
Preliminary Science Flight Report

Operation IceBridge Antarctica 2011



Flight: F14
Mission: Getz Ice Shelf 4

Flight Report Summary

Aircraft	DC-8 (N817NA)
Flight Number	120118
Flight Request	128008
Date	Thursday, November 3, 2011 (Z), Day of Year 307
Purpose of Flight	Operation IceBridge Mission Getz 4
Take off time	11:59:43 Zulu from Punta Arenas (SCCI)
Landing time	23:34:03 Zulu at Punta Arenas (SCCI)
Flight Hours	11.7 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) Getz Ice Shelf. Completed entire mission as planned.• ATM, MCoRDS, snow and Ku-band radars, gravimeter, and DMS were operated on the survey lines.• Conducted two ramp passes (1500 ft AGL) at Punta Arenas airport after takeoff for ATM, DMS, snow and Ku-band radar instrument calibration.• Performed $\pm 10^\circ$ pitch maneuvers over open water and thin sea ice for snow and Ku-band radar calibration.• Collected data over sea ice in the Bellingshausen Sea on high altitude transits as well as Peter I Island.
Geographic Keywords	Getz Ice Shelf, Marie Byrd Land, Antarctica
ICESat Tracks	0191.
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"/>	43 GB	None
MCoRDS	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	1.2 TB	None
Snow Radar	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	230 GB	None
Ku-band Radar	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	230 GB	None
DMS	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	71.5 GB	None
Gravimeter	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	1.5 GB	None
DC-8 Onboard Data	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	40 MB	None

Mission Report (John Sonntag, Mission Scientist)

This is a new mission, designed to supplement the 2009 Getz 1, 2010 Getz 2, and planned Getz 3 flights. The twofold purpose is to continue mapping the sub ice-shelf bathymetry using the gravimeter, and to continue mapping the ice surface and bedrock upstream of the grounding line. Coverage extends west of the previous OIB Getz surveys, and also occupies an ICESat line crossing all of the flown and planned Getz OIB flight lines.

The weather in the survey area was perfect.

We actively avoided the known penguin colony on Bear Peninsula during approach to survey start, since it lied directly on our route. We cleared the colony by more than two nautical miles laterally, and we were more than 6000 feet above the surface at the time.

Individual instrument reports from experimenters on board the aircraft:

ATM: Both systems worked well.

MCoRDS: The MCoRDS worked well.

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

Gravimeter: Worked well. No issues.

DMS: DMS worked well. No issues.

DC-8 on board data: System worked well.

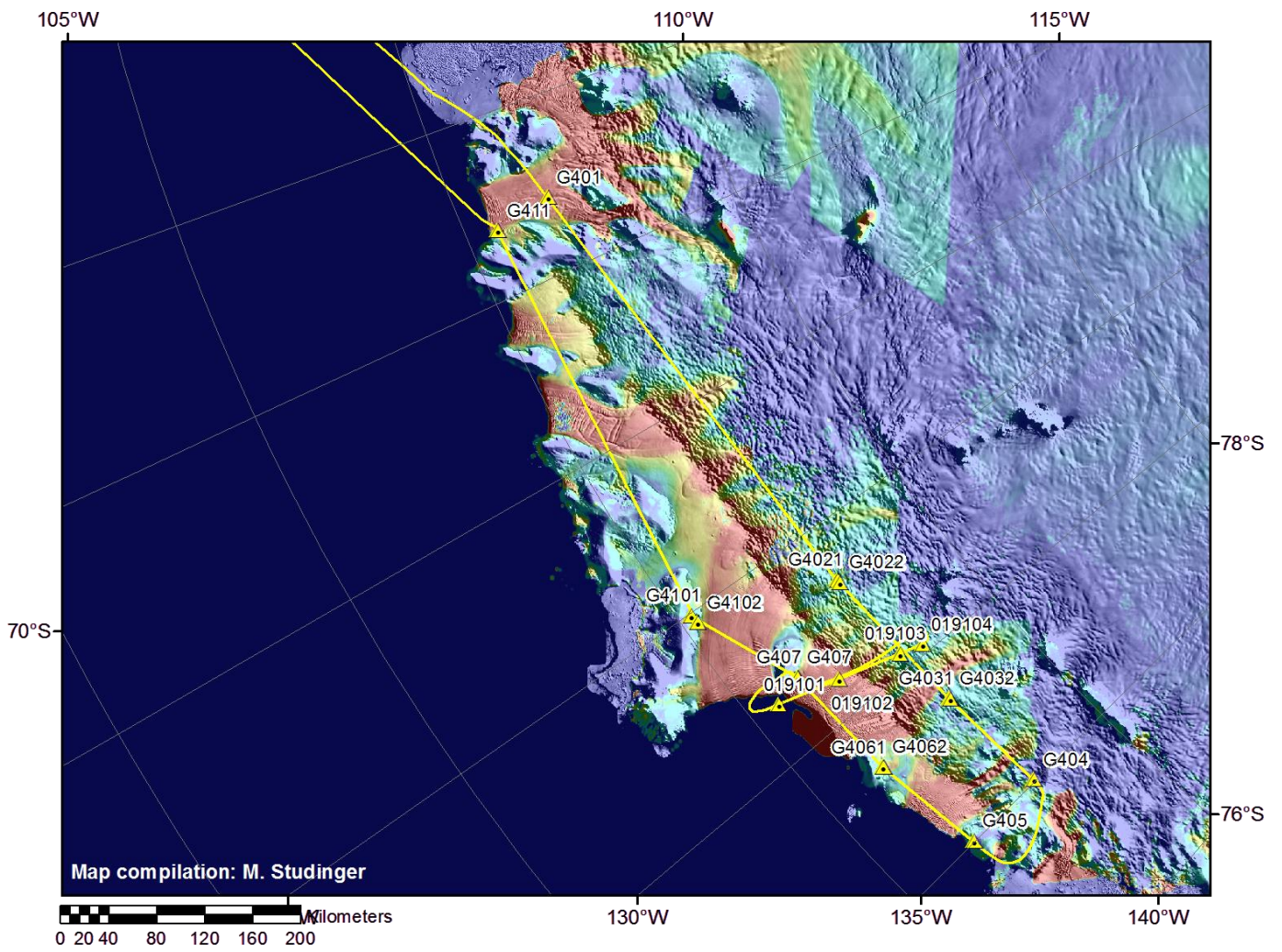


Figure 1: DC-8 trajectory over the Getz Ice Shelf. Background image is MODIS mosaic and ice surface velocity from InSAR.