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## Flight Report

<b>Aircraft :</b>	N426NA P-3B Orion
<b>Operating Site(s) From / To :</b>	KWAL/KWAL
<b>Flight Date :</b>	7/21/2011
<b>Flight Number :</b>	1089
<b>Take Off Time :</b>	<b>Local / GMT</b> 1051/1451
<b>Landing Time :</b>	<b>Local / GMT</b> 1834/2234
<b>Flight Time :</b>	7.7 hours
<b>Flt Request # / PI:</b>	11P201 Dr. Jim Crawford (NASA LaRC) N/A [ ]
<b>Purpose of Flight(s) :</b>	Data <input checked="" type="checkbox"/> Ferry <input type="checkbox"/> Functional Check <input type="checkbox"/> Other <input type="checkbox"/>
<b>Aircraft Status:</b>	Up <input checked="" type="checkbox"/> Down <input type="checkbox"/>
<b>Sensor Payload :</b>	DISCOVER-AQ mission configuration
<b>Comments :</b>	<ul style="list-style-type: none"><li>Ninth science flight of the DISCOVER-AQ campaign. Flight was successful. Please see mission science report for further science updates.</li></ul>

SUBMITTED BY: Mike Cropper \_\_\_\_\_

DATE: 7/21/2011

## Flight Hours Flown

<b>Flight</b>	<b>Date</b>	<b>Aircraft Flight #</b>	<b>Data Flight#</b>	<b>Duration (hr)</b>	<b>Remaining Hours*</b>
<i>Total Allocated</i>	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	7/20/2011	1088	#8	7.7	34.6
Science Flight 9	7/21/2011	1089	#9	7.7	26.9

Comments: This afternoon flight was the second during a period of high heat index and expected code orange conditions for ozone. Takeoff was delayed slightly due to a problem with the intercom system on the P-3B. HSRL indicated a variable haze layer depth reaching higher in the southern portion of the domain. Cumulus clouds were plentiful in the south as well, posing some challenge to the P-3B over the Beltsville and Essex sites. Despite clouds, all spirals went well, although a spiral over Beltsville had to be initiated from 3.5 kft and another over Padonia was held below 6 kft by ATC. Code orange conditions largely did not materialize at the surface, although ozone aloft over ground sites tended to be significantly higher by 10 or more ppbv. The P-3B and UMd Cessna were in the Aldino area at the same time and performed sequential profiles over the site providing an informal first intercomparison. Record levels for isoprene (5 ppbv) and CH<sub>2</sub>O (13 ppbv) were observed over the Beltsville site during the first pass over that location. To finish the flight, revisits to the Fairhill and Edgewood sites were performed to aid in providing aerosol composition data for almucantar measurements by aeronet sunphotometers at those locations.