

IODP Expedition 363: Western Pacific Warm Pool

Week 2 Report (9–15 October 2016)

Operations

Port Call: Singapore

Week 2 of Expedition 363 (Western Pacific Warm Pool) began while alongside Jetty 2A at Loyang Offshore Supply Base, Singapore. Logistical operations during the remainder of the port call included bunkering 2100 metric tons of marine gas oil, loading 12 joints of 10¾ inch screened casing to the riser hold for use on an upcoming expedition, remaining freight shipments, expedition stores, and food. The #3 crane was also repaired and a derrick inspection completed before departure. The vessel was made ready and the passage plan was prepared.

Transit to Site U1482 (proposed Site WP-12D)

Customs and immigration cleared the vessel and the pilot boarded at 0635 h (UTC + 8 h) on 11 October. The last line was released at 0705 h and the pilot was away at 0831 h, beginning the 1514 nmi sea voyage to Site U1482 (proposed Site WP-12D). At the end of the week, the vessel had travelled 1335 nmi in 112.9 h (averaging 11.8 kt), passing Bali on the evening of 15 October. The estimated time of arrival at Site U1482 is 1530 h on 16 October.

Science Results

The remainder of port call and the transit were spent familiarizing the scientists with the ship, laboratories, core flow, curation, sampling, and publication procedures used on the *JOIDES Resolution*. The core describers practiced operating the Section Half Imaging Logger (SHIL) and Section Half Multisensor Logger (SHMSL). The core description team and micropaleontologists worked with the technical staff to learn how to enter descriptive data into DESClogik. The core describers then prepared DESClogik templates for macro- and microscopic description of the sediment, and worked with the Co-Chief Scientists, Staff Scientist, and Publications Specialist to design the layout of the visual core description sheets. They also described legacy cores from Deep Sea Drilling Project Site 62 and Ocean Drilling Program Site 806 to practice on sediments similar to those expected during Expedition 363 and to work towards generating consistent observations. The micropaleontologists prepared templates of nannofossil, planktonic foraminifer, and benthic foraminifer species suitable for the Indo-Pacific Neogene. They also compiled a list of biohorizons, which included recalibration of some Miocene bioevents where the age of Chron boundaries had changed. Both groups worked with the Imaging Specialist to configure microscopes for microfossil and smear slide analyses, and they also received instruction for using the desktop scanning electron microscope.

The paleomagnetists learned how to operate the superconducting rock magnetometer (SRM) using the new software, IMS-SRM. They also practiced measurement protocol on the legacy cores from Sites 62 and 806. The background magnetization of the SRM was continually measured on several occasions to establish noise level. They also set up the spinner magnetometer and AF demagnetizer for measurement of discrete samples. The physical properties specialists and stratigraphic correlators were introduced to the Whole-Round Multisensor Logger (WRMSL), Special Task Multisensor Logger (STMSL), and Natural Gamma Radiation Logger (NGRL), and practiced using these track systems with practice cores and calibration pieces to test the systems and develop proficiency in their operation. The physical properties specialists were trained to use the thermal conductivity probe, as well as how to make discrete measurements of *P*-wave velocity on the Section Half Measurement Gantry (SHMG) and moisture and density (MAD). The stratigraphic correlators spent much of their time learning how to import data from the LIMS database to Correlator, navigate the Correlator program to create affine and splice tables, and then prepare each for upload back to the LIMS database. Use of a training dataset and tutorial videos proved very helpful. They also developed Kaleidagraph templates for plotting depth-adjusted and fully-spliced track data for production of accurate and uniform figures for the expedition reports.

The geochemistry group developed a sampling strategy and reviewed procedures for collecting sediment samples on the catwalk and for extracting interstitial water from whole-round samples. They were also trained to use the different analytical systems in the laboratory, including the gas chromatograph (for analysis of methane and other hydrocarbon gas), handheld refractometer (salinity), and Gran titration (pH, total alkalinity, and chlorinity). All laboratory groups compiled and submitted a first draft of the Methods sections.

In addition to becoming familiar with laboratory procedures, the science party met to discuss proposed research plans and sample/data requests for postexpedition research. We also developed a plan for ensuring that measurements would be comparable among different laboratories. The Co-Chief Scientists gave an overview of the overall expedition science objectives, as well as site-specific information for operations planned at our first two sites (U1482 [WP-12D] and U1483 [WP-11B]). Several scientists also presented their research to the science party.

Education and Outreach

The Education and Outreach officer began scheduling ship-to-shore events and conducted the first live event with a university in Brazil. She began to develop activities to go with a ship-to-shore event in Perth, Australia, and additional activities focused on oxygen isotopes and their use in paleoclimate studies. She also started tweeting about the expedition (<https://twitter.com/TheJR>), posting to the *JOIDES Resolution* Facebook page

(<https://www.facebook.com/joidesresolution>), and blogging on the *JOIDES Resolution* website (<http://joidesresolution.org>).

The filmmaker focused on learning more about the operations of the ship and workflow in the Core Laboratory and within the science party to determine how and what to shoot for her project. She has made initial plans to film some individuals of the science party, technical staff, and drilling crew.

Technical Support and HSE Activities

The following technical support activities took place during Week 2.

Laboratory Activities

- Laboratories were prepared for coring.
- A cooling fan module was replaced in the NGR due to a dead fan in the installed cooling array.
- The M-drive motor and communication cable failed on the WRMSL. Both were replaced, together with the logic board as a precaution. Currently we have one spare motor.
- The power cable for the new SRM was pulled and is ready for termination.

HSE Activities

- An abandon ship and fire drill were conducted.
- The safety eyewash and showers were tested.