ROV *Lu'ukai* and the ALOHA Cabled Observatory

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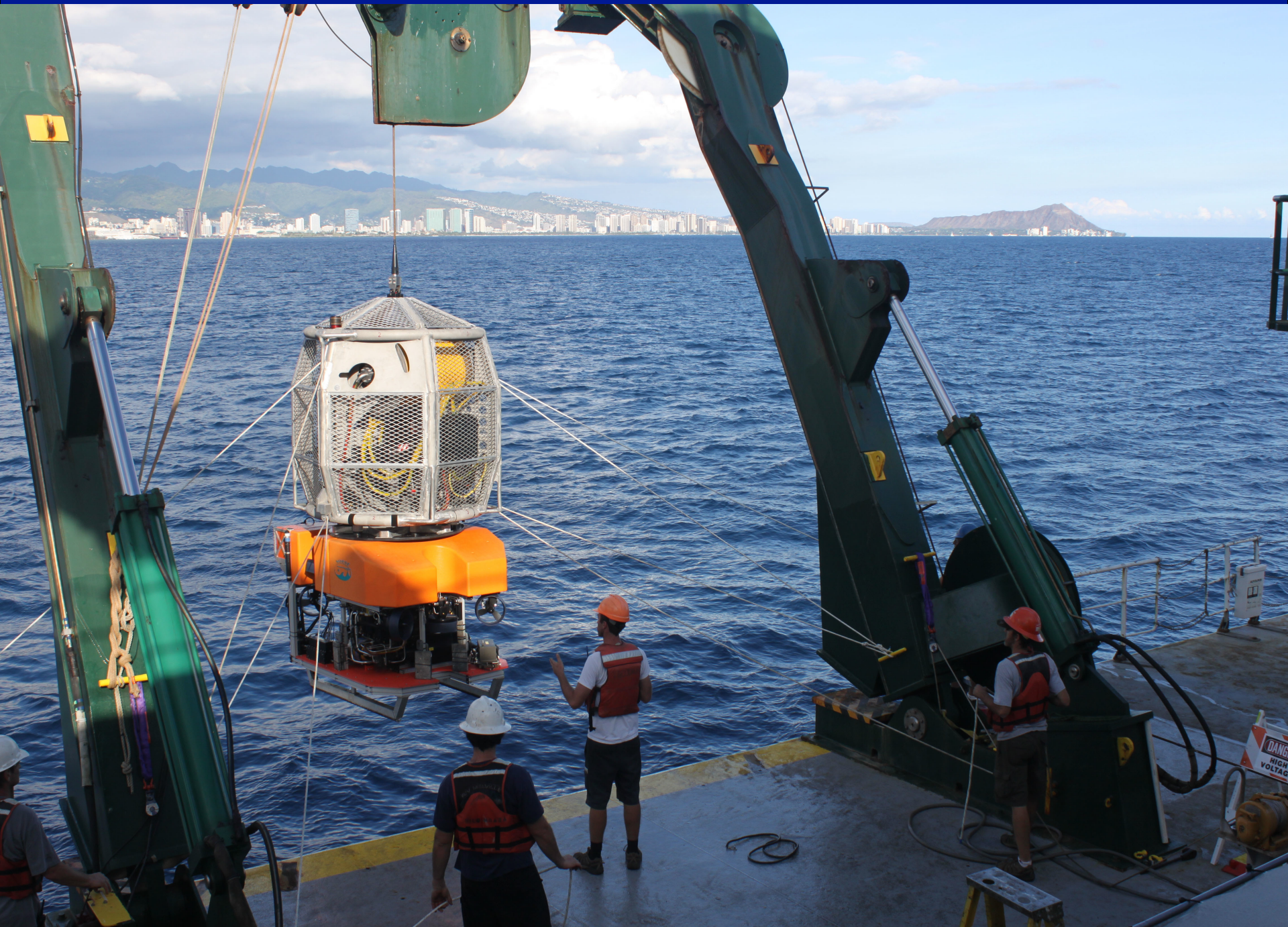
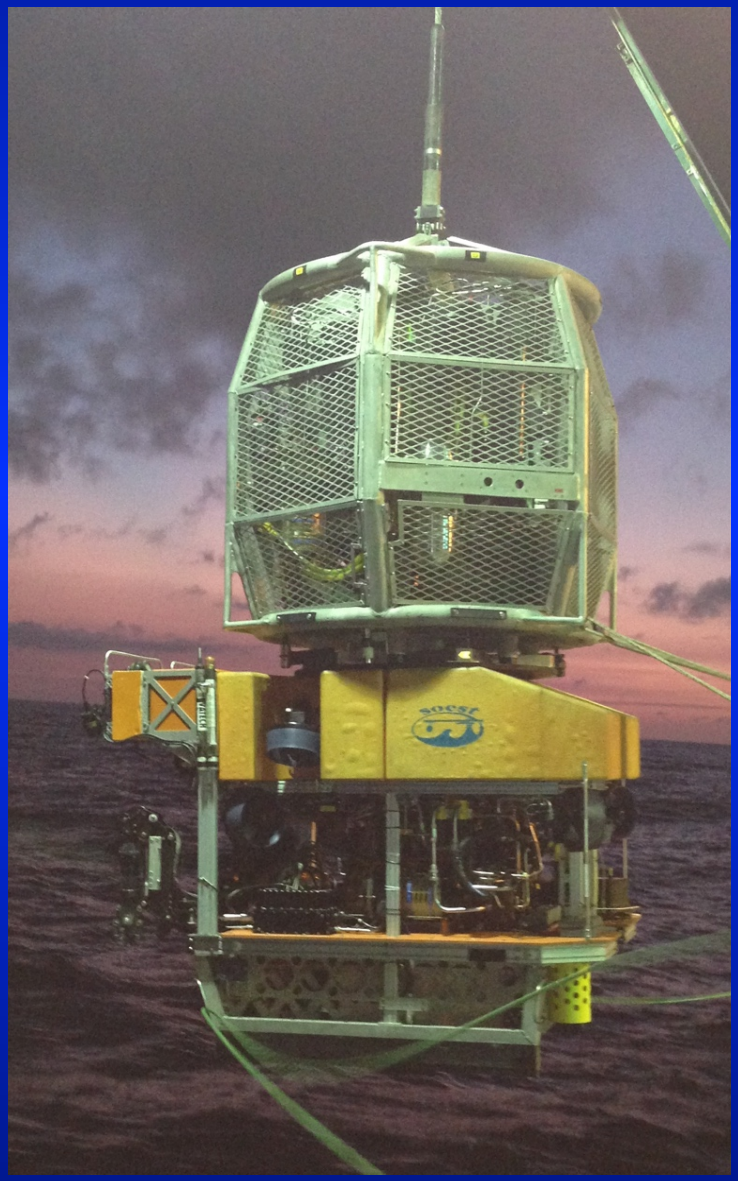
Deep Submergence Science Committee
Woods Hole Oceanographic Institution
10-11 September 2015

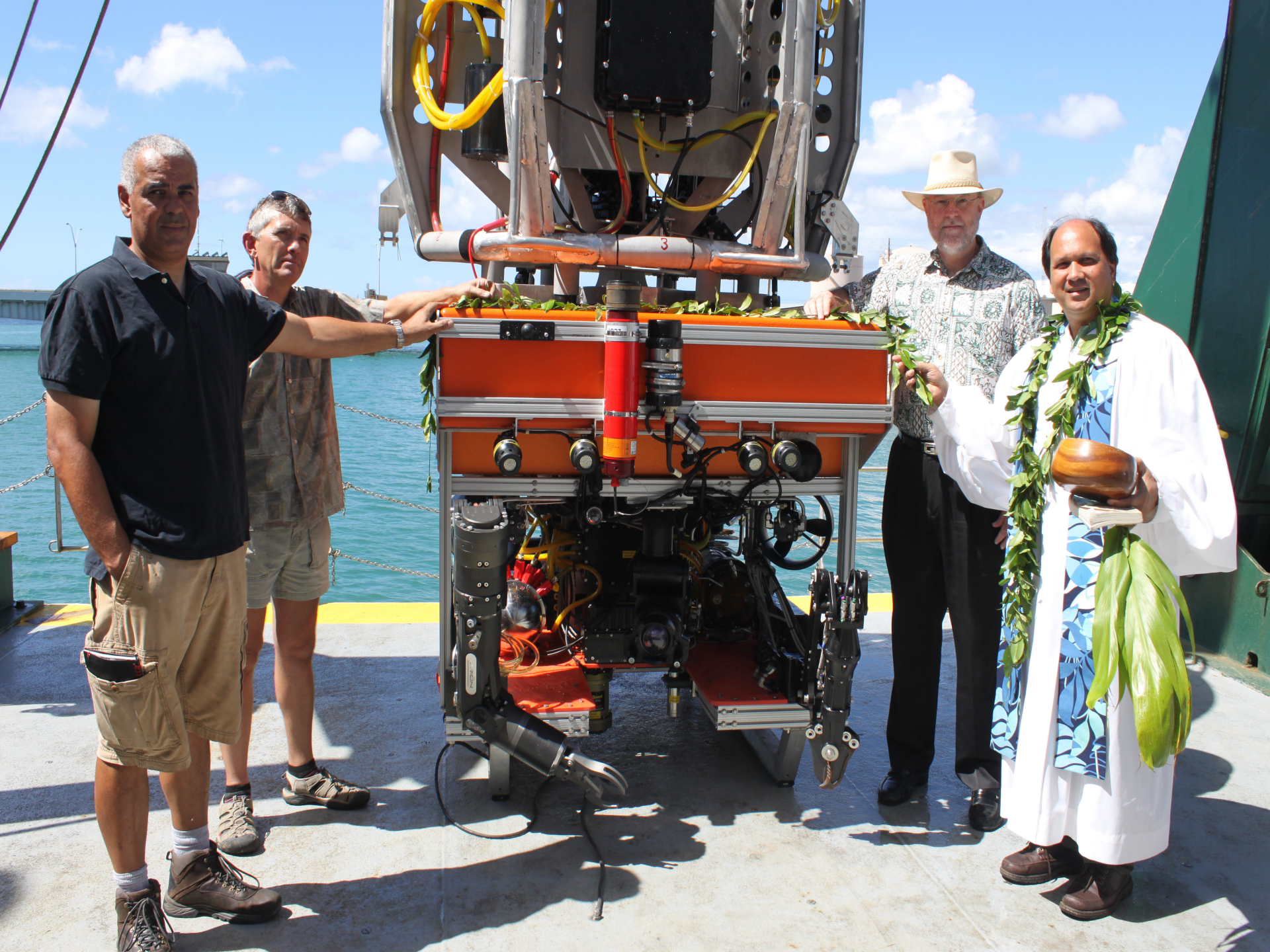


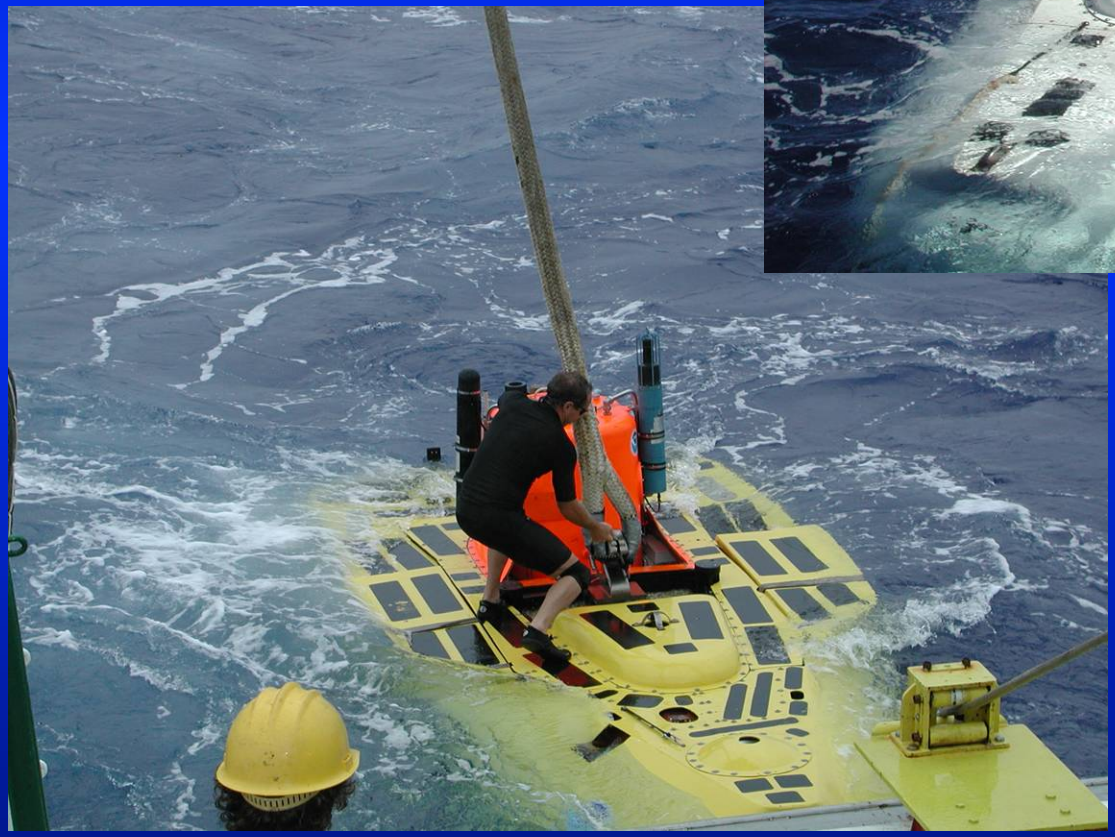
SOEST ROV Status Review

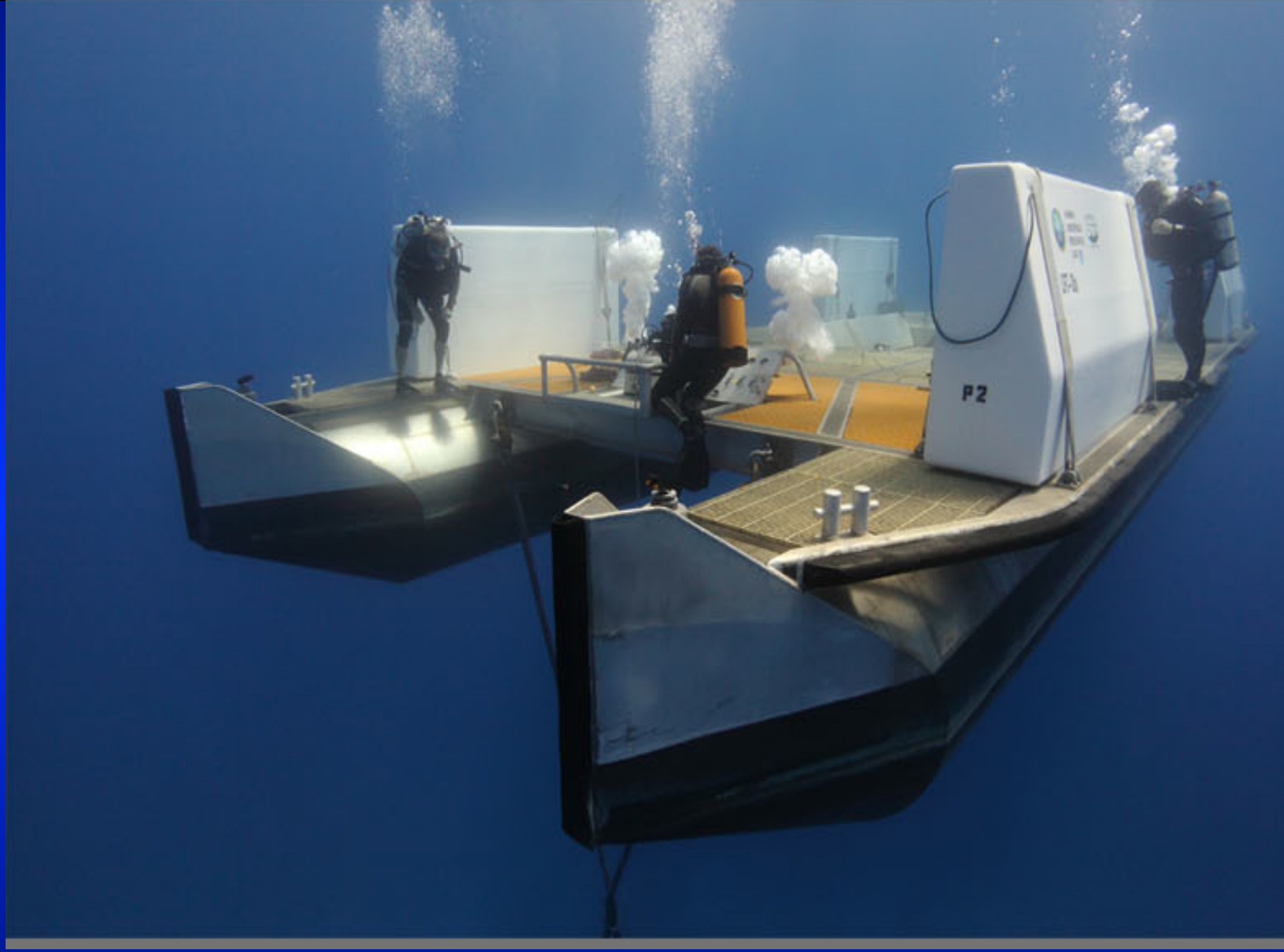
UH ROV *Lu'ukai* - Sea Diver

- Test cruise 9-12 August ✓
- Slack tensioner + lead improved dynamics (albeit calm seas)
- 6 dives LK-42 – LK47
- 1 dive to 4726 m
  - Same as ACO depth
  - 3 hours of testing
- Continuing improvements for ACO 16-21 September





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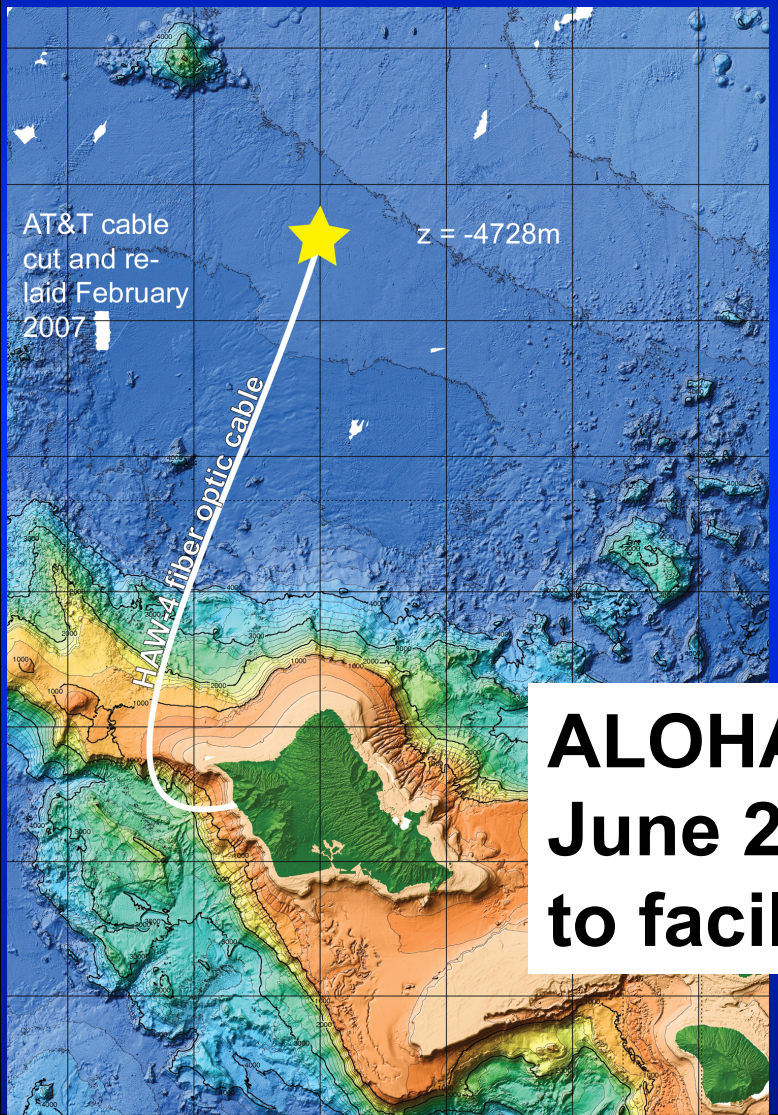
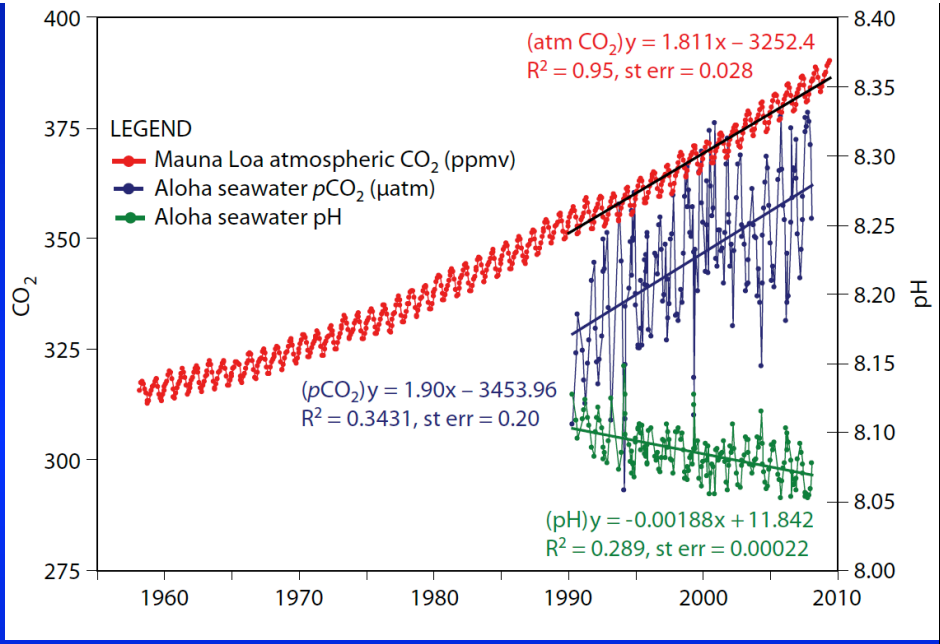
Station ALOHA

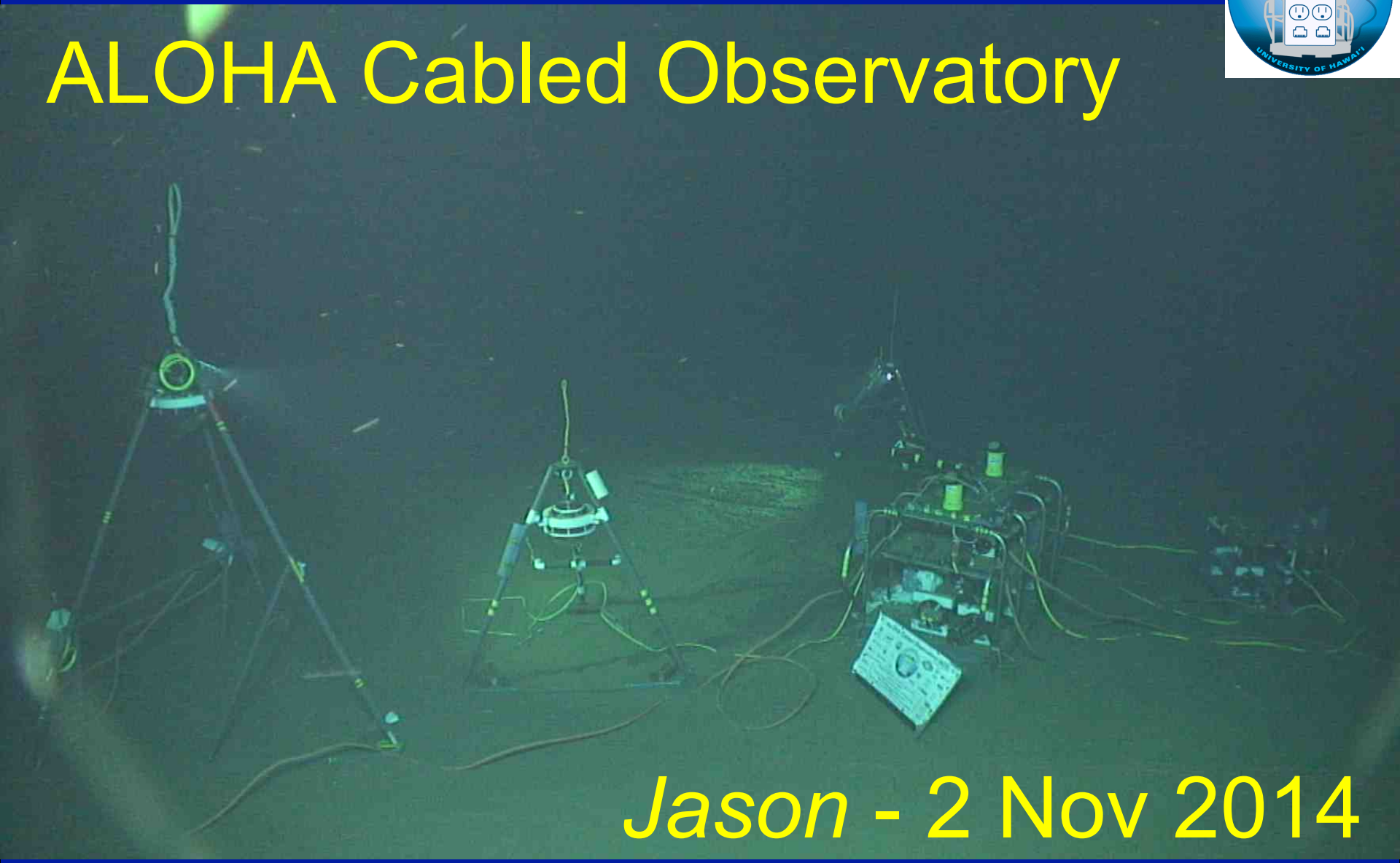
Hawaii Ocean Time-series (HOT)
28+ years, 275+ cruises, and continuing
M. Church, R. Lukas, D. Karl
and many others





ALOHA Cabled Observatory (ACO)
June 2011
to facilitate science at ALOHA

ALOHA Cabled Observatory



Jason - 2 Nov 2014

4728 m – Deepest Internet and power on the planet

ACO Status – September 2015

- Observatory infrastructure still working flawlessly since *Jason* install June 2011, with hydrophone, CT, ADCP (lights failed after 6 weeks)
- *Jason* service cruise November 2014
  - Installed Basic Sensor Package 1 (BSP1, $CTDO_2$, fluorometer, ADCP, pressure, acoustic modem), CAM2 (video/PZT, two lights, hydrophone), LIGHT1
  - Recovered AMM secondary node (cracked SS pressure case) – had 2 $CTDO_2$'s and fluorometer
  - Of these, now functional - CTDO2, acoustic modem
- September 16-21, service cruise using *Lu'ukai*
  - BSP2 – pressure, fluorometer, $CTDO_2$
  - LIGHT4
  - Recover BSP1, CAM2, LIGHT1 to repair

ACO Status and next steps

- Data flowing
- NSF OTIC O&M2 project
  - 2015-2017
  - Barebones funding
- 2015 service as described above

- 2016 – repair/redeploy
- 2017 …
- New proposals/projects
  - RAP tomography ONR, uses ship-to-ACO acoustic data✓
  - Noise interferometry – Feb2015 – NSF ✗

http://aloha.manoa.hawaii.edu