Scientific Report for IODP Expedition 381
Corinth Active Rift Development

Weekly Report – 23rd February to 28th February 2018

1. Location

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

2. Activity Summary

The final 130 m of cores from Hole M0080A were processed between the 23rd and 25th with the last core being split by midday on Sunday 25th. IODP standard measurements acquired throughout the core flow included micropaleontological and mineralogical analysis, and geochemical, physical properties, and paleomagnetic measurements.

Report writing intensified immediately following the end of core processing. A 90-minute science meeting was held on evening of 26th to summarize preliminary findings from Hole M0080A, followed by the End of Expedition meal.

By the end of the 28th February, the official end-date of the Expedition 381 Onshore Science Party, a total length of 1,646 m of core had been split and described, and 10,337 samples had been taken (Table 1) since the start of the OSP.

3. Activities for Next Week

N/A

4. Current Status

The status as of 24:00 on 28th February was as follows:

Hole	Total Core Length (m)	Split Core Described (m)	No. Samples Collected
M0078A	534	534	2977
M0078B	52	52	548
M0079A	611	611	4289
M0080A	449	449	2523

Table 1 - Progress summary for Week 4 (23rd – 28th February).

5. Preliminary Scientific Assessment

During the final week of the OSP, the Science Party and ESO staff characterized core from the lower ~150 m of Hole M0080A, and developed and finalized text and figures for all parts of the Expedition Report. One science meeting was held to share and synthesize observations from Site M0080, and a final science meeting was held to revisit the regional context of the Corinth Rift and discuss the results from all sites.

The lower part of Site M0080 appears to record earlier stages in the evolution of the Alkyonides Gulf and Corinth Rift. The depositional environment indicated by these sediments is diverse, including deposits from both subaqueous and terrestrial environments. Clasts within the conglomerate include both limestones and mafic/ultramafic clasts. Measurements of density on discrete core samples were challenging in the harder, coarser grained lower sections of Hole M0080A, but generally show broad agreement with the MSCL data acquired on whole cores offshore. Shear strength measurements on the cores show consistent trends compared to the penetrometer measurements made offshore. Color

reflectance data show good correspondence with the changes in core lithology and facies. MSCL velocity measurements on whole cores and split cores provided reliable data. The paleomagnetists were able to reliably determine natural remanent magnetization on shipboard samples from the entire deep interval of M0080, including the terrestrial intervals. The geochemistry team focused on preparation of sediment samples from Hole M0080A. Results from TOC, TC, XRF and XRD continued to be generated, and were interpreted by the science party and integrated with other results. The core-log seismic integration effort for Site M0080 involved evaluating the different velocity datasets available at this site and considering their impacts for synthetic seismograms.

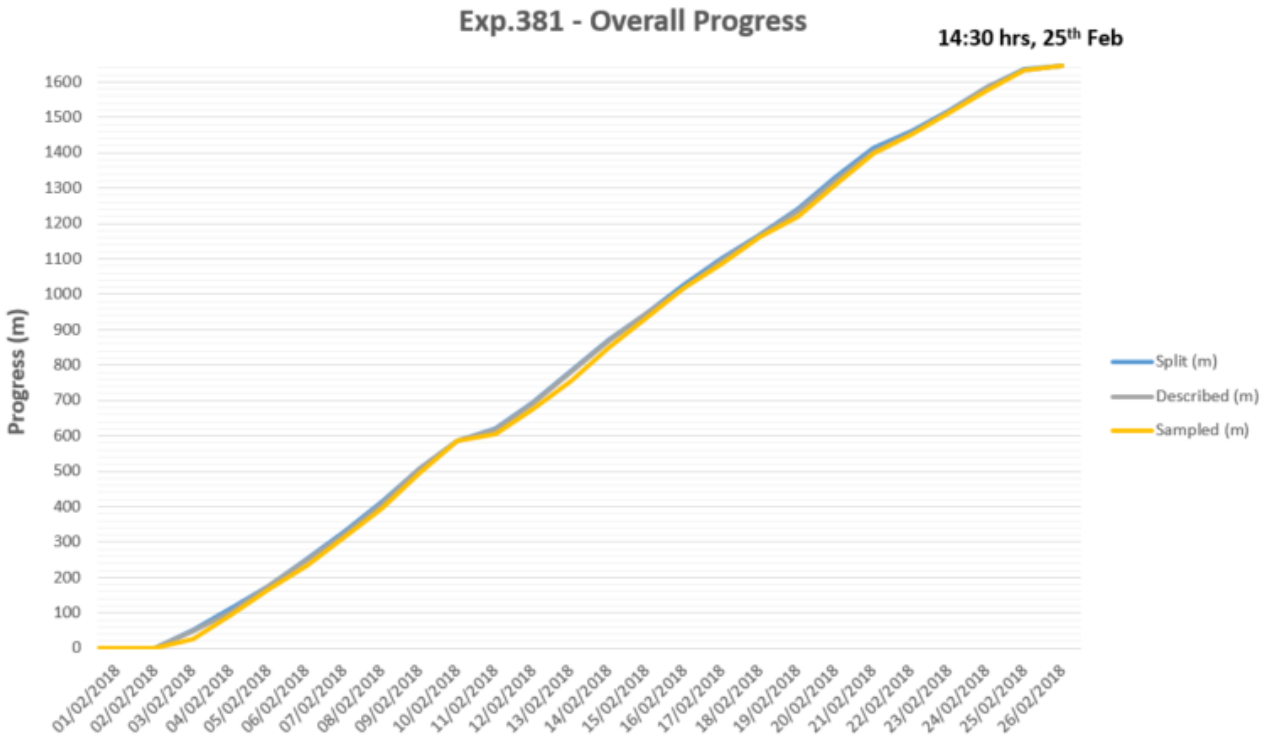

Figure 1 - Core progress chart (14:30 hrs on 25th February 2018).

6. Photographs

Photographs: Expedition 381 staff in the reefer at IODP Bremen Core Repository, MARUM, University of Bremen. Photos Volker Diekamp, IODP-ECORD.