



AHELP for CIAO 3.4

skyfov

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Synopsis

Make a field-of-view region in sky coordinates

Syntax

```
skyfov infile outfile [logfile] [kernel] [aspect] [mskfile] [geompar]
[clobber] [verbose]
```

Description

The skyfov program creates a region file that describes the edges of each instrument chip. This region file – which consists of a polygon per chip – can then be used to filter event files or images. The program can be run with only an event file, with the aspect solution and mask file of the observation as optional parameters.

The aspect solution

If an aspect solution is supplied, the dither of the telescope is taken into account, and so each polygon is a little larger than the physical chip. Without an aspect solution, the nominal aspect is used and fiducial light offsets are not taken into account.

The mask file

If a mask file is provided, active CHIP regions are taken into account, otherwise a full ccd region per chip is used.

The region file

Each chip is described by a polygon. When the output kernel is set to FITS, the region file will contain a CCD_ID column which can be used to select a single chip, or range of chips. For the ASCII kernel, each chip is written out on a separate line.

Example 1

```
skyfov evt2.fits region.fits
```

Makes a CXC–style FITS region file (region.fits) which describes the location of each chip (or HRC segment) in the input event file (evt2.fits).

Example 2

```
skyfov evt2.fits region.reg kernel=ascii
```

Makes a DS9–style ASCII region file describing the location of each chip (or HRC segment) in the input event file.

Example 3

```
skyfov evt2.fits region.fits
dmcopy "region.fits[ccd_id=3]" chip3.fits
```

A FITS region file is made, then dmcopy is used to extract the region of chip I3 (ccd_id=3) alone.

Example 4

```
skyfov evt2.fits region.reg kernel=ascii
dmmakereg "bounds(region(region.reg))" bounds.reg kernel=ascii
dmcopy "evt2.fits[sky=region(bounds.reg)][bin sky>:::1]" img.fits
```

Here we create a region file (bounds.reg), in ASCII format, which describes the rectangular region which bounds all the chips present in evt2.fits. This region is then used to create an image of the data at full resolution.

Parameters

name	type	ftype	def	min	max	reqd
<u>infile</u>	file	input				yes
<u>outfile</u>	file	output				yes
<u>logfile</u>	file	output	STDOUT			
<u>kernel</u>	string		FITS			
<u>aspect</u>	file	input				
<u>mskfile</u>	file	input				
<u>geompar</u>	file		geom			
<u>clobber</u>	boolean		no			
<u>verbose</u>	integer		0	0	5	

Detailed Parameter Descriptions

Parameter=infile (file required filetype=input)

The name of a Chandra event file. Other missions are not supported.

Parameter=outfile (file required filetype=output)

The output region name.

Parameter=logfile (file filetype=output default=STDOUT)

Log file.

A log file only used for debugging; can be left blank.

Parameter=kernel (string default=FITS)

The output region format, FITS or ASCII.

The ascii region format is a variant supported by the DS9 imager, and is useable as a filter in the CIAO tools.

Parameter=aspect (file filetype=input default=)

The aspect solution

This should be a "pcad...asol1.fits" type file, or a stack of them. It may be omitted if you only need an approximate region of interest.

Parameter=mskfile (file filetype=input default=)

The mask file to contain active windows of instrument CCD.

Parameter=geompar (file default=geom)

The name of the Pixlib Geometry parameter file.

Parameter=clobber (boolean default=no)

Clobber existing output with the same name?

Boolean that specifies whether an existing output with the same name will be clobbered or not.

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

Verbosity level of terminal display information to user.

Bugs

See the [bugs page for this tool](#) on the CIAO website for an up-to-date listing of known bugs.

See Also

tools

[dmcoords](#), [reproject_events](#), [reproject_image](#), [reproject_image_grid](#)

Ahelp: skyfov – CIAO 3.4

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URL:
<http://cxc.harvard.edu/ciao3.4/skyfov.html>
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