V&V Summary Report
L2 ASCDS Version : 10.8

Observation 21563 - L2 Version 1
Chandra X-Ray Center

L2 Processing Date : Sep 15 2019

See axaff21563N001_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	33.067618373632

Comments

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Joint proposal with HST.
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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.
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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.

seq_num	801841	Sequence number
obs_id	21563	Observation id
title	Characterizing the most X-ray luminous galaxy clusters at z=0.5-1	
observer	Harald Ebeling	Principal investigator
object	eMACSJ0834.2+4524	Source name
dtycycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	128.565417	Observer's specified target RA [deg]
dec_targ	45.405	Observer's specified target Dec [deg]
ra_nom	128.58558755396	Nominal RA [deg]
dec_nom	45.432177037217	Nominal Dec [deg]
roll_nom	55.522275424156	Nominal Roll [deg]
revision	1	Processing version of data
ontime	33067.618373632	Sum of GTIs [s]
livetime	32635.565595554	Livetime [s]
ontime0	33073.900254488	Sum of GTIs [s]
ontime1	33064.477303743	Sum of GTIs [s]
ontime2	33070.759284258	Sum of GTIs [s]
ontime3	33067.618373632	Sum of GTIs [s]
l2events	98249	Number of level 2 events