



CIAO 2.3 Release Notes

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Tools

acis_fef_lookup

- Reworked with interface changes to accommodate calculation of PI matrices directly from PHA FEF files (see "mkrmf" notes)

acis_process_events

- Now fully supports adjustment for the effects of charge-transfer inefficiency (CTI)
- New parameter ("calc_cc_times") to assign time tags in CC mode based on target position
- Added "geompar" parameter (see "pixlib" below)
- Fixed problem of always writing HDUCLAS3 keyword indicating CC time corrections were applied
- Refinements to the CC mode time of arrival algorithm
- Now generates warnings if output eventdef contains a column that is not calculated and is not being propagated from the input event file (i.e. s:pi in eventdef and calculate_pi=no)
- Now reads RA_TARG, DEC_TARG, ROLL_NOM header keywords (obs.par value supersedes keyword values)
- Changed the order of THETA and PHI WCS names
- Fix for incorrect updating of WCS keywords when stop != sky
- Fix for check_vf_pha to only check in VF mode

acisreadcorr

- Added "random" parameter to set random-number seed
- Added "geompar" parameter (see "pixlib" below)

asp_apply_sim

- Added "geompar" parameter (see "pixlib" below)

asp_calc_offsets

- Added "geompar" parameter (see "pixlib" below)

asphist

- Added "max_bin" parameter to control maximum number of aspect bins
- Added "geompar" parameter (see "pixlib" below)
- Now allows for generic column ordering
- Reworked to take input files out of time order
- Now errors out if SIM_* keywords are missing in event file (previously assumed value of 0)

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dmarfadd

- New code to exposure weight the FRACRESP column in grating ARFs

dmcoords

- Now allows 'q' or 'quit' to exit interactive mode
- Added "geompar" parameter (see "pixlib" below)

dmcopy / dmextract / dmfilth / dmlist / dmstat

- Re-linked to use updated region library (see library notes below)

hrc_process_events

- Can now apply a correction to the AMP_SF column in the event structure (AMP_SF is used in deciding which events to correct for the tap ringing problem)
- Added "geompar" parameter (see "pixlib" below)
- Changed the order of THETA and PHI WCS names

mkarf / mkexppmap / mkgarf / mkinstmap

- HRC msk1 file support added
- Can work around defective/ambiguous ACIS msk1 files
- Added "geompar" parameter (see "pixlib" below)
- Tools reflect changes to "ardlib" library (see below)

mkgrmf

- Added "geompar" parameter (see "pixlib" below)

mkpsf

- Added "geompar" parameter (see "pixlib" below)
- Fixed bug that caused a failure to resolve CALDB psflib hypercube file when using ACIS
- Fixed bug that prevented unique outpsffile filename from retaining path information

mkrmf

- Can now calculate PI matrices directly from PHA FEF files (default behavior; requires CALDB 2.18 or later)
- Modified CALDB lookups to work with CTI correction

mkwarf

- Modified CALDB lookups to work with CTI correction
- Added "geompar" parameter (see "pixlib" below)

psextract

- Fix for problem determining which ASOL, AOFF, sim+AOFF files are being used
- Changes for new acis_fef_lookup interface

psf_project_ray

- Removed parameters elevation, azimuth, imagesize, and resolution
- Added "geompar" parameter (see "pixlib" below)
- Now copies energy column from input ray file (spectrum input was only recording single energy (first row) in header)
- Now copies full header from ray file and evtfile (if provided)
- Fix for new focal length in CALDB 2.9
- Fixed problem of not reporting error when evtfile is missing
- Changed the order of THETA and PHI WCS names

reproject_events

- Speed enhancements
- Added "geompar" parameter (see "pixlib" below)

sso_freeze

- Fixed bug with processing a stack of input event files in which the code failed to reproject correctly the events from

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the second and subsequent files in to the first file's reference frame, which resulted in incorrect solar-system-object-centered coordinates for the events from those files

- Corrected initialization of TLMIN and TLMAX keywords for ocCol and skyCol (improper initialization prevented ds9 from centering image on screen)
- No longer crashes when output file exists and clobber=no

tg_create_mask

- Added "geompar" parameter (see "pixlib" below)

tgextract

- Added "geompar" parameter (see "pixlib" below)

tg_resolve_events

- Added "geompar" parameter (see "pixlib" below)
- Fix for slightly incorrect coordinates in MEG data in region where HEG and MEG arms overlap
- Changed the order of THETA and PHI WCS names
- Modified CALDB lookups to work with CTI correction

Sherpa

- New models, erf and erfc, that wrap the error function and complimentary error function, respectively
- Fixed bug where JDPFILEUP model ignored any previous data filtering

GUIDE

- Bug fix to allow usage of ATOMDB v1.2

Libraries

* NOTE *

Library changes apply ONLY to tools in the patch (i.e. those listed under "Tools" above)

ardlib

- Semantics for ACIS detsubsys options have changed
- Added support for HRC-S detsubsys options
- Added support for the HRC bad pixel file
- If the observation information file has CTI_CORR=yes, then the CALDB lookups will specify CTI corrected files

dslib

- Improvements in handling NaN's and event file headers

header/history lib

- Enhancements for CTI correction (added 'CTI_CORR' keyword)
- Tools now put full parameter content in history

pixlib

- Many tools now use "geompar" parameter to control which parameter file specifies pixlib geometry files (default is still "geom.par")
- Fixed problem of using wrong value for the LETG Rowland torus diameter
- pixlib info now included in history of output file

region lib

- Fixes for pie() and sector() producing incorrect results for theta_min and theta_max in the third quadrant (180 < theta < 270)

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- Fix for problem where areas determined by pixel-counting (e.g. areas of complex shapes that cannot be determined analytically) were too large because the "pixelated" shapes were included twice
- Fixes for incorrect area calculation using two "near" shapes (i.e. shapes whose bounding boxes overlap but are not within each other)
- Fixes for problems with field() areas

rmflib

- General updates and minor bug fixes

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