

P-3 Orion - WFF 08/31/17

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

Flight Number: Science Flight #12

Payload Configuration: ORACLES

Nav Data Collected: No

Archive Data: [20170831](#) (118 binary files; 26 archive (plain-text) files)

Total Flight Time: 8.3 hours

Submitted by: Mike Cropper on 09/05/17

Flight Segments:

From:	FPST	To:	FPST
Start:	08/31/17 07:53 Z	Finish:	08/31/17 16:10 Z
Flight Time:	8.3 hours		
Log Number:	17P001	PI:	Jens Redemann
Funding Source:	Hal Maring - NASA - SMD - ESD Radiation Science Program		
Purpose of Flight:	Science		

Flight Hour Summary:

	17P001
Flight Hours Approved in SOFRS	179.5
Total Used	154.9
Total Remaining	24.6

17P001 Flight Reports

Date	Flt #	Purpose of Flight	Duration	Running Total	Hours Remaining	Miles Flown
07/15/17	Airworthiness Test Flight	Check	1.2	1.2	178.3	
07/16/17	Project Test Flight #1	Check	4	5.2	174.3	
07/17/17	Project Test Flight #2	Check	3.1	8.3	171.2	
08/01/17	Transit Flight #1	Transit	6.2	14.5	165	
08/07/17	Transit Flight #2	Transit	10.1	24.6	154.9	
08/09/17	Transit Flight #3/Science	Transit	7.8	32.4	147.1	
08/12/17	Science Flight #1	Science	8.5	40.9	138.6	
08/13/17	Science Flight #2	Science	9.1	50	129.5	
08/15/17	Science Flight #3	Science	9.2	59.2	120.3	
08/17/17	Science Flight #4	Science	9.1	68.3	111.2	
08/18/17	Science Flight #5	Science	5.5	73.8	105.7	
08/19/17	Science Flight #6	Science	2.2	76	103.5	0
08/21/17	Science Flight #7	Science	8.3	84.3	95.2	0
08/24/17	Science Flight #8	Science	9.4	93.7	85.8	0
08/26/17	Science Flight #9	Science	9.7	103.4	76.1	0
08/28/17	Science Flight #10	Science	9.5	112.9	66.6	0
08/30/17	Science Flight #11	Science	8.9	121.8	57.7	0
08/31/17	Science Flight #12	Science	8.3	130.1	49.4	0
09/02/17	Transit Flight #1/Science	Transit	8.7	138.8	40.7	
09/03/17	Transit Flight #2	Transit	9.7	148.5	31	
09/04/17	Transit Flight #3	Transit	5.9	154.4	25.1	
09/04/17	Transit Flight #4	Transit	0.5	154.9	24.6	

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.

ORACLES - P-3 Orion 08/31/17 Science Report

Mission: ORACLES

Mission Summary:

The goal today was to resample the plume that was sampled yesterday (30 August) at 3.5km and 3.0km between 4S and 10S along 5E (Routine Track). HISPLIT forward trajectories were used to determine the latitude, longitude and altitude of these same airmasses on 31 August.

The HSRL was not working (cooler problem) so the flight plan was adjusted to exclude a high-altitude survey leg; instead the focus was fully on in-situ sampling.

On Aug 30 the P3 sampled the plume on its south-bound leg along 5E between 4S and 10S at 3.5km altitude. Today, we resampled this plume approx. 25 hours later, also headed south-bound, between 2.8 and 3.1km altitude.

On Aug 30 the P3 then sampled the plume on its north-bound along 5E between 8S and 3S at 3.0km altitude. Today we resampled this plume approx. 25.5 hours later, also headed north-bound, between 2.7 and 3.1km altitude. While the plume was projected to be lower than this, we found that at 2.6km we had dropped out of the bottom of the plume. In the middle of this north-bound leg we descended to just above cloud, then in-cloud, in order to get remote sensing measurements and cloud measurements in coordination with the A-Train overpass. At the northern end of the in-situ plume leg (corresponding to airmasses sampled at 3-5S on 30 Aug) we did a series of stacked legs at 2.7km, 2.9km and 3.0km to check for vertical variations in aerosol properties.

File:

 [PRF12_Y17_0831_FlightScienceReport.pdf](#)

Submitted by: Sarah Doherty on 09/19/17

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