

Science Flight Report

Operation IceBridge Arctic 2010



Flight: 07
Mission: Russell 01 (remainder) plus Sukkertoppen

Flight Report Summary

Aircraft	P-3B (N426NA)
Flight Number	895
Flight Request	10P002, 10P007
Date	Saturday, May 15, 2010 (Z)
Purpose of Flight	Operation IceBridge Mission Russell 01 (remainder) plus Sukkertoppen
Take off time	11:43 Zulu from Kangerlussuaq/Søndre Strømfjord Airport (BGSF)
Landing time	16:29 Zulu at Kangerlussuaq/Søndre Strømfjord Airport (BGSF)
Flight Hours	4.9
Aircraft Status	Airworthy.
Sensor Status	All installed sensors operational, except ATM T3.
Significant Issues	None.
Accomplishments	<ul style="list-style-type: none"> • Low-altitude survey (1,500 ft AGL) of regional lines extending from Russell Glacier towards the ice divide. These lines are part of the southern Greenland master grid. • Collected data over locations of borehole measurements from Joel Harper in the Russell Glacier area and inland. • ATM, DMS, MCoRDS, accumulation, Ku-band and snow radar were operated on the survey lines. • Gravimeter was in operation throughout the entire flight. • Completed all flight lines over Sukkertoppen Isflade. • Completed all planned survey lines. • Conducted a ramp pass over Kangerlussuaq/Søndre Strømfjord Airport for ATM instrument calibration.
Geographic Keywords	Greenland, Russell Glacier, Sukkertoppen Isflade
ICESat Tracks	None
Repeat Mission	Sukkertoppen Isflade

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"/>	41 GB	T2 only
MCoRDS	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1.2 TB	RFI issues
Snow Radar	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	200 GB	None
Ku-band Radar	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	200 GB	None
Accumulation Radar	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	183 GB	None
DMS	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	73 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 is a "mop up" of remaining science targets and survey lines that have not yet been completed due to weather and ash cloud. We finished the regional lines of the Russell 01 mission plan that extend from the terminus of the glacier inland to the ice divide. These lines are part of the south Greenland master grid. We also flew over the borehole locations from Joel Harper in the Russell Glacier area and inland. We reoccupied all ATM lines over Sukkertoppen Isflade.

The weather in the area was very good as expected from the forecast with only a few clouds below flight elevation near the ice divide.

Individual instrument reports from experimenters on board the aircraft:

ATM: T2 worked well throughout the entire flight and only lost an insignificant number of surface returns due to clouds near the ice divide. The T3 laser was not in operation on today's flight.

MCoRDS: The MCoRDS system worked well and collected 1.2 TB of data. Quick look data show that Radio Frequency Interference (RFI) is degrading MCoRDS sensitivity. Solutions are being investigated in both instrument operation and post processing.

Snow and Ku-band radar: Both systems worked well and collected each about 200 GB of data.

Accumulation Radar: The system worked well and collected 183 GB of data.

DMS: DMS worked well and collected 73 GB of data.

Gravimeter: System worked normally. No problems.

Russell 01 (remainder) plus Sukkertoppen

4.7 hrs at 250 knots groundspeed

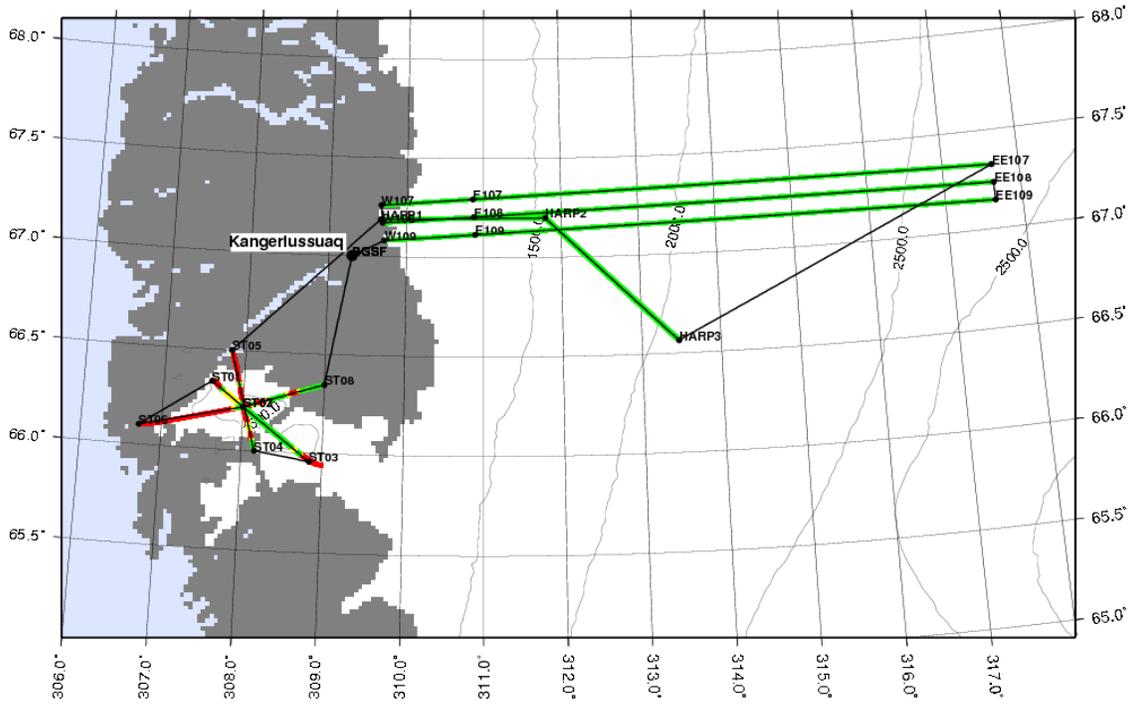


Figure 1: Waypoints and survey area of revised Flight 07 from John Sonntag.