

# V&V Summary Report

## L2 ASCDS Version : 8.4.3

Observation 12464 - L2 Version 2  
Chandra X-Ray Center

L2 Processing Date : Feb 20 2012

See [axaff12464N002\\_VV001\\_vvref2.pdf](#) for the full report

V&V Scientist	Jen Lauer
V&V Date (YYYY-MM-DD)	2012.02.22
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	11.372799

## Comments

The livetime for each chip is about 3.9 ks instead of 12 ks for each chip because the use of a 0.4 s frame time for the selection of chips and rows used during the observation is shorter than the time it takes to read out one frame of data. The formula in section 6.12.1 of the POG: [http://asc.harvard.edu/proposer/POG/html/chap6.html#tth\\_sEc6.12.1](http://asc.harvard.edu/proposer/POG/html/chap6.html#tth_sEc6.12.1) indicates that the frame time must be at least 0.7 s to avoid 'flushing' the detector before each frame of data is collected. The time required to flush the detector is specified on p. 120 of the ACIS Science Instrument Software User's Guide: <http://acis.mit.edu/swuserA/swuser.pdf> Events that occur during such a flush are discarded onboard. The flush time is effectively 'dead time.' For this reason, most of the 12 ks of the observation was spent flushing the detectors instead of collecting data. Had the frame time been 0.7 s or longer, or had only one chip been used, there would have been about 11.37 ks of exposure instead of only about 3.9 ks. ===== The sub-array frame is 0.4414 seconds, followed by a 0.72424 flush frame, so the user is getting:  $0.4/(0.4414+0.72424)$  as their fractional efficiency.

seq_num	401205	Sequence number
obs_id	12464	Observation id
title	First X-ray Observations of Four New Fermi-Associated Black-Widow Pulsars	Proposal title
observer	Prof. Maura McLaughlin	Principal investigator
object	J0023+09	Source name
dtcycle	0	&#160
cycle	P	events from which exps? Prim/Second/Both
ra_targ	5.825	Observer's specified target RA [deg]
dec_targ	9.375	Observer's specified target Dec [deg]
ra_nom	5.8219275763841	Nominal RA [deg]
dec_nom	9.3749571939478	Nominal Dec [deg]
roll_nom	122.85411130646	Nominal Roll [deg]
revision	2	Processing version of data
ontime	11372.799322128	Sum of GTIs [s]
liveltime	3903.8855286724	Livetime [s]
ontime4	11372.799322128	Sum of GTIs [s]
ontime5	11372.799322128	Sum of GTIs [s]
ontime6	11372.799322128	Sum of GTIs [s]
ontime7	11372.799322128	Sum of GTIs [s]
ontime8	11372.799322128	Sum of GTIs [s]
ontime9	11372.799322128	Sum of GTIs [s]
l2events	7750	Number of level 2 events

