

# V&V Reference Report

## L2 ASCDS Version : 8.4.4

Observation 9784 - L2 Version 2  
Chandra X-Ray Center

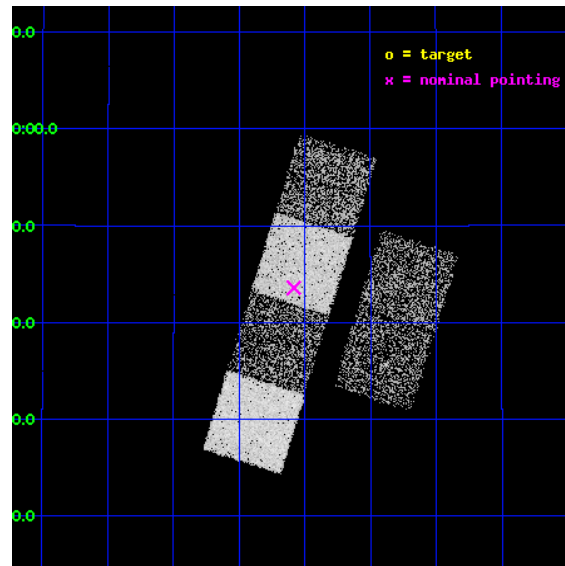
L2 Processing Date : May 7 2012

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# 1 Front

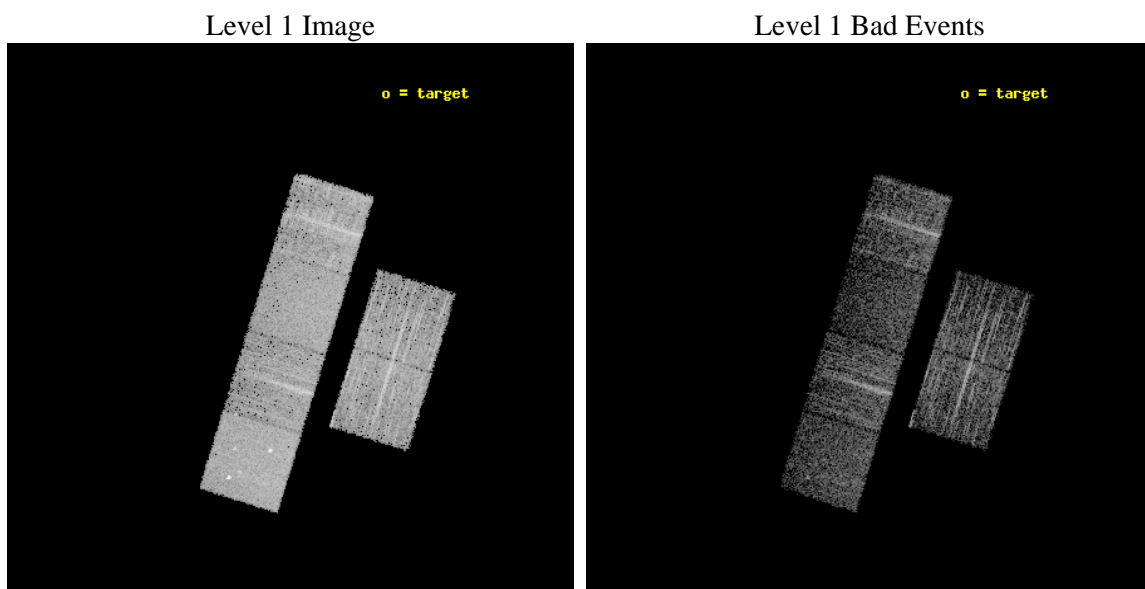
|          |   |   |
|----------|---|---|
| seq_num  | 100070  | Sequence number                             |
| obs_id   | 9784  | Observation id                              |
| title    | High Resolution Imaging and Spectroscopy of 8P/Tuttle | Proposal tit                                |
| observer | Dr Damian Christian                                   | Principal investigator                      |
| object   | 8P/Tuttle (2008)                                      | Source name                                 |
| dtcycle  | 0   | &#160                                       |
| cycle    | P   | events from which exps?<br>Prim/Second/Both |
| ra_targ  | 24.054167   | Observer's specified target RA [deg]        |
| dec_targ | 26.219722   | Observer's specified target Dec [deg]       |
| ra_nom   | 24.520843021771                                       | Nominal RA [deg]                            |
| dec_nom  | 23.726587480698                                       | Nominal Dec [deg]                           |
| roll_nom | 287.15752704394                                       | Nominal Roll [deg]                          |
| revision | 2   | Processing version of data                  |
| ontime   | 3177.5999882221                                       | Sum of GTIs [s]                             |
| livetime | 3137.3633038502                                       | Livetime [s]                                |
| ontime2  | 3177.5999882221                                       | Sum of GTIs [s]                             |
| ontime3  | 3177.5999882221                                       | Sum of GTIs [s]                             |
| ontime5  | 3177.5999882221                                       | Sum of GTIs [s]                             |
| ontime6  | 3177.5999882221                                       | Sum of GTIs [s]                             |
| ontime7  | 3177.5999882221                                       | Sum of GTIs [s]                             |
| ontime8  | 3177.5999882221                                       | Sum of GTIs [s]                             |
| l2events | 39765   | Number of level 2 events                    |



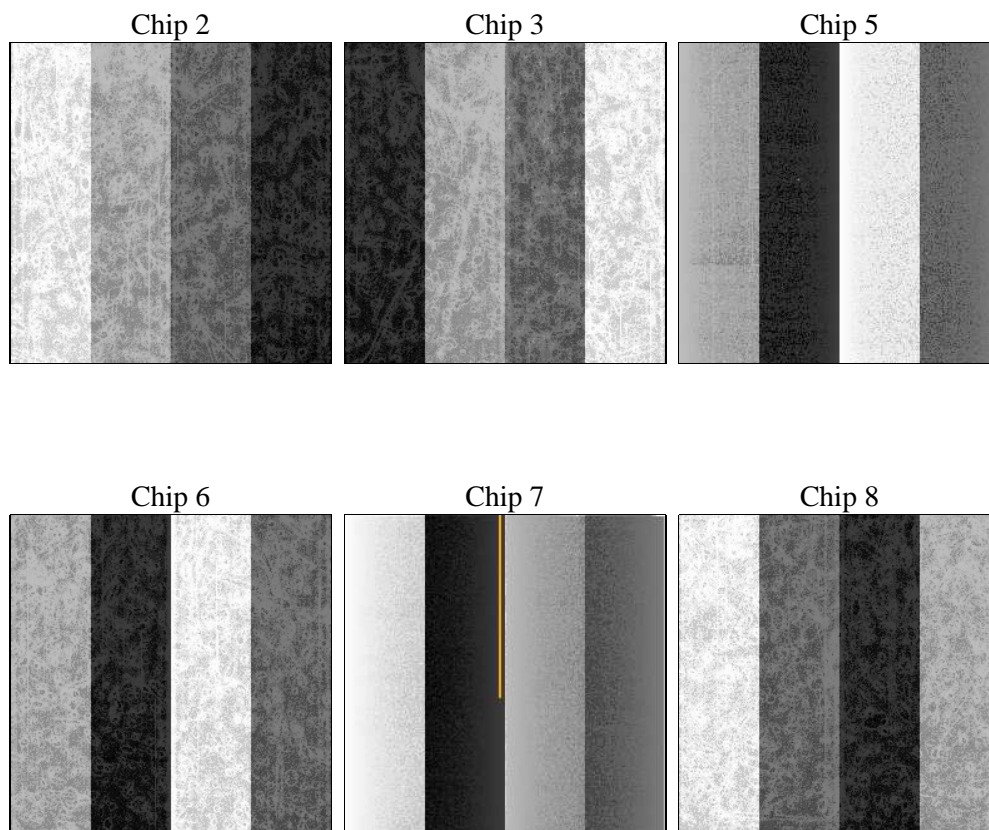
## 2 OBI

### 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 | 8.4.4               | Processing system revision     | ontime         | 3177.5999882221 | Sum of GTIs [s]                         |
| caldsver | 4.4.9               | &#160                          | ontime2        | 3177.5999882221 | Sum of GTIs [s]                         |
| date     | 2012-05-07T14:10:57 | Date and time of file creation | ontime3        | 3177.5999882221 | Sum of GTIs [s]                         |
| revision | 2                   | Processing version of data     | ontime5        | 3177.5999882221 | Sum of GTIs [s]                         |
|          |                     |                                | ontime6        | 3177.5999882221 | Sum of GTIs [s]                         |
|          |                     |                                | ontime7        | 3177.5999882221 | Sum of GTIs [s]                         |
|          |                     |                                | ontime8        | 3177.5999882221 | Sum of GTIs [s]                         |
|          |                     |                                | l1events       | 191548          | Number of level 1 events                |

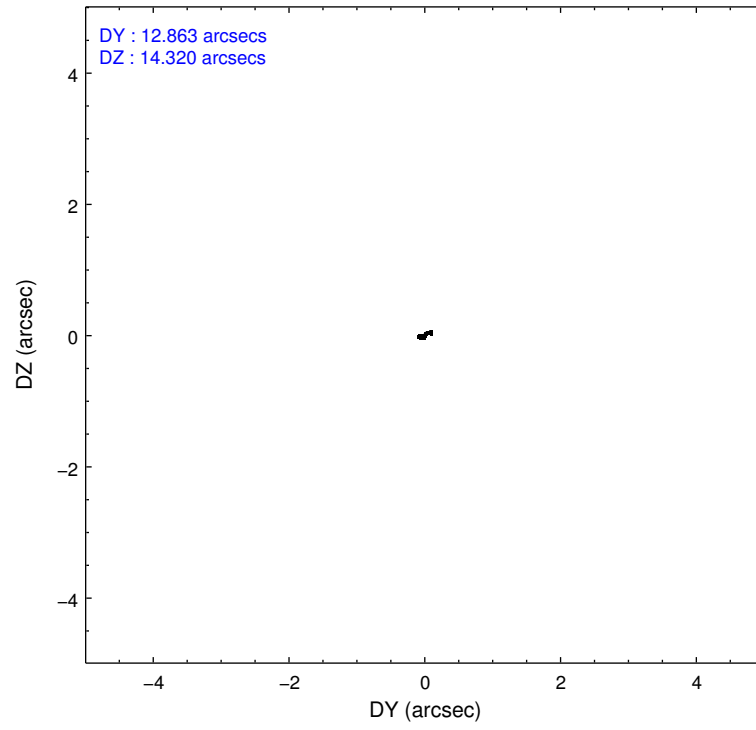
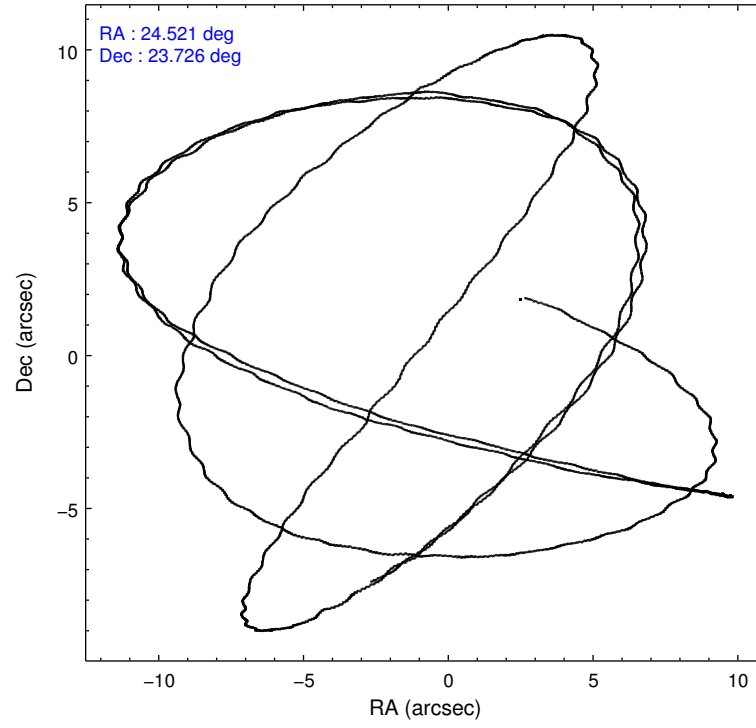
### 2.1.4 Events

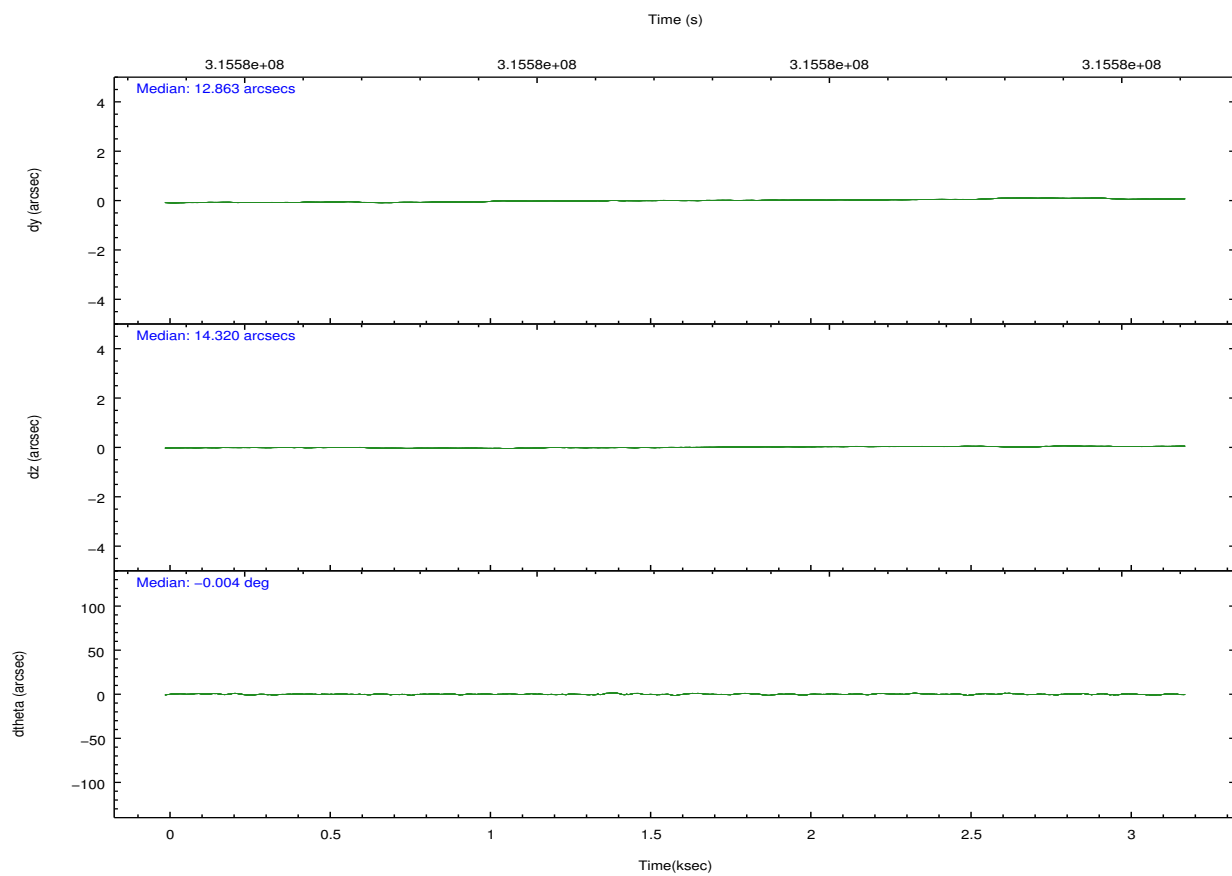
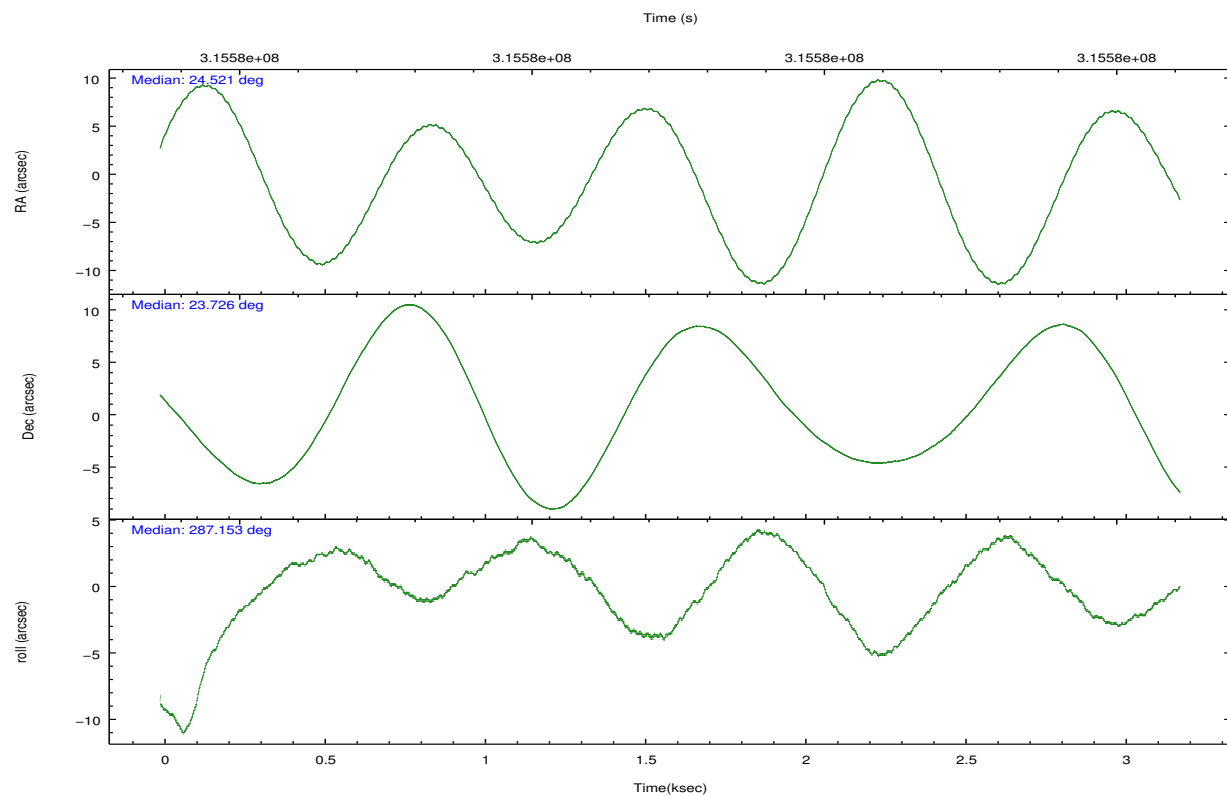
|                 | ccd 2 | ccd 3 | ccd 5 | ccd 6 | ccd 7 | ccd 8 |                | ccd 2 | ccd 3 | ccd 5 | ccd 6 | ccd 7 | ccd 8 |
|-----------------|-------|-------|-------|-------|-------|-------|----------------|-------|-------|-------|-------|-------|-------|
| level 1 events  | 30048 | 26830 | 39578 | 28100 | 31391 | 35601 | grade 0 events | 933   | 933   | 2749  | 971   | 1681  | 2534  |
| rejected events | 27566 | 24388 | 20391 | 25448 | 17632 | 27396 |                | 3%    | 3%    | 6%    | 3%    | 5%    | 7%    |
| rejected %      | 91%   | 90%   | 51%   | 90%   | 56%   | 76%   | grade 1 events | 14    | 15    | 131   | 12    | 33    | 27    |
|                 |       |       |       |       |       |       |                | 0%    | 0%    | 0%    | 0%    | 0%    | 0%    |
|                 |       |       |       |       |       |       | grade 2 events | 619   | 524   | 5938  | 579   | 2920  | 2042  |
|                 |       |       |       |       |       |       |                | 2%    | 1%    | 15%   | 2%    | 9%    | 5%    |
|                 |       |       |       |       |       |       | grade 3 events | 274   | 326   | 793   | 303   | 1300  | 879   |
|                 |       |       |       |       |       |       |                | 0%    | 1%    | 2%    | 1%    | 4%    | 2%    |
|                 |       |       |       |       |       |       | grade 4 events | 296   | 285   | 727   | 289   | 1295  | 837   |
|                 |       |       |       |       |       |       |                | 0%    | 1%    | 1%    | 1%    | 4%    | 2%    |
|                 |       |       |       |       |       |       | grade 5 events | 878   | 1124  | 2999  | 1176  | 3210  | 1605  |
|                 |       |       |       |       |       |       |                | 2%    | 4%    | 7%    | 4%    | 10%   | 4%    |
|                 |       |       |       |       |       |       | grade 6 events | 524   | 513   | 10101 | 644   | 7424  | 2391  |
|                 |       |       |       |       |       |       |                | 1%    | 1%    | 25%   | 2%    | 23%   | 6%    |
|                 |       |       |       |       |       |       | grade 7 events | 26510 | 23110 | 16140 | 24126 | 13528 | 25286 |
|                 |       |       |       |       |       |       |                | 88%   | 86%   | 40%   | 85%   | 43%   | 71%   |

## 2.2 Compared Parameters

| Parameter                         | Planned             | Actual               | Parameter                             | Planned   | Actual  |
|-----------------------------------|---------------------|----------------------|---------------------------------------|-----------|---------|
| Instrument                        | ACIS                | ACIS                 | Obspar format version number          | 7         | 7       |
| Detector                          | ACIS-235678         | ACIS-235678          | 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                 | 24.498460           | 24.52084302177128    | Subarray requested                    | NONE      | NONE    |
| [deg] Pointing Dec                | 23.744917           | 23.72658748069848    | Alternating exposures requested       | N         | N       |
| [deg] Pointing Roll               | 287.009903          | 287.1575270439419    | [s] Primary exposure time             | 0.000000  | 3.2     |
| [s] Window start time (MET)       | 314928065.184000    | 314928065.184000     |                                       |           |         |
| [s] Window stop time (MET)        | 316828805.184000    | 316828805.184000     |                                       |           |         |
| [mm] SIM focus pos                | -0.684267           | -0.6828225247311905  |                                       |           |         |
| [mm] SIM defocus                  | 0                   | 0.001444936568705701 |                                       |           |         |
| [mm] SIM translation stage pos    | -190.132523         | -190.1400660498719   |                                       |           |         |
| [mm] SIM translation stage offset | 0                   | 0.00754346686406393  |                                       |           |         |
| [s] Observation start time (MET)  | 315582057.184000    | 315581680.83025      |                                       |           |         |
| Observation start date            | 2008-01-01T13:39:52 | 2008-01-01T13:34:40  |                                       |           |         |
| [s] Observation end time (MET)    | 315585057.184000    | 315585809.01795      |                                       |           |         |
| Observation end date              | 2008-01-01T14:29:52 | 2008-01-01T14:43:29  |                                       |           |         |
| Read mode                         | TIMED               | TIMED                |                                       |           |         |

## 2.3 Aspect





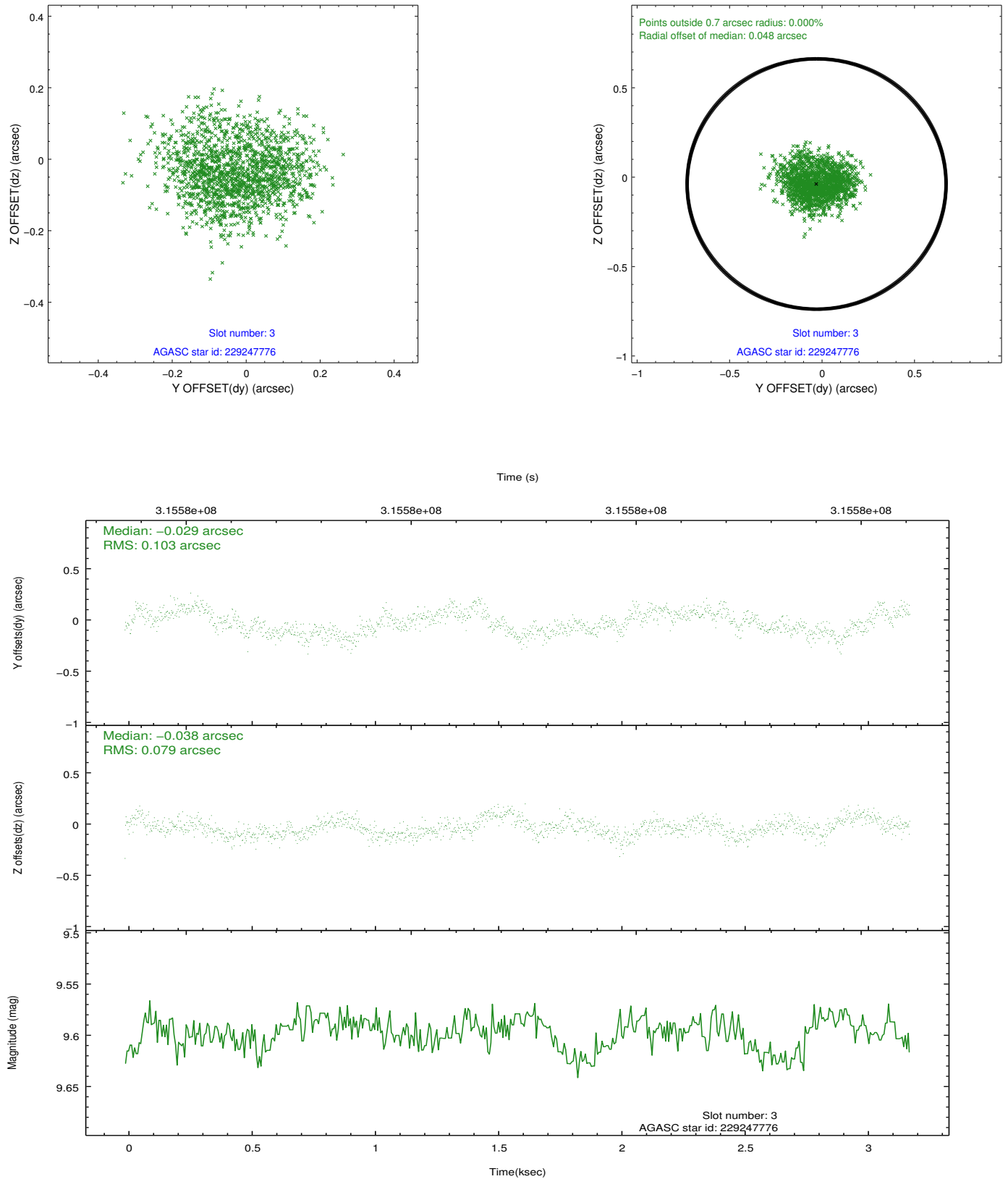
### Slot Statistics

| slot | status | id        | mag  | n_pts | med_dy | med_dz | dr1   | dr2   | ra        | dec       | mean_y   | mean_z   |
|------|--------|-----------|------|-------|--------|--------|-------|-------|-----------|-----------|----------|----------|
| 0    | FID    | ACIS-S-2  | 7.09 | 776   | -0.089 | -0.057 | 0.006 | 0.010 | 0.000000  | 0.000000  | -765.85  | -1735.75 |
| 1    | FID    | ACIS-S-4  | 7.19 | 777   | 0.107  | 0.041  | 0.006 | 0.010 | 0.000000  | 0.000000  | 2146.70  | 170.77   |
| 2    | FID    | ACIS-S-6  | 7.33 | 777   | -0.046 | 0.022  | 0.007 | 0.013 | 0.000000  | 0.000000  | 398.72   | 810.42   |
| 3    | GUIDE  | 229247776 | 9.60 | 1550  | -0.029 | -0.038 | 0.140 | 0.217 | 24.803035 | 24.428506 | -2062.51 | 1674.26  |
| 4    | GUIDE  | 229248624 | 9.39 | 1551  | 0.317  | 0.291  | 0.093 | 0.148 | 24.280333 | 23.906368 | -767.15  | -515.72  |
| 5    | GUIDE  | 229250008 | 9.24 | 1554  | 0.065  | 0.094  | 0.140 | 0.212 | 24.918884 | 24.309304 | -1542.18 | 1913.36  |
| 6    | GUIDE  | 229255600 | 8.39 | 1553  | -0.252 | -0.169 | 0.070 | 0.108 | 24.102689 | 24.216856 | -2007.90 | -744.45  |
| 7    | GUIDE  | 229260264 | 8.14 | 1553  | -0.105 | -0.184 | 0.078 | 0.122 | 24.999207 | 23.744859 | 478.43   | 1577.76  |

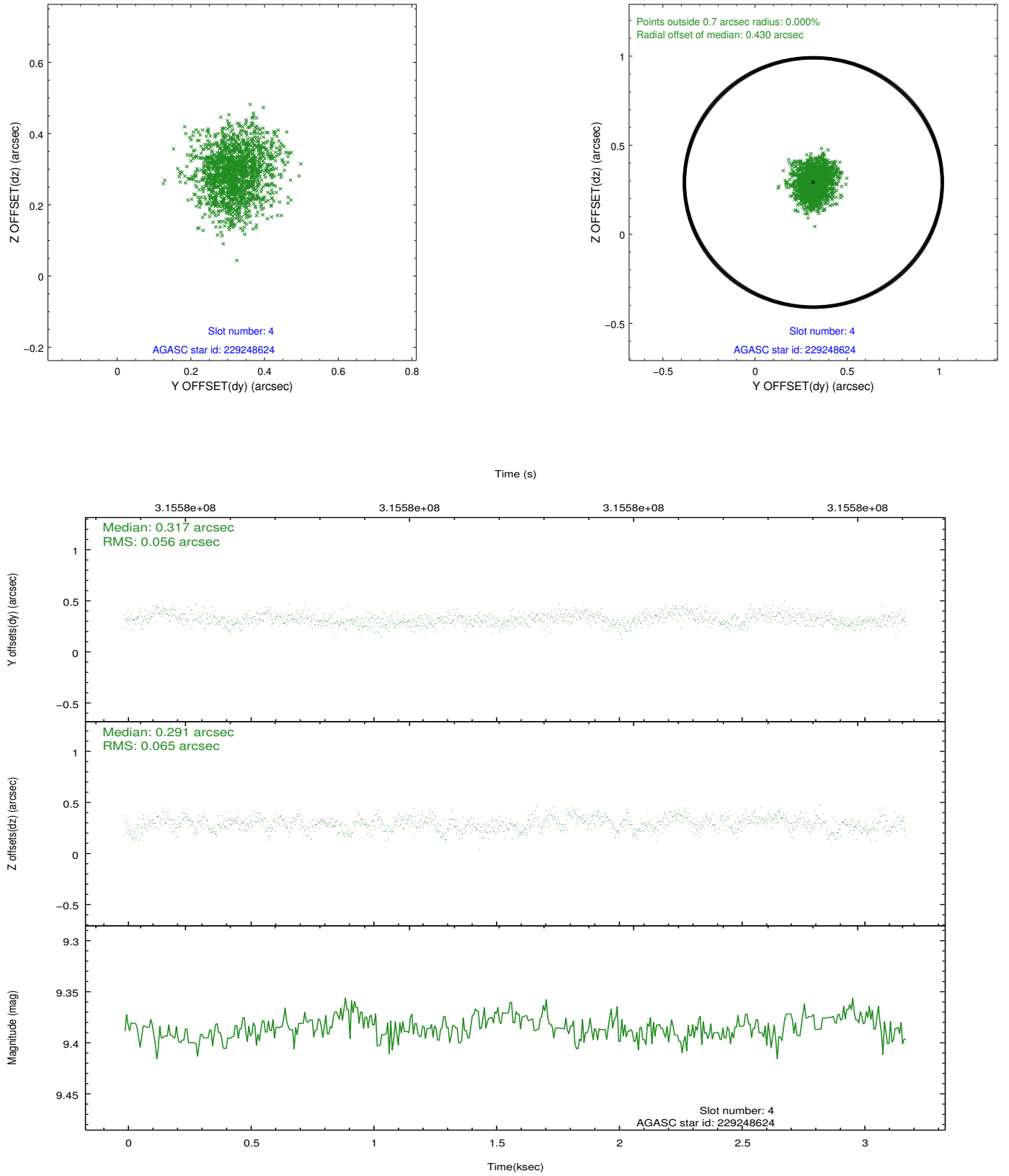


## 2.4 Star Slots

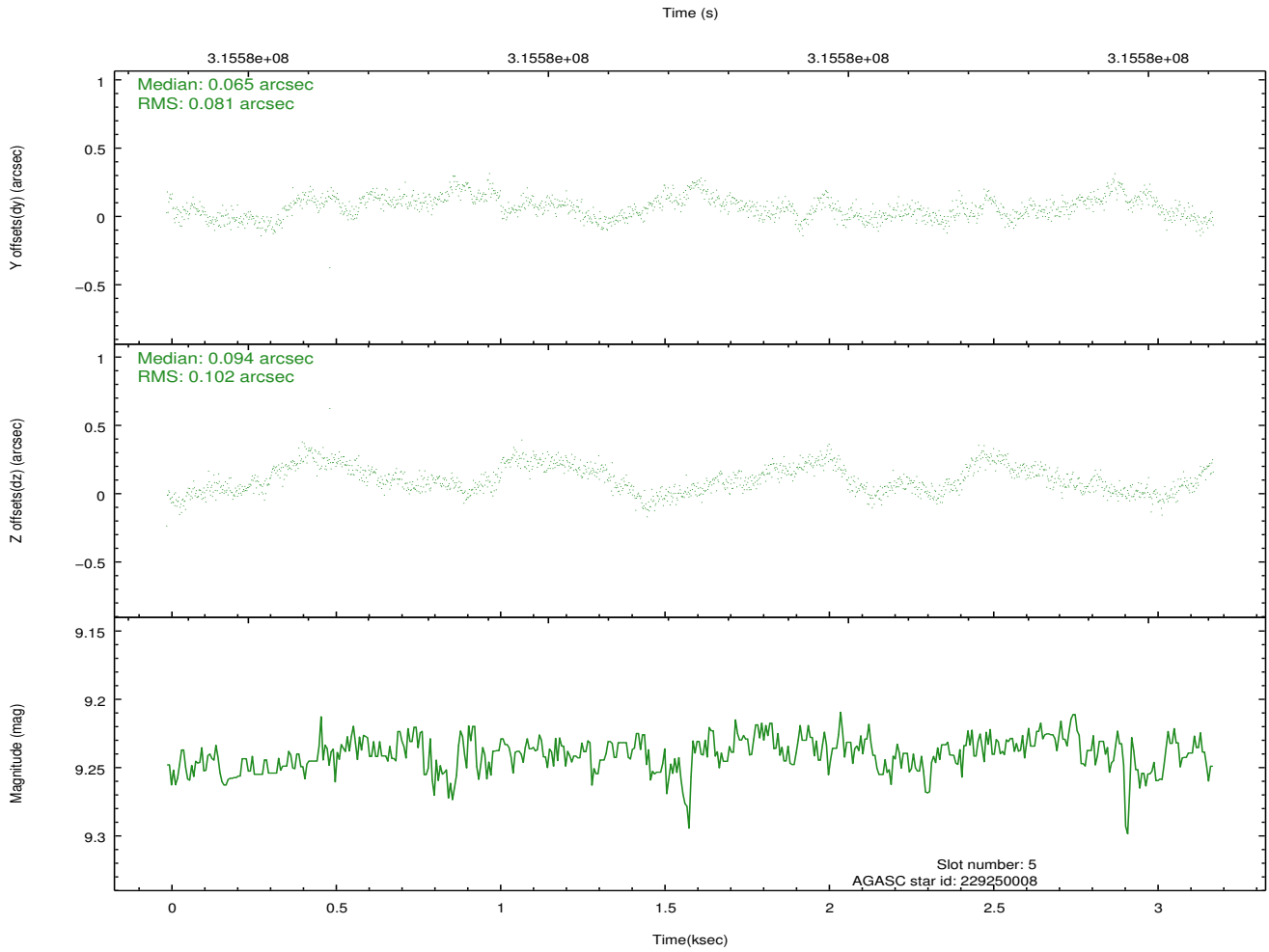
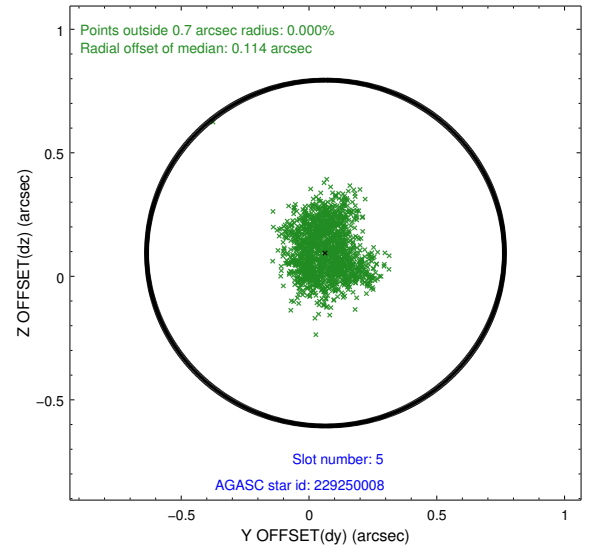
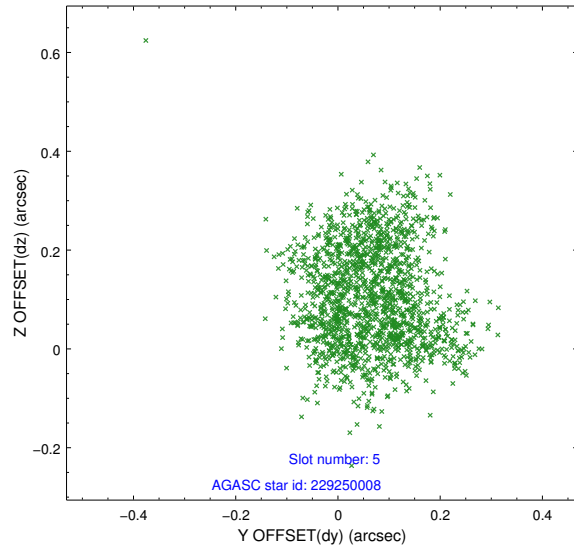
### 2.4.1 Slot 3



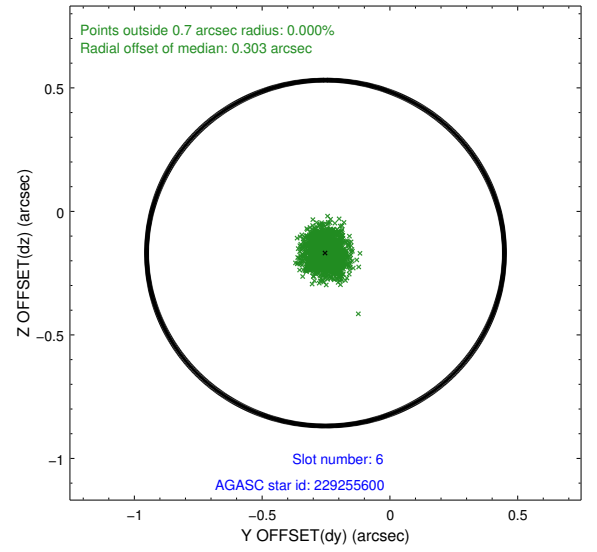
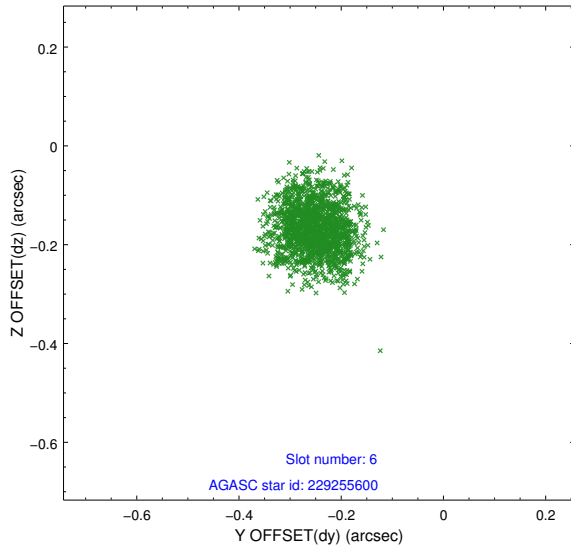
## 2.4.2 Slot 4



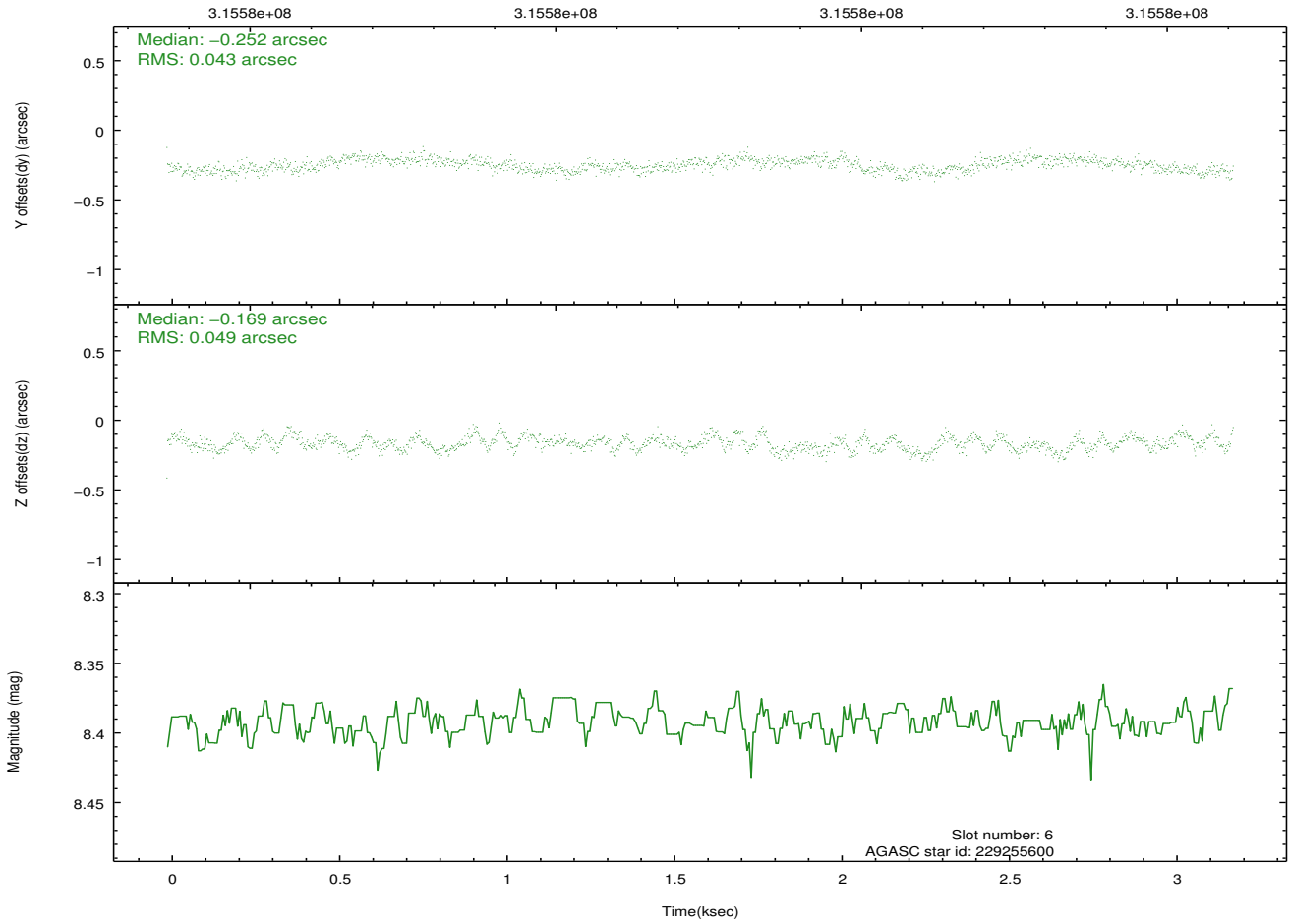
### 2.4.3 Slot 5



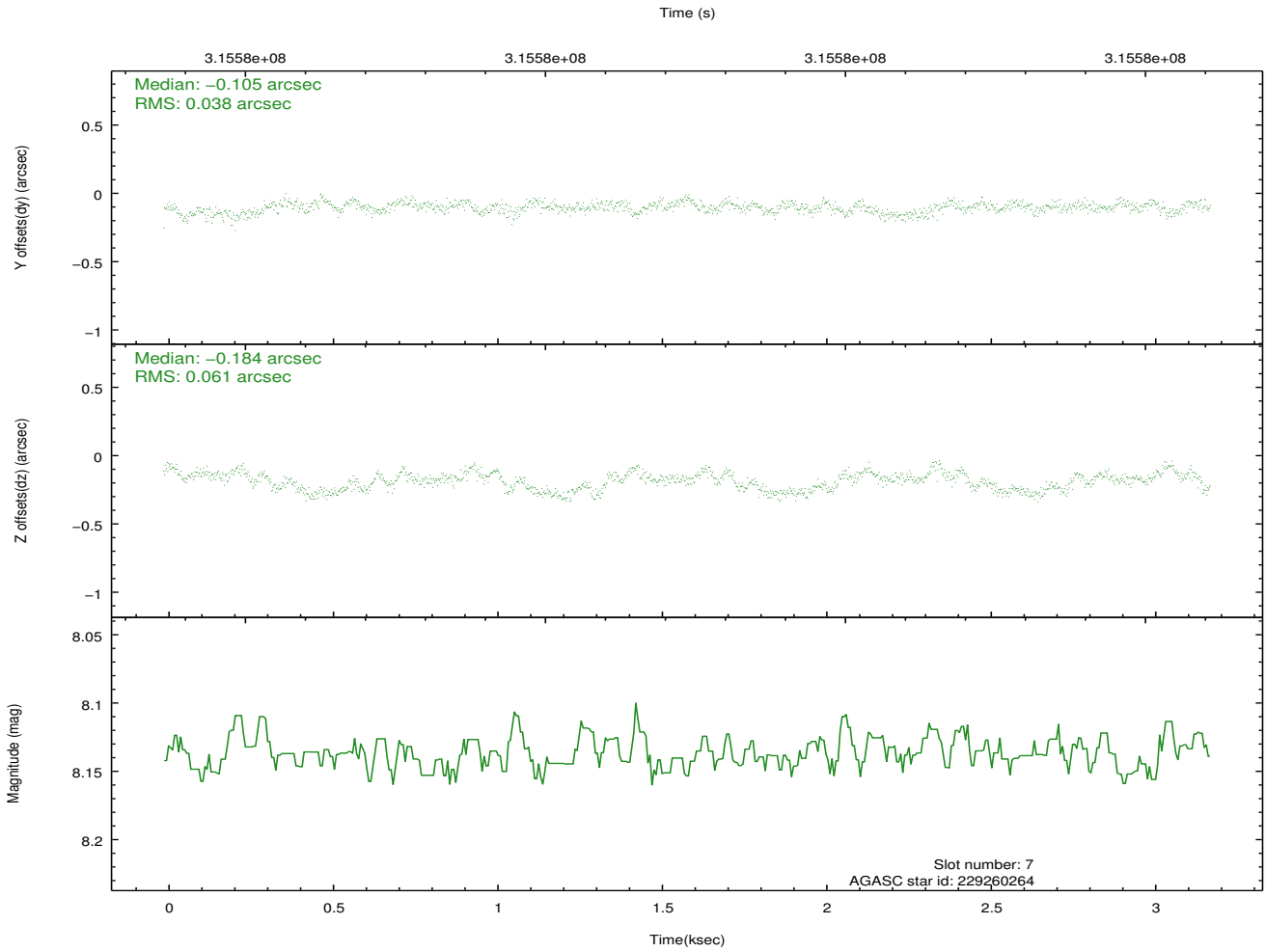
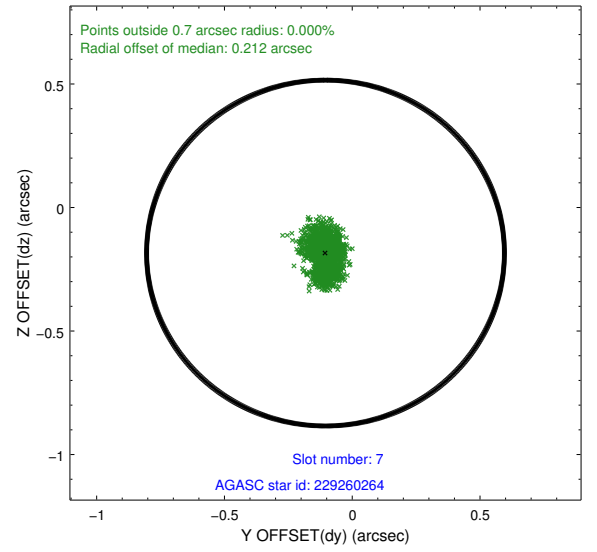
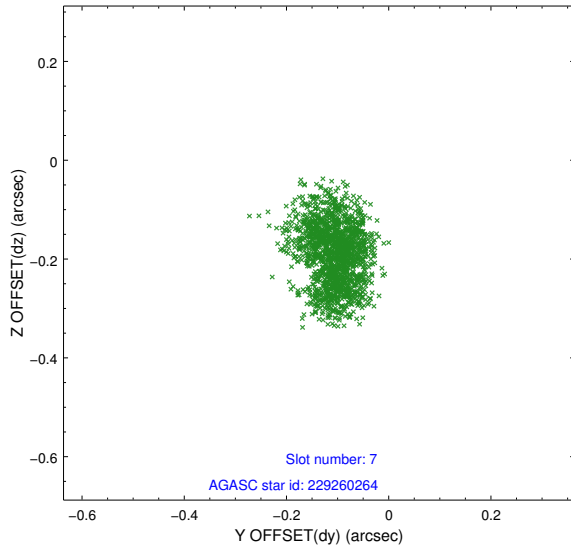
## 2.4.4 Slot 6



Time (s)

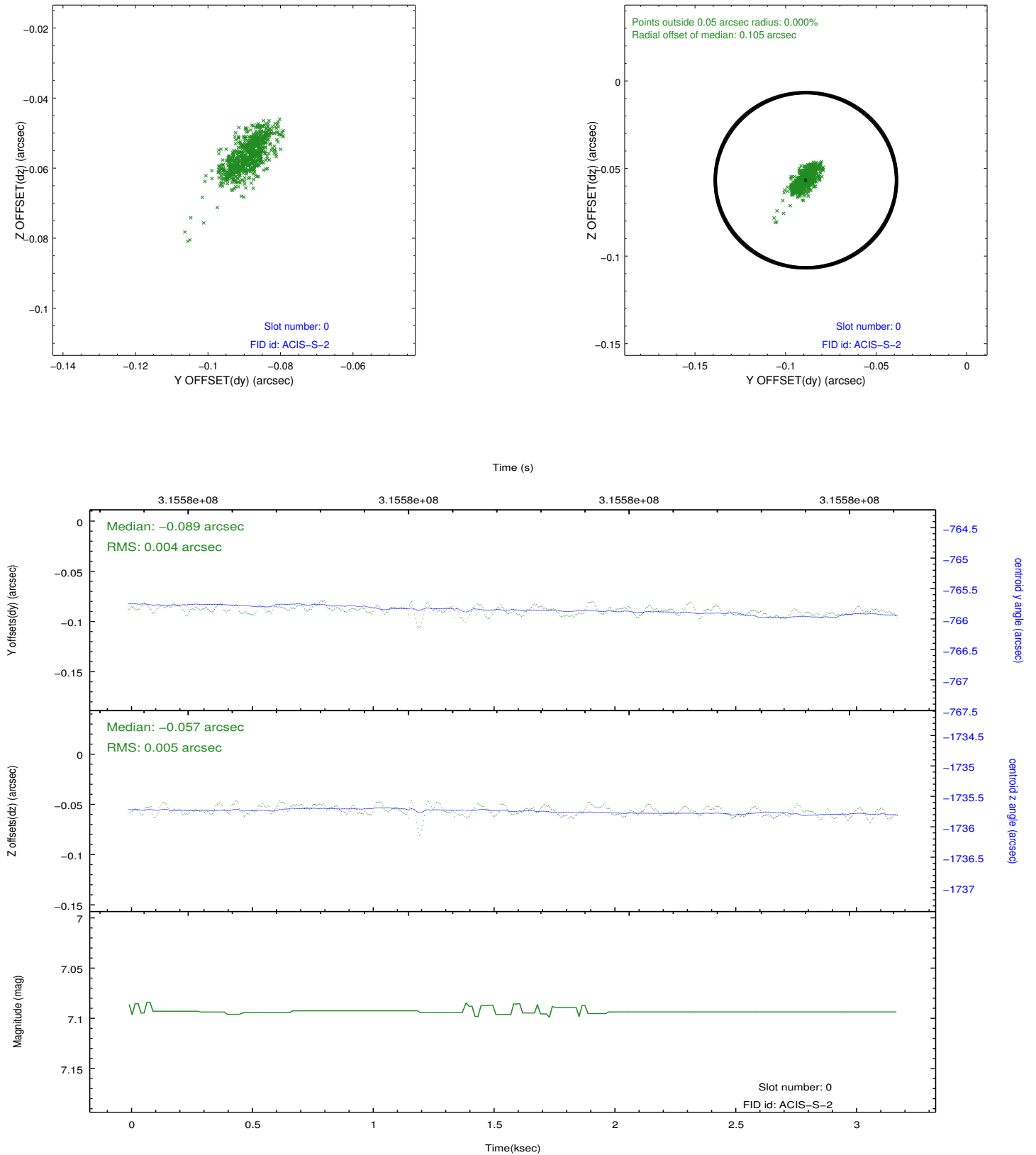


## 2.4.5 Slot 7

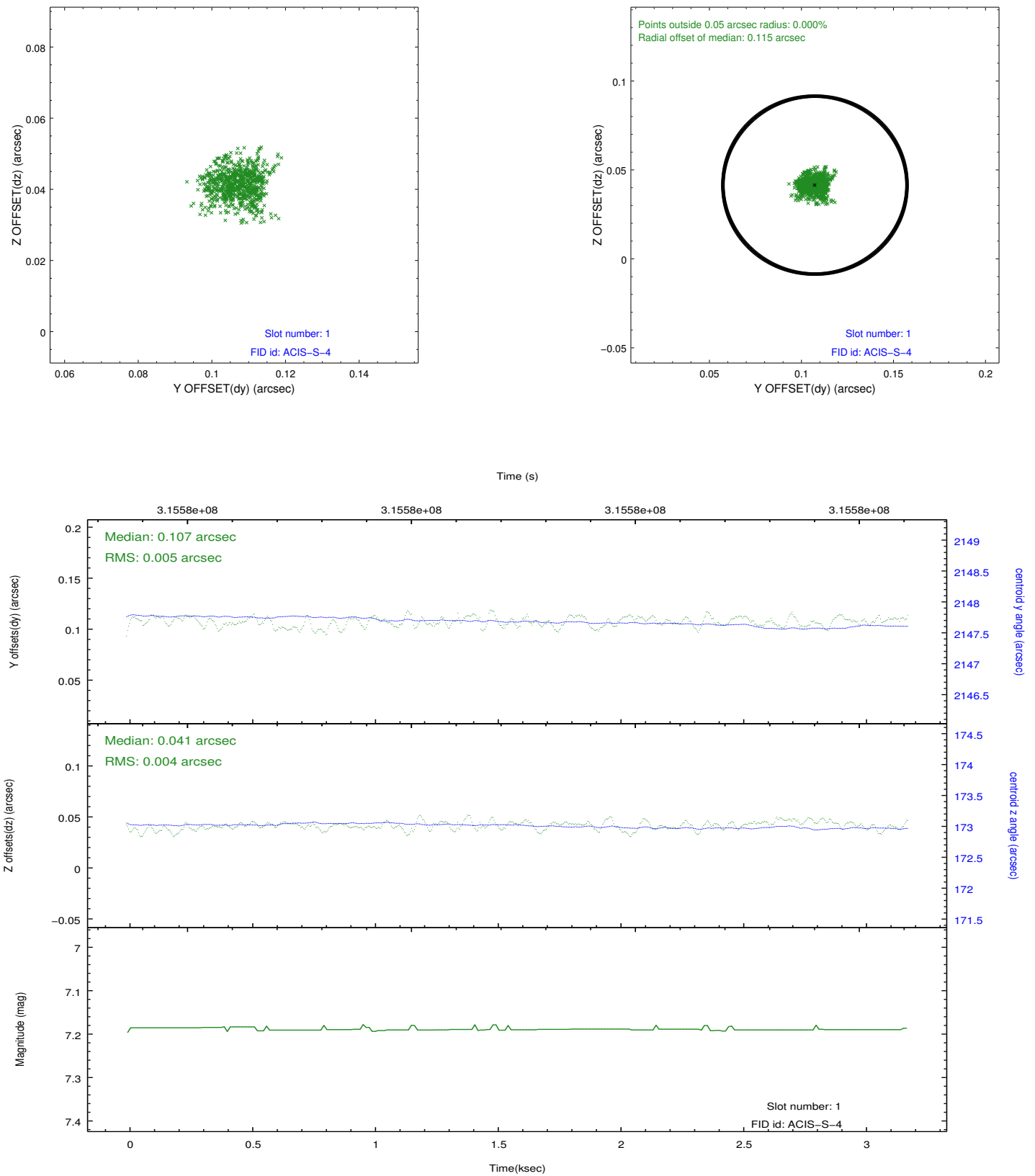


## 2.5 FID Slots

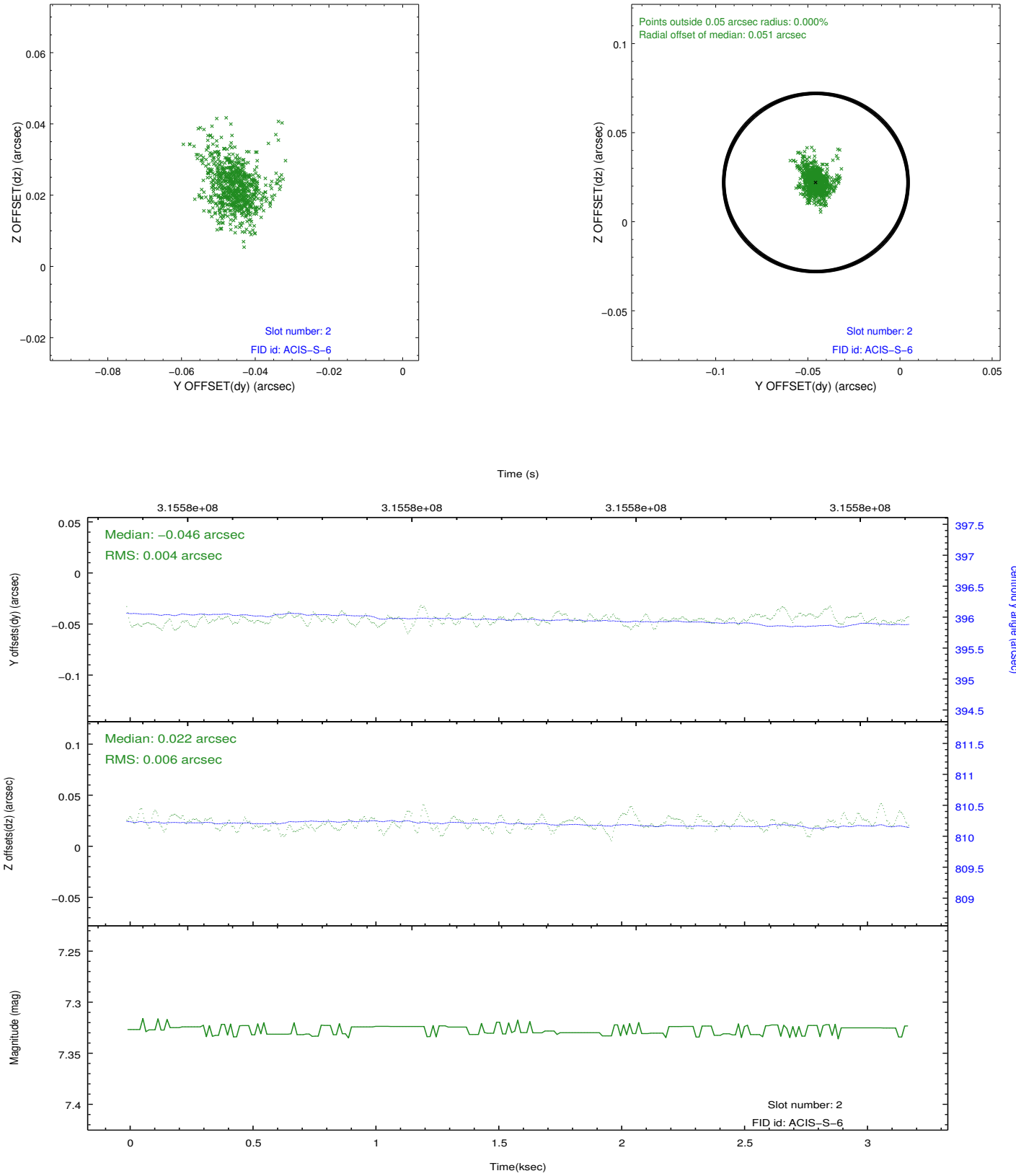
### 2.5.1 Slot 0



## 2.5.2 Slot 1



### 2.5.3 Slot 2





## A Summary

### A.1 Status

|                            |               |
|----------------------------|---------------|
| V&V Scientist              | Beth Sundheim |
| V&V Date (YYYY-MM-DD)      | 2012.05.09    |
| V&V Edition                | 1             |
| V&V Disposition and Status | OK            |
| V&V Charge Time            | 3.17759998    |

### A.2 Comments

Window preference met.