

## **IODP Expedition 390C: South Atlantic Transect Reentry Systems**

### **Week 3 Report (18–24 October 2020)**

#### **Operations**

During the third week of the International Ocean Discovery Program (IODP) Expedition 390C, South Atlantic Transect Reentry Systems, the *JOIDES Resolution* (JR) transited 2013 nmi at an average speed of 12 kt. In total, we have completed 2743 nmi of the 3608 nmi transit from Las Palmas, Canary Islands, to Site U1556 (proposed Site SATL-53B). Our location at the end of the third week was 16°43.27'S and 24°7.66'W with a southerly course. Our estimated time of arrival at Site U1556 is ~0700 h on 28 October 2020.

On 22 October, our end port for the expedition was switched from Las Palmas to Cape Town, South Africa, due to the state of the COVID-19 pandemic in Spain. This change increases the number of days available for operations, so revised operations plans are being developed by the Operations Superintendent, Staff Scientist, and Expedition 390 and 393 Co-Chief Scientists.

The JR crossed the equator at ~1040 h on 21 October. Equator crossing certificates were given to *JOIDES Resolution* Science Operator (JRSO) and Siem Offshore personnel who had not crossed before.

#### **Science Results**

The towed magnetometer was deployed after the JR entered international waters on 19 October. JRSO staff continued cross-training and preparations for coring. The Imaging Specialist gave a demonstration of the scanning electron microscope (SEM). One of the Assistant Laboratory Officers instructed staff on the use of the newly acquired conductivity-temperature-depth sensor (CTD) that can be attached to the subsea camera frame and deployed during reentry system installations. The Introduction to Electrical Engineering class taught by the Schlumberger Logging Engineer concluded. Staff are now working on projects such as temperature and motion sensors that can help monitor laboratory instrumentation. The Paleomagnetism Laboratory Technician introduced staff to the basics of paleomagnetism as well as how to measure core section halves on the superconducting rock magnetometer (SRM).

## Outreach

No onboard Outreach Officer is sailing during Expedition 390C. Limited social media posts were made via the JR Facebook and Twitter accounts.

Platform	# of posts	Analytics	Notes
<a href="#">Facebook</a>	8	1283 engagements (comments, shares, likes, or clicks on parts of the post)	
<a href="#">Twitter</a>	8	1064 engagements (including 33 retweets, 10 comments, 257 likes), 9 new followers	Does not include retweets of other accounts

## Technical Support and HSE Activities

### *Laboratory Activities*

- The towed magnetometer deployed upon entry into international waters. The Levelwind seized up following deployment of the towed magnetometer and troubleshooting is in progress.
- The Aft Trimble GPS device was replaced. The aft antenna was found to be in good condition and was not replaced. A spare will be purchased.
- Troubleshooting of the 3.5 kHz echosounder continued.
- The X-ray Imager (XRI) was tested and calibrated.
- The Section Half Multisensor Logger (SHMSL) issue where the laser would not recognize the end of sections shorter than 125 cm was resolved by returning the laser to its optimal height of ~57 mm instead of the 40 mm it had been set at.
- Demonstrated the jig for putting together the Icefield and Flexit orientation tools.
- Troubleshooting of the Section Half Imaging Logger (SHIL) heating and calibration issues continued. The blue light intensity shifts when the camera temperature changes, and we are trying to determine the optimal operating parameters.
- Several Chemistry laboratory instruments were tested and calibrated.
- A N<sub>2</sub> line was plumbed into the gas chromatograph as part of a project to conserve He; testing is in progress.
- Analyzed X-ray diffraction (XRD) samples sent from shore.
- Panalytical was contacted to advise on the Aeris XRD software errors and faulty sample changer. A service call may be required in Cape Town.
- Continued developing a soft-sediment mounting method for thin sections.
- The EPM provided a list of analysis parameters for Expedition 390C cores for all laboratories.

- Laboratory cross training continued, including a demonstration of the new conductivity-temperature-depth (CTD).
- Staff worked on projects including GEODESC, the Catwalk sampling module, and diversity, equity, and inclusion (DEI) initiatives.

#### *Application Support Activities*

- Continued work on the Catwalk sampling module and GEODESC.
- Deployed a new version of the drill report web service to fix an error that prevented it from being uploaded into the database.
- Began troubleshooting the Cahn Balance after a technician experienced an error message and the program crashed.

#### *IT Support Activities*

- Nearly completed the rollout of 32" televisions.
- Installed a 32" monitor on an articulating mount on the Core Laboratory forward description table.
- 22" televisions were disbursed to state rooms for use with Snap TV.
- Identified an issue with Snap TVs not connecting to server. Working with GlobeTech to find the cause.
- Assisted technician with installation of the new Trimble GPS device.
- Started ticket with Marlink to address satellite performance issues after transitioning from KU-band to C-band.
- Prepared computer systems for future Texas A&M University (TAMU) audits.

#### *HSE Activities*

- Tested emergency shower and eye wash stations.
- Conducted a chemical spill drill for the laboratories.
- Conducted a fire/life boat drill.