

OIB - P-3 Orion - WFF 04/12/19 Science Report

Aircraft:

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

Date:

Friday, April 12, 2019

Mission:

OIB

Mission Location:

ICESat-2 Arctic Ocean #2

Mission Summary:

Mission: ICESat-2 Arctic Ocean #2 (racetrack)

Priority: Baseline

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 sufficiently large cloud-free region in imagery and a decent forecast led us to select this baseline mission, another racetrack as a sufficiently long stretch of cloud-free regions was not available. We arrived on-station after two hours of transit to ICESat-2 RGT 218 only two minutes before the spacecraft passed overhead at 13:03 UTC on an ascending pass with clear skies overhead. As for ICESat-2 Arctic Ocean #1, we surveyed ICESat-2 beams 1L and 2L at 3500 ft AGL three times each with a 425-meter offset. Because winds were light and roughly parallel to the RGT, we did not correct for sea ice drift. We encountered some haze about 15 minutes into the flight. Unfortunately, ATM T7 experienced a malfunction during the first of the six lines and had about a 10-minute gap in data collection (~13:22-13:32 UTC), likely due to a temperature issue. Otherwise, skies were mostly clear and the mission was a satisfying success, with a few leads observed and lots of good data collected. ATM reported 100% data collection with the exception of the T7 malfunction. Even though MCoRDS was not operated during this sea ice mission, CReSIS was able to confirm during transit that their efforts further isolate the snow radar from MCoRDS interference succeeded. On the transit home, we chatted with three K-12 classrooms from, including one from Project Manager Eugenia De Marco's hometown in Argentina. Due to ceilings at Thule AB, we did not perform a ramp pass.

Attached images/files:

1. Map of today's mission (John Sonntag / NASA)
2. KML of today's mission (John Sonntag / NASA)
3. Snow-covered alluvial fans jutting into a sea-ice-covered Ellesmere Island fjord, with evidence of tidal flexure in the near-shore sea ice (John Sonntag / NASA)
4. You can call these pressure ridges "AL" (Jeremy Harbeck / NASA)
5. ATM T6 (wide swath) of sea ice leads and pressures ridges not named AL (Matt Linkswiler / NASA)

Images:

Map of today's mission



[Read more](#)

Snow-covered alluvial fans jutting into a sea-ice-covered Ellesmere Island



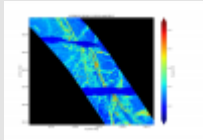
[Read more](#)

You can call these pressure ridges ?AL?



[Read more](#)

ATM T6 (wide swath) of sea ice leads and pressures ridges not named AL



[Read more](#)

Submitted by:

Joseph MacGregor on 04/12/19

Related Flight Report:

P-3 Orion - WFF 04/12/19

Flight Number:

#2083: 2019 OIB Science Flight #7

Payload Configuration:

Operation IceBridge

Nav Data Collected:

No

Total Flight Time:

7.2 hours

Submitted by:

Kelly Griffin on 04/16/19

Flight Segments:

| | | | |
|---------------------------|--|----------------|------------------|
| From: | BGTL | To: | BGTL |
| Start: | 04/12/19 10:57 Z | Finish: | 04/12/19 18:08 Z |
| Flight Time: | 7.2 hours | | |
| Log Number: | 19P017 | PI: | Joseph MacGregor |
| Funding Source: | Bruce Tagg - NASA - SMD - ESD Airborne Science Program | | |
| Purpose of Flight: | Science | | |
| Miles Flown: | 2109 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.

Flight Tracks:

| Attachment | Size |
|---|----------|
| 2_siis2arcticocean_labels.kml | 14.81 KB |

Page Last Updated: April 22, 2017

Page Editor: Brad Bulger

NASA Official: Marilyn Vasques

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