

V&V Summary Report

L2 ASCDS Version : 8.4.5

Observation 2742 - L2 Version 4
Chandra X-Ray Center

L2 Processing Date : Oct 1 2012

See axaff02742N003_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	4.752

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=4168.1, y=4089.83) 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.

===

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.

===

The charge time is based on CCD_ID=4 (S0), which had the fewest dropped frames. 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 1.465-4.142 ks.

===

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	400222	Sequence number
obs_id	2742	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	299.60231796869	Nominal RA [deg]
dec_nom	35.202531006003	Nominal Dec [deg]
roll_nom	15.235563222379	Nominal Roll [deg]
revision	4	Processing version of data
ontime	1917.8151067048	Sum of GTIs [s]
lifetime	1872.6081430629	Lifetime [s]
ontime4	4752.1376573592	Sum of GTIs [s]
ontime5	4133.7813646942	Sum of GTIs [s]
ontime6	1465.2273468226	Sum of GTIs [s]
ontime7	1917.8151067048	Sum of GTIs [s]
ontime8	1873.9452592283	Sum of GTIs [s]
ontime9	4142.4842921942	Sum of GTIs [s]
l2events	1691643	Number of level 2 events

