

Okeanos Explorer ROV Dive Summary

Dive Information	
General Location	<p style="text-align: center;">Gulf of Mexico 2017</p>
General Area Descriptor	Gulf of Mexico
Site Name	Wreck 15725 (KC530)
Science Team Leads	Diva Amon and Charles Messing
Expedition Coordinator	Brian Kennedy
ROV Dive Supervisor	Dan Rogers
Mapping Lead	Mike White
ROV Dive Name	
Cruise	EX1711
Leg	-
Dive Number	DIVE12
Equipment Deployed	
ROV	Deep Discoverer
Camera Platform	Seirios

ROV Measurements	<input checked="" type="checkbox"/> CTD	<input checked="" type="checkbox"/> Depth	<input checked="" type="checkbox"/> Altitude
	<input checked="" type="checkbox"/> Scanning Sonar	<input checked="" type="checkbox"/> USBL Position	<input checked="" type="checkbox"/> Heading
	<input checked="" type="checkbox"/> Pitch	<input checked="" type="checkbox"/> Roll	<input checked="" type="checkbox"/> HD Camera 1
	<input checked="" type="checkbox"/> HD Camera 2	<input checked="" type="checkbox"/> Low Res Cam 1	<input checked="" type="checkbox"/> Low Res Cam 2
	<input checked="" type="checkbox"/> Low Res Cam 3	<input checked="" type="checkbox"/> Low Res Cam 4	<input checked="" type="checkbox"/> Low Res Cam 5
Equipment Malfunctions	None		
ROV Dive Summary (from processed ROV data)	Dive Summary: EX1711_DIVE12		
	^		
	In Water:	2017-12-14T14:27:04.181000	
		26°, 26.013' N ; 093°, 49.600' W	
	Out Water:	2017-12-14T22:26:09.047000	
		N/A ; N/A	
	Off Bottom:	2017-12-14T16:46:50.107000	
		26°, 25.958' N ; 093°, 49.780' W	
	On Bottom:	2017-12-14T15:28:37.806000	
		26°, 25.885' N ; 093°, 49.668' W	
Dive duration:	7:59:4		
Bottom Time:	1:18:12		
Max. depth:	1567.6 m		
Special Notes	none		
Scientists Involved (please provide name, location, affiliation, email)	Name	Affiliation	Email
	Alexandra Avila	Oregon State University / Nancy Foster Scholar (ONMS)	alexandra.m.avila@gmail.com
	Andrew Shuler	NOAA/JHT, inc.	andrew.shuler@noaa.gov
	Asako Matsumoto	Planetary Exploration Research Center, Chiba Institute of Technology	amatsu@gorgonian.jp
	Charles Messing	Nova Southeastern University	messagingc@nova.edu



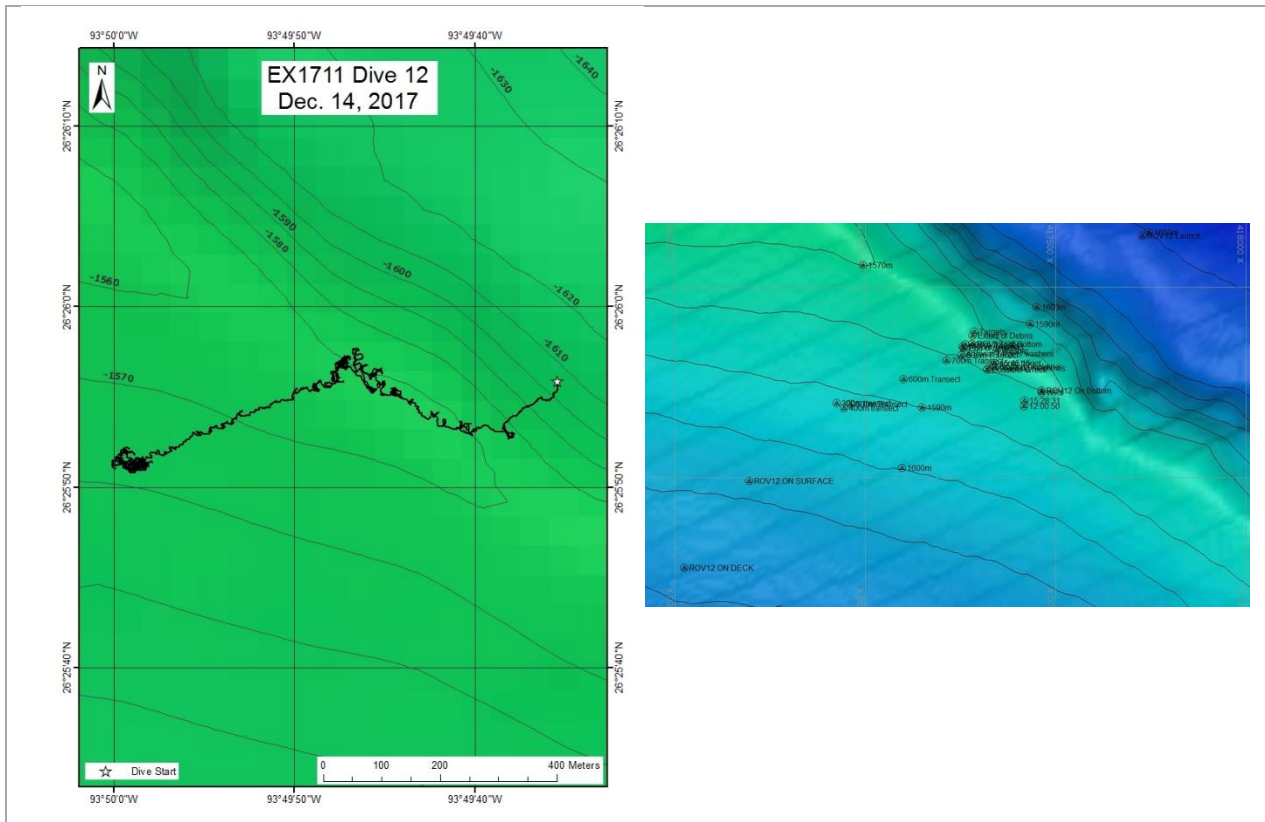
	Chris Horrell	Bureau of Safety and Environmental Enforcement	christopher.horrell@bsee.gov
	Daniel Wagner	NOAA	daniel.wagner@noaa.gov
	Diva Amon	Natural History Museum, London	divaamon@gmail.com
	Erik Cordes	Temple University	ecordes@temple.edu
	James Delgado	SEARCH, Inc.	james.delgado@searchinc.com
	Lauren Jackson	NCEI-Stennis	Lauren.Jackson@noaa.gov
	Meagan Putts	University of Hawaii	meagan.putts@noaa.gov
	Megan Cromwell	NCEI	megan.cromwell@noaa.gov
	Melanie Damour	Bureau of Ocean Energy Management	Melanie.Damour@boem.gov
	Michael Brennan	SEARCH Inc	mike.brennan@searchinc.com
	Michael Vecchione	NOAA/NMFS National Systematics Lab	vecchiom@si.edu
	Mike Ford	NOAA Fisheries	michael.ford@noaa.gov
	Nolan Barrett	Harbor Branch Oceanographic Institute at Florida Atlantic University	barrettnh@g.cofc.edu
	Robert Carney	Oceanography and Marine Sciences, LSU	rcarne1@lsu.edu
	Scott France	University of Louisiana at Lafayette	france@louisiana.edu
	Steve Auscavitch	Temple University	steven.auscavitch@temple.edu
	Tracey Sutton	Nova Southeastern University	tsutton1@nova.edu
	Daniel Warren	P&C Scientific, LLC	daniel.warren@pandcscientific.com
	Frank Cantelas	NOAA/OER	frank.cantelas@noaa.gov
	Amy Borgens	Texas Historical Commission	amy.borgens@thc.state.tx.us
	Mark Benfield	Louisiana State University	mbenfie@lsu.edu

Purpose of the Dive

This dive investigated a side scan sonar target thought to represent an archaeological site and related debris. As this was the first time the site was investigated, it was expected that a visual reconnaissance would be conducted, as well as an experimental mosaic survey, and inspection of diagnostic artifacts, features, and biological inhabitants. A survey of the debris field was also expected. However, upon reaching the site of the wreck, only recent human debris was observed. As a result, it was decided that the benthic portion of this dive would be shortened to accommodate

	<p>midwater exploration at depths of 1000m, 900m, 800m, 700m, 600m, 500m, 400m and 300m.</p>
<p>Description of the Dive</p>	<p>As with most dives during EX1711 so far, the ROV touched down in a sedimented area with many <i>Benthothuria funebris</i>, Hexactinellidae spp., and <i>Anthoptilum</i> sp. Instead of a shipwreck, we discovered a 40-foot freight-shipping container with one corner ripped open to reveal a cargo of 'white goods' – washing machines, dryers, chest freezers, dishwashers and refrigerators. Other appliances were scattered nearby as well as further afield, forming what we had assumed was a 'debris field'. The container ID number was ITLU733016 [0], with a series of other identifying markings. The cargo appeared to include a variety of brands (RCA, GE, etc.) and was without packaging, suggesting that the cargo was going to be recycled. Hydroids and stoloniferans colonized the container, and a number of fish sheltered in and under it. An Isididae sp. was observed growing on one washing machine.</p> <p>While this was not the anticipated shipwreck, the benthic portion of this dive was important for several reasons: 1) The identification markings on the container should permit tracking of a date of arrival on the seafloor. This would provide a maximum date for colonization by colonising organisms and allow an estimation of their growth rates. 2) The public was able to contextualize marine debris and anthropogenic impacts, and link it with shipping and the movement of the majority of goods on the planet. 3) It provided a great example of the public utilizing telepresence, i.e., ROV pilot Levi Unema's mother, having owned a Laundromat, was able to look up the serial number of some of the washing machines to provide a date of earliest manufacture: February 1993.</p> <p>ROV D2 rose into the water column to conduct midwater transects at eight depths from 1000 m to 300 m in 100-m increments. Temperatures ranged from approximately 4°C at 1000 m to over 13°C at 300 m. A diverse assemblage of midwater organisms included ctenophores, siphonophores (including a possibly new physonect with tentacles emerging from between its nectophores), protists (including numerous coelodendrid and tuscarorid phaeodareans), medusae, fishes, and shrimp. Fishes encountered included several <i>Cyclothone</i> sp. (bristlemouths), some myctophids (lanternfish), and a few sternoptychids (hatchetfish). A pairing of several halicreatid medusae with <i>Solmissus narcomedusae</i>, previously observed in the Pacific, added to the suggestion of a possible ecological relationship. A <i>Kiyohimea</i> (possibly <i>Kiyohimea usagi</i>) ctenophore was seen at the end of the 300-m transect in perhaps the warmest water (over 13.8 C) observed for this species. It was remarkable how the large ROV can so smoothly come up on animals in the midwater, as the lights revealed a calycophoran siphonophore with its delicate siphosome arranged in a precise coil, possibly for feeding. Considering the volume explored and the number of encounters, this midwater environment seemed to be densely populated with an excellent diversity of organisms.</p>
<p>Overall Map of the ROV Dive Area</p>	<p>Close-up Map of Main Dive Site</p>





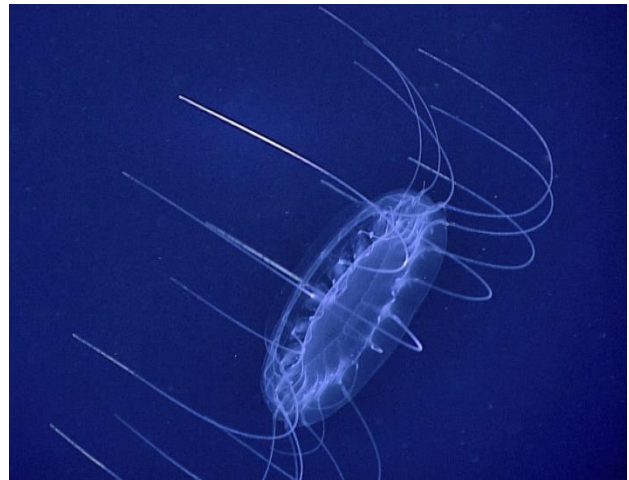
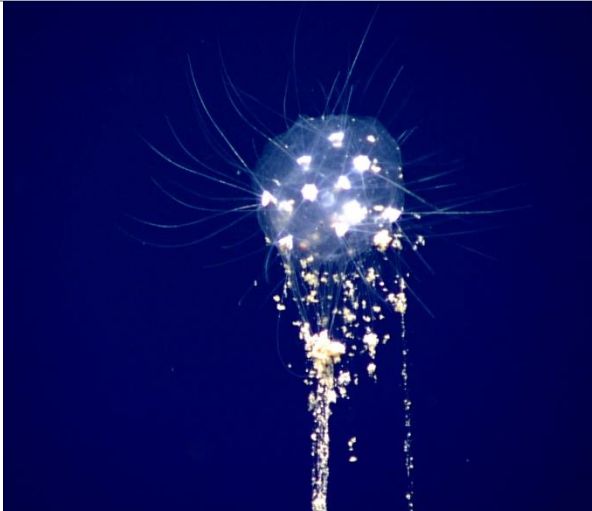
Representative Photos of the Dive



A shipping container partly filled with household appliances, including washing machines, refrigerators, and chest freezers, which also formed an extensive debris field. Depth: 1,564 m.



The viviparous brotula (Bythitidae), *Cataetyx laticeps*, sheltering along edge of the shipping container. Depth: 1,566 m.



Colonial tuscarorid phaeodarean, a relative of radiolarians and foraminiferans, feeding on a filament of marine snow. The individual cells of the colony each secrete a white silica shell, or test, with several fine radiating spines, and together they create the pale sphere composed of fine silica mesh. Depth: 701 m.

A delicate *Solmissus* sp. narcomedusa at a depth of 500 m.

Samples Collected- None

Sample

Sample ID		No Samples were collected on this Dive
Date (UTC)		
Time (UTC)		
Depth (m)		
Temperature (° C)		
Field ID(s)		
Commensal ID and Field Identification		
Comments		

Please direct inquiries to:

NOAA Office of Ocean Exploration & Research
 1315 East-West Highway (SSMC3 10th Floor)
 Silver Spring, MD 20910
 (301) 734-1014

