

# V&V Reference Report

## L2 ASCDS Version : 8.4.5

Observation 60224 - L2 Version 3  
Chandra X-Ray Center

L2 Processing Date : Dec 1 2012

## Contents

|          |                               |          |
|----------|-------------------------------|----------|
| <b>1</b> | <b>Front</b>                  | <b>2</b> |
| <b>2</b> | <b>OBI Primary</b>            | <b>3</b> |
| 2.1      | OBI . . . . .                 | 3        |
| 2.1.1    | Images . . . . .              | 3        |
| 2.1.2    | Bias . . . . .                | 3        |
| 2.1.3    | Parameters . . . . .          | 4        |
| 2.1.4    | Events . . . . .              | 4        |
| 2.2      | Compared Parameters . . . . . | 5        |
| 2.3      | Star Slots . . . . .          | 6        |
| 2.4      | FID Slots . . . . .           | 6        |
| <b>3</b> | <b>OBI Secondary</b>          | <b>6</b> |
| 3.1      | OBI . . . . .                 | 6        |
| 3.1.1    | Images . . . . .              | 6        |
| 3.1.2    | Bias . . . . .                | 6        |
| 3.1.3    | Parameters . . . . .          | 7        |
| 3.1.4    | Events . . . . .              | 7        |
| <b>A</b> | <b>Summary</b>                | <b>8</b> |
| A.1      | Status . . . . .              | 8        |
| A.2      | Comments . . . . .            | 8        |

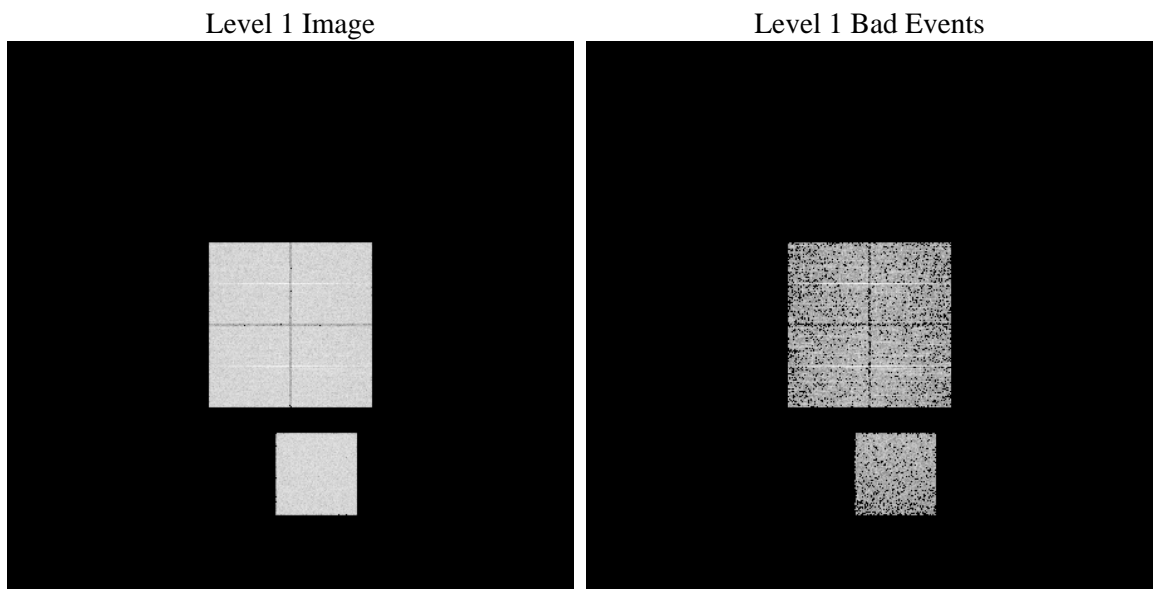
# 1 Front

|          |   |  |
|----------|---|--|
| seq_num  | &#160   | Sequence number                                    |
| obs_id   | 60224   | Observation id                                     |
| title    | ACIS-01237 diagnostics                          | Proposal title                                     |
| observer | CHANDRA engineering request/realtime commanding | Principal investig                                 |
| object   | &#160   | Source name  |
| dtcycle  | 0   | &#160  |
| cycle    | P   | events are from which exps? P[rimary]<br>S[econdar |
| ra_targ  | 0.0   | Observer's specified target RA [deg]               |
| dec_targ | 0.0   | Observer's specified target Dec [deg]              |
| ra_nom   | 325.97090774272                                 | Nominal RA [deg]                                   |
| dec_nom  | 39.017538824255                                 | Nominal Dec [deg]                                  |
| roll_nom | 109.35025954654                                 | Nominal Roll [deg]                                 |
| revision | 3   | Processing version of data                         |
| ontime   | 3823.1124048531                                 | Sum of GTIs [s]                                    |
| livetime | 1685.6043151847                                 | Livetime [s]                                       |
| ontime0  | 3823.1124247909                                 | Sum of GTIs [s]                                    |
| ontime1  | 3823.1124048531                                 | Sum of GTIs [s]                                    |
| ontime2  | 3823.1124546826                                 | Sum of GTIs [s]                                    |
| ontime3  | 3823.1124247909                                 | Sum of GTIs [s]                                    |
| ontime7  | 3823.1124048531                                 | Sum of GTIs [s]                                    |
| l2events | 258041  | Number of level 2 events                           |

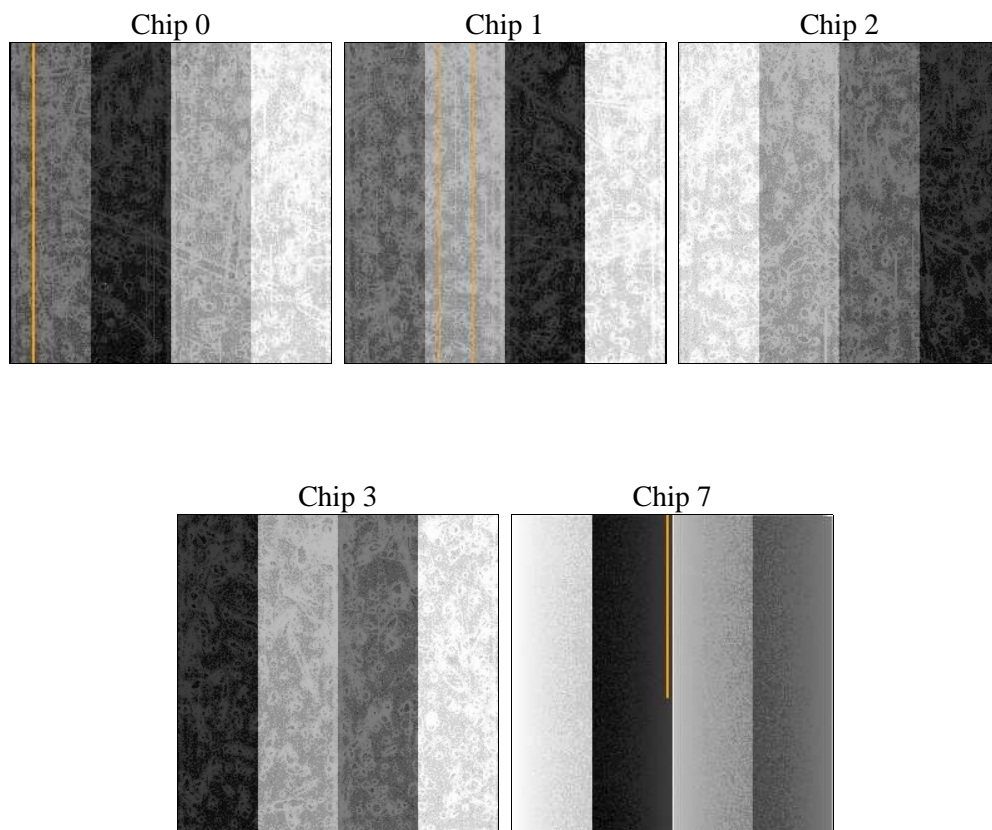
## 2 OBI Primary

### 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 | 8.4.5               | Processing system revision     | ontime         | 3823.1124048531 | Sum of GTIs [s]                         |
| caldsver | 4.5.2               | &#160                          | ontime0        | 3823.1124247909 | Sum of GTIs [s]                         |
| date     | 2012-12-01T20:36:01 | Date and time of file creation | ontime1        | 3823.1124048531 | Sum of GTIs [s]                         |
| revision | 3                   | Processing version of data     | ontime2        | 3823.1124546826 | Sum of GTIs [s]                         |
|          |                     |                                | ontime3        | 3823.1124247909 | Sum of GTIs [s]                         |
|          |                     |                                | ontime7        | 3823.1124048531 | Sum of GTIs [s]                         |
|          |                     |                                | l1events       | 336837          | Number of level 1 events                |

### 2.1.4 Events

|                 | ccd 0 | ccd 1 | ccd 2 | ccd 3 | ccd 7 |
|-----------------|-------|-------|-------|-------|-------|
| level 1 events  | 65649 | 66235 | 67821 | 68253 | 68879 |
| rejected events | 12806 | 12740 | 14475 | 14346 | 10912 |
| rejected %      | 19%   | 19%   | 21%   | 21%   | 15%   |

|                | ccd 0 | ccd 1 | ccd 2 | ccd 3 | ccd 7 |
|----------------|-------|-------|-------|-------|-------|
| grade 0 events | 29367 | 29427 | 30026 | 30288 | 14417 |
|                | 44%   | 44%   | 44%   | 44%   | 20%   |
| grade 1 events | 146   | 151   | 169   | 158   | 48    |
|                | 0%    | 0%    | 0%    | 0%    | 0%    |
| grade 2 events | 9138  | 9580  | 9001  | 9248  | 12832 |
|                | 13%   | 14%   | 13%   | 13%   | 18%   |
| grade 3 events | 3409  | 3354  | 3549  | 3559  | 5931  |
|                | 5%    | 5%    | 5%    | 5%    | 8%    |
| grade 4 events | 3417  | 3459  | 3491  | 3580  | 5789  |
|                | 5%    | 5%    | 5%    | 5%    | 8%    |
| grade 5 events | 771   | 822   | 774   | 864   | 1971  |
|                | 1%    | 1%    | 1%    | 1%    | 2%    |
| grade 6 events | 7512  | 7675  | 7279  | 7232  | 18998 |
|                | 11%   | 11%   | 10%   | 10%   | 27%   |
| grade 7 events | 11889 | 11767 | 13532 | 13324 | 8893  |
|                | 18%   | 17%   | 19%   | 19%   | 12%   |

## 2.2 Compared Parameters

| Parameter                         | Planned             | Actual               | Parameter                          | Planned   | Actual  |
|-----------------------------------|---------------------|----------------------|------------------------------------|-----------|---------|
| Instrument                        | ACIS                | ACIS                 | Obspar format version number       | 7         | 7       |
| Detector                          | ACIS-01237          | ACIS-01237           | Obspar file type                   | PREDICTED | ACTUAL  |
| Grating                           | NONE                | NONE                 | Obspar update status               | NONE      | UPDATED |
| Data mode                         | FAINT               | FAINT                | On-chip summing requested          | N         | N       |
| Observation mode                  | SECONDARY           | SECONDARY            | Subarray requested                 | NONE      | NONE    |
| [deg] Pointing RA                 | 0                   | 325.970907742725     | Alternating exposures requested    | N         | Y       |
| [deg] Pointing Dec                | 0                   | 39.01753882425468    | [s] Primary exposure time          | 0.000000  | 2.5     |
| [deg] Pointing Roll               | 0.0                 | 109.3502595465383    | [s] <b>Secondary exposure time</b> | N/A       | 3.2     |
| [mm] SIM focus pos                | -0.782348           | -0.7809083437167272  | <b>Duty cycle</b>                  | N/A       | 1       |
| [mm] SIM defocus                  | 0                   | 0.7524282956875696   |                                    |           |         |
| [mm] SIM translation stage pos    | -233.592463         | 250.466033080201     |                                    |           |         |
| [mm] SIM translation stage offset | 0                   | -0.01005468664627074 |                                    |           |         |
| [s] Observation start time (MET)  | 201728283.030533    | 201728282.00551      |                                    |           |         |
| Observation start date            | 2004-05-23T19:38:03 | 2004-05-23T19:38:02  |                                    |           |         |
| [s] Observation end time (MET)    | 201741228.781106    | 201741227.75608      |                                    |           |         |
| Observation end date              | 2004-05-23T23:13:49 | 2004-05-23T23:13:47  |                                    |           |         |
| Read mode                         | TIMED               | TIMED                |                                    |           |         |

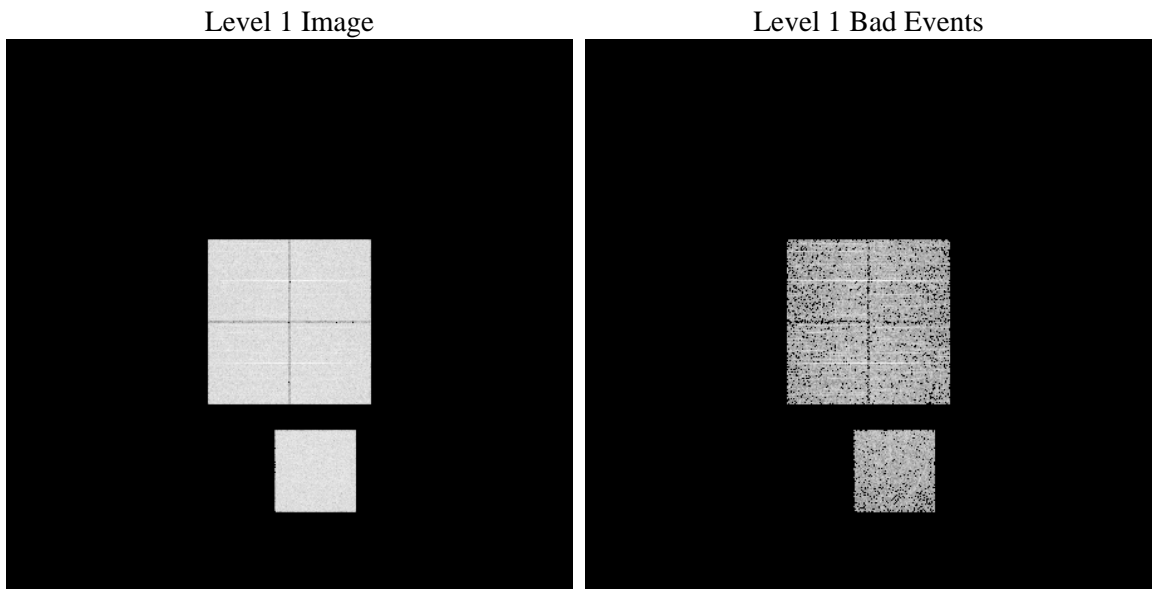
## 2.3 Star Slots

## 2.4 FID Slots

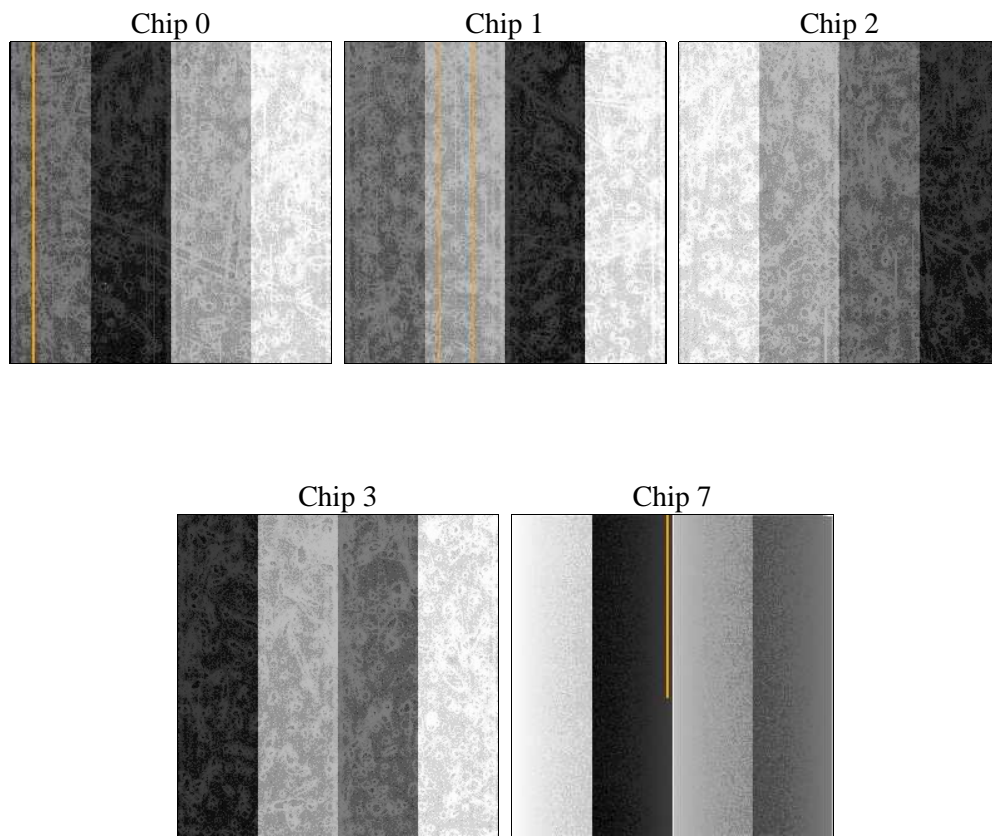
# 3 OBI Secondary

## 3.1 OBI

### 3.1.1 Images



### 3.1.2 Bias



### 3.1.3 Parameters

|          |                     |                                |                |                 |   |
|----------|---------------------|--------------------------------|----------------|-----------------|---|
| obi_num  | 0                   | Obi number                     | sched_exp_time | 0.0             | [s] Scheduled observation exposure time |
| ascdsver | 8.4.5               | Processing system revision     | ontime         | 2187.6614786088 | Sum of GTIs [s]                         |
| caldbver | 4.5.2               | &#160                          | ontime0        | 2187.6614786088 | Sum of GTIs [s]                         |
| date     | 2012-12-01T20:36:24 | Date and time of file creation | ontime1        | 2187.6614686251 | Sum of GTIs [s]                         |
| revision | 3                   | Processing version of data     | ontime2        | 2187.6614686251 | Sum of GTIs [s]                         |
|          |                     |                                | ontime3        | 2187.6614686251 | Sum of GTIs [s]                         |
|          |                     |                                | ontime7        | 2187.6614786088 | Sum of GTIs [s]                         |
|          |                     |                                | l1events       | 420417          | Number of level 1 events                |

### 3.1.4 Events

|                 | <b>ccd 0</b> | <b>ccd 1</b> | <b>ccd 2</b> | <b>ccd 3</b> | <b>ccd 7</b> |
|-----------------|--------------|--------------|--------------|--------------|--------------|
| level 1 events  | 82631        | 82449        | 84350        | 84255        | 86732        |
| rejected events | 15489        | 15174        | 16501        | 16461        | 12993        |
| rejected %      | 18%          | 18%          | 19%          | 19%          | 14%          |

|                | <b>ccd 0</b> | <b>ccd 1</b> | <b>ccd 2</b> | <b>ccd 3</b> | <b>ccd 7</b> |
|----------------|--------------|--------------|--------------|--------------|--------------|
| grade 0 events | 37151        | 36838        | 38066        | 37980        | 17660        |
|                | 44%          | 44%          | 45%          | 45%          | 20%          |
| grade 1 events | 194          | 177          | 214          | 220          | 57           |
|                | 0%           | 0%           | 0%           | 0%           | 0%           |
| grade 2 events | 11622        | 11875        | 11516        | 11705        | 16248        |
|                | 14%          | 14%          | 13%          | 13%          | 18%          |
| grade 3 events | 4365         | 4191         | 4428         | 4548         | 7317         |
|                | 5%           | 5%           | 5%           | 5%           | 8%           |
| grade 4 events | 4260         | 4430         | 4413         | 4405         | 7418         |
|                | 5%           | 5%           | 5%           | 5%           | 8%           |
| grade 5 events | 991          | 926          | 938          | 1065         | 2350         |
|                | 1%           | 1%           | 1%           | 1%           | 2%           |
| grade 6 events | 9848         | 10036        | 9529         | 9343         | 25196        |
|                | 11%          | 12%          | 11%          | 11%          | 29%          |
| grade 7 events | 14200        | 13976        | 15246        | 14989        | 10486        |
|                | 17%          | 16%          | 18%          | 17%          | 12%          |



## A Summary

### A.1 Status

|                            |                 |
|----------------------------|-----------------|
| V&V Scientist              | Jen Lauer       |
| V&V Date (YYYY-MM-DD)      | 2012.12.17      |
| V&V Edition                | 1               |
| V&V Disposition and Status | OK              |
| V&V Charge Time            | 6.0107738834619 |

### A.2 Comments

Interleave mode.