

# V&V Reference Report

## L2 ASCDS Version : 8.4.3

Observation 12282 - L2 Version 2  
Chandra X-Ray Center

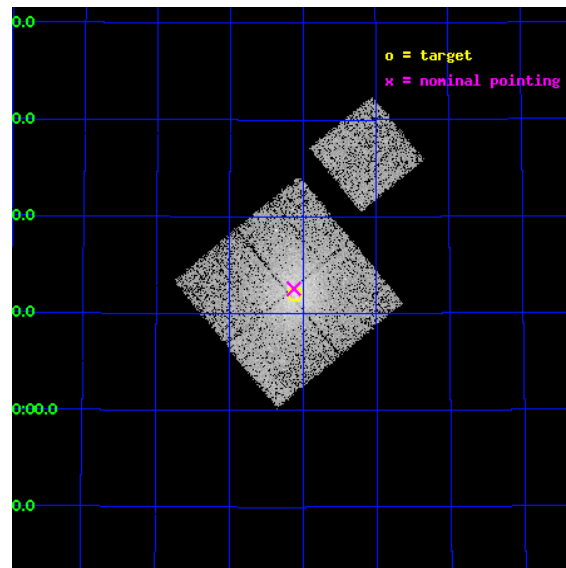
L2 Processing Date : Feb 28 2012

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# 1 Front

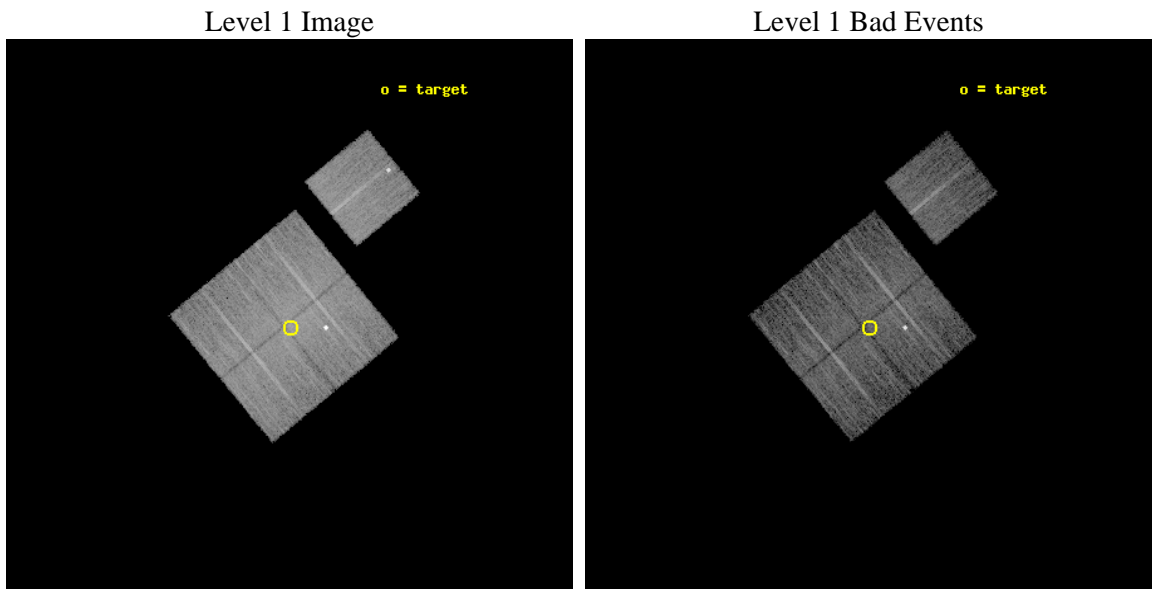
|          |   |   |
|----------|---|---|
| seq_num  | 801001  | Sequence number                             |
| obs_id   | 12282   | Observation id                              |
| title    | A 'CENTENNIAL' SAMPLE OF THE 100 X-RAY<br>BRIGHTEST GALAXY CLUSTERS | &#160                                       |
| observer | Dr. Alexey Vikhlinin  | Principal investigator                      |
| object   | A1767   | Source name                                 |
| dtcycle  | 0   | &#160                                       |
| cycle    | P   | events from which exps?<br>Prim/Second/Both |
| ra_targ  | 204.025417  | Observer's specified target RA<br>[deg]     |
| dec_targ | 59.201889   | Observer's specified target Dec<br>[deg]    |
| ra_nom   | 204.03133744112   | Nominal RA [deg]                            |
| dec_nom  | 59.209413938174   | Nominal Dec [deg]                           |
| roll_nom | 50.538242036321   | Nominal Roll [deg]                          |
| revision | 2   | Processing version of data                  |
| ontime   | 10051.892168462   | Sum of GTIs [s]                             |
| livetime | 9920.556797186  | Livetime [s]                                |
| ontime0  | 10054.91006875  | Sum of GTIs [s]                             |
| ontime1  | 10054.951108754   | Sum of GTIs [s]                             |
| ontime2  | 10054.992148757   | Sum of GTIs [s]                             |
| ontime3  | 10051.892168462   | Sum of GTIs [s]                             |
| ontime6  | 10054.869028747   | Sum of GTIs [s]                             |
| l2events | 46938   | Number of level 2 events                    |



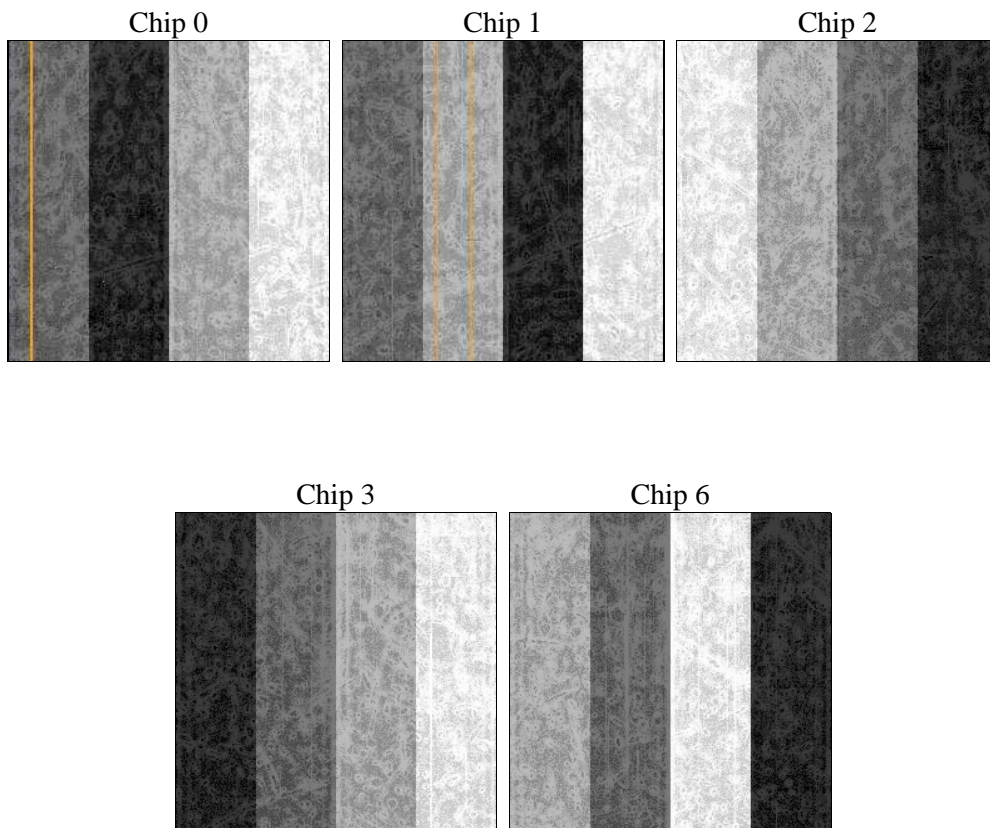
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

|          |                     |                                |                |                 |   |
|----------|---------------------|--------------------------------|----------------|-----------------|---|
| obi_num  | 0                   | Obi number                     | sched_exp_time | 10000.000000    | [s] Scheduled observation exposure time |
| ascdsver | 8.4.3               | Processing system revision     | ontime         | 10051.892168462 | Sum of GTIs [s]                         |
| caldsver | 4.4.8               | &#160                          | ontime0        | 10054.91006875  | Sum of GTIs [s]                         |
| date     | 2012-02-28T16:16:08 | Date and time of file creation | ontime1        | 10054.951108754 | Sum of GTIs [s]                         |
| revision | 2                   | Processing version of data     | ontime2        | 10054.992148757 | Sum of GTIs [s]                         |
|          |                     |                                | ontime3        | 10051.892168462 | Sum of GTIs [s]                         |
|          |                     |                                | ontime6        | 10054.869028747 | Sum of GTIs [s]                         |
|          |                     |                                | l1events       | 342156          | Number of level 1 events                |

### 2.1.4 Events

|                 | ccd 0 | ccd 1 | ccd 2 | ccd 3 | ccd 6 |
|-----------------|-------|-------|-------|-------|-------|
| level 1 events  | 63412 | 66301 | 69898 | 74619 | 67926 |
| rejected events | 53805 | 53881 | 58141 | 59591 | 57893 |
| rejected %      | 84%   | 81%   | 83%   | 79%   | 85%   |

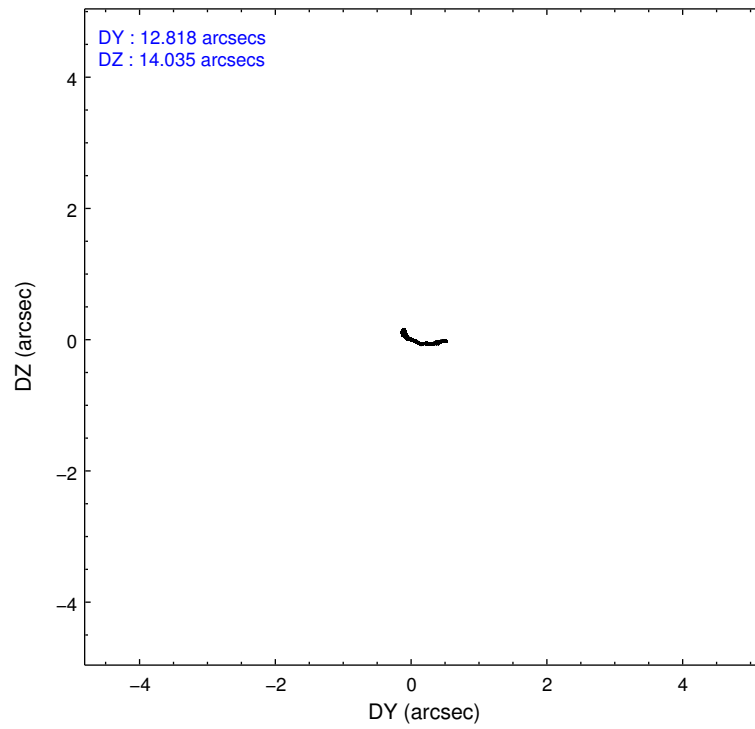
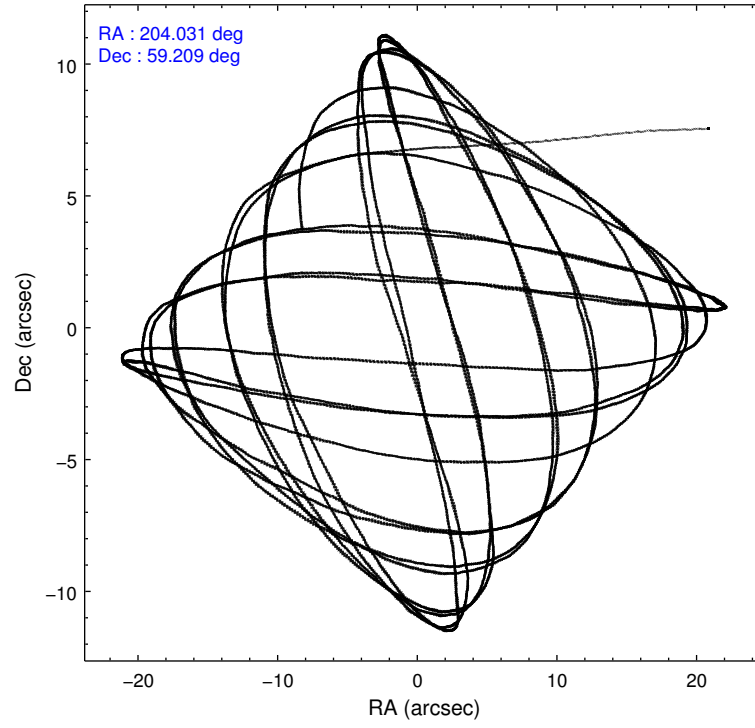
|                | ccd 0 | ccd 1 | ccd 2 | ccd 3 | ccd 6 |
|----------------|-------|-------|-------|-------|-------|
| grade 0 events | 4485  | 6327  | 6242  | 9456  | 5043  |
|                | 7%    | 9%    | 8%    | 12%   | 7%    |
| grade 1 events | 45    | 48    | 55    | 3158  | 34    |
|                | 0%    | 0%    | 0%    | 4%    | 0%    |
| grade 2 events | 1995  | 2361  | 2267  | 2087  | 1765  |
|                | 3%    | 3%    | 3%    | 2%    | 2%    |
| grade 3 events | 821   | 930   | 840   | 932   | 814   |
|                | 1%    | 1%    | 1%    | 1%    | 1%    |
| grade 4 events | 768   | 1012  | 874   | 949   | 790   |
|                | 1%    | 1%    | 1%    | 1%    | 1%    |
| grade 5 events | 2736  | 2951  | 2670  | 3295  | 3112  |
|                | 4%    | 4%    | 3%    | 4%    | 4%    |
| grade 6 events | 1546  | 1794  | 1537  | 1613  | 1623  |
|                | 2%    | 2%    | 2%    | 2%    | 2%    |
| grade 7 events | 51016 | 50878 | 55413 | 53129 | 54745 |
|                | 80%   | 76%   | 79%   | 71%   | 80%   |

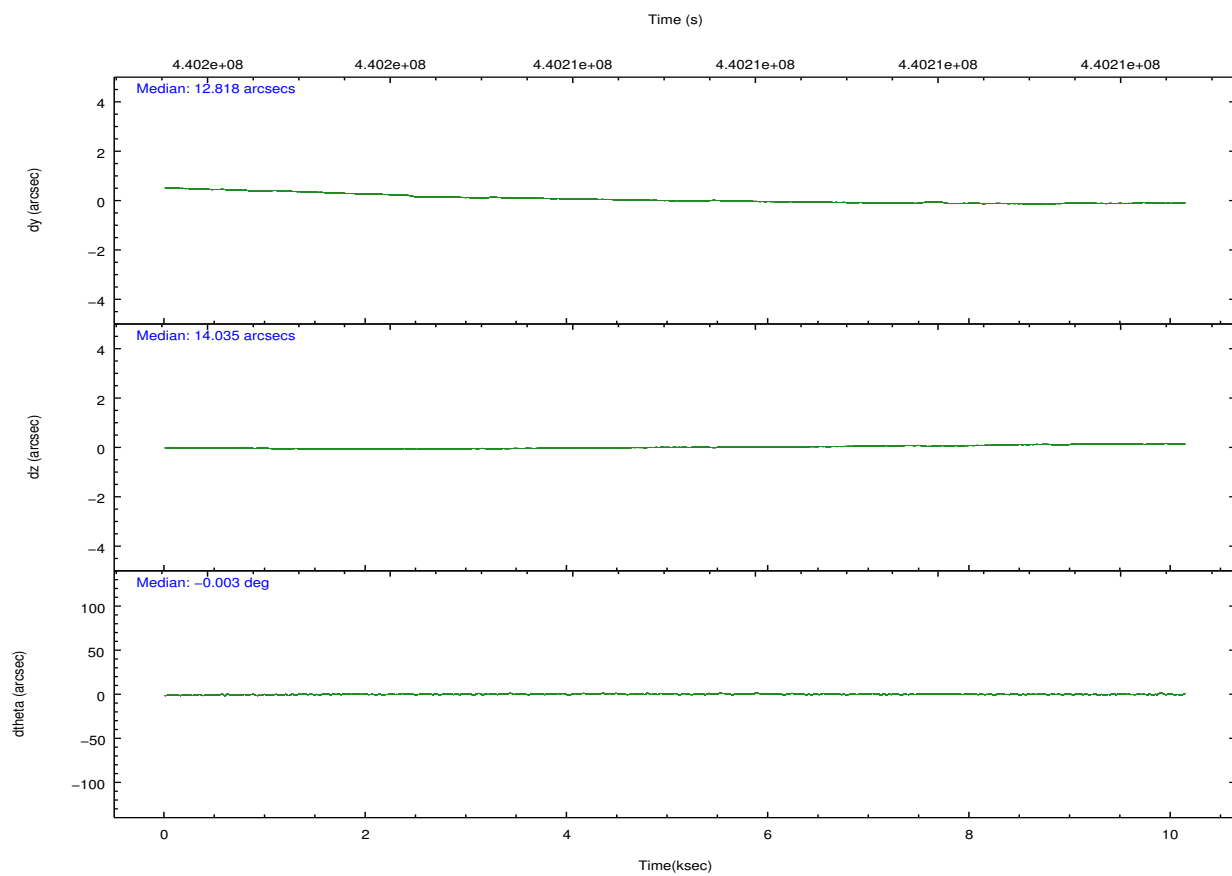
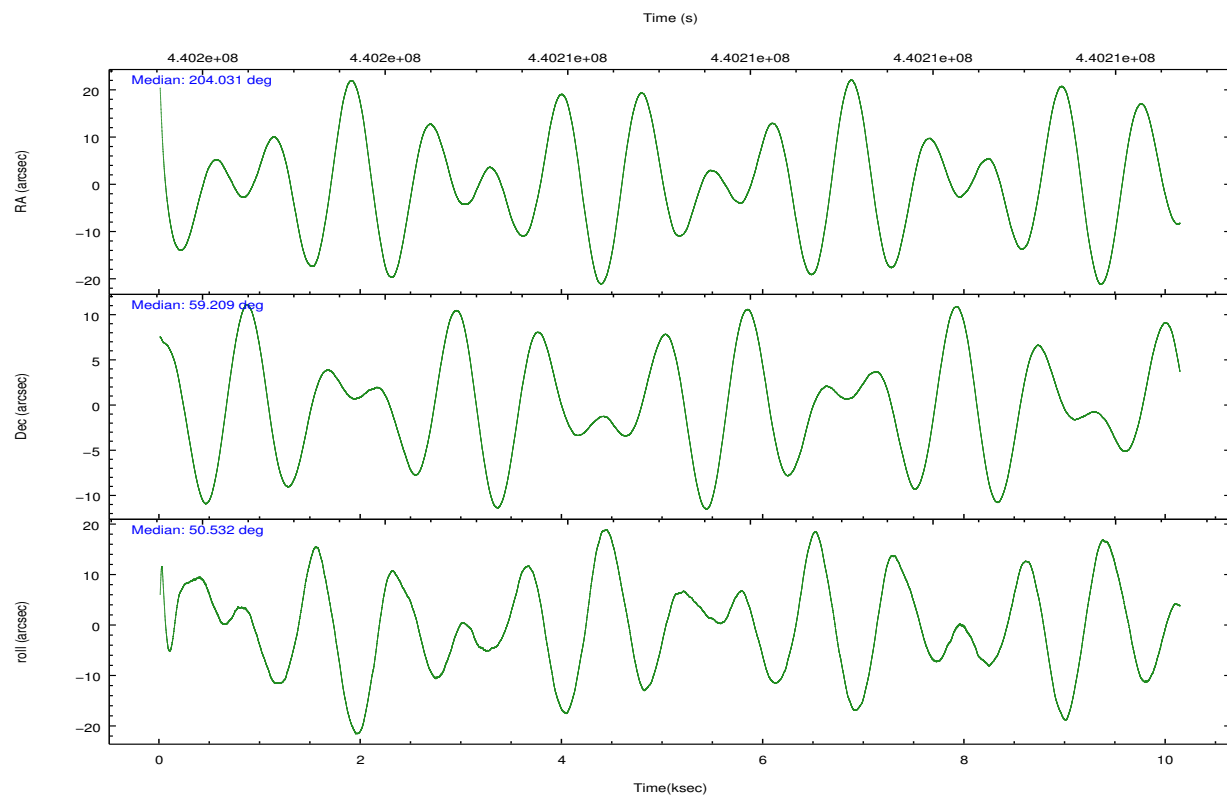


## 2.2 Compared Parameters

| 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                 | 204.022764          | 204.0313374411185     | CCD I2 on                             | Y         | Y       |
| [deg] Pointing Dec                | 59.182246           | 59.20941393817402     | CCD I3 on                             | Y         | Y       |
| [deg] Pointing Roll               | 50.336868           | 50.53824203632135     | 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                             | O1        | Y       |
| [mm] SIM translation stage pos    | -233.592463         | -233.5899487761303    | CCD S3 on                             | N         | N       |
| [mm] SIM translation stage offset | 0                   | -0.002504226799430853 | CCD S4 on                             | N         | N       |
| [s] Observation start time (MET)  | 440202196.184000    | 440201177.08833       | CCD S5 on                             | N         | N       |
| Observation start date            | 2011-12-13T22:22:10 | 2011-12-13T22:06:17   | Number of optional ACIS chips dropped | 0         | 0       |
| [s] Observation end time (MET)    | 440212196.184000    | 440212919.48894       | On-chip summing requested             | N         | N       |
| Observation end date              | 2011-12-14T01:08:50 | 2011-12-14T01:21:59   | Subarray requested                    | NONE      | NONE    |
| Read mode                         | TIMED               | TIMED                 | Alternating exposures requested       | N         | N       |
|                                   |                     |                       | [s] Primary exposure time             | 0.000000  | 3.1     |

## 2.3 Aspect



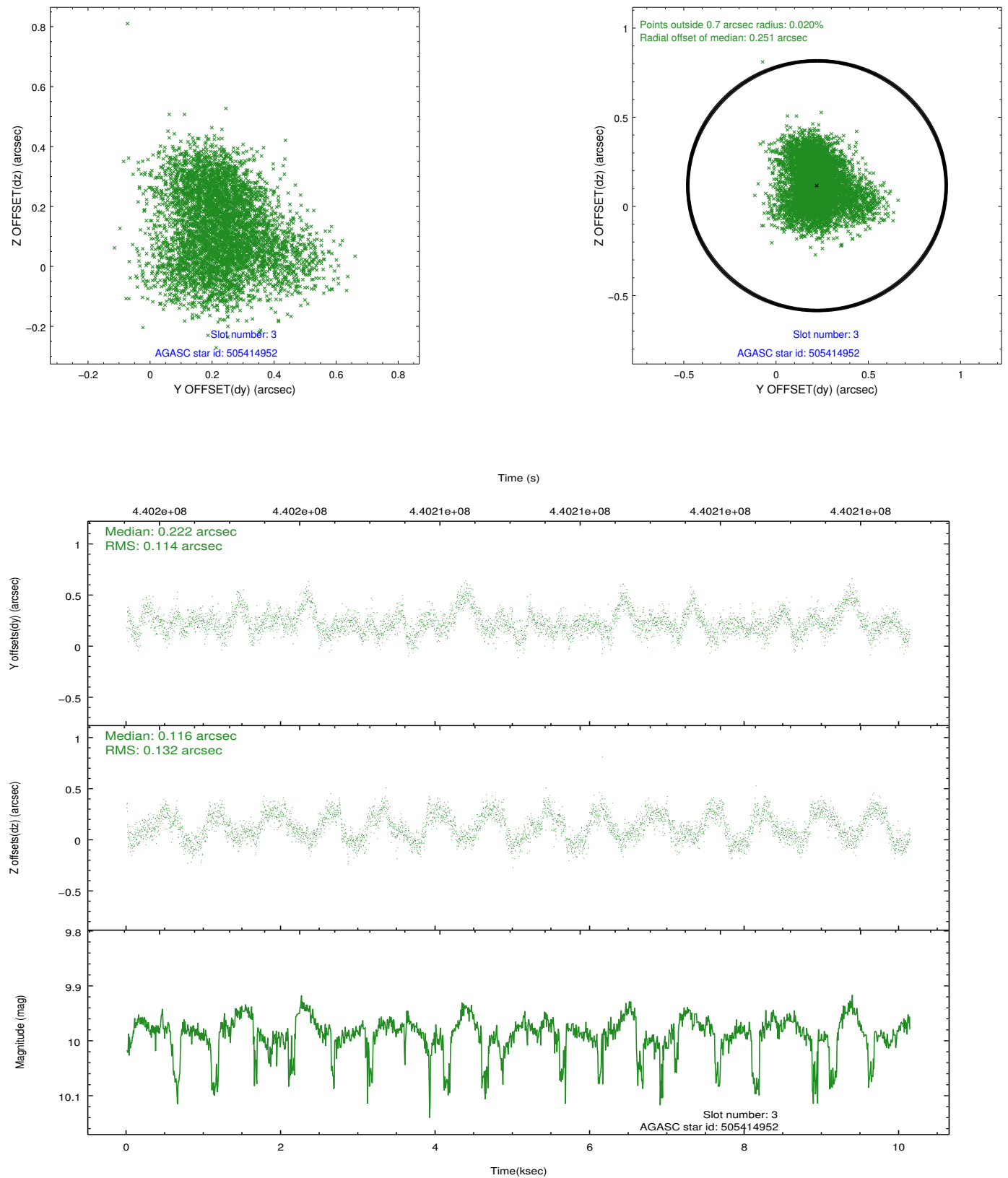


### Slot Statistics

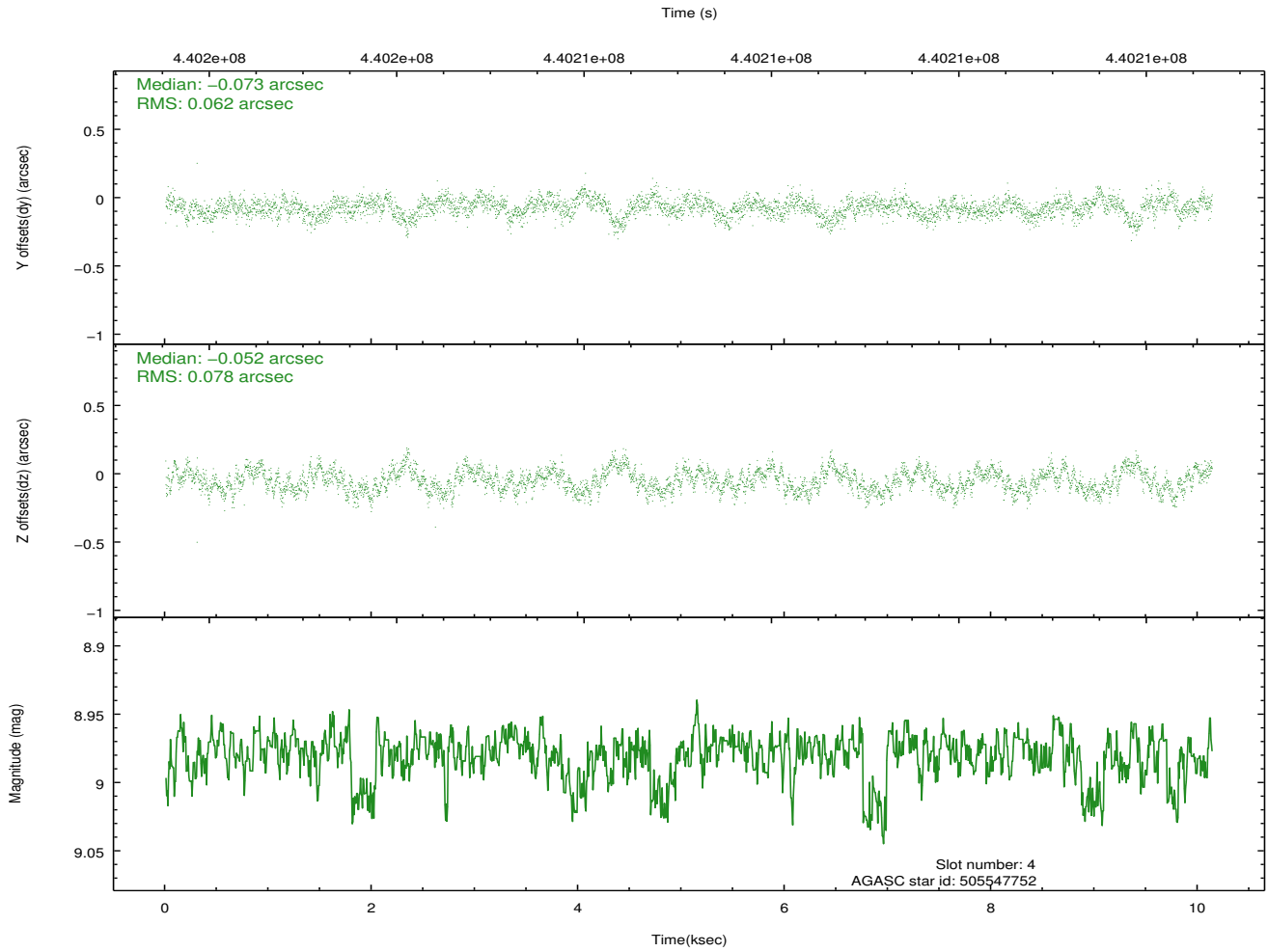
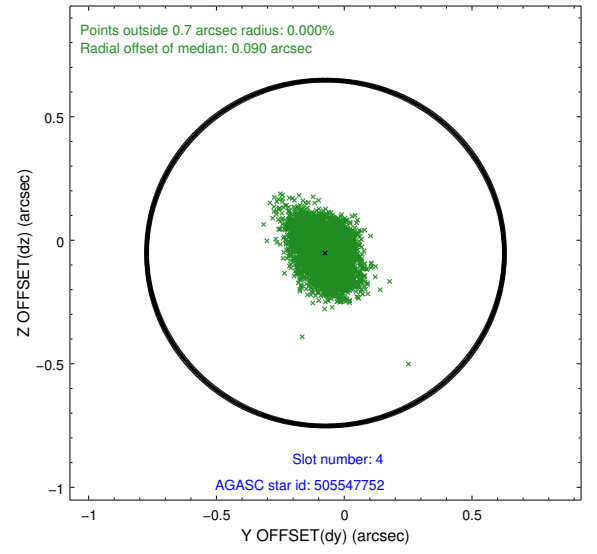
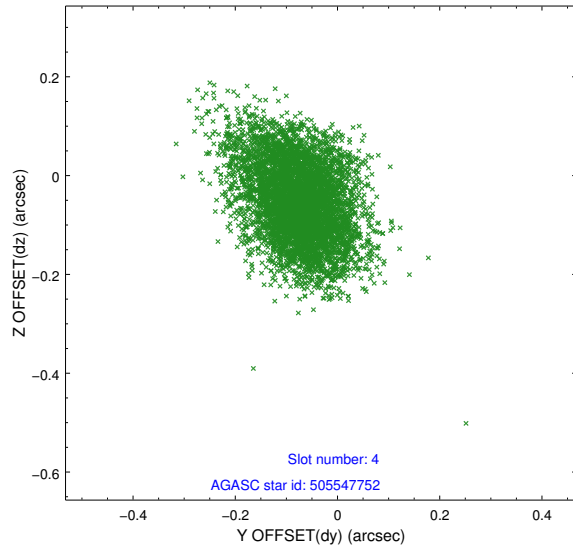
| slot | status | id        | mag   | n_pts | med_dy | med_dz | dr1   | dr2   | ra         | dec       | mean_y   | mean_z   |
|------|--------|-----------|-------|-------|--------|--------|-------|-------|------------|-----------|----------|----------|
| 0    | FID    | ACIS-I-1  | 7.13  | 2472  | 0.042  | 0.009  | 0.008 | 0.019 | 0.000000   | 0.000000  | 926.68   | -837.55  |
| 1    | FID    | ACIS-I-5  | 7.13  | 2472  | -0.205 | 0.053  | 0.007 | 0.012 | 0.000000   | 0.000000  | -1821.40 | 1059.69  |
| 2    | FID    | ACIS-I-6  | 7.13  | 2471  | 0.072  | 0.008  | 0.008 | 0.016 | 0.000000   | 0.000000  | 391.66   | 1704.76  |
| 3    | GUIDE  | 505414952 | 9.98  | 4931  | 0.222  | 0.116  | 0.189 | 0.291 | 203.527988 | 58.651569 | -2058.79 | -504.29  |
| 4    | GUIDE  | 505547752 | 8.98  | 4937  | -0.073 | -0.052 | 0.105 | 0.172 | 204.910501 | 59.205965 | 1118.51  | -1197.97 |
| 5    | GUIDE  | 505547776 | 9.93  | 4940  | 0.002  | 0.014  | 0.150 | 0.256 | 205.533527 | 59.201282 | 1854.69  | -2078.95 |
| 6    | GUIDE  | 505415296 | 9.26  | 4940  | -0.306 | -0.378 | 0.124 | 0.208 | 203.089669 | 59.632027 | 172.55   | 2347.71  |
| 7    | GUIDE  | 505418104 | 10.06 | 4925  | 0.149  | 0.294  | 0.157 | 0.256 | 204.045955 | 58.342161 | -2299.36 | -1963.65 |

## 2.4 Star Slots

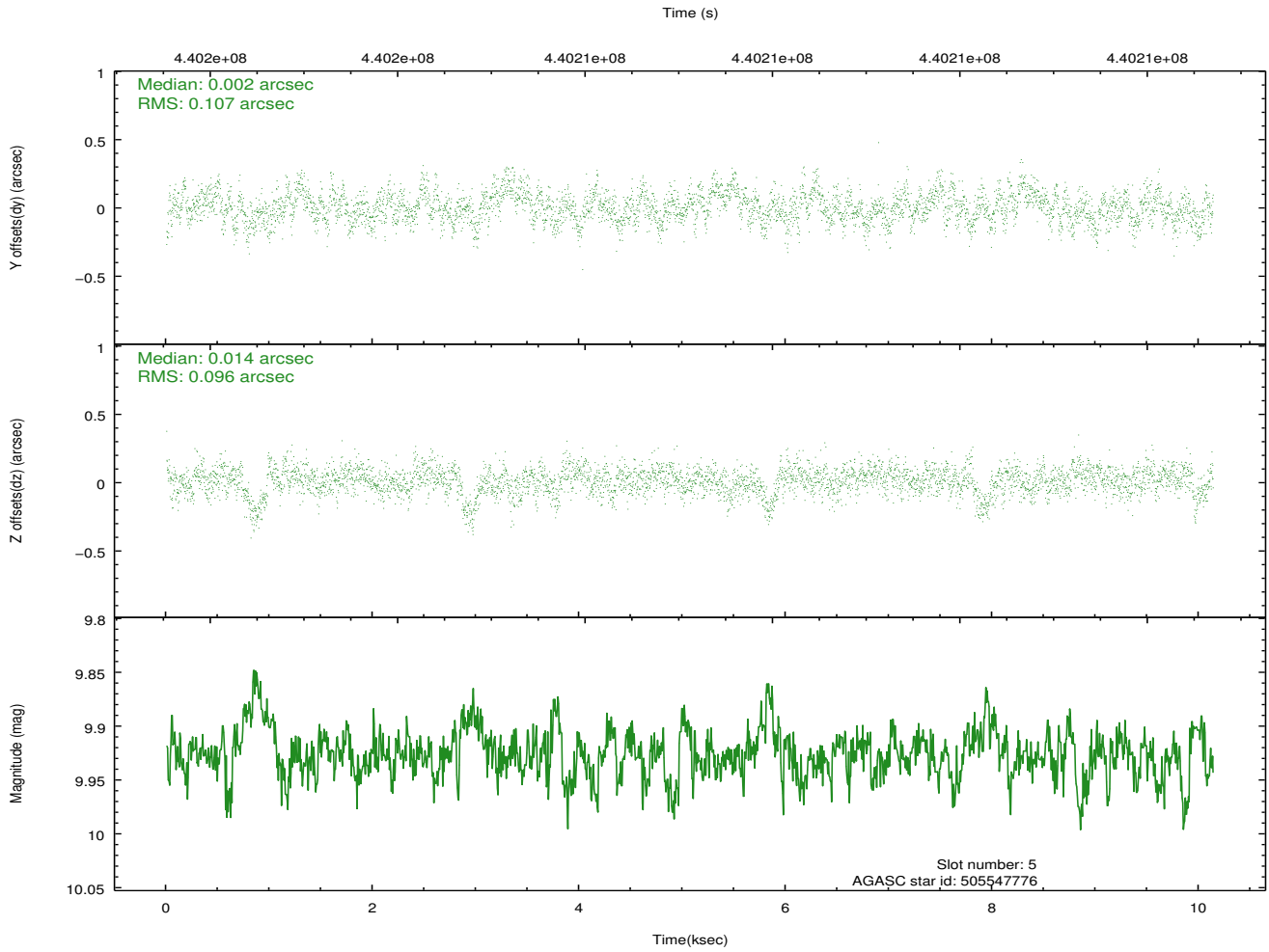
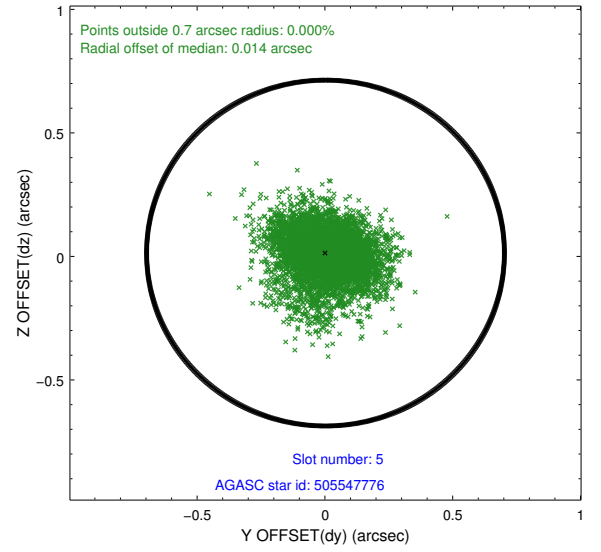
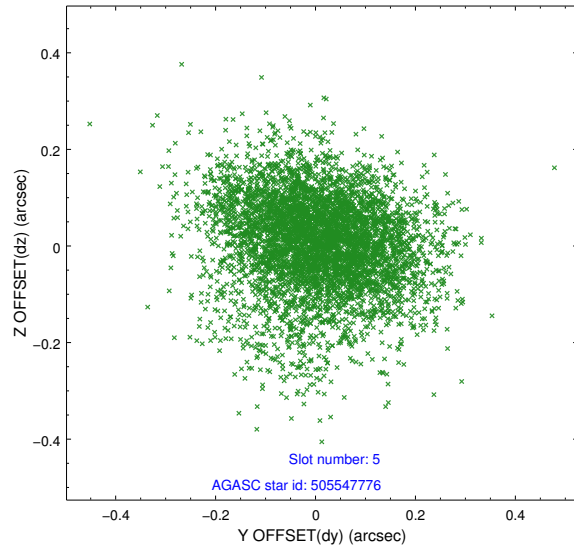
### 2.4.1 Slot 3



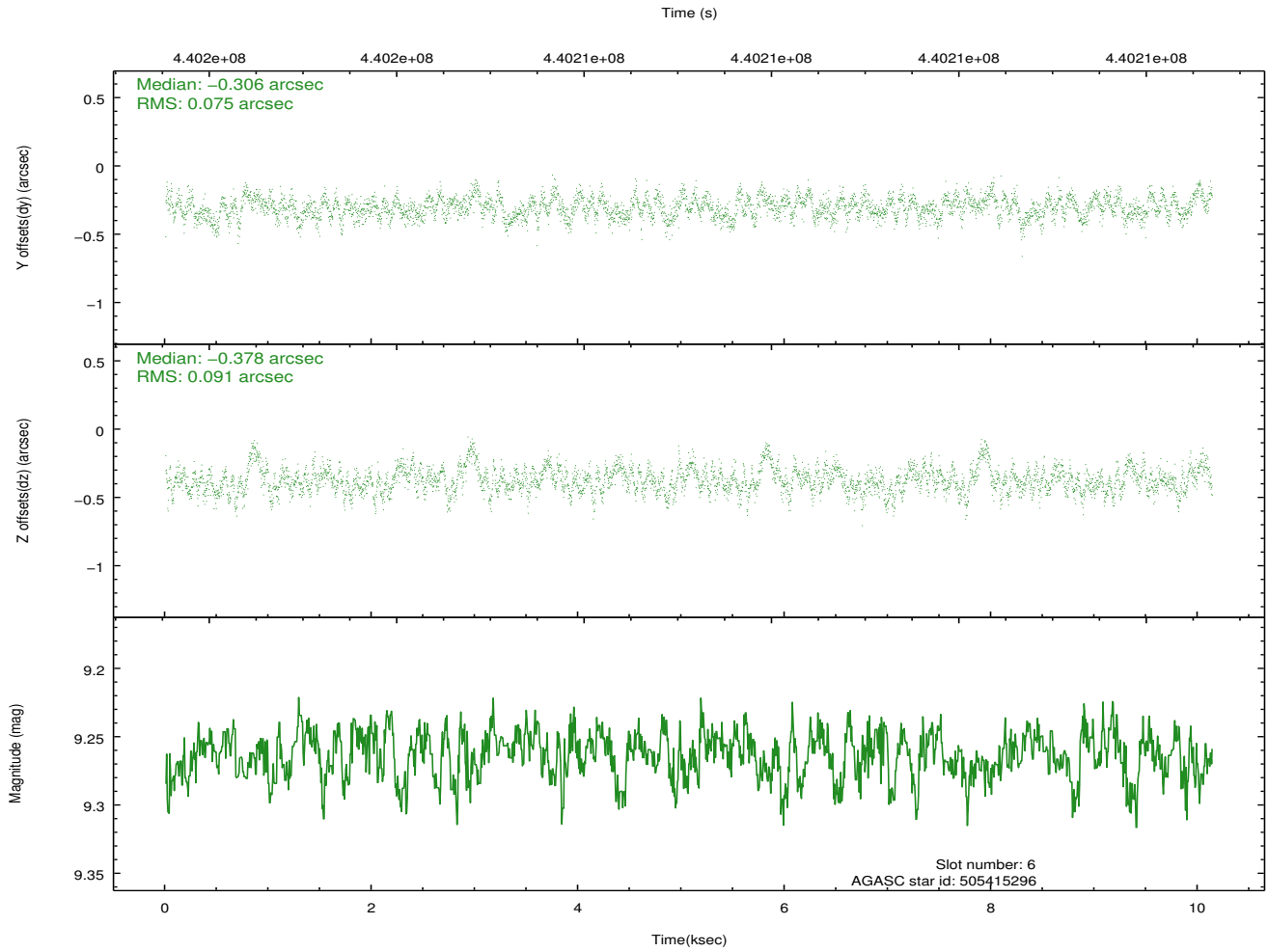
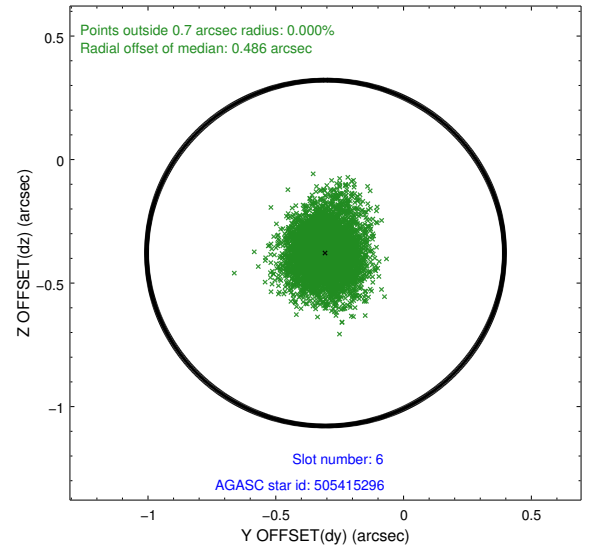
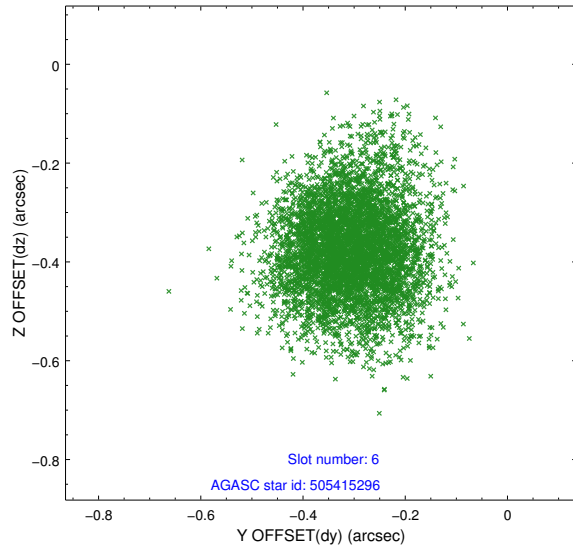
### 2.4.2 Slot 4



### 2.4.3 Slot 5

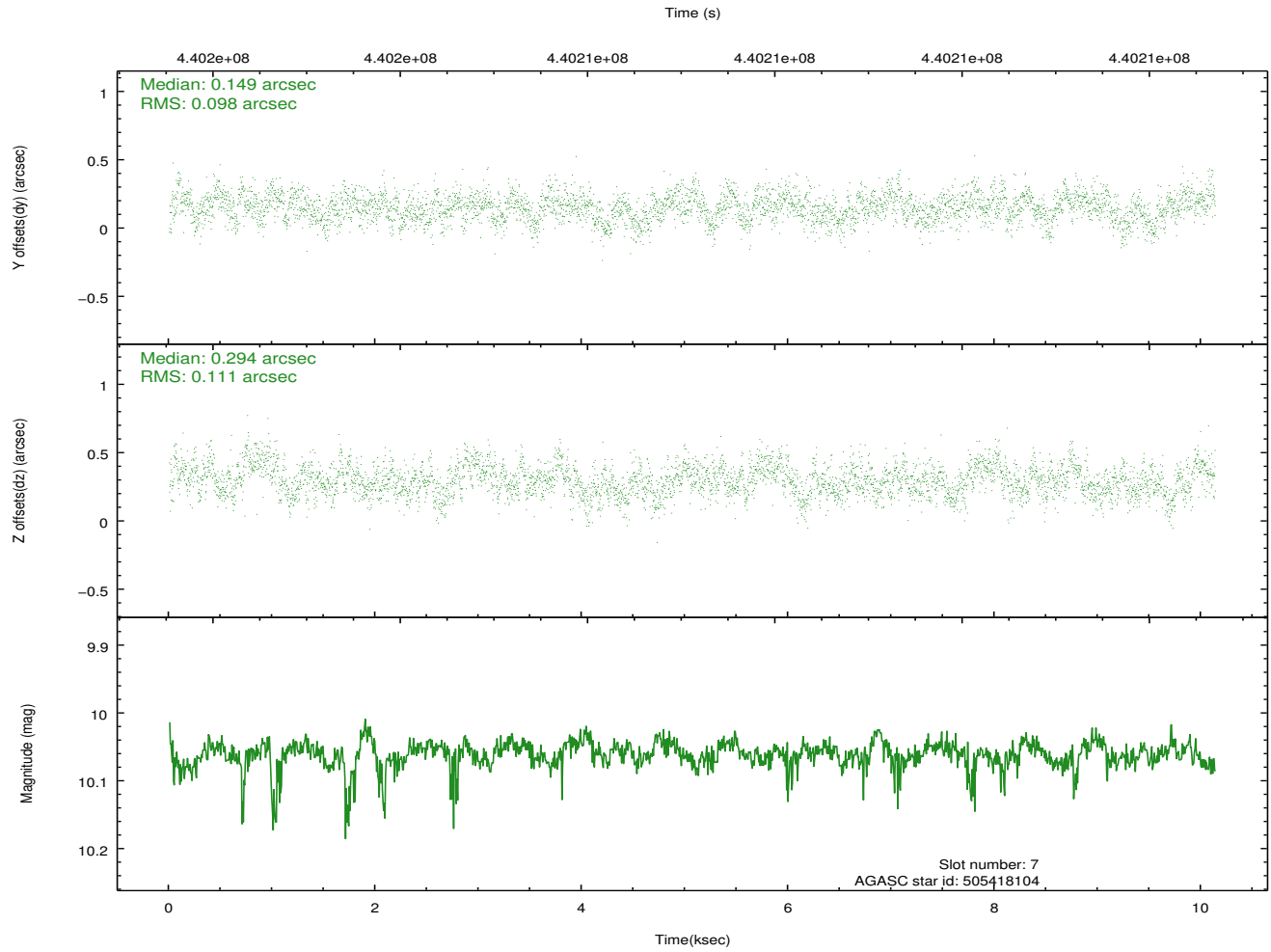
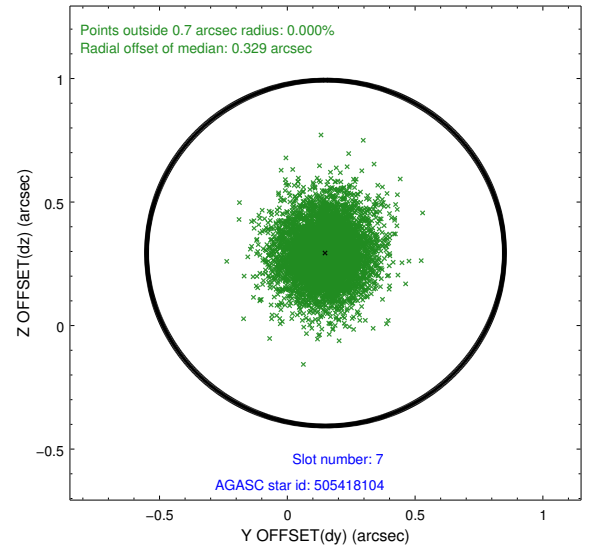
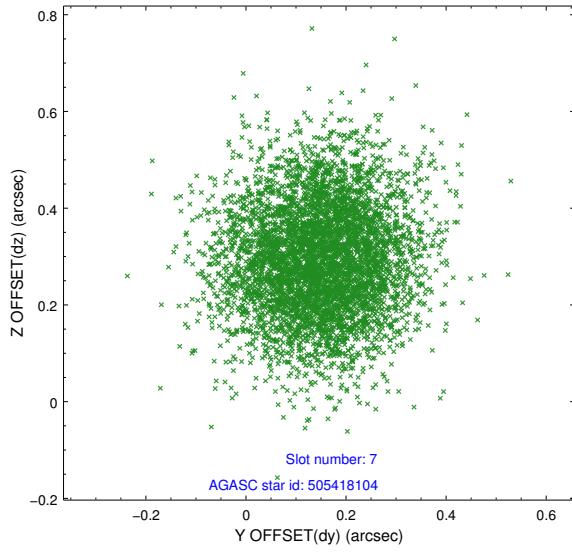


## 2.4.4 Slot 6



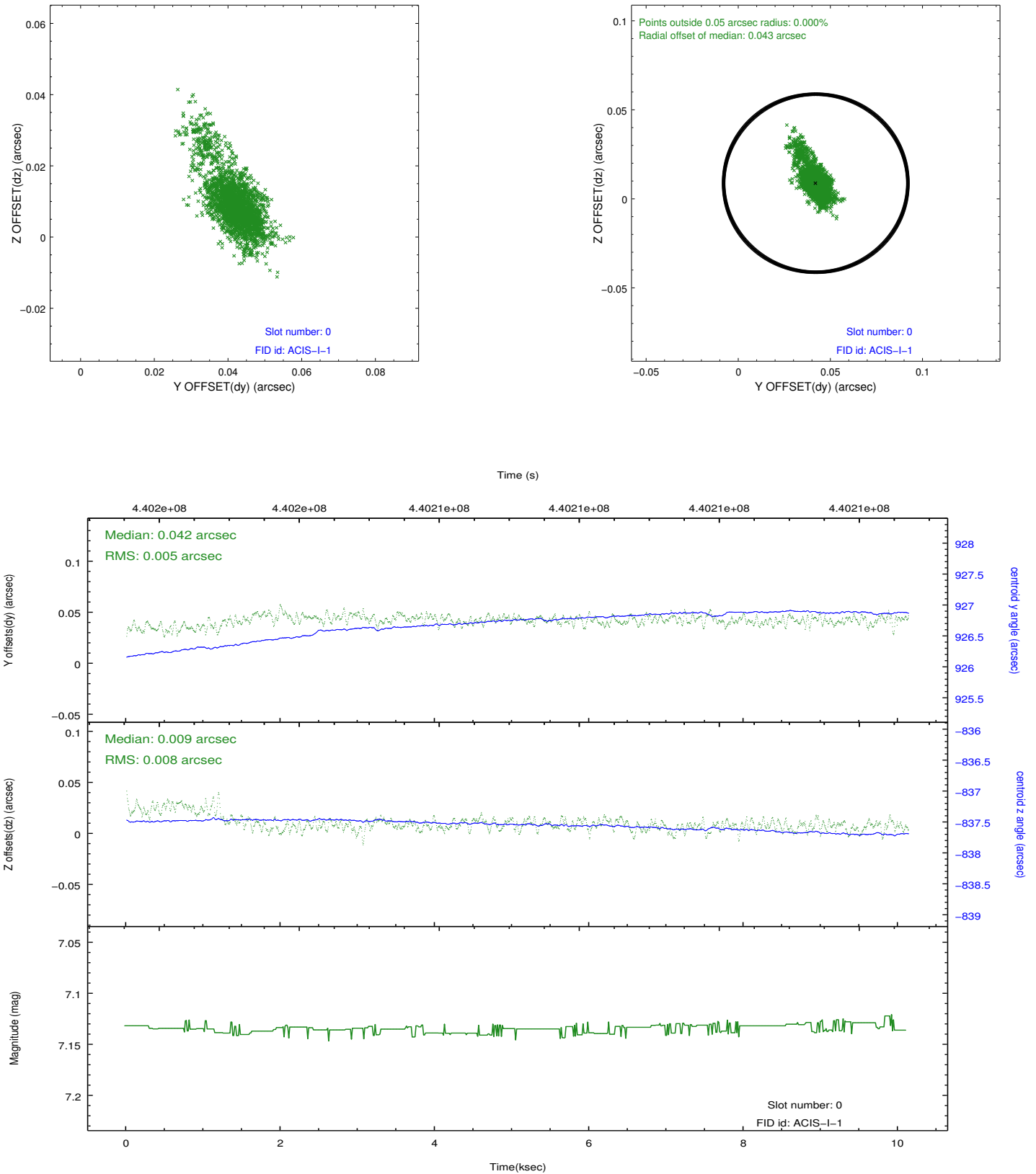


## 2.4.5 Slot 7

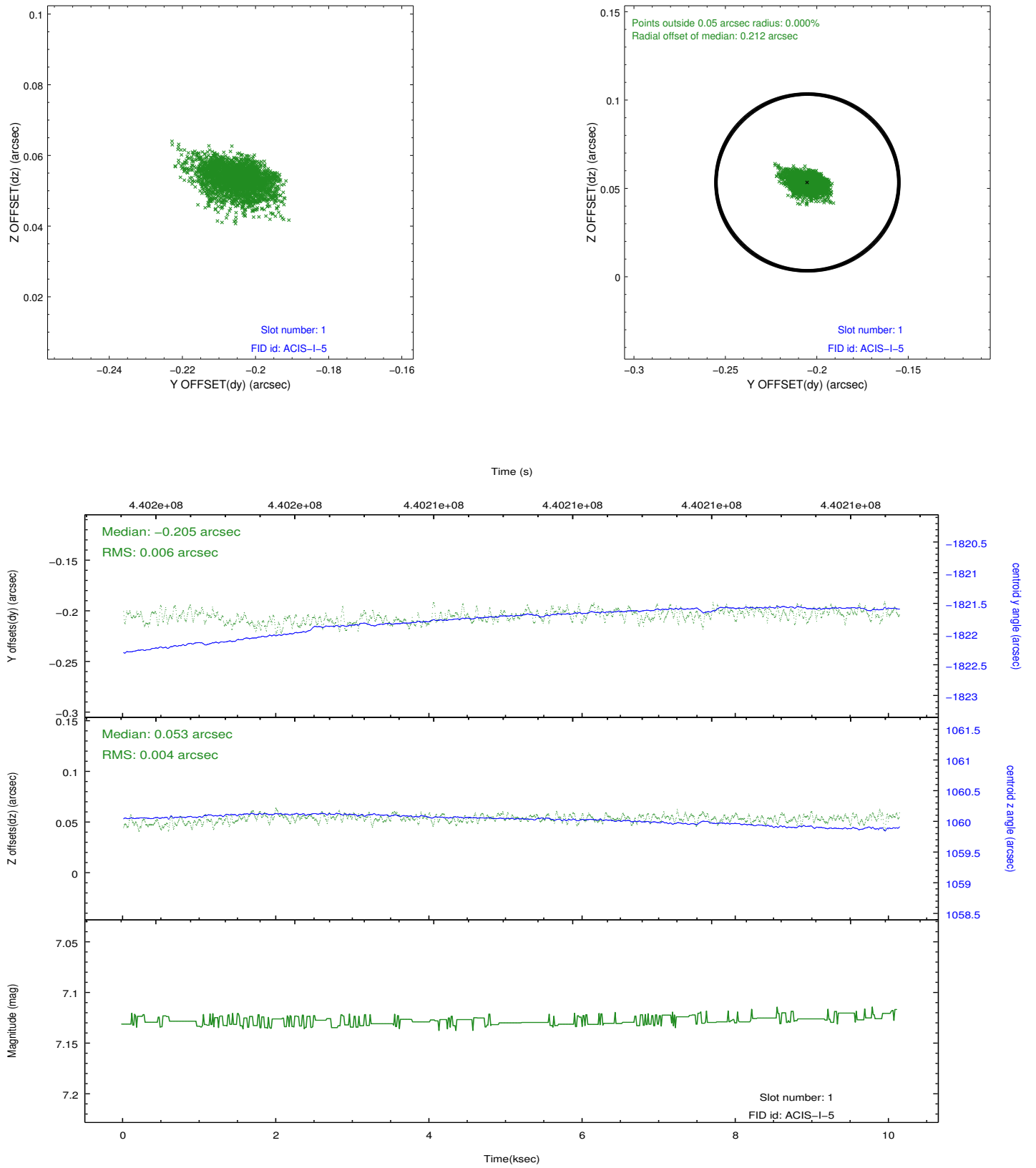


## 2.5 FID Slots

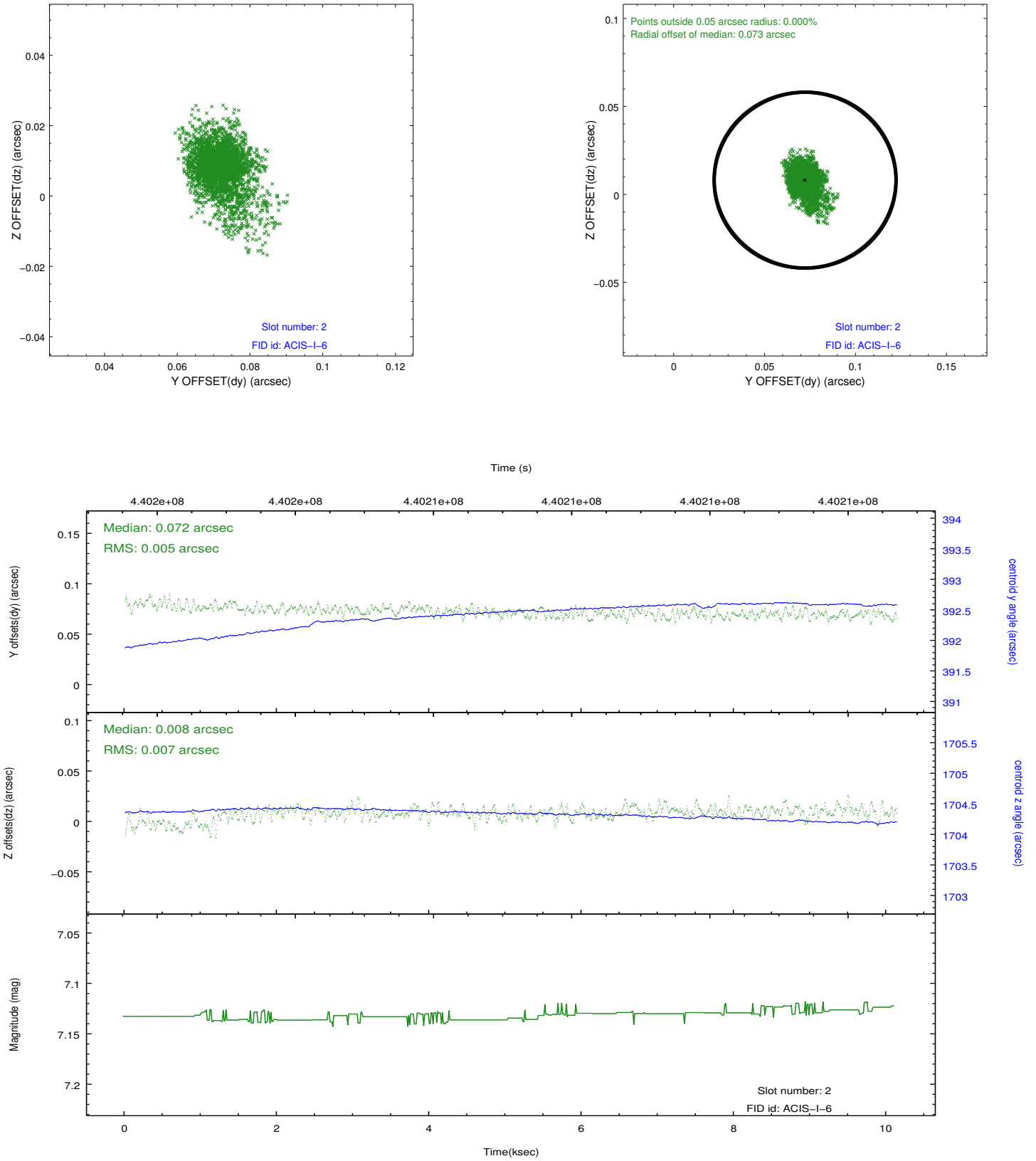
### 2.5.1 Slot 0



## 2.5.2 Slot 1



### 2.5.3 Slot 2



## **A Summary**

### **A.1 Status**

|                            |                 |
|----------------------------|-----------------|
| V&V Scientist              | Jen Lauer       |
| V&V Date (YYYY-MM-DD)      | 2012.02.29      |
| V&V Edition                | 1               |
| V&V Disposition and Status | OK              |
| V&V Charge Time            | 10.051892160773 |

### **A.2 Comments**