

## DC-8 - AFRC 10/15/18 - 10/16/18

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

Flight Number: 1295

Payload Configuration: ATM GPS/NAV\_ATM Headwall\_ATM-T6/T7\_ATM FLIR\_ATM CAMBOT, MCoRDS/UWB Radar, Gravimeter

Nav Data Collected: Yes

Total Flight Time: 11.1 hours

Submitted by: Chris Jennison on 10/17/18

### Flight Segments:

<b>From:</b>	SCCI	<b>To:</b>	SCCI
<b>Start:</b>	10/15/18 15:09 Z	<b>Finish:</b>	10/16/18 02:15 Z
<b>Flight Time:</b>	11.1 hours		
<b>Log Number:</b>	<a href="#">198006</a>	<b>PI:</b>	Joseph MacGregor
<b>Funding Source:</b>	Bruce Tagg - NASA - SMD - ESD Airborne Science Program		
<b>Purpose of Flight:</b>	Science		
<b>Comments:</b>	<p>Here are some details on today's flight. This flight is titled "Stancomb Inshore", which is a new OIB flight and consists of four ICESat-2 tracks, one track following the grounded section of the Stancomb-Wills glacier, and two tracks along the ice tongue of the glacier. The preflight aircraft refueling/positioning went smoothly and the aircraft was back out on Taxiway E well before 1000 local for the remaining preflight tasks. After arriving at the airport, it was relayed to us from ground ops that the runway had sustained some damage from rains yesterday, limiting Runway 25 to 2590m (~8500ft) usable runway length. This caused significant concern about whether we could actually takeoff with at the current aircraft weight (it already being fully fueled). After some deliberation and more detailed analysis of the takeoff data by the flight crew, it was determined that we could takeoff safely with the shortened runway. Once getting airborne, the flight went very smooth. We did a ramp overpass at 1200ft AGL immediately following takeoff. The aircraft and science instruments all performed well. Takeoff Time (Rotation): 15:10:26 Touchdown Time: 02:15:14 Duration: 11.1hr ATM: 100% data collection, instruments are all working well, no issues MCoRDS: 100% data collection, instrument is working well, no issues Snow Radar: 100% data collection, instrument is working well, no issues Gravimeter: 100% data collection, instrument is working well, no issues Data: 100% data collection for KT-19, no issues</p>		

### Flight Hour Summary:

	<b>198006</b>
<b>Flight Hours Approved in SOFRS</b>	345.8
<b>Total Used</b>	292.8
<b>Total Remaining</b>	53

### 198006 Flight Reports

Date	Flt #	Purpose of Flight	Duration	Running Total	Hours Remaining	Miles Flown
<a href="#">10/02/18</a>	1287	Check	2.6	2.6	343.2	0
<a href="#">10/08/18</a>	1289	Transit	10.1	12.7	333.1	0
<a href="#">10/08/18</a>	1290	Transit	2.8	15.5	330.3	0
<a href="#">10/10/18 - 10/11/18</a>	1291	Science	11.5	27	318.8	0
<a href="#">10/11/18 - 10/12/18</a>	1292	Science	11.6	38.6	307.2	0
<a href="#">10/12/18 - 10/13/18</a>	1293	Science	11.3	49.9	295.9	0
<a href="#">10/13/18 - 10/14/18</a>	1294	Science	10.7	60.6	285.2	0

<a href="#">10/15/18 - 10/16/18</a>	1295	Science	11.1	71.7	274.1	0
<a href="#">10/16/18 - 10/17/18</a>	1296	Science	10.1	81.8	264	0
<a href="#">10/18/18 - 10/19/18</a>	1297	Science	11.1	92.9	252.9	0
<a href="#">10/19/18 - 10/20/18</a>	1298	Science	10.8	103.7	242.1	0
<a href="#">10/20/18 - 10/21/18</a>	1299	Science	10.7	114.4	231.4	0
<a href="#">10/22/18 - 10/23/18</a>	1300	Science	11.1	125.5	220.3	0
<a href="#">10/27/18 - 10/28/18</a>	1301	Science	11.3	136.8	209	0
<a href="#">10/30/18 - 10/31/18</a>	1302	Science	11.7	148.5	197.3	0
<a href="#">10/31/18 - 11/01/18</a>	1303	Science	11.3	159.8	186	0
<a href="#">11/01/18</a>	1304	Transit	0.6	160.4	185.4	0
<a href="#">11/03/18 - 11/04/18</a>	1305	Science	11	171.4	174.4	0
<a href="#">11/04/18</a>	1306	Science	10.8	182.2	163.6	0
<a href="#">11/05/18</a>	1307	Science	10.4	192.6	153.2	0
<a href="#">11/07/18</a>	1308	Science	10.4	203	142.8	0
<a href="#">11/09/18 - 11/10/18</a>	1309	Science	11.1	214.1	131.7	0
<a href="#">11/10/18 - 11/11/18</a>	1310	Science	10.6	224.7	121.1	0
<a href="#">11/11/18</a>	1311	Science	10.8	235.5	110.3	0
<a href="#">11/12/18</a>	1312	Science	10.7	246.2	99.6	0
<a href="#">11/14/18 - 11/15/18</a>	1313	Science	11.2	257.4	88.4	0
<a href="#">11/15/18</a>	1314	Science	10.3	267.7	78.1	0
<a href="#">11/16/18 - 11/17/18</a>	1315	Science	10.1	277.8	68	0
<a href="#">11/19/18</a>	1316	Transit	3.4	281.2	64.6	0
<a href="#">11/21/18</a>	1317	Transit	11.6	292.8	53	0

Flight Reports began being entered into this system as of 2012 flights. If there were flights flown under an earlier log number the flight reports are not available online.

#### Related Science Report:

### OIB 2018 - DC-8 - AFRC 10/15/18 Science Report

**Mission:** OIB 2018

**Mission Summary:**

Mission: Stancomb Inshore  
Priority: Medium

Today we had a very successful mission, even after a deterioration of weather forecasts from the previous evening throwing us a curveball and requiring us to pick an entirely new mission, one which we previously had not considered, and a slight airport runway issue this morning. Regardless of these events we were still able to take off on time.

The Stancomb Inshore is a land ice mission that was designed in 2018 and first flown today. This particular

mission was designed for radar and lidar data collection along 4 ICESat-2 ground tracks and also along the grounding line flow of the Stancomb-Wills glacier. Today's mission was chosen based on clear skies in the region, and because the forecasts were correct, we were able to achieve 100% data collection for all instruments, with no weather, environmental factors or instrument issues encountered. Other higher priority missions were not obtainable based on poor and deteriorating weather conditions throughout the day.

The 4 ICESat-2 ground tracks that were flown and their latency between the IS2 crossovers are listed below:

Line 0115, dt = 82 days

Line 0176, dt = 86 days

Line 0237, dt = 90 days

Line 0298, dt = 3 days

During the flight we were able to conduct 6 classroom chats with students in grades K-12 all across the country, from Alaska, Washington and Kansas; reaching a total of 148 students.

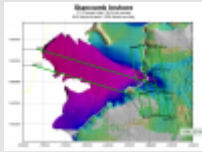
As we finished up our data collection, we got to witness the Antarctic sunset over the Brunt ice shelf and some Weddell sea ice, which was breathtaking and a satisfying way to wrap up our successful mission.

Attached images:

1. Map of today's mission (John Sonntag/NASA)
2. Snow radar image of snow on sea ice (right), with the abrupt edge of the Brunt ice shelf (left) (Aaron Wells/IU)
3. ATM T6 elevation map of a crevasse field on the Stancomb-Wills Glacier. (Matt Linksweller/NASA)
4. Panoramic photo of a large iceberg A68 (Jeremy Harbeck/NASA)
5. Sea ice floes (bottom), evaporation over the open water from a polynya (middle) adjacent to the Brunt ice shelf (top) (Linette Boisvert/NASA)
6. A crevasse field at sunset on the Stancomb-Wills Glacier (Linette Boisvert/NASA)
7. Sunset over sea ice and leads in the Weddell Sea (Jeremy Harbeck/NASA)

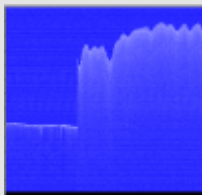
Images:

## Figure 1



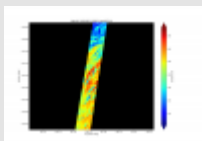
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## Figure 2



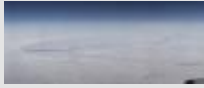
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## Figure 3



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## Figure 4



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## Figure 5



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## Figure 5



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## Figure 6



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**Submitted by:** Linette Boisvert on 10/21/18

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