

Subject: Scholes cabin 5: Chlorophyll high

To: Subject: 27 January 2010 1012 UTM -57.5061, -22.6557

Dear Stirling,

On the way north we skirted to the west of the South Sandwich islands, passing about 16 nautical miles west of South Thule. Going back we are passing to the east of the island arc, perhaps 90 nautical miles out. We see lots of chinstrap penguins every time we stop to do a CTD. Since they (like all penguins) are flightless, and must commute to and fro from their nest sites on the islands, it means that land is not impossibly far away. It still amazes me that these small birds, apparently not very bright, navigate a few hundred kilometres out into the stormy ocean and back without getting lost.

We took this route because we have been dropping weather buoys at predetermined spots. The idea is to have an even distribution of floating buoys throughout the oceans of the world - about 3000 at any given moment. They make a huge difference to the accuracy of weather forecasts. Of course, the moment you throw them overboard they drift where they please, and as their batteries run down gaps open up that need to be filled. Finding ships to fill them in the Southern Ocean is a challenge. Someone, somewhere, calculates the likely trajectories and then tells us where to drop the buoys overboard. It would make hardly any difference, I think, if we chucked them out at random, but the meteorologist takes these things very seriously, and we place them precisely where we are told to.

One consequence of this more easterly route, downstream of the mineral-rich islands, is that we are recording very high chlorophyll levels in the water - up to 4.5 mg/l, which is about 10 times more than we routinely measured at the ice shelf. That means high productivity, rich fisheries and abundant birds, seals and whales.

We are running from a frontal system, one of the waves of cold wind that sweep across the Southern Ocean as regularly as windscreen-wipers, from west to east. The winds and swells are high, but because they are striking us from the starboard aft quarter, the ship motion is not that bad. We just surf along as they pass us. It makes doing the UCTD on the exposed poop deck a bit cold and intimidating, with the big foaming swells alternately looming above and hissing below. Persuading fat Rosie to squeeze back through the door, when all she wants to do is pirouette and jive at the end of her cable, takes careful timing.

Love,

Dad