

# V&V Summary Report

## L2 ASCDS Version : 10.8.1

Observation 21390 - L2 Version 1  
Chandra X-Ray Center

L2 Processing Date : Oct 12 2019

See axaff21390N001\_VV001\_vvref2.pdf for the full report

V&V Scientist	Joy Nichols
V&V Date (YYYY-MM-DD)	2019.10.15
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	30.041387448549

## Comments

Comment for FP temp violation

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The focal plane temperature during the interval 687231191.85 - 687244382.35 (MET s) of this observation was warmer than the upper limit for optimum calibration of the ACIS gain and spectral resolution (i.e., -111.0 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](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.

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seq_num	901411	Sequence number
obs_id	21390	Observation id
title	X-ray insight into the recent death of stars	Proposal title
observer	Katie Auchettl	Principal investigator
object	AT2019pev	Source name
dtcycle	0	&#160
cycle	P	events from which exps? Prim/Second/Both
ra_targ	67.344667	Observer's specified target RA [deg]
dec_targ	0.61875	Observer's specified target Dec [deg]
ra_nom	67.341658905038	Nominal RA [deg]
dec_nom	0.6202301084683	Nominal Dec [deg]
roll_nom	81.425700924348	Nominal Roll [deg]
revision	1	Processing version of data
ontime	30041.387448549	Sum of GTIs [s]
livetime	29648.874605386	Livetime [s]
ontime2	30041.223288536	Sum of GTIs [s]
ontime5	30041.346408606	Sum of GTIs [s]
ontime6	30041.305368543	Sum of GTIs [s]
ontime7	30041.387448549	Sum of GTIs [s]
ontime8	30041.264328599	Sum of GTIs [s]
l2events	377356	Number of level 2 events

