

# Science Flight Report

## Operation Ice Bridge May 2011



**UAF Alaska Flight No 3**  
**Mission Plan: Glacier Bay**

### Flight Report Summary

<b>Aircraft</b>	<b>DHC-3 Otter</b>
<b>Flight Number</b>	UAF-3
<b>Flight Request</b>	11M009
<b>Flight Hours</b>	7.2
<b>Take off time</b>	08:00:00.00 Z from Ultima Thule Outfitters Lodge
<b>Landing time</b>	16:00:00.00 Z at Yakutat
<b>Date</b>	Sunday, May 29 2011, Day of Year 149
<b>Purpose of Flight</b>	LiDAR surveys of glaciers within Glacier Bay, SE Alaska.
<b>Aircraft Status</b>	Airworthy.
<b>Sensor Status</b>	operational.
<b>Significant Issues</b>	None.
<b>Accomplishments</b>	<ul style="list-style-type: none"> <li>• LiDAR profiles of Glacier Bay, including the Grand Plateau, Grand Pacific, Melbern, Walker and Konamox Glacier.</li> </ul>
<b>Planned Events</b>	<ul style="list-style-type: none"> <li>• The next surveys will also be flown in Glacier Bay National Park.</li> </ul>

### Science Data Report Summary

This mission performed LiDAR surveys of glaciers of Glacier Bay, including the Grand Plateau, Grand Pacific, Melbern, Walker and Konamox Glaciers.

LiDAR data were collected at a height of 500-650 meters above the glacier surface, and mapped a 0.5 km wide swath along the centerline of the glaciers. This swath map consists of measurements from individual laser shot points on a roughly 1 meter by 1 meter grid. The individual point measurements of the glacier surface latitude, longitude and elevation have an accuracy of approximately  $\pm 10$  cm.

Geographic keywords: (SE Alaska)

Repeat Mission: yes (2010, 2009, 2005, 2000, 1999, 1995)

Instrument	Instrument Operational		Data Volume for days 149+150	Instrument Issues
	Target area	Entire Flight		
<b>UAF LiDAR</b>	Yes	No	~3.0 GB in raw binary format	None
<b>GPS</b>	Yes	Yes	~1.1 GB in raw binary format	None
<b>IMU</b>	Yes	Yes	~700 MB in raw binary format	None

### **Mission Log (Chris Larsen)**

Today's mission is LiDAR surveys of glaciers of Glacier Bay, including the Grand Plateau, Grand Pacific, Melbern, Walker and Konamox Glacier. The weather was perfect throughout the entire day.

The flight was ended near Yakutat. We plan to finish the survey of Glacier Bay area tomorrow, weather permitting.

#### **Individual instruments on board the aircraft:**

**LiDAR:** The UAF LiDAR systems worked well.

**GPS:** System worked normally. No problems.

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

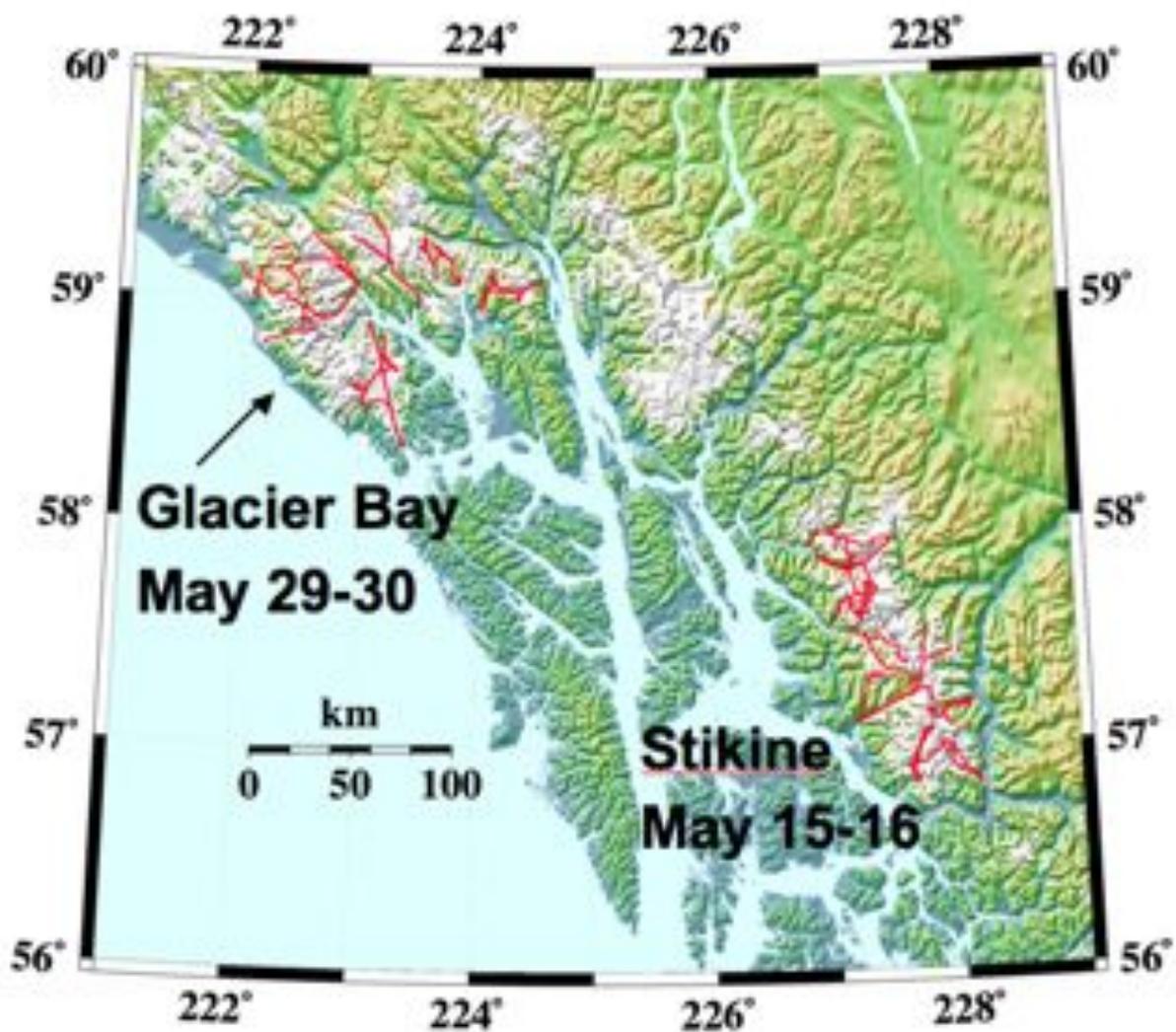


Figure 1: LiDAR ground tracks over Glacier Bay (May 29-30, 2011) and Stikine Icefield (May 15-16, 2011).



Figure 2: Otter cockpit view, pilot Paul Claus.



Figure 3: Margerie Glacier tidewater terminus, with a cruise ship.