

Solar System Data

Name	Axis	U	Period	U	Rad, km	Type	Check=1
Mercury	0.3871	a	0.2409	y	2440	Terr. Planet	1.000
or	57,909,000	a	88	d	2440		0.000
Venus	0.7233	a	0.6152	y	6051	Terr. Planet	1.000
or	108,208,000	k	224.7	d	6051	Terr. Planet	0.000
Earth	1.0	a	1.0	y	6370	Terr. Planet	1.000
or	149,598,023	k	365.25	d	6370		0.000
1 Moon	385,000	k	27.3	d	1737	PMoon,SR	0.962
the ISS	6,731	k	1.5445	h	0.09	station	0.889
Hubble Telesco.	6,917	k	1.5903	h	0.006	satellite	0.964
SOHO at L1	0.99	a	1.0	y	0.004	satellite	1.031
SOHO from Earth	0.01	a					
Mars	1.5273	a	1.8809	y	3390	Terr. Planet	0.993
or	227,939,200	k	686.97	d	3390		0.000
1 Phobos	9377	k	7.66	h	1.2		0.998
2 Deimos	23,463	k	30.35	h	6.2		1.002
Jupiter	5.2028	a	11.862	y	69,900	Gas Giant	0.999
1 Io	421,700	k	1.77	d	1821	PMoon	1.001
2 Europa	670,900	k	3.55	d	1531	PMoon	0.999
3 Ganymede	1,070,400	k	7.16	d	2634	PMoon	1.002
4 Callisto	1,882,700	k	16.7	d	2410	PMoon	1.001
5 Amalthea	181,400	k	12	h	83.5		1.004
6 Himalia	11,388,690	k	248.3	d	170	A-C	1.000
7 Elara	11,740,000	k	260	d	43	PG	1.001
8 Pasiphae	23,624,000	k	708	d	20	A-C RG	0.911
9 Sinope	23,939,000	k	724.5	d	19	A-D RG	0.917
10 Lysithea	11,740,560	k	259.89	d	5.7	PG	1.000

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Name	Axis	U	Period	U	Rad, km	Type	Check=1
11 Carme	23,404,000	k	702.28	d	23	RG,e=.253	0.931
12 Ananke	21,276,000	k	610.5	d	14	JAG,e=.244	0.927
13 Leda	11,165,000	k	240.9	d	10	PG	0.999
14 Thebe	221,889	k	16.2	h	49.3	PG	0.995
15 Adrastea	129,000	k	7.2	h	20		1.005
16 Metis	128,000	k	7.08	h	9		0.994
17 Callirrhoe	24,102,000	k	758.82	d	4.3	JPG,e=.283	0.985
18 Themisto	7,393,216	k	130	d	8	PG	1.002
19 Megaclite	23,806,000	k	752.8	d	2.5	JPG,e=.421	1.085
20 Taygete	22,438,648	k	686.67	d	2.5		1.000
21 Chaldene	22,713,444	k	639.33	d	8	ecc=.251	0.901
22 Harpalyke	21,105,000	k	623.3	d	8	JAG	1.005
23 Kalyke	23,180,773	k	721.02	d	2.5		1.000
24 Iocaste	20,722,566	k	609.43	d	4	JAG,A-C	1.000
25 Erinome	22,986,268	k	711.96	d	1.5		1.000
26 Isonoe	23,800,647	k	750.13	d	8		1.000
27 Praxidike	20,823,948	k	613.9	d	3.5	JAG	1.000
28 Autonoe	21,264,445	k	772.17	d	8.8	JPG	1.508
29 Thyone	21,405,570	k	539.8	d	8	JAG,e=.253	0.712
30 Hermippe	21,182,086	k	629.81	d	7.8		1.000
31 Aitne	22,285,161	k	679.64	d	8	RG	1.000
32 Eurydome	23,230,858	k	723.36	d	8.2	JPG	1.000
33 Euanthe	20,404,854	k	598.09	d	8.3		1.009
34 Euporie	19,088,134	k	538.89	d	8.2	RG	1.001
35 Orthosie	20,567,971	k	602.62	d	8.4		1.000
36 Sponde	24,252,627	k	771.6	d	8.4	JPG	1.000
37 Kale	23,217,000	k	729.5	d	8.2	RG	1.019
38 Pasithae	23,307,318	k	726.93	d	8.4	JPG,RG	1.000
39 Hegemone	23,702,511	k	2.041	d	8.2		0.000
40 Mneme	21,129,786	k	627.48	d	8.2		1.000
41 Aoede	23,044,175	k	714.66	d	7.8		1.000
42 Thelxinoe	21,162,000	k	628.1	d	8.1		0.997
43 Arche	23,717,051	k	746.19	d	8.2		1.000
44 Kallichore	23,111,823	k	717.81	d	8.2		1.000
45 Helike	20,540,266	k	601.4	d	8.1		1.000
46 Carpo	17,144,873	k	458.62	d	8.1		1.000

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47 Eukelade	23,483,694	k	235.2	d	8		0.102
48 Cyllene	23,396,269	k	731.1	d	8.2		1.000
49 Kore	23,345,093	k	723.72	d	8.3		0.986
50 Herse	22,134,306	k	672.75	d	8.3		1.000
53 Dia	12,570,424	k	287.93	d	8.2		1.000
60 Eupheme	21,199,710	k	627.8	d	1		0.991
Jupiter has lost and found moons over time							
J Halo ring	92,000	k				Jup. rings	
Main ring	122,500	k					
Amalthea ring	129,000	k					
Thebe ring	182,000	k					
outer edge	226,000	k					
Saturn	9.5388	a	29.458	y	58,200	Gas Giant	1.000
1 Mimas	185,540	k	0.942	d	198	PMoon, SR	1.001
2 Encedelas	238,040	k	1.37	d	521	PMoon, SR	1.002
3 Tethys	294,670	k	1.888	d	531	PMoon, SR	0.997
4 Dione	377,420	k	2.737	d	561	PMoon	1.004
5 Rhea	527,070	k	4.518	d	764	PMoon, SR	1.004
6 Titan	1,221,870	k	15.95	d	2575	PMoon, SR	1.005
7 Hyperion	1,481,009	k	21.276	d	270		1.004
8 Iapetus	3,560,840	k	79.33	d	1469	PMoon, SR	1.004
9 Phoebe	12,947,780	k	550.31	d	107	SNG, RG	1.005
10 Janus	151,460	k	0.695	d	90	SR	1.001
11 Epimetheus	151,410	k	0.694	d	58		0.998
12 Helene	377,420	k	2.737	d	18	STM	1.004
13 Telesto	294,710	k	1.888	d	12.4	STM	1.003
14 Calypso	294,710	k	1.888	d	10.7	STM	1.003
15 Atlas	137,670	k	14.44	h	15		0.999
16 Prometheus	139,380	k	14.7	h	43		0.998
17 Pandora	141,720	k	0.629	d	30		1.001
18 Pan	133,580	k	0.575	d	14		0.999
19 Ymir	23,040,000	k	1315.1	d	9	RG	1.019
20 Paaliaq	15,200,000	k	686.95	d	11	SIG, e=.363	1.760

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Name	Axis	U	Period	U	Rad, km	Type	Check=1
21 Tarvos	17,983,000	k	926.2	d	7.5	SGG,e=.53	0.252
22 Ijiraq	11,124,000	k	451.42	d	6	SIG,e=.316	1.066
23 Suttingr	19,459,000	k	1016.7	d	3.5	SNG,RG	1.010
24 Kiviug	11,110,000	k	449.22	d	8	SIG,e=.329	1.060
25 Mundilfari	18,628,000	k	952.77	d	3.5	SNG,RG	1.012
26 Albiorix	16,182,000	k	783.45	d	16	SGG,A-red	1.043
27 Skathi	15,540,000	k	728.2	d	4	SNG,RG	1.018
28 Erriapus	17,343,000	k	871.19	d	5	A-red	1.048
29 Siarnaq	17,531,000	k	895.53	d	20	A-red	1.072
30 Thrymr	20,314,000	k	1094.1	d	3.5	SNG,RG	1.029
31 Narvi	19,007,000	k	1003.9	d	3.5	SNG,RG	1.057
32 Methone	194,440	k	1.01	d	1.6		1.000
33 Pallene	212,280	k	0.1154	d	2.5		0.010
34 Polydeuces	377,200	k	2.737	d	1.3	STM	1.005
35 Daphnis	136,500	k	0.594	d	3.8		0.999
36 Aegir	20,751,000	k	1117.5	d	3	SNG,RG	1.007
37 Bebhionn	17,119,000	k	834.84	d	3	SGG,PG	1.001
38 Bergelmir	19,336,000	k	1005.7	d	3	SNG,RG	1.008
39 Bestia	20,192,000	k	1088.7	d	3.5	SNG,RG	1.037
40 Farbuti	20,377,000	k	1088.7	d	2.5	SNG,RG	1.009
41 Fenrir	22,454,000	k	1260.4	d	2	SNG,RG	1.011
42 Fornjot	25,146,000	k	1494.2	d	3	SNG,RG	1.011
43 Hati	19,846,000	k	1038.6	d	3	SNG,RG	0.994
44 Hyrrokkin	18,437,000	k	931.86	d	4	SNG,RG	0.998
45 Kari	22,089,000	k	1231	d	3.5	SNG,RG	1.013
46 Loge	23,058,000	k	1311.4	d	3	SNG,RG	1.010
47 Skoll	17,665,000	k	878.29	d	3	SNG,RG	1.008
48 Surtur	22,704,000	k	1297.4	d	3	SNG,RG	1.036
49 Anthe	197,700	k	1.0509	d	0.9		1.030
50 Jarnsaxa	18,811,000	k	964.74	d	3	SNG,RG	1.007
51 Greip	18,206,000	k	921.19	d	3	SNG,RG	1.013
52 Tarqeq	17,910,000	k	894.86	d	3.5	SIG,PG	1.004
53 Aegaeon	167,500	k	0.808	d	0.33		1.001
X S/2004 S12	19,878,000	k	1046.2	d	2.5	RG	0.997
X S/2004 S13	18,404,000	k	933.48	d	3	SNG,RG	1.007
X S/2006 S1	18,790,000	k	963.37	d	3	RG	1.008

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Name	Axis	U	Period	U	Rad, km	Type	Check=1
X S/2007 S2	16,725,000	k	808.08	d	3	SNG,RG	1.005
X S/2007 S3	18,795,000	k	977.8	d	1.5	RG	1.037
D ring	66,900	k				Saturn rings	
C ring	74,658	k					
B ring	92,000	k					
Cassini division	117,580	k					
A ring	122,700	k					
F ring	140,180	k					
G ring	166,000	k					
E ring	180,000						
Uranus	19.1914	a	84.01	y	25,400	Ice Giant	0.998
1 Ariel	191,020	k	2.52	d	579	PMoon	0.993
2 Umbriel	266,000	k	4.144	d	585	PMoon	0.994
3 Titania	435,910	k	8.71	d	789	PMoon	0.998
4 Oberon	583,520	k	13.46	d	761	PMoon	0.994
5 Miranda	129,390	k	1.41	d	236	PMoon	1.014
6 Cordelia	49,751	k	8	h	20		0.997
7 Ophelia	53,763	k	9	h	21		0.998
8 Bianca	59,165	k	10.46	h	64		1.011
9 Cressida	61,767	k	11.1	h	40		0.989
10 Desdemona	62,658	k	11.4	h	32		0.999
11 Juliet	64,358	k	11.8	h	47		0.988
12 Portia	66,097	k	12.3	h	68		0.991
13 Rosalind	69,926	k	13.4	h	36		0.993
14 Belinda	75,256	k	15	h	40		0.999
15 Puck	86,004	k	18.3	h	81		0.996
16 Caliban	7,231,000	k	579.7	d	36	UIG,RG	0.968
17 Sycorax	12,179,000	k	1288.3	d	83	UIG	1.034
18 Prospero	16,256,000	k	1978	d	25	UIG	1.005
19 Setebos	17,418,000	k	2225	d	24	UIG	1.034
20 Stephano	8,004,000	k	677.4	d	16	UIG	0.987
21 Trincolo	8,504,000	k	749.2	d	9	UIG	1.007
22 Francisco	4,276,000	k	266.6	d	11	UIG	1.003

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Name	Axis	U	Period	U	Rad, km	Type	Check=1
23 Margaret	14,345,000	k	1687	d	10	UIG	1.056
24 Ferdinand	20,901,000	k	2887.2	d	3	UIG	1.007
Uranus inner	38,000	k				Uranus rings	
Uranus outer	98,000	k					
Neptune	30.0611	a	164.79	y	24,600	Ice Giant	1.000
1 Triton	354,759	k	5.9	d	1353	PMoon, RG	1.008
2 Nereid	5,513,787	k	360.1	d	357	RG, e=.75	1.004
3 Naiad	48,224	k	7.07	h	96		0.995
4 Thalassa	50,074	k	7.5	h	41		1.005
5 Despina	52,526	k	8.03	h	152		0.998
6 Galatea	61,953	k	10	h	87		0.944
7 Larissa	73,548	k	13	h	97		0.953
8 Proteus	117,647	k	1.1	d	210		0.960
9 Halimede	16,611,000	k	1879.1	d	31	RG	0.996
10 Psamathe	46,705,000	k	9129	d	19	NNG,e=.46	1.057
11 Sao	22,228,000	k	2912.7	d	22	PG	0.998
12 Laomedeia	23,613,000	k	3171.3	d	21	RG	0.987
13 Neso	49,500,000	k	9740.7	d	60	NNG,e=.57	1.011
14 Hippocamp	105,284	k	22.47	h	17	SR	0.971
NNG has 50							
Galle ring	41,000	k				Nept. rings	
Lassel ring	53,000	k					
LeVerrier ring	53,200	k					
Arago ring	57,200	k					
Adams ring	62,930	k					
Pluto	39.482	k	247.9	y	1188	Dwarf Pl. C	0.999
1 Charon	19,591	k	6.387	d	606	PMoon,SR	1.036
2 Styx	42,656	k	20.162	d	17		0.975
3 Nix	48,694	k	24.9	d	20		0.998
4 Kerberos	57,783	k	32.2	d	15		0.999

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5 Hydra	64,738	k	38.2	d	30	all 5 are PG	1.001
Asteroids, then TNO follow							
Data for numbered asteroids to 545,000							
These 2 are Near Earth Asteroids and visited							
101955 Bennu	1.1264	a	1.196	y	0.14	a=.044	1.001
162173 Ryugu	1.1896	a	1.3	y	0.5	a=.0327	1.004
1221 Amor	1.9191	a	2.66	y	0.4	AmAG	1.001
Amor group has 7427							
300 known Mercury crossers							
2,809 known Venus crossers							
230 known Earth crossers							
next 3 are Venus crossers							
1566 Icarus	1.0781	a	1.12	y	1.4		1.001
339 Dorothea	1.2997	a	1.48	y	0.5	AAG,A-K	0.998
25143 Itokawa	1.3241	a	1.52	y	0.5	NEA,A-S	0.995
1864 Daedalus	1.461	a	1.77	y	1.5		1.005
Apollo crosses both Venus and Mars							
1862 Apollo	1.4702	a	1.78	y	0.75	AAG,A-Q	0.997
next 6 are Mars crossers							
1951 Lick	1.3904	a	1.64	y	3	A-A	1.001
433 Eros	1.4579	a	1.76	y	8	AmAG,A-S	1.000
2005 HC4	1.8207	a	2.46	y	0.1		1.003
1600 Vyssotsky	1.8488	a	2.51	y	3.5	A-A	0.997
1221 Amor	1.9191	a	2.66	y	0.4	A-S	1.001
Amor group has 7427							
9969 Braille	2.341	a	3.58	y	0.8	A-Q or V	0.999
(Mars is here)	1.5273	a					
Mars Trojans	1.5273	a			#ID:7	asteroids	

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Hungaria group	1.78	a				start	
Hungaria group	has 13,000					A-E	
434 Hungaria	1.9444	a	2.7	y	5.5	A-E	0.992
3908 Nyx	1.92719	a	2.68	y	0.5	AmAG,A-V	1.003
Hungaria gr. end	2.0	a				end	
Main Belt start	2.2	a			billions?	asteroids	
Main Belt end	3.2	a			#ID: 7K	asteroids	
2423 Ibaruri	2.1885	a	3.24	y	3	A-A	1.001
8 Flora	2.202	a	3.27	y	64	A-S	1.001
Flora family has 13,000						3.50%	
43 Aiadne	2.204	a	3.27	y	30	A-S	0.999
Vesta family begin	2.26	a					
Vesta family has 15,212						A-V	
4278 Harvey	2.26676	a	3.41	y		A-V	0.998
809 Lundia	2.28254	a	3.45	y	5	A-V	1.001
1126 Otero	2.2723	a	3.43	y	5	A-A	1.003
4977 Rauthgundis	2.29254	a	3.47	y		A-V	0.999
18 Melpomene	2.296	a	3.48	y	140	A-S	1.001
1 S1978(18)1?					19	MBMoon	
956 Elisa	2.2984	a	3.48	y	5	A-V	0.997
12 Victoria	2.33344	a	3.56	y	56	A-S	0.997
3850 Peltier	2.2342	a	3.34	y	2	A-V	1.000
4796 Lewis	2.3554	a	3.62	y		A-V	1.003
4188 Kitezh	2.3355	a	3.57	y		A-V	1.000
4 Vesta	2.362	a	3.63	y	256	A-V	1.000
2867 Steins	2.3633	a	3.63	y	3	A-E	0.998
2442 Corbett	2.3879	a	3.69	y	4	A-V	1.000
4434 Nikulin	2.4412	a	3.81	y		A-V	0.998
3849 Incidentia	2.4764	a	3.9	y	5	A-V	1.002
887 Alinda	2.4788	a	3.9	y	1	NEA,A-V	0.999
Alinda group has 23 others							

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some have 4:1 resonance with Earth as NEA							
145 Adeona	2.67354	a	4.37	y	75	A-C	0.999
446 Aeternitas	2.7865	a	4.65	y	23	A-A	0.999
289 Nennetta	2.8738	a	4.87	y	140	A-A	0.999
7 Iris	2.385	a	3.68	y	107	A-S	0.998
9 Metis	2.387	a	3.68	y	95	A-S	0.996
5379 Abehiroshi	2.4	a	3.71	y		A-V	0.996
25 Phocaea	2.4	a	3.72	y	31	A-S	1.001
20 Massalia	2.4088	a	3.74	y	73	A-S	1.001
Nysa family begin	2.41	a					
142 Polana	2.4189	a	3.76	y	28	a=.045	0.999
44 Nysa	2.4238	a	3.77	y	30	A-E	0.998
6 Hebe	2.426	a	3.78	y	93	A-S4	1.001
135 Hertha	2.4279	a	3.78	y	38	A-M	0.998
21 Lutetia	2.435	a	3.8	y	49	A-M	1.000
19 Fortuna	2.441	a	3.81	y	103		0.998
2391 Tomita	2.4408	a	3.81	y	4.6	a=.0321	0.998
42 Isis	2.442	a	3.82	y	51	A-S	1.002
750 Oskar	2.4442	a	3.82	y	10	a=.0587	0.999
11 Parthenope	2.453	a	3.84	y	77	A-S,a=.18	0.999
2984 Chaucer	2.4702	a	3.88	y	13	alb=.045	0.999
Vesta family end	2.48	a					
Nysa family end	2.5	a					
Kirkwood Gap	2.5	a				3:1 reson.	
29 Amphirite	2.5556	a	4.09	y	95		1.002
5 Astraea	2.5735	a	4.13	y	60	A-S	1.001
13 Egeria	2.577	a	4.14	y	103	A-G	1.002
23 Thalia	2.628	a	4.26	y	53	A-S	1.000
15 Eunomia	2.643	a	4.3	y	128	A-S	1.001
Eunomia family has	6,000					1.40%	
26 Proserpina	2.656	a	4.33	y	44	A-S	1.001
1036 Ganymed	2.6629	a	4.35	y	16	AmAG,A-S	1.002
3 Juno	2.6707	a	4.365	y	136	A-S	1.000
324 Bamberga	2.6823	a	4.39	y	110		0.999

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64 Angelina	2.684	a	4.4	y	50	A-E	1.001
34 Circe	2.686	a	4.4	y	56		0.999
2234 Schmadel	2.7006	a	4.44	y		A-A	1.001
103 Hora	2.701	a	4.44	y	45	A-C	1.000
54 Alexandra	2.712	a	4.47	y	77	A-C	1.002
45 Eugenia	2.7200	a	4.49	y	101		1.002
1 Petit Prince	1184	a	4.8d	d	13	MBMoon	
410 Chloris	2.724	a	4.5	y	62	A-C	1.002
128 Nemesis	2.75	a	4.56	y	81	A-C	1.000
55 Pandora	2.76	a	4.58	y	35	A-M	0.998
2732 Witt	2.7606	a	4.59	y	6	A-A	1.001
Witt family	has > 1,500					A-S	
41 Daphne	2.765	a	4.6	y	87	A-C	1.001
1 Ceres	2.766	a	4.599	y	470	Dwarf Pl. C	0.999
88 Thisbe	2.768	a	4.6	y	102		0.998
2 Pallas	2.77092	a	4.613	y	256	A-B,a=.159	1.000
532 Herculina	2.7733	a	4.62	y	111		
Kirkwood Gap	2.82	a				5:2 reson.	
243 Ida	2.861	a	4.84	y	16		1.000
1 Dactyl	90	k	20h	h	0.6	MBMoon	
Koronis family	has 5949					A-S	
167 Urda	2.861	a	4.84	y	20	A-S	1.000
534 Nassovia	2.8867	a	4.9	y	17	A-S	0.998
321 Florentina	2.887	a	4.9	y	14	A-S	0.998
720 Bohlinia	2.8873	a	4.91	y	17	A-S	1.002
158 Koronis	2.8686	a	4.86	y	18	A-S	1.001
1223 Neckar	2.8686	a	4.86	y	12	A-S	1.001
277 Elvira	2.88422	a	4.9	y	18	A-S	1.001
263 Dresda	2.886	a	4.91	y	18	A-S	1.003
208 Lacrimosa	2.8932	a	4.92	y	21	A-S	1.000
311 Claudia	2.89793	a	4.93	y	12	A-S	0.999
22 Kalliope	2.9112	a	4.97	y	83	A-M	1.001
16 Psyche	2.921	a	4.99	y	256		0.999
Kirkwood Gap	2.95	a				7:3 reson.	
Eos family begin	2.99	a				has 9789	
876 Scott	3.0085	a	5.22	y	13.7	A-K	1.001

Solar System Data

Name	Axis	U	Period	U	Rad, km	Type	Check=1
742 Edisona	3.0107	a	5.22	y	23	A-K	0.998
798 Ruth	3.0146	a	5.23	y	22	A-K	0.998
639 Latona	3.0167	a	5.24	y	18	A-K	1.000
890 Waltraut	3.02	a	5.25	y	13.7	A-K	1.001
633 Zelima	3.0227	a	5.26	y	17	A-K	1.002
221 Eos	3.01044	a	5.22	y	52	A-K	0.999
339 Dorothea	3.01176	a	5.23	y	19	A-K	1.001
669 Kypria	3.0146	a	5.23	y	16	A-K	0.998
653 Berenike	3.01609	a	5.24	y	20	A-K	1.001
513 Centisima	3.0163	a	5.24	y	25	A-K	1.001
661 Cloelia	3.0166	a	5.24	y	24	A-K	1.000
450 Brigitta	3.01733	a	5.24	y	17	A-K	1.000
562 Salome	3.0183	a	5.24	y	15	A-K	0.999
451 Antikleia	3.02523	a	5.26	y	17	A-K	0.999
Eos family end	3.03	a					
704 Interamnia	3.0575	a	5.35	y	166	A-F	1.001
Hygeia family start	3.06	a				1% of belt	
451 Patienta	3.0616	a	5.36	y	113		1.001
423 Diotima	3.0677	a	5.37	y	104	A-C	0.999
52 Europa	3.101	a	5.46	y	152		1.000
Themis family start	3.08	a				A-C	
48 Doris	3.11	a	5.49	y	108		1.002
120 Lachesis	3.1177	a	5.5	y	87	A-C	0.998
75 Ursala	3.1236	a	5.52	y	90	A-C	1.000
24 Themis	3.1236	a	5.52	y	90	A-C	1.000
10 Hygeia	3.129	a	5.54	y	49	A-C	1.002
259 Aletheia	3.135	a	5.55	y	89	A-CP	1.000
572 Palma	3.1513	a	5.59	y	94	A-C	0.999
31 Euphrosyne	3.1554	a	5.61	y	134		1.002
94 Aurora	3.16	a	5.62	y	102	A-C	1.001
511 Davida	3.1647	a	5.63	y	145		1.000
702 Alauda	3.1953	a	5.71	y	125	A-C	0.999
863 Benkoela	3.2004	a	5.73	y	140	A-A	1.002
Hygeia family end	3.24	a					
Themis family end	3.24	a					
Kirkwood Gap	3.27	a				2:1 reson.	

Solar System Data

Name	Axis	U	Period	U	Rad, km	Type	Check=1
65 Cybele	3.4283	a	6.35	y	113	A-P	1.001
121 Hermione	3.4478	a	6.4	y	95	A-C	0.999
87 Sylvia	3.49	a	6.52	y	143	A-X	1.000
1 Romulus	1351	a	3.6d	d	11	MBMoon	
2 Remus	706	k	1.4d	d	7	MBMoon	
17 Thetis	2.4712	a	3.88	y	42	A-S	0.998
107 Camilla	3.4912	a	6.52	y	100	A-CP	0.999
1 - unnamed					6	MBMoon	
2 - unnamed					2	MBMoon	
2015 BZ509	5.1394	a	11.65	y	3		1.000
(Jupiter is here)	5.2028	a					
Greeks - belt	5.2028	a				asteroids	
617 Patroclus	5.2167	a	11.92	y	70	Greek,A-D	1.001
Trojans - belt	5.2028	a		y	# >7000	asteroids	
624 Hektor	5.2571	a	12.05	y	110	Trojan,A-D	0.999
153 Hilda	3.98	a	7.94	y	170	HAG=4000	1.000
following are Centaurs						44,000 est. with > 1km	
944 Hidalgo	5.741	a	13.76	y	19	Cent.,A-D	1.001
Narcissus	6.878	a	18.04	y	6		1.000
Okyrhoe	8.372	a	24.23	y	18		1.001
15504 unnamed	9.378	a	28.75	y	7		1.002
(Saturn is here)	9.5388	a				Centaurs	
Thereus	10.64	a	34.7	y	43		1.000
Echelus	10.7	a	35.04	y	30		1.002
Damocles	11.826	a	40.67	y	4		1.000
Elatus	11.79	a	40.52	y	29		1.002
2060 Chiron	13.648	a	50.42	y	83		1.000
Chariklo	15.822	a	62.93	y	252		1.000
1st ring	396	k					
2nd ring	405	k					

Solar System Data

Name	Axis	U	Period	U	Rad, km	Type	Check=1
Bienor	16.44	a	66.8	y	44		1.004
Asbolus	17.99	a	76.4	y	33		1.003
(Uranus is here)	19.1914	a				Centaur	
Pelion	19.96	a	89.25	y	14		1.002
Dioretsa	23.9	a	116.91	y	3		1.001
Nessus	24.67	a	122.7	y	21		1.003
Hylonome	25.152	a	126.14	y	33		1.000
Amycus	25.1	a	125.74	y	50		1.000
Cyllarus	26.06	a	133.06	y	23		1.000
Pholus	20.393	a	92.09	y			1.000
(Neptune is here)	30.0611	a			TNO's	Kuiper Belt	
2002 XW93	37.36	a	228.36	y	283		1.000
2005 RN43	41.36	a	266	y	340		1.000
2004 GV9	42.173	a	273.9	y	340		1.000
Orcus	39.174	a	245.2	y	458	Dwarf Pl. C	1.000
1 Vanth	9	k	9.5d	d	221	MBMoon	
2003 AZ84	39.362	a	247	y	353		1.000
2002 XV93	39.416	a	247.47	y	275		1.000
Ixion	39.82	a	251.25	y	309		1.000
2002 MS4	42.044	a	272.62	y	383		1.000
Salacia	42.184	a	274	y	423		1.000
2002 UX25	42.49	a	277	y	332		1.000
Varuna	42.72	a	279.2	y	334		1.000
Haumea	43.182	a	283.77	y	780	Dwarf Pl. C	1.000
1 Hi'iaka	49,880	a	49.1	y	160	MBMoon	
Quaoar	43.694	a	288.8	y	560	Dwarf Pl. C	1.000
Albion	43.779	a	289.67	y	108	A-RR	1.000
Sila	44.1157	a	293.02	y	125		1.000
Ultima Thule	44.581	a	297.67	y	5	or Arrokoth	1.000
2010 KZ39	45.4	a	305.86	y	299		1.000
MakeMake	45.43	a	306.21	y	715	Dwarf Pl. C	1.000
1 unnamed					190	MBMoon	
Chaos	45.8	a	309.92	y	300		1.000
Varda	46.11	a	313.1	y	384		1.000
1 Ilmare	4809	a	5.8	d	180	MBMoon	

Solar System Data

Name	Axis	U	Period	U	Rad, km	Type	Check=1
2002 AW197	47.042	a	322.65	y	30		1.000
2010 RF43	49.426	a	347.5	y	306		1.000
2014 EZ51	52.525	a	380.7	y	313		1.000
2002 TC302	55.265	a	410.86	y	292		1.000
2014 AN55	55.92	a	418.18	y	292		1.000
2004 XR190	57.255	a	433.24	y	278		1.000
2013 FY27	58.66	a	449.3	y	370		1.000
2008 OG19	66.29	a	539.73	y	310		1.000
2006 QH181	67.235	a	551.31	y	304		1.000
Gonggong	67.471	a	554.2	y	615		1.000
Eris	67.864	a	559.07	y	1163	Dwarf Pl. C	1.000
1 Dysnomia	37,330	k	15.8	d	350	PMoon	
Gikunii homdima	72.722	a	620.17	y	321		1.000
2010 JO179	79.141	a	704.06	y	299		1.000
2015 RR245	81.373	a	734	y	313		1.000
2014 UZ224	108.2	a	1125.2	y	318		1.000
2018 VG18	114.3	a	1223	y	328		1.002
2012 VP113	257.67	a	4136.2	y	299		1.000
Sedna	484.44	a	10,663	y	498	Dwarf Pl. C	1.000
Kuiper Belt end	50	a				TNO's	
Oort Cloud begin	200	a				TNO's	
comets follow							
Enke's Comet	2.2178	a	3.3	y	2.4	comet	0.998
Kobayashi's	8.588	a	25.17	y		comet	1.000
Halley's Comet	17.834	a	75.32	y	5.5	comet	1.000
McNaught 2006	2050	a	92,600	y		comet	0.995
Sun					396,430	Sun	
table compiled by David Michalets							
for personal reference							
most data from Wikipedia							
Saturn moon numbers from britannica inconsistent with Wikipedia							
Terr.Planet = Terrestrial Planet							

Solar System Data

Name	Axis	U Period	U Rad, km	Type	Check=1
Dwarf Pl. C = Dwarf Planet Candidate					
PMoon = Planetary Mass Moon					
PG = Prograde, RG = Retrograde, SR = synchronous rotation					
A-C = Asteroid type from spectrum					
TNO = Trans Neptunian Object					
MBMoon = Minor Body Moon					
NEA = Near Earth Asteroid					
AAG = Apollo Asteroid Group - NEA					
AmAG = Amor Asteroid Group - NEA					
HAG = Hilda Asteroid group					
75% of main asteroid belt are of dark carbon C-type					
17% of main asteroid belt are of stony-type					
6% of main asteroid belt are of Vesta-type					
Hungaria group has E-type					
JAG = Jupiter Ananke group					
JPG = Jupiter Pasiphae group					
STM = Saturn Trojan Moon with another moon					
SGG = Saturn Gallic Group					
SIG = Saturn Inuit Group					
SNG = Saturn Norse Group					
UIG = Uranus Irregular Group					
NNG = Neptune Nereid Group					
a=albedo, e= or ecc= eccentricity					
reson.= resonance with Jupiter					
axis units are AU or km; period units are day, hour, year					
Note:					
Accuracy cannot be guaranteed with keyboard entries					