

V&V Summary Report

L2 ASCDS Version : 8.4.5

Observation 2743 - L2 Version 4
Chandra X-Ray Center

L2 Processing Date : Oct 5 2012

See axaff02743N002_VV001_vvref2.pdf for the full report

V&V Scientist	Joy Nichols
V&V Date (YYYY-MM-DD)	2012.10.10
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	5.231

Comments

Zeroth order piled up and cratered. Standard data processing software did not correctly locate the zeroth order due to pileup. Manual intervention was used to input the correct sky coordinates (x=4105.07, y=4026.02) into the *src1a.fits file table. These corrected coordinates were determined using a software tool developed by CXC called findzero, which is expected to be released in CIAO as tg_findzo (currently in ISIS as findzo). The tool calculates the point of intersection of the readout streak and the meg arm. The zeroth order source position determined by the standard pipeline processing using the tool tgdetect was not used in this processing. The newly determined zeroth order coordinates have been placed in the *src1a.fits file, replacing the coordinates determined by tgdetect. Note that these corrected coordinates of the zeroth order cannot be reproduced by running tgdetect on the data.

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The spectrum is clearly visible in an image of bad events. This is likely due to pileup which causes grade migration into bad event grades.

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The charge time should be based on CCD_ID=4 (S0), which had the fewest dropped frame. Original charge time has been retained. Other chips have dropped frames due to telemetry saturation by the zeroth order (no

mitigating zero order sample-cycle or exclusion region was requested) and dispersed spectra. Their effective exposures range from 1.602-4.643 ks.

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For analysis of orders 3 and above, the data should be re-extracted using custom order-sorting boundaries (osort_lo, osort_hi in tg_resolve_events) to bypass the ccd response. For high orders, residual calibration uncertainties in the response are magnified, and MEG 3rd orders are clipped in PHA-space somewhat near the ends of the spectrum.

seq_num	400223	Sequence number
obs_id	2743	Observation id
title	PHASE RESOLVED HIGH ENERGY RESOLUTION SPECTROSCOPY OF THE BLACK HOLE X-RAY BAINARY CYGNUS X-1	Proposal title
observer	Dr. Shu Zhang	Principal investigator
object	CYG X-1	Source name
dtcycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	299.590417	Observer's specified target RA [deg]
dec_targ	35.201611	Observer's specified target Dec [deg]
ra_nom	299.59176268742	Nominal RA [deg]
dec_nom	35.211250366095	Nominal Dec [deg]
roll_nom	93.367001896581	Nominal Roll [deg]
revision	4	Processing version of data
ontime	2481.1609337926	Sum of GTIs [s]
livetime	2422.6747159442	Livetime [s]
ontime4	4643.6722413301	Sum of GTIs [s]
ontime5	4490.4653247297	Sum of GTIs [s]
ontime6	1601.8624467254	Sum of GTIs [s]
ontime7	2481.1609337926	Sum of GTIs [s]
ontime8	1949.9638735652	Sum of GTIs [s]
ontime9	4236.2780794799	Sum of GTIs [s]
l2events	1589081	Number of level 2 events

