



OOI PI Team OOIFB Town Hall Ocean Sciences Meeting

February 20, 2020



OOI Systems

7 interdisciplinary marine arrays at 3 scales:

- Regional Cabled
- Coastal Endurance & Pioneer
- Global Irminger & Papa
- Global Argentine & Southern (suspended '17 & '20)



OOI Systems

Cyberinfrastructure & Data Delivery



OOI Systems

Numbers

- 80 platforms
- 800 science instruments
- 30 different instrument types
- Measuring 200 parameters
- ~ 4 TB data downloaded each month



OOI Systems

Mapping onto NSF's 10 Big Ideas:

- Growing Convergence Research
- Harnessing the Data Revolution
- Navigating the New Arctic
- Understanding the Rules of Life



Selected Accomplishments & Plans

Program Year 1 (10/2018 – 9/2019)

- Continuity
- Data Quality
- Planning



Selected Accomplishments & Plans

Program Year 2 (10/2019 – 9/2020)

- Continued excellence in marine operations
- Implementation of QARTOD principles & standards
- Website redesign (Trapeze Communications)
- Enhancement of user interface (Axiom Inc)



Selected Accomplishments & Plans

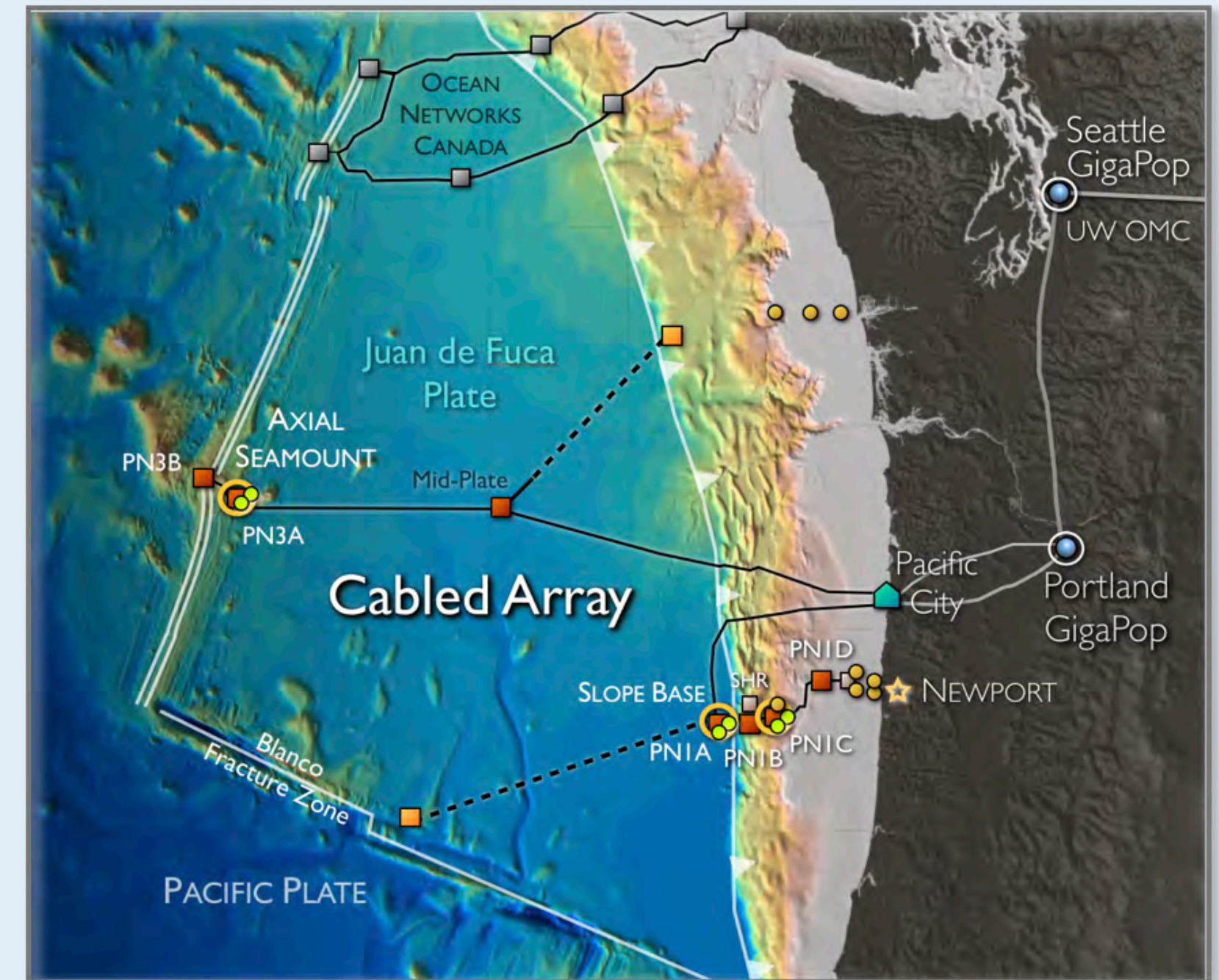
Ocean Sciences Meeting

- OOI- and ocean observing-related talks
- OOI booth: demos and conversations
- See oceanobservatories.org

Regional Cabled Array Status

R/V *Atlantis* and ROV *Jason*
AT42-12 May 30-July 12, 2019

- Sixteen 48 ft trailers, six flatbed trucks moved 166 tons of RCA equipment from Seattle WA to Newport OR
- A record 20 Jason dives in five days; 58 total dives
- Installed 113 RCA instruments & 8 PI instruments

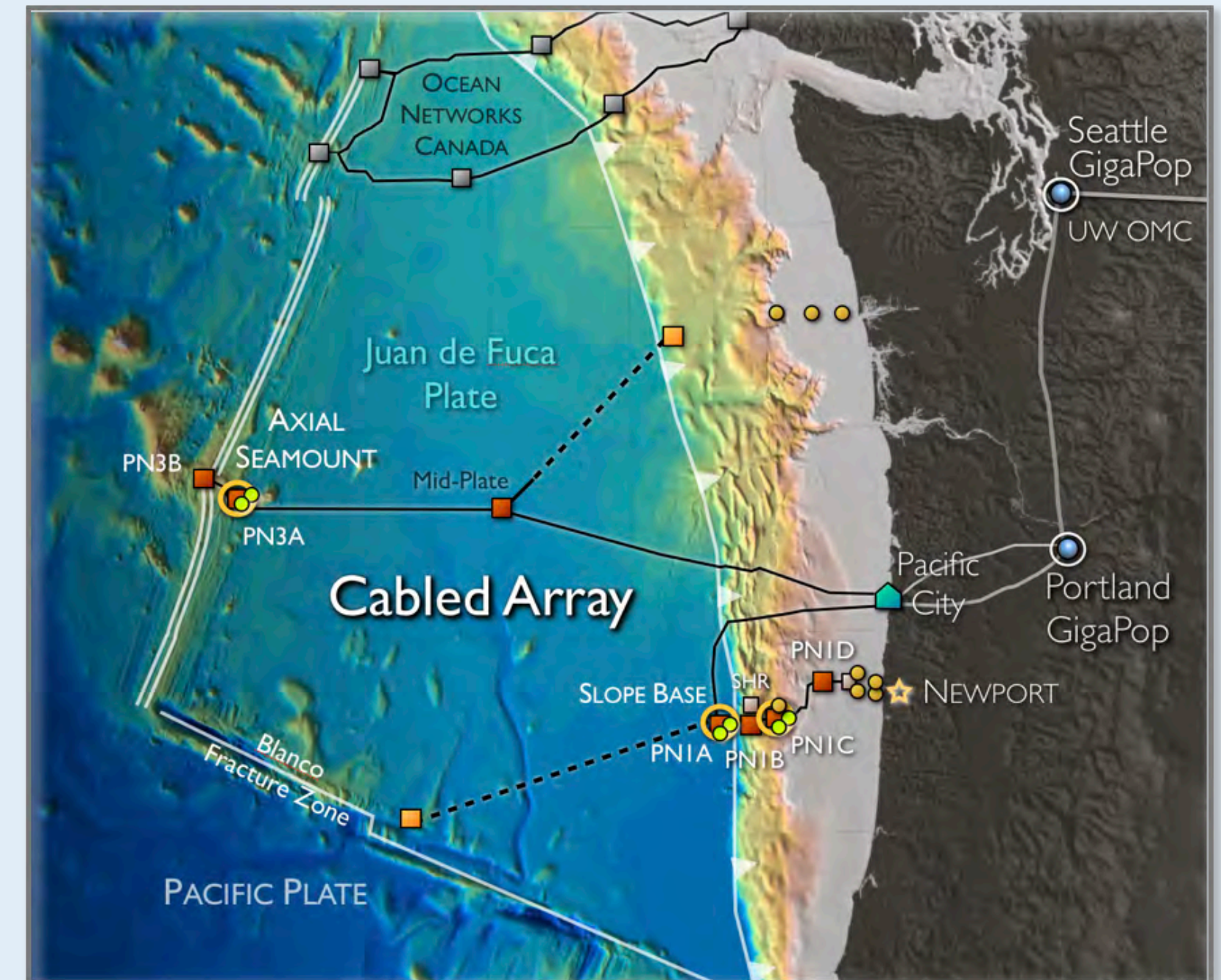


Dec 2019: 80% Operational

Regional Cabled Array Status

R/V *Atlantis* and ROV *Jason*
AT42-12 May 30-July 12, 2019

- Recovered 100 RCA instruments
- Turned 2900 m-tall, two-legged mooring; six science pods and three Deep Profiler Vehicles
- 100% successful installation

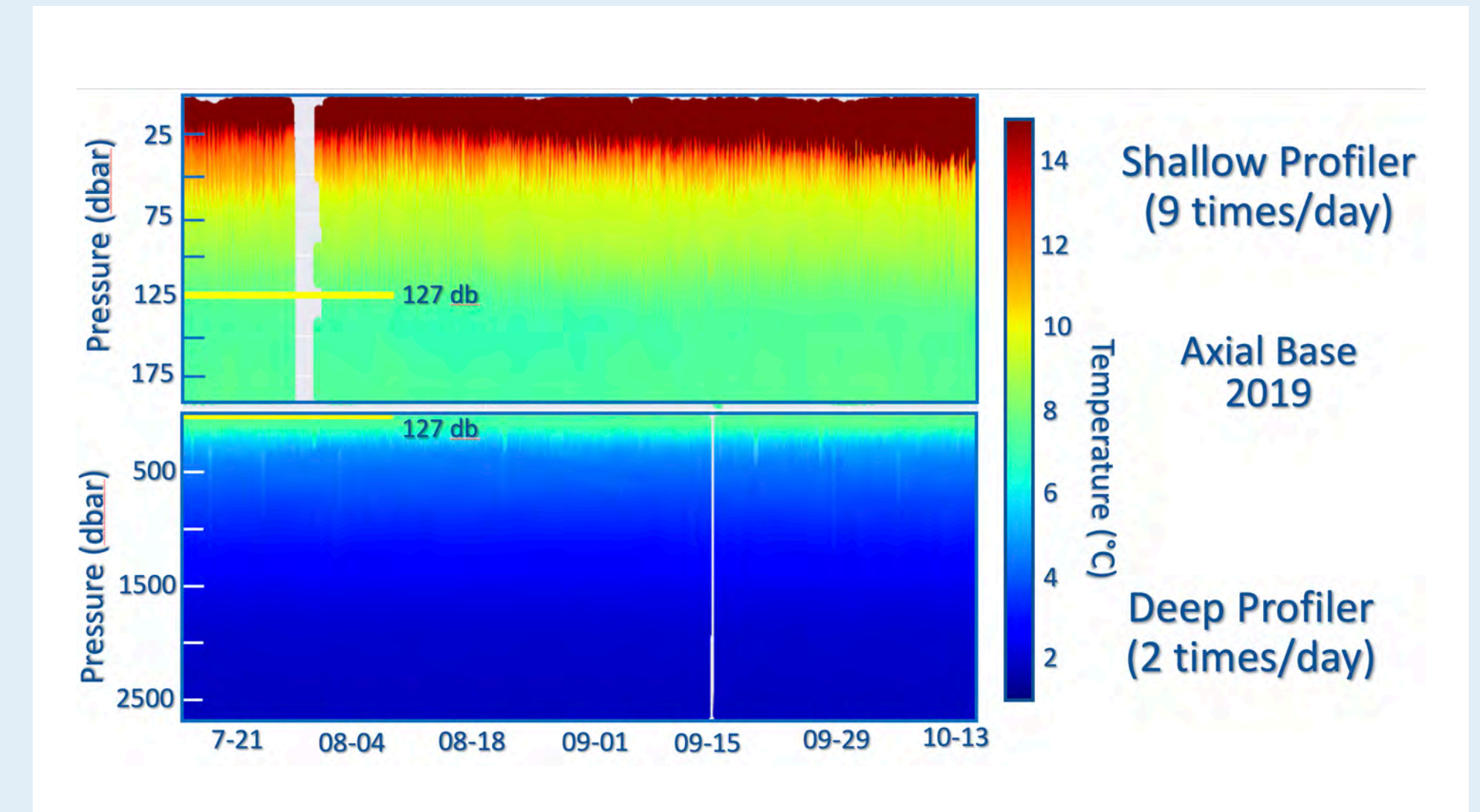


Dec 2019: 80% Operational

Regional Cabled Array Science

Proposals

- >\$26M in funded projects excluding ship and ROV costs (NSF, ONR, NASA, Germany)
- 50 Awards, 23 PIs and 31 Co-PIs from 28 institutions
- Two Industry Awards

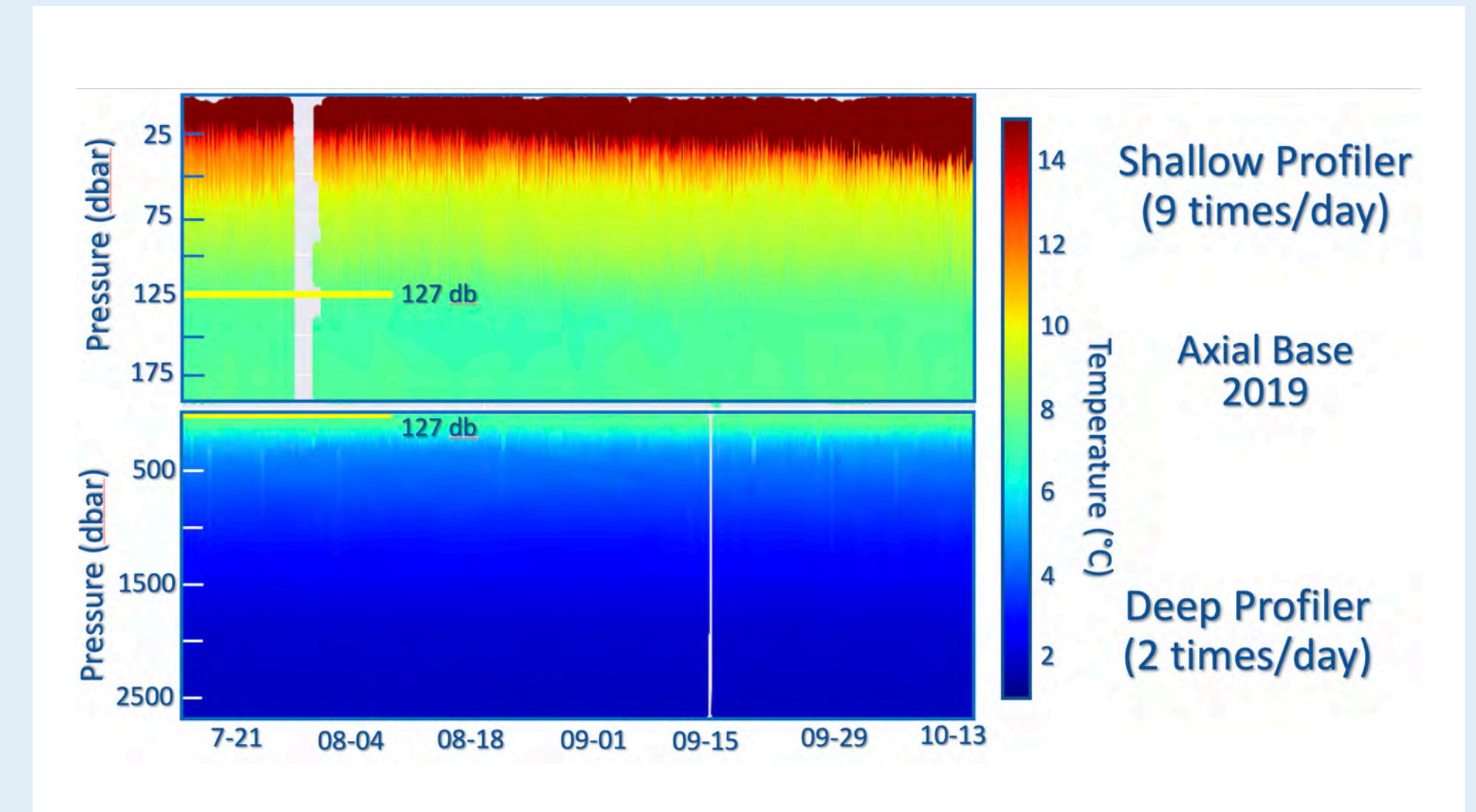


Axial Base Shallow and Deep Profilers - spanning 2700 m – 5 m: full water column measurements, 24 instrument suite

Regional Cabled Array Science

Papers

- 39 RCA-related, 2014 to date;
438 citations

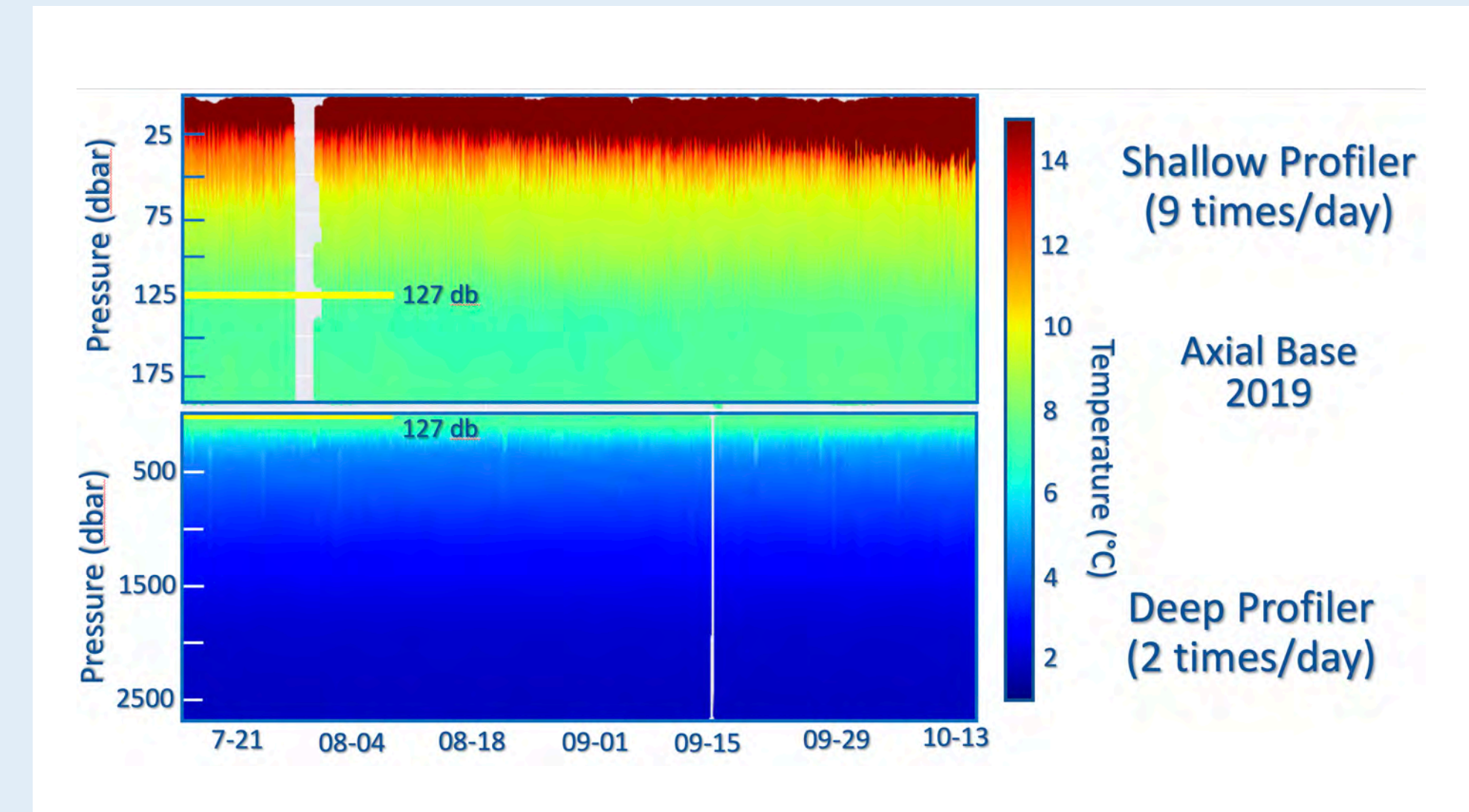


Axial Base Shallow and Deep Profilers - spanning 2700 m – 5 m: full water column measurements, 24 instrument suite

Regional Cabled Array Science

Highlights

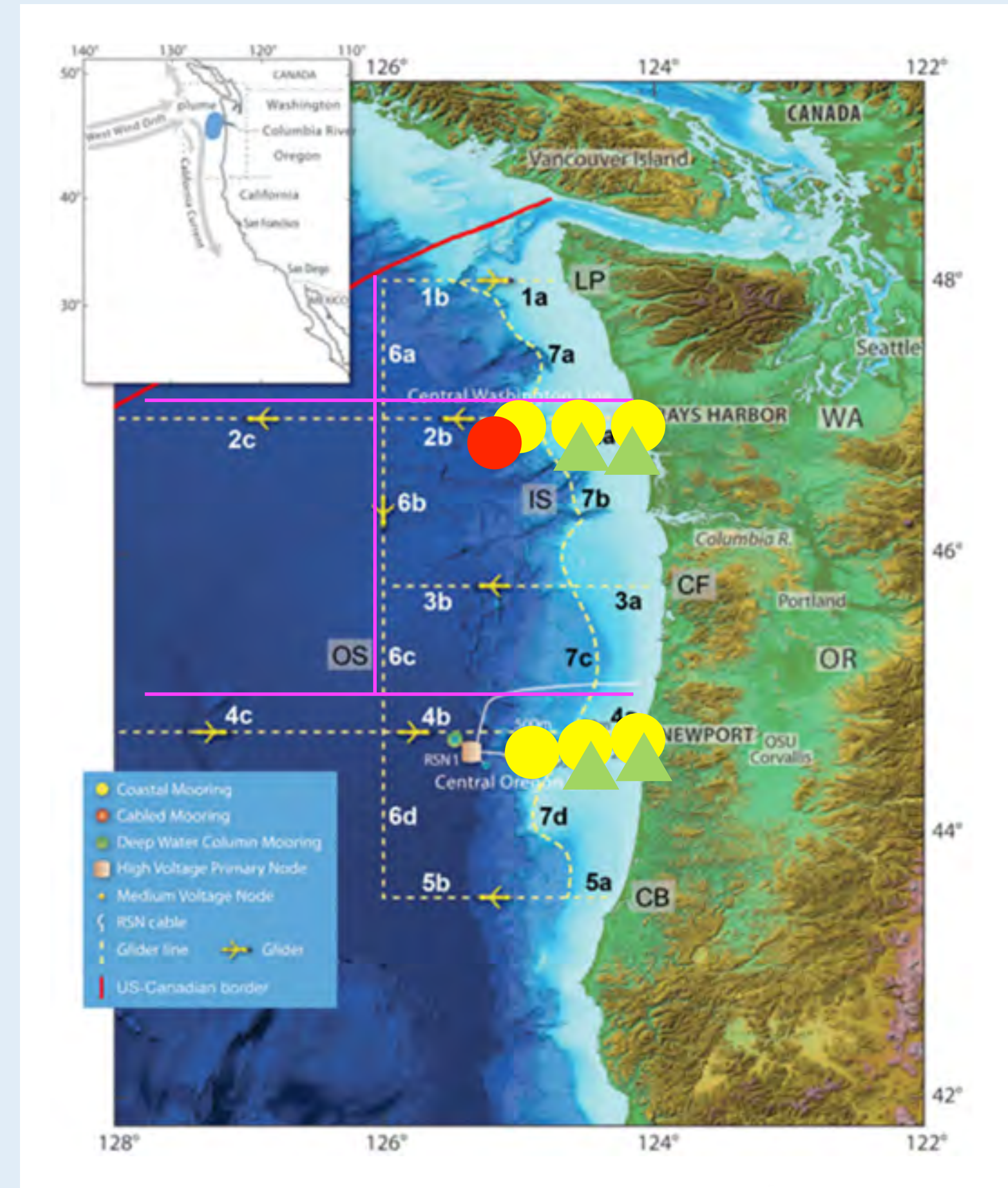
- Continuous full water column measurements at Axial
- Dramatic changes in Southern Hydrate Ridge
- Axial continues to inflate and be seismically active; projected eruption 2022-2024
(Chadwick OS51B-1489 & Wilcock: OS51B-1482)



Axial Base Shallow and Deep Profilers - spanning 2700 m – 5 m: full water column measurements, 24 instrument suite

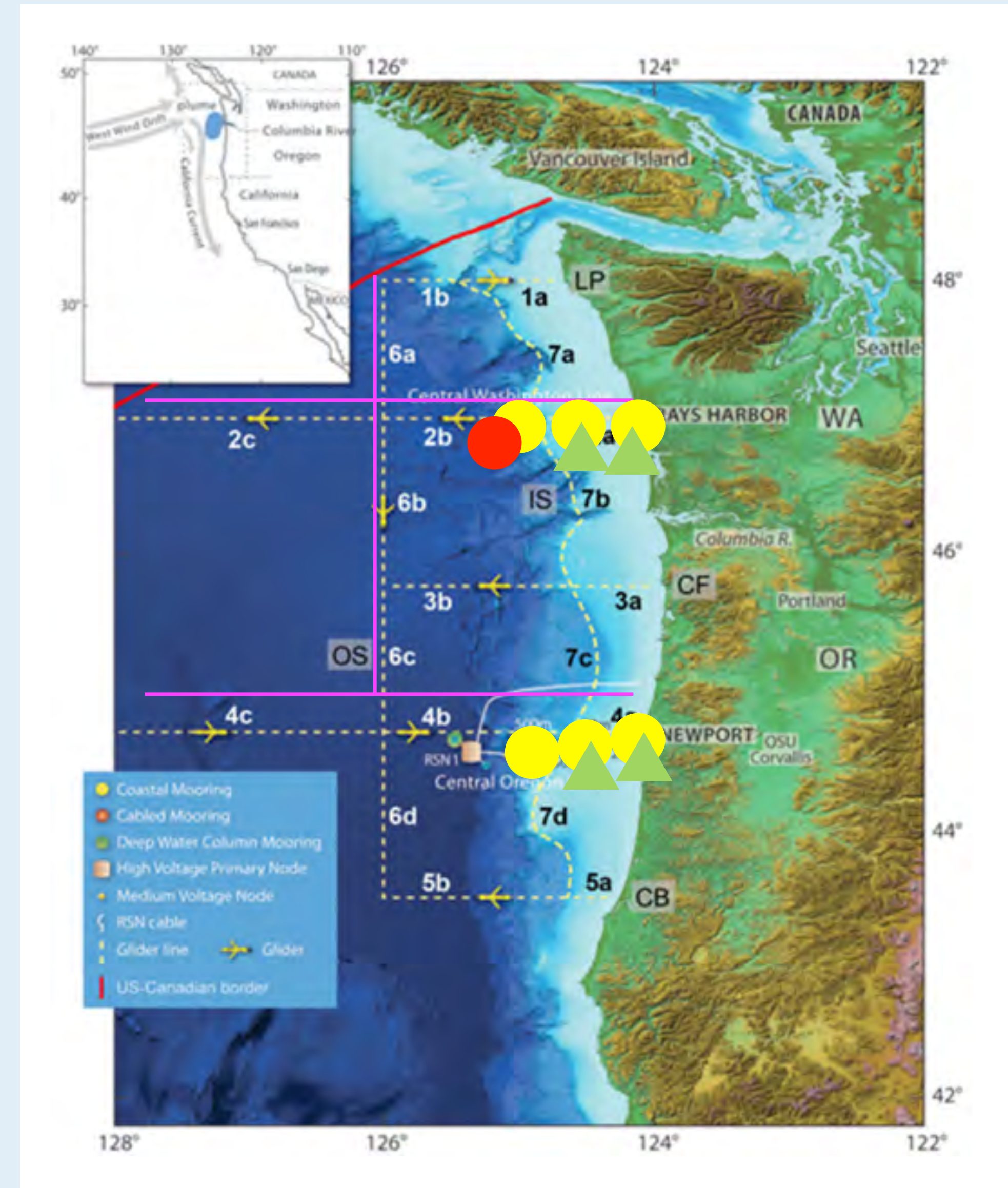
EA Operational Summary for 2019

- >90% data return from fixed sensors on mooring deployments ●
- 2660 profiles at WA offshore profiler (four trips per day) throughout 2019 ●
- 14 surface profiler deployments generating 303 days of profiles ▲



EA Operational Summary for 2019

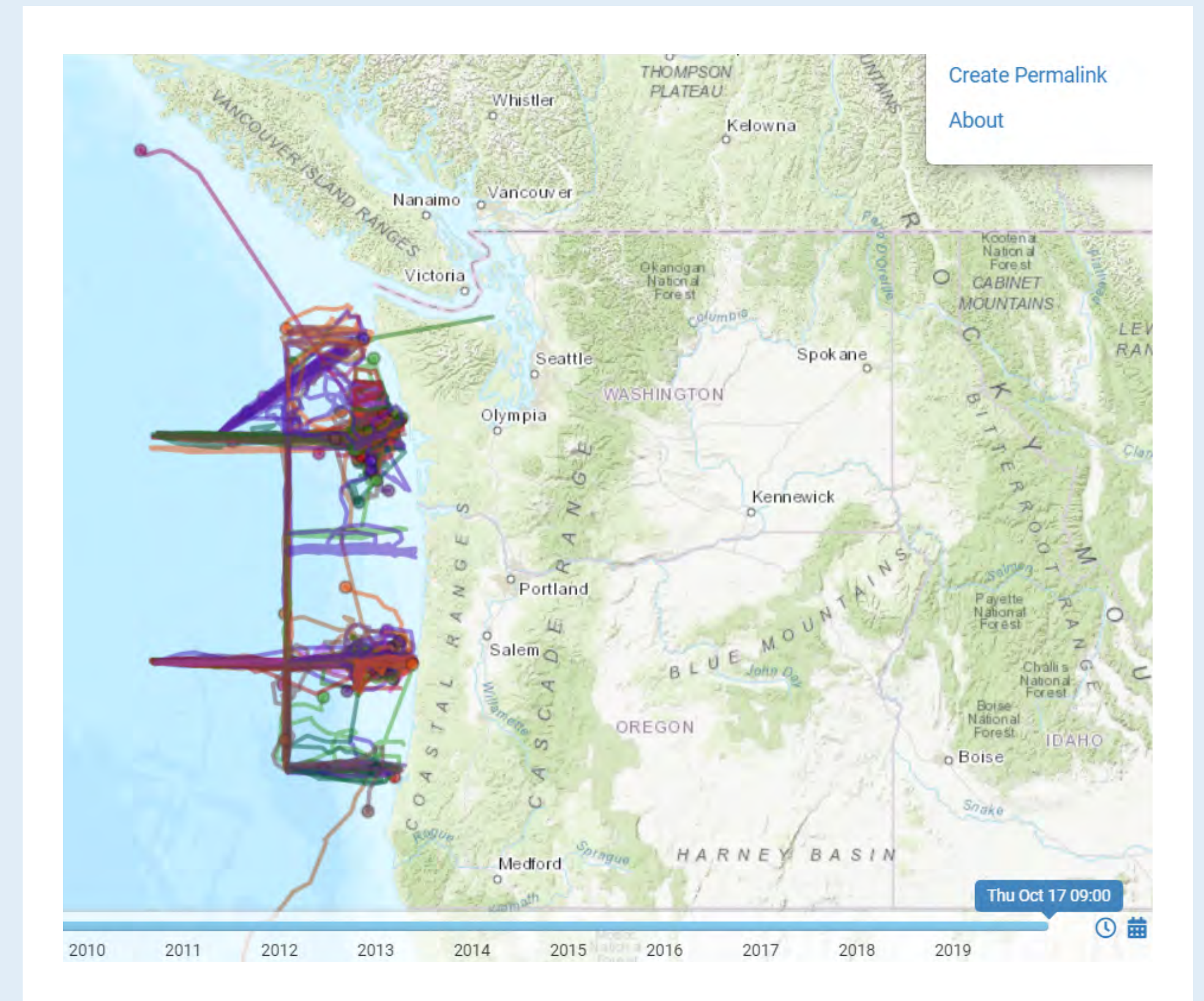
- 18 glider deployments spanning 2019. 943 glider days acquired. Glider lines along Newport and Grays Harbor lines prioritized. Also completed transects along 126 W
- Next turn cruise March 31 - April 15, 2020



EA Accomplishments Increasing OOI data visibility and use

Pushing data to community databases

- NDBC - meteorological data, including wave and radiation data
 - Updated telemetry to two hours,
NDBC review of metadata and data
- NANOOS - meteorological and water column data



EA Accomplishments Increasing OOI data visibility and use

Pushing data to community databases

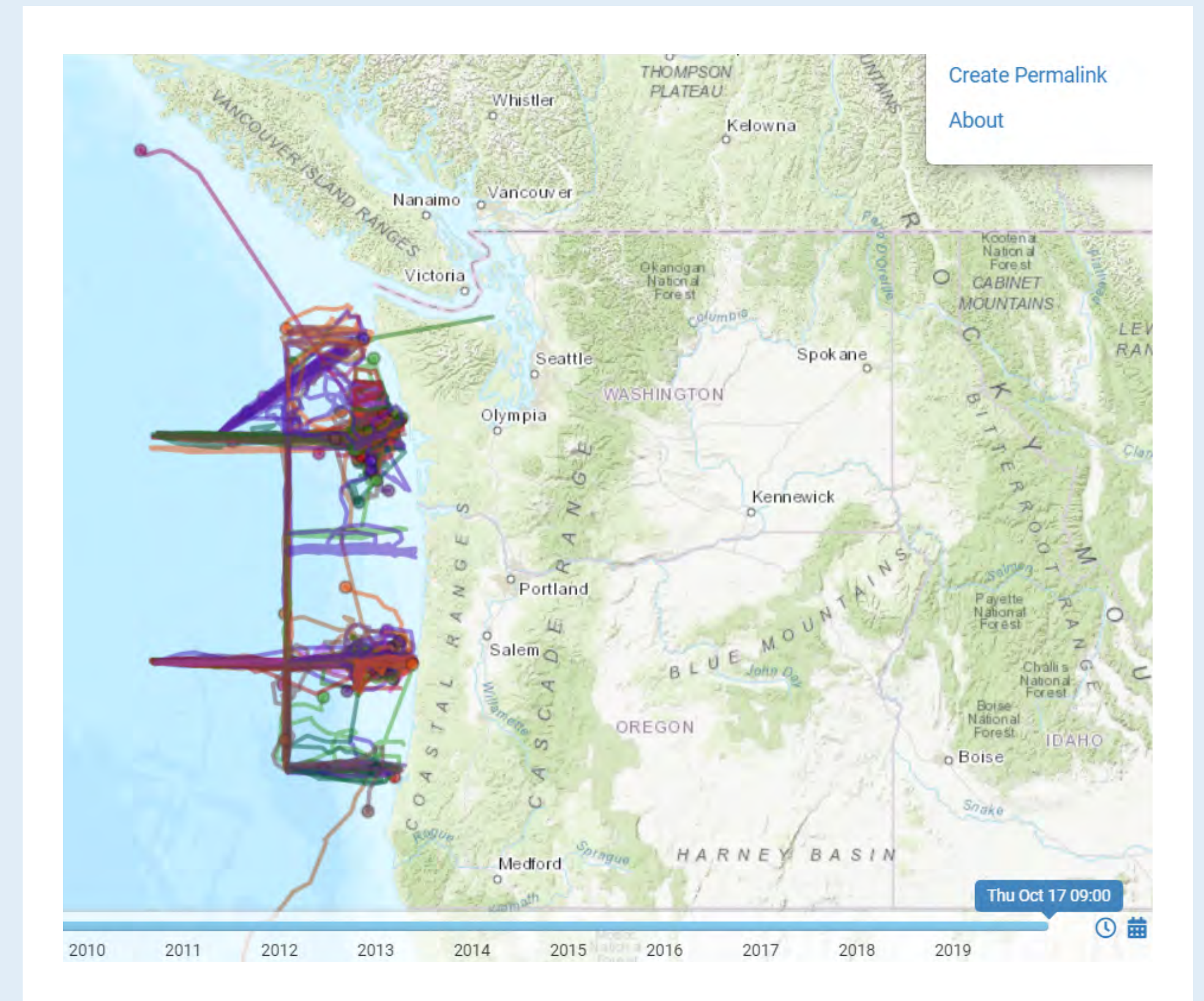
- GOA-ON - water column data focusing on pCO₂
- Glider DAC - CTD data, now expanded to include fluorescence and O₂ data



EA Accomplishments Increasing OOI data visibility and use

Development of additional
software scripts

- Python and Matlab scripts for M2M download of OOI data
- Tools for download, plotting, and quality assessment of profiler data



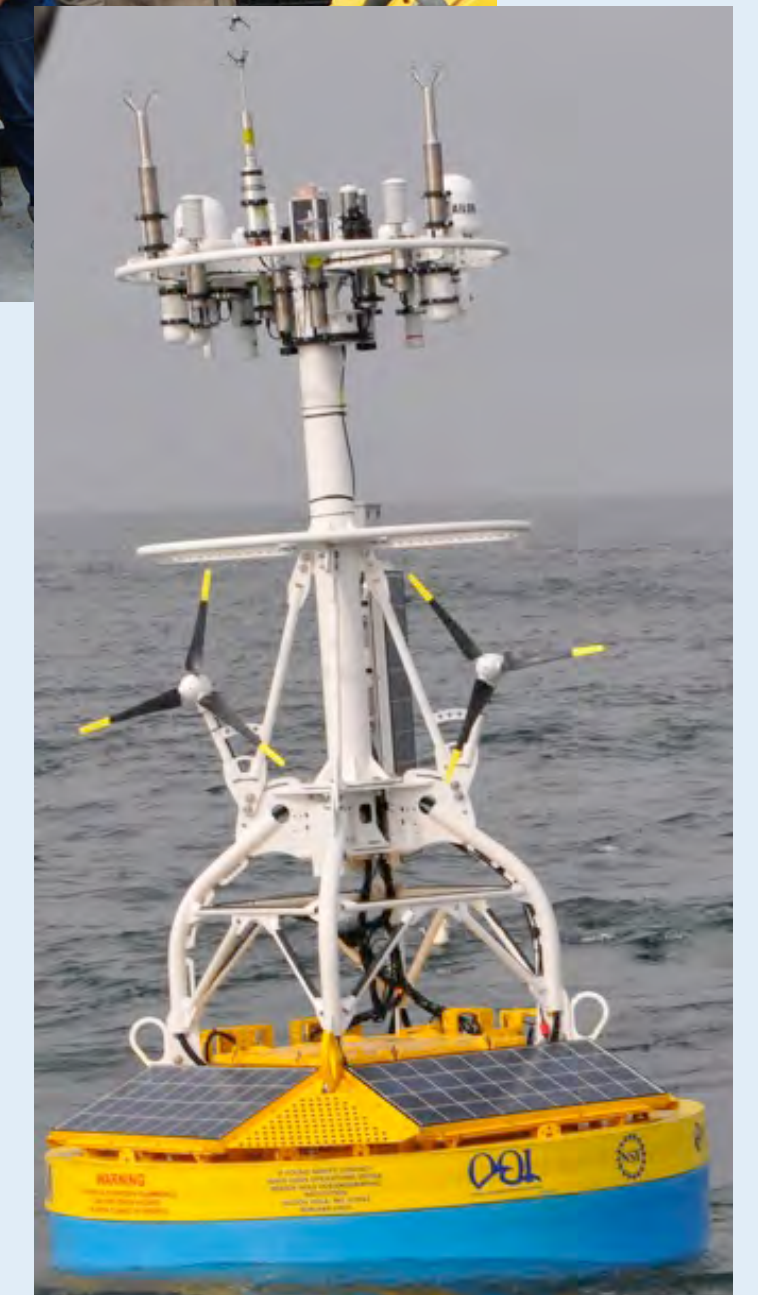
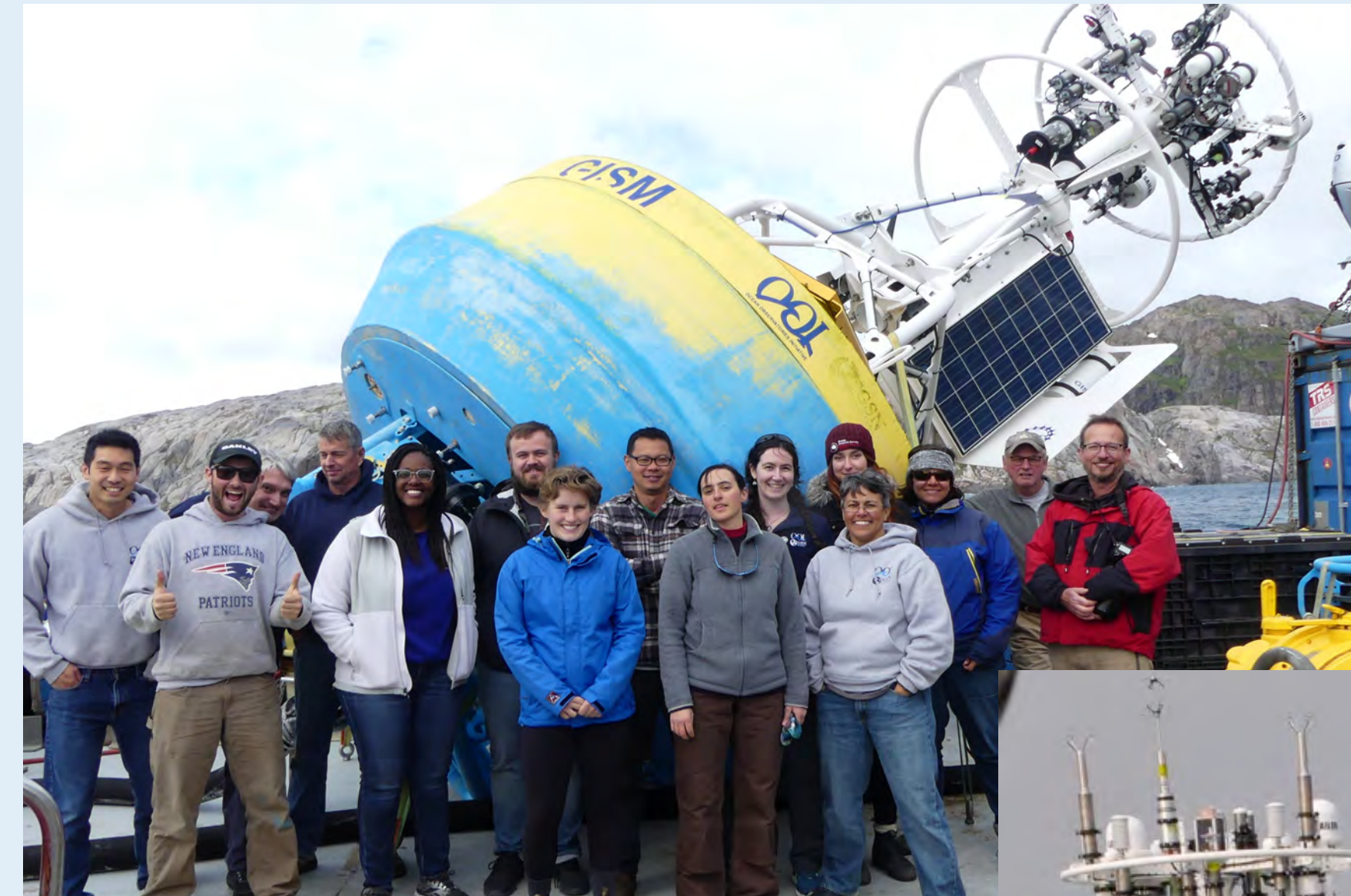
CGSN Operational Status

Irminger Sea

- 6th deployment, >80% data expected, next cruise May 2020

Southern Ocean

- 4th deployment, >40% data expected, recover only in Jan 2020



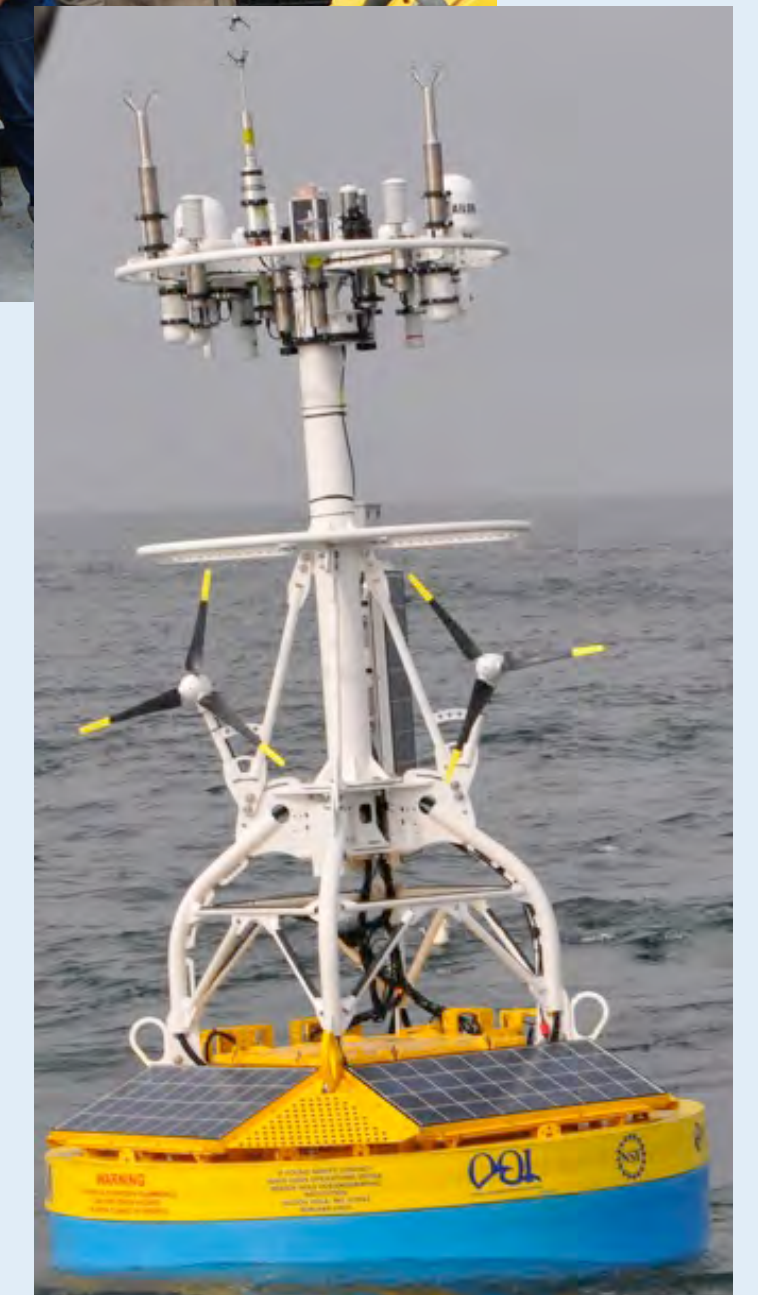
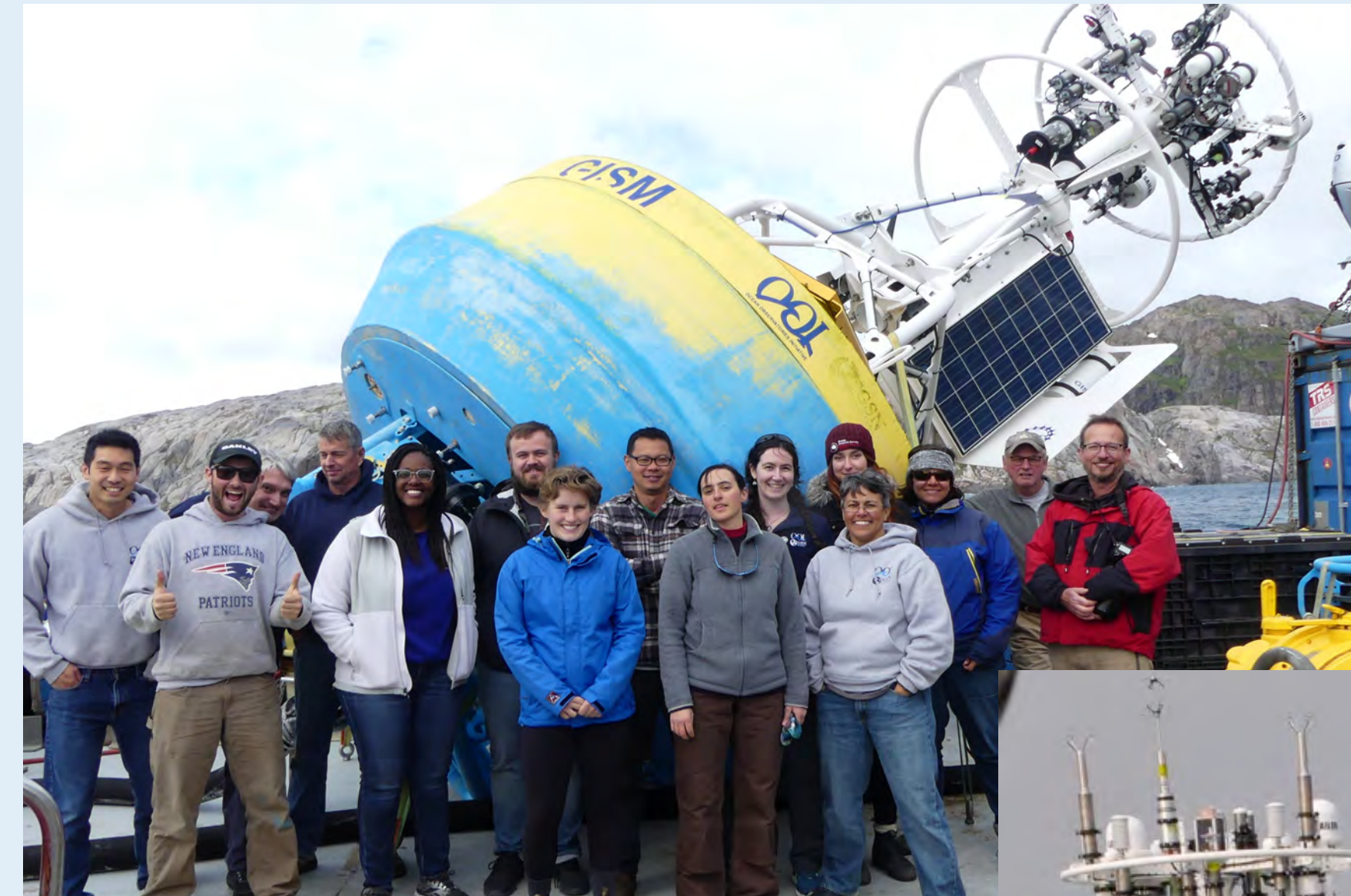
CGSN Operational Status

Station Papa

- 7th deployment, >80% data expected, next cruise May 2020

Pioneer Array

- 13th deployment (2x/yr), >90% data expected, next cruise Apr 2020





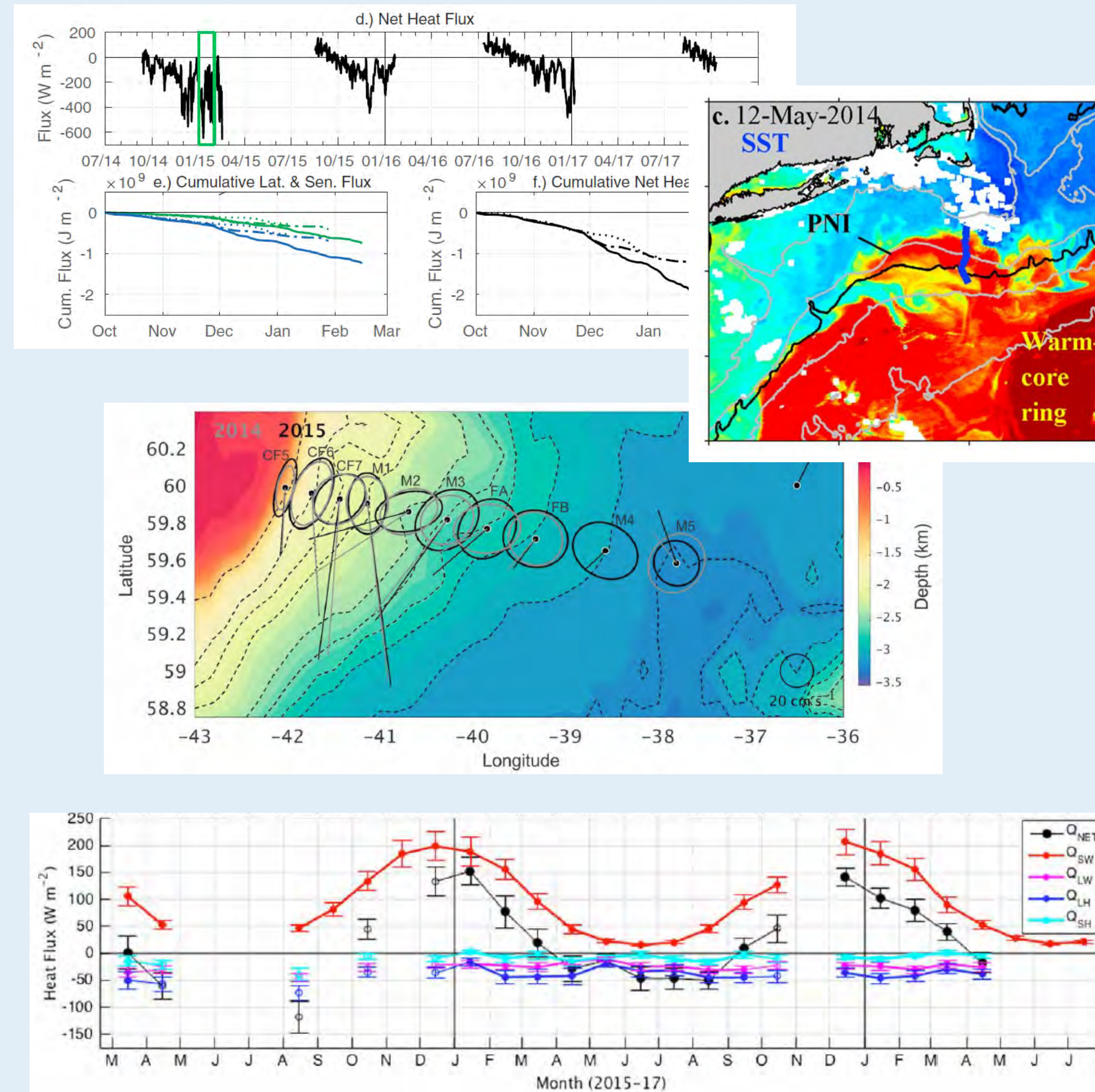
CGSN Science

Proposals

- >\$29M in NSF funded projects
- 31 Awards, 23 PIs from 16 institutions
- Also: NASA, NOAA, ONR

Papers

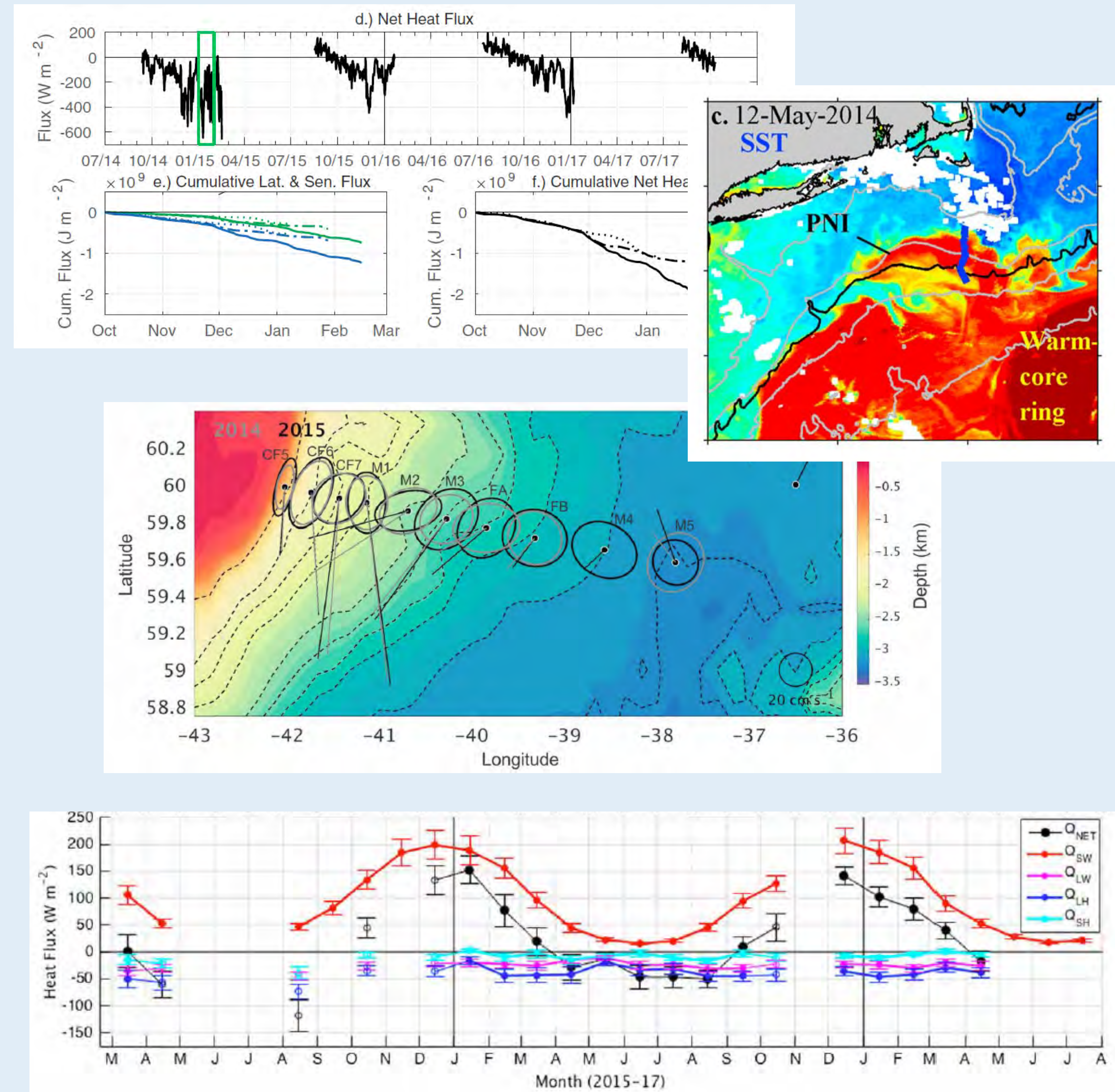
- 42 CGSN-related, inception to date



CGSN Science

Highlights

- Pioneer exchange processes
- Irminger forcing, mixing, and transport
- Southern Ocean episodic heat loss



OOI at OSM

Join us today!

- Booth #433
- CGSN Data – 13:00-14:00
- Pioneer Input – 14:00-15:00
- RCA Data – 15:00-16:00
- Axiom Data Demo – 16:00-18:00





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INITIATIVE

Questions?



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