

# V&V Reference Report

## L2 ASCDS Version : 8.5.1.1

Observation 6337 - L2 Version 3  
Chandra X-Ray Center

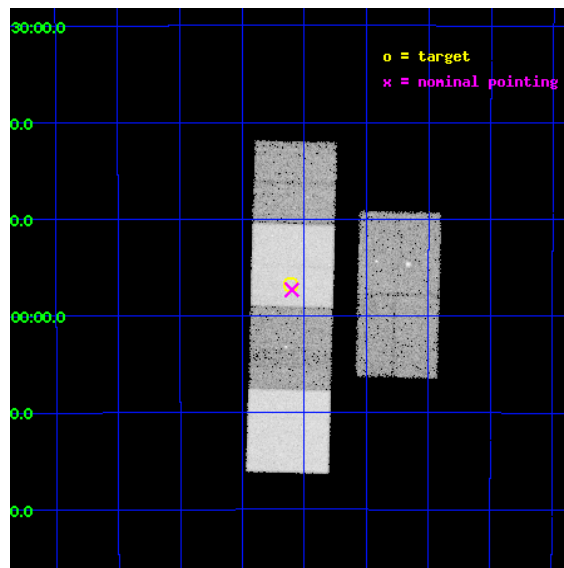
L2 Processing Date : Dec 26 2012

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# 1 Front

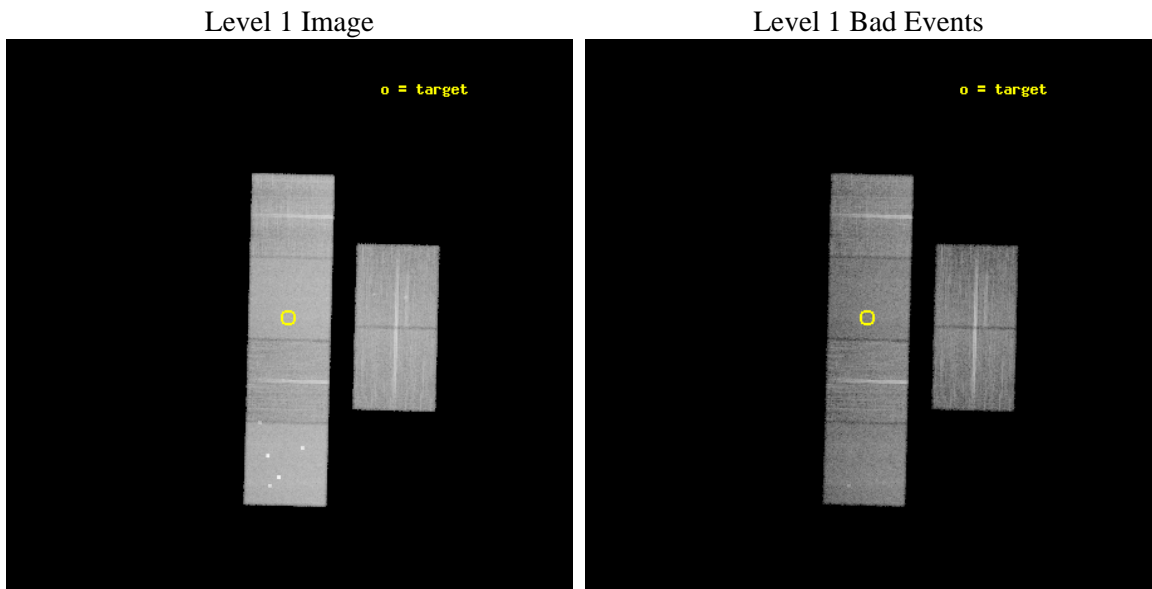
|          |  |   |
|----------|--|---|
| seq_num  | 400399   | Sequence number                             |
| obs_id   | 6337   | Observation id                              |
| title    | Cooling curves of accretion-heated neutron stars | Proposal title                              |
| observer | Dr. Rudy Wijnands                                | Principal investigator                      |
| object   | MXB 1659-29                                      | Source name                                 |
| dtcycle  | 0  | &#160                                       |
| cycle    | P  | events from which exps?<br>Prim/Second/Both |
| ra_targ  | 255.526667                                       | Observer's specified target<br>RA [deg]     |
| dec_targ | -29.945639                                       | Observer's specified target<br>Dec [deg]    |
| ra_nom   | 255.52500414331                                  | Nominal RA [deg]                            |
| dec_nom  | -29.955214909468                                 | Nominal Dec [deg]                           |
| roll_nom | 271.46378185452                                  | Nominal Roll [deg]                          |
| revision | 3  | Processing version of data                  |
| ontime   | 18956.067294061                                  | Sum of GTIs [s]                             |
| livetime | 18716.03415601                                   | Livetime [s]                                |
| ontime2  | 18956.108334064                                  | Sum of GTIs [s]                             |
| ontime3  | 18955.944174051                                  | Sum of GTIs [s]                             |
| ontime5  | 18956.026254058                                  | Sum of GTIs [s]                             |
| ontime6  | 18952.744233727                                  | Sum of GTIs [s]                             |
| ontime7  | 18956.067294061                                  | Sum of GTIs [s]                             |
| ontime8  | 18955.903134078                                  | Sum of GTIs [s]                             |
| l2events | 258487   | Number of level 2 events                    |



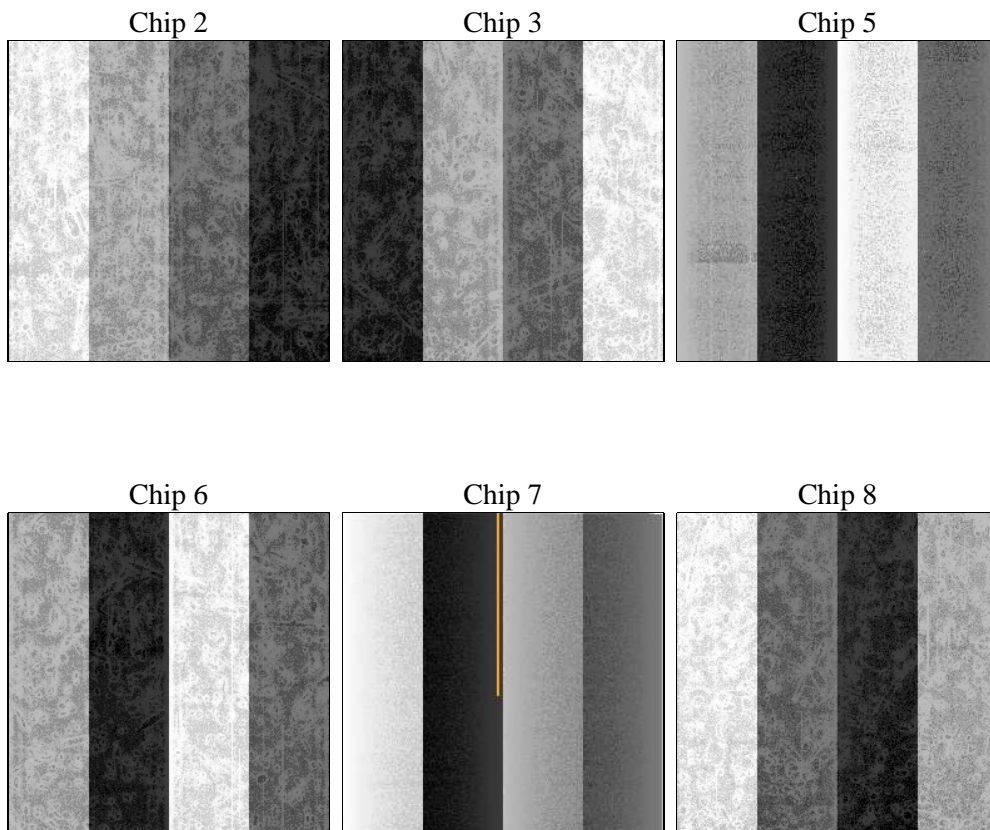
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

|          |                     |                                |                |                 |   |
|----------|---------------------|--------------------------------|----------------|-----------------|---|
| obi_num  | 0                   | Obi number                     | sched_exp_time | 19000.000000    | [s] Scheduled observation exposure time |
| ascdsver | 8.5.1.1             | Processing system revision     | ontime         | 18956.067294061 | Sum of GTIs [s]                         |
| caldbver | 4.5.5               | &#160                          | ontime2        | 18956.108334064 | Sum of GTIs [s]                         |
| date     | 2012-12-26T15:28:04 | Date and time of file creation | ontime3        | 18955.944174051 | Sum of GTIs [s]                         |
| revision | 3                   | Processing version of data     | ontime5        | 18956.026254058 | Sum of GTIs [s]                         |
|          |                     |                                | ontime6        | 18952.744233727 | Sum of GTIs [s]                         |
|          |                     |                                | ontime7        | 18956.067294061 | Sum of GTIs [s]                         |
|          |                     |                                | ontime8        | 18955.903134078 | Sum of GTIs [s]                         |
|          |                     |                                | l1events       | 1091769         | Number of level 1 events                |

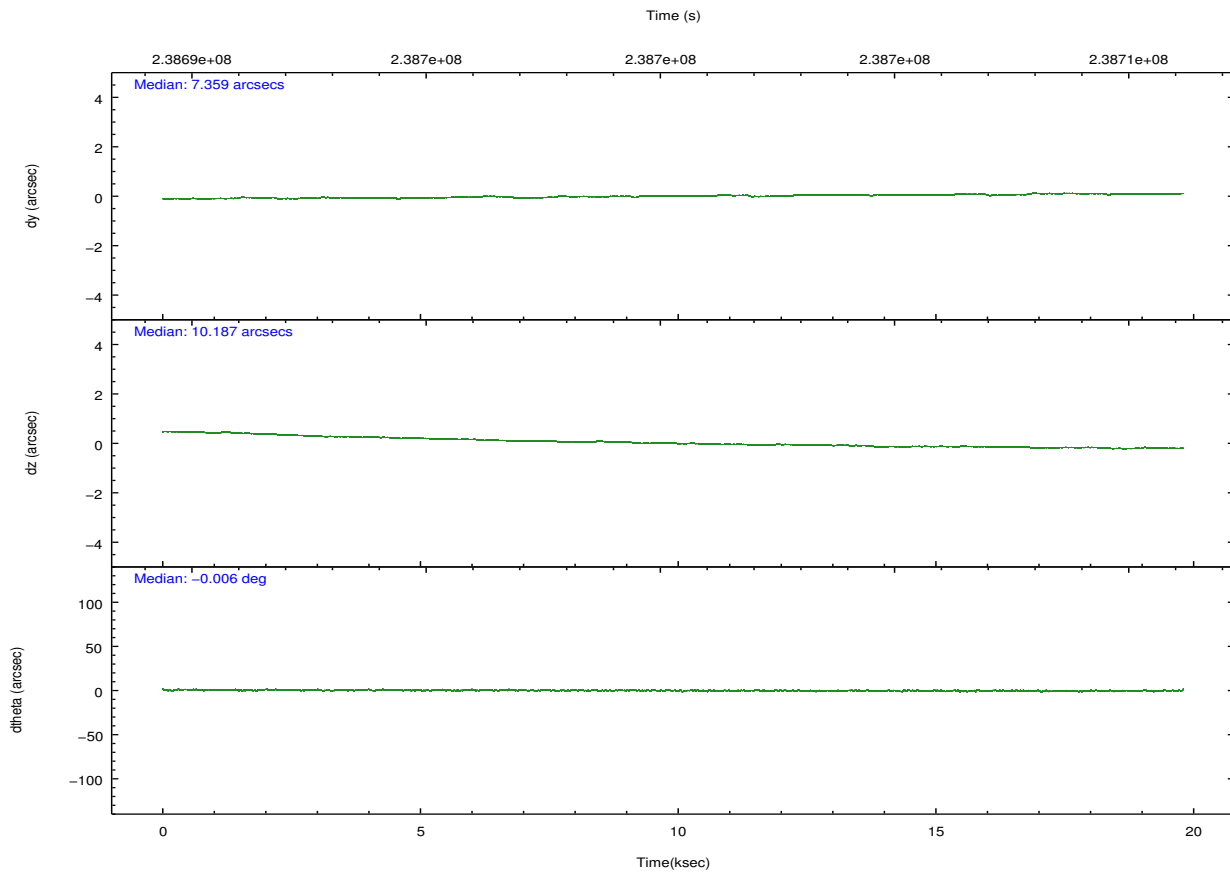
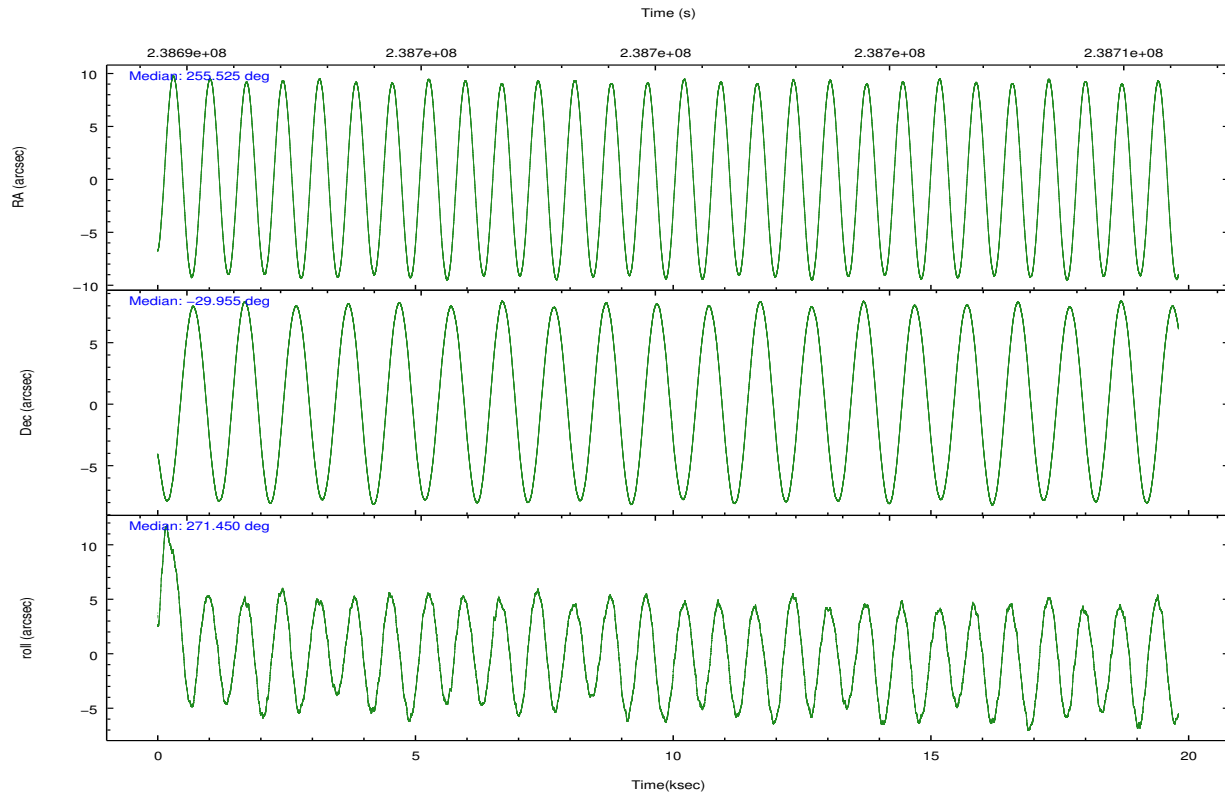
### 2.1.4 Events

|                 | 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  | 151794 | 145465 | 238439 | 153628 | 209989 | 192454 | grade 0 events | 8918   | 9537   | 19420  | 8352   | 8878  | 14812  |
| rejected events | 132956 | 125872 | 122767 | 134238 | 119727 | 148615 |                | 5%     | 6%     | 8%     | 5%     | 4%    | 7%     |
| rejected %      | 87%    | 86%    | 51%    | 87%    | 57%    | 77%    | grade 1 events | 97     | 115    | 307    | 77     | 249   | 125    |
|                 |        |        |        |        |        |        |                | 0%     | 0%     | 0%     | 0%     | 0%    | 0%     |
|                 |        |        |        |        |        |        | grade 2 events | 3619   | 3426   | 32604  | 3911   | 18509 | 9472   |
|                 |        |        |        |        |        |        |                | 2%     | 2%     | 13%    | 2%     | 8%    | 4%     |
|                 |        |        |        |        |        |        | grade 3 events | 1720   | 1796   | 4103   | 1776   | 8054  | 4533   |
|                 |        |        |        |        |        |        |                | 1%     | 1%     | 1%     | 1%     | 3%    | 2%     |
|                 |        |        |        |        |        |        | grade 4 events | 1614   | 1767   | 3947   | 1688   | 7903  | 4168   |
|                 |        |        |        |        |        |        |                | 1%     | 1%     | 1%     | 1%     | 3%    | 2%     |
|                 |        |        |        |        |        |        | grade 5 events | 6039   | 6645   | 16214  | 6975   | 19530 | 9119   |
|                 |        |        |        |        |        |        |                | 3%     | 4%     | 6%     | 4%     | 9%    | 4%     |
|                 |        |        |        |        |        |        | grade 6 events | 2969   | 3071   | 55621  | 3666   | 46930 | 10863  |
|                 |        |        |        |        |        |        |                | 1%     | 2%     | 23%    | 2%     | 22%   | 5%     |
|                 |        |        |        |        |        |        | grade 7 events | 126818 | 119108 | 106223 | 127183 | 99936 | 139362 |
|                 |        |        |        |        |        |        |                | 83%    | 81%    | 44%    | 82%    | 47%   | 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                 | 255.508227          | 255.5250041433144    | Subarray requested                    | NONE      | NONE    |
| [deg] Pointing Dec                | -29.932161          | -29.95521490946843   | Alternating exposures requested       | N         | N       |
| [deg] Pointing Roll               | 271.298774          | 271.4637818545234    | [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)  | 238691171.184000    | 238689898.98178      |                                       |           |         |
| Observation start date            | 2005-07-25T15:05:07 | 2005-07-25T14:44:58  |                                       |           |         |
| [s] Observation end time (MET)    | 238710171.184000    | 238711306.10776      |                                       |           |         |
| Observation end date              | 2005-07-25T20:21:47 | 2005-07-25T20:41:46  |                                       |           |         |
| Read mode                         | TIMED               | TIMED                |                                       |           |         |

## 2.3 Aspect

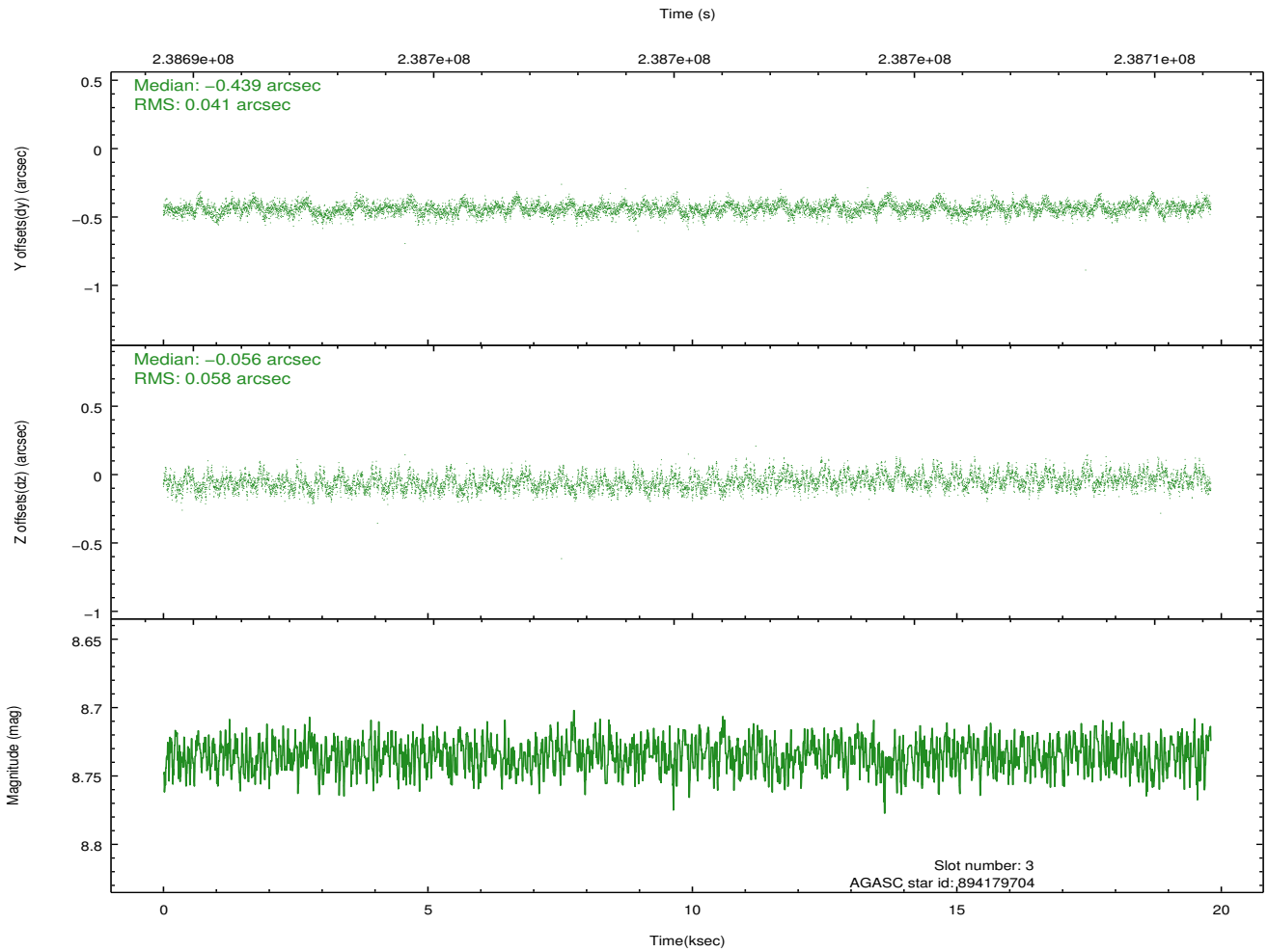
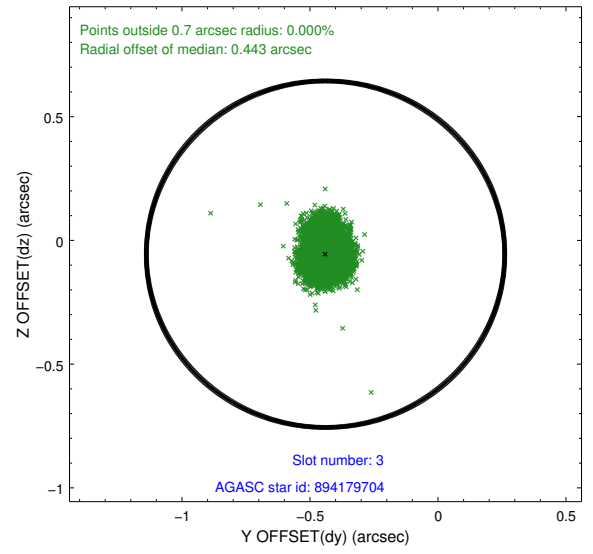
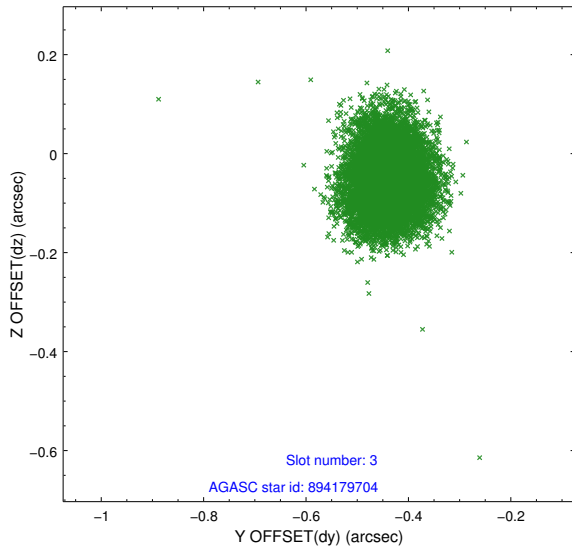


### Slot Statistics

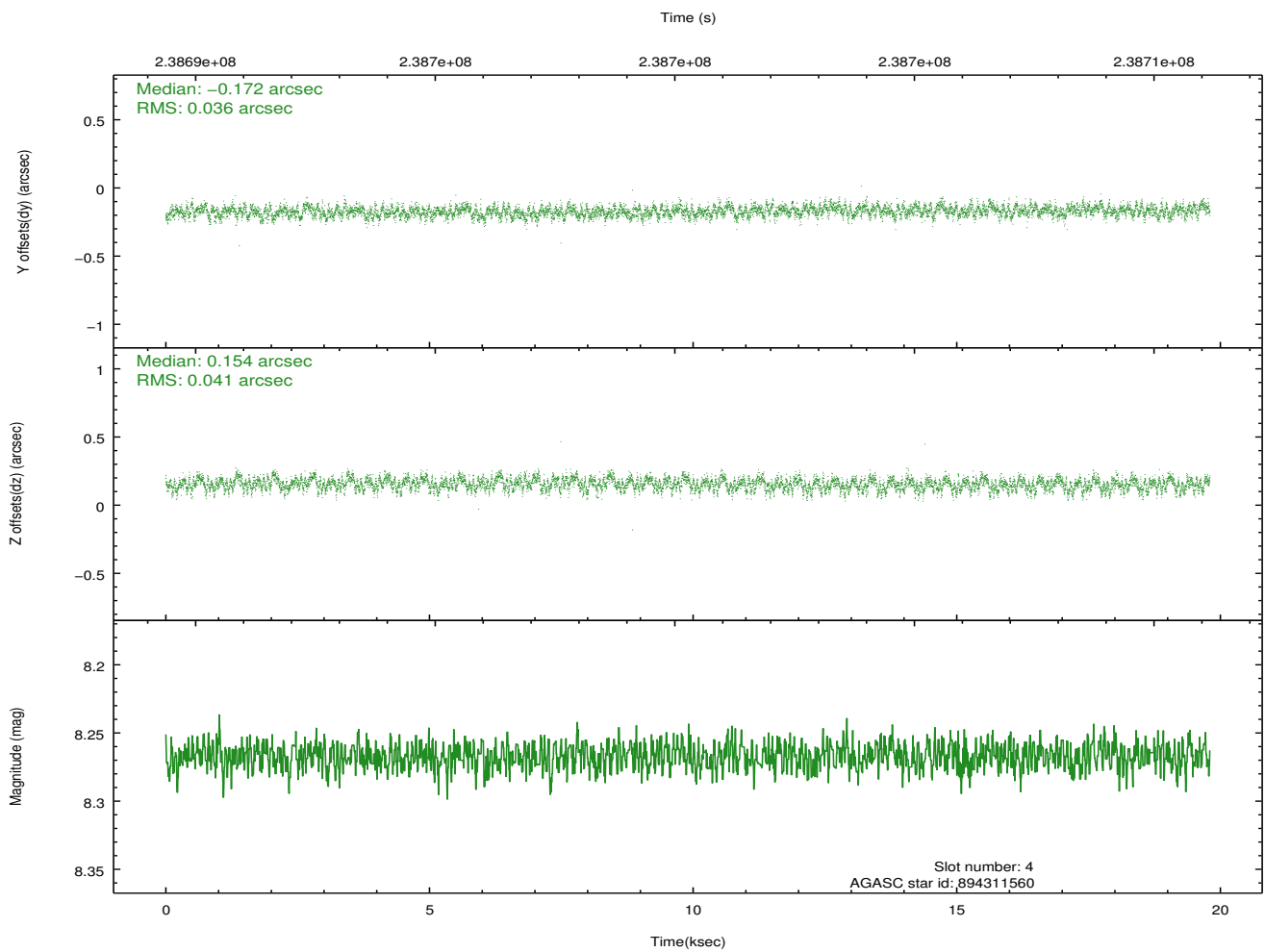
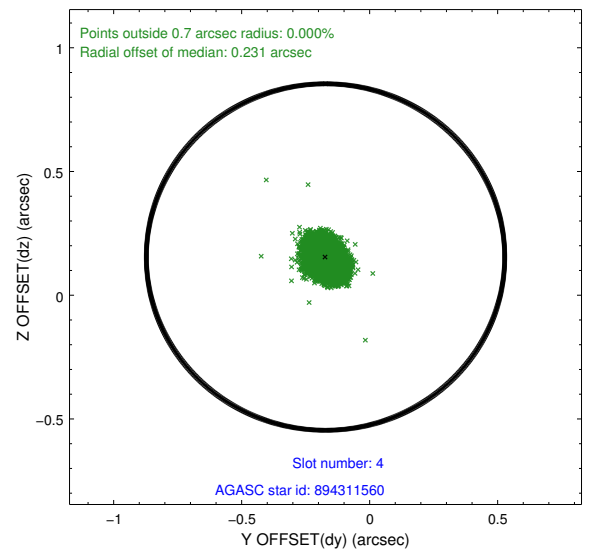
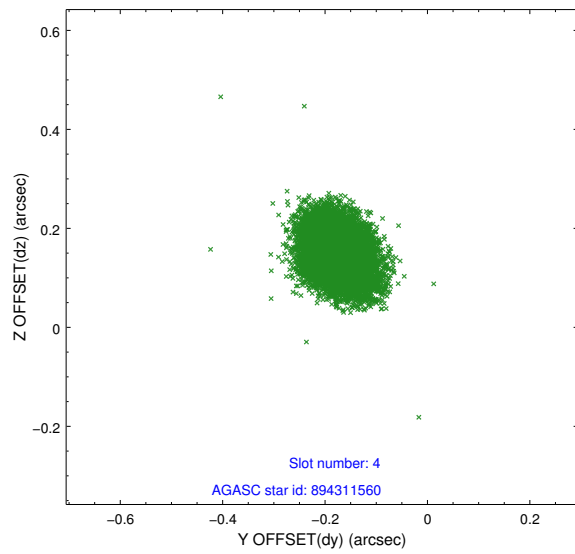
| slot | status | id        | mag  | n_pts | med_dy | med_dz | dr1   | dr2   | ra         | dec        | mean_y   | mean_z   |
|------|--------|-----------|------|-------|--------|--------|-------|-------|------------|------------|----------|----------|
| 0    | FID    | ACIS-S-1  | 7.19 | 4829  | 0.039  | -0.054 | 0.023 | 0.031 | 0.000000   | 0.000000   | 935.97   | -1727.11 |
| 1    | FID    | ACIS-S-5  | 7.24 | 4831  | -0.079 | 0.022  | 0.010 | 0.016 | 0.000000   | 0.000000   | -1813.05 | 170.30   |
| 2    | FID    | ACIS-S-6  | 7.35 | 4831  | 0.019  | 0.043  | 0.022 | 0.030 | 0.000000   | 0.000000   | 401.28   | 814.52   |
| 3    | GUIDE  | 894179704 | 8.74 | 9657  | -0.439 | -0.056 | 0.075 | 0.122 | 254.813840 | -29.808957 | -485.47  | -2158.65 |
| 4    | GUIDE  | 894311560 | 8.27 | 9661  | -0.172 | 0.154  | 0.058 | 0.094 | 255.968048 | -29.561250 | -1299.51 | 1469.44  |
| 5    | GUIDE  | 964690752 | 8.79 | 9645  | -0.053 | 0.085  | 0.079 | 0.129 | 255.992274 | -30.082811 | 579.54   | 1495.56  |
| 6    | GUIDE  | 964693496 | 8.88 | 9651  | 0.792  | -0.178 | 0.088 | 0.138 | 255.191226 | -30.516598 | 2084.14  | -1030.09 |
| 7    | GUIDE  | 894312440 | 8.37 | 9658  | -0.133 | -0.002 | 0.074 | 0.118 | 256.267206 | -29.720309 | -700.86  | 2389.21  |

## 2.4 Star Slots

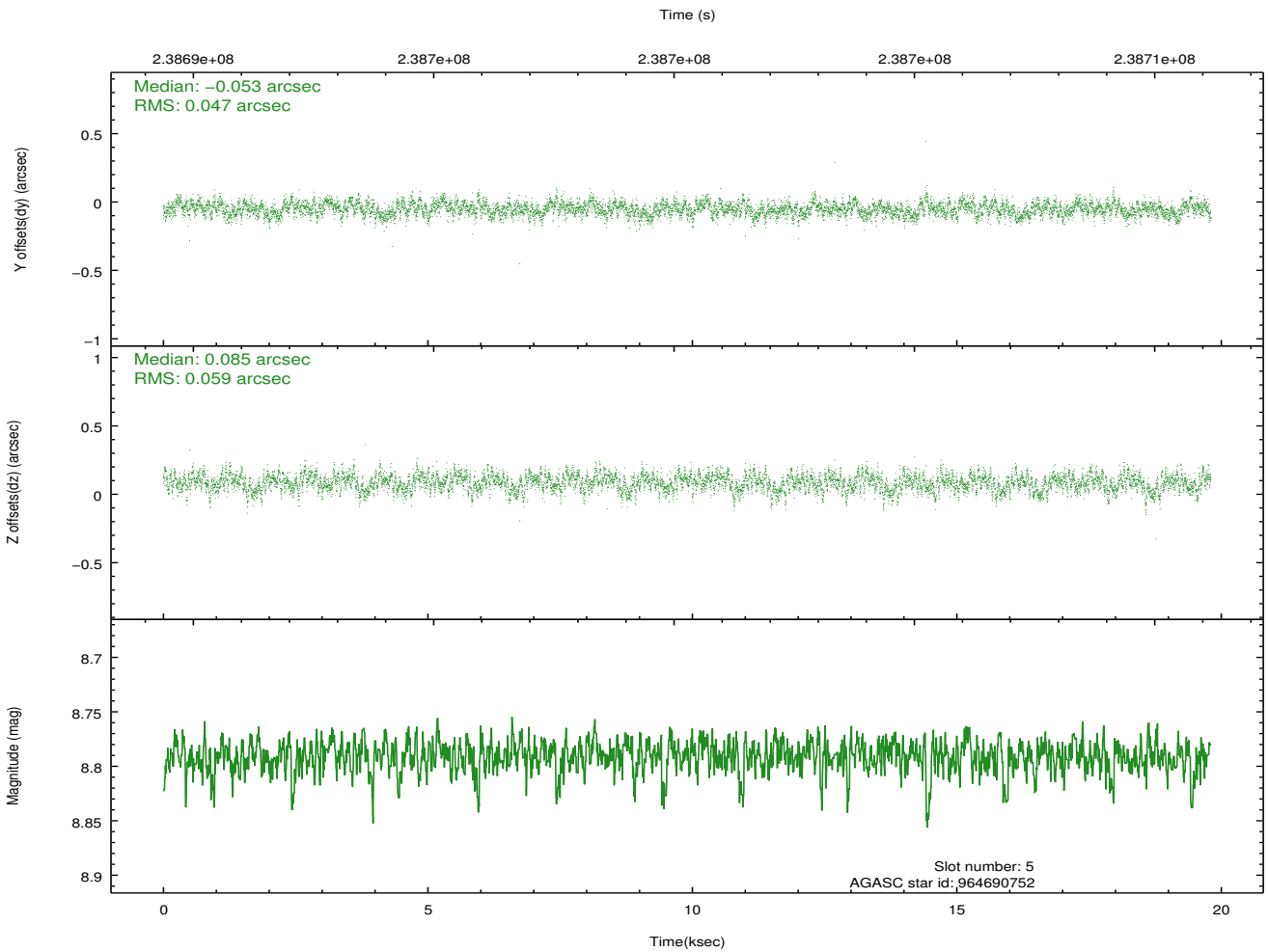
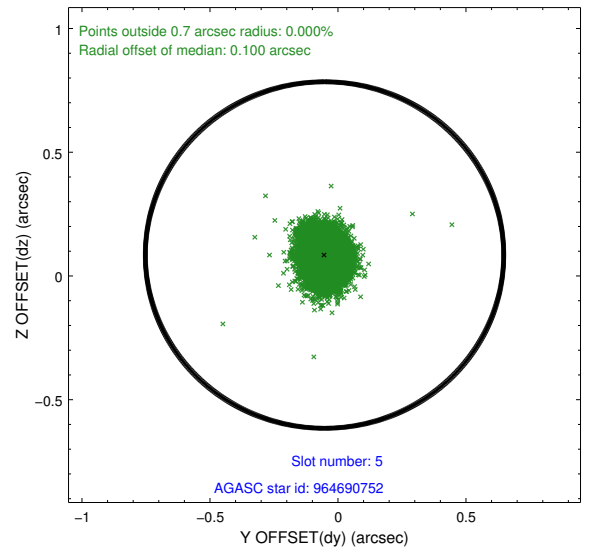
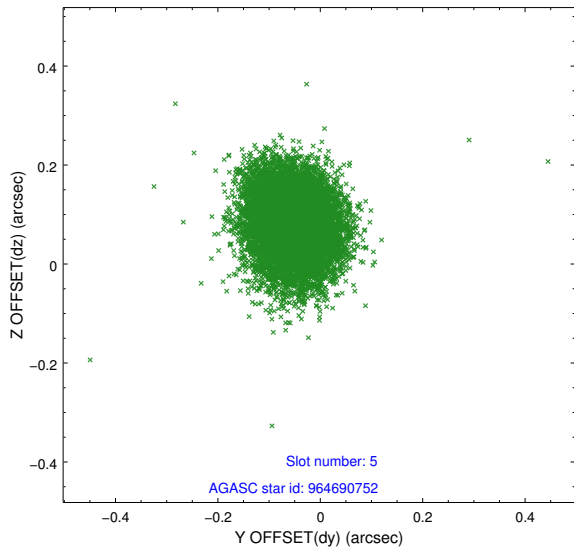
### 2.4.1 Slot 3



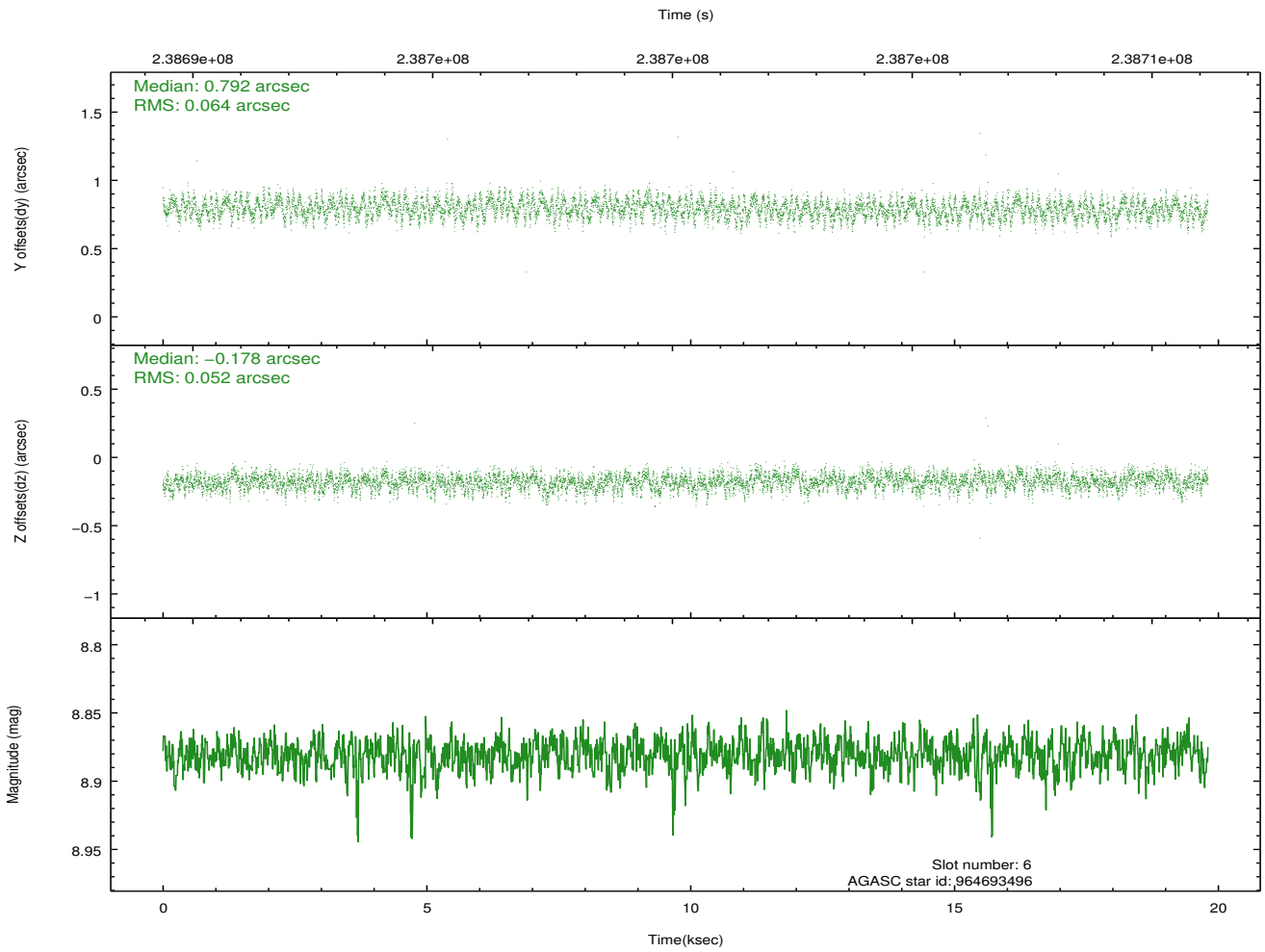
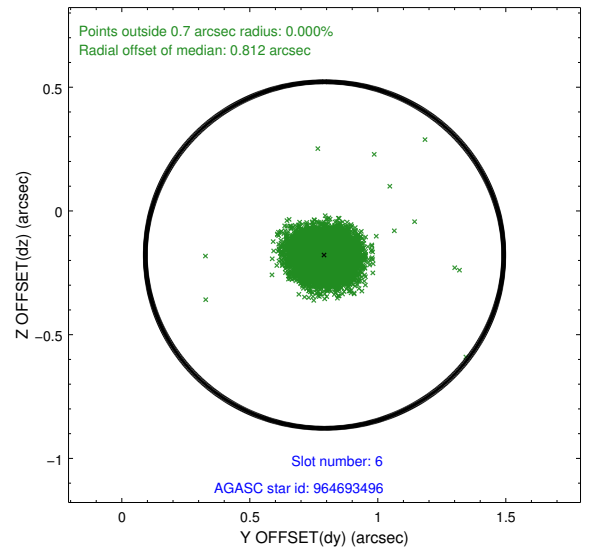
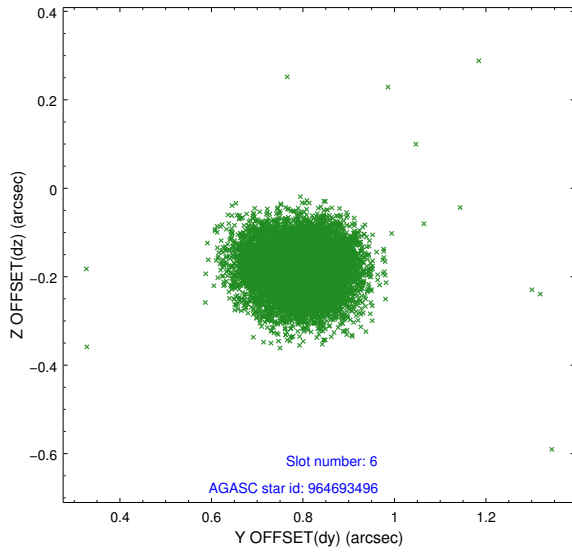
## 2.4.2 Slot 4



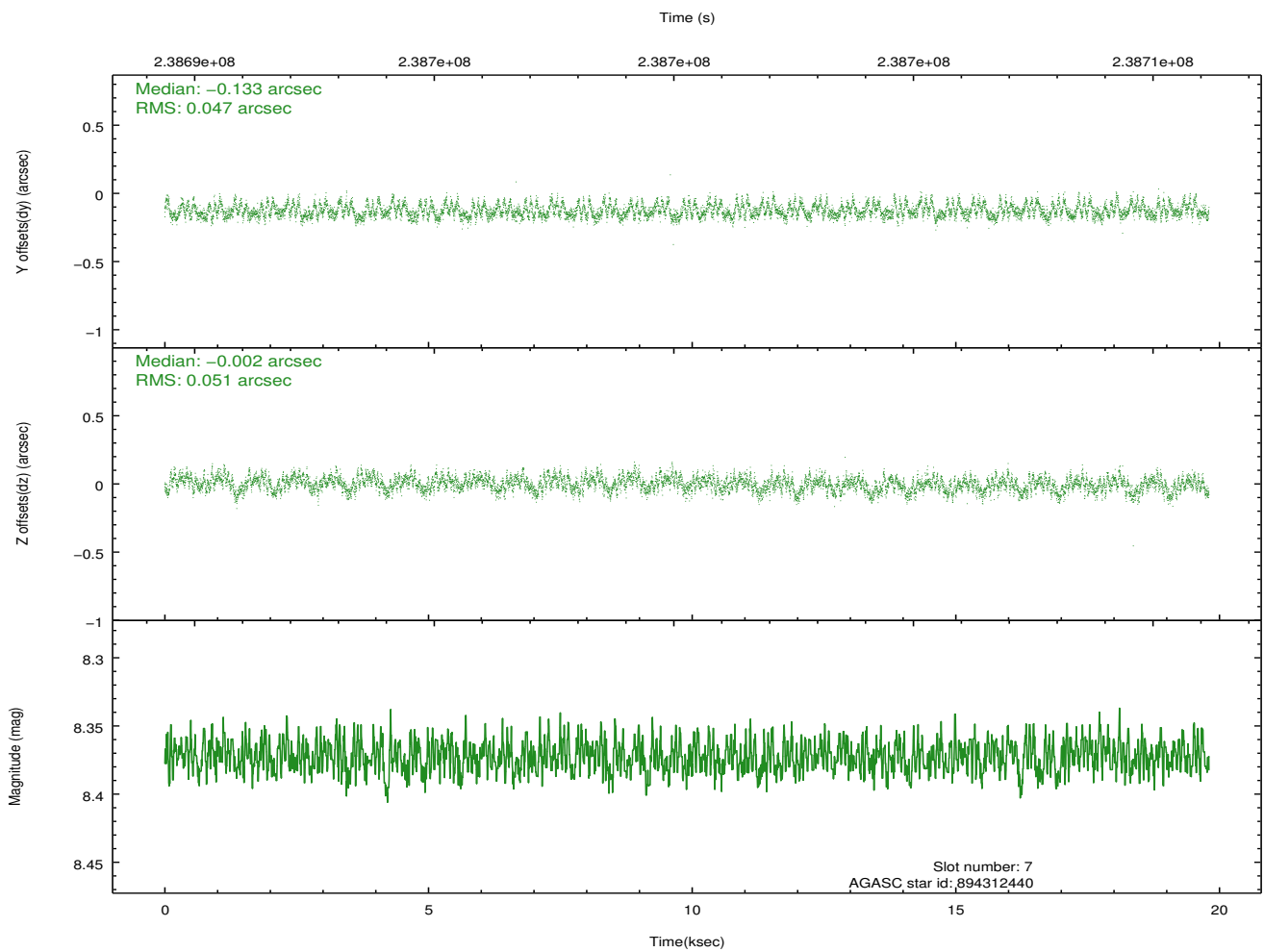
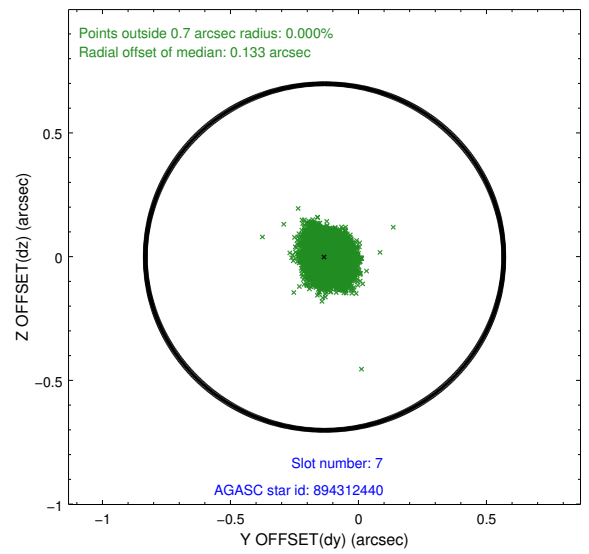
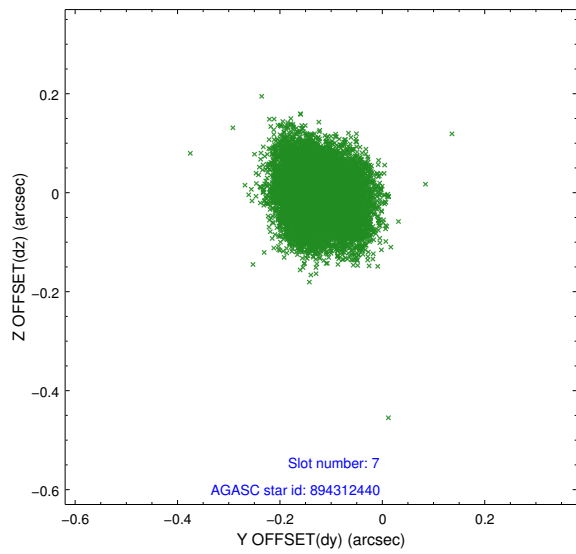
### 2.4.3 Slot 5



### 2.4.4 Slot 6

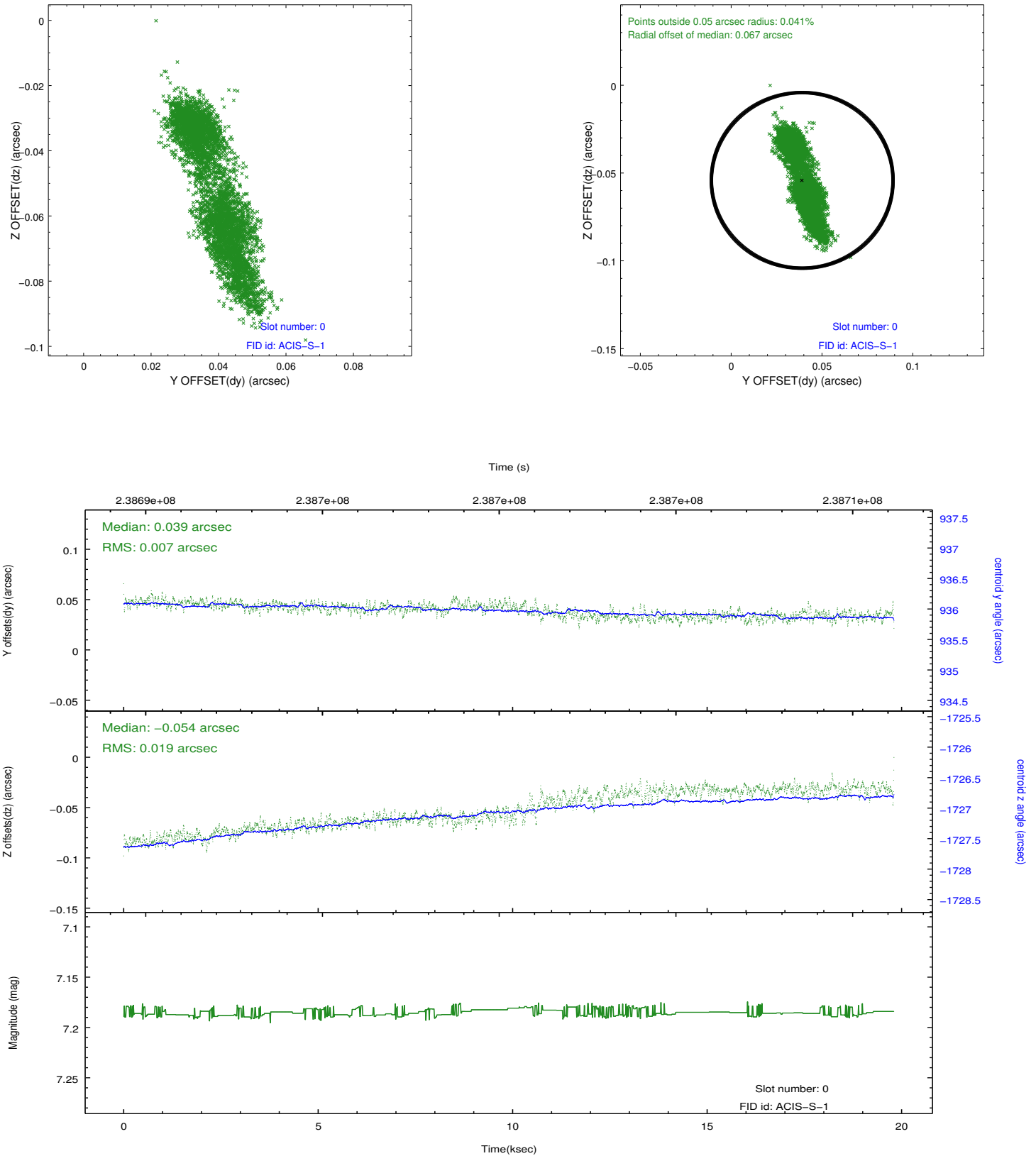


## 2.4.5 Slot 7

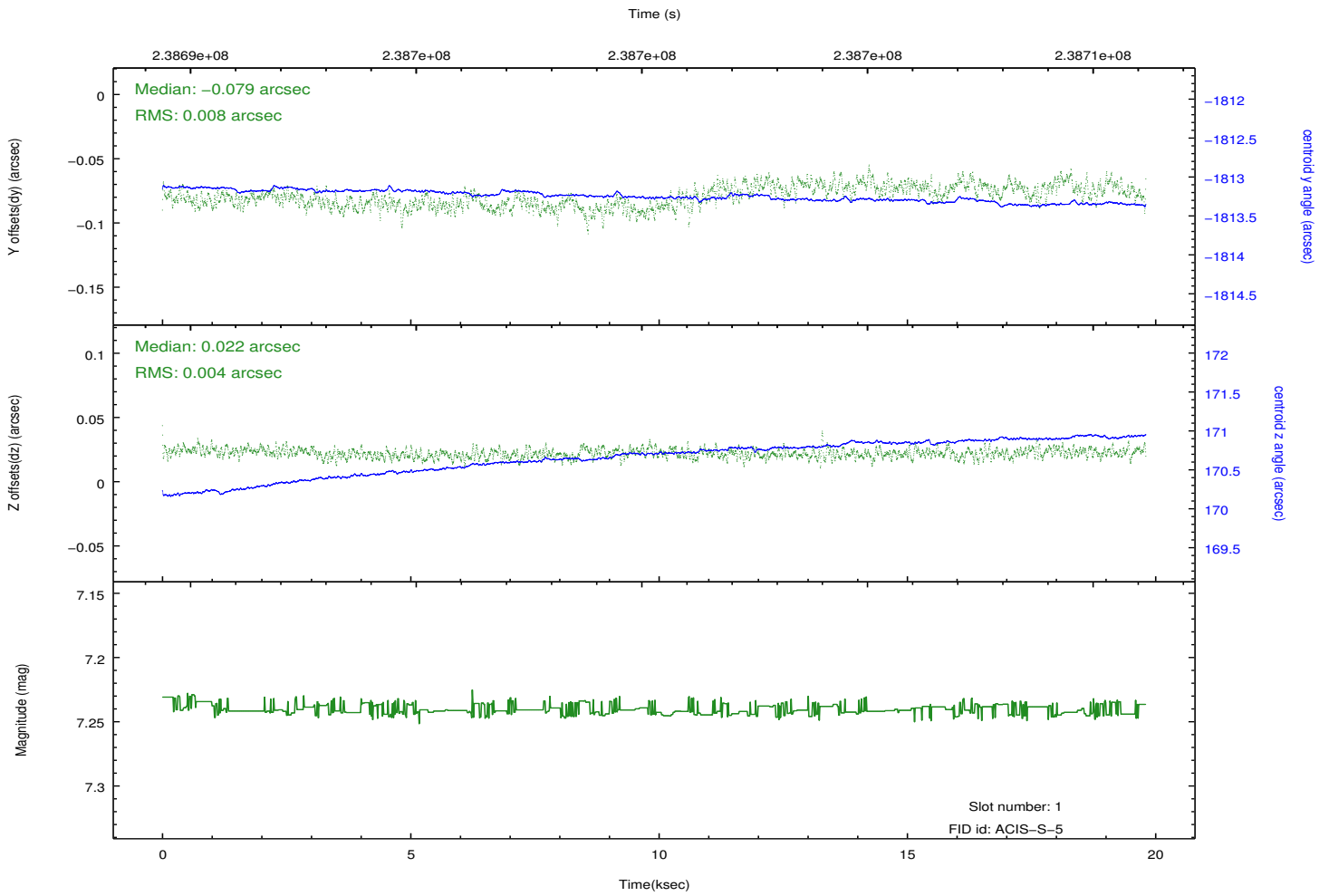
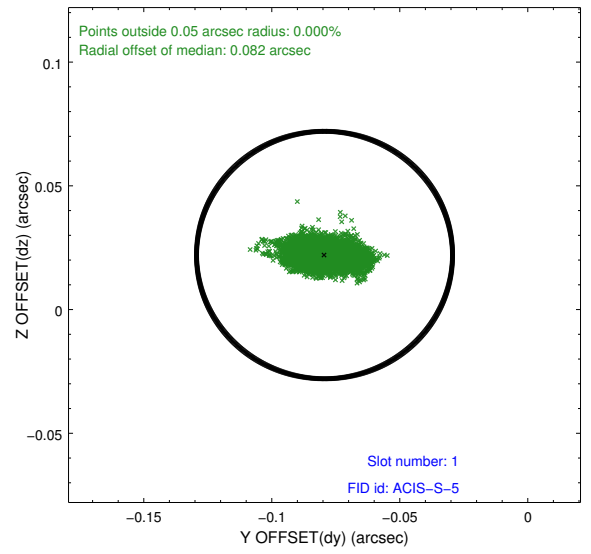
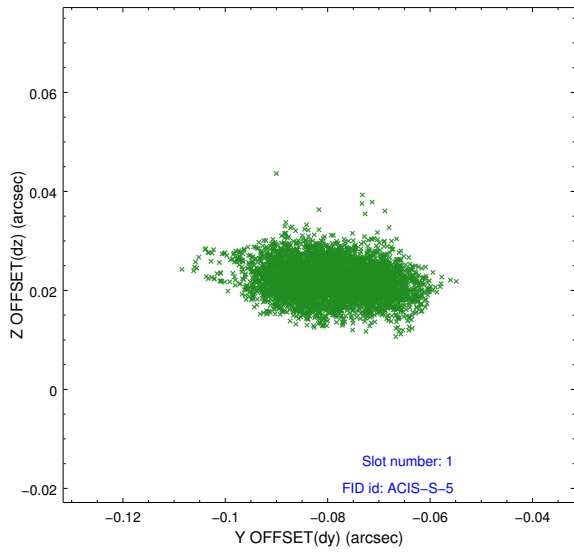


## 2.5 FID Slots

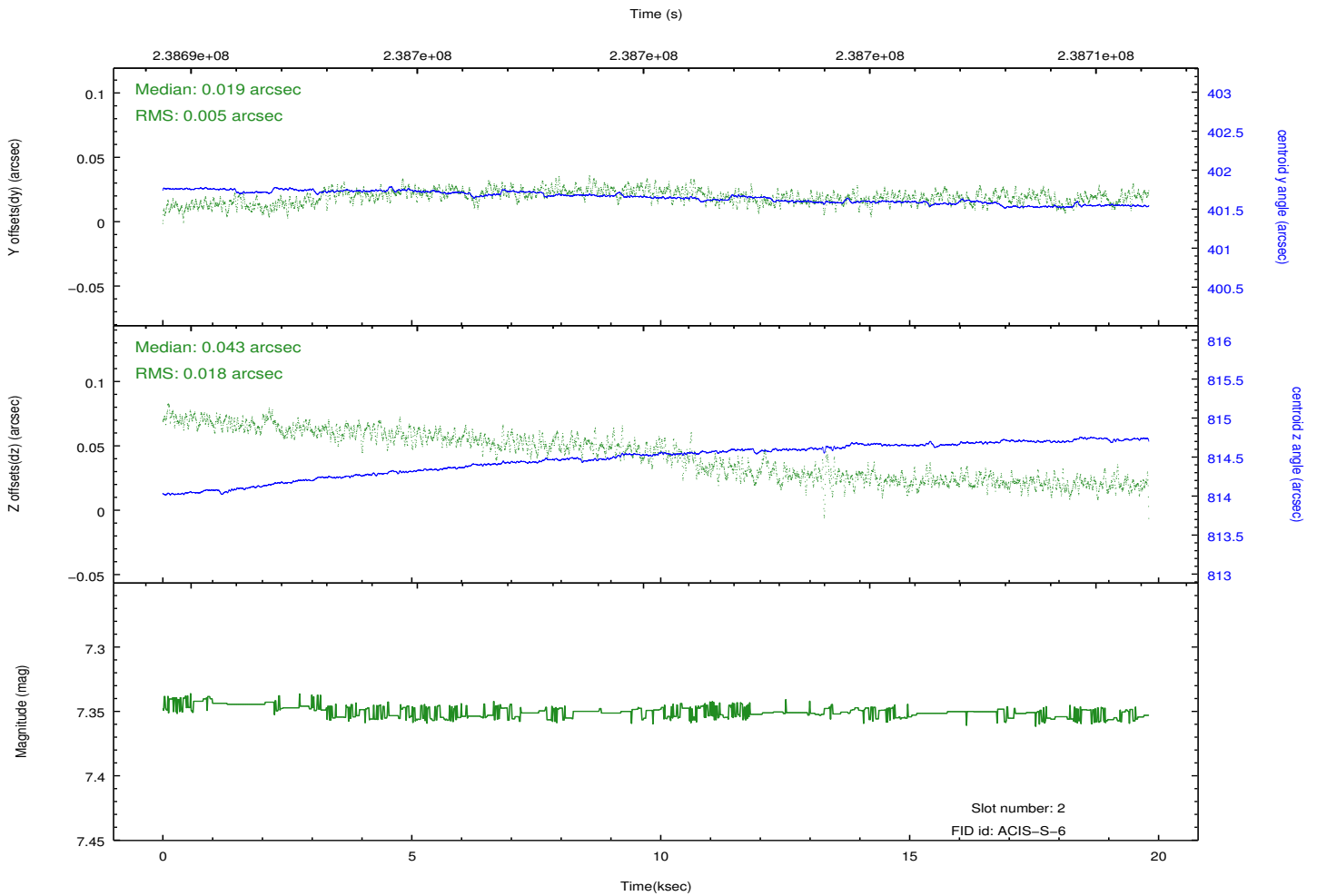
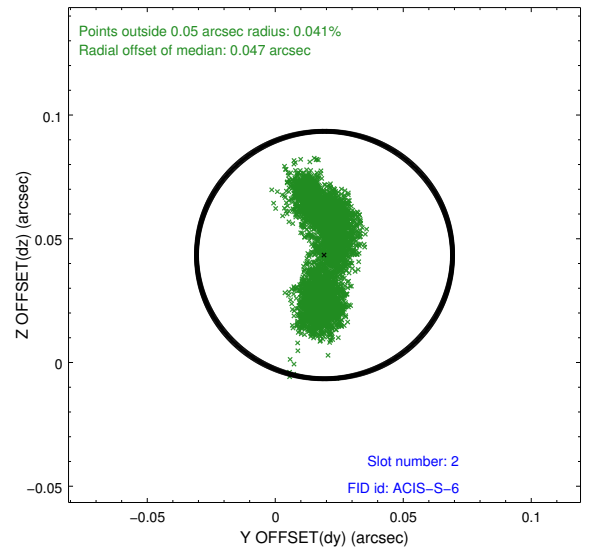
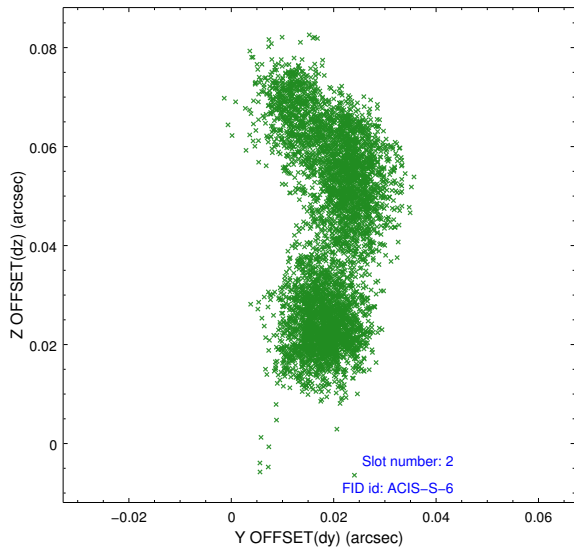
### 2.5.1 Slot 0



## 2.5.2 Slot 1



### 2.5.3 Slot 2



# A Summary

## A.1 Status

|                            |            |
|----------------------------|------------|
| V&V Scientist              | Jen Lauer  |
| V&V Date (YYYY-MM-DD)      | 2013.01.23 |
| V&V Edition                | 1          |
| V&V Disposition and Status | OK         |
| V&V Charge Time            | 18.95991   |

## A.2 Comments