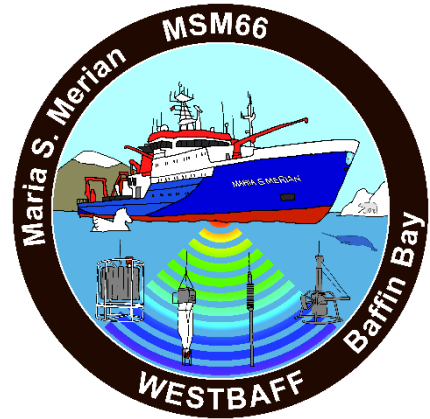


RV *Maria S. Merian*

Expedition MSM66 – WESTBAFF

22.07. – 28.08.2017

Nuuk (Greenland) – Reykjavik (Iceland)



5. Weekly report

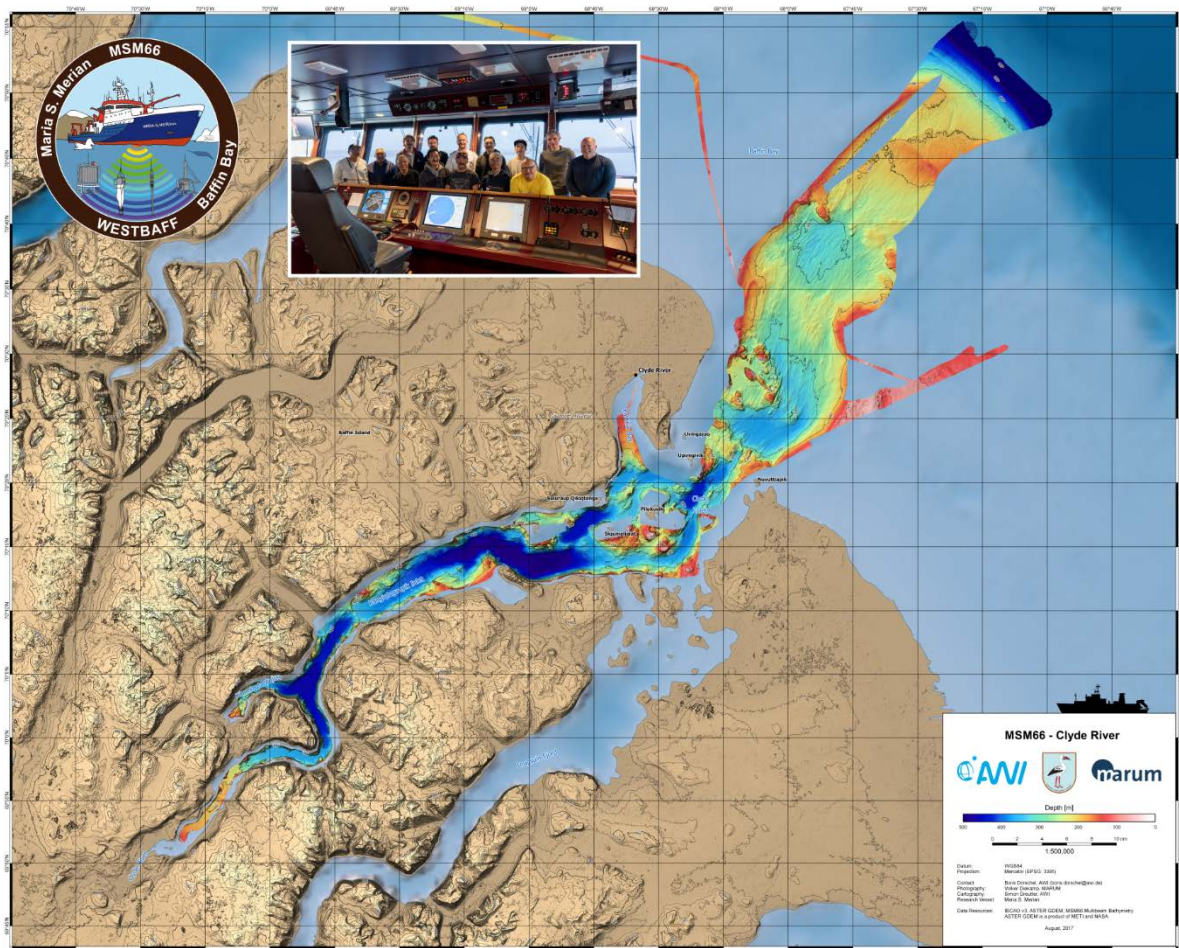
14.08. – 20.08.2017

The last week was mainly dedicated to activities in the area of the Clyde Trough, Inlet and Fjord followed by plankton work. Furthermore, the meeting with representatives of the Hamlet of Clyde River (the term “hamlet” refers to officially designated municipalities in Canada's three territories) took place that was mentioned in the last weekly report.



(Clyde Fjord. Photo V. Diekamp, MARUM)

Due to the ice situation, also an issue in the past week, work on the shelf off Baffin Island would not have been sensible. Therefore, we continued our mapping work in the Clyde Trough and Inlet. Again, we discovered very nice glacialic landforms. The entire area is a picture book example for a glacially formed landscape. At the beginning of the week, we also received permission from the Clyde River officials to map and sample in Clyde Fjord. This gave us the chance to extend our activities from the shelf edge to the head of the fjord. Studying the entire system allowed for the reconstruction of the pathway of the glacial ice stream from its origin in the mountains all the way to the shelf edge, where it likely formed an ice shelf. Sediments collected along a geo-transect from sediment basins in the fjords through the inlet and into the trough will hopefully provide information on the postglacial retreat of the ice stream in the area of Clyde River.



(Map S. Dreutter, AWI)

All our activities in the area of Clyde River were only possible with the agreement of the local community. In addition to a Canadian research permit, for the Nunavut area an additional

research permit, screened by the Nunavut Planning Commission and Nunavut Impact Review Board, is required from the Nunavut Research Institute. In this permit, it states explicitly that all research activities taking place near a settlement have to be coordinated with the local communities to avoid any interference with Inuit activities. This somewhat vague phrasing has in the past caused problems with research activities in the area of Baffin Island. To adhere to these requests and to open lines of communication for potential activities in the future, we used this opportunity to introduce ourselves and to present our planned activities. So we contacted the Hamlet Office and, as was already mentioned in the last weekly report, invited a delegation from Clyde River to the ship.

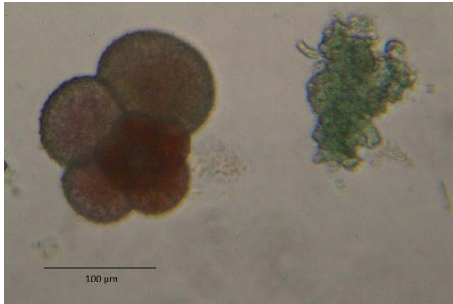
This meeting happened last Tuesday. Nine delegates representing the Hamlet Council and the Hunters and Trappers Organization visited and toured the ship. Furthermore, they were informed about our planned activities. Impressed by the maps we already had at the time, the delegates granted the permission to conduct further research in Clyde Fjord. The meeting was very positive and it might be useful to refer to this meeting in future licencing applications. As agreed upon, after completing our activities, we handed over maps and a copy of the data to the community.



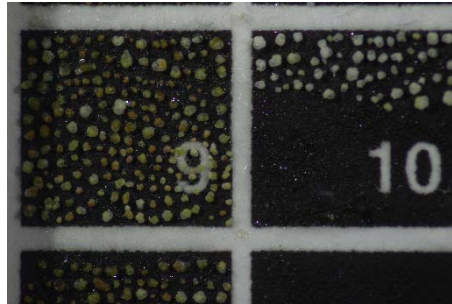
(Visit of the delegation from Clyde River. Photos V. Diekamp, MARUM)

With this, work in an additional research area was completed. The next focus was to sample plankton. Due to the ice situation in front of Baffin Island, we had to work inshore, too close to land for the plankton studies. During the last week, however, the ice moved further to the south and we were able to sample plankton along a north-south transect. The transect started at 72°N to ensure that the station is under the influence of Arctic water masses. Once in deeper water depths, the plankton team started sampling the upper 200 m of the water column with the MultiNet (100 µm mesh size). Because of marine snow, it was difficult to process the samples. Exopolymer Saccharids (EPS) that formed in the marine snow agglutinated the

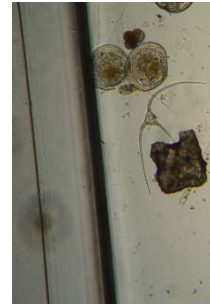
samples. However, with a fine brush it was possible to track down enough protists (the foraminifer *Neogloboquadrina pachyderma*) in a long night of picking forams. Approximately 1550 specimens between 100 µm and 250 µm were sorted in living and dead individuals, stored in sampling cells and frozen at -80°C for genetic analyses.



N. pachyderma microscopic image 40x



Cell with foraminifers (*N. pachyderma*)



Plankton microscopic image 10x

After the northernmost plankton station, we began sailing southward. Despite the upcoming work off southwest Greenland, it feels like we are already on our way home. Nevertheless, there could still be fascinating discoveries to come. After all, we will investigate cold-water coral reefs and map the wreck of the Terra Nova. And although I repeat myself, at this point, I would like to mention, once again, the excellent cooperation of ship and scientists on all levels. In all situations, every effort has been made to make things possible. The atmosphere on board is still very good and I think we are still a bit overwhelmed by the experience of the last days.

With only eight days left to go, I send greetings on behalf of all on board,

Boris Dorschel