P-3 Orion 10/29/17 - 10/30/17

Aircraft: P-3 Orion - WFF (See full schedule)
Flight Number: OIB-Ushuaia Science Flight #1
Payload Configuration: OIB
Nav Data Collected: No
Total Flight Time: 9.7 hours
Submitted by: Janet Letchworth on 10/30/17
Flight Segments:

From:	SAWH	**To:**	SAWH
Start:	10/29/17 14:53 Z	**Finish:**	10/30/17 00:35 Z
Flight Time:	9.7 hours		
Log Number:	18P006	**PI:**	Nathan Kurtz
Funding Source:	Bruce Tagg - NASA - SMD - ESD Airborne Science Program		
Purpose of Flight:	Science		
Comments:	First Science flight for Ushuaia Campaign. It was a baseline flight line including under-flight of TanDEM-X.		

Flight Hour Summary:

	18P006
Flight Hours Approved in SOFRS	151
Total Used	156
Total Remaining	-5

18P006 Flight Reports

Date	Flt #	Purpose of Flight	Duration	Running Total	Hours Remaining	Miles Flown
10/17/17	OIB - Airworthiness Test Flight	Check	1.1	1.1	149.9	
10/18/17	OIB - Project Test Flight	Check	3.5	4.6	146.4	
10/19/17	OIB PTF - Radar	Check	4.5	9.1	141.9	
10/23/17	OIB - Transit leg #1	Transit	7.1	16.2	134.8	
10/24/17	OIB - Transit leg #2	Transit	6.5	22.7	128.3	
10/25/17	OIB - Transit leg #3	Transit	7	29.7	121.3	
10/29/17 - 10/30/17	OIB-Ushuaia Science Flight #1	Science	9.7	39.4	111.6	
10/31/17	OIB-Ushuaia Science Flight #2	Science	8.9	48.3	102.7	
11/03/17	OIB-Ushuaia Science Flight #3	Science	9	57.3	93.7	
11/04/17	OIB-Ushuaia Science Flight #4	Science	9.3	66.6	84.4	
11/12/17	OIB-Ushuaia Science Flight #5	Science	9.5	76.1	74.9	
11/14/17	OIB-Ushuaia Science Flight #6	Science	9.8	85.9	65.1	
11/16/17	OIB-Ushuaia Science Flight #7	Science	9.1	95	56	
11/21/17	OIB-Ushuaia Science Flight #8	Science	9.4	104.4	46.6	
11/22/17 - 11/23/17	OIB-Ushuaia Science Flight #9	Science	9.9	114.3	36.7	
11/24/17	OIB-Ushuaia Science Flight #10	Science	9.6	123.9	27.1	

11/25/17 - 11/26/17	OIB-Ushuaia Science Flight #11	Science	9.5	133.4	17.6
11/27/17	OIB-Ushuaia SAWH-SCDA Transit Flight	Transit	7	140.4	10.6
11/28/17	OIB-Ushuaia SCDA-MROC Transit Flight	Transit	7	147.4	3.6
11/29/17	OIB-Ushuaia MROC-KNGU Transit Flight	Transit	6.3	153.7	-2.7
11/29/17	OIB-Ushuaia KNGU-KWAL Transit Flight	Transit	0.8	154.5	-3.5
12/04/17	OIB-Post Mission Calibration Flight	Science	1.5	156	-5

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 10/29/17 Science Report

Mission: OIB

Mission Summary:

This mission roughly follows the southern leg of the baseline priority Seelye Loop mission (though about 300 km south of the nominal line), a mission flown almost every year of Operation IceBridge. It targets gradients in sea ice freeboard and thickness along the “gate” connecting the tip of the Antarctic Peninsula with Cape Norvegia – although we cannot reach all the way to Cape Norvegia in 2017 due to range constraints of the P-3. The mission was modified to coincide with an ascending TanDEM-X spacecraft ground track, in cooperation with Dr. Son Nghiem’s OTASC experiment as part of a joint collaboration between NASA and DLR.

This was a difficult call as only the western portion of the Weddell Sea was clear within the range limit of the P-3. Though we expected clouds on the southeastern portion of the line, model profiles from GFS indicated we may have been able to get under clouds to get data. Some clouds were present about 1/3 of the way through the line and we changed altitude intermittently to avoid icing conditions and maintain visibility while collecting data during clearer sections. About 2/3 of the way through the line we were forced to climb in altitude to stay above the cloud deck, though DMS was able to see down to the surface at some points we were not able to go back down due to fuel considerations.

ATM and DMS ran well during the flight, though both were impacted by clouds and altitude changes but otherwise performed well during the clear sections. The magnetometer was a bit noisy during the first portion of the flight as it was positioned more optimally for northern hemisphere flights, it will be adjusted to eliminate the issue for subsequent flights. The gravimeter experienced a data gap due to the use of a remote ground station (the nominal ground station being tied up in cargo). The snow radar was also experiencing low SNR due to an unknown source of noise, it will be investigated for future flights.

Data volumes
ATM: T6: 53 Gb T7: 54 Gb
FLIR: 5.5 Gb
Cambot: 14 Gb
KT19: 12 Mb
DMS: 18 Gb
MCoRDS: 61.4 Gb calibration data only
Gravity: 3 Gb
Magnetometer: 3 Gb
Accumulation radar: 106 Gb
Snow/Ku radar: 370 Gb
data on: 1732
data off: 1943

File:

map_tandemxA.pdf
Submitted by: Nathan T. Kurtz on 10/29/17

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