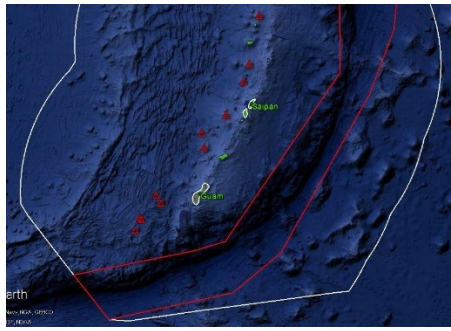


OKEANOS EXPLORER ROV DIVE SUMMARY

Site Name	Sirena Canyon			
ROV Lead/Expedition Coordinator	Jim Newman / Kelley Elliott			
Science Team Leads	Deborah Glickson & Diva Amon			
General Area Descriptor	Southern Marianas			
ROV Dive Name	Cruise Season	Leg	Dive Number	
	EX1605	1	DIVE 03	
Equipment Deployed	ROV:	Deep Discoverer		
	Camera Platform:	Seirios		
ROV Measurements	<input checked="" type="checkbox"/> D2 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"/> ROV HD 2	<input checked="" type="checkbox"/> Seirios CTD	
	Temperature Probe	<input checked="" type="checkbox"/> D2 DO Sensor	<input checked="" type="checkbox"/> Seirios DO sensor	
Equipment Malfunctions	None			
ROV Dive Summary (From processed ROV data)	<p>Dive Summary: EX1605L1_DIVE03</p> <p>~~~~~</p> <p>In Water: 2016-04-22T20:43:42.944000 12°, 32.433' N ; 144°, 36.186' E</p> <p>Out Water: 2016-04-23T06:15:10.906000 12°, 32.331' N ; 144°, 37.343' E</p> <p>Off Bottom: 2016-04-23T03:39:16.865000 12°, 32.263' N ; 144°, 36.259' E</p> <p>On Bottom: 2016-04-22T23:38:08.642000 12°, 32.391' N ; 144°, 36.439' E</p> <p>Dive duration: 9:31:27</p> <p>Bottom Time: 4:1:8</p> <p>Max. depth: 4996.1 m</p>			
Special Notes	This dive was originally intended to begin at 6,000 m. Due to marginal weather for such a deep dive, the dive plan was amended to begin at 5,000 m.			
Scientists Involved (please provide name / location / affiliation / email)	<p>David Burdick, U Guam; burdickdr@hotmail.com Jeff Drazen, UH; jdrazen@hawaii.edu Scott France, UL Lafayette; france@louisiana.edu Patty Fryer, UH; pfryer@soest.hawaii.edu Taylor Heyl, WHOI; theyl@whoi.edu Tara Harmer Luke, Stockton University; Tara.Luke@stockton.edu Mackenzie Gerring, UH; mgerring@hawaii.edu Santiago Herrera, WHOI; sherrera@alum.mit.edu</p>			

Chris Kelley, UH; ckelley@hawaii.edu
 Asako Matsumoto, Chiba Institute of Technology; amatsu@gorgonian.jp
 Tina Molodtsova, Shirshov Institute of Oceanology; tina@ocean.ru
 Bruce Mundy, NOAA PIFSC; bruce.mundy@noaa.gov
 Amanda Netburn, NOAA OER; amanda.netburn@noaa.gov
 Andrea Quattrini, Harvey Mudd College; aquattrini@g.hmc.edu
 Sonia Rowley, UH; srowley@hawaii.edu
 Tim Shank, WHOI; tshank@whoi.edu
 Les Watling, UH; watling@hawaii.edu

Purpose of the Dive

The objective of this dive was to observe the biology and geology in the deeper parts of the MTMNM along the side of a broad canyon that drops into the Sirena Deep – one of the deepest locations in the trench. Within the monument, little work has been done between 5000 and 8000 m. However, there has been more sampling in deeper areas e.g. at seep and mud volcano sites, and also at deep sites such as the Challenger Deep. Therefore, the dive track began at 4983 m and moved ~700 m in distance up steep topography to the west where the dive ended at 5865 m.

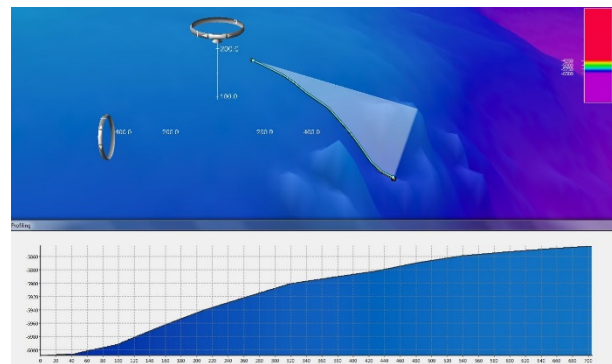
Description of the Dive:

The ROV touched down in an area of what appeared to be sedimented volcanic rock. The structures were not well-defined and were fractured. There were many areas with small talus or scree slopes and moderate sediment. D2_DIVE03_SPEC01GEO was collected in this area. The rock is partially covered with a Mn crust, but it is unclear if it is actually volcanic. There was a transition to layered rock, which may have all been sedimentary. These layered rocks were partially buried in sediment, and many appeared to be out of place. One idea was that they were large sedimentary blocks that had come down the slope as part of a mass-wasting event. We collected one such sample (D2_DIVE03_SPEC03GEO).

Fauna were relatively sparse but very diverse. There were at least four types of fish observed with *Leucicorus* cf. *atlanticus* being the most common seen on several occasions. Many different species of holothurians were also observed as well as at least three species of crinoids. One crinoid (D2_DIVE03_SPEC01BIO) and one holothurian (D2_DIVE03_SPEC04BIO) were collected. Many swimming polychaetes, three types of sponges, benthic ctenophores, *Munidopsis* squat lobsters and two types of isopods. At the end of the dive, a likely-new-species of cladhorizid sponge was collected, which had 9 ophiuroids living commensally on it (D2_DIVE03_SPEC05BIO).

Although there were opportunities for both biological and geological sampling along the slope, the flat we expected to see at the end of the dive did not materialize, so we were unable to compare faunal assemblages from slope to flat.

Map of ROV Dive Area

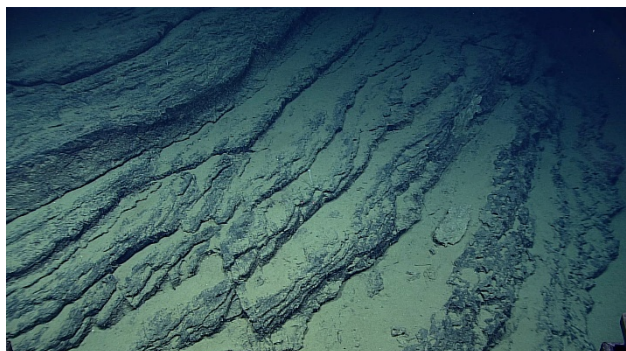


Fledermaus map of planned dive EX1605L1-DIVE03 track.



Hypack screengrab of actual dive EX1605L1-DIVE03 track

Representative Photos of the Dive


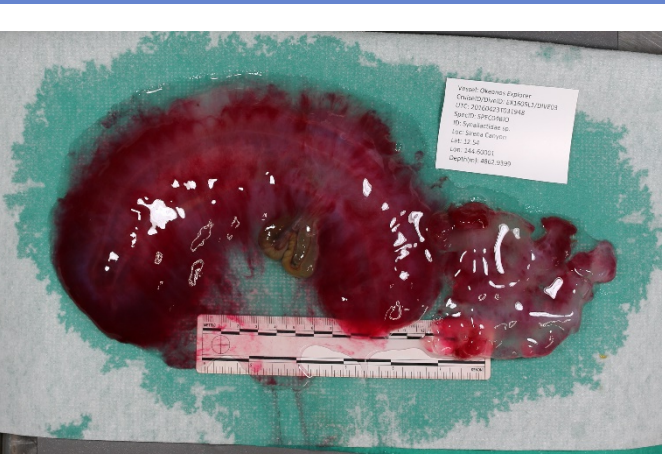
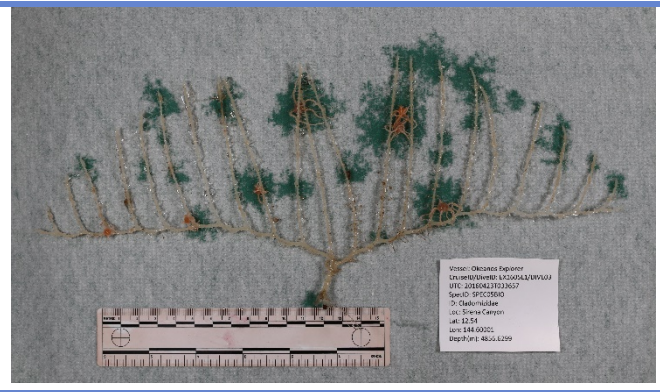


The predominant geology during the dive: lightly-sedimented sloping rock face

Leucicorus cf. *atlanticus*, many of which were observed on the dive.

Samples Collected

Sample ID	D2_DIVE03_SPEC01GEO	
Date (UTC)	20160423	
Time (UTC)	00:53:19	
Depth (m)	4968	
Temperature (°C)	1.505	
Field ID(s)	Basalt? with Mn crust	
Comments	No commensals	
Sample ID	D2_DIVE03_SPEC02BIO	
Date (UTC)	20160423	
Time (UTC)	01:18:42	
Depth (m)	4954	
Temperature (°C)	1.508	
Field ID(s)	Comatulida	
Comments	No commensals.	
Sample ID	D2_DIVE03_SPEC03GEO	
Date (UTC)	20160423	
Time (UTC)	02:42:26	
Depth (m)	4899	
Temperature (°C)	1.506	

Field ID(s)	Sedimentary rock	
Comments	No commensals.	
Sample ID	D2_DIVE03_SPEC04BIO	
Date (UTC)	20160423	
Time (UTC)	03:19:48	
Depth (m)	4863	
Temperature (°C)	1.512	
Field ID(s)	Holothuroidea, Synallactidae	
Comments	No commensals.	
Sample ID	D2_DIVE03_SPEC05BIO	
Date (UTC)	20160423	
Time (UTC)	03:36:57	
Depth (m)	4857	
Temperature (°C)	1.504	
Field ID(s)	Cladhorizid sponge	
Comments	Nine commensals: ophiuroids	
		
		

Please direct inquiries to:

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