

Science Flight Report

Operation IceBridge Arctic 2010



Flight: 11
Mission: North-West Coastal 01

Flight Report Summary

Aircraft	P-3B (N426NA)
Flight Number	902
Flight Request	10P002, 10P007
Date	Friday, May 21, 2010 (Z)
Purpose of Flight	Operation IceBridge Mission North-West Coastal 02
Take off time	11:00 Zulu from Thule Air Base (BGTL)
Landing time	17:12 Zulu at Thule Air Base (BGTL)
Flight Hours	6.4
Aircraft Status	Airworthy.
Sensor Status	All installed sensors operational, except ATM T3.
Significant Issues	None.
Accomplishments	<ul style="list-style-type: none"> • Low-altitude survey (1,500 ft AGL) of Nansen Glacier and Sverdrup Glacier along the Baffin Bay segment of the northwest Greenland coast and 4 coast-parallel lines spaced 10 km apart. • ATM, DMS, MCoRDS, accumulation, Ku-band and snow radars were all operated on the survey lines. • Gravimeter was in operation throughout the entire flight. • Completed all planned survey lines. • Conducted a ramp pass at 1600 ft AGL over Thule Air Base for ATM instrument calibration.
Geographic Keywords	Nansen Glacier, Sverdrup Glacier, Baffin Bay, Northwest Greenland, Thule
ICESat Tracks	None
Repeat Mission	None

Science Data Report Summary

Instrument	Instrument Operational			Data Volume	Instrument Issues
	Survey Area	Entire Flight	High-alt. Transit		
ATM	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	54 GB	T2 only
MCoRDS	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1.5 TB	None
Snow Radar	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	325 GB	None
Ku-band Radar	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	325 GB	None
Accumulation Radar	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	250 GB	None
DMS	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	99 GB	Camera swap.
Gravimeter	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	80 MB	None

Mission Report (Michael Studinger, Mission Scientist)

Today's mission is a new design to map the near-coastal area of the upper Baffin Bay coast with a combination of all low-altitude sensors. The coast-parallel lines of today's mission NW Coastal 02 are separated by 10 km. Yesterday's mission, NW Coastal 01, has lines spaced 10 km apart that are located in between today's flight lines resulting in a 5 km line spacing for the combined missions. On the inland side, the survey area connects to the 10 km lines of the LVIS Northwest mission that we have flown on March 29, 2010 with the LVIS instrument on the DC-8 (Science Flight F05, Flight Number 100207, Flight Request Number 108013). We also add new profiles along the center flowlines of the Nansen and Sverdrup Glaciers. Some of the coast-parallel flight lines had to be shortened near Thule Air Base because of the airspace that is closed off around the BMEWS radar site.

The weather situation this morning over the NW Coastal survey area was similar as yesterday, with more clouds. We encountered clouds at the southern end of the two eastern lines and had to climb above the cloud layer, losing about 10% of the surface returns for the laser and the near surface radar systems.

Individual instrument reports from experimenters on board the aircraft:

ATM: T2 worked well throughout the entire flight and only lost about 10% of surface returns due to clouds on the southern part of the survey. The T3 laser was not in operation on today's flight.

MCoRDS: The MCoRDS system worked well and collected 1.5 TB of data.

Snow and Ku-band radar: Both systems worked well and collected each about 325 GB of data. Lost returns during high elevation portion due to cloud layer.

Accumulation Radar: The system worked well and collected 250 GB of data. Lost returns during high elevation portion due to cloud layer.

DMS: DMS worked well and collected 99 GB of data. A lens error required to swap cameras over the Sverdrup glacier resulting in a 29 minute long data gap.

Gravimeter: System worked normally. No problems.

NW Coastal 02

6.6 hrs at 250 knots groundspeed

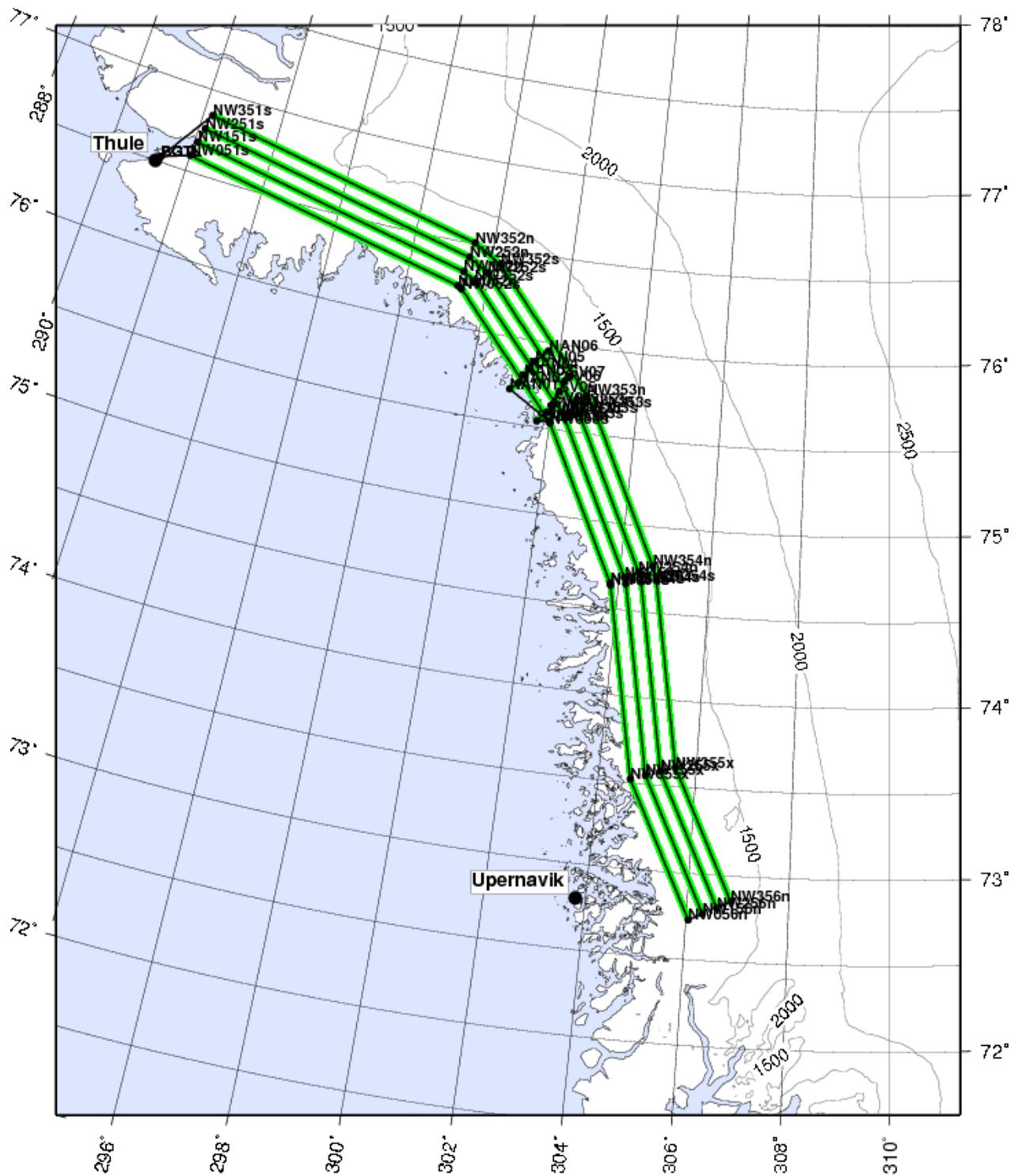


Figure 1: Waypoints and survey area of Flight 11 from John Sonntag.