

Weekly Report 3

June 9 – June 15, 2015

From: Alison Macdonald (chief sci.) and Sabine Mecking (co-chief sci.)

P16N – Leg 2 Honolulu to Seattle via 152°W

Current Position: 54.0°N, 152°W

Smooth grey sea, smooth grey sky, the barometer is dropping (from an off-the-charts high of 1038 mbar)

<http://clivarp16n2015.blogspot.com/>

Today, the occupation of the 152°W, leg 2 line with 30 nm spacing between 22.5°-55.5°N has been completed! This success we owe to hard work, enormous luck and/or gifts from the weather gods: i.e. little in the way of technical problems and a long stretch of calm weather. Tonight we will angle northwestward toward the Alaskan Shelf and across the Aleutian Trench.

This week we dealt with a few technical difficulties, but nothing major or out of the ordinary. We switched out some of cables and plumbing for the CTD, replaced an oxygen sensor, and switched out the downward looking LADCP. We've been having some trouble getting the UVP batteries to last all the way through the cast, so following the manufacturer's advice, the batteries were completely drained and recharged. Today we will see if that helps. Otherwise, we are working our way through the stations, getting them done a little more quickly as the Gulf of Alaska is somewhat shallower than the basin to the south.

Spirits are high. Our galley is keeping us well fed, the greens are still green, the soups are amazing and last night we got our pizza fix. Unfortunately, the yogurt supply appears to have dwindled and now those fresh cookies and numerous varieties ice cream haunt us throughout our shifts. To offset their powerful effect, the cruise-long, calorie burning is being augmented by the J. K. ROWling 500m Sprint and Team Relay. The sprints were completed over 24 hours ending at midnight yesterday and today rowers will be invited to join the teams for the relay event. We have all been spurred on by words of favorite professor - *Minerva McGonagall*:
"*May you row with intensity and grow with integrity*"

Today was leg 2's second day of Black Carbon sampling by the UC Irvine group at 53°N and 53.5°N. In the coming week, we are looking ahead to our sprint up to the shelf, before we turn back and eastward across the Alaskan gyre.

- *Alison and Sabine*

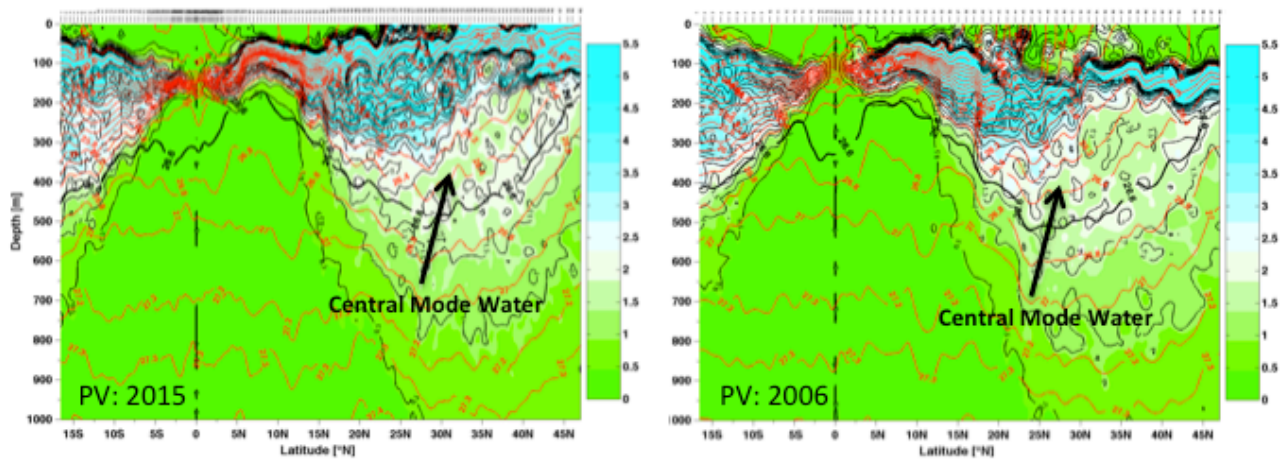


Figure 1 (above): Potential Vorticity (PV, $10^{-10} \text{ m}^{-1} \text{ s}^{-1}$) with potential density anomaly contours overlaid. The low PV/low stratification region above the $\sigma_\theta = 26.6 \text{ kg m}^{-3}$ contour (bold) found at 20-45°N signifies North Pacific Central Mode Water. It is slightly less expressed in our current CLIVAR P16N occupation (2015) than in the earlier occupation (2006).

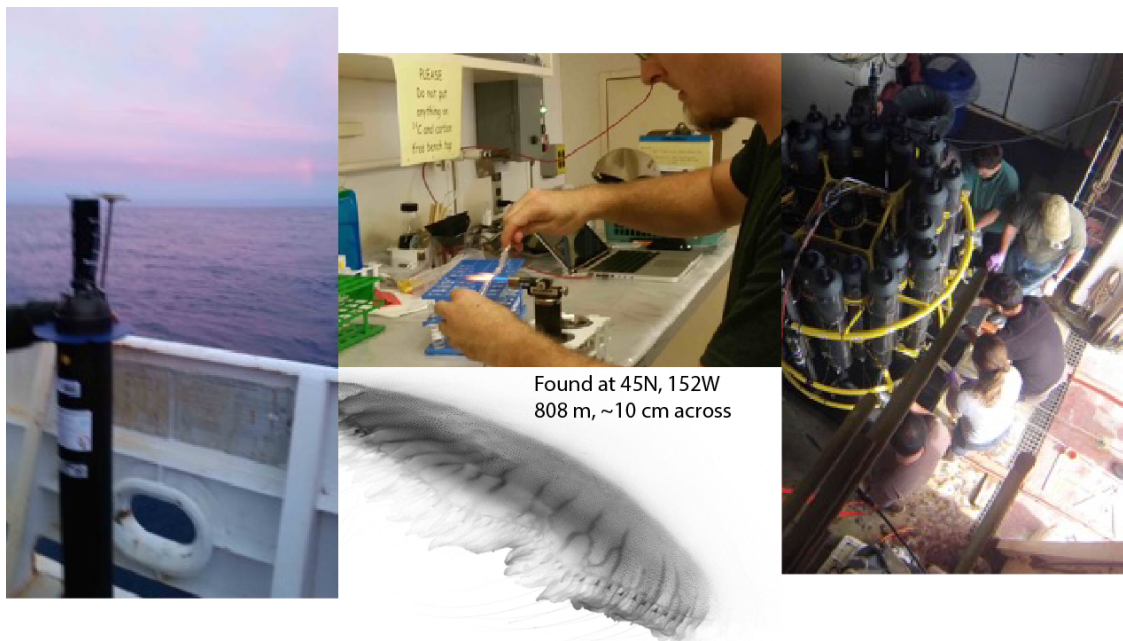


Figure 2 (above, clockwise): Argo 464 about to go out at sunset; our black-carbon commando at work in the lab, sampling in the round; a friend found 800 m down.