

# V&V Reference Report

## L2 ASCDS Version : 10.2.4

Observation 16351 - L2 Version 1  
Chandra X-Ray Center

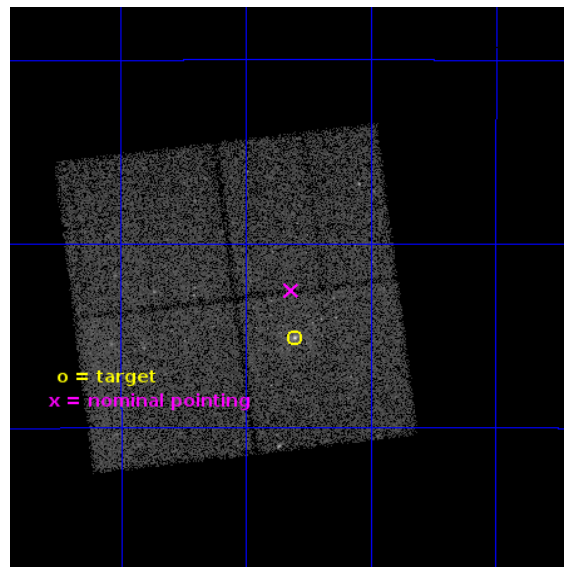
L2 Processing Date : Aug 21 2014

## Contents

|          |                               |           |
|----------|-------------------------------|-----------|
| <b>1</b> | <b>Front</b>                  | <b>2</b>  |
| <b>2</b> | <b>OBI</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      | Aspect . . . . .              | 6         |
| 2.4      | Star Slots . . . . .          | 9         |
| 2.4.1    | Slot 3 . . . . .              | 9         |
| 2.4.2    | Slot 4 . . . . .              | 10        |
| 2.4.3    | Slot 5 . . . . .              | 11        |
| 2.4.4    | Slot 6 . . . . .              | 12        |
| 2.4.5    | Slot 7 . . . . .              | 13        |
| 2.5      | FID Slots . . . . .           | 14        |
| 2.5.1    | Slot 0 . . . . .              | 14        |
| 2.5.2    | Slot 1 . . . . .              | 15        |
| 2.5.3    | Slot 2 . . . . .              | 16        |
| <b>A</b> | <b>Summary</b>                | <b>17</b> |
| A.1      | Status . . . . .              | 17        |
| A.2      | Comments . . . . .            | 17        |

# 1 Front

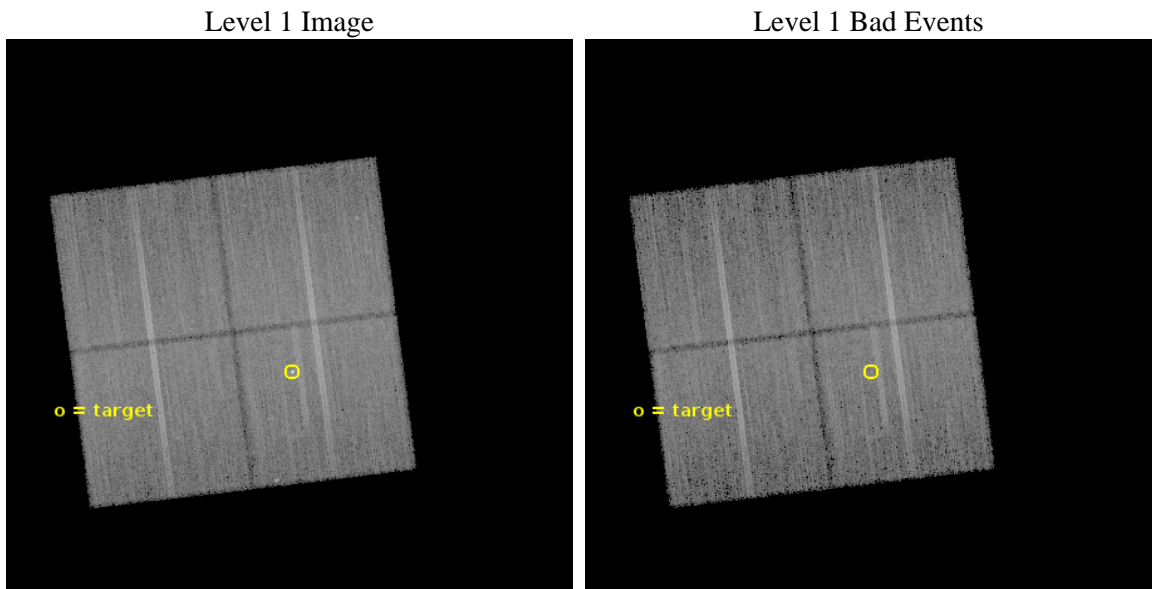
|          |   |   |
|----------|---|---|
| seq_num  | 601151  | Sequence number                             |
| obs_id   | 16351   | Observation id                              |
| title    | Searching for evidence of dwarf galaxy collisions with large spiral galaxies through X-ray emission | Proposal title                              |
| observer | Professor Gordon Garmire  | Principal investigator                      |
| object   | NGC613  | Source name                                 |
| dtcycle  | 0   | &#160                                       |
| cycle    | P   | events from which exps?<br>Prim/Second/Both |
| ra_targ  | 23.575833   | Observer's specified target RA [deg]        |
| dec_targ | -29.418333  | Observer's specified target Dec [deg]       |
| ra_nom   | 23.579287716601   | Nominal RA [deg]                            |
| dec_nom  | -29.37556665416   | Nominal Dec [deg]                           |
| roll_nom | 82.886525268354   | Nominal Roll [deg]                          |
| revision | 1   | Processing version of data                  |
| ontime   | 49494.3283481   | Sum of GTIs [s]                             |
| livetime | 48847.648511038   | Livetime [s]                                |
| ontime0  | 49497.346298516   | Sum of GTIs [s]                             |
| ontime1  | 49494.246318161   | Sum of GTIs [s]                             |
| ontime2  | 49494.287348092   | Sum of GTIs [s]                             |
| ontime3  | 49494.3283481   | Sum of GTIs [s]                             |
| l2events | 100933  | Number of level 2 events                    |



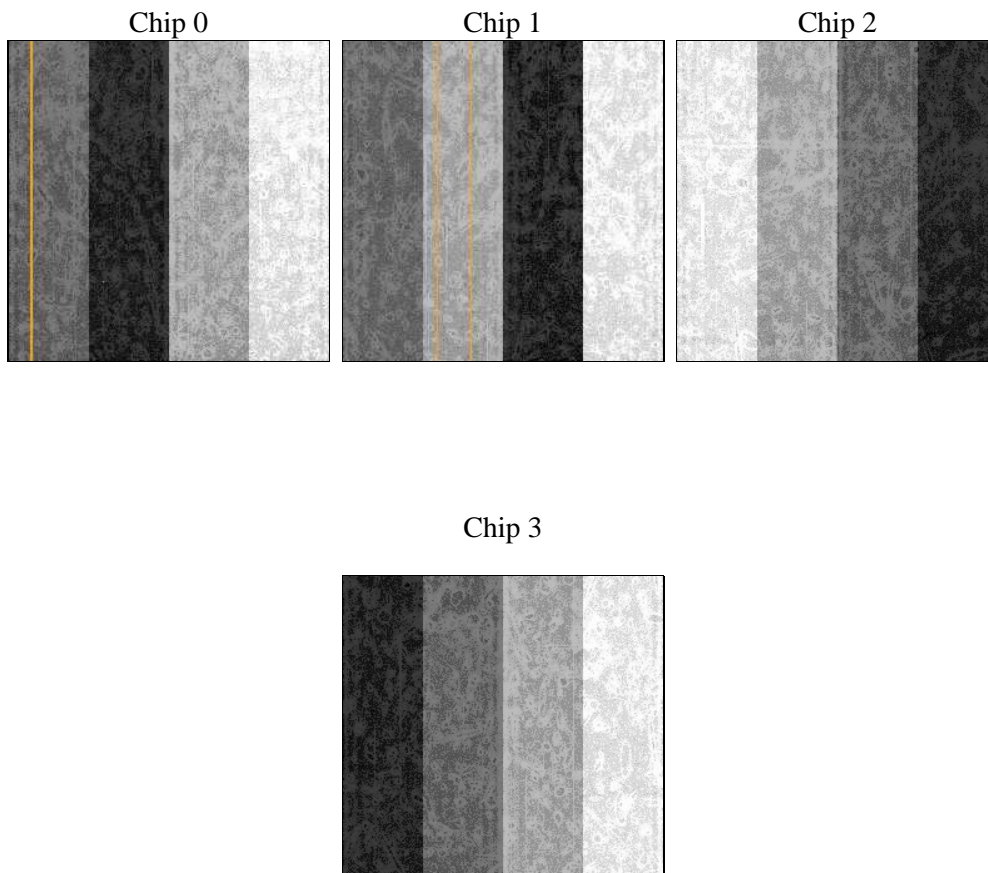
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

|          |                     |                                |                |                 |   |
|----------|---------------------|--------------------------------|----------------|-----------------|---|
| obi_num  | 0                   | Obi number                     | sched_exp_time | 49406.973000    | [s] Scheduled observation exposure time |
| ascdsver | 10.2.4              | Processing system revision     | ontime         | 49494.3283481   | Sum of GTIs [s]                         |
| caldbver | 4.6.2               | &#160                          | ontime0        | 49497.346298516 | Sum of GTIs [s]                         |
| date     | 2014-08-22T02:47:47 | Date and time of file creation | ontime1        | 49494.246318161 | Sum of GTIs [s]                         |
| revision | 1                   | Processing version of data     | ontime2        | 49494.287348092 | Sum of GTIs [s]                         |
|          |                     |                                | ontime3        | 49494.3283481   | Sum of GTIs [s]                         |
|          |                     |                                | l1events       | 937054          | Number of level 1 events                |

### 2.1.4 Events

|                 | ccd 0  | ccd 1  | ccd 2  | ccd 3  |
|-----------------|--------|--------|--------|--------|
| level 1 events  | 222249 | 228175 | 242179 | 244451 |
| rejected events | 193651 | 196169 | 214421 | 213276 |
| rejected %      | 87%    | 85%    | 88%    | 87%    |

|                | ccd 0  | ccd 1  | ccd 2  | ccd 3  |
|----------------|--------|--------|--------|--------|
| grade 0 events | 9659   | 10823  | 9818   | 12342  |
|                | 4%     | 4%     | 4%     | 5%     |
| grade 1 events | 111    | 125    | 130    | 170    |
|                | 0%     | 0%     | 0%     | 0%     |
| grade 2 events | 7053   | 7833   | 6766   | 6560   |
|                | 3%     | 3%     | 2%     | 2%     |
| grade 3 events | 3043   | 3088   | 2877   | 3095   |
|                | 1%     | 1%     | 1%     | 1%     |
| grade 4 events | 2753   | 3050   | 2874   | 3072   |
|                | 1%     | 1%     | 1%     | 1%     |
| grade 5 events | 11606  | 12078  | 10775  | 13212  |
|                | 5%     | 5%     | 4%     | 5%     |
| grade 6 events | 6094   | 7213   | 5424   | 6109   |
|                | 2%     | 3%     | 2%     | 2%     |
| grade 7 events | 181930 | 183965 | 203515 | 199891 |
|                | 81%    | 80%    | 84%    | 81%    |

## 2.2 Compared Parameters

| Parameter                         | Planned             | Actual               | Parameter                             | Planned   | Actual  |
|-----------------------------------|---------------------|----------------------|---------------------------------------|-----------|---------|
| Instrument                        | ACIS                | ACIS                 | Obspar format version number          | 7         | 7       |
| Detector                          | ACIS-0123           | ACIS-0123            | Obspar file type                      | PREDICTED | ACTUAL  |
| Grating                           | NONE                | NONE                 | Obspar update status                  | NONE      | UPDATED |
| Data mode                         | VFAINT              | VFAINT               | Number of optional ACIS chips dropped | 0         | 0       |
| Observation mode                  | POINTING            | POINTING             | On-chip summing requested             | N         | N       |
| [deg] Pointing RA                 | 23.591700           | 23.57928771660064    | Subarray requested                    | NONE      | NONE    |
| [deg] Pointing Dec                | -29.400952          | -29.37556665416015   | Alternating exposures requested       | N         | N       |
| [deg] Pointing Roll               | 82.683933           | 82.88652526835392    | [s] Primary exposure time             | 0.000000  | 3.1     |
| [mm] SIM focus pos                | -0.782348           | -0.7809083437167272  |                                       |           |         |
| [mm] SIM defocus                  | 0                   | 0.001439871863259334 |                                       |           |         |
| [mm] SIM translation stage pos    | -227.092463         | -227.0904437215976   |                                       |           |         |
| [mm] SIM translation stage offset | -6.5                | -6.50200928133205    |                                       |           |         |
| [s] Observation start time (MET)  | 524980243.184000    | 524979267.87611      |                                       |           |         |
| Observation start date            | 2014-08-21T03:49:36 | 2014-08-21T03:34:27  |                                       |           |         |
| [s] Observation end time (MET)    | 525029650.184000    | 525029884.94142      |                                       |           |         |
| Observation end date              | 2014-08-21T17:33:03 | 2014-08-21T17:38:04  |                                       |           |         |
| Read mode                         | TIMED               | TIMED                |                                       |           |         |

## 2.3 Aspect

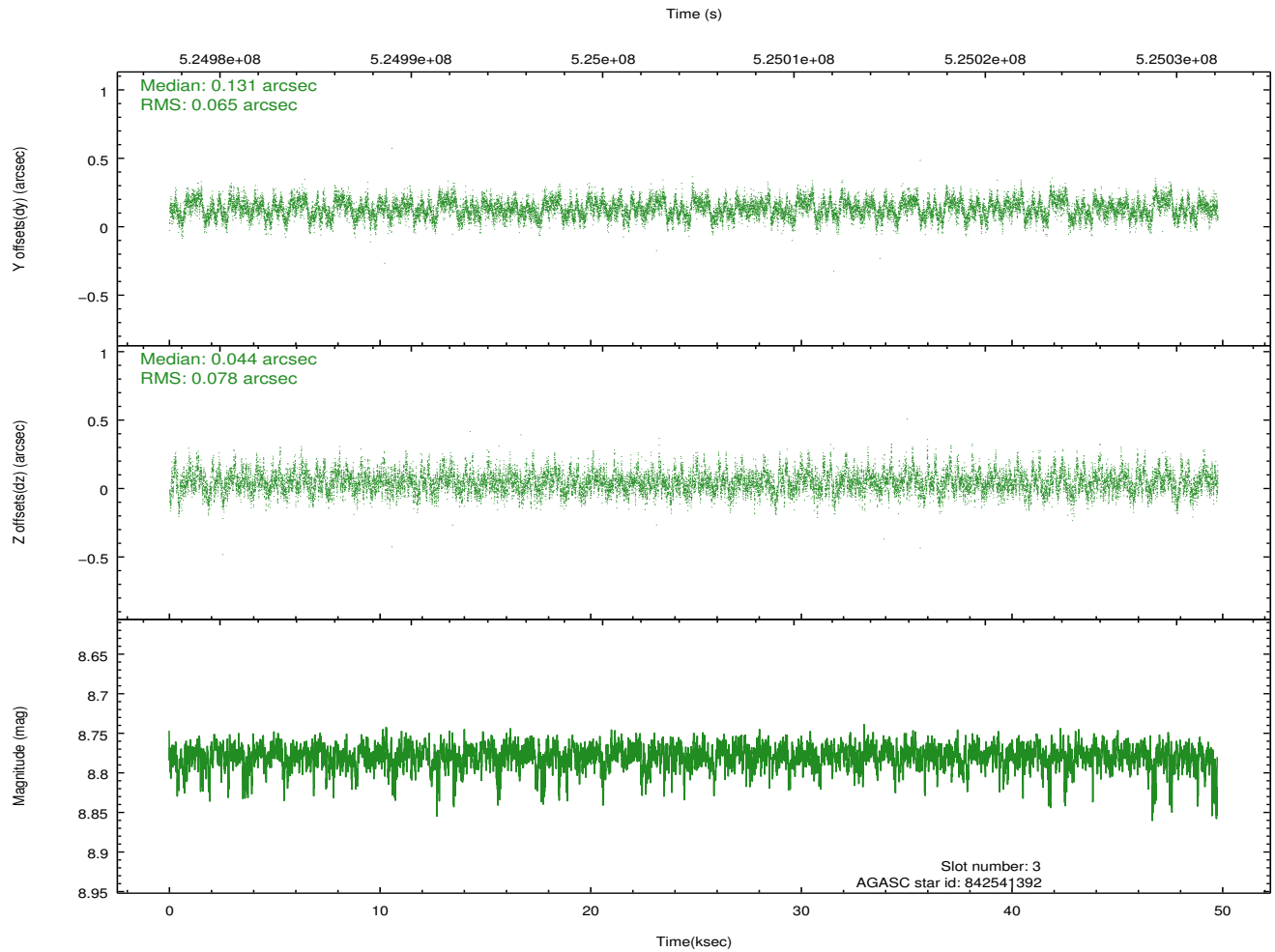
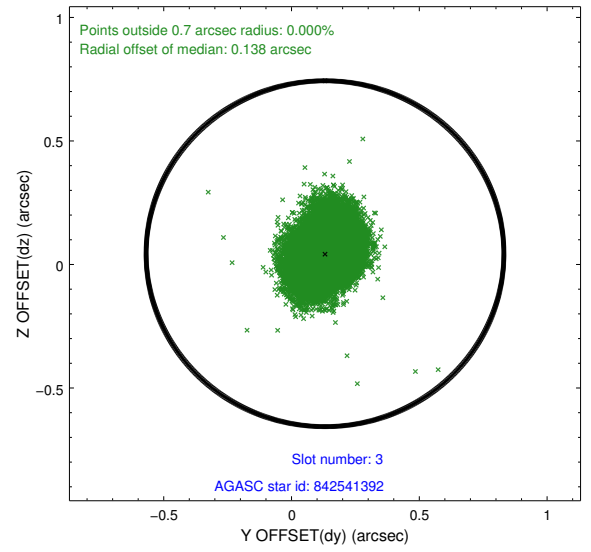
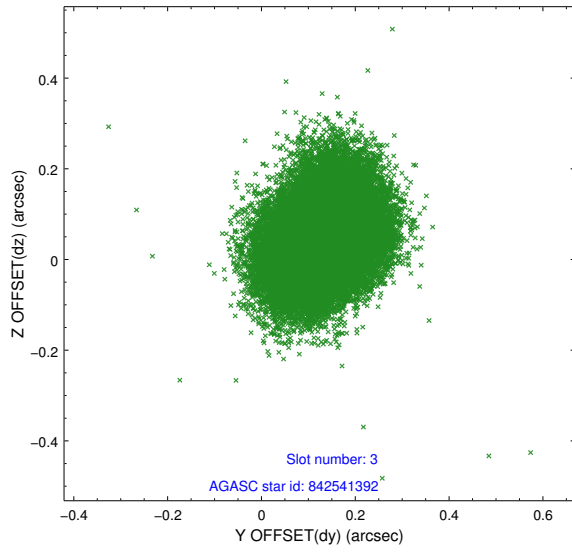


### Slot Statistics

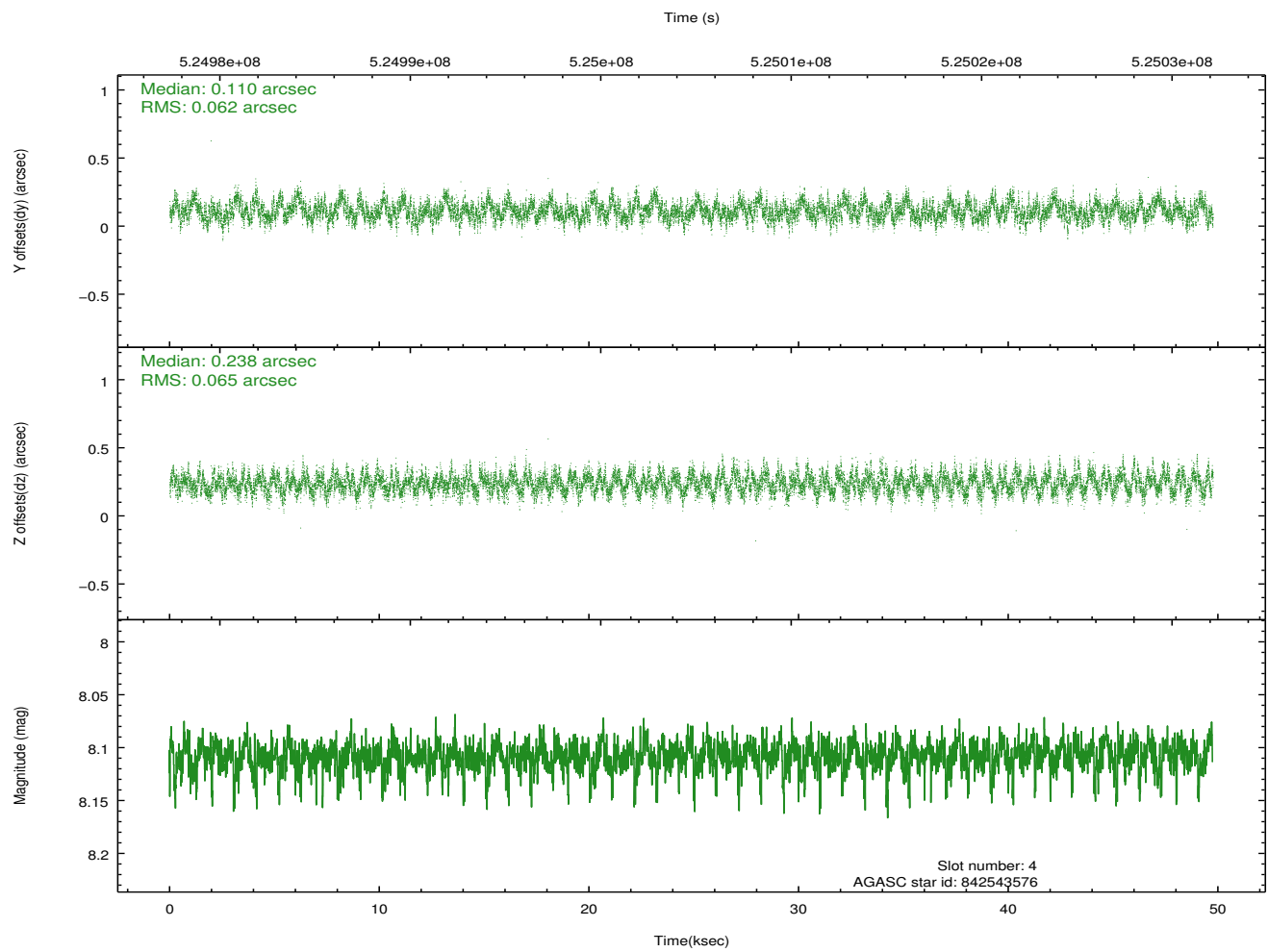
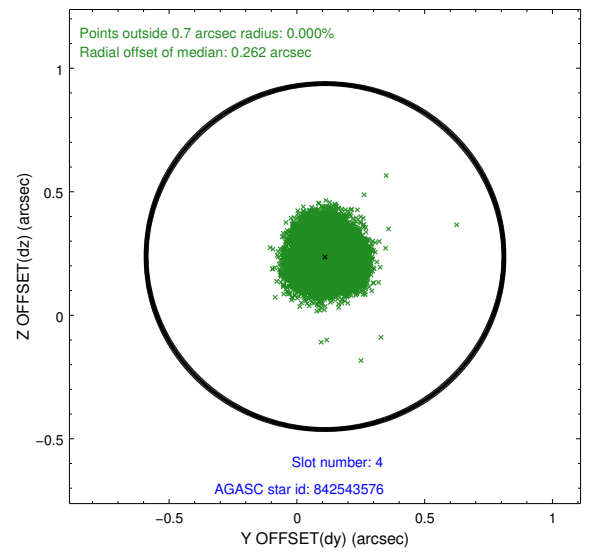
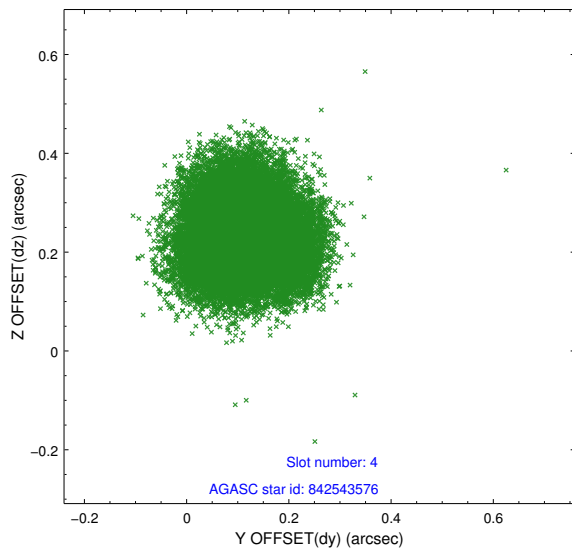
| slot | status | id        | mag  | n_pts | med_dy | med_dz | dr1   | dr2   | ra        | dec        | mean_y   | mean_z   |
|------|--------|-----------|------|-------|--------|--------|-------|-------|-----------|------------|----------|----------|
| 0    | FID    | ACIS-I-1  | 7.19 | 12136 | 0.121  | -0.081 | 0.007 | 0.013 | 0.000000  | 0.000000   | 916.55   | -976.83  |
| 1    | FID    | ACIS-I-5  | 7.18 | 12137 | -0.365 | 0.076  | 0.008 | 0.021 | 0.000000  | 0.000000   | -1832.14 | 920.69   |
| 2    | FID    | ACIS-I-6  | 7.19 | 12137 | 0.152  | 0.075  | 0.009 | 0.026 | 0.000000  | 0.000000   | 382.03   | 1565.28  |
| 3    | GUIDE  | 842541392 | 8.78 | 24262 | 0.131  | 0.044  | 0.108 | 0.174 | 24.042032 | -29.392341 | 208.46   | -1396.13 |
| 4    | GUIDE  | 842543576 | 8.11 | 24269 | 0.110  | 0.238  | 0.098 | 0.153 | 24.285951 | -29.393264 | 298.47   | -2160.92 |
| 5    | GUIDE  | 842544424 | 8.73 | 24260 | -0.267 | -0.386 | 0.101 | 0.159 | 23.269828 | -29.092134 | 971.93   | 1145.72  |
| 6    | GUIDE  | 842545112 | 7.86 | 24272 | 0.163  | 0.157  | 0.072 | 0.116 | 23.546897 | -29.956217 | -2000.01 | -115.67  |
| 7    | GUIDE  | 842545808 | 9.64 | 24248 | -0.139 | -0.067 | 0.217 | 0.334 | 23.737111 | -28.837729 | 2069.23  | -196.64  |

## 2.4 Star Slots

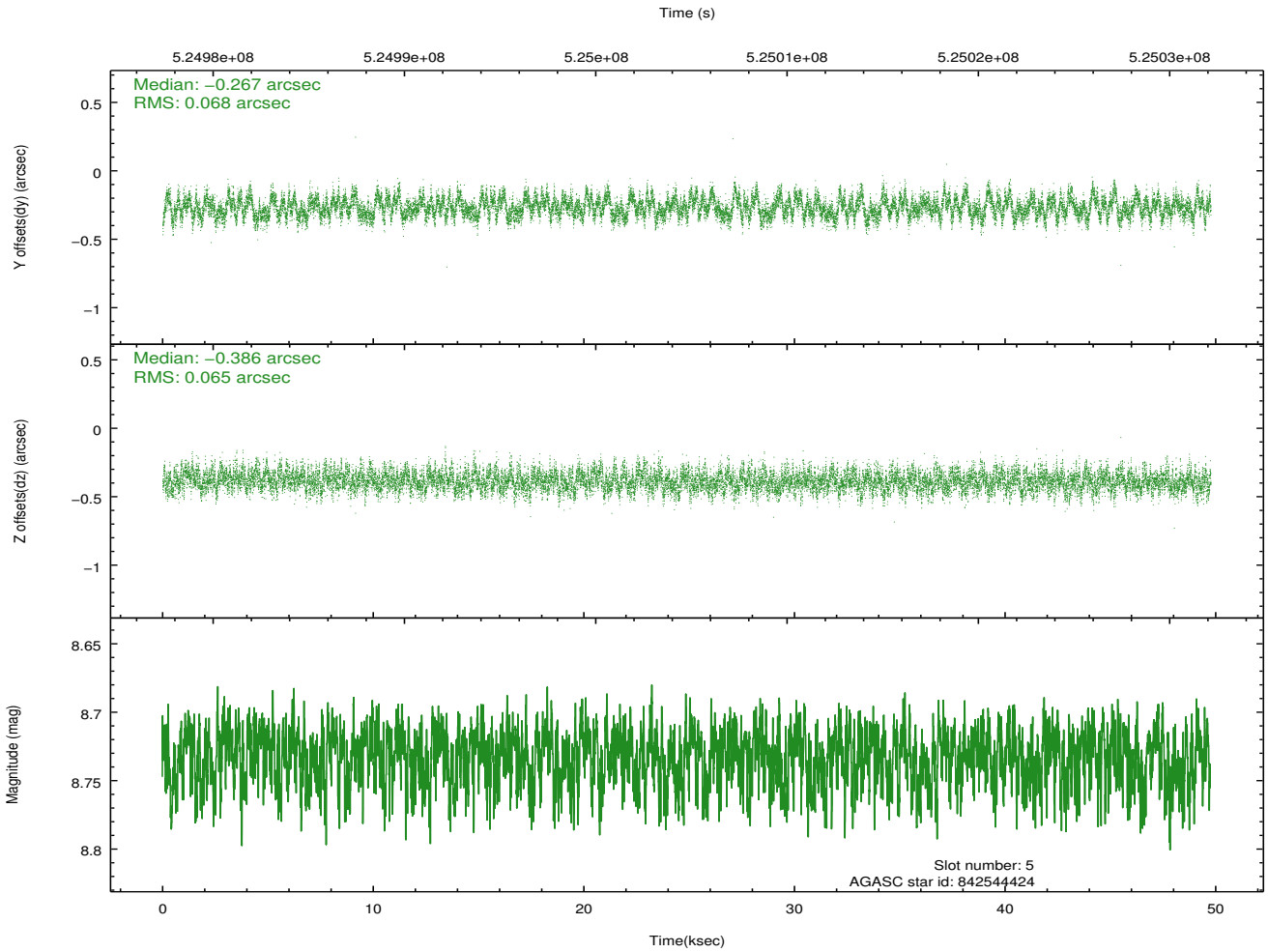
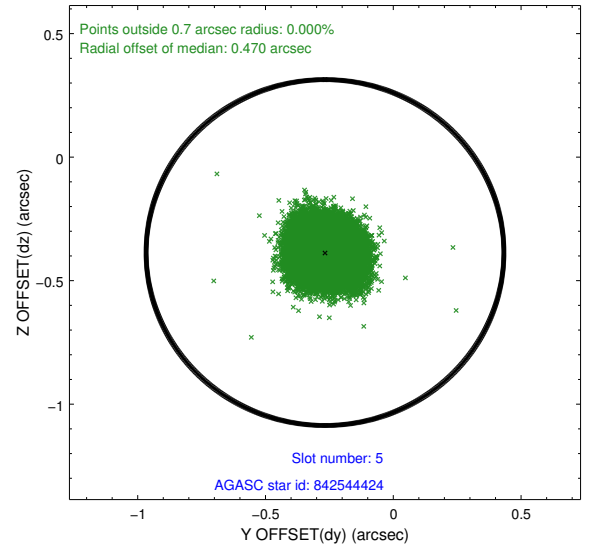
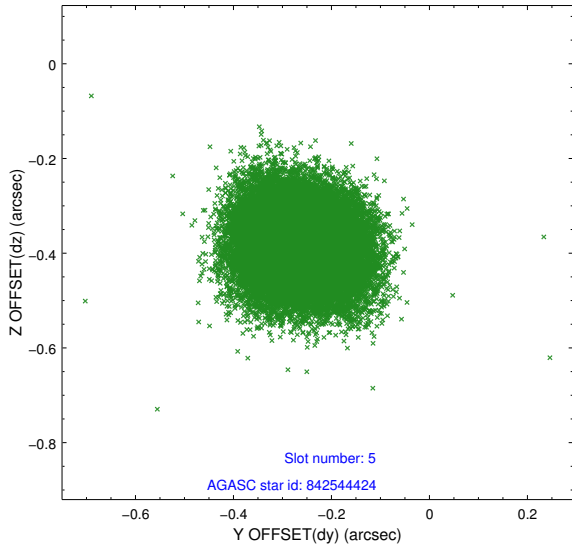
### 2.4.1 Slot 3



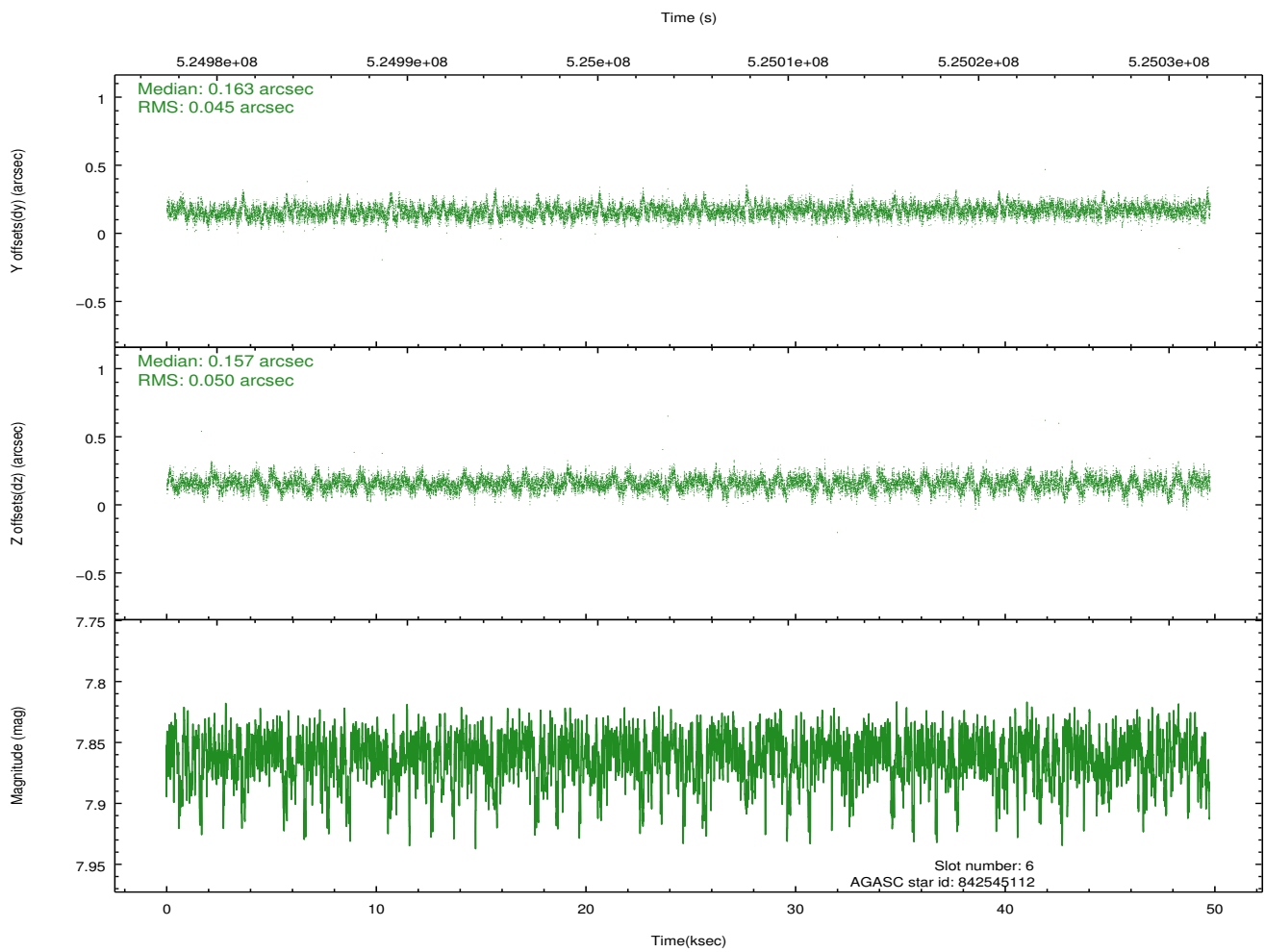
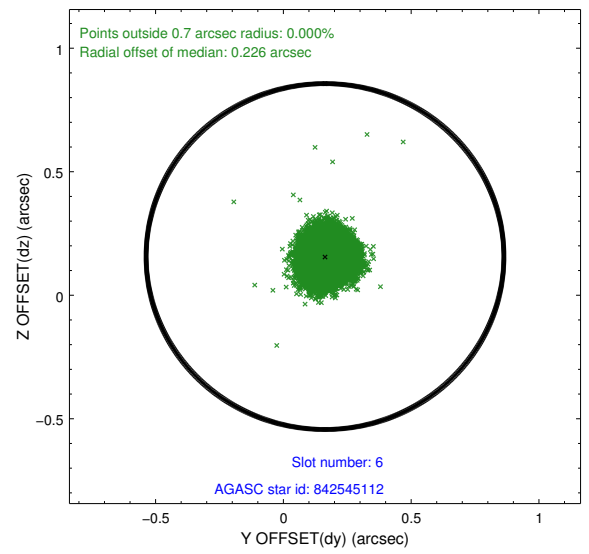
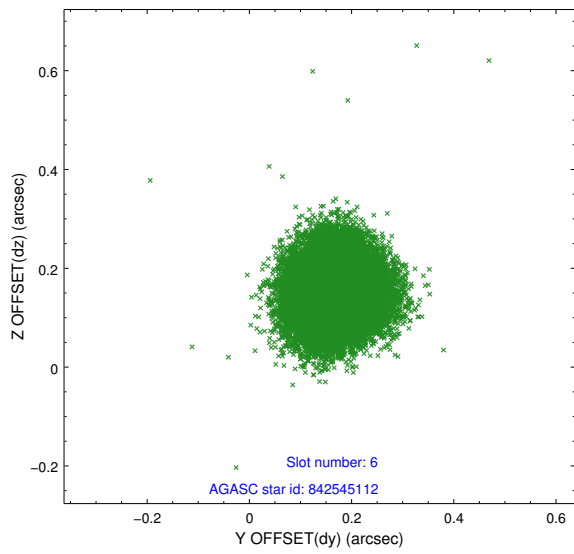
## 2.4.2 Slot 4



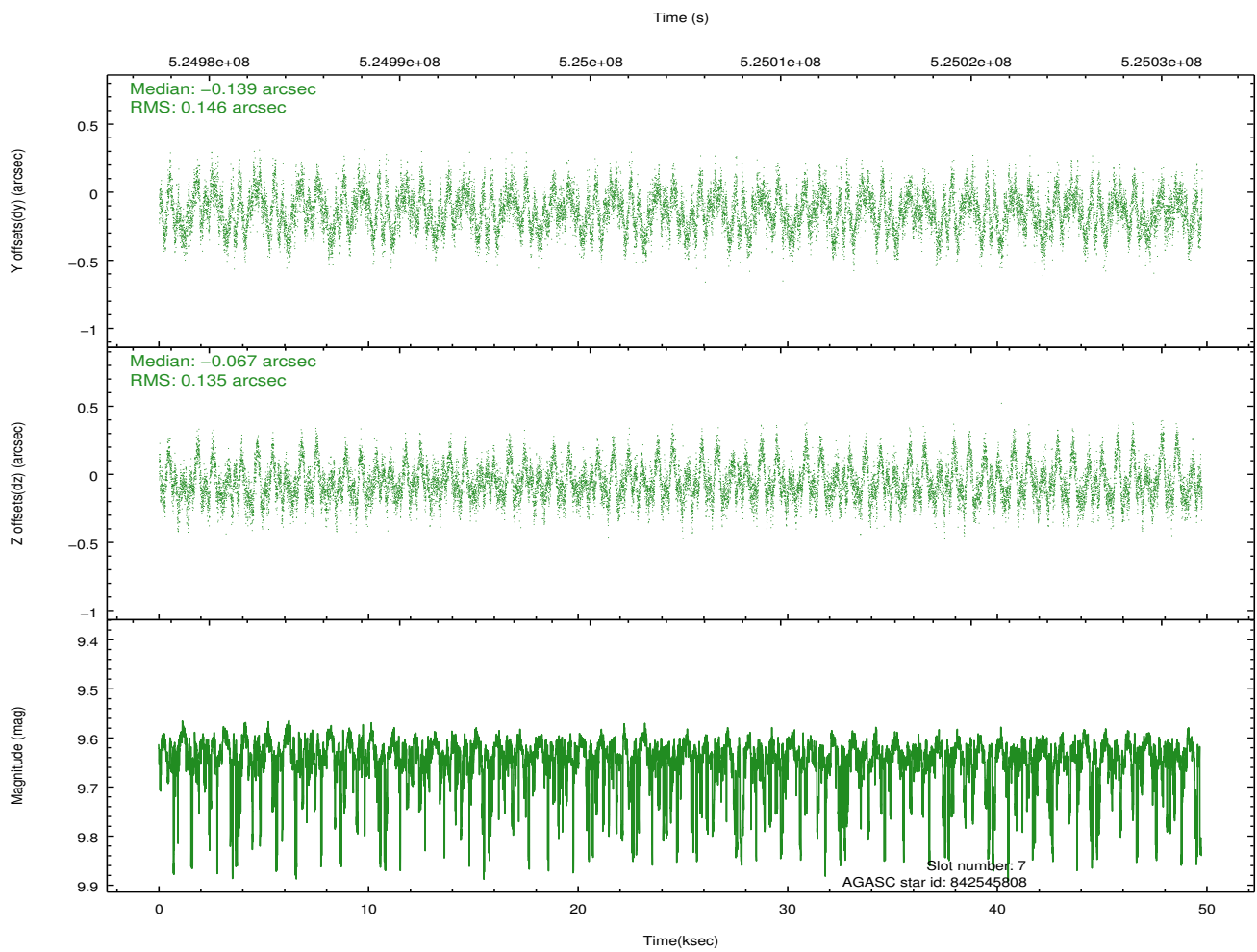
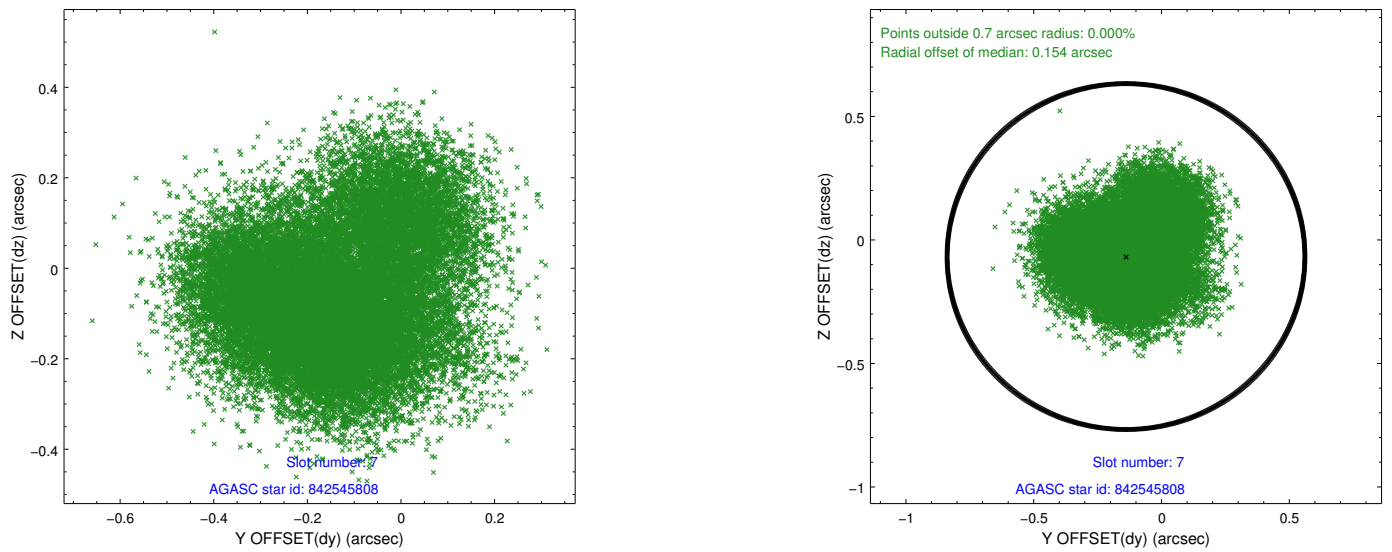
### 2.4.3 Slot 5



## 2.4.4 Slot 6

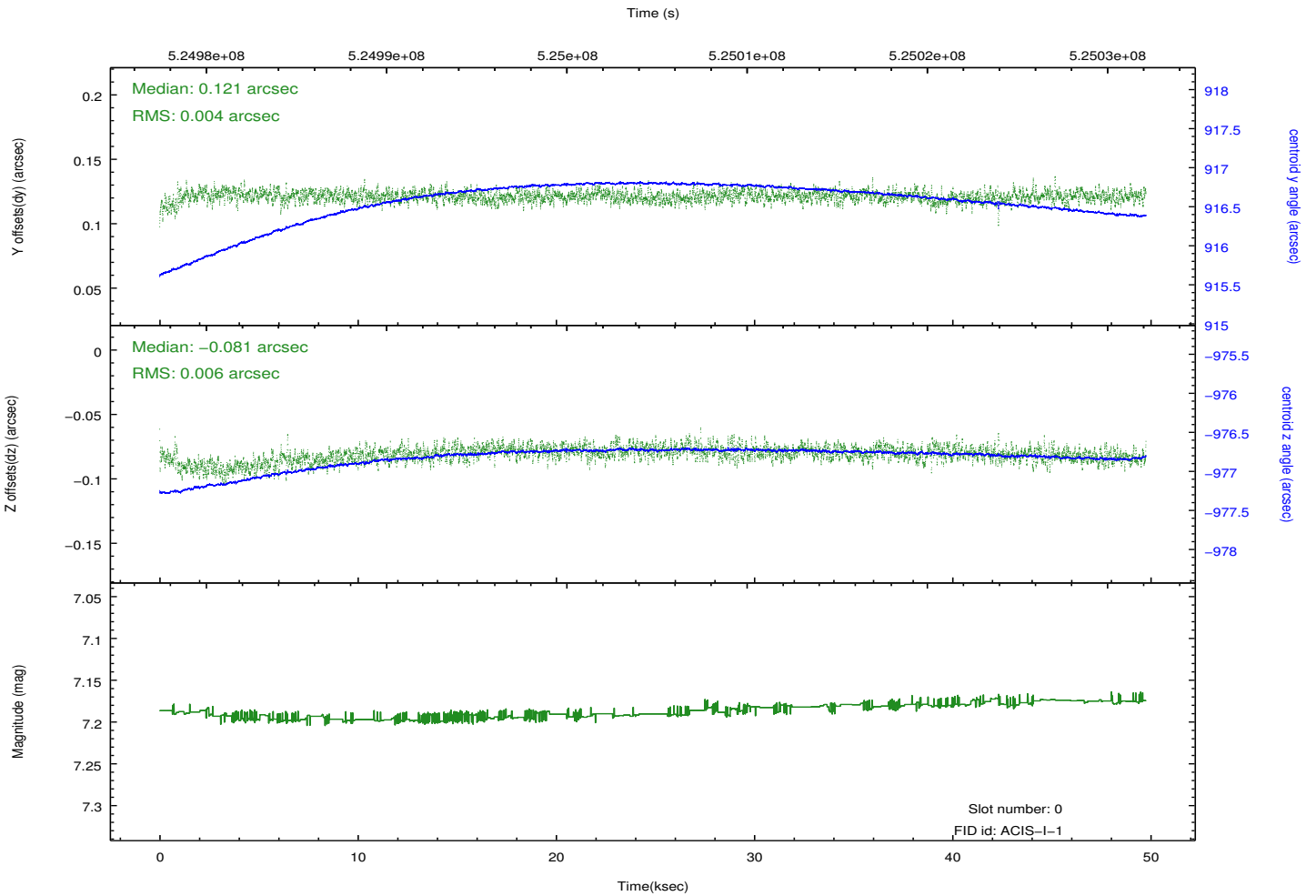
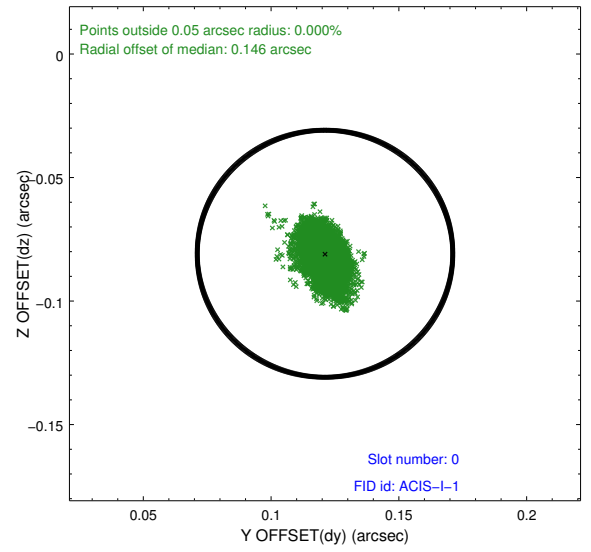
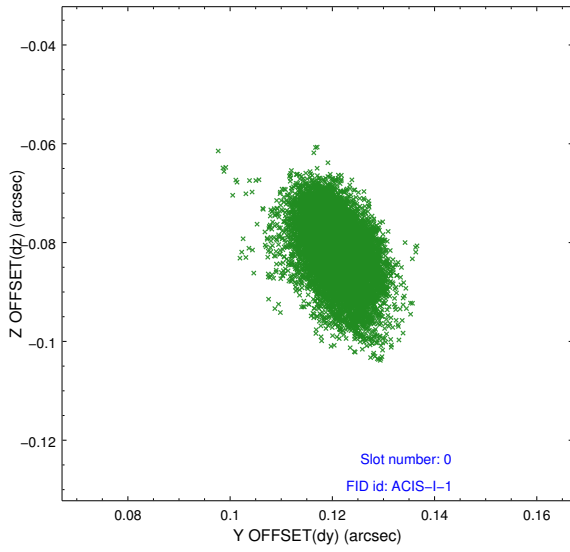


## 2.4.5 Slot 7

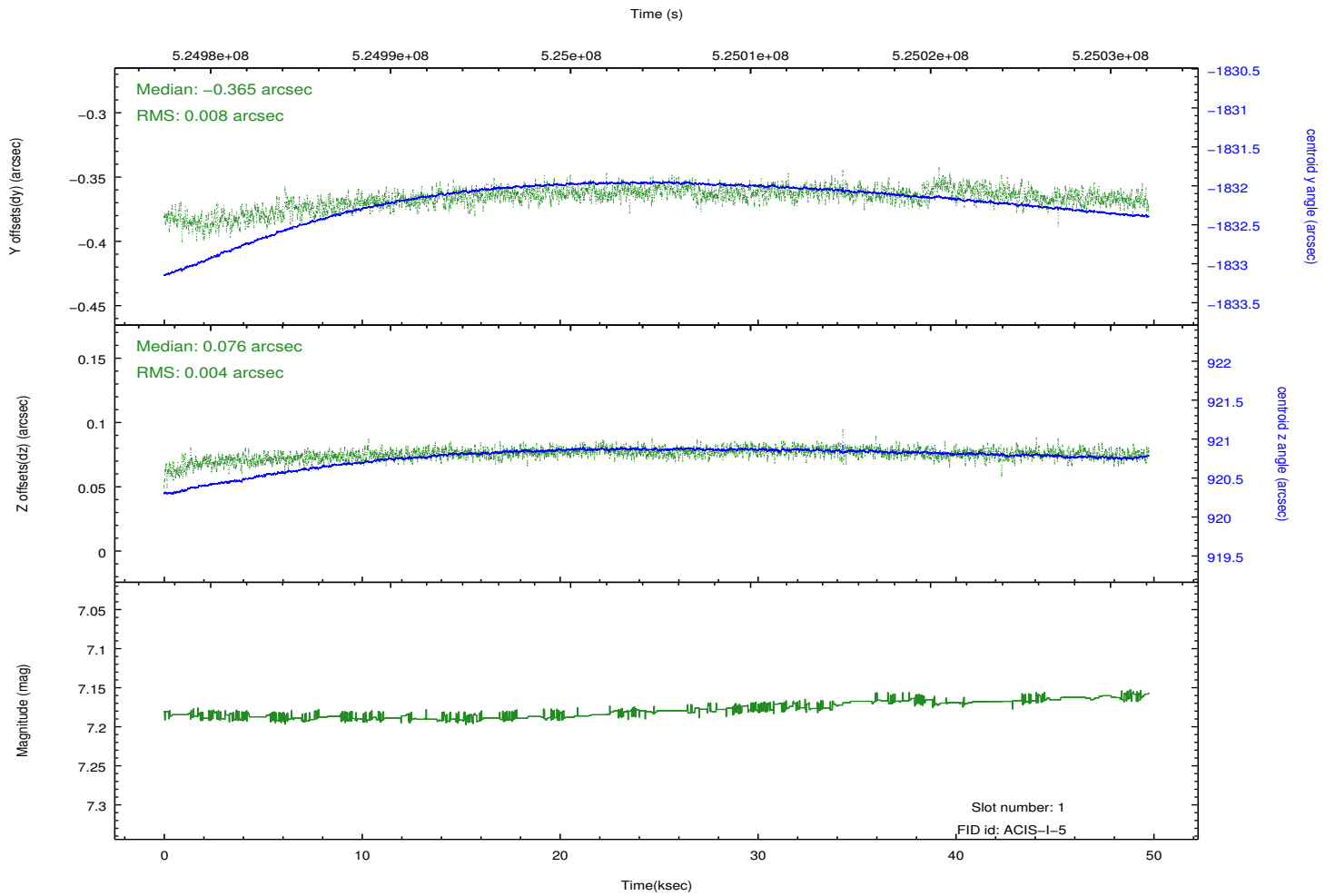
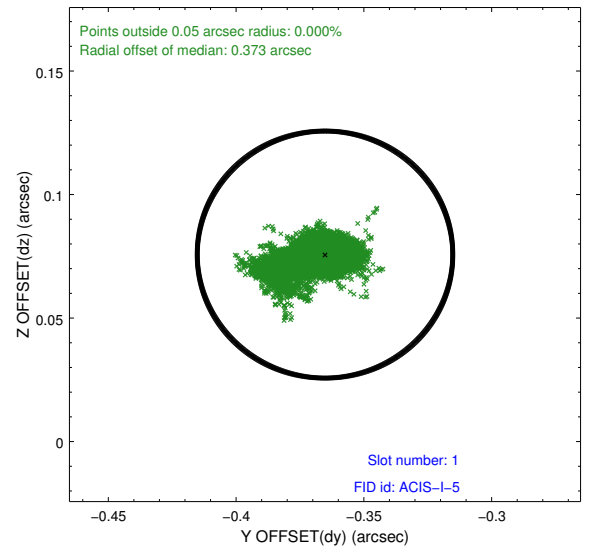
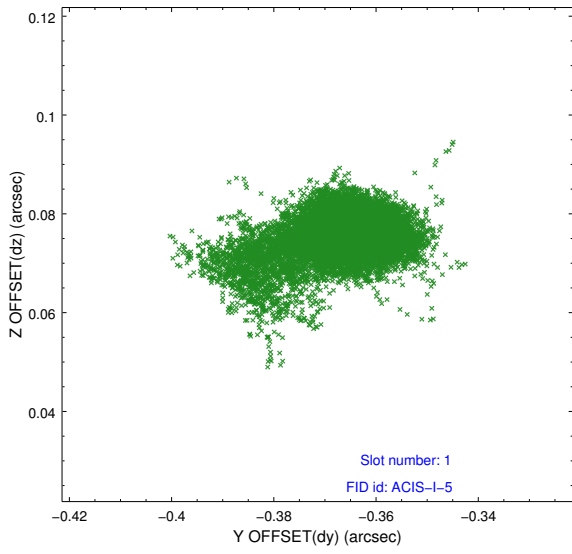


## 2.5 FID Slots

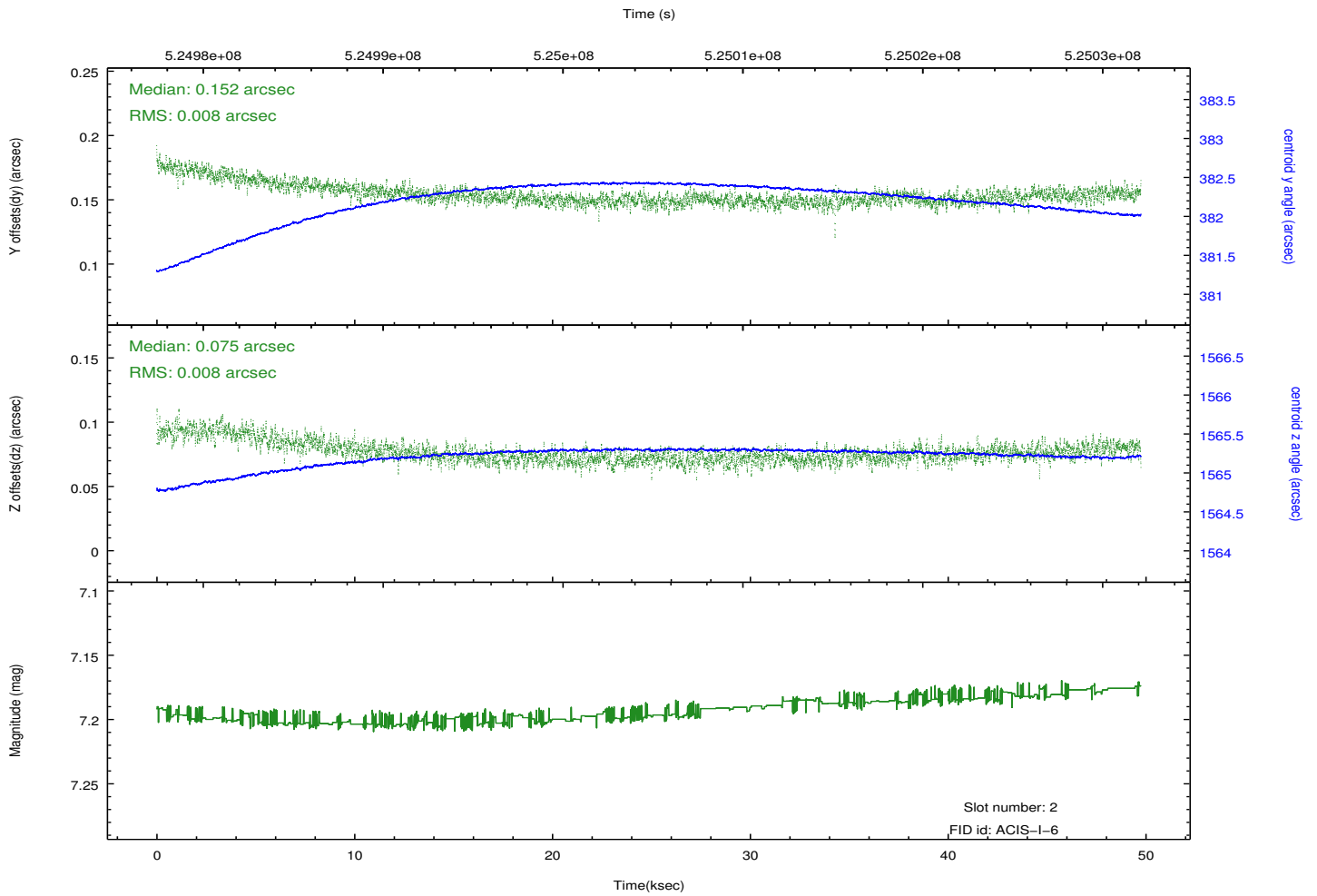
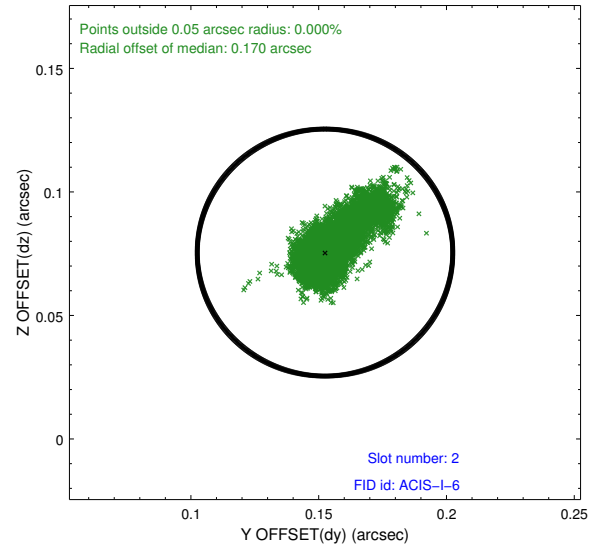
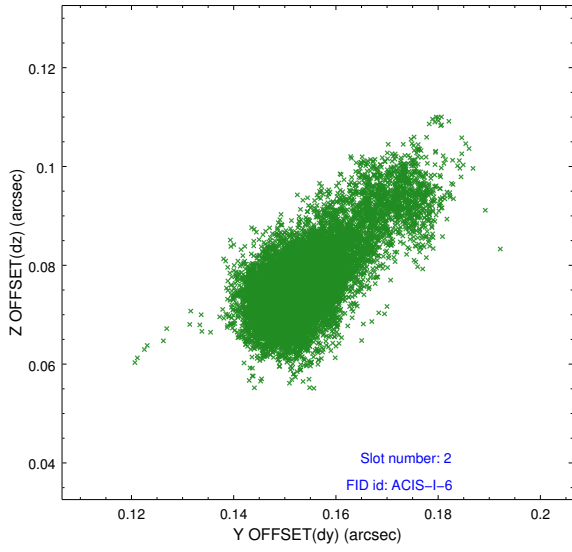
### 2.5.1 Slot 0



## 2.5.2 Slot 1



### 2.5.3 Slot 2



# A Summary

## A.1 Status

|                            |               |
|----------------------------|---------------|
| V&V Scientist              | Joy Nichols   |
| V&V Date (YYYY-MM-DD)      | 2014.08.22    |
| V&V Edition                | 1             |
| V&V Disposition and Status | OK            |
| V&V Charge Time            | 49.4943283481 |

## A.2 Comments