

HOT-149: Chief Scientist Report

Chief Scientist: T. GREGORY

HOT-149 Chief Scientist's Cruise Report

Departed: June 18, 2003 at 0900 (HST)

Returned: June 22, 2003 at 0730 (HST)

Vessel: R/V Roger Revelle

Operator: Scripps Institution of Oceanography

Master of the Vessel: Captain David Murline

Chief Scientist: Thomas Gregory

Resident Marine Technicians: Gene Pillard and Geoff Ravenhill

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 June 18 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 June 19 to June 21.

3) Station 6, referred to as Station Kaena, is located off Kaena Point at 21° 50.8'N, 158° 21.8'W and was to be occupied on June 21 for about 4 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. PRR and TSRB measurements were also to be made.

Upon arrival at Station ALOHA, the deployment of a free-drifting sediment trap array was to be conducted. After deployment, a full-depth CTD cast was to be conducted followed by CTD casts at strict 3-hour intervals for at least 36 hours for continuous and discrete data collection followed by another full-depth CTD cast. The primary production array was to be deployed on June 20 for 12 hours. PRR, TSRB and AC-9/FRRf operations were to be done around noon June 20 and 21 and a nighttime AC-9/FRRf cast was to be executed at 0300 on June 21. The drifting sediment trap array was to be recovered near dawn on June 21.

Plankton net tows were to be conducted near noon and midnight on June 19 and 20.

Following Station ALOHA operations, the ship was to transit to Station 6. A near-bottom CTD cast (~2500 m) was to be conducted at Station 6 including salinity samples for calibration, after which the ship was to return to Snug Harbor.

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

2. SCIENCE PERSONNEL

PO Group:

Shimi Rii	Research Associate	UH
Daniel Fitzgerald	Research Associate	UH
Mark Valenciano	Electronics Technician	UH
Fernando Santiago-Mandujano (Watch Leader)	Research Associate	UH
Jediah Bishop	Undergraduate Student	HPU
Santiago Andrioni	Undergraduate Student	HPU
Maya Iriondo	Graduate Student	UH
Rebecca Most	Undergraduate Student	UH

JGOFS Group:

Thomas Gregory (Chief Scientist)	Research Associate	UH
Lance Fujieki	Computer Specialist	UH
Dan Sadler	Research Associate	UH
Eric Grabowski	Research Associate	UH
Evgeny Dafner	Research Associate	UH
Karin Bjorkman	Research Specialist	UH
Cecilia Sheridan	Graduate Student	UH
Karmin Kime	Graduate Student	UH
Karin Schlappa	Graduate Student	UH
Jena Kline	Graduate Student	UH
Stefan Helmreich	Cultural Anthropologist	MIT

3. GENERAL SUMMARY

All operations at Stations Kahe, Kaena and ALOHA were conducted as planned.

Weather conditions were favorable throughout the cruise.

The thermosalinograph had problems and didn't start working properly until 1700 (HST) on June 18. The ship's anemometer and ADCP ran without interruption throughout the cruise.

We arrived back at Snug Harbor on June 22 around 0730. A complete off-load took place immediately.

4. R/V ROGER REVELLE, OFFICERS AND CREW, TECHNICAL SUPPORT

The R/V ROGER REVELLE and her crew delivered exceptional ship support for our work. The officers and crew were most helpful and accommodating and are to be commended for maintaining high standards. They showed enthusiasm and concern for our work and were very flexible in receiving changes in our operational schedule.

5. DAILY REPORT OF ACTIVITIES (HST)

June 17, 2003; Loading Day

Equipment loaded on this day. The CTD wire was terminated and tested.

June 18, 2003

The ship departed from Snug harbor at 0900, two hours late due to last minute loading and Honolulu harbor ship traffic. Safety briefings were held immediately.

We arrived at Station Kahe at 1230 and immediately conducted the PRR/TSRB deployment. Afterwards, we conducted a 1000 m CTD cast. The package was back on deck at 1502 and we then began transit to Station ALOHA.

June 19, 2003

We arrived at Station ALOHA around 2345 and executed a plankton net tow shortly thereafter. Following the tow, we deployed the sediment trap array. The first deep PO cast started at 0155 and was back on deck at 0535. We conducted six 1000 m casts this day.

Plankton net tows were conducted at 0018, 1011, 1304 and 2214.

June 20, 2003

The primary productivity array was deployed at 0445 and recovered at 2003.

Plankton net tows were conducted at 0100 and 1006.

The PRR and TSRB were deployed at 1212 and the AC-9/FRRf was deployed at 1245.

Seven 1000 m casts were conducted this day. S2C15 (the second deep PO cast) was initiated at 2303.

June 21, 2003

S2C15 was recovered at 0204 and concluded CTD operations at Station ALOHA.

The sediment trap array was recovered at around 0645. Following

recovery we steamed back to Station ALOHA.

Upon arrival at Station ALOHA, the ATE sampler was deployed at 1100.

The PRR and TSRB were deployed at 1212 and AC-9/FRRf casts were performed at 0305, 1251 and 1351.

Following the 1351 FRRf cast, we began steaming to Station Kaena.

A 2500 m cast was performed at Station Kaena at 2009.

June 22, 2003

We arrived at Snug Harbor at around 0730. A full offload took place immediately.

Sub component programs:

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

Ancillary programs:

Investigator:	Project:
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Charles Keeling	CO2 dynamics and intercalibration/SIO
Mark Abbott/Ricardo Letelier	optical measurements/OSU
Penny Chisholm/Erik Zinser	Prochlorococcus ecotype dynamics/MIT