Expedition SO280 (GPF 20-3_087)
- IceDivA
Emden - Emden
Weekly Report No. 2
11.01. - 17.01.2021

IceDivA - the first week of scientific programme starts!

Monday picks up where we left off last week with our final full steaming day to position 45.50° N, 21.00° W to begin the "DArgo2025_RBRpilot", neighbour joining proposal to IceDivA, ARGO and CTD deployments.

We arrived at position on Tuesday, 9.30am, where the first reference CTD was deployed, marking our first official station of the cruise (that wasn't underway, bathymetric mapping). This was followed by the simultaneous deployments of the 10 ARGO floats at lunchtime. Following this, eight CTD deployments were taken on the edges of a grid, outlining seven nautical miles from the ARGO swarm deployment point. Two CTDs were deployed at each corner of this grid, with RV Sonne performing two laps to complete all deployments. This process ended at 9.30pm on Wednesday, and means the full commitment of the "Dargo2025_RBRpilot" project was fulfilled. At this point we have the two French deep ARGO floats remaining on board that will be deployed at our deepest station, 36° N, 19° W. After the final CTD we began underway multibeam mapping to the next station at 42° N, 19° W. This position is originally Work Area (WA) 3 in our cruise proposal, however unrelenting stormy conditions in our first two WAs meant this decision was unavoidable. Should conditions clear we will look to head North to complete these stations, but at this moment it does not look like happening any time soon.

Figure 1. Corinna Jensen (BSH) preparing ARGO swarm

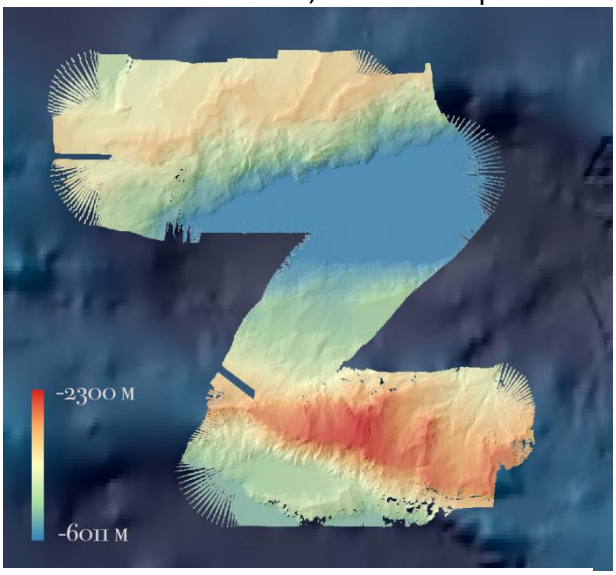

Figure 2. Preliminary results of Peake Deep mapping

On Thursday during our transit to the next station we spent time mapping two areas of the seafloor that were deemed particularly interesting, one showing as a 6000m deep hole, with the second being a 'seamount' that rises to 2300m water depth. In the

literature we have found that our 'hole' was called "Peake Deep" and the 'seamount' was the ridge connecting Peake Deep with nearby "Freen Deep" (Davies & Jones, 1971: Deep Sea Res.).

On Friday morning we arrived at WA 3, with a CTD for bathymetric calibration, and eDNA filtration beginning directly at 8.50am. We then performed a 5x5 nm bathymatric mapping exercise in order to deem suitability for gear deployment. In the afternoon we began the "plankton block" of gear deployment, due to clean ship requirements, seeing successful deployments of the Multinet, Plankton net, Bongo net, and Neuston Catamaran.

In the early hours of Saturday morning we deployed the Ocean Floor Observation System (OFOS) in order to perform a visual transect of the seafloor. Unfortunately, due to adverse weather and the self correction on the winch being unable to handle the swell, we had to abandon the deployment at the seafloor. Thankfully this has been our only set back so far, as the rest of Saturday and Sunday has been spent successfully deploying two Epibenthic Sledges, three Giant Box Corers, and three Multicorers. The depth of 4900m means that deployment of benthic gear takes between 3.5 and 7 hours per deployment, depending on the gear.

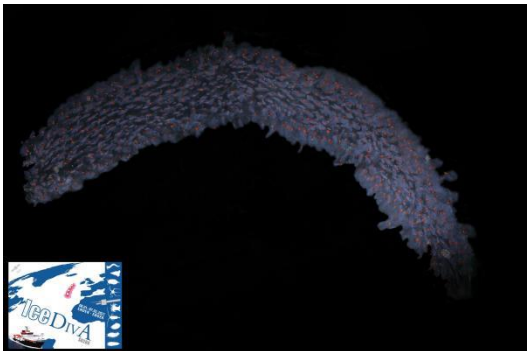

Figure 3. First animals being photographed in lab, including this salp colony

At the time of writing we will still deploy two more multicorers over Sunday night, before beginning a ~30 hour transit to WA 5. All other WAs are to be hit with prolonged, stormy weather, making our planned work infeasible there. During our transit we plan to begin sorting samples and have seminars planned for all on board who wish to attend.

Sunday, 17th January, 2021

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