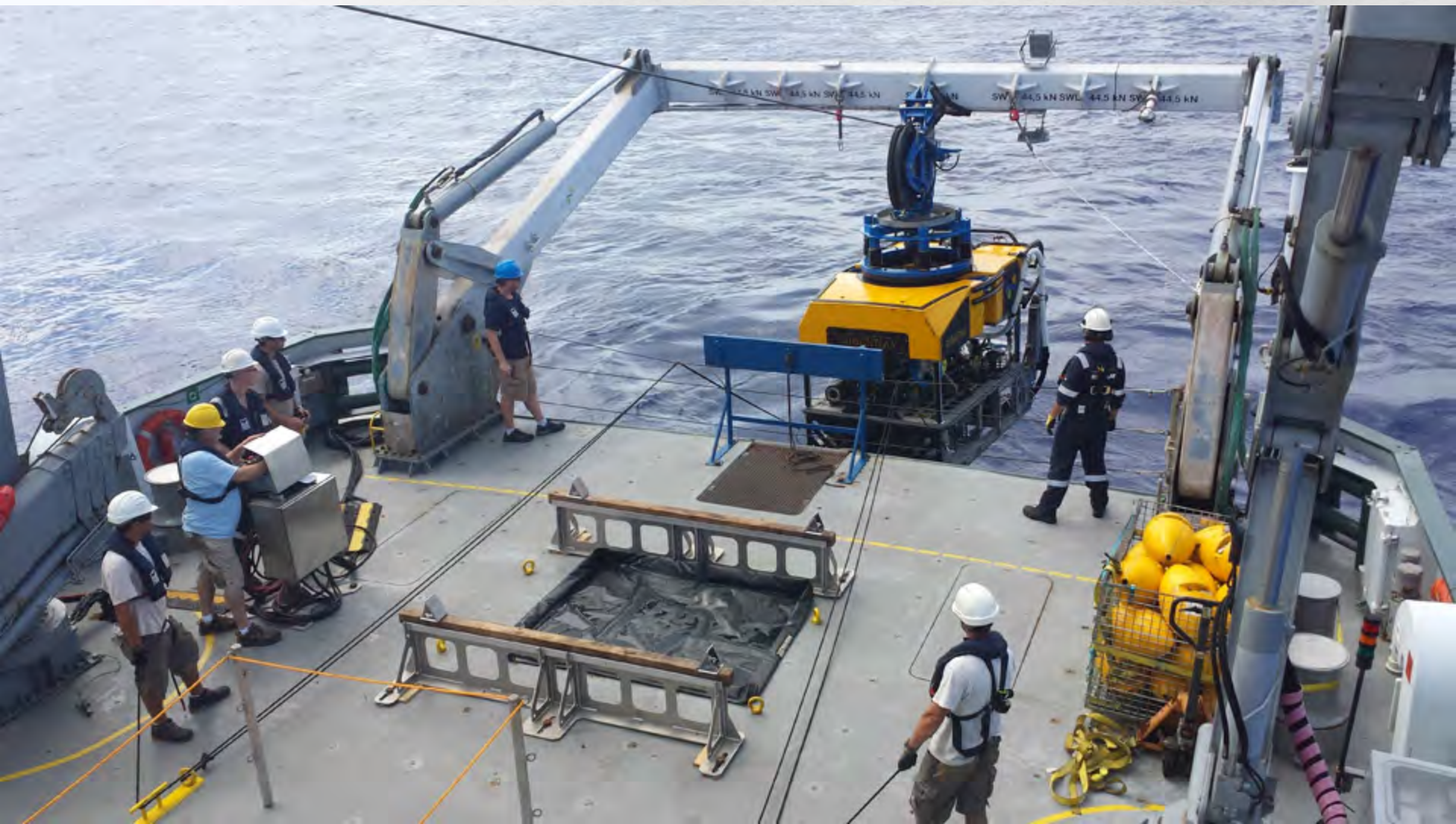


SOI 4500m ROV Progress Update

Victor Zykov
Director of Research



4500m ROV core instruments

- Core System Sensors

- Vehicle Navigation Sensors
- CTD Sensor - Seabird FastCAT SBE49
- Pressure Depth Sensor - Paroscientific DigiQuartz
- Oxygen Sensor - Aandera O2 optode 4831

- Core Imaging Suite

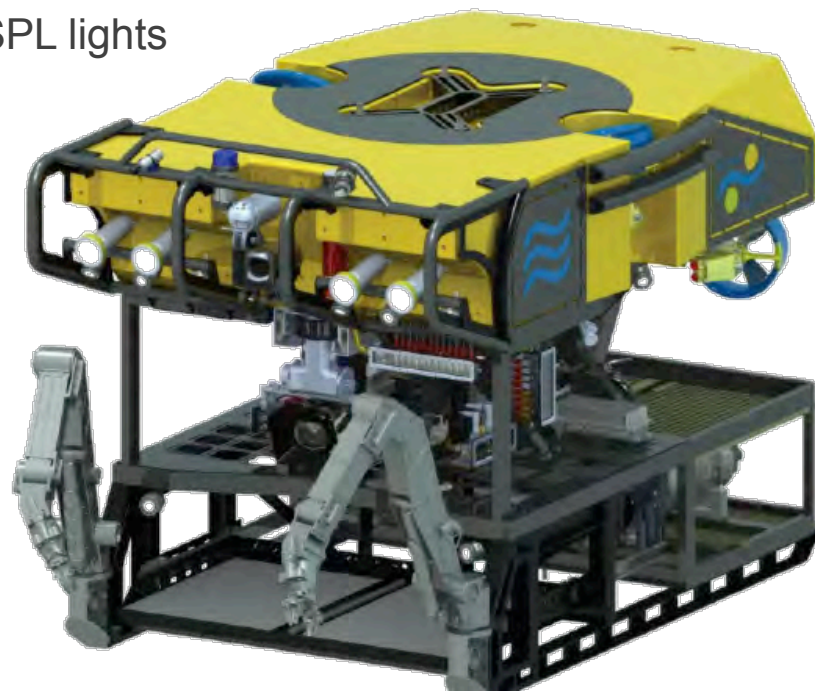
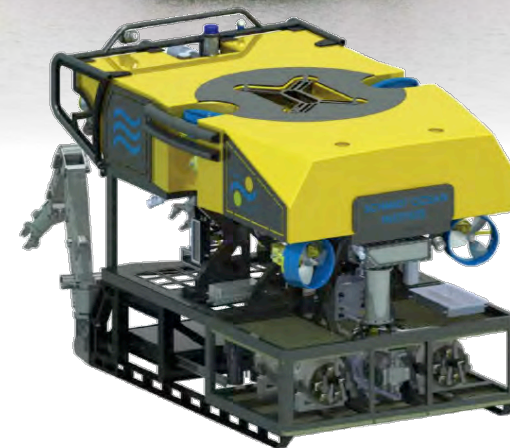
- Main: 4k 2160p, Pan/Tilt, 12x optical Zoom
- Situational: 2k 1080p, Tilt only
- Scaling lasers w 10 cm spacing, CathX / DSPL lights
- 5 HD cameras, 3 SD cameras, configurable

- Core Sampling System

- Niskin bottles / Core tubes
- Suction sampler / Insulated bio-box
- High Temperature Sensor
- Interfaced Suction Filtration Sampler

- Core Sonar Systems

- Imaging: Teledyne BlueView M900
- Scanning: Tritech Super SeaKing DST



4500m ROV delivery plan: key project dates



Preliminary Design Review	Wed 9/2/15	Fri 9/4/15
Detailed Design Review	Thu 12/17/15	Fri 12/18/15
Factory Acceptance Test	Mon 4/11/16	Wed 4/20/16
Tank Testing at MBARI	Thu 4/28/16	Sun 5/15/16
System shipping to R/V Falkor	Mon 5/30/16	Fri 6/23/16
Falkor integration, Sea Trials	Fri 7/1/16	Sun 8/14/16
Science Verification Cruise	Fri 11/18/16	Tue 11/29/16
First Planned Research Cruise	Wed 11/30/16	Wed 12/21/16

Research project currently using this vehicle:

- Searching for Life in Hydrothermal Mariana, Dec. 2016

Sea Trials - Summer 2016



- Attended by External Technical Observers
 - Vincent Rigaud, Head of Ifremer Undersea Systems Unit
 - Gerrit Meinecke, QUEST4000 MARUM Operations
- 73 Observations, a few select point:
 - Issues with the main video/still science camera
 - Need for a streamline dive annotation system
 - Need for an automated video management system
 - Be prepared to deal with large volumes of data
 - Be prepared to support seafloor photomosaicing
 - Finalize the development of an ROV Operational Team

Non-Science Verification Cruise – Nov. 18-24, 2016



Non-Science Verification Cruise – Nov. 18-24, 2016



Non-Science Verification Cruise – Nov. 18-24, 2016



Non-Science Verification Cruise – Nov. 18-24, 2016

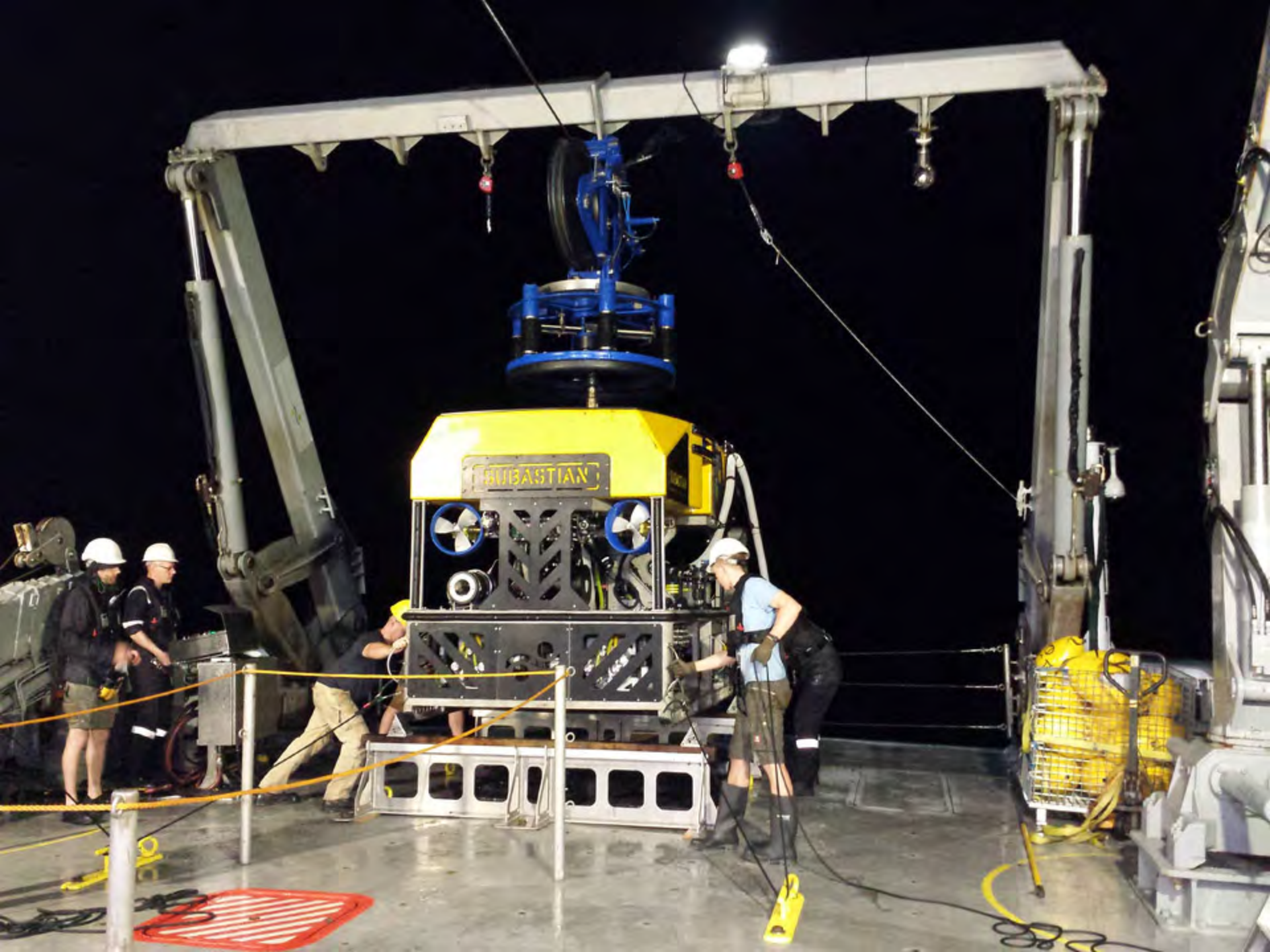


Non-Science Verification Cruise – Nov. 18-24, 2016









Non-Science Verification Cruise – Nov. 18-24, 2016



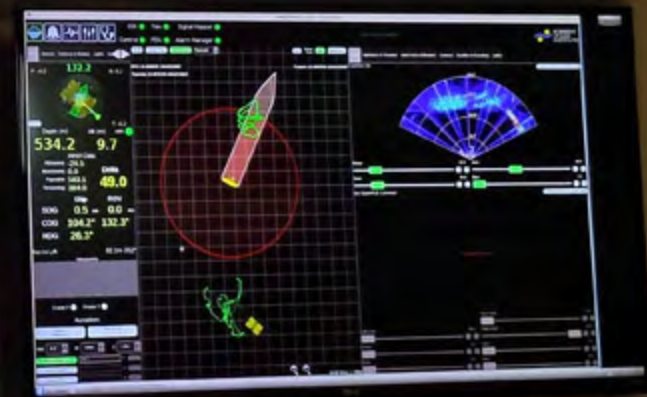
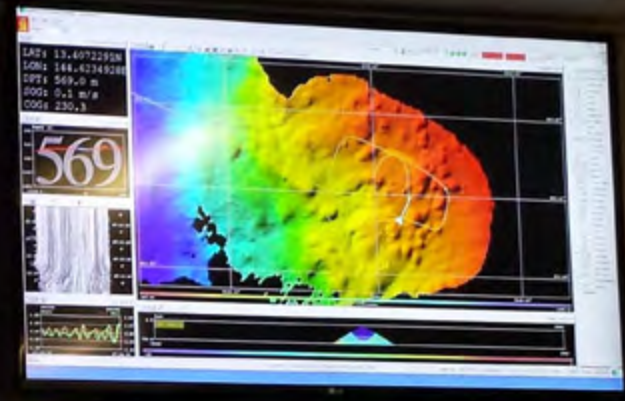
- Attended by Science Advisors as Observers
 - Bill Chadwick, NOAA-PMEL / Oregon State University
 - Mandar Chitre, Acoustic Research Lab, National University of Singapore
- 72 Observations, a few select point:
 - Accurate and consistent time-stamping of screen grabs
 - Efficient compression of continuous video recording
 - Highlights recording and automatic video file naming
 - Camera auto-iris not working, halos still present
 - Accurate logging and time-stamping of ROV nav data
 - Instant screen grabbing

First Scientific Deployment Nov. 29 – Dec. 20, 2016

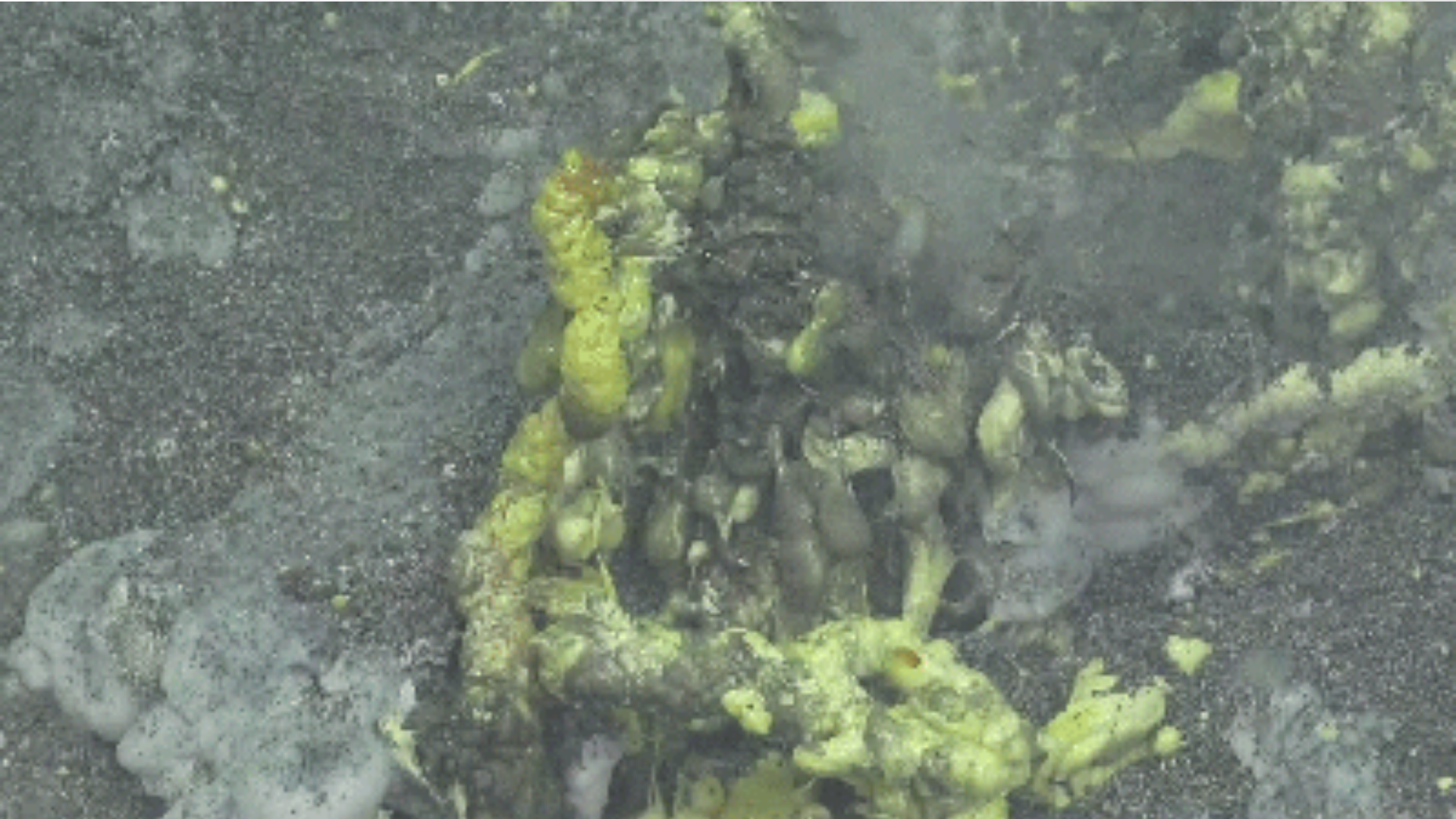


First Scientific Deployment

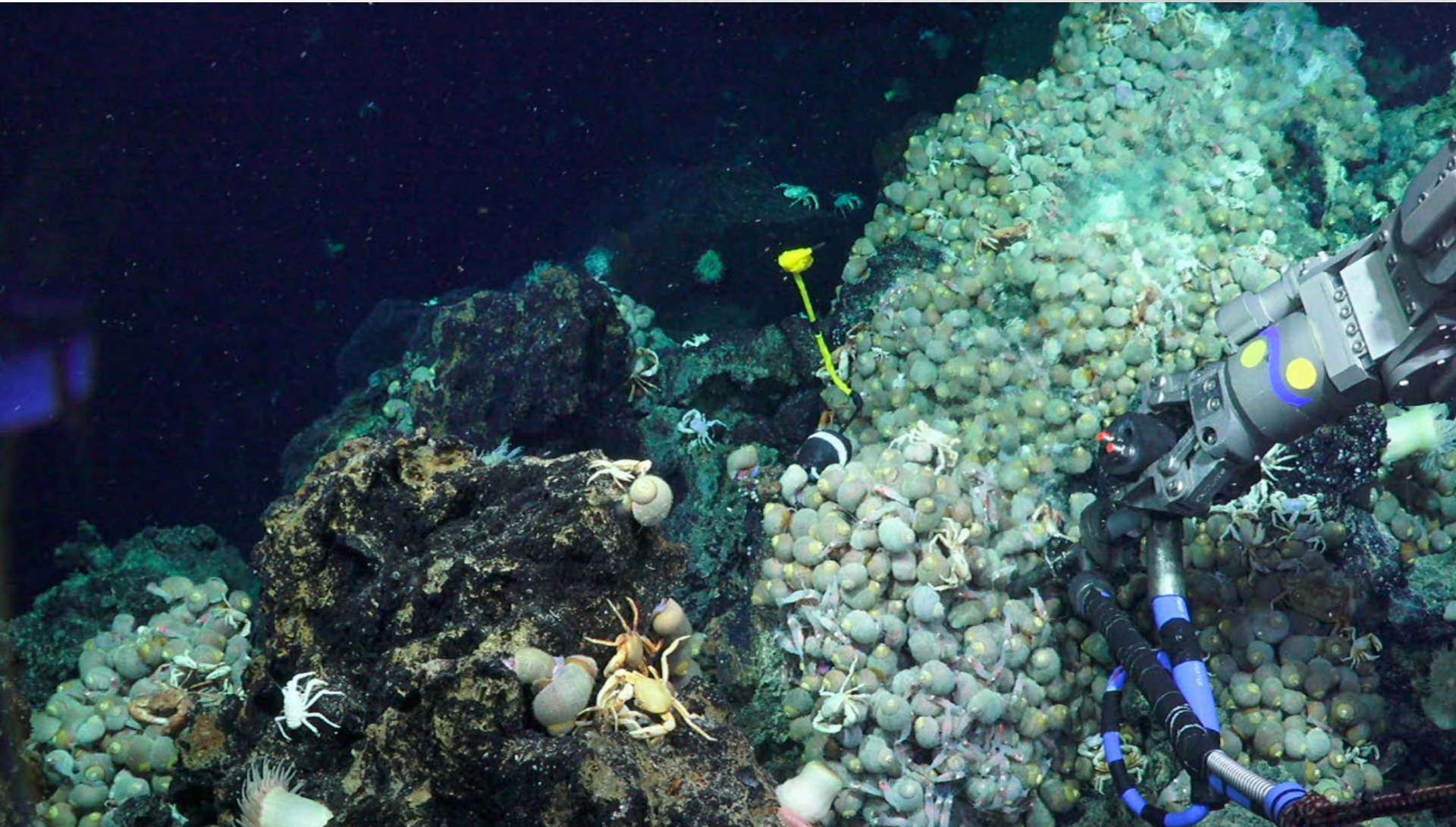
Nov. 29 – Dec. 20, 2016



First Scientific Deployment Nov. 29 – Dec. 20, 2016



First Scientific Deployment Nov. 29 – Dec. 20, 2016



First Scientific Deployment Nov. 29 – Dec. 20, 2016



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Dive #40 - Alice Springs - Burke Vent Field -FK161129 - SuBastian



Schmidt Ocean

✓ Subscribed



2,024 views

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Streamed live on Dec 6, 2016

We're diving again today at Alice Springs as part of our #HydrothermalHunt. Today, we are heading to a satellite vent field of Alice Springs,

Up next

Autoplay

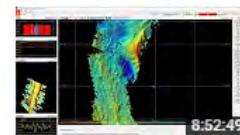


Dive #41 - New vent site at 17N (unnamed) - FK161129 -

Schmidt Ocean

1,704 views

NEW



Dive #39 - Alice Springs - FK161129 - SuBastian

Schmidt Ocean

740 views

NEW



Dive #42 - New vent site at 17N (unnamed) - FK161129 -

Schmidt Ocean

2,956 views

NEW



Dive #43 - New vent site at 17N (unnamed) - FK161129 -

Schmidt Ocean

2,664 views

NEW



Dive #44 - New vent site at 17N (unnamed) - FK161129 -

Schmidt Ocean

1,747 views

NEW



Cup Of Tea With Geo & Gonzo | Bilic Out? | Board Out? | Fans

Hammers Chat

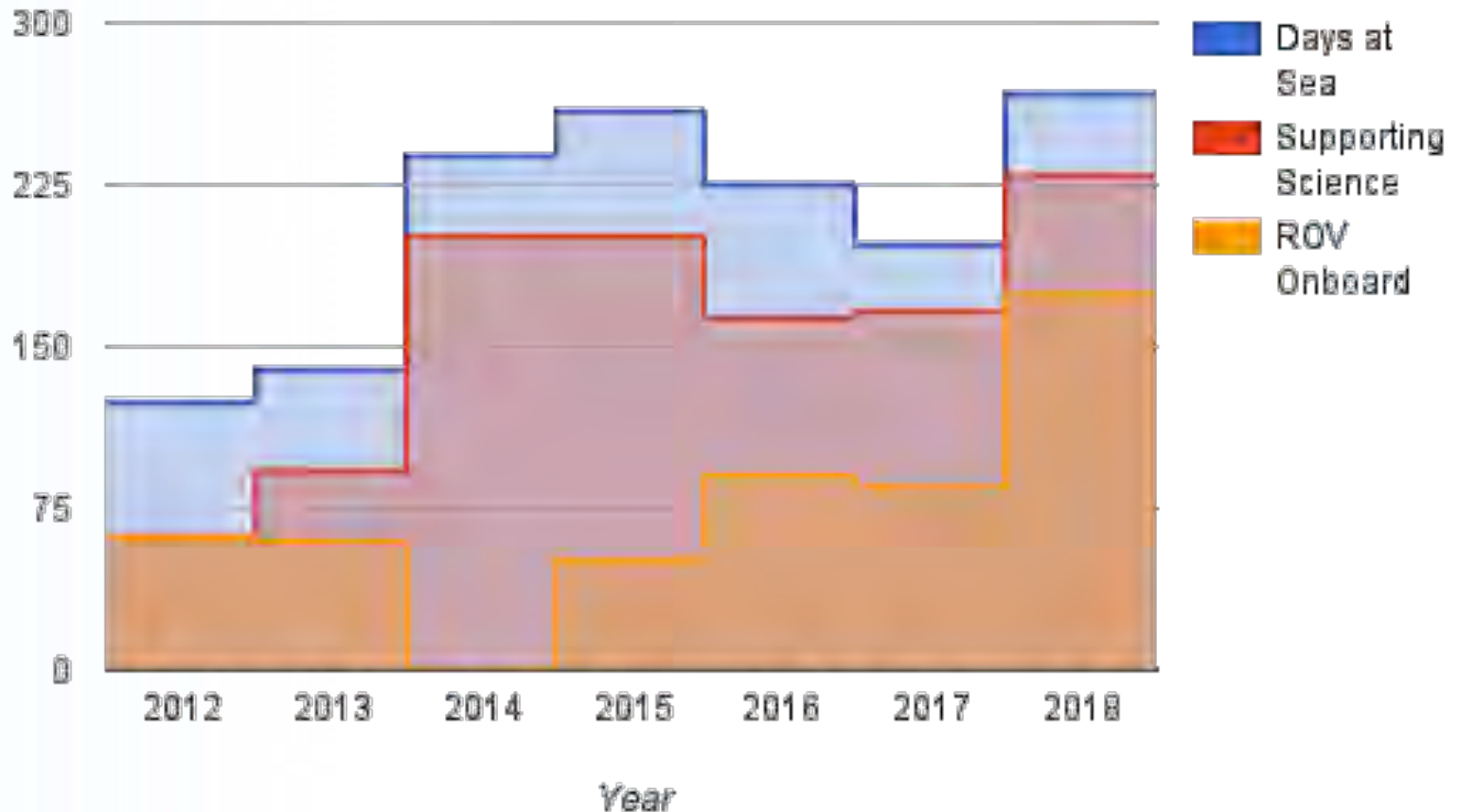
2,635 views

NEW

SOI Operational Trends



Days at Sea, Supporting Science and ROV Onboard



Planned ROV Project

(pending SOI Board approval)



- Year 2017: 97 days of ROV cruises
 - Les Watling, U. Hawaii – 30 day ROV cruise
 - Ken Rubin, U. Hawaii – 17 day and 22 day ROV cruises
 - Erik Cordes, Temple Univ. – 28 day ROV cruise
- Year 2018: 132 days of ROV cruises
 - Barbara Block, Stanford – 30 day ROV cruise (10 dive days)
 - Blair Thornton, U. Tokyo / NOC – 17 day ROV cruise
 - Anna Michel, WHOI – 28 day ROV cruise (19 dive days)
 - Peter Girguis, Harvard – 14 day ROV cruise
 - Robert Zierenberg, UC Davis – 29 day ROV cruise

First Scientific Deployment Nov. 29 – Dec. 20, 2016



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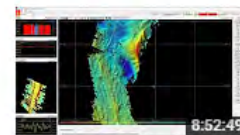
Autoplay Autoplay is turned on.



Dive #41 - New vent site at 17N (unnamed) - FK161129 -

Schmidt Ocean

1,704 views NEW



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740 views NEW



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2,956 views NEW



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Schmidt Ocean

1,747 views NEW



Cup Of Tea With Geo & Gonzo | Bilic Out? | Board Out? | Fans

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