

STARC


Ship-based Science Technical Support
In the Arctic



NSF Solicitation

- 1) to plan, coordinate and deliver science technical support onboard *Healy* and *Polar Sea*, augmenting the role of the USCG marine science technicians
- 2) to coordinate with NSF, USCG and the academic community to provide for the operation, maintenance and upgrade of science equipment installed or used on *Healy* and *Polar Sea*



An aerial photograph showing a vast expanse of sea ice. The ice is broken up into numerous irregular icebergs and smaller chunks, creating a complex pattern of white and light blue. The water between the ice pieces is a dark, deep blue. The sky is a pale, overcast grey. The overall scene is one of a cold, desolate, and expansive polar or sub-polar environment.

Collaboration between
Marine Technician Group at
Oregon State University and
Shipboard Technical Support at
Scripps Institution of Oceanography

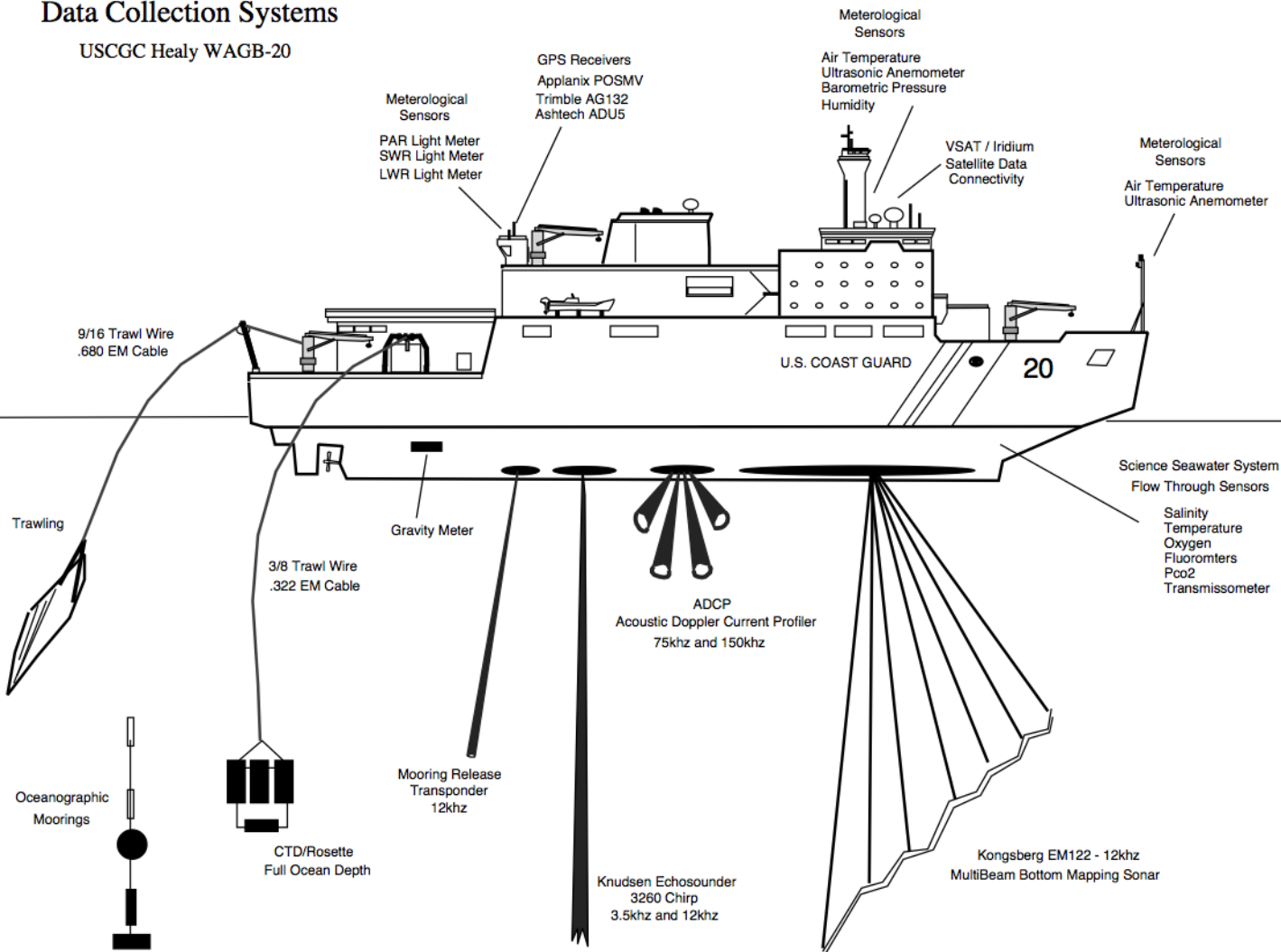


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U. S. COAST GUARD

Shipboard Science Data Collection Systems

USCGC Healy WAGB-20



2. Meteorological Sensors used on SIO vessels

Type	MFG	Model	Range	Accuracy	Output
Air Temperature	RM Young	41342LC	-50.0 to +50.0 C	+/- 0.3 Deg C	4-20 ma
Air Temperature	RM Young	41342VC	-50.0 to +50.0 C	+/- 0.3 Deg C	0 – 1 Volts
Precipitation	RM Young	50202	0-50 mm	+/- 1.0 mm	0 - 5 Volts
Wind	RM Young	05103	Dir 0-360 Deg Spd 0-60 m/s	+/- 3.0 Deg +/- 0.3 m/s	Voltage Out Pulse Count
Wind	Vaisala	WS425	Dir 0-360 Deg Spd 0-65 m/s	+/- 2.0 Deg +/- 0.14 m/s	RS232
Wind	RM Young	85000 or 85106	Dir 0-360 Deg Spd 0-70 m/s	+/- 2.0 Deg +/- 0.1 m/s	RS232
Humidity/Temp	Vaisala	HMP45A	RH 0-100% Tmp -40 to +60 C	+/-2.0% +/- 0.2 Deg C	0 – 1 VDC 0 – 1 VDC
Humidity/Temp	RM Young	41382VC	RH 0-100% Tmp -50 to +50 C	+/-2.0% +/- 0.3 Deg C	0 – 1 VDC 0 – 1 VDC
Humidity/Temp	Vaisala	HMP155	RH 0-100% Tmp -40 to +60 C	+/-2.0% +/- 0.2 Deg C	0 – 1 VDC 0 – 1 VDC or RS232
Barometer	RM Young	61302V	500-1100mb	+/-0.2mb	0-5V or RS232
Barometer	Vaisala	PTB101C	900-1100 mb	+/- 0.3 mb	0 - 2.5VDC
Radiometer Long Wave	Eppley	PIR Pyrgeometer	3.5-50 um 4 uv/W/M2 Response Time 2sec	+/- 1% Linearity	0 – 10mv
Radiometer Short Wave	Eppley	PSP Pyranometer	285-2800nm 9 uv/W/M2 Response Time 1sec	+/- 0.5% Linearity	0 – 100mv
Radiometer Black&White	Eppley	8-48	285-2800nm 10 uv/W/M2	+/- 1% Linearity	0 – 100mv
Radiometer Short Wave	Zipp&Zonen	CM21 Pyranometer	305-2800nm 7-25uv/W/M2 Response Time 5sec	+/- 0.25% Linearity	0 – 100mv
Radiometer Long Wave	Zipp&Zonen	CG4 Pyrgeometer	4.5-42 um 10 uv/W/M2 Response Time 25sec	+/- 1% Linearity	0 – 10mv
Surface PAR	Biospherical	QSR-240P	400-700nm 1.4e-5uE/(cm2-sec) to 0.5uE/(cm2-sec)	Not Specified	0 - 5VDC
Surface PAR	Biospherical	QSR-2200	400-700nm 1.4e-5uE/(cm2-sec) to 0.5uE/(cm2-sec)	Not Specified	0 - 5VDC



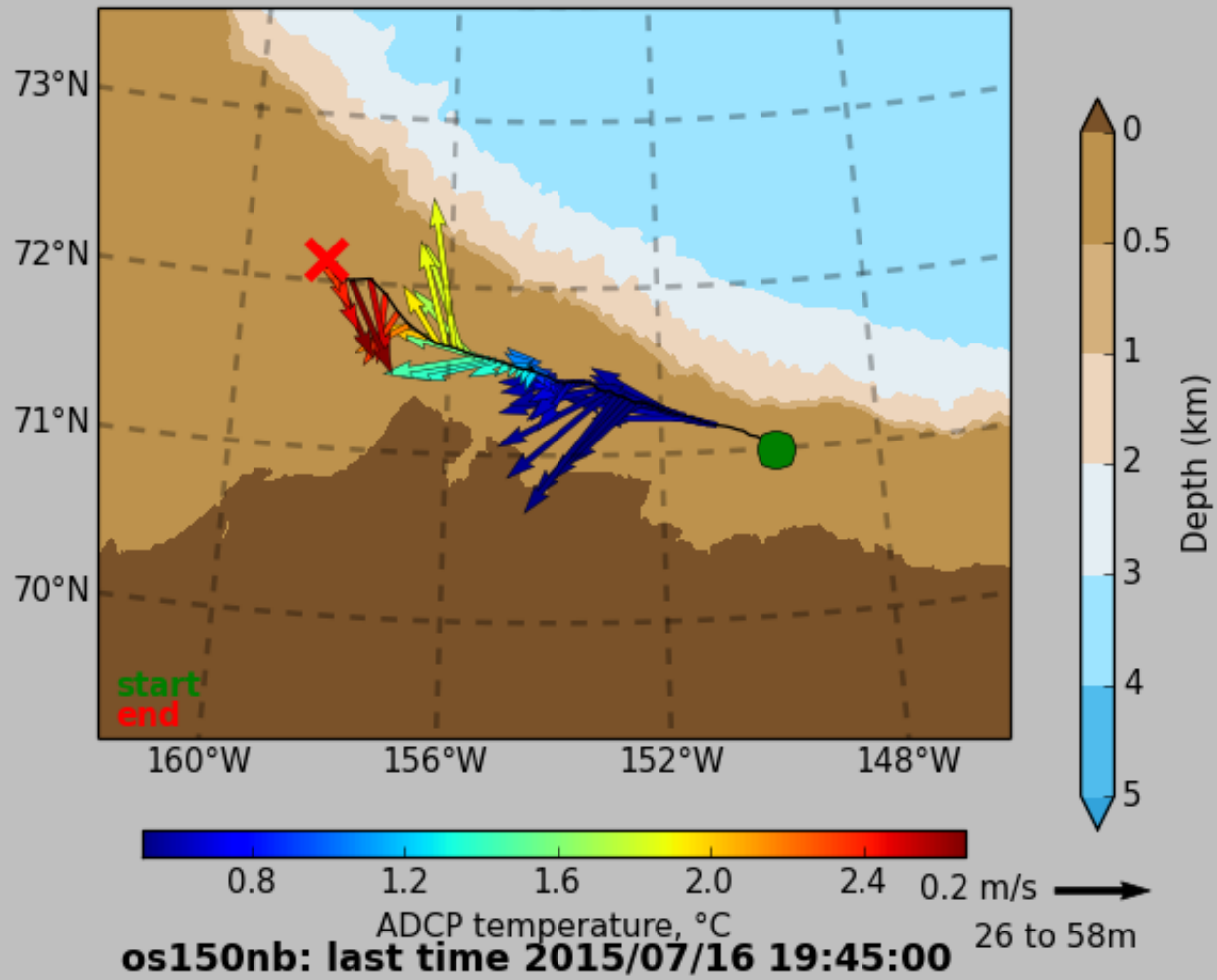


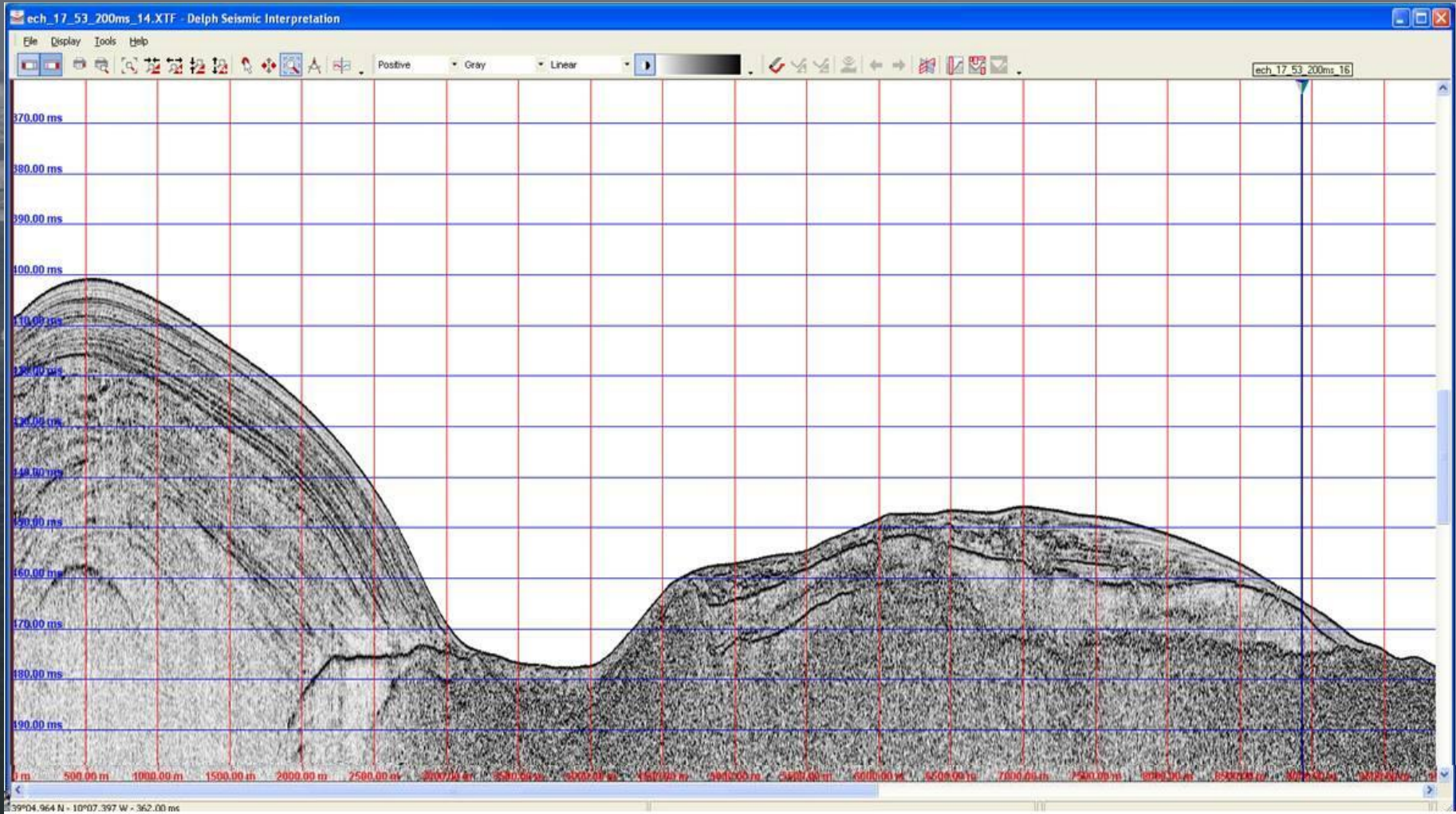


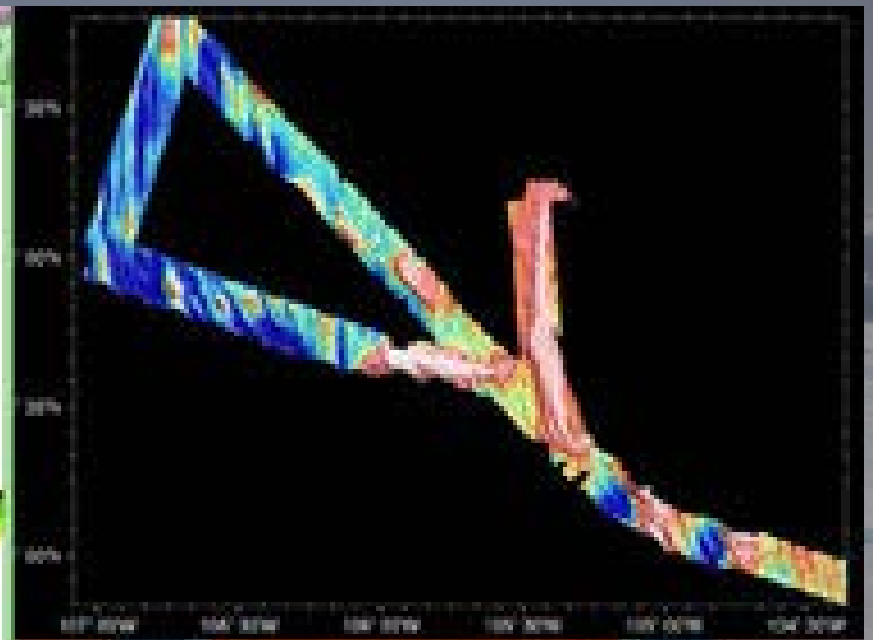
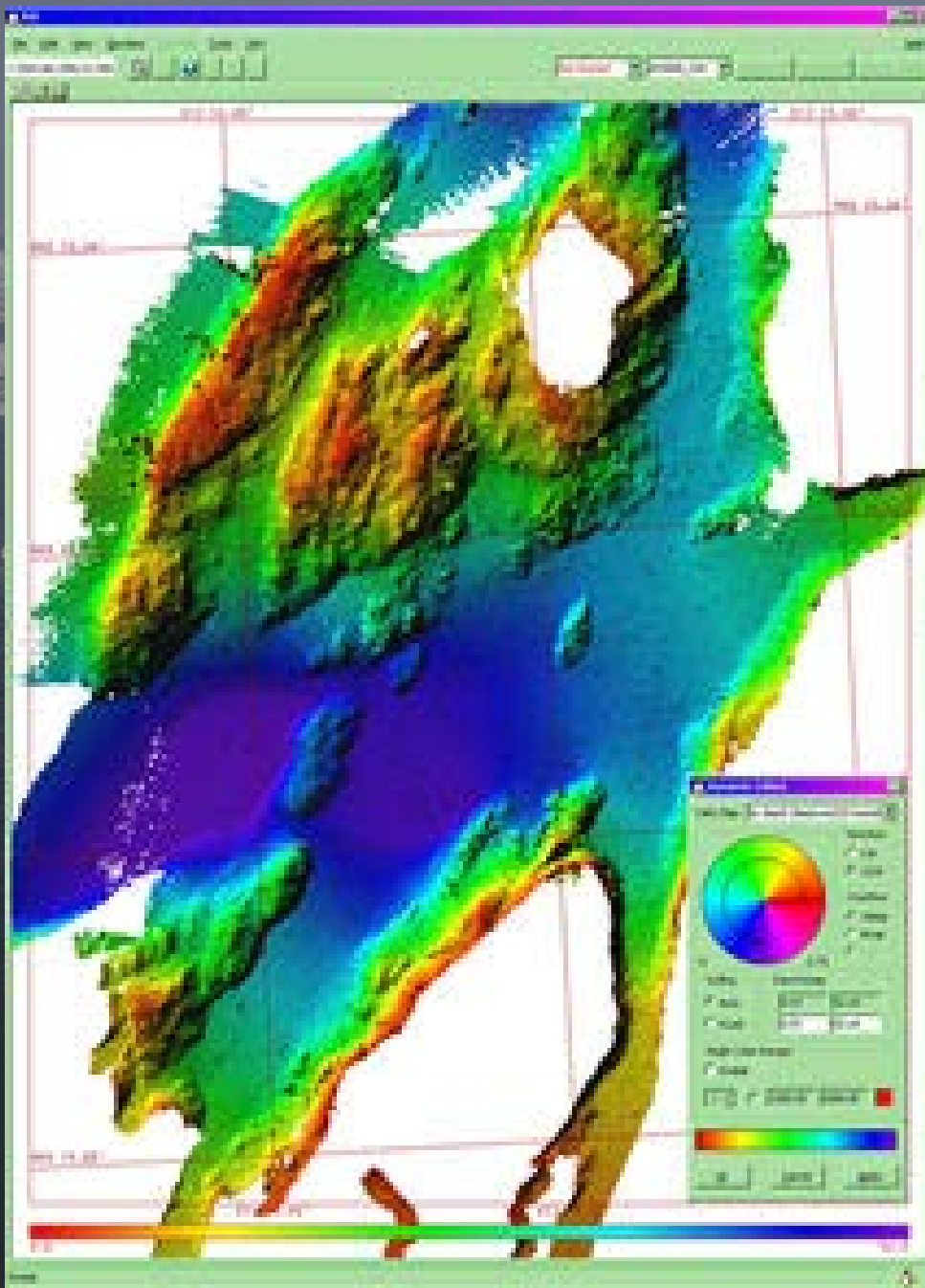
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NAVY

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SHOW LEGEND

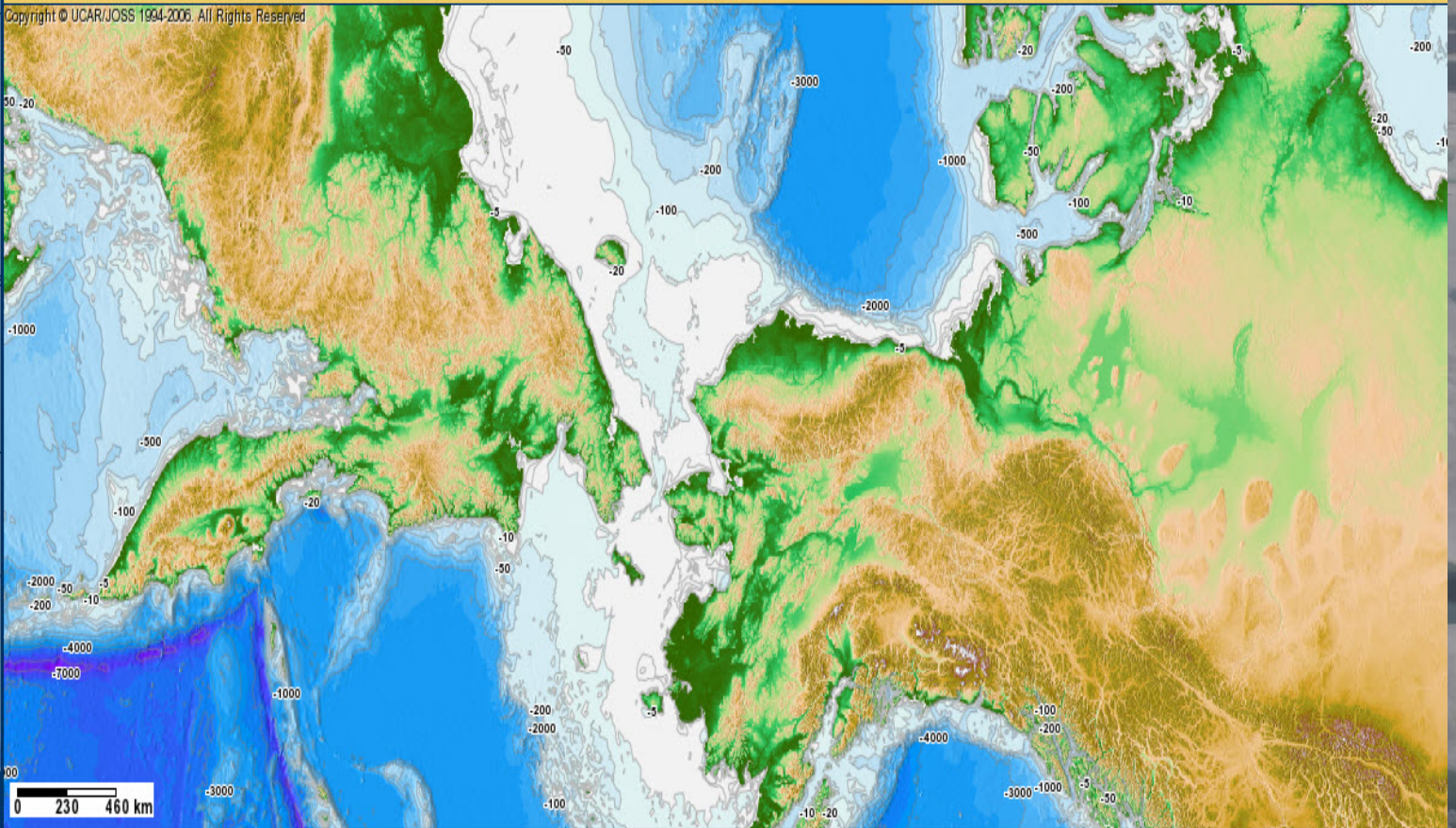
Refresh Map



Longitude: 131.65 to 275.27 Latitude: 44.55 to 79.78

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 - Hydrology/Cryosphere
 - Terrestrial Ecosystem
 - Human Dimensions
 - Arctic Seas - BODC
 - Ice Charts



0 230 460 km

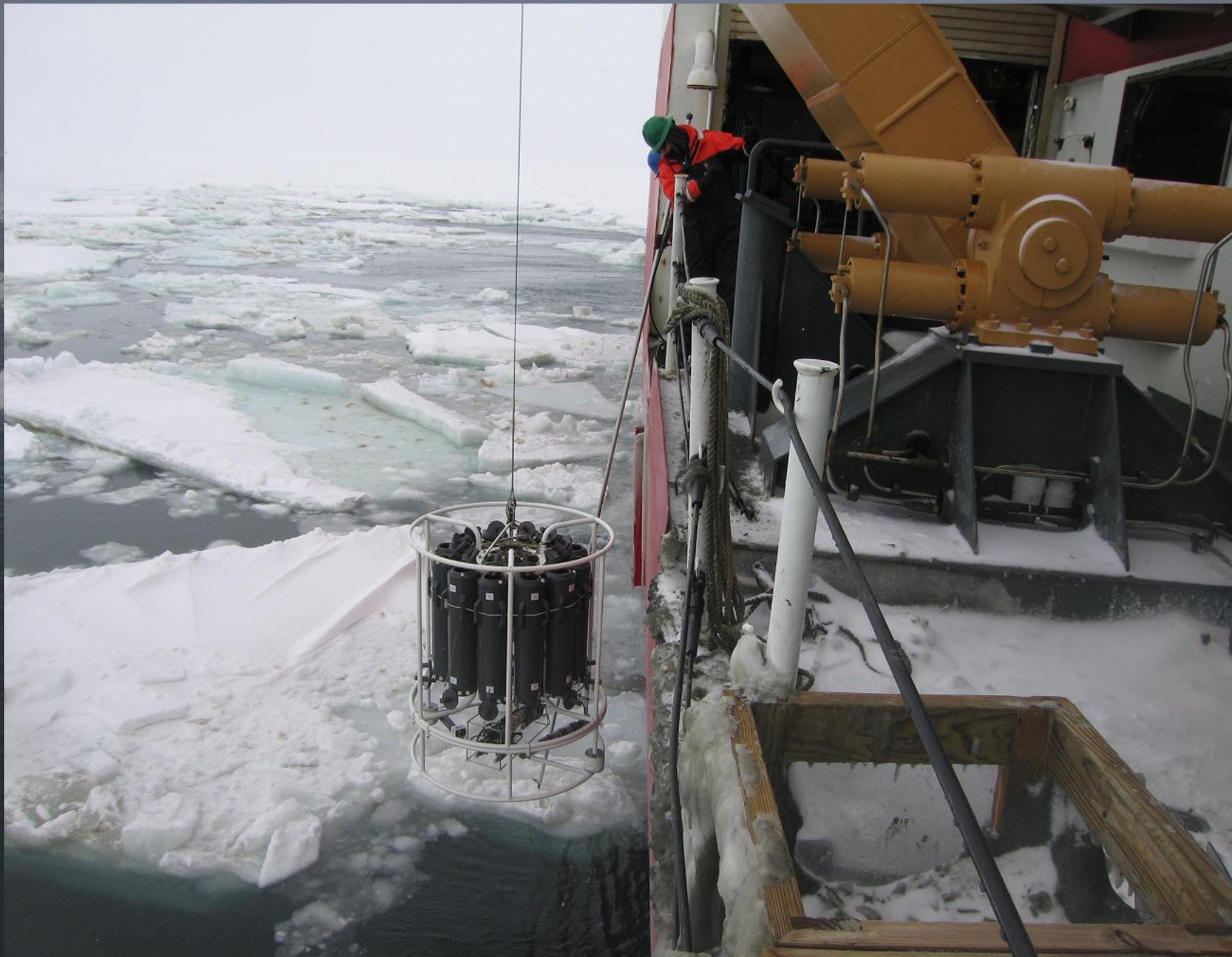


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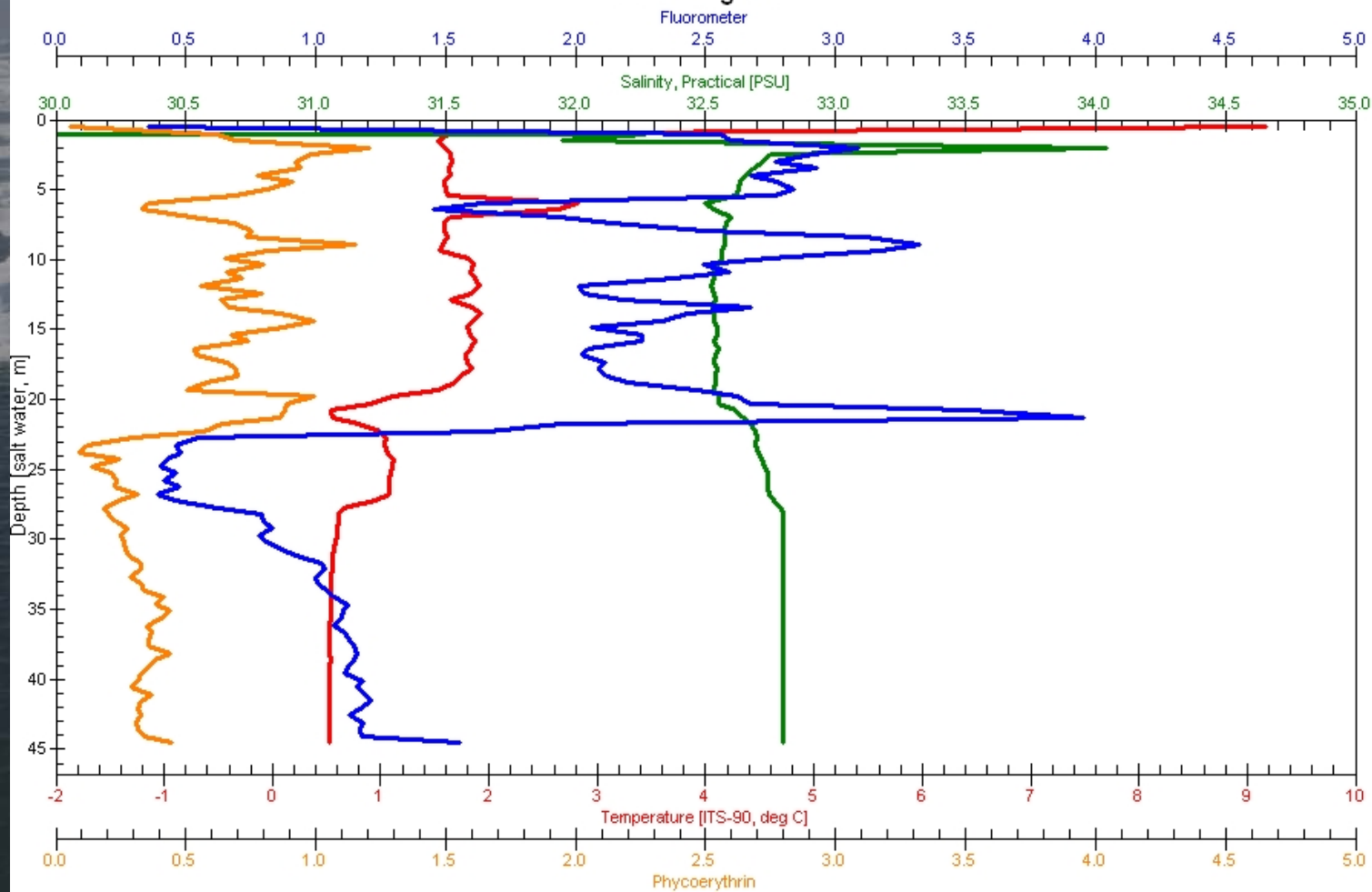
LINE CONTROL INSTRUMENT



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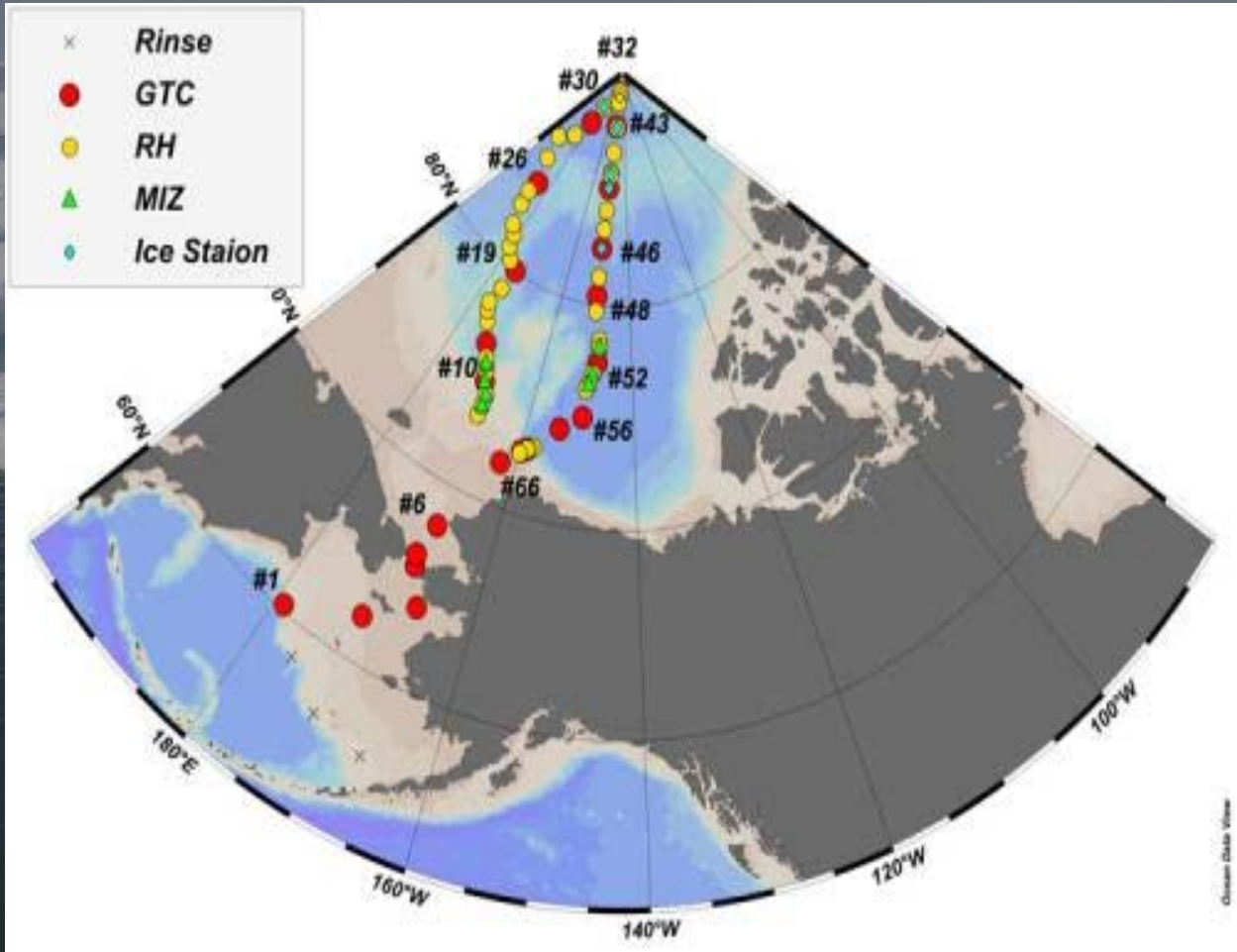
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USCG Icebreaker *Science Operations*

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- ▶ **Scheduling**
- ▶ **USCG Science Support**
- ▶ **Cruise Reports**



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