

DC-8 11/15/16 - 11/16/16

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

Flight Number: 1161

Payload Configuration: OIB-ATM NAV/ATM GPS/ATM-T5/T6/ATM FLIR/ATM CAMBOT MCoRDS/SNOW/Ku RADAR DMS/POS-AV GRAVIMETER & ARMAS (piggyback)

Nav Data Collected: Yes

Total Flight Time: 11.6 hours

Submitted by: Timothy Moes on 11/17/16

Flight Segments:

From:	SCCI - Punta Arenas	To:	SCCI - Punta Arenas
Start:	11/15/16 12:58 Z	Finish:	11/16/16 00:35 Z
Flight Time:	11.6 hours		
Log Number:	178010	PI:	Nathan Kurtz
Funding Source:	Bruce Tagg - NASA - SMD - ESD Airborne Science Program		
Purpose of Flight:	Science		
Comments:	Great flight. All instruments worked good and the aircraft returned in good shape. The mission was to survey the eastern half of the 88 deg S latitude pole hole, where present Cryosat-2 and future ICESat-2 tracks will converge. OIB surveyed the western half of the pole hole earlier during this deployment.		

Flight Hour Summary:

	178010
Flight Hours Approved in SOFRS	300
Total Used	306.9
Total Remaining	-6.9

178010 Flight Reports

Date	Flt #	Purpose of Flight	Duration	Running Total	Hours Remaining	Miles Flown
10/04/16	1135	Science	4	4	296	
10/05/16	1136	Science	2.7	6.7	293.3	
10/12/16	1138	Transit	10.9	17.6	282.4	
10/12/16	1139	Transit	3	20.6	279.4	
10/14/16 - 10/15/16	1140	Science	10.9	31.5	268.5	
10/15/16 - 10/16/16	1141	Science	11.8	43.3	256.7	
10/17/16 - 10/18/16	1142	Science	11.8	55.1	244.9	
10/20/16 - 10/21/16	1143	Science	11.4	66.5	233.5	
10/22/16	1144	Science	11	77.5	222.5	
10/24/16 - 10/25/16	1145	Science	11.5	89	211	
10/25/16 - 10/26/16	1146	Science	11.3	100.3	199.7	
10/26/16 - 10/27/16	1147	Science	12.1	112.4	187.6	
10/27/16 - 10/28/16	1148	Science	11.5	123.9	176.1	
10/28/16 - 10/29/16	1149	Science	11	134.9	165.1	
10/31/16 - 11/01/16	1150	Science	11	145.9	154.1	

11/02/16 - 11/03/16	1151	Science	11.2	157.1	142.9
11/03/16 - 11/04/16	1152	Science	11.5	168.6	131.4
11/04/16 - 11/05/16	1153	Science	11.1	179.7	120.3
11/05/16 - 11/06/16	1154	Science	11.7	191.4	108.6
11/07/16 - 11/08/16	1155	Science	11.2	202.6	97.4
11/09/16 - 11/10/16	1156	Science	11.7	214.3	85.7
11/10/16	1157	Science	10.9	225.2	74.8
11/11/16 - 11/12/16	1158	Science	11.3	236.5	63.5
11/12/16 - 11/13/16	1159	Science	11.1	247.6	52.4
11/14/16	1160	Science	10.9	258.5	41.5
11/15/16 - 11/16/16	1161	Science	11.6	270.1	29.9
11/17/16 - 11/18/16	1162	Science	11.1	281.2	18.8
11/18/16 - 11/19/16	1163	Science	11.1	292.3	7.7
11/21/16	1165	Transit	11.6	303.9	-3.9
11/21/16	1164	Transit	3	306.9	-6.9

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 11/15/16 Science Report

Mission: OIB

Mission Summary:

Mission: Hamilton Line East, formerly Pole Hole 88 East (priority: low)

This flight's purpose is to sample the surface topography at the southern apex of half of all planned ICESat-2 orbits. Specifically, this flight samples the ground tracks on the east Antarctic plateau side of the Pole. In this way, we can provide "ground truth" for every ICESat-2 orbit with just two flights, including Pole Hole 88 West as well as this one. The vertical stability of the surface must also be quantified for this approach to succeed, and this flight provides a baseline measurement for this purpose.

Another easier decision today, with poor forecasts for all remaining high-priority missions, but a consistent forecast of no low-altitude clouds in the South Pole region. Weather behaved as predicted, with a very high stratus layer but cloud-free at the surface. Following high-altitude views of Rothera and South Pole Station, we collected 90 minutes of data at 1500' along the eastern half of the 88°S pole hole and transited home uneventfully. Both ATM T5 and T6 were operational during the pole-hole portion and performed well. MCoRDS observed near-bed layers at survey altitudes also.

All instruments performed well.

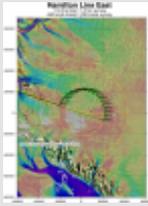
Attached images are:

1. Map of today's flight
2. Nadir view of South Pole Station from 20,000' AGL (DMS / Dennis Gearhardt)
3. FLIR brightness temperature over South Pole, offset from DMS image, pointing out building heat signatures (ATM / Jim Yungel, DMS / Dennis Gearhardt)
4. Elevation along the eastern portion of the pole hole (ATM / Jim Yungel)
5. Sea ice west of the Antarctic Peninsula (NASA / Maria-José Viñas)

6. The DC-8 flew beneath its own contrail, left behind about 90 minutes prior, while flying near the South Pole (NASA / Maria-José Viñas)

Images:

Map of today's flight



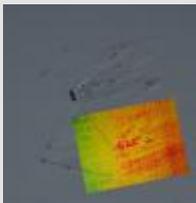
[Read more](#)

Nadir view of South Pole Station from 20,000' AGL



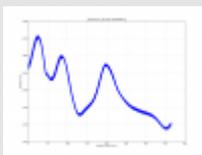
[Read more](#)

FLIR brightness temperature over South Pole, offset from DMS



[Read more](#)

Elevation along the eastern portion of the pole hole



[Read more](#)

Sea ice west of the Antarctic Peninsula



[Read more](#)

The DC-8 flew beneath its own contrail, left behind about 90 minutes

prior, while flying near the South Pole



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Submitted by: Joseph MacGregor on 11/19/16

Page Last Updated: April 22, 2017

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