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# Science Flight Report

## Operation IceBridge Arctic 2012



**Flight: F34**  
**Mission: North Glaciers 02**

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### Flight Report Summary

<b>Aircraft</b>	<b>P-3B (N426NA)</b>
<b>Flight Number</b>	35
<b>Flight Request</b>	12P006
<b>Date</b>	Thursday, May 3, 2012 (Z)
<b>Purpose of Flight</b>	Operation IceBridge Mission North Glaciers 02
<b>Take off time</b>	11:38 Zulu from Thule Air Base (BGTL)
<b>Landing time</b>	18:59 Zulu at Thule Air Base (BGTL)
<b>Flight Hours</b>	7.4 hours
<b>Aircraft Status</b>	Airworthy.
<b>Sensor Status</b>	All installed sensors operational.
<b>Significant Issues</b>	None.
<b>Accomplishments</b>	<ul style="list-style-type: none"><li>• Low-altitude survey (1,500) of glaciers and ice sheet profiles.</li><li>• Collected data for magnetic compensation offshore.</li><li>• ATM, snow, Ku-band, accumulation radar, MCoRDS gravimeter, magnetometer, DMS and KT-19 skin temperature sensor were operated on the survey lines.</li></ul>
<b>Geographic Keywords</b>	Academy Glacier, Ostfjord, Maria Sophia Glacier, Newman Bay
<b>Satellite Tracks</b>	ICESat tracks 0309,0120,0373,0135,0388
<b>Repeat Mission</b>	Academy Glacier 2011.

## Science Data Report Summary

Instrument	Instrument Operational			Data Volume	Instrument Issues
	Survey Area	Entire Flight	High-alt. Transit		
ATM	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	62 GB	None
MCoRDS	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	1.7 TB	None
Snow Radar	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	680 GB	None
Ku-band Radar	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	680 GB	None
Accumulation Radar	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	200 GB	None
DMS	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	76.8 GB	None
KT-19 Skin Temp.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	9.5 MB	None
Gravimeter	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	1.5 GB	None
Magnetometer	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	525 MB	None

### Mission Report (Michael Studinger, Mission Scientist)

This is a new mission, designed to resurvey a historical ATM longitudinal survey of Academy Glacier, plus several new glaciers. These include Ostfjord, Maria Sophia, and a (possibly unnamed) glacier emptying into Newman Bay. We also survey a coast-parallel grid on the far northeastern flank of the ice sheet, whose main purpose is to fill in a gap in existing ice-sounding radar coverage. The grid lines are made up of four ICESat tracks. We returned to Thule along the 2000 m contour line.

The forecast for the area and satellite images looked good except for the region near Thule, which was covered in low clouds. We had to de-ice the aircraft this morning and needed to make up time during this long mission. We decided to skip the cloudy part in the beginning and shortened the Independence Fjord line.

#### Individual instrument reports from experimenters on board the aircraft:

**ATM:** Both ATM systems worked well and collected good data along the entire line in mostly cloud free conditions. ATM collected a total of 5.7 hours of science data with 98% coverage.

**MCoRDS:** The MCoRDS system worked well.

**Snow and Ku-band radar:** The snow and Ku-band radars worked well.

**Accumulation radar:** Worked well today.

**Gravimeter:** Worked well.

**Magnetometer:** Worked well and used the SGL data logger today without problems.

**DMS:** DMS worked well.

**KT-19 skin temperature sensor:** System worked well.

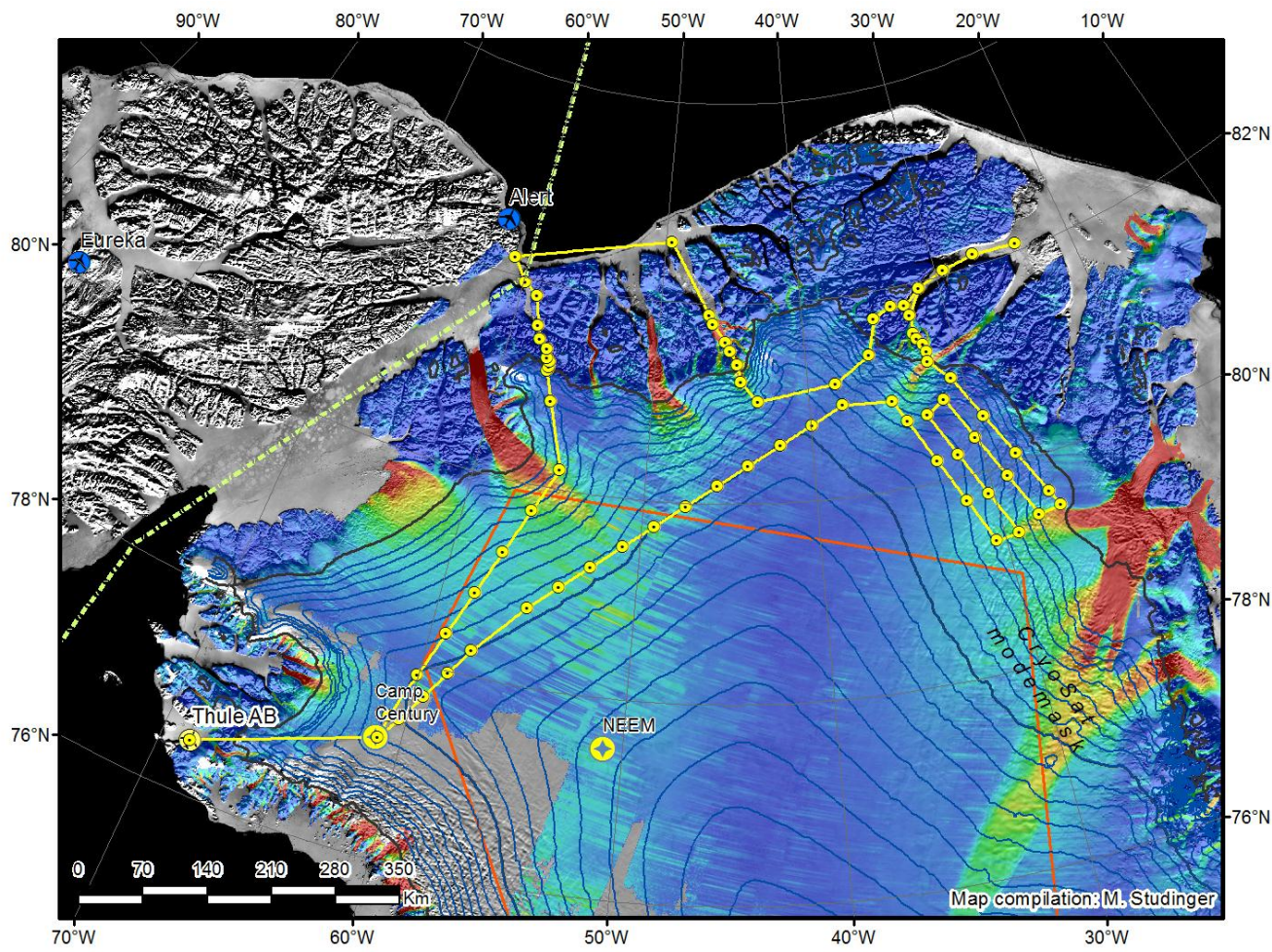


Figure 1: Today's mission plan (yellow).