

V&V Summary Report

L2 ASCDS Version : 10.6.4

Observation 21668 - L2 Version 1
Chandra X-Ray Center

L2 Processing Date : Aug 12 2018

See [axaff21668N001_VV001_vvref2.pdf](#) for the full report

V&V Scientist	Joy Nichols
V&V Date (YYYY-MM-DD)	2018.08.13
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	52.083

Comments

The focal plane temperature is warmer than -112.0 C during the interval 650451190.71 - 650458318.71 (MET s) of this observation. This temperature is the upper limit of the verified ACIS calibration for the back-illuminated chips. 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	703477	Sequence number
obs_id	21668	Observation id
title	Mapping the Extended Hard (>3 keV) Continuum and Fluorescent 6.4 keV Iron Emission of the CT AGN NGC7212	Proposal title
observer	Giuseppina Fabbiano	Principal investigator
object	NGC7212	Source name
dtcycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	331.755417	Observer's specified target RA [deg]
dec_targ	10.231111	Observer's specified target Dec [deg]
ra_nom	331.74917521269	Nominal RA [deg]
dec_nom	10.228393569584	Nominal Dec [deg]
roll_nom	158.15772663282	Nominal Roll [deg]
revision	1	Processing version of data
ontime	52083.0	Sum of GTIs [s]
livetime	51380.119958962	Livetime [s]
ontime6	52083.0	Sum of GTIs [s]
ontime7	52083.0	Sum of GTIs [s]
l2events	251027	Number of level 2 events

