HOT-13: Chief Scientist Report

Chief Scientist: C. WINN

HOT-13 Cruise Report
R/V Moana Wave
3-7 Jan. 1990

Personnel List:

Darryl Jarman	WOCE
Chris Winn	GOFS
Ricardo Letelier	GOFS
Dale Hebel	GOFS
Stewart Reid	WOCE
Jef Snyder	WOCE
Georgia Tien	GOFS
Ken Shultis	WOCE
Marc Rosen	WOCE/GOFS
Chris Sabine	GOFS
Pierre Flament	WOCE
Robert Knox	WOCE
Dave Wilbur	U.W. Oxygen
Chuck Stump	U.W. Oxygen
Robert Chen	Scripps
Eric Firing	WOCE
Shoeb Javed	WOCE

Itinerary (approximate local time):
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3 Jan.
  0800 Depart Snug Harbor
  1100 Arrive Kahe Pt
  1400 Depart Kahe Pt
4 Jan.
  0000 Arrive HOT-site: deploy sediment traps
  0300 Commence water sampling
       WOCE deep casts
  1300 Light cast
  1500 Commence CTD sampling
       including:
5 Jan.
  0300 Primary productivity cast
  0500 Deploy in situ primary production array
  0600 Continue CTD profiling
6 Jan.
  0300 Cease continuous CTD sampling
  0330 Locate traps

  0800 GOFS cast
  1100 ADCP cast
  1500 GOFS cast
  1900 ADCP cast
  2300 GOFS cast
7 Jan.
  0200 10 m cast
  1400 Recover traps
  2000 Arrive Snug Harbor

Narrative:

HOT-13 departed Snug Harbor at 0800 on 3 January 1990, aboard the R/V Moana Wave. Approximately 3 hours were spent on station at Kahe Point on both the transit to ALOHA and the return to Snug Harbor, and about 72 hours were spent at Station ALOHA. Because of problems with the CTD deck box, no CTD data were collected at Kahe Point on the outbound leg. The station was reoccupied on our return transit to Snug Harbor.

WOCE & JGOFS Sampling

All WOCE and JGOFS chemical sampling was completed on HOT-13.

CTD and XBT Operations

In general, CTD operations were successful on this cruise. However, problems with the deck box prevented the collection of CTD data at Kahe Point on the outbound transit, and oxygen sensor problems prevented the collection of continuous oxygen profiles on most of the CTD casts collected at Station ALOHA. The Kahe Point data was collected on the return leg. In spite of sensor problems, CTD oxygen sensor data was collected at Kahe Point and on three casts, including the WOCE deep cast, at Station ALOHA. XBTs were deployed on the return leg to Snug Harbor.

Primary Production and Sediment Trap Measurements

Primary production and particle flux measurements were made at Station ALOHA. Primary production was measured in situ for 12 hours using the free-floating array and 24-hour incubations were conducted using the on-deck incubator system. Several bottles from the upper three incubation depths were lost during the recovery of the in situ array when the array drifted under the ship. However, some replicate samples incubated at each of these depths were recovered. The sediment trap samples were collected without problems.

Optical Measurements

Surface irradiance measurements were collected with both the 2 pi and

cosine collectors. Underwater PAR profiles were collected with the submersible 4 pi collector.

ADCP Measurements

Current measurements were made with the hull-mounted ADCP. In addition, test casts were conducted with an ADCP attached to the 12-place rosette. Several ADCP calibration runs were made in the vicinity of the HOT site.

Ancillary projects

In addition to the regular JGOFS sampling, samples for dissolved gases were collected for Charles Keeling of Scripps Institution of Oceanography and for Steve Emerson and Paul Quay of University of Washington. Samples for dissolved organic compounds were collected by Robert Chen of the Scripps Institution of Oceanography.