2. Weekly Report MSM132 MMC-1

9. - 15.12.2024

The second week of MSM132 continued with the acquisition of 2D seismic data throughout the entire study area from Amorgos in the northeast to west of Santorini. Without interruptions we carried on until December 12 and obtained a very high quality data set that allows us to identify several previously unknown geological structures. Also, the Parasound and EM712 hydroacoustic data that were acquired along the seismic profiles are of superb quality revealing active fault zones in areas that had been mapped before at lower resolution.

On December 12 we retrieved the seismic system at 6 in the morning and sailed into Santorini caldera where we carried out a first set of tests with the new Mola landers. At 10

Recovery of the 2D streamer. Foto: Andrea Geipel.

am we collected spare parts for the broken lamps of the OBS launching system that will used for placing the landers in Kolumbo later on during the cruise. After the pick-up we conducted one more open water communication test with the Mola landers and all were safely recovered after the tests.

In the afternoon we sailed to Kolumbo volcano where we surveyed the hydrothermal vent field using the new MOMO system. The system worked perfectly and produced impressive video and stills imagery of the active hydrothermal springs. The aim will be to produce a complete photo mosaic of the vent field during the remainder of the cruise. The evening and night were used to collect multi-beam bathymetry data close to Santorini's east coast and in the northwest of Santorini.

On the morning of December 13 we sailed back into the caldera to conduct the first autonomous tests with the Mola landers. Three landers were deployed and successfully recovered after about 2 hours demonstrating that the release mechanism works and it was also possible to test their communication capabilities. Final adjustments will have to be made to the software before the next deployment on Kolumbo volcano. After these tests we started the transect to the study area off Amorgos collecting multibeam and Parasound data underway.

In the morning of December 14 we began to deploy the 3D seismic system. This was completed by 11 am and we steam towards the first sail line of the planned 3D seismic survey. Unfortunately, the starboard paravane's GPS antenna broke after about one hour and we had to recover the starboard paravane and dismantle the GPS system. It was not easily repaired and by 16:00 we decided to continue the survey without this GPS during the night. So, everything was redeployed. It will be possible to use the collected data - albeit with a lower navigation accuracy. We used the night to repair the GPS antenna. In the morning of the 15 we again recovered the starboard paravane and mounted the repaired antenna with some extra shock absorbers to avoid another damage. It had turned out that the Tromsø paravanes that we are using for this survey have slightly different mount points for the GPS antenna than the Geomar ones. This allowed the antennas to be shaken more than usual which caused damage in the electronics.

Weather conditions are reasonable and everybody on board is well and looking forward to the next week of the voyage.

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