

V&V Summary Report

L2 ASCDS Version : 10.7.1

Observation 21397 - L2 Version 1
Chandra X-Ray Center

L2 Processing Date : Feb 13 2019

See [axaff21397N001_VV001_vvref2.pdf](#) for the full report

V&V Scientist	Beth Sundheim
V&V Date (YYYY-MM-DD)	2019.02.15
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	17.561024753213

Comments

One optional chip was dropped.

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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	703695	Sequence number
obs_id	21397	Observation id
title	COMPLETING THE CHANDRA EXTRAGALACTIC 3CR SURVEY	Proposal title
observer	Fr Massaro	Principal investigator
object	3CR 257.0	Source name
dtcycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	170.788333	Observer's specified target RA [deg]
dec_targ	5.505389	Observer's specified target Dec [deg]
ra_nom	170.786043583	Nominal RA [deg]
dec_nom	5.5094979460526	Nominal Dec [deg]
roll_nom	63.156810103569	Nominal Roll [deg]
revision	1	Processing version of data
ontime	17561.024753213	Sum of GTIs [s]
livetime	17331.577036574	Livetime [s]
ontime3	17560.942673206	Sum of GTIs [s]
ontime6	17560.983713269	Sum of GTIs [s]
ontime7	17561.024753213	Sum of GTIs [s]
l2events	97331	Number of level 2 events

