

V&V Summary Report

L2 ASCDS Version : 10.6

Observation 19758 - L2 Version 1
Chandra X-Ray Center

L2 Processing Date : Dec 13 2017

See axaff19758N001_VV002_vvref2.pdf for the full report

V&V Scientist	Beth Sundheim
V&V Date (YYYY-MM-DD)	2018.03.07
V&V Edition	2
V&V Disposition and Status	OK
V&V Charge Time	20.071413626909

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	801695	Sequence number
obs_id	19758	Observation id
title	A Chandra Survey of high-redshift ($0.7 < z < 0.8$) clusters selected in the 100 deg ² SPT-Pol Deep Field	Proposal title
observer	Gordon Garmire	Principal investigator
object	SPT-CLJ0000-6020	Source name
dtcycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	0.037917	Observer's specified target RA [deg]
dec_targ	-60.341	Observer's specified target Dec [deg]
ra_nom	0.071946711302921	Nominal RA [deg]
dec_nom	-60.374050311193	Nominal Dec [deg]
roll_nom	290.46121650395	Nominal Roll [deg]
revision	1	Processing version of data
ontime	20071.413626909	Sum of GTIs [s]
livetime	19809.165831514	Livetime [s]
ontime0	20074.431527019	Sum of GTIs [s]
ontime1	20074.47253716	Sum of GTIs [s]
ontime2	20074.513567209	Sum of GTIs [s]
ontime3	20071.413626909	Sum of GTIs [s]
l2events	53607	Number of level 2 events

