

A16S Chief Scientists' update #6. Jan. 30, 2014

The weekly report and additional pictures from the cruise can be found at:  
[http://www.aoml.noaa.gov/ocd/gcc/A16S\\_2014](http://www.aoml.noaa.gov/ocd/gcc/A16S_2014) bottom left hand under "during cruise"

Up to the wire.

Call it a jinx or King Neptune's last word but our last cast of the A16 line that started this summer in Iceland was eventful. When the CTD package was on its way down we experienced communication problems between the console in the computer room that acquires and stores the CTD/O<sub>2</sub> data, and closes the bottles (or in CTD jargon we had modulo and modem errors along with data dropouts). Indeed, when we tried to close bottles on the way up it did not work and we brought the CTD package back to the surface. Many of the experts on board spent the day in the bitter cold and snow trouble shooting, re-terminating and replacing everything we could think of with little improvement. At 8 PM last night 4 hours before our deadline of heading to port we threw the proverbial Hail Mary Pass and sent the package down with warning lights flashing and audio alarms on the deck unit screaming (some exaggeration here). Low and behold the CTD settled down and at 10:15 it came back on deck with confirmed closures of all 21 bottles (we had sacrificed 3 to placate Neptune). While many contributed to saving the last cast, four deserve mention by name for going well beyond the call of duty: Kristene McTaggard, PMEL; Andrew Stefanick, AOML; Jonathan Shannahoff, RHB survey technician; and Clay Norfleet, RHBelectronics technician. While a final diagnoses of the problem is forthcoming, it appears that it might have been an intermittent short in the conducting cables at the CTD end of the wire.

Below is the note we wrote prematurely yesterday.

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GO-SHIP CLIVAR/CO<sub>2</sub> Repeat hydrography cruise A16S – It's a wrap

The science party of A16S is pleased to announce that we have completed the last station of A16S at 60 S, 31 W with the trace metal cast coming on deck at 1:30 PM local time (actually 10:15 PM). Now there will be a 6-day steam to port during which we'll finish analyses, submit our preliminary data and reports, and pack up. This has been a very successful cruise with excellent quality of all measurements. We have observed continued heating of deep water in the Brazil/Argentine basin, accelerating changes in inorganic carbon both from anthropogenic sources and natural variability, decreasing O<sub>2</sub> in the thermocline, and clear plumes of iron and aluminum inputs from the shelves of the South Georgia/Sandwich Islands shelf. Many more findings await us when shore-side analyses and final QC are complete.

We've appreciated all the shipboard and shore-side logistic, financial and moral support. Most of us have seen enough icebergs, penguins, and whales to last a

lifetime and are ready to come home.

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Steaming at 12 knots towards Punta Arenas.

Rik and Leticia

Chief Scientists GO-SHIP CLIVAR/CO2 A16S