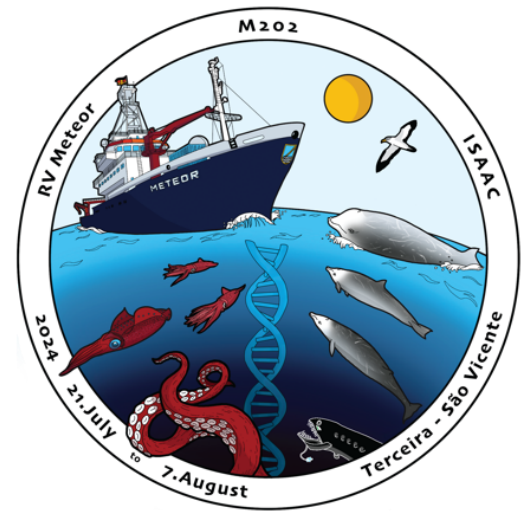


RV Meteor

Expedition M202 „ISAAC“

21.July – 07.August | Terceira – Mindelo



4. Weekly Report (05.08. - 07.8.2024)



Figure 1: The scientific team and parts of the crew of M202 – ISAAC.

During the transit, we started a seminar series to inform each other and the crew about our achievements of the cruise. We also used the transit to clean and pack all equipment that was not needed off Cape Verde. After 5.5 days of transit, we arrived at Cabo Verde on August 5. We started with a group picture of the scientist team and parts of the crew (Fig. 1). In the afternoon, we finished the first of the two last CTDs of our cruise at the time series station “Cape Verde Ocean Observatory” (CVOO). CVOO is a long-term ocean observation station established in 2006, located about 100 kilometers northeast of São Vicente Island. It consists of a permanent mooring and regular ship-based sampling, enabling continuous, high-resolution data collection on biogeochemical, biological, and physical ocean parameters, providing insights into processes ranging from daily to long-term changes. During M202, we collected CTD data and measured chlorophyll at specified depths at CVOO. In the afternoon, we began the last CTD of M202 close to the north of the island Santo Antão, (Fig. 2). Since the work off Terceira was completed in time and successful, and the transfer of equipment off Terceira was smooth, we could spend 24 hours of M202 on habitat mapping of the island of Santa Antão. This area is of particular interest, as the coastal biology and seafloor mapping of this island is subject of the dedicated international Biodiversa research project COAST (the German part is funded by the DFG). It is very difficult to map this region with small boats due to the often rough ocean conditions. M202 collected crucial data for COAST, and performed multibeam surveys and with OFOS collected among the first underwater observational data between 50-380 m for

the north of Santa Antão. At 11 pm on Tuesday, OFOS was back on deck and our research activities were successfully finished. In total, during M202 we were able to collect 25h of PELAGIOS and ~10h of OFOS video footage. The CTD with attached PISCO were deployed at 43 stations and the three Nautilus camera systems collected 164h of video footage. The echosounder recorded for 82h. We deployed the multinet and RMT at four stations each and collected 2506 fish and 34 cephalopod specimens that were directly taxonomically identified on board, and sampled for their tissues. One mooring was successfully recovered and two moorings were deployed during the cruise. We collected 375 km of ADCP data, and conducted visual behavior and phytoplankton consumption experiments. Over 1000 liter of seawater was filtered for the collection of eDNA and precious fish eye tissues were preserved in liquid nitrogen for vision analysis. Finally, 2130 km of the seafloor was mapped with the ship's multibeam system. The cruise was a complete success and we achieved all the goals and collected the data and samples that we aimed for. On Wednesday, August 7, we reached the port of Mindelo on Cape Verde. We offloaded one container, nine palettes were picked up for air freight and our frozen samples were delivered to the Ocean Science Center Mindelo for storage before they will be send to GEOMAR, and collaborator institutes.

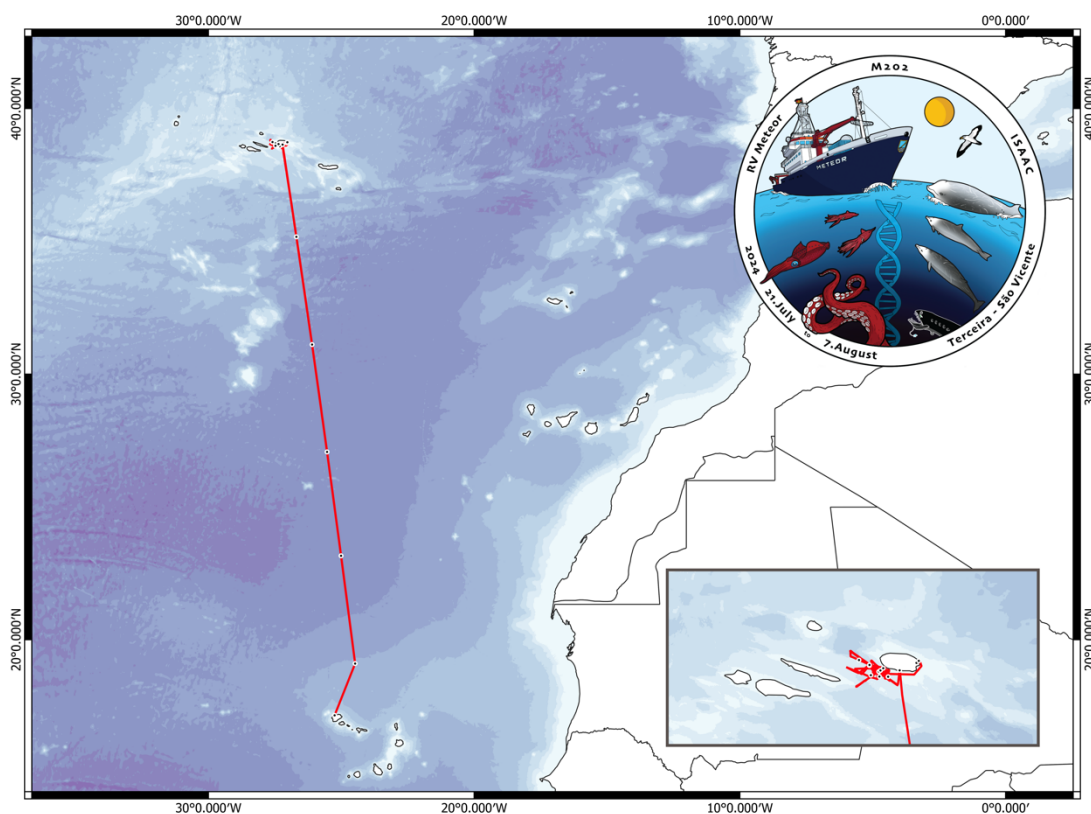


Figure 2: The cruise track of M202 – ISAAC from July 21 to August 7 2024 starting off Terceira Island (Azores) and ending off Santo Antão (Cape Verde). This map was made by Julian Stauffer with the General Bathymetric Chart of the Ocean (GEBCO) and Natural Earth Track.

The scientific team thanks Captain Korte and the entire crew of RV Meteor for the excellent support and positive atmosphere on board. The exceptional teamwork between the crew, the DWD colleague, and the scientists was indispensable in achieving all our goals. The communication was open and constructive, and the high-quality data collected is a testament

to the crew's positive dynamics and dedication, which were crucial to the success of this expedition.

Best wishes from aboard the RV Meteor on behalf of all participants.

A handwritten signature in black ink, appearing to read 'V. Merten', with a stylized flourish at the end.

Véronique Merten (Chief Scientist, M202)

GEOMAR Helmholtz-Centre for Ocean Research Kiel, Germany

Logo: Julia Stefanschitz