OIB - DC-8 - AFRC 10/11/18 Science Report

Aircraft:
DC-8 - AFRC (See full schedule)
Date:
Thursday, October 11, 2018
Mission:
OIB
Mission Location:
Blackwall-Recovery IS-2
Mission Summary:

Mission: Blackwall-Recovery IS-2
Priority: High

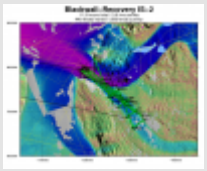
This new flight is designed to survey the channel of Blackwell Glacier and portions of lower Recovery Glacier along ICESat-2 ground tracks. For these tracks, we specifically target the strong beam of the beam pairs, which in the case of this flight are all center beam pairs.

A similar set of meteorological conditions and forecast as yesterday favored a similar mission again today. While conditions improved somewhat in the Stancomb-Willis region, winds abated in the Slessor region and skies were yet clearer there, so we selected the highest priority mission available there. The Weddell Sea was clearer than yesterday, with extensive sea ice and leads readily visible from high altitude. The Blackwall Ice Stream in particular is underexplored relative to its larger neighbors, but our survey today significantly improved radar coverage in this region, with a large majority of today's survey lines also along ICESat-2 ground tracks, except for the across-flow lines. The ice stream's surface itself is relatively mellow compared to its neighbors, with somewhat fewer and less intense crevasse fields, but we observed a variety of surface erosional patterns. We continue to experiment with optimization of data collection for the Headwall hyperspectral imager, but collected a significant volume of hyperspectral imagery data today. Data collection for all instruments went very well, with no issues, and altimetry collection was 100%.

Attached images:
1. Map of today's mission (John Sonntag / NASA)
2. Echelon crevasses along Blackwall Ice Stream, with Omega Nunatak in the background (Joe MacGregor / NASA)
3. A rift on the Filchner Ice Shelf meets a coastal polynya there (Jeremy Harbeck / NASA)
4. Winds flowing off the ice shelf help form tendrils of frazil ice on the ocean surface that coalesce into thin sea ice (shuga) adjacent to the coastal polynya (Linette Boisvert / NASA)
5. Example ATM T-7 IR narrow-scan (2.5º) elevation quick-look data plot over a crevasse field on Blackwall Ice Stream (Matt Linkswiler / NASA)
6. Example quick-look processing (unfocused SAR) MCoRDS data within the downstream region where Blackwall and Recovery Ice Streams merge and go afloat, with basal crevasses visible over the floating ice during a 180º turn (Jilu Li / CReSIS)

Images:

Map of today's mission



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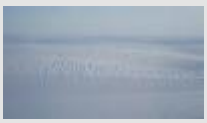
Echelon crevasses along Blackwall Ice Stream, with Omega Nunatak in



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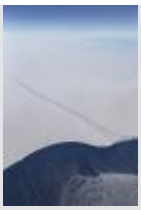
A rift on the Filchner Ice Shelf meets a coastal polynya there



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Winds flowing off the ice shelf help form tendrils of frazil ice on the ocean

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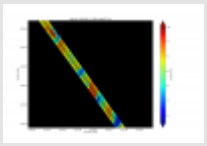
Example ATM T-7 IR narrow-scan (2.5º) elevation quick-look data plot over



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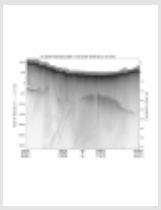
Example quick-look processing (unfocused SAR) MCoRDS data within the



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

DC-8 - AFRC 10/11/18 - 10/12/18

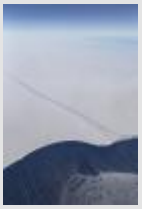
Flight Number:
1292
Payload Configuration:
ATM GPS/NAV_ATM Headwall_ATM-T6/T7_ATM FLIR_ATM CAMBOT, MCoRDS/UWB Radar, Gravimeter
Nav Data Collected:
Yes
Total Flight Time:
11.6 hours
Submitted by:
Chris Jennison on 10/17/18
Flight Segments:

From:	SCCI	**To:**	SCCI

Start:	10/11/18 13:19 Z	**Finish:**	10/12/18 00:56 Z
Flight Time:	11.6 hours		
Log Number:	198006	**PI:**	Joseph MacGregor
Funding Source:	Bruce Tagg - NASA - SMD - ESD Airborne Science Program		
Purpose of Flight:	Science		
Comments:	BlackWall Recovery IS-2 Delayed departure due to ramp congestion of small airplanes arriving and departing. ATM: 100% data collection, instruments are all working well, no issues MCoRDS: no issues Snow Radar: Instrument is working well, no issues Gravimeter: Instrument is working well, no issues KT-19: Okay		

Images:

Flichner Rift



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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.

Page Last Updated: April 22, 2017

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