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# Preliminary Science Flight Report

## Operation IceBridge Antarctica 2011



**Flight:** GV-FL12  
**Mission:** LVIS-Getz3

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### Flight Report Summary

<b>Aircraft</b>	<b>NSF G-V (N677F)</b>
<b>Flight Number</b>	12
<b>Flight Request</b>	118003
<b>Date</b>	Wednesday October 27 <sup>th</sup> , 2011, DOY 300
<b>Purpose of Flight</b>	Operation IceBridge Mission, LVIS Getz3
<b>Take off time</b>	14:51 UTC from Punta Arenas (SCCI)
<b>Landing time</b>	00:44 UTC at Punta Arenas (SCCI) on October 19, 2011
<b>Flight Hours</b>	10.2
<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>• High-altitude survey (~42,000 ft pressure altitude) of grid lines</li><li>• Completed mission as planned.</li><li>• Conducted roll and pitch maneuvers for calibration at start/end of flight</li></ul>
<b>Geographic Keywords</b>	Antarctica, Getz Ice Shelf, Marie Byrd Land, West Antarctic Ice Sheet, WAIS
<b>ICESat/CryoSat Track</b>	Grid lines cross numerous Icesat tracks
<b>Repeat Mission</b>	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 checked="" 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 checked="" 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"/>	10 MB	None

### Mission Report (Michelle Hofton, Mission Scientist; Bryan Blair, Instrument Operator; Scott Luthcke, OIB Science Team)

Today's LVIS NSF G-V flight surveyed a series of lines inland of the Getz ice shelf over Marie Byrd land plus transit lines to and from the survey area. Two ~360km, and two ~120km long 20 km spaced grid lines were surveyed. These data extend the existing LVIS Getz/Marie Byrd region grid further inland. 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.

Model predictions and weather report from the airport weather office again predicted a cloud free area inland from the Getz coast and a dense cloud cover on the eastern edge of the survey area. The planned survey lines were mostly cloud free or thin enough for the LVIS instrument to acquire a high success rate of surface returns. Surface return collection rate was 88% for the two long lines and 90% for the two short survey lines. The transit lines to the survey region were mostly cloudy with some LVIS sea and land ice surface returns recorded. On the return transit flight clouds persisted, but the LVIS instrument collected small segments of land ice returns and ~450km of sea ice returns.

The LVIS sensor worked very well. Data was successfully collected over the survey lines and on portions of the transit over land and sea ice 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.

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

**LVIS:** The LVIS system worked well.

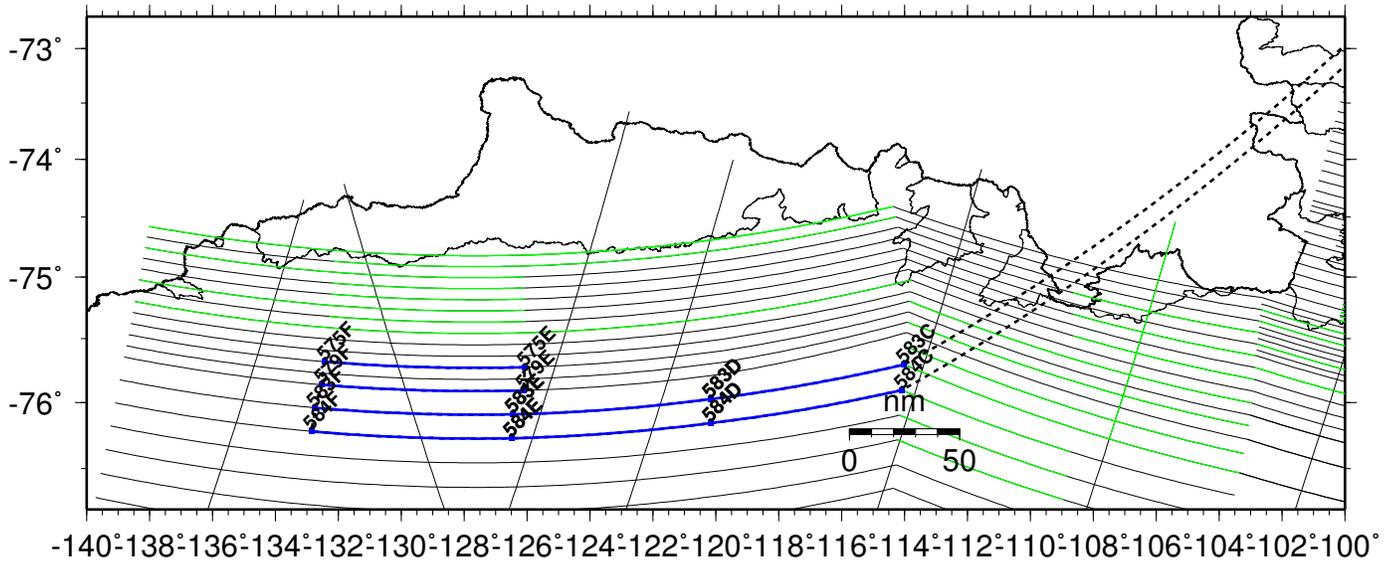
**POS/AV:** Systems worked well. No issues.

**LVIScam:** System worked well. No issues.

**G-V on board data:** System worked well.

LVIS lines surveyed during today's flight shown in blue.  
Previously surveyed LVIS lines shown in Green, and planned lines shown in Grey.

### 20111027Getz3Actual option



### Flight Hours Summary

<b>Flight</b>	<b>Date</b>	<b>Aircraft Flight #</b>	<b>Data Flight#</b>	<b>Duration (hr)</b>	<b>Running Total(hr)</b>	<b>Remaining Science Hours*</b>
						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	47.5	52.5
PUQ-PUQ	10/15/11	RF06	GV-FL06	10.5	58.0	42.0
PUQ-PUQ	10/17/11	RF07	GV-FL07	10.9	68.9	31.1
PUQ-PUQ	10/19/11	RF08	GV-FL08	10.5	79.4	20.6
PUQ-PMC	10/20/11	FF03	-	1.9		
PMC-PUQ	10/21/11	FF04	-	2.1		16.6
						+50
PUQ-PUQ	10/22/11	RF09	GV-FL09	10.4	93.8	55.2
PUQ-PUQ	10/23/11	RF10	GV-FL10	10.9	104.7	44.3
PUQ-PUQ	10/26/11	RF11	GV-FL11	10.7	115.4	33.6
PUQ-PUQ	10/27/11	RF12	GV-FL12	10.2	125.6	23.4

\* 50 additional mission flight hours added (10/21/11)