109N 2025 CRUISE WEEKLY REPORT

We have completed our fifth week at sea and are en route to Phuket! You heard correctly. We have

finished the data collection and are in packing mode. All labs have finished operations by now, and things are being disassembled and staged on the deck.

This last week was indeed very laid back, with calm seas and weak winds. Everything ran smoothly, and we completed 98 stations in total. Why not the 100 we stated last week? Nothing to do with technical issues or weather hold. Nothing to do with a lack of time. We had that, which allowed us to slow down the pace between closed space stations to give the labs time to catch up. The problem that led us to have to skip two stations was related to nuanced differences in the EEZ borders (black shading in the map). We just learned about the issue when we arrived at the station we should occupy. After discussing this with the Captain, we decided that the best course was to skip these two stations since we wouldn't be able to reach diplomatic channels in time. By skipping these stations, we avoided diplomatic





Arrival of the rosette at the last I09N 2025 station. Photo: Viviane Menezes

But more importantly than this hiccup, we occupied nine new stations (red dots on the map) compared to the previous I09Ns. These new stations were located in the Bangladesh EEZ, thanks to the Bangladesh government granting permission to sample in their waters and the presence of their Naval Observer on board. We strictly followed what was described in the MSR document, and some variables for the Bio GO-SHIP underway system were not collected as they were not part of the document. Don't worry. They were collected from the Niskin bottles as outlined in

the MSR document.

In entering the Bay of Bengal and reaching its northern end, we could follow the entire extension of the oxygen-depleted zone, where oxygen is barely above zero between the neutral densities of 26 kg/m³ and 27.3 kg/m³ (150-900 m) as seen below. If you are interested in this subject, look at the amazing observations we have collected!



This is our final weekly report! We will arrive in Phuket on April 27, 0800. We hope the gear will be offloaded on April 28 (Fingers crossed). After that, many of us will enjoy a well-deserved vacation in Thailand. CTD watchstanders and a few other members will start that on April 27!

I09N Blog

If you haven't had a chance yet, visit the I09N Blog: <u>https://www.go-bgc.org/expedition-logs/indian-ocean-2025</u> ! We have two new posts this week:



From Shouts to Signals: How Ocean Chemistry Comes Alive. Mary Kate (MK) Dinneen is a third-year PhD student in the Moffett lab at the University of Southern California, where she studies geochemical cycling and oxidative kinetics of trace metals under extreme conditions, such as low-oxygen marine environments.



<u>It's All Fun and Games</u>. **Alessandra Quigley** is a first-year PhD student at Columbia University and NASA GISS studying marine extremes. Aboard I09N, Alessandra is working as a CTD watchstander.

First float deployments. Guillaume Liniger is a postdoctoral fellow at MBARI. Guillaume works on primary productivity variability and carbon export using satellite remote sensing and BGC-Argo floats data. On the I09N, he is responsible for deploying all floats!



<u>The amazing shrinking styrofoam cup: a deep-sea physics adventure</u>. **Ilmar Leimann** is a PhD Candidate at the University of Bremen, Germany, working on internal wave energy dissipation. On the I09N, he is responsible for the LADCP.



Roxanne Mina reflects on Week 1 of her first research cruise experience. Roxanne Mina is a recent California State University Maritime Academy graduate and an incoming master's student at the University of South Florida.



<u>A day in the life of a CTD Watchstander</u> from a modeler's perspective. **Genevieve Clow** is a PhD candidate at the University of Colorado Boulder in the Department of Atmospheric and Oceanic Sciences.

See you next time on another GO-SHIP cruise,

Viviane Menezes (Chief Scientist)

Leah Chomiak (co-chief Scientist)