

# Moon Io



Picture (Io):

Author: NASA / JPL / University of Arizona

[https://en.wikipedia.org/wiki/Io\\_\(moon\)#/media/File:Io\\_highest\\_resolution\\_true\\_color.jpg](https://en.wikipedia.org/wiki/Io_(moon)#/media/File:Io_highest_resolution_true_color.jpg)

The moon was named after Io from Greek mythology. Io was a lover of Zeus (Roman: Jupiter). Io is the innermost of the four large moons of the planet Jupiter and slightly larger than the Earth's moon. Ole Rømer first measured the speed of light in 1676 using observed eclipses of Io as a function of Jupiter's position relative to Earth. It has a bound rotation, making the day and month of equal length. Io's orbital period has a ratio of 4:2:1 to the orbital periods of Ganymede and Europa. Io has the most pronounced volcanism of any celestial body in the solar system. Its surface is therefore extremely young (only a few million years old). Striking are the many volcanic calderas, which have diameters of up to 400 kilometres and are several kilometres deep. There are also numerous lakes of molten sulphur, which give the moon its yellowish to reddish colour. Tidal forces that knead the planet cause the volcanic activity. The tidal forces are about 6,000 times stronger than on Earth, creating tidal mountains up to 300 meters high. Io is composed mostly of silicate rock and has a core of iron at least 900 kilometres in diameter. Beneath the surface extends a layer of molten magma 50 kilometres thick.

## Important Data of Io:

Mean orbit radius:	421,800 km
Periapsis – Apoapsis:	420,100 km – 423,500 km
Eccentricity:	0.0041
Ecliptic Inclination:	2.21°
Orbital period (sidereal):	1.77 d
Average orbital speed:	17.3 km/s
Mean diameter:	3643.2 km
Mass:	about 0.015 Earth masses ( $8.94 \cdot 10^{22}$ kg)
Mean density:	3.56 g/cm <sup>3</sup>

Synodic rotation period:	1.77 days
Inclination to Jupiter:	0.05°
Surface gravity:	1.8 m/s <sup>2</sup>
Escape velocity:	2,560 m/s
Surface temperature:	-143 until -73 °C (130 until 200 K)

**Link:** [https://en.wikipedia.org/wiki/lo\\_\(moon\)](https://en.wikipedia.org/wiki/lo_(moon))