

International Arctic Systems for Observing the Atmosphere (IASOA) – A Portal for Discovery, a Platform for Pan-Arctic Collaboration

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Long-term atmospheric and cryospheric observations underpin our understanding of the current state of the Arctic climate and provide a means for monitoring change, gaining insight into the causes of change and supporting decisions to manage change. IASOA (<http://iasoa.org>) was initiated in 2005 to mobilize the considerable long-term observing assets at ten, independently-funded international Arctic observatories towards coordinated pan-Arctic science to understand Arctic change.

This presentation will report on the progress we have made since 2012 on developing IASOA’s data sharing capabilities, including the creation of structured metadata for 182 datasets from NOAA’s Global Monitoring Division. The guiding design principles for the IASOA data portal were to leverage existing efforts and to listen closely to the IASOA community about what motivated them to visit and contribute to data portals.

Synthesis science is the ultimate realization of IASOA’s mission. In 2013, IASOA facilitated the development of a science working group structure including experts from NOAA’s Global Monitoring and Physical Science Divisions. The accomplishments-to-date of these groups includes: 1) facilitating the installation of a new radiation suite at Summit Station; 2) spearheading consistent processing routines for IASOA aethalometer and radiation datasets; and 3) two chapter contributions to the 2013 Arctic Report Card (Sharma et al., 2013; Key et al., 2013).

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Physical, Optical	●	●	●		●	●	●		●	●	
Physical, Primary		●	●								
Atmospheric State	●	●	●	●	●	●	●	●	●	●	
Cloud Properties		●	●		●	●	●		●	●	
Macrophysical		●	●		●	●	●		●	●	
Microphysical			●		●				●		
Microphysical and Chemical Properties			●								
Optical and Radiative Properties			●						●		
Cryosphere				●	●					●	
Greenhouse Gas		●	●	●	●	●	●		●	●	
Ozone		●	●		●	●	●		●	●	
POPs						●	●				
Precipitation Chem						●	●				
Radiometric		●	●	●	●	●	●		●	●	
Reactive Gas		●	●		●	●	●		●	●	
Surface Properties			●	●	●					●	

Figure 1. Dataset entries in the new IASOA data portal are organized by site and nested geophysical parameters derived from widely used sources like the World Meteorological Organization. Each “dot” represents one or more dataset entries in our catalog. There are currently over 800 entries.