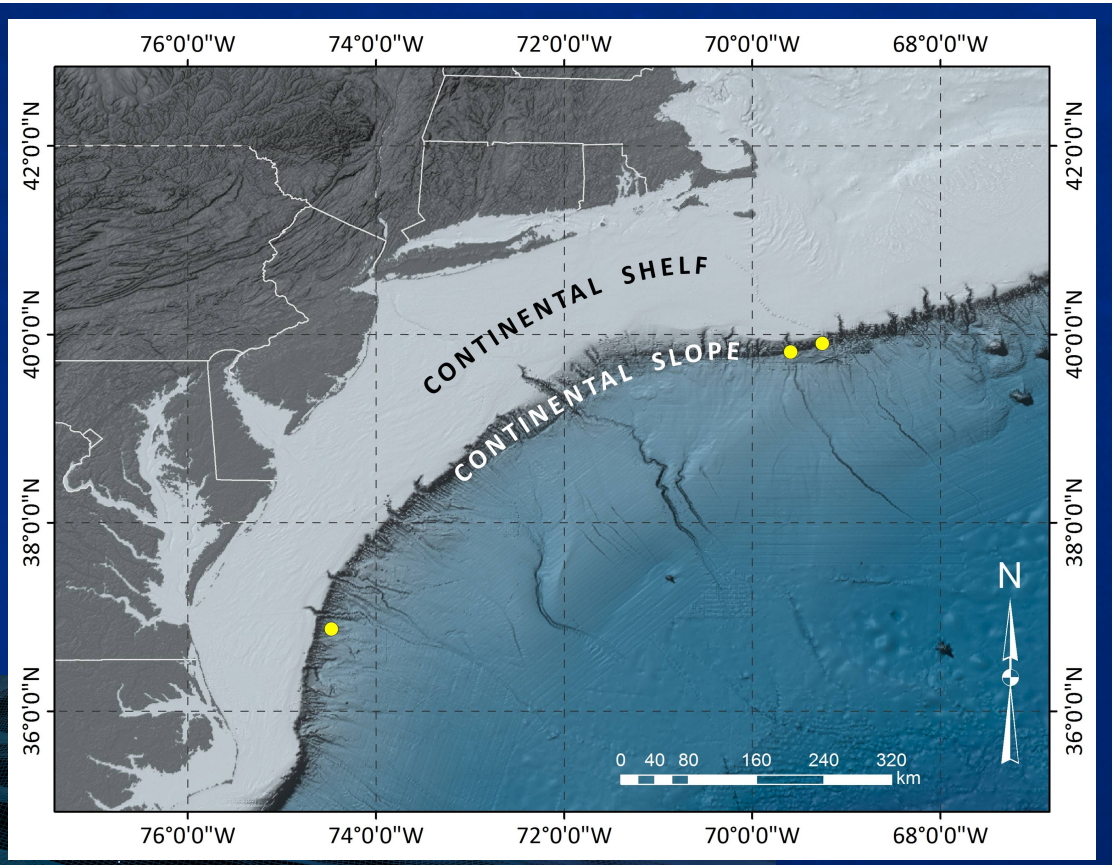
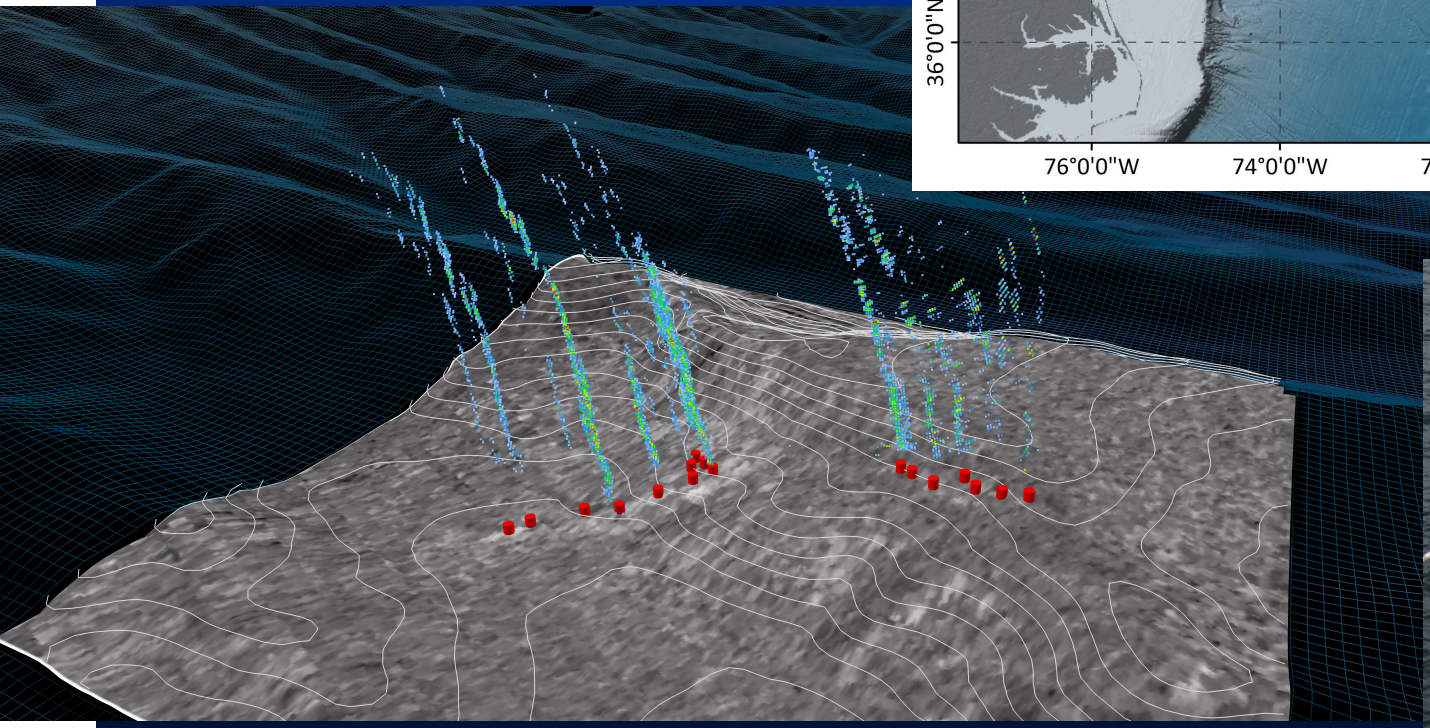
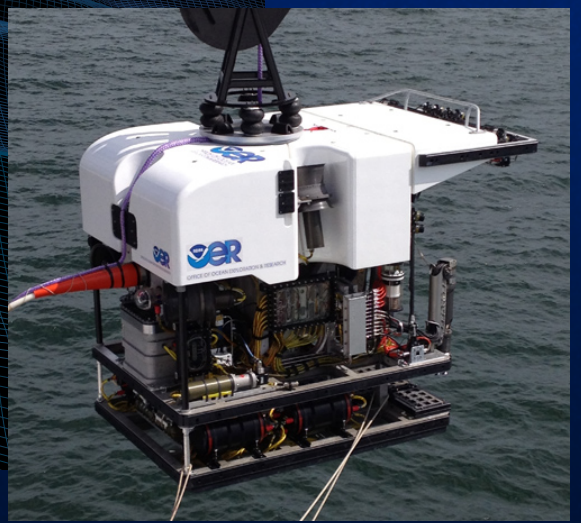
EXPLORE


NOAA
R 337


76°0'0"W
74°0'0"W
72°0'0"W
70°0'0"W
68°0'0"W
42°0'0"N
40°0'0"N
38°0'0"N
36°0'0"N
CONTINENTAL SHELF
CONTINENTAL SLOPE
N
0 40 80 160 240 320
km






CRONUS
Digital Matrix Intercom
KIMTECH
130 15 31 02

NAUTILUS EXPLORATION PROGRAM

NA026 & NA029
Hydrocarbon Detection
Mapping

NA028 ECOGIG

NA027 Shipwreck 15577

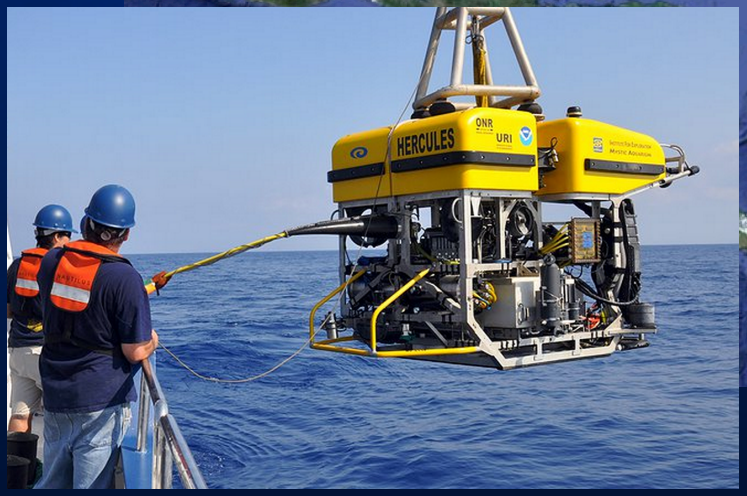
NA031 Cayman Rise

NA032 Puerto Rico

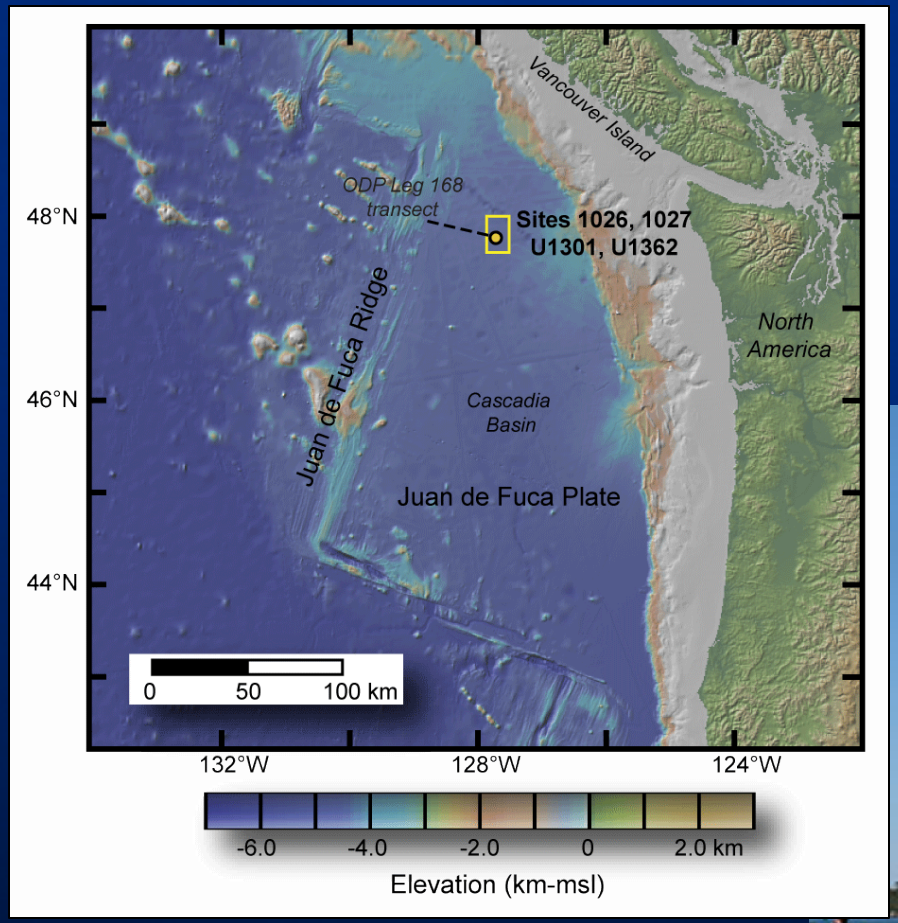
NA033
Montserrat

NA034
Kick'em Jenny

NA034 Trinidad
Tar Seeps



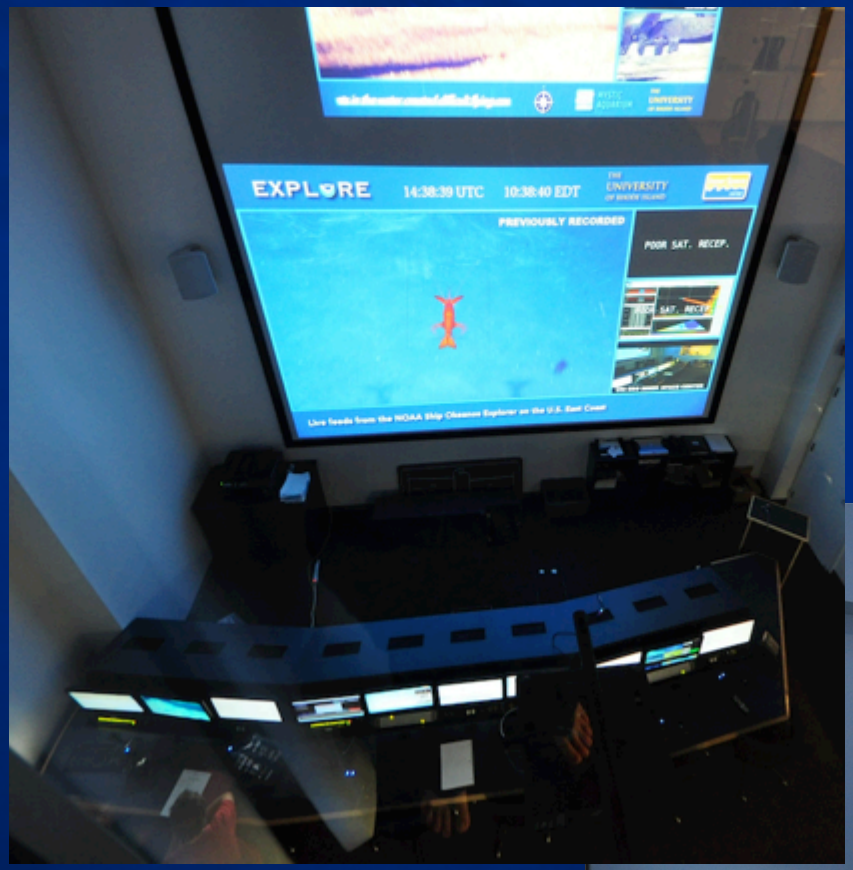
National Deep Submergence Facility




Jason


Nautilus


Okeanos Explorer

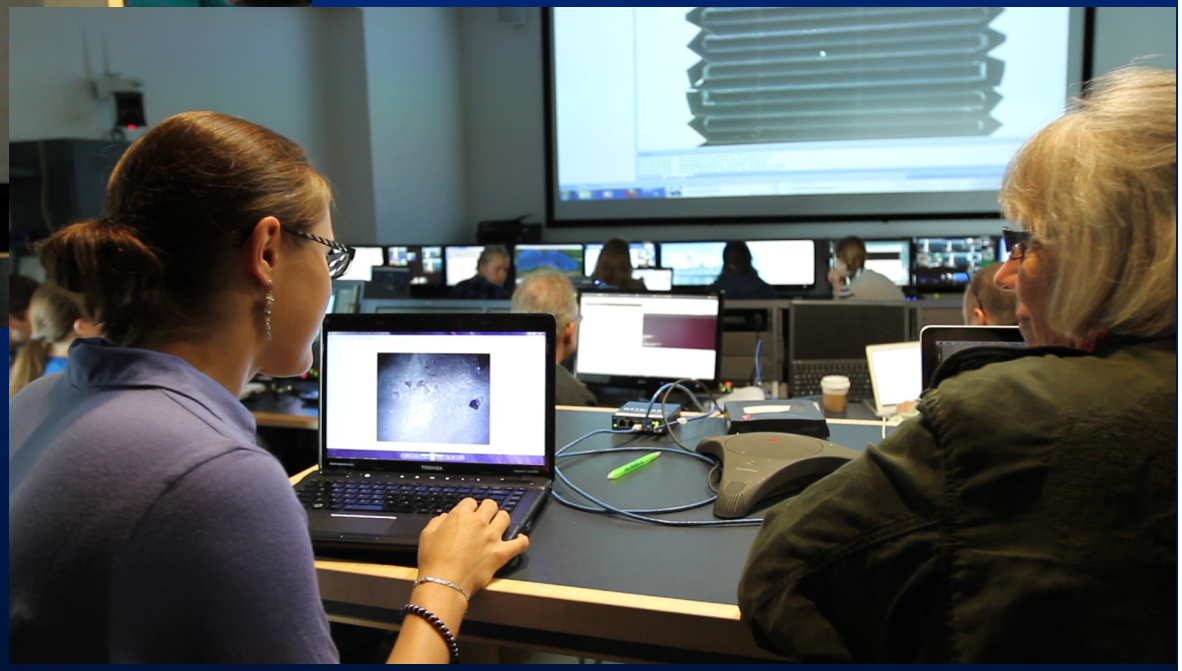


THE
UNIVERSITY
OF RHODE ISLAND
GRADUATE SCHOOL
OF OCEANOGRAPHY

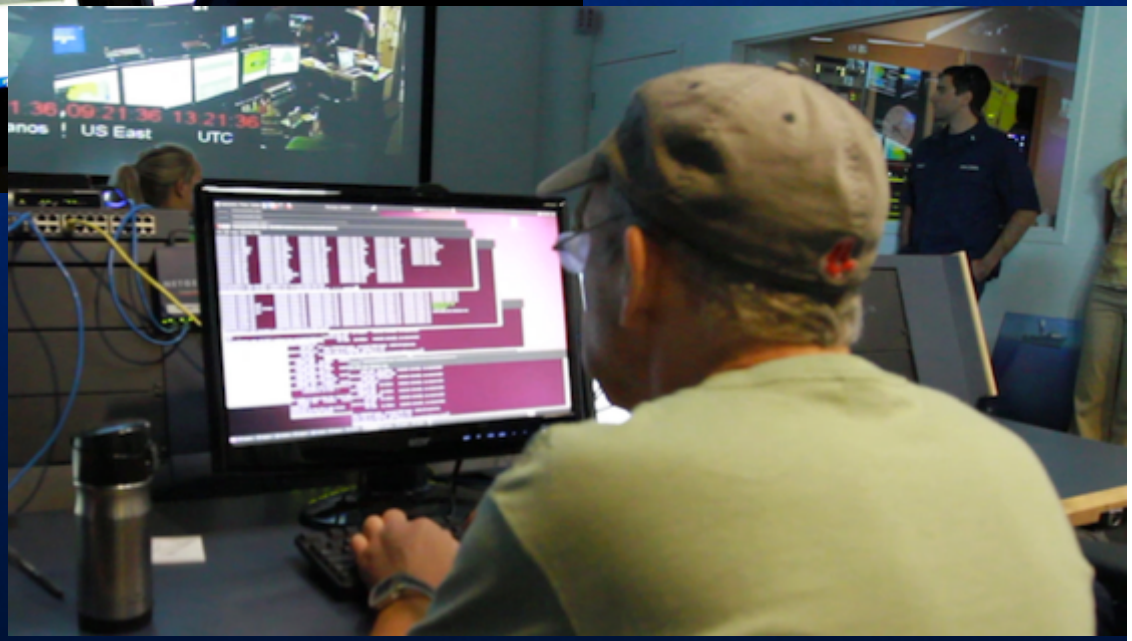
Inner Space
center

Mission Control


MS-3
MS-10 GV1
MS-11 GV2



ISC Mission Control



ISC Mission Control


TECHIE


2

Internet2


Level (3)
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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North America

U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

Ocean Explorer ○ NOAA ● Search

OKEANOS explorer

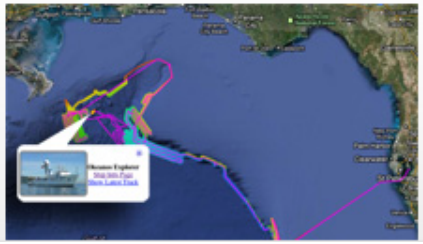
OCEAN EXPLORER | EXPEDITIONS | EDUCATION | ABOUT

NOAA Ship Okeanos Explorer, "America's Ship for Ocean Exploration"

Featured Expedition: Gulf of Mexico 2012 Expedition

Featured Content

Watch video clips from the *Okeanos Explorer* Gulf of Mexico 2012 Expedition. See how scientists used the tandem remotely operated vehicles (ROV's), *Little Hercules* and *Seirios*, to explore deep-sea habitats and marine life in the northern Gulf of Mexico.

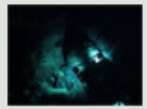



Okeanos Explorer


Education


Explorations


Slideshows


Video Playlist


Okeanos Explorer Digital Atlas

STAY CONNECTED

NATIONAL GEOGRAPHIC

SEA RESEARCH FOUNDATION

NAUTILUS LIVE

Explore the ocean LIVE with Dr. Robert Ballard and his Corps of Explorers aboard E/V Nautilus

THE MISSION | THE HIGHLIGHTS | THE TECH | THE TEAM | THE LATEST | FOR EDUCATORS | FOR KIDS

SHIP STATUS

Offseason

02:34 AM WED MAY 01

CURRENT STATUS

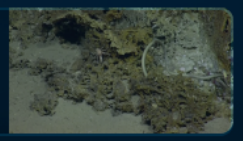
Want to sail on Nautilus? Go here to find out how:
http://www.oceanexplorationtrust.org/opportunities *4 months 2 weeks* ago

EVENT LOG

Data log offline

HIGHLIGHTS

2012 Nautilus Biology Summary
7 months 4 weeks ago



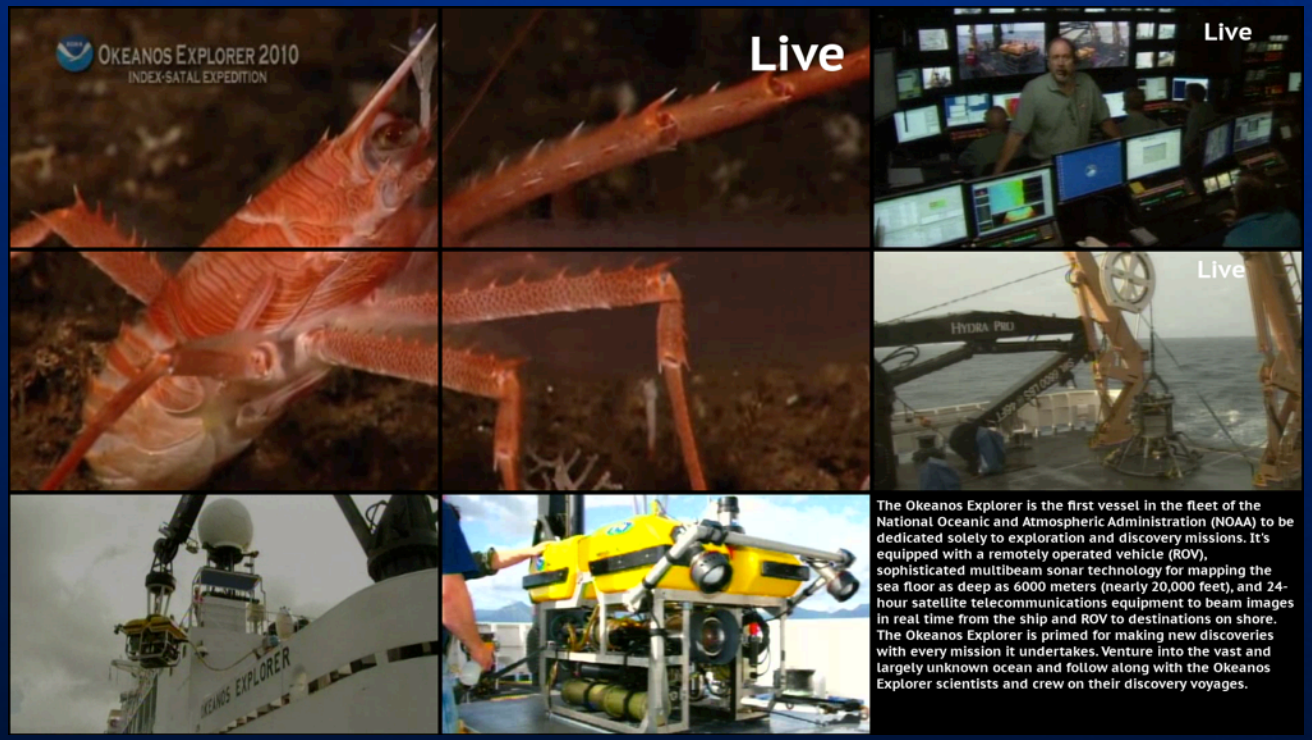
Knidos O Shipwreck - Dive Highlights
8 months 3 days ago

Knidos P Shipwreck - Dive Highlight
8 months 3 days ago

E/V Nautilus
SHIP OF EXPLORATION
SHIP LOCATION

ROV Hercules
UNMANNED SUBMERSIBLE

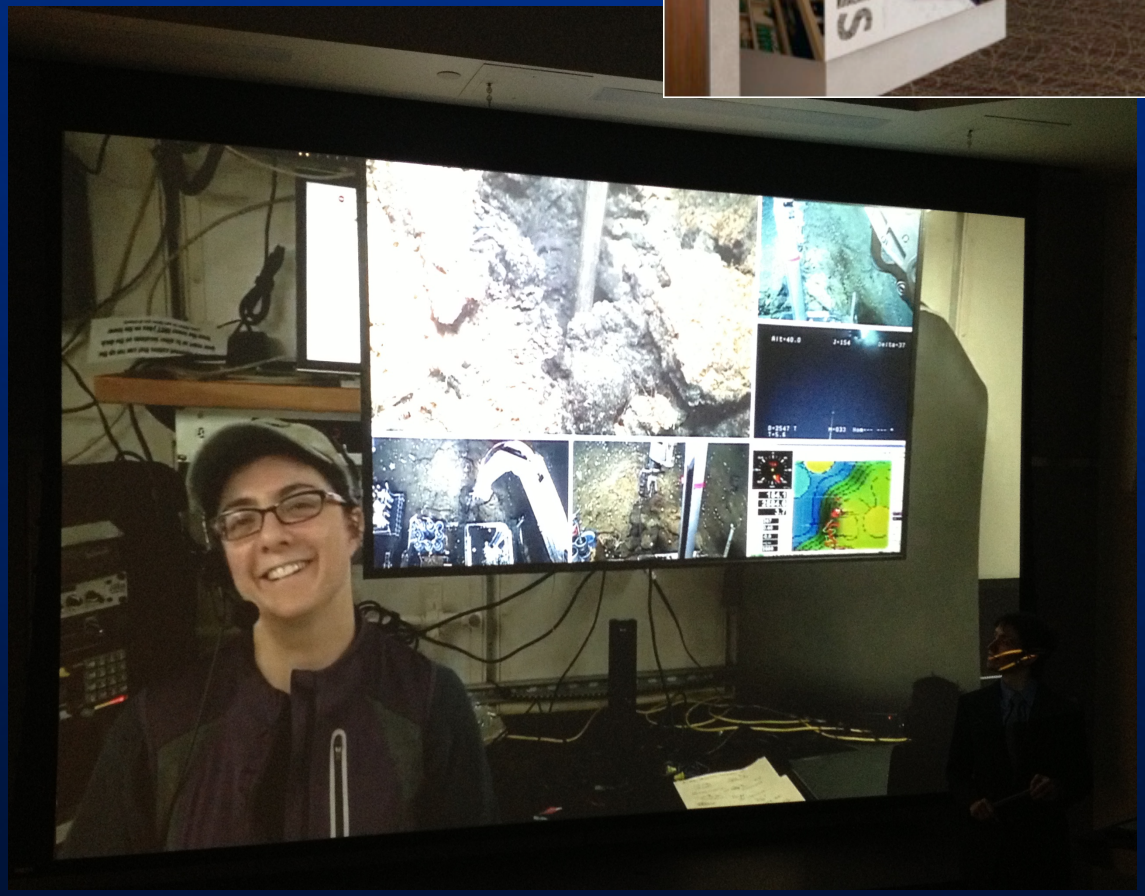
ROV Argus
UNMANNED SUBMERSIBLE

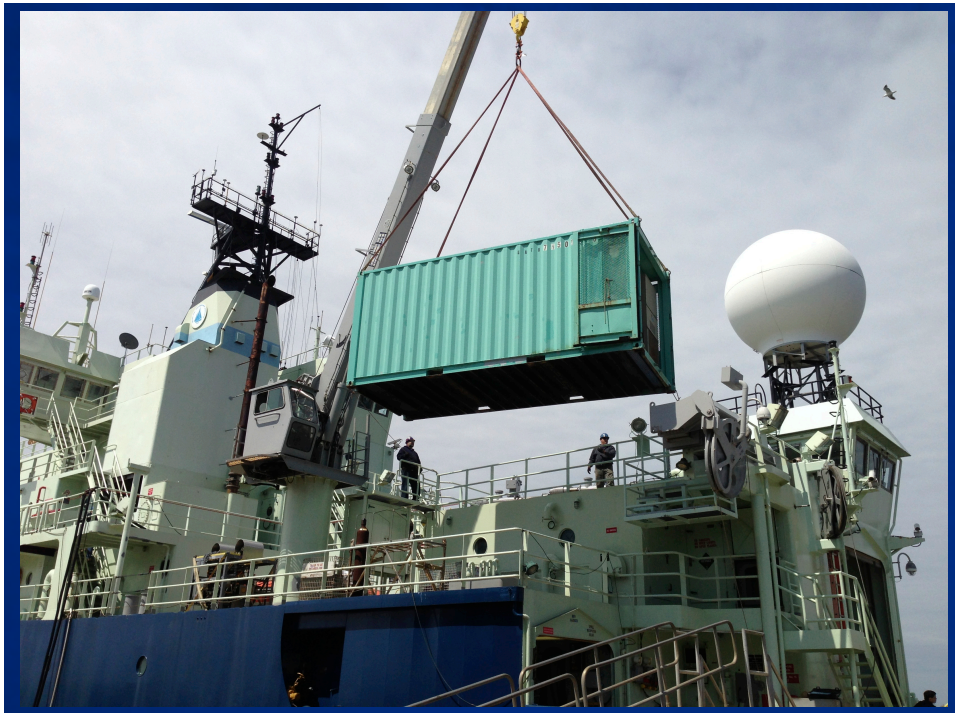


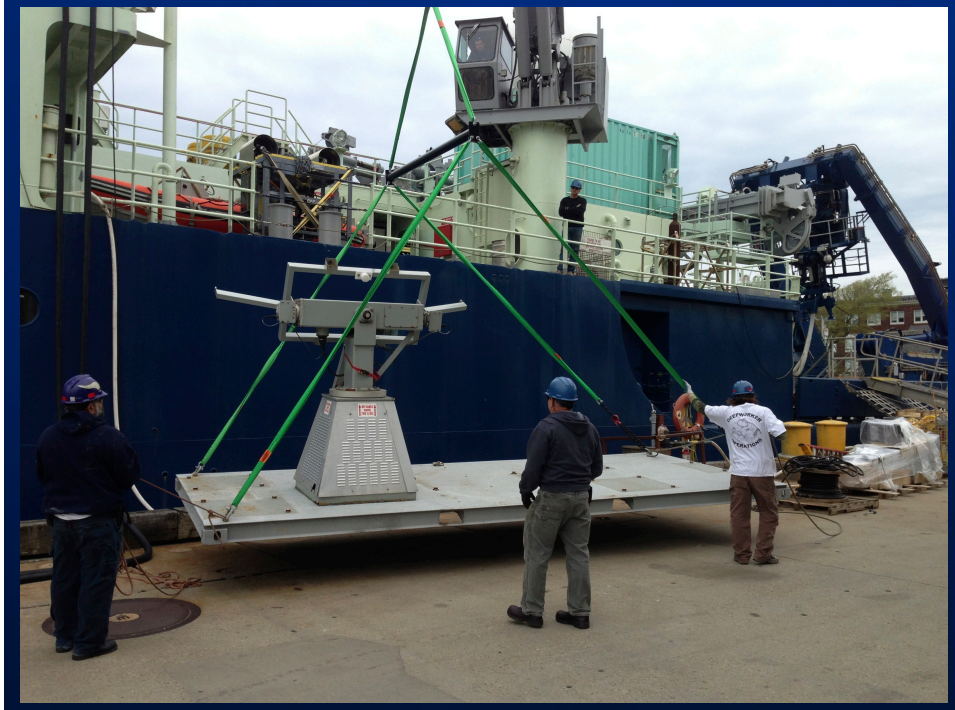
The Okeanos Explorer is the first vessel in the fleet of the National Oceanic and Atmospheric Administration (NOAA) to be dedicated solely to exploration and discovery missions. It's equipped with a remotely operated vehicle (ROV), sophisticated multibeam sonar technology for mapping the sea floor as deep as 6000 meters (nearly 20,000 feet), and 24-hour satellite telecommunications equipment to beam images in real time from the ship and ROV to destinations on shore. The Okeanos Explorer is primed for making new discoveries with every mission it undertakes. Venture into the vast and largely unknown ocean and follow along with the Okeanos Explorer scientists and crew on their discovery voyages.

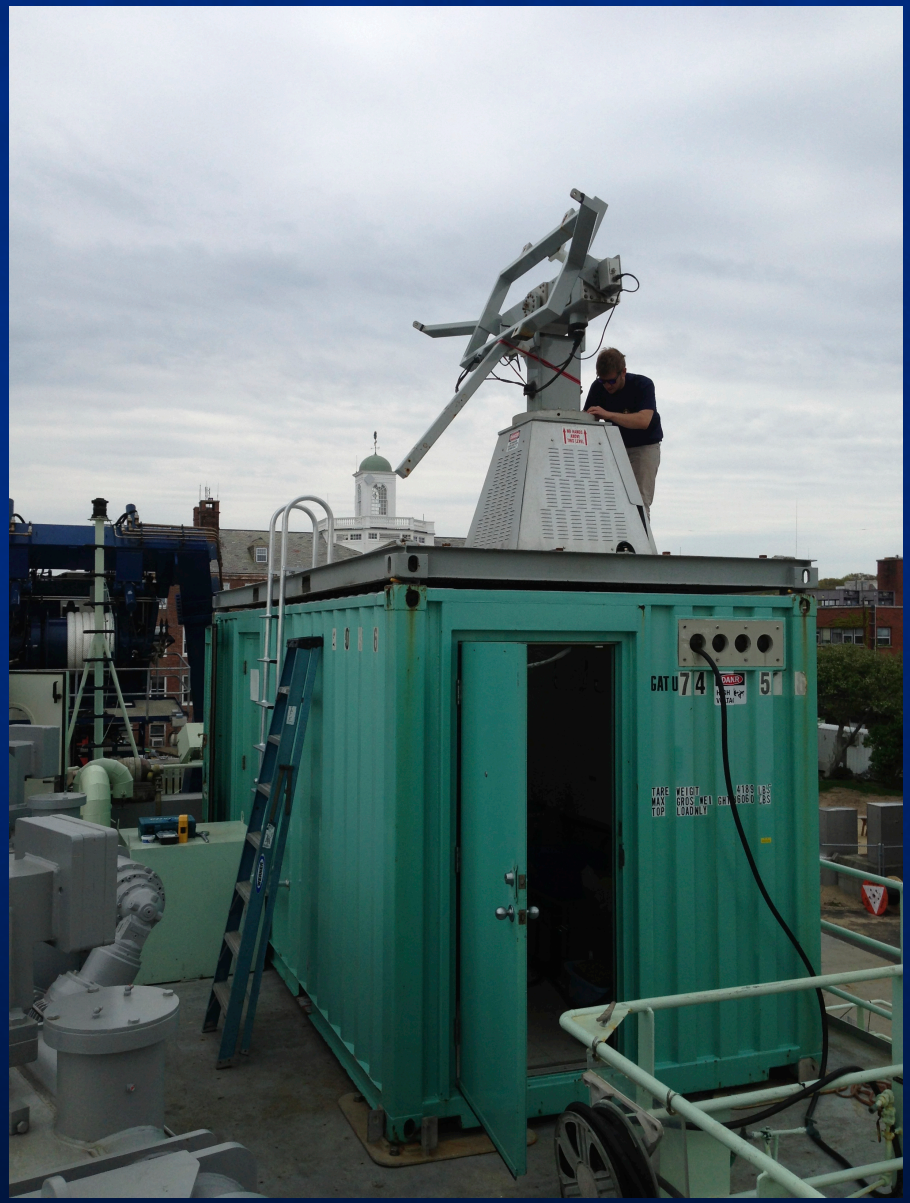
Smithsonian
National Museum of Natural History

Q?rius









Mobile Telepresence Unit (MTU)


15:22:32
15:22:34
HD

Communication Requirements

for implementing Telepresence

What is Telepresence?

- Public Viewing
- Remote Learning/Outreach
- Media Events/Outreach
- Telepresence-Enabled Science

Examples of Telepresence

- Public Viewing – ExplorationNow (Nautilus, Atlantis, Thompson, Okeanos), OceanExplorer (Okeanos, Lau Basin), NEPTUNECanada (Thompson), SOI (Falkor)
- Remote Learning/Outreach - Okeanos, Nautilus, NEPTUNECanada (Thompson)
- Media Events/Outreach - Okeanos, Nautilus, NEPTUNECanada (Thompson)
- Telepresence-Enabled Science - LostCity 2005, Nautilus, Okeanos, Sentry AUV 2012

Public Viewing:

Definition & Communication Requirements

- This is the largest potential audience and resource for raising awareness of a Project, Program or a vessel.
- Engagement opportunities: Web-based passive viewing by general public and media outlets.
- Requirements: 1.5-2Mbps, 1 stream of SD video

Remote Learning/Outreach:

Definition & Communication Requirements

- Events targeted towards smaller audiences (aquariums, museums, public venues) and classrooms that increase mission/program/ vessel awareness.
- Hosted by representatives of the science party and/or the program. The events are hosted at a shore-side facility with members from the at-sea team joining via satellite.
- Requirements: 1.5-2Mbps. 1 stream of SD video, 2-way audio communication

Media Events/Outreach

Definition & Communication Requirements

- Events targeted mass media venues (television stations) to directly promote mission/program/ vessel awareness.
- Hosted by representatives of the science party and/or the program. The events are hosted at a shore-side facility with members from mission/ program/vessel on location and members from the at-sea team joining via satellite.
- Requirements: 1.5-2Mbps. 1 stream of SD video, 2-way audio communication, large file transfers

Telepresence-Enabled Science

Definition & Communication Requirements

- Full engagement with remote science teams from the global ocean science community.
- Effectively increasing size of the science party beyond the number of available bunks.
- Requirements: 6-20Mbps. 1 or more streams of HD video, 2-way audio communication, large file transfers

Telepresence Type vs Audience Size

Type	Bandwidth	Size of Audience
Public Viewing	1.5-2 Mbps	The Internet
Remote Learning	1.5-2 Mbps	The Internet+50
Media Events/ Outreach	1.5-2 Mbps	The Internet +1000s
Telepresence-Enabled Science	6-20 Mbps	The Internet +100

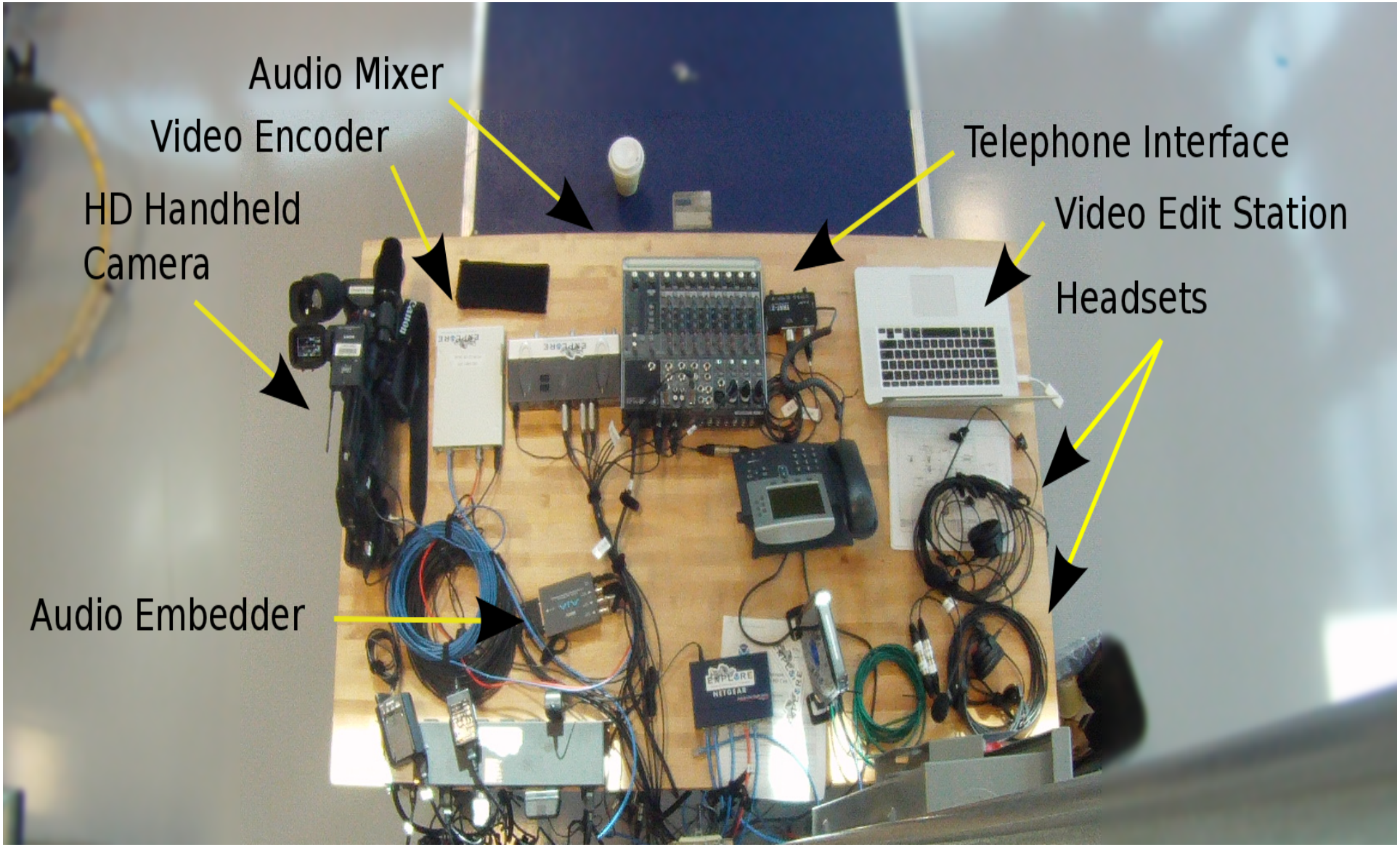
Telepresence Type vs Existing VSAT Equipment

Type	Bandwidth	Possible?
Public Viewing	1.5-2 Mbps	Yes
Remote Learning	1.5-2 Mbps	Yes
Media Events/ Outreach	1.5-2 Mbps	Yes
Telepresence-Enabled Science	6-20 Mbps	No

Requirements Beyond Communications

- Shipboard Broadcast and Video Capture Equipment
- Technical and Managerial Personnel (Shipboard and Shore-side)
- Video Editing and Production
- Shore-side Video Distribution
- Collaboration Tools
- Data-Management Infrastructure.

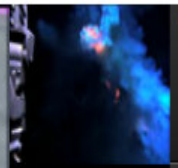

HDL-50
carlvp@yahoo.com


Audio Mixer
Video Encoder
HD Handheld Camera
Telephone Interface
Video Edit Station
Headsets
Audio Embedder

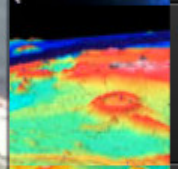

NOAA OER RED BIN #2 of
NOAA OER RED BIN #1 of
PEPS

Submarine Ring of Fire 2012: Northeast Lau Basin Expedition Video

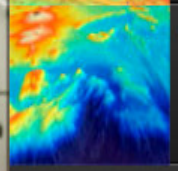
Live Stream | NE Lau Response Cruise 2009 | Bathymetry Fly-throughs | Behind the Science



Live Stream
ROV Camera View



(SRoF'12) 02:11
See the bathymetry fly-through animation of the Northeast Lau Basin (SRoF'12 expedition).



(SRoF'12) 00:44
Fly-through from the north to the south along the Northeast Lau basin.

Select a video from the playlist by clicking on an icon featured along the right side of the player window. To learn more about the science and participate in the expedition, go to the Ring Of Fire 2012 website or click on the other related links at the bottom of this page. Share the video clips by email with your friends or embed them on your blog.