

INTEGRAL Mission Status

P. Kretschmar – INTEGRAL Mission Manager
INTEGRAL User Group Meeting
ESTEC – 22 January 2013

- Platform (AOCS, Power, Thermal, OBDH) generally working smoothly, but **two ESAM triggers** for different reasons in June and August.
- Instruments nominal most of the time, no major issues.
- Strong solar flares led to (partial) loss of observing time in March & May. OMC also affected several times in July.
- 19th SPI annealing was successful, 20th just finishing. **SPI HV lowered to 2.5 kV for active detectors** after successful test.
- **JEM-X TM share increased by 5 packets per detector.**
To be reviewed again, if background rises in future.
- **Change from closed-loop slews to open-loop slews.**
Lower accuracy (up to 1 arcmin instead of ~ 1 arcsec), but do not require guide star. Large fraction of slews were open already. First test mid Oct affected for OMC by bug in updated planning software. Successful test in January, also for OMC → to be implemented soon as default.

INTERRUPTIONS TO OBSERVATIONS IN 2012



Event	Dates	SPI	IBIS	JEM-X	OMC
Solar flares	23-25 Jan		43 h	59 h	59 h
Solar flares	27-31 Jan		29 h	95 h	91 h
Solar flares	7-15 Mar	91 h	109 h	118 h	136 h
Solar flares	17-18 May	4 h	5 h	31 h	31 h
ESAM #3 (SEU Reaction Wheel Drive electronics)	7-8 June	18 h	18 h	18 h	18 h
Solar flares	13, 18, 20, 23-26 July				120 h
ESAM #4 (loss of guide star at unfortunate time → 'domino' effect leads to ESAM)	15-18 Aug	18 h	18 h	18 h	18 h

GROUND STATIONS



- Redu ground station being taken over by Galileo → INTEGRAL moving to Kiruna as main station. Geographical position actually better, no gap in coverage outside radiation belts.
- First regular passes were scheduled on 12-12-12, but also still used by GOCE for part of the time → need to use other stations (Vilspa, Weilheim, Maspalomas) also used by other satellites (GOCE, Cluster, Cryosat).
- **Redu fully assigned to Galileo mid January without previous warning. Also, Weilheim back-up excluded for cost → re-shuffling of GS usage among different missions → updates required of plans covering several weeks → EO 2.6 cancelled.**



RADIATION BELT ENTRY/EXIT HANDLING



- Over time, relative heights of belts on entry/exit has changed, due to orbital evolution
- Two approaches to predict critical altitudes for (de-)activation:
 1. Extrapolation of past data using the evolution of the argument of perigee. Explained by passage through bent geotail. [ESOC]
 2. Extrapolation based on description of past data by harmonic components, no model assumption. [ESAC]

Still some disagreement between predictions of these approaches → cautious use, monitoring results.

