

FAAM facility for airborne atmospheric measurements

FLIGHT FOLDER



Flight No. B399
 Date: 11 Sep 2008
 Take Off: 12:00:01
 Landing: 14:15:32
 Flight Time 2h 15m 31s

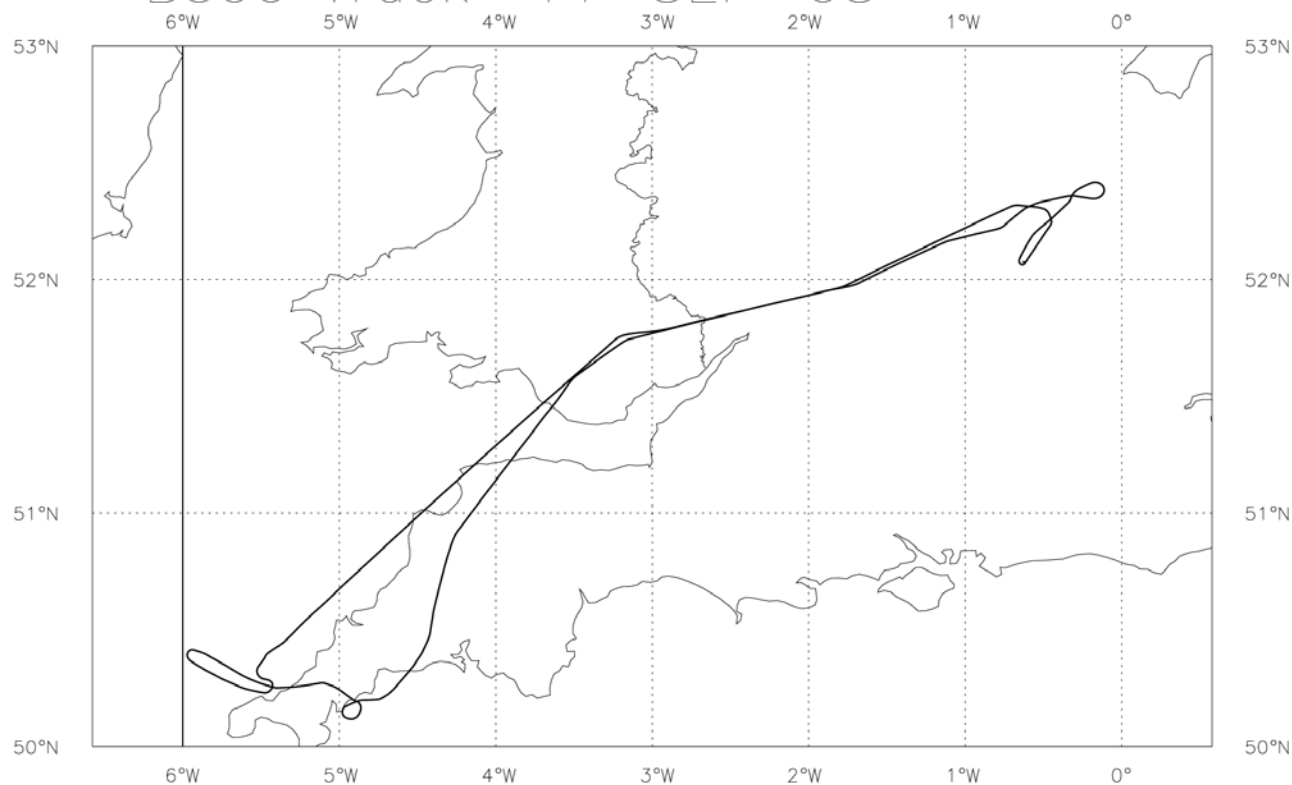
Campaign: CAVIAR

Operating Area: Camborne

POB	Position	Name	Institute	Logs y/n
1	Captain	Luc Lathouwers	Directflight	
2	Co-pilot	Alan Foster	Directflight	
3	CCM1	Dawn Quinn	Directflight	
4	Mission Scientist	Jon Taylor	Met Office	y
5	Flight Manager	Alan Woolley	FAAM	Y
6	AVAPS	Kate Turnbull	FAAM	Y
7	Cloud Physics	Martyn Pickering	Met Office	
8	CVI	Paul Barrett	Met Office	
9	Core Chem / PSAP / CCN / CCM2	Jamie Trembath	FAAM	
10	ARIES	Stuart Rodgers	Met Office	
11	MARSS/Deimos / FWVS	Rob King	Met Office	
12	TAFTS 1	Ralph Beeby	Imperial College	N
13	TAFTS 2	Paul Green	Imperial College	
14	SWS/SHIMS	Martin Glew	Met Office	
15				
16				
17				
18				

Flight Track:

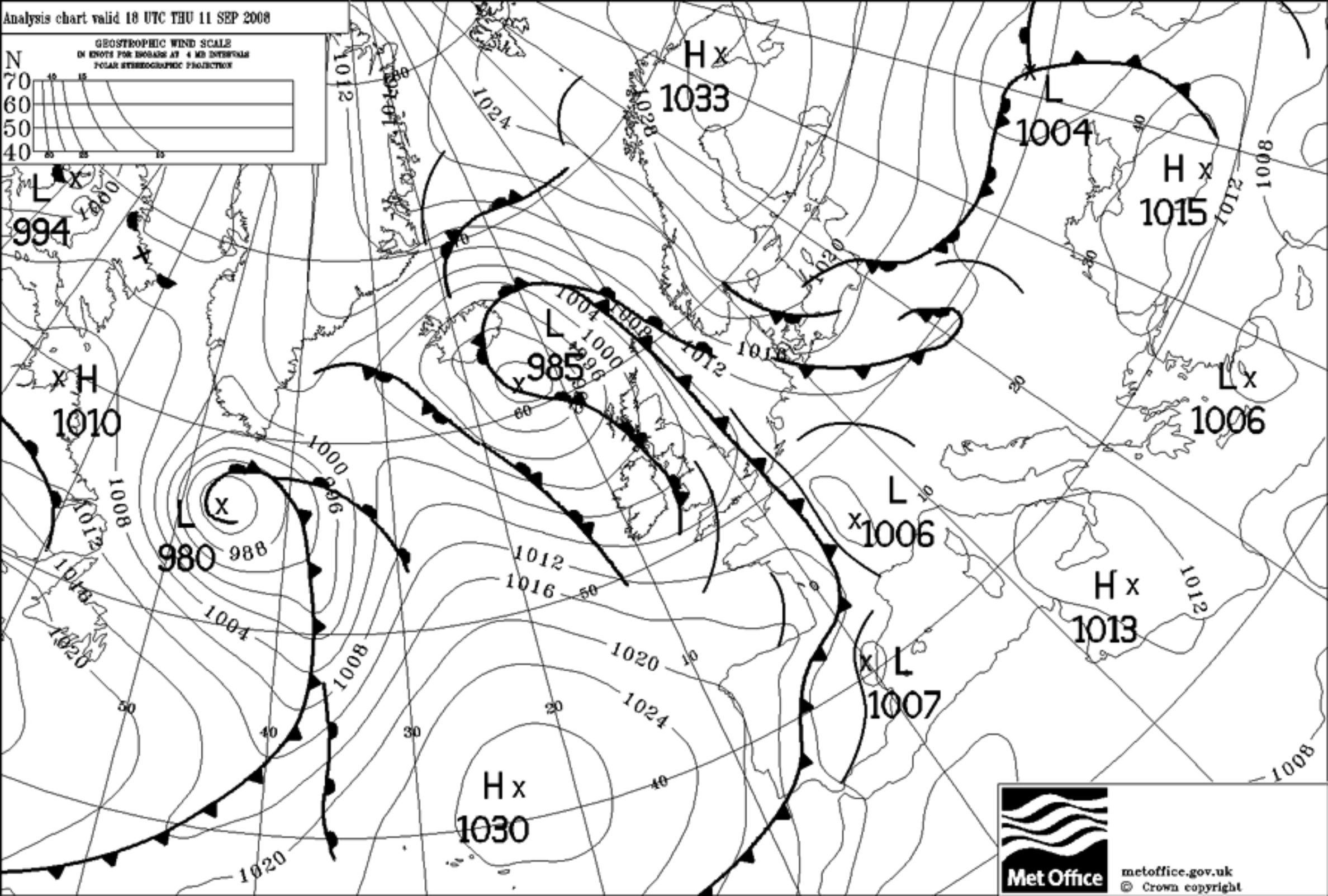
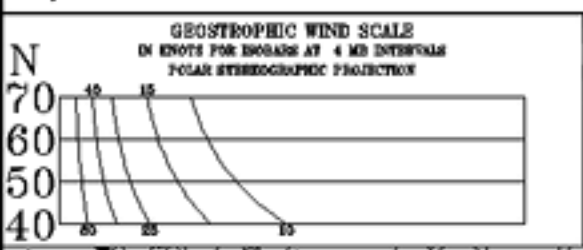
B399 Track 11-SEP-08



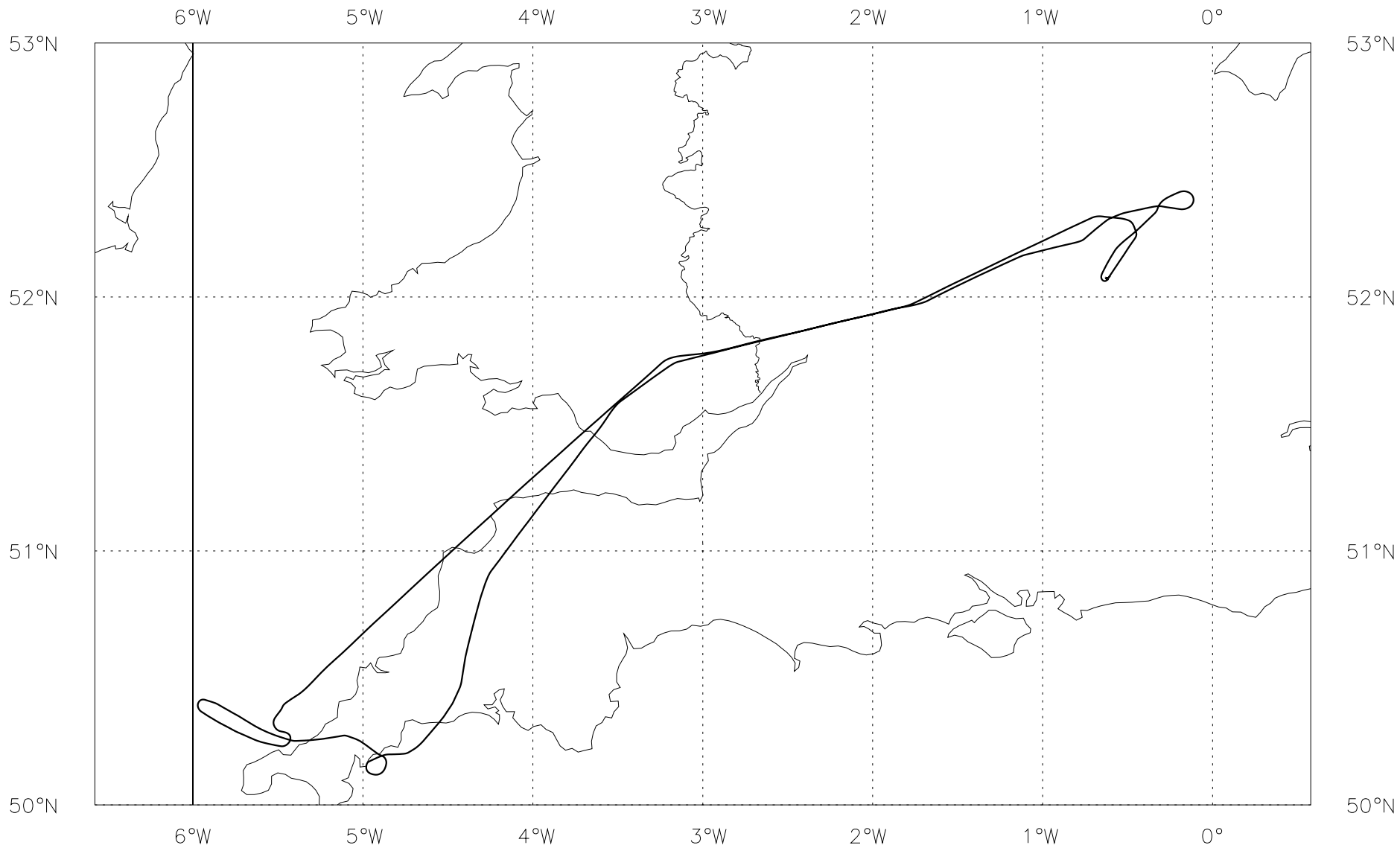
FLIGHT SUMMARY

Flight No B399
 Date: 11/9/08
 Project: Caviar
 Location: SW Approaches

Start Time	End Time	Event	Height (s)	Hdg Comments
----	----	-----	-----	--- -----
114245		engine start	0.54 kft	128
114714		taxy	0.54 kft	128
114757		asp open	0.54 kft	053
120001		T/O	0.53 kft	211
124857	125001	Profile 1	20.0 - 19.0 kft	210
125008	130515	Profile 1	19.0 - 4.0 kft	213
131241	131819	Profile 1	4.2 - 0.25 kft	260
131428		abeam	2.6 kft	266 camb
131826	132206	Run 1.1	0.26 - 0.32 kft	299
132414	132848	Run 1.2	0.30 - 0.28 kft	126
141532		Land	0.53 kft	210 at Cranfield



B399 Track 11-SEP-08



Pilot: Alan Foster

NavData Cycle 2008-9 Expires: Thursday, 25 September 2008.

Scale: 1:2567366 (1 inch = 35.21 naut mi). Printed on 11 Sep 2008

54774946

FliteStar 9.4.2.0



Flight B399 – CAVIAR – Thursday 11th September 2008.
Mission Scientist: Dr Jonathan P Taylor
Sortie type 1: CAVIAR water vapour continuum flight

Take off Cranfield 1300L (1200Z)
Land Cranfield 1830L (1730Z)

Location: Cornish peninsula in vicinity of Camborne radiosonde station. Straight and level runs should be conducted partially over sea and partially over land, intercepting the location of the ground station during the run.

Weather conditions: Clear sky (or very nearly clear sky, $\frac{1}{8}$ cloud or less) from surface to space

Important instruments: ARIES, TAFTS, SWS, MARSS, DEIMOS, AVAPS, all water vapour instruments, core chemistry, PCASP.

ARIES and TAFTS: to view upwards and downwards during straight and level runs, to obtain a mix of measurements during the 10 minutes. ARIES to use the NadZen30secLongRun script unless otherwise stated, with shutter kept open.

Sortie aim: to sample intensively the water vapour structure of the atmosphere in the area around Camborne, and measure the radiative signature of the water vapour continuum

Coordinates: aim to fly straight and level runs between fixed coordinates

A = 50.08°N, 4.51°W (Southeast point)

B = °N, °W (Northwest point, variable with TAS)

The runs are nominally of 10 mins duration, but in practice these will be of longer (shorter) duration at minimum (maximum) altitude.

Radiometers: ARIES and TAFTS to coordinate their upward and downward views during the straight and level runs.

Note that the following flight altitudes are examples only, and in practice these will be chosen by the mission scientist.

Sortie items for sortie type 1

1. Take off from Cranfield and transit to area of operations around Camborne. Arrive at intermediate altitude conducive to fuel economy, e.g. FL200. (45 min)
2. Profile to 50ft over the ocean along track A-B at 1000ft/min reducing to 500ft/min in the boundary layer to arrive at NW point B at low level. (15 mins, 60 total)
3. Straight and level run from B to A at 100ft over ocean and lowest permitted altitude over land. (10 mins, 70 total)
4. Perform series of saw tooth profiles in the boundary starting at 50ft over the ocean up to 6000ft avoiding cloud where possible, turns off the A-B track are permitted to avoid clouds (45 mins, 115 total)
5. Profile ascent to max altitude achievable (40 mins, 155 total)
6. Perform SLR (A to B) at FL350 dropping two sondes (10 mins, 165 total)
7. Perform a stepped profile from max altitude down to 50ft interrupting the profile at levels in the atmosphere where we have detected significant moisture from the drop sonde data. At each interrupt level fly a SLR along the line A to B of 10mins duration (90 mins, 255total)
8. Straight and level run from B to A at 100ft over ocean and lowest permitted altitude over land. (10 mins, 265total)
9. Perform series of saw tooth profiles in the boundary starting at 50ft over the ocean up to 6000ft avoiding cloud where possible, turns off the A-B track are permitted to avoid clouds (20 mins, 285 total)
10. End of science; transit back to Cranfield (45 mins, total sortie time 330 mins)

B399 Sortie debrief

Date : 11th Sep 2008

Mission Scientist : Jon Taylor

This CAVIAR flight was aborted very soon after arriving in the South West Approaches as there was too much convective cloud over the Camborne field site and the surrounding sea.

Aircraft Scientist's Log

Miss Sci = Jon Taylor

Flight No **B.399**
FAAM © 2004

Date **11 SEP 2008**

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GMT	Run / Profile	Height	Hdg	GPS Position	Remarks (clouds, weather, visibility, winds, sea state etc.)
120001					Take off.
121606		FL100	247		and 25ms' / 201 T=2.8 $\theta = -17$ out of dld 7/8 below 7/8 above can see dld edge above ahead
123118					Came out from below main sheet but there is still v. thin Ci above. 7/8 of dld below. Called Cambridge still not able to get down sun-shot.
123939		FL200	208		Conditions not looking good still v. thin Ci overhead + extensive dld below - some CAT.
124857	PI ↓	FL200 ↓	210		Stg PI ↓ - air traffic request still v. thin barely visible Ci above but ARIES is seeing structure in the window region.
125744	PI ↓	FL115			into entered moist layer - large conv cell to W by agt
130515	PI	3500ft KE000ft on 1006	on 1023		Very cloudy over the peninsula heights of people descent. In conv. dld.
131820	PI	50ft			End of PI 50ft and 10ms' / 250ft
131826	PI-1	100ft	298		Stg PI-1 fairly extensive b'dy hyperclouds
132206	PI-1	100ft			End PI-1

Aircraft Scientist's Log

Flight No **B** 399.....
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Date 11 SEP 2008

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[illegible]

CLOUD PHYSICS LOG Flight B 399

Date: 10:00:00	Operator: MAP	DRS Time: +0	DAU1 Time:+0	DAU2 Time: +0	DAU3 Time: +0	Aux1 Time:+0	Aux2 Time: n/a	Page 1 of 1
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[illegible]

CVI log

9/11/08 10:25:23 AM PID set points tip_heater=50, sample f1, f2 =35
9/11/08 10:26:59 AM cpc butnol nfill lwevel ok
9/11/08 11:33:11 AM perform real lyman zero now
9/11/08 11:33:37 AM pressure pump off to swap lyman plumbing
9/11/08 11:34:50 AM pressure pump back on
9/11/08 11:39:24 AM pressure pump is on for transit
9/11/08 12:06:06 PM pressure pump is on for transit
9/11/08 12:07:39 PM pressure pump off. do the plumbing to put the thing into hygromode
9/11/08 12:14:59 PM remove flow to counterflow
9/11/08 12:15:11 PM leave the flow to the lyman reference
9/11/08 12:15:44 PM unhook the pressure pump, and let the line upstream of the drying units be open to allow inlet
9/11/08 12:26:14 PM flow f1 PID is too high - ~40deg C cf set point of 35
9/11/08 12:27:59 PM time(laptop) approx 25s less than t(horace)
9/11/08 12:31:40 PM passed through a moist layer according to Lyman?
9/11/08 12:33:03 PM cviCPC>cncCPC
9/11/08 12:33:27 PM check opc flows
9/11/08 12:37:33 PM some structure to the hygromode readout
9/11/08 12:43:28 PM some structure to the hygromode readout
9/11/08 12:44:16 PM structure is similar to the deq point and deiced temp time series
9/11/08 12:50:00 PM profile 1 descent
9/11/08 1:02:19 PM banking
9/11/08 1:08:18 PM cloud passage coming up
9/11/08 1:09:07 PM cloudc
9/11/08 1:10:26 PM still cloud
9/11/08 1:10:32 PM ridiculous cpc readings
9/11/08 1:10:45 PM lytman off the scale
9/11/08 1:16:06 PM alter pcasp flows
9/11/08 1:18:10 PM run 1 100ft
9/11/08 1:18:28 PM large aerosol particles on pcasp
9/11/08 1:18:34 PM check flows on pcasp
9/11/08 1:23:53 PM run2
9/11/08 1:23:56 PM run2
9/11/08 1:28:26 PM r2end
9/11/08 1:30:48 PM end of science
9/11/08 1:32:15 PM end of science
9/11/08 1:32:20 PM end of science
9/11/08 1:35:33 PM still climbing - pcasp counts are gone - cpc are still there - why! is it the different sampling tube?
9/11/08 1:41:46 PM counterflow on for transit and landing
9/11/08 2:23:55 PM replumb to zero lyman
9/11/08 2:25:15 PM ciunterflow back on
9/11/08 2:26:00 PM display on snoop reading NaN
9/11/08 2:26:22 PM lyman interface is reading close to zero, as expected
9/11/08 2:26:27 PM re zero anyway
9/11/08 2:26:34 PM now shut down

ARIES flight log

Flight: B399

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Date: 11/5/07 Operator(s): S. Rogers

Res: 1

Gain A: 2 B: 2

Loc./Notes: CAVIAR AT CAMBORNE.

Scans: either "[IGMs]X[co-adds]", or "[stop DRS time]" if in start/stop, or "[macro name]". **View:** mirror angle.

[illegible]

B399_SWS_SHIMS_EventLog.txt

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11:33:52.17 --- - - - -
11:33:52.17 --- - - - - +++ SOFTWARE START/RESTART +++
11:33:52.17 --- - - - - +++ hh:mm:ss.ff / Instr / Posn / Period /
tVIS/ tNIR / Comment +++
11:33:52.17 --- - - - - +++ Flight no. B399
11:33:52.17 --- - - - -
11:34:06.74 SWS - 1000 - - Sample period changed from 250ms to 1000ms.
11:34:09.56 USH - 1000 - - Sample period changed from 250ms to 1000ms.
11:34:11.91 LSH - 1000 - - Sample period changed from 250ms to 1000ms.
11:34:17.44 SWS - - - 400 NIR int.time changed from 10ms to 400ms.
11:34:19.50 SWS - - 400 - VIS int.time changed from 10ms to 400ms.
11:34:27.68 SWS - - - - Initialization: VIS OK NIR OK
11:34:32.64 USH - - - - Initialization: VIS OK NIR OK
11:34:34.60 LSH - - - - Initialization: VIS OK NIR OK
11:34:38.34 USH - - 400 - VIS int.time changed from 10ms to 400ms.
11:34:41.33 USH - - - 400 NIR int.time changed from 10ms to 400ms.
11:34:44.78 LSH - - 400 - VIS int.time changed from 10ms to 400ms.
11:34:47.34 LSH - - - 400 NIR int.time changed from 10ms to 400ms.
11:34:49.45 USH - - - - Manual scene sampling started - Not Recording!
11:34:49.46 LSH - - - - Manual scene sampling started - Not Recording!
11:34:49.47 SWS - - - - Manual scene sampling started - Not Recording!
11:35:03.70 USH - - 100 - VIS int.time changed from 400ms to 100ms.
11:35:07.19 USH - - 200 - VIS int.time changed from 100ms to 200ms.
11:35:11.25 SWS - - 100 - VIS int.time changed from 400ms to 100ms.
11:35:14.39 SWS - - 45 - VIS int.time changed from 100ms to 45ms.
11:35:20.04 SWS - - - 100 NIR int.time changed from 400ms to 100ms.
11:35:32.66 LSH - - - 400 NIR int.time changed from 400ms to 400ms.
11:35:34.64 LSH - - 1000 - VIS int.time changed from 400ms to 1000ms.
11:35:34.65 LSH - - - 1000 NIR int.time changed from 400ms to 1000ms.
11:35:39.37 USH - - - - Idling
11:35:39.54 SWS - - - - Idling
11:35:39.75 LSH - - - - Idling
11:35:40.83 --- - - - - Reset shutters.
11:35:45.31 SWS - - - - Dark measurement started.
11:35:45.31 LSH - - - - Dark measurement started.
11:35:45.31 USH - - - - Dark measurement started.
11:35:46.74 LSH - - - - Warning: Abnormally bright dark measurement.
11:35:46.75 SWS - - - - Idling
11:35:50.17 USH - - - - Idling
11:35:55.98 SWS - - - - ERROR: Failed to initialise telescope.
11:35:56.00 LSH - - - - Idling
11:35:58.83 SWS - - - - Telescope disabled.
11:36:02.12 SWS - - - - Telescope motor initialised.
11:36:13.65 SWS -0.0 - - - - Telescope sent to 90.000
11:36:14.77 SWS 90.0 - - - - Telescope stopped.
11:36:23.21 USH - - - - Dark measurement started.
11:36:23.21 SWS - - - - Dark measurement started.
11:36:23.24 LSH - - - - Dark measurement started.
11:36:24.83 LSH - - - - Warning: Abnormally bright dark measurement.
11:36:24.84 SWS - - - - Idling
11:36:27.64 USH - - - - Idling
11:36:34.05 LSH - - - - Idling
11:36:34.64 SWS - - - - Manual scene recording started.
11:36:34.64 LSH - - - - Manual scene recording started.
11:36:34.64 USH - - - - Manual scene recording started.
11:36:53.79 --- - - - - *** Freezer temp 15 deg C
11:37:12.68 SWS - - - - Idling
11:37:12.91 LSH - - - - Idling
11:37:13.08 USH - - - - Idling
11:38:05.52 SWS - - - - Dark measurement started.
11:38:05.53 LSH - - - - Dark measurement started.
11:38:05.53 USH - - - - Dark measurement started.
11:38:06.94 LSH - - - - Warning: Abnormally bright dark measurement.
11:38:06.96 SWS - - - - Idling
11:38:10.36 USH - - - - Idling
11:38:16.15 LSH - - - - Idling
11:45:26.97 USH - - - - Dark measurement started.

```

11:45:26.98	LSH	-	-	-	-	Dark measurement started.
11:45:26.99	SWS	-	-	-	-	Dark measurement started.
11:45:28.40	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
11:45:29.38	SWS	-	-	-	-	Idling
11:45:31.60	USH	-	-	-	-	Idling
11:45:37.62	LSH	-	-	-	-	Idling
11:45:39.49	USH	-	-	-	-	Manual scene recording started.
11:45:41.88	LSH	-	-	-	-	Manual scene recording started.
11:45:50.94	USH	-	-	-	-	Idling
11:45:51.30	LSH	-	-	-	-	Idling
11:45:52.73	---	-	-	-	-	Reset shutters.
11:45:57.36	USH	-	-	-	-	Dark measurement started.
11:46:01.80	USH	-	-	-	-	Idling
11:46:02.30	USH	-	-	-	-	Manual scene recording started.
11:46:04.67	LSH	-	-	-	-	Dark measurement started.
11:46:05.89	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
11:46:15.10	LSH	-	-	-	-	Idling
11:46:16.07	LSH	-	-	-	-	Manual scene recording started.
11:51:45.71	USH	-	-	-	-	Warning: Clipping may be occurring.
11:53:03.31	USH	-	-	40	-	VIS int.time changed from 200ms to 40ms.
11:53:07.38	USH	-	-	-	-	Dark measurement started.
11:53:11.82	USH	-	-	-	-	Manual scene recording started.
11:53:14.06	USH	-	-	-	-	Idling
11:53:16.34	USH	-	-	-	-	Manual scene recording started.
11:53:20.22	LSH	-	-	-	-	Dark measurement started.
11:53:21.45	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
11:53:30.67	LSH	-	-	-	-	Manual scene recording started.
11:53:31.90	LSH	-	-	-	-	Idling
11:53:33.23	LSH	-	-	-	-	Manual scene recording started.
11:54:05.03	SWS	-	-	-	-	Dark measurement started.
11:54:07.08	SWS	-	-	-	-	Idling
11:54:07.62	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
12:02:08.37	LSH	-	-	-	-	Manual scene sampling started - Not Recording!
12:02:10.11	LSH	-	-	-	-	Idling
12:02:28.21	LSH	-	-	-	-	Dark measurement started.
12:02:29.44	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
12:02:38.67	LSH	-	-	-	-	Idling
12:02:40.10	SWS	89.9	-	-	-	Telescope sent to 174.000
12:02:41.23	SWS	174.0	-	-	-	Telescope stopped.
12:02:48.05	SWS	-	-	-	-	Dark measurement started.
12:02:49.48	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
12:02:51.56	SWS	-	-	-	-	Manual scene recording started.
12:02:56.62	USH	-	-	-	-	Dark measurement started.
12:02:59.35	LSH	-	-	-	-	Manual scene recording started.
12:03:01.07	USH	-	-	-	-	Manual scene recording started.
12:03:59.92	USH	-	-	-	-	Manual scene sampling started - Not Recording!
12:04:01.98	USH	-	-	-	-	Idling
12:04:04.39	USH	-	-	100	-	VIS int.time changed from 40ms to 100ms.
12:04:06.28	USH	-	-	-	-	Dark measurement started.
12:04:10.94	USH	-	-	-	-	Idling
12:04:14.78	USH	-	-	-	-	Manual scene recording started.
12:13:59.20	---	-	-	-	-	*** freezet temp 5 deg C
12:14:12.71	SWS	-	-	-	-	Warning: Clipping may be occurring.
12:14:29.36	---	-	-	-	-	*** ERROR in line above
12:14:50.75	---	-	-	-	-	*** Freezer temp 9 (nine) deg C
12:16:23.55	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
12:16:24.99	SWS	-	-	-	-	Idling
12:16:25.40	SWS	-	-	-	-	Dark measurement started.
12:16:26.85	SWS	-	-	-	-	Idling
12:16:29.34	SWS	174.0	-	-	-	Telescope sent to -6.000
12:16:31.02	SWS	-3.9	-	-	-	Telescope stopped.
12:16:31.99	SWS	-6.0	-	-	-	Telescope sent to -6.000
12:16:36.14	SWS	-	-	-	-	Manual scene recording started.
12:16:56.81	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
12:16:57.64	SWS	-	-	-	-	Idling
12:16:58.53	SWS	-	-	-	-	Dark measurement started.
12:16:59.97	SWS	-	-	-	-	Idling
12:17:03.41	SWS	-	-	35	-	VIS int.time changed from 45ms to 35ms.
12:17:04.46	SWS	-	-	-	-	Dark measurement started.

12:17:06.13	SWS	-	-	-	-	Idling
12:17:07.01	SWS	-	-	-	-	Manual scene recording started.
12:23:05.62	SWS	-	-	-	-	Idling
12:23:05.84	LSH	-	-	-	-	Idling
12:23:06.15	USH	-	-	-	-	Idling
12:23:07.56	---	-	-	-	-	Reset shutters.
12:23:12.79	---	-	-	-	-	Reset shutters.
12:23:16.50	SWS	-	-	-	-	Dark measurement started.
12:23:16.50	LSH	-	-	-	-	Dark measurement started.
12:23:16.51	USH	-	-	-	-	Dark measurement started.
12:23:17.92	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
12:23:17.94	SWS	-	-	-	-	Idling
12:23:21.37	USH	-	-	-	-	Idling
12:23:26.41	SWS	-6.0	-	-	-	Telescope sent to 174.000
12:23:27.16	LSH	-	-	-	-	Idling
12:23:28.09	SWS	171.5	-	-	-	Telescope stopped.
12:23:29.04	SWS	174.0	-	-	-	Telescope sent to 174.000
12:23:32.05	SWS	-	-	-	-	Manual scene recording started.
12:23:32.05	LSH	-	-	-	-	Manual scene recording started.
12:23:32.06	USH	-	-	-	-	Manual scene recording started.
12:31:18.29	SWS	-	-	-	-	Warning: Clipping may be occurring.
12:31:25.32	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
12:31:26.15	SWS	-	-	-	-	Idling
12:31:27.27	SWS	-	-	-	-	Dark measurement started.
12:31:28.70	SWS	-	-	-	-	Idling
12:31:31.88	SWS	-	-	25	-	VIS int.time changed from 35ms to 25ms.
12:31:33.44	SWS	-	-	-	-	Dark measurement started.
12:31:35.12	SWS	-	-	-	-	Idling
12:31:36.94	SWS	-	-	-	-	Manual scene recording started.
12:40:27.40	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
12:40:28.22	SWS	-	-	-	-	Idling
12:40:31.51	SWS	-	-	-	-	Dark measurement started.
12:40:32.95	SWS	-	-	-	-	Idling
12:40:36.30	SWS	174.0	-	-	-	Telescope sent to -6.000
12:40:38.01	SWS	-3.7	-	-	-	Telescope stopped.
12:40:40.68	SWS	-	-	-	-	Dark measurement started.
12:40:42.14	SWS	-	-	-	-	Idling
12:40:44.21	SWS	-	-	-	-	Dark measurement started.
12:40:45.65	SWS	-	-	-	-	Idling
12:40:47.71	SWS	-	-	-	-	Manual scene recording started.
12:40:52.00	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
12:40:52.86	SWS	-	-	-	-	Idling
12:40:55.81	SWS	-	-	100	-	VIS int.time changed from 25ms to 100ms.
12:40:57.33	SWS	-	-	-	-	Dark measurement started.
12:40:59.01	SWS	-	-	-	-	Idling
12:41:00.33	SWS	-	-	-	-	Manual scene recording started.
12:41:11.77	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
12:41:12.61	SWS	-	-	-	-	Idling
12:41:13.95	SWS	-	-	-	100	NIR int.time changed from 100ms to 100ms.
12:41:16.20	SWS	-	-	600	-	VIS int.time changed from 100ms to 600ms.
12:41:16.20	SWS	-	-	-	600	NIR int.time changed from 100ms to 600ms.
12:41:18.49	SWS	-	-	-	-	Dark measurement started.
12:41:25.40	SWS	-	-	-	-	Idling
12:41:25.84	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
12:41:34.23	SWS	-	-	200	-	VIS int.time changed from 600ms to 200ms.
12:41:34.23	SWS	-	-	-	200	NIR int.time changed from 600ms to 200ms.
12:41:37.66	SWS	-	-	-	-	Dark measurement started.
12:41:40.10	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
12:41:41.03	SWS	-	-	-	-	Manual scene recording started.
12:42:11.91	SWS	-	-	-	-	Idling
12:42:12.34	LSH	-	-	-	-	Idling
12:42:12.51	USH	-	-	-	-	Idling
12:42:13.42	SWS	-	-	-	-	Dark measurement started.
12:42:13.42	LSH	-	-	-	-	Dark measurement started.
12:42:13.45	USH	-	-	-	-	Dark measurement started.
12:42:15.06	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
12:42:15.92	SWS	-	-	-	-	Idling
12:42:18.09	USH	-	-	-	-	Idling
12:42:24.30	LSH	-	-	-	-	Idling

12:42:25.89	USH	-	-	-	-	Manual scene recording started.
12:42:25.90	LSH	-	-	-	-	Manual scene recording started.
12:42:25.91	SWS	-	-	-	-	Manual scene recording started.
12:48:55.05	USH	-	-	-	-	Idling
12:48:55.58	SWS	-	-	-	-	Idling
12:48:55.62	LSH	-	-	-	-	Idling
12:48:59.80	USH	-	-	-	-	Manual scene recording started.
12:48:59.81	LSH	-	-	-	-	Manual scene recording started.
12:48:59.81	SWS	-	-	-	-	Manual scene recording started.
12:49:12.68	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
12:49:13.60	SWS	-	-	-	-	Dark measurement started.
12:49:16.06	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
12:49:16.98	SWS	-	-	-	-	Manual scene recording started.
12:49:20.47	USH	-	-	-	-	Manual scene sampling started - Not Recording!
12:49:24.37	USH	-	-	-	-	Dark measurement started.
12:49:28.81	USH	-	-	-	-	Manual scene sampling started - Not Recording!
12:49:29.94	USH	-	-	-	-	Manual scene recording started.
12:49:33.20	USH	-	100	-	-	Sample period changed from 1000ms to 100ms.
12:49:36.00	SWS	-	100	-	-	Sample period changed from 1000ms to 100ms.
12:49:39.53	LSH	-	100	-	-	Sample period changed from 1000ms to 100ms.
12:49:49.60	SWS	-	-	-	-	Dark measurement started.
12:49:52.04	SWS	-	-	-	-	Manual scene recording started.
12:49:53.14	SWS	-	-	-	-	Idling
12:49:54.80	USH	-	-	-	-	Dark measurement started.
12:49:59.25	USH	-	-	-	-	Manual scene recording started.
12:50:00.73	USH	-	-	-	-	Idling
12:50:04.72	LSH	-	-	-	-	Dark measurement started.
12:50:05.95	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
12:50:15.17	LSH	-	-	-	-	Manual scene recording started.
12:50:16.39	LSH	-	-	-	-	Idling
12:56:13.73	LSH	-	-	-	-	Dark measurement started.
12:56:13.73	SWS	-	-	-	-	Dark measurement started.
12:56:13.74	USH	-	-	-	-	Dark measurement started.
12:56:15.35	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
12:56:16.94	SWS	-	-	-	-	Idling
12:56:18.74	USH	-	-	-	-	Idling
12:56:24.58	LSH	-	-	-	-	Idling
12:56:27.16	SWS	-	-	-	-	Manual scene recording started.
12:56:27.16	LSH	-	-	-	-	Manual scene recording started.
12:56:27.17	USH	-	-	-	-	Manual scene recording started.
13:04:36.66	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
13:04:37.61	SWS	-	-	-	-	Idling
13:04:39.92	SWS	-	-	-	-	Dark measurement started.
13:04:42.37	SWS	-	-	-	-	Idling
13:04:44.68	SWS	-	-	75	-	VIS int.time changed from 200ms to 75ms.
13:04:44.69	SWS	-	-	-	75	NIR int.time changed from 200ms to 75ms.
13:04:48.86	SWS	-	-	30	-	VIS int.time changed from 75ms to 30ms.
13:04:48.87	SWS	-	-	-	30	NIR int.time changed from 75ms to 30ms.
13:04:51.22	SWS	-	-	-	30	NIR int.time changed from 30ms to 30ms.
13:04:54.44	SWS	-	-	-	100	NIR int.time changed from 30ms to 100ms.
13:04:56.33	SWS	-	-	-	-	Dark measurement started.
13:04:58.38	SWS	-	-	-	-	Idling
13:04:59.52	SWS	-	-	-	-	Manual scene recording started.
13:05:24.16	USH	-	-	-	-	Manual scene sampling started - Not Recording!
13:05:25.29	USH	-	-	-	-	Idling
13:05:29.44	USH	-	-	-	-	Manual scene sampling started - Not Recording!
13:05:30.56	USH	-	-	-	-	Idling
13:05:32.96	USH	-	-	-	-	Dark measurement started.
13:05:37.41	USH	-	-	-	-	Idling
13:05:45.10	USH	-	-	-	-	Manual scene recording started.
13:05:49.63	LSH	-	-	-	-	Manual scene sampling started - Not Recording!
13:05:51.37	LSH	-	-	-	-	Idling
13:05:54.77	LSH	-	-	-	-	Manual scene sampling started - Not Recording!
13:05:56.50	LSH	-	-	-	-	Idling
13:05:59.19	LSH	-	-	-	-	Dark measurement started.
13:06:00.41	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
13:06:09.65	LSH	-	-	-	-	Idling
13:06:42.66	---	-	-	-	-	*** Freezer temp 7 deg C
13:09:47.54	USH	-	-	-	-	Manual scene sampling started - Not Recording!

13:09:48.68	USH	-	-	-	-	Idling
13:09:50.85	USH	-	-	-	-	Dark measurement started.
13:09:55.30	USH	-	-	-	-	Idling
13:09:55.80	USH	-	-	-	100	NIR int.time changed from 400ms to 100ms.
13:09:57.73	USH	-	-	-	-	Dark measurement started.
13:09:59.43	USH	-	-	-	-	Idling
13:10:00.55	USH	-	-	-	-	Manual scene recording started.
13:10:02.02	LSH	-	-	-	-	Manual scene recording started.
13:17:42.19	---	-	-	-	-	*** Freezer temp 11 deg C
13:18:29.36	USH	-	-	-	-	Idling
13:18:29.37	SWS	-	-	-	-	Idling
13:18:29.44	LSH	-	-	-	-	Idling
13:18:38.11	SWS	-6.0	-	-	-	Telescope sent to 0.000
13:18:39.56	SWS	-0.0	-	-	-	Telescope sent to 0.000
13:18:46.06	SWS	-	-	-	-	Dark measurement started.
13:18:47.51	SWS	-	-	-	-	Idling
13:18:48.00	SWS	-	-	-	-	Manual scene recording started.
13:18:49.74	USH	-	-	-	-	Dark measurement started.
13:18:51.19	USH	-	-	-	-	Idling
13:18:51.63	USH	-	-	-	-	Manual scene recording started.
13:18:54.88	LSH	-	-	-	-	Dark measurement started.
13:18:56.11	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
13:19:05.34	LSH	-	-	-	-	Idling
13:19:05.73	LSH	-	-	-	-	Manual scene recording started.
13:20:39.96	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
13:20:40.79	SWS	-	-	-	-	Idling
13:20:48.75	SWS	-0.0	-	-	-	Telescope sent to 180.000
13:20:50.44	SWS	178.7	-	-	-	Telescope stopped.
13:20:55.68	SWS	-	-	100	-	VIS int.time changed from 30ms to 100ms.
13:20:57.86	SWS	-	-	-	-	Dark measurement started.
13:20:59.58	SWS	-	-	-	-	Idling
13:21:00.62	SWS	-	-	-	-	Manual scene recording started.
13:22:07.71	SWS	-	-	-	-	Idling
13:22:07.73	USH	-	-	-	-	Idling
13:22:08.46	LSH	-	-	-	-	Idling
13:22:10.99	SWS	-	-	-	-	Dark measurement started.
13:22:10.99	LSH	-	-	-	-	Dark measurement started.
13:22:11.00	USH	-	-	-	-	Dark measurement started.
13:22:12.44	SWS	-	-	-	-	Idling
13:22:12.48	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
13:22:12.86	USH	-	-	-	-	Idling
13:22:19.46	SWS	-	-	25	-	VIS int.time changed from 100ms to 25ms.
13:22:21.06	SWS	-	-	-	-	Dark measurement started.
13:22:21.71	LSH	-	-	-	-	Idling
13:22:22.75	SWS	-	-	-	-	Idling
13:22:28.77	SWS	180.0	-	-	-	Telescope sent to 0.000
13:22:29.80	SWS	83.7	-	-	-	Telescope stopped.
13:22:32.36	SWS	83.7	-	-	-	Telescope sent to 0.000
13:22:33.50	SWS	-0.0	-	-	-	Telescope stopped.
13:22:34.95	SWS	-0.0	-	-	-	Telescope sent to 0.000
13:22:38.10	SWS	-	-	-	-	Manual scene recording started.
13:22:44.21	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
13:22:45.04	SWS	-	-	-	-	Idling
13:23:39.50	SWS	-	-	-	-	Dark measurement started.
13:23:39.50	LSH	-	-	-	-	Dark measurement started.
13:23:39.52	USH	-	-	-	-	Dark measurement started.
13:23:40.94	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
13:23:40.95	SWS	-	-	-	-	Idling
13:23:41.37	USH	-	-	-	-	Idling
13:23:50.17	LSH	-	-	-	-	Idling
13:24:16.46	SWS	-	-	-	-	Manual scene recording started.
13:24:16.47	LSH	-	-	-	-	Manual scene recording started.
13:24:16.48	USH	-	-	-	-	Manual scene recording started.
13:26:14.80	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
13:26:15.63	SWS	-	-	-	-	Idling
13:26:17.44	SWS	0.0	-	-	-	Telescope sent to 180.000
13:26:19.15	SWS	178.7	-	-	-	Telescope stopped.
13:26:20.62	SWS	180.0	-	-	-	Telescope sent to 180.000
13:26:22.77	SWS	-	-	-	-	Manual scene recording started.

13:26:29.55	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
13:26:32.25	SWS	-	-	-	-	Idling
13:26:33.14	SWS	-	-	-	-	Dark measurement started.
13:26:34.59	SWS	-	-	-	-	Idling
13:26:36.97	SWS	-	-	100	-	VIS int.time changed from 25ms to 100ms.
13:26:39.00	SWS	-	-	-	-	Dark measurement started.
13:26:40.72	SWS	-	-	-	-	Idling
13:26:41.82	SWS	-	-	-	-	Manual scene recording started.
13:28:33.45	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
13:28:34.28	SWS	-	-	-	-	Idling
13:28:40.76	SWS	180.0	-	-	-	Telescope sent to 0.000
13:28:42.43	SWS	1.2	-	-	-	Telescope stopped.
13:28:43.84	SWS	0.0	-	-	-	Telescope sent to 0.000
13:28:45.15	SWS	-	-	-	-	Manual scene recording started.
13:28:50.87	USH	-	-	-	-	Idling
13:28:50.91	SWS	-	-	-	-	Idling
13:28:51.59	LSH	-	-	-	-	Idling
13:28:55.61	USH	-	-	-	-	Dark measurement started.
13:28:55.61	LSH	-	-	-	-	Dark measurement started.
13:28:55.62	SWS	-	-	-	-	Dark measurement started.
13:28:57.04	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
13:28:57.07	USH	-	-	-	-	Idling
13:28:57.47	SWS	-	-	-	-	Idling
13:29:06.27	LSH	-	-	-	-	Idling
13:29:07.20	SWS	-	-	35	-	VIS int.time changed from 100ms to 35ms.
13:29:10.09	SWS	-	-	-	-	Dark measurement started.
13:29:10.09	LSH	-	-	-	-	Dark measurement started.
13:29:10.10	USH	-	-	-	-	Dark measurement started.
13:29:11.55	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
13:29:11.77	SWS	-	-	-	-	Idling
13:29:11.94	USH	-	-	-	-	Idling
13:29:20.78	LSH	-	-	-	-	Idling
13:30:19.99	LSH	-	-	-	-	Dark measurement started.
13:30:19.99	SWS	-	-	-	-	Dark measurement started.
13:30:20.02	USH	-	-	-	-	Dark measurement started.
13:30:21.23	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
13:30:21.64	SWS	-	-	-	-	Idling
13:30:21.84	USH	-	-	-	-	Idling
13:30:30.48	LSH	-	-	-	-	Idling
13:30:50.19	---	-	-	-	-	*** endex

Microwave Radiometers FLIGHT LOG		Date	11/09/08	Flight	B399	log pages
Operator(s)	Rob King		Campaign	CAVIAR		
Departure			Arrival			

System start MARSS

Visual pod inspection							•	
Close 3 SSP circuit breakers							•	
Close all MARSS circuit breakers							•	
FERA on	at time					1045		
Temperature controller initial temps	Ch16	°C	Ch 17	°C	Ch18	°C		
Temperature controller set points		54°C		58°C		-20	40°C	
MARSS CPU on	at time					1045		
Initial target temperatures	Hot				Cold			
Target heating							•	
*** CHECK SCAN HEAD CLEAR ***							•	
Scanning on (LMD box)	at time							
Scan indication	Monitor			•	Visual			

Deimos

Close all Deimos circuit breakers					
Turn on Deimos CPU					
*** CHECK SCAN HEAD CLEAR ***					
Start Deimos Software				at time	
Initial target temperatures	Hot		Cold		
Target heating					
Scan indication	Monitor			Visual	
Weather	Cloud			Precip	
	Surface			Pressure	
	Other				

System functionality check

(after initial system warmup, approx 1 hour)

PC to DRS Time error		t _{PC} =t _{DRS} +		0	at time		
Brightness temps 'sensible'							•
Target temps	MARSS:	Hot			Cold		
	Deimos:	Hot			Cold		
Channel gains 'sensible'		Ch1 A	Ch3 A	Ch1 B	Ch3 B		
		(-)	(-)	(-)	(-)		
		Ch16	Ch17	Ch18	Ch19	Ch20	
		(40-44)	(45-49)	(40-44)	(40-44)	(44-48)	

Power changeover

POWER CHANGEOVER		
Headset on before start		•
Listen to engine start sequence	4, 3, 2, 1.	•
LMD off (3 switches, bottom to top)		•
Exit Deimos Software (x)		
POWER CHANGEOVER		
LMD on (3 switches, top to bottom)	then pushbutton	•
Restart Deimos Software		
System running again		at time
		1146

[illegible]

Flight:

B399

KEY

Not Fitted

Fitted, Not Operated

Duff Data

Minor Problems

OK

Thermometers

Cabin Temperature:

Heimann:

Deiced Temp:

Non-deiced Temp:

Hygrometers

FWVS:

Buck CR2:

General Eastern:

Johnson Williams:

Nevzorov:

Total Water Probe:

Cameras

Downward Facing:

Forward Facing:

Rearward Facing:

Upward Facing:

Navigation + Aircraft

Cruciform GPS:

GIN Applanix:

INU Honeywell:

Radar Altimeter:

RVSM IAS:

RVSM Static Pressure:

XR5 GPS:

Misc Core

AMTG:

AVAPS:

Cabin Pressure:

Fax machine:

Printer:

S9 Static Pressure:

Satcom C:

Satcom H:

Turb Centre-Static:

Turb Left Right:

Turb Up-Down:

Turb Horizontal Chk:

Turb Vertical Chk:

Weather Radar:

DLUs:

DLU AERACK:

DLU BBR Lower:

DLU BBR Upper:

DLU Core Chem:

DLU Core Consoles:

DLU Port Aft:

DLU Port Fwd:

DLU Stbd Fwd:

Radiometers

Lower:

BBR (clear) Lower:

BBR (IR) Lower:

BBR (red) Lower:

Upper:

BBR (clear) Upper:

BBR (IR) Upper:

BBR (red) Upper:

ARIES:

DEIMOS:

IR Camera:

JNO2 Lower:

JNO2 Upper:

JO1D Lower:

JO1D Upper:

MARSS:

SHIMS Lower:

SHIMS Upper:

SWS:

TAFTS:

Cloud Probes

2DC:

2DP:

FFSSP:

PCASP:

2DS:

ADA:

CAPS:

CCN:

CDP (fuselage):

CDP (Canister):

CIP 100:

CIP 25:

CPI:

CVI:

SID1:

SID2:

Aerosol

CPC 3025A:

CPC 3786 H2O:

Filters 47mm:

Filters 90mm:

Neph - Dry:

Neph - Wet:

PSAP:

AMS:

CPC 3025 (AMS):

INC:

VACC:

CPC 3010A (CVI):

SP2:

UHSAS:

Chemistry

CO Aerolaser 5002:

NOx TE42C:

Ozone TE49C:

Ozone TE49:

SO2 TE43C:

TDLAS (NIR) CH4:

TDLAS (NIR) CO2:

FAGE:

Formaldehyde:

NOx FAAM:

NOxy:

ORAC:

PAN:

PERCA:

Peroxide:

PTRMS:

TDLAS (1C):

WAS Bags:

WAS Bottles:

Misc Non-Core

CASI/ATM:

LIDAR:

LTi:

SAW Hygrometer:



MISSING LOG SHEETS:

The following log sheets are not available for flight B399:

Log	Reason
Pre-flight log	No log available
Faults	The log for this flight appears to be a direct copy of B398 without even the number and date corrected so it is not included.
Core Chemistry / TDLAS	no In Flight log except in cases of instrument problems
PSAP log	No log as PSAP pump/filter info included on Flight Summary page
TAFTS	Operator does not create a log sheet
FWVS	Operator does not create a log sheet
AVAPS	NO SONDES DROPPED so no log

AMS - not yet fitted Document control

Revision	Date	Author	Comments
r0	08 Sep 2009	Doug Anderson	Initial version missing the above noted logs
r1			
r2			

VIDEO RECORDINGS:

The following video recordings in avi format should be available at the BADC :

faam-video-dfc_faam_20080911_r0_b399_121315_1hz.avi
faam-video-dfc_faam_20080911_r0_b399_131315_1hz.avi

faam-video-rfc_faam_20080911_r0_b399_121309_1hz.avi
faam-video-rfc_faam_20080911_r0_b399_131309_1hz.avi

faam-video-ffc_faam_20080911_r0_b399_121306_1hz.avi
faam-video-ffc_faam_20080911_r0_b399_131306_1hz.avi

faam-video-ufc_faam_20080911_r0_b399_121312_1hz.avi
faam-video-ufc_faam_20080911_r0_b399_131312_1hz.avi

No Digital8 video recordings were made on this flight.