

Science Flight Report

Operation IceBridge Arctic 2010



Flight: 13
Mission: Northeast Greenland Ice Stream 04 (NEIS 04)

Flight Report Summary

Aircraft	P-3B (N426NA)
Flight Number	904
Flight Request	10P002, 10P007
Date	Wednesday, May 26, 2010 (Z)
Purpose of Flight	Operation IceBridge Mission Northeast Greenland Ice Stream 04
Take off time	11:09 Zulu from Thule Air Base (BGTL)
Landing time	16:33 Zulu at Thule Air Base (BGTL)
Flight Hours	5.7
Aircraft Status	Airworthy.
Sensor Status	All installed sensors operational, except ATM T3.
Significant Issues	Aborted flight at 14:19 Z as safety precaution after a transformer on the aircraft had failed.
Accomplishments	<ul style="list-style-type: none"> • Low-altitude survey (1,500 ft AGL) of 3 lines of a 10 km grid pattern on the Zachariae Isstrøm and lower Northeast Greenland Ice Stream and one 10 km master grid EW line and ICESat line 0016. • Completed Camp Century – Thule line. • ATM, DMS, MCoRDS, accumulation, Ku-band and snow radars were all operated on the survey lines. • Gravimeter was in operation throughout the entire flight. • Conducted two ramp passes (1500 and 1000 ft AGL) at Thule for ATM instrument calibration.
Geographic Keywords	Northeast Greenland, Thule, Camp Century, Northeast Greenland Ice Stream, Zachariae Isstrøm
ICESat Tracks	0016
Repeat Mission	Camp Century transit to Thule, Zachariae Isstrøm

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"/>	30 GB	T2 only
MCoRDS	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1.5 TB	None
Snow Radar	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	100 GB	None
Ku-band Radar	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	100 GB	None
Accumulation Radar	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	150 GB	None
DMS	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	7 GB	None
Gravimeter	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	60 MB	None

Mission Report (Michael Studinger, Mission Scientist)

Today's mission NEIS 04 was intended to complete the series of four low-altitude missions that are designed to map the Zachariae Isstrøm and the lower Northeast Greenland Ice Stream on a 10 km grid. At 14:19 Z we aborted the flight as a safety precaution after a transformer on the aircraft failed and we were running on the backup system.

We began our flight by re-occupying the transit from Thule to Camp Century. The transit between Camp Century and the Northeast Greenland Ice Stream is along a 10 km master grid EW line (W063) and along ICESat track 0016. We stayed beneath a layer of clouds on these lines. We experienced a layer of clouds below our flight elevation that we had expected making it necessary to climb over the Northeast Greenland Ice Stream area towards the coast. We had completed on EW line W076 and two NS lines (N016 and N017) and aborted the flight on the EW line.

Individual instrument reports from experimenters on board the aircraft:

ATM: T2 worked well over the survey lines but lost surface returns over the coastal portions of the Northeast Greenland Ice Stream due to clouds. The T3 laser was not in operation on today's flight.

MCoRDS: The MCoRDS system worked well and collected 1.5 TB of data with good bed returns at low flight elevation.

Snow and Ku-band radar: Both systems worked well and collected each about 100 GB of data.

Accumulation Radar: The system worked well and collected 150 GB of data. Lost returns during high elevation portion due to cloud layer.

DMS: DMS worked well and collected 7 GB of data. The target areas over the coastal portions of the Northeast Greenland Ice Stream were obscured by clouds.

Gravimeter: System worked normally. No problems.

