**4rd Weekly Report M186**
**19 November - 25 December 2022**

The fourth week of our cruise started with relatively good weather conditions, allowing us to leave the São Jorge Channel for a seismic profiling, and continue of our work west of Faial and at Condor Seamount.
In 2019, there was a seismic-volcanic crisis in this area, and early in 2022, an anomaly was discovered in the water column during a NOAA expedition that we wanted to investigate further. We used the multibeam system to hydroacoustically map the seafloor and water column. To everyone's delight, we were also able to detect a "plume" in the water column in the area described by the NOAA expedition. This could be an indication of hydrothermal activity in the area. Thereupon we decided to do an OFOS dive in this area as well. This dive yielded exciting results regarding the lithology and fauna of the Condor seamount, but unfortunately, we could not find any further evidence of hydrothermal activity. Further dives and more detailed mapping in this area would have been necessary, but to our regret, could not be carried out due to deteriorating weather conditions again.

*Fig1. Despite the difficult conditions, safe deployment and retrieval of equipment was possible and over 80 stations were successfully completed in the last few weeks. Here we are on the OFOS dive at Condor Seamount. Photo by Mark Lever*

Poor weather conditions forced us back into our shelter of the islands in the São Jorge Channel. To complete our detailed sampling in the São Jorge Channel, five gravity sounders and four multicorers were run again, which will help to understand the complex fluid dynamics in the channel.
Although it was not planned at the beginning of the cruise to take cores at such a high resolution (16 gravity sounders and 16 multicorers!) at this location, the São Jorge channel offers a complex diversity, the understanding of which will keep us all busy long after the cruise is over. Scientists from all disciplines are fascinated and amazed by the results so far and see this detailed study as a great opportunity for further work.

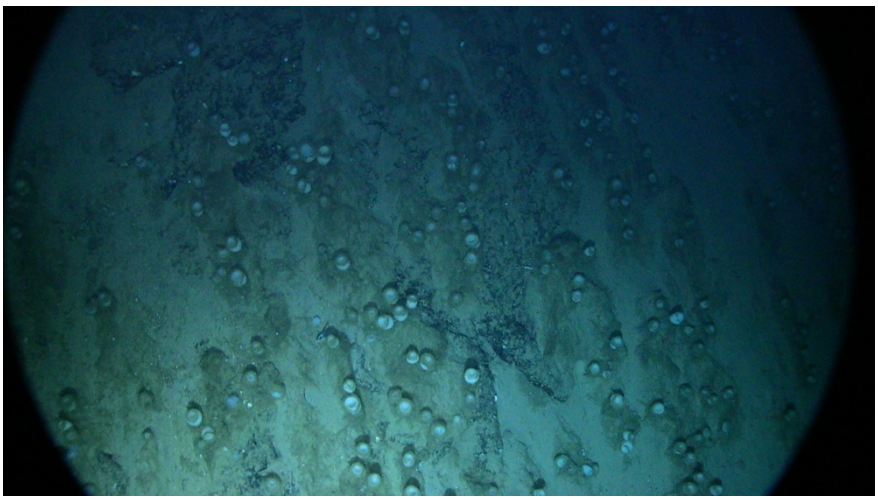

*Fig 2 Numerous sponges at Condor Seamount.*

We then began the transit back to our second work area west and north of São Miguel. First, two gravity soundings, for the purpose of a volcanological question to complement the cores from the 2017 M141 cruise, were run to the north of São Miguel.
Then, preparations for the upcoming Christmas holidays began, including choir practice, poetry writing, and lab cleaning, as well as transit to our final work area, the Tydeman Fracture Zone. This is located ~130 nm south of São Miguel and is still largely unexplored, so on Christmas Eve we conducted an extensive mapping of the seafloor using the multibeam system. The next seismic profiling cruise then started on the morning of Dec. 25 to further explore the structures.

*Fig 3 Christmas tree in the mess room of FS Meteor*

We would like to use this last weekly report to express our sincere thanks to Captain Detlef Korte, the bridge, the deck, the engine, the WTD, and the kitchen and economy, the ship's doctor and the team of the DWD of FS METEOR.
All of them have supported us incredibly well during the past weeks and contributed quite significantly to the success of our work.
In this sense, Merry Christmas and MANY MANY THANKS!

With best regards in the name of all participants
Christopher Schmidt (GEOMAR Helmholtz Centre for Ocean Research)

Christmas on Meteor

On METEOR in starry night,
yes let us see who is watching on her.

All do, make, toil,
even the christmas time does not create any gaps.

The airguns resound, the tree that flashes,
the Henning has fixed the star.

Suddenly a rumbling, cracking sound,
there the core has the rope in the neck.

Panic big, the lights out?
Stop! The Alex gets the thing out of there.

Storm and waves hit hard,
but Christopher also grabs the rest.

Norbert measures the Christmas warmth with the lance, METEOR shines in full glory.

(Poem by Santa Claus Tobias)