

IODP Expedition 369: Australia Cretaceous Climate and Tectonics

Week 2 Report (1–7 October 2017)

The second week of Expedition 369 consisted almost entirely of transiting from Hobart to the first site of the Expedition. The ship left Hobart on the morning of 1 October and arrived at Site U1512 (proposed Site WCED-4A) in the Great Australian Bight at 0530 h on 7 October.

Operations

The ship left Hobart with the last line released at 0710 h and began making its way to Site U1512 (proposed Site WCED-4A). The first abandon ship drill was held at 1300 h on 1 October. Due to heavy wind and swell, the ship's average speed was 6.4 kt over the first 24 h of the transit, with speeds sometimes below 5 kt. The weather and the ship's speed improved throughout the remaining voyage, averaging just over 9.8 kt for the entire transit. On 3 October, at 1815 h, the vessel changed course to Portland, Victoria, Australia, for medical release of a crew member. A coast guard launch met the vessel in the harbor at 1245 h on 4 October. The crewmember and manifest were transferred and the ship renewed its sea voyage at 1300 h, having added 184 nmi and 18.75 h to the original transit.

Full ship operations tours were conducted for the science party on 5 and 6 October (in total, four small group tours took place) by the Operations Superintendent as well as members of the ship's crew.

The vessel arrived at Site U1512 at ~0500 h on 7 October with the thrusters down and the official sea voyage over at 0530 h. The beacon was deployed at 0610 h. The rig crew began picking up drill collars at 0615 h, making up the mechanical bit release, bit sub, and a C-4 rotary core barrel (RCB) (DC593) bit. The nonmagnetic core barrels were spaced out while assembling the outer core barrel. The crew began tripping the RCB bottom-hole assembly at 0900 h. There were no significant operational problems running the drill string to just above the seafloor. The top drive was picked up and a wiper pig was inserted into the drill string. The wiper pig was pumped through the drill string with twice the annular volume of the string to clean any rust or debris. The core barrel was dressed with a liner and deployed.

The drill string was spaced out and Hole U1512A was started at 2120 h on 7 October, following two unsuccessful attempts to tag the seafloor. The water depth was determined to be 3070.9 m. The first two cores penetrated to 19.2 m but had low recovery (7% and 21% respectively). The week ended with continued RCB coring in Hole U1512A with an ultimate target depth of 570 mbsf.

Science Results

The Expedition 369 Science Party mostly spent the second week of the expedition working with their laboratory groups, attending planning meetings, and finalizing the first drafts of their methodology sections for the Expedition Report. All of the scientists were given a core flow tour and more specific introductions to their laboratories and the laboratory equipment. The Core Description team defined an initial template for the visual core description sheets. Both science shifts were trained to use SampleMaster, the sample input and uploading system on the ship, and the Micropaleontologists were enabled to use Mikrotax on their workstation computers. Planning meetings with each laboratory group were held with the Sample Allocation Committee to discuss shipboard sampling for routine analyses, such as interstitial water splits and physical property and paleomagnetic discrete samples, as well as sampling for postexpedition studies of ephemeral properties. Meetings with each laboratory group, the Co-Chief Scientists, and the Expedition Project Manager were also held to discuss workflow through the laboratories. The science party attended three seminars on seismic oceanography, reconstructing bottom water masses and circulation with neodymium isotopes, and organic biomarkers over Oceanic Anoxic Event 2 in the southern Pacific high latitudes.

The first two cores were received on deck just before the end of the week and were being run on the Special Task Multisensor Logger in preparation for stratigraphic correlation at later sites in the expedition.

Education and Outreach

The Education Officers had a successful broadcast on 5 October with middle school students who were visiting the Smithsonian Museum in Washington D.C. (USA); five members of the science party participated in this event. They have also been posting regularly to Facebook (<https://www.facebook.com/joidesresolution>; seven posts with 326 total “likes”), Twitter (<https://twitter.com/TheJR>; six posts with 103 total “likes” and 33 retweets), and Instagram (http://instagram.com/joides_resolution; seven posts and 315 total “likes”). They have also been working on a set of videos in response to a list of submitted questions from a group of children (ages 6–10) from a school in Texas (USA).

Technical Support and HSE Activities

Activities of the technical team mainly revolved around preparing the science party and laboratories for receiving and logging core. Specific activities included:

Transit Activities

- Secured the laboratory spaces for a rough seas transit.

- Provided orientations and introductions to the science party on specific instrumentation (e.g., handheld X-ray fluorescence, scanning electron microscope, various geochemical instruments), the physical property track systems (e.g., Whole-Round and Section-Half Multisensor Loggers, natural gamma radiation), sampling procedures and SampleMaster software training, and general core flow.
- An argon line was set up in the splitting room, along with a sealing/vacuum procedure for wrapping and preserving any core sections containing Oceanic Anoxic Events.
- The sampling plan for shipboard analyses was completed.
- The Cumulus database import was completed.
- Resolved an issue with back-ups not working correctly on a component of the Oracle database (OEMJR13).
- Updated Java and Tomcat on the Uluru server.
- Configured four workstations in the Microscopy Laboratory for internet access per request from the Expedition Project Manager to allow the micropaleontologists to access Mikrotax.
- Ongoing work to resolve how to use Thunderbird to connect to our Microsoft Exchange server.

HSE Activities

- Safety showers and eye wash stations were tested.
- Provided breathing apparatus training in case hydrogen sulfide (H₂S) is encountered.
- The marine department flushed out all of the breathing airlines on the catwalk, and refilled the escape bottles on the breathing apparatuses.