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Flight Report

Aircraft :	N426NA P-3B Orion
Operating Site(s) From / To :	KWAL/KWAL
Flight Date :	7/22/2011
Flight Number :	1092
Take Off Time :	**Local / GMT** **0655/1055**
Landing Time :	**Local / GMT** **1421/1821**
Flight Time :	**7.4 hrs.**
Flt Request # / PI:	**11P201 Dr. Jim Crawford (NASA LaRC)** **N/A [ ]**
Purpose of Flight(s) :	**Data [x] Ferry [] Functional Check [] Other []**
Aircraft Status:	**Up [x] Down [ ]**
Sensor Payload :	DISCOVER-AQ mission configuration
Comments :	• Eleventh science flight of the DISCOVER-AQ campaign. Flight was successful. Please see mission science report for further science updates.

SUBMITTED BY: Mike Cropper _____ DATE: __7/22/2011_____

Flight Hours Flown

Flight	Date	Aircraft Flight #	Data Flight#	Duration (hr)	Remaining Hours*
Total Allocated	6/26/2011				*100*
FCF	6/26/2011	1069		.8	100
DISCOVER-AQ ECF	6/26/2011	1069		1.6	98.4
PPF	6/26/2011	1069		1.1	98.4
PCF #1	6/28/2011	1074		2.6	95.8
Media Event Flight	6/28/2011	1074		.8	95.8
ECF #2	6/29/2011	1077		.9	94.9
PCF #2	6/30/2011	1079		2.8	92.1
Science Flight 1	7/01/2011	1080	#1	7.3	84.8
Science Flight 2	7/02/2011	1081	#2	7.7	77.1
Science Flight 3	7/05/2011	1073	#3	8.0	69.1
Science Flight 4	7/10/2011	1083	#4	7.6	61.5
Science Flight 5	7/11/2011	1071	#5	5.5	56.0
Science Flight 6	7/14/2011	1071	#6	8.1	47.9
Science Flight 7	7/16/2011	1087	#7	5.6	42.3
Science Flight 8	7/202011	1088	#8	7.7	34.6
Science Flight 9	7/21/2011	1089	#9	7.7	26.9
Science Flight 10	7/22/2011	1091	#10	7.9	19
Science Flight 11	7/26/2011	1092	#11	7.4	11.6

Comments: This flight was the third to emphasize morning conditions and was clean, although not as clean as the flight on 14 July. Ozone increased steadily throughout the flight, and despite what was considered to be clean conditions, one site (Aldino) reached nonattainment for ozone (code orange) by the late afternoon after the flight had ended. The frontal boundary just south of the sampling region was evident in HSRL data from the UC-12 with the haze layer reaching 10 kft. The P-3B also observed enhanced scattering during the initial transit to Beltsville, only to see things clear dramatically just prior to starting the first circuit. In the operational area, the haze layer was much lower, mainly below 2000 feet, but HSRL did observe a strong gradient in scattering over the land versus the Bay. This prompted the P-3B to perform two additional spirals over the Chesapeake Bay, although limited evidence was found for this increased scattering, which had cleared by the time of the second UC-12 sortie. Low clouds were present along the north end of the first circuit, but overall, cloudiness was not a problem.