V&V Summary Report
L2 ASCDS Version : 10.8.3

Observation 23209 - L2 Version 1
Chandra X-Ray Center

L2 Processing Date : Apr 3 2020

See axaff23209N001_VV001_vvref2.pdf for the full report

V&V Scientist	Beth Sundheim
V&V Date (YYYY-MM-DD)	2020.04.06
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	30.059560504436

Comments

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The focal plane temperature during the interval 702280136.42 -
702287157.92 (MET s) 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.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
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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	503203	Sequence number
obs_id	23209	Observation id
title	Chandra observations of the newly discovered magnetar Swift J1818.0-1607	Proposal title
observer	Harsha Blumer	Principal investigator
object	J1818-1607	Source name
dtycycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	274.500958	Observer's specified target RA [deg]
dec_targ	-16.130944	Observer's specified target Dec [deg]
ra_nom	274.504083901	Nominal RA [deg]
dec_nom	-16.1325128807	Nominal Dec [deg]
roll_nom	111.751135287	Nominal Roll [deg]
revision	1	Processing version of data
ontime	30059.560504436	Sum of GTIs [s]
livetime	29666.81021692	Livetime [s]
ontime5	30059.519464493	Sum of GTIs [s]
ontime6	30059.47842443	Sum of GTIs [s]
ontime7	30059.560504436	Sum of GTIs [s]
ontime8	30059.437384486	Sum of GTIs [s]
l2events	365942	Number of level 2 events