

Ciro

Bulk parameters

Classification: Star, yellow dwarf
Spectral class: G6V
Radius: 70,980 km
Mass: 1.90995×10^{28} kg
Gravitational parameter: 1.27471×10^{18} m³/s²
Mean density: 12,750 kg/m³
Surface gravity: 25.8 g
Escape velocity: 189,519 m/s
Luminosity: 3.34145×10^{24} W
Surface temperature: 5,524 K
Absolute magnitude: +4.9
Planets: Icarus, Thalia, Niven, Gael, Tellumo, Gratian, Otho, Gauss, Nero, Hox, Leto

Rotational parameters

Sidereal rotation period: 25 days
Synchronous orbit altitude: 2,040,628 km
Sphere of influence: infinity

Atmosphere

Overall height: 1,600,000 m
Pressure: 0.1 atm datum
Temperature range: 4,000-10,000 K
Mean molecular weight: 1.3 g/mol

- * The above are Ciro's design atmospheric properties.
- * Not implemented in game because they produce a visual artifact.
- * Actual in game atmosphere is that of the stock Sun.

Icarus

Bulk parameters

Classification: Planet, terrestrial
Radius: 160 km datum, 161.1 km mean
Mass: 6.01851×10^{20} kg
Gravitational parameter: 4.01680×10^{10} m³/s²
Mean density: 34,380 kg/m³
Surface gravity: 0.16 g datum
Escape velocity: 709 m/s
Bond albedo: 0.2
Solar irradiance: 21,755 W/m²
Black-body temperature: 526 K
Natural satellites: none

Orbital & rotational parameters

Semi-major axis: 3,496,090 km
Perihelion: 3,146,481 km
Aphelion: 3,845,699 km
Orbit eccentricity: 0.1
Orbit inclination: 6°
Longitude of ascending node: 50°
Argument of periapsis: 340°
Sidereal orbit period: 53.259 days
Synodic period: 60.869 days
Mean orbital velocity: 19,095 m/s
Sidereal rotation period: 35.506 days
Solar day: 106.52 days
Synchronous orbit altitude: not possible
Sphere of influence: 3,491 km

Thalia

Bulk parameters

Classification: Planet, terrestrial
Radius: 270 km datum, 272.5 km mean
Mass: 3.213050×10^{21} kg
Gravitational parameter: 2.14471×10^{11} m³/s²
Mean density: 37,900 kg/m³
Surface gravity: 0.3 g datum
Escape velocity: 1,260 m/s
Bond albedo: 0.15
Solar irradiance: 5,439 W/m²
Black-body temperature: 378 K
Natural satellites: Eta

Orbital & rotational parameters

Semi-major axis: 6,992,180 km
Perihelion: 6,922,258 km
Aphelion: 7,062,102 km
Orbit eccentricity: 0.01
Orbit inclination: 3°
Longitude of ascending node: 80°
Argument of periapsis: 10°
Sidereal orbit period: 150.64 days
Synodic period: 233.05 days
Mean orbital velocity: 13,502 m/s
Sidereal rotation period: 20 hours
Solar day: 20.453 hours
Synchronous orbit altitude: 2,772 km
Sphere of influence: 13,646 km

Eta

Bulk parameters

Classification: Moon (Thalia)
Radius: 60 km datum, 60.4 km mean
Mass: 2.64485×10^{19} kg
Gravitational parameter: 1.76520×10^9 m³/s²
Mean density: 28,720 kg/m³
Surface gravity: 0.05 g datum
Escape velocity: 243 m/s
Bond albedo: 0.3
Solar irradiance: 5,439 W/m²
Black-body temperature: 360 K

Orbital & rotational parameters

Semi-major axis: 11,300 km
Periapsis: 10,622 km
Apoapsis: 11,978 km
Orbit eccentricity: 0.06
Orbit inclination: 2°
Longitude of ascending node: 180°
Argument of periapsis: 350°
Sidereal orbit period: 23.859 days
Synodic period: 28.350 days
Mean orbital velocity: 138 m/s
Sidereal rotation period: 23.859 days
Solar day: 28.350 days
Synchronous orbit altitude: not possible
Sphere of influence: 1,657 km

Niven

Bulk parameters

Classification: Planet, terrestrial
Radius: 400 km datum, 403.6 km mean
Mass: 1.17549×10^{22} kg
Gravitational parameter: 7.84532×10^{11} m³/s²
Mean density: 42,670 kg/m³
Surface gravity: 0.5 g datum
Escape velocity: 1,981 m/s
Bond albedo: 0.2
Solar irradiance: 2,417 W/m²
Black-body temperature: 304 K
Natural satellites: none

Orbital & rotational parameters

Semi-major axis: 10,488,300 km
Perihelion: 10,173,651 km
Aphelion: 10,802,949 km
Orbit eccentricity: 0.03
Orbit inclination: 1°
Longitude of ascending node: 60°
Argument of periapsis: 0°
Sidereal orbit period: 276.74 days
Synodic period: 789.87 days
Mean orbital velocity: 11,024 m/s
Sidereal rotation period: 12 hours
Solar day: 12.087 hours
Synchronous orbit altitude: 2,935 km
Sphere of influence: 34,386 km

Atmosphere

Overall height: 65,000 m
Pressure: 0.12 atm datum
Mean temperature: 325 K datum
Mean molecular weight: 43 g/mol

Gael

Bulk parameters

Classification: Planet, terrestrial
Radius: 600 km sea level, 600.4 km mean
Mass: 5.28971×10^{22} kg
Gravitational parameter: 3.53039×10^{12} m³/s²
Mean density: 58,330 kg/m³
Surface gravity: 1 g sea level (9.80665 m/s²)
Escape velocity: 3,430 m/s
Bond albedo: 0.35
Solar irradiance: 1,360 W/m²
Black-body temperature: 250 K
Natural satellites: Iota, Ceti

Orbital & rotational parameters

Semi-major axis: 13,982,767 km (1 au)
Perihelion: 13,982,767 km
Aphelion: 13,982,767 km
Orbit eccentricity: 0
Orbit inclination: 0°
Longitude of ascending node: n/a
Argument of periapsis: n/a
Sidereal orbit period: 426 days (1 year)
Mean orbital velocity: 9,548 m/s
Sidereal rotation period: 5.9859 hours
Solar day: 6 hours (1 day)
Synchronous orbit altitude: 2,862.939 km
Sphere of influence: 83,668 km

Atmosphere

Overall height: 70,000 m
Pressure: 1 atm sea level (101.325 kPa)
Mean temperature: 288 K sea level
Mean molecular weight: 28.9644 g/mol

Iota

Bulk parameters

Classification: Moon (Gael)
Radius: 100 km datum, 101.2 km mean
Mass: 1.24896×10^{20} kg
Gravitational parameter: $8.33565 \times 10^9 \text{ m}^3/\text{s}^2$
Mean density: 28,800 kg/m³
Surface gravity: 0.085 g datum
Escape velocity: 408 m/s
Bond albedo: 0.45
Solar irradiance: 1,360 W/m²
Black-body temperature: 240 K

Orbital & rotational parameters

Semi-major axis: 28,000 km
Periapsis: 28,000 km
Apoapsis: 28,000 km
Orbit eccentricity: 0
Orbit inclination: 0°
Longitude of ascending node: n/a
Argument of periapsis: n/a
Sidereal orbit period: 22.938 days
Synodic period: 24.243 days
Mean orbital velocity: 355 m/s
Sidereal rotation period: 22.938 days
Solar day: 24.243 days
Synchronous orbit altitude: not possible
Sphere of influence: 2,491 km

Ceti

Bulk parameters

Classification: Moon (Gael)
Radius: 150 km datum, 152.5 km mean
Mass: 4.46319×10^{20} kg
Gravitational parameter: 2.97877×10^{10} m³/s²
Mean density: 30,030 kg/m³
Surface gravity: 0.135 g datum
Escape velocity: 630 m/s
Bond albedo: 0.35
Solar irradiance: 1,360 W/m²
Black-body temperature: 250 K

Orbital & rotational parameters

Semi-major axis: 55,000 km
Periapsis: 52,250 km
Apoapsis: 57,750 km
Orbit eccentricity: 0.05
Orbit inclination: 9°
Longitude of ascending node: 90°
Argument of periapsis: 300°
Sidereal orbit period: 63.148 days
Synodic period: 74.138 days
Mean orbital velocity: 253 m/s
Sidereal rotation period: 63.148 days
Solar day: 74.138 days
Synchronous orbit altitude: not possible
Sphere of influence: 8,144 km

Tellumo

Bulk parameters

Classification: Planet, terrestrial
Radius: 1,000 km sea level, 1,002.9 km mean
Mass: 2.79179×10^{23} kg
Gravitational parameter: 1.86326×10^{13} m³/s²
Mean density: 66,080 kg/m³
Surface gravity: 1.9 g sea level
Escape velocity: 6,105 m/s
Bond albedo: 0.3
Solar irradiance: 531 W/m²
Black-body temperature: 201 K
Natural satellites: Lili

Orbital & rotational parameters

Semi-major axis: 22,375,000 km
Perihelion: 21,927,500 km
Aphelion: 22,822,500 km
Orbit eccentricity: 0.02
Orbit inclination: 1.5°
Longitude of ascending node: 70°
Argument of periapsis: 20°
Sidereal orbit period: 862.31 days
Synodic period: 841.93 days
Mean orbital velocity: 7,548 m/s
Sidereal rotation period: 16 hours
Solar day: 16.050 hours
Synchronous orbit altitude: 10,612 km
Sphere of influence: 260,440 km

Atmosphere

Overall height: 45,000 m
Pressure: 10 atm sea level, 1 atm @ 6.75 km
Mean temperature: 273 K sea level
Mean molecular weight: 29 g/mol

Lili

Bulk parameters

Classification: Moon (Tellumo)
Radius: 7 km datum, 9.4 km mean
Mass: 1.07998×10^{17} kg
Gravitational parameter: 7.20789×10^6 m³/s²
Mean density: 30,650 kg/m³
Surface gravity: 0.015 g datum
Escape velocity: 45 m/s
Bond albedo: 0.2
Solar irradiance: 531 W/m²
Black-body temperature: 208 K

Orbital & rotational parameters

Semi-major axis: 1,455 km
Perihelion: 1,455 km
Aphelion: 1,455 km
Orbit eccentricity: 0
Orbit inclination: 0°
Longitude of ascending node: n/a
Argument of periapsis: n/a
Sidereal orbit period: 0.7096 hours
Synodic period: 0.7097 hours
Mean orbital velocity: 3,579 m/s
Sidereal rotation period: 0.7096 hours
Solar day: 0.7097 hours
Synchronous orbit altitude: not possible
Sphere of influence: 40 km

Note: Lili is omitted when Principia is installed.

Gratian

Bulk parameters

Classification: Planet, terrestrial
Radius: 550 km datum, 552.7 km mean
Mass: 3.33362×10^{22} kg
Gravitational parameter: 2.22488×10^{12} m³/s²
Mean density: 47,140 kg/m³
Surface gravity: 0.75 g datum
Escape velocity: 2,844 m/s
Bond albedo: 0.35
Solar irradiance: 173 W/m²
Black-body temperature: 149 K
Natural satellites: Geminus

Orbital & rotational parameters

Semi-major axis: 39,156,200 km
Perihelion: 36,806,828 km
Aphelion: 41,505,572 km
Orbit eccentricity: 0.06
Orbit inclination: 2°
Longitude of ascending node: 100°
Argument of periapsis: 50°
Sidereal orbit period: 4.6861 years
Synodic period: 541.57 days
Mean orbital velocity: 5,706 m/s
Sidereal rotation period: 38.679 hours
Solar day: 38.805 hours
Synchronous orbit altitude: 9,750 km
Sphere of influence: 194,786 km

Atmosphere

Overall height: 50,000 m
Pressure: 0.5 atm datum
Mean temperature: 157 K datum
Mean molecular weight: 29 g/mol

Geminus

Bulk parameters

Classification: Moon (Gratian)
Radius: 230 km datum, 231.7 km mean
Mass: 1.71005×10^{21} kg
Gravitational parameter: 1.14130×10^{11} m³/s²
Mean density: 32,810 kg/m³
Surface gravity: 0.22 g datum
Escape velocity: 996 m/s
Bond albedo: 0.35
Solar irradiance: 173 W/m²
Black-body temperature: 149 K

Orbital & rotational parameters

Semi-major axis: 10,300 km
Periapsis: 10,043 km
Apoapsis: 10,558 km
Orbit eccentricity: 0.025
Orbit inclination: 3°
Longitude of ascending node: 60°
Argument of periapsis: 30°
Sidereal orbit period: 6.4466 days
Synodic period: 6.4674 days
Mean orbital velocity: 465 m/s
Sidereal rotation period: 6.4466 days
Solar day: 6.4674 days
Synchronous orbit altitude: not possible
Sphere of influence: 3,140 km

Otho

Bulk parameters

Classification: Planet, gas giant
Radius: 3,500 km datum
Mass: 1.65597×10^{24} kg
Gravitational parameter: 1.10521×10^{14} m³/s²
Mean density: 9,220 kg/m³
Surface gravity: 0.92 g datum
Escape velocity: 7,947 m/s
Bond albedo: 0.4
Solar irradiance: 50.3 W/m²
Black-body temperature: 107 K
Natural satellites: Augustus, Hephaestus, Jannah

Orbital & rotational parameters

Semi-major axis: 72,718,700 km
Perihelion: 69,809,952 km
Aphelion: 75,627,448 km
Orbit eccentricity: 0.04
Orbit inclination: 1.5°
Longitude of ascending node: 80°
Argument of periapsis: 40°
Sidereal orbit period: 11.860 years
Synodic period: 465.23 days
Mean orbital velocity: 4,187 m/s
Sidereal rotation period: 14 hours
Solar day: 14.006 hours
Synchronous orbit altitude: 15,730 km
Sphere of influence: 1,725,278 km

Atmosphere

Overall height: 600,000 m
Pressure: 15 atm datum, 1 atm @ 148 km
Mean temperature: 237 K datum, 131 K @ 148 km
Mean molecular weight: 2.4 g/mol

Augustus

Bulk parameters

Classification: Moon (Otho)
Radius: 350 km sea level, 351.6 km mean
Mass: 6.29990×10^{21} kg
Gravitational parameter: 4.20460×10^{11} m³/s²
Mean density: 34,600 kg/m³
Surface gravity: 0.35 g datum
Escape velocity: 1,550 m/s
Bond albedo: 0.4
Solar irradiance: 50.3 W/m²
Black-body temperature: 107 K

Orbital & rotational parameters

Semi-major axis: 20,000 km
Periapsis: 19,900 km
Apoapsis: 20,100 km
Orbit eccentricity: 0.005
Orbit inclination: 1°
Longitude of ascending node: 60°
Argument of periapsis: 60°
Sidereal orbit period: 2.4748 days
Synodic period: 2.4761 days
Mean orbital velocity: 2,351 m/s
Sidereal rotation period: 2.4748 days
Solar day: 2.4761 days
Synchronous orbit altitude: not possible
Sphere of influence: 2,153 km

Atmosphere

Overall height: 60,000 m
Pressure: 0.1 atm datum
Mean temperature: 113 K datum
Mean molecular weight: 28 g/mol

Hephaestus

Bulk parameters

Classification: Moon (Otho)
Radius: 125 km datum, 127.1 km mean
Mass: 1.83670×10^{20} kg
Gravitational parameter: 1.22583×10^{10} m³/s²
Mean density: 21,350 kg/m³
Surface gravity: 0.08 g datum
Escape velocity: 443 m/s
Bond albedo: 0.3
Solar irradiance: 50.3 W/m²
Black-body temperature: 112 K

Orbital & rotational parameters

Semi-major axis: 32,000 km
Periapsis: 31,680 km
Apoapsis: 32,320 km
Orbit eccentricity: 0.01
Orbit inclination: 0.5°
Longitude of ascending node: 100°
Argument of periapsis: 350°
Sidereal orbit period: 5.0087 days
Synodic period: 5.0137 days
Mean orbital velocity: 1,858 m/s
Sidereal rotation period: 5.0087 days
Solar day: 5.0137 days
Synchronous orbit altitude: not possible
Sphere of influence: 838 km

Jannah

Bulk parameters

Classification: Moon (Otho)
Radius: 105 km datum, 106.5 km mean
Mass: 1.05298×10^{20} kg
Gravitational parameter: 7.02769×10^9 m³/s²
Mean density: 20,790 kg/m³
Surface gravity: 0.065 g datum
Escape velocity: 366 m/s
Bond albedo: 0.35
Solar irradiance: 50.3 W/m²
Black-body temperature: 110 K

Orbital & rotational parameters

Semi-major axis: 65,000 km
Periapsis: 60,125 km
Apoapsis: 69,875 km
Orbit eccentricity: 0.075
Orbit inclination: 6°
Longitude of ascending node: 80°
Argument of periapsis: 70°
Sidereal orbit period: 3.6250 days
Synodic period: 3.6355 days
Mean orbital velocity: 1,304 m/s
Sidereal rotation period: 3.6250 days
Solar day: 3.6355 days
Synchronous orbit altitude: not possible
Sphere of influence: 1,362 km

Gauss

Bulk parameters

Classification: Planet, ice giant
Radius: 2,500 km datum
Mass: 9.45903×10^{23} kg
Gravitational parameter: 6.31303×10^{13} m³/s²
Mean density: 14,450 kg/m³
Surface gravity: 1.03 g datum
Escape velocity: 7,107 m/s
Bond albedo: 0.45
Solar irradiance: 13.6 W/m²
Black-body temperature: 76 K
Natural satellites: Loki, Catullus, Tarsiss

Orbital & rotational parameters

Semi-major axis: 139,844,000 km
Perihelion: 135,648,680 km
Aphelion: 144,039,320 km
Orbit eccentricity: 0.03
Orbit inclination: 2°
Longitude of ascending node: 110°
Argument of periapsis: 340°
Sidereal orbit period: 31.628 years
Synodic period: 439.91 days
Mean orbital velocity: 3,019 m/s
Sidereal rotation period: 17 hours
Solar day: 17.004 hours
Synchronous orbit altitude: 15,660 km
Sphere of influence: 2,652,003 km

Atmosphere

Overall height: 400,000 m
Pressure: 15 atm datum, 1 atm @ 103 km
Mean temperature: 209 K datum, 103 K @ 103 km
Mean molecular weight: 2.6 g/mol

Loki

Bulk parameters

Classification: Moon (Gauss)
Radius: 180 km datum, 182.7 km mean
Mass: 4.76074×10^{20} kg
Gravitational parameter: 3.17735×10^{10} m³/s²
Mean density: 18,640 kg/m³
Surface gravity: 0.1 g datum
Escape velocity: 594 m/s
Bond albedo: 0.4
Solar irradiance: 13.6 W/m²
Black-body temperature: 77 K

Orbital & rotational parameters

Semi-major axis: 18,500 km
Periapsis: 18,130 km
Apoapsis: 18,870 km
Orbit eccentricity: 0.02
Orbit inclination: 4°
Longitude of ascending node: 130°
Argument of periapsis: 300°
Sidereal orbit period: 2.9132 days
Synodic period: 2.9138 days
Mean orbital velocity: 1,847 m/s
Sidereal rotation period: 2.9132 days
Solar day: 2.9138 days
Synchronous orbit altitude: not possible
Sphere of influence: 887 km

Catullus

Bulk parameters

Classification: Moon (Gauss)
Radius: 1,200 km datum, 1,207.3 km mean
Mass: 1.90430×10^{23} kg
Gravitational parameter: 1.27094×10^{13} m³/s²
Mean density: 25,830 kg/m³
Surface gravity: 0.9 g datum
Escape velocity: 4,602 m/s
Bond albedo: 0.4
Solar irradiance: 13.6 W/m²
Black-body temperature: 77 K

Orbital & rotational parameters

Semi-major axis: 57,000 km
Periapsis: 57,000 km
Apoapsis: 57,000 km
Orbit eccentricity: 0
Orbit inclination: 1°
Longitude of ascending node: 90°
Argument of periapsis: n/a
Sidereal orbit period: 15.755 days
Synodic period: 15.773 days
Mean orbital velocity: 1,052 m/s
Sidereal rotation period: 15.755 days
Solar day: 15.773 days
Synchronous orbit altitude: not possible
Sphere of influence: 30,021 km

Atmosphere

Overall height: 280,000 m
Pressure: 5 atm datum, 1 atm @ 37.9 km
Mean temperature: 95 K datum
Mean molecular weight: 2.8 g/mol

Tarsiss

Bulk parameters

Classification: Sub-moon (Catullus)
Radius: 320 km sea level, 321.3 km mean
Mass: 2.55787×10^{21} kg
Gravitational parameter: 1.70714×10^{11} m³/s²
Mean density: 18,410 kg/m³
Surface gravity: 0.17 g sea level
Escape velocity: 1,033 m/s
Bond albedo: 0.3
Solar irradiance: 13.6 W/m²
Black-body temperature: 80 K

Orbital & rotational parameters

Semi-major axis: 6,000 km
Periapsis: 6,000 km
Apoapsis: 6,000 km
Orbit eccentricity: 0
Orbit inclination: 0°
Longitude of ascending node: n/a
Argument of periapsis: n/a
Sidereal orbit period: 7.1952 hours
Synodic period: 7.7880 hours
Mean orbital velocity: 3,244 m/s
Sidereal rotation period: 7.1952 hours
Solar day: 7.7880 hours
Synchronous orbit altitude: not possible
Sphere of influence: 1,070 km

Atmosphere

Overall height: 130,000 m
Pressure: 1.4 atm sea level
Mean temperature: 92 K sea level
Mean molecular weight: 27 g/mol

Nero

Bulk parameters

Classification: Planet, gas giant
Radius: 5,000 km datum
Mass: 3.56321×10^{24} kg
Gravitational parameter: 2.37811×10^{14} m³/s²
Mean density: 6,810 kg/m³
Surface gravity: 0.97 g datum
Escape velocity: 9,753 m/s
Bond albedo: 0.5
Solar irradiance: 3.54 W/m²
Black-body temperature: 53 K
Natural satellites: Hadrian, Narisse, Muse, Minona, Agrippina, Julia

Orbital & rotational parameters

Semi-major axis: 274,093,000 km
Perihelion: 260,388,350 km
Aphelion: 287,797,650 km
Orbit eccentricity: 0.05
Orbit inclination: 1°
Longitude of ascending node: 90°
Argument of periapsis: 60°
Axial tilt: 10° with EVE, 0° without EVE
Sidereal orbit period: 86.788 years
Synodic period: 430.97 days
Mean orbital velocity: 2,157 m/s
Sidereal rotation period: 11 hours
Solar day: 11.001 hours
Synchronous orbit altitude: 16,139 km
Sphere of influence: 8,835,395 km

Atmosphere

Overall height: 560,000 m
Pressure: 15 atm datum, 1 atm @ 152 km
Mean temperature: 272 K datum, 104 K @ 152 km
Mean molecular weight: 2.2 g/mol

Hadrian

Bulk parameters

Classification: Moon (Nero)
Radius: 300 km datum, 300.8 km mean
Mass: 2.38037×10^{21} kg
Gravitational parameter: 1.58868×10^{11} m³/s²
Mean density: 20,890 kg/m³
Surface gravity: 0.18 g datum
Escape velocity: 1,029 m/s
Bond albedo: 0.2
Solar irradiance: 3.54 W/m²
Black-body temperature: 59 K

Orbital & rotational parameters

Semi-major axis: 30,000 km
Periapsis: 29,700 km
Apoapsis: 30,300 km
Orbit eccentricity: 0.01
Orbit inclination: 10°, 0.52° to equator
Longitude of ascending node: 357°
Argument of periapsis: 145°
Sidereal orbit period: 3.0995 days
Synodic period: 3.0998 days
Mean orbital velocity: 2,816 m/s
Sidereal rotation period: 3.0995 days
Solar day: 3.0998 days
Synchronous orbit altitude: not possible
Sphere of influence: 1,611 km

Atmosphere

Overall height: 80,000 m
Pressure: 0.4 atm sea level
Mean temperature: 65 K sea level
Mean molecular weight: 28 g/mol

Narisse

Bulk parameters

Classification: Moon (Nero)
Radius: 90 km datum, 90.5 km mean
Mass: 4.76074×10^{19} kg
Gravitational parameter: 3.17735×10^9 m³/s²
Mean density: 15,360 kg/m³
Surface gravity: 0.04 g datum
Escape velocity: 266 m/s
Bond albedo: 0.45
Solar irradiance: 3.54 W/m²
Black-body temperature: 54 K

Orbital & rotational parameters

Semi-major axis: 48,000 km
Periapsis: 47,280 km
Apoapsis: 48,720 km
Orbit eccentricity: 0.015
Orbit inclination: 10.85°, 1.01° to equator
Longitude of ascending node: 3°
Argument of periapsis: 115°
Sidereal orbit period: 6.2729 days
Synodic period: 6.2740 days
Mean orbital velocity: 2,226 m/s
Sidereal rotation period: 6.2729 days
Solar day: 6.2740 days
Synchronous orbit altitude: not possible
Sphere of influence: 539 km

Muse

Bulk parameters

Classification: Moon (Nero)
Radius: 130 km datum, 131.5 km mean
Mass: 1.98658×10^{20} kg
Gravitational parameter: 1.32586×10^{10} m³/s²
Mean density: 20,870 kg/m³
Surface gravity: 0.08 g datum
Escape velocity: 452 m/s
Bond albedo: 0.35
Solar irradiance: 3.54 W/m²
Black-body temperature: 56 K

Orbital & rotational parameters

Semi-major axis: 80,000 km
Periapsis: 79,600 km
Apoapsis: 80,400 km
Orbit eccentricity: 0.005
Orbit inclination: 10.25°, 0.25° to equator
Longitude of ascending node: 0°
Argument of periapsis: 180°
Sidereal orbit period: 13.497 days
Synodic period: 13.502 days
Mean orbital velocity: 1,724 m/s
Sidereal rotation period: 13.497 days
Solar day: 13.502 days
Synchronous orbit altitude: not possible
Sphere of influence: 1,591 km

Minona

Bulk parameters

Classification: Moon (Nero)
Radius: 120 km datum, 121.4 km mean
Mass: 1.26953×10^{20} kg
Gravitational parameter: $8.47295 \times 10^9 \text{ m}^3/\text{s}^2$
Mean density: $16,920 \text{ kg/m}^3$
Surface gravity: 0.06 g datum
Escape velocity: 376 m/s
Bond albedo: 0.35
Solar irradiance: 3.54 W/m^2
Black-body temperature: 56 K

Orbital & rotational parameters

Semi-major axis: 135,000 km
Periapsis: 132,300 km
Apoapsis: 137,700 km
Orbit eccentricity: 0.02
Orbit inclination: 11° , 1.48° to equator
Longitude of ascending node: 6°
Argument of periapsis: 155°
Sidereal orbit period: 29.588 days
Synodic period: 29.611 days
Mean orbital velocity: 1,327 m/s
Sidereal rotation period: 29.588 days
Solar day: 29.611 days
Synchronous orbit altitude: not possible
Sphere of influence: 2,244 km

Agrippina

Bulk parameters

Classification: Moon (Nero)
Radius: 50 km datum, 50.3 km mean
Mass: 1.10202×10^{19} kg
Gravitational parameter: 7.35499×10^8 m³/s²
Mean density: 20,720 kg/m³
Surface gravity: 0.03 g datum
Escape velocity: 172 m/s
Bond albedo: 0.45
Solar irradiance: 3.54 W/m²
Black-body temperature: 54 K

Orbital & rotational parameters

Semi-major axis: 800,000 km
Periapsis: 672,000 km
Apoapsis: 928,000 km
Orbit eccentricity: 0.16
Orbit inclination: 18°, 27.1° to equator
Longitude of ascending node: 150°
Argument of periapsis: 60°
Sidereal orbit period: 426.82 days
Synodic period: 431.81 days
Mean orbital velocity: 545 m/s
Sidereal rotation period: 8 hours
Solar day: 8.0003 hours
Synchronous orbit altitude: 199 km
Sphere of influence: 5,003 km

Julia

Bulk parameters

Classification: Moon (Nero)
Radius: 30 km datum, 30.2 km mean
Mass: 1.98364×10^{18} kg
Gravitational parameter: 1.32390×10^8 m³/s²
Mean density: 17,150 kg/m³
Surface gravity: 0.015 g datum
Escape velocity: 94 m/s
Bond albedo: 0.4
Solar irradiance: 3.54 W/m²
Black-body temperature: 55 K

Orbital & rotational parameters

Semi-major axis: 1,625,000 km
Periapsis: 1,170,000 km
Apoapsis: 2,080,000 km
Orbit eccentricity: 0.28
Orbit inclination: 170°, 160° to equator
Longitude of ascending node: 0°
Argument of periapsis: 60°
Sidereal orbit period: 2.9006 years
Synodic period: 3.0008 years
Mean orbital velocity: 383 m/s
Sidereal rotation period: 10 hours
Solar day: 10.0005 hours
Synchronous orbit altitude: 133 km
Sphere of influence: 5,118 km

Hox

Bulk parameters

Classification: Planet, ice
Radius: 250 km datum, 252.3 km mean
Mass: 1.28569×10^{21} kg
Gravitational parameter: 8.58082×10^{10} m³/s²
Mean density: 19,120 kg/m³
Surface gravity: 0.14 g datum
Escape velocity: 829 m/s
Bond albedo: 0.4
Solar irradiance: 1.51 W/m²
Black-body temperature: 45 K
Natural satellites: Argo

Orbital & rotational parameters

Semi-major axis: 419,531,000 km
Perihelion: 356,601,350 km
Aphelion: 482,460,650 km
Orbit eccentricity: 0.15
Orbit inclination: 5°
Longitude of ascending node: 120°
Argument of periapsis: 90°
Sidereal orbit period: 164.34 years
Synodic period: 428.61 days
Mean orbital velocity: 1,743 m/s
Sidereal rotation period: 18 hours
Solar day: 18.001 hours
Synchronous orbit altitude: 1,840 km
Sphere of influence: 567,558 km

Atmosphere

Overall height: 40,000 m
Pressure: 0.01 atm datum
Mean temperature: 46 K datum
Mean molecular weight: 28 g/mol

Argo

Bulk parameters

Classification: Moon (Hox)
Radius: 80 km datum, 81.0 km mean
Mass: 3.29137×10^{19} kg
Gravitational parameter: 2.19669×10^9 m³/s²
Mean density: 14,790 kg/m³
Surface gravity: 0.035 g datum
Escape velocity: 234 m/s
Bond albedo: 0.6
Solar irradiance: 1.51 W/m²
Black-body temperature: 40 K

Orbital & rotational parameters

Semi-major axis: 12,500 km
Periapsis: 12,500 km
Apoapsis: 12,500 km
Orbit eccentricity: 0
Orbit inclination: 40°
Longitude of ascending node: 90°
Argument of periapsis: n/a
Sidereal orbit period: 43.886 days
Synodic period: 43.914 days
Mean orbital velocity: 83 m/s
Sidereal rotation period: 43.886 days
Solar day: 43.914 days
Synchronous orbit altitude: not possible
Sphere of influence: 2,885 km

Leto

Bulk parameters

Classification: Planet, ice
Radius: 210 km datum, 211.5 km mean
Mass: 7.77587×10^{20} kg
Gravitational parameter: $5.18968 \times 10^{10} \text{ m}^3/\text{s}^2$
Mean density: $19,630 \text{ kg/m}^3$
Surface gravity: 0.12 g datum
Escape velocity: 703 m/s
Bond albedo: 0.65
Solar irradiance: 0.90 W/m^2
Black-body temperature: 34 K
Natural satellites: none

Orbital & rotational parameters

Semi-major axis: 542,593,000 km
Perihelion: 488,333,700 km
Aphelion: 596,852,300 km
Orbit eccentricity: 0.1
Orbit inclination: 10°
Longitude of ascending node: 100°
Argument of periapsis: 80°
Sidereal orbit period: 241.73 years
Synodic period: 427.77 days
Mean orbital velocity: 1,533 m/s
Sidereal rotation period: 6 hours
Solar day: 6.0001 hours
Synchronous orbit altitude: 640 km
Sphere of influence: 600,296 km

Atmosphere

Overall height: 35,000 m
Pressure: 0.005 atm datum
Mean temperature: 36 K datum
Mean molecular weight: 28 g/mol

Grannus

Bulk parameters

Classification: Star, red dwarf
Spectral class: M2V
Radius: 30,170 km
Mass: 9.54944×10^{27} kg
Gravitational parameter: 6.37338×10^{17} m³/s²
Mean density: 83,020 kg/m³
Surface gravity: 71.4 g
Escape velocity: 205,547 m/s
Luminosity: 1.03012×10^{23} W
Surface temperature: 3,550 K
Absolute magnitude: +8.7
Planets: none without GEP, 5 with GEP

Orbital & rotational parameters

Semi-major axis: 2,000,000,000 km (1,500,000,000 km with OPM)
Perihelion: 1,200,000,000 km
Aphelion: 2,800,000,000 km (1,800,000,000 km with OPM)
Orbit eccentricity: 0.4 (0.2 with OPM)
Orbit inclination: 7°
Longitude of ascending node: 130°
Argument of periapsis: 20°
Sidereal orbit period: 1711.6 years (1111.1 years with OPM)
Mean orbital velocity: 798 m/s (922 m/s with OPM)
Sidereal rotation period: 60 days
Synchronous orbit altitude: 2,974,107 km
Sphere of influence: 500,000,000 km

Atmosphere

Overall height: 400,000 m
Pressure: 0.1 atm datum
Temperature range: 2,600-6,000 K
Mean molecular weight: 1.3 g/mol

Robau's Star (requires OPM)

Bulk parameters

Classification: Star, orange dwarf
Spectral class: K5V
Radius: 49,360 km
Mass: 1.43199×10^{28} kg
Gravitational parameter: $9.55721 \times 10^{17} \text{ m}^3/\text{s}^2$
Mean density: 28,430 kg/m³
Surface gravity: 40.0 g
Escape velocity: 196,785 m/s
Luminosity: 6.80791×10^{23} W
Surface temperature: 4,450 K
Absolute magnitude: +6.6
Planets: 4 with OPM

Orbital & rotational parameters

Semi-major axis: 4,800,000,000 km
Perihelion: 4,320,000,000 km
Aphelion: 5,280,000,000 km
Orbit eccentricity: 0.1
Orbit inclination: 10°
Longitude of ascending node: 60°
Argument of periapsis: 45°
Sidereal orbit period: 6360.2 years
Mean orbital velocity: 515 m/s
Sidereal rotation period: 40 days
Synchronous orbit altitude: 2,574,856 km
Sphere of influence: 2,000,000,000 km

Atmosphere

Overall height: 900,000 m
Pressure: 0.1 atm datum
Temperature range: 3,250-8,000 K
Mean molecular weight: 1.3 g/mol