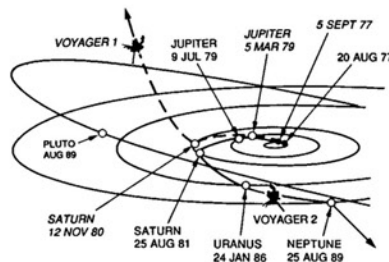




National Aeronautics and
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**Neptune
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A bright cloud feature on Neptune, similar to spots seen by planetary astronomers using Earth-based telescopes, is visible in images taken by Voyager 2 on January 23, 1989. The spacecraft was about 309 million kilometers (192 million miles) from the planet. The fact that distinct cloud features are visible while the spacecraft is still so distant suggests that pictures taken as Voyager 2 approaches its August 1989 flyby of Neptune will show far more detail than was visible in the atmosphere of Uranus, which Voyager 2 encountered in January 1986.

The cloud is at about 30 degrees south latitude, and its motion during the two hours between these images is consistent with the 17- to 18-hour rotation period derived from observations with Earth-based telescopes. The January images show details as small as about 6000 kilometers (3700 miles). The cloud has not yet been confirmed to be any of the cloud features seen on Neptune by Drs. Richard Terrile of JPL and Brad Smith of the University of Arizona at Las Campanas Observatory, Chile, in 1983, or by Dr. Heidi Hammel of JPL at the University of Hawaii's Mauna Kea facility in 1988. The features seen from these Earth-based telescopes were best viewed through methane filters not available on Voyager 2, and imaging scientists had been somewhat concerned that such features might not be visible to Voyager 2's cameras.

The mottled appearance of Neptune in these frames is likely to be "noise" in the camera system. The dark band of clouds encircling the planet's southern pole is similar to cloud structures on the giant planets Jupiter and Saturn. These images are combined from ones taken through violet, clear, and orange filters. The natural color of Neptune is a pale blue green, caused by the absorption of red light by methane gas in the planet's atmosphere.

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 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 shrouds Titan, Saturn's largest moon, and hides its surface. After its close swing past Titan, Voyager 1 was directed up and out of the ecliptic plane and 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 is now headed for Neptune, which it will pass on August 25, 1989. Then, it too will head 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.