

ELEMENTS AND OPPOSITION DATES OF CENTAURS AND TRANSNEPTUNIAN OBJECTS

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2017 SEPTEMBER 4.0 TT

Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	<i>q</i>	<i>Q</i>	<i>T</i>	Oppos.	<i>V</i>
450265 2003 <i>WU</i> ₁₇₂	6.6 ^m	X	353.83248	100.97796	10.45811	4.14648	0.2547807	0.00402690	39.13	29.2	49.1	Tn	—	—
451657 2012 <i>WD</i> ₃₆	6.9	X	337.35651	294.04308	177.40205	23.72021	0.5079759	0.00148861	75.97	37.4	114.6	Sd	11 8.8	23.7
455171 1999 <i>OM</i> ₄	7.1	X	78.39166	131.96313	113.80937	2.08799	0.1224425	0.00316461	45.95	40.3	51.6	Tn	9 1.3	23.7
455206 2001 <i>FE</i> ₁₉₃	7.2	X	55.69013	341.81021	154.81553	2.80985	0.1264316	0.00305682	47.02	41.1	53.0	Tn	4 15.7	23.7
455209 2001 <i>KT</i> ₇₆	7.1	X	56.57455	348.82581	184.34955	1.70458	0.0908658	0.00321682	45.45	41.3	49.6	Tn	5 19.9	23.5
455502 2003 <i>UZ</i> ₄₁₃	4.4	X	111.63362	144.51827	136.05884	12.04510	0.2252095	0.00403481	39.08	30.3	47.9	Tn	11 19.1	20.8
456826 2007 <i>TH</i> ₄₂₂	7.6	X	15.78939	312.82550	96.33554	28.56958	0.2732812	0.00402080	39.17	28.5	49.9	Tn	12 12.9	22.3
459865 2013 <i>XZ</i> ₈	9.7	X	333.46969	288.14828	266.67513	22.52862	0.3750060	0.01990473	13.48	8.4	18.5	Ct	1 23.8	19.7
459870 2014 <i>AT</i> ₂₈	11.9	X	0.83312	279.53820	262.53833	165.55866	0.4048726	0.02722987	10.94	6.5	15.4	Ct	9 8.9	20.0
459971 2014 <i>ON</i> ₆	11.6	X	29.65079	195.19477	94.29952	3.94220	0.5643489	0.02039705	13.27	5.8	20.8	Ct	10 17.2	21.1
463368 2012 <i>VU</i> ₈₅	7.2	X	315.62602	265.51572	252.59316	15.09470	0.3111283	0.00625149	29.18	20.1	38.3	Ct	12 14.0	21.0
463663 2014 <i>HY</i> ₁₂₃	11.3	X	2.70091	231.53780	314.90552	13.92738	0.6293591	0.01206925	18.82	7.0	30.7	Ct	3 25.5	19.7