

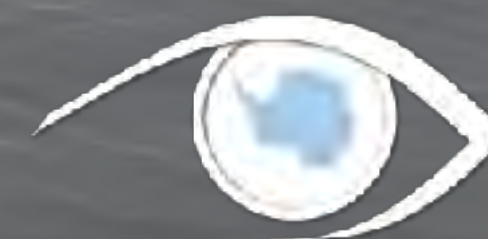
Polar Synthesis

Andrew Fleming
British Antarctic Survey
4th November 2016



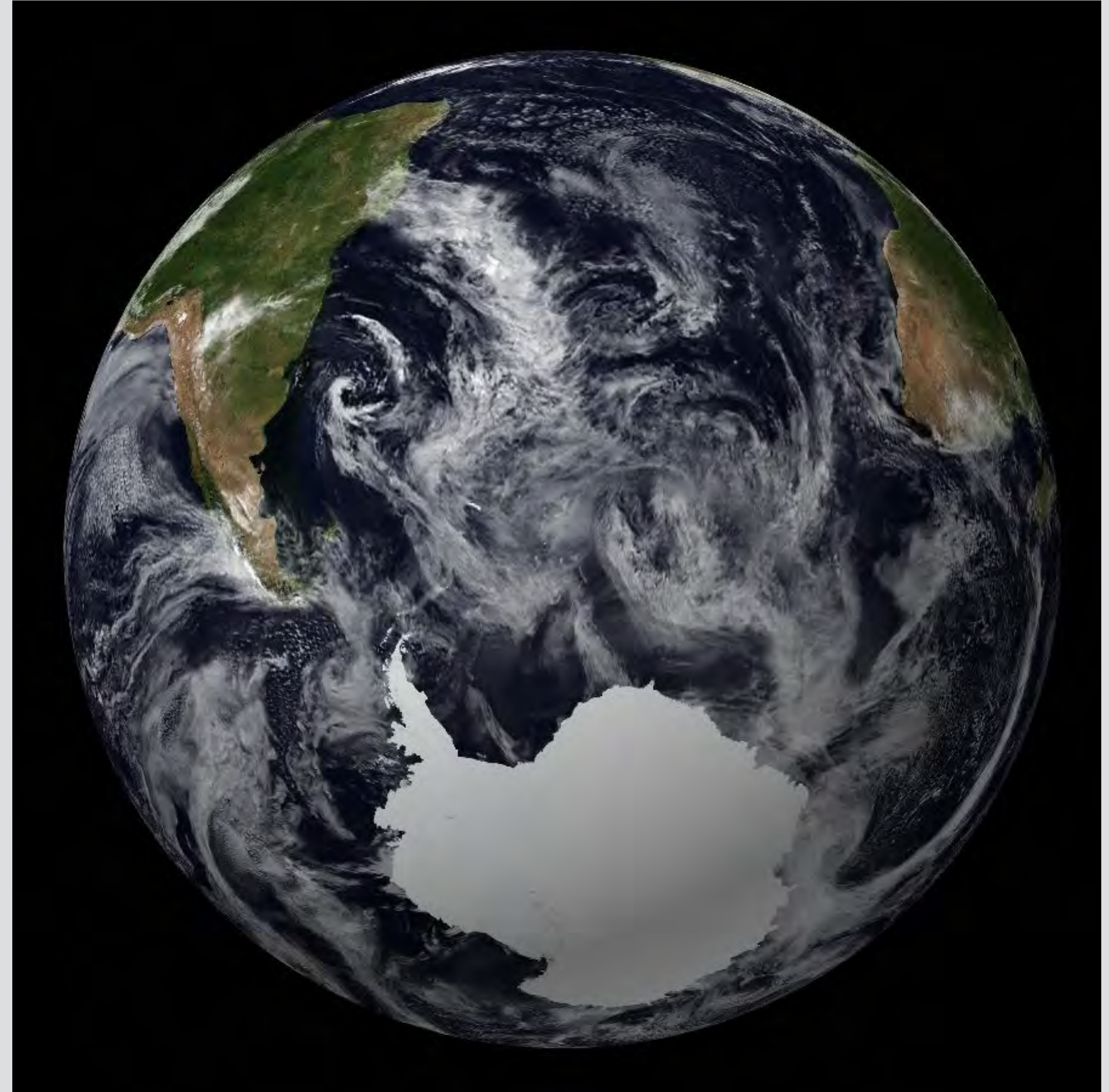
**British
Antarctic Survey**

NATURAL ENVIRONMENT RESEARCH COUNCIL



Polar View

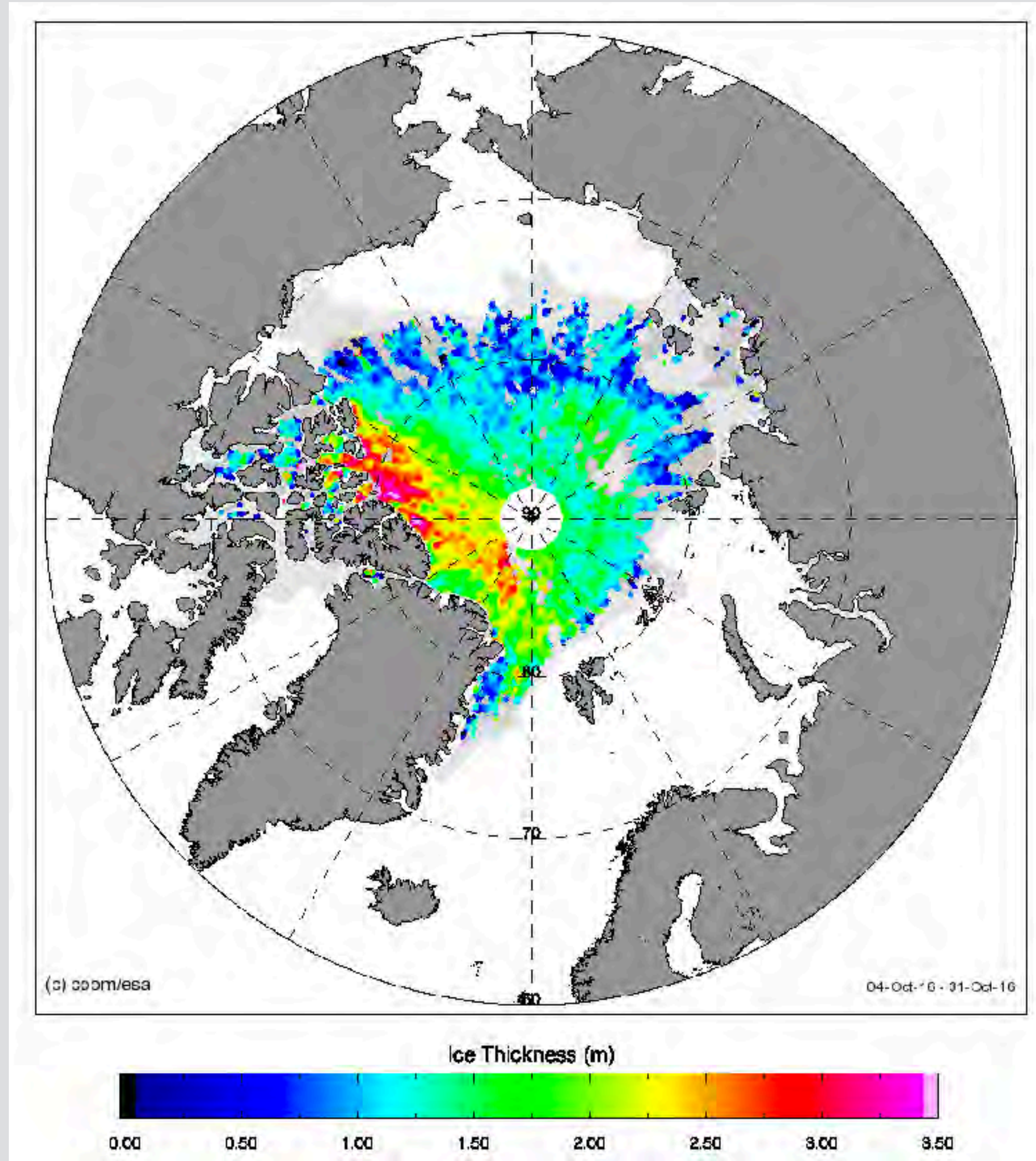
The polar regions



EO plays a unique role in the polar regions

- EO is especially important in the polar regions
- Unique benefits in these vast and hostile regions – only source of consistent, repeatable, regional scale, calibrated, year-round data of the polar regions
- EO data is a key element supporting multidisciplinary and earth system science
- Essential to programmes required to inform political and economic decisions and better understand and monitor change
- Essential to support operations and commercial activities in the regions

Polar Science - Sea Ice



CPOM NRT Sea Ice Thickness

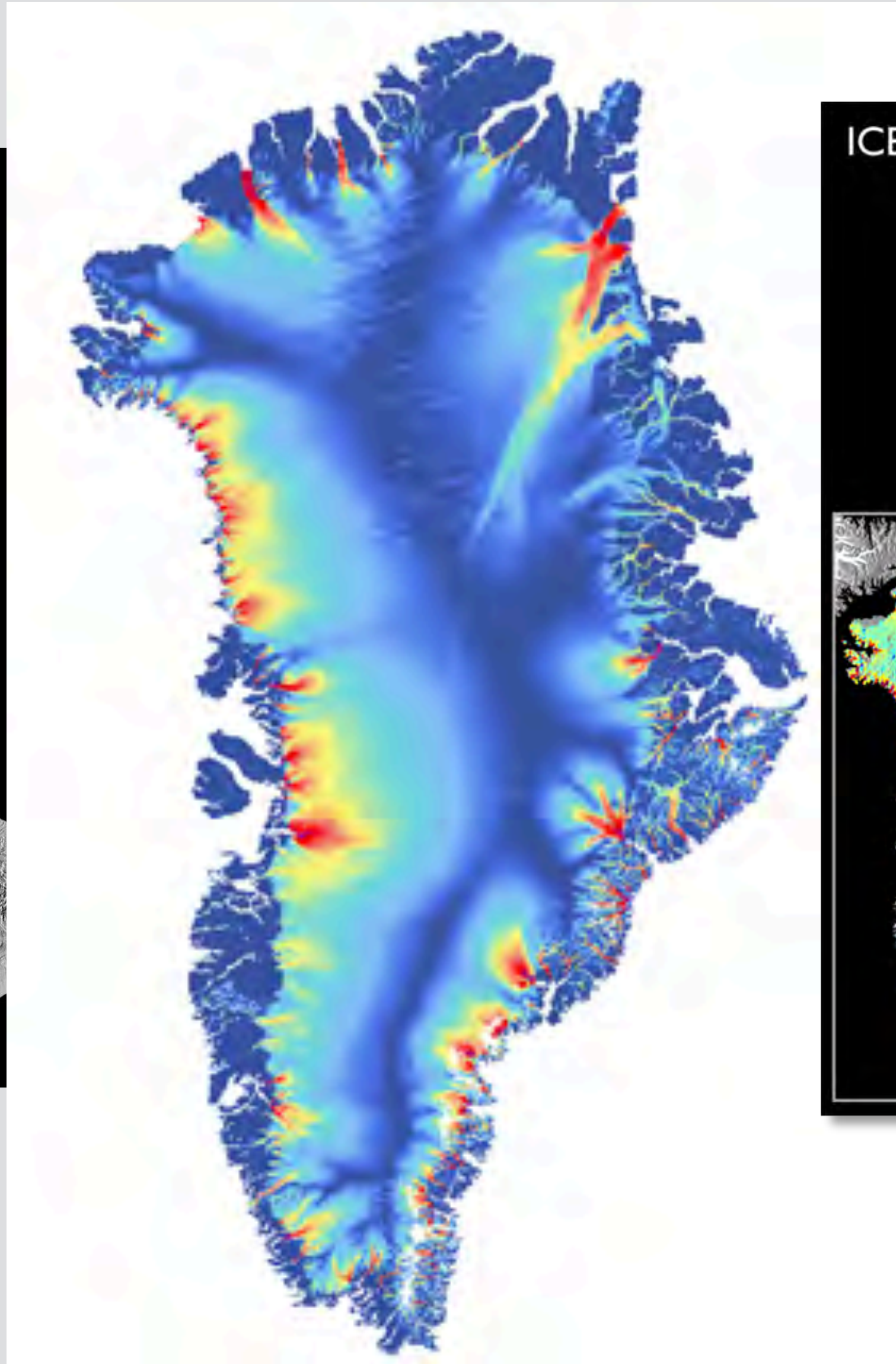


DTU Sentinel1 Mosaic

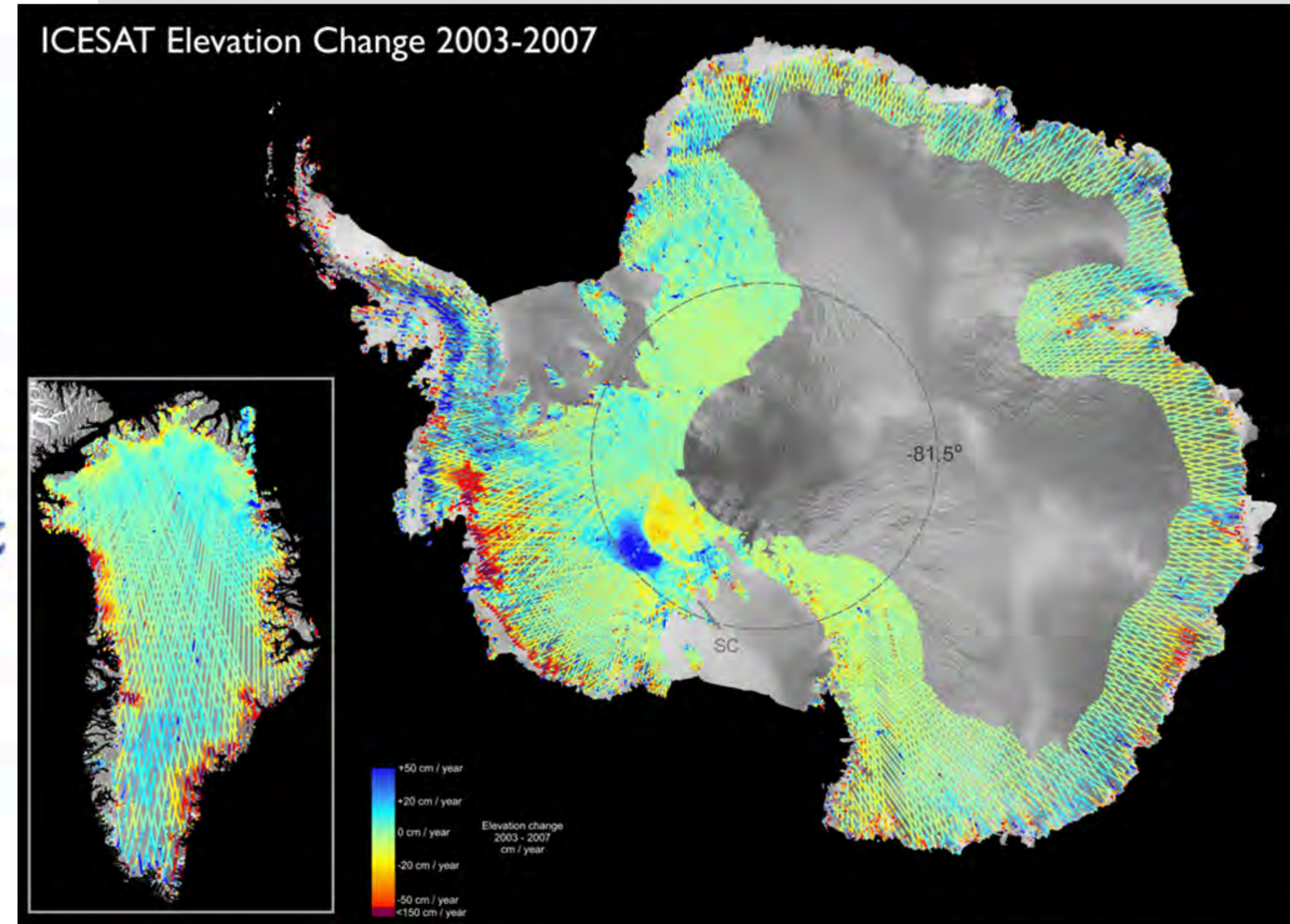
Polar Science - Ice Sheets



PGC ArcticDEM

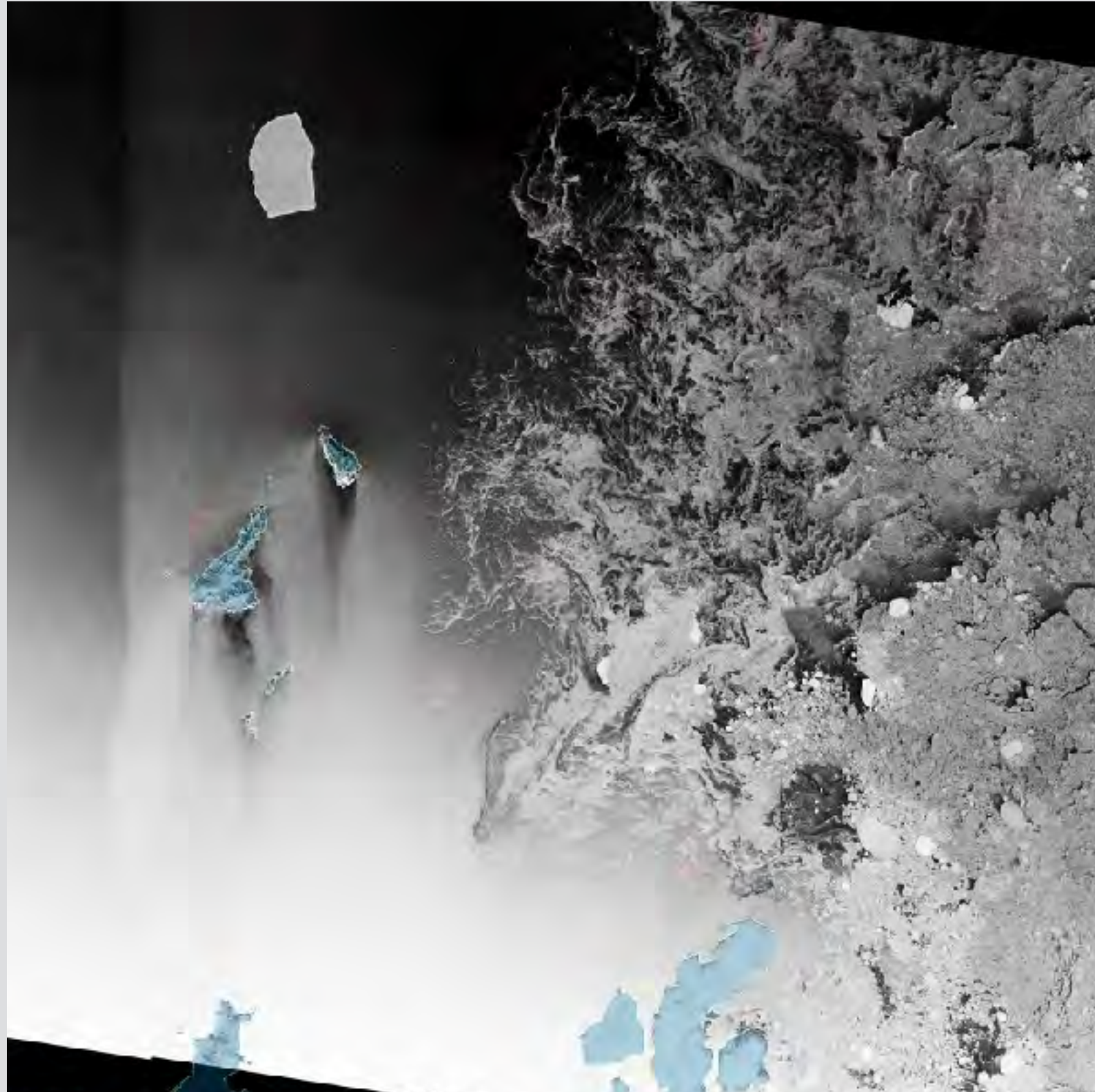


Nagler/ENVEO

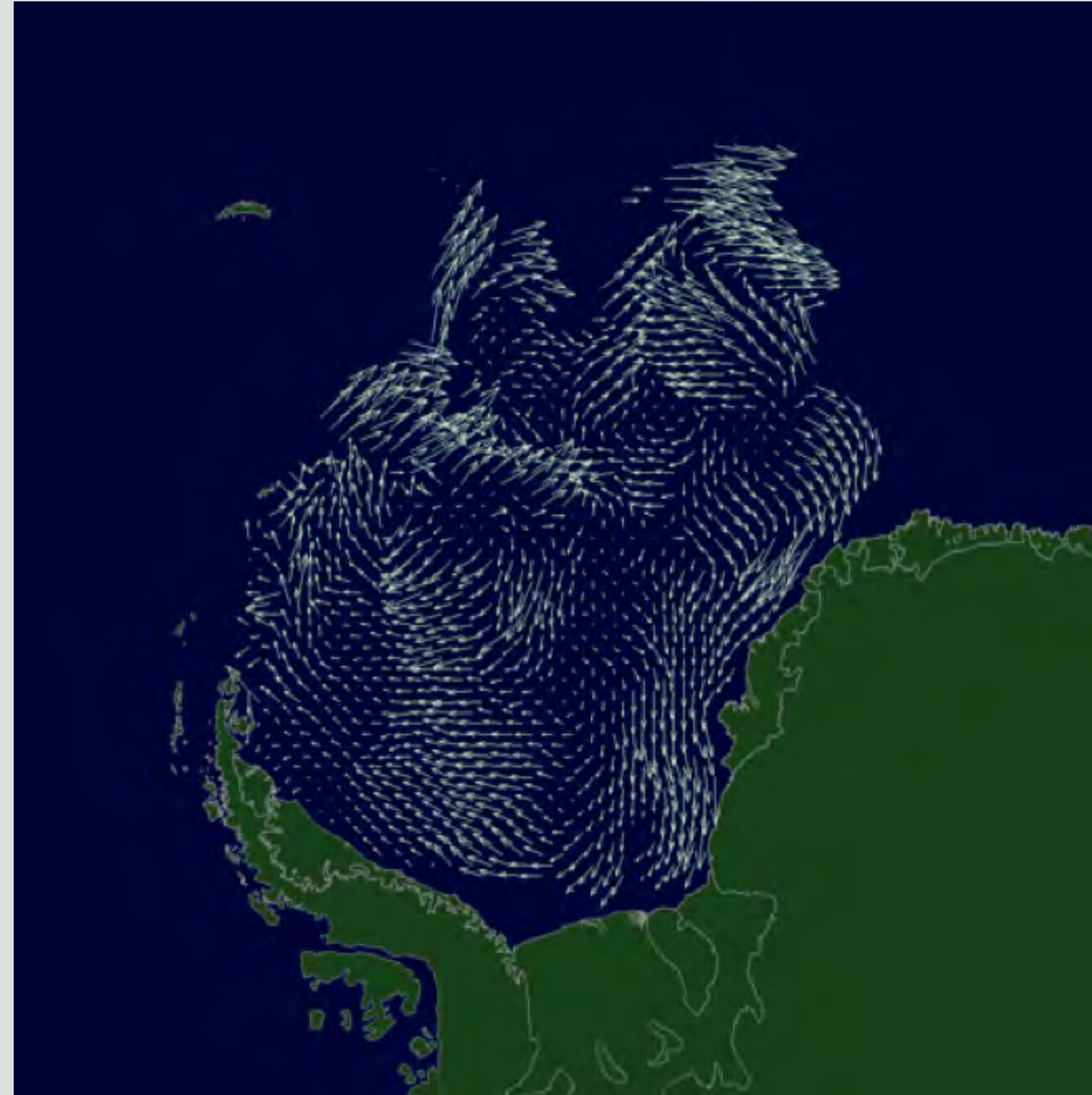


Pritchard

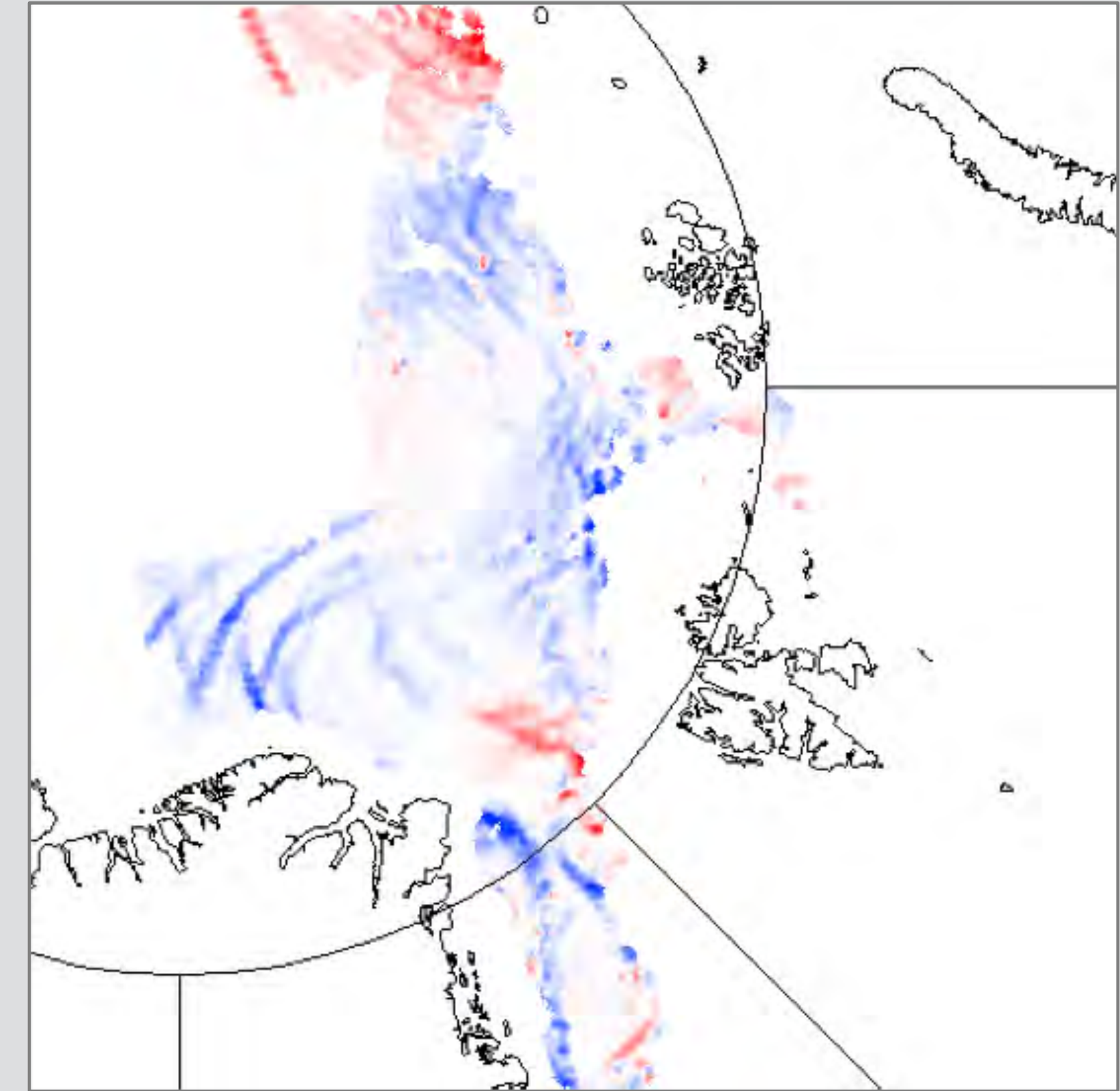
Polar Operations



S1 SAR image

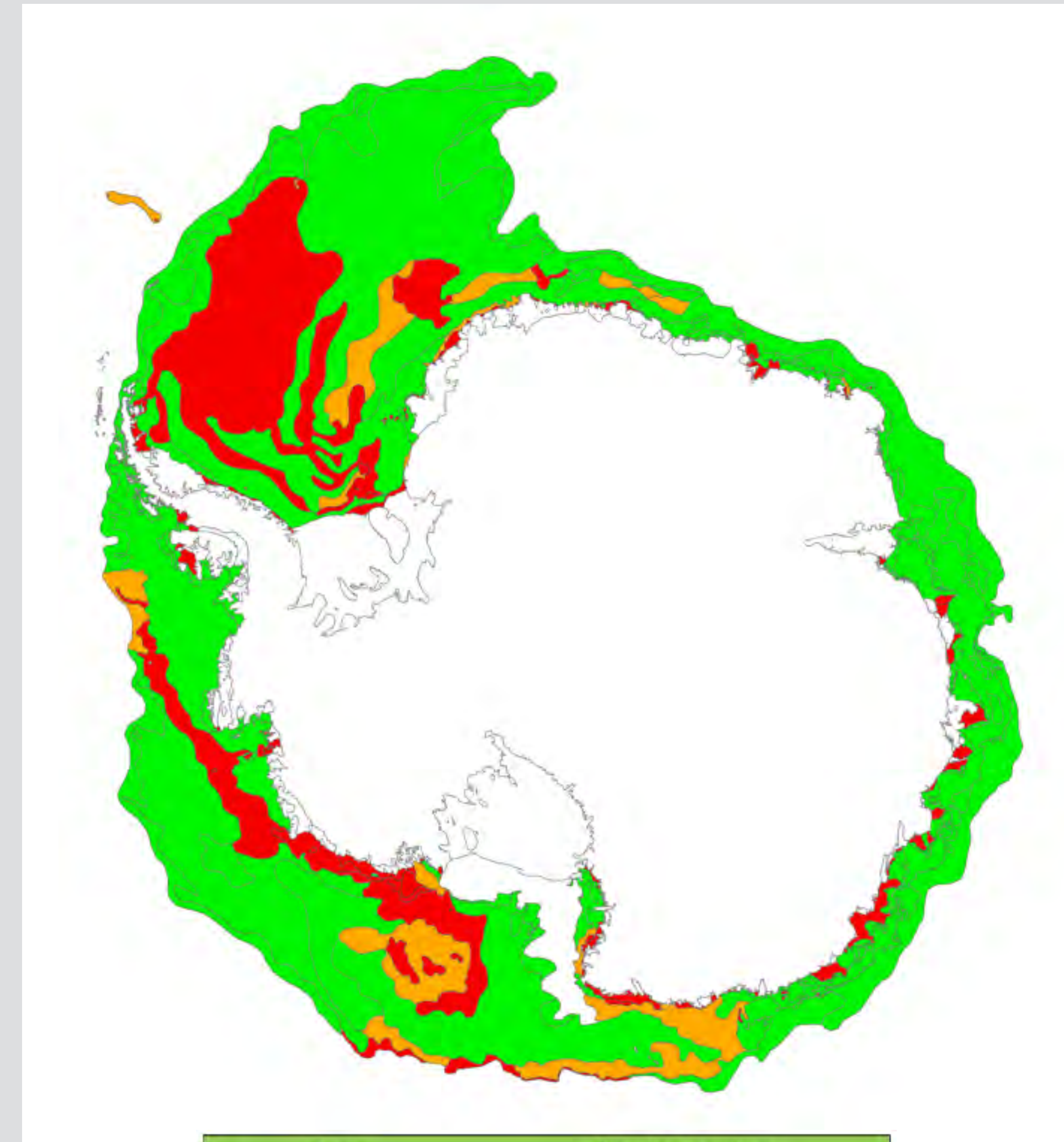
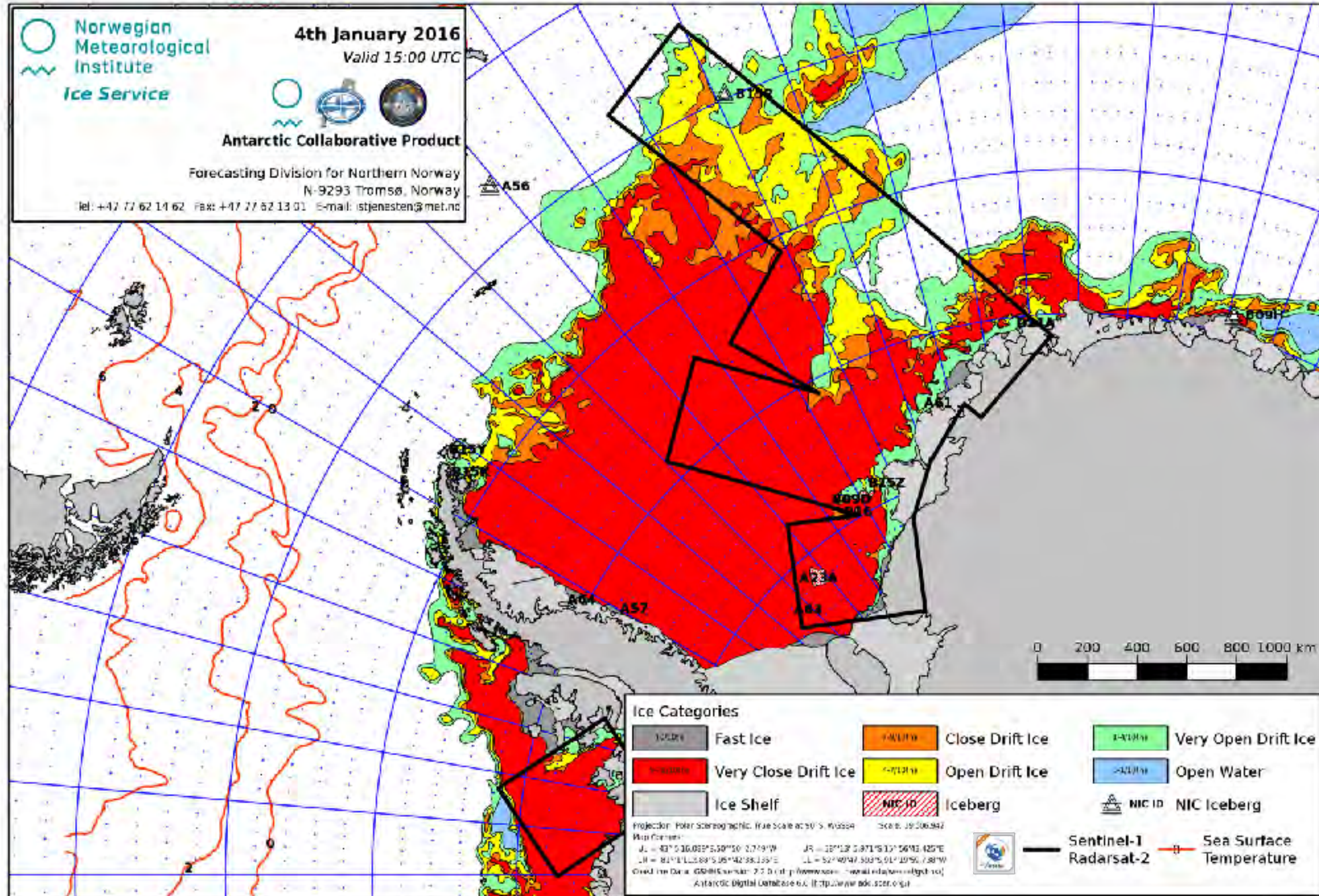


Sea ice motion



Compression /
divergence

IMO Polar Code



Green	Operation permitted
Amber	Limited speed operation permitted
Red	Operation not permitted

Polar Policy

- **“... a broad range of sovereign, legal, environmental, commercial and international cooperation reasons for our active and close engagement in the polar regions ...”**
- Antarctic Treaty, Environmental Protocol, Commission for the Conservation of Antarctic Marine Living Resources
- UK Policy Towards the Arctic, an Observer to the Arctic Council, Sustaining Arctic Observing Networks (SAON), role in EU-PolarNet & European Polar Policy
- IMO Polar Code and other regulations
- Marine Protected Areas - monitoring requirements
- **Important requirement for information to support these policies and regulations**

Summary

- Polar regions play an important role in regulating and driving the global climate & experiencing significant change
- Existing and growing UK and global interest scientifically, politically and economically
- New economic opportunities is driving increased attention and traffic
- Developing tools to model, understand and monitor these changes is vitally important in order to better predict and mitigate the resulting global economic and environmental consequences.
- UK plays a leading role in moving science into operational services and opportunities
- EO has a unique capability in the polar regions - but there are important gaps in observations, data continuity and capabilities for exploitation
- Continuity and new observations required to support and develop these capabilities