

# V&V Reference Report

## L2 ASCDS Version : 8.4.5

Observation 3566 - L2 Version 3  
Chandra X-Ray Center

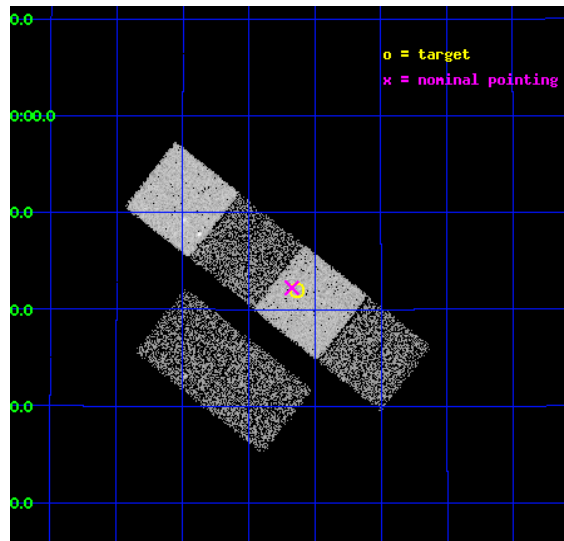
L2 Processing Date : Oct 18 2012

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# 1 Front

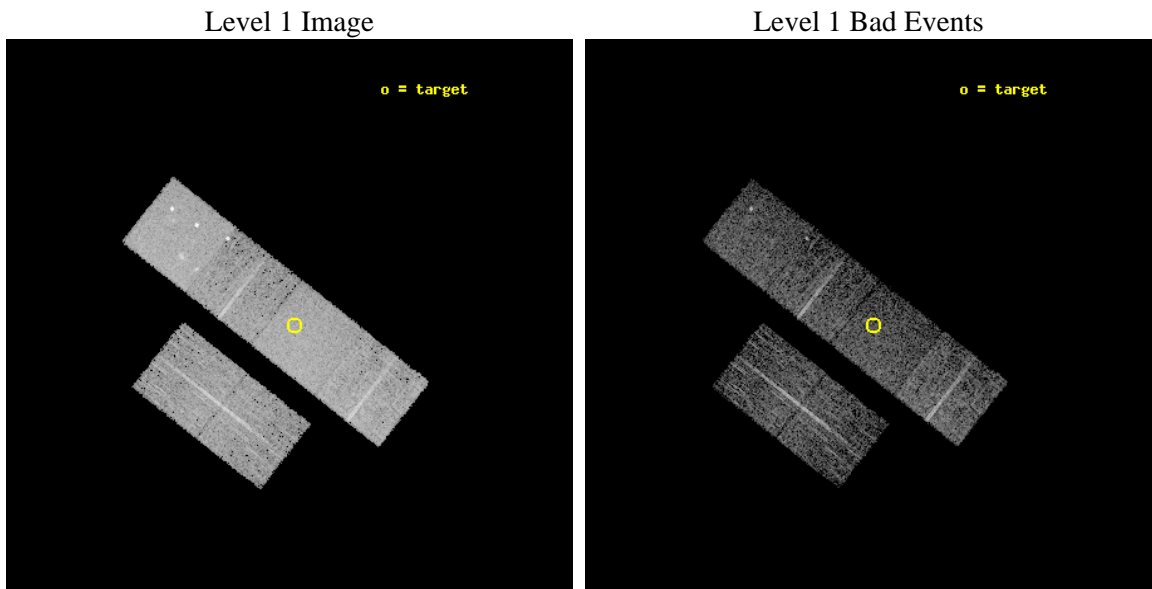
|          |  |   |
|----------|--|---|
| seq_num  | 700628   | Sequence number                             |
| obs_id   | 3566   | Observation id                              |
| title    | A CHANDRA SURVEY OF LUMINOUS,<br>RADIO-DETECTED QUASARS AT $Z > 4$ | Prop  |
| observer | Professor Gordon Garmire   | Principal investigator                      |
| object   | FIRST 1423+2241  | Source name                                 |
| dtcycle  | 0  | &#160                                       |
| cycle    | P  | events from which exps?<br>Prim/Second/Both |
| ra_targ  | 215.784167   | Observer's specified target RA<br>[deg]     |
| dec_targ | 22.699306  | Observer's specified target Dec<br>[deg]    |
| ra_nom   | 215.7934113641   | Nominal RA [deg]                            |
| dec_nom  | 22.70387442826   | Nominal Dec [deg]                           |
| roll_nom | 38.286365080685  | Nominal Roll [deg]                          |
| revision | 3  | Processing version of data                  |
| ontime   | 4751.9999822974  | Sum of GTIs [s]                             |
| livetime | 4691.8272972107  | Livetime [s]                                |
| ontime2  | 4751.9999822974  | Sum of GTIs [s]                             |
| ontime3  | 4751.9999822974  | Sum of GTIs [s]                             |
| ontime5  | 4751.9999822974  | Sum of GTIs [s]                             |
| ontime6  | 4751.9999822974  | Sum of GTIs [s]                             |
| ontime7  | 4751.9999822974  | Sum of GTIs [s]                             |
| ontime8  | 4745.5181813538  | Sum of GTIs [s]                             |
| l2events | 48675  | Number of level 2 events                    |



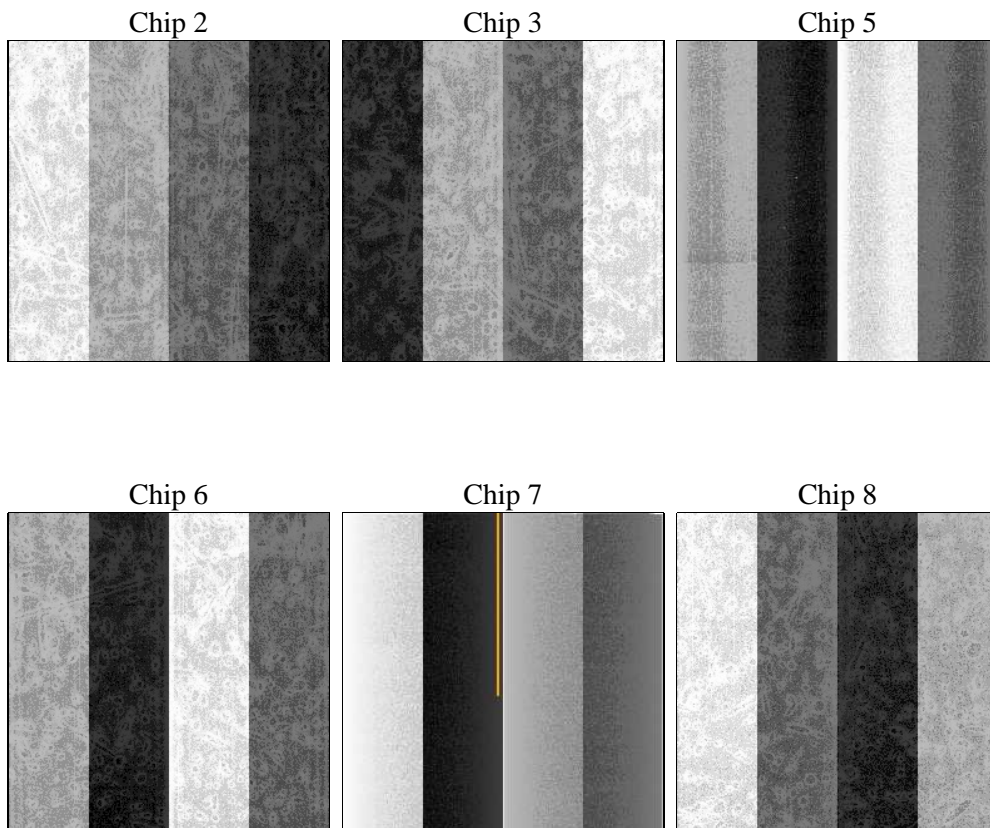
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

|          |                     |                                |                |                 |   |
|----------|---------------------|--------------------------------|----------------|-----------------|---|
| obi_num  | 0                   | Obi number                     | sched_exp_time | 5000.000000     | [s] Scheduled observation exposure time |
| ascdsver | 8.4.5               | Processing system revision     | ontime         | 4751.9999822974 | Sum of GTIs [s]                         |
| caldsver | 4.5.2               | &#160                          | ontime2        | 4751.9999822974 | Sum of GTIs [s]                         |
| date     | 2012-10-18T11:32:04 | Date and time of file creation | ontime3        | 4751.9999822974 | Sum of GTIs [s]                         |
| revision | 3                   | Processing version of data     | ontime5        | 4751.9999822974 | Sum of GTIs [s]                         |
|          |                     |                                | ontime6        | 4751.9999822974 | Sum of GTIs [s]                         |
|          |                     |                                | ontime7        | 4751.9999822974 | Sum of GTIs [s]                         |
|          |                     |                                | ontime8        | 4745.5181813538 | Sum of GTIs [s]                         |
|          |                     |                                | l1events       | 217919          | Number of level 1 events                |

### 2.1.4 Events

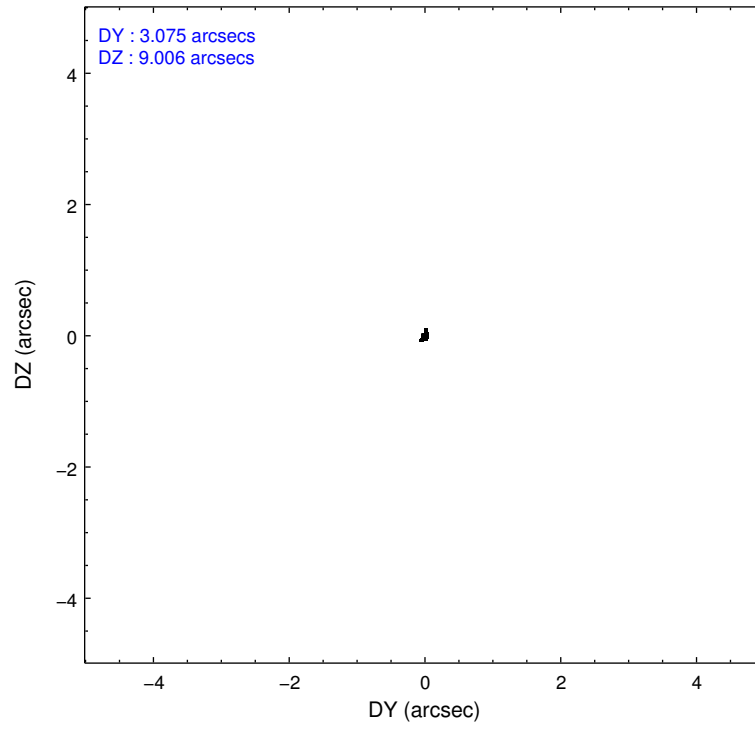
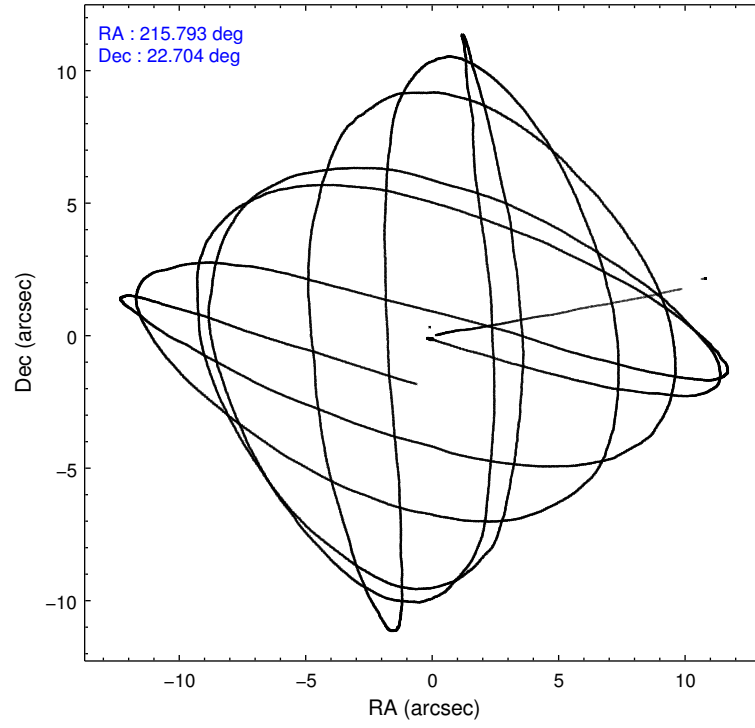
|                 | ccd 2 | ccd 3 | ccd 5 | ccd 6 | ccd 7 | ccd 8 |                | ccd 2 | ccd 3 | ccd 5 | ccd 6 | ccd 7 | ccd 8 |
|-----------------|-------|-------|-------|-------|-------|-------|----------------|-------|-------|-------|-------|-------|-------|
| level 1 events  | 30863 | 28797 | 46762 | 30106 | 40252 | 41139 | grade 0 events | 1616  | 1504  | 3957  | 1530  | 1693  | 2379  |
| rejected events | 27287 | 25347 | 24146 | 26462 | 23383 | 33550 |                | 5%    | 5%    | 8%    | 5%    | 4%    | 5%    |
| rejected %      | 88%   | 88%   | 51%   | 87%   | 58%   | 81%   | grade 1 events | 18    | 16    | 345   | 15    | 43    | 22    |
|                 |       |       |       |       |       |       |                | 0%    | 0%    | 0%    | 0%    | 0%    | 0%    |
|                 |       |       |       |       |       |       | grade 2 events | 730   | 637   | 6028  | 705   | 3367  | 1700  |
|                 |       |       |       |       |       |       |                | 2%    | 2%    | 12%   | 2%    | 8%    | 4%    |
|                 |       |       |       |       |       |       | grade 3 events | 319   | 357   | 1049  | 354   | 1513  | 784   |
|                 |       |       |       |       |       |       |                | 1%    | 1%    | 2%    | 1%    | 3%    | 1%    |
|                 |       |       |       |       |       |       | grade 4 events | 303   | 350   | 918   | 365   | 1486  | 682   |
|                 |       |       |       |       |       |       |                | 0%    | 1%    | 1%    | 1%    | 3%    | 1%    |
|                 |       |       |       |       |       |       | grade 5 events | 1124  | 1215  | 3525  | 1324  | 3930  | 1687  |
|                 |       |       |       |       |       |       |                | 3%    | 4%    | 7%    | 4%    | 9%    | 4%    |
|                 |       |       |       |       |       |       | grade 6 events | 616   | 608   | 10701 | 702   | 8835  | 2055  |
|                 |       |       |       |       |       |       |                | 1%    | 2%    | 22%   | 2%    | 21%   | 4%    |
|                 |       |       |       |       |       |       | grade 7 events | 26137 | 24110 | 20239 | 25111 | 19385 | 31830 |
|                 |       |       |       |       |       |       |                | 84%   | 83%   | 43%   | 83%   | 48%   | 77%   |

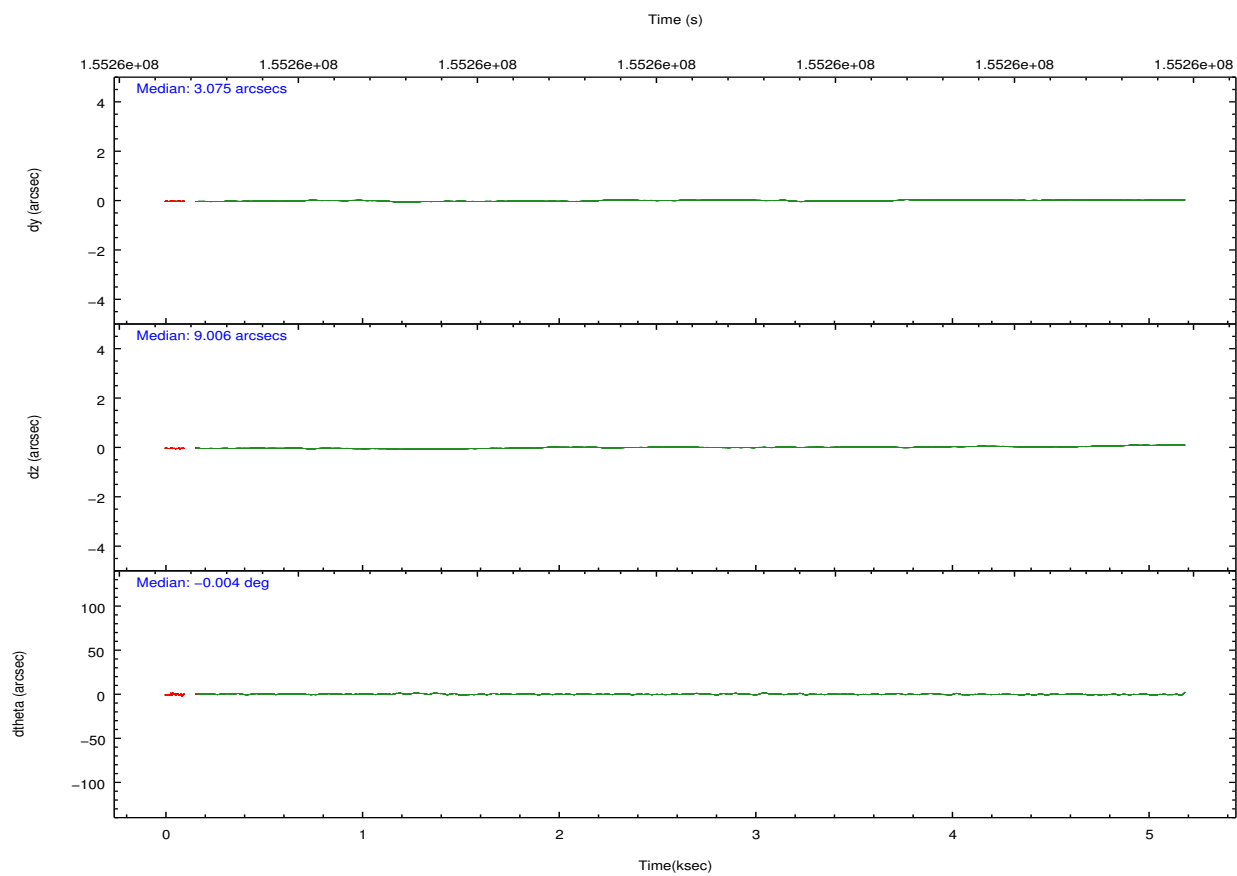
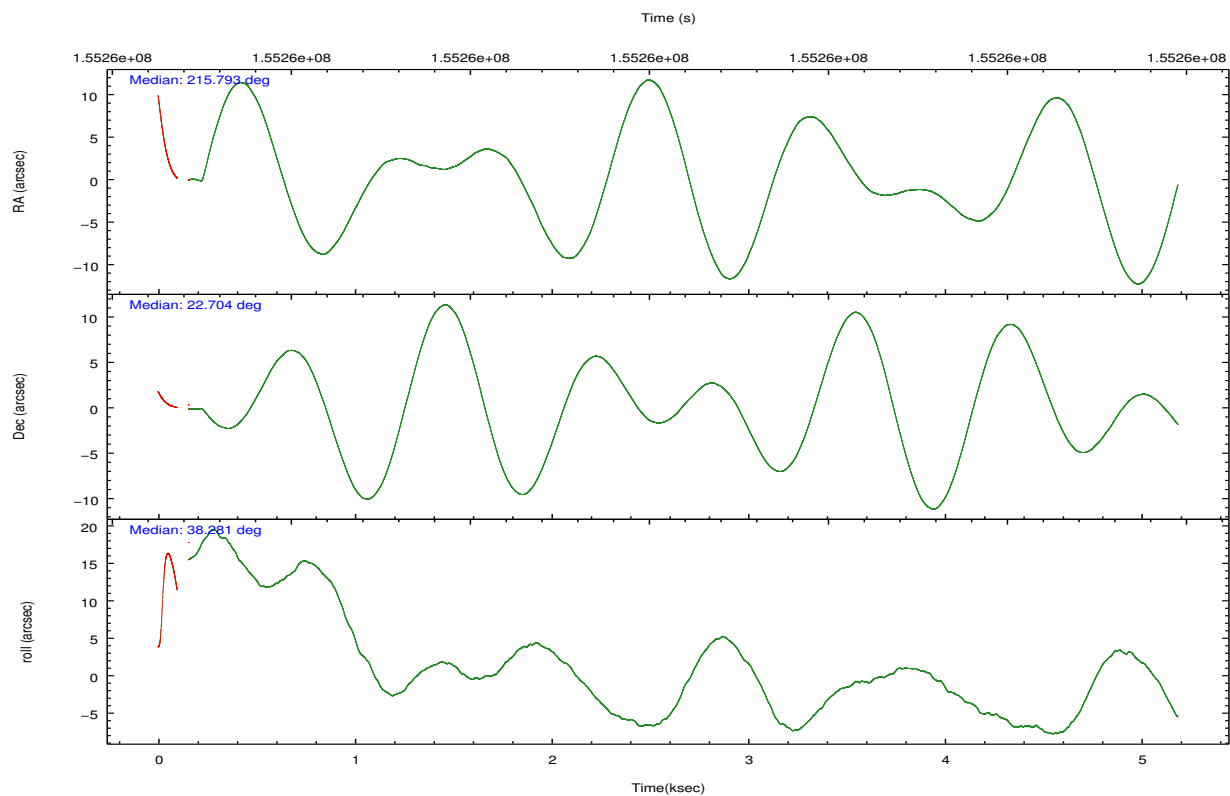


## 2.2 Compared Parameters

| 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                 | 215.782860          | 215.7934113641045    | Subarray requested                    | NONE      | NONE    |
| [deg] Pointing Dec                | 22.678447           | 22.70387442826031    | Alternating exposures requested       | N         | N       |
| [deg] Pointing Roll               | 38.133834           | 38.28636508068515    | [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)  | 155258694.184000    | 155257985.70008      |                                       |           |         |
| Observation start date            | 2002-12-02T23:23:50 | 2002-12-02T23:13:05  |                                       |           |         |
| [s] Observation end time (MET)    | 155263694.184000    | 155264143.90033      |                                       |           |         |
| Observation end date              | 2002-12-03T00:47:10 | 2002-12-03T00:55:43  |                                       |           |         |
| Read mode                         | TIMED               | TIMED                |                                       |           |         |

## 2.3 Aspect



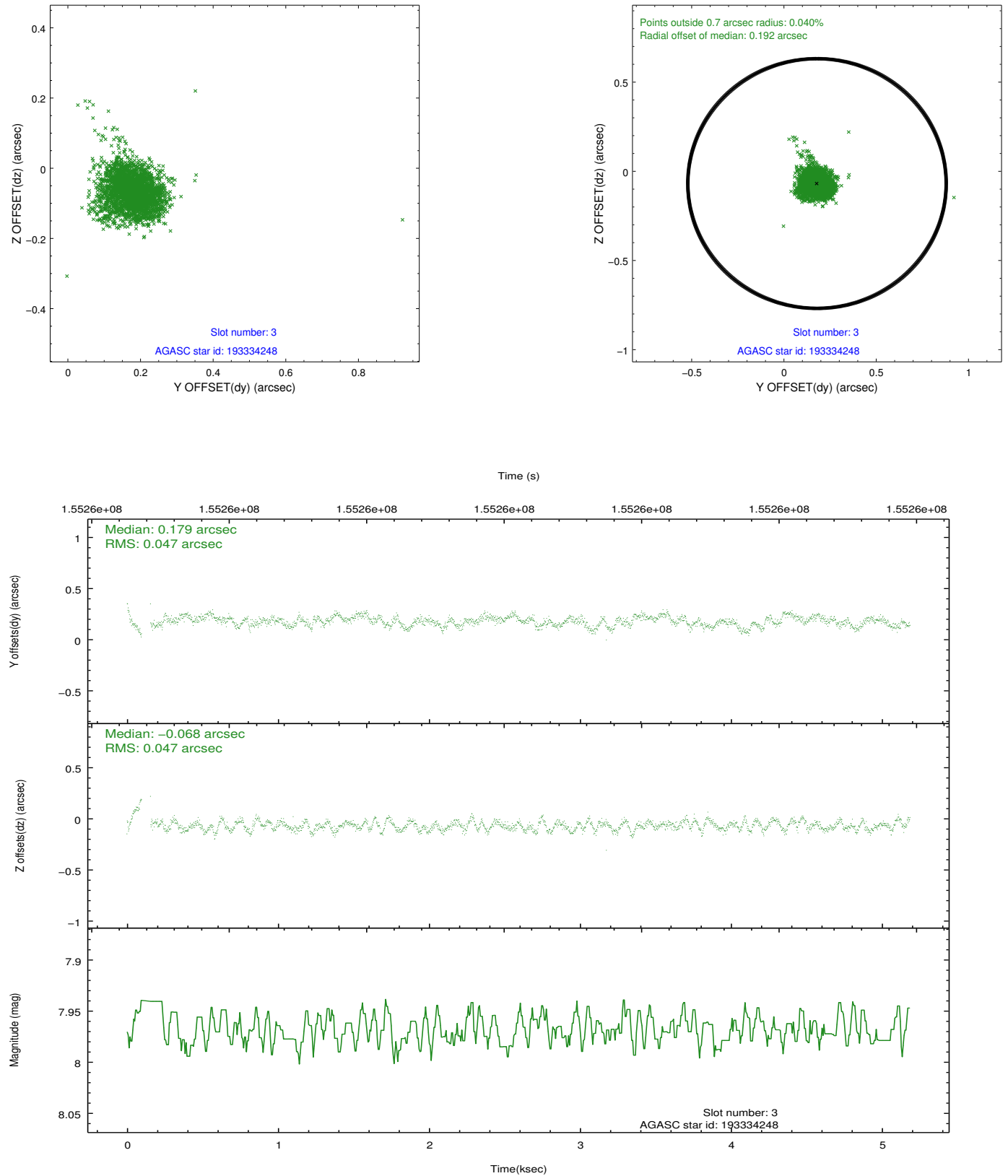


Slot Statistics

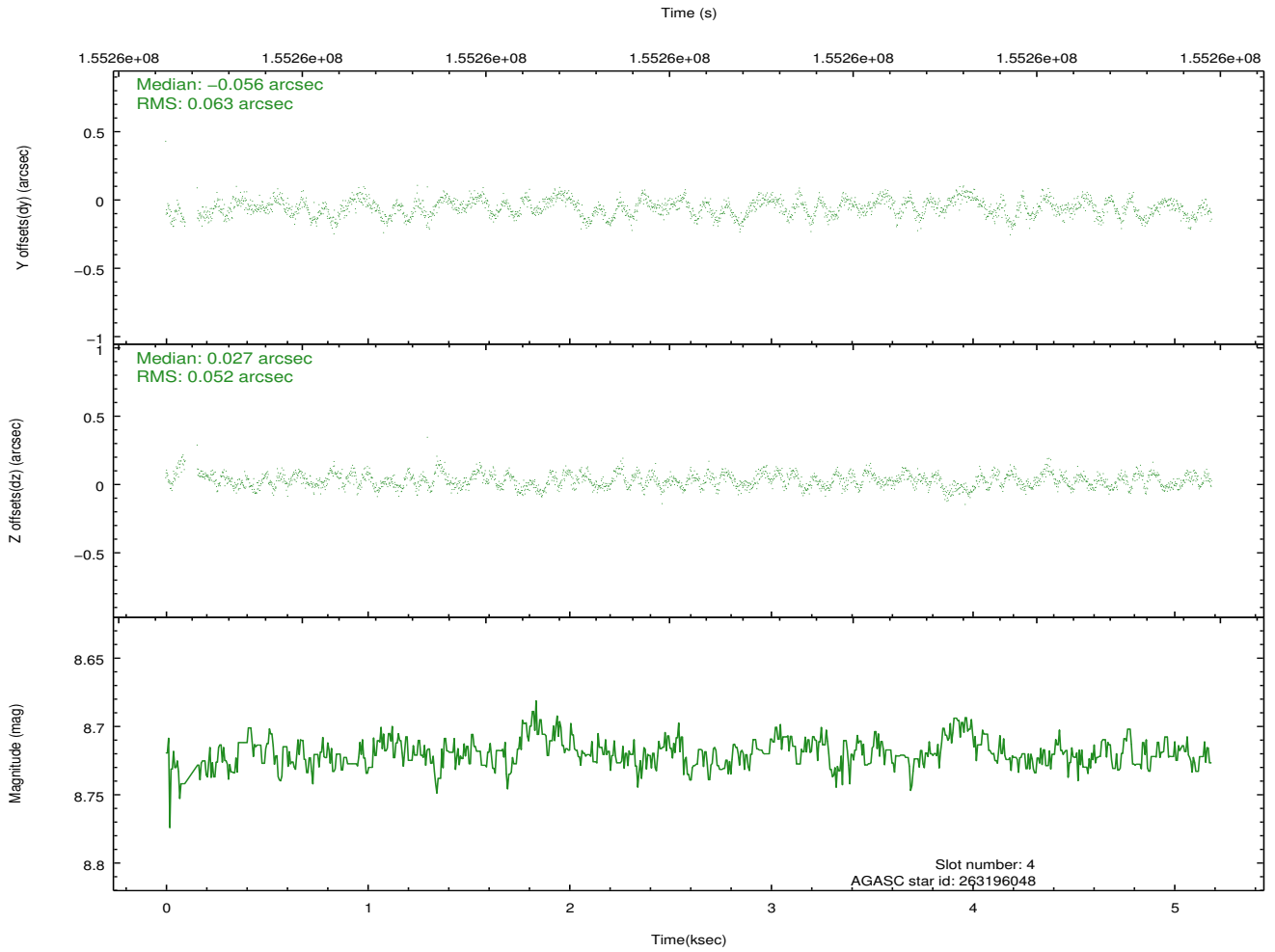
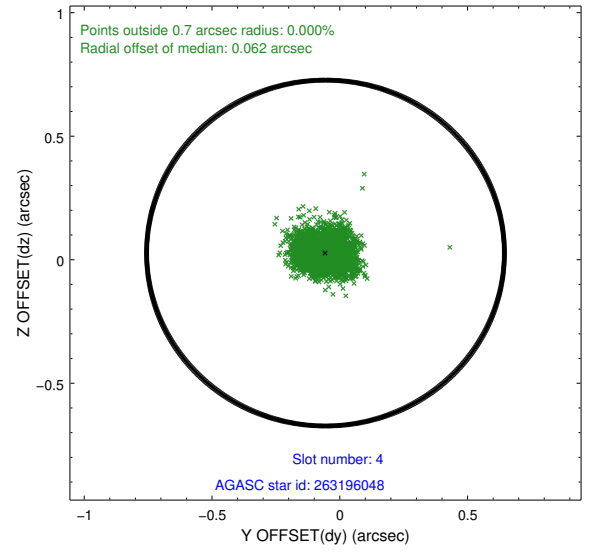
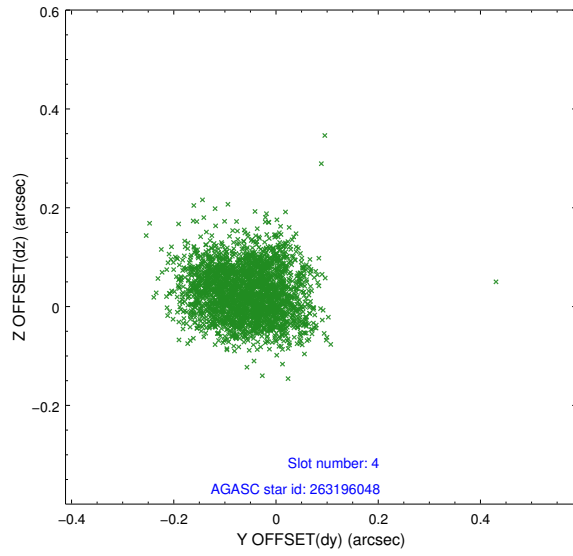
|  |        |           |      |       |        |        |       |
|--|--------|-----------|------|-------|--------|--------|-------|
|  | status | id        | mag  | n_pts | med_dy | med_dz | drl   |
|  | FID    | ACIS-S-2  | 7.11 | 1252  | -0.026 | -0.009 | 0.007 |
|  | FID    | ACIS-S-4  | 7.20 | 1252  | 0.009  | 0.015  | 0.006 |
|  | FID    | ACIS-S-5  | 7.24 | 1252  | -0.013 | 0.003  | 0.006 |
|  | GUIDE  | 193334248 | 7.97 | 2502  | 0.179  | -0.068 | 0.067 |
|  | GUIDE  | 263196048 | 8.72 | 2503  | -0.056 | 0.027  | 0.086 |
|  | GUIDE  | 263200584 | 9.67 | 2502  | -0.003 | -0.220 | 0.093 |
|  | GUIDE  | 194250128 | 9.09 | 2502  | -0.121 | 0.265  | 0.112 |
| 0.0000.0000.0000.0000000.00000000.000.00 |        |           |      |       |        |        |       |

## 2.4 Star Slots

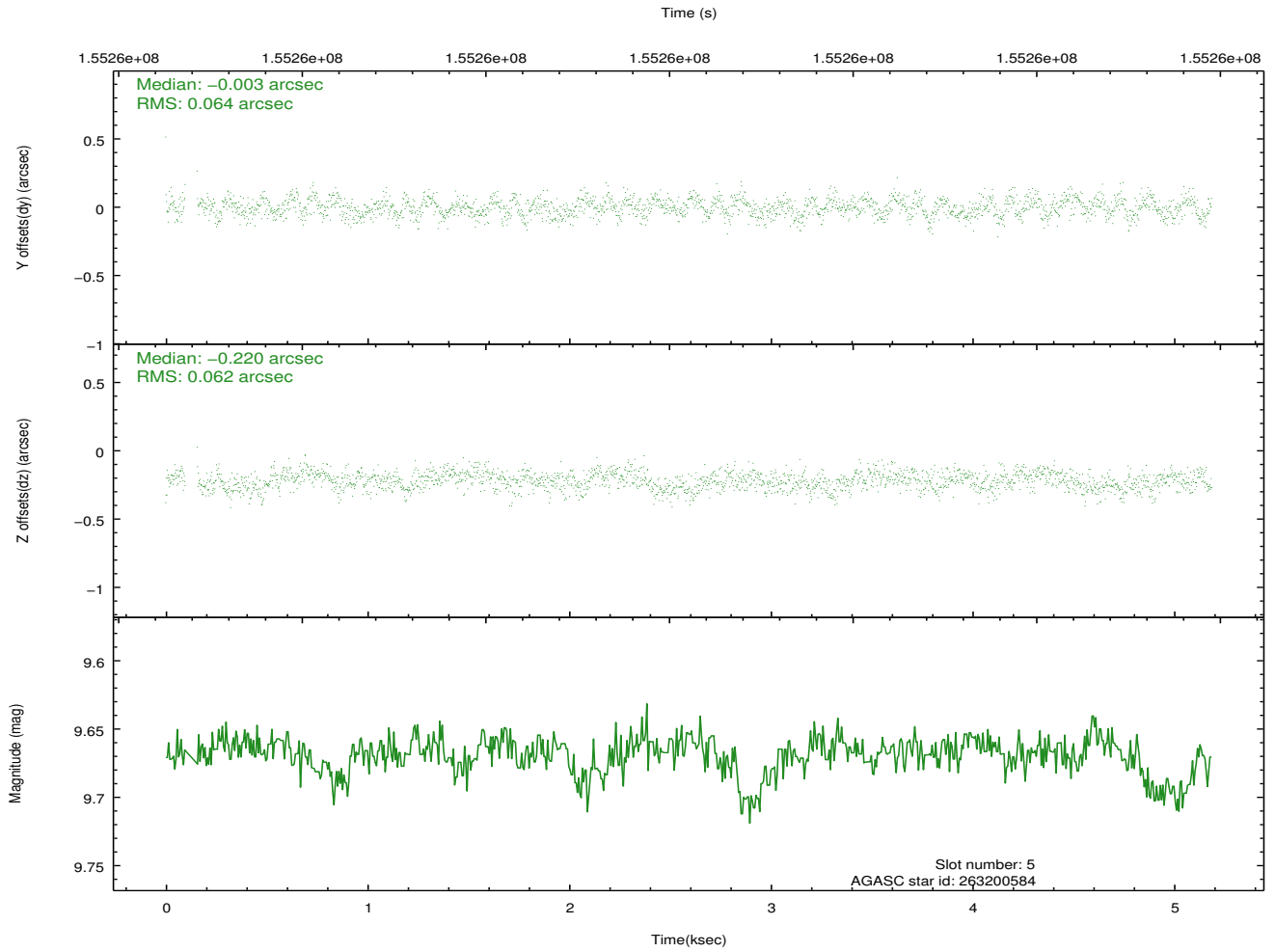
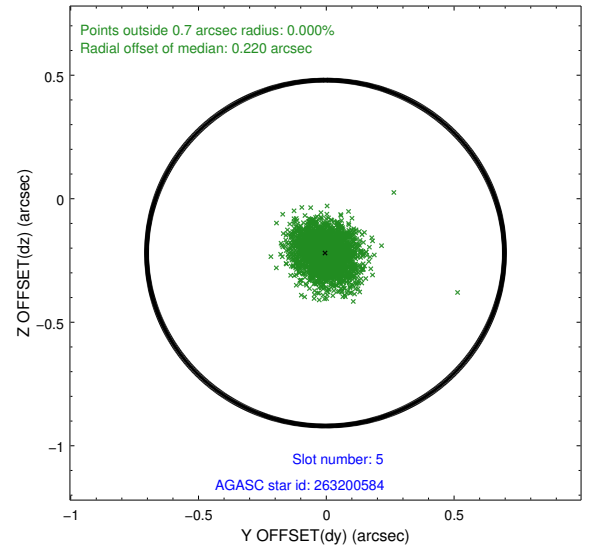
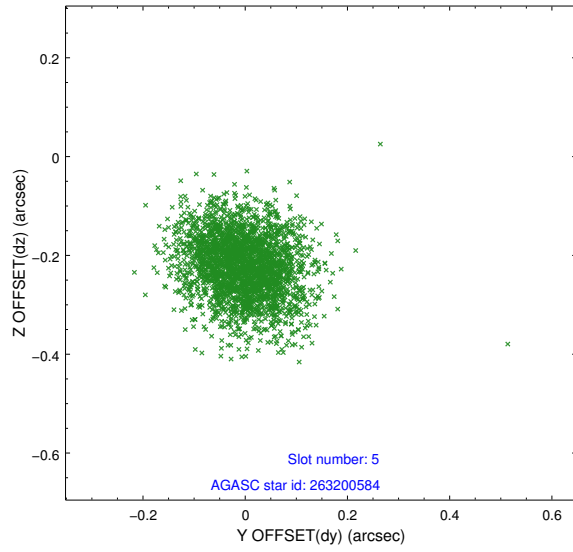
### 2.4.1 Slot 3



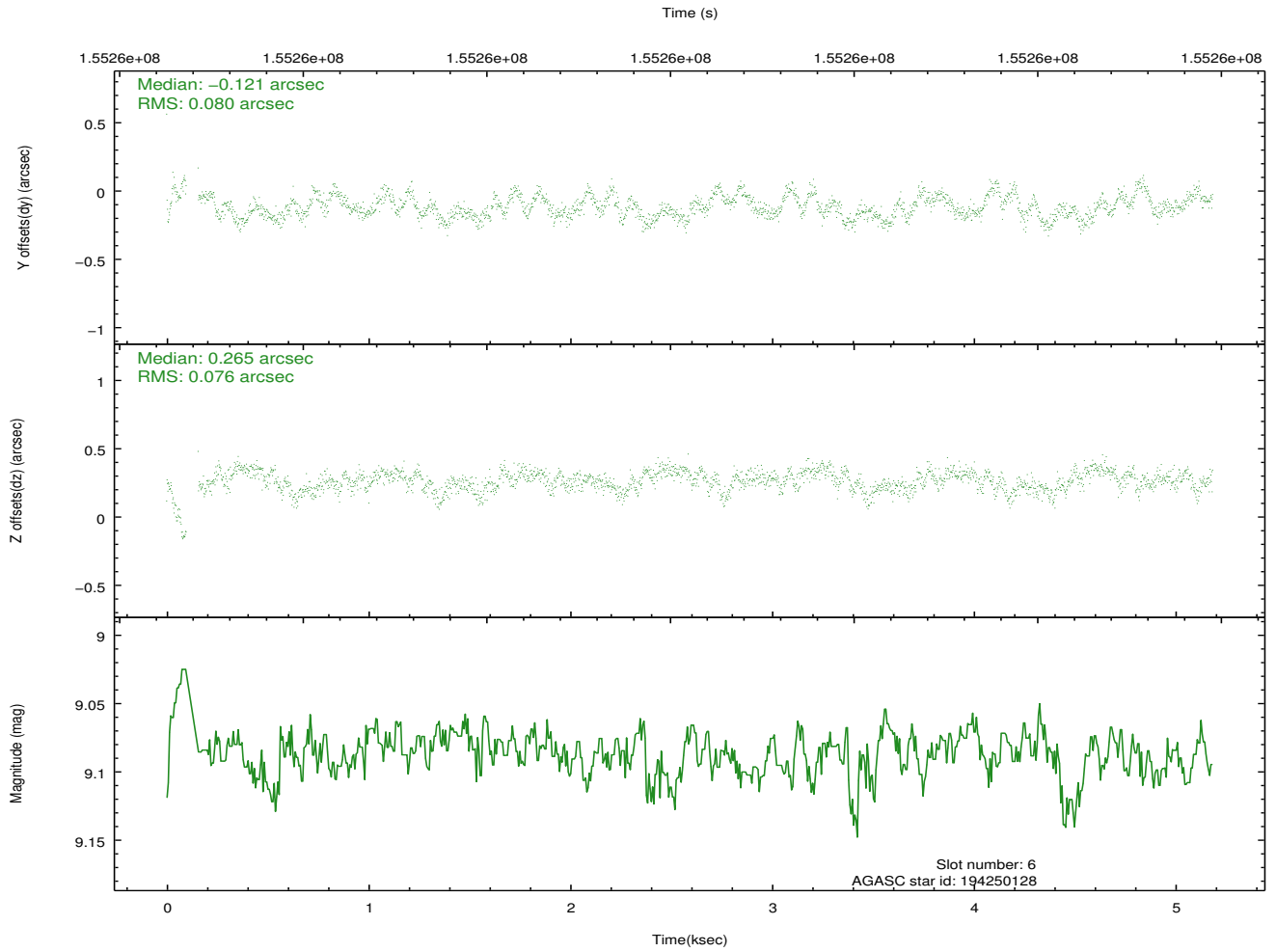
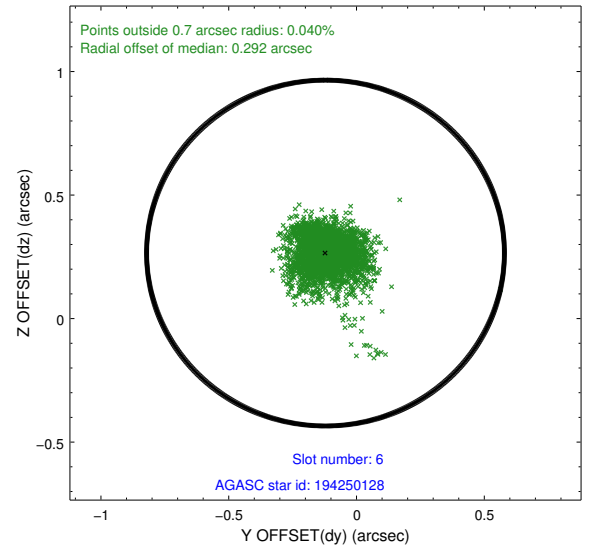
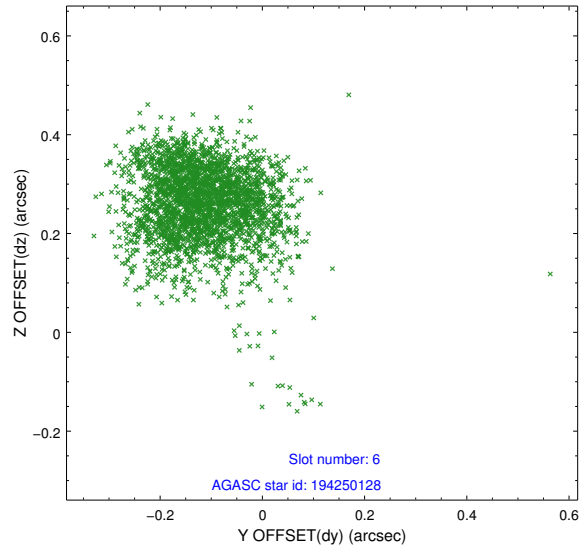
## 2.4.2 Slot 4



### 2.4.3 Slot 5



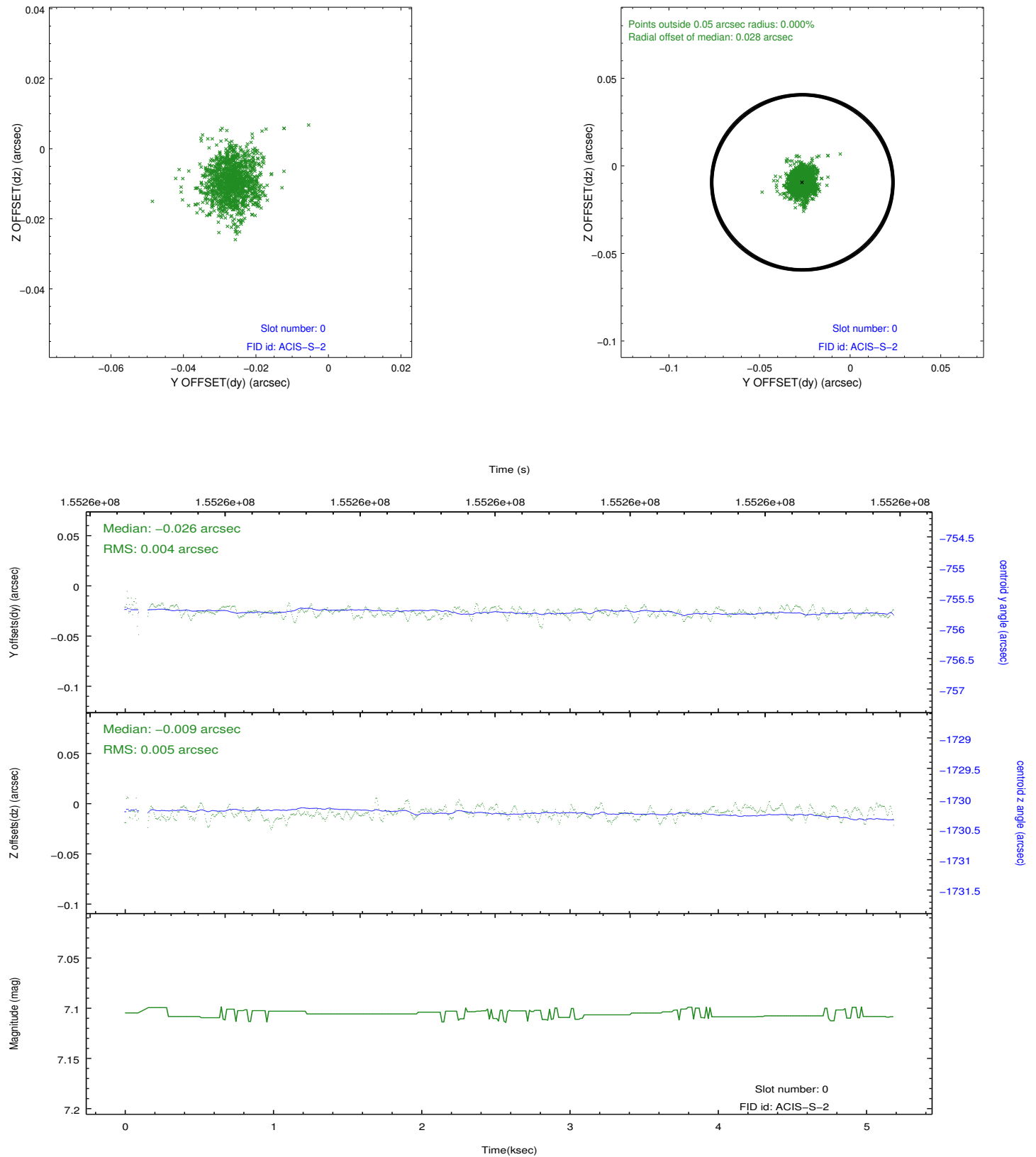
## 2.4.4 Slot 6



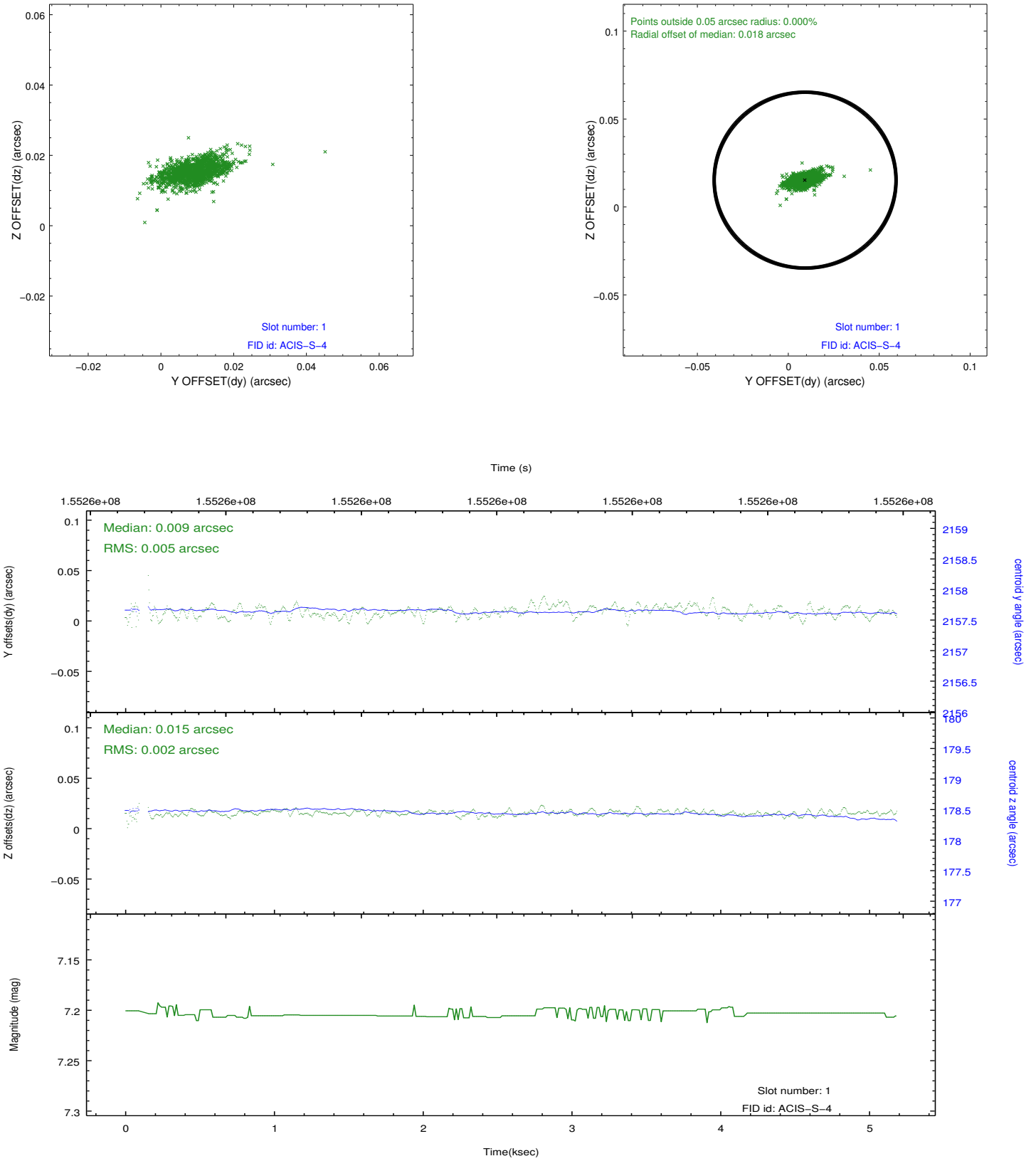


## 2.5 FID Slots

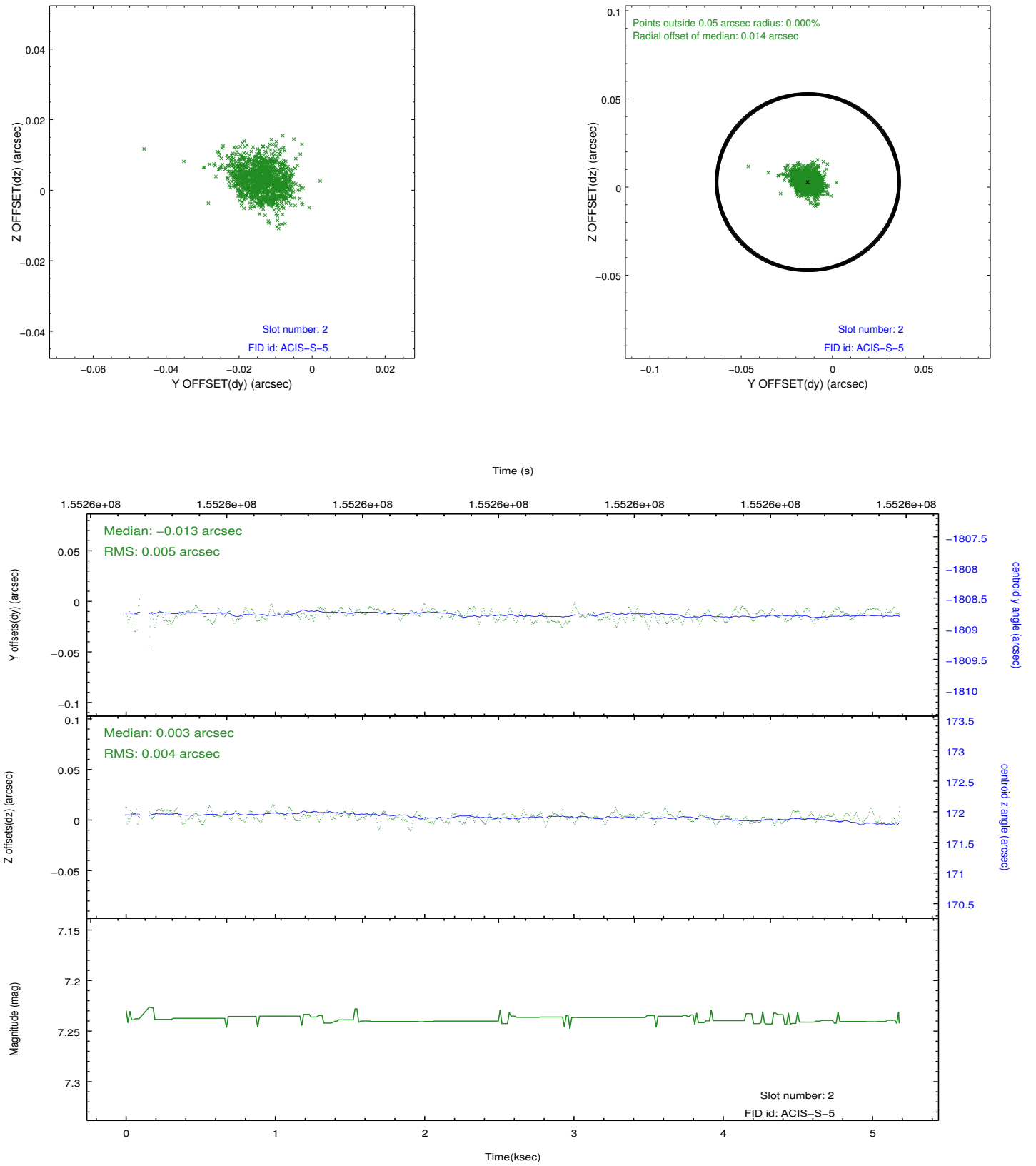
### 2.5.1 Slot 0



## 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)      | 2012.10.28 |
| V&V Edition                | 1          |
| V&V Disposition and Status | OK         |
| V&V Charge Time            | 4.755      |

### A.2 Comments