



Instrument Model Bugs: general

Bugs

1. *If the NAXIS keywords in the PSF image file are odd, Sherpa does not convolve the PSF with the model correctly.*

For example, if you have an image that is 55x55 pixels. To check these keywords, you must examine the raw file header:

```
unix% dmlist odd_psf.fits header,raw | grep AXIS
Key 3: I          *NAXIS          = 2          / number of data axes
Key 4: I          *NAXIS1         = 55         / length of data axis
Key 5: I          *NAXIS2         = 55         / length of data axis
```

Workaround:

if the PSF image is binned to an even number, e.g. 56x56 pixels instead of 55x55, it will have even NAXIS keywords and no model distortion will occur.

2. *In order to replace the instrument model with a different ARF on multiple loops of a script, it is necessary to call "erase data" inbetween resetting the instruments.*

Otherwise you will see an error of the form:

```
Error: illegal instrument definition.
Mapping from ARF to PHA bin unknown - provide RMF.
Instrument definition deleted.
```

3. *Cases where source and instrument model reinitialization does not occur.*

The current version of Sherpa is designed such that source and instrument models are not "reinitialized" with every fit, goodness, or visualization command; reinitialization only takes place if a change has occurred (e.g., one has changed the filter) such that reinitialization is required. However, there are some cases where reinitialization does not occur, but should:

- ◆ If one changes the normalization within a FARF or FARF2D (FEXPMAP) model, that change is not noticed in subsequent fits.
- ◆ If one subtracts/unsubtracts, sometimes the change is not noticed, e.g.,

```
sherpa> print(get_dcounths_sum(foo).value)
264.124
sherpa> unsubtract
sherpa> print(get_dcounths_sum(foo).value)
264.124
```

Problems such as these are being fixed as they are discovered.

Instrument Model Bugs: general – CIAO 3.4

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URL:
http://cxc.harvard.edu/sherpa3.4/bugs/inst_general.html
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