

# V&V Summary Report

## L2 ASCDS Version : 10.4.3.1

Observation 18798 - L2 Version 2  
Chandra X-Ray Center

L2 Processing Date : Mar 23 2016

See axaff18798N002\_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	13.082000100732

## Comments

The guide star in slot 4 was removed from the aspect solution due to poor data quality. The aspect solution is improved by the removal of this star 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/Acis\\_response\\_summary.html](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	801595	Sequence number
obs_id	18798	Observation id
title	Probing ICM on mean free path scales	Proposal title
observer	Dr Irina Zhuravleva	Principal investigator
object	Coma cluster	Source name
dtcycle	0	&#160
cycle	P	events from which exps? Prim/Second/Both
ra_targ	194.649583	Observer's specified target RA [deg]
dec_targ	28.074806	Observer's specified target Dec [deg]
ra_nom	194.64147298253	Nominal RA [deg]
dec_nom	28.076169563156	Nominal Dec [deg]
roll_nom	148.21255614579	Nominal Roll [deg]
revision	2	Processing version of data
ontime	13082.000100732	Sum of GTIs [s]
livetime	12911.074138587	Livetime [s]
ontime0	13082.000100732	Sum of GTIs [s]
ontime1	13078.859040618	Sum of GTIs [s]
ontime2	13082.000100732	Sum of GTIs [s]
ontime3	13082.000100732	Sum of GTIs [s]
l2events	67729	Number of level 2 events

