

V&V Summary Report

L2 ASCDS Version : 10.7.1

Observation 20499 - L2 Version 1
Chandra X-Ray Center

L2 Processing Date : Apr 25 2019

See axaff20499N001_VV001_vvref2.pdf for the full report

V&V Scientist	Beth Sundheim
V&V Date (YYYY-MM-DD)	2019.04.25
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	30.05007087791

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	703600	Sequence number
obs_id	20499	Observation id
title	Is an Accreting Binary Black Hole Precursor Driving the Ionisation Structure and its Kinematics in the Carafe?	Proposal title
observer	Prajval Shastri	Principal investigator
object	ESO202-G023	Source name
dtcycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	67.0	Observer's specified target RA [deg]
dec_targ	-47.912778	Observer's specified target Dec [deg]
ra_nom	67.000553065719	Nominal RA [deg]
dec_nom	-47.917270419925	Nominal Dec [deg]
roll_nom	217.2066729858	Nominal Roll [deg]
revision	1	Processing version of data
ontime	30050.07087791	Sum of GTIs [s]
livetime	29657.444579349	Livetime [s]
ontime3	30049.947757959	Sum of GTIs [s]
ontime5	30050.029837966	Sum of GTIs [s]
ontime6	30049.988797903	Sum of GTIs [s]
ontime7	30050.07087791	Sum of GTIs [s]
ontime8	30049.906717896	Sum of GTIs [s]
l2events	369518	Number of level 2 events

