V&V Summary Report
L2 ASCDS Version : 10.8.1

Observation 22863 - L2 Version 2
Chandra X-Ray Center

L2 Processing Date : Oct 8 2019

See axaff22863N002_VV001_vvref2.pdf for the full report

V&V Scientist	Jen Lauer
V&V Date (YYYY-MM-DD)	2019.10.08
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	50.068100385189

Comments

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The focal plane temperature during the interval 686542576.48 -
686549616.58 (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.
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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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To compensate for a few bad pixels not marked as bad that were not removed in the Level 2 processing, a custom bad pixel file with additional bad pixels at (chipx, chipy) = (232:234,322:339) in S1 was added in this processing. As a result, the user will NOT find a relatively bright square of pixels on the S1 chip for level 2 data caused by the application of the dither algorithm to the bad pixels in question, as opposed to previous processing(s).
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Optional chip I2 not included.

seq_num	801876	Sequence number
obs_id	22863	Observation id
title	Spiraling into the 'quotation mark' cluster	Proposal title
observer	Ming Sun	Principal investigator
object	MCXC J0157.4-0550	Source name
dtycycle	0	&#160
cycle	P	events from which exps? Prim/Second/Both
ra_targ	29.399917	Observer's specified target RA [deg]
dec_targ	-5.810972	Observer's specified target Dec [deg]
ra_nom	29.40310188594	Nominal RA [deg]
dec_nom	-5.7907648921971	Nominal Dec [deg]
roll_nom	69.156959496562	Nominal Roll [deg]
revision	2	Processing version of data
ontime	50068.100385189	Sum of GTIs [s]
livetime	49413.923794057	Livetime [s]
ontime3	50068.100385189	Sum of GTIs [s]
ontime5	50068.100385189	Sum of GTIs [s]
ontime6	50068.100385189	Sum of GTIs [s]
ontime7	50068.100385189	Sum of GTIs [s]
l2events	569828	Number of level 2 events