

# V&V Summary Report

## L2 ASCDS Version : 10.8

Observation 21694 - L2 Version 1  
Chandra X-Ray Center

L2 Processing Date : Aug 10 2019

See axaff21694N001\_VV001\_vvref2.pdf for the full report

V&V Scientist	Melania Nynka
V&V Date (YYYY-MM-DD)	2019.08.14
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	61.298326992273

## Comments

Comment for FP temp violation

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The focal plane temperature during the interval 681708341.50 - 681711490.30 (MET s) of this observation was warmer than the upper limit for optimum calibration of the ACIS gain and spectral resolution (i.e., -111.0 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.

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seq_num	703822	Sequence number
obs_id	21694	Observation id
title	Capturing the disk wind in NGC 5548 with Chandra	Proposal title
observer	Jelle Kaastra	Principal investigator
object	NGC 5548	Source name
dtcycle	0	&#160
cycle	P	events from which exps? Prim/Second/Both
ra_targ	214.497917	Observer's specified target RA [deg]
dec_targ	25.136833	Observer's specified target Dec [deg]
ra_nom	214.50170762435	Nominal RA [deg]
dec_nom	25.133869271261	Nominal Dec [deg]
roll_nom	261.6550257062	Nominal Roll [deg]
revision	1	Processing version of data
ontime	61298.326992273	Sum of GTIs [s]
livetime	60522.130666476	Livetime [s]
ontime4	61295.127061844	Sum of GTIs [s]
ontime5	61298.28595221	Sum of GTIs [s]
ontime6	61298.244912267	Sum of GTIs [s]
ontime7	61298.326992273	Sum of GTIs [s]
ontime8	61298.203872204	Sum of GTIs [s]
ontime9	61298.16283226	Sum of GTIs [s]
l2events	826860	Number of level 2 events

