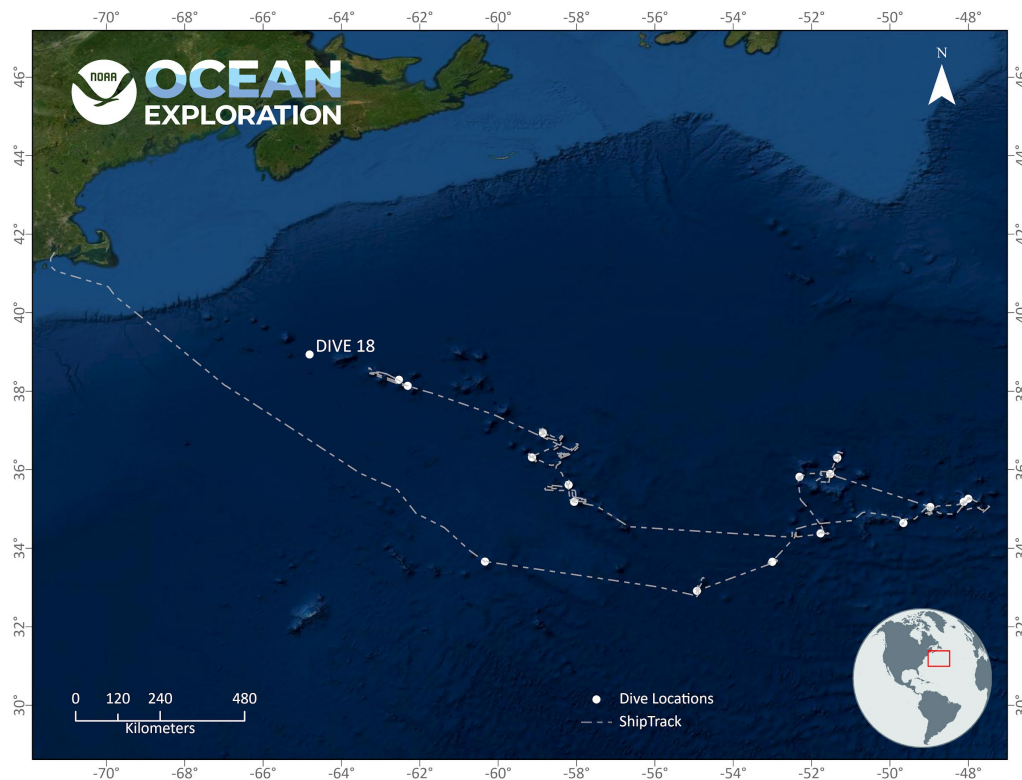


# ROV Dive Summary, EX-21-04, Dive 18, July 25, 2021

## General Location Map



## Dive Information

Site Name	'Asterina' Seamount
General Area Descriptor	Western end of the New England Seamount Chain, part of a series of three deep seamounts.
Science Team Leads	Rhian Waller, Jason Chaytor
Expedition Coordinator	Kasey Cantwell, Kimberly Galvez (Expedition Coordinator in Training)
ROV Dive Supervisor	Chris Ritter
Mapping Lead	Shannon Hoy
Dive Purpose	Explore a seamount
Was the dive restricted for	No

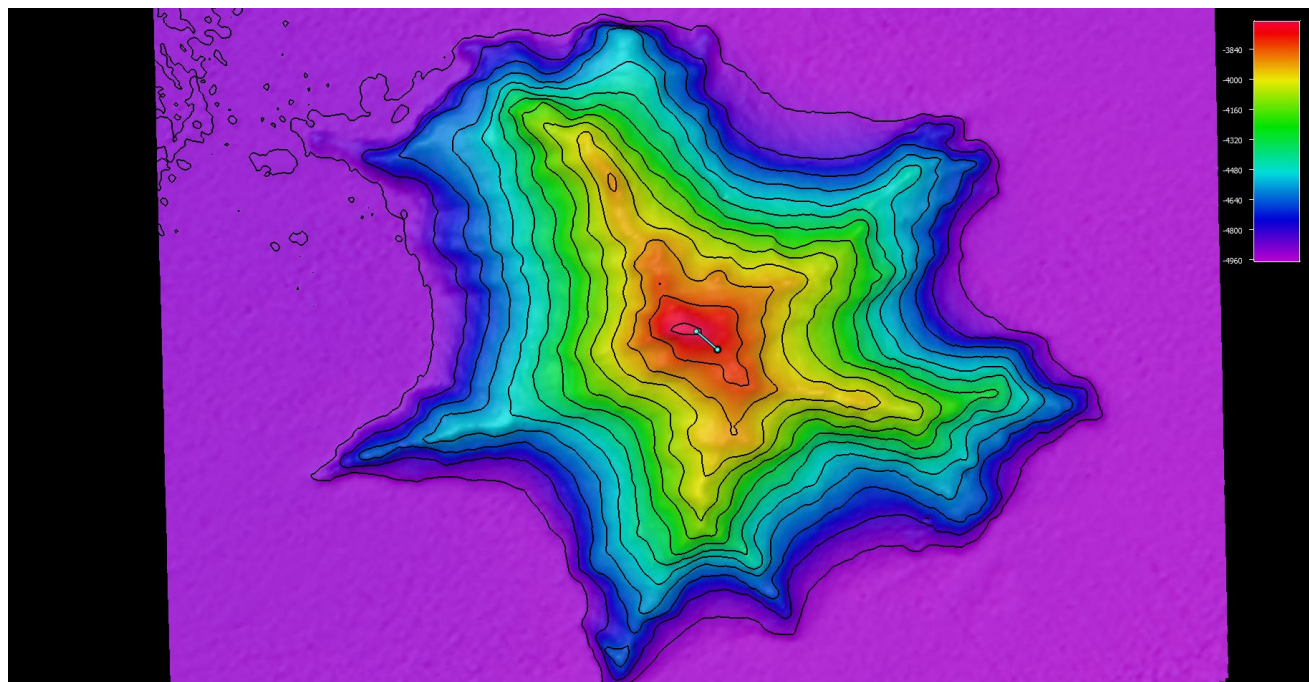
Underwater Cultural Heritage?	
ROV Dive Summary Data	<p>Dive Summary: EX2104_DIVE18            ^^^</p> <p>Dive Type: Normal</p> <p>In Water: 2021-07-25T15:27:54.826590            38.92722667384051 ; -64.8197133775442</p> <p>On Bottom: 2021-07-25T17:42:42.839919            38.92694080542748 ; -64.82043724374479</p> <p>Off Bottom: 2021-07-25T18:22:15.068370            38.92705283041431 ; -64.82084260007585</p> <p>Out Water: 2021-07-25T20:34:58.506589            38.928875971418826 ; -64.81954344333853</p> <p>Dive Duration: 5:7:3</p> <p>Bottom Time: 0:39:32</p> <p>Max Vehicle Depth: 3791.9 m</p> <p>Min Seafloor Depth: 3783.7 m</p> <p>Distance Travelled: 65.9 m</p>
Dive Description	<p>Original dive track was aborted and vehicle recovered immediately after deployment. Vehicle was checked over and redeployed on a shallower dive track, but given the depth, this led to just 39mins of bottom time.</p> <p>Large, sediment-free (current swept?) FeMn encrusted lobate and pillow lava outcrops and pockets of mixed biogenic/volcaniclastic sediment and gravel cover comprised the bulk of the substrate encountered during this very abbreviated dive near the summit peak of “Asterina” Seamount. Although only a short distance from the summit, a significant number of large displaced boulders were encountered, at least one of which was extremely angular and appeared to lack the thickness of FeMn crust seen on other boulders. The presence of these larger cobbles and boulders suggests that the slope above the dive transect may continue to be significantly unstable.</p> <p>Biological observations include multiple types of Hexactinellid sponges, several anemones, Keratoisidae and J Clade bamboo corals, anthomastus, bathypathes, the grenadier fish <i>Coryphaenoides armatus</i>, and a pteraster slime star. Most notable however were a species of sea pen and several individuals (&gt;5) of rare rock pens of unknown species. This dive confirms both the abundant presence of rock pens in this area, but also the deepest known record of these rock pens in the Atlantic.</p>
Notable Observations	Deepest known record of rock pens from the Atlantic
Community and habitat observations	<p>Corals and Sponges - Present</p> <p>Chemosynthetic Community - Absent</p> <p>High biodiversity Community - Absent</p> <p>Active Seep or Vent - Absent</p> <p>Extinct Seep or Vent - Absent</p> <p>Hydrates - Absent</p>

CMECS Feature Type(s)	Rock, Sediment (Fine & coarse unconsolidated)
SeaTube Link (science annotation system)	<a href="https://data.oceannetworks.ca/SeaTubeV3?resourceTypeId=600&amp;resourceId=2413">https://data.oceannetworks.ca/SeaTubeV3?resourceTypeId=600&amp;resourceId=2413</a>

## Equipment Deployed

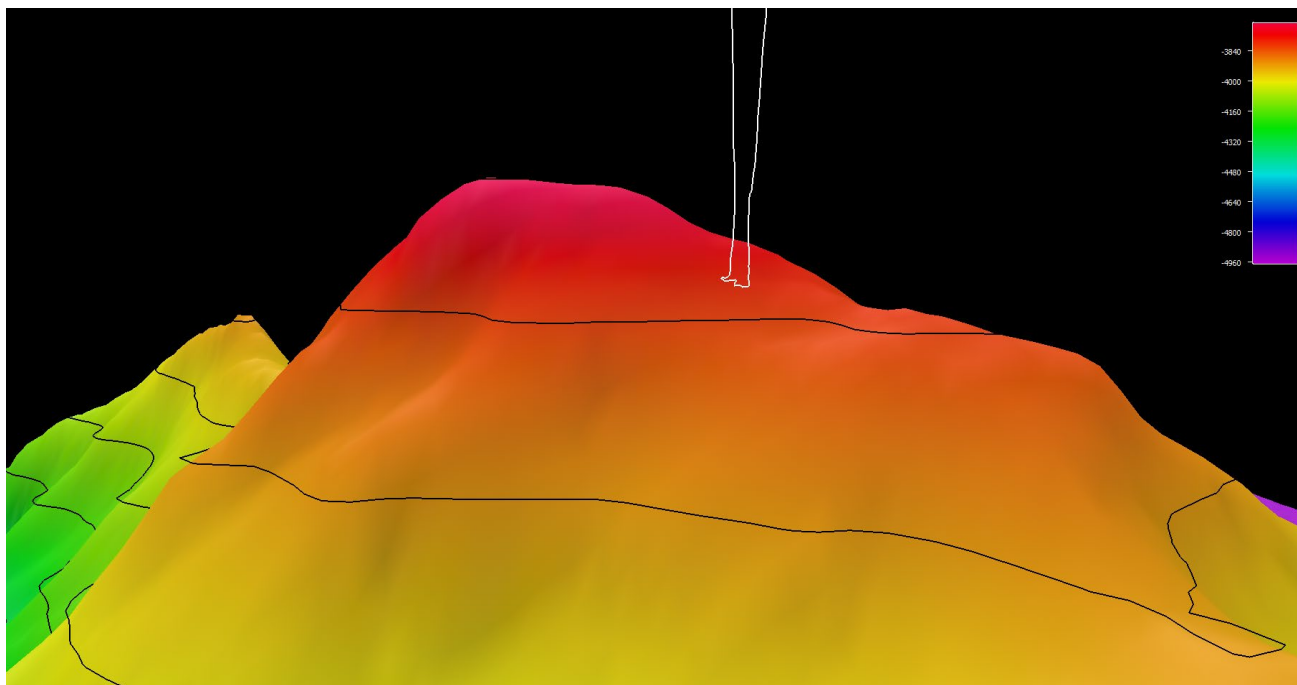
ROV	<i>Deep Discoverer</i>
Camera Platform	<i>Seirios</i>
ROV Measurements	The following ROV measurements, data streams and equipment are used on each ROV deployment: CTD, depth, scanning sonar, USBL position, altitude, heading, attitude, high-resolution cameras, low resolution cameras, manipulator arms, suction sampler, sample drawers and thrusters. The section below notes if any of these sensors were malfunctioning or not operational
Equipment Malfunctions	The conductivity (salinity) sensor on <i>Seirios</i> malfunctioned and recorded incorrect information.

## Overview of Main Dive Site



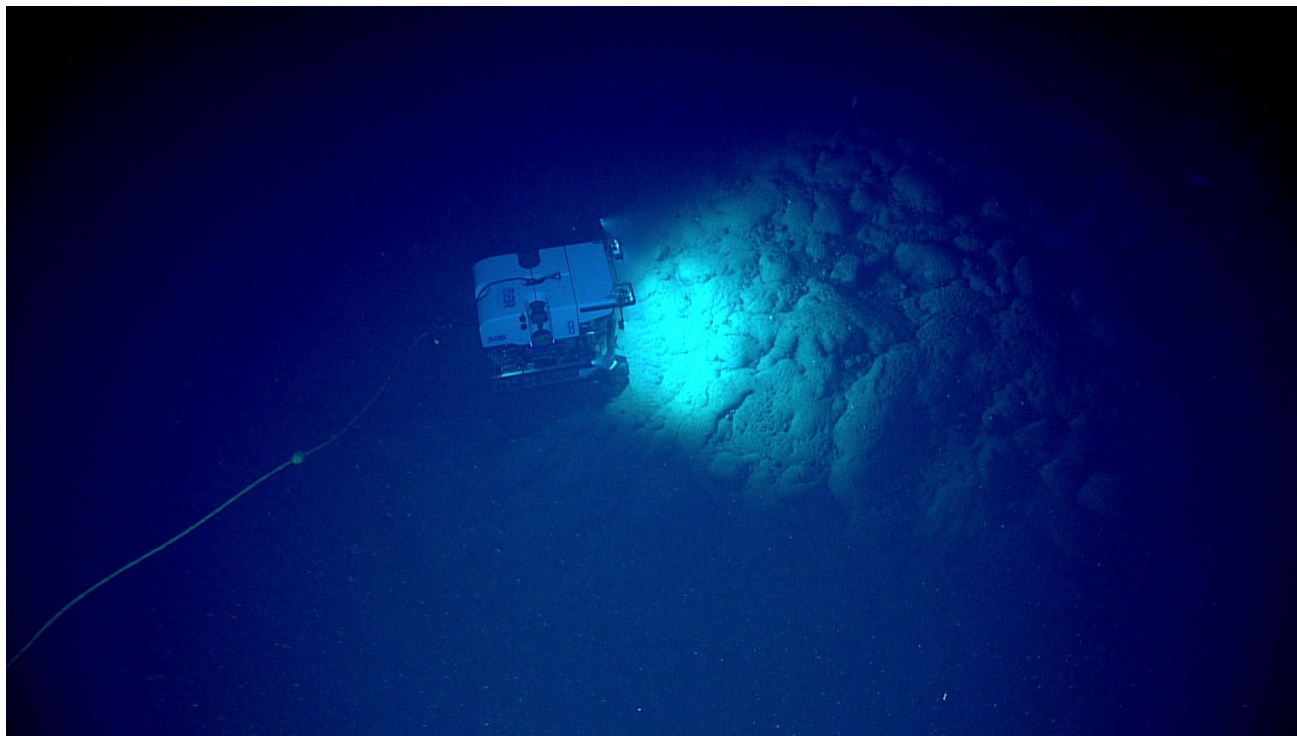
Smoothed ROV dive track (blue) on an overview bathymetry of the seamount, 3x vertical exaggeration.

## Close-up Map of Main Dive Site



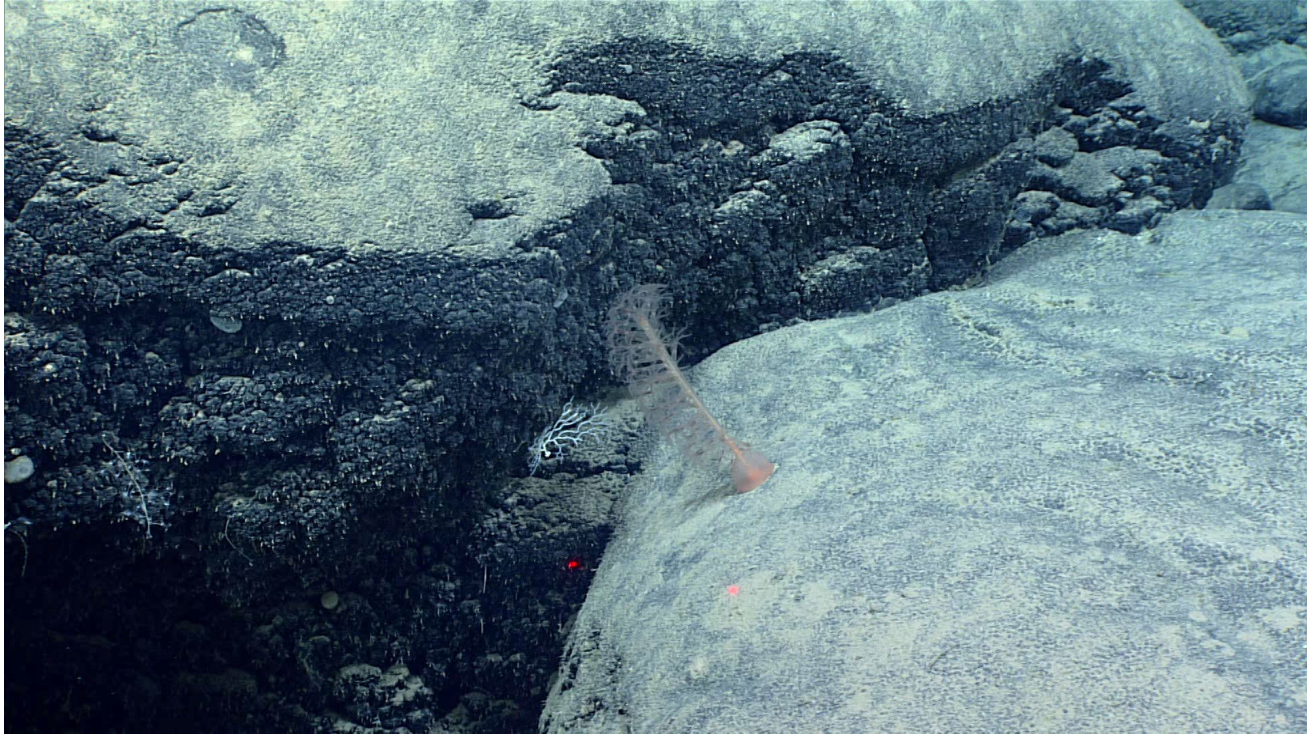
Smoothed ROV dive track in white on 25x25 cell size bathymetry, 3x vertical exaggeration, depth in meters.

## Representative Photos of the Dive



[Sediment-free lobate/pillow lava outcrops]





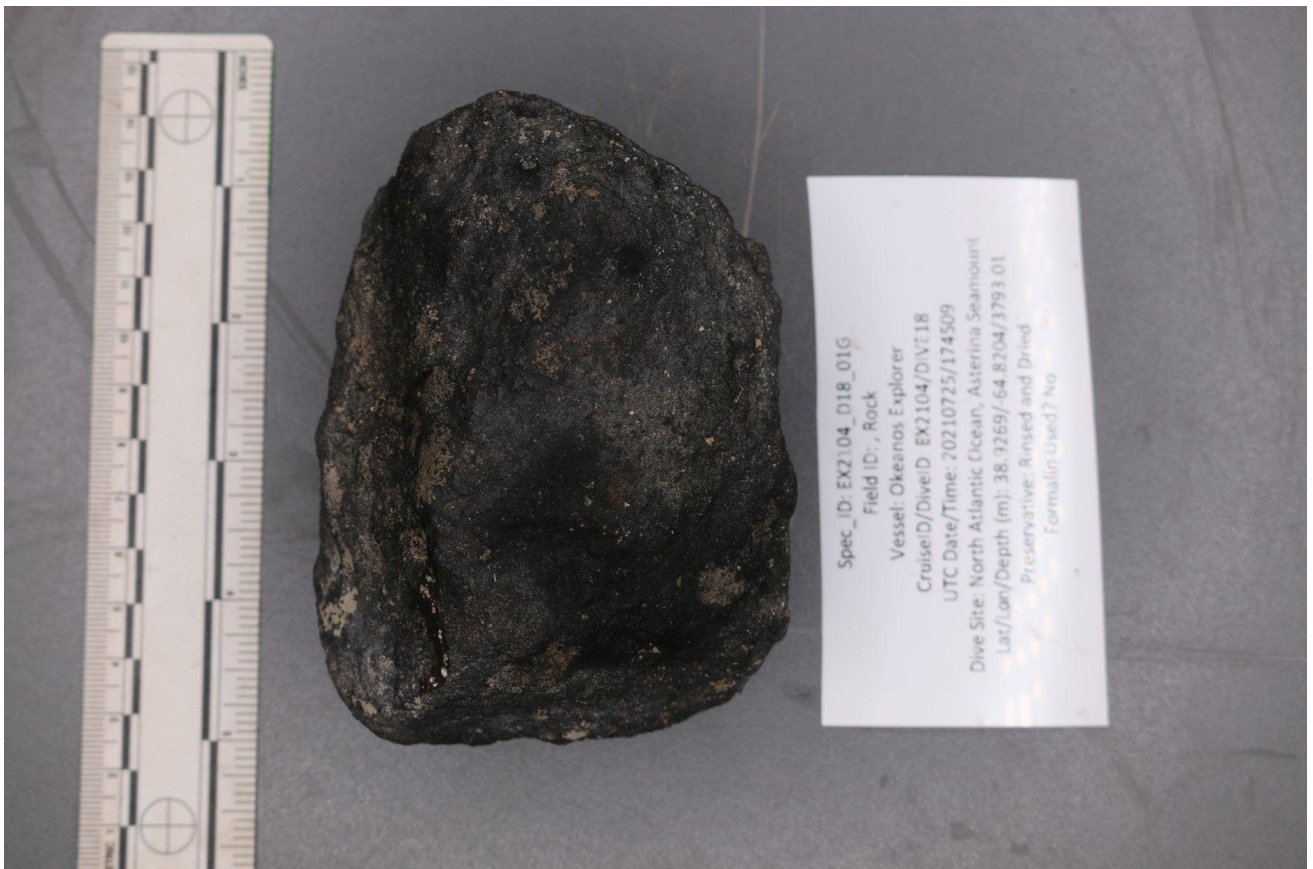
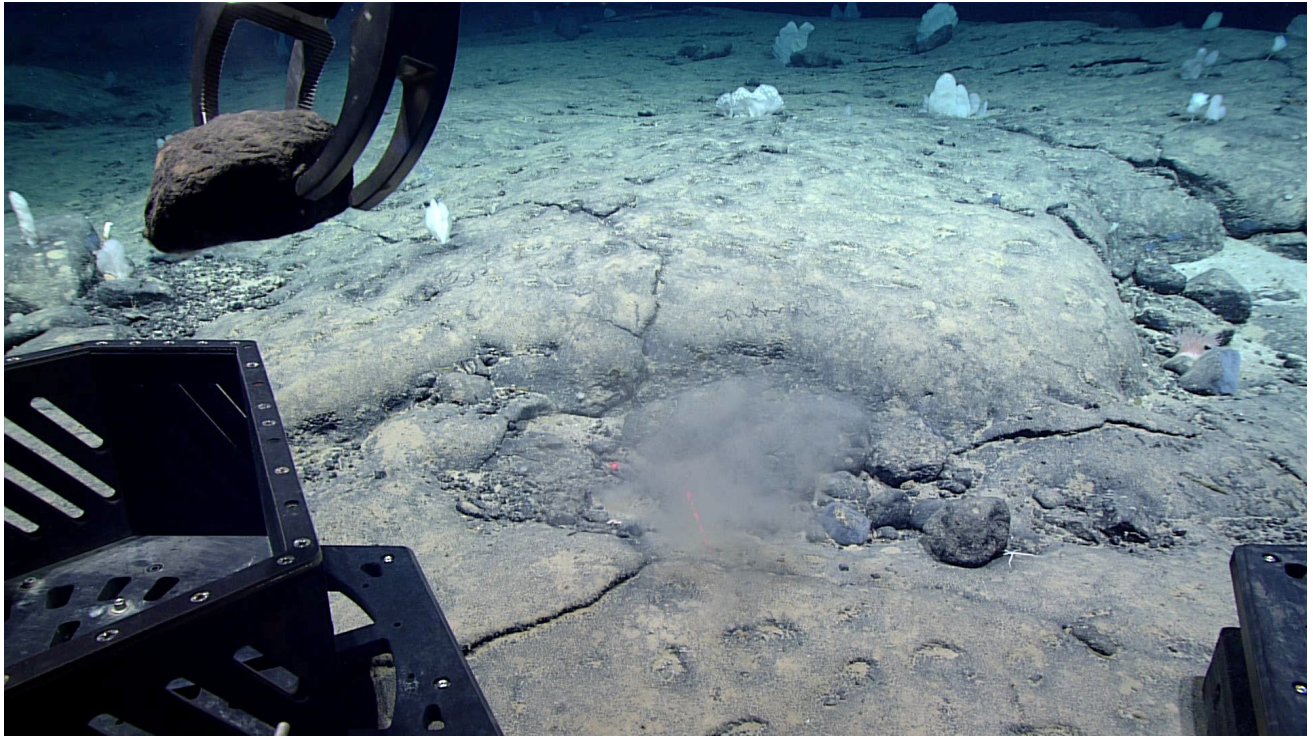
[Rock pens were abundant on this dive (>5 seen during our short bottom time), though sadly we were unable to collect one]



[Large angular boulder resting on a pillow lava outcrop and volcanoclastic gravel-mantled sediment. Boulder likely broke off an outcrop further up toward the summit peak and was transported downslope. FeMn crust on this boulder appears to be thinner than the pillow lava outcrops]



# Samples Collected -



Sample ID	EX2104_D18_01G
Date (UTC)	20210725
Time (UTC)	174509

Depth (m)	3793.01
Latitude (decimal degrees)	38.926910
Longitude (decimal degrees)	-64.820380
Temp. ( °C)	2.228
Field ID(s)	rock
Comments	10 cm wide, 7cm long, 6.5cm tall

Associates Sample ID	Field Identification	Count
NA	NA	NA



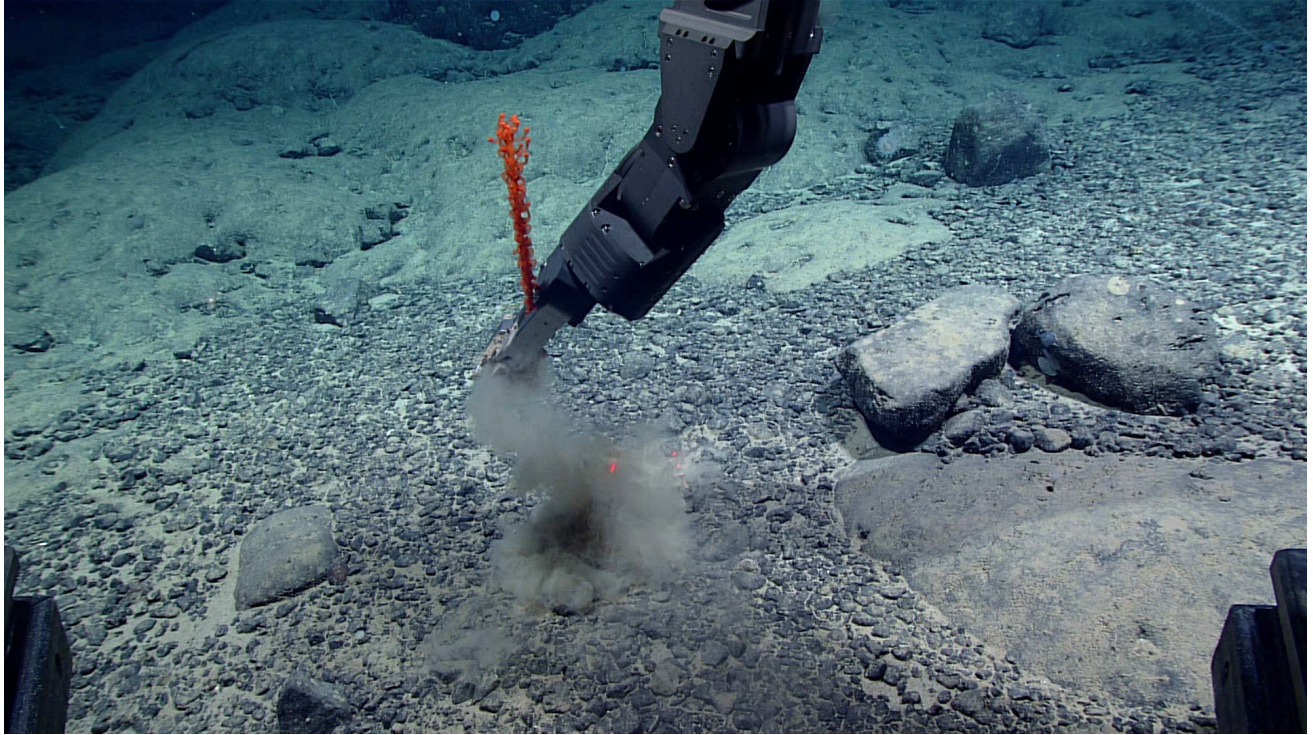


Sample ID	EX2104_D18_02G
Date (UTC)	20210725
Time (UTC)	181210
Depth (m)	3788.842
Latitude (decimal degrees)	38.927240



Longitude (decimal degrees)	-64.821010
Temp. (°C)	2.229
Field ID(s)	rock
Comments	FeMn crust on larger rock, mud on the bottom of the big rock, two separate rocks in sample, smaller rock potentially a drop stone due to granular texture, Measurements of larger rock, 14cm wide, 6cm long, 4.5cm tall, 0.54kg weight together

Associates Sample ID	Field Identification	Count
NA	NA	NA



Sample ID	EX2104_D18_03B
Date (UTC)	20210725
Time (UTC)	181638
Depth (m)	3785.626
Latitude (decimal degrees)	38.927280



Longitude (decimal degrees)	-64.821010
Temp. (°C)	2.231
Field ID(s)	Pennatulacea
Comments	orange-reddish in color, has a peduncle, sea pen, 51cm long

Associates Sample ID	Field Identification	Count
EX2104_D18_03B_A01	mud	1

### Scientists Involved (provide name, email, affiliation)

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