

V&V Summary Report

L2 ASCDS Version : 10.7.1

Observation 22182 - L2 Version 1
Chandra X-Ray Center

L2 Processing Date : Apr 17 2019

See [axaff22182N001_VV001_vvref2.pdf](#) for the full report

V&V Scientist	Joy Nichols
V&V Date (YYYY-MM-DD)	2019.04.18
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	10.109100077868

Comments

The focal plane temperature is warmer than -112.0 C during the interval 671893026.14 - 671899523.74 (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	703878	Sequence number
obs_id	22182	Observation id
title	Exploring the possible link between mass ejection and X-ray emission in a nearby TDE	Proposal title
observer	Kate Alexander	Principal investigator
object	AT2019ahk	Source name
dtcycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	105.047083	Observer's specified target RA [deg]
dec_targ	-66.0405	Observer's specified target Dec [deg]
ra_nom	105.05572762785	Nominal RA [deg]
dec_nom	-66.041718691835	Nominal Dec [deg]
roll_nom	274.16448394023	Nominal Roll [deg]
revision	1	Processing version of data
ontime	10109.100077868	Sum of GTIs [s]
livetime	9977.017243139	Livetime [s]
ontime6	10109.100077868	Sum of GTIs [s]
ontime7	10109.100077868	Sum of GTIs [s]
ontime8	10109.100077868	Sum of GTIs [s]
l2events	59027	Number of level 2 events

