Maria S. Merian MSM05/5 Weekly report 3

Finally, the sea showed us that it can indeed be rough when we were sailing close to Bear Island. After two weeks of calm winds, wind force 8 and up to 9 in gales hit us during the last $CTDO_2$ stations on the large zonal transect at 75°N. The ship behaved well, and the stations could be done. Overall results are excellent.

On our way to Longyearbyen we planned to deploy the exciting and innovative sea glider which sails in the water just like a glider in the air, the only difference being the fact that the sea glider can move both up and down while the air gliders do not move upwards. The instrument moves forward during both downcast and upcast and measures a number of physical parameters on its way. Up to 5 months endurance time can be attained, and the glider can be steered remotely to a new direction each time it surfaces and communicates with its home lab at Seattle. Despite considerable efforts, it was not possible to deploy this instrument due to software and hardware problems. This was the first serious failure we experienced during our cruise. The performance control of this fish is done remotely via Iridium from Seattle, USA, and the search for failures was hindered considerably by the slow and individual email transfers between the Seattle lab and Maria S. Merian. The glider will be brought home now and be serviced on land.

Our 'touch down' at Longyearbyen, scheduled to last only one or two hours, took some more time as a diver had to inspect the propellers. This time was appreciated much by the new scientific crew members. The geologists had to put up their equipment under great time stress, as the sailing time to their investigation sites was extremely short. The small delay took off a little bit of this stress. A number of sediment cores has been collected up to now. There are different types of corers, and the sampling strategy also varies. But before one can take a sediment core, the ground has to be checked by specialized sediment echosoundigs which reveal the bottom structure in order to detect ideal places for sediment sampling.

We had to deviate from our original plans which included sampling in regions, where 100% ice cover inhibited our visit of these areas. Having learned that one needs to be cautious about the interpretation of remote sensing ice data, we had a try nevertheless to reach them, but gave up quickly and switched over to an alternative sampling scheme. This brought us to the ice free waters north of Spitzbergen, where we are sailing at present. Certainly, this is the northernmost point Maria S. Merian has reached up to now: We stay only three miles south of 81°N. (Regrettably, this weekly report cannot contain any image to illustrate the ongoing work because the Iridium satellite connection, which is the only existing one in these high latitiudes, inhibits the transfer of such larger data volumes.)

We are heading for Longyearbyen soon again, where our cruise leg will finish on Friday, the 10^{th} of August. From there, not only the scientists will go home, but also Maria S. Merian will steam towards Germany to get repaired in a ship yard. Superfluous to state that this is a serious drawback to the next planned cruise leg.

Everybody on board is well being, and I send the best greetings on behalf of the scientific crew,

Gereon Budéus, 08.08.2007