

V&V Summary Report

L2 ASCDS Version : 8.4.3.1

Observation 14378 - L2 Version 2
Chandra X-Ray Center

L2 Processing Date : Feb 29 2012

See [axaff14378N002_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	25.037775033236

Comments

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/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	401301	Sequence number
obs_id	14378	Observation id
title	Jets, hot spots and cocoon of the most powerful microquasar	Propos
observer	Dr Roberto Soria	Principal investigator
object	S26 in NGC 7793	Source name
dtcycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	359.499583	Observer's specified target RA [deg]
dec_targ	-32.555806	Observer's specified target Dec [deg]
ra_nom	359.50305242398	Nominal RA [deg]
dec_nom	-32.556620047782	Nominal Dec [deg]
roll_nom	286.65848673567	Nominal Roll [deg]
revision	2	Processing version of data
ontime	25037.775031388	Sum of GTIs [s]
livetime	24710.638068061	Livetime [s]
ontime2	25037.610871375	Sum of GTIs [s]
ontime3	25031.411020756	Sum of GTIs [s]
ontime6	25037.733991385	Sum of GTIs [s]
ontime7	25037.775031388	Sum of GTIs [s]
ontime8	25037.651911378	Sum of GTIs [s]
l2events	149096	Number of level 2 events

