

DC-8 - AFRC 11/14/18 - 11/15/18

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

Flight Number: 1313

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: 11.2 hours

Submitted by: Timothy Moes on 11/15/18

Flight Segments:

From:	SAWH	To:	SAWH
Start:	11/14/18 13:04 Z	Finish:	11/15/18 00:12 Z
Flight Time:	11.2 hours		
Log Number:	198006	PI:	Joseph MacGregor
Funding Source:	Bruce Tagg - NASA - SMD - ESD Airborne Science Program		
Purpose of Flight:	Science		
Comments:	The NASA DC-8 OIB team completed the high-priority Long Line East mission today. All OIB remote sensing instruments operated nominally with good results. The aircraft returned to Ushuaia with no write-ups.		

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 11/14/18 Science Report

Mission: OIB

Mission Summary:

Mission: Long Line East IS-2
Priority: High

This is a new mission, designed to sample a single ICESat-2 ground track on the East Antarctic Ice Sheet from a slow-flowing region upstream of the grounding zone of the Filchner Ice Shelf, between Bailey and Slessor glaciers, to high on the plateau, crossing of the main trunks of Slessor and Recovery glaciers and, which flow into the ice shelf, and one of Recovery's larger tributaries. The original Long Line IS-2 mission was originally designed to minimize the influence of surface roughness, surface slope, and elevation change on the measurements, and should provide the best estimate of instrumental biases under ideal conditions. We fly back and forth along the left and right beam pair centerlines, with crossovers centered on the center beam pair roughly every 100 km.

Another middling forecast in the Amundsen Sea Embayment led us to select this new mission. This mission represents another first for OIB, as we will repeat a mission concept that has already been flown during this campaign, but this time along an ascending track and now correcting for the presently understood ICESat-2 RGT offset, which was not known at the time of our Long Line mission earlier this campaign. This mission's track is selected based on the lowest latency ICESat-2 RGT (0718) available, so it is not as well suited to minimization of the influence of surface conditions, but it should be still very useful in assessing ICESat-2 performance. We first performed a ramp pass at 1200 ft AGL. We then passed over a cloudy Weddell Sea, but encountered mostly sky-clear conditions during the survey at 3200 ft AGL, which proceeded uneventfully under mostly clear conditions, with a few thin high clouds in the northern ~100 km of the mission when southbound, and ~50 km of the southern end after turning around and heading northbound. The main trunks of both Slessor and Recovery Glaciers were crevassed along their shear margins. All instruments performed well. Note that ATM T7 IR was not operated today because of the higher survey altitude to ensure ATM T6 coverage of the beam pair.

ICESat-2 surveyed this ascending track beginning 16:17:54Z and ending 16:20:05Z. This survey will occur between two ICESat-2 planned commissioning activities: the round-the-world scan ending ~15:27:53Z and the TEP collection that begins at 16:20:00Z, indicating that there will be no useful data overlap for the northernmost

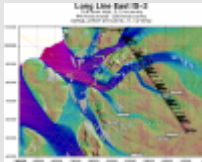
~5 seconds. OIB's latency relative to ICESat-2 was -40 minutes, i.e., ICESat-2 overflew this track roughly 40 minutes prior to the beginning of our survey.

Attached images/files:

1. Map of today's mission (John Sonntag / NASA)
2. KML file of today's planned mission (John Sonntag / NASA)
3. The Luitpold Coast, situated between the Filchner and Brunt Ice Shelves. Shore-fast sea ice is at the bottom of the frame (NASA/John Sonntag).
4. Variable cloudiness near the north end of our survey line. Such thin clouds may provide a useful laboratory for studying forward-scattering of the ICESat-2 laser pulses, in conjunction with OIB ATM lidar measurements. The spacecraft had passed directly overhead about 30 minutes prior to the time this photo was taken (NASA/John Sonntag).
5. Somewhat unusual linear striations on the East Antarctic plateau's surface, near the southern end of our survey line (NASA/John Sonntag).
6. The Read Mountains (NASA/John Sonntag).

Images:

Map of today's mission



[Read more](#)

The Luitpold Coast, situated between the Filchner and Brunt Ice



[Read more](#)

Somewhat unusual linear striations on the East Antarctic plateau's



[Read more](#)

Variable cloudiness near the north end of our survey line. Such thin



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The Read Mountains



[Read more](#)

Submitted by: Joseph MacGregor on 11/28/18

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