

## **IODP Expedition 359: Maldives Monsoon and Sea Level**

### **Week 2 Report (5–11 October 2015)**

#### **Operations**

On the fifth day (4 October) of port call, the *JOIDES Resolution* (JR) was relocated to the East Arm Wharf refueling dock in Darwin, Australia, where bunkering activities commenced and the final loading of reentry cones and a box of operations hardware (MDHDS tools) was completed. Bunkering continued through the night and was completed at 1024 h on 5 October. The pilot came aboard, and with tugs on-site the last line was cast away at 1206 h on 5 October 2015. The pilot was discharged at 1306 h and the sea passage to the Republic of Maldives began. As part of the agreement with the Republic of Maldives, the JR is required to go to anchorage in Male and check into the country. Two coastal observers from the country are also scheduled to board the vessel and participate on the expedition. In addition, ODL plans to have one of their drillers board the ship. The ship was blessed with good weather and calm seas during the initial week of transit. The drilling department took advantage of the stable platform to conduct routine drilling equipment maintenance. Three time changes took place during this week of transit with the clocks being turned back a total of 2½ h. The vessel is presently on UTC + 8 h time or 13.0 h ahead of College Station, Texas. As of 2400 h Sunday, 11 October, the vessel had transited 1869 nmi at an average speed of 11.9 kt. There is 1737 nmi remaining to our destination. At this time, the projected time of arrival at the Male pilot station remains 1200 h on 18 October 2015, or approximately 18 h ahead of schedule.

#### **Science Results**

Our science activities for this week consisted of science, laboratory, and logistical orientation and training for the scientists. These included hands-on training exercises on the laboratories instrument systems and applications. The IODP JRSO staff gave presentations on drilling and coring tools and operations, core processing, sampling, and sample data entry, as well as comprehensive tours of the vessel. The scientists also converged on a shipboard sampling plan for shipboard analyses.

The Sedimentology and Paleontology teams underwent training on DESClogik and the scanning electron microscope. The Sedimentologists agreed on the lithologic classification to be used on the expedition, and adjusted existing core description parameters and description forms according to the specific scientific objectives of Expedition 359. They designed a Draw-Visual Core Description (Draw-VCD) form that matches the requirements of the Digital VCDs that are produced from the LIMS database, and they performed core description exercises. Smear slide preparation was set up and a first series of test slides was produced. The Paleontology team

started to review reference micropaleontological material and to practice sample processing and examination with test core material available onboard. They agreed on the timescale and main biostratigraphic events that will be used during the expedition, and they produced a chart that integrates all the bioevents and biozones from all the microfossil groups.

The Geochemistry team became familiarized with the Geochemistry Laboratory instrumentation with guidance from JRSO technical staff. They discussed the operation of the laboratory, workflow, and agreed on laboratory and sampling procedures.

The Physical Properties and Downhole Logging scientists, Paleomagnetists, and the Stratigraphic Correlator received training on the laboratory systems. The JRSO Logging Technician introduced scientists to the workflow for transferring data from ship to shore for processing after logging operations and gave a demonstration of Techlog, a new software package on the *JOIDES Resolution* for displaying downhole logging data. The Downhole Measurements team continued to develop a workflow for integration of downhole logging data and the seismic project using Petrel software.

All scientific teams completed the initial drafts of the Methods chapters, and each scientist presented his or her post-expedition research objectives and proposed sampling plan to meet those objectives. During the week, we also held daily science presentations by individual scientists and received ship security training by the Siem Offshore crew.

## **Education and Outreach**

As part of our Education and Outreach activities for the Maldives Monsoon Expedition, we posted daily updates and photos on our social media outlets (Facebook [<https://www.facebook.com/joidesresolution>], Twitter [<https://twitter.com/TheJR>], and Instagram [[http://instagram.com/joides\\_resolution](http://instagram.com/joides_resolution)]) and in blogs on the *JOIDES Resolution* website (<http://joidesresolution.org/>) and in personal blogs of members of the science party. We set up a schedule for live ship-to-shore videoconferences with schools and museums around the world and successfully held two live events, one with a high school in Brussels, Belgium (Lycee Francais Jean Monnet, 33 students, broadcast in French and English), and the other with the Michigan Earth Science Teacher Association (MESTA) Conference (10 teachers).

## **Technical Support and HSE Activities**

During the transit, technical staff continued with preparing the laboratories and helping the science party become familiar with laboratory equipment, software, and procedures.

### *Laboratories*

- Repairs to floors in the Splitting Room and Core Laboratory are in process.
- Underway Laboratory
  - Bathy 2010: collecting bathymetry data starting from the edge of the Australian continental shelf.
  - Magnetometer: Deployed on 11 October after sailing past Christmas Island.
- Section Half Imaging Logger (SHIL)
  - Developers made minor changes to the SHIL software code and MUT to optimize collection of whole-round images. Testing is in progress.
  - Developers deployed the Whole-Round Composite Image Uploader (WRIMG) for testing.

### *HSE Activities*

- Laboratory Safety and Wood Working Training Videos were reviewed by IODP staff.
- Returned SCBAs were assembled with their bottles and filled with air.
- Tested safety shower and eye wash stations.
- Weekly abandon ship and security drill was held.