

ROV SUBASTIAN

SCHMIDT OCEAN INSTITUTE'S REMOTELY OPERATED VEHICLE (ROV) 2019 POST MAINTENANCE PERIOD UPDATE



Introduction

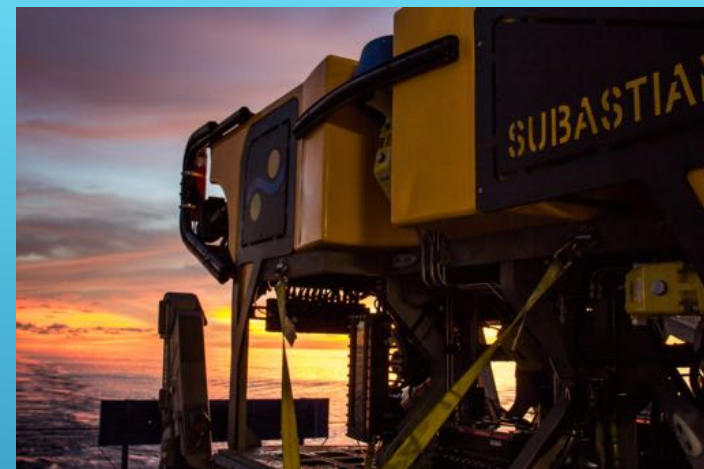
➤ Errol Campbell – ROV Manager

➤ Schmidt Ocean Institute

- Not for Profit Organization
- Goal to advance global marine research
- Provide state of the art operational, technological and information support
- Pioneering Ocean science and technology projects
- Share what we discover
- Help the world better understand our oceans

➤ ROV Subastian

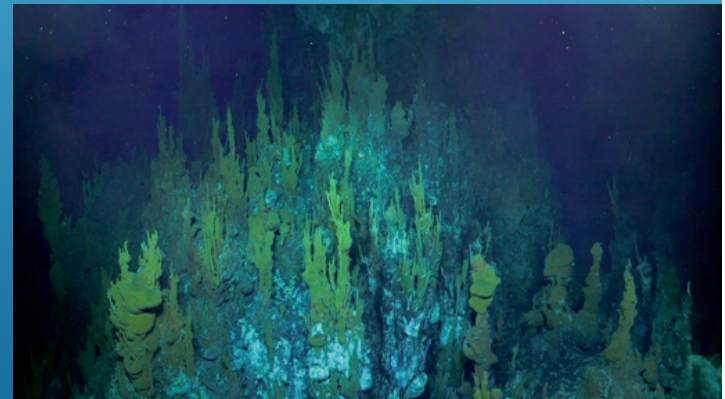
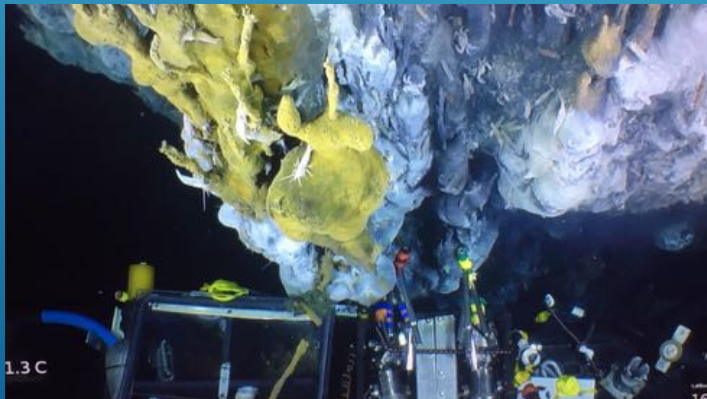
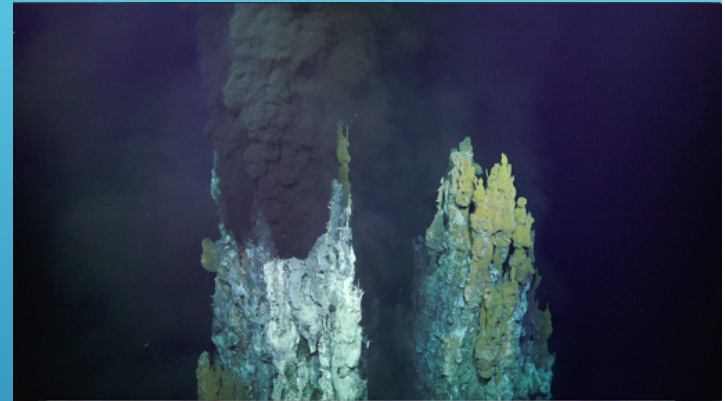
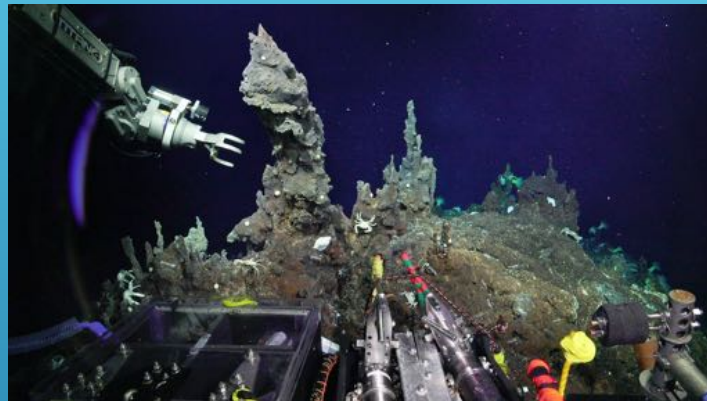
- 4500m depth rating
- Development started in 2015
- Integrated onto R/V Falkor in summer of 2016
- Successfully completed 245 Dives to date



ROV SuBastian's Tool Box - 2019

➤ Large array of calibrated sensors and tooling:

- Water samplers 2.5 & 5 L
 - Suction Sampler
 - Temp-Heat Probe
 - Bio-Boxes
 - Scoops
 - Rock Boxes
 - Mini-Temp Recorders
 - Push cores
 - O2 Sensors
 - CTD
 - PH
 - SV Probe
 - Mini IPS
 - Photomosiacing
- And the ability to integrate a vast array of other science sensors & samplers!



2019 R & M rebuild and upgrades

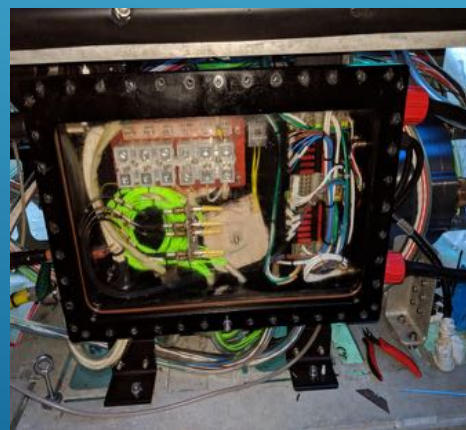
➤ Rebuild and Inspections

- Complete strip down, inspection & repair
- Structural inspection of frame & load path, thrusters, manipulators, all major components
- Science, equipment, tooling & sensors



➤ Upgrades

- HD "Gods Camera" system
- New 5700m Umbilical
- Replaced all ROV oil filled trunk cables
- Rewired all ROV junction boxes & installed new PCB's
- Installed Oil / Water Separator
- Science tooling & topside integration upgrades
- Rewired ROV Control Room



2019 Post R & M Sea Trials

➤ Sea Trials

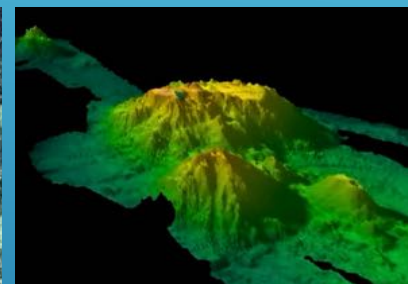
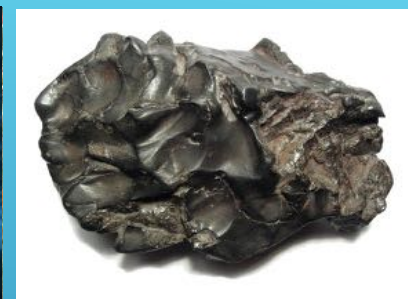
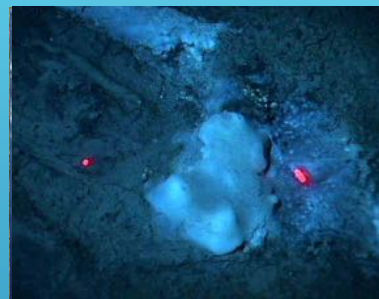
- Full system test dives & trials after rewiring the Top-Side Control Room, Replacing the main lift umbilical & replacing all ROV Subsea Trunk Wiring & PCB's
- Multiple Spin-out Dives of new 5700m Umbilical
- Tested new HD "Gods" Camera
- All Sensor calibration install & test
- 3D Printing of parts
- Test Low Latency ROV Remote Operation (VPN)
- Test the Meteorite Recovery Tool



2019 ROV Science Missions

➤ 2019 ROV Science Missions

- Cordes – Cold Seeps – Costa Rica
- Joye - Hydrothermal Vents and Hydrocarbon Seeps - Manzanillo, Mexico
- ROV & Vessel Sea-Trials
- Fries – Meteorite Recovery – OR
- Ruppel – “CaMMeRA” Cascadia Margin Methane Research Action
- Watling - Emperor Seamount chain – Hawaii
- Baco-Taylor – Seamounts & deep-sea Octocorals – Honolulu
- Phillips – Engineering Cruise - MBARI DeepPIV system



THANK YOU!
www.schmidtocean.org

- **www.schmidtocean.org**
- Livestreaming ROV Dives
- Facebook
- YouTube

