

V&V Summary Report

L2 ASCDS Version : 10.8

Observation 20751 - L2 Version 1
Chandra X-Ray Center

L2 Processing Date : Aug 20 2019

See [axaff20751N001_VV001_vvref2.pdf](#) for the full report

V&V Scientist	Beth Sundheim
V&V Date (YYYY-MM-DD)	2019.08.20
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	26.768678172231

Comments

Observation coordinated with NuSTAR.

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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., -111.0 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

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	601426	Sequence number
obs_id	20751	Observation id
title	Chandra/NuSTAR Monitoring of Sgr A*, SGR J1745-2900 and X-ray transients in the GC	Proposal title
observer	Gordon Garmire	Principal investigator
object	SgrA*	Source name
dtcycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	266.416667	Observer's specified target RA [deg]
dec_targ	-29.007833	Observer's specified target Dec [deg]
ra_nom	266.41986282199	Nominal RA [deg]
dec_nom	-29.007662574047	Nominal Dec [deg]
roll_nom	277.15819066825	Nominal Roll [deg]
revision	1	Processing version of data
ontime	26768.678172231	Sum of GTIs [s]
livetime	24277.778135526	Livetime [s]
ontime7	26768.678172231	Sum of GTIs [s]
l2events	29866	Number of level 2 events

