

V&V Summary Report

L2 ASCDS Version : 10.7.1

Observation 21568 - L2 Version 1
Chandra X-Ray Center

L2 Processing Date : May 12 2019

See axaff21568N001_VV001_vvref2.pdf for the full report

V&V Scientist	Jen Lauer
V&V Date (YYYY-MM-DD)	2019.05.13
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	33.080039383769

Comments

Joint Proposal: 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., -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/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	801846	Sequence number
obs_id	21568	Observation id
title	Characterizing the most X-ray luminous galaxy clusters at z=0.5-1	
observer	Harald Ebeling	Principal investigator
object	eMACSJ1350.7-1055	Source name
dtcycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	207.694167	Observer's specified target RA [deg]
dec_targ	-10.925556	Observer's specified target Dec [deg]
ra_nom	207.68629650706	Nominal RA [deg]
dec_nom	-10.954555142216	Nominal Dec [deg]
roll_nom	248.56373268131	Nominal Roll [deg]
revision	1	Processing version of data
ontime	33080.039383769	Sum of GTIs [s]
livetime	32647.824316049	Livetime [s]
ontime0	33083.057344079	Sum of GTIs [s]
ontime1	33083.098384023	Sum of GTIs [s]
ontime2	33083.139424086	Sum of GTIs [s]
ontime3	33080.039383769	Sum of GTIs [s]
l2events	89116	Number of level 2 events

