

Expedition SO286 - IceDivA2

05.11. - 09.12.2021, Emden - Las Palmas

4th Weekly Report

04.11. - 09.12.2021



Sunday November 28, North Atlantic Ocean, south of the Charlie Gibbs Fracture Zone

Sampling Success and Southern Migration

We left you last week towards the end of our station in the Labrador Sea, with just the deployments of the Neuston Catamaran and the ship's own Ocean Floor Observation System (OFOS) remaining. We are happy to report that with very good weather conditions the deployments went well. As always, the OFOS was a highlight. The ability to observe and study the seafloor in real time is a real privilege, which is never lost on us. At the sea floor we were greeted by the sight of a classic abyssal plain with a varied, but sparsely distributed faunal assemblage.

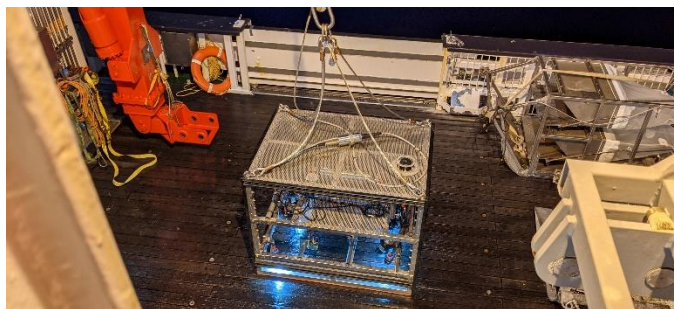


Figure 1. Image of the OFOS ready for evening deployment. Photo © Viola Siegler

Following the deployment of the OFOS early Monday morning we consulted the weather forecast of where we would be able to achieve our next full station and began our transit. This move in another round of weather roulette was just in time as yet another storm was building on the East coast of America that would hit

our previous work area on Tuesday with Beaufort 10 winds and high waves once more. Thankfully, we got out ahead of the storm and had a very pleasant transit, arriving at 52°N, 39°W at lunchtime on the Wednesday. This two-day transit was spent with the scientists on board carefully sorting and identifying their new samples.

Upon arrival on Wednesday it was clear by the GEBCO bathymetric maps that we would have to devote sufficient time to multibeam mapping to locate a suitable location for our benthic gear and discern what we believed to be seamounts in the area. Therefore a 21-hour survey was planned and carried out Wednesday afternoon to Thursday

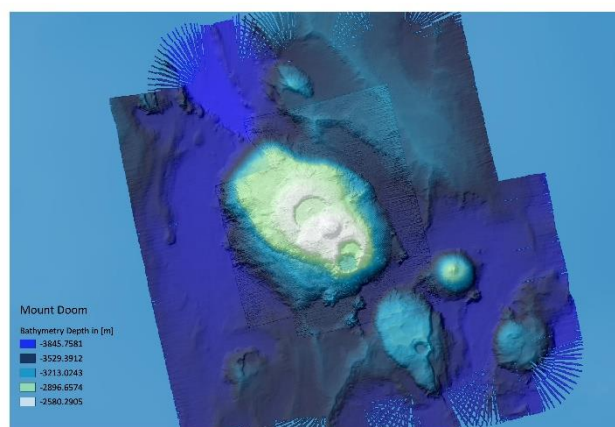


Figure 2. Bathymetric map showing the discovery of three ancient volcanoes, the oldest of which has been dubbed "Mount Doom"

afternoon, after a CTD deployment for water samples and the sound velocity profile. What we found was pretty spectacular. What on the baseline bathymetry looked like a single seamount surrounded by abyssal plain, actually turned out to be three calderas varying age (the eldest of which, has previously been unmapped and referenced to under the Tolkien influenced moniker “Mount Doom”) is estimated to be 49.5 Mya) of with low amounts of plains in the area. However, we were able to find suitable locations for our benthic gear (Fig. 2) as well as positions for two OFOS dives.

Before the back two back OFOS deployments in the early hours of Friday morning, we conducted a full and successful plankton block sampling over the course of Thursday. Our first OFOS dive began at the pinnacle of the ancient volcano and transected down across four large drops, reaching the deep in the centre. The descent overall was approximately 400 metres and transitions across ancient sedimented plateaus before dropping off volcanic rocky outcrops, home to a myriad of creatures. Our second OFOS dive took place in the nearby plains, for comparison to previous IceDivA imagery transects and to ground truth for our benthic gear. We had mixed fortunes with our benthic deployments with the MUC in particular having a few issues and a few empty hauls. This is a newly built gear, so teething problems are to be expected, but we were successful with the fact that all gear leaders ended the station with some successful deployments and samples.

Saturday morning saw our final Box corer, Epibenthic Sledge, and MUC deployments before hunting the better weather outside of the EEZ from the southwest coast of the Azores. Our central point of the station (37° 34'N, 35° 46'W) was chose as it is the final point before transitioning across the Mid-Atlantic Ridge on our voyage, as well as being directly comparable to our stations during IceDivA1 in January. This location also allows for the timely transition to our final destination of Las Palmas.



Figure 3. Karen Jeskulke (left) and Stefanie Kaiser (right) are retrieving the samples from the epibenthic sledge “Anna”. Photo © Anne-Nina Lörz

As we continue to transit on Sunday (we expect to reach station Tuesday afternoon) we have begun to decorate the ship festively as it is the first weekend of Advent. With work continuing to go well and home comforts being present, the ship and scientific crew are in high spirits, looking forward to comple another full station.

Best wishes to land while steaming through the hopefully last storm of our expedition,

Saskia Brix & James Taylor

Cruise Leader team, Senckenberg am Meer