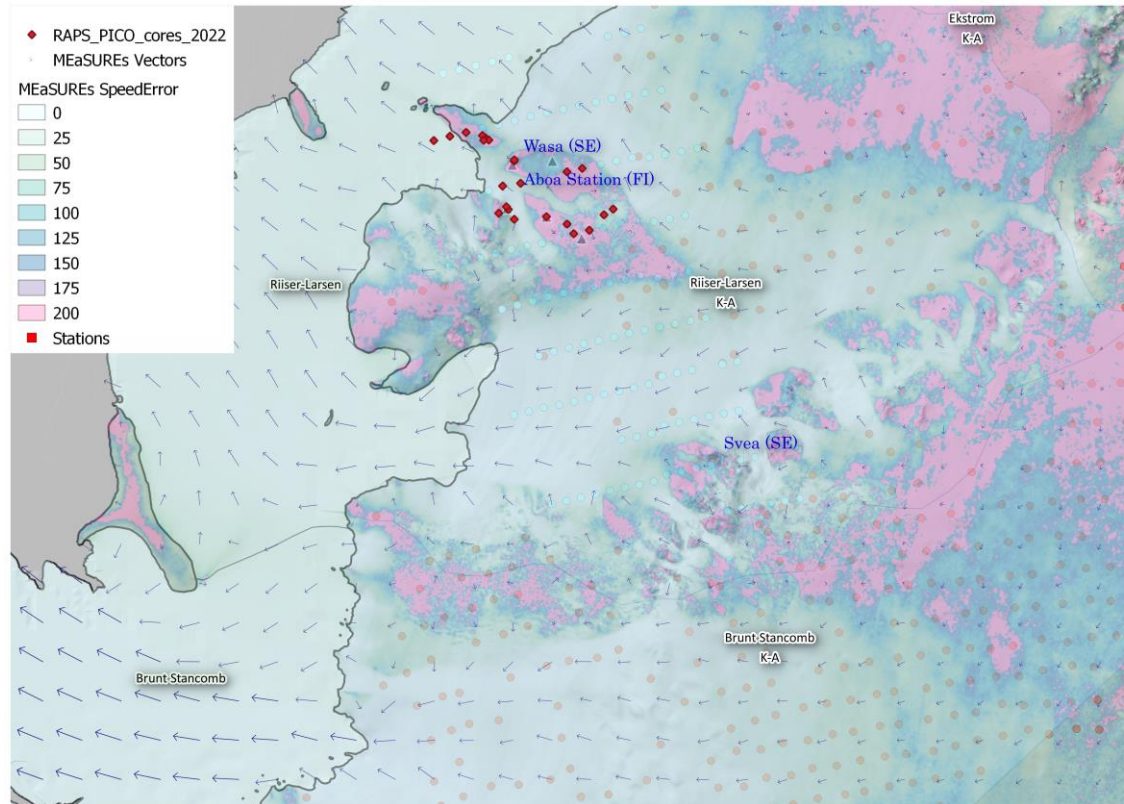


iQ2300

WP9: Ice sheet and ice shelf dynamic responses from Earth Observation



WP9: Ice sheet and ice shelf dynamic responses from Earth Observation

Principal Investigator: Ian Brown, Stockholm University, Remote Sensing

Co-PI: Celia Baumhoer, German Aerospace Center (DLR), Remote Sensing

Participant(s):

Johan Casselgren, Luleå Technical University, Engineering

Aku Riihelä, Finnish Meteorological Institute, Remote Sensing

Leena Leppänen, Finnish Meteorological Institute, Remote Sensing

Ward van Pelt, Uppsala University, Glaciology

Gunhild (Ninis) Rosqvist, Stockholm University, Glaciology



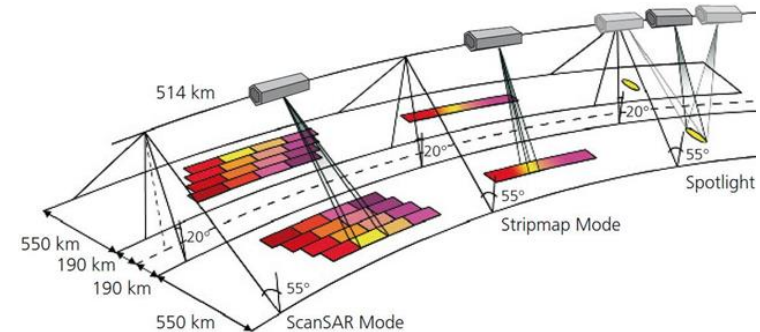
Scientific hypotheses / Research questions

1. Can we improve EO estimates of surface elevation and velocity?
2. Where and how is the ice sheet/ice shelf changing?
3. How stable is the Riiser-Larsen ice shelf?



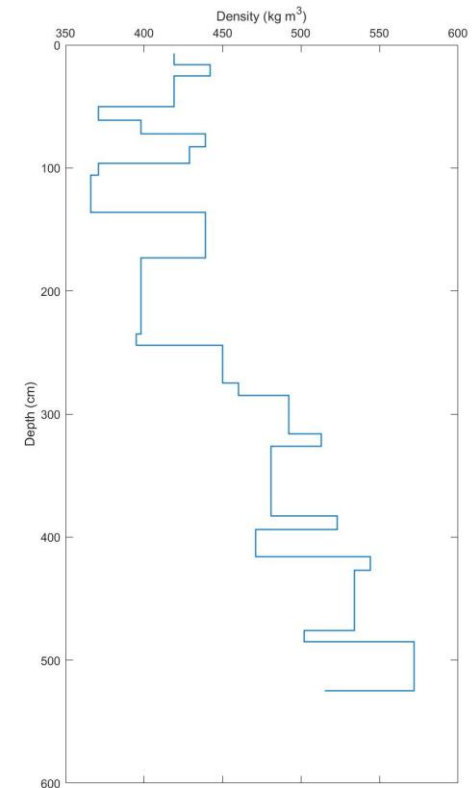
Parameters measured within the project

- » Surface elevation → WP7
- » Surface mass balance → WP8
- » Surface velocity → WP7
- » Ice shelf flexure → WPs 2-4
- » Ice shelf grounding zone dynamics → WPs 2-4, 7
- » Ice shelf margin dynamics → WPs 2-4
- » Surface melt (firn aquifer presence) → WP8
- » Radar penetration depth (→ WP7 ?)



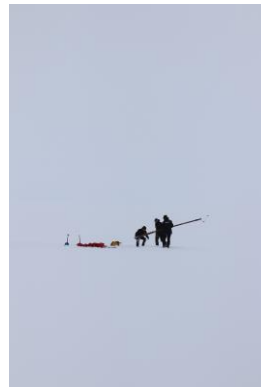
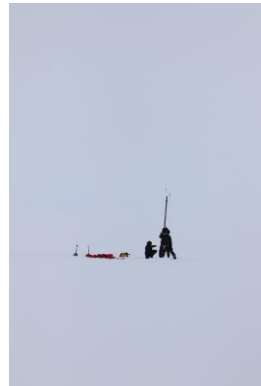
Type of data collection

- » Snow surface roughness
- » Snow depth-density profiles
- » Snow grain size
- » Surface elevation
- » Installation/excavation of radar corner reflectors



Logistic support requirements

- Snow mobiles & arks
- PICO/Kovacs auger
- Radar corner reflectors (and shovels to dig them out ☹)
- Accommodation for 3 scientists (& 1 SPRS logistician) at Wasa
- 2 expeditions (2025/26 and 2029/30)
- 5 weeks in field; 2 overnight deepfield trips



Questions?



Photo: Ola Eriksson/ SPRS



**POLARFORSKNINGS
SEKRETARIATET**
SWEDISH POLAR RESEARCH SECRETARIAT