

Scientific Cruise **SO 314** with RV SONNE:

T-SECTOR Southeast Pacific Rise

13.08.2025 (Papeete/Tahiti) –  
05.10.2025 (Antofagasta/Chile)



### Scientific Cruise SO 314, 2. Weekly Report: 18.08.-24.08.2025

During the second week of Expedition SO314 that has received funding by the European Union's Horizon Europe ERC Synergy Grant programme under grant agreement No 101071713 – T-SECTOR the preparations for the seismic and paleo-oceanographic work continued, the anchors of the 50 ocean floor seismometers were assembled and their releasers were tested that allow their return to the surface ocean after finishing the seismic data collection. In addition, the first of a total of 5 ARGO floats was deployed at the specified location. Along the transit to the working area the sea floor bathymetry was continuously mapped outside the exclusive territorial zones in the frame of the SEAMAP project with a specific focus on subsurface volcanoes (seamounts) that had so far not been mapped and surveyed (Fig. 1).

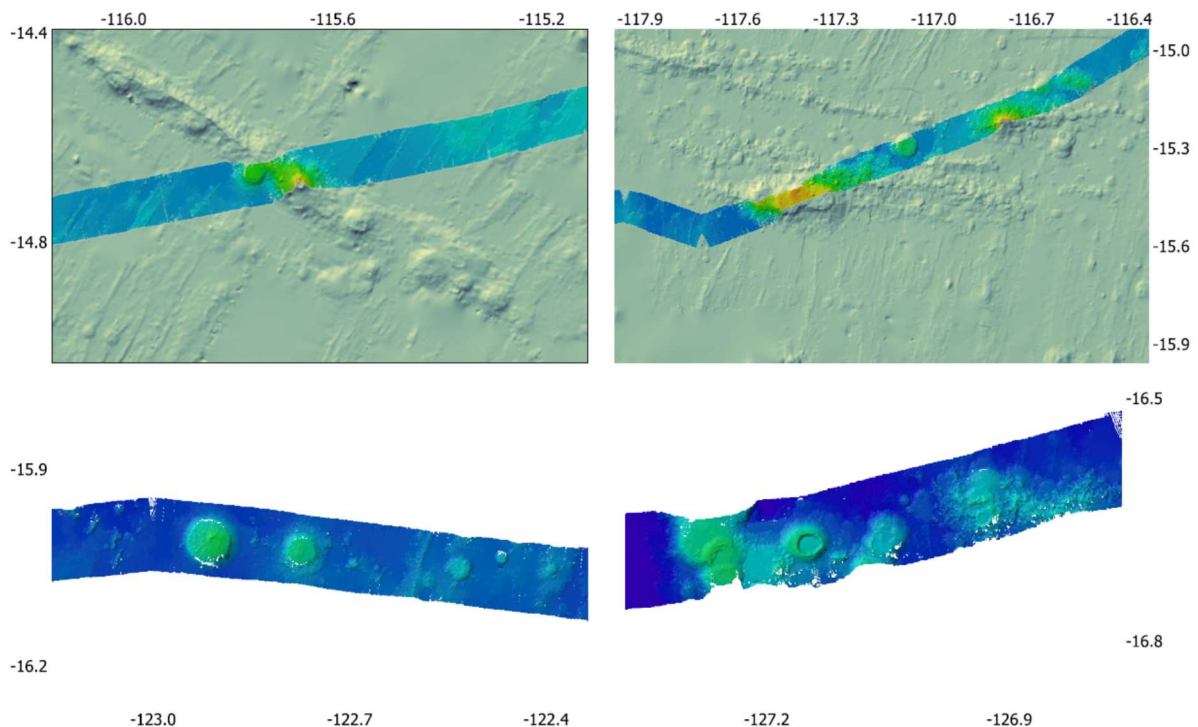


Abb. 1: Mapping of submarine volcanoes along the cruise track in the frame of the SEAMAP project.

In the afternoon of 22<sup>nd</sup> August we reached the westernmost point of our working area, where another releaser test of the OBS was carried out. Subsequently the first Parasound and Multibeam profiles to map the bathymetry and sediment coverage were taken, which allow us to define suitable locations

for the recovery of sediment cores. In addition, a magnetometer was deployed along the profile to detect changes in the Earth's magnetic field of the past in the seafloor that allow age dating of the basaltic crust.

After finishing the profiles on 23<sup>rd</sup> August we started to deploy the autonomously operating Ocean Bottom Seismometers along a first profile perpendicular to the mid ocean ridge, which will be utilized for the determination of the thickness of the ocean crust at the beginning of next week (Figs. 2,3).

The swell increased to almost 4 m during the week and the easterly winds became stronger but everybody on board is doing well.

Greetings from Martin Frank (Chief Scientist SO 314), Heidrun Kopp (Co-Chief Scientist SO 314) and the entire team and crew of SO 314.



Abb. 2: Ocean Bottom Seismometers ready for deployment on the working deck.



Fig. 3: Deployment of an OBS.