

# V&V Reference Report

## L2 ASCDS Version : 8.4.3

Observation 55705 - L2 Version 3  
Chandra X-Ray Center

L2 Processing Date : Feb 2 2012

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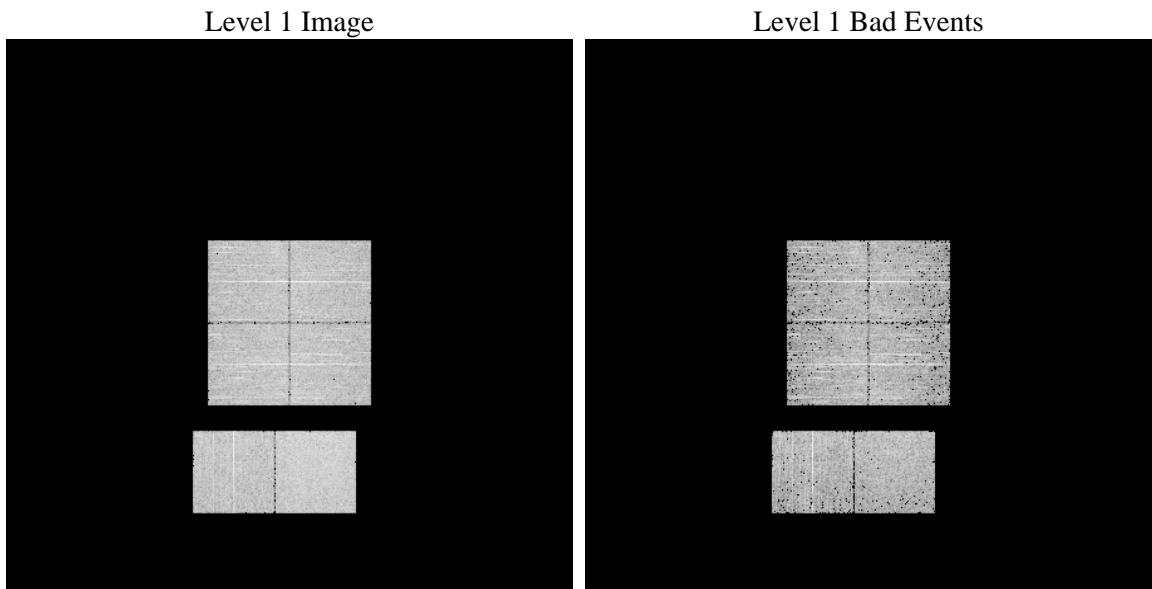
# 1 Front

seq_num	&#160	Sequence number
obs_id	55705	Observation id
title	ACIS-012367 diagnostics	Proposal title
observer	CHANDRA engineering request/realtime commanding	Principal investig
object	&#160	Source name
dtcycle	0	&#160
cycle	P	events from which exps? Prim/Second/Both
ra_targ	0.0	Observer's specified target RA [deg]
dec_targ	0.0	Observer's specified target Dec [deg]
ra_nom	135.01356877444	Nominal RA [deg]
dec_nom	-1.474710940095	Nominal Dec [deg]
roll_nom	28.966647269762	Nominal Roll [deg]
revision	3	Processing version of data
ontime	3276.7999878526	Sum of GTIs [s]
livetime	3235.3071733543	Livetime [s]
ontime0	3276.7999878526	Sum of GTIs [s]
ontime1	3276.7999878526	Sum of GTIs [s]
ontime2	3276.7999878526	Sum of GTIs [s]
ontime3	3276.7999878526	Sum of GTIs [s]
ontime6	3276.7999878526	Sum of GTIs [s]
ontime7	3276.7999878526	Sum of GTIs [s]
l2events	130133	Number of level 2 events

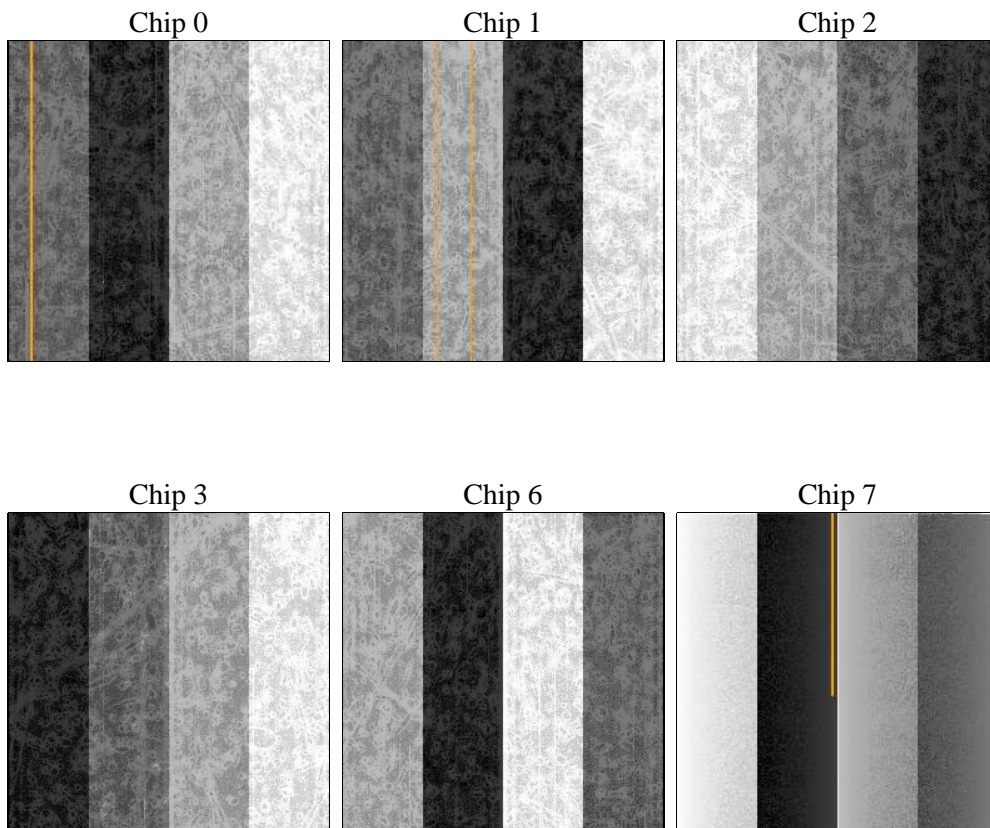
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

obi_num	0	Obi number	sched_exp_time	0.0	[s] Scheduled observation exposure time
ascdsver	8.4.3	Processing system revision	ontime	3276.7999878526	Sum of GTIs [s]
caldsver	4.4.7	&#160	ontime0	3276.7999878526	Sum of GTIs [s]
date	2012-02-03T00:07:59	Date and time of file creation	ontime1	3276.7999878526	Sum of GTIs [s]
revision	3	Processing version of data	ontime2	3276.7999878526	Sum of GTIs [s]
			ontime3	3276.7999878526	Sum of GTIs [s]
			ontime6	3276.7999878526	Sum of GTIs [s]
			ontime7	3276.7999878526	Sum of GTIs [s]
			l1events	293679	Number of level 1 events

### 2.1.4 Events

	ccd 0	ccd 1	ccd 2	ccd 3	ccd 6	ccd 7		ccd 0	ccd 1	ccd 2	ccd 3	ccd 6	ccd 7
level 1 events	45965	45385	47170	47030	48203	59926	grade 0 events	10455	9103	10791	10951	9045	5190
rejected events	25171	24703	26578	26370	26840	26310		22%	20%	22%	23%	18%	8%
rejected %	54%	54%	56%	56%	55%	43%	grade 1 events	55	43	75	77	48	47
								0%	0%	0%	0%	0%	0%
							grade 2 events	4323	5487	3780	3781	5980	7751
								9%	12%	8%	8%	12%	12%
							grade 3 events	1356	1259	1468	1379	1122	2714
								2%	2%	3%	2%	2%	4%
							grade 4 events	1332	1212	1375	1412	1174	2580
								2%	2%	2%	3%	2%	4%
							grade 5 events	1316	1269	1240	1451	1301	3592
								2%	2%	2%	3%	2%	5%
							grade 6 events	3338	3647	3205	3162	4065	15424
								7%	8%	6%	6%	8%	25%
							grade 7 events	23790	23365	25236	24817	25468	22628
								51%	51%	53%	52%	52%	37%

## 2.2 Compared Parameters

Parameter	Planned	Actual	Parameter	Planned	Actual
Instrument	ACIS	ACIS	Obspar format version number	7	7
Detector	ACIS-012367	ACIS-012367	Obspar file type	PREDICTED	ACTUAL
Grating	NONE	NONE	Obspar update status	NONE	UPDATED
Data mode	FAINT	FAINT	Number of optional ACIS chips dropped	0	0
Observation mode	SECONDARY	SECONDARY	On-chip summing requested	N	N
[deg] Pointing RA	0	135.0135687744368	Subarray requested	NONE	NONE
[deg] Pointing Dec	0	-1.47471094009503	Alternating exposures requested	N	N
[deg] Pointing Roll	0.0	28.96664726976225	[s] Primary exposure time	3.2	3.2
[mm] SIM focus pos	-1.429586	-1.428180813131781			
[mm] SIM defocus	0.1037507710433287	0.1051558262725154			
[mm] SIM translation stage pos	250.455976	250.466033080201			
[mm] SIM translation stage offset	0	-0.01005468664627074			
[s] Observation start time (MET)	411956339.749429	411956338.72443			
Observation start date	2011-01-21T00:19:00	2011-01-21T00:18:58			
[s] Observation end time (MET)	411961518.049696	411961517.0247			
Observation end date	2011-01-21T01:45:18	2011-01-21T01:45:17			
Read mode	TIMED	TIMED			

## 2.3 Star Slots

## 2.4 FID Slots

# A Summary

## A.1 Status

V&V Scientist	Jen Lauer
V&V Date (YYYY-MM-DD)	2012.02.06
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	3.2767999878526

## A.2 Comments

The data for this observation have been processed using the 'EDSER' sub-pixel event-repositioning algorithm of Li et al. (2004, ApJ, 610, 1204). Small-scale features should become sharper for sources near the aim point. The improvement will be less noticeable for off-axis sources where the size of the point-spread function is comparable to or larger than the size of an ACIS pixel. To take full advantage of the improvement, images should be binned on spatial scales smaller than the size of an ACIS pixel. Note that, at present, the point-spread function has not been calibrated for data to which the EDSER algorithm has been applied. If dither was disabled for the observation, then the algorithm can introduce artificial aliasing effects on spatial scales smaller than a pixel. If you would prefer to use no sub-pixel adjustment or to apply a coordinate randomization, then use `acis_process_events` to reprocess the data with the parameter `pix_adj=NONE` or `RANDOMIZE`, respectively.

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A spatial region of the original bias map for CCD = 3 suffered from anomalously high data values. Pixels in the event data that were bias-corrected by one of the original affected bias pixels may have an apparent energy shift. While the change in energy is expected to be small (~20 eV), it depends on many parameters that have not yet been fully explored for this bias anomaly. The bias map for CCD = 3 has been reconstructed for this processing to remove this anomaly using scaled data from a comparable bias map from another observation. The pixels affected by the anomaly are bounded by chip coordinates:  
(422,113),(437,113),(437,715),(422,708)