# PLANETARY NEWS: EUROPA (2009)

## NASA AND ESA TAKE AIM AT JUPITER -- TOGETHER

February 18, 2009

**NASA and ESA have joined forces to launch a new era in the exploration of the outer solar system. At a meeting in Washington last week, officials from both agencies decided to work together on two ambitious flagship missions. The first, called the Europa Jupiter System Mission will study Jupiter and its four largest moon, and is projected to launch around 2020; It will then be followed by the Titan Saturn System Mission, which will study Saturn's moons Titan and Enceladus.**



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**Jupiter system montage**

Jupiter and its four planet-size moons -- Io (upper left), Europa (center), Ganymede (lower center), and Callisto (lower right) -- were photographed in early March 1979 by Voyager 1 and assembled into this collage. The moons and planet are not shown to scale. Credit: NASA / JPL

"This joint endeavour is a wonderful new exploration challenge and will be a landmark of 21st Century planetary science," said David Southwood, ESA Director of Science and Robotic Exploration. "What I am especially sure of is that the cooperation across the Atlantic that we have had so far and we see in the future, between America and Europe, NASA and ESA, and in our respective science communities is absolutely right. Let's get to work."

The two missions are the result of the merging of separate NASA and ESA mission concepts. NASA was weighing the two finalists of the flagship mission competition: one was a Europa orbiter to explore this icy moon of Jupiter and its subsurface water ocean. The other was a Titan orbiter to revisit Saturn's moon. ESA, meanwhile, was also trying to choose between a Jupiter mission proposal and a Satrun mission proposal for its flagship mission competition for the Cosmic Vision 2015-2025 slot. Officials from both agencies then decided to combine the two Jupiter missions and the two Saturn missions into joint NASA-ESA proposals.

After careful study of the relative merits of the two joint missions NASA and ESA engineers determined that the Europa Jupiter System Mission was the technically more feasible to implement first. Scientists from both agencies then concluded that because both missions had high scientific value, both missions should move forward for further study and implementation.

"The decision means a win, win situation for all parties involved," said Ed Weiler, associate administrator for NASA's Science Mission Directorate in Washington. "Although the Jupiter system mission has been chosen to proceed to an earlier flight opportunity, a Saturn system mission clearly remains a high priority for the science community."

The Europa Jupiter System Mission is made up of two robotic orbiters designed to carry out detailed studies of Jupiter and its Galilean moons Io, Europa, Ganymede and Callisto. NASA will build one spacecraft, initially named Jupiter Europa Orbiter. ESA will build the other spacecraft, initially named Jupiter Ganymede Orbiter. The two spacecraft are scheduled to reach the Jupiter system in 2026, and each will spend at least a year orbiting Europa and Ganymede respectively, before turning their

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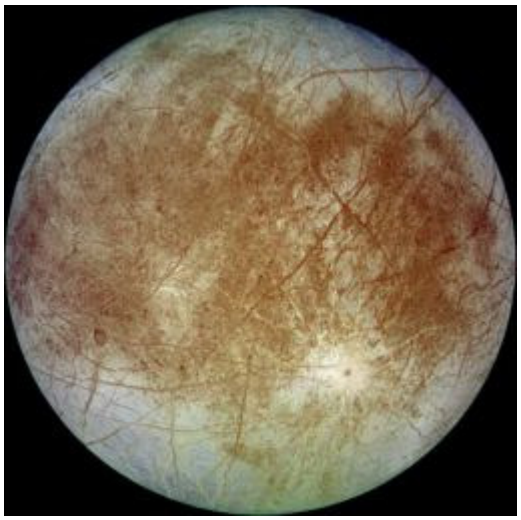
attention to other components of the Jovian system.

The mission's prime target, the moon Europa, is of particular interest to The Planetary Society and its members. "A mission to Jupiter's icy moon, Europa, will take us to one of the most likely habitats in the Solar System (other than Earth) where life might have evolved," said Louis Friedman, Executive Director of The Planetary Society. "The Planetary Society has campaigned strongly to convince Congress that NASA should undertake such a mission, and we are delighted that it is being organized as an international project -- making the mission more affordable and increasing its support."



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**Jupiter's Moon Europa**
Europa's youthful surface is covered with pinkish grooves and cracks. Color: True color. Scale: 3461.00 meters per pixel. Created: 11 November 1997. Credit: NASA/JPL/DLR

Jupiter's other Galilean moons are also the focus of intense scientific research. Ganymede is the largest moon in the Solar System, the only one known to have its own magnetic field, and might (like Europa) possess a subterranean water ocean. Io is the most volcanically active body in the Solar System, and Callisto, whose surface is heavily cratered and ancient, provides a record from the early history of the Solar System. By studying all of these bodies together, the Europa Jupiter System Mission will help scientists better understand the system's formation and evolution.

The Titan Saturn System Mission would consist of a NASA orbiter combined with an ESA lander and research balloon. It is designed to follow up on the success of the Cassini mission and the tantalizing clues gathered by the Huygens probe when it landed on Titan in January 2005. It is a complex mission that requires extensive technological development, and no date has yet been set for its launch.