

Flight Report: DISCOVER-AQ Science Flight #4

From: KPMD To: KPMD

Start: 01/21/13 16:23 Z Finish: 01/22/13 00:02 Z

Flight Time: 7.6 hours

Log Number: 13P201 PI: James Crawford

Funding Source: Hal Maring - NASA - SMD Radiation Science Program

Official report logged at:

[http://airbornescience.nasa.gov/flight_reports/P-3 Orion 01 21 13 - 01 22 13](http://airbornescience.nasa.gov/flight_reports/P-3_Orion_01_21_13_-_01_22_13)

Flight	Date	Duration	Cumulative Hours	DISCOVER-AQ Hours remaining	PODEX Hours remaining
<i>Total Allocated</i>				100	21
ECF	1/10/13	1.1	1.1	98.9	21
ECF -2	1/10/13	0.6	1.7	98.3	21
PCF	1/10/13	2.1	3.8	96.2	21
Transit	1/14/13	8.3	12.1	87.9	21
Science Flight – 1	1/16/13	8.4	20.5	79.5	21
Science Flight – 2	1/18/13	7.6	28.1	71.9	21
Science Flight – 3	1/20/13	7.4	35.5	64.5	21
Science Flight – 4	1/21/13	7.6	43.1	56.9	21

Comments: This was the fourth science flight for DISCOVER-AQ with PM2.5 forecasted to continue increasing in the southern San Joaquin Valley. Takeoff was delayed 30 minutes due to an issue with the TD-LIF instrument. Fewer missed approaches were missed due to the later takeoff enabling more fog to dissipate before our arrival. Pollution continues to be contained close to the surface below 2000 feet, but disconnects between the aircraft and surface were noted during the flight. For instance, ground monitors at Porterville registered as very clean during the first pass, but the aircraft saw scattering that was slightly greater than observed at Bakersfield. In the two hours before the second pass at Porterville, local PM2.5 doubled, showing that this disconnect was due to aerosols aloft that finally moved downward to the surface. Agreement between the aircraft and ground monitors was much better on the second pass.