Chandra X-ray Center

AHELP for CIAO 3.4   # show_tgain_corr   Context: tools

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Synopsis

Display the time–dependent gain correction for a given chip location.

Syntax

```
show_tgain_corr  chipid chipx chipy [outdev] [outfile] [type] [title]
[scriptfile] [clobber] [verbose]
```

Description

This tool displays the size of the time–dependent gain correction – i.e. how much the energy or PHA value of an event changes – for a given source location (chip number and location). The units of the plot are controlled by the type parameter (either "energy" or "pha"). The tool can create the plot either in a X–window (outdev="xserve") or to a file (outdev="cps" or outdev="gif").

This script is intended to help users who want to know whether they need to re–process their ACIS data to include the time–dependent gain correction. This correction, which is discussed on the CIAO web site, varies with location and observation time. The correction is calculated for a single location and a range of times.

Example 1

```
unix% show_tgain_corr 3 962 964 title="ACIS I3 aimpoint"
```

This creates a plot in a X–window which shows the correction for an on–axis source observed with ACIS–I3. The units of the plot are energy. The title parameter is used to add text to the start of the plot title.

Example 2

```
unix% show_tgain_corr 3 962 964 title="ACIS I3 aimpoint" type=pha
```

This creates a plot in a X–window which shows the correction for an on–axis source observed with ACIS–I3. The units of the plot are PHA.

Example 3

```
unix% show_tgain_corr 7 252 510 title="ACIS S3 aimpoint"
outfile=corr.ps outdev=cps
```

This creates a postscript file (corr.ps) which show the correction for an on−axis source observed with ACIS−S3.

Example 4

```
unix% show_tgain_corr 7 252 510 title="ACIS S3 aimpoint"
outfile=corr.gif outdev=gif
```

This creates a GIF file called corr.gif.

Parameters

name	type	ftype	def	min	max	reqd
chipid	integer		3	0	9	yes
chipx	integer		962	1	1024	yes
chipy	integer		964	1	1024	yes
outdev	string		xserve			
outfile	file	output	""			
type	string		energy			
title	string		""			
scriptfile	file	input	./show_tgain_corr.sl			
clobber	boolean		no			
verbose	integer		0	0	5	

Detailed Parameter Descriptions

Parameter=chipid `(integer required default=3 min=0 max=9)`

ACIS chip number

This parameter is used to define which ACIS chip you wish to see the correction for. The allowed parameters are 0−9 (for the 10 chips ACIS−0 to ACIS−9).

Parameter=chipx `(integer required default=962 min=1 max=1024)`

ACIS chip x coordinate

This parameter specifies the X coordinate of the location of the ACIS chip to use for the correction.

Example 3

Parameter=chipy `(integer required default=964 min=1 max=1024)`

ACIS chip y coordinate

This parameter specifies the Y coordinate of the location of the ACIS chip to use for the correction.

Parameter=outdev `(string default=xserve)`

Type of output file

What device should be used to display the plot. The allowed values are:

- xserve – display the plot in a X–window
- cps – create a postscript file
- gif – create a GIF file

Parameter=outfile `(file filetype=output default="")`

Output file (if outdev is not xserve)

The name of the file in which the plot should be stored. This parameter is ignored if outdev=xserve.

Parameter=type `(string default=energy)`

Units for the plot

Should the correction be displayed as a function of energy or PHA?

Parameter=title `(string default="")`

Title string (can be blank)

If the title parameter is blank then the plot title lists the CCD number and chip coordinates of the location used to calculate the correction. Otherwise the contents are used as the plot title, with the location appended to the end of the string after being surrounded by "[]" characters.

Parameter=scriptfile `(file filetype=input default=./show_tgain_corr.sl)`

File containing the S–Lang function show_tgain_corr()

The function used to create the plot is stored in a separate file to the tool. This parameter is used to specify the location of the file.

It is unlikely that this parameter needs to be changed from its default value.

Parameter=clobber `(boolean default=no)`

Clobber existing file

Parameter=verbose `(integer default=0 min=0 max=5)`

Verbose level

If set to a non−zero value then the tool will output extra information when run. This information is only likely to be useful when debugging the tool.

NOTES

This script is not an official part of the CIAO release but is made available as "contributed" software via the CIAO scripts page. Please see the installation instructions page for help on installing the package.

Bugs

See the bugs page for this script on the CIAO website for an up−to−date listing of known bugs.