

# V&V Reference Report

## L2 ASCDS Version : 8.4.3

Observation 13992 - L2 Version 2  
Chandra X-Ray Center

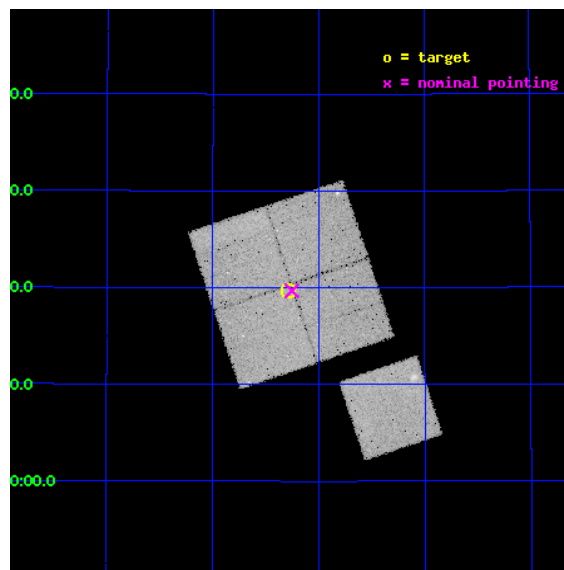
L2 Processing Date : Feb 26 2012

## 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

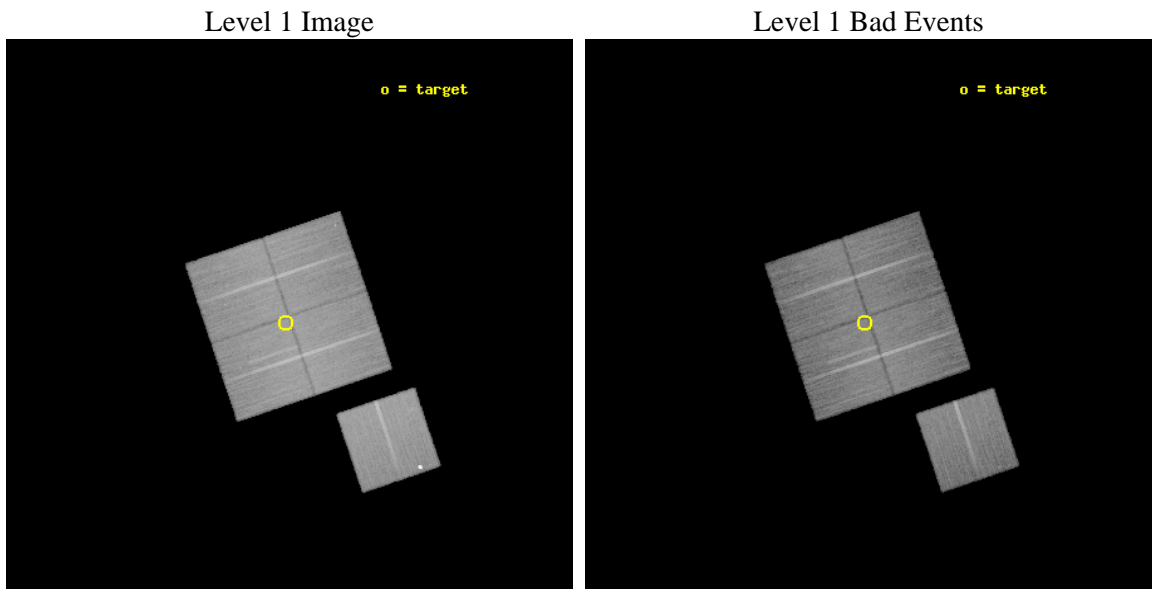
|          |  |   |
|----------|--|---|
| seq_num  | 801172   | Sequence number                             |
| obs_id   | 13992  | Observation id                              |
| title    | Imaging gas clumping in the outskirts of nearby clusters of galaxies | &#160                                       |
| observer | Dr. Aurora Simionescu  | Principal investigator                      |
| object   | Perseus_NWclumping4  | Source name                                 |
| dtcycle  | 0  | &#160                                       |
| cycle    | P  | events from which exps?<br>Prim/Second/Both |
| ra_targ  | 49.320833  | Observer's specified target RA [deg]        |
| dec_targ | 42.328611  | Observer's specified target Dec [deg]       |
| ra_nom   | 49.313083347068  | Nominal RA [deg]                            |
| dec_nom  | 42.327981010902  | Nominal Dec [deg]                           |
| roll_nom | 161.462260879  | Nominal Roll [deg]                          |
| revision | 2  | Processing version of data                  |
| ontime   | 37273.569804907  | Sum of GTIs [s]                             |
| livetime | 36786.563175003  | Livetime [s]                                |
| ontime0  | 37270.305634558  | Sum of GTIs [s]                             |
| ontime1  | 37273.4877249  | Sum of GTIs [s]                             |
| ontime2  | 37267.246664345  | Sum of GTIs [s]                             |
| ontime3  | 37273.569804907  | Sum of GTIs [s]                             |
| ontime6  | 37273.405644774  | Sum of GTIs [s]                             |
| l2events | 122321   | Number of level 2 events                    |



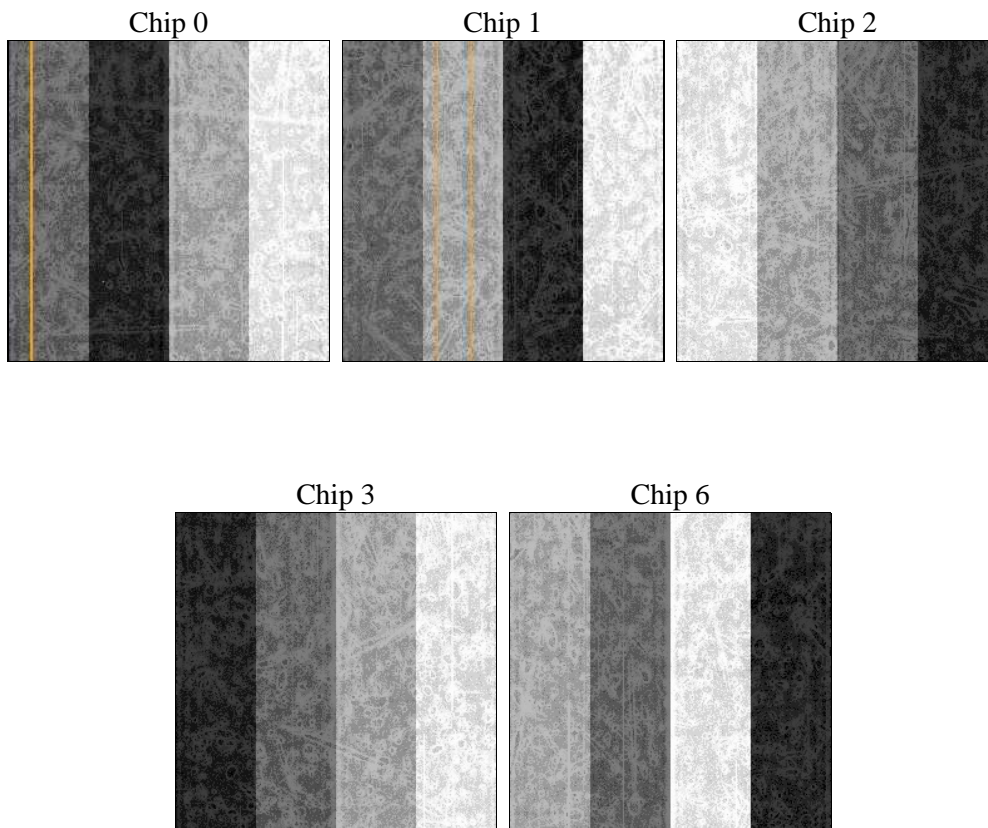
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

|          |                     |                                |                |                 |   |
|----------|---------------------|--------------------------------|----------------|-----------------|---|
| obi_num  | 0                   | Obi number                     | sched_exp_time | 37500.000000    | [s] Scheduled observation exposure time |
| ascdsver | 8.4.3               | Processing system revision     | ontime         | 37273.569804907 | Sum of GTIs [s]                         |
| caldsver | 4.4.8               | &#160                          | ontime0        | 37270.305634558 | Sum of GTIs [s]                         |
| date     | 2012-02-26T03:56:10 | Date and time of file creation | ontime1        | 37273.4877249   | Sum of GTIs [s]                         |
| revision | 2                   | Processing version of data     | ontime2        | 37267.246664345 | Sum of GTIs [s]                         |
|          |                     |                                | ontime3        | 37273.569804907 | Sum of GTIs [s]                         |
|          |                     |                                | ontime6        | 37273.405644774 | Sum of GTIs [s]                         |
|          |                     |                                | l1events       | 1154179         | Number of level 1 events                |

### 2.1.4 Events

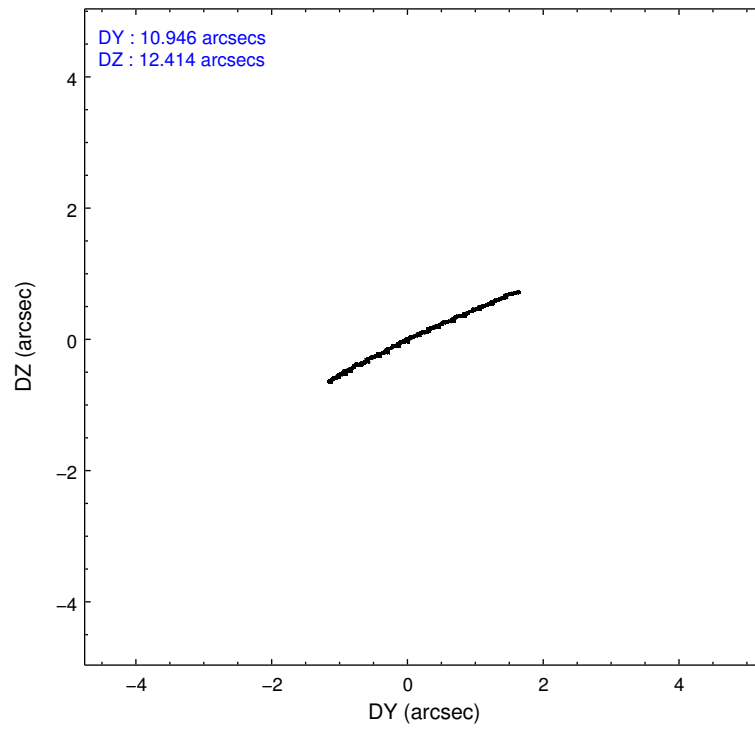
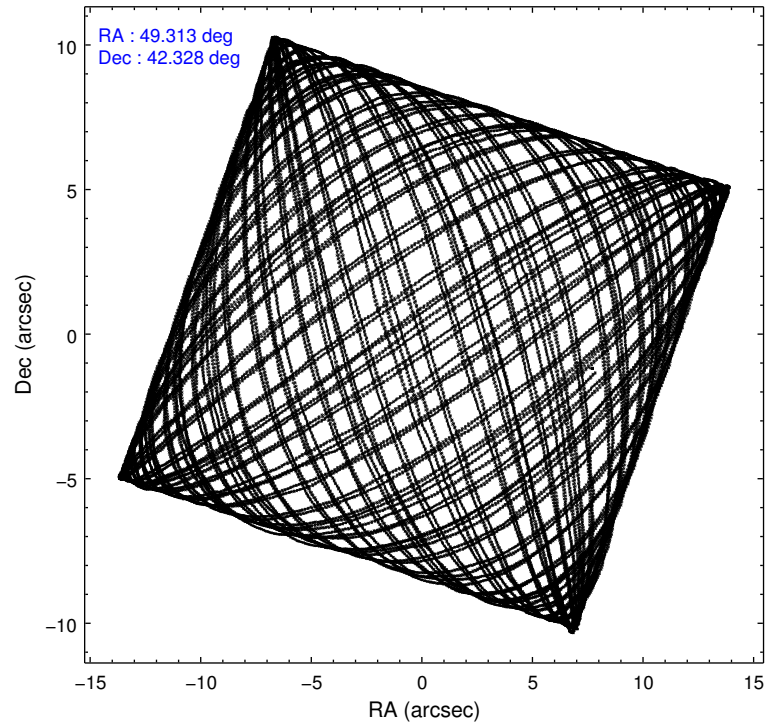
|                 | ccd 0  | ccd 1  | ccd 2  | ccd 3  | ccd 6  |
|-----------------|--------|--------|--------|--------|--------|
| level 1 events  | 210818 | 222684 | 237206 | 234661 | 248810 |
| rejected events | 182920 | 191907 | 209834 | 206972 | 209079 |
| rejected %      | 86%    | 86%    | 88%    | 88%    | 84%    |

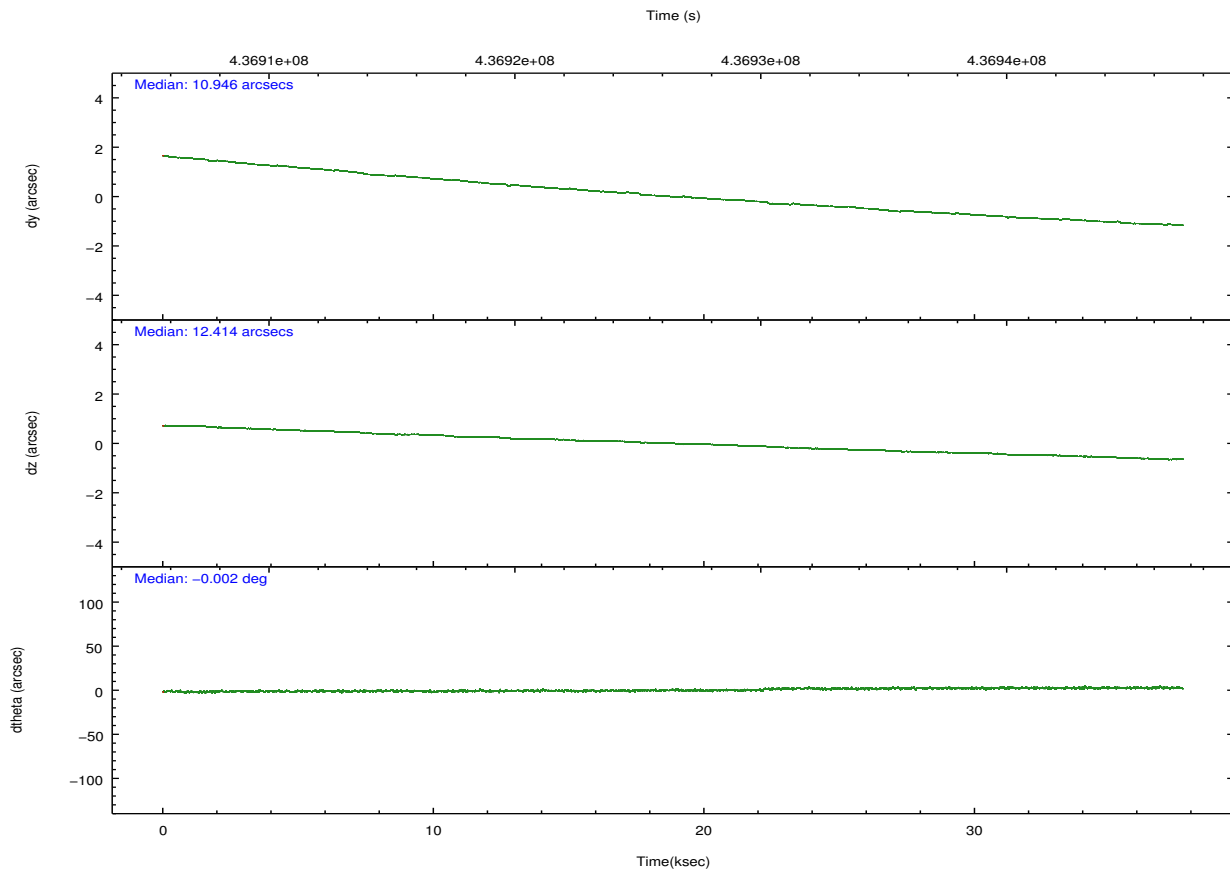
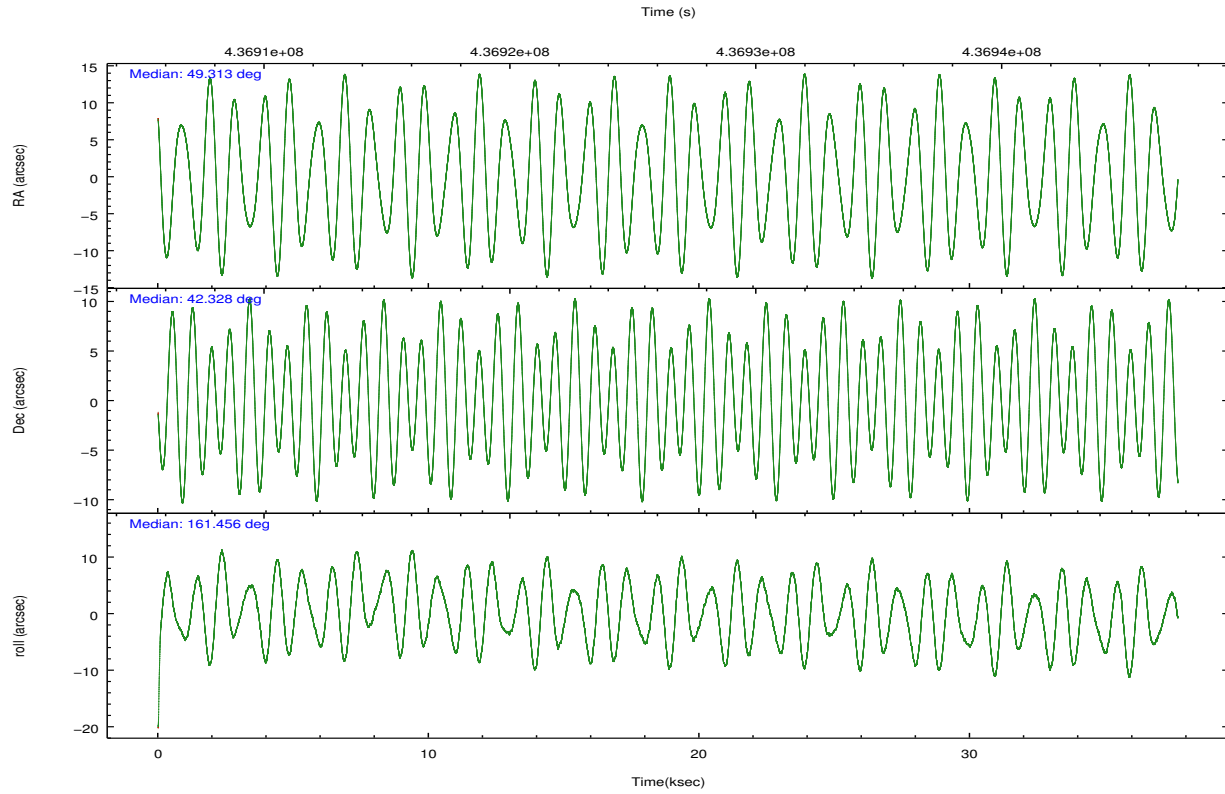
|                | ccd 0  | ccd 1  | ccd 2  | ccd 3  | ccd 6  |
|----------------|--------|--------|--------|--------|--------|
| grade 0 events | 10386  | 11723  | 10473  | 10838  | 21695  |
|                | 4%     | 5%     | 4%     | 4%     | 8%     |
| grade 1 events | 127    | 134    | 130    | 146    | 160    |
|                | 0%     | 0%     | 0%     | 0%     | 0%     |
| grade 2 events | 6539   | 6931   | 6320   | 5881   | 6225   |
|                | 3%     | 3%     | 2%     | 2%     | 2%     |
| grade 3 events | 2800   | 2902   | 2810   | 2713   | 2788   |
|                | 1%     | 1%     | 1%     | 1%     | 1%     |
| grade 4 events | 2687   | 2903   | 2680   | 2812   | 2818   |
|                | 1%     | 1%     | 1%     | 1%     | 1%     |
| grade 5 events | 10127  | 10584  | 9681   | 11451  | 10727  |
|                | 4%     | 4%     | 4%     | 4%     | 4%     |
| grade 6 events | 5494   | 6321   | 5092   | 5448   | 6207   |
|                | 2%     | 2%     | 2%     | 2%     | 2%     |
| grade 7 events | 172658 | 181186 | 200020 | 195372 | 198190 |
|                | 81%    | 81%    | 84%    | 83%    | 79%    |

## 2.2 Compared Parameters

| Parameter                         | Planned             | Actual                | Parameter                             | Planned   | Actual  |
|-----------------------------------|---------------------|-----------------------|---------------------------------------|-----------|---------|
| Instrument                        | ACIS                | ACIS                  | Obspar format version number          | 7         | 7       |
| Detector                          | ACIS-01236          | ACIS-01236            | Obspar file type                      | PREDICTED | ACTUAL  |
| Grating                           | NONE                | NONE                  | Obspar update status                  | NONE      | UPDATED |
| Data mode                         | VFAINT              | VFAINT                | CCD I0 on                             | Y         | Y       |
| Observation mode                  | POINTING            | POINTING              | CCD I1 on                             | Y         | Y       |
| [deg] Pointing RA                 | 49.349531           | 49.31308334706787     | CCD I2 on                             | Y         | Y       |
| [deg] Pointing Dec                | 42.333558           | 42.3279810109016      | CCD I3 on                             | Y         | Y       |
| [deg] Pointing Roll               | 161.229031          | 161.4622608790018     | CCD S0 on                             | N         | N       |
| [mm] SIM focus pos                | -0.782348           | -0.7809083437167272   | CCD S1 on                             | N         | N       |
| [mm] SIM defocus                  | 0                   | 0.001439871863259334  | CCD S2 on                             | O2        | Y       |
| [mm] SIM translation stage pos    | -233.592463         | -233.5874344608287    | CCD S3 on                             | O1        | N       |
| [mm] SIM translation stage offset | 0                   | -0.005018542100998502 | CCD S4 on                             | N         | N       |
| [s] Observation start time (MET)  | 436907789.184000    | 436907287.13974       | CCD S5 on                             | N         | N       |
| Observation start date            | 2011-11-05T19:15:23 | 2011-11-05T19:08:07   | Number of optional ACIS chips dropped | 1         | 1       |
| [s] Observation end time (MET)    | 436945289.184000    | 436946313.50429       | On-chip summing requested             | N         | N       |
| Observation end date              | 2011-11-06T05:40:23 | 2011-11-06T05:58:33   | Subarray requested                    | NONE      | NONE    |
| Read mode                         | TIMED               | TIMED                 | Alternating exposures requested       | N         | N       |
|                                   |                     |                       | [s] Primary exposure time             | 0.000000  | 3.1     |

## 2.3 Aspect



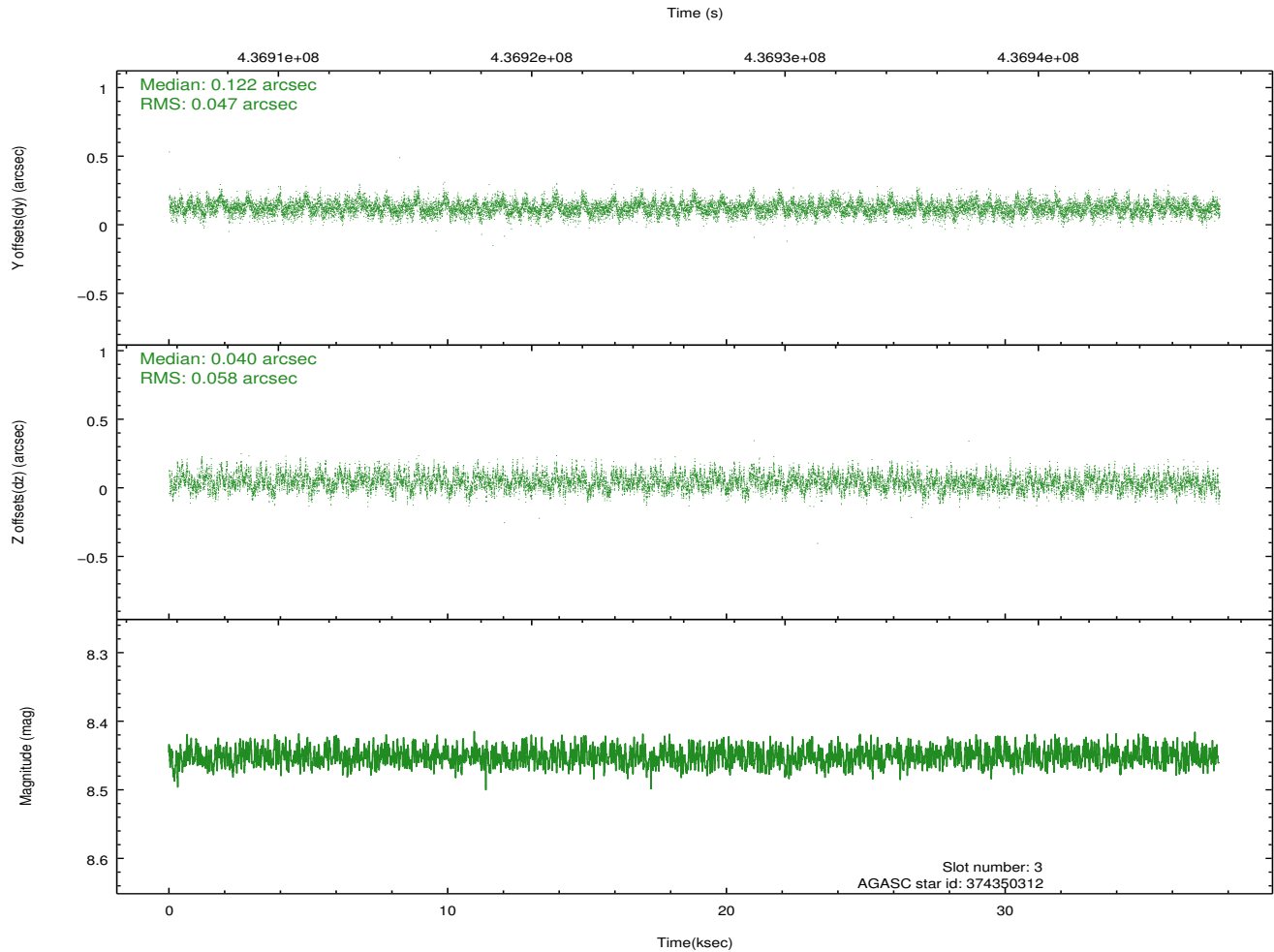
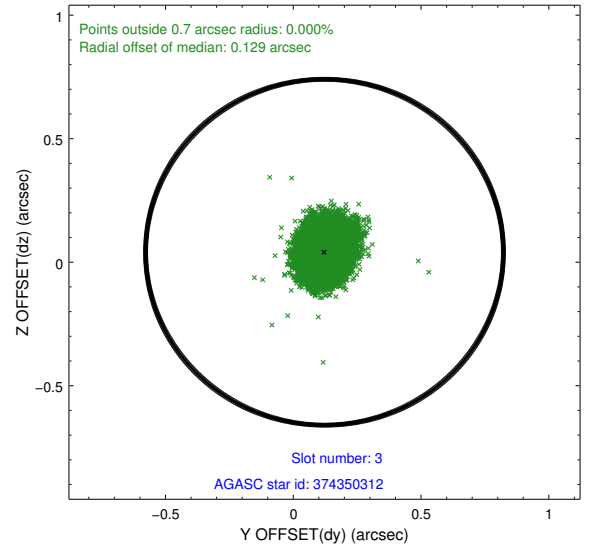
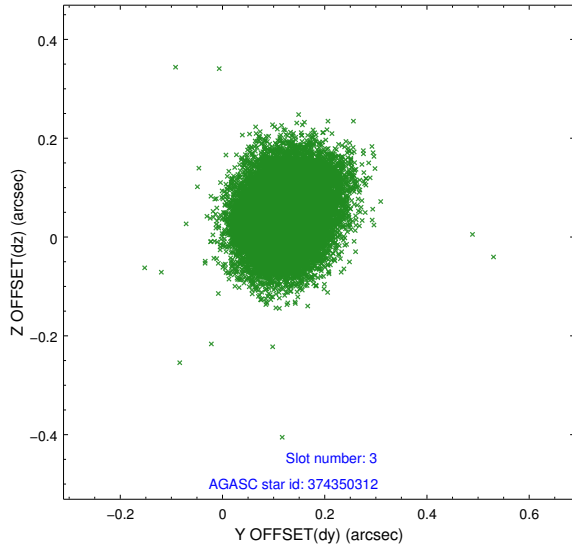


### Slot Statistics

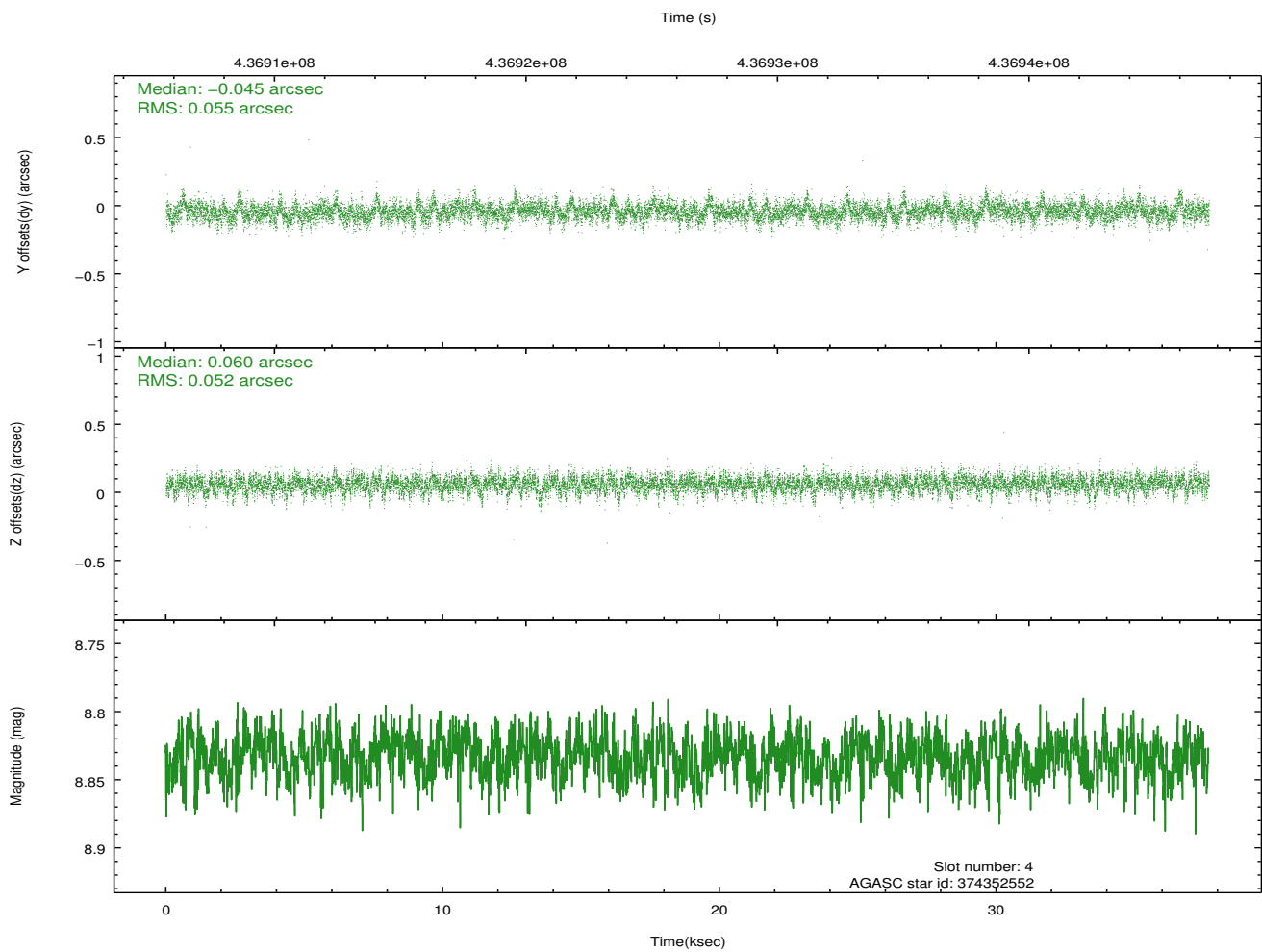
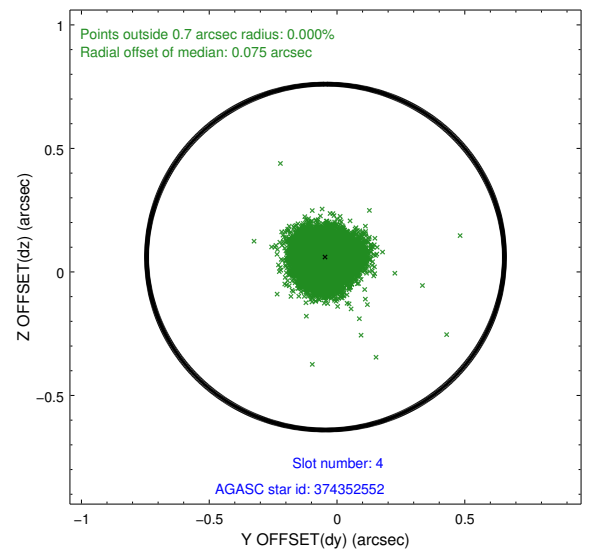
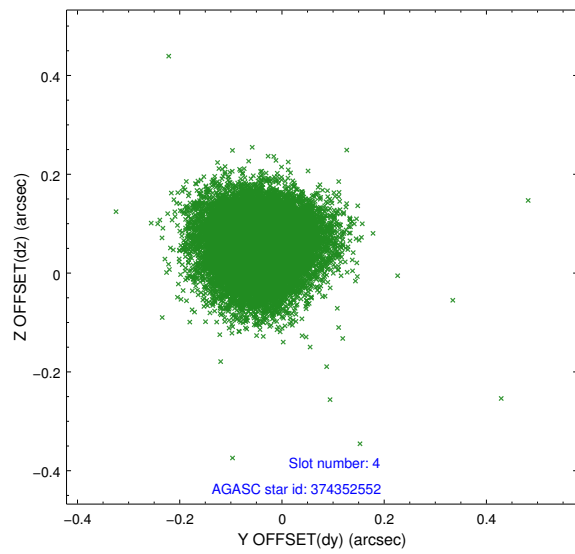
| slot | status | id        | mag  | n_pts | med_dy | med_dz | dr1   | dr2   | ra        | dec       | mean_y   | mean_z   |
|------|--------|-----------|------|-------|--------|--------|-------|-------|-----------|-----------|----------|----------|
| 0    | FID    | ACIS-I-1  | 7.15 | 9193  | 0.051  | 0.030  | 0.034 | 0.044 | 0.000000  | 0.000000  | 928.58   | -835.93  |
| 1    | FID    | ACIS-I-2  | 7.05 | 9192  | -0.162 | -0.079 | 0.017 | 0.023 | 0.000000  | 0.000000  | -765.70  | -842.48  |
| 2    | FID    | ACIS-I-6  | 7.14 | 9193  | 0.018  | 0.119  | 0.021 | 0.032 | 0.000000  | 0.000000  | 394.20   | 1705.96  |
| 3    | GUIDE  | 374350312 | 8.45 | 18382 | 0.122  | 0.040  | 0.079 | 0.129 | 49.824622 | 42.610331 | -869.48  | -1351.37 |
| 4    | GUIDE  | 374352552 | 8.83 | 18369 | -0.045 | 0.060  | 0.079 | 0.131 | 49.205176 | 42.496124 | 550.95   | -430.16  |
| 5    | GUIDE  | 374357368 | 7.78 | 18384 | -0.082 | -0.082 | 0.066 | 0.108 | 49.396079 | 42.675115 | 278.96   | -1203.36 |
| 6    | GUIDE  | 374357808 | 8.66 | 18374 | -0.026 | -0.067 | 0.080 | 0.130 | 49.921429 | 42.176083 | -1625.31 | 41.11    |
| 7    | GUIDE  | 376070040 | 8.39 | 18378 | 0.027  | 0.050  | 0.079 | 0.134 | 50.072031 | 41.897206 | -2335.94 | 857.00   |

## 2.4 Star Slots

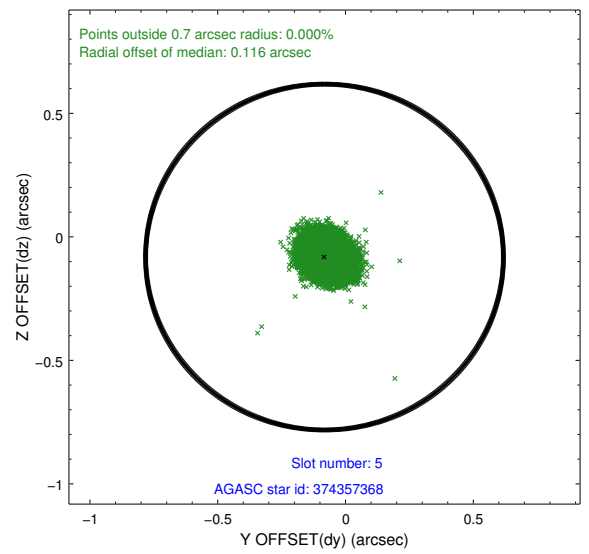
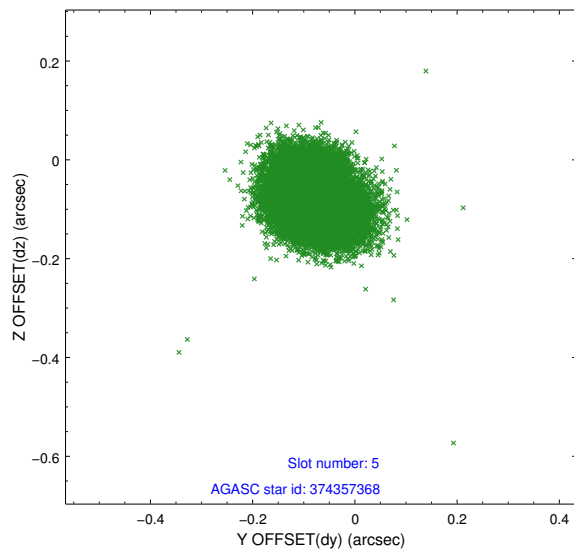
### 2.4.1 Slot 3



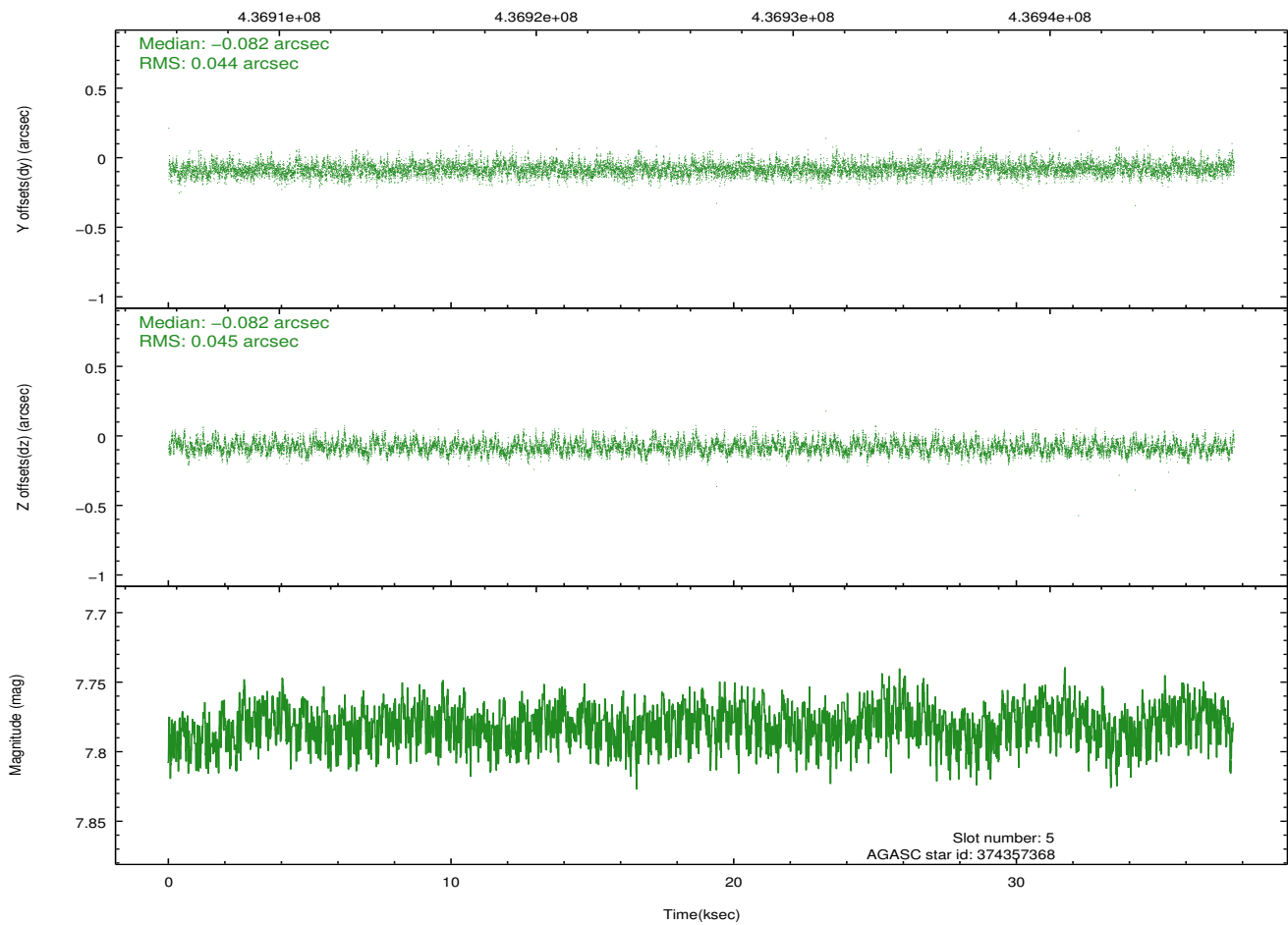
## 2.4.2 Slot 4



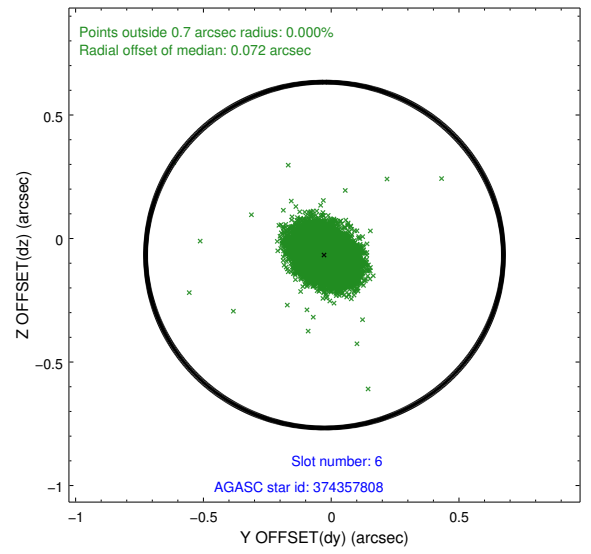
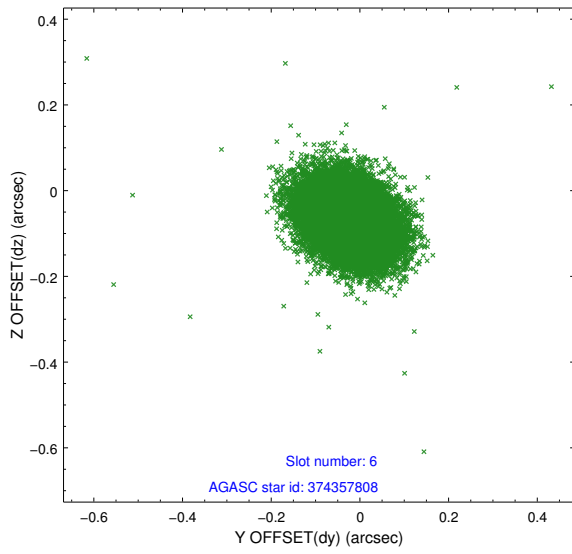
### 2.4.3 Slot 5



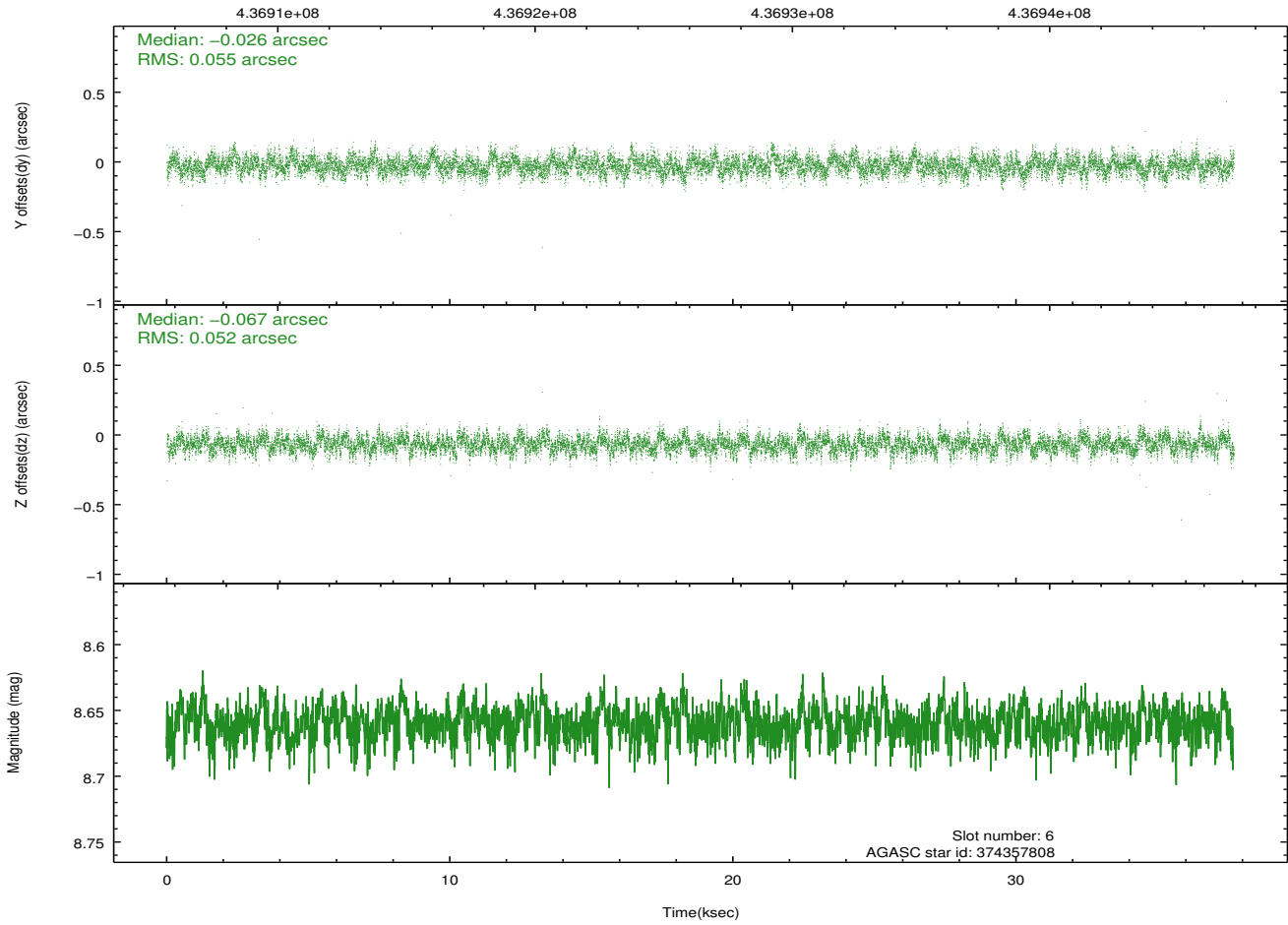
Time (s)



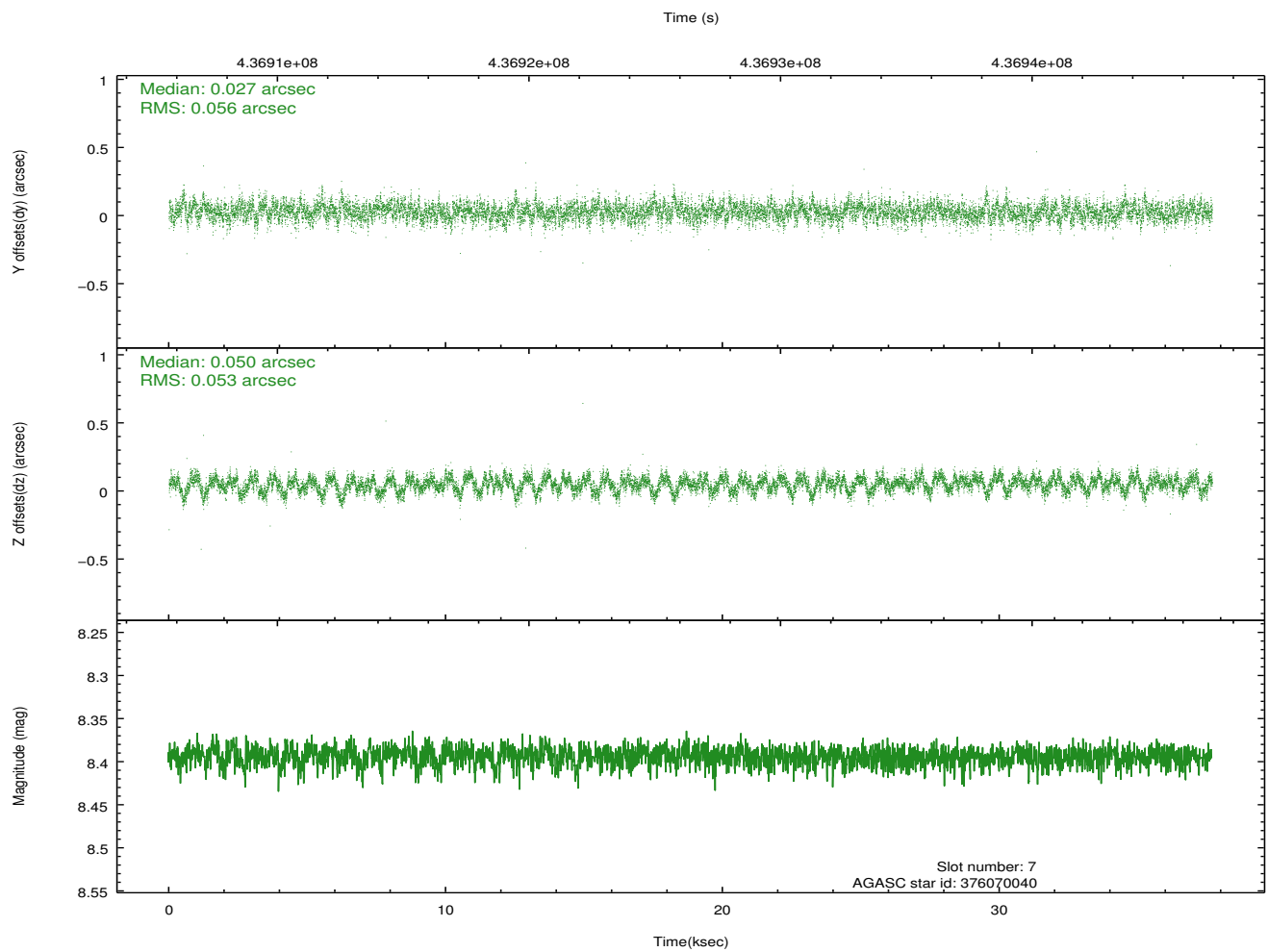
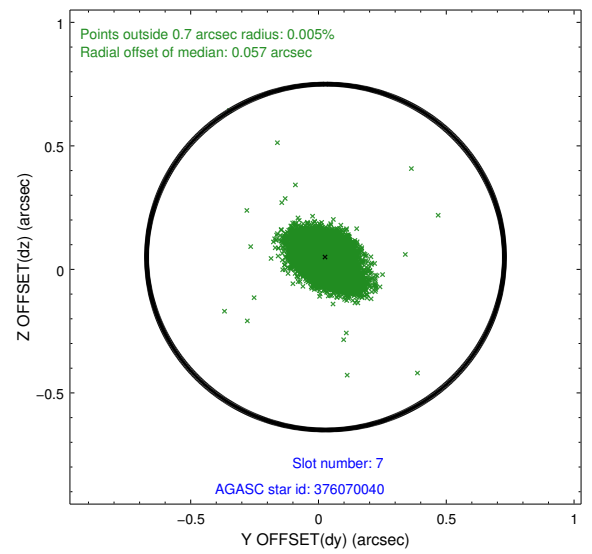
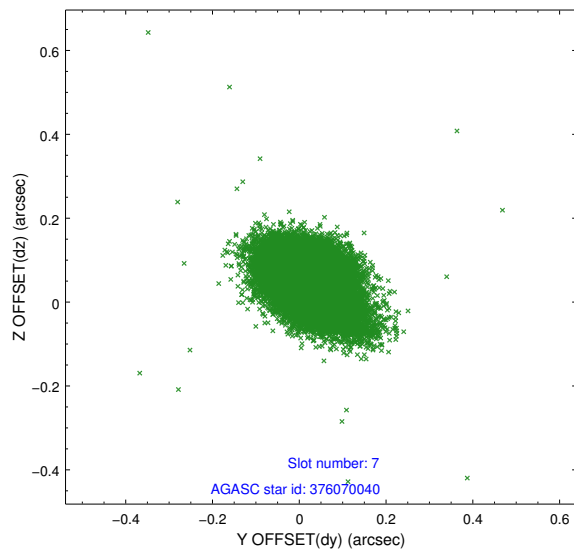
## 2.4.4 Slot 6



Time (s)

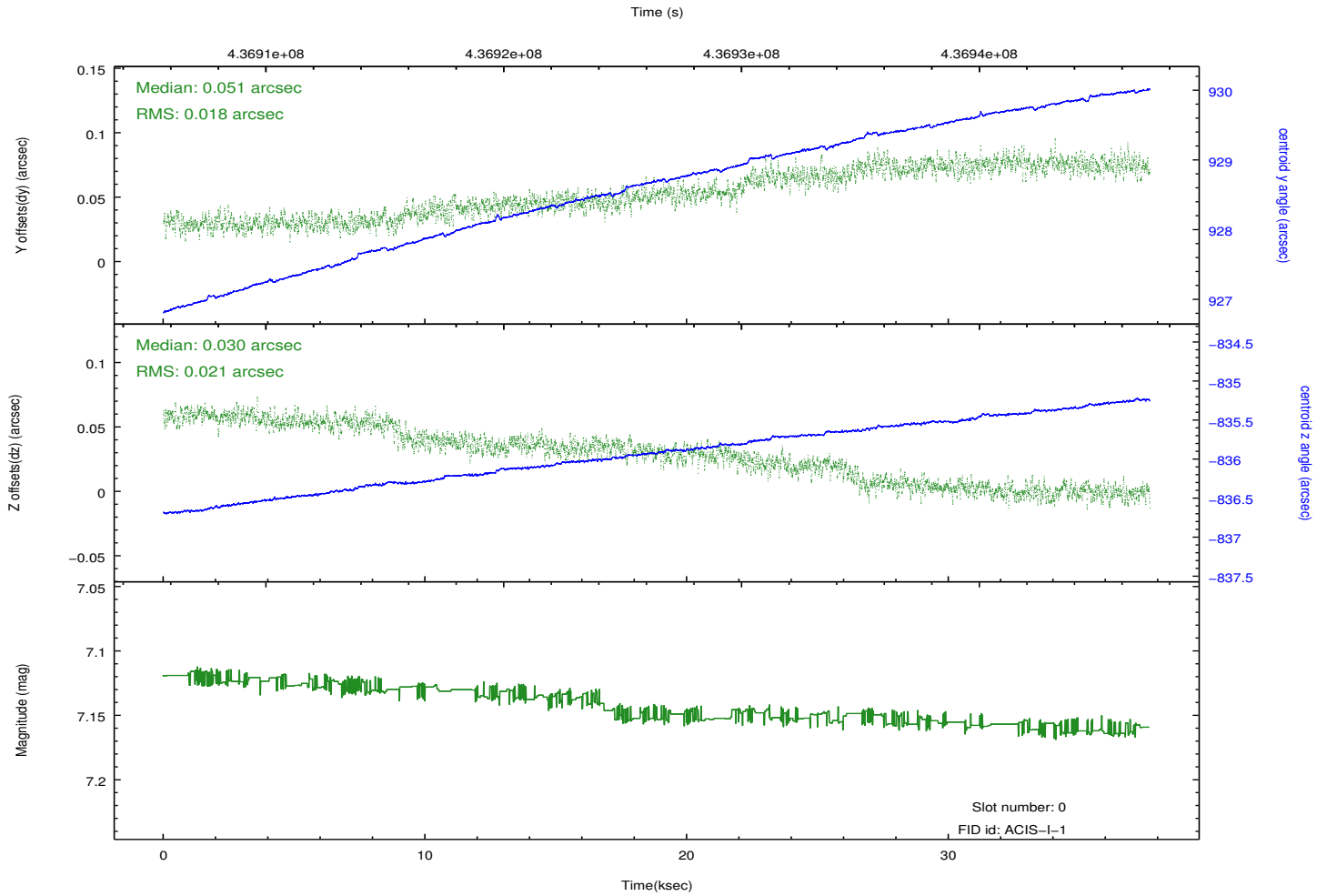
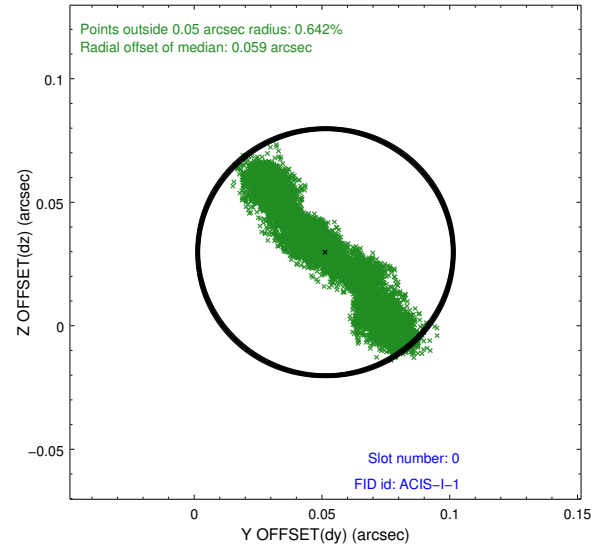
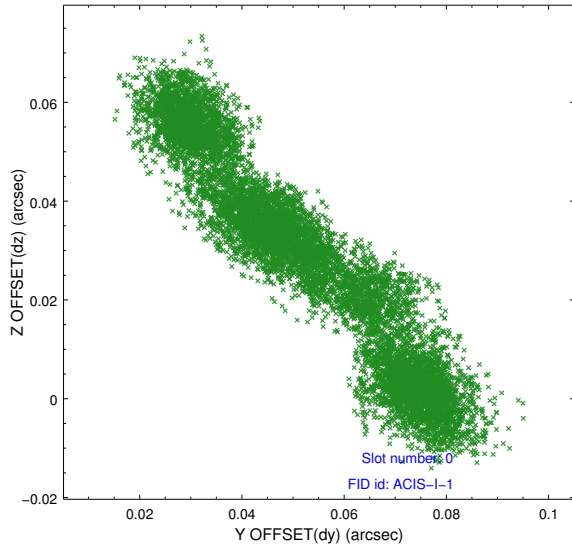


## 2.4.5 Slot 7

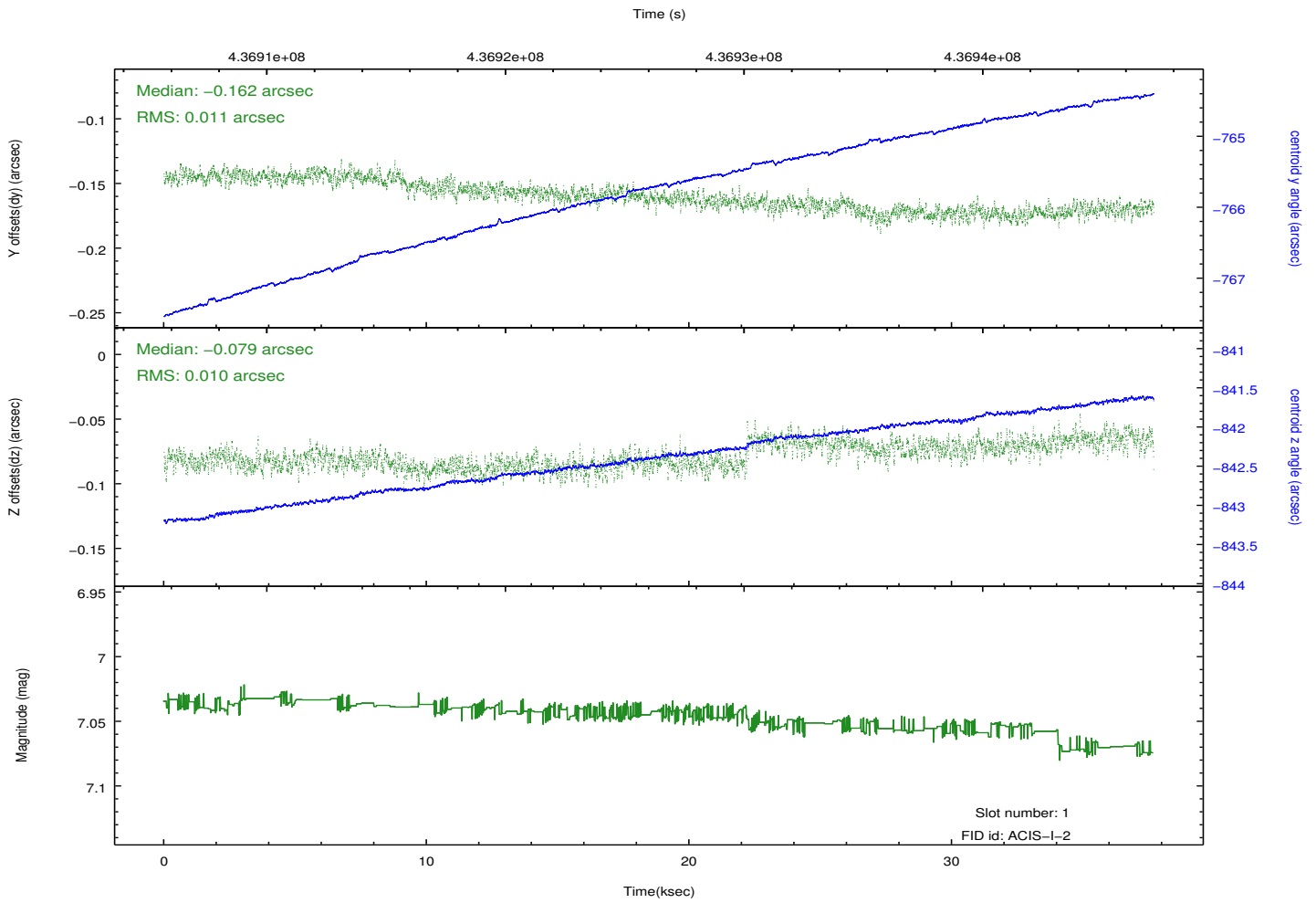
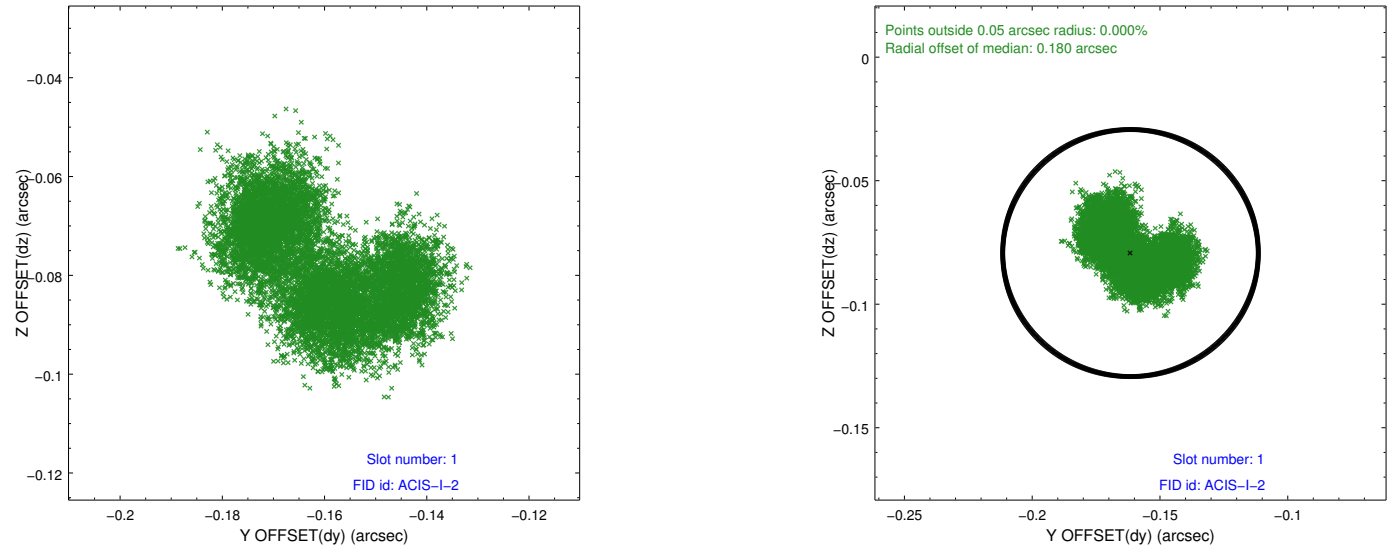


## 2.5 FID Slots

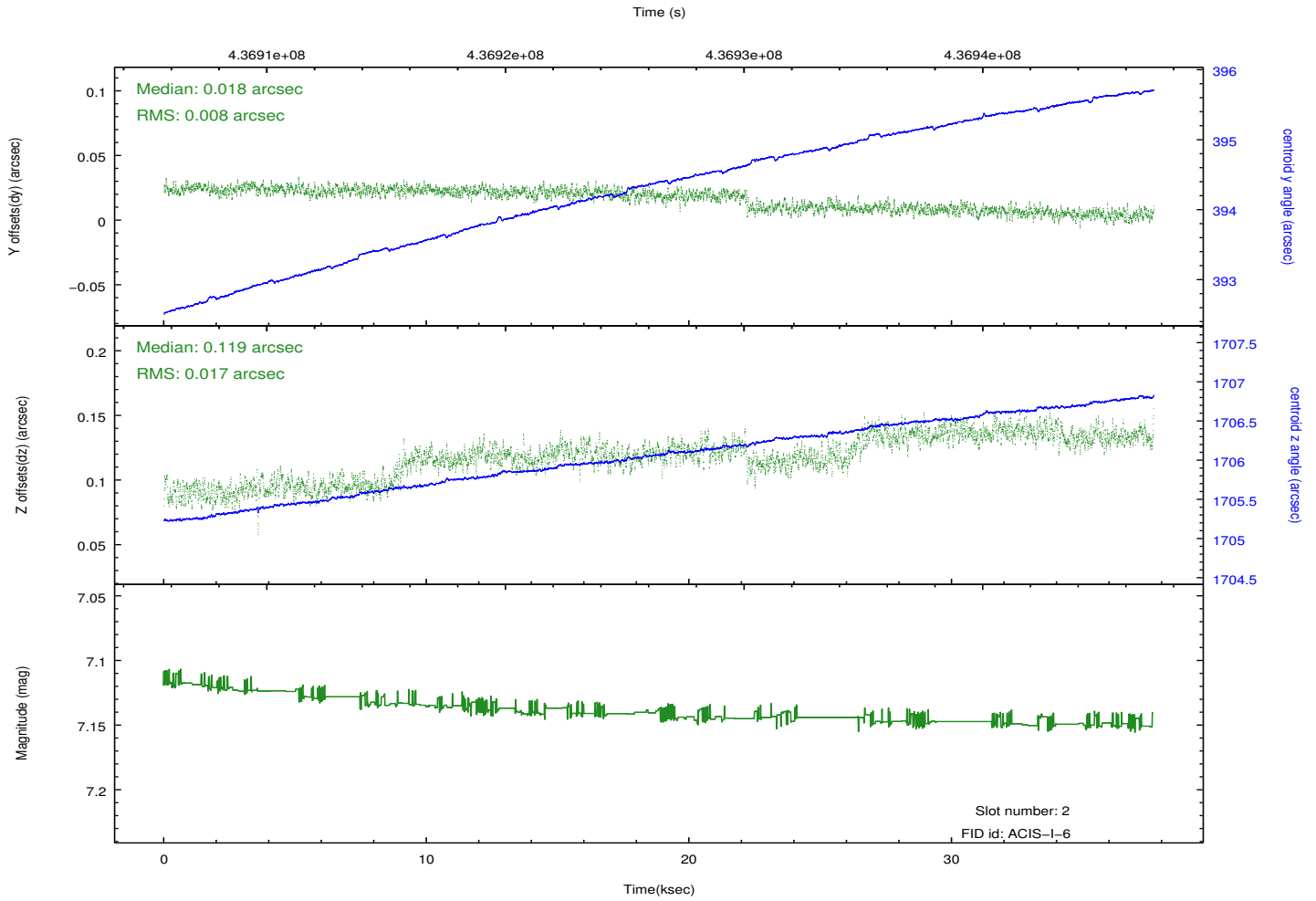
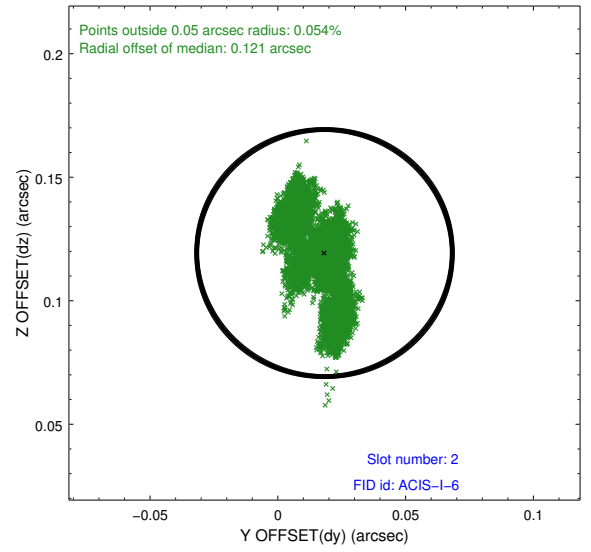
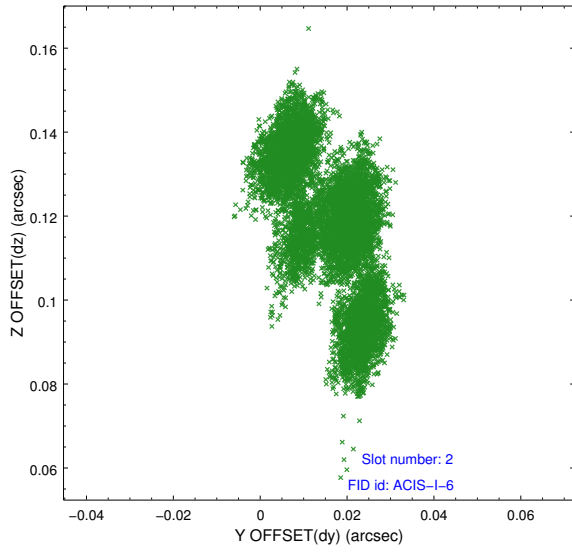
### 2.5.1 Slot 0



## 2.5.2 Slot 1



### 2.5.3 Slot 2



## A Summary

### A.1 Status

|                            |                 |
|----------------------------|-----------------|
| V&V Scientist              | Jen Lauer       |
| V&V Date (YYYY-MM-DD)      | 2012.02.28      |
| V&V Edition                | 1               |
| V&V Disposition and Status | OK              |
| V&V Charge Time            | 37.273569803357 |

### A.2 Comments