

V&V Summary Report

L2 ASCDS Version : 10.8

Observation 22513 - L2 Version 1
Chandra X-Ray Center

L2 Processing Date : Sep 21 2019

See [axaff22513N001_VV001_vvref2.pdf](#) for the full report

V&V Scientist	Beth Sundheim
V&V Date (YYYY-MM-DD)	2019.09.22
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	23.94240035677

Comments

The guide star in slot 5 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	601490	Sequence number
obs_id	22513	Observation id
title	A LOCAL CHARACTERIZATION OF THE z 10 X-RAY RADIATION FIELD AND ITS EFFECTS ON EARLY IGM HEATING	Proposal title
observer	Bret Lehmer	Principal investigator
object	J082527.7+295739.3	Source name
dtcycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	126.36523	Observer's specified target RA [deg]
dec_targ	29.96091	Observer's specified target Dec [deg]
ra_nom	126.36205236428	Nominal RA [deg]
dec_nom	29.964850785708	Nominal Dec [deg]
roll_nom	69.299543583565	Nominal Roll [deg]
revision	1	Processing version of data
ontime	23942.40035677	Sum of GTIs [s]
livetime	23639.227267069	Livetime [s]
ontime2	23935.918385983	Sum of GTIs [s]
ontime3	23939.132411718	Sum of GTIs [s]
ontime5	23942.40035677	Sum of GTIs [s]
ontime6	23935.91835618	Sum of GTIs [s]
ontime7	23942.40035677	Sum of GTIs [s]
ontime8	23942.332442284	Sum of GTIs [s]
l2events	307073	Number of level 2 events

