



# WCRP/SCAR International Program for Antarctic Buoy (IPAB) DBCP-27 Report

**Christian Haas, IPAB Coordinator**

University of Alberta

**Ignatius Rigor**

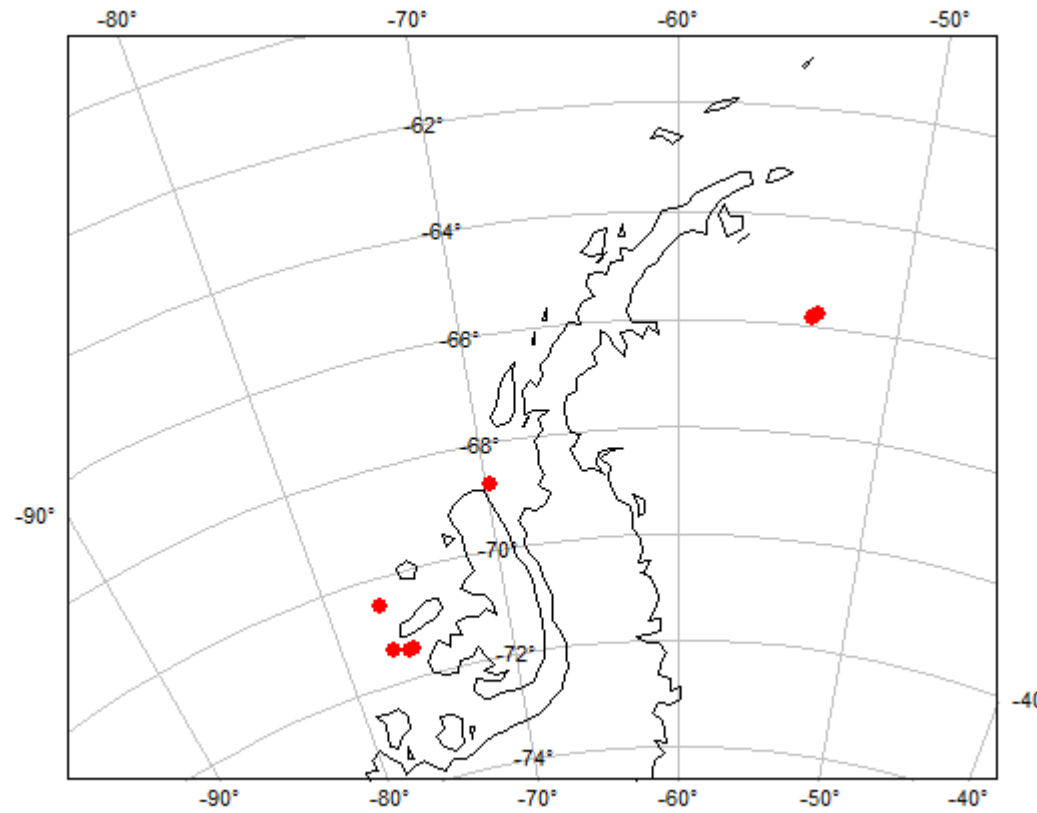
University of Washington

**Jeremy Wilkinson**

Scottish Association for Marine Science



- **UK IceBell cruise** on board James-Clark Ross mid Nov to early December 2010, to Bellingshausen Sea and northwest Weddell Sea
- **14 buoys** were deployed by Scottish Association of Marine Science (**SAMS, J. Wilkinson et al.**), with contributions from
  - British Antarctic Survey (BAS, T. Maksym)
  - University Texas San Antonio (S. Ackley)
  - South Korea Polar Research Institute (KOPRI, P. Hwang)
- Buoys drifted and survived between  $\approx$  1 month and up to 8 months!
  - 2 more CRREL Ice Mass Balance Buoys deployed by University Texas San Antonio (S. Ackley) in Dec 2010/Jan2011 in Bellingshausen/Amundsen Sea

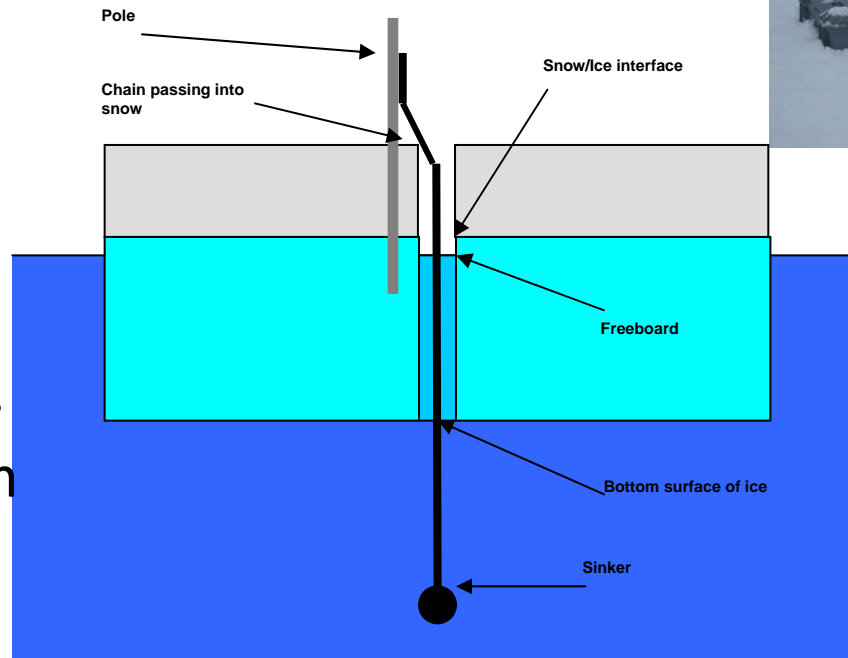


Scale: 1:6059739 at Latitude 90°

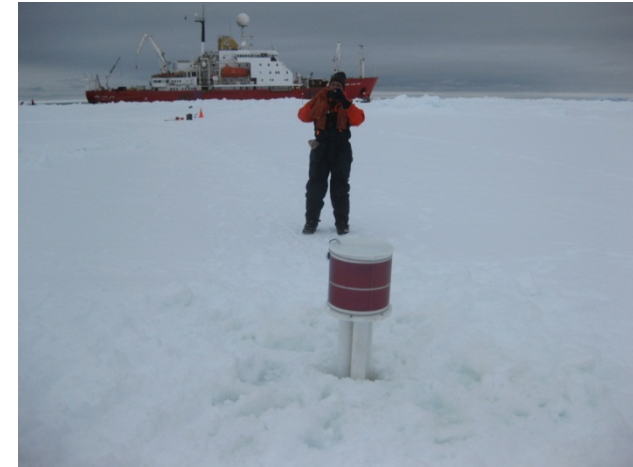
- Additional deployments of SVPs in open water by met services of South Africa, Australia, New Zealand

# SAMS buoys

- SIMBA: SAMS Ice Mass Balance:
  - Thermistor chains with heatable thermistors to measure heat dissipation and infer surrounding medium (snow, ice, water)



- FIMBA: Floating Ice Mass Balance:
  - Floats and will refreeze in newly forming ice cover

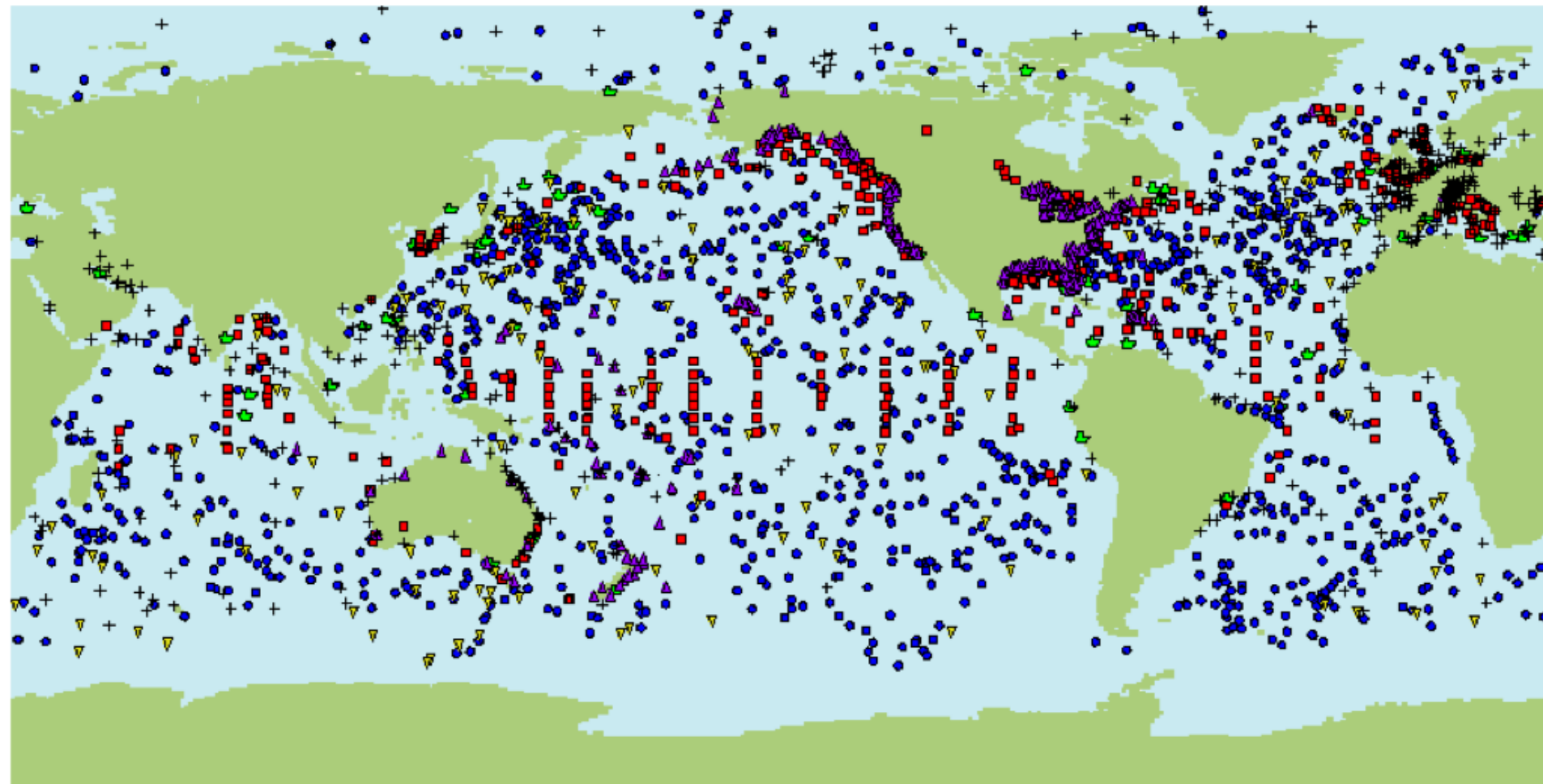


# US Interagency Program for Antarctic Buoy (US-IPAB)

Date: 26-Sep-2011 00:00:00 to 27-Sep-2011 23:59:59

Platforms: **2932**

Observations: **485550**

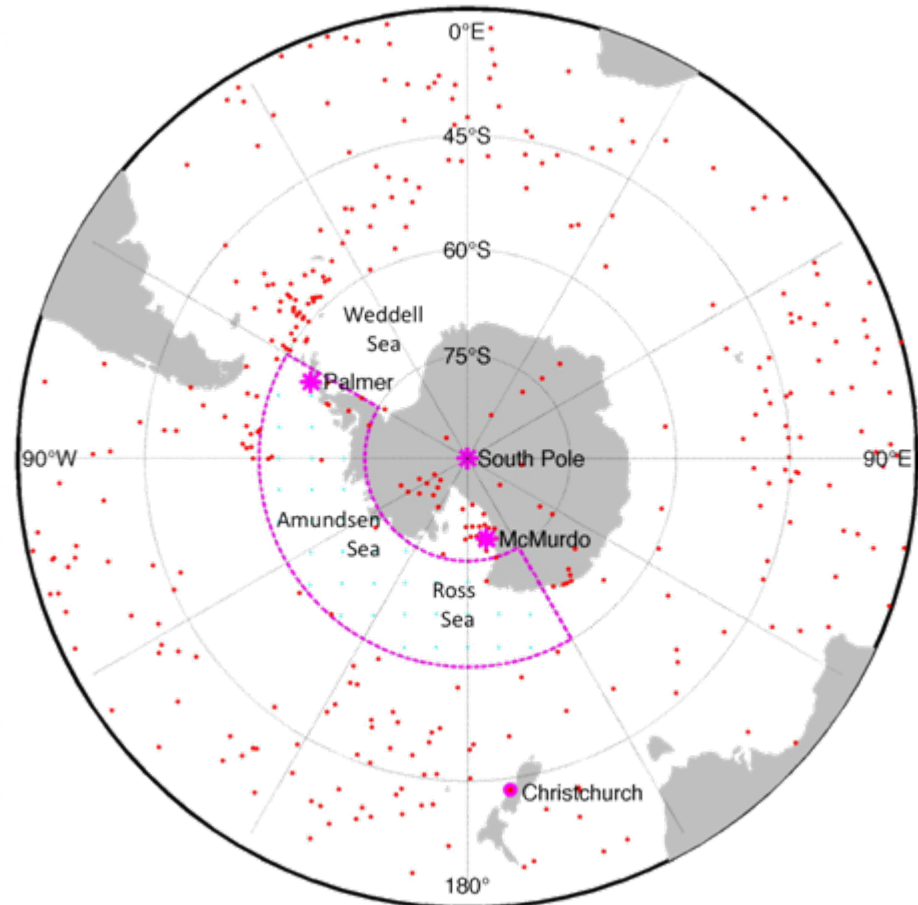
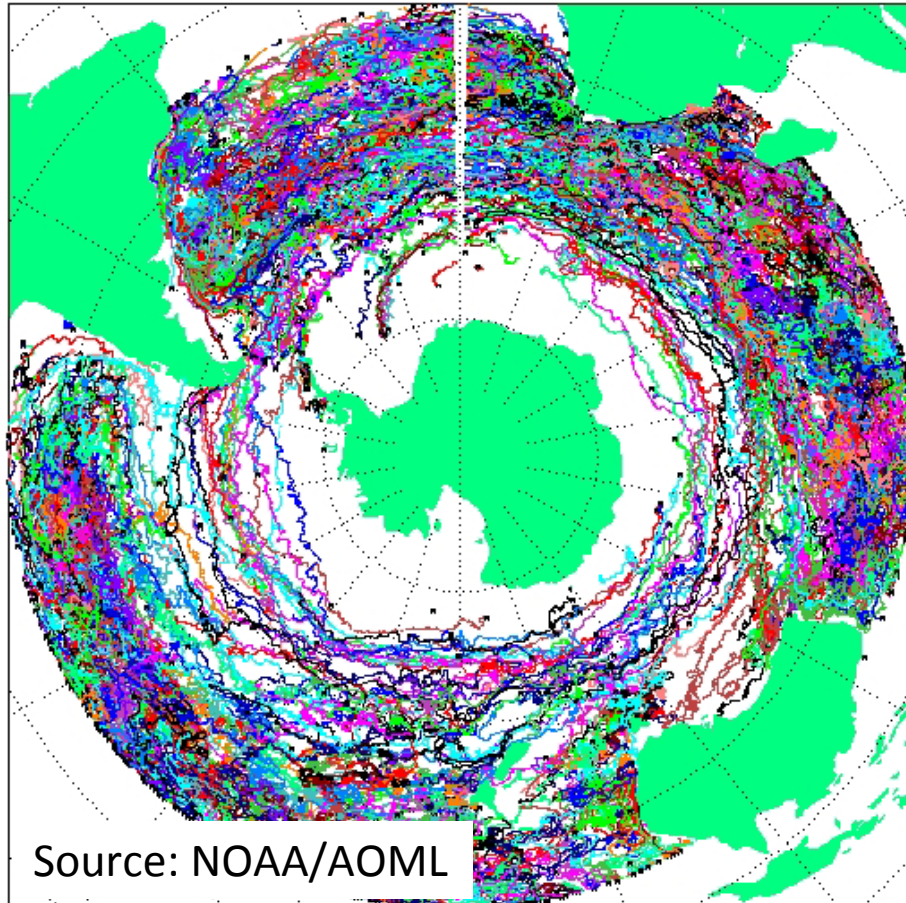


Suppressing ship observations for most recent 48 hours

Source: <http://osmc.noaa.gov/Monitor/OSMC/OSMC.html>

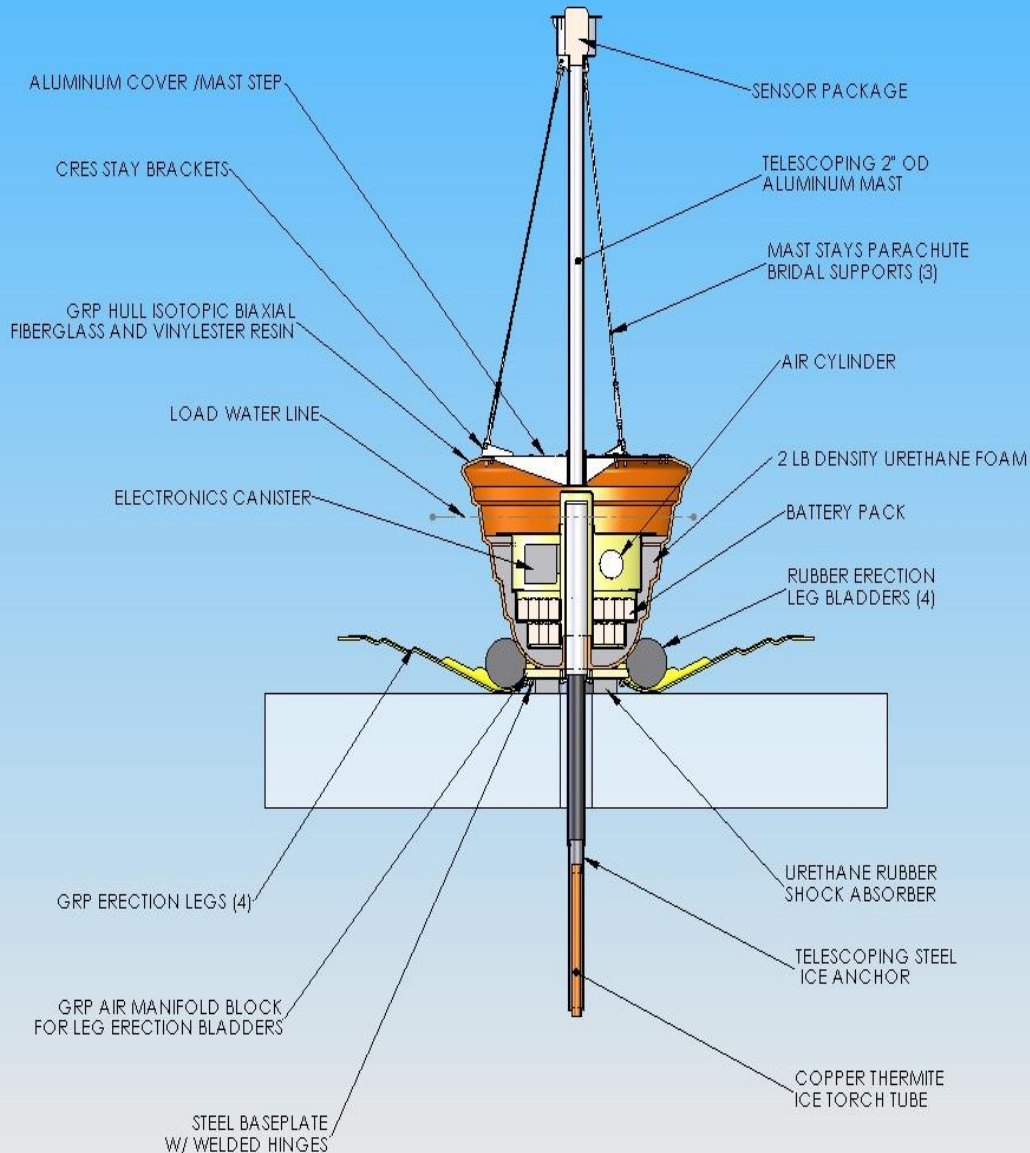
# US Interagency Program for Antarctic Buoy (US-IPAB)

BUOYS IN THE SOUTHERN OCEANS SINCE 1979



# Airborne eXpendable Ice Buoys (AXIB)

## AXIB Schematic



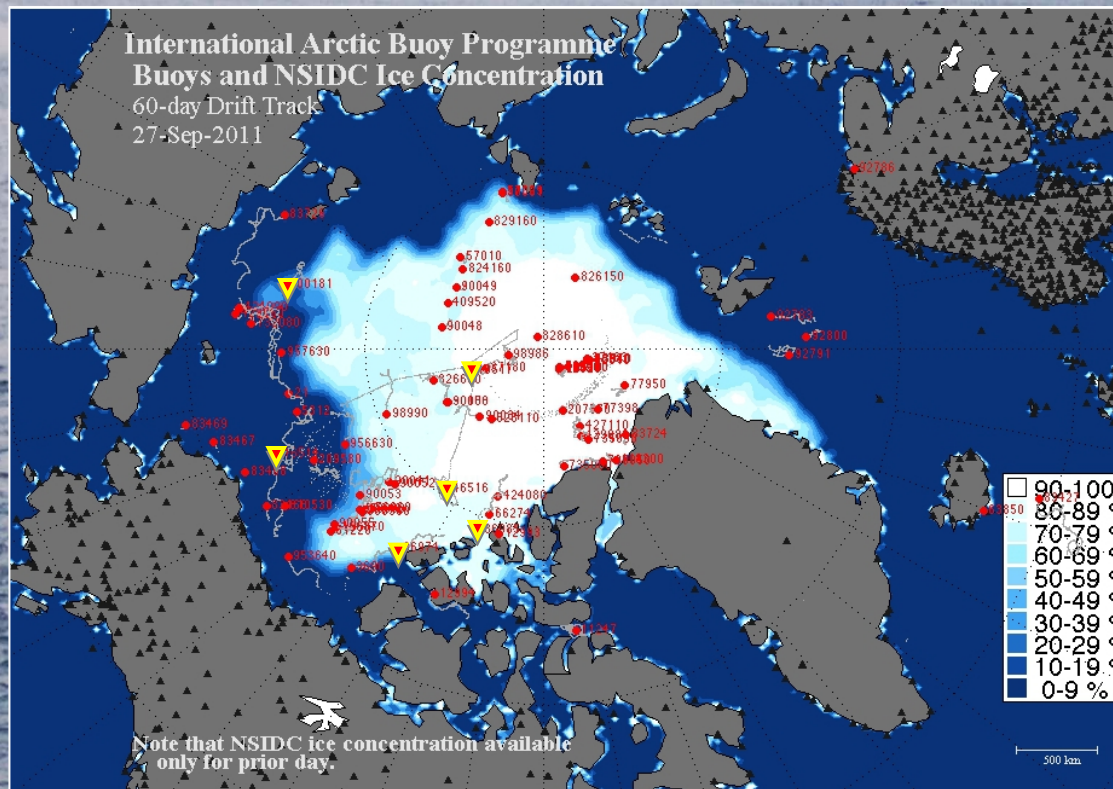
- Developed by US-IABP through a NOAA SBIR.

- Capable of operation in ice, and open water through freeze/thaw cycles.

- Sensors include air and ocean temperature, surface pressure, GPS location, and Argos transmitter.

- Currently 6 AXIBs reporting in Arctic (9/26/2011).

# Airborne eXpendable Ice Buoys (AXIB) Deployed from USCGC Healy in Arctic in August 2008



# SVP & Ocean Thermistor Strings

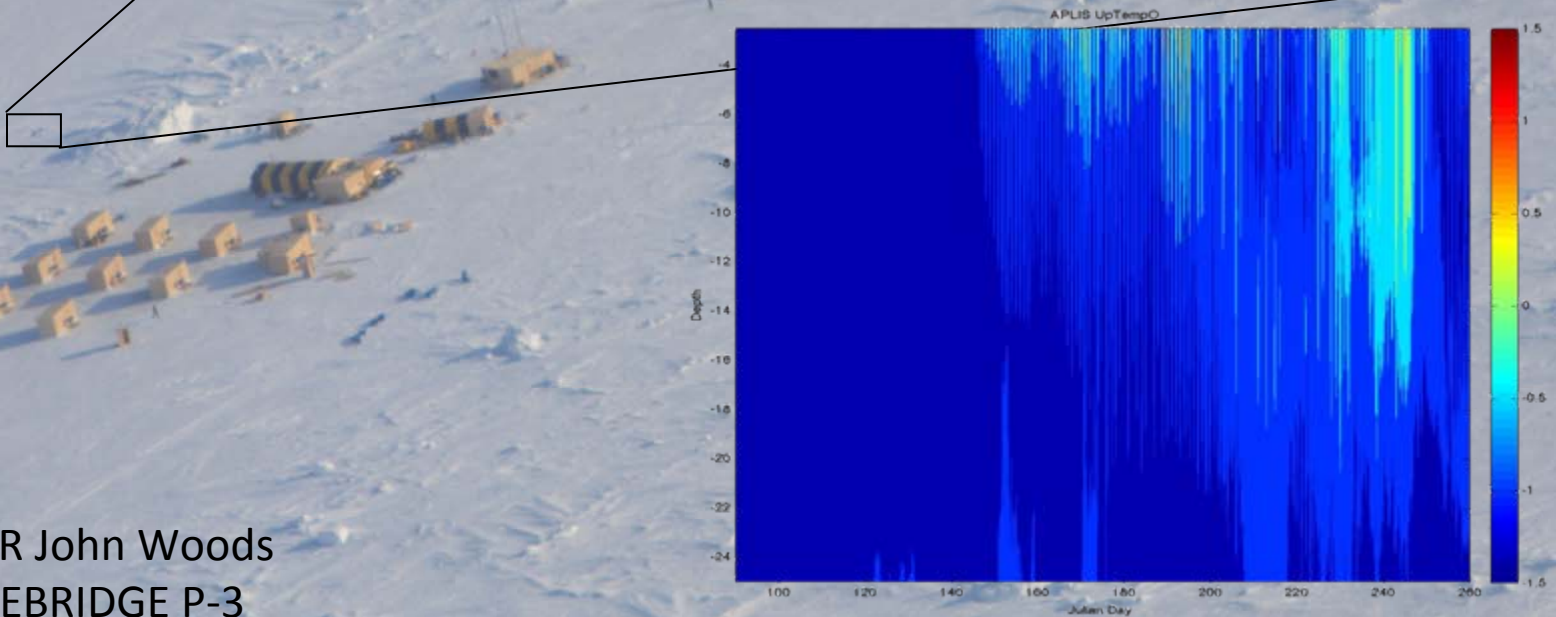
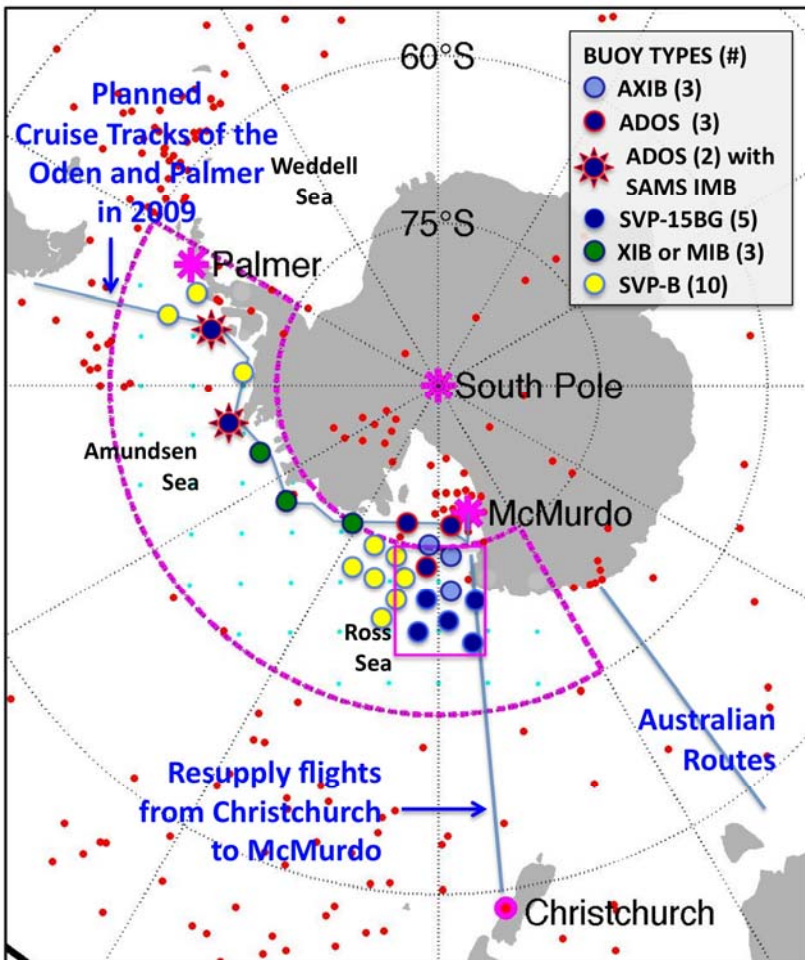


Photo by LCDR John Woods  
from NASA ICEBRIDGE P-3

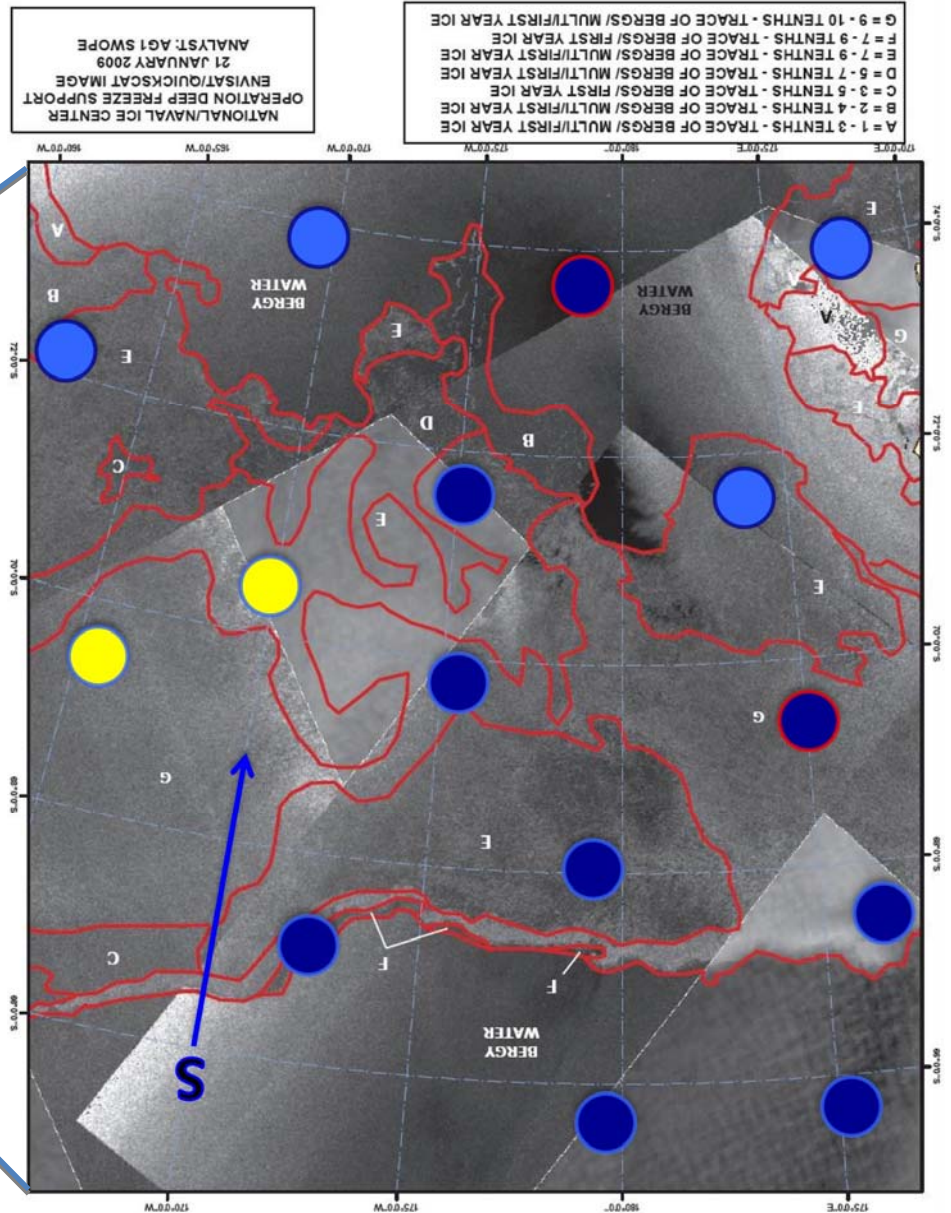
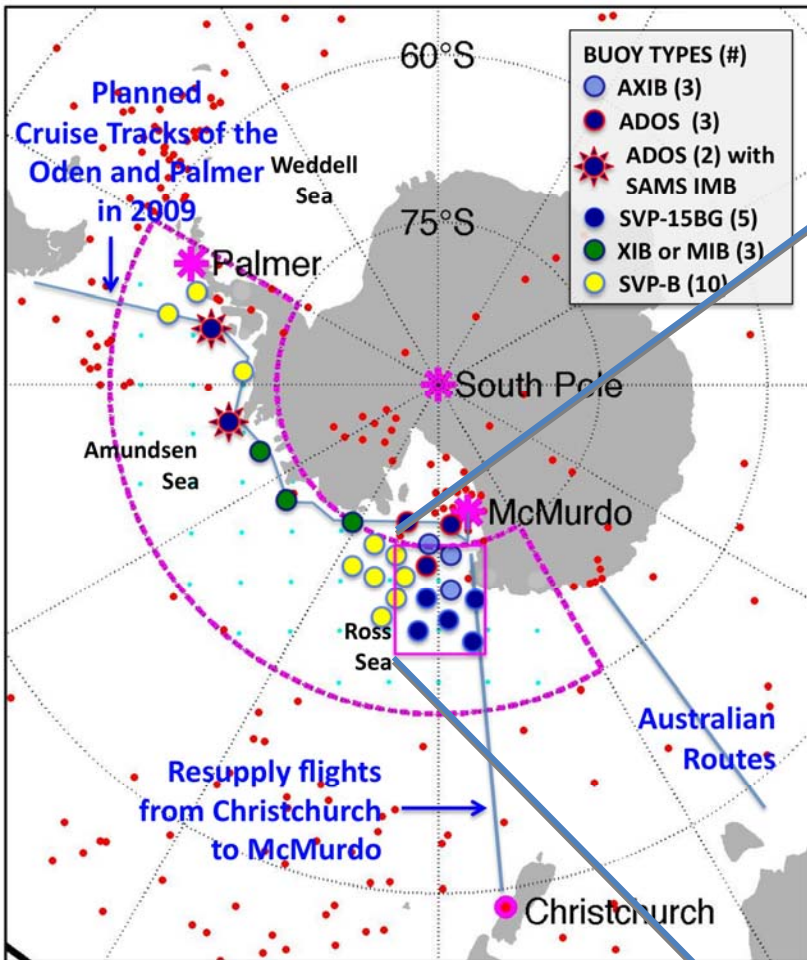


# US-IPAB Proposed Plan for 2012

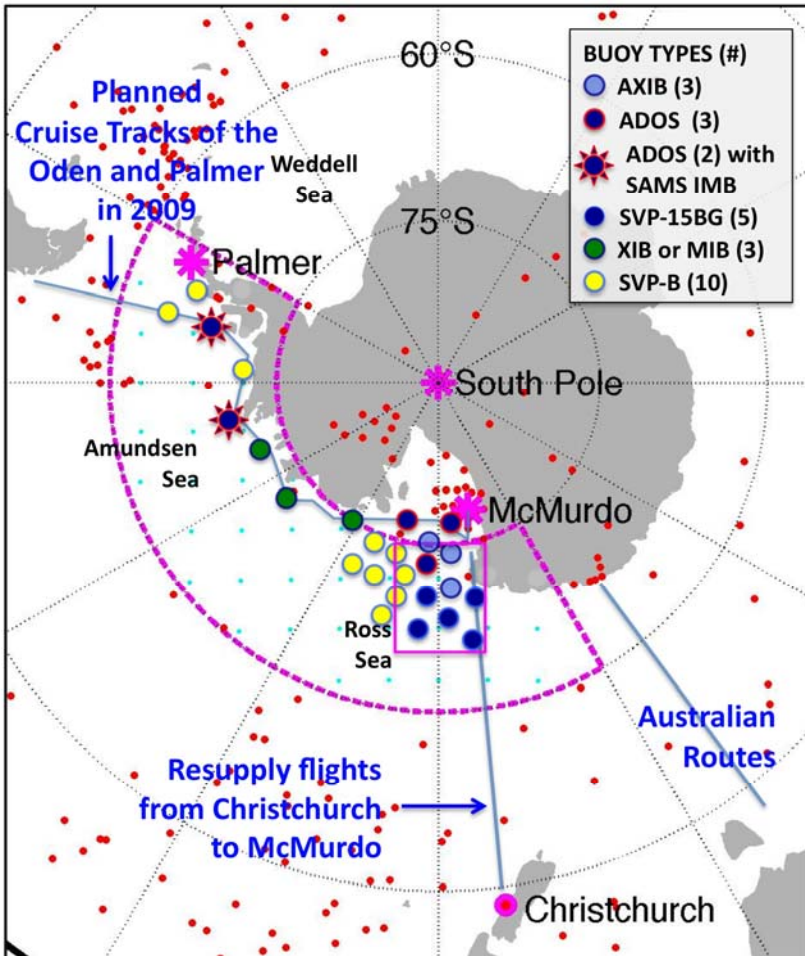


Deploy buoys from ice breakers such as the Nathaniel B. Palmer.

# US-IPAB Proposed Plan for 2012



# US-IPAB Proposed Plan for 2012



1. Leverage Experience from Arctic program.
2. Deploy AXIB, UpTempO (ADOS), and SVP-B buoys along cruise track of ice breakers resupplying McMurdo Station.
3. Long range plans:
  - Air Deployments
  - Build Inter-agency support
  - Build International Collaboration