

# V&V Summary Report

## L2 ASCDS Version : 10.7

Observation 21875 - L2 Version 1  
Chandra X-Ray Center

L2 Processing Date : Nov 14 2018

See [axaff21875N001\\_VV001\\_vvref2.pdf](#) for the full report

V&V Scientist	Beth Sundheim
V&V Date (YYYY-MM-DD)	2018.11.16
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	12.844800191402

## Comments

The focal plane temperature during the interval 658589447.84 - 658595857.44 (MET s) 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	901404	Sequence number
obs_id	21875	Observation id
title	Deep Pilot X-ray Observations of the JWST-NEP Time Domain Field	Pr
observer	Walter Maksym	Principal investigator
object	JWST-DTDF-4	Source name
dtcycle	0	&#160
cycle	P	events from which exps? Prim/Second/Both
ra_targ	260.725	Observer's specified target RA [deg]
dec_targ	65.808333	Observer's specified target Dec [deg]
ra_nom	260.74734596345	Nominal RA [deg]
dec_nom	65.807785507763	Nominal Dec [deg]
roll_nom	329.18828928312	Nominal Roll [deg]
revision	1	Processing version of data
ontime	12844.800191402	Sum of GTIs [s]
livetime	12682.151597169	Livetime [s]
ontime0	12844.800191402	Sum of GTIs [s]
ontime1	12844.800191402	Sum of GTIs [s]
ontime2	12841.559171081	Sum of GTIs [s]
ontime3	12844.800191402	Sum of GTIs [s]
ontime6	12844.800191402	Sum of GTIs [s]
ontime7	12844.800191402	Sum of GTIs [s]
l2events	94678	Number of level 2 events

