P-3 Orion - WFF 04/22/19

Aircraft:
P-3 Orion - WFF (See full schedule)
Flight Number:
#2094: 2019 OIB Science Flight #14
Payload Configuration:
Operation IceBridge
Nav Data Collected:
No
Total Flight Time:
6.6 hours
Submitted by:
Kelly Griffin on 04/24/19
Flight Segments:

From:	BGTL	**To:**	BGTL
Start:	04/22/19 12:00 Z	**Finish:**	04/22/19 18:37 Z
Flight Time:	6.6 hours		
Log Number:	19P017	**PI:**	Joseph MacGregor
Funding Source:	Bruce Tagg - NASA - SMD - ESD Airborne Science Program		
Purpose of Flight:	Science		
Miles Flown:	1867 miles		

Flight Hour Summary:

	19P017
Flight Hours Approved in SOFRS	250
Total Used	216.3
Total Remaining	33.7

19P017 Flight Reports

Date	Flt #	Purpose of Flight	Duration	Running Total	Hours Remaining	Miles Flown
03/26/19	#2053: 2019 OIB ATF	Check	0.9	0.9	249.1	0
03/27/19	#2059: 2019 OIB PTF-Laser	Check	2.3	3.2	246.8	0
03/28/19	#2061: 2019 OIB PTF-Radar	Check	3.2	6.4	243.6	0
04/01/19	#2068: 2019 OIB WFF-BGTL Transit Flight	Transit	6.9	13.3	236.7	2458
04/03/19	#2070: 2019 OIB Science Flight #1	Science	7.6	20.9	229.1	1938
04/05/19	#2072: 2019 OIB Science Flight #2	Science	7.7	28.6	221.4	1910
04/06/19	#2073: 2019 OIB Science Flight #3	Science	7.2	35.8	214.2	2000
04/08/19	#2075: 2019 OIB Science Flight #4	Science	6.9	42.7	207.3	1780
04/09/19	#2076: 2019 OIB Science Flight #5	Science	7.8	50.5	199.5	2045
04/10/19	#2081: 2019 OIB Science Flight #6	Science	10.1	60.6	189.4	2702
04/11/19	#2082: BGSF-BGTL Transit	Transit	2.2	62.8	187.2	696
04/12/19	#2083: 2019 OIB Science Flight #7	Science	7.2	70	180	2109

04/15/19	#2086: 2019 OIB Science Flight #8	Science	4.8	74.8	175.2	1243
04/16/19	#2087: 2019 OIB Science Flight #9	Science	7.6	82.4	167.6	2036
04/17/19	#2088: 2019 OIB Science Flight #10	Science	7.7	90.1	159.9	1937
04/18/19	#2090: 2019 OIB Science Flight #11	Science	7.8	97.9	152.1	2008
04/19/19	#2091: 2019 OIB Science Flight #12	Science	7.6	105.5	144.5	2104
04/20/19	#2092: 2019 OIB Science Flight #13	Science	6.9	112.4	137.6	0
04/22/19	#2094: 2019 OIB Science Flight #14	Science	6.6	119	131	1867
04/23/19	#2099: 2019 OIB Science Flight #15	Science	7.7	126.7	123.3	1979
04/25/19	#2102: 2019 OIB BGTL-KBGR Transit Flight	Transit	6.2	132.9	117.1	0
04/26/19	KBGR to BGSF Transit	Transit	5.7	138.6	111.4	0
05/05/19	2019 OIB Science Flight #16	Science	7.8	146.4	103.6	0
05/06/19	2019 OIB Science Flight #17	Science	8.4	154.8	95.2	0
05/07/19	2019 OIB Science Flight #18	Science	8.5	163.3	86.7	0
05/08/19	2019 OIB Science Flight #19	Science	8	171.3	78.7	0
05/12/19	2019 OIB Science Flight #20	Science	9	180.3	69.7	0
05/13/19	2019 OIB Science Flight #21	Science	7	187.3	62.7	0
05/14/19	2019 OIB Science Flight #22	Science	7.9	195.2	54.8	0
05/15/19	2019 OIB Science Flight #23	Science	8.3	203.5	46.5	0
05/16/19	2019 OIB Science Flight #24	Science	6.3	209.8	40.2	0
05/17/19	2019 OIB Transit	Transit	6.2	216	34	0
05/17/19	2019 OIB Transit	Transit	0.3	216.3	33.7	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 - P-3 Orion - WFF 04/22/19 Science Report

Mission:
OIB
Mission Summary:

Mission: ICESat-2 Arctic Ocean #4
Priority: High

This new flight for 2019 flies out-and-back along a single ICESat-2 ground track, selected and timed so that our aircraft and the spacecraft fly the track as closely as possible in time, and also with the track drift-corrected

according to winds measured from the aircraft. The particulars of the technique we will use to fly the track will depend on knowledge of ICESat-2?s pointing accuracy just prior to the time of this flight. Options include out-and-back along the same or parallel and offset lines, varying the altitude of one or both lines, or even a four-segment line. The general idea is to obtain a composite swath wide enough to capture any likely pointing offset of the spacecraft. See Appendix D for more details on the design of these flights.

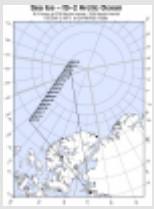
A delayed start today with high winds that temporarily induced Bravo conditions (buddy system). However, a promising forecast for this abbreviated long-line mission led us to takeoff once the brief winds lifted. We took off just in time, as a polar bear was sighted on-base shortly after we took off and base personnel had to shelter in place for an hour or so. After an uneventful transit we again arrived on-station for a shortened mission at 3,500 ft AGL, having missed ascending ICESat-2 RGT 0371, which crossed the start of our line at (13:28 UTC), whereas we got there at 14:06 UTC (38 minutes late). Winds were again mostly parallel to the line, but we drift-corrected regardless. We broke out of overcast conditions just before the start of the line, which was reassuring. We lost the surface about a quarter of the way through the mission for less than 15 minutes, but then regained it for the remainder of the mission. We broke off prior to the last two waypoints (J and K) to ensure the opportunity to collect a ramp pass. Headwall SWIR experienced multiple issues yet again and never really operated correctly today, while NVIR worked fine. ATM estimates 90% altimetry data collection. We conducted a ramp pass at 1,600 ft AGL.

Attached images/files:

1. Map of today?s mission (John Sonntag / NASA)
2. KML of today?s mission (John Sonntag / NASA)
3. P-3 in Hangar 8 (Jeremy Harbeck / NASA)
4. Flight Engineer Kurt Williams monitoring fueling following the brief blow (Jeremy Harbeck / NASA)
5. One of today?s few leads (Jeremy Harbeck / NASA)
6. Eye-shaped leads around a small floe (Jeremy Harbeck / NASA)
7. Subsun over sea ice, formed by atmospherically suspended ice crystals (Jeremy Harbeck / NASA)

Images:

Map of today's mission



Read more

P-3 in Hangar 8

Read more

Flight Engineer Kurt Williams monitoring fueling following the brief

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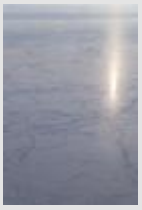
One of today?s few leads

Read more

Eye-shaped leads around a small floe

Read more

Subsun over sea ice, formed by atmospherically suspended ice



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Submitted by:
Joseph MacGregor on 04/24/19

OIB - P-3 Orion - WFF 04/23/19 Science Report

Mission:
OIB
Mission Summary:

Mission: North Glaciers 01
Priority: Medium

This mission is designed to resurvey historical ATM longitudinal surveys of several glaciers in northern Greenland, including Steensby, Ryder, and Hagen Glaciers. The maneuver connecting lower Steensby and Ryder glaciers has been modified to collect straight-line data over the fjords for better gravity data. It also re-occupies ATM lines on the Flade Ice Cap, near Station Nord, and returns to Thule along the British North Greenland Expedition traverse line, which was also flown by ATM in 2002. We also add two new glacier centerlines for small glaciers draining the Flade Isblink.

A clear forecast for north Greenland and poor conditions elsewhere led us to select this mission, OIB?s last onboard the P-3 based out of Thule AB. We lost the surface briefly before reaching Camp Century and conditions cleared again. We went down Steensby then up Ryder before turning east again toward Hagen Bræ and its iceberg graveyard. We crossed over to Flade Isblink and encountered a very section of clouds that we bypassed, passing by Station Nord and chatting with them on the radio, then returning along the EGIG. We

performed a ramp pass at 1,200 ft AGL. Headwall SWIR was unable to be operated today, but otherwise all instruments worked well. ATM estimates 95% altimetry data recovery.

Attached images:

1. Map of today?s mission (John Sonntag / NASA)
2. Our last walk for a science mission on the P-3 from Thule AB (Jeremy Harbeck / NASA)
3. The steep western wall that Steensby Glacier snakes around (Joe MacGregor / NASA)
4. Thick finger rafting in front of the terminus of Steesby Glacier (Jeremy Harbeck / NASA)
5. The recently active terminus of Hagen Bræ, northeast Greenland (Joe MacGregor / NASA)
6. Iceberg graveyard next to an island near Danmark Fjord (Jeremy Harbeck / NASA)
7. Station Nord, northeast Greenland (Jeremy Harbeck / NASA)
8. The active terminus of Spærregletscher in Kronprins Christian Land (Joe MacGregor / NASA)

Images:

Map of today's mission

Read more

Our last walk for a science mission on the P-3 from Thule AB

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The steep western wall that Steensby Glacier snakes around

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Thick finger rafting in front of the terminus of Steensby Glacier

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The recently active terminus of Hagen Bræ, northeast Greenland

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Iceberg graveyard next to an island near Danmark Fjord

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Station Nord, northeast Greenland

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The active terminus of Spærregletscher in Kronprins Christian Land

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Submitted by:
Joseph MacGregor on 04/24/19

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