
Science Flight Report

Operation IceBridge Arctic 2012



Flight: F18
Mission: Geikie 02

Flight Report Summary

Aircraft	P-3B (N426NA)
Flight Number	19
Flight Request	12P006
Date	Thursday, April 12, 2012 (Z)
Purpose of Flight	Operation IceBridge Mission Geikie 02
Take off time	10:25 Zulu from Kangerlussuaq (BGSF)
Landing time	17:48 Zulu at Kangerlussuaq (BGSF)
Flight Hours	7.4 hours
Aircraft Status	Airworthy.
Sensor Status	All installed sensors operational.
Significant Issues	None
Accomplishments	<ul style="list-style-type: none">• 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.• Several pitch and roll maneuvers over sea ice for snow and Ku-band radar calibration.• Ramp pass at Kangerlussuaq at 1,000 ft AGL.
Geographic Keywords	Sorgenfri, Christian IV, Bartholins, and South Glaciers, Geikie Plateau
Satellite Tracks	ICESat tracks 0010,0382
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"/>	69 GB	None
MCoRDS	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	1.8 TB	N/A
Snow Radar	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	250 GB	Disk problems
Ku-band Radar	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	250 GB	Disk problems
Accumulation Radar	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	146 GB	None
DMS	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	80.5 GB	None
KT-19 Skin Temp.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	4.6 MB	Beginning of line was lost
Gravimeter	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	1.5 GB	None
Magnetometer	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	335 MB	None

Mission Report (Michael Studinger, Mission Scientist)

Today's mission is a new design. We flew along the centerlines of eight Geikie peninsula glaciers for the first time. These are Sorgenfri, Christian IV, Bartholins, and South glaciers, plus five more glaciers with unknown names (Fig. 2). Where practical we extended the glacier centerlines past the coast to enable the gravimeter to detect possible sills in the fjords.

Thanks to the high pressure ridge along the northeast coast of Greenland, the weather was great as expected. We only lost less than 5% of ATM data on the western lines near Kangerlussuaq due to the bad weather there.

Individual instrument reports from experimenters on board the aircraft:

ATM: Both ATM systems worked well and collected good data along the entire line in cloud free conditions. ATM collected a total of 6.5 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 failed after 50 GB of recording. The backup system was activated. Two hours of data were lost.

Accumulation radar: Worked well today.

Gravimeter: Worked well.

Magnetometer: Worked well and used the LDEO data logger today without problems

DMS: DMS worked well and collected 16338 frames on the primary system today.

KT-19 skin temperature sensor: System worked well, except for the beginning of the line.

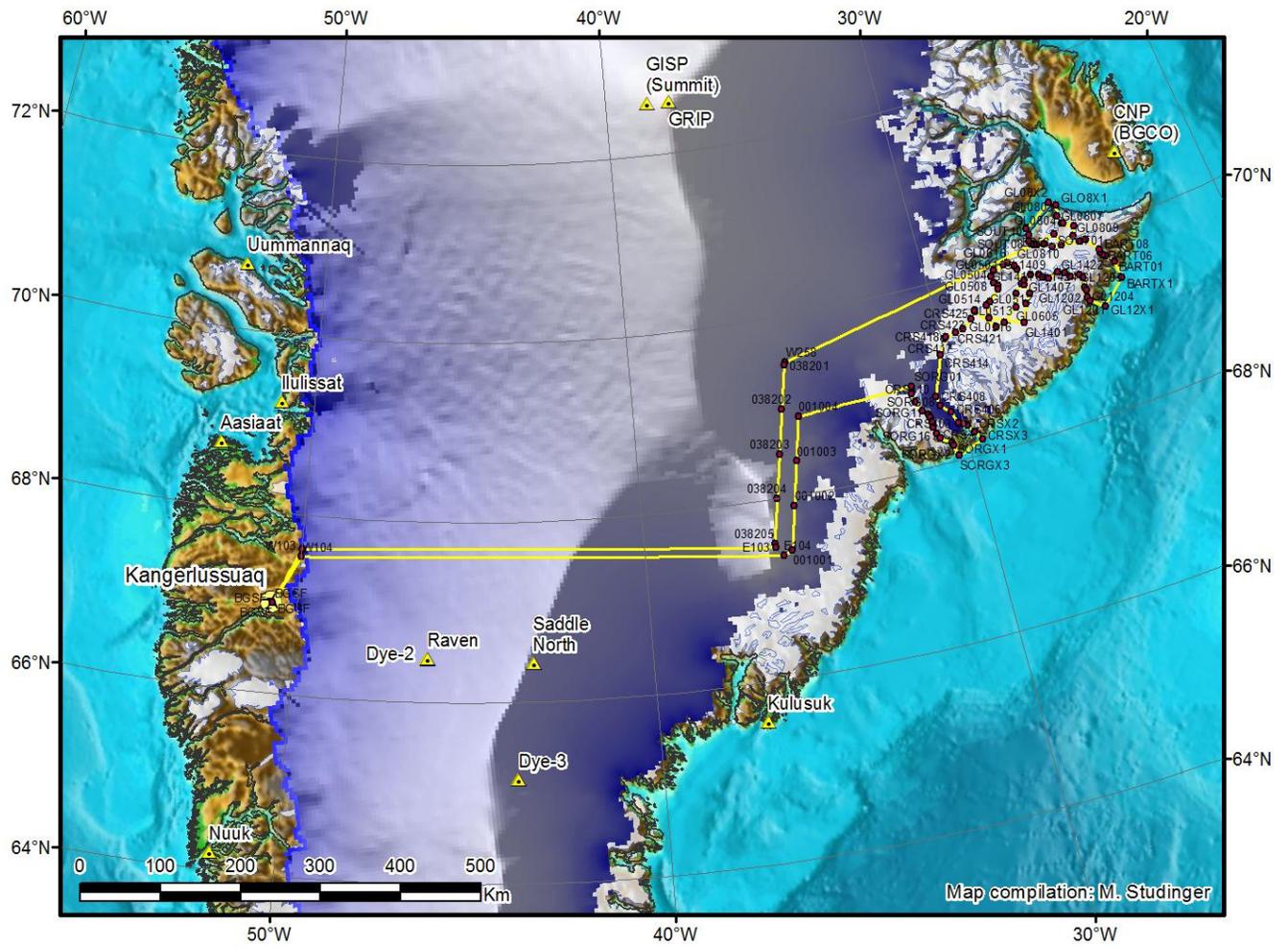


Figure 1: Today's mission plan (yellow).

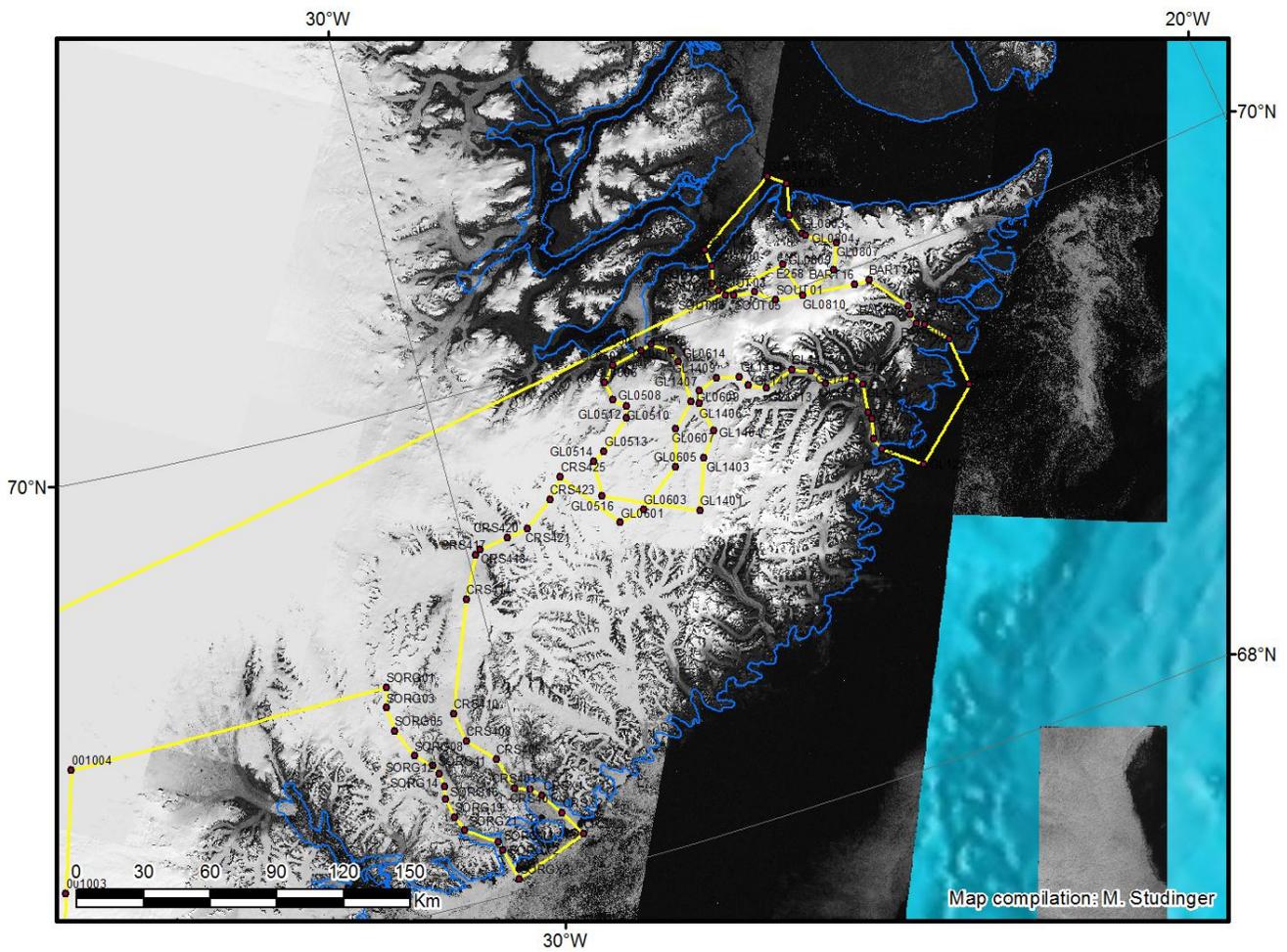


Figure 2: Today's mission plan (yellow) over the Geikie Plateau area.

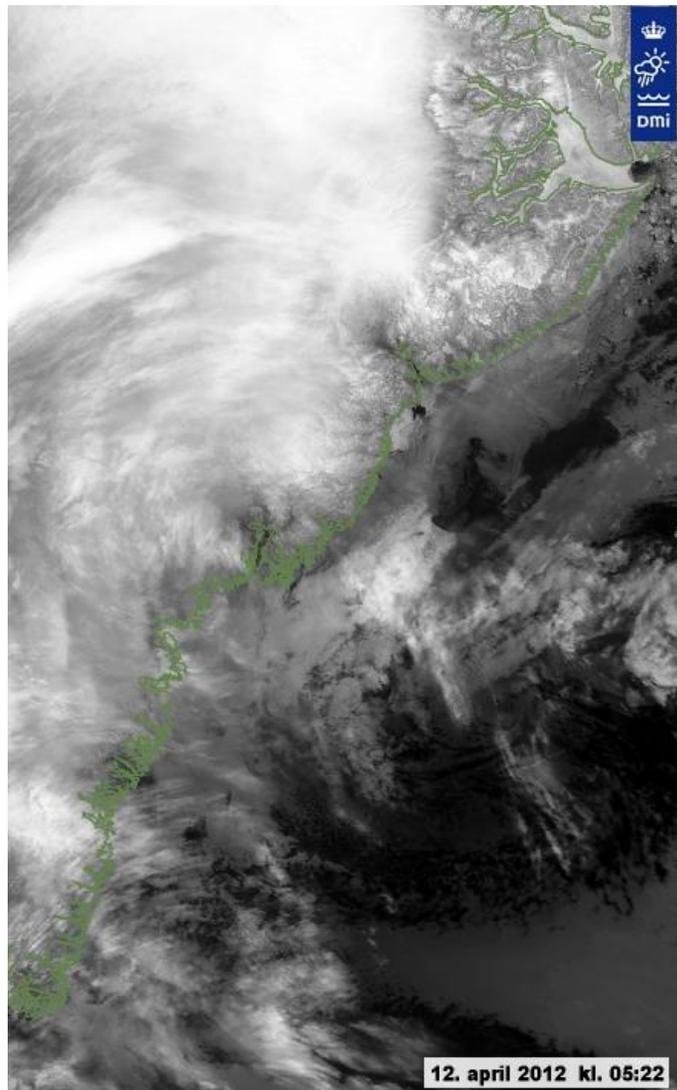


Figure 3: NOAA infrared satellite image showing cloud cover over survey areas in central east Greenland.



Figure 4: DMS mosaic of Sorgenfri Glacier calving front during today's flight from James Jacobson/DMS.