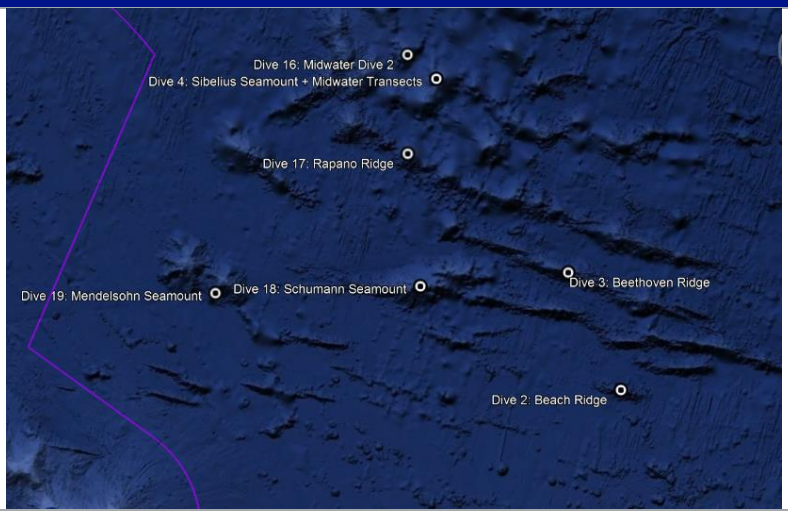
Ocean Exploration and Research

Okeanos Explorer ROV Dive Summary

Dive Information			
General Location			
General Area Descriptor	Musicians Seamounts		
Site Name	“Beach” Ridge		
Science Team Leads	John R. Smith/Meagan Putts		
Expedition Coordinator	Kasey Cantwell		
ROV Dive Supervisor	Karl McLetchie		
Mapping Lead	Mike White		
ROV Dive Name			
Cruise	EX1708		
Leg	-		
Dive Number	DIVE02		
Equipment Deployed			
ROV	Deep Discoverer		
Camera Platform	Seirios		
ROV Measurements	☒ CTD	☒ Depth	☒ Altitude
	☒ Scanning Sonar	☒ USBL Position	☒ Heading
	☒ Pitch	☒ Roll	☒ HD Camera 1

	☒ HD Camera 2	☒ Low Res Cam 1	☒ Low Res Cam 2
	☒ Low Res Cam 3	☒ Low Res Cam 4	☒ Low Res Cam 5
Equipment Malfunctions			

ROV Dive Summary (from processed ROV data)

Dive Summary: EX1708_DIVE02

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In Water:	2017-09-08T18:50:58.709000 25°, 33.209' N ; 158°, 12.885' W
Out Water:	2017-09-09T02:30:02.436000 N/A ; N/A
Off Bottom:	2017-09-09T00:46:20.401000 25°, 33.193' N ; 158°, 12.982' W
On Bottom:	2017-09-08T21:21:20.451000 25°, 33.234' N ; 158°, 12.830' W
Dive duration:	7:39:3
Bottom Time:	3:24:59
Max. depth:	3285.5 m

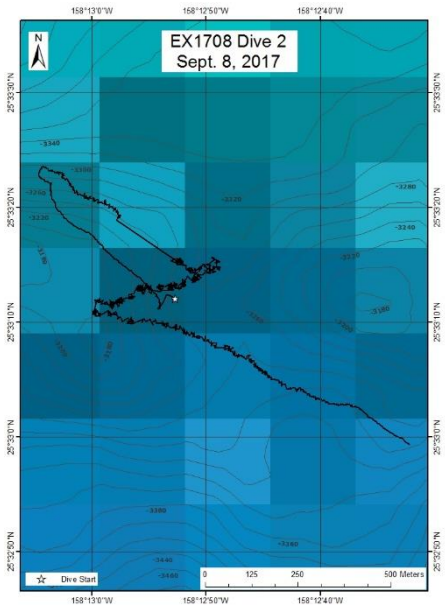
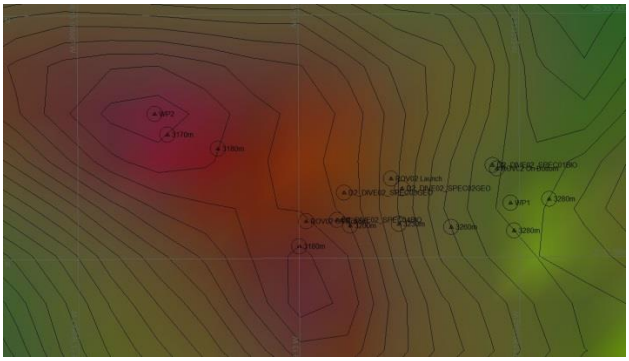
Special Notes

There was an issue with the ships propulsion during descent which caused a slight delay to the dive. No other impact to operations.

Scientists Involved (please provide name, location, affiliation, email)

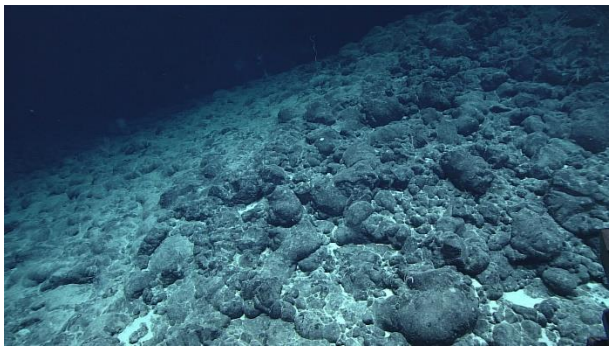
Name	Email	Affiliation
Asako Matsumoto	amatsu@gorgonian.jp	Planetary Exploration Research Center, Chiba Institute of Technology
Bruce Mundy	bruce.mundy@noaa.gov	NOAA NMFS Pacific Islands Fisheries Science Center
Christopher Kelley	ckelley@hawaii.edu	University of Hawaii
Ellie Bors	eleanor.bors@noaa.gov	NOAA
Erin Easton	erineeaston@gmail.com	UTRGV
Esprit Heestand Saucier	heestand.saucier@gmail.com	University of Louisiana at Lafayette
Hannah Shore		Stanford University
Jaymes Awbrey	jawbrey@louisiana.edu	ULL
John Smith	jrsmith@hawaii.edu	University of Hawaii
Kasey Cantwell	kasey.cantwell@noaa.gov	OER
Katie Wagner	katie.wagner@noaa.gov	NOAA OER

	Les Watling	watling@hawaii.edu	University of Hawaii at Manoa
	Luke McCartin	lmccartin@whoi.edu	WHOI
	Meagan Putts	Meagan.putts@noaa.gov	University of Hawaii
	Megan McCuller	mccullermi@gmail.com	Williams-Mystic Maritime Studies Program
	Mike White	michael.white@noaa.gov	OER
	Nolan Barrett	barrettnh@g.cofc.edu	FAU Harbor Branch Oceanographic Institute
	Scott France	france@louisiana.edu	University of Louisiana at Lafayette
	Steve Auscavitch	tug19971@temple.edu	Temple University
	Tara Luke	luket@stockton.edu	Stockton University
	Thomas Morrow	morr4998@vandals.uidaho.edu	University of Idaho
	Tina Molodtsova	tina@ocean.ru; tina.molodtsova@gmail.com	P.P.Shirshov Institute of Oceanology RAS
Purpose of the Dive	Deep-sea environments around the Musician Seamounts are unexplored. This dive was the first in a series whose purpose is to investigate the similarities and differences in community composition between seamounts and ridges in different parts of the Musicians Seamounts. Sharp elongate ridge features have been shown to harbor large-scale, high-density coral communities on the NW Hawaiian Ridge. Therefore, there was a high potential that the elongate ridge-like feature of "Beach" Ridge was host to similar communities. The primary objective for this dive was to characterize the distribution and abundance of benthic fauna and acquire baseline information on deep sea habitats, seafloor geology, and biological communities with particular interest in deep-sea coral and sponge communities. A comparison of the diversity and distribution of coral and sponge communities across the seamounts to the north and to the Hawaiian Ridge and the broader North Pacific is important to understanding the biogeography and connectivity of communities in the Pacific. In addition, the biological and geological sampling at depth will enable a comparison with other areas of the Pacific sampled as part of NOAA's CAPSTONE program.		
Description of the Dive	The dive began in a saddle between two volcanic cones on the summit of "Beach" Ridge at a depth of 3280 m. Upon acquiring bottom, we observed a uniform field of cobble-sized talus and sediment. Few coral, sponges, and shrimp were spotted in the area, and an unbranched Primnoidae coral of a possible new genus was collected. Near the beginning of the dive track, there was a rare sighting of the hydromedusa, *Angina citrea*, predating upon a Keratoisidinae colony (bamboo coral). Numerous colonies of *Iridogorgia magnisprialis* were also observed at depth, likely extending the known depth range for this species. As we transected upslope, the geology changed to a more consolidated substrate of broken pillows. This area was more densely populated with corals including Primnoids, Antipatharians, and Isidids. Throughout the dive, numerous high quality images of some representative deep-sea fishes were acquired, including those of: cusk eels, *Bassogigas* sp. and *Bassozetus* sp., an arrow-tooth eel, *Illyophis* sp., and the goosefish, *Chaunachops coloratus.*		

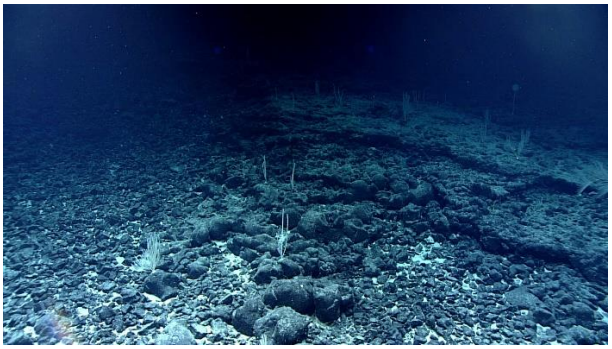
Overall Map of the ROV Dive Area	Close-up Map of Main Dive Site
	

Representative Photos of the Dive

Hydromedusa, *Angina citrea,* predating on Keratoisidinae bamboo coral.



Volcanic cone flank consisting of intact pillow lava forms coated with Mn-crust and Primnoid, Isidid, and Antipatharian coral communities in the distant background.



Stable volcanic rock outcrop with Primnoid coral communities surrounded by talus and sediment.

Bright red goosefish, *Chaunacops coloratus* posing proudly upon Mn-coated talus, likely from fractured pillow lavas.

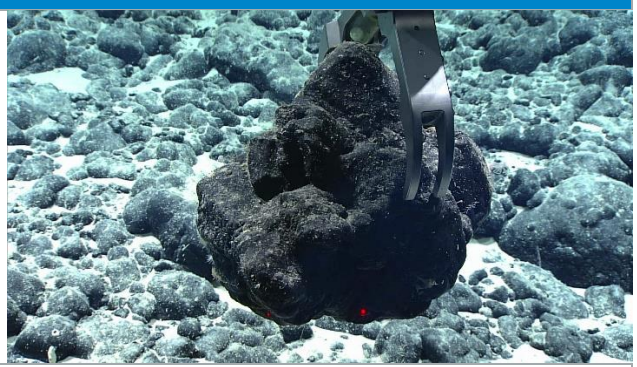
Samples Collected

Sample

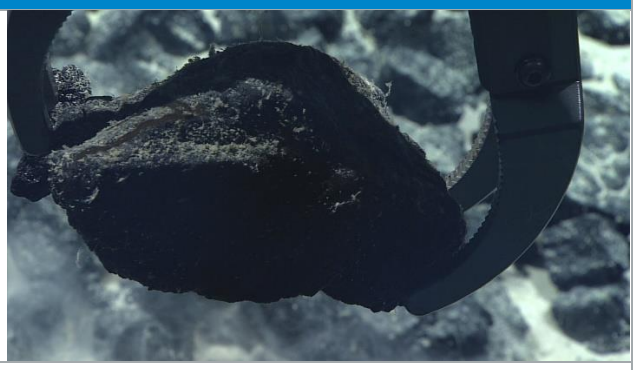
Sample ID	EX1708-DIVE01_SPEC01BIO
Date (UTC)	9/8/2017
Time (UTC)	21:50
Depth (m)	3282.3
Temperature (˚C)	1.5
Field ID(s)	Primnoidae
Commensal ID and Field Identification	
Comments	

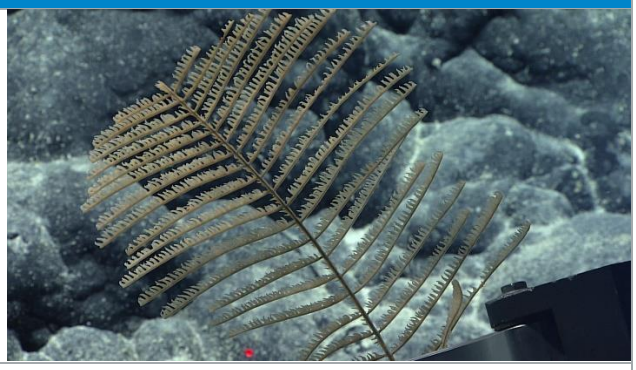
Sample

Sample ID	EX1708-DIVE02_SPEC02GEO
Date (UTC)	9/8/2017
Time (UTC)	23:46
Depth (m)	3207.0
Temperature (˚C)	1.5
Field ID(s)	Manganese crusted basalt
Commensal ID and Field Identification	EX1708-DIVE02_SPEC02GEO_A01 Bryozoa EX1708-DIVE02_SPEC02GEO_A02 Primnoidae EX1708-DIVE02_SPEC02GEO_A03 Actiniaria



	EX1708-DIVE02_SPEC02GEO_A04 Cladorhyzidae EX1708-DIVE02_SPEC02GEO_A05 Stichopathes sp.?
Comments	
Sample	
Sample ID	EX1708-DIVE02_SPEC03GEO
Date (UTC)	9/9/2017
Time (UTC)	00:10
Depth (m)	3176.3
Temperature (˚C)	1.5
Field ID(s)	Manganese crusted basalt
Commensal ID and Field Identification	EX1708-DIVE02_SPEC03GEO_A01 Bryozoa?
Comments	
Sample	
Sample ID	EX1708-DIVE02_SPEC04BIO
Date (UTC)	9/9/2017
Time (UTC)	00:34
Depth (m)	3148.6
Temperature (˚C)	1.5
Field ID(s)	*Bathypathes* sp.
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