

# V&V Reference Report

## L2 ASCDS Version : 8.5.1.1

Observation 5392 - L2 Version 5  
Chandra X-Ray Center

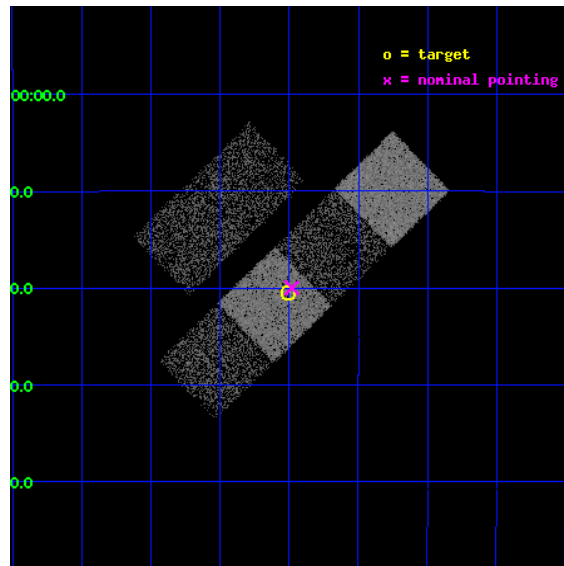
L2 Processing Date : Dec 27 2012

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# 1 Front

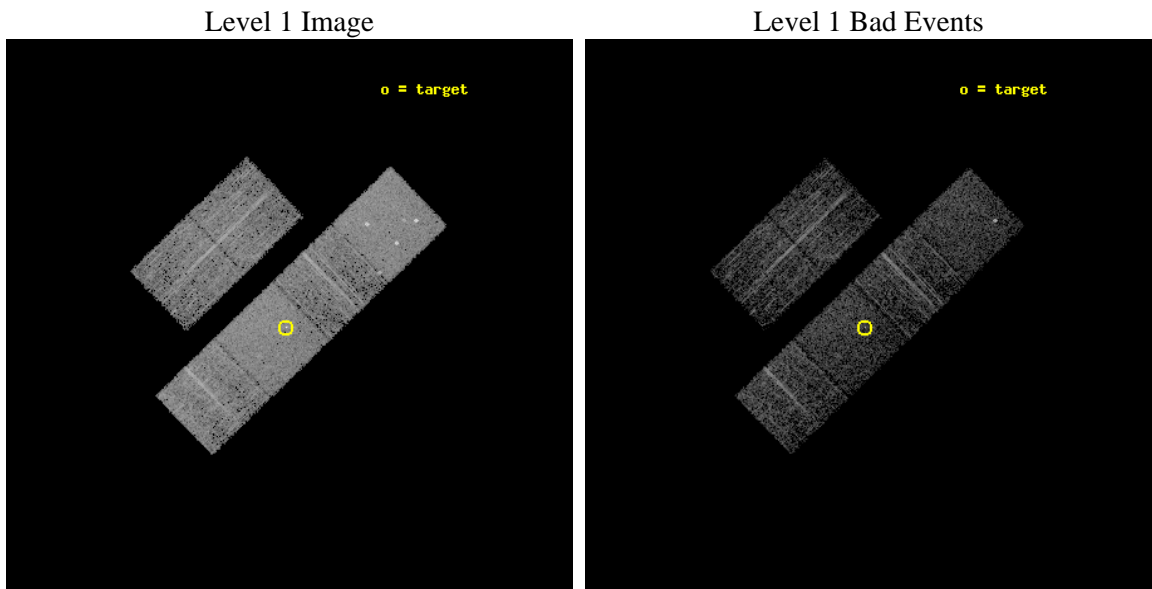
|          |   |   |
|----------|---|---|
| seq_num  | 200327  | Sequence number                             |
| obs_id   | 5392  | Observation id                              |
| title    | The puzzle of X-ray emission from magnetic stars without convective envelopes | Proposal title                              |
| observer | Prof. Jurgen Schmitt  | Principal investigator                      |
| object   | HD 15144  | Source name                                 |
| dtcycle  | 0   | &#160                                       |
| cycle    | P   | events from which exps?<br>Prim/Second/Both |
| ra_targ  | 36.50125  | Observer's specified target RA [deg]        |
| dec_targ | -15.34125   | Observer's specified target Dec [deg]       |
| ra_nom   | 36.495357635715   | Nominal RA [deg]                            |
| dec_nom  | -15.333249064589  | Nominal Dec [deg]                           |
| roll_nom | 135.93609760309   | Nominal Roll [deg]                          |
| revision | 5   | Processing version of data                  |
| ontime   | 2956.4255716205   | Sum of GTIs [s]                             |
| livetime | 2918.9895308868   | Livetime [s]                                |
| ontime2  | 2956.4666116238   | Sum of GTIs [s]                             |
| ontime3  | 2956.3024516106   | Sum of GTIs [s]                             |
| ontime5  | 2956.3845316172   | Sum of GTIs [s]                             |
| ontime6  | 2956.3434916139   | Sum of GTIs [s]                             |
| ontime7  | 2956.4255716205   | Sum of GTIs [s]                             |
| ontime8  | 2956.2614116371   | Sum of GTIs [s]                             |
| l2events | 36944   | Number of level 2 events                    |



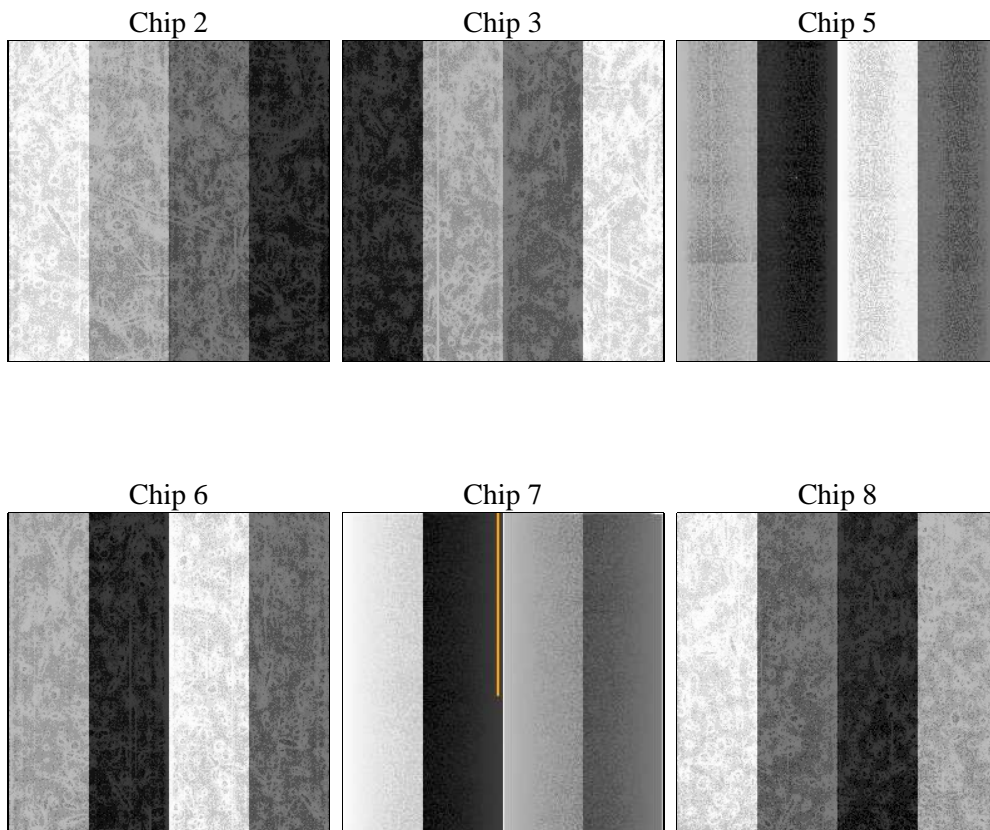
## 2 OBI

### 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 | 8.5.1.1             | Processing system revision     | ontime         | 2956.4255716205 | Sum of GTIs [s]                         |
| caldbver | 4.5.5               | &#160                          | ontime2        | 2956.4666116238 | Sum of GTIs [s]                         |
| date     | 2012-12-27T16:05:20 | Date and time of file creation | ontime3        | 2956.3024516106 | Sum of GTIs [s]                         |
| revision | 5                   | Processing version of data     | ontime5        | 2956.3845316172 | Sum of GTIs [s]                         |
|          |                     |                                | ontime6        | 2956.3434916139 | Sum of GTIs [s]                         |
|          |                     |                                | ontime7        | 2956.4255716205 | Sum of GTIs [s]                         |
|          |                     |                                | ontime8        | 2956.2614116371 | Sum of GTIs [s]                         |
|          |                     |                                | l1events       | 165439          | Number of level 1 events                |

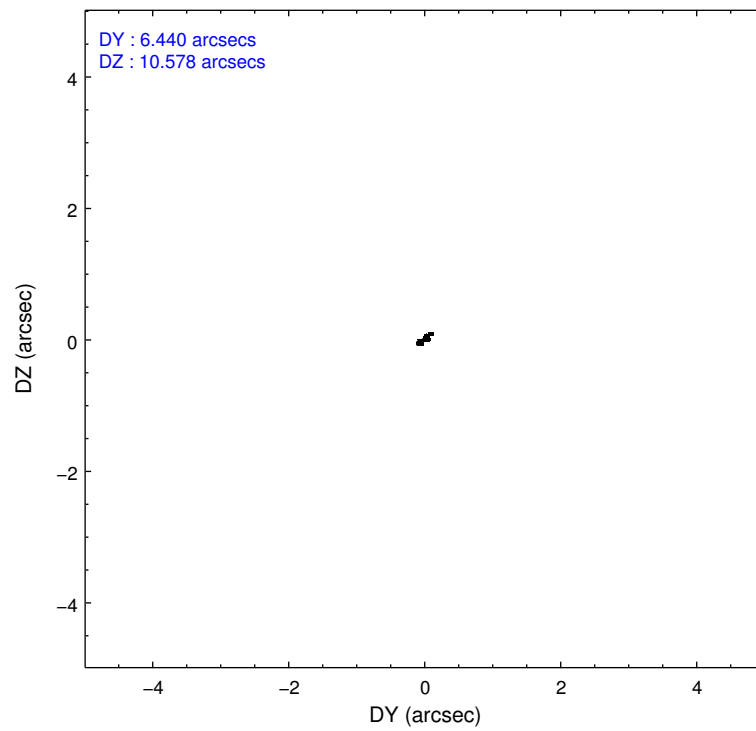
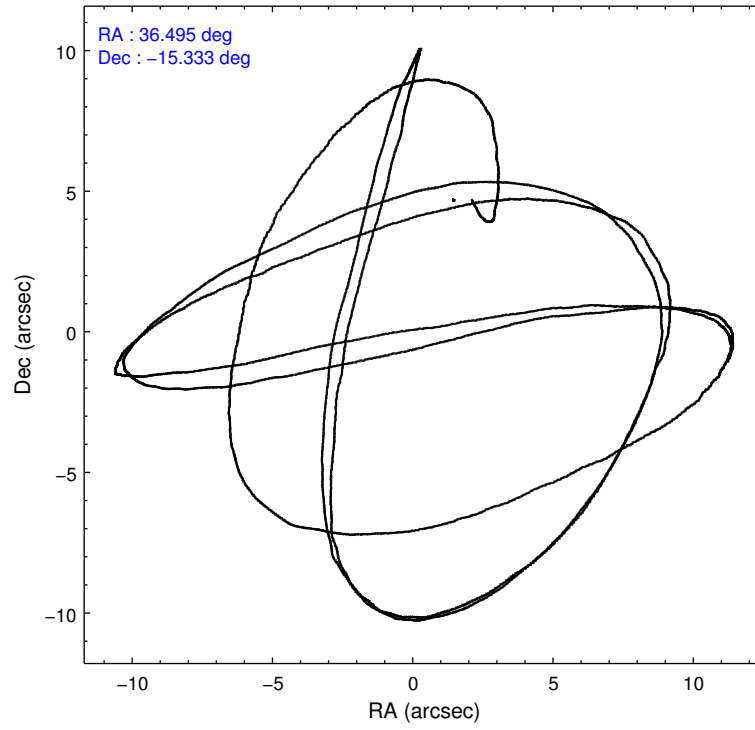
### 2.1.4 Events

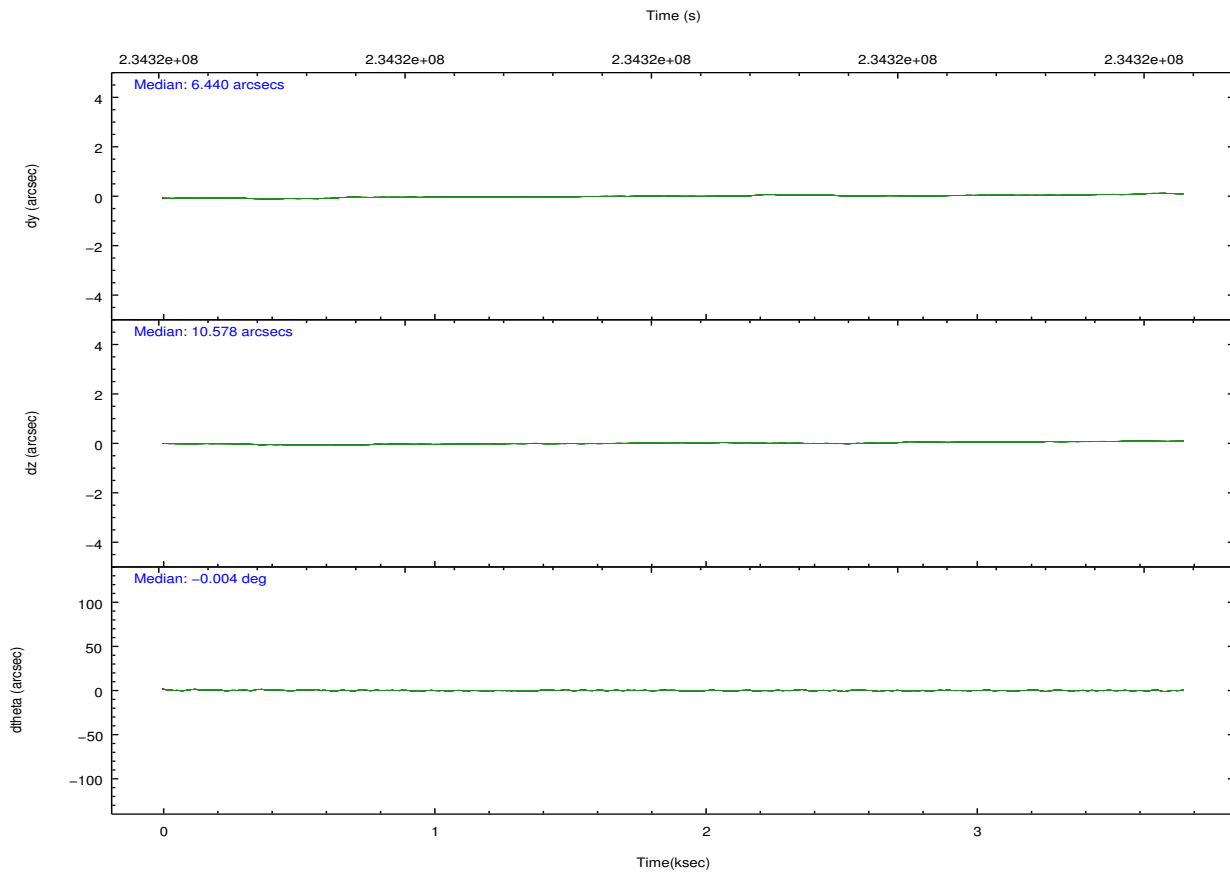
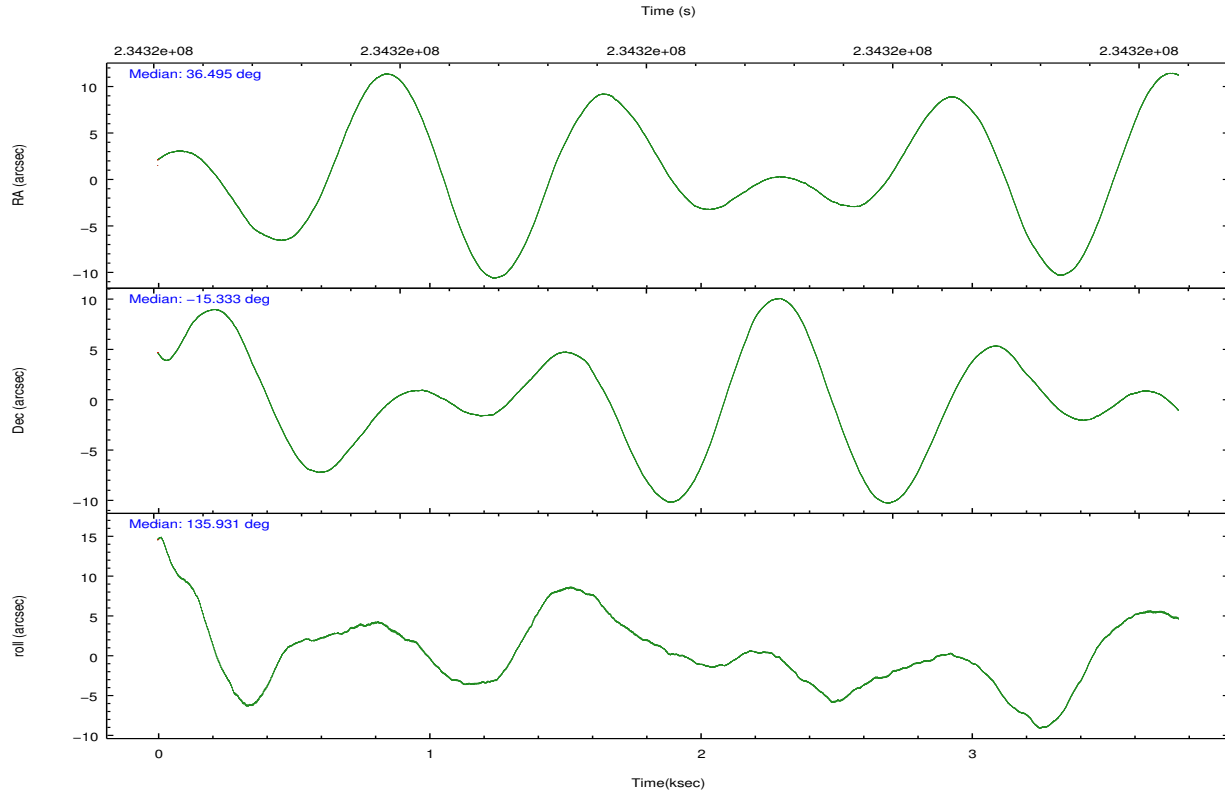
|                 | ccd 2 | ccd 3 | ccd 5 | ccd 6 | ccd 7 | ccd 8 |                | ccd 2 | ccd 3 | ccd 5 | ccd 6 | ccd 7 | ccd 8 |
|-----------------|-------|-------|-------|-------|-------|-------|----------------|-------|-------|-------|-------|-------|-------|
| level 1 events  | 23798 | 22704 | 35418 | 23813 | 31032 | 28674 | grade 0 events | 1219  | 1154  | 2493  | 1016  | 1301  | 2020  |
| rejected events | 21087 | 20056 | 18658 | 21156 | 17899 | 22138 |                | 5%    | 5%    | 7%    | 4%    | 4%    | 7%    |
| rejected %      | 88%   | 88%   | 52%   | 88%   | 57%   | 77%   | grade 1 events | 16    | 16    | 63    | 3     | 37    | 18    |
|                 |       |       |       |       |       |       |                | 0%    | 0%    | 0%    | 0%    | 0%    | 0%    |
|                 |       |       |       |       |       |       | grade 2 events | 561   | 500   | 4853  | 594   | 2636  | 1525  |
|                 |       |       |       |       |       |       |                | 2%    | 2%    | 13%   | 2%    | 8%    | 5%    |
|                 |       |       |       |       |       |       | grade 3 events | 257   | 249   | 631   | 239   | 1207  | 643   |
|                 |       |       |       |       |       |       |                | 1%    | 1%    | 1%    | 1%    | 3%    | 2%    |
|                 |       |       |       |       |       |       | grade 4 events | 253   | 274   | 586   | 251   | 1127  | 624   |
|                 |       |       |       |       |       |       |                | 1%    | 1%    | 1%    | 1%    | 3%    | 2%    |
|                 |       |       |       |       |       |       | grade 5 events | 926   | 1069  | 2598  | 1050  | 2909  | 1337  |
|                 |       |       |       |       |       |       |                | 3%    | 4%    | 7%    | 4%    | 9%    | 4%    |
|                 |       |       |       |       |       |       | grade 6 events | 429   | 476   | 8229  | 560   | 6886  | 1729  |
|                 |       |       |       |       |       |       |                | 1%    | 2%    | 23%   | 2%    | 22%   | 6%    |
|                 |       |       |       |       |       |       | grade 7 events | 20137 | 18966 | 15965 | 20100 | 14929 | 20778 |
|                 |       |       |       |       |       |       |                | 84%   | 83%   | 45%   | 84%   | 48%   | 72%   |

## 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                 | 36.522861           | 36.49535763571489    | Subarray requested                    | NONE      | NONE    |
| [deg] Pointing Dec                | -15.339665          | -15.33324906458874   | Alternating exposures requested       | N         | N       |
| [deg] Pointing Roll               | 135.786742          | 135.9360976030901    | [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         | -190.1425803651734   |                                       |           |         |
| [mm] SIM translation stage offset | 0                   | 0.01005778216563158  |                                       |           |         |
| [s] Observation start time (MET)  | 234318969.184000    | 234317718.23193      |                                       |           |         |
| Observation start date            | 2005-06-05T00:35:05 | 2005-06-05T00:15:18  |                                       |           |         |
| [s] Observation end time (MET)    | 234321969.184000    | 234323077.95718      |                                       |           |         |
| Observation end date              | 2005-06-05T01:25:05 | 2005-06-05T01:44:37  |                                       |           |         |
| Read mode                         | TIMED               | TIMED                |                                       |           |         |

## 2.3 Aspect





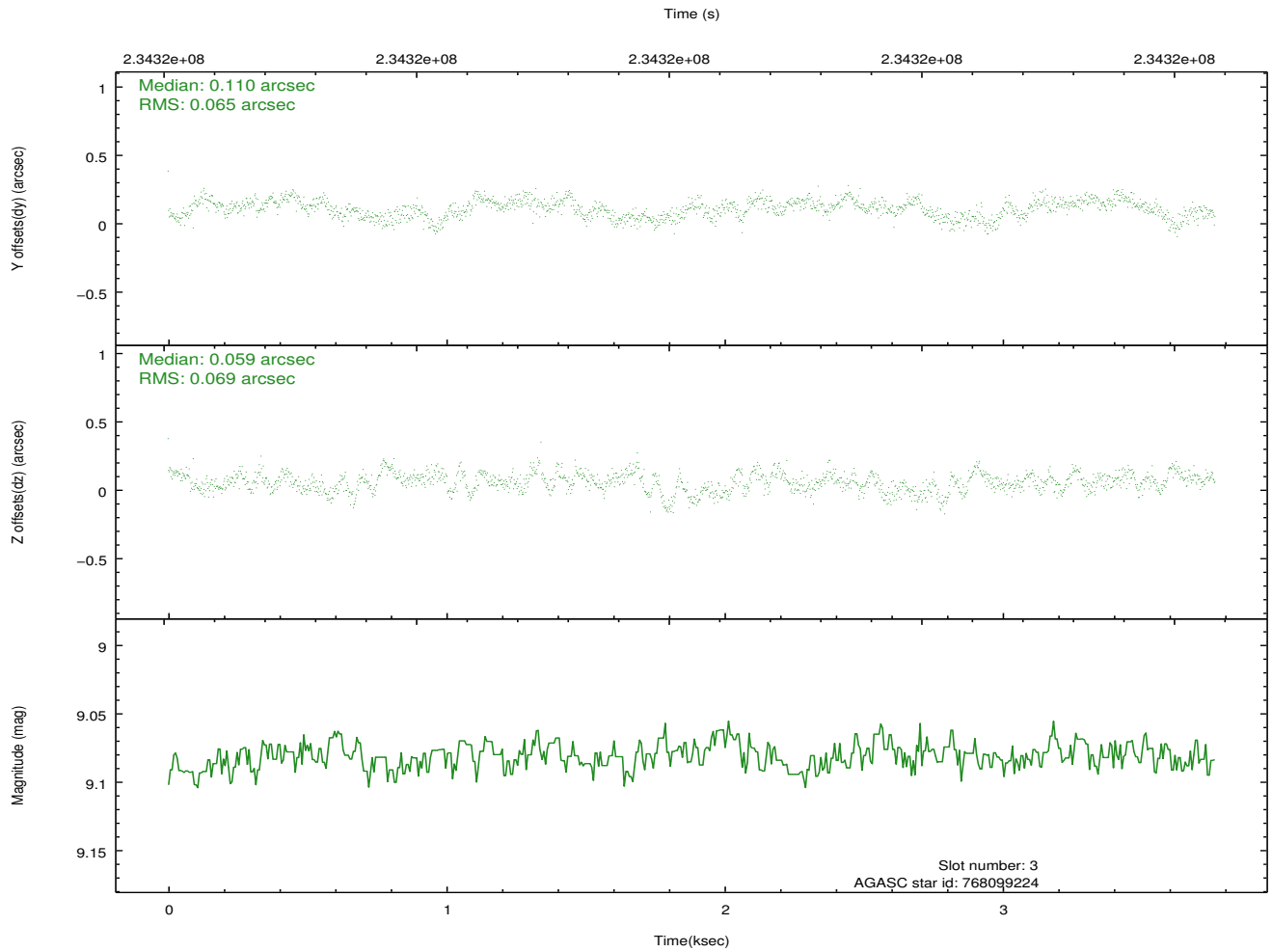
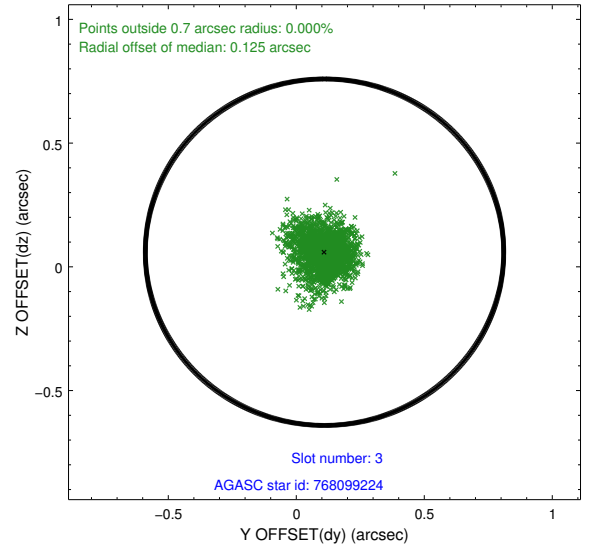
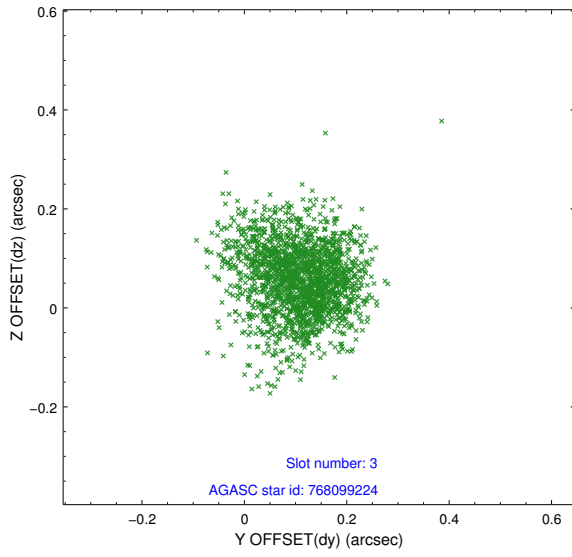
### Slot Statistics

| 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  | 918   | -0.065 | -0.045 | 0.006 | 0.010 | 0.000000  | 0.000000   | -759.22  | -1731.85 |
| 1    | FID     | ACIS-S-4  | 7.20  | 919   | 0.059  | 0.032  | 0.006 | 0.011 | 0.000000  | 0.000000   | 2153.41  | 175.01   |
| 2    | FID     | ACIS-S-6  | 7.35  | 919   | -0.022 | 0.020  | 0.007 | 0.011 | 0.000000  | 0.000000   | 404.93   | 814.28   |
| 3    | GUIDE   | 768099224 | 9.08  | 1836  | 0.110  | 0.059  | 0.100 | 0.162 | 37.197220 | -15.299441 | -1579.66 | -1733.72 |
| 4    | GUIDE   | 768099800 | 10.43 | 1836  | 0.158  | -0.076 | 0.195 | 0.329 | 36.291049 | -15.196392 | 935.73   | 192.36   |
| 5    | GUIDE   | 768102400 | 9.81  | 1834  | -0.096 | 0.216  | 0.109 | 0.178 | 36.805499 | -15.028625 | 76.64    | -1486.59 |
| 6    | GUIDE   | 767967160 | 9.86  | 1834  | -0.171 | -0.198 | 0.129 | 0.210 | 35.745534 | -15.541992 | 1420.88  | 2405.21  |
| 7    | OMITTED |           | 0.00  | 0     | 0.000  | 0.000  | 0.000 | 0.000 | 0.000000  | 0.000000   | 0.00     | 0.00     |

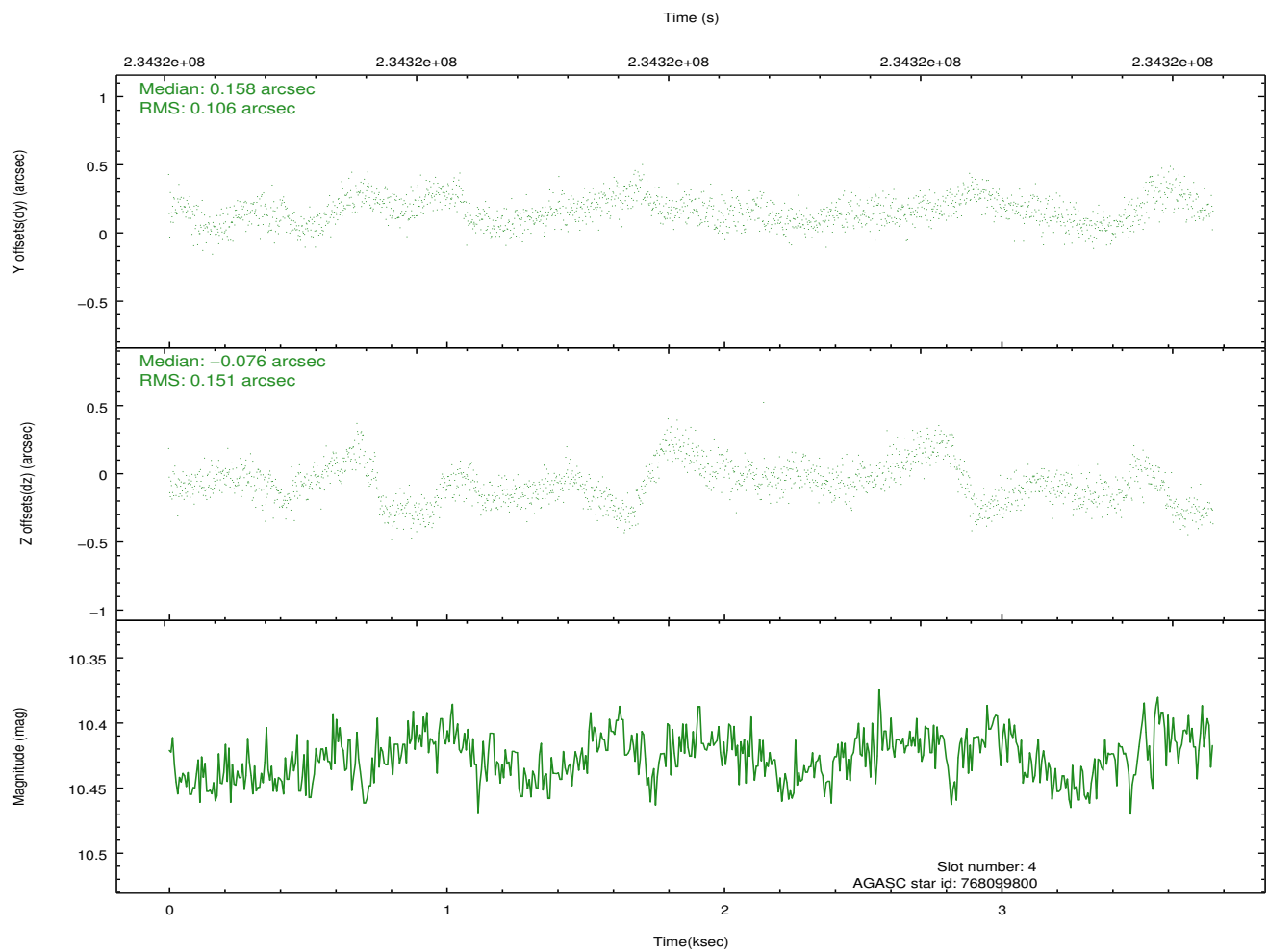
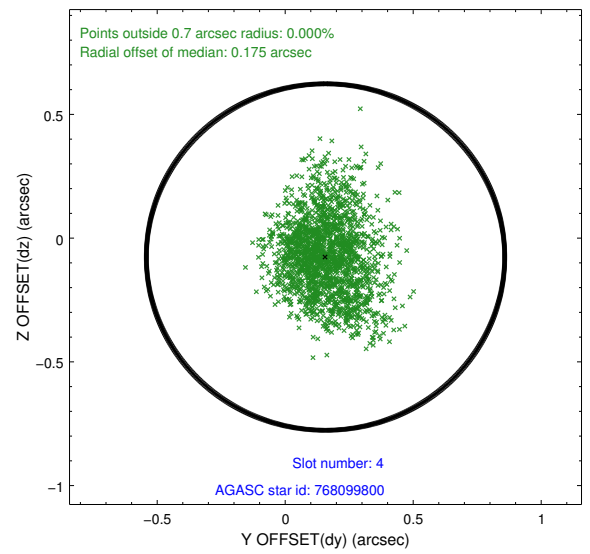
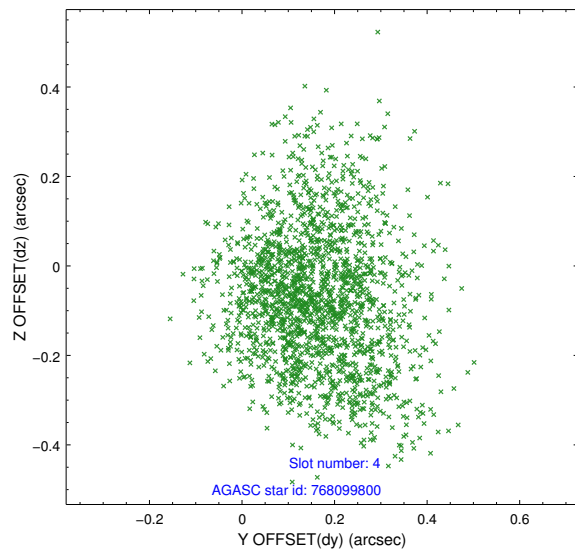
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## 2.4 Star Slots

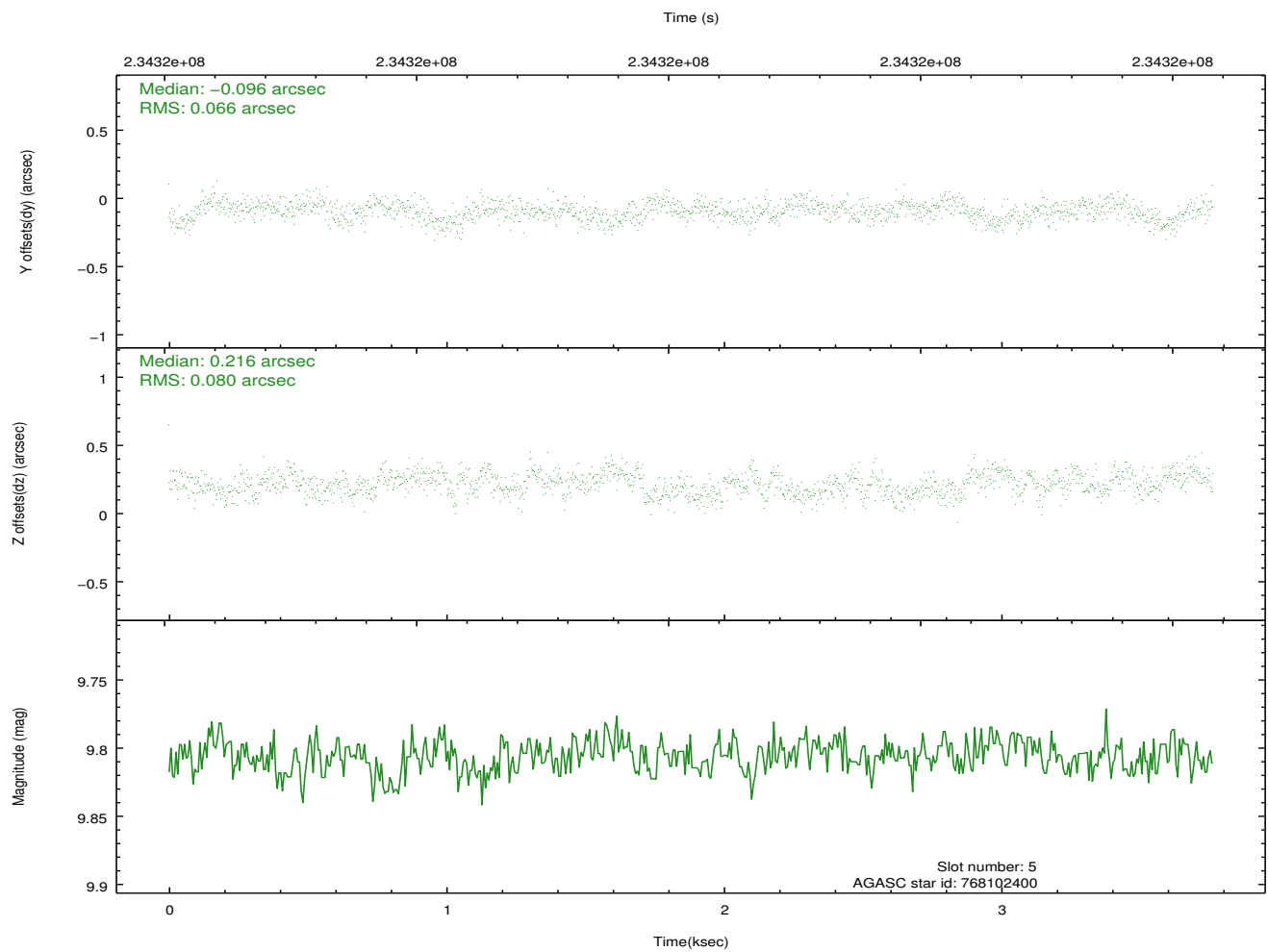
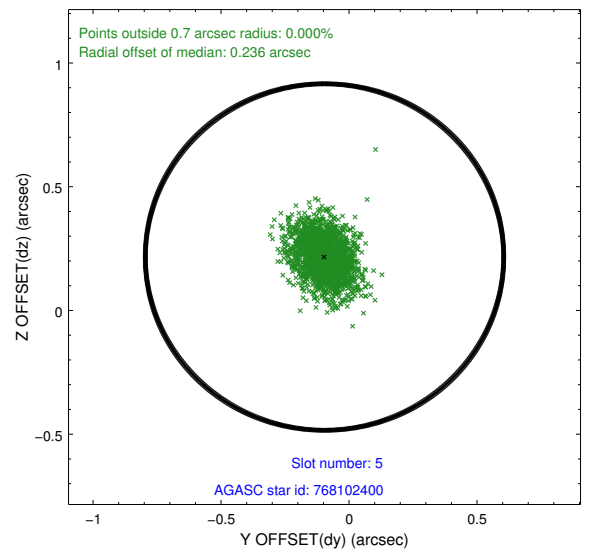
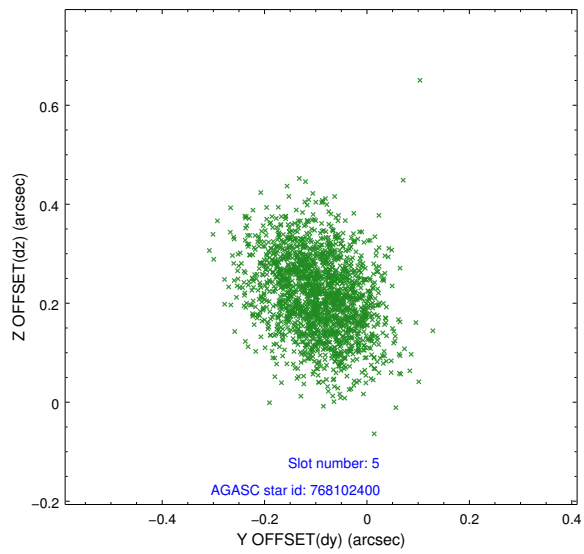
### 2.4.1 Slot 3



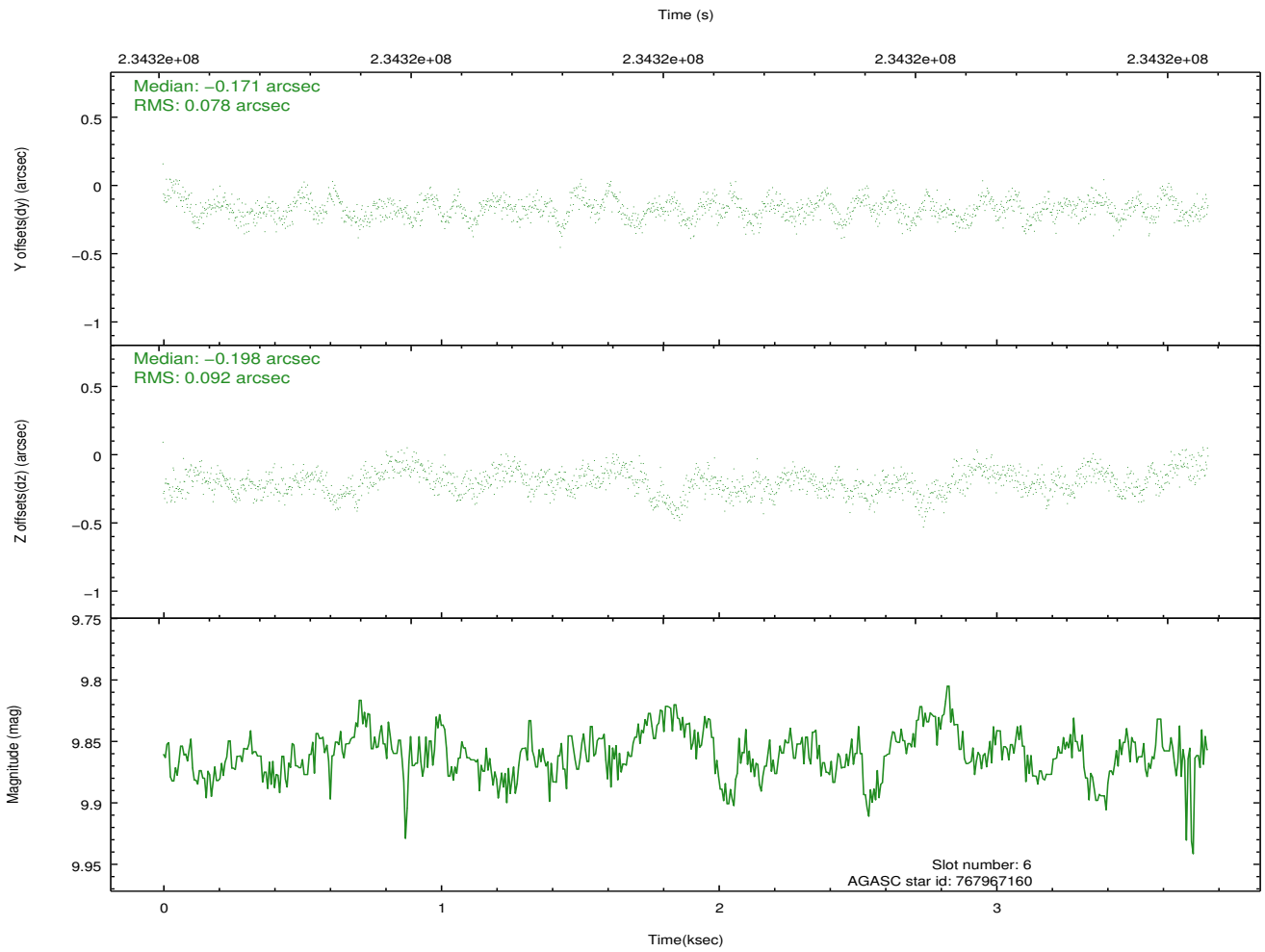
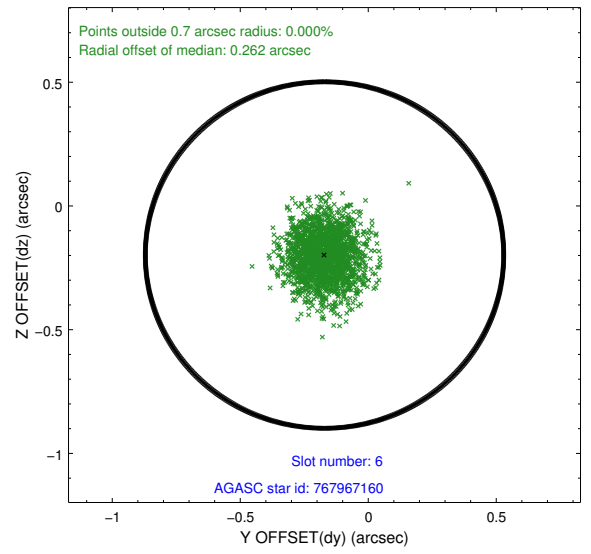
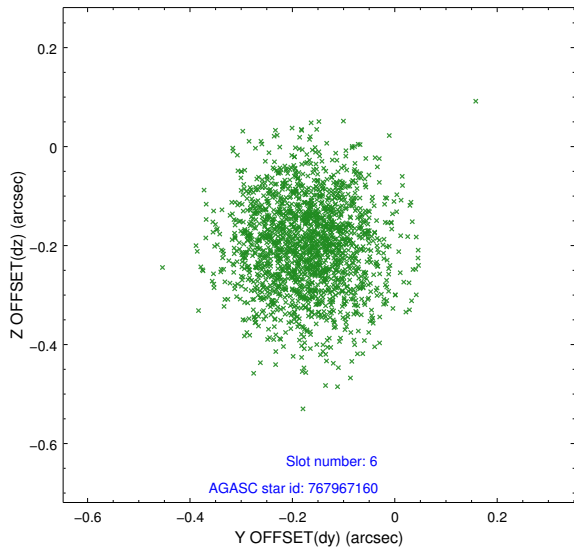
## 2.4.2 Slot 4



### 2.4.3 Slot 5

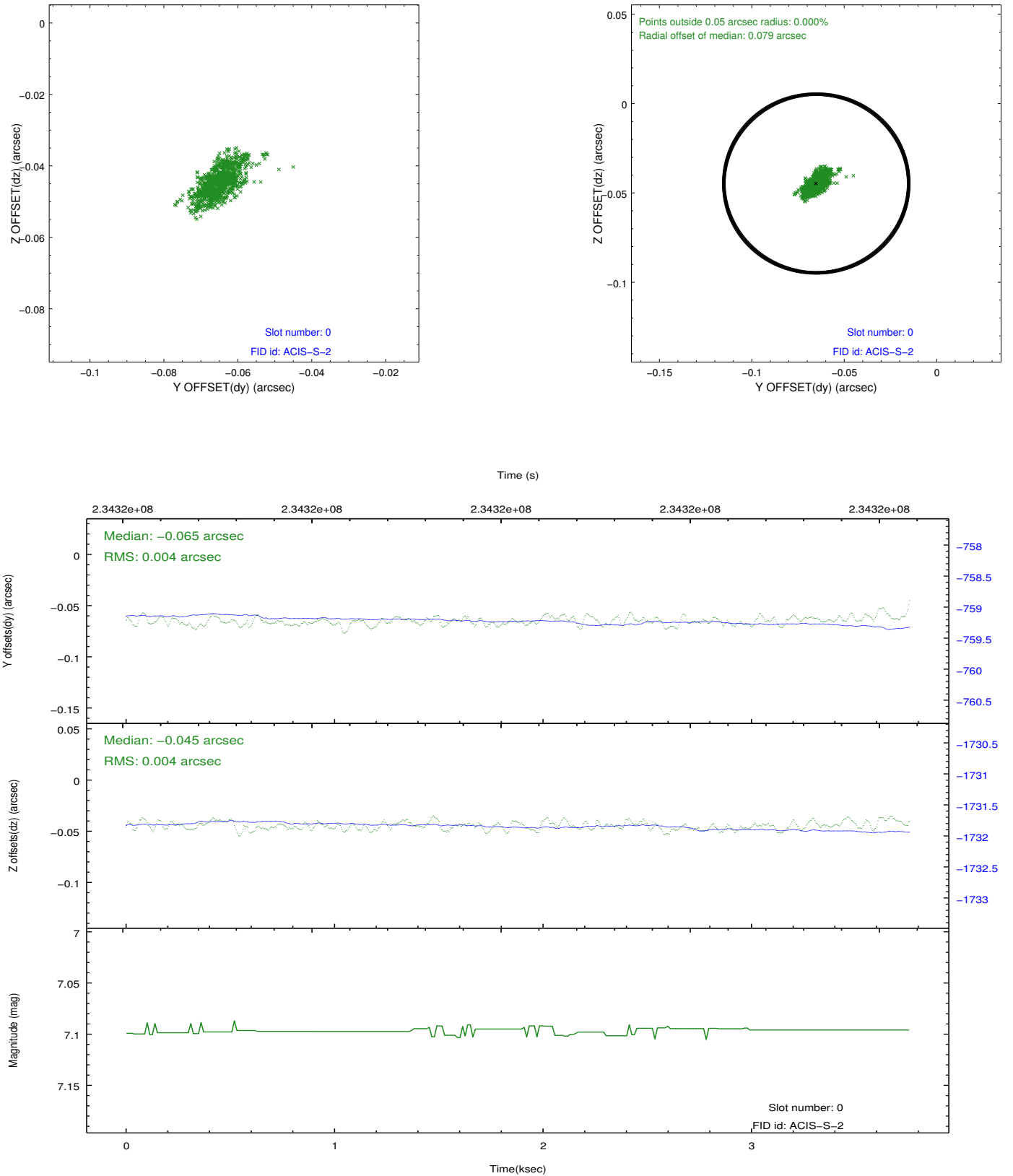


### 2.4.4 Slot 6

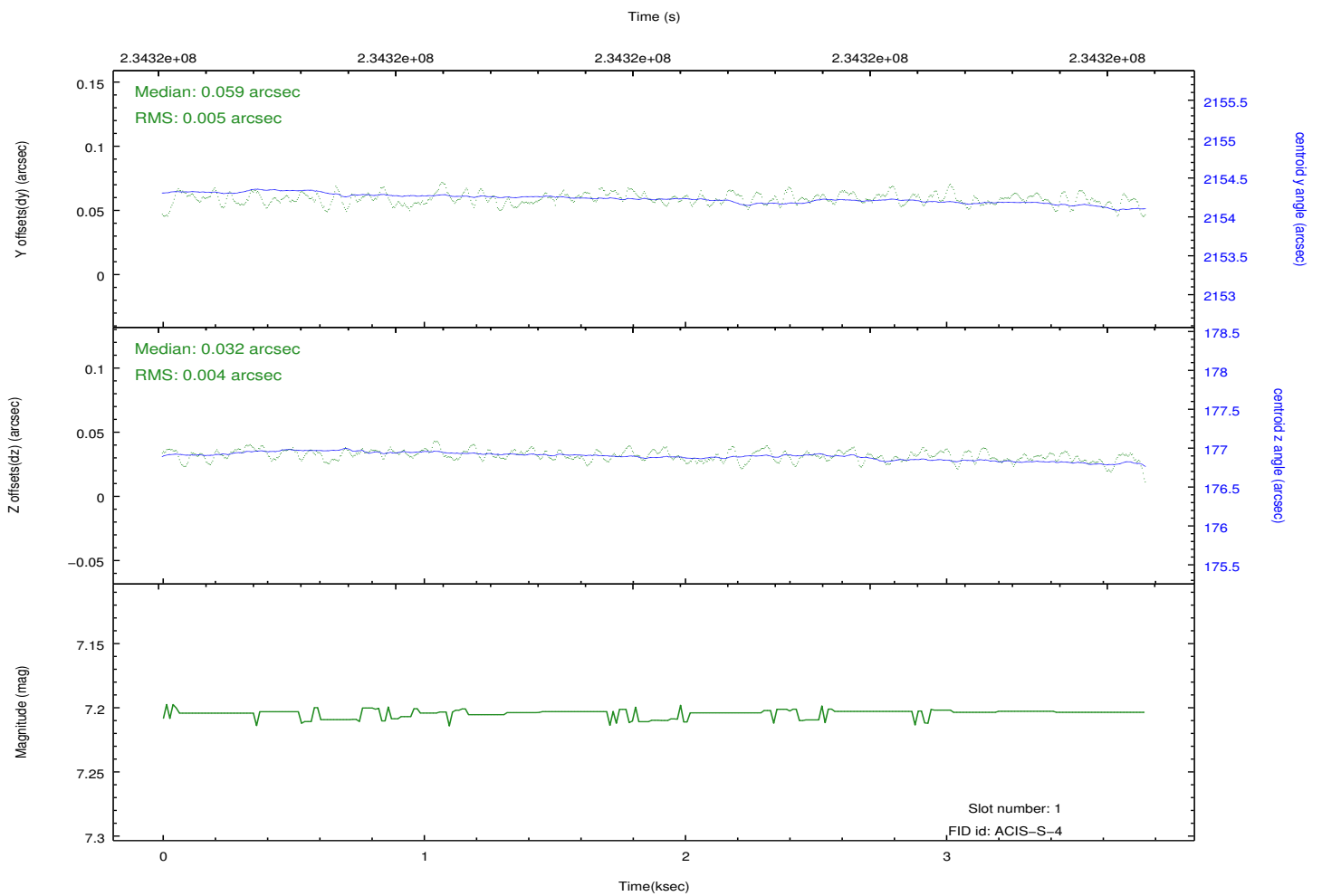
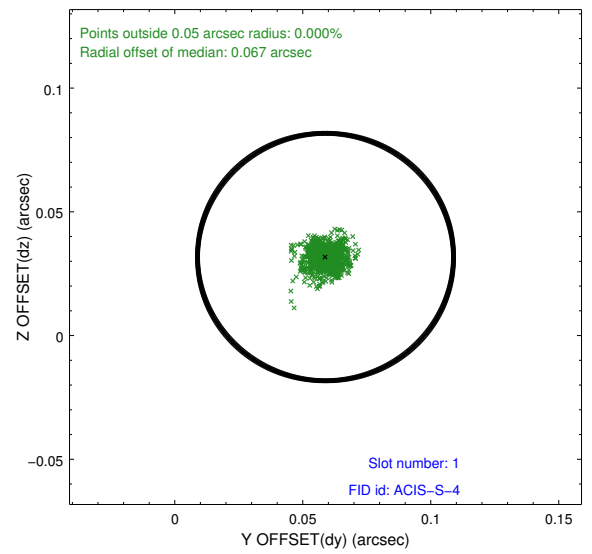
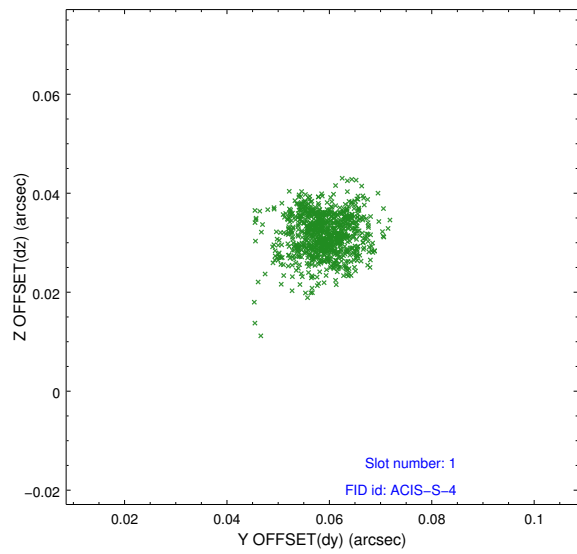


## 2.5 FID Slots

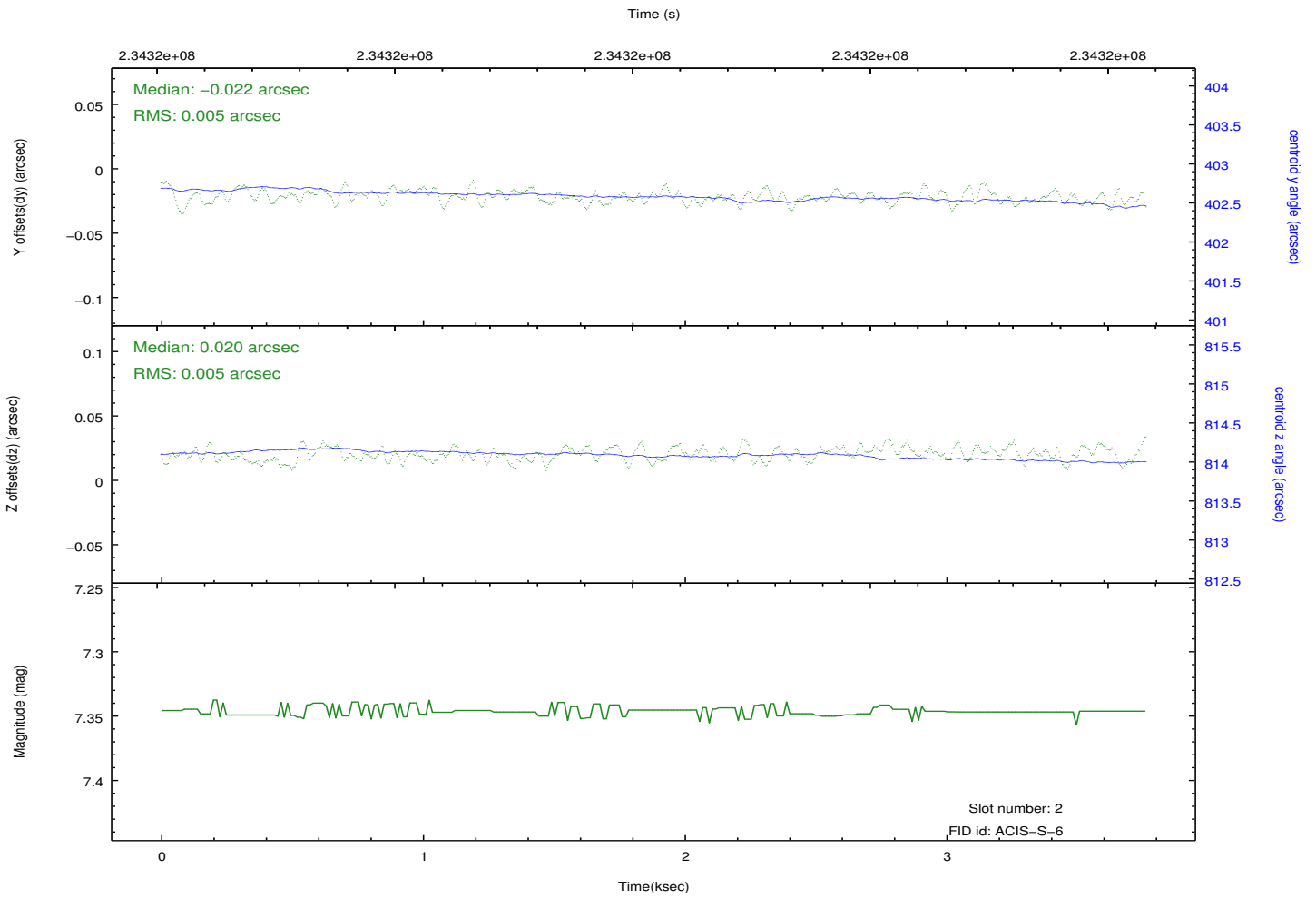
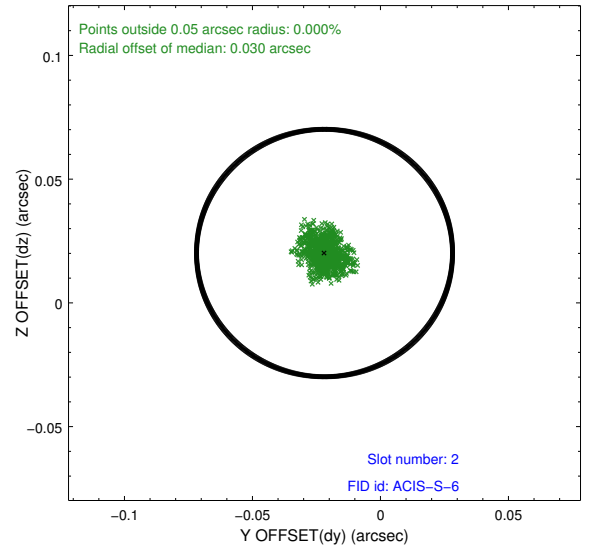
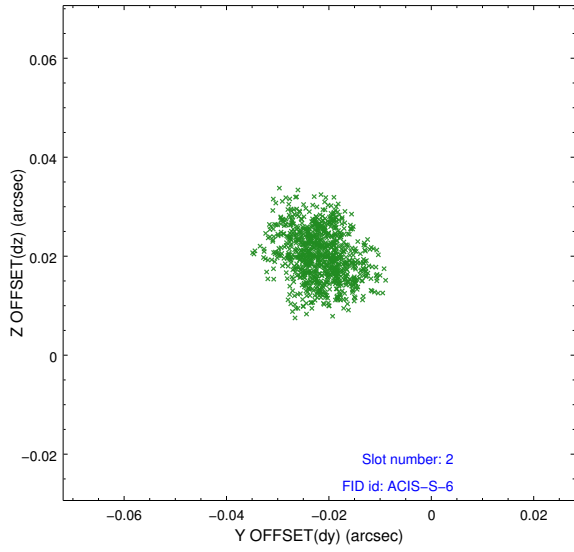
### 2.5.1 Slot 0



## 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)      | 2013.01.24 |
| V&V Edition                | 1          |
| V&V Disposition and Status | OK         |
| V&V Charge Time            | 2.956799   |

## A.2 Comments

The guide star in slot 7 was removed from the aspect solution due to poor data quality. The aspect solution is improved by the removal of this guide star from the solution.