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## Huge geysers on Jupiter moon?

Dec. 14, 2013  
Courtesy of the University of Cologne  
and World Science staff

**Scientists have found what they describe as huge plumes containing water vapor blasting out from Jupiter's moon Europa.**

**About the size of our own moon, Europa is considered a potential site of living organisms, thanks to evidence that its icy crust conceals a liquid ocean beneath. The plumes could help reveal what's in that ocean.**

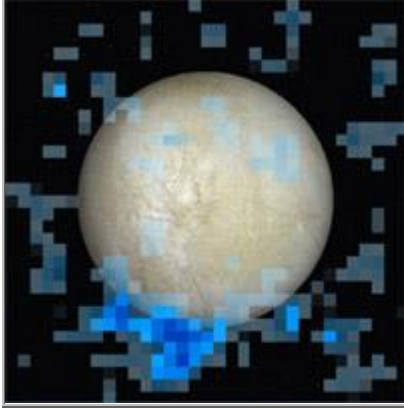


Artist conception of Europa's icy surface with a water jet. Jupiter and the sun are in the background. (Image courtesy K. Retherford, Southwest Research Inst.)

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**Lorenz Roth of the Southwest Research Institute in San Antonio, Texas and Joachim Saur of the University of Cologne in Germany used the Hubble Space Telescope to show that water vapor erupts near Europa's south pole.**

**The plumes are much larger than Earth geysers and reach heights of about 200 km (120 miles), they said, announcing the findings at a NASA press conference in San Francisco and online in the journal *Science* Dec. 13.**



A NASA image shows sites of water vapor (blue squares) detected on and near Europa. (Image courtesy Lorenz Roth, Southwest Research Inst. / USGS)

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**“Water is generally considered a basic prerequisite for life – at least as we know it,” Roth noted. The plumes eject material that will make future investigations of the moon much easier, he added.**

**“We have been advancing the search for water and water plumes with multiple Hubble campaigns,” said Saur. “However, it was only after a camera on the Hubble Space Telescope in one of the last Space Shuttle Missions was repaired that we were able to achieve enough sensitivity” to see the plumes.**

**The eruption activity varies, the scientists said: the plumes could only be seen when Europa was furthest from Jupiter in its orbit. Apparently, they said, at this time, tidal forces lead cracks in Europa’s icy crust to widen, letting out the vapors. Similar plumes have been discovered by the Cassini spacecraft on the Saturnian moon Enceladus, they noted, and the activities there are much like those on Europa during its orbit.**

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