

# V&V Reference Report

## L2 ASCDS Version : 8.4.3.1

Observation 7122 - L2 Version 2  
Chandra X-Ray Center

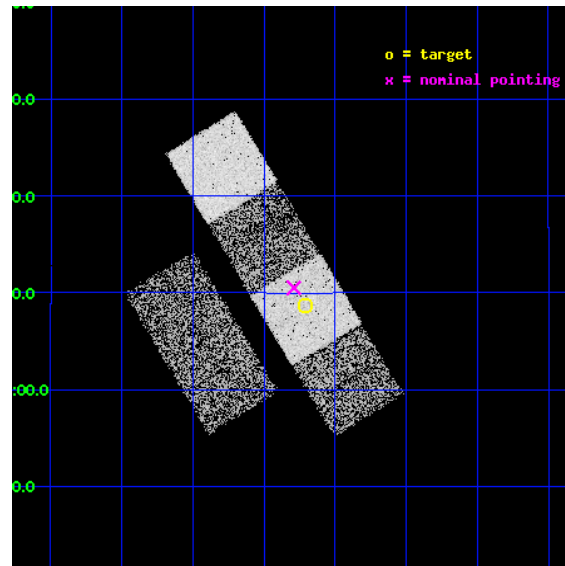
L2 Processing Date : Apr 13 2012

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# 1 Front

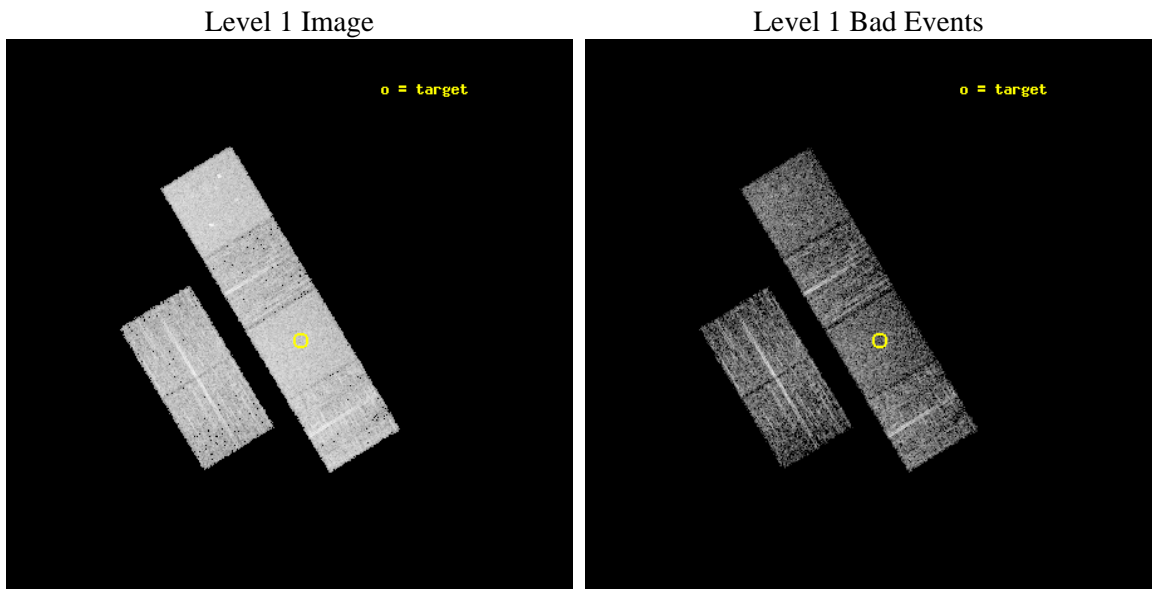
|          |  |   |
|----------|--|---|
| seq_num  | 600560                                 | Sequence number                             |
| obs_id   | 7122                                   | Observation id                              |
| title    | A Complete Sample of ULX Host Galaxies | Proposal title                              |
| observer | Douglas Swartz                         | Principal investigator                      |
| object   | NGC 4309                               | Source name                                 |
| dtcycle  | 0                                      | &#160                                       |
| cycle    | P                                      | events from which exps?<br>Prim/Second/Both |
| ra_targ  | 185.551667                             | Observer's specified target RA [deg]        |
| dec_targ | 7.144194                               | Observer's specified target Dec [deg]       |
| ra_nom   | 185.5725492867                         | Nominal RA [deg]                            |
| dec_nom  | 7.1753541018649                        | Nominal Dec [deg]                           |
| roll_nom | 58.877899080602                        | Nominal Roll [deg]                          |
| revision | 2                                      | Processing version of data                  |
| ontime   | 3353.5999875665                        | Sum of GTIs [s]                             |
| livetime | 3311.1346852284                        | Livetime [s]                                |
| ontime2  | 3353.5999875665                        | Sum of GTIs [s]                             |
| ontime3  | 3353.5999875665                        | Sum of GTIs [s]                             |
| ontime5  | 3353.5999875665                        | Sum of GTIs [s]                             |
| ontime6  | 3353.5999875665                        | Sum of GTIs [s]                             |
| ontime7  | 3353.5999875665                        | Sum of GTIs [s]                             |
| ontime8  | 3353.5999875665                        | Sum of GTIs [s]                             |
| l2events | 49610                                  | Number of level 2 events                    |



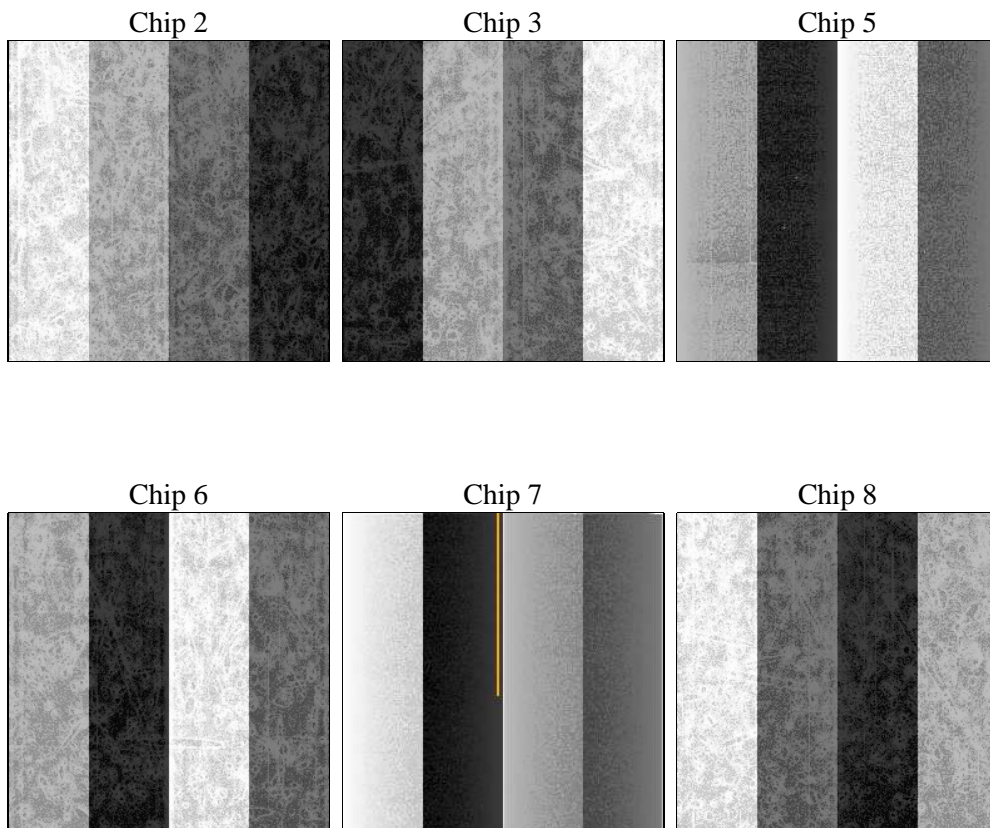
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

|          |                     |                                |                |                 |   |
|----------|---------------------|--------------------------------|----------------|-----------------|---|
| obi_num  | 0                   | Obi number                     | sched_exp_time | 3400.000000     | [s] Scheduled observation exposure time |
| ascdsver | 8.4.3.1             | Processing system revision     | ontime         | 3353.5999875665 | Sum of GTIs [s]                         |
| caldsver | 4.4.9               | &#160                          | ontime2        | 3353.5999875665 | Sum of GTIs [s]                         |
| date     | 2012-04-13T14:45:14 | Date and time of file creation | ontime3        | 3353.5999875665 | Sum of GTIs [s]                         |
| revision | 2                   | Processing version of data     | ontime5        | 3353.5999875665 | Sum of GTIs [s]                         |
|          |                     |                                | ontime6        | 3353.5999875665 | Sum of GTIs [s]                         |
|          |                     |                                | ontime7        | 3353.5999875665 | Sum of GTIs [s]                         |
|          |                     |                                | ontime8        | 3353.5999875665 | Sum of GTIs [s]                         |
|          |                     |                                | l1events       | 216212          | Number of level 1 events                |

### 2.1.4 Events

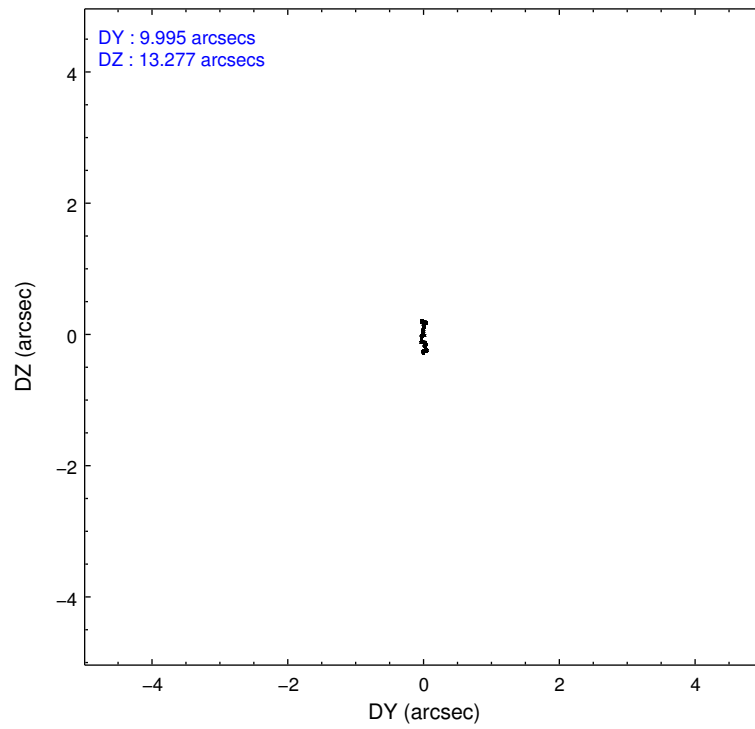
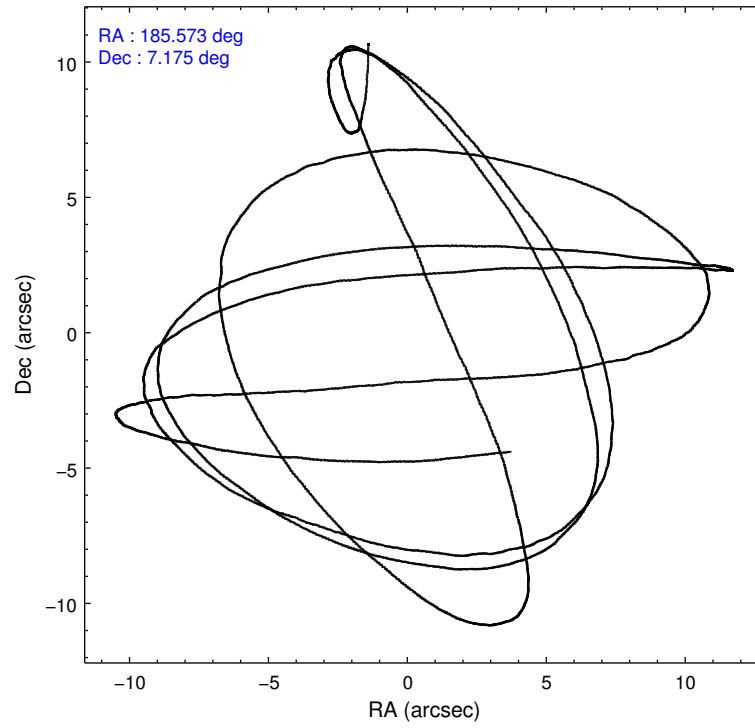
|                 | ccd 2 | ccd 3 | ccd 5 | ccd 6 | ccd 7 | ccd 8 |                | ccd 2 | ccd 3 | ccd 5 | ccd 6 | ccd 7 | ccd 8 |
|-----------------|-------|-------|-------|-------|-------|-------|----------------|-------|-------|-------|-------|-------|-------|
| level 1 events  | 31613 | 28757 | 45223 | 29853 | 41417 | 39349 | grade 0 events | 1656  | 1572  | 1704  | 1380  | 1548  | 2705  |
| rejected events | 27952 | 25170 | 24439 | 26221 | 24234 | 30136 |                | 5%    | 5%    | 3%    | 4%    | 3%    | 6%    |
| rejected %      | 88%   | 87%   | 54%   | 87%   | 58%   | 76%   | grade 1 events | 20    | 24    | 60    | 14    | 41    | 26    |
|                 |       |       |       |       |       |       |                | 0%    | 0%    | 0%    | 0%    | 0%    | 0%    |
|                 |       |       |       |       |       |       | grade 2 events | 763   | 703   | 6398  | 805   | 3496  | 2014  |
|                 |       |       |       |       |       |       |                | 2%    | 2%    | 14%   | 2%    | 8%    | 5%    |
|                 |       |       |       |       |       |       | grade 3 events | 306   | 351   | 791   | 355   | 1473  | 992   |
|                 |       |       |       |       |       |       |                | 0%    | 1%    | 1%    | 1%    | 3%    | 2%    |
|                 |       |       |       |       |       |       | grade 4 events | 329   | 352   | 733   | 340   | 1464  | 941   |
|                 |       |       |       |       |       |       |                | 1%    | 1%    | 1%    | 1%    | 3%    | 2%    |
|                 |       |       |       |       |       |       | grade 5 events | 1147  | 1342  | 3248  | 1391  | 3843  | 1836  |
|                 |       |       |       |       |       |       |                | 3%    | 4%    | 7%    | 4%    | 9%    | 4%    |
|                 |       |       |       |       |       |       | grade 6 events | 608   | 610   | 11171 | 756   | 9216  | 2564  |
|                 |       |       |       |       |       |       |                | 1%    | 2%    | 24%   | 2%    | 22%   | 6%    |
|                 |       |       |       |       |       |       | grade 7 events | 26784 | 23803 | 21118 | 24812 | 20336 | 28271 |
|                 |       |       |       |       |       |       |                | 84%   | 82%   | 46%   | 83%   | 49%   | 71%   |

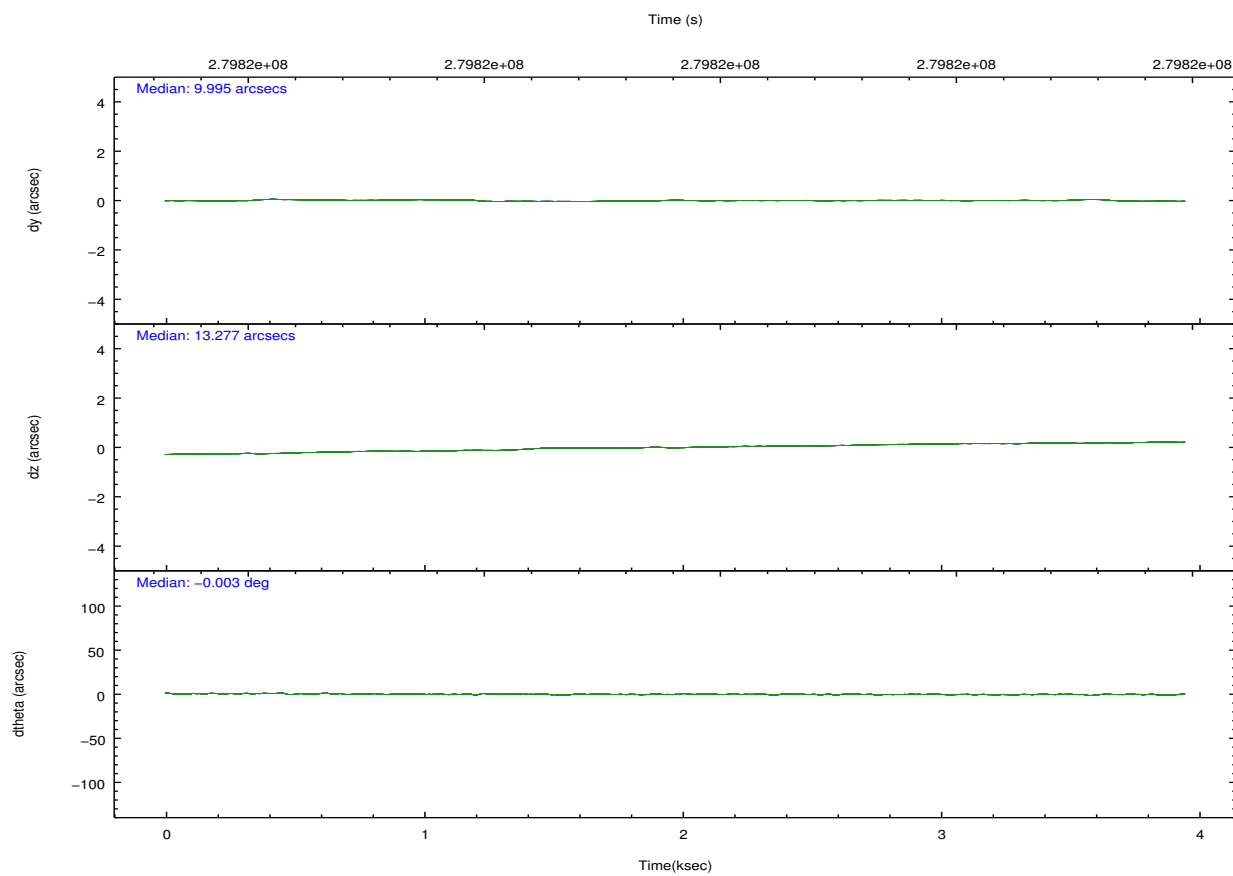
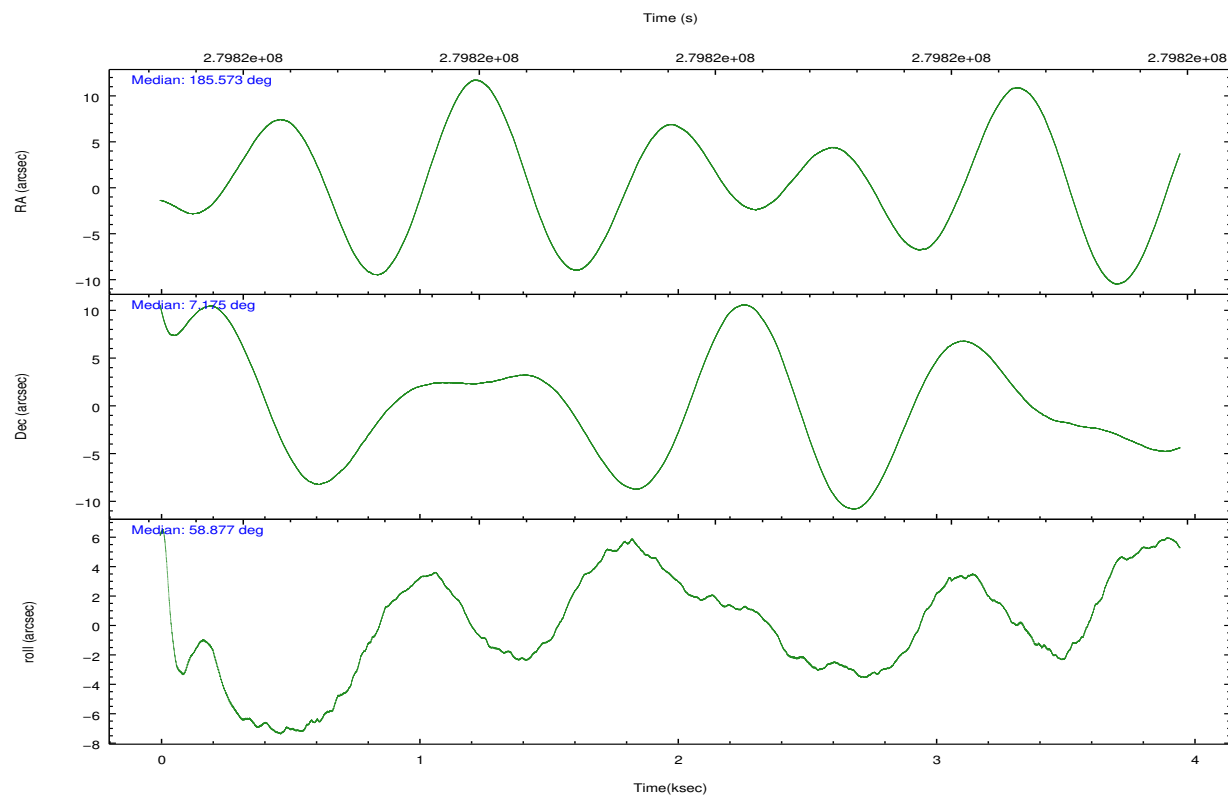


## 2.2 Compared Parameters

| 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                         | FAINT               | FAINT                | Number of optional ACIS chips dropped | 0         | 0       |
| Observation mode                  | POINTING            | POINTING             | On-chip summing requested             | N         | N       |
| [deg] Pointing RA                 | 185.572490          | 185.5725492866979    | Subarray requested                    | NONE      | NONE    |
| [deg] Pointing Dec                | 7.148025            | 7.175354101864858    | Alternating exposures requested       | N         | N       |
| [deg] Pointing Roll               | 58.721268           | 58.87789908060203    | [s] Primary exposure time             | 0.000000  | 3.2     |
| [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)  | 279820383.184000    | 279819236.42005      |                                       |           |         |
| Observation start date            | 2006-11-13T15:51:58 | 2006-11-13T15:33:56  |                                       |           |         |
| [s] Observation end time (MET)    | 279823783.184000    | 279824069.80778      |                                       |           |         |
| Observation end date              | 2006-11-13T16:48:38 | 2006-11-13T16:54:29  |                                       |           |         |
| Read mode                         | TIMED               | TIMED                |                                       |           |         |

## 2.3 Aspect



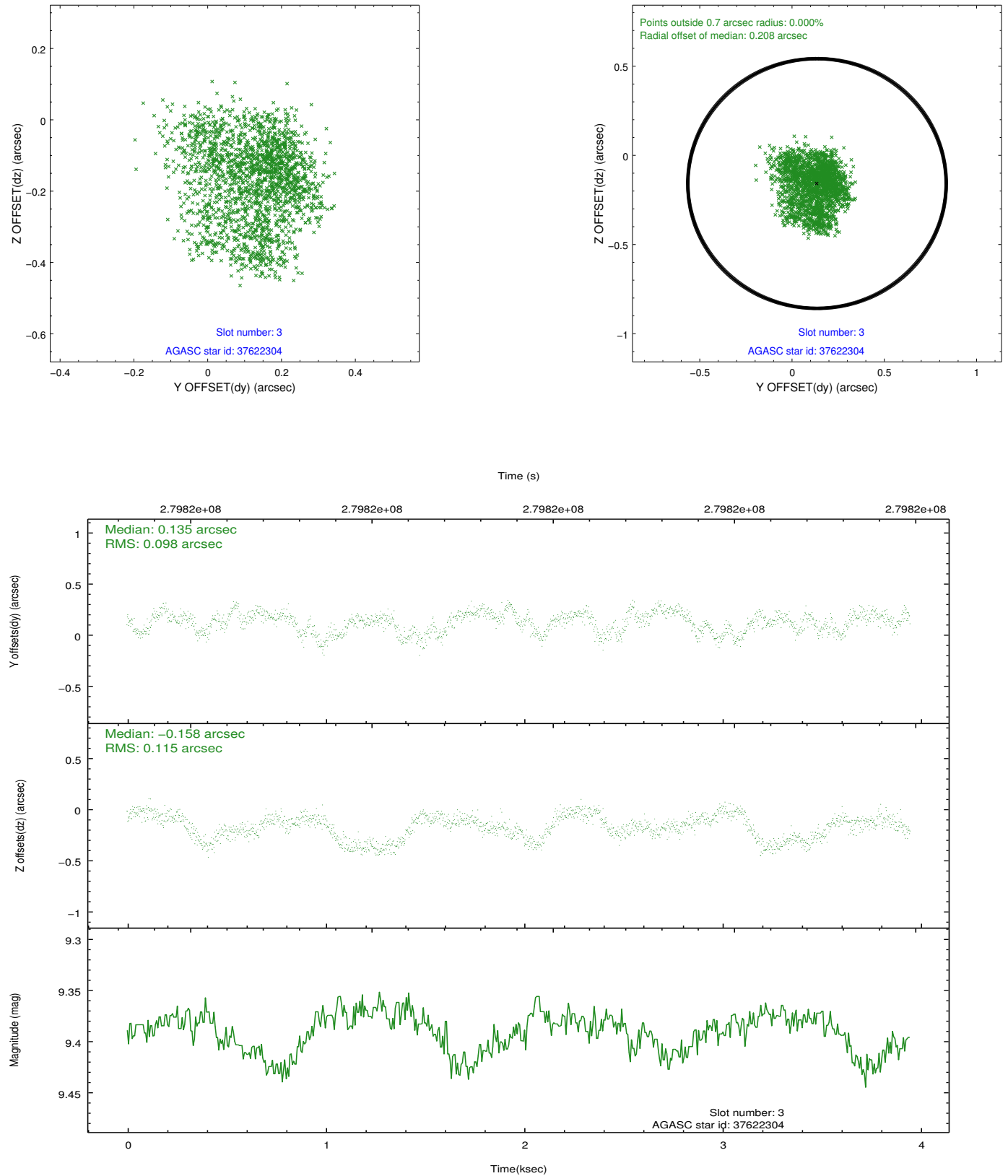


### Slot Statistics

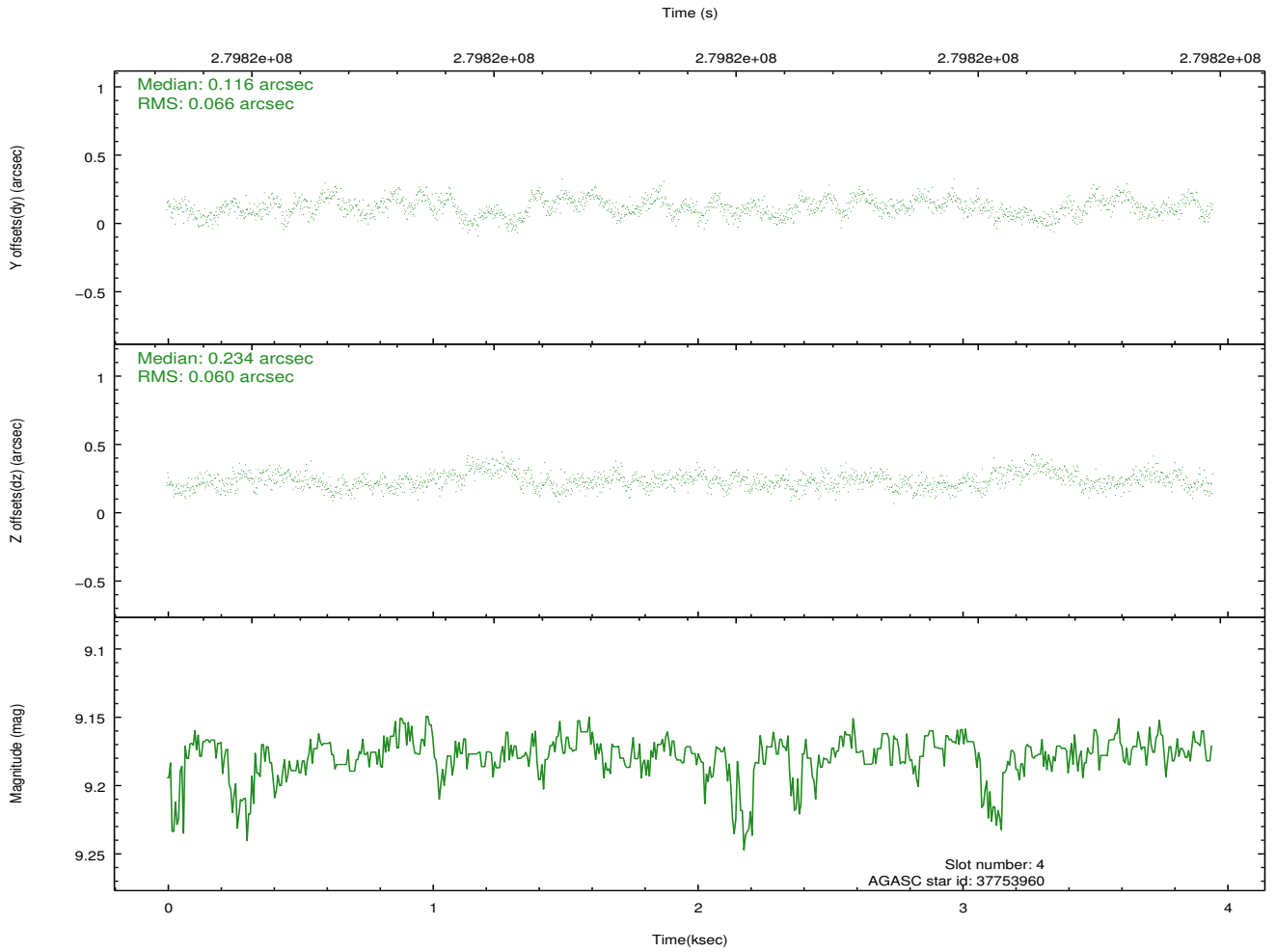
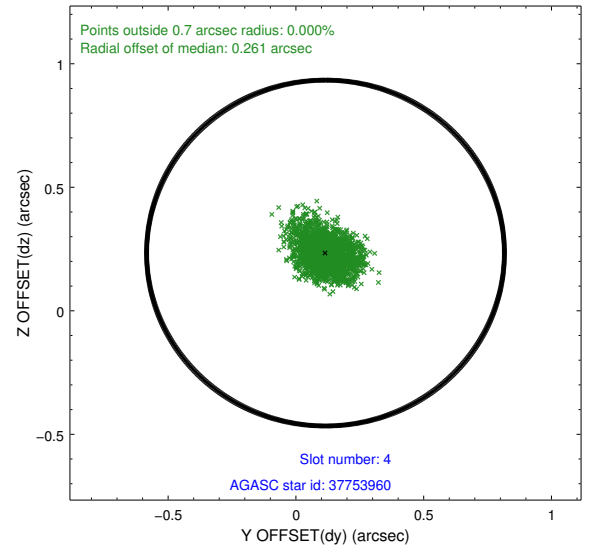
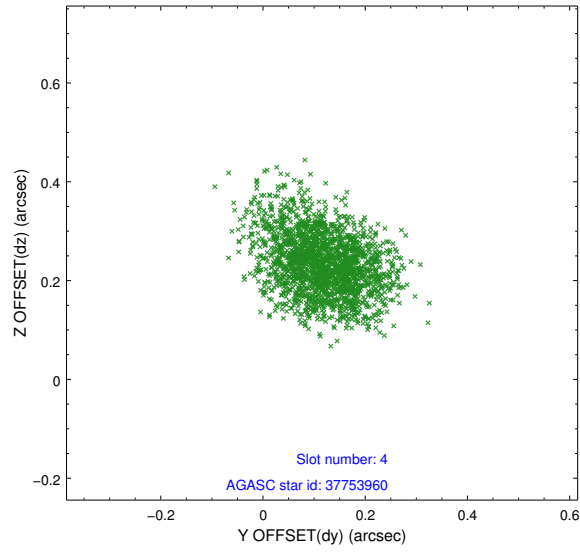
| slot | status | id        | mag  | n_pts | med_dy | med_dz | dr1   | dr2   | ra         | dec      | mean_y   | mean_z   |
|------|--------|-----------|------|-------|--------|--------|-------|-------|------------|----------|----------|----------|
| 0    | FID    | ACIS-S-2  | 7.10 | 963   | -0.030 | -0.056 | 0.006 | 0.011 | 0.000000   | 0.000000 | -762.88  | -1734.65 |
| 1    | FID    | ACIS-S-4  | 7.20 | 963   | 0.146  | 0.030  | 0.005 | 0.010 | 0.000000   | 0.000000 | 2149.88  | 172.25   |
| 2    | FID    | ACIS-S-5  | 7.23 | 963   | -0.147 | 0.035  | 0.006 | 0.010 | 0.000000   | 0.000000 | -1813.78 | 167.77   |
| 3    | GUIDE  | 37622304  | 9.39 | 1923  | 0.135  | -0.158 | 0.167 | 0.250 | 184.800430 | 7.005757 | -1868.14 | 2092.42  |
| 4    | GUIDE  | 37753960  | 9.18 | 1927  | 0.116  | 0.234  | 0.094 | 0.153 | 185.663596 | 6.383809 | -2182.99 | -1706.17 |
| 5    | GUIDE  | 114433792 | 9.58 | 1926  | -0.116 | -0.063 | 0.123 | 0.196 | 185.373016 | 7.818558 | 1692.27  | 1859.88  |
| 6    | GUIDE  | 114434008 | 8.75 | 1926  | -0.092 | -0.028 | 0.077 | 0.124 | 185.534773 | 7.569663 | 1227.94  | 903.86   |
| 7    | GUIDE  | 114434192 | 9.74 | 1923  | -0.025 | 0.031  | 0.168 | 0.249 | 185.388204 | 7.710531 | 1390.12  | 1613.12  |

## 2.4 Star Slots

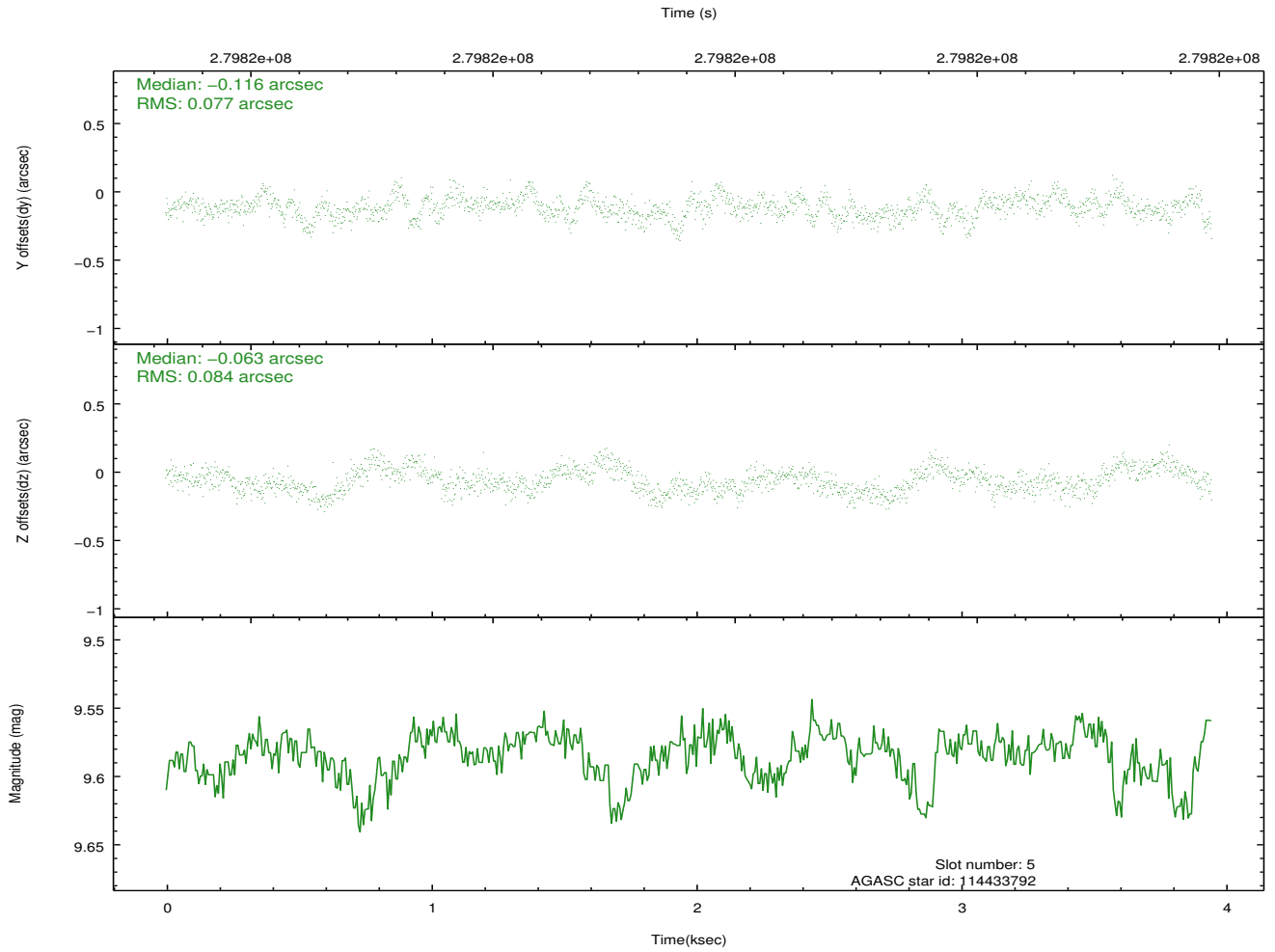
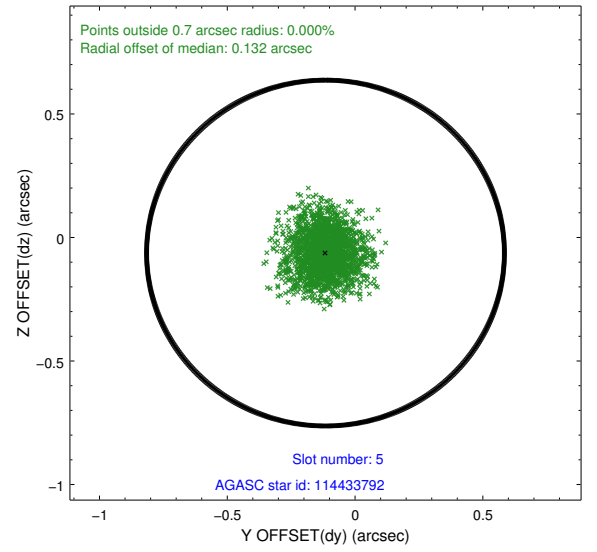
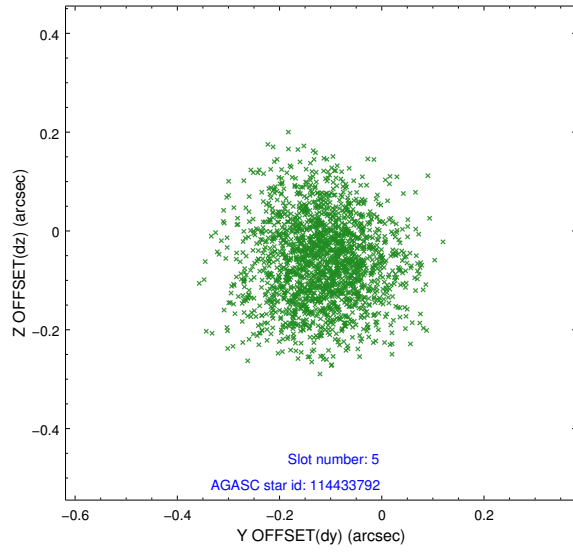
### 2.4.1 Slot 3



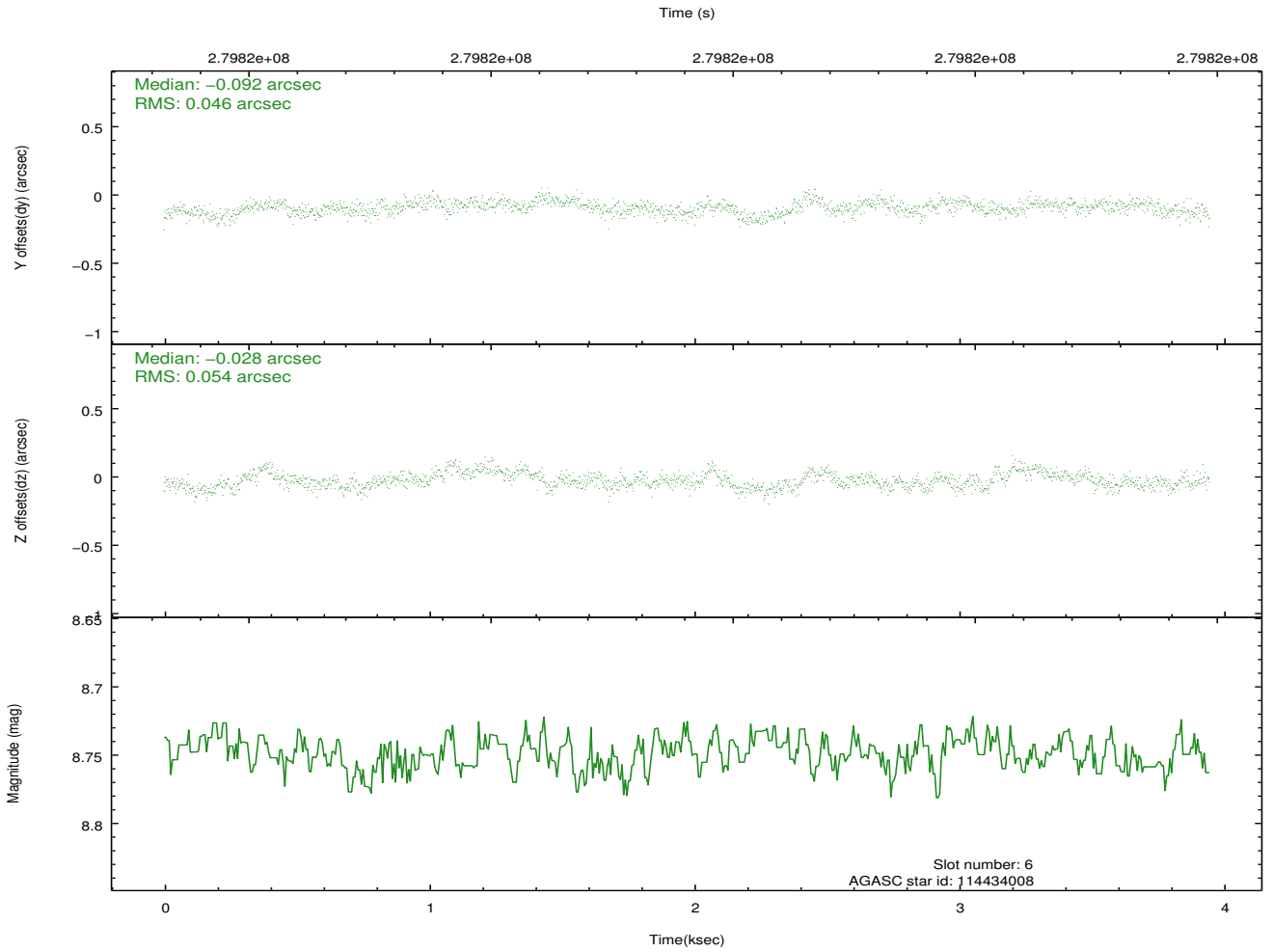
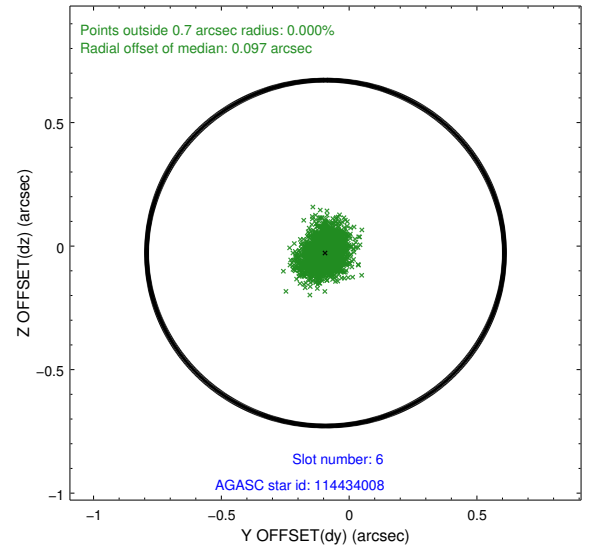
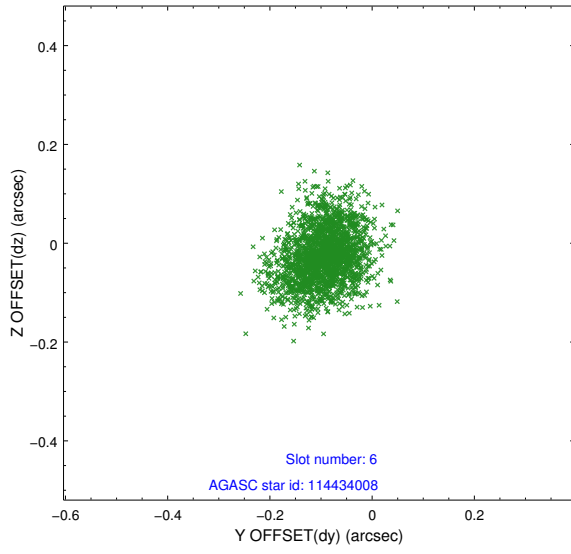
## 2.4.2 Slot 4



### 2.4.3 Slot 5

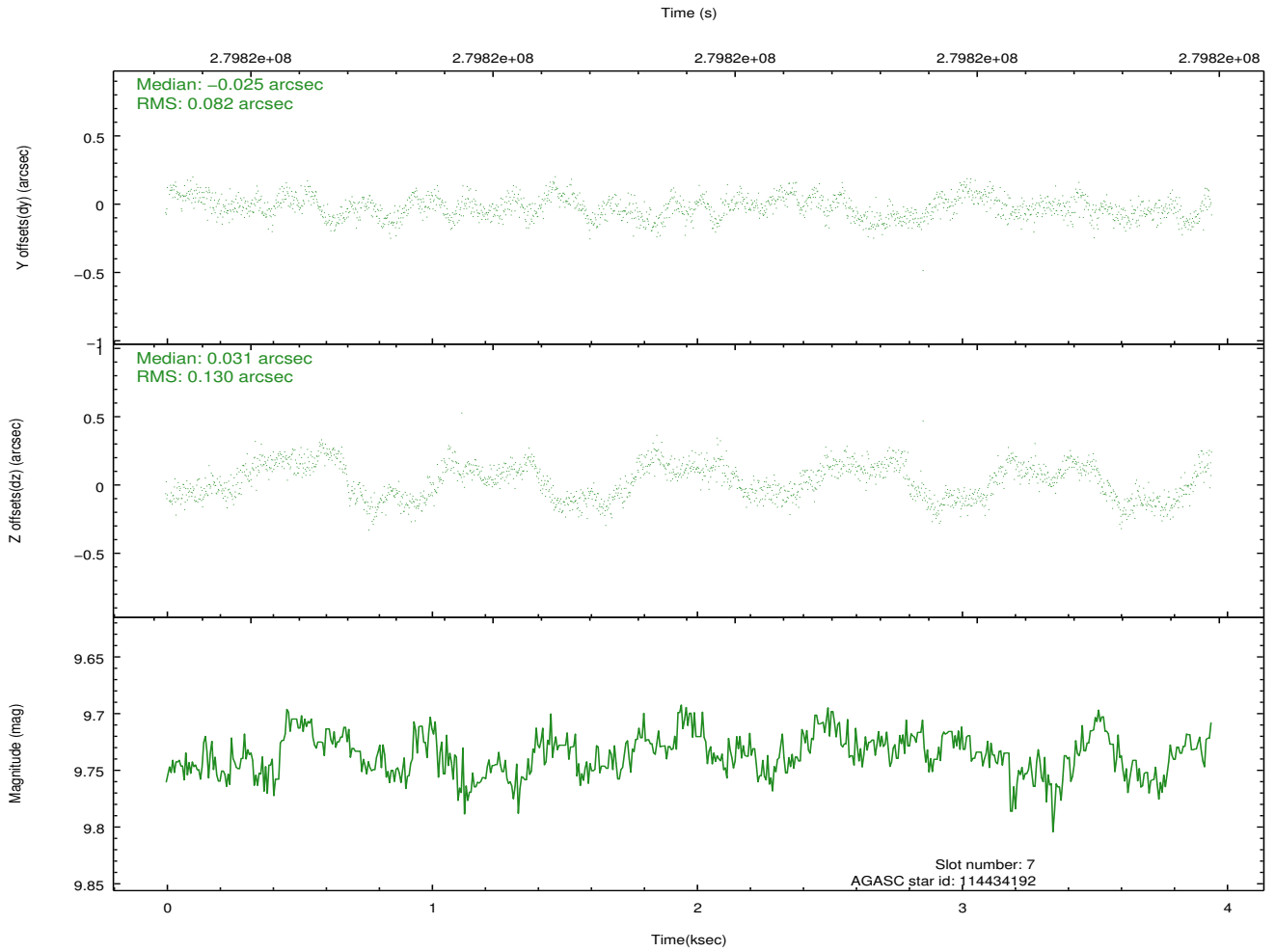
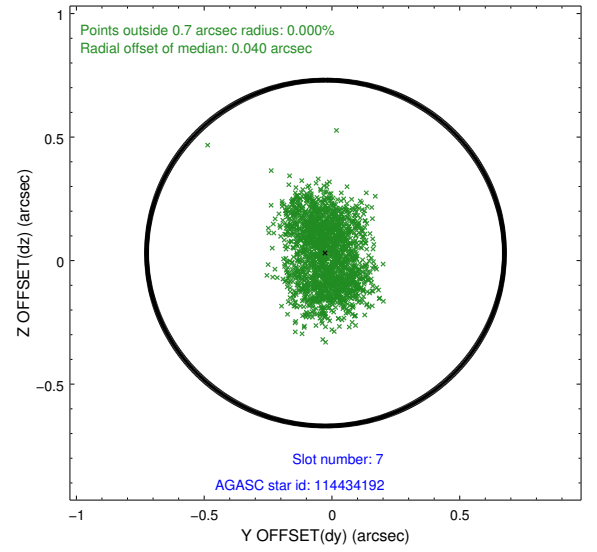
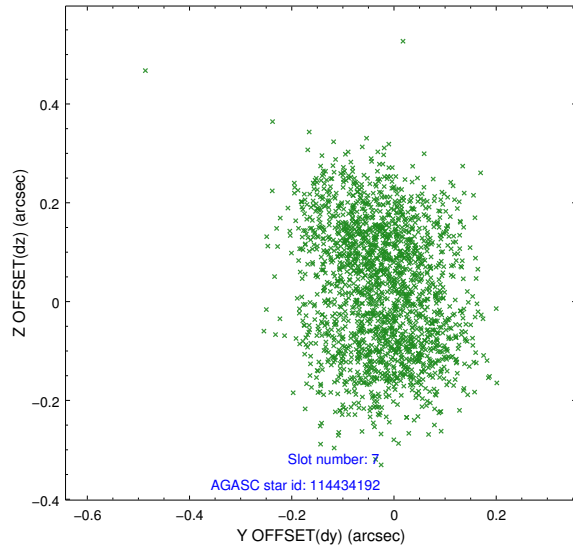


## 2.4.4 Slot 6



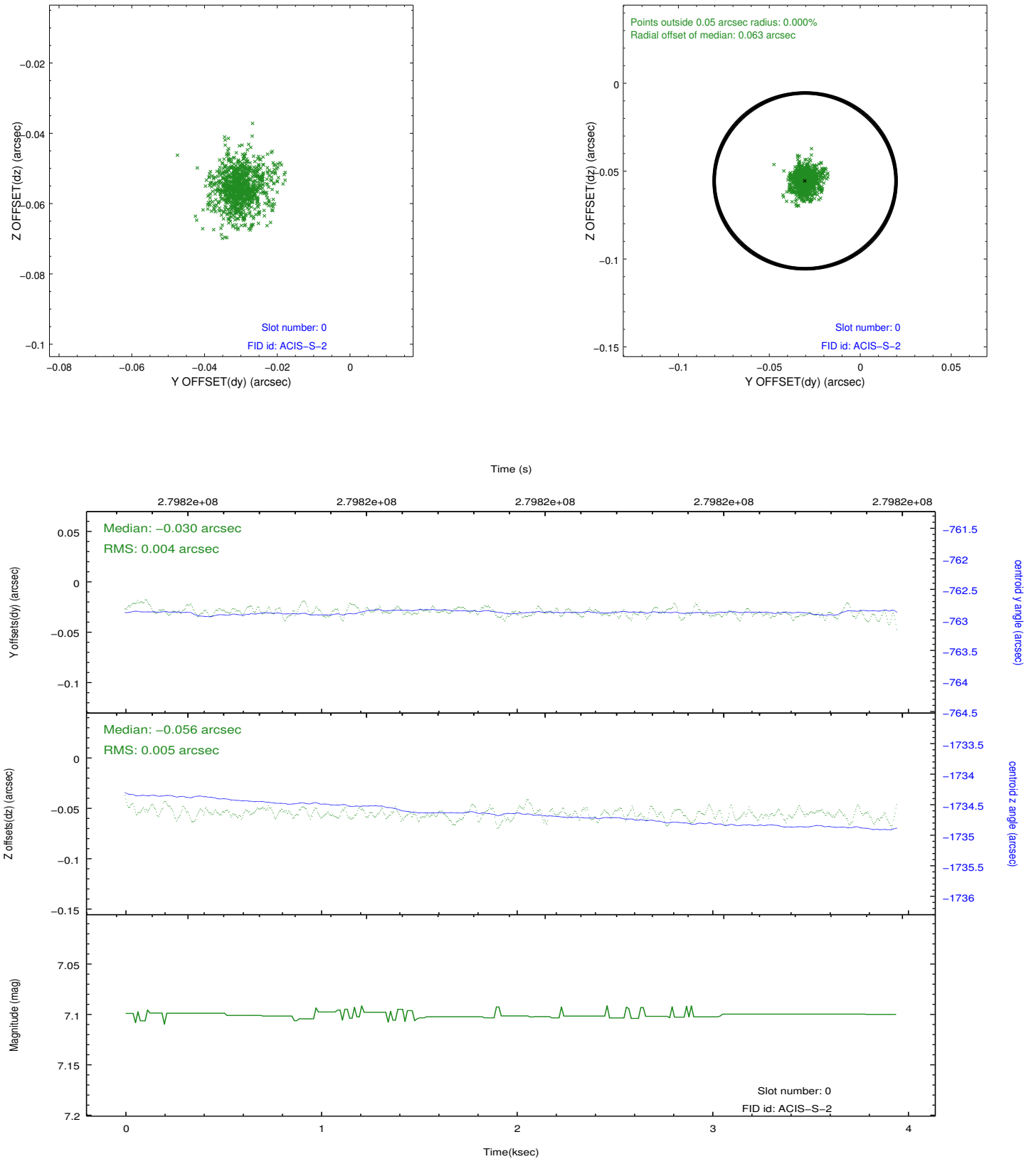


## 2.4.5 Slot 7

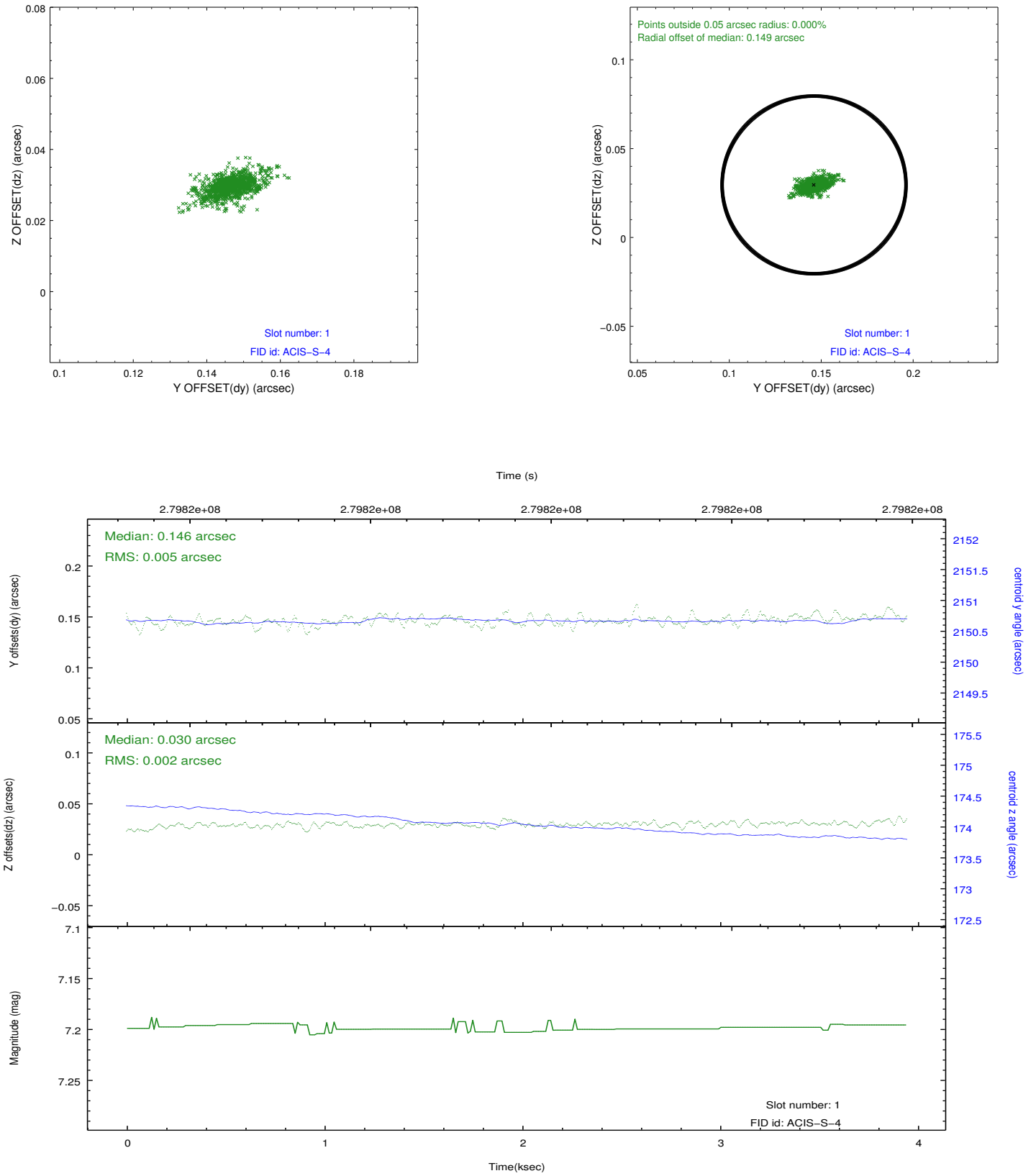


## 2.5 FID Slots

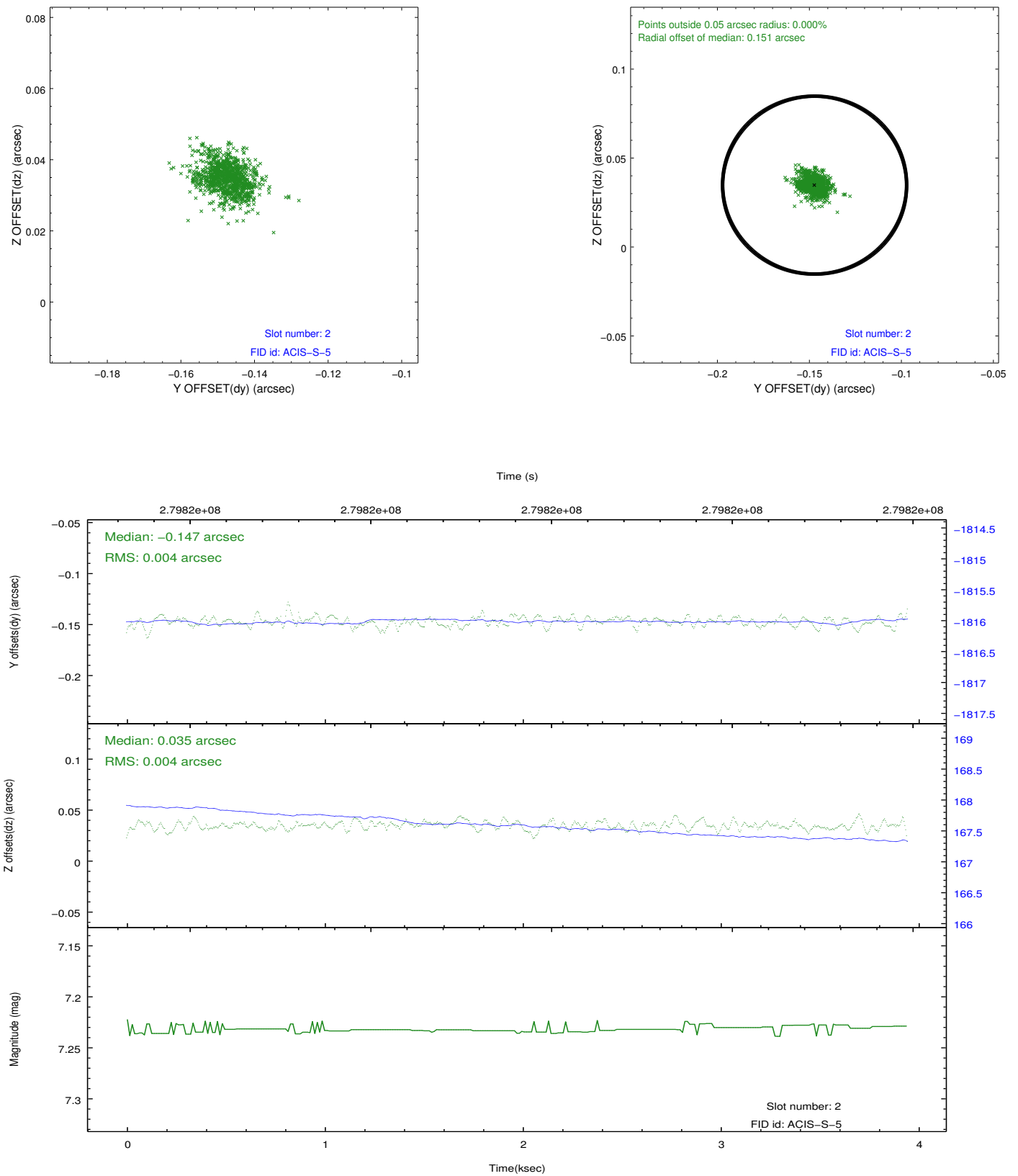
### 2.5.1 Slot 0



## 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)      | 2012.04.16    |
| V&V Edition                | 1             |
| V&V Disposition and Status | OK            |
| V&V Charge Time            | 3.35359998    |

### A.2 Comments