

V&V Summary Report

L2 ASCDS Version : 10.7.1

Observation 21291 - L2 Version 1
Chandra X-Ray Center

L2 Processing Date : Feb 28 2019

See axaff21291N001_VV001_vvref2.pdf for the full report

V&V Scientist	Joy Nichols
V&V Date (YYYY-MM-DD)	2019.03.01
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	3.5489286539555

Comments

The ACIS focal plane temperature is warmer than -112.0 C degrees during the interval 667741701.41 - 667745247.81 (MET s) of this observation. 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

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	503064	Sequence number
obs_id	21291	Observation id
title	Where Have All the Central Compact Objects Gone?	Proposal title
observer	Eric Gotthelf	Principal investigator
object	PSR J1744-1610	Source name
dtcycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	266.06875	Observer's specified target RA [deg]
dec_targ	-16.176611	Observer's specified target Dec [deg]
ra_nom	266.06533761208	Nominal RA [deg]
dec_nom	-16.174821700121	Nominal Dec [deg]
roll_nom	86.358079026525	Nominal Roll [deg]
revision	1	Processing version of data
ontime	3548.9286539555	Sum of GTIs [s]
livetime	3502.5592884083	Livetime [s]
ontime2	3548.7644939423	Sum of GTIs [s]
ontime3	3548.8465739489	Sum of GTIs [s]
ontime6	3548.8876140118	Sum of GTIs [s]
ontime7	3548.9286539555	Sum of GTIs [s]
ontime8	3542.523363471	Sum of GTIs [s]
l2events	25420	Number of level 2 events

