
Preliminary Science Flight Report

Operation IceBridge Antarctica 2011



Flight: GV-FL07
Mission: LVIS-Getz1

Flight Report Summary

Aircraft	NSF G-V (N677F)
Flight Number	7
Flight Request	118003
Date	Monday October 17 th , 2011, DOY 290
Purpose of Flight	Operation IceBridge Mission, LVIS Getz
Take off time	8:45 local time from Punta Arenas (SCCI) on October 17, 2011
Landing time	19:37 local time at Punta Arenas (SCCI) on October 17, 2011
Flight Hours	10.9
Aircraft Status	Airworthy.
Sensor Status	All installed sensors operational.
Significant Issues	None
Accomplishments	<ul style="list-style-type: none">• High-altitude survey (~42,000 ft pressure altitude) of grid lines• Completed mission as planned.• Mapped approx. > 3,000 sq. km with LVIS sensor• Conducted roll and pitch maneuvers for calibration at start/end of flight
Geographic Keywords	Antarctica, Getz Ice Shelf, West Antarctic Ice Sheet, WAIS
ICESat/CryoSat Track	Grid lines cross numerous Icesat tracks
Repeat Mission	Overlap with previous IceBridge data at Getz

Science Data Report Summary

Instrument	Instrument Operational			Data Volume	Instrument Issues
	Survey Area	Entire Flight	High-alt. Transit		
LVIS	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	50 GB	None
POS/AV (510 + 610)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	5 GB	None
LVIScameras(2)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	25 GB	None
G-V Onboard Data	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	40 MB	None

Mission Report (Michelle Hofton: Mission Scientist, Instrument Operators: David Rabine, Shane Wake)

This LVIS G-V flight surveyed a series of lines along the southern edge of the Getz ice shelf extending inland, plus transit lines to and from the survey area. Two, ~350km long grid lines and two ~175km long lines all spaced ~20km apart were surveyed. The survey is part of the overall deployment plan to collect grid data over a large region that encompasses the entire Antarctic Peninsula to the Getz Coast. Data lines in the Getz region are positioned to map the grounding lines of several inlet glaciers to the Getz ice shelf, and work inland in 20 km steps.

Weather reports from the airport weather office do not cover the planned survey area so we had to rely upon the weather models alone. The models predicted a small cloud free area in the central region of the Getz ice shelf and a dense cloud cover on the eastern edge of the survey lines. The flight was launched with the expectation of selecting the final flight lines using visible MODIS imagery available during the transit portion of the flight to the ground team, and, ultimately, based on conditions observed in the area upon arrival. Transit to the area was cloudy although data were collected from the Thwaites/Dotson area onwards with about 60% coverage from the coast to the start of the first line. The first data line was cloud free, but subsequent lines (working inland) lost up to 10% of the data at their eastern end due to the cloudbank. The start and stop points for each line was adjusted accordingly (i.e. the western 10miles was replaced with an additional 10miles at the eastern end). A clear crossing line was flown at the end of the survey. Overall coverage was ~90%.

The LVIS sensor worked very well. Data was successfully collected over the survey lines and on portions of the transit over land to/from the target area. The camera was operated in cloud free areas.

Roll and pitch maneuvers were carried out on the transit to/from Antarctica.

As usual, the aircrew and G-V aircraft performed superbly.

Individual instrument reports from experimenters on board the aircraft:

LVIS: The LVIS system worked well.

POS/AV: Systems worked well. No issues.

LVIScam: System worked well. No issues.

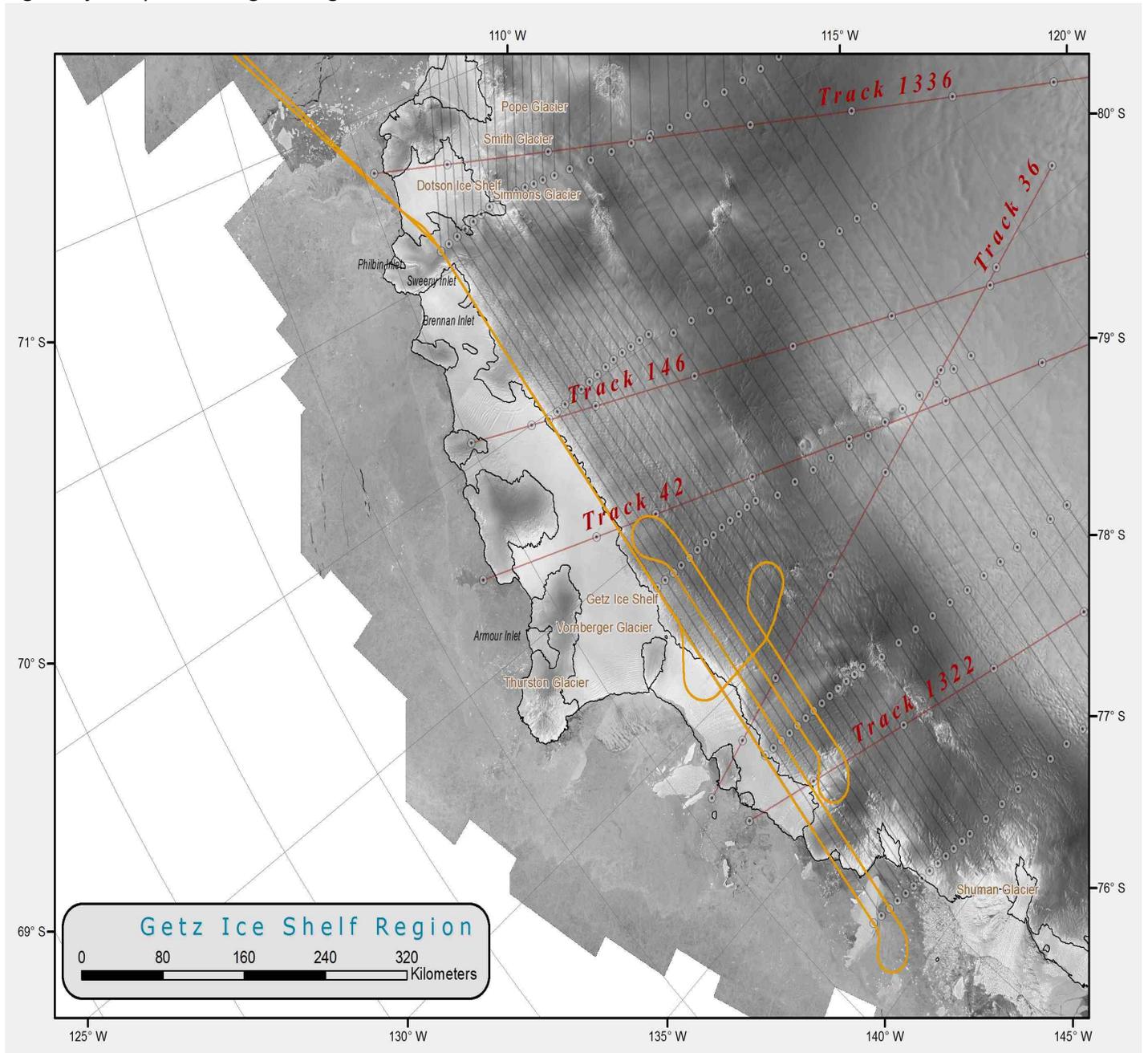
G-V onboard data: System worked well.

Pictures taken during the this mission

(Photo credit: Michelle Hofton)



Flight trajectory for this flight is in gold.



Flight Hours Summary

Flight	Date	Aircraft Flight #	Data Flight#	Duration (hr)	Running Total(hr)	Remaining Science Hours*
						100.00
PUQ-PUQ	10/07/11	RF01	GV-FL01	10.7	10.7	89.3
PUQ-PUQ	10/08/11	RF02	GV-FL02	10.4	21.1	78.9
PUQ-PUQ	10/10/11	RF03	GV-FL03	10.7	31.8	68.4
PUQ-PUQ	10/12/11	RF04	GV-FL04	10.3	42.1	58.4
PUQ-PMC	10/13/11	FF01	-	1.9		
PMC-PUQ	10/14/11	FF02	-	2.1		
PUQ-PUQ	10/14/11	RF05	GV-FL05	1.4	43.5	56.5
PUQ-PUQ	10/15/11	RF06	GV-FL06	10.5	54.0	46.0
PUQ-PUQ	10/17/11	RF07	GV-FL07	10.9	64.9	35.1

* Extended science mission hours are available