

HOT-57: Chief Scientist Report

Chief Scientist: L. TUPAS

Loading: September 20, 1994

Departed: September 21, 1994 at 1400

Returned: September 2, 1994 at 0730

Vessel: R/V Moana Wave

Operator: University of Hawaii

Chief Scientist: Dr. Louie Tupas

Master: Captain Robert Hayes

Deck Operations: Mr. Dave Gravett

Electronics Technician: Mr. Ken Shultis

1. SCIENTIFIC OBJECTIVES

The primary objective of the cruise was to maintain the collection of hydrographic and biogeochemical data at the Hawaii Ocean Time-series (HOT) station. The HOT station, also known as Station 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. Free-drifting sediment traps were planned for deployment for approximately 72 hours from the site to measure sedimentation rates of particulate matter. CTD casts at three hour intervals were planned to obtain temperature, salinity, dissolved oxygen, flash fluorescence and beam attenuation profiles. Water samples for analysis of dissolved nutrients, gases, and biomass were to be collected with the CTD casts. Another free-drifting array to conduct a primary production experiment was planned for a 12 hour deployment. Three other stations were planned to be occupied during this cruise; Kahe Point Station (21°20.6'N, 158°16.4'W), Kaena Point Station (21°50.76'N, 158°21.84'W), and Station 3 (23°25'N, 158°W). Other research objectives such as the collection of water samples for ancillary investigations and experiments were to be conducted as time permitted.

2. SCIENCE PERSONNEL

Craig Nosse - UH WOCE

Jefrey Snyder - UH, WOCE

Fernando Santiago-Mandujano - UH, WOCE

Tony Fereira - UH, WOCE

Luis Tupas - UH, JGOFS

Dale Hebel - UH, JGOFS

Terrence Houlihan - UH, JGOFS

David Pence - UH, JGOFS

Lance Fujieki - UH, JGOFS

John Dore - UH, JGOFS

Daniel Sadler - UH, Carbon Project

John Constantinou - UH, Zooplankton Project

Sue Vink - UH, Trace Metal Project

Matthieu Roy-Barman - Caltech, Postdoc

3. GENERAL SUMMARY

Departure time was reset to 1400 to await the arrival of the temperature sensors for the CTD. All objectives of the JGOFS and WOCE programs were accomplished. Stations Kahe, Kaena, ALOHA and Station 3 were occupied. All core samples were taken within the 36 hour CTD burst sampling period. All samples for ancillary projects were taken. The floating sediment trap and primary production experiment was conducted. Zooplankton net tows were conducted. All planned activities were conducted successfully.

4. R/V MOANA WAVE, OFFICERS AND CREW, TECHNICAL SUPPORT

The R/V Moana Wave continues to maintain the excellent ship support for our work. The officers and crew were most helpful and constantly concerned about the success of our work. 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

Septmebr 20, 1994; Loading Day

All equipment was moved from either SNUG Harbor labs or UH that day. All electrical and electronic connections were made for the CTD and the light sensors. All lab equipment were stowed away and secured. All instruments were tested and appeared functioning. Sediment trap tubes were made that day.

September 21, 1994

All hands arrived on ship at 0300. Ship departed at 1400. Fire and emergency drills conducted at followed by safety briefing by first mate. Arrived Kahe Point Station at 1630. Conducted weight cast and 1000 m CTD cast, accomplished at 1900. Arrive Station Kaena at 2230.

September 22, 1994

CTD cast completed at 0010. Depart for ALOHA. Arrive at the center of Station ALOHA at 0530. Sediment trap deployment at accomplished at 0800. After deployment ship transit to center. Commence with deep cast at 0900. PNF cast at noon. Start 36 hour burst sampling at 1530. CTD casts continue at 3 hour intervals.

September 23, 1994

CTD casts continue at 3 hour intervals throughout the day. Net tow conducted at 0030. Go-Flo cast conducted at 0100 and primary production array successfully deployed at 0500. CTD casts continued at 3 hour intervals. PNF cast and zooplankton tow also conducted at noon. Primary production array successfully recovered in the evening.

September 24, 1994

Burst sampling continued at 3 hour intervals. Zooplankton net tows accomplished at different time intervals. More CTD casts after burst sampling period throughout the day.

September 25, 1994

CTD cast conducted at 3 hour intervals. Last cast completed at 0130. Proceeding to sediment trap location. Sediment trap recovery at finished at 0730. Proceeded to Station 3. CTD cast at 1030, completed at 1445. Start ADCP transect down 158 West.

March 12, 1994

Continue steaming to Honolulu. Arrive Snug Harbor at 0730. Commence unloading. Completed at 1200.

ANCILLARY INVESTIGATIONS AND SPECIAL PROJECTS

1. Sediment traps, net tows and diatom sampling - R. Scharek
2. Trace metal sampling - S. Vink
3. DIC sampling - D. Sadler
4. Zooplankton net tows - J. Constantinou
5. Thorium sampling - M. Roy-Barman

SAMPLES TAKEN FOR OTHER INVESTIGATORS

1. DIC samples for C.D. Keeling, SIO-UCSD
2. DIC samples for P. Quay, UW
3. Silica samples for H. Thierstein, Zurich
4. Iodine samples for G. Luther