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Integral Status and Mission Extension

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ESA- General

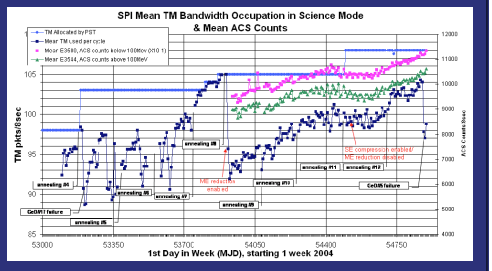
- Mark McCaughrean will become the new Head of SRE-S (the Research and Scientific Support Department) from 26 June 2009. He replaces Richard Marsden who has been Acting H/SRE-S since Jan 2009.
- Martin Kessler has been appointed Head of the Science Operations Department (SRE-O). The Department will have 3 Divisions: SRE-OA for Astronomy missions (AKARI, Integral, HST and XMM-Newton), SRE-OS for Solar-System missions and SRE-OD for Development.
- Arvind Parmar continues to Act as H/SRE-OA – actingship extended to end June 2009.

Integral Mission Status

- Mission status remains very good, with the spacecraft, instruments and ground segment all performing nominally.
- Only major anomaly since the last meeting is the loss of SPI Ge#5.
- As of end March 2009, 135 kg of fuel remain with usage of around 7 kg per year.
- The solar array is generating 2100 W as expected and the batteries and all other consumables are fine.
- Revised Operations Concept working smoothly.
- Second meeting of the Integral Operations Coordination Group held in 2009 February at IASF-Roma.

IOCG #2 Main Items

- Instruments & spacecraft globally fine, see individual reports.
- HE particle rate shows no sign of decrease yet, background still rising.
- Further event data compression possible for SPI, but question of funding.



- Extensive discussions about calibration, especially for IBIS ⇒ special meeting at ESTEC (report by G. Bélanger).
- Time correlation issues being resolved (see ISDC report).

Integral Mission Status

End of Mission Status

Integral Mission Extension

- In 2007 Integral and XMM-Newton operations were approved by the SPC until end Dec 2012 using the combined operations concept.
- Following an SPRT recommendation, an extension request was made in 2008 to confirm Integral operations in 2011 and 2012 with no increase in CaC being sought – request brought forward by one year to align with new (grouped) mission extension policy.
- SSAC unanimously considered all 8 mission extensions presented to be of the highest scientific value and considered all their extensions to be scientifically justified.
- SSAC ranked SOHO, HST and XMM-Newton as the (equal) highest priority as they are observatories serving broad communities. Followed by Cluster, Mars Express, Integral and Venus Express (in order). Decision on Planck deferred.

Integral Mission Extension

- The SSAC also proposed that should sufficient funding not be available for all extensions, then for Integral ESA should consider reducing the mission to the most important scientific objectives:
  - Nucleosynthesis of supernovae and positron emission from novae
  - Shrouded X-ray binaries
  - Low-luminosity nearby GRBs
- However, to study these topics – rather than any others – still requires all the current capabilities, so does not result in **any** savings, unless the mission extension duration is cut to exclude other areas of science.
- Mission Extension situation was presented to the SPC at their 2008 November meeting. However, they were not asked to make any decisions due to the upcoming Ministerial meeting which sets the LoR.

Integral Mission Extension

- At the Feb 2009 SPC meeting, the full set of extensions was not presented for approval due to the need to first resolve outside the SPC overall financial issues of the programme (arising primarily from the costs of BepiColumbo, Herschel/Planck and the proposed extensions).
- As an interim measure, SPC approved Mars Express, Venus Express and Cluster operations until the end of 2009.
- In view of the financial pressures on the programme, SPC requested that it should be presented with some options at its (next) June 2009 meeting.
- Discussions on-going as to what options should be presented.
- Extraordinary meeting of advisory structure to consult on mission extensions will take place on 14 May.

An Extension Option

- One drastic option that could result in significant cost savings could be:
  - No AOs – instead observing programme decided by committee (TAC or IUG?) with a small number of deep observations.
  - All data immediately public
- As a consequence:
  - No short-term re-planning so a significant risk of (partially) unplanned revolutions due to too late change requests, leave, sickness etc.
  - Extremely limited (none?) ToO possibilities
  - No special calibration etc observations and very inflexible mission planning
  - Minimal maintenance of the ESA Integral archive
- Feedback from the IUG on such an approach would be welcomed, as would ideas on other options that ESA could consider.