

## Stars - Physical Parameters

Name	Mean radius (km)	Mass (kg)	Gravitational parameter (m <sup>3</sup> /s <sup>2</sup> )	Mean density (kg/m <sup>3</sup> )	Surface gravity (g)	Escape velocity (m/s)	Luminosity (W)	Effective temperature (K)	Sidereal rotation period (hours)	Spectral type
Ciro	70,980	1.9099E+28	1.2747E+18	12,750	25.800	189,519	3.3415E+24	5,524	150	G6
Grannus	30,170	9.5494E+27	6.3734E+17	83,016	71.400	205,547	1.0301E+23	3,550	360	M2

Scaled up to life-sized proportions, comparisons to our real-life sun are as follows.			
	Solar radii	Solar masses	Solar luminosities
Ciro	1.02	0.96	0.87
Grannus	0.43	0.48	0.03

## Grannus - Orbital Parameters

Semimajor axis, km	2,000,000,000
Orbital eccentricity	0.400
Orbital inclination, degrees	7
Longitude of ascending node, degrees	130
Argument of periapsis, degrees	20
Sidereal orbital period, years	1,711

## The Planets - Bulk Parameters

Name	Mean radius (km)	Mass (kg)	Gravitational parameter ( $\text{m}^3/\text{s}^2$ )	Mean density ( $\text{kg}/\text{m}^3$ )	Surface gravity (g)	Escape velocity (m/s)	GSO altitude (km)	Sphere of influence (km)	Albedo ----	Solar irradiance ( $\text{W}/\text{m}^2$ )	Black body temperature (K)
Icarus	160	6.0185E+20	4.0168E+10	35,078	0.160	709	N/A	3,491	0.20	21,755	526.3
Thalia	270	3.2135E+21	2.1447E+11	38,976	0.300	1,260	2,772	13,646	0.15	5,439	377.8
Niven	400	1.1755E+22	7.8453E+11	43,848	0.500	1,981	2,935	34,386	0.20	2,417	303.9
Gael	600	5.2897E+22	3.5304E+12	58,464	1.000	3,430	2,863	83,668	0.35	1,360	249.9
Tellumo	1,000	2.7918E+23	1.8633E+13	66,649	1.900	6,105	10,612	260,440	0.30	531	201.2
Gratian	550	3.3336E+22	2.2249E+12	47,834	0.750	2,844	9,750	194,786	0.35	173	149.3
Otho	3,500	1.6560E+24	1.1052E+14	9,221	0.920	7,947	15,730	1,725,278	0.40	50.3	107.4
Gauss	2,500	9.4590E+23	6.3130E+13	14,452	1.030	7,107	15,660	2,652,003	0.45	13.6	75.8
Nero	5,000	3.5632E+24	2.3781E+14	6,805	0.970	9,753	16,139	8,835,395	0.50	3.54	52.9
Hox	250	1.2857E+21	8.5808E+10	19,644	0.140	829	1,840	567,558	0.40	1.51	44.7
Leto	210	7.7759E+20	5.1897E+10	20,045	0.120	703	640	600,296	0.65	0.903	34.4

# The Planets - Orbital Parameters

Name	Semimajor axis (km)	Orbital eccentricity ----	Orbital inclination (degrees)	Longitude of ascending node (degrees)	Argument of periapsis (degrees)	Sidereal orbital period (days)	Synodic orbital period (days)	Sidereal rotation period (hours)	Solar day (hours)
Icarus	3,496,090	0.100	6.0	50	340	53.3	60.9	213.0	639.1
Thalia	6,992,180	0.010	3.0	80	10	150.6	233.0	20.00	20.45
Niven	10,488,300	0.030	1.0	60	0	276.7	789.9	12.00	12.09
Gael	13,982,767	0.000	0.0	90	300	426.0	n/a	5.986	6.000
Tellumo	22,375,000	0.020	1.5	70	20	862.3	841.9	16.00	16.05
Gratian	39,156,200	0.060	2.0	100	50	1,996	541.6	38.68	38.80
Otho	72,718,700	0.040	1.5	80	40	5,052	465.2	14.00	14.01
Gauss	139,844,000	0.030	2.0	110	340	13,474	439.9	17.00	17.00
Nero	274,093,000	0.050	1.0	90	60	36,971	431.0	11.00	11.00
Hox	419,531,000	0.150	5.0	120	90	70,011	428.6	18.00	18.00
Leto	542,593,000	0.100	10.0	100	80	102,975	427.8	6.000	6.000

## Planetary Satellites - Bulk Parameters

Name	Mean radius (km)	Mass (kg)	Gravitational parameter (m <sup>3</sup> /s <sup>2</sup> )	Mean density (kg/m <sup>3</sup> )	Surface gravity (g)	Escape velocity (m/s)	Sphere of influence (km)	Albedo ----	Solar irradiance (W/m <sup>2</sup> )	Black body temperature (K)
Satellites of Thalia										
Eta	60	2.6449E+19	1.7652E+09	29,232	0.050	243	1,657	0.30	5,439	359.9
Satellites of Gael										
Iota	100	1.2490E+20	8.3357E+09	29,817	0.085	408	2,491	0.45	1,360	239.6
Ceti	150	4.4632E+20	2.9788E+10	31,571	0.135	630	8,144	0.35	1,360	249.9
Satellites of Tellumo										
Lili	7	4.3199E+16	2.8832E+06	30,067	0.006	29	40	0.20	531	208.0
Satellites of Gratian										
Geminus	230	1.7100E+21	1.1413E+11	33,553	0.220	996	3,140	0.35	173	149.3
Satellites of Otho										
Augustus	350	6.2999E+21	4.2046E+11	35,078	0.350	1,550	2,153	0.40	50.3	107.4
Hephaestus	125	1.8367E+20	1.2258E+10	22,450	0.080	443	838	0.30	50.3	111.6
Jannah	105	1.0530E+20	7.0277E+09	21,715	0.065	366	1,362	0.35	50.3	109.6
Satellites of Gauss										
Loki	180	4.7607E+20	3.1774E+10	19,488	0.100	594	887	0.40	13.6	77.4
Catullus	1,200	1.9043E+23	1.2709E+13	26,309	0.900	4,602	30,021	0.40	13.6	77.4
Tarsiss ( <i>orbits Catullus</i> )	320	2.5579E+21	1.7071E+11	18,635	0.170	1,033	1,070	0.30	13.6	80.5
Satellites of Nero										
Hadrian	300	2.3804E+21	1.5887E+11	21,047	0.180	1,029	1,611	0.20	3.54	59.4
Narisse	90	4.7607E+19	3.1774E+09	15,590	0.040	266	539	0.45	3.54	54.1
Muse	130	1.9866E+20	1.3259E+10	21,587	0.080	452	1,591	0.35	3.54	56.4
Minona	120	1.2695E+20	8.4729E+09	17,539	0.060	376	2,244	0.35	3.54	56.4
Agrippina	50	1.1020E+19	7.3550E+08	21,047	0.030	172	5,003	0.45	3.54	54.1
Julia	30	1.9836E+18	1.3239E+08	17,539	0.015	94	5,118	0.40	3.54	55.3
Satellites of Hox										
Argo	80	3.2914E+19	2.1967E+09	15,347	0.035	234	2,885	0.60	1.51	40.4

# Planetary Satellites - Orbital Parameters

Name	Semimajor axis (km)	Orbital eccentricity ----	Orbital inclination (degrees)	Longitude of ascending node (degrees)	Argument of periapsis (degrees)	Sidereal orbital period (days)	Synodic orbital period (days)	Sidereal rotation period (hours)	Solar day (hours)
Satellites of Thalia									
Eta	11,300	0.060	2.0	180	350	23.86	28.35	143.2	170.1
Satellites of Gael									
Iota	28,000	0.000	0.0	90	300	22.94	24.24	137.6	145.5
Ceti	55,000	0.050	9.0	90	300	63.15	74.14	378.9	444.8
Satellites of Tellumo									
Lili	1,455	0.000	0.0	0	0	0.118	0.118	0.710	0.710
Satellites of Gratian									
Geminus	10,300	0.025	3.0	60	30	6.45	6.47	38.68	38.80
Satellites of Otho									
Augustus	20,000	0.005	1.0	60	60	2.47	2.48	14.85	14.86
Hephaestus	32,000	0.010	0.5	100	350	5.01	5.01	30.05	30.08
Jannah	65,000	0.075	6.0	80	70	14.50	14.54	87.00	87.25
Satellites of Gauss									
Loki	18,500	0.020	4.0	130	300	2.91	2.91	17.48	17.48
Catullus	57,000	0.000	1.0	90	20	15.76	15.77	94.53	94.64
Tarsiss ( <i>orbits Catullus</i> )	6,000	0.000	0.0	90	20	1.20	1.30	7.20	7.20
Satellites of Nero									
Hadrian	30,000	0.010	10.0	357	145	3.10	3.10	18.60	18.60
Narisse	48,000	0.015	10.9	3	115	6.27	6.27	37.64	37.64
Muse	80,000	0.005	10.3	0	180	13.50	13.50	80.98	81.01
Minona	135,000	0.020	11.0	6	155	29.59	29.61	177.5	177.7
Agrippina	800,000	0.160	18.0	150	60	426.8	431.8	8.00	8.00
Julia	1,625,000	0.280	170.0	0	60	1,236	1,278	10.00	10.00
Satellites of Hox									
Argo	12,500	0.000	40.0	90	90	43.89	43.91	263.3	263.5

# Atmospheric Properties

Name	Height (km)	Total mass (kg)	Surface pressure (atm)	Surface density (kg/m <sup>3</sup> )	Scale height at surface (km)	Mean surface temperature (K)	Range of temperature (K)	Mean molecular weight (g/mol)	Adiabatic index ----	Principal composition
Ciro	1,600	2.54E+18	0.10	0.0003	111.7	5,524	0	1.3	1.67	hydrogen, helium
Niven	65	4.99E+15	0.12	0.19	10.3	325	91	43.0	1.30	carbon dioxide, nitrogen
Gael	70	4.67E+16	1.00	1.23	6.7	288	57	28.9644	1.40	nitrogen, oxygen
Tellumo	45	6.83E+17	10.00	12.95	3.4	273	27	29.0	1.40	nitrogen, oxygen
Gratian	50	2.62E+16	0.50	1.13	4.9	157	34	29.0	1.40	nitrogen
Otho	600	2.59E+19	15.00	1.85	72.8	237	0	2.4	1.44	hydrogen, helium
Augustus	60	4.54E+15	0.10	0.30	7.8	113	21	28.0	1.40	nitrogen
Gauss	400	1.18E+19	15.00	2.27	52.9	209	0	2.6	1.44	hydrogen, helium
Catullus	280	1.04E+18	5.00	1.80	25.6	95	6	2.8	1.44	hydrogen, helium
Tarsiss	130	1.09E+17	1.40	5.01	13.6	92	4	27.0	1.40	nitrogen, methane
Nero	560	5.02E+19	15.00	1.48	86.5	272	0	2.2	1.44	hydrogen, helium
Hadrian	80	2.60E+16	0.40	2.10	8.7	65	8	28.0	1.40	nitrogen
Hox	40	5.80E+14	0.01	0.074	8.0	46	9	28.0	1.40	nitrogen
Leto	35	2.39E+14	0.005	0.047	7.3	36	6	28.0	1.40	nitrogen