

HOT-118: Chief Scientist Report

Chief Scientist: D. HEBEL

HOT 118 Cruise Report
R/V Kaimikai O Kanaloa
21-25 Aug., 2000

Personnel List

HOT 118:

WOCE group:

| | | |
|------------------------------|-----------------------|----|
| Fernando Santiago-Mandujano* | Research Associate | UH |
| Lal Ratnapala | Graduate Assistant | UH |
| Mark Valenciano | Electronic Technician | UH |
| Jerimiah Johnson | Research Associate | UH |

JGOFS group:

| | | |
|-----------------|-------------------------------|--------|
| Dale Hebel | Chief Scientist (co-PI JGOFS) | UH |
| Lance Fujieki | Computer Specialist | UH |
| Colleen Allen | Research Associate | UH |
| Matt Church | Visiting Graduate Student | UH |
| Markus Karner | Scientist | UH |
| Jennifer Brum | Student Assistant | UH/HPU |
| Terry Houlihan* | Research Associate | UH |
| Karin Bjorkman | Scientist | UH |

Associated projects:

| | | |
|---------------|--------------------|----|
| Tom Gregory | Research Associate | UH |
| Roberta Hamme | Graduate Student | UW |

STAG

| | | |
|--------------|-----------------------|--------|
| Steve Poulos | Electronic Technician | UH-UMC |
| Dave Gravatt | Deck Technician | UH-UMC |

*Watch Leader

Itinerary (approximate HST):

Monday, 21 Aug.

| | |
|-------|--|
| 0900 | Departed Snug Harbor |
| 0925 | Fire/abandon ship drill, science meeting |
| ~1200 | Arrived Kahe Pt. (Sta. 1) |
| 1215 | Weight cast (1000 m) |

1255 PRR/TSRB casts
1340 slc1
1450 Departed Kahe
2355 Arrived Sta. Aloha (Sta. 2)

Tuesday, 22 Aug.

0010 Net tow
0040 Net tow
0110 s2c1(100m)
0125 s2c1 on deck
0140 Began sediment trap deployment
0225 Completed sediment trap deployment (22° 45.5N, 157° 59.3W)
0305 s2c2 (WOCE deep)
0450 s2c2 retrieving from 4750 db
0650 s2c2 on deck
0840 s2c3 (WOCE shallow)
1000 Net tow
1030 Net tow
1100 s2c4
1200 PRR-600/TSRB cast
1300 Net tow
1330 Net tow
1405 s2c5
1515 in situ pumping
1635 in situ pump on deck
1705 s2c6 (rosette hit side of ship on deployment, recovered for inspection)
1740 s2c6 (redeployed)
2000 s2c7
2200 Net tow
2235 Net tow
2300 s2c8

Wednesday, 23 Aug.

0100 Net tow
0130 Net tow
0200 s2c9
0350 Go-Flo cast (25&45m bottle comparison experiment)
0510 s2c10
0610 Deployed primary productivity array (22° 45.18N, 157° 58.41W)
0800 s2c11
0940 No ADF signal from PP array, looking for PP array
1005 Spotted PP array, spar buoy underwater
1015 Hooked PP array floats, buoy recovered and extra flotation added
1030 Spar and floats redeployed
1100 s2c12
1200 PRR-600/TSRB cast
1255 Net tow
1330 Net tow
1410 s2c13
1505 in situ pump (in)
1620 in situ pump (out)
1700 s2c14
1930 Recovered PP array (22° 43.40N, 158° 1.76W)
2000 s2c15

2300 s2c16 (rescheduled HPLC cast, 200 db)
2330 Transit HALE ALOHA

Thursday 24 Aug.

0200 Arrive HALE ALOHA (night light not working)
0215 s8c1
0325 Transit sediment traps
0510 Arrived sed. traps
0630 Hooked trap array
0715 Completed sed. trap recovery (location ???)
0900 Arrived HALE ALOHA
0955 Kahuku transect
1345 CPA Kahuku Pt. ((21° 43.7N, 157° 59.9W), transit Kaena
1545 Arrive Kaena Pt. (sta. 6)
1705 s6c1
1715 CTD on deck (100 m test cast)
1800 s6c2
1850 CTD at 2500 m
1945 CTD on deck and began Honolulu transit

Friday 25 Aug.

0715 Arrive Snug Harbor; commenced complete offload

Narrative:

HOT 118 was conducted aboard the R/V Kaimikai O Kanaloa (KOK), 21-25 August, 2000. Captain Hayes was the master of the vessel and Dale Hebel chief scientist. There was a total of 16 participants in the scientific party composed of 4 WOCE, 8 JGOFS, 2 ancillary investigators and 2 STAG.

We departed Snug on 21 August occupying stations at Kahe Pt. (sta. 1), Station ALOHA (sta. 2), HALE ALOHA (sta. 8) and Kaena Pt. (sta. 6). All scheduled work was completed and all samples collected. CTD operations were conducted at stations 1, 2, 8 and 6. One ~1000 m CTD cast was conducted at station 1&8; 2 <250m, 13 ~1000 m, one ~2000m and one ~4800 m CTD casts at Station ALOHA; one ~2500m CTD cast at Kaena Pt. (sta.6). Other over-the-side operations included [3] light casts, [12] net tows, 2 in situ pumping operations, 1 Go-Flo cast, floating sediment traps and primary productivity measurements. All operations were routine with the exception of additional net tows for C. B. Nelson (which by now are routine), an external Niskin /Go-Flo primary productivity comparison, in situ pump operations (again almost routine) and addition of sta. 6 with secondary CTD testing.

The underway/continuous thermosalinograph, ADCP, and fluorometer were operable and functioned properly. WOCE met. obs and limited ship met. data were collected as well as aerosol measurements on 23 Aug. Overall the weather was partly cloudy with moderate to rough seas and 15-30 kt Trades.

At Sta. ALOHA the day-day cruise schedule was very similar to HOT 111, however on HOT 118 we occupied sta. 8 (HALE ALOHA) before picking up

the floating sediment traps, ran a transect from Sta. ALOHA to offshore of Kahuku and occupied our old sta. 6 (Kaena Pt.) on the return leg. Therefore, for those interested in our daily activities please see HOT 111 Cruise Report for generic narrative of Sta. ALOHA activities (applicable dates Feb. 1-4, 2000).

Weather

The weather was variable with partly cloudy skies and moderate-rough seas at the beginning of the cruise and moderate-strong winds decreasing to moderate conditions towards the end. Below is listed the cruise bridge log descriptions and the various values representing the range for that day. Under wind, sea, and swell there will be two designations, the first is the direction (in degrees), the second for wind is in kts, sea in Beauford force, and swell in feet, barometer in inches of Hg, temp °C (dry bulb) and clouds in tenths.

| Day Date | Wind | Sea | Swell | Barometer | Temp | Clouds |
|---------------|---------------|-----------|-------------|-------------|-------|--------|
| Mon 21 Aug. | 065-095,19-22 | 065-095,3 | 070-130,4-5 | 29.96-30.04 | 73-77 | 7-9 |
| Tues 22 Aug. | 085-110,24-28 | 05-110,4 | 090,8 | 29.99-30.04 | 75-78 | 7-10 |
| Wed 23 Aug. | 085-95,18-22 | 85-095,3 | 090,6-8 | 29.97-30.02 | 76-83 | 3-4 |
| Thur 24 Aug. | 085-090,19-24 | 085-090,3 | 090,6-8 | 29.96-30.03 | 76-82 | 3-9 |
| Fri. 25 Aug.* | 090,15 | 090,2 | 140,2 | 29.98 | 77 | 2 |

*One entry (0200 hrs)

Equipment and methods:

All standard equipment functioned properly with the exception of the primary productivity array spar buoy. Apparently there was a crack in the spar which received a temporary fix which was ineffective. After deployment the bridge lost the radio transmitter signal and noticed that the spar was underwater. Subsequently, the spar was retrieved and redeployed with additional floatation composed of extra surface floats secured around and to the center of the spar.

Sub component programs:

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|---------------------|-------------------------|
| Investigator: | Project: |
| ----- | ----- |
| Bob Bidigare (UH) | HPLC pigments/UH |
| Michael Landry (UH) | zooplankton dynamics/UH |

Ancillary programs:

| | |
|-----------------------|---------------------------------------|
| Investigator: | Project: |
| ----- | ----- |
| Charles Keeling (SIO) | CO2 dynamics and intercalibration/SIO |
| Paul Quay (UW) | DIC and 13C/UW |
| John Porter | aerosols/UH |

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|------------------------|------------------------------|
| Abbott/Letelier | optical measurements/OSU |
| Claudia Benitez-Nelson | phosphorus isotopes,Th234/UH |

Students:

| | |
|---------------|--------------------------------|
| Matt Church | DOC, Archea dynamics/UH |
| Jennifer Brum | phycoerythrin distributions/UH |

Others:

| | |
|--------------------------|-----------------------------|
| Hebel, Dore, Karl, Tupas | EOC, 1° prod. comparison/UH |
| Karin Bjorkman | phosphorus experiments/UH |

Notable events:

1. Addition of sta. 6
2. Sinking of pp spar buoy
3. Testing of secondary ctd sensors sta. 6