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# Science Flight Report

## Operation IceBridge Arctic 2012



**Flight:** F33  
**Mission:** Jakobshavn 02

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### Flight Report Summary

<b>Aircraft</b>	<b>P-3B (N426NA)</b>
<b>Flight Number</b>	34
<b>Flight Request</b>	12P006
<b>Date</b>	Wednesday, May 2, 2012 (Z)
<b>Purpose of Flight</b>	Operation IceBridge Mission Jakobshavn 02
<b>Take off time</b>	11:06 Zulu from Kangerlussuaq (BGSF)
<b>Landing time</b>	17:04 Zulu at Thule Air Base (BGTL)
<b>Flight Hours</b>	6.1 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>• Completed entire mission as planned.</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><li>• Pitch and roll maneuvers for snow and Ku-band radar.</li></ul>
<b>Geographic Keywords</b>	Jakobshavn Glacier
<b>Satellite Tracks</b>	ICESat track 0300
<b>Repeat Mission</b>	2009, 2010.

## Science Data Report Summary

Instrument	Instrument Operational			Data Volume	Instrument Issues
	Survey Area	Entire Flight	High-alt. Transit		
<b>ATM</b>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	58 GB	None
<b>MCoRDS</b>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	1.5 TB	None
<b>Snow Radar</b>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	556 GB	None
<b>Ku-band Radar</b>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	556 GB	None
<b>Accumulation Radar</b>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	123 GB	None
<b>DMS</b>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	33 GB	None
<b>KT-19 Skin Temp.</b>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	7.5 MB	None
<b>Gravimeter</b>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	1.5 GB	None
<b>Magnetometer</b>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	420 MB	None

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

This is a new mission which serves to reposition the P-3 between Kangerlussuaq and Thule. It is similar to a 2009 and a 2010 IceBridge flight. The primary science objectives are to (a) complete the basic Jakobshavn grid, specifically the east-west lines, (b) repeat longitudinal surveys of the Rink and Kangerdlugssup Glaciers, and (c) occupy ICESat ground track 0300. We also occupy a line connecting Swiss Camp and a pair of Eric Lutz-requested points nearby.

The forecast for today was not ideal. We encountered good conditions at Jakobshavn Glacier and completed all 6 east-west survey lines as well as data north to point 8D205. From that point north, clouds prevented low altitude data collection, including Rink and Kangerdlugssup Glaciers, until point 030011. We took data from there to Thule covering 75% of the planned survey 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.

**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.

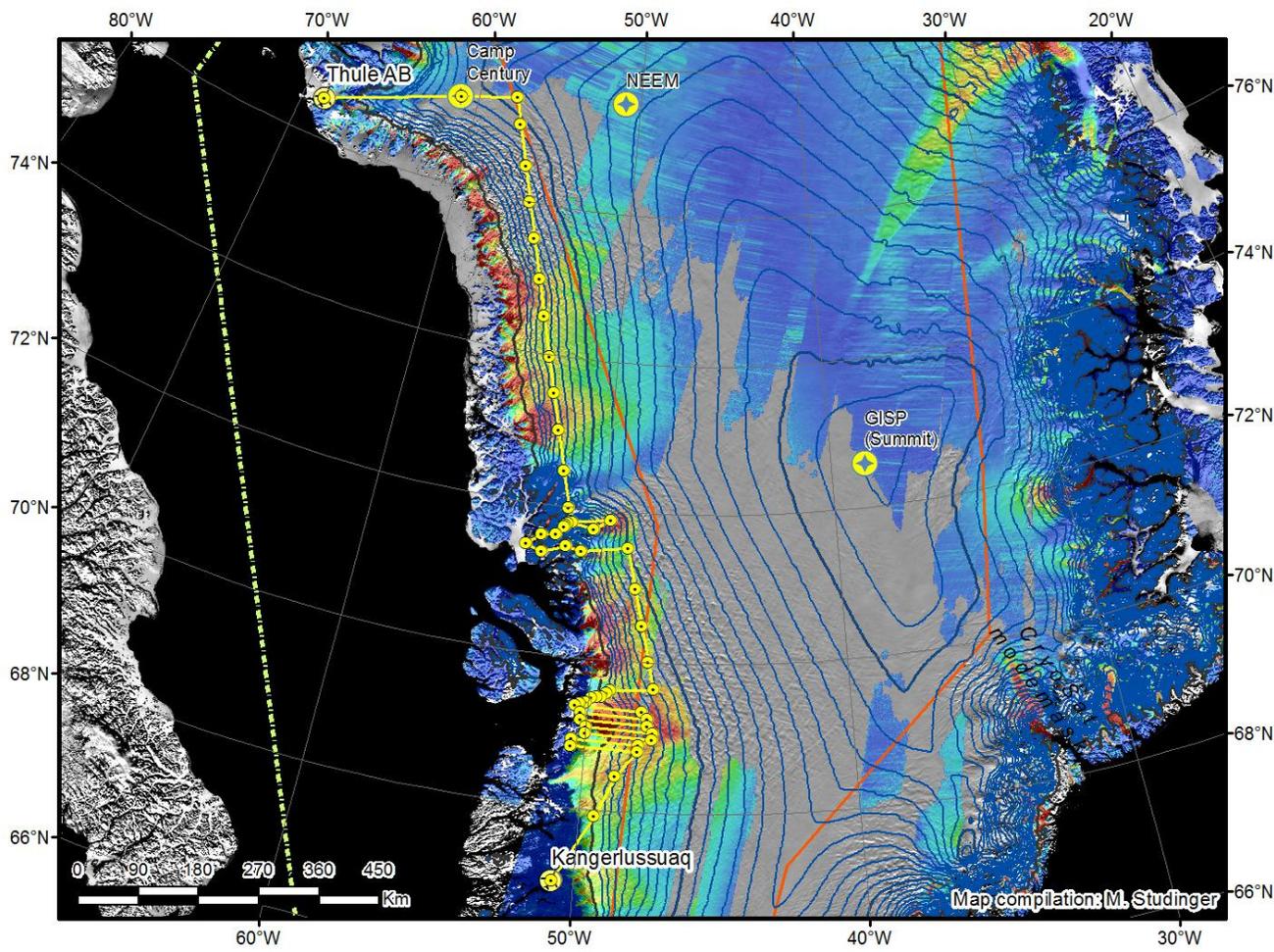


Figure 1: Today's mission plan (yellow).



Figure 2: DMS photo of Swiss Camp. DMS/Dennis Gearhart.