

ATLANTIS CRUISE SYNOPSIS

Voyage - Leg: AT 07-34

Voyage Dates: 21 Apr - 22 May 2003

Chief Sci(s): Deborah Kelley (Kelley/Michaels/Capone)

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Cruise Objective: Collaborative research -- investigation of a new class of hydrothermal system at the Lost City Hydrothermal Field, a peridotite-hosted, off-axis system at 30°N on the Mid-Atlantic Ridge. The main objective of this cruise is to characterize the Lost City Hydrothermal Field. We will be using ABE to characterize the bathymetry and water column around the field and for exploration of possible fields <~80 km away. During the 18 Alvin dives we will sample the vents for fluid, microbes, and chimney material and we will characterize the surrounding geology and tectonic setting Biocomplexity Mooring Recovery.

Science Activities: 18 Alvin dives, SEABEAM survey, CTDs (full depth), ABE, rock dredges, camera sled possibly and one mooring rescue operation

Operations Area: 30-07N 42-07W & 30-00 N 45-00W
700 to 6000 m

SSSG Tech: sssg@atlantis.whoi.edu

Departure Port: Bridgetown, Barbados

Agent: DaCosta Mannings Inc.
Brandons
St. Michael
BARBADOS
Contact: Glyne St. Hill
tel. (246) 430-4804
fax: (246) 431-0051
email: gsthill@dmishipping.com

Arrival Port: St. Georges, Bermuda

Agent: Meyer Shipping
Somers Wharf
14 Water St.
St. Georges, GE BX
BERMUDA
Contact: Capt. John Moore
tel. (441) 297-2303
fax: (441) 292-1583
email: jmoore@meyer.bm

Installed Scientific 3.5 kHz

Equipment:

PDR
 Deionized water
 CTD, 24 X 10 liter Niskins w/ oxygen, transmissometer, salinity, temp. and possible inclusion of a CH₄ Metz sensor, (Marv Lilley) - 4000 meter depth
 Fume hood
 -70 freezers
 Walk-in cooler
 Pinger for wire use
 SEABEAM
 SEANET for cruise web site
 Darkroom to be utilized as microscope room (anti-vibration table needed)
 Nitrogen generator

WHOI-Provided Science Tools:

Rock dredge
 Rock saw
 ABE
 ICL pickup on arm
 30 & 60 cm heat flow probes (Andy Fisher, if available from Alvin)
 Major water samplers
 Frame grabber (Lerner unit)
 Digital handhelds (w/strobes)
 Fornari still cam w/light booms
 Hi/Lo temp probes
 Push cores
 Small Alvin Niskins
 (2) Pelagic slurp pumps/chambers
 Hydraulic slurp pump and multichamber rotary collector
 Hyd lines to fire two gas-tights on Butterfield sampler
 Butterfield sampler interface (wires req'd?)
 Imagenex sonar
 Geocompass interface (wires req'd?)
 2 pair (4 wires) serial lines for Lilley resistivity probe
 26vdc+ serial line for Ko-ichi redox probe

Program-Provided Science Tools:

CH₄ Metz sensor (Lilley)
 In-Situ Temperature-resistivity probes (Lilley) (needs 2 serial lines)
 Ko-ichi redox probe (needs 26vdc, rs232 line)
 Vemco and Hobos (Kelley & Shank)
 Inductively coupled link (Lilley) (requires ICL pickup on arm)
 Gas tight bottles (Lilley) (6-pair available from Alvin)
 In-situ methane sensors (Lilley)
 Eh-sensor (Alvin, ABE, CTD) (Lilley)
 Fluid-particulate sensor (Butterfield)
 Butterfield water sampler (Beast)
 Paroscientific pressure sensor (Lilley)
 Biobox (Shank)
 Sample box (Kelley)
 GeoCompass for oriented samples (Karson - Rod prep/checkout)
 McLane sampler (Butterfield)

Shipboard Equipment/Nav: ABE and Alvin nav nets: 8-9 transponders for ALVIN, 2-3 ABE transponders

Other Requirements: Marv Lilley withdrew isotope request
Swab test to be performed by Univ. Miami - Tritium Labs

Notes: Extensive night operations (ABE, CTD, rock dredges)
Gas bottles to be loaded in U.S. - offload at WHOI
Load gear in U.S. on/about March 1st
Off-load in Bermuda & Woods Hole

Navy Clearance Status: Granted 04/17/03:
WITHIN 60 NM RADIUS OF 30-07N 42-07W DURING PERIOD 240400Z APR THRU 202400Z MAY 03
WITHIN 5 NM RADIUS OF 30-00N 45-00W DURING PERIOD 240400Z APR THRU 202400Z MAY 03

Last Modified: 01/19/2006

Check List:	Required?	Comments
US Customs Form	Yes	Need forms for loading in Jax, FL.
Explosives Clearance	No	
Isotope Use Approval	No	Marv Lilley withdrew request
Diplomatic Clearance	No	
SCUBA Diving	No	