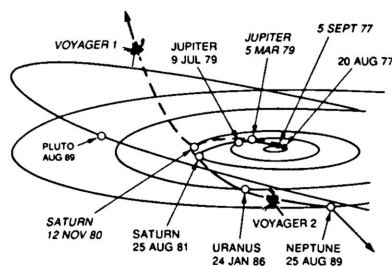




National Aeronautics and
Space Administration

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**Neptune's Rings
P-34712
August 26, 1989**

Neptune's two main rings, about 53,000 kilometers (33,000 miles) and 63,000 kilometers (39,000 miles) from the center of the planet, are seen backlit by the Sun as Voyager 2 swept past Neptune. The image of the planet was greatly overexposed to capture detail in the rings. Neptune's rings appear bright in this view as microscopic ring particles scatter sunlight toward the camera. This means that the particle-size distribution in Neptune's rings is quite different from that of Uranus' rings, which contain few dust-size grains. In this image, the main clumpy arc, composed of three features each about 6 to 8 degrees long, is clearly seen at the right in the outer ring. This image was obtained when Voyager 2 was 1.1 million kilometers (680,000 miles) from Neptune. Exposure time was nearly two minutes.

VOYAGER MISSION HIGHLIGHTS

In 1977, two unmanned Voyager spacecraft, designed and built by the Jet Propulsion Laboratory, were launched on reconnaissance missions to the outer planets. In 1979, Voyagers 1 and 2 sent back spectacular images of the Jovian system and made startling discoveries. Giant volcanoes spew molten sulfur hundreds of kilometers above the surface of Io, one of Jupiter's four largest moons, while Europa, Ganymede, and Callisto each have diverse surfaces. Three tiny moons were found near a thin ring of dust particles encircling the planet, and cloud-top lightning bolts and polar auroras light up the Jovian night skies.

The Voyagers traveled on to Saturn encounters in 1980 and 1981, respectively. The rings were more complex than scientists could have imagined. Although Saturn's colors are more muted than Jupiter's, storms are still visible in the cloud tops. A thick atmosphere of nitrogen and methane surrounds Titan, Saturn's largest moon, and photochemical hazes hide its surface. After its close swing past Titan, Saturn's gravity forced Voyager 1 up and out of the ecliptic plane, and the spacecraft is now on its way out of our solar system.

Mission planners took advantage of the opportunity to send Voyager 2 on to Uranus. Arriving at Uranus in 1986, Voyager 2 found a cold planet with a remarkably featureless atmosphere. The spacecraft discovered ten small moons and two new rings at Uranus. Miranda, one of the five larger moons, has one of the most complex surfaces yet seen in the solar system. Voyager 2's final planetary encounter took place on August 25, 1989, when the spacecraft sailed within 3000 miles of the cloud tops of Neptune's north pole. Five hours later, Voyager 2 swept past Triton, a cold, bright moon where volcanoes may spew ice particles into the thin nitrogen atmosphere. The spacecraft discovered six new moons and a number of rings at Neptune. Now Voyager 2 is also heading out of the solar system, diving below the ecliptic plane.

Data from both Voyagers may be received well into the next century as they search for interstellar space. The Voyager Project is managed for NASA by the Jet Propulsion Laboratory.