KLIMA-, ENERGI- OG BYGNINGSMINISTERIET

GEUS

PROMICE

Programme for Monitoring of the Greenland Ice Sheet

Programme for Monitoring of the Greenland Ice Sheet

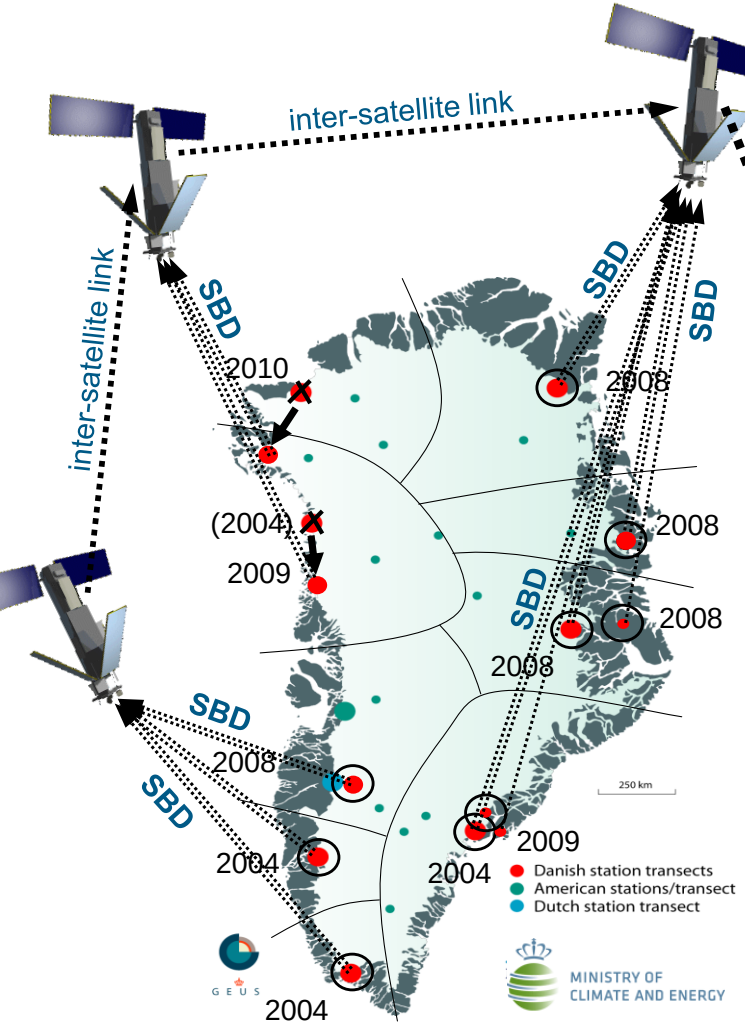
PROMICE goals

- **Provide a consistent long-term data set of observations from the Greenland ice sheet**
- **Calculate mass loss**
- **Understand the mass loss**

Established: *2007 – 2010*

Operational*: 2011 – onwards*

PROMICE as a component of GCW CryoNet



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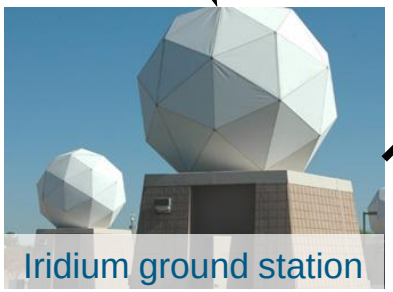


e-mail

DMI

WMO

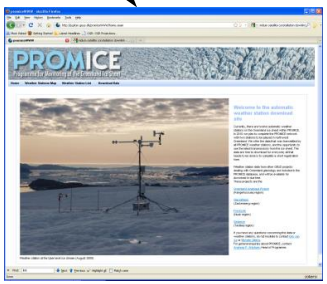
realtime

GEUS

PROMICE database

GCW Global Cryosphere Watch

timeseries, metadata



Free full online data access: www.promice.org

Obsevationally based melt product

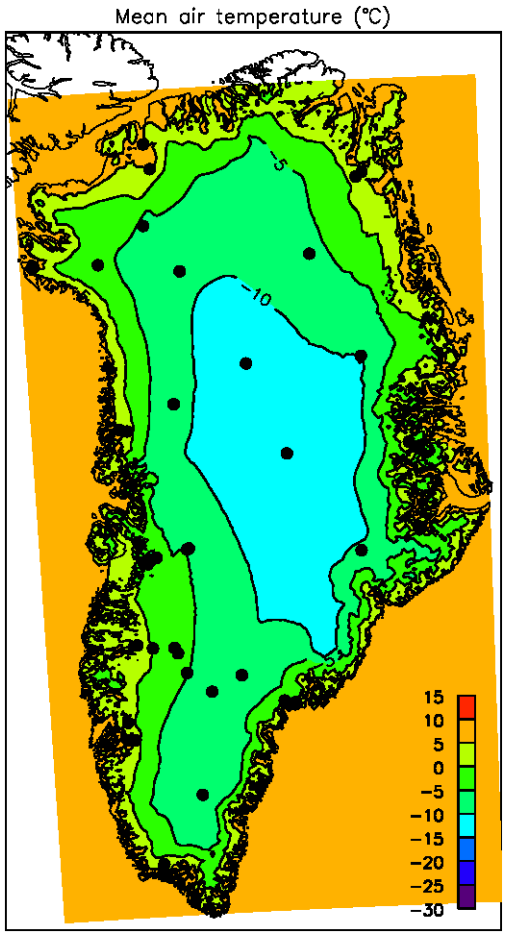


Figure 1: Average near-surface air temperature for days 178-182 in 2011.

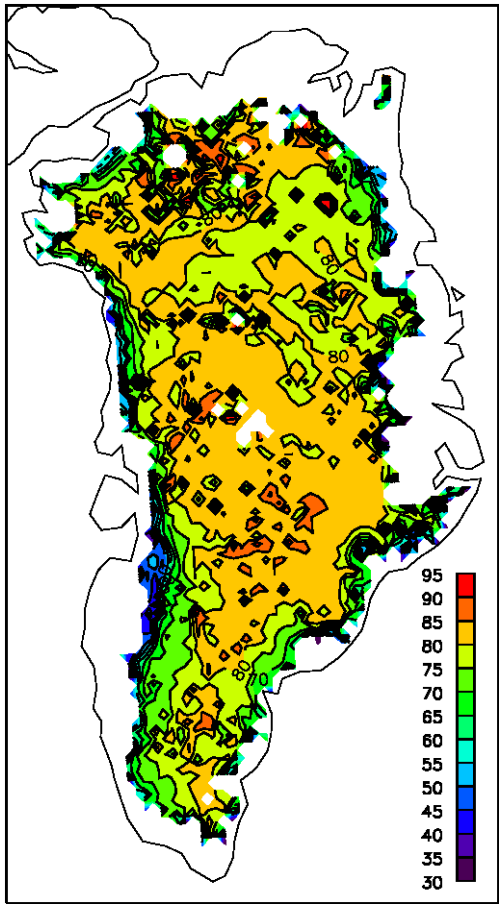


Figure 2. MODIS albedo

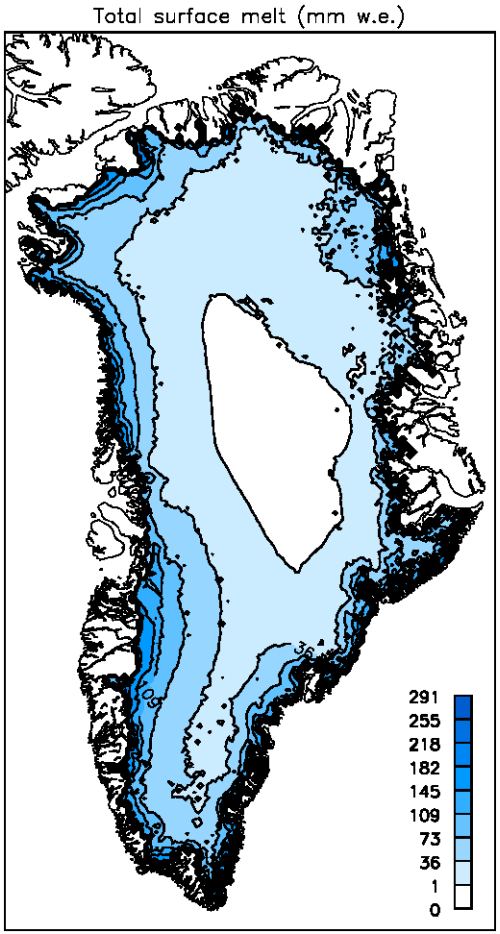


Figure 3. Surface meltwater locally generated on the Greenland ice sheet for days 178-182 in 2011.

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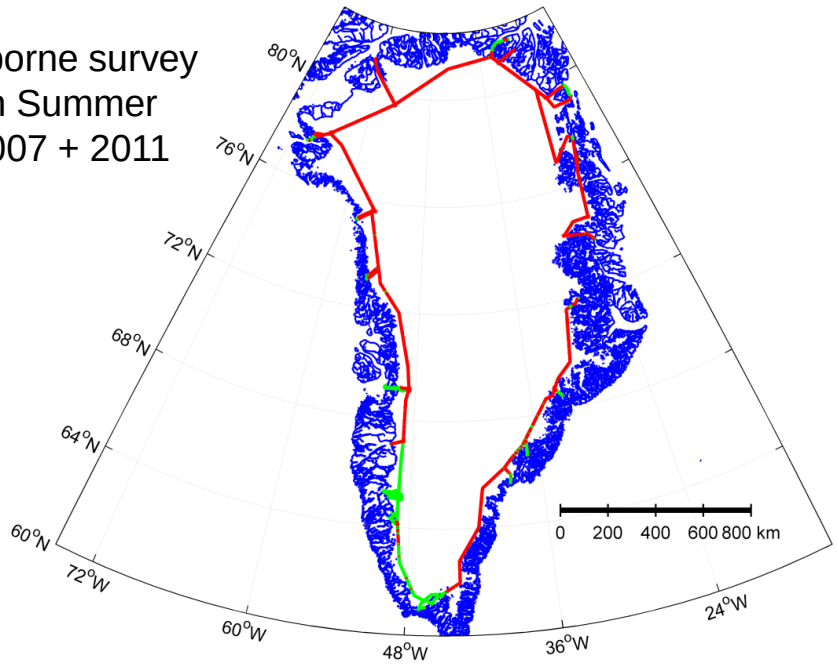
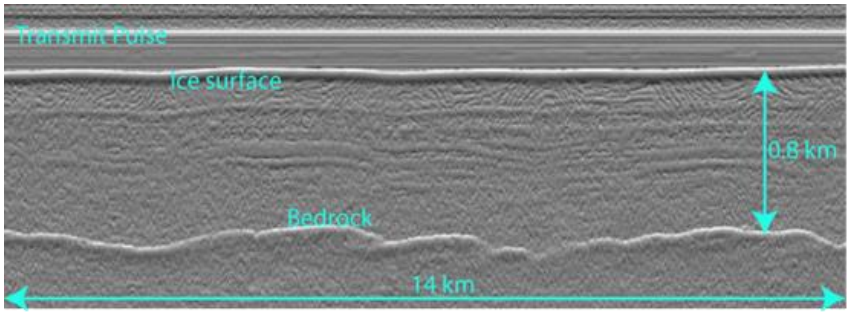
Airborne surveys of bedrock

Airborne survey in Summer 2007 + 2011





DTU | DTU Space
National Space Institute

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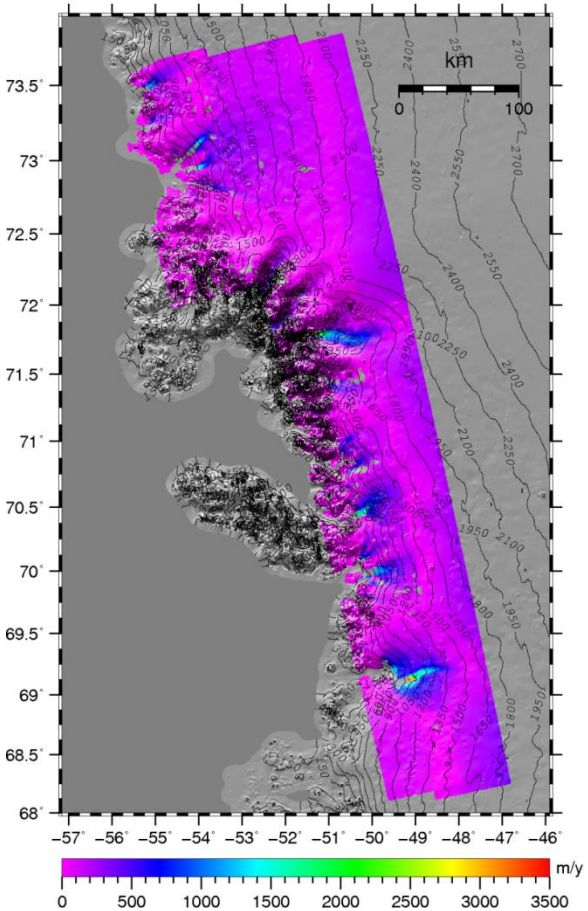
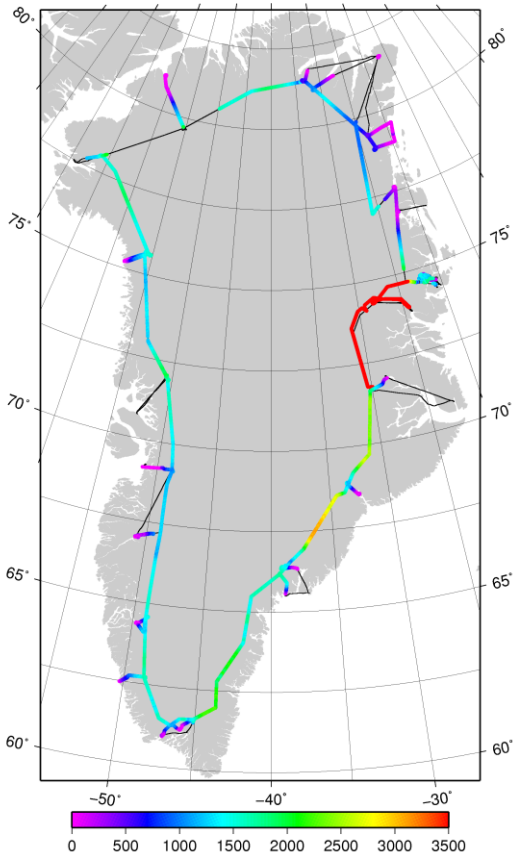
Dynamic mass loss





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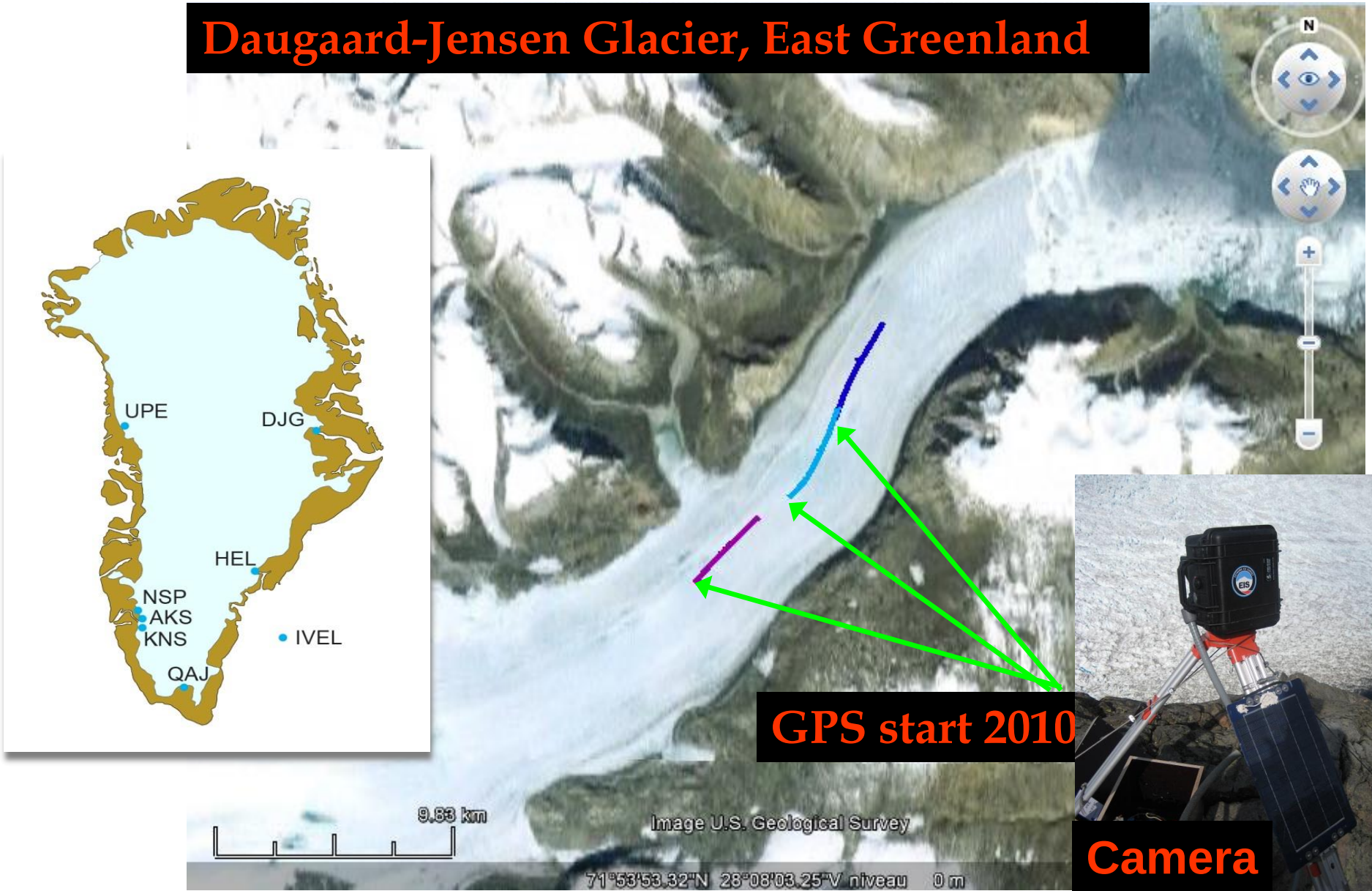
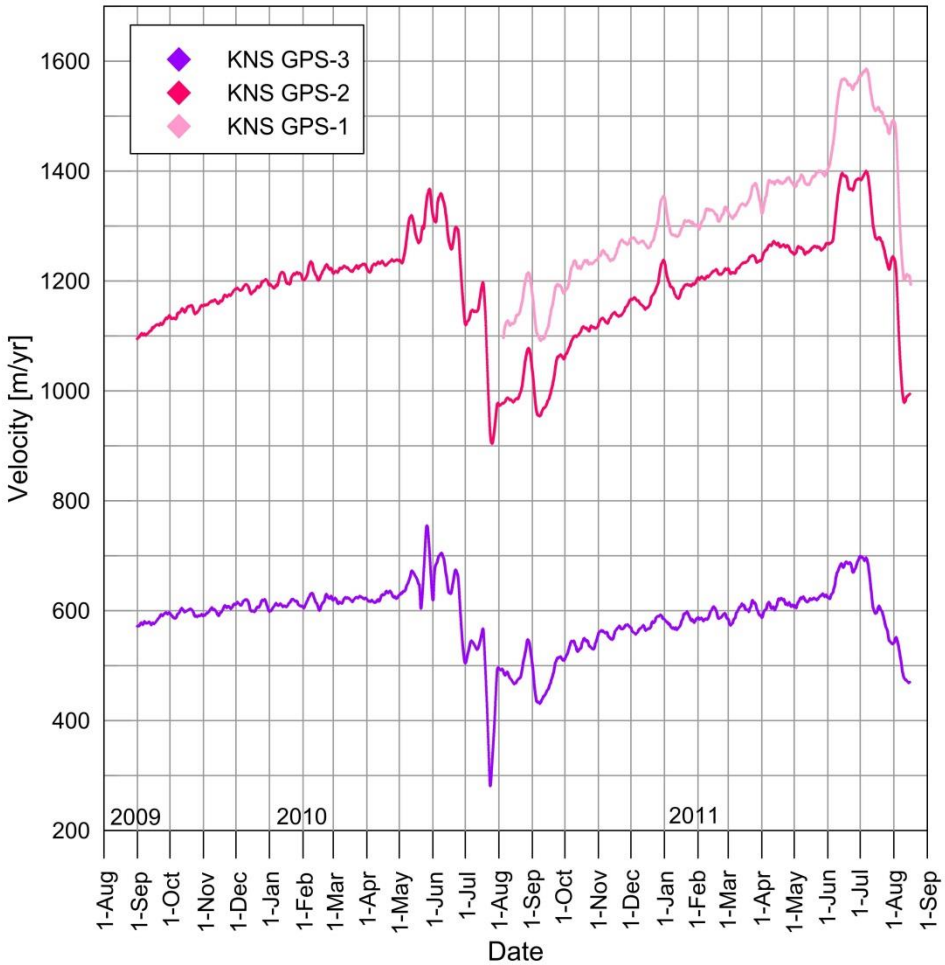
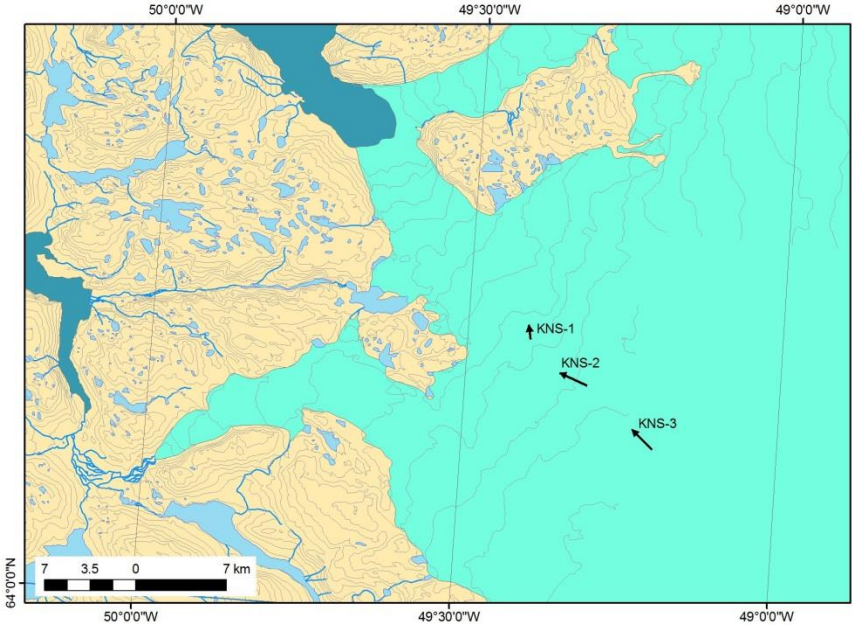
GPS-tracking of outlet glaciers



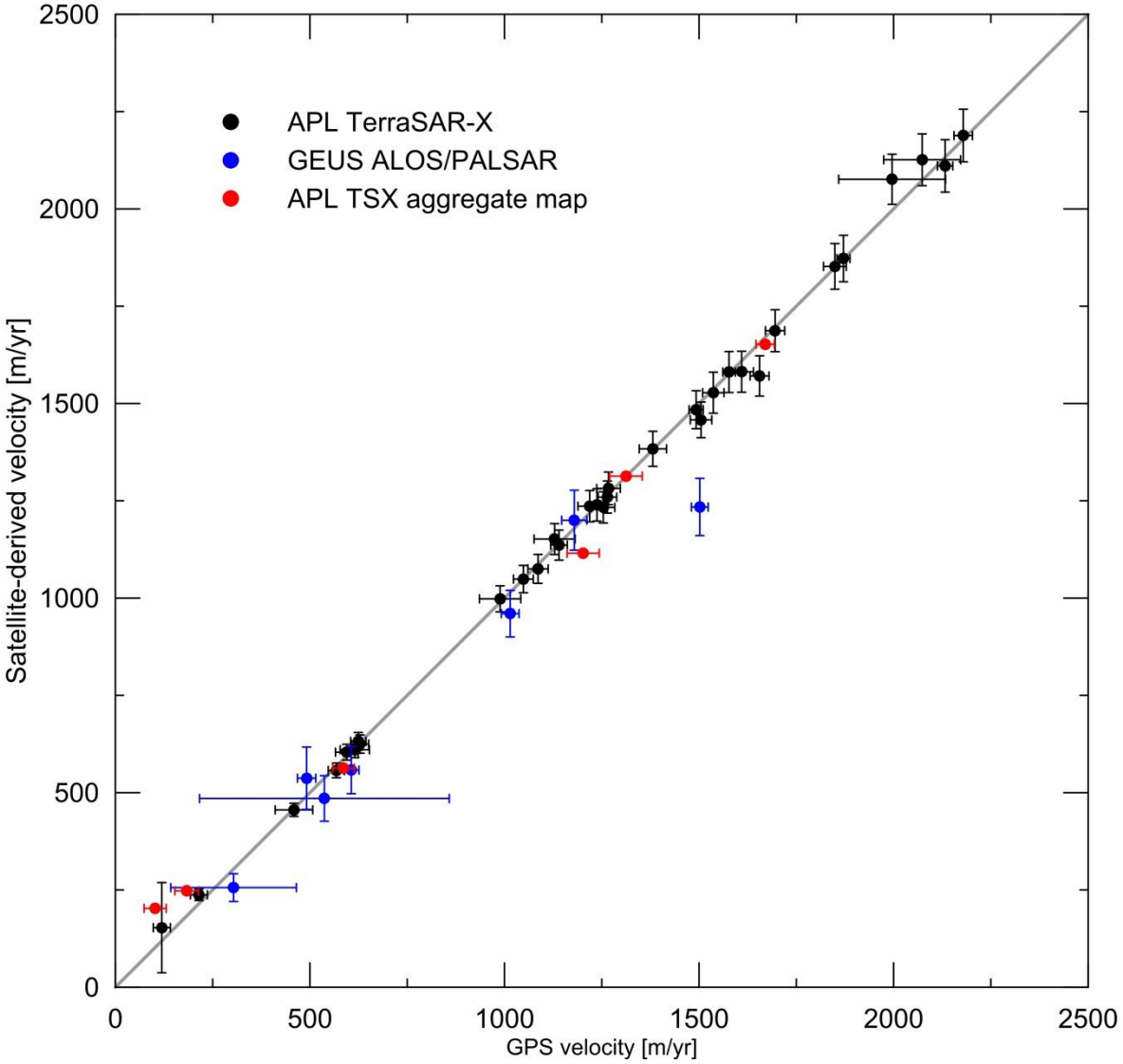
GPS-tracking of outlet glacier velocity



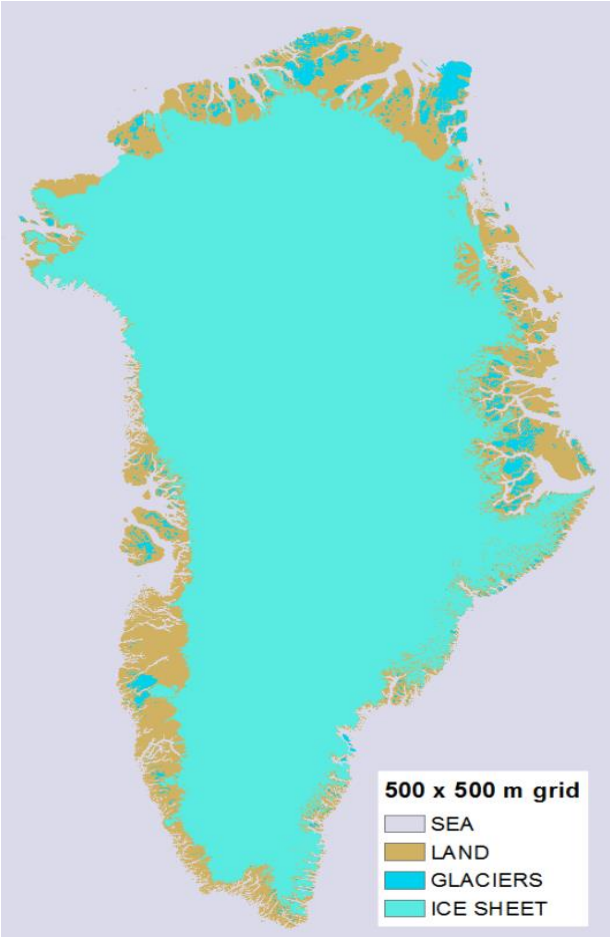


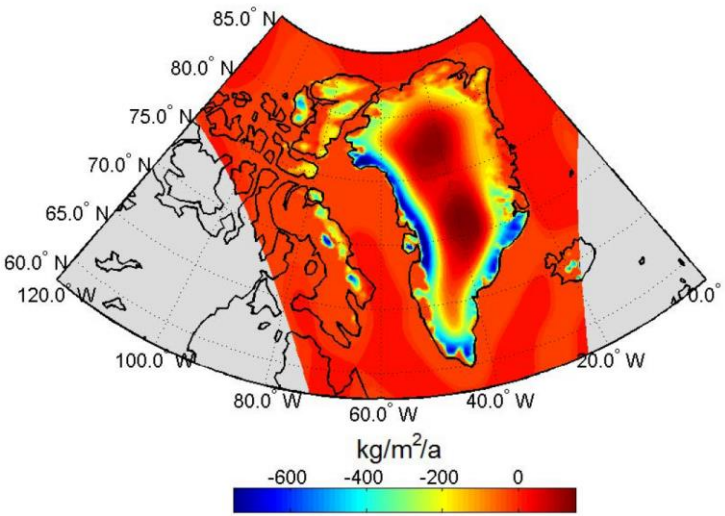
Kangiata Nunata Sermia (KNS)

Satellite ice velocities validated with GPS



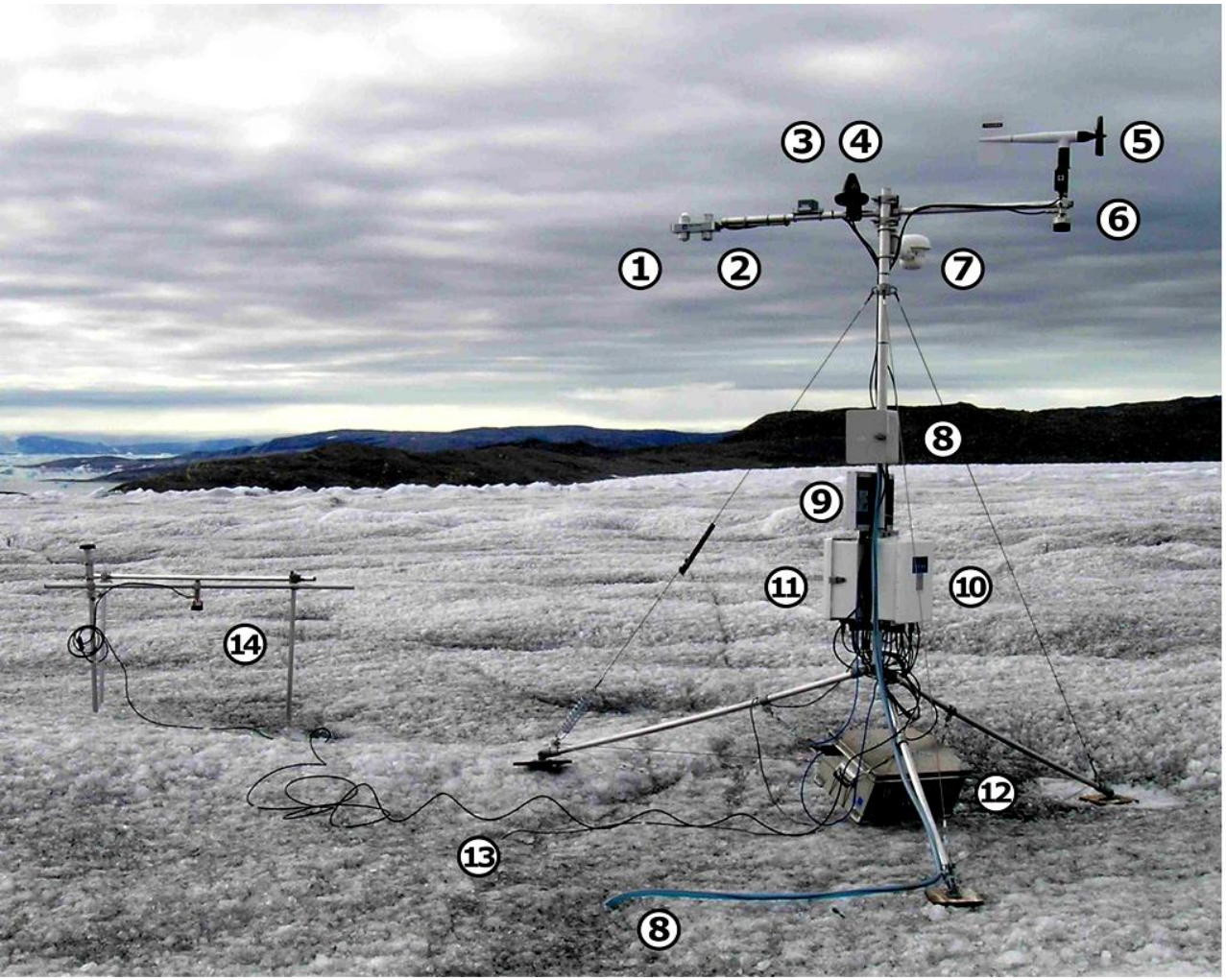
PROMICE Mapping of the ice margin and local glaciers





Inverted rate of mass change constrained to the irregularly shaped ice-covered areas in Greenland (from the PROMICE glaciers map) and the Canadian High Arctic (from the Randolph Glacier Inventory). Color scale saturates at −750 and +150 kg m−2 a−1. Grey shading denotes areas beyond the inversion domain. (Colgan et al., Cryosphere, 2013)

(Citterio and Ahlstrøm, Cryosphere, 2013)



① Shortwave radiation (in/out)

② Longwave radiation (in/out)

③ Station tilt

④ Satellite transmitter

⑤ Wind speed & direction

⑥ Snow height (sonar)

⑦ Air temp. & relative humidity

⑧ Ablation (pressure sensor)

⑨ Solar panel

⑩ Data logger enclosure

⑪ GPS & multiplexer enclosure

⑫ Battery box

⑬ Ice temp. 0–10 m (thermistors)

⑭ Ablation (sonar & stakes)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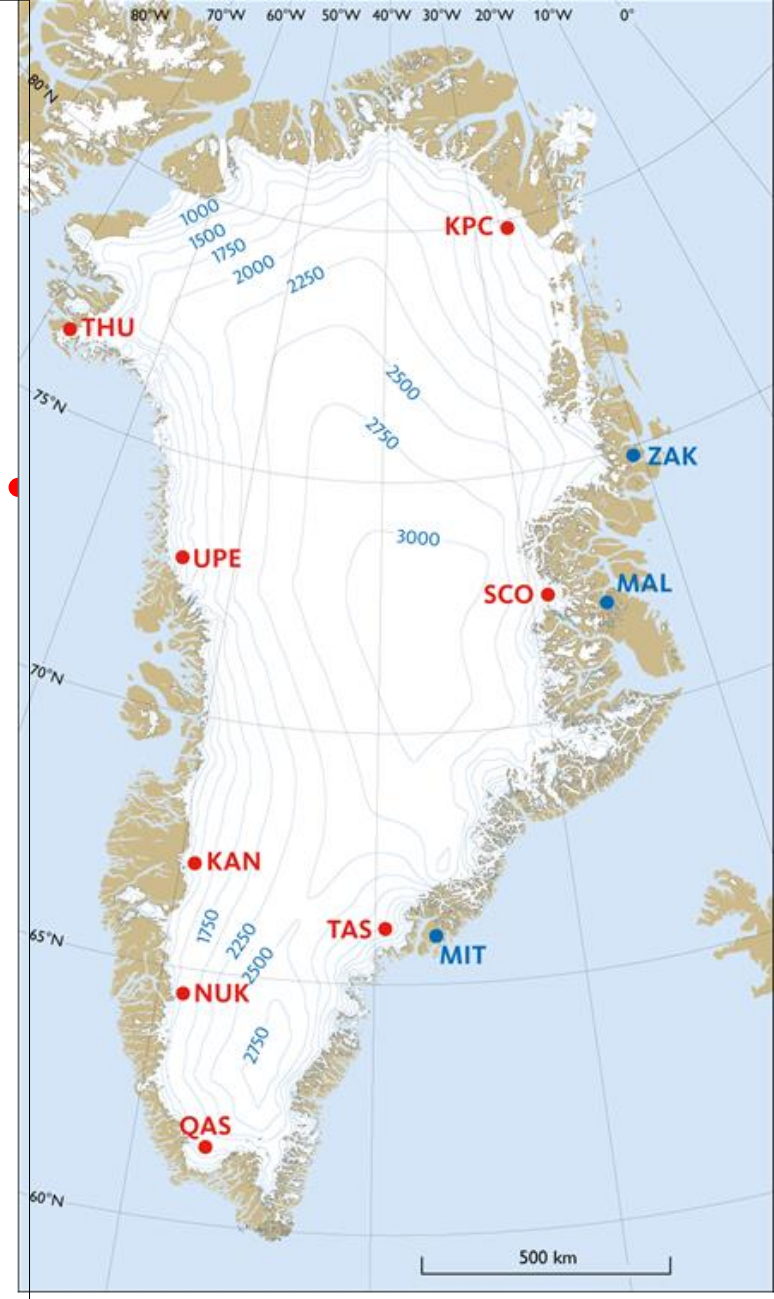
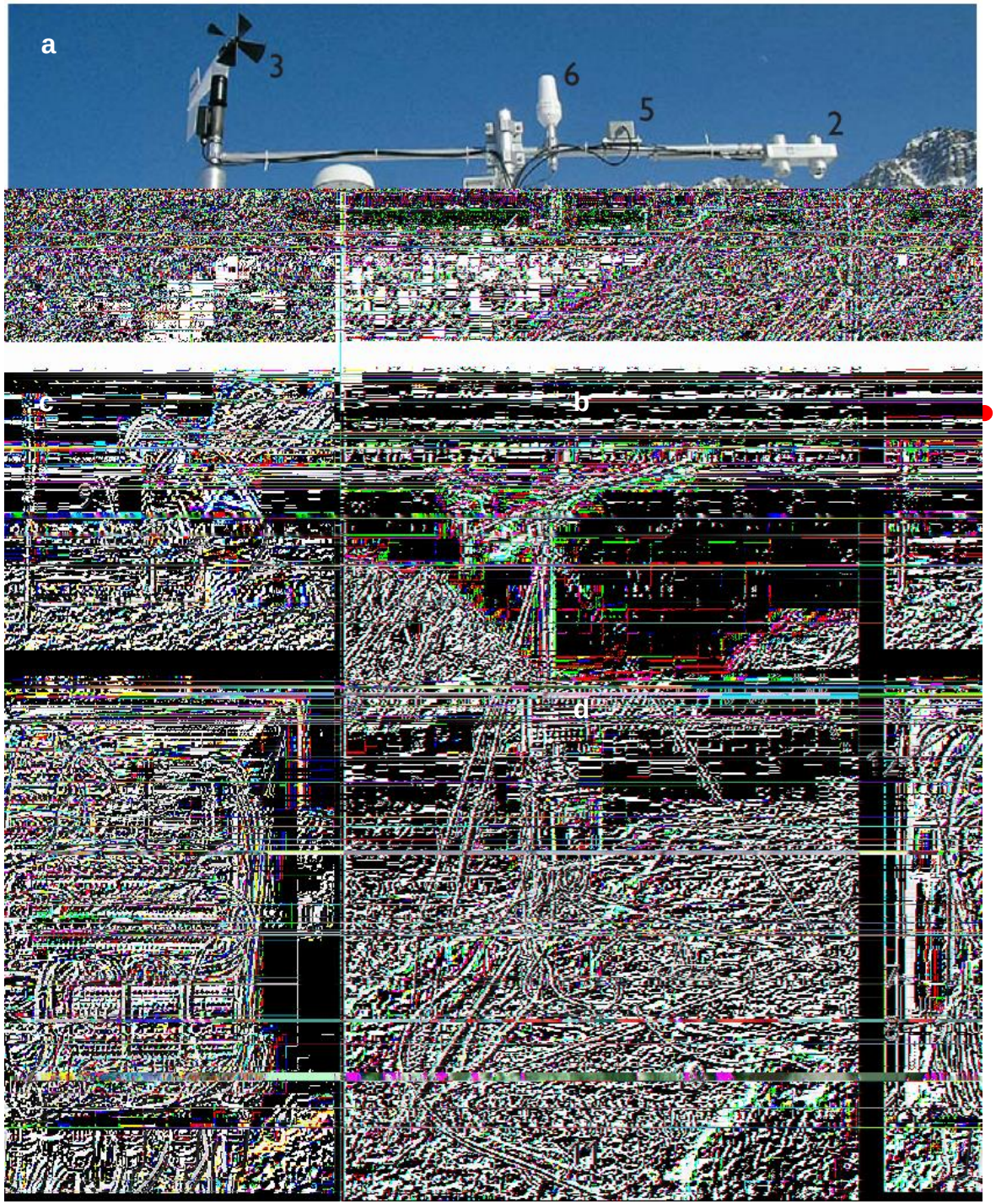
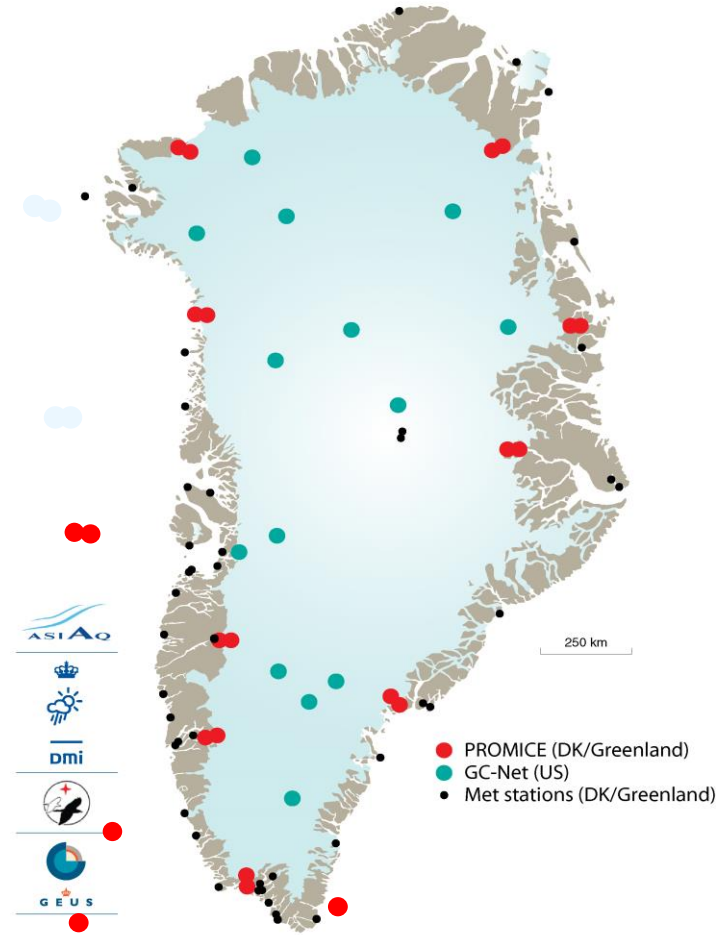
G. G. U.



GEUS glaciological AWS

mcit@geus.dk





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