

V&V Summary Report

L2 ASCDS Version : 10.8

Observation 21869 - L2 Version 2
Chandra X-Ray Center

L2 Processing Date : Jun 20 2019

See [axaff21869N002_VV001_vvref2.pdf](#) for the full report

V&V Scientist	Joy Nichols
V&V Date (YYYY-MM-DD)	2019.07.02
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	45.061600346684

Comments

New processed version to include updated proposal number 19500247. Data are identical to first processing. ===== The focal plane temperature during a very short part at the beginning 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. NOTE: After June 18, the focal plane temperature of this observation would be within the bounds of the updated calibration limits, and the statement above would not have been necessary.

seq_num	503000	Sequence number
obs_id	21869	Observation id
title	The Answer is Blowing in the Wind: Jet Sweepback in Three PWNe	Pro
observer	Roger Romani	Principal investigator
object	PSR J1709-4429	Source name
dtcycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	257.42835	Observer's specified target RA [deg]
dec_targ	-44.4853	Observer's specified target Dec [deg]
ra_nom	257.43091812891	Nominal RA [deg]
dec_nom	-44.529551790911	Nominal Dec [deg]
roll_nom	96.694063310956	Nominal Roll [deg]
revision	2	Processing version of data
ontime	45061.600346684	Sum of GTIs [s]
livetime	44472.837364287	Livetime [s]
ontime0	45061.600346684	Sum of GTIs [s]
ontime1	45045.895475268	Sum of GTIs [s]
ontime2	45049.03642571	Sum of GTIs [s]
ontime3	45055.318505526	Sum of GTIs [s]
ontime6	45061.600346684	Sum of GTIs [s]
l2events	196918	Number of level 2 events

