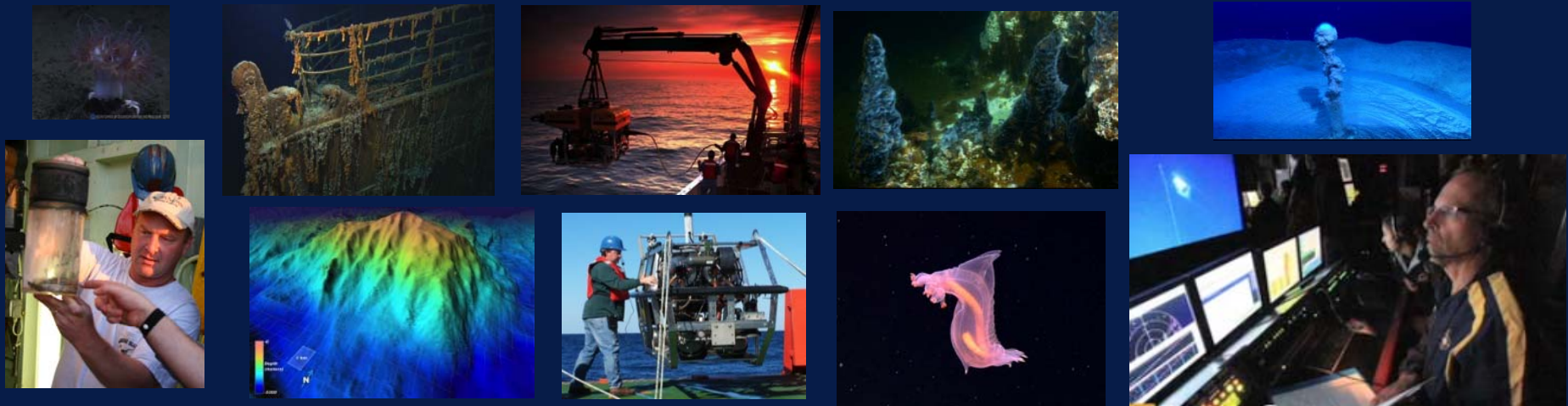


THE URI INNER SPACE CENTER  
USING TELEPRESENCE TECHNOLOGY TO FACILITATE  
REAL-TIME PARTICIPATION IN OCEAN RESEARCH CRUISES

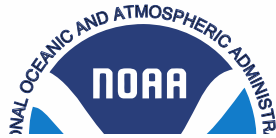
*Dwight F. Coleman*

Inner Space Center, University of Rhode Island Graduate School of Oceanography

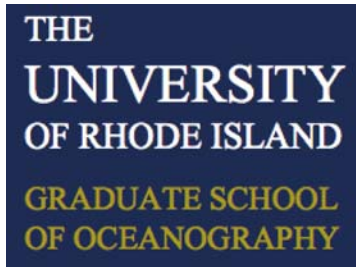
THE  
UNIVERSITY  
OF RHODE ISLAND  
GRADUATE SCHOOL  
OF OCEANOGRAPHY



# Inner Space Center Partnerships



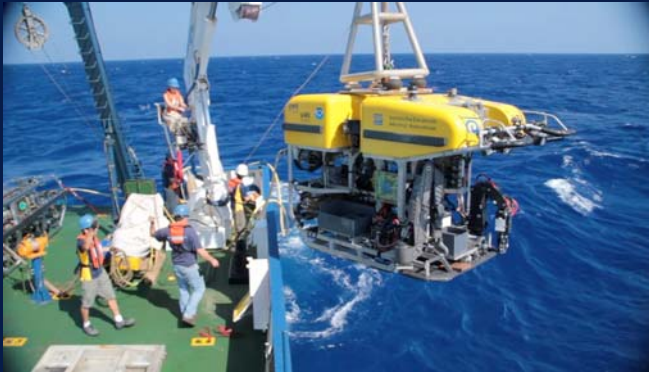
NATIONAL MARINE  
SANCTUARIES



# SHIPS AND ROVS FOR OCEAN EXPLORATION

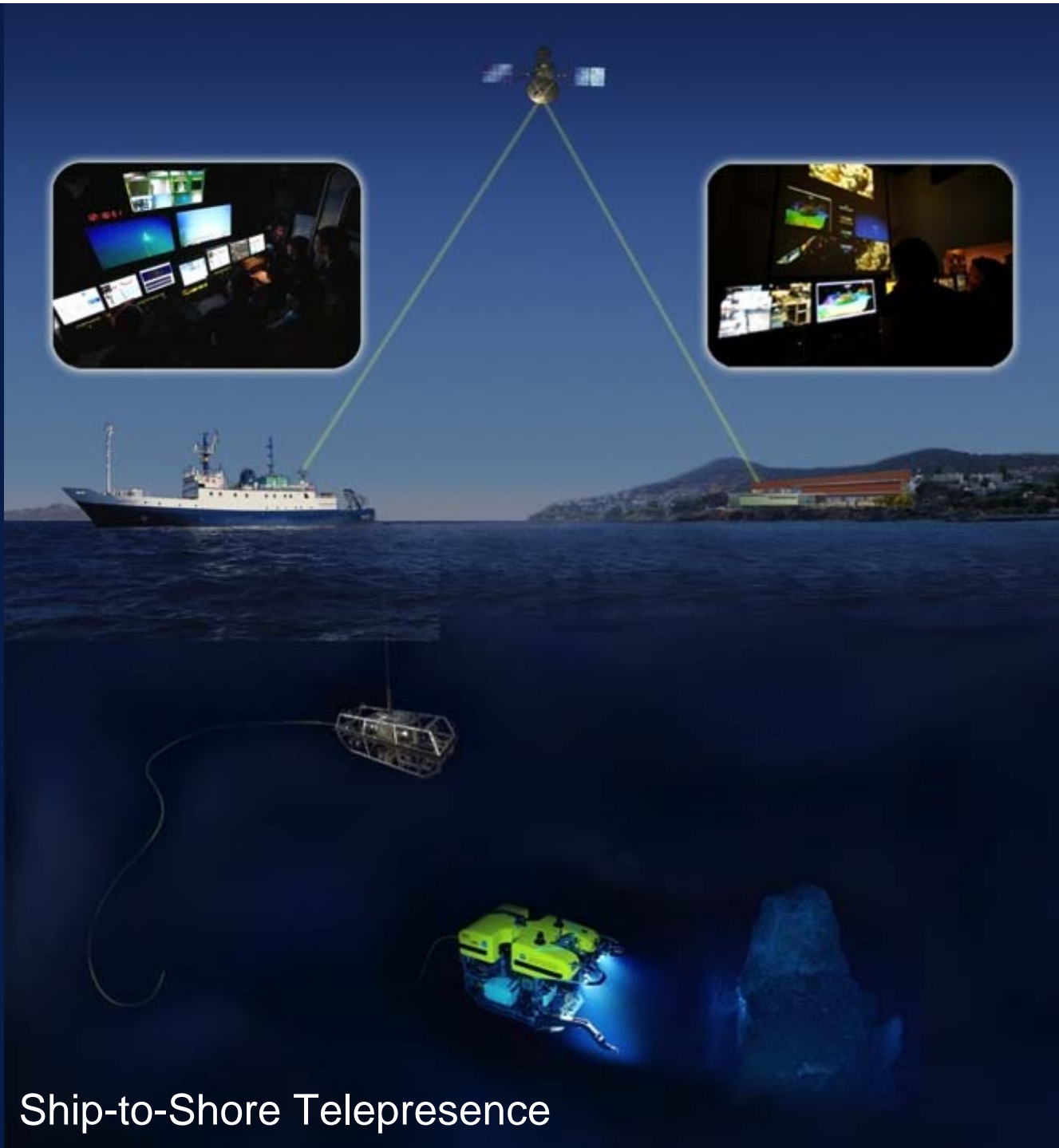


*E/V Nautilus*



*NOAA Ship Okeanos Explorer*





Ship-to-Shore Telepresence



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OF RHODE ISLAND  
GRADUATE SCHOOL  
OF OCEANOGRAPHY



Mission Control





ISC VIDEO BROADCAST AND PRODUCTION STUDIO

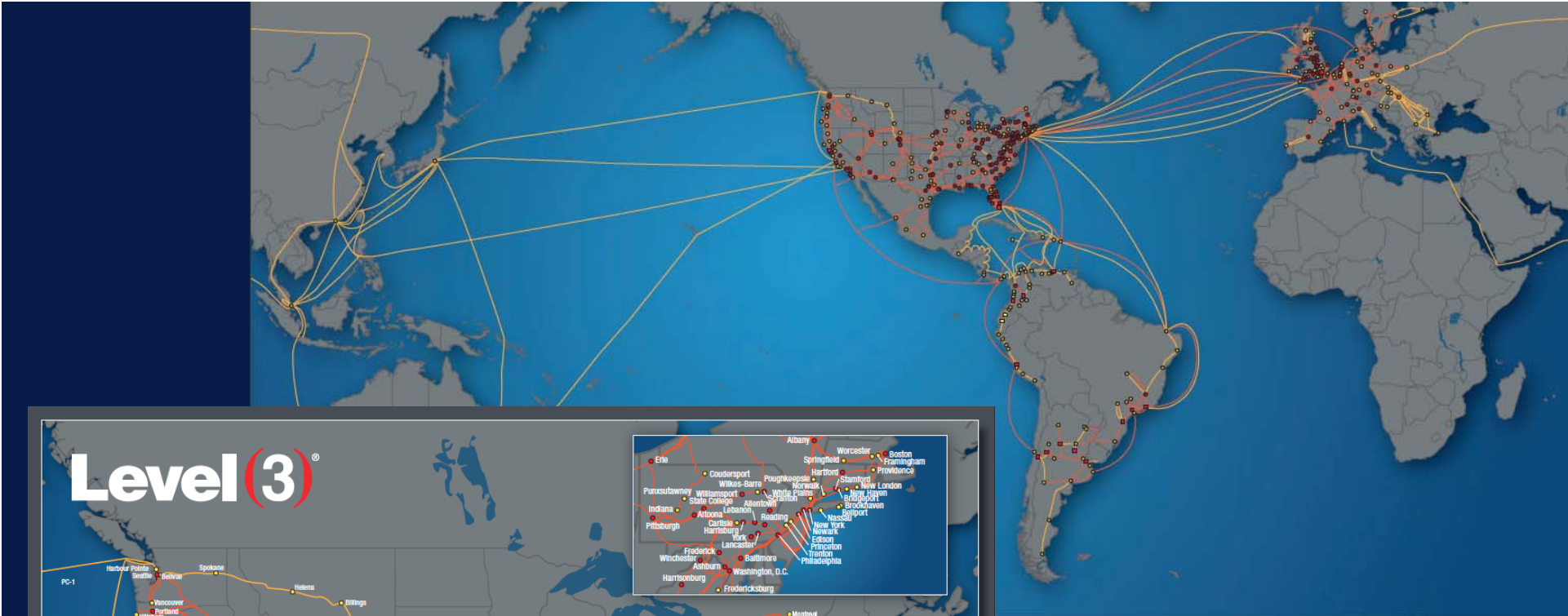


ISC Mission Control



ISC Mission Control





**Level 3**<sup>®</sup>

- THE LEVEL 3 NETWORK**
- ON-NET MARKET WITH METRO NETWORK (DATA CENTER - ■)
  - ON-NET MARKET (DATA CENTER - ■)
  - OWNED NETWORK
  - LEASED NETWORK

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**INTERNET2**

North America

# EXPLORATION COMMAND CENTERS (ECCs)



NOAA PMEL, Seattle, WA

NOAA Headquarters - Silver Spring, MD



University of Delaware



University of Haifa, Israel



University of New Hampshire



Mystic Aquarium – Nautilus Live Theater, CT



Cape Henry Collegiate School, VA



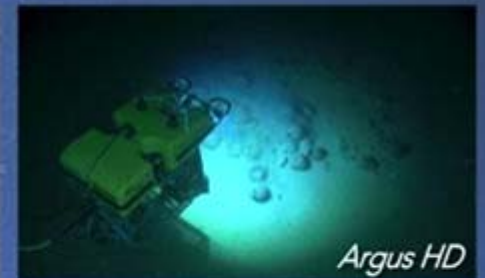
Exploratorium, San Francisco



Scottsdale, AZ Boys & Girls Club

# *EV Nautilus - 2011 Expedition*

*NA013- August 22 2011 - Knidos O*



*EV system Argus and Hercules.*



MYSTIC  
AQUARIUM

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UNIVERSITY  
OF RHODE ISLAND

COMPOSITE VIDEO STREAM

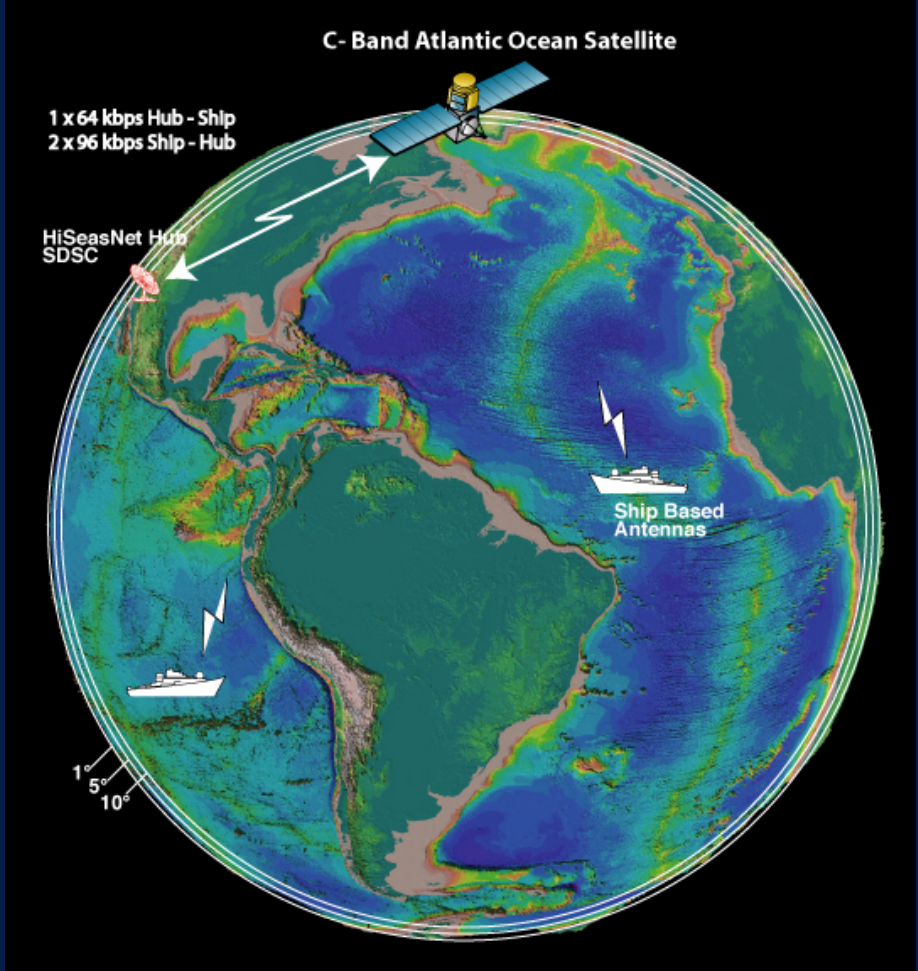
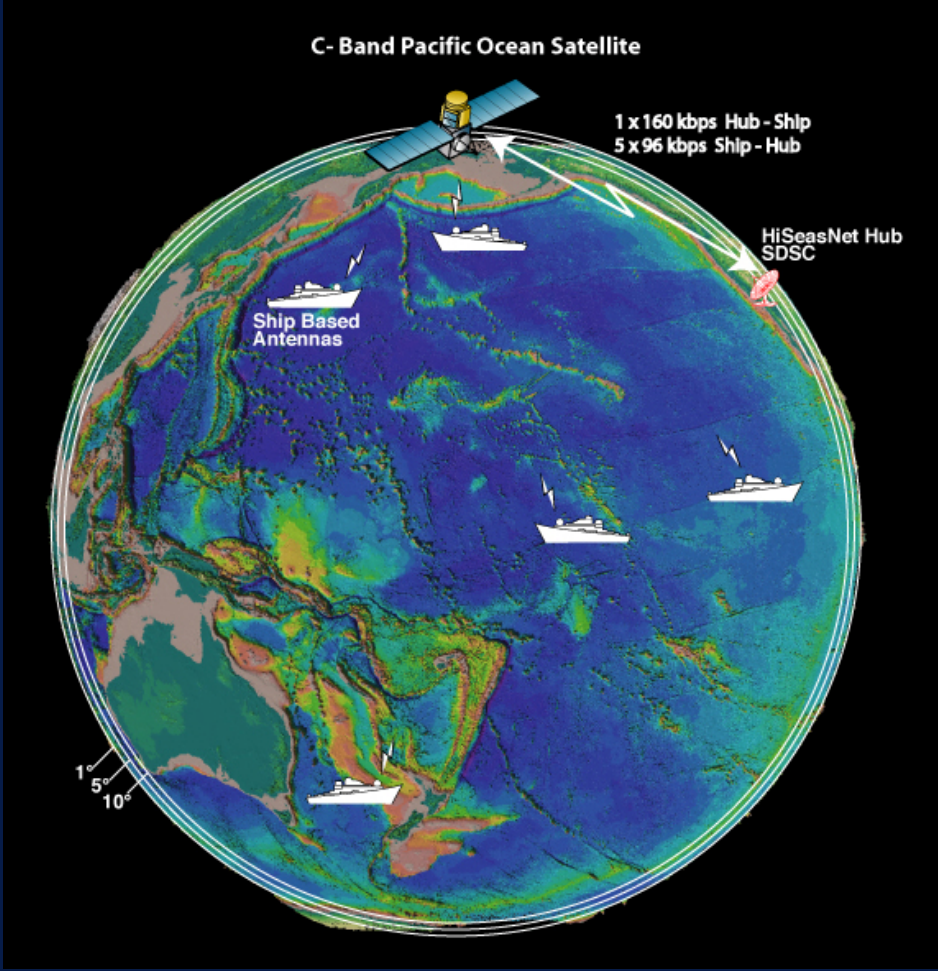


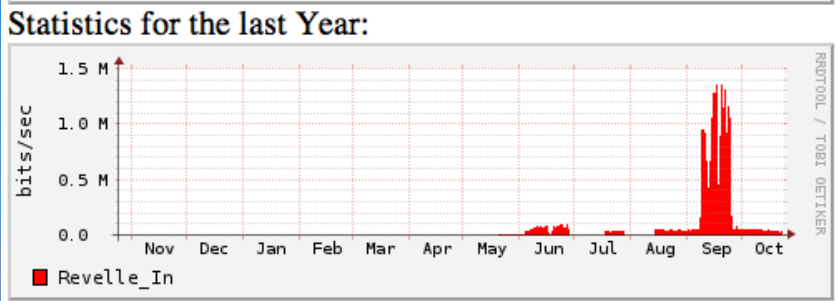
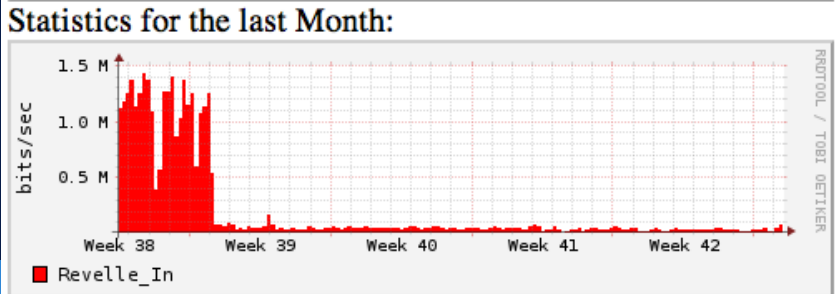
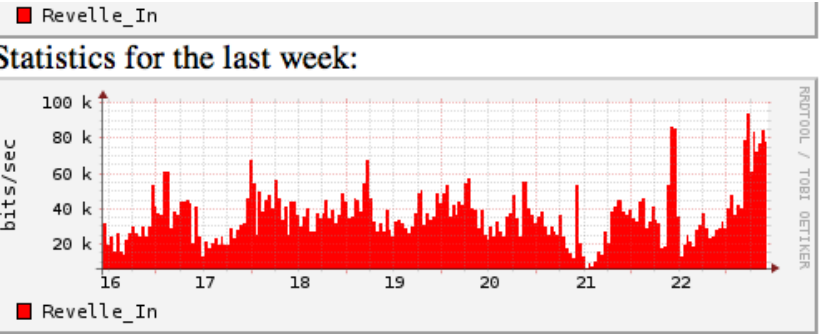
Cloud Services  
Streaming Video  
Content Delivery Networks (CDN)  
IPTV / Roku



# HiSeasNet

INTERNET FOR OCEANOGRAPHIC SHIPS AT SEA



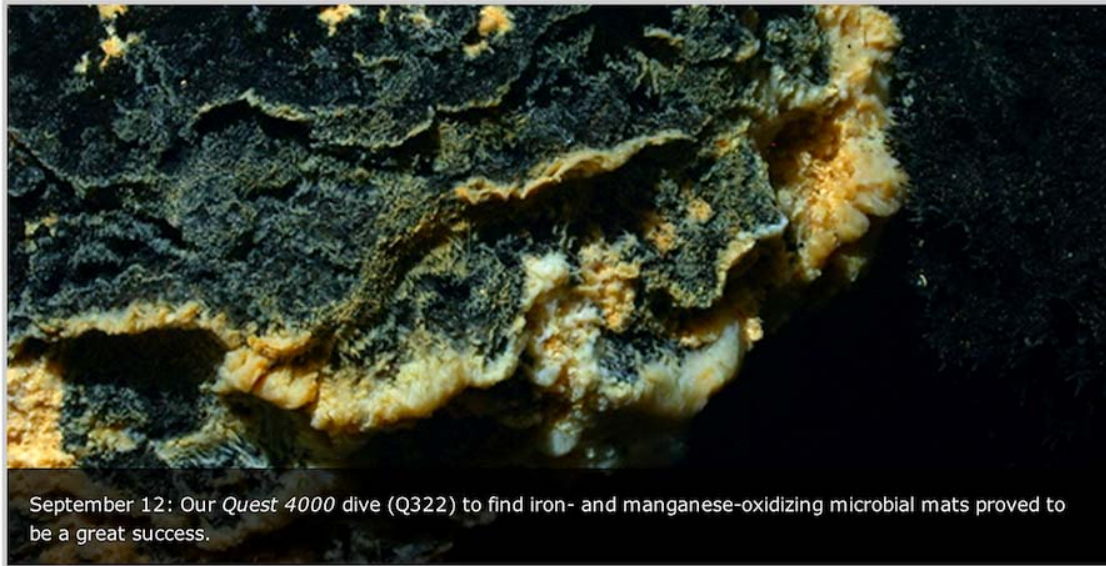


Submarine Ring of Fire  
NE Lau Basin 2012



## Submarine Ring of Fire 2012: NE Lau Basin

[Video Playlist](#) | [Mission Logs](#) | [Updates](#) | [Photo & Video](#) | [Science](#) | [Education](#) | [Explorers](#) | [Ask an Explorer](#)



September 12: Our *Quest 4000* dive (Q322) to find iron- and manganese-oxidizing microbial mats proved to be a great success.

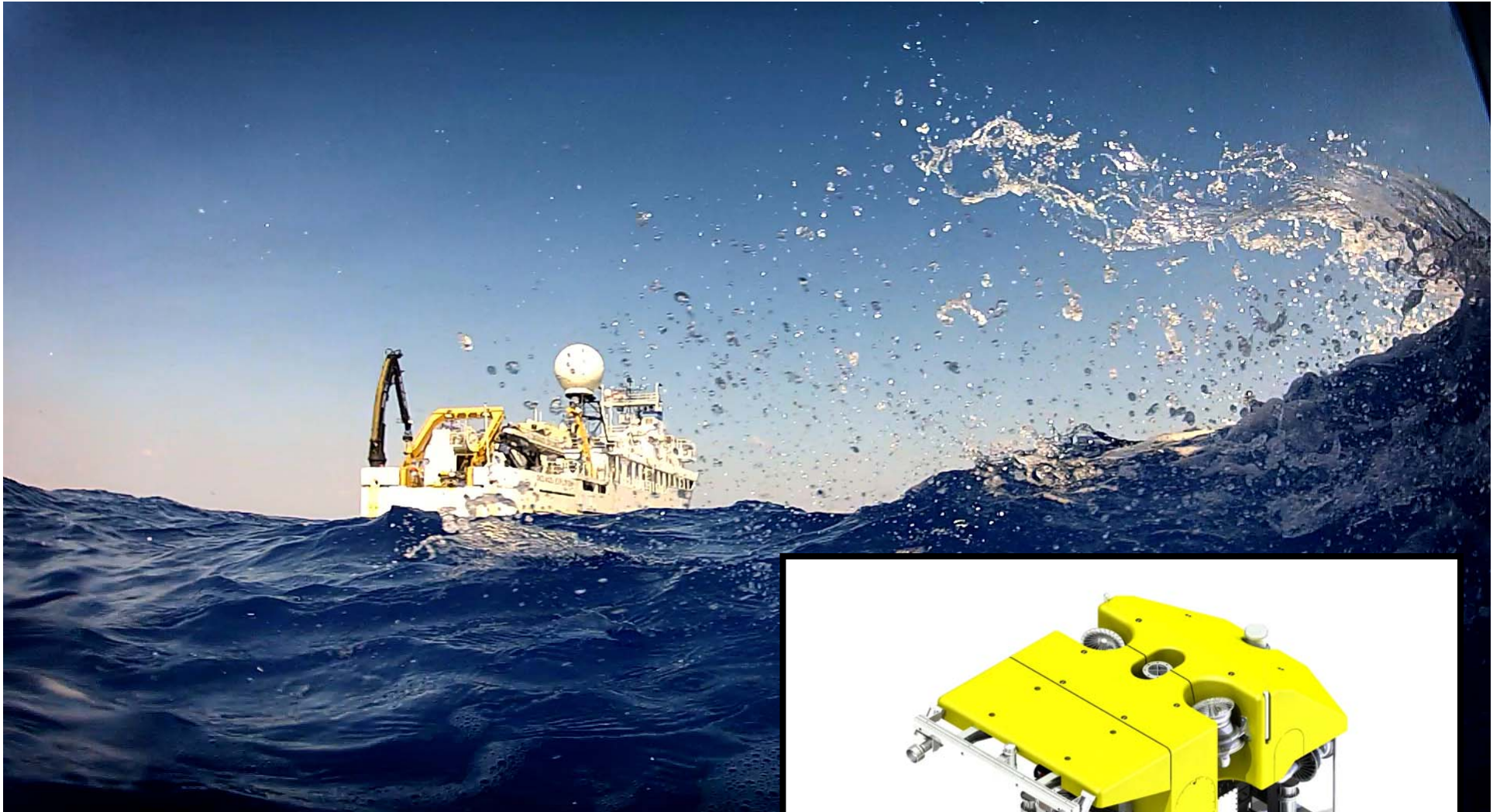


### September 9 - 26, 2012

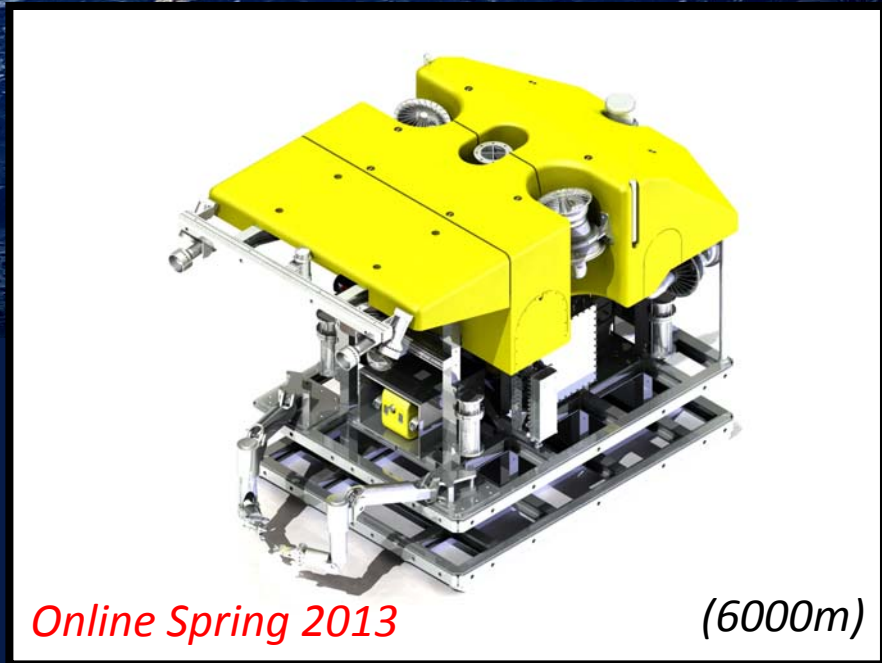
Submarine Ring of Fire 2012: NE Lau Basin is the latest in a series of expeditions to explore the submarine volcanoes of the Western Pacific. An interdisciplinary team of 27 scientists and technical experts from the United States, New Zealand and Australia will work closely with a team from the [MARUM Center for Marine Environmental Sciences](#) from the University of Bremen (Federal Republic of Germany) to utilize the remotely operated vehicle *Quest 4000* to explore and collect samples at volcanic vents and hot springs. Our primary objective will be to explore and to characterize the unique ecosystems in the NE Lau basin through examination of their geology, chemistry, and macro- and micro- biology. [Read more...](#)



Submarine Ring of Fire 2012



NOAA Ship  
*Okeanos Explorer*  
ROV Upgrade

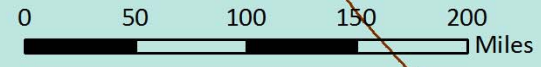


*Online Spring 2013*

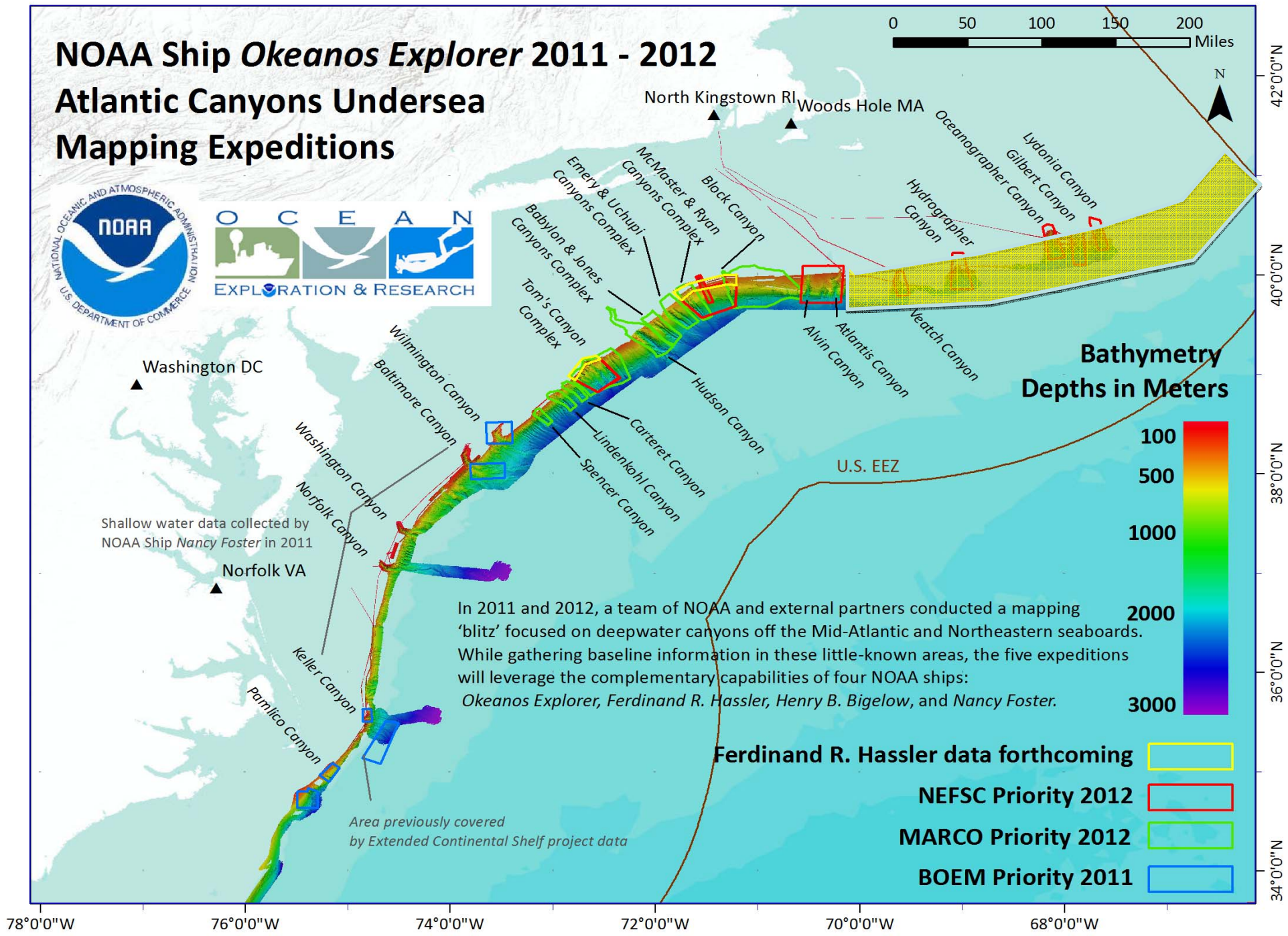
*(6000m)*

# NOAA Ship *Okeanos Explorer* 2011 - 2012

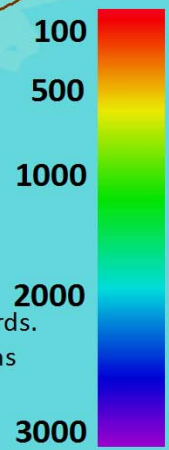
## Atlantic Canyons Undersea Mapping Expeditions



42°0'0"N  
40°0'0"N  
38°0'0"N  
36°0'0"N  
34°0'0"N



**Bathymetry**  
Depths in Meters



In 2011 and 2012, a team of NOAA and external partners conducted a mapping 'blitz' focused on deepwater canyons off the Mid-Atlantic and Northeastern seaboard. While gathering baseline information in these little-known areas, the five expeditions will leverage the complementary capabilities of four NOAA ships: *Okeanos Explorer*, *Ferdinand R. Hassler*, *Henry B. Bigelow*, and *Nancy Foster*.

- Ferdinand R. Hassler data forthcoming
- NEFSC Priority 2012
- MARCO Priority 2012
- BOEM Priority 2011

Area previously covered by Extended Continental Shelf project data

78°0'0"W    76°0'0"W    74°0'0"W    72°0'0"W    70°0'0"W    68°0'0"W

# 2013 Projected New Partnerships

## National Deep Submergence Facility



Inner Space  
center



# R/V Thompson



R/V *Atlantis*



NSF Funded  
ROV *Jason II* Cruises  
Summer/Fall 2013

R/V *Falkor*  
HROV *Nereus*



SCHMIDT OCEAN INSTITUTE

Mid-Cayman Rise Project  
June 2013

## Juan de Fuca Ridge – 2013

Planned Thompson, Atlantis, and Falkor Cruises for projects to support OOI-RSN, Neptune Canada, and NSF initiatives

HiSeasNet coverage  
MTN satellite coverage  
Use shared bandwidth  
Verizon quote

Logistics?

