



**NOAA Teacher at Sea**  
**Dave Grant**  
**Onboard NOAA Ship *Ronald H. Brown***  
**November 6 – December 3, 2008**

**NOAA Teacher at Sea: Dave Grant**

NOAA Ship *Ronald H. Brown*

Mission: VOCALS, an international field experiment designed to better understand the physical and chemical processes of the Southeast Pacific climate system.

Date: November 14-16, 2008

**Weather Data from the Bridge**

Sunrise: 10:16 UTC

Sunset: 23:16 UTC

Wind: AM Slight; PM Slight

Seas: 4'

Precipitation: 0.0

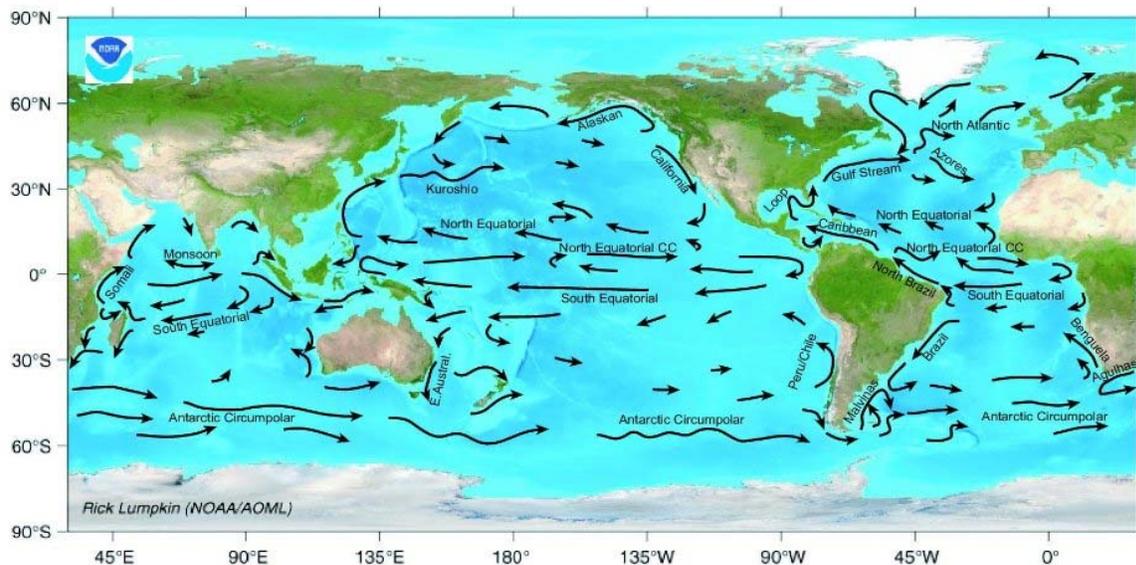
Pressure: 1015

**Science and Technology Log**

**Flotsam and Jetsam**

“Never bring anything onto a boat that you can’t afford to lose.”  
(Nancy Church – Cape Cod Museum of Natural History)

Except for the anchor, there are very few items that go overboard intentionally on a ship. A hat blown off your head by the wind becomes *flotsam*, but something deliberately discarded is *jetsam*.



**Drifter currents**

ARGO (<http://www.argo.net/>) is the international program that deploys and monitors a global network of autonomous floats that monitor ocean conditions (“Taking the pulse of the oceans.”). The buoys are deployed from a variety of vessels and one of the main advantages is that a vessel does not have to slow down or stop to launch them. Because of this, a vessel dedicated to research is not required, and commercial and even cruise ships have participated in this world-ocean study.

Drifters have been distributed since 1999 and continuously monitor temperature, salinity and currents. They will provide a global network spread out on a 3° by 3° ocean grid (180-miles by 180-miles). Data transmitted automatically to satellites is broadcast to the Global Drifter Program (<http://www.aoml.noaa.gov/phod/dac/gdp/html>) and available continuously to researchers.



**Dave holding the drifter buoy**

drifter is by current, not wind.

Once in the water, the packing materials dissolve, the drogue sinks to about 15 meters, and the currents, satellites, scientists and students do the rest. All researchers have to do to explore the oceans is log-on to the drifter website with a computer.

**Go Grandview!**



**Stickers on the drifter buoy**

Teachers and students also are involved through the Adopt-a-Drifter Program (<http://www.adp.noaa.gov/>) and we deployed drifters marked with decals from two schools partnered through it: Universite Nancy (France) and Grandview Elementary School - Grades K, 1, 2, 3, 4, 5.

Drifters actively transmit data for over a year, but like anything in the sea, can become the home for bio-fouling organisms that can interfere with their operation. We deployed several of them. The simplest are blue-and-white basket ball-sized floats with a drogue (a large sock-like bag) that acts as a *sea anchor* or *drift sock* so that the movement of the

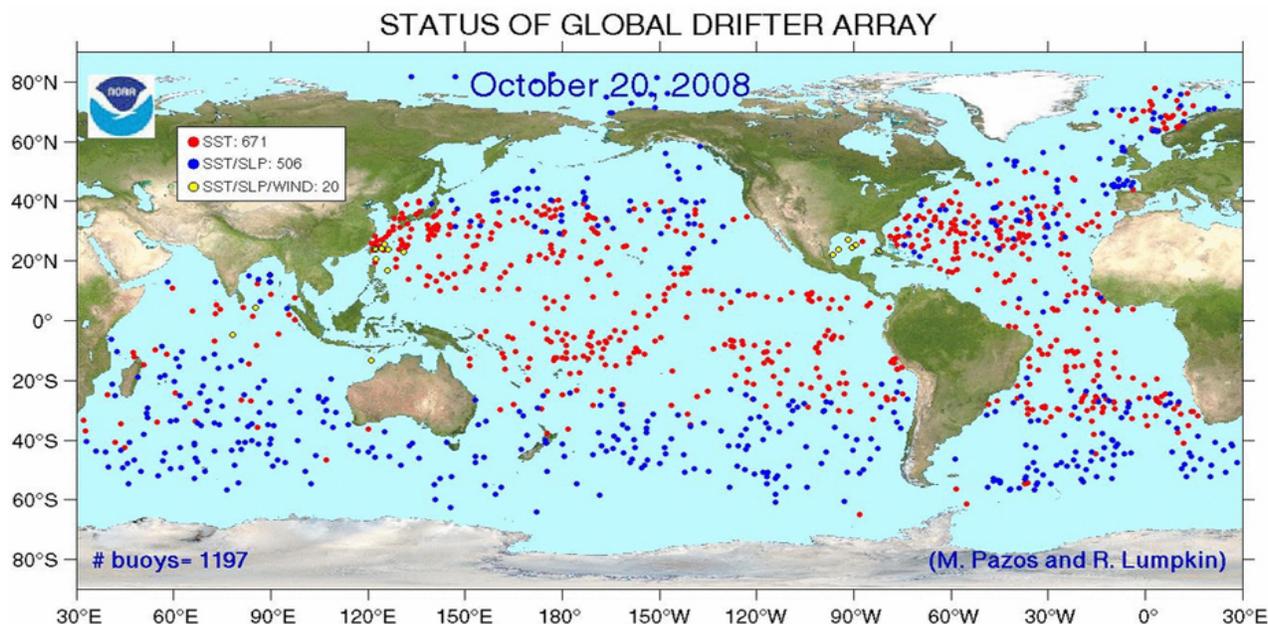


**Drifter in the water on its way!**

“After the sea-ship, after the whistling winds...  
Toward that whirling current, laughing and buoyant, with curves...  
(After the Sea-Ship – Walt Whitman)

**Surface Drifter Release Data – NOAA Ship *Ronald H. Brown* 11/14/08 – 11/29/08**

Schools	Date	Drifter	Latitude	Longitude
Grandview-4 <sup>th</sup> / Universite Nancy	11/14/08	78987	19° 51".893	075° 46".184
Grandview-5 <sup>th</sup> / Universite Nancy	11/17/08	78984	18° 59".999	079° 23.939
Grandview-2 <sup>nd</sup> -3 <sup>rd</sup> / Universite Nancy	11/29/08	78986	21° 30".122	073° 47".960
Grandview K-1/ Universite Nancy	11/29/08	78985	21° 30".004	072° 20".032



Other larger drifters are shipped in sturdy but degradable cardboard cartons. These too are launched off the stern and the shipping boxes rapidly fall apart after the water dissolves the glue. They are rather mysterious since we did not actually see what they look like, but I've seen others in the repair shop at WHOI (Woods Hole Oceanographic Institution). They are tube-shaped and designed to automatically sink to as deep as 1000-meters, and then rise periodically to broadcast their data. What a wonderful journey they will have to share with the world when they start reporting their data in dark and stormy seas and on sunny days.

Falling away astern of us, floating high and looking coffin-like, I was reminded of Queequeg's casket and some of the most memorable lines from *Moby Dick*: "These are times of dreamy solitude, when beholding the tranquil beauty and brilliancy of the ocean's skin; one forgets the tiger heart that pants beneath it..."



**Crew holding the Argos drifter**



**The drifter floating away**

### **Personal Log**

We have had a great string of days. I have settled into an interesting work routine with helpful and interesting scientists and crew. Weather balloons and sondes are released every four hours and the readouts from their flights are very informative. Along with the evening lectures, the week has been like a short semester on meteorology. Hourly water sampling has gone well too, and we are learning more about these peculiar eddies of warm and cold water each day.

My roommate (RW) is very nice and accommodating, and since we work different hours and find the best way to relax is with headphones and a book, the room does not seem crowded at all.

There are a few items I am glad I brought, and I suggest they be added to the TAS list: coveralls, ski cap, knee pads and eye drops. The coveralls are great for cool mornings on deck and to quickly pull on for the weekly “abandon ship” drills, since you are required to report to your muster station in long pants and sleeves, and with a hat. My light-weight volleyball knee-pads are good if I have to kneel on the metal deck for a while to take pictures. And eye drops are a relief since we do get wind almost every day, and some very bright days since we are headed into the Austral Summer, and the sun’s position is moving south every day.

I have been checking my Almanac, and perhaps as early as tomorrow, our course will cross paths with the sun’s southern movement, and it will be directly overhead at Noon. This can only occur at locations in the “Tropics” (Between the Tropic of Cancer and Tropic of Capricorn) and I have heard sailors refer to it as a “Lahaina Noon.” This term comes from the old sailing days when whalers made port stops at Lahaina on Maui, Hawaii. When it occurs there, fence posts, and for that matter, people, do not cast a shadow. Hopefully the clouds will clear around midday and we will be able to see the phenomenon.

“Thus drifting afar to the dim-vaulted caves  
Where life and its ventures are laid,  
The dreamers who gaze while we battle the waves

May see us in sunshine and shade.”

(Sun and Shadow by Oliver Wendell Holmes – 1857)