



FS METEOR - M178 "HazELNUT"

Emden - Las Palmas, 21.11. - 19.12.2021

4th Weekly Report (06. - 12.12.2021)

On Monday, 6th December, everyone on board was surprised by St. Nicholas in the early hours of the morning and found little chocolate surprises on their doorstep and in the mess room. These treats provided fuel for a long and exciting day of work: the deployment of the marine geodesy stations. With the enthusiastic support of the bosun and his team of mechanics, as well as precise navigation on the part of the nautical department and a smooth-running machine, we were able to deploy all five geodesy stations in a record time of just one day. The stations were gently set down again at the same positions as we retrieved them from a week ago with an accuracy of about 2 m on the seafloor at water depths between 1000 and 1200 m. We were able to ascertain that all stations were able to communicate with each other right away. They will remain on the seafloor and will measure the flank movement of Etna for the next one to two years.



Photo 1: The deployment of a marine geodesy station offshore Etna (Photo: Alessandro Bonforte)

After further hydroacoustic mapping to finalize coring locations, the geology team was able to continue with station work. In addition to the core stations on the prominent amphitheatre structure, cores were also taken on the Timpe Plateau, on the southern fault zone and on a diapir structure southwest of the continental margin in front of Etna. All core stations were very successful and the geology team was able to retrieve over 70 m of sediment gravity cores; significantly more than the originally planned 50 m. The team also performed geochemical sampling and core descriptions on board.

During the nights, the hydroacoustic team collected a lot of valuable data of the seafloor offshore Etna. These data are especially high-resolution in shallow water above 800 m water depth, and will prove useful in investigating changes to the seafloor over the last decade.

We set off for Las Palmas on the morning of 9.12., highly satisfied that most of the objectives of the trip were exceeded despite the ongoing difficulties with the deep-water multibeam echosounder and the loss of the box corer.

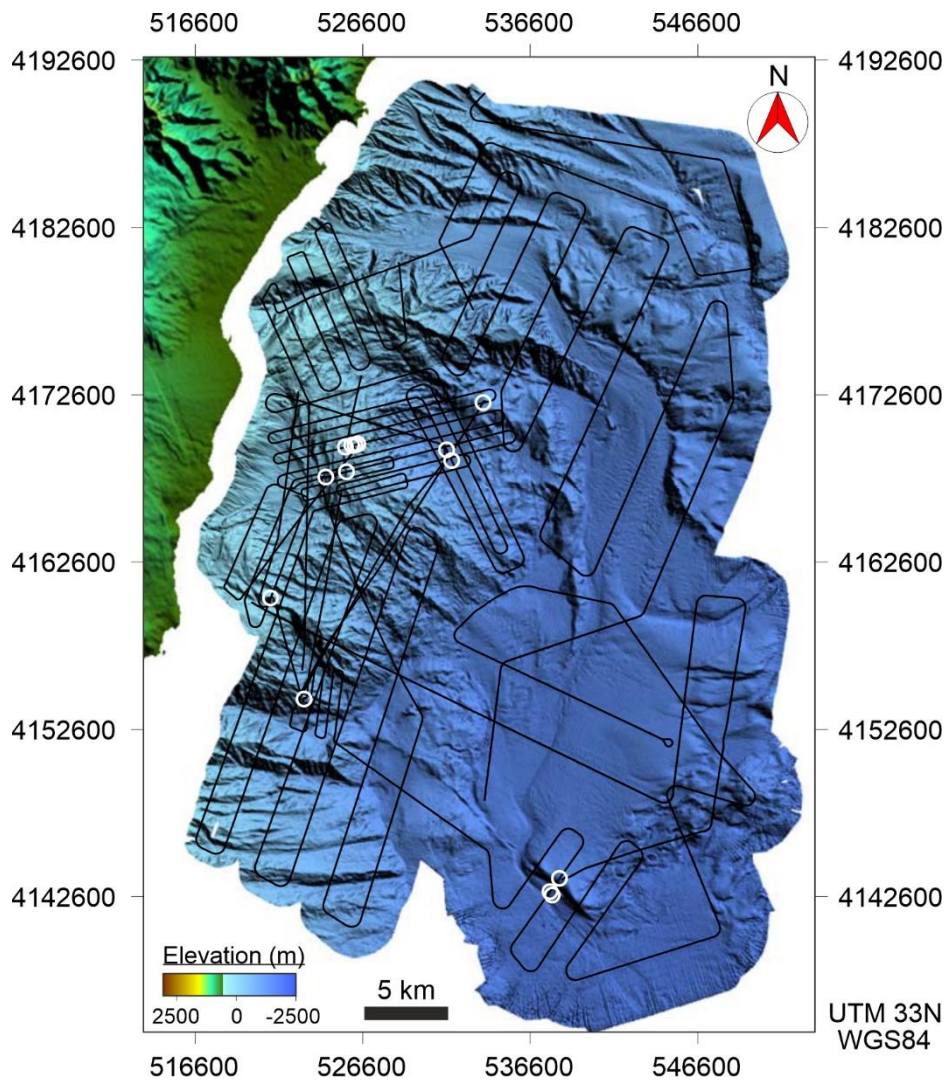


Figure 1: Preliminary bathymetric map produced during the cruise with parasound profile lines and core stations plotted.

During the night of 10.12., we were met by the first winds of the Mistral south of Sardinia. Over the next two days, we were exposed to gusts of up to 10 Bft and wave heights of up to 6 m. In order to weather out this storm, we had to change to a north-westerly course on Saturday, 11.12. On Sunday the situation improved and we were able to steer a westerly course again, which should enable us to reach Las Palmas as quickly as possible. There we expect to receive the spare parts for the pre-amplifier unit of the deep-water multibeam echosounder on 16.12, and will then continue directly to the final working area of the HazELNUT expedition: the active volcano Cumbre Vieja on the island of La Palma.

Our cruise participants continue to provide information about the cruise activities and exciting research questions on the Instagram account of the Center for Ocean and Society (@oceanandsociety).

All participants are well and send Adventurous Greetings home,

Felix Gross

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