



Okeanos Explorer ROV Dive Summary

Dive Information	
Dive Map	
Site Name	Last Dive Guyot (Unofficial name))
Expedition Coordinator(s)	Brian RC Kennedy
ROV Lead(s)	Dan Rogers
Science Team Lead(s)	Chris Kelley and Jasper Konter
General Area Descriptor	Wake Atoll Unit of the PRIMNS
ROV Dive Name	
Cruise	EX-16-06
Leg	0
Dive Number	14

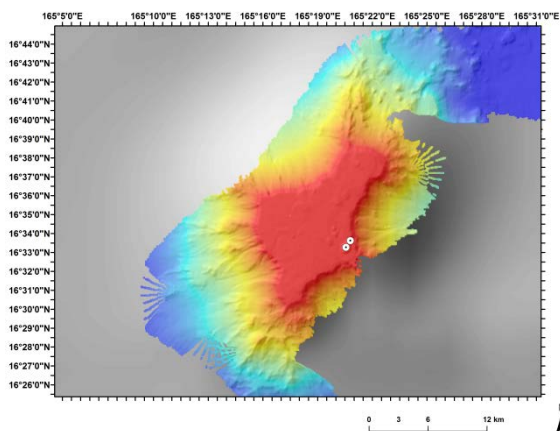
Equipment Deployed			
ROV	Deep Discoverer (D2)		
Camera Platform	Seirios		
ROV Measurements	<input checked="" type="checkbox"/> CTD	<input checked="" type="checkbox"/> Depth	<input checked="" type="checkbox"/> Altitude
	<input checked="" type="checkbox"/> Scanning Sonar	<input checked="" type="checkbox"/> 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)	<p>Dive Summary: EX1606_DIVE14 ^^^</p> <p>In Water: 2016-08-15T20:28:02.705000 16°, 33.736' N ; 165°, 20.759' E</p> <p>Out Water: 2016-08-16T03:15:00.755000 16°, 32.700' N ; 165°, 20.191' E</p> <p>Off Bottom: 2016-08-16T00:47:39.730000 16°, 33.555' N ; 165°, 20.642' E</p> <p>On Bottom: 2016-08-15T21:17:34.522000 16°, 33.638' N ; 165°, 20.754' E</p> <p>Dive duration: 6:46:58</p> <p>Bottom Time: 3:30:5</p> <p>Max. depth: 1283.9 m</p>		
Special Notes			
Scientists Involved (please provide name, location, affiliation, email)	Name	Affiliation	Email
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Purpose of the Dive	<p>The objective of the dive was to survey an un-named guyot and in particular a curious mound shaped feature that may or may not be volcanic in origin. If it turned out to be volcanic, then it could have formed as a result of rejuvenated volcanism. The ROV planned track was to begin the benthic part of the dive on the flat guyot summit next to the feature then move to it and up its flank until it reached the top. The animal focus was the same as most of the previous dives: deep water corals, sponges, and fishes, as well as other animals encountered. This dive was one of the shallowest dives on a guyot in the monument since most of the planned track was above the main flat summit. We hoped this dive would also provide data and samples for use in determining the geologic history of this seamount.</p>		
Description of the Dive	<p>This dive was again affected by weather conditions. The weather turned progressively worse throughout the day, and the decision was made to bring the vehicles up to the surface after 3.5 hours on the seafloor. Upon reaching the bottom around 21:15UTC (1282m depth), we found a field of cobbles and boulders with sediment between the rocks instead of the expected sandy seafloor. It appeared that at least this part of the summit was covered with Mn-encrusted rocks that looked like pillow lavas forming a series of pillow mounds. A Mn encrusted basalt sample was obtained from the edge of one of these mounds (22:47UTC, 1279m). As we arrived at the edge of the cone, the surface became</p>		

even more consolidated, showing larger Mn encrusted surfaces, again appearing to be formed from pillow (and tube) lavas. A fairly uneven terrain was present on the slopes, with multi-meter high offsets. As the dive progressed, the vehicles ended up on the edge of a slightly more level area (before the remainder of the dome's edge), which showed more sediment between the Mn encrusted rocks. The dive was cut short well before the final way point was reached, having covered just under half of the planned dive track, leaving the bottom around 1200m.

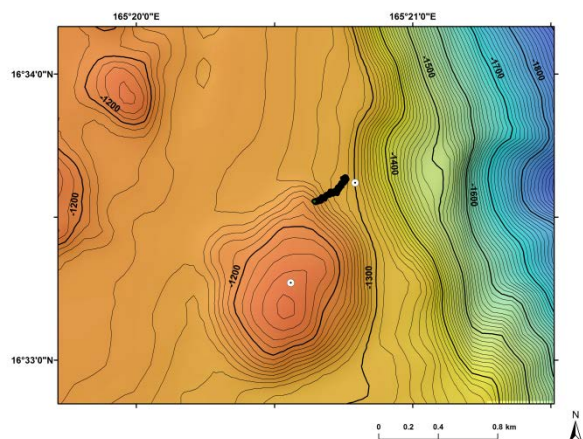
The top of the guyot and the dome feature were home to many more animals than expected, the most abundant of which were primnoid corals (*Narella* sp, *Calyptrophora* sp). Other corals included an isidid (*Clade B*), *Chrysogorgia* sp and *Iridogorgia spiralis*, a plexaurid, a coralliid (*Hemicorallium* sp), and a *Victorgorgia* sp (collected). Only one antipatharian was observed, which was growing in a farreid sponge (collected). Other cnidarians were observed as well including a sea pen (*Umbellula* sp), a single polyp scleractinian, an *Anthomastus* sp, a tubulariid and a corymorphid hydrozoan, and anemones (including *Actinernus nobilis*). Sponges were all hexactinellids and included *Poliopogon* sp, *Dictyocalyx* sp?, *Walteria* sp, *Dictyaulus* sp, *Caulophacus* sp, and a *Tretopleura* sp. Crustaceans included a blue colored shrimp (aristeid) that may have appeared that way because it recently molted, a pandalid shrimp, and squat lobsters (*Uroptychus* sp). Echinoderms were represented by sea lilies (*Proisocrinus ruberrimus*), feather stars, (*Thaumatocrinus* sp?, *Glyptometra* sp?, and other comatulids), ophiuroids (astroschematids and others), a holothurian, an urchin (*Aspidodiadema* sp), and 2 *Hymenaster* sp seastars. Aside from the primnoids, fishes were the most numerous animals near and on the dome and included *Aldrovandia* sp, *Bassozetus* sp, synaphobranchids, and a species of conger eel (*Bathyroconger* sp?).

Overall Map of the ROV Dive Area



Overview map of the dive site.

Close-up Map of Main Dive Site



Map showing the actual dive track in comparison to planned start and end points.

Representative Photos of the Dive

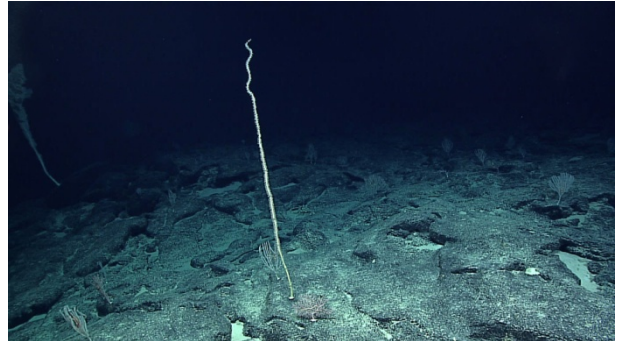
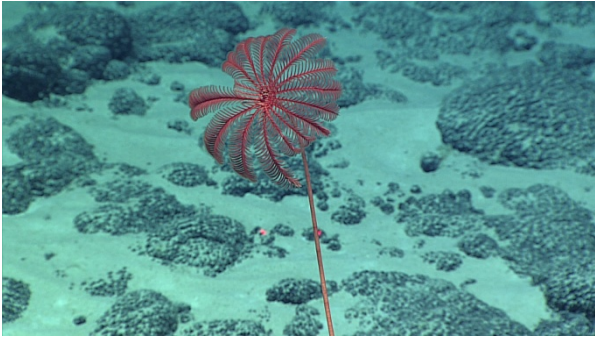


Image of the base of the feature where sediment and mn crusted rocks were observed as well as stalked crinoids and other animals.

The substrate became more consolidated and the ROV progressed upslope.

Samples Collected

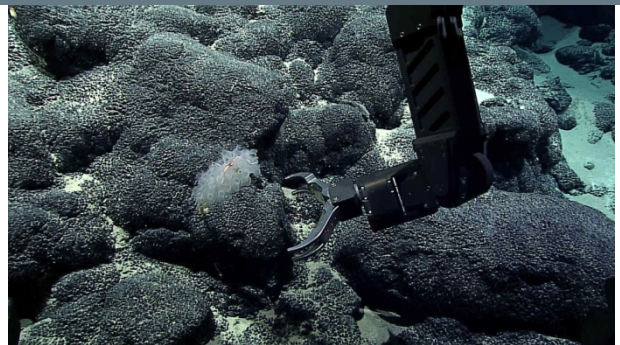
Sample

Sample ID	D2_DIVE14_SPEC01GEO
Date (UTC)	20160815
Time (UTC)	22:49:20
Depth (m)	1278.8139
Temperature (°C)	3.75843
Field ID(s)	Mn crusted rock
Comments	

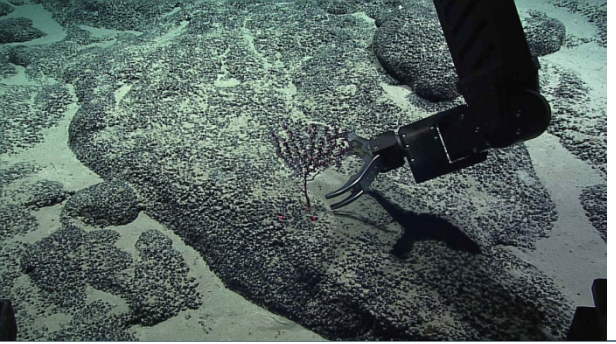


Sample

Sample ID	D2_DIVE14_SPEC02BIO
Date (UTC)	20160816
Time (UTC)	23:43:52
Depth (m)	1241.794
Temperature (°C)	2.1832
Field ID(s)	Farrea sp
Comments	Commensal antipatharian



Sample

Sample ID	D2_DIVE14_SPEC03BIO	
Date (UTC)	20160816	
Time (UTC)	0:46:23	
Depth (m)	1215.4846	
Temperature (°C)	3.88041	
Field ID(s)	Victorgorgia	
Comments	Commensal ophiuroid	

Please direct inquiries to:

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