

2004 Fall Meeting
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Cite abstracts as **Author(s) (2004), Title, *Eos Trans. AGU*, 85(47), Fall Meet. Suppl., Abstract xxxxx-xx**

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volcano thompson

HR: 14:15h

AN: **G43C-03 INVITED**

TI: [CALIPSO Borehole Monitoring Project at Soufriere Hills Volcano, Montserrat, BWI: Overview, and Response of Magma Reservoir to Prodigious Dome Collapse](#)

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AB: Project **CALIPSO** (**C**aribbean **A**ndesite **L**ava **I**sland **P**recision **S**eismo-geodetic **O**bservatory) aims to investigate the magmatic system at the active Soufriere Hills Volcano (SHV), Montserrat. The collaborative project involves several institutions acting in partnership with the Montserrat Volcano Observatory (MVO), and is funded by NSF with assistance by NERC. SHV remains active after 9 years, displaying cyclic activity on several scales. Many aspects of andesite system dynamics remain poorly understood, and CALIPSO is expected to improve our understanding of SHV and andesite systems generally. Drilling was carried out Nov 02 to Mar 03. **CALIPSO** comprises an integrated array of four strategically located 200-m boreholes, plus several shallower holes and surface installations. The borehole instruments are designed to have long life (decades). Each site includes a very broad-band Sacks-Evertson strainmeter, three-component seismometer, tiltmeter, and surface cGPS station. At one site a hot-hole strainmeter design, involving hydraulic sensors and no downhole electronics, has been used for the first time anywhere. FreeWave telemetry is coupled with Quanterra A/D converters. These instruments are intended to probe changes in the andesitic volcanic system and underlying mafic sources with unprecedented sensitivity. Early data from the July 2003 dome collapse suggest remarkable insights about the depth, shape and nature of the volatile-saturated magmatic reservoir, gleaned from the magnitude of dilatation pulses accompanying the collapse, and their change in sign of with radial distance.

DE: 8400 VOLCANOLOGY

DE: 8414 Eruption mechanisms

DE: 8419 Eruption monitoring (7280)

DE: 8494 Instruments and techniques

SC: Geodesy [G]

MN: 2004 AGU Fall Meeting

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