

V&V Summary Report

L2 ASCDS Version : 10.7.1

Observation 22144 - L2 Version 1
Chandra X-Ray Center

L2 Processing Date : Mar 16 2019

See axaff22144N001_VV001_vvref2.pdf for the full report

V&V Scientist	Jen Lauer
V&V Date (YYYY-MM-DD)	2019.03.20
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	32.174900247574

Comments

The fid light in slot 0 was removed from the aspect solution due to poor data quality. The aspect solution is improved by the removal of this fid light from the solution.

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Optional chips I2 and S4 not included.

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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	801753	Sequence number
obs_id	22144	Observation id
title	Fuelling and self-regulation of AGN feedback at the Bondi radius of M84	Proposal title
observer	Helen Russell	Principal investigator
object	M84	Source name
dtcycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	186.265833	Observer's specified target RA [deg]
dec_targ	12.886944	Observer's specified target Dec [deg]
ra_nom	186.24889628307	Nominal RA [deg]
dec_nom	12.896847766085	Nominal Dec [deg]
roll_nom	138.16038645903	Nominal Roll [deg]
revision	1	Processing version of data
ontime	32174.900247574	Sum of GTIs [s]
livetime	31754.511489022	Livetime [s]
ontime3	32168.618117094	Sum of GTIs [s]
ontime5	32174.900247574	Sum of GTIs [s]
ontime6	32174.900247574	Sum of GTIs [s]
ontime7	32174.900247574	Sum of GTIs [s]
l2events	378129	Number of level 2 events

