

Project Description

1. General Information

1.1 Cruise name and/or number:	Reykjanes Ridge Segmentation - F2018-092
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1.2 Sponsoring institution(s):		
Name	Address	Name of Director
National Science Foundation	Dr. Maurice Tivey, Program Manager	Dr. Maurice Tivey, Program Manager
Woods Hole Oceanographic Institution	Kerry Strom 266 Woods Hole Rd. #37 Woods Hole, MA 02543	Mark Abbot

1.3 Scientist in charge of the project:	
Name:	Fernando Martinez
Country:	US
Affiliation:	University of Hawaii at Manoa
Address:	Hawaii Institute of Geophysics and Planetology School of Ocean and Earth Science and Technology 1680 East West Rd. Rm. 814A , 96822 US
Telephone:	808-956-6882
Email:	fernando@hawaii.edu

1.4 Entity(ies) /Participant(s) from coastal State involved in the planning of the project:	
Name:	See Section 6.2.
Country:	
Affiliation:	
Address:	
Telephone:	
Fax:	
Email:	
Website (for CV and photo):	

2. Description of Project

2.1 Nature and objectives of the project:
To study the tectonic evolution of segmentation on the Reykjanes Ridge through geophysical mapping of the formation and elimination of transform faults and fracture zones in time.

2.2 Relevant previous or future research projects:
R/V Knorr cruise in 2007: https://doi.org/10.7284/900249 R/V Marcus G Langseth cruise in 2017: https://doi.org/10.7284/902990

2.3 Previous publications relating to the project:
Martinez, F., and R. Hey (2017), Propagating buoyant mantle upwelling on the Reykjanes Ridge, Earth and Planetary Science Letters, 457, 10-22, doi: 10.1016/j.epsl.2016.1009.1057 Hey, R., F. Martinez, A. Håfsskuldsson, D. E. Eason, J. Sleeper, S. Thordarson, A. Benediktsdóttir, and S. Merkuryev (2016), Multibeam investigation of the active North Atlantic plate boundary reorganization tip, Earth and Planetary Science Letters, 435, 115-123, doi: 10.1016/j.epsl.2015.1012.1019 Benediktsdóttir, A., R. Hey, F. Martinez, and A. Håfsskuldsson (2016), A new kinematic model of the Mid-Atlantic Ridge between 55°55'N and the Bight Transform Fault for the past 6 Ma, Journal of Geophysical Research: Solid Earth, 121(2), 455-468 Benediktsdóttir, A., R. Hey, F. Martinez, and A. Håfsskuldsson (2012), Detailed Tectonic Evolution of the Reykjanes Ridge During the Past 15 Ma, Geochem. Geophys. Geosyst., 13, Q02008, doi:02010.01029/02011GC003948 Hey, R., F. Martinez, A. Håfsskuldsson, and A. Benediktsdóttir (2010), Propagating rift model for the V-shaped ridges south of Iceland, Geochem. Geophys. Geosyst., 11(3), Q03011

3. Geographical Areas

3.1 Indicate geographical areas in which the project is to be conducted (with reference in latitude and longitude, including coordinates of cruise track/ way points):
North Atlantic south of Iceland between 42°W-20°W and 56°N and 64°N.

3.2 Attach chart(s) at an appropriate scale (1 page, high-resolution) showing the geographical areas of the intended work and, as far as practicable, the location and depth of sampling stations, the tracks of survey lines, and the locations of installations and equipment.
Chart provided - see Section 10.1.

4. Methods and Means to be Used

4.1 Particulars of vessel:	
Name:	NEIL ARMSTRONG
Type/Class:	Ship
Nationality (Flag state):	United States
Identification Number (IMO/Lloyds No.):	9688946
Owner:	United States Navy
Operator:	Woods Hole Oceanographic Institution
Overall length (meters):	72.50
Maximum draught (meters):	4.60
Displacement/Gross tonnage:	2603.00
Propulsion:	2 Siemens AC Electric Motors, 2350 HP
Cruising:	11.00
Maximum speed:	14.00
Call sign:	
INMARSAT number and method and capability of communication (including emergency frequencies):	INMARSAT C- (IMN#) 436903967
Name of master:	Capt. Kent Sheasley
Number of crew:	20
Number of scientists on board:	15

4.2 Other craft in the project, including its use:
none

4.3 Particulars of methods and scientific instruments:		
Types of samples and measurements	Methods to be used	Instruments to be used
Multibeam bathymetry and acoustic imagery will be acquired continuously using the ship's hull-mounted Simrad EM122 sonar. Magnetic field measurements will be made using a towed magnetometer. Gravity measurements will be made using a Bell BGM-3 gravimeter. Sediment profiler records will be acquired using a Knudsen 12 kHz profiler.	All of the shipboard data will be acquired continuously while sailing in a pre-determined pattern of waypoints.	Kongsberg Simrad EM122 multibeam sonar. Knudsen sediment profiler. Towed magnetometer. Shipboard gravity meter (Bell BGM-3).

4.4 Indicate nature and quantity of substances to be released into the marine environment:
No

4.5 Indicate whether drilling will be carried out. If yes, please specify:
No

4.6 Indicate whether explosives will be used. If yes, please specify type and trade name, chemical content, depth of trade class and stowage, size, depth of detonation, frequency of detonation, and position in latitude and longitude:
No

4.7 Indicate whether protected species be studied. If yes, please specify:
No

5. Installations and Equipment

Details of installations and equipment (including dates of laying, servicing, method and anticipated timeframe for recovery, locations and depth, and measurements):
No

6. Dates

6.1 Expected dates of first entry into and final departure from the research area by the research vessel and/or other platforms:
Project Start Date: Jun 01, 2019

Project End Date: Aug 15, 2019

6.2 Coastal State-specific details:

Coastal Area	Estimated Entry Date	Estimated Departure Date
Greenland	Jun 01, 2019	Aug 15, 2019

Explanation of multiple entries:

The ship track may go in and out of the Greenland EEZ several times while at sea. No port entries are expected.

Research will be performed: between 12-200 nm

Extent to which Greenland will be enabled to participate or to be represented in the research project:

Scientific participant can be accommodated on cruise.

Name, affiliation and contact information for all participants from Greenland:

Coastal Area	Estimated Entry Date	Estimated Departure Date
Iceland	Jun 01, 2019	Aug 15, 2019

Explanation of multiple entries:

Ship track may go in and out of the Iceland EEZ at sea multiple times. Only one port departure and one entry are planned as part of this cruise.

Research will be performed: between 12-200 nm

Extent to which Iceland will be enabled to participate or to be represented in the research project:

Scientific participant can be accommodated on the cruise.

Name, affiliation and contact information for all participants from Iceland:

7. Port Calls

Port	Arrival Date	End Date	Special Logistical Requirements	Shipping Agent
Reykjavik	6/23/2019	6/24/2019	Fork lift, possibly crane ops.	TVG-Zimsen ehf Korngardar 2 104 Reykjavik Iceland Phone: 011 354 560 0700 Fax: 011 354 5600 780 24 Hour Mobile Service: 011 354 856 0701 gara@gara.is
Reykjavik	7/29/2019	8/2/2019	Fork lift, possibly crane ops	TVG-Zimsen ehf Korngardar 2 104 Reykjavik Iceland Phone: 011 354 560 0700 Fax: 011 354 5600 780 24 Hour Mobile Service: 011 354 856 0701 gara@gara.is

8. Participation of the representative of the coastal State

8.1 Modalities of the participation of the representative of the coastal State in the research project:

See Section 6.2.

8.2 Proposed dates and ports for embarkation/disembarkation:

See Section 6.2.

9. Access to Data, Samples and Research Results

9.1 Expected dates of submission to coastal State of preliminary report, which should include the expected dates of submission of the data and research results:

No more than 60 days from the end date of the research as provided in Section 6.1.

9.2 Anticipated dates of submission to the coastal State of the final report:

No more than 2 years from the end date of the research as provided in Section 6.1.

9.3 Proposed means for access by coastal State to data (including format) and samples:

Data will be provided through official channels at no cost to the coastal State(s). Samples will be provided upon request.

9.4 Proposed means to provide coastal State with assessment of data, samples and research results:
 Assessment of data, samples and research results will be provided at no cost to the coastal State(s).

9.5 Proposed means to provide assistance in assessment or interpretation of data, samples and research results:
 Assistance in further assessment or interpretation will be provided upon request.

9.6 Proposed means of making results internationally available:
 Data will be archived at the R2R repository (<http://www.rvdata.us/>) and interpretations will be published in peer-reviewed journals.

10. List of Supporting Documentation

10.1 List of attachments, such as additional forms required by the coastal State, etc.:			
Attachment Type	Description	Attachment	Submission Date
Proposed Cruise Track	Proposed track (solid black line) shown overlaid on regional magnetic anomaly map (A) and on regional satellite-derived gravity map (B). Black areas are land masses (labeled). Fine dashed lines are previous ship tracks from R/V Knorr cruise KN189-04 and R/V Marcus G Langseth cruise MGL1309.	0154843750_proposed_track_no_eez.jpg	Oct 17, 2018

