

Armin Freundt and POS 522 Scientific Party

The scientific team boarded RV Poseidon on April 9, the scientific equipment was unloaded from the two containers and installed on board. At 9:00 on April 10 the ship left Catania harbor and reached the first work station at 21:20.

The first night was used to begin the bathymetric mapping at the Lametini seamounts northeast of Stromboli. The morning of April 11 began with CTD deployment in order to determine the sound velocity profile for the mapping area. We then moved to our first coring station, used the gravity corer with the 5 m tube, and recovered a 3.97 m long core. This contained at least 14 distinct volcanoclastic layers. Three of those apparently have evolved magmatic compositions, the others are black and of mafic compositions. Layer thicknesses range 1 to 8 cm with one exception: a 40 cm thick ash turbidite resting on a steep erosional unconformity, massive in the lower part but forming a melange-like coarse mixture of black ash, light-beige ash, and pelagic sediment in the upper part. This turbidite is tentatively correlated with the 5 ka major collapse event at Stromboli.



Fig. 1: Core of station 3. (left) Topmost 60 cm showing the major volcanoclastic turbidite above a steep erosional unconformity (48 cm bsf) and with a m \acute{e} lange-like mixture 15-28 cm bsf. (right) Segment 100-155 cm bsf showing an apparently compositionally zoned ash bed with a gray lower layer and a black main part around 135 cm bsf.

This optimistic start into the coring campaign was unfortunately followed by less successful attempts. The second coring site on April 11, and all 5 coring attempts on April 12 yielded no core recovery with one exception of 1.67 m core remaining in the bent tube at one site. It seems that the thick turbidite very close to the seafloor caused the corer to flip over rather than penetrate into the sediment. Using shorter tube and different impact velocities did not improve the results

Night-time mapping at the Lametini seamounts was continued until April 13; initially obtained poor results improved greatly once the sea became very calm and the bathymetry team (Michael

Marani, Alessandra Mercorella, Giacomo Della Valle) managed to optimize the measuring parameters for mapping at >2000 m water depths. Each mapping campaign was accompanied by CTD deployment to determine the local sound velocity profile. The complete map of the two, about 800 m high, circular Lametini seamounts is shown in Fig. 2. The larger, northeastern seamount has a scarp to the south extending from almost the summit down to the foot, and is interpreted as a flank-collapse structure.

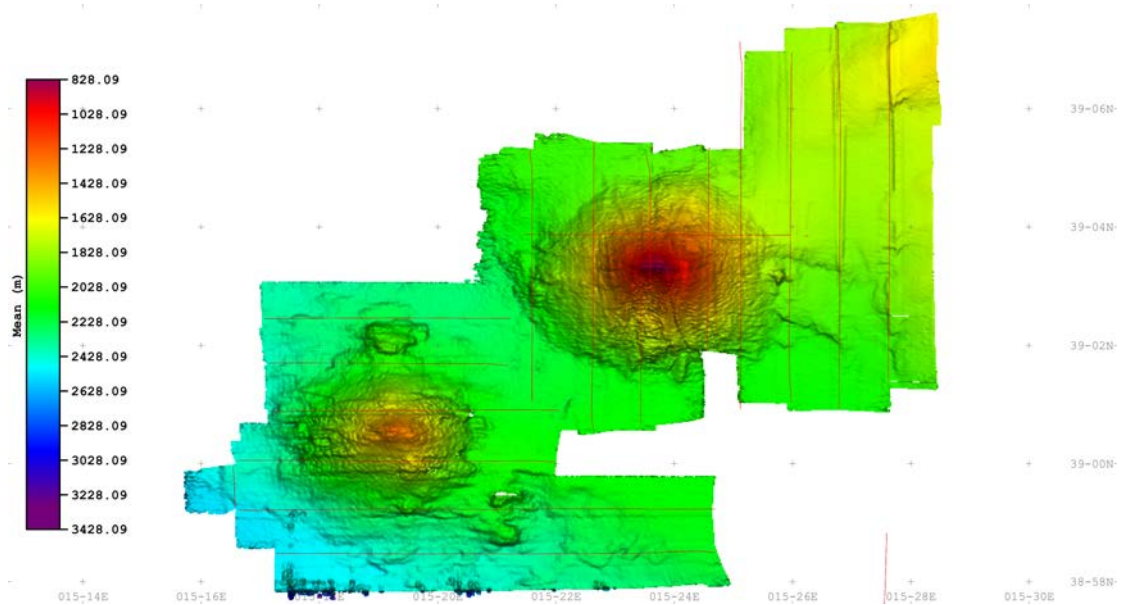


Fig. 2: Bathymetric map of the Lametini seamounts about 15 nm NNE of Stromboli.

The morning of Friday, April 13, justified the fame of the date because the winch W3 broke down while lowering the corer. However, the crew worked hard to repair the winch and we could perform two coring attempts in the afternoon. Unfortunately, again without recovery.

The first week was dedicated to sample the E-W extending plateau up to 200 m above and north of the E-W running Stromboli channel, assuming that turbidity currents from collapses at Stromboli's north flank traversed the channel and swept up onto the plateau rather than being completely deflected westward down the channel. We could show that the turbidite from the 5 Ka event is indeed distributed across the plateau (we always found some material of it in the core catcher) but it is too hard and lies too close to the seafloor to be penetrated by the gravity corer. Saturday, April 14, we tried three more coring stations near the southern rim of the plateau because these had already been announced to the naval agencies; as by now expected, they failed. However, we adjusted our research plan by focusing on sites farther north and away from Stromboli where we expect thinner and better penetrable volcanoclastic layers. This we began on Sunday, April 15, in the afternoon after waiting for storm to calm down. We indeed recovered a 223 cm long core with the 3 m tube. Hence the coring team (Asmus Petersen, Kai Fockenberg, Marija Voloschina, Kevin Krohne, Alessio Di Roberto, Marco Pistoiesi, Mauro Rosi) looks forward to a more busy week to come.

We get excellent support by the Poseidon's crew and short delays we had due to technical problems and weather do not affect the performance of our scientific program.