

Science Flight Report

Operation IceBridge Arctic 2010



Flight: 09
Mission: North-West Glaciers

Flight Report Summary

Aircraft	P-3B (N426NA)
Flight Number	899
Flight Request	10P002, 10P007
Date	Wednesday, May 19, 2010 (Z)
Purpose of Flight	Operation IceBridge Mission North-West Glaciers
Take off time	11:00 Zulu from Thule Air Base (BGTL)
Landing time	17:56 Zulu at Thule Air Base (BGTL)
Flight Hours	7.2
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 12 outlet glaciers along the Baffin Bay portion of the northwest Greenland coast. • Survey along the repeat line from Camp Century to Thule Air Base. • ATM, DMS, MCoRDS, accumulation, Ku-band and snow radar were operated on the survey lines. • Gravimeter was in operation throughout the entire flight. • Completed all planned survey lines. • Collected data for MCoRDS instrument calibration at 4500 ft AGL over sea ice and open water. • Conducted a ramp pass at 1400 ft AGL over Thule Air Base for ATM instrument calibration.
Geographic Keywords	Petowik Bræ, De Dodes Fjord, Igdlarssugssuak/Sidebriksfjord Glacier, Edvard Glacier, Rink Isbræ, Kong Oscar Glacier, Alison Glacier, Tasiusaq Glacier, Upernavik Glacier (North), Upernavik Glacier (Center), Ingia Glacier, Umiamakko Glacier, Camp Century, Greenland, Thule
ICESat Tracks	None
Repeat Mission	North-West Glaciers, Camp Century

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"/>	64 GB	T2 only
MCoRDS	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2.2 TB	None
Snow Radar	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	290 GB	None
Ku-band Radar	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	290 GB	None
Accumulation Radar	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	300 GB	None
DMS	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	126 GB	None
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 repeat of a 2009 IceBridge mission that focused on the Baffin Bay coastal region. After re-occupying the line from Thule Air Base to Camp Century we continued on and surveyed 12 outlet glaciers: Petowik Brae, De Dodes Fjord, Igdlarssugssuak/Sidebriksfjord Glacier, Edvard Glacier, Rink Isbræ, Kong Oscar Glacier, Alison Glacier, Tasiusaq Glacier, Upernavik Glacier (North), Upernavik Glacier (Center), Ingia Glacier, and Umiamak Glacier. For most of the outlet glaciers, this mission is the first LiDAR repeat survey, and hence the first chance to measure high-precision surface elevation changes. We also flew a long-established zig-zag pattern of ATM dh/dt lines which is targeted at monitoring the inland spreading of the thinning in the area.

We also collected data at 4500 ft AGL over sea ice and open water for MCoRDS instrument calibration.

Excellent weather conditions along the entire route allowed us to complete all planned survey lines. The light ground fog that was visible on the satellite image and in the forecast stayed over the Baffin Bay area and posed no problem for our mission as expected.

Individual instrument reports from experimenters on board the aircraft:

ATM: T2 worked well throughout the entire flight. The T3 laser was not in operation on today's flight.

MCoRDS: The MCoRDS system worked well and collected 2.2 TB of data.

Snow and Ku-band radar: Both systems worked well and collected each about 290 GB of data.

Accumulation Radar: The system worked well and collected 300 GB of data.

DMS: DMS worked well and collected 126 GB of data.

Gravimeter: System worked normally. No problems.

NW Glaciers

7.9 hrs at 250 knots groundspeed

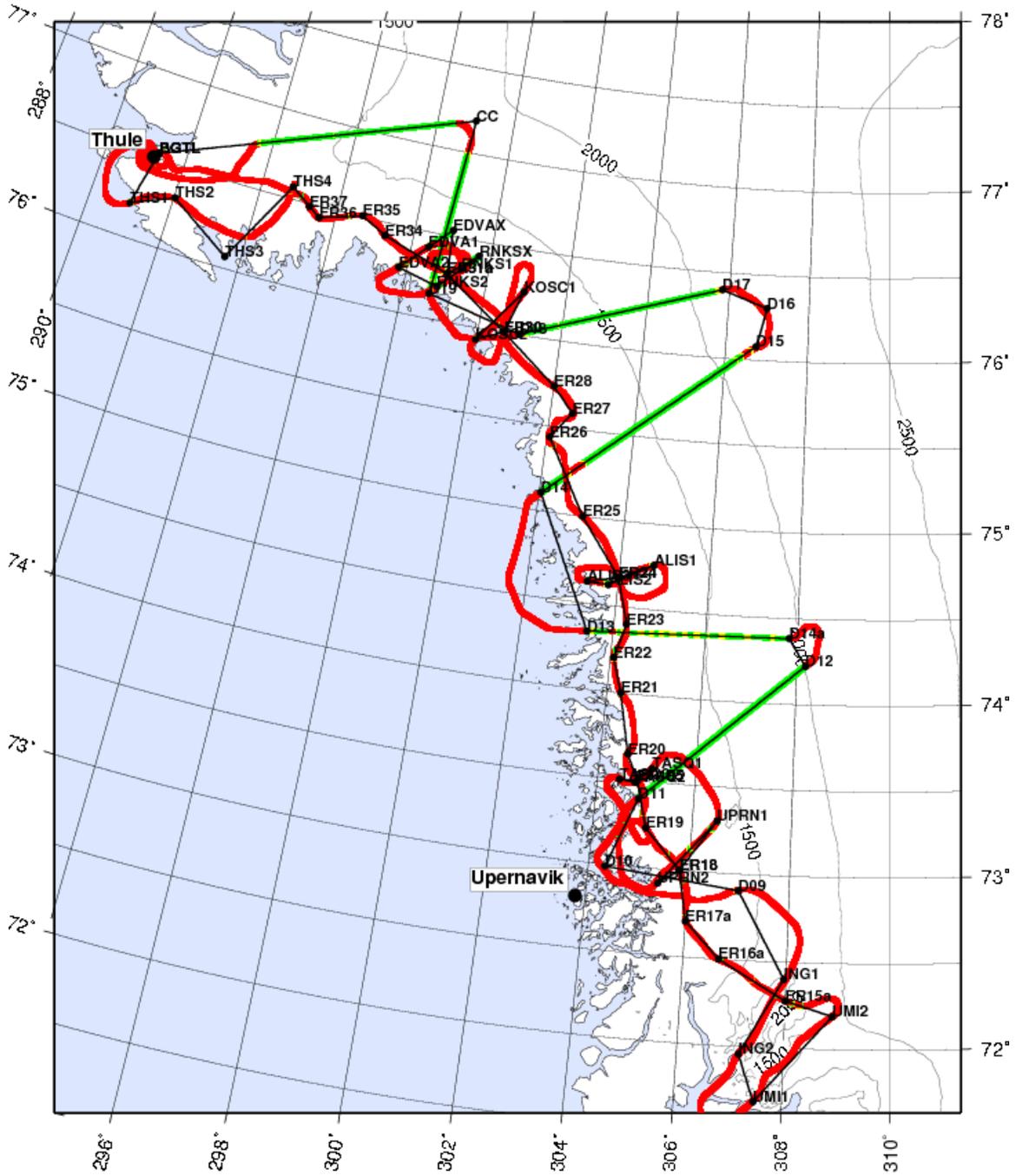


Figure 1: Waypoints and survey area of Flight 09 from John Sonntag.