

Pre-Launch Ocean In Situ Field Experiments

Experiment Coordinator: Yi Chao (RSS)

Task Manager: Bruce Haines (JPL)

SWOT Project Scientist: Lee Fu (JPL)

SWOT Project Manager: Parag Vaze

SIO: Uwe Send, Rob Pinkel, Drew Lucas, Matthias Lankhorst

PMEL: Christian Meining, Scott Stalin

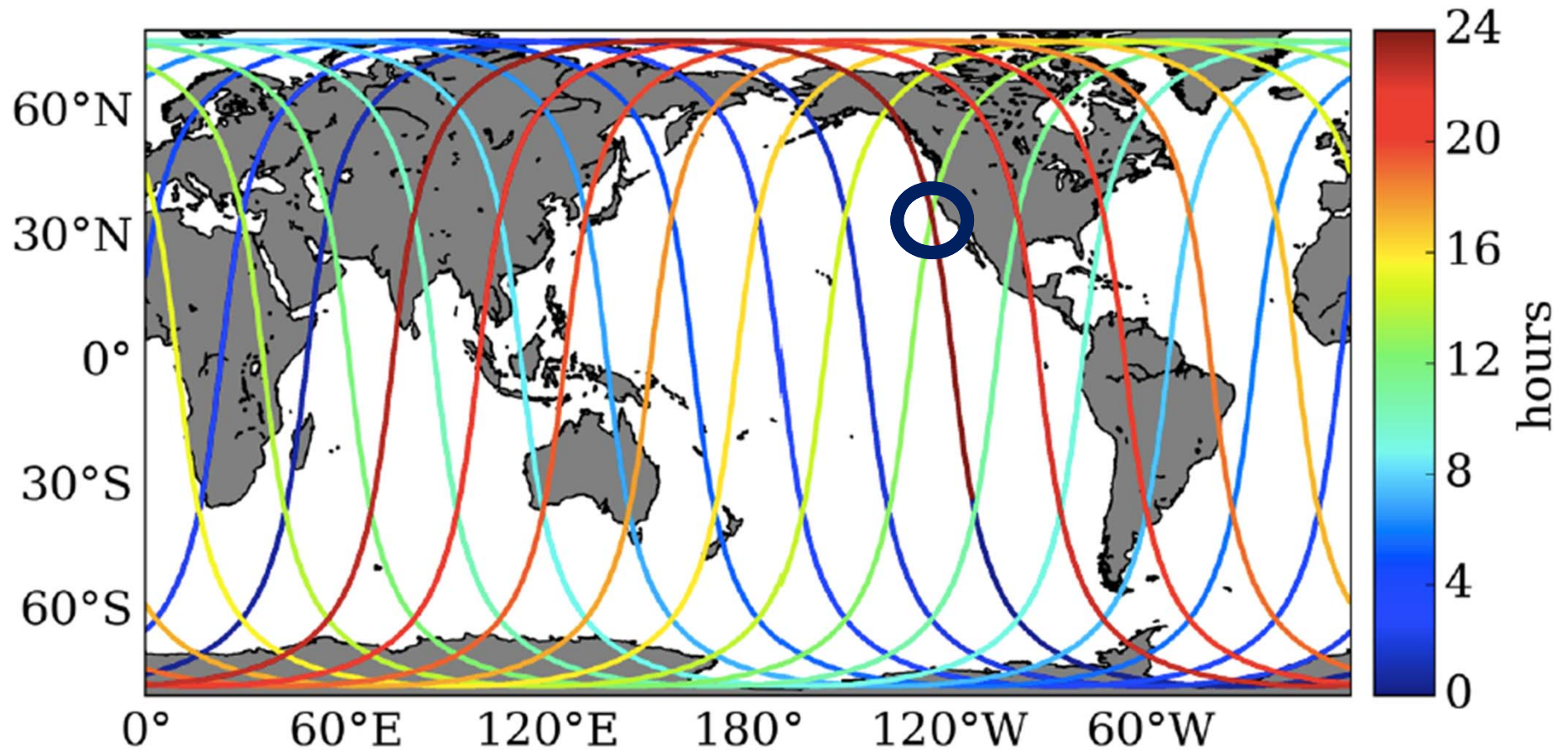
WHOI: Sebastien Bigorre, Tom Farrar

Rutgers: Oscar Schofield, David Aragon

JPL: Jinbo Wang

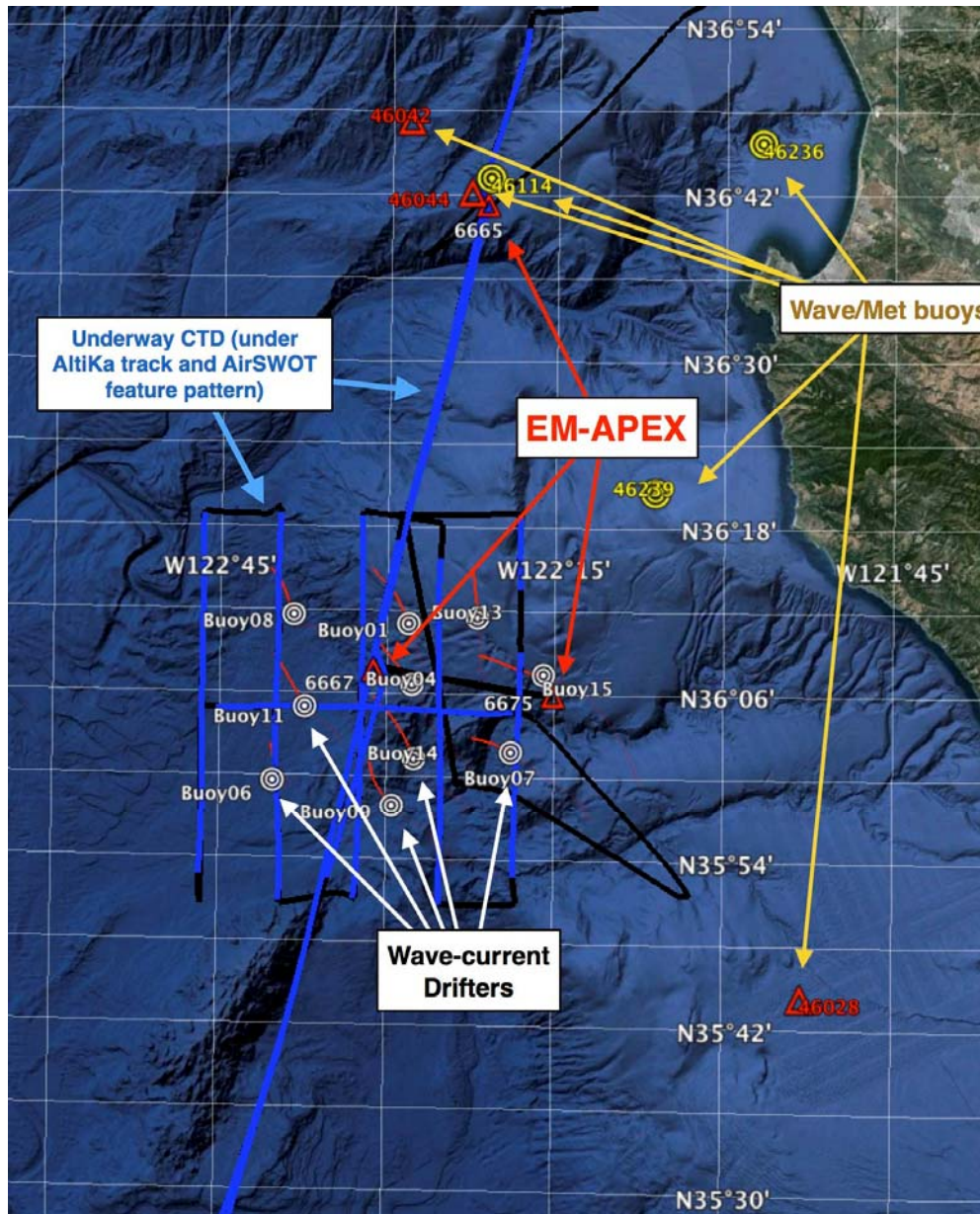
SWOT ST Meeting; June 17, 2019

Post-Launch Ocean In Situ Field Experiment during SWOT Fast (daily) Sampling Phase (90-day)



- ✓ 2015 Monterey AirSWOT experiment
- ✓ 2017 Monterey pilot experiment
- ✓ 2019 California cross-over pre-launch experiment

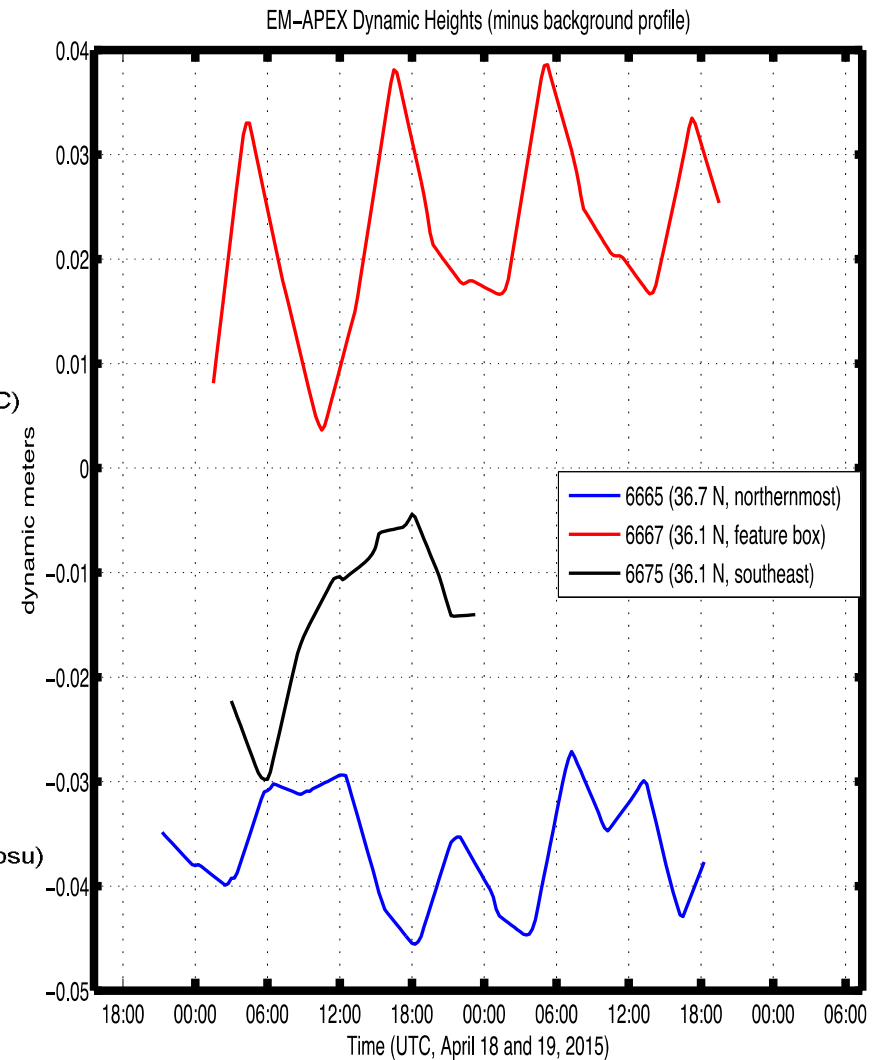
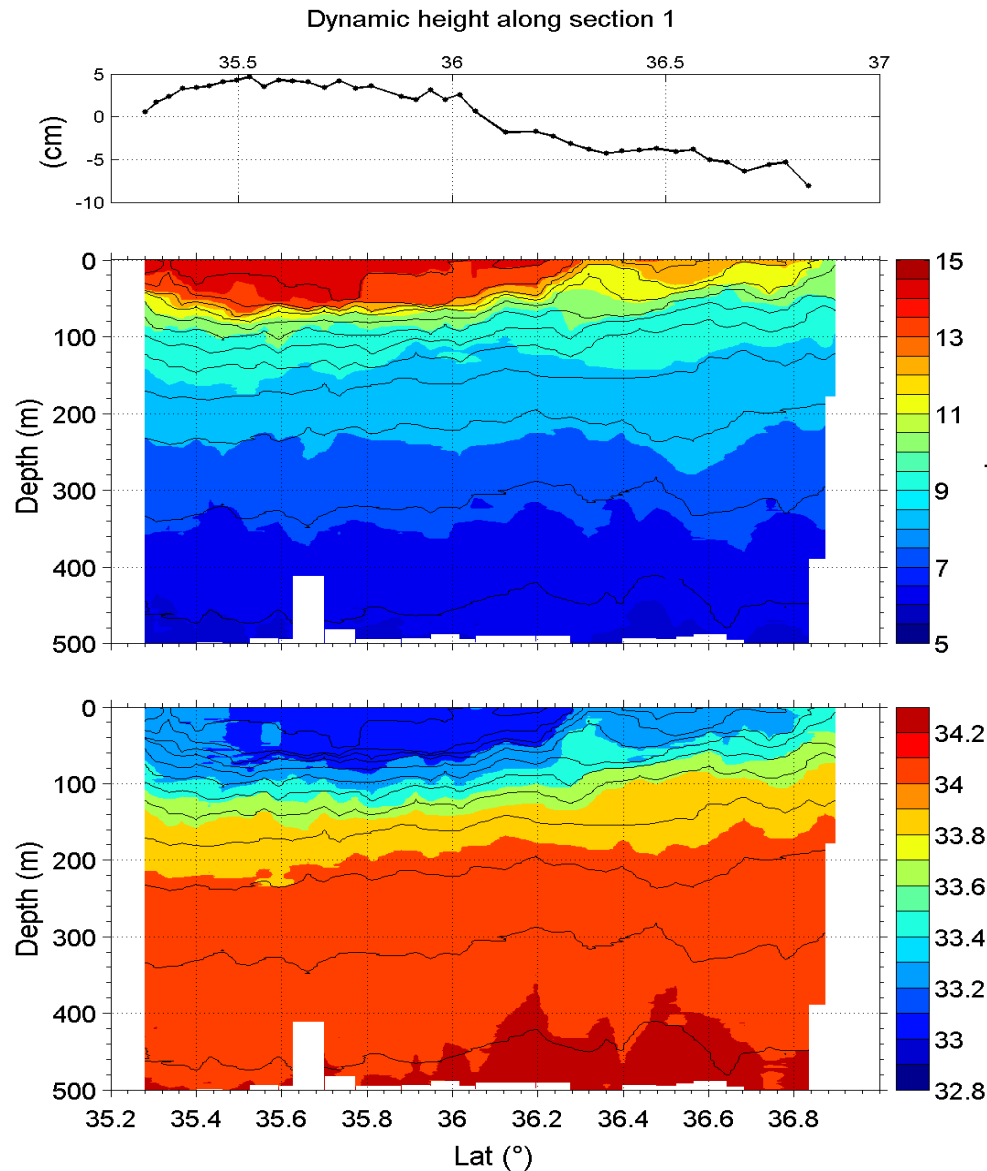
2015 Ocean In Situ Experiment for AirWOT



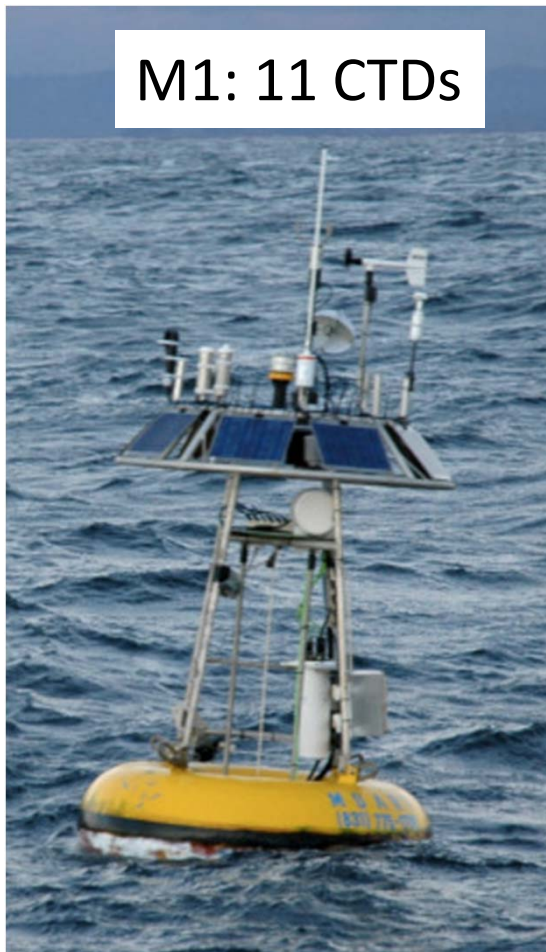
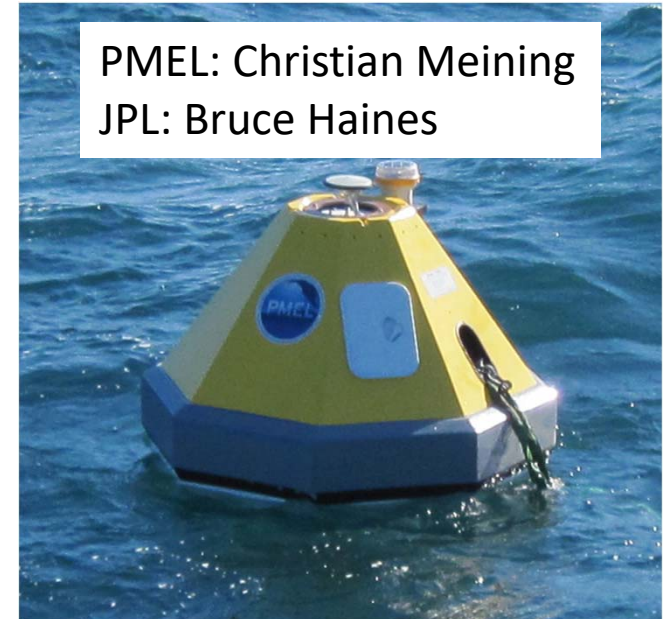
Dynamic Height from T/S Profiles

UCTD: 10 cm gradient

EM-APEX floats: 6 cm gradient;
3 cm internal tides/waves



Monterey Bay 2017 Pilot Experiment

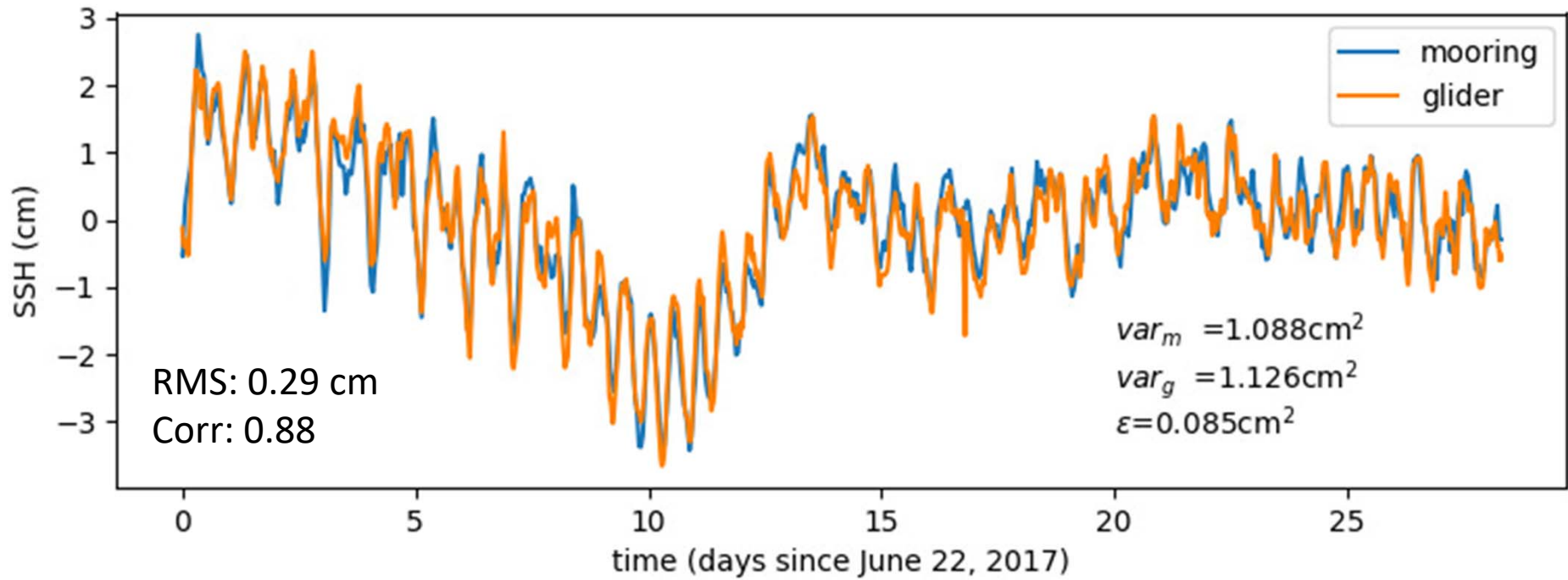


Tasks and Schedule

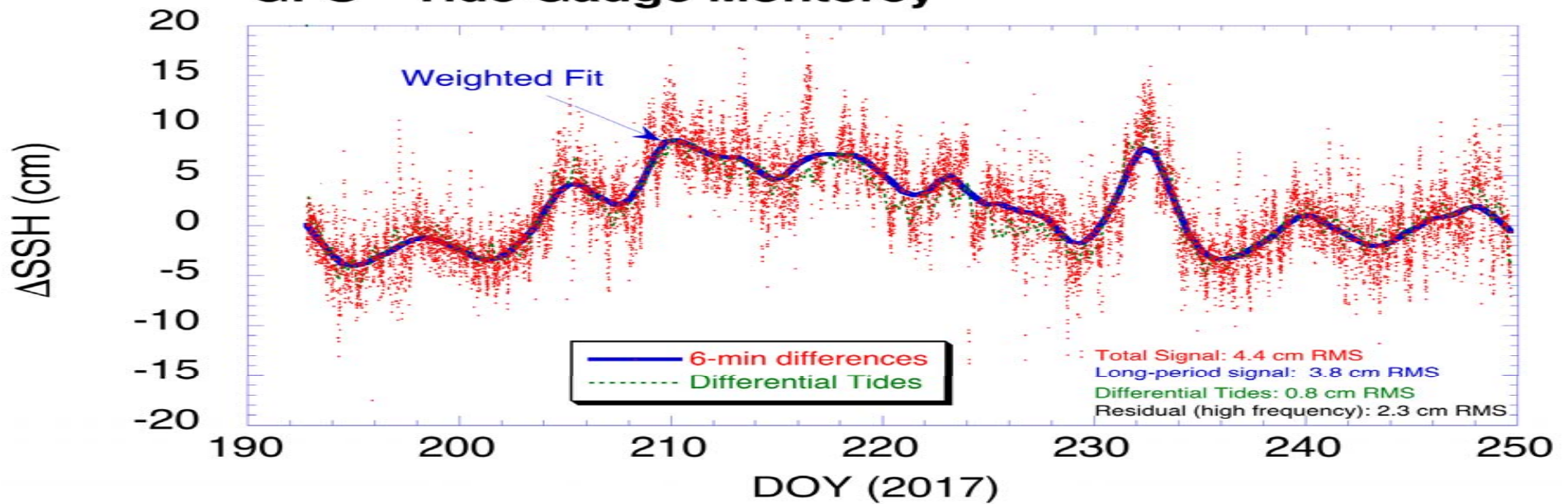
June July August September 2017



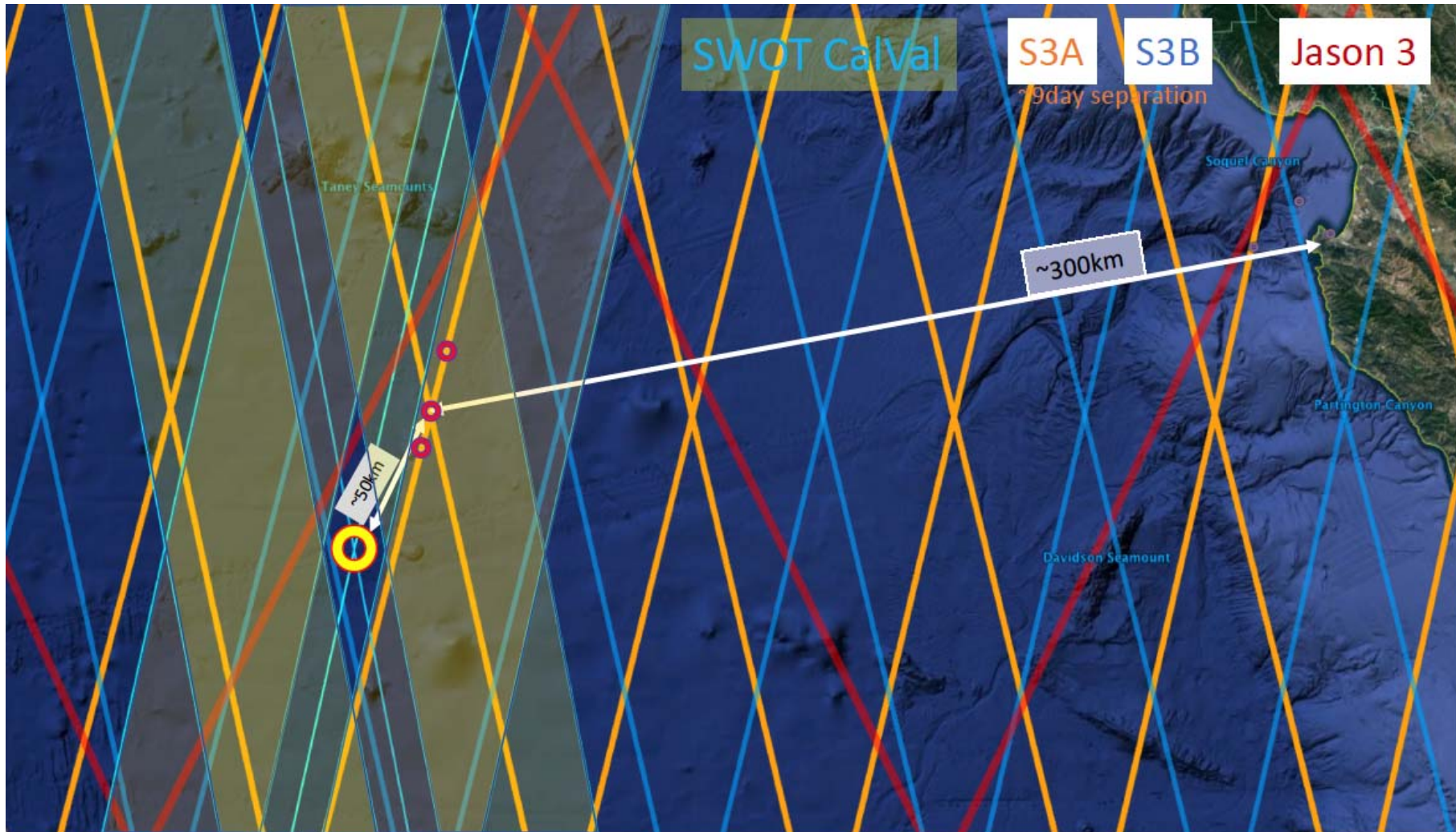
- ✓ Seaglider already in water as part of Caltech KISS experiment
 - ✓ June 22 Deployment cruise: Slocum glider, GPS mooring, BPR
 - ✓ July 11 cruise: GPS mooring repair (data recorder)
 - ✓ July 24 Recovery cruise: GPS buoy data download and re-deployment, Slocum glider moved to GPS location & in 1000-m mode
 - ✓ Aug. 11 Slocum recovered cruise
 - ✓ Sept. 6 Final recovery cruise: GPS mooring



GPS – Tide Gauge Monterey



Pre-Launch Ocean In Situ Field Experiment 90-day during September - December 2019



Objective and Required Data & Instrument

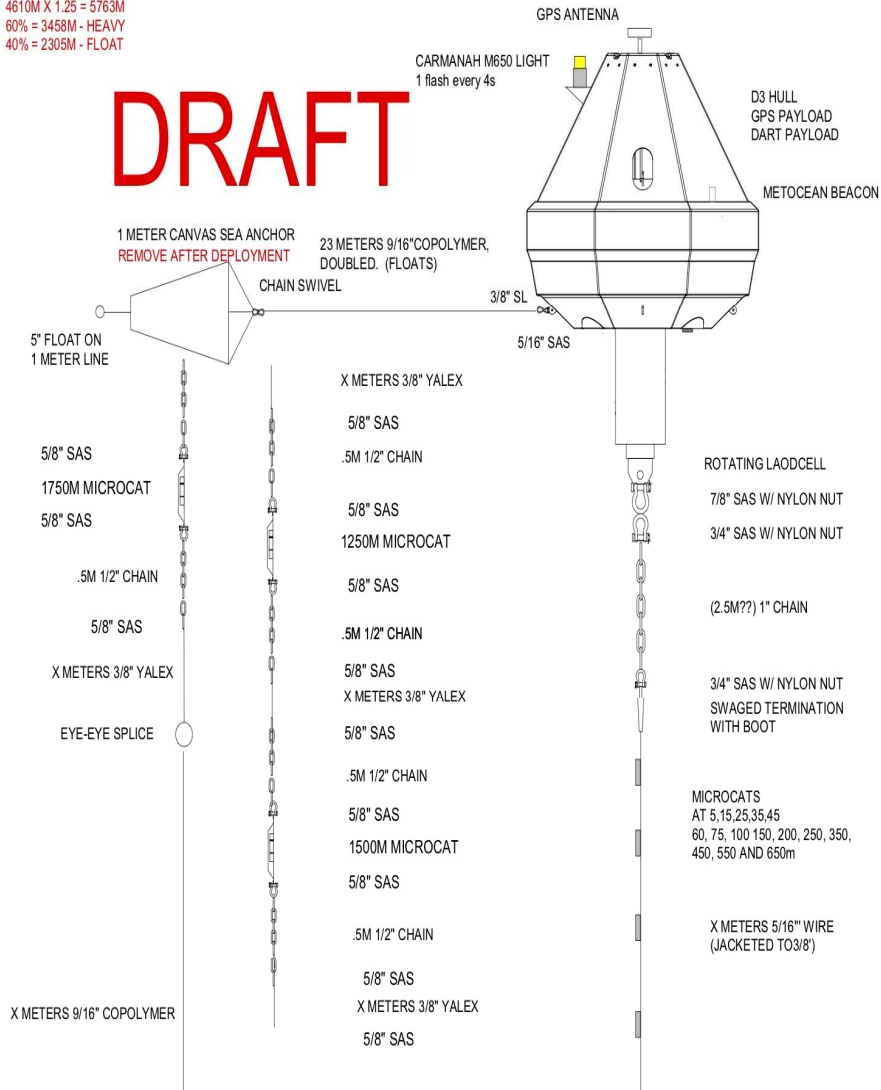
Objective	Data Required	Instrument
Geodetic	SSH (Bottom pressure)	Surface GPS mooring Bottom Pressure Recorder (BPR)
Oceanographic	T/S at depths	CTDs at depths on a surface mooring (standard; expensive for real-time subsurface data)
	T/S profiles	WireWalker
		Prawler
Underwater glider		

Instruments to be Deployed

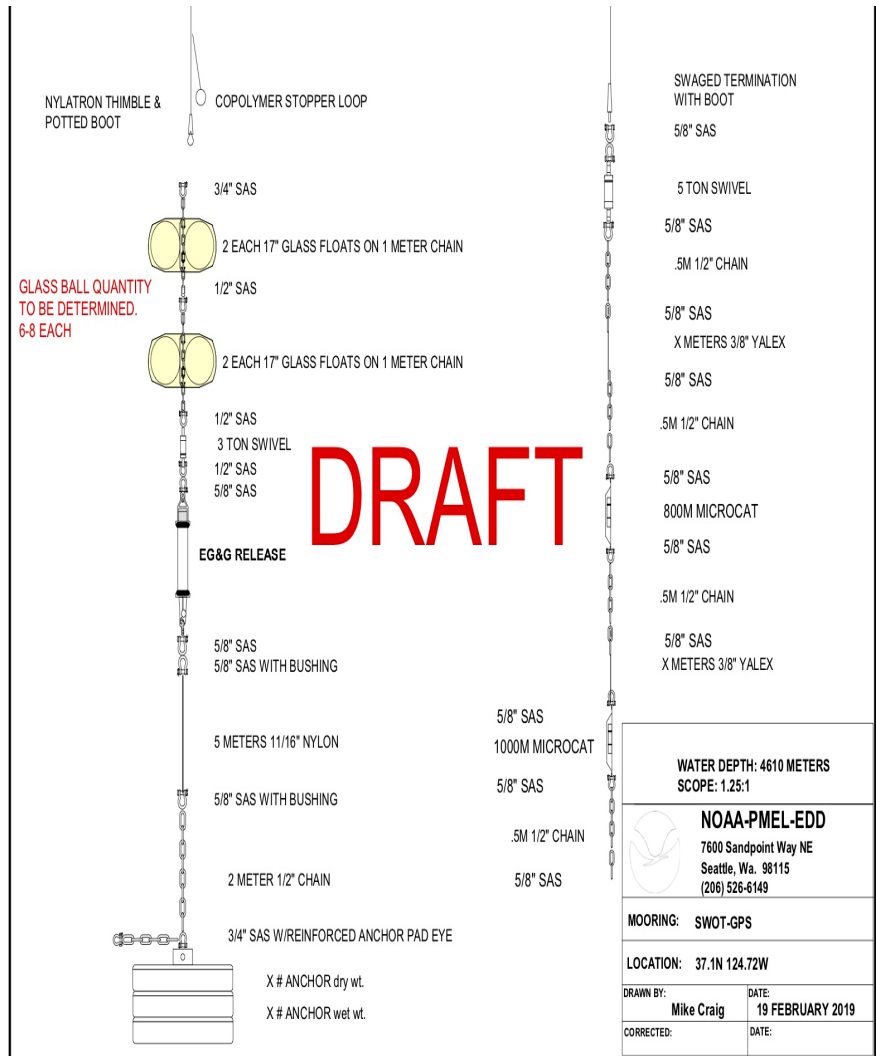
Instrument	Data	Lead PIs
GPS-CTD mooring	SSH, T/S at depths (available upon recovery)	Chris Meinig (PMEL) Sebastien Bigorre (WHOI) Bruce Haines (JPL)
GPS-Prawler mooring (in-kind contribution)	SSH (available upon recovery), T/S profiles (real-time)	Chris Meinig (PMEL) Bruce Haines (JPL)
WireWalker-CTD mooring	T/S profiles & T/S at depths (real-time)	Uwe Send, Drew Lucas (SIO)
Bottom Pressure Recorder (BPRx2)	Bottom pressure (PMEL, real-time; SIO, available upon recovery)	Chris Meinig (PMEL) Uwe Send (SIO)
Underwater glider (Slocum, Hybrid)	T/S profiles (real-time)	Oscar Schofield (Rutgers)


4610M X 1.25 = 5763M
 60% = 3458M - HEAVY
 40% = 2305M - FLOAT

DRAFT

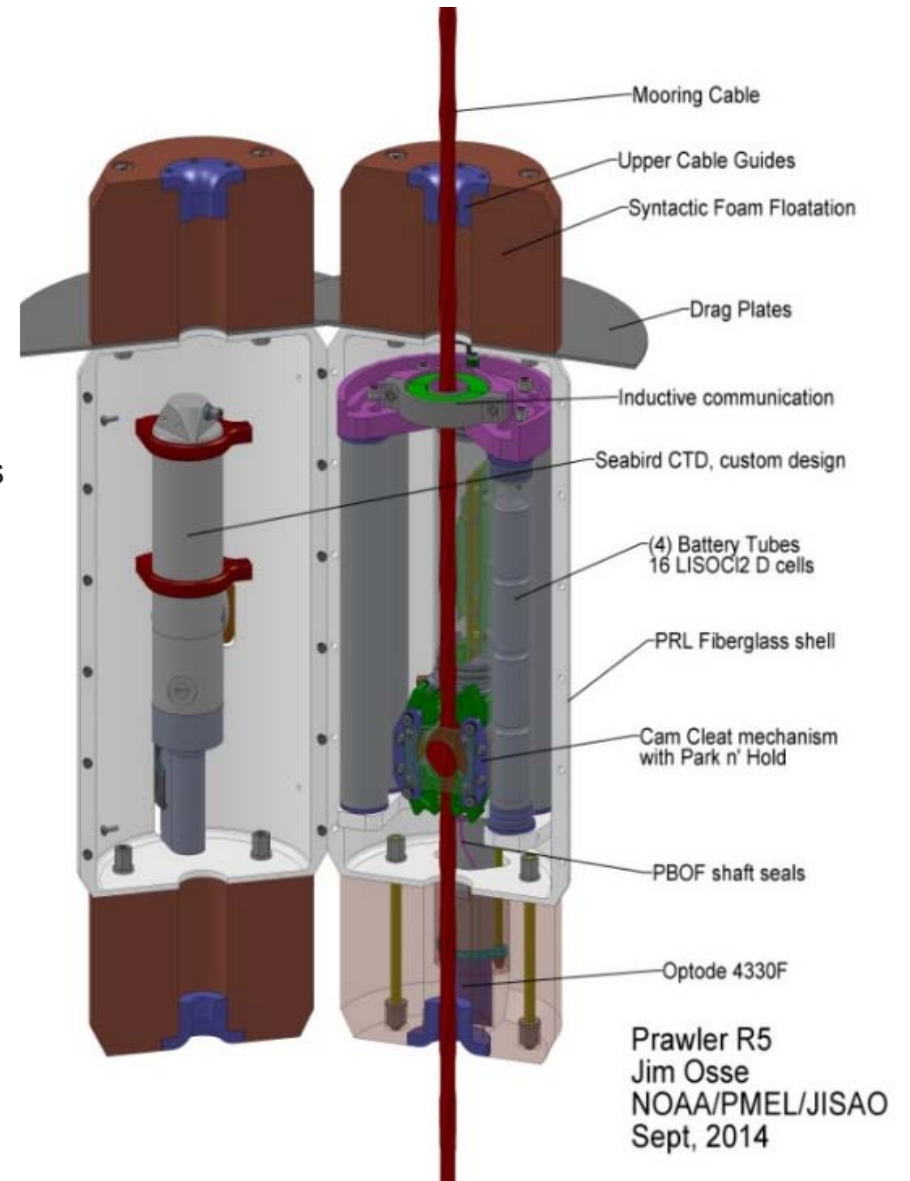
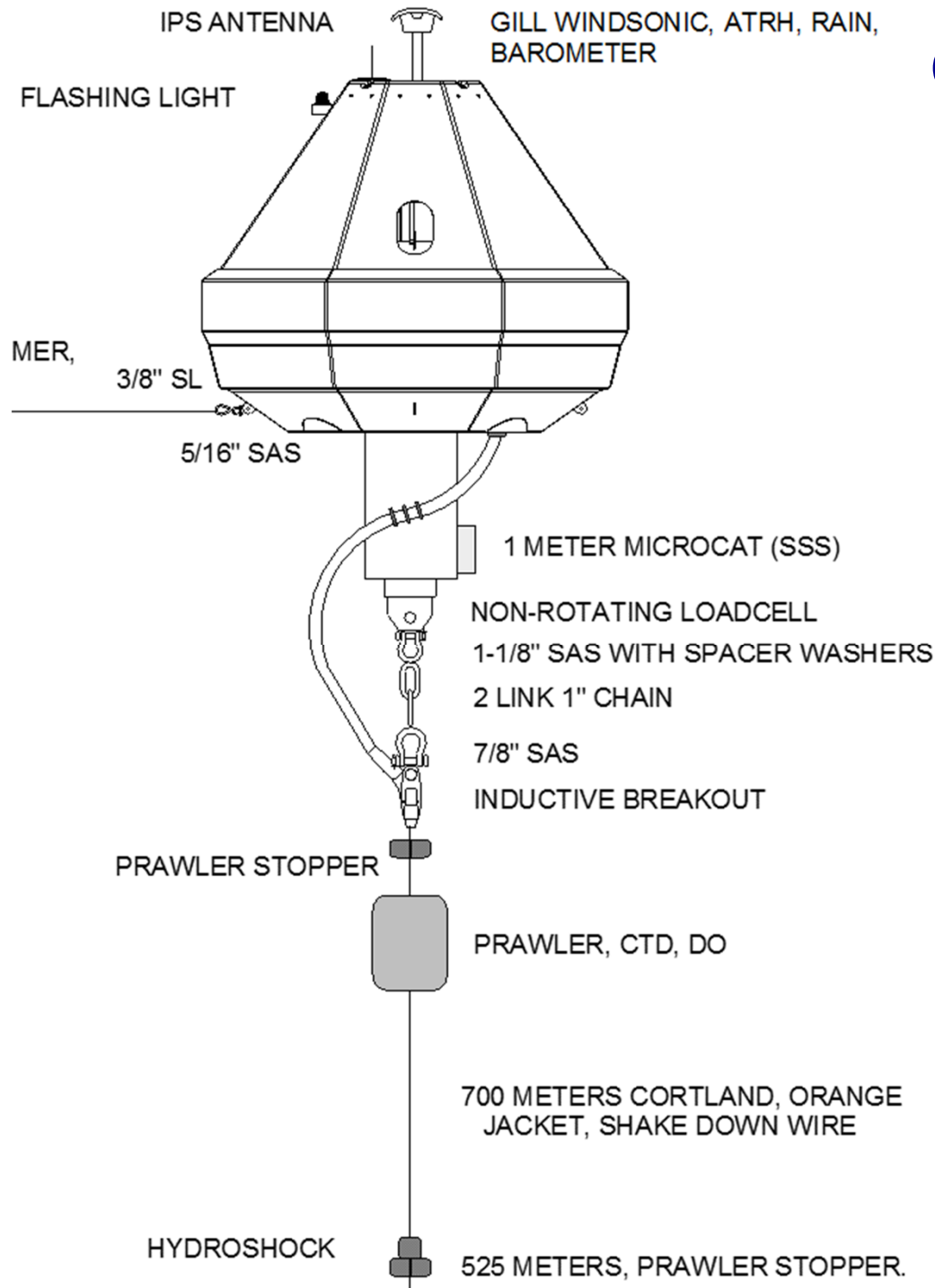


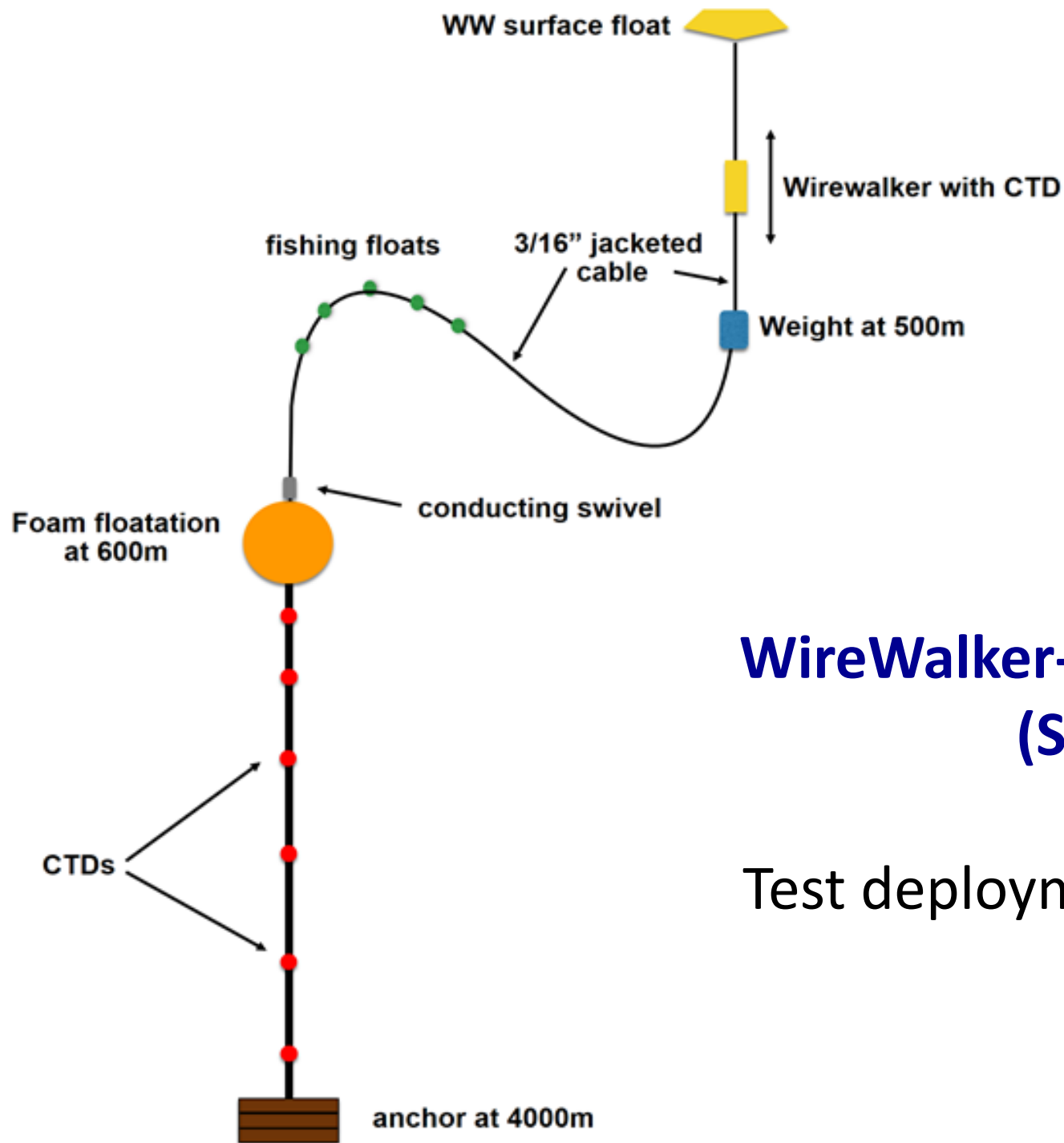
GPS-CTD Mooring (PMEL, WHOI)



WATER DEPTH: 4610 METERS SCOPE: 1.25:1	
 NOAA-PMEL-EDD 7600 Sandpoint Way NE Seattle, Wa. 98115 (206) 526-6149	
MOORING: SWOT-GPS	
LOCATION: 37.1N 124.72W	
DRAWN BY: Mike Craig	DATE: 19 FEBRUARY 2019
CORRECTED:	DATE:

GPS-PRAWLER Mooring (PMEL)



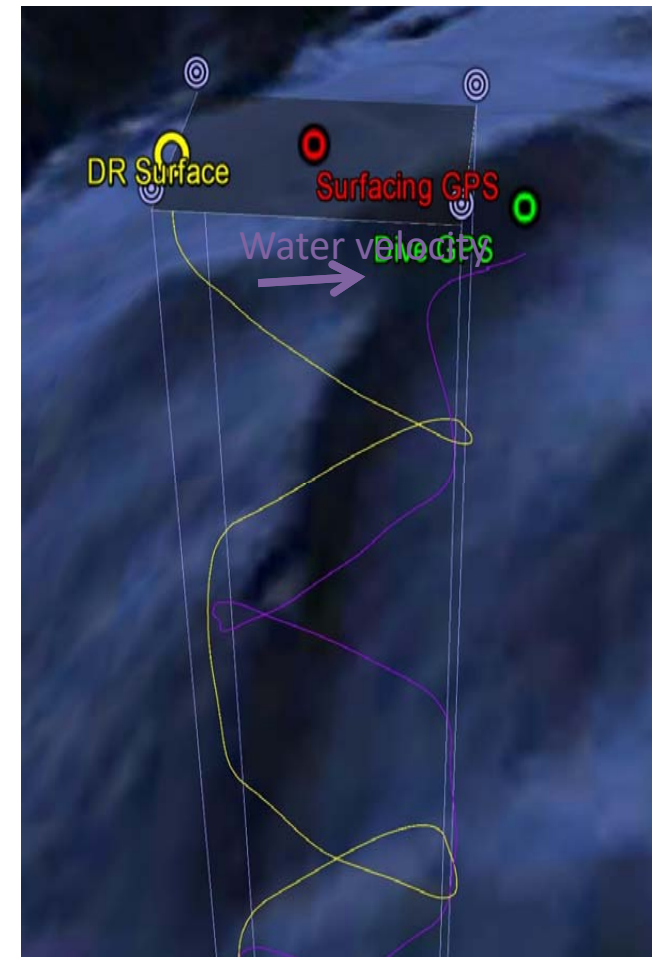
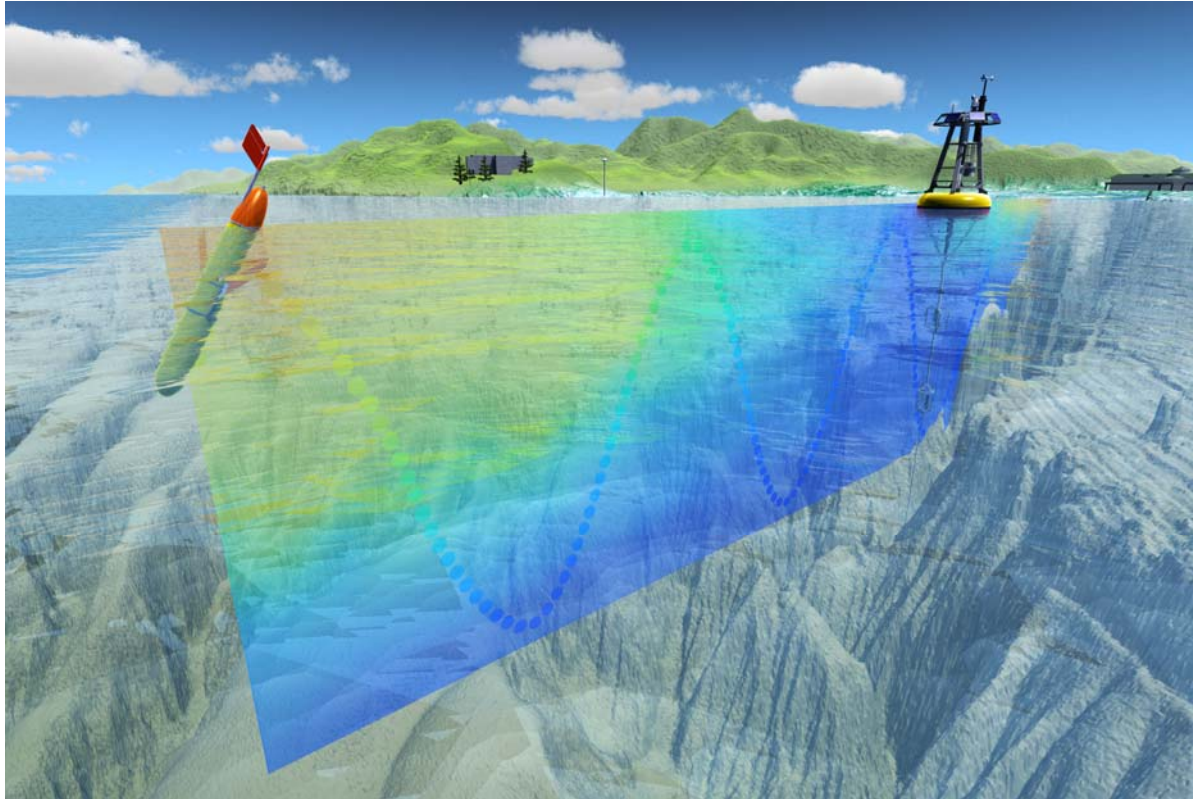


WireWalker-CTD Mooring (SIO)

Test deployment late June



Underwater Glider (Slocum, Hybrid)



Deployment Cruise during 3-8 September 2019

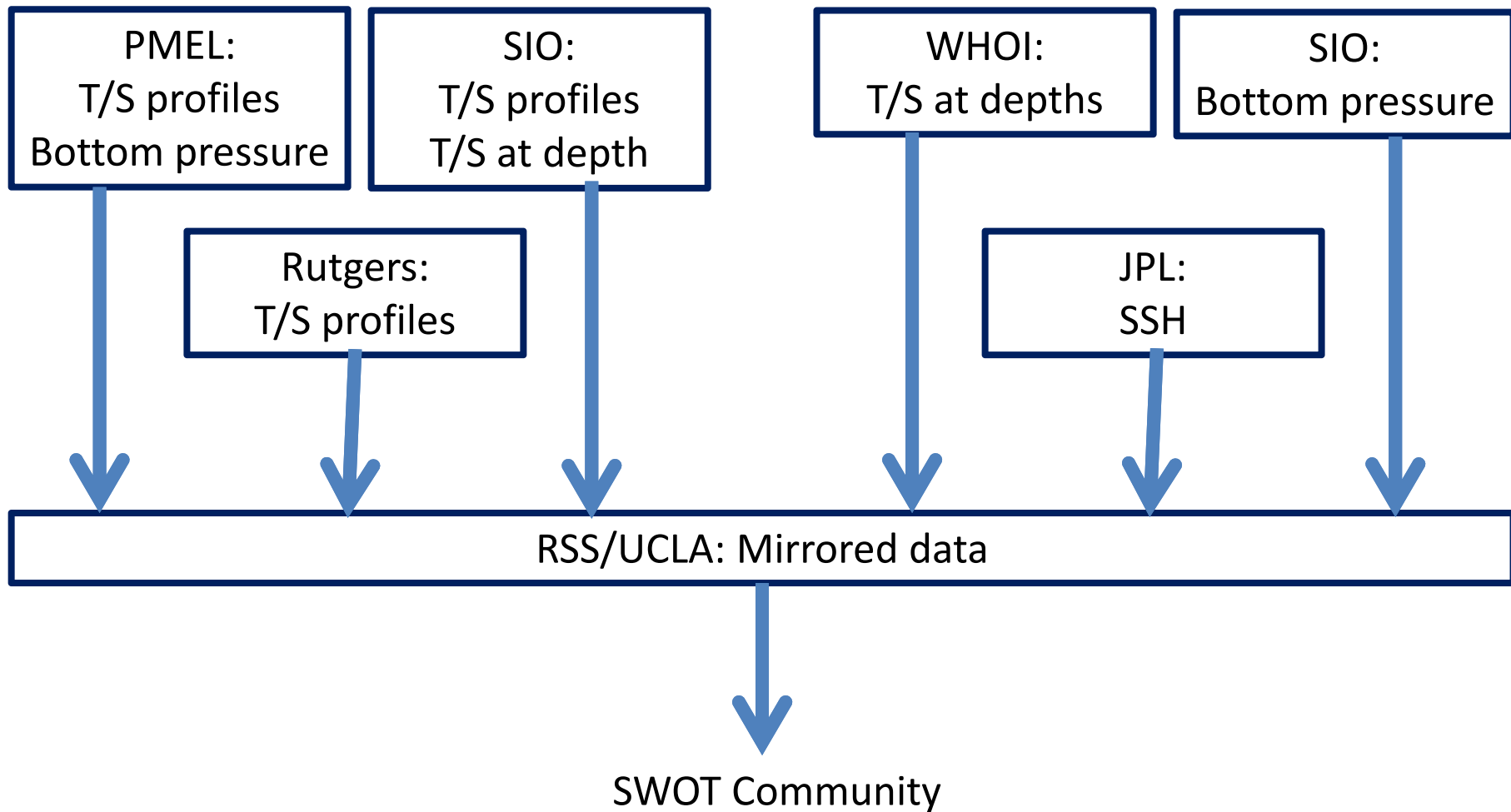


R/V Sproul (UNOLS, operated by SIO/UCSD)
Chief Scientist: Uwe Send (SIO/UCSD)

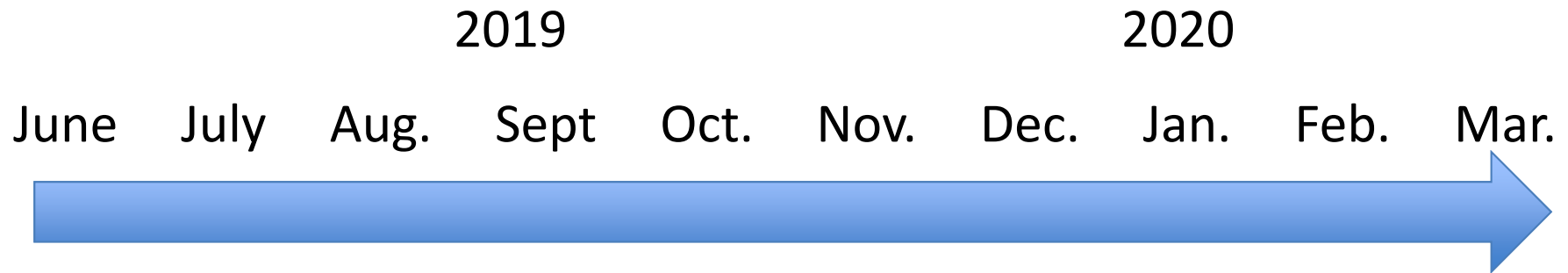
Data Processing & Distribution

Real-Time

Upon Recovery



Schedule & Milestones



✓ Plan approved & Contracts established

Test deployment (off SIO; June 21/22) WireWalker-CTD mooring

Peer review

Readiness review

Sept. 3-8 deployment cruise

Dec. 3-8 recovery cruise

Reports

Thanks!

Questions?

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