

V&V Summary Report

L2 ASCDS Version : 10.7.1

Observation 22233 - L2 Version 1
Chandra X-Ray Center

L2 Processing Date : Jun 2 2019

See [axaff22233N001_VV001_vvref2.pdf](#) for the full report

V&V Scientist	Beth Sundheim
V&V Date (YYYY-MM-DD)	2019.06.02
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	40.200167552114

Comments

One optional chip was dropped.

==

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	703572	Sequence number
obs_id	22233	Observation id
title	Did the first quasars come in pairs? Chandra/ALMA synergistic observations of quasars at $z>6$	Proposal title
observer	Eduardo Banados	Principal investigator
object	P231-20	Source name
dtcycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	231.657917	Observer's specified target RA [deg]
dec_targ	-20.833972	Observer's specified target Dec [deg]
ra_nom	231.6615521351	Nominal RA [deg]
dec_nom	-20.836739699402	Nominal Dec [deg]
roll_nom	262.15790162595	Nominal Roll [deg]
revision	1	Processing version of data
ontime	40200.167552114	Sum of GTIs [s]
livetime	39674.922768112	Livetime [s]
ontime3	40196.944401979	Sum of GTIs [s]
ontime6	40200.12651217	Sum of GTIs [s]
ontime7	40200.167552114	Sum of GTIs [s]
ontime8	40193.762301803	Sum of GTIs [s]
l2events	256297	Number of level 2 events

