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Beaufort Gyre Exploration Project: Dispatch 29: Wrap Up

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This last dispatch covers the last few days of the 2010 JOIS cruise beginning on Wednesday when we finished our last science station of the cruise. In celebration, a cruise ending Masquerade party was held in the forward lounge. Food, drink, and good times were had by all, as we rejoiced over completing our work and remorsed over the fact that we would soon be separating from all of our new friends (scientists, officers, and crew). However, oceanographers comprise a small community and we know that many of us we will be seeing each other again – particularly those that already know that they will be on next year's expedition back in the Beaufort Sea.

Thursday was a day spent madly packing away all of the valuable samples, laboratory equipment, and computers until they could be offloaded in November when the Louis returns to Newfoundland. In the meantime, the ship will be primarily based in Iqualuit, where it will be on call for ice breaking escort or rescue missions. The scientists will return home with their data, and begin to analyze to determine what was learned.

Already preliminary analysis of the results has suggested a reversal in some of the trends that we have been observing in this region since this joint collaboration began in 2003. Since then, we have consistently observed an accumulation of freshwater in the Beaufort Gyre consisting primarily of ice melt and river runoff waters. This has coincided with a deepening of the seawater density layers and nutricline. Model studies indicate that this trend may be explained by an anticyclonic (clockwise) atmospherically induced circulation. When this circulation slows or reverses, we have a cyclonic (anticlockwise) circulation regime. This is postulated to release freshwater from the gyre, and a shoaling of the seawater density layers and nutricline. There is evidence from historical records that the Arctic shifts back and forth between circulation regimes in periods on the order of decades. This year is the first year since this program began that we see evidence of a cyclonic shift. Whether it will last, and what effect it will have on the ocean (Arctic and global) and declining sea ice cover is still unknown. But it is an exciting result that we were fortunate to be there to observe and record.

Friday, we awaken anchored offshore of Kugluktuk which is overcast and covered by light snow. Goodbyes all around, and we are flown ashore on the helicopter to the airport. First stop Yellowknife, then Edmonton, and from there the scientists will split off in many different directions for home. See you next year!

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