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This color image of Europa, smallest of Jupiter's four Galilean satellites, was acquired by Voyager 2 on July 9, 1979, from a range of 241,000 kilometers (150,000 miles). Europa, the brightest of the Galilean satellites, has a density slightly less than that of Io, suggesting it has a reasonable quantity of water. It is believed that the water has formed a mantle of ice with interior slush, perhaps 100 kilometers (60 miles) thick. The complex patterns on its surface suggest that the icy surface is fractured and that the cracks are filled with dark material from below. Very few impact craters are visible on the surface, perhaps indicating that active processes on the surface are still modifying Europa. The surface patterns on Europa differ drastically from the patterns and fault systems seen on Ganymede, where pieces of the crust have moved in relation to one another. Europa's crust evidently fractures, but the pieces remain approximately in their original positions.

The Voyager Project

Two unmanned spacecraft, Voyager 1 and 2, completed highly successful fly-through encounters of the Jovian system on March 5 and July 9, 1979, respectively. The twin spacecraft, now millions of miles beyond Jupiter, are en route to rendezvous with Saturn in November 1980 and August 1981. Voyager 2 may be placed on a trajectory passing Saturn that permits a Uranus encounter in early 1986. Both spacecraft eventually will escape the solar system into interstellar space.

Each spacecraft weighed 820 kg (1,800 lb) at launch and is equipped with eleven scientific instruments that perform a wide range of planetary observations. Voyager 2 was launched from Cape Canaveral, Florida, on August 20, 1977. Voyager 1, flying a shorter, faster trajectory, was launched on September 5, 1977. Communication with each spacecraft is achieved through a worldwide network of deep space tracking stations located in California, Australia, and Spain.

The more significant Jovian findings were the discovery of a ring system encircling Jupiter, erupting volcanos on the Galilean satellite Io, the large differences in appearance and evolution of the surfaces of Jupiter's four planet-size moons, superbolts of lightning and immense auroras in the planet's violently churning atmosphere, and the complex interactions of Jupiter's magnetosphere with the solar wind and Jupiter's satellites.

The Voyager Project was assigned to the Jet Propulsion Laboratory by the National Aeronautics and Space Administration's Office of Space Science as part of NASA's planetary exploration program.