

Science Flight Report

Operation IceBridge Arctic 2010



Flight: 04
Mission: Sea Ice 03

Flight Report Summary

Aircraft	DC-8 (N817NA)
Flight Number	100206
Flight Request	108013
Date	Friday, March 26, 2010 (Z), Day of Year 085
Purpose of Flight	Operation IceBridge Mission Sea Ice 03
Take off time	11:09:00 Zulu from Thule Air Base (BGTL)
Landing time	18:17:49 Zulu at Thule Air Base (BGTL)
Flight Hours	7.2
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 sea ice in the Arctic Ocean north of Greenland. The survey lines included ICESat tracks 265, 252, 253. • Completed all of the planned survey lines. • ATM, DMS, POS/AV, Ku-band and snow radar operational throughout survey areas. • MCoRDS radar was not operated because this is a sea ice mission. • Gravimeter was in operation throughout the entire flight. • LVIS collected data during the transit and at low-altitude. • Conducted two passes over the runway at Thule Air Base, one at high elevation (10,000 ft) for LVIS instrument calibration, and one at low elevation (1,200 ft) for ATM instrument calibration.
Geographic Keywords	Nares Strait, Lincoln Sea, Robeson Canal, Fram Basin, Nansen Basin, Fram Strait, Nansen Ridge, Arctic Ocean, Thule
ICESat Tracks	265, 252, 253
Repeat Mission	Fram Strait mission on March 31, 2009.

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"/>	94 GB	None
MCoRDS	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	N/A	None
Snow Radar	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	330 GB	None
Ku-band Radar	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	260 GB	None
LVIS	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	41.5 GB	None
DMS	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	137 GB	3 system restarts
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 a sea ice mission covering a large area between the northern tip of Greenland and Svalbard. We took advantage of the favorable weather conditions over such a large area. We begin our survey flight with a line over the Nares Strait, flying over the ice arch edge, which is an impressive feature on satellite images but also very visible at 1,200 ft flight elevation. We continued our flight along ICESat tracks 265 and 252, then towards Svalbard and back to ICESat track 253 north of Greenland. We flew back to Thule offshore the northern coast of Greenland and into the Nares Strait again. The weather was good during this flight with 98% clear atmospheric conditions and only occasional pockets of light fog and clouds. We have encountered the weather conditions that we had expected from the forecast given at the weather briefing.

Individual instrument reports from experimenters on board the aircraft:

ATM: The ATM systems worked fine with 98% clear atmospheric conditions.

MCoRDS: The MCoRDS radar was not operated on today's flight because it is a sea ice mission. The instrument team was on board the aircraft to do several routine checks.

Snow and Ku-band radar: The snow radar worked well and collected 330 GB of data. The Ku-band radar worked well and collected 260 GB of data.

Gravimeter: System worked normally. No problems.

DMS: DMS worked well but had to be restarted 3 times without incident.

LVIS: LVIS collected data during 75% of the low altitude survey lines in profiling mode. The high-altitude portions of the flight were partly cloudy during data collection.

POS/AV: Systems worked well. No issues.

DC-8 on board data: System worked well.

Sea Ice 03

7.5 hours at 250 knots survey / 440 knots transit

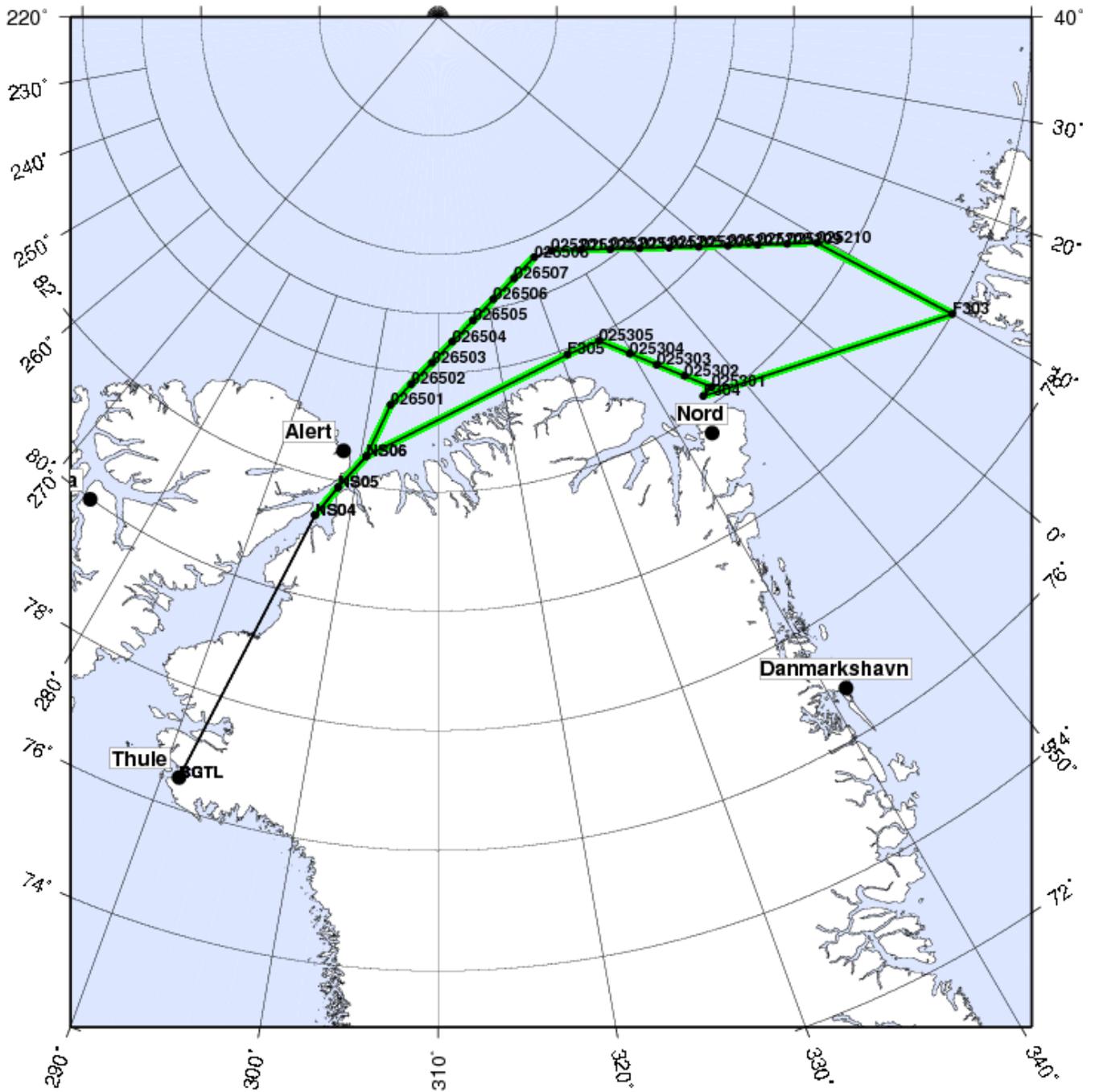


Figure 1: Waypoints and survey area of Flight 04 from John Sonntag.