ECORD Science Operator

Science Evaluation Panel
La Jolla, January 2018
Sally Morgan: sm509@le.ac.uk
ECORD Science Operator

British Geological Survey
Marine Geoscience

Universität Bremen
Center for Marine Environmental Sciences

EPC
European Petrophysics Consortium

Geophysics & Borehole Research Group

Laboratoire de Géophysique et Hydrodynamique en Forage
Summary

- Post-cruise phase expeditions
- Current expedition
- Scoping activities
- Other ESO activities
Post-Cruise Phase Expeditions

Expedition 347: Baltic Sea Paleoenvironment
• 10 papers submitted/in press/published in 2017

Expedition 357: Atlantis Massif Serpentinization & Life
• 2nd post-cruise meeting held in Liguria, Italy, 4-7 September 2017

Expedition 364: Chicxulub K-Pg Impact Crater
• At least 7 papers already in preparation/in press
• NOVA documentary aired in the US, 27 December 2017
• Expedition Report published at the end of December 2017
• 2nd post-cruise meeting preparations are underway. Mexico, June 2018
381 – Corinth Active Rift Development

- Offshore Phase: 22 Oct - 18 Dec 2017
- Onshore Phase: starting end Jan 2018

Expedition 381 – Final Summary

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Total cores recovered</td>
<td>500</td>
</tr>
<tr>
<td>Total drilled length (Coring, m)</td>
<td>1905</td>
</tr>
<tr>
<td>Total drilled length (Open hole, m)</td>
<td>0</td>
</tr>
<tr>
<td>Total recovered length (m)</td>
<td>1645</td>
</tr>
<tr>
<td>Overall recovery (%)</td>
<td>86%</td>
</tr>
</tbody>
</table>
• **Geochemistry:** Pore water geochemical data show some unusual profiles, and vary between sites. Some datasets appear to reflect the signature of the marine-non marine alternations which is unexpected. This dataset may be unique for this type of setting and could generate some really exciting results.

• **Biostratigraphy:** Assemblages of microfossils are complex and difficult to interpret offshore in terms of paleoenvironment. The truly marine sections are clear, however the non-marine and transitional stages are more challenging to define. Additional ostracods, dinoflagellates and non-marine diatoms experts will join the Science Party for the OSP.
Core Description: Thick mud units (typically marine) and thin sandy bands (likely turbidite deposits) were recorded. M0080 yielded evidence of the earliest rifting phases: gravels and pebbly conglomerates, likely to be of fluvial and terrestrial origins.

Phys Props: Strength properties data were collected using in situ methods and a hand-held penetrometer. There are some correspondences to lithology and marine/isolated intervals, superimposed on a general consolidation trend.

In situ measurements: Temperature via CPT. Difficult ground conditions limited downhole logging activities. However, data were acquired from the upper 300 mbsf of M0079A and much of M0080A.
381 – Corinth Active Rift Development

<table>
<thead>
<tr>
<th>Hole</th>
<th>M0078A</th>
<th>M0078B</th>
<th>M0079A</th>
<th>M0080A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Status</td>
<td>Complete</td>
<td>Complete</td>
<td>Complete</td>
<td>Complete</td>
</tr>
<tr>
<td>Cores recovered</td>
<td>176</td>
<td>15</td>
<td>163</td>
<td>146</td>
</tr>
<tr>
<td>Drilled length (Coring, m)</td>
<td>610</td>
<td>56</td>
<td>705</td>
<td>534</td>
</tr>
<tr>
<td>Drilled length (Open hole, m)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Recovered length (m)</td>
<td>534</td>
<td>52</td>
<td>611</td>
<td>448</td>
</tr>
<tr>
<td>Recovery (%)</td>
<td>87%</td>
<td>93%</td>
<td>87%</td>
<td>84%</td>
</tr>
<tr>
<td>Final depth / Depth at midnight (mbsf)</td>
<td>610</td>
<td>56</td>
<td>705</td>
<td>534</td>
</tr>
<tr>
<td>Proposed site depth (mbsf)</td>
<td>750</td>
<td>N/A</td>
<td>750</td>
<td>479</td>
</tr>
</tbody>
</table>

- Currently ESO are undertaking thermal conductivity measurements on the whole rounds ahead of the OSP that starts at the end of the month.
- Follow the expedition via the blog (http://www.ecord.org/expedition381/) and/or Twitter (@ESO_Outreach)....
Scoping Activities

• ESO will send a representative to the 915-Pre Fjord Sediment Archives in the northeastern North Atlantic, planning workshop pre-EGU, 7-8 April 2018
• .....and any other workshops/meetings that may arise related to MSP proposals.....
• PMT meeting, Bremen, August 2017
• Insufficient IKCs secured to enable project to proceed in 2018/19
• Science Party recruitment process halted
• Drilling platform tendering exercise halted
• Renewed efforts are ongoing to secure appropriate and adequate IKCs in 2018 to enable rescheduling of the project
• ECORD IKC working group established: first meeting, 19 December 2017

2018/19; 2019/20?
Other ESO activities - completed

- 2\textsuperscript{nd} Petrophysics Summer School (CPD-accredited): 2-7 July 2017, Leicester
- 11\textsuperscript{th} ECORD Summer School: 21 August to 1 September 2017, Bremen
- Representation at ECORD Council meeting, 24-25 October 2017, Southampton (including a meeting with 866 lead proponent and CDEX representative)

Other ESO activities – coming up

- ECORD Training Course: April 2018, Bremen
- Representation at ECORD Facility Board meeting: 6-7 March 2018, Venice