COLUMBIA UNIVERSITY
IN THE CITY OF NEW YORK
LAMONT-DOHERTY EARTH OBSERVATORY

Final Cruise Report

OFFICE OF MARINE OPERATIONS

P.O. Box 1000 61 Route 9W Palisades, New York 10964 845-365-8428 Fax 845-365-8424

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Cruise name/number:	F2012-100: Bight Reorganization MGL1309 – Bight Reorganization

Authorizations:

Coastal State	Authorization Document Number	National Participant(s)
Iceland	UTN13010082/34.R.611, No. 1-2013	Ármann Höskuldsson, Sigvaldi Thordarson, Elías Eyflórsson, Jóhannes Marteinn Jóhannesson

Scientist in charge of reporting:

Name:	Richard Hey
Country/Nationality:	USA
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Brief description of scientific objective:

A month-long marine geophysical expedition to collect the multibeam, magnetics & gravity data that will provide a definitive test between the fundamentally different thermal & tectonic hypotheses for exactly how the Iceland plume (or whatever form of mantle convection or heterogeneity creates Iceland) caused the reorganization of the Mid-Atlantic Ridge south of Iceland. The data, collected along best-estimate flowline profiles, will be sufficiently closely spaced for three-dimensional analysis. An important result of this test will be that modelers will either be confident that their thermal Reykjanes Ridge reorganization models are providing accurate information about Earth's behavior, or that they can confidently begin to model the correct mechanism instead. An additional benefit of this project will be the first accurate map of the Bight transform fault/fracture zone complex, known to be an important pathway for westward flow of North Atlantic mid-water circulation across the Reykjanes Ridge boundary (Bower et al., 2002), an important control on global climate change (Siedler et al., 2001).

Objectives:
- MBES: to fully mosaic the main survey area near the Bight transform and western margin of reorganization boundary from main survey area to near Greenland shelf
- SBP: to map basement structures under sediment
- Gravity: to help understand basement structures under sediment
- Magnetics: to determine seafloor spreading history

Sailing Dates: August 13 – September 15, 2013

MGL1309 Blog: http://www.soest.hawaii.edu/North_Atlantic_Reorganization/

Update on anticipated dates for delivery of final results:

Metadata:	Rolling Deck 2 Repository (R2R) Data (Navigational Data): http://get.rvdata.us/cruise/MGL1309/products/r2rnav/MGL1309_bestres.r2rnav
Raw Data:	Rolling Deck 2 Repository (R2R) Data: http://www.rvdata.us/catalog/MGL1309
Processed Data:	Not Available (1/2015)
Data Analysis:	Not Available (1/2015)
WODC Data Registration (if applicable):	No Applicable
Data Report:	Not Available

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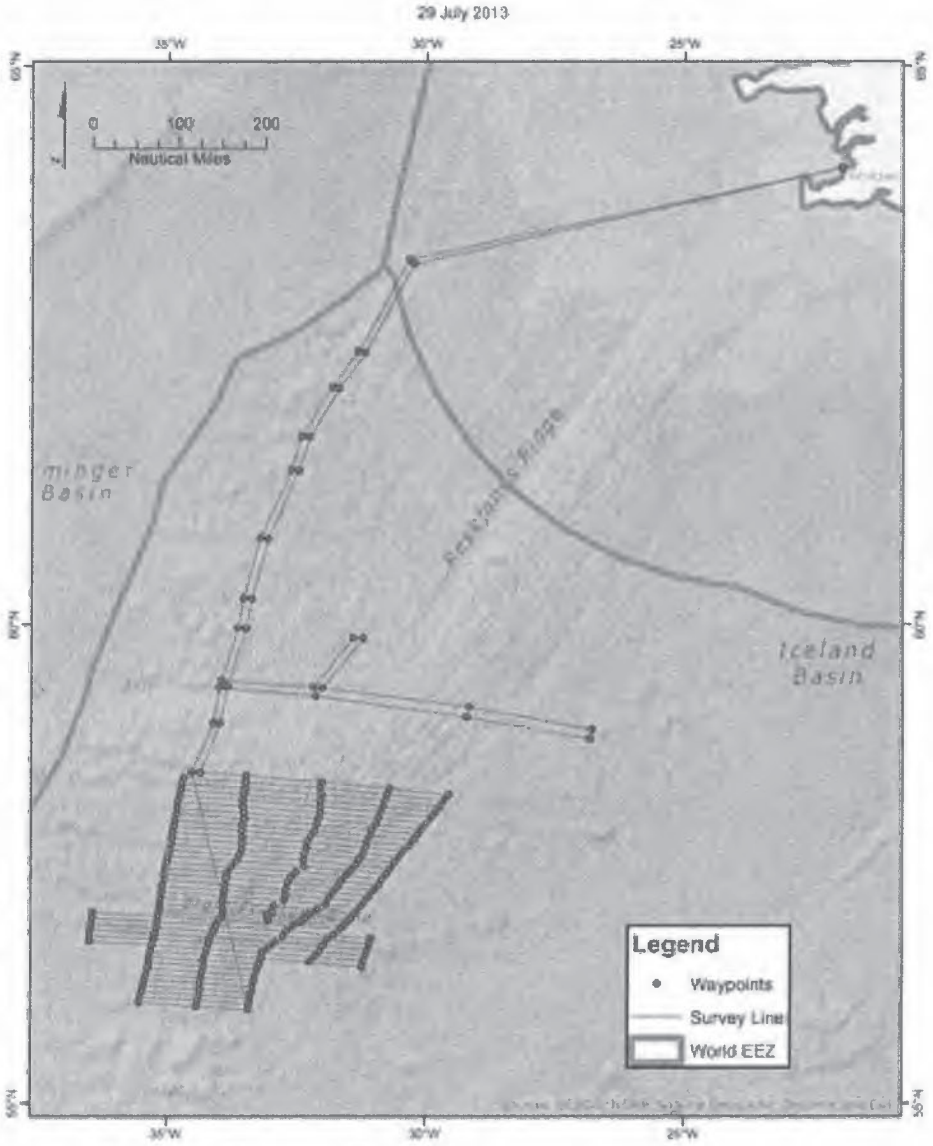
Append Image or URL illustration the route of the platform, locations where measurements were taken, and actual cruise track:



Cruise Trackline – Pre-cruise Trackline Proposal:

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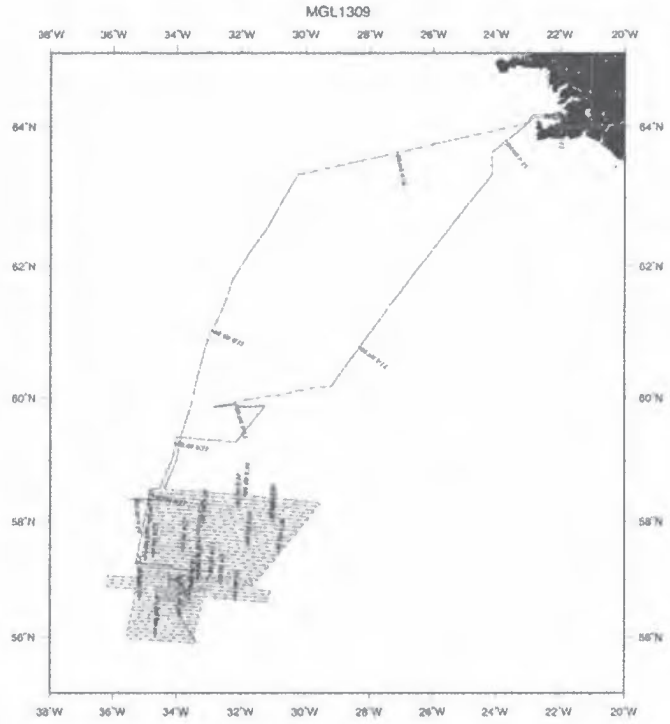
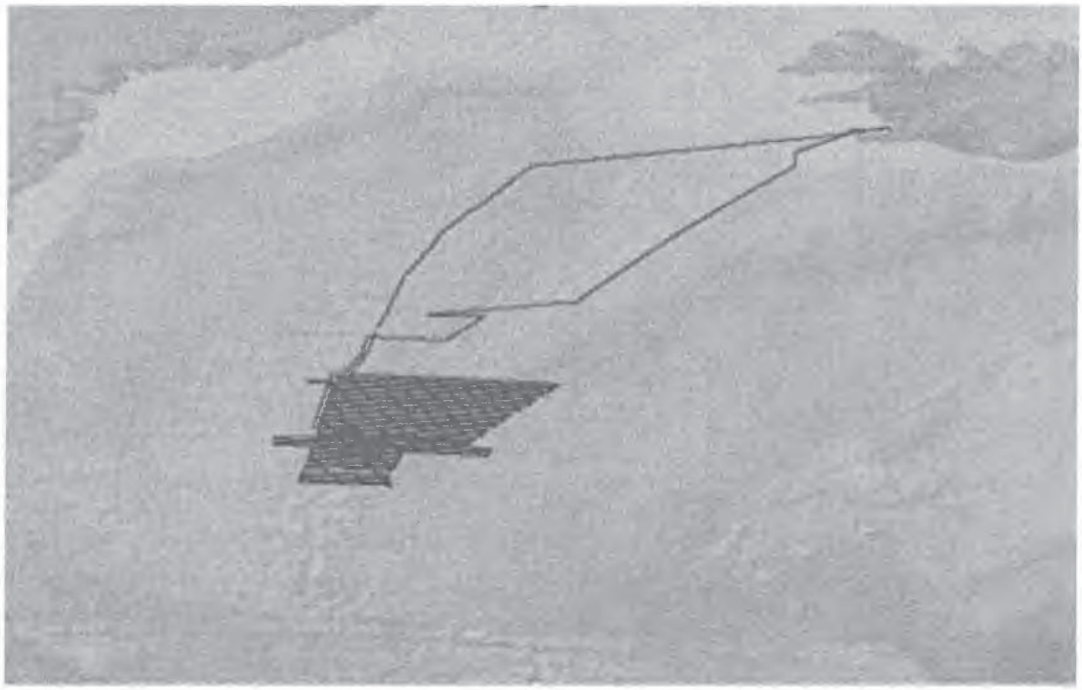


Cruise Trackline and Hydrographic Multibeam Survey lines:



Cruise Trackline and Hydrographic Multibeam Survey lines (Overlaid with Satellite Bathymetry):

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