OKEANOS EXPLORER ROV DIVE SUMMARY

Site Name	2a		EX 1103 GALREX - SITES OF INTEREST BOOTH BROWN BROWN BROWN BROWN BROWN BOOTH BROWN BROWN BROWN BROWN BROWN BROWN BROWN BROWN BROWN BROWN BROWN BROWN BRO
ROV Lead/ Expedition Coordinator	Dave Lova Jeremy Po		
General Area Descriptor	Site 2a, , ~175nm northeast o	of the Galapagos Islands	SOUTH SPECIAL MODERN SECTION SECTION SECTION
ROV Dive Name	Cruise Season	Leg	Dive Number
	EX1103 ROV:	2	Little Hercules
Equipment Deployed	Camera Platfom:		Seirios
ROV Measurements		□ Depth □ USBL Position □ Roll □ Low Res Cam 2	☐ Altitude ☐ Heading ☐ HD Camera
Equipment Malfunctions		None	·
ROV Dive Summary (From processed ROV data)	00°, Out Water at: 201 00°, Off Bottom at: 201 00°, On Bottom at: 201 00°, Dive duration: 8:8: Bottom Time: 6:8:	1-07-16T14:28:27.687000 44.322' N; 088°, 18.728' N 1-07-16T22:37:11.620000 44.161' N; 088°, 18.559' N 1-07-16T21:04:48.084000 44.278' N; 088°, 18.591' N 1-07-16T14:56:16.948000 44.334' N; 088°, 18.660' N	W W
Special Notes	Click here to enter text.	c Evnlorar Laad Scientic	rt/WHOI/tchank@whoi adu
Scientists Involved (please provide name / location / affiliation / email)	Timothy M. Shank/ Okeanos Explorer Lead Scientist/WHOI/tshank@whoi.edu Edward T. Baker/NOAA-PMEL, Washington/Edward.baker@noaa.gov Robert W. Embley/NOAA-PMEL, Oregon/Robert.w.embley@noaa.gov Stephen Hammond/ NOAA-PMEL, Oregon/Stephen.r.hammond@noaa.gov James F. Holden/ UMASS Amherst/jholden@microbio.umass.edu Scott White/University of South Carolina/swhite@geol.sc.edu Sharon L. Walker/ NOAA-PMEL, Washington/sharon.l.walker@noaa.gov Santiago Herrera/ WHOI Exploration Command Center/WHOI/sherrera@whoi.edu T. Jennifer Lin/UMASS Amherst/tjennlin@gmail.com Catriona Munro/ WHOI Exploration Command Center WHOI/catmunro89 @gmail.com		

Taylor Heyl/ WHOI Exploration Command Center/WHOI/theyl@whoi.edu
Lucy C. Stewart/ UMASS Amherst/Isteweart@cns.umass.edu
Mashkoor Malik/ NOAA Office of Ocean Exploration & Research/mashkoor.malik@noaa.gov
Meme Lobecker/ NOAA Office of Ocean Exploration & Research/ Elizabeth.Lobecker@noaa.gov

Purpose of the Dive

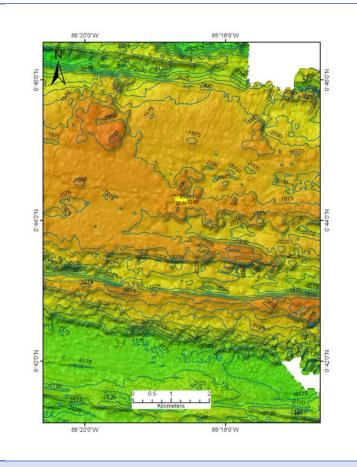
Site 2a has light-scattering properties dozens of meters off the seafloor and a strong hydrothermal plume signal was located here during the first leg of this expedition. The goal of this dive was to explore an area near 1970 meters where fresh lava flows were observed at the end of Dive 02 and to continue exploration for active hydrothermal venting.

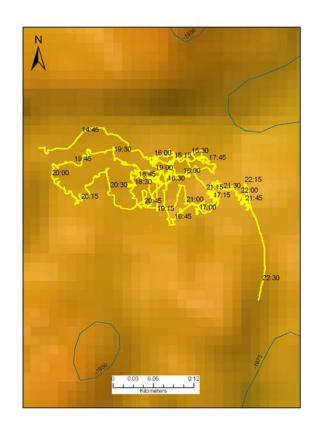
Description of the Dive:

During our third ROV dive on the Galápagos Rift, we continued searching for active hydrothermal vents. We came across recent lobate flow with hydrothermal staining and continued to move SW on this flow toward a ridge. Hydrothermal alteration of pillow lavas appeared more extensive in this region. Once on top of the ridge, there was speculation that this feature was a north-facing broken talus mound or wall and that there would be more hydrothermal activity to the west of our current location. As we moved west, low volume warm venting could be seen and particles in the water that were likely to be bacterial sulfur flocculent. Traversing over younger lava flow on our way north toward "Little Hercules smoke target", we passed a recent lava contact and the water remained murky with no sessile fauna and a decrease in hydrothermal staining. We came upon a 1 m wide fissure, floored with talus and pillow lava on either side and continued to follow the fissure with an increase in sediment, before turning to follow the fissure to the east. Towering hydrothermal sulfide spires appeared, lined west-to-east within the graben; remnants of past black smoker chimneys with scars in the rock where colonies of tubeworms once lived.

Overall Map of ROV Dive Area

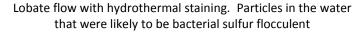
Close-up Map of Main Dive Site





Representative Photos of the Dive







Towering hydrothermal sulfide spires, lined west-to-east within the graben; remnants of past black smoker chimneys with scars in the rock where colonies of tubeworms once lived.

Please direct inquiries to:

NOAA Office of Ocean Exploration & Research 1315 East-West Highway (SSMC3 10th Floor) Silver Spring, MD 20910 (301) 734-1014