V&V Summary Report
L2 ASCDS Version : 8.5.1.1

Observation 6207 - L2 Version 5
Chandra X-Ray Center

L2 Processing Date : Apr 30 2013

See axaff06207N005_VV001_vvref2.pdf for the full report

V&V Scientist	Joy Nichols
V&V Date (YYYY-MM-DD)	2013.05.07
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	29.1005

Comments

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Original bias file for chip 8 had anomalously high adu-value columns.
The anomaly existed in columns 130-170 and 840-915 (details below). A
replacement bias file was created using the Level 0 event and exposure
data to model a reasonable bias map for chip 8.
Only the pixel values in the affected columns were replaced. === The
technique uses the bias-less FEP event islands as the basic input. The
event islands are corrected for overclocking, then arranged in an array
according to their CCD columns, with the center pixel in each island
excluded. The output bias value for each column is identified as the
value for which 62.5% of all the pixels in the column have a higher
value. The output is a one dimensional array of bias values, which is
replicated to produce the 2-dimensional bias image.
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Cosmic ray events have elevated bias values in a few columns in chips 5
and 8. Chip 8: There is a small excess (up to about 20 adu) between for
130 <= CHIPX <= 170 and a large excess (up to about 160 adu) between 840
<= CHIPX <= 915. I think these are due to cosmic rays. Data analysis
issue: These problems do affect the analysis of data in these regions in
two ways. 1. Since 1 adu is roughly 4 eV, an offset of 160 adu is about
0.6 keV! Any photons detected have energies that are systematically low
by this amount. 2. The lowest energy events will not be detected because
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the bias is subtracted before the test to see if an event exceeds the minimum event threshold (21 or 38 adu). Therefore, the effective minimum threshold is not 21 or 38 adu (i.e. about 0.1 or 0.2 keV), but 181 or 198 adu (i.e. about 0.7 or 0.8 keV)! So the spectrum below this energy is simply cut off. The problem with the cosmic rays is a known one. We have some potential improvements that can be done with a special processing configuration.

seq_num	500597	Sequence number
obs_id	6207	Observation id
title	Searching for atomic and/or cyclotron features in the Giant Flares decay of SGR 1806-20	Proposal title
observer	Dr. Nanda Rea	Principal investigator
object	SGR 1806-20	Source name
ra_targ	272.16375	Observer's specified target RA [deg]
dec_targ	-20.411028	Observer's specified target Dec [deg]
ra_nom	272.16584811045	Nominal RA [deg]
dec_nom	-20.401545751563	Nominal Dec [deg]
roll_nom	88.28934060487	Nominal Roll [deg]
revision	5	Processing version of data
ontime	29100.5	Sum of GTIs [s]
livetime	28986.826171875	Livetime [s]
ontime2	29100.5	Sum of GTIs [s]
ontime3	29100.5	Sum of GTIs [s]
ontime5	29100.5	Sum of GTIs [s]
ontime6	29100.5	Sum of GTIs [s]
ontime7	29100.5	Sum of GTIs [s]
ontime8	29100.5	Sum of GTIs [s]
l2events	434386	Number of level 2 events