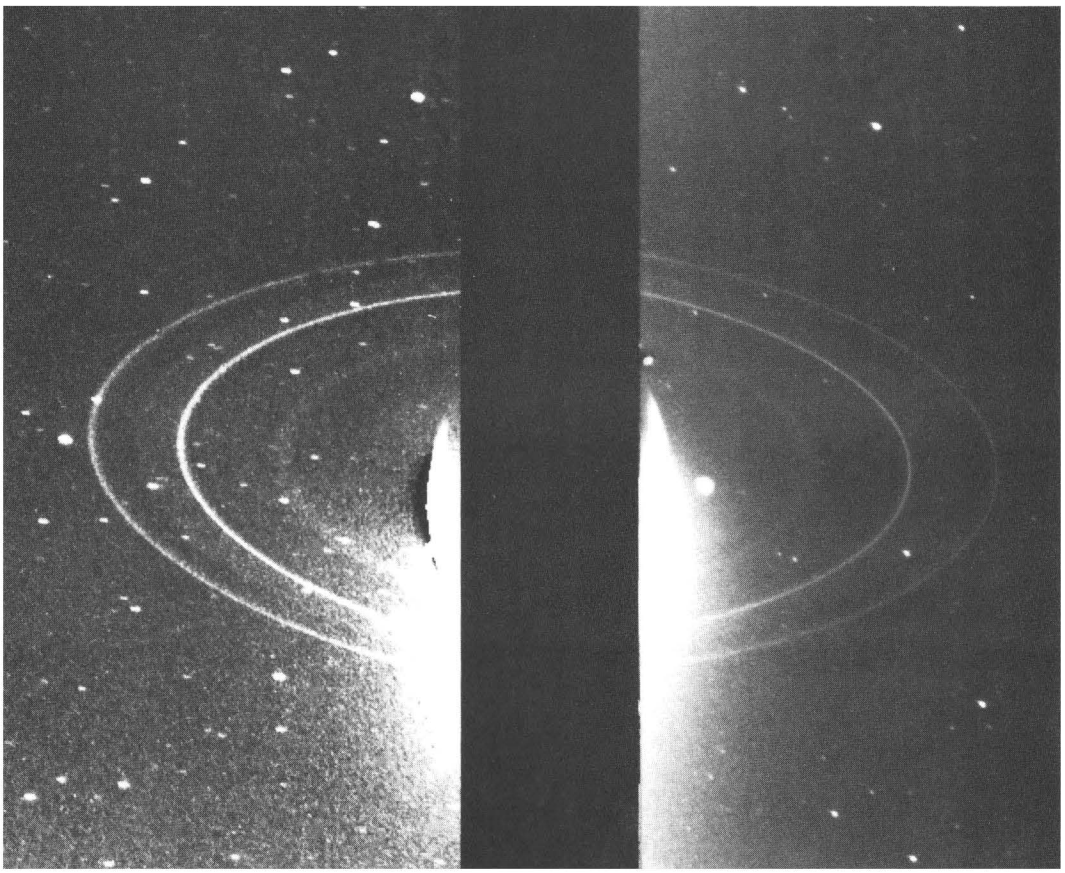
Voyager

BULLETIN

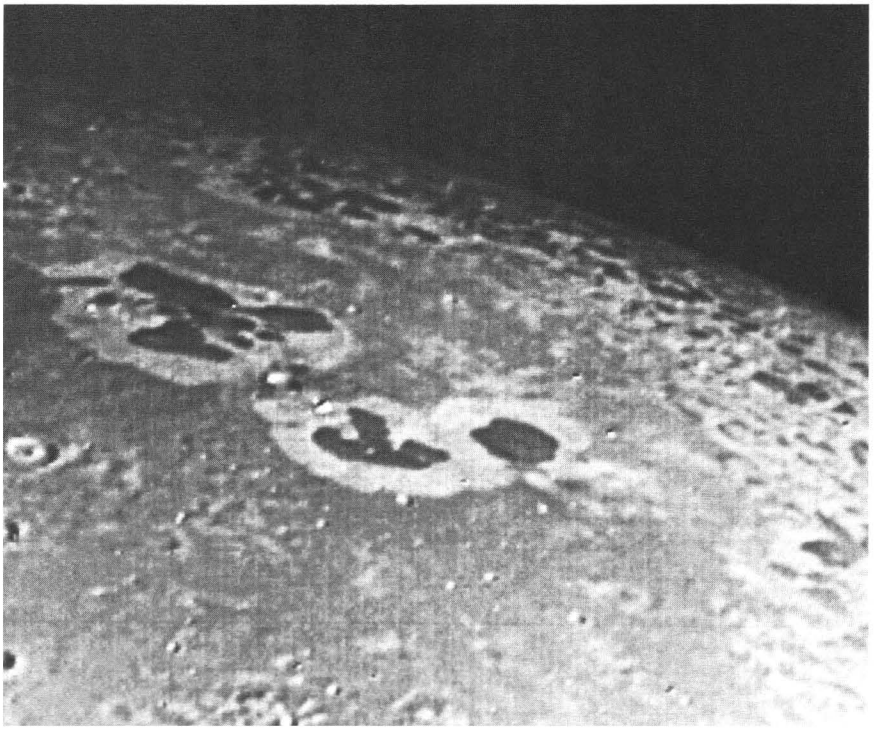
MISSION STATUS REPORT NO. 93 **AUGUST 27, 1989**



Neptune's rings are seen backlighted by the Sun in these two 591-second exposures taken August 26. (P-34726)

Three Rings, or More . . .

The ring-count at Neptune stands at three to six, depending on whether or not sheets of particles between the discrete rings are considered rings in themselves. Two images taken on August 26 from a distance of 280,000 kilometers (175,000 miles) show the two main rings plus the inner faint ring at about 42,000 kilometers (25,000 miles) from the center of Neptune, and the faint band which extends smoothly from the 53,000-kilometer (33,000-mile) ring to roughly halfway between the two bright rings. Both of these newly discovered rings are broad and much fainter than the two narrow rings. The long exposure images were taken while the rings were backlighted by the Sun at a phase angle of 135 degrees. This viewing geometry enhances the visibility of dust and allows fainter, dusty parts of the ring to be seen. A bright glare in the center is due to over-exposure of the crescent of Neptune. Two gaps in the upper part of the outer ring in one of the images are due to blemish removal in the computer processing. Numerous bright stars are evident in the background. Both bright rings have material throughout their entire orbit, and are therefore continuous.



Three irregular dark areas, surrounded by brighter material, dominate this image of a portion of Triton's surface. Low-lying material with intermediate albedo occupies the central area, and fresh craters occur along the right margin. (P-34690)

Flawless . . .

"Everything went exceedingly well and we couldn't be happier," Voyager Project Manager Norm Haynes of JPL announced on the morning after Voyager 2's fourth and final planetary encounter.

In an historic flyby witnessed by millions of people around the world, thanks to live television broadcasts of incoming images, Voyager 2 sent back extraordinary pictures of storms in Neptune's atmosphere, cloud shadows, six new moons, several new rings, and icy Triton. Voyager's fields and particles instruments discovered that Neptune's magnetic field is highly tilted, much like the case at Uranus, and other investigations pooled their knowledge to determine the composition of the atmospheres of Neptune and Triton and the structure of the rings.

Voyager 2 was designed to operate at 10 AU [astronomical units], yet its reach has been extended by a factor of three [Neptune is nearly 30 AU from the Sun) through engineering on the ground and on the spacecraft, noted Voyager Project Scientist Dr. Ed Stone of the California Institute of Technology, in seconding Mr. Haynes' commendation of the Voyager flight team, the Deep Space Network, and the affiliated tracking stations (Parkes, Australia; Very Large Array in Socorro, New Mexico; and Usuda, Japan). Voyager 2 operated where light levels were one-ninth what they are on Earth, and from a distance that made the radio signals 900 times weaker by the time they reached Earth.

Officials from Congress, NASA, and other space agencies were on hand during the week of the encounter not only to participate in the American Institute of Aeronautics and Astronautics (AIAA) conference on planetary exploration held in nearby Pasadena, but also to welcome U.S. Vice President Dan Quayle, who visited the Laboratory on August 25. Mr. Quayle is chairman of the National Space Council.

As of press time, Voyager's scientists were still awaiting playbacks of some of their data and busily analyzing what they have so far. A preliminary look at some of the most stunning results of the encounter, the amazing terrain of Triton, will be presented in future Bulletins.

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JPL 410-15-93 8/89

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