

Observations on Sea Ice for Operations and Research  
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## 1. OVERVIEW

Observations of surface air pressure (SAP) and surface temperature (Ts) provide the foundation of our ability to forecast weather and ice conditions, and our ability to understand the earth's climate and climate change. These basic variables are monitored through out the globe by weather stations on land, moored buoys along the coast, and drifting buoys in most of the world's oceans. However, the Southern Ocean and sea ice around Antarctica continue to be one of the least sampled areas of the planet. In order to address this gap, we have striving to develop an International Program for Antarctic Buoys (IPAB), which will support both operational weather and ice forecasting, and scientific research.

Beginning in the summer of 2012, we deployed a network of drifting meteorological and oceanographic buoys in the Ross and Amundsen seas from the Nathaniel B. Palmer, and deployed 2<sup>nd</sup> suite of buoys during the summer of 2013. All the buoys measure SAP and Ts, and report in real-time via Iridium or Argos. We also deployed 3 buoys each year with an ocean thermistor strings.

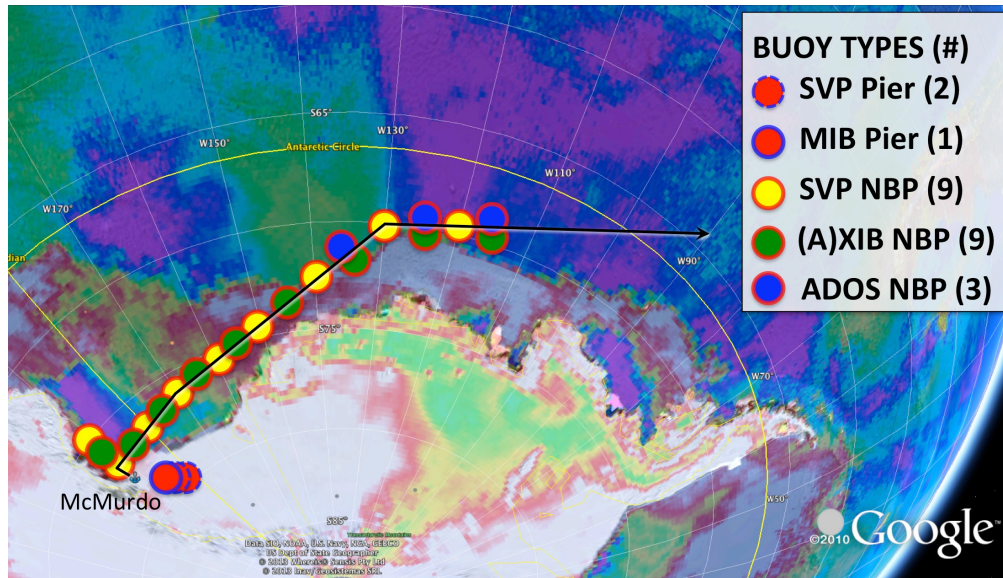
In collaboration with NOAA and our international partners we will also deploy 30 meteorological buoys in the Weddell Sea from the German ice breaker Polarstern in July–August 2013.

In this presentation we will describe our efforts to establish this fundamental observing system on sea ice, and present some preliminary analyses of the data.

The data from these buoys are reported in real-time to the World Meteorological Organization and International Oceanographic Commission's Global Telecommunications System for operational numerical weather prediction, sea ice forecasting, and assimilation into the various reanalyses (e.g. NCEP/NCAR), and are available for research from <ftp://ipab.apl.washington.edu/>.

## 2. ACKNOWLEDGEMENTS

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**Figure 1.** Planned deployment positions of drifting buoys in the Ross and Amundsen seas during the Nathaniel B. Palmer 1302 cruise. The base map shows sea ice types based on an analysis of OceanSat scatterometer data from February 2013.