

Expedition METEOR 114

Kingston – Veracruz - Kingston



3rd Weekly Report: 23 February – 1 March 2015

At the beginning of the third week of our cruise, on **Sunday 22 February**, the wind and waves slowly began to decrease. The team was to start AUV-dive 68 as soon as it was possible safely to launch the vehicle. The AUV dived to a constant height of 100 m above the seafloor and scanned the relief by means of the EM2040 multi-beam system. By noontime of the following day, the AUV was recovered under calm sea conditions. The entire team was eager to see the first maps, but had to be patient while the data were processed following a careful protocol: First, all the dive had to be celebrated; then it took several hours to transfer the data from the vehicle to the server. Only after these steps was it possible to output the first map with use of MB-Systems program. It was worth the wait! The fascinating, detailed relief of an asphalt volcano's crater area was revealed (Knoll 2201) as shown in Figure 1.

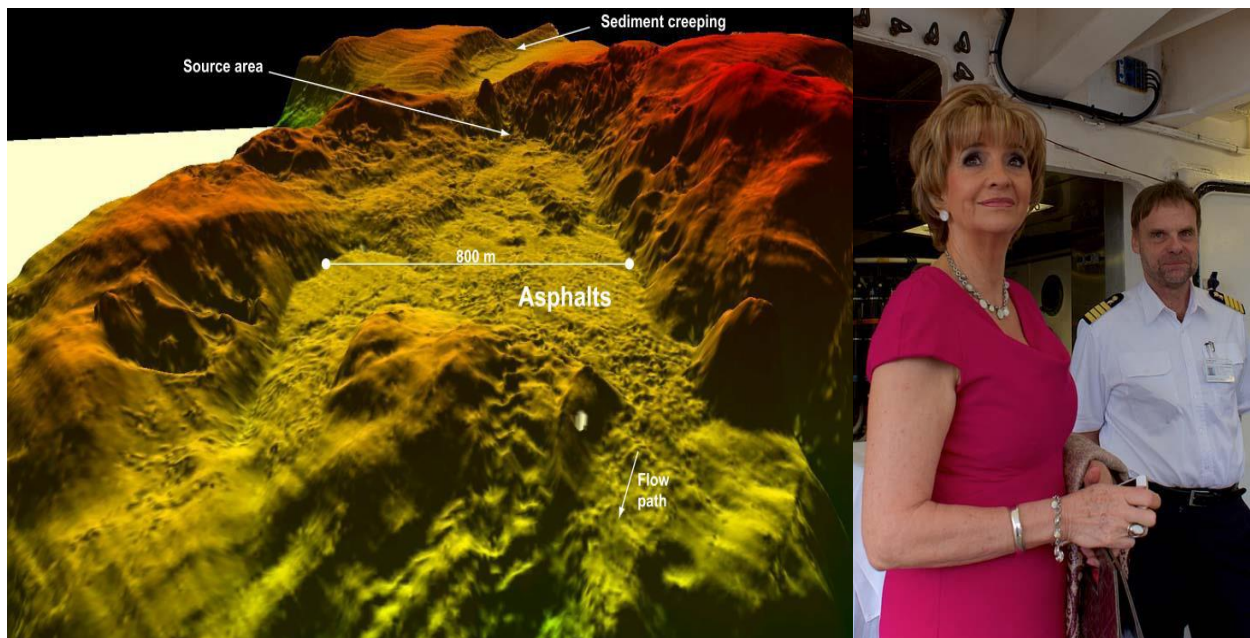


Fig. 1: Perspective presentation by multi-beam data of the AUV of the relief of an asphalt volcano. The central, about 800 m measuring, area of the crater seems to be covered by asphalt. Heavy oil is probably escaping from the highest spot, fills the crater and goes on flowing along the slope.

Fig. 2: Thanks to the excellent support of Honorary Consul Mrs Erika S. Remping, German Embassy and the vessel could invite for a reception on board RV METEOR.

The good weather continued and we were able to deploy AUV dive No. 69 during the night of **Thursday 24 February**, after completing some additional ship-based multi-beam investigations. The next hill explored (Knoll 2223), is characterized by strong gas emissions in the water column. The dive successfully covered the essential parts of the hill, but the dive had to be interrupted in the morning because of a technical failure in the device. While we were above the hill, clearly visible oil came to the water surface and formed a well definable oil slick. The rubber boat was rapidly mobilized for taking samples from the oil-bearing water. Further ship-based measurements were completed. That evening the last AUV mission at *Chapopote* asphalt volcano was performed. AUV Dive No. 70 successfully ended on **Wednesday 25 February** with high quality data. So, we now have in-hand a complete map of the crater area's micro-bathymetry. These valuable data will help us in planning the ROV

dives and a detailed sampling campaign during the second leg of cruise M114. This will maximize the research that can be carried out by our ROV. The track into Veracruz was used for a detailed investigation of gas emission sites and bathymetry with the ship operating at a slower speed. On the morning of **Thursday 26 February** we reached Veracruz as scheduled, but had to stand by until 10:30 a.m., to dock at Pier No. 6 in the port basin. This was a change from the plan to dock at Pier No. 1 as previously advised that occurred because of time delay required for the considerable formalities in this Mexican harbor.



Fig. 3: Chief Scientist Heiko Sahling and cruise participant Marta Torres talking with some journalists during the press conference in the conference hall.



Fig. 4: Reception of the leader and some cadets from the nautical school in Veracruz by Captain Hammacher on board RV METEOR in Veracruz port.

As is usual during port stays, busy loading and unloading work took place in Veracruz. However, the severe formalism in this Mexican port created extra complications. Both AUV containers were unloaded and sent back home. The four new ROV-containers had to be unpacked together with two additional containers from Germany with material and devices. At the same time we had an exchange of about half of the scientists and the ship's crew. Happily, the port stay in Veracruz gave us the opportunity on Friday **27 February** to hold a press conference on board, organized by the German Honorary Consul in Veracruz, Mrs Erika Remping (Fig. 2), together with the German Embassy. It was attended by 18 journalists, cameramen, and photographers (Fig. 3). This led to extensive favorable reporting in all media. Mr. Werner Schaich, as German Embassy representative, arrived with a small delegation from Mexico City. We were very happy to welcome them. During the subsequent reception with invited guests from Veracruz, we were able to present the ship to high-ranking representatives from all sectors of public life. Again, we thank Honorary Consul Mrs. Erika Remping for her outstanding support.

On **Saturday 28 February** we were pleasantly surprised by a visit from 30 cadets and their teachers from two nautical schools in Mexico (Fig. 4). These guests were very excited to get a tour of a famous research ship with its high-quality equipment, as well as the deep-sea robot MARUM QUEST 4000m.

After all these mutually enjoyable exchanges, R/V METEOR left the port of Veracruz on **Sunday 1 March** in order to start the second part of expedition M114 in the Gulf of Mexico.

Despite of cases of flu, probably brought from Germany or caught during the journey to Veracruz, everyone on board is healthy. The three influenza patients are getting better under medical supervision of the ship's physician.

Best regards on behalf of all cruise participants, Heiko Sahling & Gerhard Bohrmann