

V&V Summary Report

L2 ASCDS Version : 10.7.1

Observation 22125 - L2 Version 2
Chandra X-Ray Center

L2 Processing Date : Mar 6 2019

See axaff22125N002_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	18.057459128857

Comments

The guide star in slot 6 was removed from the aspect solution due to poor data quality. The aspect solution is improved by the removal of this guide star 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	22125	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	359.65186570923	Nominal RA [deg]
dec_nom	-60.631723754165	Nominal Dec [deg]
roll_nom	205.20088703086	Nominal Roll [deg]
revision	2	Processing version of data
ontime	18057.459128857	Sum of GTIs [s]
livetime	17821.52513163	Livetime [s]
ontime0	18060.600139022	Sum of GTIs [s]
ontime1	18057.459128737	Sum of GTIs [s]
ontime2	18060.600139022	Sum of GTIs [s]
ontime3	18057.459128857	Sum of GTIs [s]
ontime6	18057.45913887	Sum of GTIs [s]
l2events	71810	Number of level 2 events

