2015 Icebreaker Session

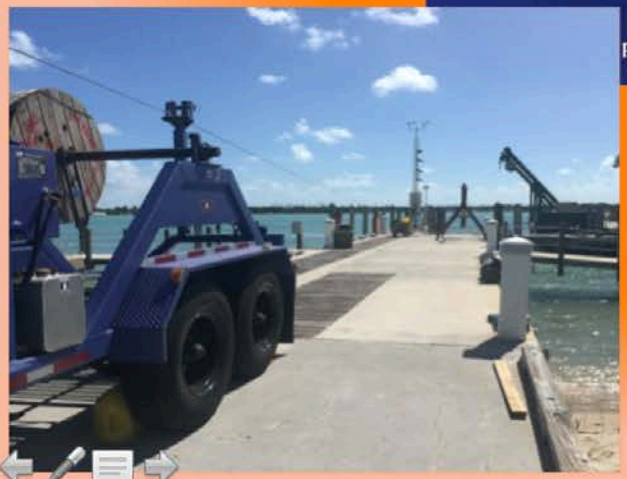
RVTEC Annual Meeting

November 3-5, 2015

THE RESEARCH VESSEL

F. G. WALTON SMITH

ROSENSTIEL SCHOOL OF MARINE AND ATMOSPHERIC SCIENCE

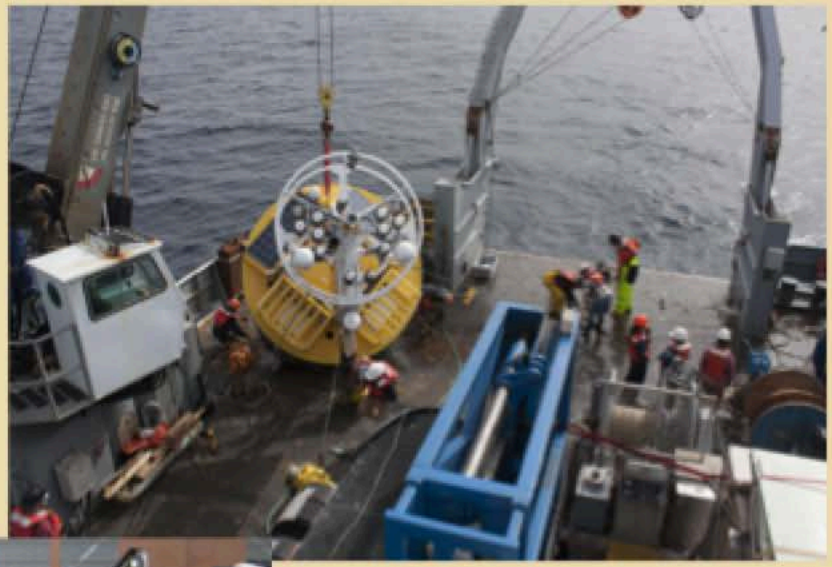


Hurricanes

R/V Thomas G Thompson

Operational & Logistical Challenges:

- Four 8,000lb surface buoys
- Finding a winch in the last minute



R/V Clifford Barnes

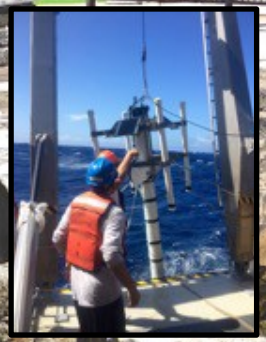
Technical Challenges:

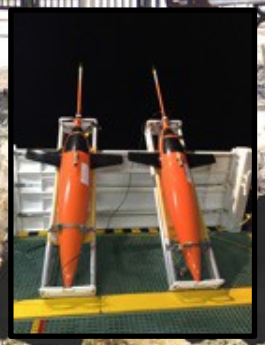
- Wifi cellular data use in Puget Sound
- CTD conducting cable: not just your termination can go bad!

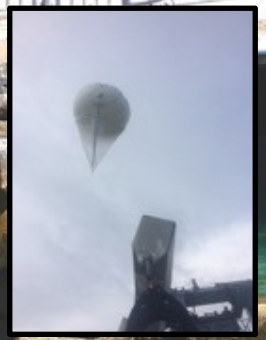
BIOS Bermuda Institute of Ocean Sciences

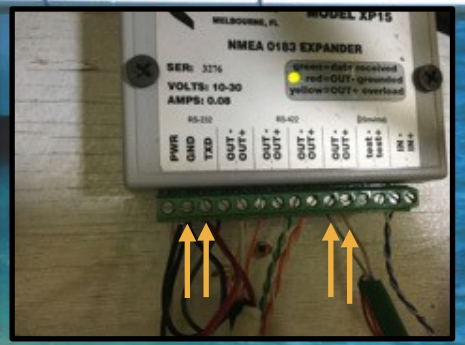
R/V ATLANTIC EXPLORER

2015 Update & Serial Communication troubleshooting



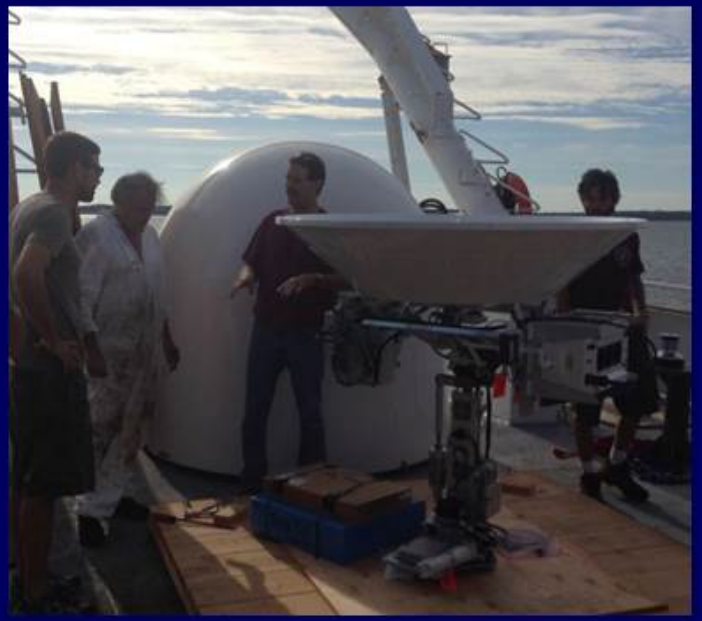






R/V *Atlantis*

Woods Hole Oceanographic Institution

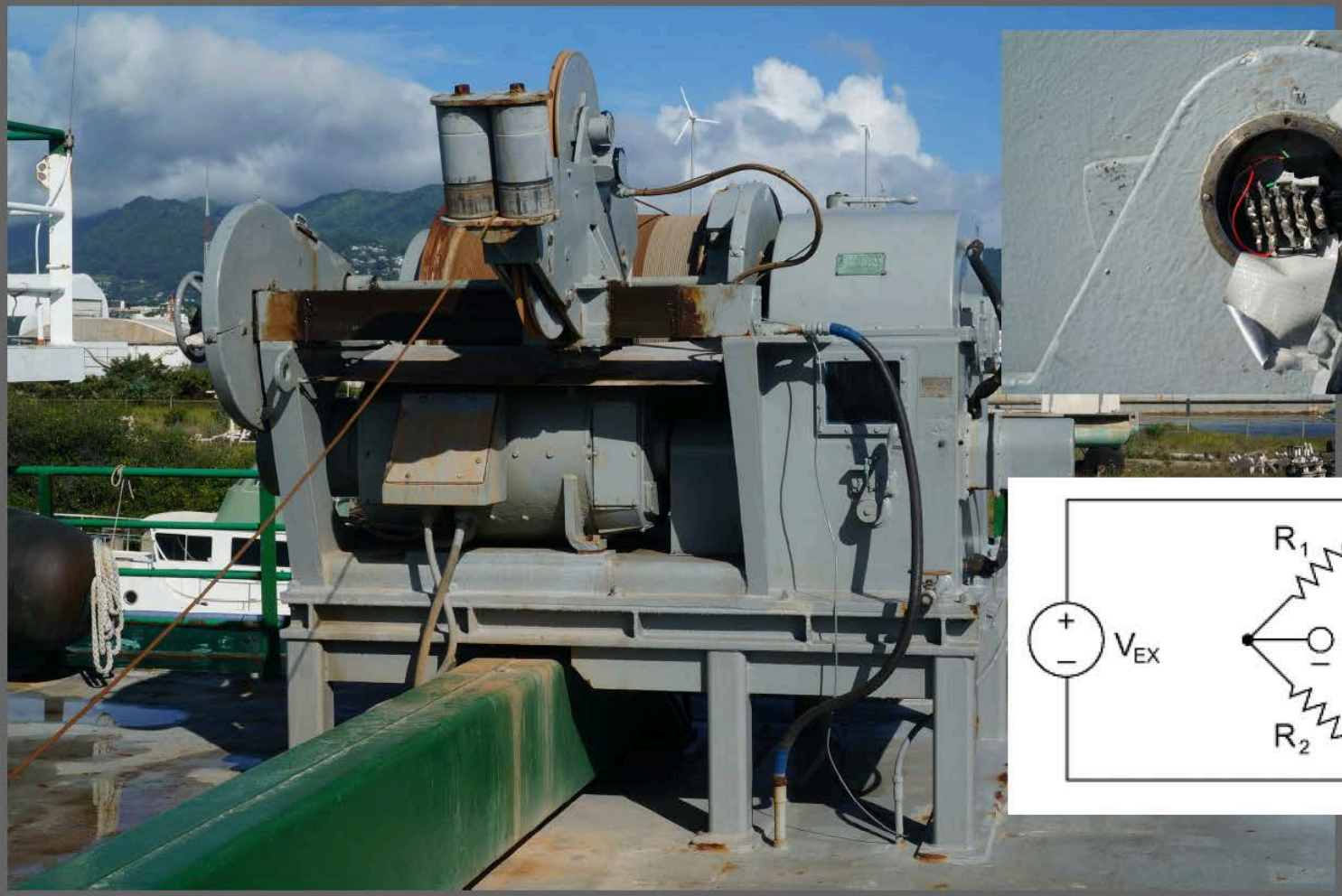


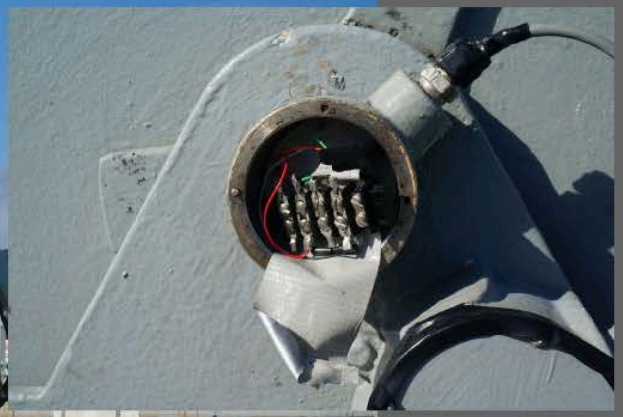
A Telepresence System for the R/V *Endeavor*

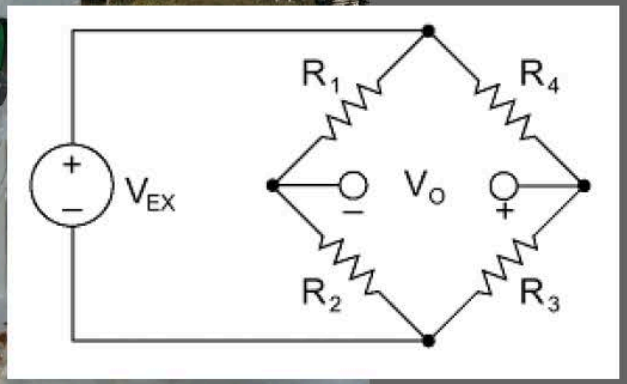
09/15/2005

University Of Hawaii

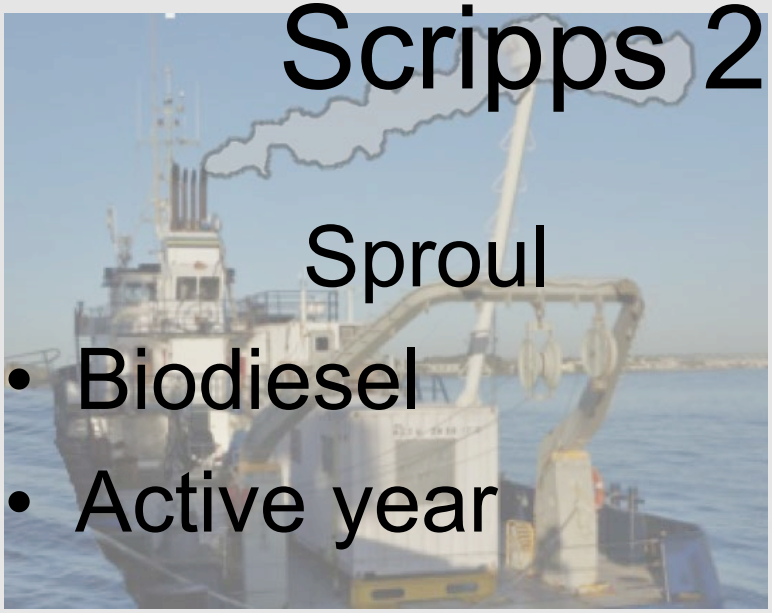
Markey Desh-5







Scripps 2015 overview



Sproul

- Biodiesel
- Active year

Revelle

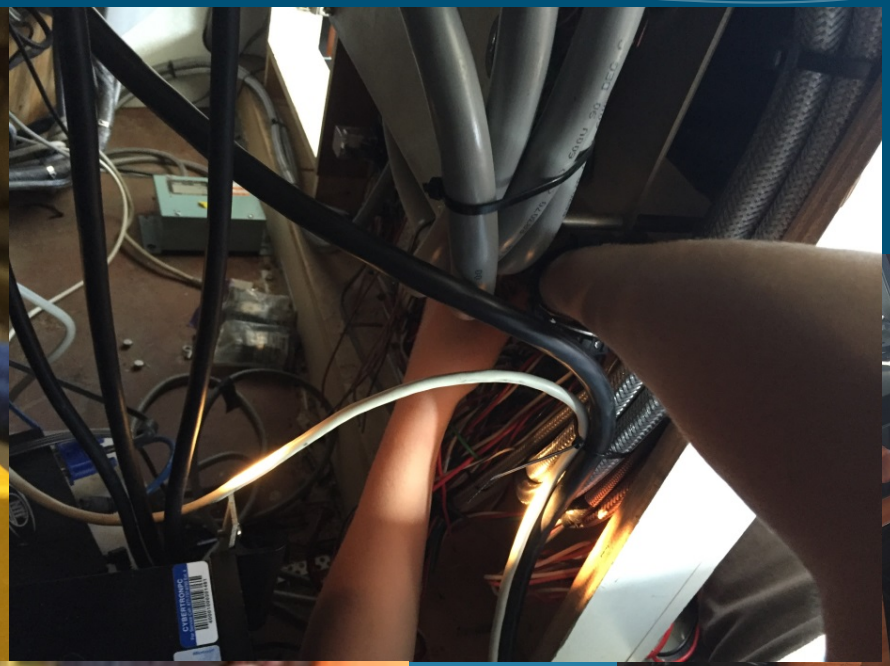
- Lots of international logistics
- Install of GX system

USCG Healy

- Actually breaking ice
- Collaborative effort
- Made it to north pole

- Decommissioning:
  - R/V Melville
  - R/V New Horizon

Breaking in the New Tech on the R/V Pelican



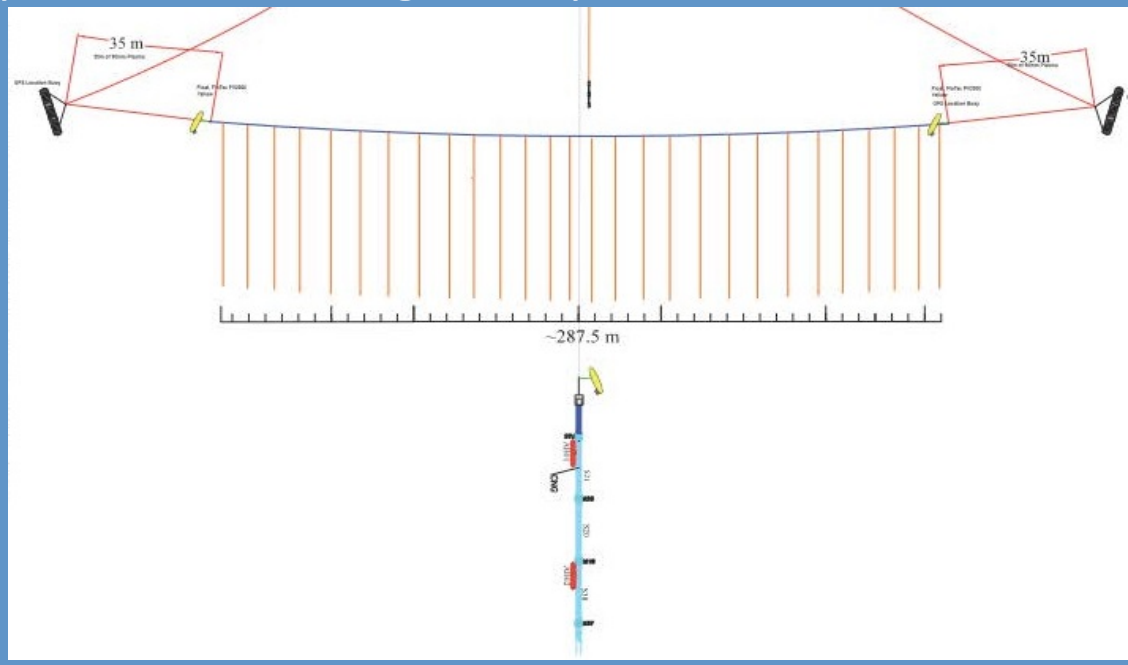
Oregon State University OSU

CEOAS
College of Earth, Ocean, and Atmospheric Sciences

R/V Marcus G. Langseth

Dual Recording systems : Dual Navigation Systems

Primary: P-Cable and NavPoint
Secondary: Syntrak and Spectra
Source: Digishot

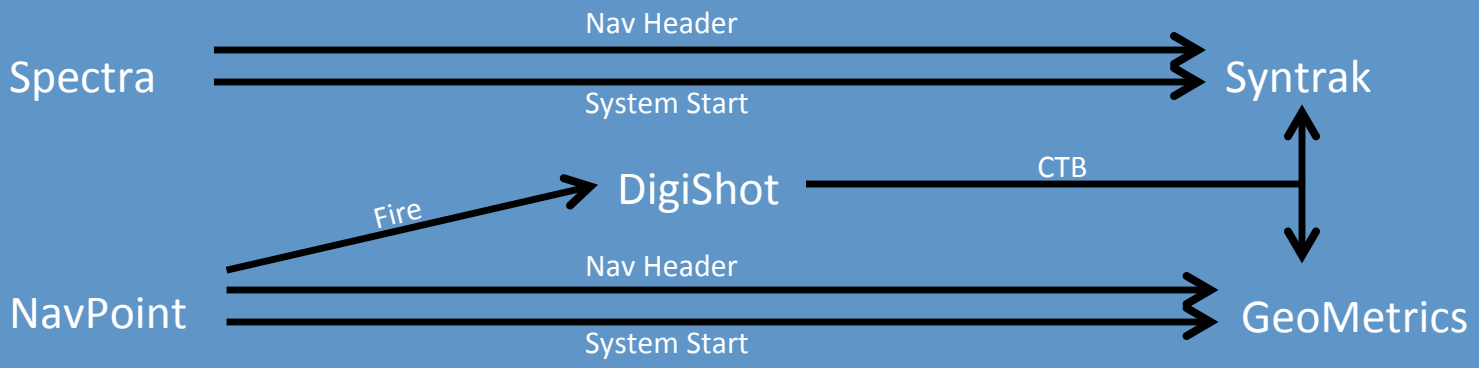


Problems:

- Cannot Split: 1 Nav system for 2 recording systems
- Triggering of all systems must match or seismic data will fluctuate

How to trigger everything at once?

- Both Nav Systems using same GPS feed and NRP (to ensure identical positions)
- NavPoint System Triggers Source



R/V SIKULIAQ
Icebreaker Session
RVTEC 2015
Zabbix

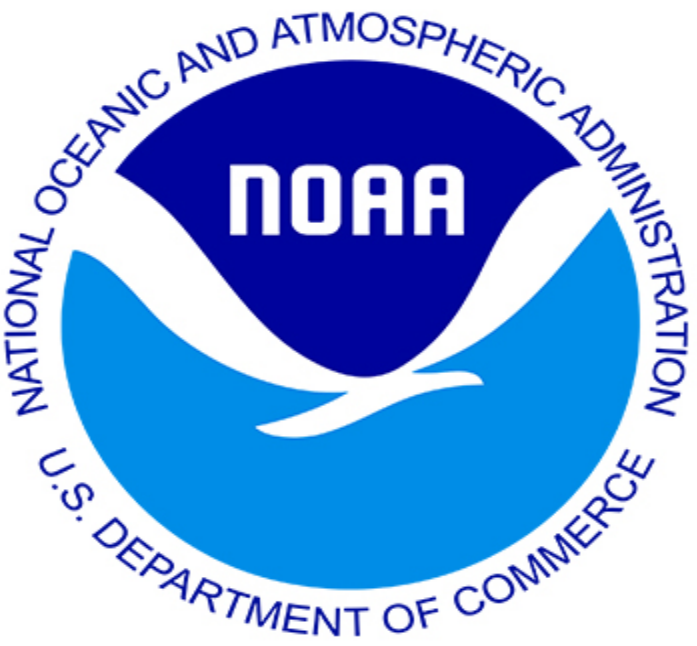
UNIVERSITY OF ALASKA FAIRBANKS

R/V Sikuliaq

School of Fisheries and Ocean Sciences

https://www.sikuliaq.alaska.edu

NSF



Significant Challenges:

13 of 16 ships delayed – CR Funding

- still realized an 83% utilization rate

GU – Loss of Automatic Gyro Data

- installed Lemmings on Serial output ports on Gyro to distro

RB – Installed IRIDIUM Pilot System to support Arctic Mission

- no loss of VSAT, even with 5-degree look angle

STARC 2015

"Gremlins of the North"

-Multibeam software issues above 86N

-Poor multibeam/Knudsen in ice and during ice stations

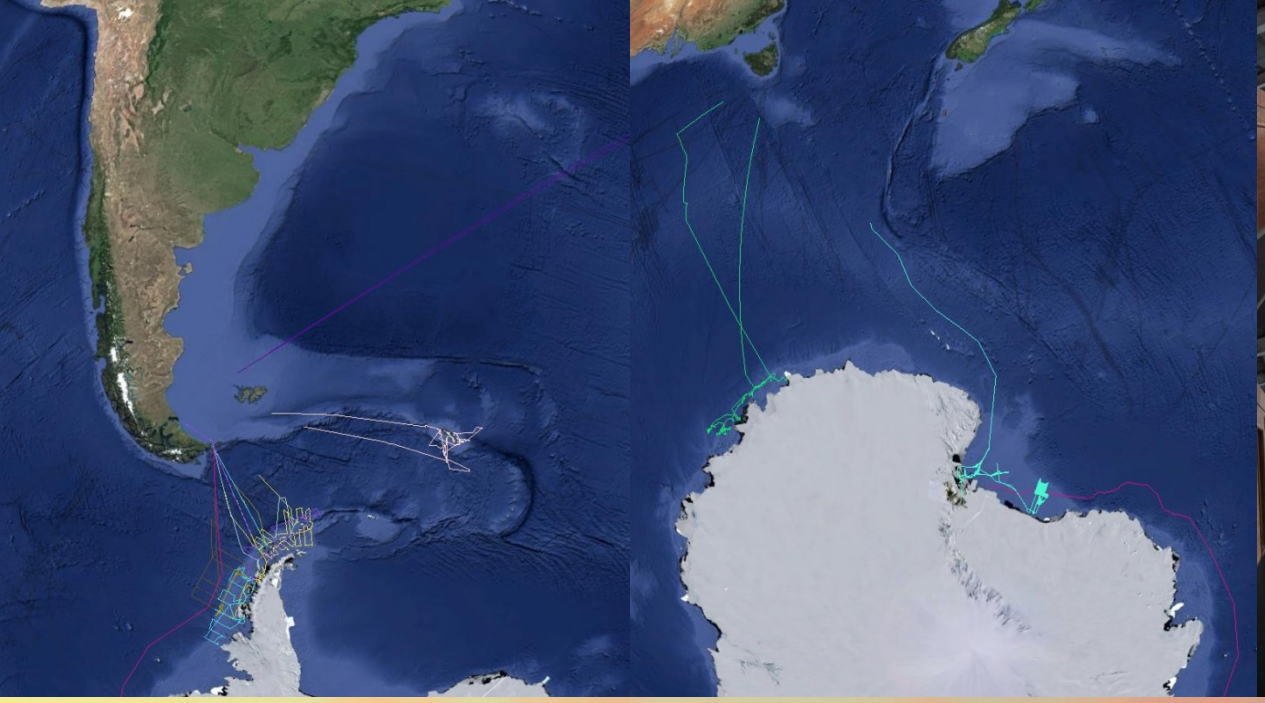
-XBT issues in ice

-Satellite ice imagery issues

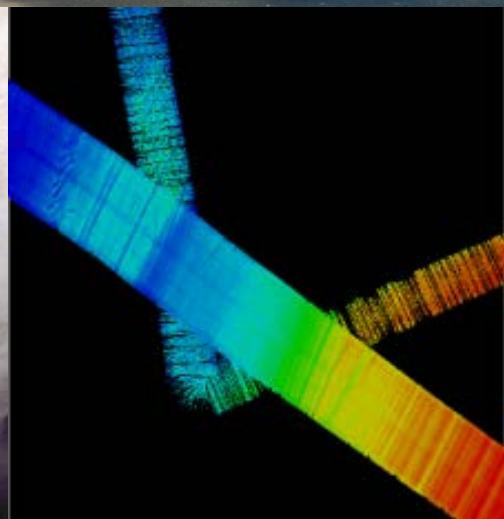
-Equipment vulnerability to cold

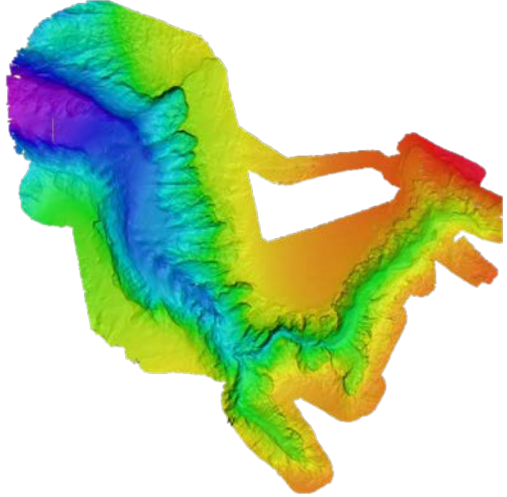
Oh My Gosh...

WE FELL OFF THE INTERNET



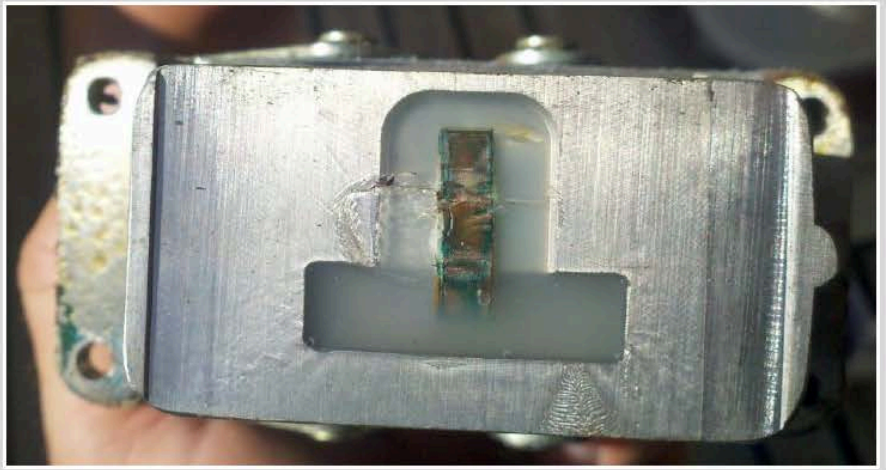
USAP Icebreaker's Icebreaker





- R/V Falkor's First Seismic Cruise
- Seamount named after the R/V Falkor
- Over a quarter million square kilometers mapped since 2014
- New CTD LARS, new 0.322 wire
- New NEBULA super computer
- SOI's 4500m ROV development well underway. On track for sea trials mid-2016.

The Encoder, the Winch, & the Wardrobe (Sensorless Vector Mode)



Systems Interface Inc.

COMPANY: MARKEY MACHINERY CO., INC.
PROJECT: DESF-4 REASEARCH WINCH DRIVE SYSTEM (SEA)
ENGINEER: SED

BALDOR 18H VECTOR DRIVE PARAMETERS
S18.3.15
10HP 230VAC

DATE: 00/00/00 REV: 0
SII JOB: S01K25

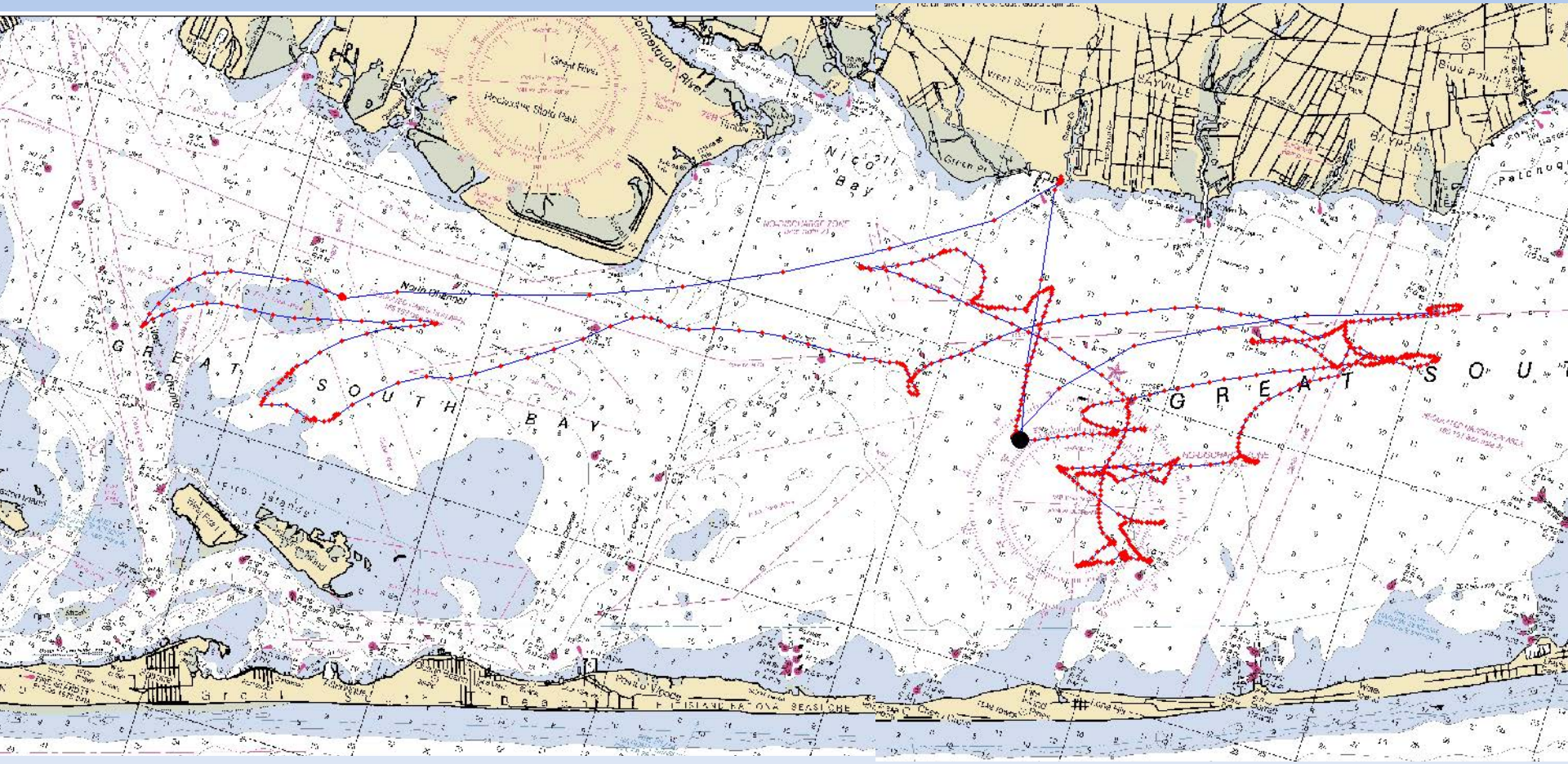
Date Printed: 30 Oct 15 08:02 W:\+EQUIPMENT\Hydrowinch etc\CC\HW_Motor - Mallorca - Sept 2015\[S01K25 Sensorless Vector-18HA SD.XLS]18HVFD

BLOCK TITLE	PARAM NUMBER	PARAMETER DESCRIPTION	UNITS	MIN/MAX VALUES	FACTORY SETTING	DRIVE SETTING	SENSORLESS VECTOR MODE	COMMENTS
LEVEL 1 BLOCKS								
PRESET SPEEDS BLOCK 0	P1001	PRESET SPEED #1	RPM	0-MAX SPD	0			Sensorless Vector Mode:
	P1002	PRESET SPEED #2	RPM	0-MAX SPD	0			Set Parameters P2506 "Encoder Counte"
	P1003	PRESET SPEED #3	RPM	0-MAX SPD	0			form 1024 to 0. P2506 is located in the
	P1004	PRESET SPEED #4	RPM	0-MAX SPD	0			Level 2 Blocks under" Motor Data"
	P1005	PRESET SPEED #5	RPM	0-MAX SPD	0			
	P1006	PRESET SPEED #6	RPM	0-MAX SPD	0			The drive will reboot after the
	P1007	PRESET SPEED #7	RPM	0-MAX SPD	0			Encoder Counts parameter is changed.
	P1008	PRESET SPEED #8	RPM	0-MAX SPD	0			After rebooting, re-enter program mode
	P1009	PRESET SPEED #9	RPM	0-MAX SPD	0			and change the parameters in the blue
	P1010	PRESET SPEED #10	RPM	0-MAX SPD	0			sensorless vector mode column.
	P1011	PRESET SPEED #11	RPM	0-MAX SPD	0			
	P1012	PRESET SPEED #12	RPM	0-MAX SPD	0			To change back to Vector Mode:
	P1013	PRESET SPEED #13	RPM	0-MAX SPD	0			Set Parameters P2506 "Encoder Counte"
	P1014	PRESET SPEED #14	RPM	0-MAX SPD	0			back to 1024 from 0. Drive will reboot.
	P1015	PRESET SPEED #15	RPM	0-MAX SPD	0			
ACCEL/DECEL RATES BLOCK 1	P1101	ACCEL TIME #1	SECONDS	0-3600	3.0	2.0	5.0	After rebooting, check and reset
	P1102	DECEL TIME #1	SECONDS	0-3600	3.0	2.0		as required, all parameters in the
	P1103	S-CURVE #1	PERCENT	0-100	0	25%		"Drive Settings" column shown in red.
	P1104	ACCEL TIME #2	SECONDS	0-3600	3.0			

- DESF-4 Winch | 10HP Motor | VF Drive
- Damaged sensor module = no control
- Pulse wheel also misaligned
- Sensorless Vector Mode
  - Allowed operation, albeit reduced
  - Less fine-tune control at near-0 RPM
  - Slower top-speed (35m/m)

Alex Sneddon

Stony Brook University


Great River
Connetquot River
Nicoll Bay
North Channel
GREAT SOUTH BAY
GREAT SOU
BAYVILLE
Patchoq

Tom Wilson shared his post.
January 30, 2014

Tom Wilson added 3 new photos.
January 30, 2014 · Edited

PLEASE LIKE AND SHARE.
HELP TRACK THE GREAT SOUTH BAY DATA BUOY.

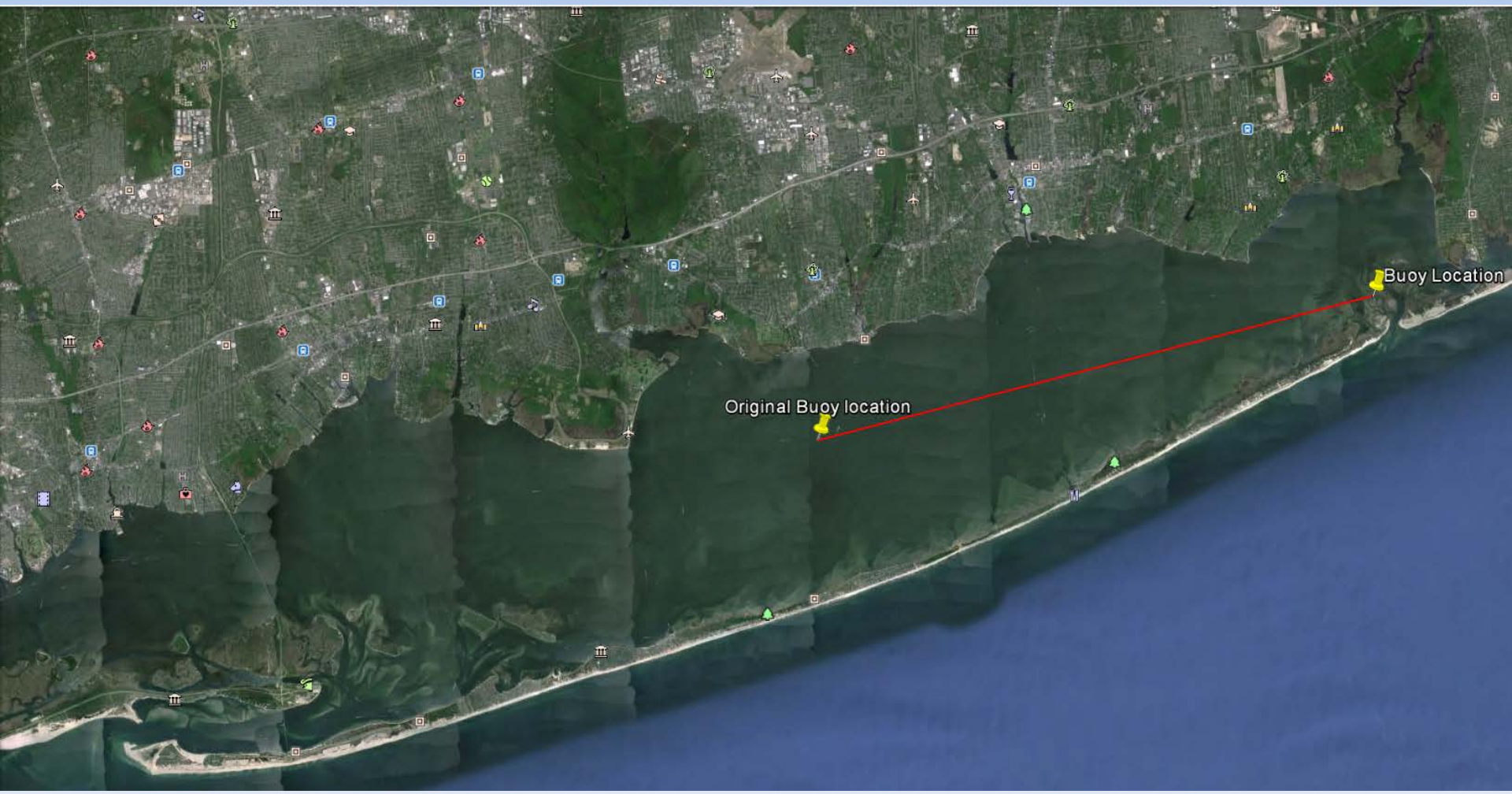
The Great South Bay Data Buoy is a project of Stony Brook University's School of Marine and Atmospheric Sciences. Since October 2010, the buoy has provided weather and water quality information to government, researchers, and the general public.

After surviving Irene and Sandy and being dragged around by the ice for three winters with no major problems, the buoy suffered a loss of telemetry on January 25th. Without telemetry we have no GPS position, so we are asking for help to keep track of the buoy until the ice breaks and we can retrieve it for repairs.

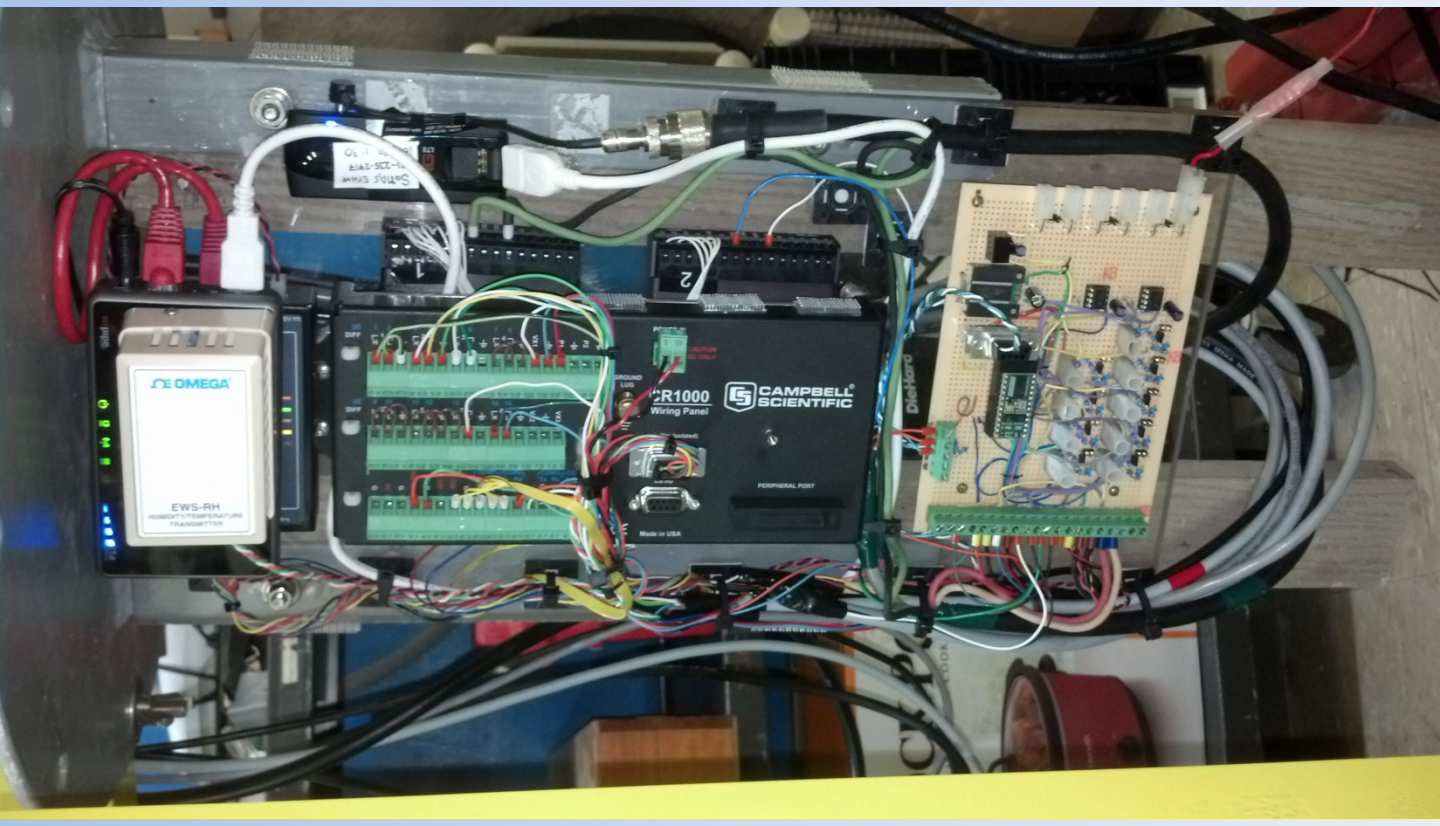
The buoy's normal position is 40d 41.96m N, 73d 05.21m W, south of Green Creek in West Sayville. Last GPS position was 40d 41.96m N 73d 1.67m W, south of Blue Point, at 5:00am EST on 1/25/2014.

If you see the buoy, please post or message me with date, time, and position. If you get close enough to take pictures (iceboaters?) that would be great too. If the buoy has broken free of the mooring and is adrift please take all reasonable steps to secure or retrieve it, otherwise a report of position is sufficient.

Thanks for your help!
Tom Wilson
Stony Brook University


Buoy Location
Original Buoy location

DATA


OMEGA
EWS-RH
CAMPBELL SCIENTIFIC
Wiring Panel
PERIPHERAL PORT
Made in USA

DATA BUO
631-632-318

GSB

Thank you!