Chandra X-ray Center

Images (IMG)

Data Products Guide

Level	Instrum	Data product	Content	Pipeline	Filename template
L2	ACIS	ACIS High–resolution Image	HIRESIMG	ACIS2	cntr_img2.fits
L2	ACIS	ACIS Low–resolution Image	LORESIMG	ACIS2	full_img2.fits
L2	HRC	HRC High–resolution Image	HIRESIMG	HRC2	cntr_img2.fits
L2	HRC	HRC Low–resolution Image	LORESIMG	HRC2	full_img2.fits

ACIS High–resolution Image

Level	Instrum	Data product	Content	Pipeline	Filename template
L2	ACIS	ACIS High–resolution Image	HIRESIMG	ACIS2	cntr_img2.fits

Description:

An image of the observation at full resolution (~0.5 arcsec/pixel), with size 1024x1024 pixels. The image field is centered at the target position of the observation. Note that this image is based on the level two event file, which is filtered extensively for bad pixels, bad times, etc. The array axes are specified in 'sky' coordinates (for more info, see the coords ahelp file).

file name template:

`acis*_cntr_img2.fits`

creator pipeline:

ACIS L2

creator tool:

dmcopy – the image may be recreated by using dmcopy on the level two event file, with a region of 1024x1024 pixels, centered at the target position. See the ahelp files for dmcopy or any Data Model topic. Here's an example of the syntax:

```
unix% dmcopy infile='evt2.fits[sky=region(field.reg)]' \
? outfile='evt2.fits' kernel='default' option='image' verbose='0'
```

If you wish to create an image with a larger field, you will need to bin the event file by some factor prior to using the region filter.

useful links:

- FITS Support Office Homepage – GSFC's page on the FITS (Flexible Image Transport System) standard.

IMAGE specific columns:

Column Name	Units	Description
IMAGE[1024,1024]	counts	an array of the counts

ACIS Low–resolution Image

Level	Instrum	Data product	Content	Pipeline	Filename template
L2	ACIS	ACIS Low–resolution Image	LORESIMG	ACIS2	full_img2.fits

description:

An image of the whole field of an observation, binned to a size 1024x1024 pixels. A bin factor of 8 is applied to fit the field into the 1024x1024 region. The image field is centered at the target position of the observation. The array axes are specified in 'sky' coordinates (for more info, see the coords ahelp file).

file name template:

```
acis*_full_img2.fits
```

creator pipeline:

acis_L2

creator tool:

dmcopy – see the discussion in the ACIS High–resolution Image section.

IMAGE specific columns:

see the ACIS High–resolution Image section.

HRC High–resolution Image

Level	Instrum	Data product	Content	Pipeline	Filename template
L2	HRC	HRC High–resolution Image	HIRESIMG	HRC2	cntr_img2.fits

Since the creation of an image from an event file is a relatively simple process, the HRC method is nearly identical to the ACIS method. For a discussion of this method, please see the ACIS High–resolution Image section.

HRC Low–resolution Image

Level	Instrum	Data product	Content	Pipeline	Filename template
L2	HRC	HRC Low–resolution Image	LORESIMG	HRC2	full_img2.fits

Since the creation of an image from an event file is a relatively simple process, the HRC method is nearly identical to the ACIS method. For a discussion of this method, please see the ACIS High–resolution Image section.

creator tool:

dmcopy – although similar to the creation of ACIS images, in general, the large size of the HRC fields means larger binning is required to produce an image of reasonable size. For HRC–I a bin factor of 32 is applied to create a 1024x1024 pixel image. For HRC–S, a binning of 32 is applied to create a 2048x2048 pixel image.

Note also, that FITS images are not created for HRC–S grating observations, although the jpg versions are created.

HRC Low–resolution Image