

V&V Summary Report

L2 ASCDS Version : 10.7.1

Observation 22124 - L2 Version 2
Chandra X-Ray Center

L2 Processing Date : Mar 6 2019

See [axaff22124N002_VV001_vvref2.pdf](#) for the full report

V&V Scientist	Jen Lauer
V&V Date (YYYY-MM-DD)	2019.03.07
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	42.05451839304

Comments

The guide stars in slot 5 and 6 were removed from the aspect solution due to poor data quality. The aspect solution is improved by the removal of these guide stars from the solution.

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The focal plane temperature during part of this observation was warmer than the upper limit for optimum calibration of the ACIS gain and spectral resolution (i.e., -114.0 C for ACIS-I and -112.0 C for ACIS-S).

The Chandra calibration team calibrates the ACIS gain and spectral resolution using data from the external calibration source (ECS). ECS data show that the frontside-illuminated (FI) CCDs are more temperature sensitive than the backside-illuminated (BI) CCDs.

A summary of the current calibration status of the ACIS gain and spectral resolution can be found at:

http://asc.harvard.edu/cal/Acis/Cal_prods/Gain_and_Spectral_Resolution/A_CIS_response_summary.html

The main points are:

- 1) The gain on BI chips remains within 0.3% (i.e., the systematic

uncertainty in the ACIS gain quoted on the Chandra Calibration Status Summary web page) at all measured temperatures.

2) The gain on FI chips remains within 0.3% below row 600 at all measured temperatures.

3) The gain on FI chips above row 600 can be underestimated by as much as 1% for focal plane temperatures exceeding -116 C.

4) The spectral resolution (i.e., FWHM) on BI chips is insensitive to the focal plane temperature.

5) Warmer focal plane temperatures increase the FWHM on FI chips by up to 30 eV near row 512 and by up to 70 eV near the top of the chips.

In summary, the user should be cautious in the spectral analysis of high S/N emission lines detected on the top half of FI chips in this observation. Default processing with the current version of the CALDB will underestimate photon energies by up to 1% and broaden emission lines by up to 70 eV.

seq_num	801744	Sequence number
obs_id	22124	Observation id
title	Double bullet cluster A4067	Proposal title
observer	Chong Ge	Principal investigator
object	Abell 4067	Source name
dtcycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	359.660833	Observer's specified target RA [deg]
dec_targ	-60.625806	Observer's specified target Dec [deg]
ra_nom	359.65283179908	Nominal RA [deg]
dec_nom	-60.631150411549	Nominal Dec [deg]
roll_nom	205.20170238308	Nominal Roll [deg]
revision	2	Processing version of data
ontime	42054.51839304	Sum of GTIs [s]
livetime	41505.045150149	Livetime [s]
ontime0	42060.800323606	Sum of GTIs [s]
ontime1	42054.518383026	Sum of GTIs [s]
ontime2	42057.659442782	Sum of GTIs [s]
ontime3	42054.51839304	Sum of GTIs [s]
ontime6	42060.800323606	Sum of GTIs [s]
l2events	171260	Number of level 2 events

