

V&V Summary Report

L2 ASCDS Version : 10.6.4.1

Observation 21865 - L2 Version 1
Chandra X-Ray Center

L2 Processing Date : Oct 7 2018

See [axaff21865N001_VV001_vvref2.pdf](#) for the full report

V&V Scientist	Beth Sundheim
V&V Date (YYYY-MM-DD)	2018.10.07
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	39.332800302625

Comments

Two optional chips were dropped.

The guide star in slot 4 was removed from the aspect solution due to poor data quality. The aspect solution is improved by the removal of this slot from the solution.

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/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.

seq_num	801799	Sequence number
obs_id	21865	Observation id
title	Mapping of cosmic web filaments around A133	Proposal title
observer	Ralph Kraft	Principal investigator
object	A133 filament	Source name
dtcycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	16.054525	Observer's specified target RA [deg]
dec_targ	-22.403292	Observer's specified target Dec [deg]
ra_nom	16.064438445298	Nominal RA [deg]
dec_nom	-22.39645954976	Nominal Dec [deg]
roll_nom	9.712476518484	Nominal Roll [deg]
revision	1	Processing version of data
ontime	39332.800302625	Sum of GTIs [s]
livetime	38818.888310285	Livetime [s]
ontime0	39326.458091021	Sum of GTIs [s]
ontime1	39323.358030677	Sum of GTIs [s]
ontime2	39320.236051559	Sum of GTIs [s]
ontime3	39332.800302625	Sum of GTIs [s]
l2events	108452	Number of level 2 events

