

HOT-106: Chief Scientist Report

Chief Scientist: L. TUPAS

Loading: July 6&7, 1999

Vessel: R/V KaImikai O Kanaloa

Test cruise

Departed: July 8, 1999 at 0900 Returned: July 9, 1999 at 0800

HOT-106

Departed: July 12, 1999 at 0900 Returned: July 16, 1999 at 0800

Chief Scientist: Dr. Louie Tupas

Master: Captain Robert Hayes

Deck Operations: Mr. Dave Gravatt

Electronics Technician: Mr. Steve Poulos

1a. SCIENCE PERSONNEL Test cruise

Luis Tupas - UH, scientist

Terry Houlihan UH, research associate

Dan Sadler - UH, research associate

Roger Lukas UH, scientist

Craig Nosse - UH, research associate

Don Wright - UH, research associate

Fernando Santiago Mandujano - UH, research associate

Mark Valenciano UH, marine technician

Karen Selph - UH, scientist

Christopher Measures - UH, Scientist

Sue Vink UH, Scientist

Carrie Burdick UH, REU student

Jordan Raddick UH REU student

Mikhail Blikshteyn UH REU student

Brian Popp UH, scientist

Ellery Ingall, UT, scientist

1b. SCIENCE PERSONNEL HOT-106

Luis Tupas - UH, scientist

Terry Houlihan UH, research associate

Dan Sadler - UH, research associate

Ursula Magaard- UH, research associate

Craig Nosse - UH, research associate

Don Wright - UH, research associate

Fernando Santiago Mandujano - UH, research associate

Mark Valenciano UH, marine technician

Scott Nunnery UH Research associate

David Sutherland UH, REU student

Larry O'Neil UH REU student

Eric Grabowski - UH REU student

Jessica Walter UH REU student

Toshiko Sato UH Graduate student

2. GENERAL SUMMARY

This was the first cruise HOT cruise on the R/V Ka Imikai O Kanaloa. The test cruise was conducted to evaluate configurations made by the HOT program to operate on this vessel. Several problems were encountered, the majority of which were fixed by the HOT cruise. This cruise was also conducted to establish safe protocols for back deck and CTD operations.

During the HOT cruise, all objectives of the JGOFS and WOCE programs were accomplished. All planned stations were occupied. Weather and sea conditions were moderate to rough but within limits of safety for deck operations. All core samples were taken and the 36 hour CTD burst sampling period was not interrupted. All samples for ancillary projects were taken. Floating sediment trap array and primary production array deployed and recovered successfully. No samples were lost during the in-situ incubations. ADCP measurements were made throughout the cruise.

3. R/V Ka Imikai O Kanaloa, OFFICERS AND CREW, TECHNICAL SUPPORT

This was the first HOT core cruise on the R/V K-O-K. Most of the officers and crew were familiar with our work because of their previous experience on the R/V Moana Wave. They showed enthusiasm and concern for our work and were very flexible in receiving changes in our operational schedule and logistical support. 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.

4. DAILY REPORT OF ACTIVITIES

July 6 & 7, 1999; Loading Days

We did a full on-load for this cruise. The ships main deck was configured for HOT equipment. The main lab van and the rope winch were secured inside the submarine hangar. The equipment van was secured on the O-2 deck. All deck and lab equipment were loaded and secured within the ships labs. All electrical and electronic connections were made for the CTD. All other equipment and containers were stowed away and secured. All laboratory instruments were tested and appeared functioning. No problems were encountered.

July 8, 1999 Test cruise

We departed from Snug Harbor at 0900 as scheduled without any problems. Fire and emergency drills conducted at 0930 followed by a safety briefing by the first mate and a short science meeting. Arrived at Station 9 (20° 51N, 158 10W) at 1200 and deployed the floating sediment trap array without the crosses. A go-flo cast was conducted over the stern followed by a net tow. After the net tow, the array was retrieved. A weight cast was made from the air castle deck. Winch operators practiced operating the boom and winch system while science crew practiced deployment and retrieval procedures. After satisfactory protocols were established, the CTD was attached to the

wire. While this was being done, the PRR and TSRB were deployed and retrieved. A CTD cast to 1000 and 4000 meters was made. Aerosol and ozone measurements were made. All samples were taken and we departed for Snug at 2300. Seas and weather were a bit rough.

July 9, 1999

After a fairly rough transit we arrived at Snug Harbor circle at 0800. Problems were encountered with the engine and we were operating with one propeller for most of the cruise. There was also a problem with the toilets. A list of other action items was provided to the engineering department.

July 12, 1999

We departed Snug Harbor at 0800. Fire and abandon ship drills were held at around 0930. We arrived at Station Kahe at 1130. Upon arrival the PRR and TSRB were deployed and retrieved. CTD cast started at 1300. Work at Station Kahe was accomplished by 1700 and the ship proceeded to Station ALOHA.

July 13, 1999

Ship arrived at Station ALOHA at 1400 because of a problem with one of the ship's engines. The floating sediment traps were deployed at 0300. The shallow cast was started at 0300 and the deep cast at 0900. The 3-hour burst sampling started at 1200. CTD casts at 3-hour intervals were conducted without interruption. Seas still rough. Conducted optical casts and atmospheric measurements during SeaWiFS overpass. Net tows conducted at noon.

July 14, 1999

Work continues according to schedule without any problems. Go-Flo cast at 0200 with some difficulty. Primary production experiment made from Go-Flo cast water. Primary production experiment was deployed without incident at 0500. At noon we did optical and atmospheric measurements as scheduled at Station ALOHA. Net tows successful. Primary production experiment retrieved at 1900 and all samples processed shortly after. CTD casts continue at 3 hour intervals. Last cast started at midnight.

July 15, 1999

Work has been proceeding as scheduled without any problems. Second WOCE deep cast started at 0400 and completed at 0800. We received a telex message from UH about the ARGOS positions. Ship proceeded to the trap location and traps retrieved at 1200. Ship then proceeded to HALE ALOHA. Arrived at HALE ALOHA at 1400. CTD cast started at 1600 together with trace metal sampling. Departed HALE ALOHA at 1900.

July 16, 1999

We arrived at Snug Harbor at 0800. Unloading commenced immediately and completed at 1200.

SAMPLES TAKEN FOR OTHER INVESTIGATORS

1. DIC water samples for Charles Keeling, SIO-UCSD

2. DIC water samples for Paul Quay, UW
3. Seawater for Ed Laws, UH
4. Phosphorus experiments by Karin Bjorkman, UH
5. Aerosol and ozone measurements for J. Porter, UH
6. Seawater for Ted Walsh, UH
7. N₂O samples for Brian Popp, UH
8. H₂O₂ samples for Gary Miller