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SWARM SPACECRAFT ANOMALIES AND MANOEUVRES HISTORY (till 16 June 2015)

ANOMALIES HISTORY IN PHASE E2

Date	SC	Subsys	Description	Repeat	ARTS reference	Comment
03/04/14	A	ACC	EDAC SEF	Y	SWARM-SC-8	Manual power recycle
09/04/14	C	ACC	EDAC SEF	Y	SWARM-SC-8	Manual power recycle
12/04/14	B	ACC	EDAC SEF	Y	SWARM-SC-8	Manual power recycle
13/04/14	A	ASM	TC's no longer processed	Y	SWARM-SC-18	Manual power recycle
14/04/14	B	ACC	EDAC SEF	Y	SWARM-SC-8	Manual power recycle
16/04/14	C	OBC	MMU stuck bit	Y	SWARM-SC-23	Manual power recycle
20/04/14	B	GPSR	LEON Cache Data Error Counter incremented from 0 to 1			Counter reset back to 0 by ground on 22/04/14
25/04/14	B	ACC	EDAC SEF	Y	SWARM-SC-8	Automatic power recycle (OBCP)
27/04/14	B	ACC	EDAC SEF	Y	SWARM-SC-8	Automatic power recycle (OBCP)
28/04/14	C	AOCS	Attitude cross-check status flag triggered	Y	SWARM-SC-31	
20/05/14	A	ACC	EDAC SEF	Y	SWARM-SC-8	Automatic power recycle (OBCP)
24/05/14	A	GPSR	Temporary loss of time synchronisation	N	SW_PERF-6	Auto-resynchronisation after xx s
01/06/14	A	OBC	MMU SEFI	Y	SWARM-SC-23	Soft MMU re-initialisation
08/06/14	A	OBC	MMU SEFI	Y	SWARM-SC-23	Soft MMU re-initialisation
09/06/14	B	ACC	EDAC SEF	Y	SWARM-SC-8	Automatic power recycle (OBCP)
10/06/14	C	GPSR	Temporary loss of time synchronisation	Y	SW_PERF-6	Auto-resynchronisation after 11s
25/06/14	B	VFM	70pT noise in y-measurement since 14/03/14	N		Manual power recycle
30/06/14	B	ACC	EDAC SEF	Y	SWARM-SC-8	Automatic power recycle (OBCP)
30/06/14	C	EFI TII	Image degradation	Y	SW-PERF-1	HV ramped-down manually
02/07/14	A	ACC	EDAC SEF	Y	SWARM-SC-8	Automatic power recycle (OBCP)
09/07/14	B	EFI TII	Image degradation	Y	SW-PERF-1	HV ramped-down manually
09/07/14	C	EFI TII	Image degradation	Y	SW-PERF-1	HV ramped-down manually
31/07/14	A	OBC	MMU stuck bit	Y	SWARM-SC-23	Manual power recycle
06/08/14	A	EFI TII	Image degradation	Y	SW-PERF-1	HV ramped-down manually
06/08/14	B	EFI TII	Image degradation	Y	SW-PERF-1	HV ramped-down manually

Date	SC	Subsys	Description	Repeat	ARTS reference	Comment
06/08/14	C	EFI TII	Image degradation	Y	SW-PERF-1	HV ramped-down manually
13/08/14	A	ACC	2x EDAC SEF	Y	SWARM-SC-8	Automatic power recycle (OBCP)
23/08/14	B	ACC	EDAC SEF	Y	SWARM-SC-8	Automatic power recycle (OBCP)
24/08/14	C	STR	STR autonomous reboot	N	SWARM-SC-33	
25/08/14	C	VFM	VFM loss of HKTM	N	SWARM-SC-32	
28/08/14	C	EFI TII	Image degradation	Y	SW-PERF-1	HV ramped-down manually
05/09/14	A	EFI TII	Image degradation	Y	SW-PERF-1	HV ramped-down manually
05/09/14	B	EFI TII	Image degradation	Y	SW-PERF-1	HV ramped-down manually
08/09/14	C	ACC	EDAC SEF	Y	SWARM-SC-8	Automatic power recycle (OBCP)
14/09/14	B	EFI TII	Image degradation	Y	SW-PERF-1	HV ramped-down manually
15/09/14	B	ACC	EDAC SEF	Y	SWARM-SC-8	Automatic power recycle (OBCP)
19/09/14	C	EFI TII	Image degradation	Y	SW-PERF-1	HV ramped-down manually
23/09/14	C	GPSR	Temporary loss of time synchronisation	Y	SW_PERF-6	Auto-resynchronisation after 11s
25/09/14	C	GPSR	Temporary loss of time synchronisation	Y	SW_PERF-6	Auto-resynchronisation after 11s
29/09/14	A	ACC	EDAC SEF	Y	SWARM-SC-8	Automatic power recycle (OBCP)
19/10/14	C	GPSR	Temporary loss of time synchronisation	Y	SW_PERF-6	Auto-resynchronisation
20/10/14	A	GPSR	Temporary loss of time synchronisation	Y	SW_PERF-6	Auto-resynchronisation
23/10/14	A	GPSR	Temporary loss of time synchronisation	Y	SW_PERF-6	Auto-resynchronisation
23/10/14	A	GPSR	Temporary loss of time synchronisation	Y	SW_PERF-6	Auto-resynchronisation
23/10/14	C	GPSR	Temporary loss of time synchronisation	Y	SW_PERF-6	Auto-resynchronisation
23/10/14	C	GPSR	Temporary loss of time synchronisation	Y	SW_PERF-6	Auto-resynchronisation
24/10/14	A	GPSR	Temporary loss of time synchronisation	Y	SW_PERF-6	Auto-resynchronisation
24/10/14	A	GPSR	Temporary loss of time synchronisation	Y	SW_PERF-6	Auto-resynchronisation
24/10/14	C	GPSR	Temporary loss of time synchronisation	Y	SW_PERF-6	Auto-resynchronisation
25/10/14	A	GPSR	Temporary loss of time synchronisation	Y	SW_PERF-6	Auto-resynchronisation
25/10/14	C	GPSR	Temporary loss of time synchronisation	Y	SW_PERF-6	Auto-resynchronisation
26/10/14	A	GPSR	Temporary loss of time synchronisation	Y	SW_PERF-6	Auto-resynchronisation
26/10/14	A	GPSR	Temporary loss of time synchronisation	Y	SW_PERF-6	Auto-resynchronisation
26/10/14	C	GPSR	Temporary loss of time synchronisation	Y	SW_PERF-6	Auto-resynchronisation

Date	SC	Subsys	Description	Repeat	ARTS reference	Comment
27/10/14	A	GPSR	Temporary loss of time synchronisation	Y	SW_PERF-6	Auto-resynchronisation
27/10/14	A	GPSR	Temporary loss of time synchronisation	Y	SW_PERF-6	Auto-resynchronisation
27/10/14	A	GPSR	Temporary loss of time synchronisation	Y	SW_PERF-6	Auto-resynchronisation
27/10/14	C	GPSR	Temporary loss of time synchronisation	Y	SW_PERF-6	Auto-resynchronisation
27/10/14	C	GPSR	Temporary loss of time synchronisation	Y	SW_PERF-6	Auto-resynchronisation
28/10/14	A	GPSR	Temporary loss of time synchronisation	Y	SW_PERF-6	Auto-resynchronisation
29/10/14	A	GPSR	Temporary loss of time synchronisation	Y	SW_PERF-6	Auto-resynchronisation
29/10/14	A	GPSR	Temporary loss of time synchronisation	Y	SW_PERF-6	Auto-resynchronisation
29/10/14	C	GPSR	Temporary loss of time synchronisation	Y	SW_PERF-6	Auto-resynchronisation
29/10/14	C	GPSR	Temporary loss of time synchronisation	Y	SW_PERF-6	Auto-resynchronisation
29/10/14	C	GPSR	Temporary loss of time synchronisation	Y	SW_PERF-6	Auto-resynchronisation
30/10/14	A	GPSR	Temporary loss of time synchronisation	Y	SW_PERF-6	Auto-resynchronisation
30/10/14	C	GPSR	Temporary loss of time synchronisation	Y	SW_PERF-6	Auto-resynchronisation
30/10/14	C	GPSR	Temporary loss of time synchronisation	Y	SW_PERF-6	Auto-resynchronisation
30/10/14	C	GPSR	Temporary loss of time synchronisation	Y	SW_PERF-6	Auto-resynchronisation
01/11/14	A	GPSR	2x Temporary loss of time synchronisation	Y	SW_PERF-6	Auto-resynchronisation
01/11/14	B	GPSR	Temporary loss of time synchronisation	Y	SW_PERF-6	Auto-resynchronisation
01/11/14	C	GPSR	Temporary loss of time synchronisation	Y	SW_PERF-6	Auto-resynchronisation
02/11/14	A	GPSR	3x Temporary loss of time synchronisation	Y	SW_PERF-6	Auto-resynchronisation
02/11/14	C	GPSR	2x Temporary loss of time synchronisation	Y	SW_PERF-6	Auto-resynchronisation
03/11/14	A	GPSR	Temporary loss of time synchronisation	Y	SW_PERF-6	Auto-resynchronisation
03/11/14	C	GPSR	Temporary loss of time synchronisation	Y	SW_PERF-6	Auto-resynchronisation
05/11/14	A	GPSR	Temporary loss of time synchronisation	Y	SW_PERF-6	Auto-resynchronisation
05/11/14	B	GPSR	Temporary loss of time synchronisation	Y	SW_PERF-6	Auto-resynchronisation
05/11/14	C	GPSR	Temporary loss of time synchronisation	Y	SW_PERF-6	Auto-resynchronisation
05/11/14	C	ASM	ASM switched off by FDIR	N	SWARM-SC-34	Remains failed
06/11/14	A	GPSR	2x Temporary loss of time synchronisation	Y	SW_PERF-6	Auto-resynchronisation
06/11/14	C	GPSR	4x Temporary loss of time synchronisation	Y	SW_PERF-6	Auto-resynchronisation
07/11/14	A	GPSR	Temporary loss of time synchronisation	Y	SW_PERF-6	Auto-resynchronisation

Date	SC	Subsys	Description	Repeat	ARTS reference	Comment
07/11/14	C	GPSR	Temporary loss of time synchronisation	Y	SW_PERF-6	Auto-resynchronisation
08/11/14	A	GPSR	Temporary loss of time synchronisation	Y	SW_PERF-6	Auto-resynchronisation
08/11/14	C	GPSR	2x Temporary loss of time synchronisation	Y	SW_PERF-6	Auto-resynchronisation
09/11/14	C	GPSR	Temporary loss of time synchronisation	Y	SW_PERF-6	Auto-resynchronisation
10/11/14	A	GPSR	2x Temporary loss of time synchronisation	Y	SW_PERF-6	Auto-resynchronisation
10/11/14	B	GPSR	Temporary loss of time synchronisation	Y	SW_PERF-6	Auto-resynchronisation
10/11/14	C	GPSR	3x Temporary loss of time synchronisation	Y	SW_PERF-6	Auto-resynchronisation
11/11/14	C	GPSR	2x Temporary loss of time synchronisation	Y	SW_PERF-6	Auto-resynchronisation
11/11/14	B	OBC	MMU SEFI	Y	SWARM-SC-23	
12/11/14	A	GPSR	Temporary loss of time synchronisation	Y	SW_PERF-6	Auto-resynchronisation
12/11/14	B	GPSR	Temporary loss of time synchronisation	Y	SW_PERF-6	Auto-resynchronisation
12/11/14	C	GPSR	Temporary loss of time synchronisation	Y	SW_PERF-6	Auto-resynchronisation
13/11/14	B	GPSR	Temporary loss of time synchronisation	Y	SW_PERF-6	Auto-resynchronisation
14/11/14	C	STR	STRE spurious re-boot	Y	SWARM-SC-33	Spacecraft in SAA
15/11/14	B	GPSR	Temporary loss of time synchronisation	Y	SW_PERF-6	Auto-resynchronisation
15/11/14	C	OBC	MMU SEFI	Y	SWARM-SC-23	
17/11/14	B	GPSR	2x Temporary loss of time synchronisation	Y	SW_PERF-6	Auto-resynchronisation
18/11/14	B	GPSR	Temporary loss of time synchronisation	Y	SW_PERF-6	Auto-resynchronisation
19/11/14	A	EFI	EDAC error	N		
19/11/14	B	GPSR	Temporary loss of time synchronisation	Y	SW_PERF-6	Auto-resynchronisation
22/11/14	B	GPSR	Temporary loss of time synchronisation	Y	SW_PERF-6	Auto-resynchronisation
28/11/14	C	OBC	MMU SEFI	Y	SWARM_SC-23	
02/12/14	B	ACC	Loss of TM	N	SWARM-SC-35	
04/12/14	A	ACC	EDAC SEF	Y	SWARM-SC-8	Automatic power recycle (OBCP)
17/12/14	B	ACC	EDAC SEF	Y	SWARM-SC-8	Automatic power recycle (OBCP)
30/12/14	A	GPSR	Temporary loss of time synchronisation	Y	SW_PERF-6	Auto-resynchronisation
30/12/14	B	ACC	EDAC SEF	Y	SW_PERF-2	Automatic power recycle (OBCP)
06/01/15	B	OBC	MMU SEFI 2x	Y	SW_PERF-8	
10/01/15	B	OBC	MMU SEFI	Y	SW_PERF-8	Soft reset executed on 11/01/15

Date	SC	Subsys	Description	Repeat	ARTS reference	Comment
10/01/15	B	VFM	VFM science packets corrupted.	N	SWARM_SC-36	Cured by power cycle
12/01/15	B	ACC	EDAC SEF	Y	SW_PERF-2	Automatic power recycle (OBCP)
12/01/15	A	GPSR	Temporary loss of time synchronisation	Y	SW_PERF-6	Auto-resynchronisation
17/01/15	B	OBC	MMU SEFI	Y	SW_PERF-8	
18/01/15	A	EFI	EDAC error	Y		
18/01/15	B	ACC	EDAC SEF	Y	SW_PERF-2	Automatic power recycle (OBCP)
29/01/15	C	ACC	EDAC SEF	Y	SW_PERF-2	Automatic power recycle (OBCP)
05/02/15	C	ACC	EDAC SEF	Y	SW_PERF-2	Automatic power recycle (OBCP)
11/02/15	A	OBC	2x MMU SEFI	Y	SW_PERF-8	
15/02/15	A	ACC	EDAC SEF	Y	SW_PERF-2	Automatic power recycle (OBCP)
19/02/15	B	GPSR	LEON data cache tag error counter incremented from 0 to 3	Y		Counter reset back to 0 by ground on 19/02/15
24/02/15	A	ACC	EDAC SEF	Y	SW_PERF-2	Automatic power recycle (OBCP)
25/02/15	A	GPSR	Temporary loss of time synchronisation	Y	SW_PERF-6	Auto-resynchronisation
25/02/15	C	GPSR	Temporary loss of time synchronisation	Y	SW_PERF-6	Auto-resynchronisation
26/02/15	A	GPSR	Temporary loss of time synchronisation	Y	SW_PERF-6	Auto-resynchronisation
27/02/15	C	GPSR	Temporary loss of time synchronisation	Y	SW_PERF-6	Auto-resynchronisation
02/03/15	C	GPSR	2x Temporary loss of time synchronisation	Y	SW_PERF-6	Auto-resynchronisation
03/03/15	A	GPSR	Temporary loss of time synchronisation	Y	SW_PERF-6	Auto-resynchronisation
03/03/15	C	GPSR	Temporary loss of time synchronisation	Y	SW_PERF-6	Auto-resynchronisation
04/03/15	A	GPSR	2x Temporary loss of time synchronisation	Y	SW_PERF-6	Auto-resynchronisation
05/03/15	A	GPSR	2x Temporary loss of time synchronisation	Y	SW_PERF-6	Auto-resynchronisation
05/03/15	C	GPSR	3x Temporary loss of time synchronisation	Y	SW_PERF-6	Auto-resynchronisation
06/03/15	A	GPSR	2x Temporary loss of time synchronisation	Y	SW_PERF-6	Auto-resynchronisation
06/03/15	C	GPSR	2x Temporary loss of time synchronisation	Y	SW_PERF-6	Auto-resynchronisation
07/03/15	A	GPSR	Temporary loss of time synchronisation	Y	SW_PERF-6	Auto-resynchronisation
07/03/15	C	GPSR	2x Temporary loss of time synchronisation	Y	SW_PERF-6	Auto-resynchronisation
08/03/15	A	GPSR	Temporary loss of time synchronisation	Y	SW_PERF-6	Auto-resynchronisation
09/03/15	A	GPSR	2x Temporary loss of time synchronisation	Y	SW_PERF-6	Auto-resynchronisation

Date	SC	Subsys	Description	Repeat	ARTS reference	Comment
09/03/15	C	ACC	EDAC SEF	Y	SW_PERF-2	Automatic power recycle (OBCP)
09/03/15	C	GPSR	Temporary loss of time synchronisation	Y	SW_PERF-6	Auto-resynchronisation
10/03/15	C	GPSR	3x Temporary loss of time synchronisation	Y	SW_PERF-6	Auto-resynchronisation
11/03/15	A	GPSR	Temporary loss of time synchronisation	Y	SW_PERF-6	Auto-resynchronisation
11/03/15	C	GPSR	Temporary loss of time synchronisation	Y	SW_PERF-6	Auto-resynchronisation
12/03/15	A	GPSR	Temporary loss of time synchronisation	Y	SW_PERF-6	Auto-resynchronisation
12/03/15	B	ACC	EDAC SEF	Y	SW_PERF-2	Automatic power recycle (OBCP)
12/03/15	C	GPSR	Temporary loss of time synchronisation	Y	SW_PERF-6	Auto-resynchronisation
13/03/15	A	GPSR	Temporary loss of time synchronisation	Y	SW_PERF-6	Auto-resynchronisation
14/03/15	A	GPSR	2x Temporary loss of time synchronisation	Y	SW_PERF-6	Auto-resynchronisation
14/03/15	C	GPSR	2x Temporary loss of time synchronisation	Y	SW_PERF-6	Auto-resynchronisation
15/03/15	C	GPSR	4x Temporary loss of time synchronisation	Y	SW_PERF-6	Auto-resynchronisation
17/03/15	A	GPSR	3x Temporary loss of time synchronisation	Y	SW_PERF-6	Auto-resynchronisation
17/03/15	B	GPSR	Temporary loss of time synchronisation	Y	SW_PERF-6	Auto-resynchronisation
17/03/15	C	GPSR	Temporary loss of time synchronisation	Y	SW_PERF-6	Auto-resynchronisation
20/03/15	A	GPSR	4x Temporary loss of time synchronisation	Y	SW_PERF-6	Auto-resynchronisation
20/03/15	C	GPSR	Temporary loss of time synchronisation	Y	SW_PERF-6	Auto-resynchronisation
25/03/15	B	GPSR	Temporary loss of time synchronisation	Y	SW_PERF-6	Auto-resynchronisation
28/03/15	B	ACC	EDAC SEF	Y	SW_PERF-2	Automatic power recycle (OBCP)
28/03/15	B	GPSR	Temporary loss of time synchronisation	Y	SW_PERF-6	Auto-resynchronisation
01/04/15	A	GPSR	Temporary loss of time synchronisation	Y	SW_PERF-6	Auto-resynchronisation
03/04/15	B	GPSR	2xTemporary loss of time synchronisation	Y	SW_PERF-6	Auto-resynchronisation
04/04/15	A	ACC	EDAC SEF	Y	SW_PERF-2	Automatic power recycle (OBCP)
07/04/15	B	GPSR	2xTemporary loss of time synchronisation	Y	SW_PERF-6	Auto-resynchronisation
07/04/15	B	OBC	MMU SEFI	Y	SW_PERF-8	
08/04/15	B	GPSR	Temporary loss of time synchronisation	Y	SW_PERF-6	Auto-resynchronisation
14/04/15	B	GPSR	Temporary loss of time synchronisation	Y	SW_PERF-6	Auto-resynchronisation
18/04/15	A	GPSR	Temporary loss of time synchronisation	Y	SW_PERF-6	Auto-resynchronisation
18/04/15	B	GPSR	Temporary loss of time synchronisation	Y	SW_PERF-6	Auto-resynchronisation

Date	SC	Subsys	Description	Repeat	ARTS reference	Comment
28/04/15	B	ACC	EDAC SEF	Y	SW_PERF-2	Automatic power recycle (OBCP)
28/04/15	B	OBC	MMU SEFI	Y	SW_PERF-8	Stuck bit
06/05/15	A	GPSR	Temporary loss of time synchronisation	Y	SW_PERF-6	Auto-resynchronisation
13/05/15	B	ACC	EDAC SEF	Y	SW_PERF-2	Automatic power recycle (OBCP)
14/05/15	C	OBC	MMU SEFI	Y	SW_PERF-8	
15/05/15	B	OBC	MMU SEFI	Y	SW_PERF-8	Stuck bit
17/05/15	C	ACC	EDAC SEF	Y	SW_PERF-2	Automatic power recycle (OBCP)
20/05/15	B	OBC	MMU SEFI	Y	SW_PERF-8	Stuck bit
21/05/15	B	ACC	EDAC SEF	Y	SW_PERF-2	Automatic power recycle (OBCP)
23/05/15	C	ACC	EDAC SEF	Y	SW_PERF-2	Automatic power recycle (OBCP)
24/05/15	B	OBC	MMU SEFI	Y	SW_PERF-8	Stuck bit
02/06/15	C	OBC	MMU SEFI	Y	SW_PERF-8	
03/06/15	A	OBC	MMU SEFI	Y	SW_PERF-8	
06/06/15	B	OBC	MMU SEFI	Y	SW_PERF-8	Stuck bit
05/06/15	C	OBC	MMU SEFI	Y	SW_PERF-8	
10/06/15	B	OBC	MMU SEFI	Y	SW_PERF-8	Stuck bit
12/06/15	C	ACC	EDAC SEF	Y	SW_PERF-2	Automatic power recycle (OBCP)
14/06/15	B	OBC	MMU SEFI	Y	SW_PERF-8	Stuck bit
16/06/15	B	ACC	EDAC SEF	Y	SW_PERF-2	Automatic power recycle (OBCP)

MANOEUVRES HISTORY IN PHASE E2

Swarm-A			
Date	**Start Time, UTC**	**Activity**	**Comment**
06/05/2014	13:50	~4s single thruster firing	Failed ACC scale factor calibration test; EFI off
13/05 - 14/05/2014	Start: 00:49 End: 05:32	4 x 90° yaw slew manoeuvres	For VFM-ASM Residual investigation
04/06/2014	Start: 14:15:00 End: 15:05:10	Torquer correction MTQ	EFI in normal mode (rather than cal mode as during Commissioning)
12/06/2014	04:49:41	Orbit maintenance	
15/10/2014	11:38:40 & 12:25:32	Orbit maintenance	
26/11/2014	12:13:28	Orbit maintenance	
15/01/2015	11:44:59.9 & 12:31:59.9	Orbit maintenance	
19/03/2015	11.59.59 & 12.51.59	Orbit maintenance	
05/05/2015	Start: 10:50 End: 14:20	40° yaw manoeuvre	EFI-TII image anomaly investigation
12/05/2015	14:18:50 & 14:19:20 & 14:19:50 & 14:20:20	ACC scale factor calibration	ACC scale factors in the S/C X axis by firing the ACT thruster pairs A5/A7 and A6/A8 during 10 sec.

Swarm-B			
Date	**Start Time, UTC**	**Activity**	**Comment**
08/05 – 09/05/2014	Start 05:50 End: 07:35	4 x 90° yaw slew manoeuvres	For VFM-ASM Residual investigation; EFI off

Swarm-B			
Date	**Start Time, UTC**	**Activity**	**Comment**
05/06/2014	Start: 15:35:00 End: 16:23:09	Torquer correction MTQ	EFI in normal mode (rather than cal mode as during Commissioning)

Swarm-C			
Date	**Start Time, UTC**	**Activity**	**Comment**
08/04 – 09/04/2014	Start: 20:00 End: 23:48	Orbit Manoeuver Batch-3a	
11/04/2014	02:23 until 12:06	Orbit Manoeuver Batch-3b	
15/04/2014	performed between 03:42 and 05:06	Drift Stop manoeuvres 1	2 manoeuvers (each 10minutes)
17/04/2014	performed between 04:20 and 05:37	Drift Stop manoeuvres 2	2 manoeuvers (each 10minutes)
13/05 – 14/05/2014	Start: 05:38 End: 10:16	4 x 90° yaw slew manoeuvres	For VFM-ASM Residual investigation
05/05/2015	Start: 10:50 End: 14:10	40° yaw manoeuvre	EFI-TII image anomaly investigation
11/05/2015	13:18:50 & 13:19:20 & 13:19:50 & 13:20:20	ACC scale factor calibration	ACC scale factors in the S/C X axis by firing the ACT thruster pairs A5/A7 and A6/A8 during 10 sec.

MANOEUVRES HISTORY IN PHASE E1

Swarm-A				
Activity	**Date**	**Start Time, UTC**	**Comment**	IOV Task
Torquer correction MTQ-1	17/12/2013	16:16	EFI in LP TSM.	3320
Torquer correction MTQ-2	17/12/2013	21:15	EFI in LP TSM.	3320
Torquer correction MTQ-3	17/12/2013	08:39	EFI in LP TSM.	3320
Precise datation	18/12/2013	17:19		3330
Yaw slew	19/12/2013	Start: 14:00 End: 02:00 (next morning)		3310
Fall-back to CPM	04/01/2014	10:49	Caused by STR's anomaly	n.a.
Yaw slew	09/01/2014	16:29	For EFI TII gain calibration, but improper TII commanding	2324
Pitch slew	09/01/2014	18:14	For EFI TII gain calibration, but improper TII commanding	2324
Pitch slew	10/01/2014	16:07	For EFI TII gain calibration	2324
Yaw slew	10/01/2014	17:51	For EFI TII gain calibration	2324
Orbital manoeuvre test	15/01/2014	11:51	Actuation of the orbit control thrusters (OCT) for 60 seconds. Satellite in nominal attitude.	n.a.
Torquer correction MTQ-1	16/01/2014	15:02	EFI in LP TSM. Torquer actuations every 2s for 8mn	3320-modified
Torquer correction MTQ-2	16/01/2014	18:25	EFI in LP TSM. Torquer actuations every 2s for 8mn	3320-modified
Torquer correction MTQ-3	16/01/2014	05:48	EFI in LP TSM. Torquer actuations every 2s for 8mn	3320-modified

EFI TII datation verification	21/01/2014	14:55	Specific MTQ pattern (MTQ-3 ok?)	2350
Orbit Manoeuver Test batches	22/01/2014	12:02 until ~15:00	OCT actuations for ca. 20 mn at ascending and descending node for two consecutive orbits. For these manoeuvres the attitude was slewed with certain yaw offset angles	n.a
Precise datation	23/01/2014	13:55	Repeat of 18-Dec manoeuvre after STR SW patch	3330
-180° yaw bias for 12h	23/01/2014	17:55	For ACC offset calibration	3350
Orbit Manoeuver Batch-1	28/01 – 29/01/2014	28/01/2014 @ 04:43 until 29/01/2014 @ 17:54	Yaw angle at ascending node: -62° Yaw angle at descending node: -33° At 17:54 the satellite stayed at -33° yaw (not planned). Manoeuver batch aborted at 22:35.	n.a
Orbit Manoeuver Batch-2	04/02 – 06/02/2014	04/02/2014 @ 08:34 until 06/02/2014 @ 01:08	Yaw angle at ascending node: -62° Yaw angle at descending node: +58° NOTE: following the abort during the first batch, the approach has been changed by using only the A1 and A2 OCTs. This required the yaw angle at the descending node to be significantly changed	n.a
Orbit Manoeuver Batch-3	18/02 – 19/02/2014	18/02/2014 @ 03:34 until 19/02/2014 @ 04:10	Yaw angle at ascending node: -80° Yaw angle at descending node: -12°	n.a

Swarm-B				
Activity	**Date**	**Time, UTC**	**Comment**	IOV Task
Safe mode (fall-back to CPM)	26/11/2013	15:24	Caused by MTL anomaly	n.a.
Transition to CPM (to load new	05/12/2013	09:05	25° pitch threshold exceeded	n.a.

STR SW on one unit)				
Yaw Manoeuver (-62°)	16/12/2013	Start: 14:00 End: 02:00 (next morning)	STR COI Phase Delay was not updated before this manoeuver. STR not synchronised to PPS.	3310
Yaw slew	19/12/2013	08:10	For EFI TII gain calibration	2324
Pitch slew	19/12/2013	12:56	For EFI TII gain calibration	2324
Fall-back to CPM	01/01/2014	09:17	Caused by STR anomaly	n.a.
Fall-back to CPM	05/01/2014	19:40	Caused by STR anomaly	n.a.
Torquer correction MTQ-1 (15s interval)	09/01/2014	14:22	EFI in LP TSM.	3320
Torquer correction MTQ-2 (15s interval)	09/01/2014	19:19	EFI in LP TSM.	3320
Torquer correction MTQ-3 (15s interval)	10/01/2014	06:21	EFI in LP TSM.	3320
Orbital manoeuvre test	14/01/2014	13:48	Actuation of the orbit control thrusters (OCT) for 60 seconds. Satellite in nominal attitude.	n.a.
Precise datation	15/01/2014	13:43		3330
Torquer correction MTQ-2	15/01/2014	18:36	EFI in LP TSM. Torquer actuations every 2 s for 8mn	3320-modified
Torquer correction MTQ-1	16/01/2014	15:00	EFI in LP TSM. Torquer actuations every 2s for 8mn	3320-modified
Torquer correction MTQ-3	17/01/2014	05:25	EFI in LP TSM. Torquer actuations every 2s for 8mn	3320-modified
EFI TII datation verification	21/01/2014	11:25	Specific MTQ pattern (MTQ-3 ok?)	2350
-180° yaw bias for 12h	22/01/2014	Start: 14:20 End: 02:20 (next day)	For ACC offset calibration	3350

Orbit Manoeuver Batch-1	25/02 – 27/02/2014	25/02/2014 @ 06:02 until 27/02/2014 @ 15:59		n.a
Orbit Manoeuver Batch-2	11/03 - 13/03/2014	11/03/2014 @ 09:39 until 13/03/2014 @ 09:55		n.a

Swarm-C				
Activity	**Date**	**Time, UTC**	**Comment**	IOV Task
Yaw slew	19/12/2013	16:01	For EFI TII gain calibration ASM in Scalar w/o Motor mode	2324
Pitch slew	19/12/2013	19:14	For EFI TII gain calibration	2324
Yaw slew (-62°)	09/01/2014	Start: 11:58 End: 23:58	For VFM calibration	3310
Torquer correction MTQ-1	13/01/2014	13:00	EFI in LP TSM. 15s between change of actuation sign	3320
Torquer correction MTQ-2	13/01/2014	17:57	EFI in LP TSM. 15s between change of actuation sign	3320
Torquer correction MTQ-3	14/01/2014	06:34	EFI in LP TSM. 15s between change of actuation sign	3320
Precise datation	15/01/2014	15:15		3330
Orbital manoeuvre test	16/01/2014	14:46	Actuation of the orbit control thrusters (OCT) for 60 seconds. Satellite in nominal attitude.	n.a.
-180° yaw bias for 12h	21/01/2014	Start: 06:00 End: 18:00	For ACC offset calibration	3350

Torquer correction MTQ-3	22/01/2014	05:17	EFI in LP TSM. Torquer actuations every 2s for 8mn	3320-modified
Torquer correction MTQ-1	22/01/2014	12:56	EFI in LP TSM. Torquer actuations every 2s for 8mn	3320-modified
Torquer correction MTQ-2	22/01/2014	17:53	EFI in LP TSM. Torquer actuations every 2s for 8mn	3320-modified
Orbit Manoeuver Test batches	23/01/2014	13:19 until ~15:11	OCT actuations for ca. 20mn at ascending and descending node for two consecutive orbits. For these manoeuvres the attitude was slewed with certain yaw offset angles	n.a
EFI TII datation verification	29/01/2014	18:20		2350
CESS calibration (6 hours forward + 6 hours backward flying)	27/02 - 28/02/2014	Start: 18:00		
Fall-back to CPM	28/02/2014	06:52	Upon slewing back to forward flying at end of CESS calibration	n.a.
Orbit Manoeuver Batch-1	04/03 - 05/03/2014	04/03/2014 @ 05:06 until 05/03/2014 @ 16:51		n.a
Orbit Manoeuver Batch-2	25/03 - 26/03/2014	25/03/2014 @ 03:53 until 26/03/2014 @ 14:20		n.a

MANOEUVRES BURNS DETAILS

Swarm-A						
Date	**Time, UTC**	**Duration (s)**	**DV magnitude (m/s)**	**DV along (m/s)**	**DV cross (m/s)**	**DV radial (m/s)**
15/01/2014	11:51:51.9	60	0.011	-0.011	0	0
22/01/2014	12:02:28.6	1065.3	0.202	-0.09	0.181	0.001
22/01/2014	12:49:34.5	1067.1	0.202	-0.09	-0.18	-0.001
22/01/2014	13:37:02.4	1065.2	0.203	-0.09	0.182	0.001
22/01/2014	14:24:08.1	1067.1	0.202	-0.09	-0.181	-0.001
28/01/2014	05:07:56.4	1097.4	0.219	-0.1	0.195	0.002
28/01/2014	05:55:13.6	1197.6	0.238	-0.131	-0.199	-0.001
28/01/2014	06:42:29.2	1097.2	0.219	-0.1	0.195	0.002
28/01/2014	07:29:46.1	1197.5	0.238	-0.131	-0.199	-0.001
28/01/2014	08:17:01.4	1097.1	0.219	-0.101	0.195	0.002
28/01/2014	09:04:18.0	1197.4	0.238	-0.131	-0.199	-0.001
28/01/2014	09:51:33.1	1097	0.22	-0.101	0.195	0.002
28/01/2014	10:38:49.4	1197.3	0.239	-0.131	-0.199	-0.001
28/01/2014	11:26:04.2	1097	0.22	-0.101	0.195	0.002
28/01/2014	12:13:20.3	1197.1	0.239	-0.131	-0.2	-0.001
28/01/2014	13:00:34.9	1096.9	0.22	-0.101	0.196	0.002
28/01/2014	13:47:50.7	1197.1	0.239	-0.131	-0.2	-0.001

Swarm-A						
Date	**Time, UTC**	**Duration (s)**	**DV magnitude (m/s)**	**DV along (m/s)**	**DV cross (m/s)**	**DV radial (m/s)**
28/01/2014	14:35:05.1	1096.8	0.22	-0.101	0.196	0.002
28/01/2014	15:22:20.7	1197	0.239	-0.131	-0.2	-0.001
28/01/2014	16:09:34.9	1096.6	0.22	-0.101	0.196	0.002
28/01/2014	16:56:50.1	1196.9	0.239	-0.131	-0.2	-0.001
28/01/2014	17:44:04.1	1096.5	0.221	-0.101	0.196	0.002
28/01/2014	18:31:19.0	1196.8	0.24	-0.132	-0.2	-0.001
28/01/2014	19:18:32.7	1096.4	0.221	-0.101	0.196	0.002
28/01/2014	20:05:47.3	1196.7	0.24	-0.132	-0.201	-0.001
28/01/2014	20:53:00.7	1096.3	0.221	-0.101	0.196	0.002
28/01/2014	21:40:15.0	1196.6	0.24	-0.132	-0.201	-0.001
28/01/2014	22:27:28.2	1096.2	0.221	-0.101	0.197	0.002
28/01/2014	23:14:42.3	1196.5	0.24	-0.132	-0.201	-0.001
29/01/2014	00:01:55.2	1096.1	0.221	-0.102	0.197	0.002
29/01/2014	00:49:09.0	1196.4	0.241	-0.132	-0.201	-0.001
29/01/2014	01:36:21.7	1096	0.222	-0.102	0.197	0.002
29/01/2014	02:23:35.3	1196.3	0.241	-0.132	-0.201	-0.001
29/01/2014	03:10:47.8	1095.8	0.222	-0.102	0.197	0.002
29/01/2014	03:58:01.1	1196.3	0.241	-0.132	-0.202	-0.001
29/01/2014	04:45:13.4	1095.7	0.222	-0.102	0.197	0.002

Swarm-A						
Date	**Time, UTC**	**Duration (s)**	**DV magnitude (m/s)**	**DV along (m/s)**	**DV cross (m/s)**	**DV radial (m/s)**
29/01/2014	05:32:26.3	1196.2	0.241	-0.132	-0.202	-0.001
29/01/2014	06:19:38.4	1095.5	0.222	-0.102	0.198	0.002
29/01/2014	07:06:51.0	1196.1	0.242	-0.133	-0.202	-0.001
29/01/2014	07:54:02.8	1095.4	0.222	-0.102	0.198	0.002
29/01/2014	08:41:15.1	1196	0.242	-0.133	-0.202	-0.001
29/01/2014	09:28:26.7	1095.3	0.223	-0.102	0.198	0.002
29/01/2014	10:15:38.6	1195.8	0.242	-0.133	-0.202	-0.001
29/01/2014	11:02:50.0	1095.2	0.223	-0.102	0.198	0.002
29/01/2014	11:50:01.7	1195.7	0.242	-0.133	-0.203	-0.001
29/01/2014	12:37:12.8	1095.2	0.223	-0.102	0.198	0.002
29/01/2014	13:24:24.3	1195.6	0.242	-0.133	-0.203	-0.001
29/01/2014	14:11:35.2	1095	0.223	-0.102	0.198	0.002
29/01/2014	14:58:46.4	1195.6	0.243	-0.133	-0.203	-0.001
29/01/2014	15:45:57.1	1094.9	0.224	-0.102	0.199	0.002
29/01/2014	16:33:08.0	1195.5	0.243	-0.133	-0.203	-0.001
29/01/2014	17:20:18.5	1094.7	0.224	-0.103	0.199	0.002
04/02/2014	08:34:09.6	1102	0.226	-0.091	0.207	-0.004
04/02/2014	09:19:29.3	1261.6	0.259	-0.138	-0.219	0.004
04/02/2014	10:08:29.8	1101.9	0.226	-0.091	0.207	-0.004

Swarm-A						
Date	**Time, UTC**	**Duration (s)**	**DV magnitude (m/s)**	**DV along (m/s)**	**DV cross (m/s)**	**DV radial (m/s)**
04/02/2014	10:53:49.2	1261.5	0.259	-0.138	-0.219	0.004
04/02/2014	11:42:49.4	1101.9	0.227	-0.092	0.207	-0.004
04/02/2014	12:28:08.7	1261.4	0.26	-0.138	-0.22	0.004
04/02/2014	13:17:08.7	1101.8	0.227	-0.092	0.208	-0.004
04/02/2014	14:02:27.7	1261.3	0.26	-0.139	-0.22	0.004
04/02/2014	14:51:27.5	1101.6	0.227	-0.092	0.208	-0.004
04/02/2014	15:36:46.2	1261.3	0.26	-0.139	-0.22	0.004
04/02/2014	16:25:45.8	1101.4	0.227	-0.092	0.208	-0.004
04/02/2014	17:11:04.2	1261.2	0.26	-0.139	-0.22	0.004
04/02/2014	18:00:03.5	1101.3	0.228	-0.092	0.208	-0.004
04/02/2014	18:45:21.6	1261.1	0.261	-0.139	-0.22	0.004
04/02/2014	19:34:20.6	1101.2	0.228	-0.092	0.208	-0.004
04/02/2014	20:19:38.4	1260.9	0.261	-0.139	-0.221	0.004
04/02/2014	21:08:37.1	1101.1	0.228	-0.092	0.209	-0.004
04/02/2014	21:53:54.7	1260.8	0.261	-0.139	-0.221	0.004
04/02/2014	22:42:53.1	1101	0.228	-0.092	0.209	-0.004
04/02/2014	23:28:10.5	1260.7	0.261	-0.139	-0.221	0.004
05/02/2014	00:17:08.7	1100.9	0.228	-0.092	0.209	-0.004
05/02/2014	01:02:25.9	1260.7	0.262	-0.14	-0.221	0.004

Swarm-A						
Date	**Time, UTC**	**Duration (s)**	**DV magnitude (m/s)**	**DV along (m/s)**	**DV cross (m/s)**	**DV radial (m/s)**
05/02/2014	01:51:23.9	1100.8	0.229	-0.092	0.209	-0.004
05/02/2014	02:36:40.8	1260.6	0.262	-0.14	-0.222	0.004
05/02/2014	03:25:38.5	1100.6	0.229	-0.092	0.209	-0.004
05/02/2014	04:10:55.1	1260.6	0.262	-0.14	-0.222	0.004
05/02/2014	04:59:52.7	1100.4	0.229	-0.093	0.21	-0.004
05/02/2014	05:45:08.9	1260.5	0.263	-0.14	-0.222	0.004
05/02/2014	06:34:06.2	1100.3	0.229	-0.093	0.21	-0.004
05/02/2014	07:19:22.1	1260.4	0.263	-0.14	-0.222	0.004
05/02/2014	08:08:19.2	1100.2	0.23	-0.093	0.21	-0.004
05/02/2014	08:53:34.8	1260.2	0.263	-0.14	-0.223	0.004
05/02/2014	09:42:31.6	1100.1	0.23	-0.093	0.21	-0.004
05/02/2014	10:27:47.0	1260.1	0.263	-0.14	-0.223	0.004
05/02/2014	11:16:43.5	1100	0.23	-0.093	0.21	-0.004
05/02/2014	12:01:58.7	1260	0.264	-0.141	-0.223	0.004
05/02/2014	12:50:54.9	1099.9	0.23	-0.093	0.211	-0.004
05/02/2014	13:36:09.9	1260	0.264	-0.141	-0.223	0.004
05/02/2014	14:25:06.0	1099.8	0.23	-0.093	0.211	-0.004
05/02/2014	15:10:20.7	1259.9	0.264	-0.141	-0.223	0.004
05/02/2014	15:59:16.5	1099.6	0.231	-0.093	0.211	-0.004

Swarm-A						
Date	**Time, UTC**	**Duration (s)**	**DV magnitude (m/s)**	**DV along (m/s)**	**DV cross (m/s)**	**DV radial (m/s)**
05/02/2014	16:44:30.8	1259.8	0.264	-0.141	-0.224	0.004
05/02/2014	17:33:26.4	1099.5	0.231	-0.093	0.211	-0.004
05/02/2014	18:18:40.4	1259.7	0.265	-0.141	-0.224	0.004
05/02/2014	19:07:35.7	1099.3	0.231	-0.093	0.211	-0.004
05/02/2014	19:52:49.5	1259.6	0.265	-0.141	-0.224	0.004
05/02/2014	20:41:44.4	1099.2	0.231	-0.093	0.212	-0.004
05/02/2014	21:26:58.0	1259.5	0.265	-0.141	-0.224	0.005
05/02/2014	22:15:52.7	1099.1	0.232	-0.094	0.212	-0.004
05/02/2014	23:01:06.0	1259.3	0.266	-0.142	-0.225	0.005
05/02/2014	23:50:00.4	1099.1	0.232	-0.094	0.212	-0.004
06/02/2014	00:35:13.5	1259.3	0.266	-0.142	-0.225	0.005
18/02/2014	03:34:06.1	1124.6	0.238	-0.036	0.235	-0.014
18/02/2014	04:19:19.3	1209.5	0.255	-0.054	-0.249	0.015
18/02/2014	05:08:12.3	1124.5	0.239	-0.036	0.235	-0.014
18/02/2014	05:53:25.3	1209.5	0.255	-0.054	-0.249	0.015
18/02/2014	06:42:18.2	1124.5	0.239	-0.036	0.236	-0.014
18/02/2014	07:27:31.2	1209.4	0.256	-0.055	-0.249	0.015
18/02/2014	08:16:24.0	1124.5	0.239	-0.037	0.236	-0.014
18/02/2014	09:01:36.8	1209.3	0.256	-0.055	-0.25	0.015

Swarm-A						
Date	**Time, UTC**	**Duration (s)**	**DV magnitude (m/s)**	**DV along (m/s)**	**DV cross (m/s)**	**DV radial (m/s)**
18/02/2014	09:50:29.4	1124.5	0.239	-0.037	0.236	-0.014
18/02/2014	10:35:42.3	1209.3	0.256	-0.055	-0.25	0.015
18/02/2014	11:24:34.8	1124.4	0.24	-0.037	0.236	-0.014
18/02/2014	12:09:47.6	1209.3	0.257	-0.055	-0.25	0.015
18/02/2014	12:58:40.0	1124.4	0.24	-0.037	0.237	-0.014
18/02/2014	13:43:52.7	1209.3	0.257	-0.055	-0.25	0.015
18/02/2014	14:32:45.1	1124.3	0.24	-0.037	0.237	-0.014
18/02/2014	15:17:57.6	1209.3	0.257	-0.055	-0.251	0.015
18/02/2014	16:06:49.9	1124.2	0.24	-0.037	0.237	-0.014
18/02/2014	16:52:02.3	1209.2	0.257	-0.055	-0.251	0.015
18/02/2014	17:40:54.4	1124.1	0.241	-0.037	0.237	-0.014
18/02/2014	18:26:06.7	1209.2	0.258	-0.055	-0.251	0.015
18/02/2014	19:14:58.7	1124.1	0.241	-0.037	0.238	-0.014
18/02/2014	20:00:10.9	1209.1	0.258	-0.055	-0.252	0.015
18/02/2014	20:49:02.7	1124.1	0.241	-0.037	0.238	-0.014
18/02/2014	21:34:14.9	1209	0.258	-0.055	-0.252	0.015
18/02/2014	22:23:06.6	1124.1	0.241	-0.037	0.238	-0.014
18/02/2014	23:08:18.7	1209	0.258	-0.055	-0.252	0.015
18/02/2014	23:57:10.4	1124	0.242	-0.037	0.238	-0.014

Swarm-A						
Date	**Time, UTC**	**Duration (s)**	**DV magnitude (m/s)**	**DV along (m/s)**	**DV cross (m/s)**	**DV radial (m/s)**
19/02/2014	00:42:22.4	1209	0.259	-0.055	-0.252	0.015
19/02/2014	01:31:14.0	1123.9	0.242	-0.037	0.239	-0.015
19/02/2014	02:16:25.9	1209	0.259	-0.055	-0.253	0.015
19/02/2014	03:05:17.4	1123.8	0.242	-0.037	0.239	-0.015
19/02/2014	03:50:29.1	1209	0.259	-0.055	-0.253	0.015
6/02/2014	13:50:00.1	4	-	-	-	-
12/06/2014	04:49:41.4	37	0.008	-0.008	0	0
15/10/2014	11:38:40.6	28	0.006	-0.006	0	0
15/10/2014	12:25:32.0	28	0.006	-0.006	0	0
26/11/2014	12:13:30.0	22	-	-	-	-
15/01/2015	11:44:59.9	25	0.005	-0.005	0	0
15/01/2015	12:31:59.9	25	0.005	-0.005	0	0
19/03/2015	11:59:59	22	0.005	-0.005	0	0
19/03/2015	12:51:59	22	0.005	-0.005	0	0

Swarm-B						
Date	**Time, UTC**	**Duration (s)**	**DV magnitud (m/s)**	**DV along (m/s)**	**DV cross (m/s)**	**DV radial (m/s)**

Swarm-B						
Date	**Time, UTC**	**Duration (s)**	**DV magnitud (m/s)**	**DV along (m/s)**	**DV cross (m/s)**	**DV radial (m/s)**
14/01/2014	13:49:20.9	60	0.011	-0.011	0	0
25/02/2014	06:02:41.4	1214.7	0.227	0.102	-0.202	-0.011
25/02/2014	06:51:46.8	1178.4	0.22	0.083	0.203	0.012
25/02/2014	07:37:14.7	1214.8	0.227	0.102	-0.202	-0.012
25/02/2014	08:26:20.3	1178.5	0.221	0.084	0.204	0.012
25/02/2014	09:11:48.4	1214.9	0.227	0.102	-0.203	-0.012
25/02/2014	10:00:54.3	1178.6	0.221	0.084	0.204	0.012
25/02/2014	10:46:22.5	1215	0.227	0.102	-0.203	-0.012
25/02/2014	11:35:28.7	1178.7	0.221	0.084	0.204	0.012
25/02/2014	12:20:57.2	1215.1	0.228	0.102	-0.203	-0.012
25/02/2014	13:10:03.6	1178.9	0.221	0.084	0.204	0.012
25/02/2014	13:55:32.4	1215.1	0.228	0.102	-0.203	-0.012
25/02/2014	14:44:38.9	1179	0.221	0.084	0.205	0.012
25/02/2014	15:30:07.8	1215.1	0.228	0.102	-0.203	-0.012
25/02/2014	16:19:14.6	1179.1	0.222	0.084	0.205	0.012
25/02/2014	17:04:43.6	1215.2	0.228	0.102	-0.204	-0.012
25/02/2014	17:53:50.6	1179.1	0.222	0.084	0.205	0.012
25/02/2014	18:39:19.8	1215.3	0.229	0.103	-0.204	-0.012
25/02/2014	19:28:27.0	1179.2	0.222	0.084	0.205	0.012

Swarm-B						
Date	**Time, UTC**	**Duration (s)**	**DV magnitud (m/s)**	**DV along (m/s)**	**DV cross (m/s)**	**DV radial (m/s)**
25/02/2014	20:13:56.4	1215.4	0.229	0.103	-0.204	-0.012
25/02/2014	21:03:03.8	1179.3	0.222	0.084	0.205	0.012
25/02/2014	21:48:33.4	1215.5	0.229	0.103	-0.204	-0.012
25/02/2014	22:37:41.1	1179.4	0.223	0.084	0.206	0.012
25/02/2014	23:23:10.9	1215.6	0.229	0.103	-0.205	-0.012
26/02/2014	00:12:18.9	1179.5	0.223	0.084	0.206	0.012
26/02/2014	00:57:48.9	1215.6	0.23	0.103	-0.205	-0.012
26/02/2014	01:46:57.1	1179.7	0.223	0.085	0.206	0.012
26/02/2014	02:32:27.4	1215.6	0.23	0.103	-0.205	-0.012
26/02/2014	03:21:35.6	1179.8	0.223	0.085	0.206	0.012
26/02/2014	04:07:06.1	1215.7	0.23	0.103	-0.205	-0.012
26/02/2014	04:56:14.6	1179.9	0.224	0.085	0.207	0.012
26/02/2014	05:41:45.3	1215.8	0.23	0.103	-0.205	-0.012
26/02/2014	06:30:53.9	1179.9	0.224	0.085	0.207	0.012
26/02/2014	07:16:24.8	1215.9	0.231	0.103	-0.206	-0.012
26/02/2014	08:05:33.6	1180	0.224	0.085	0.207	0.012
26/02/2014	08:51:04.7	1216	0.231	0.104	-0.206	-0.012
26/02/2014	09:40:13.9	1180.1	0.224	0.085	0.207	0.012
26/02/2014	10:45:56.5	2	0	0	0	0

Swarm-B						
Date	**Time, UTC**	**Duration (s)**	**DV magnitud (m/s)**	**DV along (m/s)**	**DV cross (m/s)**	**DV radial (m/s)**
26/02/2014	11:14:54.6	1180.4	0.225	0.085	0.208	0.012
26/02/2014	12:00:59.2	1157.6	0.22	0.096	-0.198	-0.012
26/02/2014	12:49:42.6	1170.2	0.223	0.085	0.205	0.012
26/02/2014	13:35:40.4	1157.6	0.22	0.096	-0.198	-0.012
26/02/2014	14:24:23.9	1170.3	0.223	0.086	0.206	0.012
26/02/2014	15:10:21.8	1157.6	0.22	0.096	-0.198	-0.012
26/02/2014	15:59:05.5	1170.4	0.223	0.086	0.206	0.012
26/02/2014	16:45:03.6	1157.7	0.221	0.096	-0.198	-0.012
26/02/2014	17:33:47.5	1170.5	0.224	0.086	0.206	0.012
26/02/2014	18:19:45.8	1157.8	0.221	0.096	-0.199	-0.012
26/02/2014	19:08:29.9	1170.5	0.224	0.086	0.206	0.012
26/02/2014	19:54:28.3	1157.9	0.221	0.096	-0.199	-0.012
26/02/2014	20:43:12.7	1170.6	0.224	0.086	0.207	0.012
26/02/2014	21:29:11.3	1158	0.221	0.096	-0.199	-0.012
26/02/2014	22:17:55.9	1170.7	0.224	0.086	0.207	0.012
26/02/2014	23:03:54.7	1158.1	0.222	0.096	-0.199	-0.012
26/02/2014	23:52:39.6	1170.8	0.225	0.086	0.207	0.013
27/02/2014	00:38:38.7	1158.1	0.222	0.097	-0.199	-0.012
27/02/2014	01:27:23.8	1171	0.225	0.086	0.207	0.013

Swarm-B						
Date	**Time, UTC**	**Duration (s)**	**DV magnitud (m/s)**	**DV along (m/s)**	**DV cross (m/s)**	**DV radial (m/s)**
27/02/2014	02:13:23.0	1158.1	0.222	0.097	-0.2	-0.012
27/02/2014	03:02:08.3	1171.1	0.225	0.086	0.207	0.013
27/02/2014	03:48:07.7	1158.2	0.222	0.097	-0.2	-0.012
27/02/2014	04:36:53.1	1171.2	0.225	0.086	0.208	0.013
27/02/2014	05:22:52.8	1158.3	0.223	0.097	-0.2	-0.012
27/02/2014	06:11:38.4	1171.2	0.225	0.086	0.208	0.013
27/02/2014	06:57:38.2	1158.3	0.223	0.097	-0.2	-0.012
27/02/2014	07:46:24.0	1171.3	0.226	0.087	0.208	0.013
27/02/2014	08:32:24.0	1158.5	0.223	0.097	-0.2	-0.012
27/02/2014	09:21:10.1	1171.3	0.226	0.087	0.208	0.013
27/02/2014	10:07:10.2	1158.6	0.223	0.097	-0.201	-0.012
27/02/2014	10:55:56.6	1171.5	0.226	0.087	0.209	0.013
27/02/2014	11:41:57.0	1158.6	0.224	0.097	-0.201	-0.012
27/02/2014	12:30:43.6	1171.6	0.226	0.087	0.209	0.013
27/02/2014	13:16:44.3	1158.7	0.224	0.097	-0.201	-0.012
27/02/2014	14:05:31.0	1171.7	0.227	0.087	0.209	0.013
27/02/2014	14:51:31.8	1158.7	0.224	0.097	-0.201	-0.012
27/02/2014	15:40:18.8	1171.8	0.227	0.087	0.209	0.013
11/03/2014	09:39:53.8	1041.5	0.209	0.081	-0.193	-0.013

Swarm-B						
Date	**Time, UTC**	**Duration (s)**	**DV magnitud (m/s)**	**DV along (m/s)**	**DV cross (m/s)**	**DV radial (m/s)**
11/03/2014	10:27:45.8	1190.1	0.24	0.109	0.213	0.014
11/03/2014	11:14:41.4	1041.5	0.21	0.081	-0.193	-0.013
11/03/2014	12:02:33.6	1190.2	0.24	0.109	0.213	0.014
11/03/2014	12:49:29.4	1041.6	0.21	0.081	-0.193	-0.013
11/03/2014	13:37:21.9	1190.3	0.24	0.109	0.213	0.014
11/03/2014	14:24:17.8	1041.6	0.21	0.081	-0.193	-0.013
11/03/2014	15:12:10.5	1190.3	0.24	0.109	0.214	0.014
11/03/2014	15:59:06.6	1041.7	0.21	0.081	-0.194	-0.013
11/03/2014	16:46:59.5	1190.4	0.241	0.11	0.214	0.014
11/03/2014	17:33:55.7	1041.8	0.21	0.081	-0.194	-0.013
11/03/2014	18:21:48.9	1190.4	0.241	0.11	0.214	0.014
11/03/2014	19:08:45.2	1041.9	0.211	0.081	-0.194	-0.013
11/03/2014	19:56:38.7	1190.5	0.241	0.11	0.214	0.014
11/03/2014	20:43:35.3	1042.1	0.211	0.081	-0.194	-0.013
11/03/2014	21:31:29.0	1190.6	0.241	0.11	0.215	0.014
11/03/2014	22:18:25.8	1042.1	0.211	0.081	-0.194	-0.013
11/03/2014	23:06:19.8	1190.7	0.242	0.11	0.215	0.014
11/03/2014	23:53:16.8	1042.2	0.211	0.081	-0.195	-0.013
12/03/2014	00:41:11.0	1190.8	0.242	0.11	0.215	0.014

Swarm-B						
Date	**Time, UTC**	**Duration (s)**	**DV magnitud (m/s)**	**DV along (m/s)**	**DV cross (m/s)**	**DV radial (m/s)**
12/03/2014	01:28:08.2	1042.2	0.212	0.081	-0.195	-0.013
12/03/2014	02:16:02.6	1190.9	0.242	0.11	0.215	0.014
12/03/2014	03:03:00.0	1042.3	0.212	0.082	-0.195	-0.013
12/03/2014	03:50:54.6	1190.9	0.242	0.11	0.215	0.014
12/03/2014	04:37:52.1	1042.4	0.212	0.082	-0.195	-0.013
12/03/2014	05:25:47.0	1191	0.243	0.11	0.216	0.014
12/03/2014	06:12:44.7	1042.5	0.212	0.082	-0.195	-0.013
12/03/2014	07:00:39.8	1191	0.243	0.111	0.216	0.014
12/03/2014	07:47:37.7	1042.7	0.213	0.082	-0.196	-0.013
12/03/2014	08:35:33.1	1191.1	0.243	0.111	0.216	0.014
12/03/2014	09:22:31.1	1042.8	0.213	0.082	-0.196	-0.013
12/03/2014	10:10:26.9	1191.2	0.244	0.111	0.216	0.014
12/03/2014	10:57:25.1	1042.9	0.213	0.082	-0.196	-0.013
12/03/2014	11:45:21.1	1191.3	0.244	0.111	0.217	0.014
12/03/2014	12:32:19.6	1042.9	0.213	0.082	-0.196	-0.013
12/03/2014	13:20:15.7	1191.4	0.244	0.111	0.217	0.014
12/03/2014	14:07:14.4	1043	0.213	0.082	-0.197	-0.013
12/03/2014	14:55:10.8	1191.5	0.244	0.111	0.217	0.014
12/03/2014	15:42:09.6	1043.1	0.214	0.082	-0.197	-0.013

Swarm-B						
Date	**Time, UTC**	**Duration (s)**	**DV magnitud (m/s)**	**DV along (m/s)**	**DV cross (m/s)**	**DV radial (m/s)**
12/03/2014	16:30:06.2	1191.5	0.245	0.111	0.217	0.014
12/03/2014	17:17:05.1	1043.2	0.214	0.082	-0.197	-0.013
12/03/2014	18:05:02.1	1191.6	0.245	0.111	0.218	0.014
12/03/2014	18:52:01.1	1043.3	0.214	0.082	-0.197	-0.013
12/03/2014	19:39:58.3	1191.6	0.245	0.112	0.218	0.014
12/03/2014	20:45:00.2	2	0	0	0	0
12/03/2014	21:14:42.3	1218.5	0.251	0.106	0.227	0.011
12/03/2014	22:02:00.9	1044.6	0.215	0.069	-0.203	-0.011
12/03/2014	22:49:47.7	1175.9	0.242	0.106	0.217	0.012
12/03/2014	23:36:58.2	1044.6	0.215	0.069	-0.203	-0.011
13/03/2014	00:24:45.2	1176	0.243	0.106	0.218	0.012
13/03/2014	01:11:55.8	1044.7	0.215	0.069	-0.204	-0.011
13/03/2014	01:59:42.9	1176.1	0.243	0.107	0.218	0.012
13/03/2014	02:46:53.8	1044.8	0.215	0.069	-0.204	-0.011
13/03/2014	03:34:41.1	1176.1	0.243	0.107	0.218	0.012
13/03/2014	04:21:52.1	1044.9	0.216	0.069	-0.204	-0.011
13/03/2014	05:09:39.6	1176.2	0.243	0.107	0.218	0.012
13/03/2014	05:56:50.7	1045	0.216	0.069	-0.204	-0.011
13/03/2014	06:44:38.5	1176.2	0.244	0.107	0.219	0.012

Swarm-B						
Date	**Time, UTC**	**Duration (s)**	**DV magnitud (m/s)**	**DV along (m/s)**	**DV cross (m/s)**	**DV radial (m/s)**
13/03/2014	07:31:49.8	1045.1	0.216	0.069	-0.204	-0.011
13/03/2014	08:19:37.8	1176.2	0.244	0.107	0.219	0.012
13/03/2014	09:06:49.2	1045.2	0.216	0.07	-0.205	-0.011
13/03/2014	09:54:37.6	1176.3	0.244	0.107	0.219	0.012

Swarm-C						
Date	**Time, UTC**	**Duration (s)**	**DV magnitude (m/s)**	**DV along (m/s)**	**DV cross (m/s)**	**DV radial (m/s)**
16/01/2014	14:46:00.9	60	0.011	-0.011	0	0
23/01/2014	13:19:07.9	1080.3	0.206	-0.089	0.186	0.001
23/01/2014	14:06:30.5	1055.5	0.191	-0.076	-0.176	-0.001
23/01/2014	14:53:42.0	1080.3	0.207	-0.089	0.186	0.001
23/01/2014	15:41:04.3	1055.5	0.192	-0.076	-0.176	-0.001
04/03/2014	05:06:27.7	1199.8	0.23	-0.109	0.202	-0.008
04/03/2014	05:53:18.4	1098.3	0.2	-0.084	-0.181	0.008
04/03/2014	06:40:59.6	1199.7	0.23	-0.109	0.202	-0.008
04/03/2014	07:27:50.1	1098.2	0.2	-0.084	-0.181	0.008

Swarm-C						
Date	**Time, UTC**	**Duration (s)**	**DV magnitude (m/s)**	**DV along (m/s)**	**DV cross (m/s)**	**DV radial (m/s)**
04/03/2014	08:15:31.0	1199.7	0.23	-0.11	0.203	-0.008
04/03/2014	09:02:21.4	1098.1	0.2	-0.084	-0.181	0.008
04/03/2014	09:50:02.1	1199.6	0.231	-0.11	0.203	-0.008
04/03/2014	10:36:52.3	1098	0.2	-0.084	-0.182	0.008
04/03/2014	11:24:33.8	1198.2	0.231	-0.11	0.203	-0.008
04/03/2014	12:15:15.6	630.1	0.115	-0.048	-0.104	0.004
04/03/2014	12:58:58.8	1205.9	0.232	-0.11	0.204	-0.008
04/03/2014	13:45:51.5	1106.5	0.202	-0.085	-0.183	0.007
04/03/2014	14:33:28.8	1205.8	0.232	-0.11	0.204	-0.008
04/03/2014	15:20:21.2	1106.4	0.202	-0.086	-0.183	0.007
04/03/2014	16:07:58.2	1205.7	0.233	-0.11	0.205	-0.008
04/03/2014	16:54:50.4	1106.3	0.203	-0.086	-0.183	0.007
04/03/2014	17:42:27.1	1205.6	0.233	-0.111	0.205	-0.008
04/03/2014	18:29:19.1	1106.2	0.203	-0.086	-0.184	0.007
04/03/2014	19:16:55.5	1205.6	0.233	-0.111	0.205	-0.008
04/03/2014	20:03:47.4	1106.1	0.203	-0.086	-0.184	0.007
04/03/2014	20:51:23.6	1205.5	0.233	-0.111	0.205	-0.008
04/03/2014	21:38:15.3	1106	0.203	-0.086	-0.184	0.007
04/03/2014	22:25:51.3	1205.4	0.233	-0.111	0.205	-0.008
04/03/2014	23:12:42.9	1105.9	0.203	-0.086	-0.184	0.007

Swarm-C						
Date	**Time, UTC**	**Duration (s)**	**DV magnitude (m/s)**	**DV along (m/s)**	**DV cross (m/s)**	**DV radial (m/s)**
05/03/2014	00:00:18.6	1205.3	0.234	-0.111	0.206	-0.008
05/03/2014	00:47:10.0	1105.9	0.203	-0.086	-0.184	0.007
05/03/2014	01:34:45.5	1205.2	0.234	-0.111	0.206	-0.008
05/03/2014	02:21:36.6	1105.8	0.204	-0.086	-0.184	0.008
05/03/2014	03:09:11.9	1205.1	0.234	-0.111	0.206	-0.008
05/03/2014	03:56:02.8	1105.7	0.204	-0.086	-0.185	0.008
05/03/2014	04:43:37.8	1205	0.234	-0.111	0.206	-0.008
05/03/2014	05:30:28.4	1105.6	0.204	-0.086	-0.185	0.008
05/03/2014	06:18:03.2	1204.9	0.235	-0.111	0.206	-0.008
05/03/2014	07:04:53.6	1105.4	0.204	-0.086	-0.185	0.008
05/03/2014	07:52:28.2	1204.9	0.235	-0.111	0.206	-0.008
05/03/2014	08:39:18.4	1105.3	0.204	-0.086	-0.185	0.008
05/03/2014	09:26:52.7	1204.9	0.235	-0.112	0.207	-0.008
05/03/2014	10:13:42.8	1105.2	0.205	-0.086	-0.185	0.008
05/03/2014	11:01:16.9	1204.8	0.235	-0.112	0.207	-0.008
05/03/2014	11:48:06.8	1105.2	0.205	-0.087	-0.185	0.008
05/03/2014	12:35:40.8	1204.6	0.235	-0.112	0.207	-0.008
05/03/2014	13:22:30.4	1105.1	0.205	-0.087	-0.186	0.008
05/03/2014	14:10:04.1	1204.5	0.236	-0.112	0.207	-0.008
05/03/2014	14:56:53.5	1105	0.205	-0.087	-0.186	0.008

Swarm-C						
Date	**Time, UTC**	**Duration (s)**	**DV magnitude (m/s)**	**DV along (m/s)**	**DV cross (m/s)**	**DV radial (m/s)**
05/03/2014	15:44:26.9	1204.4	0.236	-0.112	0.207	-0.008
05/03/2014	16:31:16.1	1104.9	0.205	-0.087	-0.186	0.008
25/03/2014	04:19:36.2	1217.8	0.247	-0.113	0.22	0.002
25/03/2014	05:08:34.6	1007.5	0.194	-0.058	-0.185	-0.002
25/03/2014	05:53:56.4	1217.8	0.247	-0.113	0.22	0.002
25/03/2014	06:42:54.7	1007.3	0.194	-0.058	-0.185	-0.002
25/03/2014	07:28:16.3	1217.8	0.247	-0.113	0.22	0.002
25/03/2014	08:17:14.5	1007.3	0.194	-0.058	-0.185	-0.002
25/03/2014	09:02:35.9	1217.7	0.248	-0.113	0.22	0.002
25/03/2014	09:51:34.0	1007.2	0.194	-0.058	-0.185	-0.002
25/03/2014	10:36:55.2	1217.6	0.248	-0.113	0.22	0.002
25/03/2014	11:25:53.0	1007.1	0.194	-0.058	-0.186	-0.002
25/03/2014	12:11:14.1	1217.5	0.248	-0.113	0.221	0.002
25/03/2014	13:00:11.7	1007	0.195	-0.058	-0.186	-0.002
25/03/2014	13:45:32.5	1217.5	0.248	-0.113	0.221	0.002
25/03/2014	14:34:29.9	1006.9	0.195	-0.058	-0.186	-0.002
25/03/2014	15:19:50.4	1217.4	0.248	-0.113	0.221	0.002
25/03/2014	16:08:47.8	1006.8	0.195	-0.058	-0.186	-0.002
25/03/2014	16:53:59.7	1213.1	0.248	-0.112	0.221	0.002
25/03/2014	17:59:27.5	1.7	0	0	0	0

Swarm-C						
Date	**Time, UTC**	**Duration (s)**	**DV magnitude (m/s)**	**DV along (m/s)**	**DV cross (m/s)**	**DV radial (m/s)**
25/03/2014	18:29:03.6	1189.7	0.243	-0.113	0.216	0.003
25/03/2014	19:18:11.7	981.3	0.19	-0.06	-0.181	-0.002
25/03/2014	20:03:20.6	1189.6	0.243	-0.113	0.216	0.003
25/03/2014	20:52:28.5	981.2	0.191	-0.06	-0.181	-0.002
25/03/2014	21:37:37.3	1189.5	0.244	-0.113	0.216	0.003
25/03/2014	22:26:45.1	981.2	0.191	-0.06	-0.181	-0.002
25/03/2014	23:11:53.6	1189.4	0.244	-0.113	0.216	0.003
26/03/2014	00:01:01.2	981.1	0.191	-0.06	-0.181	-0.002
26/03/2014	00:46:09.5	1189.3	0.244	-0.113	0.216	0.003
26/03/2014	01:35:16.8	981	0.191	-0.06	-0.181	-0.002
26/03/2014	02:20:25.0	1189.3	0.244	-0.113	0.217	0.003
26/03/2014	03:09:32.0	980.9	0.191	-0.06	-0.181	-0.002
26/03/2014	03:54:40.0	1189.2	0.244	-0.113	0.217	0.003
26/03/2014	04:43:46.9	980.8	0.191	-0.06	-0.182	-0.002
26/03/2014	05:28:54.6	1189.2	0.245	-0.113	0.217	0.003
26/03/2014	06:18:01.3	980.7	0.191	-0.06	-0.182	-0.002
26/03/2014	07:03:08.7	1189.2	0.245	-0.113	0.217	0.003
26/03/2014	07:52:15.4	980.6	0.192	-0.06	-0.182	-0.002
26/03/2014	08:37:22.7	1189.2	0.245	-0.113	0.217	0.003
26/03/2014	09:26:29.1	980.5	0.192	-0.06	-0.182	-0.002

Swarm-C						
Date	**Time, UTC**	**Duration (s)**	**DV magnitude (m/s)**	**DV along (m/s)**	**DV cross (m/s)**	**DV radial (m/s)**
26/03/2014	10:11:36.3	1189.1	0.245	-0.114	0.218	0.003
26/03/2014	11:00:42.5	980.4	0.192	-0.061	-0.182	-0.002
26/03/2014	11:45:49.5	1189	0.246	-0.114	0.218	0.003
26/03/2014	12:34:55.5	980.4	0.192	-0.061	-0.182	-0.002
26/03/2014	13:20:02.2	1188.9	0.246	-0.114	0.218	0.003
26/03/2014	14:09:08.1	980.2	0.192	-0.061	-0.183	-0.002
08/04/2014	20:00:55.0	1179.3	0.245	-0.118	0.214	0.013
08/04/2014	20:49:26.0	1152.8	0.227	-0.094	-0.206	-0.012
08/04/2014	21:35:05.9	1179.1	0.245	-0.118	0.215	0.013
08/04/2014	22:23:36.6	1152.7	0.228	-0.094	-0.207	-0.012
08/04/2014	23:09:16.2	1179	0.245	-0.118	0.215	0.013
08/04/2014	23:57:46.6	1152.6	0.228	-0.094	-0.207	-0.012
09/04/2014	00:43:26.0	1178.9	0.246	-0.118	0.215	0.013
09/04/2014	01:31:56.1	1152.5	0.228	-0.095	-0.207	-0.012
09/04/2014	02:17:35.3	1178.8	0.246	-0.118	0.215	0.013
09/04/2014	03:06:05.1	1152.4	0.228	-0.095	-0.207	-0.012
09/04/2014	03:51:44.0	1178.8	0.246	-0.118	0.215	0.013
09/04/2014	04:40:13.6	1152.2	0.228	-0.095	-0.207	-0.012
09/04/2014	05:25:52.3	1178.7	0.246	-0.118	0.216	0.013
09/04/2014	06:14:21.7	1152.1	0.229	-0.095	-0.208	-0.012

Swarm-C						
Date	**Time, UTC**	**Duration (s)**	**DV magnitude (m/s)**	**DV along (m/s)**	**DV cross (m/s)**	**DV radial (m/s)**
09/04/2014	07:00:00.1	1178.7	0.247	-0.119	0.216	0.013
09/04/2014	07:48:29.3	1152	0.229	-0.095	-0.208	-0.012
09/04/2014	08:34:07.6	1178.6	0.247	-0.119	0.216	0.013
09/04/2014	09:22:36.6	1151.9	0.229	-0.095	-0.208	-0.012
09/04/2014	10:08:14.7	1178.4	0.247	-0.119	0.216	0.013
09/04/2014	10:56:43.3	1151.8	0.229	-0.095	-0.208	-0.012
09/04/2014	11:42:21.2	1178.3	0.247	-0.119	0.217	0.013
09/04/2014	12:30:49.5	1151.7	0.229	-0.095	-0.208	-0.012
09/04/2014	13:16:27.1	1178.2	0.248	-0.119	0.217	0.014
09/04/2014	14:04:55.2	1151.6	0.23	-0.095	-0.209	-0.012
09/04/2014	14:50:32.5	1178.2	0.248	-0.119	0.217	0.014
09/04/2014	15:39:00.4	1151.4	0.23	-0.095	-0.209	-0.012
09/04/2014	16:24:37.4	1178.1	0.248	-0.119	0.217	0.014
09/04/2014	17:13:05.1	1151.3	0.23	-0.095	-0.209	-0.012
09/04/2014	17:58:41.9	1178.1	0.248	-0.119	0.217	0.014
09/04/2014	18:47:09.3	1151.2	0.23	-0.096	-0.209	-0.012
09/04/2014	19:32:46.0	1178	0.249	-0.119	0.218	0.014
09/04/2014	20:21:13.2	1151.2	0.231	-0.096	-0.209	-0.012
09/04/2014	21:06:42.6	1178.4	0.249	-0.119	0.218	0.013
09/04/2014	22:13:36.1	1.6	0	0	0	0

Swarm-C						
Date	**Time, UTC**	**Duration (s)**	**DV magnitude (m/s)**	**DV along (m/s)**	**DV cross (m/s)**	**DV radial (m/s)**
09/04/2014	22:40:45.9	1178.3	0.249	-0.119	0.218	0.013
09/04/2014	23:29:11.7	1149.6	0.231	-0.094	-0.21	-0.012
11/04/2014	02:53:05.8	1045.8	0.222	-0.062	0.213	0
11/04/2014	03:40:06.0	933.5	0.188	-0.043	-0.183	0
11/04/2014	04:27:07.8	1045.8	0.222	-0.062	0.213	0
11/04/2014	05:14:07.9	933.4	0.188	-0.044	-0.183	0
11/04/2014	06:01:09.5	1045.8	0.222	-0.062	0.214	0
11/04/2014	06:48:09.7	933.4	0.188	-0.044	-0.183	0
11/04/2014	07:35:11.2	1045.8	0.222	-0.062	0.214	0
11/04/2014	08:22:11.2	933.3	0.188	-0.044	-0.183	0
11/04/2014	09:09:12.7	1045.7	0.223	-0.062	0.214	0
11/04/2014	09:56:12.6	933.3	0.189	-0.044	-0.183	0
11/04/2014	10:43:13.9	1045.7	0.223	-0.062	0.214	0
11/04/2014	11:30:13.6	933.3	0.189	-0.044	-0.184	0
15/04/2014	04:02:17.0	672.1	0.143	-0.143	0	0
15/04/2014	04:56:01.4	652.4	0.139	-0.139	0	0
17/04/2014	04:40:29.3	582.2	0.126	-0.126	0	0
17/04/2014	05:27:29.0	569.8	0.123	-0.123	0	0

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