

V&V Summary Report

L2 ASCDS Version : 10.7.1

Observation 22192 - L2 Version 1
Chandra X-Ray Center

L2 Processing Date : Apr 28 2019

See [axaff22192N001_VV001_vvref2.pdf](#) for the full report

V&V Scientist	Joy Nichols
V&V Date (YYYY-MM-DD)	2019.04.29
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	16.107600124002

Comments

The focal plane temperature is warmer than -112.0 C during the interval 672792624.35 - 672796601.65 (MET s) of this observation. This temperature is the upper limit of the verified ACIS calibration for the back-illuminated chips. 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	703883	Sequence number
obs_id	22192	Observation id
title	X-RAY SURVEYING RADIO-LOUD ACTIVE GALAXIES AND THEIR LARGE-SCALE ENVIRONMENTS	Proposal title
observer	Francesco Massaro	Principal investigator
object	B2.1 0536+33B	Source name
dtcycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	85.016159	Observer's specified target RA [deg]
dec_targ	33.701172	Observer's specified target Dec [deg]
ra_nom	85.021159733417	Nominal RA [deg]
dec_nom	33.699494186185	Nominal Dec [deg]
roll_nom	280.153824141	Nominal Roll [deg]
revision	1	Processing version of data
ontime	16107.600124002	Sum of GTIs [s]
livetime	15897.142470139	Livetime [s]
ontime6	16104.459163666	Sum of GTIs [s]
ontime7	16107.600124002	Sum of GTIs [s]
ontime8	16107.600124002	Sum of GTIs [s]
l2events	91830	Number of level 2 events

