

### M67/2A - 3. Weekly Report 27.3 - 1.4.2006

This is the third and final weekly report for the first leg of cruise M67/2. Although there was little time to complete the geophysical survey work for the now following ROV dives, we were able to produce overall very satisfying results. The untiring efforts of system operator and electronics technicians enabled the multibeam and Parasound systems to collect data of excellent quality and system failures common on previous Meteor cruises seem to be a thing of the past.

From Monday through Thursday morning, the scheduled date for our arrival in Tampico, work focused on the acquisition of multi-channel seismic data in the Campeche Knolls area, which is characterized by asphalt deposits and sea surface oil slicks. In a renewed attempt to collect side-scan sonar data we successfully deployed the instrument and collected several hours worth of data on two interesting seafloor features before communication to the deep-towed fish ceased. Unable to resolve whether the source of the failure was located in the deep-sea wire, connectors, or electronics, we had to refrain from further deployments.

On the other hand, we successfully acquired a suite of multi-channel seismic data that, at least in the Chapopote area, will allow us to characterize the area of asphalt deposition identified during R/V Sonne cruise SO 174 (see figure below). In addition, seismic data should allow us to identify sites of fluid flow and asphalt deposition on other knolls and ridges in the study area.

While preparing the side-scan sonar we had the opportunity to deploy a CTD cast with water sampler and a gravity core in an area of visible oil slicks on the sea surface. To our surprise, water samples contained traces of higher hydrocarbons and shore-based investigations will show if the sediments also contain a record of active seepage.

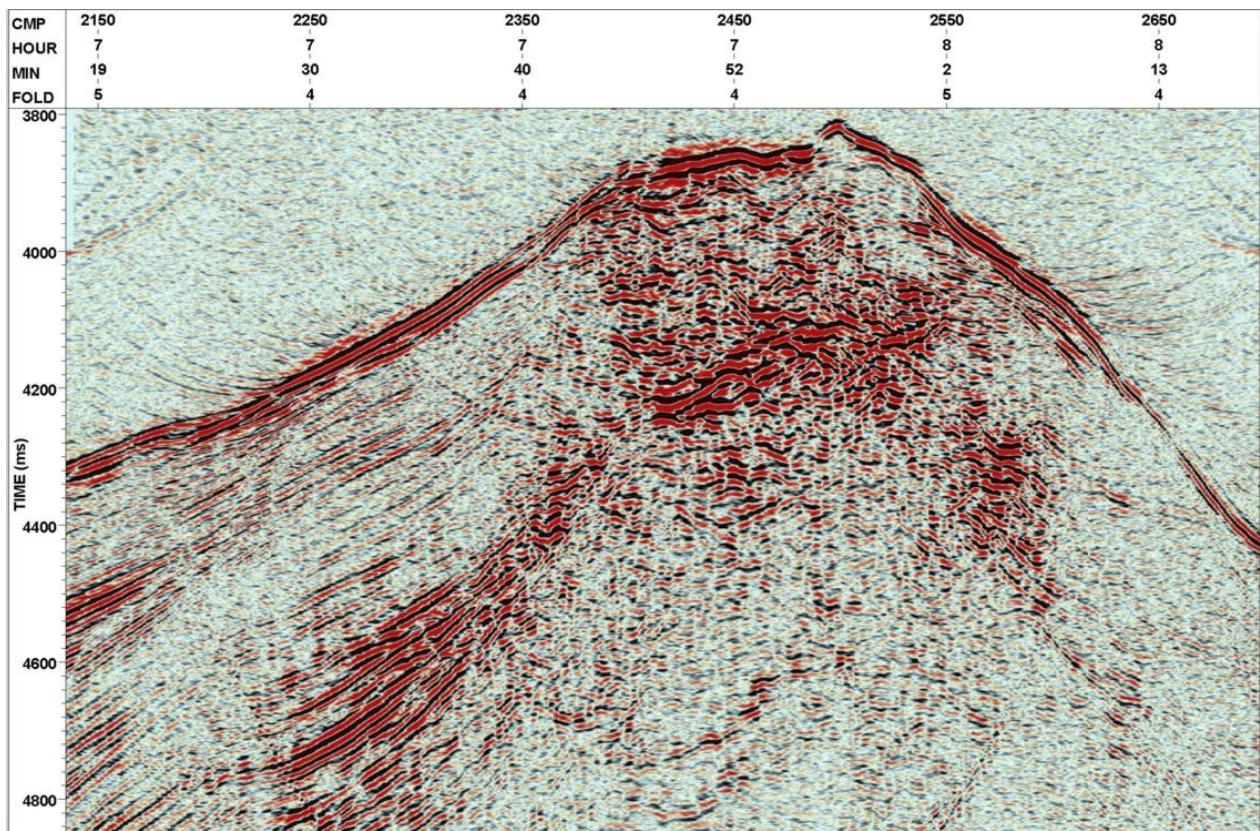
The remaining hours of M67/2a were spent on systematically documenting a number of oil slicks with seismic, multibeam, and Parasound surveys. We hope that processing of these data during the next few days will allow us to pinpoint additional sites for ROV deployments. All instruments were back on deck at 9:00 a.m. on Thursday and we concluded our scientific program with shallow water sampling in support of a coccolithophores study before we reached the pilot station at 7:00 a.m. on Friday morning.

Due to problems with customs processing, we chose the port of Altamira, about 30 nautical miles north of Tampico, for container loading and unloading, which we completed late Friday morning. Several hours later we reached the dock in Tampico after steaming upriver and enjoying the view of a city shaped by the oil industry - shipyards, oil rig construction, and factories alternated with austere settlements, all embedded in a tropical jungle. The evening saw the beginning of a 4-day port call in Tampico to exchange personnel - only six scientists from M67/2a will remain on board - and to conduct necessary repairs

and maintenance work to the front thruster and bathymetry systems. Sunday's main event was a reception and tour of the vessel for local media and representatives of the Mexican and German governments to draw attention to the German-American-Mexican collaboration that has been key to the success this project.

All cruise participants are now on the way back to their home countries. Greetings from Middle America with its tropical temperatures and warm water is sending you:

Volkhard Spieß, April 02, 2006



Migrated seismic cross-section of Chapopote. The top of the structure is characterized by a notably smooth area, which coincides with the known distribution of asphalt on the seafloor and is distinguished by clearly higher amplitudes.