

Log #2
September 3, 2005
N15°55
W152°36

We are still heading for the equator, yesterday we did tests of the CTD rosettes to check the rosettes themselves as well as train people to deploy them and to take samples.



Dr. Measures instructing us how to load the bottles on the CTD rosette.

For Dr. Measures we will be sampling for trace metals such as aluminum and iron in very very minute amounts, so the bottles and the handling and processing of the samples must take place in a very clean environment. The entire rosette is covered with plastic coating, and although there is some exposed metal and the entire ship is made of metal, they are still able to sample in a clean manner. When handling the bottles we must wear gloves and the bottles are taken into his lab that has an air filtration system that makes it a clean environment.



Inside Dr. Measure's Lab

So why are we interested in trace metals out here? You thought we were after plankton didn't you? Well, plankton need nutrients (fertilizer if you will) and iron is one of the most important. So areas with large amounts of iron tend to have big plankton blooms and areas with low amounts of iron, little or no plankton. My students will be doing an activity based on the Iron Experiment 2 data to better understand these connections. For more information on the Iron Hypothesis go to:

<http://www.palomar.edu/oceanography/iron.htm>

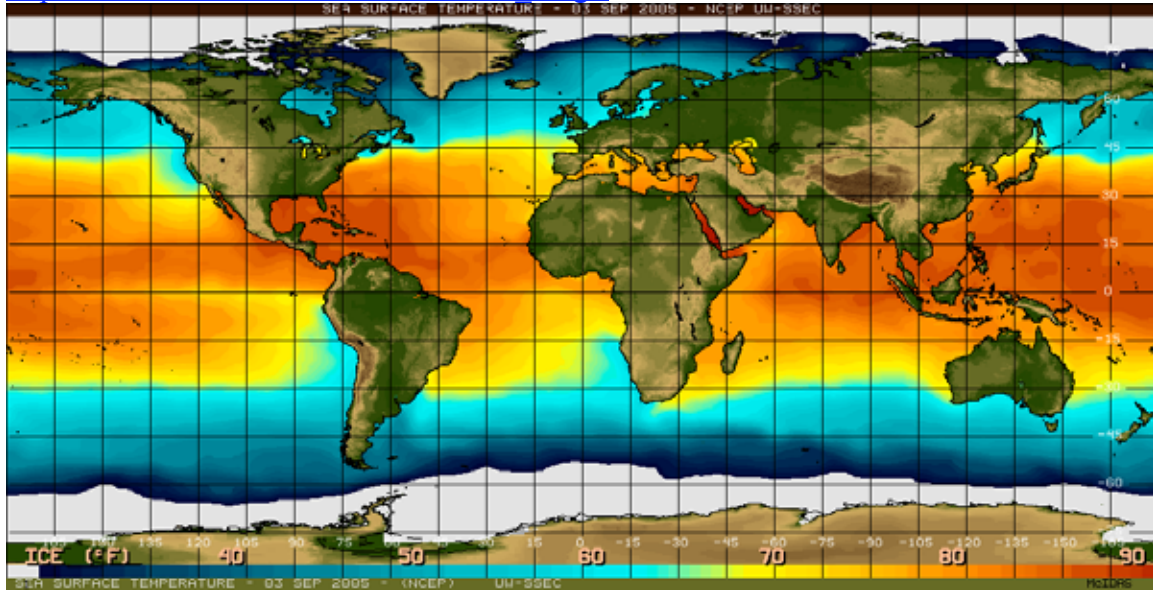
The second iron experiment: SOFeX (the Southern Ocean Iron Experiment) involved three ships, the R/V Revelle (which I am sailing on now) the R/V Melville and the Polar Star. To read more about that experiment as well as its results go to:

<http://www.mbari.org/expeditions/SOFeX2002/history&purpose.htm>

We heading for the equator on this cruise and we will be looking at the Tropical Instability Wave (TIW) see the picture below, and right along the equator coming straight off of South America you can see wave pattern in yellow. This is a map of sea surface temperature as of today and by accessing this website you can look at the changes in this wave on a daily or weekly basis. The TIW is a tongue of water that is relatively cooler than the water north and south of it and there is significant plankton bloom in this area. We will be looking at the components of this water and the plankton that live in it. I will discuss later what causes this phenomena and why the plankton are blooming there.

Sea surface temperature for today.

http://www.ssec.wisc.edu/data/sst/latest_sst.gif



For your second journal I would like my students to look up the Iron Experiment using the website above as a starting point.

Journal 2; Ocean Color

Questions:

What is ocean color?

Why are plankton important and how do they effect global climate?

What was the Iron Hypothesis and how would it effect global warming?

Do you think the Iron Experiment was a good idea for solving the excess CO₂ in the atmosphere and possibly controlling the Greenhouse Effect?

Google : Ocean Color and be able to add at least one satellite map of it to your journal, example: <http://vathenaarc.nasa.gov/curric/oceans/ocolor/global.gif>

Life on the R/V Revelle:

No we don't eat just fish, we have a great cook , Jay and his assistant, Pete and we eat very well. Sunday we will BBQ steaks, the chief engineer is in charge of this...I will send photos. We have breakfast at 7:30am, lunch at 11:30am and dinner at 5:pm. When we start working in shifts, meals get a little more hectic for those working through the night, but there is always food available in the galley. We have our won cups and glasses assigned by our bunk number and we are responsible for keeping these clean and keeping

track of them. The rest of our dishes we get as we go through the line in the galley. You can see Jay working in the galley in the picture below and our cups and glasses hanging on the hooks near the ceiling above the counter.



Jay (on the left) and Pete (on the right) working on preparing lunch in the galley.

I will send more pictures to the webmaster to post in the photo gallery.