



AHELP for CIAO 3.4

## get\_source\_components

Context: [sherpa](#)

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## Synopsis

Return, as an array, the names of the model components in the source expression of a dataset.

## Syntax

```
cpts = get_source_components();
cpts = get_source_components( dnum );
```

## Description

The routine is loaded into Sherpa with the call

```
require ("sherpa_utils");
```

The functions returns a String\_Type array which contains the names of the components used to define the source expression. If no argument is given then dataset number 1 is assumed, otherwise it uses the argument (dnum) as the dataset number to use. for dataset number 1. This routine complements get\_source\_expr() which returns the full source expression.

## Example 1

```
sherpa> paramprompt off
sherpa> source = xsphabs[gal] * ( xsmekal[clus] + xspowerlaw[pl] )
sherpa> print( get_source_expr )
(gal * (clus + pl))
sherpa> cpts = get_source_components
sherpa> cpts
String_Type[3]
sherpa> print( cpts )
gal
clus
pl
```

Here we set up a source expression consisting of a plasma model plus a powerlaw, both absorbed by the "xsphabs" model. The get\_source\_expr() routine returns a string listing the full source expression, so we use the get\_source\_components() routine from sherpa\_utils.sl to break it down into its compnenets (here "gal", "clus", and "pl").

Since we are using dataset number 1 then we do not need to provide arguments to either the `get_source_expr()` or `get_source_components()` routines. This means that we can call these routines without the trailing "()".

## Example 2

```
sherpa> paramprompt off
sherpa> source 3 = xsphabs * ( xsmekal + xspowerlaw )
sherpa> print( get_source_expr(3) )
(xsphabs * (xsmekal + xspowerlaw))
sherpa> cpts = get_source_components(3)
sherpa> print( cpts )
xsphabs
xsmekal
xspowerlaw
```

This is very similar to the previous example except that we are using dataset 3 – and so have to include it when calling both `get_source_expr()` and `get_source_components()` – and we do not provide our own names for the source components – and so they default to the model names.

## NOTES

Please see "ahelp sherpa\_utils" for information on how to load these routines into Sherpa.

## See Also

*chandra*

[guide](#)

*sherpa*

[bye](#), [calc\\_kcorr](#), [dataspace](#), [dcounts](#), [dollarsign](#), [echo](#), [eflux](#), [eqwidth](#), [erase](#), [flux](#), [get](#), [get\\_dcounts\\_sum](#), [get\\_dir](#), [get\\_eflux](#), [get\\_eqwidth](#), [get\\_filename](#), [get\\_flux2d](#), [get\\_flux\\_str](#), [get\\_lfactorial](#), [get\\_mcounts\\_sum](#), [get\\_pflux](#), [get\\_verbose](#), [groupbycounts](#), [guess](#), [is](#), [journal](#), [list](#), [list\\_par](#), [mcounts](#), [numbersign](#), [paramest](#), [plot\\_eprof](#), [plot\\_rprof](#), [prompt](#), [reset](#), [run](#), [set](#), [set\\_analysis](#), [set\\_axes](#), [set\\_coord](#), [set\\_dataspace](#), [set\\_dir](#), [set\\_verbose](#), [setplot](#), [sherpa-module](#), [sherpa\\_plotfns](#), [sherpa\\_utils](#), [show](#), [simspec](#), [use](#), [version](#)

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URL:  
[http://cxc.harvard.edu/ciao3.4/get\\_source\\_components.html](http://cxc.harvard.edu/ciao3.4/get_source_components.html)  
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