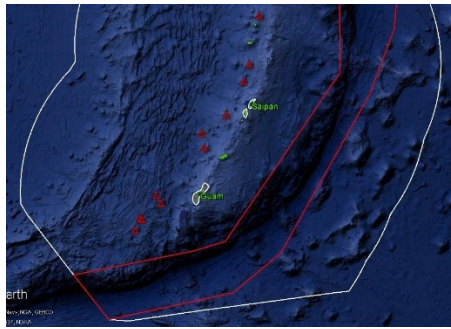


# OKEANOS EXPLORER ROV DIVE SUMMARY

Site Name	Fina Nagu Caldera D			
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 05	
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				
ROV Dive Summary (From processed ROV data)	Dive Summary: EX1605L1_DIVE05			
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	In Water:	2016-04-25T21:49:57.964000 12°, 41.464' N ; 143°, 44.848' E		
	Out Water:	2016-04-26T06:36:57.110000 12°, 41.977' N ; 143°, 45.322' E		
	Off Bottom:	2016-04-26T05:09:05.212000 12°, 42.002' N ; 143°, 44.849' E		
	On Bottom:	2016-04-25T23:39:13.086000 12°, 41.605' N ; 143°, 44.975' E		
	Dive duration:	8:46:59		
Bottom Time:	5:29:52			
Max. depth:	2973.7 m			
Special Notes				
Scientists Involved (please provide name / location / affiliation / email)	Stace Beaulieu, WHOI; <a href="mailto:sbeaulieu@whoi.edu">sbeaulieu@whoi.edu</a> Scott France, UL Lafayette; <a href="mailto:france@louisiana.edu">france@louisiana.edu</a> Patty Fryer, UH; <a href="mailto:pfryer@soest.hawaii.edu">pfryer@soest.hawaii.edu</a> Tara Harmer Luke, Stockton University; <a href="mailto:Tara.Luke@stockton.edu">Tara.Luke@stockton.edu</a> Chris Kelley, UH; <a href="mailto:ckelley@hawaii.edu">ckelley@hawaii.edu</a> Alexander Kerr, University of Guam; <a href="mailto:alexander.kerr@aya.yale.edu">alexander.kerr@aya.yale.edu</a> Asako Matsumoto, Chiba Institute of Technology; <a href="mailto:amatsu@gorgonian.jp">amatsu@gorgonian.jp</a>			

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**Purpose of the Dive**

The Fina Nagu Volcanic Chain is poorly studied, and none of its calderas, until this dive, had been imaged for signs of hydrothermal activity or biological communities. Based on the location of our dive, we think that volcanic activity would increase northward through the calderas but are unsure. Fina Nagu D was expected to have some mature biology communities, but little biology was seen. This dive began at 3029 m, and traversed 750 m upslope to the north, ending at a depth of 2692 m.

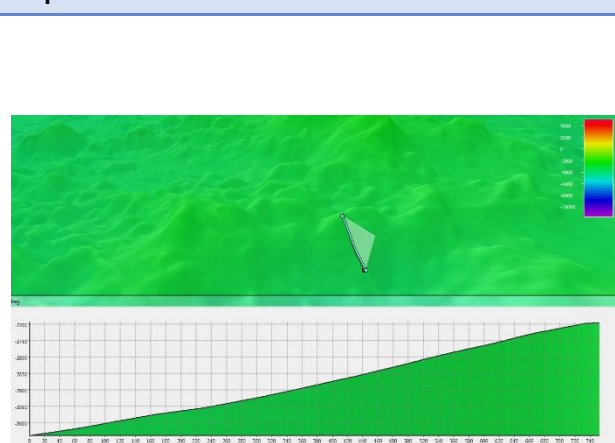
**Description of the Dive:**

The dive began at 2970 m and moved NNW up a ridge of the Fina Nagu D caldera wall.

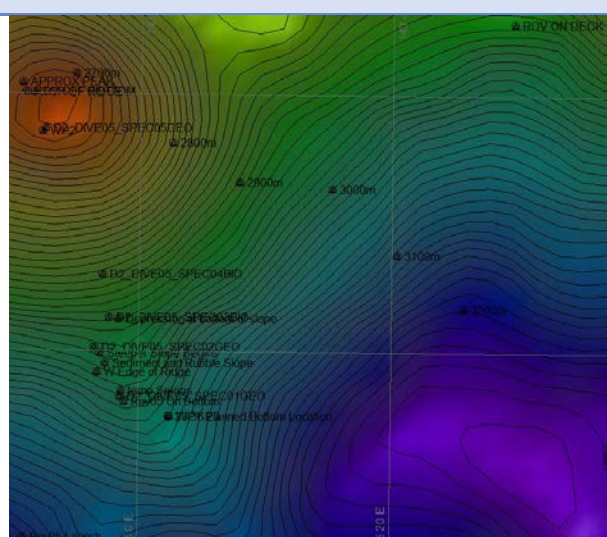
The ROV touched down in fairly fresh-looking volcanics, with low MN-crust coatings and little sediment. We saw many lava morphologies on this dive, including pillows, ropy lava, blocky talus, and sheet flows. In one area we saw what looked like dikes also. As we moved up the slope, we saw many scree slopes with moderate to heavy sediment, and talus. There were isolated small outcrops, but it was not until about 2700 m that we transitioned almost entirely to outcrops, with less talus and less sediment. When we reached the local high (Waypoint 2), it was an enormous pile of blocky talus that looked fresh and mostly unsedimented. Geological samples were collected near the beginning of the dive (D2\_DIVE05\_SPEC02GEO), at the dike feature (D2\_DIVE05\_SPEC02GEO), and in the outcrops just before we reached the talus slope (D2\_DIVE05\_SPEC05GEO).

The biology tended to be comprised of mostly suspension-feeding organisms e.g. crinoids, sponges, isidids and stylasterids. Interesting animals of note included three possible new species of sponge, likely all *Hyalonema* spp. Two of these were collected (D2\_DIVE05\_SPEC03GEO and D2\_DIVE05\_SPEC04GEO). We also encountered a benthic siphonophore (dandelion), two swimming cf. *Paleopatides* sp., a mating pair of amphipods, a benthic ctenophore, and a predatory tunicate, *Megalodicopia* sp.

**Map of ROV Dive Area**

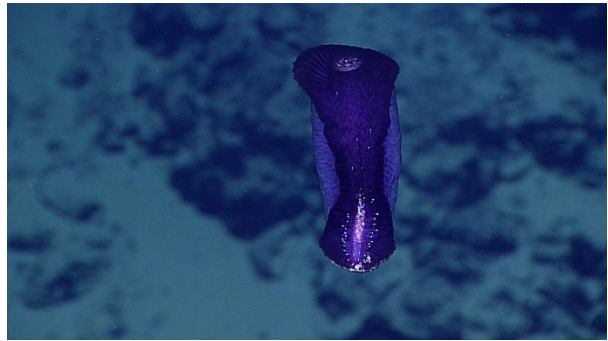
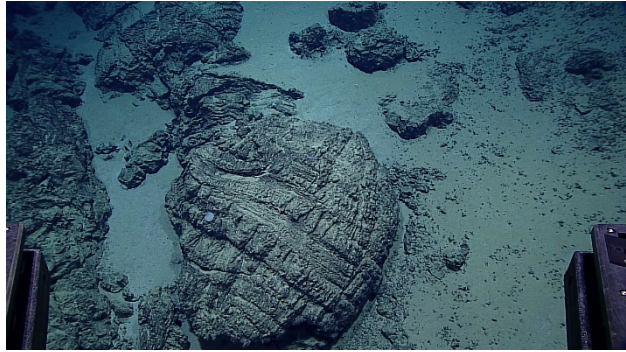


Fledermaus map of planned dive EX1605L1-DIVE05 track.



Hypack screengrab of actual dive EX1605L1-DIVE05 track

**Representative Photos of the Dive**



Some of the many pillow basalts encountered during DIVE 07.

A cf. *Paleopatides* sp. holothurian swimming.

**Samples Collected**

Sample ID	D2_DIVE05_SPEC01GEO
Date (UTC)	20160425
Time (UTC)	23:51:13
Depth (m)	2970
Temperature (°C)	1.677
Field ID(s)	Mn-coated basalt
Comments	No commensals



Sample ID	D2_DIVE05_SPEC02GEO
Date (UTC)	20160426
Time (UTC)	01:24:44
Depth (m)	2938
Temperature (°C)	1.678
Field ID(s)	Mn-coated basalt



Comments	No commensals.
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<b>Sample ID</b>	D2_DIVE05_SPEC03BIO	
<b>Date (UTC)</b>	20160426	
<b>Time (UTC)</b>	02:01:51	
<b>Depth (m)</b>	2935	
<b>Temperature (°C)</b>	1.693	
<b>Field ID(s)</b>	<i>Hyalonema</i> sp.	
<b>Comments</b>	One commensal = Scalpellidae barnacle.	
<b>Sample ID</b>	D2_DIVE05_SPEC04BIO	
<b>Date (UTC)</b>	20160426	
<b>Time (UTC)</b>	03:31:13	
<b>Depth (m)</b>	2894	
<b>Temperature (°C)</b>	1.709	
<b>Field ID(s)</b>	<i>Hyalonema</i> sp.	
<b>Comments</b>	No commensals.	
<b>Sample ID</b>	D2_DIVE05_SPEC05GEO	
<b>Date (UTC)</b>	20160426	
<b>Time (UTC)</b>	04:51:51	
<b>Depth (m)</b>	2675	
<b>Temperature (°C)</b>	1.703	
<b>Field ID(s)</b>	Basalt	
<b>Comments</b>	No commensals.	
<b>Please direct inquiries to:</b>	NOAA Office of Ocean Exploration & Research 1315 East-West Highway (SSMC3 10 <sup>th</sup> Floor) Silver Spring, MD 20910 (301) 734-1014	