



JUPITER'S FABULOUS FOUR

October 2009

“The Milky Way is nothing else but a mass of innumerable stars planted together in clusters.”
Galileo Galilei

September 2009

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November 2009

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Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
General Science Question — The <i>Galileo</i> spacecraft and the Keck telescope have shown which planet's outermost ring is actually two rings circumscribed by the orbits of the small satellites Amalthea and Thebe?				1	2	3
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				NSTA Area Conference Minneapolis, MN	NSTA Area Conference	NSTA Area Conference Halloween

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In 1610, Galileo discovered four of Jupiter's moons, known as the Galilean moons. They were later named Io, Europa, Callisto, and Ganymede after the lovers of the god Zeus. At the initial time of discovery, Galileo only observed three celestial orbs, and he believed them to be fixed stars. Later, he discovered a fourth orb, and realized the objects were not only moving, but also orbiting the planet Jupiter.

Io is the innermost of the four moons. Modern orbiters indicate that this moon might have its own magnetic field, and the surface is occupied by active volcanoes.

Europa is the second moon, and the smallest. Europa is the smoothest natural body in the solar system. Scientists think Europa has an icy outer layer with liquid water below. Perhaps life exists in this water?

Third comes *Ganymede*, the largest moon in the solar system. It is made of silicate rock and water ice, with a floating icy crust over a warmer mantle. There is a small oxygen atmosphere present on this moon.

Callisto is the outermost of the Galilean moons and is thought of as Mercury's "twin" due to similar size and appearance. Callisto is pockmarked by craters and has a small atmosphere of carbon dioxide.

Today, we know of 63 moons that orbit Jupiter! Most of the smaller moons are thought to be asteroids that were caught by Jupiter's strong gravity. From 1995 to 2003, the *Galileo* spacecraft orbited around Jupiter, resulting in detailed image collection. The spacecraft passed as low as 162 miles over the surfaces of the Galilean moons.

Credits: Family Portrait of Jupiter's Great Red Spot and the Galilean Satellites courtesy of NASA; Galileo's Moon Phase Drawing courtesy of www.wikipedia.org