

V&V Summary Report

L2 ASCDS Version : 10.8

Observation 22650 - L2 Version 1
Chandra X-Ray Center

L2 Processing Date : Sep 24 2019

See axaff22650N001_VV002_vvref2.pdf for the full report

V&V Scientist	Beth Sundheim
V&V Date (YYYY-MM-DD)	2020.04.02
V&V Edition	2
V&V Disposition and Status	OK
V&V Charge Time	59.182100455284

Comments

Joint proposal with NRAO.

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One optional chip was dropped.

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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., -112.0 C for ACIS-I).

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	801879	Sequence number
obs_id	22650	Observation id
title	A spectacular LOFAR-selected merging galaxy cluster	Proposal title
observer	Andra Stroe	Principal investigator
object	PSZ2G181.06+48.47	Source name
dtcycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	144.854083	Observer's specified target RA [deg]
dec_targ	40.786631	Observer's specified target Dec [deg]
ra_nom	144.88348889334	Nominal RA [deg]
dec_nom	40.775245134244	Nominal Dec [deg]
roll_nom	47.011639001029	Nominal Roll [deg]
revision	1	Processing version of data
ontime	59182.100455284	Sum of GTIs [s]
livetime	58408.842743607	Livetime [s]
ontime0	59178.959494948	Sum of GTIs [s]
ontime1	59175.818524718	Sum of GTIs [s]
ontime2	59163.254703283	Sum of GTIs [s]
ontime3	59182.100455284	Sum of GTIs [s]
l2events	179550	Number of level 2 events

