

P-3 Orion - WFF 04/05/19

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

Flight Number: #2072: 2019 OIB Science Flight #2

Payload Configuration: Operation IceBridge

Nav Data Collected: No

Total Flight Time: 7.7 hours

Submitted by: Kelly Griffin on 04/08/19

Flight Segments:

From:	BGTL	To:	BGTL
Start:	04/05/19 11:00 Z	Finish:	04/05/19 18:40 Z
Flight Time:	7.7 hours		
Log Number:	19P017	PI:	Joseph MacGregor
Funding Source:	Bruce Tagg - NASA - SMD - ESD Airborne Science Program		
Purpose of Flight:	Science		
Miles Flown:	1910 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 04/05/19 Science Report

Mission: OIB

Mission Summary:

Mission: Zachariæ-79N
Priority: Baseline

This mission reoccupies the centerlines of the Zachariæ Isstrøm and 79N glaciers, plus flies a grid of six ascending ICESat tracks similar to one originally flown by OIB in 2012, but moved upstream by two ICESat ground tracks to account for the breakup of the lower ice shelf. It also overflies a pair of PROMICE sites immediately north of 79N Glacier. We transit to the northeast region along a historical ATM line dating back to 1994. For 2019 we replace the east-west transit lines with new master grid lines, selected to fill gaps in knowledge of bedrock.

A clear forecast with moderate winds made for a relatively easy choice to survey northeast Greenland today. A

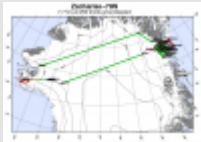
stratus layer west of the ice divide near Camp Century obscured ATM recording for several minutes, but otherwise skies were mostly clear and the grounding line of Zachariæ Isstrøm and ice shelf of 79N were clearly visible. We completed the two flowlines and six across-track ICESat lines, passing over numerous frozen-over periglacial lakes, crevasse fields, capsized icebergs, dramatic cliffs and musk oxen. Brief thin clouds were occasionally encountered at the downstream end of the grid. We then passed over two PROMICE sites on our return to Thule along a new master grid line. After the main survey lines on our return to Thule AB, we surveyed an curious ice dome between Tracy and Heilprin Glaciers that a citizen scientist alerted us to, which was previously intended for the Northeast Grid 05 Prime mission. The Headwall VNIR channels and CAMBOT again experienced brief shutoffs, but otherwise all instruments performed well. We conducted a ramp pass at 1,200 ft AGL.

Attached images:

1. Map of today's mission (John Sonntag / NASA)
2. Capsized iceberg at the terminus of Zachariæ Isstrøm (Joe MacGregor / NASA)
3. The Snake: An odd ice-covered medial moraine near the downstream end of our grid (Joe MacGregor / NASA)
4. A pair of musk oxen in Lambert Land (Jeremy Harbeck / NASA)
5. CAMBOT image of PROMICE automated weather station KPC_L near the ice-sheet margin in Konprins Christian Land (Jeremy Harbeck / NASA)

Images:

Map of today's mission



[Read more](#)

Capsized iceberg at the terminus of Zachariæ Isstrøm



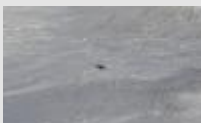
[Read more](#)

The Snake: An odd ice-covered medial moraine near the



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A pair of musk oxen in Lambert Land



[Read more](#)

CAMBOT image of PROMICE automated weather station KPC_L



[Read more](#)

Submitted by: Joseph MacGregor on 04/07/19

OIB - P-3 Orion - WFF 04/06/19 Science Report

Mission: OIB

Mission Summary:

Mission: Zigzag East
Priority: High

This mission is a repeat or near-repeat of an OIB flight flown in prior years. It is intended to sample the thick multi-year ice near the Greenland coast as well as the gradient to thinner ice closer to the pole. The eastern- and westernmost gradient lines are CryoSat-2 ground tracks. In addition to Level 1 Requirements SI1 and SI2, the mission addresses sea ice level 1 baseline requirement SI3b by sampling thick multi-year ice near the northern coast of Greenland and the poleward gradient towards thinner ice.

A nearly clear satellite image of this region made for an easier decision today. We selected two low-latency CryoSat-2 underpasses and surveyed those. We had great views of the northern margin of the Greenland Ice Sheet on our transit to the survey line. We encountered intermittent clouds and fog at the beginning of the survey line, which soon cleared, and which we encountered again on the southwestern end of the main survey. The survey lines otherwise proceeded uneventfully over what appeared to be mostly first-year ice. We returned via Nares Strait and passed over Inglefield Land to get back to Thule. Snow radar briefly had a loose connection, and Headwall continued to experience shutdown issues but good progress was made, but otherwise all instruments performed well. ATM reported 95% altimetry coverage, limited only by brief cloudy periods. We flew a ramp pass at 2,000 ft AGL.

CryoSat-2 ground track / latency (positive/negative = CryoSat-2 orbits after/before our flight)

47671 / -2 hours, 44 min

47672 / -2 hours, 55 min

Attached images/files:

1. Map of today's mission (John Sonntag / NASA)
2. KML of today's mission (John Sonntag / NASA)
3. Finger rafting of young ice in a lead (Jeremy Harbeck / NASA)
4. Flaw lead where semi-fast ice along the northern Greenland coast meets pack ice (Jeremy Harbeck / NASA)
5. The terminus of C.H. Ostenfeld Glacier, a major outlet glacier along the northern Greenland ice-sheet margin (Joe MacGregor / NASA)

Images:

Map of today's mission



[Read more](#)

Finger rafting of young ice in a lead



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Flaw lead where semi-fast ice along the northern Greenland coast



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The terminus of C.H. Ostenfeld Glacier, a major outlet glacier along



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Submitted by: Joseph MacGregor on 04/07/19

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