Flight Report: DISCOVER-AQ Science Flight #9

From: KPMD To: KPMD

Start: 02/04/13 16:34 Z Finish: 02/05/13 00:11 Z

Flight Time: 7.4 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_02_04_13_-_02_05_13

Flight	Date	Duration	Cumulative Hours	DISCOVER-AQ Hours remaining	PODEX Hours remaining
Total Allocated				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
Science Flight – 5	1/22/13	7.9	51	49	21
PODEX - 1	1/28/13	5.4	56.4	49	15.6
Science Flight – 6	1/30/13	7.7	64.1	41.3	15.6
Science Flight – 7	1/31/13	7.7	71.8	33.6	15.6
Science Flight – 8	2/1/13	8	79.8	25.6	15.6
PODEX -2	2/3/13	5	84.8	25.6	10.6
Science Flight – 9	2/4/13	7.4	92.2	18.2	10.6

Comments: This was the ninth science flight for DISCOVER-AQ. Conditions in the valley were expected to remain polluted despite a weak system bringing cloudiness to the region over the previous two days. Even with a later takeoff (0830), the valley exhibited significant foggy conditions preventing missed approaches across the eastern side of the valley on the first circuit. The aircraft was often forced above 4000 feet due to visibility, but this was the first flight for which significant pollution was observed above the boundary layer and associated fog. Pollution showed a downward trend over the western valley and Fresno during the flight, but Bakersfield and Porterville remained heavily polluted with PM in the 60 ug/m3 range. Due to apparent fogginess, missed approaches at Bakersfield were denied on all three circuits. Passing over Bakersfield on the return to Palmdale, and instrument missed approach on the Bakersfield Meadows airport. The layer was found to be haze rather than fog (75% RH) and scattering

was greater at altitude than near the ground. If these conditions are still present on Wednesday, we will seek to conduct more IFR sampling within the fog/haze.