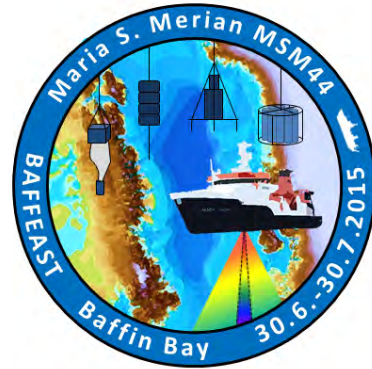




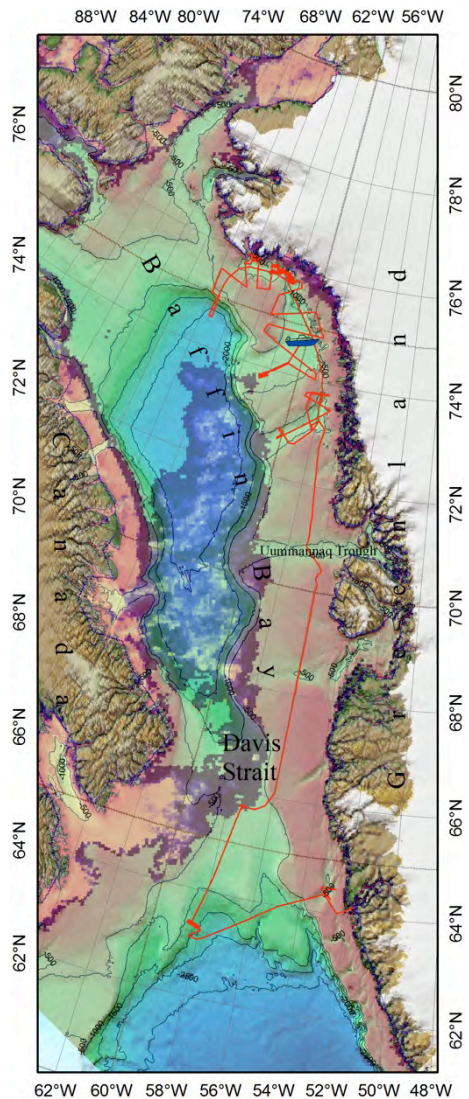
MSM 44
Nuuk – Nuuk
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3rd Weekly Report

Our third week on board of the RV MARIA S. MERIAN was characterised by detailed bathymetric surveying, sediment sampling and yet another turning point of the cruise. All teams on deck and in the labs work very smoothly together helping each other out if needs be. In addition to the amazing scenery of ice and rocks above the water, we now have very good picture of the at least as incredible landscapes under water.

In the northern Melville Bay, our second main working area, we performed detailed bathymetric surveys in the De Dødes and Sidebrinks Fjords. Thus, we gained the first-ever detailed image of this submerged glaciated landscape. In order to systematically map the seafloor, usually a series of parallel survey-lines is planned in a way that the outer parts of the multibeam echosounder swath overlap. This results in an area of seafloor fully covered by depth soundings. Under normal conditions, this is no challenge. Under ice conditions, this is a totally different kettle of fish. Icebergs forced us to divert from our envisaged tracks and the always-shifting ice floes required quite a spontaneous and creative track planning. But with support from the very helpful nautical officers on the bridge, in the end, we managed to produce a very nice map of the seafloor in the study area showing, as we had hoped, moraines and other glacial features that will allow us to reconstruct the history of the Northwest Greenland ice sheets since the last Glacial. Plotting our actual cruise track however, showed that we did not survey in nicely parallel lines. In fact, our track could rather be called spaghetti-like and I am sure that at least some of the nautical offices must



have smirked about our, never the less methodical, straying...

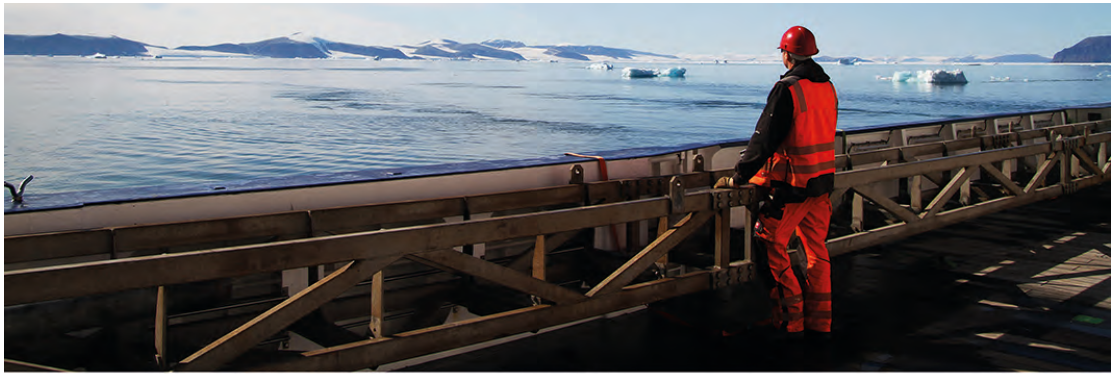
Once the moraines and other glacigenic features were mapped, we started our sampling programme. The aim was to hit sediments that allow for dating of the identified seafloor structures. But like the mapping, sampling is also a bit different in ice conditions. In addition to wind waves and currents, we have to watch out for icebergs and floes. In the end, the samples we managed to collect with the box and gravity corer mostly contained coarse gravel-sized material. It will be interesting to see if there is enough carbonate for dating among all these large rocks.

After four days, the work in the northwest Melville Bay was successfully concluded and we continued with a reconnaissance survey in the middle trough in the Melville Bay. By now, the trough has been crossed by several profiles. Another plankton sampling transect brought us, for the last time, all the way west to the ice edge in the central Baffin Bay. We were quite lucky that the ice edge was still within our reach. It is quite amazing to see on satellite images and in real time how fast the sea ice has retracted since the beginning of our expedition.

The big turning point of the cruise, mentioned earlier, was the '*Bergfest*' marking the middle of the cruise. In order to honour the day, a big BBQ on the working deck in Arctic sunshine replaced our normal dinner. It is hard to imagine that half of the expedition is already over. And although we are heading north at the moment, one may start thinking of the way home. Another highlight of the week was to see a piece of an iceberg break apart. The large remaining part slowly started to move up and down and to turn. This was an amazing sight that gave a feeling for the enormous masses of these icebergs.

On behalf of the scientists and crew I sent my regards from our last visit to the edge of the sea ice.

Boris Dorschel



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