CIAO 3.0.1 Release Notes

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Data Model

- Made TSTART/TSTOP part of block subspace and removed from runtime subspace. This fixed a problem where the TSTART keyword intersected with a time filter could cause a dropped row.
- Fixed SEGV that could occur when applying a filter to table data if the filter causes a large gap between records that exceeds the buffer size.
- Fixed SEGV when region filtering two scalar columns instead of one vector column.

  Caveat: The fix for this bug in CIAO 3.0.1 handles filtering on two scalar columns correctly except right at the boundary when the columns are of a different data type. Users should inspect their data when doing such a filter to see if lost photons at the boundary are significant for their science. This problem only applies to region filters like "[(tg_lam,pi)=circle(2.2,256,256)]" in which one column is real and the other is integer; it does not affect range filters, so "[tg_lam=0.3:5.0,pi=20:255]" work fine, and it does not affect region filters where both components have the same data type, so sky and chip coordinate filtering work fine.
- Fix to correctly handle a NULL subspace.
- Image rebinning now works. The datatype of output image is same as datatype of input image.
- Image filtering should not change the image size. A floating point rounding error was fixed to make this true.
- The manner in which the new DM created FITS extensions could cause extraneous bytes at EOF. This would show itself as an error to fverify, but appears to have no other effect.
- Problem using dmSetScalars() when the file grows to be larger than the size of the buffer.
- The version number for the DM Library was incremented to 2.01. (Note that the DM version is not meant to match the CIAO version; it was labeled 2.0 after the major rewrite for the CIAO 3.0 release.)

Sherpa

- The Sherpa/S–Lang module function set_axes has been fixed so as to work with double–precision arrays. It has also been fixed so as not to reverse user–defined lower and upper bin boundaries on input.
- A bug preventing users from using sherpa.multiplot.prefunc with a single argument has been fixed.
- A bug preventing users from using sliding–box convolution (as opposed to FFTs) has been fixed.
- A bug preventing users from imaging exposure maps has been fixed.
- A bug preventing users from evaluating fluxes at single points on ARF/RMF bin boundaries has been fixed. (Before, the software returned a flux of 0.)
- Missing code that allows one to use double–precision instrument models was added to the instrument model code base.
- Sherpa version has been updated to 3.0.1.

Other

- Configure script enhancement which avoids invoking compiler for binary–only configuration.

Other