

V&V Summary Report

L2 ASCDS Version : 10.7.1

Observation 21565 - L2 Version 1
Chandra X-Ray Center

L2 Processing Date : Jan 18 2019

See axaff21565N001_VV001_vvref2.pdf for the full report

V&V Scientist	Beth Sundheim
V&V Date (YYYY-MM-DD)	2019.01.18
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	30.302459173083

Comments

Joint proposal with HST.

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., -114.0 C for ACIS-I and -112.0 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/Acis_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	801843	Sequence number
obs_id	21565	Observation id
title	Characterizing the most X-ray luminous galaxy clusters at z=0.5-1	
observer	Harald Ebeling	Principal investigator
object	eMACSJ0935.1+0614	Source name
dtcycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	143.763333	Observer's specified target RA [deg]
dec_targ	6.243889	Observer's specified target Dec [deg]
ra_nom	143.77709537041	Nominal RA [deg]
dec_nom	6.2704959516173	Nominal Dec [deg]
roll_nom	56.400827762144	Nominal Roll [deg]
revision	1	Processing version of data
ontime	30302.459173083	Sum of GTIs [s]
livetime	29906.535235641	Livetime [s]
ontime0	30296.177092552	Sum of GTIs [s]
ontime1	30296.177162409	Sum of GTIs [s]
ontime2	30296.177132607	Sum of GTIs [s]
ontime3	30302.459173083	Sum of GTIs [s]
l2events	86306	Number of level 2 events

