

DC-8 - AFRC 10/22/18 - 10/23/18

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

Flight Number: 1300

Payload Configuration: ATM GPS/NAV_ATM Headwall_ATM-T6/T7_ATM FLIR_ATM CAMBOT, MCoRDS/UWB Radar, Gravimeter, KT radiometer - surface temperature

Nav Data Collected: Yes

Total Flight Time: 11.1 hours

Submitted by: Chris Jennison on 10/25/18

Flight Segments:

From:	SCCI	To:	SCCI
Start:	10/22/18 13:06 Z	Finish:	10/23/18 00:14 Z
Flight Time:	11.1 hours		
Log Number:	198006	PI:	Joseph MacGregor
Funding Source:	Bruce Tagg - NASA - SMD - ESD Airborne Science Program		
Purpose of Flight:	Science		
Comments:	"Long Lines IS-2 B", described as a comprehensive validation of ICESat-2 laser beams over land ice and snow extending up the west Antarctic plateau. The aircraft track consisted of two generally parallel lines and crossed back and forth across each other at regular fixed points. 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: 4 GB data, instrument is working well, no issues KT-19: 16 GB data, no issues		

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 10/22/18 Science Report

Mission: OIB

Mission Summary:

Mission: Long Line IS-2
Priority: High

Today's IceBridge science mission was of particular importance and a milestone of the campaign thus far, completing the **FIRST EVER** coincident under flight with ICESat-2! This took place during the high priority land ice mission, Long Line IS-2. This mission is a new mission for OIB, specifically planned in an area and along an IS-2 ground track where there is little influence by surface roughness, slope and elevation change on the ice sheet. This allows for the best estimates of instrumental biases. 9 crossovers are completed during flight, going back and forth between the left and right beam pair centerlines every 100km. This was also the first time OIB has flown in this particular area, making data collection that much more important.

For today's mission, clouds worked in our favor. Differing cloud conditions, high, low, opaque and thin clouds as well as clear conditions were intermittent along the flight line. These conditions will allow for a detailed look into the forward scattering experienced by IS-2 when clouds are present over the ice surface. All instruments performed well, collecting 100% data, with CAMBOT missing about 15-20 minutes of data due to some issues.

The ICESat-2 ground track that was flown and its latency between the IS-2 crossovers is listed below:
Line: 0362, t=8 hours

During our mission, McORDS recorded 2.5 km ice thickness along tributary of Pine Island Glacier. Also our flight line took us within range of the tallest mountain in Antarctica in the xx mountains, the Vinson Massif, which is a 14-mile long ridge.

Outreach: iceBridge only had 1 classroom chat today, connecting with 15 middle school students from the local school, Colegio Frances in Punta Arenas. Project Manager Eugenia DeMarco, who was on the ground today, visited the school during the X-chat.

Media: Jefferson Beck and Katy Mersmann from NASA joined today's mission to take photos, and conduct interviews with some of the scientists and engineers onboard. Katy also produced a live Snapchat of our pre-flight brief this morning. As of takeoff it had 4K views.

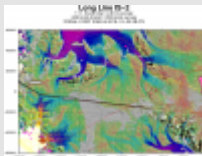
Outlook: OIB hopes to attempt the Mid-Weddell sea ice mission tomorrow night. This will be an overnight mission, weather permitting.

List of attached figures:

1. Map of today's science mission. (John Sonntag/NASA)
2. McORDS Echogram along today's science mission, showing annual layering of ice and the bedrock below. (Hara Talasila/KU CReSIS)
3. ATM T6 wide scan and T7 narrow scan overlaid of the Punta Arenas airport during our ramp pass. (Matt Linkswiler/NASA)
4. Panorama of the northeast end of the Ohio Range and land ice seen from the end of the long line. These mountains are across the continent near the Ross Sea. (Jeremy Harbeck/NASA)
5. Panorama of northern Ellsworth Mountains and land ice. Notice the fata morgana (mirages) on top of the peaks. (Jeremy Harbeck/NASA)
6. Sea ice floes and open water in the Bellingshausen Sea at the edge of the Veneable ice shelf. (Linette Boisvert/NASA)

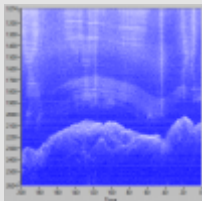
Images:

Figure 1



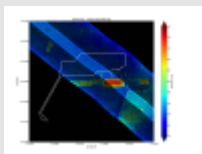
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Figure 2



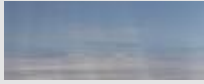
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Figure 3



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Figure 4



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Figure 5



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Figure 6



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Submitted by: Linette Boisvert on 10/25/18

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