Science Flight Report
Operation IceBridge Arctic 2012

Flight: **Falcon 01**
Mission: **Northwest Passage (sea ice)**

Flight Report Summary

Aircraft	**Falcon (HU-25) N525**
Flight Number	Falcon 01
Flight Log number	12F001
Date	Saturday, April 28, 2012 (Z)
Purpose of Flight	Operation IceBridge Northwest Passage sea ice mission
Take off time	1210 Zulu from Thule Air Base
Landing time	1538 Zulu at Thule Air Base
Flight Hours	3.5 hours
Aircraft Status	Airworthy.
Sensor Status	All installed sensors operational.
Significant Issues	None.
Accomplishments	• LVIS and photographic survey at 28,000 ft of eastern part of Northwest Passage • LVIS overflight of Devon Island ice cap
Geographic Keywords	Canadian Arctic Islands
Satellite Tracks	None
Repeat Mission	Devon Island Icecap repeat of 2002, 2008 and 2011 laser altimetry line

Science Data Report Summary

Instrument	Data Volume			Instrument Issues
	Survey Area	Entire Flight		
LVIS	☑	☒	35 GB	None
LVIS cameras	☑	☒	60 GB	None

Mission Report (Seelye Martin, Acting Project Manager)

This is one of the two sea ice missions for LVIS that the Sea Ice Science Group ranked "High". For this Northwest Passage mission, the Thule weather office predicted clear skies along the flight line except for some clouds and heavy turbulence near Thule. The nominal mission altitude was 28,000 feet. The total mission length was 2,285 km. Except for a ten-minute period following takeoff, when the laser detectors were warming up, there were no problems with LVIS. The cameras also worked well. This is the first profiling overflight of the passage region. Because of strong headwinds going out, and strong tail winds coming back (about 75 knots), there was time on the return for a reflight of an earlier ATM line from over the Devon Ice Cap taken in 2000, 2005 and 2011. This was the first Arctic science flight for the Falcon, and we thank everyone on the team for their hard work in making this mission a success.

Individual instrument reports from experimenters on board the aircraft:

LVIS: The LVIS system worked well and collected data for the majority of the flight. Few-no clouds were encountered along the data lines. LVIS collected a total of 3.4 hours of data with ~99% coverage over the targeted area.

LVIS-cameras: worked well.

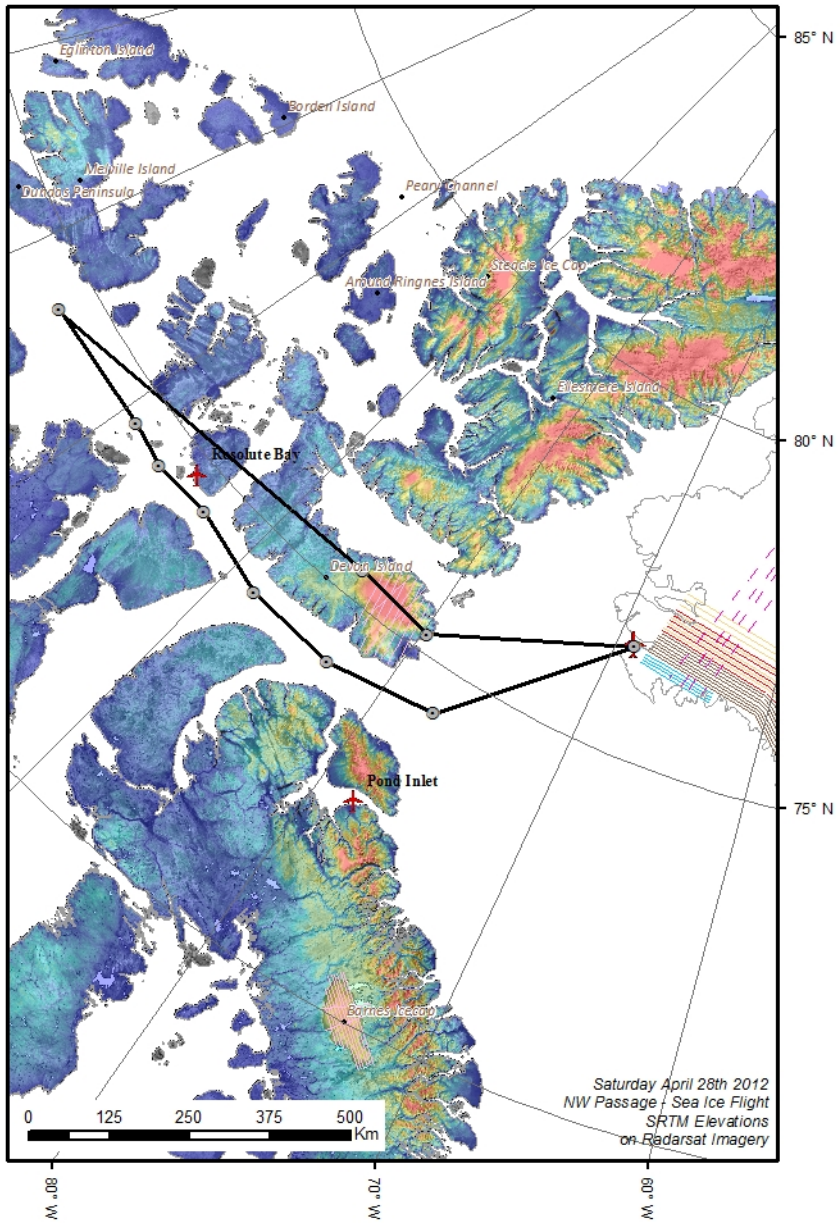

Figure 1: Today's mission (black). For land, warmer colors indicate higher altitudes.