Log 8 Friday

1. 092100Z September 2005
2. Position: Lat: 3-45.6N LONG 140-00.0W
3. Course: 180-T
4. Speed: 11.0 kts
5. Distance: 14.4 NM
6. Steaming Time: 1H 30M
7. Station Time: 22H 30M
8. Fuel: 2030 gals
9. Sky: Ptly Cldy; Cu, Sc
10. Wind: 130-T, 18 kts
11. Sea: 130-T, 3-4 ft
12. Swell: 130-T, 4-6 ft
13. Barometer: 1009.5 mb
14. Temperature: Air: 27.8 C, Sea: 27.1 C
15. Equipment Status: No change.
16. Comments: En route to station #2.

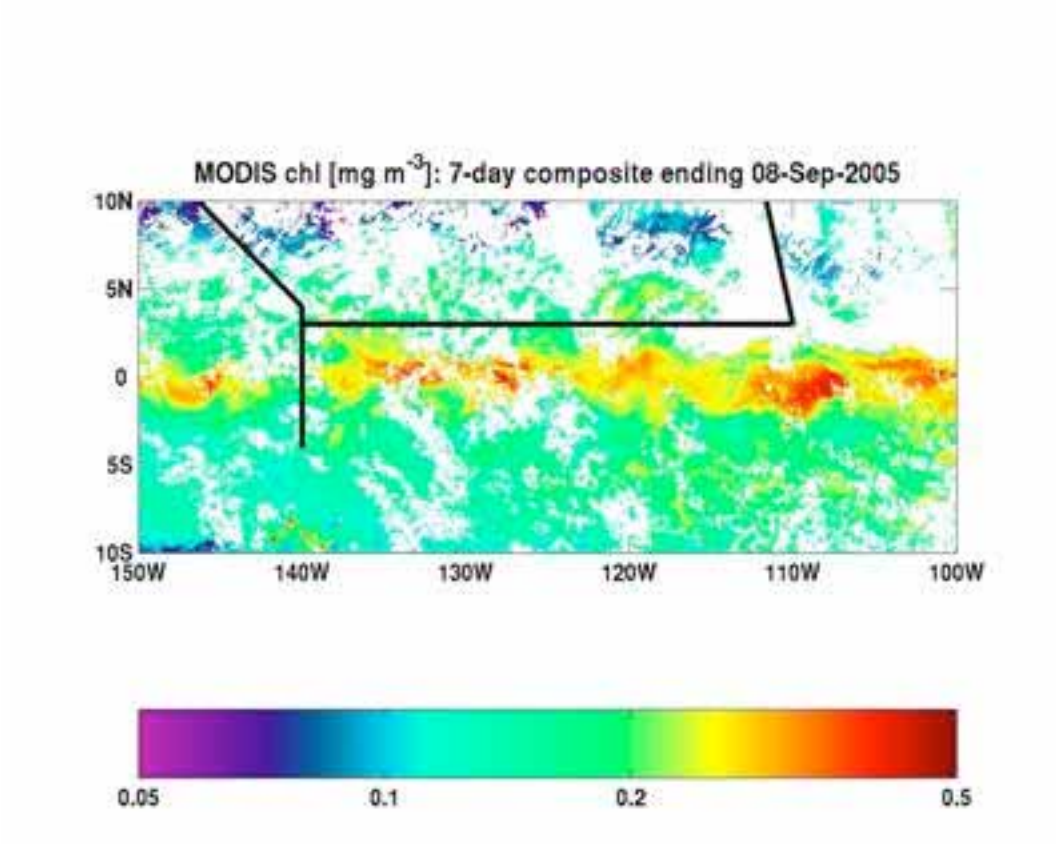
MASTER, R/V ROGER REVELLE

So why are we looking at Tropical Instability Waves, iron, aluminium, silica and what about those plankton? Well, I am so glad you asked.

The equatorial region of the Pacific Ocean is an interesting environment in terms of its oceanographic biogeochemical processes. This ecosystem is unique and is characterized by it's complex ocean-atmosphere interactions and a physically dynamic oceanic circulation pattern. Upwelling of cold, nutrient-rich water at the Equatorial Divergence supports a highly productive phytoplankton community. Phytoplankton productivity is an important measure of the oceans' food supplies. This is called primary productivity and these rates largely regulate fishery cycles and are thought to be significant in the global carbon cycle. High nutrient concentrations in this area are not accompanied by high phytoplanktonic biomass and primary productivity values, however, indicating that those parameters are somehow limited. Processes such as grazing control, iron and silica limitation have been theorized to explain this paradoxical high-nutrient and low-chlorophyll (HNLC) condition.

community structure in a highly variable ecosystem is an important component in the carbon flux balance of the Equatorial Pacific Ocean.
During an El Niño; sea surface temperature rises and nutrient concentrations tend to be low. During normal years the region is characterized by relatively low temperatures and high nutrient concentrations produced by a tropical instability wave passing through the equator. The tropical instability wave is a westward propagating wave along the equator.

Below are the Chlorophyll data for today, showing phytoplankton concentrations.



So what are we looking at here? Well Dr. Landry of Scripps Institution of Oceanography and his group are taking water samples to filter plankton and analyzing them for chorlophyll concentrations as well as taking a look at the number and diversity of grazers

Dr. Landry, Res Tech Gene Pillard and Moira Decima deploy a plankton net

Pulling the plankton net.

Pouring the contents of the plankton tow into a bucket to carry to the lab. The white tube with holes is a filter.

Pouring the net contents into a bucket……..the pink stuff at the bottom is the plankton. The zooplankton are much larger than the phytoplankton and the pink color is mostly them. Much of he phytoplankton is filtered from the CTD samples.

Much of the CTD sampling occurs at night and early morning and I mean early!!! The Cast goes in at about 1am and I go to Dr. Landry's lab at 4am to help filter chlorophyll samples. Any ideas why we might want to sample at night or early in the morning, why not do all our sampling in the daytime?