
Preliminary Science Flight Report

Operation IceBridge Antarctica 2011



Flight: F22

Mission: Elbow (Eltanin Bay and George VI Ice Shelf)

Flight Report Summary

Aircraft	DC-8 (N817NA)
Flight Number	120126
Flight Request	128008
Date	Wednesday, November 16, 2011 (Z), Day of Year 320
Purpose of Flight	Operation IceBridge Mission Elbow
Take off time	12:10:12 Zulu from Punta Arenas (SCCI)
Landing time	23:56:44 Zulu at Punta Arenas (SCCI)
Flight Hours	11.9 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 ft AGL) over glaciers and grounding lines at the Eltanin Bay and the George VI Ice Shelf. Completed entire mission as planned.• ATM, MCoRDS, snow and Ku-band radars, gravimeter, and DMS were operated on the survey lines.• Collected additional data over sea ice on the inbound and outbound transits from high altitude.• Conducted one ramp pass (2,000 ft AGL) at Punta Arenas airport before landing.
Geographic Keywords	Eltanin Bay, George VI Ice Shelf, Antarctic Peninsula
ICESat Tracks	0034, 0085, 0153, 1320.
Repeat Mission	2008, 2009.

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"/>	64 GB	None
MCoRDS	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	2.1 TB	None
Snow Radar	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	340 GB	None
Ku-band Radar	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	340 GB	None
DMS	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	95 GB	None
Gravimeter	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	1.4 GB	None
DC-8 Onboard Data	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	40 MB	None

Mission Report (Michael Studinger, Mission Scientist)

This flight is dedicated to (a) repeating the 2008 October 12th NASA/CECS/Armada de Chile mission, which continues the Amundsen coastal flux line north adjacent to the George VI Ice Shelf, and (b) occupying two ascending and two descending ICESat lines over the major glacier flowing into Eltanin Bay, plus occupies the centerline of that glacier. It is currently a repeat of the 2009 November 3rd IceBridge mission, with the grounding line portion slightly extended to the mouth of the Fleming Glacier, and with two extra George VI ice shelf crossings.

The east side of the Peninsula had precipitation and low clouds, which prevented us from flying the higher priority missions in that area. We decided to fly “elbow” instead. The weather was perfect.

We did a short 10 minute loop over the grounding line of the George VI Ice Shelf to allow swapping disks on the MCoRDS system.

We collected additional data over sea ice on the inbound and outbound transits from high altitude.

In total we collected 7.1 hours of science data.

The wildlife locations in the vicinity of the survey lines were far enough away to no cause any issues.

Individual instrument reports from experimenters on board the aircraft:

ATM: Both systems worked well. 7.1 hours of science data collection.

MCoRDS: The MCoRDS system worked well.

Snow and Ku-band radar: The snow and Ku-band radars collected data along the entire line.

Gravimeter: Worked well.

DMS: DMS worked well.

DC-8 on board data: System worked well.

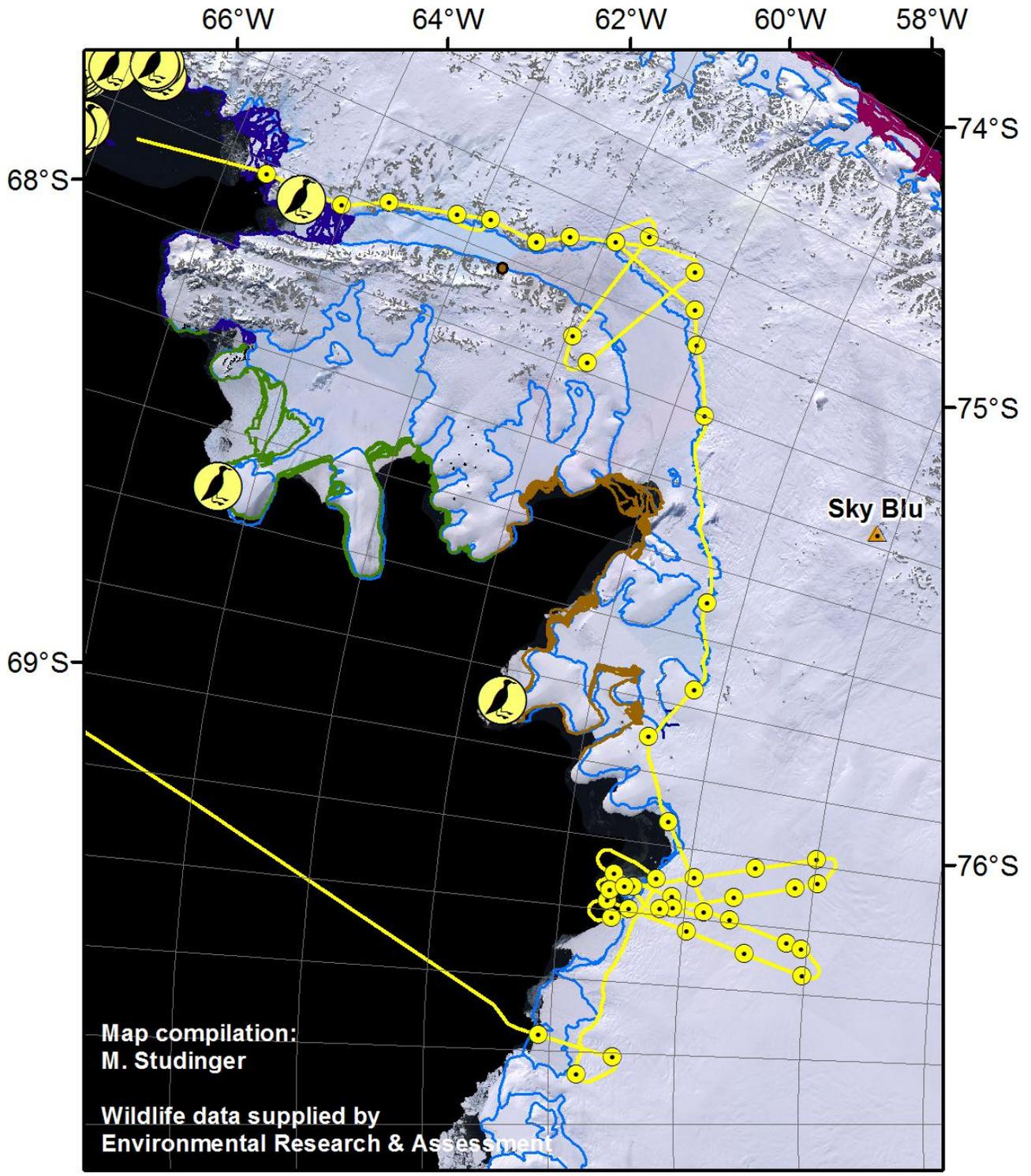


Figure 1: DC-8 trajectory of today's flight over the northern Peninsula. Background image is LIMA mosaic.