

RV SONNE Expedition SO317 MANGAN 2026

28.12.2025 – 19.02.2026

San Diego – San Diego (USA)

7th weekly report (09.02.2026 – 15.02.2026)



The sampling programme of SO317 was continued and completed during the first half of this past week. After a sediment sampling marathon with multicorer and box corer in the central part of the BGR contract area, which is an area with an extremely high abundance of small nodules and rich in megafauna, we transited back to the Patania II collector Trial Site where we had started our work five weeks earlier. Our main aim here was to pick up equipment that was positioned on the seafloor by ROV in early January – namely 12 emergence and recolonisation traps for copepods, two passive sampler platforms and a time-lapse camera lander. Furthermore, a photomosaic of the collector tracks on the seafloor was undertaken to compare the current state of sediment distribution, faunal composition and coverage with one that was undertaken straight after the test (in May 2021) and 1.5 years later (in November 2022). In addition, a short mooring with a hydrophone, a 600 kHz ADCP and passive samplers was recovered after 30 days of measurement, and redeployed as long-term mooring. The ultra-clean trace metal CTD/rosette collected water samples from a station that had been sampled 5 weeks earlier to obtain information about potential temporal variability in water masses and composition. Last but not least, three box cores were taken for resource assessment before we left the BGR contract area on Thursday morning to embark on our 5-day transit back to Ensenada (Mexico) and then San Diego, where we will arrive on Wednesday the 18th in the morning.

Since Thursday we have been busy with last analyses in the laboratories, cleaning our equipment and the laboratories, packing all the equipment back into their original boxes and containers, processing and securing data, and writing chapters for the cruise report. We have also started a series of presentations on our preliminary results to promote discussion and exchange between the different scientific teams on board.

BGR is obliged to provide at-sea training to selected candidates from less developed countries as an integral part of its contractual obligations with the International Seabed Authority. During this cruise, we have four trainees on board from Brazil, Morocco, Thailand, and Trinidad/Tobago. In addition to being integrated in the various scientific groups on board, they have used their previously gathered expertise to assess our EM122 bathymetric data as well as water column physical data (CTD, EK60) from this and past years to determine patterns in spatial and temporal upper ocean variability in the BGR contract area. Knowledge exchange between the trainees and our ROV and science team is an excellent example of how capacity-building can work in two directions to be beneficial to all parties involved.

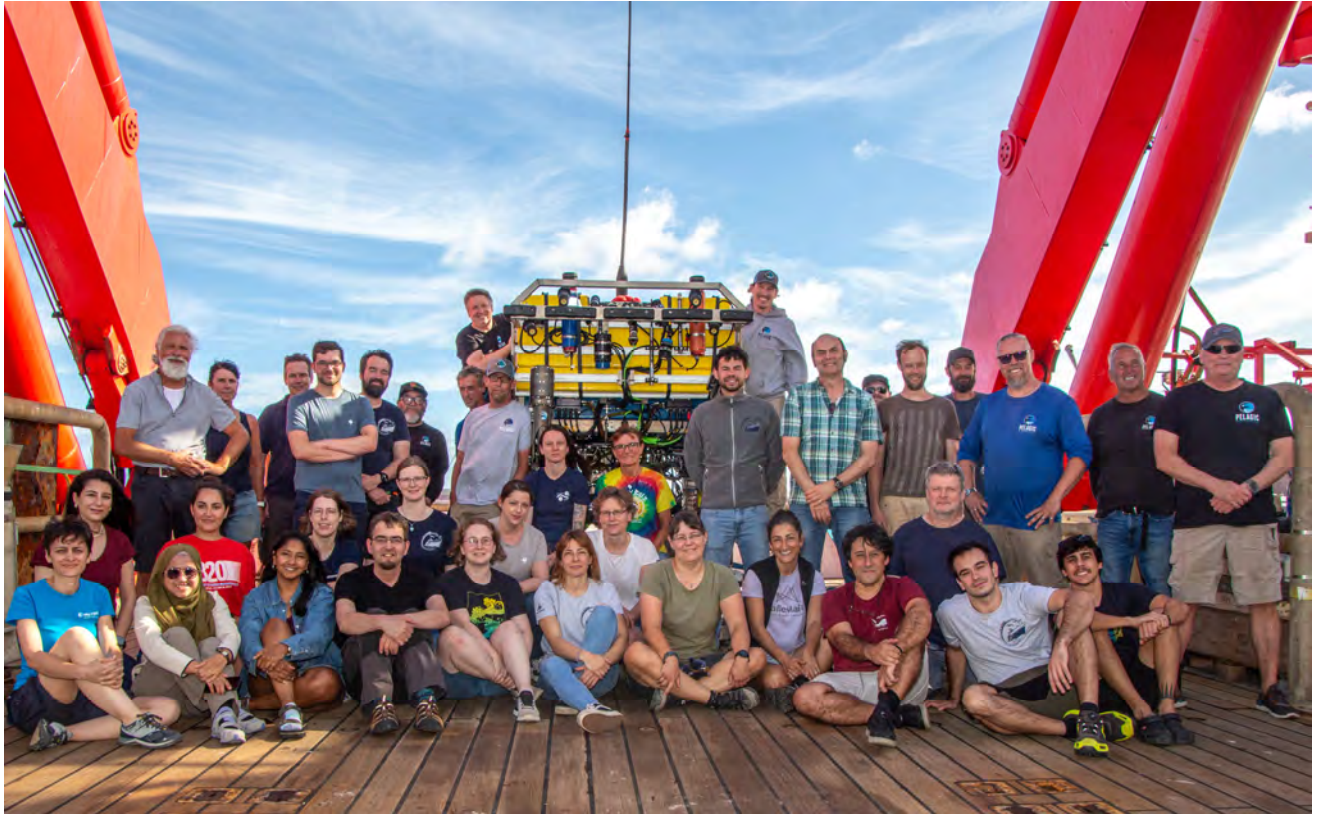
An ambitious and exciting expedition is now coming to an end. Looking back, we have had an extremely productive cruise without any down-time due to bad weather or failure of equipment, and most of our aims could be met. In total, the ROV Odysseus was in the water for 420 hours spread out over 16 dives (46% of the total working time of 38 days), and collected 94 TB of video and still files. 39 deployments of the two subsea baskets were necessary to transport measuring and experimental equipment (micro-profilers, benthic chambers, time-lapse camera landers, amphipod and copepod traps, ecotoxicological chambers, passive sampler platforms) to and from the deep seafloor (4100-4350 m water depth). Around 180 specimens of sea cucumbers, brittle stars, sea anemones and sponges were collected for morphological, genetic and ecotoxicological analyses. In between ROV dives, we carried out 41 multicorer and 43 box corer deployments, 6 epibenthic sledge deployments, 16 CTD/rosette deployments, of which 12 with the ultra-clean trace metal CTD, and 3 video-sledge (OFOS) deployments of ca. 12 hours each. Furthermore, we retrieved and redeployed 4 short moorings, and deployed a 600-m-long double sediment trap mooring. Overall, we have visited and sampled both pristine and impacted areas with varying nodule coverages and environmental characteristics, principally to determine the oceanographic, biogeochemical and biological conditions there in relation to (1) resource potential, or (2) level of mining impact. We have collected more than 6000 water, sediment, nodule and biological samples from these areas. Further analyses of these samples will keep us busy in our home laboratories during the upcoming 1.5 years until the next exploration cruise takes place.

I would like to take this opportunity to thank both the ROV team and our various multidisciplinary science groups on board for their hard work, determination, good spirit and commitment to the challenging tasks we had set for ourselves, which has contributed greatly to the success of this cruise. The professional and unwavering support of the entire crew of RV SONNE has been just as crucial, and it has been fascinating to observe how crew, ROV team and science worked together tirelessly to find good and workable solutions for almost every problem that arose. Thank you. Last but definitely not least, many thanks to André and his team for making our mess room visits so enjoyable, and for looking after us so well!

We send you warm greetings from the Pacific Ocean, and look forward to returning home to our families, friends and colleagues!

On behalf of all participants,

Annemiek Vink
(Chief Scientist SO317)



The SO317 team. From left to right; on the ROV: Ed McNichol, Miles Graber; back row: Dirk Hoffmann, Simone Sturm, Henning Wedemeyer, René Herbst, Dominik Jasinski, Rudy Schlepp, Erik Hodges, Dan Cormany, Amber Henningsen, Annemiek Vink, Lukas Damm, Felix Janssen, Aaron Duff, Klaas Meyn, Josh Bennett, Simon Jones, Paul Sanacore, Ed Cassano; front row: Pasqualina Gaetano, Asma Damghi, Araf Laerosa, Teresa Martinez Moura, Stacy Ballyram, Maria Bierkar, Robert Sommerfeldt, Christine Grisat, Jana Blanke, Lisa Egger, Nuria Sanchez Santos, Katja Schmidt, Mirja Bardenhagen, Duygu Sevilgen, Pedro Martinez, Oliver Kefel, Alberto Gonzalez Casarrubios, Eduardo Cerveira de Faria Pinheiro.



*The sun sets
in the CCZ.
We will be
back!*

*(Photo:
Robert
Sommerfeldt)*