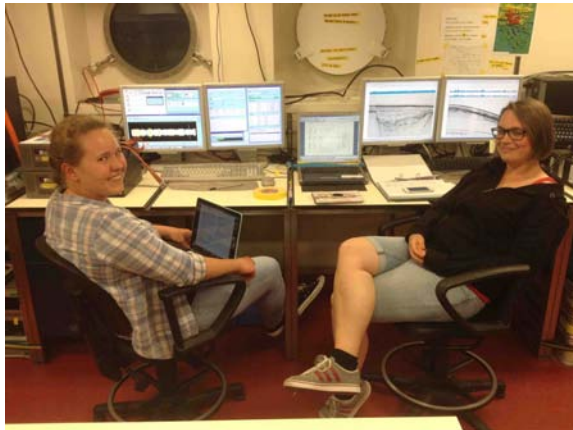


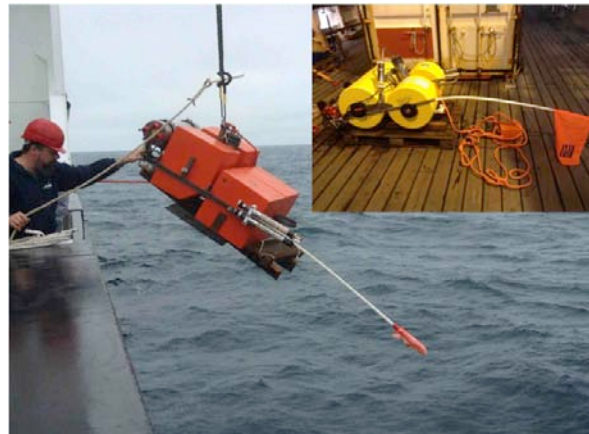
Weekly Letter No. 4 of 28 Feb 2016

This past week happened to be full of events. The extremely favourable weather of the first three weeks has now passed, and the rather typical variable weather pattern of these 40-degree latitudes has set in. Twice we already had to interrupt our seismic profiling to prevent any major damage to our towed expensive equipment. Also, a strong seastate does not allow for a good data quality. Magnetic and bathymetric surveying is often the alternative program until the seastate improves. The good behaviour of the ship enables us to record good-quality multi-beam echosounding data for seafloor mapping even in high waves. The magnetometer sensor towed 500 m behind the ship also tolerates a high seastate.

Due to an unexpected case of family bereavement of one of our marine mammal observers, we decided with permission from the Control Center of German Research Vessels to interrupt our work program for a short time and approach the nearby Chatham Islands. The participant was then brought to the island by a boat transfer to catch a plane from the island's airport. At the same time, the company brought a replacement person who was transferred to the ship also by boat. I want to thank the ship's captain, his crew and all persons helping on land for their fast responding support, organisation and coordination of this person exchange.



Rachel and Katharina are happy about the highly interesting seismic profile that is being built shot by shot on the monitor of the recording units.



With great care, deck-crew René is handling the deployment of an ocean-bottom seismometer. Another one is waiting on deck to be deployed. A total of up to 40 instruments are lying on the seafloor in 11 km distance from each other.

Earth's crust of oceanic origin? This is what we actually had expected in the south of the two long OBS profiles, because we are here in the deep-sea with water-depths of more than 3000 m, and in an area which was thought to have been formed by oceanic basalt during its development more than 80 million years ago after breakup of New Zealand from Antarctica. But our data from the ocean-bottom seismometers (OBS) of the first profile and the seismic reflection data of the second profile "speak another language" – meaning they give us hints that this is possibly a crust that partly underwent a more continental development. The numerous seamounts we see suggest that this crust has also been affected by volcanic activities at later times. So this may be an exciting type of Earth's crust in the transition from continental origin to one that was created at the oceanic spreading centre. The collection of 35 OBS

systems of the second profile just began, and we are impatiently waiting for the data these instruments will bring back from their seafloor positions



Collected by the dredge from the deep-sea: A large piece of rock is being crushed to look for usable material. (Photo: T. N. Gades).

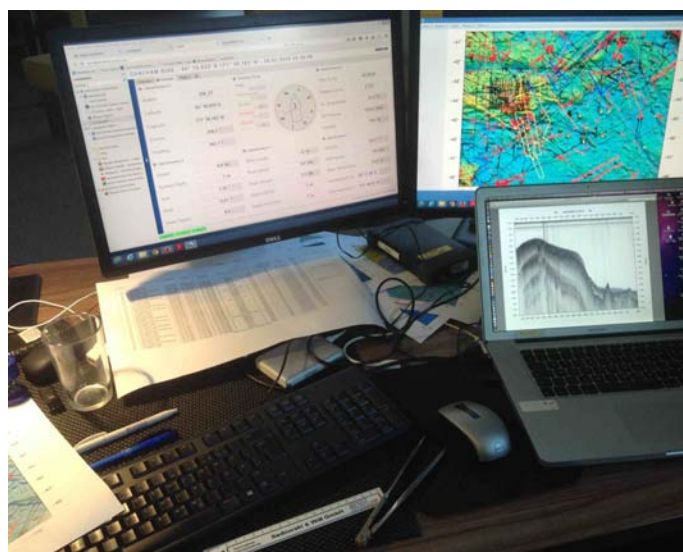


Nina searches for little lifeforms that settled on rocks in more than 4000 m water-depth (Photo: T. N. Gades).

Another event happened this week: We celebrated the “Bergfest” on Friday night. Hard to believe, but more than half the time of this cruise has already passed. Time is running fast, also due to the joy in working on this ship with an extremely competent, helpful and friendly crew.



Repair work at one of the airgun umbilicals.



Where next? Planning with all available information: Weather, old data, new data, sequence of instrument deployment, necessary repairs etc.

With best wishes from all

Karsten Gohl
(Chief Scientist)