

---

# Preliminary Science Flight Report

## Operation IceBridge Arctic 2011



**Flight:** F37  
**Mission:** NW Coastal 04

---

### Flight Report Summary

<b>Aircraft</b>	<b>P-3B (N426NA)</b>
<b>Flight Number</b>	037
<b>Flight Request</b>	11P006
<b>Date</b>	Wednesday, May 11, 2011 (Z)
<b>Purpose of Flight</b>	Mission NW Coastal 04
<b>Take off time</b>	11:05 Zulu from Thule Air Base (BGTL)
<b>Landing time</b>	18:41 Zulu at Thule Air Base (BGTL)
<b>Flight Hours</b>	7.8 hours.
<b>Aircraft Status</b>	Airworthy.
<b>Sensor Status</b>	All installed sensors operational.
<b>Significant Issues</b>	None
<b>Accomplishments</b>	<ul style="list-style-type: none"><li>• Low-altitude survey (1,500 ft AGL) of several lines along the NW coastal areas.</li><li>• ATM, MCoRDS, accumulation, snow and Ku-band radars, gravimeter, magnetometer, POS/AV, and DMS were operated on the survey lines.</li><li>• Ramp pass at Thule at 1,000 ft AGL for ATM calibration.</li></ul>
<b>Geographic Keywords</b>	NW Greenland, Yngvar Nielsen Glacier.
<b>ICESat/CryoSat Track</b>	None.
<b>Repeat Mission</b>	None.

## Science Data Report Summary

Instrument	Instrument Operational			Data Volume	Instrument Issues
	Survey Area	Entire Flight	High-alt. Transit		
<b>ATM</b>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	66 GB	None
<b>MCoRDS</b>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2 TB	None
<b>Snow Radar</b>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	380 GB	None
<b>Ku-band Radar</b>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	380 GB	None
<b>Accumulation Radar</b>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	306 GB	None
<b>DMS</b>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	136 GB	None
<b>POS/AV</b>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	2 GB	None
<b>Gravimeter</b>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	640 MB	None
<b>Magnetometer</b>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	480 MB	None

### Mission Report (Michael Studinger, Mission Scientist)

Today's flight took us to the north-west coastal areas of Greenland. This is the area where we have the last remaining high-priority mission left, but low clouds and fog over Baffin Bay visible on the satellite image prevented us from flying the mission NW Glaciers. The low clouds and fog over Baffin Bay often extend inland and obscure the lower parts of the outlet glaciers. We decided to fly a mission further inland, NW Coastal 05, with two glacier runs. The lower part of the first glacier, Yngvar Nielson, was obscured by lower clouds as we had expected. We also lost a small part at the southern end due to low clouds that we had expected from the forecast and the satellite image. Other than that we completed the mission as planned. All other remaining science targets showed more clouds than the missions in the NW area.

#### Individual instrument reports from experimenters on board the aircraft:

**ATM:** worked very well. Lost some data in the south due to clouds.

**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. Targets in the south were obscured by clouds.

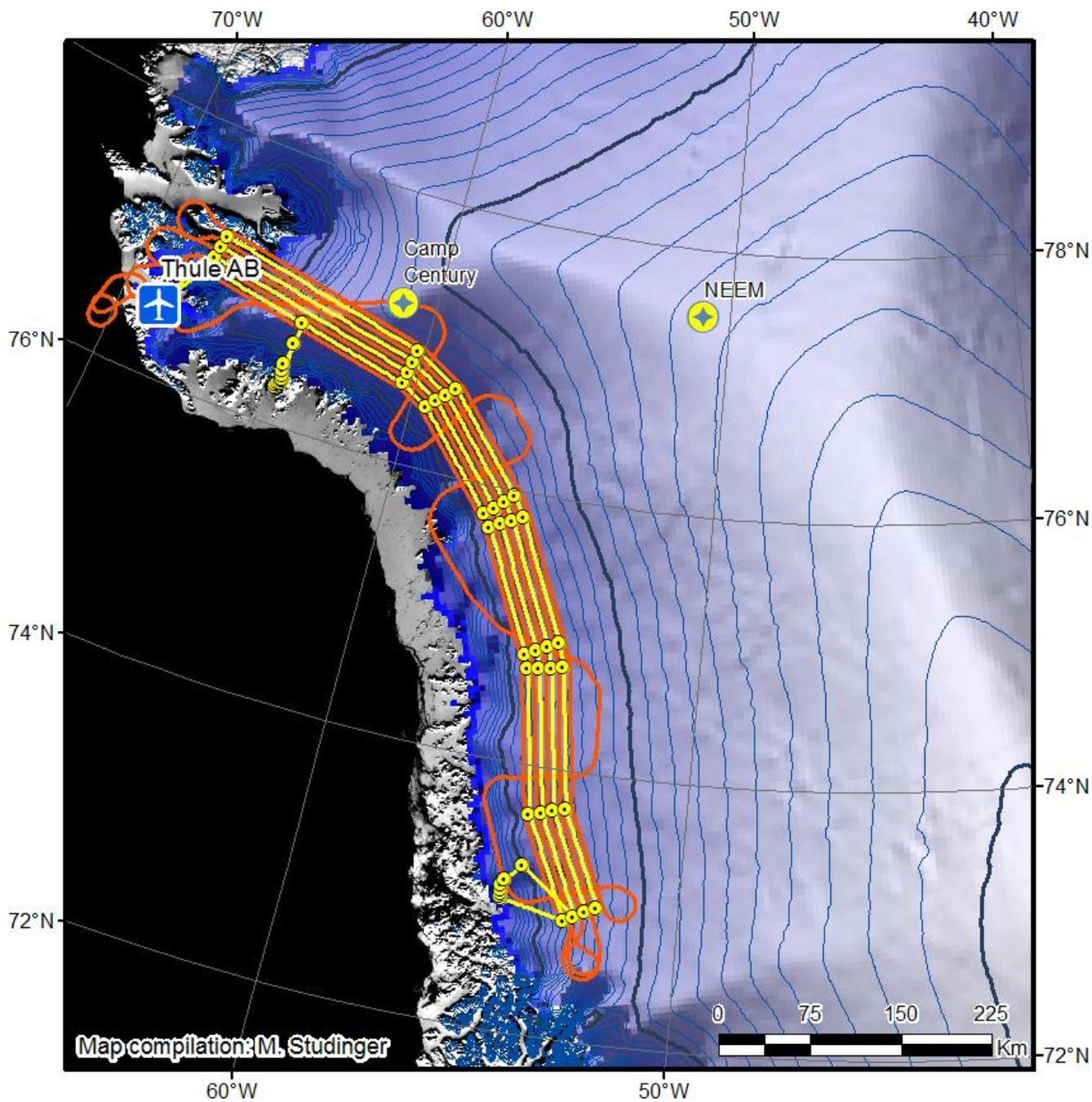


Figure 1: Mission plan for of today's flight (yellow) together with the DC-8 trajectory from March 29, 2010 (red).

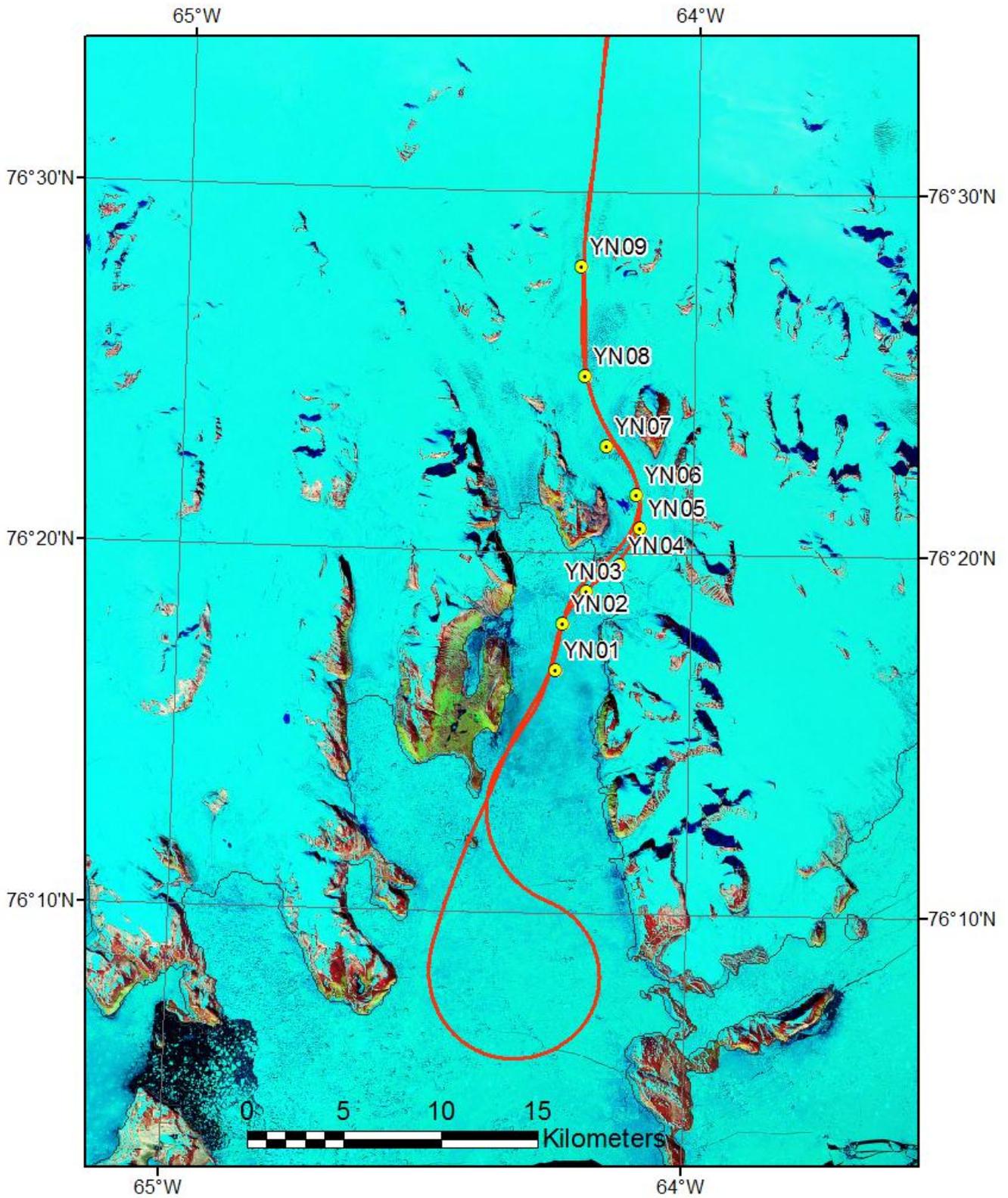


Figure 2: P-3 trajectory of today's glacier run along the centerline of Yngvar Nielson Glacier.

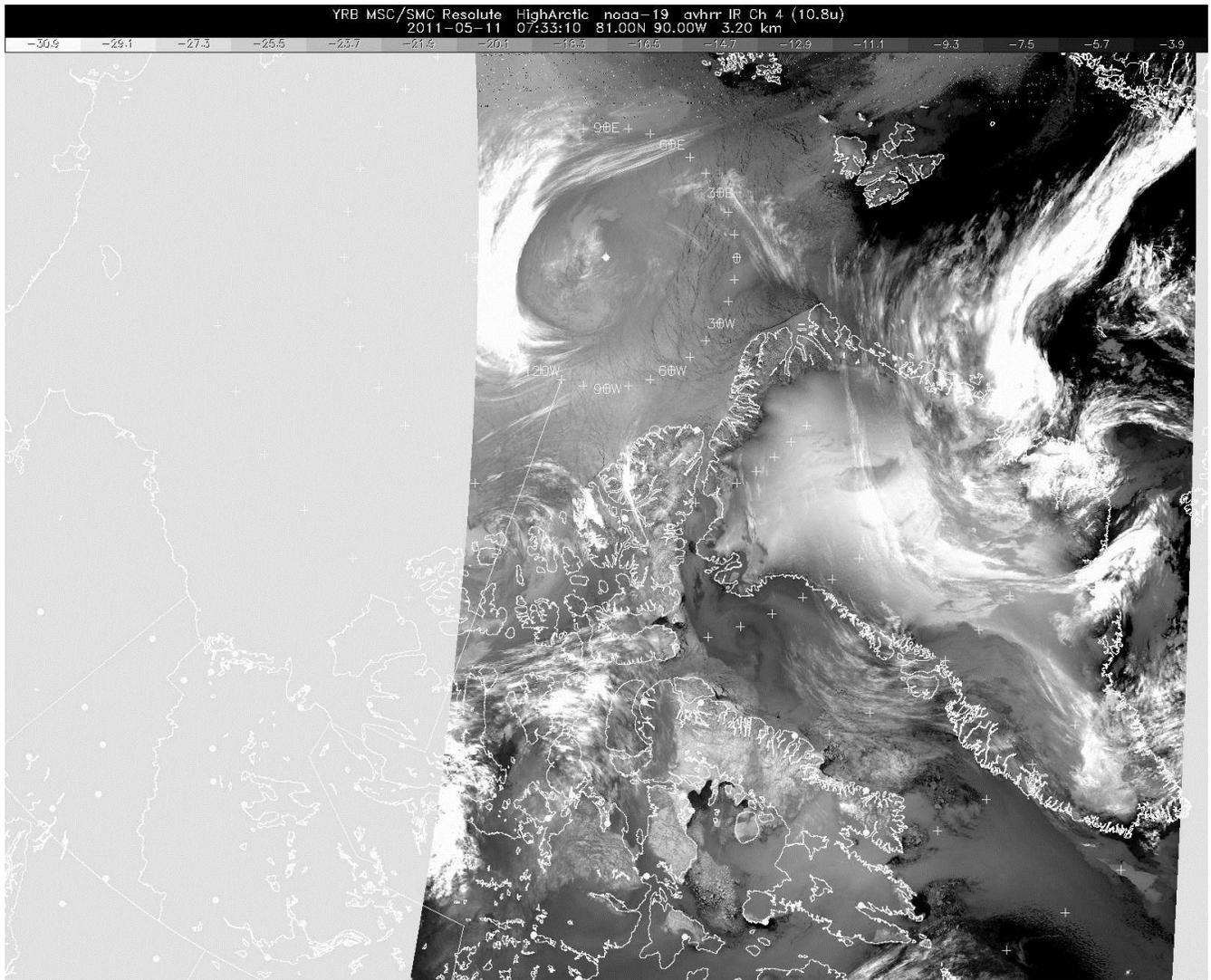


Figure 2: IR satellite image downloaded shortly before takeoff.

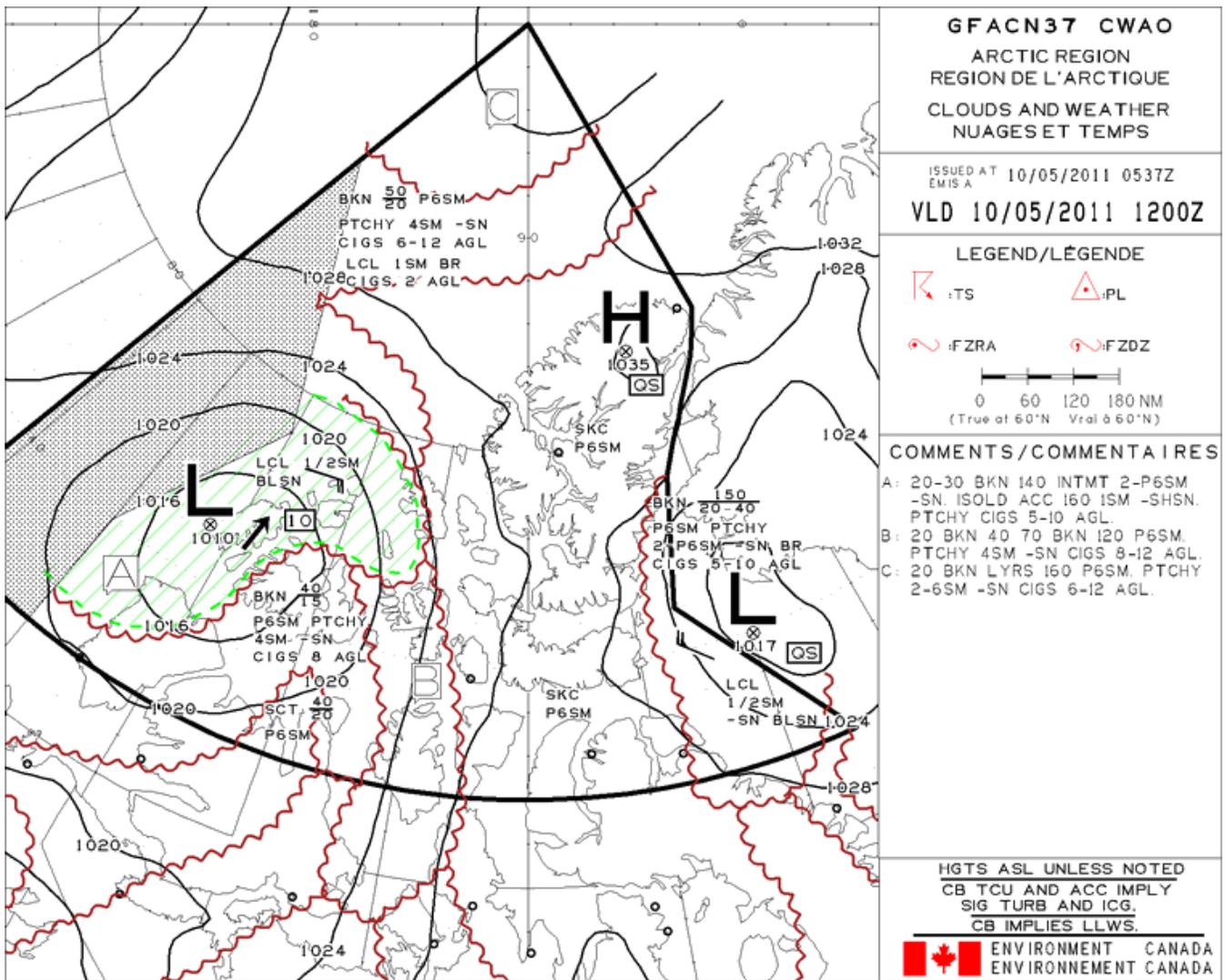


Figure 3: Aviation weather forecast downloaded shortly before takeoff.