

Flight Report: DISCOVER-AQ Science Flight #2

From: KEFD To: KEFD

Start: 09/06/13 13:48 Z Finish: 09/06/13 21:42 Z

Flight Time: 8.0 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_09_06_13

Flight	Date	Duration	Cumulative Hours	DISCOVER-AQ Hours remaining
<i>Total Allocated</i>				100
ECF	8/27/13	2.3	2.3	97.7
PCF	8/28/13	2.1	4.4	95.6
Transit	9/2/13	3.9	8.3	91.7
Science Flight - 1	9/4/13	8.0	16.3	83.7
Science Flight - 2	9/6/13	7.9	24.2	75.8

Comments: This was the second science flight for DISCOVER-AQ. In order to manage time, spirals on the first circuit were limited to 12,500 feet. Missed approaches at SW Houston and Baytown Airports were also eliminated since they are not in proximity to any profiling. This led to a time for the first circuit that puts all 24 profiles in reach of being completed in a single flight. The elevated aerosol layer was again observed up to 15,000 feet by HSRL-2 over much of the domain, with the exception of Galveston and Smith Point which were very clean. At the end of the first circuit, storms in the south prevented visiting Galveston and Smith Point, so the P-3B proceeded directly to the Ship Channel and then Moody Tower for a profile up to 15,500 feet to capture the full depth of the aerosol layer. As the flight proceeded, the storms in the south formed a line that propagated from SE to NW across the flight domain. Heading south from Conroe, the storms next prevented profiling over Channelview and Deer Park. Instead, the P-3B moved to Smith Point and Galveston, which were skipped earlier. Moving next to Manvel Croix, then to Moody Tower the third circuit was picked up and completed behind the storm line which cleared Conroe before reaching the north end of the domain. Heading south, we were again stymied at Channelview, mainly due to rerouted traffic. A profile over Deer Park and Manvel Croix were accomplished before the flight had to be terminated. Despite the difficulties, 17 profiles were completed and most sites were profiled before and after the passage of the storms. It should be interesting to compare pre and post-storm profiles for this flight.