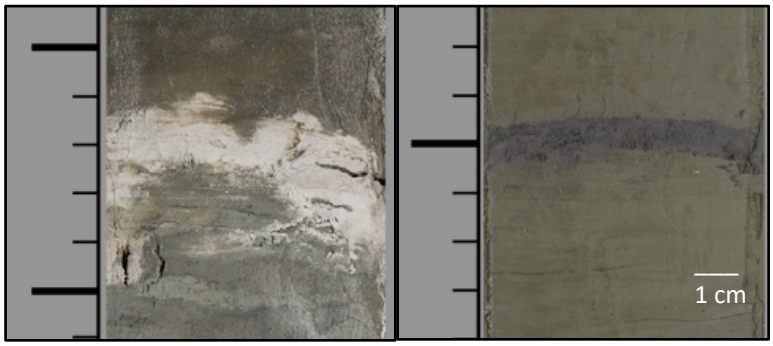
RV SONNE Expedition SO316
CAVA Tephras

21.11. – 26.12.2025
Balboa (Panama) – San Diego (USA)
3. Weekly report (01.-07.12.2025)

The third week of SO316 focused on completing the work in the study area off Nicaragua and on conducting operations in the international waters off El Salvador and Guatemala, as we were still waiting for the necessary research permits from Guatemala and Mexico.

On 01 December 2025, the second 2D seismic profile in the Nicaraguan Exclusiv Economic Zone was successfully completed, and an additional distal gravity core was taken to finalize the profile and work off Nicaragua. Afterwards, a transit brought us to international waters outside of El Salvador's Exclusive economic zone (EEZ), where another gravity core was successfully collected.

The original plan to begin work in Guatemalan territorial waters on 02 December 2025 had to be changed due to missing permits. Therefore, from 03 to 04 December 2025, additional gravity cores and a multicorer were taken outside Guatemala's and Mexico´s EEZ. These cores provide valuable information about the sediments on the incoming plate as well as the distribution of several very large volcanic eruptions, whose ash layers we were able to identify in the marine sediments.



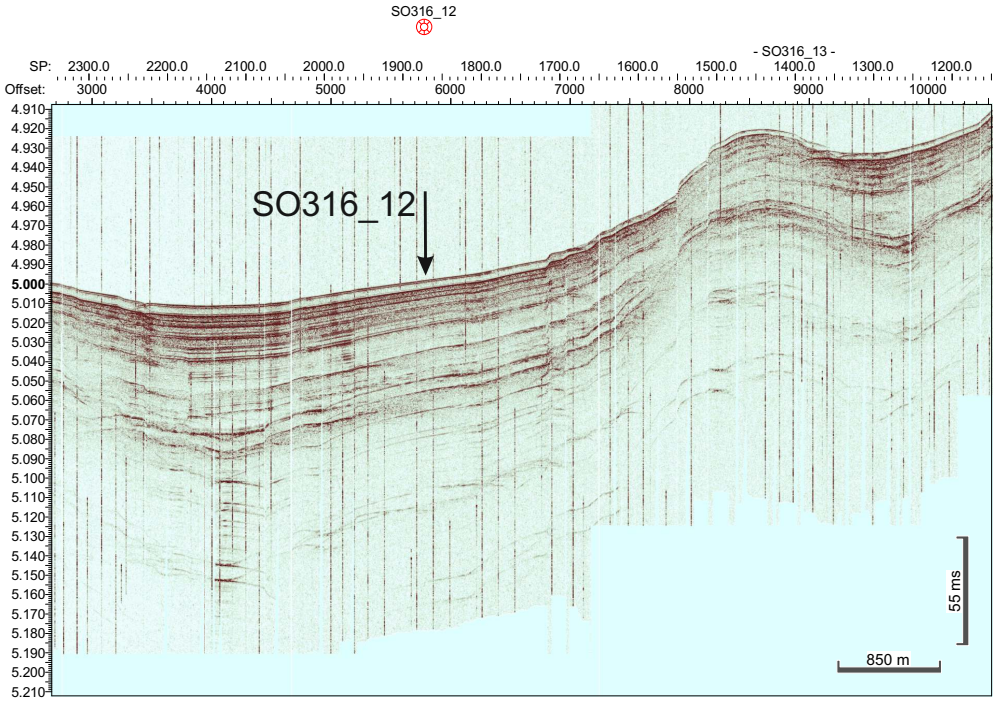
Felsic and more mafic tephra layers in the marine hemipelagic sediments.

On 03 December, another live video broadcast with a German primary school took place. This time, the participating pupils were able to actively ask questions, showing great interest both in life on board and in the explosively active volcanoes of Central America.

In the late afternoon of 04 December 2025, we began a transit to Puerto Quetzal (Guatemala) to receive the required research permit on 05 December 2025 and to embark a Guatemalan observer.

Afterwards we were able to continue our research off the coast of Guatemala. We thank in particular the German ambassador in Guatemala and his team, the Guatemalan ambassador in Berlin, the responsible authorities in Guatemala, as well as our science party member Liseth Pérez for their relentless efforts, through which we were ultimately able to obtain the required permit.

In the evening of the 05th December and early morning of the 6th a gravity core profile was taken from the slope across the trench and onto the incoming plate. Subsequently, seismic operations were resumed and a 2D profile was acquired for 24 hours across the core locations.



Parasound profile with core location on the incoming plate offshore the EEZ of El Salvador.

Parallel, intensive efforts across all channels have been succesful to obtain the necessary research permits for Mexico in order to ensure the continuation of the work program.

All participants are doing well and the chief scientist sends greetings on behalf of all the scientific participants.

Steffen Kutterolf (GEOMAR Helmholtz Centre for Ocean Research Kiel, Germany)