

V&V Summary Report

L2 ASCDS Version : 10.4.1

Observation 17311 - L2 Version 1
Chandra X-Ray Center

L2 Processing Date : Sep 6 2015

See [axaff17311N001_VV002_vvref2.pdf](#) for the full report

V&V Scientist	Beth Sundheim
V&V Date (YYYY-MM-DD)	2018.03.06
V&V Edition	2
V&V Disposition and Status	OK
V&V Charge Time	49.404800736189

Comments

Roll constraint met.

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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:

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 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	901169	Sequence number
obs_id	17311	Observation id
title	Black Hole Fingerprints from Cosmic Dawn to Cosmic Noon	Proposal t
observer	Prof. Guenther Hasinger	Principal investigator
object	UDS	Source name
dtcycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	34.568294	Observer's specified target RA [deg]
dec_targ	-5.094942	Observer's specified target Dec [deg]
ra_nom	34.564253377715	Nominal RA [deg]
dec_nom	-5.0857602020356	Nominal Dec [deg]
roll_nom	94.65703056334	Nominal Roll [deg]
revision	1	Processing version of data
ontime	49404.800736189	Sum of GTIs [s]
livetime	48779.207401268	Livetime [s]
ontime0	49404.709155679	Sum of GTIs [s]
ontime1	49404.750195622	Sum of GTIs [s]
ontime2	49404.791235685	Sum of GTIs [s]
ontime3	49404.800736189	Sum of GTIs [s]
ontime6	49401.559665918	Sum of GTIs [s]
ontime7	49404.800736189	Sum of GTIs [s]
l2events	270801	Number of level 2 events

