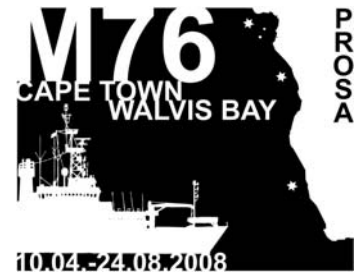


5. Wochenbericht Meteor Reise M76/1b

Kapstadt (Südafrika) – Walvis Bay (Namibia)

05.05 -11.05.2008



This Pentacost (Pfingsten) Sunday marks the completion the fifth and and last week of the M76-1 expedition. **Meteor** is on a course for Walvis Bay and the science staff of M76-1 is homeward bound with samples and data from the surface and subsurface sediments of the Benguela Upwelling region. With a last PARASOUND profile, the last chemical analysis and packing, and arrival in Walvis Bay on Tuesday, the thirty day, sea-going leg of this expedition will come to a close.

The last week began with planned MeBo drill rig testing and deployment. A leak somewhere in the electrical insulation meant that we unfortunately had to retrieve the MeBo. Isolation of the failure indicated that the problem lay somewhere in the cabling or cable termination to the MeBo. The cable not only carries the 10 tons of weight of MeBo, but is also the conduit for electrical power and telemetry. The break in MeBo operations allowed us to obtain samples from an intermediate station along our depth-transect of nearly 3000 meter water depth. From there we returned to 28° South and the area of pockmarks, known to us as Neptune's Golf Course. There, we completed mapping of this area, and obtained surface and sub-surface sediment from three structures in addition to the original Site GeoB12804 ("Das Loch").

These additional soundings confirmed our first impression that the distribution of sediment within these depressions is patchy, with some areas of the bottom accumulating more sediment than others. The surface sediments are typical fine-grained, hemipelagic sediments, sometimes exhibiting extensive networks of worm burrows, and at Site 12804, dense deposits of fecal pellets. The genesis of the structures remains unclear – at least for us here onboard **Meteor**. However, we speculate that they may be relict structures and, at present, act as efficient traps of fine-grained, organic-rich material in this otherwise sediment starved region of the continental slope.

After departing the region the weather prognosis for Friday was not promising for another MeBo deployment, so we detoured to 10°E. This put us not only in the center of the high pressure system, but also well outside the continental slope sediment depocenter, and in deep

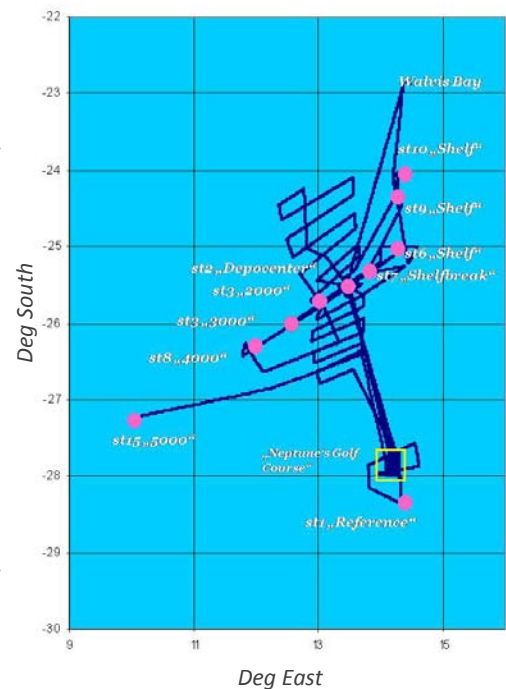


Figure 1. M76-1 cruise track and Station Location as of Friday evening, May 9, 2008

water of over 4600 meters. With this, our deepest station, we have completed a transect of over 275 nautical miles, ranging from the hypereutrophic sedimentary system that reigns on the Namibian shelf to the oligotrophic sediments of the Cape Abyssal Plain. The data collected during this expedition will add substantially to the current ongoing quantification of biomass and microbial activity in the global sub-seafloor ocean.

On Saturday, after a several days of re-engineering and very hard work in the face of mounting difficulties, MeBo was ready for another deployment. Wire-line operations commenced



Figure 2: The MeBo team preparing for the next deployment. (Photo: V. Diekamp/MARUM)

Saturday evening and by Sunday morning, drilling had extended to 24 meters below surface. The recovery of sediment in the cores was only modest, but initial impressions are that the samples came from the proper depths. A second deployment was planned at Station GeoB12807 on the shelfbreak to test methods to optimize core yield. However, wind and wave conditions precluded prospects for safe recovery and MeBo operations were concluded.

As **Meteor** Expedition M76-1 comes to a close, we look back on a productive five weeks of sample collection and analysis. Technical problems and weather more than once interfered with our original goals of several MeBo deployments. But a great deal of experience was gained with this highly promising technology. The Bremen proverb: *“Buten and Binnen, wagen und gewinnen.”* still very much captures the spirit of this expedition.

On behalf of the science party and **Meteor** crew, our very best regards,

Timothy G. Ferdelman

*On Friday, May 9, the flag on **Meteor** was flown at half-mast and, in concert with the **FS Polarstern** and the **FS Maria S. Merian**, the ship's horn was sounded at exactly 13:30 (MESZ) in memory of Prof. F. Schott (Kiel), who passed away last week after a long illness. Prof. Schott was intimately involved in German oceanographic research, sailed often on the **Meteor**, and served on the Advisory Board for **Meteor**.*