

Weekly Report – 16th February to 22nd February 2018

1. Location

IODP Bremen Core Repository, MARUM – Center for Marine Environmental Sciences, University of Bremen, Germany
Onshore Science Party

2. Activity Summary

Cores from the lower 178 m of Hole M0079A were processed between the 16th and 18th with the final core being split in the morning of Sunday 18th followed by the splitting, describing and sampling of cores from Hole M0080A commencing immediately afterwards. IODP standard measurements acquired throughout the core flow included micropaleontological and mineralogical analysis, and geochemical, physical properties, and paleomagnetic measurements.

It was once again agreed on the 21st that a pause in splitting could allow for some time to hold a short 90-minute science meeting to summarize findings from Hole M0079A. The core flow recommenced immediately following the meeting.

From the 21st to the 22nd the team continued to process cores and samples from Hole M0080A. By the end of the 22nd February, a total length of 1516 m of core had been split and described, and 9631 samples had been taken (Table 1) since the start of the OSP.

A media day took place on 22nd February.

3. Activities for Next Week (23rd – 28th February)

Saturday 24th – Finish processing cores from Hole M0080A.

Sunday 25th – Complete Results sections of Expedition and Preliminary Reports from Hole M0079A

Monday 26th – Science Meeting to present preliminary results & observations from Site M0080.

Monday 26th to 28th – Complete Site Expedition and Preliminary Reports for Hole M0080A. Final compilation of all report figures and tables for submission to TAMU.

Wednesday 28th – Final day of OSP

4. Current Status

The status as of 24:00 on 22nd February was as follows:

Hole	Total Core Length (m)	Split Core Described (m)	No. Samples Collected
M0078A	534	534	2957
M0078B	52	52	548
M0079A	611	611	4242
M0080A	449	319	1884

Table 1 - Progress summary for Week 3 (16th – 22nd February).

5. Preliminary Scientific Assessment

During the last week, the Science Party and ESO staff characterized core from the lower ~180 m of Hole M0079A and the upper ~320 m of Hole M0080A, and worked on text and figures for the Site M0078 and M0079 sections of the Expedition Report. A science meeting was held to share and synthesize observations from Site M0079.

The lower part of Site M0079 is continuing to reveal a much more detailed picture of the variations in

sediment lithology and microfossil assemblages during hypothesized marine and 'isolated' periods within the most recent phase of rift history, which was condensed and potentially incomplete at Site M0078. Coarser sediment (sand and gravel) is present in Site M0079 cores than Site M0078. The lower part of Hole M0079A also included intervals of slump and debris flow deposits. The structural geologists observed both natural small normal faults and structures induced by drilling. The micropaleontologists have been analyzing samples from Sites M0079 and M0080, including palynology samples and are beginning to integrate their paleoenvironmental interpretations.

During the week, splitting of cores from Site M0080 began. Although the upper part of M0080 samples the same time interval as M0078 and M0079, some differences in lithology and microfossil assemblages are observed. At greater depths, M0080A also includes a terrestrial unit with intervals of conglomerate and breccia.

For both Sites M0079 and M0080, measurements of density on discrete core samples show broad agreement with the MSCL data acquired on whole cores offshore. Shear strength measurements on the cores during the OSP also show consistent trends compared to the penetrometer measurements made offshore. Color reflectance data show good correspondence with changes in core lithology and facies, as well as with the marine and 'isolated' intervals. The paleomagnetists are continuing to determine natural remanent magnetization and magnetic susceptibility on shipboard samples from Holes M0079 and M0080. Data quality continues to be good.

The geochemistry team has finished the analysis of pore-fluid samples from offshore and is now focusing on preparation of sediment samples from Holes M0079A and M0080A. The first TOC, TC, and XRF data were generated and interpretations of these data and continuing XRD data were made. The core-log-seismic integration effort for Sites M0079 and M0080 is incorporating information from downhole sonic data and, where available, velocity information from discrete samples and MSCL into the calculation of synthetic seismograms.

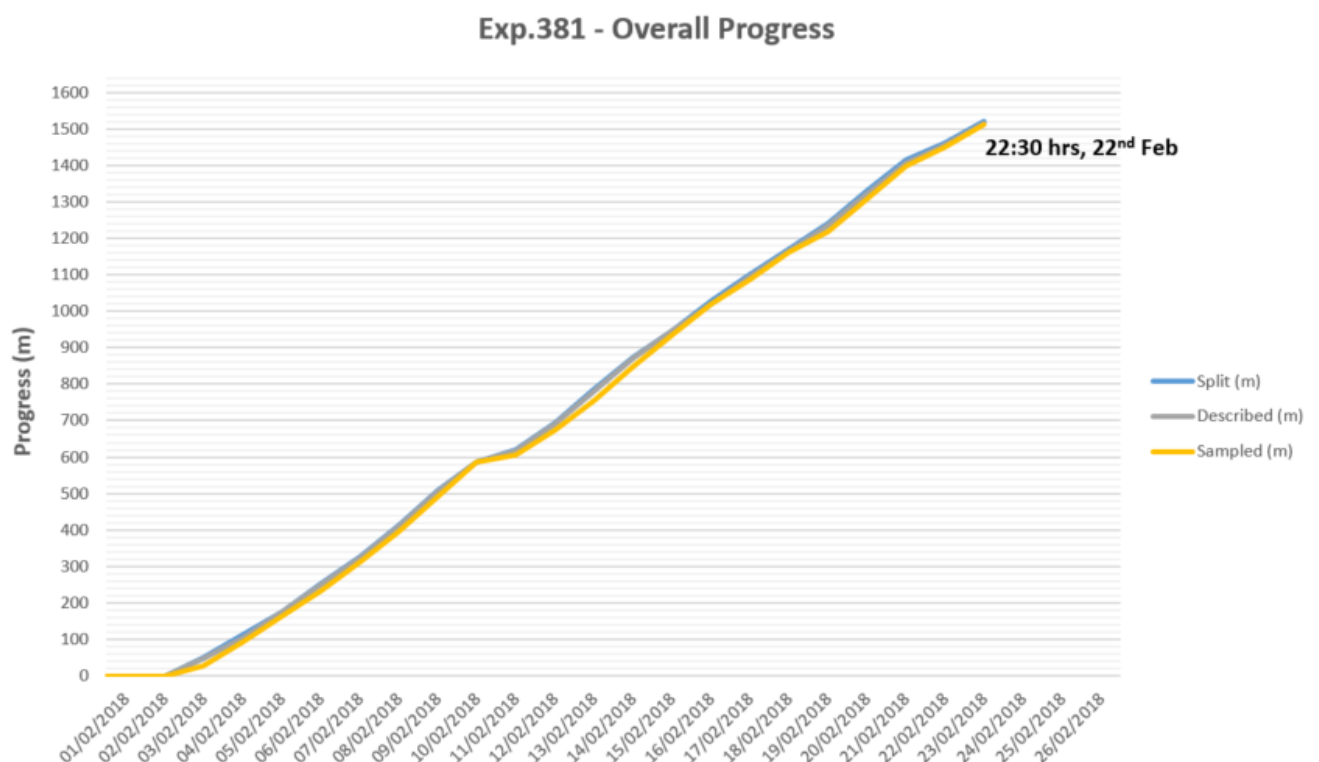


Figure 1 - Core progress chart (22:30 hrs on 22nd February 2018).

6. Photographs

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