.34756	70.61757	242.59171	21.89626	0.2824505	0.17698188	3.1418361	20	1 26.6	20.1
145295	2005	<i>KK</i> ₆	16.7	X	296.32990	88.65467	207.86837	4.23716	0.1908524	0.25832383	2.4417043	20	4 5.9	19.7
145296	2005	<i>KC</i> ₇	15.9	X	185.47512	346.55555	308.08617	3.25662	0.1632287	0.23767906	2.5811234	20	—	—
145297	2005	<i>KS</i> ₇	15.3	X	329.59075	164.22797	121.73689	11.38160	0.0531503	0.19020094	2.9945227	20	6 5.4	19.4
145298	2005	<i>KB</i> ₈	16.2	X	88.66030	175.20534	160.36354	3.52227	0.1084874	0.22701571	2.6613303	20	—	—
145299	2005	<i>KE</i> ₈	15.7	X	195.31420	79.71760	233.49907	13.14218	0.1757142	0.24114350	2.5563423	20	1 19.1	20.2
145300	2005	<i>KK</i> ₈	16.3	X	200.39011	264.76928	207.02644	6.13810	0.0627707	0.28110406	2.3079407	20	10 2.9	19.4
145301	2005	<i>KY</i> ₈	15.6	X	77.95509	253.75855	103.33774	13.67121	0.2822429	0.22690205	2.6622189	20	—	—
145302	2005	<i>KD</i> ₉	16.3	X	295.24589	357.68185	162.53750	5.41809	0.0858733	0.23741688	2.5830233	20	—	—
145303	2005	<i>KH</i> ₉	16.8	X	181.75217	212.93392	51.18015	4.08298	0.1263104	0.29815344	2.2190964	20	—	—
145304	2005	<i>KZ</i> ₉	15.6	X	305.75017	18.84131	266.37431	14.42080	0.1803216	0.25858819	2.4400399	20	3 29.2	19.0
145305	2005	<i>KT</i> ₁₀	16.2	X	246.31169	207.56859	101.85121	8.07858	0.1779130	0.25176425	2.4839337	20	3 4.6	20.2
145306	2005	<i>KC</i> ₁₁	16.6	X	311.15422	204.49150	107.06821	7.39890	0.1065972	0.26407404	2.4061290	20	6 5.5	19.2
145307	2005	<i>KA</i> ₁₂	15.9	X	192.51361	184.99649	153.21258	5.62644	0.2545363	0.24515345	2.5283899	20	2 20.1	20.4
145308	2005	<i>LD</i> ₁	16.7	X	295.03622	141.34620	156.50237	2.85986	0.1954469	0.25764241	2.4460077	20	4 6.8	19.8
145309	2005	<i>LE</i> ₁	16.7	X	315.29863	171.38512	121.46275	3.47186	0.1888221	0.26055470	2.4277471	20	5 2.5	19.1
145310	2005	<i>LF</i> ₁	16.8	X	298.57551	93.46716	216.58208	5.91614	0.1335226	0.26060239	2.4274509	20	5 8.6	19.7
145311	2005	<i>LH</i> ₁	14.8	X	56.74473	111.20201	234.36112	11.82141	0.1955316	0.22118896	2.7078655	20	—	—
145312	2005	<i>LB</i> ₃	14.9	X	255.21267	194.70325	93.19743	16.14697	0.1704042	0.18393274	3.0621752	20	2 24.6	20.0
145313	2005	<i>LK</i> ₃	14.8	X	71.39818	126.36194	241.10830	11.92347	0.2702577	0.22658783	2.6646796	20	—	—
145314	2005	<i>LE</i> ₅	16.7	X	298.63839	147.18937	145.77186	3.42030	0.1695694	0.25790410	2.4443528	20	4 9.6	19.8
145315	2005	<i>LR</i> ₅	16.6	X	212.50783	144.34518	113.51951	6.19201	0.0868319	0.30263479	2.1971354	20	—	—
145316	2005	<i>LV</i> ₅	15.7	X	50.08136	131.04575	200.62057	4.29156	0.1156230	0.21903774	2.7255663	20	12 9.1	19.4
145317	2005	<i>LA</i> ₆	16.1	X	110.34310	176.69620	116.17473	11.48062	0.1315185	0.22443317	2.6817071	20	12 27.2	20.3
145318	2005	<i>LT</i> ₁₃	16.2	X	319.92885	234.30695	170.73682	6.07051	0.0251119	0.21889176	2.7267779	20	11 2.2	19.7
145319	2005	<i>LC</i> ₁₄	16.0	X	265.70807	28.10877	213.50333	5.23643	0.1857653	0.24098794	2.5574423	20	—	—
145320	2005	<i>LE</i> ₁₆	16.3	X	93.17484	61.82481	152.08692	3.35269	0.0691897	0.21283848	2.7782370	20	11 10.2	20.2
145321	2005	<i>LU</i> ₁₈	15.8	X	333.08129	165.82464	150.78602	7.05575	0.0556953	0.20323799	2.8650539	20	7 19.8	19.6
145322	2005	<i>LP</i> ₂₂	15.8	X	250.12623	106.94094	185.20028	1.48014	0.1823711	0.17935650	3.1140432	20	2 18.9	20.9
145323	2005	<i>LR</i> ₂₂	14.9	X	304.34477	319.76934	278.25560	7.52265	0.1533587	0.18101183	3.0950291	20	2 12.5	19.2
145324	2005	<i>LE</i> ₂₅	16.9	X	240.57689	254.63803	133.89564	3.37803	0.1317313	0.26566838	2.3964929	20	6 10.4	20.1
145325	2005	<i>LG</i> ₂₈	15.6	X	20.31500	164.82743	147.09257	8.03134	0.1420019	0.20502435	2.8483876	20	10 7.3	19.1
145326	2005	<i>LB</i> ₃₃	15.6	X	314.40066	5.95469	69.94218	15.50447	0.0721538	0.22571649	2.6715329	20	12 3.8	18.8
145327	2005	<i>LA</i> ₃₆	17.1	X	38.33425	359.52794	128.70473	1.01266	0.0441346	0.25091340	2.4895459	20	2 9.1	20.1
145328	2005	<i>LH</i> ₃₆	15.6	X	129.05161	187.78239	84.29988	3.51426	0.1678877	0.22517959	2.6757777	20	12 20.0	20.8
145329	2005	<i>LH</i> ₃₈	15.8	X	83.37282	307.36285	100.15513	13.40633	0.2277229	0.23931327	2.5693594	20	1 27.1	18.6
145330	2005	<i>LR</i> ₃₈	16.2	X	108.04303	268.14598	99.29644	10.57505	0.0949044	0.23717616	2.5847707	20	—	—
145331	2005	<i>LC</i> ₃₉	16.1	X	337.24835	89.76458	155.00781	7.81621	0.0915112	0.25765114	2.4459524	20	4 15.6	18.8
145332	2005	<i>LT</i> ₄₅	15.5	X	67.82300	245.10027	125.75997	13.97115	0.1735638	0.22821335	2.6520112	20	—	—
145333	2005	<i>LG</i> ₄₉	15.9	X	4.36191	181.08609	216.33297	5.36017	0.0350848	0.22485744	2.6783328	20	12 22.8	19.4
145334	2005	<i>LP</i> ₄₉	15.8	X	173.09589	160.95869	177.61476	5.22311	0.2075672	0.24076002	2.5590561	20	2 3.3	20.0
145335	2005	<i>LM</i> ₅₀	16.1	X	129.76529	164.51941	212.99976	12.45337	0.2458837	0.23979440	2.5659214	20	2 11.9	20.2
145336	2005	<i>LM</i> ₅₂	15.5	X	72.07198	210.00349	186.01746	27.88018	0.0149283	0.23552440	2.5968415	20	—	—
145337	2005	<i>MG</i> ₁	16.0	X	167.79256	238.94261	267.78422	0.92284	0.0083300	0.19598943	2.9352670	20	8 23.7	20.1
145338	2005	<i>MR</i> ₂	16.2	X	266.82564	348.52190	282.01460	2.72249	0.1713809	0.24310752	2.5425555	20	2 3.1	20.0
145339	2005	<i>MD</i> ₃	14.7	X	222.82588	188.81062	129.29566	11.49182	0.1251020	0.17580793	3.1558068	20	3 1.6	19.8
145340	2005	<i>MZ</i> ₃	16.1	X	355.51609	184.14647	162.76472	2.85476	0.0487063	0.21358664	2.7717454	20	10 5.6	19.6
145341	2005	<i>MT</i> ₇	16.0	X	61.83109	150.00634	216.71209	2.00614	0.1126655	0.22805959	2.6532031	20	—	—
145342	2005	<i>MS</i> ₉	16.2	X	102.95291	300.28217	250.16744	5.53873	0.0515229	0.26308552	2.4121525	20	8 6.8	19.5
145343	2005	<i>MY</i> ₉	15.1	X	238.69381	43.48929	264.16479	5.25240	0.1845535	0.17631277	3.1497798	20	2 24.9	20.3
145344	2005	<i>MN</i> ₁₁	15.5	X	77.03406	226.81994	115.35704	15.02965	0.1176047	0.22532746	2.6746070	20	—	—
145345	2005	<i>MA</i> ₁₂	15.6	X	323.86417	214.29758	157.19084	6.49954	0.0543398	0.21231936	2.7827637	20	9 21.9	19.0
145346	2005	<i>MU</i> ₁₂	16.0	X	353.29699	217.84470	172.15586	9.79299	0.0880059	0.21967657	2.7202797	20	12 3.7	19.5
145347	2005	<i>MB</i> ₁₃	15.9	X	189.78934	153.91012	105.89610	3.02867	0.0304658	0.22523121	2.6753689	20	—	—
145348	2005	<i>MJ</i> ₁₅	14.9	X	55.63505	244.85701	141.28283	10.29568	0.0688918	0.15547916	3.4252157	20	—	—
145349	2005	<i>MS</i> ₁₅	16.3	X	94.63948	27.85786	220							

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>		
145361	2005	<i>MF</i> ₂₉	15.2	X	196.64041	177.91922	165.10218	8.92265	0.0705003	0.17444834	3.1721824	20	3 4.6	19.9
145362	2005	<i>MV</i> ₂₉	16.5	X	334.70394	297.83545	252.76869	6.33737	0.0855327	0.23993389	2.5649268	20	1 25.8	19.7
145363	2005	<i>MH</i> ₃₁	15.3	X	152.60074	143.41224	294.20791	10.22060	0.1156710	0.18369618	3.0648035	20	5 11.0	20.2
145364	2005	<i>MB</i> ₃₅	15.0	X	67.15368	220.82768	166.42258	13.34351	0.2942271	0.22990914	2.6389544	20	—	—
145365	2005	<i>MT</i> ₃₅	15.6	X	335.03151	242.22407	112.71284	6.82695	0.0754525	0.20201344	2.8766203	20	9 16.4	19.2
145366	2005	<i>MP</i> ₃₉	15.5	X	255.52224	77.22237	223.35290	1.70621	0.1765849	0.17918650	3.1160125	20	3 4.7	20.3
145367	2005	<i>MS</i> ₄₁	15.8	X	190.30476	229.65586	137.64875	2.49790	0.1122210	0.17691310	3.1426503	20	3 27.7	20.7
145368	2005	<i>MB</i> ₄₃	14.7	X	293.06370	147.25803	203.04793	3.00073	0.1968568	0.12461466	3.9696903	20	6 13.8	20.0
145369	2005	<i>MK</i> ₄₃	16.0	X	98.07620	55.32047	121.94001	6.49437	0.0758238	0.21865925	2.7287106	20	11 16.7	20.1
145370	2005	<i>MZ</i> ₄₃	15.9	X	123.48760	14.79330	255.22702	8.79852	0.0980570	0.21655401	2.7463670	20	12 9.7	20.0
145371	2005	<i>MT</i> ₄₄	15.9	X	110.73402	68.59522	224.95737	8.15425	0.0464879	0.21661284	2.7458697	20	12 22.2	19.9
145372	2005	<i>MZ</i> ₄₄	16.6	X	233.76994	66.09447	205.56294	3.60878	0.1674757	0.24230103	2.5481943	20	1 5.7	20.7
145373	2005	<i>MV</i> ₄₉	14.9	X	269.30638	251.73695	119.25889	3.89565	0.2368225	0.12335329	3.9967062	20	6 5.7	20.8
145374	2005	<i>MJ</i> ₅₀	15.2	X	310.78211	194.54413	100.19244	10.63173	0.1582484	0.18949117	3.0019957	20	5 8.4	19.1
145375	2005	<i>NK</i> ₄	16.7	X	59.85005	147.31194	278.12107	3.15647	0.1340598	0.29566525	2.2315290	20	—	—
145376	2005	<i>NA</i> ₆	14.2	X	273.29017	35.09629	247.11468	23.07100	0.2106662	0.18487200	3.0517945	20	2 15.4	19.5
145377	2005	<i>NJ</i> ₆	15.3	X	347.23923	41.99083	272.65477	5.01612	0.0823675	0.19874272	2.9080948	20	8 6.6	19.9
145378	2005	<i>NB</i> ₈	16.4	X	61.61312	269.38843	203.01593	3.76715	0.0892658	0.23953743	2.5677562	20	2 26.9	19.4
145379	2005	<i>NU</i> ₈	17.3	X	183.03152	72.81275	138.36767	3.98290	0.1608487	0.28418997	2.2912029	20	12 6.8	20.7
145380	2005	<i>NK</i> ₁₁	16.1	X	320.44439	163.03700	139.74392	2.47667	0.0917039	0.19254373	2.9701824	20	6 8.7	19.9
145381	2005	<i>NR</i> ₁₂	15.7	X	38.81964	273.70458	121.21373	15.25828	0.0579215	0.22252340	2.6970288	20	—	—
145382	2005	<i>NY</i> ₁₂	14.9	X	269.34843	227.10340	110.45324	10.87554	0.0851446	0.18914123	3.0056973	20	5 28.9	19.3
145383	2005	<i>NE</i> ₁₄	15.5	X	4.87237	279.80346	309.59321	3.26403	0.0609858	0.17991733	3.1075685	20	4 28.2	19.6
145384	2005	<i>NA</i> ₁₆	15.9	X	280.96290	184.91294	84.46153	2.37683	0.1379568	0.18021311	3.1041674	20	2 28.8	20.5
145385	2005	<i>NF</i> ₁₆	16.3	X	48.67647	80.37922	39.85215	2.42249	0.0357333	0.22868432	2.6483688	20	—	—
145386	2005	<i>NY</i> ₁₆	16.1	X	280.72187	64.65204	226.54540	1.22581	0.1843167	0.18336676	3.0684730	20	3 17.9	20.6
145387	2005	<i>NV</i> ₁₈	16.7	X	155.22708	52.57836	187.49898	1.50424	0.1993299	0.28573376	2.2829247	20	12 13.7	20.3
145388	2005	<i>NP</i> ₂₄	16.7	X	353.62618	344.02965	239.25015	2.51243	0.0721829	0.25178645	2.4837878	20	4 10.3	19.6
145389	2005	<i>NH</i> ₃₁	17.2	X	162.42842	15.28054	135.35928	4.05988	0.0781819	0.26845870	2.3798581	20	8 30.3	20.4
145390	2005	<i>NW</i> ₃₁	14.9	X	176.33628	232.44350	182.03054	9.57861	0.1129762	0.18365292	3.0652847	20	5 10.6	19.8
145391	2005	<i>ND</i> ₃₉	16.0	X	358.00677	197.03991	42.07836	5.36072	0.1610772	0.25712441	2.4492917	20	5 8.4	18.1
145392	2005	<i>NS</i> ₃₉	15.0	X	225.12007	341.89128	97.41124	18.86897	0.0351336	0.19904234	2.9051757	20	8 9.7	19.3
145393	2005	<i>NB</i> ₄₃	15.5	X	217.64985	174.02164	189.10220	2.83911	0.1399381	0.18142683	3.0903076	20	4 15.9	20.4
145394	2005	<i>NT</i> ₄₃	17.0	X	221.42166	188.47747	275.28626	1.60721	0.1523441	0.26915589	2.3757467	20	8 26.9	20.4
145395	2005	<i>ND</i> ₅₁	16.0	X	29.00826	222.73964	295.26554	12.43329	0.1039063	0.24404496	2.5360403	20	3 2.6	18.9
145396	2005	<i>NE</i> ₅₃	14.4	X	293.26212	104.84208	220.72596	3.78075	0.2041901	0.12313207	4.0014917	20	5 14.2	19.8
145397	2005	<i>NC</i> ₅₄	14.9	X	315.13163	117.03275	199.17048	3.02941	0.1820450	0.12515936	3.9581644	20	6 5.7	19.9
145398	2005	<i>NH</i> ₅₄	16.3	X	350.58174	236.16693	220.53924	2.70000	0.0457145	0.22406331	2.6846575	20	—	—
145399	2005	<i>NJ</i> ₅₆	16.3	X	247.68941	112.49006	152.03474	3.46006	0.0874539	0.24453387	2.5326589	20	1 14.1	19.9
145400	2005	<i>NN</i> ₆₅	16.1	X	162.47771	35.29933	194.21742	2.92020	0.0540350	0.21489698	2.7604666	20	12 1.9	20.1
145401	2005	<i>NL</i> ₇₀	15.0	X	227.15651	208.70925	106.20550	6.23796	0.1390315	0.17516685	3.1635019	20	3 1.3	20.1
145402	2005	<i>NT</i> ₇₂	15.6	X	103.55684	293.72981	315.36576	5.70566	0.0506228	0.20926323	2.8097916	20	10 16.7	19.8
145403	2005	<i>NC</i> ₇₃	16.2	X	197.27775	29.85041	238.14384	4.94725	0.1382962	0.22879630	2.6475045	20	—	—
145404	2005	<i>NX</i> ₇₉	14.9	X	195.72899	31.53337	340.57442	10.28361	0.0708466	0.18149420	3.0895428	20	4 3.3	19.6
145405	2005	<i>NK</i> ₈₀	16.1	X	62.64950	74.43929	294.49040	8.40709	0.0661825	0.28549626	2.2842086	20	—	—
145406	2005	<i>NL</i> ₈₃	15.2	X	95.07735	226.52801	203.94458	4.82566	0.0615137	0.17180170	3.2046781	20	2 24.0	19.7
145407	2005	<i>NN</i> ₈₃	15.4	X	315.89130	131.79590	229.30246	4.37496	0.0757861	0.19917725	2.9038637	20	8 19.9	19.0
145408	2005	<i>NJ</i> ₈₄	15.3	X	107.77533	120.17505	309.70010	8.04317	0.0789598	0.17473912	3.1686623	20	3 10.1	20.0
145409	2005	<i>NT</i> ₈₆	15.6	X	335.78771	307.43302	25.84973	9.22797	0.0685559	0.19781236	2.9172060	20	8 20.0	19.4
145410	2005	<i>NN</i> ₈₇	15.2	X	184.21613	99.14041	210.58388	6.94640	0.1990791	0.23782751	2.5800492	20	1 9.4	19.6
145411	2005	<i>NL</i> ₉₉	15.1	X	155.45544	279.47755	161.33580	15.85250	0.2107037	0.18175612	3.0865739	20	5 27.5	20.6
145412	2005	<i>OO</i> ₂	15.2	X	125.66094	117.40590	316.48235	9.60502	0.0817456	0.17747923	3.1359636	20	4 3.0	19.9
145413	2005	<i>OK</i> ₈	15.5	X	141.66792	317.14193	161.46945	10.21876	0.0287520	0.19008313	2.9957599	20	6 16.9	20.0
145414	2005	<i>OM</i> ₁₃	15.9	X	76.90316	280.13737	101.90347	6.59357	0.0868440	0.22087967	2.7103927	20	—	—
145415	2005	<i>OW</i> ₁₄	15.1	X	252.15718	322.15439	355.84133	8.88688	0.1803565	0.18123583	3.0924784	20	3 21.6	20.1
145416	2005	<i>OA</i> ₂₄	15.4	X	168.73443	172.21531	201.55142	7.40690	0.1079184	0.17213717	3.2005131	20	3 12.6	20.4
145417	2005	<i>PC</i> ₂	13.8	X	308.86687	199.33684	137.00857	8.80401	0.2607460	0.12452384	3.9716203	20	6 10.4	18.8
145418	2005	<i>PO</i> ₁₁	15.7	X	250.89539	355.69896	100.57588	3.20248	0.0291468	0.20294460	2.8678144	20	10 3.8	19.6
145419	2005	<i>PW</i> ₁₅	15.4	X	19.73585	188.32834	6.57445	7.15713	0.0257658	0.17882442	3.1202172	20	4 15.9	19.7
145420	2005	<i>PP</i> ₁₇	14.8	X	204.03618	258.83198	72.68497	17.61995	0.1522466	0.17387443	3.1791589	20	3 6.1	20.3
145421	2005	<i>PD</i> ₁₉	14.7	X	310.19889	357.65110	338.47307	1.91696	0.2530763	0.12501823	3.9611427	20	6 12.2	19.5
145422	2005	<i>PT</i> ₂₀	14.2	X	305.91964	240.37432	103.31033	6.24234	0.2878413	0.12507651	3.9599120	20	6 10.2	19.1
145423	2005	<i>QQ</i> ₄	15.3	X	275.14005	188.14828	120.21026	2.82792	0.1600129	0.18001140	3.1064859	20	4 6.8	19.8
145424	2005	<i>QC</i> ₁₆	15.8	X	217.54454	182.00013	155.56897	1.33246	0.0898452	0.17345360	3.1842990	20	3 19.2	20.7
145425	2005	<i>QP</i> ₃₉	15.0	X	67.53436	319.61881	283.24520	10.84048	0.0033335	0.19599186	2.9352427	20	8 15.4	19.2
145426	2005	<i>QS</i> ₄₈	13.0	X	333.58190	305.33581	9.34116	11.28196	0.2775144	0.12489266	3.9637973	20	6 24.9	17.4
145427	2005	<i>QE</i> ₅₂	15.4	X	331.37530	99.85695	174.69367	2.20603	0.1179891	0.18535499	3.0464907	20	5 16.3	19.1
145428	2005	<i>QP</i> ₆₄	14.9	X	176.70555	208.18862	88.64351	3.36243	0.0582546	0.15847963	3.3818454			

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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>
145441 2005 QY ₁₅₇	15.2	X	225.72165	287.44886	118.60619	11.70414	0.1384091	0.18399671	3.0614653	20	6 15.8	20.1
145442 2005 QB ₁₆₀	15.0	X	50.25199	128.70036	104.23898	11.14375	0.0491182	0.18980813	2.9986527	20	7 20.7	18.9
145443 2005 QR ₁₆₅	14.0	X	357.00506	183.91439	130.08486	5.13346	0.2386735	0.12647303	3.9307079	20	8 19.2	18.0
145444 2005 QD ₁₇₅	16.3	X	113.86573	51.61638	286.03588	2.61875	0.1042584	0.21959292	2.7209705	20	—	—
145445 Le Floch	15.8	X	46.10171	153.50123	117.52223	3.30325	0.0735107	0.19686540	2.9265534	20	9 8.3	19.6
145446 2005 RN ₁₀	14.8	X	261.10503	131.31289	189.07263	22.53361	0.2098373	0.17710789	3.1403456	20	3 30.9	19.8
145447 2005 RE ₁₂	16.8	X	279.70137	316.48187	154.41419	2.00825	0.0503301	0.27599801	2.3363187	20	12 14.4	19.4
145448 2005 RJ ₂₆	14.9	X	325.13365	79.83317	177.29764	5.39290	0.1051757	0.17923644	3.1154337	20	4 15.8	18.8
145449 2005 RN ₂₇	15.4	X	93.34200	121.60607	305.86057	8.56322	0.0637750	0.22674396	2.6634562	20	2 11.5	18.8
145450 2005 RM ₃₁	14.6	X	209.34385	285.60294	120.16789	10.89995	0.2341216	0.17765501	3.1338948	20	5 27.5	20.1
145451 2005 RM ₄₃	4.4	X	6.62386	318.00198	84.60918	28.81394	0.6104899	0.00115404	90.0166604	20	12 9.9	20.1
145452 2005 RN ₄₃	3.7	X	353.88535	164.88932	186.99441	19.25950	0.0276167	0.00365283	41.7557864	20	9 6.5	19.8
145453 2005 RR ₄₃	4.0	X	50.32413	278.00816	85.79243	28.57398	0.1393058	0.00348171	43.1129645	20	12 3.7	20.0
145454 2005 SL ₃	15.3	X	298.32259	222.80840	130.34855	1.97204	0.1739705	0.18568538	3.0428759	20	6 30.2	18.9
145455 2005 SU ₃	15.2	X	233.81563	238.31980	41.88880	10.97054	0.1375848	0.22806133	2.6531895	20	1 21.8	19.6
145456 2005 SA ₅	14.1	X	239.44535	36.85675	257.96120	21.06769	0.0611991	0.16982265	3.2295274	20	2 12.6	19.3
145457 2005 SE ₅	15.5	X	280.60583	201.58302	112.34115	2.47923	0.1446241	0.18232840	3.0801119	20	4 21.7	19.8
145458 2005 SF ₂₂	14.5	X	299.63275	234.27798	33.26924	10.38211	0.1905209	0.17610824	3.1522182	20	3 15.7	18.9
145459 2005 SA ₂₅	15.5	X	63.27938	251.13325	78.17713	6.91980	0.0552127	0.20725967	2.8278705	20	12 10.7	19.4
145460 2005 SZ ₃₁	16.0	X	350.26615	265.62606	139.75442	2.72930	0.0777045	0.20397689	2.8581306	20	12 12.4	19.6
145461 2005 SD ₆₉	17.1	X	215.80123	40.55795	213.22881	4.55949	0.1779142	0.29081968	2.2562481	20	—	—
145462 2005 ST ₆₉	15.7	X	220.59284	225.30266	115.98660	16.25246	0.1339161	0.23784433	2.5799276	20	3 26.8	20.0
145463 2005 SU ₁₁₂	15.1	X	224.91144	127.16768	269.31640	8.73229	0.0733544	0.17997228	3.1069360	20	6 7.6	19.8
145464 2005 SW ₁₃₃	15.0	X	136.14029	287.73172	117.88141	22.71721	0.0546219	0.23074730	2.6325601	20	3 15.4	19.1
145465 2005 SS ₁₃₄	15.1	X	285.43621	286.67600	47.70774	2.62372	0.1437625	0.18012415	3.1051894	20	5 22.6	19.2
145466 2005 SN ₁₆₅	17.0	X	268.56403	287.29092	137.14877	2.71690	0.2012341	0.25975535	2.4327252	20	8 25.9	19.9
145467 2005 ST ₁₆₇	16.2	X	57.67504	159.06227	209.09797	5.81467	0.2293649	0.27678287	2.3319000	20	—	—
145468 2005 SH ₁₇₃	15.6	X	290.14494	28.30747	230.61133	4.49655	0.1478453	0.17144380	3.2091365	20	2 23.3	20.2
145469 2005 SE ₂₂₂	15.7	X	89.17767	359.80302	108.30065	15.59069	0.0476907	0.23513646	2.5996970	20	4 5.5	19.4
145470 2005 SJ ₂₂₂	15.7	X	100.31090	246.75525	115.31356	13.58373	0.0574044	0.21813838	2.7330526	20	—	—
145471 2005 ST ₂₃₄	15.3	X	4.86307	135.85321	104.40792	1.80926	0.1529911	0.18331116	3.0690934	20	5 27.4	18.7
145472 2005 SD ₂₅₆	14.8	X	322.28352	27.62386	128.65541	4.00468	0.1163612	0.17598204	3.1537250	20	3 25.3	18.8
145473 2005 SL ₂₆₂	14.4	X	353.01441	89.95160	213.15636	8.38981	0.1995918	0.12601445	3.9402383	20	7 23.6	19.0
145474 2005 SA ₂₇₈	6.1	X	353.19108	277.00625	170.29266	16.26830	0.6384920	0.00112559	91.5272251	20	11 15.3	21.7
145475 Rehoboth	16.1	X	248.67640	172.01816	29.61303	2.98995	0.0236255	0.21351459	2.7723688	20	—	—
145476 2005 TW ₆₅	15.0	X	210.77802	92.67153	267.16124	9.20431	0.0128520	0.17079079	3.2173113	20	4 7.3	19.8
145477 2005 TM ₇₆	15.2	X	91.37396	253.38952	114.28689	10.19657	0.1524463	0.21901500	2.7257549	20	—	—
145478 2005 TC ₈₆	13.9	X	271.18616	204.42588	247.90015	10.45955	0.2163704	0.12504016	3.9606794	20	9 9.7	19.6
145479 2005 TE ₁₂₄	15.9	X	325.04201	76.65070	342.90778	1.54789	0.0540808	0.20171493	2.8794576	20	11 21.7	19.5
145480 2005 TB ₁₂₄	4.4	X	2.07163	170.99469	180.44664	26.45354	0.3953415	0.00147585	76.4025206	20	9 19.5	21.0
145481 2005 UA ₇₂	14.9	X	215.70319	150.67570	279.53275	8.38815	0.0497346	0.18099823	3.0951842	20	7 11.5	19.3
145482 2005 UD ₁₃₀	15.1	X	158.68089	23.66838	112.60121	12.74885	0.1048634	0.18034556	3.1026473	20	7 31.5	19.9
145483 2005 UM ₁₄₂	14.9	X	248.58363	260.36871	121.78250	9.18234	0.1891835	0.17824918	3.1269266	20	6 4.8	19.8
145484 2005 UV ₂₇₃	15.1	X	133.35933	234.76864	260.78938	8.92730	0.0371399	0.17896726	3.1185568	20	6 27.8	19.7
145485 2005 UN ₃₉₈	14.2	X	179.90568	233.57954	141.21018	11.55800	0.5187423	0.10026113	4.5889606	20	4 5.5	22.5
145486 2005 UJ ₄₃₈	10.8	X	48.34362	208.18737	263.05043	3.77955	0.5299339	0.01332057	17.6246641	20	5 1.5	22.6
145487 2005 UG ₄₅₅	14.9	X	183.29465	117.31343	289.46578	16.23788	0.1149247	0.17456890	3.1707218	20	5 1.6	20.2
145488 Kaczendre	16.6	X	350.88082	162.93822	276.98344	5.73179	0.1020864	0.27298628	2.3534709	20	—	—
145489 2005 VG ₃₃	15.1	X	43.59131	181.27371	269.14826	21.12319	0.0379496	0.22717030	2.6601228	20	—	—
145490 2005 VB ₁₀₂	15.0	X	269.71759	62.73355	317.02689	9.05343	0.0849353	0.18058629	3.0998894	20	7 9.9	19.4
145491 2005 VX ₁₀₈	15.4	X	233.24579	336.52410	66.40385	1.36187	0.0919456	0.17815012	3.1280857	20	6 23.3	20.0
145492 2005 WD ₆	14.0	X	283.64712	333.26139	122.69393	11.63428	0.2283068	0.12616015	3.9372041	20	10 7.7	19.4
145493 2005 WA ₇	14.5	X	304.10118	344.81670	86.02726	1.63747	0.1072070	0.12722090	3.9152883	20	10 18.1	19.5
145494 2005 WO ₃₅	15.8	X	55.90135	196.10952	215.18124	1.35336	0.0855547	0.21115238	2.7930073	20	—	—
145495 2005 WK ₃₇	17.0	X	26.40237	337.27297	93.04958	3.27903	0.1787731	0.27681740	2.3317060	20	—	—
145496 2005 WQ ₁₁₃	13.8	X	50.77633	246.86290	261.42618	24.79151	0.0927365	0.16193268	3.3335967	20	3 28.9	18.8
145497 2005 XZ ₆₇	15.2	X	279.32081	282.83278	141.11307	10.51054	0.1207486	0.17608186	3.1525330	20	9 13.0	19.4
145498 2005 YQ ₁₉₀	15.8	X	15.23329	236.73701	56.05294	0.62136	0.1579414	0.17393912	3.1783706	20	8 27.9	19.6
145499 2006 BV ₃₃	15.2	X	117.20118	305.14577	340.63640	4.31794	0.1448182	0.18162006	3.0881153	20	12 17.4	20.1
145500 2006 BL ₅₉	15.8	X	331.13461	189.80201	143.32424	13.16266	0.1871083	0.24048185	2.5610291	20	8 6.3	18.1
145501 2006 BC ₁₀₁	15.1	X	186.91993	23.22401	198.18938	8.38550	0.0527038	0.18842189	3.0133424	20	12 13.4	19.6
145502 2006 BA ₁₉₁	15.8	X	281.87040	52.36804	156.17219	5.75196	0.1540917	0.19188021	2.9770258	20	—	—
145503 2006 BJ ₂₁₅	14.8	X	35.11226	259.01121	53.06450	7.11345	0.0610976	0.17864300	3.1223294	20	10 12.5	19.0
145504 2006 BC ₂₄₂	17.0	X	224.70598	186.48263	105.24464	3.59867	0.1966331	0.27566385	2.3382064	20	1 18.1	20.8
145505 2006 BN ₂₅₈	15.2	X	335.25010	139.07286	351.15710	9.71696	0.0283000	0.19771309	2.9181824	20	—	—
145506 2006 DH ₁₀	15.5	X	57.39111	145.02384	20.06686	3.57714	0.1280090	0.21695635	2.7429705	20	5 10.9	18.9
145507 2006 DW ₄₀	14.9	X	155.84538	62.73200	132.41501	2.97379	0.1447830	0.17196330	3.2026701	20	10 7.9	20.2
145508 2006 DO ₅₀	15.3	X	104.58532	334.15015	152.62784	9.18913	0.0852387	0.21968763	2.7201884	20	5 21.3	19.2
145509 2006 DX ₆₅	15.8	X	52.34496	268.06986	288.21817	5.07552	0.0787959	0.22328304	2.6909083	20	6 8.9	19.2
145510 2006 DZ ₈₂	15.8	X	300.99448	241.60969	199.99164	2.31091	0.0756977	0.18081321	3.0972953	20	11 9.9	19.7
145511 2006 DL ₉₃	15.9	X	258.40778	107.71665	349.33460	2.73352	0.0938216	0.17481281	3.1677717	20	9 28.4	20.1
145512 2006 DP ₉₃	15.6	X	252.87240	128.97134	347.60887	1.27455	0.0666595	0.17587683	3.1549825	20	10 19.6	19.9
145513 2006 DY ₉₆	15.8	X	189.44787	196.58798	172.76286	5.44666	0.0616918	0.21086289	2.7955629	20	3 26.4	19.8
145514 200												

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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>
145521 2006 EC ₃₀	14.7	X	142.21215	264.72249	354.20289	16.45031	0.0607526	0.17912264	3.1167530	20	12 4.7	19.7
145522 2006 EU ₃₈	14.8	X	211.69948	278.73866	187.14946	25.45834	0.2273483	0.17100294	3.2146497	20	8 3.2	20.6
145523 2006 Lulin	15.5	X	359.64498	273.15249	345.21082	10.86684	0.1826044	0.21632173	2.7483326	20	6 11.7	18.4
145524 2006 FS	15.5	X	132.97788	156.96832	23.23786	10.15963	0.1418070	0.23129267	2.6284202	20	9 7.6	19.7
145525 2006 FY ₂	17.4	X	359.89745	346.72203	165.78423	2.30253	0.1514655	0.27196353	2.3593676	20	—	—
145526 2006 FC ₁₁	16.4	X	303.04940	152.44032	100.42367	2.95989	0.1442607	0.27727914	2.3291167	20	2 22.4	19.1
145527 2006 FV ₁₉	15.8	X	96.47743	351.03887	200.83819	11.73645	0.1276022	0.22513461	2.6761341	20	8 5.7	19.9
145528 2006 FB ₂₉	14.4	X	75.79893	234.38892	351.83871	15.48940	0.0588083	0.15752834	3.3954467	20	8 17.6	19.3
145529 2006 FQ ₃₁	15.5	X	273.01578	289.90243	192.99167	6.61265	0.2107231	0.18039105	3.1021257	20	11 4.2	19.5
145530 2006 FW ₃₂	16.3	X	63.92147	214.21729	60.10216	3.52573	0.1189087	0.23185347	2.6241802	20	10 17.9	20.0
145531 2006 FF ₃₃	17.1	X	88.27019	84.83390	210.30948	6.47818	0.1713146	0.23895060	2.5719585	20	12 14.4	21.2
145532 2006 FD ₄₂	16.0	X	59.88401	200.04401	179.18065	4.70915	0.2277656	0.25193506	2.4828109	20	—	—
145533 2006 FE ₅₁	15.4	X	356.82591	23.18603	213.22938	16.94823	0.1910932	0.21226548	2.7832345	20	5 3.8	17.9
145534 Jhongda	15.6	X	351.31749	189.21819	105.81527	6.20330	0.1426145	0.22122870	2.7075412	20	7 21.5	18.2
145535 2006 GP ₃	15.0	X	157.07156	173.23796	89.19342	11.56063	0.0938836	0.17960324	3.1111905	20	12 26.2	19.9
145536 2006 GP ₁₉	16.6	X	154.57970	219.70902	73.74929	2.98524	0.1801690	0.25209617	2.4817530	20	—	—
145537 2006 GB ₂₀	16.2	X	74.90959	305.60950	106.62955	3.19791	0.0960671	0.19455069	2.9497205	20	1 9.2	20.0
145538 2006 GP ₂₈	15.9	X	151.38603	136.81873	105.24113	1.43384	0.0325226	0.24394326	2.5367451	20	12 11.7	19.3
145539 2006 GU ₃₅	16.0	X	27.04158	50.36516	187.78942	12.99378	0.1250310	0.22031262	2.7150415	20	7 2.2	19.4
145540 2006 GR ₄₇	17.0	X	311.64261	125.15872	131.26858	0.14137	0.1513769	0.27714874	2.3298472	20	3 7.9	19.7
145541 2006 HN ₂₄	16.3	X	228.27325	198.85268	120.71744	3.01041	0.0911752	0.20043920	2.8916626	20	3 7.2	20.6
145542 2006 HA ₈₂	16.8	X	204.08319	140.99547	149.91010	1.43831	0.1642336	0.25874479	2.4390553	20	1 1.2	20.8
145543 2006 JF ₃₈	15.7	X	185.57034	119.88569	137.66248	1.45502	0.0724355	0.18336901	3.0684480	20	—	—
145544 2006 JP ₄₆	16.2	X	128.14124	109.82965	160.41508	13.21933	0.2490602	0.23409900	2.6073721	20	12 19.9	21.0
145545 Wensayingling	14.9	X	158.40279	122.92467	77.99063	15.42962	0.1652894	0.16481285	3.2946454	20	10 21.6	20.5
145546 Suiqizhong	15.7	X	153.59602	164.23220	137.55630	1.51282	0.1683103	0.17769407	3.1334354	20	—	—
145547 2006 KC ₈₇	14.6	X	143.10646	174.41089	127.17021	49.00898	0.1490048	0.23942590	2.5685536	20	—	—
145548 2006 KG ₉₉	16.8	X	192.61760	188.75383	190.17863	2.18927	0.1531090	0.26287072	2.4134663	20	4 7.6	20.6
145549 2006 KJ ₁₂₄	15.1	X	110.65404	1.00062	354.86142	20.61970	0.2772088	0.24249650	2.5468248	20	1 8.6	18.9
145550 2006 KA ₁₂₅	15.1	X	22.92390	295.75119	56.96966	10.96504	0.3673862	0.22006011	2.7171180	20	—	—
145551 2006 LX ₁	15.3	X	344.93831	233.51311	114.98462	10.14764	0.1853622	0.21612601	2.7499916	20	10 3.0	18.1
145552 2006 LZ ₁	15.5	X	190.89513	185.08857	147.14859	10.25639	0.2471818	0.25430338	2.4673720	20	2 10.9	19.9
145553 2006 LN ₅	16.5	X	0.99079	139.92703	207.87047	5.38968	0.2571360	0.28725745	2.2748627	20	12 2.7	18.6
145554 2006 MJ ₉	16.4	X	225.65093	186.59651	164.97088	2.43384	0.2468527	0.26345137	2.4099188	20	3 31.2	20.6
145555 2006 MQ ₁₂	14.6	X	108.41723	59.64269	312.66915	16.30786	0.2399417	0.17142135	3.2094167	20	1 27.8	19.3
145556 2006 MG ₁₄	15.5	X	130.43029	310.81227	35.66948	15.73990	0.1597904	0.24569595	2.5246667	20	—	—
145557 2006 ML ₁₄	16.5	X	62.87879	341.00208	308.06210	7.09209	0.2125078	0.29399087	2.2399938	20	11 24.6	19.9
145558 Raiatea	15.8	X	44.02064	254.52816	41.92502	3.16469	0.1744897	0.21910123	2.7242938	20	10 26.5	19.4
145559 Didiermüller	15.1	X	179.93697	187.00449	190.86318	11.12888	0.1182337	0.19057444	2.9906089	20	3 28.5	19.8
145560 2006 OG ₂	16.1	X	40.22145	202.06327	113.82548	13.52441	0.2256658	0.22373264	2.6873021	20	11 27.1	20.0
145561 2006 OV ₂	15.6	X	22.04505	202.40405	92.92271	10.53224	0.1399682	0.21563754	2.7541429	20	9 22.5	19.1
145562 Zurbriggen	15.8	X	59.72412	328.64502	339.41960	4.28421	0.1581122	0.22282160	2.6946221	20	11 25.9	19.8
145563 2006 ON ₇	16.3	X	233.10813	40.35891	311.46811	3.71045	0.2052779	0.26338150	2.4103450	20	4 6.6	20.2
145564 2006 OF ₉	15.7	X	124.28349	182.27245	135.08087	16.32657	0.2071359	0.23689733	2.5867985	20	—	—
145565 2006 OH ₁₀	15.4	X	149.47575	259.33169	89.42126	4.26240	0.0887557	0.17738593	3.1370632	20	1 24.5	20.0
145566 Andreasphilipp	15.2	X	64.58956	355.64425	297.68024	10.98056	0.1746363	0.22257364	2.6966230	20	11 13.3	19.4
145567 2006 OZ ₁₀	16.8	X	16.13846	358.36692	294.31802	4.42999	0.1123166	0.28532854	2.2851037	20	9 8.4	19.0
145568 2006 OJ ₁₁	15.0	X	126.03521	88.86935	304.16203	14.88672	0.2589019	0.17972666	3.1301647	20	3 2.7	20.2
145569 2006 OL ₁₁	17.2	X	58.41802	135.61180	149.53933	6.89319	0.1888696	0.29236121	2.2483101	20	11 15.7	20.4
145570 2006 OM ₁₁	16.3	X	209.43883	2.05901	347.33464	1.96833	0.2096951	0.25912059	2.4366965	20	3 16.2	20.3
145571 2006 OY ₁₁	15.0	X	168.35436	172.22743	153.25956	17.54904	0.2770958	0.17687760	3.1430708	20	1 24.9	20.6
145572 2006 OJ ₁₂	15.7	X	320.06652	203.68304	294.13174	7.62497	0.1122925	0.24179779	2.5517287	20	—	—
145573 2006 OA ₁₃	16.2	X	248.14116	318.14631	348.48255	6.60218	0.2556119	0.26370487	2.4083741	20	2 23.5	20.1
145574 2006 OD ₁₃	15.6	X	12.34331	206.83508	134.09264	15.05437	0.1666129	0.21893316	2.7264342	20	11 12.4	19.1
145575 2006 OV ₁₅	15.7	X	109.88562	213.44295	132.08659	14.39575	0.1910478	0.23726543	2.5841223	20	—	—
145576 2006 PE	14.6	X	172.24900	317.99712	313.59142	17.54478	0.2104698	0.17171276	3.2057846	20	—	—
145577 2006 PK ₁	16.1	X	196.17936	359.32720	347.39956	2.27024	0.2024917	0.25588160	2.4572160	20	3 2.7	20.0
145578 2006 PA ₄	15.9	X	95.73897	240.92623	115.77441	14.13858	0.1799797	0.23772089	2.5808206	20	—	—
145579 2006 PQ ₆	15.6	X	270.45099	38.31230	11.49849	7.70286	0.2209610	0.20909683	2.8112820	20	8 2.3	19.5
145580 2006 PM ₁₀	14.7	X	134.35759	54.33693	321.62817	15.01851	0.0692008	0.17814439	3.1281527	20	2 7.2	19.3
145581 2006 PJ ₁₁	16.3	X	331.09654	275.15063	61.47321	0.51758	0.0788464	0.20962768	2.8065339	20	8 13.9	19.6
145582 2006 PP ₁₁	15.8	X	64.34702	323.25870	333.29667	5.90508	0.1035529	0.22210006	2.7004549	20	11 8.6	19.6
145583 2006 PB ₁₄	15.5	X	136.93514	355.13696	10.40997	9.91236	0.2746374	0.24654628	2.5188584	20	2 14.2	19.6
145584 2006 PT ₁₄	16.0	X	216.29084	210.18976	92.79350	3.61334	0.1960761	0.25459101	2.4655133	20	1 27.3	20.1
145585 2006 PU ₁₅	16.7	X	299.88654	242.74005	21.08491	2.49445	0.1686019	0.26465107	2.4026303	20	3 1.6	19.9
145586 2006 PD ₁₆	16.2	X	198.90711	291.03288	39.66425	3.29322	0.2033613	0.25403133	2.4691333	20	2 16.1	20.3
145587 2006 PT ₁₆	16.9	X	343.74639	175.90893	176.16740	2.88174	0.2173241	0.28496617	2.2870404	20	10 26.0	18.3
145588 Sudongpo	16.9	X	356.03754	136.16189	159.99517	6.57743	0.1150997	0.27882771	2.3204850	20	8 6.6	19.1
145589 2006 PC ₁₈	16.8	X	349.97485	322.27747	321.73182	6.55453	0.1060150	0.27588343	2.3369655	20	7 6.7	19.0
145590 2006 PF ₂₅	15.8	X	259.81956	215.34254	135.51033	2.74347	0.1021654	0.19896764	2.9059028	20	5 18.6	20.0
145591 2006 PE ₃₁	15.2	X	77.28684	216.48259	176.65625	8.47286	0.0574477	0.17038836	3.2223751	20	—	—
145592 2006 PL ₃₃	15.6	X	222.06232	285.95037	143.08795	13.11055	0.1569835	0.20348421	2.8627422	20	7 8.6	20.3
145593 Xántus	16.2	X	345.19522	54.55005	231.30641	9.05424	0.0681082	0.20189452	2.8777497	20	6 25.6	19.9
145594 2006 QH ₂	16.5	X	299.99097	89.15567	178.54312	1.91641	0.1862365	0.26497655	2.4006624	20	3	

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>		
145601	2006	<i>QV</i> ₁₉	16.0	X	257.23921	85.69515	201.84411	4.97538	0.1468907	0.25979388	2.4324846	20	2 13.8	19.6
145602	2006	<i>QG</i> ₂₀	17.2	X	111.15689	312.55943	348.55407	4.65672	0.2370119	0.30434131	2.1889144	20	—	—
145603	2006	<i>QP</i> ₂₄	17.2	X	153.69155	306.22748	345.92876	6.93850	0.1890062	0.30896739	2.1670102	20	—	—
145604	2006	<i>QD</i> ₂₅	16.1	X	244.47049	335.33784	315.64699	8.96826	0.2192852	0.25782281	2.4448665	20	2 3.5	20.0
145605	2006	<i>QE</i> ₂₇	16.9	X	311.56806	335.92717	316.36652	1.88110	0.1681647	0.26843987	2.3799694	20	4 25.7	19.4
145606	2006	<i>QH</i> ₂₉	15.4	X	24.80212	280.95503	60.51168	15.32959	0.1685059	0.22273832	2.6952937	20	11 26.9	18.8
145607	2006	<i>QK</i> ₃₀	16.7	X	339.90407	245.21457	110.07473	6.16066	0.1087354	0.28548370	2.2842756	20	10 14.4	18.9
145608	2006	<i>QL</i> ₃₅	15.3	X	191.45847	224.68471	135.51429	10.43233	0.0990981	0.18575233	3.0421447	20	3 22.0	20.1
145609	2006	<i>QU</i> ₃₅	16.5	X	234.38333	272.33721	62.19455	2.28508	0.1794337	0.26067917	2.4269742	20	3 21.7	20.4
145610	2006	<i>QG</i> ₃₇	15.9	X	102.08972	336.77772	341.17747	13.91278	0.0885603	0.23385645	2.6091747	20	—	—
145611	2006	<i>QP</i> ₄₂	16.1	X	329.85095	228.06013	127.10664	4.35114	0.1048147	0.21175492	2.7877065	20	9 7.3	19.3
145612	2006	<i>QQ</i> ₄₅	16.8	X	12.05265	266.26325	30.90454	7.29358	0.1225047	0.28241326	2.3008024	20	9 14.9	19.1
145613	2006	<i>QT</i> ₄₇	16.7	X	79.22347	283.21744	83.17219	2.89157	0.1690980	0.23288919	2.6163941	20	—	—
145614	2006	<i>QF</i> ₄₈	16.9	X	275.05377	190.04665	133.43104	2.07032	0.1800887	0.26789078	2.3832204	20	4 18.0	20.1
145615	2006	<i>QL</i> ₅₄	15.6	X	287.48903	38.98715	337.00961	6.00408	0.1167775	0.20426251	2.8554656	20	7 26.3	19.3
145616	2006	<i>QV</i> ₅₄	15.1	X	124.17183	55.88558	351.61018	19.92696	0.2437367	0.17378749	3.1802190	20	3 20.2	20.3
145617	2006	<i>QS</i> ₆₀	16.2	X	41.14495	34.34550	346.75093	14.57821	0.1275030	0.22827002	2.6515723	20	—	—
145618	2006	<i>QX</i> ₇₈	15.5	X	345.25138	213.38504	140.41731	10.51813	0.1669783	0.21374102	2.7704105	20	10 8.5	18.5
145619	2006	<i>QT</i> ₈₀	15.6	X	82.49493	341.11749	328.43249	11.77465	0.1846727	0.22579328	2.6709272	20	12 25.7	20.0
145620	2006	<i>QE</i> ₉₄	16.0	X	234.08499	140.03355	255.03305	0.85758	0.1357958	0.19903940	2.9052044	20	6 10.2	20.2
145621	2006	<i>QG</i> ₉₅	15.1	X	130.37200	266.58324	137.29741	12.74179	0.1827011	0.17842641	3.1248556	20	3 21.5	20.1
145622	2006	<i>QM</i> ₉₅	15.8	X	5.70377	273.56774	81.72292	5.82405	0.0277903	0.21914046	2.7247145	20	10 31.5	19.3
145623	2006	<i>QL</i> ₁₀₀	16.8	X	136.60967	181.22343	79.43432	7.83939	0.1038704	0.30064206	2.2068334	20	12 28.8	19.7
145624	2006	<i>QR</i> ₁₀₂	16.2	X	292.42423	199.15570	192.33669	2.66432	0.0999551	0.21001217	2.8031074	20	8 24.9	19.7
145625	2006	<i>QB</i> ₁₀₇	16.5	X	8.33636	139.56194	120.94997	5.66283	0.1821828	0.28948793	2.2631625	20	12 6.2	18.9
145626	2006	<i>QT</i> ₁₁₉	16.3	X	55.25109	217.77281	112.13823	7.34015	0.2058333	0.29463065	2.2367500	20	—	—
145627	2006	<i>RY</i> ₁₀₂	11.1	X	255.16659	346.53331	94.62209	18.72926	0.2772999	0.06158298	6.3508070	20	8 6.6	19.5
145628	2135	<i>P-L</i>	17.7	X	175.67352	9.31921	332.00365	2.18873	0.1886977	0.32104647	2.1123090	20	1 31.8	20.9
145629	2188	<i>P-L</i>	16.7	X	289.32030	113.42884	286.36782	2.15643	0.1698333	0.27840884	3.2228119	20	8 31.4	18.7
145630	2214	<i>P-L</i>	16.0	X	112.05983	70.89316	309.10031	2.84068	0.0928134	0.23675715	2.5878195	20	1 10.4	19.4
145631	2215	<i>P-L</i>	15.2	X	85.94723	166.49059	244.56082	4.37165	0.1756305	0.17158344	3.2073952	20	2 5.2	19.5
145632	2216	<i>P-L</i>	16.2	X	236.54483	157.47713	208.63889	10.13828	0.1825666	0.19277051	2.9678526	20	5 4.2	20.9
145633	2227	<i>P-L</i>	17.0	X	201.23322	49.94625	336.27220	3.59693	0.2054484	0.25771709	2.4455351	20	4 22.7	21.0
145634	2516	<i>P-L</i>	15.3	X	20.96840	3.59310	6.28739	9.45263	0.1815155	0.21567508	2.7538233	20	12 29.3	19.0
145635	2585	<i>P-L</i>	15.3	X	322.68018	42.89947	10.15585	9.65092	0.1968521	0.21447320	2.7641017	20	11 9.3	17.9
145636	2597	<i>P-L</i>	16.6	X	354.13779	316.27607	22.53000	7.42906	0.2533923	0.27977510	2.3152435	20	10 30.7	18.2
145637	2671	<i>P-L</i>	15.6	X	354.38573	41.34077	14.74958	14.78295	0.1624195	0.21616151	2.7496904	20	—	—
145638	2715	<i>P-L</i>	16.2	X	148.84424	150.72861	179.77297	3.42047	0.1339930	0.23657558	2.5891434	20	—	—
145639	2847	<i>P-L</i>	15.9	X	145.45142	311.48674	11.47599	6.55946	0.1462518	0.23609019	2.5926909	20	—	—
145640	3008	<i>P-L</i>	15.8	X	79.60808	120.47495	296.45718	9.06484	0.1930689	0.23644706	2.5900815	20	1 26.8	18.6
145641	3562	<i>P-L</i>	15.5	X	47.55868	56.41593	290.45378	8.12200	0.1667276	0.28223715	2.3017594	20	—	—
145642	4058	<i>P-L</i>	15.5	X	16.78195	139.82783	243.27572	4.12831	0.1224029	0.21613897	2.7498817	20	12 30.7	18.9
145643	4064	<i>P-L</i>	15.4	X	240.46900	6.08067	324.00394	2.54781	0.1995589	0.19207871	2.9749744	20	3 22.8	20.2
145644	4107	<i>P-L</i>	14.8	X	101.20355	16.76998	327.66518	4.29947	0.1077929	0.16891221	3.2411219	20	—	—
145645	4125	<i>P-L</i>	14.9	X	136.60201	184.16048	193.07112	11.47465	0.2025773	0.17343257	3.1845564	20	2 21.6	20.1
145646	4170	<i>P-L</i>	16.2	X	215.24735	95.36278	236.22470	4.90473	0.1422832	0.25651320	2.4531808	20	2 27.7	20.2
145647	4193	<i>P-L</i>	15.7	X	98.41358	90.54532	328.21366	2.68280	0.1763723	0.23752341	2.5822509	20	2 23.6	18.9
145648	4223	<i>P-L</i>	16.5	X	204.15361	346.61660	328.96832	2.47775	0.1874880	0.25553206	2.4594564	20	1 31.9	20.6
145649	4233	<i>P-L</i>	16.0	X	314.93356	100.54029	284.21844	1.35830	0.1917428	0.21310361	2.7759321	20	9 13.5	18.7
145650	4242	<i>P-L</i>	17.2	X	68.61913	224.46155	192.98344	6.64514	0.3563003	0.23554093	2.5967200	20	2 3.6	19.5
145651	4264	<i>P-L</i>	17.5	X	124.39837	18.99500	346.61854	1.19290	0.1969177	0.26996389	2.3710039	20	1 16.9	20.5
145652	4278	<i>P-L</i>	15.1	X	195.92367	106.96329	227.25589	3.88664	0.1727118	0.17418852	3.1753361	20	2 21.2	20.3
145653	4333	<i>P-L</i>	16.3	X	37.72983	60.04736	358.52216	12.47434	0.1638362	0.23464661	2.6033138	20	—	—
145654	4728	<i>P-L</i>	15.5	X	178.41969	181.35462	186.93189	5.82879	0.2189529	0.17522004	3.1628617	20	3 18.9	21.0
145655	4740	<i>P-L</i>	15.1	X	213.02677	352.20005	337.86196	1.38639	0.1218893	0.17449052	3.1716711	20	3 4.4	20.0
145656	4788	<i>P-L</i>	16.4	X	3.08402	100.91643	174.39142	11.08701	0.5561603	0.22976863	2.6400302	20	10 2.6	17.7
145657	6218	<i>P-L</i>	14.5	X	140.51120	58.89019	344.72629	12.17078	0.1999555	0.17396019	3.1781140	20	3 25.8	19.7
145658	6596	<i>P-L</i>	15.4	X	123.83001	349.71583	8.74222	3.63645	0.1558315	0.23679949	2.5875110	20	1 7.2	18.9
145659	6697	<i>P-L</i>	16.0	X	1.75661	12.66322	51.02160	3.60595	0.1741943	0.21704833	2.7421955	20	—	—
145660	6701	<i>P-L</i>	15.5	X	358.78591	139.64602	179.24003	14.67377	0.1106317	0.21313517	2.7756581	20	9 4.2	18.8
145661	6714	<i>P-L</i>	14.9	X	130.76368	56.16726	3.05230	21.70445	0.1116502	0.17392341	3.1785620	20	3 28.3	19.7
145662	6737	<i>P-L</i>	16.1	X	356.71307	298.85400	12.75218	3.31362	0.1839330	0.21313190	2.7756865	20	8 28.8	18.8
145663	6805	<i>P-L</i>	16.4	X	128.44735	278.87315	60.23943	3.00892	0.2783444	0.23628014	2.5913012	20	1 3.7	20.1
145664	6848	<i>P-L</i>	17.6	X	41.09039	1.29866	16.85991	6.35070	0.1810518	0.29967693	2.2115691	20	—	—
145665	6859	<i>P-L</i>	15.3	X	303.62609	188.38319	123.76166	3.82317	0.0615009	0.19374453	2.9578973	20	5 31.6	19.1
145666	6882	<i>P-L</i>	16.9	X	96.00605	24.23345	8.33271	4.05889	0.2469131	0.23660200	2.5889507	20	1 29.8	20.1
145667	9537	<i>P-L</i>	15.3	X	81.49890	257.27355	173.87811	5.36326	0.0746927	0.23794607	2.5791921	20	1 30.8	18.6
145668	1071	<i>T-1</i>	16.5	X	218.53883	147.71614	337.64698	2.25759	0.1378169	0.27031598	2.3689446	20	9 23.8	19.7
145669	2244	<i>T-1</i>	15.7	X	66.21745	186.66688	20.92532	10.63763	0.1770450	0.22477765	2.6789666	20	8 4.3	19.5
145670	4241	<i>T-1</i>	15.6	X	194.69516	84.38352	171.22665	12.83661	0.1394684	0.2343				

ELEMENTS AND OPPOSITION DATES IN 2020

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Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>
145681 3018 T-2	16.5	X	278.01478	208.68399	162.54360	7.15519	0.1298799	0.27003678	2.3705772	20	7 5.5	19.4
145682 3131 T-2	15.0	X	222.81105	276.92761	16.64934	13.50956	0.1610647	0.24225256	2.5485342	20	1 27.5	19.4
145683 3275 T-2	17.4	X	300.71960	265.06257	97.57859	1.76582	0.2256782	0.27090686	2.3654987	20	7 15.3	19.5
145684 3279 T-2	14.9	X	186.40374	338.49112	15.58267	11.24767	0.1131794	0.17996933	3.1069699	20	3 10.6	19.9
145685 4075 T-2	16.4	X	85.83761	192.20331	178.94887	9.08916	0.1723980	0.23753969	2.5821329	20	—	—
145686 4077 T-2	16.6	X	85.60873	52.95955	12.23125	8.62999	0.1480377	0.23999920	2.5644615	20	2 13.0	19.7
145687 1072 T-3	15.6	X	231.25947	239.92705	231.26066	10.32816	0.0337634	0.20565777	2.8425360	20	9 22.1	19.7
145688 2159 T-3	17.4	X	251.67156	17.61243	332.22168	2.56901	0.2404826	0.26945396	2.3739943	20	4 18.8	21.2
145689 2219 T-3	15.1	X	244.00223	55.10891	329.08321	2.79399	0.0555523	0.24705230	2.5154177	20	6 17.9	18.5
145690 2280 T-3	16.8	X	335.53067	71.02275	270.52672	1.74091	0.1048175	0.27377282	2.3489611	20	9 6.3	19.1
145691 2319 T-3	15.6	X	208.56517	119.49485	10.24251	14.99597	0.0886755	0.20464975	2.8518624	20	9 18.7	19.8
145692 2625 T-3	14.9	X	2.76030	91.82789	3.80593	11.05397	0.0796013	0.18933813	3.0036131	20	—	—
145693 3112 T-3	16.8	X	269.40553	356.92999	19.23172	2.52417	0.2252060	0.27137882	2.3627553	20	6 15.1	19.9
145694 3198 T-3	16.6	X	268.00077	198.00134	188.28879	8.06024	0.0448415	0.27170438	2.3608675	20	7 25.6	19.6
145695 3290 T-3	15.4	X	119.03901	105.43053	19.61443	25.52185	0.1066969	0.22155685	2.7048671	20	5 28.2	19.8
145696 3361 T-3	15.2	X	152.39281	164.44713	191.61673	5.05364	0.1648218	0.17171162	3.2057988	20	2 9.7	20.4
145697 3394 T-3	16.5	X	261.83137	194.99418	155.02741	1.46794	0.2000089	0.26997417	2.3709437	20	5 5.3	19.8
145698 3471 T-3	15.4	X	179.83436	277.04700	46.05150	3.33703	0.1211973	0.23981771	2.5657552	20	1 19.1	19.3
145699 3499 T-3	16.6	X	128.41239	311.00878	31.78244	4.98644	0.2851210	0.23790999	2.5794528	20	1 9.2	20.5
145700 4139 T-3	15.8	X	86.91301	275.31269	126.50236	4.95577	0.1805604	0.23782161	2.5800919	20	1 16.3	18.7
145701 4269 T-3	15.9	X	115.91851	196.49942	184.61057	15.52466	0.1503901	0.23870540	2.5737196	20	1 21.8	19.7
145702 4274 T-3	16.6	X	265.50173	300.13866	127.12439	3.16341	0.2155066	0.27313594	2.3526112	20	8 24.9	19.3
145703 4389 T-3	15.0	X	181.74758	277.84318	33.49346	27.52846	0.1506194	0.23943831	2.5684648	20	1 10.2	19.6
145704 4537 T-3	16.0	X	188.73771	237.13560	53.20462	6.38727	0.1380619	0.23852045	2.5750498	20	—	—
145705 5149 T-3	16.8	X	111.44087	224.51280	91.24921	6.04266	0.1998265	0.30474095	2.1870003	20	—	—
145706 1981 EE ₆	15.6	X	258.63269	322.20062	261.49465	6.78010	0.1428800	0.22155088	2.7049157	20	—	—
145707 1981 EN ₁₀	15.0	X	322.46970	296.98931	342.33327	14.27943	0.2752879	0.22851520	2.6496752	20	4 4.3	18.1
145708 1981 EB ₃₂	14.9	X	62.16811	301.11622	252.16574	8.25268	0.2228963	0.18083920	3.0969985	20	6 10.4	19.0
145709 Rocknowar	15.1	X	125.42154	66.68005	327.53063	12.99172	0.2091924	0.24112671	2.5564610	20	2 26.7	18.9
145710 1989 SF ₃	15.7	X	131.33555	303.03319	52.85754	4.16823	0.3124242	0.23584874	2.5944602	20	1 31.2	19.9
145711 1989 TY ₆	16.6	X	79.84551	320.56065	50.11193	6.77450	0.1791498	0.29617675	2.2289590	20	—	—
145712 1991 BQ ₁	15.7	X	108.94553	345.34812	119.42991	6.58727	0.2171646	0.24431805	2.5341502	20	5 13.8	19.5
145713 1991 TQ ₁₅	16.4	X	26.39204	166.20546	172.12331	3.81581	0.2584926	0.27484559	2.3428449	20	12 22.1	19.4
145714 1992 DK ₇	16.1	X	210.61902	330.97228	147.40587	3.82814	0.1988572	0.26186795	2.4196236	20	8 30.3	19.6
145715 1992 DX ₁₀	16.4	X	151.11705	180.57803	279.12120	2.18211	0.1117821	0.25411632	2.4685827	20	6 8.7	20.1
145716 1993 FC ₂₃	16.2	X	94.95482	258.49996	326.90493	1.74705	0.1377019	0.26608114	2.3940138	20	9 25.6	19.7
145717 1993 FQ ₄₁	16.1	X	207.56860	165.64180	356.77458	2.63116	0.1387724	0.20068721	2.8892797	20	10 19.1	20.4
145718 1993 FT ₅₇	14.8	X	180.63719	315.37866	218.54901	2.14026	0.1319930	0.12630428	3.9342082	20	9 28.7	20.8
145719 1993 FG ₈₁	17.0	X	196.93078	6.89834	125.86042	1.84359	0.1280070	0.26964432	2.3728768	20	9 11.4	20.3
145720 1993 OX ₇	15.9	X	135.16718	233.57423	127.48710	6.82990	0.3578281	0.23733965	2.5835836	20	2 12.5	20.2
145721 1993 PG	14.7	X	4.96741	226.82471	301.30631	16.96109	0.0322624	0.16944777	3.2342889	20	2 19.9	19.4
145722 1993 TZ ₄₆	17.5	X	192.21386	220.51118	125.06283	2.61439	0.2055054	0.31317229	2.1475692	20	2 22.9	20.7
145723 1993 YT	14.6	X	314.42679	77.12633	88.85681	26.94419	0.2921060	0.22326509	2.6910525	20	—	—
145724 1994 AA ₁₀	16.1	X	23.40781	79.57287	334.40405	4.53138	0.1492098	0.22107870	2.7087657	20	—	—
145725 1994 CB ₅	16.4	X	1.51853	45.74770	149.04248	4.57469	0.1625070	0.22873956	2.6479423	20	3 12.7	18.8
145726 1994 GF ₂	15.8	X	3.03704	41.50108	28.92940	9.48719	0.1472243	0.21556379	2.7547710	20	—	—
145727 1994 PL ₂₉	16.2	X	291.65599	295.01219	45.83762	1.95926	0.2074126	0.26106659	2.4245726	20	5 29.4	19.1
145728 1994 RO	16.7	X	220.59803	171.48142	225.82829	1.29709	0.2004142	0.25745331	2.4472052	20	5 25.6	20.6
145729 1994 RS ₄	15.6	X	101.64527	58.84052	125.93745	3.49009	0.0299559	0.18274062	3.0754783	20	7 21.5	19.8
145730 1994 UG ₁₀	16.5	X	115.73699	313.63694	264.15880	2.71933	0.1320852	0.26321627	2.4113536	20	10 5.9	20.2
145731 1995 AU	15.2	X	157.98267	276.88914	126.97377	7.20935	0.2318995	0.24498880	2.5295226	20	4 14.6	19.5
145732 Kanmon	16.1	X	97.41432	220.07643	221.34109	3.69204	0.1461815	0.23736331	2.5834119	20	3 17.3	19.5
145733 1995 DL ₅	17.1	X	95.95523	222.94662	200.37002	1.59938	0.1493424	0.23757412	2.5818834	20	2 21.7	20.2
145734 1995 HT ₂	15.9	X	41.02603	249.95180	82.15771	5.16119	0.1054889	0.21226035	2.7832794	20	11 25.6	19.7
145735 1995 OW ₇	16.8	X	272.30119	352.92793	270.48206	6.56628	0.1188608	0.30357857	2.1925793	20	1 27.3	19.8
145736 1995 SN ₉	16.1	X	275.47753	223.82036	169.04997	3.53322	0.2552648	0.19178284	2.9780334	20	7 7.9	20.4
145737 1995 SN ₁₁	16.2	X	66.36087	120.74656	222.66962	0.84934	0.1727639	0.28599714	2.2815409	20	—	—
145738 1995 SW ₂₁	16.4	X	217.05772	102.98017	28.61216	4.28925	0.0421203	0.27740330	2.3284217	20	10 15.6	19.3
145739 1995 SX ₂₇	15.1	X	203.59238	29.34068	17.64070	15.36105	0.1369045	0.18468966	3.0538029	20	5 21.2	20.1
145740 1995 SZ ₆₈	16.0	X	81.80745	301.85599	9.38575	3.34636	0.2013787	0.28513221	2.2861525	20	—	—
145741 1995 SM ₇₀	15.8	X	254.00564	175.45553	190.95476	2.65882	0.1847698	0.18899297	3.0072690	20	5 21.4	20.3
145742 1995 SV ₇₄	16.8	X	181.63268	14.05764	140.88918	2.68363	0.1064893	0.27564938	2.3382882	20	9 26.8	20.2
145743 1995 SN ₇₇	15.7	X	293.50595	158.15773	238.41755	9.00648	0.0588895	0.19795245	2.9158295	20	9 2.4	19.7
145744 1995 UV ₁₀	16.9	X	278.44392	193.32375	255.40627	1.62021	0.1465398	0.27793774	2.3254359	20	10 30.1	18.9
145745 1995 UT ₁₃	17.0	X	180.29146	210.30062	15.17018	0.55203	0.1453091	0.28338233	2.2955542	20	12 22.9	20.2
145746 1995 UR ₁₈	16.9	X	186.19352	291.94166	358.11696	3.30405	0.1392876	0.29315435	2.2442530	20	—	—
145747 1995 UF ₃₉	16.0	X	336.74006	106.95409	327.41084	1.16657	0.0742224	0.20265553	2.8705409	20	12 28.8	19.4
145748 1995 UP ₅₀	17.0	X	234.01533	1.37284	90.21191	3.17077	0.1506582	0.27046980	2.3680463	20	8 27.8	20.2
145749 1995 UT ₅₅	16.8	X	266.35516	182.70182	354.55010	2.81587	0.0930925	0.28756400	2.2732456	20	—	—
145750 1995 VT ₁₃	16.8	X	306.87167	183.59151	191.50078	5.81936	0.1361959	0.27277614	2.3546795	20	8 30.3	18.9
145751 1995 YK ₆	17.0	X	221.01992	330.28827	210.73278	2.58792	0.1617205	0.27782425	2.3260691	20	12 9.0	19.8
145752 1995 YV ₁₁	15.7	X	160.36707	299.98055	170.73895	2.71878	0.0485985	0.17821713	3.1273015	20	6 28.9	20.4
145753 1996 AK ₆	15.9	X	349.26798	242.24099	52.08141	3.09600	0.1687831	0.26019958	2.4299555	20	7 21.1	17.7
145754 1996 HF ₂₆	16.3	X	95.16976	96.37990	84.88675	2.87211	0.1836210	0.25268107	2.4779217	20	8 3.1	19.8
145755 1996 TC ₃₇	17.7	X	67.17410	108.61967	213.23							

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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>
145761 1997 ES ₂₄	15.6	X	207.75412	263.76771	124.30414	10.60771	0.1366165	0.18010261	3.1054369	20	5 10.2	20.7
145762 1997 GC ₁₂	17.0	X	205.46934	341.54817	200.89840	1.59833	0.1565316	0.27879255	2.3206801	20	11 23.1	20.1
145763 1997 GS ₁₄	16.1	X	231.20023	307.70242	342.82638	5.31338	0.1444099	0.29204142	2.2499511	20	1 22.4	19.4
145764 1997 GD ₃₁	15.5	X	68.90779	22.01802	153.43557	1.56987	0.1105440	0.17709578	3.1404888	20	6 9.2	19.8
145765 1997 HR ₃	16.8	X	321.01354	342.44318	115.04236	3.79591	0.1713337	0.28058420	2.3107905	20	—	—
145766 1997 MX	15.2	X	179.30111	242.65826	131.05230	6.82557	0.2788297	0.24319929	2.5419159	20	3 26.6	19.8
145767 1997 PW	15.1	X	344.19327	121.55219	190.10052	2.55316	0.2722990	0.12652131	3.9297079	20	7 15.4	19.1
145768 Petiška	16.1	X	175.78821	289.10209	28.83403	4.85624	0.1803986	0.23592644	2.5938905	20	1 13.2	20.3
145769 1997 SR ₁₄	16.1	X	8.47237	169.39367	230.46974	5.30197	0.1397485	0.22052457	2.7133015	20	—	—
145770 1997 TW ₂₄	16.2	X	57.98338	106.03998	275.43461	7.14640	0.2903380	0.22458594	2.6804909	20	—	—
145771 1997 VD ₂	15.6	X	251.89806	44.07702	339.95479	2.99027	0.1676469	0.24627717	2.5206930	20	6 12.2	19.1
145772 1997 WC ₄	16.0	X	63.04661	225.97644	227.10900	2.94771	0.0440358	0.23205808	2.6226374	20	1 30.9	19.4
145773 1997 WH ₄	16.5	X	282.85620	350.51868	220.31759	2.55547	0.0529968	0.22957741	2.6414959	20	—	—
145774 1997 BE ₁₇	15.8	X	20.14824	275.39222	130.45664	4.63339	0.1002744	0.21237113	2.7823114	20	—	—
145775 1998 BE ₂₀	15.6	X	45.97397	204.17519	299.06992	10.74941	0.1358871	0.22853378	2.6495317	20	3 16.6	18.7
145776 1998 BB ₂₁	15.9	X	306.47977	235.22390	299.93417	5.62038	0.0591626	0.22022299	2.7157781	20	—	—
145777 1998 BC ₂₁	15.5	X	218.46257	314.88796	298.33852	11.86760	0.1018801	0.21847147	2.7302740	20	—	—
145778 1998 BL ₂₄	15.7	X	27.39109	50.69168	319.51977	4.54271	0.2037531	0.21133956	2.7913579	20	—	—
145779 1998 CC	16.5	X	235.77535	185.38264	71.24125	4.00452	0.1508308	0.30609522	2.1805448	20	—	—
145780 1998 DG ₈	15.7	X	218.85093	282.17913	306.46817	3.27325	0.0135955	0.21252330	2.7809831	20	—	—
145781 1998 FO ₄₁	15.3	X	25.33572	300.33566	179.49655	25.97012	0.2076788	0.22025571	2.7155091	20	1 10.2	18.6
145782 1998 FE ₇₄	16.0	X	313.70131	54.17052	134.72485	2.91647	0.1663567	0.21682788	2.7440539	20	—	—
145783 1998 KF	15.3	X	331.78193	70.02943	267.59683	3.78699	0.1994184	0.18775592	3.0204637	20	8 5.1	18.4
145784 1998 KY ₃	15.6	X	54.38309	77.28261	228.31057	22.08427	0.2304169	0.28094402	2.3088170	20	12 7.2	19.2
145785 1998 MO ₃₃	15.7	X	355.01471	23.49192	102.60524	7.04070	0.2645921	0.27310495	2.3527891	20	11 8.1	17.6
145786 1998 OT ₁₁	16.5	X	293.47000	181.52910	197.45966	1.72036	0.2383036	0.26713969	2.3876854	20	7 23.7	18.7
145787 1998 QH ₄	16.5	X	281.29579	268.14432	87.08089	3.35031	0.2019767	0.26386754	2.4073842	20	6 5.3	19.4
145788 1998 QZ ₁₈	14.9	X	25.17698	336.57051	295.25971	7.38215	0.2598416	0.18025315	3.1037077	20	8 29.3	18.4
145789 1998 QJ ₃₁	16.5	X	37.41875	219.82856	97.45931	3.73103	0.2332005	0.27539951	2.3397024	20	12 4.5	19.6
145790 1998 QE ₃₆	15.8	X	343.18291	3.13224	315.25036	5.88772	0.1369629	0.26779680	2.3837779	20	8 15.7	17.8
145791 1998 QM ₇₇	15.8	X	259.18650	114.84036	289.83905	9.29587	0.2438300	0.26300696	2.4126327	20	7 9.5	19.2
145792 1998 QV ₈₃	16.6	X	321.40164	55.58882	266.40302	8.45609	0.2352799	0.26567342	2.3964625	20	6 21.1	18.1
145793 1998 QX ₉₆	16.2	X	33.37834	71.18656	324.67158	6.16503	0.1393856	0.27213037	2.3584031	20	10 14.5	19.0
145794 1998 QJ ₁₀₉	16.0	X	331.84322	229.46712	136.38415	5.73061	0.1869689	0.27103311	2.3647641	20	10 13.8	17.7
145795 1998 RA ₁₆	15.7	X	324.05201	231.13316	106.57046	3.35210	0.1883845	0.26539024	2.3981670	20	8 1.7	17.4
145796 1998 RM ₂₂	16.6	X	298.95376	6.37192	338.60916	4.35063	0.2020640	0.26461612	2.4028418	20	6 17.8	19.2
145797 1998 RB ₂₃	16.2	X	259.21221	330.11219	30.17875	3.56946	0.2365484	0.26113814	2.4241297	20	5 10.9	20.0
145798 1998 RA ₃₀	16.4	X	31.49264	290.02355	17.92154	2.93157	0.1716121	0.27273477	2.3549176	20	11 3.7	19.2
145799 1998 RE ₅₁	16.3	X	54.27356	105.66744	229.94785	3.59157	0.1955398	0.27755061	2.3275977	20	—	—
145800 1998 RF ₅₉	16.3	X	351.26166	91.04585	318.83397	4.05700	0.1571618	0.27604043	2.3360793	20	—	—
145801 1998 RY ₈₀	15.9	X	273.68836	340.31308	59.44520	6.12685	0.2011843	0.26420257	2.4053486	20	7 30.9	18.7
145802 1998 SC ₉	15.9	X	306.34192	301.36740	15.67299	6.79506	0.1180677	0.26047889	2.4282181	20	6 1.2	18.6
145803 1998 SW ₁₂	14.8	X	64.34225	303.62348	49.98537	32.42651	0.3016183	0.23385694	2.6091710	20	—	—
145804 1998 SX ₄₁	17.3	X	272.63374	57.50499	305.38161	0.38568	0.1940653	0.26293807	2.4130542	20	6 5.4	20.4
145805 1998 SC ₄₂	16.3	X	256.04874	31.03585	19.51275	6.48445	0.0975433	0.26238802	2.4164254	20	8 7.8	19.4
145806 1998 SA ₇₇	14.3	X	268.42188	96.55105	254.25640	5.09286	0.3064551	0.12436515	3.9749980	20	5 3.2	20.4
145807 1998 SU ₇₇	16.0	X	256.29104	313.83612	78.06437	3.66209	0.1915759	0.26245797	2.4159960	20	6 25.6	19.3
145808 1998 SQ ₈₃	16.4	X	1.42839	326.78798	0.43932	2.91690	0.1873633	0.26983550	2.3717559	20	10 14.1	18.5
145809 1998 SF ₈₄	16.6	X	281.13024	288.63259	45.76225	2.02861	0.1951499	0.26059598	2.4274907	20	5 7.6	19.8
145810 1998 SR ₈₆	16.1	X	294.29238	27.67496	324.47204	1.98975	0.1981051	0.26342751	2.4100643	20	6 21.4	18.5
145811 1998 ST ₁₀₄	15.9	X	169.17380	122.47720	138.77542	6.77968	0.1329263	0.28282928	2.2985457	20	—	—
145812 1998 SX ₁₁₅	15.0	X	20.25032	163.35748	342.93200	2.61580	0.0477344	0.24591714	2.5231526	20	2 7.9	18.0
145813 1998 SJ ₁₂₅	16.1	X	146.16037	313.16296	35.83891	8.97559	0.1840685	0.24381376	2.5376433	20	1 24.0	20.1
145814 1998 SD ₁₄₀	16.4	X	154.87665	29.91422	352.58405	6.55041	0.2262842	0.24737117	2.5132556	20	3 13.3	20.3
145815 1998 SN ₁₄₉	16.8	X	215.11524	46.28653	353.28726	7.03892	0.2357502	0.25708481	2.4495432	20	5 19.5	21.1
145816 1998 SC ₁₅₂	16.3	X	342.97962	262.78825	40.86538	1.83603	0.1823832	0.26486246	2.4013518	20	7 21.8	17.9
145817 1998 SQ ₁₆₁	15.8	X	133.57433	351.66623	33.20551	4.47889	0.1613711	0.24512679	2.5285732	20	2 21.2	19.4
145818 1998 SF ₁₇₀	16.6	X	288.70526	117.98930	260.94982	6.29692	0.1502945	0.26463195	2.4027460	20	7 29.2	19.4
145819 1998 TB ₂	16.3	X	231.83176	45.05059	324.29358	2.60214	0.1651875	0.25602986	2.4562674	20	5 1.6	20.0
145820 Valeromeo	16.2	X	271.57747	307.69336	38.17140	3.12407	0.1984180	0.25877555	2.4388620	20	5 10.7	19.7
145821 1998 TK ₁₂	16.5	X	205.33807	73.48564	37.79220	4.17666	0.0601616	0.26303337	2.4124713	20	8 30.4	19.7
145822 1998 TW ₁₈	16.2	X	213.65544	169.55775	203.59003	4.73533	0.1960002	0.25405958	2.4689502	20	4 19.0	20.3
145823 1998 UH ₁	16.6	X	137.03878	21.07503	295.07390	18.42847	0.0620585	0.37371907	1.9088532	20	—	—
145824 1998 UP ₃₄	15.9	X	119.69853	310.81529	67.26197	6.78747	0.2510722	0.24318969	2.5419828	20	2 9.5	19.6
145825 1998 UE ₄₂	17.0	X	127.69094	334.23215	58.32283	3.35957	0.2765729	0.24473044	2.5313026	20	3 7.9	20.9
145826 1998 UP ₄₅	17.1	X	221.88964	105.50366	289.96464	0.34084	0.1945681	0.25617286	2.4553532	20	5 24.6	20.9
145827 1998 VA ₇	16.0	X	230.89450	24.41357	48.38404	9.90969	0.1889722	0.26131595	2.4230299	20	7 25.2	19.7
145828 1998 VS ₂₅	16.3	X	241.44426	350.31586	63.95473	2.14640	0.1753525	0.25962853	2.4335173	20	7 11.1	19.6
145829 1998 VC ₄₂	16.9	X	221.16229	198.08091	240.98434	1.51189	0.2195495	0.25933377	2.4353609	20	7 17.6	20.8
145830 1998 VY ₅₆	16.9	X	221.96452	305.23443	79.13897	2.53068	0.2586585	0.25494515	2.4632295	20	5 7.5	21.1
145831 1998 VB ₅₇	15.9	X	225.33778	32.82979	355.92310	10.36962	0.2518447	0.25602552	2.4562951	20	5 12.0	20.2
145832 1998 WG ₃₁	16.2	X	18.88240	35.10788	91.99830	22.63911	0.0862191	0.37724193	1.8969508	20	—	—
145833 1998 WY ₃₇	13.9	X	346.58962	242.04486	51.67663	3.44786	0.2071188	0.12349089	3.9937367	20	6 30.5	18.3
145834 1998 WH ₃₉	17.0	X	165.31630	239.48420	199.06243	2.34975	0.0951657	0.25229720	2.4804345	20		

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Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>
145841 1998 YH ₂₀	14.9 ^m	X	265.04948	126.06865	321.86831	2.91424	0.2374394	0.12520981	3.9571011	20	8 30.4	20.5
145842 1999 AL ₆	15.6	X	350.11094	285.23805	129.99282	5.79241	0.1583874	0.22130226	2.7069412	20	—	—
145843 1999 AD ₁₀	14.2	X	258.65967	251.71950	223.70588	4.38850	0.2121539	0.12468983	3.9680946	20	9 26.8	20.0
145844 1999 AG ₂₆	15.9	X	110.10245	343.17392	100.05782	5.45210	0.2369326	0.24286219	2.5442676	20	4 19.9	19.7
145845 1999 BS ₂₆	16.4	X	78.26969	337.61786	120.16591	5.08331	0.1617282	0.23877135	2.5732456	20	3 18.2	19.4
145846 1999 CC ₁₃	15.6	X	135.89200	262.91916	185.82167	5.24400	0.1874255	0.24340727	2.5404677	20	5 16.1	19.6
145847 1999 CQ ₁₃	15.8	X	304.59065	252.16088	307.18074	6.55916	0.0833973	0.22958596	2.6414304	20	1 1.5	19.5
145848 1999 CP ₃₆	15.5	X	51.49218	74.12033	63.05691	5.38500	0.1322723	0.23763691	2.5814286	20	3 25.7	18.3
145849 1999 CE ₄₃	16.6	X	59.48722	25.13634	104.87644	2.79555	0.2428490	0.23786361	2.5797882	20	4 14.4	19.1
145850 1999 CA ₆₆	15.3	X	308.48197	13.19941	146.47566	13.87379	0.1084286	0.22659334	2.6646364	20	—	—
145851 1999 CS ₆₉	16.0	X	18.16013	317.66419	182.41641	12.41449	0.1262977	0.23347270	2.6120329	20	1 23.8	19.0
145852 1999 CN ₉₃	15.5	X	344.48071	278.53409	138.98971	12.29077	0.1720064	0.22078853	2.7111386	20	—	—
145853 1999 CX ₉₇	15.5	X	297.32360	115.47792	80.61024	6.20754	0.2528027	0.22737528	2.6585238	20	—	—
145854 1999 CS ₉₈	15.6	X	117.64967	356.83843	131.90985	13.16473	0.0892637	0.24420595	2.5349256	20	6 9.4	19.4
145855 1999 CV ₁₀₅	15.6	X	113.04970	235.18996	192.36325	4.16627	0.2073117	0.23977407	2.5660665	20	3 27.7	19.3
145856 1999 EY ₁₁₄	16.3	X	95.98520	270.73297	196.84687	4.73795	0.2078291	0.24028235	2.5624464	20	4 30.2	19.8
145857 1999 CY ₂	15.6	X	248.80533	286.48331	145.48596	21.18950	0.3708905	0.26161098	2.4212078	20	7 29.9	19.8
145858 1999 EM ₈	16.2	X	263.61488	292.96701	328.34946	0.99034	0.1554422	0.23130859	2.6282996	20	1 23.3	20.0
145859 1999 JH ₁₃₅	15.7	X	179.85134	159.04307	109.41824	7.58183	0.2164504	0.21361592	2.7714920	20	—	—
145860 1999 KO ₃	15.9	X	69.51892	194.83801	94.74474	3.30671	0.0292694	0.20356915	2.8619458	20	10 27.1	19.9
145861 1999 LF ₁	14.6	X	204.28168	126.25600	83.32434	34.29457	0.2395570	0.21368463	2.7708979	20	12 7.3	19.1
145862 1999 ML ₂	16.6	X	85.31459	19.60122	306.66092	6.30051	0.1578310	0.29656795	2.2269984	20	—	—
145863 1999 NT ₁₅	15.2	X	197.47421	331.35406	289.41953	7.00977	0.2256122	0.21213622	2.7843650	20	—	—
145864 1999 NE ₄₁	14.9	X	203.09790	150.27465	122.29833	28.73161	0.2993536	0.21271592	2.7793040	20	—	—
145865 1999 RC ₄	16.7	X	194.46825	341.18726	302.01034	4.72431	0.1998722	0.30645313	2.1788467	20	—	—
145866 1999 RL ₅₅	15.1	X	276.67598	222.86314	124.96428	2.07097	0.2456280	0.18038571	3.1021869	20	5 15.3	19.6
145867 1999 RJ ₁₃₁	16.4	X	103.74653	136.76739	236.05972	7.18318	0.0927665	0.30278135	2.1964263	20	—	—
145868 1999 RA ₁₃₈	17.0	X	198.02758	350.75377	348.78103	3.92666	0.2025788	0.31142305	2.1556035	20	2 20.5	20.5
145869 1999 RQ ₁₄₀	16.5	X	102.84072	191.49011	127.96850	4.59113	0.1520274	0.29702725	2.2247020	20	—	—
145870 1999 RU ₁₇₉	16.6	X	98.72777	325.52215	61.50467	4.37579	0.1599242	0.30212317	2.1996151	20	—	—
145871 1999 RJ ₁₈₆	16.4	X	52.89566	263.49213	112.30672	5.62908	0.1590799	0.29524004	2.2336711	20	—	—
145872 1999 RB ₂₁₄	15.1	X	161.36125	280.96885	147.42849	1.32222	0.1653097	0.17496047	3.1659892	20	5 13.5	20.2
145873 1999 RA ₂₁₉	16.4	X	238.27506	257.08811	76.92927	3.26606	0.1237720	0.31491664	2.1396315	20	3 25.6	19.2
145874 1999 RY ₂₃₆	17.0	X	183.84015	222.31388	121.90262	5.84968	0.1385715	0.30850037	2.1691967	20	2 11.2	19.9
145875 1999 RV ₂₄₉	15.3	X	134.37610	311.11628	167.38566	1.80741	0.1787973	0.17237821	3.1975288	20	6 19.0	20.5
145876 1999 RF ₂₅₉	16.2	X	343.36452	355.58239	45.28407	6.20689	0.1553600	0.28799002	2.2710033	20	—	—
145877 1999 SP ₁₁	16.6	X	47.19027	230.00897	120.02848	3.26270	0.2626554	0.29016192	2.2596566	20	—	—
145878 1999 SS ₁₄	14.8	X	287.91461	32.32037	268.64516	16.54219	0.2124919	0.17732541	3.1377770	20	3 27.2	19.7
145879 1999 SW ₂₁	15.5	X	236.11002	354.73589	347.05532	4.77008	0.0661236	0.17306274	3.1890917	20	4 12.7	20.2
145880 1999 TE	16.5	X	39.18560	148.62054	230.66986	2.76264	0.2370950	0.29173528	2.2515249	20	—	—
145881 1999 TC ₃₂	16.1	X	65.01185	319.35107	10.20675	6.91543	0.1406859	0.28998163	2.2605931	20	—	—
145882 1999 TU ₃₂	16.4	X	30.53062	91.07651	350.20292	2.64962	0.1402339	0.29788105	2.2204490	20	—	—
145883 1999 TT ₅₁	16.9	X	3.70938	175.59943	217.34548	6.61193	0.1045808	0.28824269	2.2696759	20	—	—
145884 1999 TY ₈₃	15.1	X	275.68842	357.49413	331.60093	4.45970	0.1824549	0.17738801	3.1370387	20	4 26.9	19.8
145885 1999 TF ₈₇	17.3	X	338.30112	338.31768	77.87870	3.19501	0.1582370	0.28552280	2.2840671	20	—	—
145886 1999 TY ₉₈	16.2	X	93.68220	147.13108	166.12375	7.19095	0.2280601	0.29316889	2.2441789	20	—	—
145887 1999 TM ₁₀₀	16.4	X	120.35028	219.51604	129.20704	6.10524	0.1863577	0.30037799	2.2081267	20	—	—
145888 1999 TT ₁₀₃	16.3	X	111.31649	106.20934	223.37652	4.68432	0.2541254	0.29729204	2.2233809	20	—	—
145889 1999 TC ₁₂₅	16.9	X	57.12453	96.57240	300.27185	3.80345	0.2012032	0.29616358	2.2290250	20	—	—
145890 1999 TP ₁₃₉	17.1	X	303.66327	120.92375	336.74941	1.65016	0.1174567	0.28707314	2.2758363	20	—	—
145891 1999 TS ₁₄₇	16.7	X	141.66664	199.18196	147.72356	2.46173	0.1441272	0.30214166	2.1995254	20	—	—
145892 1999 TD ₁₅₁	17.4	X	90.30272	202.69759	178.36824	1.25003	0.1902173	0.29853084	2.2172257	20	—	—
145893 1999 TG ₁₆₅	16.5	X	330.53267	197.50156	279.48712	3.44101	0.0902538	0.29505306	2.2346146	20	—	—
145894 1999 TF ₁₆₇	14.8	X	141.55421	152.89953	323.70260	8.44537	0.0308599	0.17447946	3.1718052	20	6 13.1	19.5
145895 1999 TA ₁₆₉	17.1	X	169.19580	57.82904	227.38608	5.53022	0.1325677	0.29855669	2.2170978	20	—	—
145896 1999 TF ₁₉₀	16.3	X	75.13681	75.19312	327.40366	7.68228	0.2161598	0.29783612	2.2206723	20	—	—
145897 1999 TT ₁₉₁	16.4	X	125.79936	73.24082	284.06610	6.03494	0.1464076	0.30014439	2.2092722	20	—	—
145898 1999 TT ₁₉₂	16.4	X	5.00407	120.11253	320.92753	5.31221	0.1120646	0.29262019	2.2469834	20	—	—
145899 1999 TT ₁₉₇	16.6	X	84.61977	56.81620	287.42824	5.27566	0.2162268	0.29307705	2.2446476	20	—	—
145900 1999 TO ₂₁₉	16.7	X	182.37769	53.75989	275.86680	4.67435	0.1386301	0.30582487	2.1818297	20	1 20.8	19.9
145901 1999 TV ₂₃₇	17.1	X	101.51099	305.10605	136.68029	1.98686	0.1412696	0.30714656	2.1755661	20	3 17.6	19.4
145902 1999 TF ₂₃₉	17.3	X	184.89378	185.04428	134.93849	2.61430	0.1998592	0.30518132	2.1848959	20	1 15.4	20.6
145903 1999 TK ₂₄₈	16.3	X	56.65346	164.51062	180.56312	8.25320	0.2145056	0.28938100	2.2637200	20	—	—
145904 1999 TK ₂₅₀	14.3	X	156.37917	101.72204	356.85506	22.24798	0.0468341	0.17416903	3.1755730	20	6 4.8	19.4
145905 1999 TK ₂₆₆	16.7	X	55.79162	74.19455	290.73637	7.27745	0.1584227	0.29346815	2.2426529	20	—	—
145906 1999 TE ₂₆₉	16.3	X	61.59097	58.56417	311.04690	5.48272	0.1122175	0.29420180	2.2389230	20	—	—
145907 1999 TX ₂₇₂	16.4	X	26.04697	23.04909	337.38582	5.25780	0.2055896	0.28754913	2.2733241	20	—	—
145908 1999 TO ₂₉₇	15.4	X	296.56440	326.28168	358.53912	5.37077	0.1383855	0.17887997	3.1195712	20	5 25.0	19.6
145909 1999 TR ₃₂₀	16.2	X	5.90368	140.57171	320.25211	4.24783	0.1043040	0.29592914	2.2302021	20	—	—
145910 1999 UB	16.3	X	299.70700	100.41239	10.89398	7.38270	0.0856819	0.28770452	2.2725054	20	—	—
145911 1999 UT ₉	15.8	X	332.41195	100.58599	346.92643	22.99348	0.2680852	0.28743492	2.2739262	20	—	—
145912 1999 UX ₁₉	17.4	X	14.39507	255.22565	194.45323	6.05994	0.1143788	0.29827802	2.2184785	20	—	—
145913 1999 US ₂₄	16.5	X	208.70129	55.70257	257.97163	4.53051	0.2121514	0.30763976	2.1732402	20	1 26.9	20.0
145914 1999 UE ₂₅	17.3	X	41.65543	160.90787	253.46061	5.22074	0.1785646	0.29475624	2.2361145	20	—	—
145915 1999 UP ₃₈	16.1	X	359.10034	180.05937	243.82933	7.7793						

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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>
145921 1999 VT ₁₃₇	16.5	X	153.22270	263.24086	55.04496	5.04405	0.2005104	0.29745590	2.2225643	20	—	—
145922 1999 VZ ₁₃₈	17.1	X	228.13189	68.98710	81.92878	4.97949	0.1637363	0.28067494	2.3102925	20	11 9.1	19.9
145923 1999 VY ₁₆₀	17.1	X	1.46971	158.96497	244.75618	6.32821	0.0919762	0.28690077	2.2767477	20	—	—
145924 1999 VY ₁₈₉	16.7	X	348.59012	212.16890	216.30593	4.09071	0.1816757	0.28699437	2.2762527	20	—	—
145925 1999 VJ ₂₀₁	17.2	X	86.94395	91.55585	309.69884	5.40776	0.1566265	0.29976408	2.2111404	20	—	—
145926 1999 VP ₂₁₆	16.4	X	214.67911	18.45688	277.18864	3.51663	0.1905216	0.30581903	2.1818575	20	1 10.7	19.9
145927 1999 VW ₂₂₈	16.8	X	356.39077	103.07899	317.89208	5.14111	0.1417106	0.28969815	2.2620675	20	—	—
145928 1999 WX ₁₁	16.8	X	338.43725	269.49869	82.97888	3.08419	0.2299584	0.27838816	2.3229269	20	10 12.6	18.0
145929 1999 WJ ₁₂	16.8	X	353.99120	144.78558	236.72960	3.03651	0.1126862	0.28211175	2.3024415	20	12 13.6	19.2
145930 1999 WK ₁₂	16.9	X	259.04341	283.73907	103.32264	1.91105	0.2251498	0.27096011	2.3651888	20	6 17.8	20.2
145931 1999 XO ₅	16.7	X	356.08672	0.53249	68.76286	1.97929	0.1374479	0.28868644	2.2673495	20	—	—
145932 1999 XQ ₁₆	15.9	X	10.45683	321.69546	79.02290	10.50282	0.1766454	0.28696476	2.2764092	20	—	—
145933 1999 XG ₁₇	16.0	X	309.08097	200.42404	276.46336	22.04197	0.2087815	0.28362029	2.2942700	20	—	—
145934 1999 XT ₄₁	16.1	X	14.98076	132.29410	253.15278	6.08488	0.1140028	0.28723007	2.2750072	20	—	—
145935 1999 XN ₄₃	16.9	X	20.82853	113.01689	254.20259	5.18302	0.1904005	0.28634232	2.2797070	20	—	—
145936 1999 XK ₄₆	17.4	X	60.43628	143.30545	277.19610	0.80268	0.1431839	0.29637420	2.2279689	20	—	—
145937 1999 XS ₄₇	16.8	X	338.62107	214.37029	263.33492	0.95280	0.1350451	0.29137089	2.2534016	20	—	—
145938 1999 XW ₅₁	16.1	X	127.76986	278.64496	51.23376	3.99682	0.2136155	0.29593299	2.2301828	20	—	—
145939 1999 XF ₆₁	16.3	X	18.74222	289.55971	97.72386	4.89744	0.1654997	0.28695453	2.2764633	20	—	—
145940 1999 XR ₆₂	16.4	X	318.12791	343.55438	91.33306	4.35389	0.0872232	0.28393181	2.2925915	20	12 27.9	18.4
145941 1999 XB ₈₁	16.0	X	312.86885	258.94613	238.37637	5.77120	0.0984934	0.28918883	2.2647228	20	—	—
145942 1999 XC ₈₂	16.8	X	9.92429	73.85432	95.11661	1.90025	0.1809293	0.27913018	2.3188083	20	11 7.8	18.9
145943 1999 XG ₈₉	16.1	X	343.11582	132.77676	268.31140	7.43584	0.1236205	0.28192418	2.3034626	20	—	—
145944 1999 XR ₁₂₅	16.2	X	334.65125	126.08145	292.82257	4.93656	0.1473347	0.28473550	2.2882755	20	—	—
145945 1999 XF ₁₂₇	15.3	X	221.02156	160.93776	223.06360	25.31480	0.2751954	0.26780370	2.3837370	20	5 4.8	19.3
145946 1999 XL ₁₅₁	16.3	X	118.85560	314.42901	308.99786	2.29320	0.2109198	0.27661963	2.3328172	20	12 10.0	20.1
145947 1999 XZ ₁₇₇	16.1	X	237.14277	151.63817	333.16515	3.74514	0.1273187	0.27536026	2.3399246	20	10 17.8	19.2
145948 1999 XV ₁₉₀	16.3	X	299.19877	137.73854	333.59901	4.57075	0.1579371	0.28362686	2.2942346	20	—	—
145949 1999 XD ₁₉₁	16.5	X	337.86914	45.86037	32.06124	7.06451	0.1454251	0.28546469	2.2843770	20	—	—
145950 1999 XZ ₁₉₈	16.6	X	356.65952	54.76431	15.55445	5.76874	0.1427129	0.28751937	2.2734809	20	—	—
145951 1999 XL ₂₀₀	15.7	X	72.98676	350.71154	4.48083	6.42831	0.1326290	0.28844685	2.2686048	20	—	—
145952 1999 XL ₂₀₁	16.0	X	345.00003	66.91012	333.17179	5.83489	0.1379423	0.28162238	2.3051080	20	12 29.5	18.3
145953 1999 XN ₂₁₇	15.8	X	312.72572	309.73050	100.14660	5.46056	0.1369475	0.27722913	2.3293968	20	11 11.1	17.8
145954 1999 XW ₂₁₇	16.1	X	181.17308	236.90758	291.54058	1.48584	0.1394991	0.27245609	2.3565231	20	10 9.6	19.5
145955 1999 XE ₂₂₇	17.0	X	293.30571	27.95177	323.64089	0.38592	0.2068328	0.26779968	2.3837609	20	6 17.4	19.6
145956 1999 XJ ₂₃₄	16.3	X	21.39318	289.29698	119.23254	7.11533	0.2086081	0.29036776	2.2585886	20	—	—
145957 1999 XK ₂₄₅	16.3	X	354.80799	279.75062	121.48580	5.73356	0.1570402	0.28607556	2.2811239	20	—	—
145958 1999 XB ₂₄₈	16.7	X	19.38028	298.42413	100.78111	6.19737	0.1557777	0.28796377	2.2711413	20	—	—
145959 1999 XL ₂₄₈	16.8	X	8.51860	276.53135	109.43194	8.19626	0.2070577	0.28546637	2.2843681	20	—	—
145960 1999 XV ₂₅₅	14.5	X	174.59732	188.22553	315.50773	1.90673	0.1266471	0.12468792	3.9681353	20	8 20.1	20.5
145961 1999 XC ₂₆₅	16.9	X	337.70569	187.12904	100.75746	4.27251	0.1186158	0.26848297	2.3797146	20	6 16.1	19.1
145962 Lacchini	15.6	X	326.17090	79.55691	116.55700	24.84458	0.3254668	0.29111801	2.2547064	20	—	—
145963 1999 YC ₇	15.8	X	226.22824	245.79370	321.86300	20.75833	0.2885203	0.28195943	2.3032706	20	—	—
145964 1999 YY ₇	16.1	X	300.65955	287.11923	263.10278	7.07904	0.0647740	0.29443103	2.2377608	20	—	—
145965 1999 YM ₈	17.3	X	152.08134	60.96692	91.82982	2.28508	0.1248578	0.26630151	2.3926929	20	8 21.8	20.8
145966 1999 YM ₁₆	16.8	X	270.75929	191.54426	280.60819	8.88131	0.1030896	0.27948247	2.3168593	20	11 26.2	19.4
145967 2000 AZ ₂₈	16.4	X	295.09198	157.61487	316.63434	6.70855	0.0596851	0.28207032	2.3026669	20	—	—
145968 2000 AM ₃₁	16.2	X	312.61013	330.91413	90.81987	3.92270	0.2141305	0.27908801	2.3190419	20	11 29.8	17.4
145969 2000 AP ₃₂	16.8	X	315.22983	99.81539	335.34994	1.92279	0.1845713	0.28048551	2.3113325	20	12 27.9	18.2
145970 2000 AA ₃₄	16.3	X	262.42831	27.90418	63.09741	3.50126	0.1859694	0.27467616	2.3438082	20	9 30.6	18.8
145971 2000 AG ₃₈	16.3	X	264.97120	105.18276	57.05286	4.71843	0.1083545	0.28285023	2.2984322	20	—	—
145972 2000 AH ₃₉	15.7	X	260.90722	330.33960	85.01193	7.56526	0.0934108	0.26926573	2.3751005	20	8 23.8	18.6
145973 2000 AR ₄₃	17.4	X	210.55147	257.43766	212.96912	0.51130	0.1416103	0.26870885	2.3783809	20	8 25.2	20.8
145974 2000 AK ₅₅	16.1	X	294.55631	291.12121	110.74873	5.91750	0.2190281	0.27414267	2.3468480	20	9 9.5	18.0
145975 2000 AF ₅₇	15.9	X	295.28188	57.85076	323.28323	5.32373	0.1323887	0.27005330	2.3704805	20	8 19.0	17.9
145976 2000 AR ₆₅	15.5	X	304.77458	52.65309	340.82595	8.86853	0.2518335	0.27373346	2.3491863	20	9 10.3	16.8
145977 2000 AS ₈₅	16.7	X	354.38238	171.86538	264.06325	5.26754	0.1463461	0.28540606	2.2846899	20	—	—
145978 2000 AT ₉₂	15.4	X	176.62854	115.60263	87.99108	23.28530	0.2030694	0.27300156	2.3533831	20	11 21.5	19.4
145979 2000 AO ₁₁₂	16.7	X	277.50539	230.01596	262.52619	5.42115	0.1534339	0.28135504	2.3065679	20	—	—
145980 2000 AZ ₁₅₂	15.7	X	309.35042	229.00307	300.03154	20.97131	0.2552225	0.28621987	2.2803571	20	—	—
145981 2000 AF ₁₅₉	16.6	X	198.91125	150.71534	1.16288	4.24896	0.1471337	0.27256126	2.3559169	20	10 6.2	20.1
145982 2000 AG ₁₆₁	16.2	X	285.41891	88.18548	337.19197	6.78836	0.2440314	0.27546433	2.3393353	20	9 18.9	18.0
145983 2000 AH ₁₆₂	16.4	X	202.46143	166.46640	322.25177	3.34854	0.1080451	0.26937631	2.3744505	20	9 12.4	19.7
145984 2000 AG ₂₁₄	16.9	X	1.02439	288.72747	133.81890	5.04554	0.2041551	0.28476798	2.2881014	20	—	—
145985 2000 AJ ₂₁₅	16.2	X	215.98663	225.72153	282.73681	1.87046	0.1028952	0.27489397	2.3425700	20	10 26.9	19.4
145986 2000 AF ₂₂₅	17.0	X	281.81737	95.03662	338.95304	1.95549	0.1815886	0.27575668	2.3376816	20	10 7.5	19.3
145987 2000 AN ₂₂₈	16.5	X	355.09537	286.09082	126.56777	5.80670	0.1463854	0.28176344	2.3043386	20	—	—
145988 2000 BC ₄	16.2	X	4.43662	251.99598	127.73296	4.58300	0.1349470	0.28014835	2.3131866	20	12 30.2	18.7
145989 2000 BL ₁₅	16.6	X	152.83346	48.46676	110.82852	9.27327	0.1331603	0.26599327	2.3945411	20	9 2.4	20.3
145990 2000 BE ₂₁	16.6	X	57.05639	110.91534	303.91258	4.12052	0.1809851	0.29083529	2.2561674	20	—	—
145991 2000 BA ₃₄	16.1	X	207.59118	131.82422	336.07143	5.63281	0.1321124	0.26761272	2.3848710	20	8 20.1	19.3
145992 2000 CY ₉	16.7	X	248.94813	316.02768	133.82311	2.99380	0.1747701	0.27281289	2.3544680	20	9 9.7	19.5
145993 2000 CA ₁₀	17.0	X	242.88885	237.40897	282.90782	3.82475	0.1758897	0.27867724	2.3213202	20	12 8.9	19.4
145994 2000 CL ₁₂	16.6	X	325.22766	199.35664	262.08234	4.66374	0.1109800	0.28344946	2.2951917	20	—	—
145995 2000 CQ ₁₇	16.7											

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>
146001 2000 CK ₄₂	16.7	X	275.29372	207.92558	224.00843	2.31021	0.1652321	0.27316294	2.3524561	20	9 24.2	19.1
146002 2000 CT ₄₂	16.0	X	93.94962	4.46130	212.77696	6.03628	0.0631206	0.26495420	2.4007974	20	9 3.0	19.2
146003 2000 CT ₅₂	16.2	X	233.66995	222.91857	251.90932	1.51755	0.1556192	0.27062955	2.3671144	20	9 25.3	19.4
146004 2000 CN ₅₅	16.6	X	240.25907	289.91634	161.83672	4.48404	0.1391066	0.27042426	2.3683122	20	9 5.1	19.7
146005 2000 CE ₅₆	16.5	X	244.83591	135.99861	322.93648	1.63908	0.1915574	0.27154325	2.3618014	20	9 12.8	19.5
146006 2000 CR ₆₄	16.4	X	248.21402	104.80383	58.83626	2.77478	0.0960218	0.27925687	2.3181070	20	—	—
146007 2000 CA ₆₇	16.4	X	190.31662	320.84195	240.29396	4.02029	0.1719285	0.27363388	2.3497562	20	11 27.9	19.6
146008 2000 CY ₇₄	16.9	X	308.73746	86.00264	349.37240	2.18382	0.1739876	0.27815078	2.3242483	20	12 10.9	18.5
146009 2000 CR ₇₆	16.3	X	115.53545	83.15278	104.73332	2.18657	0.1371642	0.26198507	2.4189025	20	8 30.2	19.7
146010 2000 CN ₇₈	16.7	X	18.34113	243.30418	126.74503	4.98056	0.1658645	0.28017016	2.3130666	20	—	—
146011 2000 CM ₈₄	16.5	X	304.24116	321.45772	133.88677	2.92152	0.1830321	0.27883995	2.3204171	20	—	—
146012 2000 CK ₈₉	15.3	X	118.69367	15.24600	34.09123	4.32003	0.0701194	0.24510179	2.5287451	20	2 22.9	18.6
146013 2000 CO ₉₈	17.3	X	253.07176	253.60358	151.35534	3.51748	0.1598395	0.26611384	2.3938177	20	7 14.1	20.4
146014 2000 CD ₁₀₄	13.6	X	219.26358	320.35719	168.92925	9.04349	0.1944805	0.12514899	3.9583830	20	9 8.4	19.7
146015 2000 CV ₁₁₁	16.1	X	301.91356	75.67970	81.15440	9.42538	0.2387015	0.28216943	2.3021277	20	—	—
146016 2000 CS ₁₁₅	16.7	X	172.08035	295.06500	255.22601	1.73508	0.1457989	0.27151515	2.3619644	20	10 28.2	20.1
146017 2000 CK ₁₂₀	16.6	X	298.05584	69.54395	230.26687	2.72193	0.1240751	0.27132697	2.3630563	20	9 7.5	19.0
146018 2000 CB ₁₂₁	16.6	X	203.53550	319.24289	226.01798	1.39010	0.1284898	0.27589386	2.3369066	20	11 27.4	19.5
146019 2000 CM ₁₃₈	17.0	X	132.19723	83.42795	115.44272	1.69569	0.1526635	0.26792960	2.3829902	20	10 1.6	20.6
146020 2000 CA ₁₄₄	17.0	X	33.69886	261.68840	123.80242	6.83188	0.1733348	0.28450824	2.2894938	20	—	—
146021 2000 DB ₄	16.4	X	160.14230	105.25627	105.48244	5.61753	0.1459387	0.27140829	2.3625843	20	11 13.6	20.0
146022 2000 DF ₅	16.3	X	86.61058	140.38025	71.38547	3.31482	0.1476548	0.26124416	2.4234737	20	8 31.9	19.6
146023 2000 DX ₂₅	16.0	X	332.28002	41.69803	1.70367	1.91230	0.2086040	0.27703589	2.3304799	20	12 17.1	17.5
146024 2000 DS ₂₆	16.6	X	296.95189	311.81703	146.42288	4.05752	0.0856275	0.27738850	2.3285045	20	12 22.9	19.0
146025 2000 DY ₂₉	16.9	X	202.92809	310.83905	187.44572	0.99562	0.1187763	0.26924372	2.3752300	20	9 25.6	20.3
146026 2000 DJ ₄₀	15.7	X	186.70573	317.74248	327.60275	7.51114	0.2292911	0.28277009	2.2988664	20	—	—
146027 2000 DC ₆₀	16.9	X	176.84647	359.86920	160.85336	1.26355	0.1312534	0.26727869	2.3868575	20	9 25.9	20.5
146028 2000 DG ₆₄	16.9	X	248.61529	275.49615	232.13849	1.74209	0.1077737	0.27526626	2.3404573	20	12 10.2	19.4
146029 2000 DK ₆₅	16.3	X	68.28960	193.90937	12.84702	2.15099	0.1461453	0.25727108	2.4483607	20	7 31.1	19.2
146030 2000 DM ₆₆	17.2	X	251.96532	83.56609	346.54605	3.09648	0.2380334	0.26851250	2.3795402	20	8 6.8	20.5
146031 2000 DL ₇₀	16.6	X	77.23955	54.10663	147.36435	2.51380	0.1294656	0.25740838	2.4474900	20	8 1.1	19.6
146032 2000 DV ₇₁	16.8	X	335.89774	108.47796	351.86649	1.81436	0.1811278	0.28224037	2.3017419	20	—	—
146033 2000 DS ₈₃	16.3	X	234.12980	29.75723	64.32863	5.05126	0.0971467	0.26870068	2.3784291	20	9 9.4	19.4
146034 2000 DT ₈₇	16.4	X	180.64822	347.87396	107.66460	5.86618	0.1746395	0.26151475	2.4218017	20	7 4.2	20.2
146035 2000 DG ₈₈	13.8	X	201.79704	159.61835	354.41804	8.13791	0.1377960	0.12410788	3.9804895	20	9 24.5	20.0
146036 2000 DF ₈₉	16.5	X	331.93069	329.07786	342.05064	2.01562	0.1555011	0.26025855	2.4295884	20	7 8.6	18.7
146037 2000 DF ₉₃	16.2	X	112.61230	231.18106	27.65274	6.54326	0.0622633	0.27348360	2.3506169	20	11 22.9	19.5
146038 2000 DY ₁₀₄	16.4	X	176.84009	330.47477	111.41791	7.17842	0.0895789	0.25796050	2.4439965	20	6 13.4	19.9
146039 2000 DA ₁₀₈	16.1	X	114.76538	88.25365	104.36242	3.37398	0.1298277	0.26324489	2.4111788	20	9 4.8	19.6
146040 Alicebowman	16.9	X	204.31861	177.12883	334.04712	2.18158	0.0852066	0.27170724	2.3608510	20	10 17.8	20.2
146041 2000 EN ₂	17.0	X	275.60958	152.78916	268.55711	1.52217	0.1877262	0.26984168	2.3717197	20	9 4.3	19.5
146042 2000 ET ₄	16.2	X	292.74252	333.92513	1.18296	0.87088	0.2008076	0.25942576	2.4347852	20	5 23.9	18.9
146043 2000 ET ₇	16.5	X	232.68439	284.18275	141.17678	5.09051	0.1846709	0.26458910	2.4030054	20	7 14.7	20.0
146044 2000 EB ₁₀	16.6	X	150.92212	342.27332	185.77547	2.38364	0.1215490	0.26401599	2.4064817	20	9 8.1	20.0
146045 2000 ET ₁₁	14.5	X	210.74057	325.34497	5.13647	13.36433	0.0421013	0.24785294	2.5099977	20	3 1.7	18.1
146046 2000 ES ₁₃	16.4	X	115.34529	85.13353	118.64974	3.39620	0.1348384	0.26374093	2.4081546	20	9 20.6	19.9
146047 2000 EC ₁₇	16.6	X	245.35092	200.89554	336.31974	2.08906	0.1443361	0.27733727	2.3287913	20	—	—
146048 2000 EX ₁₇	16.5	X	232.27122	108.70479	53.89499	6.54589	0.1899503	0.27528587	2.3403462	20	11 23.5	19.4
146049 2000 EK ₃₀	14.5	X	169.95932	315.81965	8.17294	14.51449	0.1910069	0.23855014	2.5748362	20	1 18.8	18.9
146050 2000 ED ₄₄	16.3	X	218.64683	250.29434	325.50787	6.42487	0.0868548	0.27856345	2.3219523	20	—	—
146051 2000 EU ₈₂	15.8	X	128.24079	80.82832	110.66789	7.15948	0.1673641	0.26337785	2.4103672	20	9 20.9	19.6
146052 2000 ES ₈₆	16.1	X	184.67834	165.79356	333.78554	10.87335	0.1644655	0.26561725	2.3968004	20	9 3.2	19.8
146053 2000 EO ₉₆	15.8	X	141.49663	104.85661	50.60104	7.07207	0.0892379	0.25992285	2.4316799	20	8 14.7	19.4
146054 2000 EB ₁₀₁	15.4	X	122.68869	332.73048	8.19368	9.20152	0.1922337	0.23142695	2.6274034	20	—	—
146055 2000 EO ₁₁₄	16.8	X	128.32502	160.53650	21.62326	2.26760	0.1444597	0.26275899	2.4141504	20	9 5.3	20.5
146056 2000 EP ₁₂₃	16.6	X	188.27715	11.42246	129.15671	3.16583	0.1290601	0.26652335	2.3913650	20	9 12.4	20.0
146057 2000 EM ₁₃₇	15.9	X	209.47187	97.52268	55.60455	9.08909	0.1801611	0.26918388	2.3755820	20	10 18.6	19.3
146058 2000 EA ₁₇₁	14.5	X	201.25354	299.71016	28.99755	14.45956	0.2128132	0.24180610	2.5516702	20	2 22.2	19.1
146059 2000 ER ₁₈₁	15.9	X	245.71640	176.89215	92.09217	9.93213	0.1207616	0.23806591	2.5783265	20	—	—
146060 2000 EH ₁₉₆	16.2	X	232.70780	357.94361	323.20369	3.47720	0.0624237	0.24612341	2.5217426	20	3 9.7	19.8
146061 2000 FG ₇	16.7	X	221.80616	273.25048	10.29753	0.16279	0.1772648	0.23519498	2.5992658	20	1 10.7	21.1
146062 2000 FU ₂₂	16.3	X	176.38537	44.37342	58.28054	2.91724	0.1793080	0.25872923	2.4391531	20	7 9.7	20.3
146063 2000 FU ₅₀	16.2	X	137.09845	61.73293	206.38350	1.80945	0.0698789	0.22355305	2.6887411	20	12 22.4	20.2
146064 2000 FC ₅₈	16.3	X	81.96694	131.28076	112.65703	4.93911	0.1122632	0.26200801	2.4187613	20	10 5.2	19.6
146065 2000 FW ₆₀	16.0	X	262.73965	178.29000	73.00330	13.13947	0.1313274	0.23780152	2.5802372	20	1 12.0	20.0
146066 2000 FO ₆₃	15.6	X	180.64899	187.80632	32.62822	12.17362	0.1137267	0.22391452	2.6858466	20	12 5.6	19.9
146067 2000 GQ ₃₅	16.5	X	156.06517	225.40043	329.53586	1.55507	0.1370816	0.26542937	2.3979313	20	10 17.7	20.3
146068 2000 GE ₆₄	16.8	X	124.42510	81.78826	81.21380	1.84747	0.1659906	0.25789472	2.4444121	20	8 7.9	20.6
146069 2000 GL ₈₅	15.8	X	299.79740	181.86441	71.89601	14.87992	0.2296153	0.24110722	2.5565987	20	2 16.5	19.7
146070 2000 GA ₈₇	16.0	X	161.50946	34.76880	128.84253	5.74574	0.2590319	0.26414947	2.4056709	20	9 13.4	20.2
146071 2000 GQ ₉₀	15.5	X	163.31463	217.52693	45.47240	13.93267	0.1142852	0.22447708	2.6813574	20	—	—
146072 2000 GR ₉₀	16.0	X	290.84341	159.92234	79.24813	5.55544	0.2708257	0.23795998	2.5790916	20	1 10.6	20.1
146073 2000 GT ₉₄	15.4	X	297.61426	179.24781	69.65959	18.95958	0.1498675	0.24055724	2.5604940	20	2 21.5	19.3
146074 2000 GV ₁₁₁	16.2	X	349.									

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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>
146081 2000 HU ₁₄	16.1	X	176.78663	86.58567	74.48008	8.61981	0.1333489	0.26506668	2.4001182	20	9 30.6	19.8
146082 2000 HX ₂₉	15.7	X	352.87357	289.31346	271.23733	2.72851	0.2086347	0.24313942	2.5423332	20	2 22.2	17.9
146083 2000 HH ₄₃	16.4	X	152.71910	332.80576	175.90822	2.61121	0.1259650	0.25809509	2.4431467	20	8 14.9	20.1
146084 2000 HG ₆₂	16.8	X	174.40369	334.42231	223.95175	1.80674	0.1488246	0.26670510	2.3902785	20	11 9.3	20.3
146085 2000 HE ₇₃	16.7	X	337.75893	29.17527	184.36816	6.65665	0.1515726	0.24251704	2.5466810	20	2 21.0	19.4
146086 2000 JH ₄	16.2	X	112.73481	159.27867	214.51433	2.79185	0.1692267	0.23120364	2.6290949	20	1 14.7	19.6
146087 2000 JS ₁₃	16.4	X	92.66849	16.14561	190.71602	2.40296	0.1530468	0.25617612	2.4553324	20	8 29.9	19.8
146088 2000 JO ₃₃	15.8	X	129.11300	171.42228	23.96629	2.56734	0.1367982	0.25933448	2.4353565	20	9 22.4	19.4
146089 2000 KY ₅	15.4	X	259.28958	186.75210	70.33558	14.85457	0.0782566	0.23486041	2.6017337	20	1 21.9	19.4
146090 2000 KS ₁₉	16.4	X	322.76451	26.91767	260.20245	1.96746	0.0993910	0.24608095	2.5220328	20	5 19.7	19.3
146091 2000 KN ₃₅	15.9	X	210.80313	178.70705	102.59444	10.08707	0.1116494	0.22956980	2.6415543	20	—	—
146092 2000 KY ₃₉	16.6	X	310.30018	160.49580	42.83512	3.75530	0.1197457	0.23661328	2.5888684	20	1 7.1	20.0
146093 2000 KA ₄₃	16.1	X	41.68687	7.45062	116.87926	5.14686	0.1589920	0.23858590	2.5745789	20	2 18.6	18.6
146094 2000 KB ₈₃	16.2	X	98.69291	76.37783	120.09871	4.12382	0.1471812	0.25586042	2.4573516	20	8 23.7	19.7
146095 2000 OR ₁₂	15.5	X	287.50990	355.74054	298.01595	12.76741	0.1633048	0.23767998	2.5811167	20	3 20.6	19.4
146096 2000 OY ₁₅	15.6	X	221.43072	197.62483	149.85175	3.09246	0.3584226	0.18309619	3.0714952	20	3 23.4	21.2
146097 2000 PK ₇	14.9	X	228.39800	228.71618	157.15974	11.61091	0.2026559	0.18564650	3.0433007	20	5 21.5	20.1
146098 2000 PX ₇	14.9	X	55.52439	83.23158	330.58230	12.46164	0.1577895	0.21461004	2.7629267	20	—	—
146099 2000 PX ₂₅	14.1	X	194.45474	81.15492	316.83170	17.54667	0.2399252	0.17967778	3.1103300	20	4 26.8	19.9
146100 2000 PM ₂₆	14.7	X	286.54770	114.43435	266.68492	12.12569	0.2128116	0.19029206	2.9935667	20	7 12.5	18.6
146101 2000 QR ₅	14.0	X	176.52819	75.76978	281.67753	23.48335	0.2535217	0.17486586	3.1671311	20	2 23.6	19.9
146102 2000 QB ₉	15.1	X	81.35853	26.39971	320.09756	7.12291	0.2275085	0.21155708	2.7894442	20	—	—
146103 2000 QK ₂₈	15.2	X	322.96614	159.20171	149.00017	5.32664	0.2399341	0.24135495	2.5548491	20	6 1.6	17.5
146104 2000 QP ₄₄	15.0	X	193.55629	256.50886	141.75732	10.69023	0.1331009	0.18386552	3.0629214	20	5 9.0	20.1
146105 2000 QW ₇₂	15.3	X	252.51790	181.13489	170.38560	6.93714	0.1823911	0.18625015	3.0367214	20	5 3.2	20.0
146106 2000 QP ₈₁	15.4	X	217.97504	190.04788	170.11062	3.76330	0.1757782	0.18209439	3.0827503	20	4 11.4	20.4
146107 2000 QL ₈₈	14.9	X	220.19407	117.80854	304.36188	10.04223	0.0528798	0.19010602	2.9955194	20	7 7.9	19.3
146108 2000 QK ₁₀₅	16.0	X	5.37270	44.11260	13.42069	19.39338	0.0983920	0.35731605	1.9668340	20	—	—
146109 2000 QH ₁₀₈	15.5	X	231.75384	8.28515	33.26187	1.59810	0.2094702	0.18624349	3.0367939	20	6 9.1	20.5
146110 2000 QH ₁₅₂	14.0	X	157.16545	56.02393	347.67773	25.60960	0.2125516	0.17519586	3.1631527	20	4 2.3	19.6
146111 2000 QV ₁₆₀	15.4	X	327.54906	194.72768	192.23422	8.88882	0.2379301	0.20027108	2.8932807	20	10 10.5	17.7
146112 2000 QW ₁₇₆	14.9	X	113.85438	203.12449	325.28680	12.88238	0.0843474	0.24131029	2.5551643	20	7 27.9	18.6
146113 2000 QQ ₁₇₉	15.0	X	196.72042	296.33192	68.76112	2.63516	0.1670903	0.17858394	3.1230177	20	3 30.8	20.2
146114 2000 QU ₂₀₈	14.5	X	145.82978	74.81995	11.49435	22.73195	0.1682953	0.17859611	3.1228758	20	5 12.5	19.9
146115 2000 QC ₂₁₅	15.1	X	255.76673	224.59563	140.57507	6.09088	0.1068018	0.18674973	3.0313033	20	5 31.9	19.5
146116 2000 QY ₂₂₈	15.9	X	169.04704	273.48028	9.33332	3.68607	0.2794937	0.21691812	2.7432928	20	—	—
146117 2000 QB ₂₅₁	15.3	X	242.43978	169.51447	109.27591	16.46287	0.1216364	0.22729821	2.6591247	20	1 27.3	19.4
146118 2000 RZ ₂	14.8	X	267.92889	48.62054	2.83000	11.11473	0.1199746	0.19144389	2.9815474	20	8 16.3	19.0
146119 2000 RC ₁₅	14.9	X	248.04956	119.18308	277.77451	8.23390	0.1683700	0.18869132	3.0104732	20	6 23.8	19.4
146120 2000 RM ₁₈	15.3	X	76.39580	40.55575	303.83805	7.02779	0.1402770	0.20959045	2.8068662	20	—	—
146121 2000 RR ₁₈	14.9	X	273.12558	39.20189	295.40614	8.20543	0.1483873	0.18645049	3.0345459	20	5 4.1	19.4
146122 2000 RA ₂₃	15.5	X	266.24395	124.60299	210.93246	3.36675	0.2457687	0.18552585	3.0446201	20	4 18.6	20.3
146123 2000 RZ ₂₈	15.0	X	156.41225	123.41167	289.75598	8.85614	0.2337763	0.17643714	3.1482995	20	4 20.0	20.6
146124 2000 RN ₂₉	14.3	X	207.71946	352.68122	327.93422	17.16441	0.2419244	0.17653309	3.1471586	20	2 16.2	19.8
146125 2000 RM ₃₉	15.3	X	6.74579	17.87713	273.86339	8.29073	0.0267171	0.19310716	2.9644022	20	8 2.1	19.3
146126 2000 RL ₈₀	15.3	X	276.76942	76.63160	285.49721	5.67669	0.0940391	0.18933278	3.0036697	20	6 24.1	19.4
146127 2000 RD ₈₂	15.0	X	323.71974	76.17500	248.85673	9.01051	0.1718095	0.19235426	2.9721326	20	7 4.5	18.4
146128 2000 RQ ₈₂	15.4	X	240.03410	171.34466	218.37408	6.91545	0.1473024	0.18616441	3.0376538	20	6 8.7	20.1
146129 2000 RO ₉₂	15.1	X	214.25451	76.85747	286.66959	8.79512	0.2522344	0.17873056	3.1213095	20	4 4.4	20.7
146130 2000 RG ₉₃	15.5	X	19.13252	70.01584	292.17349	5.70771	0.0911534	0.20408834	2.8570900	20	11 29.3	19.2
146131 2000 RK ₉₇	15.0	X	228.13043	96.47404	384.29518	13.51052	0.3316891	0.18373140	3.0644119	20	5 1.0	20.7
146132 2000 RP ₁₀₁	14.1	X	176.39760	104.51417	338.53190	25.89598	0.2027181	0.18126806	3.0921118	20	6 12.8	19.8
146133 2000 RD ₁₀₅	15.3	X	256.02756	67.79824	297.53038	12.36659	0.2560491	0.18473482	3.0533052	20	5 10.8	20.5
146134 2000 SE ₁	16.0	X	14.42731	315.49577	289.66035	28.49423	0.2707349	0.39046357	1.8538832	20	7 24.0	16.2
146135 2000 SM ₁	15.9	X	83.17438	37.76629	292.34539	17.04009	0.0582118	0.35632085	1.9704945	20	—	—
146136 2000 SS ₂₇	15.3	X	298.91186	80.92172	248.42301	9.10832	0.1189056	0.18812586	3.0165027	20	6 7.7	19.3
146137 2000 SG ₂₈	14.7	X	197.30464	160.16986	261.29915	9.90277	0.0723305	0.18373245	3.0644001	20	6 8.5	19.4
146138 2000 SL ₃₀	15.2	X	216.26288	226.16935	175.66357	10.12999	0.0902177	0.18545066	3.0454429	20	6 4.7	20.0
146139 2000 SJ ₃₃	15.5	X	254.01354	45.65779	24.46552	12.55767	0.2107162	0.19122889	2.9837817	20	8 11.7	20.1
146140 2000 SE ₄₈	15.3	X	174.54854	17.23778	301.33350	12.91476	0.1344613	0.22125607	2.7073179	20	1 11.9	19.6
146141 2000 SC ₅₂	15.3	X	315.87036	68.33919	249.46484	10.12545	0.1553024	0.18945686	3.0023581	20	6 13.3	18.8
146142 2000 SJ ₅₂	15.4	X	161.22748	130.51816	200.84235	13.06567	0.1219540	0.17037439	3.2225513	20	1 16.5	20.6
146143 2000 SF ₅₈	15.7	X	256.14374	1.14599	2.77201	1.54976	0.1795976	0.18602527	3.0391684	20	5 20.3	20.4
146144 2000 SY ₆₀	15.5	X	222.43956	185.00053	175.01811	5.92964	0.1871739	0.18117361	3.0931864	20	4 14.9	20.5
146145 2000 SQ ₆₃	15.0	X	231.99037	168.71885	193.13253	9.55972	0.0965604	0.18212119	3.0824478	20	5 2.6	19.6
146146 2000 SU ₉₁	14.8	X	237.50846	114.76025	291.82934	10.44404	0.1324501	0.18862215	3.0112091	20	6 29.0	19.4
146147 2000 SD ₉₃	15.0	X	255.19227	84.24398	279.29322	8.87478	0.1004834	0.18655220	3.0334427	20	5 28.2	19.5
146148 2000 SN ₁₃₂	13.9	X	140.81152	145.26427	315.96343	16.75315	0.1117847	0.18027844	3.1034174	20	5 28.3	19.0
146149 2000 SG ₁₃₄	15.0	X	231.34743	131.21478	252.28814	8.42018	0.1092818	0.18416929	3.0595525	20	5 26.0	19.6
146150 2000 SS ₁₃₈	15.2	X	294.48417	89.15875	302.65066	9.06351	0.1131778	0.19245984	2.9710455	20	8 22.6	19.0
146151 2000 SD ₁₄₂	15.1	X	277.76380	115.54931	297.27231	8.71830	0.0769839	0.19230069	2.9726845	20	8 30.4	19.1
146152 2000 SU ₁₄₇	14.7	X	179.69921	347.23403	13.97119	13.30848	0.1026966	0.17315833	3.1879178	20	3 13.1	19.7
146153 2000 SZ ₁₄₇	15.0	X	154.99107	68.93963	17.62777	16.02981	0.2086406	0.17755961	3.1350172	20		

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Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>		
146161	2000	SS ₁₈₆	15.1	X	190.25469	131.06509	292.17593	3.84775	0.1779983	0.18202547	3.0835284	20	5 31.6	20.1
146162	2000	SS ₁₈₈	14.8	X	180.10424	6.12269	17.58635	11.57481	0.0978252	0.17484032	3.1674394	20	4 5.6	19.7
146163	2000	ST ₂₀₄	15.2	X	159.96015	39.89059	43.52802	2.66160	0.1533722	0.17956926	3.1115830	20	5 29.2	20.3
146164	2000	SK ₂₂₄	15.1	X	69.86503	222.56482	62.47573	3.14946	0.1276745	0.19911969	2.9044233	20	11 2.4	19.3
146165	2000	SM ₂₂₇	15.0	X	165.74768	260.14853	152.54605	8.70852	0.1489213	0.17536402	3.1611302	20	4 30.5	20.2
146166	2000	SG ₂₆₆	14.7	X	151.56668	41.66669	56.38485	9.43135	0.1026288	0.17970592	3.1100053	20	6 5.3	19.5
146167	2000	SY ₂₆₆	14.4	X	187.76898	137.35315	247.75554	21.55859	0.0366973	0.17817011	3.1278517	20	4 9.3	19.4
146168	2000	SM ₂₆₇	15.5	X	232.76985	288.22548	98.61898	2.36700	0.1997399	0.18326344	3.0696261	20	5 24.4	20.4
146169	2000	SW ₂₇₄	14.3	X	149.71467	53.23716	43.28517	16.50319	0.1746034	0.17709915	3.1404488	20	6 3.4	19.6
146170	2000	SK ₂₇₅	15.0	X	184.57650	303.20654	50.52083	14.55359	0.2235842	0.17275417	3.1928880	20	3 14.9	20.7
146171	2000	SS ₂₈₂	15.8	X	244.35638	76.29949	279.40236	9.29392	0.2585161	0.18363450	3.0654897	20	4 18.6	21.1
146172	2000	SB ₂₈₃	15.2	X	249.00439	122.82224	268.02227	8.22362	0.1051587	0.18690522	3.0296219	20	6 24.7	19.6
146173	2000	SP ₂₈₄	15.1	X	195.40826	145.09461	278.90054	8.13356	0.1758991	0.18191859	3.0847359	20	6 6.2	20.2
146174	2000	SW ₂₉₅	15.0	X	245.79183	98.92881	310.41217	5.16255	0.2989090	0.18321704	3.0701444	20	6 23.4	20.0
146175	2000	SJ ₃₀₀	15.0	X	258.39602	331.35878	354.42795	9.49283	0.0700993	0.18040425	3.1019744	20	4 16.1	19.6
146176	2000	SM ₃₀₂	15.1	X	140.20411	174.16836	230.75995	14.24631	0.0430339	0.17555330	3.1588576	20	3 10.9	20.0
146177	2000	SN ₃₀₅	14.9	X	199.71869	131.65793	253.98767	7.14771	0.2484875	0.17867593	3.1219457	20	4 22.1	20.4
146178	2000	SZ ₃₀₅	15.1	X	206.97587	100.54289	283.30519	9.32055	0.1214937	0.18016249	3.1047488	20	4 28.1	20.2
146179	2000	SY ₃₀₉	14.1	X	105.87179	211.97993	269.62684	19.69799	0.0209258	0.17798297	3.1300438	20	5 2.1	18.8
146180	2000	SY ₃₁₂	14.4	X	151.66156	102.39639	302.22305	13.88891	0.2226258	0.17373324	3.1808812	20	4 2.4	20.0
146181	2000	SX ₃₁₆	14.8	X	198.58304	160.78047	268.76192	13.57121	0.1044675	0.18545165	3.0454320	20	6 18.7	19.6
146182	2000	SC ₃₂₅	15.7	X	103.62343	192.73013	48.47977	2.81779	0.0668660	0.19662443	2.9289439	20	10 10.2	19.8
146183	2000	SK ₃₂₇	15.3	X	158.09420	261.45576	150.54835	13.89807	0.3053144	0.17548458	3.1596822	20	4 30.4	21.2
146184	2000	SS ₃₃₃	15.6	X	178.82767	265.29506	123.14894	10.74011	0.2393663	0.17791330	3.1308633	20	4 16.5	21.2
146185	2000	SD ₃₃₈	14.8	X	208.26197	237.84568	142.89120	23.09303	0.0975126	0.18109348	3.0940988	20	5 7.0	20.0
146186	2000	SC ₃₄₇	14.2	X	183.85401	100.24956	267.59916	25.76480	0.0877730	0.17618272	3.1513297	20	3 7.3	19.6
146187	2000	SE ₃₆₅	15.8	X	157.23415	212.78503	67.48936	5.00118	0.0661591	0.21257047	2.7805717	20	—	—
146188	2000	TD ₁	16.7	X	263.01992	151.43640	19.82248	20.26953	0.0580726	0.35831057	1.9631929	20	—	—
146189	2000	TN ₆	15.1	X	51.32580	0.50358	188.66046	9.34218	0.0390160	0.18245040	3.0787387	20	5 25.1	19.4
146190	2000	TK ₂₅	15.3	X	252.87288	359.86732	350.47283	3.95894	0.177454	0.18334670	3.0686968	20	4 29.5	20.2
146191	2000	TE ₃₃	15.5	X	309.14861	237.49139	287.93068	17.53196	0.0774035	0.36193509	1.9500643	20	—	—
146192	2000	TK ₄₃	14.7	X	245.11310	236.72923	138.13123	10.94040	0.0561681	0.18517463	3.0484686	20	6 7.6	19.3
146193	2000	TO ₄₅	15.1	X	243.25577	234.07902	93.94245	8.26634	0.1851278	0.18109043	3.0941335	20	3 29.6	20.2
146194	2000	TO ₅₁	14.6	X	180.02563	2.98741	46.62908	24.43987	0.2086723	0.17757474	3.1348392	20	5 7.1	19.9
146195	2000	TY ₅₂	15.8	X	73.38300	341.10927	356.80922	1.62315	0.0624347	0.20518304	2.8469188	20	—	—
146196	2000	TJ ₅₅	15.8	X	177.03340	62.44349	29.09941	0.96138	0.1385275	0.18174817	3.0866639	20	6 23.9	20.7
146197	2000	TT ₆₁	15.0	X	185.69878	291.45556	119.84234	11.19990	0.0811827	0.18045452	3.1013982	20	5 17.7	19.9
146198	2000	TV ₆₈	15.0	X	300.62529	191.13022	302.62462	10.70180	0.0542787	0.21434415	2.7652111	20	—	—
146199	2000	UZ ₉	14.3	X	123.03859	24.69632	67.67006	7.39883	0.1706709	0.17151723	3.2082206	20	5 8.1	19.3
146200	2000	UY ₁₂	15.1	X	162.49390	208.02837	226.81456	12.44994	0.1160029	0.17791871	3.1307975	20	5 20.5	20.1
146201	2000	UX ₁₈	14.8	X	185.09460	88.61039	260.20812	14.78127	0.1943527	0.17175968	3.2052007	20	2 24.1	20.5
146202	2000	UO ₃₄	14.9	X	189.47884	142.73220	239.87739	4.34297	0.1946431	0.17630787	3.1498383	20	4 11.9	20.2
146203	2000	UW ₅₆	14.8	X	253.85456	3.17168	327.07933	9.62719	0.0678928	0.18012054	3.1052308	20	4 15.1	19.5
146204	2000	UJ ₅₇	15.2	X	162.92115	96.13881	6.36221	17.70815	0.2296258	0.17979706	3.1089542	20	6 26.7	20.9
146205	2000	UW ₆₂	14.7	X	283.24145	89.75027	243.68660	10.70894	0.1376582	0.18346957	3.0673267	20	5 19.4	19.0
146206	2000	UT ₆₅	15.5	X	221.08478	102.85287	244.33204	5.75046	0.2266539	0.17829004	3.1264489	20	3 24.7	20.9
146207	2000	UH ₇₁	15.0	X	153.10197	150.39236	251.32889	5.02128	0.1670589	0.17221053	3.1996042	20	4 2.4	20.2
146208	2000	UW ₇₂	14.9	X	174.84180	86.75248	296.07505	4.03154	0.0624813	0.17265351	3.1941289	20	3 27.1	19.8
146209	2000	US ₈₂	15.4	X	197.05640	343.10223	96.04578	2.45096	0.1517846	0.18264852	3.0765120	20	6 27.1	20.4
146210	2000	UV ₉₄	15.2	X	0.78869	64.55375	264.03735	8.87738	0.0621414	0.19190195	2.9768009	20	9 10.4	19.2
146211	2000	UV ₉₇	14.6	X	152.39785	158.33879	245.54500	15.70435	0.1538510	0.17187353	3.2037852	20	3 31.6	20.0
146212	2000	UX ₁₀₅	15.0	X	204.73318	355.58580	60.35067	9.88739	0.2063612	0.18267266	3.0762410	20	6 2.9	20.1
146213	2000	UD ₁₀₇	15.0	X	208.65196	311.40252	179.60069	12.50529	0.1789935	0.17931259	3.1145515	20	5 11.8	20.2
146214	2000	VQ ₃₄	15.5	X	314.08829	242.82018	145.07783	4.73604	0.1855496	0.19185244	2.9773131	20	9 14.4	18.7
146215	2000	VV ₃₆	14.2	X	212.64654	160.12558	248.80494	16.81948	0.2645360	0.17772220	3.1331049	20	5 30.0	19.7
146216	2000	VS ₄₉	14.6	X	156.03653	41.18563	55.95083	5.76826	0.1418481	0.17549185	3.1595950	20	6 10.7	19.6
146217	2000	VX ₅₀	14.9	X	257.05087	97.02053	239.16824	9.25807	0.0993217	0.17998578	3.1067806	20	4 25.7	19.5
146218	2000	VN ₅₂	14.6	X	79.43898	267.64107	242.35565	15.19057	0.1435515	0.17364364	3.1819750	20	5 26.2	19.0
146219	2000	VU ₅₂	15.6	X	168.41602	94.28559	314.11924	3.79249	0.1787478	0.17447750	3.1718290	20	4 24.3	20.9
146220	2000	VB ₅₈	15.3	X	221.54058	117.92839	269.12423	8.24894	0.0900356	0.17927065	3.1150373	20	5 21.0	20.0
146221	2000	VH ₅₈	15.5	X	171.01359	119.63068	304.46374	4.31963	0.2126522	0.17520418	3.1630526	20	5 16.1	20.9
146222	2000	WX ₃	14.4	X	96.84710	220.50217	268.33366	17.08848	0.2082479	0.17357138	3.1828583	20	5 28.8	19.3
146223	2000	WL ₄	15.2	X	338.45603	59.39635	289.66832	8.85087	0.1099340	0.19191757	2.9766394	20	9 4.2	18.9
146224	2000	WD ₃₈	15.1	X	201.94805	343.72851	91.72155	11.48937	0.0504673	0.18037283	3.1023346	20	7 2.4	19.6
146225	2000	WG ₄₇	14.3	X	130.35708	1.40694	76.77588	23.77903	0.0549692	0.17140258	3.2096510	20	4 26.6	19.3
146226	2000	WZ ₇₀	14.4	X	136.56521	91.97159	320.50946	6.74163	0.0812053	0.17074286	3.2179134	20	3 22.6	19.2
146227	2000	WA ₇₁	14.8	X	121.19134	49.12306	18.54275	10.87813	0.0682686	0.17046057	3.2214651	20	3 26.7	19.4
146228	2000	WL ₇₆	15.0	X	127.71672	67.71587	49.77030	16.53529	0.1266158	0.17550177	3.1594759	20	6 5.0	20.0
146229	2000	WM ₈₄	14.9	X	98.05948	85.13933	24.36407	4.94673	0.1148197	0.17008706	3.2261795	20	4 23.9	19.4

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>
146241 2000 WV ₁₉₁	14.9	X	247.94008	280.57105	121.65466	9.94548	0.1413911	0.18459958	3.0547962	20	7 3.4	19.4
146242 2000 XQ ₂	14.2	X	157.54411	143.51320	282.65179	15.84814	0.1007796	0.17550828	3.1593978	20	4 29.5	19.4
146243 2000 XA ₃	14.9	X	217.88695	17.63782	352.24647	10.33123	0.2338798	0.17814011	3.1282028	20	4 16.1	20.4
146244 2000 XO ₃	14.6	X	173.71025	109.99915	262.41826	22.06971	0.2047836	0.17203237	3.2018127	20	3 9.5	20.5
146245 2000 XV ₁₈	14.5	X	199.27457	89.45236	304.28430	12.75681	0.0790995	0.17540107	3.1606850	20	5 2.4	19.5
146246 2000 XX ₁₉	15.3	X	198.05011	36.56676	7.43821	10.04469	0.2359131	0.17676412	3.1444159	20	5 11.4	20.8
146247 2000 XU ₂₃	14.6	X	146.27458	117.44787	19.17235	16.97710	0.1292585	0.17948550	3.1125510	20	7 25.2	19.8
146248 2000 XW ₃₅	14.4	X	104.34841	209.66279	281.30716	21.63506	0.2433965	0.17272585	3.1932370	20	6 11.0	19.5
146249 2000 YN ₆	14.7	X	246.62381	50.51009	299.91612	12.76175	0.2454812	0.17671010	3.1450566	20	4 12.9	20.1
146250 2000 YZ ₁₁	14.2	X	169.36489	298.41322	132.95335	27.20152	0.2394710	0.17447942	3.1718057	20	6 1.3	20.2
146251 2000 YO ₄₂	14.5	X	168.15697	35.90845	138.79447	4.93532	0.2731145	0.18305614	3.0719432	20	9 24.5	20.0
146252 2000 YS ₄₈	15.0	X	180.03500	306.25525	121.94555	6.23010	0.1885320	0.17311452	3.1884557	20	5 30.3	20.4
146253 2000 YB ₅₀	14.5	X	62.96940	241.94384	291.04694	12.91274	0.1416425	0.16874663	3.2432417	20	6 1.7	18.9
146254 2000 YT ₅₀	17.0	X	304.43742	72.05049	70.54795	4.00546	0.1135100	0.30117383	2.2042350	20	—	—
146255 2000 YA ₆₃	14.2	X	133.97716	95.02582	117.19806	18.74449	0.2053584	0.18144851	3.0900615	20	10 18.6	19.8
146256 2000 YE ₈₁	15.4	X	170.08150	285.47056	133.50817	2.67444	0.1940676	0.17367039	3.1816485	20	5 10.9	20.8
146257 2000 YU ₁₃₅	14.8	X	140.73669	96.28106	22.86055	13.75441	0.2313380	0.17246742	3.1964261	20	6 28.6	20.4
146258 2001 AO ₂₂	15.3	X	116.02082	181.62818	227.63262	1.71398	0.2355021	0.16343618	3.3131206	20	3 16.6	20.5
146259 2001 BL ₇	16.9	X	261.93008	209.51239	69.02588	3.02608	0.0881493	0.31308610	2.1479633	20	2 9.1	19.7
146260 2001 BX ₈	14.8	X	52.95392	96.13446	114.92887	6.62120	0.0972305	0.17092907	3.2155759	20	7 1.0	19.0
146261 2001 BA ₁₀	14.4	X	76.28997	106.98062	82.15801	26.96369	0.1764100	0.17666458	3.1455968	20	7 15.4	19.1
146262 2001 BU ₃₉	16.4	X	330.90304	140.04504	342.00539	7.32277	0.0465639	0.29645312	2.2275734	20	—	—
146263 2001 BG ₆₂	14.3	X	125.69964	30.23893	154.50103	17.84875	0.0928513	0.17579424	3.1559707	20	8 24.4	19.1
146264 2001 BM ₇₄	14.8	X	138.46460	29.42716	149.46711	5.88851	0.1204759	0.17688739	3.1429547	20	9 1.7	19.7
146265 2001 BC ₇₈	14.4	X	94.22203	67.97704	158.08290	17.19841	0.1314138	0.17750978	3.1356038	20	9 7.5	19.1
146266 2001 CY	14.3	X	53.93207	270.34317	331.27652	8.80479	0.1843542	0.17263788	3.1943218	20	8 24.2	18.6
146267 2001 CO ₂₆	15.4	X	106.30223	11.27330	25.57855	8.04837	0.1608767	0.30578439	2.1820222	20	1 25.5	17.8
146268 Jennipolakis	17.2	X	125.81332	80.96392	166.37196	3.32841	0.1493651	0.28224838	2.3016984	20	11 27.6	20.6
146269 2001 DY ₃₆	14.6	X	199.60181	272.65304	148.63134	22.07631	0.0497153	0.17087815	3.2162147	20	6 14.9	19.8
146270 2001 DT ₅₀	16.1	X	144.41749	170.03688	58.44186	7.24789	0.0600555	0.28687692	2.2768739	20	11 23.9	19.1
146271 2001 DQ ₇₅	15.2	X	145.39045	158.17509	303.28850	3.99772	0.1110859	0.16960843	3.2322461	20	6 4.0	20.2
146272 2001 EY ₅	15.6	X	70.94424	263.49349	27.60825	7.14764	0.1535410	0.28107983	2.3080733	20	11 27.3	18.9
146273 2001 ES ₂₂	16.0	X	103.57586	300.39057	23.90516	5.03690	0.2022686	0.28961485	2.2625013	20	—	—
146274 2001 FF ₆	16.8	X	168.85149	89.25489	147.95850	4.27044	0.1824669	0.28762233	2.2729383	20	12 23.8	20.3
146275 2001 FK ₁₂	15.6	X	46.76343	246.28585	42.08121	3.89199	0.1690610	0.27532183	2.3401424	20	10 29.3	18.3
146276 2001 FG ₄₀	16.4	X	16.80862	283.68979	350.50291	1.02856	0.1705497	0.26951326	2.3736460	20	8 20.4	18.3
146277 2001 FJ ₄₉	15.1	X	25.02539	2.69934	329.02779	5.84144	0.2248286	0.27761278	2.3272502	20	12 6.7	18.1
146278 2001 FG ₆₃	16.4	X	144.48024	118.60561	137.45094	6.47722	0.1419860	0.28599838	2.2815343	20	12 26.3	20.0
146279 2001 FT ₆₈	16.5	X	7.72590	155.66594	90.51402	3.58743	0.1473236	0.26438963	2.4042139	20	6 11.7	18.3
146280 2001 FW ₆₉	17.0	X	209.84522	87.06274	123.99130	4.73985	0.1217546	0.28930147	2.2641348	20	—	—
146281 2001 FO ₇₅	16.3	X	194.38510	80.13604	161.99884	6.26282	0.0340400	0.29257455	2.2472170	20	—	—
146282 2001 FV ₉₉	16.0	X	71.21196	218.97800	104.82738	7.49082	0.1269335	0.28374970	2.2935723	20	—	—
146283 2001 FQ ₁₁₀	16.0	X	292.90631	11.53040	344.20517	4.92735	0.1306596	0.27141604	2.3625393	20	7 7.9	18.6
146284 2001 FC ₁₂₆	16.9	X	337.67646	131.84727	189.43738	3.62331	0.2071837	0.26964617	2.3728660	20	8 6.2	18.5
146285 2001 FZ ₁₄₅	15.9	X	51.26308	66.25649	220.11715	12.89381	0.2244940	0.27559170	2.3386144	20	11 8.9	18.9
146286 2001 FR ₁₅₅	16.5	X	18.06598	175.58696	78.89914	3.31464	0.1740127	0.26827253	2.3809590	20	7 22.6	18.4
146287 2001 FS ₁₈₀	16.5	X	52.85658	168.95448	103.14054	3.01201	0.2212626	0.27180440	2.3602883	20	10 23.0	19.6
146288 2001 GC	15.9	X	344.19908	198.84066	91.35041	16.06074	0.2520193	0.26358425	2.4091088	20	6 26.2	17.1
146289 2001 GH ₁	15.2	X	101.69757	187.96867	61.60914	22.58534	0.1977468	0.28330821	2.2959545	20	12 17.1	18.8
146290 2001 HE ₉	16.4	X	188.49605	191.53799	74.99979	5.37919	0.1346991	0.29019830	2.2594677	20	—	—
146291 2001 HT ₁₂	16.4	X	297.07018	62.49572	115.13440	1.99085	0.1464305	0.29618703	2.2289074	20	—	—
146292 2001 HZ ₁₃	16.1	X	16.74810	95.76612	260.33367	4.78670	0.1577814	0.27908852	2.3190391	20	12 19.0	18.6
146293 2001 HC ₂₂	16.2	X	39.13229	72.87830	206.30061	6.25868	0.1139922	0.27079571	2.3661460	20	9 24.7	19.0
146294 2001 HP ₃₀	16.7	X	293.19429	342.08478	103.90260	7.33957	0.0648031	0.28046153	2.3114643	20	12 1.9	19.1
146295 2001 HA ₄₃	17.1	X	115.43112	173.10832	67.26818	1.87132	0.1877070	0.27741483	2.3283572	20	11 9.1	20.7
146296 2001 HW ₅₂	16.4	X	50.84925	189.09223	77.63797	3.37629	0.1860868	0.26988837	2.3714462	20	10 8.3	19.3
146297 2001 HY ₅₂	16.1	X	68.51173	208.53506	64.54137	7.09117	0.1220063	0.27389449	2.3482654	20	10 30.3	19.2
146298 2001 HR ₆₅	16.6	X	101.01075	237.71148	17.24698	2.41377	0.1362795	0.27628591	2.3346954	20	11 10.6	20.0
146299 2001 JR	15.8	X	16.93070	149.80505	114.74272	6.91417	0.1546884	0.26547211	2.3976739	20	8 2.5	17.9
146300 2001 JM ₅	16.1	X	1.01380	212.17330	78.71398	4.41458	0.1822911	0.26522927	2.3991372	20	8 15.9	18.0
146301 2001 KN	16.4	X	14.41661	127.89016	203.75071	1.63251	0.2544291	0.27084435	2.3658627	20	11 25.8	19.0
146302 2001 KK ₃	16.3	X	70.87681	175.48934	48.81600	2.18627	0.1371458	0.26789686	2.3831843	20	8 28.4	19.4
146303 2001 KY ₅	16.8	X	151.11972	185.73197	65.72387	7.31217	0.1538883	0.28248152	2.3004318	20	12 25.5	20.4
146304 2001 KT ₁₅	16.9	X	263.86795	90.45883	152.37176	2.95431	0.1687262	0.29728476	2.2234171	20	—	—
146305 2001 KC ₁₉	15.8	X	61.50405	221.07450	81.21012	7.15151	0.1269013	0.27823065	2.3238035	20	11 29.6	18.8
146306 2001 KM ₁₉	16.3	X	10.63357	259.56047	71.18847	3.38493	0.2268064	0.26964651	2.3728640	20	11 13.5	18.6
146307 2001 KK ₂₁	16.2	X	238.35198	336.60107	207.57402	24.75305	0.1528840	0.28578125	2.2826898	20	—	—
146308 2001 KJ ₂₈	15.7	X	165.32331	245.34865	92.81207	6.39056	0.3007354	0.24045088	2.5612490	20	2 4.2	20.2
146309 2001 KD ₃₀	15.9	X	221.49720	306.91206	62.41825	10.04942	0.0958844	0.25652925	2.4530786	20	4 29.1	19.5
146310 2001 KC ₃₇	15.6	X	330.99344	199.36275	88.30991	8.19005	0.1146606	0.25966080	2.4333157	20	6 3.3	18.0
146311 2001 KS ₃₇	16.5	X	83.59657	200.47390	95.52820	7.43033	0.1374107	0.27767429	2.3269065	20	12 15.9	20.0
146312 2001 KU ₅₁	15.8	X	319.39139	272.87152	86.19090	6.52073	0.1085380	0.26975972	2.3722001	20	9 6.6	18.2
146313 2001 KM ₅₂	16.7	X	275.23537	321.45145	241.55631	7.56252	0.1378998	0.29595255	2.2300845	20	—	—
146314 2001 KO ₅₄	16.6	X	92.82238	133.09046	110.0							

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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>
146321 2001 LA ₆	15.3	X	276.60306	237.52664	135.69569	12.19068	0.2482579	0.26135040	2.4228170	20	6 17.9	18.7
146322 2001 LM ₁₇	15.3	X	178.73700	199.52842	124.24557	15.58227	0.1679726	0.23671314	2.5881402	20	1 20.9	19.5
146323 2001 LX ₁₈	14.6	X	146.16561	66.75983	265.30830	11.81888	0.2136998	0.23200959	2.6230029	20	1 4.7	18.6
146324 2001 LY ₁₈	15.1	X	184.30295	100.68264	254.12567	11.47300	0.1637921	0.24043001	2.5613972	20	2 26.0	19.5
146325 2001 MB ₂₈	16.4	X	46.03915	9.16112	239.01685	3.56353	0.2712500	0.26375903	2.4080444	20	9 15.1	19.4
146326 2001 NL ₃	15.4	X	12.17227	267.22446	126.01501	13.36865	0.2115717	0.22089776	2.7102447	20	—	—
146327 2001 NM ₄	16.5	X	114.83097	91.93684	109.79490	2.95335	0.1037409	0.26545310	2.3977884	20	9 15.2	19.9
146328 2001 NV ₆	16.5	X	321.98428	230.57157	104.53042	7.16771	0.1907944	0.25930854	2.4355189	20	7 21.9	18.3
146329 2001 NJ ₈	16.3	X	99.56696	277.81222	282.99421	4.69770	0.0768483	0.26240798	2.4163028	20	8 20.4	19.5
146330 2001 NK ₁₇	16.4	X	81.37124	175.62339	71.15421	10.39190	0.1802086	0.26735734	2.3863894	20	10 18.6	20.0
146331 2001 NO ₂₀	15.8	X	144.86547	100.85394	274.68731	12.77123	0.1108375	0.23645401	2.5900308	20	2 10.2	19.8
146332 2001 OL	15.4	X	154.41468	50.85481	350.52407	2.71110	0.2307974	0.24222114	2.5487546	20	4 4.8	19.6
146333 2001 OE ₁	15.8	X	176.82075	99.99068	234.35224	2.13299	0.2627984	0.23737449	2.5833308	20	2 4.4	20.3
146334 2001 OL ₁₀	16.4	X	185.78264	141.98473	110.57854	6.95260	0.0968884	0.28272442	2.2991140	20	—	—
146335 2001 OK ₁₁	15.9	X	17.89667	268.98934	79.02291	5.83131	0.1686414	0.21650966	2.7467420	20	11 24.9	19.2
146336 2001 OK ₁₃	16.0	X	212.94498	243.08005	102.50317	3.52091	0.3334033	0.24183831	2.5514437	20	3 15.0	20.7
146337 2001 OL ₁₄	14.6	X	92.62055	47.63435	323.03903	12.21199	0.2773546	0.22623477	2.6674512	20	1 3.8	17.9
146338 2001 OH ₃₇	15.6	X	147.19168	347.43955	49.67263	9.90748	0.1834420	0.24008822	2.5638276	20	3 26.1	19.7
146339 2001 OY ₄₆	16.3	X	223.02810	109.76458	229.89350	1.96012	0.1956548	0.24493107	2.5299200	20	3 16.3	20.5
146340 2001 OF ₅₁	15.0	X	90.32770	236.12944	105.19928	14.13296	0.2614304	0.22522572	2.6754124	20	—	—
146341 2001 OS ₅₃	15.5	X	105.06520	302.77199	113.36589	16.42951	0.2120291	0.23319825	2.6140819	20	3 11.3	19.3
146342 2001 OZ ₅₉	16.2	X	145.74040	233.13887	150.78455	3.48007	0.0719506	0.24148310	2.5539511	20	2 21.9	19.5
146343 2001 OD ₆₂	15.7	X	43.59549	322.98895	316.03592	22.22387	0.0814780	0.26349588	2.4096474	20	9 13.3	19.1
146344 2001 OF ₆₈	15.5	X	136.04175	203.37662	124.05780	13.05542	0.1898496	0.22951697	2.6419596	20	—	—
146345 2001 OJ ₇₃	14.9	X	155.23049	271.39940	344.29381	25.14679	0.2498503	0.27577659	2.3375691	20	—	—
146346 2001 OS ₈₅	15.6	X	118.01188	92.83174	269.15883	10.23109	0.2099409	0.23122750	2.6289141	20	1 11.4	19.3
146347 2001 OH ₈₇	16.2	X	142.65017	260.43882	105.34991	5.07094	0.2439212	0.23297861	2.6157246	20	2 15.5	20.4
146348 2001 OF ₉₃	15.7	X	129.27022	353.13359	21.75111	5.70723	0.1976317	0.23457205	2.6038654	20	2 9.9	19.6
146349 2001 OX ₉₆	15.6	X	137.46184	247.46655	91.40532	5.90280	0.1573033	0.23132032	2.6282108	20	—	—
146350 2001 OC ₉₇	15.7	X	246.78133	267.06658	27.93902	3.22543	0.1472813	0.24256862	2.5463199	20	2 17.4	19.6
146351 2001 OH ₉₇	16.0	X	226.44911	277.67704	80.43069	4.65032	0.2910876	0.24581041	2.5238829	20	4 9.2	20.5
146352 2001 OG ₁₀₃	16.2	X	320.21482	28.33328	288.74508	4.91176	0.1978703	0.25585874	2.4573624	20	6 16.1	18.4
146353 2001 OK ₁₀₃	15.4	X	112.86230	132.36062	251.02141	10.83208	0.2033844	0.23159418	2.6261385	20	1 28.6	19.2
146354 2001 OK ₁₀₆	15.5	X	146.43450	101.65321	308.43448	9.09257	0.1864703	0.23852567	2.5750123	20	4 1.6	19.7
146355 2001 OL ₁₀₆	15.1	X	24.24326	58.33591	316.71115	12.41152	0.2042917	0.21652020	2.7466528	20	—	—
146356 2001 OB ₁₀₇	15.2	X	348.46700	107.20683	299.59745	6.36334	0.3157426	0.21276674	2.7788615	20	—	—
146357 2001 OH ₁₀₇	14.9	X	137.07565	46.41844	335.81551	15.18829	0.2050779	0.23254855	2.6189485	20	2 25.4	18.9
146358 2001 OD ₁₁₃	15.4	X	17.26674	202.14001	234.44195	15.39424	0.3166681	0.22305202	2.6927660	20	—	—
146359 2001 PG ₄	15.6	X	106.03086	319.94397	49.52603	4.46474	0.2330762	0.23090747	2.6313426	20	1 11.5	19.1
146360 2001 PM ₄	15.3	X	10.28078	179.69920	255.83466	21.14663	0.1279316	0.22386418	2.6862492	20	—	—
146361 2001 PL ₅	15.9	X	130.03391	250.71303	97.27924	9.56572	0.1175470	0.23115711	2.6294477	20	—	—
146362 2001 PR ₁₃	16.0	X	97.23904	87.53103	263.99761	2.32959	0.0877397	0.22734434	2.6587650	20	—	—
146363 2001 PA ₂₆	16.5	X	203.37270	212.62411	111.00737	4.67020	0.2229686	0.23850399	2.5751683	20	2 12.3	20.9
146364 2001 PB ₂₆	16.4	X	188.59211	323.40879	356.72436	2.83145	0.1650981	0.23558342	2.5964078	20	1 26.1	20.5
146365 2001 PC ₃₂	15.8	X	152.64830	305.72346	50.23044	8.25355	0.2129632	0.23501401	2.6005999	20	2 11.9	20.1
146366 2001 PT ₄₀	15.7	X	125.03783	63.16984	284.27474	7.02406	0.0944058	0.22848397	2.6499167	20	—	—
146367 2001 PO ₄₂	15.7	X	77.14023	266.60517	111.87119	15.69962	0.1251685	0.22624541	2.6673675	20	—	—
146368 2001 PZ ₄₅	15.7	X	116.32762	322.21452	83.36633	16.78670	0.1453842	0.23534102	2.5981903	20	3 3.9	19.7
146369 2001 PD ₅₀	16.3	X	244.65503	272.73778	96.33193	4.97342	0.0878988	0.25115436	2.4879534	20	5 25.4	19.7
146370 2001 PE ₅₈	16.0	X	198.65286	237.75733	75.31381	3.23340	0.1139363	0.23607117	2.5928302	20	1 25.4	19.9
146371 2001 PF ₆₂	16.4	X	245.03221	123.74533	205.19229	2.91224	0.1608999	0.24518275	2.5281884	20	3 25.6	20.2
146372 2001 QE ₂	15.7	X	197.23904	91.98312	242.45222	6.02807	0.2106892	0.23879442	2.5730799	20	2 16.6	20.2
146373 2001 QM ₃	15.6	X	182.84692	163.75913	137.99762	14.47235	0.0922245	0.23398531	2.6082166	20	—	—
146374 2001 QG ₄	16.8	X	337.35637	182.24723	126.67344	2.19497	0.1840689	0.25749580	2.4469360	20	7 14.8	18.6
146375 2001 QZ ₁₁	16.4	X	186.62710	11.36060	332.85394	1.16007	0.2151686	0.23803992	2.5785142	20	2 22.5	20.6
146376 2001 QJ ₁₂	15.7	X	31.52339	98.87412	327.42740	5.22782	0.3015622	0.22260324	2.6963840	20	—	—
146377 2001 QF ₁₆	15.7	X	160.66391	320.58689	54.34912	4.46726	0.2363529	0.23759597	2.5817251	20	3 12.3	20.0
146378 2001 QN ₃₂	14.5	X	38.03734	49.79261	334.36761	16.55827	0.2253376	0.22298022	2.6933440	20	—	—
146379 2001 QS ₃₉	16.0	X	189.47095	334.67658	340.41554	1.14603	0.1961364	0.23745347	2.5827579	20	1 21.3	20.4
146380 2001 QV ₅₀	15.4	X	148.27937	282.09109	54.26698	4.71243	0.1658467	0.23301699	2.6154374	20	1 8.3	19.3
146381 2001 QC ₅₂	16.1	X	142.34890	358.56693	17.00041	3.85853	0.1945164	0.23605891	2.5929200	20	2 22.4	20.0
146382 2001 QS ₅₂	16.0	X	184.89197	299.69843	10.20124	3.93965	0.1417538	0.23513408	2.5997145	20	1 9.7	20.1
146383 2001 QD ₅₈	16.2	X	180.58383	272.12502	63.00658	4.40318	0.2402173	0.23599912	2.5933579	20	2 9.8	20.7
146384 2001 QF ₅₉	15.2	X	348.15555	117.16973	314.54731	10.65850	0.2136950	0.21652741	2.7465919	20	—	—
146385 2001 QY ₆₂	15.1	X	57.91358	104.07632	334.61685	11.11711	0.1756520	0.22930199	2.6436107	20	1 20.9	17.9
146386 2001 QO ₇₀	15.2	X	15.39179	14.50978	327.67181	8.97951	0.1724961	0.21168054	2.7883594	20	11 8.4	18.7
146387 2001 QX ₇₆	15.3	X	171.02439	73.74466	307.27249	2.45974	0.1601722	0.23446461	2.6046609	20	3 21.8	19.6
146388 2001 QG ₈₂	15.2	X	79.03165	79.27938	319.95664	9.89152	0.1106798	0.22557518	2.6726485	20	—	—
146389 2001 QM ₈₂	15.8	X	240.55193	17.25782	309.17103	9.07742	0.2573351	0.24263158	2.5458795	20	3 9.1	20.3
146390 2001 QJ ₈₇	15.7	X	208.12955	45.14331	244.70798	9.78185	0.1134215	0.23343066	2.6123465	20	1 5.0	19.8
146391 2001 QB ₁₀₂	14.9	X	49.30639	69.43760	9.64514	12.69992	0.1382725	0.22457401	2.6805859	20	1 2.2	18.1
146392 2001 QJ ₁₁₄	15.5	X	162.21537	48.33506	317.43785	14.05530	0.1121933	0.23665979	2.5885292	20	2 19.5	19.5
146393 2001 QO ₁₁₉	15.8	X	107.86815	224.98155	129.13806	5.71276	0.1690294	0.22745635	2.5778920	20	—	—
146394 2001 QH ₁₃₃	15.6	X	69.43358	119.85999	273.63754	7.67762</						

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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>
146401 2001 QK ₁₆₄	16.0	X	81.56680	321.97836	77.28608	8.93688	0.1918476	0.23053119	2.6342051	20	1 8.2	18.9
146402 2001 QV ₁₆₄	16.3	X	184.72705	303.35448	73.87427	3.93239	0.1764898	0.24280643	2.5446571	20	4 1.4	20.4
146403 2001 QA ₁₆₆	15.8	X	68.47031	279.41395	115.04304	10.03683	0.1030987	0.22799190	2.6537282	20	—	—
146404 2001 QZ ₁₈₀	15.6	X	112.32633	178.74691	197.38614	9.29534	0.1121099	0.23072828	2.6327048	20	1 8.0	19.3
146405 2001 QJ ₁₈₅	15.7	X	225.54958	56.55047	259.07092	6.43711	0.1752007	0.24000538	2.5644175	20	2 17.6	20.0
146406 2001 QU ₁₈₉	15.7	X	48.19137	136.45376	259.95391	13.86889	0.1246073	0.22336646	2.6902382	20	—	—
146407 2001 QK ₁₉₀	15.4	X	106.93535	76.56038	267.85629	13.58705	0.1200656	0.22570280	2.6716409	20	—	—
146408 2001 QC ₁₉₂	15.7	X	295.97254	342.84437	263.77877	13.73350	0.0560740	0.23901316	2.5715097	20	2 15.2	19.4
146409 2001 QO ₁₉₃	15.6	X	194.29844	8.45421	266.84760	12.44304	0.2346112	0.23015877	2.6370460	20	—	—
146410 2001 QU ₁₉₃	15.2	X	97.23275	193.57511	278.01077	11.90349	0.1365373	0.23860868	2.5744150	20	4 21.4	18.9
146411 2001 QF ₁₉₄	15.2	X	123.65485	99.38626	297.88754	12.41774	0.1455098	0.23242514	2.6198755	20	2 19.1	19.1
146412 2001 QU ₁₉₆	15.0	X	342.67414	160.89754	291.74527	14.24461	0.1580412	0.21836132	2.7311921	20	—	—
146413 2001 QM ₁₉₇	14.9	X	2.82938	25.59885	298.04351	14.39765	0.1402884	0.20513918	2.8473245	20	9 12.1	18.4
146414 2001 QV ₁₉₇	15.0	X	23.51132	145.82725	224.62184	11.61728	0.1617058	0.21248890	2.7812832	20	12 27.6	18.8
146415 2001 QS ₁₉₉	14.8	X	305.98469	91.76827	7.08109	13.49089	0.1071754	0.21136651	2.7911206	20	12 14.2	18.4
146416 2001 QC ₂₁₅	16.5	X	148.62851	315.17460	49.93533	1.45779	0.1643183	0.23404472	2.6077752	20	2 12.4	20.3
146417 2001 QK ₂₁₇	16.1	X	190.14449	223.39305	124.89820	2.80070	0.2310681	0.23854507	2.5748726	20	3 2.1	20.4
146418 2001 QG ₂₁₉	16.4	X	143.53187	81.71207	286.99165	1.30949	0.1298181	0.23519527	2.5992636	20	2 7.1	20.2
146419 2001 QP ₂₁₉	15.4	X	69.07879	157.83400	275.61561	14.13709	0.1037443	0.22687004	2.6624694	20	1 19.8	18.7
146420 2001 QA ₂₂₀	15.2	X	145.03052	137.97912	313.44534	14.37678	0.0730759	0.24037533	2.5617856	20	5 14.9	19.2
146421 2001 QP ₂₂₀	15.6	X	273.01336	309.25825	297.88368	14.41546	0.1087323	0.24007530	2.5639195	20	1 18.9	19.3
146422 2001 QK ₂₂₄	16.6	X	25.03635	265.32678	20.45860	1.20744	0.1610483	0.26286664	2.4134913	20	9 20.0	18.9
146423 2001 QK ₂₂₈	15.4	X	45.74941	234.99665	195.59595	14.32101	0.0731802	0.22890641	2.6466555	20	—	—
146424 2001 QO ₂₃₁	15.5	X	71.11862	108.55900	308.82803	12.36386	0.1873607	0.22909374	2.6452125	20	1 15.7	18.2
146425 2001 QQ ₂₄₀	15.1	X	64.70706	165.32420	358.40100	14.59747	0.1089158	0.24486695	2.5303617	20	5 11.4	18.4
146426 2001 QF ₂₄₅	15.4	X	349.33981	238.06249	172.58608	15.52691	0.1508927	0.21409671	2.7673413	20	12 28.0	18.9
146427 2001 QG ₂₄₇	15.9	X	15.76622	317.49484	52.42223	1.88185	0.2116106	0.21259994	2.7803147	20	12 25.1	19.3
146428 2001 QK ₂₅₈	15.9	X	216.51463	252.33468	89.05149	7.64238	0.1786549	0.24249124	2.5468616	20	3 18.4	20.1
146429 2001 QO ₂₅₈	16.1	X	17.15631	114.32140	228.95258	6.99006	0.1994246	0.21199366	2.7856131	20	11 20.7	19.3
146430 2001 QR ₂₅₉	15.9	X	170.85881	117.58238	287.98102	7.45249	0.0892244	0.24152660	2.5536385	20	4 15.7	19.8
146431 2001 QT ₂₆₇	15.6	X	28.32618	81.74564	319.50571	11.90884	0.1128765	0.22201556	2.7011401	20	—	—
146432 2001 QW ₂₆₉	15.7	X	179.95971	10.71481	341.72336	5.23007	0.1407977	0.24091464	2.5579610	20	2 24.3	19.6
146433 2001 QX ₂₇₄	15.6	X	332.58778	258.12977	98.45703	8.92100	0.1822719	0.20847032	2.8169116	20	9 15.3	18.5
146434 2001 QM ₂₇₅	15.9	X	129.24815	97.83560	269.34087	14.85159	0.2256749	0.23102819	2.6304259	20	1 28.5	20.1
146435 2001 QU ₂₇₈	15.4	X	51.76346	281.64053	115.14504	13.60276	0.1423321	0.22476795	2.6790437	20	—	—
146436 2001 QC ₂₈₀	16.3	X	190.48178	265.00130	76.73574	5.19843	0.2430145	0.23810217	2.5780647	20	2 25.4	20.8
146437 2001 QK ₂₈₂	15.0	X	37.64367	249.89024	99.28922	15.01218	0.1981432	0.21418467	2.7665836	20	12 25.9	18.9
146438 2001 QO ₂₈₃	15.2	X	80.03222	122.19533	265.70004	11.42706	0.1655530	0.22839655	2.6505928	20	—	—
146439 2001 QD ₂₈₄	15.7	X	129.17692	257.54655	104.39986	12.96587	0.0898253	0.23187369	2.6240276	20	1 9.2	19.3
146440 2001 QH ₂₈₄	16.3	X	135.14949	145.64637	182.81703	1.84245	0.0863360	0.22769955	2.6559992	20	—	—
146441 2001 QQ ₂₉₁	15.0	X	175.70411	291.49661	1.08721	24.08161	0.0889665	0.27900087	2.3195248	20	—	—
146442 2001 Dwaynebrown	16.5	X	195.46990	346.88696	163.61043	2.20799	0.1307902	0.26191170	2.4193542	20	10 1.8	19.9
146443 2001 QQ ₃₃₃	15.8	X	111.83737	183.78417	282.10439	10.33732	0.1123473	0.23999294	2.5645061	20	4 29.7	19.6
146444 2001 RB	15.3	X	122.30444	68.41414	330.55391	10.60972	0.3083311	0.22937719	2.6430329	20	3 11.1	19.7
146445 2001 RC ₁	15.9	X	103.70638	145.71617	215.44325	1.52632	0.1238532	0.22784752	2.6548491	20	—	—
146446 2001 RA ₃	15.9	X	135.86183	124.31687	267.17450	9.03329	0.1826775	0.23550863	2.5969574	20	2 28.4	20.1
146447 2001 RU ₈	16.5	X	90.27296	328.26066	282.48992	4.32357	0.2007087	0.26647675	2.3916438	20	10 27.8	20.4
146448 2001 RQ ₁₄	16.7	X	163.74796	140.89696	160.52147	2.63470	0.0602938	0.22822931	2.6518875	20	—	—
146449 2001 RC ₂₂	15.7	X	241.52905	205.47675	259.15123	1.55082	0.1751109	0.26113496	2.4241494	20	9 17.0	19.0
146450 2001 RE ₂₆	15.8	X	50.49788	264.03996	147.31155	6.10725	0.1181797	0.22600143	2.6692869	20	—	—
146451 2001 RP ₂₆	15.3	X	60.52350	38.89696	2.02871	6.04246	0.2022255	0.22501959	2.6770459	20	—	—
146452 2001 RQ ₂₇	15.7	X	41.50696	262.28288	143.97044	2.78136	0.1643686	0.22270157	2.6955902	20	—	—
146453 2001 RC ₂₈	15.2	X	62.29078	285.92503	168.02785	5.42659	0.2670898	0.23203113	2.6228405	20	3 1.2	17.7
146454 2001 RE ₂₉	16.4	X	84.77810	242.29471	150.04472	2.64353	0.0905630	0.22875165	2.6478490	20	—	—
146455 2001 RD ₃₁	15.6	X	50.31550	272.11489	160.88715	22.21938	0.0453174	0.23014956	2.6371163	20	—	—
146456 2001 RP ₃₄	15.4	X	352.63833	271.89674	181.93387	10.52648	0.1229075	0.22454330	2.6808302	20	—	—
146457 2001 RH ₃₇	15.6	X	64.48277	277.80851	170.73667	17.18045	0.1040899	0.23450339	2.6043737	20	1 31.6	19.0
146458 2001 RH ₃₈	15.5	X	346.29777	106.61484	350.33360	12.33724	0.2586045	0.21964968	2.7205017	20	—	—
146459 2001 RJ ₃₉	16.2	X	53.77578	117.04187	351.33301	4.54471	0.2349907	0.23206999	2.6225477	20	2 29.6	18.6
146460 2001 RR ₅₁	15.7	X	268.35986	286.48471	295.24406	12.00700	0.0453640	0.23212055	2.6221668	20	—	—
146461 2001 RJ ₅₆	16.3	X	70.92907	309.70134	133.60804	1.82946	0.1447106	0.23203159	2.6228370	20	2 12.0	19.0
146462 2001 RX ₅₈	16.2	X	34.31518	289.22271	109.50396	3.56042	0.1866456	0.22025671	2.7155009	20	—	—
146463 2001 RM ₅₉	15.4	X	93.81869	75.62155	15.25376	12.38267	0.1671652	0.23559127	2.5963501	20	3 30.6	18.8
146464 2001 RC ₆₁	15.4	X	0.52178	22.37254	110.14447	6.44416	0.1492158	0.22804780	2.6532945	20	—	—
146465 2001 RJ ₆₁	15.4	X	31.67459	336.43914	92.88530	5.79311	0.1487586	0.22331275	2.6906696	20	—	—
146466 2001 RY ₆₂	15.6	X	33.89794	23.70971	38.65187	7.80912	0.1327783	0.22195904	2.7015986	20	—	—
146467 2001 RX ₆₃	15.4	X	59.27096	215.08369	331.02938	13.75977	0.2323150	0.22987040	2.6392509	20	2 1.7	18.3
146468 2001 RG ₆₅	15.9	X	333.71802	133.29829	321.75126	8.49812	0.1458044	0.21764731	2.7371621	20	—	—
146469 2001 RR ₇₅	15.5	X	332.34107	309.78573	114.93658	2.98513	0.2305093	0.21045033	2.7992154	20	12 21.4	17.9
146470 2001 RM ₇₈	15.2	X	11.75810	334.10320	12.65380	9.74728	0.1954573	0.20924151	2.8099859	20	11 12.3	18.5
146471 2001 RY ₇₈	15.1	X	32.20805	337.00802	78.69912	11.09179	0.1845155	0.21697120	2.7428453	20	—	—
146472 2001 RO ₇₉	15.3	X	342.00814	355.60268	49.10211	9.04563	0.1901594	0.20910226	2.8112333	20	12 8.3	18.1
146473 2001 RD ₈₁	15.5	X	243.25289	341.84304	280.48392	14.47817	0.1143622	0.23613893	2.5923342	20	1 6.4	19.4
146474 2001 RC ₈₃	15.7	X	29.66893	333.26892	197.01114	8.71210						

ELEMENTS AND OPPOSITION DATES IN 2020

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Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>
146481 2001 RC ₁₂₃	16.8 ^m	X	55.87793	19.59480	9.26881	3.80195	0.1161103	0.22303140	2.6929319	20	—	—
146482 2001 RR ₁₂₇	16.5	X	125.25060	147.24999	148.70882	6.64241	0.1227261	0.27489102	2.3425867	20	—	—
146483 2001 RF ₁₂₉	15.0	X	294.45580	102.03159	8.69177	9.67678	0.1422479	0.21583578	2.7524563	20	12 9.7	18.2
146484 2001 RX ₁₃₆	15.5	X	146.75892	358.39910	14.94487	15.30412	0.0328222	0.23400776	2.6080498	20	2 12.9	19.3
146485 2001 RJ ₁₄₄	16.2	X	97.63762	152.57984	299.72399	4.99372	0.1478521	0.23763484	2.5814436	20	3 30.8	19.8
146486 2001 RY ₁₅₀	15.7	X	90.92520	332.54378	114.83192	6.39223	0.2353068	0.23286525	2.6165734	20	4 4.3	19.2
146487 2001 RQ ₁₅₁	16.1	X	247.44735	215.08614	128.51667	10.29572	0.1722962	0.24546116	2.5262764	20	4 19.7	20.1
146488 2001 RP ₁₅₃	16.3	X	36.15578	354.91099	261.64047	4.72927	0.1061959	0.25683706	2.4511182	20	8 13.8	19.1
146489 2001 SW ₂	15.7	X	35.87539	318.87105	41.48166	4.38417	0.1898245	0.21470286	2.7621303	20	—	—
146490 2001 SB ₁₁	15.5	X	0.46397	255.43412	225.95052	9.72700	0.1432262	0.22799855	2.6536766	20	—	—
146491 2001 SG ₁₄	15.9	X	61.28681	14.57564	164.38945	2.65084	0.0784541	0.24638215	2.5199769	20	5 29.8	19.0
146492 2001 SE ₂₀	16.1	X	182.72108	246.36971	90.52090	5.31621	0.1542638	0.23404402	2.6077804	20	2 10.4	20.3
146493 2001 SF ₂₁	15.7	X	51.74705	8.89715	69.48376	4.76077	0.0583991	0.22713079	2.6604313	20	—	—
146494 2001 SO ₂₂	16.0	X	33.92986	105.30432	329.61623	2.68107	0.1838034	0.22359379	2.6884145	20	—	—
146495 2001 SD ₂₅	16.3	X	109.45417	358.42225	359.40617	1.75958	0.1063830	0.22606274	2.6688043	20	—	—
146496 2001 SL ₂₇	16.2	X	78.52873	298.10726	151.08001	1.20247	0.0364705	0.23385446	2.6091894	20	2 16.1	19.5
146497 2001 SM ₂₈	16.5	X	229.30504	263.78267	73.07346	1.93769	0.0906348	0.24092908	2.5578588	20	3 26.4	20.2
146498 2001 SK ₃₀	15.8	X	18.90678	151.05661	22.52103	3.47022	0.0394100	0.23763235	2.5814616	20	3 15.5	18.8
146499 2001 SP ₃₆	15.5	X	51.07996	65.31028	14.74538	12.95438	0.2482847	0.22479492	2.6788294	20	1 19.5	18.1
146500 2001 SI ₃₇	16.1	X	141.32950	277.71512	78.94574	2.24324	0.1263458	0.22987035	2.6392513	20	1 21.9	20.0
146501 2001 SD ₄₁	15.6	X	93.68224	86.68975	349.04397	14.48195	0.0924951	0.23453012	2.6041758	20	2 29.1	19.0
146502 2001 SF ₄₁	15.7	X	34.04368	195.62897	334.04309	5.41108	0.0723869	0.24091882	2.5579314	20	3 31.5	18.8
146503 2001 SJ ₄₂	16.0	X	227.11676	245.80835	99.33565	2.32254	0.1991537	0.24263068	2.5458857	20	3 28.5	20.2
146504 2001 SH ₄₅	15.5	X	58.50898	321.47400	131.16386	5.60027	0.1593168	0.22932473	2.6434360	20	2 6.2	18.2
146505 2001 SY ₅₂	16.3	X	356.80273	291.02263	138.76662	2.75737	0.1463312	0.21639474	2.7477143	20	—	—
146506 2001 SF ₅₆	15.7	X	15.80006	283.13883	177.74647	13.33583	0.2869971	0.22071584	2.7117337	20	—	—
146507 2001 SP ₅₈	15.2	X	86.31126	134.00095	181.70892	4.56163	0.1158561	0.21576775	2.7530348	20	12 27.9	19.3
146508 2001 SH ₆₅	15.2	X	299.18967	295.04273	197.36651	11.61824	0.1283393	0.21525085	2.7574404	20	—	—
146509 2001 SY ₇₄	15.4	X	328.88235	85.43706	359.75371	12.25108	0.1288550	0.21442527	2.7645137	20	—	—
146510 2001 SE ₈₁	16.0	X	50.40169	120.76714	293.42133	3.88023	0.1079775	0.22741340	2.6582267	20	—	—
146511 2001 SE ₈₁	16.0	X	98.69941	226.12006	199.71528	3.89909	0.2333491	0.23407613	2.6075419	20	3 12.3	19.4
146512 2001 SM ₉₂	17.1	X	237.07165	321.29893	333.74101	3.17433	0.1015769	0.23832094	2.5764868	20	2 10.2	21.0
146513 2001 SA ₉₈	15.8	X	56.15198	102.71744	247.37642	4.09180	0.0645844	0.21750583	2.7383489	20	12 31.2	19.6
146514 2001 SX ₁₁₈	16.1	X	282.30611	18.27253	236.44745	4.34210	0.2290477	0.24138184	2.5546593	20	1 23.7	20.0
146515 2001 SJ ₁₂₄	16.0	X	348.42402	329.80843	209.22874	3.42029	0.0341114	0.23689389	2.5868236	20	2 6.4	19.3
146516 2001 SD ₁₃₃	15.5	X	32.73791	89.65238	352.67161	13.31734	0.1580730	0.22472503	2.6793847	20	—	—
146517 2001 SL ₁₃₅	15.7	X	350.64212	60.22249	0.98726	11.08194	0.1002746	0.21662430	2.7457728	20	—	—
146518 2001 SI ₁₃₉	15.9	X	74.90803	16.07301	346.27582	1.73725	0.0752873	0.22119667	2.7078025	20	—	—
146519 2001 ST ₁₄₂	16.3	X	117.79863	61.14296	253.84847	3.39552	0.1386689	0.22302990	2.6929440	20	—	—
146520 2001 SM ₁₄₃	16.0	X	346.54507	224.53876	220.37482	3.66318	0.2876146	0.21675778	2.7446455	20	—	—
146521 2001 SX ₁₄₅	16.5	X	104.41078	44.30865	321.50606	3.64977	0.1214350	0.22665456	2.6641566	20	—	—
146522 2001 SC ₁₄₉	15.5	X	17.74899	117.20672	285.00934	3.28100	0.1011352	0.21793728	2.7347337	20	—	—
146523 2001 SP ₁₄₉	16.1	X	238.32127	12.95857	285.20478	3.99543	0.2242594	0.23795661	2.5791159	20	2 7.6	20.5
146524 2001 SY ₁₅₄	15.2	X	340.57213	21.08780	6.67949	9.30861	0.1540738	0.2093510	2.8073605	20	11 7.2	18.2
146525 2001 SO ₁₅₅	15.8	X	39.65817	107.70136	334.89688	1.81732	0.0666551	0.22498003	2.6773598	20	—	—
146526 2001 SX ₁₅₆	16.3	X	86.09042	166.82825	247.72886	4.09314	0.1195136	0.22967712	2.6407314	20	1 23.5	19.5
146527 2001 SX ₁₅₈	15.6	X	341.66279	242.83383	212.33565	11.95160	0.1018952	0.21909180	2.7251179	20	—	—
146528 2001 SE ₁₅₉	16.2	X	66.67621	158.38932	227.61009	5.14188	0.0395181	0.22274906	2.6952070	20	—	—
146529 2001 SD ₁₆₁	15.8	X	28.29110	355.75014	4.68253	4.97103	0.1522245	0.21398695	2.7682875	20	12 21.5	19.5
146530 2001 SK ₁₈₀	16.5	X	165.71136	252.49489	81.28640	1.15447	0.0809220	0.23491375	2.6013399	20	1 14.6	20.1
146531 2001 SW ₁₈₇	16.9	X	218.25695	179.38628	97.07793	0.69558	0.1348375	0.23477380	2.6023735	20	—	—
146532 2001 SM ₁₉₁	16.3	X	149.05752	329.25452	12.78370	5.56167	0.0422063	0.23125065	2.6287386	20	1 2.5	19.9
146533 2001 SM ₂₀₈	16.0	X	333.01283	283.09891	150.02318	3.20434	0.0608704	0.21670039	2.7451301	20	12 25.2	19.6
146534 2001 SX ₂₂₃	16.1	X	9.84802	231.92622	166.90853	5.38305	0.068657	0.21634323	2.7481505	20	—	—
146535 2001 SY ₂₂₆	16.3	X	207.10169	207.20084	88.68697	2.89830	0.0410145	0.23100954	2.6305675	20	1 12.3	19.8
146536 2001 SZ ₂₂₆	15.5	X	270.81667	247.20232	123.05721	3.33426	0.0683534	0.19747760	2.9205019	20	6 30.9	19.3
146537 2001 SP ₂₃₁	15.4	X	358.32868	220.37798	72.51091	3.18225	0.0518740	0.19898056	2.9057770	20	7 27.0	19.1
146538 2001 SJ ₂₄₅	15.6	X	14.90436	284.48035	57.76822	9.20713	0.1144440	0.20923849	2.8100130	20	11 4.0	19.1
146539 2001 SG ₂₅₁	16.0	X	81.53477	358.15729	24.37278	4.71808	0.1537308	0.22308359	2.6925119	20	—	—
146540 2001 SQ ₂₅₁	16.1	X	108.27067	251.86049	33.68426	3.59584	0.0777981	0.21378680	2.7700150	20	12 11.1	20.2
146541 2001 SQ ₂₅₆	16.0	X	225.08463	186.24755	54.94772	3.16209	0.0770361	0.22341426	2.6898545	20	—	—
146542 2001 SD ₂₆₆	16.2	X	246.16052	281.17496	35.63801	2.16741	0.1296884	0.23913326	2.5706487	20	3 15.9	20.0
146543 2001 SC ₂₇₇	15.4	X	9.86245	357.04758	42.17593	7.69605	0.1433104	0.21320976	2.7750107	20	—	—
146544 2001 SE ₂₇₇	15.0	X	135.37175	59.82800	300.18337	26.16966	0.0933511	0.22822800	2.6518977	20	1 16.5	18.7
146545 2001 SC ₂₇₈	15.4	X	24.03832	112.14480	283.01819	6.60994	0.1758156	0.21543465	2.7558719	20	—	—
146546 2001 SC ₂₇₉	15.4	X	73.35204	89.64610	230.74533	7.63657	0.1309791	0.21418018	2.7666222	20	12 21.3	19.5
146547 2001 SR ₂₈₂	16.0	X	16.68036	278.62566	103.29025	4.85415	0.1847348	0.21342293	2.7731626	20	—	—
146548 2001 SU ₂₈₅	14.7	X	200.43431	337.33353	85.69435	12.86219	0.1825473	0.24537878	2.5268418	20	6 10.2	18.6
146549 2001 SK ₂₈₇	15.5	X	284.97441	215.47824	336.25642	11.03279	0.0977137	0.22878136	2.6476198	20	—	—
146550 2001 SB ₂₉₂	15.4	X	141.18763	137.77804	270.21863	14.48839	0.1016269	0.23678858	2.5875905	20	3 13.8	19.5
146551 2001 SP ₃₀₁	16.3	X	63.89891	93.99104	304.50540	2.58172	0.0895042	0.22487826	2.6781675	20	—	—
146552 2001 ST ₃₀₃	16.4	X	154.67689	238.58488	311.80360	1.36689	0.1221186	0.26075649	2.4264944	20	10 10.2	20.0
146553 2001 SX ₃₀₄	16.5	X	4.36589	189.74835	206.72927	4.46357	0.0611617	0.21505308	2.7591307	20	12 22.1	20.1
146554 2001 SE ₃₁₅	15.5	X	342.64636	250.64266	132.61087	10.57518	0.2123440	0.22128998	2.7070413	20	—	—
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Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>		
146561	2001	TC ₄	16.1	X	113.48252	131.97740	242.15550	2.36494	0.1718668	0.22718827	2.6599825	20	1 17.2	19.7
146562	2001	TY ₆	16.3	X	171.70193	273.27803	90.33492	6.44048	0.0610105	0.23447993	2.6045474	20	2 28.6	20.1
146563	2001	TB ₇	16.3	X	262.57925	176.57491	110.16285	5.68207	0.1939028	0.23936514	2.5689882	20	2 19.1	20.4
146564	2001	TT ₁₉	15.8	X	4.02585	95.17104	283.74955	7.22470	0.1663087	0.21030388	2.8005147	20	12 11.1	19.0
146565	2001	TU ₂₁	15.5	X	71.37259	18.09151	58.90162	15.02171	0.1039250	0.22906507	2.6454332	20	2 4.3	19.0
146566	2001	TF ₂₉	15.6	X	144.63310	110.13678	323.81282	2.19077	0.0675170	0.23779854	2.5802588	20	4 24.1	19.2
146567	2001	TW ₄₈	15.1	X	49.46454	154.61994	289.76581	20.99723	0.1129369	0.22635727	2.6664887	20	1 6.9	18.0
146568	2001	TW ₅₄	15.8	X	152.91150	172.77117	285.38563	3.28519	0.1861560	0.24366447	2.5386797	20	6 11.9	19.8
146569	2001	TM ₅₉	16.1	X	356.78077	145.37527	40.32866	2.78125	0.0714852	0.23489394	2.6014861	20	2 27.1	19.1
146570	2001	TK ₆₀	15.5	X	324.33034	117.33723	43.81783	3.59013	0.1165389	0.22485054	2.6783876	20	—	—
146571	2001	TR ₆₅	15.3	X	343.95146	236.51556	205.63355	2.36597	0.1575832	0.21458400	2.7631502	20	—	—
146572	2001	TF ₆₈	14.7	X	25.61088	14.42042	44.15825	15.83801	0.0659511	0.21820439	2.7325014	20	—	—
146573	2001	TS ₆₈	16.1	X	316.48355	232.09078	213.66777	3.06916	0.0725128	0.21411711	2.7671655	20	12 16.7	19.6
146574	2001	TR ₆₉	16.0	X	322.83447	139.20494	321.16849	0.78267	0.1903019	0.21459988	2.7630139	20	—	—
146575	2001	TR ₇₄	15.3	X	38.96573	83.96801	44.93808	14.79110	0.0438674	0.23033752	2.6356814	20	2 22.1	18.9
146576	2001	TZ ₇₇	15.4	X	23.03366	321.56250	109.10437	6.32754	0.0530205	0.21873502	2.7280804	20	—	—
146577	2001	TF ₇₈	15.5	X	348.27078	13.06710	55.28446	7.46199	0.0332592	0.21388976	2.7691260	20	—	—
146578	2001	TX ₈₇	16.3	X	71.01009	74.11889	275.75538	4.20851	0.0823748	0.21831748	2.7315577	20	—	—
146579	2001	TF ₈₈	15.7	X	103.26574	28.23535	319.06938	4.41510	0.0653857	0.22259736	2.6964314	20	—	—
146580	2001	TC ₈₉	16.2	X	18.33573	191.62594	151.18686	2.94937	0.1133138	0.23138460	2.6277240	20	2 5.9	19.0
146581	2001	TU ₉₄	16.0	X	60.37492	91.08943	282.40744	4.48289	0.0613129	0.21880821	2.7274720	20	—	—
146582	2001	TA ₉₉	15.6	X	329.01459	243.75644	269.14940	2.46565	0.1033927	0.22580756	2.6708145	20	—	—
146583	2001	TK ₉₉	16.0	X	341.25192	137.96593	260.23932	3.67975	0.0924273	0.21118447	2.7927243	20	11 22.0	19.3
146584	2001	TQ ₁₀₁	16.0	X	307.95996	251.13078	213.36453	4.88832	0.0742124	0.21535595	2.7565432	20	12 28.1	19.3
146585	2001	TY ₁₀₃	15.6	X	26.73363	51.82908	288.46004	4.38663	0.0165259	0.20893061	2.8127729	20	11 2.0	19.5
146586	2001	TE ₁₂₃	15.7	X	357.55297	199.20110	253.54478	10.84749	0.1554690	0.22223982	2.6993227	20	—	—
146587	2001	TJ ₁₂₅	15.4	X	322.58641	198.78896	280.10932	7.88778	0.1189924	0.21799017	2.7342913	20	—	—
146588	2001	TC ₁₂₇	16.1	X	56.01744	149.12779	163.98644	2.21635	0.2239862	0.21077430	2.7963462	20	12 5.2	20.3
146589	2001	TS ₁₃₈	15.7	X	76.39923	348.05921	22.39888	11.88505	0.0859997	0.22466116	2.6798926	20	—	—
146590	2001	TU ₁₄₀	16.3	X	16.02315	279.40733	132.91701	4.88386	0.1627688	0.21908974	2.7251350	20	—	—
146591	2001	TH ₁₄₃	16.0	X	96.84626	299.86562	126.19395	4.17482	0.0448375	0.23252231	2.6191455	20	2 12.6	19.2
146592	2001	TQ ₁₄₃	16.4	X	147.17898	283.16114	68.16855	5.09053	0.0871272	0.23000144	2.6382484	20	1 17.7	20.1
146593	2001	TD ₁₅₃	15.4	X	58.40057	100.20184	71.13211	6.75636	0.1402678	0.24496948	2.5296556	20	5 23.9	18.1
146594	2001	TN ₁₅₃	16.5	X	178.24449	271.54725	88.00647	6.08043	0.0750328	0.23500358	2.6006769	20	3 2.5	20.3
146595	2001	TR ₁₅₇	16.3	X	335.24945	25.38246	151.76280	1.73178	0.1208816	0.22964663	2.6409651	20	1 7.6	19.5
146596	2001	TW ₁₅₉	15.7	X	109.76397	230.11819	242.55960	12.72732	0.1302227	0.23917610	2.5703417	20	5 11.6	19.2
146597	2001	TA ₁₆₀	15.2	X	302.76480	349.29980	123.83282	11.38715	0.1912948	0.21258192	2.7804718	20	12 25.9	18.1
146598	2001	TQ ₁₆₆	15.0	X	291.24035	160.34867	260.42540	14.21175	0.1196565	0.20416003	2.8564211	20	9 21.4	18.9
146599	2001	TK ₁₆₈	15.4	X	1.05326	106.40479	330.01134	8.24271	0.1436874	0.21522554	2.7576565	20	—	—
146600	2001	TJ ₁₆₉	15.7	X	40.61575	48.33603	311.76304	7.14524	0.3048130	0.21359318	2.7716888	20	—	—
146601	2001	TS ₁₇₈	15.8	X	19.20484	160.54814	327.46557	2.91146	0.0456469	0.22888884	2.6467909	20	1 16.3	19.0
146602	2001	TW ₁₈₈	15.2	X	18.32821	47.39720	20.25775	5.85934	0.1200014	0.21755412	2.7379437	20	—	—
146603	2001	TC ₁₉₂	15.0	X	0.37127	26.50067	33.14254	12.70420	0.1411981	0.21279362	2.7786274	20	—	—
146604	2001	TC ₁₉₄	15.7	X	269.23383	299.87272	222.99962	8.00610	0.0588982	0.21727684	2.7402726	20	—	—
146605	2001	TQ ₁₉₄	14.9	X	47.37113	58.50752	30.06803	13.07036	0.1587899	0.22211519	2.7003323	20	1 15.2	18.0
146606	2001	TJ ₁₉₆	15.5	X	114.40906	22.27422	93.13825	12.32376	0.1088406	0.24127379	2.5542219	20	5 21.4	19.2
146607	2001	TD ₁₉₇	15.8	X	203.61599	320.76000	314.03451	3.97190	0.0151036	0.22314061	2.6920532	20	—	—
146608	2001	TQ ₂₀₀	15.8	X	344.57922	303.17587	140.26923	9.30343	0.1417584	0.21715788	2.7412732	20	—	—
146609	2001	TS ₂₀₀	15.5	X	356.52071	331.19837	105.72257	9.48055	0.0818907	0.21903710	2.7255716	20	—	—
146610	2001	TB ₂₀₃	15.5	X	320.08737	22.19661	74.58242	14.10161	0.1400414	0.21449214	2.7639391	20	—	—
146611	2001	TB ₂₀₅	15.4	X	189.35108	233.78538	106.96952	12.82455	0.2970858	0.23643395	2.5901773	20	2 25.7	20.3
146612	2001	TJ ₂₀₈	15.6	X	54.92147	315.90183	129.37316	7.61835	0.1020700	0.22485598	2.6783444	20	1 15.7	18.6
146613	2001	TA ₂₁₁	15.8	X	359.04581	213.73414	239.00214	10.46191	0.1561884	0.22146215	2.7056381	20	—	—
146614	2001	TP ₂₁₁	15.7	X	110.61989	102.65434	271.59808	10.44855	0.1730071	0.22949004	2.6421663	20	1 12.9	19.2
146615	2001	TK ₂₁₂	16.0	X	327.95130	167.17633	287.88600	8.26275	0.2499248	0.21340575	2.7733114	20	—	—
146616	2001	TS ₂₁₃	15.6	X	61.94966	240.00157	265.87491	8.89570	0.0697030	0.23799945	2.5788065	20	4 8.3	19.0
146617	2001	TJ ₂₂₂	15.7	X	0.51295	21.60372	1.15191	5.79625	0.0348203	0.20965506	2.8062896	20	11 23.8	19.5
146618	2001	TV ₂₂₆	15.7	X	186.85540	231.56436	89.84726	14.20427	0.1830411	0.23284782	2.6167040	20	1 27.9	20.1
146619	2001	TD ₂₂₇	15.4	X	20.46463	95.86074	289.09337	10.63541	0.1151161	0.21721952	2.7407546	20	—	—
146620	2001	TK ₂₂₉	15.6	X	119.17005	18.73162	40.20504	15.44344	0.0974052	0.23566622	2.5957996	20	3 17.8	19.4
146621	2001	TX ₂₂₉	15.7	X	283.45764	229.68086	287.91600	3.71991	0.0568451	0.21867020	2.7286195	20	—	—
146622	2001	TC ₂₃₁	16.2	X	280.62670	153.95268	266.37895	1.61505	0.0937597	0.20410921	2.8568953	20	9 15.2	19.9
146623	2001	TB ₂₃₇	15.4	X	61.70033	65.67982	36.10377	15.16458	0.0687670	0.23320597	2.6140242	20	2 21.1	19.0
146624	2001	TR ₂₅₆	16.0	X	79.65583	3.14747	31.12048	12.74444	0.1767101	0.22666662	2.6640621	20	—	—
146625	2001	TC ₂₅₇	15.0	X	246.38719	306.33413	34.44671	11.08325	0.0880356	0.18512753	3.0489857	20	4 21.9	19.3
146626	2001	UN ₃	15.9	X	38.29414	253.50421	112.67488	4.93219	0.0855486	0.21458518	2.7631400	20	12 31.9	19.6
146627	2001	UD ₁₂	13.8	X	169.02701	270.89421	107.73621	26.14732	0.2854766	0.17642703	3.1484198	20	4 6.5	19.9
146628	2001	UJ ₁₂	15.8	X	117.42026	117.17434	296.66653	2.13413	0.0725666	0.23182044	2.6244294	20	2 26.3	19.3
146629	2001	UX ₁₉	15.8	X	54.15909	272.62251	113.51131	6.46329	0.0779527	0.22047606	2.7136995	20	—	—
146630	2001	UU ₂₃	16.1	X	53.30037	106.54803	275.33947	8.19824	0.1418039	0.21874118	2.7280292	20	—	—
146631	2001	UJ												

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>		
146641	2001	US ₇₃	15.6 ^m	X	60.74103	264.62086	67.70345	4.86794	0.1058238	0.21304717	2.7764224	20	12 19.1	19.5
146642	2001	UF ₇₄	15.9	X	4.81024	21.43091	79.21317	4.12499	0.0430815	0.22126912	2.7072114	20	—	—
146643	2001	UZ ₇₄	15.7	X	1.30649	72.37453	57.38660	13.08157	0.1403731	0.22301020	2.6931026	20	—	—
146644	2001	UA ₇₆	14.6	X	314.88285	58.00872	59.19009	15.14053	0.1309349	0.21360368	2.7715979	20	—	—
146645	2001	US ₇₉	16.0	X	80.97537	67.85213	58.09667	2.79086	0.0762420	0.23567491	2.5957358	20	4 14.9	19.2
146646	2001	UZ ₇₉	16.0	X	87.19637	314.68700	70.25356	3.04995	0.0995078	0.22320421	2.6915418	20	—	—
146647	2001	UA ₈₀	16.6	X	107.36650	216.96710	162.12897	2.27268	0.1630378	0.22593682	2.6697958	20	1 14.9	20.0
146648	2001	UM ₈₀	16.1	X	142.52500	289.87164	43.41943	3.80634	0.2159783	0.22635236	2.6665273	20	1 4.9	20.2
146649	2001	UD ₈₉	15.6	X	176.17179	229.80305	97.05074	12.70914	0.1949518	0.23047892	2.6346034	20	1 25.6	20.0
146650	2001	UO ₉₂	15.4	X	91.76124	262.23225	132.84894	3.57249	0.0838395	0.22445590	2.6815261	20	1 3.2	18.7
146651	2001	UD ₉₄	15.5	X	14.18902	241.49837	107.02818	8.43507	0.2416969	0.20912655	2.8110157	20	11 30.2	18.8
146652	2001	UZ ₉₉	15.5	X	89.10311	251.51081	91.28856	4.69016	0.1485423	0.21754726	2.7380012	20	—	—
146653	2001	UD ₁₀₁	16.0	X	265.05956	53.06088	194.37423	2.92433	0.0929466	0.23276523	2.6173229	20	1 12.8	19.7
146654	2001	UG ₁₀₁	15.9	X	343.19820	172.94061	42.15746	1.64797	0.0950241	0.23864717	2.5741382	20	3 13.5	18.7
146655	2001	UV ₁₀₄	14.9	X	246.17749	165.35931	37.21983	14.91599	0.2267893	0.21936936	2.7228188	20	—	—
146656	2001	US ₁₀₅	16.2	X	58.59758	221.15354	114.40484	1.61544	0.0767869	0.21293437	2.7774029	20	12 17.0	19.9
146657	2001	UV ₁₁₄	16.1	X	342.98874	304.49329	44.10517	2.65409	0.0772806	0.20311043	2.8662533	20	9 18.6	19.5
146658	2001	UJ ₁₁₄	16.0	X	27.24743	167.43926	198.81995	5.53568	0.1212582	0.21227716	2.7831324	20	12 22.4	19.7
146659	2001	UD ₁₂₂	15.3	X	305.71405	286.24127	200.29402	2.65228	0.0718405	0.21399194	2.7682444	20	—	—
146660	2001	UP ₁₂₉	15.8	X	306.47356	332.15048	162.66565	4.63143	0.0771834	0.21918020	2.7243852	20	—	—
146661	2001	UW ₁₂₉	16.4	X	125.64751	121.41030	123.30759	2.11572	0.1473514	0.26390845	2.4071354	20	11 20.9	20.1
146662	2001	UK ₁₃₃	16.3	X	128.72365	358.90243	352.67928	1.49941	0.1079650	0.22672515	2.6636035	20	—	—
146663	2001	UD ₁₃₇	16.0	X	17.16025	90.09039	298.18198	3.76630	0.0803169	0.21318842	2.7751959	20	12 31.3	19.5
146664	2001	UK ₁₄₁	16.0	X	285.33962	287.90030	201.81645	8.72035	0.1101502	0.21292683	2.7774684	20	12 22.9	19.5
146665	2001	UF ₁₅₁	15.7	X	355.64060	289.01966	210.04564	8.40655	0.2298265	0.22056563	2.7129647	20	—	—
146666	2001	UW ₁₆₂	15.7	X	333.19734	89.45913	51.76972	12.53294	0.1729008	0.21880668	2.7274848	20	—	—
146667	2001	UV ₁₆₃	15.7	X	129.81199	29.97905	143.82784	4.94448	0.0840953	0.25473261	2.4645995	20	8 22.1	19.1
146668	2001	UG ₁₆₈	15.3	X	196.43546	48.39330	325.47406	10.69822	0.2752379	0.23728687	2.5839667	20	3 31.7	20.2
146669	2001	UO ₁₇₃	16.2	X	324.47751	57.15549	76.33099	3.44776	0.0849404	0.21906380	2.7253502	20	—	—
146670	2001	UT ₁₇₄	15.8	X	277.61735	144.93438	44.54928	2.73006	0.0350252	0.22044791	2.7139306	20	—	—
146671	2001	UH ₁₈₅	15.8	X	8.55309	133.60347	278.64666	8.05901	0.1467018	0.21832240	2.7315166	20	—	—
146672	2001	UH ₂₀₁	16.5	X	202.88772	37.53109	270.98349	1.15480	0.0786913	0.23146620	2.7271064	20	1 23.3	20.2
146673	2001	UM ₂₀₄	16.1	X	39.88755	110.16846	247.23372	2.87105	0.1089925	0.21316353	2.7754119	20	12 25.9	19.9
146674	2001	UL ₂₀₅	15.9	X	29.57074	345.32388	24.38015	3.71290	0.1012920	0.21261939	2.7801451	20	12 27.2	19.5
146675	2001	UV ₂₁₄	16.3	X	260.80426	204.08117	69.91920	4.56139	0.1822825	0.23502087	2.6005494	20	2 3.4	20.3
146676	2001	UG ₂₁₆	16.0	X	265.98116	340.38027	80.24601	4.99877	0.0874936	0.20400821	2.8578381	20	8 30.4	19.8
146677	2001	UR ₂₁₇	15.8	X	332.24090	98.82512	53.54653	10.82184	0.1501929	0.22081807	2.7108967	20	—	—
146678	2001	UE ₂₂₁	16.3	X	247.78654	105.55500	63.05075	1.36759	0.0124366	0.21366262	2.7710882	20	—	—
146679	2001	UF ₂₂₄	15.5	X	283.83781	281.35191	137.40491	12.73748	0.0506275	0.20196173	2.8771113	20	9 28.3	19.5
146680	2001	VQ ₇	16.3	X	39.29948	123.91876	52.14748	1.55099	0.0846844	0.23632950	2.5909404	20	4 21.5	19.0
146681	2001	UV ₁₁	15.1	X	338.23346	97.64765	262.65004	13.59651	0.1682089	0.20344963	2.8630666	20	9 18.3	18.4
146682	2001	VT ₁₂	15.4	X	39.23015	92.14340	289.76504	10.18560	0.1944034	0.21438058	2.7648978	20	—	—
146683	2001	VB ₁₉	15.4	X	354.09484	81.34987	37.38809	5.22818	0.1048810	0.22046022	2.7138295	20	—	—
146684	2001	VN ₂₀	15.5	X	116.57877	244.30622	252.89928	1.81814	0.0842961	0.24091213	2.5579787	20	6 16.7	19.1
146685	2001	VG ₂₆	15.6	X	48.00308	128.01573	237.57092	4.99405	0.2684988	0.21471037	2.7620659	20	—	—
146686	2001	UV ₃₇	15.9	X	326.41358	309.24071	353.16372	1.66453	0.0404121	0.24485413	2.5304500	20	6 23.7	18.9
146687	2001	VC ₃₉	15.8	X	47.86370	317.00385	54.09433	4.00700	0.1124170	0.21361501	2.7714999	20	—	—
146688	2001	VG ₄₈	15.5	X	256.56286	89.46786	258.71371	0.87989	0.2371406	0.24186511	2.5512552	20	4 23.4	19.4
146689	2001	VB ₅₆	16.1	X	137.60061	65.21824	307.59290	4.15356	0.1484283	0.22917683	2.6445731	20	2 8.5	20.0
146690	2001	VB ₅₈	15.6	X	133.72067	313.64243	16.16760	3.77518	0.2519291	0.22477993	2.6789485	20	—	—
146691	2001	VC ₆₁	16.3	X	91.12749	49.84620	302.23561	5.31631	0.0829049	0.21836084	2.7311960	20	—	—
146692	2001	UV ₆₇	15.6	X	66.12976	208.11561	286.84036	9.89214	0.0561179	0.23620910	2.5931383	20	3 27.1	19.1
146693	2001	VA ₆₉	16.3	X	350.10045	73.90186	42.06258	3.38194	0.1461351	0.21905363	2.7254345	20	—	—
146694	2001	VJ ₆₉	15.1	X	116.23592	54.58292	295.21261	12.93797	0.1746483	0.22233601	2.6985440	20	—	—
146695	2001	VG ₇₁	15.8	X	146.27924	340.55014	299.48635	18.00985	0.0709053	0.36891277	1.9253969	20	—	—
146696	2001	VZ ₇₁	15.9	X	131.69091	304.26188	25.93918	4.01670	0.2123114	0.22358146	2.6885133	20	—	—
146697	2001	VU ₇₃	15.7	X	179.47268	29.22242	291.49515	13.42727	0.0969024	0.22947852	2.6422548	20	1 14.9	19.5
146698	2001	VY ₈₇	15.6	X	151.57134	255.53107	125.71658	7.00578	0.0449425	0.23231838	2.6206781	20	2 24.9	19.2
146699	2001	VP ₁₀₀	15.6	X	6.95479	326.49937	88.09812	16.62384	0.1008730	0.21341263	2.7732518	20	—	—
146700	2001	VU ₁₀₀	14.9	X	122.71896	113.15446	348.36650	15.34072	0.2048001	0.23795241	2.5791463	20	5 14.5	19.2
146701	2001	VJ ₁₀₁	15.8	X	292.32492	132.71841	345.57876	3.79280	0.0183144	0.21234883	2.7825061	20	12 25.9	19.6
146702	2001	VA ₁₀₉	16.3	X	77.99490	18.81571	339.65001	2.58193	0.1911307	0.21760674	2.7375023	20	—	—
146703	2001	VY ₁₁₂	15.8	X	19.01661	68.14243	307.29419	2.96251	0.1120162	0.20972306	2.8056829	20	12 20.9	19.3
146704	2001	VU ₁₁₃	15.7	X	337.78423	40.64739	334.38423	1.25867	0.0785748	0.20308812	2.8664632	20	10 14.2	19.2
146705	2001	VM ₁₂₅	15.9	X	151.87590	301.40926	316.37761	0.75110	0.0860901	0.21295849	2.7771931	20	12 22.7	20.1
146706	2001	WM ₆	15.5	X	350.77937	127.92648	339.21500	8.62670	0.1329919	0.21881396	2.7274243	20	—	—
146707	2001	WN ₆	15.2	X	56.41295	234.32549	253.72371	16.95789	0.0536535	0.23292246	2.6161449	20	2 29.3	19.0
146708	2001	WT ₆	16.1	X	327.36304	96.97309	326.73038	1.65876	0.0511501	0.20969408	2.8059414	20	12 2.4	19.6
146709	2001	VW ₁₁	15.6	X	104.08712	274.95629	91.07184	7.08574	0.0392394	0.22095807	2.7097515	20	—	—
146710	2001	WA ₁₃	15.6	X	31.48377	300.71186	107.41464	6.42081	0.0790723	0.21518191	2.7580293	20	—	—
146711	2001	WN ₁₃												

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146721	2001	<i>XF</i> ₈	15.1	X	118.11950	326.25396	100.83513	2.47129	0.1989195	0.17635912	3.1492279	20	4 5.8	19.9
146722	2001	<i>XA</i> ₉	15.6	X	245.93183	252.88896	294.94350	8.25000	0.1603940	0.21089909	2.7952431	20	—	—
146723	2001	<i>XN</i> ₁₁	14.8	X	88.34103	140.96022	276.08248	20.79204	0.0593226	0.22552797	2.6730214	20	1 19.1	18.4
146724	2001	<i>XC</i> ₂₄	15.1	X	306.56085	58.51687	68.44093	12.65512	0.1863705	0.21008588	2.8024517	20	—	—
146725	2001	<i>XG</i> ₃₀	16.1	X	315.27505	236.04665	274.85645	19.73209	0.0639243	0.37253148	1.9129079	20	—	—
146726	2001	<i>XT</i> ₃₃	16.1	X	38.03335	300.75911	91.87234	4.58035	0.0981243	0.21323813	2.7747646	20	—	—
146727	2001	<i>XD</i> ₃₅	15.1	X	89.72663	120.97053	282.10993	12.05245	0.1810711	0.22477433	2.6789930	20	1 23.2	18.3
146728	2001	<i>XU</i> ₃₆	15.8	X	309.76020	93.51834	29.37849	8.93562	0.2366140	0.21065273	2.7974220	20	—	—
146729	2001	<i>XV</i> ₃₇	14.3	X	62.60046	245.32022	281.67581	16.32444	0.1042887	0.17637295	3.1490633	20	5 17.4	18.7
146730	2001	<i>XD</i> ₄₅	15.5	X	199.89388	82.25095	329.21093	10.97287	0.1087915	0.18438262	3.0571921	20	5 26.0	20.5
146731	2001	<i>XE</i> ₅₁	16.3	X	42.83949	305.51264	76.52082	1.67696	0.0813626	0.21422648	2.7662236	20	—	—
146732	2001	<i>XH</i> ₅₁	16.1	X	32.94866	258.35375	132.80450	1.13329	0.0795009	0.21365745	2.7711329	20	—	—
146733	2001	<i>XE</i> ₅₂	14.9	X	285.12883	98.53382	232.53042	4.31525	0.2581271	0.19253609	2.9702610	20	4 30.9	19.3
146734	2001	<i>XG</i> ₅₅	15.7	X	10.98559	329.03601	86.34849	5.13838	0.0958754	0.21239505	2.7821025	20	—	—
146735	2001	<i>XQ</i> ₆₃	15.4	X	199.81185	191.54143	262.73446	4.35676	0.1676635	0.18852515	3.0122420	20	7 17.1	20.4
146736	2001	<i>XS</i> ₇₁	15.2	X	266.59424	259.77144	218.93787	12.16953	0.1462703	0.20446343	2.8535947	20	11 3.8	18.9
146737	2001	<i>XK</i> ₇₃	15.6	X	308.62442	317.21215	128.85760	3.04330	0.0588948	0.20832044	2.8182626	20	12 4.6	19.2
146738	2001	<i>XL</i> ₈₁	14.9	X	305.17464	319.65656	123.20898	10.22169	0.1056906	0.20583983	2.8408596	20	11 24.6	18.4
146739	2001	<i>XQ</i> ₈₆	15.4	X	226.95605	290.75233	122.82074	10.70465	0.3030570	0.18870569	3.0103204	20	6 14.1	20.7
146740	2001	<i>XV</i> ₈₉	14.8	X	291.02449	68.48325	257.47755	9.15082	0.1194988	0.19204195	2.9753540	20	5 22.5	18.7
146741	2001	<i>XD</i> ₉₃	16.0	X	18.37575	136.21301	263.19169	2.41635	0.0979258	0.21264913	2.7798860	20	—	—
146742	2001	<i>XS</i> ₁₁₀	15.8	X	348.05628	47.37251	72.98848	10.08235	0.1411163	0.21940026	2.7225631	20	—	—
146743	2001	<i>XH</i> ₁₁₆	15.3	X	177.51831	8.66517	86.83315	14.48611	0.0805493	0.18487903	3.0517172	20	6 29.4	20.0
146744	2001	<i>XZ</i> ₁₁₈	15.1	X	191.15465	13.56052	73.23625	8.46040	0.1379777	0.18515635	3.0486692	20	7 1.5	19.9
146745	2001	<i>XV</i> ₁₂₉	15.7	X	71.00564	252.19316	72.54872	8.48164	0.2229135	0.21195500	2.8759518	20	—	—
146746	2001	<i>XO</i> ₁₃₁	15.8	X	199.29203	48.93820	73.04382	2.96207	0.0645788	0.19627332	2.9324359	20	8 29.1	20.0
146747	2001	<i>XV</i> ₁₃₂	15.4	X	203.16746	287.71344	164.36587	2.23771	0.1192813	0.19157171	2.9802210	20	7 20.6	19.9
146748	2001	<i>XB</i> ₁₃₆	16.0	X	43.28448	315.23520	89.86179	5.31217	0.0985262	0.21605302	2.7506109	20	—	—
146749	2001	<i>XL</i> ₁₃₆	14.8	X	60.24694	111.91252	76.62070	14.88341	0.2082523	0.18156655	3.0887221	20	6 28.8	18.9
146750	2001	<i>XN</i> ₁₄₁	15.8	X	127.05660	236.88850	87.37191	3.84308	0.1823465	0.21945482	2.7221118	20	—	—
146751	2001	<i>XO</i> ₁₄₁	16.1	X	113.74669	275.58565	86.93285	3.47923	0.0959321	0.22147534	2.7055307	20	—	—
146752	2001	<i>XU</i> ₁₄₃	15.8	X	324.87285	88.94042	264.64161	0.89111	0.1193413	0.19776298	2.9176916	20	8 22.5	19.1
146753	2001	<i>XX</i> ₁₄₅	15.4	X	129.20715	143.71393	88.78800	3.05784	0.0312997	0.20172575	2.8793547	20	10 27.2	19.6
146754	2001	<i>XT</i> ₁₄₇	15.2	X	192.52577	12.21721	91.13371	12.30471	0.0974203	0.19067870	2.9895186	20	7 26.4	19.9
146755	2001	<i>XM</i> ₁₅₂	15.3	X	46.50952	267.39905	92.25129	11.90134	0.2370110	0.21160830	2.7889940	20	—	—
146756	2001	<i>XP</i> ₁₅₉	14.8	X	118.74509	250.83762	256.21414	7.73749	0.0899507	0.18395701	3.0619058	20	6 30.6	19.3
146757	2001	<i>XB</i> ₁₆₃	15.2	X	260.49768	5.24044	108.25378	3.20881	0.0276318	0.20310041	2.8663475	20	11 6.6	19.2
146758	2001	<i>XC</i> ₁₆₄	15.3	X	294.17006	353.57233	83.99889	10.28211	0.0832504	0.20292253	2.8680224	20	11 2.7	19.0
146759	2001	<i>XP</i> ₁₆₇	15.2	X	88.05293	165.44704	123.59680	3.03046	0.0416380	0.20327612	2.8646956	20	11 18.8	19.2
146760	2001	<i>XZ</i> ₁₇₀	15.4	X	127.78070	261.49257	122.20352	2.60813	0.1753479	0.17261880	3.1945571	20	2 21.4	20.2
146761	2001	<i>XH</i> ₁₈₀	15.6	X	198.71465	241.24881	232.45363	3.87154	0.2051543	0.19067780	2.9895280	20	8 6.3	20.7
146762	2001	<i>XW</i> ₁₈₄	14.9	X	152.19425	158.60229	285.26973	8.83408	0.0621341	0.17952618	3.1120808	20	5 16.2	19.6
146763	2001	<i>XF</i> ₁₉₃	15.4	X	141.11774	13.44095	119.67283	12.38145	0.2084317	0.18231322	3.0802830	20	7 14.5	20.5
146764	2001	<i>XK</i> ₁₉₄	14.9	X	214.04512	113.32706	277.94082	10.92304	0.1614729	0.18227376	3.0807275	20	5 13.1	20.0
146765	2001	<i>XE</i> ₁₉₉	14.9	X	115.04547	30.27760	122.85150	12.10467	0.0880244	0.18208602	3.0828448	20	7 4.4	19.5
146766	2001	<i>XU</i> ₂₀₁	16.5	X	197.89485	46.18668	231.03480	1.02012	0.0322323	0.22117311	2.7079948	20	—	—
146767	2001	<i>XC</i> ₂₀₂	15.2	X	8.53670	8.23330	63.30394	27.27496	0.1409473	0.21801441	2.7340886	20	—	—
146768	2001	<i>XU</i> ₂₀₃	15.6	X	340.28203	294.93711	118.30163	5.08685	0.0959988	0.21025890	2.8009141	20	12 11.0	18.9
146769	2001	<i>XK</i> ₂₁₅	15.3	X	283.23554	11.16315	80.24230	13.58799	0.0395189	0.20361706	2.8614969	20	11 9.9	19.2
146770	2001	<i>XN</i> ₂₁₇	15.5	X	6.69519	305.69366	104.48046	10.56445	0.1663294	0.20871058	2.8147495	20	—	—
146771	2001	<i>XO</i> ₂₂₀	15.5	X	310.93029	72.72532	273.88149	8.40193	0.0896538	0.19559802	2.9391815	20	7 22.3	19.2
146772	2001	<i>XD</i> ₂₂₁	16.1	X	290.93612	112.94406	18.25072	4.37997	0.0547041	0.21362794	2.7713881	20	—	—
146773	2001	<i>XO</i> ₂₂₁	15.5	X	109.18817	22.19671	284.02047	3.46135	0.1016978	0.21451691	2.7637263	20	—	—
146774	2001	<i>XK</i> ₂₂₄	16.1	X	46.20700	297.63410	62.06772	2.31776	0.1047773	0.21161334	2.7889498	20	—	—
146775	2001	<i>XD</i> ₂₂₆	16.0	X	17.13441	146.36374	261.23987	3.33608	0.0646813	0.21286271	2.7780261	20	—	—
146776	2001	<i>XO</i> ₂₃₀	16.1	X	285.80534	142.11135	4.73830	0.96274	0.0175529	0.21290529	2.7776557	20	—	—
146777	2001	<i>XT</i> ₂₃₀	15.3	X	88.92588	78.13763	61.48332	10.13244	0.2336741	0.17884496	3.1199783	20	6 5.4	19.9
146778	2001	<i>XX</i> ₂₃₁	15.5	X	218.76789	164.68518	58.02068	5.83407	0.0341831	0.21405451	2.7677050	20	—	—
146779	2001	<i>XK</i> ₂₃₄	15.3	X	75.98980	66.45365	283.75597	7.75407	0.1673007	0.21441260	2.7646225	20	—	—
146780	2001	<i>XK</i> ₂₃₅	15.7	X	249.31384	30.31493	60.07140	4.62897	0.1357710	0.19841649	2.9112816	20	9 8.8	19.8
146781	2001	<i>XM</i> ₂₃₅	15.6	X	258.05956	333.49156	50.04511	2.14374	0.1314665	0.19142946	2.9816971	20	6 22.8	19.8
146782	2001	<i>XQ</i> ₂₄₁	16.0	X	75.99528	144.24830	227.81711	2.31744	0.0713075	0.21735017	2.7396562	20	—	—
146783	2001	<i>XR</i> ₂₄₁	15.8	X	91.41755	174.53093	90.87317	3.26629	0.0221620	0.20332009	2.8642825	20	10 22.8	19.8
146784	2001	<i>XE</i> ₂₄₅	15.7	X	123.32320	38.97688	246.07942	13.39225	0.0767713	0.21404512	2.7677859	20	12 25.5	20.0
146785	2001	<i>XA</i> ₂₅₃	14.7	X	48.25331	258.34858	286.91888	8.36738	0.1550455	0.17454255	3.1710409	20	5 28.7	18.8
146786	2001	<i>XF</i> ₂₆₇	14.9	X	239.86911	278.14320	68.86640	12.95505	0.0862757	0.17968158	3.1102861	20	4 26.6	19.6
146787	2001	<i>YB</i> ₉	15.5	X	32.40418	343.34023	22.72866	4.41895	0.0951382	0.20921171	2.8102528	20	12 24.4	19.3
146788	2001	<i>YS</i> ₉	15.1	X	164.21264	93.48346	75.97120	11.96464	0.0095279	0.19524400	2.9427334	20	9 24.6	19.4
146789	2001	<i>YW</i> ₁₆	15.8	X	236.40638	3.96								

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146801	2001	YS ₄₆	15.1	X	40.05923	327.63937	274.63108	9.37798	0.0909202	0.18876970	3.0096399	20	7 22.2	19.0
146802	2001	YG ₄₈	15.5	X	72.22889	263.35061	70.65673	4.57106	0.0963307	0.20931400	2.8093371	20	—	—
146803	2001	YL ₅₀	15.5	X	305.51380	58.40777	322.99586	1.25898	0.0908104	0.19709010	2.9243286	20	8 31.5	19.0
146804	2001	YP ₅₆	16.0	X	35.58390	1.15509	15.94665	2.94470	0.2323078	0.21235391	2.7824617	20	—	—
146805	2001	YR ₆₉	14.7	X	98.65868	255.21837	292.57371	9.92100	0.1253920	0.18575339	3.0421331	20	8 1.8	19.2
146806	2001	YT ₆₉	15.9	X	352.15036	2.36626	43.29397	2.72493	0.0639349	0.20545000	2.8444521	20	12 14.3	19.6
146807	2001	YF ₇₅	15.0	X	80.17968	306.23278	275.26380	9.35157	0.0538517	0.19020530	2.9944769	20	8 11.5	19.3
146808	2001	YW ₈₁	15.0	X	304.30128	259.96124	96.43014	11.02193	0.0940456	0.19006101	2.9959924	20	7 26.8	18.9
146809	2001	YZ ₈₁	15.9	X	277.84374	176.54691	26.63408	2.84036	0.1104659	0.21421820	2.7662949	20	—	—
146810	2001	YE ₈₂	15.5	X	302.94871	129.30611	301.01365	10.14704	0.1090233	0.20128315	2.8835740	20	10 26.3	19.3
146811	2001	YD ₉₀	14.6	X	256.09925	210.25646	79.41375	7.04304	0.1173566	0.17142196	3.2094091	20	3 2.8	19.5
146812	2001	YP ₉₂	15.7	X	13.25734	264.72487	59.25423	2.86917	0.0739870	0.20051852	2.8908999	20	10 1.7	19.3
146813	2001	YM ₉₃	14.9	X	323.23029	340.79440	297.24259	8.21889	0.0650287	0.17979379	3.1089919	20	5 11.3	19.1
146814	2001	YV ₉₅	15.0	X	209.29761	30.86056	64.70246	3.10910	0.0127362	0.18989406	2.9977481	20	8 10.9	19.1
146815	2001	YP ₁₀₁	15.6	X	345.17756	5.01992	158.83237	2.56752	0.0698866	0.22112605	2.7083791	20	1 12.9	18.9
146816	2001	YL ₁₀₅	15.9	X	56.45028	254.00051	147.81441	2.32053	0.1096339	0.21416162	2.7667821	20	—	—
146817	2001	YF ₁₀₈	15.1	X	251.37889	307.16055	77.44604	8.86716	0.0527527	0.18931524	3.0038552	20	6 26.6	19.4
146818	2001	YL ₁₁₅	14.6	X	21.85788	74.30728	101.35920	20.65957	0.0888601	0.17120892	3.2120709	20	4 9.9	19.1
146819	2001	YO ₁₁₇	15.0	X	181.55396	312.46760	92.01509	5.66223	0.0838477	0.17819303	3.1275834	20	5 3.4	19.8
146820	2001	YQ ₁₂₅	15.0	X	138.31023	47.40770	57.01158	11.60116	0.1127587	0.18248556	3.0783432	20	5 31.1	19.6
146821	2001	YC ₁₂₉	15.2	X	129.34047	107.35646	66.12948	10.95542	0.0464739	0.19016976	2.9948500	20	8 16.8	19.7
146822	2001	YF ₁₃₀	14.8	X	201.78991	277.35788	83.04201	17.28848	0.1070524	0.17700047	3.1416160	20	4 7.9	20.0
146823	2001	YI ₁₃₇	15.7	X	28.98934	162.90981	344.45921	6.94012	0.2310233	0.22535091	2.6744214	20	3 2.3	17.5
146824	2001	YP ₁₄₀	14.1	X	128.50148	42.04089	332.75675	14.34697	0.1371193	0.22754070	2.6572351	20	2 3.0	17.9
146825	2001	YC ₁₄₄	15.4	X	238.51280	210.52270	185.31443	1.85570	0.1175658	0.18802268	3.0176062	20	6 17.7	20.0
146826	2001	YK ₁₄₅	15.2	X	220.89825	49.21394	326.17495	11.00338	0.1468193	0.18161881	3.0881295	20	4 28.1	20.4
146827	2001	YW ₁₄₅	15.1	X	149.60675	73.80791	320.50669	10.40679	0.1902482	0.23305146	2.6151795	20	3 17.4	19.4
146828	2001	YL ₁₅₅	14.5	X	224.98938	0.83234	40.23224	13.54931	0.0256895	0.18650484	3.0339562	20	6 16.9	19.0
146829	2002	AB ₅	14.7	X	20.78900	176.85957	31.54410	13.35575	0.4316139	0.17389675	3.1788868	20	6 18.2	17.2
146830	2002	AT ₈	16.2	X	271.06425	283.60775	153.63250	2.39271	0.0708729	0.19684312	2.9267742	20	9 27.7	20.2
146831	2002	AV ₁₁	16.1	X	198.94497	334.97993	276.20094	17.65213	0.0460705	0.37045048	1.9200651	20	—	—
146832	2002	AZ ₂₃	15.3	X	355.34157	281.31127	136.06583	15.61639	0.1397910	0.20611514	2.8383293	20	—	—
146833	2002	AK ₂₅	16.4	X	17.73900	121.86569	284.51783	18.47329	0.1227820	0.36718751	1.9314232	20	—	—
146834	2002	AY ₃₁	15.9	X	212.31931	199.37879	75.67602	6.48700	0.0730284	0.22508866	2.6764983	20	—	—
146835	2002	AF ₄₀	15.6	X	114.78607	318.87304	258.59358	3.50539	0.0894107	0.19095679	2.9866155	20	9 21.9	20.1
146836	2002	AR ₄₀	15.8	X	11.01646	294.80297	143.13252	4.65228	0.0665162	0.21006174	2.8026664	20	—	—
146837	2002	AN ₄₁	15.0	X	153.92959	151.43022	297.76158	10.43567	0.1805061	0.17968115	3.1102910	20	5 31.3	20.2
146838	2002	AR ₄₃	15.9	X	173.78605	293.71715	119.92525	14.76903	0.2296039	0.18123511	3.0924866	20	5 12.4	21.5
146839	2002	AK ₄₉	14.9	X	268.97503	169.43429	123.43843	12.17214	0.0603166	0.17316623	3.1878210	20	3 28.8	19.6
146840	2002	AN ₄₉	16.0	X	131.81882	0.33529	126.60894	4.06523	0.1377893	0.18064879	3.0991744	20	6 24.1	20.8
146841	2002	AP ₄₉	15.2	X	61.66795	275.01668	294.59953	0.64858	0.1616899	0.18121988	3.0926598	20	7 21.7	19.2
146842	2002	AA ₅₀	15.4	X	328.40117	53.80501	289.81792	9.34937	0.0853551	0.19023841	2.9941295	20	8 13.4	19.2
146843	2002	AP ₆₈	15.9	X	7.14850	349.48932	337.29123	1.10115	0.0990460	0.19456573	2.9495685	20	9 25.9	19.6
146844	2002	AP ₇₉	15.4	X	22.85556	190.07197	88.92867	3.90113	0.1051567	0.18940946	3.0028590	20	8 19.2	19.1
146845	2002	AG ₈₂	15.7	X	48.50098	343.49867	160.30412	3.80699	0.1942254	0.22697014	2.6616865	20	4 6.1	18.3
146846	2002	AM ₈₃	15.1	X	229.56683	284.29970	133.14519	9.91743	0.0979564	0.18945455	3.0023825	20	7 7.1	19.7
146847	2002	AV ₈₄	14.6	X	283.62747	137.86076	138.35972	11.83365	0.0306950	0.17385416	3.1794060	20	3 29.0	19.2
146848	2002	AC ₈₅	15.2	X	130.05371	322.11557	153.46183	7.30974	0.1298517	0.17999865	3.1066325	20	6 8.5	20.1
146849	2002	AX ₉₈	15.0	X	325.97940	238.28259	99.22714	9.86535	0.1075212	0.18924154	3.0046351	20	8 3.8	18.6
146850	2002	AT ₉₉	14.8	X	220.32064	24.25667	323.97215	8.31049	0.0642605	0.17509218	3.1644012	20	4 1.2	19.6
146851	2002	AK ₁₀₄	15.2	X	264.95985	314.42321	118.48446	3.05579	0.0582267	0.19452575	2.9499727	20	9 16.1	20.2
146852	2002	AQ ₁₀₉	16.4	X	208.30110	351.68491	101.46896	2.88792	0.1059436	0.18764898	3.0216112	20	7 28.7	20.1
146853	2002	AY ₁₁₀	15.3	X	91.28967	121.86500	42.24098	2.80179	0.0486807	0.17960048	3.1112224	20	6 14.2	19.6
146854	2002	AO ₁₁₅	15.0	X	82.80053	152.40686	316.25580	9.55578	0.0717058	0.17074006	3.2179486	20	3 24.8	19.6
146855	2002	AH ₁₂₁	15.4	X	90.19787	141.93214	2.14633	2.56354	0.2254838	0.17491900	3.1664895	20	6 11.6	20.0
146856	2002	AD ₁₂₄	15.0	X	169.97175	128.95678	332.31152	15.82522	0.1470644	0.18123495	3.0924885	20	7 1.8	20.2
146857	2002	AD ₁₂₇	16.0	X	159.54007	246.09403	161.05896	2.70972	0.1393964	0.17659038	3.1464779	20	4 15.8	21.0
146858	2002	AA ₁₄₈	15.2	X	229.66001	343.10965	55.58083	11.79192	0.1341022	0.18633041	3.0358494	20	6 9.0	20.0
146859	2002	AB ₁₄₉	15.4	X	329.90691	357.60177	143.33214	9.24758	0.2114286	0.21032873	2.8002942	20	—	—
146860	2002	AL ₁₄₉	15.7	X	91.84956	126.67604	106.84864	11.30430	0.0271775	0.19211308	2.9746196	20	9 15.4	20.0
146861	2002	AS ₁₅₁	15.2	X	128.73611	104.62908	95.55268	3.01828	0.1516860	0.18836691	3.0139286	20	9 21.9	20.0
146862	2002	AV ₁₅₂	14.7	X	36.66002	106.22598	126.83086	8.25620	0.1101551	0.17886379	3.1197594	20	7 7.9	18.7
146863	2002	AW ₁₆₂	15.3	X	216.39988	162.21883	297.82960	9.17049	0.0798188	0.18871933	3.0101753	20	8 15.1	19.8
146864	2002	AX ₁₆₅	15.1	X	225.85466	56.14846	150.26786	6.84164	0.1483857	0.20246709	2.8723217	20	12 30.1	19.2
146865	2002	AB ₁₇₃	15.6	X	165.19314	134.63693	346.53357	0.72538	0.1106866	0.18471394	3.0535353	20	7 19.2	20.4
146866	2002	AO ₁₇₄	15.6	X	196.97620	80.61214	336.70757	4.30015	0.1387868	0.18200491	3.0837605	20	5 30.9	20.7
146867	2002	AC ₁₇₆	15.4	X	106.46278	234.60073	316.49986	2.53579	0.0671310	0.18519781	3.0482142	20	8 9.4	19.6
146868	2002	AG ₁₇₇	15.4	X	131.32502	157.82591	4.12268	2.50446	0.0946662	0.18430588	3.0580407	20	8 3.9	20.0
146869	2002	AN ₁₈₁	15.1	X	318.02556	1.89142	31.17441	13.06734	0.1811891	0.20042554	2.8917939	20	10 4.6	18.1
146870	2002	AT ₁₈₁	15.1	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>
146881 2002 CH ₁₁	14.7	X	294.01163	256.01831	324.42510	37.99862	0.1997393	0.21638469	2.7477994	20	1 15.3	19.3
146882 2002 CV ₂₁	15.5	X	197.11246	301.83200	159.95899	1.22632	0.0976584	0.18538453	3.0461671	20	7 27.6	20.2
146883 2002 CF ₂₄	15.2	X	300.06616	145.50468	276.83498	10.87716	0.0349924	0.19676496	2.9275492	20	10 16.9	19.4
146884 2002 CL ₂₄	14.4	X	37.69184	309.19597	266.65142	13.23456	0.2405762	0.17627561	3.1502225	20	7 4.2	18.0
146885 2002 CB ₂₇	15.1	X	173.06537	315.27233	71.65615	5.14849	0.0288092	0.17318019	3.1876496	20	4 2.3	19.7
146886 2002 CW ₂₇	15.4	X	207.59941	76.25124	55.14668	3.98492	0.0817133	0.19311781	2.9642933	20	9 17.9	19.9
146887 2002 CT ₂₉	14.8	X	197.11230	293.82802	83.48964	10.23911	0.0998655	0.17556024	3.1587744	20	4 18.9	19.8
146888 2002 CG ₃₄	15.0	X	162.17060	4.94866	14.00345	6.27442	0.0484157	0.17032388	3.2231884	20	3 11.8	19.8
146889 2002 CG ₃₇	15.7	X	65.90189	155.47653	15.08927	0.40726	0.058183	0.17446938	3.1719274	20	5 28.8	20.0
146890 2002 CA ₃₈	14.8	X	2.89310	1.24019	273.39165	4.47474	0.1342443	0.18123649	3.0924709	20	7 9.8	18.5
146891 2002 CY ₄₀	14.7	X	30.41253	351.17917	288.99231	18.68770	0.1256171	0.18536053	3.0464300	20	8 23.9	18.9
146892 2002 CQ ₄₇	14.9	X	328.42581	27.31210	262.81012	8.56917	0.0618946	0.17974841	3.1095151	20	6 6.3	19.0
146893 2002 CK ₅₅	15.1	X	114.63205	202.66008	280.88618	2.83492	0.1539903	0.17462750	3.1700124	20	6 3.7	19.9
146894 2002 CX ₅₉	16.3	X	2.30571	100.50997	297.64754	17.17610	0.1033018	0.36239659	1.9484083	20	—	—
146895 2002 CP ₆₆	15.5	X	224.57911	32.45494	102.09721	3.41985	0.0547348	0.19639803	2.9311944	20	10 14.7	19.7
146896 2002 CZ ₆₉	15.6	X	248.84420	86.63279	101.61719	3.28095	0.0444143	0.20617661	2.8377651	20	—	—
146897 2002 CB ₇₄	15.5	X	178.42747	131.00812	114.46960	6.05941	0.1300847	0.17894753	3.1187860	20	5 24.4	20.5
146898 2002 CL ₇₄	15.4	X	70.77186	194.74182	25.90158	1.67011	0.0756906	0.18302559	3.0722850	20	8 4.9	19.6
146899 2002 CS ₇₅	15.8	X	242.17819	7.17169	78.11270	2.67906	0.0755505	0.19044320	2.9919826	20	8 30.9	20.0
146900 2002 CL ₇₉	14.7	X	18.62291	242.54672	333.83622	8.40211	0.0252677	0.17461422	3.1701730	20	5 10.2	19.2
146901 2002 CO ₈₂	15.5	X	111.25882	352.38758	129.03262	2.15744	0.1118306	0.17440090	3.1727577	20	5 24.3	20.1
146902 2002 CL ₉₀	15.4	X	34.47075	94.98698	113.95056	2.71266	0.1201224	0.17448165	3.1717787	20	6 3.7	19.3
146903 2002 CE ₉₂	14.9	X	238.23910	319.64774	8.12312	4.00634	0.0429704	0.16974687	3.2304884	20	4 1.8	19.4
146904 2002 CU ₉₄	15.1	X	158.47595	332.96409	85.87848	2.37450	0.1485663	0.17340682	3.1848716	20	4 29.2	20.3
146905 2002 CH ₉₇	15.4	X	199.82896	314.28471	125.42629	6.69869	0.1203519	0.18147313	3.0897820	20	7 1.7	20.2
146906 2002 CD ₁₁₉	15.4	X	114.49707	348.72990	142.50661	2.03360	0.1079197	0.17862885	3.1224942	20	6 8.5	20.1
146907 2002 CH ₁₂₆	15.0	X	175.14481	128.57770	324.82889	9.98350	0.1017316	0.18032301	3.1029060	20	6 25.2	19.9
146908 2002 CX ₁₄₈	15.0	X	266.30925	334.02417	305.48731	4.96250	0.0650373	0.16730875	3.2617971	20	3 3.1	19.7
146909 2002 CL ₁₅₁	14.8	X	153.06177	15.39423	116.07400	14.17164	0.0776818	0.18007148	3.1057948	20	7 18.2	19.5
146910 2002 CR ₁₅₆	15.0	X	290.11951	253.91024	83.21685	10.48848	0.0970260	0.18209216	3.0827754	20	6 8.9	19.2
146911 2002 CA ₁₇₄	15.0	X	36.09341	161.75091	80.90848	5.43156	0.1593992	0.17953192	3.1120144	20	7 28.0	18.9
146912 2002 CL ₁₈₇	15.9	X	200.18649	109.78913	23.96366	1.76332	0.0966002	0.19111769	2.9849390	20	9 9.9	20.3
146913 2002 CE ₁₉₆	15.9	X	41.90556	158.23099	86.07263	2.59205	0.1336305	0.18115879	3.0933551	20	8 4.3	19.8
146914 2002 CB ₁₉₉	15.3	X	274.17795	233.68320	119.43772	3.68991	0.0740561	0.18044151	3.1015474	20	6 11.9	19.5
146915 2002 CN ₂₀₄	15.2	X	358.36438	225.00023	27.81602	1.90427	0.1724150	0.17485766	3.1672300	20	5 31.7	18.5
146916 2002 CG ₂₁₀	15.7	X	147.08602	106.60602	29.09798	1.33743	0.1029431	0.18096661	3.0955447	20	7 18.6	20.5
146917 2002 CE ₂₁₄	15.5	X	218.35309	330.95027	136.18162	3.97409	0.0763791	0.18826359	3.0150313	20	8 29.3	19.8
146918 2002 CT ₂₂₅	14.5	X	254.57693	40.22956	279.55223	15.35359	0.0956615	0.17319552	3.1874615	20	3 27.9	19.6
146919 2002 CK ₂₂₆	15.0	X	350.51963	338.13989	296.27745	9.27363	0.0695113	0.18028698	3.1033194	20	6 18.7	19.1
146920 2002 CB ₂₂₇	15.6	X	111.51493	311.73484	192.94967	4.24854	0.0811935	0.17927317	3.1150082	20	6 18.7	20.2
146921 Michaelbuckley	15.8	X	217.10288	30.96229	47.78407	2.03027	0.1247868	0.18428608	3.0582597	20	7 18.3	20.6
146922 2002 CE ₂₅₅	15.2	X	252.97178	102.18967	305.85081	7.62652	0.0515122	0.18598478	3.0396094	20	7 29.1	19.5
146923 2002 CJ ₂₆₀	16.0	X	247.50632	77.76431	309.39550	0.39864	0.1397220	0.18287508	3.0739705	20	6 14.0	20.5
146924 2002 CQ ₂₆₃	15.7	X	73.41132	31.30692	327.60522	1.23113	0.0838582	0.20503569	2.8482806	20	—	—
146925 2002 CM ₂₆₅	14.3	X	71.41714	151.26671	69.44400	9.90458	0.0393143	0.17961528	3.1110515	20	8 2.0	18.7
146926 2002 CN ₂₇₂	14.9	X	185.75521	65.92323	114.18695	12.22656	0.1430871	0.19261054	2.9694956	20	10 23.9	19.8
146927 2002 CX ₂₇₆	15.7	X	219.49397	181.99730	209.94780	1.14876	0.0667035	0.17855122	3.1233993	20	5 27.6	20.3
146928 2002 CC ₂₈₉	15.1	X	220.20700	335.70224	61.45520	11.92491	0.0713364	0.18219960	3.0815634	20	6 2.7	19.6
146929 2002 CT ₂₉₇	15.9	X	184.54368	306.29351	137.69262	4.23574	0.0781710	0.18271968	3.0757132	20	6 22.8	20.5
146930 2002 CH ₃₀₀	15.6	X	112.95723	26.31447	153.96076	1.97357	0.0142206	0.18511908	3.0490784	20	7 27.9	19.9
146931 2002 CC ₃₀₇	15.1	X	152.42821	143.49586	44.57472	6.32865	0.1645104	0.19201513	2.9756311	20	9 29.9	20.0
146932 2002 CQ ₃₀₇	16.1	X	260.57854	88.41504	326.27849	2.84855	0.1076240	0.18969621	2.9998321	20	8 8.7	20.4
146933 2002 CZ ₃₀₉	15.6	X	96.13360	339.75199	242.08948	4.16662	0.1102717	0.18649703	3.0340409	20	9 8.3	20.1
146934 2002 CJ ₃₁₁	16.0	X	180.32482	294.02113	162.91453	0.93611	0.1405166	0.18084656	3.0969144	20	7 3.5	20.9
146935 2002 DF ₅	14.6	X	112.08366	98.60947	60.27744	22.66514	0.0959476	0.17790042	3.1310120	20	7 8.7	19.6
146936 2002 DE ₆	14.3	X	123.29939	156.06055	282.46022	16.49888	0.1557110	0.17335144	3.1855499	20	4 11.9	19.5
146937 2002 DO ₉	14.4	X	54.56974	134.53755	79.59589	18.65097	0.1552706	0.17841772	3.1249571	20	7 17.1	18.7
146938 2002 DV ₁₂	15.3	X	144.82647	39.59555	186.41244	2.73953	0.0549308	0.19267660	2.9688168	20	11 4.4	19.7
146939 2002 DR ₁₇	16.4	X	24.84538	34.40190	123.50871	25.18043	0.0617842	0.37805735	1.8942222	20	2 7.9	17.7
146940 2002 EY ₄	15.6	X	175.20424	296.66470	153.22233	1.86983	0.0702151	0.17752361	3.1354410	20	6 19.9	20.4
146941 2002 EC ₅	15.7	X	133.17267	69.97693	20.83828	1.28707	0.1198046	0.17235271	3.1978442	20	5 10.3	20.7
146942 2002 EQ ₇	16.9	X	105.50961	69.27212	6.03084	21.04666	0.1636860	0.38062111	1.8857067	20	3 13.7	18.5
146943 2002 EY ₁₅	15.2	X	84.55641	296.89923	288.13300	9.36364	0.0371647	0.18363946	3.0654345	20	8 18.6	19.7
146944 2002 EA ₁₇	14.1	X	59.17704	108.24640	117.03283	10.10000	0.2288782	0.17733376	3.1376785	20	8 19.2	18.4
146945 2002 EC ₂₀	15.6	X	128.73425	354.85593	206.82545	0.21770	0.1816636	0.18581703	3.0414385	20	9 23.3	20.6
146946 2002 EC ₂₁	16.7	X	45.98377	84.21007	359.59019	19.86024	0.0919764	0.37461886	1.9057955	20	—	—
146947 2002 EG ₃₉	15.7	X	58.77027	5.51687	178.39130	1.18633	0.1279654	0.17437314	3.1730944	20	6 8.6	

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ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>
146961 2002 GH ₁₂₉	14.4	X	73.04334	0.15454	246.56625	1.73537	0.1413751	0.12551801	3.9506208	20	9 10.6	19.9
146962 2002 JN ₅	14.2	X	300.43591	123.26427	61.29620	17.16364	0.0913295	0.15259637	3.4682195	20	—	—
146963 2002 JD ₁₂	15.8	X	192.67673	184.67301	70.70598	5.41354	0.1267261	0.30664566	2.1779346	20	—	—
146964 2002 JM ₆₆	16.4	X	138.74792	148.79036	190.96369	3.25392	0.2227461	0.30636474	2.1792658	20	—	—
146965 2002 JS ₁₁₆	16.3	X	12.15150	350.64097	62.44939	22.80577	0.0862532	0.36180512	1.9505312	20	—	—
146966 2002 KF ₁	16.4	X	14.40533	281.54183	125.18166	23.99922	0.1190344	0.35589374	1.9720707	20	—	—
146967 2002 LW ₇	16.6	X	134.99976	196.53983	169.11045	1.82757	0.1972645	0.30854555	2.1689849	20	1 22.9	19.1
146968 2002 LD ₂₄	16.3	X	95.47758	145.24193	157.73898	4.83718	0.2041281	0.29049013	2.2579542	20	—	—
146969 2002 LZ ₂₅	16.3	X	210.99439	44.20264	293.84520	5.21355	0.1916496	0.31670419	2.1315728	20	2 26.6	19.7
146970 2002 LO ₅₅	16.6	X	211.83551	193.08865	91.43310	6.44571	0.1765934	0.30637258	2.1792286	20	—	—
146971 2002 NY ₁₀	17.0	X	182.44817	230.76055	117.99573	5.03862	0.2155550	0.30931427	2.1653898	20	2 19.9	20.5
146972 2002 NU ₁₉	16.3	X	25.70049	109.30021	285.71847	6.22108	0.0863326	0.29173619	2.2515202	20	—	—
146973 2002 NJ ₂₂	16.5	X	17.42486	197.82705	141.22683	6.85306	0.1478919	0.28220079	2.3019571	20	11 27.4	19.2
146974 2002 NS ₂₂	16.7	X	50.06505	150.55948	183.81342	5.00884	0.1897392	0.28659277	2.2783786	20	—	—
146975 2002 NF ₂₆	16.5	X	141.01873	49.30295	254.36468	4.18013	0.1943071	0.29604762	2.2296071	20	—	—
146976 2002 NC ₂₇	16.1	X	310.91445	42.32638	307.26501	4.13197	0.2523834	0.27075274	2.3663963	20	7 11.0	17.7
146977 2002 NU ₃₉	16.6	X	342.06289	184.72441	166.27193	7.46716	0.1828458	0.27711845	2.3300170	20	10 28.3	17.9
146978 2002 NG ₄₅	16.8	X	147.17218	45.05562	262.47748	4.41557	0.1350001	0.29763383	2.2216784	20	—	—
146979 2002 NJ ₄₈	15.5	X	268.16106	173.12074	314.23530	25.04730	0.1542587	0.28863494	2.2676192	20	12 13.6	18.3
146980 2002 NV ₄₉	16.3	X	74.58262	203.33682	106.36532	5.18245	0.1802182	0.28810551	2.2703963	20	12 29.3	19.6
146981 2002 NZ ₄₉	16.9	X	299.86292	100.45242	281.39173	2.02753	0.2818184	0.27396009	2.3478906	20	8 2.9	18.6
146982 2002 NX ₅₅	17.0	X	356.05065	260.64437	62.93135	3.12434	0.2310654	0.27809483	2.3245601	20	10 8.3	18.5
146983 2002 NN ₆₁	17.0	X	242.99931	274.77863	69.05230	2.56194	0.2155303	0.26226701	2.4171686	20	4 7.7	20.8
146984 2002 OF ₂₁	17.1	X	49.95526	26.37606	271.34574	2.93674	0.2249543	0.28250016	2.3003306	20	11 22.8	20.3
146985 2002 PM ₁₁	16.7	X	359.72195	45.67671	284.25306	3.51109	0.1784847	0.27807826	2.3246524	20	10 15.8	18.8
146986 2002 PE ₁₈	17.2	X	243.74460	202.99375	167.51323	2.47687	0.1924584	0.26531826	2.3986007	20	5 14.4	20.7
146987 2002 PC ₃₅	17.1	X	226.60017	237.78434	146.61419	1.47511	0.1968489	0.26365594	2.4086721	20	5 15.1	20.8
146988 2002 PN ₄₁	16.4	X	274.59754	215.54969	153.71176	5.48247	0.2455105	0.26609897	2.3939069	20	6 9.8	19.7
146989 2002 PC ₄₂	15.9	X	293.41548	318.92920	28.00336	5.42368	0.2524908	0.26616713	2.3934982	20	6 1.4	18.6
146990 2002 PV ₄₃	15.9	X	40.07265	31.47705	342.65809	6.96836	0.1571810	0.28615465	2.2807036	20	—	—
146991 2002 PD ₄₄	16.0	X	38.95899	38.23069	333.84144	2.85641	0.2143623	0.28517681	2.2859142	20	—	—
146992 2002 PK ₄₈	16.3	X	97.72999	53.52144	260.34288	5.68658	0.1415795	0.28944173	2.2634039	20	—	—
146993 2002 PZ ₆₁	17.0	X	33.70472	213.06221	129.09061	4.50452	0.1646093	0.28500161	2.2868503	20	12 25.1	20.0
146994 2002 PR ₆₃	16.2	X	29.46970	7.37874	337.15485	4.98333	0.1285459	0.28377349	2.2934442	20	12 17.2	19.0
146995 2002 PU ₈₁	16.8	X	164.99776	17.50515	305.86994	2.98448	0.1613557	0.30196293	2.2003932	20	—	—
146996 2002 PG ₈₅	16.8	X	299.42233	234.58495	120.87940	3.64294	0.2297901	0.26960213	2.3731244	20	6 30.1	18.9
146997 2002 PY ₉₁	16.8	X	16.58217	189.80745	142.48255	5.45570	0.2005600	0.28034593	2.3120996	20	11 24.7	19.4
146998 2002 PS ₉₃	17.0	X	283.32985	247.38495	105.70168	3.20995	0.2345810	0.26751456	2.3854543	20	5 31.0	19.8
146999 2002 PL ₉₉	16.9	X	61.37601	213.10204	96.19891	6.30627	0.1809833	0.28437973	2.2901836	20	12 15.4	20.2
147000 2002 PD ₁₀₀	16.5	X	41.51770	225.03554	85.90088	5.78500	0.1875763	0.28106344	2.3081630	20	11 26.3	19.5
147001 2002 PC ₁₀₈	16.4	X	328.70818	299.93482	94.77360	6.97094	0.1761777	0.28107942	2.3080756	20	11 24.5	18.2
147002 2002 PT ₁₂₁	16.6	X	4.10255	114.65703	256.95300	5.44417	0.1315854	0.28269021	2.2992994	20	12 18.6	18.9
147003 2002 PV ₁₂₁	16.4	X	251.81092	185.55818	203.19024	6.72029	0.1129195	0.26760474	2.3849183	20	6 26.4	19.7
147004 2002 PT ₁₂₆	16.6	X	12.55025	288.29756	75.63627	1.78765	0.2160375	0.28275009	2.2989748	20	—	—
147005 2002 PA ₁₂₇	15.5	X	286.69422	7.25088	24.82918	6.75343	0.1178412	0.27207944	2.3586974	20	8 26.8	18.1
147006 2002 PC ₁₂₇	16.4	X	332.84073	252.65628	91.61360	4.13195	0.2715465	0.27355469	2.3502096	20	9 9.6	17.3
147007 2002 PD ₁₂₇	16.2	X	156.54708	209.20224	119.32425	7.53144	0.2214136	0.30032255	2.2083984	20	1 2.2	19.2
147008 2002 PV ₁₂₇	17.2	X	57.40893	250.17175	70.19122	2.89926	0.1939578	0.28542211	2.2846042	20	12 26.8	20.6
147009 2002 PS ₁₂₉	16.3	X	65.39560	290.82330	40.12869	4.97608	0.0927132	0.28634239	2.2797066	20	—	—
147010 2002 PY ₁₃₄	16.8	X	111.95124	200.65507	90.30525	5.67564	0.2138784	0.29061165	2.2573247	20	—	—
147011 2002 PP ₁₄₀	16.7	X	204.30300	23.22960	274.08147	5.77829	0.1333445	0.30412765	2.1899395	20	1 1.9	20.0
147012 2002 PT ₁₅₃	17.1	X	144.11125	163.82885	162.96544	2.85834	0.0665750	0.29918330	2.2140010	20	—	—
147013 2002 PV ₁₆₉	16.5	X	351.75552	334.75764	27.35653	4.72807	0.1613105	0.27931556	2.3177822	20	11 16.4	18.7
147014 2002 QF	15.8	X	354.31115	92.67354	244.03496	5.43166	0.2032645	0.27598671	2.3363825	20	10 17.2	17.8
147015 2002 QV ₁₆	17.0	X	70.32337	26.47516	261.68264	4.58811	0.2523455	0.28373279	2.2936635	20	12 3.5	20.6
147016 2002 QY ₁₇	16.5	X	314.99294	211.02464	158.45104	6.80314	0.1792143	0.27372231	2.3492501	20	9 5.7	18.3
147017 2002 QW ₂₈	16.5	X	261.10011	252.18824	67.28700	3.30878	0.2030284	0.26192085	2.4192978	20	3 26.8	20.1
147018 2002 QG ₃₄	17.3	X	265.09629	301.60174	35.12161	1.79446	0.1893777	0.26285944	2.4133534	20	4 22.3	20.5
147019 2002 QA ₄₇	16.7	X	61.47546	42.01353	258.76683	8.76294	0.2400841	0.28167173	2.3048387	20	12 9.9	20.1
147020 2002 QM ₉₀	16.9	X	265.67189	309.19429	88.34395	6.00817	0.1871065	0.26912836	2.3759087	20	7 17.2	19.9
147021 2002 QS ₉₅	17.4	X	32.44053	345.79725	99.28452	4.62545	0.1203338	0.29797838	2.2199654	20	—	—
147022 2002 QZ ₉₈	16.8	X	338.81785	4.32001	49.86792	6.53772	0.1501923	0.28375085	2.2935662	20	—	—
147023 2002 RL ₃	17.1	X	8.03729	231.50265	97.40094	2.97858	0.2106308	0.27721069	2.3295001	20	11 6.3	19.3
147024 2002 RW ₇	16.6	X	292.75523	257.61447	131.18664	2.91940	0.2173547	0.27197822	2.3592826	20	8 12.3	18.6
147025 2002 RK ₁₂	16.5	X	45.36051	103.24910	192.37691	2.19003	0.1695445	0.27834260	2.3231804	20	11 7.3	19.3
147026 2002 RF ₁₃	16.8	X	293.89596	337.42943	23.06397	3.03339	0.2066505	0.26836613	2.3804053	20	7 2.5	19.2
147027 2002 RV ₂₀	16.3	X	305.79041	340.37669	17.99627	4.43589	0.1657582	0.27050475	2.3678424	20	7 31.2	18.4
147028 2002 RO ₂₂	17.0	X	328.24651	160.27153	144.87247	2.98027	0.1959574</					

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>
147041 2002 RE ₆₅	15.9	X	7.86653	256.33008	105.89110	4.83360	0.2614499	0.27694961	2.3309639	20	12 30.9	18.4
147042 2002 RA ₇₁	17.5	X	36.88096	83.97620	236.02746	5.71833	0.1396532	0.28077979	2.3097173	20	11 25.0	20.4
147043 2002 RA ₇₅	16.6	X	305.18486	215.65292	175.02073	2.33757	0.2103254	0.27402504	2.3475196	20	9 13.9	18.2
147044 2002 RW ₇₇	17.0	X	329.20752	322.27398	18.72020	2.50832	0.2106600	0.27255075	2.3559774	20	8 21.8	18.3
147045 2002 RE ₇₉	16.4	X	293.45587	222.80098	132.73849	2.04497	0.1984996	0.26833471	2.3805911	20	6 25.2	18.9
147046 2002 RB ₈₂	16.9	X	238.44655	117.37916	244.05862	0.42089	0.1816535	0.26010454	2.4305474	20	4 27.5	20.6
147047 2002 RE ₈₅	16.1	X	6.20450	352.55509	340.39009	2.84694	0.0659187	0.27536555	2.3398947	20	10 14.7	18.7
147048 2002 RW ₈₆	16.4	X	307.56915	69.58593	352.96162	6.38553	0.1221115	0.27763571	2.3271221	20	11 16.1	18.7
147049 2002 RP ₈₇	16.4	X	273.79818	241.91953	158.04401	4.76891	0.1361400	0.26911754	2.3759723	20	8 9.5	18.9
147050 2002 RJ ₈₈	16.1	X	318.57097	147.83124	192.79289	1.56090	0.2021381	0.26943437	2.3741094	20	7 21.9	17.8
147051 2002 RO ₉₁	16.6	X	273.24896	61.85885	338.72898	1.79748	0.1277673	0.26938962	2.3743722	20	8 12.0	19.1
147052 2002 RT ₉₄	16.0	X	264.71146	15.82201	17.73376	2.73927	0.2103492	0.26623278	2.3931047	20	7 6.3	19.1
147053 2002 RT ₁₀₀	16.4	X	37.27294	306.92927	64.02882	1.46534	0.2437841	0.28386486	2.2929520	20	—	—
147054 2002 RZ ₁₀₀	16.3	X	326.79734	4.53221	1.04440	2.30314	0.2171978	0.27215636	2.3582529	20	9 27.3	17.8
147055 2002 RU ₁₀₁	16.4	X	353.03830	312.01591	39.38543	3.59508	0.2619934	0.27500659	2.3419304	20	11 18.3	18.0
147056 2002 RW ₁₀₄	16.4	X	312.90579	271.20697	89.22986	2.68498	0.2060477	0.26864192	2.3787759	20	8 12.3	18.1
147057 2002 RY ₁₀₆	15.4	X	46.44452	110.83666	237.41674	4.34042	0.2810559	0.28144986	2.3060499	20	—	—
147058 2002 RP ₁₁₅	16.9	X	41.24467	196.43900	113.32137	4.56803	0.1381832	0.28064162	2.3104753	20	11 17.8	19.7
147059 2002 RD ₁₁₈	16.0	X	4.58199	33.44248	33.24091	6.21294	0.2659708	0.2799950	2.3140306	20	—	—
147060 2002 RG ₁₂₁	16.2	X	354.74288	14.20382	308.96960	6.30589	0.1341827	0.27236658	2.3570394	20	9 14.9	18.5
147061 2002 RJ ₁₂₁	16.1	X	5.02242	120.15072	259.22000	6.25642	0.1127644	0.28073605	2.3099572	20	12 27.1	18.5
147062 2002 RD ₁₂₆	16.2	X	52.50067	248.32801	101.35629	6.58093	0.1460173	0.28480431	2.2879069	20	—	—
147063 2002 RU ₁₃₃	16.0	X	2.44267	268.36100	118.46285	7.43335	0.1217021	0.28246751	2.3005078	20	—	—
147064 2002 RA ₁₃₅	16.0	X	9.91681	32.10646	20.19070	7.34204	0.0859181	0.28820818	2.2698571	20	—	—
147065 2002 RS ₁₄₉	16.2	X	191.67201	352.30531	265.31686	5.24324	0.2011340	0.29624880	2.2285976	20	—	—
147066 2002 RD ₁₇₅	16.6	X	75.78178	21.20096	278.62814	4.68313	0.1700332	0.28426509	2.2907992	20	12 16.6	20.1
147067 2002 RD ₂₀₂	16.7	X	340.20668	263.02954	270.07174	4.19068	0.0454090	0.30260423	2.1972833	20	1 5.1	19.0
147068 2002 RX ₂₁₂	16.0	X	71.38585	229.88074	95.09374	7.37472	0.1428941	0.28462559	2.2888645	20	—	—
147069 2002 RA ₂₁₅	16.6	X	339.25107	228.92268	130.56390	7.60491	0.1240735	0.27636924	2.3342261	20	10 18.7	18.9
147070 2002 RV ₂₂₄	16.8	X	323.78439	232.85000	204.92200	6.30839	0.0513288	0.28538768	2.2847880	20	—	—
147071 2002 RA ₂₂₈	16.3	X	0.30661	231.76081	99.05600	8.08701	0.1931706	0.27678145	2.3319079	20	10 25.7	18.5
147072 2002 SF ₆	17.4	X	26.14089	116.72104	186.91720	2.08541	0.2142889	0.27594532	2.3366161	20	10 29.8	19.8
147073 2002 SJ ₁₀	16.9	X	45.38675	216.07537	62.50867	2.87366	0.1938866	0.27492383	2.3424004	20	10 18.7	19.7
147074 2002 SS ₁₂	17.1	X	147.73901	203.40521	101.71707	2.43999	0.0788619	0.29260886	2.2470414	20	—	—
147075 2002 SJ ₁₉	16.7	X	320.24303	264.30338	181.27461	2.81440	0.1658291	0.28265171	2.2995082	20	—	—
147076 2002 SP ₂₁	17.4	X	108.03686	248.68808	36.00753	2.77544	0.1291320	0.28507419	2.2864627	20	12 26.9	20.9
147077 2002 SG ₂₅	16.1	X	238.58815	94.15341	36.01824	7.76275	0.0555496	0.27806678	2.3247164	20	11 9.3	18.7
147078 2002 SN ₂₇	16.3	X	296.60823	229.86601	141.25639	6.79446	0.1363986	0.26837381	2.3803599	20	8 4.8	18.7
147079 2002 SS ₃₀	16.5	X	356.57789	277.90333	66.18389	5.77996	0.1661090	0.27588508	2.3369562	20	10 31.4	18.5
147080 2002 SC ₃₂	16.4	X	270.44877	10.53189	58.97171	5.15542	0.1176998	0.27271068	2.3550563	20	9 24.3	19.0
147081 2002 SB ₃₆	16.5	X	238.47237	244.85724	167.81841	1.19990	0.1729159	0.26375036	2.4080972	20	7 5.6	19.9
147082 2002 ST ₃₆	15.8	X	344.21124	8.72416	30.24824	7.30179	0.1005475	0.27933248	2.3176886	20	12 19.4	18.3
147083 2002 SA ₃₇	16.8	X	174.55327	300.54026	5.43705	2.58079	0.2517132	0.29889825	2.2154084	20	—	—
147084 2002 SF ₃₇	16.7	X	129.02708	283.18428	112.69665	3.04056	0.2742937	0.24511335	2.5286656	20	3 12.6	20.6
147085 2002 ST ₄₂	16.7	X	346.82934	170.07902	216.63111	2.35466	0.1763265	0.27870071	2.3211899	20	12 17.3	18.6
147086 2002 SQ ₄₃	16.0	X	300.55177	150.77526	352.40438	2.84639	0.1152918	0.28777596	2.2721293	20	—	—
147087 2002 SL ₄₈	16.2	X	332.80135	356.00107	146.34494	5.47898	0.0827723	0.29390533	2.2404284	20	—	—
147088 2002 SQ ₅₀	15.9	X	331.15903	162.37948	172.76668	2.63951	0.1841177	0.26951373	2.3736433	20	8 15.1	17.6
147089 2002 SX ₅₂	16.3	X	277.51417	235.86153	91.63050	9.15042	0.2312766	0.26251355	2.4156549	20	4 22.9	19.8
147090 2002 SZ ₅₃	15.9	X	309.31129	167.99042	229.14781	9.54854	0.1849929	0.27158902	2.3615360	20	10 4.1	17.9
147091 2002 SM ₅₆	16.2	X	289.42136	351.45350	54.26266	7.99988	0.1040639	0.27197462	2.3593034	20	9 24.6	18.7
147092 2002 TY	16.6	X	306.50533	356.02088	60.76188	3.68798	0.1613428	0.27656123	2.3331456	20	11 6.1	18.5
147093 2002 TM ₁	16.1	X	262.24162	191.29598	220.24605	2.54528	0.2282363	0.26669912	2.3903142	20	7 24.5	19.2
147094 2002 TK ₁₃	16.8	X	156.64418	312.68390	9.04653	2.36530	0.2003002	0.24163261	2.5528915	20	—	—
147095 2002 TM ₁₅	16.5	X	309.36918	0.34205	64.86116	3.65868	0.1461549	0.27836532	2.3230540	20	11 26.4	18.5
147096 2002 TM ₁₆	16.3	X	3.56347	91.99149	240.39758	2.10583	0.1818409	0.27601627	2.3362156	20	10 27.3	18.5
147097 2002 TV ₁₈	16.9	X	255.72025	134.67514	289.11180	1.24431	0.2171368	0.26812673	2.3818220	20	8 4.7	20.0
147098 2002 TX ₂₅	15.8	X	95.28668	289.86256	131.08839	2.54822	0.1393948	0.24244992	2.5471510	20	2 16.4	18.9
147099 2002 TL ₂₈	16.5	X	271.52364	32.87165	37.30242	4.73773	0.1574154	0.27098603	2.3650380	20	9 19.2	18.9
147100 2002 TV ₂₉	16.7	X	251.33564	25.50092	353.74469	1.90189	0.2054383	0.26200966	2.4187511	20	5 31.5	20.1
147101 2002 TC ₃₀	16.4	X	7.92004	241.89907	83.46840	3.58273	0.2226459	0.27417547	2.3466608	20	11 2.2	18.5
147102 2002 TD ₃₆	16.5	X	312.58264	264.97552	55.46848	2.07612	0.1895933	0.26511797	2.3998086	20	6 7.2	18.8
147103 2002 TO ₃₉	16.3	X	18.66056	285.54503	49.86501	7.82973	0.1646943	0.27366826	2.3495594	20	11 22.3	18.9
147104 2002 TG ₄₂	16.6	X	257.19394	244.85914	179.58858	2.15309	0.1930535	0.26700432	2.3884924	20	8 10.8	19.5
147105 2002 TM ₄₂	16.3	X	9.65444	332.09337	37.42265	5.98690	0.1155358	0.27864002	2.3215269	20	12 20.0	18.9
147106 2002 TE ₄₃	15.7	X	322.02827	38.11873	22.73833	9.59301	0.0124546	0.27819370	2.3240093	20	12 6.7	18.7
147107 2002 TL ₄₃	16.0	X	201.29404	269.96521	218.87437	6.10732	0.1086001	0.26815407	2.3816601	20	9 9.5	19.4
147108 2002 TZ ₄₃	16.4	X	242.59793	234.10581	157.94692	1.17857	0.1417651	0.26135874	2.4227654	20	6 16.0	19.8
147109 2002 TF ₄₈	16.3	X	30.98916	47.88839	40.11548	12.82597	0.2574122	0.23327045	2.6135425	20	—	—
147110 2002 TJ ₄₈	16.5	X	315.96758	216.80476	192.05615	3.41343	0.1721579	0.27423979	2.3462938	20	11 14.2	18.2
147111 2002 TZ ₄₈	16.5	X	107.84212	302.36402	32.15655	3.03483	0.1611378	0.28906545	2.2653671	20	—	—
147112 2002 TO ₅₀	16.2	X	282.12222	323.45718	55.99705	4.43323	0.2555054	0.26571505	2.3962123	20	7 2.7	18.9
147113 2002 TK ₇₀	16.1	X	359.75007	30.95795	267.89283	5.08455	0.1212954	0.26877892	2.3779675	20	8 16.1	18.4
147114 2002 TK ₇₂	15.8	X	36.49117	58.03321	247.08109	6.33456	0.12					

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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>
147121 2002 TY ₁₂₀	15.4	X	41.88678	124.63430	241.14191	7.67776	0.1697338	0.28403443	2.2920393	20	—	—
147122 2002 TZ ₁₂₂	16.0	X	256.45473	159.02611	232.89408	9.57384	0.0935311	0.26653041	2.3913228	20	7 8.8	19.3
147123 2002 TR ₁₂₆	15.6	X	149.66019	344.17701	58.61864	6.83375	0.1206239	0.25148140	2.4857959	20	3 28.6	19.3
147124 2002 TH ₁₂₉	16.6	X	203.65734	22.54099	276.99522	5.55204	0.1018791	0.30130086	2.2036154	20	1 3.3	19.4
147125 2002 TR ₁₃₀	16.3	X	172.71931	19.89006	242.72123	5.94304	0.1114667	0.29186533	2.2508560	20	—	—
147126 2002 TH ₁₃₁	16.5	X	303.77508	340.40029	104.82074	6.63922	0.0984605	0.28114541	2.3077144	20	12 17.3	18.5
147127 2002 TJ ₁₃₂	15.8	X	11.94683	74.72326	271.88137	2.46591	0.1525214	0.27803301	2.3249046	20	11 27.3	18.1
147128 2002 TT ₁₃₇	16.2	X	171.16468	23.50955	288.46813	6.53275	0.1915914	0.29580177	2.2308423	20	—	—
147129 2002 TE ₁₃₉	16.4	X	287.43348	130.77701	294.25015	4.66866	0.2143252	0.27188396	2.3598279	20	9 25.9	18.6
147130 2002 TZ ₁₇₂	16.3	X	27.77407	352.56363	72.49892	5.23632	0.0916077	0.29109542	2.2548230	20	—	—
147131 2002 TS ₁₈₀	15.5	X	188.71491	84.45985	341.60453	11.84412	0.1727104	0.25516257	2.4618300	20	6 1.1	19.7
147132 2002 TB ₁₈₆	16.7	X	6.56567	0.94471	309.00016	3.64236	0.1569299	0.27306060	2.3530439	20	9 22.1	18.9
147133 2002 TO ₂₀₃	16.9	X	195.85978	211.13147	118.21113	6.15551	0.1960614	0.30473860	2.1870115	20	2 6.3	20.3
147134 2002 TL ₂₀₆	16.3	X	334.44816	98.59055	249.24780	2.48637	0.1967375	0.27134436	2.3629554	20	9 14.6	17.9
147135 2002 TR ₂₁₀	16.8	X	9.64621	333.40705	45.61655	2.90330	0.1228402	0.28017627	2.3130329	20	—	—
147136 2002 TT ₂₂₄	16.7	X	226.01433	24.17303	54.96619	5.85994	0.1962592	0.26344836	2.4099372	20	7 26.9	20.4
147137 2002 TB ₂₃₉	15.8	X	338.51507	28.15322	357.28038	12.18548	0.1723809	0.27678800	2.3318711	20	11 21.0	18.2
147138 2002 TU ₂₃₉	16.3	X	299.63544	76.78491	310.87751	2.09253	0.1703310	0.27005181	2.3704893	20	8 31.6	18.3
147139 2002 TY ₂₄₃	16.8	X	35.84298	227.24908	216.13351	1.01935	0.1303779	0.23616619	2.5921347	20	—	—
147140 2002 TW ₂₄₅	16.2	X	91.35427	269.11765	49.65353	7.46284	0.1483802	0.28564134	2.2834351	20	—	—
147141 2002 TB ₂₄₆	16.3	X	265.63884	206.24578	150.69247	6.65422	0.1239384	0.26164695	2.4209859	20	5 31.0	19.5
147142 2002 TB ₂₄₆	16.4	X	248.71865	170.48815	32.37827	6.39887	0.0735961	0.28962525	2.2624471	20	—	—
147143 2002 TN ₂₅₃	16.0	X	50.24362	283.24683	130.24780	1.73212	0.1425661	0.23322823	2.6138579	20	—	—
147144 2002 TS ₂₅₅	16.8	X	245.42020	357.41023	21.34906	2.20841	0.2170781	0.26012074	2.4304465	20	5 23.4	20.4
147145 2002 TK ₂₅₉	16.3	X	82.16623	255.85552	85.85103	5.90596	0.1905699	0.28569342	2.2831576	20	—	—
147146 2002 TU ₂₆₀	16.2	X	253.51769	204.41637	204.66850	7.55519	0.1886755	0.26230922	2.4169093	20	7 14.7	19.6
147147 2002 TP ₂₇₄	16.5	X	337.04156	68.57559	238.58510	4.64138	0.2489037	0.26763179	2.3847576	20	7 5.9	17.8
147148 2002 TQ ₂₇₅	16.2	X	16.31796	36.08402	344.95456	2.52529	0.2305238	0.28116020	2.3076334	20	—	—
147149 2002 TF ₂₇₉	16.3	X	298.67472	86.05096	265.05067	5.00356	0.1618045	0.26589316	2.3951420	20	7 3.9	18.7
147150 2002 TB ₂₈₆	15.9	X	87.43832	323.57042	57.11204	4.46519	0.1980481	0.28451922	2.2894350	20	—	—
147151 2002 TX ₂₉₃	17.0	X	289.71355	209.65173	250.65714	5.80080	0.1776776	0.27833021	2.3232493	20	12 7.3	18.4
147152 2002 TX ₂₉₇	16.1	X	326.75236	278.57444	80.21303	7.99112	0.1364138	0.27182139	2.3601900	20	9 22.2	18.3
147153 2002 TB ₃₀₃	17.0	X	306.94106	160.71399	157.18636	3.10182	0.1859770	0.26429993	2.4047578	20	5 25.3	19.5
147154 2002 UO ₅	15.9	X	359.98250	279.67795	77.75430	5.96866	0.1504626	0.27687491	2.3313831	20	11 23.5	18.2
147155 2002 UM ₉	16.1	X	102.10799	252.40710	114.18149	7.31924	0.1605128	0.29592334	2.2302313	20	—	—
147156 2002 UL ₁₇	16.4	X	208.35377	39.76432	40.64561	4.93630	0.1723867	0.26042394	2.4285597	20	7 11.7	20.1
147157 2002 UO ₂₀	16.3	X	21.86553	252.61593	81.75477	3.52658	0.1220432	0.27533072	2.3400920	20	11 20.1	18.8
147158 2002 UY ₂₂	16.7	X	355.53125	189.93866	263.49193	2.13944	0.1720467	0.28433912	2.2904016	20	—	—
147159 2002 UQ ₃₁	16.7	X	264.76940	324.98617	311.41808	5.57489	0.1310212	0.30564067	2.1827062	20	2 4.9	19.6
147160 2002 UE ₃₂	16.0	X	356.22538	21.22197	73.06186	1.50562	0.2223671	0.22809547	2.6529248	20	—	—
147161 2002 VP ₃	16.7	X	252.63937	201.01651	300.90054	3.81248	0.1657244	0.27580051	2.3374339	20	11 28.5	19.1
147162 2002 VK ₈	16.1	X	66.64408	23.16471	268.64585	7.30630	0.1832324	0.27735156	2.3287112	20	11 26.9	19.6
147163 2002 VR ₈	16.0	X	333.68951	338.87853	309.08031	5.52529	0.0845650	0.26012683	2.4304085	20	6 10.7	18.6
147164 2002 VM ₉	15.8	X	356.96795	326.19889	291.70222	5.53843	0.1152578	0.25868243	2.4394472	20	6 6.5	18.2
147165 2002 VA ₁₂	16.5	X	156.19484	223.51368	82.09847	4.25303	0.1816322	0.29354491	2.2422619	20	—	—
147166 2002 VG ₁₂	15.9	X	249.35291	282.62780	69.65532	7.40613	0.1915100	0.25613149	2.4556176	20	4 27.9	19.6
147167 2002 VZ ₁₃	16.6	X	95.19452	168.87755	344.21116	5.52959	0.0571285	0.31175643	2.1540665	20	6 6.8	19.1
147168 2002 VK ₁₉	16.5	X	224.23874	61.66860	56.03909	3.82831	0.1272051	0.26858571	2.3791077	20	9 23.9	19.7
147169 2002 VY ₂₃	16.3	X	246.14533	209.70883	241.42977	4.75184	0.1760098	0.26703151	2.3883302	20	9 3.3	19.5
147170 2002 VJ ₂₇	16.7	X	345.82719	196.52364	172.05415	0.55503	0.2129204	0.27376075	2.3490302	20	11 21.4	18.4
147171 2002 VK ₂₈	16.2	X	254.51120	116.51975	230.61719	5.53058	0.1719981	0.25684659	2.4510576	20	4 26.1	19.8
147172 2002 VQ ₂₉	16.1	X	346.66400	264.59659	128.93646	7.61304	0.1245608	0.27589146	2.3369202	20	12 18.8	18.5
147173 2002 VP ₃₄	15.7	X	269.51439	272.97044	72.28613	3.85750	0.2308945	0.25783604	2.4447829	20	5 4.3	19.1
147174 2002 VU ₃₆	15.5	X	75.44726	165.36783	267.98271	12.17429	0.2391327	0.23514589	2.5996275	20	2 13.9	18.6
147175 2002 VV ₃₆	15.4	X	66.48252	43.33654	72.78506	5.94919	0.1701398	0.23733461	2.5836202	20	3 27.5	18.3
147176 2002 VP ₄₃	16.4	X	274.60487	358.88435	105.09354	6.08569	0.1847820	0.27402823	2.3475013	20	11 10.9	18.6
147177 2002 VN ₄₅	16.1	X	46.04010	301.02153	343.63146	3.56225	0.1072358	0.27171270	2.3608194	20	10 11.5	18.9
147178 2002 VY ₄₈	16.6	X	210.54933	324.98907	116.13978	3.31977	0.1647298	0.26026334	2.4295586	20	7 14.6	20.2
147179 2002 VN ₄₉	16.2	X	178.91185	327.40937	95.62942	6.02349	0.2365600	0.25303324	2.4756220	20	5 22.8	20.4
147180 2002 VT ₅₂	16.6	X	155.48229	40.16404	49.95311	8.01808	0.1059612	0.25456514	2.4656803	20	5 30.7	20.3
147181 2002 VZ ₅₉	16.2	X	341.31529	79.44389	255.56393	3.36193	0.1403104	0.26851842	2.3795052	20	9 6.4	18.4
147182 2002 VF ₆₂	16.0	X	300.50190	352.53940	318.67378	1.80962	0.1749418	0.25896575	2.4376676	20	5 5.0	18.8
147183 2002 VB ₆₉	16.6	X	345.81276	226.07845	283.91957	4.66560	0.0462361	0.29412664	2.2393044	20	—	—
147184 2002 VG ₇₉	16.3	X	237.52939	237.50293	122.81676	5.79890	0.2157188	0.25602349	2.4563081	20	4 25.3	20.3
147185 2002 VX ₇₉	15.5	X	274.18440	192.69420	132.29793	5.36505	0.1015972	0.25473787	2.4645655	20	5 2.4	18.7
147186 2002 VG ₈₀	16.6	X	275.47637	281.28578	135.20150	3.40461	0.1053716	0.26728165	2.3868399	20	9 12.4	19.2
147187 2002 VR ₈₀	16.9	X	254.65586	265.74672	91.64506	5.93812	0.2957432	0.25916771	2.4364011	20	4 29.7	20.9
147188 2002 VF ₈₁	16.5	X	196.09699	315.18353	155.30368	2.33397	0.1470770	0.26074950	2.4265378	20	8 8.7	20.3
147189 2002 VN ₈₁	16.0	X	146.66636	55.50607	91.70487	10.57002	0.1819596	0.25741876	2.4474242	20	8 11.3	20.0
147190 2002 VY ₈₄	16.7	X	263.28609	283.62841	153.54771	2.46755	0.1604351	0.26939481	2.3743418	20	9 13.8	19.4
147191 2002 VL ₈₈	16.1	X	90.34541	111.91830	317.66972	2.02050	0.1227267	0.23908880	2.5709673	20	2 18.3	19.3
147192 2002 VD ₈₉	16.4	X	99.95965	28.02796	280.58867	5.84865	0.1192198	0.28283635	2.2985074	20	—	—
147193 2002 VE ₈₉	15.8	X	302.78102	272.81189	14.20605	5.75371	0.1147348	0.25476956	2.4643612	20	4 14.4	18.7
147194 2002 VU ₈₉	16.2	X	290.76103	106.01184								

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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>		
147201	2002	VL ₁₁₃	16.7	X	289.31060	303.42062	77.10501	3.38380	0.2351303	0.26624788	2.3930142	20	7 20.1	19.0
147202	2002	VB ₁₁₉	16.1	X	254.94217	58.24612	26.19663	7.14340	0.0874562	0.26746045	2.3857760	20	9 25.3	19.0
147203	2002	VM ₁₂₁	16.5	X	91.74772	69.70172	322.77678	6.67226	0.1070113	0.29186559	2.2508547	20	—	—
147204	2002	VV ₁₂₄	16.3	X	274.39519	270.04086	108.16581	7.18980	0.1582021	0.26326406	2.4110617	20	7 5.7	19.2
147205	2002	VY ₁₃₃	16.4	X	340.48053	238.54776	79.38473	4.81413	0.1854950	0.26825546	2.3810600	20	8 11.7	18.1
147206	2002	VJ ₁₃₉	16.4	X	55.44003	192.17616	167.32015	0.59041	0.2238535	0.22679361	2.6630675	20	—	—
147207	2002	VK ₁₃₉	16.4	X	157.33393	238.03165	142.41989	13.35750	0.1830679	0.24528459	2.5274886	20	3 12.7	20.5
147208	2002	WE	15.4	X	82.42061	258.42551	222.64711	11.32642	0.2466389	0.23964027	2.5670216	20	5 6.5	18.7
147209	2002	WN ₅	16.5	X	260.90980	302.51516	133.44412	2.96395	0.1411510	0.26664985	2.3906087	20	9 11.8	19.2
147210	2002	WC ₆	16.3	X	289.29264	137.34322	298.76993	5.24353	0.0994482	0.27331180	2.3516018	20	11 2.5	18.8
147211	2002	WW ₇	16.7	X	133.76872	48.71143	260.23303	2.09988	0.1512933	0.28687039	2.2769084	20	—	—
147212	2002	WW ₇	16.8	X	219.00483	14.54128	53.85404	2.02034	0.1679775	0.25967559	2.4332233	20	7 6.4	20.5
147213	2002	WX ₁₃	16.0	X	71.11029	181.77860	109.67105	7.34036	0.1109528	0.27328864	2.3517347	20	11 24.9	19.3
147214	2002	WL ₁₄	16.3	X	115.92096	280.76986	133.70419	7.30842	0.2804215	0.24228310	2.5483201	20	3 25.6	20.2
147215	2002	WQ ₁₈	15.6	X	332.26214	323.98877	42.41182	24.18234	0.2359069	0.27513496	2.3412019	20	10 23.7	17.1
147216	2002	XC ₆	16.0	X	180.66557	316.30532	105.77636	7.14203	0.1034651	0.25272470	2.4776365	20	5 23.2	19.7
147217	2002	XT ₇	16.0	X	52.41535	187.10147	264.90789	12.77232	0.1060835	0.23829991	2.5766383	20	1 15.8	18.9
147218	2002	XA ₁₁	17.1	X	10.28050	87.29418	294.52671	1.36239	0.2312026	0.27836938	2.3230314	20	—	—
147219	2002	XQ ₁₂	16.1	X	62.98744	92.48662	66.21439	9.24800	0.1749918	0.24593221	2.5230495	20	5 19.1	19.0
147220	2002	XZ ₁₄	16.8	X	145.18099	333.14922	143.62463	0.61321	0.1273248	0.25291279	2.4764079	20	6 25.9	20.5
147221	2002	XT ₂₄	16.3	X	2.13929	272.81630	258.82771	7.82741	0.1370546	0.23815531	2.5776812	20	2 5.7	19.2
147222	2002	XS ₂₈	15.6	X	133.68895	157.21897	257.17111	1.69768	0.2121260	0.24376871	2.5379559	20	3 31.8	19.6
147223	2002	XB ₂₉	15.6	X	189.60151	251.36905	83.75550	2.46704	0.1436642	0.24106074	2.5569273	20	2 12.9	19.5
147224	2002	XB ₃₁	16.0	X	78.04354	303.24885	298.67224	4.93987	0.0726422	0.26451171	2.4034741	20	9 17.5	19.3
147225	2002	XQ ₃₁	15.8	X	289.99544	55.28841	291.87864	8.10019	0.2505556	0.26192737	2.4192577	20	5 27.3	18.9
147226	2002	XB ₃₂	16.4	X	303.41022	15.94923	345.34993	4.39053	0.1670815	0.26431750	2.4046513	20	7 29.5	18.8
147227	2002	XM ₃₄	16.0	X	305.68045	121.35892	289.27628	6.28878	0.0883631	0.26781574	2.3836656	20	10 23.2	18.6
147228	2002	XL ₃₅	16.5	X	288.84993	64.17915	279.41444	1.43190	0.2289491	0.26005504	2.4308558	20	5 25.5	19.4
147229	2002	XF ₄₃	15.7	X	92.51876	11.05845	113.37873	12.76230	0.0691075	0.24218944	2.5489770	20	5 2.6	19.3
147230	2002	XU ₄₃	15.7	X	281.82983	285.00743	58.30307	7.29468	0.1548044	0.25824134	2.4422242	20	5 27.3	18.7
147231	2002	XV ₄₇	16.1	X	323.62449	63.19914	300.22613	5.95905	0.1365451	0.26728842	2.3867996	20	9 12.8	18.3
147232	2002	XB ₄₈	16.5	X	70.25344	13.39509	287.40963	3.17034	0.1486214	0.27425203	2.3462240	20	12 8.2	19.7
147233	2002	XC ₄₈	15.7	X	63.15433	247.26676	270.94286	5.54741	0.1764759	0.24566178	2.5249008	20	5 17.4	18.6
147234	2002	XV ₅₀	15.5	X	276.10716	183.08212	79.00110	16.12279	0.0798732	0.24408595	2.5357564	20	2 19.2	19.3
147235	2002	XD ₅₂	16.2	X	59.90593	51.60586	66.22609	4.11074	0.0855827	0.23975762	2.5661839	20	3 5.9	19.2
147236	2002	XM ₅₂	16.0	X	148.48902	156.98218	248.85314	5.26679	0.1213744	0.24397817	2.5365031	20	3 26.1	19.8
147237	2002	XC ₅₄	16.0	X	107.71061	301.95380	104.04695	12.53259	0.1783086	0.23706888	2.5855505	20	2 23.2	19.6
147238	2002	XC ₅₄	15.6	X	340.56616	63.65944	119.11600	5.10430	0.2009931	0.23611042	2.5925429	20	1 9.6	18.6
147239	2002	XF ₅₉	15.1	X	329.68082	85.30916	96.70297	13.40215	0.1938132	0.22873413	2.6479842	20	—	—
147240	2002	XW ₆₀	16.7	X	223.66828	338.17598	74.32181	3.34775	0.1625055	0.25795908	2.4440054	20	6 20.2	20.2
147241	2002	XW ₆₂	16.0	X	240.37183	71.41360	317.30237	4.35837	0.1159468	0.25706979	2.4496387	20	6 11.6	19.4
147242	2002	XJ ₆₃	15.9	X	214.31174	320.24394	28.63773	3.00684	0.1340960	0.24737300	2.5132432	20	3 23.3	19.6
147243	2002	XV ₇₀	16.0	X	131.82421	90.30389	296.22912	2.42884	0.2059755	0.24035023	2.5619640	20	2 24.1	19.8
147244	2002	XE ₇₂	16.2	X	197.29674	156.57484	279.72036	9.20312	0.0348451	0.25756384	2.4465051	20	7 1.8	19.2
147245	2002	XV ₇₇	15.6	X	104.15612	58.05173	57.63921	5.01617	0.1775692	0.24527137	2.5275794	20	5 15.7	19.1
147246	2002	XW ₇₇	15.7	X	4.38064	122.28275	53.30384	7.51365	0.1341157	0.23802165	2.5786461	20	2 23.2	18.5
147247	2002	XA ₈₀	15.3	X	180.30868	49.93112	312.36987	4.48128	0.2206551	0.24317134	2.5421107	20	3 8.3	19.7
147248	2002	XC ₈₀	14.9	X	291.22502	247.51981	296.94863	11.30925	0.1455150	0.22594634	2.6697208	20	—	—
147249	2002	XZ ₈₁	15.7	X	178.90816	99.72134	85.61254	12.66143	0.1632085	0.26391303	2.4071075	20	10 31.9	19.6
147250	2002	XL ₈₂	15.7	X	293.66011	290.91808	249.55743	12.50631	0.0912320	0.22517791	2.6757910	20	—	—
147251	2002	XJ ₈₅	15.3	X	179.18180	287.61878	59.63933	13.65740	0.2377414	0.24342693	2.5403309	20	2 27.2	19.9
147252	2002	XA ₈₆	15.8	X	30.69341	153.28988	286.07549	13.68770	0.0695618	0.22973553	2.6402838	20	—	—
147253	2002	XG ₈₆	15.8	X	9.73810	88.96990	54.24477	8.12587	0.1426547	0.23406913	2.6075939	20	1 15.7	18.6
147254	2002	XK ₈₇	16.0	X	20.40923	45.80524	71.23118	12.50738	0.1449767	0.23173681	2.6250608	20	—	—
147255	2002	XX ₈₈	15.8	X	99.01582	1.88651	46.24768	4.70248	0.1778212	0.23544660	2.5974135	20	2 13.4	19.1
147256	2002	XN ₉₁	16.4	X	333.89630	264.92154	242.46281	5.17246	0.1623423	0.22935664	2.6431907	20	—	—
147257	2002	XO ₉₁	16.2	X	58.32954	163.62083	92.84579	8.12097	0.0778568	0.26123877	2.4235071	20	9 18.8	19.4
147258	2002	XG ₁₀₂	15.8	X	71.58490	232.31975	59.01439	3.60042	0.2122224	0.27298928	2.3534537	20	12 3.3	19.4
147259	2002	XP ₁₁₀	15.8	X	172.99944	290.67671	23.78892	4.32736	0.2577563	0.23868592	2.5738596	20	1 10.7	20.3
147260	2002	XH ₁₁₃	15.6	X	136.66764	15.27178	65.74405	8.40880	0.2042787	0.24595572	2.5228887	20	5 8.4	19.6
147261	2002	YQ	15.8	X	96.93841	18.17740	93.02360	5.24032	0.1170947	0.24212998	2.5493943	20	4 24.4	19.1
147262	2002	YV	16.0	X	130.11195	135.01077	285.59926	3.30442	0.1842834	0.24157430	2.5533022	20	4 1.5	19.8
147263	2002	YF ₇	15.4	X	2.32988	345.71040	116.71382	13.05309	0.1453074	0.22515781	2.6759503	20	—	—
147264	2002	YO ₇	16.0	X	200.51914	103.73440	323.93633	3.70076	0.2642899	0.25285884	2.4767602	20	6 12.8	20.3
147265	2002	YP ₈	15.6	X	105.00336	347.17073	120.24326	2.81743	0.1451251	0.24443277	2.5333572	20	5 2.4	19.0
147266	2002	YW ₈	15.7	X	116.87157	248.40108	138.03203	3.31592	0.1734254	0.23686744	2.5870161	20	2 4.9	19.2
147267	2002	YE ₁₁	15.3	X	330.73307	99.75259	95.68246	12.97464	0.1065378	0.23006971	2.6377264	20	1 28.6	18.6
147268	2002	YH ₁₅	16.3	X	121.84954	290.78701	142.45191	5.04261	0.1424403	0.24381583	2.5376289	20	4 7.8	19.9
147269	2002	YP ₁₆	16.2	X	152.84130	171.61287	286.91335	1.11214	0.1288213	0.25219056	2.4811337	20	6 9.9	20.0
147270	2002	YT ₁₆	16.1	X	276.65844	179.19508	202.13299	1.65480	0.1854668	0.27				

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>
147281 2002 YG ₃₅	15.0 ^m	X	128.21031	269.94809	105.67354	15.67231	0.2370617	0.23839440	2.5759574	20	2 14.4	19.0
147282 2003 AE ₁₀	15.7	X	138.07823	178.80023	190.62657	6.39606	0.3012100	0.24098770	2.5574440	20	2 17.3	20.0
147283 2003 AD ₁₄	15.8	X	48.22377	320.42503	121.70386	14.12643	0.2618420	0.22967529	2.6407454	20	1 10.6	17.8
147284 2003 AR ₂₂	15.5	X	76.75861	181.61038	297.53355	13.08284	0.1718545	0.23606628	2.5928660	20	4 6.0	19.0
147285 2003 AF ₂₄	16.4	X	121.09578	122.37204	315.46123	0.49600	0.1603749	0.24346510	2.5400654	20	4 12.8	19.9
147286 2003 AF ₂₈	16.0	X	95.41595	170.11374	264.36388	3.26795	0.2009494	0.23753775	2.5821470	20	3 13.3	19.3
147287 2003 AA ₂₉	16.6	X	235.89730	291.27436	185.97980	2.25192	0.1512306	0.26406465	2.4061860	20	10 1.9	19.6
147288 2003 AJ ₃₂	16.1	X	78.09643	79.87915	146.76964	1.18977	0.0929441	0.23384258	2.6092778	20	1 24.5	19.1
147289 2003 AM ₃₅	15.0	X	129.83553	262.45954	112.15399	10.50886	0.2036879	0.23760304	2.5816739	20	2 9.7	18.9
147290 2003 AZ ₃₅	15.7	X	167.30902	131.42294	250.58070	7.52087	0.0968805	0.24244278	2.5472010	20	3 12.8	19.6
147291 2003 AD ₃₈	16.0	X	118.61707	300.25798	127.95955	8.15041	0.1661041	0.24049401	2.5609428	20	4 2.4	19.8
147292 2003 AY ₃₉	15.8	X	332.65525	175.32072	259.87213	8.21783	0.1235201	0.21687474	2.7436586	20	12 30.7	18.8
147293 2003 AR ₄₂	15.1	X	213.85706	1.87091	124.47169	16.18270	0.0851996	0.20371560	2.8605740	20	9 23.2	19.5
147294 2003 AD ₄₃	16.0	X	104.02008	90.32920	3.98149	2.61618	0.0693415	0.24248324	2.5469176	20	4 1.1	19.1
147295 2003 AE ₄₈	15.6	X	18.14059	158.33123	298.21526	12.27388	0.0954759	0.22808067	2.6530396	20	—	—
147296 2003 AS ₅₄	16.2	X	141.34261	352.73592	57.80891	3.09704	0.1569619	0.24084452	2.5584575	20	3 31.7	20.1
147297 2003 AY ₅₇	15.6	X	70.97061	350.73800	100.11709	8.14531	0.0941447	0.23390469	2.6088159	20	2 17.5	18.8
147298 2003 AR ₅₇	15.8	X	189.07794	92.91642	64.36067	2.99719	0.1642218	0.26078110	2.4263418	20	10 2.1	19.4
147299 2003 AU ₅₈	15.6	X	28.25417	338.88700	110.50400	13.88376	0.1700556	0.22677299	2.6632290	20	—	—
147300 2003 AQ ₅₉	15.0	X	56.73819	168.59732	329.69262	15.51561	0.0857685	0.23575810	2.5951251	20	3 20.6	18.4
147301 2003 AF ₆₁	16.1	X	357.98132	347.20588	168.54274	6.54965	0.2573581	0.23102392	2.6304583	20	—	—
147302 2003 AS ₆₂	16.1	X	265.79751	286.73547	84.56925	3.43087	0.2053631	0.25723860	2.4485068	20	6 6.8	19.5
147303 2003 AG ₆₅	15.2	X	161.10985	302.69236	68.18521	13.38306	0.2065705	0.24023861	2.5627575	20	3 11.0	19.6
147304 2003 AN ₆₈	16.7	X	74.37811	165.38780	261.19826	3.21588	0.1928273	0.23234951	2.6204440	20	1 31.8	19.6
147305 2003 AD ₇₃	15.4	X	59.58466	330.42833	77.68565	15.50211	0.0465845	0.22543879	2.6737263	20	—	—
147306 2003 AH ₇₃	15.5	X	153.76785	300.18558	79.58273	15.56044	0.1816603	0.23707288	2.5855213	20	3 14.9	19.9
147307 2003 AH ₇₈	14.9	X	313.84263	90.40284	86.43060	14.07293	0.1226736	0.22661323	2.6644805	20	—	—
147308 2003 AN ₇₈	15.5	X	287.34701	298.61151	289.84167	10.83322	0.2029223	0.22820992	2.6520378	20	1 2.9	19.4
147309 2003 AS ₈₈	15.6	X	79.08550	235.58034	255.26559	11.09890	0.2506665	0.23931332	2.5693590	20	5 15.0	18.9
147310 2003 AT ₈₈	15.5	X	17.22409	216.36164	262.45673	12.39858	0.2065071	0.22778585	2.6553283	20	—	—
147311 2003 AF ₈₉	16.0	X	60.99969	61.13254	322.17606	10.65436	0.3141083	0.22922404	2.6442100	20	—	—
147312 2003 AT ₈₉	15.3	X	86.25796	271.93981	79.00942	22.32534	0.0481484	0.22374281	2.6872206	20	—	—
147313 2003 AZ ₉₃	15.6	X	342.22893	307.19946	194.63377	11.69258	0.1469283	0.22860014	2.6490189	20	—	—
147314 2003 AC ₉₄	15.1	X	254.93045	320.42094	340.67160	2.93880	0.0836282	0.17640343	3.1487006	20	3 14.5	19.7
147315 2003 BK ₂	15.7	X	295.28449	162.43113	293.04143	8.34980	0.1170614	0.21083923	2.7957721	20	11 21.3	19.1
147316 2003 BJ ₆	16.0	X	344.29400	260.51659	118.68090	1.85320	0.2566553	0.26813653	2.3817640	20	12 9.8	17.6
147317 2003 BF ₇	16.4	X	66.82336	94.94757	304.34575	1.96885	0.1780176	0.23213621	2.6220489	20	1 29.9	19.2
147318 2003 BD ₈	16.3	X	160.85263	156.07050	262.37866	2.40543	0.1187300	0.24368818	2.5385150	20	4 25.8	20.1
147319 2003 BG ₈	16.3	X	132.53345	279.42954	145.88152	5.24957	0.2271306	0.24203728	2.5500452	20	4 17.7	20.4
147320 2003 BZ ₁₂	16.4	X	142.15606	115.41593	321.01672	11.18858	0.2189976	0.24324361	2.5416071	20	5 2.9	20.8
147321 2003 BU ₁₃	16.5	X	82.60348	323.66636	118.14434	2.51831	0.0850793	0.23493028	2.6012178	20	2 19.2	19.7
147322 2003 BC ₁₅	16.2	X	233.93760	101.87189	336.36868	8.27256	0.2134535	0.25783756	2.4447733	20	7 31.9	19.8
147323 2003 BG ₁₅	15.8	X	92.26162	9.36245	65.19792	6.23079	0.2482085	0.23586171	2.5943651	20	3 21.9	19.3
147324 2003 BD ₁₆	14.9	X	108.75531	298.31314	337.81988	10.95216	0.2496587	0.26232046	2.4168402	20	12 15.9	19.3
147325 2003 BW ₁₇	16.4	X	56.22539	338.61692	155.10130	1.19844	0.1104233	0.23633115	2.5909284	20	3 23.5	19.1
147326 2003 BF ₂₅	15.7	X	235.72746	341.94383	194.74802	9.07951	0.0989771	0.21224374	2.7834245	20	12 15.1	19.7
147327 2003 BH ₃₀	15.6	X	236.64607	0.84858	308.08969	12.89240	0.1415193	0.23663624	2.5887009	20	2 20.9	19.8
147328 2003 BG ₃₁	16.0	X	9.96120	286.81725	140.46811	9.94092	0.0625269	0.21982930	2.7190195	20	—	—
147329 2003 BJ ₃₃	15.8	X	9.28934	262.66480	309.53875	11.31772	0.1143367	0.24006968	2.5639596	20	4 15.2	18.8
147330 2003 BR ₃₃	15.7	X	60.08054	326.94291	130.68607	12.68010	0.1511179	0.23067954	2.6330756	20	2 15.5	18.5
147331 2003 BR ₃₈	15.3	X	248.31969	339.18020	295.10524	7.55762	0.1875947	0.23128995	2.6284408	20	1 22.0	19.4
147332 2003 BB ₄₀	15.8	X	338.39131	127.31586	119.01876	6.07327	0.2571221	0.23822456	2.5771817	20	3 29.9	18.2
147333 2003 BP ₄₂	15.4	X	231.57703	292.75050	292.81007	7.77643	0.2134607	0.21533556	2.7567172	20	—	—
147334 2003 BE ₄₉	15.7	X	129.73718	311.25083	128.82617	7.38338	0.0887120	0.23939655	2.5687635	20	4 21.1	19.4
147335 2003 BK ₄₉	16.5	X	69.03672	14.65086	66.59676	2.09154	0.1599095	0.23378143	2.6097328	20	2 8.7	19.3
147336 2003 BY ₅₀	16.1	X	237.05433	305.30461	122.65608	2.82579	0.1795318	0.25742479	2.4473860	20	7 23.7	19.5
147337 2003 BU ₅₁	16.2	X	59.00487	169.30297	332.51875	4.19173	0.1749442	0.23734406	2.5835516	20	4 15.7	19.0
147338 2003 BT ₅₄	16.1	X	148.92587	121.21486	299.29594	11.18377	0.2434082	0.24345769	2.5401170	20	4 19.9	20.7
147339 2003 BW ₅₆	16.3	X	201.05610	22.09227	148.59468	6.47177	0.0763863	0.26627045	2.3928790	20	11 12.0	19.6
147340 2003 BC ₅₇	15.7	X	149.36411	255.25422	127.66576	5.94149	0.3235117	0.24120942	2.5558765	20	3 18.0	20.2
147341 2003 BE ₆₀	15.7	X	309.26167	39.16681	114.78234	10.49108	0.2033368	0.21997281	2.7178368	20	—	—
147342 2003 BT ₆₄	16.1	X	339.71001	129.70308	304.10054	5.38502	0.0357885	0.21607536	2.7504212	20	—	—
147343 2003 BY ₆₅	16.3	X	231.23255	310.86973	149.81333	2.01073	0.1534708	0.25969153	2.4331237	20	9 2.9	19.6
147344 2003 BK ₆₇	15.5	X	46.25136	319.76254	89.27916	9.89080	0.1841045	0.22353621	2.6888761	20	—	—
147345 2003 BG ₆₉	15.2	X	321.91867	262.81795	351.34541	3.92808	0.1417645	0.17703083	3.1412568	20	3 31.6	19.3
147346 2003 BJ ₇₁	15.1	X	272.36871	221.83155	353.35404	12.60043	0.1737084	0.22232638	2.6986219	20	—	—
147347 2003 BL ₇₁	15.9	X	74.40171	22.92934	148.33233	9.05436	0.1373735	0.24129969	2.5523390	20	6 17.1	19.3
147348 2003 BF ₇₂	15.9	X	56.36756	248.17449	166.33132	11.81328	0.1920347	0.22715381	2.6602515	20	—	—
147349 2003 BC ₇₃	16.0	X	104.34798	327.64767	128.84940	6.92842	0.2437161	0.23897631	2.5717741	20	5 2.2	19.9
147350 2003 BD ₇₈	15.5	X	40.65102	62.71978	225.29222	8.61726	0.1797428	0.23516544	2.5994834	20	3 30.8	18.2
147351 2003 BB ₈₁	15.7	X	188.94253	176.25286	292.74672	11.43186	0.1048245	0.25666790	2.4521950	20	7 30.9	19.2
147352 2003 BG ₈₁	16.2	X	313.22486	229.51778	143.14079	4.92532	0.2042118	0.26275338	2.4141848	20	9 1.9	17.9
147353 2003 BH ₈₁	15.9	X	355.95680	118.11598	101.68238	13.08503	0.2316689	0.23725385	2.5842065	20	4 7.9	18.4
147354 2003 BY ₈₂	15.8	X	25.62096	206.01								

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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>
147361 2003 CP ₉	15.4	X	225.30539	298.96052	270.34476	3.74503	0.0913300	0.21575143	2.7531736	20	—	—
147362 2003 CR ₉	15.8	X	262.85329	301.05518	267.26218	3.77848	0.0994343	0.22111623	2.7084592	20	—	—
147363 2003 CH ₁₀	15.5	X	260.09454	337.56605	168.41199	8.19882	0.1575564	0.21171416	2.7880643	20	12 1.0	19.1
147364 2003 CD ₁₁	16.0	X	82.04861	261.81902	187.21706	6.83747	0.2123728	0.23510207	2.5999505	20	3 17.7	19.1
147365 2003 CH ₁₃	16.0	X	89.92888	66.78421	43.74658	5.78438	0.2565488	0.23808632	2.5781791	20	5 3.1	19.4
147366 2003 CZ ₁₈	15.5	X	128.11537	340.66654	60.56005	14.34197	0.1574063	0.23551848	2.5968850	20	3 13.5	19.6
147367 2003 CA ₂₀	15.6	X	182.87187	181.53173	78.10169	10.93520	0.1656172	0.21582009	2.7525897	20	—	—
147368 2003 CP ₂₁	16.1	X	235.51390	326.13200	154.68686	2.54750	0.0194516	0.20291026	2.8681380	20	10 16.1	20.1
147369 2003 DA ₁	16.5	X	49.04830	137.04269	347.68000	3.54897	0.0402352	0.23316373	2.6143399	20	2 22.8	19.6
147370 2003 DO ₁₆	16.1	X	332.29973	295.38526	144.86682	9.84613	0.1262007	0.21580556	2.7527132	20	—	—
147371 2003 DU ₁₆	15.7	X	320.08220	321.02108	124.89926	3.77099	0.0273194	0.21277484	2.7787909	20	12 21.5	19.3
147372 2003 DB ₂₀	16.7	X	60.73275	219.02369	273.31194	1.60743	0.1632848	0.23546901	2.5972487	20	4 4.5	19.5
147373 2003 EB	16.3	X	252.35032	309.91136	227.51680	8.21911	0.0921464	0.21516162	2.7582027	20	—	—
147374 2003 EE ₃	15.7	X	317.90233	350.51174	90.66112	5.58235	0.0390984	0.21157525	2.7892845	20	12 12.3	19.3
147375 2003 EH ₅	16.2	X	298.60289	11.87315	199.25570	1.69766	0.1375658	0.22591447	2.6699718	20	1 1.6	20.1
147376 2003 EM ₂₁	15.5	X	17.84888	334.15369	176.96217	13.02458	0.1275503	0.22931652	2.6434990	20	2 8.6	18.6
147377 2003 ET ₂₁	16.0	X	61.03706	313.07567	133.46762	4.82788	0.1009869	0.22826875	2.6515821	20	1 26.5	19.0
147378 2003 EP ₂₂	15.9	X	298.10539	207.47850	18.85574	3.73332	0.2901957	0.22391135	2.6858720	20	1 1.8	20.2
147379 2003 EA ₂₃	15.4	X	204.66820	105.34813	119.24144	4.98320	0.1430428	0.21061237	2.7977794	20	12 31.6	19.5
147380 2003 EC ₂₆	15.8	X	180.81729	84.41541	116.94381	3.52643	0.1958664	0.20442675	2.8539360	20	11 8.1	20.5
147381 2003 EE ₂₉	15.9	X	357.22752	32.46325	89.81004	5.18023	0.1448226	0.22193607	2.7017850	20	—	—
147382 2003 EC ₃₃	16.2	X	285.79320	65.69744	116.35272	2.07285	0.0856529	0.21834157	2.7313567	20	—	—
147383 2003 EJ ₃₆	16.2	X	234.87458	194.31102	20.20654	1.58147	0.1619588	0.21432935	2.7653384	20	—	—
147384 2003 EW ₃₆	15.6	X	349.61864	352.98144	79.85592	14.29645	0.1815717	0.21754955	2.7379820	20	—	—
147385 2003 ER ₃₉	15.6	X	299.96374	118.73938	55.90597	15.46200	0.0564731	0.22026649	2.7154205	20	—	—
147386 2003 ED ₅₃	15.4	X	6.78665	100.14594	118.08522	13.70512	0.1456601	0.23093641	2.6311227	20	5 3.8	18.4
147387 2003 EJ ₅₃	15.5	X	48.61862	1.06302	134.49858	15.58091	0.0627506	0.23133241	2.6281192	20	3 13.1	18.9
147388 2003 EO ₅₇	15.5	X	35.15654	39.65687	97.54018	13.81519	0.2442278	0.23230829	2.6207539	20	3 8.9	17.9
147389 2003 EV ₅₇	14.2	X	335.71874	137.30039	104.97798	17.61630	0.1700320	0.17773847	3.1329137	20	4 14.1	18.3
147390 2003 EK ₅₈	14.7	X	56.69630	271.53219	230.99938	17.92004	0.1081070	0.17455427	3.1708990	20	4 6.8	19.0
147391 2003 EO ₅₉	15.0	X	336.30590	129.21068	325.87064	13.07680	0.1658698	0.21435212	2.7651425	20	—	—
147392 2003 ET ₆₁	15.6	X	329.74799	13.98742	92.56039	9.27112	0.0651547	0.21527275	2.7572534	20	—	—
147393 2003 EV ₆₁	15.1	X	66.19334	119.97880	84.81854	6.16920	0.0286694	0.18623914	3.0368412	20	7 1.8	19.2
147394 2003 EB ₆₂	15.2	X	247.04610	247.77734	157.86045	10.96963	0.1030342	0.19081688	2.9880752	20	7 11.0	19.6
147395 2003 EE ₆₂	14.9	X	168.24803	296.92047	150.03197	14.99327	0.1218906	0.18285128	3.0742372	20	6 11.8	20.0
147396 2003 EQ ₆₂	15.1	X	192.11735	323.59707	141.80914	16.14861	0.1332658	0.19185796	2.9772559	20	7 25.3	19.9
147397 Bobhazel	15.8	X	195.25269	297.51608	179.79109	4.60453	0.1327919	0.19486509	2.9465468	20	8 12.4	20.4
147398 2003 FX ₈	14.4	X	332.38477	343.64533	259.23920	24.35335	0.2932665	0.17523093	3.1627306	20	2 27.8	18.7
147399 2003 FV ₁₁	15.7	X	62.16668	357.61346	319.88180	1.05693	0.0734079	0.20168938	2.8797008	20	11 25.8	19.8
147400 2003 FF ₁₇	15.6	X	24.07535	265.06506	55.83910	2.83341	0.0259401	0.19917571	2.9038786	20	10 6.9	19.6
147401 2003 FJ ₂₁	15.1	X	270.83537	107.51786	52.71307	9.96616	0.0876378	0.20935638	2.8089580	20	—	—
147402 2003 FB ₃₄	15.9	X	79.04688	71.35139	9.89207	2.13512	0.0353023	0.22608368	2.6686395	20	2 8.3	19.4
147403 2003 FW ₄₁	15.6	X	163.94123	86.72833	102.52858	4.76792	0.1547342	0.19897787	2.9058032	20	10 12.3	20.3
147404 2003 FS ₄₃	15.6	X	58.00581	208.65339	19.49518	3.02357	0.0688014	0.18596259	3.0398512	20	7 28.2	19.8
147405 2003 FG ₄₆	16.5	X	33.65352	30.37679	148.67577	1.02225	0.0634797	0.23368990	2.6104142	20	4 15.2	19.5
147406 2003 FR ₅₂	15.4	X	263.46184	140.48437	139.15763	14.60334	0.0704715	0.22830220	2.6513231	20	2 24.8	19.1
147407 2003 FV ₅₆	15.4	X	339.83876	246.19548	42.95921	1.72152	0.1086446	0.18579693	3.0416579	20	6 19.7	19.1
147408 2003 FE ₆₁	14.7	X	161.37122	264.80200	155.85145	10.11565	0.0911173	0.17971283	3.1099255	20	5 3.7	19.6
147409 2003 FL ₆₅	14.4	X	261.07681	155.59648	153.48710	9.98077	0.0734413	0.17476281	3.1683759	20	4 4.4	19.0
147410 2003 FM ₆₇	14.8	X	98.29965	7.19506	157.16075	9.19604	0.0489768	0.18387356	3.0628322	20	6 23.9	19.3
147411 2003 FG ₇₂	15.8	X	326.39026	326.11124	135.91896	8.19962	0.1933496	0.21310283	2.7759390	20	—	—
147412 2003 FN ₇₉	14.9	X	53.80562	4.87874	207.11255	10.03565	0.0618194	0.18334176	3.0687520	20	6 27.9	19.2
147413 2003 FK ₈₉	15.3	X	79.97943	340.70188	216.76451	8.86925	0.0844343	0.18552883	3.0445874	20	7 16.4	19.7
147414 2003 FQ ₈₉	14.6	X	226.14087	118.75214	234.47025	7.19257	0.0833856	0.17655889	3.1485521	20	4 14.3	19.4
147415 2003 FG ₉₉	14.5	X	220.26185	285.92515	41.43683	4.98202	0.1334622	0.17150423	3.2083827	20	3 9.9	19.6
147416 2003 FO ₁₁₃	15.7	X	165.63099	6.31629	184.16732	1.63464	0.0174534	0.19989258	2.8969318	20	10 16.8	19.8
147417 2003 FH ₁₁₇	15.5	X	263.86981	19.59010	166.59952	5.05393	0.1032454	0.21262444	2.7801011	20	—	—
147418 2003 FS ₁₁₇	15.8	X	216.92808	159.11583	74.85778	5.23280	0.0781691	0.21485809	2.7607998	20	—	—
147419 2003 FK ₁₂₁	16.0	X	309.82290	220.87606	214.98797	1.28839	0.0217307	0.20500497	2.8485671	20	11 23.5	19.8
147420 2003 FJ ₁₃₀	14.9	X	0.37654	308.94501	242.29222	9.12055	0.0233326	0.17189262	3.2035479	20	3 14.8	19.5
147421 Gárdonyi	15.6	X	17.04040	228.93032	130.61703	6.97792	0.0625105	0.19821912	2.9132138	20	11 20.7	19.5
147422 2003 GR ₁₄	15.5	X	60.07479	282.18686	119.45816	12.47413	0.0241941	0.21714796	2.7413567	20	—	—
147423 2003 GV ₁₆	14.6	X	328.65860	205.44349	65.47354	11.54048	0.0382065	0.18057908	3.0999720	20	5 15.7	18.7
147424 2003 GA ₁₇	15.5	X	307.29924	232.93260	291.98146	10.55314	0.1786967	0.21873836	2.7280527	20	—	—
147425 2003 GF ₃₇	15.4	X	357.07644	69.33146	134.18832	15.79730	0.1316462	0.23049716	2.6344644	20	3 23.2	18.5
147426 2003 GE ₃₈	15.5	X	202.78326	38.59014	106.18926	3.35979	0.0419763	0.19726383	2.9226114	20	10 3.3	19.7
147427 2003 GN ₄₄	14.9	X	8.11741	179.40674	89.34460	19.33276	0.1812168	0.18255822	3.0775264	20	7 14.8	18.3
147428 2003 GM ₅₄	15.4	X	3.55111	246.35640	81.24538	2.07288	0.1545992	0.19282398	2.9673039	20	9 27.6	18.8
147429 2003 HQ ₉	15.3	X	33.94906	152.22166	104.65444	6.67367	0.1248485	0.18239591	3.0793519	20	8 8.3	19.2
147430 2003 HE ₁₃	15.1	X	297.10347	208.90209	102.85924	4.88301	0.0712525	0.17745664	3.1362298	20	5 21.2	19.3
147431 2003 JA	17.8	X	0.62017	5.84017	91.67614	9.97380	0.0831680	0.44141620	1.7083252	20	—	—
147432 2003 JF ₉	14.9	X	172.34823	308.28731	97.04553	5.00485	0.0712406	0.17234008	3.1980005	20	4 24.9	19.7
147433 2003 JS ₁₁	14.9	X	170.03305	7.58664	81.15659	11.43813	0.0359403	0.18058266	3.0999310	20	6 12.3	19.3
147434 2003 OM ₁₄	17.1	X	76.98890	113.32452	269.43604	17.69120	0.1038461	0.37312016	1.9108954	20		

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Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>
147441 2003 XY ₁₇	15.6	X	109.54961	220.86081	81.19610	26.14872	0.2432548	0.29294139	2.2453406	20	—	—
147442 2003 XN ₂₆	16.4	X	78.47827	212.88260	110.42304	7.26136	0.1627299	0.29607197	2.2294848	20	—	—
147443 2003 YK ₄₇	16.8	X	64.67435	109.50732	270.51865	1.84259	0.2351023	0.29954313	2.2122276	20	—	—
147444 2003 YA ₅₀	16.7	X	202.62558	330.45998	277.41501	2.49483	0.0864136	0.29983216	2.2108057	20	—	—
147445 2003 YG ₉₀	16.6	X	177.06221	145.67594	98.50907	7.38879	0.1333056	0.28940645	2.2635873	20	—	—
147446 2003 YG ₉₄	15.4	X	294.89812	147.64285	305.35197	25.33383	0.2422617	0.28424448	2.2909100	20	12 6.8	17.6
147447 2003 YT ₁₁₉	16.2	X	96.87562	282.82873	72.49265	4.30370	0.2089358	0.30043046	2.2078696	20	—	—
147448 2003 YT ₁₃₆	16.7	X	348.58077	328.57012	119.41431	8.11693	0.0742574	0.29444757	2.2376770	20	—	—
147449 2003 YL ₁₅₄	15.2	X	16.37394	191.86820	325.29027	19.70370	0.0564845	0.36969188	1.9226908	20	1 28.0	16.8
147450 2003 YN ₁₇₂	16.5	X	149.75357	163.45980	78.16381	6.00698	0.0961898	0.28668140	2.2779090	20	12 15.6	19.8
147451 2004 BH ₃	16.2	X	314.68959	144.97072	117.27052	3.16104	0.1622332	0.25415819	2.4683116	20	3 23.2	18.9
147452 2004 BH ₉	16.3	X	310.00987	97.49854	55.57518	9.83787	0.0541805	0.29663650	2.2266553	20	—	—
147453 2004 BZ ₁₀	16.9	X	303.55319	4.85121	134.80307	6.17973	0.1573117	0.29254701	2.2473581	20	—	—
147454 2004 BT ₁₄	16.1	X	99.99342	304.83117	278.33518	3.22467	0.0840827	0.27292549	2.3538204	20	9 22.6	19.3
147455 2004 BK ₂₀	16.3	X	121.17758	15.91967	11.49673	3.48244	0.1772766	0.31035488	2.1605467	20	2 2.7	18.7
147456 2004 BA ₃₀	17.1	X	222.13394	180.30123	336.41235	2.43595	0.1159702	0.28161796	2.3051321	20	11 14.4	20.0
147457 2004 BD ₃₇	16.8	X	276.42463	265.03761	104.05932	4.12312	0.1783795	0.27064178	2.3670430	20	6 22.3	19.5
147458 2004 BY ₄₂	16.8	X	14.66837	262.42937	179.95017	6.48751	0.0625140	0.29602482	2.2297215	20	—	—
147459 2004 BV ₄₈	16.7	X	131.85622	325.39393	282.97717	3.03945	0.1349236	0.28236015	2.3010910	20	12 3.7	20.2
147460 2004 BL ₅₆	16.5	X	130.06730	298.05629	280.52426	1.47053	0.1602627	0.27342637	2.3509449	20	10 23.9	20.2
147461 2004 BJ ₆₆	16.9	X	101.67480	235.06660	107.70859	5.99646	0.0636056	0.29629811	2.2283503	20	—	—
147462 2004 BA ₈₇	16.7	X	11.10156	356.69060	130.83520	7.76253	0.1834277	0.30172195	2.2015647	20	—	—
147463 2004 BG ₉₁	17.1	X	282.96542	295.94255	299.64057	4.33168	0.1002345	0.30314471	2.1946708	20	1 6.6	19.9
147464 2004 BL ₉₁	16.8	X	294.08892	23.18222	152.86207	4.97371	0.1326553	0.29600235	2.2298344	20	—	—
147465 2004 BQ ₉₁	16.3	X	156.98622	336.73656	252.31123	1.46508	0.1743010	0.27825748	2.3236541	20	12 1.5	19.9
147466 2004 BZ ₁₀₄	15.9	X	210.28680	96.91093	146.78685	2.48731	0.0819267	0.23397655	2.6082817	20	—	—
147467 2004 BS ₁₀₈	16.6	X	208.93876	165.50019	20.25358	5.94832	0.0992293	0.28288643	2.2982361	20	12 9.3	19.5
147468 2004 BJ ₁₁₄	16.7	X	4.62968	202.12874	304.95224	5.64895	0.1137258	0.30216819	2.1993966	20	—	—
147469 2004 BM ₁₁₇	16.7	X	25.88366	357.82901	66.01338	8.82410	0.0567858	0.29507012	2.2345285	20	—	—
147470 2004 BX ₁₁₇	16.4	X	247.41601	247.20121	236.47271	6.06196	0.0938698	0.28218169	2.3020610	20	11 8.2	18.8
147471 2004 BF ₁₄₉	17.5	X	314.59351	43.23520	15.37959	1.05359	0.0464440	0.28408593	2.2917623	20	11 26.8	20.1
147472 2004 BD ₁₅₂	16.9	X	231.21653	320.98607	247.94701	3.64458	0.1633914	0.29072070	2.2567602	20	—	—
147473 2004 CC ₇	16.7	X	98.91689	199.47994	13.76247	3.12034	0.1615304	0.26893177	2.3770663	20	9 17.6	20.3
147474 2004 CG ₁₉	17.0	X	131.98973	102.04635	133.41023	7.22920	0.1634171	0.27869379	2.3212283	20	11 19.4	20.7
147475 2004 CE ₂₄	16.4	X	78.32402	323.14189	288.80069	2.10962	0.1123907	0.26989437	2.3714110	20	10 8.9	19.5
147476 2004 CK ₂₄	16.3	X	15.60415	96.35846	172.02445	1.35042	0.1603604	0.26248060	2.4158571	20	8 5.3	18.5
147477 2004 CV ₂₆	16.8	X	154.21560	287.79277	313.55724	2.86292	0.0884322	0.28152533	2.3056377	20	12 19.5	19.9
147478 2004 CZ ₂₉	17.1	X	104.19157	88.46867	132.35266	2.71350	0.1507540	0.27143934	2.3624041	20	10 2.9	20.5
147479 2004 CH ₃₀	16.3	X	296.20400	315.57584	330.57170	1.60144	0.1892561	0.25539501	2.4603362	20	3 23.1	19.3
147480 2004 CA ₃₅	15.9	X	260.35449	248.24663	113.18111	9.12140	0.2971469	0.26837714	2.3803402	20	5 10.7	19.8
147481 2004 CO ₃₇	16.3	X	217.06593	311.93450	174.85178	10.91572	0.0791517	0.27437222	2.3453388	20	10 4.2	19.3
147482 2004 CS ₄₀	17.1	X	190.25339	274.42594	202.01979	1.85106	0.1654497	0.27008961	2.3702681	20	8 9.9	20.6
147483 2004 CW ₄₂	16.7	X	87.26956	123.18462	81.12064	2.91498	0.1282854	0.26404501	2.4063054	20	8 19.8	19.9
147484 2004 CR ₅₃	16.2	X	74.72942	193.18326	141.10651	3.87619	0.1523948	0.22427585	2.6829611	20	—	—
147485 2004 CS ₅₄	16.5	X	121.58216	220.01421	4.55647	3.27538	0.0903152	0.27308897	2.3528809	20	10 20.9	19.7
147486 2004 CV ₅₅	16.4	X	359.25410	338.33873	106.77074	7.03407	0.0819204	0.29283286	2.2458953	20	—	—
147487 2004 CJ ₅₆	17.0	X	68.50229	51.86057	120.04312	2.22052	0.1285719	0.25597903	2.4565925	20	6 7.6	19.9
147488 2004 CM ₆₇	16.1	X	32.18160	174.90565	121.61672	8.05668	0.1068313	0.27263327	2.3555020	20	10 13.9	18.9
147489 2004 CA ₇₄	16.2	X	155.56929	103.87644	91.77094	9.68280	0.1363454	0.27339917	2.3511008	20	10 24.5	19.9
147490 2004 CM ₇₅	17.4	X	271.26251	228.95660	212.54360	2.22174	0.1981921	0.28080507	2.3095786	20	9 27.7	19.8
147491 2004 CO ₇₇	15.6	X	107.33532	110.99279	147.85324	3.16539	0.0320687	0.21777110	2.7361247	20	11 6.2	19.5
147492 2004 CW ₇₈	16.7	X	150.07603	69.59484	37.98836	1.69904	0.1435857	0.26151549	2.4217972	20	6 19.9	20.5
147493 2004 CA ₇₉	16.9	X	198.45153	71.24105	86.31232	3.17643	0.1138509	0.27640134	2.3340453	20	10 19.2	20.0
147494 2004 CS ₈₅	17.2	X	2.28891	127.29482	6.24516	1.86330	0.0859896	0.30055503	2.2072594	20	—	—
147495 2004 CQ ₈₆	17.0	X	329.31848	1.71623	126.04278	4.00295	0.1189639	0.29407274	2.2395781	20	—	—
147496 2004 CE ₉₅	17.0	X	181.66680	298.76400	258.15758	1.58180	0.1537817	0.27846266	2.3225125	20	11 16.0	20.5
147497 2004 CO ₉₉	16.2	X	42.86732	98.42099	103.68580	3.09208	0.1573673	0.25461462	2.4653608	20	6 14.6	18.7
147498 2004 CZ ₉₉	16.3	X	189.68701	56.30808	88.14439	3.63837	0.1129501	0.27214127	2.3583401	20	9 21.9	19.6
147499 2004 CR ₁₀₀	16.8	X	324.64831	358.50998	103.71399	4.16657	0.0468097	0.28796969	2.2711101	20	—	—
147500 2004 CX ₁₀₀	16.2	X	165.06876	250.71884	330.67484	2.92738	0.1380212	0.27713720	2.3299119	20	11 30.9	19.6
147501 2004 CJ ₁₀₃	16.0	X	71.51440	310.44263	271.59899	6.29322	0.0664688	0.26444785	2.4038610	20	8 10.9	19.0
147502 2004 CT ₁₀₃	16.5	X	51.17155	293.97219	297.41551	4.04532	0.1358154	0.26081417	2.4261367	20	8 7.7	19.4
147503 2004 CW ₁₀₄	16.7	X	255.61304	187.99372	308.24406	2.64488	0.1768563	0.28236637	2.3010571	20	11 25.4	19.1
147504 2004 CU ₁₀₅	16.2	X	99.77291	299.46759	256.19689	8.08895	0.1530745	0.26426542	2.4049672	20	8 20.3	19.8
147505 2004 CW ₁₀₆	15.7	X	175.15677	301.50612	228.41342	6.25206	0.0914411	0.27306780	2.3530025	20	10 7.4	19.2
147506 2004 CF ₁₀₇	16.4	X	324.44614	167.72632	311.43115	6.95290	0.0769175	0.29007568	2.2601044	20	—	—
147507 2004 CQ ₁₃₀	15.9	X	307.78707	153.20630	65.11593	11.47031	0.0646937	0.24291953	2.5438671	20	2 2.1	19.4
147508 2004 DA ₅	16.4	X	182.72094	49.78670	99.16730	6.66402	0.0518839	0.27282742	2.3543844	20	9 26.5	19.6
147509 2004 DD ₆	16.8	X	263.60483	296.82598	143.37232	5.03281	0.1128604	0.27590044	2.3368695	20	9 29.4	19.3
147510 2004 DR ₉	16.3	X	145.40074	62.94959	115.75886	8.40272	0.0987230	0.26849119	2.3796661	20	9 20.8	19.8
147511 2004 DS ₉	16.2	X	192.92391	163.71987	87.83000	8.91587	0.0999628	0.28677901	2.2773921	20	—	—
147512 2004 DH ₁₄	16.4	X	213.11498	85.31201	54.29322	2.74133	0.0753340	0.27394176	2.3479953	20	10 16.6	19.5
147513 2004 DW ₁₆	16.7	X	245.26072	317.76533	157.43902	3.89212	0.0659298	0.27816578	2.3241648	20	10 29.6	19.3
147514 2004 DU ₁₈	16.2	X	298.64741	24.33327	141.14294	4.86500	0.1013844	0.2310852				

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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>	
147521	2004 DK ₄₁	16.2	X	77.52721	165.41337	62.67297	4.96938	0.2124665	0.26215661	2.4178472	20	9 21.2	19.7
147522	2004 DY ₄₁	16.5	X	271.16014	151.16417	323.89142	6.49390	0.1319481	0.28182323	2.3040126	20	11 27.5	18.8
147523	2004 DC ₄₂	16.6	X	145.22762	348.62074	209.23809	1.97847	0.1024154	0.27115248	2.3640700	20	10 12.2	20.0
147524	2004 DE ₄₂	16.9	X	342.28449	47.93376	123.06011	4.59245	0.1220909	0.30000584	2.2099524	20	—	—
147525	2004 DQ ₄₅	16.3	X	284.84760	69.08283	157.57708	4.60370	0.2533972	0.23447401	2.6045912	20	—	—
147526	2004 DY ₄₅	16.2	X	51.77019	154.18494	125.79677	3.05494	0.1978898	0.26774048	2.3841122	20	10 28.2	19.3
147527	2004 DG ₄₇	16.6	X	122.62496	252.05049	298.27165	5.27760	0.0728536	0.26701877	2.3884062	20	9 3.2	19.9
147528	2004 DO ₅₂	17.2	X	311.89813	319.28385	248.56232	1.41396	0.0881216	0.30184759	2.2009537	20	1 7.0	19.7
147529	2004 DP ₅₃	16.3	X	215.25719	170.39786	56.51647	4.04121	0.1879862	0.28488663	2.2874661	20	—	—
147530	2004 DF ₆₀	16.2	X	26.84627	338.45466	293.18590	1.76635	0.1738776	0.26391153	2.4071167	20	9 3.2	18.6
147531	2004 DS ₆₂	16.5	X	301.90616	81.52189	309.22525	3.49640	0.1556434	0.27487088	2.3427012	20	9 12.5	18.5
147532	2004 DF ₆₆	16.3	X	33.57176	167.90070	89.18051	3.38987	0.1761971	0.25876958	2.4388995	20	8 26.1	18.9
147533	2004 EN ₃	16.2	X	217.17798	92.29772	92.87910	8.26534	0.0542795	0.28213144	2.3023343	20	12 26.9	19.1
147534	2004 EF ₆	16.8	X	168.19446	44.38520	194.82736	1.14608	0.1337754	0.28056295	2.3109702	20	12 28.1	19.9
147535	2004 EH ₁₄	15.9	X	65.65297	189.73191	113.43140	3.62239	0.1759427	0.27222888	2.3578341	20	12 9.3	19.2
147536	2004 EK ₁₄	16.4	X	60.27147	234.70936	133.62407	7.56727	0.0322018	0.28550319	2.2841717	20	—	—
147537	2004 EF ₁₅	16.1	X	140.89387	159.46006	87.50932	7.76834	0.0818961	0.27745322	2.3281424	20	12 11.7	19.3
147538	2004 EF ₂₄	16.6	X	99.83667	150.03143	46.89831	4.20433	0.1525702	0.26289180	2.4133373	20	8 28.0	20.1
147539	2004 EB ₂₇	16.5	X	227.98285	34.79022	108.24415	0.43314	0.1600462	0.27612304	2.3356134	20	10 27.8	19.6
147540	2004 EC ₂₈	16.7	X	325.55855	321.39859	356.02357	1.11539	0.1912201	0.25927065	2.4357561	20	6 30.1	18.5
147541	2004 EO ₃₁	16.2	X	55.61716	345.62221	250.39170	6.36929	0.1353093	0.25972754	2.4328988	20	8 18.2	19.4
147542	2004 ET ₃₁	16.2	X	233.87214	2.53777	307.39249	5.21035	0.1450417	0.30183721	2.2010042	20	2 15.4	19.4
147543	2004 ED ₃₃	15.9	X	333.44128	352.90887	246.26713	13.02730	0.1394345	0.24568428	2.5247466	20	3 17.4	19.1
147544	2004 EN ₃₆	16.6	X	273.33630	158.58325	319.08281	3.59640	0.1402936	0.28133740	2.3066643	20	12 5.2	18.8
147545	2004 EA ₅₀	16.7	X	101.33843	81.41881	190.18940	2.26853	0.1461095	0.27496208	2.3421831	20	12 2.9	20.2
147546	2004 EN ₅₀	17.2	X	38.77936	318.35687	99.97165	1.85627	0.1421611	0.29454218	2.2371978	20	—	—
147547	2004 EQ ₅₂	16.1	X	262.29191	224.83390	72.30765	4.26504	0.0966349	0.24537794	2.5268476	20	3 12.9	19.6
147548	2004 EY ₅₉	16.8	X	274.01473	16.43418	168.53885	0.93425	0.1444988	0.28842740	2.2687068	20	—	—
147549	2004 EQ ₆₁	16.0	X	170.83078	184.04015	178.43502	11.38370	0.1526132	0.24365716	2.5387305	20	2 26.5	20.0
147550	2004 EQ ₆₃	16.0	X	18.54780	15.45653	308.44439	2.11647	0.2082267	0.26761882	2.3848347	20	11 11.5	18.6
147551	2004 EB ₈₀	15.8	X	41.15679	196.96225	47.70827	7.14035	0.0994668	0.26185612	2.4196965	20	8 9.3	18.7
147552	2004 EV ₈₅	16.5	X	142.50697	112.58516	66.61594	4.18776	0.0933605	0.26716919	2.3875096	20	9 16.6	20.0
147553	2004 EW ₈₅	16.6	X	224.27837	149.03702	70.53984	3.81794	0.0648813	0.28684587	2.2770382	20	—	—
147554	2004 EE ₉₆	15.5	X	84.01764	304.87702	149.38272	22.58900	0.0860812	0.24075369	2.5591009	20	3 9.8	18.7
147555	2004 FU ₁₁	16.5	X	294.01455	166.38798	304.95688	5.23614	0.1074411	0.28317549	2.2966718	20	—	—
147556	2004 FK ₁₄	16.6	X	228.57347	304.11423	210.12426	3.16983	0.1500445	0.27706720	2.3303043	20	11 14.6	19.5
147557	2004 FY ₁₄	16.9	X	257.31993	201.00810	288.79174	1.55285	0.1529435	0.27969146	2.3157050	20	11 22.4	19.2
147558	2004 FZ ₁₄	16.7	X	66.45275	187.06116	292.76660	2.25163	0.0251088	0.30436878	2.1887827	20	2 28.8	19.1
147559	2004 FR ₂₀	16.4	X	205.22595	275.74061	266.75921	1.11224	0.1419663	0.27794032	2.3254215	20	11 24.2	19.6
147560	2004 FN ₂₅	15.5	X	104.01801	4.30184	15.59967	14.58620	0.0900208	0.23243766	2.6197814	20	—	—
147561	2004 FD ₂₆	16.3	X	244.46285	279.69800	236.01017	3.36981	0.1157488	0.27940394	2.3172934	20	12 15.1	18.9
147562	2004 FD ₃₁	15.6	X	277.65688	357.03994	124.09339	23.74815	0.1581021	0.28239151	2.3009206	20	12 21.5	18.0
147563	2004 FA ₃₃	15.9	X	121.36374	304.94398	328.61463	6.65004	0.0997723	0.27767414	2.3269073	20	12 24.7	19.4
147564	2004 FM ₃₃	16.5	X	254.36392	197.01579	247.24413	5.03914	0.1084353	0.27273615	2.3549096	20	9 16.6	19.5
147565	2004 FL ₃₄	16.0	X	3.79755	253.55329	66.75241	4.37471	0.1077315	0.26571680	2.3962017	20	9 29.1	18.4
147566	2004 FB ₃₇	15.4	X	153.06513	192.48333	168.92960	12.04707	0.1963011	0.23941457	2.5686346	20	2 12.2	19.5
147567	2004 FE ₄₁	16.9	X	277.36509	80.82227	3.09856	2.28150	0.1901050	0.27717591	2.3296950	20	10 13.6	19.0
147568	2004 FW ₄₅	16.5	X	95.07448	195.27411	72.77899	5.17272	0.1323128	0.26890068	2.3772496	20	11 20.6	19.9
147569	2004 FN ₅₀	16.8	X	240.18896	217.86431	336.59836	2.98367	0.1679153	0.28394496	2.2925208	20	—	—
147570	2004 FK ₅₃	16.4	X	198.23454	81.21456	216.22796	3.06112	0.1697362	0.23715032	2.5849585	20	1 6.5	20.6
147571	2004 FH ₅₅	15.5	X	329.77551	252.18814	65.02378	3.34329	0.1180903	0.20083047	2.8879055	20	7 12.1	18.7
147572	2004 FK ₅₈	16.8	X	258.99908	68.80490	121.24631	1.30319	0.1426620	0.28664227	2.2781163	20	—	—
147573	2004 FW ₆₂	15.7	X	347.15399	190.25287	150.33485	3.29891	0.1927002	0.26507517	2.4000669	20	10 5.6	17.5
147574	2004 FC ₆₇	16.4	X	288.86137	27.97817	111.91934	4.30005	0.1126407	0.28611158	2.8089324	20	—	—
147575	2004 FR ₆₉	16.6	X	236.72740	205.26187	59.82924	2.18461	0.1392705	0.23205204	2.6226829	20	1 3.5	20.6
147576	2004 FA ₉₄	16.6	X	136.46165	6.21802	122.51934	3.84707	0.1200835	0.25757081	2.4464609	20	7 2.2	20.1
147577	2004 FR ₉₇	16.7	X	342.71884	34.08108	108.84250	7.03947	0.0635231	0.29513800	2.2341858	20	—	—
147578	2004 FL ₁₀₇	16.5	X	150.62606	354.18280	228.79727	1.79251	0.1198366	0.27260275	2.3556778	20	11 19.1	19.8
147579	2004 FF ₁₁₀	15.9	X	215.05781	59.44205	193.62581	2.20059	0.2069520	0.22476407	2.6790745	20	—	—
147580	2004 FW ₁₂₅	16.9	X	279.33875	282.06391	202.03547	2.77606	0.0960666	0.28160247	2.3052166	20	12 30.6	19.1
147581	2004 FR ₁₂₆	17.0	X	286.22209	58.45759	10.23456	4.16192	0.1035968	0.27328820	2.3517373	20	10 18.3	19.2
147582	2004 FG ₁₃₀	16.9	X	9.93021	21.67197	119.97848	6.74368	0.0836345	0.29885173	2.2156383	20	1 1.9	19.2
147583	2004 FR ₁₃₀	16.1	X	333.95163	184.51504	110.92600	9.38760	0.1608528	0.25298007	2.4759689	20	6 16.6	18.4
147584	2004 FB ₁₃₄	16.6	X	29.30198	134.76022	307.48473	6.36859	0.0998976	0.29425257	2.2386655	20	—	—
147585	2004 FX ₁₃₄	16.5	X	277.62752	293.30856	314.83967	5.87551	0.1636058	0.29704350	2.2246209	20	1 11.9	19.8
147586	2004 FW ₁₄₁	16.9	X	113.82536	301.30695	309.68391	2.21286	0.1674718	0.27007418	2.3703584	20	11 18.2	20.5
147587	2004 FU ₁₆₁	17.1	X	227.03503	256.11647	218.08716	1.67822	0.1705983	0.27273717	2.3549037	20	9 14.7	20.4
147588	2004 FN ₁₆₂	17.1	X	87.18078	356.67865	101.84310	3.92935	0.0876419	0.30543000	2.1837098	20	3 12.8	19.3
147589	2004 GG	15.0	X	257.64849	189.43206	104.62963	4.73569	0.2281712	0.17816894	3.1278654	20	2 25.9	20.1
147590	2004 GR ₁	16.6	X	222.16758	42.21401	209.81343	1.36565	0.1664614	0.22699150	2.6615195	20	—	—
147591	2004 GL ₈	15.8	X	70.94857	195.96176	196.38386	3.26811	0.1820157	0.22793387	2.6541786	20	—	—
147592	2004 GT ₁₃	16.4	X	95.48963	358.91708	245.79924	5.84394	0.0999366	0.26621931				

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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>		
147601	2004	GX ₂₉	16.3	X	241.23169	164.41282	85.73348	1.95733	0.0876384	0.23097660	2.6308175	20	—	—
147602	2004	GN ₃₀	16.9	X	306.38066	294.86796	227.43456	3.36226	0.0866804	0.29024837	2.2592078	20	—	—
147603	2004	GM ₃₂	16.4	X	329.51084	210.73348	294.85683	7.28406	0.0749035	0.29309090	2.2445769	20	—	—
147604	2004	GS ₃₄	16.5	X	354.17533	286.44084	279.10512	3.40164	0.0530723	0.24358055	2.5392628	20	3 18.0	19.6
147605	2004	GP ₃₇	15.8	X	103.35320	235.41190	287.23871	6.97235	0.0562387	0.25547378	2.4598304	20	7 1.8	18.8
147606	2004	GJ ₃₉	15.8	X	11.59534	198.25697	58.91535	1.59208	0.2573919	0.18978240	2.9989238	20	7 13.6	18.4
147607	2004	GG ₄₃	16.3	X	44.97379	282.07929	36.31092	2.96644	0.1848161	0.27097752	2.3650875	20	12 6.5	19.6
147608	2004	GB ₄₄	16.6	X	248.80434	253.32493	67.76813	1.63928	0.0450711	0.24707545	2.5152606	20	4 1.2	19.8
147609	2004	GE ₅₁	16.0	X	61.73021	353.88449	36.98602	9.29664	0.0799239	0.22613011	2.6682742	20	—	—
147610	2004	GT ₅₄	16.5	X	83.25816	97.34801	214.31446	5.59506	0.0444978	0.21517241	2.7581105	20	12 13.1	20.4
147611	2004	GV ₅₉	17.0	X	2.99080	244.20448	250.56049	2.95662	0.0715886	0.29575382	2.2310834	20	—	—
147612	2004	GP ₈₈	15.2	X	210.65724	276.01767	39.13786	8.92115	0.1045259	0.17120716	3.2120930	20	2 18.8	20.3
147613	2004	HJ ₃	16.4	X	145.25416	234.07824	304.83750	6.34479	0.1448853	0.26575458	2.3959746	20	9 14.5	20.2
147614	2004	HX ₃	15.8	X	254.19623	192.87711	109.35153	10.11134	0.1723047	0.23578065	2.5949596	20	3 5.4	19.9
147615	2004	HE ₈	16.0	X	243.59534	252.87524	349.50726	3.31100	0.0333466	0.23013447	2.6372316	20	—	—
147616	2004	HS ₉	16.8	X	188.21750	219.01249	336.88243	1.78084	0.1581880	0.27411738	2.3469923	20	11 19.9	20.1
147617	2004	HF ₁₀	16.5	X	146.19933	45.69063	117.69392	4.84089	0.1304074	0.26095323	2.4252747	20	8 29.8	20.1
147618	2004	HG ₁₀	16.8	X	227.58023	169.80647	356.53775	2.28639	0.1501387	0.27632292	2.3344869	20	11 28.5	19.5
147619	2004	HW ₁₂	16.4	X	304.45513	350.50740	89.39918	7.10745	0.1722764	0.28083648	2.3094064	20	12 10.1	17.9
147620	2004	HQ ₁₇	16.3	X	43.91256	208.16887	279.93455	3.48968	0.1666910	0.24244943	2.5471544	20	2 25.4	18.7
147621	2004	HD ₂₀	15.9	X	42.36076	52.85970	116.63334	6.02657	0.1688905	0.24366907	2.5386478	20	4 29.6	18.5
147622	2004	HS ₂₅	15.9	X	192.09568	167.19514	67.17278	6.43423	0.0718370	0.21875432	2.7279199	20	—	—
147623	2004	HQ ₂₇	15.5	X	278.16678	139.32524	41.08638	14.80948	0.0295815	0.22711866	2.6605260	20	—	—
147624	2004	HP ₃₆	15.8	X	301.51060	222.26993	119.63975	7.77317	0.1401067	0.25796479	2.4439694	20	6 28.4	18.5
147625	2004	HY ₄₂	15.9	X	38.09637	123.99146	15.76417	2.05974	0.0754860	0.23896020	2.5718897	20	2 28.2	18.9
147626	2004	HF ₄₄	15.5	X	346.69841	330.98663	359.60741	6.01766	0.1038278	0.19927182	2.9029449	20	8 31.1	18.8
147627	2004	HR ₄₅	16.3	X	5.67679	356.80614	192.23788	1.76764	0.0995932	0.24123544	2.5556927	20	3 12.7	18.8
147628	2004	HQ ₄₆	15.0	X	215.90581	302.86239	35.11230	16.52795	0.0809821	0.17979324	3.1089983	20	3 24.2	19.9
147629	2004	HE ₄₈	15.5	X	244.65764	19.36969	302.40482	12.31944	0.2641646	0.23952485	2.5678461	20	3 4.9	20.1
147630	2004	HN ₄₉	16.6	X	116.20325	177.00490	86.20093	6.33501	0.1163882	0.27339884	2.3511027	20	12 5.7	20.1
147631	2004	HH ₅₂	15.3	X	173.77391	207.24786	88.94263	13.89994	0.1664055	0.22455338	2.6807500	20	—	—
147632	2004	HL ₅₄	16.2	X	358.34285	301.84832	245.89943	3.06508	0.0654423	0.24004860	2.5641096	20	2 28.9	19.3
147633	2004	HD ₅₈	16.5	X	36.33090	126.68638	215.23016	2.04529	0.0850881	0.20884533	2.8135386	20	11 27.9	20.1
147634	2004	HH ₅₈	16.5	X	152.24336	348.52875	45.64225	4.25600	0.0778597	0.23878278	2.5731635	20	3 16.2	20.1
147635	2004	HW ₆₃	15.6	X	42.73734	46.61918	59.06830	16.57421	0.1207018	0.23552336	2.5968492	20	1 25.9	18.7
147636	2004	HC ₆₇	16.9	X	150.35619	68.05446	78.93906	1.82983	0.1664293	0.25988566	2.4319119	20	8 12.4	20.7
147637	2004	JO ₆	15.9	X	348.22504	293.18380	237.98952	9.43909	0.0615975	0.23420401	2.6065927	20	1 22.7	19.3
147638	2004	JZ ₈	14.9	X	228.71209	244.03494	88.24655	14.71431	0.1878232	0.17634656	3.1493775	20	3 25.4	20.3
147639	2004	JT ₁₀	15.4	X	111.98666	206.94335	101.12175	13.64349	0.1731890	0.21294150	2.7773408	20	—	—
147640	2004	JD ₁₂	15.4	X	341.47140	262.52606	294.45697	11.85288	0.1252405	0.23951511	2.5679158	20	2 7.3	18.5
147641	2004	JS ₁₃	16.8	X	320.89201	166.73681	76.47180	1.33948	0.0837982	0.30291767	2.1957673	20	3 11.8	19.2
147642	2004	JL ₁₅	15.6	X	358.08731	82.98327	192.22968	2.16887	0.2072825	0.18866583	3.0107443	20	7 3.7	18.5
147643	2004	JE ₁₇	16.7	X	138.38208	228.12818	331.70133	3.57450	0.1055103	0.26553826	2.3972757	20	10 5.5	20.3
147644	2004	JB ₂₃	15.2	X	243.62111	282.27569	52.31528	14.67711	0.1568175	0.17934423	3.1141853	20	4 10.2	20.2
147645	2004	JG ₂₄	16.2	X	164.39480	39.08868	212.05762	2.12283	0.1467789	0.21458452	2.7631457	20	12 24.7	20.7
147646	2004	JK ₂₅	17.0	X	193.27594	0.50015	200.80395	1.74438	0.1781128	0.27482207	2.3429785	20	11 30.9	20.3
147647	2004	JK ₂₆	16.5	X	193.46534	259.29929	21.11697	1.80402	0.1720795	0.22249994	2.6972185	20	—	—
147648	2004	JK ₂₆	15.7	X	312.96872	133.27692	66.54561	4.90043	0.1173462	0.23244069	2.6197586	20	1 7.0	19.1
147649	2004	JT ₂₇	14.9	X	294.86827	110.72671	183.07768	9.95550	0.0732455	0.17977384	3.1092219	20	4 25.6	19.2
147650	2004	JB ₃₂	15.1	X	254.48525	166.64969	146.81889	6.13831	0.1373010	0.17885505	3.1198610	20	3 25.0	19.8
147651	2004	JO ₃₂	15.7	X	147.82741	142.85672	91.63769	5.53776	0.0177105	0.21115896	2.7929492	20	11 22.0	19.6
147652	2004	JA ₃₅	15.9	X	346.81078	65.94993	114.75414	5.31349	0.1536548	0.23535260	2.5981051	20	1 24.7	18.6
147653	2004	JF ₃₅	15.2	X	147.24755	178.49696	80.16452	17.55125	0.1568194	0.21091445	2.7951074	20	12 17.1	19.6
147654	2004	JM ₃₅	15.3	X	2.82682	103.46391	96.45824	6.79278	0.1878538	0.24083486	2.5585259	20	3 22.8	17.6
147655	2004	JF ₃₆	16.4	X	226.19927	186.73239	269.80636	6.86426	0.0731552	0.26224187	2.4173231	20	8 29.3	19.7
147656	2004	JZ ₃₆	15.5	X	253.61178	94.99307	221.98302	5.65431	0.1737258	0.17816842	3.1278715	20	3 21.5	20.6
147657	2004	JG ₃₇	16.5	X	291.11620	311.88983	269.23103	5.34460	0.1495497	0.29366038	2.2416741	20	—	—
147658	2004	JP ₄₁	17.3	X	326.38981	26.49080	131.09088	2.42054	0.1007129	0.29109695	2.2548151	20	—	—
147659	2004	JT ₄₁	16.9	X	236.16249	120.33772	71.50543	2.84169	0.1680849	0.28023845	2.3126908	20	—	—
147660	2004	JP ₄₄	16.6	X	4.55137	0.18081	163.95821	4.08157	0.0958852	0.29746432	2.2225223	20	1 24.3	18.6
147661	2004	JN ₅₁	15.3	X	96.15453	206.78474	86.10135	10.24020	0.1326715	0.21100789	2.7942821	20	12 11.3	19.6
147662	2004	JZ ₅₄	16.0	X	27.04275	313.78300	49.97477	5.45072	0.0664880	0.21443729	2.7644104	20	12 11.3	19.6
147663	2004	KD	16.4	X	337.31693	132.71792	20.04967	9.22604	0.1698982	0.29263723	2.2468961	20	—	—
147664	2004	KC ₄	15.1	X	283.85566	46.35967	250.13689	16.36138	0.1972387	0.17774903	3.1327895	20	3 20.3	20.1
147665	2004	KO ₄	16.3	X	285.05588	352.86297	208.70726	5.29094	0.1818439	0.22854749	2.6494257	20	—	—
147666	2004	KV ₆	16.1	X	92.06777	35.35623	83.16781	3.20328	0.0941090	0.24467964	2.5316529	20	4 23.0	19.2
147667	2004	KU ₉	16.3	X	97.28250	320.76835	276.75120	4.84249	0.1653850	0.26238259	2.4164587	20	10 13.9	20.1
147668	2004	KQ ₁₂	14.9	X	293.04765	164.52255	128.77517	14.12091	0.1536385	0.18052961	3.1005381	20	4 15.0	19.4
147669	2004	KG ₁₅	15.2	X	140.82268	280.82714	72.35703	16.74255	0.1515233	0.22943847	2.6425622	20	1 21.4	19.3
147670	2004	LT ₃	15.7	X	304.40838	166.40127	89.36987	5.64732	0.1727006	0.23731599	2.5837			

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>
147681 2004 OS ₃	15.1	X	343.25636	0.31231	305.66332	13.93123	0.1092325	0.18410842	3.0602268	20	8 1.0	18.6
147682 2004 OH ₄	15.0	X	115.34579	307.18255	317.70173	13.02387	0.0561850	0.20197070	2.8770261	20	11 16.7	19.6
147683 2004 OS ₁₄	15.8	X	22.11321	159.06410	154.89880	2.43717	0.0324714	0.19238401	2.9718262	20	9 24.5	19.8
147684 2004 PU ₃₉	14.9	X	299.98454	33.77174	320.25348	9.05181	0.1318430	0.17804624	3.1293022	20	7 11.3	18.9
147685 2004 PX ₅₄	14.7	X	46.53365	86.40424	123.28368	10.21271	0.0267300	0.17437696	3.1730480	20	6 12.4	19.1
147686 2004 PJ ₆₆	15.2	X	9.71617	43.92323	294.59264	8.49466	0.0789671	0.19242966	2.9713561	20	10 8.4	19.1
147687 2004 PZ ₆₆	14.4	X	26.45488	298.35431	285.11044	20.67361	0.0492973	0.17541723	3.1604910	20	6 4.2	18.8
147688 2004 PD ₇₀	15.6	X	323.34252	138.87926	110.52707	6.1082	0.2074643	0.23640962	2.5903550	20	3 16.0	18.6
147689 2004 PR ₇₇	15.4	X	346.19915	58.10042	291.14502	8.23337	0.0371293	0.18911871	3.0059360	20	9 15.5	19.6
147690 2004 QW ₃	15.0	X	339.71199	206.77072	107.15765	11.44320	0.1275586	0.18248358	3.0783655	20	7 23.1	18.5
147691 2004 RC ₁₅₂	14.1	X	70.87545	257.65626	296.19058	21.52443	0.0627056	0.17600812	3.1534135	20	6 30.5	18.5
147692 2004 RY ₂₁₄	14.8	X	29.51152	349.10492	285.88311	12.87357	0.1394917	0.18081044	3.0973269	20	8 20.6	18.8
147693 Piccioni	16.2	X	55.26715	81.57591	226.61167	4.75659	0.1732051	0.28098652	2.3085843	20	12 6.1	19.5
147694 2005 ED ₁₉₉	16.7	X	41.46542	143.75728	204.99285	5.63137	0.1368723	0.29310006	2.2445302	20	—	—
147695 2005 EY ₂₈₃	16.9	X	339.00302	235.79554	39.53959	6.04977	0.2062360	0.26787307	2.3833254	20	5 18.7	18.7
147696 2005 GB ₃₇	15.9	X	13.54555	245.53952	69.83704	23.13359	0.2752566	0.27701744	2.3305834	20	11 12.5	18.5
147697 2005 GA ₃₈	16.3	X	23.78949	54.75993	247.05104	5.55298	0.1682717	0.28083100	2.3094365	20	10 14.1	18.8
147698 2005 GQ ₄₀	16.6	X	34.60466	339.34043	35.56814	6.34396	0.1482348	0.29633884	2.2281461	20	—	—
147699 2005 GJ ₅₇	16.5	X	336.26947	151.83907	192.13921	4.86836	0.2727751	0.27720955	2.3295065	20	9 18.9	17.1
147700 2005 GU ₈₃	16.3	X	76.07792	336.08011	4.22770	5.58819	0.1853824	0.29613126	2.2291872	20	—	—
147701 2005 GY ₈₉	16.4	X	17.65420	142.87681	141.52146	2.96023	0.2130982	0.27234953	2.3571378	20	9 16.1	18.5
147702 2005 GD ₁₄₃	16.2	X	164.08858	168.62763	149.39318	2.35585	0.3121051	0.23786755	2.5797597	20	1 10.6	20.8
147703 2005 GU ₂₀₃	16.4	X	334.95914	336.45451	8.70878	9.47904	0.1957451	0.28464959	2.2887359	20	9 18.9	17.6
147704 2005 GN ₂₀₅	16.8	X	69.19068	256.21735	110.78422	2.58322	0.1431953	0.29859836	2.2168915	20	—	—
147705 2005 GT ₂₁₀	17.2	X	340.18455	24.35658	62.66197	23.85955	0.0778771	0.36689984	1.9324327	20	—	—
147706 2005 GZ ₂₁₄	16.4	X	124.95291	215.01832	104.92688	9.17464	0.1443027	0.29889500	2.2154245	20	—	—
147707 2005 JH ₂₆	16.4	X	192.78116	202.40160	99.33088	7.06254	0.1426799	0.30658544	2.1782198	20	—	—
147708 2005 JA ₅₀	16.7	X	110.06433	241.07022	77.78362	4.33534	0.2086481	0.29422123	2.2388245	20	—	—
147709 2005 JY ₇₂	15.3	X	1.88431	318.09874	59.46838	13.68234	0.3364728	0.21881291	2.7274330	20	—	—
147710 2005 JU ₈₃	16.3	X	45.66881	270.33901	65.46583	7.75577	0.1972926	0.28615003	2.2807281	20	—	—
147711 2005 JH ₁₀₂	16.1	X	58.62473	172.12743	201.09748	13.67953	0.1086489	0.22925964	2.6439362	20	—	—
147712 2005 JB ₁₆₃	15.9	X	56.30323	66.73103	209.87094	4.63954	0.1927969	0.21293626	2.7773864	20	10 8.2	19.5
147713 2005 JC ₁₇₇	17.1	X	340.15704	242.21696	61.02989	1.91668	0.1781320	0.26654904	2.3912114	20	7 13.9	18.8
147714 2005 KG ₆	16.1	X	353.33898	315.36203	51.59626	11.41712	0.1824565	0.28114094	2.3077388	20	11 30.3	18.2
147715 2005 KO ₆	16.2	X	212.40275	52.52372	231.53805	4.13080	0.1187402	0.24214467	2.5492911	20	1 1.8	20.3
147716 2005 KY ₁₂	15.6	X	198.26295	162.46284	184.85156	1.77681	0.1966338	0.17427652	3.1742670	20	3 10.3	21.0
147717 2005 LS ₇	16.0	X	201.65978	113.10500	221.51498	9.15827	0.2015057	0.24540854	2.5266375	20	2 18.9	20.5
147718 2005 LJ ₄₃	17.0	X	37.09778	157.60367	121.58689	3.51118	0.0147158	0.26924001	2.3752518	20	9 8.2	19.8
147719 2005 LL ₄₈	16.0	X	11.71516	2.56473	325.35258	5.25656	0.3161993	0.26962386	2.3729969	20	11 25.1	18.6
147720 2005 LB ₅₁	16.3	X	242.34200	72.92091	288.21735	4.70479	0.1743624	0.25126548	2.4872198	20	4 30.2	20.3
147721 2005 MK ₁	15.9	X	236.13261	151.09812	187.20930	0.49635	0.2587541	0.17754755	3.1351592	20	3 26.7	21.2
147722 2005 MJ ₅	16.6	X	348.26359	107.73573	170.31560	2.15354	0.1997934	0.26017403	2.4301146	20	6 18.7	18.4
147723 2005 MX ₉	16.2	X	322.30891	196.96611	131.81775	2.15887	0.1951607	0.26034348	2.4290600	20	7 10.9	17.9
147724 2005 MR ₁₂	15.5	X	297.43530	224.07601	101.41611	15.57991	0.1635835	0.25622515	2.4550191	20	5 27.8	18.6
147725 2005 MD ₁₃	16.5	X	307.28695	286.80925	117.24571	7.17106	0.1242541	0.27044336	2.3682007	20	10 22.4	18.8
147726 2005 MU ₂₀	16.4	X	73.35116	300.05619	117.14908	2.89227	0.1122933	0.23081842	2.6320193	20	1 7.5	19.4
147727 2005 MA ₃₂	15.6	X	264.52976	59.85075	326.86394	6.95584	0.1642999	0.25934239	2.4353069	20	7 3.7	18.8
147728 2005 MD ₃₃	16.8	X	70.07789	115.03486	150.30538	3.36616	0.2084527	0.27396156	2.3478822	20	10 31.5	20.2
147729 2005 MP ₃₄	16.5	X	285.85655	17.68499	307.03793	1.90620	0.1947026	0.25344920	2.4729126	20	4 29.9	19.8
147730 2005 MO ₃₈	16.2	X	284.36596	116.00897	201.00784	0.62584	0.1613858	0.18634574	3.0356829	20	4 26.6	20.4
147731 2005 MG ₄₁	16.5	X	238.43488	297.37107	307.67520	2.84934	0.1432129	0.23343605	2.6123063	20	—	—
147732 2005 NM ₄₂	15.8	X	98.46039	273.37058	163.52433	9.27282	0.1015692	0.23868669	2.5738540	20	3 7.3	19.1
147733 2005 MV ₄₄	16.4	X	132.55045	118.71626	275.69139	14.41600	0.1255713	0.23635218	2.5907747	20	2 19.8	20.5
147734 2005 ME ₅₃	15.4	X	301.04019	341.66181	2.39906	4.39917	0.1358126	0.19271264	2.9684466	20	6 28.6	19.3
147735 2005 NE	15.6	X	152.40938	215.02139	109.09553	15.62997	0.1451778	0.23018599	2.6368381	20	—	—
147736 Raxavinic	14.9	X	333.21786	184.08182	151.29225	9.35137	0.2330690	0.19840339	2.9114097	20	8 4.3	17.6
147737 2005 NM ₁	16.3	X	141.86819	330.26331	254.83875	6.34940	0.0658381	0.27853707	2.3220989	20	11 14.2	19.5
147738 2005 NU ₃	16.4	X	80.93460	331.88896	307.23399	4.16418	0.2182944	0.27638772	2.3341220	20	11 27.2	20.0
147739 2005 NP ₉	15.5	X	249.70916	232.14433	150.72838	5.36483	0.1121045	0.18954726	3.0014035	20	6 14.9	19.9
147740 2005 NW ₉	16.3	X	300.31223	272.27904	158.59773	4.15029	0.0814096	0.20862259	2.8155408	20	11 2.3	19.7
147741 2005 NA ₁₇	15.9	X	116.41224	173.31583	84.68663	12.88065	0.2504633	0.28123277	2.3072364	20	12 3.9	19.9
147742 2005 NJ ₂₈	16.6	X	138.24122	142.91248	147.54003	4.50104	0.1426639	0.28849527	2.2683510	20	—	—
147743 2005 NU ₃₀	16.4	X	49.72629	190.55299	140.08819	0.99118	0.0758086	0.21302066	2.7766527	20	11 30.3	20.1
147744 2005 NV ₃₀	16.8	X	242.92545	156.15885	240.35599	0.39278	0.1824021	0.25750549	2.4468747	20	6 17.5	20.4
147745 2005 NK ₆₇	16.0	X	344.75396	44.83211	308.72399	7.79136	0.1413255	0.26652713	2.3913424	20	10 9.9	18.3
147746 2005 NT ₇₅	17.2	X	257.78201	265.80032	134.27762	2.56014	0.1708546	0.26127677	2.4232721	20	7 11.6	20.2
147747 2005 NY ₈₃	15.9	X	95.40619	56.74050	166.88347	2.17144	0.0161258	0.20052780	2.8908107	20	9 1.7	19.8
147748 2005 NB ₈₄	17.1	X	230.97040	236.76147	222.89904	1.17583	0.0489686	0.26844523	2.3799377	20	9 16.7	20.2
147749 2005 NS ₈₉	16.1	X	154.40528	309.60815	109.92726	4.17413	0.0414915	0.24710070	2.5150892	20	4 17.3	19.5
147750 2005 NB ₁₂₂	16.2	X	15.76627	184.76436	142.86050	2.52262	0.0986888	0.20422356	2.8558287	20	10 13.6	19.7
147751 2005 OR ₉	16.0	X	204.99547	188.81532	101.66883	6.27908	0.1163519	0.23290422	2.6162815	20	1 4.2	19.9
147752 2005 OB ₁₁	15.7	X	77.13318	210.15771	126.16526	5.85257	0.1163912	0.21591519	2.7517813	20	—	—
147753 2005 OG ₁₁	16.9	X	359.05679	329.11428	345.68867	2.22273	0.2037865	0.26506277	2.4001418	20	9 20.6	18.6
147754 2005 OO ₁₃	17.3	X	263.33105	189.36286	74.39384	6						

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Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>		
147761	2005	<i>QJ</i> ₁₀	16.3	X	21.03386	146.19642	152.91281	2.47911	0.2101797	0.26650437	2.3914785	20	10 12.9	18.7
147762	2005	<i>QA</i> ₁₇	15.3	X	249.02249	208.15665	141.35219	2.33160	0.0864030	0.17957653	3.1114990	20	5 6.7	19.9
147763	2005	<i>QS</i> ₂₁	15.6	X	201.45945	210.11759	104.59700	14.59594	0.1748878	0.23377798	2.6097585	20	1 31.7	20.0
147764	2005	<i>QN</i> ₃₂	15.9	X	351.76849	159.38122	131.72585	2.65046	0.1834271	0.19163750	2.9795389	20	7 13.3	18.8
147765	2005	<i>QP</i> ₃₂	16.1	X	13.93054	234.59887	93.46716	7.71949	0.1456533	0.26897443	2.3768150	20	11 3.9	18.7
147766	Elisatoffoli		14.8	X	257.85857	285.92817	57.61887	10.57254	0.0286359	0.18354003	3.0665415	20	5 16.4	19.1
147767	2005	<i>QM</i> ₄₄	15.5	X	318.88169	245.29158	125.32220	2.80717	0.1167051	0.19677184	2.9274810	20	9 6.2	19.0
147768	2005	<i>QP</i> ₄₄	16.5	X	37.12064	148.53680	129.09180	1.98886	0.1655143	0.26516582	2.3995199	20	9 29.4	19.1
147769	2005	<i>QJ</i> ₄₇	16.3	X	302.64048	282.13799	117.20682	4.05053	0.1257353	0.26463500	2.4027275	20	10 2.7	18.6
147770	2005	<i>QV</i> ₅₃	15.9	X	57.94895	304.61097	11.73254	1.91835	0.0381363	0.20739150	2.8266720	20	11 15.4	19.9
147771	2005	<i>QE</i> ₆₃	15.4	X	322.74245	182.64489	60.37193	2.66535	0.0921326	0.17682608	3.1436813	20	3 27.2	19.5
147772	2005	<i>QT</i> ₇₈	16.3	X	128.81392	54.88925	273.17284	1.60711	0.1841020	0.22079391	2.7110945	20	—	—
147773	2005	<i>QR</i> ₈₂	16.7	X	249.70623	169.09204	112.25231	3.27337	0.1651865	0.23908018	2.5710291	20	2 1.8	20.6
147774	2005	<i>QF</i> ₈₉	16.7	X	344.31906	4.28175	275.77193	0.05506	0.2112540	0.25801536	2.4436500	20	6 10.6	18.1
147775	2005	<i>QS</i> ₈₉	15.6	X	303.47492	182.95297	186.38922	3.77011	0.0732633	0.19651357	2.9300454	20	8 13.1	19.4
147776	2005	<i>QR</i> ₁₀₀	14.8	X	228.18622	81.44302	220.78642	5.11750	0.1266213	0.17055587	3.2202650	20	2 13.6	19.9
147777	2005	<i>QV</i> ₁₀₃	16.3	X	169.21984	242.24060	237.49473	4.14821	0.0664475	0.25561205	2.4589432	20	7 24.3	19.8
147778	2005	<i>QM</i> ₁₀₄	15.1	X	96.39923	319.76722	173.76163	10.26876	0.0319431	0.17846474	3.1244082	20	5 12.7	19.6
147779	2005	<i>QK</i> ₁₀₇	14.7	X	241.80650	277.22966	42.43226	6.93345	0.1479281	0.17522096	3.1628506	20	3 20.3	19.7
147780	2005	<i>QM</i> ₁₀₇	16.2	X	221.29011	239.26734	110.54421	6.99957	0.0569957	0.24246771	2.5470264	20	4 7.8	19.9
147781	2005	<i>QB</i> ₁₁₅	15.2	X	304.14369	102.12098	194.35993	8.09536	0.1772705	0.18188926	3.0850675	20	4 25.3	19.2
147782	2005	<i>QI</i> ₁₁₈	16.0	X	249.52130	319.60894	152.42232	4.41970	0.0796964	0.20364064	2.8612760	20	10 14.7	19.9
147783	2005	<i>QR</i> ₁₂₃	15.9	X	229.86693	177.77673	153.06215	0.64213	0.0325479	0.17390943	3.1787323	20	3 27.9	20.5
147784	2005	<i>QY</i> ₁₃₅	17.0	X	13.16299	115.74016	143.75317	1.87539	0.1598508	0.25553380	2.4594452	20	7 15.9	19.2
147785	2005	<i>QE</i> ₁₄₆	15.2	X	120.99494	259.36939	120.40692	13.46905	0.1818216	0.23012355	2.6373150	20	2 4.2	18.9
147786	2005	<i>QA</i> ₁₄₉	15.5	X	305.41056	46.82452	289.50674	7.24335	0.2731692	0.18778074	3.0201975	20	6 1.9	19.2
147787	2005	<i>QH</i> ₁₅₇	15.8	X	112.33995	47.77724	280.77845	3.00107	0.0522180	0.21506133	2.7590602	20	—	—
147788	2005	<i>QE</i> ₁₆₁	15.3	X	44.34004	151.99614	85.17189	3.05778	0.0735340	0.18750985	3.0231056	20	7 21.2	19.1
147789	2005	<i>QZ</i> ₁₆₁	15.9	X	47.38408	251.68301	130.91343	9.83653	0.1963342	0.21471896	2.7619922	20	—	—
147790	2005	<i>QT</i> ₁₆₉	14.7	X	203.29767	89.12436	267.88651	9.12159	0.0666822	0.17127467	3.2112488	20	3 23.9	19.7
147791	2005	<i>QF</i> ₁₇₈	16.1	X	359.28655	44.81757	319.99326	1.09048	0.0852886	0.20215302	2.8752960	20	11 3.1	19.7
147792	2005	<i>RG</i> ₁	15.9	X	66.23271	255.19999	118.12088	6.61530	0.0590990	0.22117723	2.7079612	20	—	—
147793	2005	<i>RR</i> ₂	14.8	X	101.36633	217.20846	284.54560	14.12667	0.1066736	0.24065109	2.5598282	20	6 6.9	18.4
147794	2005	<i>RO</i> ₂	14.9	X	216.52093	125.82228	304.75430	16.16919	0.1220629	0.18077405	3.0977425	20	7 8.9	19.8
147795	2005	<i>RO</i> ₇	15.6	X	98.10328	17.90094	331.90672	3.44139	0.0799398	0.21761256	2.7374535	20	—	—
147796	2005	<i>RC</i> ₁₃	16.7	X	350.61827	145.98448	347.35313	2.52545	0.0465944	0.22687411	2.6624375	20	—	—
147797	2005	<i>RK</i> ₁₆	16.4	X	17.23956	349.28616	0.53748	1.74919	0.0763192	0.20474985	2.8509328	20	11 9.3	20.0
147798	2005	<i>RC</i> ₂₁	15.9	X	110.53665	34.82913	305.30379	5.20046	0.1198172	0.21927509	2.7235991	20	—	—
147799	2005	<i>RA</i> ₃₄	16.1	X	11.25061	144.57233	201.79233	1.20115	0.0869632	0.19811513	2.9142331	20	10 27.7	19.9
147800	2005	<i>SR</i> ₂₅	15.9	X	113.80710	188.71910	104.95101	1.72263	0.0429867	0.21120403	2.7925518	20	12 24.8	20.0
147801	2005	<i>SR</i> ₂₉	16.5	X	95.83782	141.41646	296.77198	2.92056	0.0870896	0.23022594	2.6365330	20	3 2.9	19.8
147802	2005	<i>SS</i> ₃₃	16.2	X	264.41191	223.07494	75.37422	5.61175	0.1655513	0.23918074	2.5703084	20	3 10.6	20.1
147803	2005	<i>SQ</i> ₅₂	15.7	X	264.32824	281.42023	58.43885	1.80130	0.1971437	0.18004301	3.1061222	20	4 27.9	20.4
147804	2005	<i>SP</i> ₅₅	14.9	X	336.74239	203.93725	35.15835	5.04912	0.0718124	0.17151204	3.2082852	20	4 13.2	19.0
147805	2005	<i>SD</i> ₆₈	16.2	X	83.62239	149.99083	308.98052	2.55542	0.0709974	0.23193856	2.6235383	20	3 11.1	19.6
147806	2005	<i>SJ</i> ₇₀	16.0	X	272.14517	70.68385	307.56614	0.69746	0.1179489	0.18756460	3.0225174	20	7 5.4	20.1
147807	2005	<i>SH</i> ₇₂	15.6	X	209.91812	289.35098	110.08137	2.22733	0.1819957	0.17714559	3.1399001	20	5 20.6	20.9
147808	2005	<i>SC</i> ₇₃	15.0	X	239.77696	93.81441	286.01357	8.61942	0.1086531	0.17953699	3.1119558	20	5 30.2	19.8
147809	2005	<i>SX</i> ₇₇	16.8	X	168.46453	168.67099	95.65992	0.47404	0.0236750	0.21401232	2.7680687	20	—	—
147810	2005	<i>SL</i> ₈₂	15.9	X	30.60962	26.52737	331.25840	1.39777	0.0359199	0.20512493	2.8474564	20	12 2.1	19.7
147811	2005	<i>SV</i> ₉₄	15.5	X	150.15021	41.64296	262.36884	13.46552	0.0687683	0.22016890	2.7162229	20	—	—
147812	2005	<i>SM</i> ₁₀₃	15.7	X	260.19291	170.99136	207.18856	1.00434	0.1346349	0.18199102	3.0839174	20	6 17.8	20.2
147813	2005	<i>SM</i> ₁₀₆	15.7	X	91.04642	204.15172	250.21389	11.99392	0.1340400	0.23481294	2.6020843	20	3 19.8	19.4
147814	2005	<i>SP</i> ₁₀₇	15.2	X	338.31196	270.95089	296.22380	11.15131	0.2181409	0.23902559	2.5714206	20	2 3.0	17.9
147815	2005	<i>SK</i> ₁₁₈	14.7	X	245.93347	199.96368	159.15926	6.70867	0.2188006	0.17936692	3.1139226	20	5 3.0	19.7
147816	2005	<i>SU</i> ₁₂₅	15.0	X	301.47260	304.36565	37.92270	11.33524	0.0678186	0.18537957	3.0462214	20	7 6.8	19.2
147817	2005	<i>SW</i> ₁₂₇	15.5	X	252.27038	111.62947	184.10654	1.08597	0.1711540	0.17073965	3.2179537	20	2 26.7	20.6
147818	2005	<i>SZ</i> ₁₃₈	16.0	X	138.11416	141.12539	145.36011	2.80036	0.0730449	0.21309760	2.7759843	20	—	—
147819	2005	<i>SA</i> ₁₄₀	16.4	X	321.25870	81.72484	71.17316	2.28869	0.1754296	0.21811666	2.7332341	20	—	—
147820	2005	<i>SS</i> ₁₆₆	14.9	X	257.08159	263.69252	107.53880	10.36028	0.1065553	0.18154474	3.0889694	20	6 10.0	19.4
147821	2005	<i>ST</i> ₁₇₀	14.8	X	180.85015	110.98478	243.20992	7.32966	0.0704806	0.16851691	3.2461884	20	2 27.8	19.9
147822	2005	<i>SQ</i> ₁₈₀	15.6	X	114.48091	87.61850	159.22051	2.88174	0.0985660	0.20371257	2.8606024	20	11 1.6	19.9
147823	2005	<i>SO</i> ₁₈₇	15.3	X	63.21134	211.77068	86.34782	4.07379	0.1261698	0.20056761	2.8904282	20	11 11.3	19.4
147824	2005	<i>SC</i> ₁₉₂	15.3	X	102.73832	348.07045	165.27272	1.26855	0.1181136	0.17404935	3.1770285	20	6 23.9	19.9
147825	2005	<i>SE</i> ₂₀₆	15.2	X	359.03418	178.30288	115.78393	6.97431	0.1288363	0.18995608	2.9970955	20	7 31.4	18.5
147826	2005	<i>SL</i> ₂₀₈	14.6	X	262.37485	1.56926	6.31662	22.03468	0.0459154	0.18120880	3.0927859	20	6 18.3	19.4
147827	2005	<i>SW</i> ₂₁₉	15.2	X	316.47650	87.55190	111.67192	13.98310	0.0373196	0.22771913	2.6558469	20	1 23.4	18.6
147828	2005	<i>SG</i> ₂₃₉	16.0	X	309.70413	128.08624	151.97592	1.95839	0.1562761	0.17961270				

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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>		
147841	2005	TJ ₁₇₂	15.0	X	215.23999	129.43429	294.73515	12.53740	0.1222001	0.17938361	3.1137295	20	6 28.6	19.9
147842	2005	TU ₁₇₅	15.1	X	193.75790	67.59118	57.84883	12.55561	0.0979869	0.18973319	2.9994423	20	8 29.5	19.9
147843	2005	TN ₁₈₃	15.4	X	127.11611	204.18744	126.31125	14.62993	0.1249454	0.21648829	2.7469227	20	—	—
147844	2005	TG ₁₉₀	14.6	X	95.96744	337.83695	88.64137	7.32794	0.0325471	0.15897243	3.3748528	20	2 22.2	19.4
147845	2005	UY ₁₄	16.2	X	66.82683	356.10304	71.00989	2.18933	0.0620531	0.22013742	2.7164818	20	1 7.8	19.6
147846	2005	UO ₂₀	13.8	X	264.37259	59.39209	45.26794	10.80996	0.1758265	0.12596356	3.9412995	20	9 30.9	19.4
147847	2005	UA ₃₀	15.2	X	270.20432	310.79864	52.27643	0.36660	0.1825932	0.17990160	3.1077497	20	6 3.8	19.6
147848	2005	UG ₆₈	15.1	X	285.29744	255.76331	68.63347	9.96461	0.0782094	0.17652513	3.1472533	20	5 20.3	19.5
147849	2005	UB ₇₆	14.6	X	266.63830	65.88941	276.19643	13.98754	0.0853423	0.17581700	3.1556982	20	5 15.8	19.3
147850	2005	UP ₇₆	15.4	X	196.90540	139.97510	337.81737	10.92710	0.2056670	0.18197774	3.0840675	20	8 12.5	20.5
147851	2005	UY ₇₆	14.2	X	328.12992	178.94389	79.65405	21.84995	0.0949701	0.17217877	3.1999976	20	5 1.9	18.6
147852	2005	UA ₁₀₆	16.2	X	277.82170	188.66562	96.17120	3.69695	0.0445897	0.23223522	2.6213036	20	3 23.9	19.7
147853	2005	UT ₁₇₈	15.3	X	290.12043	204.79677	146.25273	2.13914	0.1075554	0.17947894	3.1126268	20	6 25.3	19.5
147854	2005	UF ₂₅₀	15.5	X	183.26850	25.39565	310.34339	12.75059	0.1833968	0.23057658	2.6338594	20	2 8.4	19.9
147855	2005	UO ₂₉₄	15.8	X	217.26086	170.55991	311.49742	2.29181	0.0861154	0.18847584	3.0127673	20	9 13.3	20.3
147856	2005	UH ₃₄₃	14.3	X	263.61669	271.36465	67.19452	15.55069	0.1877073	0.17541564	3.1605101	20	4 30.8	19.2
147857	2005	UW ₃₈₁	15.0	X	202.37481	291.06765	132.86113	16.38400	0.1086775	0.17545303	3.1600611	20	6 17.1	20.1
147858	2005	UC ₃₈₅	14.1	X	297.73766	192.71111	97.44695	22.93718	0.0098247	0.16859295	3.2452122	20	5 11.6	19.0
147859	2005	UF ₄₅₀	14.8	X	264.48572	222.72377	77.07403	6.28468	0.1419696	0.17025453	3.2240635	20	3 20.8	19.7
147860	2005	UA ₄₈₂	16.1	X	29.14915	32.82123	284.77193	9.11105	0.0611585	0.26615373	2.3935785	20	10 21.7	19.2
147861	2005	UD ₄₉₂	15.4	X	23.96597	205.74934	116.93890	11.86297	0.1042560	0.19372458	2.9581003	20	10 22.6	19.4
147862	2005	UP ₄₉₃	15.3	X	16.55117	198.09180	326.26273	16.15439	0.0816114	0.22777738	2.6553941	20	2 25.9	18.4
147863	2005	VD ₁₅	15.9	X	66.51171	6.73973	37.76843	0.86284	0.0663972	0.21585738	2.7522726	20	—	—
147864	2005	VQ ₃₄	15.9	X	132.14373	164.22227	161.39338	6.23247	0.1203485	0.21658407	2.7461128	20	—	—
147865	2005	VN ₃₉	13.7	X	202.57176	268.87357	249.55153	6.80246	0.1548572	0.12554505	3.9500536	20	9 27.1	20.0
147866	2005	VG ₇₆	15.2	X	240.64734	137.26434	315.47112	8.35805	0.1093957	0.18853132	3.0121762	20	8 30.5	19.5
147867	2005	VF ₁₀₂	15.8	X	75.95921	242.25204	304.10263	8.89286	0.0946889	0.24316464	2.5421574	20	7 3.7	19.0
147868	2005	VW ₁₂₀	14.3	X	327.79117	356.07921	290.25121	20.55318	0.0986712	0.17724573	3.1387173	20	5 27.0	18.6
147869	2005	WG ₁₀₄	15.6	X	332.95867	265.69409	148.29376	2.62962	0.0848812	0.19678720	2.9273287	20	11 26.4	19.3
147870	2006	PG ₃₀	16.2	X	329.59539	213.29914	177.87737	6.52053	0.1117090	0.28523800	2.2855872	20	11 17.3	18.3
147871	2006	PH ₃₀	15.1	X	90.90503	336.50396	4.05419	15.28141	0.2805077	0.22984746	2.6394265	20	—	—
147872	2006	QT ₂₄	15.7	X	308.88040	47.07151	6.18256	7.47549	0.2260386	0.21226617	2.7832285	20	10 8.7	18.1
147873	2006	QD ₂₇	16.5	X	228.09767	313.96891	56.11596	3.32169	0.2195155	0.26298063	2.4127938	20	4 26.7	20.4
147874	2006	QP ₃₉	16.4	X	249.54725	162.92716	192.23270	5.57265	0.3212739	0.26480760	2.4016834	20	4 18.9	20.5
147875	2006	QU ₅₅	15.6	X	124.66541	358.95639	346.05615	12.95131	0.1940378	0.23655087	2.5893237	20	—	—
147876	2006	QL ₅₈	14.8	X	72.18953	343.47074	303.71154	13.64285	0.1818895	0.22895045	2.6463161	20	—	—
147877	2006	QY ₆₂	15.4	X	30.87431	215.44128	161.97876	8.94496	0.2694064	0.22268553	2.6957196	20	—	—
147878	2006	QY ₇₉	16.0	X	189.09095	198.37992	194.97145	5.92478	0.1068972	0.26242088	2.4162236	20	4 23.2	19.4
147879	2006	QQ ₁₁₃	15.9	X	311.43721	9.49069	33.64560	3.95706	0.1430248	0.21431346	2.7654750	20	10 9.6	18.7
147880	2006	QY ₁₁₃	15.0	X	152.21878	318.30095	19.91020	15.05890	0.2942386	0.23937055	2.5689495	20	1 29.3	19.6
147881	2006	QZ ₁₁₇	15.9	X	322.76653	206.83750	205.19502	3.00761	0.1923219	0.21758580	2.7376779	20	11 12.8	18.4
147882	2006	QN ₁₆₆	15.2	X	173.11885	138.98250	218.71460	8.88944	0.1295870	0.17712011	3.1402012	20	2 25.8	20.3
147883	2006	RF ₆	17.1	X	306.37914	163.09302	164.64670	1.60521	0.2047760	0.27159944	2.3614757	20	6 4.5	19.3
147884	2006	RH ₆	16.7	X	321.63908	117.25761	195.06753	4.70934	0.2431476	0.27309755	2.3528316	20	6 4.4	18.5
147885	2006	RJ ₁₈	16.9	X	301.70623	159.03880	156.97768	1.63556	0.1979587	0.26933207	2.3747105	20	5 11.0	19.3
147886	2006	RJ ₁₉	16.3	X	254.78581	304.58582	59.21839	6.97296	0.1499613	0.26554044	2.3972625	20	5 21.6	19.4
147887	2006	RY ₂₆	16.4	X	294.04205	177.69046	182.56300	6.76308	0.1242118	0.27334981	2.3513839	20	7 15.7	19.0
147888	2006	RY ₃₀	16.7	X	281.35459	142.32554	229.23777	6.08644	0.1173950	0.27367471	2.3495225	20	7 12.9	19.4
147889	2006	RK ₃₁	15.8	X	306.27439	23.93361	13.46193	3.75570	0.1204150	0.21026781	2.8008350	20	9 23.4	19.0
147890	2006	RL ₃₁	16.8	X	318.66012	264.67639	173.82726	3.67515	0.1737667	0.29097152	2.2554631	20	—	—
147891	2006	RS ₄₈	16.4	X	104.00456	120.90343	197.10326	1.81459	0.0758651	0.22706378	2.6609547	20	—	—
147892	2006	RC ₆₀	17.0	X	289.91076	150.39630	210.45491	2.91769	0.1656224	0.27189255	2.3597782	20	7 3.1	19.5
147893	2006	SH	16.5	X	304.36498	302.19652	17.84378	3.14905	0.1787553	0.27054675	2.3675973	20	5 23.6	18.9
147894	2006	SO ₄	16.3	X	29.60450	164.75326	213.94082	1.28255	0.2144048	0.22356545	2.6886416	20	—	—
147895	2006	ST ₄	16.3	X	332.12447	132.62164	225.08317	4.87020	0.2352914	0.27816597	2.3241637	20	9 29.2	17.4
147896	2006	SR ₅	16.9	X	298.62588	309.74979	32.73699	3.02512	0.2087823	0.27198157	2.3592632	20	6 12.1	19.2
147897	2006	SF ₁₂	16.1	X	319.91111	148.49360	212.75409	12.36289	0.2392628	0.27706247	2.3303309	20	8 22.9	17.9
147898	2006	SH ₁₃	15.9	X	43.36501	52.56158	284.10889	0.82414	0.0796938	0.22011633	2.7166553	20	12 1.8	19.5
147899	2006	SS ₁₈	17.0	X	161.59550	293.76075	41.80862	6.37171	0.2022078	0.24329944	2.5412183	20	1 23.1	21.1
147900	2006	SZ ₄₂	16.3	X	169.05165	31.99492	278.32466	2.27278	0.1534222	0.24069206	2.5595377	20	—	—
147901	2006	SV ₄₈	15.1	X	92.59967	306.47362	39.81686	14.19387	0.2270675	0.22799540	2.6537011	20	—	—
147902	2006	SJ ₅₄	14.2	X	199.53565	133.18571	217.12467	26.24786	0.2157991	0.17946313	3.1128097	20	3 9.0	19.9
147903	2006	SE ₆₁	16.4	X	256.57470	318.46442	52.94376	6.11822	0.2470367	0.26770096	2.3843469	20	5 21.8	19.7
147904	2006	SG ₆₂	16.8	X	317.34903	301.67086	47.23085	7.37595	0.1333713	0.27687163	2.3314015	20	8 16.5	19.0
147905	2006	SV ₆₃	14.7	X	198.94719	333.36536	43.18220	20.46743	0.2240453	0.18189998	3.0849464	20	4 17.3	20.1
147906	2006	SB ₁₀₀	14.7	X	70.67661	114.36608	88.48018	17.67953	0.0355629	0.18015439	3.1048419	20	7 5.6	19.0
147907	2006	SG ₁₃₀	16.0	X	53.75591	198.72759	171.41364	6.78313	0.1518287	0.22536948	2.6742745	20	—	—
147908	2006	SV ₁₄₅	16.3	X	344.34083	20.09100	10.13387	6.24336	0.0394856	0.21634967	2.7480959	20	11 13.0	19.9
147909	2006	TV ₃₉	15.7	X	166.50057	240.42791	39.15628	10.28548	0.0946256	0.22865803	2.6485718	20	—	—
147910	2006	TY ₄₄	15.9	X	150.94964	183.05539								

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>
147921 2006 UY ₂₄₃	16.3	X	242.15276	254.21304	182.90016	1.84101	0.0161906	0.20364327	2.8612513	20	8 28.5	20.3
147922 2006 UD ₂₆₂	15.0	X	55.83947	309.93509	275.45598	16.14269	0.0417393	0.18419740	3.0592412	20	7 14.6	19.2
147923 2006 VK ₃₄	15.6	X	196.73390	324.37084	80.57375	4.06266	0.0763789	0.18316821	3.0706901	20	5 18.6	20.3
147924 2006 VM ₃₆	15.8	X	163.90983	308.58473	132.39246	5.89980	0.1464370	0.18348169	3.0671916	20	5 31.0	20.8
147925 2006 VU ₄₂	16.2	X	277.66394	253.79766	1.17751	3.58166	0.0281651	0.23952077	2.5678753	20	2 14.4	19.5
147926 2006 VJ ₉₄	15.4	X	216.77283	331.57482	56.77917	7.71352	0.1815824	0.18371802	3.0645606	20	5 13.0	20.3
147927 2006 VU ₁₂₉	15.8	X	249.66979	240.46977	78.95593	1.83473	0.1758762	0.18059720	3.0997646	20	3 22.9	20.6
147928 2006 VV ₁₃₇	16.8	X	328.34527	276.57763	71.61286	4.78130	0.1919813	0.27376598	2.3490003	20	9 4.8	18.4
147929 2006 WE ₁₁	14.9	X	197.11150	347.56168	33.49966	8.86725	0.0456286	0.17761730	3.1343384	20	4 20.2	19.6
147930 2006 WD ₂₈	15.7	X	237.62528	234.79392	137.94346	1.83816	0.1398711	0.18558710	3.0439501	20	5 17.1	20.4
147931 2006 WO ₁₀₂	15.9	X	48.90489	180.65970	50.11358	0.48402	0.1024182	0.18771775	3.0208732	20	7 23.1	19.7
147932 3043 P-L	16.5	X	125.69439	52.63452	284.37907	6.34551	0.1670264	0.30203975	2.2000201	20	—	—
147933 4744 P-L	17.0	X	358.09645	68.33790	357.89867	1.84952	0.1410118	0.28294403	2.2979241	20	—	—
147934 6302 P-L	17.2	X	218.16876	52.95687	355.77202	1.01699	0.1759599	0.25915651	2.4364713	20	6 8.5	21.1
147935 6620 P-L	14.8	X	339.33442	82.95845	10.65333	13.44279	0.1763844	0.21717410	2.7411367	20	—	—
147936 6728 P-L	17.2	X	0.69314	252.64297	127.37917	2.55500	0.2133562	0.28140017	2.3063213	20	—	—
147937 1038 T-2	17.3	X	102.97944	184.20659	210.73892	1.59195	0.1439145	0.30314346	2.1946768	20	1 11.8	19.6
147938 1119 T-2	16.5	X	110.38777	342.12037	359.93461	4.99569	0.1678442	0.30120257	2.2040948	20	—	—
147939 1413 T-2	17.3	X	325.54629	39.90222	297.37196	1.47369	0.2138339	0.27143212	2.3624460	20	8 2.4	18.7
147940 2203 T-2	16.2	X	123.75068	228.59225	189.81899	7.85120	0.1602716	0.24180524	2.5516763	20	3 21.6	20.0
147941 4134 T-2	16.9	X	348.05708	294.89652	35.61959	1.97631	0.2006191	0.27240223	2.3568337	20	9 23.3	18.4
147942 1058 T-3	15.1	X	255.62266	33.00370	326.88972	10.31494	0.1594781	0.17769202	3.1334596	20	5 14.2	20.0
147943 1209 T-3	16.6	X	344.51160	81.69150	305.43475	5.93258	0.1340315	0.27675771	2.3320412	20	12 6.1	19.0
147944 3448 T-3	16.2	X	204.12421	239.85390	156.72550	2.61725	0.1351439	0.24522913	2.5278696	20	5 13.0	20.0
147945 4021 T-3	16.7	X	341.05641	317.62138	66.81077	3.48894	0.1758497	0.27649680	2.3335081	20	12 1.5	18.6
147946 4084 T-3	17.1	X	309.66283	286.69263	88.84653	3.14388	0.1938575	0.27394603	2.3479709	20	9 3.2	18.8
147947 4187 T-3	15.5	X	211.11286	202.36751	121.34441	5.27189	0.1819630	0.24211624	2.5494907	20	2 18.4	19.7
147948 4211 T-3	15.0	X	217.08344	317.97494	52.36420	10.19636	0.0975386	0.17565478	3.1576409	20	4 27.6	19.9
147949 4284 T-3	16.0	X	129.51748	283.04411	111.21625	4.08880	0.1404440	0.24022635	2.5628447	20	2 25.9	19.6
147950 4642 T-3	14.7	X	12.44847	37.72345	166.10667	9.54677	0.2008234	0.17436700	3.1731689	20	4 21.6	19.1
147951 5156 T-3	14.7	X	163.43829	342.91658	80.48280	12.96970	0.1044663	0.17450752	3.1714652	20	5 10.0	19.7
147952 1984 BY ₃	15.8	X	338.79364	123.74172	316.03706	7.54179	0.2991656	0.21378809	2.7700039	20	—	—
147953 1993 FB ₇₅	16.4	X	249.75085	140.89897	3.06669	5.67083	0.0665618	0.27495663	2.3422140	20	12 12.1	19.2
147954 1993 RW ₁₄	16.3	X	167.41562	191.72968	189.37013	3.61297	0.1461417	0.24016397	2.5632884	20	3 18.2	20.3
147955 1993 TS ₁₀	15.0	X	341.31805	314.79870	11.62053	6.92039	0.1401159	0.25226859	2.4806220	20	8 25.7	17.3
147956 1993 TG ₁₁	16.1	X	231.58894	104.30489	241.76875	2.51827	0.2054323	0.24331051	2.5411413	20	3 30.9	20.4
147957 1993 TM ₂₁	15.9	X	134.95387	23.21257	31.21002	6.53583	0.2589412	0.23807930	2.5782298	20	4 8.0	20.1
147958 1993 TN ₂₅	16.8	X	202.85537	255.75738	119.22898	2.48077	0.1695433	0.24264978	2.5457522	20	4 13.9	20.8
147959 1993 TQ ₂₈	16.8	X	214.32241	199.35553	141.77545	3.49467	0.1845372	0.24125099	2.5555829	20	3 12.9	20.9
147960 1994 CM ₄	16.8	X	208.49294	150.26306	146.72662	7.03708	0.1865431	0.29829873	2.2183758	20	1 7.6	20.3
147961 1994 EU ₄	17.2	X	168.56703	15.05369	164.89427	6.53684	0.0541646	0.28188630	2.3036690	20	10 20.6	20.2
147962 1994 GD ₅	17.3	X	24.23289	220.44271	10.87030	1.12488	0.1440602	0.26897495	2.3768120	20	6 22.8	19.3
147963 1994 JC ₆	16.5	X	321.30117	121.45408	54.11639	5.97615	0.1021255	0.29399218	2.2399872	20	—	—
147964 1994 PP ₉	16.2	X	305.81841	218.37014	138.30844	2.48318	0.1915379	0.26356899	2.4092018	20	7 21.3	18.2
147965 1994 PV ₁₄	15.4	X	237.06320	53.92062	328.24734	15.66676	0.2629759	0.18090230	3.0962783	20	5 12.0	20.9
147966 1994 PK ₂₁	16.5	X	141.88883	293.19416	349.72041	2.84469	0.2315925	0.27902644	2.3193831	20	—	—
147967 1994 PW ₃₈	16.0	X	170.91579	119.70478	188.50663	0.72212	0.1613128	0.24584618	2.5236381	20	—	—
147968 1994 TZ ₇	15.0	X	252.48442	346.53988	22.22024	4.71767	0.1256347	0.18033684	3.1027474	20	5 28.3	19.7
147969 1994 TD ₈	16.9	X	103.82587	34.08362	29.88020	3.10821	0.2172403	0.24551030	2.5259392	20	3 14.7	20.2
147970 1994 UV ₃	16.9	X	179.49022	231.67796	236.12872	1.31776	0.1624993	0.25605466	2.4561088	20	7 18.8	20.9
147971 1994 Nametoko	15.3	X	198.30697	285.50612	99.42775	6.33827	0.2017749	0.17405285	3.1769859	20	4 25.4	20.7
147972 1995 ED ₂	17.0	X	146.23085	181.62750	250.49819	1.34686	0.0464738	0.24276424	2.5449519	20	4 22.0	20.3
147973 1995 FC ₂	16.8	X	2.05784	163.77723	48.84641	2.25548	0.0373067	0.23925272	2.5697929	20	4 12.5	19.7
147974 1995 HO ₃	17.2	X	30.04967	227.69434	85.80012	4.14452	0.1832047	0.28638388	2.2794864	20	11 14.8	19.9
147975 1995 QK ₁₂	15.7	X	20.99864	161.83613	208.48895	5.27933	0.0816394	0.20585090	2.8407577	20	12 12.1	19.4
147976 1995 SU ₂₇	16.5	X	291.10756	259.20018	174.73065	0.63520	0.0565216	0.19783872	2.9169469	20	10 22.6	20.2
147977 1995 SH ₃₀	16.2	X	232.03931	58.46120	171.31251	5.25499	0.1343626	0.21289636	2.7777334	20	—	—
147978 1995 SA ₃₄	16.0	X	168.59215	176.36975	167.50050	3.01246	0.1669809	0.17822334	3.1272289	20	2 10.2	21.2
147979 1995 SU ₄₁	16.4	X	134.60007	27.85949	69.91942	1.90032	0.1616792	0.18246984	3.0785201	20	5 23.9	21.2
147980 1995 SJ ₄₂	17.0	X	349.03715	241.05997	147.89309	2.43186	0.2292023	0.27991842	2.3144531	20	—	—
147981 1995 UP ₁₂	16.8	X	71.98219	338.51490	16.00979	3.79367	0.1584179	0.28590443	2.2820341	20	—	—
147982 1995 UC ₅₀	17.4	X	10.03263	168.74985	221.92066	1.06798	0.1878875	0.28244309	2.3006404	20	—	—
147983 1995 VL ₁₈	16.7	X	62.30786	272.52773	57.09511	3.55113	0.1824070	0.28074182	2.3099255	20	—	—
147984 1995 WO ₄	16.0	X	352.90924	316.75353	97.52911	4.74023	0.1966666	0.27976825	2.3152813	20	—	—
147985 1995 WS ₅	16.4	X	73.12076	346.82031	352.88293	5.53924	0.2185312	0.28416854	2.2913181	20	—	—
147986 1995 WW ₁₆	17.0	X	1.21030	80.05023	250.67241	2.59945	0.1591968	0.27495698	2.3422121	20	10 15.7	19.2
147987 1995 WY ₁₇	16.4	X	189.39387	347.24684	9.10033	2.44331	0.1354607	0.25806583	2.4433314	20	3 7.6	20.1
147988 1995 YS ₁	17.8	X	54.54998	124.48767	240.03862	2.02350	0.3236725	0.36169089	1.9509419	20	—	—
147989 1995 YJ ₁₀	16.6	X	249.31912	318.13072	128.35105	4.14551	0.2020114	0.26823444	2.3811844	20	8 31.8	19.5
147990 1995 YX ₁₀	15.6	X	167.21689	125.82948	87.78213	12.92263	0.0751920	0.17589171	3.1548047	20	4 29.4	21.5
147991 1996 AC ₁₁	17.4	X	180.88733	8.05183	177.70064	2.27027	0.1620343	0.26853085	2.3794318	20	10 30.7	20.9
147992 1996 BA ₁₁	15.3	X	130.71775	192.41594	276.71313	8.99394	0.0272591	0.17367737	3.1815632	20	5 20.4	20.0
147993 1996 FZ ₈	16.2	X	188.43706	73.33996	110.86626	2.92587	0.1092255	0.26568833	2.3963729	20	11 9.9	19.5
147994 1996 GF ₁₀	16.9	X	239.38127	313.87225	140.54738	1.85484	0.1600102	0.26168606	2.4207447	20	9 3.9	20.1
147995 1996 GX ₁₅	15.6	X										