V&V Summary Report
L2 ASCDS Version : 10.6

Observation 18934 - L2 Version 1
Chandra X-Ray Center

L2 Processing Date : Nov 26 2017

See axaff18934N001_VV003_vvref2.pdf for the full report

V&V Scientist	Beth Sundheim
V&V Date (YYYY-MM-DD)	2018.03.07
V&V Edition	3
V&V Disposition and Status	OK
V&V Charge Time	80.078457620263

Comments

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A spatial region of the original bias map for CCD = 0 suffered from
anomalously high data values. Pixels in the event data that were
bias-corrected by one of the original affected bias pixels may have an
apparent energy shift. While the change in energy is expected to be
small (~20 eV), it depends on many parameters that have not yet been
fully explored for this bias anomaly. In this case, the bias map for
CCD=0 could not be improved because no suitable data at a compatible
temperature and time range are available to use as replacement values.
The bias map used in this processing is the original bias map
telemetered with the observation.
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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., -114.0 C for ACIS-I and -112.0 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:
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http://asc.harvard.edu/cal/Acis/Cal_prods/Gain_and_Spectral_Resolution/ACIS_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 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	201127	Sequence number
obs_id	18934	Observation id
title	Chandra/ACIS-I observations of W3-AFGL333: Studying Feedback from Massive stars on Circumstellar Disk Evolution	Proposal title
observer	Jinyoung Kim	Principal investigator
object	AFGL333	Source name
dtycycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	37.103333	Observer's specified target RA [deg]
dec_targ	61.525361	Observer's specified target Dec [deg]
ra_nom	37.092659793251	Nominal RA [deg]
dec_nom	61.516634296997	Nominal Dec [deg]
roll_nom	212.89422648111	Nominal Roll [deg]
revision	1	Processing version of data
ontime	80078.457620263	Sum of GTIs [s]
livetime	79032.173618552	Livetime [s]
ontime0	80072.05246985	Sum of GTIs [s]
ontime1	80078.375540257	Sum of GTIs [s]
ontime2	80078.416580319	Sum of GTIs [s]
ontime3	80078.457620263	Sum of GTIs [s]
l2events	218573	Number of level 2 events