HAWAI'I UNDERSEA RESEARCH LABORATORY

QUICK LOOK REPORT
DIVE: P5-596

MISSION STATUS

Location: Loihi Seamount

Latitude: 18° 54.45 **Longitude:** 155° 15.75

Mission Date: 10/27/04 **Duration:** 8 hours 42 mins

Maximum Depth: 1325 m

Project Title: Temporal Evolution of Loihi Seamount Geochemistry Across a Major Tectonic-Volcanic Event

Principal Investigator: Frank Sansone

Address: Oceanography Dept., Univ. of Hawaii, 1000 Pope Rd, Honolulu, HI 96822

Phone: 808-956-8370

Observer 1: Geoff Wheat
Address: PO Box 475
Moss Landing CA 95039

Observer 2:

Address:

Pilot 1: Terry Kerby

Pilot 2: Collin Wollerman

Scientific Data Acquired: Prepare an abstract outlining your objectives, techniques, findings, etc.

Objectives:
The primary objective of this study is to document the recovery of the Loihi hydrothermal system and its associated biological communities after the major volcanic-tectonic event of 1996 and to determine the temporal and spatial scales over which these changes occur. The continuation of this research as the seamount cools from the 1996 tectonic-volcanic event will provide insights to processes and fluxes that may have been previously unknown or theorized. In addition, the importance of our study is amplified by the increasing awareness that submarine volcanoes are important to global biogeochemical fluxes. Finally, the resulting greater understanding of the temporal variability of CO_2 release by Loihi hydrothermal vents will be valuable for predicting the role of hotspot volcanism on global CO_2 cycling; this is particularly important in light of the very high levels of CO_2 found in Loihi vent fluids.

Observations, findings, etc:
Landslides have significantly altered the seafloor at several locations within Pele's Pit. Venting continues at the Jet Vent site where two water samples were collected. We then visited the Tower Vents where we deployed two bacteria traps and collected a water sample, two bacterial traps, one slide trap, one (pair) miniature temperature recorder and four jars of microbial mat. We traversed Pele's Pit and ascended to Lohiau Vents were we collected a water sample two bacteria traps, and three jars of microbial mat. At many of these sites photographs and temperatures were taken.

Species list:
None

MISSION EVALUATION:

Limitations, failures, or operational problems noted:

None

Recommendations for corrective action or improvement:

HMI lights would significantly increase the resolution of the still and digital imagery, as it would allow the cameras to operate at larger f-stops.

Also, a digital still camera, mounted above the basket, with remote pan, tilt, and zoom, would be extremely useful.

In your opinion, did the mission essentially achieve its purpose? Compare actual work accomplished with the work that was expected to be accomplished.

All dive objectives were met.

List specimens or samples collected on the mission.

Samples collected: 4 titanium “majors” samples, 2 Niskin samples, 7 suction “rosette” samples, one shrimp, 4 bacteria traps, 1 slide trap, and one (pair) miniature temperature recorder.

Samplers deployed: 2 bacteria traps

DATA RELEASE

Data may be retained by the project leader for up to 2 years after the mission date with the following exception. NOAA may request to use photos for publication or publicity purposes at any time.

Fill in the appropriate statement below and sign this form.

I hereby release the data archived by HURL for public consumption following mission (project title)

"Temporal Evolution of Loihi Seamount Geochemistry Across a Major Tectonic-Volcanic Event"

held on October 27, 2006 (date) in the following way:

a. CTD data by October 27, 2006 (date)

b. video and images by October 27, 2006 (date)

c. other October 27, 2006 (date)

d. I will give my written consent to individuals wishing to use these data prior to the above dates depending on the nature of the request(s).

_____ Principal Investigator