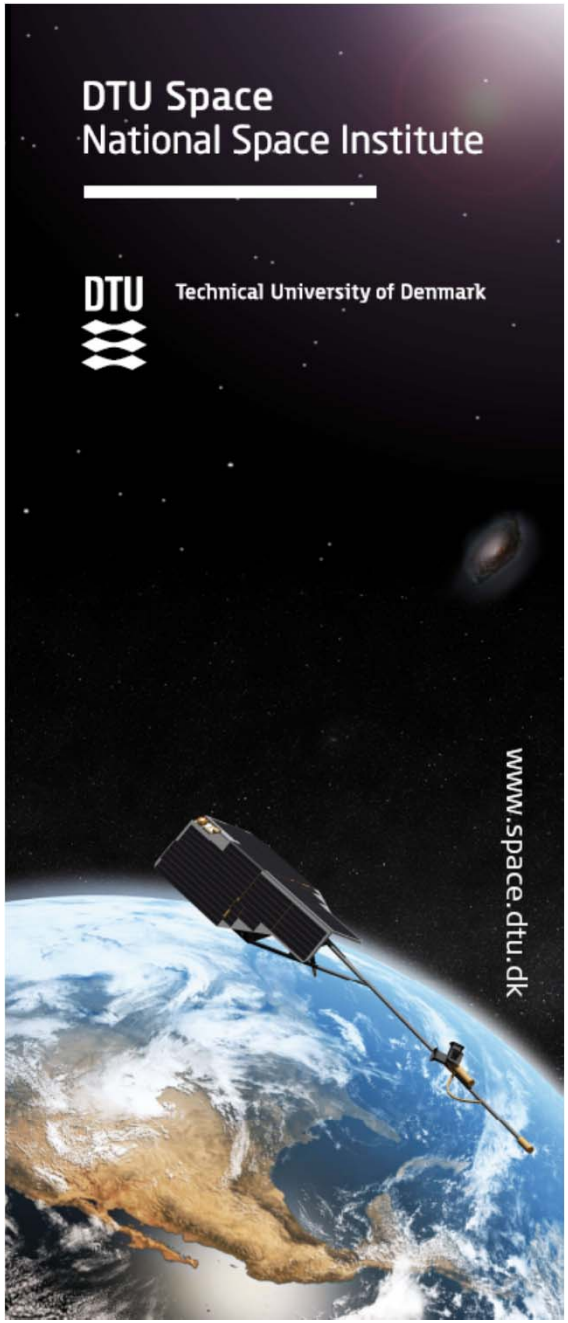


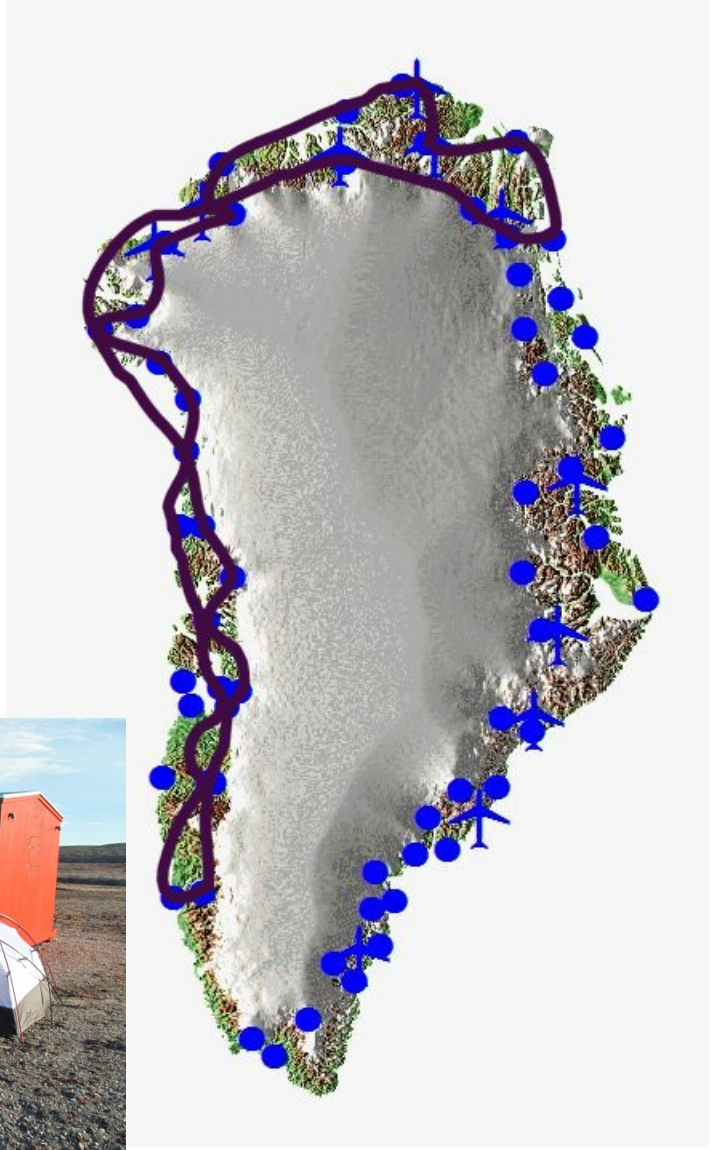
DTU Field activities 2016-2017

H. Skourup, R. Forsberg, S. M. Hvidegaard, E. Nielsen
Division of Geodynamics, DTU Space

Finn Bo Madsen and Abbas Khan
Division of Geodesy, DTU Space

GNET 2017

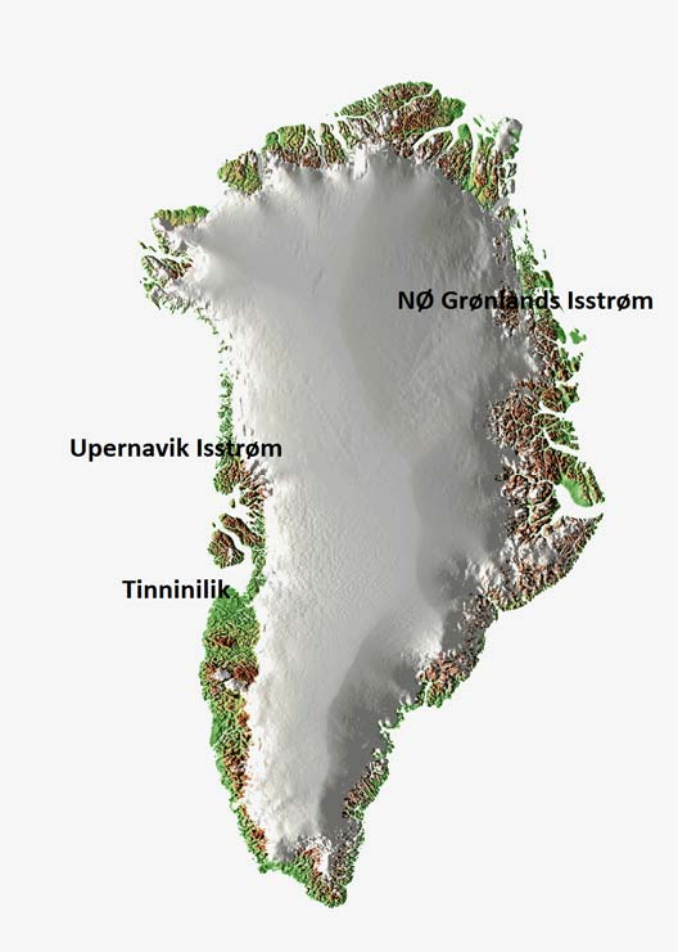
- Tentatively 21 stations Nuuk-79 Fjord-Nuuk
- Fuel/spare parts to be cached in july 2017 at:
  - Cass Fjord
  - Nares Land
  - Station Nord
  - Centrum Sø
- Fieldwork med AS 350 B3 in August 2017 based in:
  - Qaarsut
  - Upernavik
  - Thule Airbase
  - Station Nord
  - Field camps at
    - Cass Fjord
    - Nares Land
    - Centrum Sø



Contact: Finn Bo Madsen, DTU Space

Abbas Khan 2016-2017

- Tinnilik + Upernavik Isstrøm tentativt juni ad-hoc charter Ilulissat og Upernavik
- NØ Grønlands Isstrøm AS350 B3 charter based in Daneborg and Danmarkshavn

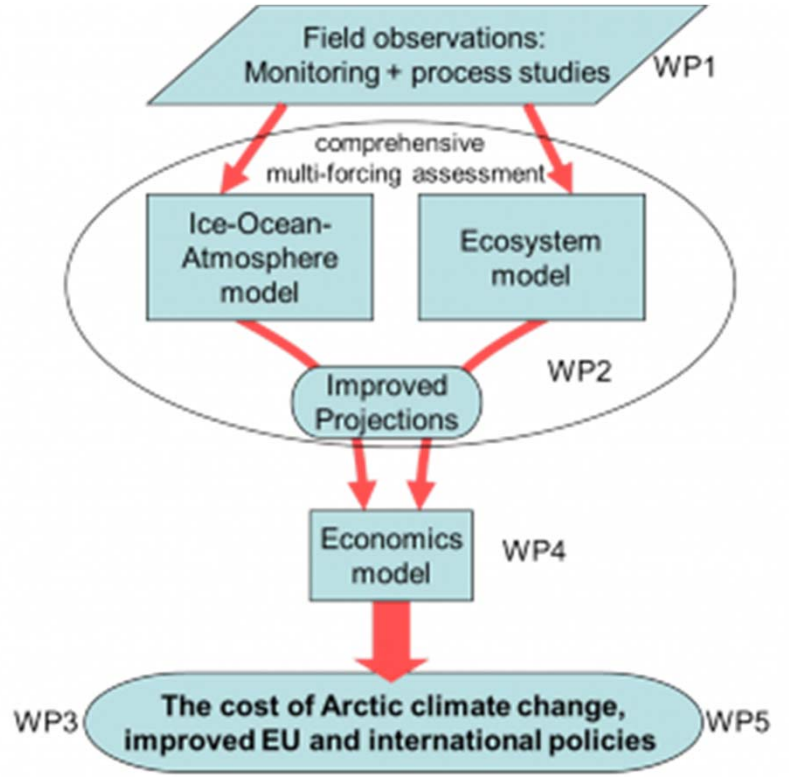


Ice, Climate, Economics – Arctic Research on Change

ICE-ARC is a programme funded by the European Union's 7th Framework Programme.

It is a 4 year project that started on the 1st January 2014, and will look into the current and future changes in Arctic sea ice – both from changing atmospheric and oceanic conditions.

We will also investigate, in a robust way, the consequences of these changes both on the economics of the area, and social aspects such as on indigenous peoples.

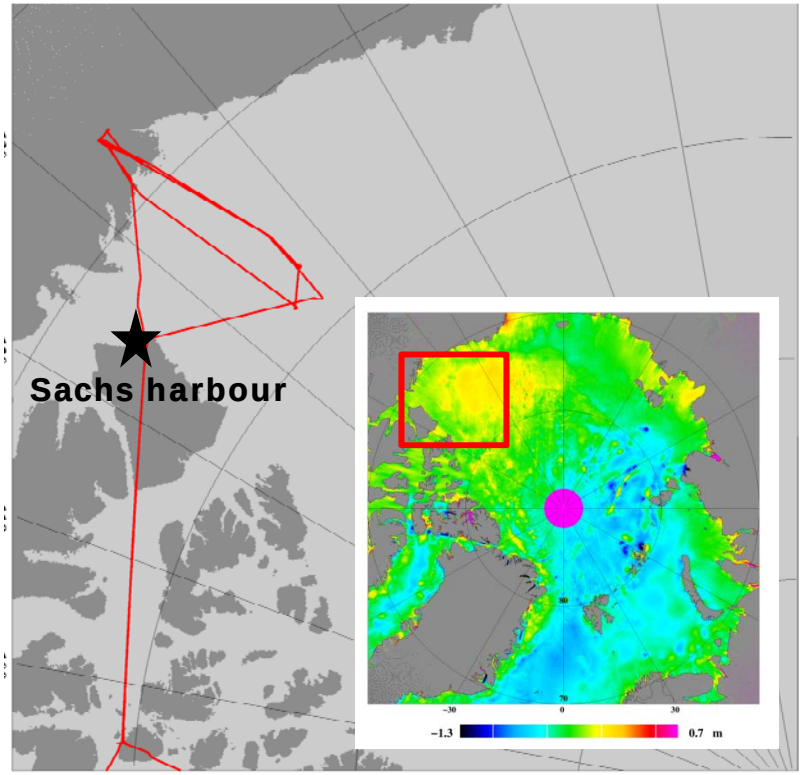


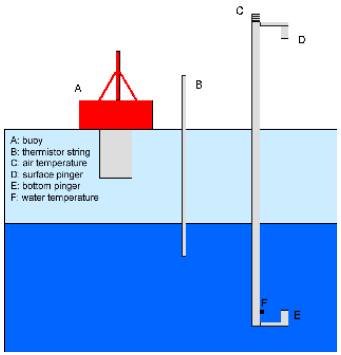
ICE-ARC: March 2016

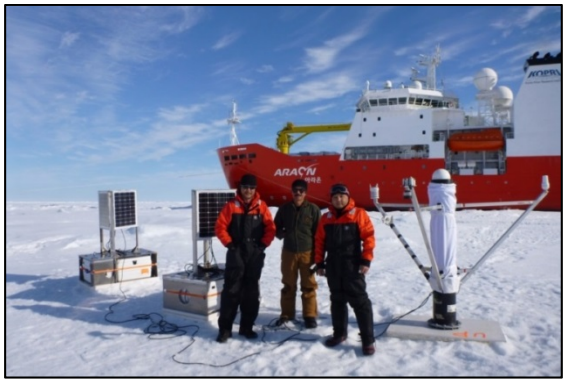
Flights in the Beaufort Sea to measure sea ice thickness and sea surface height to compare to buoy data (IMB and GPS) and validation of satellite measurements, sea ice thickness and sea surface height primarily from CryoSat-2, but also the freshwater component estimated by GRACE

Logistics:

- *BAS Twin Otter*
- *Base: Sachs Harbour, Banks Island, gateway to the Beaufort Gyre*
- *Instruments Lidar/ASIRAS radar*







OMG / ICE-ARC: April 2016

NASA's Oceans Melting Greenland field campaign is gathering data to clarify how warm ocean water is speeding the loss of Greenland's glaciers.

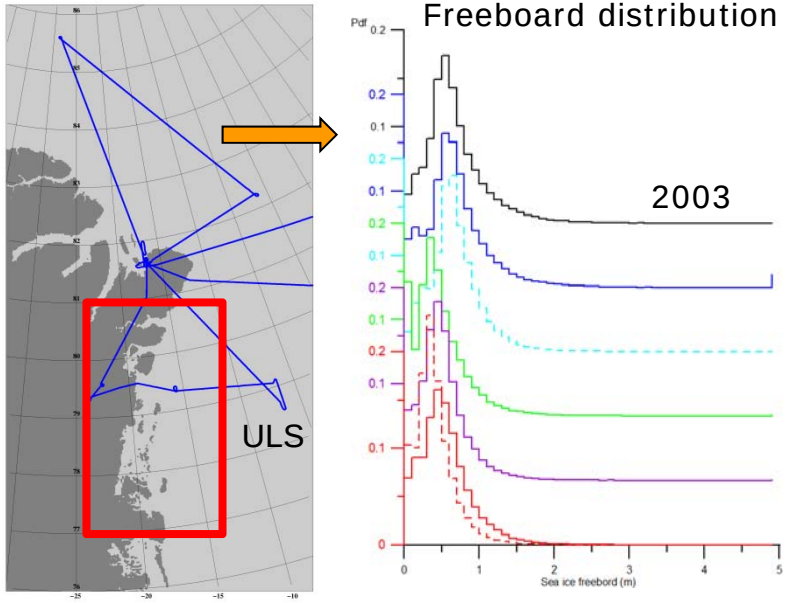
- New and critical observations of airborne marine gravity

ICE-ARC:

- Repeat flight north of Greenland
- Overflight of ULS in Fram Strait

Logistics:

- *Willum Research Station, St. Nord*
- *Twin Otter*
- *Gravimeter, lidar, …*



Gravity measurement/GPS

Absolute gravity measurements to measure changes in the gravity field from uplift and maintain the gravity network, as part of contract with Styrelsen for dataforsyning og effektivering/GST

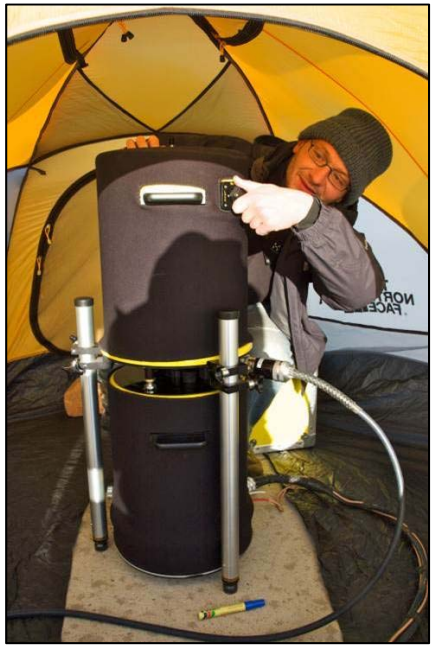
Logistics:

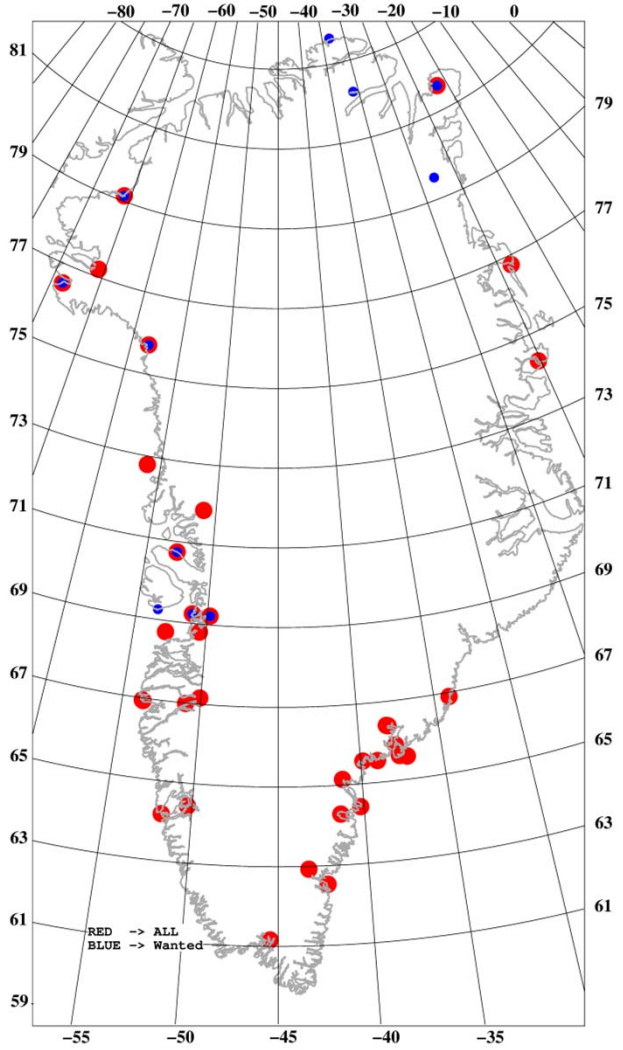
NE-Greenland, August 2016:

- *Willum Research Station, St. Nord*
- *Helicopter lifts*

W-Greenland, Summer 2016:

- *Helicopter lifts*



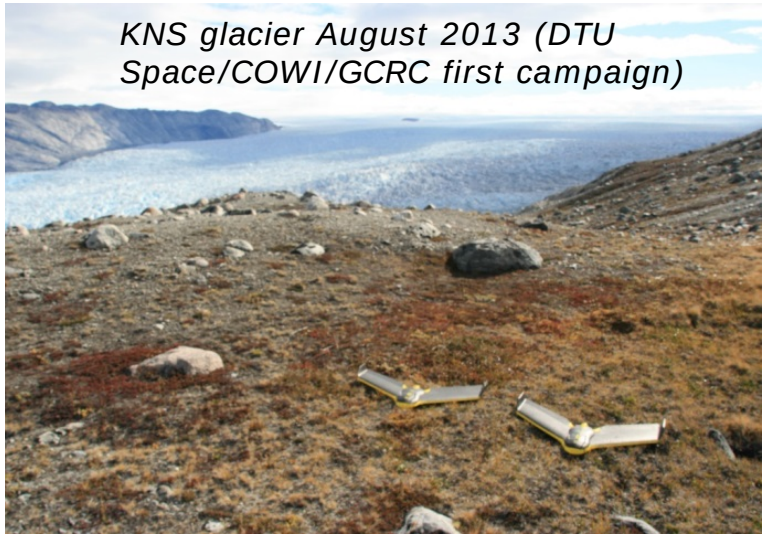


Sea ice mapping by drones - NE Greenland, August 2016

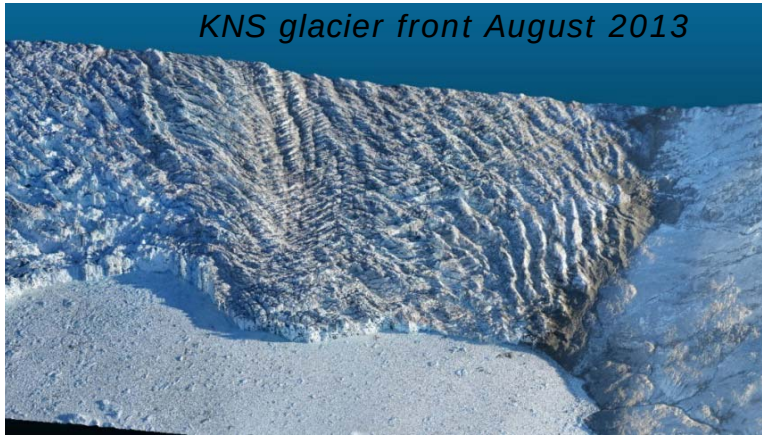
- Testing small and medium UAV's:
  - Sensor development, lidar/INS
  - Sea ice, glacier mapping, icebergs

Logistics:

- *Willum Research Station, St. Nord*
- *Helicopter lifts to Kap Morris Jessup*



Penguin B is capable of up to 26.5 hour endurance with the 4 kg payload

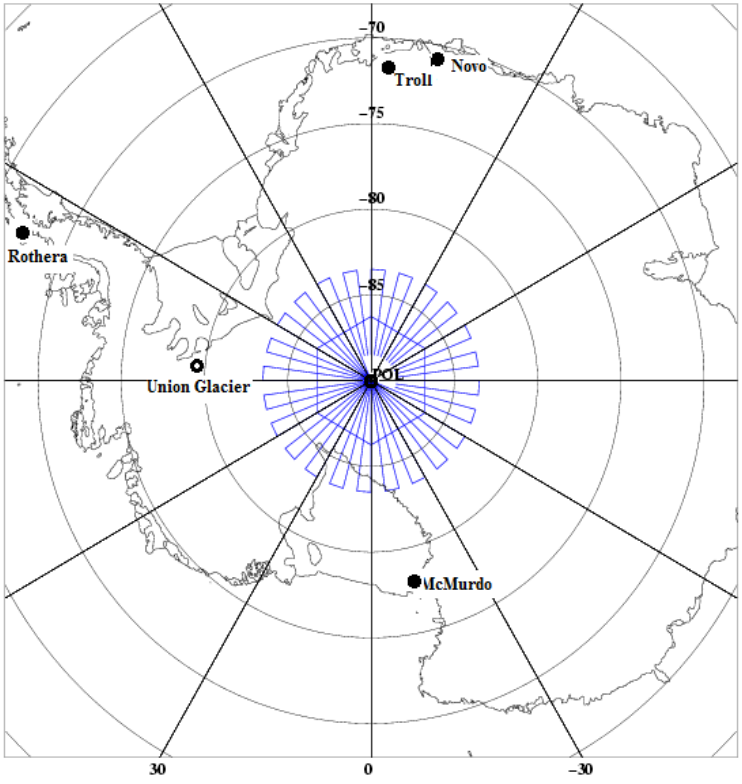


DTU Space Antarktis 2015/16 – PolarGap project

(*ESA GOCE+CryoSat validation – Grav, Mag, Radar, Lidar)*

Partners: DTU Space, Norsk Polarinstitut, British Antarctic Survey, Lamont/Columbia University (US)

2015/16



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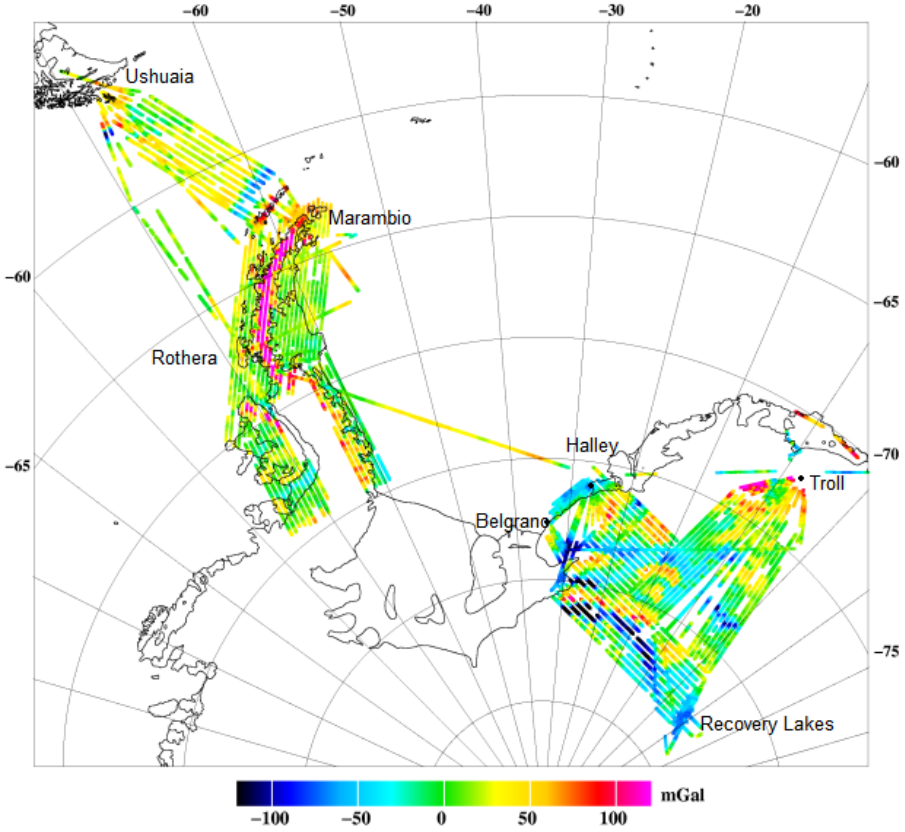
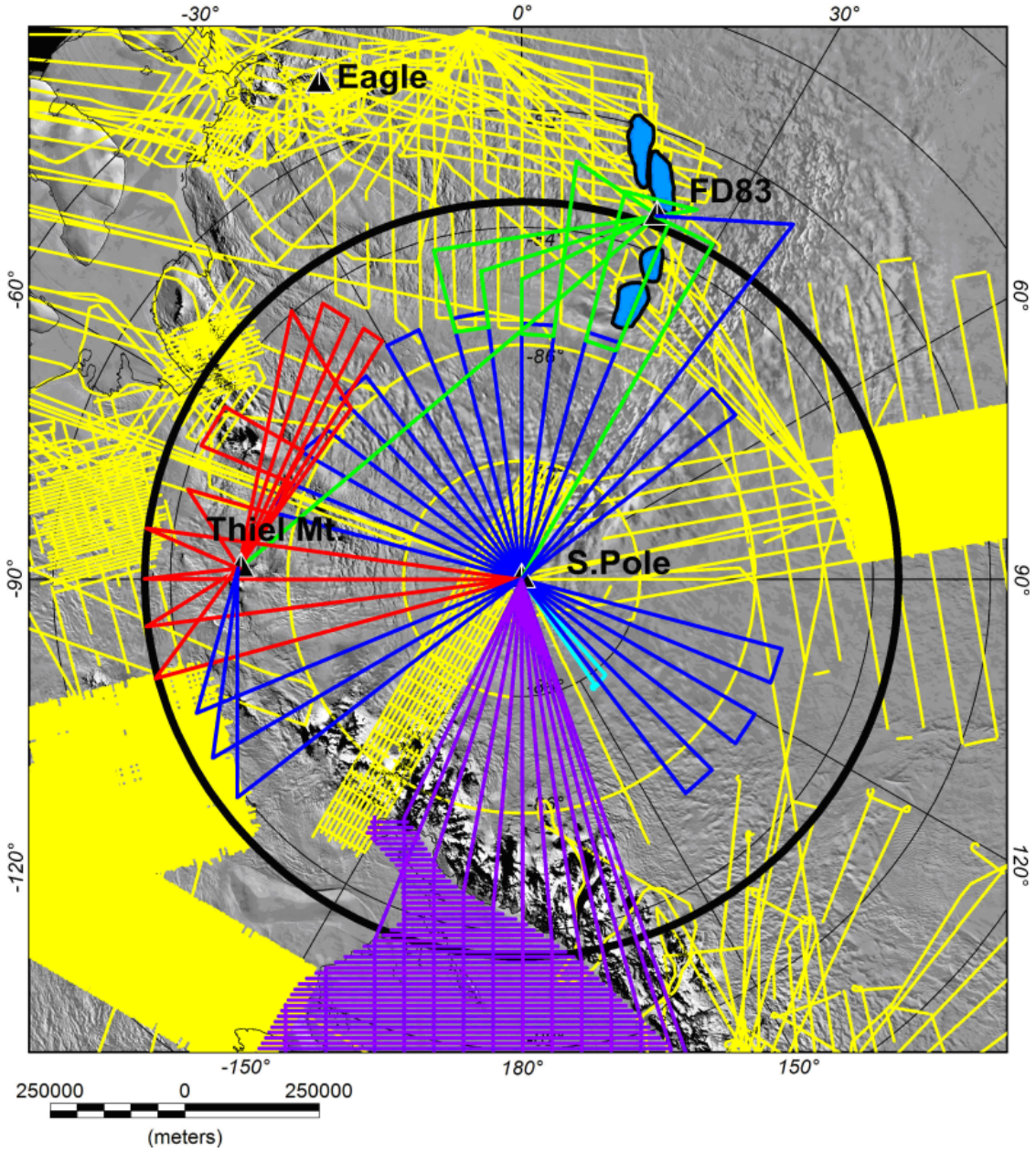


Fig. 1. Radial flight pattern – Twin-Otter



Current plan

.. use older data

and rectify by new

data …

⇒ Near complete

coverage

Field sites:

- *FD83 (ALCI)*
- *Thiel Mountains (ALE)*
- *South Pole Station (luxury)*

Astronomic fuel prices:

10-15 Euro/liter !!

(airdrop/tractor trains)

Camp logistics ..

FD83

Thiel Mts

FD-83

Fuel

drop