
Science Flight Report

Operation IceBridge Arctic 2010



Flight: 04
Mission: South-East Coastal

Flight Report Summary

Aircraft	P-3B (N426NA)
Flight Number	892
Flight Request	10P002, 10P007
Date	Wednesday, May 12, 2010 (Z)
Purpose of Flight	Operation IceBridge Mission South-East Coastal
Take off time	11:46 Zulu from Kangerlussuaq/Søndre Strømfjord Airport (BGSF)
Landing time	19:28 Zulu at Kangerlussuaq/Søndre Strømfjord Airport (BGSF)
Flight Hours	7.8
Aircraft Status	Airworthy.
Sensor Status	All installed sensors operational.
Significant Issues	None.
Accomplishments	<ul style="list-style-type: none">• Low-altitude survey (1,500 ft AGL) of Southeast Greenland, Mogens Fjord, Fridtjof Glacier and two east-west oriented master grid lines. ATM, DMS, MCoRDS, accumulation and Ku-band and snow radar were operated on the survey lines. Gravimeter was in operation throughout the entire flight.• No ramp pass because of snow showers.
Geographic Keywords	Southeast Greenland, Mogens Fjord, Fridtjof Glacier
ICESat Tracks	None
Repeat Mission	None

Science Data Report Suary

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"/>	97 GB	None
MCoRDS	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2.3 TB	None.
Snow Radar	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	360 GB	None
Ku-band Radar	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	360 GB	None
Accumulation Radar	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	305 GB	None
DMS	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	117 GB	Automatic shut down.
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 and targeted at mapping the lower flank of the southeast Greenland coast. The four coast-parallel lines are separated by 20 km to capture the elevation changes inland of the coastal areas. We also mapped, for the first time, two glaciers at the head of Mogens Fjord and Fridtjof Glacier. The transits to and from Kangerlussuaq are on east-west oriented master grid lines.

The strong westerly winds of 50-60 kts have pushed back the volcanic ash cloud from the Eyjafjallajokull eruption towards Iceland and we are no longer impacted (for now) by the volcanic ash cloud. The strong winds also provide dry air in the survey area with flow from the ice sheet towards the coast resulting in good conditions for a survey flight. We have expected to encounter severe wind conditions in the survey area. We only encountered moderate turbulence during the flight but the expected strong cross winds. We completed all survey lines as planned. This was only possible because the crew was able to replace a valve twice and a starter on engine #4 in very short time before takeoff this morning. The valve is used to direct the bleed air from the APU into the starter for starting the engines and is known to be prone to failure. Thanks everyone for such a great job that allowed us to finish all planned survey lines on today's mission.

Individual instrument reports from experimenters on board the aircraft:

ATM: Both systems worked well and only lost a small amount of data on the transits due to ice fog and clouds.

MCoRDS: The MCoRDS system worked well and collected 2.3 TB of data.

Snow and Ku-band radar: Both systems worked well and collected each about 360 GB of data.

Accumulation Radar: The system worked well and collected 305 GB of data after some minor adjustments at the beginning of the survey

DMS: DMS worked well. The system has shut down itself which resulted in a brief loss of data over an uncritical part. We refer to this as "Turbulence induced deactivation (TID)".

Gravimeter: System worked normally. No problems.

SE Coastal

8.1 hrs at 250 knots groundspeed

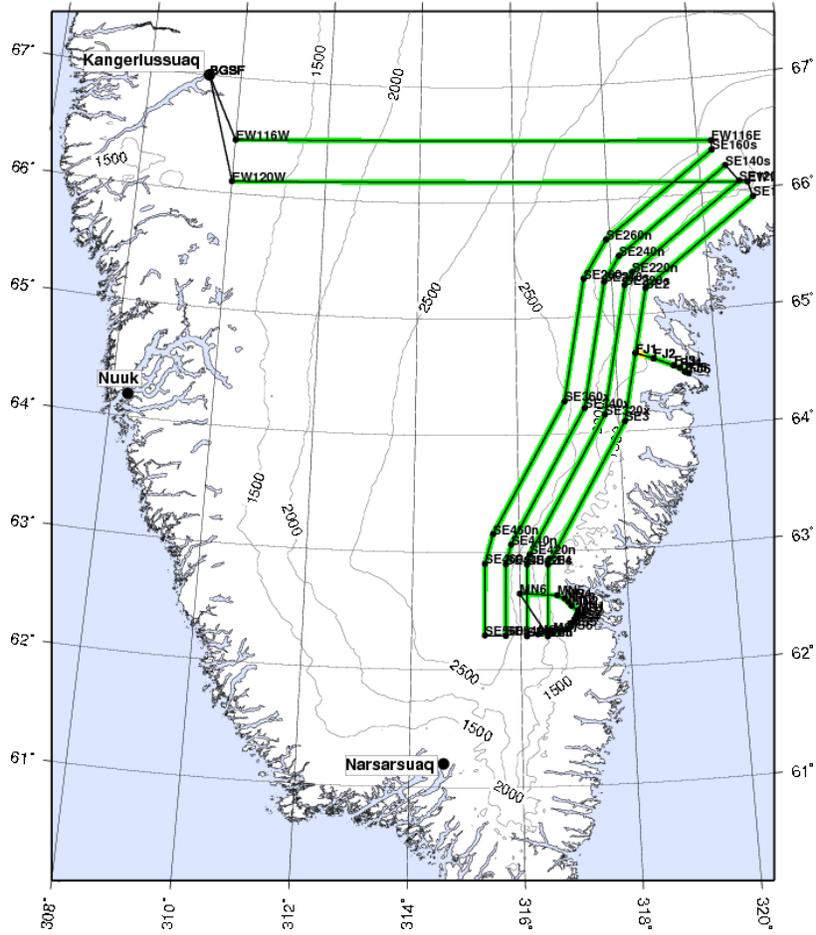


Figure 1: Waypoints and survey area of Flight 04 from John Sonntag.