

V&V Summary Report

L2 ASCDS Version : 10.6

Observation 19664 - L2 Version 1
Chandra X-Ray Center

L2 Processing Date : Aug 25 2017

See [axaff19664N001_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	24.874400191426

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	901371	Sequence number
obs_id	19664	Observation id
title	The Chandra Deep Wide-Field Survey: Completing the new generation of Chandra extragalactic surveys	Proposal title
observer	Ryan Hickox	Principal investigator
object	CDWFS	Source name
dtcycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	216.50739	Observer's specified target RA [deg]
dec_targ	34.970601	Observer's specified target Dec [deg]
ra_nom	216.51296406649	Nominal RA [deg]
dec_nom	34.963632449006	Nominal Dec [deg]
roll_nom	276.20549895715	Nominal Roll [deg]
revision	1	Processing version of data
ontime	24874.400191426	Sum of GTIs [s]
livetime	24549.397840658	Livetime [s]
ontime0	24874.400191426	Sum of GTIs [s]
ontime1	24868.118171096	Sum of GTIs [s]
ontime2	24874.400191426	Sum of GTIs [s]
ontime3	24874.400191426	Sum of GTIs [s]
ontime7	24874.400191426	Sum of GTIs [s]
l2events	151315	Number of level 2 events

