Science Flight Report
Operation IceBridge Arctic 2012

Flight: F37
Mission: Northeast Grid 03

Flight Report Summary

Aircraft	**P-3B (N426NA)**
Flight Number	38
Flight Request	12P006
Date	Tuesday, May 8, 2012 (Z)
Purpose of Flight	Operation IceBridge Mission Northeast Grid 03
Take off time	11:00 Zulu from Thule Air Base (BGTL)
Landing time	18:40 Zulu at Thule Air Base (BGTL)
Flight Hours	7.9 hours
Aircraft Status	Airworthy.
Sensor Status	All installed sensors operational.
Significant Issues	None.
Accomplishments	• Low-altitude survey (1,500) of glaciers and ice sheet profiles. • ATM, snow, Ku-band, accumulation radar, MCoRDS gravimeter, magnetometer, DMS and KT-19 skin temperature sensor were operated on the survey lines. • Pitch maneuvers for snow and Ku-band radar calibration. • Ramp pass at 1,500 ft AGL at Thule Air Base for ATM calibration.
Geographic Keywords	Northeast Greenland
Satellite Tracks	ICESat orbits 1297,0352,0233,0062
Repeat Mission	None.

Science Data Report Summary

Instrument	Instrument Operational			Data Volume	Instrument Issues
	Survey Area	Entire Flight	High-alt. Transit		
ATM	☑	☒	☒	70 GB	None
MCoRDS	☑	☒	☒	1.9 TB	None
Snow Radar	☑	☒	☒	710 GB	None
Ku-band Radar	☑	☒	☒	710 GB	None
Accumulation Radar	☑	☒	☒	170 GB	None
DMS	☑	☒	☒	88.7 GB	None
KT-19 Skin Temp.	☑	☑	☑	11 MB	None
Gravimeter	☑	☑	☑	1.5 GB	None
Magnetometer	☑	☑	☑	550 MB	None

Mission Report (Michael Studinger, Mission Scientist)

This is a new mission, one of a suite of six flights intended to thoroughly sample the bedrock topography of northeast Greenland along a series of nearly coast-parallel ICESat lines. At the same time we obtain altimetry measurements along the ICESat tracks which will enable the calculation of dh/dt over a broad area and a significant time span. This particular mission complements the Northeast Grid 01 mission with the next two tracks in the inland direction. It transits to the area along short ICESat tracks in the west and new east-west master grid lines.

We skipped the first ICESat line near Thule because of low clouds and the fact that the mission was too long with 8.1 hours. On the return line the weather was mostly fine and we collected 95% of expected data.

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 6.7 hours of science data with 95% coverage.

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. The GPS received needed to be reset due to a suspected interference with an HF radio call. Two other GPS receivers of the grav/mag system worked fine and the reset is no issue.

DMS: DMS worked well.

KT-19 skin temperature sensor: System worked well.

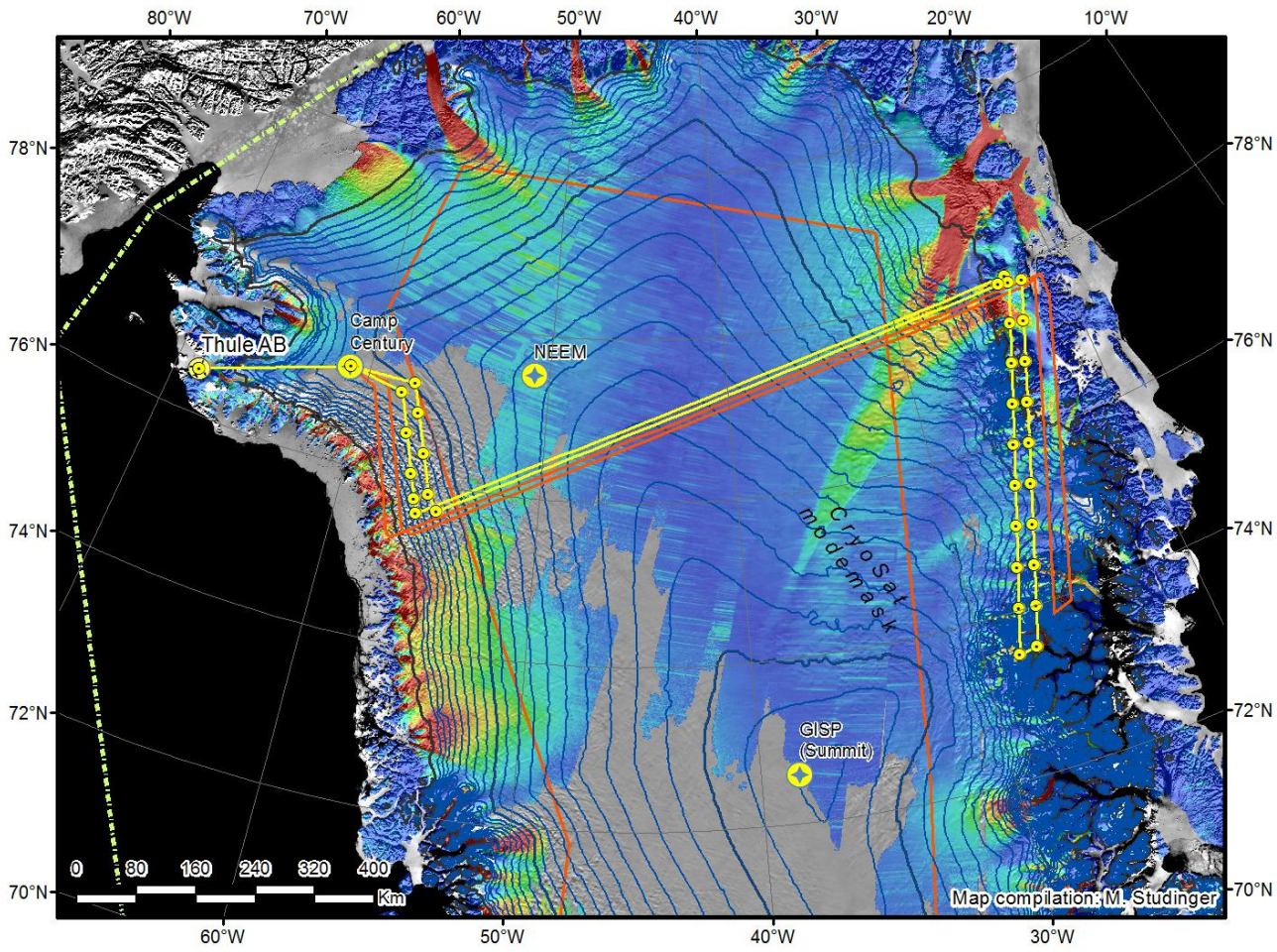

Figure 1: Today's mission plan in yellow. Yesterday's flight plan Northeast Grid 02 is shown in red.

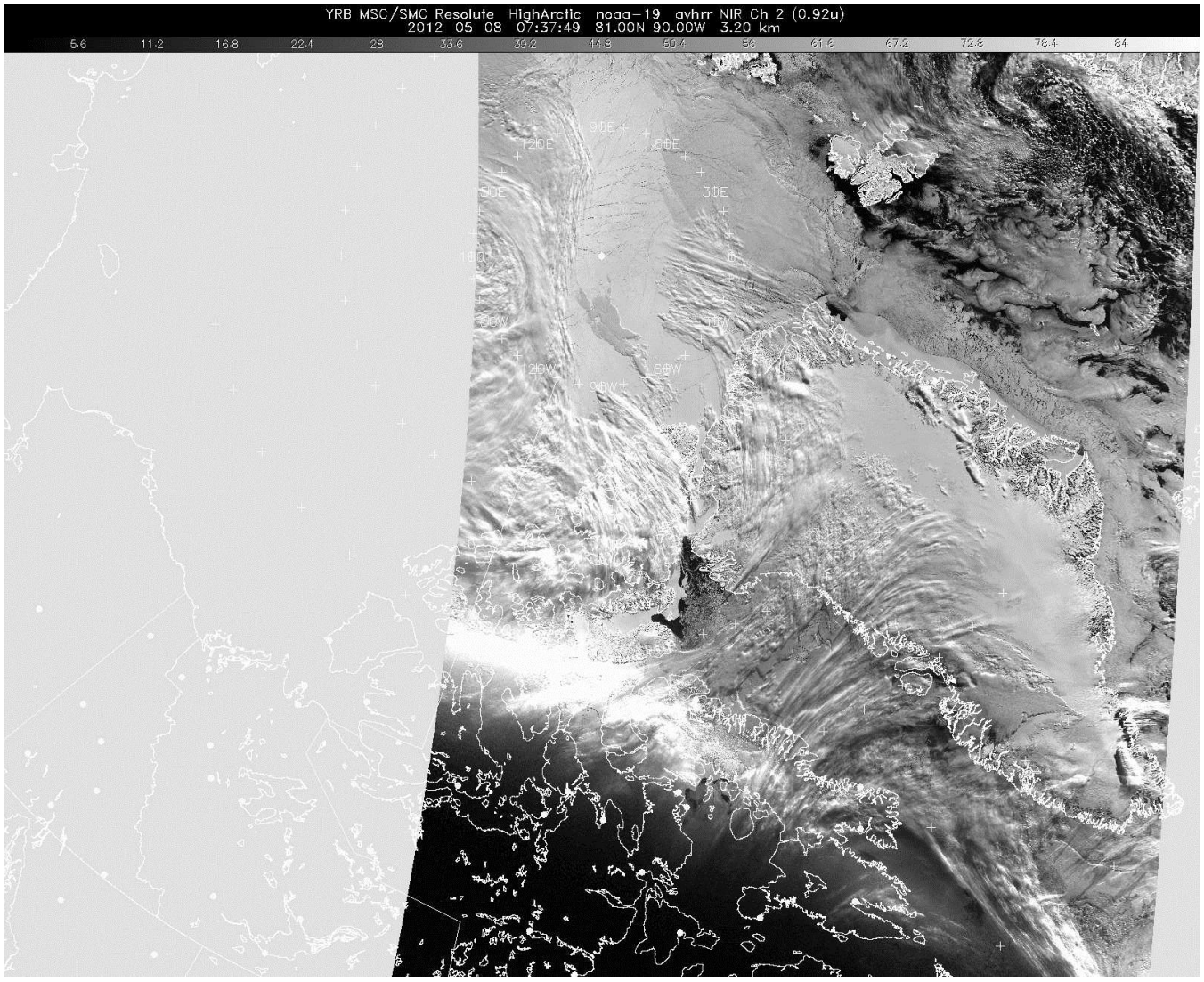

Figure 2: Satellite image (visible).