ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
	m		°	°	°	°		°				
28001 1997 WD_{41}	13.6	X	357.08700	243.51219	257.30292	7.79220	0.0531028	0.18275157	3.0753554	20	1 8.9	17.8
28002 1997 WO_{51}	13.7	X	323.30281	50.70201	95.67684	6.57426	0.1322669	0.17927685	3.1149654	20	—	—
28003 1997 WT_{52}	13.2	X	296.40742	151.36029	65.27144	12.45502	0.0704092	0.18429214	3.0581926	20	1 24.1	17.7
28004 Terakawa	14.5	X	284.88772	202.80533	246.11863	8.99357	0.1963686	0.21258108	2.7804792	20	10 14.9	17.9
28005 1997 XC	12.8	X	65.00226	245.73259	242.62108	13.61320	0.2491756	0.18449385	3.0559632	20	4 22.2	16.7
28006 1997 XM_5	14.2	X	22.33005	234.83240	275.57390	10.65411	0.1183361	0.27257422	2.3558422	20	2 5.6	16.6
28007 1997 XO_{10}	13.7	X	216.66288	280.16149	76.35463	10.92294	0.1563135	0.19479928	2.9472105	20	4 10.5	18.6
28008 1997 XR_{11}	12.9	X	133.58135	7.18973	304.89143	13.57427	0.1794342	0.22295095	2.6935797	20	—	—
28009 1997 YY_1	13.8	X	284.02895	325.99664	91.46584	3.74232	0.1418397	0.20635300	2.8361478	20	9 12.7	17.3
28010 1997 YE_3	13.5	X	354.84017	359.69081	123.24630	7.44434	0.0743364	0.17678179	3.1442063	20	—	—
28011 1997 YW_3	13.6	X	340.55164	74.96031	340.35655	7.88085	0.2365121	0.21520689	2.7578159	20	12 30.0	16.3
28012 1997 YH_4	13.7	X	307.83170	336.00174	59.27594	2.92341	0.0750656	0.20548658	2.8441145	20	9 27.3	17.3
28013 1997 YL_4	14.4	X	137.66275	305.31261	105.58869	3.91915	0.1310231	0.23702930	2.5858383	20	3 26.8	18.2
28014 1997 YS_5	13.2	X	104.34756	142.40685	307.22268	9.47888	0.2457682	0.18744700	3.0237813	20	4 18.3	18.0
28015 1997 YG_9	14.2	X	192.46761	200.06168	218.73479	1.35829	0.0500678	0.19688476	2.9263616	20	5 31.6	18.3
28016 1997 YV_{11}	12.5	X	36.70133	312.46424	125.19562	17.60747	0.1048537	0.17320773	3.1873117	20	—	—
28017 1997 YV_{13}	13.5	X	164.06879	131.74214	266.46522	4.98354	0.3888298	0.23573140	2.5953211	20	4 13.2	18.5
28018 1998 AG	13.0	X	216.13116	212.07524	140.24271	11.13121	0.0810547	0.18937301	3.0032443	20	4 7.5	17.7
28019 Warchal	15.4	X	226.70654	200.52092	223.38284	4.84454	0.1179409	0.29139729	2.5532655	20	7 14.2	18.4
28020 1998 BP_5	14.8	X	190.99567	47.80185	304.02512	5.91226	0.1297108	0.27389707	2.3482507	20	2 28.5	18.4
28021 1998 BP_6	13.6	X	78.21862	340.23839	96.28269	12.00181	0.2396534	0.18557602	3.0440713	20	3 12.1	17.8
28022 1998 BA_9	12.9	X	71.86880	110.52663	284.54393	8.03992	0.0918086	0.17472060	3.1688862	20	—	—
28023 1998 BF_{11}	13.7	X	106.47682	314.40463	107.55541	11.79157	0.1030333	0.18466500	3.0540747	20	3 8.9	18.2
28024 1998 BT_{14}	12.5	X	320.31794	324.85612	287.59928	8.90676	0.0548664	0.18650026	3.0340059	20	4 2.6	16.7
28025 1998 BD_{41}	14.8	X	139.77349	37.10344	36.40691	5.35701	0.3128295	0.23798073	2.5789417	20	5 7.5	19.4
28026 1998 CN_1	13.8	X	270.51231	180.03518	23.85279	5.24933	0.0514151	0.21719321	2.7409759	20	—	—
28027 1998 CC_5	14.7	X	175.72612	54.43309	318.85227	5.65143	0.1568611	0.27148061	2.3621647	20	3 13.0	18.3
28028 1998 DS_8	13.4	X	8.02263	102.78598	120.22085	3.02356	0.0586505	0.19565456	2.9386153	20	5 8.3	17.2
28029 1998 DW_9	12.3	X	280.18812	174.14035	246.28769	7.56966	0.1102894	0.15584589	3.4198403	20	9 2.6	17.1
28030 1998 DW_{12}	14.0	X	88.62804	299.63220	132.35338	4.14864	0.3163042	0.18405425	3.0608273	20	3 26.6	18.3
28031 1998 DX_{17}	14.2	X	167.27636	307.42851	73.50069	2.91940	0.0584207	0.22366592	2.6878365	20	3 15.9	18.0
28032 1998 DZ_{23}	13.9	X	297.59219	276.43773	206.81817	8.06721	0.1855552	0.21120072	2.7925810	20	12 28.2	16.8
28033 1998 EE_9	13.0	X	87.13510	89.70944	1.92925	9.00273	0.0437526	0.18315211	3.0708700	20	3 10.0	17.3
28034 1998 EU_{13}	14.0	X	32.10815	29.57998	36.71663	5.75731	0.1511262	0.21459089	2.7630910	20	—	—
28035 1998 FY_1	15.6	X	58.54985	357.94767	64.01092	3.81545	0.0711321	0.30370216	2.1919844	20	—	—
28036 1998 FZ_{26}	13.0	X	122.84979	106.17076	348.29904	9.04971	0.0618245	0.18421087	3.0590921	20	4 23.8	17.5
28037 Williammonts	15.4	X	174.88398	346.78946	118.67941	1.05984	0.1142826	0.28036995	2.3119676	20	7 13.3	18.6
28038 Nicoleodzer	15.9	X	124.63480	107.14670	349.88841	2.21674	0.1768610	0.27410884	2.3470411	20	5 12.2	19.2
28039 Mauraoei	14.3	X	153.82979	209.62307	80.22177	5.21783	0.1634755	0.29483226	2.2357301	20	—	—
28040 1998 FF_{80}	14.0	X	138.74313	229.85602	116.71981	5.61752	0.1265439	0.17037407	3.2225553	20	1 15.1	18.8
28041 1998 FQ_{87}	12.9	X	214.85122	240.54040	24.96365	13.02979	0.0727295	0.17009500	3.2260791	20	—	—
28042 Mayapatel	15.3	X	334.70583	16.49302	80.39001	5.79456	0.0873261	0.29944644	2.2127038	20	—	—
28043 Mabelwheeler	14.7	X	100.84300	44.08624	46.25451	6.71096	0.0363174	0.26915064	2.3757775	20	3 18.4	17.6
28044 1998 FD_{116}	14.1	X	218.63218	327.78155	330.71864	5.93230	0.1313944	0.26054401	2.4278135	20	1 24.3	17.7
28045 Johnwilkins	15.1	X	67.15729	306.41451	350.36478	6.20023	0.1234020	0.28517285	2.2859353	20	11 27.9	18.3
28046 1998 HB_{14}	14.0	X	94.57903	89.31295	85.76081	11.62813	0.0970043	0.27505342	2.3416646	20	7 14.9	17.0
28047 1998 HU_{90}	15.5	X	279.15568	219.20710	99.73425	4.48581	0.1932829	0.31251616	2.1505740	20	4 13.8	18.1
28048 Camilleyoke	15.4	X	326.88095	207.39787	152.67438	4.87170	0.1481596	0.27990797	2.3145108	20	9 22.2	17.1
28049 Yvonnealex	14.3	X	75.56845	217.42373	224.93070	8.24507	0.1546103	0.21729577	2.7401134	20	2 18.1	17.8
28050 Asekomeh	14.9	X	110.74489	264.61881	65.09065	4.45709	0.1825787	0.29246788	2.2477634	20	—	—
28051 1998 HS_{153}	14.6	X	111.88770	332.72751	308.64204	0.97296	0.0304705	0.20002680	2.8956358	20	12 4.3	18.8
28052 1998 KP_1	14.7	X	106.91932	119.84809	191.58387	1.23448	0.1791471	0.24479444	2.5308613	20	—	—
28053 1998 KE_4	14.2	X	57.26923	315.89733	194.06825	3.59122	0.0471313	0.22073976	2.7115378	20	4 9.8	17.7
28054 1998 KE_{50}	13.9	X	61.08945	197.56118	102.34021	13.42201	0.1433988	0.19251594	2.9704683	20	11 15.2	18.4
28055 1998 MX	14.1	X	85.34503	235.88247	86.55834	14.22939	0.1941764	0.24250197	2.5467865	20	—	—
28056 1998 MK_5	12.7	X	345.42298	265.91319	118.53222	13.83078	0.1806699	0.23132305	2.6281901	20	11 28.5	15.6
28057 1998 MM_{37}	13.5	X	44.82327	205.70142	121.87412	10.22999	0.0803081	0.18783252	3.0196424	20	11 18.6	17.8
28058 1998 NF	14.5	X	325.90840	163.53438	75.97290	3.54300	0.1362219	0.26275913	2.4141496	20	3 12.4	17.1
28059 Kiliaan	13.0	X	164.22778	182.41262	145.54662	11.71320	0.1605022	0.20182363	2.8784236	20	1 16.1	17.7
28060 1998 OL_8	13.1	X	230.12803	232.98905	145.41901	9.65241	0.1097995	0.17007608	3.2263184	20	5 21.3	18.2
28061 1998 ON_{11}	13.5	X	33.82922	196.29506	237.02924	1.08549	0.0176652	0.19847930	2.9106673	20	—	—
28062 1998 OZ_{11}	14.9	X	69.08369	37.47009	337.97921	7.36877	0.1223190	0.28558824	2.2837182	20	—	—
28063 1998 OR_{14}	14.3	X	204.17802	117.62841	335.75639	5.41947	0.0460725	0.22131166	2.7068645	20	8 1.0	18.0
28064 1998 QX_{10}	12.6	X	317.08162	289.63901	126.47086	10.76028	0.0984387	0.18662865	3.0326142	20	11 5.6	16.5
28065 1998 QZ_{10}	14.1	X	332.53876	261.17075	20.42983	2.50432	0.1893207	0.26477326	2.4018910	20	5 16.8	16.1
28066 1998 QA_{11}	15.3	X	336.20106	280.15587	349.67290	5.69756	0.0948093	0.35371154	1.9801734	20	5 12.4	16.7
28067 1998 QA_{14}	13.7	X	160.59459	350.09365	156.77332	13.52985	0.1187304	0.22424957	2.6831707	20	8 17.6	18.0
28068 Stephbillings	15.2	X	57.47733	333.85859	347.46555	4.91820	0.1695239	0.27817991	2.3240861	20	12 24.2	18.6
28069 1998 QQ_{22}	14.9	X	33.55445	324.74216	71.88249	4.16842	0.2119325	0.23664199	2.5886590	20	—	—
28070 1998 QS_{25}	13.9	X	129.04923	292.20812	81.50457	3.26013	0.0460037	0.20222924	2.8745735	20	1 23.0	17.8
28071 1998 QC_{26}	14.7	X	334.76056	345.76991	340.63405	3.52717	0.1491963	0.22148940	2.7054162	20	8 4.6	17.4
28072 Lindbowerman	14.7	X	210.10721	279.26595	86.89579	3.30805	0.1975443	0.25588000	2.4572263	20	4 8.6	18.8
28073 Fohner	14.2	X	138.69711	215.69824	224.54337	4.43133	0.0448532	0.21051702	2.7986241	20	4 24.8	18.1
28074 Matgallagher	14.3	X	134.14093	195.02538	155.33188	2.24556	0.0340402	0.19918691	2.9037698	20	—	—
28075 Emilyhoffman	14.9	X	235.78560	82.17653	293.86528	2.49028	0.1139421	0.25962229	2.4335563	20	5 19.8	18.5
28076 1998 QS_{48}	15.6	X	274.95265	55.41269	328.99435	5.41722	0.0610957	0.31085074	2.1582485	20	8 6.7	17.8
28077 1998 QH_{55}	15.0	X	134.20272	75.26172	340.06628	5.70559	0.0584029	0.29515962	2.2340767	20	3 11.8	17.8
28078 Mauricehilleman	15.2	X	229.39419	265.51101	169.07940	0.65917	0.1012348	0.30685715	2.1769338	20	8 6.5	17.9
28079 1998 QY_{63}	12.2	X	225.69168	274.21773	158.91200	23.81430	0.0978698	0.17728276	3.1382801	20	7 21.3	17.2
28080 1998 QS_{72}	15.2	X	167.11414	73.35396	185.50047	13.45980	0.1603281	0.23959985	2.5673103	20	—	—

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
	m		°	°	°	°		°				
28081 Carriehudson	15.6	*X*	215.21496	65.92185	242.61093	8.62187	0.0886583	0.29689343	2.2253705	20	1 25.1	18.8
28082 1998 QF_{88}	13.8	*X*	138.75787	234.15985	314.76782	12.10807	0.1274301	0.22419775	2.6835841	20	9 13.9	18.2
28083 1998 QP_{90}	15.0	*X*	286.56667	353.70234	12.74794	9.50460	0.1685112	0.30934262	2.1652575	20	7 10.6	17.3
28084 1998 QH_{92}	15.4	*X*	279.44827	267.68316	106.09033	5.09629	0.1850173	0.30722392	2.1752008	20	7 4.5	17.5
28085 1998 QO_{98}	14.6	*X*	79.83573	275.65749	197.38379	19.86158	0.3140805	0.28974320	2.2618330	20	5 2.4	17.3
28086 1998 QW_{100}	13.3	*X*	141.93667	87.43721	82.13228	2.96954	0.0203647	0.22137674	2.7063340	20	8 25.5	17.0
28087 1998 QH_{101}	15.4	*X*	195.66644	1.92620	103.02149	2.08510	0.0233528	0.31093696	2.1578495	20	8 16.0	17.8
28088 1998 RQ_{2}	15.4	*X*	261.88124	47.02298	17.52700	6.12419	0.0571834	0.31338501	2.1465973	20	9 19.1	17.5
28089 1998 RD_{17}	13.7	*X*	143.03012	216.71253	160.92248	13.23557	0.1050196	0.20411372	2.8568532	20	2 17.9	18.0
28090 1998 RW_{32}	16.5	*X*	251.13803	236.43307	155.23461	0.27561	0.1379482	0.30802595	2.1714234	20	6 28.0	19.2
28091 Mikekane	15.2	*X*	169.82466	116.99359	151.81727	5.27497	0.1636650	0.28530300	2.2852400	20	—	—
28092 Joannekear	15.2	*X*	336.27091	286.31177	246.49582	4.79331	0.0457371	0.29141484	2.2531751	20	1 1.1	17.9
28093 Staceylevoit	15.0	*X*	142.48193	283.48368	301.41205	3.84144	0.1651587	0.27523789	2.3406182	20	11 11.9	18.7
28094 Michellewis	14.5	*X*	294.87225	336.68122	207.92452	6.67676	0.1195546	0.24199184	2.5503644	20	—	—
28095 Seanmahoney	15.3	*X*	144.23757	174.78586	216.11716	1.43037	0.1225017	0.29412793	2.2392979	20	2 28.5	18.3
28096 Kathrynmarsh	15.5	*X*	232.41893	294.00162	304.80340	3.81638	0.1071268	0.28760055	2.2730530	20	—	—
28097 1998 RZ_{63}	14.4	*X*	73.11294	294.87479	113.85910	3.23009	0.0980455	0.19621038	2.9330630	20	1 2.1	17.9
28098 1998 RJ_{64}	15.2	*X*	322.96957	180.11052	143.02659	2.72233	0.2126346	0.26481085	2.4016638	20	6 30.6	16.9
28099 1998 RZ_{66}	13.7	*X*	89.29459	287.51919	289.41720	5.60617	0.0580703	0.17429425	3.1740518	20	8 17.7	18.3
28100 1998 RG_{69}	14.0	*X*	290.12809	199.78065	163.07123	3.02851	0.1058445	0.21802112	2.7340325	20	7 13.0	17.4
28101 1998 RP_{71}	15.5	*X*	227.12450	28.23072	25.67829	4.21666	0.1130844	0.30647091	2.1787624	20	7 3.2	18.3
28102 1998 RM_{79}	15.9	*X*	321.15202	290.90108	55.49771	3.81146	0.2093638	0.31161423	2.1547218	20	8 18.9	16.9
28103 Benmcpheron	15.3	*X*	70.84906	344.37421	114.43251	2.75879	0.1185923	0.29130705	2.2537309	20	2 20.5	17.5
28104 1998 SL_{1}	16.0	*X*	299.58891	76.26280	29.33047	6.17818	0.1212985	0.27423503	2.3463210	20	—	—
28105 Santallo	14.7	*X*	144.09037	222.77537	29.21460	12.03720	0.1471763	0.23063593	2.6334075	20	12 8.6	19.1
28106 1998 SE_{10}	15.4	*X*	196.38331	252.64911	31.02651	8.75727	0.1113247	0.28617520	2.2805944	20	—	—
28107 Sapar	13.7	*X*	214.90374	325.21760	291.96567	14.49530	0.0798395	0.22852874	2.6495706	20	—	—
28108 Sydneybarnes	16.1	*X*	155.91643	10.07273	41.12351	4.57487	0.1384546	0.29776639	2.2210189	20	4 11.5	19.1
28109 1998 SA_{29}	13.8	*X*	220.00000	83.71751	71.77053	2.43196	0.1597817	0.18149601	3.0895222	20	10 19.9	18.4
28110 1998 SG_{30}	15.9	*X*	324.64256	224.07165	16.01503	2.28630	0.1036772	0.29873428	2.2162190	20	3 10.2	18.2
28111 1998 SY_{31}	15.7	*X*	31.79671	240.68376	187.02323	4.65508	0.1682801	0.28242579	2.3007344	20	—	—
28112 1998 SN_{37}	15.6	*X*	309.65689	124.27128	347.02823	2.39776	0.1627650	0.27562662	2.3384169	20	—	—
28113 1998 SD_{43}	14.8	*X*	354.04116	165.45221	17.48694	7.28370	0.1607586	0.29306248	2.2447220	20	1 29.6	17.0
28114 1998 SE_{43}	14.6	*X*	277.71221	186.24081	8.20945	7.01423	0.0406859	0.28521901	2.2856886	20	—	—
28115 1998 SN_{50}	15.3	*X*	239.10389	241.03096	252.57215	1.42855	0.1538883	0.26976332	2.3721790	20	10 28.6	18.0
28116 1998 SP_{56}	13.8	*X*	244.13382	312.62754	15.15114	3.66158	0.0739048	0.20953721	2.8073417	20	4 3.1	17.7
28117 1998 SK_{57}	15.0	*X*	315.47264	220.02266	13.98214	5.46145	0.1004177	0.29792074	2.2202518	20	2 18.7	17.5
28118 1998 SR_{57}	16.8	*X*	330.76997	257.87506	47.18356	3.01899	0.2089646	0.30974586	2.1633778	20	6 21.9	17.7
28119 1998 SX_{71}	15.1	*X*	178.38876	155.65600	41.51608	4.26249	0.0770232	0.27235431	2.3571102	20	11 18.2	18.1
28120 1998 SX_{72}	15.0	*X*	256.31444	222.99548	40.91849	6.06970	0.1563606	0.29261832	2.2469929	20	1 12.3	18.4
28121 1998 SY_{72}	14.8	*X*	352.40704	32.88598	176.34522	6.35273	0.0550558	0.29587576	2.2304704	20	3 16.3	17.0
28122 1998 SJ_{74}	15.0	*X*	1.12669	265.54396	86.05481	4.01458	0.0989618	0.22478752	2.6788882	20	10 28.1	18.1
28123 1998 SM_{74}	14.6	*X*	240.56738	329.89473	122.96301	3.33549	0.1687011	0.26490043	2.4011223	20	9 3.1	17.7
28124 1998 SD_{79}	14.3	*X*	144.20030	277.94923	15.20346	14.08340	0.2440301	0.24032464	2.5621458	20	—	—
28125 Juliomiguez	14.5	*X*	309.78543	186.97581	351.26682	4.00126	0.0876566	0.28709873	2.2757010	20	—	—
28126 Nydegger	15.3	*X*	108.49988	164.53513	284.02082	4.08200	0.1121835	0.29464512	2.2366767	20	3 30.4	18.1
28127 Ogden–Stenerson	15.7	*X*	150.81826	102.03295	277.60096	2.12159	0.1156383	0.29267429	2.2467065	20	2 20.2	18.8
28128 Cynthrossman	15.4	*X*	343.50907	117.13000	34.15692	2.77552	0.0912554	0.28703752	2.2760245	20	—	—
28129 Teresummers	14.3	*X*	269.50200	230.71423	297.19445	4.23560	0.0780538	0.27974436	2.3154131	20	—	—
28130 Troemper	15.1	*X*	279.93010	62.89945	37.15819	3.96646	0.1307799	0.27175776	2.3605584	20	11 19.1	17.2
28131 Dougwelch	15.3	*X*	129.94587	343.27869	104.26195	3.03964	0.1483543	0.29671510	2.2262621	20	5 3.5	18.2
28132 Karenzobel	14.9	*X*	222.21580	121.53286	37.68315	6.84858	0.0397984	0.27326994	2.3518420	20	11 27.5	17.7
28133 Kylebardwell	14.6	*X*	341.16865	262.78313	344.07285	2.54626	0.1301331	0.30093751	2.2053888	20	4 13.4	16.3
28134 1998 SB_{131}	13.9	*X*	296.49494	80.32961	287.86618	1.72994	0.0536879	0.21790803	2.7349784	20	8 6.7	17.4
28135 1998 ST_{131}	14.3	*X*	92.62225	257.54831	291.99597	4.92202	0.1229413	0.30542500	2.1837336	20	8 6.6	17.1
28136 Chasegross	15.4	*X*	30.05477	227.39054	192.56216	5.88517	0.0666704	0.28145074	2.3060450	20	—	—
28137 Helenyao	14.7	*X*	86.66039	228.93906	8.73653	7.28558	0.0777717	0.26636323	2.3923233	20	9 26.7	17.9
28138 1998 SD_{141}	13.1	*X*	105.13591	286.94977	20.63979	10.53855	0.1052169	0.18691760	3.0294881	20	12 31.0	17.9
28139 1998 SN_{141}	13.9	*X*	303.99508	126.52338	27.47522	10.38704	0.0316577	0.19114635	2.9846406	20	—	—
28140 1998 SR_{144}	14.5	*X*	284.09108	351.74592	194.65911	6.86894	0.0759359	0.28362704	2.2942336	20	—	—
28141 1998 TC	13.6	*X*	273.18334	198.69324	283.97231	11.89706	0.1259546	0.26494330	2.4008632	20	12 8.9	16.1
28142 1998 TU	15.6	*X*	72.14041	56.68324	31.60154	5.98348	0.1095443	0.28883939	2.2665490	20	2 8.4	17.9
28143 1998 TK_{5}	14.3	*X*	216.42103	47.41253	58.98923	7.22250	0.0839831	0.26322185	2.4113195	20	9 5.9	17.7
28144 1998 TN_{13}	16.3	*X*	209.53195	120.15871	205.59777	2.81085	0.1597258	0.29319026	2.2440698	20	2 12.9	19.7
28145 1998 TY_{18}	14.6	*X*	170.89707	193.46830	36.59650	3.40200	0.1625224	0.23061784	2.6335452	20	12 7.5	18.7
28146 1998 TC_{32}	14.3	*X*	359.97700	266.58335	245.80663	4.59384	0.0911288	0.28760319	2.2730392	20	1 2.6	16.5
28147 1998 TD_{32}	14.8	*X*	231.38608	171.59868	332.82687	4.22130	0.0876303	0.27038062	2.3685670	20	11 11.2	17.8
28148 1998 TL_{34}	15.7	*X*	41.45954	262.50452	183.82327	5.09126	0.1427618	0.28436654	2.2902544	20	—	—
28149 1998 TX_{34}	15.6	*X*	114.61771	334.73768	32.81230	6.91322	0.1295700	0.28581230	2.2825244	20	—	—
28150 1998 UC_{1}	15.3	*X*	38.60405	276.07236	139.35385	5.93063	0.1479175	0.27982780	2.3149528	20	—	—
28151 Markknopfler	15.3	*X*	179.91924	144.95031	112.04308	4.47387	0.1606405	0.23528395	2.5986104	20	—	—
28152 1998 UK_{8}	14.8	*X*	154.65137	324.20227	173.14068	4.76893	0.1275362	0.25655799	2.4528954	20	8 1.3	18.5
28153 1998 UU_{20}	15.2	*X*	252.50827	276.88699	48.01295	5.94378	0.1844910	0.29855551	2.2171036	20	3 25.4	18.4
28154 1998 UQ_{26}	13.4	*X*	147.74111	72.16591	75.42342	8.41502	0.0620357	0.16828986	3.2491075	20	8 2.1	18.3
28155 Chengzhendai	14.9	*X*	1.00679	84.74683	14.62996	5.69851	0.1425373	0.28078542	2.3096864	20	—	—
28156 McColl	13.9	*X*	72.96979	179.74598	193.90557	9.56714	0.1393832	0.19027481	2.9937476	20	—	—
28157 1998 VY_{3}	14.3	*X*	85.10841	239.85830	91.37090	3.54506	0.1759930	0.23053005	2.6342138	20	—	—
28158 1998 VT_{6}	15.0	*X*	227.12598	274.54630	109.49317	3.19655	0.1450212	0.29953725	2.2122566	20	5 18.9	18.2
28159 Giuricich	15.1	*X*	78.59173	36.01456	67.17288	6.44864	0.1080837	0.29223797	2.2489422	20	3 12.8	17.5
28160 1998 VC_{11}	15.2	*X*	331.93419	65.69344	209.44553	4.62300	0.1081155	0.30211949	2.1996330	20	5 16.2	17.1

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Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
	m		°	°	°	°		°				
28161 Neelpatel	16.1	*X*	85.07202	242.37761	155.12935	1.16728	0.1572925	0.28487015	2.2875543	20	—	—
28162 1998 VD_{14}	13.7	*X*	67.97651	267.57993	314.28760	5.14959	0.1083102	0.26005526	2.4308545	20	8 14.1	16.7
28163 Lorikim	14.9	*X*	223.44278	18.18551	211.42833	4.38622	0.1600582	0.28133979	2.3066513	20	—	—
28164 1998 VY_{21}	15.7	*X*	206.39341	164.40205	275.15495	5.63432	0.0483395	0.30424222	2.1893897	20	7 19.5	18.5
28165 Bayanmashat	14.7	*X*	214.45293	188.53730	60.09691	5.94138	0.1444557	0.28248236	2.3004272	20	—	—
28166 1998 VP_{25}	16.1	*X*	271.75109	283.70868	61.71286	3.34903	0.1886820	0.30340234	2.1934282	20	5 11.1	18.6
28167 Andrewkim	14.6	*X*	238.64209	173.29276	58.63323	4.37646	0.0802664	0.28253403	2.3001467	20	—	—
28168 Evanolin	14.9	*X*	315.17337	77.58904	38.03396	3.32454	0.0238347	0.27711985	2.3300092	20	—	—
28169 Cathconte	14.9	*X*	114.37564	5.59238	32.56796	4.25243	0.1936159	0.28770648	2.2724951	20	2 15.2	17.6
28170 1998 VC_{30}	15.5	*X*	238.72394	316.25118	84.80055	3.93385	0.0963638	0.30339805	2.1934489	20	7 1.2	18.0
28171 Diannahu	15.1	*X*	256.53829	78.71505	353.26197	1.96506	0.1833347	0.26257981	2.4152485	20	8 22.7	18.0
28172 1998 VZ_{30}	13.1	*X*	349.64048	102.45727	69.86704	14.13062	0.1017655	0.23965300	2.5669307	20	1 26.4	16.3
28173 Hisakichi	15.1	*X*	139.78144	80.98049	55.44913	3.09371	0.1465212	0.25450725	2.4660541	20	7 18.1	18.9
28174 Harue	14.2	*X*	176.98511	147.75594	85.21773	13.51457	0.1784982	0.22368459	2.6876869	20	12 14.6	18.6
28175 1998 VM_{33}	15.3	*X*	119.47664	260.74347	184.56316	1.82190	0.1367954	0.24560568	2.5252852	20	4 18.3	18.9
28176 1998 VV_{43}	16.9	*X*	25.93188	285.49950	111.05319	1.97014	0.2401430	0.27321411	2.3521624	20	—	—
28177 1998 VO_{53}	14.5	*X*	258.75683	155.15154	276.63804	11.74505	0.1497458	0.26411465	2.4058823	20	8 24.5	17.8
28178 1998 WL_{1}	14.5	*X*	260.60957	332.61830	96.06526	7.04134	0.0891963	0.26151463	2.4218025	20	9 11.6	17.5
28179 1998 WR_{1}	14.6	*X*	32.63217	351.15332	249.23696	4.49333	0.1178241	0.29917715	2.2140314	20	7 21.2	16.6
28180 1998 WU_{1}	14.6	*X*	67.02430	237.46816	82.72863	11.66088	0.0774304	0.26955850	2.3733805	20	12 20.9	17.7
28181 1998 WW_{5}	14.7	*X*	98.48277	305.93809	358.05391	5.57462	0.1399079	0.27530637	2.3402300	20	—	—
28182 Chadharris	15.0	*X*	219.33483	202.89558	257.75376	1.55936	0.1643328	0.26043008	2.4285215	20	8 18.2	18.7
28183 Naidu	15.7	*X*	116.60053	220.09227	198.84513	2.11824	0.1021960	0.28957651	2.2627010	20	2 29.6	18.5
28184 Vaishnavirao	15.4	*X*	256.95312	265.73825	48.13680	4.51446	0.1691674	0.29639195	2.2278799	20	3 16.6	18.5
28185 1998 WJ_{18}	14.3	*X*	274.45433	345.65933	292.96595	4.50318	0.0992849	0.29239611	2.2481312	20	2 22.7	17.1
28186 1998 WK_{18}	15.1	*X*	270.09575	22.01909	328.38803	3.23423	0.1843591	0.30250239	2.1977764	20	5 15.4	17.9
28187 1998 WP_{19}	13.5	*X*	315.86004	300.18245	256.35413	13.55408	0.0447753	0.23338646	2.6126764	20	1 13.9	17.1
28188 1998 WV_{19}	13.1	*X*	61.53176	202.42065	270.80473	13.41935	0.1311305	0.23491126	2.6013582	20	2 27.4	16.4
28189 1998 WP_{22}	14.4	*X*	330.79192	286.14261	222.70529	3.22657	0.2076821	0.23362052	2.6109310	20	—	—
28190 1998 WU_{23}	12.9	*X*	214.54082	130.47729	18.68595	9.41215	0.0739087	0.21285277	2.7781126	20	10 19.0	16.7
28191 1998 WV_{23}	13.3	*X*	254.16770	198.82231	352.34600	13.36265	0.1082397	0.22241816	2.6978796	20	—	—
28192 1998 WE_{24}	12.9	*X*	47.98512	169.11816	282.00317	12.38702	0.1741490	0.18525409	3.0475968	20	1 24.9	16.3
28193 1998 WY_{30}	15.3	*X*	329.92405	289.00723	4.91216	6.09082	0.2036621	0.30264450	2.1970884	20	5 27.8	16.9
28194 1998 WX_{37}	15.7	*X*	239.07638	30.36443	56.52423	1.18073	0.0411851	0.26355182	2.4093064	20	9 11.6	18.6
28195 1998 XW_{4}	14.9	*X*	324.22657	346.33113	23.70179	2.70483	0.0921472	0.26170692	2.4206161	20	9 28.2	17.1
28196 Szeged	14.7	*X*	274.94745	348.91243	165.08066	6.98772	0.0537184	0.27361969	2.3498374	20	—	—
28197 1998 XZ_{12}	14.8	*X*	24.88447	133.88037	258.40872	5.52462	0.1094087	0.27260314	2.3556756	20	—	—
28198 1998 XU_{16}	13.2	*X*	254.98342	81.58232	84.58972	10.82332	0.0665720	0.17591812	3.1544889	20	12 21.4	17.5
28199 1998 XA_{42}	13.7	*X*	213.17734	316.36796	90.93584	5.49781	0.0043535	0.25137622	2.4864893	20	6 14.9	16.8
28200 1998 XF_{44}	14.0	*X*	218.94725	77.54863	22.93503	6.24892	0.0969901	0.25891300	2.4379988	20	8 28.5	17.4
28201 Lifubin	14.3	*X*	86.45542	69.05652	11.54024	6.81253	0.1411859	0.28590265	2.2820436	20	2 26.3	16.7
28202 1998 XC_{47}	15.2	*X*	349.53081	322.92535	50.11429	3.13417	0.2102657	0.26694504	2.3888459	20	12 2.6	17.2
28203 1998 XL_{48}	15.5	*X*	236.86398	0.74203	43.44814	3.70737	0.3089219	0.30257548	2.1974225	20	6 9.6	19.2
28204 Liyakang	15.2	*X*	278.60639	31.45209	41.63909	2.93274	0.1820754	0.26325552	2.4111139	20	9 29.0	17.5
28205 1998 XL_{51}	15.9	*X*	208.57862	46.52561	350.37518	5.13574	0.2201443	0.29742354	2.2227254	20	5 10.9	19.7
28206 Haozhongning	14.8	*X*	66.24804	306.59864	80.56800	8.75811	0.1770276	0.27737699	2.3285689	20	—	—
28207 Blakesmith	14.5	*X*	56.00723	78.02503	351.89619	1.66479	0.1049373	0.23361944	2.6109390	20	—	—
28208 Timtrippel	14.2	*X*	61.80647	131.67662	16.61367	5.38276	0.1911078	0.24224608	2.5485797	20	5 3.0	16.9
28209 Chatterjee	14.1	*X*	296.21786	202.43808	296.88975	9.70183	0.0876849	0.22938012	2.6430104	20	—	—
28210 Howardfeng	15.4	*X*	140.18180	344.02971	62.83968	7.81059	0.1895379	0.29152702	2.2525970	20	3 28.3	18.7
28211 1998 XJ_{64}	14.8	*X*	203.34193	273.61019	70.62222	6.42000	0.2506035	0.29425037	2.2386767	20	3 6.2	18.7
28212 1998 XJ_{78}	15.6	*X*	22.35168	247.43986	145.76207	5.55824	0.2015396	0.27480051	2.3431011	20	—	—
28213 1998 XS_{92}	14.9	*X*	235.28049	304.56269	131.94719	11.13699	0.1099736	0.25791472	2.4442857	20	8 11.8	18.0
28214 1998 YW	16.0	*X*	187.43541	148.22302	251.44981	0.75983	0.1927567	0.29447787	2.2375235	20	4 28.1	19.6
28215 1998 YE_{1}	14.3	*X*	150.89430	22.11451	351.67208	7.01732	0.1284735	0.28517524	2.2859225	20	2 17.4	17.4
28216 1998 YU_{1}	14.5	*X*	250.88661	270.21306	173.49051	2.77390	0.1439847	0.25664167	2.4523621	20	9 5.3	17.7
28217 1998 YO_{3}	14.6	*X*	106.49125	242.84447	94.58916	7.64443	0.1440322	0.27681353	2.3317277	20	—	—
28218 1998 YA_{6}	15.1	*X*	134.96170	7.74197	176.34702	3.84104	0.0605926	0.30621186	2.1799910	20	9 16.1	17.9
28219 1998 YP_{8}	15.0	*X*	6.52664	329.53396	138.75631	1.98863	0.1259093	0.23054783	2.6340783	20	—	—
28220 York	15.3	*X*	100.39216	241.10468	242.59569	1.27322	0.0675942	0.24615795	2.5215067	20	5 5.8	18.5
28221 1998 YG_{17}	14.5	*X*	0.35254	322.44094	267.51009	0.76850	0.0114337	0.19807151	2.9146609	20	5 5.3	18.4
28222 Neilpathak	14.3	*X*	90.36428	147.45238	57.36317	4.27413	0.0890918	0.30170091	2.2016670	20	8 24.2	17.0
28223 1998 YR_{27}	14.2	*X*	280.14020	339.81736	125.69339	10.03420	0.2500899	0.21977796	2.7194430	20	10 30.4	17.3
28224 1999 AJ	14.8	*X*	321.38170	228.81257	162.92424	2.54410	0.2125657	0.26365754	2.4086623	20	10 26.5	16.4
28225 1999 AS	14.1	*X*	131.38629	285.83182	53.72018	4.78943	0.1426539	0.23131709	2.6282352	20	—	—
28226 1999 AE_{2}	14.2	*X*	190.38160	76.79357	53.21562	5.11243	0.1499516	0.20975003	2.8054425	20	8 26.8	18.7
28227 1999 AN_{2}	14.4	*X*	59.41912	62.67698	78.94058	4.73568	0.0714116	0.28716556	2.2753479	20	4 1.3	16.8
28228 1999 AU_{2}	14.3	*X*	106.58827	16.99453	34.40625	6.73784	0.1307436	0.23481341	2.6020809	20	2 21.6	17.8
28229 1999 AK_{4}	14.7	*X*	261.28426	127.80168	271.48686	5.33896	0.1151221	0.25636316	2.4541379	20	7 22.9	17.8
28230 1999 AH_{5}	13.7	*X*	298.49431	190.74939	333.15340	13.00320	0.1065938	0.27304705	2.3531217	20	—	—
28231 1999 AL_{5}	13.8	*X*	49.03442	160.24764	327.80734	21.91937	0.0328451	0.23737759	2.5833083	20	2 23.4	17.0
28232 1999 AS_{5}	14.6	*X*	29.89372	350.37566	79.39783	6.48363	0.1301057	0.22798216	2.6538038	20	—	—
28233 1999 AV_{5}	13.6	*X*	26.86215	13.99724	348.07874	12.04961	0.1336008	0.21887224	2.7269401	20	12 20.4	17.4
28234 1999 AB_{8}	13.6	*X*	330.72799	39.68189	99.25527	15.95069	0.1898511	0.18161271	3.0881986	20	—	—
28235 1999 AL_{8}	15.1	*X*	36.27655	314.08999	129.00850	5.33809	0.2290688	0.28119771	2.3074282	20	—	—
28236 1999 AH_{10}	13.7	*X*	143.85396	323.30392	138.70053	2.77804	0.0290477	0.19595839	2.9355770	20	5 29.0	17.9
28237 1999 AR_{16}	14.9	*X*	124.62489	119.80739	172.48928	2.55959	0.0364003	0.22256624	2.6966827	20	—	—
28238 1999 AB_{18}	14.2	*X*	10.76152	123.55731	139.21216	2.71541	0.0093367	0.20243371	2.8726375	20	7 1.9	18.0
28239 1999 AQ_{19}	14.0	*X*	256.37280	102.71412	135.23690	10.31670	0.0417879	0.18323920	3.0698969	20	1 4.9	18.5
28240 1999 AP_{21}	14.5	*X*	344.76586	12.09407	295.26592	5.86302	0.1423521	0.25193740	2.4827955	20	7 29.7	16.9

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Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
	m		°	°	°	°		°				
28241 1999 AC_{22}	14.6	X	56.55474	39.59962	59.98707	5.23962	0.0550082	0.23272515	2.6176234	20	2 3.0	17.8
28242 Mingantu	14.8	X	268.17558	177.51410	236.26357	3.86500	0.1200542	0.25827380	2.4420196	20	8 21.1	17.7
28243 1999 AA_{23}	14.5	X	26.98760	89.28891	49.15702	6.56457	0.1331712	0.28020312	2.3128852	20	2 1.3	16.6
28244 1999 AL_{31}	14.8	X	263.97257	222.88209	127.78088	5.84277	0.1138274	0.24679618	2.5171577	20	5 22.0	18.2
28245 1999 AV_{37}	14.6	X	289.37369	335.02365	125.89282	11.30016	0.1318543	0.21929701	2.7234176	20	11 24.7	17.9
28246 1999 BW_{1}	13.7	X	224.85454	32.86340	162.00734	7.26011	0.0122010	0.21972513	2.7198788	20	—	—
28247 1999 BP_{3}	15.2	X	21.07401	222.37269	136.51959	0.89020	0.2293635	0.26741587	2.3860412	20	—	—
28248 Barthelemy	14.1	X	160.00405	41.72677	324.00022	2.48761	0.2114671	0.23558998	2.5963596	20	2 26.1	18.3
28249 1999 BX_{6}	13.4	X	232.60346	51.89363	164.84806	15.37770	0.0408590	0.17136442	3.2101275	20	—	—
28250 1999 BC_{8}	14.0	X	287.69605	206.09314	315.36763	9.28238	0.1348214	0.17668900	3.1453070	20	—	—
28251 Gerbaldi	14.4	X	203.89188	257.15108	127.60012	2.92429	0.1178013	0.19667562	2.9284357	20	4 30.1	19.1
28252 1999 BK_{15}	14.0	X	312.65116	210.31430	341.47164	11.77169	0.1321103	0.22812843	2.6526692	20	—	—
28253 1999 BA_{19}	13.7	X	139.51793	3.54880	309.94166	13.82943	0.0989678	0.22936419	2.6431327	20	—	—
28254 Raghrama	14.5	X	214.81052	184.96446	295.85284	3.04709	0.1391691	0.25905386	2.4371149	20	9 10.9	17.9
28255 1999 BB_{24}	14.3	X	207.11520	146.71644	180.65726	3.83228	0.1539741	0.28606012	2.2812060	20	2 13.5	17.7
28256 1999 BL_{24}	14.0	X	348.76313	325.88157	148.99525	7.23610	0.0588000	0.27511003	2.3413433	20	—	—
28257 1999 BT_{24}	13.5	X	294.69632	307.64695	243.65794	8.24643	0.1319237	0.22982897	2.6395681	20	—	—
28258 1999 BM_{25}	14.2	X	221.77814	316.71580	161.95278	8.30959	0.1437496	0.25902382	2.4373033	20	9 17.8	17.7
28259 1999 BY_{27}	14.8	X	87.39988	80.09189	85.82260	6.74650	0.0948711	0.25168717	2.4844409	20	6 20.3	17.8
28260 1999 BK_{29}	14.2	X	18.70642	223.30777	317.84966	3.41981	0.0271371	0.19236939	2.9719768	20	3 27.0	18.2
28261 1999 CJ	12.9	X	87.61389	88.82633	8.78045	10.53391	0.0904563	0.19184928	2.9773457	20	3 23.4	16.8
28262 1999 CQ_{4}	13.9	X	290.06084	11.85507	194.78443	4.04590	0.1880398	0.18248796	3.0783163	20	—	—
28263 1999 CR_{4}	13.2	X	325.45378	278.23910	295.00673	8.87999	0.0485587	0.23572667	2.5953558	20	2 16.5	16.6
28264 1999 CJ_{5}	13.5	X	142.39123	44.56494	19.04315	10.67255	0.1133104	0.19273952	2.9681706	20	4 14.8	18.0
28265 1999 CL_{5}	13.4	X	171.26078	19.82753	359.33394	14.06413	0.0842998	0.23601667	2.5932294	20	3 17.5	17.2
28266 1999 CP_{5}	14.1	X	205.93915	340.64718	11.28147	9.45425	0.1319212	0.23637135	2.5906346	20	3 20.4	18.2
28267 1999 CH_{10}	14.1	X	278.28441	342.04262	87.85758	4.16202	0.1661268	0.25712333	2.4492986	20	9 26.6	16.8
28268 1999 CA_{14}	14.7	X	34.27568	328.32736	124.73857	4.29033	0.1110002	0.27670899	2.3323150	20	—	—
28269 1999 CQ_{14}	13.7	X	59.41992	322.95488	163.92777	13.45849	0.1134313	0.23646597	2.5899434	20	3 20.8	16.7
28270 1999 CS_{14}	13.7	X	289.08777	153.17551	217.98794	1.62757	0.0712104	0.20193887	2.8773284	20	7 26.8	17.5
28271 1999 CK_{16}	14.5	X	202.03064	231.11048	209.63409	1.36954	0.0345993	0.20229353	2.8739645	20	7 11.1	18.4
28272 Mikejanner	14.5	X	300.32251	234.51995	87.04471	7.17849	0.1681029	0.29556242	2.2320465	20	5 22.6	16.6
28273 Maianhvu	14.8	X	183.64373	79.88891	337.42712	1.98880	0.1374218	0.24707460	2.5152663	20	5 17.9	18.8
28274 1999 CF_{21}	14.4	X	325.12547	232.83881	312.43988	12.16972	0.1160792	0.23226862	2.6210523	20	1 5.8	17.8
28275 Quoc–Bao	14.1	X	358.27311	214.87560	344.15314	1.42146	0.0801062	0.19181037	2.9777484	20	3 21.3	17.9
28276 Filipnaiser	15.2	X	318.22874	330.07864	83.44662	3.51857	0.1787784	0.26409156	2.4060226	20	11 22.8	17.0
28277 Chenghergyi	14.5	X	137.08017	351.28861	21.75155	6.98680	0.1276104	0.28115037	2.3076872	20	2 1.9	17.6
28278 1999 CQ_{27}	13.5	X	287.22944	181.52189	81.75430	11.32268	0.0530745	0.19128555	2.9831925	20	3 15.0	17.9
28279 1999 CD_{28}	12.9	X	183.21905	213.42036	60.06263	8.09888	0.1463279	0.17780511	3.1321308	20	—	—
28280 1999 CG_{28}	14.1	X	108.18546	225.53396	9.90058	7.06187	0.0909197	0.25656531	2.4528487	20	10 17.4	17.7
28281 1999 CT_{29}	12.5	X	165.11617	344.10592	325.82637	12.87745	0.1806748	0.22679452	2.6630604	20	—	—
28282 1999 CJ_{35}	13.0	X	201.94549	328.82353	0.75298	10.39022	0.0947939	0.18932726	3.0037281	20	2 24.4	17.6
28283 1999 CR_{35}	13.1	X	39.17257	89.15814	65.03503	10.54752	0.0445567	0.19173355	2.9785436	20	3 28.6	17.2
28284 1999 CG_{37}	13.4	X	267.95573	131.41140	38.60874	3.51383	0.0290230	0.22259022	2.6964890	20	—	—
28285 1999 CP_{39}	14.0	X	16.25155	63.39731	27.51078	4.23334	0.1721846	0.22833962	2.6510334	20	—	—
28286 1999 CJ_{40}	13.7	X	42.87472	274.94860	76.51088	8.57378	0.0230226	0.21762821	2.7373222	20	12 11.0	17.3
28287 Osmanov	14.2	X	311.15053	310.31461	11.84264	1.86321	0.0715118	0.20095016	2.8867587	20	6 23.2	17.8
28288 1999 CL_{49}	14.0	X	7.25711	91.96483	91.43550	10.08415	0.0403630	0.19008173	2.9957746	20	3 21.5	18.1
28289 1999 CT_{50}	13.7	X	237.24182	304.78505	267.92338	0.08129	0.1199138	0.17505226	3.1648823	20	—	—
28290 1999 CY_{51}	13.3	X	134.19818	210.86833	9.82951	9.17812	0.0829289	0.21035854	2.8000296	20	10 18.9	17.4
28291 1999 CX_{52}	13.2	X	259.99050	56.24774	46.66092	7.20620	0.1056390	0.25998238	2.4313087	20	10 23.6	16.0
28292 1999 CX_{54}	12.6	X	57.34236	8.61659	7.13316	9.30581	0.0239789	0.22095669	2.7097628	20	—	—
28293 1999 CN_{57}	13.9	X	222.73843	318.22835	118.49769	1.39498	0.0125609	0.24961398	2.4981784	20	8 7.9	17.2
28294 1999 CS_{59}	13.4	X	150.47136	165.76130	254.87883	10.92869	0.0389182	0.19600963	2.9350653	20	4 10.8	17.9
28295 Heyizheng	14.7	X	9.38257	109.03231	269.49679	4.27633	0.0937119	0.21807047	2.7336200	20	12 11.2	18.0
28296 1999 CQ_{63}	14.3	X	31.06538	321.01718	190.32812	11.76073	0.0767277	0.19034183	2.9930448	20	3 7.9	18.2
28297 1999 CR_{63}	14.0	X	43.60079	327.25165	224.42224	7.89202	0.1076849	0.19597017	2.9354594	20	5 24.5	17.6
28298 1999 CM_{64}	14.0	X	252.22124	249.06498	241.36731	6.76269	0.0903479	0.21656340	2.7462876	20	11 9.5	17.5
28299 Kanghaoyan	14.3	X	161.15195	244.08554	194.11852	4.22543	0.1244994	0.29185584	2.2509048	20	5 23.0	17.4
28300 1999 CS_{67}	13.7	X	40.74394	307.29402	181.21716	10.43499	0.0348536	0.18863580	3.0110639	20	2 19.6	17.9
28301 1999 CW_{67}	13.6	X	179.18159	256.10939	275.67993	6.36624	0.1598128	0.21088558	2.7953625	20	9 30.6	18.2
28302 1999 CK_{71}	13.8	X	216.52113	129.87643	162.92650	2.65400	0.1933234	0.18320055	3.0703286	20	1 22.1	18.9
28303 1999 CY_{72}	13.7	X	327.69921	313.51549	280.06062	10.99295	0.0538519	0.23747681	2.5825887	20	3 13.0	17.2
28304 1999 CC_{75}	13.1	X	18.64828	137.36566	278.94539	10.97962	0.1546676	0.22400818	2.6850980	20	—	—
28305 Wangjiayi	14.6	X	73.57567	208.82009	223.69483	1.99032	0.1214255	0.23246991	2.6195391	20	1 28.5	17.7
28306 1999 CV_{79}	13.7	X	309.26909	187.79508	294.04835	8.07127	0.0601694	0.17494322	3.1661973	20	—	—
28307 1999 CN_{80}	14.0	X	32.18903	274.41687	185.42736	12.99297	0.1650072	0.23057420	2.6338775	20	—	—
28308 1999 CA_{81}	14.2	X	38.49368	333.28439	169.97113	15.63284	0.1126648	0.23554940	2.5966578	20	3 6.4	16.9
28309 Ericfein	14.3	X	289.39247	295.11542	201.27472	4.78084	0.1420504	0.26712712	2.3877603	20	—	—
28310 1999 CT_{81}	14.0	X	3.23868	264.60831	228.34771	5.37873	0.1466165	0.18290966	3.0735830	20	1 1.1	17.7
28311 1999 CY_{90}	14.8	X	88.90199	324.27464	111.29549	13.03645	0.0677358	0.23602794	2.5931468	20	2 19.5	18.2
28312 1999 CH_{94}	13.8	X	246.67620	276.31779	28.91913	9.27225	0.0840479	0.19137807	2.9822309	20	3 13.0	18.3
28313 1999 CU_{99}	13.8	X	326.83620	282.99446	61.29171	7.45570	0.1131477	0.20600754	2.8393176	20	8 18.6	17.2
28314 1999 CG_{100}	13.7	X	309.18709	170.11338	121.34043	3.10433	0.0705666	0.19532215	2.9419484	20	5 11.2	17.5
28315 1999 CD_{101}	14.1	X	187.91354	298.10292	37.15123	5.03530	0.0573065	0.18567158	3.0430267	20	2 16.3	18.6
28316 1999 CK_{101}	14.1	X	224.38435	1.11237	73.29323	2.74355	0.1128377	0.20423743	2.8556994	20	7 22.9	18.3
28317 Aislinndeely	14.9	X	52.58638	168.44081	238.40517	1.66011	0.0816926	0.22765780	2.6563239	20	—	—
28318 Janecox	14.8	X	100.40508	208.14608	178.47293	3.93656	0.1606680	0.27842921	2.3226986	20	1 4.0	17.2
28319 1999 CR_{107}	14.2	X	29.48134	249.37604	161.50945	12.42437	0.1649513	0.22606628	2.6687764	20	—	—
28320 1999 CG_{110}	13.2	X	185.88770	83.13064	197.90161	16.32170	0.2141864	0.17699562	3.1416735	20	—	—

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
	m		°	°	°	°		°				
28321 Arnabdey	14.1	*X*	125.94208	143.57868	239.51329	5.00877	0.1903638	0.28075174	2.3098711	20	2 5.7	17.2
28322 Kaeberich	14.2	*X*	243.62214	125.28365	169.43295	2.90855	0.0921030	0.23501814	2.6005695	20	2 16.9	18.0
28323 1999 CP_{112}	14.6	*X*	111.50012	256.03774	187.39819	10.47006	0.0885176	0.19243723	2.9712782	20	4 3.6	18.7
28324 Davidcampeau	14.8	*X*	86.16009	256.34348	162.69198	5.94553	0.1728550	0.27977985	2.3152173	20	1 28.2	17.1
28325 1999 CK_{118}	13.9	*X*	305.12676	233.23351	325.64515	12.92391	0.1152272	0.22818499	2.6522309	20	—	—
28326 1999 CY_{120}	13.5	*X*	249.68457	122.24553	58.02969	13.92312	0.1114697	0.22264574	2.6960407	20	—	—
28327 1999 CT_{123}	15.0	*X*	341.33773	65.60585	29.48495	12.28195	0.1577062	0.22455649	2.6807252	20	—	—
28328 1999 CN_{125}	13.9	*X*	327.47223	52.98812	72.29406	12.37257	0.1514453	0.22535295	2.6744053	20	—	—
28329 1999 CD_{150}	14.7	*X*	21.76775	247.74307	152.96100	2.55976	0.2049949	0.26680371	2.3896895	20	—	—
28330 1999 CG_{152}	14.5	*X*	345.77851	351.85942	146.66150	0.36213	0.1334145	0.18231595	3.0802522	20	—	—
28331 1999 CD_{156}	13.9	*X*	24.95716	232.15228	255.00670	7.85663	0.0972984	0.18519052	3.0482942	20	1 28.5	17.8
28332 1999 DU_{1}	14.9	*X*	178.28810	334.44164	61.10380	7.30202	0.2082603	0.24472753	2.5313226	20	4 19.1	19.2
28333 1999 DW_{1}	13.7	*X*	247.87864	190.04303	91.04032	11.14063	0.0600046	0.18877373	3.0095970	20	2 16.6	18.2
28334 1999 DJ_{2}	13.5	*X*	338.22166	58.84380	64.70911	13.73647	0.0581500	0.17798413	3.1300302	20	—	—
28335 1999 DN_{2}	12.5	*X*	274.02312	104.19453	15.96691	14.69813	0.0565377	0.16906689	3.2391446	20	11 15.8	17.2
28336 1999 DZ_{4}	13.5	*X*	44.88730	331.08802	223.46398	15.39542	0.1052736	0.19592778	2.9358827	20	5 30.0	17.3
28337 1999 EA_{2}	15.3	*X*	186.16666	225.45928	135.71063	4.02798	0.2458845	0.23856369	2.5747387	20	3 14.9	19.7
28338 1999 EL_{2}	13.7	*X*	17.49141	230.20185	179.64802	2.92693	0.0382715	0.17305034	3.1892440	20	—	—
28339 1999 EC_{3}	13.4	*X*	260.90477	336.42068	354.74667	10.58061	0.1004197	0.19101447	2.9860142	20	4 20.8	18.0
28340 Yukihiro	12.5	*X*	190.67619	285.40781	80.67602	11.83471	0.1528864	0.18874156	3.0099389	20	3 31.3	17.6
28341 Bingaman	13.6	*X*	58.76221	95.80028	125.96528	2.99451	0.0204431	0.19925374	2.9031205	20	7 13.5	17.5
28342 1999 FB_{9}	13.7	*X*	133.75870	65.79121	51.63965	2.84981	0.0567616	0.19618685	2.9332976	20	6 7.4	18.0
28343 1999 FG_{9}	12.4	*X*	203.84074	275.09972	35.06853	16.47133	0.2328077	0.17911505	3.1168411	20	2 7.8	18.1
28344 1999 FE_{19}	14.3	*X*	110.01952	140.63145	319.84492	4.55390	0.1687996	0.23863055	2.5742577	20	4 29.3	18.1
28345 1999 FL_{19}	13.5	*X*	33.83928	25.52297	104.39605	3.13215	0.1361608	0.18375092	3.0641948	20	2 20.5	17.1
28346 Kent	13.6	*X*	214.64648	209.37040	1.85045	9.18330	0.1289629	0.21707456	2.7419746	20	12 30.3	17.7
28347 1999 FD_{22}	13.2	*X*	10.60459	116.94353	318.37419	8.61101	0.0851994	0.17762932	3.1341970	20	—	—
28348 1999 FO_{23}	12.8	*X*	16.48729	190.71589	333.74241	9.34737	0.0549400	0.18803910	3.0174305	20	3 3.9	16.6
28349 1999 FB_{26}	13.4	*X*	258.00563	103.17649	350.25932	9.87876	0.1459058	0.20897417	2.8123820	20	9 20.2	17.1
28350 1999 FC_{26}	13.1	*X*	136.75221	71.84273	350.92938	9.94440	0.1028383	0.18842994	3.0132566	20	4 5.2	17.7
28351 Andrewfeldman	15.2	*X*	114.76544	126.35494	90.66107	4.45525	0.0663484	0.29699534	2.2248614	20	10 8.7	18.1
28352 1999 FF_{31}	12.5	*X*	112.31661	281.15912	168.42708	10.92593	0.0803989	0.18811047	3.0166672	20	4 13.3	16.8
28353 Chrisnielsen	14.4	*X*	19.08286	91.01712	217.42341	3.47390	0.1881207	0.29327948	2.2436146	20	10 24.5	16.6
28354 1999 FV_{33}	13.4	*X*	98.41644	177.13896	158.46966	11.83983	0.0962330	0.16949495	3.2336887	20	—	—
28355 1999 FW_{33}	13.6	*X*	61.70717	242.61644	134.84469	6.82147	0.1021319	0.17158807	3.2073374	20	—	—
28356 1999 FF_{38}	14.5	*X*	173.21371	175.70316	210.84700	6.99023	0.2183305	0.23917912	2.5703201	20	4 1.4	18.8
28357 1999 FB_{40}	13.8	*X*	317.14021	227.41149	330.22246	14.53021	0.0641673	0.23006994	2.6377247	20	1 20.9	17.4
28358 1999 FW_{48}	13.4	*X*	181.54126	304.91321	26.33218	6.73188	0.1068378	0.18350054	3.0669815	20	2 7.3	18.3
28359 1999 FP_{52}	13.9	*X*	49.98304	74.58363	1.04805	6.27727	0.0961271	0.18144544	3.0900962	20	1 5.9	17.8
28360 1999 FU_{55}	13.2	*X*	140.84690	352.67780	130.03322	3.26982	0.0526562	0.19796748	2.9156819	20	6 22.6	17.3
28361 1999 FF_{59}	14.4	*X*	82.42432	338.64355	90.89027	4.85031	0.2577464	0.23357833	2.6112454	20	3 2.6	17.5
28362 1999 GP_{5}	13.1	*X*	257.79859	268.04663	93.85464	13.03249	0.0760107	0.19684502	2.9267553	20	6 3.6	17.3
28363 1999 GN_{6}	14.2	*X*	277.28334	83.98402	293.17957	0.96025	0.0876824	0.19581451	2.9370148	20	7 15.9	18.1
28364 1999 GN_{7}	13.7	*X*	284.33387	154.16634	192.74035	12.04259	0.1839120	0.19494892	2.9457021	20	6 1.6	17.9
28365 1999 GF_{14}	13.3	*X*	275.45955	176.16588	31.34291	14.07009	0.0832163	0.22204596	2.7008935	20	—	—
28366 Verkuil	14.6	*X*	357.67492	313.27231	141.30331	5.31171	0.1901950	0.22165909	2.7040353	20	—	—
28367 1999 GO_{16}	13.5	*X*	121.98654	311.46382	170.73983	9.42689	0.2027873	0.19635317	2.9316408	20	6 14.9	18.3
28368 1999 GW_{18}	13.0	*X*	272.45894	31.55943	113.78951	7.06843	0.0288888	0.16863444	3.2446799	20	12 21.5	17.5
28369 1999 GA_{21}	13.1	*X*	64.12891	247.03216	161.12524	13.16676	0.0458988	0.17452203	3.1712894	20	—	—
28370 1999 GK_{34}	13.5	*X*	170.08471	153.29615	343.52362	10.37011	0.0584500	0.20202516	2.8765090	20	8 16.2	17.8
28371 1999 GG_{39}	13.1	*X*	233.57494	187.28783	161.85776	10.12596	0.0789563	0.19082187	2.9880231	20	4 21.3	17.6
28372 1999 HU	12.8	*X*	119.61665	275.99343	205.12463	9.20408	0.0347779	0.18970249	2.9997659	20	5 24.7	17.1
28373 1999 HL_{3}	12.4	*X*	36.46057	305.85605	100.93162	11.51576	0.1725350	0.17459024	3.1704634	20	—	—
28374 1999 HL_{11}	13.4	*X*	148.41553	342.23385	336.89862	0.11984	0.1330711	0.17102610	3.2143595	20	—	—
28375 1999 JC	13.4	*X*	12.63668	272.63981	205.03809	0.13896	0.1538975	0.17948684	3.1125354	20	—	—
28376 Atifjaved	15.4	*X*	97.82436	7.65025	296.51766	3.99734	0.1776742	0.30173690	2.2014919	20	—	—
28377 1999 JC_{24}	13.7	*X*	26.79859	244.06937	223.56976	11.96405	0.1383426	0.22464120	2.6800513	20	—	—
28378 1999 JN_{24}	13.1	*X*	325.43013	262.58910	28.27165	10.95075	0.0820686	0.19082561	2.9879841	20	5 29.7	17.1
28379 1999 JK_{37}	14.8	*X*	28.18154	339.82212	39.61214	7.87883	0.0786801	0.30354731	2.1927298	20	—	—
28380 1999 JO_{38}	13.2	*X*	295.56735	245.36795	203.81493	8.55920	0.1354546	0.20928741	2.8095751	20	11 13.7	16.4
28381 1999 JQ_{39}	12.7	*X*	198.95366	15.63164	44.08285	11.23681	0.1007942	0.19122902	2.9837804	20	6 5.5	17.4
28382 Stevengillen	15.3	*X*	128.04612	64.90432	274.48242	0.48574	0.1927676	0.26157027	2.4214590	20	—	—
28383 1999 JX_{68}	14.2	*X*	48.01903	287.09140	203.12616	10.62620	0.0820644	0.22974588	2.6402044	20	2 28.8	17.5
28384 1999 JT_{76}	13.7	*X*	106.79101	217.09426	140.81079	6.97610	0.1380452	0.26065408	2.4271299	20	—	—
28385 1999 JX_{76}	12.4	*X*	314.21978	55.33733	70.49434	15.70843	0.0703280	0.17021969	3.2245036	20	—	—
28386 1999 JD_{79}	13.1	*X*	224.36091	167.35790	192.09609	9.78946	0.0670421	0.18624188	3.0368114	20	4 23.4	17.5
28387 1999 JE_{79}	12.8	*X*	8.92533	21.24040	119.21868	17.42991	0.1623771	0.18016415	3.1047297	20	1 20.8	16.4
28388 1999 JM_{86}	12.9	*X*	100.76666	274.72455	162.88234	11.55527	0.1424871	0.18446539	3.0562775	20	3 23.7	17.2
28389 1999 JN_{95}	13.4	*X*	173.80410	254.75530	177.17632	9.46211	0.0749821	0.18893244	3.0079113	20	5 28.6	18.1
28390 Demjohopkins	14.9	*X*	332.70678	247.71009	130.33841	5.29125	0.1731026	0.29288147	2.2456468	20	11 11.5	16.5
28391 1999 LV_{11}	13.1	*X*	51.85182	225.77409	228.16299	15.93441	0.2255934	0.17630419	3.1498820	20	2 8.0	17.0
28392 1999 NQ_{11}	14.0	*X*	272.30164	138.04652	164.47660	2.72169	0.0438877	0.22293322	2.6937225	20	4 8.4	17.7
28393 1999 RB_{12}	14.2	*X*	202.44149	186.29668	177.40652	7.04564	0.1619798	0.17182185	3.2044275	20	4 3.1	19.4
28394 Mittag–Leffler	15.5	*X*	144.77247	171.94951	216.23440	1.33719	0.1443364	0.21169064	2.7882708	20	3 6.8	19.8
28395 1999 RZ_{42}	14.0	*X*	343.40303	317.97935	52.14276	16.39765	0.2148682	0.23816548	2.5776078	20	11 6.8	16.2
28396 Eymann	15.4	*X*	327.13366	333.39551	326.46380	6.36111	0.1260452	0.27493021	2.3423641	20	6 13.1	17.7
28397 Forrestbetton	14.9	*X*	212.33092	224.82544	183.28203	6.92657	0.1048106	0.27418507	2.3466060	20	6 7.5	18.3
28398 Ericthomas	15.1	*X*	58.85365	27.08618	263.91756	3.17407	0.1064508	0.24092461	2.5578904	20	10 31.2	18.5
28399 1999 RY_{136}	13.8	*X*	40.64479	316.57731	325.21093	9.42399	0.0852554	0.18943921	3.0025446	20	9 11.5	17.8
28400 Morgansinko	15.1	*X*	21.46888	350.25411	8.13307	1.47790	0.1888743	0.19290731	2.9664493	20	12 9.3	18.7

ELEMENTS AND OPPOSITION DATES IN 2020

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	Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
		m		°	°	°	°		°				
28401	1999 RT_{165}	13.7	X	226.48547	107.18874	333.27075	1.68781	0.0698234	0.18319582	3.0703815	20	8 4.9	18.2
28402	Matthewkim	14.9	X	83.22351	331.96303	292.21810	6.32297	0.0974681	0.28354757	2.2946622	20	10 30.1	18.1
28403	1999 TY	13.8	X	57.72956	253.52792	21.82223	17.44789	0.2128206	0.23576407	2.5950813	20	10 22.5	17.5
28404	1999 TQ_5	14.6	X	325.06140	207.86272	200.78544	4.05381	0.1708393	0.23673100	2.5880101	20	11 19.9	16.8
28405	1999 TG_{13}	15.2	X	86.10473	284.20631	54.69266	4.69426	0.1959390	0.29191691	2.2505909	20	—	—
28406	1999 TB_{100}	13.6	X	223.43122	105.81632	165.82815	17.03822	0.0606566	0.20675650	2.8324566	20	1 3.8	18.1
28407	Meghanarao	14.4	X	242.45148	130.21092	6.62993	6.72462	0.1176996	0.23730848	2.5838098	20	11 3.8	17.9
28408	1999 TS_{222}	14.4	X	248.50698	183.87037	122.31375	7.98581	0.0341208	0.21366924	2.7710310	20	3 19.0	18.3
28409	1999 TQ_{226}	15.2	X	119.41916	336.72551	241.14654	2.92310	0.1604995	0.23144403	2.6272742	20	10 7.5	19.5
28410	1999 TE_{246}	13.9	X	64.35248	127.64851	168.83706	8.54038	0.0765369	0.18684054	3.0303210	20	11 2.7	18.2
28411	Xiuqicao	15.8	X	16.04256	132.30933	156.36664	6.85084	0.1451441	0.27609906	2.3357486	20	9 8.4	17.8
28412	1999 UY_{13}	14.4	X	249.09003	20.71697	122.64929	3.56291	0.1306957	0.28537490	2.2848562	20	12 4.7	16.9
28413	1999 UT_{26}	14.3	X	44.53130	309.22188	330.21330	4.74410	0.0368759	0.23104451	2.6303020	20	9 14.4	17.7
28414	1999 UH_{46}	14.7	X	297.79459	122.26391	0.74981	9.13296	0.0658040	0.24160111	2.5531134	20	—	—
28415	Yingxiong	15.2	X	204.04649	287.34498	229.74850	5.30807	0.1010549	0.23070796	2.6328594	20	10 16.6	19.1
28416	Ngqin	16.0	X	86.26914	276.27805	44.56027	3.14063	0.1585577	0.28947401	2.2632350	20	—	—
28417	Leewei	14.3	X	129.93478	300.05598	251.94042	6.51523	0.1669731	0.27419659	2.3465403	20	9 17.5	18.2
28418	Pornwasu	16.4	X	227.28326	110.46540	40.06576	0.41543	0.1470294	0.28290635	2.2981282	20	11 9.2	19.0
28419	Tanpitcha	15.4	X	86.85224	220.05697	61.12624	6.19744	0.1821851	0.28442352	2.2899485	20	12 4.4	18.9
28420	1999 VC_{78}	14.1	X	254.54643	52.70790	353.10758	15.72778	0.1372697	0.17930167	3.1146780	20	7 20.6	18.9
28421	1999 VH_{87}	15.2	X	271.29602	316.33295	122.55468	24.29377	0.0904130	0.36839587	1.9271974	20	11 17.8	17.5
28422	1999 VA_{154}	14.2	X	87.66581	351.55250	166.94406	9.58921	0.0917498	0.21512185	2.7585426	20	6 10.3	18.1
28423	1999 WN_3	13.6	X	270.79215	212.81686	145.53751	3.38432	0.0678301	0.17053560	3.2205200	20	6 15.0	18.1
28424	1999 XA	14.2	X	156.78250	345.90359	36.53489	11.93198	0.2461213	0.26203678	2.4185842	20	3 20.0	18.3
28425	Sungkanit	14.5	X	4.87930	215.53363	239.36780	4.82424	0.1126551	0.24549938	2.5260142	20	—	—
28426	Sangani	14.9	X	79.18360	82.05332	128.16702	3.48986	0.0152163	0.22198065	2.7014232	20	7 26.4	18.5
28427	Gidwani	15.3	X	176.36872	258.63211	350.19180	1.47455	0.1526827	0.24220582	2.5488620	20	—	—
28428	Ankurvaishnav	15.2	X	85.76467	320.36675	347.10106	1.79355	0.1482035	0.28726446	2.2748257	20	—	—
28429	1999 XF_{75}	15.0	X	135.81111	46.68503	238.63571	5.25727	0.2207208	0.28720651	2.2751317	20	—	—
28430	1999 XP_{124}	15.4	X	125.24409	267.13010	18.89025	7.09097	0.1257082	0.28862621	2.2676649	20	—	—
28431	1999 XO_{136}	14.6	X	317.80178	92.26220	98.37148	7.44143	0.1402966	0.29048837	2.2579633	20	—	—
28432	1999 XY_{168}	13.4	X	211.89484	210.80426	272.61601	12.17953	0.1153225	0.22587274	2.6703007	20	9 4.5	17.7
28433	Samarquez	14.3	X	75.28905	329.30509	2.25431	3.98834	0.1704425	0.23390276	2.6088302	20	—	—
28434	1999 XL_{176}	14.3	X	96.49063	127.98528	78.42220	11.20580	0.1927980	0.26353144	2.4094306	20	9 14.2	18.2
28435	1999 XW_{209}	14.1	X	200.53993	232.38599	349.82644	10.71540	0.0387504	0.18894814	3.0077446	20	—	—
28436	1999 XJ_{230}	15.7	X	138.01391	351.06197	358.27436	4.93270	0.1024826	0.29979814	2.2109729	20	—	—
28437	1999 YJ_{16}	14.7	X	330.82257	313.07316	308.72953	5.06484	0.1391325	0.30062072	2.2069379	20	4 13.7	16.7
28438	Venkateswaran	15.8	X	136.03373	242.18954	333.09383	1.60882	0.1592767	0.27140332	2.3626131	20	10 25.0	19.5
28439	Miguelreyes	14.5	X	76.06665	119.34319	87.85062	4.33457	0.0951095	0.21423283	2.7661689	20	7 30.8	18.2
28440	2000 AN_{40}	15.1	X	297.04412	175.73569	93.67722	9.09774	0.2125231	0.29973803	2.2112685	20	2 27.1	18.1
28441	2000 AE_{43}	16.0	X	320.16780	232.13974	109.32325	24.16192	0.0836011	0.36570660	1.9366338	20	9 1.6	17.9
28442	Nicholashuey	15.2	X	89.92138	184.36451	32.66634	2.93519	0.1396564	0.26409915	2.4059765	20	9 10.6	18.5
28443	Crisara	15.8	X	306.93838	54.87701	175.56431	1.35375	0.1220595	0.29643407	2.2276689	20	1 27.0	18.4
28444	Alexrabii	15.1	X	248.12750	111.87444	131.76070	6.75416	0.1511786	0.28907398	2.2653225	20	—	—
28445	2000 AQ_{95}	14.0	X	75.19233	140.68757	136.92352	13.65253	0.1027333	0.22149619	2.7053609	20	11 4.7	18.1
28446	Davlantes	14.9	X	240.97203	103.15638	96.47339	3.98620	0.1716890	0.28015042	2.3131752	20	—	—
28447	Arjunmathur	15.1	X	310.36985	54.37120	126.19438	4.06381	0.1221780	0.28765737	2.2727537	20	—	—
28448	2000 AN_{97}	14.2	X	179.74369	87.71855	119.92431	8.59193	0.1667308	0.27209613	2.3586010	20	11 27.6	17.8
28449	Ericlau	14.6	X	281.19672	221.45918	213.68996	4.25576	0.0691619	0.22634161	2.6666117	20	10 13.6	17.9
28450	Saravolz	15.1	X	5.53210	353.41257	156.94289	4.29324	0.0951496	0.29448780	2.2374732	20	1 6.7	17.3
28451	Tylerhoward	15.4	X	101.93033	15.59290	207.27341	1.71047	0.1734905	0.26588511	2.3951904	20	10 2.9	19.0
28452	Natkondamuri	15.1	X	138.84506	272.63553	305.59381	7.35855	0.1918812	0.26943280	2.3741186	20	10 28.5	19.1
28453	Alexcecil	14.8	X	101.57656	18.23116	259.63697	3.18154	0.0508492	0.22760993	2.6566963	20	11 25.4	18.6
28454	2000 AF_{137}	13.9	X	319.18384	19.75390	146.94641	15.64060	0.1947819	0.23751634	2.5823021	20	—	—
28455	2000 AV_{137}	13.8	X	312.64197	209.13186	344.78070	15.13384	0.1682391	0.23918366	2.5702876	20	—	—
28456	2000 AY_{137}	13.8	X	309.91244	213.99964	19.39187	7.35663	0.1443482	0.24314600	2.5422873	20	2 12.2	17.1
28457	Chloeanassis	14.8	X	146.46744	326.79398	283.70547	6.24057	0.0825923	0.27484807	2.3428308	20	12 21.7	18.0
28458	2000 AL_{144}	14.4	X	328.35489	51.03898	145.43616	18.20700	0.1644827	0.24264512	2.5457847	20	1 13.6	17.7
28459	2000 AW_{144}	14.3	X	162.59391	36.56256	157.61328	1.50587	0.3016169	0.17003601	3.2268252	20	10 10.6	20.1
28460	Ariannepapa	14.8	X	6.27768	298.61639	129.94720	4.45517	0.0682692	0.23680151	2.5874963	20	—	—
28461	2000 AL_{164}	13.5	X	352.29323	25.57281	239.74780	6.84847	0.1378476	0.25233749	2.4801705	20	6 8.7	15.9
28462	2000 AO_{164}	14.1	X	198.05381	348.22919	266.98403	4.97820	0.1115297	0.27881747	2.3205418	20	—	—
28463	2000 AG_{168}	15.4	X	236.32864	88.88738	60.83807	7.58191	0.0628649	0.27084526	2.3658574	20	11 30.5	18.1
28464	2000 AZ_{185}	14.5	X	349.58524	159.39901	208.22765	14.68665	0.1064356	0.23443887	2.6048515	20	11 2.6	17.3
28465	Janesmyth	14.2	X	135.61829	44.78422	186.13358	1.99634	0.1782424	0.26764445	2.3846824	20	11 13.7	18.0
28466	2000 AV_{243}	14.0	X	167.30004	240.67504	355.77568	11.80648	0.2204947	0.22446078	2.6814872	20	12 6.6	18.8
28467	Maurentejamie	15.0	X	43.86700	80.18563	49.38496	6.97331	0.1261749	0.29454996	2.2371584	20	2 19.9	17.0
28468	Shichangxu	13.7	X	260.54231	218.97092	26.30002	9.72765	0.0600101	0.23766364	2.5812350	20	1 9.5	17.5
28469	2000 BU_8	13.2	X	132.58050	259.28281	40.50064	8.23523	0.2056812	0.18618924	3.0373837	20	—	—
28470	2000 BJ_{12}	15.7	X	342.17615	129.48444	131.99350	2.62859	0.1752638	0.25427893	2.4675302	20	5 9.5	17.9
28471	2000 BZ_{13}	15.2	X	174.46602	99.38008	81.16078	3.19438	0.1465587	0.27038643	2.3685331	20	10 19.8	18.7
28472	2000 BE_{14}	14.4	X	278.39424	88.48642	129.06618	14.12960	0.1071994	0.23959336	2.5673566	20	—	—
28473	2000 BF_{15}	13.7	X	314.54826	103.79212	47.90799	10.78757	0.0430691	0.18861695	3.0112645	20	—	—
28474	Bustamante	15.5	X	299.36454	120.50183	108.59408	5.77597	0.1176782	0.29304513	2.2448106	20	1 17.2	18.3
28475	Garrett	15.2	X	314.62628	349.66907	164.51152	4.74658	0.1221931	0.28572791	2.2829738	20	—	—
28476	2000 CK_2	15.5	X	332.07587	28.67232	118.42901	6.30572	0.0924175	0.28671856	2.2777122	20	—	—
28477	2000 CB_4	13.9	X	37.24373	94.78801	137.90383	15.64858	0.1058003	0.20450531	2.8532051	20	7 9.4	17.6
28478	2000 CR_{24}	15.6	X	17.87961	28.35223	267.48567	0.97510	0.1585347	0.31360714	2.1455835	20	10 2.0	17.4
28479	Varlotta	15.1	X	236.40473	61.92112	157.97396	4.48921	0.0911725	0.28374786	2.2935823	20	—	—
28480	Seojinyoung	15.0	X	130.58738	292.95878	306.11042	1.85745	0.1793471	0.27067510	2.3668488	20	11 18.8	18.7

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	Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
		m		°	°	°	°		°				
28481	Shindongju	15.6	X	80.83191	56.63822	171.21221	1.20424	0.1416996	0.26302791	2.4125047	20	9 13.5	18.9
28482	Bauerle	14.9	X	75.34561	53.85166	178.29233	2.07159	0.1747439	0.21324009	2.7747476	20	9 10.8	18.8
28483	Allenyuan	15.3	X	259.70109	104.91580	103.13169	1.08232	0.1499790	0.28416611	2.2913311	20	—	—
28484	Aishwarya	15.3	X	306.64493	55.40051	219.80923	4.71633	0.1743367	0.29996952	2.2101307	20	3 19.2	17.9
28485	Dastidar	14.9	X	168.69742	56.91713	188.62750	5.62049	0.1789564	0.27547528	2.3392733	20	12 31.3	18.5
28486	2000 CZ_{51}	15.2	X	317.85814	136.09557	169.68994	4.69644	0.1425591	0.30521051	2.1847566	20	6 3.3	17.0
28487	2000 CB_{58}	14.6	X	217.56844	253.06470	339.24116	12.12036	0.0681002	0.23223672	2.6212924	20	—	—
28488	Gautam	14.6	X	289.25867	48.04736	123.54762	9.23769	0.0472969	0.28188710	2.3036646	20	—	—
28489	2000 CN_{58}	12.7	X	211.06969	5.91170	163.49173	22.77175	0.0593840	0.17353884	3.1832562	20	11 9.2	17.7
28490	2000 CQ_{58}	13.0	X	341.00141	294.66354	148.78322	16.82396	0.1637036	0.18037033	3.1023632	20	—	—
28491	2000 CC_{59}	14.0	X	309.72721	49.04556	149.90147	14.03061	0.1999389	0.23784030	2.5799568	20	—	—
28492	Marik	14.6	X	236.08267	255.78515	20.19680	6.60569	0.1307834	0.28580600	2.2825580	20	1 10.0	18.1
28493	Duncan–Lewis	15.9	X	213.35278	359.93876	192.18199	2.95497	0.0599710	0.27551630	2.3390411	20	12 28.2	18.7
28494	Jasmine	15.2	X	263.54346	45.19962	276.23219	3.27985	0.1661194	0.29936667	2.2130969	20	3 29.8	18.4
28495	2000 CA_{64}	14.7	X	291.41730	241.73237	330.05009	11.16391	0.0932273	0.28737667	2.2742335	20	—	—
28496	2000 CR_{68}	14.5	X	66.36449	135.81131	139.00218	5.45116	0.1374563	0.17179622	3.2047463	20	10 15.3	19.1
28497	2000 CJ_{69}	15.6	X	121.43411	30.88796	227.07784	0.11788	0.1886982	0.27251390	2.3561898	20	12 4.8	19.5
28498	2000 CL_{70}	14.3	X	23.69058	85.54511	194.91484	11.79272	0.2124476	0.25932405	2.4354218	20	9 15.6	16.9
28499	2000 CG_{75}	15.2	X	286.11009	9.40059	277.45733	5.54282	0.2323438	0.29920888	2.2138748	20	2 28.7	18.5
28500	2000 CW_{76}	15.4	X	169.50071	339.40435	346.09991	6.80615	0.1471377	0.28801587	2.2708674	20	1 7.2	18.7
28501	2000 CO_{79}	16.7	X	69.18055	142.37931	155.85111	1.55349	0.1937981	0.27101240	2.3648845	20	12 7.9	20.1
28502	2000 CV_{79}	13.9	X	107.25125	155.56762	160.09283	12.08790	0.1895790	0.22854933	2.6494115	20	—	—
28503	Angelazhang	14.8	X	30.38639	276.70218	10.89420	2.31043	0.1902448	0.26350120	2.4096150	20	10 6.2	17.5
28504	Rebeccafaye	15.0	X	99.67631	278.68359	349.22785	6.53671	0.0967039	0.27108712	2.3644499	20	11 20.9	18.4
28505	Sagarrambhia	15.3	X	191.45275	213.94139	353.42616	5.45043	0.1349547	0.27492402	2.3423993	20	12 10.5	18.6
28506	2000 CR_{83}	14.6	X	230.20897	264.31374	16.18059	3.41888	0.2002812	0.28902719	2.2655670	20	1 7.9	18.3
28507	2000 CD_{87}	15.2	X	342.02930	297.24889	343.50434	5.46111	0.1471900	0.30427521	2.1892314	20	6 11.7	16.8
28508	Kishore	14.8	X	69.12936	223.04506	41.95689	5.62211	0.1101930	0.26411369	2.4058882	20	10 16.4	18.0
28509	Feddersen	15.5	X	277.81184	216.31566	13.93634	2.21171	0.0451074	0.28921969	2.2645616	20	1 2.0	18.2
28510	2000 CC_{95}	13.6	X	238.24757	75.50226	166.71211	15.25155	0.0514696	0.23321691	2.6139424	20	—	—
28511	Marggraff	15.3	X	192.21716	1.41396	163.90738	2.44904	0.1437721	0.26821825	2.3812802	20	10 17.6	18.9
28512	Tanyuan	14.7	X	225.38046	189.72021	41.29289	3.62248	0.1485673	0.23173655	2.6250628	20	—	—
28513	Guo	16.2	X	24.91786	146.51708	149.40165	2.72069	0.2102222	0.26483388	2.4015245	20	10 14.4	18.7
28514	2000 DQ_2	15.2	X	296.78186	174.71505	341.20920	8.41744	0.0679091	0.28208282	2.3025989	20	—	—
28515	2000 DK_3	14.6	X	258.86002	278.33712	352.58200	8.46646	0.1557058	0.24234974	2.5478528	20	1 31.2	18.6
28516	Möbius	14.6	X	242.79338	200.40970	337.56508	8.53828	0.0867082	0.22907584	2.6453503	20	—	—
28517	2000 DD_7	14.1	X	345.88741	51.58672	72.05698	8.50460	0.0439844	0.28405124	2.2919489	20	—	—
28518	2000 DE_7	14.6	X	3.84759	205.75827	82.69226	7.21464	0.1268510	0.25720780	2.4487623	20	8 11.8	17.0
28519	Sweetman	14.5	X	195.80235	259.53460	33.28108	5.07023	0.1502186	0.28427232	2.2907604	20	—	—
28520	2000 DH_{16}	14.5	X	48.61718	194.47339	8.95812	4.68678	0.0719605	0.30106000	2.2047906	20	6 13.6	16.8
28521	Mattmcintyre	15.9	X	151.15299	338.40092	242.03275	2.02733	0.0824761	0.27189141	2.3597847	20	11 17.5	19.0
28522	2000 DP_{34}	15.8	X	35.89272	280.74154	9.74055	0.93524	0.1330009	0.31368016	2.1452505	20	10 18.9	17.8
28523	2000 DH_{50}	14.4	X	45.90406	3.69566	311.35452	0.22357	0.1938776	0.17181710	3.2044865	20	11 14.1	18.9
28524	Ebright	15.4	X	106.44835	288.26621	358.72567	2.69369	0.1878820	0.27232524	2.3572779	20	12 27.4	19.1
28525	Andrewabboud	15.6	X	236.46645	15.68886	306.53911	3.74467	0.1864068	0.29585535	2.2305729	20	3 2.9	18.9
28526	2000 DV_{65}	16.3	X	212.20058	156.82138	326.69793	1.48360	0.0205184	0.31599940	2.1347411	20	10 6.8	18.7
28527	Kathleenrose	15.4	X	126.41444	114.73092	179.78194	5.42419	0.1506948	0.27584384	2.3371891	20	—	—
28528	2000 DC_{70}	14.7	X	132.91951	145.94479	154.05314	7.40084	0.2184425	0.27671710	2.3322694	20	—	—
28529	2000 DQ_{70}	13.5	X	12.64632	283.92009	349.48445	8.32539	0.1599326	0.20838958	2.8176393	20	8 3.1	16.6
28530	Shiyimeng	15.7	X	271.86062	3.41307	213.55535	0.27516	0.1449805	0.23659209	2.5890230	20	—	—
28531	Nikbogdanov	15.1	X	331.57274	134.86461	158.43347	3.41841	0.1795418	0.25399200	2.4693882	20	6 5.6	17.3
28532	2000 DE_{78}	14.8	X	41.68479	158.74182	186.89513	5.60754	0.2766155	0.27275629	2.3547937	20	—	—
28533	Iansohl	15.6	X	207.56092	317.12512	236.92568	1.37746	0.1627734	0.27397973	2.3477784	20	12 8.6	18.6
28534	Taylorwilson	15.3	X	246.53399	256.97159	352.78611	7.49938	0.0728838	0.28918068	2.2647653	20	—	—
28535	Sungjanet	15.6	X	163.69185	161.79259	62.28525	3.81495	0.0550220	0.27468210	2.3437744	20	12 8.7	18.5
28536	Hunaiwen	14.9	X	269.08041	180.85016	47.35205	4.12022	0.1463066	0.23908023	2.5710288	20	—	—
28537	Kirapowell	15.1	X	240.38708	207.27985	87.47497	5.79639	0.0693548	0.24371472	2.5383307	20	2 16.6	18.7
28538	Ruisong	15.1	X	90.43219	251.50590	54.82730	6.88057	0.1385200	0.27281993	2.3544275	20	—	—
28539	2000 EO_3	14.5	X	142.92717	267.08022	40.27296	2.37809	0.2843439	0.22944815	2.6424879	20	—	—
28540	2000 EC_4	14.4	X	262.47950	232.26438	350.65066	4.44643	0.1978330	0.18398694	3.0615737	20	—	—
28541	2000 ED_6	15.1	X	97.58213	115.70574	107.73105	0.64296	0.2047748	0.26096792	2.4251837	20	10 1.9	18.8
28542	Cespedes–Nano	14.8	X	14.39244	323.91933	324.34763	2.90930	0.1517839	0.21077142	2.7963717	20	8 24.6	17.8
28543	Solis–Gozar	15.1	X	169.68809	24.56497	173.03581	6.06933	0.0682691	0.26960189	2.3731258	20	11 10.9	18.3
28544	2000 EM_{19}	16.0	X	213.62622	332.71483	98.26710	2.56715	0.0615150	0.30941211	2.1649333	20	7 16.5	18.6
28545	2000 ED_{20}	15.1	X	250.46093	329.34857	185.72838	24.31057	0.1998986	0.27484646	2.3428399	20	12 9.3	18.3
28546	2000 EE_{20}	12.5	X	100.20966	128.24003	184.16081	9.33640	0.0676467	0.17475524	3.1684674	20	12 25.4	17.4
28547	Johannschröter	15.5	X	318.97398	331.36216	258.63461	6.35391	0.0847674	0.29461149	2.2368469	20	2 15.7	18.1
28548	2000 EY_{25}	15.6	X	12.87382	234.04537	173.82358	3.31326	0.0763143	0.27682054	2.3316884	20	—	—
28549	2000 EZ_{25}	14.6	X	337.31548	275.19907	7.78177	7.27298	0.0827245	0.25281881	2.4770216	20	6 8.7	17.5
28550	2000 EC_{26}	14.0	X	61.30197	99.78762	176.41565	5.87466	0.1272261	0.26263199	2.4149287	20	10 24.0	17.2
28551	Paulomi	14.9	X	132.54544	210.76465	30.57289	2.70333	0.1692537	0.26816287	2.3816080	20	11 22.9	18.7
28552	2000 EY_{38}	13.9	X	198.54292	276.14207	351.51445	6.49158	0.1684639	0.23098089	2.6307850	20	—	—
28553	Bhupatiraju	15.4	X	275.41641	336.90369	357.10873	1.72926	0.1466208	0.30064029	2.2068421	20	5 5.1	18.0
28554	Adambowman	14.9	X	268.99630	263.17026	25.58569	4.35176	0.1643297	0.24294796	2.5436687	20	3 1.7	18.8
28555	Jenniferchan	15.2	X	254.91357	332.99589	146.22104	1.86797	0.0341538	0.26989988	2.3713787	20	11 20.0	17.9
28556	Kevinchen	14.3	X	236.22700	189.70943	146.03287	2.74596	0.1661924	0.24561814	2.5251999	20	3 26.6	18.2
28557	Lillianchin	14.9	X	178.40466	141.00170	18.48721	5.97967	0.0912090	0.26511011	2.3998560	20	9 28.7	18.1
28558	Kathcordwell	14.7	X	107.63921	38.72938	235.32113	1.37997	0.1320631	0.26876615	2.3780428	20	12 10.1	18.2
28559	Anniedai	14.4	X	21.30177	273.19191	355.79758	6.08169	0.1219027	0.25596183	2.4567026	20	8 13.5	16.9
28560	2000 EO_{48}	13.9	X	251.23678	201.41644	14.66558	7.23310	0.0528261	0.23237352	2.6202635	20	—	—

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
	m		°	°	°	°		°				
28561 2000 EP_{48}	14.1	X	192.31586	203.85674	37.63988	1.55261	0.1347409	0.17734238	3.1375768	20	—	—
28562 2000 ET_{48}	14.8	X	108.76174	151.26461	188.31199	11.39402	0.2359976	0.27658705	2.3330005	20	—	—
28563 Dantzler	15.7	X	287.56747	303.68357	213.03344	1.09628	0.0551209	0.28045389	2.3115063	20	—	—
28564 Gunderman	14.9	X	165.89901	145.98728	163.33224	4.76355	0.1845257	0.28234631	2.3011661	20	—	—
28565 2000 EO_{58}	15.0	X	329.20820	150.02354	185.14827	5.33736	0.2851533	0.30646956	2.1787688	20	8 9.2	15.3
28566 2000 EV_{59}	16.2	X	266.61204	21.68612	32.39455	0.62746	0.1101234	0.31332580	2.1468677	20	8 30.9	18.1
28567 2000 EA_{61}	14.9	X	300.02210	266.78101	354.49438	14.18474	0.1472440	0.24459148	2.5322612	20	3 5.0	18.1
28568 Jacobjohnson	15.6	X	324.34730	288.22432	268.06229	0.60832	0.0845249	0.24088066	2.5582016	20	1 20.5	18.9
28569 Kallenbach	15.7	X	120.01099	11.79868	3.23833	2.96488	0.1417810	0.28625561	2.2801673	20	1 13.1	18.3
28570 Peterkraft	15.8	X	267.99751	208.09121	13.67011	5.98176	0.1136100	0.28697031	2.2763799	20	—	—
28571 Hannahlarson	15.4	X	159.74981	243.84553	51.44328	7.21547	0.1094257	0.28188997	2.3036490	20	—	—
28572 Salebreton	14.8	X	45.16906	122.85287	118.07766	5.37268	0.1579227	0.25795190	2.4440508	20	8 17.4	17.6
28573 2000 EG_{81}	14.7	X	243.40371	265.83648	43.42163	3.92021	0.1606236	0.24578519	2.5240556	20	3 1.9	18.7
28574 2000 EV_{88}	15.2	X	154.95188	192.38079	98.51426	6.31280	0.2036352	0.27968282	2.3157528	20	—	—
28575 McQuaid	15.8	X	125.67126	155.75414	193.57703	2.73206	0.1941011	0.28258637	2.2998627	20	—	—
28576 2000 EP_{96}	14.1	X	328.39321	245.57279	65.90894	6.34551	0.1289374	0.25503118	2.4626755	20	7 3.6	16.5
28577 2000 EW_{96}	13.8	X	198.64309	303.80875	352.60194	13.11257	0.1475616	0.23315838	2.6143799	20	1 8.5	18.2
28578 2000 EE_{97}	14.6	X	93.86807	293.89696	326.08910	5.64681	0.0830576	0.26479545	2.4017569	20	11 1.4	18.0
28579 2000 EQ_{97}	14.1	X	305.53241	187.52333	52.14050	3.89712	0.1541118	0.28832074	2.2692663	20	2 5.1	16.9
28580 2000 EJ_{104}	15.0	X	265.82747	350.19169	186.13989	6.17900	0.0770983	0.27836109	2.3230775	20	—	—
28581 2000 ER_{105}	15.5	X	93.02776	12.81133	97.49433	6.95199	0.1207467	0.29683741	2.2256505	20	4 16.5	18.1
28582 2000 EB_{106}	13.9	X	180.69946	0.28878	155.14651	13.40638	0.0773378	0.21586569	2.7522020	20	9 21.6	18.0
28583 Mehrotra	15.1	X	321.31621	155.37952	66.28101	5.82443	0.1924261	0.24217122	2.5491048	20	2 3.9	18.2
28584 2000 ER_{110}	15.4	X	183.84440	46.83107	85.97013	3.38256	0.1381359	0.26397090	2.4067557	20	8 28.2	19.1
28585 2000 EY_{110}	14.8	X	137.88062	249.92777	72.97748	6.18994	0.1680294	0.28033160	2.3121784	20	—	—
28586 2000 EB_{113}	13.9	X	170.17255	181.64411	62.63712	1.95436	0.1602583	0.17394740	3.1782698	20	12 14.1	19.1
28587 Mundkur	14.7	X	314.77311	79.06062	12.48238	6.72534	0.0676082	0.27401113	2.3475990	20	—	—
28588 2000 EL_{114}	13.4	X	213.24429	254.38241	19.42324	2.45194	0.1943835	0.18234421	3.0799339	20	—	—
28589 2000 EL_{126}	15.4	X	338.75644	142.61510	102.76845	3.22697	0.0677126	0.29857517	2.2170063	20	4 17.5	17.6
28590 2000 EX_{126}	14.9	X	63.28423	287.22029	28.79918	8.18387	0.1337218	0.27040556	2.3684214	20	12 17.3	18.3
28591 2000 EC_{130}	14.9	X	76.02000	246.79799	54.84639	2.55048	0.1932797	0.26865141	2.3787199	20	12 17.9	18.4
28592 O'Leary	14.7	X	256.45986	326.89846	348.43513	2.28724	0.1505750	0.24698205	2.5158947	20	3 21.2	18.5
28593 2000 EZ_{133}	14.1	X	266.32676	144.99513	128.38030	10.94838	0.0631014	0.19256215	2.9699930	20	2 25.8	18.4
28594 2000 EF_{134}	13.6	X	79.13010	201.31244	67.72697	9.10755	0.1843630	0.21470020	2.7621531	20	11 3.3	17.8
28595 2000 EP_{136}	13.6	X	190.39302	182.26712	126.48683	11.71991	0.0801868	0.18923666	3.0046867	20	1 16.5	18.2
28596 2000 EK_{137}	15.0	X	309.75779	112.61350	155.83502	14.13168	0.0193782	0.24756599	2.5119369	20	4 18.9	18.4
28597 2000 ER_{137}	13.8	X	28.98573	343.21563	177.97208	15.95573	0.0672221	0.24261769	2.5459766	20	3 12.1	16.6
28598 Apadmanabha	15.3	X	103.86943	110.19567	152.18483	5.99001	0.0722314	0.26611682	2.3937999	20	11 19.6	18.7
28599 Terenzoni	14.3	X	279.24137	128.59966	135.70111	14.47813	0.1383252	0.24120514	2.5559068	20	2 13.2	17.8
28600 Georgelucas	14.9	X	87.52627	314.86703	3.16310	7.50526	0.1307348	0.27388802	2.3483024	20	—	—
28601 Benton	15.3	X	309.18513	67.77626	215.79283	2.71562	0.1425308	0.29671588	2.2262581	20	4 11.8	17.4
28602 Westfall	14.9	X	150.87062	322.79800	340.72745	2.95643	0.0450482	0.23038901	2.6352888	20	—	—
28603 Jenkins	14.5	X	35.25998	173.22290	358.03559	2.54122	0.1026179	0.24640430	2.5198258	20	4 7.6	17.2
28604 2000 EB_{151}	14.2	X	229.46457	196.68536	67.09152	2.39333	0.1569441	0.18461923	3.0545795	20	1 1.1	19.3
28605 2000 ER_{152}	15.3	X	262.01214	101.97947	123.70792	3.59506	0.0741571	0.23731582	2.5837565	20	—	—
28606 2000 ES_{154}	15.0	X	347.30778	54.90021	81.10938	7.16942	0.0428627	0.28420676	2.2911127	20	—	—
28607 Jiayipeng	14.3	X	306.84380	349.84956	266.32713	4.49764	0.1323887	0.29366564	2.2416474	20	2 28.2	17.1
28608 2000 EU_{157}	14.5	X	203.22943	359.84516	230.71279	5.57565	0.1105034	0.22813627	2.6526085	20	—	—
28609 2000 EL_{158}	14.6	X	237.44512	293.47332	289.47955	10.94442	0.2235008	0.23099540	2.6306748	20	—	—
28610 2000 EM_{158}	12.9	X	230.02822	333.28075	316.89378	15.67571	0.2430066	0.23655042	2.5893270	20	1 25.0	17.4
28611 Liliapopova	15.2	X	321.81353	179.58392	57.59833	4.91642	0.1807715	0.29505909	2.2345842	20	2 20.0	17.7
28612 2000 FE_2	14.7	X	226.48700	178.19518	67.10927	0.79111	0.0977760	0.18258947	3.0771752	20	—	—
28613 2000 FG_5	13.8	X	266.15533	8.04777	117.04904	12.57117	0.0399950	0.22188197	2.7022241	20	12 2.8	17.5
28614 Vejvoda	14.5	X	310.92565	163.70332	152.81321	3.04876	0.1641107	0.30022995	2.2088524	20	6 3.2	16.4
28615 2000 FS_{10}	14.1	X	349.73627	224.21867	356.34244	3.13136	0.0798131	0.19523519	2.9428219	20	4 4.8	17.7
28616 2000 FD_{11}	13.4	X	30.13524	233.23684	41.72203	15.17677	0.2799715	0.21120160	2.7925733	20	9 30.4	16.9
28617 2000 FB_{13}	13.6	X	277.98980	319.77047	113.05475	16.14539	0.0317530	0.17041260	3.2220696	20	10 9.3	18.4
28618 Scibelli	15.1	X	244.58163	122.63865	123.41583	7.67723	0.0967171	0.28476695	2.2881070	20	—	—
28619 2000 FP_{24}	13.7	X	49.82312	177.08099	160.68592	19.93021	0.1590776	0.17101531	3.2144948	20	12 13.1	18.7
28620 2000 FE_{26}	14.4	X	165.78106	303.79209	40.13861	4.62514	0.1105535	0.28697063	2.2763782	20	1 23.8	17.5
28621 2000 FZ_{28}	15.4	X	348.24589	248.79903	316.65058	3.26368	0.0116800	0.29298334	2.2451262	20	3 7.9	18.0
28622 2000 FJ_{29}	14.3	X	309.19281	347.11652	328.61138	2.17987	0.1323187	0.20319748	2.8654346	20	6 2.6	17.7
28623 2000 FX_{29}	15.4	X	153.22597	85.86178	27.88752	6.34704	0.1124245	0.25579183	2.4577910	20	6 30.3	19.1
28624 2000 FM_{31}	14.6	X	320.79875	55.69389	66.66810	8.91557	0.0787944	0.28130525	2.3068401	20	—	—
28625 Selvakumar	15.0	X	94.38153	199.08691	131.78967	4.01509	0.0574414	0.27583166	2.3372579	20	—	—
28626 Meghanshea	15.0	X	68.71959	125.92279	41.01035	5.36578	0.1177523	0.25136948	2.4865337	20	5 28.9	18.0
28627 2000 FH_{33}	14.1	X	260.90601	85.20895	162.46328	9.17581	0.1150713	0.18806110	3.0171952	20	1 12.8	18.7
28628 Kensenshi	14.5	X	180.51138	128.08409	150.88784	5.11469	0.1447956	0.18047247	3.1011926	20	—	—
28629 Solimano	15.2	X	139.87847	208.60683	76.70824	2.88812	0.1862191	0.22444502	2.6816128	20	—	—
28630 Mayuri	15.8	X	114.19917	346.44975	128.88011	4.10260	0.0830000	0.29964098	2.2117460	20	5 15.1	18.5
28631 Jacktakahashi	14.5	X	179.78922	180.76012	109.74657	2.42549	0.1273424	0.18158732	3.0884864	20	—	—
28632 Christraver	14.9	X	289.72719	169.37088	70.96154	3.90451	0.1166933	0.23986319	2.5654308	20	1 29.5	18.5
28633 Ratripathi	15.1	X	104.10251	322.05358	74.44145	5.55653	0.1924261	0.28743501	2.2739257	20	1 28.9	17.6
28634 2000 FR_{39}	13.9	X	108.08225	245.16297	33.12395	12.62775	0.1066150	0.21981965	2.7190992	20	12 3.1	18.2
28635 2000 FV_{42}	14.9	X	343.42759	267.05820	44.42588	4.19703	0.0544880	0.25889607	2.4381051	20	8 5.8	17.7
28636 Vasudevan	15.3	X	351.75909	297.43735	99.71836	5.89644	0.1066711	0.27209798	2.3585903	20	12 27.9	17.6
28637 2000 FB_{48}	13.2	X	76.25005	227.50829	139.71657	12.23514	0.2560765	0.22793302	2.6541851	20	—	—
28638 Joywang	14.7	X	216.70660	277.30401	300.76458	1.17845	0.1426414	0.22691874	2.6620884	20	—	—
28639 2000 FK_{49}	13.8	X	21.90865	173.20314	339.21855	9.81386	0.0466127	0.19204699	2.9753019	20	2 26.1	17.6
28640 Cathywong	13.9	X	50.34360	253.04200	260.89697	8.38194	0.1044757	0.19656706	2.9295138	20	4 9.8	17.8

ELEMENTS AND OPPOSITION DATES IN 2020

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Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
	m		°	°	°	°		°				
28641 2000 FS_{49}	13.9	X	96.62664	336.98860	247.89706	7.01595	0.1593064	0.21090878	2.7951575	20	9 19.3	18.3
28642 Zbarsky	14.7	X	265.96829	195.84381	302.33876	5.21321	0.1234969	0.27273092	2.3549397	20	12 21.9	17.1
28643 Kellyzhang	14.9	X	314.86041	168.53135	8.91365	4.09630	0.1098858	0.28354445	2.2946790	20	—	—
28644 Michaelzhang	15.5	X	228.99978	226.92623	118.47629	5.38561	0.1282812	0.29571929	2.2312571	20	4 1.8	18.7
28645 2000 FP_{56}	14.4	X	209.09628	97.18986	164.92244	12.67851	0.1096940	0.18256340	3.0774682	20	—	—
28646 2000 FO_{62}	15.3	X	110.10498	23.65490	298.26866	2.19798	0.1273452	0.27588404	2.3369621	20	—	—
28647 2000 GW	15.0	X	206.08352	136.19362	202.62888	3.84758	0.2991083	0.23796737	2.5790382	20	2 29.7	19.9
28648 2000 GY	14.9	X	58.55149	253.53199	197.17355	4.91475	0.0360925	0.23735605	2.5834646	20	1 19.8	18.3
28649 2000 GZ_{1}	13.8	X	222.25798	184.58351	24.33974	12.65441	0.1923626	0.22605124	2.6688948	20	12 29.6	17.8
28650 2000 GE_{8}	13.3	X	206.04449	103.80589	188.67878	10.07109	0.0807754	0.18903058	3.0068702	20	1 11.8	18.1
28651 2000 GP_{8}	14.6	X	97.41427	160.39335	199.21128	3.11196	0.2043807	0.23308789	2.6149070	20	—	—
28652 Andybramante	16.1	X	121.38354	136.05059	269.18441	1.96938	0.1543526	0.29172530	2.2515762	20	2 24.3	18.8
28653 Charliebrucker	15.7	X	169.53129	72.97855	194.92637	3.09102	0.0327564	0.22862535	2.6488241	20	—	—
28654 Davidcaine	15.6	X	170.37042	69.79859	238.79928	1.32042	0.1799708	0.23146427	2.6271210	20	—	—
28655 Erincolfax	15.4	X	290.51340	230.75343	181.49199	2.85128	0.0657947	0.26526895	2.3988979	20	10 5.0	18.1
28656 Doreencurtin	15.0	X	334.97344	224.20234	205.49633	5.28763	0.0495442	0.27352073	2.3504042	20	—	—
28657 Briandempsey	15.6	X	165.46734	88.80399	335.98780	1.39307	0.0819099	0.29907050	2.2145577	20	5 5.9	18.5
28658 2000 GC_{30}	13.9	X	349.21841	301.19763	16.48436	2.93659	0.1141351	0.20889408	2.8131008	20	8 18.8	17.1
28659 2000 GB_{36}	13.6	X	31.68795	222.12593	301.71561	1.03368	0.0423553	0.19539808	2.9411862	20	3 23.9	17.3
28660 Derbes	14.8	X	232.53532	111.82970	173.34935	3.79826	0.1573933	0.23649296	2.5897464	20	1 21.5	19.1
28661 Jimdickens	14.4	X	239.41635	151.71695	177.08036	1.96975	0.0945522	0.19595435	2.9356173	20	3 29.3	18.8
28662 Ericduran	14.3	X	35.58625	85.11345	66.83479	1.64665	0.0632227	0.24383442	2.5374999	20	3 11.0	17.3
28663 2000 GH_{43}	13.9	X	95.35027	271.45606	43.01452	1.64386	0.2132135	0.17082182	3.2169216	20	—	—
28664 Maryellenfay	15.4	X	284.92947	112.83093	219.62576	2.24603	0.1402866	0.29915325	2.2141493	20	5 18.4	17.9
28665 Theresafultz	14.8	X	255.50534	201.41252	145.16745	2.75222	0.0813105	0.20048913	2.8911825	20	5 10.8	19.0
28666 Trudygessler	15.4	X	6.08575	264.56123	146.43147	2.70901	0.1582943	0.27512725	2.3412456	20	—	—
28667 Whithagins	15.2	X	356.93207	295.23554	42.58092	4.19932	0.1158911	0.21208022	2.7848551	20	9 30.9	18.3
28668 2000 GF_{54}	14.9	X	179.63375	156.70604	179.44465	1.55074	0.2063354	0.28424731	2.2908948	20	2 2.2	18.4
28669 Bradhelsel	16.1	X	58.03210	339.56606	204.15476	2.77889	0.0825755	0.29899418	2.2149345	20	6 1.1	18.2
28670 2000 GO_{55}	13.8	X	49.95913	241.15038	44.56051	4.99159	0.1454935	0.21157036	2.7893274	20	10 15.5	17.6
28671 2000 GW_{55}	13.8	X	154.59430	213.48042	83.58948	2.32093	0.1581296	0.17721093	3.1391281	20	—	—
28672 Karolhiggins	14.6	X	241.37989	36.62381	183.12357	5.71521	0.0857408	0.27915483	2.3186718	20	—	—
28673 Valholmes	14.9	X	167.53535	136.64211	190.16348	2.84706	0.1370703	0.28195168	2.3033128	20	1 5.3	18.1
28674 2000 GZ_{59}	15.6	X	282.11515	205.49287	156.37022	2.15710	0.1940006	0.30249329	2.1978205	20	6 18.4	18.0
28675 Suejohnston	14.4	X	198.69310	161.80290	141.84814	1.56824	0.1564592	0.18408778	3.0604556	20	1 20.3	19.5
28676 Bethkoester	15.1	X	184.70589	17.62778	22.69106	5.40462	0.1781088	0.29656179	2.2270293	20	4 25.8	18.5
28677 Laurakowalski	14.9	X	105.43780	222.90316	234.85853	1.89881	0.0751728	0.29416330	2.2391184	20	4 4.2	17.4
28678 Lindquester	14.5	X	7.24424	193.81065	196.16126	4.23130	0.0623617	0.27039375	2.3684903	20	—	—
28679 2000 GY_{68}	14.2	X	32.53562	305.34913	196.87836	8.67873	0.0801781	0.19196127	2.9761876	20	2 26.8	18.0
28680 Sandralitvin	15.2	X	170.77931	166.24577	46.19222	3.14645	0.1427007	0.26830883	2.3807442	20	11 23.7	18.8
28681 Loseke	15.0	X	318.98160	1.99527	317.26664	1.43077	0.1625857	0.25115975	2.4879178	20	6 22.3	17.3
28682 Newhams	14.5	X	341.86545	119.98377	26.33691	4.32420	0.0460914	0.23399988	2.6081083	20	—	—
28683 Victorostrik	14.6	X	357.00033	355.73404	21.81172	3.61908	0.0807645	0.21747473	2.7386100	20	11 19.3	17.9
28684 2000 GK_{72}	14.1	X	208.32815	98.46863	113.89498	1.83349	0.1519348	0.17490011	3.1667176	20	12 12.8	19.0
28685 2000 GU_{72}	13.8	X	123.04008	193.84826	150.47068	1.18139	0.1456541	0.17933267	3.1143191	20	—	—
28686 Tamsenprofit	14.7	X	348.92159	344.82318	210.66446	1.46815	0.0831922	0.24128723	2.5553270	20	2 24.1	17.6
28687 Reginareals	14.6	X	284.97577	251.44323	54.23085	2.87027	0.0873224	0.19694238	2.9257907	20	4 23.7	18.5
28688 Diannerister	14.5	X	123.69006	202.37858	39.24662	7.77289	0.0417275	0.21632741	2.7482844	20	11 2.9	18.4
28689 Rohrback	15.1	X	20.52932	138.56402	196.78391	3.73533	0.1065447	0.21358729	2.7717397	20	11 2.4	18.5
28690 Beshellem	14.8	X	324.20691	307.40986	68.60628	2.20765	0.1946086	0.26043135	2.4285136	20	10 6.3	16.6
28691 2000 GC_{76}	13.6	X	180.90246	36.41054	218.57224	4.56710	0.1001896	0.22500659	2.6771491	20	—	—
28692 Chanleysmall	14.4	X	259.86160	306.14387	34.68369	2.23069	0.0666160	0.19920215	2.9036217	20	5 9.5	18.6
28693 2000 GS_{79}	14.9	X	28.75021	167.65126	192.30920	6.32710	0.1390830	0.26703936	2.3882834	20	—	—
28694 2000 GJ_{85}	12.8	X	285.52852	73.45382	119.31903	15.25728	0.0942609	0.18443051	3.0566628	20	—	—
28695 Zwanzig	15.5	X	12.12627	322.34153	33.89152	4.88041	0.0937668	0.26892474	2.3771078	20	11 28.6	18.1
28696 2000 GU_{87}	13.3	X	42.01077	215.59808	93.16275	8.63260	0.2124091	0.21312620	2.7757360	20	11 15.1	17.1
28697 Eitanacks	14.5	X	181.62595	14.12717	115.30577	4.89175	0.0455121	0.21094195	2.7948644	20	8 20.3	18.4
28698 Aakshi	14.7	X	196.96706	352.30514	163.07881	6.85787	0.1058561	0.26619792	2.3933136	20	10 14.3	18.0
28699 2000 GN_{89}	14.0	X	98.40408	189.42207	69.77626	9.22457	0.1774103	0.21493386	2.7601509	20	11 8.8	18.4
28700 Balachandar	14.6	X	103.46101	268.12271	112.65463	6.07923	0.1287207	0.28261275	2.2997196	20	—	—
28701 2000 GK_{90}	14.2	X	196.29432	79.21273	89.89879	7.66064	0.2306665	0.21939943	2.7225700	20	10 16.2	18.8
28702 2000 GH_{91}	13.5	X	283.08333	134.25855	165.31261	10.01626	0.1213345	0.24488154	2.5302611	20	4 7.0	16.9
28703 2000 GM_{91}	13.8	X	197.47302	168.27888	105.26009	11.06891	0.0224817	0.18211495	3.0825182	20	—	—
28704 2000 GU_{91}	14.4	X	8.23209	343.76196	172.45483	14.35055	0.1852251	0.24082970	2.5585625	20	1 21.9	17.2
28705 Michaelbecker	14.8	X	104.88182	348.69981	120.34364	7.19416	0.1148131	0.24726468	2.5139771	20	5 2.0	18.3
28706 2000 GC_{93}	15.3	X	259.93169	112.84196	99.88079	7.86197	0.0500624	0.23299252	2.6156205	20	—	—
28707 Drewbecker	15.3	X	319.41490	68.09654	224.46309	1.18706	0.0419190	0.20128129	2.8835918	20	5 29.7	19.1
28708 2000 GR_{95}	13.5	X	91.64705	107.03571	227.10229	8.48659	0.0720163	0.17455174	3.1709296	20	—	—
28709 2000 GY_{96}	13.6	X	223.39576	201.02437	27.61048	1.65616	0.1592651	0.17788988	3.1311357	20	—	—
28710 Rebeccab	14.7	X	321.64927	132.96039	240.53835	5.02932	0.1183661	0.26480438	2.4017029	20	9 25.4	17.1
28711 Emmaburnett	15.4	X	172.41733	321.99875	232.55840	3.71024	0.1092238	0.26851251	2.3795401	20	11 5.1	18.9
28712 Elizabethcorn	14.3	X	308.70628	235.94409	71.40388	2.74549	0.1381185	0.20176010	2.8790278	20	5 21.0	17.6
28713 2000 GW_{102}	14.2	X	155.71240	153.06580	145.31772	2.59427	0.0741976	0.27813772	2.3243211	20	—	—
28714 Gandall	14.6	X	234.99915	254.83658	68.33511	3.31983	0.1888414	0.29092503	2.2557034	20	3 6.0	18.1
28715 Garimella	15.1	X	32.46022	169.64683	122.43780	2.73886	0.0538184	0.21162235	2.7888706	20	9 16.3	18.7
28716 Calebgonser	14.5	X	146.50683	248.08380	53.16123	7.57832	0.1404607	0.27575261	2.3377046	20	—	—
28717 2000 GT_{106}	14.3	X	179.87641	116.16888	217.18571	14.04197	0.1560524	0.23470056	2.6029149	20	1 28.8	18.8
28718 Rivergrace	15.2	X	183.54101	332.81128	6.84957	7.31053	0.1570315	0.28618043	2.2805666	20	2 10.4	18.7
28719 Sahoolahan	15.4	X	209.62201	30.64643	119.55235	2.13491	0.1277732	0.26723409	2.3871231	20	10 18.9	18.5
28720 Krystalrose	14.7	X	332.26173	87.75725	148.52177	3.48510	0.1521690	0.24378020	2.5378762	20	3 17.0	17.4

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Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
	m		°	°	°	°		°				
28721 2000 GW_{107}	13.4	X	275.50511	60.88738	194.14216	14.24294	0.0578741	0.23882138	2.5728862	20	2 3.3	17.2
28722 Dhruviyer	14.9	X	175.20915	75.64118	89.90377	4.88156	0.1402381	0.26408916	2.4060372	20	10 2.2	18.5
28723 Cameronjones	15.1	X	43.28376	283.31426	142.35079	4.74920	0.1239718	0.28052122	2.3111364	20	—	—
28724 2000 GG_{111}	14.7	X	354.26583	242.91364	33.98460	4.66846	0.1452973	0.30190717	2.2006641	20	7 6.3	16.3
28725 2000 GB_{113}	14.6	X	108.05575	158.73725	27.82263	8.62587	0.1531257	0.25921815	2.4360850	20	8 24.8	18.3
28726 Kailey–Steiner	14.7	X	113.60473	272.96101	41.19157	3.99443	0.0728983	0.22546652	2.6735071	20	—	—
28727 2000 GO_{113}	14.1	X	232.04624	311.70649	221.80037	15.52825	0.2190535	0.22285298	2.6943690	20	11 22.8	18.0
28728 2000 GX_{121}	14.8	X	291.02896	27.35233	103.43584	8.57544	0.1715781	0.22572072	2.6714995	20	—	—
28729 Moivre	16.2	X	123.19606	242.77906	195.02459	3.55518	0.1082037	0.29324275	2.2438020	20	4 5.8	18.9
28730 2000 GU_{123}	13.9	X	286.11114	129.36424	77.98224	10.29072	0.0839735	0.18476099	3.0530168	20	—	—
28731 2000 GX_{123}	14.2	X	307.08228	176.90782	53.73345	14.62661	0.0991052	0.23948660	2.5681195	20	2 16.1	17.9
28732 Rheakamat	14.5	X	21.46544	168.53099	161.97981	6.45119	0.1578995	0.26088894	2.4256731	20	11 17.8	17.4
28733 2000 GY_{124}	14.3	X	247.18367	82.05412	166.75677	10.69524	0.0996298	0.18307301	3.0717545	20	1 2.8	19.1
28734 Austinmccoy	15.1	X	18.90387	38.17936	78.40306	7.40077	0.0984681	0.28426614	2.2907936	20	—	—
28735 2000 GX_{125}	14.2	X	328.42732	9.33532	94.10477	7.49982	0.0667438	0.27379825	2.3488157	20	—	—
28736 2000 GE_{133}	14.0	X	351.92716	27.78814	131.16796	9.74296	0.0671299	0.28608624	2.2810672	20	1 3.2	16.5
28737 Mohindra	14.7	X	86.70539	105.12415	129.43029	6.80511	0.0959923	0.25887927	2.4382105	20	9 26.1	18.1
28738 Carolinolan	14.9	X	15.17091	179.39966	162.64718	6.13020	0.0959029	0.26332186	2.4107089	20	11 15.1	17.8
28739 Julisauer	14.5	X	93.84772	65.49189	150.00501	8.00046	0.1506019	0.20901018	2.8120589	20	9 7.7	18.8
28740 Nathansperry	14.4	X	276.01456	337.20074	115.52896	6.56350	0.0358563	0.21726976	2.7403321	20	11 4.0	18.1
28741 2000 GJ_{136}	13.7	X	307.61503	255.59740	85.81575	13.90479	0.0694927	0.20448811	2.8533651	20	7 15.1	17.4
28742 Hannahsteele	14.4	X	274.92171	5.63071	96.99534	7.13443	0.0879555	0.26631147	2.3926333	20	11 20.2	17.0
28743 2000 GO_{142}	13.1	X	52.28175	200.27402	102.69047	10.56407	0.1406322	0.21358787	2.7717347	20	11 11.6	17.1
28744 2000 GK_{143}	15.2	X	213.94612	323.21378	140.80065	6.66398	0.0480842	0.26037924	2.4288376	20	8 31.4	18.2
28745 2000 GV_{144}	15.9	X	106.80111	224.09824	197.72425	1.54833	0.1582701	0.28973326	2.2618848	20	2 29.3	18.6
28746 2000 GB_{148}	15.6	X	27.99513	182.51109	161.17805	2.22133	0.2165849	0.26962225	2.3730063	20	12 23.7	18.7
28747 Swintosky	15.3	X	314.54276	308.40842	6.21320	2.04333	0.0519199	0.20354044	2.8622149	20	6 20.3	18.9
28748 2000 GH_{161}	13.8	X	100.16200	213.77230	66.01107	5.78841	0.1923345	0.26453294	2.4033455	20	12 11.8	17.6
28749 2000 GP_{161}	14.4	X	334.64944	212.19407	142.30461	7.33311	0.1526720	0.25882293	2.4385643	20	9 26.5	16.6
28750 Brennawallin	15.8	X	137.30211	169.24265	179.58345	3.67481	0.1337599	0.28274016	2.2990286	20	—	—
28751 2000 GT_{167}	15.6	X	261.23695	49.32834	276.26443	1.74653	0.1142470	0.24635400	2.5201688	20	4 12.3	19.0
28752 2000 GZ_{176}	15.8	X	240.23140	13.59407	323.04542	0.81430	0.1482785	0.29759830	2.2218552	20	3 28.4	19.0
28753 2000 HA	13.7	X	310.63091	350.83267	126.92687	25.78507	0.2241920	0.27629747	2.3346303	20	—	—
28754 2000 HV_{1}	12.8	X	60.87476	300.11580	218.74850	16.54063	0.2152256	0.19802077	2.9151588	20	5 23.5	16.5
28755 2000 HK_{4}	14.7	X	249.75766	272.15598	96.51976	3.39941	0.0757784	0.20230352	2.8738698	20	6 1.4	18.7
28756 2000 HA_{6}	14.2	X	177.23378	9.18955	3.58517	1.87491	0.1326188	0.19183759	2.9774667	20	3 20.5	19.0
28757 Seanweber	14.7	X	174.05523	112.31341	142.00195	2.22478	0.1777379	0.17353622	3.1832882	20	12 27.8	19.8
28758 2000 HE_{10}	13.8	X	147.14494	188.48293	141.81839	2.29082	0.1696948	0.17903643	3.1177535	20	1 7.4	18.7
28759 Joshwentzel	14.9	X	85.54901	64.84576	65.88155	3.63986	0.0616320	0.24547831	2.5261587	20	4 25.2	18.0
28760 Grantwomble	14.9	X	3.65486	358.54940	222.68850	7.80622	0.0218647	0.24581406	2.5238579	20	4 25.8	18.0
28761 2000 HU_{12}	14.3	X	6.76015	20.05175	38.26600	6.66867	0.2054841	0.27371354	2.3493003	20	—	—
28762 2000 HG_{13}	13.8	X	76.68682	202.60004	224.62700	8.58150	0.0188697	0.18510770	3.0492034	20	1 20.2	18.2
28763 2000 HK_{13}	13.9	X	265.10410	183.92727	24.54606	0.92892	0.1093875	0.18098722	3.0953097	20	—	—
28764 2000 HS_{13}	13.6	X	195.25895	80.24460	227.11263	7.12512	0.1491904	0.18222651	3.0812600	20	1 20.1	18.8
28765 Katherinewu	14.8	X	246.00054	286.51496	44.91727	1.64889	0.1190068	0.29122953	2.2541308	20	3 31.5	18.0
28766 Monge	13.5	X	216.26588	223.20739	73.67179	2.47352	0.1699765	0.18297941	3.0728019	20	1 27.9	18.6
28767 2000 HA_{17}	15.6	X	304.51701	303.23682	100.52904	2.40817	0.1747738	0.26464569	2.4026629	20	10 7.7	17.7
28768 2000 HP_{21}	14.6	X	44.21759	341.00940	17.40227	6.28363	0.2398779	0.26829684	2.3808151	20	—	—
28769 2000 HC_{26}	14.5	X	55.18438	240.44102	90.37807	3.24311	0.1085125	0.26627792	2.3928342	20	12 23.8	17.7
28770 Sarahrines	14.8	X	11.85877	198.28667	130.23991	7.11595	0.0649856	0.21192566	2.7862090	20	10 8.7	18.4
28771 2000 HF_{32}	15.4	X	277.66457	117.91282	261.91872	1.47754	0.1375372	0.30379297	2.1915476	20	7 19.5	17.7
28772 2000 HE_{34}	14.2	X	357.29815	325.04285	344.44564	5.18755	0.0227777	0.20837351	2.8177841	20	8 17.2	17.9
28773 2000 HU_{35}	12.7	X	275.66931	264.26163	343.22189	9.29267	0.0637348	0.18784369	3.0195227	20	2 6.0	17.0
28774 2000 HO_{36}	14.3	X	54.94701	287.30111	143.25390	13.02528	0.1494897	0.23384687	2.6092459	20	—	—
28775 2000 HE_{37}	13.3	X	293.08903	348.10377	168.47023	15.86740	0.0198976	0.17810881	3.1285693	20	—	—
28776 2000 HC_{41}	13.9	X	340.82353	97.62608	90.67202	14.19078	0.1358301	0.23921755	2.5700448	20	1 28.7	17.0
28777 2000 HK_{41}	14.7	X	165.84487	291.44615	103.64982	12.68553	0.0684455	0.24231740	2.5480795	20	4 5.9	18.6
28778 Michdelucia	14.8	X	125.88866	140.00883	54.82418	4.58460	0.0346732	0.21134057	2.7913489	20	9 8.4	18.7
28779 Acthieke	15.2	X	156.35384	290.50370	69.75423	2.95854	0.1635033	0.28393596	2.2925692	20	2 8.9	18.5
28780 Lisadeaver	15.5	X	136.95803	110.39725	256.54253	1.25691	0.1790048	0.28197039	2.3032109	20	1 28.3	18.6
28781 Timothylohr	14.4	X	152.90773	182.06636	196.32752	1.35842	0.1049398	0.18858496	3.0116051	20	3 2.0	18.8
28782 Mechling	15.8	X	125.05576	257.48005	199.50359	4.76764	0.0603216	0.29500354	2.2348647	20	4 29.3	18.5
28783 2000 HH_{49}	14.8	X	20.93282	322.87967	73.09700	3.46835	0.2110079	0.27080921	2.3660673	20	—	—
28784 Deringer	14.0	X	236.13751	342.70603	57.25287	2.94817	0.0649971	0.20240427	2.8729161	20	6 26.7	18.1
28785 Woodjohn	14.4	X	226.10360	171.44350	135.48915	1.18037	0.0409917	0.23716378	2.5848607	20	2 16.1	18.0
28786 2000 HA_{54}	14.1	X	173.27927	78.27051	218.60944	11.03026	0.0399603	0.22827328	2.6515470	20	—	—
28787 Peterpinko	14.5	X	240.86753	255.35831	76.50913	4.24376	0.1083193	0.24089774	2.5580806	20	4 1.4	18.2
28788 2000 HW_{57}	14.1	X	31.53011	280.31077	86.85085	3.26252	0.2216242	0.26691670	2.3890151	20	—	—
28789 2000 HE_{58}	14.6	X	116.34906	354.95264	356.21522	0.49953	0.1774535	0.17813251	3.1282918	20	1 2.0	18.9
28790 2000 HK_{58}	14.9	X	203.21732	249.79576	74.55984	0.34565	0.0510119	0.23655404	2.5893006	20	2 11.6	18.3
28791 2000 HW_{59}	14.9	X	203.95944	196.63120	133.94626	1.55492	0.0853843	0.18883156	3.0089825	20	2 25.2	19.5
28792 2000 HE_{61}	15.4	X	202.73379	134.37111	107.61202	2.93761	0.0280970	0.22699089	2.6615243	20	—	—
28793 2000 HM_{61}	14.1	X	264.65434	100.87678	165.59974	3.08855	0.0883126	0.23769124	2.5810352	20	2 4.7	17.7
28794 2000 HG_{64}	14.6	X	208.21279	109.34134	251.19246	7.43690	0.1876255	0.29299577	2.2450628	20	3 24.0	18.3
28795 2000 HO_{64}	15.0	X	307.26630	226.96000	290.39781	4.06299	0.0719186	0.28040981	2.3117485	20	—	—
28796 2000 HW_{65}	14.4	X	109.97812	240.48169	113.58450	5.01319	0.1123751	0.22648953	2.6654505	20	—	—
28797 2000 HH_{68}	14.0	X	171.22703	140.32945	178.76596	10.20512	0.1072575	0.18191823	3.0847400	20	1 10.9	19.0
28798 2000 HJ_{69}	14.3	X	158.73865	354.65787	2.22238	8.40099	0.1317278	0.23579963	2.5948204	20	2 11.5	18.2
28799 2000 HB_{72}	15.2	X	180.08785	212.31955	173.57040	3.32557	0.1454908	0.29250293	2.2475839	20	4 3.2	18.4
28800 Speth	14.5	X	54.38043	225.37540	191.07903	8.16893	0.1638367	0.27959043	2.3162629	20	—	—

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

	Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
		m		°	°	°	°		°				
28801	Maryanderson	14.8	X	52.39078	263.55063	128.31258	4.55070	0.1218779	0.27474696	2.3434055	20	—	—
28802	Boborino	14.6	X	23.37359	82.67357	317.86547	5.02474	0.1147795	0.27535548	2.3399517	20	—	—
28803	Roe	14.7	X	123.77918	293.59448	117.19125	15.74389	0.0908321	0.24006752	2.5639750	20	3 8.6	18.4
28804	2000 HC_{81}	14.5	X	194.36858	330.54230	10.76982	3.82436	0.2062692	0.23586550	2.5943373	20	2 26.3	18.9
28805	2000 HY_{85}	14.6	X	303.80827	251.49510	143.77862	5.67075	0.1814613	0.26025945	2.4295828	20	9 20.8	16.6
28806	2000 HH_{87}	14.5	X	29.89570	322.40269	199.53723	12.93170	0.0907742	0.24245317	2.5471282	20	3 13.7	17.4
28807	Lisawaller	15.8	X	190.60140	353.74544	44.86442	5.07009	0.1140597	0.29410894	2.2393943	20	4 30.2	19.1
28808	Ananthnarayan	14.9	X	131.79366	31.32241	344.87089	4.26352	0.0572568	0.23473476	2.6026620	20	1 26.4	18.4
28809	2000 HY_{102}	15.0	X	231.81158	289.85821	53.57399	7.21428	0.1027431	0.24748296	2.5124987	20	4 6.9	18.7
28810	Suchandler	14.7	X	18.11769	144.61269	172.28357	5.17199	0.0543078	0.21134985	2.7912672	20	9 28.4	18.1
28811	2000 JX_9	13.7	X	0.95469	308.48754	160.38039	17.20292	0.0615526	0.18082786	3.0971280	20	—	—
28812	2000 JS_{11}	14.8	X	104.08534	40.51029	235.15207	12.58333	0.1201666	0.21604595	2.7506709	20	11 28.5	18.9
28813	Jeffreykurtz	14.3	X	182.41291	215.75471	122.55917	2.47744	0.1167122	0.18500189	3.0503659	20	2 14.3	19.0
28814	2000 JA_{17}	14.2	X	13.15116	168.06023	158.62170	8.78520	0.2280962	0.21026175	2.8008888	20	10 29.7	17.4
28815	2000 JS_{17}	13.1	X	35.00711	160.15534	185.42201	11.99426	0.0944285	0.16808410	3.2517585	20	11 24.2	17.7
28816	Kimneville	15.1	X	181.94409	68.73071	97.00531	3.14410	0.1448600	0.26401267	2.4065019	20	10 7.9	18.8
28817	Simoneflood	14.5	X	85.40384	320.80582	291.26254	3.17102	0.0777051	0.26161465	2.4211852	20	10 11.6	17.8
28818	Kellyryan	14.5	X	173.61370	54.37844	317.01827	5.34688	0.1510441	0.28971421	2.2619840	20	3 7.2	17.9
28819	Karinritchey	14.4	X	126.32486	23.10786	317.03870	6.43221	0.1580315	0.27803660	2.3248846	20	—	—
28820	Sylrobertson	15.4	X	37.04105	89.55612	359.67254	8.99677	0.0436759	0.28216026	2.3021776	20	—	—
28821	Harryanselmo	14.8	X	181.03732	60.85088	353.84822	5.08260	0.1137888	0.29722334	2.2237235	20	5 9.6	18.1
28822	Angelabarker	15.8	X	119.79568	13.48124	319.19560	1.39416	0.1035081	0.22593272	2.6698281	20	—	—
28823	Archibald	14.6	X	216.85591	48.58255	278.73424	7.38779	0.1054026	0.23859856	2.5744878	20	2 25.5	18.6
28824	Marlablair	14.4	X	280.11164	255.86314	286.25254	4.53702	0.0985798	0.18067538	3.0988703	20	—	—
28825	Bryangoehring	14.1	X	34.86179	148.15883	249.74870	6.69682	0.1287364	0.22433242	2.6825100	20	—	—
28826	2000 JQ_{28}	14.2	X	31.62565	25.89086	341.60696	4.55741	0.0711545	0.21925029	2.7238045	20	12 24.5	17.9
28827	2000 JK_{29}	14.2	X	176.15007	307.41804	16.18907	4.21560	0.2175555	0.23008600	2.6376019	20	1 23.1	18.6
28828	Aalamiharandi	14.6	X	207.53391	121.10291	351.03641	3.71123	0.1438903	0.26021961	2.4298308	20	8 24.2	18.1
28829	Abelsky	14.8	X	272.34917	336.34489	14.66806	3.86989	0.1834165	0.24770381	2.5110051	20	5 20.3	18.4
28830	2000 JY_{30}	14.0	X	205.22740	110.42122	255.28775	10.94211	0.0908411	0.19315323	2.9639308	20	4 3.7	18.7
28831	Abu–Alshaikh	14.5	X	345.22240	146.90288	239.19074	3.83968	0.0298483	0.21549828	2.7553293	20	11 9.6	18.0
28832	Akana	14.5	X	121.83528	41.15850	46.31003	3.51370	0.0617058	0.19387171	2.9566035	20	4 17.5	18.7
28833	Arunachalam	15.0	X	211.67726	36.89586	46.04468	2.65982	0.0135854	0.20543028	2.8446341	20	7 29.4	19.0
28834	2000 JD_{37}	14.0	X	272.48714	320.72341	52.08426	2.87562	0.0712812	0.20163915	2.8801790	20	7 6.7	17.9
28835	2000 JX_{37}	13.4	X	113.97325	279.63320	46.55474	3.02171	0.1712125	0.17106046	3.2139291	20	—	—
28836	Ashmore	15.3	X	115.64896	104.94445	252.22786	2.72458	0.1577857	0.27646527	2.3336855	20	—	—
28837	Nibalachandar	14.9	X	126.12642	113.51770	249.74872	3.18808	0.1038730	0.23034492	2.6356250	20	1 8.9	18.5
28838	2000 JA_{41}	14.1	X	77.16867	254.28827	220.46542	14.38599	0.0708369	0.24090046	2.5580614	20	3 19.1	17.6
28839	2000 JG_{41}	14.2	X	322.46019	94.95729	74.15446	11.39206	0.1150195	0.18392971	3.0622088	20	—	—
28840	2000 JB_{44}	14.1	X	76.02693	81.17116	73.00197	4.74937	0.1041054	0.24611628	2.5217914	20	5 20.6	17.3
28841	Kelseybarter	14.8	X	13.98780	345.72508	77.20820	0.63044	0.1542606	0.22466540	2.6798588	20	—	—
28842	Bhowmik	14.7	X	243.05870	137.17355	234.33517	1.18573	0.0737078	0.19868333	2.9086743	20	5 27.9	18.9
28843	2000 JZ_{45}	13.9	X	18.62683	330.14409	83.07234	2.65775	0.1474425	0.17431804	3.1737630	20	—	—
28844	2000 JS_{47}	14.1	X	172.28534	111.45544	304.13830	7.82603	0.0824817	0.29516337	2.2340578	20	4 28.3	17.3
28845	2000 JP_{49}	15.0	X	347.54741	194.56148	231.50327	4.40851	0.2107558	0.27189977	2.3597364	20	—	—
28846	2000 JQ_{50}	14.2	X	195.56646	47.88832	260.10595	8.68326	0.1015504	0.23189109	2.6238964	20	1 14.4	18.2
28847	2000 JT_{50}	14.7	X	12.79031	192.43616	242.12914	11.56873	0.1552880	0.22674368	2.6634585	20	—	—
28848	Nicolemarie	14.2	X	183.40388	0.84586	49.95006	2.97731	0.0909522	0.19638714	2.9313028	20	5 10.8	18.8
28849	2000 JC_{54}	14.2	X	131.29708	314.30345	0.11417	12.55844	0.1625712	0.22610690	2.6684568	20	—	—
28850	2000 JS_{54}	13.5	X	49.36915	165.32905	209.08900	9.88041	0.0451345	0.17316850	3.1877930	20	—	—
28851	Londonbolsius	14.2	X	144.65829	304.57361	183.43270	5.30782	0.0427669	0.25148629	2.4857637	20	7 4.9	17.6
28852	Westonbraun	14.1	X	305.83617	343.22934	192.41574	3.84010	0.0912327	0.23155154	2.6264609	20	—	—
28853	Bukhamsin	14.4	X	312.01968	191.86036	114.29946	3.17769	0.0219321	0.19913305	2.9042934	20	6 8.9	18.4
28854	Budisteanu	14.6	X	6.73351	51.60787	101.75590	7.04181	0.1277778	0.28624664	2.2802149	20	1 11.9	16.8
28855	Burchell	14.4	X	25.76350	334.95781	133.06232	4.48149	0.0741943	0.28113110	2.3077927	20	—	—
28856	2000 JZ_{58}	13.6	X	113.97663	285.29670	116.85095	9.04548	0.2174928	0.23181116	2.6244995	20	3 1.5	17.4
28857	2000 JE_{59}	14.1	X	208.73278	2.41152	258.41498	11.29894	0.2178472	0.22953455	2.6418248	20	—	—
28858	2000 JK_{59}	14.1	X	59.59304	59.97043	253.93313	11.65898	0.1219610	0.26580953	2.3956444	20	12 8.7	17.2
28859	2000 JC_{60}	13.8	X	217.26451	346.30767	242.22409	10.95191	0.1359630	0.22655158	2.6649638	20	—	—
28860	Cappelletto	14.5	X	137.00423	337.10161	327.48882	1.98114	0.0463253	0.22442430	2.6817778	20	—	—
28861	2000 JF_{62}	12.1	X	160.68552	52.68808	253.36710	13.75518	0.0600261	0.17637356	3.1490561	20	—	—
28862	2000 JF_{65}	13.6	X	221.90447	188.73286	96.43575	16.17225	0.0113772	0.23276987	2.6172881	20	1 16.6	17.2
28863	2000 JW_{65}	13.2	X	87.55474	144.02914	187.72013	13.86342	0.1202033	0.17025760	3.2240248	20	—	—
28864	2000 JG_{70}	13.3	X	223.51061	308.72973	337.15307	14.18776	0.0960722	0.23660798	2.5889070	20	1 19.8	17.4
28865	2000 JX_{74}	14.6	X	251.92661	306.05916	185.58559	6.39330	0.0546359	0.26696482	2.3887280	20	11 29.6	17.5
28866	Chakraborty	14.7	X	290.22023	351.76177	122.86848	9.40562	0.1175625	0.27076238	2.3663401	20	12 31.2	16.9
28867	2000 JU_{76}	14.4	X	340.44497	147.04135	273.50035	3.13025	0.2166028	0.27046680	2.3680639	20	—	—
28868	Rianchandra	14.4	X	26.11302	151.29395	242.90477	4.02130	0.0908241	0.22058548	2.7128020	20	—	—
28869	Chaubal	14.7	X	3.61877	311.06328	158.12303	3.88433	0.0792505	0.23119030	2.6291961	20	—	—
28870	2000 JO_{85}	14.1	X	97.44655	73.40327	123.44189	18.03434	0.0825981	0.20914292	2.8108690	20	8 10.9	18.1
28871	2000 KA_6	13.9	X	251.51986	209.32632	148.68324	2.68332	0.0799866	0.19697988	2.9254194	20	5 20.7	18.2
28872	2000 KF_6	14.0	X	112.46086	244.80008	167.23989	4.30709	0.0797663	0.18623796	3.0368540	20	2 24.7	18.2
28873	2000 KM_7	13.2	X	285.44190	36.59228	90.67453	11.90536	0.0574085	0.17126856	3.2113252	20	12 14.0	17.6
28874	Michaelchen	15.0	X	245.70813	224.63418	223.79150	1.82910	0.1554188	0.26046049	2.4283325	20	9 2.9	18.2
28875	2000 KH_{18}	13.4	X	115.25619	272.39698	77.60243	6.22600	0.1548519	0.17618234	3.1513342	20	—	—
28876	2000 KL_{31}	13.2	X	75.35896	289.92711	70.84768	9.27200	0.0422899	0.17183514	3.2042623	20	—	—
28877	2000 KC_{41}	14.5	X	16.13682	155.29905	132.51406	13.85054	0.1148576	0.20604287	2.8389930	20	8 23.7	17.8
28878	Segner	14.7	X	187.35077	48.16449	319.52850	0.39336	0.1948883	0.23780158	2.5802368	20	3 21.6	19.1
28879	2000 KK_{42}	13.7	X	101.35798	240.97598	127.24321	20.16795	0.1116622	0.17640529	3.1486784	20	—	—
28880	2000 KN_{46}	13.6	X	291.34410	113.07261	133.53126	10.72461	0.0435817	0.18772029	3.0208459	20	2 25.7	17.8

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Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
	m		°	°	°	°		°				
28881 2000 KG_{48}	13.9	X	47.42505	226.89556	132.65395	8.13139	0.0430413	0.21738700	2.7393467	20	12 29.6	17.6
28882 2000 KO_{48}	13.5	X	100.76361	220.94934	113.82221	14.50830	0.1223838	0.17024923	3.2241305	20	—	—
28883 2000 KS_{52}	14.7	X	121.02153	208.91718	166.70642	5.23301	0.0563122	0.23307277	2.6150201	20	1 10.7	18.3
28884 2000 KA_{54}	13.5	X	150.44580	157.15309	163.59052	22.33551	0.0608380	0.18093205	3.0959389	20	—	—
28885 2000 KH_{56}	13.2	X	56.82306	100.09181	229.85854	8.14328	0.1610845	0.21322031	2.7749191	20	12 18.7	17.2
28886 2000 KX_{57}	14.6	X	72.44737	207.85140	201.61800	14.94272	0.1059847	0.23172735	2.6251323	20	—	—
28887 2000 KQ_{58}	13.8	X	335.87958	291.29930	100.42510	13.80118	0.2555682	0.26430312	2.4047385	20	12 9.6	15.5
28888 2000 KS_{60}	14.5	X	27.04161	325.68442	175.92263	5.97482	0.1268702	0.23944093	2.5684461	20	2 11.2	17.0
28889 2000 KQ_{63}	13.5	X	95.43942	313.14538	101.91995	10.38726	0.0854626	0.18622965	3.0369444	20	2 10.9	17.8
28890 2000 KY_{65}	14.8	X	120.43370	180.54844	164.63012	14.66144	0.0373834	0.22718122	2.6600376	20	—	—
28891 2000 KK_{75}	15.0	X	96.62993	289.68225	119.06925	6.78000	0.0884175	0.23333690	2.6130462	20	1 26.8	18.2
28892 2000 LZ_{2}	14.0	X	87.98068	65.22161	268.46163	21.43888	0.2243134	0.26187109	2.4196043	20	—	—
28893 2000 LL_{7}	14.8	X	282.49207	17.63558	116.94479	8.23728	0.0987567	0.27217952	2.3581192	20	—	—
28894 Ryanchung	14.3	X	282.87587	205.05235	181.06288	5.03240	0.1140905	0.25256828	2.4786593	20	8 4.7	17.3
28895 2000 LS_{9}	13.4	X	99.83913	123.23083	214.74330	0.99249	0.1305029	0.17043982	3.2217265	20	—	—
28896 2000 LN_{10}	14.2	X	226.12557	94.17895	190.24001	14.58304	0.1939602	0.22783457	2.6549497	20	1 13.6	18.9
28897 2000 LP_{10}	13.3	X	13.75344	352.48434	213.11826	13.80479	0.0962140	0.23767743	2.5811352	20	4 20.3	16.2
28898 2000 LX_{10}	13.8	X	136.25773	192.71031	193.75893	14.66585	0.0930631	0.23192406	2.6236477	20	2 14.1	17.7
28899 2000 LV_{11}	13.0	X	85.12951	220.00531	111.88224	24.11909	0.0540537	0.16894384	3.2407172	20	12 30.5	17.8
28900 2000 LH_{12}	13.6	X	166.05796	102.41539	250.83231	11.98642	0.2091699	0.22527258	2.6750414	20	2 12.3	18.3
28901 2000 LJ_{14}	13.3	X	28.73681	72.65990	235.94026	12.35068	0.2526075	0.20396960	2.8581987	20	10 28.7	16.8
28902 2000 LZ_{33}	14.6	X	199.03248	65.40261	244.64905	5.81995	0.1262631	0.27651546	2.3334031	20	1 15.4	18.1
28903 2000 LD_{35}	13.8	X	78.64444	265.43785	98.96267	12.43869	0.1907300	0.22348465	2.6892897	20	—	—
28904 2000 ML	12.9	X	77.54644	144.47200	210.89072	16.51620	0.1035658	0.17179438	3.2047692	20	—	—
28905 2000 MQ	13.9	X	339.05294	204.19741	185.67503	9.17769	0.1625483	0.21260934	2.7802327	20	11 13.7	16.8
28906 2000 MP_{2}	14.1	X	23.46409	203.68807	299.72776	8.90073	0.0206134	0.23037618	2.6353866	20	2 9.3	17.6
28907 2000 MH_{3}	14.9	X	139.61622	48.80550	220.74021	6.28621	0.0774677	0.26329561	2.4108692	20	—	—
28908 2000 NY_{6}	13.4	X	157.21002	64.02792	271.68481	8.13447	0.0701686	0.17471145	3.1689968	20	1 14.7	18.1
28909 2000 NC_{10}	13.6	X	319.90167	229.90998	305.16035	11.21865	0.0953440	0.22620121	2.6677150	20	—	—
28910 2000 NH_{11}	13.4	X	300.18985	203.03755	286.99749	8.42645	0.0826160	0.21620295	2.7493391	20	—	—
28911 2000 NB_{16}	13.2	X	192.57238	264.55091	320.80272	8.37146	0.0840999	0.21386854	2.7693092	20	12 27.4	17.3
28912 2000 NL_{26}	13.2	X	301.59265	155.08034	243.61917	8.95186	0.0952362	0.15121108	3.4893697	20	9 5.8	18.0
28913 2000 OT	12.9	X	298.38973	190.46768	312.73960	13.41688	0.2946408	0.21824561	2.7321573	20	—	—
28914 2000 OC_{12}	13.7	X	146.83603	166.91330	294.68329	9.58346	0.0690878	0.19131197	2.9829178	20	6 2.9	18.2
28915 2000 OU_{13}	14.2	X	111.39088	341.71892	13.80572	0.77024	0.1770020	0.17059314	3.2197959	20	1 2.9	18.7
28916 Logancollins	15.4	X	309.02029	198.79664	125.66501	7.29025	0.1402193	0.29016660	2.2596323	20	6 16.6	17.6
28917 Zacollins	14.3	X	184.89442	268.00815	141.84152	2.69890	0.1615033	0.18356655	3.0662462	20	5 12.2	19.3
28918 2000 QF_{21}	12.4	X	42.88432	329.49241	168.43767	6.82461	0.1340033	0.12476209	3.9665624	20	3 23.3	17.3
28919 2000 QP_{27}	14.5	X	218.62054	159.34639	157.65518	2.53605	0.2145092	0.27745500	2.3281324	20	2 11.9	18.2
28920 2000 QC_{91}	14.1	X	293.81503	150.27598	191.42513	11.30873	0.1368663	0.18983740	2.9983445	20	6 14.3	18.2
28921 2000 QZ_{122}	13.6	X	333.30545	352.94333	311.47518	8.11946	0.1057540	0.18896640	3.0075509	20	6 30.8	17.2
28922 2000 QK_{132}	12.6	X	53.85187	158.45698	327.10235	19.43147	0.1737772	0.17970057	3.1100671	20	3 14.9	16.6
28923 2000 QJ_{161}	13.6	X	153.57332	173.12781	236.14260	9.01858	0.0890250	0.18137258	3.0909238	20	4 6.1	18.4
28924 Jennanncsele	14.8	X	263.71771	102.55779	328.06119	1.11441	0.1291113	0.24537514	2.5268668	20	9 6.0	18.0
28925 2000 QY_{205}	13.7	X	236.41666	198.86175	176.45221	8.50439	0.0917365	0.18497090	3.0507066	20	5 24.8	18.3
28926 2000 QE_{231}	13.3	X	278.76312	320.28002	358.74099	10.70083	0.1134985	0.18835218	3.0140858	20	4 25.2	17.7
28927 2000 RA_{6}	14.5	X	347.62277	45.38260	24.06123	7.18822	0.0537385	0.30485622	2.1864490	20	—	—
28928 2000 RY_{12}	13.5	X	74.57713	227.71663	220.91776	14.56692	0.0587553	0.17556268	3.1587452	20	2 15.6	18.1
28929 2000 RU_{13}	13.5	X	275.52267	21.49949	204.79626	12.67546	0.0832844	0.17311211	3.1884853	20	1 7.6	18.4
28930 2000 RA_{31}	13.5	X	76.27857	11.55559	257.08619	8.13387	0.0717252	0.19868354	2.9086723	20	10 9.4	17.7
28931 2000 RU_{54}	13.2	X	323.20594	74.16711	291.99030	8.59483	0.1107914	0.19178355	2.9780259	20	9 1.9	16.9
28932 2000 RY_{102}	13.1	X	83.35797	220.36540	274.38143	10.94644	0.1047224	0.17767394	3.1336722	20	5 3.3	17.6
28933 2000 SZ_{22}	13.6	X	218.77912	88.12029	213.95049	4.74075	0.1079186	0.17162203	3.2069144	20	2 5.7	18.7
28934 Meagancurrie	14.4	X	346.26254	225.59963	178.29791	2.41510	0.0836568	0.20156870	2.8808500	20	12 4.6	18.0
28935 Kevincyr	15.1	X	226.19618	241.20995	115.53754	4.52053	0.1123490	0.27908310	2.3190691	20	4 15.4	18.4
28936 Dalapati	14.4	X	150.40244	165.62922	240.71664	4.99638	0.1015195	0.22522339	2.6754308	20	3 28.8	18.5
28937 2000 SM_{162}	14.1	X	324.03970	237.56771	67.29579	10.61592	0.0755899	0.18590432	3.0404864	20	6 17.8	18.1
28938 2000 SR_{311}	12.2	X	176.85962	84.49116	269.64003	20.33175	0.1145409	0.17394253	3.1783291	20	2 18.2	17.6
28939 2000 TO_{33}	13.9	X	123.15434	146.57417	291.19624	20.85386	0.0181586	0.22294337	2.6936407	20	3 16.3	18.1
28940 2000 UD_{1}	14.3	X	353.72249	210.83057	90.80853	2.42939	0.2444295	0.19050040	2.9913837	20	8 4.9	16.9
28941 2000 UH_{8}	14.4	X	189.07750	128.99361	227.51033	13.59604	0.1281570	0.22228807	2.6989320	20	3 4.6	18.9
28942 Yennydieguez	14.4	X	169.54899	179.59107	295.58363	1.42782	0.1256119	0.18103920	3.0947172	20	7 15.8	19.3
28943 2000 UF_{51}	14.4	X	50.65842	244.57031	185.10943	3.72923	0.0835783	0.21125294	2.7921208	20	—	—
28944 2000 UA_{70}	14.4	X	27.01592	116.03396	25.71582	12.31826	0.0772489	0.21783164	2.7356177	20	2 22.3	17.9
28945 Taideding	15.3	X	67.72937	351.85980	340.97240	1.63370	0.1900362	0.25280735	2.4770965	20	—	—
28946 2000 VW_{56}	15.2	X	22.14946	343.71705	314.63881	3.45921	0.2446167	0.29200899	2.2501177	20	10 22.6	17.5
28947 2000 WH_{12}	13.7	X	155.51522	351.85592	139.95560	15.37087	0.0427016	0.23463215	2.6034208	20	7 22.9	17.4
28948 Disalvo	14.8	X	36.88346	153.70275	163.30078	6.89720	0.0788857	0.24287229	2.5441970	20	11 5.2	18.1
28949 2000 WV_{100}	12.9	X	166.30617	353.83917	89.32156	17.14673	0.0726712	0.17349060	3.1838462	20	6 3.6	17.7
28950 Ailisdooner	14.4	X	63.89735	276.98706	326.60681	8.88837	0.0575303	0.18844742	3.0130702	20	8 22.5	18.5
28951 2000 WA_{149}	13.2	X	28.12023	262.09329	142.85244	15.46842	0.1528378	0.20451420	2.8531224	20	—	—
28952 Ericepstein	14.9	X	94.79553	219.26233	245.81265	1.44788	0.1715526	0.26859624	2.3790456	20	4 17.3	17.8
28953 Hollyerickson	15.2	X	279.56598	123.87298	243.01863	2.41051	0.1325011	0.23118154	2.6292625	20	6 29.7	18.7
28954 Feiyiou	14.5	X	252.81275	299.42895	115.27697	2.22926	0.1458822	0.23368636	2.6104406	20	7 27.7	18.1
28955 Kaliadeborah	16.0	X	49.72504	316.39509	267.82964	1.60484	0.1265682	0.27549413	2.3391666	20	7 25.9	18.5
28956 2001 AA_{45}	13.1	X	91.24153	158.95855	126.68577	14.91094	0.1602292	0.18461777	3.0545956	20	11 29.0	18.1
28957 Danielfulop	15.4	X	91.09775	102.50547	115.61336	3.28554	0.1951210	0.27364777	2.3496767	20	9 20.6	18.8
28958 2001 CQ_{42}	12.2	X	284.85634	286.19142	147.80109	8.22995	0.0833147	0.08089059	5.2950581	20	9 23.6	19.0
28959 2001 DL_{74}	12.6	X	124.94229	52.60834	214.83817	26.54435	0.1918438	0.17587743	3.1549754	20	12 3.2	18.1
28960 2001 DZ_{81}	12.7	X	340.04504	31.38391	339.63270	2.78822	0.0359273	0.08039882	5.3166278	20	9 21.8	19.5

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	Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
		m		°	°	°	°		°				
28961	2001 FO_{64}	15.0	*X*	92.87273	169.79878	156.10816	5.43828	0.2246544	0.28792951	2.2713214	20	—	—
28962	2001 FL_{117}	12.9	*X*	37.22922	166.67733	184.72612	24.22939	0.1314056	0.17928627	3.1148564	20	12 10.7	17.6
28963	Tamyiu	15.4	*X*	51.33562	47.55877	190.65256	2.30256	0.1652295	0.26765591	2.3846144	20	8 23.6	18.2
28964	2001 FG_{122}	13.8	*X*	66.36013	171.63747	168.98912	3.64713	0.2364507	0.18379635	3.0636898	20	—	—
28965	2001 FF_{162}	14.6	*X*	258.79040	217.43317	49.61477	2.60258	0.0155717	0.20136118	2.8828290	20	2 13.1	18.5
28966	2001 HS_{24}	13.1	*X*	188.50437	71.05324	86.24919	22.61409	0.0356413	0.17113266	3.2130251	20	10 10.1	18.3
28967	Gerhardter	15.1	*X*	218.96516	266.52863	67.17439	6.77992	0.1743468	0.30016135	2.2091890	20	3 6.5	18.6
28968	Gongmiaoxin	15.0	*X*	65.67619	247.72100	357.62608	2.24293	0.1287635	0.21729268	2.7401393	20	9 10.7	18.6
28969	2001 HM_{57}	14.4	*X*	185.13976	190.05402	106.59815	13.86542	0.2405284	0.24116835	2.5561667	20	—	—
28970	2001 JJ_4	13.8	*X*	287.60145	341.22407	212.87245	8.88039	0.0232609	0.19064977	2.9898210	20	—	—
28971	2001 KM_{28}	14.6	*X*	278.52465	302.86585	77.89370	8.01772	0.2495986	0.26375588	2.4080636	20	6 29.9	17.7
28972	2001 KV_{38}	14.5	*X*	85.33139	246.40499	89.68713	14.04095	0.1991422	0.22903184	2.6456891	20	—	—
28973	2001 KN_{42}	13.9	*X*	252.32071	279.11393	226.64752	11.85921	0.1463612	0.22944929	2.6424792	20	11 24.9	17.3
28974	2001 KW_{59}	15.3	*X*	195.54606	72.20778	194.07933	7.33175	0.2463584	0.23416714	2.6068662	20	—	—
28975	2001 KR_{69}	14.8	*X*	3.58330	177.19760	171.23810	14.09977	0.0067444	0.22471706	2.6794481	20	10 19.7	18.5
28976	2001 KN_{73}	14.0	*X*	140.99264	24.39551	258.06460	7.34834	0.1142937	0.22652799	2.6651488	20	—	—
28977	2001 KP_{73}	13.7	*X*	123.66704	340.82146	310.00308	11.27653	0.1784365	0.22548202	2.6733846	20	—	—
28978	Ixion	3.6	*X*	288.86150	298.17500	70.99936	19.58884	0.2450229	0.00392283	39.8171337	20	6 19.9	19.5
28979	2001 *LW*	13.5	*X*	218.34854	273.54574	242.43957	17.18227	0.0639300	0.17458769	3.1704942	20	10 24.9	18.3
28980	Chowyunfat	14.9	*X*	81.49278	290.70630	107.91688	6.39143	0.1924770	0.28507134	2.2864779	20	—	—
28981	2001 LY_3	14.3	*X*	142.08130	258.94180	91.44796	4.50251	0.3342732	0.23427814	2.6060428	20	2 3.9	18.7
28982	2001 LJ_{17}	15.3	*X*	47.49082	152.49226	186.93404	2.55282	0.2396374	0.27143112	2.3624518	20	—	—
28983	Omergranek	15.5	*X*	228.40250	78.69816	216.40190	6.54498	0.1438804	0.29246932	2.2477560	20	1 22.4	18.9
28984	2001 MS_2	13.9	*X*	153.36606	297.49946	100.17990	11.39512	0.1105022	0.19175902	2.9782799	20	3 31.9	18.7
28985	2001 MP_5	15.0	*X*	212.65834	22.82364	298.15606	4.15966	0.2255531	0.29233596	2.2484396	20	2 10.1	18.9
28986	2001 MG_{13}	15.0	*X*	137.87886	179.20905	134.91719	7.14766	0.1511932	0.28043448	2.3116129	20	—	—
28987	2001 MP_{14}	16.1	*X*	256.11223	40.75903	253.28643	2.45552	0.1188817	0.29619387	2.2288731	20	2 19.9	19.3
28988	2001 MS_{23}	16.3	*X*	319.05034	160.59563	114.56654	3.75040	0.2060501	0.30361595	2.1923993	20	4 6.2	18.3
28989	2001 MZ_{24}	14.8	*X*	265.77020	281.79922	81.43371	4.54554	0.2082422	0.25367721	2.4714305	20	5 26.7	18.2
28990	2001 ML_{27}	13.1	*X*	62.80611	258.66892	144.81261	16.92800	0.1035407	0.17579264	3.1559897	20	—	—
28991	2001 MU_{27}	12.8	*X*	124.43960	138.35295	277.33164	9.31230	0.1025576	0.18908364	3.0063076	20	3 11.9	17.5
28992	2001 MW_{28}	16.0	*X*	27.70257	98.91300	205.09510	0.39591	0.1794897	0.26568967	2.3963648	20	10 24.0	18.7
28993	2001 NA_6	15.9	*X*	111.11238	46.98352	173.52424	2.37158	0.1621724	0.26852267	2.3794801	20	10 9.1	19.4
28994	2001 OO_8	15.1	*X*	72.74889	198.29778	142.00007	5.11372	0.2349694	0.22203789	2.7009590	20	—	—
28995	2001 OF_{46}	15.0	*X*	146.28847	123.27328	244.75319	2.29765	0.2068739	0.23597574	2.5935292	20	2 15.7	19.1
28996	2001 OL_{51}	14.8	*X*	41.95312	80.25876	346.83084	3.78510	0.1125376	0.23133335	2.6281121	20	—	—
28997	2020 *P–L*	14.7	*X*	176.21256	60.80651	342.60085	5.12312	0.2395022	0.24031208	2.5622351	20	4 23.7	19.2
28998	2184 *P–L*	14.5	*X*	322.51467	350.96342	205.93231	11.88683	0.1725957	0.23854116	2.5749008	20	1 4.2	18.0
28999	2505 *P–L*	14.8	*X*	297.16626	47.02899	4.50781	6.57641	0.1616443	0.26277475	2.4140539	20	10 3.2	17.0
29000	2607 *P–L*	14.3	*X*	41.37069	219.18468	192.09774	6.20759	0.2034058	0.21800691	2.7341513	20	—	—
29001	2615 *P–L*	14.9	*X*	55.28523	274.48802	35.39943	5.27916	0.1584724	0.21543516	2.7558674	20	11 22.1	18.8
29002	2708 *P–L*	15.5	*X*	122.44855	182.24659	12.02877	4.28192	0.0704026	0.26196665	2.4190158	20	9 10.9	18.7
29003	2760 *P–L*	14.1	*X*	213.81184	306.96711	110.11209	0.93340	0.0356237	0.19318877	2.9635673	20	6 24.5	18.3
29004	2767 *P–L*	13.7	*X*	109.03084	236.92051	87.18595	2.42059	0.1254016	0.16769393	3.2568004	20	—	—
29005	2784 *P–L*	14.4	*X*	72.49470	104.77251	121.37462	2.78240	0.0585467	0.17845685	3.1245003	20	8 10.9	18.6
29006	3091 *P–L*	13.6	*X*	210.96916	176.88079	286.98342	9.73656	0.0979211	0.19485918	2.9466065	20	8 12.1	18.1
29007	4022 *P–L*	15.1	*X*	291.41895	23.78359	343.65777	4.49268	0.1827744	0.29407805	2.2395511	20	7 16.1	17.2
29008	4044 *P–L*	13.7	*X*	211.81457	35.93012	359.13066	9.29766	0.0799823	0.19261264	2.9694740	20	5 19.0	18.4
29009	4074 *P–L*	14.9	*X*	88.77177	17.59354	238.06215	0.61233	0.1507100	0.26409562	2.4059979	20	10 29.6	18.3
29010	4100 *P–L*	14.6	*X*	293.01708	225.94472	352.34616	12.93318	0.1286097	0.23843670	2.5756528	20	1 5.5	18.5
29011	4184 *P–L*	14.7	*X*	168.51550	43.36652	325.70943	5.66110	0.0935511	0.27220484	2.3579729	20	2 26.7	18.0
29012	4285 *P–L*	14.6	*X*	173.07674	52.59368	348.87083	8.95718	0.0856695	0.19118428	2.9842458	20	4 15.5	19.2
29013	4291 *P–L*	15.5	*X*	187.59941	129.48785	201.01135	8.89269	0.1223024	0.23845941	2.5754892	20	2 1.5	19.6
29014	4536 *P–L*	14.1	*X*	110.01098	140.22634	184.33761	2.39840	0.0781095	0.18497346	3.0506784	20	—	—
29015	4544 *P–L*	15.5	*X*	52.44859	318.50268	8.70537	4.14804	0.0691307	0.23217210	2.6217787	20	12 1.8	19.1
29016	4591 *P–L*	14.0	*X*	192.85001	61.41018	14.69445	7.57388	0.2003267	0.24226682	2.5484342	20	6 18.8	18.4
29017	4601 *P–L*	13.9	*X*	128.95106	10.74224	73.80943	2.96545	0.2309195	0.19042760	2.9921460	20	5 8.4	18.8
29018	6062 *P–L*	15.0	*X*	301.37195	106.67506	328.31733	2.06603	0.1451336	0.26427405	2.4049149	20	11 18.9	17.0
29019	6095 *P–L*	14.0	*X*	182.79877	107.43393	204.76277	4.61500	0.1323897	0.17145120	3.2090442	20	1 16.4	19.2
29020	6274 *P–L*	14.6	*X*	288.95636	33.17739	204.86307	4.19733	0.1834690	0.23963584	2.5670532	20	1 15.5	18.4
29021	6613 *P–L*	16.1	*X*	346.82357	296.82221	49.70906	1.91879	0.2205064	0.26329535	2.4108707	20	10 16.6	17.8
29022	6630 *P–L*	15.1	*X*	276.11048	211.13496	15.18715	6.14215	0.0659253	0.28745710	2.2738092	20	—	—
29023	6667 *P–L*	14.3	*X*	248.72717	345.78788	3.03077	9.73556	0.1024527	0.19302492	2.9652442	20	4 29.3	18.9
29024	6685 *P–L*	14.8	*X*	51.47918	158.90554	160.38788	2.46040	0.0397174	0.19900448	2.9055442	20	11 10.8	18.7
29025	6710 *P–L*	14.6	*X*	57.65542	117.05984	168.57476	4.61971	0.0673691	0.21445056	2.7642963	20	10 14.3	18.3
29026	6774 *P–L*	15.2	*X*	248.07121	282.49842	12.96575	13.52948	0.1536608	0.24022308	2.5628679	20	2 23.1	19.3
29027	7587 *P–L*	15.1	*X*	89.55782	13.02622	50.34648	3.67648	0.1194574	0.23757494	2.5818775	20	2 10.5	18.3
29028	9097 *P–L*	14.2	*X*	310.76918	185.06155	359.27220	7.11931	0.1360446	0.23766801	2.5812034	20	—	—
29029	9549 *P–L*	13.8	*X*	167.92350	70.30986	15.63188	16.96842	0.1509684	0.24218437	2.5490126	20	6 5.7	18.2
29030	1034 *T–1*	15.0	*X*	161.28234	261.16769	200.12435	4.20517	0.0605378	0.30535699	2.1840578	20	6 21.7	17.7
29031	1132 *T–1*	15.3	*X*	213.04580	299.02135	234.39471	1.31134	0.1450431	0.27215610	2.3582545	20	11 20.1	18.3
29032	2059 *T–1*	13.7	*X*	73.11867	352.78411	2.18589	24.34852	0.2056310	0.27403323	2.3474727	20	—	—
29033	2085 *T–1*	14.0	*X*	80.74919	321.82391	125.67366	1.92316	0.1720523	0.18139416	3.0906787	20	3 14.6	18.0
29034	2149 *T–1*	13.2	*X*	61.12924	95.85569	3.90393	7.30835	0.1040227	0.18011649	3.1052774	20	2 23.5	17.1
29035	2214 *T–1*	14.8	*X*	0.90933	150.76176	178.42485	4.14251	0.0935406	0.26830552	2.3807638	20	10 4.1	17.2
29036	3075 *T–1*	13.4	*X*	39.57059	96.03249	344.88030	0.89620	0.1641123	0.17846117	3.1244499	20	—	—
29037	3165 *T–1*	15.6	*X*	282.71784	41.29135	349.84017	2.45442	0.1895769	0.30806522	2.1712388	20	8 7.4	17.6
29038	4030 *T–1*	13.6	*X*	278.10910	50.74143	17.04241	9.01209	0.1490041	0.21031631	2.8004043	20	9 17.6	17.2
29039	4514 *T–1*	14.2	*X*	321.43344	11.12368	206.68037	12.30117	0.0818612	0.23986850	2.5653930	20	2 10.2	17.8
29040	1002 *T–2*	15.8	*X*	48.99233	19.96993	7.45544	1.56002	0.1102682	0.27860947	2.3216966	20	—	—

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
	m		°	°	°	°		°				
29041 1050 *T–2*	13.7	*X*	99.30133	270.84456	178.96685	10.99730	0.2386714	0.17887371	3.1196440	20	4 19.2	18.4
29042 1426 *T–2*	14.2	*X*	186.96254	218.20134	351.58971	10.83319	0.1272373	0.17130141	3.2109147	20	11 17.7	19.4
29043 2024 *T–2*	13.6	*X*	3.71508	77.58234	353.46559	8.60534	0.1464441	0.21435873	2.7650857	20	—	—
29044 2154 *T–2*	15.1	*X*	75.45817	127.38689	352.12063	2.37295	0.0347301	0.24319431	2.5419506	20	3 21.6	18.4
29045 2255 *T–2*	15.1	*X*	83.18850	7.40617	10.62179	5.39085	0.1508691	0.27983475	2.3149145	20	—	—
29046 2268 *T–2*	14.6	*X*	75.57441	145.44339	191.21809	4.98282	0.1381640	0.17124390	3.2116334	20	—	—
29047 2278 *T–2*	14.7	*X*	103.19249	228.36813	71.52201	2.33858	0.0950961	0.17111789	3.2132099	20	12 15.6	19.7
29048 3069 *T–2*	14.8	*X*	348.74762	90.75192	161.14624	8.48375	0.0418059	0.24665304	2.5181314	20	5 18.9	18.0
29049 3083 *T–2*	16.5	*X*	28.22040	41.90544	8.07436	6.28684	0.0736905	0.27862609	2.3216043	20	—	—
29050 3333 *T–2*	15.1	*X*	250.94228	196.36199	136.38362	2.90741	0.0753560	0.20360994	2.8615635	20	4 18.7	19.3
29051 4212 *T–2*	14.9	*X*	38.29359	44.55641	49.92260	5.31819	0.1269821	0.28118340	2.3075065	20	—	—
29052 4258 *T–2*	15.1	*X*	287.23293	142.59018	122.19025	2.85966	0.0711975	0.24367688	2.5385935	20	3 3.5	18.3
29053 Muskau	13.7	*X*	238.67373	56.51415	72.24005	2.30545	0.0725795	0.12694779	3.9209016	20	10 10.3	19.2
29054 5097 *T–2*	14.0	*X*	307.23611	248.63586	227.32676	12.14261	0.1679577	0.21338539	2.7734879	20	—	—
29055 5118 *T–2*	13.3	*X*	127.16088	126.78405	208.25782	14.98665	0.0803540	0.17481474	3.1677484	20	—	—
29056 1055 *T–3*	15.1	*X*	305.22886	259.53064	319.17375	10.51468	0.1660122	0.24106565	2.5568927	20	1 14.1	18.6
29057 1083 *T–3*	15.7	*X*	156.32472	86.32021	319.15198	5.08986	0.1751399	0.24251182	2.5467175	20	4 6.5	19.8
29058 2077 *T–3*	15.7	*X*	191.32875	209.96307	3.22930	9.05748	0.2029785	0.27940000	2.3173152	20	12 10.9	19.3
29059 2151 *T–3*	15.3	*X*	280.97432	229.61297	357.63554	9.36278	0.0348209	0.28581120	2.2825303	20	1 5.3	18.3
29060 2157 *T–3*	14.4	*X*	106.60038	181.76277	240.35597	4.08122	0.1095843	0.28663045	2.2781789	20	2 20.3	17.2
29061 2193 *T–3*	15.1	*X*	110.48371	90.79392	359.37691	3.79003	0.1991890	0.24152987	2.5536154	20	4 21.1	18.7
29062 2324 *T–3*	15.1	*X*	228.04811	285.19273	341.45193	4.54301	0.1620653	0.28581753	2.2824966	20	—	—
29063 2369 *T–3*	15.5	*X*	348.00159	220.98896	275.87199	3.02869	0.0923305	0.28344780	2.2952006	20	—	—
29064 3129 *T–3*	14.7	*X*	190.61269	312.60377	87.37329	2.03400	0.1535127	0.24441247	2.5334975	20	5 3.6	18.6
29065 3447 *T–3*	15.0	*X*	156.46774	140.78426	173.56327	3.73744	0.0642888	0.23749046	2.5824897	20	—	—
29066 3527 *T–3*	15.6	*X*	294.94390	313.03680	205.00009	6.15277	0.0447889	0.28195950	2.3032702	20	—	—
29067 3856 *T–3*	14.3	*X*	170.81875	43.91770	188.20995	9.94426	0.0957937	0.18700426	3.0285521	20	12 6.7	19.1
29068 4234 *T–3*	14.7	*X*	12.17476	281.02227	193.24181	22.42338	0.2640495	0.28231251	2.3013498	20	—	—
29069 4310 *T–3*	14.4	*X*	262.62121	167.43722	65.60930	5.66969	0.0942093	0.28510488	2.2862986	20	—	—
29070 4316 *T–3*	15.2	*X*	209.56170	260.75784	56.84495	5.82837	0.0446966	0.24086855	2.5582873	20	2 12.2	18.8
29071 5048 *T–3*	13.1	*X*	209.39091	74.19558	54.77161	15.00904	0.1416068	0.15934930	3.3695296	20	9 14.4	18.6
29072 5089 *T–3*	15.8	*X*	153.76016	192.87757	120.10183	7.38862	0.1357622	0.28385610	2.2929992	20	—	—
29073 5130 *T–3*	15.3	*X*	40.08899	356.82061	92.60892	8.32171	0.1242839	0.28366823	2.2940114	20	—	—
29074 5160 *T–3*	14.2	*X*	349.95140	133.82748	156.41317	13.97220	0.2325393	0.20355541	2.8620746	20	7 7.9	17.0
29075 1950 *DA*	17.1	*X*	230.88291	224.68336	356.66216	12.16753	0.5078266	0.44522474	1.6985690	20	—	—
29076 1972 TR_8	13.7	*X*	242.56857	8.64561	318.18819	12.56553	0.1711273	0.23993580	2.5649133	20	3 15.4	17.9
29077 1975 *SR*	15.1	*X*	30.32618	165.09388	189.97518	2.41741	0.2498549	0.26610237	2.3938865	20	—	—
29078 1975 SX_1	13.6	*X*	142.10443	251.70229	199.59224	8.99883	0.0195483	0.18965972	3.0002168	20	5 12.9	17.8
29079 1975 *XD*	14.8	*X*	22.58758	267.59864	119.45300	7.36390	0.1161305	0.26574023	2.3960609	20	—	—
29080 Astrocourier	12.5	*X*	126.55099	23.82504	1.38986	18.15639	0.1858804	0.17610216	3.1522907	20	2 27.5	17.5
29081 Krymradio	14.9	*X*	355.80394	308.35990	63.30930	2.21820	0.1978635	0.25978272	2.4325543	20	12 8.2	17.0
29082 1978 VG_9	15.2	*X*	260.24795	307.31895	50.26035	7.03224	0.1980900	0.29880729	2.2158580	20	5 12.7	18.0
29083 1979 MG_3	13.5	*X*	209.85465	52.76890	270.56737	8.45739	0.0863577	0.18438702	3.0571434	20	2 19.1	18.4
29084 1979 MD_7	15.0	*X*	260.84855	73.46133	130.41107	5.77379	0.1750093	0.27785630	2.3258902	20	—	—
29085 Sethanne	14.6	*X*	81.03620	286.73862	47.59565	3.89007	0.0692030	0.22199618	2.7012973	20	—	—
29086 1980 PY_2	13.9	*X*	237.43115	340.71726	37.43069	15.67692	0.1324101	0.24276355	2.5449567	20	5 20.4	17.8
29087 1980 VW_2	15.2	*X*	79.81533	26.37063	13.12777	6.12895	0.1164688	0.27957421	2.3163525	20	—	—
29088 1981 DR_2	14.3	*X*	32.59017	138.62143	314.87296	10.94580	0.1552501	0.22358830	2.6884585	20	—	—
29089 1981 DD_3	14.9	*X*	332.77538	122.72511	295.91303	6.73875	0.0845919	0.21633354	2.7482326	20	12 6.7	18.3
29090 1981 EY_3	13.8	*X*	65.73640	224.41129	235.48965	8.17944	0.2331199	0.17698472	3.1418023	20	3 14.3	17.8
29091 1981 EF_8	13.5	*X*	75.61448	210.16802	214.01344	7.46091	0.1680824	0.17516174	3.1635635	20	2 4.6	17.7
29092 1981 EL_{10}	14.5	*X*	118.00725	0.50006	301.31106	4.80247	0.1035900	0.21721362	2.7408042	20	—	—
29093 1981 EQ_{10}	15.5	*X*	268.73090	141.52376	305.94228	3.08594	0.1971692	0.26550209	2.3974934	20	9 28.2	18.0
29094 1981 ED_{11}	15.1	*X*	31.11065	307.76700	323.71892	7.71186	0.1943060	0.25820590	2.4424477	20	9 11.3	17.7
29095 1981 EK_{11}	14.8	*X*	56.07957	187.21162	214.20172	9.41855	0.2167767	0.27240379	2.3568247	20	—	—
29096 1981 EW_{11}	16.1	*X*	159.92495	294.30490	252.78483	1.47907	0.1353236	0.26332788	2.4106722	20	10 11.3	19.7
29097 1981 EC_{12}	15.4	*X*	230.25364	247.13881	263.65488	5.24718	0.0789255	0.26590809	2.3950524	20	11 19.6	18.3
29098 1981 EN_{16}	15.8	*X*	137.68976	223.19746	325.32123	7.57196	0.1547565	0.26171611	2.4205594	20	9 19.5	19.6
29099 1981 EQ_{16}	13.9	*X*	47.68491	85.32809	339.84289	13.36002	0.1227793	0.17238231	3.1974782	20	—	—
29100 1981 EE_{18}	14.9	*X*	49.98698	103.85306	356.58435	4.78271	0.1753962	0.17575245	3.1564709	20	2 15.1	18.5
29101 1981 EZ_{20}	14.9	*X*	6.63272	204.86024	216.07312	1.16833	0.0606397	0.21909364	2.7251026	20	—	—
29102 1981 EA_{22}	14.5	*X*	120.21769	127.88802	170.31811	12.70849	0.0246525	0.21785214	2.7354461	20	—	—
29103 1981 EC_{22}	16.1	*X*	120.67550	352.32020	174.47582	1.63209	0.0301755	0.30932226	2.1653525	20	7 31.4	18.4
29104 1981 EO_{22}	16.3	*X*	123.20602	302.59328	278.34208	0.84366	0.1371811	0.26245045	2.4160421	20	10 18.5	19.8
29105 1981 EY_{22}	15.8	*X*	63.58831	91.69516	176.35518	3.29988	0.1372448	0.31141782	2.1556276	20	10 25.3	18.5
29106 1981 EL_{25}	15.4	*X*	304.14069	279.24680	188.16771	6.13261	0.0684602	0.26823525	2.3811796	20	—	—
29107 1981 EO_{25}	13.6	*X*	329.91714	280.27583	183.47345	21.46722	0.0778615	0.16930701	3.2360813	20	—	—
29108 1981 EG_{26}	14.6	*X*	232.65799	145.82077	354.11627	9.21362	0.1318226	0.21529890	2.7570301	20	10 19.3	18.5
29109 1981 EO_{28}	14.3	*X*	97.18056	9.65185	357.52627	5.86329	0.0471046	0.22084333	2.7106901	20	—	—
29110 1981 ET_{29}	14.2	*X*	343.46387	273.49354	225.96902	4.59025	0.1009350	0.17207249	3.2013150	20	—	—
29111 1981 EC_{33}	16.1	*X*	355.24019	152.23530	299.23457	4.71928	0.1720386	0.27173934	2.3606651	20	—	—
29112 1981 EZ_{33}	14.6	*X*	120.61113	153.58538	261.99570	4.02841	0.1408208	0.17718389	3.1394476	20	3 15.9	19.3
29113 1981 EA_{34}	15.0	*X*	337.99846	227.03905	209.96687	8.67609	0.1313223	0.21873058	2.7281173	20	—	—
29114 1981 EB_{34}	16.7	*X*	55.87823	50.00615	197.25877	4.12931	0.0310678	0.31016805	2.1614142	20	8 25.5	19.1
29115 1981 EW_{38}	14.6	*X*	175.70850	304.48492	281.21446	4.11277	0.0631840	0.21616646	2.7496485	20	12 10.9	18.5
29116 1981 ED_{40}	14.4	*X*	69.01140	278.62978	178.47670	11.06811	0.2646040	0.17741193	3.1367567	20	3 24.5	18.2
29117 1981 EK_{40}	14.2	*X*	45.71185	188.40844	187.19593	4.71911	0.1240798	0.21835364	2.7312561	20	—	—
29118 1981 EQ_{43}	16.4	*X*	100.55042	34.65957	189.37936	1.25459	0.1342418	0.26101747	2.4248767	20	9 29.4	19.7
29119 1981 EW_{45}	14.1	*X*	64.19034	177.63384	202.50859	4.77249	0.1225702	0.16964477	3.2317846	20	—	—
29120 1981 EY_{45}	14.0	*X*	131.30847	94.16271	316.88986	4.17918	0.1930629	0.17761831	3.1343264	20	3 26.7	19.0

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	Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
		m		°	°	°	°		°				
29121	1981 QP_2	15.4	X	247.68911	220.28238	142.79388	6.08855	0.1824046	0.29874678	2.2161572	20	5 10.4	18.7
29122	Vasadze	14.2	X	282.74310	47.76345	6.56575	5.92605	0.2148540	0.25558341	2.4591269	20	9 1.7	16.7
29123	1983 RA_4	14.2	X	71.37046	352.43334	355.17874	9.38968	0.2564096	0.21989666	2.7184643	20	—	—
29124	1984 SW_6	15.7	X	127.58627	302.78418	71.67752	5.49104	0.1886736	0.28638818	2.2794636	20	1 29.8	18.7
29125	Kyivphysfak	14.5	X	122.83001	41.67683	65.24276	6.22822	0.1368941	0.28907327	2.2653263	20	5 20.1	17.6
29126	1985 CU_1	14.1	X	8.71279	120.49259	323.91551	24.18511	0.2386205	0.27681759	2.3317049	20	—	—
29127	1985 FF_2	13.9	X	283.03872	187.62110	307.91048	6.73797	0.1450971	0.21625786	2.7488737	20	12 25.2	17.1
29128	1985 RA_1	14.5	X	227.26863	60.17286	283.33924	9.94145	0.1890894	0.24411454	2.5355584	20	3 20.4	18.9
29129	1985 RG_3	14.8	X	280.33022	281.74263	99.67267	5.22942	0.1765599	0.25106448	2.4885471	20	7 15.7	17.7
29130	1986 EA_5	14.6	X	280.32454	199.34637	358.00453	0.39497	0.1853824	0.22550798	2.6731794	20	—	—
29131	1986 QU_1	15.1	X	23.35614	249.10210	113.29993	2.31878	0.1971410	0.26636915	2.3922878	20	—	—
29132	Bradpitt	14.9	X	74.96577	344.06513	142.64776	5.46594	0.2514281	0.24299159	2.5433642	20	5 6.7	18.0
29133	Vargas	13.9	X	233.12839	125.21720	137.52557	14.01245	0.1701903	0.22989230	2.6390833	20	—	—
29134	1987 RW	14.6	X	166.39111	53.78470	340.44352	5.81412	0.1734417	0.28819255	2.2699392	20	3 30.7	18.2
29135	1987 SZ_2	14.7	X	198.28164	355.93644	26.52676	7.45115	0.1367283	0.28945442	2.2633372	20	4 16.4	18.0
29136	1987 SQ_4	14.4	X	30.46360	150.45117	195.99125	7.18017	0.2069922	0.21347768	2.7726884	20	12 14.9	18.2
29137	Alanboss	15.2	X	146.45288	169.08607	215.03269	24.95847	0.2201988	0.28393402	2.2925796	20	2 26.8	19.2
29138	1988 BE_4	13.7	X	110.69963	261.24274	152.44790	10.39991	0.1567277	0.18771383	3.0209152	20	3 6.9	18.0
29139	1988 CP	14.4	X	209.77290	177.87092	340.82578	12.52978	0.1983635	0.26317177	2.4116254	20	10 14.9	18.3
29140	1988 CG_4	15.0	X	22.78495	159.61816	240.15816	6.00655	0.1198221	0.26841422	2.3801210	20	—	—
29141	1988 CZ_4	15.2	X	237.42445	263.61654	208.43601	6.98121	0.0551037	0.26148867	2.4219628	20	10 10.5	18.1
29142	1988 CR_7	14.7	X	110.26643	132.46279	90.67684	2.61489	0.1451549	0.26032172	2.4291954	20	10 10.4	18.3
29143	1988 DK	13.9	X	6.05662	276.17865	217.92493	9.31610	0.1749326	0.18260508	3.0769999	20	1 4.3	17.5
29144	1988 FB	14.0	X	271.11836	89.78012	44.55108	2.60854	0.1546990	0.26518483	2.3994052	20	12 18.5	16.1
29145	1988 FE	14.3	X	203.85034	138.83220	47.52718	10.26901	0.1800884	0.26272772	2.4143420	20	11 19.5	17.7
29146	McHone	14.2	X	232.26672	203.76990	333.88046	23.62751	0.2430378	0.26518055	2.3994310	20	11 28.6	18.0
29147	1988 GG	13.9	X	260.99924	166.02462	26.51643	25.54655	0.2161221	0.26684067	2.3894688	20	—	—
29148	Palzer	13.4	X	127.72900	191.58219	118.91351	3.72516	0.1714467	0.16923945	3.2369424	20	—	—
29149	1988 RE_1	13.5	X	172.30593	212.05758	195.32285	14.63784	0.1054968	0.23645223	2.5900438	20	4 25.4	17.4
29150	1988 RM_5	13.6	X	131.73284	244.00924	159.74772	15.04296	0.1007243	0.23357175	2.6112944	20	3 6.6	17.2
29151	1988 RE_{11}	14.5	X	67.18267	335.59960	351.20406	7.25770	0.1587722	0.22224118	2.6993116	20	12 28.1	18.6
29152	1988 RA_{13}	15.0	X	31.41554	85.04016	194.49203	4.46252	0.1475175	0.30875139	2.1680207	20	9 26.9	17.2
29153	1988 SY_2	14.5	X	145.55769	185.04579	176.63986	12.84325	0.2774353	0.23052982	2.6342156	20	2 12.8	19.0
29154	1988 VC_1	14.3	X	107.47769	173.67365	267.59269	11.67245	0.1304721	0.23069368	2.6329681	20	3 23.2	18.2
29155	1988 XE	13.4	X	113.65146	169.50168	252.45290	12.72541	0.2939642	0.22849736	2.6498132	20	3 27.1	17.8
29156	1989 CH	13.2	X	172.41270	19.42622	136.40037	16.10859	0.2023326	0.20491432	2.8494071	20	9 9.6	18.1
29157	Higashinihon	14.4	X	31.56473	87.69034	36.95232	6.23183	0.1070477	0.28361123	2.2943188	20	1 19.1	16.6
29158	1989 EE_3	14.4	X	259.48952	328.09399	160.16075	16.60905	0.1368558	0.18039107	3.1021255	20	11 6.8	18.9
29159	1989 GB	13.9	X	142.21342	170.56092	40.65208	13.61762	0.0660952	0.26664539	2.3906353	20	10 27.1	17.3
29160	1989 SP_1	14.2	X	0.20463	54.82701	131.66562	5.04554	0.0870332	0.24030773	2.5622660	20	3 2.5	17.0
29161	1989 SF_2	14.2	X	319.36312	131.50586	45.88954	8.93182	0.1643911	0.23532223	2.5983286	20	—	—
29162	1989 SD_4	13.8	X	36.39786	95.91820	34.26201	15.16163	0.0446777	0.23799543	2.5788355	20	2 19.0	17.3
29163	1989 SF_{14}	14.7	X	206.96371	114.68650	252.90427	13.84442	0.1319927	0.24262417	2.5459313	20	4 3.1	18.9
29164	1989 UA	13.4	X	179.62496	7.40668	45.27677	10.76729	0.0986514	0.24267658	2.5455647	20	5 7.9	17.2
29165	1989 UK_1	14.4	X	146.61323	225.67460	217.33557	11.59340	0.2717646	0.24074150	2.5591873	20	5 23.1	18.8
29166	1989 VP_1	14.6	X	103.13999	280.75118	191.78754	13.35378	0.1269057	0.24000651	2.5644094	20	5 5.3	18.2
29167	1989 WC_2	13.5	X	155.49309	20.19214	64.64293	9.28898	0.1729389	0.24085118	2.5584103	20	5 27.6	17.6
29168	1990 KJ	13.5	X	175.66064	180.36057	93.64973	24.22521	0.1780310	0.28095135	2.3087769	20	—	—
29169	1990 OC_1	13.2	X	261.39152	45.85017	247.45547	10.87347	0.0867585	0.18688140	3.0298794	20	3 6.1	17.9
29170	1990 OA_3	13.2	X	302.32327	57.73940	243.96088	9.01617	0.0948610	0.19204482	2.9753244	20	5 9.9	17.2
29171	1990 QK_3	14.2	X	139.07729	240.18328	151.01332	6.25349	0.1247580	0.28130947	2.3068170	20	2 25.4	17.2
29172	1990 QL_4	12.9	X	345.84399	263.02124	350.00673	10.17191	0.0127700	0.18955622	3.0013089	20	5 12.7	17.2
29173	1990 QW_4	14.2	X	110.53567	306.97894	123.12806	8.67005	0.1519150	0.28185948	2.3038151	20	3 20.9	17.2
29174	1990 QJ_6	14.2	X	211.75242	249.67930	74.92064	0.57699	0.1978994	0.18463313	3.0544261	20	2 23.7	19.3
29175	1990 QP_6	14.7	X	327.53310	237.14850	351.16277	5.56631	0.1147597	0.28583627	2.2823969	20	2 26.9	17.1
29176	1990 QJ_{10}	14.1	X	173.00606	0.43064	10.13480	1.98452	0.1080303	0.18453858	3.0554694	20	3 13.8	18.7
29177	1990 RF_7	14.1	X	82.19651	284.34139	109.94725	2.37986	0.1697370	0.17748597	3.1358844	20	1 10.6	18.2
29178	1990 RW_8	15.2	X	175.97604	28.75837	283.62808	6.70351	0.1945777	0.27969702	2.3156743	20	1 1.1	18.8
29179	1990 RT_{13}	15.4	X	96.43826	250.51496	107.71912	2.33665	0.0727846	0.27433942	2.3457257	20	—	—
29180	1990 SW_1	14.3	X	62.61938	194.84753	194.16691	25.40741	0.2949573	0.27270370	2.3550964	20	—	—
29181	1990 SE_6	15.1	X	107.33841	220.95107	160.76601	7.22685	0.1151844	0.27683896	2.3315850	20	—	—
29182	1990 ST_6	13.8	X	175.56757	223.36831	104.57198	4.55255	0.1426921	0.17989678	3.1078051	20	1 28.8	18.8
29183	1990 SQ_7	15.4	X	350.62999	339.84669	77.64017	3.24112	0.2063445	0.26847499	2.3797618	20	—	—
29184	1990 SL_{10}	14.7	X	155.20031	318.42708	20.20272	14.01563	0.1047643	0.27867958	2.3213072	20	1 5.9	18.1
29185	Reich	13.1	X	118.21893	60.38925	38.39126	17.35951	0.2217173	0.18095448	3.0956830	20	5 12.5	18.0
29186	Lake Tekapo	14.3	X	219.48554	99.40492	52.29458	7.28796	0.0541032	0.26356704	2.4092137	20	11 10.6	17.3
29187	Lemonnier	13.5	X	110.77038	286.59085	89.42915	7.28337	0.1609826	0.17585880	3.1551982	20	1 24.1	18.0
29188	1990 UW_3	15.5	X	339.24067	302.33393	131.67075	3.21032	0.1487217	0.26699295	2.3885602	20	—	—
29189	Udinsk	12.9	X	154.44368	296.68168	67.01785	9.97901	0.2370238	0.17974035	3.1096082	20	3 1.0	18.3
29190	1990 UZ_4	13.4	X	37.14493	358.73293	86.07595	8.44281	0.1706167	0.17329531	3.1862377	20	1 1.9	17.0
29191	1990 UQ_5	15.5	X	185.66856	10.73791	74.07178	6.88177	0.1249858	0.28677289	2.2774245	20	6 26.7	18.8
29192	1990 VK_2	13.4	X	202.62606	277.73717	57.43469	8.10474	0.2893469	0.18327160	3.0695351	20	3 2.6	19.0
29193	Dolphyn	13.5	X	341.14372	102.70957	85.23239	14.44084	0.1593423	0.17552390	3.1592103	20	2 8.3	17.6
29194	1990 WJ_4	14.4	X	205.79882	65.94149	125.07041	6.57759	0.0574655	0.26404812	2.4062865	20	12 14.9	17.6
29195	1990 WF_5	15.2	X	156.93248	1.91211	109.48721	7.46949	0.1019841	0.25152119	2.4855337	20	6 30.3	18.7
29196	Dius	11.9	X	115.52608	39.48647	67.64033	3.85326	0.0516164	0.08179133	5.2561109	20	5 6.8	18.9
29197	Gleim	15.0	X	232.17859	183.62191	283.87847	0.06903	0.1773214	0.25574591	2.4580851	20	9 9.4	18.2
29198	Weathers	13.2	X	274.39951	161.40899	91.16107	16.57819	0.1010853	0.23519780	2.5992450	20	1 30.8	17.1
29199	Himeji	13.1	X	235.86443	348.53382	4.67314	13.66978	0.0518652	0.24221961	2.5487653	20	4 22.2	16.7
29200	1991 FX_2	13.0	X	172.70634	2.41360	17.99024	13.29126	0.1731371	0.23694658	2.5864401	20	3 26.1	17.1

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Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
	m		°	°	°	°		°				
29201 1991 GO_4	13.8	X	159.78636	295.29131	26.98636	11.38792	0.1895926	0.22732626	2.6589060	20	1 6.2	18.2
29202 1991 GH_8	14.2	X	148.31421	276.66636	17.09043	11.35253	0.1907684	0.22288109	2.6941425	20	—	—
29203 Schnitger	15.2	X	21.91476	71.01490	64.57118	4.46182	0.1433382	0.23438148	2.6052767	20	1 27.5	17.8
29204 Ladegast	14.6	X	63.76251	2.13870	184.32266	9.19465	0.0603405	0.24162290	2.5529599	20	6 10.5	17.9
29205 1991 NM_6	13.8	X	77.02641	210.04236	148.33816	5.79707	0.0669709	0.21731543	2.7399481	20	—	—
29206 1991 PX_{10}	15.2	X	265.68547	166.59564	184.94482	8.50344	0.2003241	0.29992840	2.2103327	20	5 12.3	18.1
29207 1991 RG_2	15.7	X	146.34083	63.65731	315.66801	5.46174	0.1911213	0.29024705	2.2592147	20	2 23.1	18.8
29208 Halorentz	15.8	X	240.06542	83.02620	229.20648	4.31088	0.1951158	0.29449781	2.2374225	20	2 21.5	19.3
29209 1991 RV_7	15.3	X	265.05446	207.81802	153.14728	6.25304	0.1784628	0.29987602	2.2105901	20	5 27.8	18.2
29210 Robertbrown	13.8	X	335.95245	83.99452	319.55986	12.74364	0.1699795	0.20938566	2.8086962	20	11 20.7	17.0
29211 1991 RY_{15}	13.3	X	328.95143	202.89935	129.91488	2.99160	0.0674714	0.20094654	2.8867933	20	8 4.6	16.9
29212 Zeeman	14.3	X	7.33806	268.89247	31.55961	2.30843	0.0487492	0.20125907	2.8838040	20	8 20.1	17.9
29213 1991 SJ	14.7	X	49.61979	83.78906	139.46871	5.20053	0.1165959	0.30267895	2.1969217	20	7 24.8	16.9
29214 Apitzsch	14.0	X	355.54177	33.49739	276.72664	2.98153	0.1458349	0.20189902	2.8777070	20	8 17.5	17.2
29215 1991 UE	15.3	X	62.04823	112.50422	342.12960	2.74548	0.1122932	0.28685601	2.2769845	20	1 29.3	17.4
29216 1991 VX_5	12.7	X	83.08405	82.63462	86.81411	10.86688	0.0420796	0.19087324	2.9874870	20	6 10.3	16.7
29217 1991 VV_{12}	14.0	X	240.29177	77.85827	264.45473	3.84882	0.1590809	0.19173780	2.9784997	20	4 8.5	18.8
29218 1992 AY	13.0	X	57.60649	15.43674	100.76547	15.37861	0.1512308	0.17832402	3.1260516	20	3 21.8	17.2
29219 1992 BJ	14.8	X	303.52523	334.45220	124.49719	2.91893	0.1353441	0.27120792	2.3637478	20	—	—
29220 Xavierbaptista	13.5	X	174.77675	188.86409	269.59359	8.55145	0.1199884	0.18844540	3.0130918	20	6 30.3	18.1
29221 1992 BW_3	15.3	X	159.05520	295.88280	53.34901	6.44557	0.1915187	0.28699194	2.2762655	20	1 31.9	18.8
29222 1992 BU_4	16.0	X	63.30656	213.27975	172.54524	6.41171	0.2562259	0.27765741	2.3270008	20	—	—
29223 1992 DW_2	15.2	X	62.35560	235.25751	129.35687	3.14822	0.2267594	0.27111651	2.3642791	20	—	—
29224 1992 DD_7	14.9	X	260.82331	314.84554	144.74634	7.58641	0.0385561	0.26384585	2.4075161	20	11 2.0	17.9
29225 1992 DW_7	15.3	X	193.49283	38.84636	71.75662	2.63551	0.1018414	0.25859830	2.4399763	20	8 10.1	18.7
29226 1992 DH_8	15.2	X	173.27569	353.14448	206.89071	3.23335	0.1272878	0.26427640	2.4049006	20	11 11.6	18.7
29227 Wegener	14.2	X	204.06004	215.31716	346.48231	2.46250	0.1884092	0.26760775	2.3849005	20	12 9.7	17.5
29228 1992 EC	14.4	X	221.82923	244.69856	349.36299	6.79472	0.0677733	0.27149116	2.3621035	20	—	—
29229 1992 EE_1	13.9	X	272.10652	160.06050	28.31575	26.75841	0.1823842	0.27126372	2.3634236	20	—	—
29230 1992 ED_4	13.5	X	14.65892	6.86842	113.93563	2.68853	0.1392995	0.17319370	3.1874839	20	1 8.2	17.2
29231 1992 EG_4	14.3	X	63.69937	29.02824	76.22252	3.06911	0.1305100	0.17678897	3.1441211	20	3 8.4	18.3
29232 1992 EH_4	15.3	X	309.63042	12.05150	120.86090	3.08622	0.1180477	0.27252568	2.3561220	20	—	—
29233 1992 EP_6	14.6	X	309.84446	63.42024	78.63504	5.72934	0.0394492	0.27256897	2.3558725	20	—	—
29234 1992 EC_7	15.1	X	12.39323	259.68865	99.65095	7.40653	0.1765597	0.26529067	2.3987670	20	12 16.5	17.9
29235 1992 EU_{13}	13.7	X	130.77523	76.71222	316.67838	6.10601	0.2617068	0.28200614	2.3030163	20	3 3.9	17.1
29236 1992 EB_{14}	15.5	X	218.78713	278.55151	235.05538	0.60955	0.1231191	0.26507560	2.4000643	20	11 2.4	18.7
29237 1992 EG_{14}	14.8	X	359.22042	144.56814	320.10692	3.89580	0.1045236	0.27443106	2.3452036	20	—	—
29238 1992 EE_{17}	15.0	X	129.27356	46.80424	147.12801	2.77336	0.1223727	0.25910630	2.4367861	20	9 20.1	18.5
29239 1992 EJ_{17}	15.4	X	225.86933	344.37491	133.88835	7.98975	0.0487842	0.26276183	2.4141330	20	10 8.8	18.6
29240 1992 GE_3	14.5	X	219.60744	74.47284	210.96647	10.86819	0.1669972	0.23699944	2.5860555	20	1 9.1	19.0
29241 1992 GA_5	14.7	X	175.37657	236.49130	49.62612	3.92885	0.2968059	0.23126570	2.6286246	20	—	—
29242 1992 HB_4	14.5	X	337.39868	170.06828	211.07920	21.09456	0.0743993	0.36513688	1.9386478	20	12 5.8	16.4
29243 1992 JC_1	14.7	X	244.89064	352.31157	61.49907	8.20044	0.1336205	0.25360648	2.4718901	20	7 21.1	18.1
29244 Van Damme	13.1	X	220.98196	8.03709	310.05137	13.14252	0.1580841	0.23453740	2.6041219	20	2 17.8	17.4
29245 1992 PZ	14.9	X	164.32100	103.16244	251.95500	1.72568	0.1191451	0.23172295	2.6251655	20	2 11.0	18.7
29246 Clausius	13.5	X	23.33416	2.22075	15.85912	8.65366	0.1664617	0.21706744	2.7420345	20	—	—
29247 1992 RC_4	14.5	X	90.05303	138.69858	230.42056	1.65215	0.0848522	0.22416316	2.6838602	20	—	—
29248 1992 SB_{10}	15.3	X	358.47689	233.18998	180.17202	5.60856	0.0549982	0.21795432	2.7345911	20	—	—
29249 Hiraizumi	14.3	X	327.62469	267.82094	130.75199	0.69047	0.0740223	0.21266180	2.7797755	20	11 1.7	17.6
29250 Helmutmoritz	14.2	X	251.07800	301.81168	183.56320	7.58469	0.1733693	0.21338271	2.7735110	20	10 21.3	17.9
29251 1992 UH_4	13.0	X	147.45369	271.39948	73.42084	13.67220	0.1912872	0.22537850	2.6742031	20	1 22.5	17.3
29252 Konjikido	13.8	X	54.46817	202.09798	306.03920	5.47934	0.1211571	0.18699788	3.0286210	20	4 11.9	17.6
29253 1993 DN	14.8	X	111.72995	213.56343	293.05475	4.81515	0.0777292	0.29953345	2.2122753	20	6 24.6	17.5
29254 1993 FR_1	12.6	X	175.14975	221.69633	74.67885	5.90683	0.0935871	0.17262748	3.1944500	20	—	—
29255 1993 FF_4	14.2	X	100.01879	55.97804	41.67956	2.34549	0.1431941	0.18447811	3.0561371	20	4 15.4	18.5
29256 1993 FC_7	15.3	X	140.15280	322.49051	34.23109	6.47945	0.1945482	0.28522517	2.2856557	20	1 22.3	18.5
29257 1993 FK_{10}	15.5	X	240.05257	252.42417	21.13337	7.34268	0.0846064	0.28584194	2.2823667	20	1 13.1	18.7
29258 1993 FX_{11}	15.9	X	192.63098	200.63043	38.32111	5.61331	0.1115242	0.27749261	2.3279221	20	—	—
29259 1993 FZ_{11}	15.2	X	152.32867	288.78404	59.50253	5.18029	0.1941828	0.28465696	2.2886964	20	1 23.8	18.5
29260 1993 FG_{12}	13.5	X	20.31557	293.81103	174.29301	14.55784	0.1535504	0.17699161	3.1417209	20	—	—
29261 1993 FS_{13}	14.5	X	175.50580	257.48342	52.75535	6.00448	0.1581107	0.28244101	2.3006517	20	—	—
29262 1993 FP_{14}	14.7	X	269.55540	250.11456	38.08540	7.34936	0.1698133	0.28936211	2.2638185	20	2 27.4	18.0
29263 1993 FY_{14}	14.1	X	140.77433	60.20828	38.95491	10.72067	0.0651992	0.18732802	3.0250616	20	5 22.6	18.6
29264 1993 FR_{17}	16.1	X	187.13626	328.04793	90.02877	5.01221	0.1404031	0.29714927	2.2240930	20	5 23.3	19.3
29265 1993 FV_{18}	15.2	X	254.75399	206.24979	70.09596	4.52755	0.1558831	0.28647954	2.2789789	20	1 27.3	18.6
29266 1993 FA_{20}	13.4	X	197.14402	338.01812	55.74320	10.62974	0.1557036	0.18643624	3.0347004	20	5 3.9	18.3
29267 1993 FD_{22}	14.6	X	82.62263	242.74935	211.06857	1.10516	0.2526207	0.18262571	3.0767682	20	4 4.8	18.7
29268 1993 FY_{22}	13.9	X	97.85867	83.79734	357.89142	8.44183	0.1058297	0.18118338	3.0930752	20	3 18.8	18.2
29269 1993 FD_{25}	14.6	X	35.11836	287.94978	352.66625	6.27376	0.1096792	0.26517574	2.3994600	20	9 19.9	17.2
29270 1993 FF_{28}	15.3	X	220.82504	84.12788	201.51034	5.97614	0.1924711	0.28380690	2.2932642	20	1 5.6	19.1
29271 1993 FF_{31}	15.6	X	106.27738	330.80906	121.44388	3.30103	0.1108360	0.29237002	2.2482649	20	4 5.9	18.2
29272 1993 FO_{31}	16.6	X	166.49932	259.12139	27.75683	2.94087	0.0752717	0.27933491	2.3176752	20	—	—
29273 1993 FO_{32}	16.4	X	94.84986	116.99446	151.34110	1.09065	0.1622126	0.26935330	2.3745857	20	11 22.6	20.0
29274 1993 FK_{33}	14.1	X	3.41476	352.10797	125.35780	3.53488	0.2438861	0.17673834	3.1447215	20	—	—
29275 1993 FM_{33}	15.7	X	132.64970	159.62353	108.76055	2.69097	0.1378001	0.27345300	2.3507923	20	12 27.8	19.1
29276 1993 FO_{33}	15.7	X	120.54579	216.21865	63.59224	3.00841	0.2002268	0.27257692	2.3558267	20	12 30.6	19.5
29277 1993 FB_{34}	14.4	X	48.16130	337.15532	135.23443	3.52843	0.0612574	0.17870330	3.1216269	20	2 14.9	18.4
29278 1993 FN_{34}	14.3	X	190.62233	179.65019	76.17570	4.65916	0.0642285	0.17002326	3.2269866	20	—	—
29279 1993 FC_{35}	15.7	X	204.29453	145.07530	158.96900	3.42971	0.1881263	0.28376607	2.2934841	20	1 14.4	19.3
29280 1993 FD_{36}	15.0	X	168.49097	229.77563	28.93792	5.89951	0.0864382	0.27663226	2.3327463	20	—	—

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29281 1993 FJ_{38}	13.8	X	353.50150	314.20337	173.31792	9.38928	0.0552144	0.17500597	3.1654404	20	—	—
29282 1993 FM_{39}	15.4	X	203.22507	332.04284	11.73169	7.67663	0.1545012	0.28896988	2.2658666	20	3 4.4	18.8
29283 1993 FD_{40}	15.9	X	144.69816	46.28735	176.84342	6.78816	0.0630303	0.27170626	2.3608567	20	11 15.9	19.2
29284 1993 FL_{41}	15.9	X	19.76121	14.41258	154.97844	3.82141	0.0441709	0.29035733	2.2586426	20	3 3.5	18.0
29285 1993 FD_{42}	14.0	X	76.02148	352.63764	41.54428	0.92625	0.1646360	0.17464973	3.1697433	20	1 1.6	18.1
29286 1993 FA_{45}	15.3	X	127.86343	270.30917	9.99408	4.45857	0.2666409	0.27314258	2.3525730	20	—	—
29287 1993 FD_{49}	15.6	X	109.01002	228.72119	0.53775	1.93705	0.1585245	0.26814328	2.3817240	20	10 17.1	19.3
29288 1993 FJ_{51}	16.1	X	249.42748	58.06650	352.14324	3.41050	0.1740055	0.30280761	2.1962993	20	7 18.2	18.9
29289 1993 FM_{62}	15.0	X	127.97873	253.57787	79.73632	3.93387	0.2640123	0.27898003	2.3196403	20	—	—
29290 1993 FF_{84}	15.9	X	131.89016	202.45333	149.19216	4.57526	0.1697335	0.28268192	2.2993444	20	1 1.1	18.9
29291 1993 JX	15.1	X	358.10177	275.70575	226.64243	4.99118	0.0745489	0.28212015	2.3023958	20	—	—
29292 Conniewalker	13.6	X	173.83749	169.97736	89.82957	25.55481	0.1988908	0.27382728	2.3486497	20	—	—
29293 1993 OG_9	14.7	X	16.76529	308.23242	125.50659	10.19720	0.2031993	0.27093020	2.3653628	20	—	—
29294 1993 OH_9	15.3	X	109.21380	140.99923	147.06544	2.98784	0.0773696	0.26730654	2.3866917	20	12 27.0	18.5
29295 1993 OC_{13}	15.9	X	55.85867	115.61053	198.86084	1.18893	0.1416414	0.26419554	2.4053912	20	12 7.4	19.0
29296 1993 PY_5	14.3	X	129.32013	283.41478	304.11936	7.07889	0.1625586	0.26199780	2.4188241	20	10 30.6	18.2
29297 1993 RU_7	14.6	X	264.40120	169.47929	300.21074	1.59959	0.0752733	0.25874678	2.4390428	20	11 11.1	17.4
29298 Cruls	15.0	X	295.79874	63.80208	359.63014	19.49058	0.1045300	0.36805005	1.9284044	20	11 18.7	16.8
29299 1993 TW_1	13.6	X	134.88037	12.92239	47.58265	10.97544	0.0731931	0.23877108	2.5732475	20	3 31.9	17.3
29300 1993 TD_{25}	15.5	X	260.92075	251.04557	62.36822	3.55966	0.1673123	0.24369179	2.5384900	20	3 23.9	19.2
29301 1993 TQ_{31}	15.3	X	241.18629	152.03237	135.96038	4.40794	0.2221130	0.23945683	2.5683324	20	1 29.7	19.7
29302 1993 TY_{34}	15.8	X	218.39462	275.05415	35.19797	4.01506	0.1545337	0.23888487	2.5724304	20	2 9.9	20.0
29303 1993 TO_{36}	13.4	X	188.56736	33.61842	320.86931	17.57794	0.2418830	0.24057635	2.5603584	20	3 2.6	18.0
29304 1993 TF_{37}	15.5	X	96.36964	273.29769	130.69808	3.30009	0.1719568	0.23334930	2.6129537	20	2 1.8	18.5
29305 1993 TJ_{38}	14.4	X	85.23635	252.00447	182.05361	10.69591	0.0319489	0.23540580	2.5977137	20	2 2.4	17.9
29306 1993 TK_{38}	14.0	X	324.27679	87.38638	51.90939	13.52677	0.1094537	0.22876877	2.6477170	20	—	—
29307 Torbernbergman	13.8	X	16.81185	3.33037	144.46753	6.28796	0.1245242	0.23485785	2.6017526	20	2 3.1	16.4
29308 1993 UF_1	14.7	X	23.84824	311.96562	35.95077	21.12977	0.0922967	0.36873330	1.9260215	20	—	—
29309 1993 VF_1	13.4	X	100.24598	49.15272	62.43654	26.10738	0.2613063	0.23703014	2.5858321	20	5 18.3	17.3
29310 1993 VA_5	14.4	X	67.71793	20.34235	58.23414	7.02695	0.2467990	0.23130292	2.6283426	20	2 19.4	17.1
29311 Lesire	12.8	X	102.40479	222.65404	136.97960	14.47641	0.1999330	0.22455822	2.6807115	20	—	—
29312 1994 BL_4	15.0	X	66.95411	132.42376	327.98467	11.95877	0.2123175	0.23011389	2.6373888	20	3 7.3	17.9
29313 1994 CR	14.0	X	5.99997	326.55050	127.67421	5.02939	0.0895444	0.22214605	2.7000822	20	—	—
29314 Eurydamas	11.6	X	325.31452	133.91282	143.35843	15.23127	0.0738332	0.08104612	5.2882815	20	5 20.8	18.5
29315 1994 EV_5	14.2	X	241.31497	85.84640	8.47970	11.25673	0.0434987	0.20641707	2.8355609	20	9 17.6	18.2
29316 1994 LY_1	15.9	X	148.89189	300.20608	126.79008	8.50448	0.0775185	0.29391415	2.2403836	20	4 23.4	19.0
29317 1994 PR_9	15.7	X	74.45918	278.15110	190.39323	2.39455	0.1256053	0.28884231	2.2665337	20	3 12.5	17.7
29318 1994 PH_{14}	15.2	X	163.53289	222.17225	203.87377	1.38602	0.2358630	0.29194346	2.2504544	20	5 12.8	18.7
29319 1994 PS_{14}	15.4	X	327.12552	295.01284	327.83427	4.06840	0.1239032	0.29623516	2.2286660	20	4 12.3	17.5
29320 1994 PW_{14}	15.8	X	121.84522	267.84878	163.85642	4.02398	0.0872584	0.28985681	2.2612420	20	3 24.5	18.4
29321 1994 PL_{16}	15.3	X	340.92414	285.38007	314.70275	5.60001	0.0837698	0.29471489	2.2363237	20	4 6.2	17.6
29322 1994 PS_{16}	16.5	X	174.76733	210.41871	162.25906	6.18523	0.1936520	0.28902788	2.2655634	20	3 14.3	19.9
29323 1994 PN_{19}	16.1	X	227.74049	305.17130	317.80537	2.05996	0.1541445	0.28568447	2.2832053	20	—	—
29324 1994 PM_{31}	15.3	X	200.83886	79.55645	190.60346	6.42702	0.0975730	0.28300031	2.2976195	20	—	—
29325 1994 PN_{39}	16.1	X	239.80601	198.35488	144.12908	2.00256	0.0908278	0.29434957	2.2381737	20	4 11.2	18.9
29326 1994 RK_3	15.9	X	1.84832	88.35735	159.23264	2.68372	0.1624486	0.26081194	2.4261505	20	6 1.4	17.8
29327 1994 SV_9	14.7	X	38.50960	117.68611	17.49926	5.06783	0.1160004	0.28523514	2.2856025	20	2 17.7	16.7
29328 Hanshintigers	14.6	X	172.59110	70.70073	277.20607	3.47155	0.1923248	0.28228290	2.3015107	20	2 9.3	18.3
29329 Knobelsdorff	15.2	X	100.86789	67.54531	27.32336	4.40315	0.1165121	0.28626711	2.2801062	20	4 2.4	17.7
29330 1994 UK	15.5	X	314.94948	331.60657	67.75591	2.22803	0.1896596	0.26406795	2.4061660	20	10 23.1	17.2
29331 1994 UC_8	14.6	X	194.61392	264.18624	12.07711	6.20262	0.2294327	0.28047113	2.3114115	20	—	—
29332 1994 VE	14.1	X	269.13995	109.37625	33.68414	11.16334	0.0405261	0.27030712	2.3689964	20	—	—
29333 1994 VE_2	15.5	X	0.48296	20.02869	31.02695	5.31497	0.1756644	0.27052851	2.3677037	20	—	—
29334 1994 XJ	14.2	X	348.37817	99.67724	64.78677	6.97203	0.0578090	0.27700697	2.3306421	20	1 9.5	16.9
29335 1994 XL	14.5	X	242.12529	160.64689	355.76669	3.75909	0.1905255	0.26348573	2.4097093	20	11 24.9	17.5
29336 1994 YT_1	15.0	X	291.71649	10.24594	52.46316	2.70801	0.1102009	0.26044413	2.4284341	20	10 16.7	17.6
29337 Hakurojo	13.9	X	133.15128	41.55410	161.17997	6.26792	0.1609730	0.25475303	2.4644678	20	10 6.7	17.9
29338 1995 AV_2	14.4	X	173.27232	80.29977	54.36582	4.18603	0.1576333	0.25338209	2.4733492	20	8 18.9	18.4
29339 1995 BA	14.4	X	246.74022	57.72791	68.71559	1.74281	0.1698981	0.26125111	2.4234308	20	10 25.9	17.4
29340 1995 BF	14.7	X	246.72519	25.28371	139.62235	3.90942	0.1615639	0.22480112	2.6787802	20	12 8.7	18.1
29341 1995 BC_1	14.5	X	57.14815	131.57455	319.09585	15.79575	0.1381360	0.23615855	2.5921906	20	1 29.7	17.3
29342 1995 CF_1	14.2	X	108.05016	9.30008	104.35058	8.35238	0.1877403	0.24438448	2.5336909	20	5 20.8	18.0
29343 1995 CK_{10}	13.9	X	277.12600	237.27306	296.02312	11.45875	0.1224089	0.22845905	2.6501094	20	—	—
29344 1995 DX	14.6	X	253.92338	73.62399	141.38613	12.12327	0.1516916	0.22702521	2.6612560	20	—	—
29345 Ivandanilov	14.2	X	294.72948	20.57866	162.02954	5.85069	0.1218378	0.22761819	2.6566320	20	—	—
29346 Mariadina	14.8	X	167.78504	62.13128	156.57487	12.01120	0.2374511	0.21752237	2.7382101	20	11 19.6	19.7
29347 Natta	14.2	X	14.84169	107.18162	140.53005	5.36864	0.0233477	0.24392646	2.5368616	20	6 19.5	17.5
29348 Criswick	14.8	X	359.13131	169.71993	8.39880	3.56413	0.1458852	0.23414516	2.6070294	20	2 13.9	17.4
29349 1995 FQ_4	14.1	X	295.87914	264.35206	61.51006	2.42591	0.0871283	0.24396399	2.5366014	20	6 3.6	17.1
29350 1995 FQ_{20}	14.5	X	188.43884	183.62191	32.44888	13.60714	0.0885509	0.21865378	2.7287561	20	12 9.5	18.7
29351 1995 HP_2	15.0	X	346.37341	323.08548	74.92365	6.14619	0.1590923	0.21486068	2.7607776	20	12 7.3	17.7
29352 1995 JR	14.6	X	144.53475	63.35708	64.72481	8.39304	0.2079636	0.24394255	2.5367501	20	7 14.4	18.9
29353 Manu	14.2	X	257.22318	53.92529	312.49511	10.14553	0.1221180	0.19198025	2.9759915	20	5 30.8	18.8
29354 1995 OR_1	14.0	X	166.03553	229.52492	94.54667	2.56523	0.1425656	0.17844961	3.1245848	20	1 15.8	18.9
29355 Siratakayama	13.5	X	359.04104	74.88944	198.33511	9.19938	0.0409205	0.19173193	2.9785605	20	6 29.2	17.6
29356 Giovarduino	13.7	X	165.60338	67.58378	248.89592	0.60368	0.1680161	0.17372026	3.1810395	20	1 8.7	18.9
29357 1995 YE_6	16.2	X	332.92447	0.48964	216.80871	2.62801	0.1389903	0.29537554	2.2329878	20	2 11.8	18.4
29358 1996 AY_7	15.3	X	265.95326	252.62830	7.72869	2.65995	0.1453283	0.28664350	2.2781098	20	1 18.6	18.6
29359 1996 BK	15.6	X	306.26387	153.35096	322.97028	10.46098	0.1967345	0.27595026	2.3365882	20	—	—
29360 1996 BR_{14}	15.3	X	242.77478	350.23630	331.97759	6.38128	0.2069595	0.29347879	2.2425987	20	3 7.8	18.8

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Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
	m		°	°	°	°		°				
29361 Botticelli	15.5	*X*	9.31521	6.35026	125.18509	6.24487	0.0927491	0.28484953	2.2876648	20	—	—
29362 Azumakofuzi	14.8	*X*	104.42683	43.27095	98.94815	2.91825	0.0975014	0.29371005	2.2414214	20	6 10.9	17.4
29363 1996 CW_8	15.1	*X*	240.69317	214.04910	358.91025	6.73016	0.0653684	0.27684947	2.3315260	20	—	—
29364 1996 DG	15.0	*X*	10.32647	115.95958	78.13753	3.27597	0.0625031	0.28869867	2.2672854	20	3 26.1	17.2
29365 1996 DN_2	14.6	*X*	285.20725	145.38253	49.99535	3.62652	0.1261570	0.27848906	2.3223658	20	—	—
29366 1996 DS_6	14.9	*X*	32.86426	161.57095	336.84018	5.43153	0.0925976	0.28722342	2.2750423	20	2 9.7	17.1
29367 1996 EN_{12}	15.3	*X*	32.34325	97.82464	292.13727	6.25947	0.1165558	0.27463948	2.3440169	20	—	—
29368 1996 FF_2	15.1	*X*	338.28877	221.64219	301.70827	3.48303	0.1259454	0.28228168	2.3015174	20	—	—
29369 1996 FK_2	15.2	*X*	217.42797	251.86925	195.81073	4.20949	0.1142626	0.30036763	2.2081774	20	8 6.4	18.2
29370 1996 FQ_4	14.6	*X*	47.90540	318.20996	173.42926	3.93414	0.0774867	0.28499123	2.2869064	20	2 24.4	16.8
29371 1996 FG_{16}	15.5	*X*	325.22132	289.12448	206.03033	1.47341	0.1517393	0.27556151	2.3387852	20	—	—
29372 1996 GA	14.0	*X*	171.68101	207.75286	26.23194	13.76147	0.1350559	0.26896990	2.3768417	20	12 21.7	17.8
29373 Hamanowa	14.5	*X*	251.39854	74.37697	114.42152	5.00530	0.0605216	0.27069832	2.3667134	20	—	—
29374 Kazumitsu	14.9	*X*	235.34436	183.14724	15.33803	2.55361	0.1770811	0.27089012	2.3655962	20	—	—
29375 1996 GN_{17}	15.3	*X*	141.75988	333.62275	190.83046	1.81309	0.1545590	0.25737710	2.4476883	20	8 25.1	19.1
29376 1996 GU_{17}	14.5	*X*	302.35822	224.50779	30.88786	9.28855	0.1158339	0.24261717	2.5459802	20	3 7.7	17.9
29377 1996 GV_{18}	14.5	*X*	96.25189	333.06442	43.86229	7.51126	0.1204620	0.27428088	2.3460595	20	—	—
29378 1996 HP_4	14.4	*X*	277.43791	233.60087	42.74146	8.42092	0.1322227	0.24291048	2.5439304	20	3 1.7	18.1
29379 1996 HX_{12}	14.3	*X*	257.33217	93.19838	202.36388	6.44178	0.1819023	0.24014949	2.5633915	20	2 22.4	18.3
29380 1996 HO_{13}	14.8	*X*	273.93731	64.09354	211.92919	3.56266	0.1064363	0.24096718	2.5575892	20	2 23.9	18.4
29381 1996 HR_{15}	15.2	*X*	215.68962	309.12617	170.32471	1.81186	0.1161265	0.26013045	2.4303860	20	9 14.4	18.6
29382 1996 HM_{16}	14.7	*X*	254.72198	31.96057	220.78916	6.62182	0.1800946	0.23593935	2.5937959	20	1 1.6	19.0
29383 1996 HA_{23}	15.0	*X*	318.97483	33.76613	212.05557	6.21159	0.1779348	0.24255517	2.5464141	20	3 1.8	18.3
29384 1996 HO_{23}	14.7	*X*	26.58541	293.96190	201.95983	5.01382	0.0594699	0.28019330	2.3129392	20	1 25.6	17.2
29385 1996 JT	15.0	*X*	301.54011	73.92689	229.91933	4.59181	0.1368137	0.24586222	2.5235284	20	5 3.6	17.9
29386 1996 JC_5	14.8	*X*	259.13283	26.89754	115.49947	7.38681	0.0841246	0.26638984	2.3921639	20	12 20.0	17.4
29387 1996 JC_6	14.6	*X*	122.95992	30.89338	149.13694	3.00361	0.1322838	0.25600078	2.4564533	20	8 25.9	18.3
29388 1996 JD_6	14.8	*X*	354.15331	183.55063	189.62792	6.11296	0.0961769	0.26168761	2.4207351	20	11 24.6	17.5
29389 1996 LZ	14.8	*X*	301.96324	297.32918	294.39490	0.66601	0.1248581	0.23876219	2.5733114	20	1 31.3	18.3
29390 1996 LO_3	14.4	*X*	56.14090	133.46420	167.89396	6.21545	0.1268402	0.25838992	2.4412879	20	11 19.1	17.7
29391 Knight	15.2	*X*	181.11973	332.63772	294.13966	1.20341	0.1673803	0.22740069	2.6583257	20	—	—
29392 1996 MN_1	14.3	*X*	268.24202	192.84585	92.94749	14.23012	0.1374971	0.23986459	2.5654209	20	3 4.9	18.3
29393 1996 NA_3	13.7	*X*	10.21255	39.68567	140.11539	14.96342	0.0362583	0.23382989	2.6093722	20	3 14.0	17.1
29394 Hirokohamanowa	13.9	*X*	168.83796	20.96419	275.97007	12.47462	0.1551564	0.22494118	2.6776680	20	—	—
29395 1996 PO_1	15.1	*X*	323.17855	110.61200	18.77086	2.78833	0.1603790	0.22438135	2.6821200	20	—	—
29396 1996 PM_3	14.0	*X*	88.33928	333.68153	149.26238	13.16620	0.1330485	0.23408338	2.6074881	20	5 3.9	17.7
29397 1996 RU_3	14.8	*X*	60.28204	47.60371	17.06852	2.03944	0.0548767	0.22220615	2.6995953	20	—	—
29398 1996 RM_5	14.5	*X*	62.06259	132.38724	165.89774	14.13591	0.1591234	0.21189138	2.7865095	20	11 18.7	18.8
29399 1996 RO_5	14.0	*X*	319.76618	101.41962	154.98559	11.63832	0.1461989	0.23726072	2.5841566	20	3 28.5	17.1
29400 1996 RO_6	14.7	*X*	224.49986	25.86185	331.66618	1.11565	0.0810234	0.19287077	2.9668240	20	4 18.2	19.2
29401 Asterix	14.3	*X*	352.54265	313.28391	55.29546	2.88095	0.0896337	0.20733261	2.8272072	20	10 31.2	17.6
29402 Obelix	14.5	*X*	137.73004	6.43039	6.50920	8.23523	0.0446610	0.18165902	3.0876737	20	2 6.2	19.0
29403 1996 TO_{13}	14.9	*X*	235.92714	167.13110	203.55188	10.73158	0.0988668	0.19301922	2.9653025	20	5 17.1	19.4
29404 Hikarusato	14.0	*X*	319.18887	18.15485	353.73996	1.54862	0.0791085	0.20238618	2.8730872	20	9 11.2	17.4
29405 1996 TN_{18}	13.7	*X*	340.93384	241.38242	243.41751	0.96250	0.1702561	0.17243915	3.1967755	20	—	—
29406 1996 TS_{32}	13.6	*X*	296.16759	9.29747	208.84843	12.79289	0.1157263	0.22725212	2.6594842	20	1 8.0	17.6
29407 1996 UW	15.1	*X*	240.19193	281.74053	39.27603	5.07801	0.3016634	0.27258946	2.3557544	20	3 4.1	19.2
29408 1996 VJ_5	12.7	*X*	210.05865	7.51404	40.76950	20.77544	0.2656601	0.19153636	2.9805876	20	5 23.5	18.1
29409 1996 VW_5	13.6	*X*	207.72845	327.81679	79.92903	14.14686	0.1371451	0.18981515	2.9985788	20	5 31.1	18.3
29410 1996 VD_6	13.3	*X*	48.16552	207.50984	207.50960	3.93924	0.1438777	0.17174290	3.2054095	20	—	—
29411 1996 WQ_2	13.0	*X*	56.21051	233.66218	260.62267	16.40536	0.1987405	0.17830329	3.1262940	20	4 4.3	17.1
29412 1996 WJ_3	13.4	*X*	109.65305	272.89436	206.74815	10.05793	0.1259803	0.18860975	3.0113411	20	5 22.3	17.9
29413 1996 XE_1	13.4	*X*	205.71476	75.44980	280.01494	10.09935	0.1267456	0.18221618	3.0813765	20	3 21.5	18.6
29414 1996 XF_1	13.8	*X*	105.01919	293.60883	84.20095	5.84253	0.1765475	0.17551416	3.1593272	20	1 21.7	18.4
29415 1996 XU_5	14.1	*X*	160.84692	74.70748	299.04055	6.78518	0.1792070	0.17980024	3.1089176	20	3 7.1	19.3
29416 1996 XX_5	14.5	*X*	78.37830	131.03780	280.37314	2.14580	0.3212232	0.17520284	3.1630687	20	2 17.5	18.6
29417 1996 XR_{26}	13.3	*X*	249.63587	307.08112	243.25148	8.30739	0.1952898	0.21285667	2.7780787	20	—	—
29418 1997 AH_{13}	13.8	*X*	126.97832	324.68974	70.46641	8.95814	0.2537482	0.17675469	3.1445277	20	3 16.1	19.0
29419 Mládková	14.1	*X*	57.00443	239.52361	110.84143	2.24715	0.0987003	0.16218193	3.3301803	20	12 23.8	18.9
29420 Ikuo	13.3	*X*	144.50642	62.64345	351.98735	9.28193	0.0338400	0.17959449	3.1112915	20	3 29.7	17.9
29421 1997 AV_{18}	15.7	*X*	15.30652	228.52088	113.90684	24.52692	0.0939056	0.36610354	1.9352338	20	12 16.1	18.0
29422 1997 AH_{21}	12.5	*X*	117.14488	320.33120	115.88888	18.55063	0.2038989	0.17924011	3.1153911	20	4 23.3	17.7
29423 1997 AF_{22}	12.8	*X*	79.19620	72.82623	334.73520	16.14851	0.2599754	0.17278712	3.1924821	20	2 8.6	17.0
29424 1997 BV_4	13.5	*X*	36.39008	135.02461	353.37269	18.23131	0.1999145	0.17709217	3.1405315	20	3 2.1	16.9
29425 1997 CZ_{21}	15.6	*X*	156.34131	201.67980	10.20756	2.61613	0.0520724	0.32053068	2.1145744	20	11 23.4	18.2
29426 1997 CH_{28}	12.7	*X*	50.93190	149.06617	317.22731	9.53042	0.1634263	0.17482613	3.1676108	20	2 20.3	16.6
29427 Oswaldthomas	16.5	*X*	357.10874	82.88470	164.18847	5.20236	0.0842349	0.30466249	2.1873758	20	5 22.5	18.4
29428 Ettoremajorana	15.4	*X*	199.56898	325.61685	187.39015	22.35363	0.0909644	0.36070407	1.9544986	20	11 3.3	17.7
29429 1997 GO_{13}	16.3	*X*	13.40918	37.20049	282.14930	0.48979	0.1852337	0.31195172	2.1531674	20	11 4.7	18.3
29430 Mimiyen	15.9	*X*	219.61103	41.72418	213.27324	6.35626	0.1044596	0.28547713	2.2843107	20	—	—
29431 Shijimi	14.5	*X*	301.19823	192.09873	51.54536	7.18938	0.1550384	0.29478134	2.2359876	20	2 5.2	17.4
29432 Williamscott	14.1	*X*	49.44278	213.80966	44.84218	2.78796	0.1322831	0.18245200	3.0787207	20	9 3.7	18.2
29433 1997 HC_3	12.8	*X*	21.64436	317.42803	197.12709	4.83496	0.0627638	0.12622786	3.9357958	20	3 6.3	18.0
29434 1997 HZ_{13}	16.4	*X*	197.37371	329.66102	64.34662	2.52407	0.0833906	0.30006564	2.2096587	20	5 1.9	19.1
29435 Mordell	15.6	*X*	297.93198	96.89874	217.60910	4.97654	0.2199696	0.29889696	2.2154148	20	4 26.9	18.0
29436 1997 JT_{14}	15.1	*X*	142.40300	257.28055	62.59504	7.84861	0.2016170	0.28134116	2.3066438	20	—	—
29437 Marchais	15.1	*X*	132.72960	179.45675	137.10753	10.43393	0.2332461	0.27846747	2.3224858	20	—	—
29438 1997 MV	15.3	*X*	90.30264	18.84796	123.23843	8.71044	0.0426138	0.29455344	2.2371408	20	5 15.7	18.0
29439 Maxfabiani	14.9	*X*	330.14519	15.58540	206.45469	5.85753	0.0884409	0.29118751	2.2543476	20	2 22.0	17.3
29440 1997 MK_4	15.1	*X*	62.81801	79.95507	117.43248	5.08569	0.0865346	0.29987202	2.2106098	20	6 30.7	17.3

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
	m		°	°	°	°		°				
29441 1997 NN_1	15.7	X	334.89076	300.30712	140.45513	6.19735	0.1794600	0.26914413	2.3758159	20	—	—
29442 1997 NS_4	15.5	X	44.69332	79.83768	204.56686	8.76058	0.1578009	0.26542117	2.3979807	20	10 17.4	18.5
29443 Remocorti	15.3	X	199.08401	42.92717	282.64036	11.06831	0.1886705	0.28485889	2.2876146	20	2 2.8	19.0
29444 1997 NR_{10}	16.2	X	52.39792	153.75209	156.01521	5.27347	0.2404453	0.26590697	2.3950591	20	12 10.2	19.7
29445 1997 PH	14.7	X	320.92655	334.98101	25.60788	6.44133	0.1332294	0.25885819	2.4383429	20	9 7.6	17.1
29446 Gouguenheim	15.7	X	78.14186	264.09520	169.19739	3.40432	0.1553477	0.28019003	2.3129572	20	2 1.4	17.8
29447 Jerzyneyman	15.1	X	338.29934	292.67010	83.63496	7.14755	0.0700137	0.26172744	2.4204896	20	11 2.3	17.8
29448 Pappos	15.7	X	11.82981	259.08118	136.67263	1.42936	0.2940287	0.26583242	2.3955069	20	—	—
29449 Taharbenjelloun	14.9	X	37.59752	279.40837	155.91063	13.37708	0.1501763	0.22969653	2.6405826	20	—	—
29450 Tomohiroohno	13.7	X	331.17886	207.69179	320.77431	4.02394	0.0662136	0.27859813	2.3217596	20	—	—
29451 1997 RM_1	14.6	X	28.01859	290.24433	2.10906	5.07607	0.3471572	0.26153854	2.4216549	20	11 2.4	17.6
29452 1997 RV_2	14.6	X	336.63869	269.67001	171.83192	12.32525	0.1349193	0.26659815	2.3909177	20	—	—
29453 1997 RU_6	14.9	X	84.31717	306.54700	345.57068	5.55731	0.1491244	0.26505830	2.4001687	20	12 9.4	18.5
29454 1997 RZ_6	15.0	X	63.21813	244.95872	12.77330	2.69941	0.1395779	0.25749320	2.4469525	20	10 1.3	18.1
29455 1997 SX_1	14.0	X	48.81959	249.05826	208.91855	4.42894	0.1455999	0.23010141	2.6374842	20	1 23.7	16.7
29456 Evakrchová	15.5	X	357.84881	187.63906	230.10156	1.59057	0.1576442	0.26748215	2.3856470	20	—	—
29457 Marcopolo	15.1	X	10.60082	134.26422	191.15727	2.23440	0.1937144	0.26039933	2.4287127	20	10 28.4	17.3
29458 Pearson	15.5	X	20.51541	337.20724	29.82503	2.72743	0.2192583	0.26238317	2.4164551	20	—	—
29459 1997 SO_{16}	15.2	X	20.46988	281.97890	6.04064	6.88998	0.1282405	0.25570153	2.4583695	20	9 10.2	17.7
29460 1997 SR_{31}	15.7	X	256.25780	118.30573	355.02309	3.67062	0.0887348	0.26182819	2.4198686	20	11 1.9	18.6
29461 1997 SP_{32}	15.5	X	24.35970	301.00718	352.76011	2.11990	0.1884444	0.25761225	2.4461986	20	10 3.5	18.1
29462 1997 SG_{34}	14.5	X	22.53906	38.42681	26.40879	13.13662	0.1932720	0.22303769	2.6928813	20	—	—
29463 Benjaminpeirce	14.8	X	327.06755	295.88010	198.87149	14.60590	0.0592779	0.22677572	2.6632076	20	—	—
29464 Leonmiš	15.8	X	209.56739	286.05430	87.40559	2.30377	0.1845190	0.24245619	2.5471070	20	4 17.5	20.0
29465 1997 TX_{10}	15.9	X	98.30033	271.58695	177.72680	9.34000	0.1341002	0.23906755	2.5711197	20	3 29.0	19.2
29466 1997 TN_{17}	13.8	X	313.84371	12.01778	229.77557	15.12516	0.1240180	0.23833989	2.5763502	20	2 22.6	17.4
29467 Shandongdaxue	14.3	X	319.12922	349.51372	38.11222	9.78127	0.1623693	0.21075960	2.7964763	20	10 2.8	17.2
29468 1997 UC	14.7	X	2.62343	127.97923	185.78016	14.41572	0.1832226	0.25652016	2.4531365	20	9 21.3	16.8
29469 1997 UV_2	14.6	X	300.17333	240.24747	263.80672	1.22839	0.1370722	0.22218423	2.6997729	20	—	—
29470 Higgs	13.0	X	309.98778	194.05370	57.18568	13.72140	0.1394397	0.23621336	2.5917896	20	3 13.6	16.6
29471 Spejbl	14.4	X	226.04528	253.12448	326.59612	3.20185	0.1106274	0.27436042	2.3456061	20	—	—
29472 Hurvínek	15.2	X	68.59887	242.82693	197.51645	5.01064	0.1545699	0.23233176	2.6205774	20	2 3.6	18.1
29473 Krejčí	15.3	X	45.45603	291.85504	48.26955	1.53843	0.0958374	0.21729705	2.7401026	20	12 10.4	18.9
29474 1997 UT_8	14.5	X	270.93486	124.49611	209.79977	5.53789	0.1460353	0.24471893	2.5313819	20	5 2.8	17.8
29475 1997 UF_{11}	13.9	X	116.82356	307.07630	27.84927	23.13102	0.2263909	0.27234749	2.3571495	20	—	—
29476 Kvíčala	14.5	X	354.22094	349.03562	42.94325	10.19864	0.1046697	0.21782968	2.7356341	20	12 6.0	17.9
29477 Zdíkšíma	14.9	X	100.65213	309.15341	226.74273	10.54710	0.0857536	0.24596989	2.5227919	20	7 17.1	18.6
29478 1997 UW_{17}	14.0	X	351.66631	187.39919	55.07095	8.60085	0.0226855	0.24130296	2.5552160	20	5 9.0	17.2
29479 1997 VJ_1	13.8	X	311.48509	249.81245	312.09686	14.36014	0.0664000	0.23216504	2.6218318	20	1 16.7	17.3
29480 1997 VO_1	13.4	X	86.82989	308.90761	46.14746	14.29963	0.1768952	0.22486562	2.6782679	20	—	—
29481 1997 VJ_3	13.6	X	59.90237	175.27950	228.03848	3.43805	0.0812041	0.22425221	2.6831496	20	—	—
29482 1997 VM_3	13.4	X	240.79144	92.20419	78.84454	7.20473	0.0543491	0.21707183	2.7419976	20	12 21.8	17.0
29483 Boeker	15.9	X	0.39791	192.83469	180.66516	4.20633	0.2460148	0.26093536	2.4253854	20	12 27.1	18.4
29484 Honzaveselý	14.3	X	160.86704	84.74366	5.96533	4.37000	0.1121528	0.24078800	2.5588578	20	6 6.7	18.2
29485 1997 VE_7	14.5	X	237.78035	258.39158	255.71017	4.93712	0.1514861	0.26063121	2.4272719	20	11 22.0	17.5
29486 1997 VG_7	15.4	X	252.35129	89.69803	278.69831	1.25221	0.1953147	0.24593792	2.5230105	20	5 19.6	19.2
29487 1997 VU_8	13.6	X	177.59090	164.35435	256.28737	12.34942	0.1545132	0.23849985	2.5751981	20	5 16.4	17.8
29488 1997 WM	14.2	X	211.09911	272.79637	252.90982	13.08066	0.1165302	0.21139369	2.7908813	20	10 28.9	18.4
29489 1997 WQ	13.4	X	182.17260	258.27437	54.18305	12.71347	0.1949240	0.22954099	2.6417753	20	1 14.2	17.9
29490 Myslbek	14.4	X	88.54566	30.84798	9.02315	7.98668	0.0707535	0.27504626	2.3417052	20	—	—
29491 Pfaff	15.2	X	81.60105	61.72283	358.00939	2.35925	0.0810752	0.23067180	2.6331345	20	1 19.9	18.5
29492 1997 WP_2	12.9	X	68.80634	29.49932	82.01156	11.15807	0.0961637	0.23162397	2.6259133	20	3 17.7	16.3
29493 1997 WR_5	14.2	X	269.93576	110.71947	88.76447	2.88750	0.0108974	0.22533793	2.6745241	20	—	—
29494 1997 WL_7	13.8	X	43.93757	214.49155	250.07905	3.48137	0.0904532	0.22907497	2.6453570	20	1 21.7	17.0
29495 1997 WU_7	13.7	X	193.25931	34.78056	32.53512	13.45048	0.2418913	0.24284216	2.5444074	20	6 5.1	18.3
29496 1997 WE_8	13.8	X	242.72227	324.78254	247.98122	4.97039	0.0930458	0.22304185	2.6928479	20	—	—
29497 1997 WD_{15}	13.1	X	204.09479	143.68252	41.76541	5.98842	0.1182503	0.21586592	2.7522001	20	11 17.1	17.0
29498 1997 WK_{21}	13.7	X	79.37398	118.32873	195.52618	4.77337	0.0462077	0.21455052	2.7634377	20	12 11.5	17.6
29499 1997 WT_{21}	14.3	X	341.24614	286.57707	60.24763	3.12009	0.0741164	0.20491762	2.8493765	20	9 14.3	17.8
29500 1997 WP_{32}	13.9	X	18.16039	322.85516	146.20109	1.92669	0.1502841	0.18217283	3.0818653	20	—	—
29501 1997 WQ_{32}	15.0	X	312.21042	225.34322	99.75377	4.90408	0.1618535	0.24787020	2.5098813	20	6 18.2	17.7
29502 1997 WL_{35}	14.9	X	229.61987	136.45910	234.09008	5.20258	0.1700517	0.24238386	2.5476137	20	5 1.6	18.7
29503 1997 WQ_{38}	14.2	X	122.27267	205.61130	257.29821	8.74012	0.1626849	0.23713548	2.5850663	20	5 16.7	18.1
29504 1997 WS_{44}	14.4	X	340.12473	12.58506	86.84803	4.39332	0.0840396	0.21923337	2.7239446	20	—	—
29505 1997 WV_{44}	13.9	X	224.48281	278.34361	235.56483	6.69162	0.1643913	0.21016242	2.8017712	20	10 24.5	18.1
29506 1997 XM	14.4	X	164.12502	50.40324	23.71948	2.45654	0.1791881	0.23774845	2.5806212	20	5 21.9	18.5
29507 1997 XV	13.9	X	118.69107	199.28357	351.27159	4.75379	0.0250822	0.20281463	2.8690395	20	8 21.6	17.8
29508 Bottinelli	14.4	X	59.98847	336.13012	86.97098	2.26909	0.1802138	0.17798727	3.1299934	20	1 14.2	17.9
29509 1997 YK_1	13.9	X	185.54333	63.85559	282.74860	8.44132	0.0923929	0.18985803	2.9981273	20	2 22.1	18.6
29510 1997 YF_2	13.8	X	171.77612	239.82053	106.85745	10.46312	0.0966860	0.18337538	3.0683768	20	2 14.9	18.6
29511 1997 YP_3	14.4	X	319.19138	165.41686	186.99248	1.63607	0.0297923	0.20289408	2.8682905	20	8 18.7	18.3
29512 1997 YL_5	14.1	X	275.36924	11.09476	127.57552	6.54590	0.0815588	0.21235427	2.7824587	20	12 22.9	17.6
29513 1997 YT_5	13.1	X	284.53787	28.48082	284.93474	9.39415	0.1041799	0.19168511	2.9790454	20	4 26.8	17.4
29514 Karatsu	13.4	X	116.33577	243.43760	293.08355	15.32356	0.1665571	0.19556146	2.9395478	20	8 8.8	18.2
29515 1997 YL_7	13.0	X	61.80999	18.20718	87.74258	15.05449	0.2313324	0.22752607	2.6573491	20	3 21.9	16.2
29516 1997 YO_7	13.5	X	116.23500	39.75186	103.41814	11.67828	0.0568616	0.19106058	2.9855338	20	6 20.2	17.7
29517 1997 YQ_{10}	13.2	X	169.44402	35.59763	77.81907	9.68560	0.0813132	0.19587111	2.9364490	20	7 14.7	17.7
29518 1997 YW_{11}	13.7	X	44.59193	249.33573	93.02274	4.72176	0.0988575	0.21050352	2.7987438	20	12 11.2	17.5
29519 1997 YH_{13}	14.0	X	313.67735	284.76851	251.70661	5.79311	0.1431026	0.17471704	3.1689292	20	—	—
29520 1997 YH_{14}	14.3	X	108.17314	224.86905	322.89394	1.03572	0.0505779	0.19599456	2.9352159	20	8 6.2	18.5

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		m		°	°	°	°		°				
29521	1997 YK_{14}	13.4	X	140.37332	2.88232	314.76573	8.54368	0.0666200	0.17238556	3.1974380	20	—	—
29522	1997 YL_{15}	14.5	X	123.36943	297.19773	28.46573	0.67181	0.1864393	0.17458484	3.1705287	20	—	—
29523	1997 YO_{21}	14.7	X	350.47787	295.73699	98.19903	4.65253	0.0988815	0.21105192	2.7938935	20	12 2.2	18.0
29524	1998 AE	13.6	X	280.60774	37.18617	110.81281	11.51439	0.2096511	0.17011213	3.2258626	20	12 14.2	17.6
29525	1998 AF	15.4	X	186.57882	307.46233	160.40838	5.11315	0.1000300	0.28685899	2.2769687	20	7 29.8	18.7
29526	1998 AV	13.0	X	110.47683	265.77307	114.64648	22.36530	0.0031868	0.17621510	3.1509436	20	1 7.1	17.5
29527	1998 AY_{6}	14.0	X	157.71746	12.53141	64.82330	2.28009	0.1776200	0.19251576	2.9704702	20	5 20.9	19.0
29528	Kaplinski	14.0	X	70.25927	326.07749	44.33819	15.58181	0.0959890	0.22480674	2.6787355	20	—	—
29529	1998 BM	12.8	X	180.13902	321.09565	347.30995	8.39245	0.0748548	0.17674450	3.1446485	20	1 8.9	17.7
29530	1998 BT	13.9	X	52.58963	118.18410	102.98616	11.17245	0.0324210	0.19296733	2.9658342	20	7 5.8	17.9
29531	1998 BA_{1}	13.4	X	231.90344	176.02527	133.13493	13.83767	0.1375839	0.18164645	3.0878162	20	2 27.1	18.3
29532	1998 BJ_{1}	13.9	X	47.83320	71.88996	122.63060	9.77701	0.0578151	0.18852450	3.0122488	20	5 30.2	18.0
29533	1998 BW_{1}	14.0	X	134.29041	276.87401	156.75719	2.20837	0.2285869	0.18917543	3.0053350	20	4 30.0	19.0
29534	1998 BP_{7}	14.3	X	136.37740	272.18400	160.27108	1.66930	0.1019602	0.18736856	3.0246253	20	4 19.9	18.9
29535	1998 BF_{8}	14.0	X	190.11586	304.47665	135.22654	10.43911	0.0243409	0.19170924	2.9787954	20	6 25.7	18.4
29536	1998 BC_{12}	12.8	X	99.25691	340.38612	110.66745	11.62276	0.0327180	0.18616098	3.0376911	20	3 26.9	17.2
29537	1998 BW_{15}	13.9	X	340.54718	215.20030	292.64211	8.13365	0.0524739	0.17497940	3.1657608	20	—	—
29538	1998 BN_{16}	11.6	X	221.52853	49.93623	87.68695	14.67030	0.0554277	0.15768596	3.3931837	20	10 14.7	16.8
29539	1998 BT_{23}	13.8	X	102.75981	183.14983	147.26752	0.46397	0.1413890	0.16951759	3.2334008	20	—	—
29540	1998 BV_{24}	13.2	X	169.18032	240.21641	75.56866	6.07863	0.1616053	0.17360750	3.1824168	20	1 11.1	18.4
29541	1998 BZ_{24}	14.1	X	41.96964	351.82578	146.06808	2.72818	0.1507650	0.18134498	3.0912374	20	3 17.0	17.7
29542	1998 BZ_{25}	14.1	X	161.75289	327.64898	96.49368	11.08279	0.0724007	0.18779393	3.0200561	20	5 8.0	18.8
29543	1998 BV_{29}	13.9	X	290.74181	323.19018	91.69338	10.51410	0.0963820	0.21033750	2.8002163	20	9 30.8	17.6
29544	1998 BE_{30}	13.3	X	47.68097	218.71377	3.12980	10.79481	0.0467335	0.19011441	2.9954313	20	7 3.1	17.5
29545	1998 BM_{31}	13.6	X	159.87225	331.02756	18.94360	0.19768	0.1683840	0.18038798	3.1021609	20	2 10.1	18.7
29546	1998 BV_{33}	12.8	X	78.26757	337.53563	55.49162	5.89149	0.0620954	0.17141581	3.2094859	20	—	—
29547	1998 BA_{34}	13.1	X	153.45371	320.56858	70.70803	11.59565	0.0752408	0.18452784	3.0555879	20	3 22.7	17.9
29548	1998 BC_{42}	14.1	X	86.03402	333.00657	118.07374	11.79623	0.0188913	0.18139979	3.0906147	20	3 7.1	18.5
29549	1998 BB_{44}	14.2	X	263.26572	40.20665	88.79301	10.01835	0.1271252	0.20916598	2.8106624	20	11 18.4	17.8
29550	1998 BE_{44}	13.5	X	100.28795	284.66013	105.64152	13.86464	0.2033859	0.22394417	2.6856096	20	1 27.6	17.0
29551	1998 CH_{1}	14.6	X	247.14436	229.85693	186.80566	1.92555	0.0724427	0.19829664	2.9124545	20	7 30.4	18.6
29552	Chern	13.4	X	241.76979	294.51425	97.05424	6.80595	0.0813208	0.20173787	2.8792393	20	6 20.6	17.4
29553	1998 CZ_{3}	14.1	X	330.27418	0.36395	151.27715	1.88795	0.1087076	0.17246403	3.1964680	20	—	—
29554	1998 CL_{4}	13.5	X	265.42362	39.00463	324.78079	8.95279	0.0825125	0.19201608	2.9756212	20	6 12.9	17.8
29555	MACEK	12.1	X	140.86159	224.87549	112.30275	13.86945	0.1211640	0.17514514	3.1637633	20	1 5.3	16.8
29556	1998 DR_{2}	13.2	X	150.34774	112.79319	347.08790	9.23626	0.0467689	0.18979898	2.9987492	20	6 2.2	17.7
29557	1998 DV_{3}	13.8	X	58.99555	285.34993	180.98289	1.17566	0.1616007	0.18128029	3.0919727	20	3 4.4	17.4
29558	1998 DN_{4}	14.0	X	343.91179	305.24198	162.81553	10.21646	0.1512177	0.21573783	2.7532893	20	—	—
29559	1998 DS_{4}	13.7	X	201.58823	228.79519	151.09607	16.00160	0.1021947	0.18762684	3.0218489	20	4 26.3	18.6
29560	1998 DE_{9}	13.6	X	10.91885	97.11018	12.46491	14.66351	0.0102948	0.17094988	3.2153149	20	—	—
29561	Iatteri	13.3	X	115.65046	329.83143	44.42760	8.91984	0.1214360	0.18052054	3.1006421	20	1 23.0	17.9
29562	Danmacdonald	13.3	X	20.40702	72.18995	170.07653	10.49440	0.0491895	0.19055806	2.9907802	20	6 20.4	17.4
29563	1998 DY_{26}	13.7	X	59.37089	223.91768	342.45824	10.22551	0.0334769	0.19020400	2.9944906	20	6 26.4	18.0
29564	1998 ED_{6}	11.8	X	180.50036	55.99037	292.96849	13.39117	0.2131338	0.18070687	3.0985102	20	2 22.4	17.2
29565	Glenngould	14.0	X	121.93982	135.29326	330.54573	2.27153	0.2268350	0.18762257	3.0218947	20	5 26.7	18.9
29566	1998 FK_{5}	15.1	X	351.52921	323.15661	21.92560	24.13292	0.1204713	0.41674568	1.7750966	20	11 15.8	16.7
29567	1998 FT_{13}	12.6	X	216.61492	345.42734	41.77083	10.35195	0.1114920	0.18886453	3.0086323	20	5 14.2	17.2
29568	Gobbi–Belcredi	13.7	X	314.40842	320.96167	80.31081	3.20962	0.0971201	0.20358353	2.8618111	20	10 13.8	17.1
29569	1998 FA_{23}	13.2	X	8.02791	30.62461	160.24637	12.03740	0.0444563	0.18120908	3.0927828	20	3 29.6	17.3
29570	1998 FY_{27}	14.1	X	109.61992	198.47757	296.48845	2.64439	0.1023504	0.18698459	3.0287645	20	6 6.7	18.5
29571	1998 FC_{29}	13.1	X	154.96043	186.65104	171.30445	14.28723	0.1388949	0.17586256	3.1551532	20	2 11.5	18.1
29572	1998 FH_{30}	13.8	X	210.07186	253.82032	185.09448	10.82790	0.0849687	0.19246859	2.9709554	20	7 12.5	18.4
29573	1998 FU_{38}	13.8	X	85.50873	278.86982	185.31330	5.57245	0.1506707	0.18158600	3.0885015	20	4 7.3	18.0
29574	1998 FM_{45}	12.7	X	173.11858	196.11126	131.29904	5.22334	0.0405286	0.12805492	3.8982696	20	1 26.9	18.4
29575	Gundlapalli	14.4	X	110.16731	315.88691	150.92194	5.62343	0.1323103	0.18363957	3.0654333	20	5 8.6	19.0
29576	1998 FF_{52}	13.6	X	7.96138	356.06549	163.40949	4.44980	0.1433018	0.17613537	3.1518944	20	2 13.9	17.2
29577	1998 FA_{53}	13.2	X	39.88045	79.88469	4.63241	5.27905	0.1535168	0.17242157	3.1969927	20	1 6.6	16.9
29578	1998 FU_{53}	13.7	X	95.97784	62.37002	333.87567	6.98139	0.1294630	0.17245956	3.1965232	20	1 27.3	18.1
29579	1998 FV_{54}	13.4	X	70.66564	335.98387	183.00520	16.95375	0.1268959	0.18350268	3.0669576	20	5 25.7	17.8
29580	1998 FK_{55}	13.0	X	17.33341	272.89527	176.47636	16.52835	0.0799657	0.16909384	3.2388004	20	—	—
29581	1998 FR_{55}	13.9	X	130.23308	265.42980	168.82926	12.97672	0.1377086	0.18205967	3.0831421	20	4 21.6	18.7
29582	1998 FR_{58}	13.0	X	45.94199	98.36495	45.45322	1.80022	0.0774217	0.17852827	3.1236669	20	3 23.9	16.9
29583	1998 FA_{60}	13.5	X	121.21201	358.60369	81.99638	2.10955	0.1570382	0.18162783	3.0880272	20	4 19.9	18.3
29584	1998 FQ_{60}	13.7	X	105.73247	85.16038	357.46884	0.83809	0.1684889	0.18018243	3.1045198	20	4 6.5	18.2
29585	Johnhale	14.1	X	128.99877	9.05683	76.87613	3.34314	0.1429289	0.18270629	3.0758634	20	5 2.9	18.7
29586	1998 FT_{66}	13.8	X	6.36802	123.36627	25.84936	6.36514	0.1158779	0.17407654	3.1766977	20	2 2.8	17.7
29587	1998 FR_{69}	13.8	X	113.94930	55.05084	63.06356	3.04305	0.1730135	0.18448964	3.0560097	20	5 29.4	18.5
29588	1998 FM_{71}	13.0	X	20.47800	111.93590	18.51740	15.85567	0.1742446	0.17390748	3.1787561	20	2 6.4	16.8
29589	1998 FV_{98}	13.5	X	222.08034	141.22260	324.95543	9.76332	0.1155495	0.19754737	2.9198142	20	8 27.4	18.0
29590	1998 FR_{115}	13.8	X	133.42583	106.88526	346.59581	10.53193	0.1176872	0.18303867	3.0721386	20	5 9.9	18.7
29591	1998 FK_{121}	13.0	X	183.37283	268.64537	39.90346	5.60253	0.1313646	0.12459526	3.9701023	20	1 20.5	19.2
29592	1998 FP_{123}	13.9	X	191.99562	56.90240	353.93440	3.62243	0.2377851	0.18681266	3.0306225	20	5 16.6	19.2
29593	1998 FA_{129}	13.3	X	157.33445	27.76690	347.98195	10.04516	0.0862193	0.17897182	3.1185038	20	3 3.8	17.9
29594	1998 GK_{8}	13.3	X	69.28807	257.05960	170.54508	27.63842	0.1470246	0.17173952	3.2054516	20	1 29.2	17.8
29595	1998 HL_{14}	11.9	X	3.18767	46.91998	50.49935	22.92373	0.1114540	0.17300650	3.1897827	20	—	—
29596	1998 HO_{32}	13.8	X	60.66373	281.45350	195.54389	16.69184	0.1460962	0.17753156	3.1353474	20	3 17.3	17.8
29597	1998 HT_{37}	13.4	X	33.49757	90.90222	1.12848	9.31782	0.1135806	0.17017871	3.2250211	20	1 5.0	17.5
29598	1998 HB_{62}	14.0	X	66.51104	71.34473	63.78685	2.81898	0.0790451	0.17864904	3.1222590	20	4 11.3	18.1
29599	1998 HZ_{119}	12.7	X	25.90265	35.25639	88.41223	13.12286	0.0886339	0.17132242	3.2106521	20	2 1.7	16.9
29600	1998 HP_{134}	13.5	X	17.63422	97.59766	49.69403	11.44484	0.0443502	0.17513469	3.1638892	20	2 21.5	17.9

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	m		°	°	°	°		°				
29601 1998 KK_{31}	13.7	X	99.63495	48.99233	91.67998	10.68622	0.2535609	0.18215881	3.0820234	20	6 20.8	18.4
29602 1998 LA_{2}	14.6	X	242.23568	344.89602	234.12331	5.27926	0.0735756	0.29537900	2.2329704	20	—	—
29603 1998 MO_{44}	11.1	X	273.78974	189.27502	113.57474	33.39890	0.0344155	0.08448116	5.1439427	20	5 3.8	18.4
29604 1998 QX_{5}	14.1	X	89.63497	262.43669	17.29695	11.88435	0.2591552	0.22920883	2.6443270	20	11 28.9	18.7
29605 1998 QF_{54}	15.5	X	145.78440	166.55218	208.79973	6.18494	0.1199466	0.29207514	2.2497779	20	2 7.8	18.6
29606 1998 QN_{94}	14.5	X	164.08616	50.21419	155.01068	23.90146	0.2093212	0.27775267	2.3264687	20	11 12.7	18.8
29607 Jakehecla	15.1	X	114.46657	65.33732	35.28383	6.92723	0.1559428	0.29764217	2.2216369	20	5 2.6	17.8
29608 1998 RP_{50}	16.7	X	282.75773	0.73343	16.89943	2.24612	0.1330212	0.31016329	2.1614363	20	7 27.4	18.8
29609 Claudiahuang	14.4	X	268.78355	133.13764	218.08852	8.57490	0.1752083	0.21484979	2.7608708	20	5 19.4	18.4
29610 Iyengar	15.2	X	266.11834	60.06647	252.93482	3.68837	0.1495754	0.30150641	2.2026138	20	3 23.0	18.1
29611 1998 RO_{77}	16.7	X	347.99373	175.46069	147.31645	4.91098	0.2037688	0.31310379	2.1478824	20	9 22.8	17.7
29612 Cindyjiang	15.0	X	8.24393	29.17047	132.50313	3.68104	0.1890299	0.29209073	2.2496979	20	1 17.6	16.7
29613 Charlespicard	16.5	X	43.95107	135.18072	182.25988	4.70042	0.1373002	0.31882258	2.1221203	20	12 9.4	19.1
29614 Sheller	15.8	X	112.25990	69.73666	40.04833	3.46753	0.1199107	0.29533329	2.2332008	20	5 8.2	18.6
29615 1998 SL_{47}	15.1	X	229.89125	232.52994	15.86142	2.30661	0.1266402	0.28954495	2.2628654	20	—	—
29616 1998 SG_{64}	15.2	X	220.18196	23.36422	114.49044	2.62000	0.2280645	0.26703114	2.3883324	20	10 2.9	18.7
29617 1998 SK_{108}	15.6	X	209.74343	241.38669	228.56116	4.10667	0.0277659	0.31120746	2.1565989	20	9 9.7	18.0
29618 Jinandrew	15.5	X	21.52963	33.68141	176.16948	5.86297	0.1182613	0.30043752	2.2078349	20	5 11.4	17.3
29619 Kapurubandage	15.9	X	41.94123	261.52914	183.31896	5.23152	0.1210494	0.28524939	2.2855264	20	—	—
29620 Gurbanikaur	15.7	X	61.39211	199.24756	229.49237	3.77908	0.1188111	0.28560631	2.2836218	20	—	—
29621 1998 SY_{141}	16.2	X	299.45852	257.97094	81.92131	4.16005	0.2036054	0.30771814	2.1728712	20	6 11.6	17.9
29622 1998 SM_{145}	13.8	X	261.08606	121.34260	35.15362	6.91578	0.1301886	0.27589055	2.3369253	20	—	—
29623 1998 SR_{164}	14.3	X	288.10965	66.58822	40.16884	11.91354	0.1968456	0.26978575	2.3720475	20	12 6.1	16.4
29624 Sugiyama	13.6	X	166.58156	258.27408	0.06216	7.34355	0.0878952	0.27969130	2.3157060	20	—	—
29625 1998 TF_{7}	14.4	X	226.98758	23.45794	178.43759	5.69130	0.0837624	0.19126592	2.9833966	20	12 31.6	18.7
29626 1998 TV_{12}	15.4	X	142.41268	327.87635	214.01025	2.07395	0.1144666	0.26332910	2.4106647	20	9 16.9	19.1
29627 1998 TX_{12}	15.0	X	238.28733	333.24674	211.81953	1.82560	0.1689826	0.27527270	2.3404208	20	—	—
29628 1998 TX_{30}	14.4	X	147.19757	77.83292	9.97665	5.98557	0.1012130	0.29791888	2.2202610	20	5 16.5	17.4
29629 1998 UP_{16}	14.9	X	326.97788	332.88059	221.19989	4.64345	0.0717055	0.28882418	2.2666285	20	1 13.2	17.5
29630 1998 UN_{32}	14.1	X	288.61202	220.17367	276.08599	11.70639	0.1092227	0.22355937	2.6886904	20	—	—
29631 Ryankenny	15.7	X	298.40849	225.41303	45.08679	4.72482	0.0709235	0.29773345	2.2211827	20	3 21.9	18.3
29632 1998 UR_{44}	16.2	X	112.18366	47.05687	23.88210	7.60651	0.1196461	0.29163834	2.2520238	20	3 17.1	18.9
29633 Weatherwax	15.1	X	322.72737	311.92539	240.51395	4.91235	0.0997067	0.28702418	2.2760950	20	1 1.4	17.9
29634 1998 VB_{3}	14.2	X	184.22866	359.67384	327.02162	1.15337	0.1096453	0.19760687	2.9192281	20	1 31.7	18.8
29635 1998 VP_{5}	15.0	X	213.68740	119.79589	12.23367	6.34508	0.1077632	0.26451279	2.4034676	20	9 30.8	18.1
29636 1998 VH_{6}	15.1	X	24.19707	68.82789	24.54655	9.42461	0.1005420	0.28229093	2.3014671	20	—	—
29637 1998 VN_{11}	14.6	X	56.64559	176.96263	108.04278	1.98358	0.1441146	0.31482334	2.1400542	20	11 10.6	17.2
29638 Eeshakhare	15.2	X	354.98777	30.17418	114.76051	5.94915	0.0987856	0.28546885	2.2843548	20	—	—
29639 1998 VO_{22}	16.0	X	265.55975	2.65420	16.76596	3.06581	0.1525780	0.30546830	2.1835273	20	6 27.6	18.6
29640 1998 VQ_{22}	15.1	X	166.93473	79.04823	269.74541	2.39440	0.2011198	0.24490324	2.5301117	20	2 9.8	19.3
29641 Kaikloepfer	16.2	X	50.84893	12.09894	43.22958	3.95916	0.1174957	0.28169532	2.3047100	20	—	—
29642 Archiekong	15.3	X	55.59945	83.00262	15.84185	4.73764	0.0826002	0.28682484	2.2771495	20	1 22.6	17.5
29643 Plücker	15.1	X	120.25829	226.22078	241.01385	3.90107	0.0953143	0.29429215	2.2384647	20	5 11.6	17.7
29644 1998 VA_{33}	15.2	X	206.93249	315.14596	234.67996	1.30053	0.1589368	0.27025353	2.3693095	20	12 2.1	18.4
29645 Kutsenok	16.0	X	105.14895	351.08575	65.35545	4.28089	0.1877631	0.28882392	2.2666299	20	2 27.3	18.6
29646 Polya	16.5	X	160.70969	180.13272	223.77153	3.89448	0.0829174	0.29270784	2.2465348	20	4 1.1	19.3
29647 Poncelet	15.7	X	308.69846	289.67866	197.34747	2.02845	0.1629903	0.27391766	2.3481330	20	—	—
29648 1998 WM_{3}	14.4	X	35.25328	113.46348	55.36895	3.39274	0.1016446	0.24256174	2.5463681	20	4 6.3	17.1
29649 1998 WP_{6}	14.4	X	84.23554	49.70501	59.42980	4.87156	0.1440233	0.24278880	2.5447803	20	4 7.9	17.5
29650 Toldy	15.7	X	102.71713	278.74195	85.40289	8.02589	0.1445051	0.28157343	2.3053751	20	—	—
29651 1998 WA_{9}	15.7	X	278.00433	245.33741	349.63464	7.32073	0.1621394	0.28876013	2.2669637	20	—	—
29652 1998 WD_{9}	15.2	X	16.28897	203.08700	207.37240	8.26962	0.1429902	0.27688452	2.3313292	20	—	—
29653 1998 WG_{9}	15.4	X	98.80353	351.64447	53.60295	5.37900	0.2257659	0.28292439	2.2980305	20	2 9.8	18.0
29654 Michaellaue	15.4	X	187.55728	1.14983	143.62802	2.14629	0.1458031	0.26207095	2.4183740	20	9 15.0	19.1
29655 Yarimlee	15.2	X	226.93589	288.53360	43.48489	2.38182	0.0249351	0.29292299	2.2454346	20	3 17.0	17.9
29656 Leejoseph	15.3	X	186.95762	292.88825	177.81585	2.90082	0.1503355	0.25763338	2.4460649	20	7 29.9	19.2
29657 Andreali	14.4	X	148.06726	55.81997	166.57772	2.35029	0.1630900	0.26805973	2.3822189	20	11 14.7	18.2
29658 Henrylin	14.8	X	270.08891	347.56579	262.48968	3.10356	0.1220950	0.28766914	2.2726917	20	1 10.7	18.1
29659 Zeyuliu	15.5	X	23.81162	41.48613	40.73708	5.26536	0.1458650	0.27982971	2.3149423	20	—	—
29660 Jessmacalpine	15.9	X	44.40269	70.45826	21.43639	3.51878	0.1480877	0.28394771	2.2925059	20	—	—
29661 1998 WT_{20}	14.0	X	33.00183	30.61689	206.53062	4.23758	0.1355169	0.30217524	2.1993624	20	7 19.8	16.1
29662 1998 WD_{23}	14.8	X	158.05646	294.86760	238.88677	4.27233	0.0411776	0.30874649	2.1680437	20	9 29.9	17.4
29663 Evanmackay	15.8	X	115.45110	24.12066	69.61016	4.68998	0.0784001	0.29363199	2.2418186	20	4 15.6	18.5
29664 1998 WY_{23}	13.3	X	272.65985	102.65504	85.44526	14.06640	0.1245594	0.22389413	2.6860097	20	—	—
29665 1998 WD_{24}	12.8	X	86.31962	239.51909	346.89435	7.98752	0.2110121	0.20295850	2.8676835	20	9 17.8	17.3
29666 1998 WC_{31}	15.5	X	66.65142	337.49296	106.73655	6.28874	0.1198438	0.28526239	2.2854569	20	1 23.1	17.4
29667 1998 XF	13.3	X	132.31803	222.38046	23.72141	11.46246	0.1325813	0.21277193	2.7788162	20	11 17.3	17.8
29668 Ipf	14.6	X	311.75088	194.81373	346.33133	2.97048	0.1038620	0.23523528	2.5989689	20	—	—
29669 1998 XZ_{3}	14.3	X	45.13066	138.78457	29.56941	5.76820	0.1067096	0.29136328	2.2534409	20	4 18.4	16.4
29670 1998 XS_{4}	13.4	X	174.39967	349.78825	291.82999	12.25008	0.1608456	0.23015623	2.6370653	20	—	—
29671 1998 XX_{8}	15.2	X	245.87148	16.50874	110.67013	3.29763	0.1292142	0.26679276	2.3897549	20	11 3.4	18.0
29672 Salvo	15.3	X	108.00046	144.76505	71.39214	3.68349	0.1282501	0.25994934	2.4315147	20	9 28.4	18.8
29673 1998 XK_{11}	14.7	X	59.68333	89.20239	304.88895	3.67523	0.0945395	0.27646258	2.3337006	20	—	—
29674 Raušal	15.6	X	294.55970	357.55226	77.02970	3.40621	0.1946953	0.26654762	2.3912198	20	11 1.8	17.4
29675 1998 XV_{15}	15.6	X	45.15155	266.75690	347.39035	5.53180	0.0633873	0.25871361	2.4392512	20	8 21.0	18.4
29676 1998 XW_{15}	14.2	X	255.02407	233.96533	270.62528	18.91870	0.2036757	0.26914130	2.3758325	20	11 28.3	16.8
29677 1998 XL_{17}	14.4	X	177.95473	111.17791	61.69939	6.31655	0.0699817	0.26058671	2.4275483	20	10 18.0	17.7
29678 1998 XZ_{18}	15.8	X	317.17160	78.77718	83.69796	3.96613	0.1066185	0.28070474	2.3101289	20	—	—
29679 1998 XF_{23}	14.9	X	111.13209	295.46247	287.35861	1.22479	0.1809399	0.26322628	2.4112924	20	10 11.3	18.6
29680 1998 XM_{27}	14.2	X	205.87886	311.13405	296.62615	6.17318	0.0805820	0.27879173	2.3206846	20	—	—

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
	m		°	°	°	°		°				
29681 Saramanshad	15.1	*X*	79.53688	58.62137	38.99693	8.94374	0.0528886	0.24037753	2.5617700	20	3 5.6	18.4
29682 1998 XR_{48}	14.1	*X*	317.92616	101.78777	83.44890	7.35031	0.0526234	0.28089401	2.3090911	20	—	—
29683 1998 XO_{50}	15.3	*X*	25.47546	132.28960	286.99085	1.11433	0.2240900	0.27598446	2.3363951	20	—	—
29684 1998 XF_{51}	14.1	*X*	163.82368	5.66140	53.22150	5.40040	0.1631502	0.29314306	2.2443106	20	5 1.2	17.3
29685 Soibamansoor	14.5	*X*	209.07896	57.11550	92.19310	7.16819	0.0538827	0.26197799	2.4189460	20	10 27.7	17.8
29686 Raymondmaung	14.8	*X*	338.25487	152.05174	292.54485	6.46479	0.0664202	0.27207423	2.3587275	20	—	—
29687 Mohdreza	15.3	*X*	333.40068	346.11766	120.34679	6.10931	0.1564217	0.27515031	2.3411148	20	—	—
29688 1998 XM_{92}	14.0	*X*	55.14882	52.26020	119.79398	5.43493	0.1056459	0.24517284	2.5282565	20	5 15.7	16.9
29689 1998 XY_{93}	14.5	*X*	271.02224	256.47474	232.86345	6.73513	0.0609682	0.26812329	2.3818424	20	12 22.9	17.2
29690 Nistala	14.6	*X*	236.56330	316.16510	186.23650	8.98403	0.0541206	0.26520403	2.3992894	20	11 22.8	17.7
29691 1998 XH_{96}	13.7	*X*	112.25504	136.39686	120.11566	9.95288	0.1034301	0.21438424	2.7648664	20	11 15.4	18.1
29692 1998 XE_{97}	15.7	*X*	4.28973	121.23738	312.56434	2.61808	0.1111399	0.27220372	2.3579794	20	—	—
29693 1998 *YC*	14.7	*X*	204.68733	120.33327	281.72869	3.05831	0.0958187	0.29503037	2.2347292	20	5 20.4	17.9
29694 1998 *YG*	14.5	*X*	315.01025	287.36283	226.39361	1.41327	0.1462101	0.22568588	2.6717744	20	—	—
29695 1998 *YH*	14.7	*X*	13.83689	218.69569	305.05148	4.24585	0.2185622	0.23419224	2.6066800	20	2 15.3	16.7
29696 Distasio	13.8	*X*	166.67731	213.65216	8.48555	7.71497	0.1641130	0.21047493	2.7989973	20	11 19.5	18.4
29697 1998 YR_1	13.7	*X*	127.99082	130.42175	157.53701	12.63685	0.0598848	0.21818798	2.7326384	20	—	—
29698 1998 YE_3	14.4	*X*	331.48301	225.38301	283.51816	7.14278	0.1296858	0.27682758	2.3316488	20	—	—
29699 1998 YF_4	15.6	*X*	42.01032	286.91489	130.31013	6.39037	0.1651695	0.27691696	2.3311471	20	—	—
29700 Salmon	15.9	*X*	264.46396	175.23523	278.47417	8.30820	0.1340573	0.26301266	2.4125979	20	10 7.4	19.0
29701 1998 YT_6	14.2	*X*	104.20726	259.50333	228.20610	17.52839	0.1993542	0.24425501	2.5345862	20	6 3.3	18.0
29702 1998 YY_6	14.8	*X*	175.69234	323.54602	232.24865	4.85334	0.0698906	0.21737984	2.7394069	20	11 3.9	18.9
29703 1998 YL_7	14.6	*X*	122.81507	308.53617	61.06817	6.05603	0.1657350	0.28088688	2.3091302	20	1 14.4	17.4
29704 1998 YB_9	15.8	*X*	207.95693	95.25155	211.10592	2.88839	0.1525254	0.28857691	2.2679231	20	1 18.9	19.3
29705 Cialucy	14.0	*X*	115.32307	101.71215	348.30837	4.00151	0.1072887	0.23694781	2.5864311	20	4 14.5	17.5
29706 Simonetta	15.5	*X*	41.37363	260.82044	97.55843	3.98856	0.2351507	0.27192683	2.3595799	20	—	—
29707 1998 YU_{14}	15.6	*X*	297.40355	21.93498	153.45515	3.59133	0.0506555	0.28035275	2.3120621	20	—	—
29708 1998 YQ_{15}	15.0	*X*	110.60884	15.83963	124.78524	5.49273	0.0965470	0.29303129	2.2448813	20	6 16.9	17.9
29709 1999 AF_2	14.2	*X*	262.90407	129.71405	16.65905	2.54293	0.1549042	0.26742551	2.3859838	20	12 21.9	16.5
29710 1999 AK_2	14.6	*X*	35.67839	18.19106	39.33733	3.80902	0.0911802	0.22819858	2.6521256	20	—	—
29711 1999 AU_5	14.3	*X*	335.57039	130.15946	85.71965	9.81797	0.0269763	0.19140459	2.9819554	20	3 20.6	18.5
29712 1999 AX_6	15.3	*X*	239.64555	116.84042	291.01781	4.02337	0.1244226	0.29935900	2.2131346	20	7 8.3	18.2
29713 1999 AK_7	14.8	*X*	67.73155	92.19693	267.50352	5.30159	0.1359773	0.27118875	2.3638592	20	—	—
29714 1999 AL_7	14.9	*X*	339.38978	316.61303	152.28739	6.45082	0.0815401	0.27251779	2.3561674	20	—	—
29715 1999 AW_7	13.8	*X*	184.45542	264.79026	94.97937	14.60915	0.1347443	0.23985482	2.5654905	20	3 15.1	18.1
29716 1999 AY_7	14.8	*X*	125.05411	1.78957	91.14938	10.09535	0.1233364	0.28964997	2.2623184	20	5 5.3	17.9
29717 1999 AC_8	15.2	*X*	128.27647	159.61425	20.92357	5.88378	0.1076024	0.29885219	2.2156360	20	9 6.5	18.3
29718 1999 AH_{18}	13.7	*X*	312.17621	35.92331	127.67094	13.90190	0.1852103	0.22764190	2.6564475	20	—	—
29719 1999 AF_{19}	12.7	*X*	82.14623	31.27654	315.01384	11.45380	0.0204565	0.17578738	3.1560527	20	—	—
29720 1999 AC_{20}	15.3	*X*	127.09715	212.15360	123.70652	2.86780	0.1155780	0.22655809	2.6649128	20	—	—
29721 1999 AC_{21}	15.3	*X*	26.65807	56.99183	338.16817	6.42779	0.1159241	0.27144984	2.3623432	20	—	—
29722 1999 AQ_{23}	13.8	*X*	297.47507	97.34000	135.31112	14.72446	0.1208012	0.23182213	2.6244167	20	1 28.3	17.4
29723 1999 AD_{24}	14.2	*X*	347.23482	184.11428	123.57903	13.73033	0.2208691	0.25443648	2.4665114	20	8 8.5	15.9
29724 1999 AP_{24}	14.7	*X*	351.67631	359.27560	140.25532	3.42163	0.0558918	0.22903891	2.6456346	20	—	—
29725 Mikewest	13.7	*X*	288.32046	101.62417	137.85409	2.39696	0.1011542	0.18316436	3.0707331	20	2 4.7	18.0
29726 1999 AH_{26}	14.8	*X*	328.47131	302.05163	244.45001	3.88001	0.0467771	0.23573187	2.5953176	20	1 18.9	18.2
29727 1999 AC_{34}	15.6	*X*	184.37165	236.19775	133.25222	1.89827	0.2142015	0.28784832	2.2717485	20	3 19.5	19.3
29728 1999 AM_{34}	14.8	*X*	128.19934	153.08635	308.33608	4.98914	0.0534261	0.28886715	2.2664037	20	5 6.5	17.7
29729 1999 BY_1	13.8	*X*	273.12219	20.94130	121.59682	25.37982	0.1987982	0.26774058	2.3841116	20	12 31.9	16.1
29730 1999 BE_2	13.8	*X*	295.41900	245.99879	265.82976	21.74658	0.2790187	0.26987473	2.3715261	20	—	—
29731 1999 BY_2	14.3	*X*	294.25721	334.72665	135.10298	16.92008	0.1628878	0.21934405	2.7230283	20	12 12.1	17.5
29732 1999 BZ_2	13.6	*X*	148.86061	157.98310	5.55510	5.63669	0.0622031	0.25235539	2.4800532	20	8 30.9	17.0
29733 1999 BA_4	13.9	*X*	124.99525	132.61480	77.52720	5.54075	0.0871471	0.25766914	2.4458385	20	10 7.1	17.5
29734 1999 BP_5	14.9	*X*	11.17483	309.38783	181.89451	4.71404	0.1400025	0.27575116	2.3377128	20	—	—
29735 1999 BR_6	13.8	*X*	258.58196	68.60370	41.17082	7.10076	0.0713405	0.20973078	2.8056141	20	10 25.0	17.5
29736 Fichtelberg	14.9	*X*	16.74567	101.06837	37.23717	7.15053	0.0560986	0.27930314	2.3178509	20	1 17.1	17.5
29737 Norihiro	14.3	*X*	188.57457	53.78540	150.29320	9.59816	0.0954664	0.21516486	2.7581750	20	11 27.9	18.5
29738 Ivobudil	14.7	*X*	122.65407	204.44767	167.26120	3.02280	0.0881291	0.27842570	2.3227181	20	1 4.3	17.4
29739 1999 BM_9	14.9	*X*	109.49669	359.56537	45.47685	3.50617	0.1441973	0.28304908	2.2973556	20	2 10.6	17.7
29740 1999 BS_9	13.3	*X*	45.77654	29.81686	343.73723	11.14994	0.1393749	0.22498728	2.6773023	20	—	—
29741 1999 BM_{10}	14.8	*X*	169.59782	236.50302	142.70293	4.56192	0.1820934	0.28646086	2.2790780	20	3 18.2	18.3
29742 1999 BQ_{12}	12.7	*X*	203.82539	239.88744	100.46782	16.05434	0.1641372	0.23977971	2.5660263	20	3 8.8	17.1
29743 1999 BM_{15}	14.7	*X*	129.69349	306.97136	159.61487	13.99442	0.1418797	0.24235251	2.5478334	20	5 30.7	18.8
29744 1999 BG_{20}	14.1	*X*	151.57999	355.87299	339.81404	14.89356	0.1256672	0.23452505	2.6042133	20	1 9.2	18.2
29745 Mareknovak	14.9	*X*	184.98000	351.21495	52.24150	8.87898	0.1533586	0.29384652	2.2407274	20	5 1.7	18.1
29746 1999 BB_{25}	14.7	*X*	273.10006	189.71409	232.17182	5.06443	0.0642220	0.30507308	2.1854127	20	9 26.6	17.1
29747 Acorlando	14.7	*X*	337.53940	326.56667	179.75870	7.41323	0.0666724	0.27678659	2.3318790	20	—	—
29748 1999 BZ_{31}	15.1	*X*	143.99278	31.43766	313.32628	5.75521	0.2044134	0.28021915	2.3127970	20	1 11.8	18.4
29749 1999 *CN*	15.0	*X*	16.61034	25.15134	92.42824	2.05461	0.1609575	0.27735312	2.3287025	20	—	—
29750 Chleborad	13.9	*X*	290.51593	337.05837	103.18003	7.16653	0.0727810	0.26059964	2.4274679	20	11 14.4	16.7
29751 1999 CE_4	14.5	*X*	340.44761	164.38538	134.87045	2.55807	0.0221944	0.20036822	2.8923454	20	7 8.8	18.4
29752 1999 CG_4	14.8	*X*	5.21558	147.87904	342.36977	5.52456	0.1193558	0.27586782	2.3370537	20	—	—
29753 Silvo	13.8	*X*	37.29693	244.17129	107.36869	10.05979	0.1412069	0.26747694	2.3856780	20	—	—
29754 1999 CE_5	15.2	*X*	16.20087	16.79280	19.70683	3.12719	0.0842977	0.22134985	2.7065532	20	—	—
29755 1999 CT_5	14.0	*X*	239.88982	271.20549	116.54748	5.75320	0.1166437	0.24612189	2.5217531	20	6 10.3	17.5
29756 1999 CW_5	13.9	*X*	122.81873	53.68659	53.20176	5.70999	0.1825132	0.24246735	2.5470289	20	5 24.7	17.7
29757 1999 CH_8	13.4	*X*	296.18149	131.38812	100.87415	12.56788	0.1343687	0.23089181	2.6314615	20	1 25.8	17.0
29758 1999 CN_8	13.5	*X*	84.95575	7.51661	99.71851	15.20223	0.1081041	0.23642449	2.5902464	20	4 8.0	17.1
29759 1999 CR_8	15.0	*X*	4.62423	278.21925	162.31712	4.91707	0.0742500	0.22530819	2.6747595	20	—	—
29760 Milevsko	14.2	*X*	214.82214	168.47068	354.92961	2.09978	0.1134715	0.21612107	2.7500334	20	11 2.1	18.2

ELEMENTS AND OPPOSITION DATES IN 2020

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Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
	m		°	°	°	°		°				
29761 1999 CJ_{16}	15.2	X	32.07155	279.66964	160.76811	1.91571	0.1955202	0.27604613	2.3360472	20	—	—
29762 Panasiewicz	14.1	X	301.14429	247.13002	11.14967	6.81650	0.1045620	0.28606457	2.2811823	20	3 4.3	16.7
29763 1999 CH_{20}	14.3	X	71.83316	341.29781	16.39518	8.94127	0.2290437	0.27253802	2.3560508	20	—	—
29764 Panneerselvam	14.7	X	339.40890	8.37427	116.28529	4.23917	0.0472789	0.22738603	2.6584400	20	—	—
29765 Miparedes	15.1	X	280.80907	130.26298	14.25900	1.43769	0.0930724	0.26831239	2.3807232	20	—	—
29766 1999 CL_{24}	14.5	X	49.31754	251.91251	114.15596	9.83461	0.2259268	0.27006366	2.3704199	20	—	—
29767 1999 CO_{24}	13.7	X	208.56578	131.77009	81.89555	7.25952	0.1102918	0.22067968	2.7120300	20	12 28.8	17.4
29768 1999 CZ_{27}	13.2	X	151.78478	71.02860	84.05429	14.04839	0.0664866	0.20647261	2.8350523	20	8 22.2	17.6
29769 1999 CE_{28}	12.2	X	123.98525	224.86219	96.61454	12.87523	0.1961259	0.22470453	2.6795477	20	—	—
29770 Timmpiper	15.2	X	116.97294	247.63019	125.85060	6.93932	0.1531470	0.27818775	2.3240424	20	1 9.3	18.0
29771 1999 CA_{31}	13.7	X	196.62791	176.42344	70.20741	3.06205	0.1327231	0.17512150	3.1640481	20	—	—
29772 Portocarrero	14.4	X	225.35785	132.31857	35.14273	3.97442	0.0326615	0.21741123	2.7391432	20	11 30.7	18.1
29773 Samuelpritt	14.1	X	298.91960	63.11895	123.94114	2.50295	0.0897604	0.18149724	3.0895082	20	—	—
29774 1999 CL_{44}	15.4	X	64.71913	325.56940	110.00679	4.74528	0.1372024	0.27926790	2.3180459	20	1 9.3	17.5
29775 1999 CO_{45}	13.8	X	9.06208	9.00933	2.82301	3.53601	0.0830569	0.26210373	2.4181723	20	12 12.4	16.6
29776 Radzhabov	14.8	X	109.81826	352.43914	44.04822	1.99724	0.1291986	0.23273006	2.6175866	20	2 4.2	18.2
29777 1999 CK_{46}	13.2	X	239.59270	257.50146	338.22406	7.60381	0.1753152	0.17738164	3.1371138	20	—	—
29778 1999 CO_{48}	14.0	X	66.02582	331.99037	343.83465	13.01532	0.1085411	0.21404246	2.7678088	20	12 3.3	18.3
29779 1999 CK_{49}	14.1	X	243.19723	272.29142	18.62426	9.04148	0.0629718	0.18766729	3.0214146	20	2 23.4	18.6
29780 1999 CJ_{50}	15.4	X	141.89140	107.65716	348.66502	6.14460	0.3207930	0.29223370	2.2489641	20	6 6.1	19.5
29781 1999 CL_{50}	14.7	X	310.38128	325.37470	135.97793	2.85987	0.1695367	0.26680495	2.3896821	20	—	—
29782 1999 CN_{50}	14.4	X	132.25230	270.79378	149.50074	14.48604	0.1762909	0.23915498	2.5704930	20	4 8.7	18.5
29783 Sanjanarane	14.8	X	286.16525	276.81545	150.53478	2.76803	0.1730407	0.25976038	2.4326938	20	10 5.0	17.2
29784 1999 CD_{51}	14.0	X	72.10896	354.30290	120.33502	3.12513	0.0892207	0.23654675	2.5893538	20	3 20.2	17.2
29785 1999 CD_{55}	14.3	X	304.66848	352.04360	93.69895	5.82195	0.0703315	0.21631034	2.7484290	20	11 30.2	17.6
29786 1999 CO_{57}	14.4	X	139.60922	296.36481	149.32945	11.14972	0.1528626	0.24224465	2.5485897	20	5 15.5	18.5
29787 Timrenier	14.3	X	173.43550	338.22747	16.12606	3.56575	0.1553591	0.23309819	2.6148299	20	2 22.8	18.3
29788 Rachelrossi	14.7	X	267.97056	165.84417	169.96431	1.83308	0.1238634	0.24402674	2.5361665	20	5 4.4	18.0
29789 1999 CD_{64}	13.9	X	101.39349	87.89729	299.98696	13.37361	0.1245227	0.23162246	2.6259247	20	1 12.6	17.1
29790 1999 CW_{64}	14.0	X	310.92816	56.16775	216.65671	13.09613	0.1478415	0.23991019	2.5650958	20	3 31.9	17.4
29791 1999 CC_{65}	13.7	X	189.14928	61.47343	281.26674	11.97227	0.1886412	0.23628152	2.5912911	20	2 17.5	18.2
29792 1999 CG_{65}	13.8	X	74.39603	280.03399	189.39488	9.73074	0.0648445	0.19112621	2.9848502	20	3 15.5	17.8
29793 1999 CH_{65}	13.3	X	173.48646	329.71989	234.19745	6.50216	0.0923110	0.21449821	2.7638869	20	11 9.8	17.4
29794 1999 CC_{67}	13.5	X	57.04267	236.08813	272.66396	11.00805	0.0805758	0.23940281	2.5687187	20	4 4.5	16.8
29795 1999 CL_{71}	13.8	X	183.13287	277.35123	288.46885	3.50080	0.1000036	0.21539425	2.7562164	20	11 21.3	17.9
29796 1999 CW_{77}	13.9	X	340.20491	299.69434	207.96796	7.86840	0.0753392	0.27468355	2.3437662	20	—	—
29797 1999 CC_{78}	13.7	X	265.35694	150.96075	176.42788	13.98909	0.1894648	0.24166007	2.5526981	20	4 13.6	17.5
29798 1999 CP_{79}	13.4	X	230.97013	85.85663	166.87529	12.69185	0.1350805	0.22572886	2.6714353	20	—	—
29799 Trinirussell	14.3	X	336.38966	52.93300	187.92187	9.83559	0.0345616	0.19167209	2.9791804	20	4 17.5	18.3
29800 Valeriesarge	14.6	X	166.39470	17.42168	343.39450	6.93119	0.1432165	0.28445500	2.2897795	20	2 18.0	17.9
29801 1999 CX_{84}	14.0	X	173.11363	119.64998	86.11564	9.55653	0.1756207	0.26105704	2.4246317	20	11 16.7	17.9
29802 Rikhavshah	14.9	X	273.71127	351.60079	131.83425	6.77137	0.0356398	0.21941884	2.7224094	20	12 8.9	18.5
29803 Michaelshao	15.6	X	79.30071	315.40167	135.41126	1.32530	0.1309459	0.23723764	2.5843241	20	3 3.6	18.5
29804 Idansharon	14.9	X	30.09376	25.80331	330.31111	2.04520	0.1784971	0.26495365	2.4008007	20	—	—
29805 Bradleysloop	15.1	X	78.13678	117.78539	326.95472	5.21756	0.1214690	0.28192070	2.3034815	20	2 13.7	17.2
29806 Eviesobczak	15.2	X	129.22017	2.30608	66.83670	3.58433	0.1680565	0.28629905	2.2799367	20	4 10.6	18.4
29807 1999 CR_{99}	13.8	X	242.81069	99.19804	56.76776	3.08275	0.0651368	0.21667261	2.7453647	20	12 3.7	17.5
29808 Youssoliman	15.2	X	87.06508	138.89052	333.36672	3.58219	0.1420173	0.23859699	2.5744991	20	4 12.6	18.4
29809 1999 CQ_{103}	14.4	X	160.03181	14.82722	201.94993	9.18954	0.1284048	0.21495286	2.7599882	20	11 11.9	18.8
29810 1999 CF_{106}	14.6	X	185.90670	241.34253	158.12897	13.65880	0.2325329	0.24614343	2.5216059	20	5 2.1	19.2
29811 1999 CK_{109}	14.3	X	294.28761	273.72661	227.17857	10.55729	0.1460088	0.22289932	2.6939956	20	—	—
29812 Aaronsolomon	14.9	X	14.98493	134.60274	234.33308	5.54709	0.1927318	0.26429571	2.4047834	20	—	—
29813 1999 CF_{111}	14.1	X	247.05565	231.50304	253.56114	2.91939	0.0317522	0.21458097	2.7631762	20	11 4.0	17.9
29814 1999 CU_{111}	13.7	X	3.35144	300.94390	205.10860	8.51639	0.1160063	0.18543676	3.0455951	20	1 18.3	17.6
29815 1999 CG_{112}	14.3	X	77.72481	81.23666	194.79363	16.65708	0.1555890	0.20973344	2.8055904	20	11 6.2	18.6
29816 1999 CS_{113}	14.0	X	134.82410	201.68708	226.39155	9.13860	0.0016284	0.19191753	2.9766398	20	3 29.7	18.3
29817 1999 CG_{117}	14.6	X	294.86631	269.58631	172.82042	11.80844	0.1746384	0.26279668	2.4139196	20	11 17.7	16.9
29818 Aryosorayya	14.6	X	100.09144	269.13707	213.51195	6.67695	0.1610703	0.28748257	2.2736749	20	5 17.9	17.5
29819 1999 CD_{128}	12.5	X	237.45787	121.77409	80.52902	14.31929	0.0815697	0.17371970	3.1810464	20	—	—
29820 1999 CW_{149}	14.2	X	163.75348	271.68746	55.65180	0.08318	0.1720702	0.17888796	3.1194784	20	1 19.1	19.3
29821 1999 DP_{1}	13.1	X	346.62158	172.26204	58.02278	14.60314	0.1266662	0.23786754	2.5797598	20	4 12.7	16.0
29822 1999 DS_{2}	14.0	X	215.40328	183.57363	343.76351	9.29252	0.1526046	0.21404188	2.7678139	20	10 30.7	18.3
29823 1999 DS_{3}	13.8	X	308.65868	123.62734	70.40956	11.19482	0.1591513	0.22756343	2.6570582	20	—	—
29824 Kalmančok	14.8	X	264.81130	80.17241	111.05415	2.49340	0.1554069	0.17459919	3.1703551	20	—	—
29825 Dunyazade	15.2	X	135.74029	301.83003	95.63758	1.09798	0.1429561	0.23648232	2.5898240	20	3 7.6	19.0
29826 1999 DW_{6}	13.7	X	31.92543	86.35048	343.59060	9.39931	0.2126376	0.27065515	2.3669651	20	—	—
29827 1999 DQ_{7}	14.8	X	331.94819	18.36927	118.16780	5.69148	0.1044758	0.22537582	2.6742243	20	—	—
29828 1999 DU_{8}	15.4	X	115.48026	267.50963	139.09016	8.17340	0.1649210	0.28283285	2.2985263	20	2 23.2	18.1
29829 Engels	13.4	X	68.41891	336.19121	172.90995	12.41290	0.1911578	0.23836779	2.5761491	20	5 19.1	16.7
29830 1999 ER_{4}	13.4	X	57.77262	138.90059	197.18396	5.32495	0.1200323	0.21274041	2.7790907	20	12 22.1	17.4
29831 1999 EV_{4}	13.7	X	214.44546	84.22585	181.64017	12.13020	0.0372469	0.22338725	2.6900713	20	—	—
29832 Steinwehr	14.8	X	24.25664	60.14996	90.88711	5.13733	0.1101249	0.23336968	2.6128015	20	2 24.3	17.6
29833 1999 FJ	14.5	X	277.48594	294.81909	216.61777	1.68758	0.0950089	0.21821871	2.7323819	20	—	—
29834 Mariacallas	13.8	X	214.21943	61.98137	18.39005	2.01529	0.0421594	0.19844674	2.9109857	20	7 25.6	17.9
29835 1999 FW_{1}	14.8	X	119.72655	43.52822	180.40969	2.86811	0.0564880	0.25419993	2.4680414	20	10 14.6	18.2
29836 1999 FB_{4}	15.1	X	59.89429	169.42901	152.93452	4.96723	0.0999212	0.21528152	2.7571785	20	12 6.6	19.1
29837 Savage	14.1	X	247.65837	304.25688	13.76006	10.37941	0.1052681	0.18940963	3.0028572	20	3 25.3	18.5
29838 1999 FA_{7}	14.1	X	299.17945	159.46942	36.73332	1.49041	0.1014896	0.17745270	3.1362762	20	—	—
29839 1999 FA_{9}	13.9	X	284.04632	168.16443	59.30328	2.29538	0.1472328	0.18072725	3.0982774	20	1 11.7	18.6
29840 1999 FV_{12}	13.9	X	158.72492	94.68890	24.62386	4.77876	0.2531967	0.19896255	2.9059523	20	7 14.7	19.0

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	Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
		m		°	°	°	°		°				
29841	1999 FO_{14}	15.0	X	91.20246	38.84375	24.05636	2.20641	0.0663117	0.22785336	2.6548038	20	2 5.1	18.3
29842	1999 FE_{18}	13.6	X	118.17035	58.38458	164.66413	12.72929	0.1888426	0.20338620	2.8636618	20	10 14.5	18.4
29843	1999 FJ_{19}	13.3	X	202.34557	95.36893	179.42984	13.32185	0.1694078	0.17246478	3.1964587	20	—	—
29844	1999 FM_{19}	13.7	X	162.96416	88.61551	141.00924	3.17751	0.0689371	0.21143690	2.7905011	20	12 1.4	17.8
29845	Wykrota	14.1	X	284.23328	124.40855	24.09090	13.85612	0.1564901	0.26375526	2.4080674	20	—	—
29846	1999 FT_{23}	13.5	X	117.33537	120.70160	214.80134	7.86676	0.0367703	0.22299873	2.6931950	20	—	—
29847	1999 FC_{24}	14.6	X	259.20350	326.01789	208.82401	2.37584	0.2078382	0.22023554	2.7156749	20	12 30.3	17.7
29848	1999 FL_{24}	13.6	X	294.85581	260.95826	294.57573	3.94992	0.1045490	0.17780511	3.1321308	20	—	—
29849	1999 FJ_{25}	14.0	X	49.87463	60.21019	45.93847	9.97231	0.0397293	0.18236862	3.0796590	20	2 11.4	18.3
29850	Tanakagyou	14.4	X	222.88798	318.90761	25.62051	2.43196	0.0155311	0.23484232	2.6018673	20	4 2.7	17.7
29851	1999 FW_{25}	13.3	X	304.62787	158.67368	210.88494	1.41359	0.0801175	0.20166032	2.8799774	20	8 15.5	16.9
29852	Niralithakor	14.4	X	261.96790	175.80315	320.59887	3.96355	0.0996536	0.21412083	2.7671334	20	11 28.2	17.9
29853	1999 FZ_{26}	13.3	X	353.45674	76.24494	137.54348	7.20692	0.0473744	0.18797649	3.0181004	20	4 7.5	17.3
29854	1999 FK_{27}	13.4	X	73.15449	43.89535	25.94667	13.19297	0.1199738	0.22806128	2.6531899	20	1 30.9	16.8
29855	1999 FN_{27}	13.5	X	279.65222	6.23623	160.23071	5.95048	0.0822468	0.21949239	2.7218012	20	—	—
29856	1999 FA_{28}	13.7	X	213.92644	4.85661	213.64947	6.74342	0.0866723	0.21663252	2.7457034	20	—	—
29857	1999 FS_{28}	13.9	X	87.20899	78.96312	169.57527	2.10013	0.0240190	0.20429889	2.8551267	20	9 25.4	17.9
29858	Tlomak	13.9	X	180.58012	68.66203	140.30490	4.29526	0.0356103	0.21124548	2.7921865	20	11 28.2	17.8
29859	1999 FW_{31}	13.9	X	326.57541	298.40849	214.95557	11.47115	0.2102462	0.22477467	2.6789902	20	—	—
29860	1999 FO_{34}	13.8	X	359.27530	19.36975	155.78027	4.80307	0.0968820	0.18374329	3.0642796	20	2 21.4	17.4
29861	1999 FV_{36}	12.6	X	348.06941	220.29932	221.24973	16.70436	0.1422849	0.17162890	3.2068288	20	—	—
29862	Savannahjoy	14.8	X	191.75876	300.15311	223.86324	6.18808	0.1158779	0.25705431	2.4497370	20	10 14.4	18.4
29863	1999 FC_{43}	13.1	X	345.55568	348.06872	149.65294	8.56392	0.1231605	0.22744170	2.6580062	20	—	—
29864	1999 FM_{44}	14.1	X	276.97148	60.15908	175.37310	11.63363	0.1416610	0.22826912	2.6515792	20	1 6.2	18.3
29865	1999 FL_{45}	12.8	X	0.03836	80.32340	338.22350	13.37429	0.1295364	0.17355218	3.1830930	20	—	—
29866	1999 FR_{46}	13.7	X	141.49169	29.20149	71.92808	2.87897	0.0316201	0.19504396	2.9447452	20	5 24.7	17.8
29867	1999 FA_{55}	13.5	X	10.02433	317.50883	189.72335	12.07196	0.1378864	0.23123989	2.6288202	20	1 18.8	16.6
29868	1999 FB_{56}	14.2	X	19.50609	89.25063	156.43430	14.65040	0.0967446	0.24297275	2.5434957	20	6 29.6	17.4
29869	Chiarabarbara	13.0	X	208.46285	299.36626	14.57360	15.56638	0.0379415	0.18241341	3.0791549	20	2 18.0	17.7
29870	1999 GV_{4}	13.0	X	331.19833	263.39548	195.17523	8.40310	0.1725312	0.21749317	2.7384551	20	—	—
29871	1999 GE_{5}	13.4	X	20.15687	263.43918	126.77590	9.80383	0.1724762	0.21478194	2.7614523	20	—	—
29872	1999 GO_{6}	14.2	X	18.29486	119.18452	6.73653	3.94228	0.1473262	0.22594662	2.6697186	20	1 8.4	17.0
29873	1999 GG_{9}	14.6	X	140.81638	63.65822	74.16981	4.55423	0.1078133	0.24295969	2.5435869	20	7 18.4	18.4
29874	Rogerculver	14.6	X	61.82763	4.26190	158.57326	8.06156	0.1355949	0.23703130	2.5858237	20	5 18.6	17.8
29875	1999 GY_{14}	14.3	X	20.22387	334.25176	136.79288	0.57098	0.1355905	0.17906177	3.1174593	20	1 3.9	17.8
29876	1999 GR_{16}	13.1	X	146.81871	239.23537	183.32057	10.22449	0.0345477	0.19026118	2.9938906	20	4 13.8	17.3
29877	1999 GL_{17}	12.8	X	163.33537	262.86568	111.86731	13.17830	0.1233346	0.23198927	2.6231560	20	3 10.8	17.0
29878	1999 GY_{19}	13.8	X	26.44653	258.33217	193.50517	11.26888	0.1446524	0.22385266	2.6863414	20	—	—
29879	1999 GO_{21}	12.8	X	124.77063	58.77015	49.12031	11.29284	0.0593003	0.19012453	2.9953250	20	5 15.5	17.1
29880	Andytran	14.2	X	203.75421	152.11726	159.19491	1.87722	0.1519727	0.17912055	3.1167773	20	2 2.7	19.2
29881	Tschopp	14.3	X	197.85571	214.62847	64.64691	2.19221	0.1343743	0.17338716	3.1851123	20	—	—
29882	1999 GU_{30}	14.5	X	30.13440	284.01608	177.03113	12.23234	0.1228521	0.22583392	2.6706067	20	—	—
29883	1999 GB_{31}	13.2	X	121.99253	239.48219	180.88418	11.00870	0.0109462	0.18397236	3.0617354	20	3 7.6	17.5
29884	1999 GF_{31}	13.8	X	312.66920	174.87850	189.76125	6.34744	0.1145405	0.24725954	2.5140120	20	8 23.0	16.5
29885	1999 GN_{31}	14.0	X	3.44993	165.30297	65.14278	2.23092	0.0157713	0.19031120	2.9933660	20	5 10.7	18.2
29886	Randytung	15.0	X	275.27444	315.15554	164.36318	2.69284	0.1477639	0.26013139	2.4303802	20	12 4.2	17.5
29887	1999 GN_{34}	13.4	X	356.27785	66.15432	256.28139	1.19168	0.1242421	0.20192399	2.8774698	20	9 4.7	16.7
29888	1999 GJ_{36}	13.8	X	117.75235	240.65670	225.09517	7.79712	0.0391384	0.18978392	2.9989078	20	5 2.2	17.9
29889	1999 GN_{36}	14.1	X	32.92704	355.12669	223.31545	11.61688	0.0759378	0.24061682	2.5600713	20	6 9.9	17.2
29890	1999 GH_{37}	13.3	X	218.58568	231.90764	32.43126	15.25210	0.1999113	0.17567069	3.1574502	20	—	—
29891	1999 GQ_{37}	13.0	X	264.38763	103.57247	85.82263	10.40932	0.0462541	0.17484655	3.1673642	20	—	—
29892	1999 GS_{37}	13.7	X	225.10348	215.66770	154.07104	9.49350	0.0696532	0.23984580	2.5655549	20	5 7.2	17.5
29893	1999 GW_{37}	14.1	X	35.60223	22.11739	46.34187	13.95660	0.1622879	0.22508161	2.6765542	20	—	—
29894	1999 GD_{39}	13.6	X	51.20169	348.13975	126.42527	8.87956	0.0845525	0.18470575	3.0536255	20	2 24.5	17.5
29895	1999 GP_{53}	12.8	X	190.14583	116.16463	230.83793	13.52310	0.0388070	0.18263948	3.0766135	20	2 24.9	17.6
29896	1999 GN_{58}	13.9	X	270.52230	214.03270	13.08965	11.81802	0.1110383	0.22395925	2.6854890	20	—	—
29897	1999 GM_{61}	13.8	X	160.69503	230.53601	42.93966	4.15699	0.0377651	0.16989042	3.2286685	20	—	—
29898	1999 HG_{1}	13.0	X	185.13762	257.92960	16.53808	8.12745	0.0247237	0.17010448	3.2259593	20	—	—
29899	1999 HU_{1}	14.2	X	49.25191	264.52363	136.22959	4.77093	0.0899000	0.21932069	2.7232216	20	—	—
29900	1999 HP_{5}	13.8	X	305.27265	93.22491	207.59191	10.55876	0.1016671	0.19070366	2.9892577	20	5 13.6	17.7
29901	1999 HS_{7}	14.1	X	226.26775	96.29236	43.27549	4.00935	0.1255514	0.25472239	2.4646654	20	10 22.4	17.3
29902	1999 HM_{8}	13.6	X	325.29645	343.22034	199.35829	11.59334	0.1566319	0.22778628	2.6553249	20	—	—
29903	1999 HP_{9}	13.0	X	281.56865	209.73620	213.27619	8.64911	0.1195083	0.20591143	2.8402010	20	9 14.9	16.8
29904	1999 HL_{10}	13.7	X	184.64146	89.13762	210.44349	15.52389	0.0483910	0.17497201	3.1658500	20	—	—
29905	Kunitaka	13.2	X	308.24393	2.19312	207.04433	17.69106	0.1655585	0.22526845	2.6750740	20	1 4.2	17.3
29906	1999 HF_{12}	14.4	X	2.52606	121.69648	204.02145	11.70155	0.0721367	0.20128767	2.8835308	20	9 13.8	18.2
29907	1999 JD	14.0	X	32.50461	183.36989	43.49533	13.56931	0.1022632	0.24246820	2.5470229	20	6 23.9	17.1
29908	1999 JP_{3}	13.2	X	322.35540	317.31814	268.17175	13.56830	0.0701503	0.23084673	2.6318041	20	2 21.6	16.8
29909	1999 JE_{8}	14.1	X	317.42988	292.39048	203.63112	22.76555	0.2565351	0.26667592	2.3904529	20	—	—
29910	Segre	13.7	X	180.28427	297.56257	89.75648	10.69516	0.1148927	0.18378923	3.0637690	20	4 14.8	18.7
29911	1999 JQ_{9}	14.0	X	359.47420	318.71035	140.63287	5.61908	0.0523173	0.22042254	2.7141388	20	—	—
29912	1999 JQ_{10}	13.6	X	6.56492	320.97706	171.85781	13.43509	0.1149619	0.22460740	2.6803202	20	—	—
29913	1999 JO_{12}	13.4	X	217.88627	271.98052	109.83947	11.49133	0.1393619	0.18930986	3.0039122	20	5 12.1	18.3
29914	1999 JH_{15}	13.2	X	297.83538	88.48366	115.97935	18.10769	0.1198306	0.17598487	3.1536911	20	1 4.0	17.7
29915	1999 JG_{18}	14.0	X	238.57858	135.67590	20.95361	8.83168	0.1771283	0.21296739	2.7771157	20	11 10.7	17.9
29916	1999 JP_{18}	15.0	X	122.74541	113.76167	5.64411	6.35213	0.2436776	0.24083969	2.5584917	20	6 15.0	19.2
29917	1999 JP_{19}	13.0	X	178.87244	24.89360	16.54269	10.41780	0.1285321	0.18795963	3.0182809	20	4 23.6	17.8
29918	1999 JV_{20}	12.9	X	18.92053	79.21560	48.43336	2.28764	0.1452425	0.18008183	3.1056758	20	1 23.2	16.3
29919	1999 JD_{23}	13.0	X	313.74756	249.68797	43.81015	10.62494	0.0855805	0.19014071	2.9951550	20	5 16.5	16.9
29920	1999 JB_{26}	13.6	X	271.44054	92.54883	216.25760	9.62031	0.0640678	0.18654027	3.0335720	20	4 13.3	17.8

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

	Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
		m		°	°	°	°		°				
29921	1999 JE_{26}	14.3	X	26.67259	313.09410	217.17399	14.32706	0.0707181	0.23168421	2.6254581	20	3 19.3	17.7
29922	1999 JZ_{27}	12.8	X	135.58947	257.70233	80.49675	3.31608	0.0436457	0.17229710	3.1985323	20	—	—
29923	1999 JE_{28}	13.8	X	344.61321	181.06495	186.04593	1.54723	0.0549839	0.20351911	2.8624150	20	10 14.2	17.4
29924	1999 JN_{28}	13.4	X	219.05822	151.55665	227.16282	9.98160	0.1409299	0.18854840	3.0119943	20	5 5.3	18.1
29925	1999 JV_{28}	13.1	X	218.19375	354.83770	32.06724	11.22903	0.1006636	0.18963833	3.0004424	20	5 15.2	17.7
29926	1999 JW_{32}	12.9	X	245.84456	294.39054	59.01238	10.14826	0.0867231	0.18829758	3.0146684	20	5 7.8	17.3
29927	1999 JE_{35}	14.0	X	247.18854	316.10453	229.91304	2.08180	0.0549425	0.21463004	2.7627551	20	—	—
29928	1999 JX_{35}	13.4	X	149.49563	253.29258	201.75763	10.55190	0.0888748	0.19039450	2.9924928	20	5 31.2	18.0
29929	1999 JR_{39}	13.1	X	163.23968	313.59337	42.21706	6.86735	0.1496298	0.17684413	3.1434674	20	2 21.9	18.2
29930	1999 JT_{41}	13.8	X	110.22294	278.46328	168.84065	4.04938	0.0892470	0.23081042	2.6320802	20	4 4.8	17.3
29931	1999 JL_{44}	12.2	X	316.86627	292.44623	238.07813	14.69453	0.0588202	0.17427564	3.1742778	20	—	—
29932	1999 JB_{46}	13.5	X	284.03281	2.46129	213.74593	15.03106	0.0898780	0.17532702	3.1615749	20	1 3.7	18.3
29933	1999 JG_{46}	13.7	X	274.23119	148.78240	203.88241	10.83320	0.0314777	0.19121323	2.9839447	20	6 17.5	18.0
29934	1999 JL_{46}	13.2	X	175.88270	273.20281	200.88380	7.76169	0.2921296	0.19796463	2.9157099	20	7 18.2	18.7
29935	1999 JH_{48}	14.5	X	109.37549	224.34732	261.20526	12.08298	0.2070982	0.23701400	2.5859496	20	6 7.0	18.4
29936	1999 JD_{49}	12.6	X	356.72052	235.10832	235.83185	20.70835	0.0368183	0.17116707	3.2125944	20	—	—
29937	1999 JB_{50}	13.6	X	275.37103	58.73035	76.49407	10.36725	0.1022352	0.21199662	2.7855872	20	12 15.6	17.1
29938	1999 JR_{52}	13.8	X	220.18341	332.58338	185.09158	1.76132	0.0211329	0.20634254	2.8362436	20	11 12.2	17.7
29939	1999 JS_{52}	13.7	X	309.46814	330.24206	224.33534	8.62994	0.0426037	0.17557898	3.1585496	20	1 14.5	18.2
29940	1999 JK_{73}	13.8	X	50.17658	20.44524	191.73222	10.26505	0.0418344	0.19177273	2.9781380	20	6 21.5	18.0
29941	1999 JB_{76}	13.7	X	329.29067	169.01699	20.73735	1.58974	0.0754366	0.17981929	3.1086980	20	1 31.2	17.9
29942	1999 JJ_{77}	13.1	X	331.61455	103.65078	186.27611	9.82608	0.0500432	0.19043883	2.9920284	20	6 12.4	17.2
29943	1999 JZ_{78}	10.9	X	14.16014	26.46836	90.73808	19.65145	0.1549061	0.17869554	3.1217173	20	—	—
29944	1999 JF_{80}	12.4	X	209.85418	167.05178	114.18308	13.63039	0.1794167	0.12535483	3.9540487	20	1 10.9	18.8
29945	1999 JU_{83}	12.2	X	45.91737	292.31612	184.37698	23.22013	0.1107725	0.17935421	3.1140697	20	2 17.7	16.4
29946	1999 JZ_{83}	13.3	X	205.16916	184.30580	111.21255	10.58820	0.0505120	0.17426433	3.1744151	20	1 18.3	18.0
29947	1999 JD_{84}	13.4	X	36.42352	30.81432	120.60923	18.12805	0.1324664	0.23028420	2.6360883	20	3 24.7	16.6
29948	1999 JS_{84}	12.8	X	350.01492	51.69585	108.49682	17.34847	0.0592555	0.17530360	3.1618565	20	1 25.4	17.0
29949	1999 JM_{85}	13.1	X	285.45507	243.82273	101.55512	11.70896	0.0753706	0.19112660	2.9848462	20	6 17.1	17.2
29950	Uppili	15.0	X	274.82173	349.90211	113.79956	3.52200	0.1584700	0.25788998	2.4444420	20	11 9.2	17.4
29951	1999 JH_{86}	13.1	X	138.03335	177.67269	177.15534	21.26798	0.0359365	0.17646748	3.1479386	20	1 11.4	18.1
29952	Varghese	14.5	X	107.59376	346.06497	143.71310	8.74546	0.1436556	0.23907198	2.5710879	20	6 4.7	18.3
29953	1999 JW_{86}	13.3	X	229.41387	252.52245	107.79945	10.85469	0.1555061	0.18856841	3.0117812	20	4 26.7	18.2
29954	1999 JK_{89}	13.4	X	204.16698	162.51087	179.43948	8.99995	0.0625196	0.18188472	3.0851189	20	3 10.0	18.1
29955	1999 JE_{90}	13.9	X	351.36104	76.16205	116.27391	10.89924	0.0397459	0.18247032	3.0785147	20	3 10.5	18.1
29956	1999 JF_{91}	13.1	X	162.48060	175.96768	145.40647	14.91346	0.1221381	0.17243186	3.1968655	20	1 8.4	18.2
29957	1999 JR_{91}	13.0	X	164.90171	276.68016	150.37629	10.60227	0.1048794	0.18856329	3.0118357	20	5 15.5	17.8
29958	1999 JY_{91}	13.9	X	31.61361	22.00902	137.86346	7.58217	0.1238429	0.18396309	3.0618383	20	3 27.9	17.6
29959	Senevelling	14.1	X	295.35700	273.29570	150.87181	9.63066	0.1231771	0.20526909	2.8461231	20	10 13.3	17.6
29960	1999 JU_{92}	14.0	X	224.04517	239.51395	139.07013	10.78564	0.1176137	0.18846528	3.0128799	20	5 15.1	18.8
29961	1999 JB_{99}	13.3	X	116.10025	307.72107	138.13197	17.40727	0.1909059	0.18405480	3.0608211	20	4 30.2	18.3
29962	1999 JA_{100}	13.1	X	12.78268	356.63423	114.35853	12.55825	0.0808183	0.17243752	3.1967956	20	—	—
29963	1999 JH_{100}	13.4	X	154.10346	125.66614	190.97607	21.29639	0.0144128	0.16962208	3.2320727	20	—	—
29964	1999 JO_{100}	13.5	X	10.65993	37.65942	121.40731	12.17786	0.1367895	0.17924270	3.1153611	20	2 20.3	17.2
29965	1999 JX_{102}	13.9	X	11.93388	29.24638	94.34029	6.15447	0.1138580	0.17720931	3.1391473	20	1 7.6	17.7
29966	1999 JW_{103}	13.4	X	359.19022	112.64365	163.96703	11.19823	0.0600931	0.14625451	3.5677675	20	7 2.4	18.3
29967	1999 JN_{104}	14.0	X	288.94032	339.36596	157.75805	12.87486	0.0856569	0.21636217	2.7479901	20	—	—
29968	1999 JE_{106}	13.9	X	315.63762	103.83481	195.38592	10.31972	0.0724290	0.19148422	2.9811287	20	5 30.7	17.9
29969	Amyvitha	14.3	X	291.98346	323.60154	118.31311	2.92210	0.0174113	0.20629706	2.8366605	20	11 9.3	18.0
29970	1999 KQ	14.0	X	317.34251	312.87544	185.96828	11.87986	0.1234760	0.21900210	2.7258620	20	—	—
29971	1999 KT	15.6	X	327.26657	139.00746	165.97118	7.15020	0.1802391	0.28414632	2.2914376	20	6 16.1	17.5
29972	Chriswan	14.0	X	30.56995	278.83989	222.81560	8.26242	0.0430390	0.17901012	3.1180590	20	2 22.5	18.3
29973	1999 LP_{7}	13.7	X	193.35602	107.72951	181.38440	2.80166	0.1673664	0.12377974	3.9875211	20	1 6.6	20.1
29974	1999 LV_{8}	14.0	X	326.65554	0.77325	120.12548	10.42431	0.0902808	0.21549287	2.7553754	20	—	—
29975	1999 LQ_{32}	13.7	X	5.74150	243.79224	276.17553	7.76783	0.1449066	0.22887370	2.6469076	20	1 29.4	16.6
29976	1999 NE_{9}	11.0	X	171.34300	111.75448	318.89680	30.08091	0.0095959	0.08417656	5.1563447	20	5 15.1	18.3
29977	1999 NH_{11}	11.1	X	294.45076	155.81077	133.96701	23.98213	0.0892671	0.08249277	5.2262736	20	4 29.1	18.2
29978	Arthurwang	14.9	X	339.83232	329.71288	323.22622	2.84733	0.1684113	0.28082956	2.3094444	20	6 26.4	16.6
29979	Wastyk	15.3	X	305.15423	168.84325	24.83418	6.23154	0.0647493	0.25760413	2.4462500	20	—	—
29980	Dougsimons	14.7	X	69.81128	71.96209	255.97833	3.74030	0.2083568	0.29120758	2.2542441	20	—	—
29981	1999 TD_{10}	8.7	X	7.91892	172.32618	184.62811	5.96134	0.8723051	0.00105297	95.6885229	20	1 5.7	23.7
29982	Sarahwu	15.4	X	259.14072	173.10972	8.24340	6.12885	0.0307267	0.29456762	2.2370690	20	—	—
29983	Amyxu	14.1	X	190.62007	120.87100	15.87866	1.30588	0.1061794	0.18074757	3.0980451	20	9 1.9	18.8
29984	Zefferer	15.4	X	160.47003	254.65995	283.08824	2.41404	0.0608943	0.23079594	2.6321902	20	9 26.6	19.3
29985	1999 VX_{153}	13.6	X	308.51615	103.22338	116.61180	18.14160	0.2244935	0.24051055	2.5608253	20	1 9.9	17.3
29986	Shunsuke	15.5	X	131.32938	135.10388	75.89363	6.12209	0.1138905	0.27514433	2.3411487	20	10 18.2	18.9
29987	Lazhang	15.3	X	186.27599	228.25520	54.40043	6.01322	0.1191202	0.29540531	2.2328378	20	—	—
29988	Davidezilli	14.4	X	293.21389	305.33022	278.94859	3.55499	0.1872706	0.29822071	2.2187626	20	—	—
29989	1999 XS_{204}	13.4	X	142.20812	246.42379	38.97453	12.11977	0.2331813	0.23595005	2.5937175	20	—	—
29990	1999 XR_{208}	14.0	X	208.69283	201.67433	36.50359	11.51437	0.1451302	0.18982115	2.9985157	20	—	—
29991	Dazimmerman	14.8	X	116.31764	336.38335	10.59974	2.05427	0.0319917	0.19220830	2.9736370	20	—	—
29992	Yasminezubi	14.9	X	345.32707	212.51510	99.66391	4.79611	0.0960412	0.21912420	2.7248493	20	8 4.7	18.0
29993	2000 AD_{55}	13.4	X	62.48233	181.64410	94.78505	2.54008	0.1613564	0.17352720	3.1833986	20	10 15.3	18.0
29994	Zuoyu	14.3	X	103.10510	309.70425	322.98208	6.43153	0.1189753	0.27430098	2.3459449	20	12 3.4	17.9
29995	Arshavsky	15.3	X	28.06497	177.00365	30.07453	5.05986	0.1313174	0.30071526	2.2064753	20	5 18.9	17.1
29996	2000 AQ_{97}	15.7	X	162.67612	248.83059	331.37300	19.05605	0.0540250	0.37022411	1.9208476	20	12 31.0	18.1
29997	2000 AE_{127}	14.7	X	138.55977	122.21518	145.77238	10.48132	0.2268528	0.27628690	2.3346898	20	12 30.9	18.7
29998	2000 AG_{137}	15.3	X	99.63799	235.93303	17.00965	2.86067	0.1177941	0.31516579	2.1385037	20	11 12.0	18.2
29999	2000 AT_{137}	13.8	X	237.43236	221.19980	339.21075	11.93733	0.1392076	0.22995882	2.6385743	20	—	—
30000	Camenzind	14.6	X	278.28994	226.02649	11.63666	6.57592	0.0798430	0.28869877	2.2672849	20	1 9.6	17.7

ELEMENTS AND OPPOSITION DATES IN 2020

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Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
	m		°	°	°	°		°				
30001 2000 AU_{195}	13.4	X	214.58713	64.81211	150.72963	14.01147	0.1177277	0.23301218	2.6154733	20	—	—
30002 2000 AP_{233}	15.7	X	123.08762	25.80899	131.60681	2.77969	0.0700897	0.30873668	2.1680896	20	7 24.9	18.3
30003 2000 AO_{236}	14.2	X	195.07273	343.04686	249.77980	5.88417	0.3265584	0.22719531	2.6599276	20	12 19.1	18.7
30004 Mikewilliams	15.7	X	76.30313	148.30963	115.27220	3.45592	0.1682168	0.26805210	2.3822641	20	10 30.7	19.1
30005 Stevenchen	16.1	X	186.61307	12.97659	193.71599	3.68008	0.1868022	0.27447654	2.3449444	20	11 30.4	19.6
30006 2000 CB_{30}	13.5	X	281.53480	111.67382	149.40456	2.45620	0.0412821	0.19836885	2.9117476	20	2 29.3	17.6
30007 Johnclarke	15.9	X	307.67868	42.30244	236.23245	3.75700	0.1799377	0.29984171	2.2107588	20	3 24.7	18.3
30008 Aroncoraor	15.2	X	118.04076	58.74502	204.07551	1.92802	0.1847101	0.27112014	2.3642580	20	12 7.7	18.9
30009 2000 CQ_{50}	14.4	X	244.43791	99.04881	153.32314	15.56822	0.1388590	0.23868662	2.5738545	20	—	—
30010 2000 CJ_{56}	13.3	X	152.70568	278.46201	350.28950	11.93161	0.1929604	0.22778209	2.6553575	20	—	—
30011 2000 CM_{56}	15.6	X	351.61536	257.05117	26.29953	4.62588	0.1611742	0.30588285	2.1815540	20	7 12.9	16.9
30012 Sohamdaga	14.8	X	211.39078	236.06575	359.20729	7.23862	0.1397224	0.27762782	2.3271662	20	—	—
30013 2000 CV_{77}	15.7	X	91.20850	331.00141	309.87641	2.87586	0.2102518	0.26979125	2.3720153	20	12 7.1	19.4
30014 2000 CY_{80}	15.5	X	25.20923	82.86724	181.73097	3.86039	0.1735794	0.30585121	2.1817044	20	8 26.9	17.4
30015 2000 CX_{92}	15.2	X	39.46026	162.17266	83.31675	3.24210	0.1223375	0.30605459	2.1807378	20	8 15.1	17.3
30016 2000 CA_{95}	13.8	X	11.93616	214.09114	62.86257	3.45650	0.1524020	0.25443524	2.4665195	20	8 11.3	16.1
30017 Shaundatta	14.4	X	230.34695	102.21742	132.95945	1.10543	0.1680217	0.27905072	2.3192485	20	—	—
30018 2000 CX_{101}	14.8	X	5.83809	123.54007	143.21593	8.68687	0.2392354	0.25453177	2.4658958	20	7 18.9	16.6
30019 2000 DD	14.7	X	254.00793	272.06885	10.22700	21.73933	0.0955104	0.39366820	1.8438086	20	2 2.5	17.4
30020 2000 DZ_5	11.9	X	315.35677	328.51426	80.06715	16.66116	0.0474282	0.08130028	5.2772541	20	10 12.2	18.9
30021 2000 DP_6	15.7	X	349.51456	148.25470	118.96366	3.38086	0.1097770	0.30486302	2.1864164	20	6 8.0	17.5
30022 Kathibaker	16.0	X	155.90704	60.67373	149.71355	3.03196	0.1205838	0.26910398	2.3760521	20	11 8.9	19.4
30023 2000 DN_{16}	15.7	X	129.43358	50.42948	163.44029	2.94356	0.1317712	0.26423942	2.4051249	20	10 17.1	19.4
30024 Neildavey	15.7	X	264.60224	92.71762	167.60190	3.20090	0.1598473	0.29181073	2.2511368	20	1 14.2	18.9
30025 Benfreed	15.6	X	172.40287	138.34681	149.95016	5.53366	0.1658742	0.28326215	2.2962034	20	—	—
30026 2000 DS_{29}	15.2	X	192.65995	259.51625	24.77982	2.43237	0.1498895	0.28062926	2.3105431	20	—	—
30027 Anubhavguha	16.0	X	263.69094	95.90520	136.64383	1.96963	0.1334260	0.23864763	2.5741349	20	—	—
30028 Yushihomma	15.0	X	23.32474	157.22255	133.80922	2.08151	0.1738147	0.26234829	2.4166693	20	9 27.6	17.6
30029 Preetikakani	15.9	X	124.09526	262.22270	329.32676	3.91929	0.1970907	0.26679585	2.3897364	20	11 2.7	19.9
30030 Joycekang	16.1	X	71.26163	59.33815	163.00562	2.66159	0.1553151	0.25896161	2.4376936	20	8 26.4	19.3
30031 Angelakong	15.1	X	40.81139	12.74147	327.20710	6.61009	0.1701271	0.27232676	2.3572691	20	12 28.9	18.3
30032 Kuszmaul	16.4	X	156.86877	300.49841	245.95263	0.50070	0.1292462	0.26702344	2.3883783	20	10 8.5	19.8
30033 Kevinlee	16.2	X	259.89201	76.34460	169.97821	1.91165	0.0710941	0.28832616	2.2692379	20	—	—
30034 2000 DU_{76}	16.1	X	352.33932	51.15567	227.90395	1.21142	0.0828062	0.30497684	2.1858724	20	7 3.9	17.9
30035 Charlesliu	15.5	X	249.78857	73.56110	163.87346	4.53491	0.1445476	0.23602763	2.5931491	20	—	—
30036 Eshamaiti	15.9	X	93.36460	5.24996	216.25564	1.84486	0.1570542	0.26151893	2.4217759	20	9 20.0	19.3
30037 Rahulmehta	15.4	X	221.85178	241.05310	0.84132	4.52214	0.0909255	0.28195721	2.3032827	20	—	—
30038 2000 DM_{92}	15.7	X	265.71014	81.53117	124.01374	1.18551	0.1541210	0.28209074	2.3025558	20	—	—
30039 Jameier	16.3	X	105.63634	174.57888	69.50938	3.64751	0.1366566	0.26715123	2.3876167	20	11 1.4	19.8
30040 Annemerrill	15.5	X	170.96488	138.62127	147.15930	4.12057	0.1777417	0.27991005	2.3144993	20	—	—
30041 2000 EG_3	15.2	X	194.55790	101.92899	175.91951	13.61108	0.1095571	0.23454944	2.6040328	20	—	—
30042 Schmude	14.7	X	231.34279	198.11566	34.75831	5.74152	0.0948038	0.27818390	2.3240638	20	—	—
30043 Lisamichaels	15.8	X	101.51018	340.35590	266.72675	1.83370	0.1731319	0.26488292	2.4012281	20	11 1.6	19.5
30044 2000 EG_{19}	16.1	X	349.49366	185.13830	96.09857	2.74165	0.1636191	0.30440711	2.1885990	20	7 1.7	17.1
30045 2000 EC_{20}	15.5	X	167.19371	68.46220	190.90715	2.04830	0.1817580	0.27351838	2.3504177	20	—	—
30046 2000 EX_{24}	15.5	X	124.60147	103.45061	179.31214	0.47605	0.1948885	0.27125085	2.3634984	20	—	—
30047 2000 EV_{35}	14.1	X	145.44210	188.51051	128.38093	13.09265	0.1899284	0.22734302	2.6587753	20	—	—
30048 Sreyasmisra	15.7	X	138.94965	189.42449	4.04140	2.02570	0.1647419	0.26425412	2.4050358	20	9 29.9	19.3
30049 Violamocz	15.0	X	73.40488	204.42390	347.23888	4.94272	0.1770444	0.25473498	2.4645842	20	7 21.9	18.2
30050 Emilypang	15.2	X	184.28024	289.41483	10.15487	6.28397	0.1281257	0.28307078	2.2972381	20	—	—
30051 Jihopark	14.8	X	248.51612	86.54259	154.03464	3.56062	0.0997522	0.18573796	3.0423017	20	—	—
30052 2000 EW_{41}	14.7	X	61.11698	150.01471	168.43605	5.40833	0.2633485	0.26790754	2.3831210	20	12 30.4	18.5
30053 Ivanpaskov	16.4	X	202.32902	54.42737	206.56397	3.43228	0.0939942	0.28056176	2.3109137	20	—	—
30054 Pereira	15.4	X	314.43108	322.58943	296.36833	1.99176	0.1690635	0.29447557	2.2375351	20	3 9.6	17.9
30055 Ajaysaini	15.6	X	188.23409	163.73313	17.30546	2.52664	0.1412036	0.26901295	2.3765882	20	11 1.8	19.0
30056 2000 EP_{47}	15.1	X	318.01985	135.00655	179.36444	5.44472	0.2206289	0.30114347	2.2043832	20	6 4.4	16.8
30057 Sarasakowitz	15.2	X	54.79832	120.70990	150.07538	2.60112	0.1567913	0.26170161	2.4206488	20	10 12.4	18.3
30058 2000 EJ_{58}	14.8	X	73.45192	351.47260	321.30437	2.79074	0.2649701	0.26866180	2.3786585	20	—	—
30059 2000 ET_{59}	16.5	X	322.17346	114.07319	177.84217	2.43010	0.0589370	0.30206959	2.1998752	20	5 31.5	18.5
30060 Davidseong	16.3	X	118.90287	57.28393	184.31131	2.19315	0.1514739	0.26650348	2.3914839	20	11 11.3	19.9
30061 Vishnushankar	16.0	X	235.75175	102.75643	199.41242	1.85739	0.0898447	0.29107741	2.2549161	20	2 11.3	18.9
30062 2000 ER_{62}	15.0	X	349.13239	289.25928	9.31037	7.88053	0.2379966	0.25499352	2.4629180	20	8 1.1	16.7
30063 Jessicashi	15.9	X	246.47729	166.94160	141.85636	3.17157	0.1761680	0.29238694	2.2481782	20	2 26.7	19.3
30064 Kaitlynshin	15.9	X	263.75221	20.32678	196.53694	4.77316	0.1411992	0.23462232	2.6034935	20	—	—
30065 Asrinivasan	15.5	X	77.50966	168.08637	154.64014	4.86122	0.1492357	0.27194118	2.3594968	20	—	—
30066 Parthakker	15.4	X	117.05743	280.67329	10.60753	6.48705	0.1033199	0.27271315	2.3550420	20	—	—
30067 Natalieng	15.2	X	91.67243	353.30069	359.84355	7.35540	0.1436830	0.27820674	2.3239366	20	—	—
30068 Frankmelillo	14.1	X	29.08096	204.25222	113.34733	10.66903	0.1615677	0.21558528	2.7545880	20	11 4.3	17.7
30069 2000 EH_{74}	16.1	X	308.99495	119.96035	47.85390	7.46493	0.0370857	0.28260727	2.2997493	20	—	—
30070 Thabitpulak	15.6	X	325.04420	341.95322	205.84686	6.53006	0.1292112	0.29047060	2.2580554	20	—	—
30071 2000 EW_{92}	14.9	X	231.79127	31.06338	196.75802	13.97875	0.1080265	0.23250439	2.6192801	20	—	—
30072 2000 EP_{93}	13.1	X	71.32588	110.50046	216.98410	11.99225	0.1877492	0.22358223	2.6885071	20	—	—
30073 Erichen	14.8	X	218.62672	63.41831	236.09361	4.60645	0.1703731	0.28709540	2.2757186	20	1 19.9	18.5
30074 2000 EY_{96}	14.0	X	267.11875	215.77217	0.10934	13.09817	0.0783228	0.23334606	2.6129779	20	—	—
30075 2000 EC_{97}	14.2	X	217.85581	180.28434	13.14041	13.45505	0.1026255	0.22374777	2.6871809	20	12 14.8	18.3
30076 2000 EP_{97}	14.3	X	256.89445	46.33048	176.58631	3.60211	0.2760254	0.18153683	3.0890591	20	—	—
30077 2000 ES_{97}	13.6	X	281.98995	80.12951	209.24941	11.62022	0.2742144	0.19115009	2.9846017	20	3 2.9	18.3
30078 2000 EB_{104}	14.0	X	61.64167	337.38301	219.01479	15.69544	0.1937053	0.20305104	2.8668121	20	7 7.2	18.1
30079 2000 EP_{104}	15.1	X	188.08563	160.22897	0.22440	3.01312	0.1789656	0.26620746	2.3932564	20	10 3.1	18.8
30080 2000 EQ_{105}	14.9	X	190.99081	220.33042	44.75598	13.52671	0.1490376	0.22946279	2.6423755	20	—	—

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	Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
		m		°	°	°	°		°				
30081	Zarinrahman	14.6	X	112.83104	272.58369	64.81214	5.38863	0.1597348	0.27684309	2.3315618	20	—	—
30082	2000 EE_{110}	14.7	X	210.92898	188.98725	82.05607	7.65404	0.1614368	0.28328925	2.2960569	20	—	—
30083	2000 EG_{110}	15.3	X	79.93186	198.60466	72.52926	7.59413	0.0960645	0.26664509	2.3906371	20	11 5.8	18.6
30084	2000 EV_{110}	15.6	X	97.50811	146.90711	61.05260	5.36818	0.0683633	0.26052027	2.4279609	20	8 31.3	18.9
30085	Kevingarbe	15.5	X	268.15916	230.76075	41.65529	3.24590	0.1306217	0.28926013	2.2643506	20	2 7.1	18.6
30086	2000 EU_{113}	14.1	X	120.48028	137.91386	31.79782	13.47389	0.1076642	0.25716956	2.4490050	20	8 14.3	17.9
30087	2000 EL_{122}	15.9	X	66.21195	346.42925	187.92581	5.42995	0.0832864	0.30283339	2.1961747	20	5 31.8	18.2
30088	2000 EK_{128}	14.9	X	337.73642	179.24543	126.02251	3.58977	0.1718588	0.25589267	2.4571452	20	7 10.0	16.7
30089	2000 EW_{128}	15.0	X	243.36846	203.33951	28.89375	5.74883	0.1989300	0.23337655	2.6127503	20	—	—
30090	2000 EL_{129}	14.8	X	188.90416	259.01609	54.18368	3.64028	0.1859980	0.23727723	2.5840367	20	1 18.8	19.1
30091	2000 EY_{130}	15.5	X	310.84748	167.14059	114.13710	2.00608	0.1457917	0.29838250	2.2179606	20	4 11.9	17.6
30092	2000 EB_{135}	15.2	X	113.66210	151.42589	96.05802	3.56631	0.1334991	0.26632486	2.3925530	20	11 13.4	18.8
30093	2000 ES_{135}	14.2	X	117.98918	283.44651	40.28114	13.20985	0.2819111	0.22647681	2.6655504	20	—	—
30094	Rolfebode	14.6	X	210.51950	283.96155	11.31201	6.43846	0.1691953	0.28622507	2.2803295	20	1 9.9	18.3
30095	Tarabode	15.0	X	107.80747	166.51380	41.38549	4.50080	0.0629630	0.30741514	2.1742988	20	9 18.0	17.6
30096	Glindadavidson	15.3	X	21.68411	98.33210	170.18961	2.61474	0.1630199	0.25498926	2.4629454	20	8 16.8	17.8
30097	Traino	14.7	X	112.03894	276.63467	16.93391	7.33760	0.1303574	0.27095103	2.3652416	20	—	—
30098	2000 EE_{151}	14.8	X	136.18539	168.11813	82.20918	3.09148	0.1814308	0.26841416	2.3801214	20	12 7.5	18.4
30099	2000 EG_{151}	14.2	X	186.71088	195.50791	71.43711	13.12825	0.2068496	0.22795835	2.6539886	20	—	—
30100	Christophergo	14.3	X	286.64373	180.08225	117.01095	16.40094	0.1808423	0.24498522	2.5295472	20	4 5.2	18.1
30101	2000 FA	15.4	X	35.11109	133.83610	163.55594	1.64111	0.1140214	0.30942744	2.1648618	20	10 24.6	17.7
30102	2000 FC_1	10.8	X	34.97781	281.74216	42.18081	23.71013	0.0421347	0.08179573	5.2559224	20	10 13.4	17.7
30103	2000 FY_2	16.2	X	142.55817	6.92333	233.26593	2.15142	0.1264519	0.27019334	2.3696614	20	12 2.1	19.7
30104	2000 FA_3	15.1	X	329.47364	320.26359	306.04927	3.42032	0.0948744	0.29837512	2.2179971	20	4 26.6	17.3
30105	2000 FO_3	14.3	X	355.39740	255.43178	62.03623	7.31817	0.3111752	0.30688304	2.1768113	20	10 23.2	15.4
30106	2000 FR_3	13.8	X	236.11397	228.49981	71.09188	9.80255	0.1780902	0.24098866	2.5574372	20	2 13.8	18.1
30107	2000 FT_{15}	14.9	X	109.66023	273.21527	28.73853	7.27211	0.1385019	0.27420710	2.3464803	20	—	—
30108	2000 FM_{16}	13.9	X	131.38857	273.90748	18.66999	15.59502	0.2195741	0.22531366	2.6747161	20	—	—
30109	Jaywilson	15.2	X	167.00321	274.60631	66.79103	7.75668	0.1446010	0.28702664	2.2760820	20	1 25.4	18.5
30110	Lisabreton	15.0	X	296.11543	242.50745	52.76172	8.48800	0.0908129	0.29831099	2.2183150	20	4 20.3	17.5
30111	Wendyslijk	15.0	X	140.46709	155.08890	109.13932	7.08510	0.0906418	0.27280646	2.3545050	20	12 31.7	18.3
30112	2000 FZ_{25}	13.9	X	125.67749	305.41942	30.02581	7.64987	0.1475166	0.27986252	2.3147614	20	—	—
30113	2000 FM_{26}	15.0	X	159.60044	87.19253	150.75703	4.87736	0.1130620	0.27122869	2.3636271	20	12 17.5	18.4
30114	2000 FY_{26}	15.9	X	45.78704	343.46924	142.91482	2.88227	0.0862695	0.29186944	2.2508349	20	2 12.9	17.8
30115	2000 FQ_{31}	14.3	X	112.07212	259.67948	49.67506	12.90260	0.2120601	0.27476854	2.3432828	20	—	—
30116	2000 FA_{36}	14.1	X	145.55329	150.75957	115.46668	12.49247	0.1263804	0.27266081	2.3553434	20	—	—
30117	Childress	15.2	X	227.28997	154.79765	149.99082	3.35208	0.1536397	0.28806259	2.2706218	20	2 4.4	18.6
30118	2000 FC_{37}	15.3	X	257.51130	273.08123	53.68898	5.40799	0.2082463	0.29481161	2.2358345	20	3 30.6	18.7
30119	Lucamatone	15.0	X	295.72128	79.40105	122.73039	5.92638	0.0716335	0.23671978	2.5880919	20	—	—
30120	2000 FZ_{38}	14.6	X	131.81045	101.58560	154.93806	5.33582	0.2007158	0.26801998	2.3824544	20	12 11.6	18.6
30121	2000 FF_{39}	15.6	X	2.60176	160.67219	129.79780	4.06084	0.0851757	0.30511265	2.1852237	20	8 13.0	17.4
30122	Elschweitzer	15.2	X	222.02264	170.09526	48.25960	7.22254	0.1191969	0.27690770	2.3311991	20	—	—
30123	Scottrippeon	15.0	X	305.58654	215.41363	113.42752	5.63215	0.1836104	0.30169711	2.2016855	20	6 9.5	17.1
30124	2000 FZ_{40}	14.8	X	307.63491	94.43663	75.84224	4.56860	0.0225590	0.28268222	2.2993428	20	—	—
30125	Mikekiser	14.7	X	135.03792	82.71862	158.25233	5.14704	0.0927623	0.26772980	2.3841756	20	11 26.6	18.3
30126	Haviland	15.2	X	226.14324	206.41644	64.32124	7.92619	0.0918201	0.28376908	2.2934679	20	—	—
30127	2000 FY_{41}	14.9	X	73.56911	166.93303	42.98842	5.95396	0.0726289	0.30486512	2.1864064	20	8 6.3	17.5
30128	Shannonbunch	15.6	X	101.24028	137.32314	40.81159	5.38097	0.1371046	0.25731705	2.4480691	20	8 1.9	19.1
30129	Virmani	15.7	X	244.61687	183.67386	63.91083	6.42823	0.0815093	0.28478197	2.2880265	20	—	—
30130	Jeandillman	15.2	X	248.02751	83.02854	79.32532	6.15805	0.1042914	0.27476637	2.3432952	20	12 30.2	17.7
30131	2000 FO_{46}	16.0	X	347.65582	313.01711	34.77666	5.22633	0.1036052	0.31182877	2.1537333	20	10 20.5	17.6
30132	2000 FP_{47}	13.6	X	152.52830	196.74715	115.44771	8.91611	0.1157446	0.18105359	3.0945532	20	—	—
30133	2000 FA_{48}	15.0	X	158.38845	207.47531	129.95554	10.52692	0.1974169	0.28274929	2.2989792	20	1 15.1	18.4
30134	2000 FR_{49}	13.9	X	55.21150	108.07535	356.38445	14.99096	0.0587892	0.23900112	2.5715961	20	2 10.5	17.2
30135	2000 FU_{49}	14.1	X	214.40693	88.22579	227.67155	12.18454	0.1832420	0.23671115	2.5881547	20	2 6.8	18.7
30136	Bakerfranke	15.3	X	162.99205	203.01929	100.89508	5.58809	0.1800739	0.23007922	2.6376538	20	—	—
30137	2000 FB_{63}	15.8	X	39.06617	356.52529	304.43666	1.99761	0.1265424	0.31173843	2.1541494	20	11 5.5	18.3
30138	2000 FN_{68}	16.8	X	186.97411	144.39730	215.62481	2.39548	0.0139229	0.29336349	2.2431863	20	2 29.3	19.6
30139	2000 GG_3	14.8	X	60.07596	296.89853	16.37831	23.47501	0.2305420	0.26508706	2.3999952	20	12 17.1	19.0
30140	Robpergolizzi	15.6	X	136.83120	292.05232	324.66557	5.16367	0.1619249	0.27068164	2.3668107	20	12 16.3	19.5
30141	Nelvenzon	15.5	X	58.83849	99.28009	207.48841	6.65753	0.1250055	0.26580710	2.3956590	20	11 29.7	18.7
30142	Debfrazier	15.6	X	121.85790	275.69088	25.22492	6.82799	0.1835047	0.27257543	2.3558352	20	—	—
30143	2000 GU_{29}	14.0	X	139.61595	319.94261	15.50999	12.86764	0.1851729	0.23102467	2.6304526	20	1 1.4	18.2
30144	Minubasu	16.2	X	6.05091	271.34090	172.21427	2.55426	0.0669887	0.27979700	2.3151227	20	—	—
30145	2000 GG_{33}	15.0	X	339.23317	63.96158	285.58295	1.15225	0.1430957	0.26111450	2.4242760	20	9 25.2	17.2
30146	Decandia	14.1	X	202.58105	184.80636	34.45119	0.65098	0.1439210	0.17610988	3.1521986	20	12 16.1	19.1
30147	Amyhammer	14.7	X	255.14271	19.11266	207.03262	5.58736	0.0932693	0.28209415	2.3025372	20	—	—
30148	2000 GP_{45}	15.1	X	141.41286	281.35480	48.35241	3.18332	0.2465990	0.27791078	2.3255863	20	—	—
30149	Kellyriedell	15.5	X	302.72957	100.68485	29.77454	4.56553	0.1684825	0.27861327	2.3216755	20	—	—
30150	Laseminara	14.5	X	123.59506	100.99494	188.95796	6.48389	0.1163134	0.27163930	2.3612446	20	—	—
30151	Susanoffner	15.2	X	264.93863	276.93519	202.21170	6.18261	0.0601314	0.27039852	2.3684625	20	12 1.3	17.9
30152	Reneefallon	15.0	X	110.77412	230.69250	37.14508	2.83783	0.1494980	0.26655159	2.3911961	20	12 5.3	18.8
30153	Ostrander	15.8	X	211.70028	266.43743	34.02411	6.20235	0.1356827	0.28465403	2.2887120	20	1 17.5	19.3
30154	Christichil	14.5	X	328.15883	304.90781	27.56367	4.21988	0.1925058	0.25513876	2.4619832	20	8 2.4	16.4
30155	Warmuth	15.6	X	249.86330	199.93073	25.62615	3.83413	0.1168963	0.28089604	2.3090800	20	—	—
30156	2000 GH_{55}	15.6	X	339.16062	136.78364	199.83238	5.32159	0.1470067	0.30665340	2.1778980	20	9 14.2	17.1
30157	Robertspira	15.6	X	338.14791	162.50404	164.15923	2.77967	0.1898309	0.25544582	2.4600099	20	8 15.6	17.5
30158	Mabdulla	14.9	X	254.70970	168.01518	134.37504	1.96323	0.1356800	0.19263069	2.9692885	20	3 10.0	19.5
30159	Behari	15.5	X	257.88481	259.44928	54.61526	3.11951	0.1514523	0.24324606	2.5415901	20	3 22.9	19.1
30160	Danielbruce	15.8	X	149.07236	341.64413	222.30912	1.41793	0.1161061	0.26485412	2.4014021	20	10 23.1	19.3

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
	m		°	°	°	°		°				
30161 Chrepta	15.9	X	213.08011	339.74052	214.29644	2.01434	0.1480796	0.27248325	2.3563665	20	12 16.8	19.1
30162 Courtney	15.1	X	143.64732	242.54928	341.94223	0.72552	0.1398099	0.26610798	2.3938529	20	11 12.4	18.8
30163 2000 GK_{58}	13.8	X	78.30472	230.65753	19.98728	9.25408	0.1145215	0.21135044	2.7912620	20	10 1.2	17.7
30164 Arnobdas	15.4	X	171.31978	95.51744	57.30871	0.74252	0.0693154	0.26153193	2.4216957	20	9 11.9	18.7
30165 2000 GF_{61}	13.8	X	299.83192	41.03397	46.01642	3.58132	0.0653347	0.22189957	2.7020813	20	11 25.5	17.2
30166 Leodeng	14.7	X	45.24609	314.78907	11.25171	6.65999	0.1040014	0.26594080	2.3948560	20	12 3.6	17.9
30167 Caredmonds	14.9	X	88.70407	152.73523	209.53900	5.46189	0.1207200	0.27707344	2.3302693	20	—	—
30168 Linusfreyer	15.1	X	77.95294	54.98654	234.93142	1.61096	0.1807174	0.26376016	2.4080375	20	12 3.5	18.7
30169 Raghavganesh	15.3	X	30.81660	265.04889	168.63899	2.46911	0.1296962	0.28098573	2.3085886	20	—	—
30170 Makaylaruth	15.1	X	101.17385	293.49213	93.12496	2.53304	0.0689221	0.23346992	2.6120536	20	1 1.3	18.5
30171 2000 GY_{70}	14.3	X	62.62113	305.47328	29.94293	7.01432	0.1458468	0.26814449	2.3817169	20	—	—
30172 Giedraitis	14.6	X	9.53390	120.71676	157.67253	2.44875	0.0200058	0.20552593	2.8437514	20	7 21.7	18.3
30173 Greenwood	15.5	X	74.09870	179.20716	181.36745	4.72403	0.0129242	0.27489665	2.3425548	20	—	—
30174 Hollyjackson	15.2	X	349.82714	140.47133	55.44550	1.82354	0.0804561	0.29055229	2.2576322	20	2 20.3	17.6
30175 Adityajain	15.3	X	133.53374	291.34889	342.79058	1.64311	0.1449958	0.22039876	2.7143340	20	12 25.4	19.7
30176 Gelseyjaymes	15.4	X	174.91275	17.73552	224.21736	5.86263	0.0979752	0.27174518	2.3606312	20	—	—
30177 Khashayar	14.5	X	283.62659	348.92354	216.19716	6.25321	0.0634952	0.28214292	2.3022719	20	—	—
30178 2000 GW_{77}	15.3	X	85.60821	127.51539	225.07419	2.59437	0.2269459	0.27322112	2.3521221	20	—	—
30179 Movva	15.1	X	118.78967	248.59370	299.58264	3.87080	0.1428609	0.25999187	2.4312496	20	8 31.9	18.7
30180 2000 GX_{87}	13.6	X	273.96323	55.22514	169.62704	13.88728	0.0771218	0.23568518	2.5956604	20	—	—
30181 2000 GR_{88}	14.2	X	74.25044	247.75543	54.32326	13.63521	0.1458605	0.21739713	2.7392616	20	12 1.5	18.3
30182 2000 GC_{95}	13.8	X	271.98314	296.79896	10.63097	12.82443	0.1835316	0.24350258	2.5398048	20	3 25.5	17.4
30183 Murali	15.3	X	109.70020	242.43512	4.87215	4.19890	0.1684825	0.26331710	2.4107380	20	11 8.4	19.0
30184 Okasinski	15.0	X	128.66272	261.99917	5.00864	6.70454	0.1212944	0.26841263	2.3801304	20	12 21.5	18.7
30185 2000 GT_{95}	13.2	X	345.16837	321.86210	250.12558	5.24464	0.1577792	0.24277586	2.5448707	20	2 29.4	16.1
30186 Ostojic	14.4	X	236.94970	231.84574	17.94923	8.75623	0.1922229	0.23124487	2.6287825	20	—	—
30187 Jamesroney	15.0	X	161.05541	251.02378	36.49388	4.10755	0.1853957	0.27379130	2.3488554	20	—	—
30188 Hafsasaeed	14.8	X	300.50264	262.30532	310.69723	0.90799	0.1232344	0.28521455	2.2857125	20	—	—
30189 2000 GV_{96}	13.5	X	243.18716	93.65838	219.59967	10.85720	0.1778832	0.23848003	2.5753408	20	2 29.3	17.9
30190 Alexshelby	14.9	X	232.13574	163.43448	27.87064	6.24916	0.1777038	0.27336705	2.3512850	20	—	—
30191 Sivakumar	14.8	X	131.79454	15.22876	251.01471	5.24732	0.0741420	0.27091314	2.3654622	20	12 24.7	18.2
30192 Talarterzian	15.3	X	260.35622	52.03918	219.46378	5.58019	0.1694746	0.28719341	2.2752008	20	1 22.9	18.7
30193 Annikaurban	15.1	X	207.71080	341.51421	342.94049	5.99297	0.1433760	0.28740220	2.2740988	20	2 12.1	18.4
30194 Liamyoung	14.5	X	50.00526	101.23715	235.60789	5.86969	0.1837433	0.26753153	2.3853534	20	—	—
30195 Akdemir	15.1	X	37.26842	333.35789	326.09377	6.17939	0.1905169	0.26174158	2.4204024	20	10 29.3	18.2
30196 2000 GB_{102}	15.2	X	304.75209	8.87441	338.98274	5.89101	0.1978900	0.30452704	2.1880243	20	7 8.3	17.0
30197 Nickbadyrka	15.7	X	326.24529	265.69056	221.32413	4.51195	0.0282569	0.27992862	2.3143970	20	—	—
30198 2000 GR_{103}	15.8	X	225.79304	118.11932	161.44596	4.43919	0.0795685	0.28477174	2.2880813	20	1 3.5	18.9
30199 Ericbrown	15.9	X	86.26969	335.70715	178.51679	5.96361	0.0456550	0.29932651	2.2132948	20	5 26.2	18.4
30200 Terryburch	15.0	X	185.70880	75.63339	135.82387	3.02401	0.1621169	0.27079776	2.3661340	20	12 6.9	18.6
30201 Caruana	15.3	X	35.55010	89.28130	160.44104	3.39361	0.1650371	0.25370931	2.4712221	20	8 13.7	17.9
30202 2000 GD_{105}	14.6	X	204.17227	176.65740	104.31008	3.23862	0.0701686	0.23260603	2.6185171	20	—	—
30203 Kimdavis	15.3	X	141.18560	220.94402	335.10131	1.80838	0.1205984	0.26286818	2.4134818	20	10 4.2	18.9
30204 Stevedoherty	14.9	X	185.52222	345.45570	147.29785	3.23193	0.1047581	0.26115196	2.4240442	20	8 30.2	18.2
30205 Mistyevans	15.1	X	51.24270	343.92742	165.04995	5.17729	0.0326360	0.29257522	2.2472136	20	3 23.1	17.3
30206 Jasonfricker	14.8	X	84.02794	109.31856	166.82986	5.79639	0.0766404	0.21541785	2.7560151	20	11 5.3	18.8
30207 2000 GL_{109}	14.7	X	196.59925	23.99944	180.18149	9.05098	0.1610066	0.22225889	2.6991682	20	11 30.9	19.0
30208 Guigarcia	15.1	X	116.59147	72.57994	209.94282	6.18154	0.1094916	0.27184705	2.3600415	20	12 28.9	18.6
30209 Garciaarriola	14.8	X	190.34976	255.19497	85.91936	4.78546	0.1594537	0.23933345	2.5692150	20	2 22.4	18.9
30210 2000 GN_{122}	14.7	X	221.91505	246.03496	64.72844	14.40002	0.2552664	0.23641890	2.5902872	20	2 15.4	19.5
30211 Sheilah	14.5	X	144.61407	232.01679	175.21367	6.76962	0.1302266	0.28996469	2.2606811	20	3 24.1	17.4
30212 2000 GP_{123}	14.0	X	134.51634	239.16166	74.45243	11.62282	0.1731806	0.22365502	2.6879237	20	—	—
30213 2000 GW_{124}	14.0	X	21.05625	193.04616	171.03520	10.26258	0.1402282	0.26552701	2.3973434	20	12 28.7	17.1
30214 2000 GS_{125}	14.2	X	147.51616	243.84541	110.68212	7.37057	0.1416807	0.28235717	2.3011071	20	1 20.0	17.3
30215 2000 GU_{125}	14.2	X	342.85459	65.62117	75.38273	11.68501	0.0700937	0.23220847	2.6215049	20	—	—
30216 Summerjohnson	14.6	X	230.50426	161.74863	152.29679	6.63078	0.1377727	0.28643935	2.2791921	20	2 20.0	18.1
30217 2000 GA_{126}	14.6	X	274.09094	238.18870	200.95467	12.04703	0.0278173	0.26222383	2.4174339	20	10 22.3	17.4
30218 Paulaladd	15.0	X	351.75790	47.15350	147.96599	5.35690	0.0723693	0.28906587	2.2653649	20	2 22.8	17.1
30219 2000 GM_{126}	13.6	X	199.56624	51.14309	219.90609	27.00536	0.3058676	0.17584286	3.1553889	20	—	—
30220 2000 GP_{126}	13.9	X	288.18344	108.38171	163.48664	6.66376	0.1929364	0.28779802	2.2720132	20	2 19.5	17.1
30221 LeDonne	14.7	X	317.66788	51.09147	140.36253	8.31383	0.1651311	0.28311602	2.2969934	20	—	—
30222 Malecki	15.2	X	250.46969	74.95255	107.63227	6.47726	0.1449427	0.27501964	2.3418563	20	—	—
30223 2000 GE_{134}	13.8	X	77.46568	103.46415	169.55111	7.55382	0.2002196	0.21047932	2.7989583	20	11 7.4	18.2
30224 2000 GU_{136}	13.5	X	234.60118	238.57329	89.80836	15.21118	0.2075522	0.23916718	2.5704056	20	3 21.0	18.0
30225 2000 GV_{137}	14.6	X	186.34848	104.49576	169.02922	1.05230	0.1330008	0.17890655	3.1192623	20	—	—
30226 2000 GY_{137}	14.5	X	150.79551	273.40837	56.35516	5.29087	0.1774974	0.28012035	2.3133407	20	—	—
30227 2000 GO_{139}	15.5	X	224.68497	198.03039	112.64246	6.83094	0.1625966	0.23835285	2.5762568	20	2 15.7	19.6
30228 2000 GO_{141}	14.0	X	343.36898	301.31969	69.91058	10.12739	0.1686863	0.21544524	2.7557815	20	10 29.7	16.8
30229 2000 GL_{142}	15.1	X	143.51734	239.20503	80.66040	13.13413	0.1675081	0.22783384	2.6549554	20	—	—
30230 2000 GP_{142}	14.8	X	219.04501	185.38642	134.16829	9.05918	0.2141412	0.23696077	2.5863368	20	2 19.7	19.3
30231 2000 GZ_{142}	14.3	X	243.30394	256.64558	65.50362	13.81655	0.1968533	0.24106153	2.5569218	20	3 21.4	18.7
30232 2000 GV_{153}	15.3	X	169.92879	96.33135	251.12666	6.35358	0.1264330	0.28730680	2.2746022	20	1 30.7	18.7
30233 2000 GJ_{161}	14.0	X	257.30347	350.78422	192.37811	10.02186	0.1501420	0.17730513	3.1380162	20	—	—
30234 2000 GD_{167}	15.5	X	5.10300	187.32768	203.60933	21.56955	0.0792940	0.37347008	1.9097016	20	—	—
30235 Kimmiller	15.8	X	72.20707	172.78841	197.45423	6.92196	0.1180146	0.27719804	2.3295710	20	—	—
30236 2000 HF	14.2	X	227.79094	162.86085	126.10273	14.65753	0.1245909	0.23463619	2.6033909	20	1 23.6	18.1
30237 2000 HY_1	14.6	X	95.91168	90.23374	182.44969	5.84522	0.1154062	0.26327394	2.4110014	20	11 25.7	18.2
30238 2000 HY_4	14.1	X	48.63660	317.42490	189.18448	9.68809	0.0219746	0.19309311	2.9645460	20	3 23.7	18.0
30239 2000 HZ_4	14.2	X	316.90174	170.05016	43.06317	15.32662	0.0490855	0.23838992	2.5759897	20	2 14.6	17.9
30240 Morgensen	15.0	X	284.77922	106.86266	84.49164	3.12819	0.0693972	0.23203721	2.6227947	20	—	—

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
	m		°	°	°	°		°				
30241 Donnamower	15.5	X	297.66013	111.65382	202.92600	2.73227	0.0519836	0.29806980	2.2195115	20	5 26.9	17.9
30242 Naymark	15.1	X	327.75485	3.78418	44.77147	7.81233	0.0898916	0.26693250	2.3889208	20	11 29.7	17.5
30243 2000 HS_9	16.0	X	121.35009	88.51065	83.63706	2.29518	0.0702436	0.30488813	2.1862964	20	8 13.9	18.7
30244 Linhpham	15.4	X	149.36210	52.94319	49.88455	7.09737	0.1225127	0.29974339	2.2112422	20	6 11.6	18.4
30245 Paigesmith	15.0	X	356.23936	304.04661	224.41665	6.41114	0.1052568	0.23914093	2.5705937	20	1 26.3	18.0
30246 2000 HC_{13}	13.8	X	211.56480	60.07029	39.44201	12.88269	0.0586161	0.20829497	2.8184924	20	8 21.4	18.1
30247 2000 HN_{13}	13.6	X	121.54178	342.78590	330.16255	0.36632	0.1620791	0.17235824	3.1977759	20	—	—
30248 Kimstinson	14.1	X	67.63836	50.56821	232.37995	5.29211	0.2004216	0.21103575	2.7940362	20	11 7.5	18.1
30249 Zamora	14.7	X	149.19108	128.57429	240.60668	5.58417	0.1377084	0.28334076	2.2957786	20	2 6.8	18.0
30250 2000 HG_{14}	14.6	X	169.91004	99.26266	228.18465	4.99338	0.2175994	0.22895369	2.6462911	20	1 20.2	19.1
30251 Ashkin	15.4	X	209.22038	150.41018	232.54320	1.92999	0.0856599	0.24642650	2.5196745	20	5 1.7	18.8
30252 Textorisová	15.5	X	24.75210	358.77841	58.49286	7.64759	0.1777248	0.27540751	2.3396570	20	—	—
30253 Vítek	15.8	X	30.63184	264.79522	168.68443	5.86829	0.1874874	0.27767041	2.3269282	20	—	—
30254 2000 HZ_{25}	14.9	X	13.87562	105.51601	143.95356	2.47871	0.0178380	0.20185912	2.8780862	20	6 18.9	18.8
30255 2000 HK_{26}	15.4	X	58.58259	337.14423	161.18773	2.86709	0.1128536	0.24409247	2.5357112	20	4 2.9	18.1
30256 2000 HC_{30}	15.6	X	287.93130	1.41910	7.68135	6.02220	0.1539153	0.30334575	2.1937010	20	7 19.5	17.8
30257 Leejanel	15.0	X	121.99259	32.72344	290.93187	1.27413	0.1440244	0.27354357	2.3502734	20	—	—
30258 2000 HA_{33}	14.6	X	280.70886	95.18678	130.50030	14.55569	0.1047369	0.23459646	2.6036848	20	1 2.4	18.4
30259 Catherineli	15.1	X	228.14085	249.16297	86.53615	6.36227	0.1884798	0.29160680	2.2521862	20	3 17.3	18.7
30260 2000 HY_{35}	14.4	X	204.81736	266.85661	323.33982	6.05407	0.0671210	0.27443903	2.3451581	20	—	—
30261 2000 HB_{36}	14.4	X	34.06799	341.41900	167.41535	14.36038	0.0921924	0.24223734	2.5486410	20	3 4.5	17.1
30262 2000 HP_{41}	13.5	X	161.18576	209.62524	87.28126	14.52952	0.2754110	0.22327900	2.6909407	20	—	—
30263 2000 HR_{41}	14.2	X	313.95813	65.96630	102.07536	12.38221	0.1276727	0.23183588	2.6243129	20	—	—
30264 2000 HT_{44}	15.3	X	208.55354	236.05997	135.03762	3.93624	0.1432821	0.24571670	2.5245245	20	4 15.5	19.2
30265 2000 HH_{45}	15.4	X	8.95675	58.05665	63.46864	4.12955	0.0956236	0.28491260	2.2873271	20	—	—
30266 2000 HW_{48}	14.4	X	178.37367	312.65529	48.52782	14.21734	0.1803378	0.23733963	2.5835837	20	3 13.4	18.9
30267 Raghuvanshi	14.8	X	143.28929	125.63468	227.87027	0.43191	0.0486748	0.23267027	2.6180350	20	1 9.9	18.4
30268 Jessezhang	15.1	X	243.29014	124.30219	165.69291	1.44602	0.1448730	0.23620323	2.5918637	20	2 7.3	19.1
30269 Anandapadmanaban	15.2	X	210.96803	122.66962	67.72651	2.93333	0.1429012	0.27046656	2.3680652	20	12 9.6	18.2
30270 Chemparathy	15.2	X	80.58692	209.34131	79.76684	3.62181	0.1712224	0.26277175	2.4140722	20	12 4.1	18.9
30271 Brandoncui	15.6	X	12.35853	268.21668	232.14161	4.75523	0.0204403	0.28454019	2.2893225	20	1 12.1	18.2
30272 D′Mello	15.1	X	222.45352	19.51268	235.30919	0.89670	0.0536330	0.22983227	2.6395428	20	—	—
30273 Samepstein	15.3	X	258.46009	159.60734	204.08154	3.31474	0.1870957	0.29674678	2.2261036	20	5 21.3	18.1
30274 2000 HN_{53}	13.4	X	106.27780	297.61678	53.83227	13.96990	0.2107808	0.22378564	2.6868778	20	—	—
30275 Eskow	14.9	X	166.16627	265.58635	104.84617	2.18801	0.1773691	0.23606079	2.5929063	20	3 7.3	19.0
30276 Noahgolowich	15.1	X	146.25004	230.19004	87.50720	2.01214	0.0718416	0.22672249	2.6636244	20	—	—
30277 Charlesgulian	14.8	X	144.90300	172.68721	224.23596	4.85378	0.1308715	0.28667554	2.2779400	20	3 8.5	18.0
30278 2000 HN_{56}	13.7	X	191.49941	321.27008	84.28769	3.32031	0.0685091	0.19950776	2.9006557	20	5 13.7	17.9
30279 2000 HQ_{56}	15.1	X	114.86866	230.60458	116.36141	3.93954	0.1373003	0.27697811	2.3308040	20	—	—
30280 2000 HS_{56}	15.2	X	95.95846	356.84899	130.38233	3.56945	0.0930603	0.24770919	2.5109687	20	5 10.1	18.5
30281 Horstman	14.6	X	95.67542	212.33300	165.12093	7.47693	0.2005829	0.27778182	2.3263060	20	—	—
30282 2000 HQ_{57}	14.9	X	80.26924	203.38687	190.66479	6.30983	0.1183223	0.27930478	2.3178419	20	—	—
30283 2000 HS_{57}	14.7	X	250.22469	226.18058	60.55622	6.79982	0.1054413	0.28685711	2.2769787	20	2 10.1	18.0
30284 2000 HG_{58}	15.9	X	155.79189	162.41340	35.54740	0.22741	0.1558569	0.26405355	2.4062535	20	10 21.3	19.6
30285 2000 HB_{59}	13.5	X	171.27646	94.16153	234.21898	10.22585	0.1251307	0.18410033	3.0603164	20	1 20.9	18.5
30286 2000 HG_{61}	15.1	X	264.50388	249.18084	67.18557	3.20662	0.0932225	0.19540310	2.9411358	20	4 12.0	19.2
30287 2000 HK_{62}	15.4	X	65.95232	120.06764	217.17243	2.56787	0.2003829	0.21731117	2.7399840	20	—	—
30288 2000 HT_{62}	14.9	X	14.77949	173.13214	139.09929	5.03945	0.0590991	0.21097230	2.7945964	20	9 18.7	18.4
30289 2000 HP_{65}	15.5	X	321.06535	332.35826	168.46730	5.15045	0.0850388	0.27882940	2.3204756	20	—	—
30290 2000 HG_{69}	15.7	X	97.46866	261.65854	198.26012	6.86160	0.0398134	0.29165146	2.2519562	20	3 20.8	18.4
30291 2000 HL_{71}	14.3	X	158.09945	298.68274	61.21512	9.60225	0.2222263	0.23482855	2.6019690	20	2 23.0	18.7
30292 2000 HJ_{72}	15.9	X	162.31603	310.03517	82.27072	2.81435	0.1265510	0.29162350	2.2521001	20	3 24.4	19.0
30293 2000 HO_{72}	14.4	X	65.82785	23.99313	294.58713	4.79679	0.0576140	0.21941145	2.7224705	20	12 3.1	18.2
30294 2000 HQ_{74}	14.9	X	141.13309	130.07754	174.14276	3.57370	0.2275045	0.27316552	2.3524413	20	—	—
30295 Anvitagupta	15.1	X	198.77901	199.39841	153.17918	4.56790	0.1028288	0.24052995	2.5606877	20	3 13.5	18.8
30296 Bricehuang	14.9	X	63.06701	244.29190	165.29922	9.68092	0.0727742	0.23067924	2.6330779	20	—	—
30297 2000 HO_{77}	13.8	X	275.58140	179.19863	74.56425	16.10610	0.1318121	0.24063727	2.5599263	20	1 30.4	17.8
30298 Somyakhare	15.5	X	129.87313	351.84788	17.09030	7.61745	0.1931921	0.28422359	2.2910222	20	1 27.4	18.6
30299 Shashkishore	15.7	X	191.25483	0.43516	20.56689	2.97059	0.1876566	0.29287792	2.2456649	20	4 7.7	19.3
30300 2000 HF_{86}	14.3	X	268.03468	221.09549	72.40438	10.79978	0.0491779	0.19233186	2.9723633	20	3 29.3	18.7
30301 Kuditipudi	14.9	X	217.17260	143.99168	166.53255	5.26913	0.1750581	0.28658597	2.2784147	20	2 1.6	18.4
30302 Kritilall	15.4	X	94.08509	276.71792	315.88211	4.03463	0.0415197	0.25926486	2.4357924	20	9 21.5	18.6
30303 2000 HS_{93}	15.4	X	277.52255	116.66729	256.49266	2.52244	0.1393784	0.30255669	2.1975135	20	7 8.3	17.8
30304 2000 HZ_{103}	15.0	X	76.10104	350.88312	146.73770	14.40542	0.1005079	0.24545135	2.5263437	20	5 1.9	18.5
30305 Severi	14.0	X	343.32634	276.18703	58.20905	2.85709	0.0896043	0.20591361	2.8401810	20	8 31.7	17.3
30306 Frigyesriesz	14.8	X	266.02123	253.76688	77.13443	2.01322	0.0296952	0.24516899	2.5282830	20	5 8.9	18.1
30307 Marcelriesz	13.4	X	240.79099	233.51677	56.45046	9.85353	0.0251782	0.18680711	3.0306826	20	2 24.1	17.9
30308 Ienli	15.4	X	188.35537	87.47683	232.47149	5.27028	0.1402203	0.28435420	2.2903206	20	1 16.8	18.8
30309 2000 JR_2	14.2	X	234.62735	146.94556	97.52572	6.94617	0.0699860	0.27842126	2.3227428	20	—	—
30310 Alexanderlin	15.1	X	58.56906	69.97519	293.31166	1.44901	0.1027877	0.27141920	2.3625210	20	—	—
30311 2000 JS_{10}	14.1	X	124.11386	258.60349	245.53747	19.25194	0.1599446	0.35080373	1.9911008	20	7 11.7	17.1
30312 Lilyliu	15.3	X	103.72278	305.41349	277.67280	5.02849	0.0804204	0.25981510	2.4323522	20	9 23.8	18.8
30313 2000 JF_{14}	13.8	X	112.98269	274.51304	71.15563	4.69319	0.2334202	0.22404690	2.6847886	20	—	—
30314 Yelenam	15.0	X	120.99635	13.09380	67.13441	6.13926	0.1200740	0.29195905	2.2503743	20	4 10.9	17.9
30315 2000 JM_{14}	14.4	X	195.83830	68.93876	139.46349	1.66611	0.1406592	0.17170320	3.2059036	20	11 27.1	19.3
30316 Scottmassa	15.0	X	237.93107	353.83032	65.64405	4.21907	0.0950976	0.25427781	2.4675374	20	7 24.9	18.3
30317 2000 JR_{15}	14.1	X	253.13924	100.07977	97.82096	14.59620	0.0896614	0.23025237	2.6363312	20	—	—
30318 2000 JW_{15}	14.2	X	81.51492	206.77918	87.05463	3.26966	0.0707345	0.21730153	2.7400650	20	11 22.8	18.1
30319 2000 JT_{16}	13.5	X	340.14832	161.88090	78.76621	8.70617	0.0382822	0.19621247	2.9330422	20	4 24.1	17.4
30320 2000 JP_{17}	14.5	X	34.28349	178.68195	154.98679	6.19372	0.2103627	0.26333769	2.4106123	20	12 16.3	17.8

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Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
	m		°	°	°	°		°				
30321 McCleary	15.2	X	43.25577	46.99080	157.96798	5.24482	0.0757950	0.29883804	2.2157060	20	6 8.6	17.5
30322 2000 JU_{17}	14.0	X	40.57020	266.94982	60.23814	14.90492	0.3157206	0.21200868	2.7854816	20	12 16.1	18.2
30323 Anyam	14.9	X	169.80237	242.26383	120.34450	6.27238	0.1280986	0.28720869	2.2751201	20	2 22.9	18.1
30324 Pandya	15.8	X	69.92024	224.01614	277.11833	1.65504	0.0689851	0.29555644	2.2320766	20	4 12.8	18.0
30325 Reesabpathak	15.1	X	142.88203	340.25932	13.68049	8.98853	0.0252985	0.23458240	2.6037889	20	1 8.1	18.8
30326 Maxpine	15.9	X	16.14183	180.88891	327.10488	1.85868	0.1187656	0.28853724	2.2681310	20	1 21.9	18.0
30327 Prembabu	14.3	X	69.30785	147.53006	182.30698	5.09374	0.1199115	0.21710431	2.7417241	20	12 27.9	18.3
30328 Emilyspencer	14.9	X	282.90280	206.76182	347.12478	9.34899	0.1242734	0.28154742	2.3055171	20	—	—
30329 2000 JR_{23}	14.3	X	178.46284	222.02736	309.35297	5.25844	0.0526864	0.26420605	2.4053274	20	10 13.5	17.7
30330 Tiffanysun	14.7	X	139.33603	35.65757	266.23833	6.88783	0.1430825	0.27335654	2.3513452	20	—	—
30331 2000 JT_{26}	13.6	X	167.70481	332.14382	14.04846	9.25745	0.1403475	0.18538364	3.0461768	20	2 13.9	18.5
30332 Tanaytandon	15.0	X	144.92994	266.25668	271.01964	3.45586	0.0984513	0.26014245	2.4303112	20	9 11.7	18.6
30333 Stevenwang	14.8	X	165.02966	350.06724	7.80403	6.38558	0.1542098	0.28434532	2.2903683	20	2 14.9	18.1
30334 Michaelwiner	15.0	X	147.93992	157.72034	14.42672	5.07542	0.0865628	0.25939872	2.4349544	20	9 11.3	18.4
30335 2000 JU_{28}	13.2	X	182.02010	325.35542	19.65557	11.64108	0.1169547	0.18680041	3.0307551	20	2 25.9	18.1
30336 Zhangyizhen	14.8	X	187.70335	104.19135	261.85216	4.39704	0.1394259	0.23965488	2.5669173	20	3 16.7	18.9
30337 Crystalzheng	14.8	X	321.33636	44.40160	318.10173	1.84367	0.1917946	0.25634869	2.4542303	20	9 3.3	16.7
30338 2000 JW_{29}	15.0	X	290.64036	218.53259	331.84637	3.75178	0.1039515	0.28097712	2.3086357	20	—	—
30339 2000 JQ_{32}	15.1	X	205.20546	326.51882	358.51923	1.55578	0.2064937	0.23384509	2.6092591	20	2 15.2	19.5
30340 2000 JY_{32}	14.5	X	112.74395	87.38405	251.24810	4.34563	0.1104805	0.27363923	2.3497255	20	—	—
30341 2000 JT_{33}	15.1	X	336.22875	100.23549	304.44627	5.38796	0.1027526	0.26700112	2.3885114	20	12 10.4	17.5
30342 2000 JX_{35}	14.3	X	348.11375	236.56930	36.63043	2.42340	0.0124049	0.19987122	2.8971382	20	6 14.9	18.2
30343 2000 JB_{36}	14.9	X	210.75214	202.69445	359.20288	2.28967	0.1561806	0.27116269	2.3640106	20	12 22.8	18.0
30344 2000 JG_{36}	14.7	X	281.42026	230.64314	46.64039	16.28997	0.1835415	0.23889078	2.5723879	20	3 6.3	18.7
30345 2000 JN_{36}	13.8	X	148.00987	306.91731	48.56406	14.37174	0.1601259	0.23051710	2.6343125	20	2 4.6	18.1
30346 2000 JK_{37}	12.9	X	205.88112	345.43979	248.30082	14.03018	0.2211868	0.17458997	3.1704666	20	12 27.4	18.0
30347 Pattyhunt	14.9	X	282.86013	349.99403	241.69989	5.54670	0.1007328	0.28320203	2.2965283	20	1 3.9	17.9
30348 Marizzabailey	15.3	X	356.38660	261.82903	30.30887	0.89382	0.0887528	0.20314726	2.8659069	20	7 23.8	18.6
30349 2000 JV_{38}	14.8	X	116.24825	152.58695	45.97937	10.31484	0.1312942	0.20887083	2.8133096	20	9 12.4	19.3
30350 Beltecas	15.4	X	179.04004	145.50189	235.75445	2.86686	0.1717067	0.28884726	2.2665078	20	3 26.5	18.9
30351 2000 JK_{39}	14.2	X	171.55037	79.59479	247.85968	11.82201	0.2031291	0.22922140	2.6442303	20	1 19.0	18.7
30352 2000 JL_{39}	14.0	X	306.60740	273.24884	39.66261	2.64691	0.0529991	0.19896265	2.9059514	20	6 6.0	17.8
30353 Carothers	14.4	X	29.79464	243.43528	45.32547	2.76641	0.0646611	0.20718169	2.8285800	20	9 9.1	17.9
30354 2000 JR_{39}	14.8	X	148.86968	247.34914	20.55530	0.81061	0.1516524	0.17044830	3.2216197	20	12 22.5	20.0
30355 2000 JU_{39}	15.0	X	105.64007	184.53007	55.10815	4.74112	0.0932622	0.30975592	2.1633310	20	10 30.8	17.7
30356 2000 JJ_{41}	15.6	X	249.84471	19.05930	317.01092	1.18441	0.2165110	0.24401698	2.5362342	20	4 3.5	19.5
30357 Davisdon	14.8	X	45.99848	205.06851	219.23089	2.39696	0.0988721	0.22912483	2.6449732	20	—	—
30358 2000 JF_{49}	14.2	X	82.24091	350.79612	291.96041	5.41101	0.1100597	0.26270332	2.4144915	20	11 21.2	17.7
30359 2000 JE_{50}	14.3	X	163.50873	46.05651	256.93660	11.62954	0.1683265	0.22599073	2.6693712	20	—	—
30360 2000 JY_{50}	14.4	X	87.30751	306.24621	311.24437	4.84894	0.2007419	0.25977946	2.4325747	20	11 1.1	18.2
30361 2000 JJ_{51}	14.4	X	356.99919	192.98822	35.40787	12.53657	0.1080228	0.24453832	2.5326282	20	4 23.4	16.9
30362 Jenniferdean	15.6	X	335.73440	276.68504	289.32062	4.52548	0.0988850	0.29062680	2.2572463	20	2 7.4	18.0
30363 Dellasantina	14.7	X	98.92490	111.51569	108.99794	3.29047	0.1558969	0.25813105	2.4429198	20	9 26.4	18.4
30364 2000 JX_{54}	14.2	X	339.15811	230.65815	126.65029	3.73428	0.1956246	0.25721559	2.4487128	20	10 12.6	16.0
30365 Gregduran	15.2	X	304.36672	69.42193	102.96770	4.18869	0.0985710	0.27998669	2.3140770	20	—	—
30366 2000 JC_{57}	13.2	X	231.06518	340.30298	229.19964	12.50051	0.1122272	0.22477517	2.6789863	20	—	—
30367 2000 JS_{57}	13.8	X	125.07300	145.24371	82.22367	10.22400	0.0982530	0.21232641	2.7827020	20	10 24.5	18.2
30368 Ericferrante	14.2	X	279.59117	99.50793	212.60975	6.09672	0.0962712	0.24301102	2.5432286	20	4 20.9	17.7
30369 2000 JU_{58}	14.2	X	310.86630	63.18710	204.50509	8.44745	0.1404523	0.24053432	2.5606567	20	3 26.9	17.3
30370 Jongoetz	14.4	X	86.55374	219.88415	93.56017	5.54246	0.1140067	0.26539762	2.3981225	20	—	—
30371 Johngorman	15.5	X	148.97787	17.69805	294.18236	6.41759	0.1172580	0.27676561	2.3319969	20	—	—
30372 Halback	15.1	X	299.81129	226.81638	78.27851	3.19563	0.1185424	0.24498560	2.5295446	20	5 6.8	18.1
30373 Mattharley	14.9	X	49.44950	355.05599	339.98420	6.35014	0.1369247	0.26719318	2.3873667	20	12 26.8	18.3
30374 Bobbiehinson	15.1	X	94.64138	354.19638	318.37454	6.18120	0.1246614	0.26931215	2.3748276	20	—	—
30375 Kathuang	15.3	X	287.46300	351.92197	331.00969	3.31991	0.1629572	0.24656390	2.5187383	20	5 4.4	18.5
30376 2000 JE_{65}	13.4	X	168.18021	206.08587	103.51843	13.02883	0.1815258	0.22626027	2.6672507	20	—	—
30377 2000 JL_{66}	13.7	X	237.69579	190.14919	105.75252	14.66467	0.1486231	0.23488631	2.6015424	20	2 11.7	17.9
30378 2000 JW_{67}	15.0	X	122.27020	55.60628	112.65307	6.64665	0.1504807	0.25560539	2.4589859	20	8 11.9	18.6
30379 2000 JY_{69}	13.6	X	357.38252	239.78226	137.22783	17.25210	0.2820942	0.21144937	2.7903914	20	12 17.4	16.8
30380 2000 JE_{76}	15.3	X	222.16269	271.72265	154.16498	3.94706	0.0925583	0.30211631	2.1996484	20	7 15.5	18.1
30381 2000 JN_{76}	14.0	X	7.69559	53.22659	122.24633	5.95111	0.1967930	0.24042776	2.5614132	20	2 21.5	16.1
30382 2000 JB_{81}	14.4	X	281.43867	206.30297	95.16707	8.31378	0.1855306	0.24057505	2.5603676	20	4 1.1	18.1
30383 2000 KZ_{1}	15.1	X	59.54003	12.46546	112.53403	5.86270	0.1511075	0.28928623	2.2642144	20	3 18.2	17.1
30384 Robertirelan	14.7	X	13.56467	257.71796	129.42873	3.12611	0.0949385	0.21962445	2.7207100	20	12 28.7	18.0
30385 2000 KG_{8}	13.8	X	100.43144	190.36418	141.50325	7.89144	0.0871726	0.22024943	2.7155608	20	—	—
30386 Philipjeffery	14.6	X	39.60841	276.75332	36.11558	3.45880	0.0337361	0.21197698	2.7857593	20	10 19.6	18.1
30387 2000 KN_{16}	14.0	X	196.67270	145.59984	244.18802	12.96434	0.1682468	0.24294430	2.5436942	20	4 23.6	18.2
30388 Nicolejustice	14.8	X	279.87888	282.03118	177.06182	1.73476	0.0821590	0.21686189	2.7437670	20	11 9.7	18.1
30389 Ledoux	14.6	X	114.97055	130.46800	66.62098	3.04753	0.0282012	0.20682764	2.8318071	20	8 26.8	18.6
30390 2000 KX_{17}	14.0	X	133.96248	287.21555	55.53241	1.79017	0.1377845	0.17783279	3.1318058	20	1 6.2	18.6
30391 2000 KA_{23}	14.3	X	273.77330	164.28047	128.03999	11.98703	0.0590375	0.19174898	2.9783838	20	4 1.5	18.7
30392 2000 KX_{26}	14.0	X	173.37880	13.72749	248.86351	12.75833	0.2259303	0.22194549	2.7017086	20	—	—
30393 2000 KN_{30}	13.8	X	100.35402	312.46387	78.84318	5.26197	0.2369815	0.22709745	2.6606916	20	2 3.0	17.2
30394 2000 KZ_{32}	13.7	X	176.34828	72.64384	183.93000	1.39975	0.1167778	0.17158041	3.2074329	20	—	—
30395 2000 KQ_{36}	14.2	X	219.00344	312.82984	151.62371	15.01928	0.1214266	0.20955854	2.8071512	20	8 23.4	18.3
30396 Annleonard	14.5	X	16.35292	103.95402	62.17519	2.85548	0.0779926	0.18883141	3.0089840	20	3 8.4	18.3
30397 2000 KU_{39}	13.9	X	160.17488	280.94677	100.69331	6.90604	0.3388621	0.23464044	2.6033595	20	3 26.2	18.7
30398 2000 KM_{41}	13.5	X	189.86390	100.12747	197.26767	13.63507	0.1973451	0.17380433	3.1800137	20	1 6.4	19.1
30399 2000 KF_{42}	14.0	X	79.80418	162.20280	184.47966	15.46373	0.2434065	0.21711231	2.7416567	20	—	—
30400 2000 KL_{42}	14.6	X	332.03869	223.42275	148.09369	14.76855	0.1329285	0.25701089	2.4500129	20	10 19.7	17.3

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Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
	m		°	°	°	°		°				
30401 2000 KO_{47}	12.6	X	229.63374	67.01296	120.80478	17.02265	0.0838134	0.17164111	3.2066766	20	12 15.7	17.4
30402 2000 KN_{50}	15.0	X	356.39053	173.36104	169.83434	8.51985	0.1714725	0.25999946	2.4312022	20	10 26.8	17.3
30403 2000 KR_{50}	13.9	X	195.26243	260.31742	94.44132	14.72371	0.2034795	0.23564203	2.5959772	20	3 20.1	18.6
30404 2000 KN_{51}	16.1	X	109.87458	123.71607	213.46567	1.17745	0.0978305	0.22482641	2.6785792	20	—	—
30405 2000 KE_{52}	15.6	X	204.78329	20.04815	90.88655	4.16158	0.0954669	0.30830240	2.1701252	20	8 30.4	18.3
30406 Middleman	14.8	X	142.75210	267.18776	153.74137	3.57086	0.1158787	0.29153794	2.2525408	20	4 8.7	17.8
30407 Pantano	15.1	X	211.64015	111.87099	176.89172	4.39471	0.0217906	0.28073901	2.3099409	20	—	—
30408 2000 KW_{55}	13.6	X	318.27292	150.55293	88.55528	9.85273	0.0327673	0.19021713	2.9943528	20	3 26.7	17.8
30409 Piccirillo	14.9	X	228.09169	118.81237	193.96295	2.20108	0.1213137	0.23539450	2.5977968	20	2 21.2	18.7
30410 2000 KU_{56}	14.0	X	216.79976	203.95123	101.17126	11.01847	0.0687105	0.18361879	3.0656646	20	2 11.0	18.7
30411 2000 KP_{57}	14.9	X	82.49439	203.08797	149.32767	3.87546	0.1899176	0.27133405	2.3630152	20	—	—
30412 2000 KJ_{58}	14.6	X	244.20089	166.21855	153.71767	10.63927	0.0763379	0.19327535	2.9626823	20	3 27.7	19.0
30413 2000 KS_{59}	13.9	X	195.81601	189.57000	130.29966	3.16832	0.0732576	0.18488006	3.0517059	20	2 4.7	18.5
30414 Pistacchi	15.2	X	159.35664	282.90955	99.09740	2.09848	0.0581984	0.23806026	2.5783673	20	3 6.3	18.7
30415 2000 KT_{74}	14.0	X	221.68705	317.19642	180.38751	6.68379	0.1231677	0.21599306	2.7511199	20	10 8.8	17.9
30416 Schacht	15.8	X	32.38424	247.01418	113.05188	7.11507	0.0415622	0.26634045	2.3924597	20	12 24.1	18.8
30417 Staudt	14.6	X	168.11033	214.29553	104.14039	3.60484	0.2024922	0.22698219	2.6615923	20	1 8.8	18.9
30418 Jakobsteiner	14.6	X	120.95467	268.10401	77.08798	12.17903	0.2117200	0.22379427	2.6868087	20	—	—
30419 2000 LU	13.6	X	335.48710	328.07273	43.47403	7.35690	0.0931797	0.20934533	2.8090568	20	10 10.1	16.8
30420 2000 LD_1	13.8	X	133.21162	169.12544	131.26825	7.55193	0.0898020	0.22067092	2.7121018	20	—	—
30421 Jameschafer	14.3	X	93.05683	116.13898	149.37966	9.71409	0.1180412	0.21082195	2.7959249	20	11 7.1	18.7
30422 2000 LE_4	14.3	X	4.30202	283.45364	216.09633	14.41659	0.0831552	0.23092841	2.6311835	20	1 3.7	17.7
30423 2000 LG_4	13.3	X	337.34049	35.86144	118.08141	17.73026	0.0562188	0.17965358	3.1106093	20	—	—
30424 2000 LS_4	14.3	X	67.97960	44.76704	163.83768	6.01771	0.1251932	0.29984541	2.2107406	20	7 31.7	16.8
30425 Silverman	14.7	X	100.26468	155.21170	169.78338	5.12002	0.1613767	0.21825688	2.7320632	20	—	—
30426 Philtalbot	14.6	X	99.39152	39.46920	230.42007	5.25656	0.1441322	0.26186170	2.4196621	20	11 26.5	18.4
30427 2000 LX_8	14.0	X	295.83764	162.61812	177.93330	1.81427	0.1252484	0.19845056	2.9109483	20	6 17.5	17.8
30428 2000 LP_{11}	13.6	X	227.03884	52.23092	212.58736	14.74077	0.0749709	0.22746470	2.6578270	20	—	—
30429 2000 LR_{11}	13.4	X	204.55680	172.31478	166.93290	11.47327	0.1139035	0.18495997	3.0508268	20	3 6.6	18.2
30430 Robertoegel	14.9	X	290.91409	26.63873	144.02861	4.74425	0.0856352	0.27817742	2.3240999	20	—	—
30431 Michaeltran	15.3	X	17.54915	359.05397	157.32602	5.80846	0.1299523	0.28827492	2.2695067	20	2 4.6	17.2
30432 2000 LM_{20}	13.3	X	345.17025	291.47672	246.95706	11.43983	0.1310848	0.23102399	2.6304577	20	1 19.4	16.6
30433 2000 LJ_{21}	12.7	X	48.58764	224.09454	269.11981	15.26735	0.0420060	0.18058052	3.0999555	20	3 1.9	17.3
30434 2000 LQ_{21}	13.0	X	159.78512	85.77488	253.28058	13.19827	0.0856609	0.17639708	3.1487762	20	1 19.8	18.0
30435 2000 LB_{29}	13.2	X	205.04945	102.35268	195.62346	3.09530	0.2351913	0.12506543	3.9601459	20	1 23.9	19.8
30436 2000 LC_{29}	13.9	X	94.39636	284.79791	178.14621	2.83266	0.1713763	0.22985188	2.6393927	20	4 17.2	17.4
30437 2000 LE_{32}	14.3	X	261.11568	0.05366	213.72584	6.21844	0.0680993	0.27292473	2.3538248	20	—	—
30438 2000 LL_{34}	13.7	X	105.80411	122.80852	156.98369	10.55654	0.1570109	0.20992668	2.8038684	20	12 7.5	18.4
30439 Moe	13.7	X	118.35751	128.44504	29.38576	6.19206	0.1148963	0.25178596	2.4837910	20	7 22.3	17.3
30440 Larry	14.7	X	318.96040	250.76658	354.44297	1.42345	0.2012215	0.18985086	2.9982028	20	3 6.6	18.4
30441 Curly	13.9	X	169.70572	257.14264	71.73371	6.45707	0.1600962	0.17838949	3.1252867	20	1 26.6	19.0
30442 2000 MO_4	13.4	X	201.90535	54.29778	305.75696	9.53774	0.1394127	0.18366345	3.0651676	20	3 23.7	18.5
30443 Stieltjes	13.4	X	111.39521	134.54308	282.35460	6.85291	0.0319774	0.22993163	2.6387823	20	2 15.2	17.0
30444 Shemp	14.0	X	68.40439	44.84902	300.20600	8.01354	0.1672276	0.21326594	2.7745234	20	—	—
30445 Stirling	14.0	X	241.17172	286.85708	287.41772	12.04949	0.1503233	0.22238977	2.6981091	20	—	—
30446 2000 NO_2	13.9	X	219.96312	88.87009	207.67063	3.47474	0.1234679	0.22894665	2.6463454	20	1 25.1	18.0
30447 2000 NO_3	13.9	X	35.86261	65.87350	154.10629	3.57959	0.1111581	0.19455611	2.9496657	20	6 20.0	17.5
30448 Yoshiomoriyama	14.0	X	229.65576	323.45838	292.44707	12.81826	0.1461651	0.22445590	2.6815261	20	—	—
30449 2000 NH_{13}	13.3	X	181.81867	258.11708	287.25645	10.73072	0.1317195	0.20685540	2.8315537	20	10 18.8	17.9
30450 2000 NM_{20}	14.1	X	81.53971	251.95589	284.58362	8.84869	0.0395398	0.19279741	2.9675765	20	6 17.0	18.2
30451 2000 NX_{23}	14.1	X	263.16207	186.76611	126.13184	9.60620	0.1269024	0.18676702	3.0311162	20	4 5.6	18.7
30452 2000 NR_{24}	14.2	X	289.58201	297.59635	133.17307	13.16716	0.0844352	0.20461451	2.8521898	20	10 20.0	18.1
30453 2000 NQ_{25}	12.7	X	74.36881	301.17195	308.34532	12.78359	0.1363949	0.20333291	2.8641621	20	9 19.1	17.0
30454 2000 NK_{26}	14.1	X	356.52256	324.07344	203.34125	8.88389	0.0252788	0.17790190	3.1309947	20	2 10.3	18.6
30455 2000 NB_{27}	13.3	X	165.16418	73.60876	311.32606	10.37214	0.0060493	0.18213267	3.0823182	20	3 12.8	17.7
30456 2000 OY_1	13.8	X	192.37129	357.06389	296.40099	1.38970	0.1675611	0.17364724	3.1819313	20	1 5.2	19.0
30457 2000 OZ_3	13.8	X	253.17411	77.37427	294.22195	8.80306	0.1107110	0.18994758	2.9971850	20	6 3.9	18.2
30458 2000 OC_6	13.4	X	123.81725	193.12395	270.00986	7.85804	0.0841683	0.18505769	3.0497527	20	5 10.4	18.0
30459 2000 OK_6	14.3	X	12.72836	359.06677	202.29173	5.68371	0.1102019	0.28756029	2.2732652	20	4 7.5	16.3
30460 2000 OT_6	13.6	X	179.13150	37.72975	264.83801	9.51661	0.0404959	0.17327945	3.1864322	20	—	—
30461 2000 OZ_9	13.8	X	119.56995	203.93230	121.15430	6.13065	0.1589087	0.21841033	2.7307835	20	—	—
30462 2000 OM_{10}	13.4	X	283.02712	175.09991	128.77955	11.48500	0.1017159	0.18954512	3.0014260	20	4 21.7	17.8
30463 2000 OE_{11}	13.8	X	279.13854	51.95004	282.15934	9.01936	0.0886778	0.19213277	2.9744164	20	5 21.1	17.9
30464 2000 OH_{12}	14.4	X	239.71483	40.57772	268.08776	2.01891	0.0844663	0.23283310	2.6168143	20	3 1.3	18.3
30465 2000 OY_{13}	13.3	X	118.13242	95.46469	308.74005	5.54688	0.0554194	0.17858643	3.1229887	20	2 18.9	17.8
30466 2000 OP_{14}	13.6	X	124.28860	243.44776	132.74487	11.59433	0.1020042	0.17500107	3.1654994	20	1 30.9	18.3
30467 2000 OV_{14}	13.3	X	206.14337	50.13879	306.87874	8.04566	0.0513119	0.18426375	3.0585068	20	3 26.9	18.0
30468 2000 OW_{16}	13.2	X	39.86789	174.14314	294.69923	7.48481	0.0975555	0.17558357	3.1584945	20	1 31.6	17.3
30469 2000 OZ_{16}	14.0	X	114.74701	196.23936	179.50350	1.06443	0.1965106	0.17196890	3.2026006	20	1 31.9	18.9
30470 2000 OR_{19}	14.0	X	271.96502	80.94741	199.87953	3.16572	0.2122164	0.18519110	3.0482879	20	2 21.8	18.7
30471 2000 OF_{20}	13.6	X	207.27815	1.31685	250.34717	6.20320	0.0235521	0.16890177	3.2412554	20	—	—
30472 2000 OM_{23}	12.7	X	108.39648	53.09391	308.32265	15.09446	0.1858122	0.17123444	3.2117518	20	1 9.1	17.4
30473 Ethanbutson	14.1	X	297.74421	279.80844	334.97836	0.88385	0.1190805	0.18592650	3.0402446	20	3 2.6	18.1
30474 2000 OE_{26}	14.2	X	358.58924	317.68762	115.49449	10.42674	0.1420939	0.21466901	2.7624207	20	—	—
30475 2000 OA_{32}	13.3	X	186.35886	162.86007	148.24569	19.07283	0.1096560	0.17475671	3.1684496	20	1 17.7	18.5
30476 2000 OY_{34}	14.0	X	50.81959	23.67385	158.03992	16.11551	0.1208550	0.23736735	2.5833826	20	5 27.1	17.4
30477 2000 OM_{36}	14.0	X	126.87177	90.96325	200.22105	11.83359	0.1290119	0.21478751	2.7614045	20	—	—
30478 2000 OQ_{37}	13.9	X	139.36023	110.20984	212.51302	10.47762	0.1472884	0.16981084	3.2296771	20	—	—
30479 2000 OW_{37}	13.8	X	65.56971	142.09141	205.78440	10.35999	0.1779599	0.16226505	3.3290429	20	—	—
30480 2000 OH_{40}	13.9	X	332.50762	210.84161	271.41689	7.51073	0.2281160	0.21504346	2.7592130	20	—	—

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Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
	m		°	°	°	°		°				
30481 2000 OX_{40}	14.1	X	165.18107	128.91899	209.79264	9.58960	0.1431470	0.17525891	3.1623939	20	1 29.2	19.3
30482 2000 OG_{45}	12.0	X	37.00685	189.16081	287.16166	16.56197	0.1057066	0.17363966	3.1820239	20	2 2.9	16.1
30483 2000 OG_{52}	13.4	X	45.50947	121.76627	294.82015	8.37740	0.0463045	0.16981020	3.2296852	20	—	—
30484 2000 PD_{6}	14.0	X	262.55363	344.10983	10.19988	10.92533	0.1195430	0.18890698	3.0081816	20	5 20.2	18.6
30485 2000 PK_{16}	13.7	X	212.23292	324.12732	125.21006	6.81829	0.1962101	0.19401646	2.9551327	20	7 21.3	18.4
30486 2000 PE_{23}	14.0	X	61.60064	213.67021	280.53453	11.33421	0.2303566	0.23234212	2.6204995	20	4 15.3	17.2
30487 Dominikovacs	14.2	X	126.33532	59.61483	310.48027	0.23352	0.1623706	0.17365272	3.1818643	20	2 2.2	18.9
30488 Steinlechner	14.3	X	265.74906	230.87960	157.08114	2.34428	0.1047957	0.19377980	2.9575383	20	7 11.7	18.3
30489 2000 QL_{32}	13.1	X	140.74167	353.03133	67.09294	9.19452	0.0396479	0.18099322	3.0952413	20	4 7.5	17.7
30490 2000 QP_{33}	12.8	X	251.04338	210.71020	87.04552	16.75621	0.0517834	0.17786163	3.1314672	20	3 18.5	17.7
30491 2000 QJ_{38}	14.0	X	66.53066	315.82556	133.01844	2.17347	0.1649948	0.17345246	3.1843129	20	2 24.9	17.9
30492 2000 QQ_{40}	13.8	X	91.30518	293.82922	149.83196	1.92124	0.1806139	0.17537617	3.1609843	20	3 24.9	18.1
30493 2000 QM_{48}	13.4	X	273.66414	65.33399	157.82019	9.18694	0.0636249	0.17277103	3.1926803	20	1 5.7	18.1
30494 2000 QD_{67}	13.4	X	327.43995	194.69804	4.45939	21.00807	0.1732420	0.17592165	3.1544467	20	2 5.4	17.8
30495 2000 QZ_{72}	13.4	X	181.59037	322.32961	331.52358	11.96346	0.0500948	0.16917411	3.2377759	20	—	—
30496 2000 QN_{80}	13.9	X	245.46740	164.94782	177.40602	10.72727	0.1226140	0.18311074	3.0713325	20	4 21.1	18.6
30497 2000 QH_{97}	12.6	X	283.33731	88.99566	154.17735	13.81707	0.0796972	0.17508127	3.1645327	20	2 6.3	17.2
30498 2000 QK_{100}	11.8	X	234.29529	241.99671	107.41777	4.67528	0.0897051	0.08113334	5.2844906	20	4 24.9	19.0
30499 2000 QE_{169}	12.1	X	221.37278	107.74585	267.02810	3.91317	0.0561589	0.08376412	5.1732568	20	5 10.4	19.2
30500 2000 QC_{193}	14.0	X	104.86370	12.70293	96.84328	2.55576	0.1331679	0.18179459	3.0861385	20	5 5.1	18.4
30501 2000 RH_{17}	12.8	X	267.88989	334.52964	260.26615	8.36722	0.0986788	0.17221126	3.1995950	20	1 8.8	17.6
30502 2000 RY_{29}	13.4	X	64.18234	290.66811	211.39637	11.94455	0.1078925	0.17716926	3.1396204	20	4 19.9	17.6
30503 2000 RW_{79}	12.5	X	164.10465	229.19502	244.44887	9.82489	0.0613061	0.18911967	3.0059258	20	7 6.4	17.1
30504 2000 RS_{80}	11.4	X	8.37891	286.80649	296.68984	5.28853	0.0627984	0.08263579	5.2202415	20	5 10.3	18.1
30505 2000 RW_{82}	11.6	X	206.66025	195.97213	202.57681	28.66665	0.0804412	0.08293119	5.2078380	20	5 21.8	19.0
30506 2000 RO_{85}	11.0	X	240.76466	11.29263	343.36485	20.05714	0.0810948	0.08491250	5.1265079	20	4 27.4	18.3
30507 2000 SK_{8}	12.7	X	166.90566	52.28826	54.79491	10.62905	0.0635917	0.18884671	3.0088216	20	7 2.9	17.3
30508 2000 SZ_{130}	12.0	X	274.78465	103.00402	229.34087	17.24306	0.0459307	0.08531334	5.1104375	20	5 22.2	18.7
30509 Yukitrippel	14.5	X	317.00686	180.98317	86.69900	6.53430	0.1925275	0.26144482	2.4222336	20	3 31.0	17.3
30510 2001 DM_{44}	12.0	X	328.74422	48.54041	342.65525	11.43916	0.1271116	0.08144814	5.2708656	20	9 23.8	18.4
30511 2001 FS_{29}	14.4	X	72.50139	141.32907	149.76873	13.49164	0.1902201	0.22744423	2.6579865	20	11 27.2	18.7
30512 2001 HO_{8}	12.7	X	227.18133	43.38759	128.46066	25.71277	0.3228969	0.13073314	3.8448457	20	11 1.5	19.4
30513 2001 HE_{48}	14.4	X	345.51795	227.51549	127.32799	16.18238	0.1008092	0.22666436	2.6640798	20	10 13.2	17.8
30514 Chiomento	15.6	X	224.41734	303.65347	343.28512	3.19890	0.1842571	0.29724062	2.2236373	20	1 9.9	19.2
30515 2001 KZ_{29}	14.7	X	100.28508	287.35411	57.47616	15.39618	0.1319872	0.23476071	2.6024703	20	—	—
30516 2001 LB_{7}	14.2	X	7.19668	174.44492	198.92869	9.10239	0.1768182	0.21613944	2.7498776	20	12 12.6	17.5
30517 2001 LJ_{15}	12.8	X	246.76117	138.99771	252.97563	8.74477	0.0910219	0.15160584	3.4833098	20	6 23.9	17.9
30518 2001 LE_{16}	14.9	X	289.62606	244.35824	122.94154	7.04925	0.1400182	0.25913098	2.4366313	20	7 16.3	17.6
30519 2001 ML_{9}	15.5	X	161.23019	113.43835	233.69596	2.93725	0.1498156	0.28699613	2.2762433	20	1 24.6	18.7
30520 2001 MM_{11}	14.8	X	15.10654	141.22729	277.19743	6.42671	0.0944320	0.27840762	2.3228186	20	—	—
30521 2001 MU_{14}	14.4	X	57.54901	52.44166	319.19731	4.78035	0.2473332	0.22208809	2.7005519	20	—	—
30522 2001 MQ_{15}	13.2	X	336.49224	267.70393	145.74273	14.06554	0.3434898	0.21278575	2.7786959	20	12 30.4	15.4
30523 2001 MK_{23}	13.9	X	191.88314	222.51416	339.99633	10.09143	0.1488922	0.17202630	3.2018881	20	11 12.5	19.2
30524 Mandushev	15.6	X	149.44340	91.35161	305.29042	5.69542	0.1950883	0.29347083	2.2426393	20	3 17.8	19.0
30525 Lenbright	15.2	X	16.67746	54.98231	284.17640	1.64107	0.0880662	0.21607484	2.7504257	20	10 29.5	18.5
30526 2001 NC_{2}	14.8	X	17.24023	284.43893	104.00129	8.91339	0.2364016	0.27375567	2.3490592	20	—	—
30527 2001 NW_{10}	14.0	X	108.61896	193.92524	256.96726	8.64641	0.0558176	0.19335358	2.9618830	20	3 31.6	18.4
30528 2001 NT_{17}	16.0	X	290.78686	252.30277	40.46235	2.81564	0.0462497	0.30235302	2.1985002	20	4 14.2	18.3
30529 2001 NE_{18}	12.8	X	336.12217	162.78845	271.73948	14.55947	0.0515576	0.17295698	3.1903916	20	12 18.6	16.9
30530 2001 NS_{18}	16.1	X	46.82864	92.33752	199.93983	1.79350	0.1920846	0.26648324	2.3916050	20	11 5.3	19.3
30531 2001 ND_{21}	14.0	X	113.19833	77.10760	274.68016	1.81314	0.2031532	0.17579503	3.1559612	20	1 2.9	18.4
30532 2001 OO	14.4	X	114.12519	267.61267	177.40517	9.98289	0.0737077	0.19323012	2.9631446	20	4 7.6	18.6
30533 Saeidzoonemat	15.2	X	305.19985	223.62676	186.00165	2.46723	0.1817911	0.26402310	2.4064385	20	10 16.7	17.2
30534 2001 OA_{5}	12.6	X	82.05052	160.24248	259.86347	11.82475	0.1309411	0.17964161	3.1107475	20	1 31.9	17.0
30535 2001 OR_{5}	15.0	X	140.25931	39.64135	156.79768	24.04887	0.0303303	0.36883756	1.9256586	20	10 29.5	17.6
30536 2001 OJ_{7}	13.7	X	334.58249	88.06453	305.77740	7.99019	0.1681628	0.21275979	2.7789219	20	11 5.5	16.8
30537 2001 OR_{8}	15.0	X	61.26147	349.02392	257.66470	3.64305	0.1968762	0.26365019	2.4087071	20	9 20.9	18.2
30538 2001 OG_{12}	13.4	X	213.14130	228.65524	138.93014	10.36528	0.0829155	0.19071545	2.9891346	20	4 22.9	18.1
30539 Raissamuller	15.5	X	241.62358	182.75871	136.09466	6.84924	0.1755265	0.29528028	2.2334681	20	3 6.9	18.8
30540 2001 ON_{14}	14.0	X	194.05576	223.79314	135.65318	2.45242	0.1120239	0.19032551	2.9932159	20	3 21.0	18.8
30541 2001 OG_{20}	13.2	X	109.20361	153.66004	196.68595	22.94145	0.1625136	0.17552751	3.1591670	20	—	—
30542 2001 OG_{23}	13.7	X	9.70938	250.98089	228.58431	21.05471	0.0326711	0.22784083	2.6549011	20	—	—
30543 2001 OE_{27}	14.6	X	194.58025	59.81801	198.32917	15.36636	0.2167000	0.18009024	3.1055791	20	—	—
30544 2001 OO_{32}	15.3	X	171.99632	207.74633	37.70194	7.70598	0.0727293	0.27971782	2.3155596	20	—	—
30545 2001 OT_{35}	12.2	X	345.56431	279.23524	220.88760	27.06098	0.1741315	0.17304596	3.1892978	20	—	—
30546 2001 OA_{38}	15.1	X	60.58323	230.82560	76.66514	7.15064	0.1257490	0.26974662	2.3722769	20	12 3.1	18.3
30547 2001 OS_{44}	14.8	X	78.75765	241.07652	112.10240	15.11257	0.0667673	0.22528480	2.6749446	20	—	—
30548 2001 OT_{45}	14.6	X	246.57681	243.78157	102.01537	7.09000	0.1015529	0.19745752	2.9206999	20	4 29.1	19.0
30549 2001 OE_{46}	15.0	X	155.22035	242.32457	149.44433	4.67167	0.2412571	0.23977054	2.5660916	20	3 27.5	19.3
30550 2001 OH_{47}	14.5	X	136.21145	160.75374	132.63577	9.47936	0.2606518	0.17379803	3.1800906	20	—	—
30551 2001 OH_{50}	16.0	X	167.07386	124.58905	211.56810	3.85514	0.1969410	0.28792229	2.2713594	20	1 20.4	19.5
30552 2001 OM_{54}	14.4	X	318.59595	299.76388	89.28016	11.10418	0.1889021	0.21209788	2.7847005	20	10 5.8	17.4
30553 2001 OV_{56}	14.7	X	103.92242	105.52108	330.98068	2.98866	0.1229395	0.24027215	2.5625190	20	3 16.1	18.0
30554 2001 OP_{57}	15.3	X	14.02072	215.17943	151.85305	6.82710	0.1493401	0.26606782	2.3940937	20	12 24.9	18.2
30555 2001 OM_{59}	14.3	X	38.24435	261.92837	142.84767	21.15394	0.2832992	0.27756468	2.3275190	20	—	—
30556 2001 OX_{59}	14.8	X	165.05354	217.29057	129.09432	10.18033	0.2113403	0.23765576	2.5812921	20	2 7.9	19.0
30557 2001 OD_{67}	15.3	X	163.65748	219.07191	171.04347	5.15919	0.2174882	0.23770797	2.5809141	20	3 30.7	19.7
30558 Jamesoconnor	15.2	X	220.70116	24.99426	335.81771	6.45496	0.2082437	0.29796147	2.2200494	20	4 4.6	18.8
30559 2001 OG_{68}	14.6	X	138.27128	28.20815	343.95214	7.26529	0.2084653	0.23447249	2.6046025	20	2 15.7	18.6
30560 2001 OO_{71}	15.8	X	249.21906	240.46928	130.14048	7.69071	0.2213340	0.30086082	2.2057636	20	5 18.4	19.1

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
	m		°	°	°	°		°				
30561 2001 OP_{71}	13.6	X	357.59700	301.82988	103.86122	6.13272	0.1567252	0.21558707	2.7545727	20	—	—
30562 2001 ON_{72}	14.0	X	78.36404	233.73621	136.41663	0.41943	0.1614029	0.17122533	3.2118657	20	—	—
30563 2001 OZ_{75}	14.8	X	251.60846	210.63798	103.38350	3.17361	0.0409302	0.19573721	2.9377880	20	3 31.8	19.1
30564 Olomouc	14.9	X	52.47165	283.27002	165.12323	3.89783	0.1454885	0.23552020	2.5968724	20	1 16.4	17.5
30565 2001 OV_{80}	14.3	X	217.08479	17.62050	285.28776	12.97329	0.2537239	0.23680210	2.5874920	20	1 26.5	18.9
30566 Stokes	15.2	X	8.17324	263.71646	106.35024	3.05221	0.2248977	0.26845814	2.3798614	20	—	—
30567 2001 OR_{90}	16.2	X	13.51334	163.15371	218.71908	3.00444	0.1324293	0.27179818	2.3603243	20	—	—
30568 2001 OQ_{91}	14.0	X	159.93505	45.25359	231.89172	12.76581	0.1582523	0.22745238	2.6579230	20	—	—
30569 2001 OG_{94}	14.7	X	125.79298	23.42163	283.84812	2.79843	0.1971812	0.22708823	2.6607637	20	—	—
30570 2001 OO_{96}	14.4	X	273.33054	140.02958	262.00618	5.57910	0.1390321	0.25523234	2.4613814	20	8 8.2	17.5
30571 2001 OW_{97}	15.9	X	63.71725	272.89335	35.11516	5.33053	0.1990305	0.26991699	2.3712786	20	12 14.5	19.5
30572 2001 OE_{98}	13.1	X	150.41752	152.91934	258.82652	9.29256	0.1380809	0.18587829	3.0407702	20	4 7.9	18.1
30573 2001 OR_{99}	15.8	X	359.28613	297.60377	337.33691	0.57186	0.1897037	0.25808873	2.4431869	20	7 12.4	17.4
30574 2001 OQ_{100}	16.2	X	80.14736	203.82811	53.07125	3.31937	0.1620214	0.26703297	2.3883215	20	10 24.5	19.6
30575 2001 OM_{101}	13.8	X	349.31384	351.90062	122.40801	23.32521	0.0202724	0.17843135	3.1247980	20	—	—
30576 2001 OC_{103}	13.6	X	218.08144	93.74230	270.71774	8.24820	0.1975421	0.19064621	2.9898582	20	4 11.0	18.7
30577 2001 OU_{103}	15.7	X	213.14515	204.45219	179.30524	24.25250	0.0816206	0.40209941	1.8179437	20	5 6.6	18.1
30578 2001 OD_{105}	14.4	X	192.59407	236.92350	153.01216	8.99714	0.0394894	0.24108164	2.5567796	20	4 26.4	18.0
30579 2001 OW_{107}	14.1	X	124.80472	290.79892	100.08922	15.34356	0.1919589	0.23192389	2.6236490	20	2 27.3	18.2
30580 2001 PG_{2}	13.7	X	74.82582	287.60285	136.88628	11.26485	0.0417782	0.18227923	3.0806659	20	1 19.5	18.0
30581 2001 PY_{2}	13.5	X	93.13782	88.82422	285.71162	9.94859	0.1048120	0.22887072	2.6469306	20	—	—
30582 2001 PJ_{3}	15.1	X	216.35705	200.75571	116.61855	3.04074	0.1130814	0.24294043	2.5437213	20	2 16.1	18.9
30583 2001 PZ_{6}	14.8	X	117.23476	201.09765	167.70149	15.50776	0.1332995	0.23042341	2.6350265	20	1 8.5	18.7
30584 2001 PF_{9}	13.7	X	236.73924	33.96995	158.81758	13.47470	0.1141112	0.22270424	2.6955686	20	—	—
30585 2001 PE_{14}	15.3	X	234.53796	56.18160	292.48466	2.71886	0.2233196	0.24562149	2.5251769	20	4 4.1	19.5
30586 2001 PV_{21}	16.5	X	174.07670	102.57392	166.74640	2.14318	0.1520843	0.28132682	2.3067222	20	—	—
30587 2001 PC_{33}	13.7	X	159.17441	18.70054	357.68691	14.02921	0.1930538	0.23823826	2.5770828	20	3 9.7	17.9
30588 2001 PC_{35}	12.7	X	257.27139	289.49570	284.10858	10.58687	0.0923821	0.17668468	3.1453582	20	—	—
30589 2001 QQ_{7}	13.9	X	119.53897	234.51548	151.38733	9.87410	0.1002326	0.18218910	3.0816817	20	2 4.3	18.3
30590 2001 QZ_{9}	16.1	X	160.92049	188.13647	205.53500	2.42631	0.2075476	0.29213565	2.2494673	20	3 28.1	19.6
30591 2001 QG_{10}	14.5	X	33.74037	254.18476	171.13974	2.07221	0.2017023	0.22479858	2.6788003	20	—	—
30592 2001 QO_{10}	14.7	X	188.95720	67.72423	0.24953	1.38877	0.2219081	0.19489446	2.9462508	20	6 4.7	19.8
30593 Dangovski	14.6	X	349.74366	264.70858	111.92900	6.21682	0.0747431	0.21368080	2.7709310	20	11 8.9	18.0
30594 2001 QD_{30}	12.6	X	105.49039	8.74917	11.18166	11.84243	0.1996292	0.17337654	3.1852425	20	1 31.5	17.4
30595 2001 QE_{43}	13.8	X	286.28248	220.58309	327.44358	10.66331	0.0770059	0.18196826	3.0841746	20	—	—
30596 Amdeans	15.5	X	271.64558	74.25450	233.21992	3.51278	0.1944825	0.29923637	2.2137392	20	3 17.1	18.6
30597 2001 QP_{69}	14.6	X	198.40354	83.90266	199.24134	11.72744	0.2707853	0.23374109	2.6100330	20	—	—
30598 2001 QA_{117}	13.4	X	148.47028	303.04006	332.75213	12.42349	0.1644990	0.22240951	2.6979495	20	—	—
30599 2052 P–L	16.1	X	203.16119	158.49967	203.07117	5.94797	0.1677169	0.28996168	2.2606968	20	3 23.7	19.5
30600 2078 P–L	13.6	X	153.88704	82.57222	354.16693	7.03454	0.1395733	0.24074792	2.5591418	20	5 11.8	17.6
30601 2082 P–L	15.4	X	238.35569	65.73618	254.64259	3.73299	0.1621592	0.29018441	2.2595398	20	3 3.3	18.8
30602 2086 P–L	15.1	X	133.94751	139.50178	269.55098	2.88096	0.1719903	0.23876502	2.5732911	20	3 21.0	19.1
30603 2106 P–L	15.9	X	237.88608	97.69506	220.58267	6.34729	0.1213728	0.24027189	2.5625209	20	3 6.6	19.9
30604 2107 P–L	15.8	X	264.36993	13.45795	243.61918	4.94508	0.1482849	0.28846808	2.2684935	20	1 10.9	19.2
30605 2204 P–L	15.6	X	55.97231	106.13243	343.83314	6.20547	0.1220565	0.28651699	2.2787803	20	1 12.5	17.6
30606 2503 P–L	13.5	X	184.43026	59.27802	7.42225	14.98183	0.1084695	0.24192286	2.5508492	20	5 27.6	17.7
30607 2507 P–L	15.7	X	65.67874	81.07180	2.13489	5.74666	0.1221785	0.28670033	2.2778087	20	1 21.1	17.9
30608 2573 P–L	15.1	X	224.81838	303.50286	25.11746	4.52804	0.2239334	0.24045469	2.5612219	20	3 6.2	19.4
30609 2618 P–L	14.5	X	310.21471	74.22474	181.28445	3.03029	0.1767008	0.24090590	2.5580229	20	3 4.5	17.6
30610 2623 P–L	15.6	X	185.56778	337.28227	13.63043	15.00251	0.1172526	0.23920630	2.5701254	20	3 3.4	19.7
30611 2627 P–L	14.8	X	311.03232	43.60375	21.87345	5.91610	0.1347709	0.21459858	2.7630251	20	11 7.8	17.7
30612 2638 P–L	15.9	X	218.08166	166.81256	189.24928	1.99267	0.2321571	0.24128034	2.5553757	20	3 31.8	20.4
30613 2678 P–L	15.2	X	210.55030	32.24571	117.16900	2.14257	0.1302913	0.26370567	2.4083692	20	10 18.1	18.4
30614 2778 P–L	14.6	X	148.81114	84.90742	167.44570	1.62402	0.0228382	0.26580651	2.3956625	20	12 27.6	17.5
30615 2818 P–L	15.1	X	190.44213	170.55864	43.41656	4.69989	0.1391344	0.26631395	2.3926184	20	12 15.8	18.6
30616 3049 P–L	14.7	X	89.64091	58.18811	256.54874	6.40204	0.1661204	0.26659591	2.3909311	20	—	—
30617 3068 P–L	14.6	X	75.97239	238.40353	281.92701	6.03379	0.0414422	0.24171707	2.5522968	20	5 17.5	17.9
30618 3084 P–L	14.7	X	284.75148	269.25685	236.05595	5.94189	0.0434928	0.26699920	2.3885229	20	—	—
30619 4045 P–L	15.0	X	164.93712	37.87998	342.30544	5.15473	0.1416804	0.23942888	2.5685323	20	3 14.2	18.9
30620 4126 P–L	15.7	X	232.77926	147.43443	200.49063	1.10598	0.2008800	0.24162130	2.5529712	20	4 4.6	19.8
30621 4189 P–L	15.3	X	83.35959	184.49660	281.51233	4.12598	0.1850801	0.23883450	2.5727920	20	4 5.0	18.5
30622 4213 P–L	14.5	X	269.47578	308.37755	347.71754	8.20653	0.0709589	0.19132477	2.9827848	20	3 24.1	18.7
30623 4226 P–L	15.4	X	241.09273	236.95752	264.37085	1.71085	0.1284980	0.26472948	2.4021559	20	11 13.9	18.3
30624 4232 P–L	16.1	X	22.64177	335.09433	307.98803	1.44039	0.1872888	0.26235460	2.4166306	20	9 15.2	18.5
30625 4236 P–L	15.9	X	128.16432	39.87329	344.19253	7.36812	0.1304729	0.28731979	2.2745336	20	2 4.2	18.7
30626 4240 P–L	14.4	X	333.44235	236.36367	357.81464	9.74931	0.0436319	0.19112746	2.9848373	20	4 1.2	18.3
30627 4269 P–L	14.4	X	152.42994	223.55344	205.13682	8.33620	0.0765736	0.19133829	2.9826443	20	4 30.5	18.9
30628 4644 P–L	14.7	X	293.77510	291.74057	186.75582	4.98931	0.0036027	0.21696589	2.7428901	20	12 29.5	18.4
30629 4667 P–L	14.3	X	114.25845	303.09714	27.13695	7.01593	0.2077702	0.21871527	2.7282447	20	—	—
30630 4733 P–L	16.1	X	27.03177	143.88514	169.47899	6.17866	0.1293206	0.26370018	2.4084027	20	10 29.3	18.9
30631 6026 P–L	15.6	X	95.62204	94.84120	195.27673	9.00384	0.1268018	0.21654139	2.7464736	20	12 8.4	19.9
30632 6117 P–L	15.4	X	328.65526	18.31028	18.27460	1.84647	0.1654996	0.26394096	2.4069378	20	11 17.8	17.2
30633 6120 P–L	15.7	X	238.06448	165.54540	188.91398	5.25958	0.2449287	0.24231630	2.5480873	20	4 14.9	19.9
30634 6128 P–L	15.7	X	229.10797	113.33674	223.55191	0.85235	0.1624640	0.24104321	2.5570514	20	3 20.6	19.8
30635 6186 P–L	15.9	X	221.97522	97.21945	200.75037	5.66666	0.1925671	0.28891840	2.2661357	20	1 20.5	19.7
30636 6190 P–L	15.4	X	251.99060	44.76719	230.49439	4.07262	0.1333027	0.28907690	2.2653073	20	1 22.1	18.6
30637 6196 P–L	14.3	X	288.35339	108.73414	192.65436	9.31301	0.0317093	0.19244594	2.9711886	20	5 1.9	18.4
30638 6237 P–L	15.2	X	242.93614	277.72291	212.45302	4.98378	0.0242269	0.21527584	2.7572270	20	11 7.4	18.7
30639 6246 P–L	13.9	X	70.71585	87.68443	303.31847	3.60041	0.1856128	0.17096491	3.2151265	20	—	—
30640 6319 P–L	15.1	X	344.07936	114.60837	262.93087	2.32979	0.1066901	0.31362879	2.1454848	20	11 29.9	16.8

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
	m		°	°	°	°		°				
30641 6349 *P–L*	15.6	*X*	313.59326	181.79785	237.87791	2.92010	0.0742412	0.21494687	2.7600395	20	11 8.1	18.7
30642 6532 *P–L*	16.0	*X*	193.10079	340.26435	12.58420	6.11227	0.2598215	0.24016335	2.5632929	20	3 10.5	20.6
30643 6590 *P–L*	14.0	*X*	222.83850	22.82394	6.95484	9.51652	0.0795294	0.19307389	2.9647428	20	5 24.9	18.5
30644 6601 *P–L*	15.7	*X*	242.83806	147.09493	163.69023	6.96850	0.1403387	0.29021528	2.2593796	20	2 27.5	19.0
30645 6604 *P–L*	15.2	*X*	190.14755	281.52126	137.78800	2.94560	0.1895930	0.24178150	2.5518433	20	5 27.4	19.4
30646 6623 *P–L*	15.3	*X*	316.83198	60.48308	10.31907	6.15464	0.0741264	0.26524215	2.3990595	20	12 12.1	18.0
30647 6642 *P–L*	15.2	*X*	221.68105	300.49375	49.50348	2.89983	0.1378622	0.29065890	2.2570801	20	3 29.4	18.5
30648 6679 *P–L*	15.3	*X*	137.06838	206.13871	355.61473	5.28407	0.0985330	0.26367448	2.4085591	20	10 6.6	18.9
30649 6871 *P–L*	16.1	*X*	247.47817	114.72992	126.23364	2.01578	0.0961717	0.28707216	2.2758414	20	—	—
30650 7638 *P–L*	14.3	*X*	168.17689	256.59648	160.24958	7.48863	0.1286660	0.24095265	2.5576920	20	5 4.9	18.3
30651 9588 *P–L*	15.1	*X*	29.61783	304.13098	62.31487	1.64455	0.2163188	0.26586380	2.3953184	20	—	—
30652 1236 *T–1*	15.5	*X*	195.83157	105.06736	353.84905	5.26252	0.1279960	0.30733174	2.1746921	20	7 30.0	18.5
30653 2190 *T–1*	15.0	*X*	87.99502	75.02439	35.55955	4.79355	0.0874592	0.24206682	2.5498377	20	4 5.4	18.1
30654 2234 *T–1*	14.2	*X*	145.43115	95.30306	13.88958	12.94143	0.1104911	0.24516683	2.5282979	20	6 13.5	18.2
30655 2289 *T–1*	13.7	*X*	278.73801	108.55964	20.36477	9.28704	0.1038056	0.21348022	2.7726664	20	12 11.8	17.2
30656 3098 *T–1*	12.5	*X*	44.87971	103.36857	357.46778	17.91830	0.1910819	0.17975698	3.1094163	20	2 13.1	16.2
30657 3258 *T–1*	14.2	*X*	61.18612	82.92757	247.78721	1.17978	0.0743743	0.21145938	2.7903033	20	12 13.4	18.1
30658 4042 *T–1*	14.4	*X*	322.42665	195.84105	17.05497	12.90167	0.0940790	0.23987197	2.5653682	20	2 13.5	17.8
30659 4109 *T–1*	13.5	*X*	158.31257	223.28837	79.16705	2.12446	0.1691585	0.17321711	3.1871967	20	—	—
30660 4142 *T–1*	16.0	*X*	285.89732	233.83781	45.81628	4.88357	0.1284827	0.30100898	2.2050397	20	3 8.7	18.8
30661 4166 *T–1*	13.8	*X*	169.41701	307.41727	19.51196	10.69680	0.1010133	0.17693650	3.1423732	20	1 22.7	18.8
30662 4256 *T–1*	13.4	*X*	2.22620	111.87898	23.52961	5.56734	0.0699673	0.17796017	3.1303111	20	1 11.0	17.6
30663 1026 *T–2*	15.3	*X*	156.11655	307.70158	0.26446	4.51685	0.1233552	0.28110893	2.3079140	20	—	—
30664 1040 *T–2*	15.3	*X*	311.54051	331.40927	207.53148	1.49329	0.0745467	0.28198646	2.3031234	20	—	—
30665 1144 *T–2*	15.2	*X*	346.64587	229.26834	282.30662	2.26543	0.0999123	0.28198686	2.3031213	20	—	—
30666 1156 *T–2*	15.2	*X*	198.35468	198.86501	190.45863	6.19979	0.1887737	0.24509878	2.5287659	20	4 27.2	19.4
30667 1177 *T–2*	14.5	*X*	166.90160	234.59023	193.61027	10.65120	0.2751565	0.24406857	2.5358768	20	5 20.9	19.2
30668 1227 *T–2*	15.0	*X*	114.03458	246.80795	171.41762	3.36978	0.1578283	0.28373625	2.2936448	20	3 5.9	17.8
30669 1234 *T–2*	15.7	*X*	27.05083	223.71910	229.50840	2.82913	0.0914023	0.28070067	2.3101512	20	—	—
30670 1283 *T–2*	14.1	*X*	310.47613	296.59767	190.77121	0.94472	0.1655417	0.17286291	3.1915489	20	—	—
30671 1314 *T–2*	15.3	*X*	302.50119	280.07747	5.97828	2.24673	0.1296407	0.24621099	2.5211446	20	4 11.1	18.1
30672 1346 *T–2*	13.9	*X*	286.23181	99.14744	56.20583	1.75346	0.1740063	0.17309426	3.1887045	20	—	—
30673 1409 *T–2*	15.8	*X*	105.85965	213.13343	152.99690	0.45389	0.1630597	0.17581767	3.1556903	20	1 6.2	20.2
30674 1455 *T–2*	14.2	*X*	49.03216	162.94880	211.84188	4.96506	0.0854676	0.21453611	2.7635614	20	—	—
30675 2042 *T–2*	14.5	*X*	39.84353	201.08164	175.61272	2.92732	0.1570397	0.21396548	2.7684727	20	—	—
30676 2201 *T–2*	15.2	*X*	301.87560	308.64886	198.36131	4.00732	0.0929464	0.27885454	2.3203361	20	—	—
30677 2231 *T–2*	14.9	*X*	78.63036	301.86928	12.53824	9.25680	0.1610089	0.21347655	2.7726982	20	12 22.4	19.3
30678 2265 *T–2*	16.4	*X*	132.11859	153.75679	181.70665	2.49640	0.1099495	0.28071050	2.3100973	20	—	—
30679 2303 *T–2*	15.7	*X*	76.24860	341.23858	89.30371	1.78880	0.1805813	0.28179109	2.3041878	20	1 29.7	17.7
30680 3029 *T–2*	15.9	*X*	2.26061	210.26360	128.17977	0.81870	0.0778967	0.21026343	2.8008739	20	10 5.7	19.4
30681 3084 *T–2*	15.1	*X*	291.69009	56.63838	174.56493	6.50337	0.0709447	0.28430297	2.2905957	20	1 17.0	18.1
30682 3209 *T–2*	13.7	*X*	194.76208	140.05018	138.08286	5.91508	0.1003539	0.17552946	3.1591437	20	—	—
30683 3211 *T–2*	13.7	*X*	235.77744	128.84092	72.60607	2.67053	0.1514025	0.17355536	3.1830542	20	12 28.3	18.1
30684 3237 *T–2*	14.5	*X*	47.91170	91.00808	21.66854	9.85876	0.2025455	0.17718867	3.1393910	20	3 4.1	18.1
30685 3243 *T–2*	16.4	*X*	268.89432	319.85041	103.87320	1.49644	0.0159051	0.31483413	2.1400053	20	10 4.8	18.6
30686 3288 *T–2*	14.0	*X*	236.76345	157.86018	68.42235	2.06311	0.1335744	0.17493802	3.1662600	20	—	—
30687 3347 *T–2*	15.5	*X*	294.91161	77.56183	88.75518	3.05709	0.0648146	0.28033559	2.3121565	20	—	—
30688 4194 *T–2*	14.8	*X*	74.84922	123.74300	145.90201	3.79159	0.1263205	0.21104236	2.7939778	20	10 22.8	18.8
30689 4318 *T–2*	15.5	*X*	340.45577	357.15765	143.75253	3.89805	0.0803811	0.28076675	2.3097888	20	—	—
30690 4633 *T–2*	15.0	*X*	43.63183	163.59559	111.44031	4.02439	0.0451066	0.20870858	2.8147674	20	9 8.1	18.7
30691 4810 *T–2*	14.8	*X*	132.78021	49.22544	163.99848	9.53187	0.1014305	0.21058935	2.7979833	20	10 12.7	19.1
30692 5040 *T–2*	15.0	*X*	270.27230	273.82675	343.81521	16.40466	0.1654805	0.24291499	2.5438988	20	1 27.7	19.0
30693 5069 *T–2*	14.0	*X*	3.13883	164.90569	238.26964	7.29405	0.2198571	0.21289030	2.7777861	20	—	—
30694 5112 *T–2*	13.5	*X*	349.54633	228.43488	260.01540	9.72522	0.1813955	0.17459756	3.1703748	20	—	—
30695 1020 *T–3*	15.4	*X*	153.01339	133.69029	243.09712	6.66593	0.1235038	0.28727448	2.2747728	20	2 18.0	18.7
30696 1110 *T–3*	14.8	*X*	1.34789	276.36997	267.02127	5.48895	0.0732554	0.28792834	2.2713276	20	2 18.5	17.3
30697 2137 *T–3*	14.5	*X*	93.15507	290.00599	211.08065	7.21854	0.1727783	0.24419234	2.5350198	20	6 5.5	18.0
30698 Hippokoon	12.0	*X*	264.57702	100.86106	216.26449	7.87486	0.0647658	0.08362533	5.1789791	20	4 20.8	19.0
30699 2356 *T–3*	15.0	*X*	35.17067	272.86591	223.09047	2.24684	0.0831479	0.28658284	2.2784312	20	2 8.2	17.3
30700 2367 *T–3*	15.6	*X*	28.48533	240.13000	254.11734	4.62007	0.1032492	0.28580725	2.2825513	20	1 24.2	17.7
30701 2381 *T–3*	16.0	*X*	219.01755	100.96379	247.17592	2.26701	0.1717248	0.29012963	2.2598242	20	3 20.9	19.6
30702 3042 *T–3*	14.9	*X*	267.17308	125.24435	47.70349	7.22193	0.1363653	0.28072793	2.3100017	20	—	—
30703 3101 *T–3*	14.6	*X*	120.47637	286.10170	39.43964	8.48540	0.0967733	0.28216612	2.3021457	20	—	—
30704 Phegeus	11.2	*X*	305.64792	283.19705	20.50034	14.89324	0.0384428	0.08209575	5.2431095	20	5 22.8	18.1
30705 Idaios	10.4	*X*	210.39874	341.75095	24.17789	19.75543	0.0596672	0.08314614	5.1988583	20	4 18.7	17.6
30706 4026 *T–3*	15.0	*X*	219.29445	296.16094	50.35076	8.29801	0.1748291	0.29019842	2.2594671	20	3 24.0	18.6
30707 4075 *T–3*	15.2	*X*	358.19525	45.92965	118.27182	2.63939	0.0947154	0.28616698	2.2806381	20	1 16.9	17.4
30708 Echepolos	11.8	*X*	168.67106	21.20390	29.43874	24.15307	0.0118926	0.08296982	5.2062211	20	4 25.0	18.7
30709 4107 *T–3*	15.4	*X*	9.98355	353.96820	151.74871	5.03618	0.0534244	0.28585828	2.2822797	20	1 13.5	17.8
30710 4137 *T–3*	14.8	*X*	358.89818	242.03588	100.76118	4.10777	0.1904102	0.20646589	2.8351138	20	10 18.2	17.7
30711 4186 *T–3*	15.8	*X*	330.17349	51.38976	131.90112	5.49721	0.0662886	0.28585857	2.2822781	20	1 5.1	18.4
30712 4207 *T–3*	14.1	*X*	217.47474	357.70340	134.92109	4.80419	0.1776898	0.20477784	2.8506730	20	9 21.7	18.5
30713 4216 *T–3*	15.8	*X*	26.90722	351.32443	119.79935	3.50758	0.1283824	0.28408159	2.2917856	20	—	—
30714 4282 *T–3*	15.2	*X*	357.95023	104.11005	180.42004	11.65488	0.0607820	0.22512054	2.6762456	20	7 14.5	18.7
30715 5034 *T–3*	13.4	*X*	221.63108	309.15902	170.36813	15.30846	0.0942222	0.20484615	2.8500393	20	9 17.4	17.6
30716 5107 *T–3*	15.4	*X*	241.84474	160.17412	102.12468	6.70497	0.1590976	0.28639161	2.2794454	20	—	—
30717 1937 *UD*	14.9	*X*	334.71061	314.69289	33.07127	8.96976	0.3349412	0.30872258	2.1681557	20	10 19.1	14.7
30718 Records	14.0	*X*	39.91114	54.57350	278.23014	5.29642	0.3152494	0.21416833	2.7667243	20	12 23.8	18.1
30719 Isserstedt	13.8	*X*	123.85211	104.98506	320.19250	15.61638	0.2126003	0.18199446	3.0838785	20	3 31.9	19.0
30720 1969 *GB*	13.3	*X*	3.77570	297.91882	269.44816	10.28569	0.0879288	0.17351722	3.1835206	20	4 6.5	17.6

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
	m		°	°	°	°		°				
30721 1975 ST_1	13.9	X	292.36909	158.23961	187.49343	10.37082	0.1143909	0.19289856	2.9665390	20	6 20.7	18.0
30722 Biblioran	13.7	X	102.28707	15.43112	356.05803	11.13479	0.3351320	0.21975261	2.7196521	20	1 28.7	17.6
30723 1978 RU_8	14.0	X	161.81307	224.66674	163.90790	10.93448	0.1932200	0.17913941	3.1165585	20	3 30.3	19.2
30724 Peterburgtrista	11.9	X	89.51359	46.87734	351.43760	21.31829	0.0414597	0.17428781	3.1741300	20	1 14.3	16.7
30725 Klimov	14.4	X	14.27621	163.89541	211.68717	2.61419	0.1883835	0.26121671	2.4236436	20	—	—
30726 1978 VK_7	16.2	X	337.24124	144.92617	223.74936	0.95607	0.1923364	0.25691672	2.4506115	20	10 23.8	18.1
30727 1979 MC_9	16.6	X	137.53530	77.99685	187.25255	2.19059	0.1791075	0.27284351	2.3542919	20	12 27.3	20.2
30728 1979 QD_2	14.9	X	178.37376	304.06741	29.27471	1.20748	0.2225063	0.18172903	3.0868807	20	2 8.9	20.2
30729 1980 TA	14.2	X	154.08295	277.75437	150.45100	5.59259	0.1351313	0.28794363	2.2712472	20	5 3.8	17.5
30730 1981 DL	14.5	X	60.74959	251.74621	232.97118	9.25464	0.0830820	0.17663502	3.1459478	20	3 17.4	18.8
30731 1981 EK_2	14.8	X	105.24333	28.83122	260.53436	7.90571	0.1289783	0.21543069	2.7559056	20	12 16.1	19.2
30732 1981 EQ_2	14.8	X	243.59119	278.39919	277.23702	5.94437	0.0619311	0.26954550	2.3734568	20	—	—
30733 1981 EJ_3	14.3	X	85.45598	129.89745	309.10760	10.86765	0.1698024	0.22670434	2.6637666	20	2 29.1	17.8
30734 1981 ES_3	13.9	X	153.37190	85.27381	307.83085	11.59643	0.1790365	0.22777421	2.6554187	20	3 17.3	18.4
30735 1981 EF_7	15.4	X	342.17505	210.55362	245.25046	5.63921	0.0750559	0.26979113	2.3720159	20	—	—
30736 1981 EU_7	15.4	X	73.86194	85.00059	291.02603	6.05453	0.1209642	0.27082393	2.3659816	20	—	—
30737 1981 ER_9	14.5	X	309.24988	235.94799	299.75673	4.94478	0.0735049	0.17188564	3.2036347	20	—	—
30738 1981 EO_{11}	15.4	X	314.33151	257.28068	283.15035	1.77052	0.1659260	0.27346945	2.3506980	20	—	—
30739 1981 EN_{14}	15.6	X	269.64595	257.09511	270.04231	1.99810	0.0718789	0.26943929	2.3740805	20	—	—
30740 1981 ET_{14}	14.5	X	80.23092	200.60363	267.18306	2.49546	0.1724122	0.17766033	3.1338322	20	4 6.7	18.8
30741 1981 EQ_{15}	15.2	X	98.08820	233.00683	228.09306	6.03689	0.1987114	0.22915092	2.6447724	20	4 21.9	18.8
30742 1981 EG_{17}	13.9	X	58.70790	302.78375	181.76678	21.60874	0.1983225	0.17745295	3.1362733	20	4 3.5	17.7
30743 1981 EQ_{17}	15.9	X	317.40170	296.54898	224.92605	1.62289	0.0998775	0.27240109	2.3568403	20	—	—
30744 1981 EN_{18}	15.0	X	46.68511	307.10270	199.04720	5.46374	0.1074866	0.17722004	3.1390206	20	3 30.1	19.0
30745 1981 EB_{22}	14.4	X	42.53362	40.12358	111.29392	2.19695	0.1191936	0.17716015	3.1397280	20	4 2.3	18.2
30746 1981 EG_{24}	15.1	X	136.86576	302.12811	312.02752	1.75708	0.1495480	0.21518883	2.7579702	20	12 3.8	19.6
30747 1981 EM_{25}	16.0	X	296.17637	349.72775	173.54186	3.39487	0.1094339	0.27122068	2.3636737	20	—	—
30748 1981 ES_{25}	15.1	X	131.11808	244.60029	22.47228	2.11020	0.1440824	0.26550470	2.3974777	20	12 23.2	18.8
30749 1981 ER_{26}	15.1	X	269.83517	208.98833	5.06399	7.34023	0.0513706	0.27241259	2.3567739	20	—	—
30750 1981 EY_{28}	14.2	X	101.49117	37.85166	334.83814	14.45941	0.2045235	0.22232100	2.6986655	20	1 9.4	17.9
30751 1981 EL_{29}	15.6	X	112.22146	67.48418	194.56980	5.47000	0.1075302	0.26425549	2.4050274	20	11 28.7	19.1
30752 1981 EQ_{33}	15.6	X	118.19418	2.79839	294.56071	5.19535	0.1333559	0.26701593	2.3884231	20	—	—
30753 1981 EL_{38}	15.1	X	345.08951	280.26986	191.11002	12.17241	0.1476574	0.22149331	2.7053844	20	—	—
30754 1981 EB_{39}	15.6	X	147.90490	78.98251	182.08866	8.80863	0.2171321	0.26584946	2.3954045	20	12 28.2	19.7
30755 1981 EO_{39}	15.1	X	96.53752	223.83317	159.93092	2.16010	0.0908932	0.22280696	2.6947401	20	—	—
30756 1981 ET_{39}	14.4	X	34.85293	116.09591	334.20132	4.24192	0.1620812	0.17388252	3.1790603	20	1 4.9	17.9
30757 1981 EB_{40}	14.8	X	78.17697	71.31229	34.50684	0.63469	0.1469182	0.17753539	3.1353024	20	3 30.1	19.0
30758 1981 EN_{41}	15.7	X	266.72571	55.66201	139.06229	2.17084	0.1063208	0.22073115	2.7116084	20	—	—
30759 1981 EV_{41}	15.0	X	338.50376	141.84143	326.97166	2.60298	0.0407950	0.22004810	2.7172169	20	—	—
30760 1981 EY_{41}	16.9	X	304.50336	313.10786	191.69892	1.63711	0.1487543	0.27092819	2.3653746	20	—	—
30761 1981 EF_{42}	15.2	X	145.49212	210.80873	41.50330	1.67602	0.1509437	0.21550430	2.7552780	20	12 9.3	19.6
30762 1981 ES_{42}	15.1	X	75.19563	80.26258	16.41117	1.93090	0.1682577	0.22711772	2.6605333	20	3 12.5	18.0
30763 1981 EJ_{47}	16.2	X	104.87456	65.85461	167.79594	6.17512	0.0869422	0.26211756	2.4180873	20	10 14.5	19.6
30764 1981 EK_{47}	13.6	X	352.63941	289.44681	236.46593	1.96122	0.1311608	0.12448640	3.9724166	20	2 6.8	18.6
30765 1981 EJ_{48}	15.6	X	51.66553	75.39612	359.44214	21.79130	0.3649881	0.27587853	2.3369932	20	1 1.8	17.0
30766 1981 UX_{22}	13.8	X	229.07065	324.46411	65.55434	9.83767	0.1176394	0.19438002	2.9514468	20	5 30.9	18.4
30767 Chriskraft	14.6	X	88.89640	347.56093	55.79748	26.80368	0.2900109	0.27623577	2.3349779	20	2 14.3	17.9
30768 1983 YK	12.7	X	23.55722	6.85658	160.17638	9.89355	0.0162502	0.16890944	3.2411572	20	3 20.4	17.2
30769 1984 ST_2	14.0	X	280.97079	19.00700	338.41310	6.53276	0.2070056	0.29756291	2.2220314	20	6 6.3	16.7
30770 1984 SL_4	15.4	X	278.84223	328.39970	338.33441	4.40981	0.2209308	0.29485009	2.2356400	20	3 21.6	18.6
30771 1986 PO_2	14.6	X	43.58836	235.45019	140.51873	8.29160	0.3420335	0.26798218	2.3826785	20	—	—
30772 1986 RJ_1	14.7	X	61.35368	355.79567	342.89916	5.15121	0.2485842	0.26784630	2.3834842	20	—	—
30773 Schelde	13.9	X	75.35800	66.78740	332.90214	25.57236	0.2271217	0.27269192	2.3551643	20	—	—
30774 1987 BU_1	15.0	X	331.54632	212.49422	241.25909	3.42587	0.1765898	0.26182366	2.4198965	20	—	—
30775 Lattu	16.0	X	17.66113	13.07731	355.07066	14.24516	0.4621435	0.21201774	2.7854022	20	—	—
30776 1987 QY	15.1	X	101.90533	211.01639	173.71352	24.92746	0.2463973	0.28059760	2.3107169	20	1 16.2	18.3
30777 1987 SB_3	15.0	X	270.58252	310.34062	32.68812	6.06625	0.1908537	0.29305580	2.2447561	20	5 5.3	17.9
30778 Döblin	14.2	X	70.34326	11.66873	40.87669	8.20477	0.0975643	0.22023391	2.7156883	20	—	—
30779 Sankt-Stephan	14.8	X	101.03973	189.38711	196.04082	24.70446	0.1925541	0.28059086	2.3107539	20	1 4.9	18.0
30780 1988 CA_2	14.7	X	36.00750	334.93942	124.16632	7.10607	0.0595369	0.27564898	2.3382904	20	—	—
30781 1988 CR_2	14.4	X	112.84439	247.94686	115.01880	6.52067	0.1242932	0.27480735	2.3430622	20	—	—
30782 1988 CC_4	14.2	X	47.64967	308.25933	244.26387	7.73758	0.0413038	0.19027677	2.9937270	20	5 23.1	18.1
30783 1988 CO_4	14.7	X	268.32500	259.14159	266.88494	7.51667	0.0562187	0.26806323	2.3821982	20	—	—
30784 1988 PO	13.6	X	273.70151	94.49484	266.60763	10.94049	0.2034995	0.24197749	2.5504652	20	6 2.6	17.0
30785 Greeley	16.6	X	265.79951	308.96948	13.38789	5.40183	0.3441304	0.30188556	2.2007692	20	3 18.7	20.3
30786 Karkoschka	17.1	X	133.07846	214.12651	151.33266	8.28518	0.4457526	0.23002715	2.6380518	20	2 22.8	21.8
30787 1988 RC	13.6	X	353.33676	56.68853	248.33809	13.26123	0.0753937	0.24431403	2.5341780	20	8 3.8	16.8
30788 Angekauffmann	13.4	X	118.23439	57.01224	12.72972	26.81288	0.1995482	0.23130121	2.6283556	20	4 3.9	17.2
30789 1988 RB_6	14.4	X	279.80686	162.13241	162.35794	12.63075	0.2554615	0.24077271	2.5589661	20	4 18.5	18.2
30790 1988 RT_{11}	15.0	X	192.08101	46.79571	16.31840	1.37572	0.1299469	0.23954285	2.5677175	20	6 3.4	18.9
30791 1988 RY_{11}	12.1	X	184.92480	232.97754	164.49700	24.68202	0.0606708	0.08258627	5.2223279	20	5 4.1	19.5
30792 1988 RP_{12}	12.3	X	8.60817	63.19466	157.46994	4.36167	0.0358287	0.08253588	5.2244534	20	5 9.6	19.1
30793 1988 SJ_3	12.1	X	199.18444	292.61425	88.83463	20.99246	0.0597525	0.08223256	5.2372926	20	5 4.1	19.5
30794 1988 TR_1	14.2	X	165.45581	181.44194	194.75950	13.27464	0.1750784	0.23239447	2.6201060	20	3 10.9	18.6
30795 1989 AR_5	14.4	X	105.41799	274.92285	125.26953	4.49867	0.1115275	0.22284513	2.6944323	20	2 1.6	17.7
30796 1989 CU_2	14.6	X	334.97141	270.83290	201.08397	8.81729	0.1002289	0.21640531	2.7476249	20	—	—
30797 Chimborazo	14.4	X	38.48943	193.30946	292.98637	12.53084	0.1421782	0.22319767	2.6915944	20	2 11.9	17.3
30798 Graubünden	13.9	X	357.77276	194.92443	323.34194	7.83720	0.1305784	0.22154015	2.7050030	20	1 19.4	17.0
30799 1989 LH	14.3	X	134.97366	13.22318	225.20455	10.01773	0.2157268	0.26529162	2.3987613	20	11 21.8	18.3
30800 1989 ST	14.6	X	13.84297	23.04751	292.39265	4.48834	0.2753150	0.28770039	2.2725272	20	11 7.9	16.8

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

	Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
		m		°	°	°	°		°				
30801	1989 SS_1	15.1	X	225.90171	258.41749	61.09203	3.71962	0.2647636	0.24215234	2.5492374	20	2 24.0	19.6
30802	1989 SH_3	14.8	X	355.90184	272.27283	97.78667	1.90553	0.2277106	0.25646608	2.4534813	20	12 9.9	17.0
30803	1989 SG_{14}	14.6	X	257.85774	5.54956	328.38141	13.79388	0.1686038	0.24496404	2.5296931	20	4 6.9	18.7
30804	1989 TO_{14}	13.8	X	121.93977	358.55999	66.35099	2.04622	0.1630933	0.17584902	3.1553152	20	4 2.8	18.5
30805	1989 UO_2	15.3	X	228.18568	158.10661	211.37981	6.05847	0.2946338	0.24513121	2.5285428	20	4 21.9	19.6
30806	1989 UP_5	12.7	X	37.33759	92.51406	98.59139	2.08355	0.0345651	0.08217232	5.2398518	20	5 10.1	19.5
30807	1989 UQ_5	12.0	X	318.72855	120.02926	170.23521	4.69750	0.0571552	0.08351607	5.1834951	20	5 25.8	18.7
30808	1989 YA_2	14.1	X	198.65053	201.61599	279.87580	5.33463	0.1821182	0.24520709	2.5280212	20	8 20.4	18.1
30809	1990 EO_8	13.3	X	269.12328	179.85886	349.21402	9.81777	0.0814027	0.22010037	2.7167867	20	—	—
30810	1990 FM	13.5	X	210.48593	150.46035	82.50371	17.95001	0.2850384	0.21805623	2.7337390	20	—	—
30811	1990 OD_2	14.9	X	249.67245	284.00019	47.45159	6.70572	0.1844433	0.28802843	2.2708013	20	3 31.8	18.4
30812	1990 OZ_4	15.3	X	271.98105	57.19270	228.64561	4.94941	0.1983988	0.28796562	2.2711316	20	2 18.2	18.8
30813	1990 QT	14.5	X	211.77348	353.68453	351.56276	6.17808	0.1666948	0.28542952	2.2845647	20	3 12.1	17.8
30814	1990 QW	14.5	X	216.74450	342.20812	347.81015	7.50617	0.1498945	0.28480047	2.2879275	20	2 27.7	18.0
30815	1990 QH_2	14.9	X	130.57767	17.20109	356.31539	4.54900	0.1727467	0.27898879	2.3195917	20	1 30.9	18.0
30816	1990 QA_6	14.6	X	209.00646	19.13006	350.35495	4.21442	0.1799181	0.28642059	2.2792916	20	4 8.0	18.2
30817	1990 QN_9	14.3	X	160.59429	324.03004	129.08672	4.33531	0.1108800	0.28910982	2.2651353	20	6 11.1	17.4
30818	1990 RH_2	15.1	X	97.19317	39.98454	343.90453	6.62153	0.1102142	0.27635720	2.3342938	20	—	—
30819	1990 RL_2	14.6	X	126.46764	139.60087	174.65941	9.99687	0.2398073	0.27525936	2.3404964	20	—	—
30820	1990 RU_2	14.9	X	140.41250	330.47759	348.72091	6.07168	0.1714820	0.27573427	2.3378082	20	—	—
30821	Chernetenko	14.4	X	187.95503	53.79385	270.04943	4.27678	0.2035657	0.28004331	2.3137650	20	1 25.2	18.1
30822	1990 SX_5	15.4	X	141.29016	343.23373	50.99656	2.38028	0.1609164	0.28081692	2.3095136	20	3 8.0	18.6
30823	1990 SY_{15}	14.5	X	210.53658	162.18448	194.35940	5.96781	0.1332531	0.28576131	2.2827960	20	3 25.6	17.8
30824	1990 TD	14.2	X	245.13152	74.94076	254.14251	5.00993	0.1807156	0.28694401	2.2765190	20	3 19.5	17.8
30825	1990 TG_1	14.7	X	345.56798	33.71835	205.02694	8.73772	0.6809829	0.25907719	2.4369686	20	1 4.9	18.1
30826	Coulomb	13.6	X	205.18515	50.87206	346.04917	5.64798	0.1953350	0.18671124	3.0317199	20	5 10.6	18.8
30827	Lautenschläger	15.2	X	288.58062	271.05422	241.52077	3.96727	0.1399440	0.27068276	2.3668041	20	—	—
30828	Bethe	15.3	X	68.82094	237.48319	228.61662	2.95747	0.1261678	0.27842426	2.3227261	20	2 28.6	17.7
30829	Wolfwacker	14.6	X	226.90146	345.22381	325.72660	4.36248	0.1482254	0.28204086	2.3028272	20	2 12.9	17.9
30830	Jahn	14.7	X	41.37574	175.71459	255.73192	4.67614	0.2141168	0.27169416	2.3609267	20	—	—
30831	1990 TO_{14}	15.3	X	341.29806	124.65701	212.56985	20.74370	0.0999031	0.36058055	1.9549449	20	9 27.5	17.0
30832	Urbaincreve	14.5	X	25.67007	13.78045	123.26181	5.91187	0.1256009	0.27663908	2.3327079	20	1 25.9	16.5
30833	1990 VM_4	15.4	X	10.79924	268.23021	166.47447	6.69925	0.1106886	0.26927910	2.3750219	20	—	—
30834	1990 VR_6	14.5	X	83.92441	302.39391	135.97686	6.83374	0.0761457	0.27607252	2.3358983	20	2 8.2	17.1
30835	Waterloo	15.0	X	53.93884	186.67634	175.18075	5.28350	0.1377926	0.26732418	2.3865867	20	—	—
30836	Schnittke	15.2	X	190.19968	218.59909	303.66238	4.19248	0.1470870	0.25543380	2.4600870	20	10 6.6	19.1
30837	Steinheil	13.7	X	132.48975	330.07525	130.02722	15.36040	0.1466499	0.17784187	3.1316992	20	5 27.4	18.8
30838	1991 CM_1	14.8	X	251.36945	167.56501	294.59742	3.05224	0.1400622	0.25575033	2.4580568	20	9 30.5	17.8
30839	1991 GH_1	13.6	X	281.60154	83.67856	73.12022	3.74959	0.1368881	0.25994203	2.4315603	20	—	—
30840	Jackalice	13.8	X	275.42717	76.34927	120.48371	12.24201	0.2029844	0.22779002	2.6552959	20	—	—
30841	1991 GA_3	14.6	X	188.73951	330.68585	191.99756	6.16677	0.1050881	0.25189627	2.4830658	20	10 10.9	18.1
30842	1991 GO_7	15.5	X	296.10848	12.40125	225.09864	8.12615	0.1366224	0.23311577	2.6146984	20	1 27.9	19.3
30843	1991 JK_1	14.1	X	157.04425	200.34627	89.26364	16.83858	0.3243828	0.22082152	2.7108685	20	—	—
30844	Hukeller	13.9	X	238.66107	109.30629	122.59693	27.38490	0.2558074	0.22546786	2.6734965	20	—	—
30845	1991 PQ_3	14.2	X	101.24938	273.19844	355.15962	3.34240	0.0595603	0.21119431	2.7926375	20	11 9.9	18.2
30846	1991 PJ_{17}	15.4	X	44.80933	64.15896	254.98323	2.00675	0.1417070	0.31192246	2.1533020	20	12 11.2	18.0
30847	Lampert	12.8	X	131.38486	69.79820	0.41606	10.88665	0.0967929	0.18933416	3.0036551	20	4 8.3	17.4
30848	1991 RZ_{19}	13.7	X	70.15479	14.13490	337.20443	8.67525	0.1619992	0.21233852	2.7825962	20	—	—
30849	1991 RE_{20}	13.3	X	357.81928	107.76743	343.96563	11.27749	0.0762439	0.21408818	2.7674148	20	—	—
30850	Vonsiemens	13.7	X	266.02222	201.84437	349.14120	9.10007	0.1937494	0.21449870	2.7638827	20	—	—
30851	Reisfelder	15.1	X	199.95129	263.31067	266.51518	2.68119	0.0384746	0.30989701	2.1626743	20	11 21.6	17.5
30852	Debye	15.2	X	88.99064	310.86812	299.29768	2.32582	0.1560393	0.30856625	2.1688879	20	10 29.2	18.2
30853	1991 UH_3	14.0	X	303.32476	65.71556	22.88879	8.59144	0.2876044	0.20427160	2.8553809	20	11 5.9	16.6
30854	1991 VB	17.3	X	194.94780	135.12771	256.11219	6.43325	0.4116920	0.29458806	2.2369655	20	4 21.2	21.7
30855	1991 VQ_9	16.6	X	159.82240	198.29881	133.60129	2.01241	0.1245159	0.28563743	2.2834560	20	1 1.8	19.8
30856	1991 XE	14.1	X	273.45055	269.80076	79.21704	26.65372	0.1082869	0.39912806	1.8269551	20	6 2.9	15.4
30857	Parsec	15.0	X	243.47049	225.28008	207.25959	3.49222	0.1600163	0.29850071	2.2173750	20	8 11.4	17.7
30858	1992 AU_1	14.1	X	93.09935	45.83948	87.62487	24.67942	0.2535056	0.28787577	2.2716041	20	6 8.0	17.3
30859	1992 BM	14.6	X	193.24422	77.41406	349.15535	5.65351	0.1626059	0.29214775	2.2494051	20	6 8.1	18.2
30860	1992 DA_4	15.7	X	205.14475	182.48426	339.33998	2.18277	0.1487041	0.26450128	2.4035373	20	10 24.2	19.2
30861	1992 DS_5	14.4	X	15.22650	79.21667	96.19363	2.01775	0.1126461	0.17643858	3.1482824	20	3 19.9	18.2
30862	1992 DF_{10}	14.2	X	196.28575	178.99118	214.37620	4.96753	0.1594348	0.28777846	2.2721162	20	4 28.7	17.7
30863	1992 EA_4	15.2	X	135.26199	77.76484	123.27722	3.32617	0.1456508	0.26081661	2.4261215	20	10 7.1	19.0
30864	1992 EE_6	15.0	X	27.32742	359.88188	127.90049	7.14313	0.0453685	0.27888705	2.3201558	20	1 17.3	17.5
30865	1992 EH_8	14.7	X	3.44127	125.75926	340.51682	9.60521	0.1408800	0.17094708	3.2153500	20	—	—
30866	1992 EN_8	13.7	X	61.46328	69.46103	7.29822	9.23734	0.1679440	0.17451228	3.1714075	20	2 5.2	17.6
30867	1992 EL_9	13.9	X	65.68153	334.96257	112.74371	5.67363	0.1423421	0.17528826	3.1620410	20	2 19.9	17.9
30868	1992 ET_{10}	14.0	X	142.79690	354.78298	89.00842	1.58612	0.2332449	0.18323601	3.0699325	20	5 19.1	19.2
30869	1992 EU_{11}	14.6	X	203.46496	271.68100	337.15696	6.48217	0.1481362	0.27074408	2.3664467	20	—	—
30870	1992 EW_{15}	14.1	X	90.42534	273.81205	201.33450	1.88763	0.0765669	0.17889178	3.1194339	20	4 16.2	18.4
30871	1992 EG_{16}	14.6	X	127.85236	293.52053	178.17407	1.71161	0.2077947	0.18281568	3.0746364	20	6 7.3	19.6
30872	1992 EM_{17}	14.1	X	301.25339	85.90212	128.19873	5.06259	0.1135327	0.27779775	2.3262170	20	1 2.6	17.0
30873	1992 EN_{17}	15.3	X	339.26344	32.72851	64.43668	2.93821	0.1703837	0.27292677	2.3538130	20	—	—
30874	1992 EA_{23}	15.5	X	281.20087	50.91402	36.03014	6.45905	0.1094344	0.26552388	2.3973622	20	11 3.1	18.0
30875	1992 EX_{25}	13.8	X	34.15481	41.15091	100.34418	2.40562	0.1057911	0.17591133	3.1545701	20	3 6.4	17.6
30876	1992 EM_{27}	14.3	X	28.25232	180.16930	335.27937	7.77590	0.1036685	0.17670482	3.1451193	20	3 12.1	18.1
30877	1992 ES_{30}	13.7	X	76.37924	267.13331	168.30258	21.56680	0.0802550	0.17431722	3.1737730	20	2 8.3	18.2
30878	1992 GQ	13.3	X	53.56860	68.15274	99.57520	9.33419	0.1494375	0.17747548	3.1360079	20	5 16.3	17.3
30879	Hiroshikanai	13.4	X	280.65632	173.00358	66.03630	15.19000	0.1268156	0.23828228	2.5767654	20	1 16.9	17.3
30880	1992 PC_2	13.8	X	0.53308	82.72749	217.44780	7.26463	0.0955201	0.24649973	2.5191755	20	8 13.4	16.7

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Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
	m		°	°	°	°		°				
30881 Robertstevenson	15.4	X	290.58210	317.71733	326.30420	1.63201	0.1786423	0.23758388	2.5818127	20	3 16.5	18.9
30882 Tomhenning	13.4	X	267.57394	120.80252	170.22144	13.13625	0.1594052	0.23464311	2.6033397	20	3 2.0	17.1
30883 de Broglie	15.1	X	271.32011	53.37783	224.72730	1.15156	0.1673437	0.23401183	2.6080195	20	2 18.3	19.1
30884 1992 SL_{23}	13.9	X	166.58387	33.81275	31.18619	13.98008	0.1472845	0.23351901	2.6116876	20	5 9.7	18.2
30885 1992 UU_4	13.5	X	125.64101	179.50920	236.89446	13.69350	0.1835014	0.22749786	2.6575688	20	3 20.3	17.8
30886 1992 WJ_1	13.5	X	123.98320	294.86361	71.51326	14.00840	0.2092845	0.22369640	2.6875923	20	1 28.2	17.6
30887 1992 WL_2	13.3	X	345.01198	126.52960	56.36073	14.05283	0.1278885	0.22447695	2.6813584	20	2 4.2	16.7
30888 Okitsumisaki	13.9	X	253.14110	118.04602	323.03785	4.10459	0.2365696	0.20250048	2.8720060	20	8 16.6	18.2
30889 1993 FU_6	14.1	X	128.66753	108.57846	79.61579	3.32991	0.0418143	0.19488352	2.9463611	20	9 1.1	18.3
30890 1993 FB_9	13.6	X	191.67312	231.52498	79.09639	3.53693	0.1514841	0.17538206	3.1609135	20	1 23.9	18.7
30891 1993 FV_{14}	14.8	X	244.04264	191.18723	135.60697	6.77025	0.1908131	0.29099606	2.2553363	20	3 19.3	18.3
30892 1993 FR_{18}	14.0	X	202.73981	289.41674	39.92780	10.14206	0.1490719	0.17869823	3.1216860	20	2 27.4	19.2
30893 1993 FD_{19}	15.0	X	19.13471	69.87029	137.72407	6.64999	0.0860197	0.29359959	2.2419835	20	5 2.8	17.2
30894 1993 FD_{20}	15.4	X	211.96425	17.52492	56.60632	6.07838	0.0897189	0.30051948	2.2074335	20	7 16.3	18.3
30895 1993 FH_{23}	15.5	X	221.07593	98.17739	212.80339	4.80455	0.1795009	0.28614691	2.2807447	20	2 4.8	19.2
30896 1993 FX_{26}	14.6	X	94.15741	246.54717	295.90865	2.79471	0.0644916	0.18962669	3.0005653	20	7 14.4	18.8
30897 1993 FG_{29}	14.2	X	213.71853	80.20607	331.65828	8.79911	0.1206403	0.19013175	2.9952491	20	6 10.8	19.0
30898 1993 FJ_{29}	14.9	X	345.55903	50.57036	308.32101	4.54668	0.1677781	0.30578156	2.1820357	20	11 7.5	16.5
30899 1993 FL_{32}	14.4	X	163.44727	88.56326	328.10306	8.61106	0.0286838	0.18499024	3.0504940	20	4 20.7	19.0
30900 1993 FM_{34}	14.2	X	182.54558	247.87645	67.29283	6.43490	0.1575436	0.17493637	3.1662799	20	1 22.1	19.4
30901 1993 FU_{34}	15.7	X	17.48821	228.34579	153.35392	3.25238	0.0884644	0.31142969	2.1555729	20	—	—
30902 1993 FF_{35}	13.6	X	217.18744	351.42566	131.08474	2.47760	0.0908820	0.19735178	2.9217430	20	9 16.0	17.9
30903 1993 FU_{37}	15.7	X	338.62093	149.23148	24.84670	4.62396	0.0739945	0.28643877	2.2791952	20	1 3.9	18.2
30904 1993 FV_{41}	14.6	X	330.14221	339.26088	190.94886	3.55296	0.0407044	0.17641768	3.1485310	20	1 12.3	18.9
30905 1993 FC_{42}	13.2	X	332.18286	264.07018	10.39727	9.68314	0.0574206	0.18663209	3.0325770	20	5 19.8	17.4
30906 1993 FV_{44}	13.4	X	99.37255	285.87518	43.75288	0.98167	0.1274821	0.16829003	3.2491053	20	—	—
30907 1993 FD_{47}	14.7	X	326.23165	55.82043	156.14909	1.41560	0.0969996	0.17977706	3.1091848	20	2 20.1	18.9
30908 1993 FW_{47}	14.0	X	272.11422	193.43292	12.16062	5.27820	0.0948175	0.17365774	3.1818030	20	—	—
30909 1993 FZ_{49}	15.9	X	256.78670	283.40785	346.92586	2.53205	0.1460181	0.28668090	2.2779116	20	1 21.8	19.4
30910 1993 FP_{52}	16.1	X	164.14088	205.64058	43.96543	2.75224	0.1878459	0.27495225	2.3422389	20	—	—
30911 1993 FY_{75}	15.9	X	242.78198	91.33085	210.34778	5.17898	0.1836221	0.28734607	2.2743949	20	2 12.0	19.4
30912 1993 FP_{76}	14.7	X	352.37541	63.51339	202.26145	1.70379	0.0467337	0.18741702	3.0241038	20	6 10.3	18.5
30913 1993 FO_{77}	14.4	X	251.45544	102.59585	196.53132	22.49449	0.0753590	0.18016255	3.1047481	20	3 6.1	19.2
30914 1993 FV_{82}	15.6	X	295.40236	303.43298	81.93666	2.85838	0.2018660	0.30414959	2.1898342	20	8 21.9	17.1
30915 1993 GF_1	13.1	X	339.35538	241.66364	37.15436	12.02658	0.0794974	0.18637337	3.0353829	20	6 4.6	17.0
30916 1993 GN_1	15.0	X	105.87216	286.92483	258.03336	4.11854	0.1236038	0.29877282	2.2160284	20	8 14.8	18.0
30917 Moehorgan	14.7	X	186.60212	263.21483	34.08223	25.84956	0.1243447	0.17385035	3.1794525	20	1 3.6	20.2
30918 1993 KV_2	15.4	X	313.50894	119.32486	99.58158	7.23616	0.0469633	0.28473283	2.2882897	20	2 4.6	18.1
30919 1993 NV_1	15.6	X	27.16656	38.23815	301.90208	3.01033	0.2264636	0.26269731	2.4145283	20	12 17.8	18.5
30920 1993 OV_4	15.1	X	244.07959	308.69602	289.17287	2.90691	0.0608975	0.27612957	2.3355765	20	—	—
30921 1993 OG_6	15.4	X	335.22319	56.95768	290.69065	1.50720	0.2092762	0.25766061	2.4458925	20	9 13.4	17.1
30922 1993 OE_{13}	14.5	X	260.70134	162.85221	121.65189	5.54454	0.1013399	0.28271632	2.2991579	20	2 17.9	17.6
30923 1993 QU_4	14.3	X	232.21026	153.44370	159.42281	11.13365	0.1100273	0.24216571	2.5491435	20	2 25.8	18.1
30924 1993 RC_2	14.7	X	177.50578	37.26866	3.81600	13.32851	0.2845923	0.24225902	2.5484889	20	4 20.7	19.5
30925 1993 RD_2	13.2	X	150.43316	153.66361	174.66237	15.33835	0.1215821	0.23423796	2.6063408	20	—	—
30926 1993 TL_{13}	14.3	X	75.15439	248.45445	47.89558	9.13241	0.1937281	0.26031036	2.4292660	20	12 8.2	18.0
30927 1993 TF_{17}	14.6	X	94.06961	78.56731	191.76363	13.15091	0.2636466	0.26058626	2.4275510	20	11 29.9	18.9
30928 Jefferson	13.6	X	0.61558	69.42076	32.59665	16.27739	0.1634974	0.22823497	2.6518437	20	—	—
30929 1993 TR_{38}	13.7	X	326.65310	181.65491	44.87157	13.77662	0.1068187	0.23959384	2.5673531	20	3 9.1	17.1
30930 1993 UF	14.6	X	302.04220	219.01681	131.74554	15.25984	0.1837908	0.25161286	2.4849300	20	7 5.3	17.4
30931 1993 UJ_5	15.2	X	92.46079	15.64774	106.98540	4.51120	0.1329732	0.23969599	2.5666237	20	5 5.9	18.6
30932 1993 UO_5	14.5	X	64.80928	48.51725	99.40147	7.20903	0.2913607	0.23798562	2.5789064	20	5 27.5	17.6
30933 Grillparzer	14.5	X	259.10569	201.16452	85.62773	5.31073	0.1743478	0.24015013	2.5633869	20	2 18.0	18.5
30934 Bakerhansen	15.5	X	110.74675	119.67047	246.95376	20.67431	0.0399014	0.37859984	1.8924123	20	—	—
30935 Davasobel	14.5	X	329.23164	230.66301	294.13290	27.81753	0.1175933	0.37528207	1.9035495	20	—	—
30936 Basra	13.3	X	283.42885	72.33174	140.57368	12.79271	0.1241453	0.22457072	2.6806120	20	—	—
30937 Bashkirtseff	14.6	X	144.86013	245.31832	217.77131	3.05015	0.1180332	0.23794017	2.5792348	20	6 6.9	18.5
30938 Montmartre	14.3	X	358.90723	280.29426	287.67300	11.70648	0.1102124	0.23194135	2.6235173	20	3 21.3	17.6
30939 Samaritaine	13.9	X	254.59296	108.07301	135.35613	13.54827	0.1463508	0.22441934	2.6818173	20	—	—
30940 1994 CL_2	14.8	X	111.68672	337.80346	118.15271	4.30655	0.1611241	0.23292819	2.6161020	20	4 28.5	18.6
30941 1994 CJ_{11}	14.1	X	9.01477	301.76091	148.06649	22.08783	0.0976720	0.22004856	2.7172131	20	—	—
30942 Helicaon	11.3	X	193.04467	271.66311	143.53783	22.86104	0.0652293	0.08326602	5.1938671	20	6 1.5	18.7
30943 1994 ED_2	13.7	X	250.81823	225.76487	337.65721	7.75257	0.1791514	0.21580941	2.7526804	20	—	—
30944 1994 GD_1	13.8	X	69.39454	142.47705	67.49318	10.91026	0.2248207	0.19555395	2.9396231	20	8 15.9	18.1
30945 1994 GW_9	13.4	X	223.63750	280.71066	33.31754	10.15673	0.0841627	0.18362794	3.0655627	20	3 1.3	18.2
30946 1994 HB	17.0	X	352.74606	128.44919	189.00929	1.98253	0.2121844	0.31033628	2.1606331	20	9 23.9	18.1
30947 1994 JW	13.5	X	70.61115	30.66535	65.39394	13.59779	0.1397105	0.22388708	2.6860661	20	3 8.3	17.0
30948 1994 PU	15.2	X	273.74626	66.99256	330.69014	3.56309	0.1327708	0.30140278	2.2031186	20	8 11.4	17.2
30949 1994 PF_9	13.8	X	112.28200	310.93159	143.38150	1.54351	0.1845467	0.17541959	3.1604625	20	4 30.5	18.7
30950 1994 PJ_9	15.4	X	70.80875	187.26176	324.38832	4.44066	0.0472477	0.29419927	2.2389359	20	4 25.3	17.9
30951 1994 PL_{13}	15.4	X	197.89598	202.62673	325.25097	6.27417	0.0150758	0.30933469	2.1652945	20	11 17.6	17.9
30952 1994 PX_{15}	15.6	X	195.09482	302.80285	159.37350	2.21452	0.1287544	0.30023858	2.2088101	20	7 31.3	18.5
30953 1994 PZ_{17}	13.4	X	135.97052	8.11535	328.59384	10.14779	0.0614560	0.16744140	3.2600742	20	—	—
30954 1994 PM_{28}	16.2	X	322.63903	240.46760	20.57592	3.88985	0.0818423	0.29547459	2.2324888	20	4 10.6	18.6
30955 Weiser	12.9	X	96.77587	95.00155	350.83637	6.89051	0.1737414	0.17311478	3.1884526	20	3 31.2	17.6
30956 1994 QP	13.3	X	200.52882	260.43979	65.73089	22.74419	0.1856979	0.17413349	3.1760050	20	2 27.7	19.0
30957 1994 SQ_7	15.8	X	329.53880	116.87339	86.23049	1.09819	0.1403480	0.28681098	2.2772229	20	1 20.0	18.4
30958 1994 TV_3	14.6	X	182.41984	104.85284	193.64469	22.04694	0.0797700	0.35747116	1.9662650	20	—	—
30959 1994 TG_9	15.4	X	289.65568	11.35996	201.15487	6.36634	0.1255982	0.28152339	2.3056483	20	—	—
30960 1994 UV_2	15.6	X	109.28230	53.83439	12.32793	2.79473	0.1899752	0.28346063	2.2951314	20	3 16.2	18.4

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Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
	m		°	°	°	°		°				
30961 1994 VD_1	14.9	X	107.43461	33.59191	68.17245	7.66083	0.0810907	0.28623724	2.2802648	20	4 18.1	17.7
30962 1994 VH_7	14.5	X	146.92454	67.42528	45.25080	7.12652	0.1203291	0.29012352	2.2598560	20	6 22.7	17.7
30963 Mount Banzan	14.3	X	81.67680	295.62842	79.48482	22.93313	0.3013057	0.27606266	2.3359539	20	—	—
30964 1994 WW_7	15.3	X	332.32305	27.46367	161.97691	6.08946	0.1102795	0.28033179	2.3121774	20	1 10.4	18.1
30965 1994 XW	14.7	X	175.65447	304.94771	89.99512	7.07709	0.1790437	0.28738694	2.2741793	20	4 14.9	18.3
30966 1994 XN_1	15.8	X	234.26602	118.42129	47.34436	4.41817	0.0735440	0.26780191	2.3837476	20	12 16.9	18.8
30967 1994 XX_4	14.5	X	125.52216	107.21119	275.40837	5.98599	0.1298851	0.27813403	2.3243416	20	1 28.1	17.5
30968 1995 AM_1	14.2	X	144.59367	314.09972	109.00054	23.49921	0.2623543	0.28398050	2.2923294	20	5 5.7	18.5
30969 1995 BP_2	14.7	X	61.95088	293.21907	187.39267	21.14323	0.2798082	0.27965012	2.3159333	20	4 7.2	16.5
30970 1995 BP_3	14.2	X	3.36066	70.59341	149.84910	11.66213	0.1213763	0.24089779	2.5580803	20	4 27.8	17.1
30971 1995 DJ	14.0	X	322.28290	56.55139	337.25980	7.79664	0.2806531	0.25816466	2.4427078	20	10 24.7	15.4
30972 1995 DE_8	15.5	X	24.00183	341.87584	156.56178	3.82352	0.0678848	0.23433671	2.6056085	20	2 3.7	18.5
30973 1995 DS_8	15.2	X	257.80465	142.11848	4.84524	2.28558	0.1536837	0.26078536	2.4263154	20	12 11.8	17.8
30974 1995 EL	14.1	X	88.18063	209.28863	52.09532	8.83133	0.1825609	0.21223469	2.7835037	20	11 1.3	18.4
30975 1995 EM	14.4	X	319.11722	67.12445	21.16055	6.83458	0.0994189	0.26198962	2.4188744	20	—	—
30976 1995 FH_1	13.9	X	342.85303	211.15924	5.81360	12.96292	0.0966208	0.23530818	2.5984320	20	3 16.9	16.8
30977 1995 JJ_1	14.4	X	206.66108	114.41034	117.66970	3.37738	0.1489508	0.25905997	2.4370766	20	—	—
30978 1995 MO_5	14.2	X	3.80486	209.70644	160.98124	8.15053	0.1265936	0.21047151	2.7990276	20	11 26.7	17.7
30979 1995 OB_5	14.4	X	62.50536	219.48240	180.49614	0.42244	0.2316278	0.17213631	3.2005238	20	—	—
30980 1995 QU_3	13.5	X	132.96102	106.94832	296.54576	23.75693	0.3864342	0.17745218	3.1362824	20	3 21.9	19.6
30981 1995 SJ_4	13.1	X	166.06413	91.51717	257.98425	20.16458	0.1450177	0.17749094	3.1358257	20	2 5.5	18.5
30982 1995 SP_5	13.7	X	114.82549	25.80840	55.26324	1.98585	0.1781817	0.17656563	3.1467719	20	4 16.2	18.5
30983 1995 SE_{16}	14.5	X	34.15961	115.21394	348.13034	4.53869	0.1088229	0.17437835	3.1730312	20	1 18.7	18.4
30984 1995 SW_{19}	14.2	X	351.74550	106.85296	42.04866	1.04122	0.1450549	0.17168149	3.2061739	20	1 6.2	18.0
30985 1995 SM_{24}	14.4	X	328.36392	167.36058	53.85807	2.76162	0.0876287	0.18047960	3.1011110	20	3 8.0	18.4
30986 1995 SC_{28}	13.7	X	127.11724	93.16723	233.95265	9.33387	0.0964598	0.21269827	2.7794578	20	—	—
30987 1995 SO_{34}	14.9	X	81.50409	295.45403	102.99708	0.74885	0.2028899	0.17258152	3.1950171	20	1 20.5	19.1
30988 1995 SE_{36}	14.4	X	211.05856	130.64022	166.10067	2.33496	0.1934524	0.17842289	3.1248967	20	1 22.8	19.6
30989 1995 SZ_{43}	13.7	X	239.61584	57.11755	200.41586	11.28516	0.1688254	0.17479004	3.1680469	20	1 2.1	19.0
30990 1995 ST_{48}	14.4	X	71.10548	120.02457	97.54294	2.45157	0.1588900	0.19170997	2.9787880	20	8 14.4	18.5
30991 Minenze	14.3	X	174.06537	281.05094	208.40257	1.35009	0.0609917	0.19432365	2.9520176	20	8 8.1	18.8
30992 1995 SV_{66}	14.9	X	187.44229	238.81665	152.41792	0.87089	0.1465711	0.18390931	3.0624352	20	4 21.6	19.7
30993 1995 SA_{81}	14.1	X	237.46065	302.27487	24.96126	8.46631	0.1536267	0.18328491	3.0693865	20	3 23.4	18.9
30994 1995 UE_2	14.1	X	176.32450	139.54448	185.89987	2.74872	0.2052410	0.17639330	3.1488212	20	1 28.3	19.4
30995 1995 UZ_3	13.6	X	216.74031	331.29679	32.29031	22.44247	0.0307309	0.18060323	3.0996955	20	4 21.6	17.9
30996 1995 UH_4	14.1	X	183.78273	122.24655	304.23840	8.77629	0.1408809	0.18352781	3.0666777	20	5 29.5	19.2
30997 1995 UO_5	17.0	X	116.96255	151.08775	38.66819	36.21522	0.6432945	0.50585599	1.5599767	20	10 15.9	20.7
30998 1995 UF_{11}	14.4	X	129.14373	168.55376	199.40342	9.12592	0.0881619	0.17449502	3.1716166	20	1 22.9	19.2
30999 1995 UJ_{31}	14.1	X	255.96846	38.20982	12.00546	1.61744	0.1194973	0.19024926	2.9940156	20	7 26.8	18.4
31000 Rockchic	13.4	X	310.81832	315.85385	38.55381	11.26860	0.0509210	0.18902921	3.0068846	20	8 11.8	17.6
31001 1995 VG_{14}	14.1	X	194.24472	64.85019	235.97266	9.31791	0.0935857	0.17069955	3.2184577	20	1 12.3	19.2
31002 1995 VR_{15}	13.2	X	77.83943	109.35978	56.54113	14.12556	0.0403231	0.18080508	3.0973882	20	5 28.1	17.5
31003 1995 WQ_2	13.7	X	131.51265	353.15953	70.88497	17.40716	0.0808103	0.17659911	3.1463742	20	4 11.0	18.6
31004 1995 WW_{28}	13.7	X	90.80755	69.04919	55.85967	17.66839	0.1259820	0.17836739	3.1255450	20	5 7.7	18.1
31005 1995 WC_{31}	12.8	X	308.81566	259.46427	61.08344	12.00592	0.1094322	0.18573471	3.0423371	20	6 11.1	16.7
31006 1995 XC	12.7	X	30.31190	284.62635	249.95428	11.74750	0.1442569	0.17339928	3.1849639	20	4 10.1	16.7
31007 1996 AE_{14}	14.5	X	282.10812	216.00870	94.79475	7.00146	0.2032966	0.29271687	2.2464886	20	4 7.5	17.5
31008 1996 BN_2	15.5	X	55.91742	303.95129	218.19283	2.38134	0.1040922	0.29263312	2.2469172	20	4 27.9	17.7
31009 1996 CP	13.5	X	183.87406	349.63085	60.72532	12.99154	0.1058172	0.18011291	3.1053185	20	5 12.1	18.3
31010 1996 CJ_1	15.6	X	35.47512	123.22698	59.74572	3.77571	0.1425860	0.29081975	2.2562477	20	4 27.9	17.4
31011 1996 CG_7	15.3	X	250.77135	261.88450	237.29996	0.35419	0.0848165	0.31219266	2.1520594	20	12 16.4	17.5
31012 1996 CG_8	15.3	X	15.04195	57.92914	145.37560	3.81453	0.1405332	0.29050506	2.2578768	20	4 17.7	17.0
31013 1996 DR	14.1	X	69.96220	71.45878	154.91959	8.93830	0.1622012	0.29770333	2.2213326	20	9 5.8	16.9
31014 1996 DW	14.9	X	314.99936	227.13572	354.32867	7.49846	0.1627977	0.28463648	2.2888061	20	1 23.8	17.7
31015 Boccardi	16.0	X	79.37978	328.34950	153.32157	5.46841	0.0749949	0.29039373	2.2584539	20	4 3.1	18.4
31016 1996 DY_1	15.3	X	11.02951	67.53667	114.91066	2.88124	0.1043038	0.28858275	2.2678925	20	3 7.1	17.3
31017 1996 EH_2	14.5	X	18.99480	292.01678	265.94669	4.37008	0.1369942	0.28965422	2.2622962	20	4 13.0	16.3
31018 1996 ET_2	15.7	X	344.99634	291.70399	190.53687	3.06390	0.0874316	0.27808964	2.3245890	20	—	—
31019 1996 EH_{10}	15.7	X	50.83024	347.36910	351.35242	1.99930	0.2269275	0.27009981	2.3702084	20	—	—
31020 Skarupa	13.0	X	356.91956	180.25536	1.59261	3.46971	0.1208120	0.12388147	3.9853378	20	3 4.9	17.9
31021 1996 FW_1	15.1	X	208.97194	95.23947	133.14947	1.48538	0.1686920	0.27210795	2.3585327	20	—	—
31022 1996 FJ_9	14.4	X	325.26499	112.71695	182.79726	2.50210	0.0853314	0.29404434	2.2397222	20	6 8.3	16.6
31023 1996 FT_{10}	15.9	X	10.19728	113.62046	26.12770	8.20200	0.0488490	0.28147126	2.3059330	20	1 8.7	18.6
31024 1996 FT_{11}	15.3	X	239.78901	241.37777	71.77586	1.89143	0.0610960	0.28539717	2.2847373	20	3 5.7	18.2
31025 1996 GR	15.2	X	351.09613	85.29740	97.53531	2.69099	0.1524415	0.28271290	2.2991764	20	1 25.0	17.2
31026 1996 GB_7	15.3	X	233.80453	84.42626	34.93021	4.30362	0.0809150	0.30404037	2.1903585	20	10 20.8	17.6
31027 Viktorhess	15.7	X	348.04651	147.69236	60.82309	7.20893	0.1005653	0.28385794	2.2929892	20	3 9.1	18.1
31028 Cerulli	15.5	X	259.66557	285.46287	130.49899	3.67870	0.1364027	0.30042956	2.2078740	20	8 16.1	17.9
31029 1996 HC_{16}	15.1	X	358.13804	74.23338	43.82003	6.11360	0.1108414	0.27594399	2.3366236	20	—	—
31030 1996 HN_{19}	14.4	X	105.28010	153.66699	209.08045	6.39314	0.1377887	0.27207839	2.3587035	20	—	—
31031 Altiplano	15.0	X	90.60991	77.85278	164.76206	2.79241	0.1590561	0.25740604	2.4475048	20	10 15.5	18.6
31032 Scheidemann	15.8	X	42.89229	84.95061	70.15066	1.46309	0.1125738	0.28486001	2.2876086	20	3 26.4	17.8
31033 1996 HY_{23}	15.0	X	192.94271	264.67552	48.61974	9.95886	0.2418288	0.23320830	2.6140068	20	1 25.9	19.7
31034 1996 HC_{24}	14.6	X	72.01510	292.59038	66.77247	6.87172	0.1036482	0.26798340	2.3826712	20	—	—
31035 1996 HJ_{24}	14.7	X	188.87396	80.11740	194.49869	4.01800	0.0492602	0.27212288	2.3584464	20	—	—
31036 1996 HM_{25}	15.0	X	149.59822	225.84000	61.89188	9.36155	0.1158037	0.26834125	2.3805524	20	—	—
31037 Mydon	12.0	X	11.03681	28.33341	188.78474	7.27700	0.1303730	0.08201728	5.2464533	20	5 11.0	18.3
31038 1996 HG_{26}	15.0	X	69.83246	275.44175	203.03617	6.99356	0.0926063	0.28330496	2.2959720	20	3 13.8	17.4
31039 1996 JN	14.1	X	34.89498	94.18271	90.40115	5.16445	0.0958491	0.28614351	2.2807628	20	4 26.4	16.3
31040 1996 JW_8	15.5	X	322.39542	253.71369	149.04848	6.79369	0.1132195	0.26098141	2.4251001	20	11 14.4	18.0

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
	m		°	°	°	°		°				
31041 1996 KD	14.6	X	162.02500	114.04039	91.13873	3.76018	0.1225350	0.26149840	2.4219027	20	11 7.3	18.1
31042 1996 KS_4	15.6	X	89.41406	166.57508	119.38733	3.37884	0.1615261	0.26086852	2.4257997	20	12 7.8	19.2
31043 Sturm	15.9	X	234.42247	145.68783	105.59700	8.89298	0.1725176	0.23296665	2.6158141	20	—	—
31044 1996 NY	13.5	X	101.32405	235.39322	88.82720	13.55644	0.2497348	0.26160030	2.4212737	20	—	—
31045 1996 NP_4	14.7	X	266.52788	301.85174	315.51966	7.96172	0.1844196	0.23229166	2.6208790	20	1 19.4	18.8
31046 1996 NU_4	13.9	X	258.50864	32.53488	310.96436	7.94482	0.0779136	0.23895353	2.5719375	20	5 5.7	17.6
31047 1996 PW_8	14.2	X	340.18617	327.84765	315.96093	12.92132	0.1467998	0.24275322	2.5450289	20	6 11.6	16.9
31048 1996 PO_9	13.8	X	173.14685	141.21654	135.66264	13.67356	0.1626577	0.22341268	2.6898672	20	—	—
31049 1996 QZ	15.5	X	53.83647	220.85742	146.37018	7.07619	0.0828289	0.21605075	2.7506301	20	—	—
31050 1996 RA_2	13.8	X	261.93781	309.93570	115.49517	3.16590	0.0403831	0.20501850	2.8484418	20	9 6.3	17.7
31051 1996 RT_3	14.4	X	271.73906	262.41497	357.52183	14.11518	0.0782055	0.22938924	2.6429403	20	2 12.3	18.3
31052 1996 RC_5	14.1	X	29.81942	265.05402	37.60144	2.38068	0.0661688	0.20640055	2.8357122	20	9 27.0	17.8
31053 1996 RD_5	14.7	X	98.53171	295.48664	159.75159	4.02499	0.0493252	0.23047426	2.6346389	20	3 25.1	18.0
31054 1996 RT_5	13.7	X	40.33426	201.43954	18.40702	15.72916	0.0996644	0.23611412	2.5925158	20	6 27.4	17.1
31055 1996 RZ_{19}	14.4	X	186.73111	178.12087	338.40009	0.91621	0.0827532	0.20628253	2.8367936	20	9 25.8	18.7
31056 1996 RK_{25}	13.6	X	239.20891	117.07384	176.64459	14.82491	0.1319175	0.23027387	2.6361672	20	2 7.2	17.9
31057 1996 SK_4	13.7	X	302.79693	245.30648	12.10612	14.44320	0.0759426	0.23125182	2.6287298	20	3 17.2	17.1
31058 1996 TA_5	15.0	X	132.01228	99.37310	205.49982	5.01370	0.0742745	0.21673375	2.7448483	20	—	—
31059 1996 TQ_5	14.2	X	175.86910	333.01760	342.36082	12.65082	0.1825654	0.22389867	2.6859734	20	1 13.8	18.7
31060 1996 TB_6	13.6	X	93.37122	346.67684	31.43563	12.25547	0.3109807	0.21878297	2.7276818	20	1 22.9	17.3
31061 Tamao	15.1	X	238.89596	214.91054	151.89993	1.31915	0.0525670	0.19183822	2.9774601	20	5 19.8	19.4
31062 1996 TP_{10}	12.1	X	313.38527	176.12251	74.73068	11.04689	0.0412801	0.18950635	3.0018354	20	4 3.5	16.3
31063 1996 TK_{11}	15.0	X	311.20098	340.69947	30.75288	3.15032	0.1918396	0.20144934	2.8819879	20	8 17.5	18.2
31064 1996 TP_{11}	14.5	X	191.62764	234.09259	210.86912	11.91304	0.0728104	0.19473484	2.9478606	20	6 30.7	19.1
31065 Beishizhang	14.7	X	312.57381	234.82237	221.72579	4.18110	0.0819811	0.21280775	2.7785044	20	12 24.1	18.1
31066 1996 TR_{25}	14.5	X	310.93909	232.40980	40.28762	7.98997	0.0559364	0.23087270	2.6316067	20	4 18.8	17.9
31067 1996 TF_{50}	14.6	X	200.61849	251.30093	275.29018	3.10997	0.0305343	0.20874323	2.8144559	20	10 28.2	18.5
31068 1996 TT_{54}	13.4	X	183.85318	228.63682	154.46664	22.32627	0.0344506	0.23423909	2.6063324	20	4 8.8	17.3
31069 1996 UM_1	14.9	X	93.23759	346.34978	133.71362	4.97556	0.1541218	0.22891653	2.6465775	20	5 7.2	18.5
31070 1996 VX_9	14.1	X	90.60739	259.60626	174.30143	8.78007	0.0416499	0.18014764	3.1049194	20	2 19.2	18.5
31071 1996 VL_{18}	14.2	X	272.13768	88.78932	171.67517	9.72166	0.0849103	0.18141061	3.0904918	20	2 12.3	18.7
31072 1996 VZ_{22}	14.6	X	340.05968	243.71704	141.66093	6.70738	0.0994761	0.20419910	2.8560567	20	11 4.7	18.1
31073 1996 VV_{29}	13.9	X	160.54415	20.09931	53.81178	9.64629	0.1240265	0.18888074	3.0084602	20	5 17.1	18.6
31074 1996 WY_1	14.0	X	261.88516	275.68768	62.95499	15.78483	0.1812334	0.23600132	2.5933418	20	4 27.8	17.9
31075 1996 XV	14.4	X	59.23232	81.15818	49.02882	1.41112	0.0912632	0.18092077	3.0960676	20	3 26.9	18.4
31076 1996 XH_1	15.5	X	304.40767	90.06302	78.14343	24.63268	0.1583756	0.37976524	1.8885388	20	—	—
31077 1996 XZ_2	13.4	X	348.36048	71.68858	99.16083	14.77762	0.1913804	0.17236441	3.1976996	20	1 23.6	17.1
31078 1996 XJ_5	13.5	X	149.45870	330.21509	276.88424	12.45667	0.1781795	0.20480731	2.8503996	20	12 4.5	18.4
31079 1996 XS_5	13.9	X	79.14190	28.48740	97.44830	6.04622	0.1096675	0.18000219	3.1065917	20	4 22.7	18.1
31080 1996 XA_6	13.7	X	313.89091	43.65351	299.11706	6.66351	0.1448104	0.19282426	2.9673010	20	7 16.5	17.2
31081 1996 XO_{13}	13.8	X	228.19059	98.89904	256.09691	8.19577	0.0399451	0.18558010	3.0440267	20	4 21.0	18.2
31082 1996 XM_{19}	14.2	X	274.41850	109.63626	283.42847	8.44994	0.0971053	0.19316974	2.9637619	20	7 29.9	18.4
31083 1996 XE_{32}	14.3	X	39.88841	115.50658	19.00324	7.52587	0.2114110	0.17492807	3.1663801	20	3 17.3	17.7
31084 1996 YX_2	14.4	X	50.22799	29.13764	55.77174	1.24090	0.1841401	0.17255912	3.1952936	20	1 27.2	18.0
31085 1997 AV_{12}	13.9	X	157.32122	326.32376	86.78354	3.28133	0.1373557	0.18042108	3.1017815	20	4 21.0	18.8
31086 Gehringer	15.0	X	112.58713	71.39922	55.95538	1.94852	0.2204727	0.18159530	3.0883960	20	6 13.2	19.8
31087 Oirase	13.8	X	224.41164	68.12722	339.83643	10.08412	0.1084391	0.18869074	3.0104794	20	6 18.6	18.6
31088 1997 BV	13.9	X	165.96320	185.33775	287.43434	5.96544	0.0806402	0.18674645	3.0313388	20	7 9.0	18.6
31089 1997 BW_1	14.9	X	238.84217	77.15868	357.60606	4.77585	0.2380052	0.19118050	2.9842852	20	7 25.5	19.7
31090 1997 BJ_5	13.0	X	125.16093	63.04455	308.40372	10.47265	0.1871364	0.17156119	3.2076725	20	2 4.9	17.9
31091 1997 BE_9	15.7	X	234.92666	115.04067	318.33382	17.78705	0.0949586	0.35910050	1.9603128	20	8 17.5	17.7
31092 1997 CW_5	14.0	X	234.69309	99.70709	341.84992	10.70256	0.0885803	0.19078784	2.9883784	20	8 16.1	18.4
31093 1997 CE_{28}	13.6	X	128.52661	313.74910	119.25753	3.12076	0.1605789	0.17745975	3.1361931	20	4 19.3	18.5
31094 1997 CN_{28}	13.6	X	0.98806	257.35480	143.96655	18.76383	0.2146088	0.16026067	3.3567429	20	12 26.0	17.8
31095 Buneiou	13.8	X	201.72587	122.79658	313.08441	9.75114	0.0799618	0.18725027	3.0258989	20	7 2.2	18.4
31096 1997 GH_{14}	13.6	X	256.21142	32.98624	10.72442	22.85803	0.2278031	0.18331132	3.0690917	20	7 7.3	18.7
31097 Nucciomula	12.9	X	22.66556	72.22247	97.28012	2.70869	0.1077078	0.12537436	3.9536379	20	3 29.7	17.9
31098 Frankhill	14.7	X	165.80516	89.78230	249.06529	22.53135	0.2822521	0.28383833	2.2930948	20	1 22.3	19.0
31099 1997 MF_4	15.4	X	106.02842	316.14539	17.37133	3.07147	0.2378118	0.27483600	2.3428994	20	—	—
31100 1997 ML_4	15.3	X	243.14680	45.48577	275.49063	6.28014	0.1569368	0.29090030	2.2558312	20	3 7.6	18.8
31101 1997 NM_1	16.1	X	305.05134	343.45528	191.97198	1.49788	0.1445124	0.28030314	2.3123350	20	—	—
31102 1997 NP_2	15.2	X	1.85459	33.89360	202.61528	5.05100	0.1486563	0.29580044	2.2308490	20	5 12.8	16.6
31103 1997 OE_2	16.1	X	155.75459	105.40303	146.02281	5.39097	0.1977313	0.27235517	2.3571052	20	12 25.6	20.0
31104 Annanetrebko	15.0	X	294.91790	298.70165	305.31311	5.08479	0.1311112	0.28718108	2.2752659	20	1 30.4	18.0
31105 Oguniyamagata	14.5	X	281.38525	129.88826	268.33468	5.52502	0.1344821	0.30051407	2.2074600	20	8 21.8	16.7
31106 1997 PU_2	14.4	X	17.07679	5.24449	150.32285	23.01466	0.1413060	0.28651133	2.2788104	20	2 1.8	16.4
31107 1997 PS_3	15.9	X	302.25081	212.14748	13.62226	2.64727	0.0333536	0.28223540	2.3017690	20	1 31.6	18.8
31108 1997 PW_3	15.1	X	30.72644	137.99804	354.11020	6.58294	0.0413320	0.28098264	2.3086055	20	1 30.7	17.7
31109 Janpalouš	15.6	X	290.62042	241.58167	344.46943	6.89413	0.0729156	0.28183469	2.3039502	20	1 11.6	18.7
31110 Clapas	16.1	X	304.68439	1.99294	241.21442	3.29321	0.1647682	0.28789214	2.2715180	20	2 4.3	18.9
31111 1997 PN_5	13.5	X	81.06549	94.37300	292.97534	12.12985	0.1944113	0.23225341	2.6211667	20	—	—
31112 1997 PQ_5	15.8	X	338.12383	313.54593	242.19638	4.08161	0.1568436	0.28656003	2.2785522	20	1 18.9	18.3
31113 Stull	15.4	X	321.52927	193.44572	263.58365	5.93429	0.0853044	0.27201465	2.3590719	20	—	—
31114 1997 QB_1	15.8	X	60.06867	77.03988	65.02967	4.59274	0.1169403	0.28626878	2.2800973	20	4 8.9	18.0
31115 1997 QF_4	14.5	X	189.14900	257.85982	229.70876	3.86484	0.0680572	0.30207510	2.1998485	20	9 1.3	17.3
31116 1997 QM_4	15.9	X	157.87832	169.82564	167.04872	4.67439	0.1268917	0.27798982	2.3251454	20	1 7.1	19.1
31117 1997 QF_5	15.6	X	278.64771	254.50226	152.50925	1.88598	0.1347944	0.25737371	2.4477098	20	8 27.2	18.4
31118 1997 RN_1	16.0	X	235.69681	48.01829	297.14394	2.77062	0.2738939	0.24564677	2.5250037	20	3 28.9	20.5
31119 1997 RP_1	15.4	X	50.88599	14.35344	345.71264	3.23299	0.2272804	0.26716892	2.3875113	20	—	—
31120 1997 RT_8	15.3	X	91.01298	223.87284	92.31589	2.35506	0.1914496	0.26727054	2.3869060	20	—	—

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	Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
		m		°	°	°	°		°				
31121	1997 RD_{10}	15.1	X	178.46127	204.09775	161.50760	4.89328	0.2917966	0.23895864	2.5719009	20	3 14.9	19.7
31122	Brooktaylor	15.1	X	17.23890	122.49424	170.35365	3.07338	0.1383153	0.30327233	2.1940551	20	9 21.1	16.9
31123	1997 SU	14.1	X	33.66956	179.55826	211.43565	5.47513	0.1270067	0.26465720	2.4025932	20	—	—
31124	Slavíček	15.8	X	65.27062	104.61948	334.92269	2.16714	0.0743592	0.27853621	2.3221037	20	1 10.9	18.3
31125	1997 SL_1	15.1	X	98.53846	280.31579	176.15548	3.59104	0.0275208	0.28410097	2.2916814	20	3 17.3	17.7
31126	1997 SG_2	14.4	X	316.91277	13.63632	338.06755	7.56557	0.0749385	0.29750255	2.2223319	20	8 24.7	16.4
31127	1997 SL_4	14.7	X	348.65261	196.37655	222.51739	6.86703	0.1917133	0.22013187	2.7165275	20	—	—
31128	1997 SL_9	16.2	X	185.32036	19.06795	312.61254	2.74160	0.1754849	0.23587943	2.5942351	20	2 5.6	20.4
31129	Langyatai	14.4	X	270.42193	272.50679	4.57758	12.10415	0.1416168	0.24147264	2.5540189	20	2 22.7	18.2
31130	1997 SS_{10}	14.7	X	66.77729	288.10814	185.67322	3.59622	0.0799215	0.28110985	2.3079090	20	3 1.5	17.2
31131	1997 SV_{10}	14.9	X	32.27565	43.30846	184.82337	4.35150	0.1065053	0.29580812	2.2308104	20	6 29.2	17.1
31132	1997 SD_{13}	14.8	X	90.86602	284.45959	173.01853	6.78627	0.0682759	0.28331860	2.2958983	20	3 14.3	17.2
31133	1997 SZ_{15}	15.0	X	21.12089	54.94289	235.11042	3.13059	0.1037469	0.25260764	2.4784019	20	9 6.7	17.9
31134	Zurria	15.4	X	206.87857	147.56698	48.60660	3.60638	0.1224538	0.26407536	2.4061210	20	12 13.3	18.6
31135	1997 SN_{24}	14.7	X	187.21666	305.54402	208.74990	16.48952	0.0595702	0.25525883	2.4612111	20	9 29.9	18.2
31136	1997 SN_{31}	14.4	X	344.57275	222.75648	358.55835	5.36941	0.0885862	0.28727178	2.2747870	20	3 18.6	16.7
31137	1997 SQ_{32}	14.9	X	54.34149	19.56857	356.23870	2.20469	0.2347389	0.26817608	2.3815298	20	—	—
31138	1997 SJ_{33}	15.6	X	41.64267	207.48823	151.61285	3.56801	0.1042824	0.26459790	2.4029521	20	—	—
31139	Garnavich	15.8	X	282.56568	124.08086	7.98670	1.36897	0.1483148	0.26247965	2.4158629	20	—	—
31140	1997 TC_9	15.3	X	79.70949	135.81075	212.31485	8.68151	0.2258164	0.22437671	2.6821570	20	—	—
31141	1997 TN_{18}	15.5	X	275.50942	31.12658	109.84629	2.94051	0.1557408	0.26475860	2.4019797	20	—	—
31142	1997 TT_{22}	15.4	X	29.20149	128.51808	220.59348	0.82150	0.1421565	0.26307836	2.4121962	20	12 19.7	18.3
31143	1997 TN_{24}	14.0	X	266.94017	116.44601	40.18604	7.53839	0.0830879	0.26171839	2.4205453	20	—	—
31144	1997 TM_{26}	14.4	X	140.93840	13.75118	53.03238	4.62219	0.1075769	0.28431090	2.2905532	20	4 14.1	17.4
31145	1997 UK	15.2	X	107.63568	351.13868	218.11412	0.38141	0.0191409	0.25431649	2.4672872	20	9 5.6	18.4
31146	1997 UV_3	14.3	X	333.45350	0.78295	27.10142	2.54435	0.1878235	0.25716582	2.4490288	20	11 13.9	16.3
31147	Miriquidi	14.1	X	347.06565	317.04440	253.82724	3.59934	0.0561521	0.28057628	2.3108340	20	3 9.7	16.8
31148	1997 UO_8	13.1	X	145.57376	39.64411	39.57355	15.33372	0.0819243	0.24088904	2.5581423	20	5 3.7	16.6
31149	1997 UE_{13}	15.9	X	215.86846	157.19936	16.26560	2.51103	0.1389306	0.25998664	2.4312822	20	11 21.2	19.1
31150	1997 UT_{20}	14.7	X	124.57873	195.50057	42.65231	8.72046	0.0750620	0.25546831	2.4598655	20	11 7.8	18.0
31151	Sajichugaku	15.2	X	158.27696	142.25984	27.07719	5.25939	0.0740081	0.29826669	2.2185346	20	9 24.6	18.1
31152	Daishinsai	14.2	X	157.38319	68.36481	53.02347	13.10724	0.2143774	0.24349026	2.5398905	20	7 18.2	18.7
31153	Enricaparri	14.7	X	256.42793	295.27281	6.72519	6.05411	0.1791798	0.28450326	2.2895206	20	2 29.4	18.2
31154	1997 VJ	14.4	X	202.16592	283.41730	47.53002	23.56636	0.2292947	0.27978402	2.3151943	20	2 29.0	18.9
31155	1997 VG_2	15.5	X	45.02599	150.05382	278.28464	2.30918	0.2080174	0.26888369	2.3773497	20	—	—
31156	1997 WO	14.9	X	322.47191	61.30440	56.39252	3.49350	0.1266582	0.26310776	2.4120165	20	—	—
31157	1997 WK_1	14.3	X	57.76038	46.51335	313.65955	4.45155	0.0763790	0.21923542	2.7239277	20	—	—
31158	1997 WE_3	14.3	X	277.96516	85.84778	295.48108	0.93877	0.0447549	0.20241059	2.8728563	20	7 29.3	18.2
31159	1997 WB_6	14.5	X	45.98979	73.47768	79.60710	4.38532	0.0582202	0.27918832	2.3184864	20	3 26.4	17.0
31160	1997 WQ_9	15.2	X	30.02773	255.73128	177.50928	2.27431	0.1795789	0.26780475	2.3837307	20	—	—
31161	1997 WR_{11}	15.2	X	39.15991	309.71806	223.86774	4.55892	0.1219591	0.23780282	2.5802278	20	4 20.6	18.1
31162	1997 WB_{13}	14.9	X	356.75604	147.48056	39.20336	1.85840	0.1382935	0.23438877	2.6052226	20	2 22.1	17.5
31163	1997 WR_{18}	15.3	X	189.40321	244.29027	99.62942	2.69013	0.1408487	0.23492418	2.6012628	20	2 23.9	19.3
31164	1997 WM_{35}	14.2	X	247.54728	144.69097	78.65304	3.19559	0.1543459	0.26762812	2.3847794	20	—	—
31165	1997 WN_{43}	14.8	X	198.57889	84.57683	265.37565	9.46984	0.2792289	0.23697083	2.5862636	20	3 5.1	19.7
31166	1997 WX_{45}	15.4	X	278.97585	123.94551	219.51737	5.72001	0.2607041	0.29019890	2.2594646	20	5 7.1	18.3
31167	1997 WL_{46}	14.9	X	351.48155	248.34998	178.32196	1.92784	0.2016377	0.26204838	2.4185128	20	—	—
31168	1997 WM_{49}	14.4	X	190.37702	187.20760	172.96910	4.26227	0.0984057	0.23542596	2.5975653	20	3 14.0	18.2
31169	1997 WV_{53}	14.9	X	72.59867	72.57706	65.79374	3.18461	0.0982804	0.23491183	2.6013540	20	4 23.4	18.0
31170	1997 WO_{58}	14.2	X	339.62430	204.01104	222.05847	24.00258	0.2605553	0.26152454	2.4217413	20	—	—
31171	1997 XB	15.2	X	140.23492	18.70872	99.11629	9.04069	0.1054537	0.24034095	2.5620300	20	6 20.5	18.8
31172	1997 XQ	14.9	X	150.67352	176.37713	288.11429	2.25561	0.1600972	0.23849836	2.5752088	20	6 16.8	19.0
31173	1997 XF_1	14.9	X	196.98413	106.72867	250.01936	20.40142	0.1043550	0.36760834	1.9299489	20	2 22.2	18.0
31174	Rozelot	14.5	X	341.96091	82.63042	310.26250	0.85574	0.1188752	0.20599877	2.8393982	20	11 16.3	17.8
31175	Erikafuchs	13.1	X	85.32464	117.74256	293.23512	11.59039	0.1737853	0.22414164	2.6840320	20	1 26.7	16.3
31176	1997 XL_9	14.0	X	273.60284	16.01734	89.60840	7.29384	0.1053655	0.25551591	2.4595600	20	11 17.1	16.7
31177	1997 XH_{11}	13.5	X	79.58183	77.80033	68.07605	11.17485	0.0991356	0.22935658	2.6431912	20	5 14.6	16.8
31178	1997 XK_{13}	13.1	X	169.69351	165.89327	151.73157	19.05505	0.1366933	0.17361419	3.1823350	20	1 11.5	18.4
31179	Gongju	13.8	X	38.91131	248.07666	81.29809	3.45247	0.1913606	0.25808572	2.4432059	20	12 11.9	17.0
31180	1997 YX_3	14.4	X	343.83374	86.32318	298.44343	27.98002	0.4198377	0.21225794	2.7833004	20	12 25.8	16.6
31181	1997 YY_3	13.8	X	318.45226	252.48714	108.52767	16.66468	0.2843224	0.20381199	2.8596721	20	8 4.2	16.4
31182	1997 YZ_3	14.8	X	246.96801	235.66555	107.40340	23.75640	0.0666747	0.36648542	1.9338892	20	5 3.0	17.7
31183	1997 YT_4	15.1	X	285.90685	330.95554	61.43192	8.00746	0.2988880	0.25250909	2.4790467	20	7 20.3	18.0
31184	1997 YZ_4	14.6	X	289.23686	279.65905	65.62410	4.21461	0.1818148	0.24589861	2.5232793	20	6 5.6	17.6
31185	1997 YK_5	13.5	X	132.82887	308.67563	93.66436	15.88664	0.0393001	0.22852267	2.6496175	20	3 5.1	17.4
31186	1997 YQ_5	14.9	X	135.21019	295.30935	115.04331	6.65983	0.2488544	0.23186360	2.6241037	20	4 5.1	19.2
31187	1997 YK_7	14.2	X	95.58461	356.02567	84.14098	13.07340	0.1548132	0.22945686	2.6424211	20	3 24.3	18.0
31188	1997 YM_7	13.8	X	31.35644	246.16456	113.64666	10.35376	0.1746322	0.20934212	2.8090856	20	12 26.9	17.7
31189	Tricomi	14.9	X	223.14984	149.65856	280.82887	10.49044	0.1913241	0.24393848	2.5367782	20	7 10.1	18.7
31190	Toussaint	13.8	X	194.03491	125.90345	276.80173	14.05041	0.1140347	0.23565906	2.5958521	20	5 7.8	18.0
31191	1997 YD_{15}	14.4	X	119.97273	352.61268	96.75784	3.58748	0.1331601	0.23278422	2.6171806	20	4 25.5	18.1
31192	Aigoual	13.9	X	79.46898	278.61300	65.56380	3.45374	0.1843697	0.21571593	2.7534756	20	—	—
31193	1997 YP_{16}	14.5	X	92.80139	194.56889	285.53310	5.12541	0.1380681	0.23251443	2.6192047	20	4 30.3	18.1
31194	1997 YQ_{16}	14.7	X	140.35053	334.95246	61.15641	3.06153	0.2792318	0.23191730	2.6236986	20	3 23.8	19.0
31195	1997 YG_{18}	14.1	X	91.51382	273.03345	236.38107	8.08935	0.0451748	0.19140838	2.9819161	20	5 26.4	18.2
31196	Yulong	14.9	X	71.59098	305.01880	183.87533	1.12729	0.1501837	0.23198594	2.6231811	20	4 16.5	18.0
31197	1997 YS_{19}	14.6	X	337.69310	356.46071	78.39359	7.47949	0.0936743	0.26114750	2.4240717	20	—	—
31198	1998 AB_1	14.3	X	279.53438	327.04715	120.80850	20.66487	0.1323923	0.20634757	2.8361975	20	10 25.7	18.3
31199	1998 AK_3	14.1	X	255.60953	22.40772	125.70952	4.80049	0.0399052	0.21029328	2.8006088	20	12 12.9	17.9
31200	1998 AL_4	14.3	X	153.12291	157.34111	342.71208	1.31041	0.0521281	0.19719848	2.9232571	20	7 29.6	18.7

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	Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
		m		°	°	°	°		°				
31201	Michellegrand	13.7	X	183.08830	230.67409	141.15760	10.32173	0.1082437	0.18350454	3.0669369	20	3 27.9	18.6
31202	1998 AX_7	13.9	X	119.16864	10.12948	102.34331	14.08371	0.1266247	0.23580249	2.5947994	20	5 25.9	17.8
31203	Hersman	14.6	X	279.27018	328.02331	42.82408	2.63892	0.0848121	0.19709746	2.9242558	20	7 11.1	18.4
31204	1998 AA_{10}	13.9	X	5.94157	303.16350	291.95656	14.07898	0.0785399	0.23591176	2.5939981	20	5 17.0	17.2
31205	1998 BW	12.9	X	148.86198	268.97837	315.67716	14.07119	0.2154164	0.20294917	2.8677714	20	11 2.4	18.1
31206	1998 BF_1	13.8	X	0.74583	14.00715	100.03467	12.66822	0.0311930	0.21961027	2.7208272	20	—	—
31207	1998 BM_1	14.1	X	7.51765	337.82321	137.80068	6.24744	0.1294974	0.17519695	3.1631395	20	—	—
31208	1998 BU_1	13.9	X	167.67424	324.77326	102.51885	14.34045	0.1387506	0.23573710	2.5952793	20	5 19.9	18.2
31209	1998 BZ_6	13.8	X	330.58812	3.42330	119.37668	13.41771	0.0782497	0.21497398	2.7598075	20	—	—
31210	1998 BX_7	16.3	X	142.23375	271.44640	144.92276	8.95829	0.5024402	0.23464207	2.6033474	20	5 1.6	21.7
31211	1998 BW_8	13.7	X	264.34272	205.55994	15.21637	5.07734	0.0868254	0.17325192	3.1867697	20	—	—
31212	1998 BZ_8	14.0	X	126.28285	355.51411	77.55661	4.78072	0.1037700	0.22965316	2.6409151	20	4 9.1	17.8
31213	1998 BK_9	13.8	X	34.01549	344.86343	209.21852	2.38060	0.1654919	0.18521042	3.0480758	20	5 18.9	17.3
31214	1998 BZ_9	15.4	X	30.58260	1.55497	153.03158	3.32656	0.1147793	0.23249190	2.6193739	20	3 9.9	18.2
31215	1998 BN_{10}	14.6	X	284.10827	238.60114	103.97138	10.64876	0.1370417	0.19698245	2.9253940	20	6 3.2	18.6
31216	1998 BL_{12}	13.8	X	128.79866	82.64402	111.28827	17.34897	0.1271592	0.24491256	2.5300475	20	9 25.1	18.0
31217	1998 BD_{15}	13.6	X	14.67144	194.77988	299.37904	13.14117	0.0923118	0.22362255	2.6881840	20	1 16.6	16.7
31218	1998 BZ_{20}	14.6	X	217.89058	285.88657	115.90765	3.00308	0.1131456	0.19521812	2.9429935	20	6 3.9	19.1
31219	1998 BW_{24}	13.4	X	342.44050	69.83137	125.45447	17.32277	0.1742481	0.17857656	3.1231038	20	2 15.4	17.1
31220	1998 BA_{26}	14.3	X	342.18308	215.00973	351.11816	13.21505	0.1983712	0.22406883	2.6846134	20	2 19.8	17.3
31221	1998 BP_{26}	17.2	X	307.92897	186.65321	331.03989	20.22069	0.2570183	0.43573845	1.7231330	20	—	—
31222	1998 BD_{30}	14.2	X	161.31703	40.43932	139.46080	2.16197	0.1557432	0.20066260	2.8895159	20	9 27.4	19.0
31223	1998 BJ_{30}	14.4	X	198.55908	81.66840	284.12700	2.23622	0.1291505	0.23116176	2.6294125	20	3 28.3	18.6
31224	1998 BP_{33}	14.2	X	359.12031	335.00214	131.23189	10.33033	0.1014345	0.21556196	2.7547867	20	—	—
31225	1998 BH_{35}	14.5	X	88.39790	296.99316	238.41477	8.81273	0.1524052	0.24157910	2.5532684	20	7 11.1	18.1
31226	1998 BZ_{40}	14.1	X	72.96199	70.08146	32.92597	1.33864	0.1414488	0.18220272	3.0815282	20	3 18.5	18.1
31227	1998 BC_{41}	12.2	X	326.54410	343.13396	295.79098	12.77279	0.1446974	0.23114259	2.6295579	20	5 4.0	15.4
31228	1998 BR_{45}	14.9	X	345.06379	313.23407	126.24673	5.77274	0.0820971	0.21325410	2.7746260	20	—	—
31229	1998 BD_{46}	14.6	X	82.14857	272.33736	153.87925	11.46563	0.1736340	0.22495095	2.6775905	20	2 11.3	17.7
31230	Tuyouyou	13.5	X	75.66028	316.57812	110.17054	14.21082	0.1481975	0.22391039	2.6858796	20	1 31.2	16.7
31231	Uthmann	14.6	X	147.74503	21.39155	95.70455	9.39466	0.2321412	0.23772260	2.5808082	20	7 3.1	18.9
31232	Slavonice	14.6	X	162.25871	78.66117	108.16215	12.23818	0.0184339	0.20420125	2.8560367	20	10 14.8	18.8
31233	1998 CG_1	14.0	X	193.57006	8.34740	69.43879	11.04474	0.0623402	0.19072211	2.9890650	20	6 25.2	18.5
31234	Bea	15.0	X	80.79370	225.52277	254.22142	2.21156	0.1740852	0.18395276	3.0619529	20	4 22.9	19.1
31235	1998 CE_3	13.7	X	220.98225	65.93330	340.37057	9.22591	0.0940233	0.19187762	2.9770525	20	6 13.6	18.3
31236	1998 CC_4	13.6	X	202.58906	87.18147	311.69504	9.44932	0.1043390	0.19120878	2.9839909	20	5 12.8	18.4
31237	1998 CY_4	14.3	X	227.95935	242.67434	204.64686	1.18143	0.0197479	0.19707587	2.9244694	20	8 22.2	18.3
31238	Kromeriz	14.3	X	18.59214	206.55578	140.79416	3.09529	0.0237592	0.16029313	3.3562897	20	10 25.8	19.0
31239	Michaeljames	13.6	X	209.43999	69.75558	310.71879	12.01419	0.1993194	0.23614591	2.5922831	20	4 18.9	18.3
31240	Katrianne	14.4	X	316.31265	104.61437	2.78493	7.33171	0.1830337	0.21137183	2.7910737	20	—	—
31241	1998 DK_2	14.2	X	201.26770	283.51060	111.31522	13.72273	0.0209631	0.18570674	3.0426426	20	5 17.1	18.8
31242	1998 DO_{10}	13.1	X	281.57894	30.66290	263.86168	12.11463	0.2054564	0.18096756	3.0955339	20	3 14.7	17.9
31243	1998 DW_{10}	13.7	X	207.44403	17.12808	46.92149	10.31857	0.0748690	0.19147762	2.9811972	20	6 22.5	18.2
31244	1998 DG_{11}	14.3	X	229.79545	205.18625	57.77604	3.33190	0.1458292	0.17098123	3.2149219	20	1 2.7	19.4
31245	1998 DR_{11}	14.1	X	270.72347	315.60000	133.90836	2.80147	0.0428808	0.20194697	2.8772515	20	10 18.4	17.9
31246	1998 DZ_{12}	14.1	X	187.12416	110.51362	357.34937	7.37235	0.1552406	0.23879572	2.5730706	20	7 28.1	18.3
31247	1998 DD_{13}	13.5	X	23.17999	172.29917	24.66411	12.48149	0.1470345	0.18278273	3.0750059	20	4 29.0	17.1
31248	1998 DH_{13}	14.4	X	81.04736	328.01308	177.52751	23.62850	0.0885481	0.18472773	3.0533832	20	5 17.4	19.0
31249	Renéefleming	14.4	X	300.26361	86.44388	96.93179	1.57658	0.2645841	0.16834520	3.2483954	20	—	—
31250	1998 DR_{14}	14.2	X	56.78094	204.38413	300.73216	11.41522	0.0865611	0.18292931	3.0733629	20	4 3.7	18.5
31251	1998 DU_{14}	13.7	X	140.32587	288.33036	137.68298	12.07687	0.1008566	0.18497665	3.0506434	20	4 20.3	18.5
31252	1998 DA_{15}	13.4	X	50.06529	299.17187	132.83652	22.91239	0.1110006	0.17444115	3.1722695	20	1 4.4	17.6
31253	1998 DQ_{21}	14.4	X	280.79647	346.38679	19.05305	2.44610	0.1277801	0.19387532	2.9565668	20	6 28.9	18.5
31254	1998 DK_{23}	13.3	X	255.32212	263.02878	320.02892	9.03863	0.2071123	0.21600997	2.7509763	20	—	—
31255	1998 DL_{27}	14.0	X	0.23757	162.82221	4.03879	5.08012	0.0752877	0.17754360	3.1352057	20	2 16.3	18.0
31256	1998 DM_{32}	13.8	X	279.19099	28.17533	252.88979	13.05189	0.1824250	0.23749148	2.5824823	20	2 22.2	17.9
31257	1998 DG_{35}	13.4	X	357.76666	301.96609	8.44712	10.12573	0.1079525	0.19326930	2.9627440	20	8 24.0	17.0
31258	1998 EE	13.2	X	356.16289	233.16442	52.33590	10.73303	0.0755747	0.18952989	3.0015868	20	7 14.1	17.1
31259	1998 EB_3	14.2	X	96.56544	268.47537	72.79824	6.87208	0.1426165	0.21217784	2.7840009	20	—	—
31260	1998 EE_6	14.2	X	22.16610	208.77345	239.14258	5.47257	0.1934479	0.21843128	2.7306089	20	—	—
31261	1998 EF_8	14.2	X	37.55562	211.14045	173.51712	8.47937	0.2327489	0.21001236	2.8031057	20	—	—
31262	1998 ES_8	14.3	X	353.51447	265.52412	191.93962	4.63764	0.1214475	0.21440347	2.7647011	20	—	—
31263	1998 EG_9	13.4	X	3.11715	214.78614	120.01795	4.88467	0.0976365	0.25412221	2.4685445	20	10 15.6	16.1
31264	1998 EQ_{11}	14.2	X	106.19014	117.27257	41.07494	5.13640	0.0255864	0.18884843	3.0088033	20	6 22.7	18.4
31265	1998 EC_{13}	13.5	X	42.55783	203.70668	15.85215	4.83074	0.0845463	0.18737469	3.0245592	20	6 26.3	17.5
31266	Tournefort	13.8	X	21.42890	126.68568	84.27483	3.20876	0.0610488	0.18403037	3.0610920	20	5 12.3	17.6
31267	Kuldiga	12.8	X	242.72906	0.74899	12.70014	10.58441	0.1130006	0.18792608	3.0186402	20	5 22.8	17.4
31268	Welty	13.8	X	105.28863	22.28350	92.17751	10.29577	0.1277349	0.23017653	2.6369103	20	5 12.1	17.6
31269	1998 FO	13.8	X	30.67215	100.31412	17.37608	8.10593	0.1355097	0.21948389	2.7218715	20	1 23.9	16.8
31270	1998 FP_{14}	13.4	X	214.67172	219.26851	203.31129	9.17113	0.0658105	0.18951329	3.0017621	20	6 29.1	18.0
31271	Nallino	13.9	X	29.25043	2.19147	139.51206	1.71940	0.0986653	0.17740608	3.1368257	20	2 26.6	17.8
31272	Makosinski	14.0	X	16.03160	112.87044	52.84051	1.16094	0.1448161	0.17924916	3.1152863	20	3 7.8	17.5
31273	1998 FY_{23}	14.1	X	97.83020	316.02074	161.88386	10.55973	0.0856721	0.18421445	3.0590525	20	5 2.9	18.5
31274	1998 FE_{24}	13.7	X	43.24667	313.79239	175.39545	5.52775	0.1202158	0.17895816	3.1186625	20	3 3.9	17.4
31275	1998 FN_{25}	14.5	X	121.10553	298.52819	187.49588	10.05494	0.0595583	0.18744102	3.0238457	20	6 4.8	19.0
31276	Calvinrieder	14.4	X	350.13739	141.74896	273.71113	0.96197	0.0559656	0.20722348	2.8281997	20	12 23.8	18.0
31277	1998 FK_{28}	14.0	X	313.07367	10.00937	219.85652	1.26089	0.0697373	0.17793579	3.1305971	20	2 27.9	18.3
31278	1998 FK_{30}	14.1	X	86.06091	88.99774	333.82120	5.91741	0.3217362	0.22342968	2.6897307	20	3 6.9	17.5
31279	1998 FQ_{31}	14.2	X	32.31669	300.01394	134.79115	2.06764	0.1905054	0.17215191	3.2003304	20	—	—
31280	1998 FG_{33}	13.6	X	262.65104	160.40932	167.28205	11.78109	0.0317120	0.18431982	3.0578864	20	5 4.7	18.0

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

	Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
		m		°	°	°	°		°				
31281	Stothers	14.4	*X*	26.32771	107.81063	342.49528	9.03099	0.1061592	0.21600242	2.7510404	20	—	—
31282	Nicoleticea	14.2	*X*	16.72233	44.41139	181.00459	2.43766	0.1375924	0.18428161	3.0583091	20	5 28.4	17.7
31283	Wanruomeng	15.4	*X*	99.31616	117.63924	354.53910	5.66750	0.1766197	0.22864562	2.6486676	20	5 3.6	19.1
31284	1998 FN_{48}	12.9	*X*	231.90910	289.38111	331.19940	7.73081	0.1462932	0.12478546	3.9660671	20	1 8.6	19.1
31285	1998 FK_{51}	13.8	*X*	37.30875	179.41165	10.67892	15.72320	0.1218447	0.18282013	3.0745865	20	5 8.3	17.8
31286	1998 FD_{54}	13.8	*X*	156.70037	300.99394	192.39289	10.05317	0.0739537	0.19095789	2.9866040	20	7 22.8	18.5
31287	1998 FK_{58}	13.3	*X*	100.88642	178.13865	5.09666	9.00886	0.0205895	0.18936913	3.0032853	20	7 20.3	17.6
31288	1998 FZ_{59}	13.7	*X*	11.43045	267.82964	15.69927	10.99945	0.0896362	0.18975198	2.9992443	20	8 8.9	17.6
31289	1998 FN_{62}	13.6	*X*	154.72539	119.42052	352.85062	9.21019	0.0424932	0.18722941	3.0261237	20	6 25.1	18.2
31290	1998 FG_{63}	13.7	*X*	359.82352	72.85335	141.93610	2.16976	0.0373734	0.18066600	3.0989776	20	4 16.5	17.8
31291	Yaoyue	14.3	*X*	346.44282	52.09788	138.41844	2.69758	0.1379276	0.17560018	3.1582954	20	2 19.1	18.2
31292	1998 FK_{66}	14.1	*X*	121.46331	42.59374	45.34279	0.78854	0.1531463	0.18196079	3.0842591	20	4 28.0	18.8
31293	1998 FP_{70}	14.0	*X*	257.11975	104.76503	79.69302	1.71089	0.2415518	0.16392921	3.3064743	20	12 18.5	18.4
31294	1998 FJ_{71}	13.8	*X*	219.81499	53.80114	9.97397	9.68097	0.0671964	0.18859068	3.0115441	20	7 8.9	18.4
31295	1998 FF_{72}	14.1	*X*	124.26867	177.60995	273.42528	2.84734	0.2176071	0.18365047	3.0653121	20	5 9.9	19.1
31296	1998 FY_{73}	12.9	*X*	269.03184	7.84929	3.89827	10.00891	0.1118807	0.18801984	3.0176366	20	6 23.9	17.3
31297	1998 FZ_{74}	13.5	*X*	227.56424	61.68757	16.24024	10.10208	0.0809165	0.19158685	2.9800640	20	8 6.1	18.0
31298	Chantaihei	14.3	*X*	11.15304	142.46853	67.05119	5.71016	0.1139473	0.18060443	3.0996818	20	4 27.1	18.0
31299	1998 FJ_{80}	14.6	*X*	136.63178	344.26365	130.42416	5.74863	0.2064662	0.18805452	3.0172655	20	6 18.7	19.7
31300	1998 FZ_{82}	12.9	*X*	202.25888	344.80301	5.71141	16.31694	0.0774522	0.18166576	3.0875974	20	3 20.0	17.6
31301	1998 FE_{92}	13.2	*X*	194.87757	36.24875	48.21529	10.92382	0.0886486	0.19133943	2.9826324	20	7 4.8	17.9
31302	1998 FT_{95}	13.9	*X*	201.29326	192.08665	240.32404	9.27411	0.0800201	0.19043819	2.9920351	20	6 25.8	18.5
31303	1998 FO_{99}	13.6	*X*	141.36361	110.39284	335.75933	10.38540	0.0212887	0.18404984	3.0608761	20	4 30.1	18.2
31304	1998 FE_{103}	13.9	*X*	17.78870	353.61934	218.55755	8.93193	0.0412954	0.18311595	3.0712743	20	5 7.5	18.0
31305	1998 FL_{104}	13.8	*X*	51.15268	294.19230	314.96190	9.08160	0.0472688	0.19105966	2.9855434	20	8 11.4	17.7
31306	1998 FZ_{104}	13.0	*X*	160.57593	196.38532	244.04627	9.36365	0.0608048	0.18509263	3.0493689	20	5 22.7	17.4
31307	1998 FK_{105}	13.3	*X*	292.98710	25.80060	221.42938	9.75321	0.1560886	0.17473794	3.1686765	20	2 9.5	18.1
31308	1998 FK_{113}	14.1	*X*	87.36891	259.41047	261.13517	6.70568	0.0951310	0.18480347	3.0525489	20	6 11.7	18.2
31309	1998 FJ_{116}	13.2	*X*	290.55320	199.68072	359.66842	16.02136	0.0603601	0.16974246	3.2305444	20	—	—
31310	1998 FP_{118}	14.3	*X*	268.00901	196.96349	310.36941	3.93053	0.0568484	0.20552889	2.8437242	20	12 24.6	18.1
31311	1998 FX_{118}	13.9	*X*	123.38238	93.34866	349.60078	6.91272	0.0853619	0.17989171	3.1078636	20	4 14.3	18.5
31312	Fangerhai	14.4	*X*	299.01795	144.64414	8.56034	9.25988	0.1109552	0.20938403	2.8087107	20	—	—
31313	Kanwingyi	14.5	*X*	39.43807	90.92589	73.94037	1.80640	0.1412065	0.18221643	3.0813737	20	4 16.4	18.1
31314	1998 FS_{120}	14.8	*X*	175.43741	272.33393	170.51394	13.27406	0.1617039	0.18989763	2.9977105	20	6 12.9	19.9
31315	1998 FS_{132}	13.1	*X*	104.24251	327.76965	50.07255	0.75008	0.2682496	0.17364081	3.1820098	20	2 1.5	17.6
31316	1998 GZ_{7}	13.3	*X*	324.69994	48.58262	129.73449	21.47525	0.0348769	0.17149876	3.2084508	20	1 17.4	17.8
31317	1998 GL_{8}	13.4	*X*	20.28763	332.67946	141.17925	14.46686	0.1116689	0.17132617	3.2106052	20	1 9.5	17.5
31318	1998 GQ_{10}	15.4	*X*	167.19764	264.52802	201.77869	6.23993	0.4044908	0.23850748	2.5751432	20	7 5.5	20.6
31319	Vespucci	13.0	*X*	339.95520	333.92732	211.93965	16.43928	0.0590094	0.17297121	3.1902165	20	2 6.8	17.7
31320	1998 HX_{2}	15.2	*X*	160.97709	245.29943	201.96623	21.22827	0.1514763	0.36278754	1.9470083	20	6 4.9	18.2
31321	1998 HD_{3}	14.0	*X*	353.18401	132.48392	38.25820	5.89083	0.0840002	0.17231627	3.1982951	20	2 12.2	18.1
31322	1998 HS_{14}	14.3	*X*	102.93198	287.72411	112.40075	2.71748	0.1782249	0.17368176	3.1815096	20	2 14.9	18.8
31323	Lysá hora	13.4	*X*	14.27862	359.60116	48.01416	13.32650	0.1232483	0.21270247	2.7794212	20	—	—
31324	Jiřímrázek	14.1	*X*	181.66331	322.86865	100.93028	9.82266	0.0243561	0.18447491	3.0561724	20	5 27.3	18.5
31325	1998 HN_{33}	13.8	*X*	174.50882	70.29763	4.41208	10.56847	0.0180934	0.18435413	3.0575070	20	5 27.9	18.4
31326	1998 HF_{34}	13.7	*X*	85.03854	202.15406	24.13095	10.32974	0.0284614	0.19186638	2.9771688	20	8 28.5	18.0
31327	1998 HM_{34}	13.9	*X*	78.72495	260.05413	181.53664	10.88005	0.0218175	0.17374783	3.1807030	20	2 11.2	18.4
31328	1998 HV_{47}	14.2	*X*	76.92212	27.48018	80.77096	6.29040	0.1063047	0.17740175	3.1368767	20	3 28.8	18.5
31329	1998 HU_{57}	13.6	*X*	100.53831	48.20655	20.95384	6.23350	0.0709470	0.17438535	3.1729462	20	3 4.8	18.0
31330	1998 HB_{84}	13.8	*X*	73.92688	273.66930	185.74192	10.41682	0.1934461	0.17595655	3.1540296	20	3 22.9	17.7
31331	1998 HU_{92}	14.1	*X*	92.82175	169.00529	34.99004	11.31424	0.0395826	0.18843127	3.0132424	20	8 11.0	18.5
31332	1998 HC_{101}	14.0	*X*	109.88688	127.52291	32.45544	1.65816	0.1830396	0.18572433	3.0424504	20	7 17.8	18.8
31333	1998 HD_{101}	13.3	*X*	117.92798	14.82080	43.42879	10.55705	0.1019005	0.17338753	3.1851079	20	3 18.7	18.1
31334	1998 HW_{102}	13.6	*X*	19.42924	15.04876	146.07103	1.43821	0.1242887	0.17362086	3.1822536	20	3 7.9	17.4
31335	1998 HY_{124}	12.7	*X*	230.80450	231.54432	77.67407	23.47135	0.0589974	0.17296721	3.1902658	20	3 13.2	17.9
31336	Chenyuhsin	14.5	*X*	90.23448	293.37134	194.02773	9.12959	0.0890681	0.18260705	3.0769778	20	5 4.3	18.8
31337	1998 HA_{134}	13.8	*X*	160.09724	275.39710	157.44082	10.19027	0.0828243	0.18477554	3.0528566	20	5 16.5	18.6
31338	Lipperhey	13.3	*X*	298.89456	161.91361	53.24694	9.56474	0.0596038	0.12398052	3.9832149	20	2 5.5	19.0
31339	1998 KY_{30}	13.5	*X*	37.77141	56.53418	64.79854	14.26217	0.1881566	0.17161606	3.2069887	20	2 28.8	17.4
31340	1998 KW_{53}	12.6	*X*	77.07479	20.10904	84.24109	23.19737	0.0822819	0.17204047	3.2017123	20	3 31.5	17.5
31341	1998 KH_{55}	12.9	*X*	29.46053	151.84479	131.19055	16.96809	0.0747574	0.18654890	3.0334785	20	8 31.6	16.9
31342	1998 MU_{31}	10.4	*X*	299.37904	191.36560	102.96800	24.41580	0.0767326	0.08253735	5.2243915	20	5 12.9	17.4
31343	1998 NT	15.4	*X*	333.67374	242.83427	131.95528	28.91917	0.0290886	0.36684411	1.9326284	20	11 26.2	18.2
31344	Agathon	10.9	*X*	232.11773	325.42131	27.25122	7.47520	0.0377466	0.07969180	5.3480274	20	4 28.5	18.1
31345	1998 PG	17.4	*X*	199.76446	156.17010	222.72345	6.50345	0.3914686	0.34454408	2.0151445	20	4 8.4	21.3
31346	1998 PB_{1}	17.1	*X*	202.95867	350.50080	299.73494	5.96401	0.4299548	0.34080568	2.0298542	20	—	—
31347	1998 QV_{90}	15.0	*X*	355.18746	213.79904	59.05539	4.96789	0.1649615	0.30878127	2.1678809	20	7 1.7	16.2
31348	1998 QF_{92}	15.1	*X*	74.23269	283.37250	23.02689	21.88147	0.0771195	0.36520555	1.9384048	20	—	—
31349	Uria–Monzon	16.8	*X*	334.99674	290.14244	23.28658	2.78129	0.0862663	0.30785914	2.1722077	20	7 28.9	18.7
31350	1998 SF_{2}	15.5	*X*	265.33472	233.28660	105.70058	5.39404	0.2161864	0.30484390	2.1865078	20	4 23.1	18.5
31351	1998 SD_{24}	15.2	*X*	77.89168	306.67909	24.90774	21.52757	0.0614478	0.36895136	1.9252626	20	—	—
31352	1998 SP_{135}	16.0	*X*	321.74690	248.70808	69.97508	3.15288	0.2140693	0.30882000	2.1676996	20	6 22.3	17.0
31353	1998 TE	15.1	*X*	97.93466	189.84755	233.15094	5.64246	0.1027699	0.28943380	2.2634447	20	2 6.9	17.7
31354	1998 TR_{3}	14.0	*X*	92.93367	277.50994	32.08836	21.68478	0.0867000	0.36700274	1.9320714	20	—	—
31355	1998 TT_{6}	14.0	*X*	57.45501	217.05559	57.23415	7.17089	0.0923984	0.26645658	2.3917645	20	10 13.5	17.0
31356	1998 TN_{10}	16.0	*X*	3.64331	183.78058	37.71294	5.11331	0.0979813	0.29761009	2.2217965	20	4 21.9	17.6
31357	1998 UP_{20}	14.3	*X*	148.81493	171.07240	48.21525	7.63335	0.1423727	0.26857049	2.3791976	20	11 11.3	17.9
31358	1998 UR_{23}	15.2	*X*	344.53595	96.52503	155.39357	6.38972	0.1878821	0.30310878	2.1948442	20	4 25.6	16.7
31359	1998 UA_{28}	14.9	*X*	2.89706	305.81859	215.27796	23.02763	0.1940774	0.28766202	2.2727292	20	1 1.1	17.7
31360	Huangyihsuan	14.9	*X*	229.00317	305.25830	349.03165	1.85071	0.1061164	0.29133789	2.2535718	20	1 25.3	18.0

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Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
	m		°	°	°	°		°				
31361 1998 VQ_{29}	12.9	*X*	81.08819	86.57383	256.73023	11.88489	0.1982164	0.23240998	2.6199894	20	—	—
31362 1998 VU_{41}	14.8	*X*	335.77532	161.80622	129.08979	2.96203	0.0851297	0.29618021	2.2289416	20	6 20.6	16.7
31363 Shulga	15.3	*X*	343.11359	358.39288	97.84719	3.23311	0.1719993	0.27294613	2.3537017	20	—	—
31364 1998 WM_6	16.1	*X*	39.59229	200.30772	92.89915	2.56834	0.0680984	0.30948093	2.1646123	20	10 18.1	18.3
31365 1998 WF_7	14.5	*X*	11.59823	219.66714	69.30311	8.03137	0.2079380	0.26142803	2.4223373	20	9 12.3	16.8
31366 1998 WF_8	15.0	*X*	100.45133	138.21571	282.31644	6.13742	0.0917941	0.28485791	2.2876199	20	2 6.9	17.6
31367 1998 WB_9	13.8	*X*	106.52255	256.95744	85.17479	24.23880	0.3157147	0.27700362	2.3306609	20	—	—
31368 1998 WW_{23}	12.5	*X*	70.83402	106.22115	91.16419	15.25190	0.2511578	0.19704105	2.9248139	20	8 3.1	16.8
31369 1998 WX_{26}	15.8	*X*	320.01792	90.09081	114.07561	1.89652	0.1815367	0.28034118	2.3121257	20	1 2.7	18.4
31370 1998 XS_3	14.0	*X*	11.36355	27.36416	44.83161	3.43716	0.1294129	0.18453661	3.0554911	20	—	—
31371 1998 XN_{10}	15.4	*X*	299.93231	32.76159	128.41037	3.00226	0.1598088	0.27201742	2.3590559	20	—	—
31372 1998 XN_{11}	14.6	*X*	130.18171	122.87478	78.03784	6.66009	0.0769146	0.30443972	2.1884427	20	10 7.9	17.6
31373 1998 XN_{12}	13.3	*X*	4.90909	85.94461	73.26639	14.77558	0.1026464	0.23233296	2.6205684	20	2 4.9	16.5
31374 Hruskova	15.7	*X*	62.14490	48.98547	42.04107	1.46635	0.1357707	0.28377743	2.2934229	20	1 27.1	17.6
31375 Krystufek	15.2	*X*	111.96572	103.94629	340.24740	4.84101	0.0303593	0.28894258	2.2660093	20	3 17.9	17.9
31376 Leobauersfeld	15.4	*X*	222.03380	14.46447	40.02255	8.94990	0.1088252	0.29997626	2.2100976	20	6 27.5	18.5
31377 Kleinwort	14.9	*X*	349.94915	249.74017	294.32097	5.47473	0.1359836	0.28333575	2.2958057	20	1 26.3	17.1
31378 Neidinger	14.9	*X*	284.59310	135.08818	29.73746	2.75330	0.1506470	0.27254922	2.3559863	20	—	—
31379 1998 XX_{51}	13.8	*X*	333.67338	150.97344	63.40388	19.77671	0.1900116	0.23869789	2.5737735	20	2 21.9	17.2
31380 Hegyesi	15.1	*X*	301.89186	103.27456	7.18580	6.89804	0.0605787	0.27125448	2.3634773	20	—	—
31381 1998 XW_{86}	13.7	*X*	35.29119	320.04297	236.55086	8.99059	0.0354923	0.29363720	2.2417921	20	5 6.8	16.1
31382 1998 XN_{89}	13.3	*X*	274.16751	327.95449	263.74418	12.88296	0.1179269	0.23538234	2.5978863	20	—	—
31383 1998 XJ_{94}	14.0	*X*	108.12741	53.29320	175.88557	4.44160	0.0995394	0.30519204	2.1848447	20	10 19.4	16.8
31384 1998 XE_{96}	15.4	*X*	158.91576	261.19778	119.04867	7.02488	0.0993400	0.28504680	2.2866091	20	3 3.7	18.5
31385 1998 XF_{96}	14.0	*X*	299.98491	155.19919	123.25060	14.52959	0.1389073	0.24114912	2.5563026	20	4 3.1	17.6
31386 1998 YG_1	14.6	*X*	12.04472	234.98579	11.34312	4.59283	0.0956214	0.29397821	2.2400581	20	6 18.4	16.7
31387 1998 YA_2	14.5	*X*	136.70426	228.50297	321.53705	4.43327	0.0503818	0.30097512	2.2052051	20	9 23.9	17.3
31388 1998 YL_2	15.7	*X*	247.24937	93.09381	93.93558	2.20343	0.1275271	0.26800507	2.3825428	20	—	—
31389 Alexkaplan	15.2	*X*	221.93482	74.35950	98.82465	3.39024	0.1235495	0.26341237	2.4101567	20	12 2.2	18.3
31390 1998 YB_4	15.5	*X*	207.73171	130.11333	261.65298	6.86762	0.2063093	0.29603330	2.2296790	20	5 4.4	19.1
31391 1998 YA_5	16.2	*X*	8.68156	40.92753	168.70851	3.23124	0.0457672	0.29355549	2.2422081	20	4 14.7	18.4
31392 1998 YJ_5	13.6	*X*	0.88150	168.59354	52.90729	15.53655	0.0601222	0.23694647	2.5864409	20	4 25.6	16.7
31393 1998 YG_8	14.9	*X*	329.66110	153.39908	201.60892	3.52660	0.0192186	0.30306892	2.1950367	20	9 21.5	17.2
31394 1998 YX_9	15.9	*X*	42.47036	246.61286	237.69840	1.29443	0.1672463	0.28278520	2.2987845	20	2 8.6	17.6
31395 1998 YB_{11}	15.5	*X*	293.95283	251.88008	310.50931	4.26251	0.0976778	0.27613784	2.3355299	20	—	—
31396 1998 YQ_{12}	14.5	*X*	262.21533	166.94392	102.57926	8.27018	0.1020316	0.28229028	2.3014706	20	1 31.2	17.8
31397 1998 YR_{15}	14.6	*X*	235.23800	23.65039	261.60500	2.79947	0.2253300	0.28087265	2.3092081	20	1 17.2	18.5
31398 1998 YU_{29}	14.7	*X*	283.59651	342.66236	66.74211	11.74625	0.2559898	0.25989642	2.4318448	20	8 24.5	17.5
31399 1998 YF_{30}	13.2	*X*	358.48945	137.53021	30.96338	14.66107	0.1030763	0.23626083	2.5914424	20	2 9.2	16.5
31400 Dakshdua	15.2	*X*	15.71371	40.04167	111.63885	3.24178	0.1001901	0.28657224	2.2784874	20	1 28.6	17.3
31401 1999 AK	13.3	*X*	267.10559	304.54552	249.62098	7.60465	0.1388156	0.22615476	2.6680803	20	—	—
31402 Negishi	12.7	*X*	337.64590	313.31327	305.81412	16.48346	0.1776880	0.24417782	2.5351203	20	4 14.8	15.8
31403 1999 AV	15.0	*X*	319.45858	146.82763	4.37933	3.25417	0.1920220	0.27448558	2.3448930	20	—	—
31404 1999 AL_1	15.9	*X*	29.36979	240.22053	176.69642	0.36179	0.1954718	0.27449075	2.3448636	20	—	—
31405 1999 AD_2	14.7	*X*	33.64531	173.51125	61.29285	4.99983	0.1070263	0.29422862	2.2387870	20	7 13.9	16.8
31406 1999 AA_4	14.4	*X*	45.92463	284.91725	344.75763	5.69129	0.1737977	0.25209002	2.4817933	20	9 27.7	17.6
31407 1999 AP_4	13.8	*X*	209.88886	195.16278	114.40929	16.22834	0.1152970	0.23418548	2.6067302	20	2 1.5	17.8
31408 1999 AV_4	14.7	*X*	312.01655	62.33894	78.11337	3.07178	0.1521525	0.27177852	2.3604382	20	—	—
31409 1999 AB_5	14.4	*X*	300.08230	121.13974	95.40395	6.50278	0.1295924	0.27832363	2.3232860	20	1 2.2	17.2
31410 1999 AY_5	14.9	*X*	156.58628	349.15122	78.97079	7.02096	0.1285779	0.29046017	2.2581095	20	5 5.7	18.1
31411 1999 AU_9	14.9	*X*	312.10705	308.65408	76.14162	5.39105	0.1279134	0.30339140	2.1934810	20	10 9.7	16.6
31412 1999 AP_{20}	15.4	*X*	1.14081	241.89032	141.31553	3.82531	0.1911541	0.31199226	2.1529809	20	—	—
31413 1999 AR_{21}	15.4	*X*	11.74064	228.84091	301.19684	1.82516	0.0782143	0.28234722	2.3011612	20	2 19.3	17.8
31414 Rotarysusa	15.0	*X*	272.20404	145.85512	161.92190	5.37659	0.1521826	0.29013776	2.2597820	20	3 26.7	17.9
31415 1999 AK_{23}	14.7	*X*	140.33058	196.67107	158.61385	6.83938	0.2687439	0.28711909	2.2755934	20	1 26.1	18.1
31416 Peteworden	15.3	*X*	209.77618	28.02122	139.94197	3.15767	0.1387571	0.26018693	2.4300343	20	11 8.8	18.6
31417 1999 AD_{32}	14.0	*X*	245.59621	90.69553	115.67771	7.32916	0.0580732	0.27219478	2.3580310	20	—	—
31418 1999 AJ_{34}	15.0	*X*	114.38975	344.80341	167.25894	4.12015	0.0879317	0.29354275	2.2422729	20	7 6.4	17.9
31419 1999 AN_{37}	16.3	*X*	36.00385	42.57486	94.10005	1.54548	0.1572637	0.28313215	2.2969062	20	2 14.9	17.9
31420 1999 BV	15.4	*X*	202.69124	353.88795	15.85428	6.09642	0.2075729	0.29134943	2.2535123	20	4 3.4	18.9
31421 1999 BZ	13.4	*X*	2.78377	85.40161	73.00036	22.89330	0.0415593	0.23065417	2.6332687	20	2 6.9	17.2
31422 1999 BE_1	15.4	*X*	101.07343	208.63316	312.11169	4.03732	0.0907261	0.29405343	2.2396761	20	7 2.7	18.1
31423 1999 BR_2	14.8	*X*	3.12332	93.39351	70.74613	7.57789	0.0373310	0.28046305	2.3114559	20	2 3.6	17.5
31424 1999 BW_2	14.6	*X*	351.37887	180.37791	354.51153	11.55577	0.0680457	0.28002213	2.3138816	20	1 30.2	17.3
31425 1999 BF_3	13.6	*X*	146.61192	77.22658	113.56934	8.81660	0.1960239	0.25555453	2.4593122	20	10 7.1	17.8
31426 1999 BA_5	14.5	*X*	107.74272	299.17145	47.48216	1.26780	0.0902571	0.27053252	2.3676803	20	—	—
31427 1999 BS_5	15.4	*X*	183.93243	290.78987	260.55586	0.65600	0.1413750	0.26039674	2.4287288	20	11 9.3	18.9
31428 1999 BG_6	14.6	*X*	204.91612	23.08964	156.28123	11.90944	0.1039473	0.25915389	2.4364877	20	11 23.8	18.2
31429 Diegoazzaro	14.7	*X*	252.90783	195.92866	72.91961	7.93090	0.1016555	0.28052389	2.3111217	20	1 20.5	18.1
31430 1999 BX_8	14.8	*X*	299.07655	280.04966	192.37034	2.20622	0.1536858	0.26746123	2.3857714	20	—	—
31431 Cabibbo	14.3	*X*	115.90871	119.27050	135.22712	9.89409	0.2660040	0.21523525	2.7575737	20	11 22.9	19.3
31432 1999 BY_{12}	13.2	*X*	232.99768	9.79777	301.33326	19.29566	0.2563216	0.19170792	2.9788092	20	2 16.2	18.6
31433 1999 BA_{13}	15.6	*X*	231.58230	296.85089	259.50939	1.89818	0.1177955	0.26752108	2.3854155	20	—	—
31434 1999 BQ_{13}	14.6	*X*	263.15482	112.61831	331.63064	5.37231	0.0846439	0.30284685	2.1961096	20	10 10.3	16.8
31435 Benhauck	14.7	*X*	161.06967	99.78031	50.81077	4.74951	0.1031518	0.29509280	2.2344140	20	9 1.9	17.8
31436 1999 BJ_{15}	14.7	*X*	286.89198	331.43804	265.05853	4.17560	0.0941757	0.23266087	2.6181055	20	1 23.5	18.2
31437 Verma	15.0	*X*	234.07315	145.55349	80.03216	6.60726	0.1668486	0.27289913	2.3539719	20	—	—
31438 Yasuhitohayashi	15.2	*X*	311.32472	107.94009	43.29737	3.12667	0.1811139	0.27411183	2.3470240	20	—	—
31439 Mieyamanaka	14.7	*X*	318.25652	293.40266	277.55303	5.42020	0.1605552	0.28154136	2.3055502	20	1 12.2	17.3
31440 1999 BD_{26}	15.1	*X*	332.74988	50.01760	123.65370	5.57122	0.0833907	0.27783590	2.3260041	20	—	—

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	Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
		m		°	°	°	°		°				
31441	1999 BE_{28}	15.2	X	21.11519	244.91565	131.10421	8.94107	0.1917202	0.26872110	2.3783086	20	—	—
31442	Stark	14.6	X	184.30885	229.15080	304.03747	1.83556	0.1285969	0.25962459	2.4335419	20	10 17.8	18.3
31443	1999 CL_{2}	15.6	X	157.87854	110.74503	278.32459	5.09700	0.1490750	0.28793805	2.2712765	20	3 12.9	18.9
31444	1999 CW_{2}	15.5	X	29.65483	211.42161	9.76617	3.76324	0.1150943	0.29151986	2.2526339	20	6 13.8	17.5
31445	1999 CS_{5}	14.0	X	355.91839	300.29704	94.82124	6.32364	0.1108031	0.26243135	2.4161593	20	12 29.1	16.5
31446	1999 CV_{5}	13.4	X	199.00069	20.54223	3.40901	15.25934	0.1195581	0.24072992	2.5592694	20	4 16.9	17.5
31447	1999 CB_{8}	14.6	X	347.45455	132.10410	297.10131	2.41247	0.0552583	0.31470654	2.1405837	20	—	—
31448	1999 CO_{8}	15.0	X	155.54350	117.64065	95.45344	3.67135	0.0795788	0.30443342	2.1884729	20	11 20.1	17.8
31449	1999 CO_{9}	14.2	X	100.32591	38.14041	48.80769	7.50199	0.0697554	0.28220340	2.3019429	20	3 17.5	17.0
31450	Stevepreston	13.2	X	101.28122	18.71954	323.91876	10.74165	0.2660732	0.26606376	2.3941181	20	—	—
31451	Joenickell	15.3	X	252.37679	165.04687	102.15079	5.20062	0.1385811	0.28634117	2.2797130	20	1 13.6	18.5
31452	1999 CX_{12}	14.9	X	259.10903	312.71189	188.05684	5.66550	0.0565664	0.21760805	2.7374912	20	12 8.1	18.5
31453	1999 CY_{12}	14.0	X	80.77055	99.57868	177.18151	8.81518	0.1761005	0.20995374	2.8036275	20	11 12.5	18.4
31454	1999 CH_{14}	14.3	X	138.92285	76.84187	356.54232	5.09311	0.1669420	0.28475265	2.2881836	20	4 23.6	17.6
31455	1999 CU_{14}	13.9	X	32.96373	199.95424	165.57553	4.66651	0.0667933	0.21481052	2.7612073	20	12 21.8	17.6
31456	1999 CV_{14}	13.3	X	333.43382	302.74559	170.57982	15.88922	0.1742752	0.17650176	3.1475310	20	—	—
31457	1999 CW_{14}	15.3	X	207.01913	38.76096	171.55037	2.59500	0.1603471	0.26216416	2.4178007	20	12 26.3	18.7
31458	Delrosso	14.5	X	258.14118	276.40046	320.32718	7.03599	0.1735457	0.22970532	2.6405153	20	—	—
31459	1999 CB_{17}	13.1	X	88.35360	222.27558	112.24940	14.35768	0.1873951	0.22520058	2.6756114	20	—	—
31460	Jongsowfei	14.3	X	230.68186	32.64739	321.13031	7.82839	0.1782749	0.29131474	2.2536912	20	4 5.1	17.9
31461	Shannonlee	14.3	X	16.24092	135.69529	65.52816	6.86942	0.1432629	0.24060975	2.5601214	20	4 22.1	16.7
31462	Brchnelova	15.2	X	144.41562	60.35155	79.17082	3.45260	0.0787113	0.29641255	2.2277767	20	7 26.8	18.1
31463	Michalgeci	15.0	X	347.64994	88.90278	127.68605	3.97703	0.0926494	0.28479841	2.2879385	20	3 18.5	17.3
31464	Liscinsky	14.7	X	204.28566	31.10454	347.79954	7.78797	0.1792661	0.29124560	2.2540479	20	4 13.9	18.3
31465	Piyasiri	14.8	X	194.88231	110.41795	81.04927	3.46309	0.1181811	0.26185120	2.4197268	20	11 24.1	18.2
31466	Abualhassan	14.7	X	202.85557	141.58069	73.72832	3.16674	0.1285993	0.26529856	2.3987194	20	—	—
31467	1999 CG_{29}	15.5	X	134.82074	16.87114	330.25322	6.12059	0.2318711	0.27673604	2.3321630	20	1 9.2	18.8
31468	Albastaki	15.5	X	317.69066	352.46950	96.20151	3.29763	0.1819310	0.26756687	2.3851434	20	—	—
31469	Aizawa	14.5	X	279.16168	132.00062	82.81013	5.37472	0.1550953	0.27457511	2.3443832	20	—	—
31470	Alagappan	15.1	X	326.89244	271.58863	319.04813	2.91200	0.1392232	0.23624283	2.5915741	20	3 1.9	18.3
31471	Sallyalbright	14.2	X	176.05395	64.44447	40.47351	6.04919	0.0779180	0.29600000	2.2298462	20	7 16.7	17.2
31472	1999 CT_{36}	14.6	X	141.85713	299.40362	89.59700	6.76014	0.2100099	0.28429246	2.2906522	20	3 8.9	18.1
31473	Guangning	14.2	X	189.52203	243.05950	15.01256	5.14208	0.0917616	0.22274318	2.6952544	20	—	—
31474	Advaithanand	14.9	X	10.28306	64.77634	109.34805	4.80802	0.0739937	0.28215827	2.3021884	20	2 25.5	17.2
31475	Robbacchus	14.7	X	320.08631	272.77751	346.31343	6.00454	0.1204943	0.28531986	2.2851500	20	3 27.6	17.1
31476	Bocconcelli	15.0	X	125.81420	179.55022	55.45608	3.36668	0.1483671	0.25650139	2.4532562	20	11 7.7	18.6
31477	Meenakshi	14.9	X	15.08428	175.86128	21.87677	4.45440	0.0909159	0.28506225	2.2865265	20	4 7.2	17.0
31478	1999 CJ_{45}	13.9	X	168.90385	334.42946	349.74912	7.16742	0.1611666	0.27522545	2.3406887	20	1 8.2	17.4
31479	Botello	14.7	X	270.15184	245.14191	1.23273	6.52463	0.0731402	0.27735706	2.3286804	20	1 14.3	17.8
31480	Jonahbutler	14.9	X	105.93163	120.60667	342.89497	4.21440	0.1239493	0.28659624	2.2783602	20	4 20.3	17.8
31481	1999 CX_{47}	14.3	X	268.50122	9.99566	224.44562	0.23089	0.0849210	0.18228961	3.0805489	20	1 9.9	18.9
31482	Caddell	15.1	X	352.37354	25.90329	115.74626	3.09482	0.0772586	0.22931841	2.6434845	20	—	—
31483	Caulfield	15.2	X	271.41293	119.93127	87.83929	3.19122	0.1518684	0.27164158	2.3612314	20	—	—
31484	1999 CC_{49}	13.7	X	331.86142	152.82485	133.84645	16.92060	0.2586410	0.19633657	2.9318062	20	5 21.7	17.0
31485	1999 CM_{51}	13.1	X	69.95586	48.55445	346.92629	14.64024	0.2037209	0.22784239	2.6548890	20	—	—
31486	1999 CR_{52}	14.7	X	184.48179	210.08460	72.36572	12.43991	0.1339814	0.22400196	2.6851476	20	—	—
31487	Parthchopra	14.9	X	129.98655	147.17695	17.01745	6.33461	0.1072010	0.29553207	2.2321993	20	8 16.9	18.0
31488	1999 CM_{53}	14.2	X	157.93569	115.44536	121.81518	8.16533	0.0437787	0.21543499	2.7558689	20	12 7.6	18.2
31489	Matthewchun	14.7	X	316.44062	320.34905	119.96951	6.84900	0.0989716	0.26404625	2.4062978	20	12 26.3	17.3
31490	Swapnavdeka	14.6	X	122.61162	146.32901	93.48971	5.54817	0.1398757	0.25605978	2.4560760	20	11 11.7	18.4
31491	Demessie	14.6	X	344.75670	23.54673	338.83177	3.13331	0.0057457	0.25603476	2.4562360	20	10 14.6	17.7
31492	Jennarose	14.9	X	249.77147	294.73609	116.16838	5.64358	0.1426079	0.29810616	2.2193310	20	7 23.5	17.5
31493	Fernando–Peiris	14.9	X	327.78002	201.93570	33.76872	7.32437	0.1722133	0.23477342	2.6023763	20	3 9.5	17.9
31494	Emmafreedman	14.6	X	214.91164	75.56951	277.37746	2.60796	0.1933387	0.28733525	2.2744520	20	3 22.6	18.1
31495	Sarahgalvin	15.4	X	267.55880	262.27271	285.73253	2.28024	0.1199451	0.27005672	2.3704605	20	—	—
31496	Glowacz	14.6	X	211.15494	184.53450	267.84166	2.20824	0.0452254	0.25225570	2.4807065	20	8 9.4	17.8
31497	1999 CW_{61}	14.1	X	134.82213	95.63038	290.59279	12.08415	0.2104096	0.23770819	2.5809126	20	2 23.2	18.2
31498	1999 CX_{61}	13.3	X	248.33302	27.38638	275.96624	11.14586	0.2417466	0.23748071	2.5825604	20	2 17.1	17.9
31499	1999 CS_{64}	12.7	X	307.94922	202.17387	281.37706	15.86013	0.0931748	0.17646007	3.1480267	20	—	—
31500	Grutzik	14.9	X	276.12377	6.35776	265.40101	3.86716	0.1382048	0.28207178	2.3026590	20	2 12.2	18.0
31501	Williamhang	15.1	X	176.82744	211.34486	308.03607	2.09737	0.1421830	0.25579340	2.4577809	20	9 21.1	18.8
31502	Hellerstein	15.3	X	158.63635	305.73107	252.22874	2.38938	0.1638129	0.25702275	2.4499375	20	10 22.0	19.2
31503	Jessicahong	14.9	X	114.70900	249.09046	228.18570	5.65210	0.1896894	0.24370117	2.5384248	20	5 31.2	18.6
31504	Jaisonjain	15.1	X	220.91027	351.39316	206.25520	5.83909	0.0575036	0.26563976	2.3966650	20	—	—
31505	1999 CE_{74}	14.2	X	121.55709	342.09462	271.73756	1.60935	0.1393431	0.25871494	2.4392429	20	11 26.7	18.1
31506	1999 CZ_{76}	14.2	X	72.46172	44.08531	268.58005	4.62123	0.1420749	0.26091912	2.4254860	20	12 22.2	17.7
31507	Williamjin	15.1	X	92.29524	190.87477	301.62559	5.06271	0.0991656	0.28693896	2.2765457	20	5 8.9	17.9
31508	Kanevsky	14.4	X	144.56202	314.71841	343.84712	1.75017	0.0387958	0.27172444	2.3607513	20	—	—
31509	1999 CT_{84}	15.4	X	64.13973	357.49895	39.76206	10.67401	0.1732279	0.27675149	2.3320762	20	—	—
31510	Saumya	15.7	X	165.60369	33.75061	71.55582	5.86009	0.1315615	0.29614352	2.2291257	20	7 3.8	18.9
31511	Jessicakim	15.0	X	44.35023	150.96286	358.84764	3.28117	0.1261328	0.23878110	2.5731755	20	3 26.9	17.7
31512	Koyyalagunta	14.7	X	298.12132	184.53660	67.71982	4.94907	0.0476970	0.23738890	2.5832263	20	3 7.3	18.1
31513	Lafazan	15.3	X	0.81579	272.64230	105.39497	7.84837	0.1389381	0.26381409	2.4077093	20	12 18.1	17.8
31514	1999 CL_{101}	13.9	X	31.69326	275.22414	14.68250	6.96610	0.0352639	0.25203356	2.4821640	20	9 16.5	17.0
31515	1999 CN_{101}	14.3	X	144.47994	279.08758	113.34992	9.70182	0.0714474	0.23487616	2.6016174	20	3 6.3	18.0
31516	Leibowitz	14.6	X	182.49579	184.52119	32.80798	5.49143	0.1457927	0.26076843	2.4264203	20	12 9.6	18.2
31517	Mahoui	14.5	X	234.94542	295.16871	208.21695	5.20935	0.0758123	0.26297565	2.4128243	20	11 17.0	17.4
31518	1999 CG_{103}	13.9	X	225.32346	106.47021	156.09378	13.00123	0.1517097	0.22906064	2.6454673	20	—	—
31519	Mimamarquez	15.1	X	0.03407	9.05314	185.73112	6.56433	0.0572058	0.28475235	2.2881852	20	3 7.6	17.5
31520	1999 CB_{105}	14.4	X	15.60971	262.54217	173.35096	15.52822	0.1696961	0.22786222	2.6547349	20	—	—

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

	Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
		m		°	°	°	°		°				
31521	1999 CT_{106}	14.0	X	311.81654	0.18207	209.32235	12.76306	0.1197644	0.23258399	2.6186824	20	1 14.2	17.7
31522	McCutchen	15.8	X	276.69198	280.32396	154.39989	7.65745	0.1029221	0.25930239	2.4355574	20	10 11.4	18.5
31523	Jessemichel	14.9	X	55.28366	238.09868	192.13717	5.35645	0.0730432	0.22988595	2.6391319	20	—	—
31524	1999 CE_{112}	14.2	X	10.35413	353.93691	246.00181	10.46240	0.1709104	0.24176907	2.5519308	20	6 8.1	16.5
31525	Nickmiller	14.8	X	223.53236	350.79944	231.72150	6.12604	0.1296162	0.26728352	2.3868287	20	—	—
31526	1999 CW_{124}	13.5	X	258.75481	200.76820	64.89940	15.35374	0.0487746	0.23364513	2.6107476	20	2 7.1	17.4
31527	1999 CM_{126}	13.5	X	329.02807	102.99054	67.67657	15.67991	0.2020228	0.22943686	2.6425746	20	—	—
31528	1999 CU_{126}	14.3	X	219.55395	259.48820	78.24397	23.23751	0.2417111	0.28399226	2.2922662	20	3 21.4	18.7
31529	1999 CW_{127}	13.6	X	51.36534	328.76485	60.94381	22.48737	0.0579890	0.22279993	2.6947967	20	—	—
31530	1999 CQ_{128}	13.8	X	121.80332	20.93036	76.06027	14.06281	0.1279709	0.24042457	2.5614358	20	5 8.9	17.6
31531	ARRL	14.6	X	326.60288	137.65190	157.08533	2.42664	0.0833889	0.19912463	2.9043753	20	6 8.3	18.3
31532	1999 CZ_{146}	14.7	X	161.35937	15.65731	306.39581	1.00002	0.2228093	0.22489891	2.6780036	20	1 8.9	19.1
31533	1999 CV_{148}	15.6	X	244.05768	17.34267	330.24397	0.85572	0.0916216	0.24377859	2.5378873	20	4 24.4	19.1
31534	1999 CE_{149}	15.2	X	286.85536	95.86688	189.98309	1.35441	0.1011939	0.23616261	2.5921609	20	3 26.0	18.6
31535	1999 CE_{150}	14.7	X	267.87448	102.82655	164.90471	9.64188	0.0785582	0.23121242	2.6290284	20	2 11.2	18.4
31536	1999 CX_{150}	14.1	X	243.91856	104.72414	159.75031	10.64182	0.2182936	0.17899012	3.1182913	20	1 10.7	19.5
31537	1999 DZ	15.2	X	183.66181	143.25884	0.29959	7.31104	0.1386094	0.29850127	2.2173722	20	9 14.1	18.3
31538	1999 DM_1	14.9	X	291.19914	339.77923	178.46931	25.05831	0.2624274	0.26921096	2.3754227	20	—	—
31539	1999 DQ_1	12.4	X	150.87062	288.45724	330.79938	17.03386	0.1773324	0.17093018	3.2155619	20	12 14.3	18.0
31540	1999 DK_2	13.2	X	74.37207	88.30845	43.62956	15.67765	0.0764252	0.23828766	2.5767266	20	4 16.4	16.4
31541	1999 DC_3	14.9	X	52.32106	151.25531	62.62681	7.68487	0.1392635	0.28875078	2.2670126	20	7 19.5	17.4
31542	1999 DR_3	12.2	X	334.88600	153.57617	76.06392	12.16247	0.0484803	0.18904921	3.0066726	20	4 5.4	16.4
31543	1999 DM_5	14.5	X	311.36847	326.55661	212.99163	14.37910	0.1232989	0.22851020	2.6497139	20	—	—
31544	1999 DZ_5	13.7	X	237.12041	336.52747	233.72798	13.96012	0.0781747	0.22218996	2.6997264	20	—	—
31545	1999 DN_6	13.6	X	49.29442	26.07068	144.23672	9.88382	0.1998652	0.23587963	2.5942336	20	5 19.7	16.5
31546	1999 DP_6	13.6	X	34.45599	64.28302	109.01944	15.81200	0.1258334	0.23305814	2.6151295	20	4 21.9	16.9
31547	1999 DT_6	13.3	X	76.31736	94.07658	76.15765	25.68092	0.0509169	0.23633995	2.5908640	20	6 4.2	16.6
31548	1999 DV_6	12.8	X	163.89713	36.26928	68.58770	16.17504	0.0392576	0.23757499	2.5818772	20	6 26.6	16.5
31549	1999 DY_6	13.5	X	40.87078	197.71816	60.26181	14.21789	0.1374399	0.24191877	2.5508779	20	9 6.6	16.9
31550	1999 DT_7	15.1	X	273.41329	346.55539	126.62337	7.09743	0.0237429	0.26066333	2.4270726	20	12 7.3	18.1
31551	1999 DV_7	15.0	X	18.19157	161.42046	3.98647	8.02804	0.1458097	0.28050108	2.3112470	20	2 24.8	16.9
31552	1999 EJ	13.9	X	162.47984	285.96812	323.05030	2.80861	0.1228463	0.21367604	2.7709722	20	12 21.5	18.2
31553	1999 EG_2	15.6	X	233.07471	338.27388	336.78344	0.47947	0.0857671	0.23363897	2.6107935	20	3 2.9	19.2
31554	1999 EJ_2	13.0	X	348.07900	55.91783	192.02927	14.86609	0.0796731	0.23709532	2.5853582	20	5 10.2	16.1
31555	Wheeler	15.0	X	67.43531	123.13452	50.65288	6.91139	0.0457579	0.28773689	2.2723350	20	5 24.9	17.5
31556	Shatner	14.8	X	154.30754	170.80054	149.89221	4.79890	0.2190364	0.22288099	2.6941433	20	1 1.1	19.2
31557	Holleybakich	14.5	X	98.40470	288.75450	11.89796	8.88726	0.1460460	0.21306328	2.7762824	20	12 23.6	19.0
31558	1999 EE_6	15.6	X	35.27994	94.18531	18.48295	6.32902	0.0971062	0.27437101	2.3455457	20	1 10.2	18.0
31559	Alonmillet	15.4	X	191.17683	344.92245	117.91240	6.12200	0.0890721	0.29511582	2.2342978	20	7 30.6	18.2
31560	1999 EQ_{14}	13.5	X	78.18230	12.40590	359.66575	9.10575	0.1862570	0.26896179	2.3768895	20	—	—
31561	1999 FT_5	14.6	X	239.06760	203.20827	8.83419	6.92685	0.0384266	0.26632914	2.3925274	20	—	—
31562	1999 FU_6	15.7	X	309.95427	32.27927	141.48155	3.21958	0.0737505	0.27563818	2.3383515	20	—	—
31563	1999 FW_8	14.7	X	237.55834	50.76441	118.96456	3.44747	0.1200893	0.26272672	2.4143481	20	12 18.6	17.4
31564	1999 FF_9	13.9	X	59.36039	57.60612	80.43091	5.93935	0.1243023	0.28180219	2.3041273	20	4 4.4	16.2
31565	1999 FO_9	14.3	X	117.10046	268.40481	150.14066	5.06067	0.1883257	0.28050647	2.3112173	20	3 16.1	17.2
31566	1999 FF_{10}	14.1	X	300.89592	271.28257	356.66850	13.56395	0.1244282	0.23446986	2.6046220	20	3 17.5	17.4
31567	1999 FG_{10}	14.9	X	45.20980	343.04053	168.75010	4.39479	0.1144824	0.23502053	2.6005518	20	3 31.7	17.8
31568	1999 FQ_{14}	15.2	X	330.92531	52.36900	27.04617	1.66922	0.1345672	0.26223764	2.4173491	20	—	—
31569	1999 FL_{18}	14.2	X	153.94665	58.01028	330.64318	6.39729	0.1232252	0.28007665	2.3135814	20	3 8.3	17.5
31570	1999 FG_{19}	14.3	X	67.64268	240.68016	280.34706	1.96155	0.1775463	0.23944770	2.5683977	20	5 29.4	17.4
31571	1999 FY_{20}	15.1	X	345.95164	159.32603	94.82640	3.44314	0.0360731	0.23831566	2.5765248	20	5 16.7	18.2
31572	1999 FM_{22}	13.8	X	162.54952	65.04930	281.29006	5.41994	0.1749753	0.27722534	2.3294180	20	1 28.3	17.3
31573	Mohanty	14.5	X	63.78654	211.84184	198.31274	4.71401	0.0521065	0.27280305	2.3545246	20	—	—
31574	Moshova	15.0	X	346.76944	333.72732	154.05880	6.05425	0.0735578	0.27052259	2.3677383	20	—	—
31575	Nikhilmurthy	15.4	X	56.72501	188.33094	340.15901	6.27954	0.0690706	0.28403609	2.2920304	20	5 1.2	17.9
31576	Nandigala	15.0	X	42.74654	257.63974	277.35993	3.30950	0.2001780	0.23695775	2.5863588	20	5 9.7	17.6
31577	1999 FO_{27}	14.2	X	24.06164	344.99738	181.97746	14.34599	0.0032062	0.23256991	2.6187882	20	3 12.2	17.5
31578	1999 FM_{29}	14.1	X	186.74442	101.44644	112.53633	4.86888	0.0402423	0.21299376	2.7768865	20	12 10.9	18.0
31579	1999 FX_{29}	14.1	X	184.85139	142.75927	125.78522	5.95554	0.1070829	0.17096885	3.2150771	20	—	—
31580	Bridgetoei	14.7	X	253.39144	94.41746	35.75680	4.46312	0.1458778	0.25922881	2.4360183	20	11 12.2	17.5
31581	Onnink	14.9	X	157.05084	68.64051	19.23843	5.51962	0.1154702	0.28733515	2.2744526	20	5 29.5	18.2
31582	Miraeparker	15.2	X	349.59459	19.76133	186.45333	3.19130	0.1071568	0.23253817	2.6190264	20	3 9.9	18.2
31583	1999 FP_{30}	13.7	X	312.47375	267.69070	258.70228	4.14925	0.0910733	0.17650370	3.1475080	20	—	—
31584	Emaparker	14.4	X	336.96874	68.75501	52.31443	7.50053	0.0570997	0.26765868	2.3845979	20	—	—
31585	1999 FJ_{31}	13.8	X	219.12495	249.36763	41.57511	11.97562	0.1922511	0.22380033	2.6867602	20	1 20.8	18.5
31586	1999 FA_{32}	13.2	X	276.43133	92.97343	186.66993	6.73198	0.1995256	0.18320209	3.0703115	20	2 26.0	17.9
31587	1999 FQ_{32}	15.2	X	260.53227	103.33168	53.23637	2.96517	0.1351986	0.26245410	2.4160197	20	—	—
31588	Harrypaul	14.8	X	105.79792	164.62769	121.30982	5.34940	0.0362346	0.21166786	2.7884708	20	12 6.7	18.9
31589	1999 FX_{33}	13.6	X	159.43788	268.47399	67.96107	6.51445	0.1144366	0.17779208	3.1322838	20	1 22.9	18.4
31590	1999 FS_{34}	14.4	X	30.18909	178.50655	3.82608	12.76243	0.1670648	0.23545979	2.5973165	20	4 17.4	17.0
31591	1999 FD_{35}	14.2	X	296.38819	313.16917	223.08838	0.41215	0.1418259	0.17585432	3.1552518	20	—	—
31592	Jacobplaut	15.0	X	142.01354	250.83181	230.52590	6.06443	0.1367504	0.29203966	2.2499601	20	6 29.9	18.4
31593	Romapradhan	15.3	X	169.37180	328.45469	94.13020	2.01341	0.0634174	0.28823165	2.2697339	20	5 8.3	18.3
31594	Drewprevost	15.2	X	113.09750	255.27167	325.07485	4.97805	0.0906826	0.25275283	2.4774526	20	10 1.6	18.8
31595	Noahpritt	14.9	X	236.93751	265.27263	119.05684	2.77042	0.1039487	0.29167633	2.2518282	20	6 3.6	17.8
31596	Ragavender	15.3	X	298.08953	1.79388	134.15165	1.81353	0.1350064	0.26720139	2.3873178	20	—	—
31597	Allisonmarie	14.6	X	213.15717	334.89984	193.77896	5.98933	0.0818668	0.25969718	2.4330884	20	11 20.9	17.8
31598	Danielrudin	14.4	X	56.34550	305.94166	6.89297	6.49352	0.1239831	0.25698967	2.4501477	20	11 30.5	17.8
31599	Chloesherry	14.3	X	194.52043	285.12992	29.62753	8.19370	0.0889812	0.27552974	2.3389650	20	1 18.6	17.7
31600	Somasundaram	14.7	X	233.52249	273.13345	212.00563	4.62968	0.1120708	0.21126329	2.7920296	20	10 5.9	18.7

ELEMENTS AND OPPOSITION DATES IN 2020

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Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
	m		°	°	°	°		°				
31601 1999 GF	13.5	X	268.46698	312.37236	358.30478	14.74127	0.1292667	0.23593336	2.5938398	20	3 29.7	17.3
31602 1999 GG	13.9	X	219.68516	136.76556	163.05163	0.38849	0.1379007	0.18022418	3.1040403	20	2 3.6	18.8
31603 1999 GQ_3	13.6	X	248.96123	131.56090	201.37330	7.42066	0.1439319	0.23330979	2.6132487	20	4 6.2	17.5
31604 1999 GH_4	14.5	X	281.81768	331.69897	243.37782	5.94882	0.0689548	0.27042951	2.3682815	20	—	—
31605 Braschi	14.0	X	163.34887	295.93568	28.39909	7.05281	0.1135005	0.22362385	2.6881735	20	1 5.8	18.1
31606 1999 GX_4	15.4	X	113.04951	338.05538	154.14021	2.61391	0.1655123	0.24103097	2.5571379	20	6 15.3	19.2
31607 1999 GQ_5	14.2	X	197.15607	261.36415	33.10701	3.26597	0.0475513	0.22441846	2.6818243	20	—	—
31608 1999 GR_5	14.1	X	150.15853	231.26017	235.59176	8.83303	0.0484600	0.19191811	2.9766338	20	6 12.6	18.4
31609 1999 GT_5	13.5	X	204.05419	152.58972	110.98435	0.50197	0.1240559	0.17204651	3.2016374	20	—	—
31610 1999 GC_6	12.9	X	32.27084	203.49543	60.83484	15.93020	0.0815086	0.24349145	2.5398822	20	8 24.2	16.4
31611 1999 GF_6	14.3	X	338.97836	280.32079	141.47344	6.50548	0.1142720	0.25951432	2.4342313	20	—	—
31612 1999 GG_6	14.7	X	223.77371	355.54068	171.28422	9.16989	0.0848310	0.21118258	2.7927409	20	11 21.9	18.7
31613 1999 GO_8	14.5	X	262.03670	294.61842	95.93658	3.84430	0.0294004	0.24387385	2.5372264	20	7 26.1	17.7
31614 1999 GV_{10}	13.7	X	122.35736	158.66011	163.03528	1.81257	0.1466784	0.16954917	3.2329992	20	—	—
31615 1999 GF_{16}	13.6	X	44.19886	26.42831	31.51622	2.96898	0.0853751	0.17501837	3.1652909	20	—	—
31616 1999 GM_{17}	12.7	X	276.81450	177.71093	74.53578	10.72601	0.0406821	0.18303893	3.0721357	20	2 18.9	17.2
31617 Meeraradha	14.7	X	354.95441	193.35478	39.93987	9.27751	0.1304147	0.28321387	2.2964644	20	4 23.2	16.4
31618 Tharakan	14.8	X	68.49525	136.58923	73.61414	7.15957	0.0613049	0.29117353	2.2544198	20	7 25.8	17.4
31619 Jodietinker	15.1	X	110.16037	93.95660	72.97118	5.84482	0.1322833	0.29077904	2.2564583	20	7 29.1	18.3
31620 1999 GB_{19}	14.2	X	7.53392	72.72779	74.72381	12.88765	0.0942615	0.27529659	2.3402854	20	1 11.7	16.8
31621 1999 GH_{19}	13.8	X	285.40632	106.87611	175.23591	11.43305	0.1964806	0.18506049	3.0497219	20	3 10.5	18.4
31622 1999 GL_{19}	13.9	X	313.97192	355.60253	192.30630	6.35002	0.0439436	0.27199724	2.3591726	20	—	—
31623 1999 GK_{20}	13.4	X	186.12094	225.92724	122.11363	4.69274	0.1179729	0.22792455	2.6542509	20	2 26.1	17.5
31624 1999 GP_{20}	13.5	X	71.26046	101.17803	38.68249	12.67964	0.1282407	0.23550508	2.5969835	20	4 27.5	16.6
31625 1999 GR_{20}	14.1	X	354.79787	243.01656	40.17335	10.81791	0.1024127	0.24057567	2.5603632	20	7 12.9	17.0
31626 1999 GV_{20}	13.1	X	156.90249	307.42866	64.73073	11.69020	0.0706608	0.18172490	3.0869274	20	3 3.1	17.9
31627 Ulmera	14.4	X	307.98127	64.81630	89.96232	7.39549	0.0473954	0.26703929	2.3882838	20	—	—
31628 Vorperian	14.9	X	60.08584	203.34590	15.67138	5.08657	0.0990402	0.24421407	2.5348694	20	7 28.9	18.1
31629 1999 GK_{23}	15.3	X	356.20374	309.03937	170.79978	2.66469	0.2056982	0.27313345	2.3526254	20	—	—
31630 Jennywang	14.9	X	303.99611	271.14815	257.70078	3.69524	0.1776917	0.22433484	2.6824907	20	—	—
31631 Abbywilliams	14.2	X	310.73927	222.14792	171.30412	6.71154	0.1589880	0.25228699	2.4805014	20	10 2.5	16.3
31632 Stephaying	14.6	X	281.22616	38.41754	143.84221	3.76996	0.0311123	0.22066747	2.7121300	20	—	—
31633 Almonte	14.6	X	254.65837	84.52318	143.87838	1.67723	0.1397618	0.17494218	3.1662099	20	—	—
31634 1999 GG_{31}	14.3	X	72.74394	1.63916	144.11107	1.78388	0.0711269	0.18924327	3.0046168	20	5 1.4	18.2
31635 Anandarao	14.3	X	169.55547	45.29605	82.08396	3.66225	0.0105271	0.19855958	2.9098828	20	8 2.3	18.3
31636 1999 GB_{32}	13.9	X	341.94770	202.48265	79.20785	5.10385	0.1481523	0.19248899	2.9707455	20	6 10.8	17.0
31637 Bhimaraju	14.9	X	197.04331	334.16441	109.03936	1.90980	0.0930003	0.24380572	2.5376991	20	7 6.9	18.6
31638 1999 GL_{32}	13.6	X	186.66137	317.03408	28.88111	16.64781	0.2100638	0.22668421	2.6639242	20	3 4.2	18.4
31639 Bodoni	15.2	X	11.17907	185.47876	327.97985	3.98643	0.1052182	0.27767753	2.3268884	20	1 25.1	17.3
31640 Johncaven	14.9	X	54.52335	339.03657	211.22113	4.46216	0.1755821	0.24014113	2.5634510	20	6 19.7	17.9
31641 Cevasco	14.9	X	245.91401	216.01499	278.30056	1.21561	0.1304036	0.25912152	2.4366906	20	11 9.5	17.7
31642 Soyounchoi	15.3	X	334.35281	272.75134	239.15790	1.39898	0.1442345	0.22485035	2.6783891	20	—	—
31643 Natashachugh	14.9	X	105.51597	65.62145	104.92509	4.98678	0.0935360	0.29060728	2.2573473	20	7 23.0	17.7
31644 1999 GY_{41}	14.1	X	225.62709	277.08231	127.49680	7.16953	0.1148164	0.29016170	2.2596577	20	6 17.3	17.3
31645 1999 GJ_{42}	13.4	X	170.06933	176.43162	104.47291	8.99448	0.1855779	0.21660976	2.7458957	20	—	—
31646 1999 GQ_{44}	13.1	X	295.38726	215.79512	79.57669	11.97632	0.0768346	0.18983839	2.9983341	20	4 29.8	17.3
31647 1999 GY_{51}	15.1	X	260.47623	306.80206	218.97129	7.48063	0.1449513	0.26368636	2.4084868	20	—	—
31648 1999 GL_{53}	14.0	X	55.41968	211.59446	1.14173	13.03698	0.1073937	0.24102493	2.5571807	20	7 16.1	17.4
31649 1999 GL_{55}	13.4	X	181.29785	109.55419	339.00123	1.17112	0.0256028	0.19650768	2.9301039	20	6 26.1	17.6
31650 Frýdek–Místek	14.0	X	104.53857	166.41490	185.43455	13.99753	0.1843244	0.21671888	2.7449739	20	—	—
31651 1999 HH_2	14.5	X	307.87982	148.94777	58.44295	8.50735	0.0850549	0.27414041	2.3468609	20	1 7.6	17.5
31652 1999 HS_2	14.7	X	215.69085	337.76015	185.58399	2.21636	0.1481966	0.25870634	2.4392969	20	11 7.5	17.9
31653 1999 HH_4	14.3	X	359.24791	314.32994	173.50490	1.04085	0.1451884	0.17714043	3.1399610	20	—	—
31654 1999 HJ_5	14.7	X	355.75668	303.52233	204.85565	5.82361	0.0928962	0.27194006	2.3595033	20	—	—
31655 Averyclowes	14.2	X	183.95076	233.07389	207.89830	7.50937	0.0448907	0.24065581	2.5597948	20	6 19.9	17.9
31656 1999 HL_8	12.8	X	1.39973	325.45420	202.86557	9.43965	0.0379265	0.18380892	3.0635502	20	2 16.2	17.1
31657 1999 HN_8	13.9	X	328.89002	330.35917	250.07368	6.88589	0.0822568	0.27840248	2.3228472	20	2 19.3	16.8
31658 1999 HU_8	13.8	X	272.91053	132.89965	209.20830	9.41256	0.0951053	0.19274293	2.9681356	20	5 24.6	18.0
31659 1999 HT_{10}	13.6	X	276.88030	144.44705	27.90376	5.97315	0.1138844	0.17188179	3.2036825	20	—	—
31660 Maximiliandu	15.3	X	3.18461	132.52524	21.44548	3.11503	0.1784598	0.27523032	2.3406611	20	1 2.4	17.3
31661 Eggebraaten	14.4	X	348.29597	214.98981	211.61619	4.74032	0.1067870	0.26078776	2.4263004	20	—	—
31662 1999 HP_{11}	19.4	X	97.96594	311.99262	13.96095	18.81315	0.5479378	0.48804884	1.5976949	20	—	—
31663 1999 JG_2	15.0	X	55.36893	355.43192	90.49577	7.88550	0.0787485	0.27272478	2.3549751	20	1 5.1	17.3
31664 Randiiwessen	13.7	X	7.80333	16.20636	236.79699	13.64885	0.0539770	0.23695350	2.5863897	20	6 16.6	16.9
31665 Veblen	14.4	X	331.96519	96.45943	142.37076	2.32675	0.0910243	0.18526432	3.0474846	20	4 3.3	18.2
31666 1999 JK_3	13.4	X	311.75968	204.65381	97.78001	14.34067	0.1572781	0.23420595	2.6065783	20	5 19.7	16.6
31667 1999 JL_3	14.3	X	30.45614	320.97964	210.73775	22.81818	0.2260268	0.27885852	2.3203140	20	4 2.8	15.8
31668 1999 JX_3	13.0	X	250.28951	238.93266	117.17337	11.16014	0.1266128	0.18863728	3.0110481	20	5 14.4	17.7
31669 1999 JT_6	15.9	X	312.28750	39.10128	78.81978	9.54343	0.5783266	0.31580822	2.1356025	20	—	—
31670 1999 JL_7	14.2	X	221.92851	189.87801	167.76495	10.66187	0.0136269	0.18688091	3.0298846	20	4 23.9	18.6
31671 Masatoshi	14.5	X	354.77505	293.07022	328.59635	2.06344	0.1974639	0.18964730	3.0003479	20	6 5.6	17.5
31672 1999 JB_8	14.0	X	30.38426	83.11553	61.63135	22.96163	0.1462717	0.27742497	2.3283004	20	3 3.1	16.9
31673 1999 JZ_8	14.3	X	350.37923	3.65735	94.57544	9.65821	0.1710045	0.26520037	2.3993115	20	—	—
31674 1999 JD_9	13.4	X	23.52231	267.66492	80.12726	14.31593	0.0696683	0.20531683	2.8456819	20	11 17.9	17.2
31675 1999 JO_{10}	14.2	X	305.73056	275.28636	115.81603	13.15026	0.0150691	0.20208183	2.8759712	20	9 27.7	18.3
31676 1999 JN_{16}	14.4	X	344.35317	201.74908	225.49720	3.27558	0.0880004	0.21059490	2.7979341	20	—	—
31677 Audreyglende	15.0	X	320.73873	196.09755	9.26469	6.13807	0.0783626	0.27424549	2.3462614	20	1 24.6	17.8
31678 1999 JX_{18}	14.3	X	333.76859	329.42027	267.01180	5.96182	0.0692638	0.27951765	2.3166649	20	3 22.7	16.9
31679 Glenngrimmett	14.3	X	79.53264	185.35888	18.83789	5.13070	0.0812532	0.24258162	2.5462290	20	8 1.6	17.6
31680 Josephuitt	14.7	X	68.77782	294.81047	227.50961	8.39049	0.1054602	0.23695090	2.5864086	20	5 21.7	17.7

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	Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
		m		°	°	°	°		°				
31681	1999 JH_{21}	14.3	X	232.32118	329.62159	228.58776	10.63357	0.1242782	0.21543509	2.7558681	20	—	—
31682	Kinsey	14.7	X	208.30524	242.03902	343.89478	4.97579	0.0606343	0.26156465	2.4214938	20	—	—
31683	1999 JJ_{22}	13.9	X	172.41208	60.20222	284.09811	4.84421	0.0393786	0.22502375	2.6770130	20	2 1.2	17.5
31684	Lindsay	14.4	X	209.58414	345.48584	240.72640	3.85771	0.0792151	0.21512532	2.7585130	20	—	—
31685	1999 JB_{25}	13.2	X	105.95593	43.92320	20.95075	13.47805	0.1573819	0.22812102	2.6527267	20	3 15.1	16.9
31686	1999 JL_{26}	14.3	X	279.70731	70.05417	76.42169	3.83627	0.1106908	0.21551088	2.7552219	20	—	—
31687	1999 JP_{26}	14.1	X	9.14592	110.17732	165.88391	2.35619	0.0205426	0.19493339	2.9458586	20	7 17.3	18.1
31688	Bryantliu	14.1	X	198.10640	74.38359	184.93472	2.11963	0.0432907	0.21715751	2.7412763	20	—	—
31689	Sebmellen	14.3	X	268.97406	182.78782	84.16950	2.06752	0.1299386	0.17971058	3.1099516	20	2 13.7	18.9
31690	Nayamenezes	14.3	X	175.31891	193.02864	112.86006	0.13432	0.1361590	0.17182420	3.2043983	20	1 3.8	19.3
31691	1999 JO_{30}	13.8	X	112.82028	243.20731	259.74326	9.25554	0.0575803	0.19178445	2.9780167	20	6 15.4	18.0
31692	1999 JQ_{31}	14.1	X	247.68090	132.83749	53.38466	6.62063	0.0358650	0.26151157	2.4218214	20	—	—
31693	1999 JC_{32}	13.8	X	271.68083	179.49898	55.81318	14.22757	0.1246067	0.22352475	2.6889680	20	1 4.0	18.0
31694	1999 JO_{32}	13.1	X	55.84224	319.29934	66.14137	10.71998	0.0756395	0.16816487	3.2507173	20	—	—
31695	1999 JQ_{32}	13.4	X	283.49108	128.59017	56.47526	14.38460	0.1507906	0.22014182	2.7164456	20	—	—
31696	Rohitmital	14.2	X	42.18253	206.58015	209.52213	3.06395	0.0627973	0.21766306	2.7370300	20	—	—
31697	Isaiahoneal	14.5	X	131.81869	233.05589	53.70336	4.48292	0.0661640	0.21146042	2.7902941	20	—	—
31698	Nikolaiortiz	14.3	X	43.80833	340.28967	265.09704	1.07526	0.0375779	0.19516187	2.9435589	20	7 26.5	18.2
31699	1999 JA_{36}	14.1	X	304.16885	91.19259	109.03470	4.87414	0.0961548	0.17675651	3.1445060	20	1 9.2	18.5
31700	Naperez	14.3	X	194.60809	226.85090	65.64303	2.39167	0.1467968	0.17191580	3.2032600	20	1 5.9	19.5
31701	Ragula	14.7	X	279.09665	330.64557	220.76321	2.64860	0.0204244	0.21881479	2.7274174	20	—	—
31702	1999 JD_{41}	13.3	X	342.49592	211.80663	71.23997	11.33062	0.0225602	0.23844350	2.5756038	20	6 20.7	16.5
31703	1999 JZ_{43}	13.1	X	219.01328	89.68818	276.93615	9.06282	0.1478308	0.18482423	3.0523204	20	4 16.8	18.2
31704	1999 JZ_{44}	13.7	X	318.02761	326.36348	228.47982	16.40695	0.1580330	0.17801375	3.1296830	20	1 7.7	18.2
31705	1999 JM_{45}	13.4	X	304.07114	114.96621	57.50969	11.80574	0.1387471	0.17375495	3.1806161	20	—	—
31706	Singhani	14.8	X	5.48429	68.79043	166.26416	4.70307	0.1298606	0.18850280	3.0124801	20	5 21.7	18.2
31707	1999 JH_{49}	14.0	X	201.83386	240.61117	60.01408	6.14046	0.1088986	0.17412529	3.1761048	20	1 21.9	19.1
31708	1999 JL_{49}	14.5	X	292.90077	1.00501	224.57182	5.98992	0.2184280	0.22467088	2.6798153	20	1 2.8	18.5
31709	1999 JD_{51}	13.9	X	86.31397	60.60292	221.89244	11.74550	0.0879454	0.20407120	2.8572500	20	11 13.5	18.1
31710	1999 JC_{52}	14.0	X	327.31340	119.31734	30.19484	5.66569	0.1622260	0.17398336	3.1778318	20	—	—
31711	Suresh	14.2	X	4.06208	337.87518	76.49578	9.28022	0.0827283	0.21108350	2.7936148	20	—	—
31712	1999 JZ_{52}	13.9	X	247.88288	144.55436	81.81910	6.44661	0.1003797	0.17133939	3.2104402	20	—	—
31713	1999 JF_{54}	14.1	X	266.95362	117.16873	91.61172	2.17263	0.1731217	0.17216732	3.2001394	20	—	—
31714	1999 JP_{54}	13.3	X	281.69410	118.25800	268.25845	8.37672	0.0894706	0.24225725	2.5485013	20	8 4.7	16.5
31715	1999 JX_{56}	14.1	X	210.45195	200.87717	80.10268	11.89393	0.0642833	0.17288534	3.1912728	20	1 6.9	18.9
31716	Matoonder	14.3	X	340.63879	90.14250	162.26631	3.45394	0.1559750	0.18657104	3.0332385	20	4 28.9	17.8
31717	1999 JA_{58}	12.9	X	1.27291	147.46000	62.00427	10.57466	0.0331854	0.18397836	3.0616689	20	4 14.7	17.1
31718	1999 JO_{58}	13.6	X	54.42161	269.68573	236.95681	12.70282	0.1332990	0.23123646	2.6288462	20	4 7.4	16.8
31719	Davidyue	14.3	X	331.95810	353.75702	197.17761	2.43754	0.1457033	0.22575121	2.6712590	20	1 17.5	17.6
31720	1999 JW_{59}	14.0	X	278.73926	70.85507	217.83165	10.49238	0.1452990	0.18207934	3.0829201	20	3 15.3	18.6
31721	1999 JB_{60}	14.0	X	147.78785	336.79275	234.94480	14.35582	0.2228456	0.20487976	2.8497275	20	10 21.5	19.0
31722	1999 JG_{61}	13.5	X	226.11850	172.33206	85.73786	9.87292	0.0793748	0.17133536	3.2104905	20	—	—
31723	1999 JT_{61}	13.2	X	82.59795	16.78119	66.28912	16.04882	0.2901010	0.22548302	2.6733767	20	4 2.6	17.0
31724	1999 JJ_{64}	12.8	X	95.65630	54.94670	67.96903	8.35547	0.1628736	0.18528093	3.0473025	20	5 15.1	17.1
31725	Anushazaman	14.5	X	248.97887	155.00092	108.25110	3.30115	0.0557292	0.22513769	2.6761097	20	1 19.6	18.4
31726	1999 JA_{67}	14.0	X	262.60641	112.92689	106.07987	6.31584	0.1190089	0.17455851	3.1708476	20	—	—
31727	Amandalewis	15.0	X	84.57163	350.81162	153.89583	3.85067	0.0454595	0.23616190	2.5921661	20	5 11.3	18.3
31728	Rhondah	14.8	X	268.15929	18.72139	176.94341	5.09039	0.0964215	0.21935536	2.7229346	20	—	—
31729	Scharmen	14.2	X	23.29141	207.99387	164.92706	8.39562	0.1076492	0.21042311	2.7994567	20	12 23.2	18.0
31730	1999 JV_{70}	14.0	X	298.85742	121.26150	194.15531	12.62218	0.0884029	0.19052633	2.9911122	20	5 26.1	18.1
31731	Johnwiley	14.7	X	128.75009	321.94074	171.03366	7.25134	0.0823900	0.24029722	2.5623408	20	6 25.3	18.5
31732	1999 JB_{71}	13.4	X	15.89986	189.96323	63.43688	15.69953	0.1430944	0.23905978	2.5711754	20	7 9.4	16.3
31733	1999 JP_{71}	12.9	X	144.10194	253.91882	87.32925	8.04168	0.1255556	0.17328367	3.1863804	20	1 14.3	17.7
31734	1999 JT_{71}	13.6	X	111.76079	253.83728	189.49724	9.50141	0.0700463	0.18449598	3.0559397	20	4 1.5	17.7
31735	1999 JJ_{72}	12.7	X	76.16429	91.58597	70.95792	13.22817	0.0125525	0.18956303	3.0012370	20	5 19.8	16.9
31736	1999 JR_{73}	14.1	X	268.69575	162.82249	188.52877	10.23236	0.1141713	0.18988338	2.9978605	20	5 28.9	18.5
31737	Carriecoombs	14.3	X	32.38836	127.32065	317.22175	6.00379	0.0786094	0.26913955	2.3758428	20	—	—
31738	1999 JC_{77}	13.4	X	40.54356	267.88388	177.90456	16.58703	0.1053238	0.17623032	3.1507622	20	1 3.9	17.6
31739	1999 JE_{77}	14.2	X	316.37664	138.17121	158.06708	10.43197	0.0883431	0.19050140	2.9913732	20	5 27.1	18.2
31740	1999 JW_{77}	14.0	X	348.27460	22.30812	187.78752	10.34173	0.0584472	0.18316353	3.0707423	20	3 22.9	17.9
31741	1999 JG_{78}	13.9	X	324.66004	273.50840	29.98001	14.51209	0.2032988	0.23744395	2.5828270	20	5 29.9	16.7
31742	1999 JA_{79}	14.2	X	319.27101	102.22517	121.04902	14.96153	0.1475591	0.22923793	2.6441031	20	2 11.7	17.5
31743	1999 JK_{79}	12.8	X	93.81649	325.86731	78.89395	10.42726	0.0883084	0.17532416	3.1616094	20	1 29.4	17.3
31744	Shimshock	14.6	X	265.49649	322.75212	211.79281	8.60990	0.0910442	0.21540768	2.7561019	20	—	—
31745	1999 JN_{82}	13.7	X	273.46285	122.52648	155.02308	10.64358	0.0587096	0.18291603	3.0735117	20	3 11.0	18.1
31746	1999 JP_{82}	13.6	X	286.18242	233.90107	94.02216	12.10167	0.0967248	0.19063722	2.9899522	20	5 24.7	17.7
31747	1999 JD_{83}	14.1	X	335.85395	51.14939	152.01990	9.15724	0.1671430	0.18138794	3.0907493	20	2 13.3	17.8
31748	1999 JG_{83}	13.3	X	250.65171	117.36314	120.25211	12.37613	0.1187115	0.17367518	3.1815900	20	—	—
31749	1999 JV_{83}	13.7	X	270.51570	72.82219	167.60966	15.38222	0.1851332	0.17572867	3.1567556	20	1 8.7	18.9
31750	1999 JQ_{84}	14.1	X	332.54569	14.29581	151.93694	15.70396	0.2645963	0.22438588	2.6820840	20	—	—
31751	1999 JF_{85}	12.6	X	152.44646	227.39450	107.94067	17.50978	0.1695875	0.17503011	3.1651494	20	1 18.7	17.7
31752	1999 JN_{91}	14.6	X	109.14556	48.26944	93.90256	14.06186	0.1059718	0.23882598	2.5728532	20	6 17.3	18.2
31753	1999 JL_{94}	13.5	X	211.78249	169.99022	105.17775	17.37455	0.0579955	0.17327551	3.1864804	20	1 1.6	18.4
31754	1999 JT_{95}	14.0	X	168.60763	263.53872	160.63868	10.22589	0.0676303	0.18753931	3.0227890	20	5 14.3	18.7
31755	1999 JA_{96}	13.8	X	308.48230	217.39834	136.49103	12.94453	0.0719724	0.19536072	2.9415612	20	7 31.5	17.5
31756	1999 JL_{98}	12.7	X	85.78866	287.21929	135.67999	19.68595	0.2200045	0.17644157	3.1482468	20	2 28.9	17.0
31757	1999 JO_{98}	13.9	X	316.80025	100.49661	178.71950	15.95463	0.0513907	0.18675690	3.0312257	20	5 10.4	18.2
31758	1999 JQ_{99}	14.3	X	42.68900	351.76869	145.50487	14.11699	0.2139061	0.22969838	2.6405684	20	3 20.5	16.8
31759	1999 JT_{99}	14.3	X	144.64519	248.92035	153.60147	15.64536	0.0939657	0.22664856	2.6642036	20	3 21.5	18.3
31760	1999 JG_{101}	13.9	X	207.28379	340.30794	105.50037	13.52105	0.1373862	0.24081871	2.5586403	20	7 18.8	17.9

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
	m		°	°	°	°		°				
31761 1999 JO_{103}	13.6	X	17.23117	253.58827	134.40322	8.53654	0.2360631	0.21033544	2.8002345	20	—	—
31762 1999 JB_{104}	12.6	X	60.79804	359.28510	93.01695	18.34274	0.0838125	0.18078243	3.0976468	20	2 13.3	16.9
31763 1999 JW_{107}	14.0	X	164.16443	330.87543	156.71800	2.18270	0.0981563	0.19706396	2.9245872	20	7 26.2	18.5
31764 1999 JB_{108}	14.2	X	193.93836	285.96649	37.98677	6.08930	0.1239342	0.17703232	3.1412392	20	2 11.3	19.2
31765 1999 JG_{114}	14.0	X	103.10355	192.65695	228.08513	11.04548	0.1692418	0.22510748	2.6763491	20	2 28.0	17.9
31766 1999 JD_{116}	14.3	X	215.87780	273.07275	99.32651	10.46361	0.0829009	0.18556606	3.0441802	20	5 2.1	19.0
31767 Jennimartin	15.1	X	161.13502	271.27295	219.97624	5.90570	0.1762835	0.24370152	2.5384224	20	7 29.6	19.4
31768 1999 JA_{117}	14.7	X	82.54003	188.93019	329.18596	3.70432	0.2152618	0.23739145	2.5832077	20	6 21.1	18.2
31769 1999 JL_{117}	13.4	X	284.80971	296.91019	62.75290	11.65461	0.1261965	0.19143733	2.9816154	20	6 26.5	17.5
31770 Melivanhouten	14.5	X	75.68413	181.10206	111.84544	3.20408	0.0424664	0.20473580	2.8510633	20	11 9.6	18.4
31771 Kirstenwright	14.4	X	197.65114	105.00376	202.19732	9.33315	0.0716492	0.17389129	3.1789534	20	1 21.8	19.5
31772 Asztalos	14.4	X	178.36166	334.10628	224.83824	8.71206	0.0781624	0.20576619	2.8415374	20	11 8.5	18.5
31773 1999 JL_{121}	13.4	X	200.28185	311.33824	78.32147	9.99942	0.1025894	0.18468281	3.0538784	20	5 4.9	18.2
31774 Debralas	14.6	X	348.31952	97.89341	144.84013	2.59658	0.1245820	0.18585681	3.0410045	20	5 1.7	18.1
31775 1999 JN_{122}	13.7	X	300.54552	8.37269	279.18245	7.62894	0.1727042	0.27761983	2.3272108	20	3 27.5	16.7
31776 1999 JE_{124}	13.2	X	236.96176	344.81630	90.21614	16.54229	0.1052430	0.24198334	2.5504241	20	8 14.9	17.0
31777 Amywinegar	14.0	X	38.00934	182.41999	118.36819	3.12421	0.0548940	0.19958513	2.8999061	20	10 4.0	17.8
31778 Richardschnur	14.5	X	62.32811	334.79754	100.18723	7.38955	0.0903866	0.27154182	2.3618097	20	1 2.1	16.6
31779 1999 JO_{129}	14.3	X	168.41056	317.47167	115.89599	11.90319	0.1784425	0.23595426	2.5936866	20	5 27.9	18.7
31780 1999 JB_{136}	13.4	X	54.52667	184.55937	5.19026	10.53387	0.0373193	0.19172183	2.9786650	20	5 25.7	17.6
31781 1999 KZ_{2}	14.8	X	294.11606	35.89706	83.00350	3.00550	0.0200671	0.21136336	2.7911483	20	12 28.4	18.3
31782 1999 KM_{6}	13.2	X	227.41247	60.50915	114.75340	16.77260	0.2797371	0.21118680	2.7927037	20	11 16.3	17.9
31783 1999 KV_{9}	13.7	X	261.16988	64.56449	236.30085	8.57884	0.0825412	0.18255746	3.0775350	20	3 17.7	18.4
31784 1999 KB_{11}	14.1	X	340.47406	203.52543	268.38548	3.49852	0.1371063	0.26353725	2.4093952	20	—	—
31785 1999 KK_{13}	14.3	X	76.84769	309.74916	77.18268	4.10461	0.0665823	0.21500478	2.7595439	20	—	—
31786 1999 KO_{13}	13.6	X	233.89580	58.01961	264.49678	10.87913	0.0744266	0.22679651	2.6630448	20	3 8.7	17.8
31787 Darcylawson	14.3	X	247.25075	104.30759	86.46133	7.06737	0.1165192	0.21355967	2.7719787	20	—	—
31788 1999 KQ_{14}	12.9	X	3.24632	55.67597	78.59278	17.76619	0.0983934	0.17402296	3.1773497	20	1 9.0	17.0
31789 1999 KA_{15}	13.7	X	307.00982	106.21998	108.37308	9.45828	0.1550486	0.17650039	3.1475473	20	1 22.0	17.9
31790 1999 LA_{1}	12.9	X	359.32063	135.25112	41.99710	13.89225	0.1002161	0.23573972	2.5952600	20	2 23.6	16.2
31791 1999 LT_{3}	13.5	X	257.80742	127.48121	107.69542	27.61594	0.0358785	0.17592004	3.1544659	20	1 5.5	18.0
31792 1999 LY_{4}	14.2	X	320.76794	16.75295	186.84009	17.48348	0.1377830	0.17911131	3.1168845	20	1 24.8	18.7
31793 1999 LB_{6}	14.6	X	328.06766	219.82175	190.47506	23.48009	0.0605071	0.38774248	1.8625465	20	—	—
31794 1999 LL_{9}	13.7	X	42.73745	288.00302	124.23228	8.96189	0.1755686	0.21409936	2.7673184	20	—	—
31795 1999 LM_{14}	14.0	X	202.50751	106.45905	129.71151	6.86671	0.0974876	0.25861173	2.4398918	20	—	—
31796 1999 LS_{15}	13.4	X	14.09049	317.39244	151.16481	22.48408	0.0735168	0.17098367	3.2148913	20	—	—
31797 1999 LN_{16}	13.8	X	208.44158	232.57173	4.93926	9.10231	0.1025605	0.21461350	2.7628970	20	—	—
31798 1999 LY_{16}	13.9	X	180.61520	343.68646	257.31101	4.97402	0.0187668	0.21112742	2.7932274	20	—	—
31799 1999 LN_{23}	13.2	X	134.60221	230.39303	265.22929	11.94521	0.1180859	0.23814798	2.5777341	20	7 7.3	17.1
31800 1999 LT_{25}	13.5	X	321.44289	312.61216	266.42501	14.02948	0.1984195	0.17864474	3.1223091	20	2 3.1	17.8
31801 1999 LY_{26}	12.3	X	250.70018	128.30321	98.22915	24.84412	0.0989512	0.16920196	3.2374206	20	—	—
31802 1999 LP_{30}	14.4	X	333.98271	11.40576	94.64805	3.67632	0.0508919	0.21468588	2.7622760	20	—	—
31803 1999 LN_{32}	14.7	X	3.76705	0.87389	143.23344	14.78130	0.2000797	0.22485369	2.6783626	20	—	—
31804 1999 MG	14.0	X	66.65913	36.10421	87.76777	14.11207	0.1183502	0.22401021	2.6850817	20	4 6.0	17.6
31805 1999 NN_{5}	12.3	X	202.28107	80.16500	261.75624	20.47536	0.0270799	0.17373644	3.1808421	20	2 28.3	17.4
31806 1999 NE_{11}	11.6	X	269.53134	192.94479	136.73509	34.09516	0.0954047	0.08325687	5.1942478	20	5 17.4	19.0
31807 Shaunalennon	14.2	X	74.49357	244.60922	306.24490	7.83333	0.1501106	0.23459644	2.6036850	20	7 16.1	17.6
31808 1999 NR_{34}	13.7	X	338.20053	61.75805	107.30242	9.20542	0.1262647	0.21753491	2.7381048	20	1 3.3	16.9
31809 1999 NS_{36}	12.8	X	129.19540	114.54090	324.72213	15.71149	0.1035930	0.17499689	3.1655499	20	4 12.6	17.8
31810 1999 NR_{38}	13.2	X	233.53430	177.36915	350.87837	8.11168	0.1083276	0.20252194	2.8718031	20	11 26.2	17.5
31811 1999 NA_{41}	13.2	X	16.41343	243.90430	331.80707	9.58158	0.0343441	0.17910335	3.1169769	20	5 5.7	17.6
31812 1999 NL_{47}	13.6	X	196.90542	5.29597	264.43151	8.76498	0.1129741	0.21236313	2.7823813	20	—	—
31813 1999 RF_{41}	15.6	X	214.38124	244.31289	162.76682	23.01198	0.1310330	0.36676462	1.9329076	20	6 9.9	18.8
31814 1999 RW_{70}	12.2	X	269.12374	0.82901	326.33797	4.44251	0.0700217	0.08021205	5.3248777	20	5 5.2	19.3
31815 1999 RY_{111}	13.4	X	54.70887	257.56914	297.49808	12.54530	0.1260800	0.22996030	2.6385630	20	6 19.1	16.7
31816 1999 RZ_{117}	12.9	X	55.87997	343.87033	285.44089	9.80299	0.0746609	0.19091187	2.9870839	20	9 11.9	17.2
31817 1999 RK_{134}	11.9	X	111.72045	191.28385	270.35908	6.27723	0.1478301	0.12454802	3.9711061	20	5 4.1	17.8
31818 1999 RM_{135}	12.1	X	35.14137	170.79586	339.93448	22.64611	0.0596610	0.17051688	3.2207558	20	3 11.7	16.6
31819 1999 RS_{150}	11.4	X	352.71977	273.09832	348.70045	14.32895	0.0068101	0.08237443	5.2312777	20	6 3.0	18.4
31820 1999 RT_{186}	12.1	X	319.31368	90.12938	193.31240	2.37370	0.0787807	0.08090691	5.2943460	20	5 16.1	18.8
31821 1999 RK_{225}	12.0	X	269.16710	177.40573	146.69931	10.75456	0.0608110	0.08221063	5.2382238	20	5 7.8	19.0
31822 1999 SY_{4}	12.3	X	91.34832	315.68019	26.59723	6.38187	0.0446654	0.15615760	3.4152877	20	—	—
31823 Viète	14.6	X	159.13916	65.69368	28.28723	24.21265	0.3604438	0.21697660	2.7427998	20	6 11.5	20.2
31824 Elatus	10.1	X	195.40481	281.43844	87.17977	5.24442	0.3829006	0.02436153	11.7850934	20	4 7.2	22.2
31825 1999 UL_{13}	15.2	X	206.89710	114.05802	311.73397	1.50955	0.1920305	0.27085875	2.3657788	20	6 19.4	19.0
31826 1999 VM_{2}	13.2	X	287.04189	250.73327	241.68093	23.71443	0.0891480	0.23793663	2.5792603	20	—	—
31827 1999 VJ_{13}	15.1	X	263.88972	132.93931	52.17385	25.22391	0.1057101	0.38235395	1.8800050	20	—	—
31828 1999 VU_{199}	12.6	X	89.78764	106.10794	128.66470	15.52663	0.2423764	0.18233448	3.0800435	20	10 8.6	17.8
31829 1999 XT_{12}	13.3	X	226.61692	65.73249	130.67793	10.52778	0.0293997	0.19041779	2.9922488	20	—	—
31830 1999 XT_{59}	13.2	X	346.02157	308.44420	74.69922	11.60002	0.0835507	0.18530849	3.0470003	20	11 6.3	17.1
31831 1999 YL	15.1	X	132.02289	307.39435	229.83549	22.39028	0.0684393	0.36554638	1.9371997	20	8 31.2	18.0
31832 2000 AP_{59}	14.7	X	317.30977	341.03424	309.86735	6.58401	0.2644992	0.30555685	2.1831054	20	4 9.9	17.0
31833 2000 AW_{123}	14.0	X	280.06693	77.01847	148.67260	13.46149	0.1362880	0.24276784	2.5449267	20	—	—
31834 2000 AL_{142}	14.3	X	245.86277	345.30015	265.61633	8.69635	0.1542786	0.23950689	2.5679745	20	—	—
31835 2000 BK_{16}	11.5	X	298.34111	350.81081	74.83948	15.12987	0.0517793	0.08488110	5.1277722	20	10 10.1	18.3
31836 Poshedly	15.3	X	219.77621	28.28994	275.07485	5.47149	0.1514502	0.29478577	2.2359652	20	1 25.2	18.6
31837 2000 CB_{35}	14.1	X	115.89242	168.31255	142.12725	14.11046	0.1813457	0.23388479	2.6089639	20	—	—
31838 Angelarob	14.3	X	38.18866	18.63580	273.04748	5.80404	0.1194232	0.26558164	2.3970146	20	10 9.1	17.2
31839 Depinto	15.9	X	150.28371	318.72494	234.60525	1.63319	0.1246023	0.26765118	2.3846425	20	10 10.6	19.4
31840 Normnegus	15.8	X	342.68237	337.59567	277.26764	4.25377	0.1479693	0.30049960	2.2075309	20	4 26.8	17.6

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
	m		°	°	°	°		°				
31841 2000 CQ_{70}	14.1	X	140.05763	8.85866	303.48509	6.40766	0.1385293	0.28141168	2.3062584	20	—	—
31842 2000 CF_{77}	15.1	X	50.96877	230.79155	5.62435	1.97701	0.1450941	0.25712395	2.4492946	20	8 17.2	18.0
31843 2000 CQ_{80}	15.0	X	291.29143	120.46006	172.84039	20.33873	0.2922151	0.30120939	2.2040615	20	3 8.4	18.1
31844 Mattwill	15.3	X	259.43549	240.20698	50.62287	5.08885	0.1809287	0.29253962	2.2473959	20	2 17.9	18.7
31845 2000 DK_{17}	16.2	X	84.64031	150.66311	148.84995	2.72367	0.2634760	0.31880429	2.1222015	20	—	—
31846 Elainegillum	16.2	X	103.03275	137.74140	164.59813	3.22767	0.1775885	0.27474244	2.3434312	20	—	—
31847 2000 DQ_{96}	14.1	X	91.83310	167.95992	114.90639	0.43741	0.2024666	0.17479376	3.1680019	20	11 24.8	19.2
31848 Mikemattei	14.5	X	170.20264	157.61103	26.87114	13.40337	0.1699344	0.26496039	2.4007600	20	10 17.8	18.4
31849 2000 EZ_{21}	15.9	X	310.93745	348.75848	11.62726	21.26321	0.0822420	0.36016857	1.9564354	20	9 16.1	17.5
31850 2000 EB_{22}	15.2	X	17.19684	328.52093	28.40074	21.12532	0.0815612	0.36803802	1.9284465	20	—	—
31851 2000 EK_{40}	16.1	X	41.63794	118.13511	165.79041	3.01013	0.1655751	0.30952479	2.1644078	20	10 23.4	18.5
31852 2000 EO_{43}	14.7	X	204.63958	309.76161	21.55277	5.95228	0.2227125	0.24019084	2.5630972	20	2 23.5	19.1
31853 Rahulmital	15.2	X	134.26130	285.47181	357.38397	6.87860	0.1152327	0.27316989	2.3524162	20	—	—
31854 Darshanashah	16.7	X	322.72315	57.35140	192.17123	2.01831	0.1050405	0.29470185	2.2363896	20	3 20.5	19.1
31855 2000 EA_{50}	14.6	X	125.74148	290.34941	4.78508	13.16038	0.1782088	0.22529993	2.6748248	20	—	—
31856 2000 EP_{54}	14.6	X	233.55317	269.56743	70.86945	6.14740	0.2874591	0.24337843	2.5406684	20	3 25.5	19.1
31857 2000 EG_{58}	15.6	X	34.59414	242.62219	18.33745	2.93466	0.1883030	0.30613333	2.1803639	20	9 11.9	17.6
31858 Raykanipe	15.7	X	162.80034	129.65862	191.15068	6.69736	0.1527807	0.28285611	2.2984003	20	—	—
31859 Zemaitis	16.1	X	93.07211	153.63145	121.16541	2.33038	0.1684595	0.26659816	2.3909177	20	11 29.0	19.7
31860 2000 ES_{68}	16.1	X	200.54413	118.45489	178.78900	3.20631	0.2471811	0.28269517	2.2992726	20	1 4.9	20.0
31861 Darleshimizu	16.3	X	110.37811	97.27434	145.06787	1.65922	0.1527344	0.26496757	2.4007166	20	11 4.1	20.0
31862 Garfinkle	14.9	X	17.78881	245.54575	106.80392	8.65144	0.1366601	0.26898670	2.3767428	20	12 10.0	17.7
31863 Hazelcoffman	15.7	X	237.92677	164.28971	114.92632	4.86266	0.1841207	0.28822893	2.2697481	20	1 12.7	19.1
31864 2000 EC_{86}	13.0	X	64.12904	203.47856	163.67968	15.61216	0.0959933	0.17952440	3.1121013	20	—	—
31865 2000 ED_{86}	13.8	X	143.41740	174.53739	154.27012	9.60895	0.1643924	0.23212528	2.6221312	20	—	—
31866 2000 EA_{94}	15.7	X	51.43508	28.43385	224.36961	6.99001	0.2055838	0.30683037	2.1770605	20	9 24.2	18.4
31867 2000 EG_{94}	14.1	X	237.96228	95.51358	216.11107	12.88150	0.3059524	0.24121007	2.5558720	20	2 15.8	19.0
31868 2000 EO_{97}	15.2	X	250.61084	223.06794	13.41474	6.52746	0.2566591	0.28070496	2.3101277	20	—	—
31869 2000 EF_{101}	14.4	X	266.40574	242.22043	39.68117	7.00050	0.2693516	0.28812252	2.2703070	20	2 7.1	18.2
31870 2000 EG_{101}	14.1	X	200.60216	289.03571	41.50260	9.78930	0.1849469	0.23816206	2.5776325	20	2 21.7	18.5
31871 2000 EA_{105}	14.1	X	288.31594	205.96663	52.36451	10.45313	0.2414095	0.24087869	2.5582155	20	2 6.7	18.1
31872 Terkán	15.8	X	207.72708	199.06973	13.36183	3.09116	0.1342580	0.27616439	2.3353802	20	—	—
31873 2000 EA_{130}	15.7	X	110.17775	106.72501	133.25977	3.22640	0.1325136	0.26578903	2.3957676	20	10 31.8	19.2
31874 2000 EF_{135}	14.9	X	113.65196	216.91369	103.08656	4.32663	0.0908580	0.27681087	2.3317427	20	—	—
31875 Saksena	16.6	X	342.63455	114.87096	151.59904	2.97705	0.1087372	0.29983216	2.2108057	20	5 23.7	18.4
31876 Jenkens	14.5	X	266.65788	160.44772	130.74037	13.72252	0.2571390	0.23780109	2.5802403	20	2 22.9	18.7
31877 Davideverett	15.1	X	148.02527	343.96832	285.02791	2.30088	0.1642645	0.27317824	2.3523683	20	—	—
31878 2000 FR_{7}	14.8	X	187.98899	315.12188	149.42858	12.91128	0.1418435	0.25845637	2.4408695	20	7 23.0	18.6
31879 2000 FL_{12}	12.8	X	202.00442	245.49482	91.23511	14.47271	0.2230817	0.19639691	2.9312057	20	3 5.5	18.1
31880 2000 FW_{12}	15.7	X	236.17676	135.38145	151.83665	3.79269	0.2066785	0.28801095	2.2708932	20	1 20.0	19.5
31881 2000 FL_{15}	16.4	X	205.01929	310.57767	198.62885	21.08045	0.1138986	0.41368330	1.7838461	20	11 13.5	18.0
31882 2000 FD_{20}	15.3	X	140.18784	144.70936	131.23268	9.66661	0.2025320	0.27258090	2.3558037	20	—	—
31883 Susanstern	15.3	X	12.04393	226.85988	84.46745	7.06873	0.0942697	0.26178288	2.4201478	20	9 29.3	18.1
31884 2000 FK_{27}	14.7	X	20.80343	167.95868	176.35401	2.36327	0.0790591	0.21826598	2.7319873	20	11 11.8	18.1
31885 Greggweger	15.7	X	44.40277	175.31342	97.45543	2.42359	0.1465365	0.25950571	2.4342850	20	9 29.5	18.5
31886 Verlisak	15.8	X	174.59341	127.95733	147.44882	3.61065	0.1485401	0.27735121	2.3287132	20	—	—
31887 2000 FM_{33}	13.2	X	139.45094	205.74314	67.85832	13.11157	0.1477619	0.22505942	2.6767301	20	12 30.6	17.6
31888 Polizzi	15.0	X	115.37363	143.66835	159.60751	7.31419	0.1377431	0.27303326	2.3532009	20	—	—
31889 2000 FW_{35}	13.7	X	3.12700	257.45983	99.57914	13.78687	0.2711940	0.26688168	2.3892240	20	12 15.9	16.2
31890 2000 FG_{37}	15.2	X	185.62685	181.03003	92.01987	3.48980	0.2178965	0.27712447	2.3299833	20	—	—
31891 2000 FR_{42}	14.1	X	301.50785	232.55416	28.71710	7.20155	0.0497620	0.24681657	2.5170191	20	3 22.0	17.2
31892 2000 FC_{43}	15.9	X	4.61596	157.35117	121.56848	2.91237	0.1046197	0.30506392	2.1854564	20	7 30.3	17.4
31893 Rodriguezalvarez	15.5	X	278.71772	234.35218	66.33775	8.22137	0.1850344	0.29469645	2.2364170	20	3 23.8	18.6
31894 2000 FD_{44}	14.6	X	155.07689	120.85167	144.28093	5.99055	0.2162210	0.27246341	2.3564809	20	—	—
31895 2000 FX_{44}	15.2	X	311.29188	274.24508	59.26238	5.37216	0.2931656	0.30373182	2.1918417	20	6 5.9	16.8
31896 Gaydarov	15.1	X	47.22899	265.16531	328.21800	5.66428	0.1164015	0.25410665	2.4686453	20	8 1.9	17.8
31897 Brooksdasilva	15.1	X	65.84766	267.84399	347.87934	6.27787	0.1053680	0.25911476	2.4367330	20	9 25.9	18.3
31898 2000 GC_{1}	15.4	X	126.02729	174.73500	141.58398	23.87053	0.0822017	0.37548487	1.9028640	20	—	—
31899 Adityamohan	16.2	X	203.42350	266.03410	47.54557	3.48016	0.1679520	0.28609341	2.2810291	20	1 26.1	19.7
31900 2000 GX_{15}	15.4	X	52.71960	330.19245	358.32300	1.76680	0.2211273	0.26778756	2.3838328	20	12 31.6	18.9
31901 Amitscheer	14.9	X	181.97080	170.76754	163.46869	7.33807	0.1309692	0.28312416	2.2969494	20	1 28.2	18.3
31902 Raymondwang	15.4	X	304.27840	308.08405	348.43730	2.83511	0.1752533	0.29718371	2.2239211	20	4 16.9	17.8
31903 Euniceyou	15.4	X	136.07553	253.51318	20.02101	3.87348	0.1848938	0.22208196	2.7006016	20	12 27.2	19.9
31904 Haoruochen	15.4	X	332.51764	204.60034	196.75908	6.63336	0.0970216	0.26904587	2.3763943	20	11 30.6	17.8
31905 Likinpong	15.4	X	14.69038	88.24508	196.57360	6.00388	0.1040466	0.25638277	2.4540128	20	8 19.0	18.0
31906 2000 GF_{44}	16.1	X	120.22461	298.86147	31.51787	5.76762	0.2648129	0.27511510	2.3413145	20	—	—
31907 Wongsumming	15.7	X	320.24800	93.97533	156.16695	1.87617	0.1223820	0.29364820	2.2417361	20	3 15.3	17.9
31908 2000 GP_{46}	15.3	X	243.79484	288.20744	14.51934	6.46506	0.2012551	0.28843787	2.2686519	20	2 17.6	18.9
31909 Chenweitung	15.7	X	64.55357	51.02345	196.39629	2.14825	0.1622922	0.25771464	2.4455506	20	9 21.9	18.9
31910 Moustafa	15.8	X	98.46946	28.05246	22.46240	9.86293	0.0977531	0.28679627	2.2773007	20	1 27.1	18.5
31911 Niklasfauth	16.1	X	2.98790	148.58490	186.28233	1.81787	0.2005740	0.26016470	2.4301727	20	10 29.5	18.2
31912 Lukasgrafner	15.7	X	283.43617	242.39229	35.27056	2.69874	0.1683700	0.24165430	2.5527387	20	3 2.6	19.2
31913 2000 GM_{56}	15.1	X	151.78667	291.53150	29.58937	10.79858	0.3033159	0.27641786	2.3339523	20	—	—
31914 2000 GL_{65}	15.3	X	41.25038	159.30472	162.69376	2.80931	0.1649155	0.31240408	2.1510884	20	12 14.2	18.0
31915 2000 GA_{66}	14.8	X	229.51047	300.69528	25.40936	12.15442	0.3222211	0.23801980	2.5786595	20	3 6.7	19.6
31916 Arnehensel	16.4	X	229.44484	271.11372	21.86820	1.95865	0.0881790	0.28604702	2.2812756	20	1 25.4	19.5
31917 Lukashohne	15.0	X	87.66147	58.29888	224.30407	0.48311	0.1562549	0.26442258	2.4040142	20	12 1.9	18.6
31918 Onkargujral	15.3	X	25.95231	129.47000	171.58661	2.83538	0.1175334	0.25897653	2.4376000	20	10 6.1	18.1
31919 Carragher	15.4	X	309.78240	251.82985	62.41794	1.81015	0.1595838	0.29861352	2.2168165	20	5 28.3	17.4
31920 Annamcevoy	15.9	X	291.70110	227.29927	22.33032	7.11777	0.0745453	0.28918480	2.2647438	20	2 14.0	18.7

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
	m		°	°	°	°		°				
31921 2000 GD_{71}	14.2	X	5.70795	121.26155	200.96654	5.08483	0.2024974	0.25752774	2.4467337	20	10 14.8	16.4
31922 Alsharif	15.1	X	267.87621	241.31998	57.30333	4.65940	0.1392513	0.29105177	2.2550485	20	3 12.3	18.1
31923 2000 GN_{73}	14.3	X	299.36139	32.85985	240.68561	3.73399	0.0490633	0.19506451	2.9445383	20	4 5.2	18.3
31924 2000 GD_{74}	15.4	X	32.92954	139.54040	198.86828	2.05971	0.2056817	0.26344249	2.4099729	20	12 19.8	18.5
31925 Krutovskiy	15.6	X	86.46569	285.37172	38.07478	6.36900	0.0858076	0.27008196	2.3703128	20	—	—
31926 Alhamood	14.2	X	194.34859	326.27394	217.33031	4.37437	0.0976754	0.21882770	2.7273101	20	11 7.7	18.0
31927 2000 GT_{78}	16.6	X	196.52967	78.13642	35.63988	3.25961	0.0305773	0.30762426	2.1733133	20	8 30.4	19.0
31928 Limzhengtheng	15.6	X	273.86178	240.93265	67.69060	1.32119	0.0840444	0.29403925	2.2397481	20	4 7.7	18.3
31929 2000 GF_{79}	15.4	X	152.17237	314.14214	30.01011	4.09719	0.2753882	0.27954350	2.3165221	20	1 26.7	19.1
31930 2000 GJ_{81}	15.3	X	247.39037	61.80041	213.70695	12.43840	0.1518628	0.23620389	2.5918589	20	1 21.2	19.7
31931 Sipiera	15.6	X	255.37083	239.82603	88.14401	1.15119	0.2520291	0.24176917	2.5519300	20	3 27.7	19.7
31932 2000 GK_{85}	13.1	X	163.31840	128.68931	158.51358	22.10896	0.0247880	0.17973289	3.1096942	20	—	—
31933 Tanyizhao	15.5	X	217.79297	52.06019	210.79509	6.30889	0.1611536	0.28277870	2.2988198	20	—	—
31934 Benjamintan	15.1	X	161.83692	172.54378	96.09116	3.39558	0.1911704	0.27318847	2.3523095	20	—	—
31935 Midgley	15.3	X	297.78259	190.85972	101.35775	5.91938	0.1574934	0.29490483	2.2353633	20	4 8.6	17.9
31936 Bernardsmit	15.0	X	234.88460	347.68605	282.96084	2.50920	0.1660919	0.23358171	2.6112202	20	1 7.1	19.2
31937 Kangsunwoo	15.7	X	340.05697	299.42588	307.89983	4.55468	0.1427941	0.29598246	2.2299343	20	4 8.7	17.8
31938 Nattapong	15.4	X	244.24259	63.20587	237.90633	3.64142	0.1638808	0.28908136	2.2652840	20	2 13.9	18.8
31939 Thananon	14.7	X	186.15029	334.26486	315.23800	4.24420	0.1950806	0.28031572	2.3122657	20	—	—
31940 Sutthiluk	15.7	X	278.38219	138.58993	146.02812	4.54473	0.1536414	0.29136115	2.2534519	20	3 1.9	18.8
31941 2000 GQ_{105}	15.2	X	205.76522	117.54052	158.75929	12.67178	0.1482152	0.27705462	2.3303749	20	—	—
31942 2000 GA_{106}	14.5	X	179.94212	97.90463	250.32042	3.62438	0.1607425	0.28691847	2.2766541	20	2 13.7	17.9
31943 Tahsinelmas	15.3	X	164.39430	69.53763	237.99007	5.00354	0.1762352	0.27819310	2.3240126	20	—	—
31944 Seyitherdem	15.7	X	174.36336	137.19432	145.47452	5.67389	0.1359317	0.27668661	2.3324408	20	—	—
31945 2000 GQ_{108}	14.6	X	105.41796	52.96780	124.14170	5.50775	0.0525194	0.30379746	2.1915260	20	7 27.9	17.2
31946 Sahilabbi	15.8	X	50.49787	168.70708	51.40924	8.26539	0.1070048	0.30164931	2.2019181	20	7 22.2	18.2
31947 2000 GO_{109}	14.2	X	238.98019	164.96528	167.45639	7.23803	0.3308827	0.23995024	2.5648104	20	3 15.3	18.8
31948 2000 GH_{110}	15.9	X	289.37904	56.21139	311.20757	2.24508	0.1099754	0.30688169	2.1768177	20	7 25.9	17.9
31949 2000 GR_{120}	15.5	X	226.37954	166.11148	187.05898	6.44932	0.2954715	0.24593212	2.5230501	20	4 1.2	19.8
31950 2000 GC_{122}	15.0	X	266.14153	185.41492	131.13004	7.60948	0.1525126	0.24256241	2.5463634	20	4 5.9	18.7
31951 Alexisallen	15.2	X	219.12362	192.56977	118.85908	4.93935	0.1943470	0.28419276	2.2911879	20	2 5.9	18.9
31952 Bialtdecelie	15.0	X	293.62703	200.04963	120.85160	5.98158	0.1702798	0.29555739	2.2320718	20	5 11.4	17.5
31953 Bontha	15.2	X	327.14512	89.40543	130.72885	4.67839	0.0602927	0.28884498	2.2665197	20	2 22.7	17.5
31954 Georgiebotev	14.7	X	270.78790	147.45469	143.03806	6.88060	0.1285117	0.28834886	2.2691188	20	3 4.9	17.6
31955 2000 GU_{126}	14.2	X	87.85604	159.23615	132.87188	6.57706	0.1954324	0.26207355	2.4183580	20	12 16.4	18.2
31956 Wald	14.5	X	282.74138	243.94718	212.67203	2.26446	0.0305705	0.21803728	2.7338974	20	11 16.3	18.2
31957 Braunstein	15.3	X	314.40107	82.16711	149.48003	5.64817	0.1315631	0.28965340	2.2623005	20	2 7.3	17.9
31958 2000 GN_{135}	14.9	X	234.41781	171.26224	151.55119	7.78740	0.2445472	0.23953956	2.5677410	20	3 5.2	19.2
31959 Keianacave	14.9	X	215.52903	192.66556	83.74399	7.00945	0.1423127	0.23121087	2.6290401	20	—	—
31960 2000 GC_{142}	15.1	X	46.43800	173.29771	135.73733	11.29172	0.2719059	0.26025605	2.4296040	20	12 7.2	18.8
31961 2000 GJ_{142}	14.9	X	202.10841	215.69718	122.60640	10.65262	0.2299051	0.28644641	2.2791546	20	2 26.3	18.8
31962 2000 GE_{153}	14.8	X	273.10486	1.78964	236.87182	6.80966	0.1499702	0.23699893	2.5860592	20	1 4.1	18.7
31963 2000 GE_{154}	15.5	X	125.87244	306.14920	284.15210	5.66891	0.1009198	0.26572024	2.3961811	20	10 30.8	19.0
31964 2000 GG_{161}	15.4	X	151.79658	12.73133	294.27063	1.55240	0.2278179	0.27522093	2.3407143	20	—	—
31965 2000 GQ_{161}	14.7	X	125.11357	212.34698	110.06172	7.06576	0.2219571	0.27331663	2.3515742	20	—	—
31966 2000 HR_{1}	15.9	X	29.49346	158.97819	219.31295	5.96870	0.1197553	0.26925717	2.3751508	20	—	—
31967 2000 HW_{4}	12.9	X	251.18556	224.15678	34.25555	24.07296	0.1970508	0.18514514	3.0487922	20	1 14.5	18.3
31968 2000 HH_{5}	16.1	X	207.26127	124.09460	45.11654	22.20921	0.0407405	0.36416207	1.9421059	20	12 11.3	18.3
31969 Yihuachen	15.5	X	265.61707	137.82772	150.91726	2.41475	0.0974357	0.24143280	2.5542998	20	3 4.3	18.9
31970 2000 HD_{9}	14.9	X	247.08676	101.47785	215.70708	13.28119	0.2115995	0.23976052	2.5661632	20	3 6.0	19.3
31971 Beatricechoi	14.9	X	107.32005	212.90131	64.04062	3.37730	0.1690047	0.26553835	2.3972751	20	12 13.9	18.7
31972 Carlycrump	16.0	X	1.92654	269.55587	217.83524	5.76439	0.0528877	0.28254512	2.3000865	20	—	—
31973 Ashwindatta	14.9	X	353.95606	270.56086	48.48750	7.05370	0.1494803	0.25504183	2.4626070	20	9 12.3	17.2
31974 2000 HG_{12}	16.0	X	91.04940	331.52518	242.38771	2.80015	0.0781267	0.30587681	2.1815827	20	9 2.4	18.7
31975 Johndean	14.4	X	268.40659	246.89094	347.40849	5.93626	0.1345056	0.28276169	2.2989119	20	—	—
31976 Niyatidesai	14.5	X	48.22859	62.82283	234.43534	1.68203	0.0909776	0.21137725	2.7910260	20	10 18.5	18.0
31977 Devalapurkar	15.6	X	102.01798	218.84546	236.09712	3.30108	0.0709624	0.29091877	2.2557357	20	3 25.0	18.2
31978 Jeremyphilip	15.3	X	177.95636	222.62872	14.97255	2.01643	0.1776396	0.27031142	2.3689712	20	12 30.1	18.8
31979 2000 HH_{14}	13.8	X	166.18368	157.25774	147.14833	13.67916	0.2003167	0.22586498	2.6703619	20	—	—
31980 Axelfeldmann	15.0	X	289.18924	282.42140	47.65473	3.54282	0.1711600	0.24667592	2.5179758	20	5 16.6	18.1
31981 2000 HH_{15}	15.0	X	107.24165	204.08461	89.79508	3.12870	0.2010789	0.26731973	2.3866132	20	—	—
31982 Johnwallis	15.0	X	166.46957	24.91483	238.75539	2.25206	0.1511842	0.17210012	3.2009725	20	—	—
31983 2000 HS_{21}	14.8	X	291.86019	47.67984	232.81602	11.69486	0.1694097	0.24256777	2.5463259	20	3 9.8	18.6
31984 Unger	15.5	X	147.16969	96.91241	96.55559	2.98416	0.1527117	0.26223288	2.4173783	20	10 8.9	19.2
31985 2000 HV_{23}	15.8	X	71.96984	185.50588	126.51752	3.41083	0.1838988	0.26477087	2.4019055	20	12 25.4	19.5
31986 2000 HZ_{27}	16.3	X	173.12354	301.82346	194.92582	21.33495	0.0722286	0.35680986	1.9686937	20	8 28.7	19.1
31987 2000 HN_{28}	15.6	X	8.11910	38.28568	307.04647	1.46014	0.2099299	0.26158673	2.4213575	20	11 24.1	18.1
31988 Jasonfiacco	15.5	X	286.00771	4.86532	295.19239	2.24013	0.1591978	0.29350401	2.2424703	20	3 29.5	18.4
31989 2000 HX_{33}	16.5	X	356.33069	107.28663	144.82035	3.07475	0.0790591	0.29818932	2.2189184	20	5 28.7	18.6
31990 2000 HX_{34}	15.1	X	351.02302	217.19292	60.59356	6.97911	0.0610209	0.30072099	2.2064473	20	6 29.1	17.3
31991 Royghosh	15.9	X	156.41678	171.47762	74.72830	7.10427	0.1230517	0.27101655	2.3648604	20	12 23.5	19.4
31992 2000 HX_{35}	15.2	X	210.36753	320.43475	278.31843	6.48016	0.2068228	0.27555416	2.3388268	20	—	—
31993 2000 HL_{37}	14.3	X	158.31405	149.88650	134.42362	14.15233	0.1785073	0.22307133	2.6926106	20	—	—
31994 2000 HR_{40}	15.3	X	51.68198	329.51599	244.58147	4.99054	0.1525426	0.30214294	2.1995191	20	7 19.4	17.6
31995 2000 HX_{40}	15.3	X	268.67611	327.33130	39.71352	7.86902	0.2090076	0.29820421	2.2188445	20	6 2.9	18.1
31996 Goecknerwald	16.1	X	168.36095	104.37538	201.86810	6.06269	0.1286927	0.27869695	2.3212107	20	—	—
31997 2000 HR_{43}	15.5	X	240.68405	123.65240	224.38164	1.99624	0.2139696	0.24278387	2.5448147	20	4 10.5	19.7
31998 2000 HN_{44}	15.7	X	35.53167	29.72564	178.54745	6.02442	0.0962994	0.29843991	2.2176761	20	6 2.9	17.8
31999 2000 HF_{47}	14.6	X	168.58911	167.96736	218.31309	13.81623	0.1646547	0.24102196	2.5572017	20	3 23.9	18.8
32000 2000 HA_{51}	14.9	X	20.70945	285.37938	44.00607	9.20566	0.2593304	0.25826544	2.4420723	20	11 27.9	17.7