

V&V Summary Report

L2 ASCDS Version : 10.8

Observation 22686 - L2 Version 1
Chandra X-Ray Center

L2 Processing Date : Aug 17 2019

See [axaff22686N001_VV001_vvref2.pdf](#) for the full report

V&V Scientist	Beth Sundheim
V&V Date (YYYY-MM-DD)	2019.08.19
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	20.091

Comments

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., -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

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	201326	Sequence number
obs_id	22686	Observation id
title	Stellar activity with TESS and Chandra	Proposal title
observer	Hans Guenther	Principal investigator
object	2RXS J211827.5-034050	Source name
dtcycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	319.612823	Observer's specified target RA [deg]
dec_targ	-3.680181	Observer's specified target Dec [deg]
ra_nom	319.61276109654	Nominal RA [deg]
dec_nom	-3.6845821131846	Nominal Dec [deg]
roll_nom	210.85125669787	Nominal Roll [deg]
revision	1	Processing version of data
ontime	20091.0	Sum of GTIs [s]
liveltime	19819.864256965	Livetime [s]
ontime7	20091.0	Sum of GTIs [s]
l2events	83666	Number of level 2 events

