

Preliminary Science Flight Report

Operation IceBridge Arctic 2011



Flight: F17
Mission: SE Coastal 02

Flight Report Summary

Aircraft	P-3B (N426NA)
Flight Number	017
Flight Request	11P006
Date	Tuesday, April 11, 2011 (Z)
Purpose of Flight	Mission SE Coastal 01
Take off time	10:17 Zulu from Kangerlussuaq (BGSF)
Landing time	17:24 Zulu at Kangerlussuaq (BGSF)
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 four coast-parallel lines spaced 20 km apart. • Completed two east-west oriented master grid lines. • ATM, MCoRDS snow and Ku-band radars, accumulation radar, gravimeter, magnetometer, POS/AV, and DMS were operated on the survey lines. • Ramp pass at 1,000 ft AGL for ATM calibration. • Pitch maneuvers over fjord for snow radar.
Geographic Keywords	Greenland Ice Sheet, Southeast Greenland
ICESat/CryoSat Track	None.
Repeat Mission	None.

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"/>	60 GB	Dirty laser beam.
MCoRDS	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	1.7 TB	None
Snow Radar	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	350 GB	None
Ku-band Radar	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	350 GB	None
Accumulation Radar	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	275 GB	None
DMS	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	126 GB	None
POS/AV	<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"/>	600 MB	None
Magnetometer	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	200TBD	None

Mission Report (Michael Studinger, Mission Scientist)

Today's mission is new design, which interlaces the 2010 "SE Coastal" coast-parallel grid to a spacing of 10 km.

The weather forecast for today suggested to take advantage of the good conditions in the southeast again. Winds had calmed down, but a front was approaching quickly from the south and the remnants of another frontal system constrained our working area to the north. SE Coastal was the mission plan with the most cloud-free area according to the forecast. The weather was very good during the day. We only lost an insignificant amount of data on the 3rd and 4th line in the south due to the rapidly approaching front. The area was still cloud free on the 1st and 2nd line but we could see the clouds approaching.

We accidentally flew the same east-west master grid line as yesterday on today's mission. This will provide a unique opportunity to check instrument consistency, in particular for the magnetometer.

We flew by 2.4 nm from DYE-2/Raven.

Individual instrument reports from experimenters on board the aircraft:

ATM: The laser beam of the wide-swath ATM scanner showed anomalies that resulted in reduced laser power. The root cause could not be identified during the flight.

MCoRDS: The MCoRDS system worked well.

Snow and Ku-band radar: The snow and Ku-band radars collected 100% data along the line.

Accumulation radar: worked well.

Gravimeter: Worked well. No issues.

Magnetometer: worked well.

DMS: worked very well.

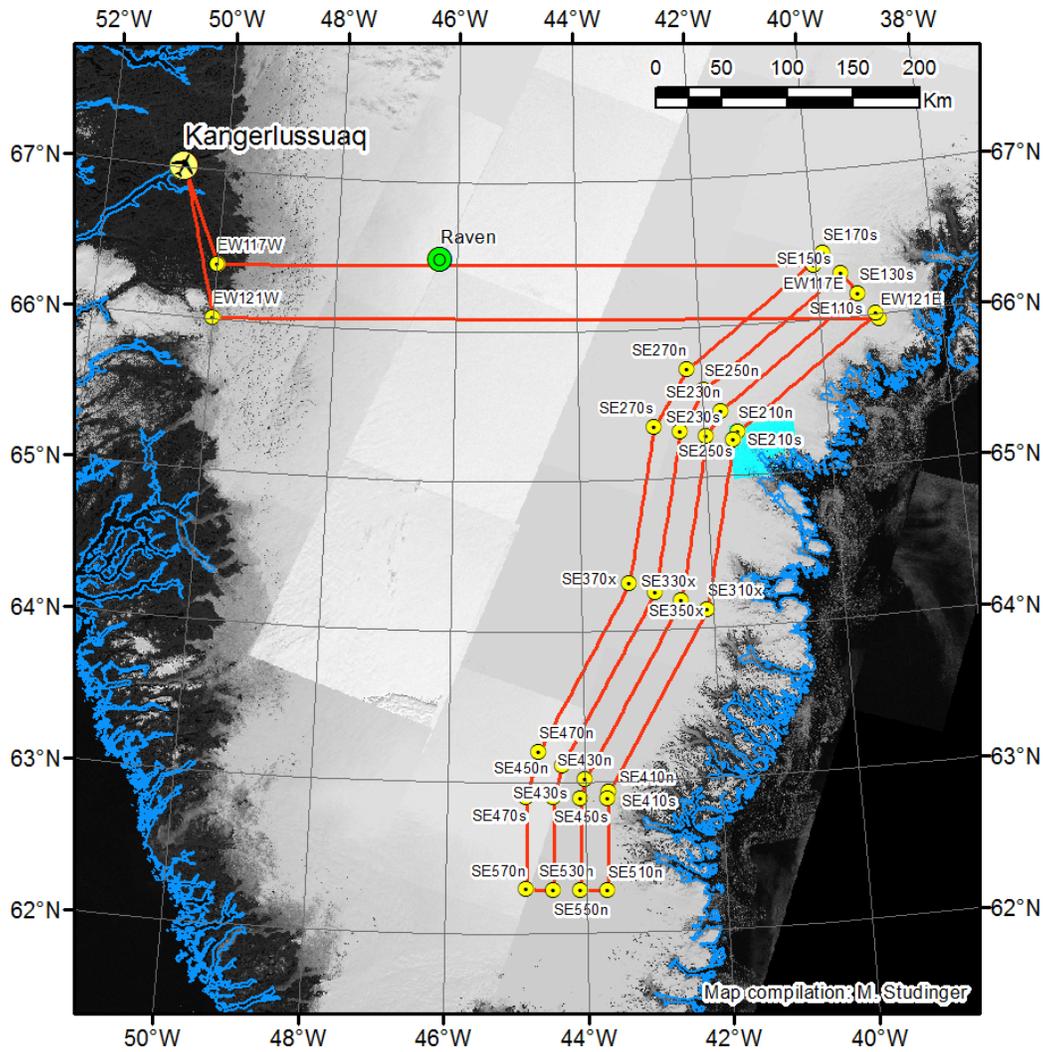


Figure 1: Mission plan for today's flight.

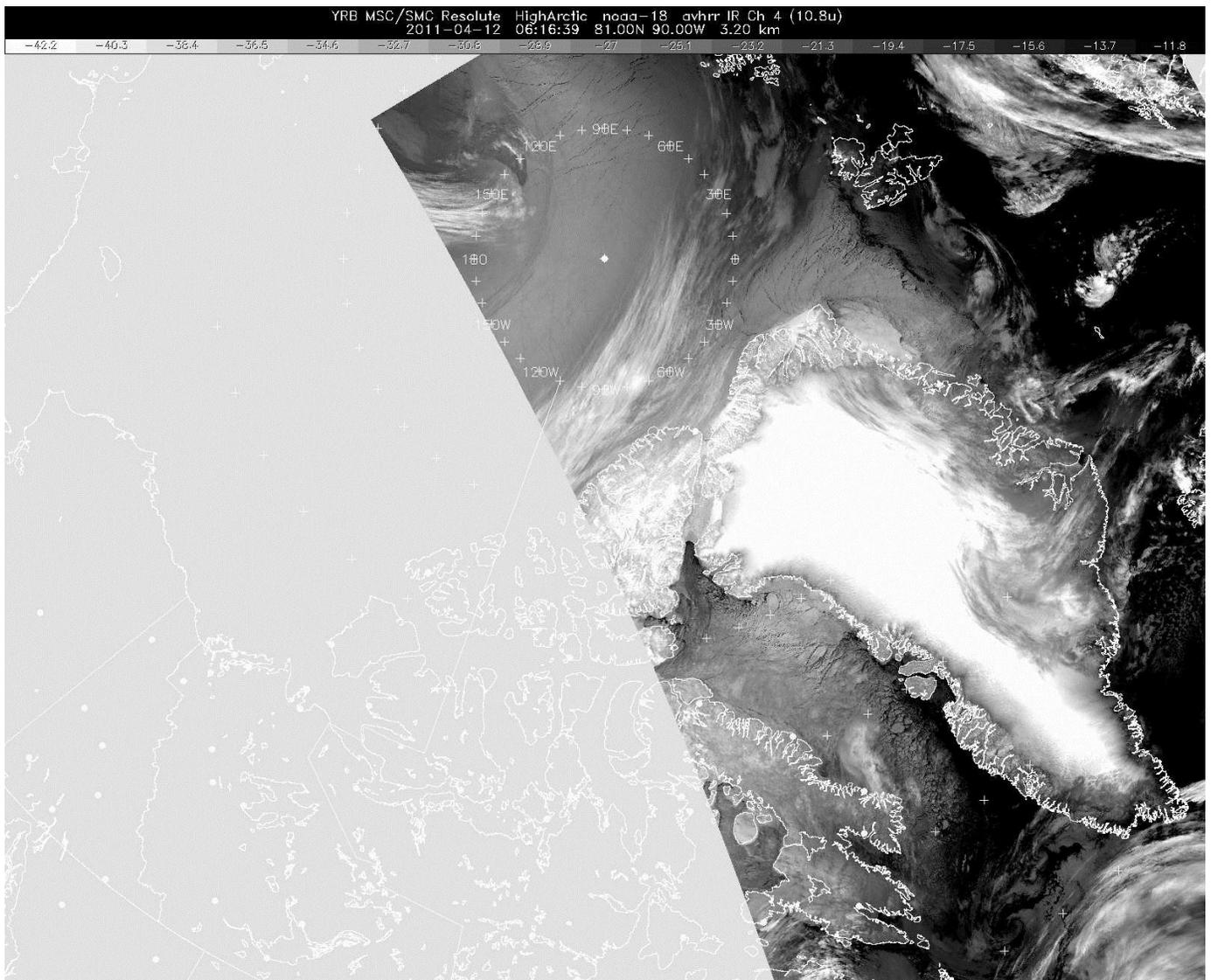


Figure 2: IR satellite image downloaded before flight. The southeast coastal areas were still cloud free.