

V&V Summary Report

L2 ASCDS Version : 10.6

Observation 21098 - L2 Version 1
Chandra X-Ray Center

L2 Processing Date : May 27 2018

See [axaff21098N001_VV001_vvref2.pdf](#) for the full report

V&V Scientist	Beth Sundheim
V&V Date (YYYY-MM-DD)	2018.05.28
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	39.887577145457

Comments

One optional chip was dropped.

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

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	503022	Sequence number
obs_id	21098	Observation id
title	The wagging jet and the X-ray plerion of PSR J1809-1917	Proposal t
observer	George Pavlov	Principal investigator
object	PSR J1809-1917	Source name
dtcycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	272.429583	Observer's specified target RA [deg]
dec_targ	-19.293917	Observer's specified target Dec [deg]
ra_nom	272.42148087224	Nominal RA [deg]
dec_nom	-19.277033913205	Nominal Dec [deg]
roll_nom	99.206001641947	Nominal Roll [deg]
revision	1	Processing version of data
ontime	39887.577145457	Sum of GTIs [s]
livetime	39366.416585245	Livetime [s]
ontime0	39893.859246731	Sum of GTIs [s]
ontime1	39890.718206406	Sum of GTIs [s]
ontime2	39887.577156305	Sum of GTIs [s]
ontime3	39887.577145457	Sum of GTIs [s]
l2events	124551	Number of level 2 events

