

OIB - DC-8 - AFRC 10/16/18 Science Report

Aircraft: [DC-8 - AFRC](#) ([See full schedule](#))

Date: Tuesday, October 16, 2018

Mission: OIB

Mission Location: North Peninsula IS-2

Mission Summary:

Mission: North Peninsula IS-2

Priority: Baseline

The weather in the North Antarctic Peninsula was in our favor this morning, allowing for OIB to tackle the North Peninsula IS-2 baseline land ice mission. This area is often times cloud covered due to unique meteorological conditions, however a high pressure system changed winds in the region to blow in from the south instead of the west, causing clear skies perfect for data collection.

This flight is of particular importance because it has been attempted and repeated each year in order to monitor changes in dh/dt over the multiple glaciers that feed out into the Larsen-A, -B and -C embayment. Areas where large icebergs have calved off of the ice shelf last year (A68), and in the early 2000's and 1990's. Stagnant ice was also surveyed during this flight in order to better understand the impact of surface process and dynamic processes on dh/dt independently of one another.

Due to a pot hole on the Punta Arenas runway, we were unable to fuel the DC8 for a 12 hour mission, and instead had to shorten this mission by cutting out lines for the Weyerhauser and Gibbs glaciers at the southwest corner of Larsen-C. Regardless of this setback all instruments had 100% data coverage and preformed well, making this mission a success.

During this flight, OIB flew over the Larsen-C ice shelf where the A68 iceberg recently calved off last year and were able to see the edge of the ice shelf, sea ice, leads, and the A68 iceberg in the distance where it had drifted away from the shelf. It was an impressive sight.

The 2 ICESat-2 ground tracks that were flown and their latency between the IS2 crossovers are listed below:

Line 1306 dt = 68 days

Line 1245, dt = 64 days

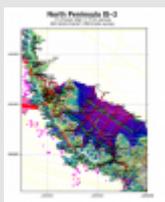
We chatted with 4 class rooms encompassing 80 kids from three countries: South Africa, Canada and the United States during our mission.

List of Figures:

1. Map of today's mission (John Sonntag/NASA)
2. Cambot image showing the ATM T6 wide scan and T7 narrow scan green lasers with a slow shutter speed (Jeremy Harbeck/NASA)
3. Heavily crevassed land ice in the Northern Antarctic Peninsula (Jeremy Harbeck/NASA)
4. A large lead and sea ice both newly formed and deformed sea ice in the foreground, and icebergs, more sea ice and finally the A68 iceberg in the background with the wing of the DC8 dissecting the image. (Linette Boisvert/NASA)
5. Larsen-C ice shelf highlighting some wavy surface features (Jeremy Harbeck/NASA)
6. An unusually 'square' iceberg in the sea ice just off of the Larsen-C ice shelf (Jeremy Harbeck/NASA)

Images:

Figure 1



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Figure 2



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Figure 3



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Figure 4



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Figure 5



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Figure 6



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