

V&V Summary Report

L2 ASCDS Version : 10.7.1

Observation 21412 - L2 Version 1
Chandra X-Ray Center

L2 Processing Date : May 3 2019

See [axaff21412N001_VV001_vvref2.pdf](#) for the full report

V&V Scientist	Beth Sundheim
V&V Date (YYYY-MM-DD)	2019.05.05
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	17.064641243458

Comments

Joint proposal with NRAO and NOAO.

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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	703710	Sequence number
obs_id	21412	Observation id
title	Changing-Look Quasars: Radical Changes in Accretion Rate?	Proposal
observer	Paul Green	Principal investigator
object	SDSS J1226-0011	Source name
dtcycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	186.66112	Observer's specified target RA [deg]
dec_targ	-0.18725	Observer's specified target Dec [deg]
ra_nom	186.66342036861	Nominal RA [deg]
dec_nom	-0.19103600240693	Nominal Dec [deg]
roll_nom	243.15664233058	Nominal Roll [deg]
revision	1	Processing version of data
ontime	17064.641243458	Sum of GTIs [s]
livetime	16841.679142806	Livetime [s]
ontime2	17064.518123507	Sum of GTIs [s]
ontime3	17064.559163451	Sum of GTIs [s]
ontime6	17064.600203514	Sum of GTIs [s]
ontime7	17064.641243458	Sum of GTIs [s]
l2events	93795	Number of level 2 events

