Preliminary Science Flight Report
Operation IceBridge Arctic 2011

Flight: F36
Mission: Ellesmere Island 01

Flight Report Summary

Aircraft	**P-3B (N426NA)**
Flight Number	036
Flight Request	11P006
Date	Tuesday, May 10, 2011 (Z)
Purpose of Flight	Mission Ellesmere Island 01
Take off time	11:03 Zulu from Thule Air Base (BGTL)
Landing time	18:11 Zulu at Thule Air Base (BGTL)
Flight Hours	7.4 hours.
Aircraft Status	Airworthy.
Sensor Status	All installed sensors operational.
Significant Issues	None
Accomplishments	• Low-altitude survey (1,500 ft AGL) of several glaciers and ice caps on Ellesmere Island, Axel Heiberg Island and Meighen Island. • ATM, MCoRDS, accumulation, snow and Ku-band radars, gravimeter, magnetometer, POS/AV, and DMS were operated on the survey lines. • Ramp pass at Thule at 2,000 ft AGL for ATM calibration. • Several pitch maneuvers over for snow and Ku-band radar. • On the way from the Agassiz Ice Cap to Thule we had time to stay low at 1,500 ft and collect sea ice data across the Nares Strait and the Kane Basin.
Geographic Keywords	Ellesmere Island, Axel Heiberg Island and Meighen Island, Prince of Whales Ice Field, Agassiz Ice Cap, Kane Basin, Nares Strait.
ICESat/CryoSat Track	None.
Repeat Mission	1995, 2000, and 2005.

Science Data Report Summary

Instrument	Instrument Operational			Data Volume	Instrument Issues
	Survey Area	Entire Flight	High-alt. Transit		
ATM	☑	☒	☒	56 GB	None
MCoRDS	☑	☒	☒	1.2 TB	None
Snow Radar	☑	☒	☒	256 GB	None
Ku-band Radar	☑	☒	☒	256 GB	None
Accumulation Radar	☑	☒	☒	200 GB	None
DMS	☑	☒	☒	62 GB	None
POS/AV	☑	☑	☑	2 GB	None
Gravimeter	☑	☑	☑	640 MB	None
Magnetometer	☑	☑	☑	480 MB	None

Mission Report (Michael Studinger, Mission Scientist)

On today's mission we surveyed glaciers and small ice caps on Ellesmere Island, Axel Heiberg Island and Meighen Island, including the Prince of Whales Ice Field and Agassiz Ice Cap. The weather in the survey area was perfect. Luckily, the snow that has fallen over night did not get blown around as predicted, reducing visibility, and we were able to take off this morning. During the day, the snow melted and did not pose a threat together with the strong winds during landing. Luckily, the local weather in Thule worked out for takeoff and landing.

Most of today's mission was a repeat of previously surveyed lines by the ATM/KU teams in 1995, 2000, and 2005. After finishing the last line across the Agassiz Ice Cap we were ahead of schedule and had time to stay low at 1,500 ft AGL and collect sea ice data over the Nares Strait and the Kane Basin across the transition from sea ice to open water.

Individual instrument reports from experimenters on board the aircraft:

ATM: worked very well.

MCoRDS: worked well.

Snow and Ku-band radar: The snow and Ku-band radars worked well.

Accumulation radar: worked well.

Gravimeter: Worked well. No issues.

Magnetometer: worked well.

DMS: worked very well.

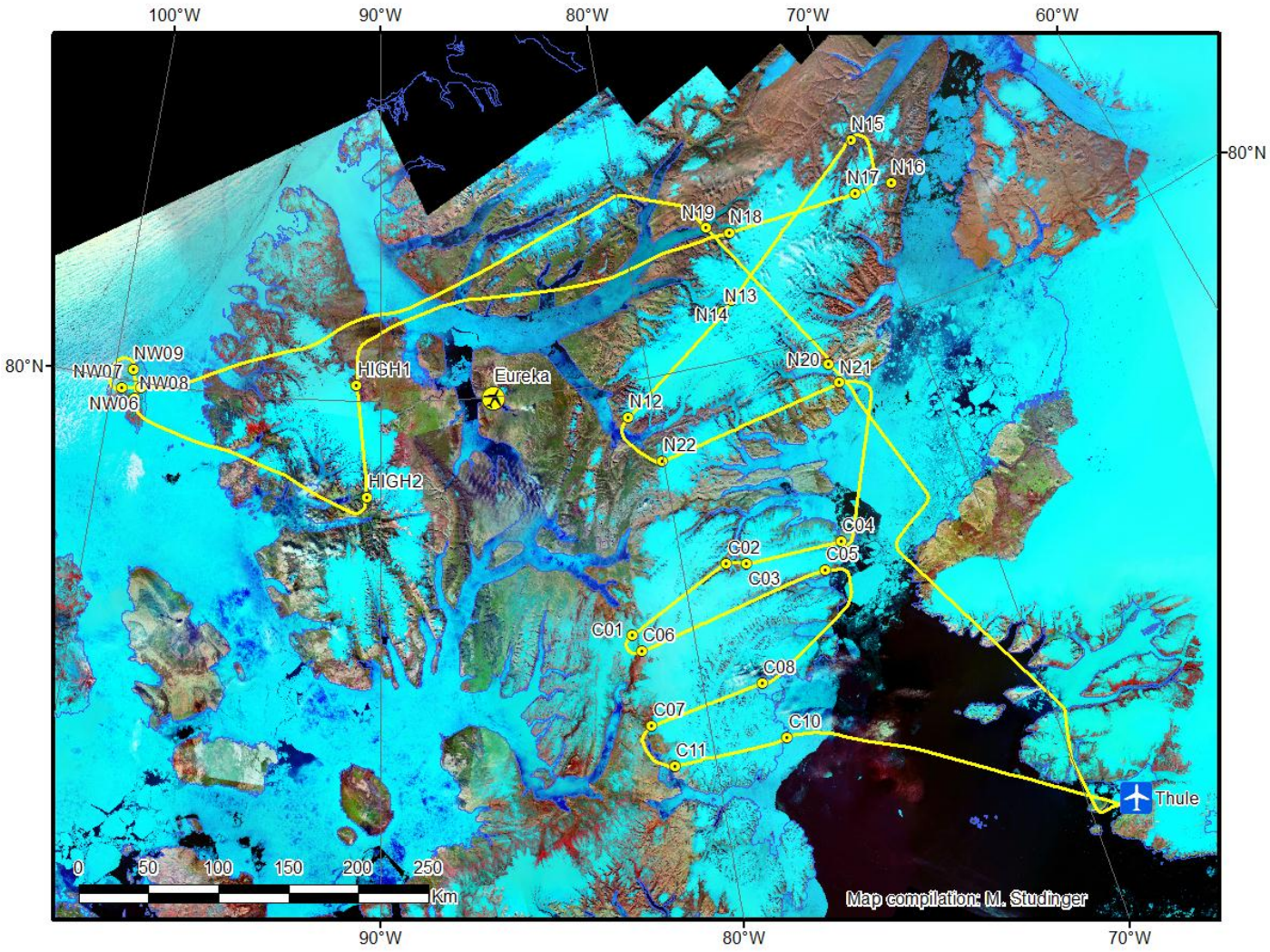

Figure 1: P-3 trajectory and mission plan for of today's flight.

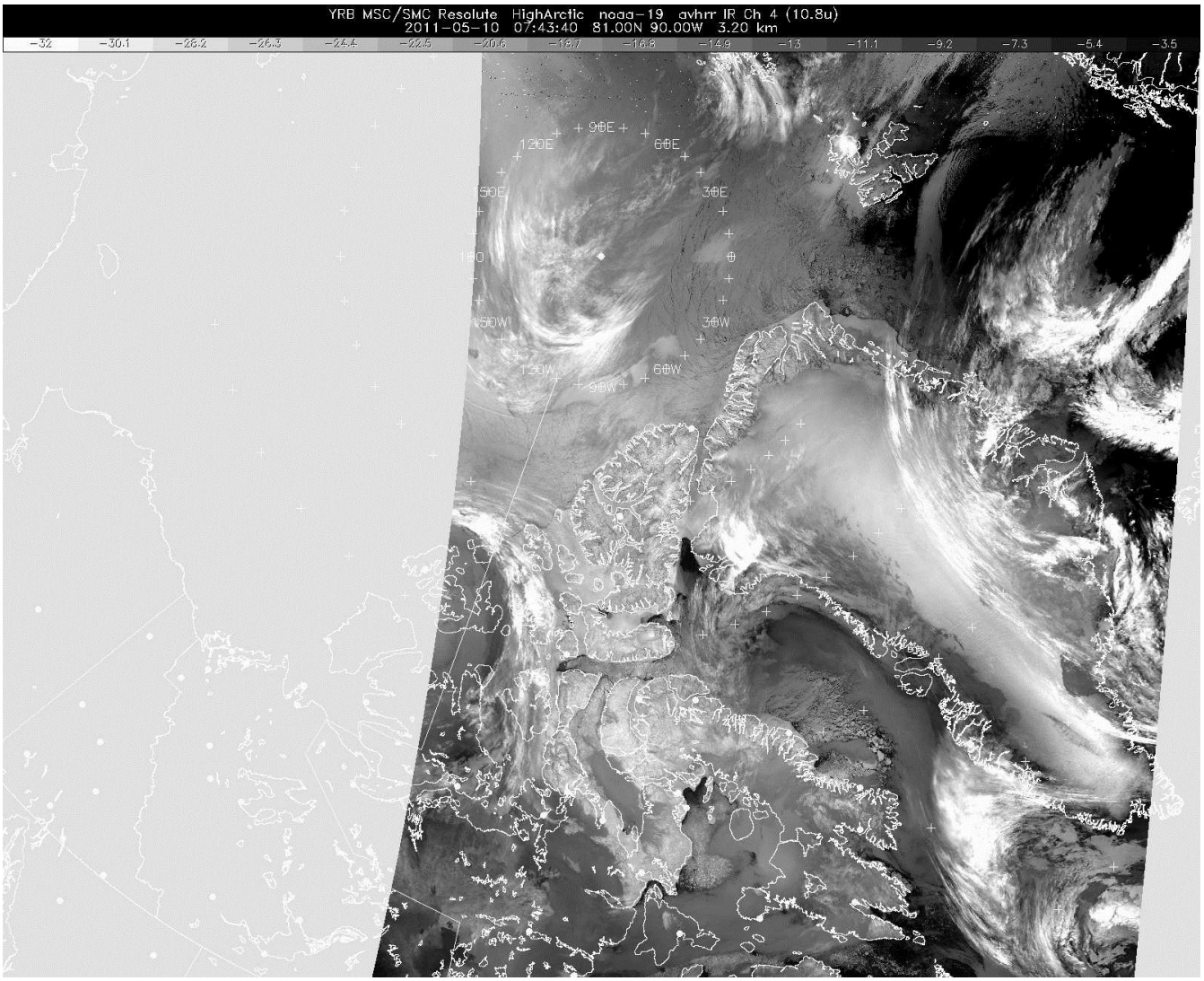

Figure 2: IR satellite image downloaded shortly before takeoff.

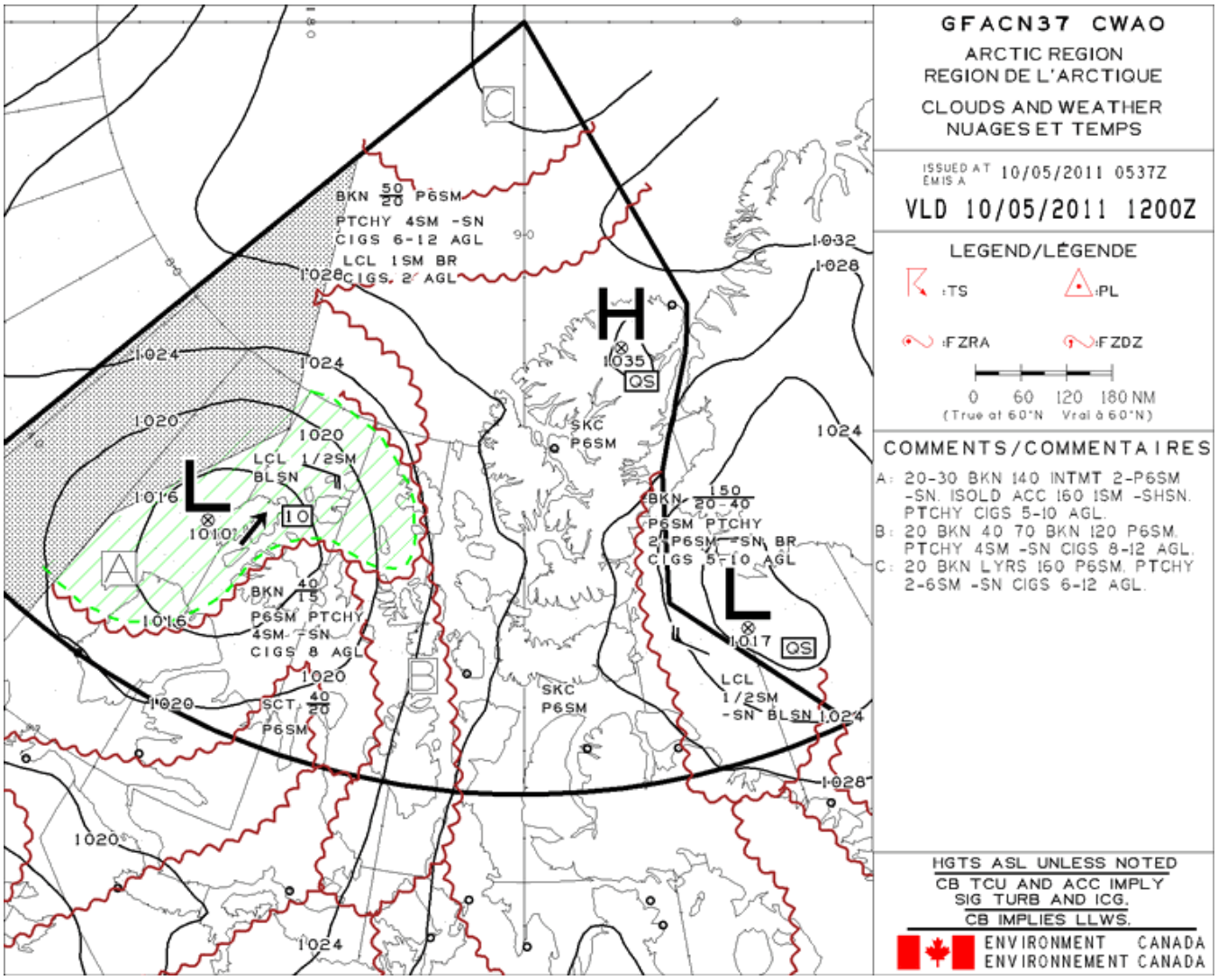

Figure 3: Aviation weather forecast downloaded shortly before takeoff.