

Maria S. Merian cruise MSM 04/3
Third Weekly Report, period 5th – 11th February



In the beginning of week three, the winds picked up to 15 m/s and wave heights increased to 3.5 m. However, diving with ROV Jason II from the Woods Hole Oceanographic Institution was still possible. We continued work on Monday morning as planned while we watched the weather, and we were prepared to break off the dive at any time. On the next morning the wind had calmed down again and we were able to dive every day. The nights were again filled with CTD-casts which were closely connected to the MAPR-profiling performed in the preceding week. The water samples obtained by the CTD casts will be analyzed, a.o., for the contents of CH₄, H₂ and He in the hydrothermal plume, which will be later used to model the turnover processes of these volatiles. The 25-m long temperature mooring was re-deployed on Monday about midway between Irina II to the north and the smoking crater of site “B” to the south.

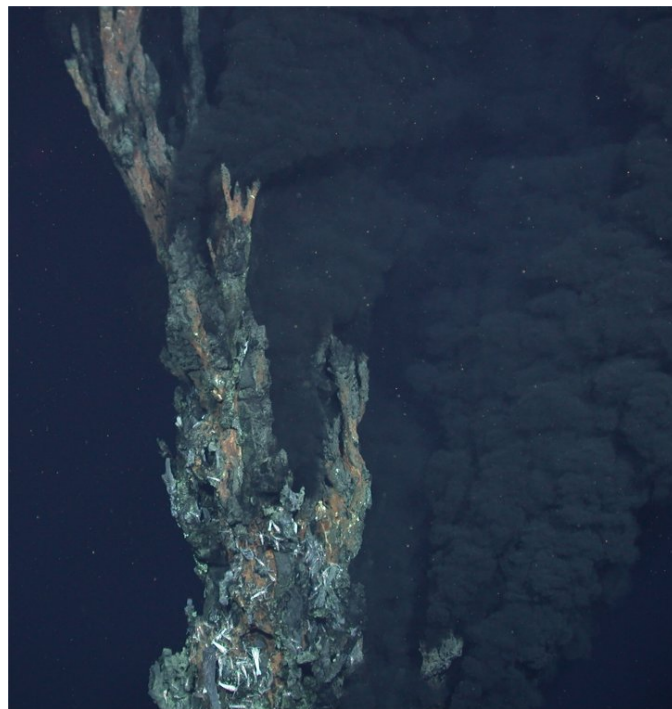


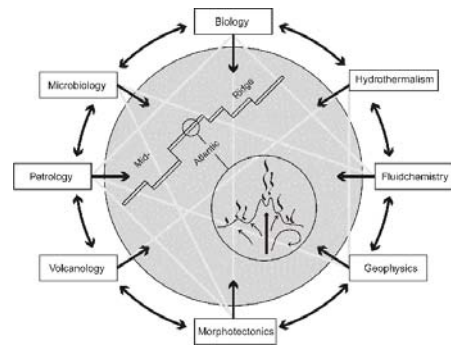
Fig. 1. Top of the chimney Barad Dûr at Site “A”.

The dives of these days continued with the general program of the preceding week around the Irina II mound and Quest: Sampling of fluids, sediments and mussels for ex-situ incubation experiments with microorganisms and symbiotic tissue in the lab, setting out the in-situ profiler for measurements of geochemical gradients above mussel beds at a micro scale, sampling of hot fluids for the determination of the fluid compositions. Additionally, during the Monday dive we re-deployed the OBT, which we had recovered only a few days before. Although this instrument had been sitting on the sea floor for 20 months, its general condition and the state of the batteries proved to be sufficiently good to be used again. Thus two OBTs that will be recovered in November 2007 are currently measuring sea floor tilt at Logatchev. During this dive we sampled also site “F” between the northern and the southern field structures, which is a sedimentary area covered by white bacterial mats. The

Tuesday dive was dedicated to fluid sampling at the hydrothermal structures of the southern field including the Barad Dûr chimney at site "A", Anna Louise, Irina I, and site "B". The Wednesday dive was only a short one and served to complete work that could not be finished before, such as the re-deposition of temperature loggers at the Quest site. During this dive we also "cleaned up" the sea floor by collecting all items which had been left during earlier dives but which were not meant to stay.

Finally we completed work on Wednesday with a total of 11 dives and 105 h of bottom time during 12 days on station. On Wednesday, 07th Feb. 19:15 we left the working area after picking up the navigation transponders and started to transit to Las Palmas, where we will arrive in the morning of Wednesday 14th Feb. We are very happy about the success of our cruise, which was a result of good cooperation between the science group, ROV-team and ship's crew, and last not least also of good weather for the entire stay in Logatchev.

We are all in good health and send our best wishes.
Christian Borowski and the MSM 04/3 shipboard party.
11th February 2007



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