![Chandra X-ray Center logo]

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

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# Synopsis

Causes the specified 2−D data to be displayed, with a contour plot, via ChIPS.

# Syntax

```
sherpa> CPLOT [<num_plots>] <arg_1> [# [ID]] [<arg_2> [# [ID]] ...]

<num_plots> specifies the number of plotting windows to open within the
ChIPS pane (default 1); that number sets the number of subsequent
arguments. For each subsequent argument, # specifies the number of the
dataset (default dataset number is 1), and 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_n> may be any of the following:

### CPLOT 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 |
| {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 plotting window when an CPLOT command is given, one will be created automatically.

If one issues the CPLOT following filtering, note the following: arbitrarily filtered data cannot be passed from Sherpa to ChIPS for display; the data grid must be rectangular. Therefore, contouring proceeds in three steps: (1) the smallest possible rectangle is drawn around the noticed data; (2) within this rectangle, the <data to image> is tranformed to <data to image> * filter; and (3) these transformed data are sent off to ChIPS for display.

The appearance of plots generated with this command can be changed by modifying the fields of certain state objects. See the ahelp for Sherpa or for sherpa.plot for more information.

NOTE: all ChIPS commands may be used from within Sherpa to modify plot characteristics. In order to view these changes, the REDRAW command must be issued.

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

# Example 1

Display 2–D data with a contour plot:

```
sherpa> DATA 3 example2Da.dat ASCII 1 2 3
sherpa> CPLOT DATA 3
```

The CPLOT command plots dataset number 3 as a contour plot. Dataset number 3 must be a 2–D dataset.

# Example 2

Display 2–D datasets with contour plots in multiple windows:

```
sherpa> DATA 1 example2Db.dat ASCII 1 2 3
```

```
sherpa> CPLOT 2 DATA 1 DATA 3
```

This command displays a contour plot of dataset number 1 (example2Db.dat) in the first window, and a contour plot of dataset number 3 (example2Da.dat) in the second window.

## Bugs

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

## See Also

*sherpa*

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

Bugs