Sea Scholars Ship's Log August 13, 2006

Latitude: 28º 16 N
Longitude: 138º 11 W
Air Temp: 21ºC
Wind Speed: 15 knots

Photo 1: African Tulip Tree (*Spathodea campanulata*): This picture was taken at the Haleiwa Harbor.

Teachers stayed in their learning Groups attending three various classes. Group 2 began its first lesson in Ocean Acoustics with Jay Walmark. They learned the principles behind wave propagation throughout the ocean.

Photo 2: Jay Walmark lectures on ocean acoustics to Misty Savel, Tami Wells, Lois Eppich, and Regina Sumner.

Photo 3: Carol Ann Drane is testing salinity using a refractometer.

In the morning, Carol Ann Drane's group studied biological oceanography. They covered topics that included ocean ecology, major ocean zones, and the organisms within those zones. A major component of this lecture was plankton. Lectures were provided by Dr. Shelia Brown on the two major divisions of plankton, zooplankton and phytoplankton. A few of the phytoplankton discussed were diatoms, dinoflagellates, and those which cause harmful algal blooms. Many zooplankton were also discussed such as crab larvae, copepods, and the very odd skeleton shrimp!

Photo 4: Lt. Liz Crapo and AG1 Keisha Wallace pose before the morning launch of the weather balloon.

Lt. Liz Crapo, Navy meteorologist, taught the third group of the morning. Assisted by follow Aerographer's Mate, First Class (AG1), Keisha Wallace, Lt. Crapo presented material on weather fronts, the Coriolis effect, and the various world climates. Of course as in the previous classes, Group 2 launched a weather balloon that sadly outlasted and flew higher than our group yesterday.

Photo 5: Keisha Wallace, Saralee Lamb, and Sharon Walker ready the weather balloon for launch.

Photo 6: Tami Wells, Lois Eppich, and Greg Graeber prepare the acoustic for deployment after lunch

To demonstrate sound traveling through the water, our group constructed 12 acoustic sources made of light bulbs attached to weights. Then, every Sea Scholar dropped his/her light bulb in the ocean. Once these light bulbs imploded at approximately 575 meters, they were "heard" by the sonobuoy that had been deployed a few minutes before. These sound-receiving buoys were placed at depths of 90 ft. and 400ft. Jay Walmark then recorded the implosions of the bulbs in the survey control room. The implosions were also heard clearly from a different sonobuoy deployed nearly an hour earlier. This earlier sonobuoy had already traveled a distance of over 10 miles. This activity demonstrated how well sound is propagated through water.

Photo 7: Saralee Lamb deploys the sonobouy for acoustic testing.

Photo 8: Ruthie Hollis releases her acoustic source.

All three Groups were involved in “follow-up” classes in the major topic areas discussed aboard the ship. These included a second class with A.J. Pearson, resident oceanographer, completing discussion of physical oceanography for Group 2. During this course, we deployed a deep water XBT to a depth of 800 m. This XBT sent temperature readings in real time as it fell through the water column. The surface temperature had already decreased by five degrees C. This reduction in temperature is to be expected as the boat continues toward California, due to the very cold water California current.

Photo 9: Sharon Walker and Misty Savel sieve core and beach samples in their afternoon Geology class.

Photo 10: Regina Sumner, Tami Wells, and Greg Graeber are a part of A.J. Pearson’s discussion of wind propagated waves.

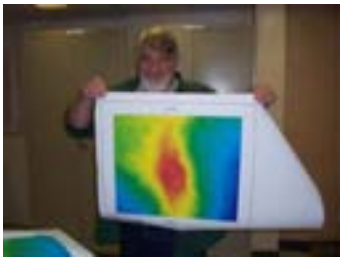

Photo 11: Tom Best displays our new survey map of Lo’ihi with the data collected by the Sea Scholars.

The evening concluded with last team’s tour of the bridge and continued with evening presentations. The first was Regina Sumner’s fifth grade lesson on the Iditarod. She shared ideas on history, participants, weather conditions, and race logistics. The second presentation was “Motion in the Ocean” by Tami Wells and Dr. Shelia Brown. This presentation linked actual data from crab fisheries research in the Gulf of Mexico. Classrooms can use these data to chart motions of blue crabs throughout the Gulf. The last presentation of the evening was a lesson plan, “Ocean Bathymetry and Texture Mapping” which modeled the contours of the ocean floor. This lesson was presented by Tami Wells, Rita Kaplan, and Ruthie Hollis

Photo 12: Sam Aciel, Rita Kaplan, Dr. Shelia Brown, Mary Ruch, Captain Tom Erwin, Sharon Walker, and Saralee Lamb pose on the bridge during their tour.

Photo 13: Regina Sumner presents her lesson on the Iditarod

Photo 14: Joan Turner, Greg Graeber, Sharon Walker, Carol Ann Drane, Regina Sumner, and Dr. Shelia Brown constructing a bathymetric model of Lo'ihi.

The Sea Scholars went on the fantail at 9 p.m. for a 15-minute for a plankton tow. The spectacular bioluminescence awed everyone and so did the wonderful organisms examined under the microscopes until 11 .m. Some of the animals were so unusal they even baffled Drs. Shelia Brown and Sharon Walker for a short time!

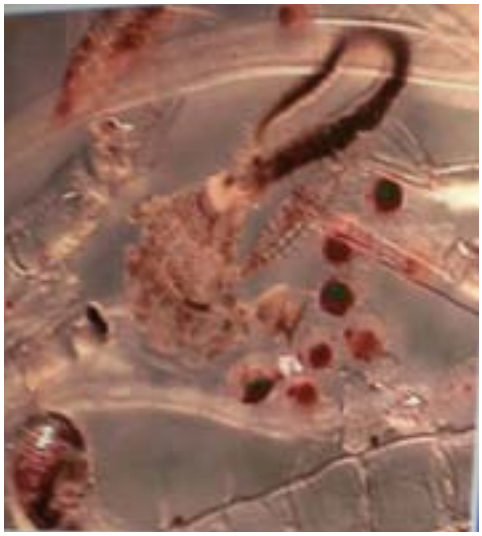

Photo 15: The organism above was one of the species that baffled the scientists aboard. This interesting image was taken with a computer that has microscopic photography software.

Photo 16: Carol Ann Drane, Rita Kaplan, and other Sea Scholars are using the microscopes to identify and study organisms found in the plankton tow.