

V&V Summary Report

L2 ASCDS Version : 10.6

Observation 20547 - L2 Version 1
Chandra X-Ray Center

L2 Processing Date : Dec 24 2017

See [axaff20547N001_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	10.078100077629

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	801757	Sequence number
obs_id	20547	Observation id
title	Hiding in Plain Sight - Recovering Clusters with the Strongest AGN in their Cores	Proposal title
observer	Paul Nulsen	Principal investigator
object	1RXSJ080938.5+345544	Source name
dtcycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	122.410417	Observer's specified target RA [deg]
dec_targ	34.928889	Observer's specified target Dec [deg]
ra_nom	122.40167719262	Nominal RA [deg]
dec_nom	34.936565323291	Nominal Dec [deg]
roll_nom	106.10394057449	Nominal Roll [deg]
revision	1	Processing version of data
ontime	10078.100077629	Sum of GTIs [s]
livetime	9946.4222807255	Livetime [s]
ontime0	10078.100077629	Sum of GTIs [s]
ontime1	10078.100077629	Sum of GTIs [s]
ontime2	10078.100077629	Sum of GTIs [s]
ontime3	10078.100077629	Sum of GTIs [s]
l2events	26063	Number of level 2 events

