

Primary Investigator: C. Geoffrey Wheat

Institution: University of Alaska Fairbanks

Project: Collaborative Research: Discovery, sampling, and quantification of flows from cool yet massive ridge-flank hydrothermal springs on Dorado Outcrop, eastern Pacific Ocean

Collaborators: Fisher and Hulme

NSF Division: OCE

Solicitation Info: NSF-MGG (PD-98-1620)

Submission Date: 02/15/2011

Overview

We will use the AUV Sentry to map a ridge flank basaltic outcrop on 20 Ma crust to create bathymetric, sediment thickness (sub-bottom sonar), water column anomaly, and photo mosaics maps. We will then use the ROV Jason II to locate and sample hydrothermal springs (fluid, temperature, and flow rate) and to collect sediment push cores and heat flow measurements.

Data description

Dorado Outcrop 9 degrees 5' N; 87 degrees 6'W;

Description of present data and samples

Pore water - Wheat and Fisher 2008

Heat flow - Fisher et al., 2003; Hutnak et al., 2007; Hutnak et al., 2008

Data analysis summary

Wheat - pore water and spring fluid composition

Fisher - Heat flow and flow rate

Hulme - Sentry data

Includes field work? Yes

Description of field work

Single expedition with 16 days on site

Expected data product #1

Data type: Analytical

Responsible investigator: Wheat

Product description

Pore and spring fluid compositions

Intended repository: VentDB

Timeline for data release: End of grant period

Expected data product #2

Data type: Analytical

Responsible investigator: Fisher

Product description

Heat flow and fluid flow rate

Intended repository: NGDC

Timeline for data release: End of grant period

Expected data product #3

Data type: Analytical

Responsible investigator: Hulme

Product description

Bathymetric, sediment thickness, Water column anomalies

Intended repository: NGDC

Timeline for data release: End of grant period

Expected data product #4

Data type: Analytical

Responsible investigator: Hulme

Product description

images from Sentry and Jason II

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Preservation plan

Images from Sentry and Jason II are typically stored on a WHOI-based repository

Timeline for data release: Sixty days after acquisition