

DC-8 - AFRC 11/16/18 - 11/17/18

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

Flight Number: 1315

Payload Configuration: OIB 2018 Configuration - ATM-Cambot, ATM-GPS/ATM-NAV, ATM-FLIR, ATM-T6, ATM-T7, Gravimeter, MCoR Snow RADAR, and piggybacks ARMAS & Tinman

Nav Data Collected: Yes

Total Flight Time: 10.1 hours

Submitted by: Timothy Moes on 11/17/18

Flight Segments:

From:	SAWH - Ushuaia, Argentina	To:	SAWH - Ushuaia, Argentina
Start:	11/16/18 15:06 Z	Finish:	11/17/18 01:13 Z
Flight Time:	10.1 hours		
Log Number:	198006	PI:	Joseph MacGregor
Funding Source:	Bruce Tagg - NASA - SMD - ESD Airborne Science Program		
Purpose of Flight:	Science		
Comments:	<p>The NASA DC-8 OIB team completed most of the medium priority Bellingshausen-Amundsen Divide IS-2 mission today. A number of unavoidable factors resulted in a later-than-planned takeoff today including uncertainty on weather in Antarctica and a desire to not fuel until it was certain we would fly the mission today since our next mission is a much shorter flight to Santiago to begin our redeployment to Palmdale (and we did not want too much fuel on-board for that). All OIB remote sensing instruments operated nominally with good results (with the exception of ATM SWIR). The aircraft returned to Ushuaia with no write-ups.</p>		

Flight Hour Summary:

	198006
Flight Hours Approved in SOFRS	345.8
Total Used	292.8
Total Remaining	53

198006 Flight Reports

Date	Flt #	Purpose of Flight	Duration	Running Total	Hours Remaining	Miles Flown
10/02/18	1287	Check	2.6	2.6	343.2	0
10/08/18	1289	Transit	10.1	12.7	333.1	0
10/08/18	1290	Transit	2.8	15.5	330.3	0
10/10/18 - 10/11/18	1291	Science	11.5	27	318.8	0
10/11/18 - 10/12/18	1292	Science	11.6	38.6	307.2	0
10/12/18 - 10/13/18	1293	Science	11.3	49.9	295.9	0
10/13/18 - 10/14/18	1294	Science	10.7	60.6	285.2	0
10/15/18 - 10/16/18	1295	Science	11.1	71.7	274.1	0
10/16/18 - 10/17/18	1296	Science	10.1	81.8	264	0
10/18/18 - 10/19/18	1297	Science	11.1	92.9	252.9	0
10/19/18 - 10/20/18	1298	Science	10.8	103.7	242.1	0
10/20/18 - 10/21/18	1299	Science	10.7	114.4	231.4	0

10/22/18 - 10/23/18	1300	Science	11.1	125.5	220.3	0
10/27/18 - 10/28/18	1301	Science	11.3	136.8	209	0
10/30/18 - 10/31/18	1302	Science	11.7	148.5	197.3	0
10/31/18 - 11/01/18	1303	Science	11.3	159.8	186	0
11/01/18	1304	Transit	0.6	160.4	185.4	0
11/03/18 - 11/04/18	1305	Science	11	171.4	174.4	0
11/04/18	1306	Science	10.8	182.2	163.6	0
11/05/18	1307	Science	10.4	192.6	153.2	0
11/07/18	1308	Science	10.4	203	142.8	0
11/09/18 - 11/10/18	1309	Science	11.1	214.1	131.7	0
11/10/18 - 11/11/18	1310	Science	10.6	224.7	121.1	0
11/11/18	1311	Science	10.8	235.5	110.3	0
11/12/18	1312	Science	10.7	246.2	99.6	0
11/14/18 - 11/15/18	1313	Science	11.2	257.4	88.4	0
11/15/18	1314	Science	10.3	267.7	78.1	0
11/16/18 - 11/17/18	1315	Science	10.1	277.8	68	0
11/19/18	1316	Transit	3.4	281.2	64.6	0
11/21/18	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 - DC-8 - AFRC 11/16/18 Science Report

Mission: OIB

Mission Summary:

Mission: Bellingshausen-Amundsen Divide IS-2
Priority: Medium

This new mission is designed to sample the area of the Bryan Coast and inland, include PIG drainage to the Amundsen Sea and Evans drainage to the Weddell, all along ICESat-2 ground tracks. It also overflies two ice cores sites known as Bryan and Ferrigno.

Today's decision was probably the hardest of the campaign. Relative to our remaining options, this mission was the most viable, although we expect to encounter some clouds farther east toward the Bryan Coast. Because of that possibility, we opted to increase mission viability by flying yesterday's version of this mission rather than today's, because yesterday's version is situated farther west toward PIG. This means that our latency of this mission relative to the ICESat-2 RGTs that we underfly was roughly one day greater than originally intended. Because of fueling complications, our departure was delayed by two hours. This delay and limits on crew duty days meant that we had to pre-select a portion of the mission to remove prior to take-off. We made the difficult decision to cut most of the two easternmost ICESat-2 tracks at the survey start, where/when the forecast was poorer, so we started the survey at waypoint YF3682 two thirds of the way through the second-most eastern track.

We started the mission with a 1500 ft AGL ramp pass that set a campaign record for distance from ramp target center (2 ft). When we got there, we encountered a cloud deck at ~4000 ft AGL that dissipated once we reached the end of that track. We then completed most of the survey at 3200 ft AGL again to maximize our opportunity to

survey the ICESat-2 beam pair with ATM T6 wide-scan laser altimetry. During that portion of the survey, we did not operate ATM T7 IR. We passed over the Abbott, Cosgrove and Pine Island ice shelves, including the newly formed B-46, under clear conditions. During the final line of the survey, roughly east-west and which was not along an ICESat-2 track, we surveyed mostly at 1500 ft AGL and turned on ATM T7 IR. We encountered haze toward the end of the last line that limited ATM T7 IR data collection. While the delay cost us those two easternmost ICESat-2 tracks, it did allow the weather to catch up with our mission, and so the entire last line that included the two ice cores was sufficiently clear to main survey both the ice cores at its easternmost end. All instruments reported successful data collection and no major issues, except for Headwall SWIR, which was unable to be successfully started for the duration of this mission. All in all a successful end to the campaign.

ICESat-2 RGT / Latency (hours, negative indicates OIB underflight AFTER ICESat-2)

736 / -22

728 / -35

721 / -46

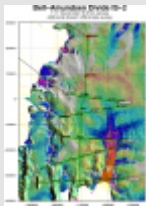
713 / -60

Attached images/files:

1. Map of today's mission (John Sonntag / NASA)
2. KML of today's mission (John Sonntag / NASA)
3. Recently calved icebergs from the northern flank of B-46 (Joe MacGregor / NASA)
4. Sea ice in Pine Island Bay (Ray Perigo / CReSIS/IU)
5. Icebergs ~10 km south/upstream of the terminus of the southwest tributary to Pine Island Glacier's ice shelf. That tributary is now fully exposed to Pine Island Bay, a configuration that has not been observed since Pine Island Glacier was first spotted in 1947 (Joe MacGregor / NASA)
6. Thanking Tim Moes, one of our excellent DC-8 mission managers on several OIB campaigns, on his last science mission after 36 years as a NASA civil servant (John Sonntag / NASA)

Images:

Map of today's mission



[Read more](#)

Recently calved icebergs from the northern flank of B-46



[Read more](#)

Sea ice in Pine Island Bay



[Read more](#)

Icebergs ~10 km south/upstream of the terminus of the southwest

tributary to Pine Island Glacier's ice shelf. That tributary is now fully



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Submitted by: Joseph MacGregor on 11/28/18

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