V&V Summary Report
L2 ASCDS Version : 10.7.1

Observation 22160 - L2 Version 1
Chandra X-Ray Center

L2 Processing Date : Mar 30 2019

See axaff22160N001_VV001_vvref2.pdf for the full report

V&V Scientist	Joy Nichols
V&V Date (YYYY-MM-DD)	2019.04.01
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	7.0700004816055

Comments

```
The focal plane temperature is warmer than -112.0 C during the interval
670302975.10 - 670306574.50 (MET s) of this observation. This
temperature is the upper limit of the verified ACIS calibration for the
back-illuminated chips.
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	703706	Sequence number
obs_id	22160	Observation id
title	Chandra Observations of the Young Gamma-Ray AGN TXS 0128+554	Propo
observer	Matthew Lister	Principal investigator
object	TXS 0128+554	Source name
dtycycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	22.8075	Observer's specified target RA [deg]
dec_targ	55.753611	Observer's specified target Dec [deg]
ra_nom	22.810388076357	Nominal RA [deg]
dec_nom	55.756432211593	Nominal Dec [deg]
roll_nom	347.15426043649	Nominal Roll [deg]
revision	1	Processing version of data
ontime	7070.0004816055	Sum of GTIs [s]
livetime	6678.4523603636	Livetime [s]
ontime2	7070.0004816055	Sum of GTIs [s]
ontime3	7070.0004816055	Sum of GTIs [s]
ontime6	7070.0004816055	Sum of GTIs [s]
ontime7	7070.0004816055	Sum of GTIs [s]
ontime8	7070.0004816055	Sum of GTIs [s]
l2events	7721	Number of level 2 events