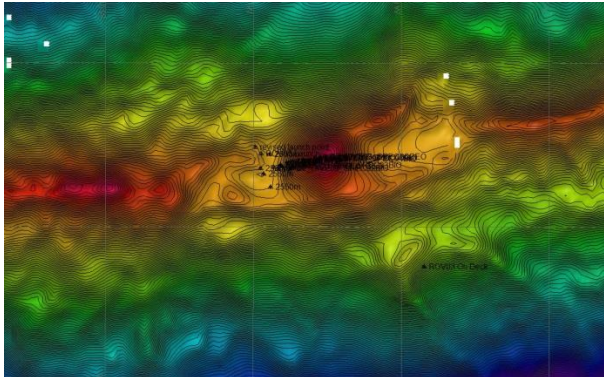
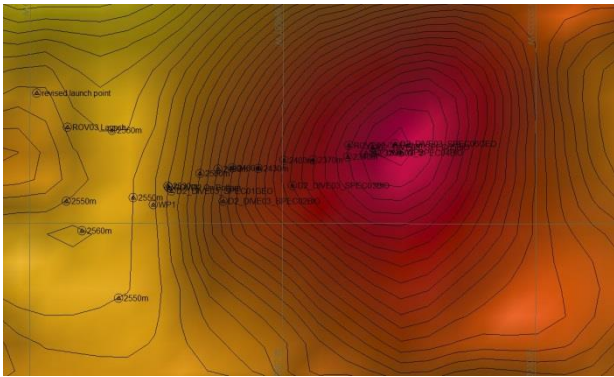
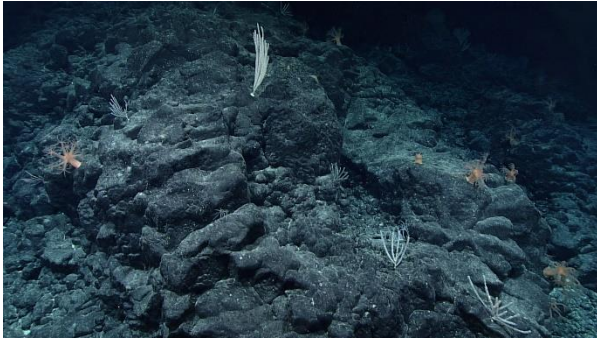


Okeanos Explorer ROV Dive Summary

Dive Information	
General Location	
General Area Descriptor	Musicians Seamounts
Site Name	Beethoven 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	DIVE03
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

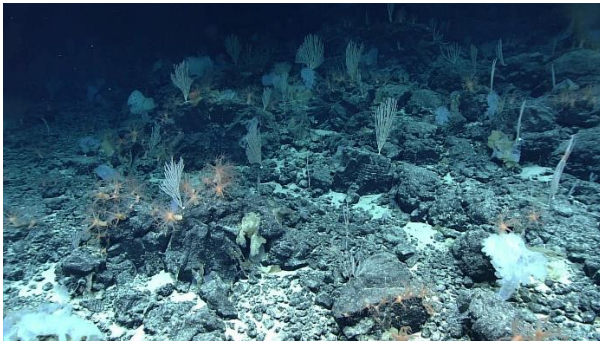
			Lafayette
	Tara Luke	luket@stockton.edu	Stockton University
	Tina Molodtsova	tina@ocean.ru; tina.molodtsova@gmail.com	P.P.Shirshov Institute of Oceanology RAS
Purpose of the Dive	<p>The primary objective for this dive was to characterize the distribution and abundance of benthic fauna. A comparison of the diversity and distribution of coral and sponge communities across the seamounts to the north, the Hawaiian Ridge, and the broader North Pacific is of particular importance to understanding biogeography and connectivity of communities in the Pacific. Sharp elongate ridge features have been shown to harbor large-scale, high-density coral communities on the NW Hawaiian Ridge. As such, the elongate ridges in these areas have a high potential to host similar communities. The priorities were to complete a videographic survey along the transect and collect unique or representative biological and geological samples while covering as much of the feature as possible.</p>		
Description of the Dive	<p>The ROV arrived on bottom at 2525 m water depth near the base of the volcanic cone on a cobble field of variable sized rocks and few biological organisms. As the vehicle moved upslope, we saw numerous transitions from talus fields to intact volcanic outcrops of various morphologies including intact and fractured pillows, lobate flows, along with possible sheet flows and massive lava forms. Eventually, the density, diversity, and size of biologics increased, leading us to consider that steeper and more stable substrate may be the influencing factors as seen at other sites. A unique relatively dense community of <i>Anthomastus</i> sp., Primnoids, and glass sponges was observed ~2400 m and upward. After alternating between talus and outcrops, we came across a dense coral and sponge community at ~2300 m that continued to intensify and diversify toward the summit. The topography began flattening out at ~2312 m and the dense biological community was found to persist all throughout the summit area we investigated. The final rock sample with numerous biological associates was collected just prior to leaving bottom at 2303 m.</p>		
Overall Map of the ROV Dive Area		Close-up Map of Main Dive Site	
			
Representative Photos of the Dive			



Anthomastus sp. and Primnoidae coral community of massive lava outcrop



Glass sponge dominated community along with *Anthomastus* sp. and Primnoidae coral located on a talus pile



High density coral and sponge community on talus and outcrop near summit of cone. Note that most coral fans are similarly oriented, presumably facing the dominant current.

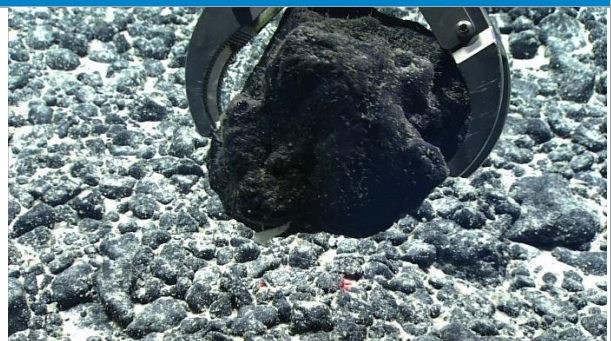



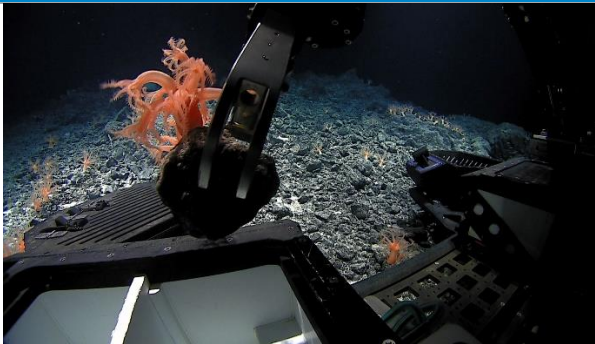

Hexactinellida vase sponge in a field of Primnoids and *Anthomastus* sp. and other glass sponges.


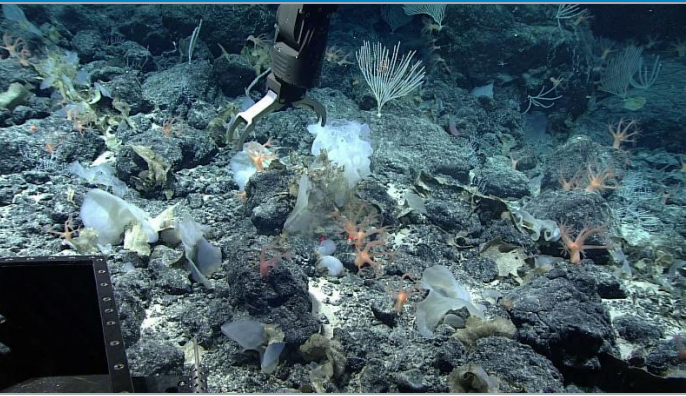
Samples Collected

Sample

Sample ID	EX1708_D2_DIVE03_SPEC01GE O
Date (UTC)	9/10/2017
Time (UTC)	20:03
Depth (m)	2531.1
Temperature (°C)	1.6
Field ID(s)	Manganese crusted basalt
Commensal ID and Field Identification	



Comments		
Sample		
Sample ID	EX1708_D2_DIVE03_SPEC02BIO O	
Date (UTC)	9/10/2017	
Time (UTC)	21:19	
Depth (m)	2472.6	
Temperature (°C)	1.6	
Field ID(s)	Ceriantharia	
Commensal ID and Field Identification	EX1708_D2_DIVE03_SPEC02BIO_A01 EX1708_D2_DIVE03_SPEC02BIO_A02	
Comments	Three individuals in sponge stalk	
Sample		
Sample ID	EX1708_D2_DIVE03_SPEC03BIO O	
Date (UTC)	9/10/2017	
Time (UTC)	22:42	
Depth (m)	2393.9	
Temperature (°C)	1.7	
Field ID(s)	<i>Anthomastus</i> sp.	
Commensal ID and Field Identification	EX1708_D2_DIVE03_SPEC03BIO_A01 Rock	
Comments	Two individuals on rock	
Sample		
Sample ID	EX1708_D2_DIVE03_SPEC04BIO O	
Date (UTC)	9/11/2017	
Time (UTC)	00:11	
Depth (m)	2321.8	
Temperature (°C)	1.7	
Field ID(s)	<i>Chrysogorgia</i> sp.	
Commensal ID and Field Identification		
Comments		

Sample	
Sample ID	EX1708_D2_DIVE03_SPEC05BIO
Date (UTC)	9/11/2017
Time (UTC)	01:01
Depth (m)	2308.7
Temperature (°C)	1.7
Field ID(s)	Hexactinellida "vase"
Commensal ID and Field Identification	
Comments	
	
Sample	
Sample ID	EX1708_D2_DIVE03_SPEC06GEO
Date (UTC)	9/11/2017
Time (UTC)	01:11
Depth (m)	2303.8
Temperature (°C)	1.7
Field ID(s)	Manganese crusted basalt
Commensal ID and Field Identification	EX1708_D2_DIVE03_SPEC06GEO_A01 Hexactinellida sp. EX1708_D2_DIVE03_SPEC06GEO_A02 Anthomastus sp. EX1708_D2_DIVE03_SPEC06GEO_A03 Ophiuroidea EX1708_D2_DIVE03_SPEC06GEO_A04 Hexactinellida sp.
Comments	
	

Please direct inquiries to:

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