

# ORACLES - P-3 Orion - WFF 09/30/18 Science Report

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

**Date:** Sunday, September 30, 2018

**Mission:** ORACLES

**Mission Location:** São Tomé

**Mission Summary:**

- Flight 7:12-14:35UTC
- High-altitude transit for HSRL
- Found somewhat broken clouds at ~7.5S.
- Radiation wall module components:
  - Spiral in somewhat heavier cloud field.
  - Ramped ascent south-bound to just above cloud.
  - Above, below, then sawtooth in-cloud 2-sawtooth leg. Chose sawtooth to capture variability in microphysics.

**{AMS, CCN compromised below 3000' altitude by PTI leak up until end of cloud legs}**

- 2 min above clouds for 4STAR AOD, then ramped ascent south-bound to start first, north-bound in-situ leg south of spiral.

**{11:06UTC, at start of ascent: Power bank failed affecting HSRL, APR3, 4STAR, COMA, PDI; no data from these instruments after this. Also forced a slightly early return and cancellation of final high-altitude leg over wall area.}**

- 3 ~15min in-situ legs ~1/3 to south of spiral, 2/3 to north of spiral.
- AOD 0.42 at spiral location; 0.36 at south end of wall & 0.32 at north end of wall.
- At north end of last in-situ leg / north of "wall", descend to measure cloud/aerosol in transit on way home:
  - ~30sec below-cloud, then 2 sawtooths, below-cloud leg, in-cloud level leg w/ HiGEAR/AMS/CCN on CVI.
  - Ascend to aerosol layer but it petered out really quickly
- Transitioned east to hit CALIPSO overpass for RSP; got on their track ~8min after overpass
- **{No PTI data this flight due to leak (gasket issue).}**

**Submitted by:** Sarah Doherty on 10/12/18

**File:**

 [PRF02\\_Y18\\_0930\\_FlightScienceReport.pdf](#)

**Related Flight Report:**

## P-3 Orion - WFF 09/30/18

**Flight Number:** ORACLES Science Flight #2

**Payload Configuration:** ORACLES

**Nav Data Collected:** No

**Total Flight Time:** 7.7 hours

**Archive Data:** [20180930](#) (69 binary files; 24 archive (plain-text) files; 39 image files)

**Submitted by:** Mike Cropper on 10/01/18

**Flight Segments:**

<b>From:</b>	FPST	<b>To:</b>	FPST
<b>Start:</b>	09/30/18 08:00 Z	<b>Finish:</b>	09/30/18 15:40 Z
<b>Flight Time:</b>	7.7 hours		
<b>Log Number:</b>	<a href="#">18P004</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>	2400 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

<b>19P018 Flight Reports</b>						
<b>Date</b>	<b>Flt #</b>	<b>Purpose of Flight</b>	<b>Duration</b>	<b>Running Total</b>	<b>Hours Remaining</b>	<b>Miles Flown</b>
<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
<a href="#">10/27/18</a>	ORACLES Transit #4	Transit	0.8	110	34	72

**Source URL:** [https://airbornescience.nasa.gov/science\\_reports/ORACLES\\_-\\_P-3\\_Orion\\_-\\_WFF\\_09\\_30\\_18\\_Science\\_Report#comment-0](https://airbornescience.nasa.gov/science_reports/ORACLES_-_P-3_Orion_-_WFF_09_30_18_Science_Report#comment-0)

Page Last Updated: April 22, 2017

Page Editor: Brad Bulger

NASA Official: Bruce A. Tagg

*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.*

<b>18P004 Flight Reports</b>						
<b>Date</b>	<b>Flt #</b>	<b>Purpose of Flight</b>	<b>Duration</b>	<b>Running Total</b>	<b>Hours Remaining</b>	<b>Miles Flown</b>
<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