

V&V Summary Report

L2 ASCDS Version : 10.8.4

Observation 23251 - L2 Version 1
Chandra X-Ray Center

L2 Processing Date : May 18 2020

See axaff23251N001_VV001_vvref2.pdf for the full report

V&V Scientist	Jen Lauer
V&V Date (YYYY-MM-DD)	2020.05.19
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	19.061460132599

Comments

Comments for Obi 0

Comment for FP temp violation

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The focal plane temperature during the interval 706187174.49 - 706193653.49 (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

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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Optional chip I2 not included.

seq_num	503204	Sequence number
obs_id	23251	Observation id
title	Light echoes from the magnetar, SGR J1935+2154	Proposal title
observer	Ersin Gogus	Principal investigator
object	SGR J1935+2154	Source name
dtcycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	293.732	Observer's specified target RA [deg]
dec_targ	21.89672	Observer's specified target Dec [deg]
ra_nom	293.715248616	Nominal RA [deg]
dec_nom	21.9248958011	Nominal Dec [deg]
roll_nom	121.91447483	Nominal Roll [deg]
revision	1	Processing version of data
ontime	19061.460132599	Sum of GTIs [s]
livetime	18812.408123124	Livetime [s]
ontime3	19061.378052592	Sum of GTIs [s]
ontime6	19061.419092655	Sum of GTIs [s]
ontime7	19061.460132599	Sum of GTIs [s]
ontime8	19058.195982337	Sum of GTIs [s]
l2events	128425	Number of level 2 events

