
Science Flight Report

Operation IceBridge Arctic 2010



Flight: 06
Mission: NEIS 01

Flight Report Summary

Aircraft	DC-8 (N817NA)
Flight Number	100208
Flight Request	108013
Date	Tuesday, March 30, 2010 (Z), Day of Year 089
Purpose of Flight	Operation IceBridge Mission NEIS 01
Take off time	11:04:32 Zulu from Thule Air Base (BGTL)
Landing time	18:51:59 Zulu at Thule Air Base (BGTL)
Flight Hours	7.9
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 lines of a 10 km grid pattern on the Zachariae Isstrøm and lower Northeast Ice Stream and two of the 10 km master grid EW lines.• ATM, POS/AV, DMS, and MCoRDS, Ku-band and snow radar were operated on the survey lines.• Gravimeter was in operation throughout the entire flight.• LVIS was not operated on this flight due to the low-altitude mission.• Completed all of the planned survey lines and added two more glacier profiles from a previous P-3 mission along Zachariae Isstrøm and 79°North Glacier/ Nioghalvfjærdsbræ.• Conducted one pass over the runway at Thule Air Base at 1,500 ft AGL for ATM instrument calibration.
Geographic Keywords	Northeast Greenland, Thule, Camp Century, Northeast Greenland Ice Stream, Zachariae Isstrøm, Nioghalvfjærdsbræ, 79°North Glacier
ICESat Tracks	None
Repeat Mission	Camp Century transit to Thule, Zachariae Isstrøm, 79°North Glacier/Nioghalvfjærdsbræ

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"/>	114.5 GB	None
MCoRDS	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	2.3 TB	None
Snow Radar	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	380 GB	None
Ku-band Radar	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	380 GB	None
LVIS	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	N/A	None
DMS	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	105 GB	None
POS/AV (510 + 610)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	2 GB	None
Gravimeter	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	80 MB	None
DC-8 Onboard Data	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	25 MB	None

Mission Report (Michael Studinger, Mission Scientist)

Today's mission is the first mission in a sequence of 4 low-altitude missions that are designed to map the Zachariae Isstrøm and lower Northeast Ice Stream on a 10 km grid. Two of the missions on the inland side are planned for the DC-8 and two more missions of this grid will be flown with the P-3 this Spring. We begin our flight by re-occupying the transit from Thule to Camp Century. The transits between Camp Century and the Northeast Greenland Icestream and back are along 10 km master grid EW lines. We have completed the grid of survey lines faster than expected and were able to add two glacier profiles along the centerlines of Zachariae Isstrøm and 79°North Glacier/Nioghalvfjerdsbræ. These missions have been previously flown with the P-3 and were planned as P-3 mission for the Spring 2010 campaign.

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 ATM systems worked well during the flight. On the transit back from Zachariae Isstrøm to Camp Century approximately 15 minutes of laser surface data were lost due to very low and very dense ice fog.

MCoRDS: The MCoRDS system worked well and collected 2.3 TB of data, almost the entire flight. The thickest ice imaged during this flight was about 2.7 km.

Snow and Ku-band radar: Both systems worked and collected each about 380 GB of data.

Gravimeter: System worked normally. No problems.

DMS: DMS worked well. No problems.

LVIS: LVIS was not operated on this flight due to low-altitude mission.

POS/AV: Systems worked well. No issues.

DC-8 on board data: System worked well.

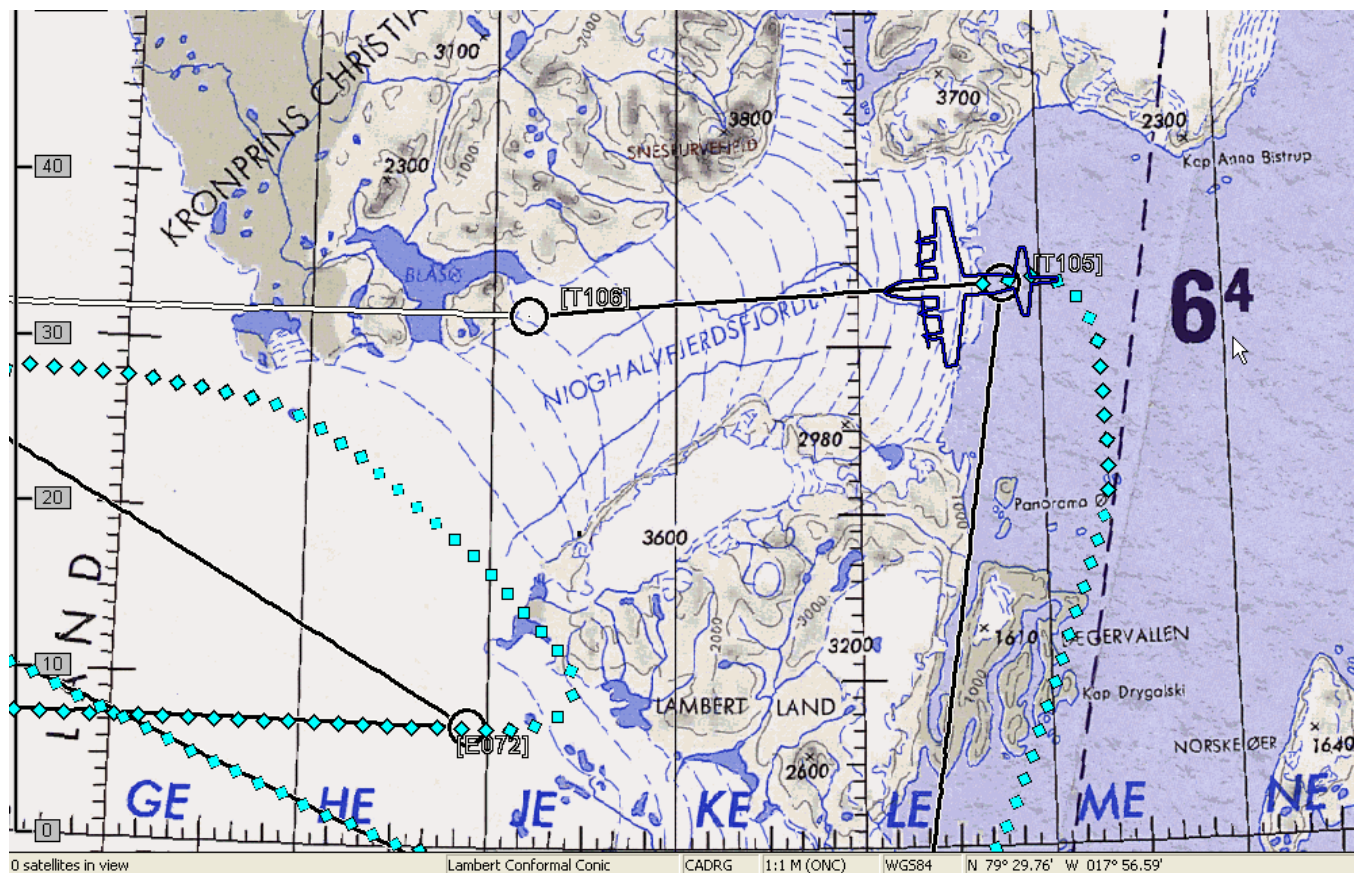
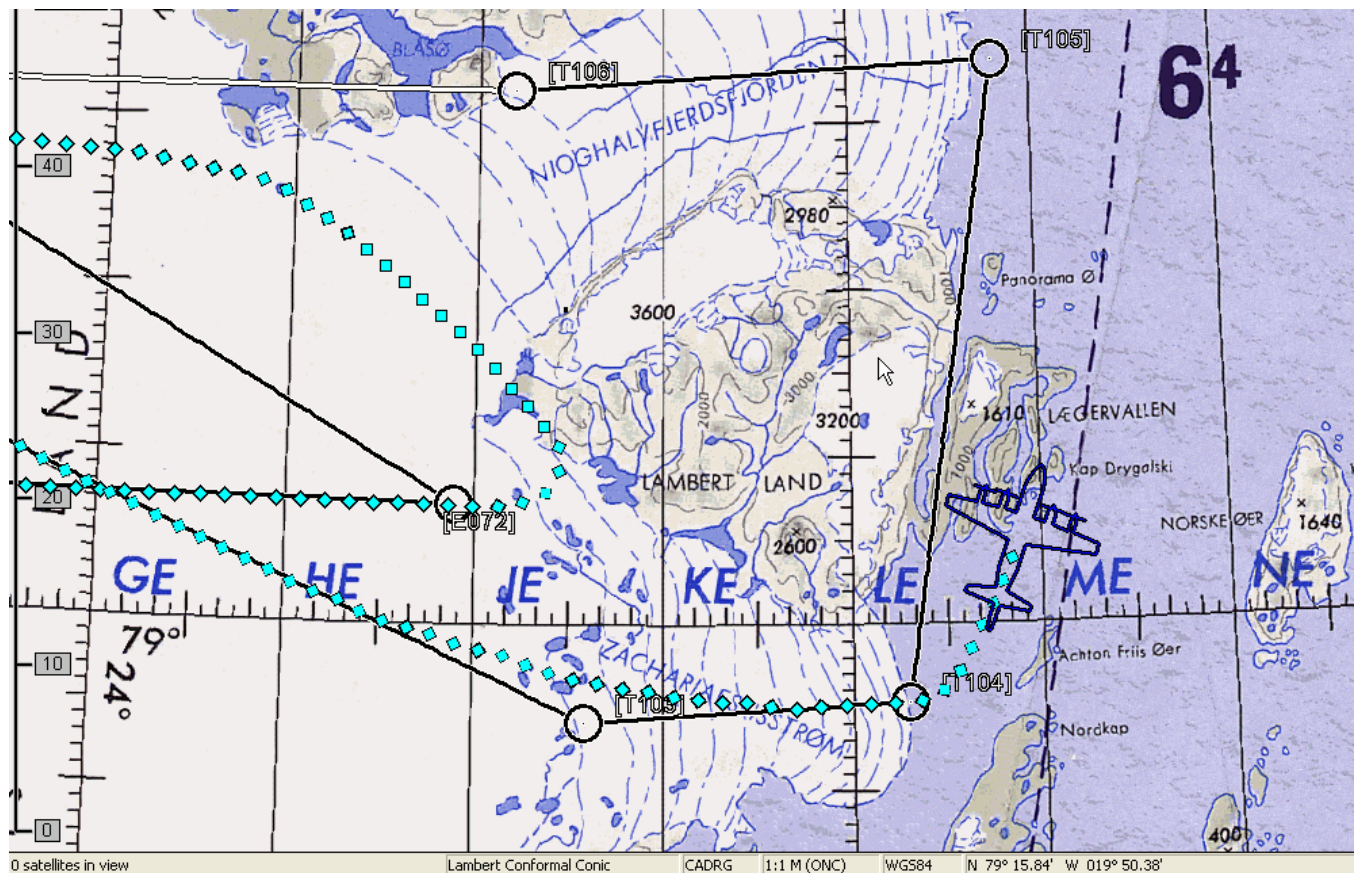


Figure 1: Additional flight lines added to the mission plan from the Falcon DC-8 onboard navigation system.

NEIS 01

7.6 hrs at 250 knots groundspeed

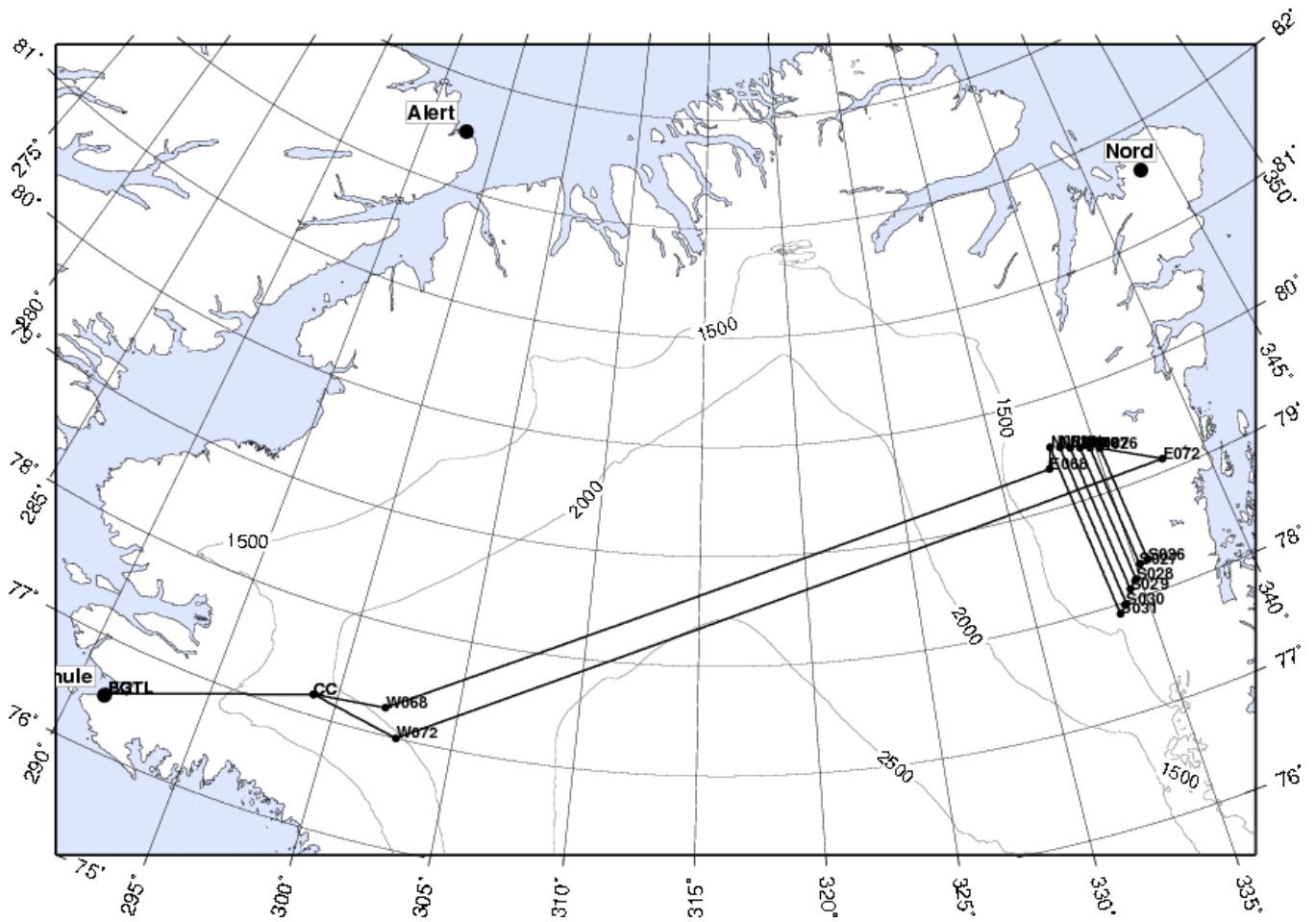


Figure 2: Waypoints and survey area of Flight 06 from John Sonntag.