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

Aircraft: DC-8 - AFRC (See full schedule)
Date: Wednesday, October 10, 2018
Mission: OIB
Mission Location: Slessor Grounding Zone / Lake IS-2
Mission Summary:

Mission: Slessor Grounding Zone / Lake IS-2
Priority: High

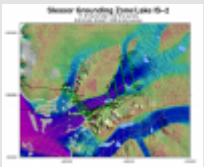
This new flight is designed to map portions of the Slessor and Bailey Glaciers, along ICESat-2 ground tracks. For these tracks, we specifically target the strong beam of the beam pairs, which in the case of this flight are all center beam pairs and TEP.

This mission was the best available option, based on MODIS imagery and multiple model forecasts. Nothing farther west was viable, and only the Stancomb-Willis region could have been considered. At the beginning of the mission, we collected a 1500' ramp pass across the PUQ runway. We passed over the Antarctic Peninsula, but did not spot the A-68 iceberg due to clouds. About halfway across the Weddell Sea, the clouds cleared and extensive sea ice with intermittent icebergs were visible. During the survey, we saw blowing snow and impressively glazed surfaces within the windswept trough of Slessor Glacier, especially during the downstreammost across-flow lines, along with substantial cross-winds but minimal turbulence. Our first flight proceeded exactly as planned, and no major instrument issues were reported. It took about 15 minutes the beginning of the survey to get the IR sensor on the ATM T7 synched up with the laser returns, an adjustment that should not have to be repeated, but otherwise altimetry collection was 100%. MCoRDS ice-bed reflections were regularly visible, with some exceptions over regions of extensive surface crevassing.

Attached images:
1. Map of today's mission (John Sonntag / NASA)
2. Coastal polynya near the Filchner Ice Shelf (John Sonntag / NASA)
3. Snow blowing off the Filchner Ice Shelf into the adjacent ocean (Linette Boisvert / NASA)
4. Crew in the DC-8 cockpit during a turn (Linette Boisvert / NASA)
5. Blue ice near Slessor Glacier (Jeremy Harbeck / NASA)
6. The Shackleton Range at sunset with snow blowing off the ridges (Michael Studinger / NASA)

Images:

Map of today's mission



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Coastal polynya near the Filchner Ice Shelf (John Sonntag / NASA)

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Snow blowing off the Filchner Ice Shelf into the adjacent ocean

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Crew in the DC-8 cockpit during a turn

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Blue ice near Slessor Glacier

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The Shackleton Range at sunset with snow blowing off the ridges

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Submitted by: Joseph MacGregor on 10/17/18
Related Flight Report:

DC-8 - AFRC 10/10/18 - 10/11/18

Flight Number: 1291
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: 11.5 hours
Submitted by: Chris Jennison on 10/17/18
Flight Segments:

From:	SCCI	**To:**	SCCI
Start:	10/10/18 13:12 Z	**Finish:**	10/11/18 00:43 Z
Flight Time:	11.5 hours		
Log Number:	198006	**PI:**	Joseph MacGregor
Funding Source:	Bruce Tagg - NASA - SMD - ESD Airborne Science Program		
Purpose of Flight:	Science		
Comments:	Slessor Grounding Zone/Lake IS-2, which consisted mostly of some Icesat-2 tracks. We had a slight delay for an aircraft on the ramp, but pretty much everything all went smooth after that. The aircraft and science instruments all performed well. ATM: 100% data collection, instruments are all working well, no issues MCoRDS: 848GB collected data, no issues Snow Radar: 635GB collected data, instrument is working well, no issues Gravimeter: 4.1GB collected data, instrument is working well, no issues KT-19: 17MB		

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.

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