

# V&V Reference Report

## L2 ASCDS Version : 8.4.4

Observation 8651 - L2 Version 2  
Chandra X-Ray Center

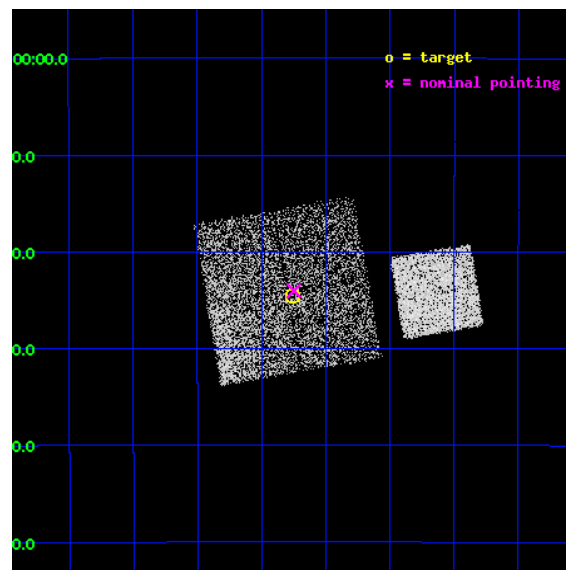
L2 Processing Date : May 14 2012

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# 1 Front

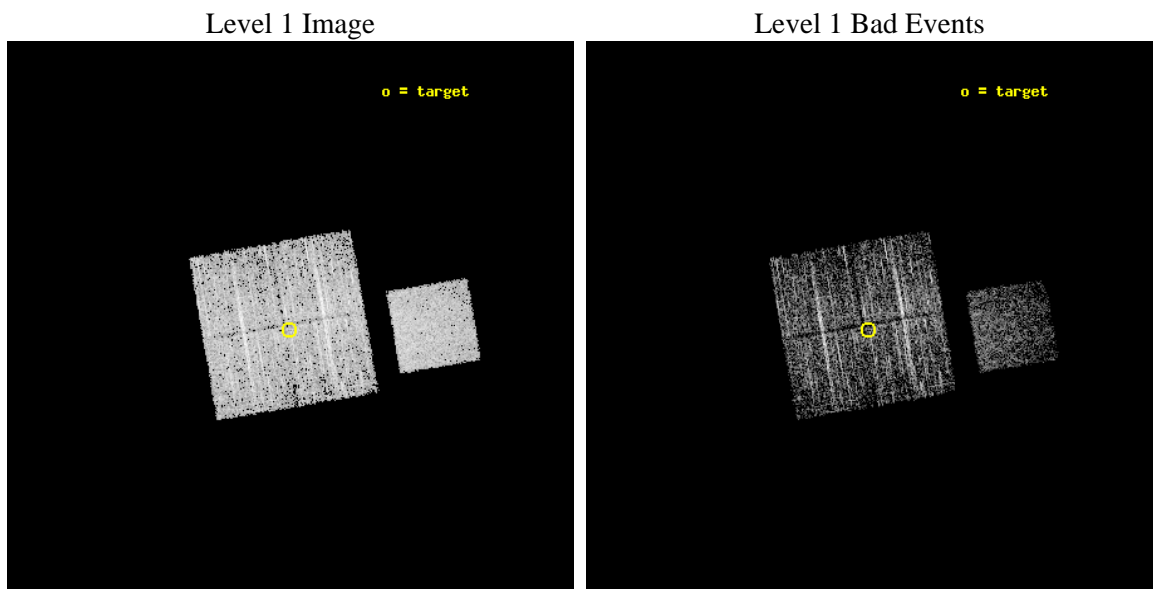
|          |   |   |
|----------|---|---|
| seq_num  | 400702  | Sequence number                             |
| obs_id   | 8651  | Observation id                              |
| title    | The Galactic Bulge Survey: categorising the plethora of faint X-ray sources in the Galactic Bulge | Proposal title                              |
| observer | Prof Mariano Mendez   | Principal investigator                      |
| object   | GBSGTO1   | Source name                                 |
| dtcycle  | 0   | &#160                                       |
| cycle    | P   | events from which exps?<br>Prim/Second/Both |
| ra_targ  | 266.688158  | Observer's specified target RA [deg]        |
| dec_targ | -26.408513  | Observer's specified target Dec [deg]       |
| ra_nom   | 266.68693126392   | Nominal RA [deg]                            |
| dec_nom  | -26.400665821221  | Nominal Dec [deg]                           |
| roll_nom | 80.208158998583   | Nominal Roll [deg]                          |
| revision | 2   | Processing version of data                  |
| ontime   | 2179.2590163946   | Sum of GTIs [s]                             |
| livetime | 2150.7853929983   | Livetime [s]                                |
| ontime0  | 2182.4000167847   | Sum of GTIs [s]                             |
| ontime1  | 2179.2590165138   | Sum of GTIs [s]                             |
| ontime2  | 2182.4000167847   | Sum of GTIs [s]                             |
| ontime3  | 2179.2590163946   | Sum of GTIs [s]                             |
| ontime7  | 2182.4000167847   | Sum of GTIs [s]                             |
| l2events | 18927   | Number of level 2 events                    |



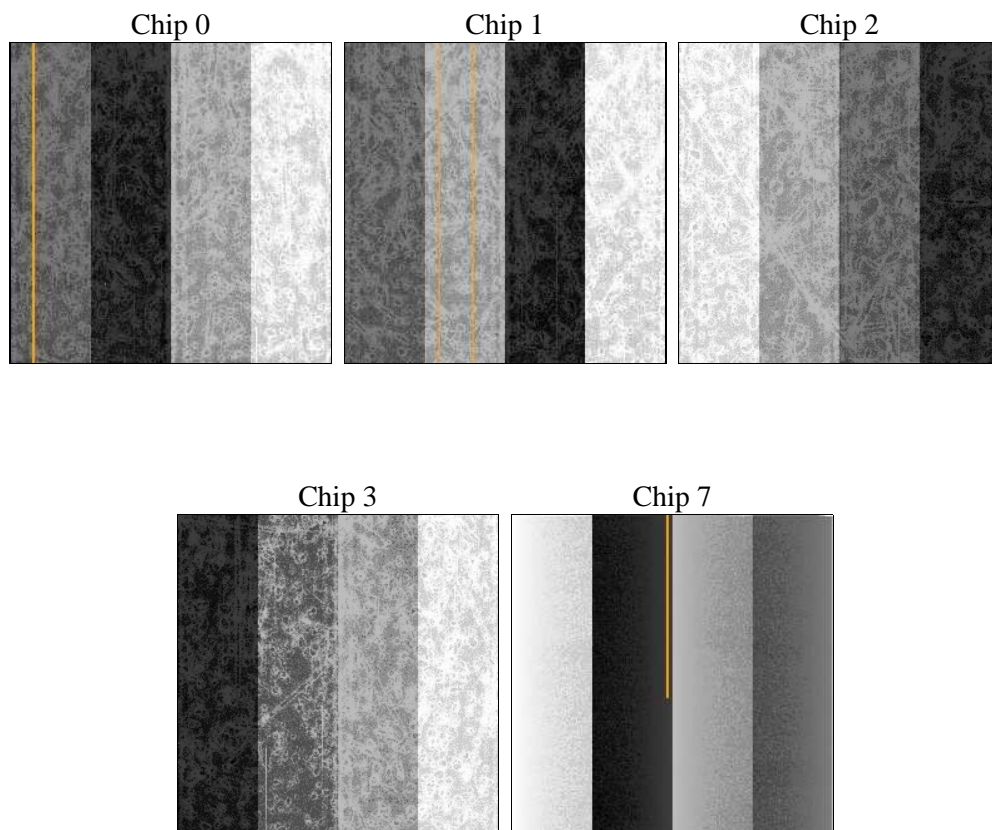
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

|          |                     |                                |                |                 |   |
|----------|---------------------|--------------------------------|----------------|-----------------|---|
| obi_num  | 1                   | Obi number                     | sched_exp_time | 2000.000000     | [s] Scheduled observation exposure time |
| ascdsver | 8.4.4               | Processing system revision     | ontime         | 2179.2590163946 | Sum of GTIs [s]                         |
| caldsver | 4.4.9               | &#160                          | ontime0        | 2182.4000167847 | Sum of GTIs [s]                         |
| date     | 2012-05-14T23:52:56 | Date and time of file creation | ontime1        | 2179.2590165138 | Sum of GTIs [s]                         |
| revision | 2                   | Processing version of data     | ontime2        | 2182.4000167847 | Sum of GTIs [s]                         |
|          |                     |                                | ontime3        | 2179.2590163946 | Sum of GTIs [s]                         |
|          |                     |                                | ontime7        | 2182.4000167847 | Sum of GTIs [s]                         |
|          |                     |                                | l1events       | 107033          | Number of level 1 events                |

### 2.1.4 Events

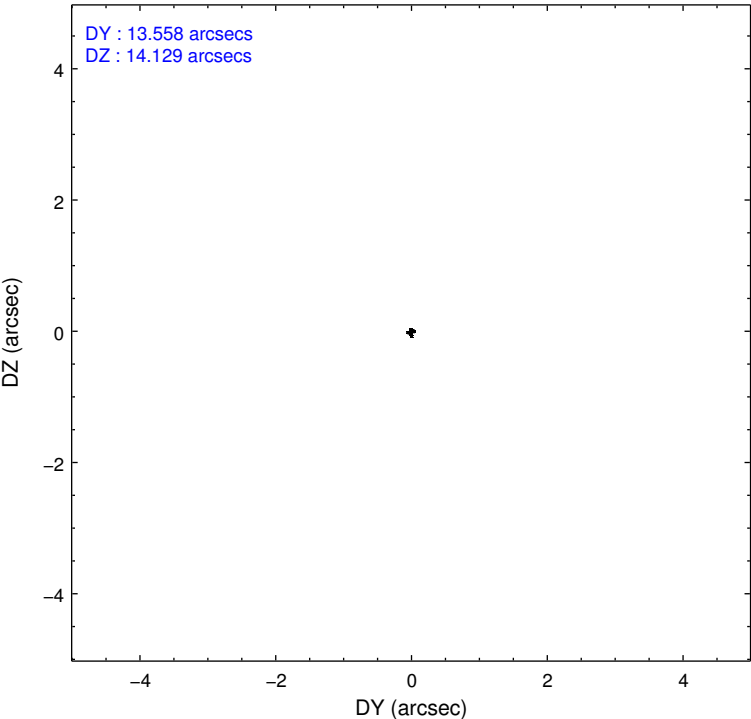
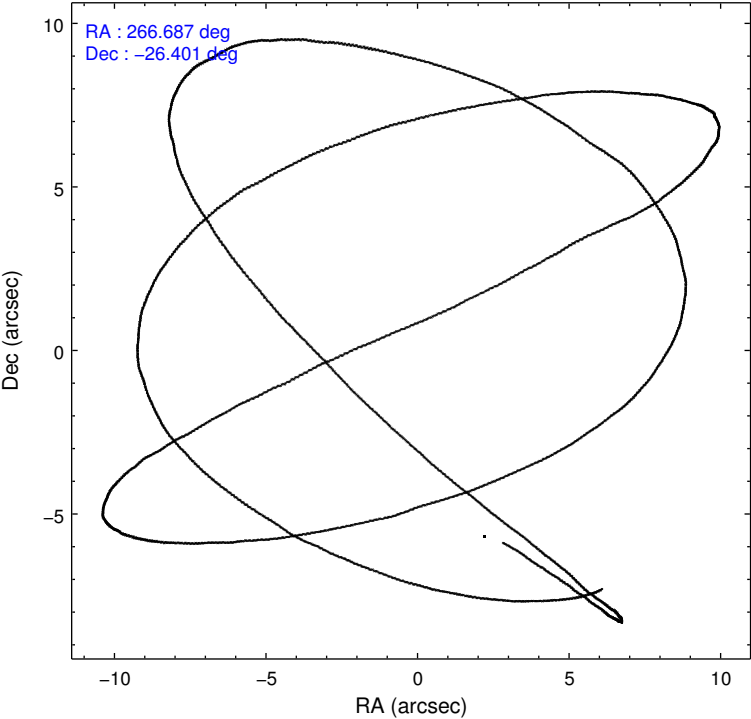
|                 | ccd 0 | ccd 1 | ccd 2 | ccd 3 | ccd 7 |
|-----------------|-------|-------|-------|-------|-------|
| level 1 events  | 20102 | 21237 | 21618 | 21211 | 22865 |
| rejected events | 17183 | 17140 | 19458 | 18897 | 13652 |
| rejected %      | 85%   | 80%   | 90%   | 89%   | 59%   |

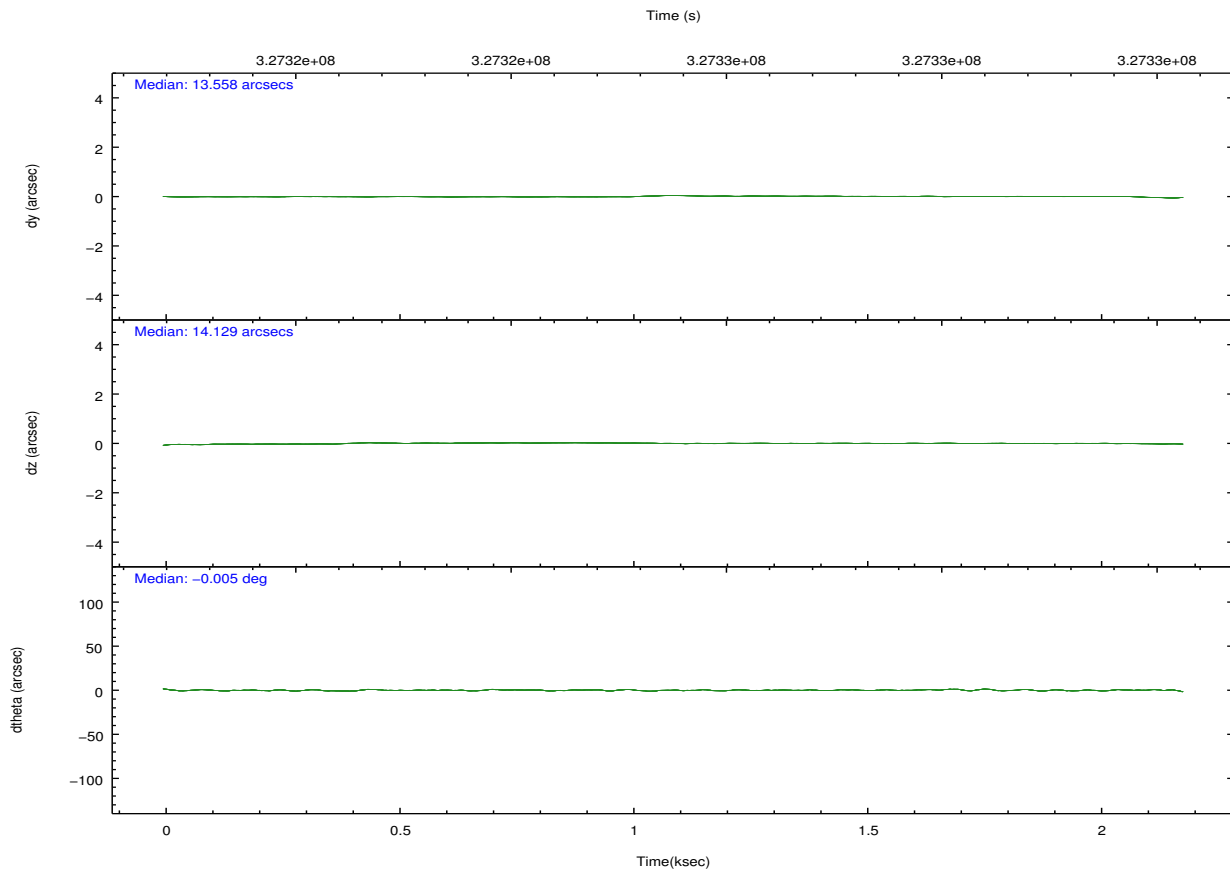
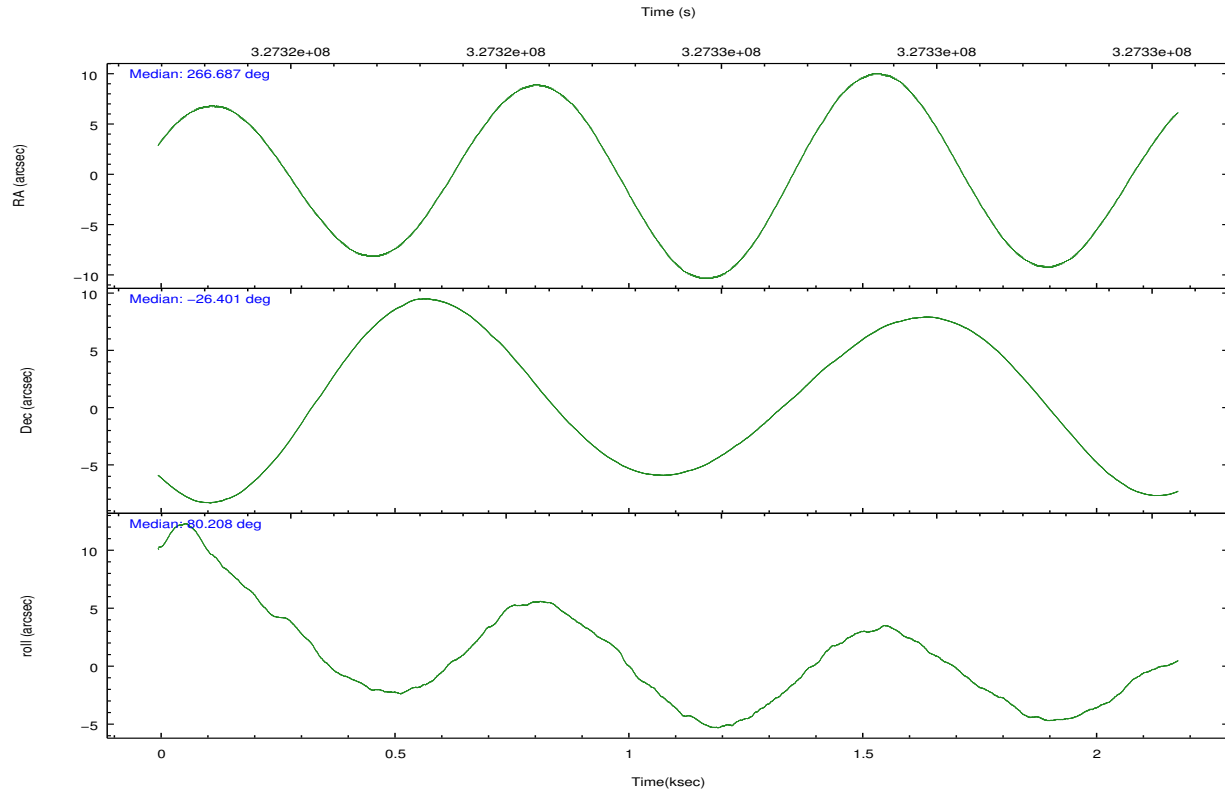
|                | ccd 0 | ccd 1 | ccd 2 | ccd 3 | ccd 7 |
|----------------|-------|-------|-------|-------|-------|
| grade 0 events | 1764  | 2696  | 1102  | 1260  | 1115  |
|                | 8%    | 12%   | 5%    | 5%    | 4%    |
| grade 1 events | 28    | 21    | 12    | 7     | 30    |
|                | 0%    | 0%    | 0%    | 0%    | 0%    |
| grade 2 events | 611   | 799   | 579   | 524   | 2121  |
|                | 3%    | 3%    | 2%    | 2%    | 9%    |
| grade 3 events | 302   | 342   | 190   | 257   | 937   |
|                | 1%    | 1%    | 0%    | 1%    | 4%    |
| grade 4 events | 225   | 324   | 264   | 264   | 997   |
|                | 1%    | 1%    | 1%    | 1%    | 4%    |
| grade 5 events | 726   | 802   | 701   | 795   | 2476  |
|                | 3%    | 3%    | 3%    | 3%    | 10%   |
| grade 6 events | 438   | 540   | 380   | 414   | 5408  |
|                | 2%    | 2%    | 1%    | 1%    | 23%   |
| grade 7 events | 16008 | 15713 | 18390 | 17690 | 9781  |
|                | 79%   | 73%   | 85%   | 83%   | 42%   |

## 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                         | VFAINT              | VFAINT                | CCD I0 on                             | Y         | Y       |
| Observation mode                  | POINTING            | POINTING              | CCD I1 on                             | Y         | Y       |
| [deg] Pointing RA                 | 266.697705          | 266.6869312639208     | CCD I2 on                             | Y         | Y       |
| [deg] Pointing Dec                | -26.426265          | -26.40066582122148    | CCD I3 on                             | Y         | Y       |
| [deg] Pointing Roll               | 80.004257           | 80.20815899858263     | 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                             | N         | N       |
| [mm] SIM translation stage pos    | -233.592463         | -233.5874344608287    | CCD S3 on                             | O1        | Y       |
| [mm] SIM translation stage offset | 0                   | -0.005018542100998502 | CCD S4 on                             | N         | N       |
| [s] Observation start time (MET)  | 327324463.184000    | 327324087.55093       | CCD S5 on                             | N         | N       |
| Observation start date            | 2008-05-16T11:26:38 | 2008-05-16T11:21:27   | Number of optional ACIS chips dropped | 0         | 0       |
| [s] Observation end time (MET)    | 327326463.184000    | 327326597.26355       | On-chip summing requested             | N         | N       |
| Observation end date              | 2008-05-16T11:59:58 | 2008-05-16T12:03:17   | Subarray requested                    | NONE      | NONE    |
| Read mode                         | TIMED               | TIMED                 | Alternating exposures requested       | N         | N       |
|                                   |                     |                       | [s] Primary exposure time             | 0.000000  | 3.1     |

2.3 Aspect





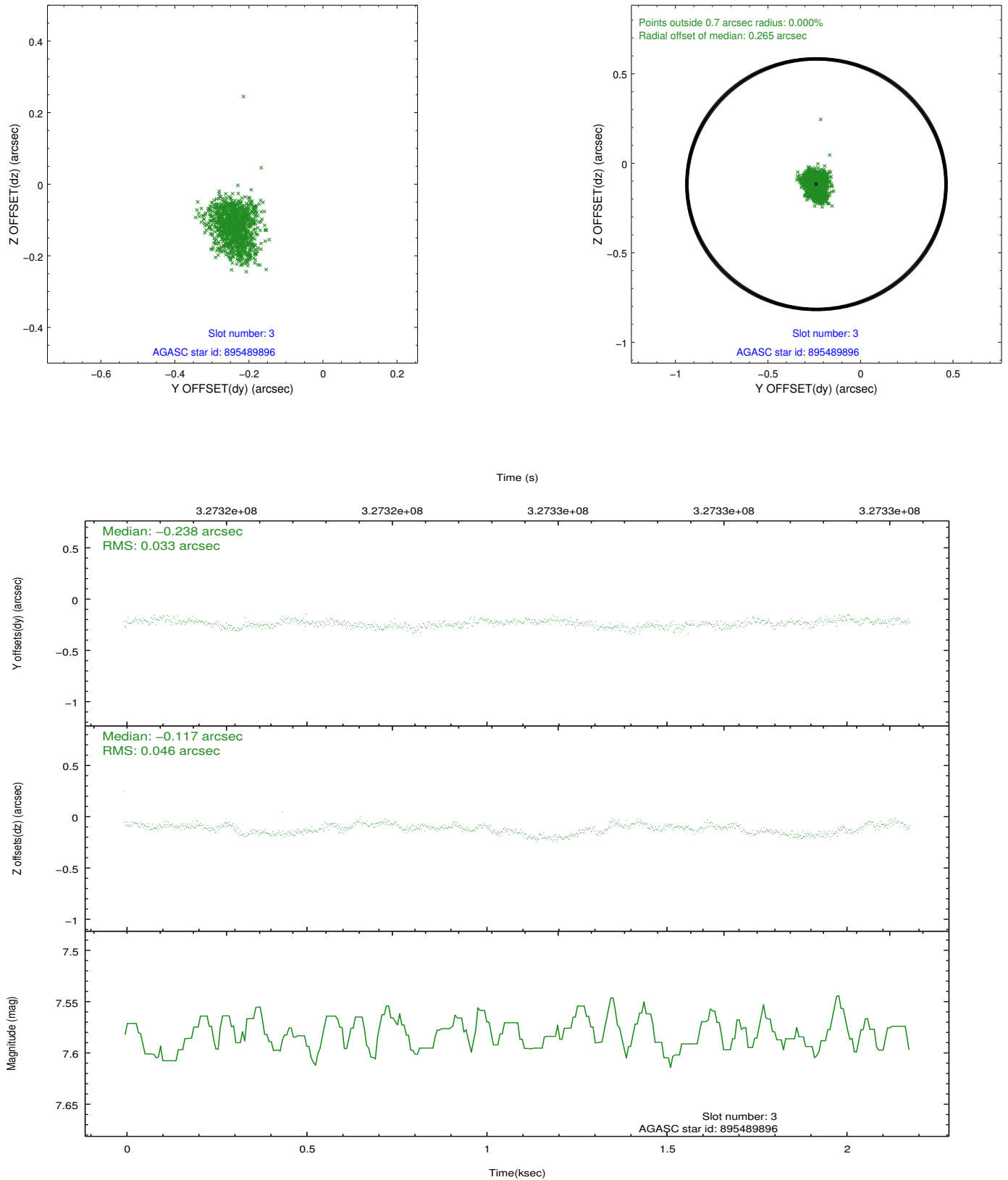
### Slot Statistics

| slot | status | id        | mag  | n_pts | med_dy | med_dz | dr1   | dr2   | ra         | dec        | mean_y   | mean_z   |
|------|--------|-----------|------|-------|--------|--------|-------|-------|------------|------------|----------|----------|
| 0    | FID    | ACIS-I-1  | 7.06 | 532   | 0.040  | 0.018  | 0.006 | 0.014 | 0.000000   | 0.000000   | 926.03   | -837.64  |
| 1    | FID    | ACIS-I-2  | 6.97 | 532   | -0.051 | -0.050 | 0.009 | 0.017 | 0.000000   | 0.000000   | -766.50  | -845.73  |
| 2    | FID    | ACIS-I-5  | 7.04 | 532   | -0.081 | 0.105  | 0.007 | 0.013 | 0.000000   | 0.000000   | -1823.83 | 1058.28  |
| 3    | GUIDE  | 895489896 | 7.58 | 1061  | -0.238 | -0.117 | 0.060 | 0.094 | 266.605795 | -26.200300 | 750.17   | 433.46   |
| 4    | GUIDE  | 896011536 | 9.36 | 1065  | 0.189  | 0.274  | 0.110 | 0.172 | 267.007333 | -26.766562 | -1033.15 | -1192.24 |
| 5    | GUIDE  | 896013040 | 7.35 | 1065  | 0.040  | -0.175 | 0.061 | 0.095 | 266.506589 | -26.972299 | -2042.81 | 261.38   |
| 6    | GUIDE  | 896013056 | 8.53 | 1065  | 0.109  | 0.165  | 0.065 | 0.098 | 266.762141 | -26.954413 | -1837.56 | -533.21  |
| 7    | GUIDE  | 896015112 | 9.15 | 1064  | -0.091 | -0.138 | 0.094 | 0.147 | 266.684847 | -26.286161 | 488.58   | 127.82   |

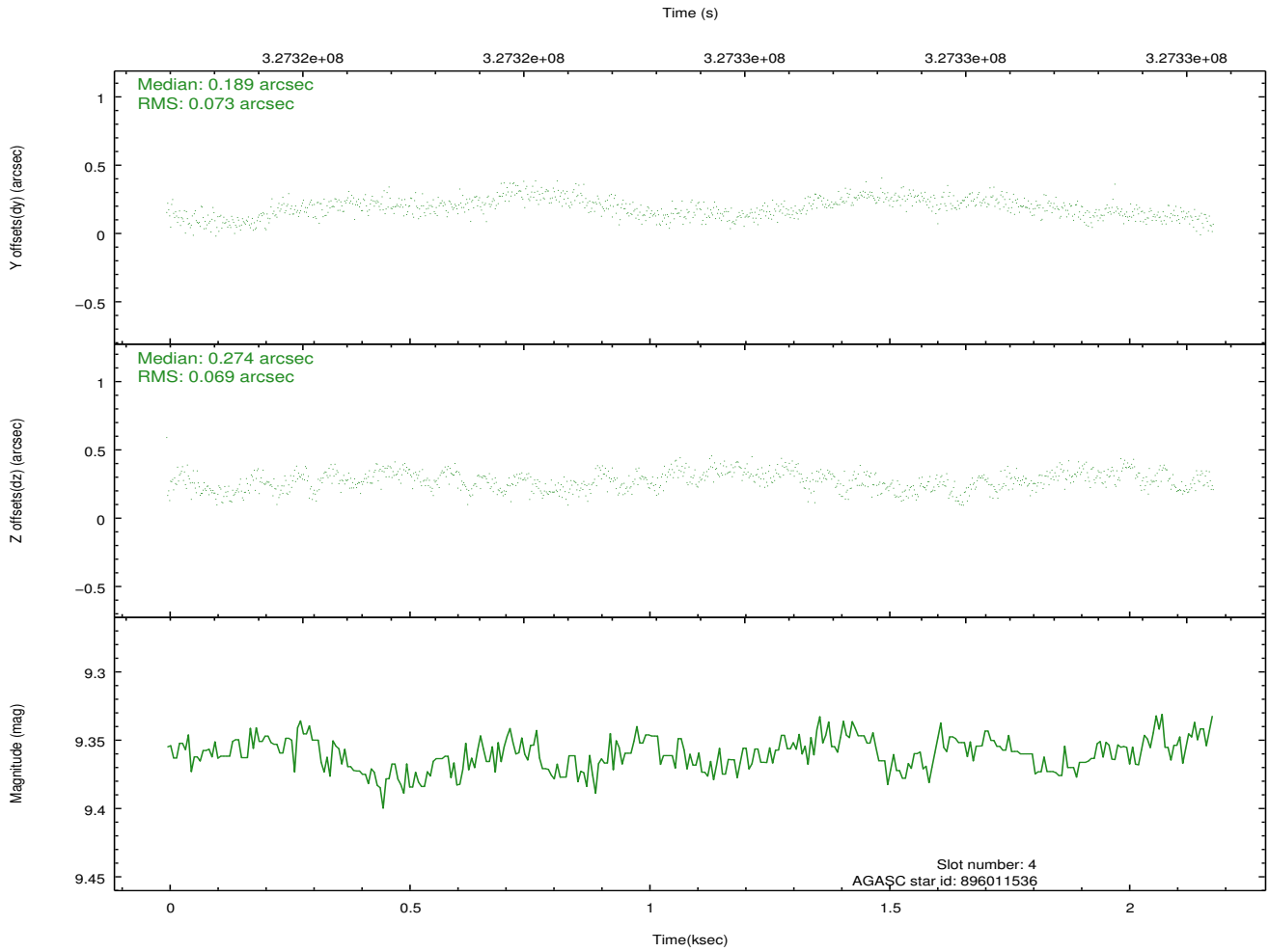
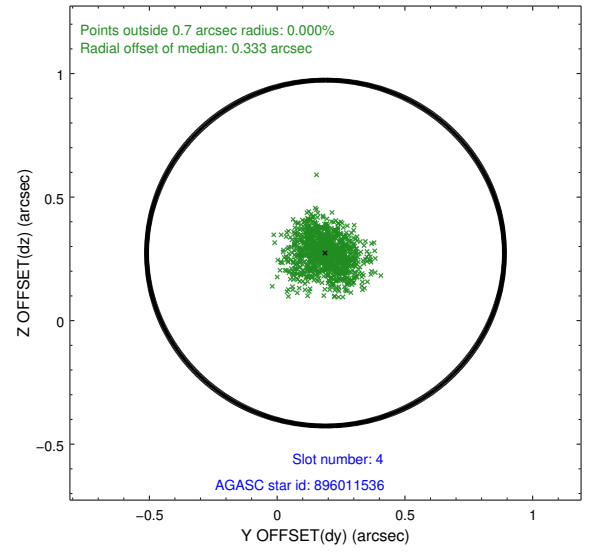
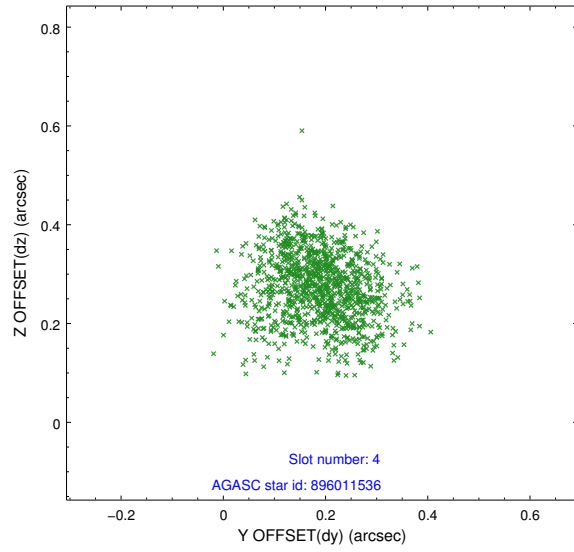


## 2.4 Star Slots

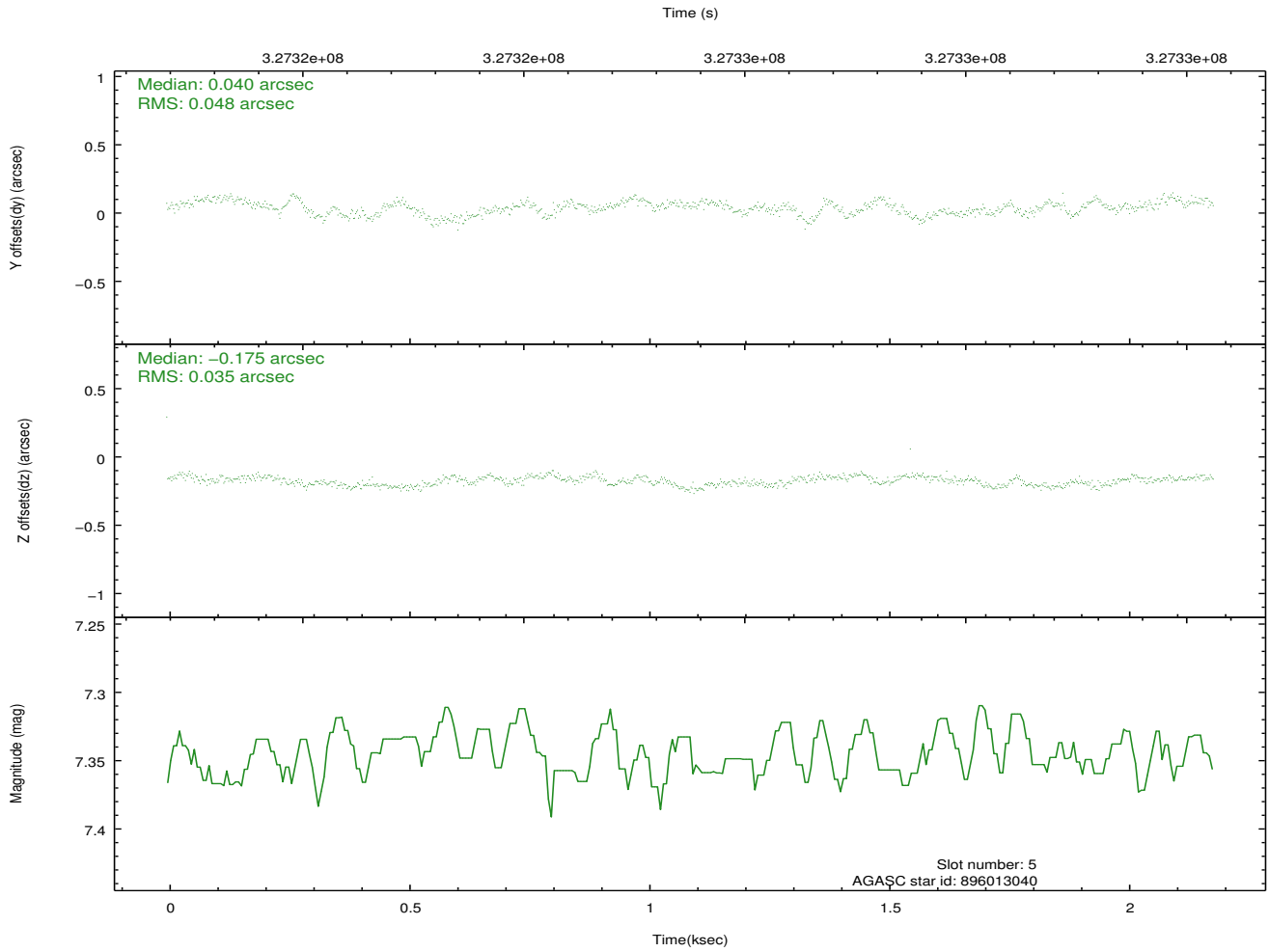
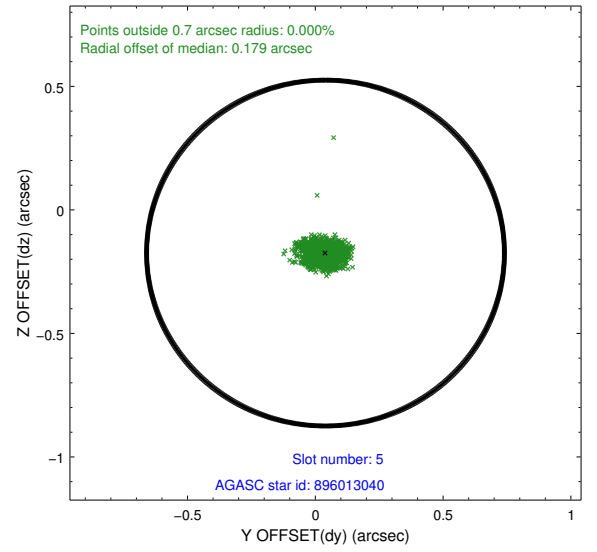
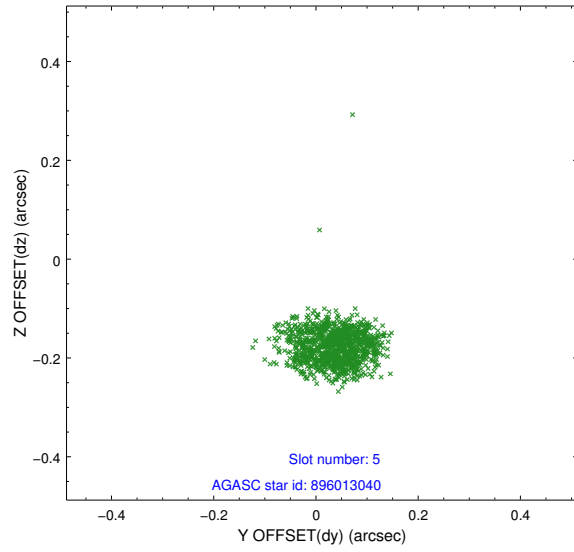
### 2.4.1 Slot 3



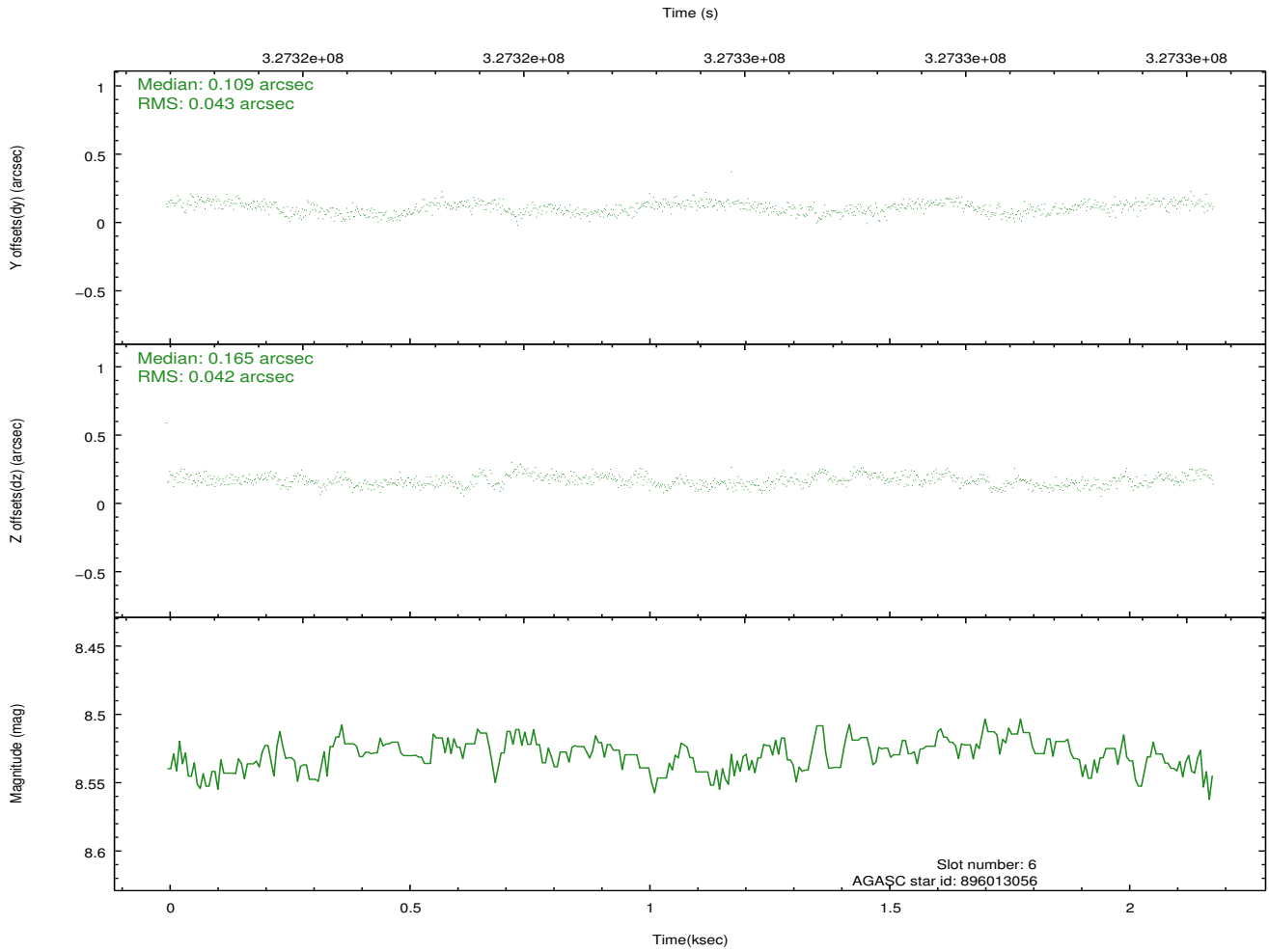
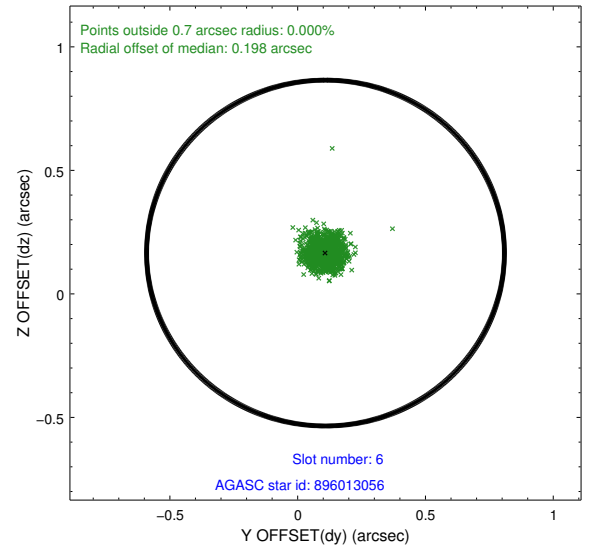
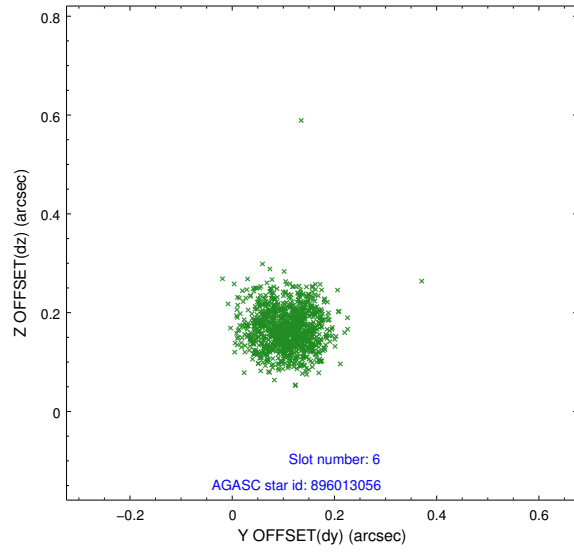
## 2.4.2 Slot 4



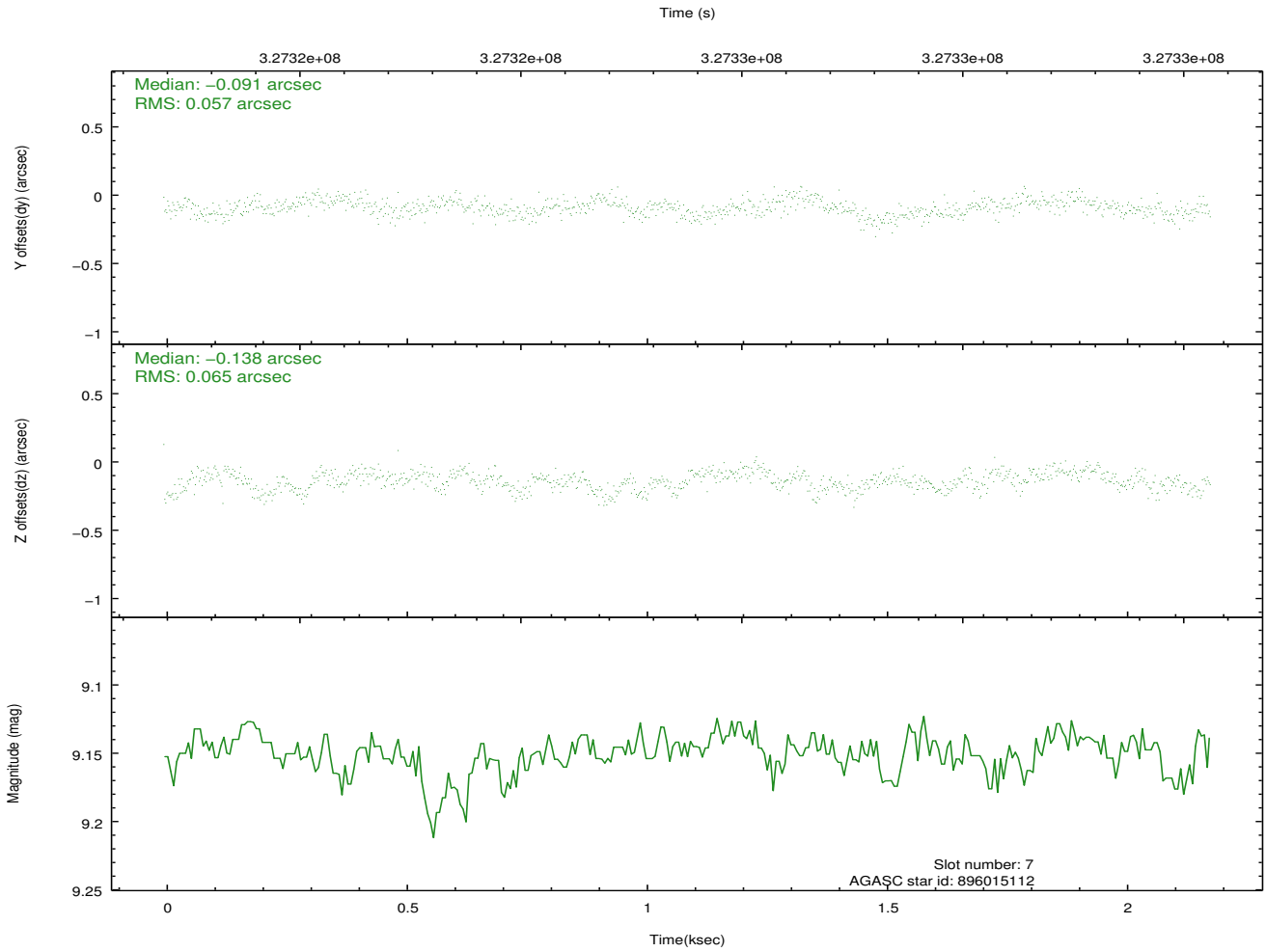
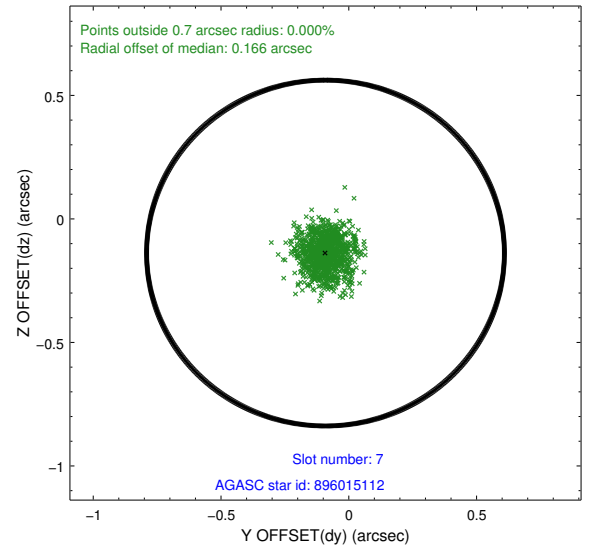
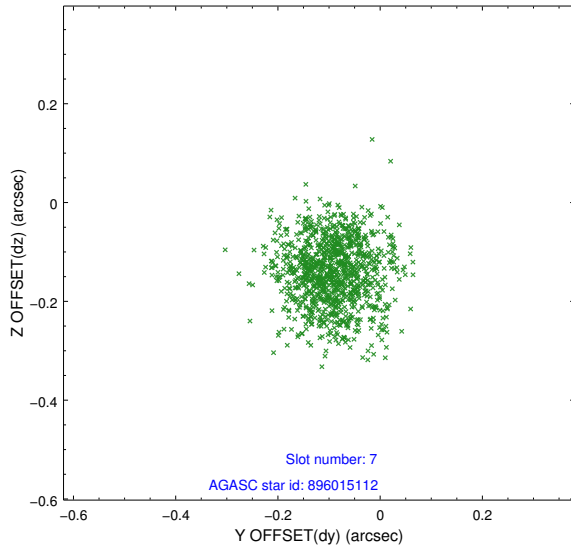
### 2.4.3 Slot 5



## 2.4.4 Slot 6

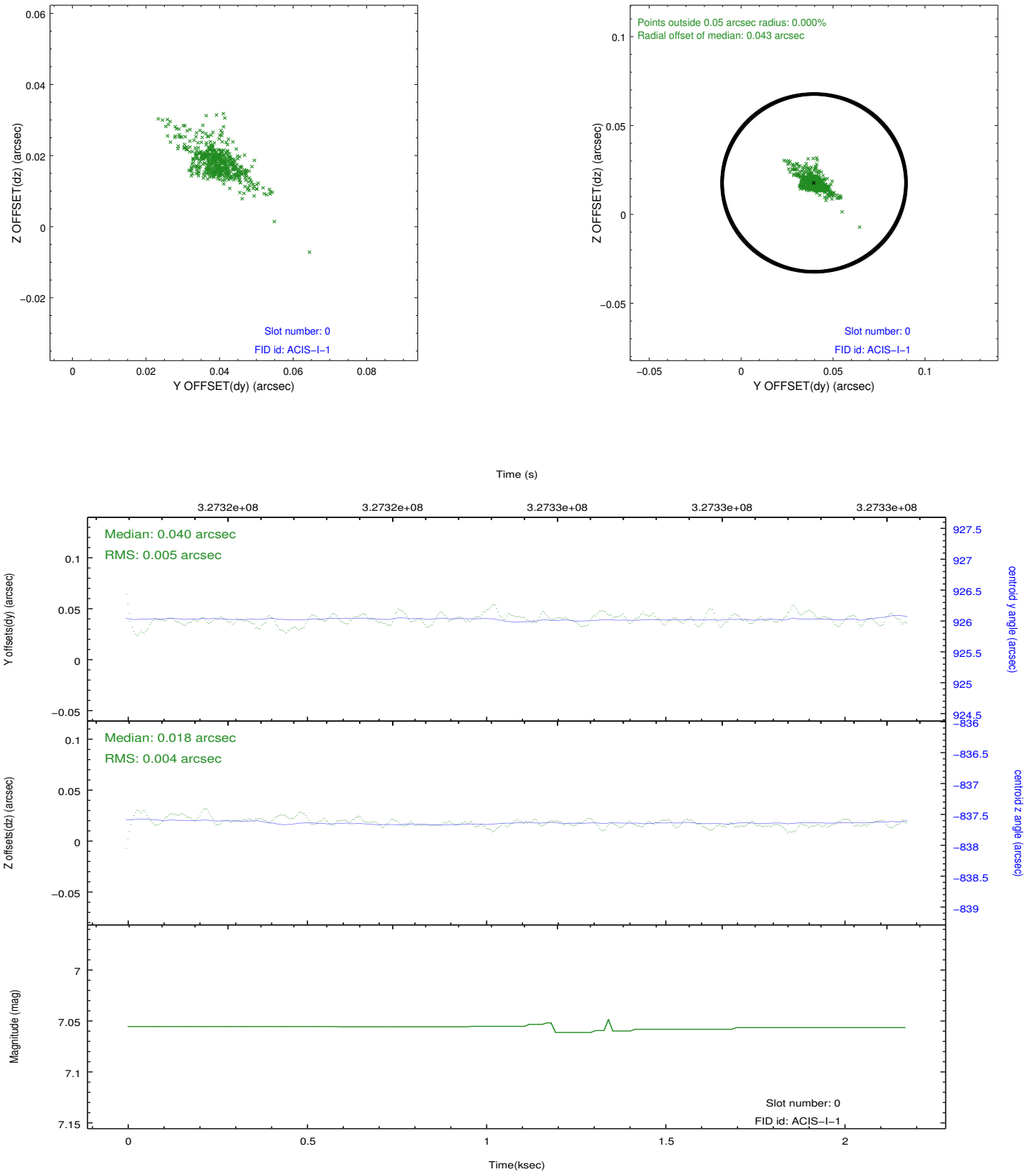


## 2.4.5 Slot 7

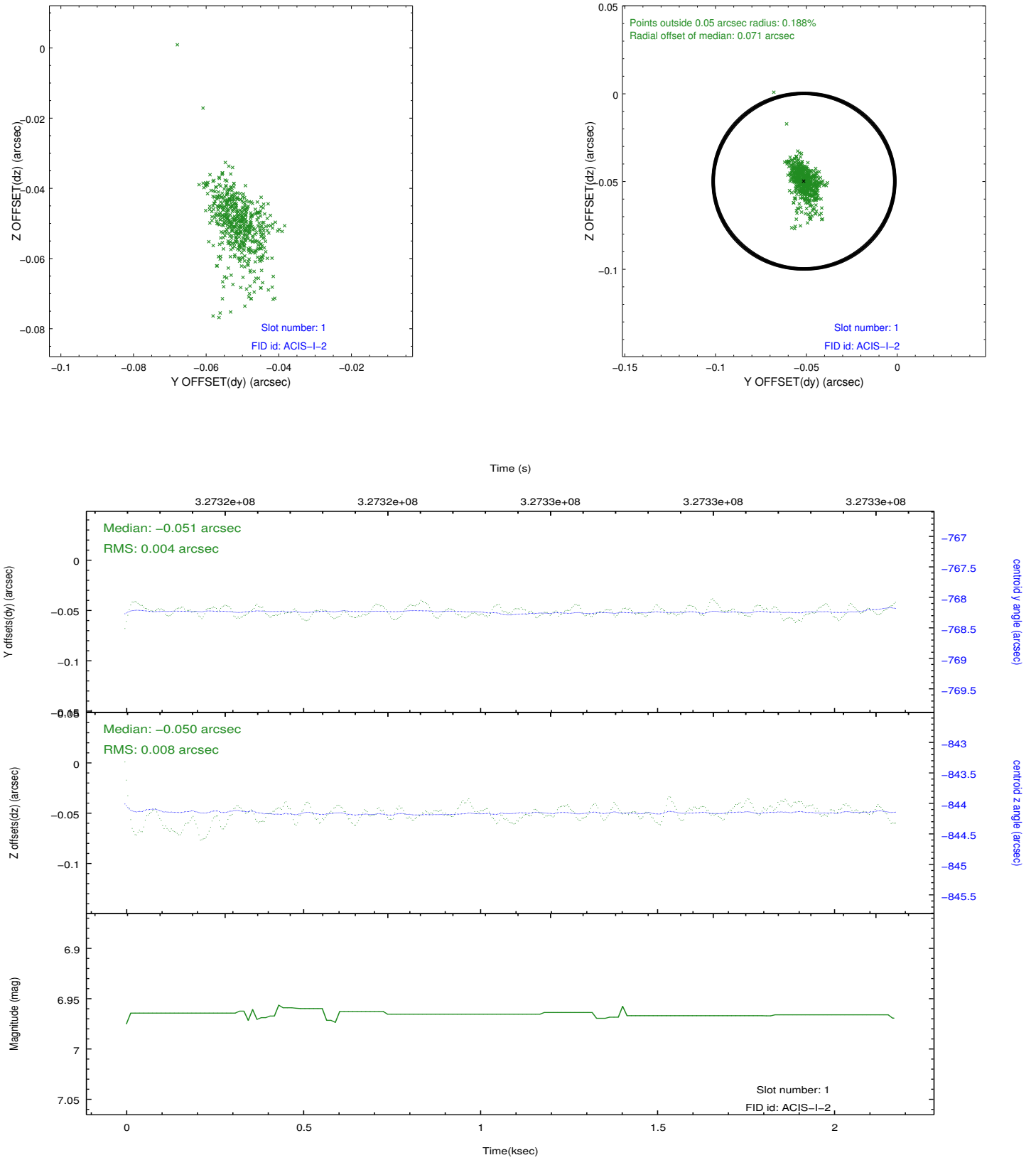


## 2.5 FID Slots

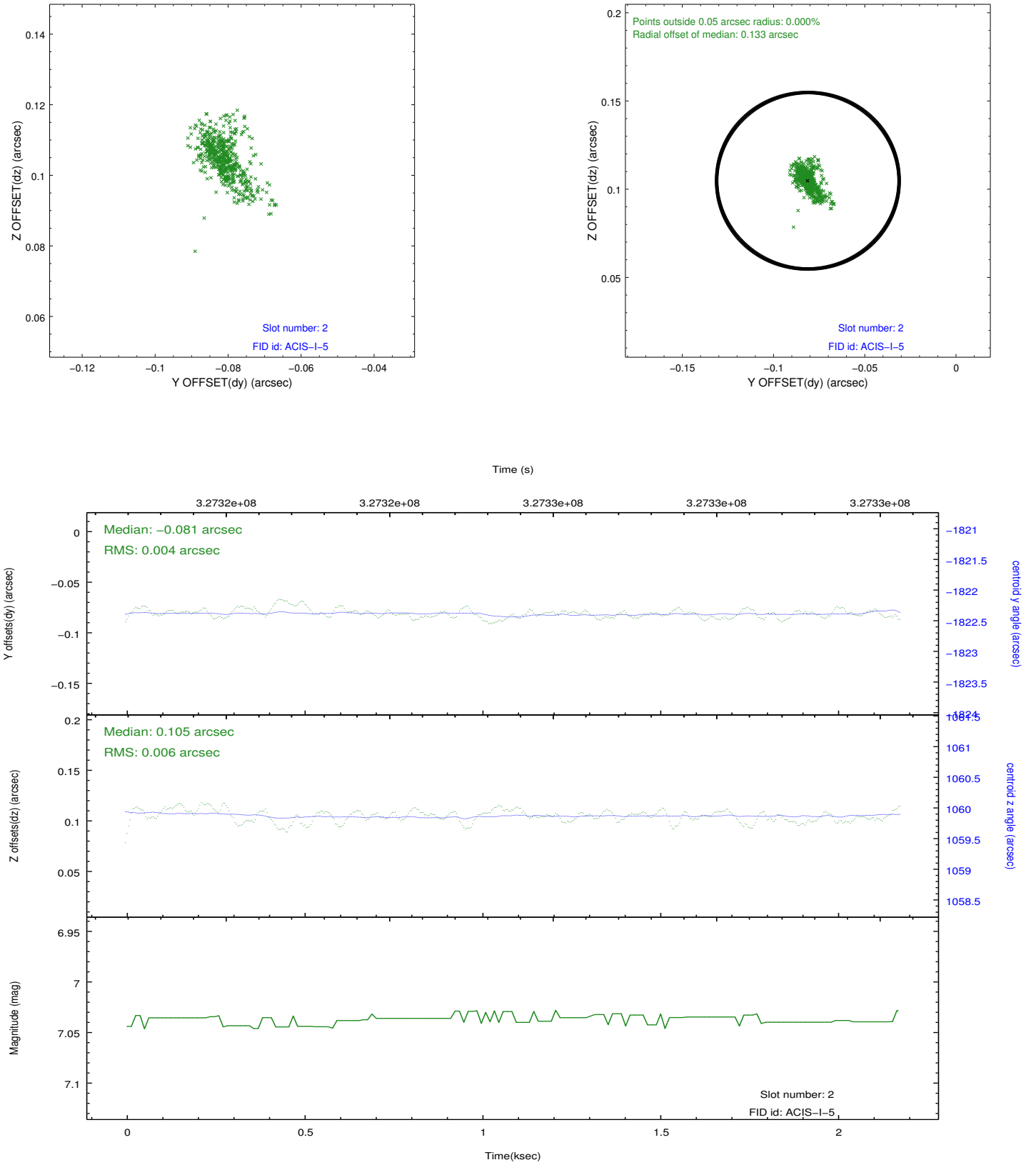
### 2.5.1 Slot 0



## 2.5.2 Slot 1



### 2.5.3 Slot 2





## A Summary

### A.1 Status

|                            |               |
|----------------------------|---------------|
| V&V Scientist              | Beth Sundheim |
| V&V Date (YYYY-MM-DD)      | 2012.05.18    |
| V&V Edition                | 1             |
| V&V Disposition and Status | OK            |
| V&V Charge Time            | 2.17925901    |

### A.2 Comments