

## DC-8 11/03/16 - 11/04/16

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

Flight Number: 1152

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: 11.5 hours

Submitted by: Timothy Moes on 11/05/16

### Flight Segments:

<b>From:</b>	SCCI	<b>To:</b>	SCCI
<b>Start:</b>	11/03/16 13:27 Z	<b>Finish:</b>	11/04/16 00:54 Z
<b>Flight Time:</b>	11.5 hours		
<b>Log Number:</b>	<a href="#">178010</a>	<b>PI:</b>	Nathan Kurtz
<b>Funding Source:</b>	Bruce Tagg - NASA - SMD - ESD Airborne Science Program		
<b>Purpose of Flight:</b>	Science		
<b>Comments:</b>	Good flight. The aircraft came back in good condition. This was a new mission, designed to collect dh/dt measurements over lower Thwaites Glacier. It reoccupies six flight lines first flown in 2011 and 2012 as part of an extensive grid, as well as two crossing lines last flown in 2009, and first flown in 2002 by ATM and CreSIS as part of the NASA-Chilean project. A ramp overpass calibration was flown at the start of the mission.		

### Flight Hour Summary:

	<b>178010</b>
<b>Flight Hours Approved in SOFRS</b>	300
<b>Total Used</b>	306.9
<b>Total Remaining</b>	-6.9

### 178010 Flight Reports

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

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

#### Mission: OIB

#### Mission Summary:

OIB completed the baseline priority Thwaites A mission. This is a new mission, designed to collect dh/dt measurements over lower Thwaites Glacier. It re-occupies six flight lines first flown in 2011 and 2012 as part of an extensive grid, as well as two crossing lines last flown in 2009, and first flown in 2002 by ATM and CreSIS as part of the NASA-Chilean project.

The unlucky aspect of the 13<sup>th</sup> science mission appeared to strike us at the beginning with a late take-off due to troubleshooting of instrument issues, primarily the need to adjust ATM T6 laser power which inadvertently impacted the real time display of the ATM start pulse. DMS also showed a minor malfunction in their Applanix system—our most reliable system of the campaign—which was later found to be benign. Thanks to the quick work of the instrument teams these issues were fixed in time to prevent further problems. Overall, the mission was fully successful with no loss of data along the line due to instrument issues, late take-off time, or weather. As a matter of long-term concern, the ATM lasers have begun showing degradation of power and we have opted to begin using the narrow scan system and high altitude data collections much more sparingly to preserve the systems for the remainder of the campaign. With this change, we will move towards using the wide scan system as the primary instrument on land ice flights and the narrow scan system as a backup. However, the narrow scan system was turned on shortly after the beginning of the data line on this mission to ensure data integrity while quality checking of the wide-scan system was undertaken in flight. Thankfully, these quality checks observed good data collection.

#### Data volumes

ATM: T5: 18 Gb      T6: 24 Gb

FLIR: 9.4 Gb

Cambot: 27 Gb

DMS: 57.8 Gb (Five extra frames were logged as events, but these were thought to be during the ramp overpass

so shouldn't be an issue in post-processing.)  
Snow/Ku radars: 400 Gb each  
MCoRDS: 1.1 Tb  
AIRGrav: 5 Gb  
data on: 1710  
data off: 2111

**File:**

 [thwaitesA\\_map.pdf](#)

**Submitted by:** Nathan T. Kurtz on 11/03/16

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NASA Official: Bruce A. Tagg

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