

V&V Summary Report

L2 ASCDS Version : 10.5.2

Observation 18973 - L2 Version 1
Chandra X-Ray Center

L2 Processing Date : Feb 24 2017

See [axaff18973N001_VV002_vvref2.pdf](#) for the full report

V&V Scientist	Beth Sundheim
V&V Date (YYYY-MM-DD)	2018.03.07
V&V Edition	2
V&V Disposition and Status	OK
V&V Charge Time	4.9408000736237

Comments

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	401841	Sequence number
obs_id	18973	Observation id
title	The Nature of INTEGRAL Sources in the Galactic Plane	Proposal titl
observer	John Tomsick	Principal investigator
object	IGR J19294+1327	Source name
dtcycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	292.374167	Observer's specified target RA [deg]
dec_targ	13.4515	Observer's specified target Dec [deg]
ra_nom	292.37395525746	Nominal RA [deg]
dec_nom	13.460332833616	Nominal Dec [deg]
roll_nom	65.382843786531	Nominal Roll [deg]
revision	1	Processing version of data
ontime	4940.8000736237	Sum of GTIs [s]
livetime	4878.2366880988	Livetime [s]
ontime0	4940.8000736237	Sum of GTIs [s]
ontime1	4940.8000736237	Sum of GTIs [s]
ontime2	4940.8000736237	Sum of GTIs [s]
ontime3	4940.8000736237	Sum of GTIs [s]
ontime6	4940.8000736237	Sum of GTIs [s]
ontime7	4940.8000736237	Sum of GTIs [s]
l2events	34407	Number of level 2 events

