

V&V Summary Report

L2 ASCDS Version : 10.3.3

Observation 17459 - L2 Version 1
Chandra X-Ray Center

L2 Processing Date : May 29 2015

See axaff17459N001_VV002_vvref2.pdf for the full report

V&V Scientist	Beth Sundheim
V&V Date (YYYY-MM-DD)	2018.03.06
V&V Edition	2
V&V Disposition and Status	OK
V&V Charge Time	49.398418259621

Comments

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	601215	Sequence number
obs_id	17459	Observation id
title	A Survey of nearby, nearly face-on spiral galaxies	Proposal title
observer	Professor Gordon Garmire	Principal investigator
object	NGC5713	Source name
dtcycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	220.047917	Observer's specified target RA [deg]
dec_targ	-0.288889	Observer's specified target Dec [deg]
ra_nom	220.0237554018	Nominal RA [deg]
dec_nom	-0.29531225195673	Nominal Dec [deg]
roll_nom	227.41465807083	Nominal Roll [deg]
revision	1	Processing version of data
ontime	49398.418259621	Sum of GTIs [s]
livetime	48752.991558472	Livetime [s]
ontime0	49404.616269112	Sum of GTIs [s]
ontime1	49401.516238809	Sum of GTIs [s]
ontime2	49404.698349118	Sum of GTIs [s]
ontime3	49398.418259621	Sum of GTIs [s]
l2events	101734	Number of level 2 events

