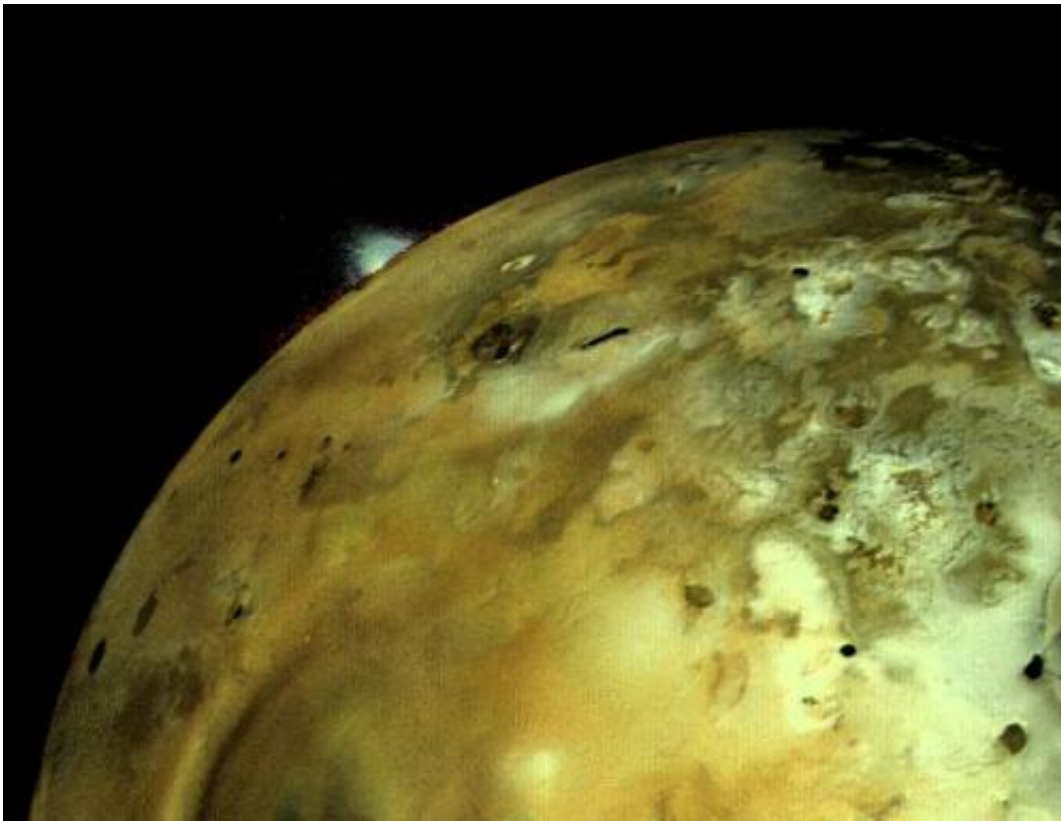


Major volcanic eruption seen on Jupiter's moon Io

August 26 2013, by Nancy Atkinson



Voyager 1 acquired this image of Io on March 4, 1979. An enormous volcanic explosion can be seen silhouetted against dark space over Io's bright limb.
Credit: NASA/JPL

Recent observations of Jupiter's moon Io has revealed a massive volcanic eruption taking place 628,300,000 km (390,400,000 miles) from Earth. Io, the innermost of the four largest moons around Jupiter, is the most

volcanically active object in the Solar System with about 240 active regions. But this new one definitely caught the eye of Dr. Imke de Pater, Professor of Astronomy and of Earth and Planetary Science at the University of California in Berkeley. She was using the Keck II telescope on Mauna Kea in Hawaii on August 15, 2013 when it immediately became apparent something big was happening at Io.

"When you are right at the telescope and see the data, this is something you can see immediately, especially with a big eruption like that," de Pater told Universe Today via phone.

de Pater said this eruption is one of the top 10 most powerful eruptions that have been seen on this moon. "It is a very energetic eruption that covers over a 30 square kilometer area," she said. "For Earth, that is big, and for Io it is very big too. It really is one of the biggest eruptions we have seen."

She added the new volcano appears to have a large [energy output](#). "We saw a big eruption in 2001, which was in the Surt region, which is well known as the biggest one anyone has ever seen," she said. "For this one, the total energy is less but per square meter, it is bigger than the one in 2001, so it is very powerful."

While Io's eruptions can't be seen directly from Earth, [infrared cameras](#) on the Keck telescope (looking between 1 and 5 microns) have been able to ascertain there are likely fountains of lava gushing from fissures in the Rarog Patera region of Io, aptly named for a Czech fire deity.

While many regions of Io are volcanically active, de Pater said she's not been able to find any other previous activity that has been reported in the Rarog Patera area, which the team finds very interesting.

Ashley Davies of NASA's Jet Propulsion Laboratory in Pasadena,

California and a member of the observing team told Universe Today that Rarog Patera was identified as a small, relatively innocuous hot spot previously in Galileo PPR data and possibly from Earth, but at a level way, way below what was seen on August 15, and [reported](#) in *New Scientist*.

de Pater and other astronomers will be taking more data soon with Keck and perhaps more telescopes to try and find out more about this massive eruption.

"We never know about eruptions – they can last hours, days months or years, so we have no idea how long it will stay active," she said, "but we are very excited about it."

No data or imagery has been released on the new [eruption](#) yet since the team is still making their observations and will be writing a paper on this topic.

Scientists think a gravitational tug-of-war with Jupiter is one cause of Io's intense vulcanism.

Provided by [Universe Today](#)

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