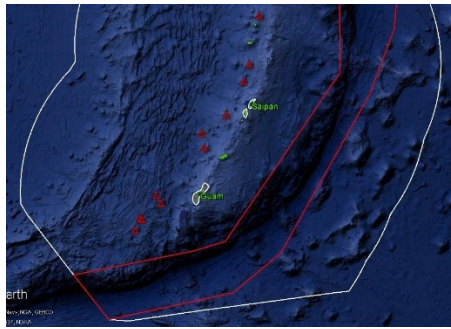


# OKEANOS EXPLORER ROV DIVE SUMMARY

Site Name	Santa Rosa South			
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 02	
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	None			
ROV Dive Summary (From processed ROV data)	<p>Dive Summary: EX1605L1_DIVE02</p> <p>~~~~~</p> <p>In Water: 2016-04-21T20:31:04.901000 12°, 43.918' N ; 144°, 16.020' E</p> <p>Out Water: 2016-04-22T04:42:13.830000 12°, 43.951' N ; 144°, 16.646' E</p> <p>Off Bottom: 2016-04-22T04:20:18.244000 12°, 43.912' N ; 144°, 16.627' E</p> <p>On Bottom: 2016-04-21T21:22:33.279000 12°, 43.932' N ; 144°, 16.100' E</p> <p>Dive duration: 8:11:8</p> <p>Bottom Time: 6:57:44</p> <p>Max. depth: 580.9 m</p>			
Special Notes				
Scientists Involved (please provide name / location / affiliation / email)	<p>Amy Baco-Taylor, FSU; <a href="mailto:abacotaylor@fsu.edu">abacotaylor@fsu.edu</a>  David Burdick, U Guam; <a href="mailto:burdickdr@hotmail.com">burdickdr@hotmail.com</a>  Scott France, UL Lafayette; <a href="mailto:france@louisiana.edu">france@louisiana.edu</a>  Tara Harmer Luke, Stockton University; <a href="mailto:Tara.Luke@stockton.edu">Tara.Luke@stockton.edu</a>  Santiago Herrera, U Toronto &amp; WHOI; <a href="mailto:sherrera@alum.mit.edu">sherrera@alum.mit.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></p>			

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**Purpose of the Dive**

This dive was on a ridge feature located at site called Santa Rosa South where the goal was to explore for high-density communities of deep-sea corals, in this case precious corals that are under the management of NOAA Fisheries. While the precious coral fishery is listed as a managed fishery in Guam and CNMI, no precious coral beds have been identified to date and only anecdotal accounts have been published of their presence in this region of the Pacific. This particular site was chosen to also survey bottom-fish fishery habitat, which has also not been characterized in Guam/CNMI and determine if there is a depth and site overlap between the two fisheries.

**Description of the Dive:**

The dive began at 578 m at the base of a ridge, then the ROV moved east up the ridge for ~900 m to a final target depth of ~286 m at the top of the ridge.

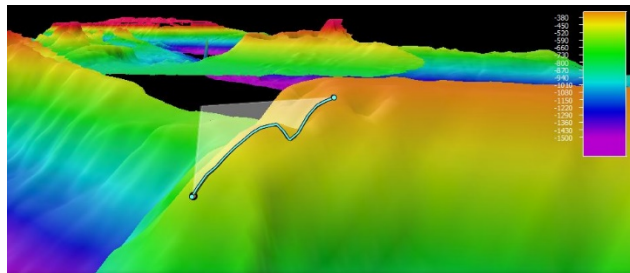
The dive began in an area of fractured volcanic rocks. The structures were not particularly well-defined, looking mostly like small broken pillow or lobate flows. We were unable to collect a rock in this area. Fauna were seen regularly: mostly octocorals, scleractinians, squat lobsters, crabs and echinoderms. One *Madrepora* scleractinian with a commensal coral and squat lobster was collected (D2\_DIVE02\_SPEC01BIO). Many interesting fish were also observed.

Very soon after landing in volcanics (probably basalts) the geology transitioned to a fissured, carbonate crust. The ridge appeared to be mostly Mn-encrusted, weathered looking carbonate. As we progressed, this encrusted carbonate became less weathered, but more rounded. We picked up a Mn-crust carbonate (?) (D2\_DIVE02\_SPEC02GEO) at this point. We passed through a boulder field composed of carbonate blocks, some of which were very rounded instead of angular. In this area, there were some significant fissures and fractures. Toward the end of the dive, we emerged onto a flat carbonate platform that looked like it might have been subaerially exposed in the past. A carbonate rock was collected in this area (D2\_DIVE02\_SPEC03GEO). Regular sightings of octocorals, scleractinians, squat lobsters, crabs and echinoderms continued until the vehicle entered an area with many isidid and primnoid corals. The diversity of fauna then decreased and only a sylasterid field were observed as the vehicles continued up the carbonate platform. A stalked crinoid (likely Hyocrinidae sp.) was collected (D2\_DIVE02\_SPEC04BIO), as well as a piece of a *Lepidisis* coral (D2\_DIVE02\_SPEC05BIO).

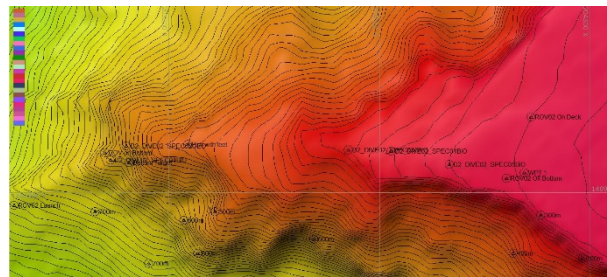
At the end of the dive on the carbonate platform at 250 m, observations of fauna were rare.

During this dive, only one species of commercially-valuable coral, *Pleurocorallium*, but no species of commercially valuable fish were observed.

**Map of ROV Dive Area**

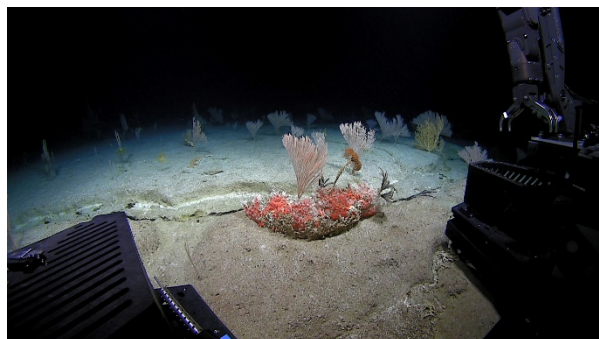
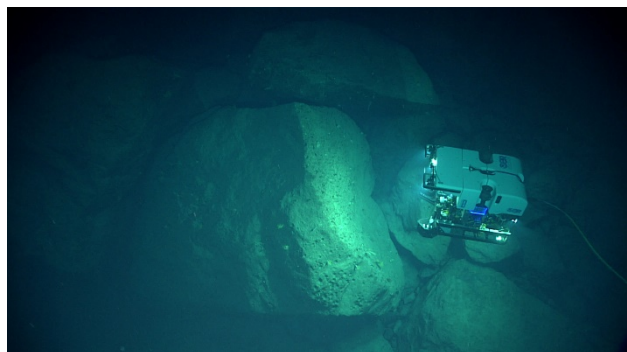


Fledermaus map of planned dive EX1605L1-DIVE02 track.



Hypack screengrab of actual dive EX1605L1-DIVE02 track

**Representative Photos of the Dive**


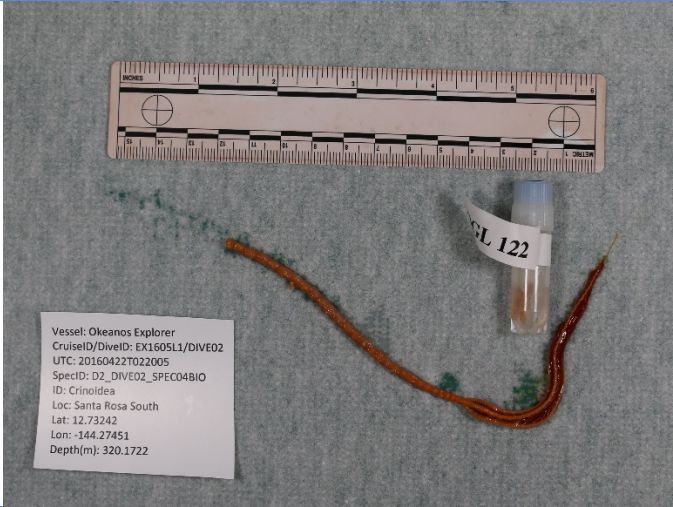



ROV D2 with some of the large carbonate boulders encountered on this dive.

A high abundance and diversity coral assemblage on the carbonate wave platform towards the end of the dive.

**Samples Collected**

<b>Sample ID</b>	D2_DIVE02_SPEC01BIO	<p>A photograph of a biological sample consisting of orange branching coral and a small orange crustacean (squat lobster) on a green mesh background. A ruler and a label are included for scale and identification.</p>
<b>Date (UTC)</b>	20160421	
<b>Time (UTC)</b>	21:44:23	
<b>Depth (m)</b>	575	
<b>Temperature (°C)</b>	6.079	
<b>Field ID(s)</b>	<i>Lepidisis</i> sp.	
<b>Comments</b>	Two commensals: one <i>Desmophyllum</i> cup coral and one squat lobster.	
<b>Sample ID</b>	D2_DIVE02_SPEC02GEO	<p>A photograph of a dark, porous carbonate rock sample. A ruler and a label are included for scale and identification.</p>
<b>Date (UTC)</b>	20160422	
<b>Time (UTC)</b>	01:29:17	
<b>Depth (m)</b>	346	
<b>Temperature (°C)</b>	6.678	
<b>Field ID(s)</b>	Carbonate Rock	
<b>Comments</b>	No commensals.	
<b>Sample ID</b>	D2_DIVE02_SPEC03GEO	

<b>Date (UTC)</b>	20160422	
<b>Time (UTC)</b>	01:29:17	
<b>Depth (m)</b>	346	
<b>Temperature (°C)</b>	7.875	
<b>Field ID(s)</b>	Carbonate rock covered in Mn?	
<b>Comments</b>	No commensals.	
<b>Sample ID</b>	D2_DIVE02_SPEC04BIO	
<b>Date (UTC)</b>	20160422	
<b>Time (UTC)</b>	02:20:05	
<b>Depth (m)</b>	320.1722	
<b>Temperature (°C)</b>	9.384	
<b>Field ID(s)</b>	Hyocrinidae (stalked crinoid) sp.	
<b>Comments</b>	No commensals.	
<b>Sample ID</b>	D2_DIVE02_SPEC05BIO	
<b>Date (UTC)</b>	20160422	
<b>Time (UTC)</b>	03:43:04	
<b>Depth (m)</b>	298.316	
<b>Temperature (°C)</b>	11.618	
<b>Field ID(s)</b>	<i>Lepidisis</i> sp.	
<b>Comments</b>	No commensals.	

**Please direct inquiries to:**

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Silver Spring, MD 20910  
(301) 734-1014