HOT-147: Chief Scientist Report

Chief Scientist: D. SADLER

HOT-147 Chief Scientist's Cruise Report

Cruise ID: KOK0307
Departed: April 22, 2003; 0900(HST)
Returned: April 26, 2003; 0800(HST)
Vessel: R/V Ka'imikai-o-Kanaloa
Operator: University of Hawaii
Master of the Vessel: Captain Ross Barnes
Chief Scientist: Dan Sadler
STAG Electronics Technician: Steven Tottori
STAG Deck Operations: Dave Gravatt

1. SCIENTIFIC OBJECTIVES

The objective of this cruise was to continue building a collection of hydrographic and biogeochemical data at the Hawaii Ocean Time-series(HOT) stations. Three stations were to be occupied during the cruise, in the following order:

1) Station 1, referred to as Station Kahe, is located at 21° 20.6' N, 158° 16.4' W and was to be occupied on April 22 for about 3 hours.

2) Station 2: ALOHA (A Long Term Oligotrophic Habitat Assessment) is defined as a circle with a 6 nautical mile radius centered at 22° 45'N, 158° W. This is the main HOT station and was to be occupied for 3 days from April 23 though April 26.

3) Station 6: Located off Kahe Point at 21° 50.8' N, 158° 21.8' W. Station 6 was planned to be occupied on April 26 for about 3 hours.

A single CTD cast was to be conducted at Station 1 to collect continuous profiles of various physical and chemical parameters. Water samples were to be collected at discrete depths for biogeochemical measurements.

Upon arrival at Station ALOHA, a floating sediment trap array was to be deployed. A full-depth CTD cast was to be conducted followed by CTD casts at 3-hour intervals for 36 hours of continuous and discrete data collection. Plankton net tows were to be conducted near noon and midnight on April 23 and 24. A floating primary production experiment was to be deployed and recovered on April 24. Following recovery of the sediment traps on April 25, the ship was scheduled to return to Station ALOHA for optical casts. Once work was completed at Station ALOHA, the ship was to transit to Station 6 for a single 2500 m cast. The ship was scheduled to return to SNUG Harbor at 0800 on April 26 and unload. The

following instruments were to collect data throughout the cruise: a shipboard ADCP, a thermosalinograph, a fluorometer and an anemometer.

2. SCIENCE PERSONNEL

PO Group:		
Yves Veillerobe	Undergraduate Student	UH
Fernando Santiago-Mandujano (Watch Leader)	Research Associate	UH
Shimi Rii	Research Associate	UH
Mark Valenciano	Electronics Technician	UH
Hillary Ellis	Undergraduate Student	UH
JGOFS Group:		
Thomas Gregory	Research Associate	UH
Anne Gasc	Research Associate	UH
Lance Fujieki	Computer Specialist	UH
Tara Clemente (Watch Leader)	Research Associate	UH
Daniel Sadler (Chief Scientist)	Research Associate	UH
Evgeny Dafner	Research Specialist	UH
Cecelia Sheridan	Graduate Student	UH
Eric Grabowski	Research Associate	UH
Cory Lar Rieu	Volunteer	HI
STAG Group:		
Dave Gravatt		
Steve Tottori		

3. GENERAL SUMMARY

All operations at all stations were conducted as planned. Thirteen 1000 m and two 4800 m CTD casts were obtained at Station ALOHA. A 1000 m cast was obtained at Station Kahe. A 2500 m CTD cast was completed at Kaena Point. Also, three PRR/TSRB cast were performed at Station ALOHA.

C. Sheridan successfully completed six plankton net tows.

The PRR, TSRB and AC9/FRRf were deployed as planned.

The ADCP ran without interruption throughout the cruise, as well as the fluorometer, thermosalinograph and the ship's anemometer.

All ancillary work was completed.

We arrived back at Snug Harbor on April 26 at 0730. A complete off-load took place immediately.

4. R/V KA'IMIKAI-O-KANALOA, OFFICERS AND CREW, TECHNICAL SUPPORT

The R/V Ka'imikai-o-Kanaloa and her crew delivered excellent ship support for our work. The officers and crew were most helpful and accommodating and are to be commended for maintaining high standards.

Technical support during this cruise was excellent. STAG personnel were available at any time to assist in our work and made things much easier for us. 5. DAILY REPORT OF ACTIVITIES (HST)

April 21, 2003; Loading Day

Equipment loaded on this day. The CTD cable was re-terminated, followed by a test of the CTD system.

April 22, 2003

The ship departed from Snug harbor at 0920. Fire and abandon ship drills were conducted followed by a science meeting to review the objectives and schedule for the cruise. We arrived at Station Kahe at 1206 and conducted a weight cast (400 lb) to 1000 m. The PRR and TSRB were deployed at 1306 followed by a 1000 m CTD cast. The ship departed Station Kahe at 1522 and proceeded to Station ALOHA.

April 23, 2003

We arrived at Station ALOHA at 0056. A net tow was conducted at 0122. The sediment trap array was deployed at 0238 followed by a 4500 m CTD cast at 0345. The 36 hour burst CTD sampling began at 0838 and continued throughout the day. Six 1000 m casts were completed. Additional net tows were completed at 1027, 1300, 1340 and 2229.

April 24, 2003

Seven 1000 m CTD casts were completed. The primary production array was deployed at 0615 and recovered at 1905. A net tows was completed at 0126. The PRR/TSRB optical packages were deployed at noon. An AC-9/FRRf casts was conducted at 1402.

April 25, 2003

A 4500 m deep CTD cast was completed at 0219. The AC9/FRRf was deployed at 0301. The sediment trap array was successfully recovered at 0711. The PRR/TSRB optical packages were deployed at 1101 followed by AC-9/FRRf casts at 1200 and 1306. The ship departed Station ALOHA at 1411 and transited to Station 6. We arrived at Station 6 at 2030 and conducted a 2500 m CTD cast at 2036. We departed Station 6 at 2136 proceeded to Honolulu Harbor.

April 26, 2003

We arrived at Snug Harbor at 0730. A full offload took place upon arrival.

WEATHER:

Below is the cruise bridge log description for HOT 147. Wind and sea directions are in degrees, wind speed in knots, seas in Beaufort scale, swells in feet, barometer in inches Hg, temp in F (dry bulb), clouds in tenths.

Date	Wind	Sea	Swell	Barometer	Temp	Clouds
Tue. 22 April	090, 13-25	090, 3-5	090, 8-10	30.05-30.12	68-72	2-3
Wed. 23 April	080, 18-25	080, 4-5	080, 8	30.06-30.12	68-71	2-10
Thu. 24 April	080, 18-30	080, 5-6	090, 8-10	30.02-30.08	69-72	4-9
Fri. 25 April	080, 18-20	080, 4-5	090, 7-8	30.02-30.09	73-78	4-8
Sat. 26 April	090, 3-10	090, 2	130, 3	30.01	73	1-3

Sub component programs:

Investigator:	Project:
Bob Bidigare	HPLC pigments/UH
Mike Landry	zooplankton dynamics/UH
John Dore	CO2 dynamics/UH

Ancillary programs:

Investigator:	Project:
Charles Keeling	CO2 dynamics and intercalibration/SIO
Paul Quay	DI13C and O isotopes/UW
Mark Abbott/Ricardo Letelier	Optical measurements/OSU
Sally Chisholm	Prochlorococcus population dynamics/MIT