

## P-3 Orion 05/05/17

**Aircraft:**

P-3 Orion - WFF ([See full schedule](#))

**Flight Number:**

Science Flight #35-Helheim-Kangerdlugssuaq Gap B (High Priority)

**Payload Configuration:**

OIB Arctic

**Nav Data Collected:**

No

**Total Flight Time:**

8.2 hours

**Submitted by:**

Cate Easmunt on 05/05/17

**Flight Segments:**

<b>From:</b>	BGSF	<b>To:</b>	BGSF
<b>Start:</b>	05/05/17 10:16 Z	<b>Finish:</b>	05/05/17 18:30 Z
<b>Flight Time:</b>	8.2 hours		
<b>Log Number:</b>	<a href="#">17P006</a>	<b>PI:</b>	Nathan Kurtz
<b>Funding Source:</b>	Bruce Tagg - NASA - SMD - ESD Airborne Science Program		
<b>Purpose of Flight:</b>	Science		

**Flight Hour Summary:**

	<b>17P006</b>
<b>Flight Hours Approved in SOFRS</b>	333.6
<b>Total Used</b>	332
<b>Total Remaining</b>	1.6

**17P006 Flight Reports**

Date	Flt #	Purpose of Flight	Duration	Running Total	Hours Remaining	Miles Flown
<a href="#">02/24/17</a>	Airworthiness Test Flight	Check	1	1	332.6	
<a href="#">02/26/17</a>	Project Test Flight #1	Check	4.9	5.9	327.7	
<a href="#">02/27/17</a>	Project Test Flight #2	Check	3	8.9	324.7	
<a href="#">03/07/17</a>	Transit Flight	Transit	8.2	17.1	316.5	
<a href="#">03/09/17</a>	Science Flight #1 - North Pole Transect	Science	8	25.1	308.5	
<a href="#">03/10/17</a>	Science Flight #2 - Laxon Line	Science	8.5	33.6	300	
<a href="#">03/11/17 - 03/12/17</a>	Science Flight #3 - Chukchi West Line	Science	8	41.6	292	
<a href="#">03/12/17 - 03/13/17</a>	Science Flight #4 - North Beaufort Loop Line	Science	8.1	49.7	283.9	
<a href="#">03/14/17 - 03/15/17</a>	Science Flight #5 - East Beaufort Loop Line	Science	8	57.7	275.9	
<a href="#">03/20/17</a>	Science Flight #6 - Sea Ice South Basin Transect (to Thule)	Science	8.1	65.8	267.8	
<a href="#">03/22/17</a>	Science Flight #7 - North Flux 02	Science	7.9	73.7	259.9	
<a href="#">03/23/17</a>	Science Flight #8 - Zig Zag West Line	Science	7.9	81.6	252	
<a href="#">03/24/17</a>	Science Flight #9 - CryoVEx Line	Science	5.8	87.4	246.2	
<a href="#">03/27/17</a>	Science Flight #10 - Northwest Coastal A Line	Science	7.4	94.8	238.8	
<a href="#">03/28/17</a>	Science Flight #11 - North Central Cap 01 Line	Science	7.6	102.4	231.2	
<a href="#">03/29/17</a>	Science Flight #12 - Ellesemere Island 01 Line	Science	7.6	110	223.6	

<a href="#">03/30/17</a>	Science Flight #13 - Ellesemere South Line	Science	7.9	117.9	215.7
<a href="#">03/31/17</a>	Science Flight #14- Alexander-Petermann Line	Science	6.5	124.4	209.2
<a href="#">04/03/17</a>	Science Flight #15- Zachariae 79N Fram Straight and BGTL ENSB Transit	Science	7.4	131.8	201.8
<a href="#">04/05/17</a>	Science Flight #16 - Svalbard North Line (High Priority)	Science	7	138.8	194.8
<a href="#">04/06/17</a>	Science Flight #17- Svalbard South Mission (High Priority)	Science	8.5	147.3	186.3
<a href="#">04/07/17</a>	Science Flight #18- Combined Zig Zag East Mission and Transit ENSB to BGTL	Science	8.3	155.6	178
<a href="#">04/10/17</a>	Science Flight #19- North Central Gap 3	Science	7.8	163.4	170.2
<a href="#">04/11/17</a>	Science Flight #20- CryoVex 2 (High Priority)	Science	7.8	171.2	162.4
<a href="#">04/12/17</a>	Science Flight #21-Northwest Coastal C	Science	7.2	178.4	155.2
<a href="#">04/13/17</a>	Science Flight #22-North Glaciers 02 Prime (High Priority)	Science	8.2	186.6	147
<a href="#">04/14/17</a>	Science Flight #23-IceSat-2 North/CryoSat-2 SARIn	Science	7	193.6	140
<a href="#">04/17/17</a>	Science Flight #24-Humboldt 01(High Priority)	Science	7.8	201.4	132.2
<a href="#">04/19/17</a>	Science Flight #25-Sea Ice - South Canada Basin (MediumPriority)	Science	7.8	209.2	124.4
<a href="#">04/20/17</a>	Transit Flight to Kangerlussuaq	Transit	3	212.2	121.4
<a href="#">04/21/17</a>	Science Flight #26-Southeast Coastal	Science	8	220.2	113.4
<a href="#">04/22/17</a>	Science Flight #27-Helheim-Kangerd	Science	7.8	228	105.6
<a href="#">04/24/17</a>	Science Flight #28-Geikie 01 (High Priority)	Science	8	236	97.6
<a href="#">04/26/17</a>	Science Flight #29-Devon-Bylot (Medium Priority)	Science	7.9	243.9	89.7
<a href="#">04/28/17</a>	Science Flight #30-Penny 01 (Medium Priority)	Science	6	249.9	83.7
<a href="#">04/29/17</a>	Science Flight #31-Thomas - Jakobshavn 01	Science	8.4	258.3	75.3
<a href="#">05/01/17</a>	Science Flight #32-Thomas - Jakobshavn-Eqip-Store	Science	8.4	266.7	66.9
<a href="#">05/02/17</a>	Science Flight #33-Thomas - ICESat-2 Central	Science	7.9	274.6	59
<a href="#">05/03/17</a>	Science Flight #34-Thomas - Southwest Coastal A	Science	8.3	282.9	50.7
<a href="#">05/05/17</a>	Science Flight #35-Helheim-Kangerdlugssuaq Gap B (High Priority)	Science	8.2	291.1	42.5
<a href="#">05/06/17</a>	Science Flight #36-Helheim-K-EGIG-Summit	Science	8	299.1	34.5
<a href="#">05/08/17</a>	Science Flight #37-Southeast Glaciers 01 (High Priority)	Science	8	307.1	26.5
<a href="#">05/10/17</a>	Science Flight #38-Umanaq B (High Priority)	Science	8	315.1	18.5
<a href="#">05/11/17</a>	Science Flight #39-ICESat-2 South (High Priority)	Science	8.1	323.2	10.4
<a href="#">05/12/17</a>	Science Flight #40-Nuuk Fjords	Science	1.8	325	8.6

<a href="#">05/13/17</a>	Transit Flight to Dover DE (to clear customs)	Transit	6.4	331.4	2.2
<a href="#">05/13/17</a>	Transit Flight to Wallops Flight Facility	Transit	0.6	332	1.6

*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 - P-3 Orion 05/05/17 Science Report

**Mission:**

OIB

**Mission Summary:**

Mission: Helheim-Kangerdlugssuaq Gap B (priority: high; last flown: 2016)

This mission is designed (along with Helheim-Kangerdlugssuaq Gap A) to re-fly a 2012 grid over the area of complex terrain between the Helheim and Kangerdlugssuaq Glaciers. Each of these new missions alone forms a coast-parallel grid spaced at 20 km, and the two flights together interlace to form a 10-km grid. This particular mission also reoccupies the centerlines of two glaciers in the area (names unknown). This flight retains a high priority for 2016 because it continues an intra-annual time series with the spring and fall 2015/2016 campaigns along these lines.

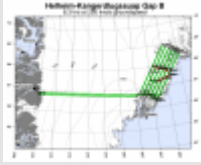
Various weak systems in southern Greenland were slowly clearing today and offered us a clear opportunity to complete this mission along the southeast coast. On our outbound transit, we were pleasantly surprised to be able to collect altimetry data all the way to the ice divide, at which point a cloud bank sharply began. Upon arriving at the southeast coast, the clouds mostly cleared, as expected, and the mission proceeded as planned. At our survey altitude (1500?) and throughout the mission along the southeast coast, peak outside air temperatures up to 18°C were reported by the pilots, but FLIR reported temperatures only slightly above freezing at the surface, suggesting a significant inversion, which a visiting DMI meteorologist confirmed. We also had a visitor from CH2M Polarfield Services. The coast was clear, all instruments performed satisfactorily and we made good enough time to perform additional repeat centerline surveys of Fenris and Helheim glaciers. In a southeastern fjord, we also performed a series of roll and pitch maneuvers for MCoRDS sensitivity testing. The east flank of the ice sheet had broken clouds that again cleared upon reaching the divide. A ramp pass was performed at 4000?.

Attached images:

1. Map of today's mission
2. DMS image of the calving front of Fenris Glacier (Eric Fraim/ NASA)
3. ATM T6 surface elevation along the calving front of Fenris Glacier (Matt Linkswiler / NASA)
4. Subglacial outlet along the western ice-sheet margin near Kangerlussuaq (Lauren Andrews / NASA)
5. Wavy surface texture over a col in southeastern Greenland (Lauren Andrews / NASA)
6. Calving front of Helheim Glacier (John Sonntag / NASA)

**Images:**

### Map of today's mission



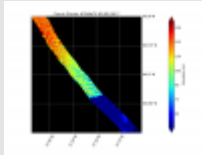
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## DMS image of the calving front of Fenris Glacier



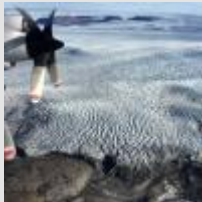
[Read more](#)

## ATM T6 surface elevation along the calving front of Fenris Glacier



[Read more](#)

## Subglacial outlet along the western ice-sheet margin near



[Read more](#)

## Wavy surface texture over a col in southeastern Greenland



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## Calving front of Helheim Glacier



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Submitted by:

Page Last Updated: April 22, 2017

Page Editor: Brad Bulger

NASA Official: Marilyn Vasques

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