

V&V Summary Report

L2 ASCDS Version : 10.8

Observation 22728 - L2 Version 1
Chandra X-Ray Center

L2 Processing Date : Aug 22 2019

See [axaff22728N001_VV001_vvref2.pdf](#) for the full report

V&V Scientist	Beth Sundheim
V&V Date (YYYY-MM-DD)	2019.08.22
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	60.068373116136

Comments

One optional chip was dropped.

The guide star in slot 7 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., -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	703713	Sequence number
obs_id	22728	Observation id
title	X-rays from the brightest radio source at z~6	Proposal title
observer	Eduardo Banados	Principal investigator
object	P352-15	Source name
dtcycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	352.403333	Observer's specified target RA [deg]
dec_targ	-15.337333	Observer's specified target Dec [deg]
ra_nom	352.39949135747	Nominal RA [deg]
dec_nom	-15.334889755262	Nominal Dec [deg]
roll_nom	88.155623917172	Nominal Roll [deg]
revision	1	Processing version of data
ontime	60068.373116136	Sum of GTIs [s]
livetime	59283.53559968	Livetime [s]
ontime3	60065.149925828	Sum of GTIs [s]
ontime6	60065.190995932	Sum of GTIs [s]
ontime7	60068.373116136	Sum of GTIs [s]
ontime8	60058.826705456	Sum of GTIs [s]
l2events	387801	Number of level 2 events

