

## P-3 Orion - WFF 05/14/19

**Aircraft:**

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

**Flight Number:**

2019 OIB Science Flight #22

**Payload Configuration:**

Operation IceBridge

**Nav Data Collected:**

No

**Total Flight Time:**

7.9 hours

**Submitted by:**

Mike Cropper on 05/14/19

**Flight Segments:**

<b>From:</b>	BGSF	<b>To:</b>	BGSF
<b>Start:</b>	05/14/19 10:25 Z	<b>Finish:</b>	05/14/19 18:20 Z
<b>Flight Time:</b>	7.9 hours		
<b>Log Number:</b>	<a href="#">19P017</a>	<b>PI:</b>	Joseph MacGregor
<b>Funding Source:</b>	Bruce Tagg - NASA - SMD - ESD Airborne Science Program		
<b>Purpose of Flight:</b>	Science		

**Flight Hour Summary:**

	<b>19P017</b>
<b>Flight Hours Approved in SOFRS</b>	250
<b>Total Used</b>	216.3
<b>Total Remaining</b>	33.7

**19P017 Flight Reports**

Date	Flt #	Purpose of Flight	Duration	Running Total	Hours Remaining	Miles Flown
<a href="#">03/26/19</a>	#2053: 2019 OIB ATF	Check	0.9	0.9	249.1	0
<a href="#">03/27/19</a>	#2059: 2019 OIB PTF-Laser	Check	2.3	3.2	246.8	0
<a href="#">03/28/19</a>	#2061: 2019 OIB PTF-Radar	Check	3.2	6.4	243.6	0
<a href="#">04/01/19</a>	#2068: 2019 OIB WFF-BGTL Transit Flight	Transit	6.9	13.3	236.7	2458
<a href="#">04/03/19</a>	#2070: 2019 OIB Science Flight #1	Science	7.6	20.9	229.1	1938
<a href="#">04/05/19</a>	#2072: 2019 OIB Science Flight #2	Science	7.7	28.6	221.4	1910
<a href="#">04/06/19</a>	#2073: 2019 OIB Science Flight #3	Science	7.2	35.8	214.2	2000
<a href="#">04/08/19</a>	#2075: 2019 OIB Science Flight #4	Science	6.9	42.7	207.3	1780
<a href="#">04/09/19</a>	#2076: 2019 OIB Science Flight #5	Science	7.8	50.5	199.5	2045
<a href="#">04/10/19</a>	#2081: 2019 OIB Science Flight #6	Science	10.1	60.6	189.4	2702
<a href="#">04/11/19</a>	#2082: BGSF-BGTL Transit	Transit	2.2	62.8	187.2	696
<a href="#">04/12/19</a>	#2083: 2019 OIB Science Flight #7	Science	7.2	70	180	2109
<a href="#">04/15/19</a>	#2086: 2019 OIB Science Flight #8	Science	4.8	74.8	175.2	1243

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

**Mission:**

OIB

**Mission Summary:**

Mission: Umanaq B (priority:high)

This mission is designed (along with Umanaq A) to re-fly the 2012 Umanaq coast-parallel grid with a pair of interlaced missions. This mission by itself re-occupies a grid spaced at 10 km near the coast, widening to 20 km upstream. The two flights together establish a grid at half this spacing. We also re-fly a pair of 2012 lines over the Disko Island ice cap, and another 2016 line over the Nuussuaq Peninsula. For 2019 we replace ICESat-1 line 0419 with ICESat-2 line A0719 (beam 1L), which is occupied by the spacecraft on 15 May 2019.

The decision regarding which mission to fly today was a straightforward one. Southeast and central Greenland were completely covered in clouds and/or fog, as was southwest Greenland. This left only two high-priority missions along the central west coast available. One of those, Jakobshavn 02, was in an area with rather strong katabatic winds (40+ knots on the open ice sheet, much higher in the valleys) and associated turbulence, while those winds moderated to the north, leaving this mission in reasonably smooth air. In the event, we experienced clear skies except for a few clouds high above us at times, and light to occasionally moderate turbulence at the southwestern corner of our grid lines and in the lee of canyon walls.

We observed surface melt, with partial refreezing, all along the ice sheet margin today. This included the northernmost section near Upernavik, at 72.6 deg N. This appears to be a consequence of strong and persistent katabatics over the central west coast of Greenland for much of the past two weeks, which abated over the past weekend (leading to the partial refreezing), but are picking up again yesterday and today. A few days ago we observed much less surface melt in far southern Greenland, where katabatic flow has been weak or nonexistent recently.

Headwall SWIR did not operate today, but otherwise all instruments performed well. ATM estimates 100% altimetry data recovery. We performed a ramp pass at 2000' prior to landing.

IceSat-2 RGT latencies (+/- indicates OIB surveyed after/before IceSat-2)

0719 -14 hours

OIB has flown 9375 nautical miles (17363 km) of IceSat-2 ground tracks so far this season, including today.

Data volumes:

ATM: 131 Gb

CAMBOT: 245 Gb

FLIR: 16 Gb

KT19: 12 Mb

MCoRDS: 2.068 Tb

Narrow Swath ATM: 177 Gb green

Narrow Swath ATM: 134 Gb IR

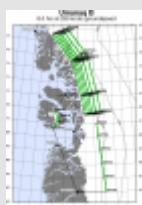
VNIR 60 Gb

Snow Radar: 1.377 Tb

total data collection time: 7.6 hrs

## Images:

### Map of today's flight.



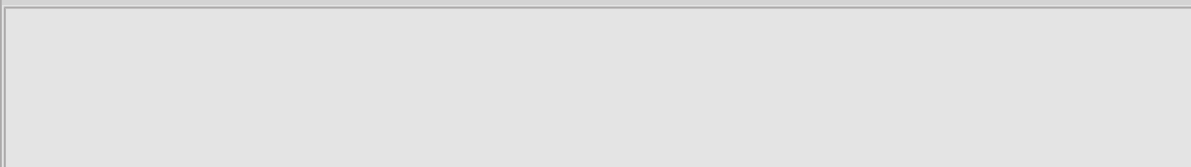
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### Iceberg in Disko Bay



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### Glaciers of Umanaq





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## Icefall



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## Ingia Glacier



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## Kangerdlugssup Glacier



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## Supraglacial lake



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**Submitted by:**

John Sonntag on 05/14/19

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NASA Official: Bruce A. Tagg

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