

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:

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

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 BGSGF 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 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

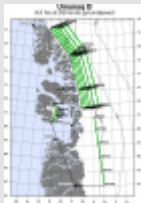
VNIR 60 Gb

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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