

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

**Aircraft:**

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

**Flight Number:**

1312

**Payload Configuration:**

OIB 2018 Configuration - ATM-Cambot, ATM-GPS/ATM-NAV, ATM-FLIR, ATM-T6, ATM-T7, Gravimeter, MCoRDS, UWB Snow RADAR, and piggybacks ARMAS & Tinman

**Nav Data Collected:**

Yes

**Total Flight Time:**

10.7 hours

**Submitted by:**

Timothy Moes on 11/12/18

**Flight Segments:**

|                           |   |                |                  |
|---------------------------|---|----------------|------------------|
| <b>From:</b>              | SAWH  | <b>To:</b>     | SAWH             |
| <b>Start:</b>             | 11/12/18 12:56 Z  | <b>Finish:</b> | 11/12/18 23:38 Z |
| <b>Flight Time:</b>       | 10.7 hours  |                |                  |
| <b>Log Number:</b>        | <a href="#">198006</a>  | <b>PI:</b>     | Joseph MacGregor |
| <b>Funding Source:</b>    | Bruce Tagg - NASA - SMD - ESD Airborne Science Program  |                |                  |
| <b>Purpose of Flight:</b> | Science   |                |                  |
| <b>Comments:</b>          | The NASA DC-8 OIB team completed the baseline Hamilton Line TAM Sector mission today completing the final 1/3rd of the 88 deg S latitude line around the South Pole. All OIB remote sensing instruments operated nominally with good results. The aircraft returned to Ushuaia with no write-ups. |                |                  |

**Flight Hour Summary:**

|                                       |               |
|---------------------------------------|---------------|
|                                       | <b>198006</b> |
| <b>Flight Hours Approved in SOFRS</b> | 345.8         |
| <b>Total Used</b>                     | 292.8         |
| <b>Total Remaining</b>                | 53            |

**198006 Flight Reports**

| Date                                | Flt # | Purpose of Flight | Duration | Running Total | Hours Remaining | Miles Flown |
|-------------------------------------|-------|-------------------|----------|---------------|-----------------|-------------|
| <a href="#">10/02/18</a>            | 1287  | Check             | 2.6      | 2.6           | 343.2           | 0           |
| <a href="#">10/08/18</a>            | 1289  | Transit           | 10.1     | 12.7          | 333.1           | 0           |
| <a href="#">10/08/18</a>            | 1290  | Transit           | 2.8      | 15.5          | 330.3           | 0           |
| <a href="#">10/10/18 - 10/11/18</a> | 1291  | Science           | 11.5     | 27            | 318.8           | 0           |
| <a href="#">10/11/18 - 10/12/18</a> | 1292  | Science           | 11.6     | 38.6          | 307.2           | 0           |
| <a href="#">10/12/18 - 10/13/18</a> | 1293  | Science           | 11.3     | 49.9          | 295.9           | 0           |
| <a href="#">10/13/18 - 10/14/18</a> | 1294  | Science           | 10.7     | 60.6          | 285.2           | 0           |
| <a href="#">10/15/18 - 10/16/18</a> | 1295  | Science           | 11.1     | 71.7          | 274.1           | 0           |
| <a href="#">10/16/18 - 10/17/18</a> | 1296  | Science           | 10.1     | 81.8          | 264             | 0           |
| <a href="#">10/18/18 - 10/19/18</a> | 1297  | Science           | 11.1     | 92.9          | 252.9           | 0           |
| <a href="#">10/19/18 - 10/20/18</a> | 1298  | Science           | 10.8     | 103.7         | 242.1           | 0           |
| <a href="#">10/20/18 - 10/21/18</a> | 1299  | Science           | 10.7     | 114.4         | 231.4           | 0           |

|                                     |      |         |      |       |       |   |
|-------------------------------------|------|---------|------|-------|-------|---|
| <a href="#">10/22/18 - 10/23/18</a> | 1300 | Science | 11.1 | 125.5 | 220.3 | 0 |
| <a href="#">10/27/18 - 10/28/18</a> | 1301 | Science | 11.3 | 136.8 | 209   | 0 |
| <a href="#">10/30/18 - 10/31/18</a> | 1302 | Science | 11.7 | 148.5 | 197.3 | 0 |
| <a href="#">10/31/18 - 11/01/18</a> | 1303 | Science | 11.3 | 159.8 | 186   | 0 |
| <a href="#">11/01/18</a>            | 1304 | Transit | 0.6  | 160.4 | 185.4 | 0 |
| <a href="#">11/03/18 - 11/04/18</a> | 1305 | Science | 11   | 171.4 | 174.4 | 0 |
| <a href="#">11/04/18</a>            | 1306 | Science | 10.8 | 182.2 | 163.6 | 0 |
| <a href="#">11/05/18</a>            | 1307 | Science | 10.4 | 192.6 | 153.2 | 0 |
| <a href="#">11/07/18</a>            | 1308 | Science | 10.4 | 203   | 142.8 | 0 |
| <a href="#">11/09/18 - 11/10/18</a> | 1309 | Science | 11.1 | 214.1 | 131.7 | 0 |
| <a href="#">11/10/18 - 11/11/18</a> | 1310 | Science | 10.6 | 224.7 | 121.1 | 0 |
| <a href="#">11/11/18</a>            | 1311 | Science | 10.8 | 235.5 | 110.3 | 0 |
| <a href="#">11/12/18</a>            | 1312 | Science | 10.7 | 246.2 | 99.6  | 0 |
| <a href="#">11/14/18 - 11/15/18</a> | 1313 | Science | 11.2 | 257.4 | 88.4  | 0 |
| <a href="#">11/15/18</a>            | 1314 | Science | 10.3 | 267.7 | 78.1  | 0 |
| <a href="#">11/16/18 - 11/17/18</a> | 1315 | Science | 10.1 | 277.8 | 68    | 0 |
| <a href="#">11/19/18</a>            | 1316 | Transit | 3.4  | 281.2 | 64.6  | 0 |
| <a href="#">11/21/18</a>            | 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 11/12/18 Science Report

**Mission:**

OIB

**Mission Summary:**

Mission: Hamilton Line - TAM Sector  
Priority: Baseline

This flight's purpose is to sample the surface topography at the southern apex of many ICESat-2 orbits. Specifically this flight samples the ground tracks on the Transantarctic Mountains sector of the Polar plateau. In this way, we can provide 'ground truth' for every ICESat-2 orbit with just three flights. The vertical stability of the surface must also be quantified for this approach to succeed, and this flight provides a repeat measurement for this purpose. This flight provides 40 km of overlap with each adjacent Hamilton Line mission. Finally, we fly a short crossover line in the overlapped section with the Hamilton Line ? Amery Sector mission. This mission also covers the ICESat-2 traverse route. flown in a counterclockwise direction. Renamed in 2016 in honor of Dr. Gordon Hamilton.

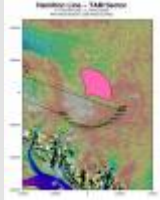
An unexpected change in forecast overnight led to an option that was not previously considered for today and which was ultimately possible to fly, thanks to quick work by the DC-8 crew. We flew a ramp pass at 1200 ft AGL. We observed a clouded over Antarctic Peninsula, with the peaks of Alexander Island occasionally peeking through. We then proceeded to the plateau and encountered excellent conditions, with clearing as forecast. This portion of the Hamilton Line, flown as per usual with rhumb line navigation, proceeded smoothly and uneventfully. We then did a loop at the end to cross-over the transect perpendicularly, and flew by South Pole station outside of the clean air zone. The return transit proceeded smoothly. All instruments reported 100% data collection, with no issues.

Attached images:

1. Map of today's mission (John Sonntag / NASA)
2. Northwestern Alexander Island, west of the Antarctic Peninsula, during our transit to the South Pole (Joe MacGregor / NASA)
3. Amundsen-Scott Station, South Pole (Hara Madhav Talasila / CREsis)
4. Preliminary ATM T6 elevation swath along all of today's mission (Matt Linkswiler / NASA)

**Images:**

## Map of today's mission



[Read more](#)

## Northwestern Alexander Island, west of the Antarctic Peninsula,



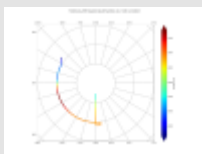
[Read more](#)

## Amundsen-Scott Station, South Pole



[Read more](#)

## Preliminary ATM T6 elevation swath along all of today's mission



[Read more](#)

**Submitted by:**

Joseph MacGregor on 11/13/18

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