



SDAST Meeting #37

DNSC Copenhagen 13-14th March 2007

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SDAST Open AIs

http://spacecenter.dk/~oxborrow/sdast/AIList.html

SDAST Action Item List

ID Number	Status	Responsible	Due Date	Description
AI27.7	OPEN	NJW	19 July 2007	Make spectral response matrix for REST events and non-imaging data modes
AI34_1	OPEN	CBJ/NL/NJW	06/06/06	Determine azimuthal angle characteristics parameters (collimator, SPAG, vignetting etc). NL team leader.
AI35_2	OPEN	NJW	12/3/2007	Initiate procedures to up date IMOD files with detector map
AI35_3	OPEN	SP	31/5/2007	Verify (and urge programmers to ensure) that output of j_src_properites (lightcurves) is expressed in flux and that the spectra have the correct ARFs taking into account current gain
AI35_5	ONGOING	NJW,CBJ?SB?	31/5/2006	Prove that the electronic efficiency will produce high quality ARF for Crab observation interpretation





New Developments: j_cor_gain

- Gain correction needs temperature dependence
- j_calib_gain_HK: offline tool adds HK data (temperature, trigger rate, HV) to gain history table for whole revolution with 256 second resolution
 - nearly finished
 - currently runs offline
 - could be delivered to ISDC to run at end of revolution pipeline
- j_cor_gain: add extra fitting parameter for temperature dependence to gain smoothing/fitting
- Deliver smoothed gain histories as IC files
 - Will include temperature dependence
 - Could also include other problems (e.g. gain suppression)





A bad example

- Revolution 520
 - with significant temperature variations



Gain History of JMX1, revolution 520







<u>muhuunhuunhuun</u>

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Xe line postion evolution unit jemx1: orbit 0299

A good example

Revolution 299 •







New Developments: j_dead_time_calc

- Add column outputs LIVETIME, DEADC in accordance with OGIP
- Currently have output columns (all 8 sec resolution):
 - DEADTIME due to read in/processing dead time
 - RATE_COR event rate correction factor due to readin and buffer losses
 - DEAD_EFF due to read in, buffer losses and grey filter
 - Imaging and source extraction read in RATE_COR and do their own correction with better than 8 sec. time resolution
- Include correct grey filter correction:
 - Basic correction to DEAD_EFF calculation
 - More sophisticated calculation to handle double triggers, to be found by SB – will require extra HK read in?
 - Extend full dead time calculation to include full time resolution grey filter data instead of having later components calculate this?





New Developments: j_cor_position

- Improved hotspot event flagging (e.g. stripe removal in revolutions around 342)
 - Been waiting a long time but not high priority
- Bug fix: correct randomization of raw position=255
- Adding another output column for randomized events?
 - This would make all future software backwards compatible
 - But would still allow us to have randomized events
 - As with energies whicch have binned (PI) values and keV energy
 - Would smooth the transition from SL's components to NL's





Future Developments: other components

- j_calib_gain_fitting j_cor_gain :
 - Should be able to handle single segment operation
 - Not a high priority
- j_calib_ADC:
 - Runs fine, no real need for update
 - Maybe some logging bugs?
- IMOD files:
 - JMXi-DETE-MOD needs updating with latest dead anodes
 - JMXi-SPAG-MOD presumably needs updating too