

V&V Summary Report

L2 ASCDS Version : 10.7.1

Observation 21647 - L2 Version 1
Chandra X-Ray Center

L2 Processing Date : Apr 17 2019

See axaff21647N001_VV001_vvref2.pdf for the full report

V&V Scientist	Joy Nichols
V&V Date (YYYY-MM-DD)	2019.04.18
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	30.081

Comments

Joint proposal with NOAO,

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The guide star in slot 7 was removed from the aspect solution due to poor data quality. The aspect solution is improved by the removal of this guide star from the solution.

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The focal plane temperature is warmer than -112.0 C during the interval 671880133.61 - 671890522.61 (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/A

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	601444	Sequence number
obs_id	21647	Observation id
title	The Nature of the Two Globular Cluster ULXs in the Galaxy NGC 4472	
observer	Stephen Zepf	Principal investigator
object	NGC 4472 ULXs	Source name
dtcycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	187.415417	Observer's specified target RA [deg]
dec_targ	7.909167	Observer's specified target Dec [deg]
ra_nom	187.41718348865	Nominal RA [deg]
dec_nom	7.905666444888	Nominal Dec [deg]
roll_nom	233.15641334656	Nominal Roll [deg]
revision	1	Processing version of data
ontime	30081.0	Sum of GTIs [s]
livetime	29675.045379212	Livetime [s]
ontime6	30081.0	Sum of GTIs [s]
ontime7	30081.0	Sum of GTIs [s]
l2events	174068	Number of level 2 events

