

Science Flight Report

Operation Ice Bridge May 2011



UAF Alaska Flight No 4
Mission Plan: Glacier Bay

Flight Report Summary

Aircraft	DHC-3 Otter
Flight Number	UAF-4
Flight Request	11M009
Flight Hours	7.0
Take off time	08:00:00.00 Z from Yakutat
Landing time	16:00:00.00 Z at Ultima Thule Outfitters Lodge
Date	Sunday, May 30 2011, Day of Year 150
Purpose of Flight	LiDAR surveys of glaciers within Glacier Bay, SE Alaska.
Aircraft Status	Airworthy.
Sensor Status	operational.
Significant Issues	None.
Accomplishments	<ul style="list-style-type: none"> • LiDAR profiles of Glacier Bay, including the Fairweather, Brady, Lamplugh, Reid, Casement, Davidson, Muir, Carroll, Margerie, and Grand Plateau Glaciers.
Planned Events	<ul style="list-style-type: none"> • The next surveys will be in August.

Science Data Report Summary

This mission performed LiDAR surveys of glaciers of Glacier Bay, including the Fairweather, Brady, Lamplugh, Reid, Casement, Davidson, Muir, Carroll, Margerie, and Grand Plateau 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 ± 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		
UAF LiDAR	Yes	No	~3.0 GB in raw binary format	None
GPS	Yes	Yes	~1.1 GB in raw binary format	None
IMU	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 Fairweather, Brady, Lamplugh, Reid, Casement, Davidson, Muir, Carroll, Margerie, and Grand Plateau Glaciers. The weather was perfect throughout the entire day. The flight was ended at Ultima Thule Outfitters. This finishes the spring campaign.

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.

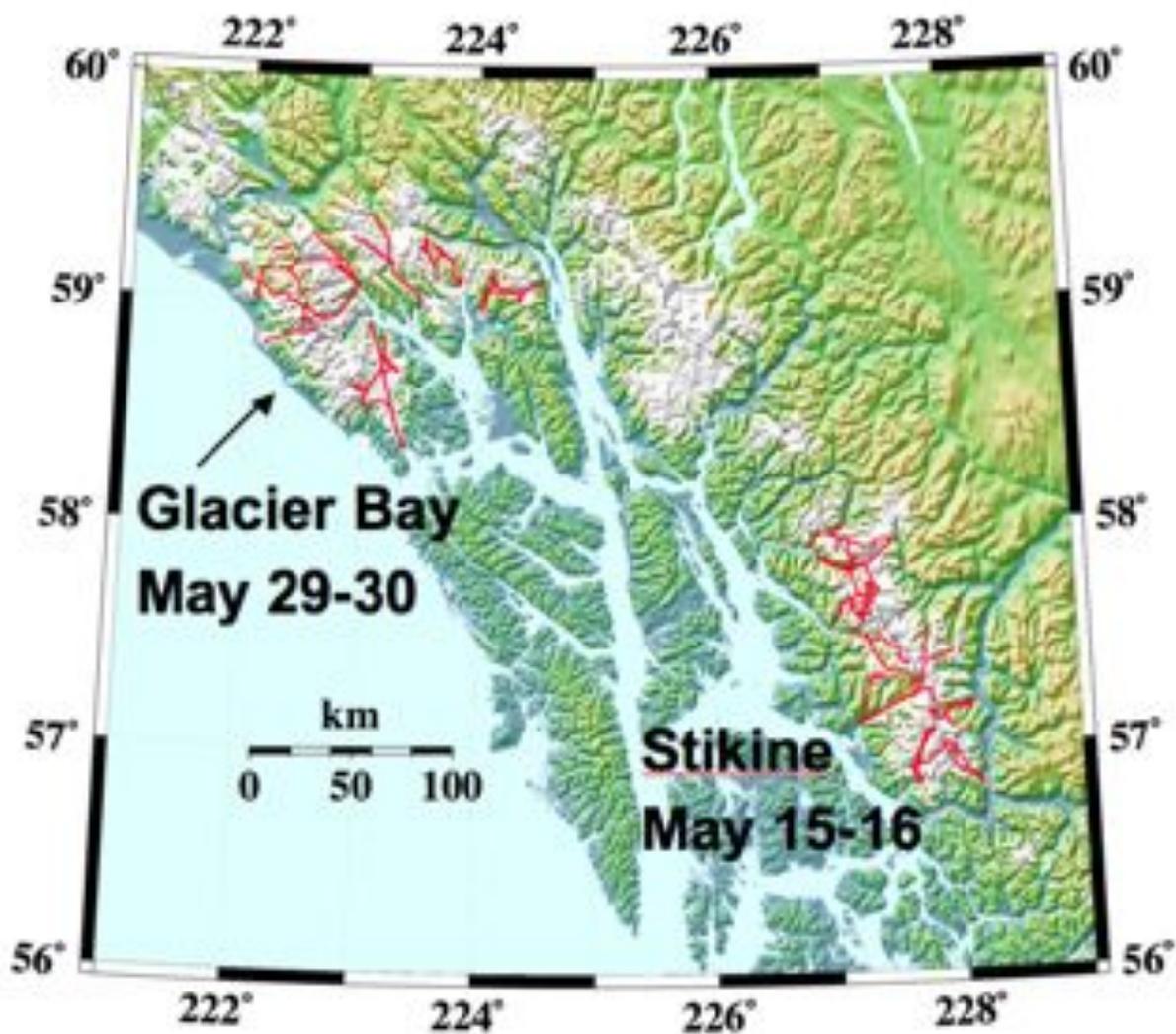


Figure 1: LiDAR ground tracks over Glacier Bay (May 29-30, 2011) and Stikine Icefield (May 15-16, 2011).



Figure 2: La Perouse Glacier, the only glacier to calve directly into the open Gulf of Alaska.



Figure 3: Konamox Glacier terminus, calving into Melbern Lake. The confluence of the Asek and Tatshenshini Rivers is in the background.