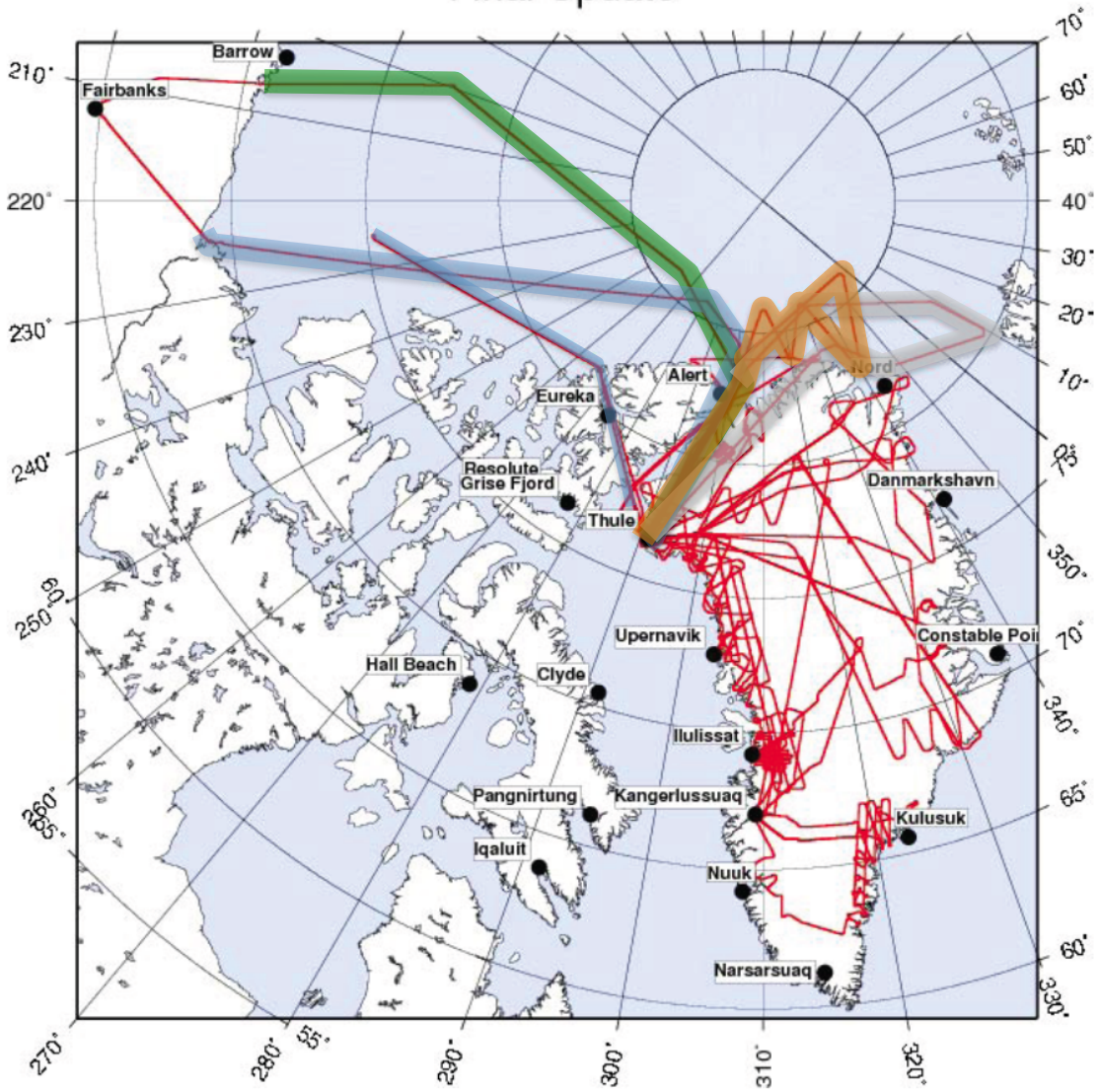
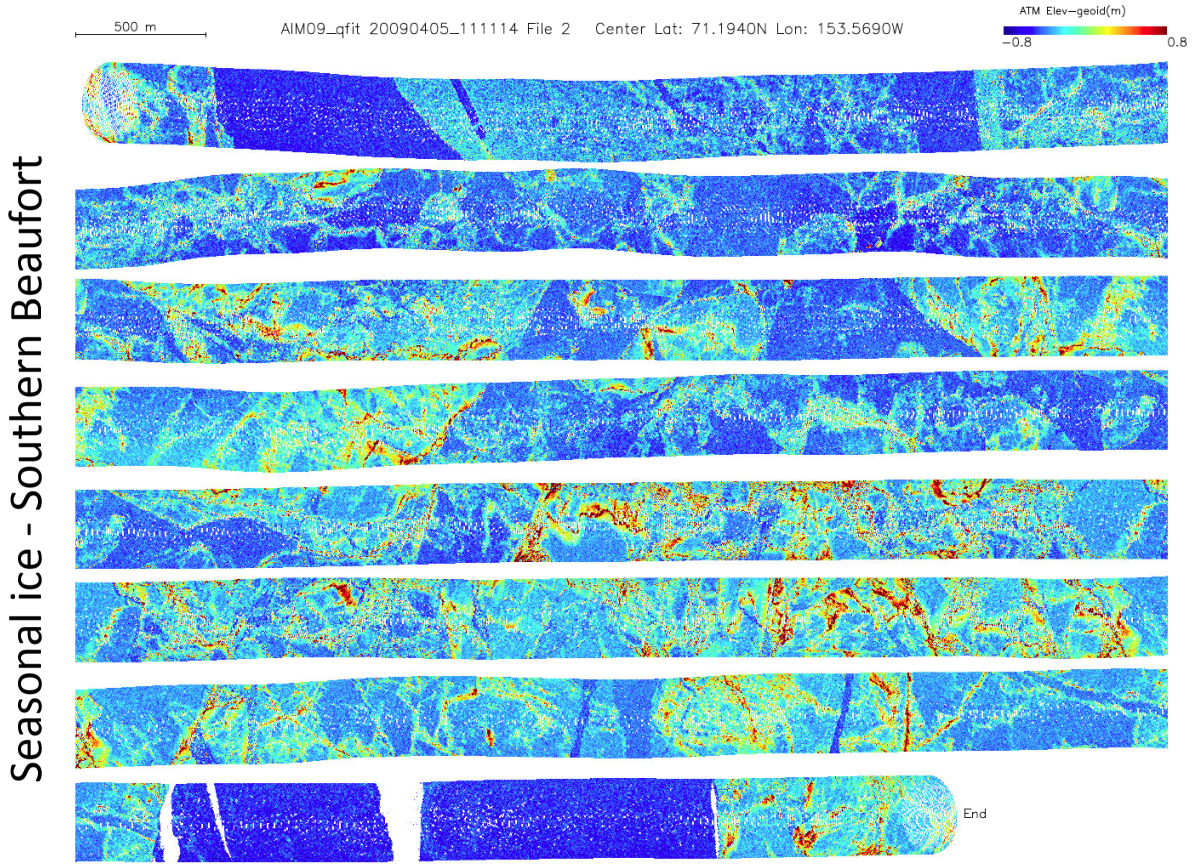
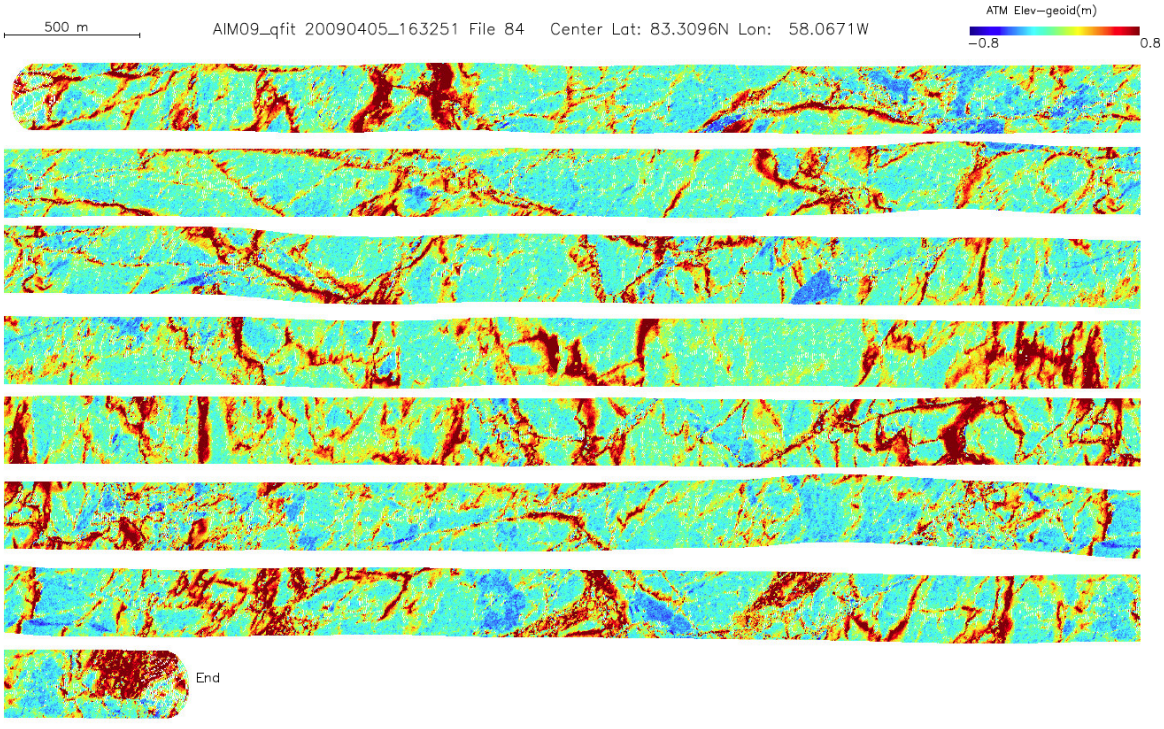
2009 Spring Arctic Missions Flown

Final Update



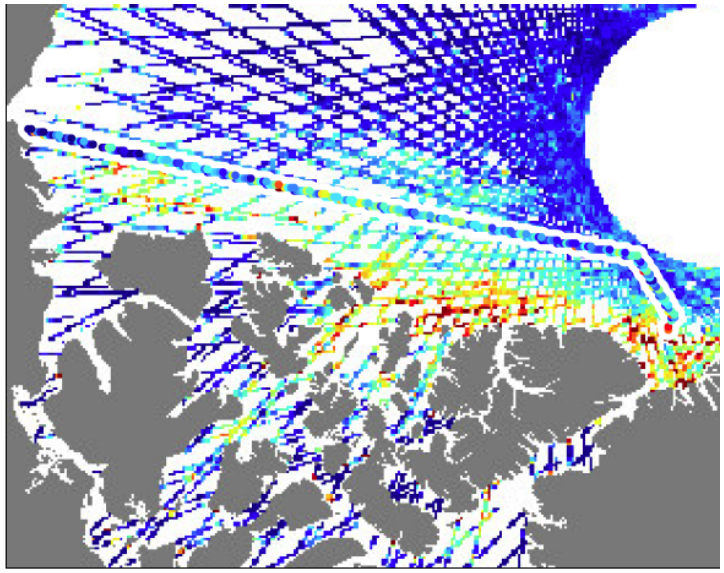


Seasonal ice - Southern Beaufort

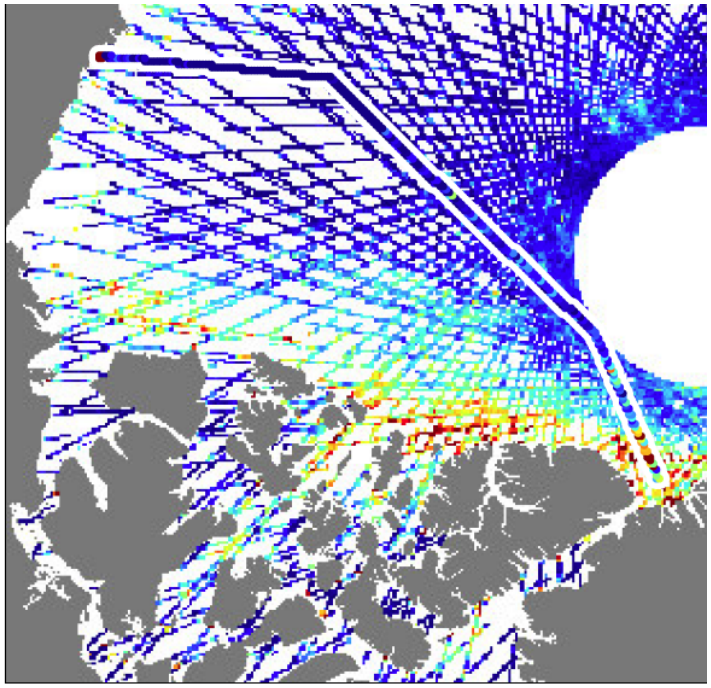


Thicker ice - Greenland coast

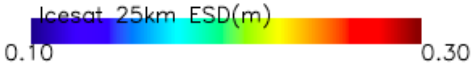
Comparison of surface elevation distribution: ICESat vs ATM



April 02



April 05

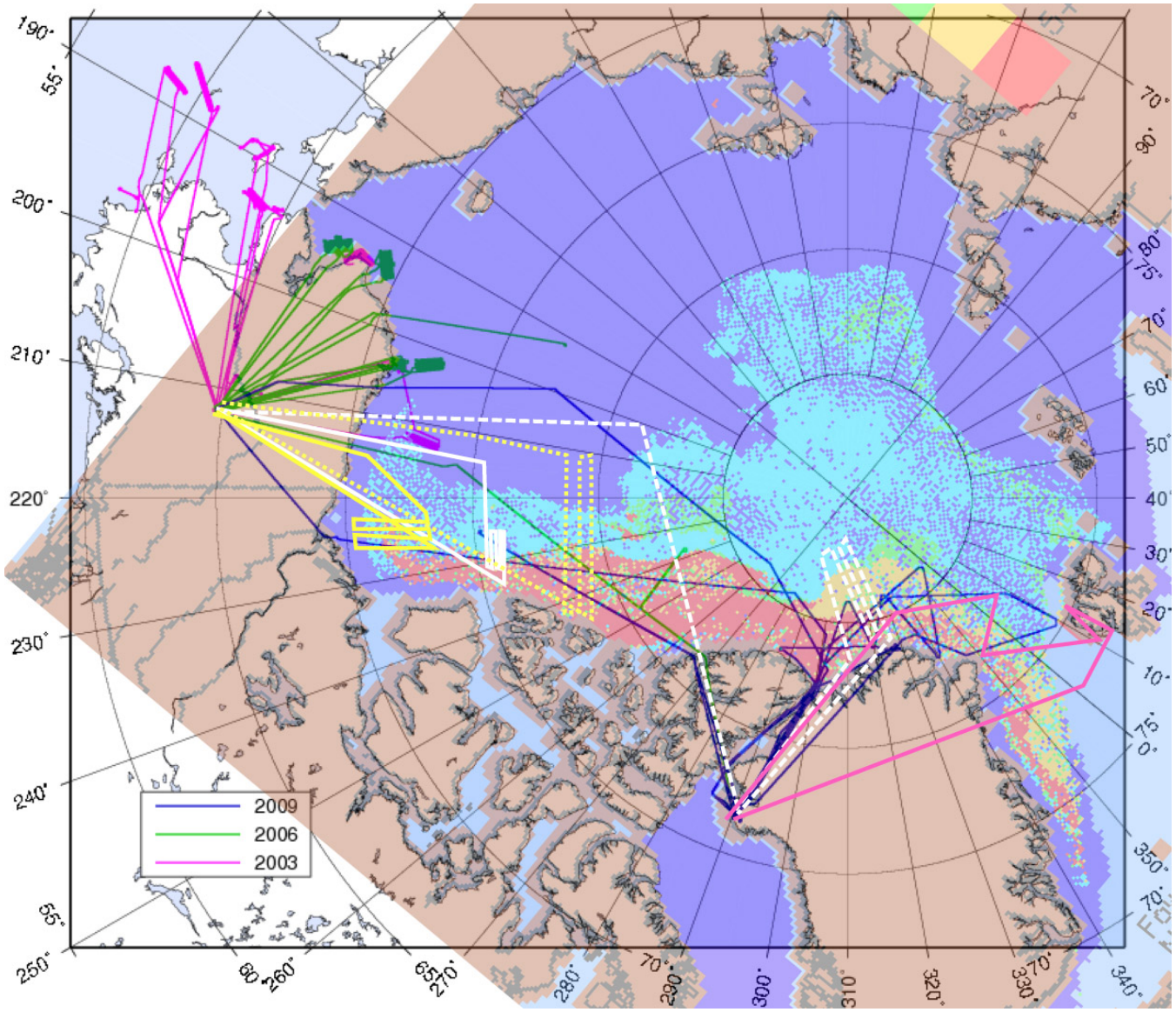


Flight Lines – Priorities
Measurements: Freeboard and snow depth

- (2 flights) Fairbanks and back **(Exact Repeat)**
  - Survey of changes in the old and seasonal ice in the Arctic Ocean, also Nares Strait and ice arch(es)
  - Snow depth distribution along these lines; contrast snow depth along track
- (1 flight) Fram Strait **(Exact Repeat)**
  - Fram Strait ice freeboard and thickness, also snow depth
  - Survey thick ice north of Greenland on the way to Fram Strait
- (1 flight) north of Greenland towards the pole **(Exact Repeat)**
  - Zig-zag pattern to sample thick ice and snow cover
- (1 flight) north of Ellesmere Island **(New)**
  - Zig-zag pattern to sample thick ice and snow cover
- (1 flight) North Water and Baffin Bay (New)
  - Fly on return flight
  - Thick ice off east coast of Baffin Island
  - Topography of ice arches

- NOAA flight lines (McAdoo)

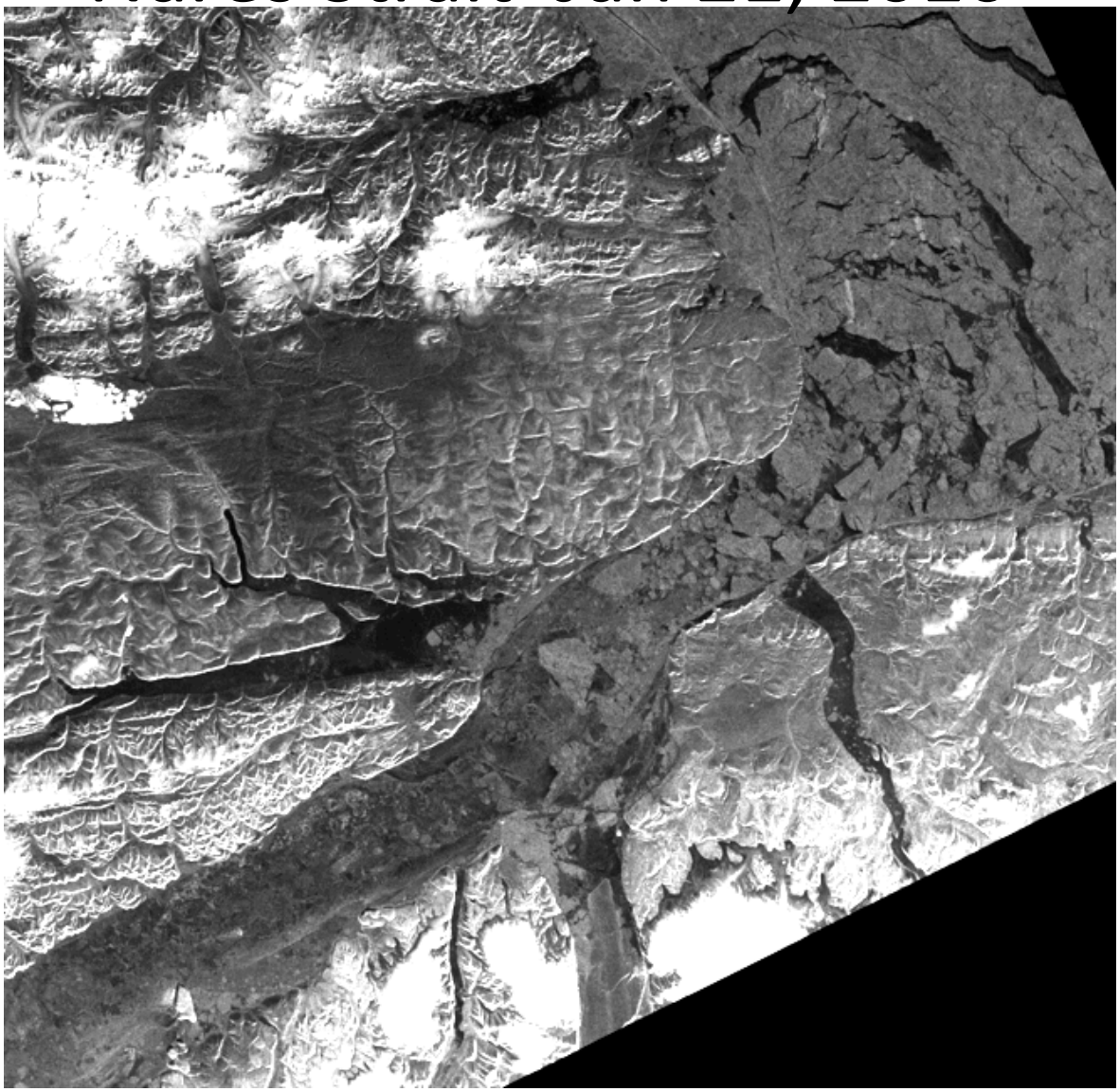
Goal: overfly transitions between ice of different ages and thicknesses, with abbreviated "mapping" transects included, to assess thickness and roughness in relation to presumed age (Fram Strait track also covers Svalbard glaciers as an option).



Ice age for Aug. 2009 superimposed on P-3 flight track map.

Proposed tracks (yellow solid, yellow dashed, white solid, white dashed, fuschia (Fram St.) overlaid on 2003, 2006 and 2009 Flight track map.

Nares Strait Jan 21, 2010



Issues and Concerns

- Snow depth data acquisition – an important component of science program
  - Status of data processing
  - Has there been improvements in snow radar operations?
  - Co-registration of snow radar with ATM swath?
- LVIS lidar
  - Status of data processing
- ATM lidar/camera
  - Co-registration of aerial pictures with ATM track
  - Use to identify areas of open leads/thin ice
  - Areas of low return
- Availability of metric camera
  - Co-registration with ATM/LVIS track is important
- CryoSat-2?