

FAAM facility for airborne atmospheric measurements

FLIGHT FOLDER



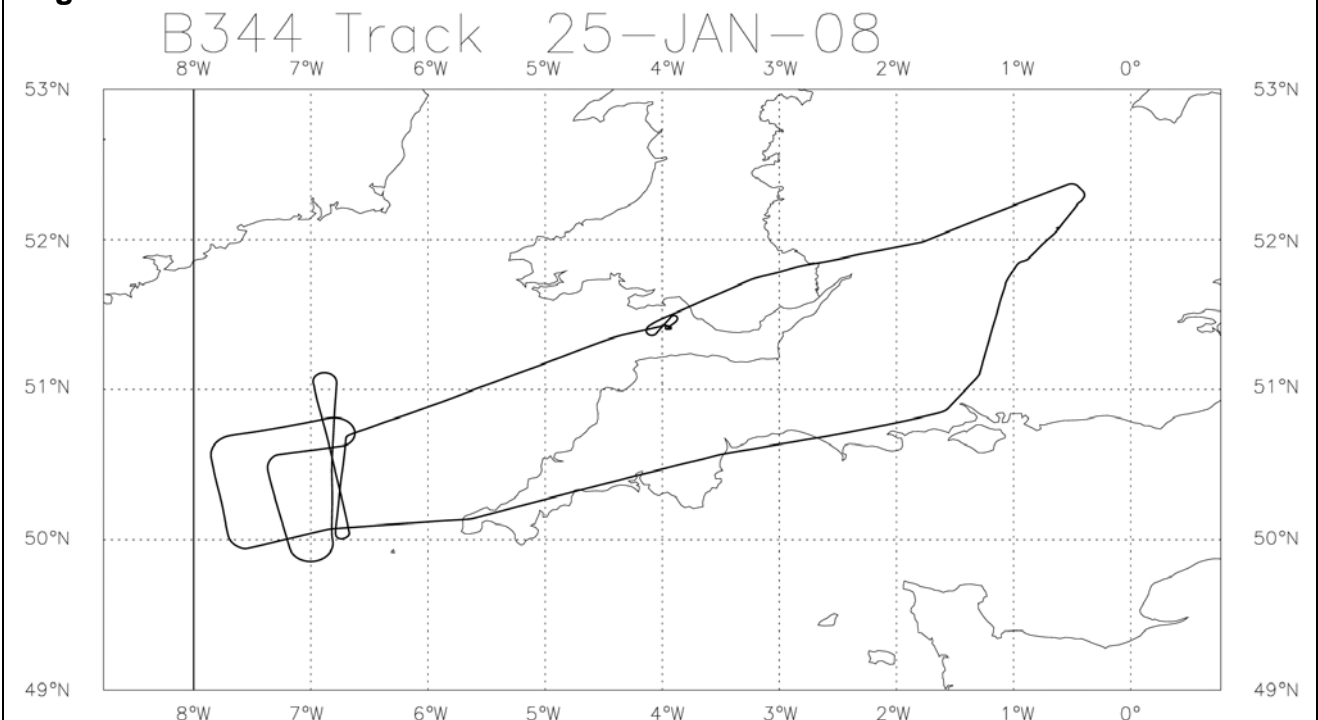
Flight No. B344
Date: 25 January 2008
Take Off: 10:34:20Z
Landing: 14:02:45Z
Flight Time 3h 28m 25

Campaign: Radiation Instruments Test

Operating Area: South West

POB	Position	Name	Institute
1	Captain	Luc Lathouwers	Directflight
2	Co-pilot	Alan Foster	Directflight
3	CCM	Dawn Quinn	Directflight
4	Flight Manager	Mo Smith	FAAM
5	Core Chemistry / CCM2	Doug Anderson	FAAM
6	SWS	Andy Wilson	Met Office
7	Cloud Physics	Martyn Pickering	Met Office
8	Cloud Physics Training	Phil Rosenberg	FAAM
9	CVI	Jeff Norwood-Brown	Met Office
10	Mission Scientist	Paul Field	Met Office
11	DEIMOS	Dave Pollard	Met Office
12	Wet Neph	Simon Osborne	Met Office
13	Wet Neph Training	Rob King	Met Office
14	ARIES	Dave Tiddeman	Met Office
15	Mission Scientist Training	Nick Hewitt	University of Lancaster
16	Observer	Jean-Claude Thelen	Met Office

Flight Track:

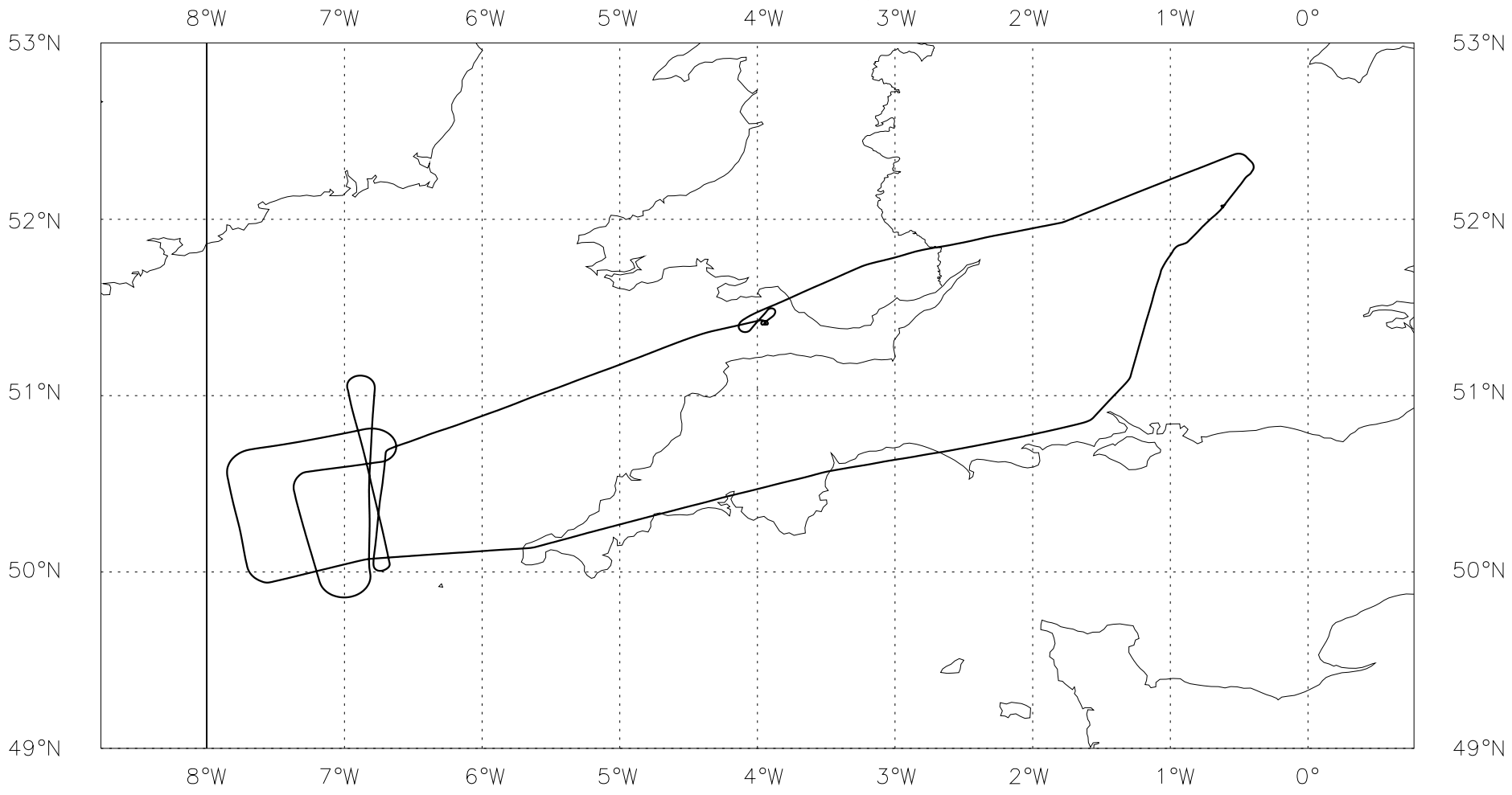


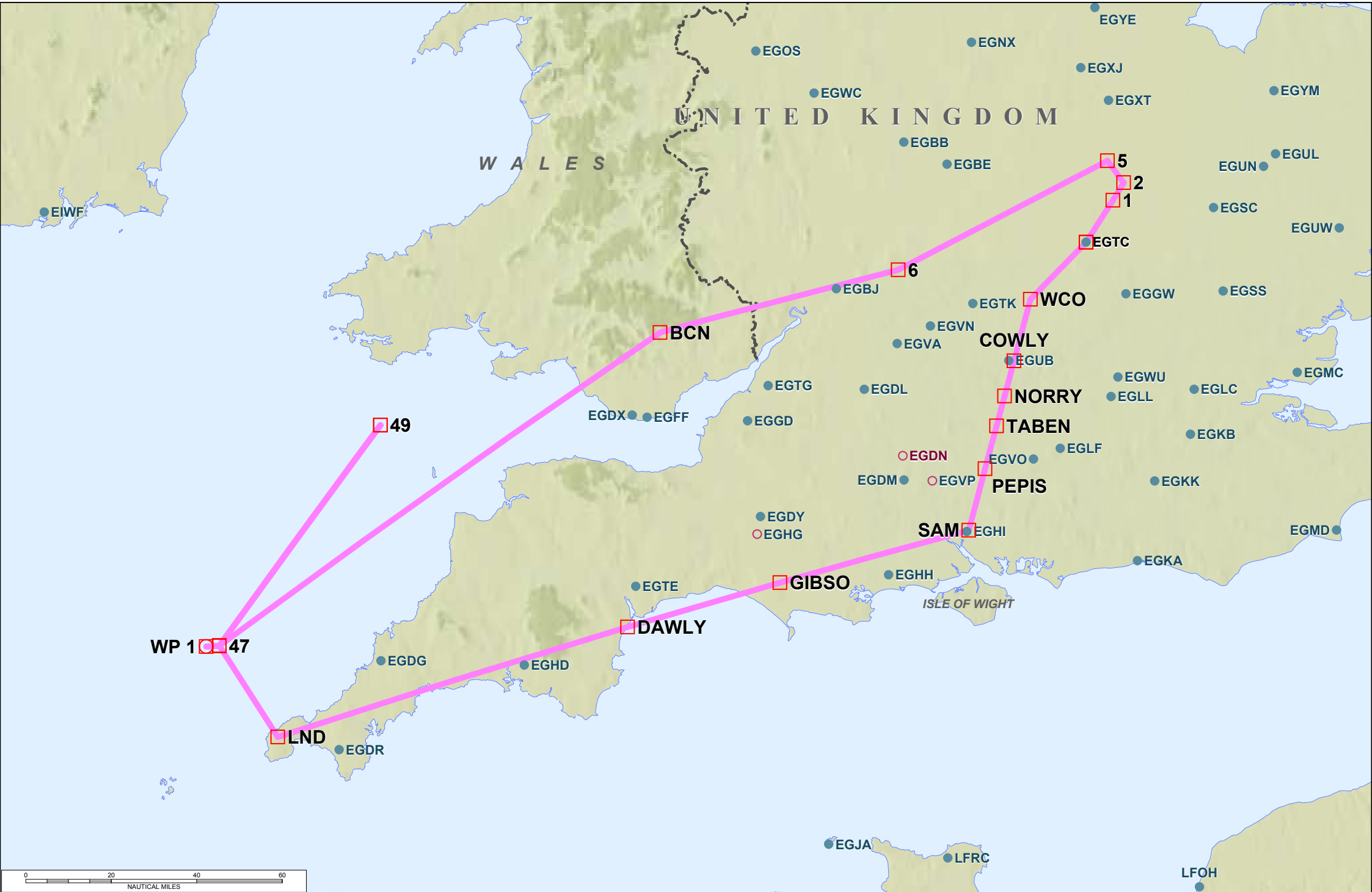
FLIGHT SUMMARY

Flight No B344
 Date: 25 Jan 2008
 Project: Radiation Instruments Test
 Location: South West

Start Time	End Time	Event	Height (s)	Hdg	Comments
----	----	-----	-----	---	-----
091218		Start-Up	-.21 kft	000	52'04.36N, 0'37.48W
102429	102748	Pirouette	-.20 - -.19 kft	172	Start 173deg, cw
102554		Video	-.19 kft	322	Start UFC
103420		T/O	0.64 kft	222	Cranfield
103853		Event	6.0 kft	229	Zero JW & Nevz
104559		Video	11.0 kft	204	Start DFC
111907		Video	31.0 kft	254	Contrailing, DFC to RFC
113437	113938	Run 1.1	33.0 kft	256	Across sun, contrailing
113647		Video	33.0 kft	253	Switch RFC to DFC
114130	114631	Run 1.2	33.0 kft	346	Down sun
114846	115347	Run 1.3	33.0 kft	080	Across sun
115733	120105	Run 1.4	33.0 kft	259	
120306	120806	Run 1.5	33.0 kft	174	Into Sun
121157	122315	Profile 1	33.0 - 22.1 kft	348	1000fpm
122635	124008	Profile 1	22.0 - 10.1 kft	174	
124224	125046	Profile 1	10.0 - 1.6 kft	355	QNH 1039
125054	125437	Profile 1	1.4 - -.58 kft	066	500fpm, 1k'-50'
125500	131501	Run 2	-.55 - -.57 kft	067	100'
131307		Event	-.56 kft	063	Heimann cal
131956	132156	Orbit 1	5.0 - 5.1 kft	144	60deg,right,start 180deg
134943		ASPs	10.0 kft	054	Close
140245		Land	-.19 kft	355	Cranfield
140729		Shutdown	-.20 kft	307	52'04.36N, 0'37.50W

B344 Track 25-JAN-08





Instrument test flight B344 Friday 25th January 2008

Purpose:

Pre CLPX test - SHIMS, SWS, MARSS, DEIMOS, WET NEPH training.

1. Perform pirouette on the runway. (360 degree turn at around 120 degrees per minute)
2. Take off. Climb to >25 kft for transit.
3. Transit to operating area
4. Carry out box pattern with 5 minute legs. One leg into the sun.
Requirements:
no cloud above for SHIMS and SWS.
Some cloud is acceptable for MARSS.
DEIMOS is looking down and would prefer non-precipitating cloud below.
5. Repeat 4 if required (DEIMOS needs 1 hour at >25 kft)
6. Profile descent to 50 ft over sea.
7. Climb to height chosen by a/c scientist.
8. Perform race track with two 10 minute runs at this height for wet neph (out of cloud).
9. Perform a single 60degree orbit at altitude determined by pilots (2g test of ARIES, no weather requirements)
10. Return to Cranfield

Debrief B344 Friday 25th January 2008

A successful instrument test flight in support of CLPX was flown. Instruments tested included the SWS (NIR module not working), SHIMS, 2 PCASPs, ARIES, DEIMOS, Wet Neph, CVI, TWC.

Just before take off (1030Z) a pirouette was performed under mostly clear skies. About 3/8 thin cirrus was visible.

After take off the aircraft climbed to 33kft, passing 25 kft (-42C) at 1100Z. The transit was then continued to the vicinity of the Scilly Isles. During the transit 7/8 stratocumulus was present below while 2/8 thin cirrus and contrails were visible at or close to the flight level of the aircraft. Some ice particles were detected and a 22deg halo was visible for a short while around 1130Z.

From 1134Z to 1208Z a high level box pattern was carried out (R1.1 - R1.5, 33kft, -60C). The box shape was modified slightly (R1.4, R1.5) to ensure that the measurements were as cloud free as possible. During the box pattern, 6/8 stratocumulus was present below and some thin cirrus (old contrails) was present on the horizon (less than 1/8). The 146 was also generating contrails at this altitude.

From 1212Z to 1254Z a profile descent was carried out (P1) from 33kft to 50ft. As we passed 25 kft, the total time spent above 25kft was about 80 minutes. Several platforms were executed to keep the aircraft in cloud free conditions (thin cirrus + contrails above, less than 1/8). The profile passed through the stratocumulus deck (7/8) at 1600ft (5C).

A straight and level run (R2, 1255Z-1315Z) was carried out at 100 ft above the sea. Wind speed was 13 m/s. PCASP recorded 100/cc. During the 20 minute run there was 4/8 to 7/8 of stratocumulus above.

Following the R2, the aircraft climbed to 4kft to carry out the 60deg orbits. There was about 2/8 contrail/cirrus above during the orbit (O1, 1320Z-1323Z) that went through about 1.5 complete circuits.

Finally, the aircraft climbed to 17kft for the return transit over nearly complete stratocumulus cover below and thickening cirrus (upt to 4/8) above (landed 1400Z).

Mission Scientist's Log

DigiMemo e-Page

Flight No **B.344**.... Date **25/1/08**... Name **PAUL FIELD** Page **1**.... of **5**...

GMT	Run / Profile	Height	Hdg	GPS Position	Remarks (clouds, weather, visibility, winds, sea state etc.)
1030					PLUMMETE 3/8 THIN Ci SOME CONTRAILS 3 MIN DURATION
					TAKE OFF.
1044					Sc ~ 5kft. T=2C
1044					CLIMB 12kft.
1047		13kft.			-10C 3/8 Sc BELOW 7/8 THIN Ci
1057		23kft			BROKEN Sc 7/8 Ci
1100		25.3kft			-42C
1105		26.5kft			5/8 Sc 7/8 Ci THIN.
1109		29.4kft			INTO Ci -51C
1111		30kft			JUST AT TOP OF Ci
1113					CLIMB TO 31kft. 7/8 Sc 2/8 Ci + CONTRAILS
1122		31kft			7/8 Sc SOME CONTRAILS AHEAD + SLIGHTLY ABOVE
1126					CLIMB TO 33kft 7/8 Sc THIN Ci
1131		32.7kft			SOME ICE'S PRESENT V SMALL 22° HMO.

Mission Scientist's Log

DigiMemo e-Page

Flight No **B**.....344 Date 25/1/08 Name [Signature]..... Page 2 of 5

GMT	Run / Profile	Height	Hdg	GPS Position	Remarks (clouds, weather, visibility, winds, sea state etc.)
1134		334ft.			START BOX PATTERN
					6/8 Sc Some thin Ci of this level.
1134	R1.1	334ft.	253		R1
1137					HARDLY ANY SIGNAL ON CLOUD PATTERN
1139	R1.1				END R1.1
1141	R1.2	334ft.	347		START 6/8 Sc Ci on HORIZON CLEAR ABOVE
1146	R1.2	334ft.			END 6/8 Sc Ci on HORIZON CLEAR ABOVE
	R1.3	334ft.			START
1148	R1.3				START 7/8 Sc THIN Ci AT THIS LEVEL CLEAR ABOVE.
					T = -60C
					THIN Ci LAYER AT THIS LEVEL. NOT IN IT YET.
1152	R1.3				SOME THIN Ci
1153	R1.3				END SOME CLOUD AT END OF RUN. 5-10 PTTLES/s on SIDA
					DO RELIP OF R1-3 TO GET OUT OF CLOUDS.
1157	R1.4		259		
1200	R1.4				END END

Mission Scientist's Log

DigiMemo e-Page

Flight No **B344** Date 25/1/08 Name Paul Phillips Page 3 of 5

GMT	Run / Profile	Height	Hdg	GPS Position	Remarks (clouds, weather, visibility, winds, sea state etc.)
1203	R1.5	33kft	170		INTO SUN. START.
					7/8 SC THIN Ci AT
					THIS LEVEL ON HORIZON
					CLEAR ABOVE
					CONTRAIL BELOW SUN.
					6000ft above 32kft
1206					CONTRAIL COMING THROUGH SUN.
1208	R1.5	33kft			END OF RUN AND BOX'AN
1212	P1	33kft	348		START P1
					7/8 SC THIN Ci ON HORIZON
1224	P1				PLATFORM WHEN LEVEL WITH Ci
					7/8 SC SOME CONTRAILS ABOVE
1226		22kft	175		RECOGNISE P1 RECIPI HDB
					SOME 1/8 Ci AHEAD + ABOVE
					CLEAR ABOVE.
1239		11kft			-6C 7/8 SC
					SOME THIN Ci ABOVE
1240	P1	10kft			PLATFORM
1242	P1	10kft			RECOGNISE 7/8 SC 1/8 THIN Ci
					LOOKS CLEAR ABOVE
1246	P1	6kft			7/8 SC 1/8 Ci + CONTRAILS
					CLEAR ABOVE

Mission Scientist's Log

DigiMemo e-Page

Flight No **B.344** Date 25/1/08 Name Paul R. H. Page 4 of 5

GMT	Run / Profile	Height	Hdg	GPS Position	Remarks (clouds, weather, visibility, winds, sea state etc.)
1250		1600ft			Sc CLOW TOP. CONTRAILS ABOVE
1251		1200ft			4.5C.
1252		1000ft.			INTERMIT
1253			065		RECOMMENCE BELOW SC
1254		50ft			END P4
1255	R2	100ft	067		START R2
					7/8 SC ABOVE
					WIND 13m/s
					PCASV ~200/cc
					CVI PLASMA 3-4 cc?
1301	R2	100ft			7/8 SC ABOVE
1306	R2				PCASV 125/cc 4/8 SC
1315	R2	100ft			END OF RUN 2 7/8 SC
					CLIMBS TO 5ft.
1317.		4ft.			CLOW TOP
					2/8 CONTRAIL ABOVE
1319					START OF ARIES CAL
1320	O1				START OF ORBIT O1
1322					1 1/2 60° ORBS
1323					END OF EXPERIMENTAL
					RETURN TRANSIT AT 17ft
1326					8/8 SC BELOW
					3/8 THIN Cc ABOVE

CLOUD PHYSICS LOG Flight B 344

Date: 25/01/08 **Operator:**map/pdr **DRS Time:** 8:22:50 **DAU1 Time:** +0 **DAU2 Time:** +0 **DAU3 Time:** +0 **Aux1 Time:** N/A **Aux2 Time:** +0 **Page 1 of 2**

G.M.T	PCASP		FFSSP	SID1	SID2	2D2-C		2D2-P		CIP25			CIP100			Habit	Remarks
	Conc/cc	Mean R	Block TX	Count	Count	Conc/L	Max size	Conc/m3	Max size	Conc m3	Max size	LWC	Conc m3	Max size	LWC		
11:34:38																Start Run 1.1 @ FL330	
11:35:00	1	0.10	109	5													
11:37:00	1	0.06		1													
11:39:00	2	0.10	110	1													
11:39:39																End of Run 1.1	
11:41:31																Start Run 1.2 @ FL330	
11:42:00	2	0.09		1													
11:44:00	2	0.07		1													
11:46:32																End of Run 1.2	
11:48:48																Start Run 1.3 @ FL330	
11:49:00	1	0.05		1													
11:51:00	1	0.06		1													
11:53:00	7	0.50		30		1	25								11		
11:53:48																End of Run 1.3	
11:57:36																Start Run 1.4 @ FL330	
11:58:00	6	0.17	113	10		1	25								11		
12:00:00	1	0.09		1		Noise											
12:01:06																End of Run 1.4	
12:03:07																Start Run 1.5 @ FL330	
12:04:00	2	0.10	115	1		Noise											
12:06:00	5	0.22	116	1		0											
12:08:00	2	0.18	116	1		0											
12:08:06																End of run 1.4@fl330	
12:11:57	0.7	0.22	124	2		0										Start of profile1 @ fl330	
12:13:19	4	0.22	124	2		0										Fl320	
12:14:23	1	1.0	124	2		0										Fl310	
12:15:22	1.5	0.15	125	0		0										Fl300	
12:16:21	3	0.1		0												Fl290	
12:17:16	1.5	0.3		1												Fl280	
12:18:09	3	0.35		1												Fl270	
12:19:14	14	0.35		0												Fl260	
12:20:11	15	0.13	126	0												Fl250	
12:21:15	12	0.13		2												Fl240	
12:22:16	13	0.11		0												Fl230	
12:23:14	15	0.15		0												Fl220 profile interrupted	
12:27:44	3.8	0.15	156	0												Fl210	
12:28:45	3.8	0.13	156	0												Fl200	
12:29:50	4.6	0.18		0												Fl190	
12:31:08	9	0.13		0												Fl180	
12:32:14	2	0.22		0												Fl170	
12:33:29	6	0.18		0												Fl160	
12:34:38	7	0.35		0												Fl150	
12:35:43	5	0.27		0												Fl140	

PCASP Reference Volts = 7.8	FFSSP Reference Volts =3.1	2D2-C End element 1 voltage = 1.5	CIP25 End element 1 voltage =	CIP100 End element 1 voltage =
PCASP Flow rate =1.2		2D2-C End element 32 voltage =1	CIP25 End element 64 voltage =	CIP100 End element 64 voltage =
© Met Office 2007	SID2 Laser power =not fitted	2D2-P End element 1 voltage =N fitted	Not fitted	Not fitted

CLOUD PHYSICS PROCESSING LOG

Flight number: B344 **T/O:** 10:34:20
Date of flight: 25/01/08 **Land:** 14:02:45

A) FFSSP PROCESSING		DONE IN EXETER
Processing Stage	Done?	Comments
1) Transfer *.txt files from DVD to processing PC Bnnn_FFSSP_hh.txt for each hour of data Bnnn_FFSSP_HVMS.txt		hh = Last sec processed =
2) FTP the files (ascii) from the PC to directory PMSDATA: on FLOODS		File size =
3) FLOODS> RUN MRFB:[PMS.FAST_FFSSP]FFSSP_EXTRACT_TAS a) Flight number: Bnnn b) Path name: MFDDATA:Bnnn_MFDX c) Output directory: PMSDATA: d) Start time: <i>0 if unknown (see comment box)</i> e) End time: <i>240000 if unknown</i>		Use time just before/after take-off/landing. If T/O /landing just after/before the hour, ensure start/end time is before/after the hour if there is an FFSSP_hh.txt file for that hour.
4) FLOODS> RUN MRFB:[PMS.FAST_FFSSP]FFSSP_PROCESS_TXT a) Flight number: Bnnn b) Directory: PMSDATA: c) TAS in processing: Y d) Vel threshold (clicks) 0 e) Calibration file: <i>Use the most recent calibration file.</i> Format FFSSP_CALddmmyyyy.txt Calibration files to be stored in MRFB:[PMS.FAST_FFSSP] f) Adjust FFSSP time Y/N g) If Y, enter value to add to data time (seconds)		Total glitches = Sec file written ok? Note calibration file used Yes only if gross errors occur in FFSSP time eg; ~ 1hour
5) FLOODS> WAVE a) WAVE> write_procffssp_to_m5,'pmsdata:Bnnn_procffssp.dat', 'mfddata:Bnnn_mfdX','pmsdata:Bnnn_m5procffssp',/auto b) WAVE> exit		Use PVWAVE for this section Note time correction applied to FFSSP by /auto =
6) FLOODS> MODIFY a) Modifying datasets: pmsdata:Bnnn_m5procffssp b) Dataset: mfddata:Bnnn_mfdX c) New dataset: mfddata:Bnnn_mfdY (y=x+1) d) Parameter description file: <i>leave blank to use default</i>		Input file size = M5 output file size =
7) CHECKS: i). Are FFSSP and JW/Nevzorov LWC synchronized in time? <i>In flight_plot, parameters</i> <i>JW LWC para 535</i> <i>Nevzorov LWC para 602</i> <i>FFSSP LWC para 1202</i> ii). If not, repeat from step 5b replacing /auto with addt=x which adds x+20 secs to FFSSP time.		Synchronized?

CLOUD PHYSICS PROCESSING LOG

Flight number: B344
Date of Flight: 25/01/08

B) 2D PROCESSING		REPROCESS +1hr
Processing Stage	Done?	Comments
1) Transfer Bnnn.dat file from CD/DVD to PC	Y	
2) Zip up file on PC (Bnnn.zip)	Y	
3) FTP the zipped file (binary) from the PC to the directory SEADAS_DATA:[SEADAS_DATA] on FLOODS	Y	16293 blocks
4) Log on to FLOODS		
5) Unzip SEADAS_DATA:[SEADAS_DATA]Bnnn.zip	Y	Size of Bnnn.dat = 123034
6) FLOODS> WAVE WAVE> CONVERT_SEADAS_FILE a) Input file: SEADAS_DATA:[SEADAS_DATA]Bnnn.dat b) Output file: SEADAS_DATA:[SEADAS_DATA]Bnnn_seadas.dat WAVE> exit	Y	Use PVWAVE for this section Blocks read = 32266 Blocks written = 32266 Bad reads = 0
7) FLOODS> RUN MRFB:[PMS.SEADAS]READM200_FILE a) Default directory: PMSDATA: b) Flight number: Bnnn c) Disk file name: SEADAS_DATA:[SEADAS_DATA]Bnnn_seadas.dat d) Comment string: e) Start time: <i>0 if unknown (T/O – 5 min)</i> f) End time: <i>240000 if unknown (Land + 5 min)</i> g) Read 2DC: Y h) Read 2DP: Y i) Secondary data: Y j) FSP-SYNC: Y k) cmd.str: Y l) Auto time correction: N m) Full length secondary: N	Y	Start = 103000 End = 140500 Ignore error message scroll (vestigial error from tapes) Are FRW, FSP, IMB, PCA,SEC files in PMSDATA? Y Are they non-zero in size? Y
8) FLOODS> WAVE i). WAVE> imagedisplay a) 2D directory name: PMSDATA: b) Flight number: Bnnn c) File generation no: 0 d) Time from IWC plot: N e) Select probe: (1) 2DC (2) 2DP f) Start time: <i>As in 7e above</i> g) End time: <i>As in 7f above</i> h) Time interval (sec): 5 recommended (0 for all images) ii). WAVE> auto_image a) 2D directory name: PMSDATA: b) Flight number: Bnnn c) Enter date: YYYYMMDD d) Enter start time: <i>0 if unknown (T/O – 1 min)</i> e) Enter end time: <i>240000 if unknown (Land – 1 min)</i> f) Enter time interval (sec) between successive imaged blocks: 10 iii). WAVE> exit to create files iv). FTP ascii *.PS files from PMSDATA: to PC v). Load each into Ghostview or other pdf-converter vi). Output as pdf file (720 dpi resolution), appending name prefix of CORE-CLOUD-PHY_ to converted files	Y	2D image display and printing Must be done from FLOODS itself. Note any problems with images 2DC 1110705 first images 113000 – 132900 mostly noise No 2DP Prepare imagery for Core data From own PC again Start = 103000 End =140500 FAAM_YYYYMMDD_R0_ Bnnn_2Dx-images.ps Notes on this in instructions 2dc 10 pages 2dp None

<p>9) FLOODS> RUN MRFB:[PMS.SPEC2D.AUTO]PROCESS2D_AUTO</p> <p>a) Flight number: Bnnn b) Directory: PMSDATA: c) File generation: <i>Hit enter</i> d) Time correction: <i>Time offset of the 2D data</i> e) TAS: Y f) MFD directory: MFDDATA:Bnnn_tas g) Probe number: (1) 2DC (2) 2DP (0) Both <i>0 unless either probe known to be faulty</i> h) Start time: <i>0 if unknown (T/O + 30sec)</i> i) End time: <i>240000 if unknown (Land – 30sec)</i> j) Nominal averaging: 0.2 seconds for conversion to M5 k) Particle type 2DC: 8 if known to be in ice cloud 11 if known to be in water cloud l) Particle type 2DP: 8 if known to be in mixed-phase 8 if unknown m) Coefficient choice: 2 n) Output root filename: PMSDATA:Bnnn_PROC2D</p>	<p>Y</p> <p>1</p>	<p>NB. an error message may appear, floating point exception, rerun and use time quoted in error message, repeat until successful.</p> <p>X = B344_tas</p> <p>Start = 103000 End = 140500</p> <p>Time data processed to = 132954 2dproc files present? Y *.2dc, *.2dp and *.dat</p>
<p>10) FLOODS> WAVE</p> <p>i) WAVE> WRITE_PROC2D_TO_M5, 'PMSDATA:BNNN_PROC2D.DAT', 'PMSDATA:BNNN_M5PROC2D' ii). exit</p>	<p>Y</p>	<p>Use PVWAVE for this section</p> <p>Error message about HDDR file should be ignored.</p> <p>Records = 565</p>
<p>11) FLOODS> MODIFY</p> <p>a) Modifying datasets: pmsdata:Bnnn_m5proc2D b) Datset: mfddata:Bnnn_tas c) New dataset: mfddata:Bnnn_tas_2d d) Parameter description file: leave blank to use default</p>	<p>Y</p>	<p>X = _tas Y = (X+1) = _tas_2d</p>
<p>12) CHECKS:</p> <p>Are 2DC/2DP IWC of comparable magnitude and well-correlated with Nevzorov TWC? <i>In flight_plot, parameters</i> <i>Nevzerov TWC para 605</i> <i>2DC IWC para 1302</i> <i>2DP IWC para 1312</i></p>	<p>N</p>	<p>Use flight_plot to check data is present in mfd file? Y</p>

CLOUD PHYSICS PROCESSING LOG

Flight number: B344
Date of Flight: 25/01/08

C) PCASP PROCESSING		
Processing Stage	Done?	Comments
1) Complete stage 7) in 2D processing Ensures Bnnn_FSP.DAT containing raw PCASP data is written to directory PMSDATA:	Y	
2) FLOODS> RUN MRFB:[PMS.PCASP]PROCPCASP_NEW a) Flight number: Bnnn b) File name: PMSDATA:Bnnn_FSP.DAT c) Root output name: PMSDATA:Bnnn_PROCPCASP Produces PMSDATA:Bnnn_PROCPCASP.DAT (binary) PMSDATA:Bnnn_PROCPCASP.OUT (ascii) d) Minimum size channel: <i>default = 1</i> <i>If smallest size channel are known to be noisy the value of the highest noise free channel to be entered here</i> e) Calibration volume flow rate: <i>Use the most recent value. (1.15ccs⁻¹ Feb 07)</i> <i>Calibration files to be stored in Exeter</i> <i>Entering zero gives default value = 1.0 cm³s⁻¹</i> f) Time correction: <i>Same value as used in 2D processing stage 9d</i> g) Start time: <i>0 if unknown</i> h) End time: <i>240000 if unknown</i>	Y	Min size = 1 Vol flow rate = 1.2 103000 140500
3) FLOODS> WAVE i).WAVE> write_procpcasp_to_m5, 'pmsdata:Bnnn_procpcasp.dat', 'pmsdata:Bnnn_m5procpcasp' ii). WAVE> exit	Y	Use PVWAVE for this section
4) FLOODS> MODIFY a) Modifying datasets: pmsdata:Bnnn_m5procpcasp b) Dataset: mfddata:Bnnn_tas_2d c) New dataset: mfddata:Bnnn_tas_2d_pcasp d) Parameter description file: <i>leave blank to use default</i>	Y	X = _tas_2d Y = X+1 = _tas_2d_pcasp
5) CHECKS Are PCASP and JW peaks synchronous? <i>In flight_plot, parameters</i> <i>Neph – total blue scatter.</i> <i>PCASP conc para 1550</i>	N	Is data present in mfd? Y Use flight_plot to check.

Wet Nephelometer Log

 Flight No **B** 344

 Date 25/06/08

 Operator's name: KENGE OSBORNE

 Page 1 of

GMT	Run	Height	Sample flow	Dry neph RH	Wet neph RH	Temp ramp	T _{water}	Remarks
1230		FL260	4.0	91.0	91.0	10.0	10.0	TO CLARFIELD. TRANSIT TO SW. APPROXIMATELY ALMOST ZERO ABSORPTION. NEPHS ALROUND 0.0 m
		→						
1235	BOX	FL330	2.0					BOX PATTERN. ~ 2.0 ON BOTH NEPHS
1236			14.3					CHILLER ON
						→ 40		SET TO output DURING DESCENT.
1239	RT			91.0				ALL COMMS WORKING
1241	RT	FL100	4.2	91.0	91.0			LAST COMMS WORKING CHECKED AT START OF RUN
	RT	100'						
1302								↓ 5 (GET) RH (wet) falling very slowly

B344_SWS_SHIMS_EventLog.txt

```
08:52:35.94 --- - - - -
08:52:35.96 --- - - - - +++ SOFTWARE START/RESTART +++
08:52:35.96 --- - - - - +++ hh:mm:ss.ff / Instr / Posn / Period /
                                tVIS/ tNIR / Comment +++
08:52:35.96 --- - - - - +++ Flight no. B344
08:52:35.96 --- - - - -
08:53:00.75 SWS - - - - ERROR: Failed to initialise telescope.
08:53:07.61 SWS - - - - Telescope disabled.
08:53:10.37 SWS - - - - Telescope motor initialised.
08:53:46.56 SWS -0.0 - - - - Telescope sent to 124.747
08:53:48.22 SWS 124.7 - - - - Telescope stopped.
08:54:02.29 SWS 124.7 - - - - Telescope sent to 240.000
08:54:03.40 SWS 234.0 - - - - Telescope stopped.
08:54:11.98 SWS 240.0 - - - - Telescope sent to 0.863
08:54:14.19 SWS 1.3 - - - - Telescope stopped.
08:54:31.81 SWS 0.9 - - - - Telescope sent to 240.000
08:54:33.99 SWS 237.2 - - - - Telescope stopped.
08:54:52.48 SWS 240.0 - - - - Telescope sent to 59.746
08:54:54.13 SWS 64.2 - - - - Telescope stopped.
08:54:59.44 SWS 59.7 - - - - Telescope sent to 59.246
08:55:00.29 SWS 59.2 - - - - Telescope sent to 58.746
08:55:00.60 SWS 58.7 - - - - Telescope sent to 58.246
08:55:00.91 SWS 58.2 - - - - Telescope sent to 57.746
08:55:01.21 SWS 57.7 - - - - Telescope sent to 57.246
08:55:01.53 SWS 57.2 - - - - Telescope sent to 56.746
08:55:01.84 SWS 56.7 - - - - Telescope sent to 56.246
08:55:02.12 SWS 56.2 - - - - Telescope sent to 55.746
08:55:02.42 SWS 55.7 - - - - Telescope sent to 55.246
08:55:02.73 SWS 55.2 - - - - Telescope sent to 54.746
08:55:03.06 SWS 54.7 - - - - Telescope sent to 54.246
08:55:03.39 SWS 54.2 - - - - Telescope sent to 53.746
08:55:03.70 SWS 53.7 - - - - Telescope sent to 53.246
08:55:04.01 SWS 53.2 - - - - Telescope sent to 52.746
08:55:04.35 SWS 52.7 - - - - Telescope sent to 52.246
08:55:04.65 SWS 52.2 - - - - Telescope sent to 51.746
08:55:04.99 SWS 51.7 - - - - Telescope sent to 51.246
08:55:05.29 SWS 51.2 - - - - Telescope sent to 50.746
08:55:05.60 SWS 50.7 - - - - Telescope sent to 50.246
08:55:05.91 SWS 50.2 - - - - Telescope sent to 49.746
08:55:06.23 SWS 49.7 - - - - Telescope sent to 49.246
08:55:06.54 SWS 49.2 - - - - Telescope sent to 48.746
08:55:06.85 SWS 48.7 - - - - Telescope sent to 48.246
08:55:07.17 SWS 48.2 - - - - Telescope sent to 47.746
08:55:07.47 SWS 47.7 - - - - Telescope sent to 47.246
08:55:07.78 SWS 47.2 - - - - Telescope sent to 46.746
08:55:08.09 SWS 46.7 - - - - Telescope sent to 46.246
08:55:10.60 SWS 46.2 - - - - Telescope sent to 45.746
08:55:10.88 SWS 45.7 - - - - Telescope sent to 45.246
08:55:11.23 SWS 45.2 - - - - Telescope sent to 44.746
08:55:11.50 SWS 44.7 - - - - Telescope sent to 44.246
08:55:11.81 SWS 44.3 - - - - Telescope sent to 43.746
08:55:12.13 SWS 43.7 - - - - Telescope sent to 43.246
08:55:12.45 SWS 43.2 - - - - Telescope sent to 42.746
08:55:12.76 SWS 42.7 - - - - Telescope sent to 42.246
08:55:13.09 SWS 42.2 - - - - Telescope sent to 41.746
08:55:13.40 SWS 41.7 - - - - Telescope sent to 41.246
08:55:13.71 SWS 41.2 - - - - Telescope sent to 40.746
08:55:14.05 SWS 40.7 - - - - Telescope sent to 40.246
08:55:14.38 SWS 40.2 - - - - Telescope sent to 39.746
08:55:14.70 SWS 39.7 - - - - Telescope sent to 39.246
08:55:15.00 SWS 39.2 - - - - Telescope sent to 38.746
08:55:15.31 SWS 38.7 - - - - Telescope sent to 38.246
08:55:15.62 SWS 38.2 - - - - Telescope sent to 37.746
08:55:15.92 SWS 37.7 - - - - Telescope sent to 37.246
08:55:16.23 SWS 37.2 - - - - Telescope sent to 36.746
08:55:16.54 SWS 36.7 - - - - Telescope sent to 36.246
08:55:16.84 SWS 36.2 - - - - Telescope sent to 35.746
```

08:55:17.15	SWS	35.7	-	-	-	Telescope sent to 35.246
08:55:17.46	SWS	35.2	-	-	-	Telescope sent to 34.746
08:55:23.28	SWS	34.7	-	-	-	Telescope sent to 119.774
08:55:24.39	SWS	119.8	-	-	-	Telescope stopped.
08:55:59.51	SWS	-	-	-	-	Initialization: VIS OK NIR FAILED
08:56:20.35	USH	-	-	-	-	Initialization: VIS OK NIR OK
08:56:24.53	LSH	-	-	-	-	Initialization: VIS OK NIR OK
08:56:58.32	SWS	-	-	-	-	Telescope disabled.
09:09:39.02	SWS	-	-	-	-	Initialization: VIS FAILED NIR FAILED
09:10:00.62	---	-	-	-	-	
09:10:00.62	---	-	-	-	-	+++ SOFTWARE START/RESTART +++
09:10:00.62	---	-	-	-	-	+++ hh:mm:ss.ff / Instr / Posn / Period / tVIS/ tNIR / Comment +++
09:10:00.63	---	-	-	-	-	+++ Flight no. B344
09:10:00.63	---	-	-	-	-	
09:10:04.39	SWS	-	-	-	-	Initialization: VIS FAILED NIR FAILED
09:10:58.33	---	-	-	-	-	
09:10:58.34	---	-	-	-	-	+++ SOFTWARE START/RESTART +++
09:10:58.34	---	-	-	-	-	+++ hh:mm:ss.ff / Instr / Posn / Period / tVIS/ tNIR / Comment +++
09:10:58.34	---	-	-	-	-	+++ Flight no. B344
09:10:58.34	---	-	-	-	-	
09:11:07.29	USH	-	-	-	-	Initialization: VIS OK NIR OK
09:11:09.18	LSH	-	-	-	-	Initialization: VIS OK NIR OK
09:11:15.79	SWS	-	-	-	-	Initialization: VIS OK NIR FAILED
09:14:26.51	---	-	-	-	-	
09:14:26.51	---	-	-	-	-	+++ SOFTWARE START/RESTART +++
09:14:26.51	---	-	-	-	-	+++ hh:mm:ss.ff / Instr / Posn / Period / tVIS/ tNIR / Comment +++
09:14:26.52	---	-	-	-	-	+++ Flight no. B344
09:14:26.52	---	-	-	-	-	
09:14:31.30	USH	-	-	-	-	Initialization: VIS OK NIR OK
09:14:34.52	LSH	-	-	-	-	Initialization: VIS OK NIR OK
09:14:42.92	SWS	-	-	-	-	Initialization: VIS OK NIR FAILED
09:14:49.46	SWS	-	-	-	-	Initialization: VIS FAILED NIR FAILED
09:16:09.97	---	-	-	-	-	
09:16:09.97	---	-	-	-	-	+++ SOFTWARE START/RESTART +++
09:16:09.97	---	-	-	-	-	+++ hh:mm:ss.ff / Instr / Posn / Period / tVIS/ tNIR / Comment +++
09:16:09.97	---	-	-	-	-	+++ Flight no. B344
09:16:09.97	---	-	-	-	-	
09:16:18.63	SWS	-	-	-	-	Initialization: VIS OK NIR FAILED
09:16:59.06	USH	-	-	-	-	Initialization: VIS OK NIR OK
09:17:00.29	LSH	-	-	-	-	Initialization: VIS OK NIR OK
09:31:02.37	---	-	-	-	-	
09:31:02.37	---	-	-	-	-	+++ SOFTWARE START/RESTART +++
09:31:02.37	---	-	-	-	-	+++ hh:mm:ss.ff / Instr / Posn / Period / tVIS/ tNIR / Comment +++
09:31:02.37	---	-	-	-	-	+++ Flight no. B344
09:31:02.37	---	-	-	-	-	
09:31:13.73	SWS	-	-	-	-	Initialization: VIS OK NIR FAILED
09:43:34.17	---	-	-	-	-	
09:43:34.17	---	-	-	-	-	+++ SOFTWARE START/RESTART +++
09:43:34.17	---	-	-	-	-	+++ hh:mm:ss.ff / Instr / Posn / Period / tVIS/ tNIR / Comment +++
09:43:34.17	---	-	-	-	-	+++ Flight no. B344
09:43:34.17	---	-	-	-	-	
09:43:42.93	SWS	-	-	-	-	Initialization: VIS OK NIR FAILED
09:43:48.37	SWS	-	-	-	-	Initialization: VIS FAILED NIR FAILED
09:43:50.40	SWS	-	-	-	-	Initialization: VIS FAILED NIR FAILED
10:03:47.38	---	-	-	-	-	
10:03:47.38	---	-	-	-	-	+++ SOFTWARE START/RESTART +++
10:03:47.38	---	-	-	-	-	+++ hh:mm:ss.ff / Instr / Posn / Period / tVIS/ tNIR / Comment +++
10:03:47.38	---	-	-	-	-	+++ Flight no. B344
10:03:47.38	---	-	-	-	-	
10:03:50.40	SWS	-	-	-	-	Initialization: VIS FAILED NIR FAILED
09:56:39.48	---	-	-	-	-	
09:56:39.48	---	-	-	-	-	+++ SOFTWARE START/RESTART +++

```

09:56:39.48 --- - - - - - +++ hh:mm:ss.ff / Instr / Posn / Period /
                                tVIS/ tNIR / Comment +++
09:56:39.48 --- - - - - - +++ Flight no. B344
09:56:39.48 --- - - - - -
09:56:47.01 SWS - - - - - Initialization: VIS OK NIR FAILED
09:56:52.38 USH - - - - - Initialization: VIS OK NIR OK
09:56:54.51 LSH - - - - - Initialization: VIS OK NIR OK
09:57:02.26 SWS - - - - - Telescope motor initialised.
09:58:07.88 SWS 0.0 - - - - - Telescope sent to 120.000
09:58:09.49 SWS 120.0 - - - - - Telescope stopped.
09:58:25.48 SWS - - - - - 5 NIR int.time changed from 5ms to 5ms.
09:58:29.72 SWS - - - 300 - VIS int.time changed from 5ms to 300ms.
09:58:29.72 SWS - - - - - 300 NIR int.time changed from 5ms to 300ms.
09:58:39.25 SWS - - - - - Initialization: VIS FAILED NIR FAILED
09:59:18.41 --- - - - - -
09:59:18.41 --- - - - - - +++ SOFTWARE START/RESTART +++
09:59:18.41 --- - - - - - +++ hh:mm:ss.ff / Instr / Posn / Period /
                                tVIS/ tNIR / Comment +++
                                +++ Flight no. B344
09:59:18.41 --- - - - - -
09:59:18.41 --- - - - - -
09:59:25.19 SWS - - - - - Telescope motor initialised.
09:59:25.67 SWS - - - - - Telescope disabled.
10:00:01.08 SWS - - - - - Initialization: VIS OK NIR FAILED
10:00:10.68 USH - - - - - Initialization: VIS OK NIR OK
10:00:13.69 LSH - - - - - Initialization: VIS OK NIR OK
10:00:32.81 SWS - - - 100 - VIS int.time changed from 5ms to 100ms.
10:01:08.28 SWS - - - - - 300 NIR int.time changed from 5ms to 300ms.
10:01:13.19 LSH - - - - - Manual scene recording started.
10:01:13.19 USH - - - - - Manual scene recording started.
10:01:20.99 LSH - - - - - 5 NIR int.time changed from 5ms to 5ms.
10:01:22.73 USH - - - - - 5 NIR int.time changed from 5ms to 5ms.
10:01:26.18 USH - - - 100 - VIS int.time changed from 5ms to 100ms.
10:01:26.18 USH - - - - - 100 NIR int.time changed from 5ms to 100ms.
10:01:30.25 LSH - - - 100 - VIS int.time changed from 5ms to 100ms.
10:01:30.26 LSH - - - - - 100 NIR int.time changed from 5ms to 100ms.
10:01:34.05 --- - - - - - Reset shutters.
10:01:39.50 USH - - - - - Idling
10:01:39.50 LSH - - - - - Idling
10:01:40.71 LSH - - - - - Dark measurement started.
10:01:40.71 USH - - - - - Dark measurement started.
10:01:42.14 LSH - - - - - Idling
10:01:42.35 USH - - - - - Idling
10:02:23.00 USH - - - - - Manual scene sampling started - Not Recording!
10:02:23.00 LSH - - - - - Manual scene sampling started - Not Recording!
10:02:28.17 USH - - - - - Idling
10:02:28.36 LSH - - - - - Idling
10:02:30.03 SWS - - - - - 100 NIR int.time changed from 300ms to 100ms.
10:02:33.20 SWS - - - - - 100 NIR int.time changed from 100ms to 100ms.
10:02:36.92 SWS - - - - - Initialization: VIS FAILED NIR FAILED
10:04:04.13 --- - - - - -
10:04:04.14 --- - - - - - +++ SOFTWARE START/RESTART +++
10:04:04.14 --- - - - - - +++ hh:mm:ss.ff / Instr / Posn / Period /
                                tVIS/ tNIR / Comment +++
                                +++ Flight no. B344
10:04:04.14 --- - - - - -
10:04:04.14 --- - - - - -
10:04:39.20 SWS - - - - - Initialization: VIS OK NIR FAILED
10:04:53.33 USH - - - - - Initialization: VIS OK NIR OK
10:04:57.51 LSH - - - - - Initialization: VIS OK NIR OK
10:06:25.77 --- - - - - -
10:06:25.77 --- - - - - - +++ SOFTWARE START/RESTART +++
10:06:25.77 --- - - - - - +++ hh:mm:ss.ff / Instr / Posn / Period /
                                tVIS/ tNIR / Comment +++
                                +++ Flight no. B344
10:06:25.77 --- - - - - -
10:06:25.77 --- - - - - -
10:06:37.16 SWS - - - - - Initialization: VIS OK NIR FAILED
10:06:44.98 SWS - - - 200 - VIS int.time changed from 5ms to 200ms.
10:06:51.52 USH - - - - - Initialization: VIS OK NIR OK
10:06:53.28 LSH - - - - - Initialization: VIS OK NIR OK
10:07:04.97 LSH - - - - - Manual scene recording started.

```

```

10:07:04.97 USH - - - - Manual scene recording started.
10:07:11.02 USH - - 400 - VIS int.time changed from 5ms to 400ms.
10:07:14.21 USH - - - 300 NIR int.time changed from 5ms to 300ms.
10:07:17.77 LSH - - - 600 - VIS int.time changed from 5ms to 600ms.
10:07:21.51 LSH - - - 600 NIR int.time changed from 5ms to 600ms.
10:07:30.45 SWS - - - 600 - VIS int.time changed from 200ms to 600ms.
10:12:35.82 --- - - - -
10:12:35.82 --- - - - - +++ SOFTWARE START/RESTART +++
10:12:35.82 --- - - - - +++ hh:mm:ss.ff / Instr / Posn / Period /
tVIS/ tNIR / Comment +++
10:12:35.82 --- - - - - +++ Flight no. B344
10:12:35.82 --- - - - -
10:12:45.93 SWS - - - - Initialization: VIS OK NIR FAILED
10:13:00.66 SWS - - - - 5 NIR int.time changed from 5ms to 5ms.
10:13:07.43 SWS - - - 400 - VIS int.time changed from 5ms to 400ms.
10:13:07.44 SWS - - - - 400 NIR int.time changed from 5ms to 400ms.
10:13:14.90 USH - - - - 5 NIR int.time changed from 5ms to 5ms.
10:13:19.46 USH - - - 600 - VIS int.time changed from 5ms to 600ms.
10:13:19.47 USH - - - - 600 NIR int.time changed from 5ms to 600ms.
10:13:22.92 LSH - - - - 5 NIR int.time changed from 5ms to 5ms.
10:13:27.94 LSH - - - - 5 NIR int.time changed from 5ms to 5ms.
10:13:28.69 LSH - - - - 5 NIR int.time changed from 5ms to 5ms.
10:13:31.59 LSH - - - 600 - VIS int.time changed from 5ms to 600ms.
10:13:31.59 LSH - - - - 600 NIR int.time changed from 5ms to 600ms.
10:14:31.08 USH - - - - Initialization: VIS OK NIR OK
10:14:31.55 LSH - - - - Initialization: VIS OK NIR OK
10:14:55.35 --- - - - - Reset shutters.
10:15:08.25 USH - - - - Manual scene recording started.
10:15:08.25 LSH - - - - Manual scene recording started.
10:15:15.56 USH - - - - Idling
10:15:15.82 LSH - - - - Idling
10:15:17.54 USH - - - - Dark measurement started.
10:15:20.16 LSH - - - - Dark measurement started.
10:15:23.97 USH - - - - Idling
10:15:26.58 LSH - - - - Idling
10:15:27.53 LSH - - - - Manual scene recording started.
10:15:27.54 USH - - - - Manual scene recording started.
10:15:39.36 SWS - - - - Telescope motor initialised.
10:18:47.38 SWS -0.0 - - - - Telescope sent to 121.317
10:18:49.05 SWS 121.3 - - - - Telescope stopped.
10:22:41.38 SWS 121.3 - - - - Telescope sent to 120.817
10:22:42.80 SWS 120.8 - - - - Telescope sent to 120.317
10:22:51.44 SWS 120.3 - - - - Telescope sent to 120.000
10:40:03.21 USH - - - - Warning: Clipping may be occurring.
10:40:18.80 USH - - - - Warning: Clipping may be occurring.
10:40:36.88 USH - - - - Warning: Clipping may be occurring.
10:40:42.76 USH - - - 600 NIR int.time changed from 600ms to 600ms.
10:40:45.98 USH - - - 400 - VIS int.time changed from 600ms to 400ms.
10:40:51.49 USH - - - - Dark measurement started.
10:40:52.31 USH - - - - Warning: Abnormally bright dark measurement.
10:40:57.09 LSH - - - - Idling
10:40:57.94 USH - - - - Manual scene recording started.
10:41:01.25 USH - - - - Idling
10:41:02.75 USH - - - - Dark measurement started.
10:41:02.75 LSH - - - - Dark measurement started.
10:41:03.57 USH - - - - Warning: Abnormally bright dark measurement.
10:41:03.77 LSH - - - - Warning: Abnormally bright dark measurement.
10:41:08.92 --- - - - - Reset shutters.
10:41:09.20 USH - - - - Idling
10:41:09.40 LSH - - - - Idling
10:41:15.60 USH - - - - Dark measurement started.
10:41:21.42 LSH - - - - Dark measurement started.
10:41:22.04 USH - - - - Idling
10:41:27.85 LSH - - - - Idling
10:41:28.55 LSH - - - - Manual scene recording started.
10:41:28.55 USH - - - - Manual scene recording started.
10:45:59.62 SWS 120.0 - - - - Telescope sent to -7.000
10:46:01.30 SWS -7.0 - - - - Telescope stopped.
10:51:47.72 USH - - - - Idling

```

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10:51:47.74 LSH - - - - Idling
10:51:50.26 LSH - - - - Dark measurement started.
10:51:50.26 USH - - - - Dark measurement started.
10:51:56.69 LSH - - - - Idling
10:51:56.91 USH - - - - Idling
10:51:57.54 LSH - - - - Manual scene recording started.
10:51:57.54 USH - - - - Manual scene recording started.
10:53:04.34 SWS - 100 - - Sample period changed from 250ms to 100ms.
10:53:09.28 SWS - 250 - - Sample period changed from 100ms to 250ms.
10:53:16.48 SWS - - 600 - VIS int.time changed from 400ms to 600ms.
10:53:16.50 SWS - - - 600 NIR int.time changed from 400ms to 600ms.
10:53:54.31 LSH - - - - Warning: Clipping may be occurring.
10:59:14.20 --- - - - -
10:59:14.22 --- - - - - +++ SOFTWARE START/RESTART +++
10:59:14.22 --- - - - - +++ hh:mm:ss.ff / Instr / Posn / Period /
tVIS/ tNIR / Comment +++
10:59:14.22 --- - - - - +++ Flight no. B344a
10:59:26.31 SWS - - - - Initialization: VIS OK NIR FAILED
10:59:32.07 USH - - - - Initialization: VIS OK NIR OK
10:59:32.54 LSH - - - - Initialization: VIS OK NIR OK
11:05:46.88 --- - - - -
11:05:46.88 --- - - - - +++ SOFTWARE START/RESTART +++
11:05:46.88 --- - - - - +++ hh:mm:ss.ff / Instr / Posn / Period /
tVIS/ tNIR / Comment +++
11:05:46.88 --- - - - - +++ Flight no. B344a
11:05:46.88 --- - - - -
11:05:56.56 SWS - - - - Initialization: VIS OK NIR FAILED
11:06:03.86 USH - - - - Initialization: VIS OK NIR OK
11:06:05.58 LSH - - - - Initialization: VIS OK NIR OK
11:07:46.34 USH - - - 5 NIR int.time changed from 5ms to 5ms.
11:07:50.58 USH - - 400 - VIS int.time changed from 5ms to 400ms.
11:07:50.58 USH - - - 400 NIR int.time changed from 5ms to 400ms.
11:07:52.41 LSH - - - 5 NIR int.time changed from 5ms to 5ms.
11:07:56.00 LSH - - 600 - VIS int.time changed from 5ms to 600ms.
11:07:56.01 LSH - - 600 NIR int.time changed from 5ms to 600ms.
11:08:07.95 SWS - - 300 - VIS int.time changed from 5ms to 300ms.
11:08:11.53 --- - - - - Reset shutters.
11:08:17.42 USH - - - - Manual scene recording started.
11:08:17.42 LSH - - - - Manual scene recording started.
11:08:17.42 SWS - - - - Manual scene recording started.
11:08:18.70 SWS - - - - Warning: Clipping may be occurring.
11:08:24.52 SWS - - - - Warning: Clipping may be occurring.
11:08:26.05 SWS - - 100 - VIS int.time changed from 300ms to 100ms.
11:08:31.42 LSH - - 400 - VIS int.time changed from 600ms to 400ms.
11:08:31.43 LSH - - - 400 NIR int.time changed from 600ms to 400ms.
11:08:36.45 USH - - 300 - VIS int.time changed from 400ms to 300ms.
11:08:36.46 USH - - - 300 NIR int.time changed from 400ms to 300ms.
11:08:40.42 USH - - - - Idling
11:08:40.45 SWS - - - - Idling
11:08:40.58 LSH - - - - Idling
11:08:41.33 SWS - - - - Dark measurement started.
11:08:41.33 LSH - - - - Dark measurement started.
11:08:41.34 USH - - - - Dark measurement started.
11:08:42.76 SWS - - - - Idling
11:08:45.17 USH - - - - Idling
11:08:45.98 LSH - - - - Idling
11:08:46.33 SWS - - - - Manual scene recording started.
11:08:46.33 LSH - - - - Manual scene recording started.
11:08:46.34 USH - - - - Manual scene recording started.
11:11:17.52 LSH - - - - Warning: Clipping may be occurring.
11:12:01.06 LSH - - - 400 NIR int.time changed from 400ms to 400ms.
11:12:02.30 LSH - - - 400 NIR int.time changed from 400ms to 400ms.
11:12:06.46 LSH - - - 400 NIR int.time changed from 400ms to 400ms.
11:12:09.71 LSH - - - 600 NIR int.time changed from 400ms to 600ms.
11:12:11.99 LSH - - 300 - VIS int.time changed from 400ms to 300ms.
11:12:15.86 USH - - - 300 NIR int.time changed from 300ms to 300ms.
11:12:18.04 USH - - - 600 NIR int.time changed from 300ms to 600ms.
11:12:30.08 SWS - - 300 - VIS int.time changed from 100ms to 300ms.

```

11:12:35.24	SWS	-	-	-	-	Idling
11:12:35.39	USH	-	-	-	-	Idling
11:12:35.48	LSH	-	-	-	-	Idling
11:12:38.26	SWS	-	-	-	-	Dark measurement started.
11:12:38.26	LSH	-	-	-	-	Dark measurement started.
11:12:38.27	USH	-	-	-	-	Dark measurement started.
11:12:38.78	SWS	-	-	-	-	Warning: Abnormally bright dark measurement.
11:12:39.28	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
11:12:39.48	USH	-	-	-	-	Warning: Abnormally bright dark measurement.
11:12:41.70	SWS	-	-	-	-	Idling
11:12:44.91	LSH	-	-	-	-	Idling
11:12:45.11	USH	-	-	-	-	Idling
11:12:48.90	SWS	-	-	-	-	Dark measurement started.
11:12:48.91	LSH	-	-	-	-	Dark measurement started.
11:12:48.93	USH	-	-	-	-	Dark measurement started.
11:12:49.43	SWS	-	-	-	-	Warning: Abnormally bright dark measurement.
11:12:49.93	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
11:12:50.13	USH	-	-	-	-	Warning: Abnormally bright dark measurement.
11:12:52.34	SWS	-	-	-	-	Idling
11:12:52.95	---	-	-	-	-	Reset shutters.
11:12:55.56	LSH	-	-	-	-	Idling
11:12:55.76	USH	-	-	-	-	Idling
11:12:58.46	SWS	-	-	-	-	Dark measurement started.
11:12:58.46	LSH	-	-	-	-	Dark measurement started.
11:12:58.47	USH	-	-	-	-	Dark measurement started.
11:13:01.90	SWS	-	-	-	-	Idling
11:13:05.11	LSH	-	-	-	-	Idling
11:13:05.30	USH	-	-	-	-	Idling
11:13:09.43	SWS	-	-	-	-	Manual scene recording started.
11:13:09.43	LSH	-	-	-	-	Manual scene recording started.
11:13:09.44	USH	-	-	-	-	Manual scene recording started.
11:18:19.96	SWS	-	-	-	-	Telescope motor initialised.
11:18:20.38	SWS	-	-	-	-	Telescope disabled.
11:18:26.72	SWS	-	-	-	-	Telescope motor initialised.
11:18:39.79	SWS	-	-	-	-	Telescope disabled.
11:19:28.09	SWS	-	-	-	-	Telescope motor initialised.
11:19:37.34	SWS	0.0	-	-	-	Telescope sent to -6.000
11:21:08.75	SWS	-	-	600	-	VIS int.time changed from 300ms to 600ms.
11:21:14.68	SWS	-	-	-	-	Dark measurement started.
11:21:15.50	SWS	-	-	-	-	Warning: Abnormally bright dark measurement.
11:21:21.12	SWS	-	-	-	-	Manual scene recording started.
11:21:25.68	SWS	-	-	-	-	Idling
11:21:27.99	SWS	-	-	-	-	Dark measurement started.
11:21:28.82	SWS	-	-	-	-	Warning: Abnormally bright dark measurement.
11:21:34.42	SWS	-	-	-	-	Idling
11:21:35.93	USH	-	-	-	-	Idling
11:21:35.99	LSH	-	-	-	-	Idling
11:21:37.85	SWS	-	-	-	-	Dark measurement started.
11:21:37.85	LSH	-	-	-	-	Dark measurement started.
11:21:37.86	USH	-	-	-	-	Dark measurement started.
11:21:38.68	SWS	-	-	-	-	Warning: Abnormally bright dark measurement.
11:21:38.88	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
11:21:39.08	USH	-	-	-	-	Warning: Abnormally bright dark measurement.
11:21:43.54	---	-	-	-	-	Reset shutters.
11:21:44.29	SWS	-	-	-	-	Idling
11:21:44.50	LSH	-	-	-	-	Idling
11:21:44.71	USH	-	-	-	-	Idling
11:21:49.68	SWS	-	-	-	-	Dark measurement started.
11:21:49.68	LSH	-	-	-	-	Dark measurement started.
11:21:49.70	USH	-	-	-	-	Dark measurement started.
11:21:56.11	SWS	-	-	-	-	Idling
11:21:56.33	LSH	-	-	-	-	Idling
11:21:56.52	USH	-	-	-	-	Idling
11:21:57.47	SWS	-	-	-	-	Manual scene recording started.
11:21:57.48	LSH	-	-	-	-	Manual scene recording started.
11:21:57.48	USH	-	-	-	-	Manual scene recording started.
11:33:01.15	USH	-	-	-	-	Idling
11:33:01.52	LSH	-	-	-	-	Idling
11:33:01.65	SWS	-	-	-	-	Idling

11:33:04.81	SWS	-	-	-	-	Dark measurement started.
11:33:04.82	LSH	-	-	-	-	Dark measurement started.
11:33:04.82	USH	-	-	-	-	Dark measurement started.
11:33:11.24	SWS	-	-	-	-	Idling
11:33:11.48	LSH	-	-	-	-	Idling
11:33:11.65	USH	-	-	-	-	Idling
11:33:12.44	SWS	-	-	-	-	Manual scene recording started.
11:33:12.45	LSH	-	-	-	-	Manual scene recording started.
11:33:12.46	USH	-	-	-	-	Manual scene recording started.
11:34:28.85	---	-	-	-	-	*** fl330 box patterns coming up
11:34:48.42	---	-	-	-	-	*** start box heading 253deg
11:35:13.32	SWS	-6.0	-	-	-	Telescope sent to -5.500
11:36:00.02	---	-	-	-	-	*** this is Run1.1
11:39:39.52	---	-	-	-	-	*** end
11:39:47.48	LSH	-	-	-	-	Warning: Clipping may be occurring.
11:39:59.35	LSH	-	-	-	-	Warning: Clipping may be occurring.
11:40:00.88	---	-	-	-	-	*** turning
11:41:34.06	---	-	-	-	-	*** start run 1.2 heading 349ged
11:46:32.09	---	-	-	-	-	*** end run
11:46:39.77	SWS	-5.5	-	-	-	Telescope sent to 58.320
11:46:40.50	SWS	-	-	-	-	Warning: Clipping may be occurring.
11:46:40.90	SWS	58.3	-	-	-	Telescope stopped.
11:46:57.49	SWS	58.3	-	-	-	Telescope sent to -5.500
11:46:58.61	SWS	-5.5	-	-	-	Telescope stopped.
11:47:32.10	LSH	-	-	-	-	Idling
11:47:32.11	USH	-	-	-	-	Idling
11:47:32.17	SWS	-	-	-	-	Idling
11:47:34.89	USH	-	-	-	-	Dark measurement started.
11:47:34.90	LSH	-	-	-	-	Dark measurement started.
11:47:34.90	SWS	-	-	-	-	Dark measurement started.
11:47:41.34	USH	-	-	-	-	Idling
11:47:41.54	LSH	-	-	-	-	Idling
11:47:41.72	SWS	-	-	-	-	Idling
11:47:54.50	SWS	-	-	-	-	Manual scene recording started.
11:47:54.50	LSH	-	-	-	-	Manual scene recording started.
11:47:54.51	USH	-	-	-	-	Manual scene recording started.
11:48:48.48	---	-	-	-	-	*** start run 1.3 heading 081 deg
11:53:49.20	---	-	-	-	-	*** end run 1.3
11:54:14.54	---	-	-	-	-	*** turning back 180 deg to get back into clearer air
11:54:39.93	---	-	-	-	-	*** SID probe seeing particles in the last min of previous run
11:55:25.11	---	-	-	-	-	*** southbound leg to commence when we're in clearer air
11:55:53.62	LSH	-	-	-	-	Idling
11:55:53.71	USH	-	-	-	-	Idling
11:55:53.86	SWS	-	-	-	-	Idling
11:56:01.55	USH	-	-	-	-	Dark measurement started.
11:56:01.55	LSH	-	-	-	-	Dark measurement started.
11:56:01.56	SWS	-	-	-	-	Dark measurement started.
11:56:07.98	USH	-	-	-	-	Idling
11:56:08.19	LSH	-	-	-	-	Idling
11:56:08.38	SWS	-	-	-	-	Idling
11:56:14.12	SWS	-	-	-	-	Manual scene recording started.
11:56:14.12	LSH	-	-	-	-	Manual scene recording started.
11:56:14.13	USH	-	-	-	-	Manual scene recording started.
11:57:37.58	---	-	-	-	-	*** start reciprocal run 1.4
11:57:54.17	---	-	-	-	-	*** heading 258deg
12:01:10.47	---	-	-	-	-	*** end run
12:01:21.92	USH	-	-	-	-	Warning: Clipping may be occurring.
12:03:09.84	---	-	-	-	-	*** starting into sun run 1.5 heading 175deg
12:06:32.98	---	-	-	-	-	*** upper shims dip was contrail 6000ft above us.
12:09:37.20	---	-	-	-	-	*** end run
12:12:16.77	---	-	-	-	-	*** start P1 from FL330 to 50ft
12:21:02.50	LSH	-	-	600	-	VIS int.time changed from 300ms to 600ms.
12:21:06.52	LSH	-	-	-	-	Idling
12:21:06.57	USH	-	-	-	-	Idling
12:21:06.64	SWS	-	-	-	-	Idling

12:21:11.56	USH	-	-	-	-	Dark measurement started.
12:21:11.56	LSH	-	-	-	-	Dark measurement started.
12:21:11.59	SWS	-	-	-	-	Dark measurement started.
12:21:18.01	USH	-	-	-	-	Idling
12:21:18.21	LSH	-	-	-	-	Idling
12:21:18.41	SWS	-	-	-	-	Idling
12:21:19.04	SWS	-	-	-	-	Manual scene recording started.
12:21:19.05	LSH	-	-	-	-	Manual scene recording started.
12:21:19.05	USH	-	-	-	-	Manual scene recording started.
12:22:35.86	SWS	-5.5	-	-	-	Telescope sent to -5.000
12:22:36.82	SWS	-5.0	-	-	-	Telescope sent to -4.500
12:22:41.28	SWS	-4.5	-	-	-	Telescope sent to -4.500
12:23:26.23	---	-	-	-	-	*** int P1 at FL220
12:25:14.28	USH	-	-	-	-	Warning: Clipping may be occurring.
12:25:23.62	---	-	-	-	-	*** turning
12:26:02.99	LSH	-	-	-	-	Warning: Clipping may be occurring.
12:26:42.23	---	-	-	-	-	*** restart P1 to 50ft
12:27:07.78	SWS	-	-	-	-	Idling
12:27:07.81	USH	-	-	-	-	Idling
12:27:07.89	LSH	-	-	-	-	Idling
12:27:11.30	LSH	-	-	300	-	VIS int.time changed from 600ms to 300ms.
12:27:13.53	SWS	-	-	-	-	Dark measurement started.
12:27:13.53	LSH	-	-	-	-	Dark measurement started.
12:27:13.54	USH	-	-	-	-	Dark measurement started.
12:27:19.97	SWS	-	-	-	-	Idling
12:27:20.45	USH	-	-	-	-	Idling
12:27:20.45	LSH	-	-	-	-	Idling
12:27:23.03	LSH	-	-	-	-	Manual scene recording started.
12:27:23.03	USH	-	-	-	-	Manual scene recording started.
12:27:23.04	SWS	-	-	-	-	Manual scene recording started.
12:28:45.22	SWS	-4.5	-	-	-	Telescope sent to 175.500
12:28:46.37	SWS	-	-	-	-	Warning: Clipping may be occurring.
12:28:46.90	SWS	173.9	-	-	-	Telescope stopped.
12:28:52.81	SWS	-	-	200	-	VIS int.time changed from 600ms to 200ms.
12:28:56.19	SWS	-	-	-	-	Idling
12:28:57.30	SWS	-	-	-	-	Dark measurement started.
12:28:59.73	SWS	-	-	-	-	Idling
12:29:02.55	SWS	-	-	-	-	Manual scene recording started.
12:29:28.83	SWS	-	-	-	-	Warning: Clipping may be occurring.
12:29:32.99	SWS	-	-	-	-	Idling
12:29:35.50	SWS	-	-	100	-	VIS int.time changed from 200ms to 100ms.
12:29:36.96	SWS	-	-	-	-	Dark measurement started.
12:29:38.65	SWS	-	-	-	-	Idling
12:29:41.52	SWS	-	-	-	-	Manual scene recording started.
12:39:49.33	---	-	-	-	-	*** 7/8 SC cloud below during this profile descent
12:40:09.16	---	-	-	-	-	*** int P1 at FL100
12:40:27.91	---	-	-	-	-	*** turning
12:41:21.27	LSH	-	-	-	-	Warning: Clipping may be occurring.
12:41:35.00	LSH	-	-	-	-	Warning: Clipping may be occurring.
12:42:40.23	---	-	-	-	-	*** restart P1
12:47:40.00	SWS	175.5	-	-	-	Telescope sent to 175.000
12:47:43.32	SWS	175.0	-	-	-	Telescope sent to 174.500
12:47:47.77	SWS	174.5	-	-	-	Telescope sent to 175.000
12:47:48.75	SWS	175.0	-	-	-	Telescope sent to 175.500
12:47:52.43	SWS	175.5	-	-	-	Telescope sent to 176.000
12:48:08.58	SWS	176.0	-	-	-	Telescope sent to 176.500
12:48:10.02	SWS	176.5	-	-	-	Telescope sent to 177.000
12:50:27.92	---	-	-	-	-	*** in cloud tops at 2500ft
12:50:39.66	SWS	177.0	-	-	-	Telescope sent to -3.000
12:50:40.44	SWS	-	-	-	-	Warning: Clipping may be occurring.
12:50:41.36	SWS	-1.6	-	-	-	Telescope stopped.
12:51:54.50	SWS	-	-	-	-	Warning: Clipping may be occurring.
12:52:15.04	---	-	-	-	-	*** int P1 at 1000ft
12:52:24.49	SWS	-	-	-	-	Warning: Clipping may be occurring.
12:52:26.56	SWS	-	-	-	-	Idling
12:52:26.62	LSH	-	-	-	-	Idling
12:52:26.80	USH	-	-	-	-	Idling
12:52:31.54	USH	-	-	400	-	VIS int.time changed from 300ms to 400ms.

```

12:52:34.43 LSH - - 600 - VIS int.time changed from 300ms to 600ms.
12:52:37.77 SWS - - 50 - VIS int.time changed from 100ms to 50ms.
12:52:39.52 USH - - - - Dark measurement started.
12:52:39.52 LSH - - - - Dark measurement started.
12:52:39.54 SWS - - - - Dark measurement started.
12:52:41.17 SWS - - - - Idling
12:52:46.21 USH - - - - Idling
12:52:46.46 LSH - - - - Idling
12:52:47.09 USH - - - - Manual scene recording started.
12:52:47.09 LSH - - - - Manual scene recording started.
12:52:47.10 SWS - - - - Manual scene recording started.
12:52:52.53 --- - - - - *** restart P1
12:54:20.33 --- - - - - ***
12:54:20.76 SWS -3.0 - - - - Telescope sent to -2.500
12:54:22.86 SWS -2.5 - - - - Telescope sent to -3.000
12:54:23.70 SWS -3.0 - - - - Telescope sent to -3.500
12:54:24.15 SWS -3.5 - - - - Telescope sent to -4.000
12:54:25.04 SWS -4.0 - - - - Telescope sent to -4.500
12:54:25.47 SWS -4.5 - - - - Telescope sent to -5.000
12:54:42.59 --- - - - - *** end P1 at 50ft
12:54:57.94 SWS -5.0 - - - - Telescope sent to -4.500
12:54:58.29 SWS -4.5 - - - - Telescope sent to -4.000
12:54:58.61 SWS -4.0 - - - - Telescope sent to -3.500
12:55:02.51 SWS -3.5 - - - - Telescope sent to -4.000
12:55:03.07 SWS -4.0 - - - - Telescope sent to -4.500
12:55:03.39 SWS -4.5 - - - - Telescope sent to -5.000
12:55:03.85 SWS -5.0 - - - - Telescope sent to -5.500
12:55:06.66 SWS -5.5 - - - - Telescope sent to -6.000
12:55:15.70 USH - - - - Warning: Clipping may be occurring.
12:55:17.14 --- - - - - *** start R 2
12:55:21.19 --- - - - - *** at 100ft
12:55:47.39 SWS -6.0 - - - - Telescope sent to -5.500
12:57:59.94 SWS - - - - Idling
12:58:04.95 SWS - - 200 - VIS int.time changed from 50ms to 200ms.
12:58:08.56 SWS - - - - Dark measurement started.
12:58:11.23 SWS - - - - Idling
12:58:12.41 SWS - - - - Manual scene recording started.
12:59:08.91 SWS - - - - Warning: Clipping may be occurring.
12:59:14.63 SWS - - - - Warning: Clipping may be occurring.
13:00:07.21 SWS - - - - Warning: Clipping may be occurring.
13:00:13.19 SWS - - - - Warning: Clipping may be occurring.
13:00:20.54 SWS - - - - Warning: Clipping may be occurring.
13:00:30.34 SWS - - - - Warning: Clipping may be occurring.
13:00:32.84 SWS - - - - Idling
13:00:38.49 SWS - - 75 - VIS int.time changed from 200ms to 75ms.
13:00:41.03 SWS - - - - Dark measurement started.
13:00:42.45 SWS - - - - Idling
13:00:43.06 SWS - - - - Manual scene recording started.
13:05:16.45 SWS -5.5 - - - - Telescope sent to 174.500
13:05:18.12 SWS 173.4 - - - - Telescope stopped.
13:05:36.05 --- - - - - *** looking at sea surface for 10 mins
13:05:42.27 SWS - - - - Idling
13:05:47.41 SWS - - 300 - VIS int.time changed from 75ms to 300ms.
13:05:49.36 SWS - - - - Dark measurement started.
13:05:53.03 SWS - - - - Idling
13:05:53.56 SWS - - - - Manual scene recording started.
13:06:10.37 USH - - - - Warning: Clipping may be occurring.
13:10:31.00 USH - - - - Warning: Clipping may be occurring.
13:12:34.69 SWS - - - - Warning: Clipping may be occurring.
13:12:39.43 USH - - - - Warning: Clipping may be occurring.
13:13:03.82 --- - - - - *** sc well broken above
13:15:02.63 --- - - - - *** end of run at 100ft
13:15:32.54 SWS 174.5 - - - - Telescope sent to -5.500
13:15:33.60 SWS - - - - Warning: Clipping may be occurring.
13:15:34.26 SWS -4.6 - - - - Telescope stopped.
13:15:42.02 SWS - - - - Idling
13:15:42.09 USH - - - - Idling
13:15:42.29 LSH - - - - Idling
13:15:49.92 SWS - - 75 - VIS int.time changed from 300ms to 75ms.

```

13:16:00.66	USH	-	-	-	-	Dark measurement started.
13:16:00.66	LSH	-	-	-	-	Dark measurement started.
13:16:00.67	SWS	-	-	-	-	Dark measurement started.
13:16:02.49	SWS	-	-	-	-	Idling
13:16:07.12	USH	-	-	-	-	Idling
13:16:07.32	LSH	-	-	-	-	Idling
13:17:09.03	SWS	-	-	-	-	Manual scene recording started.
13:17:09.04	LSH	-	-	-	-	Manual scene recording started.
13:17:09.05	USH	-	-	-	-	Manual scene recording started.
13:17:48.71	LSH	-	-	-	-	Warning: Clipping may be occurring.
13:17:54.99	SWS	-	-	-	-	Idling
13:17:55.13	USH	-	-	-	-	Idling
13:17:55.58	LSH	-	-	-	-	Idling
13:17:59.06	LSH	-	-	300	-	VIS int.time changed from 600ms to 300ms.
13:18:05.31	USH	-	-	300	-	VIS int.time changed from 400ms to 300ms.
13:18:08.59	SWS	-	-	-	-	Dark measurement started.
13:18:08.59	LSH	-	-	-	-	Dark measurement started.
13:18:08.60	USH	-	-	-	-	Dark measurement started.
13:18:10.08	SWS	-	-	-	-	Idling
13:18:14.39	SWS	-	-	-	-	Manual scene recording started.
13:18:15.50	LSH	-	-	-	-	Idling
13:18:15.73	USH	-	-	-	-	Idling
13:18:22.10	LSH	-	-	-	-	Manual scene recording started.
13:18:22.10	USH	-	-	-	-	Manual scene recording started.
13:19:09.76	SWS	-5.5	-	-	-	Telescope sent to -5.000
13:19:11.46	SWS	-5.0	-	-	-	Telescope sent to -4.500
13:19:12.39	SWS	-4.5	-	-	-	Telescope sent to -4.000
13:19:12.90	SWS	-4.0	-	-	-	Telescope sent to -3.500
13:19:25.99	SWS	-	-	-	-	Idling
13:19:26.19	USH	-	-	-	-	Idling
13:19:26.22	LSH	-	-	-	-	Idling
13:19:29.24	LSH	-	-	200	-	VIS int.time changed from 300ms to 200ms.
13:19:39.16	SWS	-	-	40	-	VIS int.time changed from 75ms to 40ms.
13:19:41.35	SWS	-	-	-	-	Dark measurement started.
13:19:41.36	LSH	-	-	-	-	Dark measurement started.
13:19:41.37	USH	-	-	-	-	Dark measurement started.
13:19:42.61	SWS	-	-	-	-	Idling
13:19:48.30	LSH	-	-	-	-	Idling
13:19:48.31	USH	-	-	-	-	Idling
13:19:49.61	LSH	-	-	-	-	Manual scene recording started.
13:19:49.62	SWS	-	-	-	-	Manual scene recording started.
13:19:49.64	USH	-	-	-	-	Manual scene recording started.
13:20:02.54	---	-	-	-	-	*** start orbit 1 right
13:20:03.94	USH	-	-	-	-	Warning: Clipping may be occurring.
13:20:26.37	---	-	-	-	-	*** start
13:20:31.59	LSH	-	-	-	-	Warning: Clipping may be occurring.
13:20:44.26	---	-	-	-	-	*** 60 Deg aob right at FL050
13:20:50.98	SWS	-3.5	-	-	-	Telescope sent to -3.000
13:20:51.87	SWS	-3.0	-	-	-	Telescope sent to -2.500
13:20:52.72	SWS	-2.5	-	-	-	Telescope sent to -2.000
13:20:53.55	SWS	-2.0	-	-	-	Telescope sent to -1.500
13:20:55.54	SWS	-1.5	-	-	-	Telescope sent to -2.000
13:20:55.86	SWS	-2.0	-	-	-	Telescope sent to -2.500
13:21:05.03	USH	-	-	-	-	Warning: Clipping may be occurring.
13:21:32.10	LSH	-	-	-	-	Warning: Clipping may be occurring.
13:22:03.39	---	-	-	-	-	*** end orbit
13:22:52.61	---	-	-	-	-	*** end sortie
13:23:15.97	USH	-	-	-	-	Warning: Clipping may be occurring.

ARIES flight log

Flight: R 344

page 1 of

Date: 25/01/08

Operator(s): D. D. DEMAN

Res: 1

Gain A: 2 B: 2

Loc./Notes:

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

DRS time	Fit ptrn	Scans	View	Shtr	HBB	CBB	Comments	32	mtg !
0958	Ground	3 noise check	-	C	44	24	Original pre-flight no engines		
102245	"	3 "	-	C	71	31	Original taxiing/procedure		
103700	Ascant	1 HCal	-	C	71	31	Ascant		
104119	" 130	2 Visurb	2	O	71	31	Took ~20min		
117750	FL280	130x1	N	C	71	31	Over Eke estuary		
117425	FL310	2 visurb	-	O	71	30	Stopped 112150		
112212	FL310	3 noise	-	C	71	31	Transit high up - inside Nadir		r20?
1127:00	FL320	"	-	C	71	30	"		Nadir+90
113134	FL320	2 visurb	-	O	71	31	Shutter was closed for the first little bit:		
115230	FL330	120x1	N	C	71	31			
115735	"	3 noise	-	C	71	30			
120310	"	3 noise	-	C	71	31			
120713	FL330x	2 visurb	-	O	71	31			
123046	x	2 visurb	-	O	71	30			
124034							Script fell over 35900% acquisition?		
124230	x	2 visurb					pressed escape		
124230	x	2 visurb	-	O	71	31	Restarted at 10000ft		
125130							Stopped with escape closed shutter as gaining through cloud		
125505	100ft	3 noise	-	C	71	31			
125835	"	2 visurb	-	O	71	31	Broken cloud above (Sc) Stopped early		
130906	Orbit	3 noise		C	71	31			
132302	Transit	2 visurb		O	71	31	Completed successfully		
134416	FL100	3 noise	-	C	71	31			
134630	"	2 visurb	-	O	71	31			
1355							Shutter closed		
140403	Ground	3 noise		C	71	31	Engines on		
140814	"	3 noise		C	71	31	Engines off		

Microwave Radiometers FLIGHT LOG		Date	25/01/08	Flight	B344	log pages	2
Operator(s)	Pollard		Campaign	Test			
Departure	Cranfield		Arrival	Cranfield			

**System start
MARSS**

Visual pod inspection							X
Close 3 SSP circuit breakers							X
Close all MARSS circuit breakers							X
FERA on				at time	08:11		
Temperature controller initial temps	Ch16	17.9°C	Ch	17.9	Ch18	17.0	
Temperature controller set points		50°C	17	50°C	-20	40°C	
MARSS CPU on				at time	08:13		
Initial target temperatures	Hot	289	Cold	286			
Target heating							X
*** CHECK SCAN HEAD CLEAR ***							
Scanning on (LMD box)				at time	08:40		
Scan indication			Monitor)		Visual	X

Deimos

Close all Deimos circuit breakers							X
Turn on Deimos CPU							X
*** CHECK SCAN HEAD CLEAR ***							
Start Deimos Software				at time	08:16		
Initial target temperatures	Hot	288.8	Cold	288.1			
Target heating							X
Scan indication			Monitor)		Visual	X
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	09:59			
Brightness temps 'sensible'							
Target temps	MARSS:	Hot	344.68	Cold	282.4		
	Deimos:	Hot	344.28	Cold	294.69		
Channel gains 'sensible'	Ch1 A	Ch3 A	Ch1 B	Ch3 B			
	(-)	(-)	(-)	(-)			
	57.17	30.26	58.09	29.38			
	Ch16	Ch17	Ch18	Ch19	Ch20		
	(40-44)	(45-49)	(40-44)	(40-44)	(44-48)		
	39.9	33.69	39.54	41.44	43.17		

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	

CVI log

1/25/08 8:59:49 AM Hygro zero'd
1/25/08 9:36:08 AM Counterflow on
1/25/08 9:59:13 AM From yesterday's callib - bins/buckets 1,2 & 3 still un-reliable
- 4 onwards should be OK.
1/25/08 10:54:25 AM Out of CVI mode whilst in clear air
1/25/08 10:55:17 AM PCASP flow adjusted
1/25/08 10:56:13 AM Bin 1&2 appear OK!
1/25/08 11:07:44 AM Just coming into cloud so back to CVI mode
1/25/08 11:08:52 AM Into Ci1
1/25/08 11:15:10 AM Currently out of Ci1 - however patchy so leaving in CVI mode for
now
1/25/08 11:32:14 AM Still in patchy Ci1
1/25/08 11:34:55 AM Start of run 1.1
1/25/08 11:39:43 AM End of run 1.1
1/25/08 11:45:09 AM leaving cvi mode whilst out of cloud
1/25/08 11:46:47 AM End of run 1.2
1/25/08 11:53:41 AM Back to cvi mode - prob just our con trail but better to be safe
1/25/08 11:53:54 AM end of run 1.3
1/25/08 11:57:44 AM start of run 1.4
1/25/08 12:01:16 PM end of run 1.4
1/25/08 12:03:15 PM start of run 1.5
1/25/08 12:12:07 PM start of profile 1 descent
1/25/08 12:15:16 PM out of cvi mode whilst out of cloud
1/25/08 12:22:20 PM back to cvi
1/25/08 12:23:30 PM interrupt of profile 1
1/25/08 12:26:54 PM profile 1 re-start
1/25/08 12:27:39 PM back out of cvi mode as in clear layer
1/25/08 12:31:10 PM con trails around per mission scientist
1/25/08 12:34:38 PM back in cvi mode
1/25/08 12:35:42 PM and out again
1/25/08 12:36:21 PM and back in for sc5 transit
1/25/08 12:40:18 PM profile interrupt
1/25/08 12:42:23 PM profile re-startt
1/25/08 12:49:27 PM passing through sc5
1/25/08 12:51:13 PM below sc5
1/25/08 12:55:11 PM start of run 2 st 100ft
1/25/08 12:56:51 PM quick exit from cvi mode
1/25/08 12:57:42 PM and back out again
1/25/08 12:58:40 PM flow adjusted and will remain for rest of flight
1/25/08 12:59:01 PM back to cvi mode
1/25/08 1:00:22 PM and out again
1/25/08 1:01:37 PM back in cvi mode
1/25/08 1:05:43 PM bins1,2 & 3 now over reading
1/25/08 1:15:00 PM end of run 2
1/25/08 1:16:06 PM into sc5
1/25/08 1:16:42 PM above cloud
1/25/08 1:16:52 PM out of cvi mode
1/25/08 1:19:54 PM start of orbit 1
1/25/08 1:22:09 PM end of orbit
1/25/08 1:23:29 PM end of sortie brief
1/25/08 1:27:11 PM zeroing lyman

Flight:

B344

KEY

Not Fitted

Fitted, Not Operated

Duff Data

Minor Problems

OK

Thermometers

Cabin Temperature:

Heimann:

Deiced Temp:

Non-deiced Temp:

Hygrometers

FWVS:

General Eastern:

Johnson Williams:

Nevezorov:

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:

Report Created 06/02/2008
15:40:25

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:

Last Updated:

01/02/2008 09:13:03

Cloud Probes

2DC:

2DP:

FFSSP:

PCASP:

2DS:

ADA:

CAPS:

CCN:

CDP:

CIP 100:

CIP 25:

CPI:

CVI:

SID1:

SID2:

Aerosol

CPC 3025A:

Filters 47mm:

Filters 90mm:

Neph - Dry:

Neph - Wet:

PSAP:

AMS:

CPC 3025 (AMS):

INC:

VACC:

CPC 3010A (CVI):

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:



Faults / Incidents Log

Flight No. B344

Date: 25 January 2008

Instruments

1. Core Console Aft PC – U/S. Set up FM laptop for Mission Scientist 3.
2. CGPS – u/s
3. HORACE – DRS program appeared to be crashing continuously. Deleted changes from yesterday ref GIN. Stopped all processes but DRS still showing recording. Rebooted then okay.
4. GPS – Receiver fault status bit set, Maint/CDU = 6000/1, Trkrs/Dynam = 6/3, all other indications look normal and working okay.
5. CPC – Pump switch does not appear to be operating properly i.e. the “-“ leds don’t go off and the “+” leds don’t come on. Reset power to instrument, then pump came on but indicators still showing “-“ on front panel
6. SWS – Problem with one of the channels pre-startup. Received message from Exeter suggesting solution. It worked! All fine from about 1100Z.
7. Neph Rack Drawer – not locked for t/o. Stopped short of runway and locked, then okay.
8. Printer – not printing colours
- 9.

TWC – Zero = 2016 DRSU – Okay at FL330, –60C for 45mins

Aircraft

- 1.

ISDN Emails

Nil connections

Satcom-H Calls

Nil

Issues –

Post Flight - Turb Probe Water Traps

1. Indicate Amount of Water: a) Nil b) 1-2 drops c) ¼ full or more d) Ice present
2. Emptied by:
3. Dried by:

MISSING LOG SHEETS:

The following log sheets are not available for flight B344:

Log	Reason
Pre-flight log	No log available
Core Chemistry	no In Flight log except in cases of instrument problems
PSAP log	No log as PSAP pump/filter info included on Flight Summary page

Document control

Revision	Date	Author	Comments
r0	17 Mar 2008	Doug Anderson	Initial version missing the above noted logs
r1			
r2			

VIDEO RECORDINGS:

2 x Upward Facing Cameras
2 x Down/Rearward Facing Cameras

Digital8 video recordings from this flight reside with :

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