

# V&V Summary Report

## L2 ASCDS Version : 10.7.1

Observation 21150 - L2 Version 2  
Chandra X-Ray Center

L2 Processing Date : Mar 6 2019

See axaff21150N002\_VV001\_vvref2.pdf for the full report

V&V Scientist	Jen Lauer
V&V Date (YYYY-MM-DD)	2019.03.07
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	4.4071190252304

## Comments

The guide stars in slots 5 and 6 were removed from the aspect solution due to poor data quality. The aspect solution is improved by the removal of these guide stars from the solution.

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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](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	703690	Sequence number
obs_id	21150	Observation id
title	A Chandra view of Eddington-limited accretion in DOGs	Proposal tit
observer	Dr. Gordon Garmire	Principal investigator
object	J1028+5011	Source name
dtcycle	0	&#160
cycle	P	events from which exps? Prim/Second/Both
ra_targ	157.00625	Observer's specified target RA [deg]
dec_targ	50.184028	Observer's specified target Dec [deg]
ra_nom	157.00651702707	Nominal RA [deg]
dec_nom	50.180508097357	Nominal Dec [deg]
roll_nom	201.15646681071	Nominal Roll [deg]
revision	2	Processing version of data
ontime	4407.1190252304	Sum of GTIs [s]
livetime	4349.5367706919	Livetime [s]
ontime6	4407.0779852867	Sum of GTIs [s]
ontime7	4407.1190252304	Sum of GTIs [s]
ontime8	4407.0369452238	Sum of GTIs [s]
l2events	25616	Number of level 2 events

