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Vital clues from Europa

27 September 2003 by [Emily Singer](#)
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COULD sulphur traces on Jupiter's moon Europa be a sign of alien life? The compounds look like waste products rising from bacterial colonies living beneath the surface.

The Galileo space probe first spotted the sulphur compounds, as well as revealing that the moon almost certainly has a volcanically heated and potentially habitable ocean hiding beneath the surface layer of ice. Some scientists say the sulphur may have come from the nearby moon Io, where the compound is abundant. Or volcanic eruptions in the moon's core may have brought the sulphur to the surface.

But Aranya Bhattacharjee of the University of Pisa, Italy, and Julian Chela-Flores of the International Centre for Theoretical Physics in Trieste say the sulphur could be biological in origin. They base their idea on an Earth-based analogue of Europa - the dry valley lakes of Antarctica. The icy surface of these lakes also contains traces of sulphur compounds, excreted by bacteria in the water below. "Over a long period of time, bacteria could put substantial sulphur deposits on the surface of Europa," says Chela-Flores.

There is no way to check the idea without going to Europa, but it highlights the type of "biogenic signatures" scientists can look for when probing space for signs of life, according to Torrence Johnson of NASA's Jet Propulsion Lab in California. "It gives us an interesting idea of what to measure," he says.

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