

## Hexagon on Saturn mystifies astronomers

by Bend\_Weekly\_News\_Sources

An odd, six-sided, honeycomb-shaped feature encircling Saturn's North Pole has captured the interest of scientists with NASA's Cassini space-craft mission.

The agency's Voyager 1 and 2 spacecraft imaged the hexagon over two decades ago, but its appearance in new Cassini images shows it's long lived, heightening the riddle, scientists said. This nighttime view of Saturn's north pole shows a bizarre six-sided hexagon feature encircling the north pole. (Courtesy: NASA/JPL/University of Arizona)

"We've never seen anything like this on any other planet," said Kevin Baines of the Cassini team at NASA's Jet Propulsion Laboratory in Pasadena, Calif. Indeed, Saturn's thick atmosphere is perhaps the last place you'd expect to see such a six-sided geometric figure, yet there it is. Normally, in the ringed planet's atmosphere, circularly-shaped waves and formations called convective cells predominate, he said. A convective cell is a pattern created by an updraft of warmed fluid and sinking of cooled fluid. A second hexagon, significantly darker than the brighter horizontal feature, is also seen in the Cassini pictures. An instrument on the craft, called the visual and infrared mapping spectrometer, is the first to capture the whole hexagon in one image, investigators said. "This is a very strange feature, lying in a precise geometric fashion with six nearly equal straight sides," said Baines, an atmospheric expert who is part of the team mapping the hexagon. The hexagon is similar to Earth's polar vortex, which has winds blowing in a circular pattern around the polar region, researchers said. But on Saturn, the vortex is hexagonal rather than circular. The hexagon is nearly 25,000 kilometers (15,000 miles) across. Nearly four Earths could fit inside it. The new images are taken in infrared light, a lower-energy form of light than the visible type. These images show the hexagon extends much deeper down into the atmosphere than previously expected, some 100 kilometers (60 miles) below the cloud tops, according to scientists. The hexagon, they added, contains clouds that seem to be whipping around the hexagon like cars on a race-track.

Courtesy NASA and World Science staff

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