

V&V Summary Report

L2 ASCDS Version : 10.7.1

Observation 21248 - L2 Version 1
Chandra X-Ray Center

L2 Processing Date : Jan 9 2019

See [axaff21248N001_VV001_vvref2.pdf](#) for the full report

V&V Scientist	Jen Lauer
V&V Date (YYYY-MM-DD)	2019.01.10
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	4.9466519153118

Comments

The focal plane temperature during the entire 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	402080	Sequence number
obs_id	21248	Observation id
title	The Nature of INTEGRAL Sources in the Galactic Plane	Proposal titl
observer	John Tomsick	Principal investigator
object	IGR J20084+3221	Source name
dtcycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	302.124167	Observer's specified target RA [deg]
dec_targ	32.35	Observer's specified target Dec [deg]
ra_nom	302.13280497649	Nominal RA [deg]
dec_nom	32.351511338156	Nominal Dec [deg]
roll_nom	347.20042746173	Nominal Roll [deg]
revision	1	Processing version of data
ontime	4946.6519153118	Sum of GTIs [s]
livetime	4884.0144302439	Livetime [s]
ontime0	4946.5287953615	Sum of GTIs [s]
ontime1	4946.5698353052	Sum of GTIs [s]
ontime2	4946.6108753681	Sum of GTIs [s]
ontime3	4946.6519153118	Sum of GTIs [s]
ontime6	4946.7339953184	Sum of GTIs [s]
ontime7	4946.6929553747	Sum of GTIs [s]
l2events	41476	Number of level 2 events

