

V&V Summary Report

L2 ASCDS Version : 10.9

Observation 23363 - L2 Version 1
Chandra X-Ray Center

L2 Processing Date : Aug 14 2020

See axaff23363N001_VV001_vvref2.pdf for the full report

V&V Scientist	Jen Lauer
V&V Date (YYYY-MM-DD)	2020.08.14
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	9.7990589752197

Comments

Comments for Obi 0

Comment for FP temp violation

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The focal plane temperature during the interval 713766599.78 - 713767728.18 (MET s) 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.

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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seq_num	801906	Sequence number
obs_id	23363	Observation id
title	The most X-ray luminous clusters of galaxies in the Universe	Propo
observer	Harald Ebeling	Principal investigator
object	MACSJ2020.8-3002	Source name
dtcycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	305.218994	Observer's specified target RA [deg]
dec_targ	-30.0369	Observer's specified target Dec [deg]
ra_nom	305.23843543085	Nominal RA [deg]
dec_nom	-30.059158361823	Nominal Dec [deg]
roll_nom	308.65349203202	Nominal Roll [deg]
revision	1	Processing version of data
ontime	9799.0589752197	Sum of GTIs [s]
livetime	9671.0270557462	Livetime [s]
ontime0	9802.1427983046	Sum of GTIs [s]
ontime1	9802.1838382483	Sum of GTIs [s]
ontime2	9802.2000755072	Sum of GTIs [s]
ontime3	9799.0589752197	Sum of GTIs [s]
l2events	28777	Number of level 2 events

