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# I09N 2025 CRUISE WEEKLY REPORT

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We are finally in the sweet tropics! No more seasickness, rough waves, or strong winds. No more hurricanes in our way! The weather is gorgeous. We've left all that behind!

Our lives are now on track with the monotonous endless loop that defines GO-SHIP cruises—*deploy, recover, sample, deploy*. Don't understand us wrong. We are all happy (and relieved) with this. A "boring" cruise means things are working properly. But arriving at this stage was not easy.

We stopped our last report when we reached station 8 at 24°S, and everything failed. We didn't know then that we would stay on hold at station 8 for almost three days. As you know, the ship Z-drive and our CTD package failed simultaneously. The sea was rough, and the winds picked up because Cyclone Courtney was ahead of us. We had a triple hold!



Photo: April 3rd, 2025. Allen Smith

When the sea improved, and the Z-drive was partially fixed, we attempted station 8 for a second time but failed. We tried a third time and had to abort again. Discovering the issue was challenging, but our fantastic team- Jesse McLaughlin and John Calderwood from ODF, along with Mar Tech's Brandon Russell- managed to identify it. The culprit, as usual, was the wire! The wire was cut, necessitating mechanical and electrical re-termination. After hard work and many hours later, we were back in the game. All kudos to them!

**"The fourth time is the charm"**

## Changes

After leaving Station 8 (finally!), things started to get back on track. Unfortunately, we had to reduce the number of stations again to address the time lost in our first week. Before traveling to Freo, we planned for 122 stations (i.e., positions), which were decreased to 106 due to the delay in the DIC container's arrival. Now, we aim to cover 89 stations while still accomplishing all our critical mission objectives.

In the updated plan, stations north of 4.3°S will be spaced 30 to 45 nautical miles, depending on the bottom topography and ocean fronts. Exceptions to this are at the northern end, where stations have higher resolution for capturing the boundary currents.

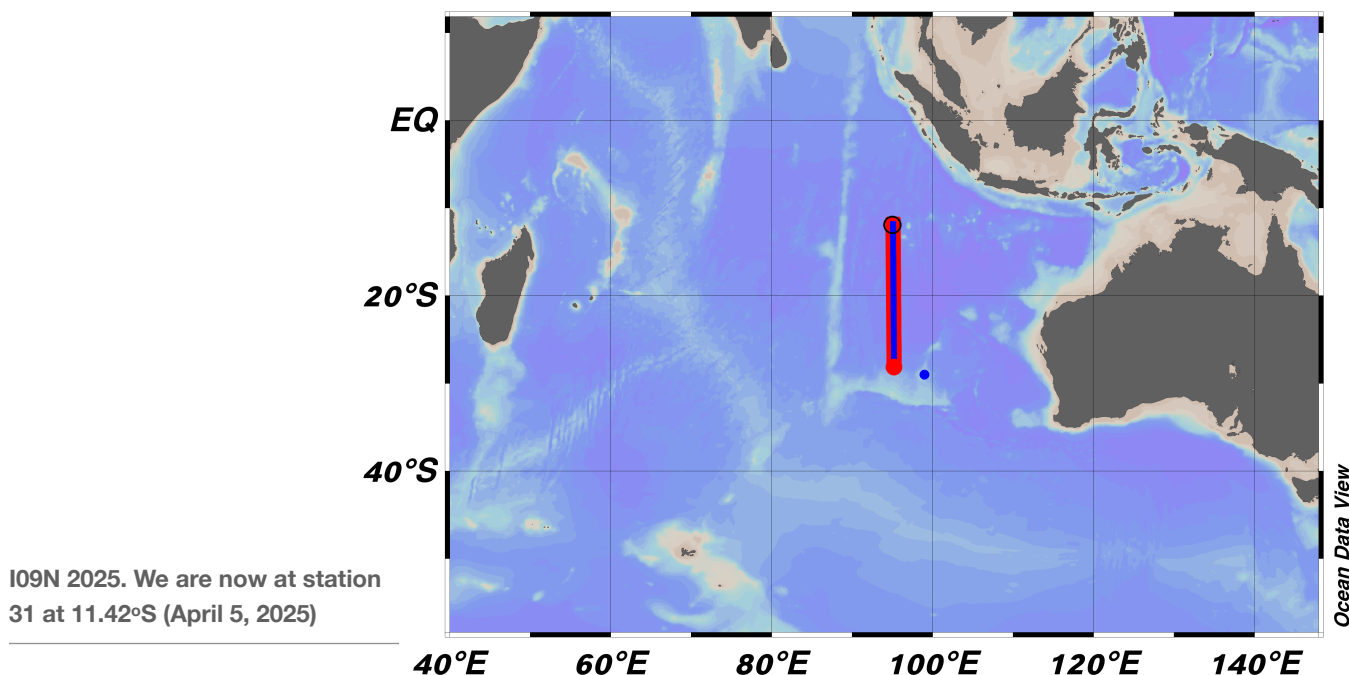
We also had to stop performing the daily *Bio Casts*. At the beginning of the cruise, we conducted independent casts to accommodate the water requirements and depth specifications of the BIO GO-SHIP team (<https://biogoship.org>). The “*Bio Cast*,” as we affectionately call it, is a relatively shallow cast, reaching down to 1000 meters, where 26 of 36 Niskin bottles are fired. Completing one cast takes about 2 hours, factoring in the rosette preparation, deployment, and sampling. Unfortunately, we wouldn’t be able to reach Phuket on time if we performed all (originally) planned *Bio casts*. But don’t get us wrong; we are still collecting water for our amazing BIO GO-SHIP team onboard (Star Dressler, Laura Lubelczyk & Eli Mally), but instead in an integrated core-bio GO-SHIP cast!

Graciously, R/V Thompson also extended our cruise for an additional day, which we much appreciate. Our arrival in Phuket is now scheduled for April 27 at 0800 UTC (local time).

We hope for no more drastic changes!

## So far, we have

After our nightmare first week, we are now living in a dream. During the second week, we occupied 24 deep stations (all greater than 5000 m depth). We even had three stations with depths exceeding 6000 m, where we followed tradition and crashed some styrofoam cups. This averages to 3-4 stations per day.

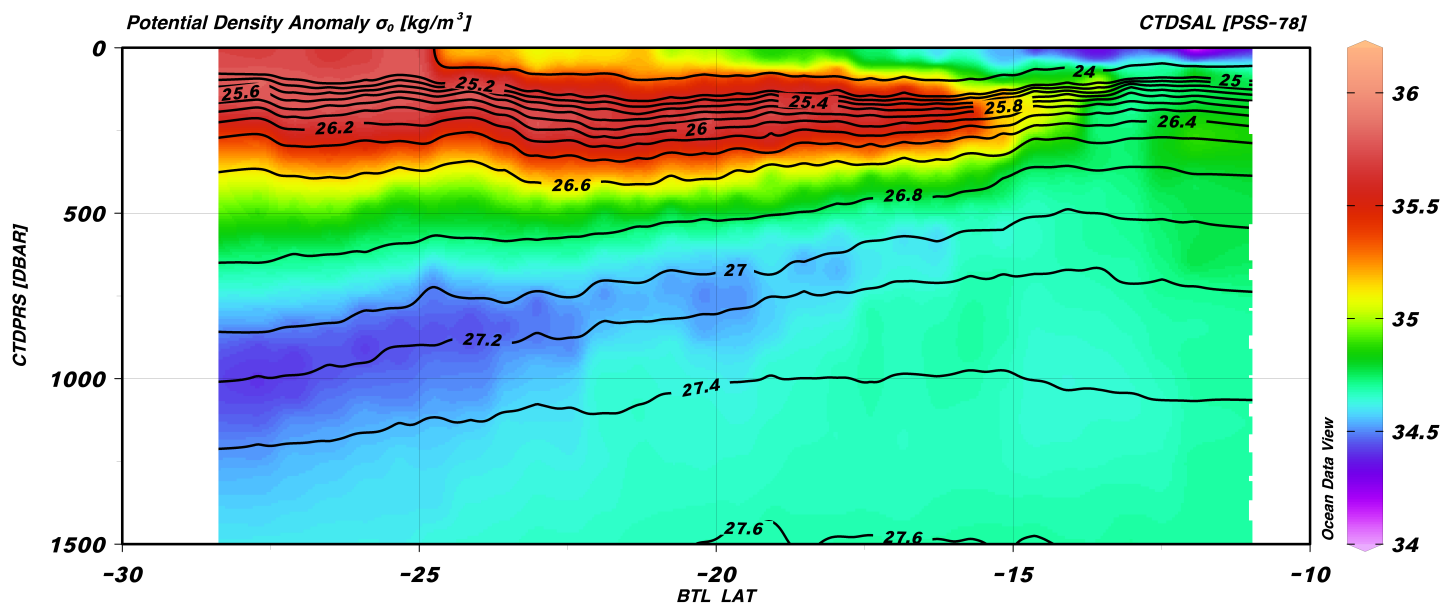


However, this doesn't mean everything is rosy, as we still had to stop along the way for a few hours here and there to fix the z-drive and the bow thruster. Our altimeters also continue to (intermittently) fail us as we approach the ocean bottom, and swapping them has become a favorite pastime. But with care, we have managed this issue relatively well. Kudos to the CTD Watchstander team!

Busy as a bee, we deployed 2 Argo floats (<https://argo.ucsd.edu>), 2 SQUID floats (<https://www.apl.uw.edu/project/project.php?id=squid>), 1 BGC float (<https://www.go-bgc.org>), and 11 surface drifters from the Global Drifter Program (<https://www.aoml.noaa.gov/global-drifter-program/>) just last week! More to come ...



Leah Chomiak (co-Chief) and CTDWatchstander Roxane Mina deploying a surface drifter of the NOAA Global Drifter Program



Salinity Observations during the 2025 I09N Occupation. Observe the high-salinity tongue that subducts at the subtropics (Sea Surface Salinity Maximum) and is carried to the north as part of the shallow overturning circulation (aka the Subtropical Underwater). Also, the beautiful fresh signal of the Antarctic Intermediate Water ~ 1000 m. Starting around 15°S, we began to see the signature of the most fresh Indonesian Throughflow Water at the surface and its intermingling with the salty Subtropical Underwater. A textbook figure!

## I09N Blog

If you haven't had a chance yet, visit the I09N Blog: <https://www.go-bgc.org/expedition-logs/indian-ocean-2025> ! We have two posts and more to come (weekly updates). You will have the opportunity to know more about our team that is making the I09N possible :)



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



[A day in the life of a CTD Watchstander](#) 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;

Best from the Southeast Indian Ocean,

Viviane Menezes (Chief Scientist)

Leah Chomiak (co-chief Scientist)