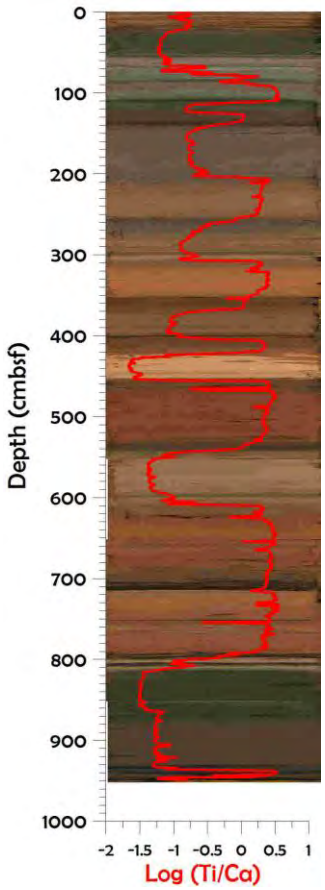
On board Research Vessel *Pelagia* in the equatorial *North* Atlantic, Saturday 30 November 2013

Dear all,

The previous report came from station M2, in the meantime we are on our way to station M5, the last of the whole transect.



The sediment core that we retrieved at station M2 was another beauty: a 9m24 long undisturbed sequence of alternating brown to orange sediments.

The good thing is that we have all the equipment with us to immediately open and scan these cores, so that we can get an idea of their quality. Not only can we make an image of the surface of the core –this saves a lot drawing and visual description!—but we can also already get an idea of the bulk geochemical composition of the core through XRF scanning.

On the left you see a nice example of some measurements done on core M1A, which was retrieved from almost 6000m depth. One can see that the changes in the chemistry (in this case a ratio of the elements Titanium and Calcium) line up nicely with the colour changes in the sediments.

Once back home, the core will be sampled and analysed for oxygen isotopes to determine how far back in time this sequence dates. In addition, the particle-size as well as shape distributions of the land-derived sediment fraction will be analysed to determine the amount of Saharan dust. Once the dust fraction in the core has been isolated the chemistry and mineralogy will also be determined in order to trace the dust back to its source(s) on the African continent.

At both stations M3 and M4, the dust-collecting buoys were deployed. Buoy Michèlle at M3 and buoy Laura at station M4. Laura and Michèlle are the two PhD students in the project. Their buoys will be collecting dust on filters throughout the upcoming year and report to us twice daily about their position, meteorology and sampling progress. Already the first messages are trickling in, as well as those from buoy Carmen, the MARUM PhD student who will be studying Saharan dust directly off the Mauritanian coast, where we also deployed a buoy. So far, all three buoys are still where we deployed them and are happily sampling.

At station M3 the deepest sediment trap came up damaged. Fortunately, it had been sampling sediments all right throughout the past year, but the damage was so bad that we decided not to re-deploy it. Hence, just like at stations M1 and M2, these moorings have become a tick simpler; one sediment trap at 1200m water depth. At station M4 we were lucky to get both the traps up and both had been sampling successfully!

Seeing this makes our hearts beat faster; the funnel is emptying itself of water, which means that either the carrousel has turned successfully or not at all. In this case one can (barely) see that there is material in the bottles so it must be a goody!

The buoys that we're deploying are unique in the world; they have been specially designed, developed, and constructed by the technicians at NIOZ. We're pretty proud of that! Because they are unique, they have been photographed already millions of time and we thought it appropriate to also make the group picture of the cruise with a buoy in the background. As you can see, the weather has improved greatly; most days the sun comes out and then temperatures rise to >30°C.

Meet the dream team! L2R: Ronald, Jose, Michèlle, Roald, Jan, Carmen, Martin, Jan-Berend, Laura, Chris, Esmee, Jan-Dirk, Sietske, Brett, Alex, Geert-Jan, Ger, Yvo, Michael, Iwan, Leon, Alle, Bob. Not on this picture due to other duties: John, Joe, Jaap and Roel.
Did I mention that we're forming a super team!?

Many greetings to all of you from the Pelagia in the equatorial North Atlantic!
On behalf of the ship's- and scientific crew,
Jan-Berend Stuut

For more info on our cruise, please have a look at www.stuut.tv/html/pe378.html.
In addition, you can read a ship's diary, kept by all the participants onboard the ship on the nioz website at: www.nioz.nl/scheepsjournaal.
Our journalist Ronald Veldhuizen writes a liveblog on the Volkskrant site: www.volkskrant.nl/vk/nl/12587/Ware-Wetenschap/article/detail/3542625/2013/11/11/Liveblog-de-reis-van-Jan-Berend-Stuut-naar-het-woestijnstof.dhtml
Finally, Ronald also writes a series for the VPRO series Wetenschap24 at:
www.wetenschap24.nl/nieuws/artikelen/2013/november/Geboeid-door-stof.html