

TO: Airborne Science Program
 NASA Headquarters
 Mail Suite 3F71
 Attn: Bruce Tagg
 bruce.a.tagg@nasa.gov

FAX: (202) 358-2770
 Voice: (202) 358-2890

Flight Report

Aircraft :	NASA 528 (LaRC UC-12)
Operating Site(s) From / To :	KFAF (Felker) -KFAF
Flight Date :	7/21/2011
Flight Number :	HSRL R278 F/A/B (DISCOVER AQ 9A/B) And a Ferry Flight (KFAF to KPHF) prior to research
Take Off Time :	F: 1304 Z KFAF A: 1358 Z KPHF B: 1840 Z KPHF
Landing Time :	F: 1309 Z KPHF A: 1753 Z KPHF B: 2240 Z KFAF
Flight Time :	F: 0.1 A: 3.9 hours B: 4.0 hours 8.0 hours Total
Flt Request # / PI:	11B-201 SOFRS 11-088 LaRC
Purpose of Flight :	Data <input checked="" type="checkbox"/> Ferry <input type="checkbox"/> Functional Check <input type="checkbox"/> Other <input type="checkbox"/>
Aircraft Status:	Up <input checked="" type="checkbox"/> Down <input type="checkbox"/>
Sensor Payload :	DISCOVER-AQ (HSRL & ACAM)
Comments :	Discover AQ Research Flights with HSRL & ACAM. Aircraft based at KFAF due to KLF1 runway closure. (Ferry hop from FAF to PHF required for fuel).FL260, good ATC coordination. Weather was hot and hazy with some scatter cloud build ups later in the afternoon. Flew the alternate flight plane for flight #9B. Next flight tentatively scheduled for 22 July 2011.

SUBMITTED BY Luci Crittenden **DATE:** 7/22/11

Flight Hours Summary

Flight	Date	Aircraft Flight #	Data Flight#	Duration (hr)	Running Total(hr)	Remaining Hours*
						100.00
KLFI-KLFI	6/25/11	11-066	ICF	1.7	1.7	98.3
KLFI-KLFI	7/01/11	11-070	1A	4.3	6.0	94.0
KLFI-KLFI	7/01/11	11-070	1B	3.4	9.4	90.6
KLFI-KLFI	7/2/11	11-071	2A	4.0	13.4	86.6
KLFI-KLFI	7/2/11	11-071	2B	3.6	17.0	83.0
KLFI-KLFI	7/5/11	11-072	3A	4.0	21.0	79.0
KLFI-KLFI	7/5/11	11-072	3B	3.9	24.9	75.1
KFAF-KPHF	7/10/11	11-079	4F	0.1	25.0	75.0
KPHF-KPHF	7/10/11	11-079	4A	3.9	28.9	71.1
KPHF-KFAF	7/10/11	11-079	4B	3.8	32.7	67.3
KFAF-KPHF	7/11/11	11-080	5F	0.1	32.8	67.2
KPHF-KPHF	7/11/11	11-080	5A	3.8	36.6	63.4
KPHF-KFAF	7/11/11	11-080	5B	3.9	40.5	59.5
KFAF-KPHF	7/14/11	11-081	6F	0.1	40.6	59.4
KPHF-KPHF	7/14/11	11-081	6A	4.0	44.6	55.4
KPHF-KFAF	7/14/11	11-081	6B	4.1	48.7	51.3
KFAF-KPHF	7/16/11	11-083	7F	0.2	48.9	51.1
KPHF-KFAF	7/16/11	11-083	7B	3.8	52.7	47.3
KFAF-KPHF	7/19/11	11-086	ICF-F	0.1	52.8	47.2
KPHF-KFAF	7/19/11	11-086	ICF	1.5	54.3	45.7
KFAF-KPHF	7/20/11	11-087	8F	.1	54.4	45.6
KPHF-KPHF	7/20/11	11-087	8A	3.9	58.3	41.7
KPHF-KFAF	7/20/11	11-087	8B	3.9	62.2	37.8
KFAF-KPHF	7/21/11	11-089	9F	.1	62.3	37.7
KPHF-KPHF	7/21/11	11-089	9A	3.9	66.2	33.8
KPHF-KFAF	7/21/11	11-089	9B	4.0	70.2	29.8

Flight Notes

Flight Name: R-278a

Date: 7/21/2011

Personnel: Yasky, Crittenden, Rogers

Take Off Time: 10am est, 14z

- First DISCOVER-AQ flight of the day over Baltimore/DC region. Hot on the ground.
- 13:59z Very hazy on the climb up to ~4.2 kft with some haze up to 10.5-11kft kft.
- 14:04z acam turned on at 11kft.
- 14:07z acam receiving packets @ 15kft.
- 14:13z another visual haze layer at 19kft
- 14:27z calcs
- 14:31z looks like 6km plume dissipated a bit during the calcs.
- 14:40z seeing a lower plume now at 5km or so.
- 15:00 lots of aerosol down there today.
- 15:38z cameras not saving data over APG.
- 15:42z cameras saving data again.
- Warmer than usual at altitude here. I mentioned this to Rick and he reports -17 outside and normally in the -30 range. I'm not even cold back here, which is not usual. May affect ACAM, but the temperatures look nominal wrt to what I normally see on it.
- 16:36z laser shuttered briefly for aircraft below.
- 16:37z cameras not saving data over APG
- 16:41z cameras saving data again.
- 16:41z laser shuttered briefly for plane below.
- 17:16z cameras not saving data over APG.
- 17:20z cameras saving data again.
- 17:30 calcs.

Flight Name: R-278b

Date: 7/21/2011

Personnel: Yasky, Crittenden, Rogers

Take Off Time: about 18:30z

- Second DISCOVER-AQ flight of the day over Baltimore/DC region, doing the alternate plan "plan b", which is the E-W legs over Baltimore. This is to measure the aerosol gradient that is supposed to be east/west over the city.
- 18:53z acam turned on at 16kft
- 18:57z noted acam receiving packets correctly.

- 19:00z still very hazy below – some boundary layer clouds.
- 19:03z flipped to the color plots and noted that the clean air depol was ~10%. That isn't right. Note the analyzer was set to 0.05 by me earlier and the attenuator was 0. So I reset the Newport stage positions and it was fine. Didn't notice this on the main screen so need to look at it earlier.
- 19:06z calcs.
- 19:46z been seeing some heavy aerosol loading up on the north east section of this track here just by Delaware.
- 20:17z cameras not saving data over AGP
- 20:21z cameras saving data again.
- 22:01z cameras not saving data over AGP
- 22:05z cameras saving data again.
- 22:14z calcs