EUROPEAN SPACE AGENCY
DIRECTORATE OF TECHNICAL & OPERATIONAL SUPPORT
MISSION OPERATIONS DEPARTMENT

INTEGRAL
Mission Report

INT-MOC-SYS-RP-1001-OPS-OF

No. 248
Week 25

25.06.07

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 16.06.07 until 22.06.07 (both dates inclusive) and covers the revolutions 571 and 572.

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 two raster dithers, which were part of the XMM Large Scale Structure Survey (RA 02:18:00.00, DEC -07:00:00.0), and an OMC Flat-Field calibration, a staring observation at attitude (RA 00:12:24.00, DEC +05:12:00.0).

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.

One slew was missed from TL during the observation period, due to problem on FDS.

The fuel consumption over the period between 16/06/2007 and 21/06/2007 was 0.0569 Kg. The remaining propellant is in the order of 145.6263 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

The 10th annealing started on 29th May and ended on 17th June. This annealing progressed nominally and the overall status of the gamma-ray spectrometer since this annealing 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 following table reports the major events/steps performed during the annealing:

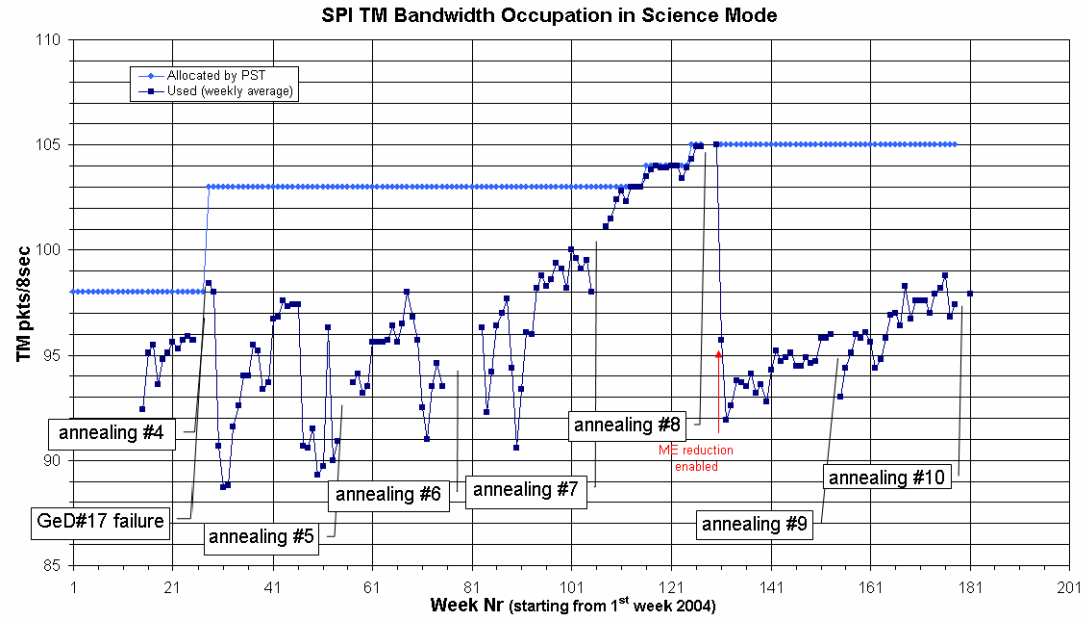
Date/Time	Activity
29/05/2007 22:16Z	Configure SPI for start of Annealing and stop SPI active cooling
29/05/2007 23:30Z	Annealing Heater Main ON
30/05/2007 01:30Z	Annealing Heater Redundant ON
31/05/2007 10:39Z	Cold plate temperature reached 373K (100degC)
08/06/2007 20:39Z	Stop SPI Annealing: Annealing Heater Main and Redundant OFF; Heat Pipe Heater Main and Redundant OFF; Antifreeze Heater 1A ON
11/06/2007 08:44Z	ACS switch-on and calibration start (FEE#57 and FEE#81 ON)
11/06/2007 12:26Z	Thermal braids temperature TM EU0398A reached 308K
11/06/2007 12:47Z	Start of cryocooler switch-on
11/06/2007 13:57Z	Cyrocooler switch-on complete and stroke set to 4x45
13/06/2007 03:08Z	End of ACS Calibration
14/06/2007 21:08Z	Cold plate temperature TM EU0392A reached 127K
14/06/2007 21:34Z	Select narrow range cyro temps and restore PSD nominal threshold
15/06/2007 16:36Z	Cold plate temperature TM EU0392 reached 100K
15/06/2007 16:42Z	Camera switch-on start
15/06/2007 19:08Z	Camera switch-on end: SPI in PHOTON mode with all GeD HV at 4kV except for GeD#2 (0.5kV) GeD#17(0.5kV) and GeD#12 (2.5kV)
15/06/2007 19:24Z	Thermal braid temperature TM E0398 reached 86K
15/06/2007 20:00Z	Start of reduction of cryocooler stroke for 80K target (FCP_SPI1_0072)
16/06/2007 15:49Z	End of reduction of cryocooler stroke for 80K target: Stroke set to 4x37
15/06/2007 20:53Z	Start test of OEM 243 generation and Single Event Filtering

16/06/2007 00:16Z	End test of Single Event Filtering: to CONF, set nominal ACS HV config (FEE#57 and FEE#81 OFF) and IASW parameters and return to PHOTON
16/06/2007 09:32Z - 16/06/2007 11:40Z	Repeat test of Single Event Filtering with spectra scaling =1/19SE
16/06/2007 15:42Z - 16/06/2007 17:12Z	Adjustment of GeD#12 HV to 3kV, 3.5kV, 4kV and final setting at 3.5kV
17/06/2007 07:03Z	Cold plate temperature TM EU0392 reached 80.9K
17/06/2007 07:27Z	To CONF, set nominal IASW parameters (for Cold Plate Monitoring) and return to PHOTON

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

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 from 2007-06-19T16:54:35Z until the end of revolution 571, when the TM allocation was 85 packets/cycle due to an OMC FFC. The average telemetry occupation when the TM allocation was 105 packets/cycle was 97.9 packets/cycle.

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



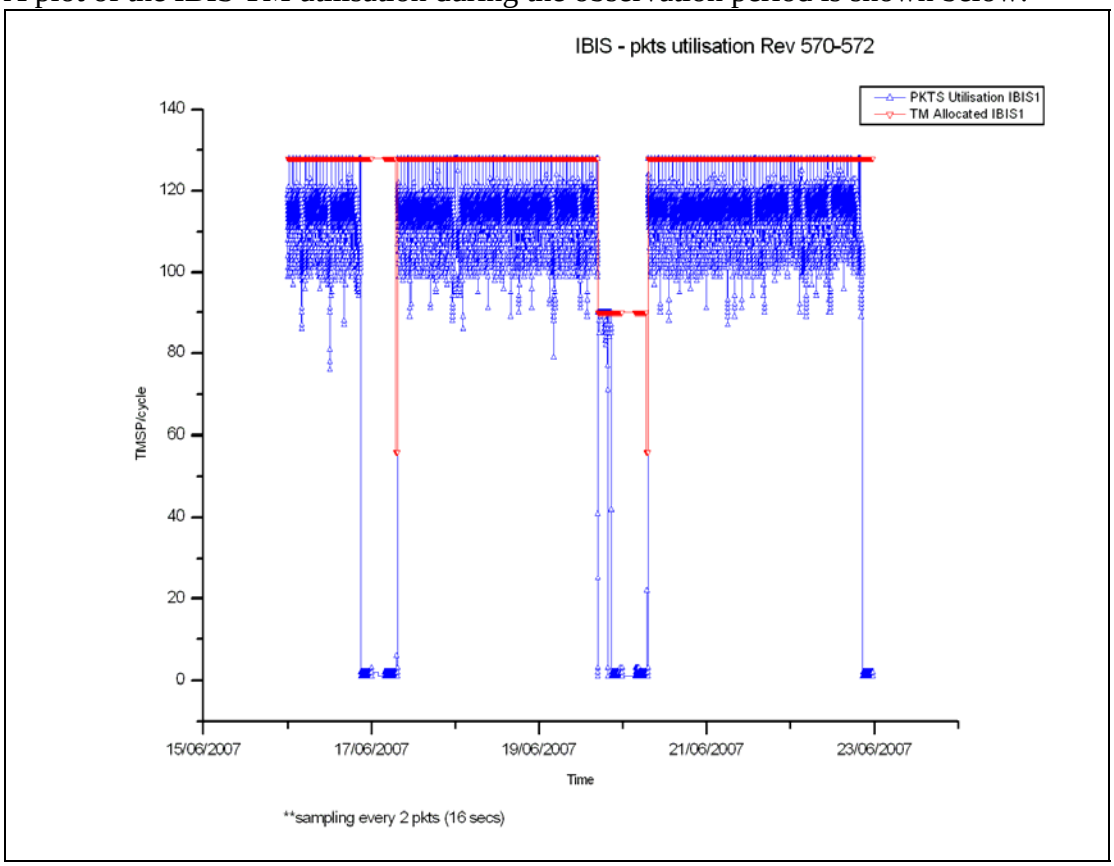
Note: Some more information concerning the SPI operations is provided in the Appendix.

3.2.2 IBIS

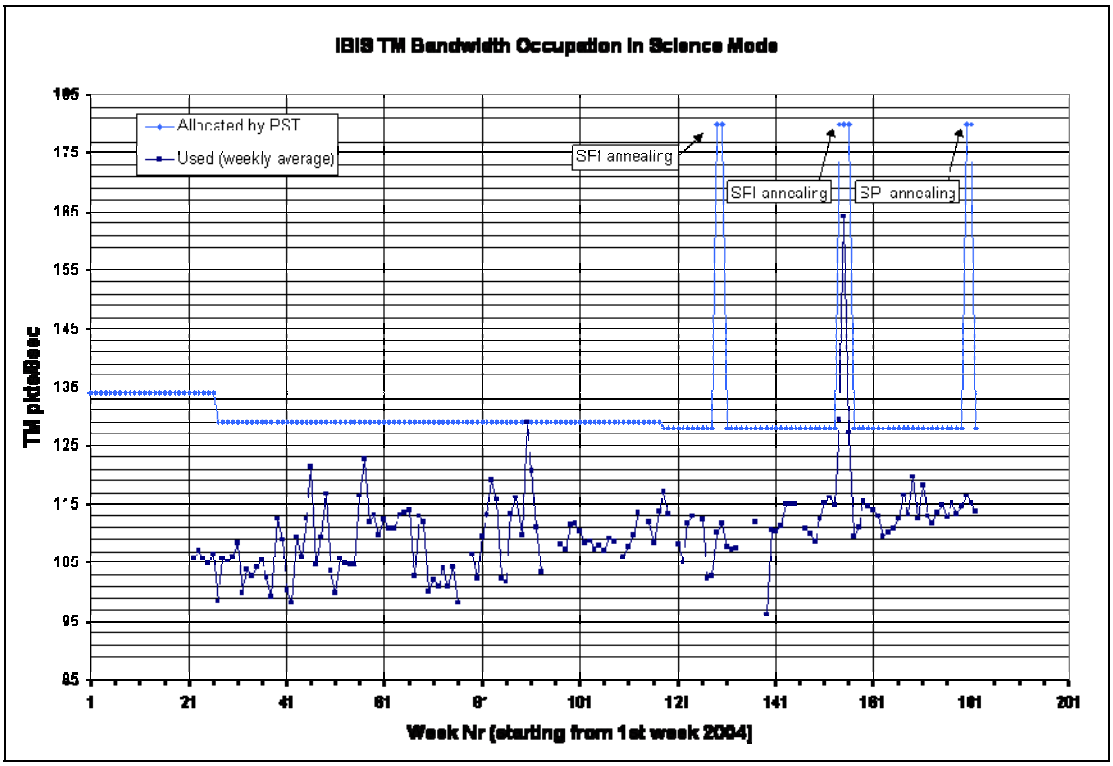
The overall status of the unit is nominal.

During the reporting period, the PST allocation to IBIS was 128 TMPS/cycle. However between 19/06/2007 16:54:50Z and 20/06/2007 07:17:35Z, it was 90 TMPS/cycle due to an OMC Flat Field Calibration. The IBIS mean bandwidth utilisation during the observation period (when IBIS was in Science mode) was 113.74 TMPS/cycle, down 1.49 on last week.

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.

Further information on the JEM-X operations can be found in the Appendix Section 8.3.4.

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, except during the Flat Field calibration on DoY 170 (19 June 2007) from 16:55:18 to 20:19:21 when it was 63 packets/cycle.

During this reporting period, 129 of the 130 planned science pointings for OMC were executed nominally, 1 was lost.

Note: Some more information concerning the OMC operations is provided in the Appendix Section 8.3.5.

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 during the whole observation period.

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 good this week. One pointing was lost to ground problems. The overall performance was well over the 95% requirement.

4.1 Mission Operations Centre

The performance of the MOC was very good this week. An FD problem led to the loss of a pointing, but that was all. The HFA task died, the Autostack froze, and there was a lost connection to the RT Cache, without further impact. A new release (version E1.2) was installed on the A-chain, but due to numerous problems, it was decided to roll back to the previous version. There was no impact, see anomaly report for details. The overall performance was well over the 95% requirement.

4.2 Ground Stations & Network

The performance of the ground stations and Network was very good this week. There were 3 occasions of a data drops from Redu, all without impact. The overall performance was well over the 95% requirement.

4.3 Science Ground Segment

4.3.1 ISOC

1. Mission planning

PSFs are available up to revolution 582. Observations were planned up to 578. Further planning is complicated by the Galactic Latitude Scans which have complex constraints.

TSFs received up to revolution 574.

2. Observation status

ECS files have been received and processed up to revolution 563.

3. ISOC Science Data Archive

No news.

4. ISOC system

Version 15.0 still in use. Testing is ongoing on version 15.1 and has encountered some problems, the release is expected for next week.

5. Problems

IFTS problems re-occurred due to unannounced changes in the firewall permissions at ESAC. For the moment these seem to be fixed again.

The issue of a roll angle constraint violation (0.05 deg) in revolution 558 will not be further explored, according to Flight Dynamics.

4.3.2 ISDC

Status of ISDC observation processing on 25/06/2007:

- Latest Standard Analysis completed: observation 04700020002 (1E 1048.1-5937, Revolution 560) on 13/06/2007.

- Latest products archived: observation 04700020002 (1E 1048.1-5937, Revolution 560) on 13/06/2007.

- Latest observation products sent to the observer: 04700020002 (1E 1048.1-5937, Revolution 560) on 14/06/2007.

5 Special Events

6 Anomalies

The following problems were reported that impacted operations:

- On DoY 168 at 22:49, the lack of a suitable star caused the Star Mapping and subsequent manoeuvre update to fail. A recovery was performed, and the Timeline rejoined at 00:24. The impact was the loss of slew 05710018.

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The following anomaly reports were entered into the ARTS system this week:

AR id	Date Created	Subject	Segment	Status
INT-2925	20/06/2007	Problems with IMCS Release E1.2 on A-chain	IMCS	Pending

7 Future Milestones

The following activities are foreseen in the next few weeks.

- Periodic Thruster Torque rescaling 24th July 2007 in Rev. 583
- On Board Clock wrap around due 30th July 2007 in Rev. 585.

Appendix

The appendix includes various detailed information.

7.1 Overview of Revolutions

Revolution 571

The observations in revolution 571 began with a raster dither, part of the XMM Large Scale Structure Survey (RA 02:18:00.00, DEC -07:00:00.0), lasting ~53.9 hours. It continued with an OMC Flat-Field calibration, a staring observation at attitude (RA 00:12:24.00, DEC +05:12:00.0), lasting ~3.4 hours until the end of the revolution.

Revolution 572

The observations in revolution 572 consisted entirely of a raster dither, part of the XMM Large Scale Structure Survey (RA 02:18:00.00, DEC -07:00:00.0), lasting ~55.9 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, except during the OMC Flat Field calibration from 2007-06-16T17:07:14Z until the end of the revolution when it was: IBIS 90; SPI 85; JEM-X1 8; JEM-X2 0; OMC 63.

7.2 Consumables

7.2.1 Detailed Fuel Book-keeping

```
2007-06-08T05:07:44.000Z     146.1569    F   Automatic TM processing.
2007-06-09T14:38:27.000Z     146.1357    F   Automatic TM processing.
2007-06-11T04:57:36.000Z     146.1243    F   Automatic TM processing.
2007-06-12T02:48:58.000Z     146.0915    F   Automatic TM processing.
2007-06-13T23:26:55.000Z     146.0540    F   Automatic TM processing.
2007-06-14T04:41:52.000Z     146.0429    F   Automatic TM processing.
2007-06-14T16:56:38.000Z     145.8719    F   ESAM monitoring
2007-06-14T19:17:52.000Z     145.7620    F   Post ESAM SSA to STA
2007-06-14T21:49:04.000Z     145.7480    F   Automatic TM processing.
2007-06-14T23:06:24.000Z     145.7000    F   Automatic TM processing.
2007-06-15T14:39:05.000Z     145.6940    F   Automatic TM processing.
2007-06-17T04:30:05.000Z     145.6840    F   Automatic TM processing.
2007-06-18T14:03:53.000Z     145.6596    F   Automatic TM processing.
2007-06-20T04:17:40.000Z     145.6431    F   Automatic TM processing.
2007-06-21T13:50:00.000Z     145.6263    F   Automatic TM processing.

This report was generated  Fri Jun 22 08:00:20 GMT 2007
```

7.3 Detailed Satellite Information

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

7.3.1 AOCS SUMMARY OPERATIONS REPORT, 16/06/2007 –22/06/2007

AOCS operations were executed from the Automatic Timeline.

During this period, 70 Open Loop Slews, 71 Closed Loop Slews and 4 Momentum Biases were executed.

1 (OSL) slew was missed from TL, during the observation period, due to FDS failing to generate an update.

The OTF was not reached during recovery of PID 05700018.

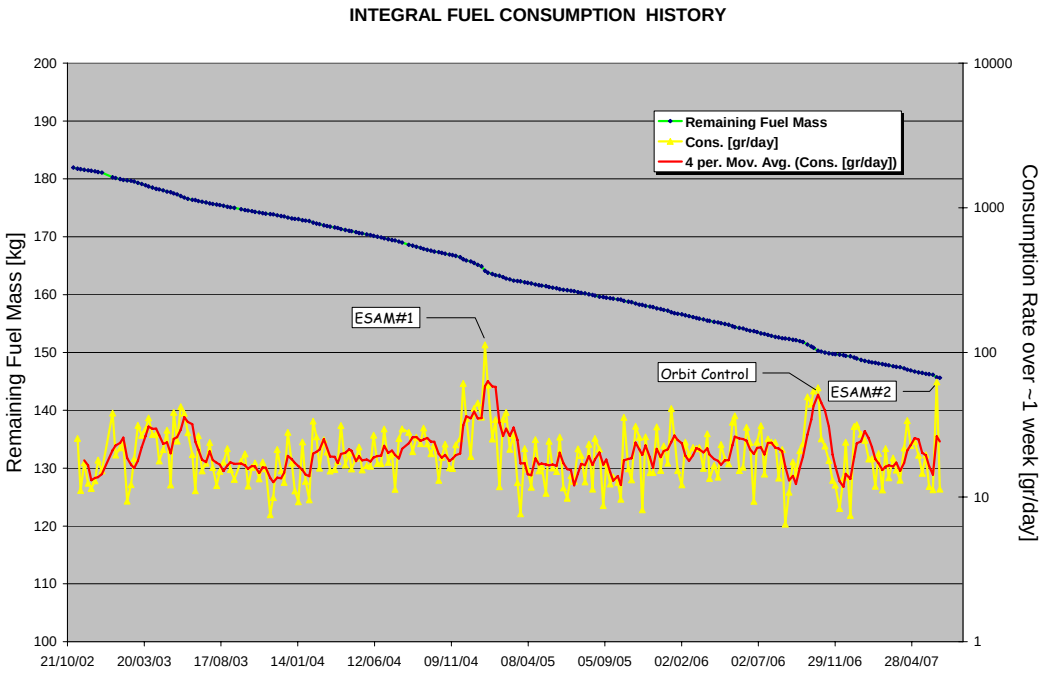
This is equivalent to ~0.7 % of the total number of slews planned (141).

Orbit Control

No update.

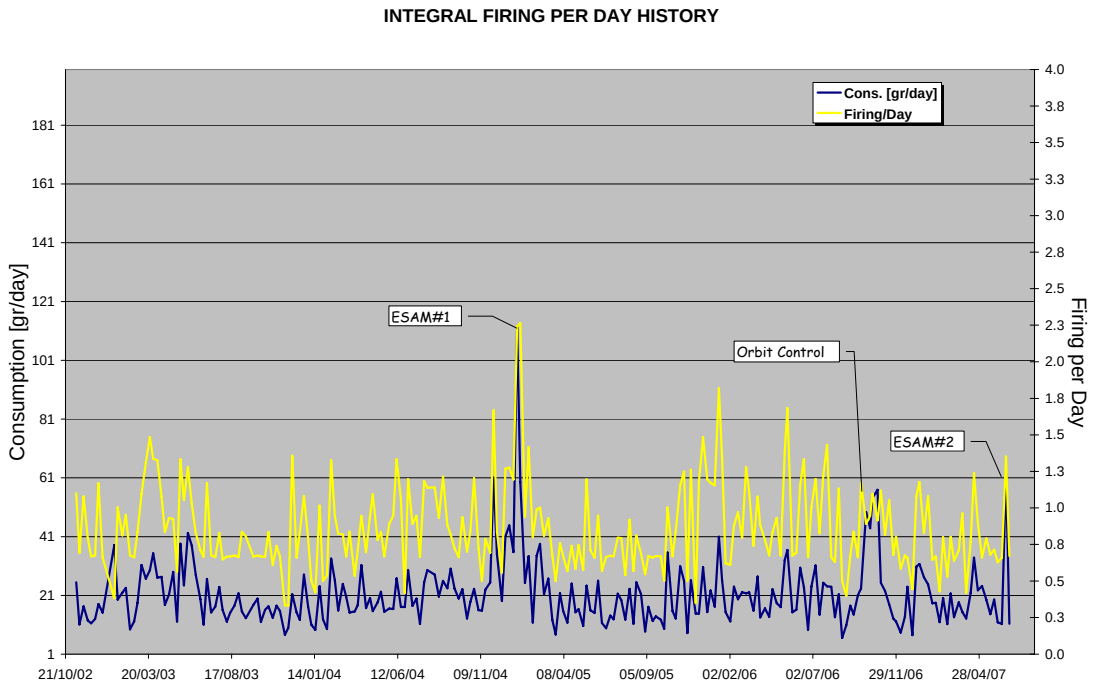
Fuel consumption

The fuel consumption (total, grams per day) over the period between 01/11/2002 and 21/06/2007 is reported in the plot below.



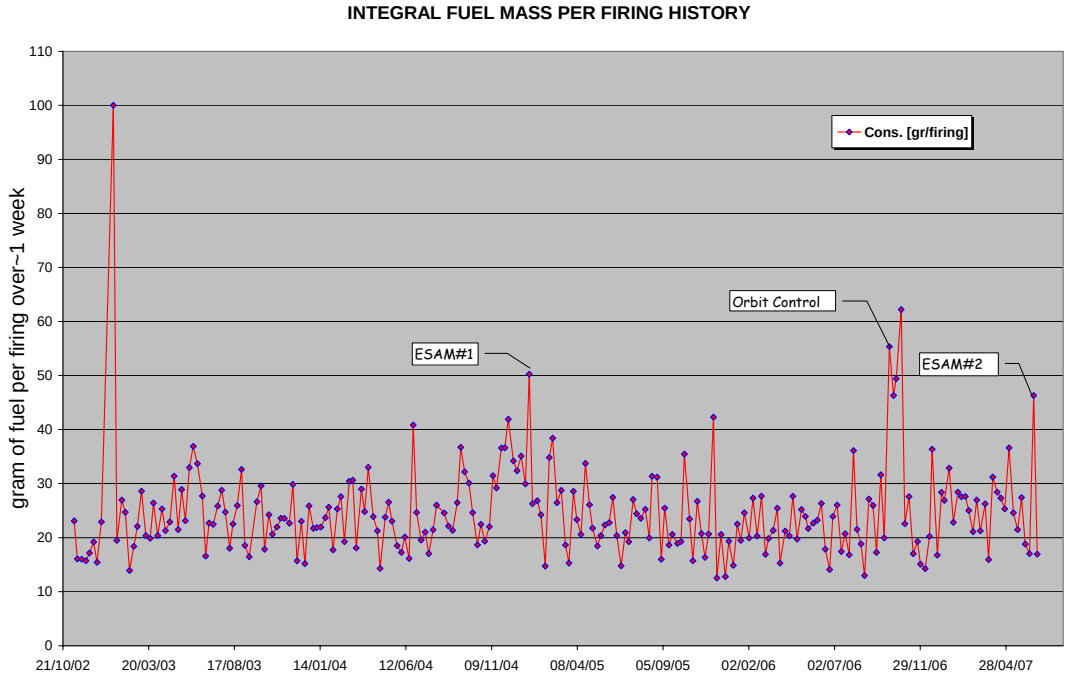
The plot above has been corrected to consider the ESAM fuel consumption spread over period of ~1 week.

The firing per day over the period between 01/11/2002 and 21/06/2007 is reported in the plot below.



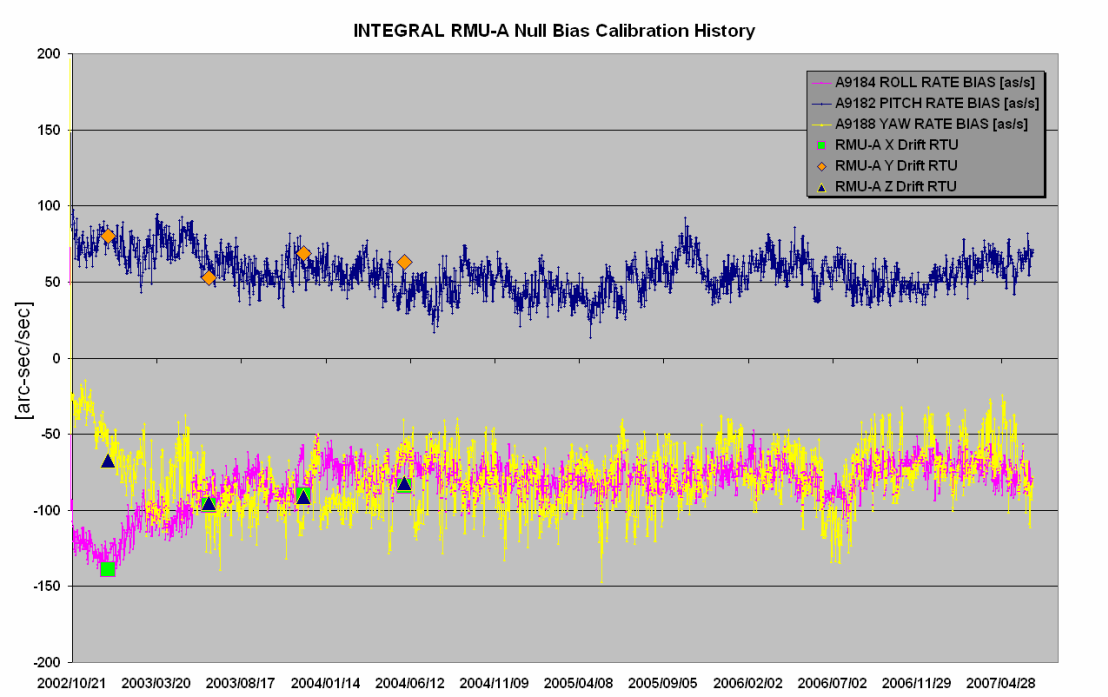
The plot above has been corrected to consider the ESAM fuel consumption spread over period of ~1 week.

The fuel per firing over the period between 01/11/2002 and 21/06/2007 is reported in the plot below.

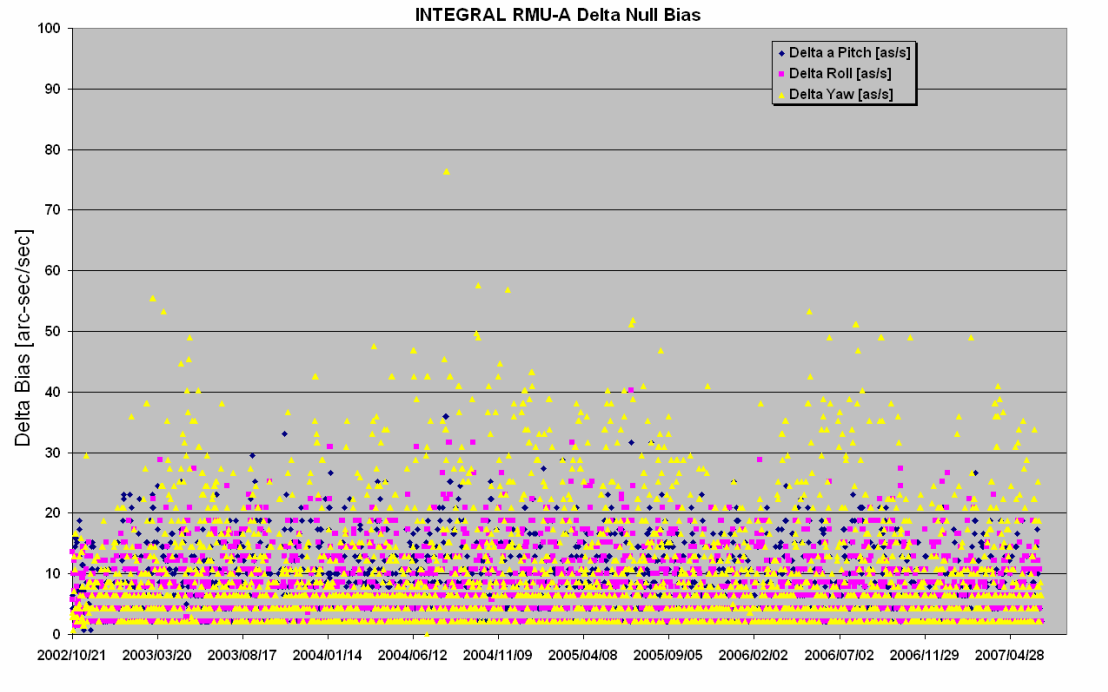


The RMU-A null bias calibration

The RMU-A null bias calibration history, on pitch, roll and yaw channel over the period between 01/11/2002 and 22/06/2007 is reported in the plot below.



The RMU-A delta null bias calibration history, on pitch, roll and yaw channel over period between 01/11/2002 and 22/06/2007 is reported in the plot below.



16/06/2007 (Day of Year 167, Revolution 570)

Nothing to report.

17/06/2007 (Day of Year 168, Revolution 570-571)

FDS failed slew update: at 22:49z the FDS failed the update of slew ID 05710018. FDS reported an error during the update process.

A manual recovery was performed at 23:00z to the attitude of PID 05700018 and the next slew (05700019) manually updated in TL.

The following slew was missed in TL: 05700018(OSL)

18/06/2007 (Day of Year 169, Revolution 571)

STR lost of guide star: during the execution of PID 05700018 a lost of guide star occurred with consequent automatic IMU1 switch ON at 00:06:49z. The following slew 05700019 was manually update still during the execution of the recovery initiated on DoY 168 at 23:00.

No impact on the TL, except the OTF was not reached during PID 05700018 (but it was already recovered from TL due to a previous FDS update failure).

19/06/2007 (Day of Year 170, Revolution 571)

Nothing to report.

20/06/2007 (Day of Year 171, Revolution 571-572)

Nothing to report.

21/06/2007 (Day of Year 172, Revolution 572)

Nothing to report.

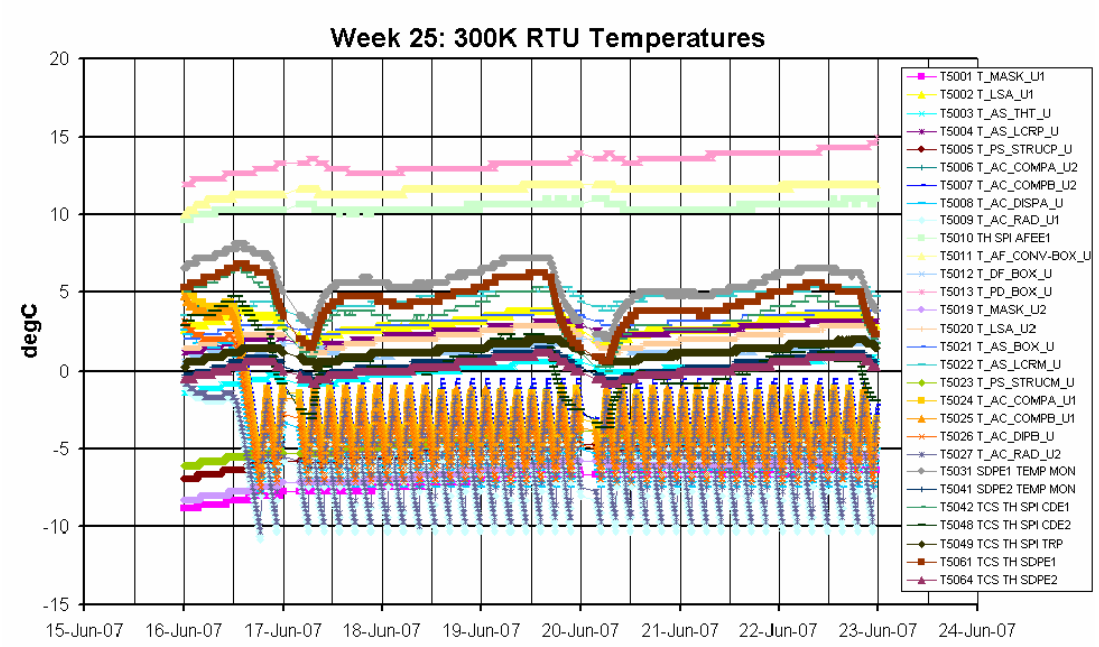
22/06/2007 (Day of Year 173, Revolution 572)

STR lost of guide star: during the execution of PID 05720041 a lost of guide star occurred with consequent automatic IMU1 switch ON at 00:03:36z. A manual recovery for slew 05720042 was initiated at 00:08z but it could not be completed in time due a failure update of FDS. Considerations on the limited time spent under IMU1 control and based on current pointing reached by a Close Loop Slew, allowed to perform the following slew in TL 05720042 without parameters update.

No impact on TL.

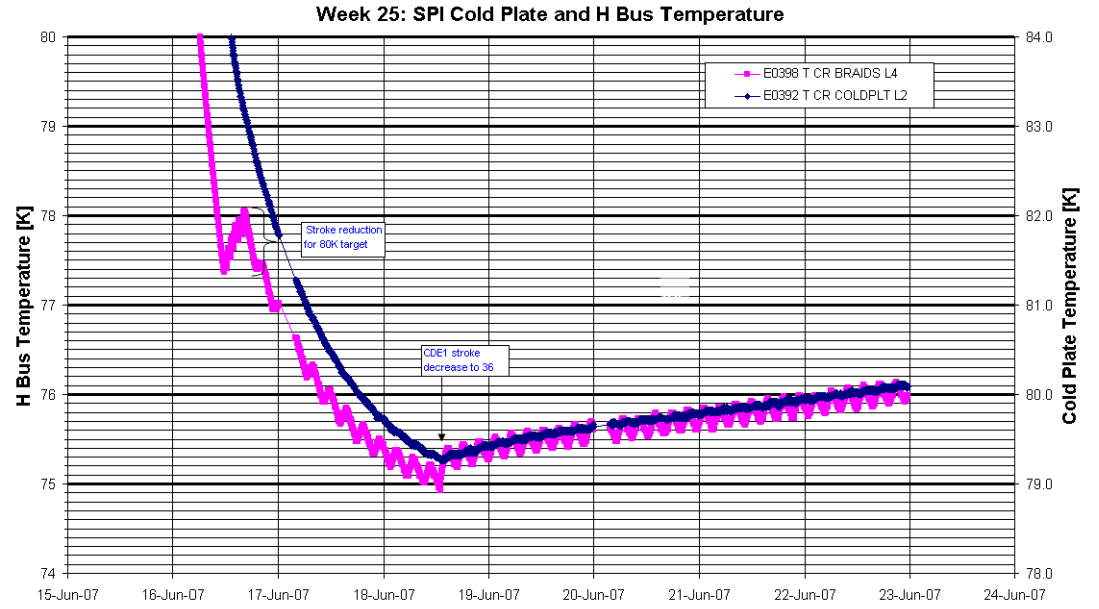
7.3.2 SPI Operations

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

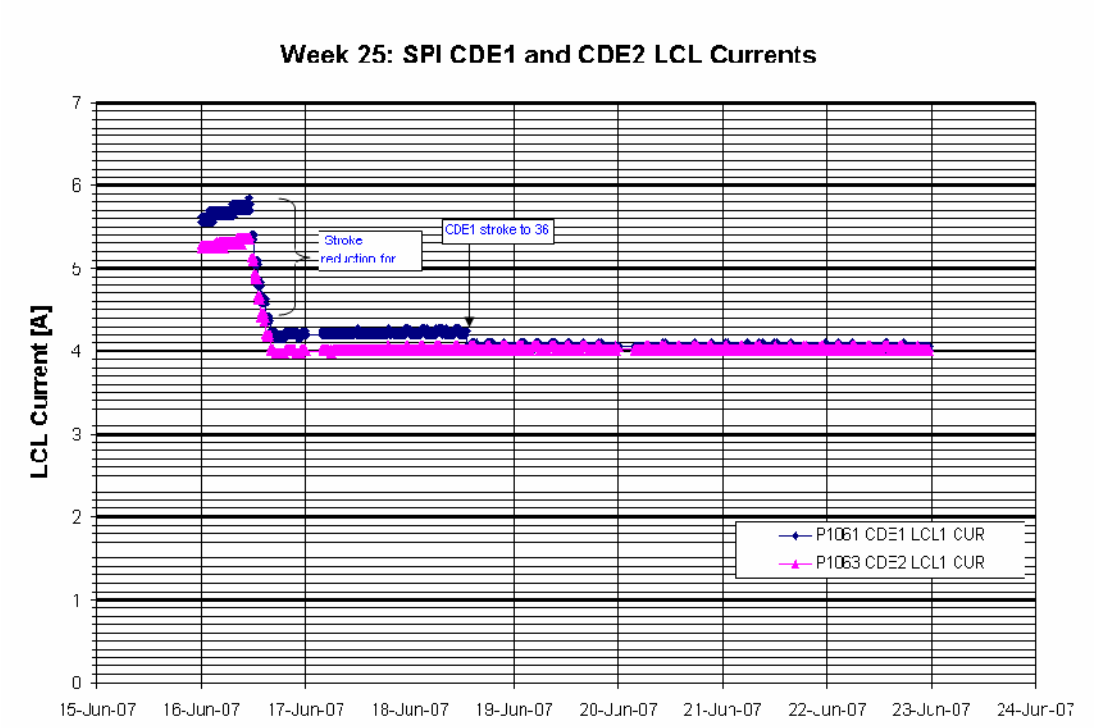


Stirling Compressors and Cryostat: The performance of the compressors is nominal. Following the annealing, the reduction of the compressor stokes to reach a cold plate temperature of 80K was started on 15/06/2007 at 20:00:00Z and completed on 16/06/2007 at 15:49:00Z (stroke of all four compressors set to 37). The cold plate temperature reached 80.9K on 17/06/2007 at 07:03Z, after which it has been maintained in the range 80K +/-1K. On 18/06/2007 at 13:00Z, the stroke of compressors A&B was decreased to 36, after which it remained at 36 and that of compressors C&D at 37 for the remainder of the reporting period.

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



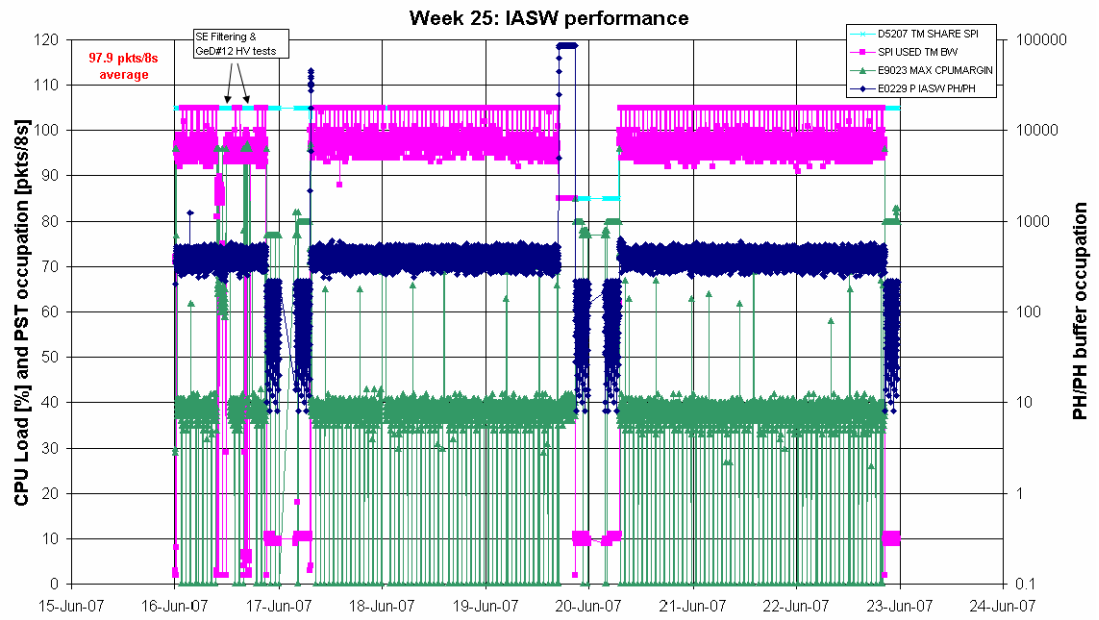
The following plot shows the evolution of the CDE currents during the reporting period.



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 9/19 SE. The average TM bandwidth occupation of SPI was 97.9 packets/cycle over the science window, when the TM allocation was 105 packets/cycle.

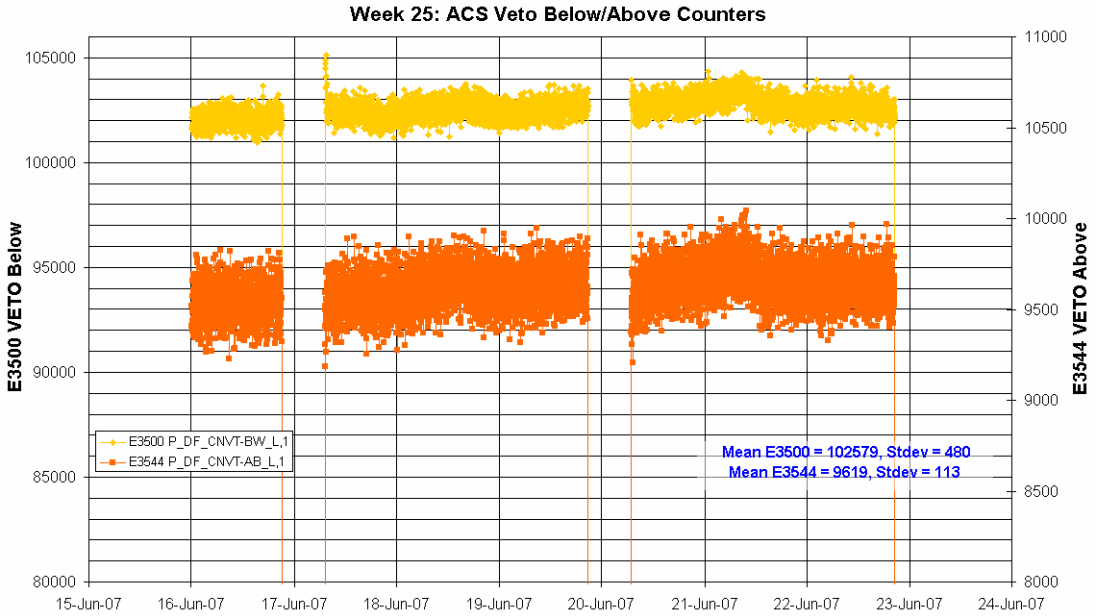
On 16/06/2007 from 09:32Z to 11:40Z a repetition of the tests of the Single Event Filtering (see last weekly report) was performed, with the spectra scaling factor set to 1/19 SE (instead of 9/19 SE). With SE filtering only and spectra enabled the max CPU margin was ~62-64% and no anomaly OEMs were received. With SE and ME filtering and spectra enabled the max CPU margin was ~61% and again no anomaly OEMs were received. The conclusion is that it is possible to operate with SE filtering and spectra enabled, with the correct tuning of the spectra scaling parameter.

The following plot shows the IASW performance in terms of TM bandwidth, event buffer occupation and DPE CPU load during the reporting period. Note that from 2007-06-19T16:54:35Z until the end of revolution 571 the TM allocation was 85 packets/cycle due to an OMC FFC.



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).

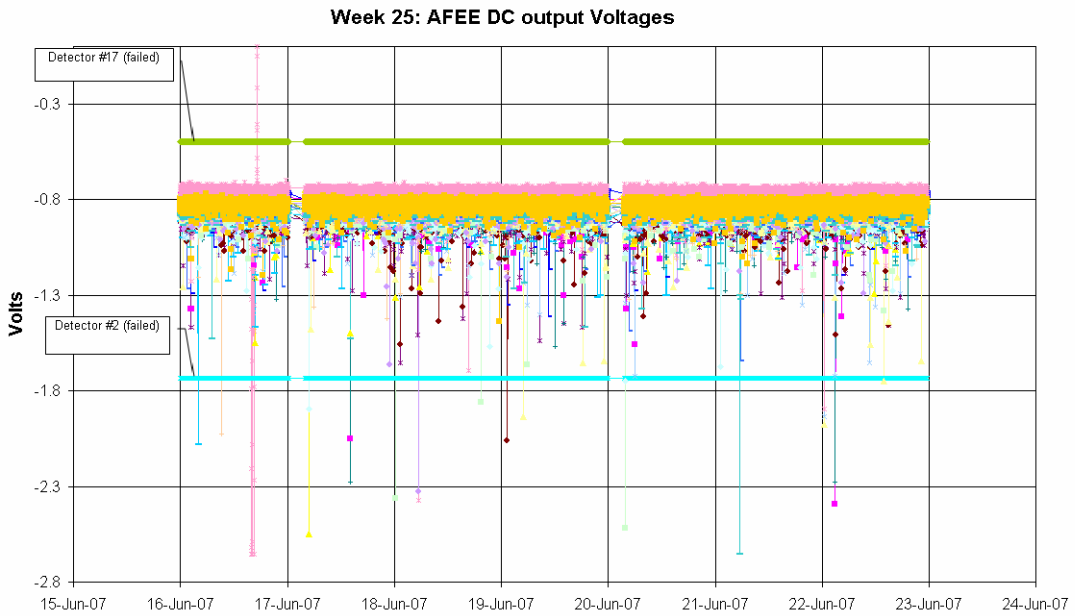
The following plot shows the ACS overall count rate evolution during the reporting period:



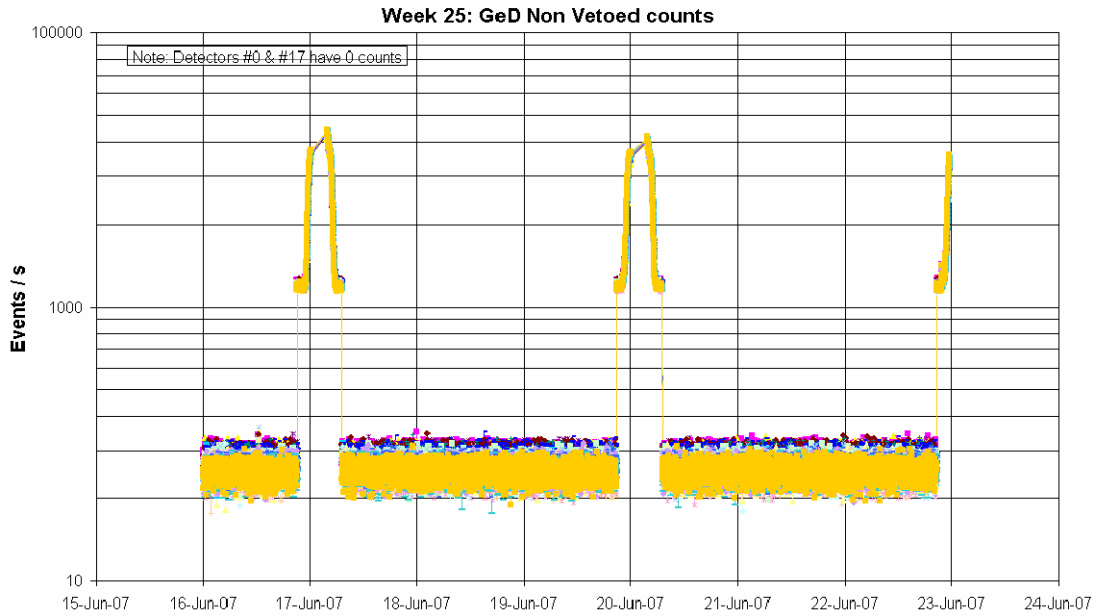
AFEE: The health of the AFEE is nominal. The performance of the AFEE and the detectors is nominal, except for the Ge detector #12 which is showing a slightly degraded energy resolution. At the end of the camera switch-on following annealing, on 15/06/2007 at 19:08Z, the HV of GeD#12 was left at 2.5kV (instead of the nominal 4kV) due to the observed degradation in the energy resolution of this detector. On 16/06/2007 from 15:42Z to 17:12Z the HV of GeD#12 was ramped up to 4kV, to determine the energy resolution of this detector at the different HV settings, once the cold plate temperature had lowered. Following these tests, the HV of GeD#12 was set

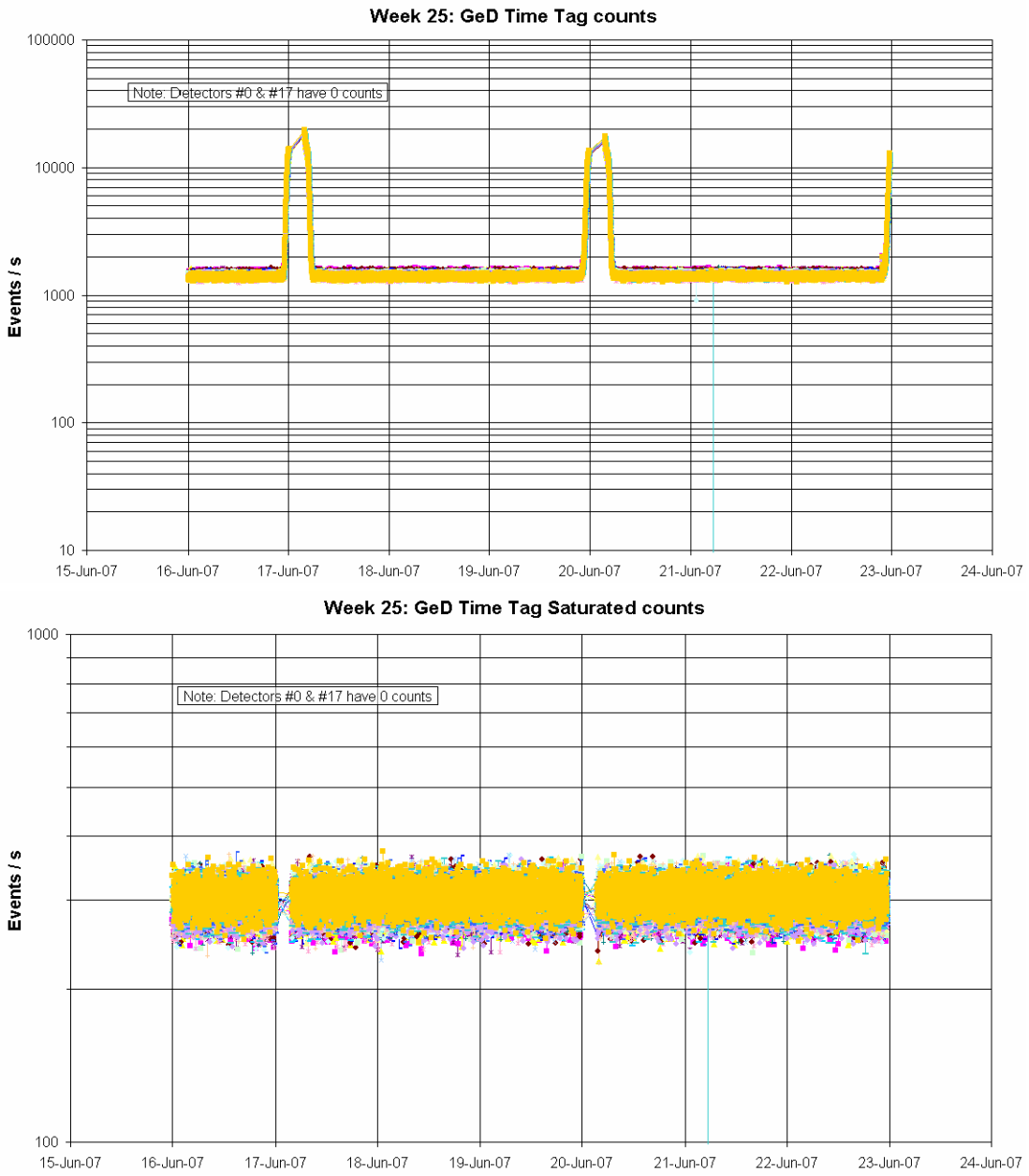
at 3.5kV, as was the case prior to this annealing cycle. The GeD#12 HV remained at 3.5kV for the remainder of the reporting period.

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.

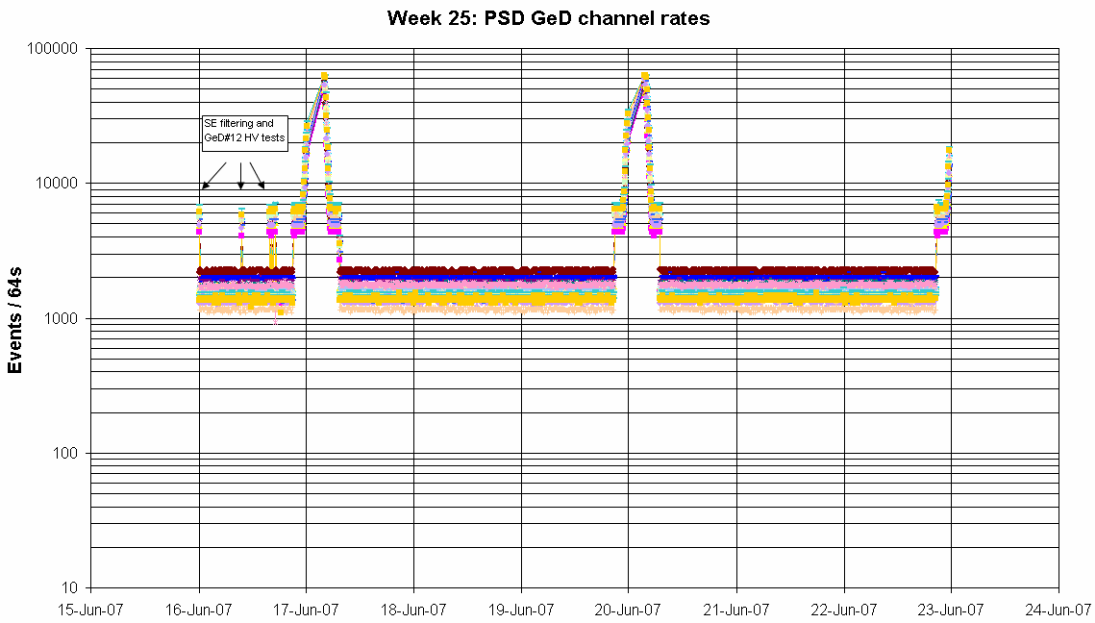


DFEE: The performance of the unit is nominal. The following plots show the Non Vetoed, Time Tag and Time Tag Saturated Event Count Rates during the reporting period.





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:

- On 2007-06-17 at 18:30:24Z OEM APID 1024 ID 229 EXCEPTION SPI1 PARTIAL FLAG OVERFLOW was received with parameter E9783 SUBBLOCK ID = SP16. This was during Pointing ID 05710012. As it was a single occurrence no action was taken.
- On 2007-06-19 at 14:52:57Z the following OEMs were received:

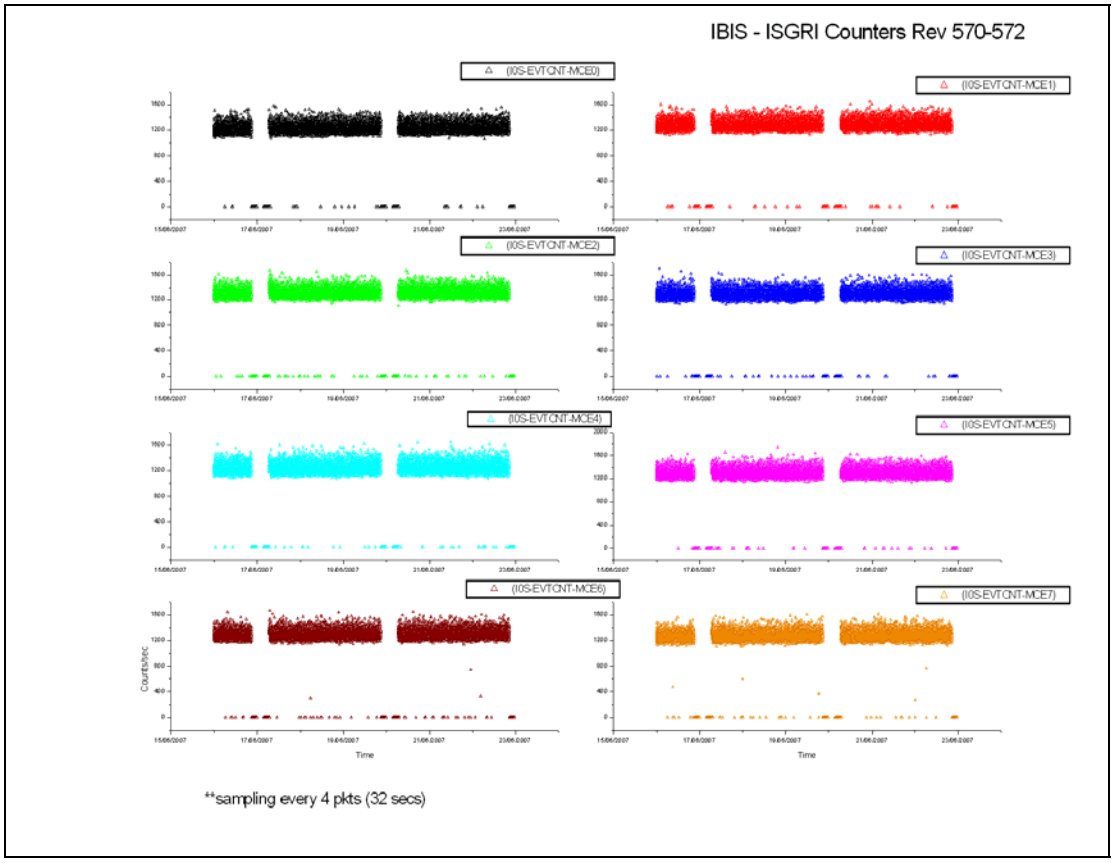
  ```
  APID 1024 ID 243 EXCEPTION SPI1 SPECTRA BUILDING NOT COMPLETED
  E9780 DETECTOR ID 14
  APID 1024 ID 229 EXCEPTION SPI1 PARTIAL FLAG OVERFLOW
  E9783 SUBBLOCK ID SP8
  ```

  This was during Pointing ID 05710055. As they were single occurrences, no action was taken.
- On 2007-06-20 at 04:03:05Z OEM APID 1024 ID 1 EXCEPTION SPI1 FIXED POINT OVERFLOW was received. This was during the AOS_CHK window of revolution 572, when the time verification TC was sent. This OEM is sometimes received when this TC is sent and no action was taken.
- On 2007-06-20 at 07:00:44Z (packet time) the ACS parameters E2101-E2116; E2150-E2179; E2250-E2279; E2350-E2379 and E3164-E3193 all went OOL value 0 raw. They are all in the periodic housekeeping packet SPID 60601.The building of this packet started 53secs before the reconfiguration of the ACS at belt exit (at 07:01:37Z) and so the ACS parameters being zero was likely due to the acquisition of these blocks being exactly at the time the ACS switch-on was occurring. They returned within limits when the next packet was received at 07:03:24Z.
- The TM parameter E2115 PSAC temperature toggled OOL Warning Low several times during the reporting period. It returned within limits of its own accord and no action was taken.

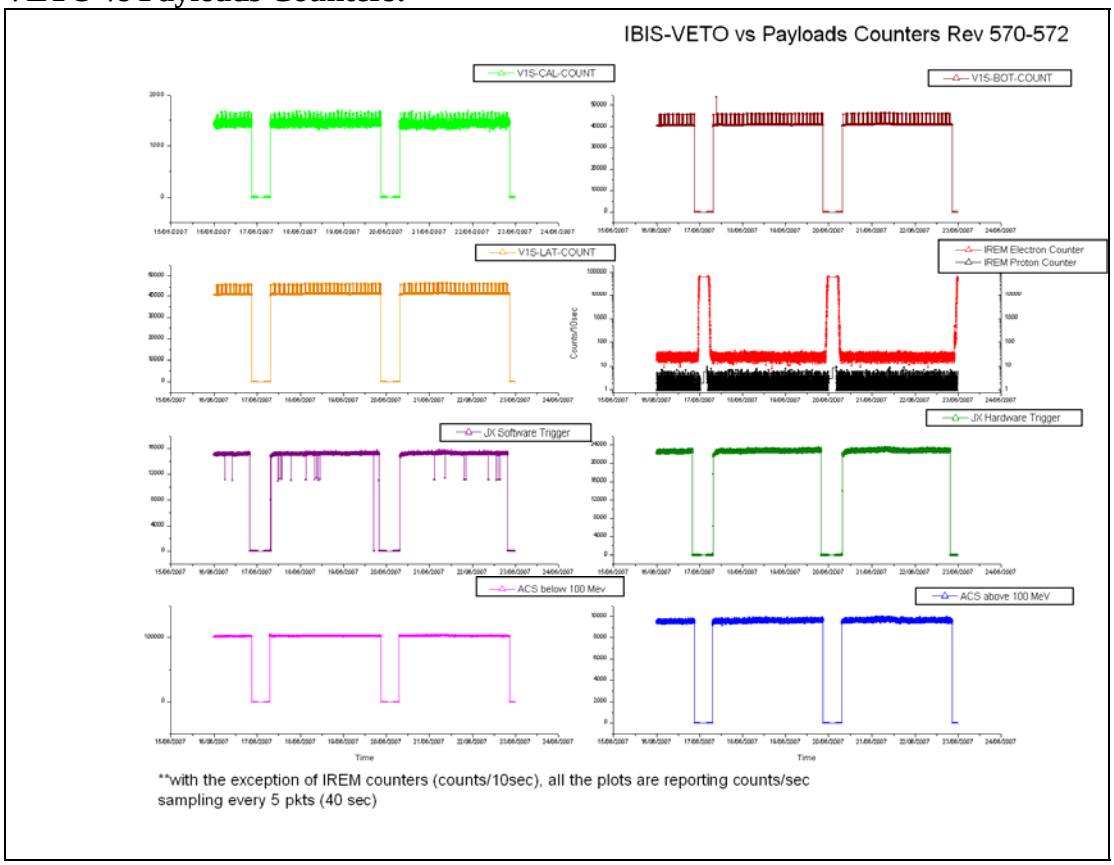
7.3.3 IBIS Operations

IBIS Event Counters Plots.

ISGRI Counters:

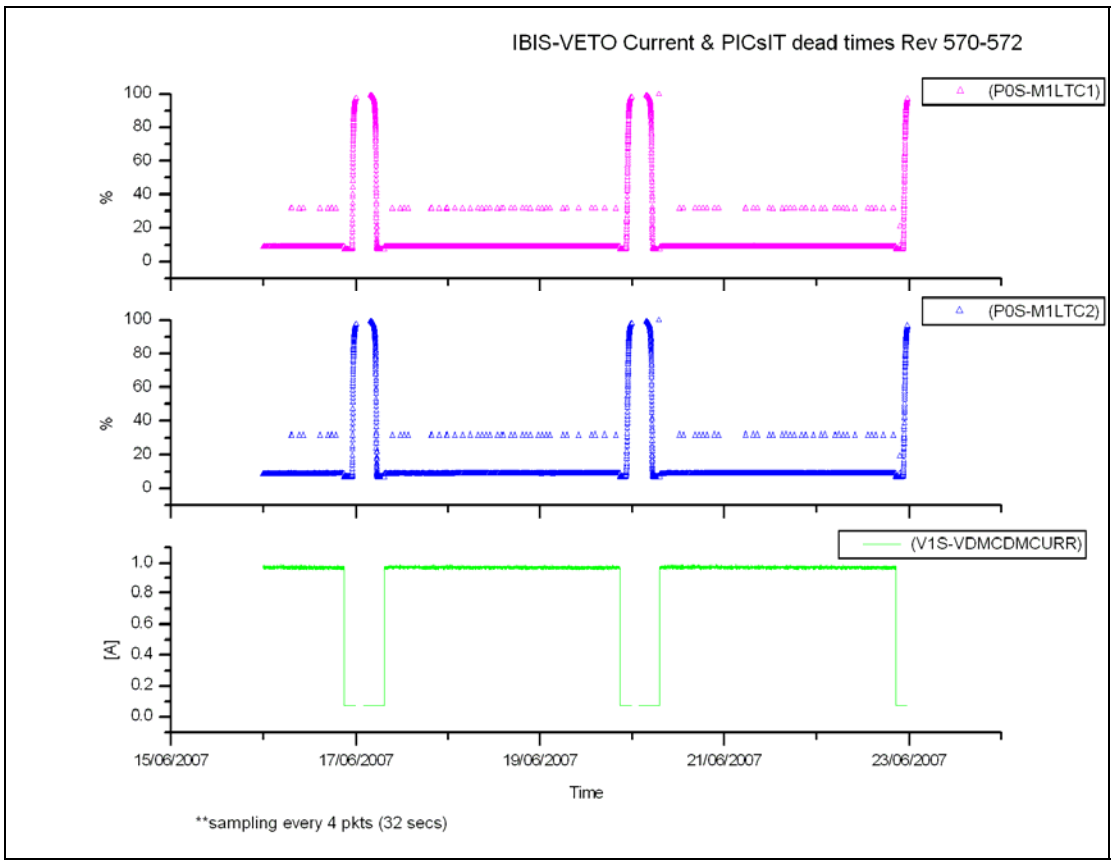


VETO vs Payloads Counters:

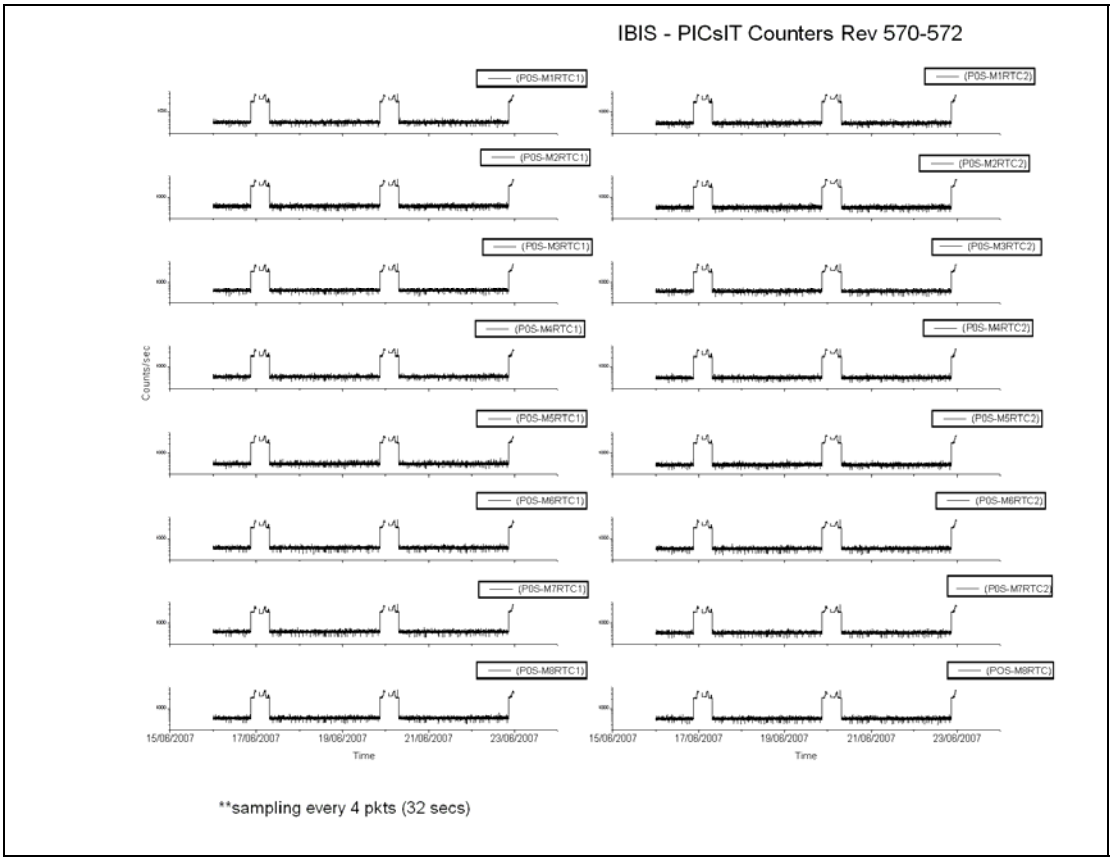


The week was characterised by low radiation as reported by the payload.

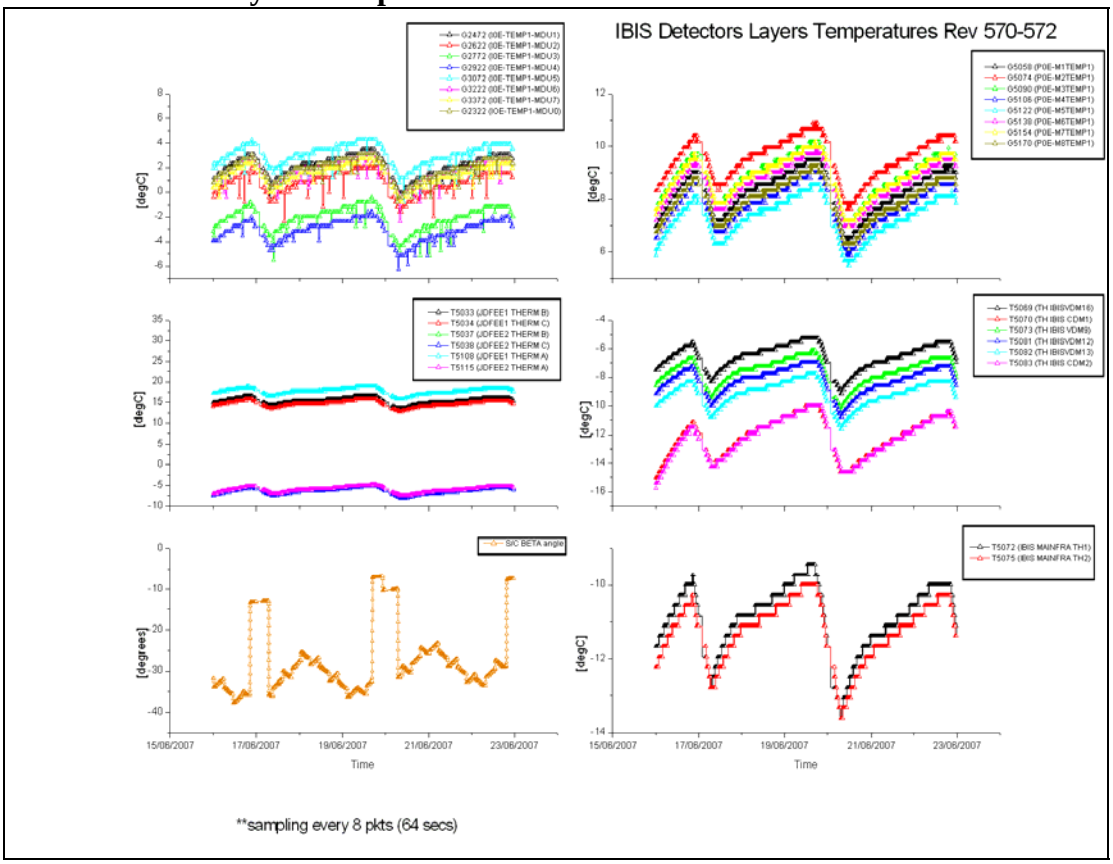
VETO Current:



PICsIT Counters:



IBIS Detectors Layers Temperatures:



IBIS daily report:

The usual Out Of Limits on TM parameter G8015 (S1E-A2_PMT_V), families G5002 (P0S-Mi_RTC1) and G5003 (P0S-Mi_RTC2), families G2014 (I0E-OVFWPXADD-Mi) were reported at Radiation Belts passage.

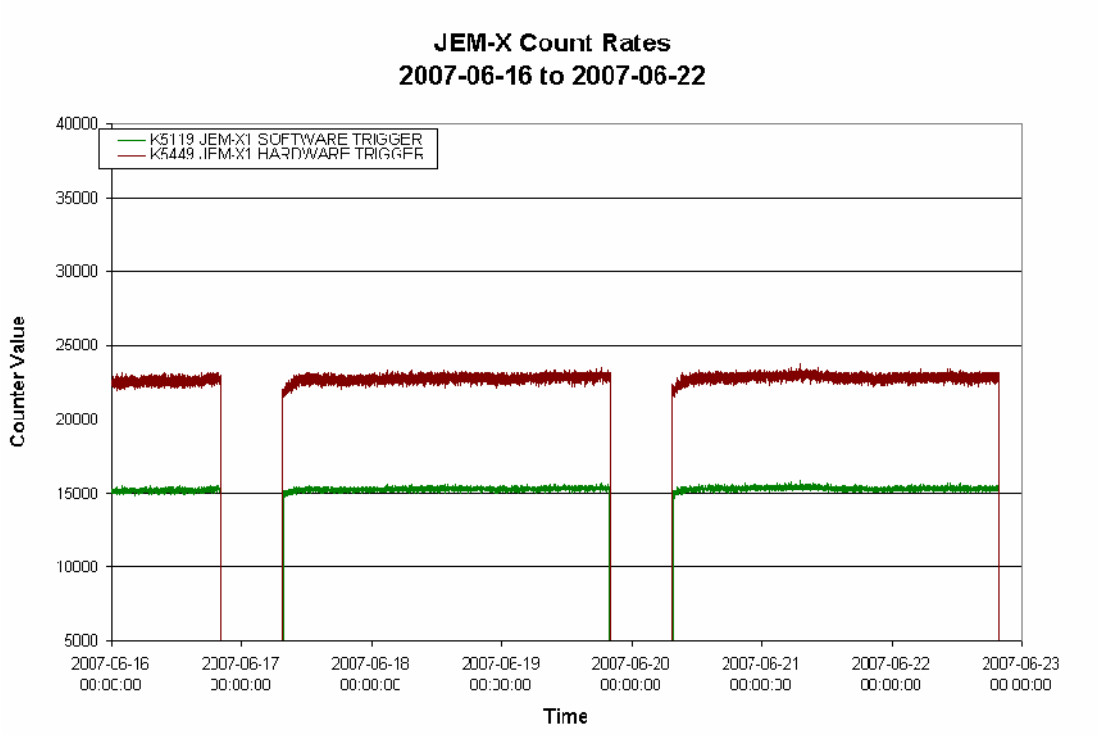
DoY 2007.171 (20/06/2007)

At beginning of revolution 572, all ISGRI CTX tables had not been received from ISDC. Therefore the CTX tables of revolution 570 were uplinked instead of the ones of revolution 571.

7.3.4 JEM-X Operations

JEM-X Count Rates

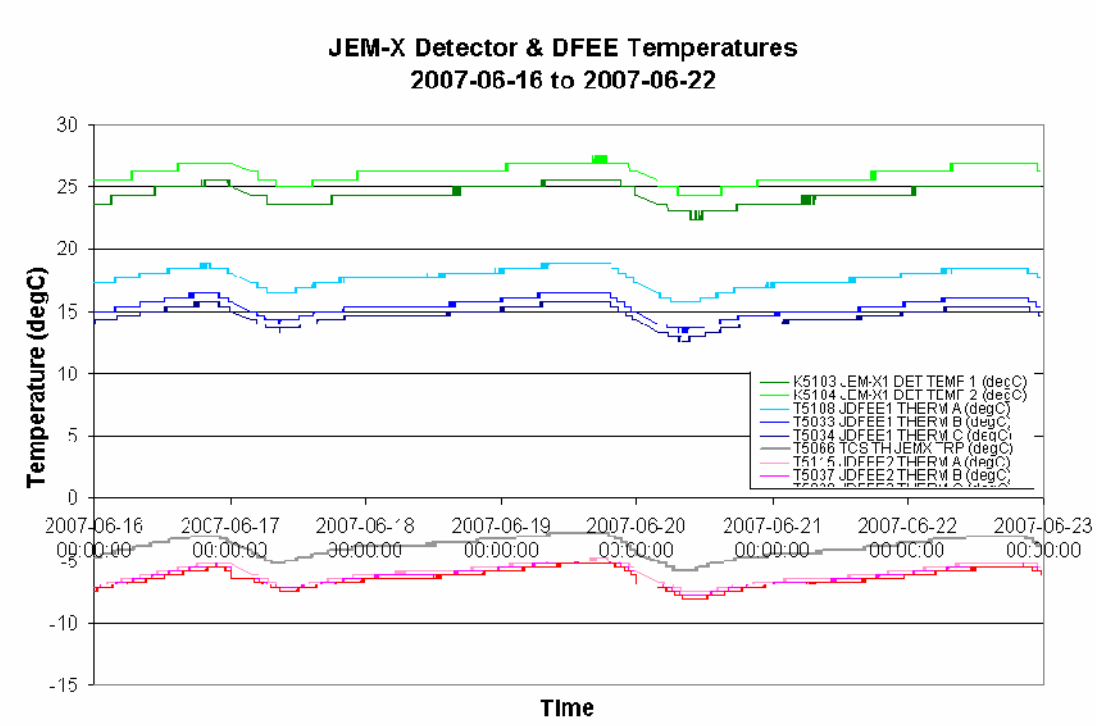
JEM-X count rates over the reporting period are displayed in the following graph[1].



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 graph[2].

[1] Data sampled (1 frame in 4) and smoothed to remove spikes in S/W Trigger due to flushing of buffer after slews.
[2] Data sampled (1 frame in 8)



JEM-X Daily Report

2007-06-16 (DOY 167, Rev 570) to 2007-06-22 (DOY 173, Rev 572)

JEM-X1 operations executed nominally.

7.3.5 OMC Operations

2007-06-16 (DOY 167, Rev 570)

Nothing to report

2007-06-17 (DOY 168, Rev 571)

Due to an FD problem, the update for slew 05710018 failed to arrive. The impact was the loss of that pointing. It was at this time the following commands were rejected:

```
2007.168.23.44.56.145   2007.168.23.45.04.884   1792   RealTime   131     TC REJECT
REJECTED TC1                                              0       0    65535   PR    N
E   E
2007.168.23.45.02.145   2007.168.23.45.04.943   1792   RealTime   131     TC REJECT
REJECTED TC1                                              0       0    65535   PR    N
E   E
```

These correspond to the M1130 (RESET IM) and MU1310 (IMAGING-A) commands.

2007-06-18 (DOY 169, Rev 571)

Nothing to report

2007-06-19 (DOY 170, Rev 571)

At 16:54:50, a Flat Field calibration commenced. It continued until 19:46:46, and was followed from 19:47:16 to 20:19:21 by a Dark Current calibration. Both were executed nominally.

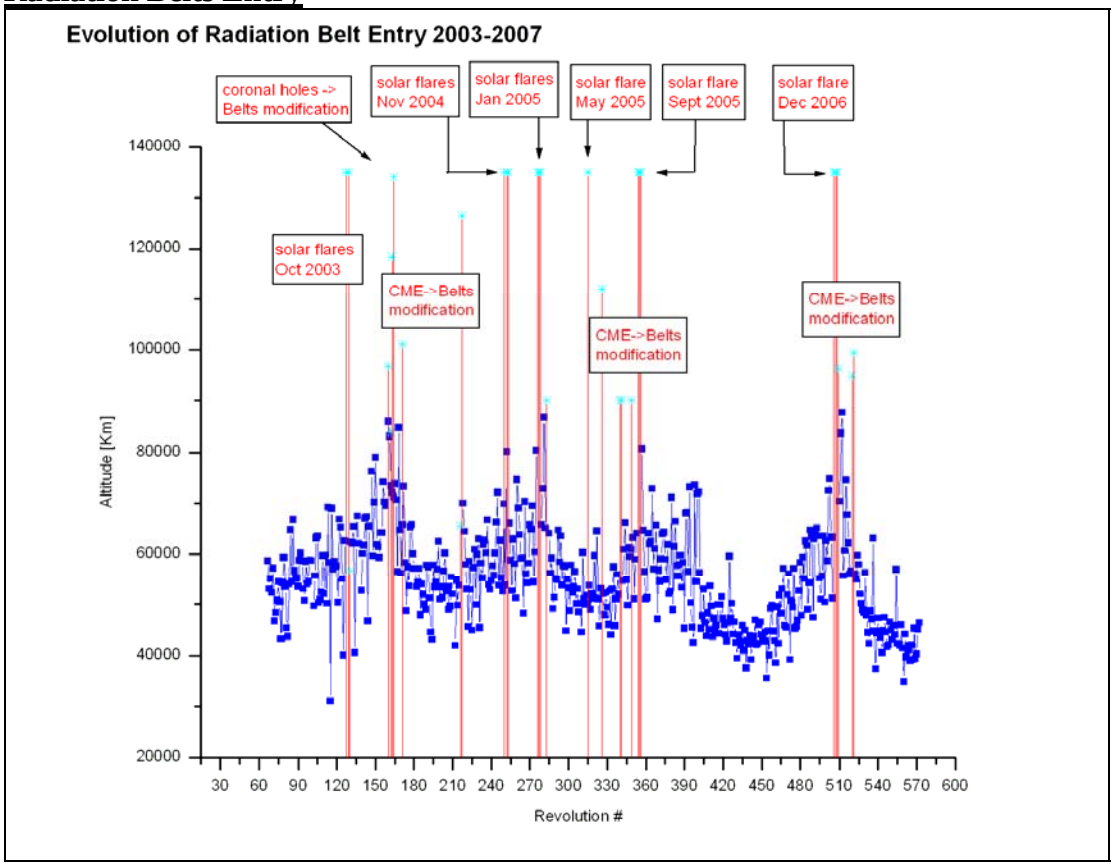
2007-06-20 (DOY 171, Rev 572) to 2007-06-22 (DOY 173, Rev 572)

Nothing to report

On DoY 167 at 21:01:12, DoY 170 at 20:48:56 and DoY 173 at 20:36:24 OMC went to SAFE mode nominally, at the radiation belt entry time as set in the Broadcast Packet.

7.3.6 IREM Operations

Radiation Belts Entry



IREM daily report

Nothing to report.

Electron Belts

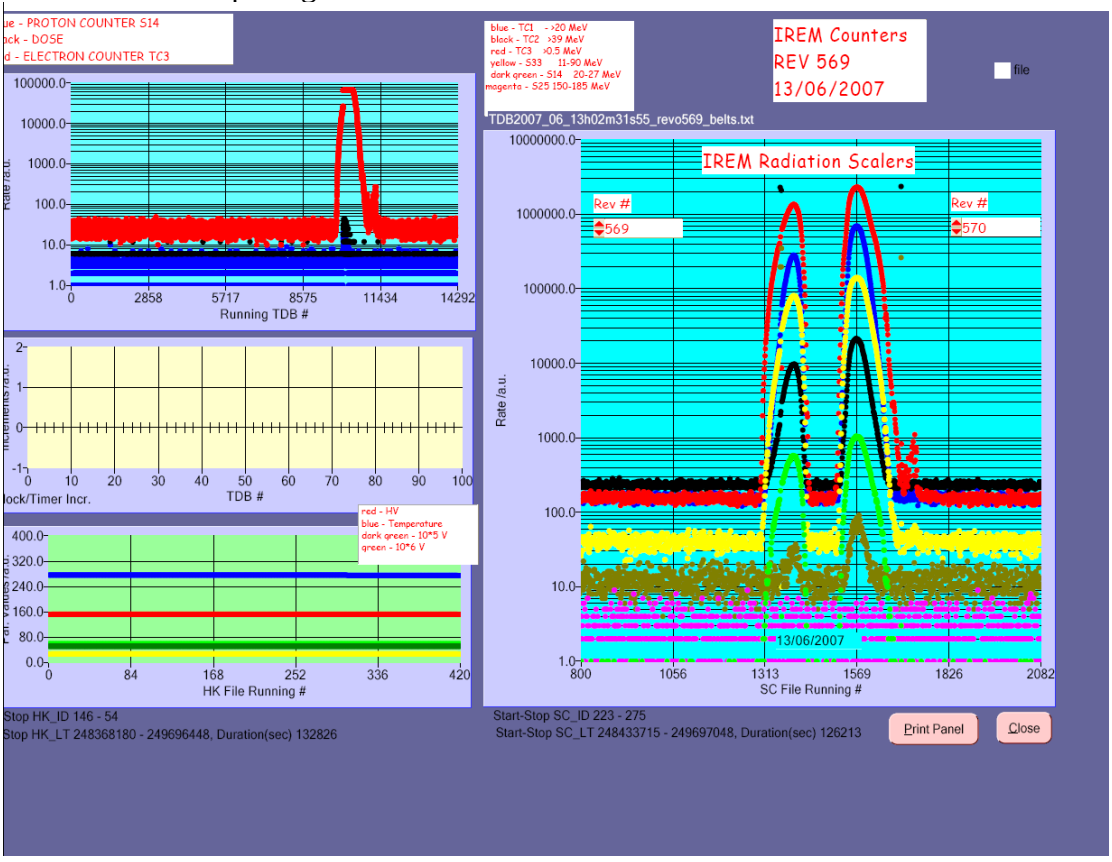
REV	S/C BCPKT (electron)	Electron CUT-OFF Observed Entry/Exit	Observed Entry/Exit Altitude [Km]	Electron CUT-OFF Predicted Entry/Exit	Predicted Entry/Exit Altitude [Km]
570	RAD_ENTR R 2007-06-16T21:01:04Z	40281.3	2007-06-16 22:56:30	2007-06-16 22:15:53	45586
571	RAD_EXIT R 2007-06-17T07:13:34Z	>>29784.5	2007-06-17 05:43:58	2007-06-17 03:05:53	43478
571	RAD_ENTR R 2007-06-19T20:48:52Z	45059.5	2007-06-19 22:11:27	2007-06-19 22:03:27	45601
572	RAD_EXIT R 2007-06-20T07:01:15Z	<<51673.1	2007-06-20 05:43:03	2007-06-20 05:53:27	43462
572	RAD_ENTR R 2007-06-22T20:36:19Z	46403.5	2007-06-22 21:41:27	2007-06-22 21:53:27	45207

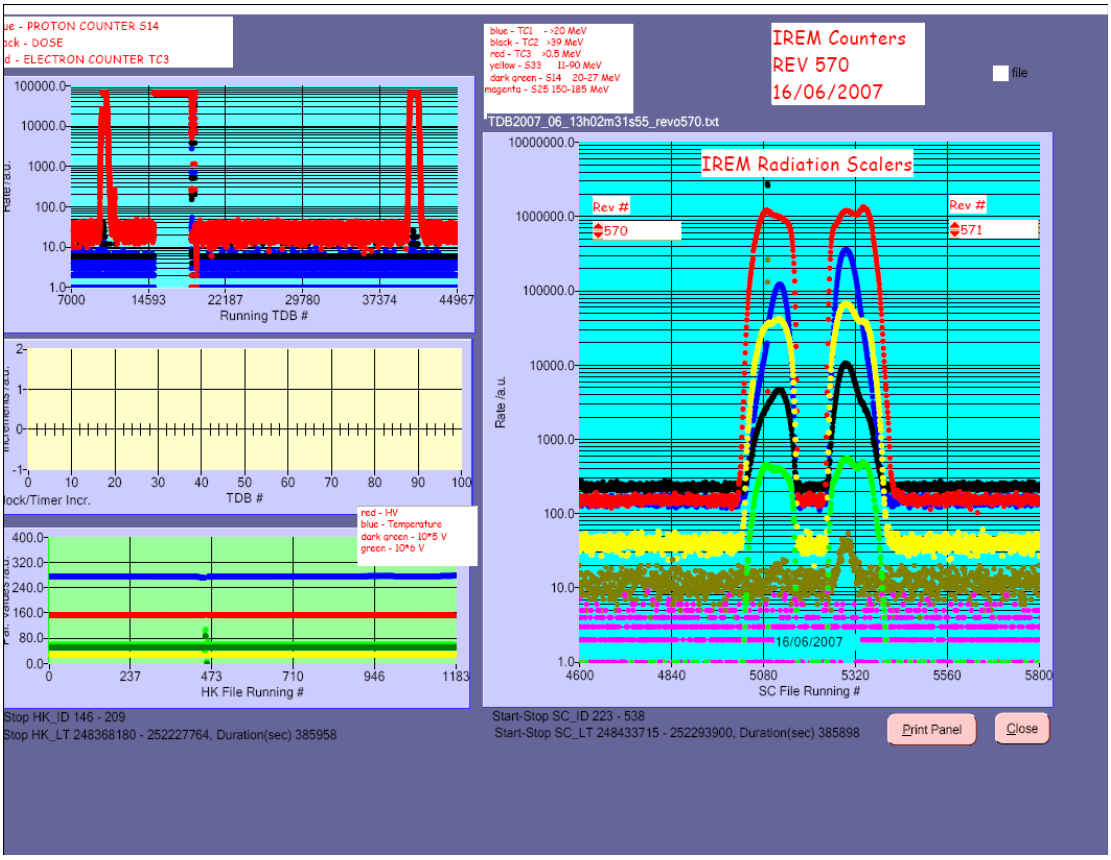
Reference

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)

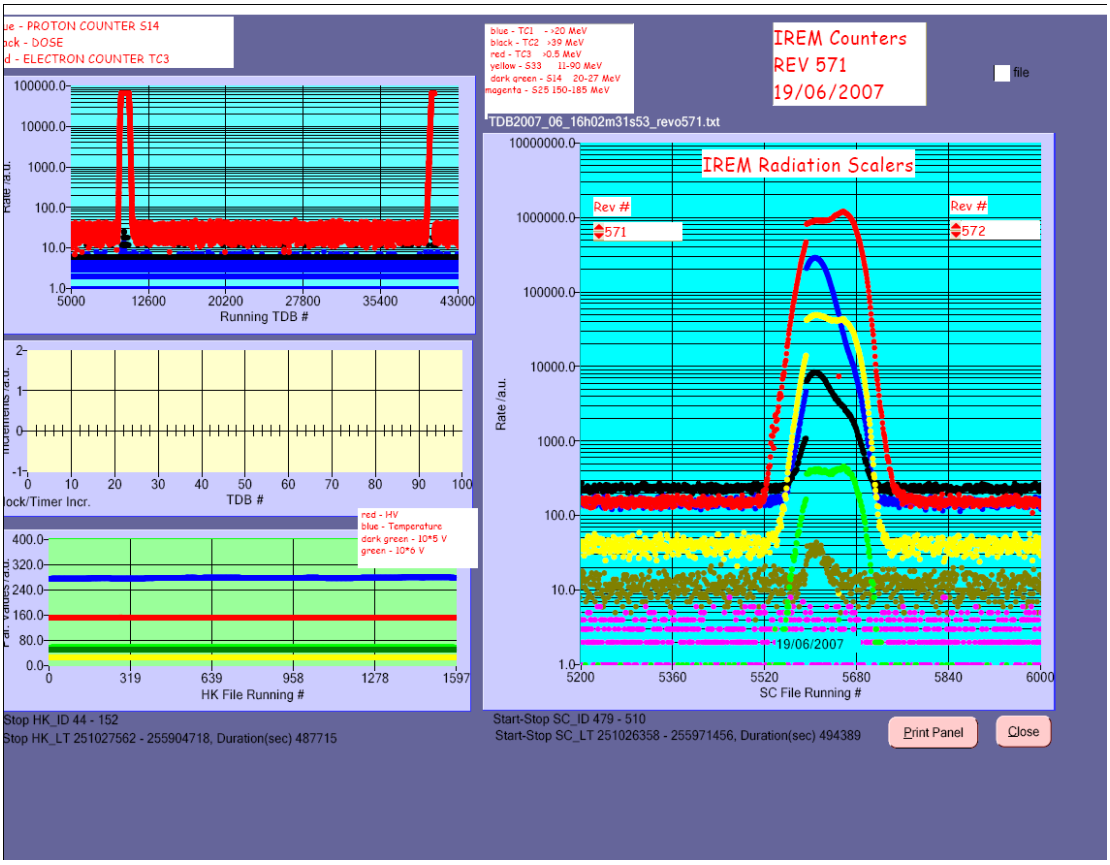
IREM radiation counters:

Due to problems with the ECOE, IREM radiation counters during revolution 569 were not presented in the previous weekly report. However it was possible to recover the data for the Belts passage from revolution 569 to 570.



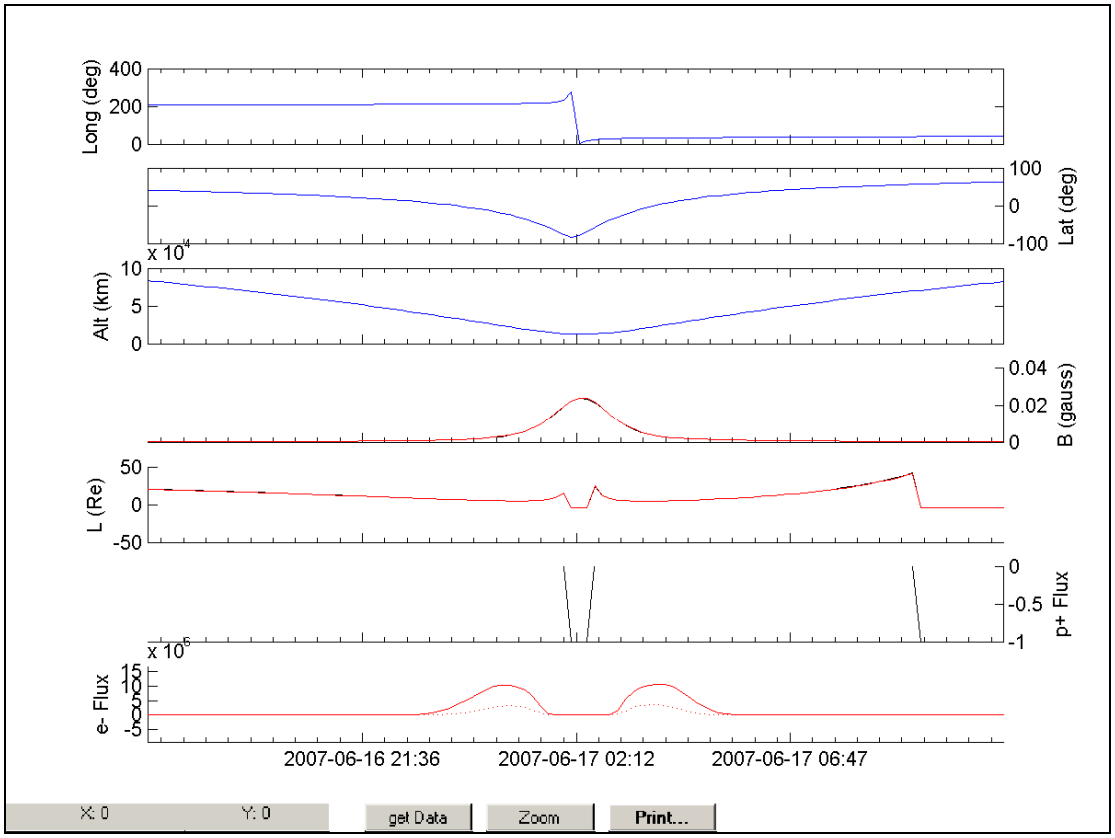


Due to the installation of the new IMCS release, interruptions of the connection to ECOE and therefore missing data during the belts passage from revolution 570 to 571 were reported.

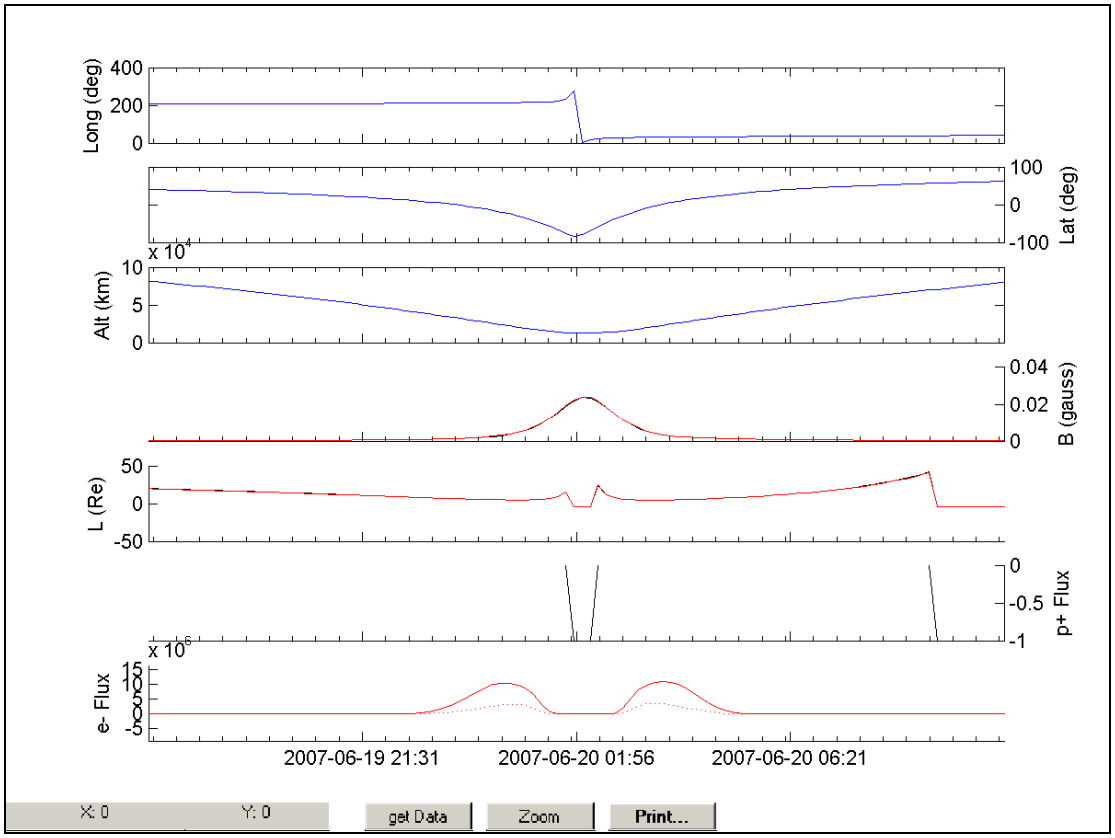


IREM Predicted Radiation Belt Passages

Rev 570



Rev 571



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.