

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:

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

Flight Hour Summary:

| | |
|---------------------------------------|---------------|
| | 17P006 |
| Flight Hours Approved in SOFRS | 333.6 |
| Total Used | 332 |
| Total Remaining | 1.6 |

17P006 Flight Reports

| Date | Flt # | Purpose of Flight | Duration | Running Total | Hours Remaining | Miles Flown |
|-------------------------------------|---|-------------------|----------|---------------|-----------------|-------------|
| 02/24/17 | Airworthiness Test Flight | Check | 1 | 1 | 332.6 | |
| 02/26/17 | Project Test Flight #1 | Check | 4.9 | 5.9 | 327.7 | |
| 02/27/17 | Project Test Flight #2 | Check | 3 | 8.9 | 324.7 | |
| 03/07/17 | Transit Flight | Transit | 8.2 | 17.1 | 316.5 | |
| 03/09/17 | Science Flight #1 - North Pole Transect | Science | 8 | 25.1 | 308.5 | |
| 03/10/17 | Science Flight #2 - Laxon Line | Science | 8.5 | 33.6 | 300 | |
| 03/11/17 - 03/12/17 | Science Flight #3 - Chukchi West Line | Science | 8 | 41.6 | 292 | |
| 03/12/17 - 03/13/17 | Science Flight #4 - North Beaufort Loop Line | Science | 8.1 | 49.7 | 283.9 | |
| 03/14/17 - 03/15/17 | Science Flight #5 - East Beaufort Loop Line | Science | 8 | 57.7 | 275.9 | |
| 03/20/17 | Science Flight #6 - Sea Ice South Basin Transect (to Thule) | Science | 8.1 | 65.8 | 267.8 | |
| 03/22/17 | Science Flight #7 - North Flux 02 | Science | 7.9 | 73.7 | 259.9 | |
| 03/23/17 | Science Flight #8 - Zig Zag West Line | Science | 7.9 | 81.6 | 252 | |
| 03/24/17 | Science Flight #9 - CryoVEx Line | Science | 5.8 | 87.4 | 246.2 | |
| 03/27/17 | Science Flight #10 - Northwest Coastal A Line | Science | 7.4 | 94.8 | 238.8 | |
| 03/28/17 | Science Flight #11 - North Central Cap 01 Line | Science | 7.6 | 102.4 | 231.2 | |
| 03/29/17 | Science Flight #12 - Ellesemere Island 01 Line | Science | 7.6 | 110 | 223.6 | |
| 03/30/17 | Science Flight #13 - Ellesemere South Line | Science | 7.9 | 117.9 | 215.7 | |
| 03/31/17 | Science Flight #14- Alexander-Petermann Line | Science | 6.5 | 124.4 | 209.2 | |

| | | | | | |
|--------------------------|--|---------|-----|-------|-------|
| 04/03/17 | Science Flight #15- Zachariae 79N Fram Straight and BGTL ENSB Transit | Science | 7.4 | 131.8 | 201.8 |
| 04/05/17 | Science Flight #16 - Svalbard North Line (High Priority) | Science | 7 | 138.8 | 194.8 |
| 04/06/17 | Science Flight #17- Svalbard South Mission (High Priority) | Science | 8.5 | 147.3 | 186.3 |
| 04/07/17 | Science Flight #18- Combined Zig Zag East Mission and Transit ENSB to BGTL | Science | 8.3 | 155.6 | 178 |
| 04/10/17 | Science Flight #19- North Central Gap 3 | Science | 7.8 | 163.4 | 170.2 |
| 04/11/17 | Science Flight #20- CryoVex 2 (High Priority) | Science | 7.8 | 171.2 | 162.4 |
| 04/12/17 | Science Flight #21-Northwest Coastal C | Science | 7.2 | 178.4 | 155.2 |
| 04/13/17 | Science Flight #22-North Glaciers 02 Prime (High Priority) | Science | 8.2 | 186.6 | 147 |
| 04/14/17 | Science Flight #23-IceSat-2 North/CryoSat-2 SARIn | Science | 7 | 193.6 | 140 |
| 04/17/17 | Science Flight #24-Humboldt 01(High Priority) | Science | 7.8 | 201.4 | 132.2 |
| 04/19/17 | Science Flight #25-Sea Ice - South Canada Basin (MediumPriority) | Science | 7.8 | 209.2 | 124.4 |
| 04/20/17 | Transit Flight to Kangerlussuaq | Transit | 3 | 212.2 | 121.4 |
| 04/21/17 | Science Flight #26-Southeast Coastal | Science | 8 | 220.2 | 113.4 |
| 04/22/17 | Science Flight #27-Helheim-Kangerd | Science | 7.8 | 228 | 105.6 |
| 04/24/17 | Science Flight #28-Geikie 01 (High Priority) | Science | 8 | 236 | 97.6 |
| 04/26/17 | Science Flight #29-Devon-Bylot (Medium Priority) | Science | 7.9 | 243.9 | 89.7 |
| 04/28/17 | Science Flight #30-Penny 01 (Medium Priority) | Science | 6 | 249.9 | 83.7 |
| 04/29/17 | Science Flight #31-Thomas - Jakobshavn 01 | Science | 8.4 | 258.3 | 75.3 |
| 05/01/17 | Science Flight #32-Thomas - Jakobshavn-Eqip-Store | Science | 8.4 | 266.7 | 66.9 |
| 05/02/17 | Science Flight #33-Thomas - ICESat-2 Central | Science | 7.9 | 274.6 | 59 |
| 05/03/17 | Science Flight #34-Thomas - Southwest Coastal A | Science | 8.3 | 282.9 | 50.7 |
| 05/05/17 | Science Flight #35-Helheim-Kangerdlugssuaq Gap B (High Priority) | Science | 8.2 | 291.1 | 42.5 |
| 05/06/17 | Science Flight #36-Helheim-K-EGIG-Summit | Science | 8 | 299.1 | 34.5 |
| 05/08/17 | Science Flight #37-Southeast Glaciers 01 (High Priority) | Science | 8 | 307.1 | 26.5 |
| 05/10/17 | Science Flight #38-Umanaq B (High Priority) | Science | 8 | 315.1 | 18.5 |
| 05/11/17 | Science Flight #39-ICESat-2 South (High Priority) | Science | 8.1 | 323.2 | 10.4 |
| 05/12/17 | Science Flight #40-Nuuk Fjords | Science | 1.8 | 325 | 8.6 |
| 05/13/17 | Transit Flight to Dover DE (to clear customs) | Transit | 6.4 | 331.4 | 2.2 |

05/13/17

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.

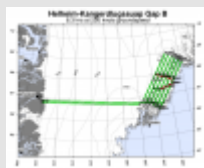
Various weak systems in southern Greenland were slowly clearing today and offered us a clear opportunity to complete this mission along the southeast coast. On our outbound transit, we were pleasantly surprised to be able to collect altimetry data all the way to the ice divide, at which point a cloud 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



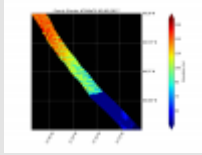
[Read more](#)

DMS image of the calving front of Fenris Glacier



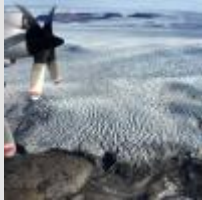
[Read more](#)

ATM T6 surface elevation along the calving front of Fenris Glacier



[Read more](#)

Subglacial outlet along the western ice-sheet margin near



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Wavy surface texture over a col in southeastern Greenland



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Calving front of Helheim Glacier



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Submitted by: Joseph MacGregor on 05/09/17

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