AHELP for CIAO 3.4 **image** Context: sherpa

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Synopsis

Causes the specified 2–D data to be displayed, via ds9.

Syntax

```
sherpa> IMAGE <arg> [# [ID]]

# specifies the number of the dataset (default dataset number is 1).
The ID modifier is used for displaying background datasets, and then if
and only if the Sherpa state object variable multiback is set to 1,
i.e., if more than one background dataset is to be associated with a
single source dataset. The ID modifier may be any unreserved string
(e.g., A, foo, etc.), i.e., a string that is not a parsable command.
```

Description

The argument <arg> may be any of the following:

IMAGE Command Arguments

Argument	Displays
{{DATA | DCOUNTS} | {BACK | BDCOUNTS}}	The source|background data values
{ERRORS | BERRORS}	The estimated total errors for the source|background data values
{SYSERRORS | BSYSERRORS}	The assigned systematic errors for the source|background data values
{STATERRORS | BSTATERRORS}	The estimated statistical errors for the source|background data values
{{MODEL | MCOUNTS} | {BMODEL | BMCOUNTS}}	The (convolved) source|background model amplitudes
{FIT | BFIT}	The data, model, and absolute residuals for source|background, displayed in three frames
{DELCHI | BDELCHI}	The sigma residuals of the source|background fit: (data – model)/error
{RESIDUALS | BRESIDUALS}	The absolute residuals of the source|background fit: (data – model)
{RATIO | BRATIO}	The ratio (data/model) for source|background
{CHI SQU | BCHISQU}	

	The contributions to the chi−square statistic from each source|background data point
{STATISTIC | BSTATISTIC}	The contributions to the current statistic from each source|background data point
{WEIGHT | BWEIGHT}	The statistic weight value assigned to each source|background data point
{FILTER | BFILTER}	The mask value (0|1) for each source|background data point
<sherpa_model_stack>	The (unconvolved) model amplitudes for the specified model stack (SOURCE, {BACKGROUND|BG}, or [B]NOISE)
<model_stack>	The (unconvolved) model amplitudes for the specified user−defined model stack
<sherpa_modelname>	The (unconvolved) amplitudes of the specified model component (e.g., GAUSS2D)
<modelname>	The (unconvolved) amplitudes of the specified model component (e.g., g)
{EXPMAP | BEXPMAP}	The unfiltered source|background 2−D EXPMAP file contents
{PSF | BPSF}	The unfiltered source|background 2−D PSF file contents

If there is no open image window when an IMAGE command is given, one will be created automatically.

In CIAO 3.0, if one displays an image after filtering, what is displayed is the <data to image> * filter", shown over the range of the unfiltered dataset. In a future version of Sherpa, include/exclude regions may also be superimposed upon the image.

Also note that in CIAO 3.0, images are automatically resized to fit entirely within the image frame. The user may of course subsequently zoom in and/or out.

Related commands include IGNORE IMAGE and NOTICE IMAGE, which are used to interactively define filter regions from an image display.

The Display chapter of the Sherpa Manual has more information regarding data display capabilities, including modifying various image characteristics.

Using Data Model Filters

It IS NOT possible to pass a Data Model virtual file specification to this command. While you can read in a large file with

```
sherpa> data "image.fits[opt mem=1000]"
```
the following DOES NOT work:

```
sherpa> image "model[opt mem=1000]"
```
This is because "model" is a token that the Sherpa parser interprets, and it will treat the rest of the string ("[opt mem=1000]") as an error. A workaround is to write out the file with the "write" command:

```
sherpa> write model "out.fits[opt mem=1000]"
```
Then display out.fits in ds9.

Example 1

Display 2−D data:

```
sherpa> DATA example_img.fits
sherpa> IMAGE DATA
```

The last command displays dataset number 1. Dataset number 1 must be a 2−D dataset.

Example 2

Exclude a 2−D region; display the filtered region:

```
sherpa> IGNORE FILTER "BOX(250,250,50,50)"
sherpa> IMAGE FILTER
```

The first command, IGNORE FILTER "BOX(250,250,50,50)" defines a filter for dataset number 1. The second command displays the defined filter region.

Example 3

Display 2−D absolute residuals:

```
sherpa> PARAMPROMPT OFF
sherpa> SOURCE = GAUSS2D[g]
sherpa> FIT
sherpa> IMAGE RESIDUALS
```

Bugs

See the Sherpa bug pages online for an up−to−date listing of known bugs.

See Also

sherpa

      close, cplot, fefplot, getx, gety, lplot, open, oplot, ploty, splot

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Example 1