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

INTEGRAL
Mission Report

INT-MOC-SYS-RP-1001-TOS-OF

No. 040
Week 26

30.06.03

Routine Phase

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LIST OF CONTENTS

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		C. Larigauderie – SPI	1
		G. La Rosa – IBIS	1
		S. Brandt – JEM X	1
		E. De Miguel - OMC	1
		W. Hajdas – IREM	1
		JPL / Goldstone	
		D. Holmes	1
		T. Horton	1
		Redu	
		J. Mac Lauchlan	1

1 General

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

It addresses the activities from 21.06.03 until 27.06.03 (both dates inclusive) and covers the revolutions 83 to 86.

The summer eclipse season started on the 24th of June. Up to now the eclipse season is proceeding nominally.

2 Summary of Activities

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

The targets of these revolutions were the Vela region (RA 08:52:45.57; DEC -44:35:07.2), eta-Carinae (RA 10:45:3.60; DEC -59:41:03.0) and the galactic plane. Activities performed included raster dithering and GPS observations.

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 unexpected behaviour / malfunction was identified.

3.1.1 AOCS

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

Several slews were missed in revolutions 84 and 85 due to problems with the Mission Control System and the File Transfer System. Each time the operations could only be resumed after restarting the affected services/machines. On the revolution prior to the first eclipse, the “Sunlight” AMD thresholds were set to their eclipse season settings.

The fuel consumption over the period between 20/06/2003 and 27/06/2003 was 0.069Kg. The remaining propellant is in the order of 176.345 Kg on the 27th of June.

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

3.1.2 Power

The power subsystem is working as specified. The available power is in the order of 2380 W as since the beginning of the mission, i.e. no degradation has been identified so far.

23/06/2003 (DOY 174)

08.01z Battery full Charge Rate C/13 was selected for both batteries.

FCP_EPS_1271 Select Full Charge Rate (C/13), BCR1
FCP_EPS_1272 Select Full Charge Rate (C/13), BCR2

08.33z the MRU end of Charge Timer Threshold for the first eclipse was loaded and enabled. The value loaded was #D987, this corresponds to 3672seconds

FCP_EPS_1260 Battery EOC Timer – Change Time.

The MRU end-of-charge timer threshold will be updated periodically during the eclipse season at request of SOE, depending upon the duration of the upcoming eclipses.

24/06/2003 (DoY 175)

Eclipse passage:
Eclipse #1 of the current eclipse season.
Total Eclipse Duration: 30m 34s
Umbra Duration: 20m 42s
ECD measured DOD Battery 1 9.29% (2.23Ah)
ECD measured DOD Battery 2 9.17% (2.20Ah)
(Note DOD calculation assumes nominal battery capacity rating of 24Ah)
Recharge time battery 1 1h 16m
Recharge time battery 2 1h 15m
Both the eclipse passage and recharge executed outside ground coverage, all indications (ECD and OBM TM / OEMs)are that these operations executed nominally.

26/06/2003 (DoY 177)

08.18z the MRU end of Charge Timer Threshold for the second to the seventh eclipses was loaded and enabled. The value loaded was #8927, this corresponds to 9120 seconds

FCP_EPS_1260 Battery EOC Timer – Change Time.

27/06/2003 (DoY 178)

Eclipse passage:
Eclipse #2 of the current eclipse season.
Total Eclipse Duration: 54m 08s

Umbra Duration: 49m 30s
ECD measured DOD Battery 1 21.21% (5.09Ah)
ECD measured DOD Battery 2 20.96% (5.03Ah)
(Note DOD calculation assumes nominal battery capacity rating of 24Ah)
Recharge time battery 1 3h 01m
Recharge time battery 2 2h 59m
The eclipse passage was completely outside ground coverage, all indications (ECD and OBM TM / OEMs) are that this operation executed nominally. The last 25 minutes of battery recharge occurred after AOS REDU, the observed part of the battery recharge was nominal.

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 identified.

On DoY 174 at 11:54Z the OBDH On-board Monitoring Tables for the eclipse season were loaded and started.

FCP_DHS_1232 Load OBM Entries for Eclipse Season

3.1.5 RF

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 status is nominal.

The instrument is operating in photon by photon mode with Spectra telemetry disabled. The TM bandwidth assigned to SPI was 98 pkts/cycle for the reported period.
The Cryo-cooler is working nominally maintaining 85K temperature in the detector cold plate.
The 2nd eclipse season of the year started in rev.84 (24th June): the SPI special management operations devised in occasion of 1st season were repeated and successfully executed this time by means of the automatic timeline.
The detailed schedule for the 2nd SPI annealing (18th – 30th July) has been agreed in a meeting in Toulouse last week with CNES/CSER and ISOC people: details will be included in the next weekly report.

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

3.2.2 IBIS

The Status of the unit is Nominal.
The TM bandwidth assigned to IBIS is 134 pkts/8sec.

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

3.2.3 JEM-X

During the reporting period, JEM-X2 operations were executed from the Automatic Timeline and JEM-X1 was dormant.

The JEM-X eclipse operations were performed nominally and the instrument behaviour was also nominal. We are receiving Low Limit warnings on the detector pressures after switch On of the DFEEs at eclipse exit. The reason is the drop in detector temperatures due to switch Off of the DFEES during eclipse. Near the end of revolution 85, JEM-X2 went to SAFE mode due to high Software Trigger Rates.

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

3.2.4 OMC

During the reporting period, OMC operations were interrupted twice when the OMCAS crashed, causing the OMC to go to mode NONE and remain in that state for about 2 hours 37 minutes on 25th of June at 04:07Z, and then again for 1 hour 23 minutes at 18:16Z on the same day. 7 OMC pointings were missed during these times. Problems with the IMCS caused the loss of 3 more OMC pointings on the 22nd.

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

3.2.5 IREM

The status of the unit is nominal.

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

4 Ground Facilities

The problems during this week concentrated on the Control System and the NCTRS. The overall performance of the ground segment was acceptable, with 96% of pointings achieved.

4.1 Mission Operations Centre

There was two major problems concerning the performance of the IMCS this week, which resulted in the loss of six slews.

- On DoY 173 at 07:09 the TLM from Redu dropped, the IMCS-A was showing 'red', with swap space decreasing rapidly. A decision was made to swap to IMCS-B, but as no TPFs were being received, it was decided to switch back to IMCS-A after the system had been re-booted. It was not until the IFTS had been restarted that the TPFs finally arrived. The Timeline was recovered at 11:00 with slews 14 and 15 of revolution 84 being lost and 16 performed manually.
- On DoY 176 at 23:35 to DoY 177 at 02:00 problems with IFTS software on IMCS-A that prevented the TPFs from being transferred. Slews 47, 48 and 49 of revolution 85 were missed.

4.2 Ground Stations & Network

During this week, there were the following problems related to the ground stations:

- On DoY 172 at 10:17 there was a mystery drop of VC0 and VC7, DSS-16 reported no problems from their end.
- On DoY 173 at 02:03 to 02:05, the NCTRS-A was restarted as an off-line link to DSS-16 was hanging. There was no TLM or TC during this interval, and no impact.
- Later that day at 15:15 till 15:25 there was no TLM or TC links when problems were encountered during a restart of the TMPs in Redu.
- On DoY 174 at 06:28 to 06:30 there were no TLM or TC links while the NCTRS-A was restarted.
- On DoY 175 at 05:47 to 05:50 there were no TLM or TC links while the NCTRS-A was restarted.
- Later at 06:36 the TLM and TC links from DSS-16 dropped out, the TLM returned at 06:42, with the TC following a minute later, there was no impact.
- At 15:59 there was a drop in VC0 TLM, when the VC7 link was removed at 16:03, the problem corrected itself.
- On DoY 177 from 12:47 to 13:01, there was a drop in TLM from Redu, no impact.

4.3 Science Ground Segment

4.3.1 ISOC

No ISOC Input has been provided

4.3.2 ISDC

On DoY 172 from 05:04 to 09:13, then from 21:29 to 21:41, again on DoY 173 from 14:44 to 14:50 there were short drops in the ISDS link to ISDC. These were probably caused by the IDDA being overloaded by consolidation, data retrieval or CD production. There were also longer interruptions on DoY 173 from 15:25 to 15:36, then on DoY 174 from 19:14 to 19:25 and again on DoY 175 from 04:43 to 04:45 when the ISDC link was disconnected and re-connected. In all cases lost data will be recovered in due course via the CDs produced by the MOC.

5 Special Events

6 Anomalies

The problems related to the ground segments are already mentioned in chapter 4.

A list of the pending anomalies since Launch is presented in the Appendix. New anomalies raised during the past week are listed below:

ARid	Date Occurrence	Subject	Segment	Element	Status
INT - 002358	2003/06/22	Error sending data to ISDC	Ground	IMCS	Pending
INT - 002359	2003/06/22	NCTRSA application restart	Ground	NCTRS	Pending
INT - 002360	2003/06/22	Loss of telemetry due to NCTRSA and IMCSA errors	Ground	NCTRS	Pending
INT - 002361	2003/06/23	Late handover to DSS-16, DR pending	Ground	NASA Sta.	Pending
INT - 002362	2003/06/23	NCTRSA application restart	Ground	NCTRS	Pending
INT - 002363	2003/06/23	Error sending data to ISDC	Ground	IMCS	Pending
INT - 002364	2003/06/24	NCTRSA application restart	Ground	NCTRS	Pending
INT - 002365	2003/06/24	Telemetry Drops from Goldstone. DR GI02942	Ground	NASA Sta.	Pending
INT - 002366	2003/06/25	SPI Spurious CSSW HK TM(1,8) Generation	Space	SPI	Pending
INT - 002367	2003/06/25	SPI: Spikes in GeD count rates after HV switch on following 1st annealing	Space	SPI	Pending
INT - 002368	2003/06/25	IFTS Transfer on IMCS-A Failed	Ground	IMCS	Pending

7 Future Milestones

8 Appendix

The appendix includes various detailed information.

8.1 Overview of Revolutions

Revolution 84
In revolution 84, a raster dithering observation of the Vela region (RA 08:52:45.57; DEC -44:35:07.2) was performed throughout the available observation time.

Revolution 85
Revolution 85 consisted of a raster dithering observation of eta-Carinae (RA 10:45:3.60; DEC -59:41:03.0) lasting approximately 31 hours, followed by a raster dithering observation of the Vela region (RA 08:52:45.57; DEC -44:35:07.2) for the remaining ~29 hours of observation time.

Revolution 86
Revolution 86 began with 13 pointings of a GPS lasting ~9 hours. A raster dithering observation of the Vela region (RA 08:52:45.57; DEC -44:35:07.2) was then performed for ~25 hours. This was interrupted by an 8 hour period of staring at an attitude of (RA 08:52:45.57; DEC -46:35:07.2) in the Vela region. During this time the instruments remained in their science modes but the time had not been planned for a science observation as a ground station outage had been expected. The raster dithering observation of the Vela region was then resumed and continued for the remaining ~19 hours of observation time.

Throughout the observations in these revolutions, all instruments were in their nominal science modes, except for JEM-X1 which was in Safe mode, and the TM allocation was 134 IBIS, 98 SPI, 1 JEM-X1, 8 JEM-X2, 5 OMC.

8.2 Consumables

8.2.1 Detailed Fuel Book-keeping

```
2003-06-06T17:50:16.000Z     176.7218    F   Automatic TM processing.
2003-06-09T11:11:42.000Z     176.7009    F   Automatic TM processing.
2003-06-09T17:33:51.000Z     176.6749    F   Automatic TM processing.
2003-06-12T10:24:38.000Z     176.6200    F   Automatic TM processing.
2003-06-12T17:24:38.000Z     176.5880    F   Automatic TM processing.
2003-06-13T06:07:04.000Z     176.5619    F   Automatic TM processing.
2003-06-13T10:15:04.000Z     176.5344    F   Automatic TM processing.
2003-06-15T17:07:49.000Z     176.5173    F   Automatic TM processing.
2003-06-16T04:58:55.000Z     176.4508    F   Automatic TM processing.
2003-06-18T16:51:56.000Z     176.4350    F   Automatic TM processing.
2003-06-19T02:08:13.000Z     176.4140    F   Automatic TM processing.
2003-06-21T16:55:08.000Z     176.3957    F   Automatic TM processing.
2003-06-23T03:39:51.000Z     176.3755    F   Automatic TM processing.
2003-06-24T17:06:11.000Z     176.3576    F   Automatic TM processing.
2003-06-26T02:45:34.000Z     176.3446    F   Automatic TM processing.

This report was generated  Fri Jun 27 08:00:12 GMT 2003
```

8.3 Detailed Satellite Information

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

8.3.1 AOCS Operations

AOCS operations were executed from the Automatic Timeline.

During this period, 33 Open Loop Slews, 124 Closed Loop Slews and 5 Momentum Bias were executed. 7 slews were lost or executed manually. This is equivalent to a 4%.

21/06/03 (Day of Year 172, Revolution 83-84)

Guide Star released during perigee passage due to SEU Filter: At 16:07:33, shortly before AOS at the beginning of revolution 84, the Guide Star was released when the ACC SEU STR Filter was exceeded. At LOS the guide star had magnitude 6.35 and CCD coordinates (-2723, -1920). An autonomous mapping was performed and the ACC apparently picked the same guide star that it had lost. At AOS the guide star had magnitude 6.35 and CCD coordinates (-2689, -1708).

22/06/03 (Day of Year 173, Revolution 84)

Slews lost due to problems on the Mission Control System: At 07:09, failures on the NCTRS-A and IMCS-A caused loss of all links and stopping of the timeline. An attempt to continue the operations on the backup chain, while trying to bring up the prime chain, was also not successful due to problems with the File Transfer System. The operations could not be resumed until after a complete restart of all the applications on IMC-A and reboot of the NCTRS-A machine. This anomaly resulted in the missing of slews 00840014 to 00840016. After reestablishment of the TM/TC links, the FD Timeline recovery tool was used to perform a manual slew to the attitude of pointing 00840016 and then to manually update the parameters for slew 00840017.

Modification of the AMD Thresholds from sunlight to eclipse settings: On this first revolution prior to the first eclipse, the “Sunlight” AMD thresholds were set to their eclipse season settings. The loaded values are the modified AMD thresholds for the eclipse season. These modified values, which were also loaded during the previous eclipse season, are derived by adjusting the hypothetical AMD thresholds (calculated before launch) to the real mission orbit worst-case eclipse. As was also shown during the last eclipse season, the modified thresholds considerably improve the fuel consumption by reducing the number of reaction wheel biases needed per revolution.

23/06/03 (Day of Year 174, Revolution 84)

Nothing to Report.

24/06/03 (Day of Year 175, Revolution 84-85)

Nothing to report.

25/06/03 (Day of Year 176, Revolution 85)

Slews lost due to problem with the File Transfer System: At 23:35, the TPF to update the parameters of slew 00850047 failed transmission to the Mission Control System. The AOCS commanding from the timeline was disabled and the IFTS was restarted. Slews 00850047 to 00850050 were missed due to this anomaly. After restart of the IFTS, the Timeline Recovery tool was used to manually slew to the attitude of pointing 00850050 and to update the parameters for slew 00850051. The Flight Dynamic System then failed to update the parameters for the change of guide star prior to the reaction wheel bias. In the presence of the FD engineer, it was verified that the default parameters of the CGS were fine for the RWB operation and the timeline was allowed to execute with its default values.

26/06/03 (Day of Year 177, Revolution 85)

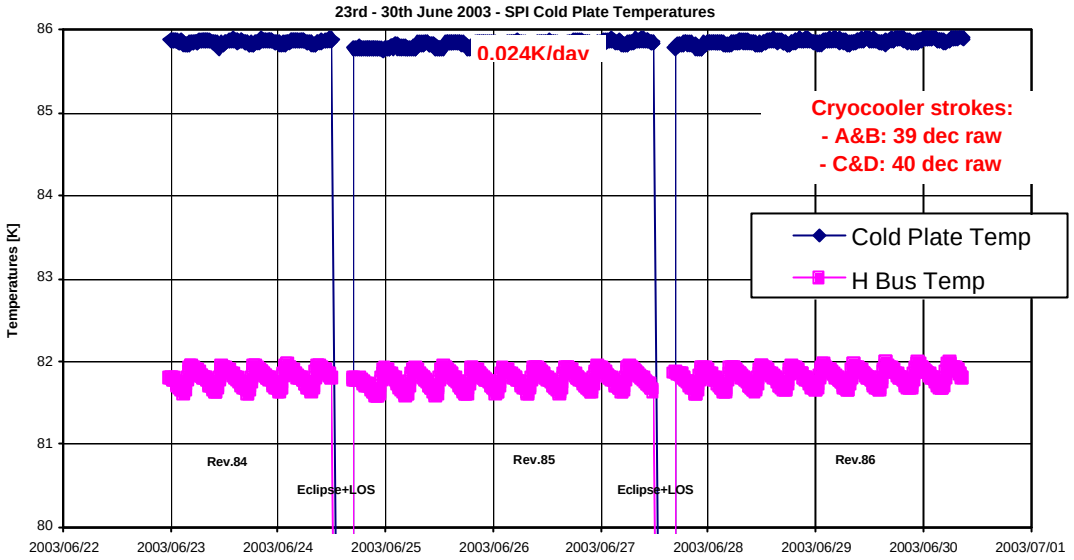
Nothing to report.

27/06/03 (Day of Year 178, Revolution 85-86)

Nothing to report.

8.3.2 SPI Operations

Cryo-cooler:
The performance of the 4 compressors is nominal and the cold plate temperature is maintained at around 85.85K with a drift of 0.024K/day average for the reporting period.
This trend has finally led the cold plate temperature (TM E0392 used as reference) to hit the Warning Upper Limit at 89.9K, for a few hours before the LOS at the end of rev.86. As a consequence, it is scheduled to increase by 1LSB the stroke of the compressors A&B at AOS at the beginning of rev.87.

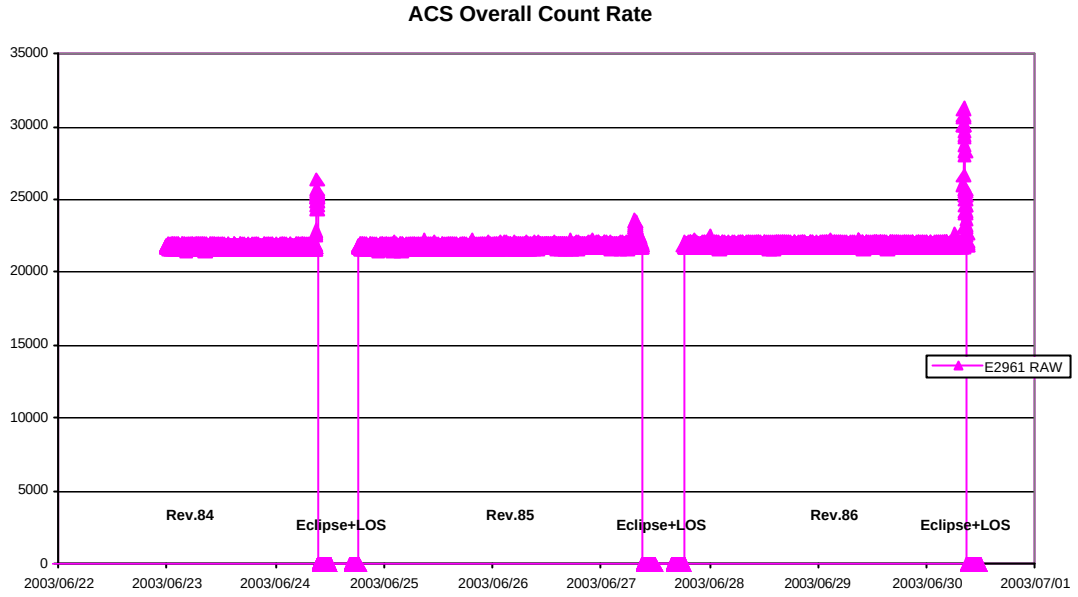


IASW/DPE:

The CNES reported anomaly about the downlink of spurious CSSW HK TM(1,8) packets on 30th March 2003 has been confirmed by analyzing the data archive at MOC and thus an Integral Anomaly Report has been finally issued (INT-AR-2024).
Subsequent CNES/CSER investigations indicated that a similar anomaly has also been affecting the telemetry packets with APID=129 (OBDH) and APID=640 (AOCS) relayed to Toulouse in the same period by the SPI W/S at MOC. If confirmed, this may indicate that the error could be located somewhere else than on-board SPI payload.
Data archive analysis has to be performed at MOC to confirm this outcome.

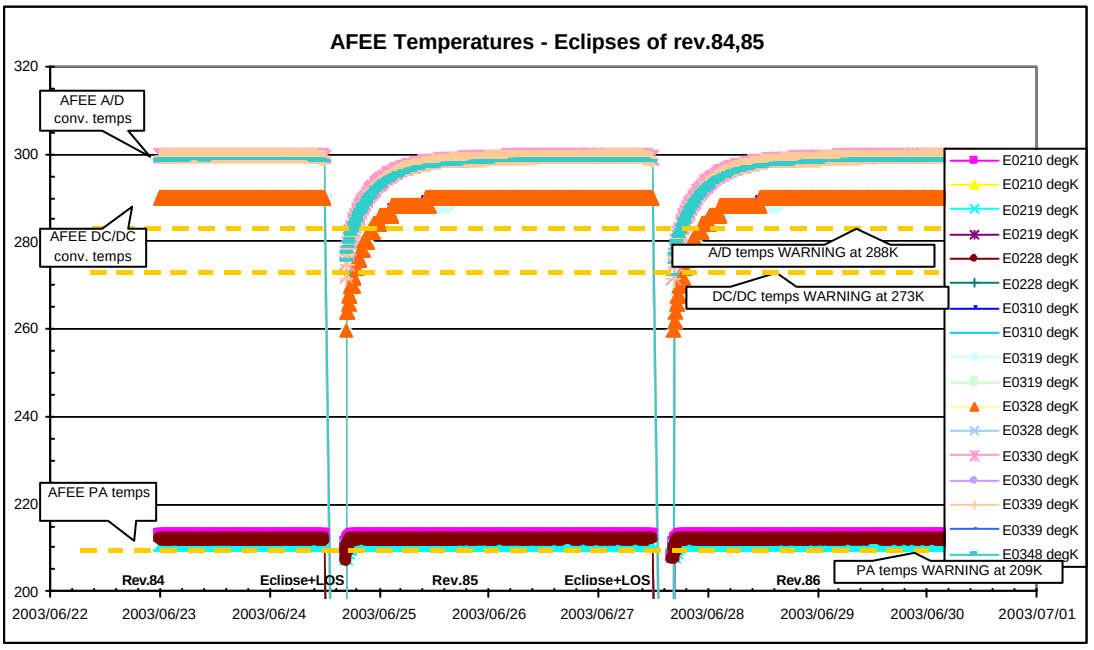
ACS:

The overall ACS count rate during the reporting period is here plotted (sampling at 1/80s) : the anomalous increase is due to the rad belts approaching while the ACS HV is on, being the switch off still at 60000km. In these conditions CNES/CSER should evaluate the possibility to enable the reactions of the IASW to IREM proton counter.

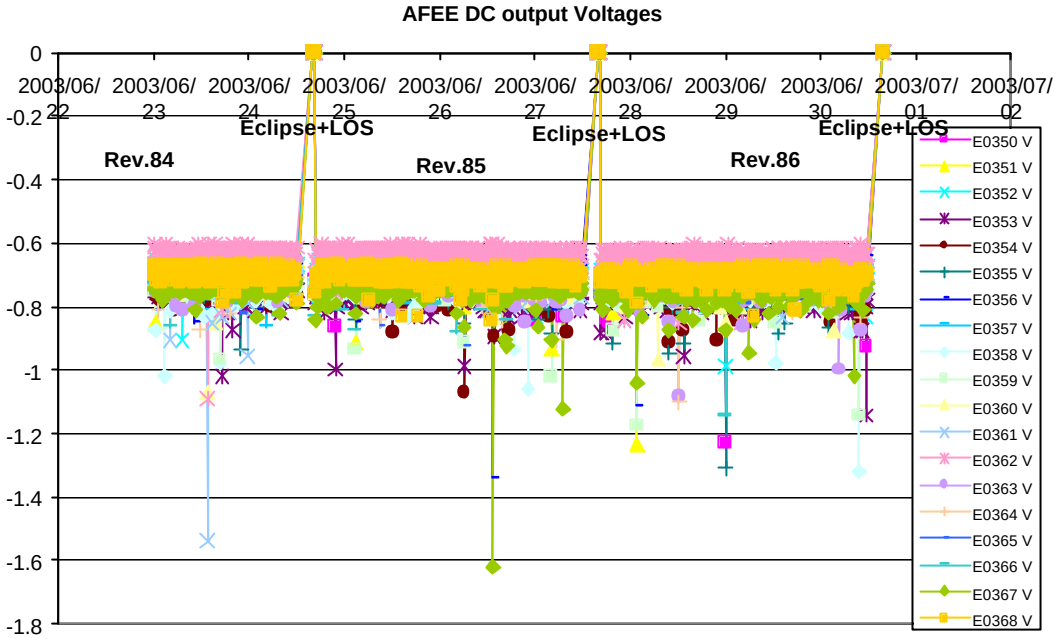


AFEE :.

Immediately after the eclipse passage, after the SPI configuration was re-established by ground commanding, most of AFEE temperatures showed Out-Of-Limit for a few hours: this was considered nominal, due to the expected cool down of the front-end electronics in absence of power. In fact the affected limits are applicable only when the unit is powered. See the plot in attachment. The behavior is also in accordance with what was observed during the 1st eclipse season.



The AFEE dc output signal during the reporting period is here plotted (sampling at 1/640s): no anomalous noise is present.



DFEE, PSD: Nothing to report

8.3.3 IBIS Operations

There were a few reports during the Belt passage of the OEM ID 167 Class 2<<IBIS1 PICsIT NOISY SEMIMODULE>> due to the PICsIT detectors being ON without the VETO anticoincidence system, as it required by PIs.

On DoY 2003.173 (22/06) at 19.41Z the following TM parameters G5084-5088-5100-5115-5120-5180-5184 were reported OOLs (SCC fail). As required in the FDIR doc, the s/s SOE was informed and the parameters monitored for few minutes until they were back in limits. No further action was taken.

At 19.53Z the TM parameter family G5002 (counter semimodule #1) and G5003 (counter semimodule #2) were reported OOLs As required in the FDIR doc, the s/s SOE was informed and the parameters monitored for few minutes until they were back in limits: in coincidence the following OEM ID 132 Class 0 <<IBIS 1 IASW HEPI RESYNCH...>> was generated (19.56Z). No further action was taken.

On DoY 2003. 174 (23/06) at 03.42-20.44-21.14-22.17Z the OEM ID 180 Class 2 <<IBIS1 VETO COUNTER LATERAL EXCEEDS ALERT VALUE>> was reported. The relevant TM_para G6063 showed values inside limits after few TM cycles and therefore the problem was disregarded, as suggested by the nominal reaction to this OEM.

At 18.10-22.06Z the OEM ID 179 Class 2 <<IBIS1 VETO COUNTER BOTTOM EXCEEDS ALERT VALUE>> was reported. The relevant TM_para G6062 showed values inside limits after few TM cycles and therefore the problem was disregarded, as suggested by the nominal reaction to this OEM.

At 19.18Z the OEM ID 183 Class 2 <<IBIS1 VETO +5V VECU VOLTAGE OUT OF RANGE>> was reported. The relevant TM_para G6106 showed a value inside limits and therefore the problem was disregarded, as suggested by the nominal reaction to this OEM.

On DoY 2003. 175 (24/06) at 00.55-01.12-04.25-19.54-23.59Z the OEM ID 180 Class 2 <<IBIS1 VETO COUNTER LATERAL EXCEEDS ALERT VALUE>> was reported. The relevant TM_para G6063 showed values inside limits after few TM cycles and therefore the problem was disregarded, as suggested by the nominal reaction to this OEM.

At 04.57Z the OEM ID 179 Class 2 <<IBIS1 VETO COUNTER BOTTOM EXCEEDS ALERT VALUE>> was reported. The relevant TM_para G6062 showed values inside limits after few TM cycles and therefore the problem was disregarded, as suggested by the nominal reaction to this OEM.

On DoY 2003. 176 (25/06) at 00.43-00.51-03.40-10.19-19.08-22.47Z the OEM ID 180 Class 2 <<IBIS1 VETO COUNTER LATERAL EXCEEDS ALERT VALUE>> was reported. The relevant TM_para G6063 showed values inside limits after few TM cycles and therefore the problem was disregarded, as suggested by the nominal reaction to this OEM.

At 00.17-1.07-1.48-09.09-09.17-19.13-20.16-20.21-22.36Z the OEM ID 179 Class 2 <<IBIS1 VETO COUNTER BOTTOM EXCEEDS ALERT VALUE>> was reported. The relevant TM_para G6062 showed values inside limits after few TM cycles and therefore the problem was disregarded, as suggested by the nominal reaction to this OEM.

8.3.4 JEM-X Operations

21/06/03 (Day of Year 172, Revolution 83-84)
Nothing to report

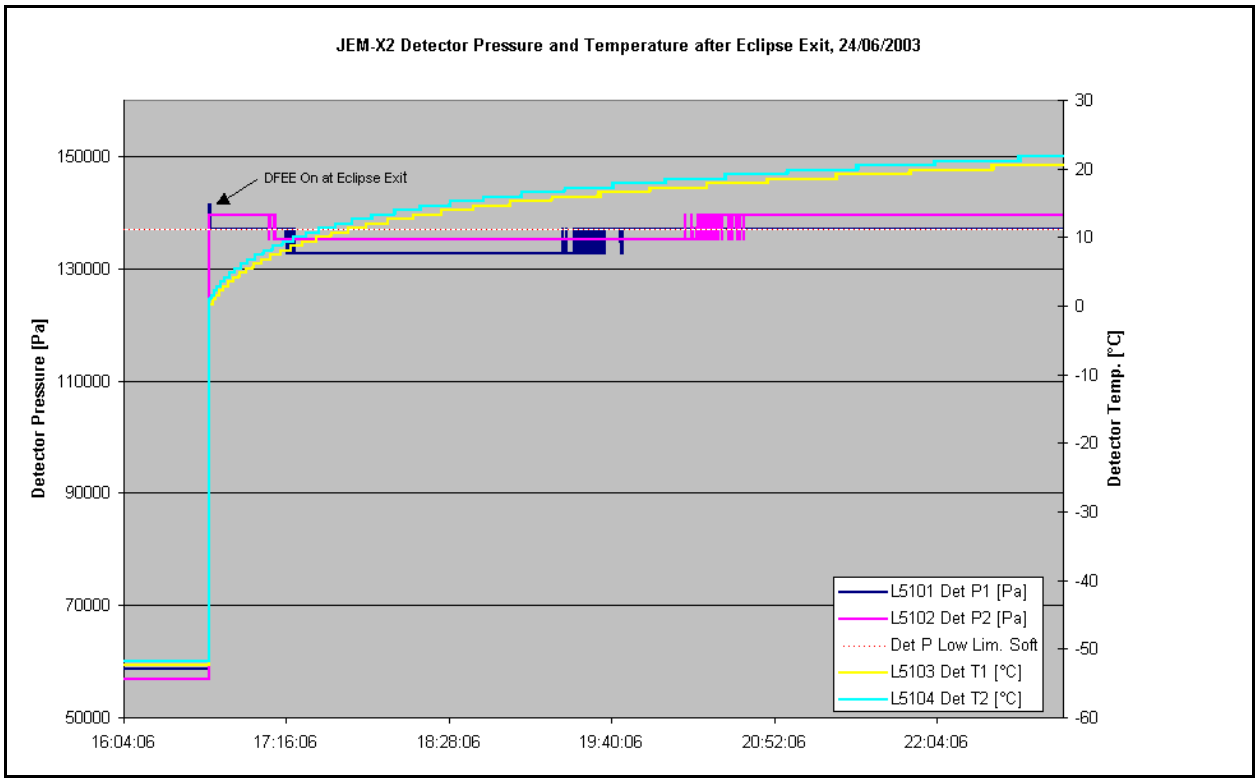
22/06/03 (Day of Year 173, Revolution 84)
Nothing to report

23/06/03 (Day of Year 174, Revolution 84)
Nothing to Report

24/06/03 (Day of Year 175, Revolution 84-85)

Low-limit warnings on JEM-X1 and 2 Detector pressures at eclipse exit: About 30 minutes after switch-on of the DFEEs at exit from eclipse, Out-Of-Limit warnings were generated on the detector pressures. These pressures had dropped one LSB below the lower-limit warning threshold of 137000 Pa. The reason for this was the decrease in detector temperature due to switch Off of the DFEEs during eclipse. Both pressures raised above the warning threshold after thermal stability. The evolution of

the JEM-X2 detector pressures and temperatures after eclipse exit is shown in the following graph.



25/06/03 (Day of Year 176, Revolution 85)
Nothing to report

26/06/03 (Day of Year 177, Revolution 85)
Nothing to report

27/06/03 (Day of Year 178, Revolution 85-86)

JEM_X2 to SAFE due to S/W Trigger Rate threshold: at 07:22, JEM-X2 went to SAFE mode when the S/W trigger rate exceeded the Safe threshold of 20000. The altitude was 72000 km descending and it was 30 minutes before the planned LESAFE ED. Therefore, no recovery action was taken and the unit was left in SAFE mode.

8.3.5 OMC Operations

During this period 13 out of the 153 originally planned OMC image acquisitions were missed.

21/06/2003, DOY 172, Revolution 83-84
Nothing to report

22/06/2003, DOY 173, Revolution 84

Pointings 14, 15 and 16 were lost due to problems with the IMCS.

23/06/2003, DOY 174, Revolution 84
Nothing to report

24/06/2003, DOY 175, Revolution 84-85
Nothing to report

25/06/2003, DOY 176, Revolution 85

04:07:49, and again at 18:16:52 at transition the STAND-BY, the OMCAS crashed and OMC mode changed to NONE. At this time the following OEMs were issued by the CSSW:
OEM class 1, ID 5: "Exception raised in IASW/CSSW interface by CSS operation START_ANALOG_ACQUISITION. Interface called by IASW task NEW_TC. Exception Identification."
OEM calss 1, ID 6: "Exception raised in IASW/CSSW interface by CSS operation START_ANALOG_ACQUISITION. Interface called by IASW task NEW_TC. IASW Culprit Identification."
OEM class 1, ID 5: "Exception raised in IASW/CSSW interface by CSS operation READ_LAST_ANALOG_ACQUIRED_VALUE. Interface called by IASW task NEW_TC. Exception Identification."
OEM calss 1, ID 6: "Exception raised in IASW/CSSW interface by CSS operation READ_LAST_ANALOG_ACQUIRED_VALUE. Interface called by IASW task NEW_TC. IASW Culprit Identification."
OEM class 0, ID 232: "Transition to STANDBY."

2003.176.04.07.49.094 2003.176.04.07.34.907 1792 Real Time Exception 5 OMC EXC IACS INT
FIX6=0 M9079=1 M9080=5 M9065=51,ST ART AN ACQ M9066=1,IASW TASK 1 M9067=5078
2003.176.04.07.49.160 2003.176.04.07.34.907 1792 Real Time Exception 6 OMC EXC IACS INT
FIX6=0 M9079=1 M9080=6 M9065=51,START AN ACQ M9066=1,IASW TASK 1 M9067=14537
2003.176.04.07.49.190 2003.176.04.07.34.907 1792 Real Time Exception 5 OMC EXC IACS INT
FIX6=0 M9079=1 M9080=5 M9065=52,READ LAST AN M9066=1,IASW TASK 1 M9067=5024
2003.176.04.07.49.225 2003.176.04.07.34.907 1792 Real Time Exception 6 OMC EXC IACS INT
FIX6=0 M9079=1 M9080=6 M9065=52,READ LAST AN M9066=1,IASW TASK 1 M9067=14578
2003.176.04.07.49.243 2003.176.04.07.35.102 1792 Real Time Event 232 TO STDBY
FIX2=0 M5010=1,STAND BY M9079=0 M9080=232 M5800=350,OTF M5899=0

Here, pointings 16, 17, 18 and 19 were lost.

2003.176.18.16.52.761 2003.176.18.16.38.933 1792 Real Time Exception 5 OMC EXC IACS INT
FIX6=0 M9079=1 M9080=5 M9065=51,START AN ACQ M9066=1,IASW TASK 1 M9067=5078
2003.176.18.16.52.901 2003.176.18.16.38.933 1792 Real Time Exception 6 OMC EXC IACS INT
FIX6=0 M9079=1 M9080=6 M9065=51,START AN ACQ M9066=1,IASW TASK 1 M9067=14537
2003.176.18.16.52.934 2003.176.18.16.38.933 1792 Real Time Exception 5 OMC EXC IACS INT
FIX6=0 M9079=1 M9080=5 M9065=52,READ LAST AN M9066=1,IASW TASK 1 M9067=5024
2003.176.18.16.53.101 2003.176.18.16.38.933 1792 Real Time Exception 6 OMC EXC IACS INT
FIX6=0 M9079=1 M9080=6 M9065=52,READ LAST AN M9066=1,IASW TASK 1 M9067=14578
2003.176.18.16.53.132 2003.176.18.16.39.129 1792 Real Time Event 232 TO STDBY
FIX2=0 M5010=1,STAND BY M9079=0 M9080=232 M5800=350,OTF M5899=0

Here, pointings 38, 39 and 40 were lost.

During transition to STANDBY an attempt to read an analogue line had failed and the OMCAS had crashed.

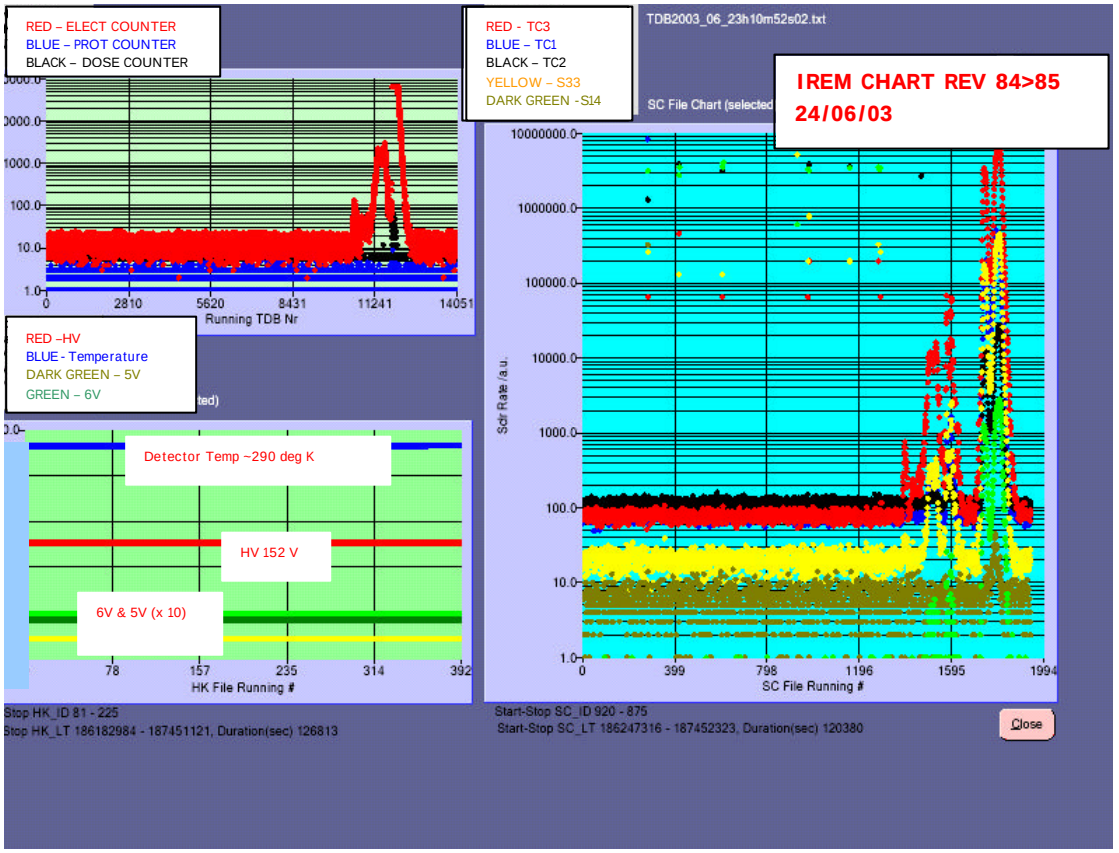
A cold reset of the DPE was performed, and the instrument re-configured. The OMC team is working on a patch to avoid this problem.

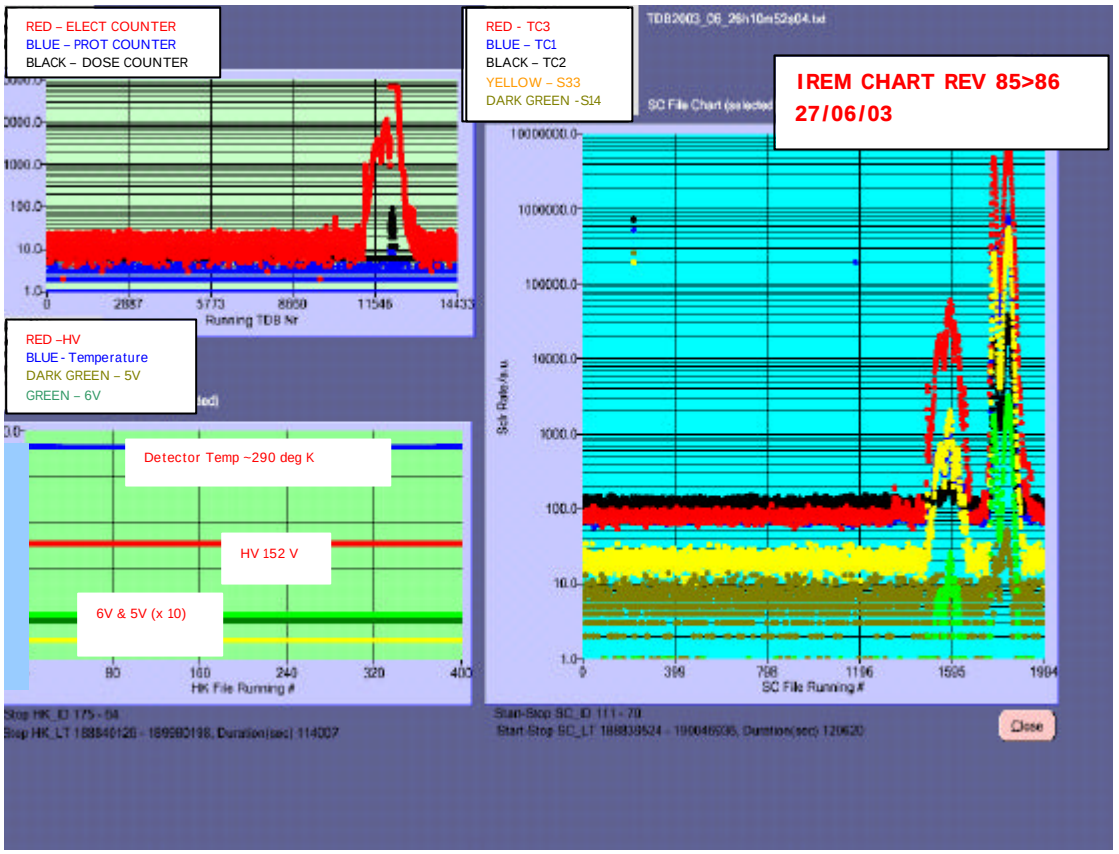
26/06/2003, DOY 177, Revolution 85
Nothing to Report

27/06/2003, DOY 178, Revolution 85-86
Nothing to Report

8.3.6 IREM Operations

The following plots of the IREM count rates for the radiation belts passages are from rev 84 and 85.




RED – ELECT COUNTER
BLUE – PROT COUNTER
BLACK – DOSE COUNTER
Running TDB Nr
RED –HV
BLUE - Temperature
DARK GREEN – 5V
GREEN – 6V
Detector Temp ~290 deg K
HV 152 V
6V & 5V (x 10)
HK File Running #
RED - TC3
BLUE – TC1
BLACK – TC2
YELLOW – S33
DARK GREEN -S14
IREM CHART REV 85>86
27/06/03
SC File Running #
Close

8.4 List of Anomalies since Launch

The following table presents the list of all identified anomalies that have been registered since Launch and that are still pending. Though these Anomaly Reports still have a pending status most of the problems have been analysed and solutions or at least workarounds are already in place.

ARid	Date Occurrence	Subject	Segment	Element	Status
INT - 002010	2002/10/22	Time correlation not applied correctly to time parameters in TM type 8 reports.	Ground	IMCS	Pending
INT - 002024	2002/10/28	OEM: SPI1 Fixed print overflow	Space	SPI	Pending
INT - 002061	2002/11/12	TM Desktop performance collapses when de-selecting super-commutated processing.	Ground	IMCS	Pending
INT - 002066	2002/11/13	Data routing to ISDS	Ground	I/F to SGS	Pending
INT - 002082	2002/11/13	TM packet production lower than allocation.	Space	SPI	Pending
INT - 002070	2002/11/14	TDRS: data Retrievals cancelled	Ground	IMCS	Pending
INT - 002094	2002/11/19	TDRS does not work with super-commutated parameters	Ground	IMCS	Pending
INT - 002142	2002/12/11	TDRS Time Interval Setting	Ground	IMCS	Pending
INT - 002145	2002/12/15	Commands failing PTV for no reason	Ground	IMCS	Pending
INT - 002212	2003/01/29	TDRS Interval-by-Interval TM Retrieval Problem	Ground	IMCS	Pending
INT - 002213	2003/01/29	SCOS 2000 Interval-by-Interval TM Retrieval Problem	Ground	IMCS	Pending
INT - 002217	2003/02/06	TC link drop	Ground	NASA Sta.	Pending
INT - 002219	2003/02/10	IBIS: PICsIT PDMs counters SET to 0 (twice) during nominal operation	Space	IBIS	Pending
INT - 002220	2003/02/10	Wrong Scrolling Display definitions on IMCS following Import	Ground	IMCS	Pending
INT - 002233	2003/02/24	Time Calibration not Coherent among Ground Stations	Ground		Pending
INT - 002234	2003/02/24	S2K unable to access READ ONLY disk in IDDA.	Ground	IMCS	Pending
INT - 002235	2003/02/25	Too narrow window for RMU cal in PSF of rev 49	Ground	I/F to SGS	Pending
INT - 002242	2003/03/02	TM &TC Drop on DSS 16	Ground	NASA Sta.	Pending
INT - 002246	2003/03/05	Loss of Telemetry from DSS16	Ground	NASA Sta.	Pending

INT - 002253	2003/03/10	RX1 and RX2 Locked at the same time	Ground	NASA Sta.	Pending
INT - 002255	2003/03/10	Late AOS at DSS-24	Ground	NASA Sta.	Pending
INT - 002256	2003/03/14	Late AOS at DSS-16	Ground	NASA Sta.	Pending
INT - 002257	2003/03/17	Late AOS at DSS-24	Ground	NASA Sta.	Pending
INT - 002259	2003/03/21	TDRS: Retrieval log is Meaningless.	Ground	IMCS	Pending
INT - 002260	2003/03/21	Monitoring task Printout, sample time	Ground	IMCS	Pending
INT - 002262	2003/03/21	TDRS: FEN Retrievals containing status parameters always fail.	Ground	IMCS	Pending
INT - 002267	2003/03/25	Drop in link from ISDS to ISDC	Ground	I/F to SGS	Pending
INT - 002273	2003/03/27	Drop in VC7 via REDU	Ground	ESA Sta.	Pending
INT - 002279	2003/03/29	Telemetry lost from DSS-16. DR N109197	Ground	NASA Sta.	Pending
INT - 002283	2003/04/01	ISDS-A and IDDA services stopped	Ground	IMCS	Pending
INT - 002291	2003/04/08	Archiving lost on A chain	Ground	IMCS	Pending
INT - 002293	2003/04/13	Science data CDs produced with no TM inside.	Ground	IMCS	Pending
INT - 002295	2003/04/15	Telemetry Drops from Goldstone	Ground	NASA Sta.	Pending
INT - 002298	2003/04/20	ISDS - ISDC link outage	Ground	I/F to SGS	Pending
INT - 002299	2003/04/21	Telemetry loss from DSS-24	Ground	NASA Sta.	Pending
INT - 002302	2003/04/24	Telemetry loss via DSS-16 due to RFI	Ground	NASA Sta.	Pending
INT - 002305	2003/05/04	Telemetry Drops from Goldstone. DR GI02720	Ground	NASA Sta.	Pending
INT - 002308	2003/05/05	Loss of TM/TC link due to hit on line	Ground	COMMS	Pending
INT - 002307	2003/05/06	Wrong sign applied in the S/C delay in the correlator.	Ground	IMCS	Pending
INT - 002309	2003/05/06	Command release delayed	Ground	ESA Sta.	Pending
INT - 002311	2003/05/06	Drop in TM on MADDS-ISDSA link	Ground	ESA Sta.	Pending
INT - 002312	2003/05/06	Static PTV in "No Go" State for command A3189	Ground	IMCS	Pending
INT - 002314	2003/05/12	Wrong file displayed for Timeline Summary File	Ground	IMCS	Pending
INT - 002323	2003/05/19	Telemetry Drops from Goldstone (DR 109346)	Ground	NASA Sta.	Pending
INT - 002324	2003/05/19	Command A3084 not verified	Ground	IMCS	Pending
INT - 002326	2003/05/21	Hardware failure at DSS-16 during handover DR: GI02772	Ground	NASA Sta.	Pending
INT - 002329	2003/05/24	Late handover to DSS-16. DR: G102803	Ground	NASA Sta.	Pending
INT - 002327	2003/05/26	CLCW: change in ratio of the number of VC-0 / VC-7 CLCWs in VC-0 TM Frames	Space	Platform	Pending

INT - 002328	2003/05/27	TDRS queries for some SPI parameters fail before DOY 2003.034	Ground	IMCS	Pending
INT - 002330	2003/05/27	NCTRS CPU goes to 85% for a problem related with tracking data	Ground	NCTRS	Pending
INT - 002331	2003/05/27	Monitoring Task ASCII Printout, not in ASCII format	Ground	IMCS	Pending
INT - 002334	2003/05/30	Bad telemetry from Goldstone - DSS-16	Ground	NASA Sta.	Pending
INT - 002336	2003/06/02	VC-0 telemetry not being received from Goldstone	Ground	NASA Sta.	Pending
INT - 002333	2003/06/03	TM acquisition from MRU-B no longer possible.	Ground	Simulator	Pending
INT - 002337	2003/06/03	Late handover to DSS-16 due to uplink bind problem	Ground	NCTRS	Pending
INT - 002338	2003/06/03	Error sending data to consolidator (VC-7)	Ground	IMCS	Pending
INT - 002339	2003/06/05	IREM anomaly: SEU (#3)	Space	IREM	Pending
INT - 002340	2003/06/05	IBIS anomaly: Histogram production stopped due to coincidence of GSHF=1 with the start of S5 process	Space	IBIS	Pending
INT - 002341	2003/06/05	IBIS anomaly: Histogram production stopped due to the combination of PDUR setting with IASW observation duration calculation during long staring	Space	IBIS	Pending
INT - 002342	2003/06/05	Telemetry Drops from Goldstone DR: AR109393	Ground	NASA Sta.	Pending
INT - 002343	2003/06/07	Error sending data to ISDC	Ground	IMCS	Pending
INT - 002344	2003/06/08	Telemetry drops from REDU	Ground	ESA Sta.	Pending
INT - 002345	2003/06/09	Telemetry drop from Redu	Ground	ESA Sta.	Pending
INT - 002350	2003/06/12	Telemetry Drop from Goldstone DR: G102867	Ground	NASA Sta.	Pending
INT - 002351	2003/06/12	Telemetry drop from Redu	Ground	ESA Sta.	Pending
INT - 002352	2003/06/14	Late handover to DSS-16, DR G102878 and G102879	Ground	NASA Sta.	Pending
INT - 002353	2003/06/14	Telemetry drop from Redu	Ground	ESA Sta.	Pending
INT - 002354	2003/06/15	Error sending data to ISDC	Ground	IMCS	Pending
INT - 002355	2003/06/17	VC7 Frames received with a wrong order by ISDC	Ground	ESA Sta.	Pending
INT - 002356	2003/06/19	Telemetry drop from Redu	Ground	ESA Sta.	Pending
INT - 002357	2003/06/20	Error sending data to ISDS	Ground	IMCS	Pending
INT - 002358	2003/06/22	Error sending data to ISDC	Ground	IMCS	Pending
INT - 002359	2003/06/22	NCTRSA application restart	Ground	NCTRS	Pending
INT - 002360	2003/06/22	Loss of telemetry due to NCTRSA and IMCSA errors	Ground	NCTRS	Pending
INT - 002361	2003/06/23	Late handover to DSS-16, DR pending	Ground	NASA Sta.	Pending
INT - 002362	2003/06/23	NCTRSA application restart	Ground	NCTRS	Pending

INT - 002363	2003/06/23	Error sending data to ISDC	Ground	IMCS	Pending
INT - 002364	2003/06/24	NCTRSA application restart	Ground	NCTRS	Pending
INT - 002365	2003/06/24	Telemetry Drops from Goldstone. DR GI02942	Ground	NASA Sta.	Pending
INT - 002366	2003/06/25	SPI Spurious CSSW HK TM(1,8) Generation	Space	SPI	Pending
INT - 002367	2003/06/25	SPI: Spikes in GeD count rates after HV switch on following 1st annealing	Space	SPI	Pending
INT - 002368	2003/06/25	IFTS Transfer on IMCS-A Failed	Ground	IMCS	Pending
INT - 002369	2003/06/26	Problems to establish VC0 and VC7 links on NCTRS-A	Ground	NCTRS	Pending