



Plans for MXT data reduction tasks and pipeline

A rather standard pipeline for MXT/SVOM :

- Level 1 to level 2 (raw to calibrated event lists and their projections)
 - Bad pixels filtering (hot pixels, bad columns, etc.)
 - Detector to sky transformation
 - from star trackers
 - correction for thermal deformations (model & cross identification of field sources) ?
 - ADC unit to energy conversion
 - filtering particle impact (pattern)
 - gain temperature correction
 - Time conversion and correction
 - ‘Bad’ data filtering (background level, attitude, etc)
 - Production of calibrated event lists to be used as input for
 - Multi band images ...
 - Source detection ...
 - Source specific calibration files ...
 - Light curves, spectra, ...



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- Level 2 to level 3:
 - Astrometric correction using field sources (enough ?)
 - Cross-identification from archival catalogues and VT (see below)
 - Basic spectra slopes (?)
 - Automated spectral fits (?)
 - Variability analysis (?)
 - Multi instrument imaging (?)
- Off pipeline tasks
 - Alert triggering ?
 - Catalogue compilation
- Automated 'statistical' cross-identification (?)
 - To be used in Normal & Real Time pipelines and to help Burst Advocates (interactive pipeline)
 - Based on coincidence in position
 - With priors on object type and spectral energy distribution



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- Individual MXT tasks will be used in:
 - General program pipeline
 - Real time pipeline
 - Interactive (Burst Advocate) pipeline
 - Interactive quick look analysis
 - General purpose interactive data reduction environment
- Compliance with HEASOFT and SAO standards
- Extensive reuse of existing legacy s/w.
 - Contact taken with HEASARC's director (A. Smale) to use (fTOOLS, XANADU, xselect, CALDB, SWIFT/XRT tasks as a basis for SVOM tasks.
 - Possibility to distribute MXT's tasks through HEASARC (multi-platform use)
- Leicester agrees (in principle) to deliver PSF and possibly (?) astrometric mapping.
- MXT simulation will be possible using SIXTE (Ingo Kreykenbohm, Bamberg)
- contact MPE to obtain some low level detector s/w or description ?