

## FS METEOR

### Expedition M201 VebVolc

09.06. – 18.07.2024 | Reykjavik – Praia da Vitoria



#### 4. Weekly Report (24. - 30. June 2024)

Week four continued with the third seismic block that began on Sunday evening. This third survey of Expedition M201 continued until late Wednesday evening, capturing seismic reflection data over the central part of the research area, where the largest and most significant volcanic cones of the Vesturdjup Basin are found. The improving weather conditions allowed us to gather high-quality data with N-S and E-W lines over the area. This grid will be refined in the upcoming seismic block to achieve a higher resolution of the seismic data and deepen our understanding of this crucial area.



*Left: The OFOS (Ocean Floor Observation System) is being prepared for a North Atlantic midnight dive. Right: A Halibut laung at the seafloor photographed with the OFOS OceanImagingCam still camera. © N. Augustin and M201 Geology Team, respectively*

After a short transit, we started an intensive OFOS program on Thursday morning with almost perfect sea conditions. Until Saturday afternoon, we did 11 successful OFOS casts, with the longest cast having 4 hours of bottom time. With the OFOS, we can see that all the seamounts are very different in terms of biodiversity and faunal communities. While one seamount is home to corals, crinoids, and plenty of fish, the neighboring seamount can look much different and is taken by sponges, crabs, and anemones. With the collected HD and 4k video footage and high-resolution photos,

we have valuable data to thoroughly look into the role of the Vesturdjup seamounts as a habitat for benthic and pelagic species in the Vesturdjup basin.



*Top: Something is going on between these two spikey King Crabs at the top of "Seamount 4", the working name of this seamount in the Vesturdjup basin. Some smaller long-armed white crabs are hiding below this slab of consolidated sediment (upper middle and lower left). The laser dots are 50 cm apart. Bottom: A small octopus (here about 25 cm across) is relaxing at the seafloor. Imaged with the OFOS OceanImagingCam still camera. © M201 Geology Team*

Another important aspect of the OFOS surveys was investigating the distribution of outcropping material, volcanic talus, and dropstones at the seamounts. At first glance, the videos confirm our assumptions that, even though plenty of glacial dropstones are present, there is a good number of in-situ outcrops and talus material, which is relieving news for the ongoing dredge sampling and our onboard preselection.

Seafloor sampling started again on Saturday evening, after transit to the central volcanoes, with three dredge tows, followed by five gravity core stations. The dredges were successful, and the usual collection of volcanic material and dropstones was recovered. Coring was also very successful, and we got 2-3m sediment cores from all stations.

The sampling will continue until Monday morning, when the geophysics team will take over for the fourth seismic block, which is planned to collect more data over the central part of the working area.

All participants are fine, and the atmosphere on board is still superb.

On behalf of the M201 science party, greetings from aboard the RV METEOR,

A handwritten signature in blue ink that reads "Nico Augustin". The signature is written in a cursive, flowing style.

Chief Scientist