

Science Flight Report

Operation IceBridge Arctic 2010



Flight: 01
Mission: Geikie 01

Flight Report Summary

Aircraft	P-3B (N426NA)
Flight Number	889
Flight Request	10P002,10P007
Date	Friday, May 07, 2010 (Z)
Purpose of Flight	Operation IceBridge Mission Geikie 01
Take off time	10:23 Zulu from Kangerlussuaq/Søndre Strømfjord Airport (BGSF)
Landing time	18:23 Zulu at Kangerlussuaq/Søndre Strømfjord Airport (BGSF)
Flight Hours	8.1
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 several outlet glaciers in southeast Greenland, ICESat tracks, and old ATM lines for east-west transits. ATM, DMS, accumulation and Ku-band and snow radar were operated on the survey lines. Gravimeter was in operation throughout the entire flight. • Completed all of the planned survey lines. • Collected MCoRDS radar data for testing and system fine tuning with the new 16 antenna array. Today's MCoRDS data set is a test data set and not intended for science use. • Conducted two passes over the runway at Kangerlussuaq/Søndre Strømfjord ramp for ATM instrument calibration.
Geographic Keywords	Southeast Greenland, Daugaard-Jensen Gletscher, Vestfjord, Christian den IV Gletscher, Geikie Plateau, Knud Rasmussen Land, Kong Christian den IX Land, Kronborg Gletscher, Storbræ, Eielson, De Reste Bugt
ICESat Tracks	1334, 1296
Repeat Mission	Daugaard-Jensen Gletscher, Vestfjord and Kong Christian IV Glaciers, "X" pattern over the Geikie Plateau

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"/>	112 GB	None
MCoRDS	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2.1 TB	Test data set.
Snow Radar	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	320 GB	None
Ku-band Radar	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	320 GB	None
Accumulation Radar	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	350 GB	None
DMS	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	140 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 new design, which incorporates many segments of old ATM and CReSIS lines. We re-occupy previous lines along the Daugaard-Jensen Gletscher, Vestfjord and Kong Christian IV Glaciers, and the "X" pattern over the Geikie Plateau. We also surveyed new lines along the Eielson, De Reste Bugt, Storbræ and Kronborg Gletscher. Old ATM lines across central Greenland are used to transit to and from Kangerlussuaq.

Today's mission is used for MCoRDS testing and system fine tuning with the new 16 antenna array. Today's MCoRDS data set is a test data set and not intended for science use or submission to NSIDC.

The weather in the survey area was very good as we had expected from the forecast.

Individual instrument reports from experimenters on board the aircraft:

ATM: Both systems worked well. We lost about 40 mins of laser returns on the transit back to Kangerlussuaq due to dense ice fog.

MCoRDS: The MCoRDS system worked well and collected 2.1 TB of test data, almost the entire flight. All 16 new antenna elements have been tested and are all working.

Snow and Ku-band radar: Both systems worked well and collected each about 320 GB of data. We briefly lost data due to higher than 1500 ft flight elevation because of clouds.

Accumulation Radar: The system worked well and collected 350 GB of data. Brief data loss due to larger than 1500 ft flight elevation due to clouds.

DMS: DMS worked well. No problems.

Gravimeter: System worked normally. No problems.

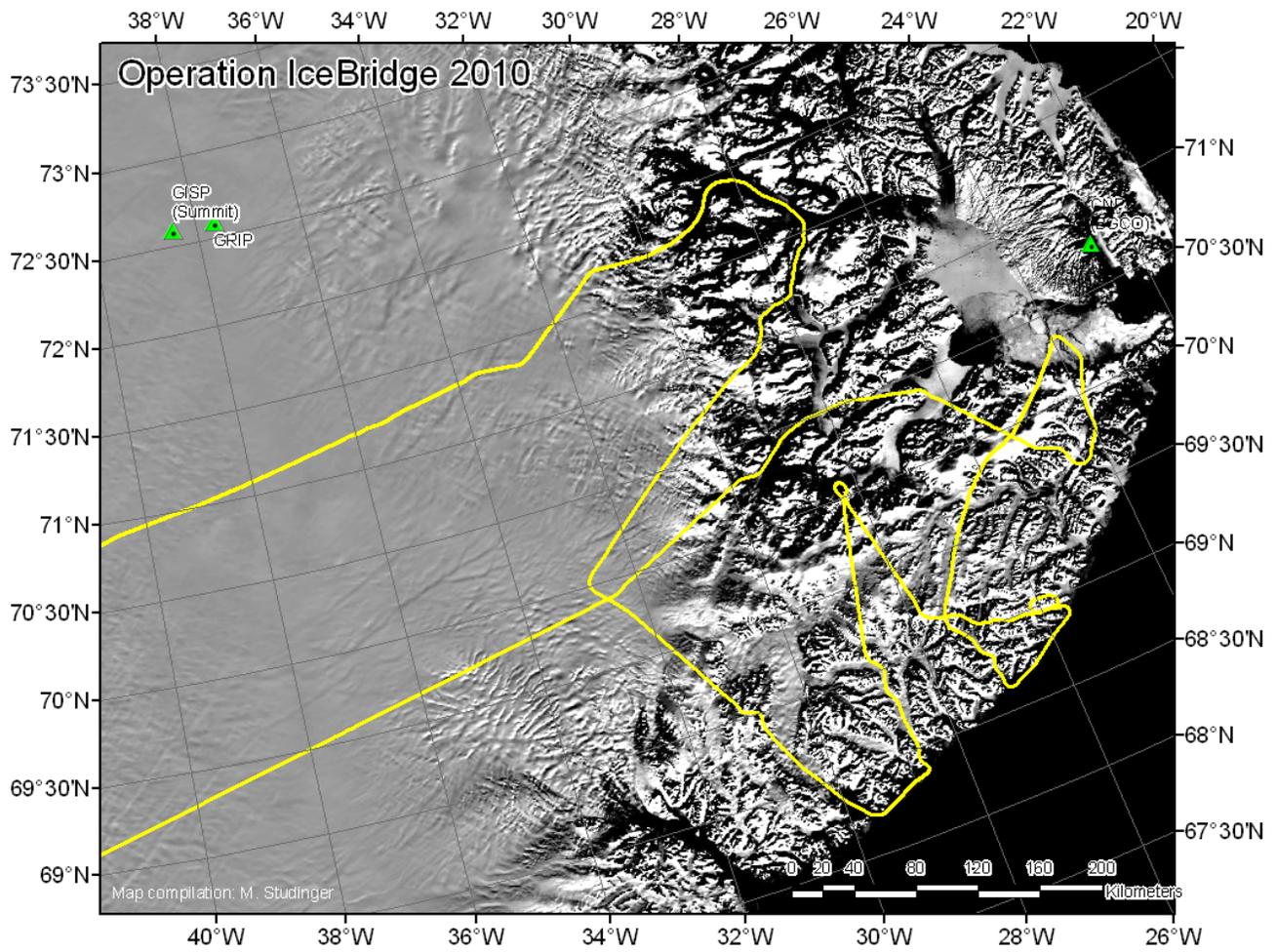


Figure 1: Flight path of F01 over MODIS Image Mosaic of Greenland (Fahnestock et al.)

