

OKEANOS EXPLORER ROV DIVE SUMMARY

Site Name	Unnamed Seamount 1		
ROV Lead/Expedition Coordinator	Karl Mcletchie/ Brian RC Kennedy		
Science Team Leads	Daniel Wagner and Jonathan Tree		
General Area Descriptor	Papahānaumokuākea Marine National Monument		
ROV Dive Name	Cruise Season	Leg	Dive Number
	EX1603	1	DIVE05
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	The Seirios CTD data had some erroneous spikes in the data.		
ROV Dive Summary (From processed ROV data)	Dive Summary: EX1603_DIVE05		
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	In Water:	2016-03-05T18:16:51.001000 26°, 38.320' N ; 175°, 23.753' W	
	Out Water:	2016-03-06T02:31:26.193000 26°, 39.064' N ; 175°, 24.011' W	
	Off Bottom:	2016-03-06T01:36:59.810000 26°, 38.815' N ; 175°, 23.702' W	
	On Bottom:	2016-03-05T19:20:17.747000 26°, 38.549' N ; 175°, 23.914' W	
	Dive duration:	8:14:35	
	Bottom Time:	6:16:42	
Max. depth:	1758.9 m		
<b>Special Notes</b>			
<b>Scientists Involved (please provide name / location / affiliation / email)</b>	<b>Name</b>	<b>Affiliation</b>	<b>Email Address</b>
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	Jonathan Tree	University of Hawaii Geology and Geophysics Department	jtree@hawaii.edu
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	Daniel Wagner	NOAA PMNM	daniel.wagner@noaa.gov
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	Katharine Woodard	NOAA/NCEI	katharine.woodard@noaa.gov

#### Purpose of the Dive

This dive was located on a ridge extending to the southwest of an unnamed seamount located east of Bank 9. The unnamed seamount had never been previously surveyed, and therefore its geological age is unknown. The objectives of this dive were to (1) collect rock samples that could be used to determine the geological age of the seamount, and (2) survey for high-density communities of corals and sponges along the ridge and summit of the seamount. The target start point of the dive was on the ridge crest at a depth of 1779 m. The plan was for the ROV to move up the ridge until reaching the highest point of the seamount at ~1600 m. Then, the ROV would survey towards the northwest along a flat plateau located at the top of the seamount until running out of bottom time.

#### Description of the Dive:

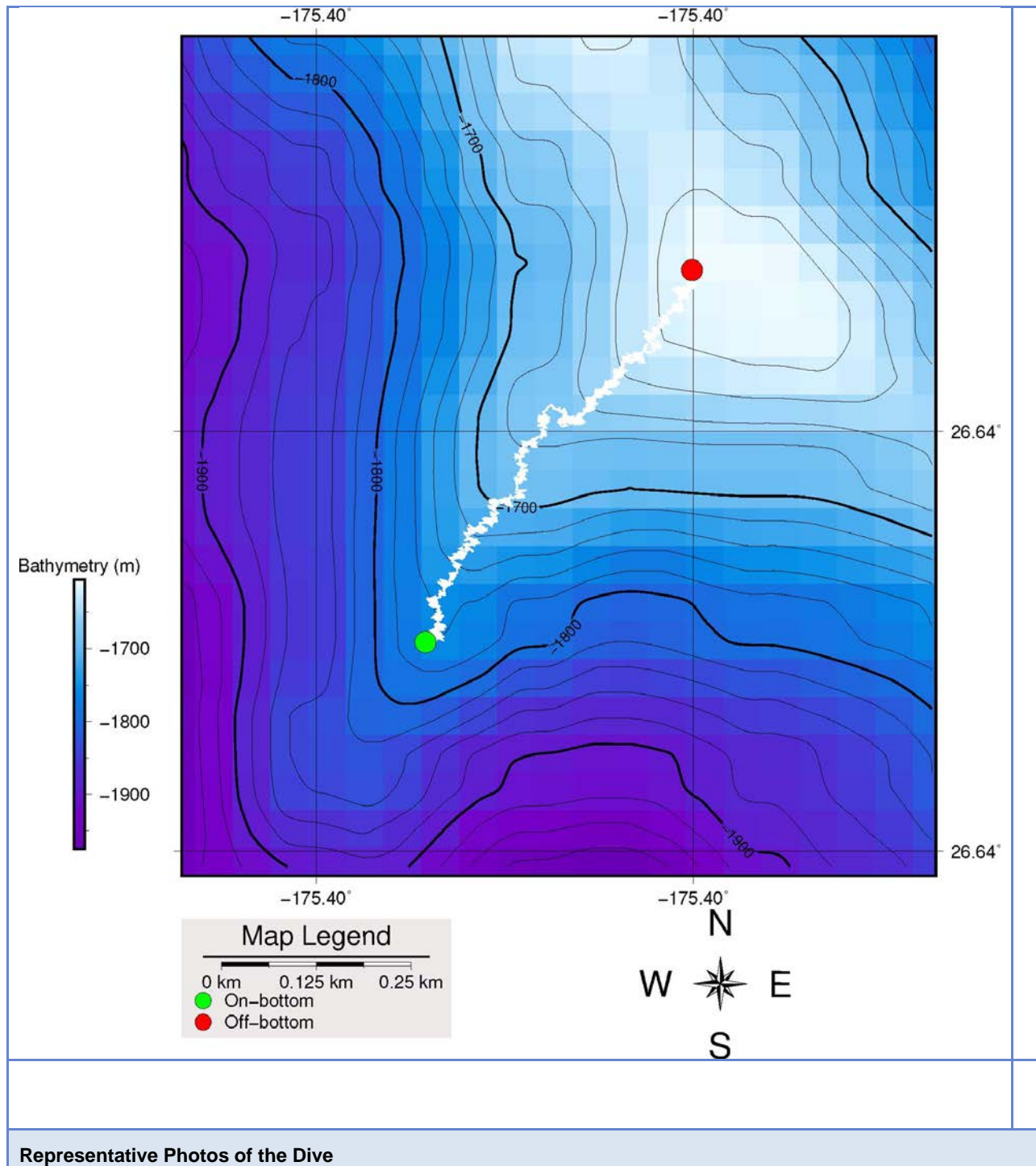
The ROV landed on the ridge crest at a depth of 1754 m. The substrate consisted of heavy botryoidal Mn-crust volcanic rubble with channelized sediment and ripples. The density of animals was moderate and consisted mainly of *Poliopogon* and *Walteria* sponges, the black coral *Stichopathes* sp., the gorgonian coral *Metallogorgia melanochristos*, unbranched bamboo corals, the crinoid *Glyptometra triseriales*, as well as their respective commensals. These species remained the most abundant throughout the entire duration of the dive. At 1759 m, the ROV collected a small, Mn-crust rock sample. The source lava flow of this geological sample is unknown. Further up the slope, the ROV collected a *Stichopathes* sp. wire coral, which was the most abundant coral throughout the dive, at 1703 m. Throughout the ascent along the ridge, the substrate was composed of Mn-encrusted volcanic talus and rubble with interspersed, fully cemented Mn-crust hardpan and larger rock features. Sedimentation was generally light, with some ripple structures present in the channelized sediments. Near the top of the ridge and before gaining the summit area, the substrate changed to a fragmented and laminated sheet flow that draped the ridgeline. Within separated portions of the sheet flow, loose volcanics were present. The second geological sample was taken from a separation between two sheet flow blocks. This sample appears to be a portion from the laminations present in the sheet flow. At the top of the seamount, several types of corals were present that had not been observed previously on the dive. These included *Anthomastus* sp., *Paragorgia* sp. and an unidentified plexaurid coral. Towards the end of the dive, the ROV collected a *Bathypathes* sp. black coral, which had a commensal squat lobster on it. However, the

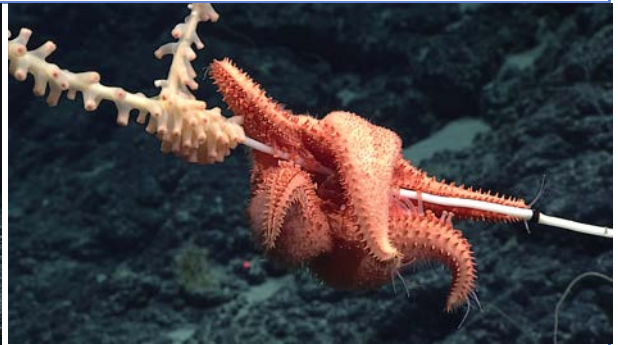
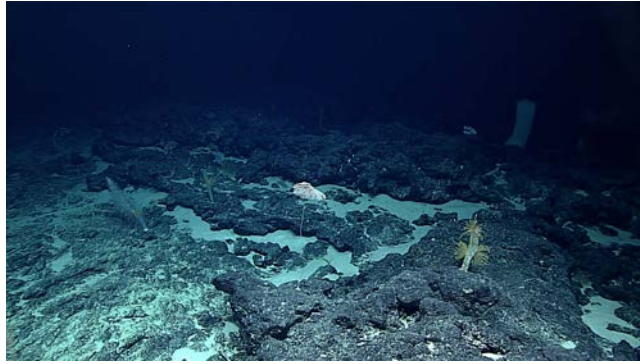
commensal squat lobster swam out of the collection box before it could be secured. The density of animals was moderate to throughout the dive, with isolated patches of high density. The ROV left the bottom at a depth of 1586 m after a total bottom time of 5:19.

### Animals observed during dive

Phylum	Group	Species
Anellida	Polychaetes	Polynoid
Anellida	Polychaetes	Sabellida
Arthropods	Barnacles	Scalpellidae
Arthropods	Pycnogonids	Colosseneidae
Arthropods	Shrimp	Unidentified shrimp in water column
Arthropods	Squat lobsters	Gastroptychus/new genus
Cnidarians	Actinarians	Exocoelactis sp.
Cnidarians	Actinarians	Phelliactis sp.
Cnidarians	Actinarians	Unidentified anemone
Cnidarians	Alcyonaceans	Anthomastus sp.
Cnidarians	Antipatharians	Bathypathes cf. alternata
Cnidarians	Antipatharians	Bathypathes sp.
Cnidarians	Antipatharians	Stichopathes sp.
Cnidarians	Antipatharians	Hexapathes sp.
Cnidarians	Antipatharians	Trissopathes tetracrada
Cnidarians	Ceriantharian	Ceriantharian
Cnidarians	Gorgonians	Bathygorgia? sp.
Cnidarians	Gorgonians	Chrysogorgia flavescens
Cnidarians	Gorgonians	Eknomisis? sp. (unbranched)
Cnidarians	Gorgonians	Iridogorgia magnispiralis
Cnidarians	Gorgonians	Isidella sp. lyrate
Cnidarians	Gorgonians	Keratoisidinae
Cnidarians	Gorgonians	Lepidisis sp.
Cnidarians	Gorgonians	Metallogorgia melanotrichos
Cnidarians	Gorgonians	Paragorgia sp.
Cnidarians	Gorgonians	Plexauridae sp.
Cnidarians	Gorgonians	Victorgorgia nuttingi
Cnidarians	Hydrozoans	Aegina sp.
Cnidarians	Hydrozoans	Hydroidolina
Cnidarians	Hydrozoans	Corymorphidae
Cnidarians	Pennatulaceans	Anthoptilum sp.
Cnidarians	Pennatulaceans	Umbellula sp.
Ctenophores	Ctenophores	Platyctenidae
Echinoderms	Asteroids	Brisingid
Echinoderms	Asteroids	Brisinga sp
Echinoderms	Asteroids	Calliaster sp
Echinoderms	Crinoids	Antedonidae
Echinoderms	Crinoids	Comatulid crinoid
Echinoderms	Crinoids	Glyptometra lateralis
Echinoderms	Crinoids	Sarametra triserialis
Echinoderms	Urchin	Tromikosoma hispidus

Fishes	Swimmer	Cataetyx/Luciobrotula sp. (ID by Bruce Mundy)
Fishes	Eels	Synaphobranchus affinis/kauplii?
Fishes	Eels	Synaphobranchus brevidorsalis
Sponges	Hexactinellids	Caulophacus (New subgenus) sp.
Sponges	Hexactinellids	Pheronematidae
Sponges	Hexactinellids	Poliopogon sp. 4
Sponges	Hexactinellids	Poliopogon sp.
Sponges	Hexactinellids	Poliopogon sp.B
Sponges	Hexactinellids	Walteria cf. leukarti
<b>Overall Map of ROV Dive Area</b>		





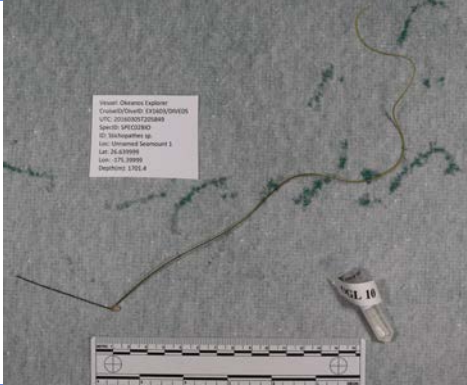


**Samples Collected**

<b>Sample ID</b>	EX1603_20160305T193613_D2_DIVE05_SPEC01GEO
<b>Date (UTC)</b>	20160305
<b>Time (UTC)</b>	19:36:13
<b>Depth (m)</b>	1756
<b>Temperature (°C)</b>	2.3
<b>Field ID(s)</b>	Mn-encrusted volcanic



**Comments**

<b>Sample ID</b>	EX1603_20160305T205849_D2_DIVE05_SPEC02BIO
<b>Date (UTC)</b>	20160305
<b>Time (UTC)</b>	20:58:49
<b>Depth (m)</b>	1701
<b>Temperature (°C)</b>	2.31

Field ID(s)	Stichopathes sp.	
Comments		
Sample ID	EX1603_20160305T230941_D2_DIVE05_ SPEC03GEO	
Date (UTC)	20160305	
Time (UTC)	23:09:41	
Depth (m)	1634	
Temperature (°C)	2.41	
Field ID(s)	Mn-encrusted volcanic	
Comments		
Sample ID	EX1603_20160306T010937_D2_DIVE05_ SPEC04BIO	
Date (UTC)	20160306	
Time (UTC)	01:09:37	
Depth (m)	1603	
Temperature (°C)	2.37	
Field ID(s)	Bathypathes sp.	
Comments		

**Please direct inquiries to:**

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