

## P-3 Orion - WFF 10/17/18

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

Flight Number: ORACLES Science Flight #10

Payload Configuration: ORACLES

Nav Data Collected: No

Archive Data: [20181017](#) (120 binary files; 24 archive (plain-text) files; 39 image files)

Total Flight Time: 8.5 hours

Submitted by: Mike Cropper on 10/17/18

### Flight Segments:

<b>From:</b>	FPST	<b>To:</b>	FPST
<b>Start:</b>	10/17/18 07:45 Z	<b>Finish:</b>	10/17/18 16:15 Z
<b>Flight Time:</b>	8.5 hours		
<b>Log Number:</b>	<a href="#">19P018</a>	<b>PI:</b>	Jens Redemann
<b>Funding Source:</b>	Hal Maring - NASA - SMD - ESD Radiation Science Program		
<b>Purpose of Flight:</b>	Science		
<b>Miles Flown:</b>	2000 miles		

### Flight Hour Summary:

	18P004	19P018
<b>Flight Hours Approved in SOFRS</b>	188.5	
<b>Flight Hours Previously Approved</b>		144
<b>Total Used</b>	44.5	110
<b>Total Remaining</b>		34

### 19P018 Flight Reports

Date	Flt #	Purpose of Flight	Duration	Running Total	Hours Remaining	Miles Flown
<a href="#">10/02/18</a>	ORACLES Science Flight #3	Science	8.5	8.5	135.5	1940
<a href="#">10/03/18</a>	ORACLES Science Flight #4	Science	8.5	17	127	1970
<a href="#">10/05/18</a>	ORACLES Science Flight #5	Science	9	26	118	2000
<a href="#">10/07/18</a>	ORACLES Science Flight #6	Science	8.4	34.4	109.6	2000
<a href="#">10/10/18</a>	ORACLES Science Flight #7	Science	8.3	42.7	101.3	1970
<a href="#">10/12/18</a>	ORACLES Science Flight #8	Science	5.3	48	96	800
<a href="#">10/15/18</a>	ORACLES Science Flight #9	Science	7.8	55.8	88.2	1700
<a href="#">10/17/18</a>	ORACLES Science Flight #10	Science	8.5	64.3	79.7	2000
<a href="#">10/19/18</a>	ORACLES Science Flight #11	Science	8	72.3	71.7	1800
<a href="#">10/21/18</a>	ORACLES Science Flight #12	Science	8.2	80.5	63.5	1800
<a href="#">10/23/18</a>	ORACLES Science Flight #13	Science	8.1	88.6	55.4	1800
<a href="#">10/25/18</a>	ORACLES Transit #1	Transit	7.8	96.4	47.6	2009
<a href="#">10/26/18</a>	ORACLES Transit #2	Transit	7	103.4	40.6	2100
<a href="#">10/27/18</a>	ORACLES Transit #3	Transit	5.8	109.2	34.8	1692

Source URL: [https://espo.nasa.gov/oracles/flight\\_reports/P-3\\_Orion\\_-\\_WFF\\_10\\_17\\_18#comment-0](https://espo.nasa.gov/oracles/flight_reports/P-3_Orion_-_WFF_10_17_18#comment-0)

Page Last Updated: April 22, 2017

Page Editor: Brad Bulger

NASA Official: Marilyn Vasques

**Related Science Report:**

## ORACLES - P-3 Orion - WFF 10/17/18 Science Report

**Mission:** ORACLES

**Mission Summary:**

This was a Target of Opportunity flight aimed at sampling younger aerosol off the coast of Angola. The first priority was intensive in-situ aerosol sampling; if possible, the hope was to also get a radiation wall / square spiral out of it for SSFR/4STAR retrieval of spectral absorption and single scatter albedo. The flight plan, which we largely followed, was to transit south on 7E to 7S; then go east-bound to 10.5E. There, do the radiation wall along a north-south line ~7.0-7.6E. Then transit from 7S, 10.5E west to 7S, 5E and transit back to STM on 5E, with some in-situ sampling along the way if time/fuel permits.

We encountered significant mid-level clouds on the south- and east- bound transit legs to the work area, requiring us to adjust altitude frequently to keep below the mid-level clouds (thereby allowing for HSRL retrievals). When we arrived at the work area there were still mid-level clouds, so we changed the usual order of the radiation wall and instead stepped down from high altitude, doing in-situ aerosol legs on the way down; then did the below-cloud, in-cloud and above-cloud legs before doing a square spiral back up to altitude.

Unfortunately mid-level clouds interfered with the square spiral SSFR/4STAR measurements. We were able to do some more in-situ sampling on the leg back to STM on 5E.

This flight was most notable for the extremely high concentrations of aerosol on the 7-7.6S, 10.5E line at ~5-7,000' altitude. This was the most concentrated aerosol seen yet in ORACLES. In addition, based on preliminary in-flight observations, it was younger than other aerosol sampled during ORACLES.

**File:**

 [PRF10\\_Y18\\_1017\\_FlightScienceReport.pdf](#)

**Submitted by:** Sarah Doherty on 01/30/19

*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.*

### 18P004 Flight Reports

Date	Flt #	Purpose of Flight	Duration	Running Total	Hours Remaining	Miles Flown
<a href="#">09/17/18</a>	ORACLES ATF	Check	1.3	1.3	187.2	0
<a href="#">09/19/18</a>	ORACLES PTF	Check	3.7	5	183.5	0
<a href="#">09/21/18</a>	ORACLES Transit #1	Transit	6.3	11.3	177.2	1716
<a href="#">09/22/18</a>	ORACLES Transit #2	Transit	8.2	19.5	169	2131
<a href="#">09/24/18</a>	ORACLES Transit #3/Science Flight	Transit	9.3	28.8	159.7	2500
<a href="#">09/27/18</a>	ORACLES Science Flight #1	Science	8	36.8	151.7	1875
<a href="#">09/30/18</a>	ORACLES Science Flight #2	Science	7.7	44.5	144	2400