

**Weekly Report – 9<sup>th</sup> February to 15<sup>th</sup> 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 30 m of Hole M0078A was processed during the morning of Friday 9<sup>th</sup> and splitting, describing and sampling of cores from Hole M0078B commenced immediately afterwards. IODP standard measurements acquired throughout the core flow included micropaleontological and mineralogical analysis, and geochemical, physical properties, and palaeomagnetic measurements. This continued throughout the day, with just 2 cores left to describe by end of shift.

M0078B was completed early in the morning shift on the 10<sup>th</sup> of February, and processing of cores from M0079A began immediately, and continued until the arrival of the Evening Shift at 11.45am. It was agreed a pause in splitting could allow for some extra time for report compilation, and a short 1 hour science meeting to summarise findings from Holes M0078A and M0078B was held. The core flow recommenced as the Day Shift departed MARUM, and continued through the evening.

From the 10<sup>th</sup> to the 15<sup>th</sup> the team continued to process M0079A. By the end of the 15<sup>th</sup> February, a total length of 1019 m of core had been split and described, and 6449 samples had been taken (Table 1) since the start of the OSP.

**3. Activities for Next Week (16<sup>th</sup> – 22<sup>nd</sup> February)**

Saturday 17<sup>th</sup> – Finish processing cores from Hole M0079A.

Sunday 18<sup>th</sup> – Start processing cores from Hole M0080A.

Wednesday 21<sup>st</sup> – Science Meeting to present preliminary results & observations from Site M0079A.

Sunday 18<sup>th</sup> to Thursday 22<sup>nd</sup> – Continue processing cores from Site M0080A.

**4. Current Status**

The status as of 24:00 on 15<sup>th</sup> February was as follows:

Hole	Total Core Length (m)	Split Core Described (m)	No. Samples Collected
M0078A	534	534	2747
M0078B	52	52	548
M0079A	611	433	3154
M0080A	449	0	0

*Table 1 - Progress summary for Week 2 (9<sup>th</sup> – 15<sup>th</sup> February).*

**5. Preliminary Scientific Assessment**

During the last week, the Science Party and ESO staff characterized core from Holes M0078B and the upper ~430 m of Hole M0079A, and prepared text and figures for both the Methods and the Site M0078 sections of the Expedition Report. A science meeting was held to share and synthesize observations from Site M0078.

Hole M0078B was cored from 0-55 mbsf and provided improved recovery of shallow intervals of interest to science party members focused on tectonics and climate change in the Holocene. At 20 m from Hole M0078A, not surprisingly the stratigraphy is very similar to Hole M0078A, and correlation is feasible.

Site M0079 is located in the open basin where the syn-rift sediments are expanded relative to M0078 and the majority of the drilled section is within Seismic Unit 2 (the most recent syn-rift sedimentary package). Hole M0079A is revealing a much more detailed picture of the variations in sediment lithology and microfossil assemblages during hypothesized marine and 'isolated' periods of the last ~0.5-0.7 Myr. More sand and some gravel is observed in Site M0079 than correlative units of Site M0078. The Site M0079 cores have also included intervals of slump and debris flow deposits. The structural geologists have been continuing to characterize structures observed in the core, including both small faults and structures induced by drilling. The micropaleontologists continue to analyse samples from both Sites M0078 and M0079, including palynology samples and are beginning to integrate their paleoenvironmental interpretations.

As with Site M0078, measurements of density on discrete core samples show broad agreement with MSCS 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 Hole M0079. Data quality continues to be good. The geochemistry team has continued with analysis of pore-fluid samples from offshore. Sediment sample preparation has continued and TOC, TC, XRD and XRF analyses have started. The core-log seismic integration effort for Site M0079 is incorporating information from downhole sonic data into the calculation of synthetic seismograms.

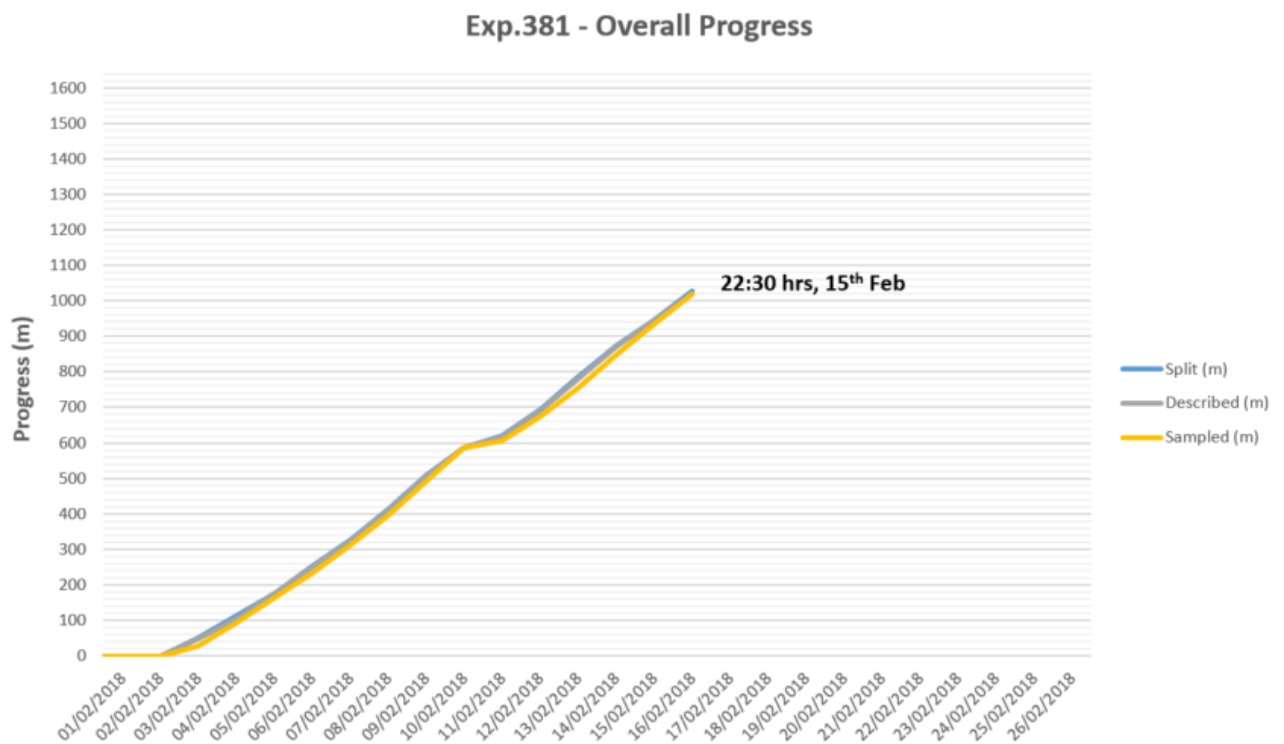


Figure 1 - Core progress chart (22:30 hrs on 15<sup>th</sup> February 2018).

## 6. Photographs

