

V&V Summary Report

L2 ASCDS Version : 10.8

Observation 21715 - L2 Version 2
Chandra X-Ray Center

L2 Processing Date : Sep 10 2019

See [axaff21715N002_VV001_vvref2.pdf](#) for the full report

V&V Scientist	Beth Sundheim
V&V Date (YYYY-MM-DD)	2019.09.10
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	9.0365000696182

Comments

One optional chip was dropped.

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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.

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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	801861	Sequence number
obs_id	21715	Observation id
title	Snapshot Survey of LOFAR-selected Galaxy Clusters	Proposal title
observer	Ralph Kraft	Principal investigator
object	PSZ1 G135.24+65.43	Source name
dtcycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	184.783333	Observer's specified target RA [deg]
dec_targ	50.916667	Observer's specified target Dec [deg]
ra_nom	184.86800187083	Nominal RA [deg]
dec_nom	50.897928747335	Nominal Dec [deg]
roll_nom	333.15054568496	Nominal Roll [deg]
revision	2	Processing version of data
ontime	9036.5000696182	Sum of GTIs [s]
livetime	8918.4315436341	Livetime [s]
ontime0	9036.5000696182	Sum of GTIs [s]
ontime1	9036.5000696182	Sum of GTIs [s]
ontime2	9036.5000696182	Sum of GTIs [s]
ontime3	9036.5000696182	Sum of GTIs [s]
l2events	25931	Number of level 2 events

