

V&V Summary Report

L2 ASCDS Version : 10.7.1

Observation 21322 - L2 Version 1
Chandra X-Ray Center

L2 Processing Date : Mar 22 2019

See [axaff21322N001_VV001_vvref2.pdf](#) for the full report

V&V Scientist	Beth Sundheim
V&V Date (YYYY-MM-DD)	2019.03.22
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	36.108183650494

Comments

Joint proposal with HST and NRAO.

One optional chip was dropped.

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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	503094	Sequence number
obs_id	21322	Observation id
title	Late-time monitoring of GW170817 across the electromagnetic spectrum	
observer	Raffaella Margutti	Principal investigator
object	GW170817	Source name
dtcycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	197.450417	Observer's specified target RA [deg]
dec_targ	-23.381472	Observer's specified target Dec [deg]
ra_nom	197.45048837564	Nominal RA [deg]
dec_nom	-23.377142969801	Nominal Dec [deg]
roll_nom	30.156673682983	Nominal Roll [deg]
revision	1	Processing version of data
ontime	36108.183650494	Sum of GTIs [s]
livetime	35636.403648642	Livetime [s]
ontime5	36108.14261055	Sum of GTIs [s]
ontime6	36104.960480213	Sum of GTIs [s]
ontime7	36108.183650494	Sum of GTIs [s]
l2events	379436	Number of level 2 events

