

## Scientists to return to undersea volcano, which may be erupting again

by Bend\_Weekly\_News\_Sources

NEWPORT, Ore. — An international team of scientists will return this April 3-17 to an undersea volcano near the Mariana Islands northwest of Guam where in 2004 they observed a deep-ocean eruption live for the first time from a remotely operated vehicle, or ROV — a feat they duplicated in 2006.

Northwest Rota-1, brimstone pit eruption — photo courtesy of [www.pmel.noaa.gov](http://www.pmel.noaa.gov) Called Northwest Rota-1, the volcano is still showing signs of activity according to data retrieved from an underwater hydrophone that captures sound data, said William Chadwick, a volcanologist at Oregon State University and chief scientist on the National Science Foundation-funded project.

—“We don’t know if it will be active when we are there, how intense that activity could be, or even whether we will be able to see much,” cautioned Chadwick. —“But if it is active, this will be an extraordinary opportunity to learn more about undersea volcanoes and some of the significant impacts they can have.”

Sounds of the eruptive activity were recorded by a hydrophone that was deployed at the site in February of 2008 by Robert Dziak and Joe Haxel, OSU researchers and colleagues of Chadwick’s at the university’s Hatfield Marine Science Center in Newport. They recovered the hydrophone last month and analyzed the data, which suggests that the volcano has been active for much of the past year, though at varying intensities. They deployed another hydrophone that will record sounds over the next year.

During the upcoming expedition, the science team will report its findings on a blog so that science students and classes from middle school through college — as well as the general public — can follow their progress. The expedition will use the R/V Thompson, a ship operated by the University of Washington, and will utilize Jason II, an ROV operated by Woods Hole Oceanographic Institution.

In addition to researchers from OSU, UW and NOAA, the team will include scientists from Canada, Japan and New Zealand, as well as other institutions within the United States, including the University of Oregon.

Northwest Rota-1 remains the only undersea volcano scientists have witnessed erupting and thus is a unique site for research. Though they first saw it in action in 2004 and again the following year, it was a project in 2006 that drew international attention. That year, the cinder cone at the top of the volcano had slipped away and allowed the scientists to look directly into the erupting vent. Video images captured by the Jason ROV were spectacular and were featured on news organizations around the world.

Now the scientists’ goal is to put more science behind those observations.

—“What we’ve done thus far has been to capture a brief scientific “snapshot” of an undersea volcano,” Chadwick said. —“We know a great deal about the impact of terrestrial volcanoes and very little about those that erupt beneath the sea — from the underwater explosion processes to the chemical impacts on the ocean and the effects on deep-sea ecology.”

—“Amazingly, there are animals adapted to hydrothermal vents that live right on this erupting volcano,” Chadwick added.

During the two-week project, the scientists will deploy long-term monitoring instruments including hydrophones, chemical sensors, current meters and plume sensing devices that will allow them to study for the first time the patterns of activity over an entire year. They also will make additional visual observations of the eruptive activity, hydrothermal vents and biological communities, and will collect samples of lava, gas and fluids from the volcano.

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