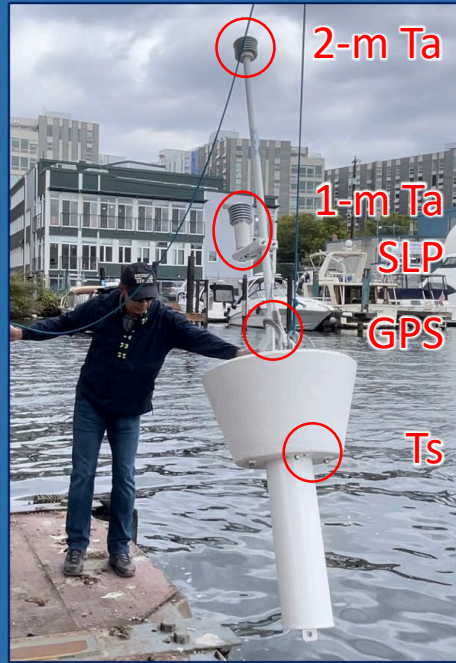


US Interagency Arctic Buoy Program (USIABP) International Arctic Buoy Programme (IABP) Ignatius Rigor, and Participants of the IABP



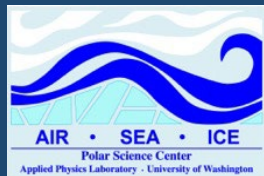
Spring



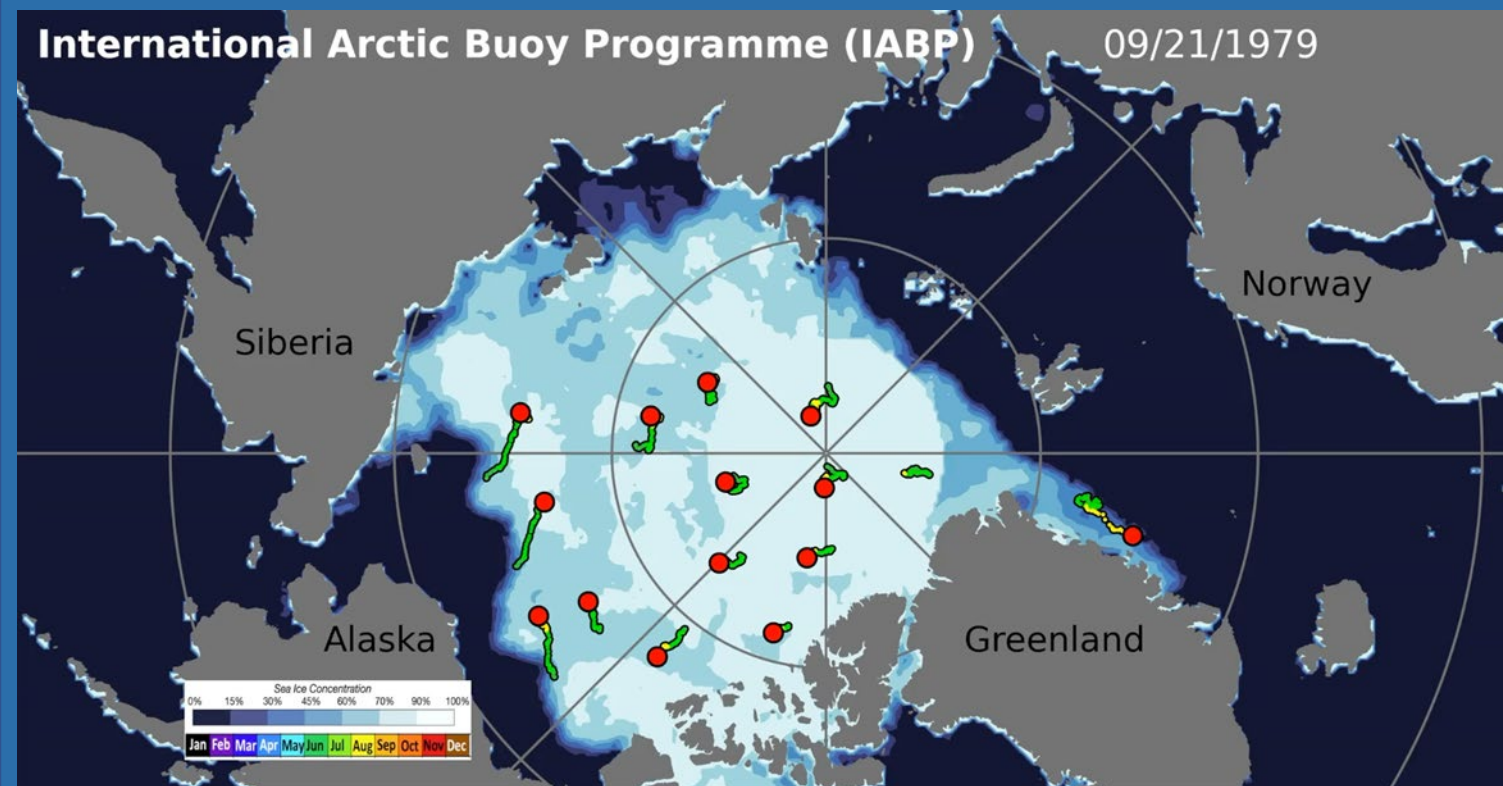
Summer



Fall



US Interagency Arctic Buoy Program (USIABP) International Arctic Buoy Programme (IABP) Weather, Sea Ice and Oceanographic Buoys



Observations For:

- 1) operational weather and ice forecasting;
- 2) research of climate and climate change;
- 3) assimilated into NCEP/NCAR, ERA, JRA, etc. reanalyses;
- 4) forcing, validation and assimilation into numerical ice/ocean models;
- 5) validations of satellite retrievals, etc.

The IABP maintains the fundamental Arctic Observing Network observing ice/ocean circulation, surface meteorology, and oceanography.

Challenges

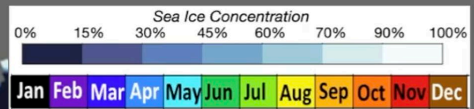
How do we maintain the IABP and broader AON in the Eurasian Arctic?

Siberia

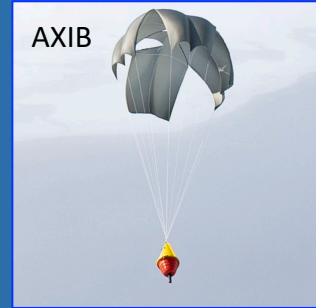
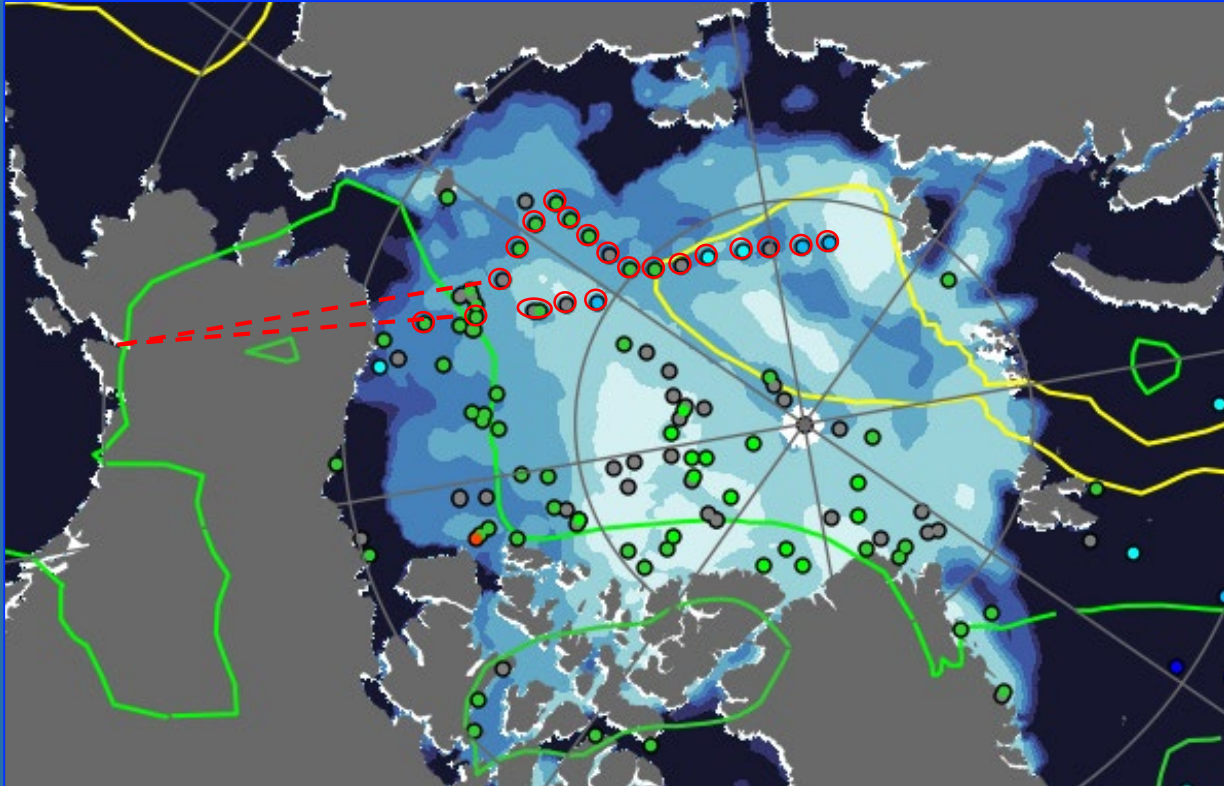
Norway

Alaska

Greenland



International Cooperative Engagement Program for Polar Research (ICE-PPR) Alaska Air National Guard



21 Buoys Deployed on July 11, 12, 2023

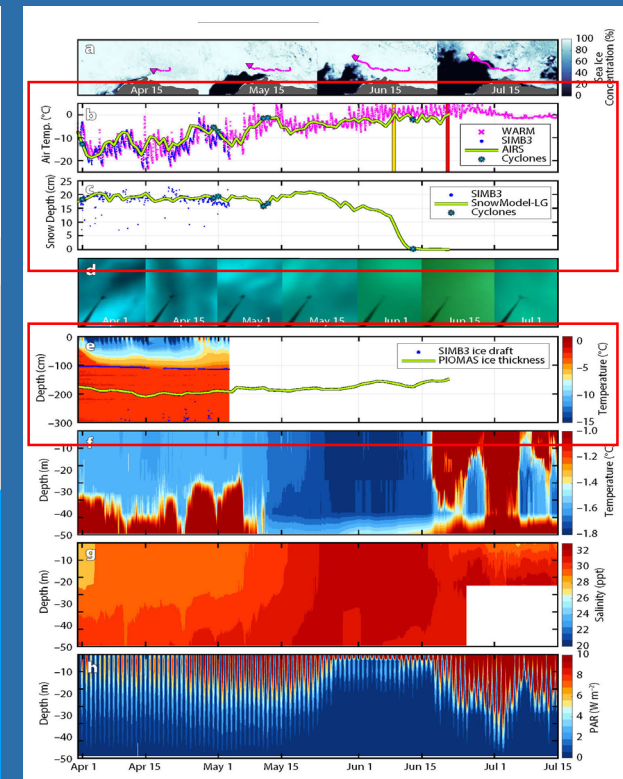
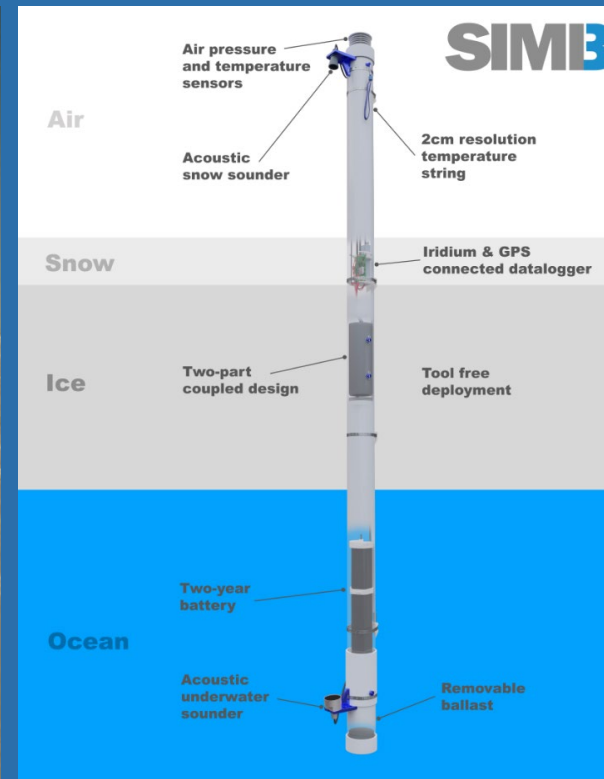
- 12 Ice Balls (SVP-B w/o drogues)
- 5 Ice Trackers
- 2 Airdroppable Seasonal Ice Beacons (AXIB)
- 1 ICEXAIR
- 1 A-Size "Sonotube" Buoy (prototype)

Certified air deployed floats, etc. may also be deployed.



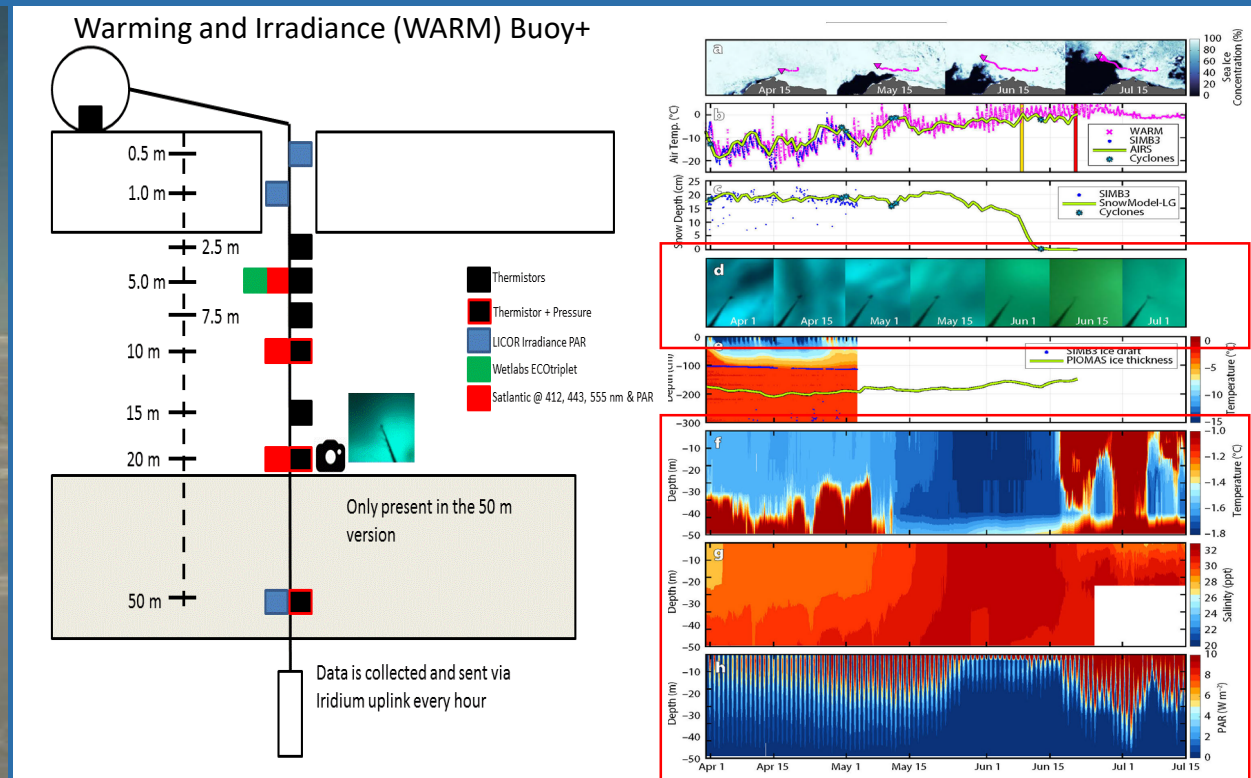
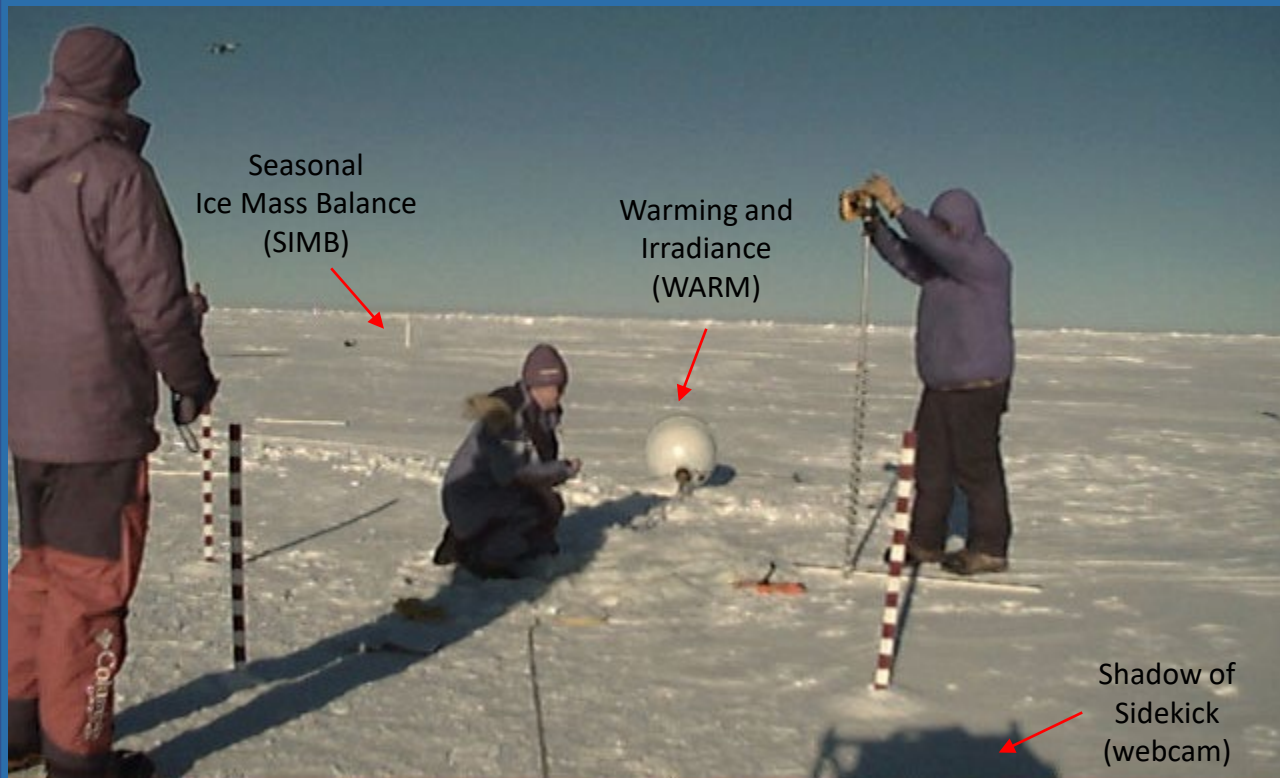
IABP Automated Drifting Stations

Co-located Buoys with a myriad of sensors measuring surface meteorology, sea ice light and temperature, upper ocean T/S, CO₂, PAR, Fluorometers, Webcams, etc.



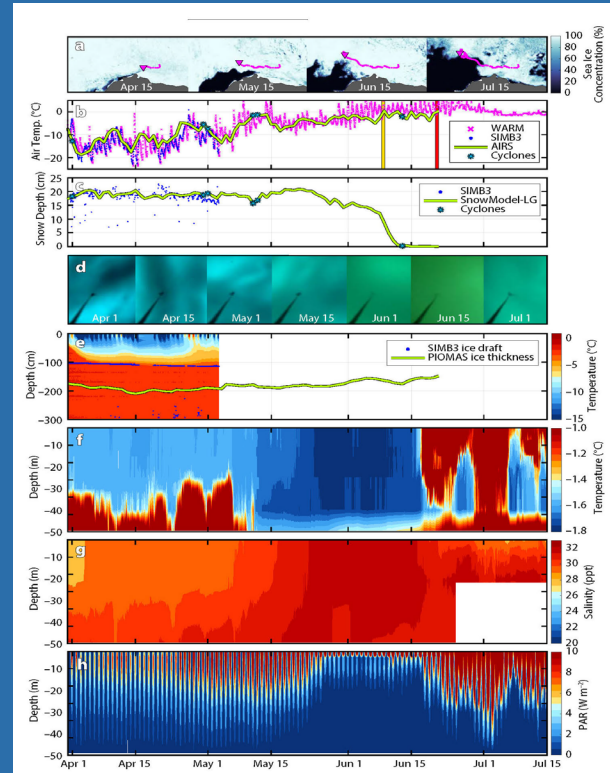
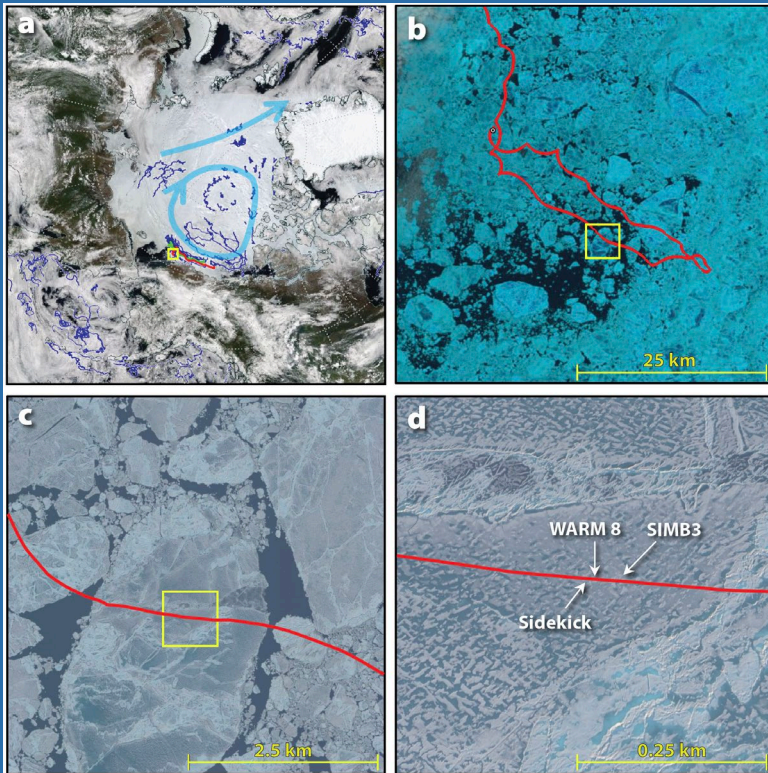
IABP Automated Drifting Stations

Co-located Buoys with a myriad of sensors measuring surface meteorology, sea ice light and temperature, upper ocean T/S, CO2 PAR, Fluorometers, Webcams, etc.



IABP Automated Drifting Stations

Co-located Buoys with a myriad of sensors measuring surface meteorology, sea ice light and temperature, upper ocean T/S, CO₂, PAR, Fluorometers, Webcams, etc.

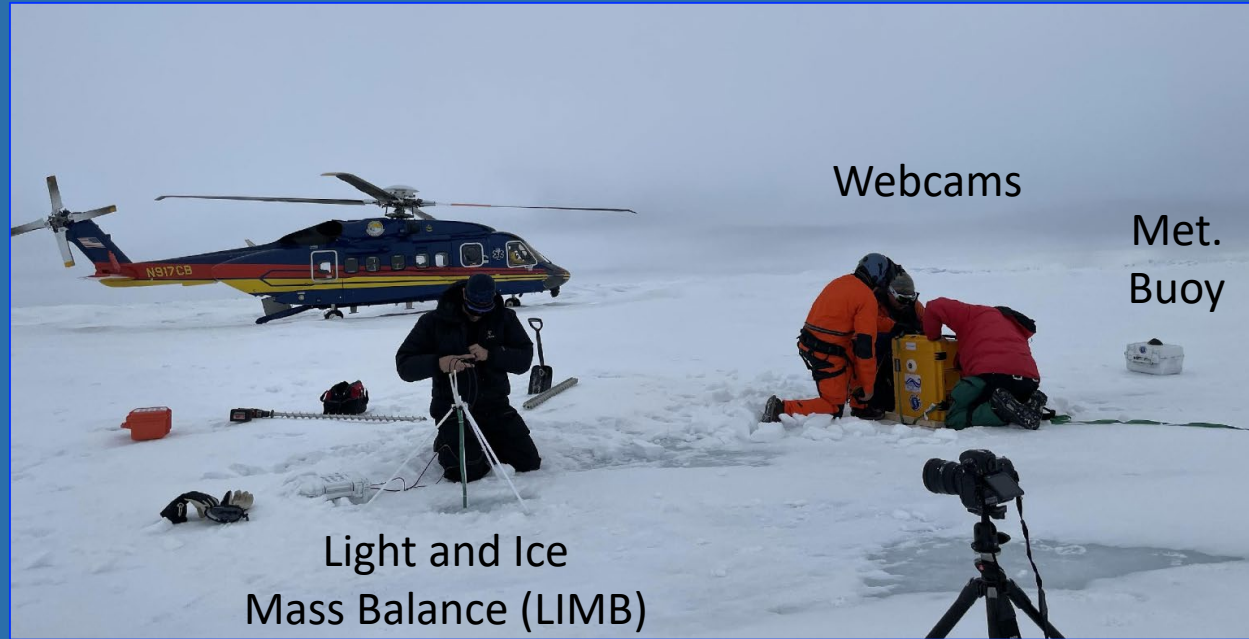
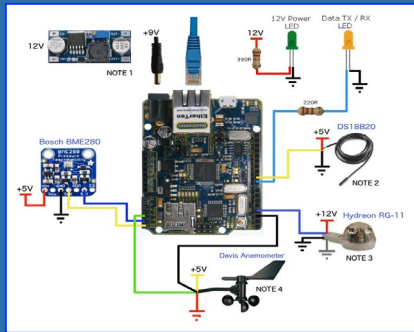


Webster, et al. 2022

Lily Wu, CICOES Intern, Summer 2023

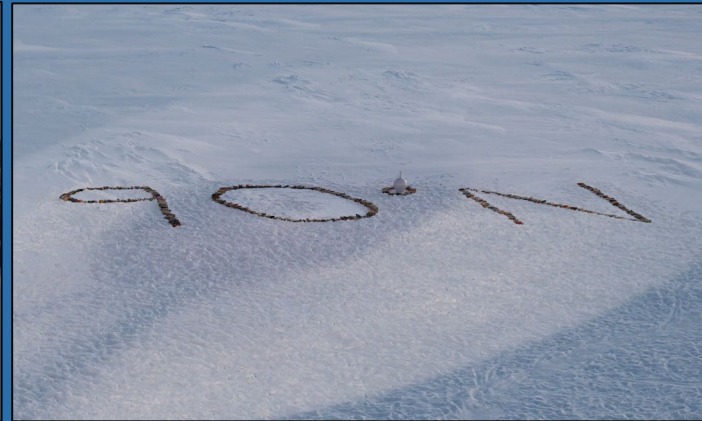
Challenge: Real Time Sharing of Data

Should we share “GitHub” Open Buoy data on Open GTS?



- Arduino and other microelectronics are evolving rapidly, becoming more accurate and more widely used in science.
- A myriad of sensors are available for meteorology, sea ice, oceanography, biogeochemistry, etc.

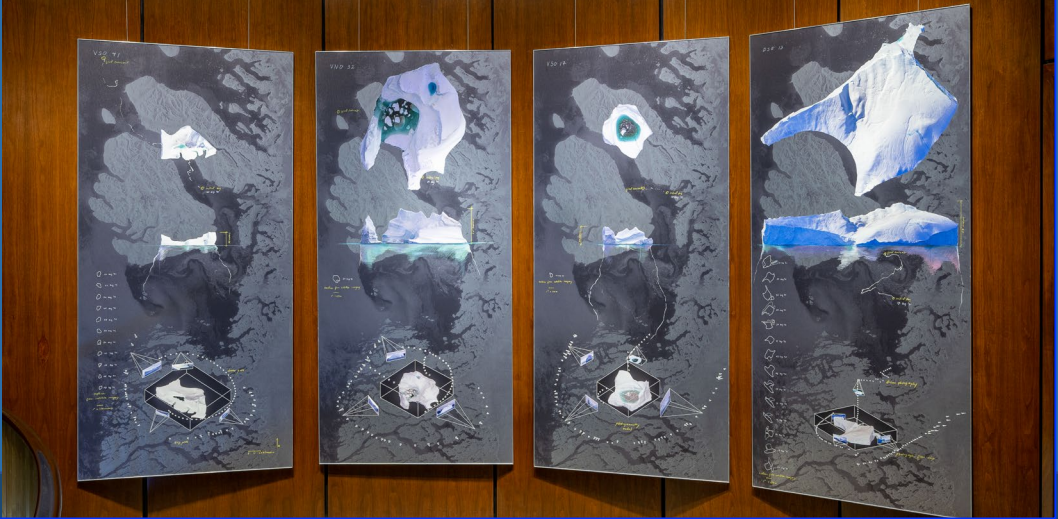
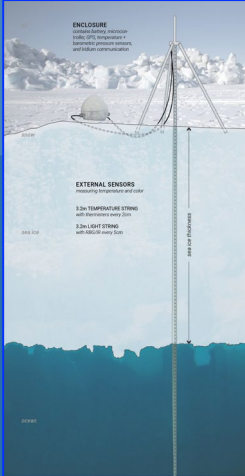
Key Outreach Activities – FloatBoat.org



- Connecting People to the Arctic Ocean
- Builds on NOAA's Adopt-A-Buoy Program
- Leads: David Forcucci (USCG retired), and Ignatius Rigor



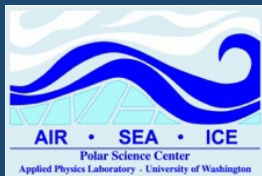
Key Outreach Activities – Arctic Ice Exhibits



US Interagency/International Arctic Buoy Program

Key Findings and Data Access

- 1) Many of the changes in Arctic Climate were first observed using data from the IABP. E.g. Walsh et al. (1996) reporting that atmospheric pressure has decreased, Jones et al. (1999) and Rigor et al. (2000) reporting that air temperatures have increased, and to Proshutinsky and Johnson (1997), Kwok (2000), and Rigor et al. (2002) reporting that the clockwise circulation of sea ice and the ocean has weakened.
- 2) Over 1300+ peer reviewed citations (<https://iabp.apl.uw.edu/publications.html>, doesn't include citations of papers using reanalyses).
- 3) Observations available in real-time on the WMO/IOC GTS for operational weather and ice forecasting;
- 4) Research quality data are provided in near real-time at <http://IABP.apl.uw.edu>;
- 5) Data are archived in many places such as the Regional Data Centers for the GTS, the NSF Arctic Data Center (arcticdata.io), etc.



END