

V&V Summary Report

L2 ASCDS Version : 10

Observation 53531 - L2 Version 1
Chandra X-Ray Center

L2 Processing Date : Aug 2 2013

See [axaff53531N001_VV001_vvref2.pdf](#) for the full report

V&V Scientist	Glenn Allen
V&V Date (YYYY-MM-DD)	2013.08.05
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	0.57560519438982

Comments

As noted below, some data, in addition to the bias data was not telemetered. However, I think that the event data as processed using the replacemnt/repaiored biases is OK.

Glenn

PLEASE NOTE: In addition to the problems with the bias files that are detailed below, the pixel threshold value drops to nearly zero between about 0.18 and 0.28 ks into the observation. In fact all of the data in the exposure-records files are missing during this interval for the four CCDs mentioned below. This period is also marked NOT GTI for the affected chips. I don't know the cause of this.

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Because of a trickle-bias anomaly, the bias maps for CCD chips 4, 6, and 8 were not included in the telemetry stream for transmission to the ground. In addition, only
https://icxc2.cfa.harvard.edu/soft/vvpipeline/53531N001/acisf53531N001_s

part of the bias map for CCD chip 5 was included in the telemetry stream. There was no problem in the acquisition and onboard processing of the event data. The bias maps were available to ACIS throughout the observation and were used for event thresholding. There is no negative impact on the science quality of the data. ==== The bias maps that were not available in telemetry have been replaced using scaled data from similar bias maps taken near in time and at similar focal plane temperature. Initial overclock values for each chip were not available in telemetry; they were calculated using the PHA values of the outer 8 pixels of each event island as a measure of the scaling factor required. ==== The portion of the bias map for CCD 5 that was included in telemetry was used, but the missing portion was replaced according to established procedure when a partial bias map is received. The procedure finds a bias map taken near in time and temperature, then scales the bias values to match the median adu value of the affected node(s).

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Donor bias file used: Obsid 53544

===Details===

Bias file for CCD=5 (FEP=2):

This bias file was 40% complete, so we treated it just like a standard bias repair case. We were able to use the median value of each node for the portion of the bias file that was telemetered, scaling a donor bias file to match that median value for the missing part. To improve the results, we added 1 adu for nodes 1 and 2 in the repaired area.

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Bias files for CCDs 4, 6, and 8 (FEPs 3-5):

Nothing was telemetered for these bias files, so we had to use the bias replacement algorithm that uses a donor file, scaled by the overclocking values of the lost bias file. Procedures for this work defined by Glenn Allen at MIT.

seq_num	 	Sequence number
obs_id	53531	Observation id
title	ACIS-456789 diagnostics	Proposal title
observer	CHANDRA engineering request/realtime commanding	Principal investig
object	 	Source name
dtcycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	0.0	Observer's specified target RA [deg]
dec_targ	0.0	Observer's specified target Dec [deg]
ra_nom	325.06235202656	Nominal RA [deg]
dec_nom	2.6519267414609	Nominal Dec [deg]
roll_nom	137.61445205346	Nominal Roll [deg]
revision	1	Processing version of data
ontime	575.60519438982	Sum of GTIs [s]
livetime	568.31653483062	Livetime [s]
ontime4	449.08305752277	Sum of GTIs [s]
ontime5	575.56415438652	Sum of GTIs [s]
ontime6	458.84721761942	Sum of GTIs [s]
ontime7	575.60519438982	Sum of GTIs [s]
ontime8	471.72928768396	Sum of GTIs [s]
ontime9	465.45232856274	Sum of GTIs [s]
l2events	14544	Number of level 2 events