

# V&V Reference Report

## L2 ASCDS Version : 8.4.5

Observation 12087 - L2 Version 2  
Chandra X-Ray Center

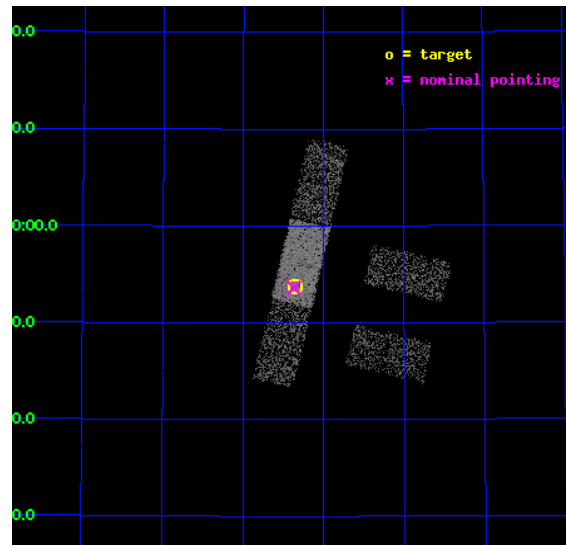
L2 Processing Date : Jun 28 2012

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# 1 Front

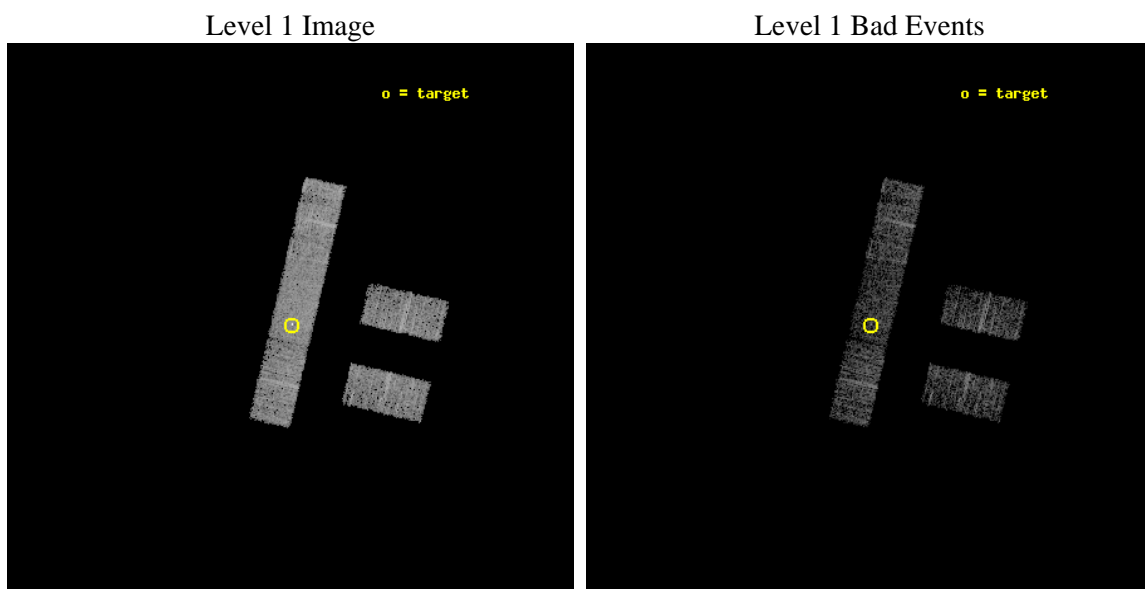
|          |   |   |
|----------|---|---|
| seq_num  | 702317  | Sequence number                             |
| obs_id   | 12087   | Observation id                              |
| title    | Gravitationally lensed quasar Q0957+561AB in outburst | Proposal tit                                |
| observer | Dr Luis Goicoechea                                    | Principal investigator                      |
| object   | Q0957+561   | Source name                                 |
| dtcycle  | 0   | &#160                                       |
| cycle    | P   | events from which exps?<br>Prim/Second/Both |
| ra_targ  | 150.336667  | Observer's specified<br>target RA [deg]     |
| dec_targ | 55.897056   | Observer's specified<br>target Dec [deg]    |
| ra_nom   | 150.34253776736                                       | Nominal RA [deg]                            |
| dec_nom  | 55.893660049575                                       | Nominal Dec [deg]                           |
| roll_nom | 283.25237406981                                       | Nominal Roll [deg]                          |
| revision | 2   | Processing version of<br>data               |
| ontime   | 3061.69997859   | Sum of GTIs [s]                             |
| livetime | 2989.5292259816                                       | Livetime [s]                                |
| ontime2  | 3061.69997859   | Sum of GTIs [s]                             |
| ontime3  | 3061.69997859   | Sum of GTIs [s]                             |
| ontime6  | 3061.69997859   | Sum of GTIs [s]                             |
| ontime7  | 3061.69997859   | Sum of GTIs [s]                             |
| ontime8  | 3061.69997859   | Sum of GTIs [s]                             |
| l2events | 12072   | Number of level 2 events                    |



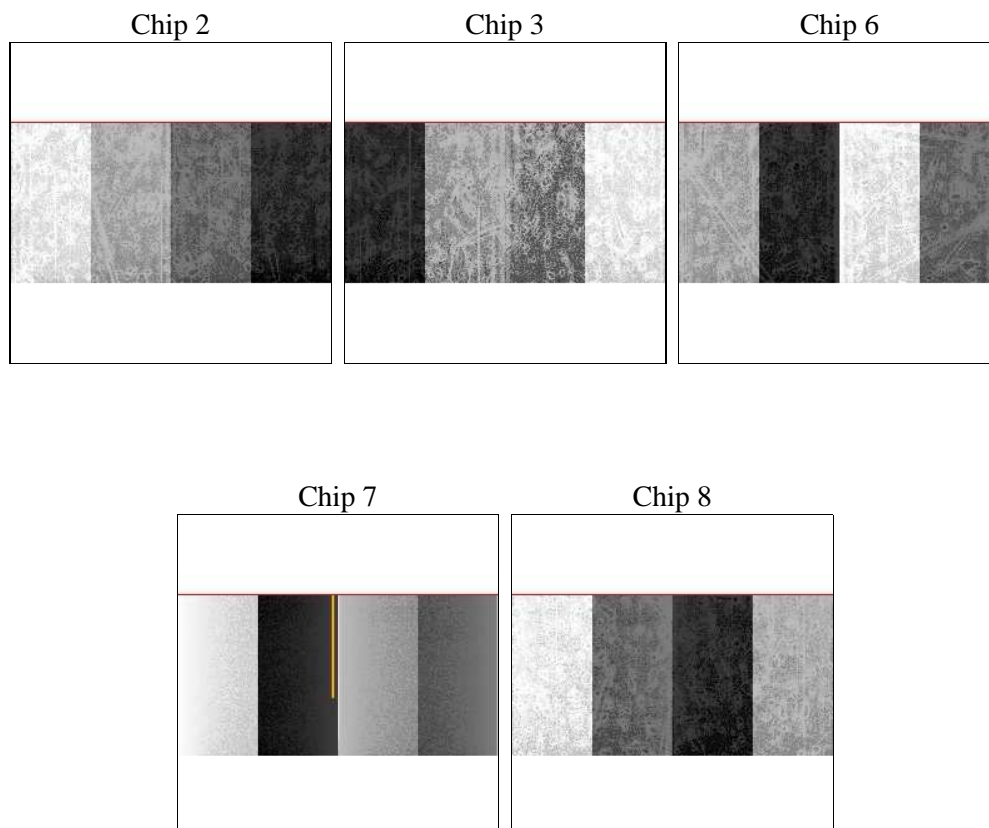
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

|          |                     |                                |                |               |   |
|----------|---------------------|--------------------------------|----------------|---------------|---|
| obi_num  | 0                   | Obi number                     | sched_exp_time | 3000.000000   | [s] Scheduled observation exposure time |
| ascdsver | 8.4.5               | Processing system revision     | ontime         | 3061.69997859 | Sum of GTIs [s]                         |
| caldsver | 4.5.0               | &#160                          | ontime2        | 3061.69997859 | Sum of GTIs [s]                         |
| date     | 2012-06-28T21:10:36 | Date and time of file creation | ontime3        | 3061.69997859 | Sum of GTIs [s]                         |
| revision | 2                   | Processing version of data     | ontime6        | 3061.69997859 | Sum of GTIs [s]                         |
|          |                     |                                | ontime7        | 3061.69997859 | Sum of GTIs [s]                         |
|          |                     |                                | ontime8        | 3061.69997859 | Sum of GTIs [s]                         |
|          |                     |                                | l1events       | 67626         | Number of level 1 events                |

### 2.1.4 Events

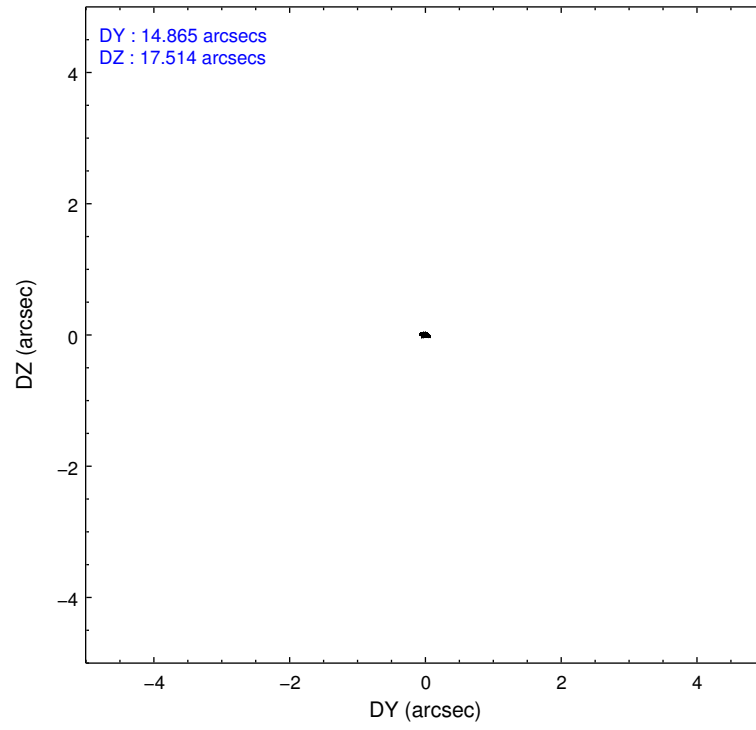
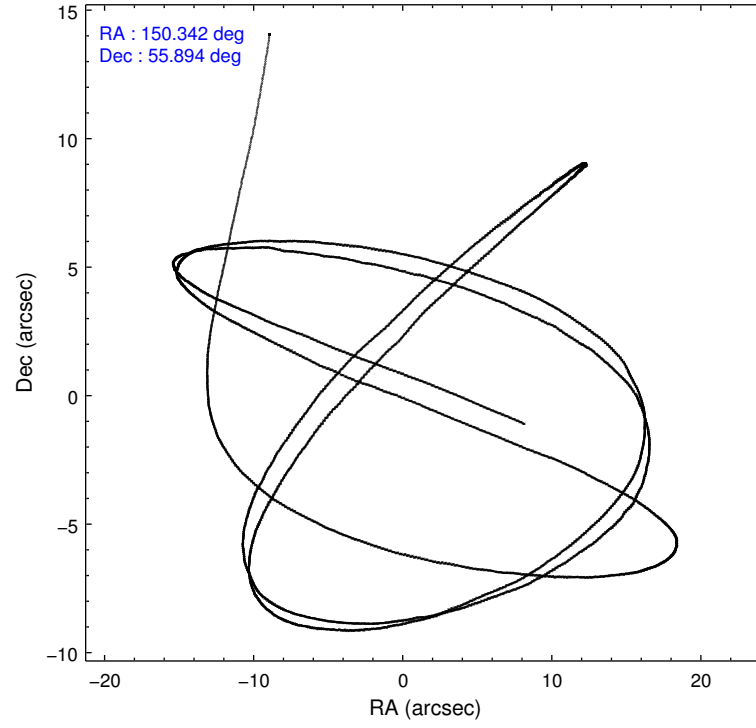
|                 | ccd 2 | ccd 3 | ccd 6 | ccd 7 | ccd 8 |
|-----------------|-------|-------|-------|-------|-------|
| level 1 events  | 11440 | 11773 | 12791 | 15276 | 16346 |
| rejected events | 10185 | 10487 | 11323 | 7844  | 12210 |
| rejected %      | 89%   | 89%   | 88%   | 51%   | 74%   |

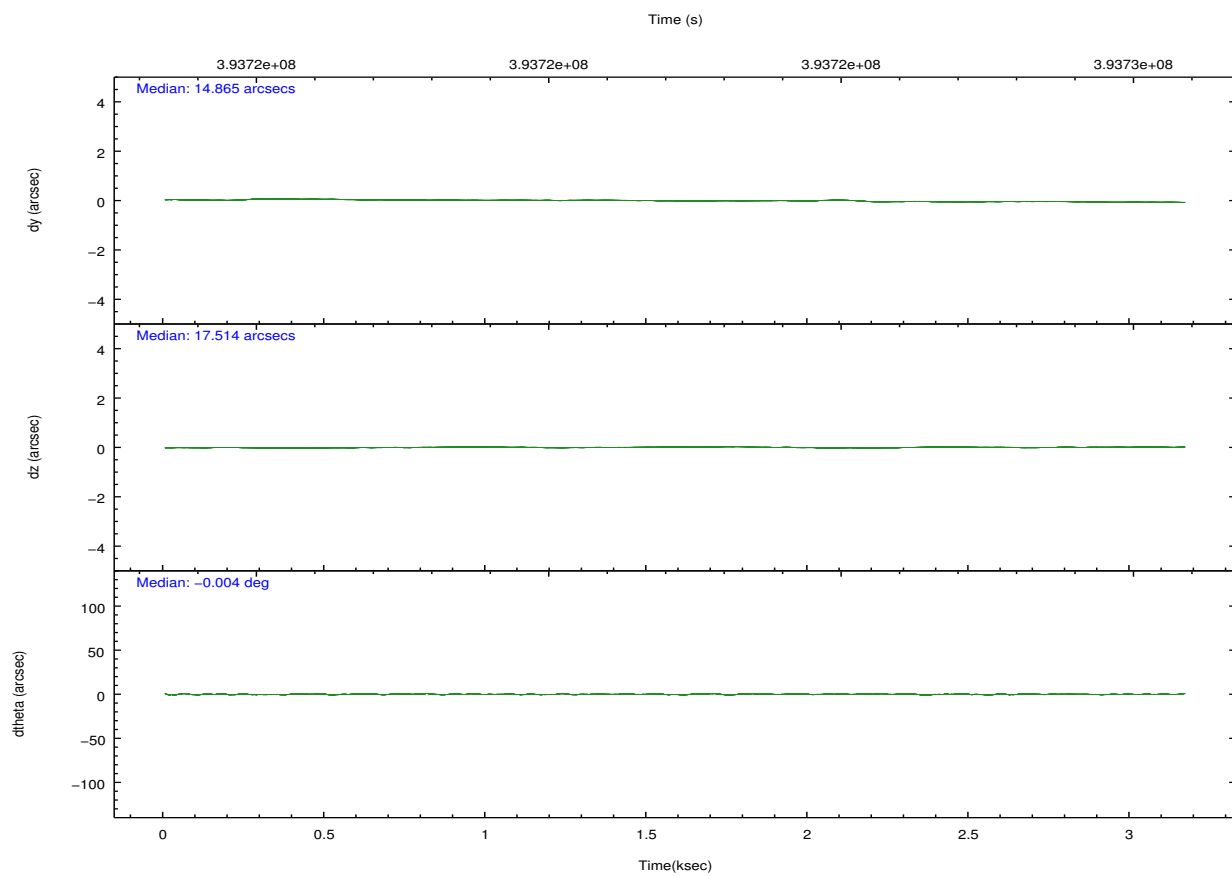
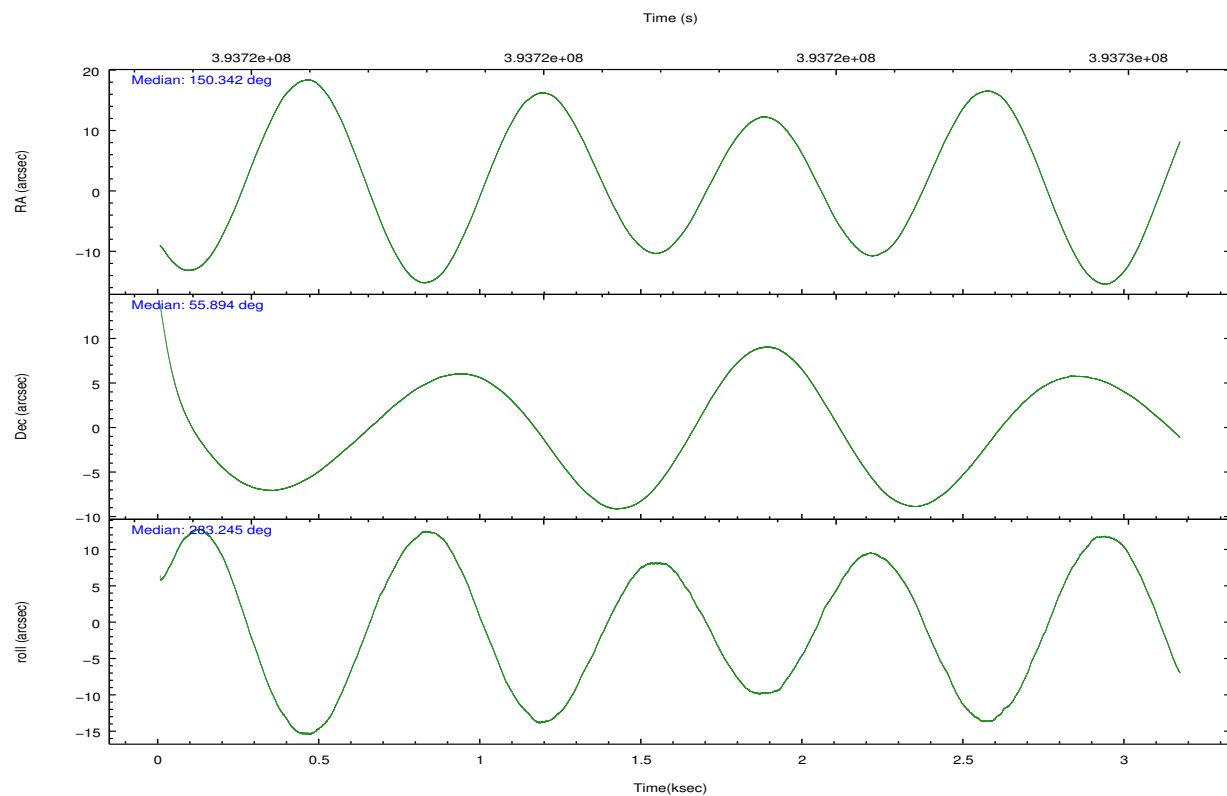
|                | ccd 2 | ccd 3 | ccd 6 | ccd 7 | ccd 8 |
|----------------|-------|-------|-------|-------|-------|
| grade 0 events | 423   | 463   | 505   | 909   | 1242  |
|                | 3%    | 3%    | 3%    | 5%    | 7%    |
| grade 1 events | 8     | 3     | 3     | 18    | 11    |
|                | 0%    | 0%    | 0%    | 0%    | 0%    |
| grade 2 events | 275   | 248   | 287   | 1538  | 951   |
|                | 2%    | 2%    | 2%    | 10%   | 5%    |
| grade 3 events | 164   | 169   | 180   | 789   | 446   |
|                | 1%    | 1%    | 1%    | 5%    | 2%    |
| grade 4 events | 165   | 145   | 194   | 720   | 385   |
|                | 1%    | 1%    | 1%    | 4%    | 2%    |
| grade 5 events | 410   | 479   | 568   | 1488  | 771   |
|                | 3%    | 4%    | 4%    | 9%    | 4%    |
| grade 6 events | 228   | 262   | 305   | 3488  | 1112  |
|                | 1%    | 2%    | 2%    | 22%   | 6%    |
| grade 7 events | 9767  | 10004 | 10749 | 6326  | 11428 |
|                | 85%   | 84%   | 84%   | 41%   | 69%   |

## 2.2 Compared Parameters

| Parameter                         | Planned             | Actual               | Parameter                             | Planned   | Actual  |
|-----------------------------------|---------------------|----------------------|---------------------------------------|-----------|---------|
| Instrument                        | ACIS                | ACIS                 | Obspar format version number          | 7         | 7       |
| Detector                          | ACIS-23678          | ACIS-23678           | Obspar file type                      | PREDICTED | ACTUAL  |
| Grating                           | NONE                | NONE                 | Obspar update status                  | NONE      | UPDATED |
| Data mode                         | VFAINT              | VFAINT               | CCD I0 on                             | N         | N       |
| Observation mode                  | POINTING            | POINTING             | CCD I1 on                             | N         | N       |
| [deg] Pointing RA                 | 150.308859          | 150.3425377673564    | CCD I2 on                             | O4        | Y       |
| [deg] Pointing Dec                | 55.913279           | 55.89366004957503    | CCD I3 on                             | O3        | Y       |
| [deg] Pointing Roll               | 283.123661          | 283.252374069814     | CCD S0 on                             | N         | N       |
| [mm] SIM focus pos                | -0.684267           | -0.6828225247311905  | CCD S1 on                             | N         | N       |
| [mm] SIM defocus                  | 0                   | 0.001444936568705701 | CCD S2 on                             | O1        | Y       |
| [mm] SIM translation stage pos    | -190.132523         | -190.1425803651734   | CCD S3 on                             | Y         | Y       |
| [mm] SIM translation stage offset | 0                   | 0.01005778216563158  | CCD S4 on                             | O2        | Y       |
| [s] Observation start time (MET)  | 393723022.184000    | 393721328.46254      | CCD S5 on                             | N         | N       |
| Observation start date            | 2010-06-23T23:29:16 | 2010-06-23T23:02:08  | Number of optional ACIS chips dropped | 0         | 0       |
| [s] Observation end time (MET)    | 393726022.184000    | 393727324.20034      | On-chip summing requested             | N         | N       |
| Observation end date              | 2010-06-24T00:19:16 | 2010-06-24T00:42:04  | Subarray requested                    | CUSTOM    | 1/2     |
| Read mode                         | TIMED               | TIMED                | Subarray start row                    | 257       | 257     |
|                                   |                     |                      | Subarray row count                    | 512       | 512     |
|                                   |                     |                      | Alternating exposures requested       | N         | N       |
|                                   |                     |                      | [s] Primary exposure time             | 0.000000  | 1.7     |

## 2.3 Aspect





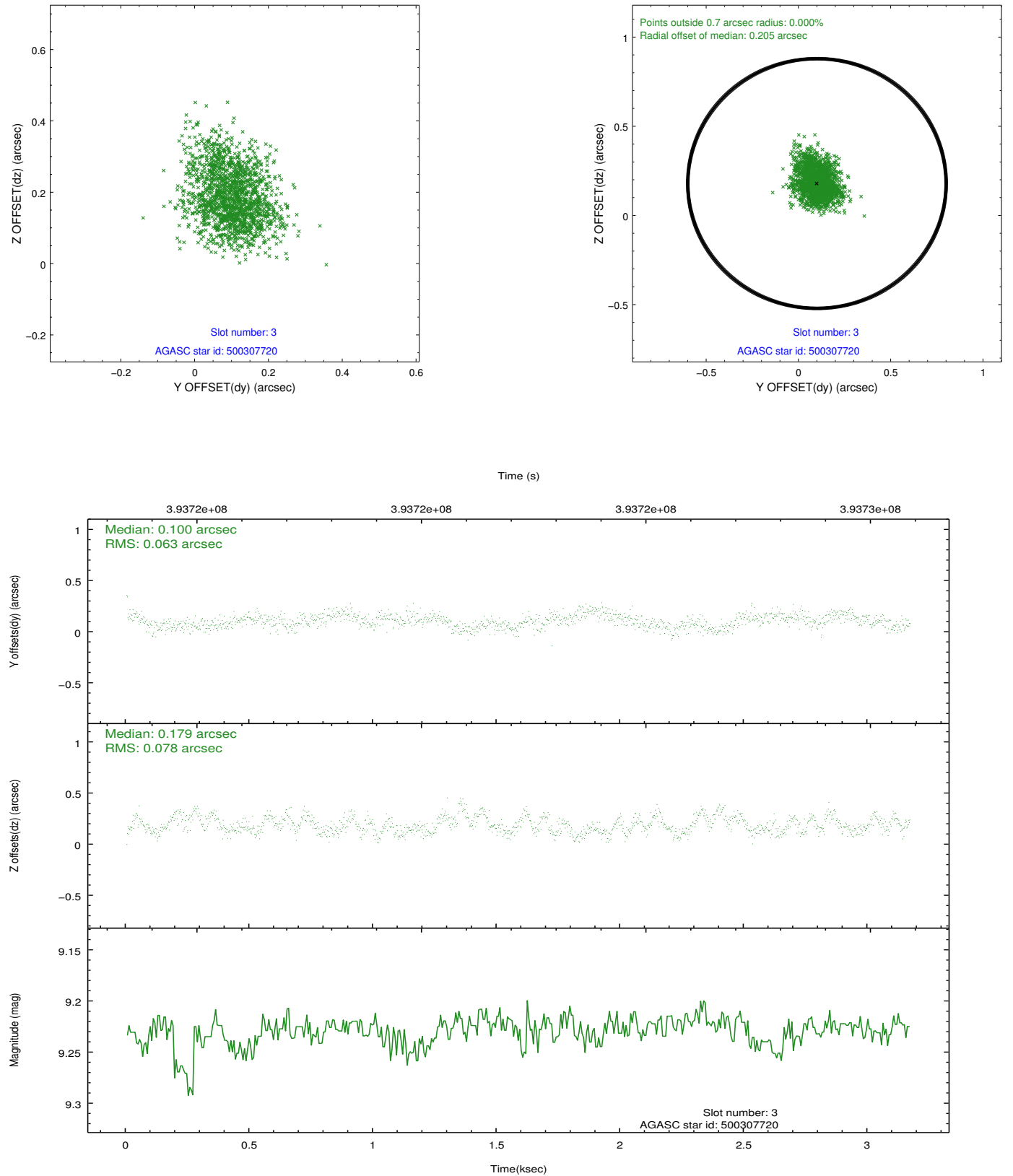
### Slot Statistics

| slot | status | id        | mag  | n_pts | med_dy | med_dz | dr1   | dr2   | ra         | dec       | mean_y   | mean_z   |
|------|--------|-----------|------|-------|--------|--------|-------|-------|------------|-----------|----------|----------|
| 0    | FID    | ACIS-S-1  | 6.96 | 773   | 0.063  | -0.047 | 0.006 | 0.009 | 0.000000   | 0.000000  | 928.22   | -1734.61 |
| 1    | FID    | ACIS-S-4  | 6.97 | 773   | 0.124  | 0.007  | 0.006 | 0.011 | 0.000000   | 0.000000  | 2146.85  | 167.48   |
| 2    | FID    | ACIS-S-5  | 7.00 | 773   | -0.213 | 0.053  | 0.005 | 0.012 | 0.000000   | 0.000000  | -1818.30 | 163.51   |
| 3    | GUIDE  | 500307720 | 9.23 | 1546  | 0.100  | 0.179  | 0.106 | 0.172 | 149.835368 | 56.109010 | -904.48  | -764.40  |
| 4    | GUIDE  | 500437816 | 8.69 | 1544  | -0.046 | 0.017  | 0.089 | 0.148 | 151.181905 | 56.134575 | -389.24  | 1888.79  |
| 5    | GUIDE  | 500441280 | 9.43 | 1541  | -0.162 | -0.115 | 0.150 | 0.234 | 151.172137 | 55.831559 | 672.11   | 1637.14  |
| 6    | GUIDE  | 500311288 | 8.62 | 1545  | 0.055  | 0.009  | 0.106 | 0.159 | 149.915988 | 55.168561 | 2426.56  | -1393.14 |
| 7    | GUIDE  | 500443344 | 9.43 | 1543  | 0.044  | -0.108 | 0.096 | 0.152 | 151.235048 | 55.451326 | 2038.61  | 1466.51  |

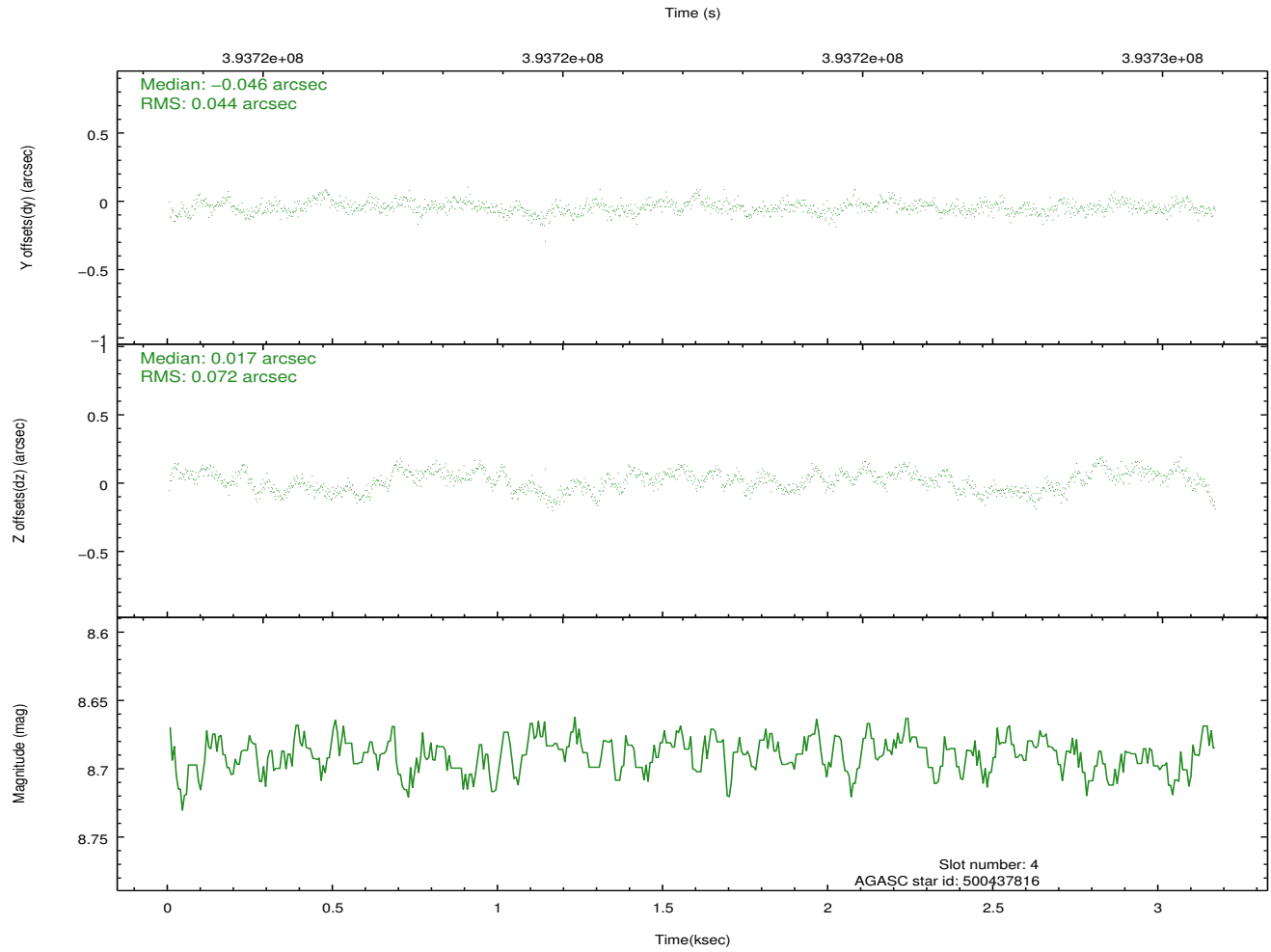
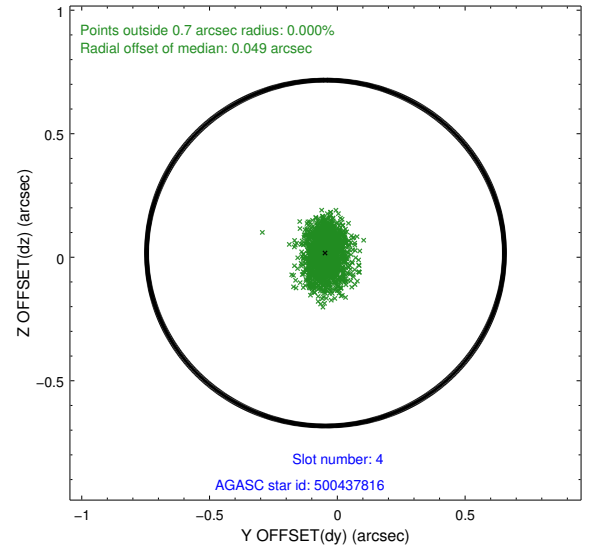
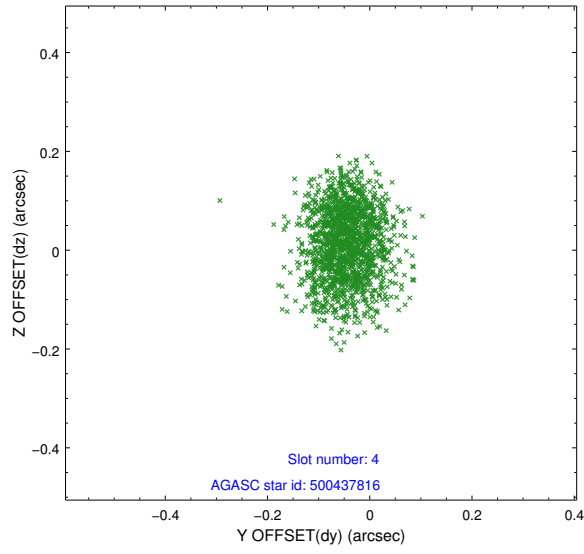


## 2.4 Star Slots

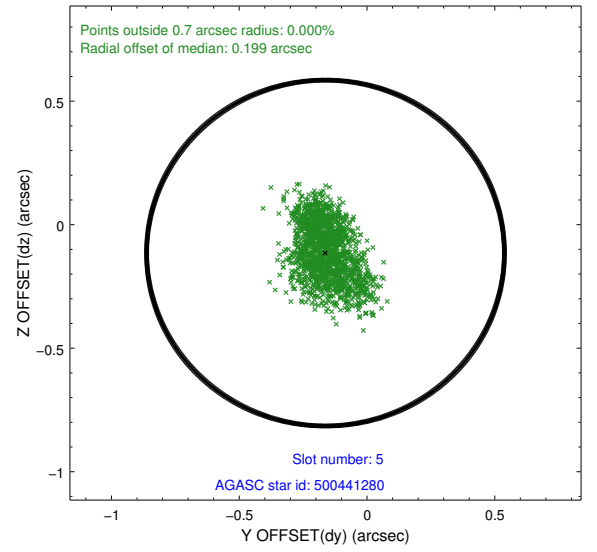
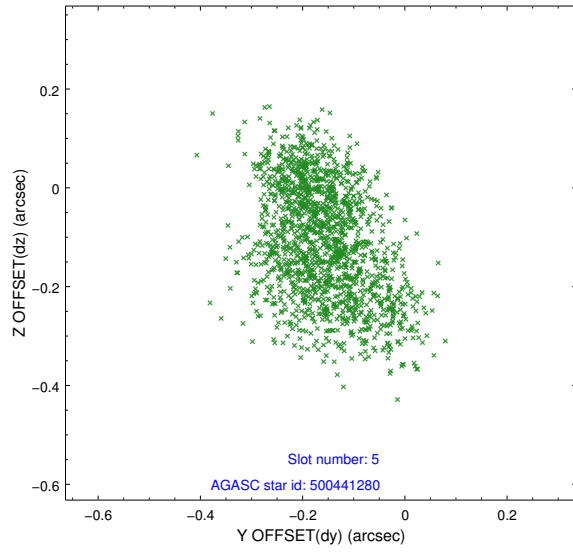
### 2.4.1 Slot 3



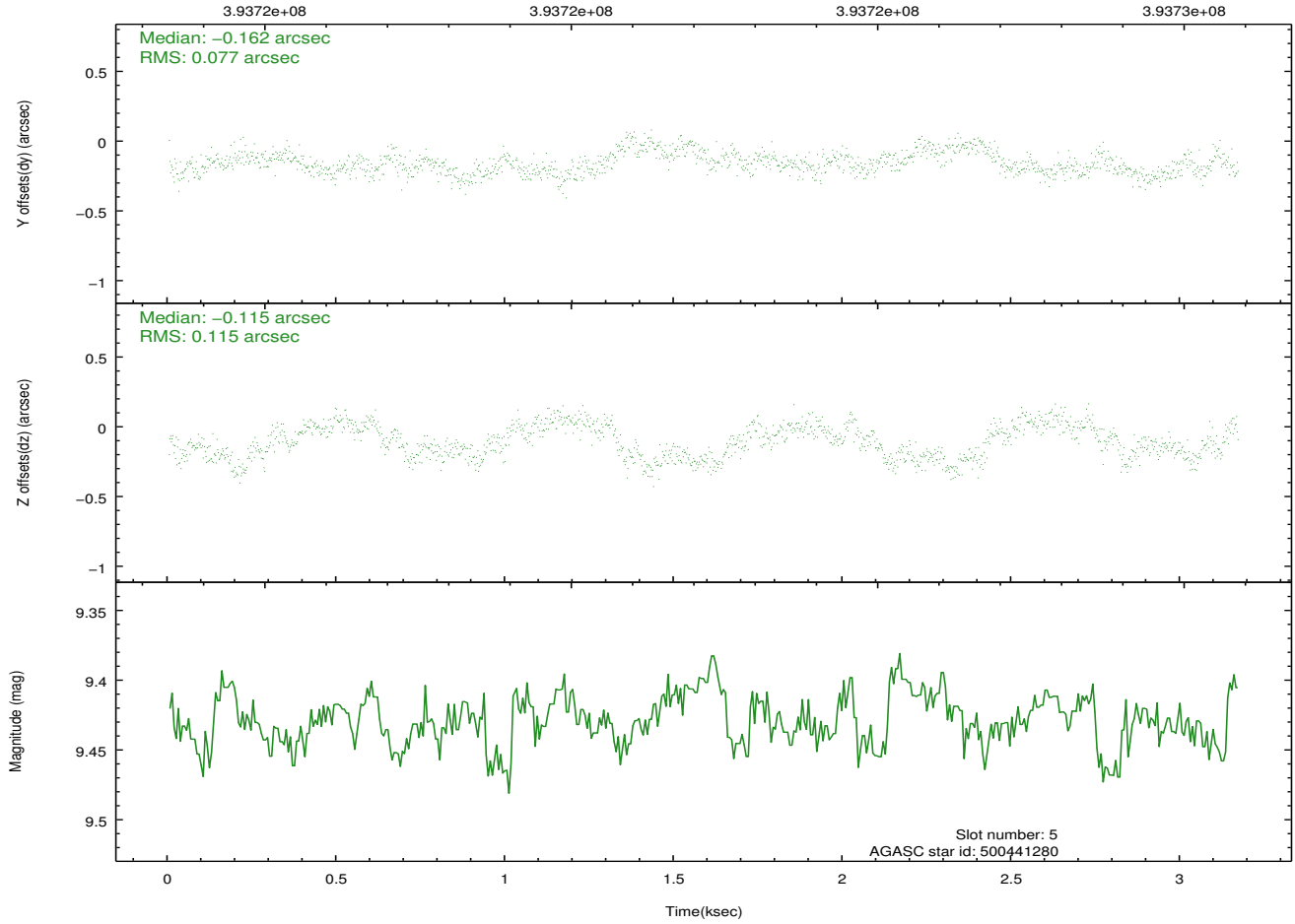
## 2.4.2 Slot 4



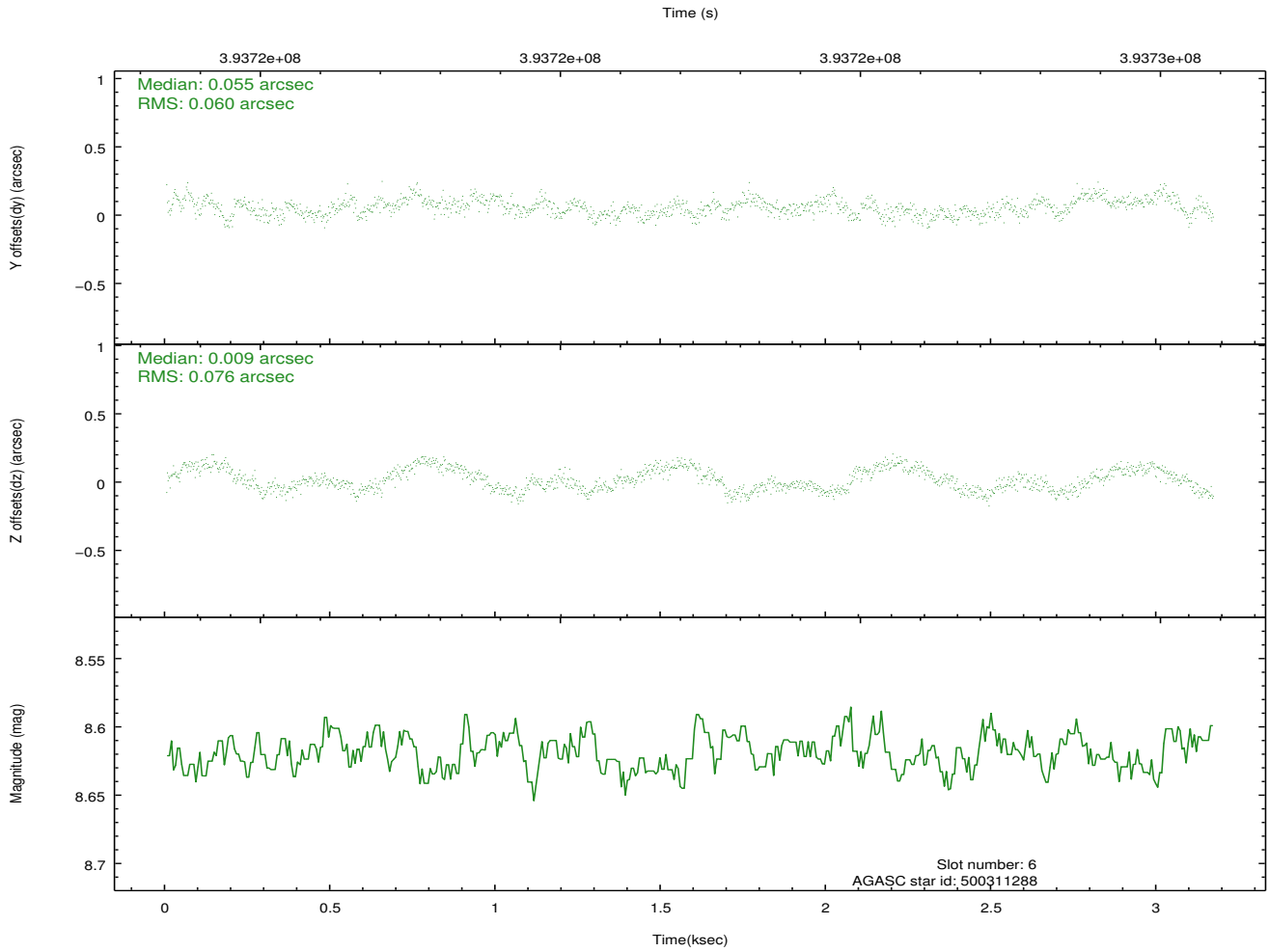
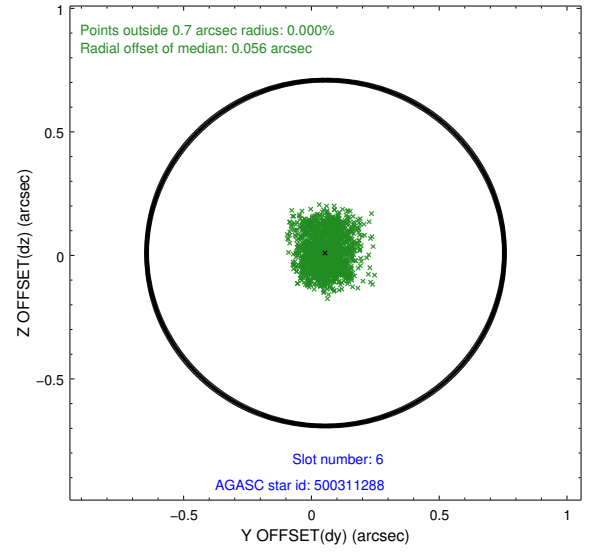
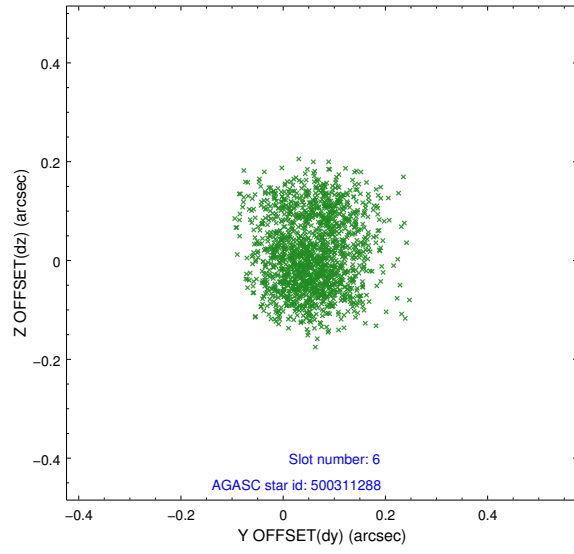
### 2.4.3 Slot 5



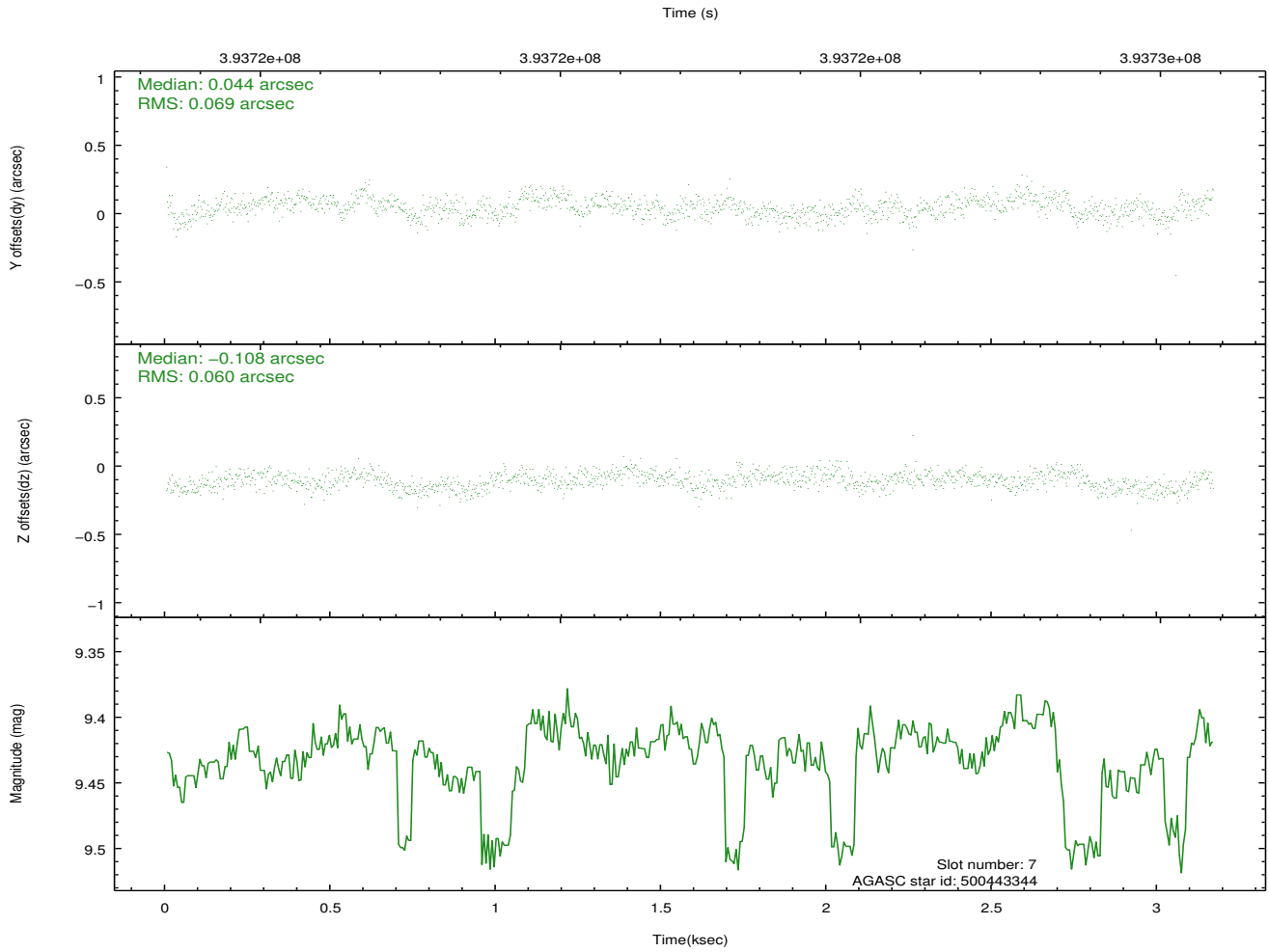
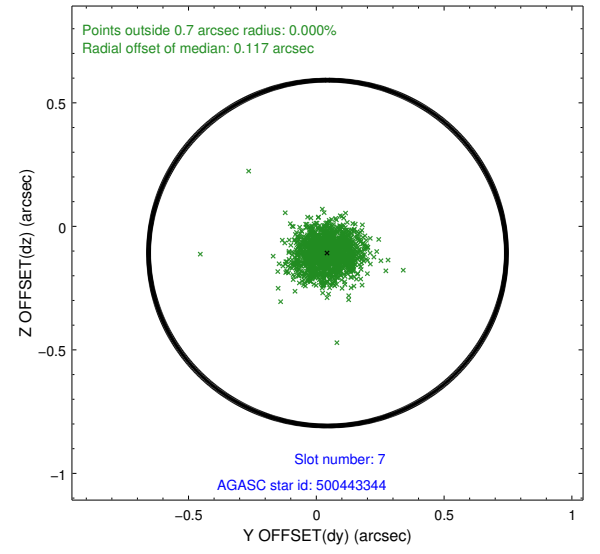
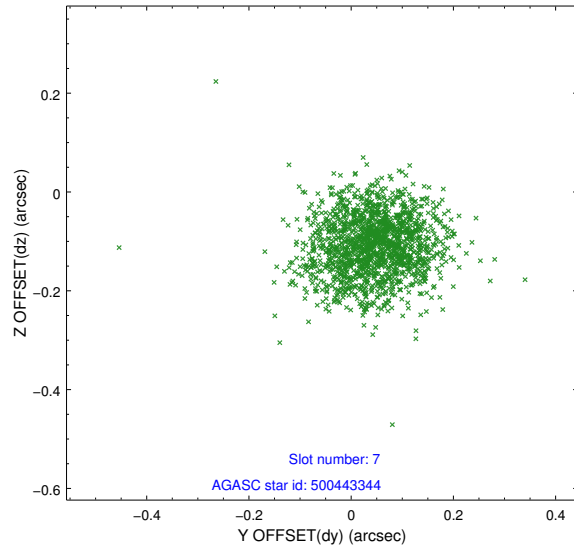
Time (s)



## 2.4.4 Slot 6

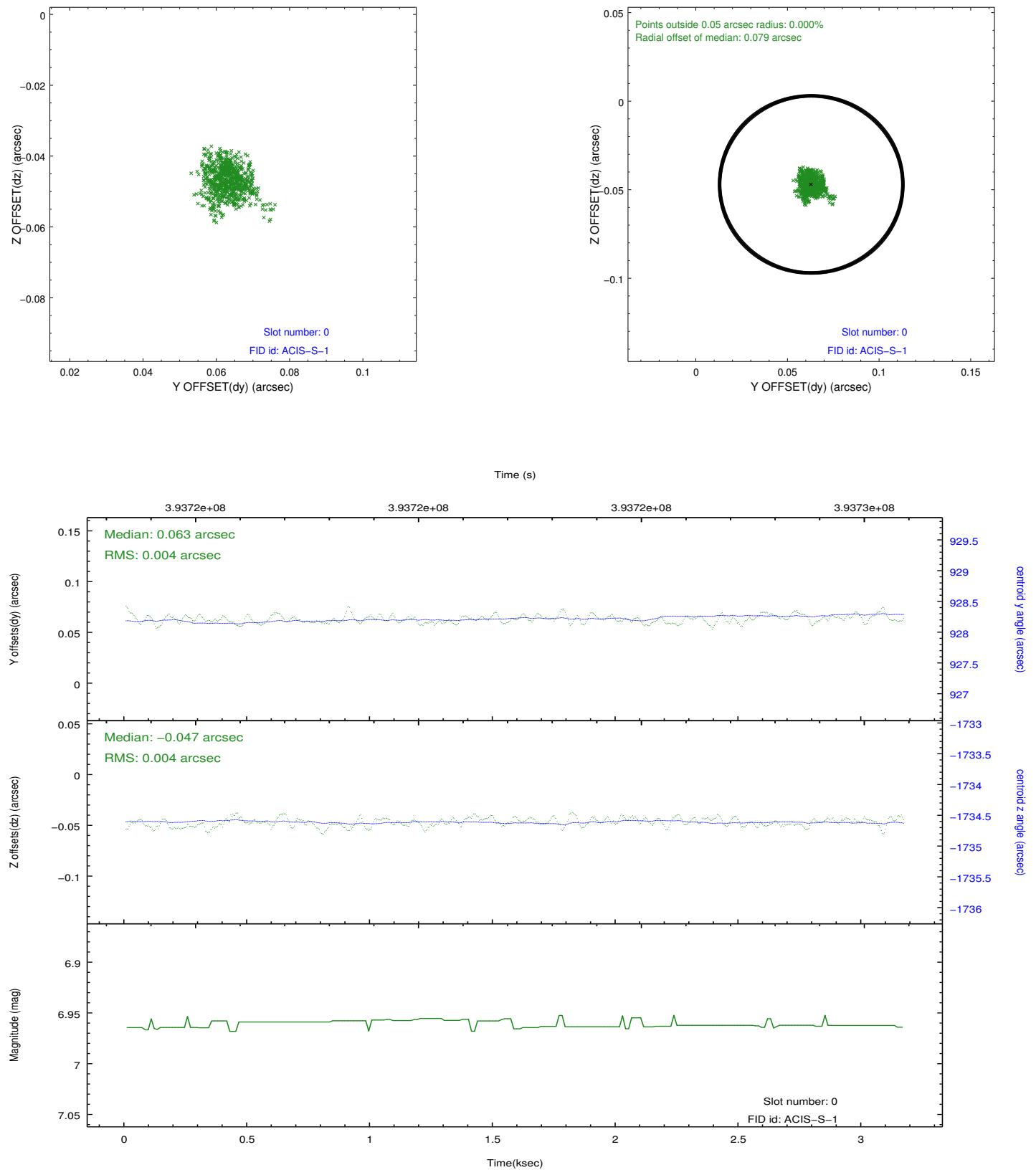


## 2.4.5 Slot 7

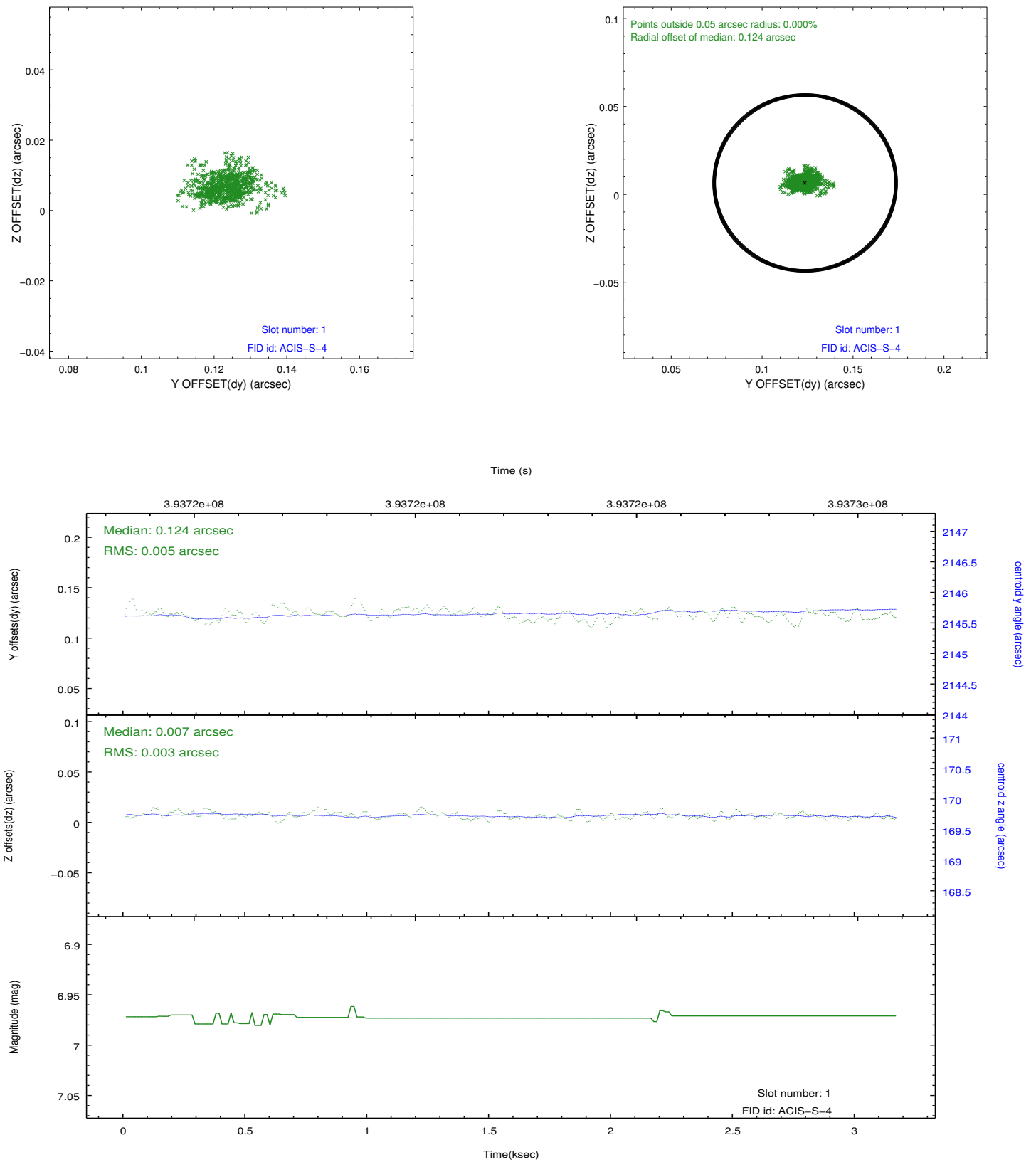


## 2.5 FID Slots

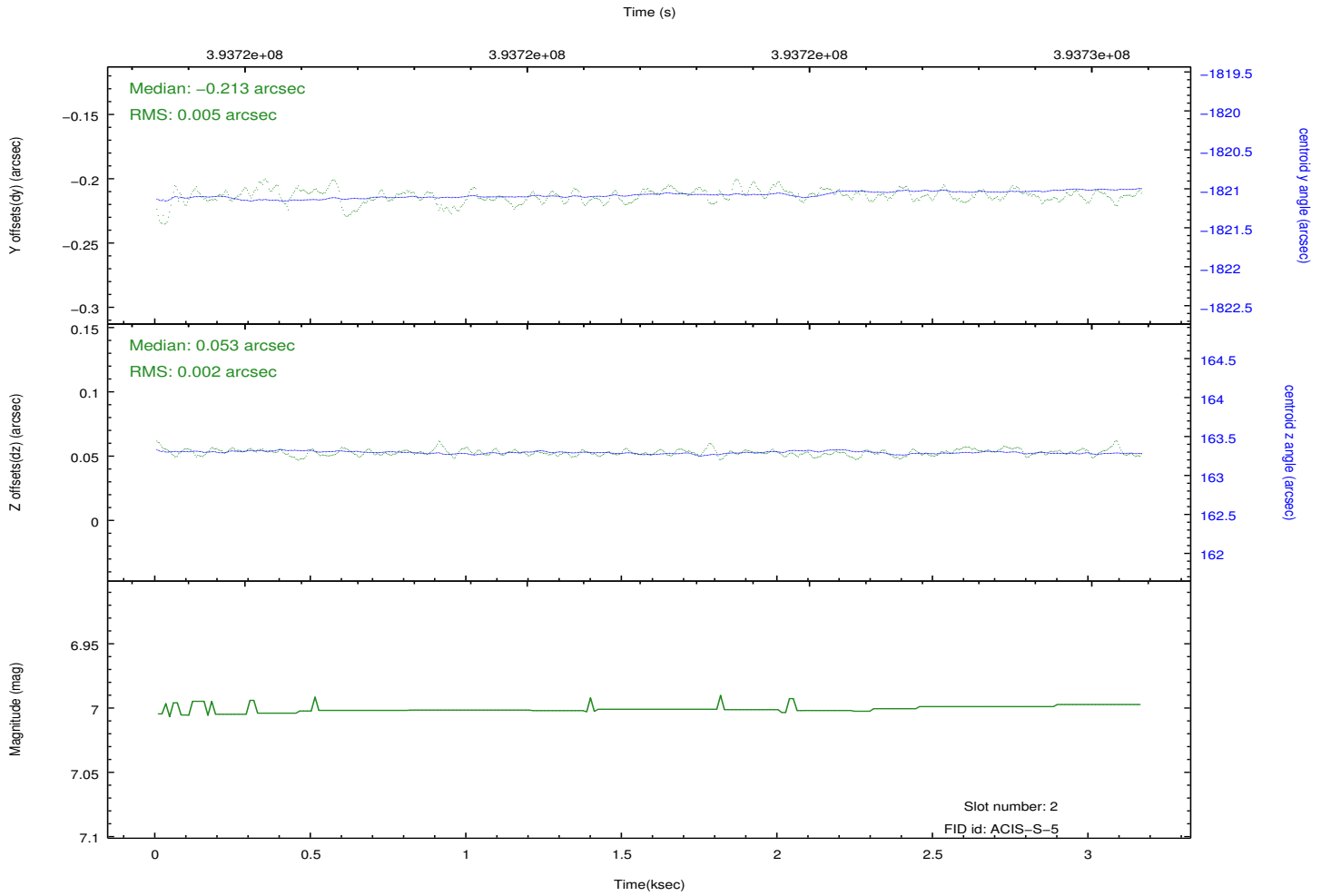
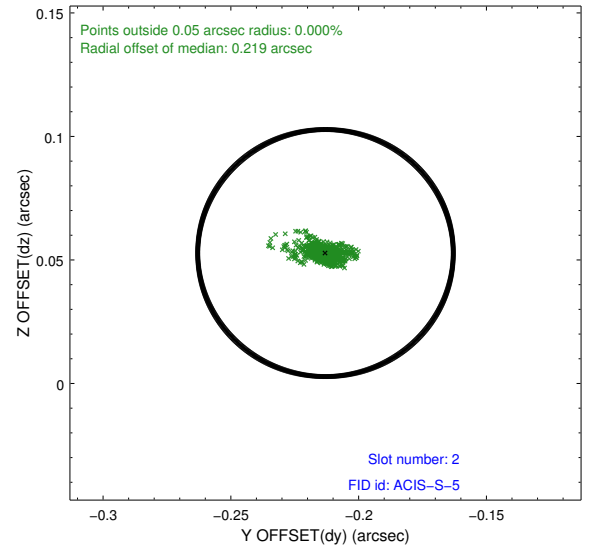
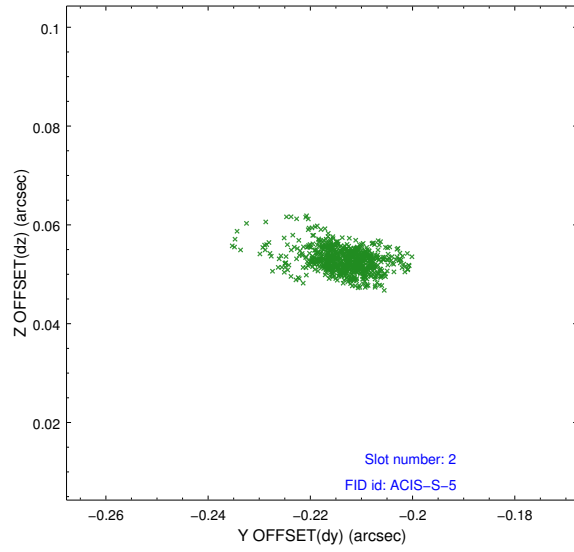
### 2.5.1 Slot 0



## 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)      | 2012.07.05    |
| V&V Edition                | 1             |
| V&V Disposition and Status | OK            |
| V&V Charge Time            | 3.06169997859 |

### A.2 Comments