URL: http://cxc.harvard.edu/ciao3.4/bugs/dmcopy.html
Last modified: 10 October 2007

Bugs: dmcopy

A list of bugs fixed in CIAO 3.4 is included at the end of this document.

Caveats

1. ***Creating a filter for data that is outside the range of TLMIN:TLMAX***

   If data in a table is outside the valid range of TLMIN:TLMAX, it is impossible to select it with a filter except by doing

   ```
   [exclude foo=:]
   ```

Bugs

1. ***Rebinning an image with different values for the two axes causes the coordinate information to be lost***

   For example:

   ```
   unix% dmcopy acis.img"[bin x=::5,y=::6]" acis5x6.img
   ```

   Using the same value for both axes works correctly:

   ```
   unix% dmcopy acis.img"[bin (x,y)=::5]" acis5.img
   ```

2. ***The `BLANK` header keyword that an older version of some FTOOLs (e.g. `chimgtyp`) write to the FITS file header causes problems for `dmcopy`.***

   Workarounds:

   1. Use a CIAO tool in place of the FTOOL that created the `BLANK` keyword, e.g. instead of `chimgtyp`, try

      ```
      unix% dmcopy input.fits"[opt type=i4,null=-9999]" output.fits
      ```

      changing the `opt type` as appropriate.
   2. Delete the `BLANK` keyword before passing the file to `dmcopy` or any other CIAO tool.

3. ***The tool always copies the data in the primary image, even when "`[opt all]`" is not used.***

   For example:

   ```
   unix% dmcopy acis.fits"[spectrum]" spectrum.fits
   unix% dmlist spectrum.fits blocks

   ----------------------------------------------------------------------------
   Dataset: spectrum.fits
   ----------------------------------------------------------------------------

   ```

```
     Block Name                          Type         Dimensions
-------------------------------------------------------------------------------
Block    1: WMAP                           Image      Int2(1024x1024)
Block    2: SPECTRUM                       Table         5 cols x 1024     rows
...
```

Here we expected to only get the SPECTRUM block, not the as WMAP well.

Workaround:

There is an odd sort of workaround:

```
unix% dmtcalc acis.fits spectrum2.fits expr="(1==1)"
unix% dmlist spectrum2.fits blocks

-------------------------------------------------------------------------------
Dataset: spectrum2.fits
-------------------------------------------------------------------------------

     Block Name                          Type         Dimensions
-------------------------------------------------------------------------------
Block    1: PRIMARY                        Null
Block    2: SPECTRUM                       Table         5 cols x 1024     rows
...
```

4. ***Specifying a fixed number of output image bins*** *(06 Mar 2007)*

   The number of bins that dmcopy creates is different than the input specification:

```
unix% dmcopy acis_evt2.fits"[bin x=3482:4708:#122,y=3406:4630:#122]" test.fits

unix% dmlist test.fits blocks
....
Block    1: EVENTS_IMAGE                   Image      Int2(123x122)
...
```

5. ***The tool only copies the first element of a vector array column*** *(06 Mar 2007)*

   For example, in this file, there is a WCS on the POS column which is a vector array column that is 13 elements long. Copying the data yields:

```
unix% dmcopy acis_fov.fits"[cols ra,dec]" copy.fits

unix% dmlist copy.fits data

-------------------------------------------------------------------------------
Data for Table Block FOV
-------------------------------------------------------------------------------

ROW    EQPOS(RA,DEC)

     1 (      246.8650071199,      -24.6144174326)
     2 (      246.9897042111,      -24.7220983076)
     3 (      246.6804146459,      -24.4408800569)
     4 (      246.8046771385,      -24.5486314727)
     5 (      246.6736578338,      -24.4347154624)
```

   There should be five rows with 13 cells per row.

6. ***# DMCOPY (CIAO 3.4): Can't convert region filter using unequal scaling factors. Pixels outside region will not be set to null.*** *(10 Oct 2007)*

   This error is printed when the pixels in the input image are not square, e.g. if an exposure map is created with the binning `xygrid="3175.0:4555.0:#690,3609.0:4983.0:#690"` (1380x1374).

Workaround:

Rebin to make an image with square pixels.

Bugs fixed in CIAO 3.4

The following is a list of bugs that were fixed in the CIAO 3.4 software release.

1. ***If an invalid kernel name is given, the tool defaults to `kernel=fits`.***

   No error message is printed.

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Workaround: