

INTEGRAL
Mission Report
INT-MOC-SYS-RP-1001-OPS-OAI
No. 265
Week 42
22.10.07
Routine Phase

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1 General

The Flight Control Team at MOC has compiled this report with some input provided by the Flight Dynamics Team, ISOC and ISDC.

It addresses the activities from 13.10.07 until 19.10.07 (both dates inclusive) and covers the revolutions 611 and 612.

2 Summary of Activities

The operations were performed according to the planning inputs from ISOC combined with some manual commanding by MOC.

The targets of these revolutions consisted of a hexagonal dither of the Galactic bulge region (RA 17:45:36.00, DEC -28:56:00.0), a Custom Pointing at the Galactic disk (RA 19:04:22.00, DEC +06:17:13.0), a hexagonal dither of the Gamma Ray Source 1915+105 (RA 19:15:11.50, DEC +10:56:44.0), a raster dither of the Galactic Plane Region 1 (RA 18:04:41.75, DEC -05:04:48.4), and a raster dither of SS433 (RA 19:11:49.56, DEC +04:58:57.6),

Note: Some further information concerning the activities is provided in the Appendix.

3 Satellite Status

3.1 Platform

The performance of the platform was good. No new unexpected behaviour / malfunction was identified.

3.1.1 AOCS

The AOCS operations were performed from the timeline during this period.

The winter 2007 Eclipse Season started on 11/10/2007. The second and third eclipse passages were nominal from an AOCS point of view.

As part of the AOCS preparation for the winter 2007 eclipse season, were verified the load of the TT sequence to re-enable the IMU Auto Switch-Off function in the ACC and the Eclipse ACC\FDE\FCE timers.

Two slews were missed from TL, during the observation period, due to loss of guide star and not enough number of stars for manoeuvre generation.

The fuel consumption over the period between 12/10/2007 and 19/10/2007 was 0.0914 Kg. The remaining propellant is in the order of 144.1102 Kg.

Note: Some more information concerning the AOCS operations and the fuel budget is provided in the Appendix.

3.1.2 Power

The EPS is working nominally; available power from the arrays is of the order of 2100W.

3.1.3 Thermal

The thermal control of the satellite is working well. The temperatures are currently all within the specified operational limits.

3.1.4 OBDH

The OBDH subsystem is working flawlessly. No on-board communications problem has been identified.

3.1.5 RFS

The RF subsystem is working properly. The link margin is sufficient to ensure proper TM reception and execution of commands with the ranging channel enabled.

3.2 Payload

3.2.1 SPI

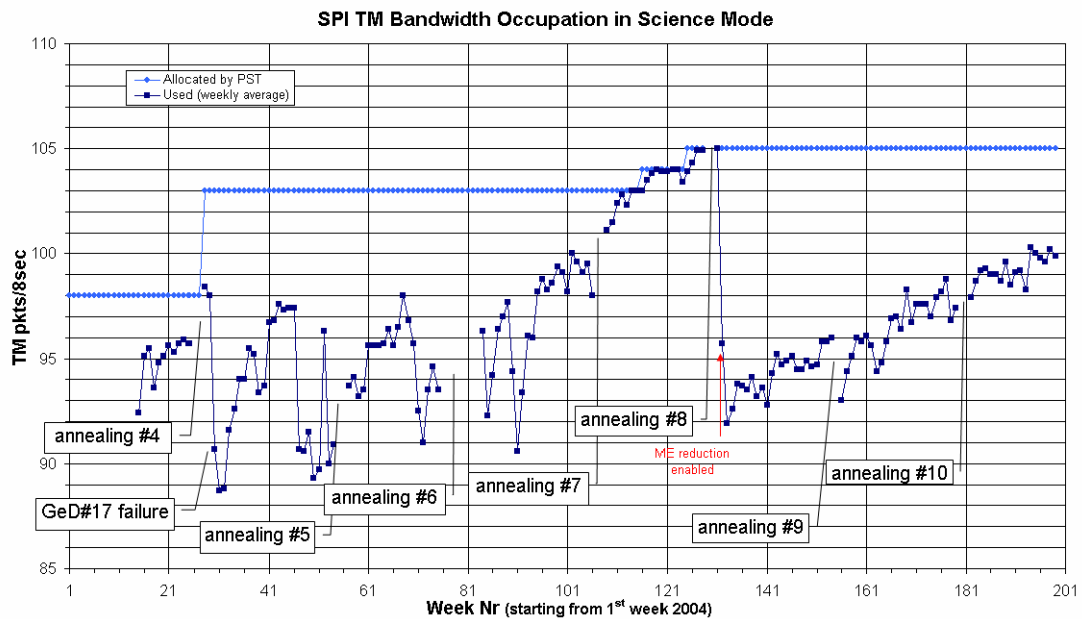
Following the 10th annealing, which ended on 17th June, the overall status of the gamma-ray spectrometer is nominal, except for the Ge detector #12 which is showing a slightly degraded energy resolution and is therefore operating at a lower HV setting of 3.5kV (instead of 4kV). Detector #2 is failed since 06.12.2003 and detector #17 since 17.07.2004.

The Stirling compressors are working nominally, maintaining the Germanium detectors at 80 +/-1K.

During science operations, the instrument was kept in photon-by-photon mode with spectra TM enabled. The assigned TM bandwidth in the science observation windows was 105 packets/cycle except. The average telemetry occupation when the TM allocation was 105 packets/cycle was 99.9 packets/cycle.

During the reporting period, SPI operations for eclipse continued to be executed nominally.

The following plot shows the assigned and the average occupation of the SPI TM bandwidth.



Note: Some more information concerning the SPI operations is provided in the Appendix.

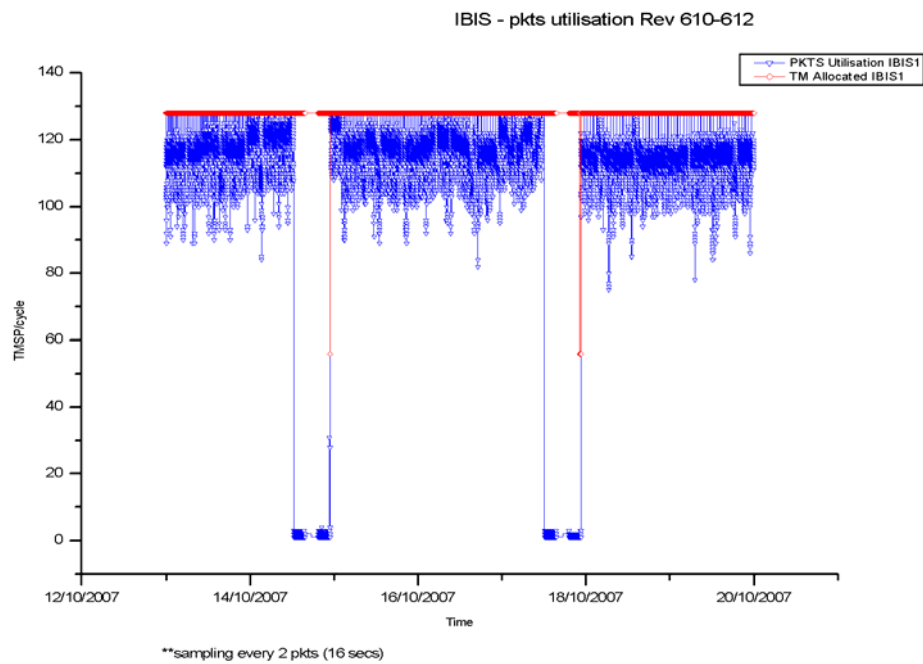
3.2.2 IBIS

The overall status of the unit is nominal.

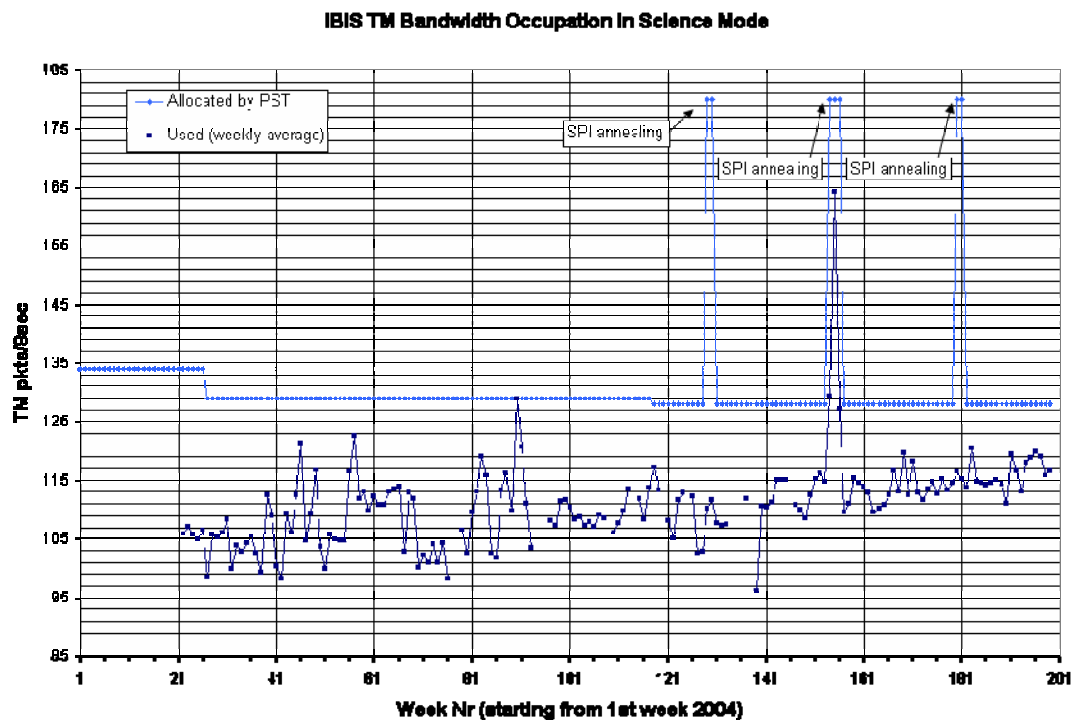
During the reporting period, the PST allocation to IBIS was 128 TMPS/cycle. The IBIS mean bandwidth utilisation during the observation period (when IBIS was in Science mode) was 116.64 TMPS/cycle, up 0.77 on last week.

During the reporting period IBIS operations for eclipse continued to be executed nominally.

A plot of the IBIS TM utilisation during the observation period is shown below:



A plot of the IBIS weekly bandwidth utilisation since 2004 is shown below:



Note: Some more information concerning the IBIS operations is provided in the Appendix.

3.2.3 JEM-X

The status of both JEM-X units is nominal.

JEM-X operations were performed by the automatic Timeline.

JEM-X1 was operated in Data Taking mode with a TM allocation of 8 packets/cycle. JEM-X2 was dormant (DPE OFF) with no TM slots allocated.

Note: Some more information concerning the JEM-X operations is provided in the Appendix.

3.2.4 OMC

The status of OMC is nominal.

OMC operations were performed by the automatic Timeline. OMC was operated in Science Normal mode during science observations, with a TM allocation of 5 packets/cycle.

During this reporting period, 187 of the 189 planned science pointings for OMC were executed nominally, 2 were shortened.

Note: Some more information concerning the OMC operations is provided in the Appendix.

3.2.5 IREM

The overall status of the unit is nominal.

Solar Activity

The observation period was characterised by low solar activity. The sun was blank all week, the risk of solar flares was very low.



Reference: www.spaceweather.com

Note: Some more information concerning the IREM operations is provided in the Appendix Section 8.3.6.

4 Ground Facilities

The Operational ground facilities performance was very good this week, no pointings were missed from the Timeline. The overall performance was well over the 95% requirement.

4.1 Mission Operations Centre

The performance of the MOC was very good this week. A problem with the nctrs caused a late uplink of the OMC commands. The overall performance was well over the 95% requirement.

4.2 Ground Stations & Network

The performance of the ground stations and Network was good this week. There were, however, 4 occasions of small TM drops from Redu, 3 from DSS27, and 2 occasions of errors sending data to the isds. The overall performance was well over the 95% requirement.

4.3 Science Ground Segment

4.3.1 ISOC

1. Mission planning

PSFs received for Revolutions 618 & 619. Revolutions up to 619 have been planned and send to MOC.

TSFs for Revolutions 613-615 have been received.

2. Observation status

ECS for Revolution 613 has been received, but not yet processed.

3. ISOC Science Data Archive

No news.

4. ISOC system

Still working with Version 16.0.

5. Problems

The problem with different constraint checks at ISOC and MOC has still not been resolved, despite efforts on both sides to investigate the question. ISOC is also busy with implementing a sequential roll angle (between ± 3 degrees) strategy for 5x5 observations, but a few bugs have to be taken care of.

4.3.2 ISDC

Status of ISDC observation processing on 22/10/2007:

- Latest Standard Analysis completed: observation 05200010010 (Galactic Bulge region, Revolution 602) on 17/10/2007.
- Latest products archived: observation 05200010010 (Galactic Bulge region, Revolution 602) on 17/10/2007.
- Latest observation products sent to the observer: observation 05200010010 (Galactic Bulge region, Revolution 602) on 18/10/2007.

5 Special Events

6 Anomalies

The following problems were reported that impacted operations:

- On DoY 288, at 19:42, the VC0 & VC7 TM links dropped. The cause was a queue overflow on the Redu TMP2. The nctrs-a machine was restarted and the TM connected to TMP1. The impact was a shortening of the OMC pointing 06110036.

The following anomaly report was entered into the ARTS system this week.

AR id	Date Created	Subject	Segment	Status
INT-2962	2007-10-19	Display of parameter values on VPD no consistent - probably since M-05	IMCS	Pending

7 Future Milestones

The following activities are foreseen in the next few weeks.

- Eclipse season is scheduled to finish, with the last eclipse on 1st November 2007, at the beginning of revolution 617.

8 Appendix

The appendix includes various detailed information.

8.1 Overview of Revolutions

Revolution 611

The observations in revolution 611 began with a hexagonal dither of the Galactic bulge region (RA 17:45:36.00, DEC -28:56:00.0), lasting ~3.5 hours. They continued with a Custom Pointing at the Galactic disk (RA 19:04:22.00, DEC +06:17:13.0), lasting ~33.7 hours. This was followed by a hexagonal dither of the Gamma Ray Source 1915+105 (RA 19:15:11.50, DEC +10:56:44.0), lasting ~5.6 hours. Finally a raster dither of the Galactic Plane Region 1 (RA 18:04:41.75, DEC -05:04:48.4), lasting ~10.9 hours, was performed, until the end of the revolution.

Revolution 612

The observations in revolution 612 consisted entirely a raster dither of SS433 (RA 19:11:49.56, DEC +04:58:57.6), lasting ~56.1 hours.

Throughout these observations, all instruments were in their nominal science modes, except JEM-X2, which is switched off. The TM allocation was IBIS 128; SPI 105; JEM-X1 8; JEM-X2 0; OMC 5.

8.2 Consumables

8.2.1 Detailed Fuel Book-keeping

2007-09-28T06:54:50.000Z	144.3511	F	Automatic TM processing.
2007-09-29T21:11:34.000Z	144.3404	F	Automatic TM processing.
2007-10-01T06:44:42.000Z	144.3103	F	Automatic TM processing.
2007-10-02T20:58:30.000Z	144.2960	F	Automatic TM processing.
2007-10-04T06:22:41.000Z	144.2737	F	Automatic TM processing.
2007-10-05T20:45:41.000Z	144.2660	F	Automatic TM processing.
2007-10-07T06:12:57.000Z	144.2486	F	Automatic TM processing.
2007-10-08T20:47:49.000Z	144.2403	F	Automatic TM processing.
2007-10-10T06:12:25.000Z	144.2142	F	Automatic TM processing.
2007-10-11T21:05:01.000Z	144.2016	F	Automatic TM processing.
2007-10-13T06:06:00.000Z	144.1817	F	Automatic TM processing.
2007-10-14T20:53:48.000Z	144.1645	F	Automatic TM processing.
2007-10-16T05:36:57.000Z	144.1420	F	Automatic TM processing.
2007-10-17T20:51:57.000Z	144.1282	F	Automatic TM processing.
2007-10-19T05:57:52.000Z	144.1102	F	Automatic TM processing.

This report was generated Fri Oct 19 08:00:39 GMT 2007

8.3 Detailed Satellite Information

This section contains some detailed information concerning the various subsystems of the satellite and instruments.

8.3.1 AOCS SUMMARY OPERATIONS REPORT, 13/10/2007 – 19/10/2007

The AOCS operations were executed from the Automatic Timeline.

During this period, 72 Open Loop Slews, 127 Closed Loop Slews and 5 Momentum Biases were executed.

2 slews (1 OSL, 1 CSL) were missed from TL, during the observation period due to loss of guide star and not enough stars in STR FOV for manoeuvre generation.

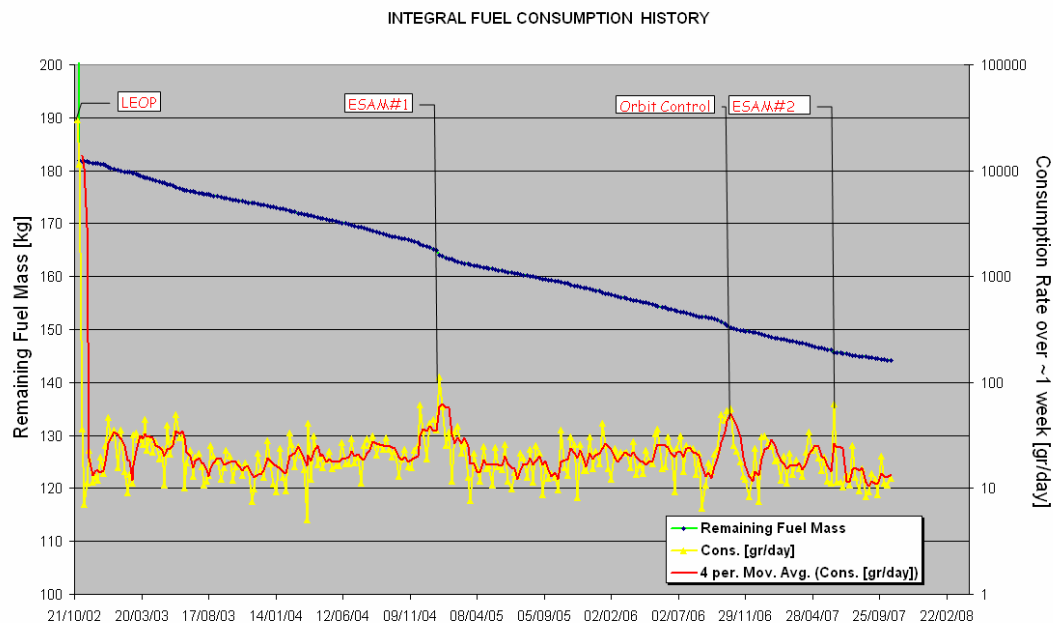
The OTF was not reached during PID 06110089.

Orbit Control

No update.

Fuel consumption

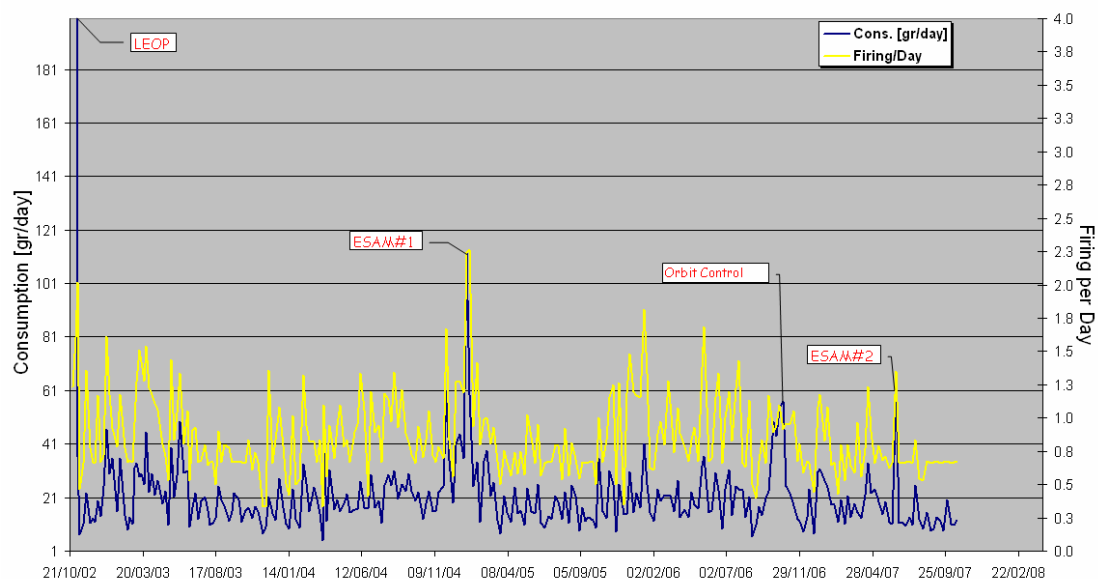
The fuel consumption (total, grams per day) over the period between 01/11/2002 and 19/10/2007 is reported in the plot below.



The plot above considers the ESAM fuel consumption spread over period of ~1 week.

The firing per day over the period between 01/11/2002 and 19/10/2007 is reported in the plot below.

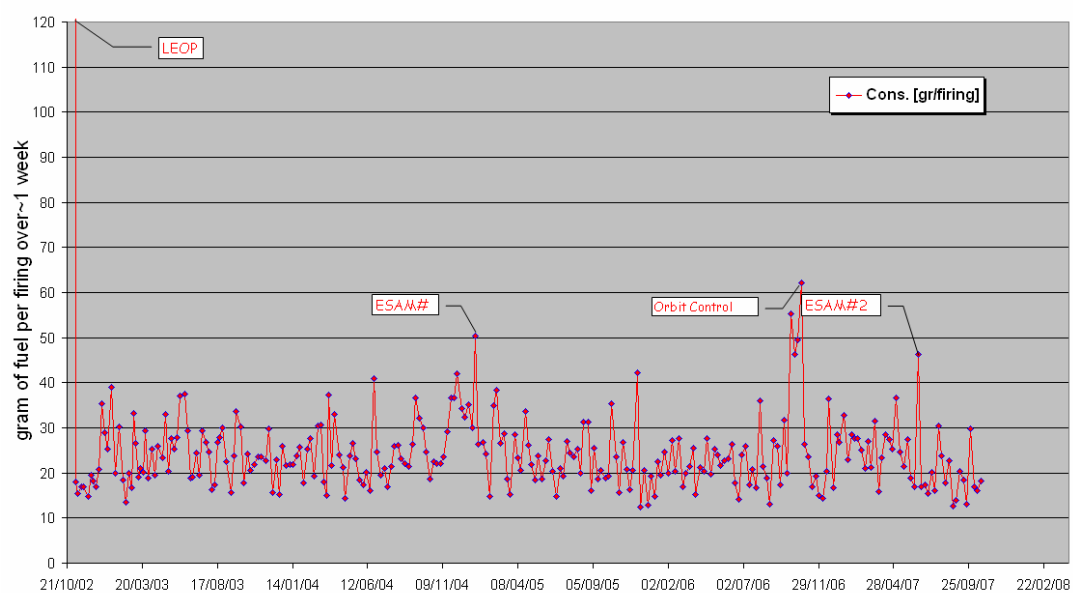
INTEGRAL FIRING PER DAY HISTORY



The plot above consider the ESAM fuel consumption spread over period of ~1 week.

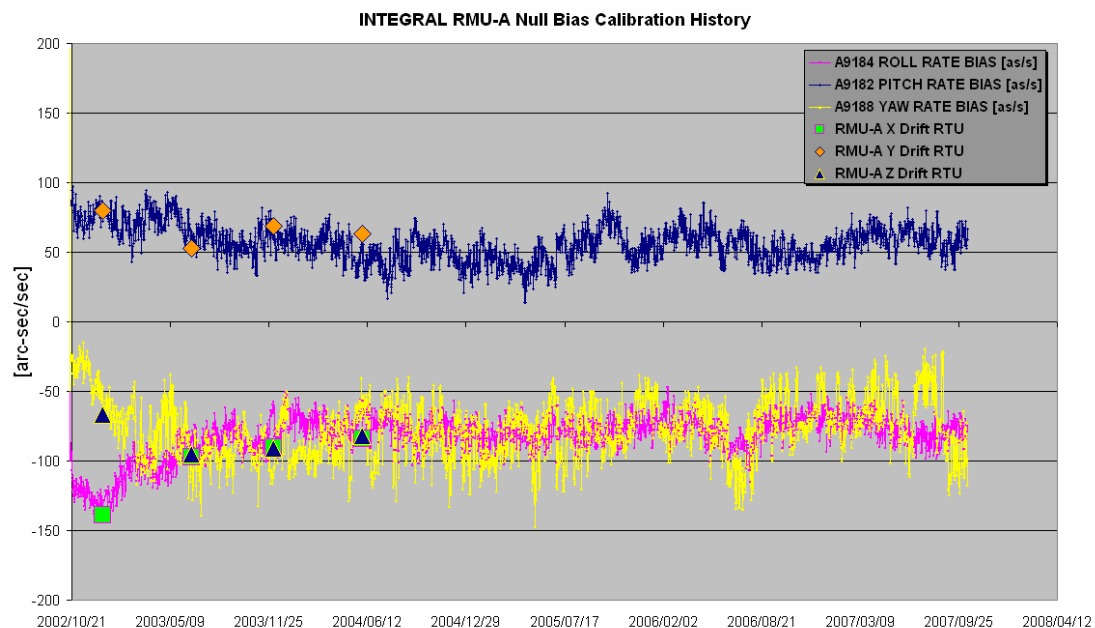
The fuel per firing over the period between 01/11/2002 and 19/10/2007 is reported in the plot below.

INTEGRAL FUEL MASS PER FIRING HISTORY



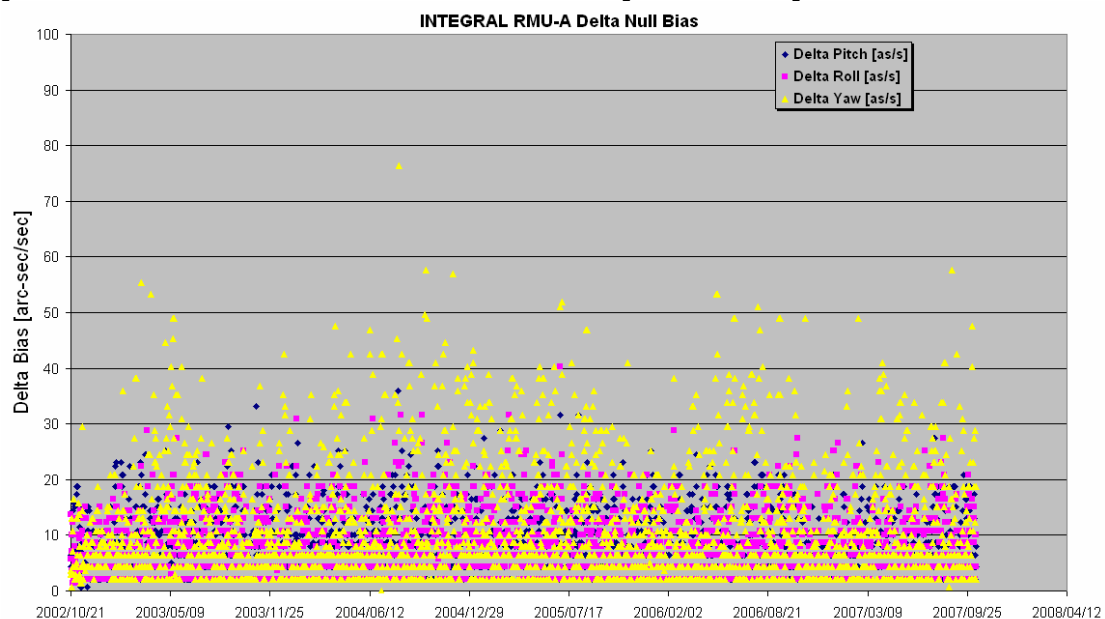
The RMU-A null bias calibration

The RMU-A null bias calibration history, on pitch, roll and yaw channel over the period between 01/11/2002 and 12/10/2007 is reported in the plot below.



The evolution of the drift on yaw channel is under constant monitoring.

The RMU-A delta null bias calibration history, on pitch, roll and yaw channel over period between 01/11/2002 and 12/10/2007 is reported in the plot below.



13/10/2007 (Day of Year 286, Revolution 610)

Nothing to report.

14/10/2007 (Day of Year 287, Revolution 610-611)

Eclipse passage rev 610: the 2nd eclipse operations were nominal from the AOCS point of view. Hereafter is reported a summary of the eclipse passage during rev 610:

INPUT		AOCS ECLIPSE MONITORING		Revolution: 610	
		Winter 2007		Date: 14/11/2007	
				DoY: 287	
Penumbra Start	14/10/2007 19:19	Penumbra Start:	14/10/2007 19:19:36	LOS:	14/10/2007 19:40:00
Penumbra End	14/10/2007 20:00	Umbral Start:	14/10/2007 19:21:24	AOS:	14/10/2007 19:26:00
Umbral Start	14/10/2007 19:21	Umbral End:	14/10/2007 20:01:27		
Umbral End	14/10/2007 20:01	Penumbra End:	14/10/2007 20:03:43		
ACC Sample Time	14/10/2007 01:09:40	Eclipse Duration:	0:44:07		
FDE Sample Time	14/10/2007 01:09:40	Eclipse Duration [sec]:	2647		
FCE Sample Time	14/10/2007 01:09:40	IMU Health Check Start	14/10/2007 12:19:00		
ACC Eclipse Counter	186149	Eclipse Imminent Flag	14/10/2007 18:19:56		
ACC Eclipse Start	263470	ACC IMU AutoCal Start	14/10/2007 18:34:22		
ACC Eclipse End	256770	ACC IMU AutoCal End	14/10/2007 18:54:22		
FDE Eclipse Start	263008	Sun out of FSS FoV	14/10/2007 19:21:03		
FDE Left to Eclipse Start	64513	Sun back in FSS FoV	14/10/2007 20:01:56		
FDE Eclipse Duration	3400				
FCE Eclipse Start	262942				
FCE Left to Eclipse Start	64074				
FCE Eclipse Duration	3326				

Eclipse Timers		From Loaded Timers		Actual From Telemetry		UM [sec]		LSB [sec]	
		Absolute	WRT Pen. Start [sec]	Absolute	WRT Pen. Start [sec]				
ACC Eclipse Start	14/10/2007 19:01:50		-1066.00	14/10/2007 19:01:50	-1066.00		-1064		176
FDE Eclipse Start	14/10/2007 19:11:50		-466.00				-464		176
FCE Eclipse Start	14/10/2007 19:12:34		-422.00				-360		176

		From Loaded Timers		Actual From Telemetry		UM [sec]		LSB [sec]	
		Absolute	WRT Pen. End [sec]	Absolute	WRT Pen. End [sec]				
FCE Eclipse End	14/10/2007 20:08:30	267		14/10/2007 20:08:24	341.00		360		176
FDE Eclipse End	14/10/2007 20:08:30	267		14/10/2007 20:09:24	341.00		360		176
ACC Eclipse End	14/10/2007 20:13:21	578		14/10/2007 20:13:21	578.00		578		

IMU		Uplink	Execution	WRT Penumbra End [sec]	
IMU Auto Off Enable	11/10/2007 20:47:39		14/10/2007 20:15:15	692	
IMU On	14/10/2007 12:23:46	IMU H/C Noise Roll [sec]		0.1962	
IMU Off	14/10/2007 20:15:35	IMU H/C Drift Roll [sec]		0.2620	
IMU On Time	7:51:39	IMU Auto Cal Drift Roll [sec]		0.3275	

15/10/2007 (Day of Year 288, Revolution 611)

No TM Links from REDU: at 19:42z the VC0 and VC7 TM links on NCTRS-A reported a drop. The origin was a queue overflow on REDU TMP2. NCTRS-A was restarted and the TM links connected again from TMP1. As consequence, the automatic update for slew ID 06110037 failed and the AOCS s/s was disabled in TL.

A manual recovery was performed at 20:00z and the slew ID 06110037 manually updated in TL.

No impact on TL.

16/10/2007 (Day of Year 289, Revolution 611)

Nothing to report.

17/10/2007 (Day of Year 290, Revolution 611-612)

Loss of guide star: at 09:22:23z a loss of the selected guide star Mi 8.25 @ CCD location [18897, -22219], occurred during the execution of PID 06110089.

As foreseen by the IPS logic, the ACC switched ON the IMU 1, a new automatic mapping was commanded and a new guide star, Mi 7.0 @ CCD location [5208, -600], was picked.

A manual recovery was performed at 09:45z from attitude of PID 06110089 to the attitude of PID 06110090 (last PID of the rev).

The following slew was not executed from TL: 06110090(OSL).

The OTF was not reached during PID 06110089.

Eclipse passage rev 611: the 3rd eclipse operations were nominal from the AOCS point of view. Hereafter is reported summary of the eclipse passage during rev 611:

Issue : 1
Rev. : 0
Page : 15

18/10/2007 (Day of Year 291, Revolution 612)

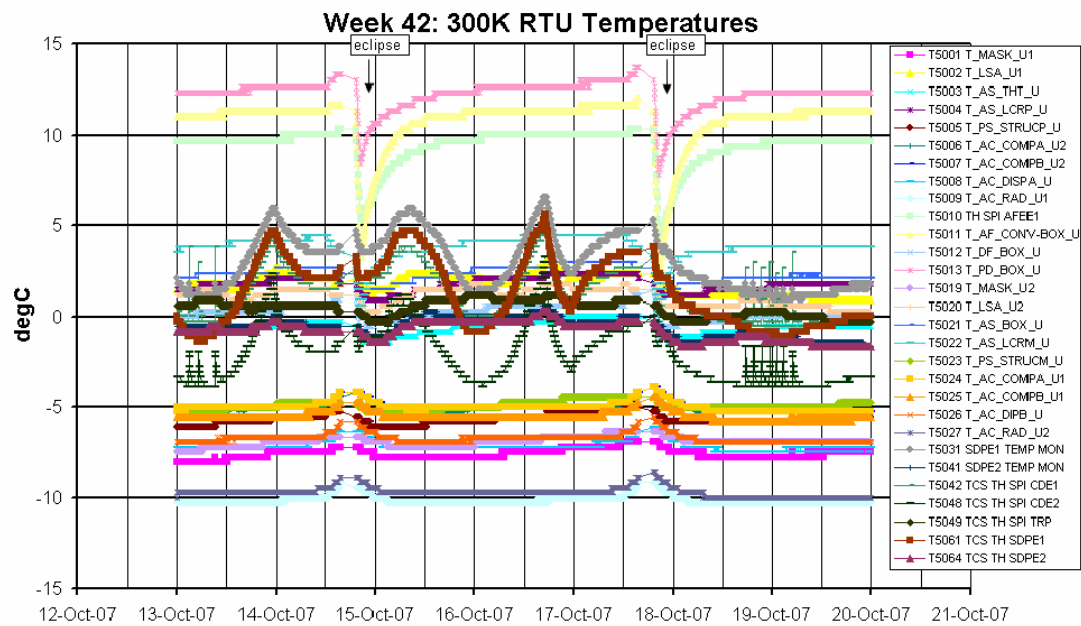
19/10/2007 (Day of Year 292, Revolution 612)

A manual recovery was performed from attitude of PID 06120054 to the attitude of PID 06120055 by generating the manoeuvre as an OSL (Open Loop Slew).

The following slew was missed in TL: 06120055(CSL)

8.3.2 SPI Operations

Unit Temperatures: All the equipment temperatures are inside the operational limits. The following plot shows their evolution during the reporting period.

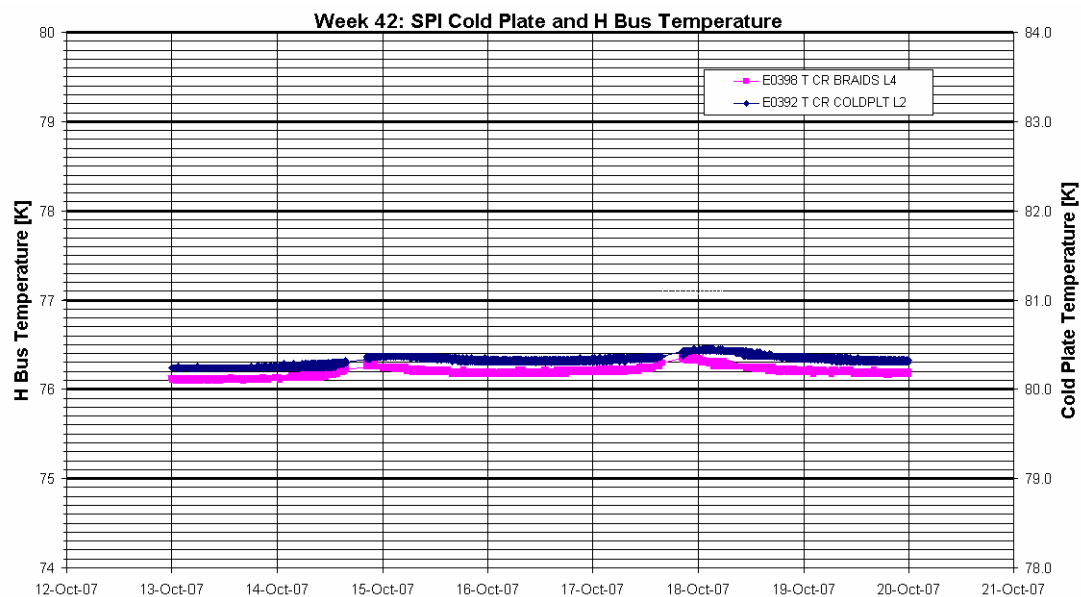


Stirling Compressors and Cryostat: The performance of the compressors is nominal. The cold plate temperature was maintained in the range 80K +/-1K.

The stroke of all four compressors was set 40 throughout the week with the average CDE LCL currents as follows:

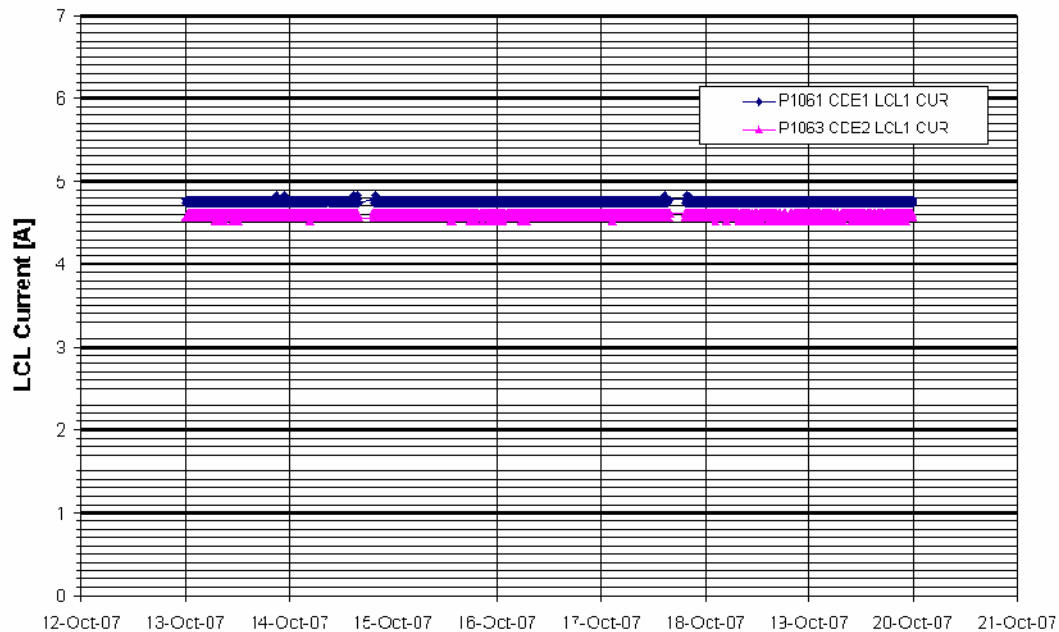
- CDE1 LCL Current = 4.76A
- CDE2 LCL Current = 4.57A

The following plot shows the evolution of the cold plate and H bus temperatures during the reporting period.



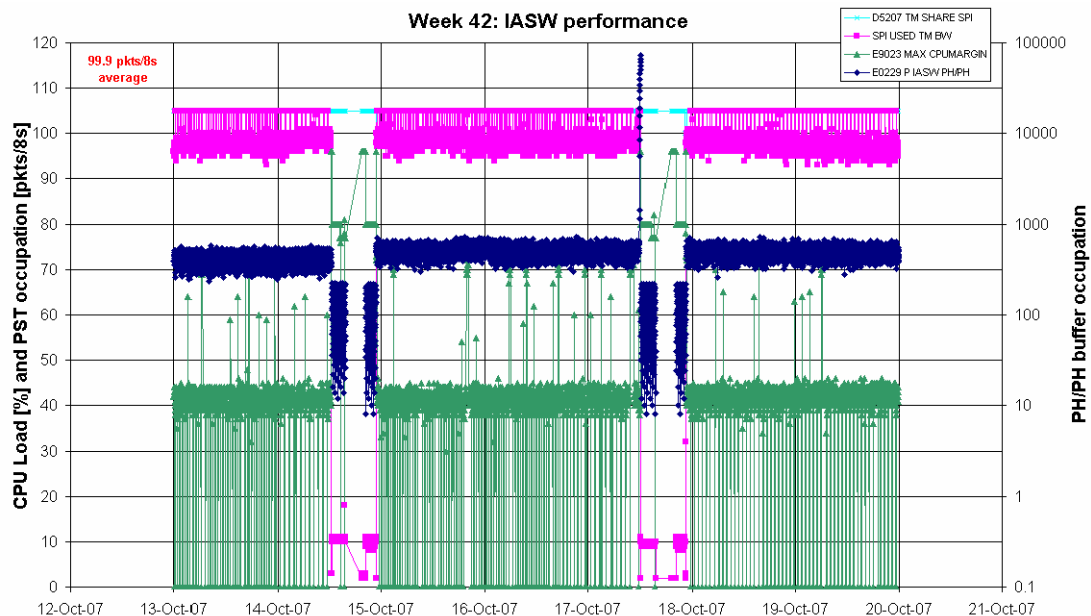
The following plot shows the evolution of the CDE currents during the reporting period.

Week 42: SPI CDE1 and CDE2 LCL Currents



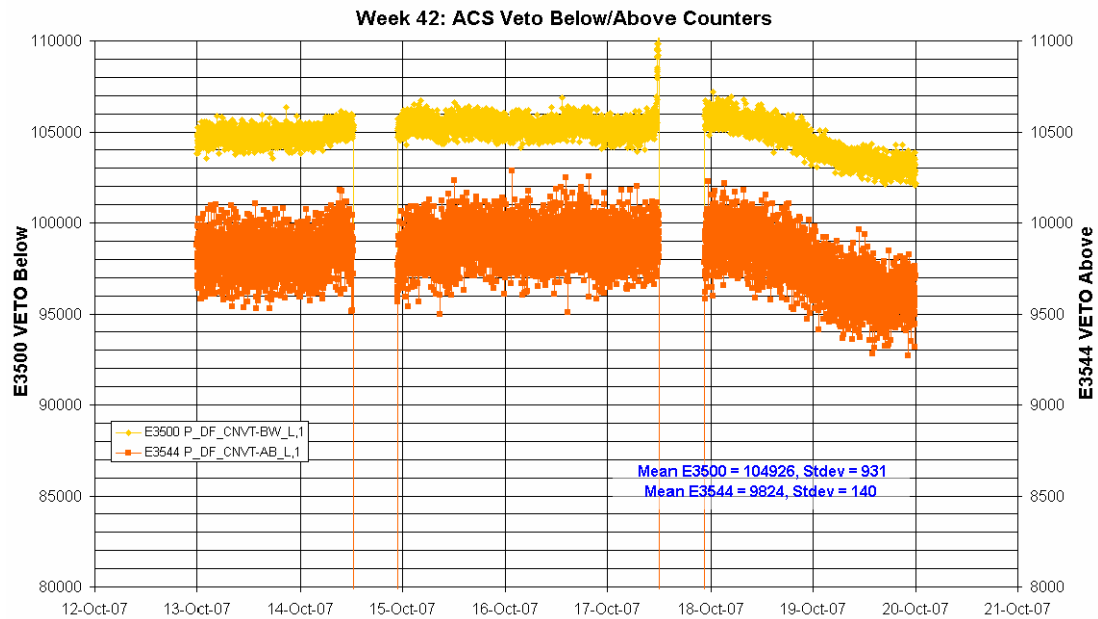
DPE & IASW: The DPE health and IASW performance is nominal. The IASW version installed is v433 patch #1 with the spectra scaling factor set to 8/19 SE. The average TM bandwidth occupation of SPI was 99.9 packets/cycle over the science window, when the TM allocation was 105 packets/cycle.

The following plot shows the IASW performance in terms of TM bandwidth, event buffer occupation and DPE CPU load during the reporting period.



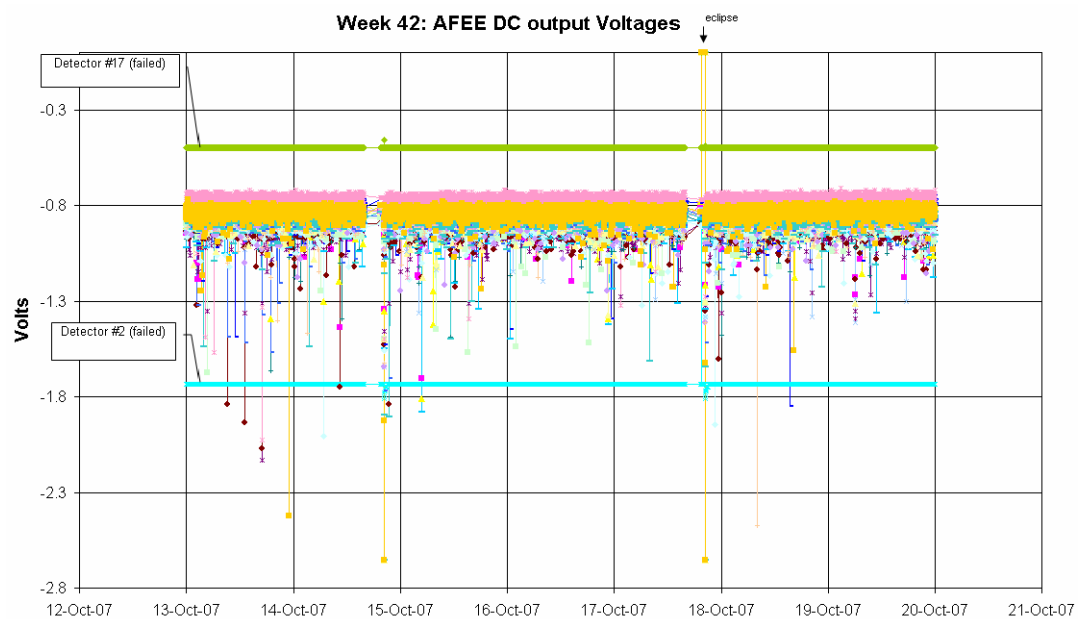
ACS: The performance of the ACS is nominal, except for FEE #81 which remains switched off since the anomaly on 29/10/2006 (INT_SC-162) and FEE #57 which is still OFF due to the anomaly on 5/8/2003 (INT_SC-61).

The following plot shows the ACS overall count rate evolution during the reporting period:

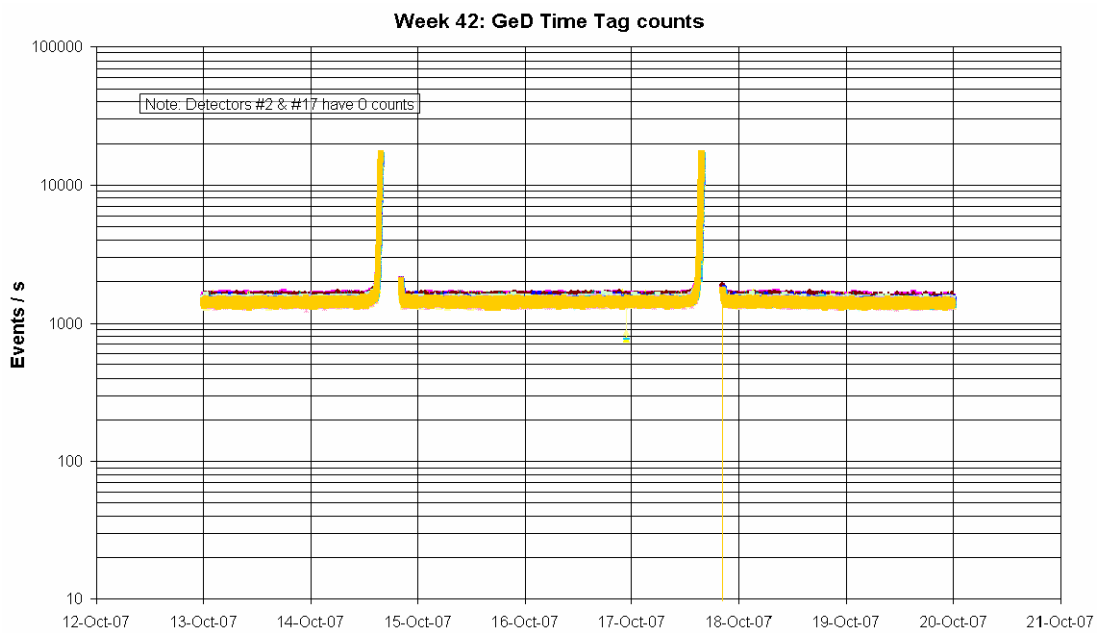
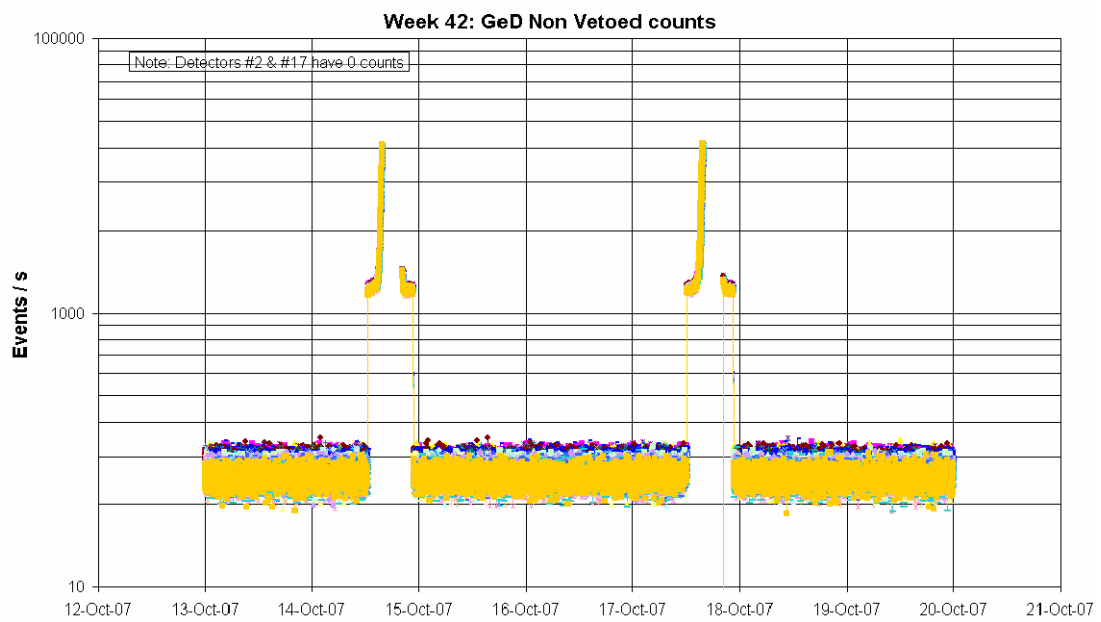


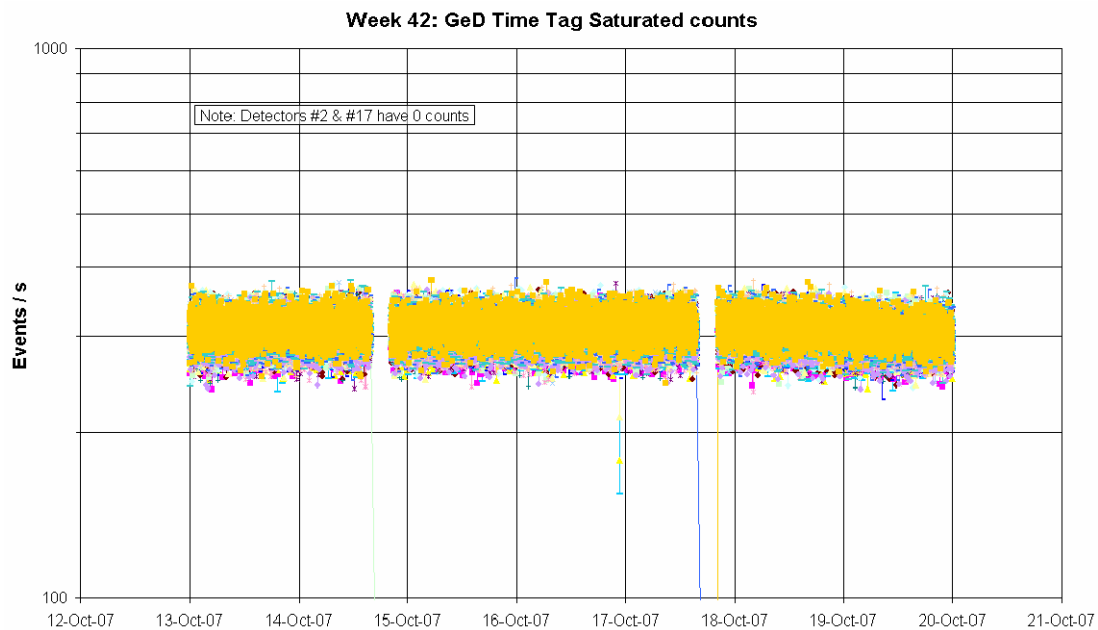
AFEE: The health of the AFEE is nominal. The performance of the AFEE and the detectors is nominal, except for the Ge detector #12 which is showing a slightly degraded energy resolution and is therefore operated at a lower HV setting of 3.5kV (instead of 4kV).

The following plot shows the dc voltage offset of the detector channels during the reporting period. The values are nominal. Detector #2 is failed since 06.12.2003 and detector #17 is failed since 17.07.2004.

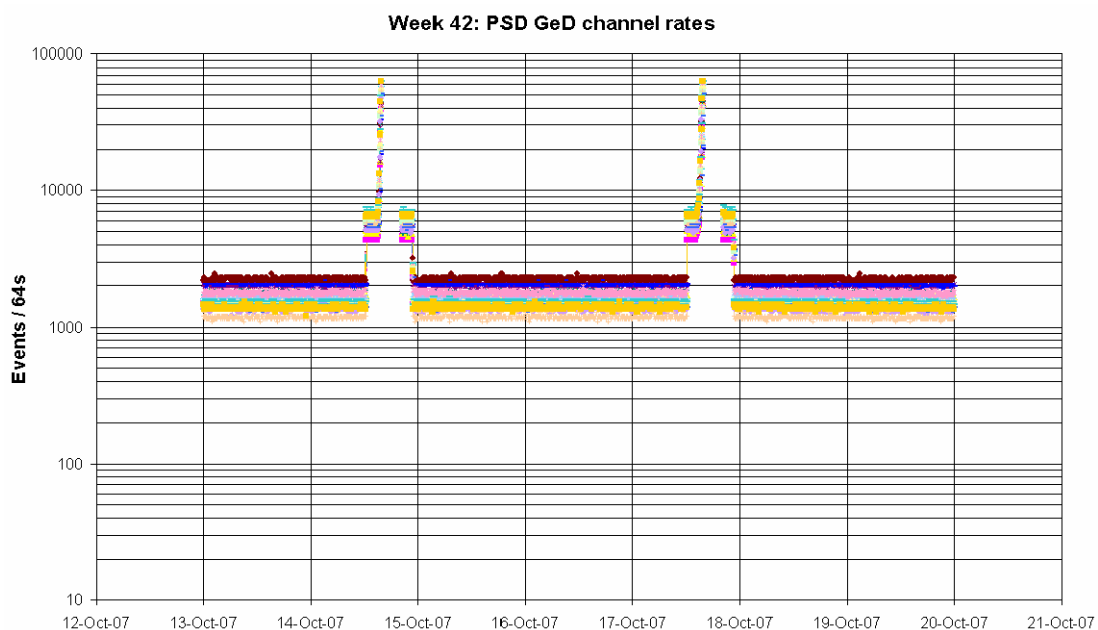


DFEE: The performance of the unit is nominal. The following plots show the Non Vetoed, Time Tag and Time Tag Saturated Event Count Rates during the reporting period.





PSD: The health of the unit is nominal. The following plot shows the PSD channel rates during the reporting period.



Event Log:

The following non-nominal events occurred on SPI during the reporting period:

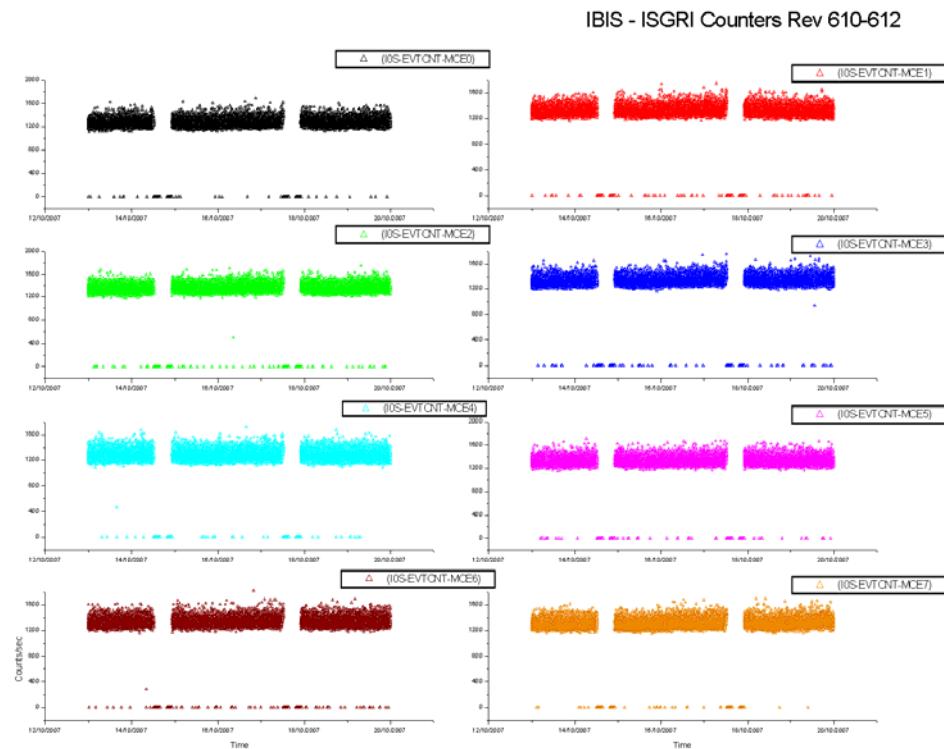
- 8 occurrences of OEM APID 1024 ID 243 EXCEPTION SPI1 SPECTRA BUILDING NOT COMPLETED were received during the week. As they were all single occurrences, no action was taken.
- TM parameter E2115 (Plastic Scintillator temperature) fluctuated OOL warning low several times during the week. As these were small fluctuations around the limit, not accompanied by other OOLs and all heaters were in the correct configuration, no action was taken.

- On 2007-10-16 at 03:47:32Z TM parameter E1296 (ISB response parity error) went OOL (value = ERROR STATE). It returned within limits when the next packet was received at 03:47:40Z and no action was taken.
- On 2007-10-17 at 22:35:22Z, just after radiation belt exit of revolution 612, TM parameters E3981-E3984; E3986; E3988; E3991-E3992 and E3995-E3996 all went OOL with value = 0. These are the Coldbox temperatures; DFEE and PSD box temperatures; VCU temperature; Heat pipe temperatures and the AFEE power supply board temperature and are all in SPID 60602. This was the first mode-change packet received after radiation belt exit and the parameters returned within limits when the final mode-change packet was received at 22:41:02Z. This is a re-occurrence of the anomaly INT_SC-205

8.3.3 IBIS Operations

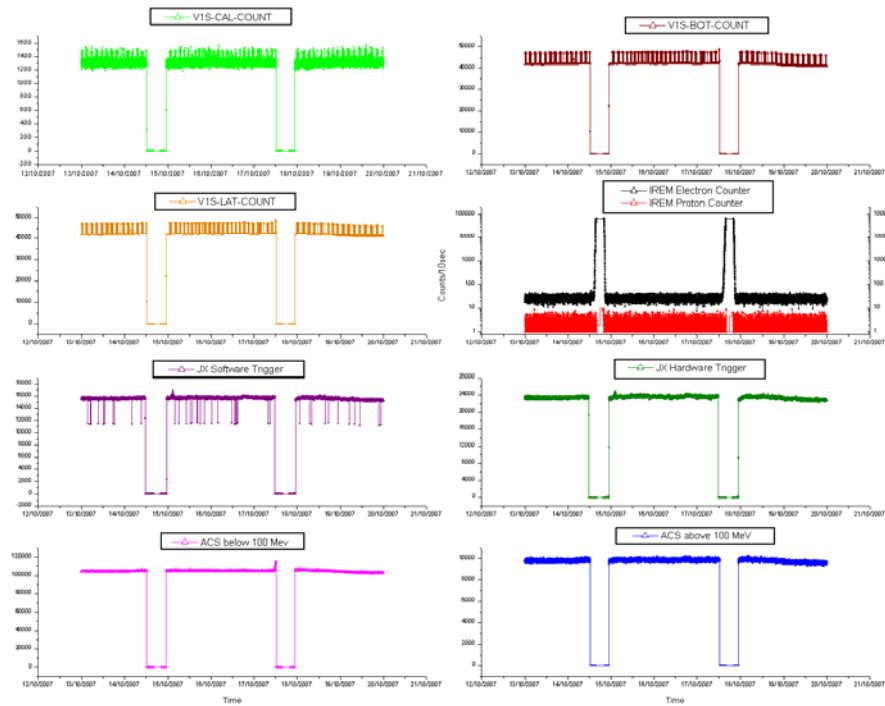
IBIS Event Counters Plots

ISGRI Counters:



VETO vs Payloads Counters:

IBIS-VETO vs Payloads Counters Rev 610-612

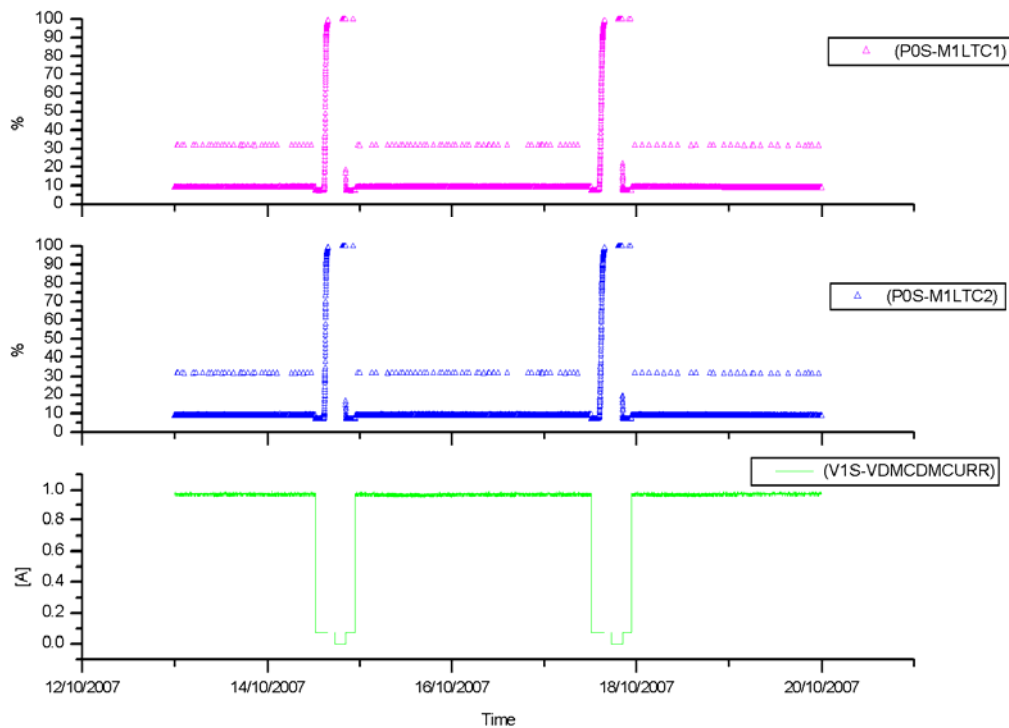


**with the exception of IREM counters (counts/10sec), all the plots are reporting counts/sec sampling every 5 pkts (40 sec)

The week was characterised low radiation as reported by the payload.

VETO Current:

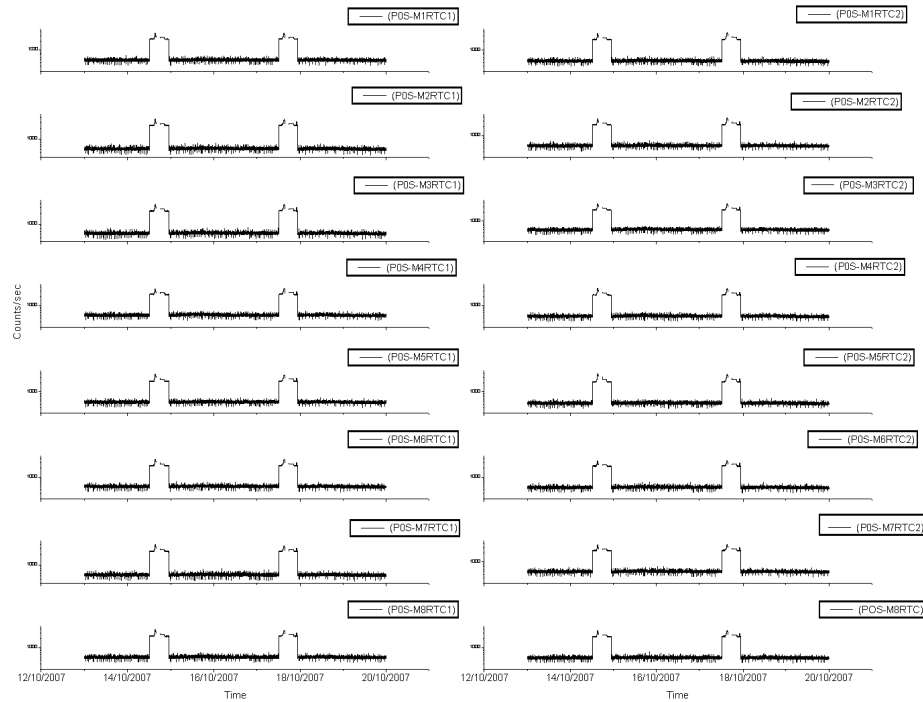
IBIS-VETO Current & PICsIT dead times Rev 610-612



**sampling every 4 pkts (32 secs)

PICsIT Counters:

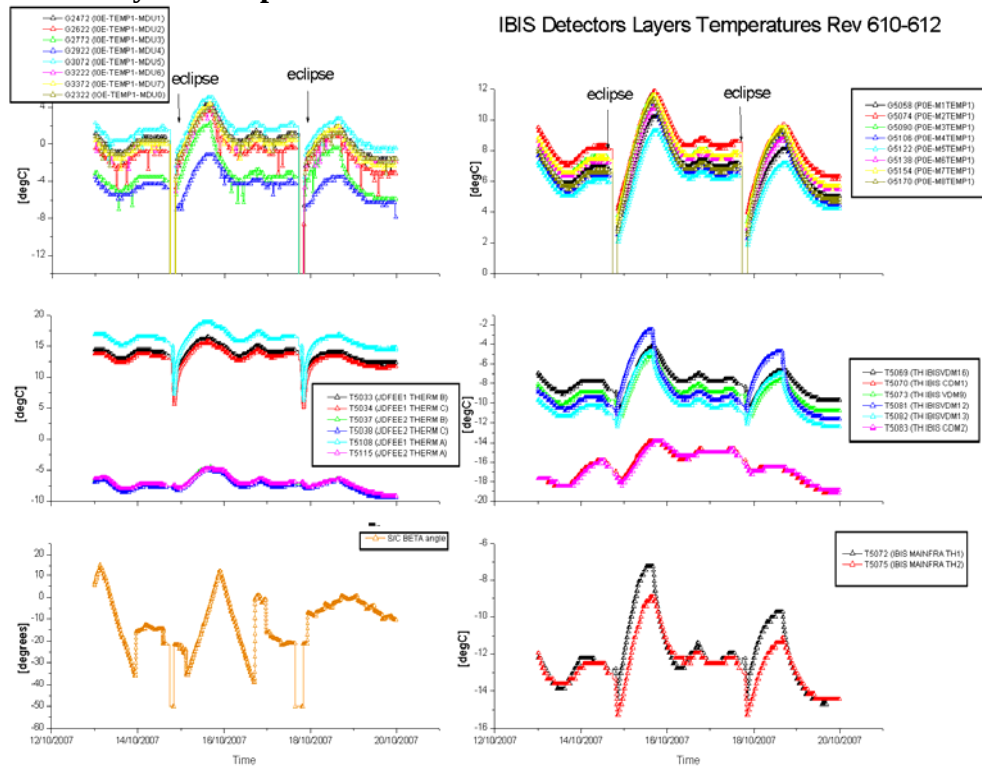
IBIS - PICsIT Counters Rev 610-612



**sampling every 4 pkts (32 secs)

IBIS Detectors Layers Temperatures:

IBIS Detectors Layers Temperatures Rev 610-612



**sampling every 8 pkts (64 secs)

IBIS daily report:

The usual Out Of Limits on TM parameter G8015 (S1E-A2_PMT_V), G5002 (P0S-Mi_RTC1) and G5003 (P0S-Mi_RTC2) families and G2000 family (I0E-OVFWPXADD-Mi) were received during the radiation belt passages.

2007-10-13 (DOY 286, Rev 610) to 2007-10-16 (DOY 289, Rev 611)

IBIS operations executed nominally.

2007-10-17 (DOY 290, Rev 611-612)

At 14:31:06Z, during the radiation belt passage of revolution 611-612, TM parameter G5079 went OOL High (value = 2.60509804V). This is the PDM2 +2.5 V. It returned within limits at 14:31:37Z and therefore no action was taken.

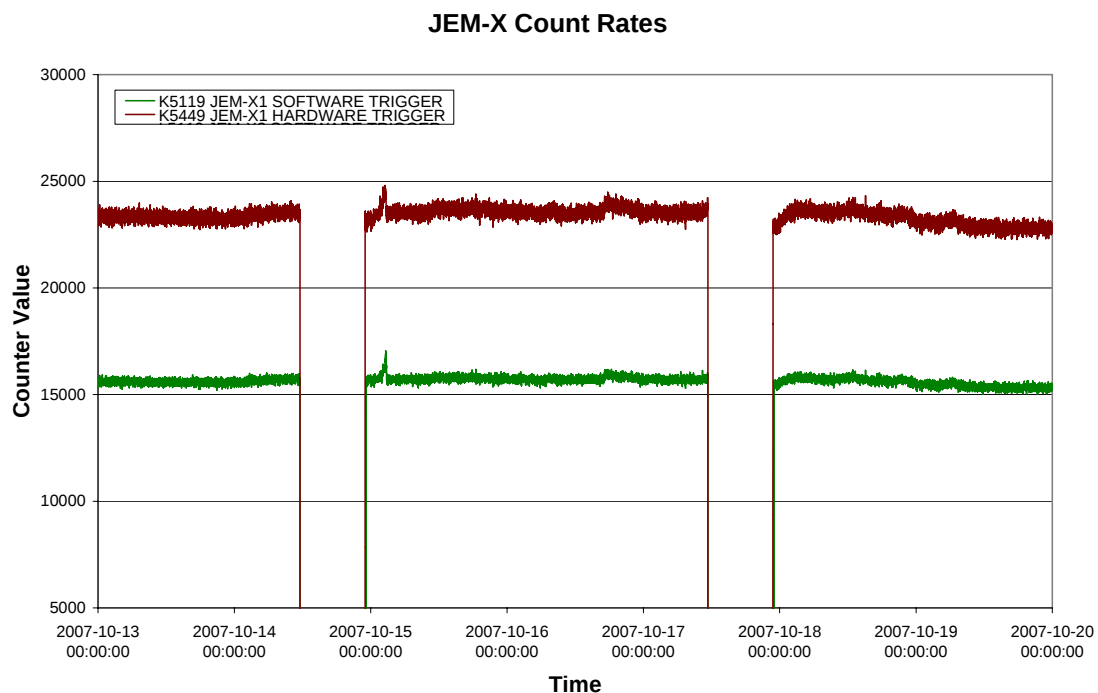
2007-10-18 (DOY 291, Rev 612) to 2007-10-19 (DOY 292, Rev 612)

IBIS operations executed nominally.

8.3.4 JEM-X Operations

JEM-X Count Rates

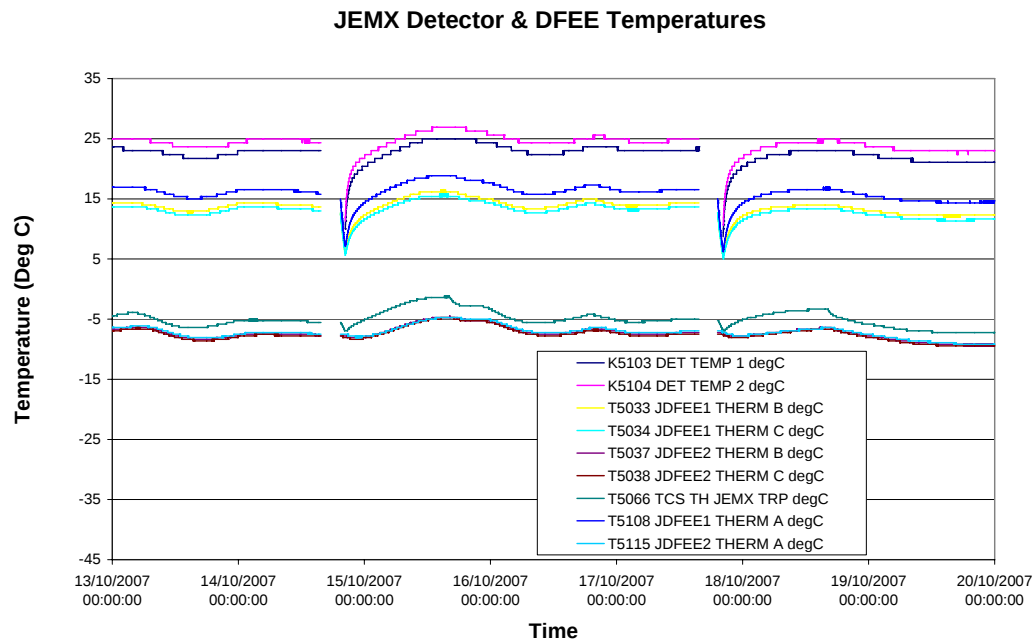
JEM-X count rates over the reporting period are displayed in the following graph¹.



¹ Data sampled (1 frame in 4) and smoothed to remove spikes in S/W Trigger due to flushing of buffer after slews.

JEM-X Temperatures

JEM-X Detector and DFEE temperatures, along with the temperature on the detector bench between the two units, over the reporting period are displayed in the following graph².



JEM-X Daily Report

2007-10-13 (DoY 286, Rev 610)

JEM-X1 operations executed nominally

2007-10-14 (DoY 287, Rev 610)

At 20:21:05, the TM parameter KD5380D (EQ SHuTDoWN LEVel) was outside nominal range for 24 seconds. No action was taken, and there was no impact.

At 23:02, there was a TM drop from Redu, this caused at 23:04:07 the TC K0013 not to be released due to PTV failure. After re-establishment of the TM link, the command was manually uplinked at 23:05. There was no impact.

2007-10-15 (DoY 288, Rev 611) to 2007-10-16 (DoY 289, Rev 611)

JEM-X1 operations executed nominally

2007-10-17 (DoY 290, Rev 611)

At 20:19:04, the TM parameter KD5380D (EQ SHuTDoWN LEVel) was outside nominal range for 24 seconds. No action was taken, and there was no impact.

² Data sampled (1 frame in 8)

2007-10-18 (DoY 291, Rev 612) to 2007-10-19 (DoY 292, Rev 612)

JEM-X1 operations executed nominally.

8.3.5 OMC Operations

2007-10-13 (DoY 286, Rev 610) to 2007-10-14 (DoY 287, Rev 610)

Nothing to Report.

2007-10-15 (DoY 288, Rev 611)

At 19:42, due to a TM drop, the commands for pointing 06110036 failed release. After reacquisition of the links, the commands were manually uplinked at 19:59. The impact was that pointing was shortened from a planned 1955 to 953 seconds.

2007-10-16 (DoY 289, Rev 611)

Nothing to Report.

2007-10-17 (DoY 290, Rev 611)

At 09:22:23, the loss of the guide star caused an interruption in the commanding. A recovery was performed and the commands for pointing 06110090 originally scheduled for 09:42:12, were manually uplinked at 09:53. The impact was that pointing was shortened from a planned 3579 to 2985 seconds.

2007-10-18 (DoY 291, Rev 612) to 2007-10-19 (DoY 292, Rev 612)

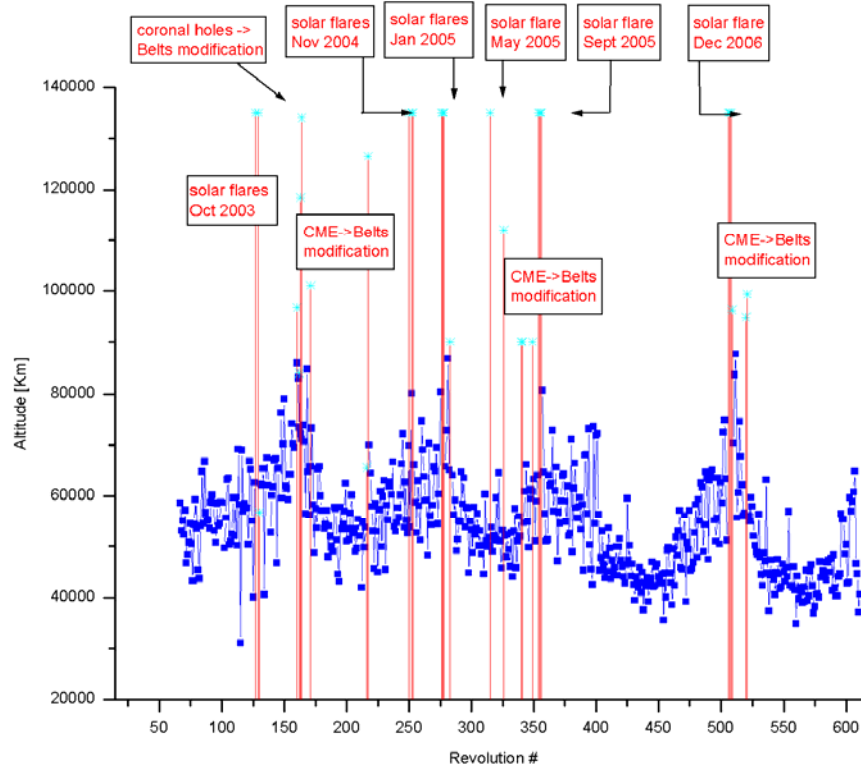
Nothing to Report.

On DoY 287 at 12:28:39 and DoY 290 at 12:17:11 OMC went to SAFE mode nominally, at the radiation belt entry time as set in the Broadcast Packet.

8.3.6 IREM Operations

Radiation Belts Entry

Evolution of Radiation Belt Entry 2003-2007



IREM daily report

Nothing to report.

Electron Belts

REV	S/C BCPKT (electron)	Electron CUT-OFF Observed Entry/Exit	Observed Entry/Exit Altitude [Km]	Electron CUT-OFF Predicted Entry/Exit	Predicted Entry/Exit Altitude [Km]
610	RAD_ENTR R 2007-10-14T12:28:38Z	14/10/2007 14:45:42	37118.7	14-Oct-2007 13:49:55	44490.47
611	RAD_EXIT R 2007-10-14T22:39:51Z	14/10/2007 20:49:58	36220.4	14-Oct-2007 21:39:55	44721.46
611	RAD_ENTR R 2007-10-17T12:17:06Z	17/10/2007 14:07:59	40641.9	17-Oct-2007 13:38:27	44589.23
612	RAD_EXIT R 2007-10-17T22:27:42Z	17/10/2007 20:54:55	39358.6	17-Oct-2007 21:28:27	44685.96

Reference

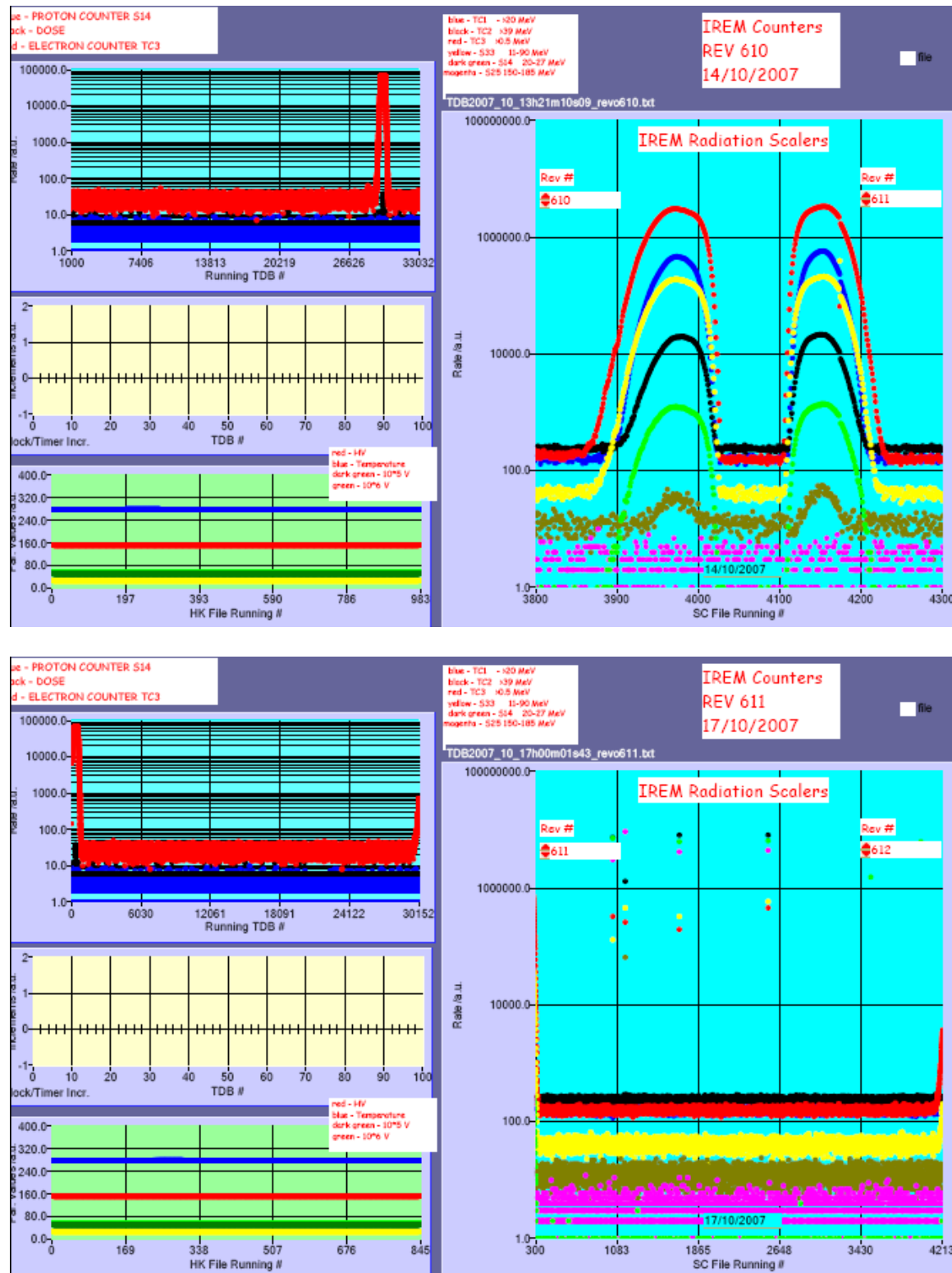
High radiation

Very small error vs reference (less than 10 minutes)

Small error vs reference (between 10 and 30 minutes)

Large error vs reference (more than 30 minutes)

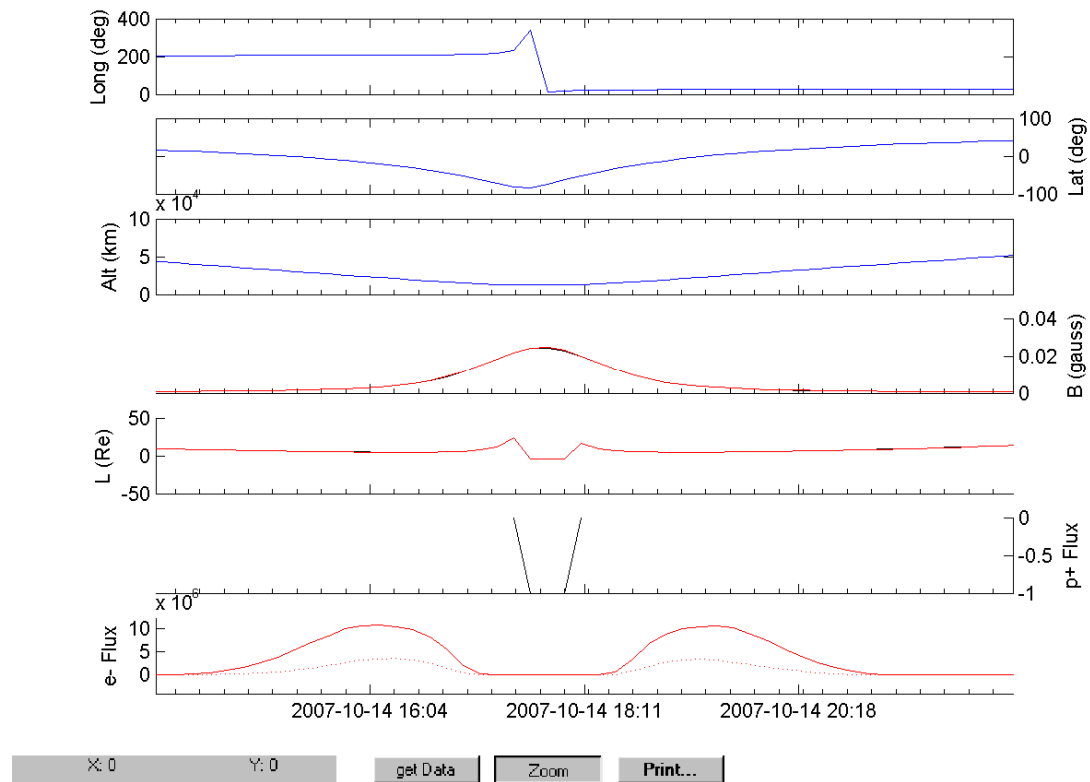
IREM radiation counters:



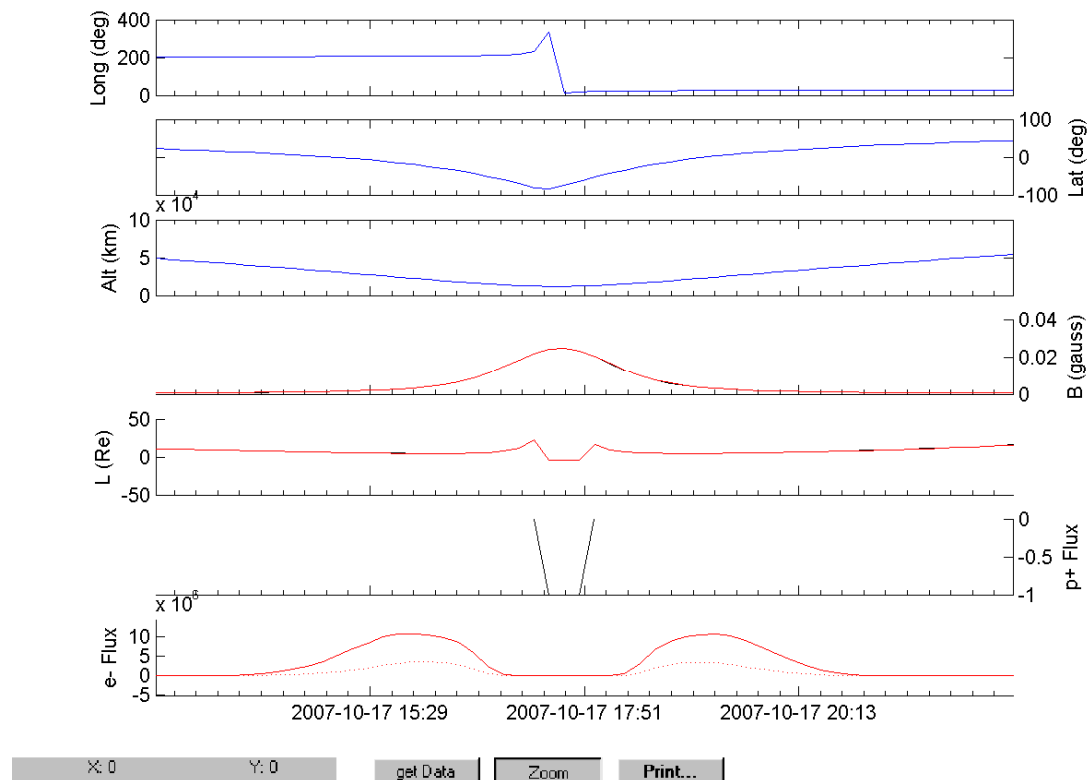
For the belt passage of revolution 611, no data was present.

IREM Predicted Radiation Belt Passages

Rev 610



Rev 611



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Date : 22/10/07

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SEC-GOES Observed Particles Fluxes (using SEIS/RAT tool):

Due to a problem on the SEISOP server, no data are available this week. However, the week was very quiet and no radiation was reported.