

# V&V Reference Report

## L2 ASCDS Version : 8.4.3.1

Observation 6838 - L2 Version 2  
Chandra X-Ray Center

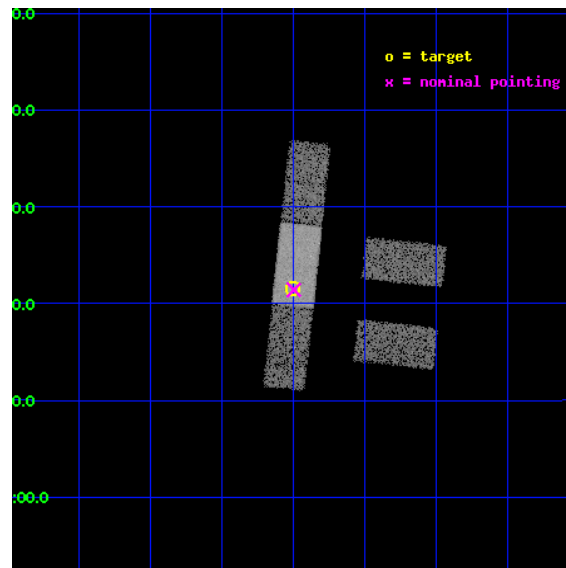
L2 Processing Date : Apr 10 2012

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# 1 Front

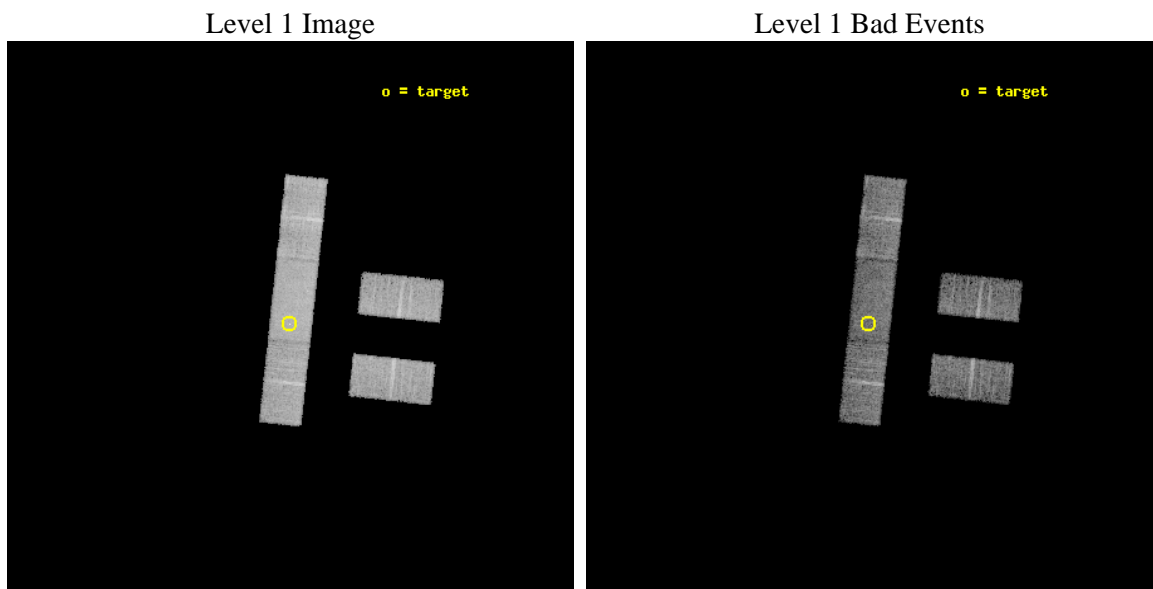
|          |  |   |
|----------|--|---|
| seq_num  | 701256   | Sequence number                             |
| obs_id   | 6838   | Observation id                              |
| title    | Measuring the Size of a Quasar With Microlensing | Proposal title                              |
| observer | Prof. Christopher Kochanek                       | Principal investigator                      |
| object   | Q2237+0305                                       | Source name                                 |
| dtcycle  | 0  | &#160                                       |
| cycle    | P  | events from which exps?<br>Prim/Second/Both |
| ra_targ  | 340.125833                                       | Observer's specified target RA [deg]        |
| dec_targ | 3.358333   | Observer's specified target Dec [deg]       |
| ra_nom   | 340.12434579322                                  | Nominal RA [deg]                            |
| dec_nom  | 3.3569453101615                                  | Nominal Dec [deg]                           |
| roll_nom | 276.17921228312                                  | Nominal Roll [deg]                          |
| revision | 2  | Processing version of data                  |
| ontime   | 8176.9999427199                                  | Sum of GTIs [s]                             |
| livetime | 7984.2507366998                                  | Livetime [s]                                |
| ontime2  | 8176.9999427199                                  | Sum of GTIs [s]                             |
| ontime3  | 8175.2589425445                                  | Sum of GTIs [s]                             |
| ontime6  | 8176.9999427199                                  | Sum of GTIs [s]                             |
| ontime7  | 8176.9999427199                                  | Sum of GTIs [s]                             |
| ontime8  | 8176.9999427199                                  | Sum of GTIs [s]                             |
| l2events | 38393  | Number of level 2 events                    |



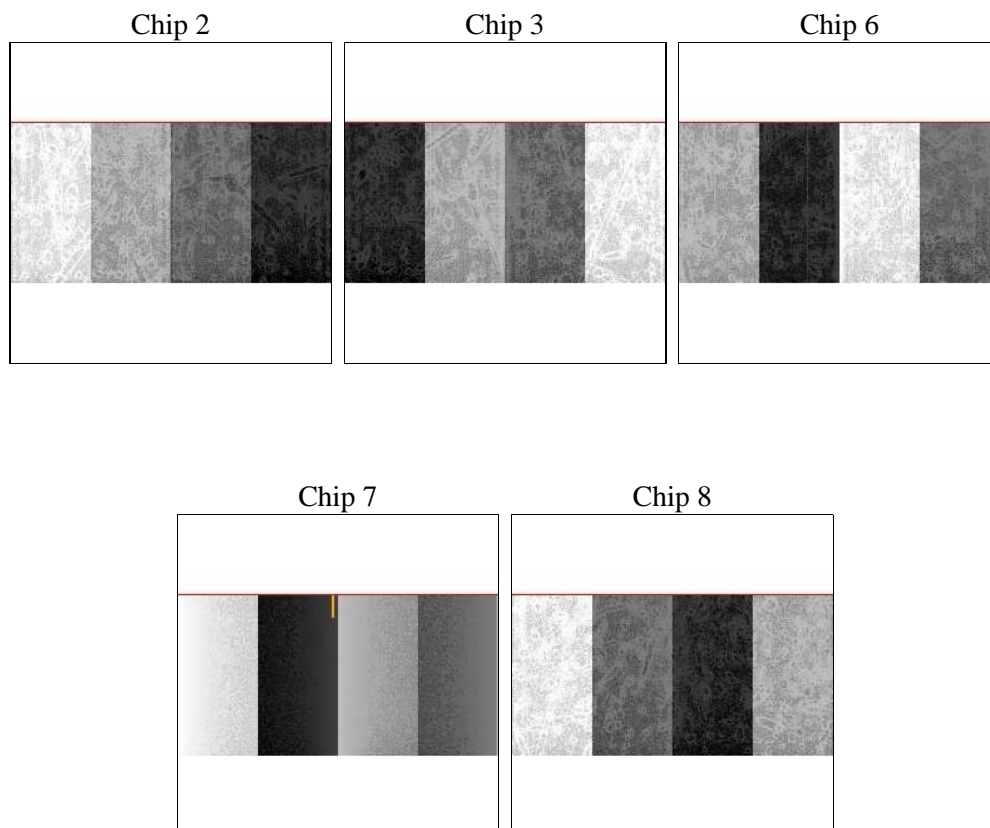
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

|          |                     |                                |                |                 |   |
|----------|---------------------|--------------------------------|----------------|-----------------|---|
| obi_num  | 0                   | Obi number                     | sched_exp_time | 8000.000000     | [s] Scheduled observation exposure time |
| ascdsver | 8.4.3.1             | Processing system revision     | ontime         | 8176.9999427199 | Sum of GTIs [s]                         |
| caldsver | 4.4.9               | &#160                          | ontime2        | 8176.9999427199 | Sum of GTIs [s]                         |
| date     | 2012-04-11T01:11:56 | Date and time of file creation | ontime3        | 8175.2589425445 | Sum of GTIs [s]                         |
| revision | 2                   | Processing version of data     | ontime6        | 8176.9999427199 | Sum of GTIs [s]                         |
|          |                     |                                | ontime7        | 8176.9999427199 | Sum of GTIs [s]                         |
|          |                     |                                | ontime8        | 8176.9999427199 | Sum of GTIs [s]                         |
|          |                     |                                | l1events       | 233626          | Number of level 1 events                |

### 2.1.4 Events

|                 | ccd 2 | ccd 3 | ccd 6 | ccd 7 | ccd 8 |
|-----------------|-------|-------|-------|-------|-------|
| level 1 events  | 39913 | 40504 | 43045 | 54559 | 55605 |
| rejected events | 35328 | 35872 | 38288 | 32115 | 43744 |
| rejected %      | 88%   | 88%   | 88%   | 58%   | 78%   |

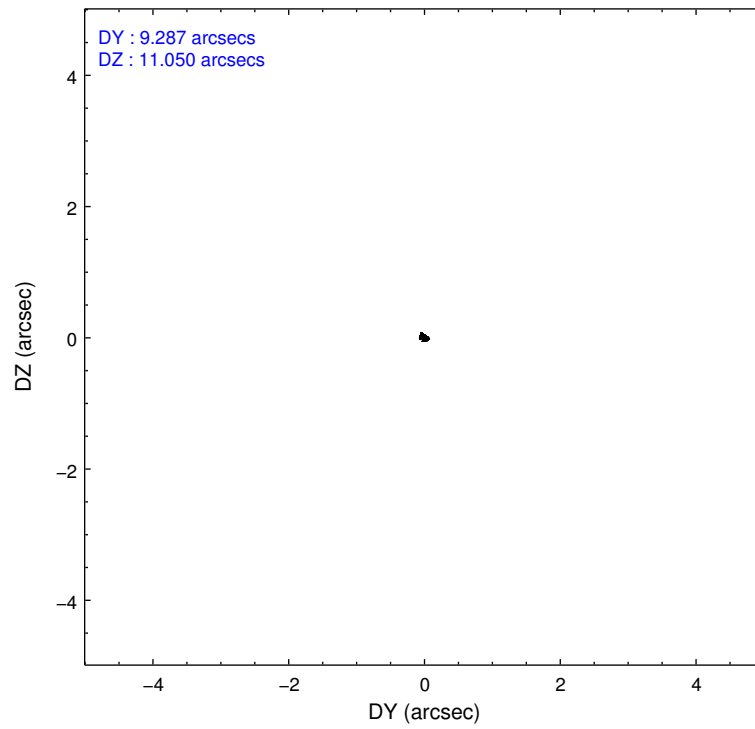
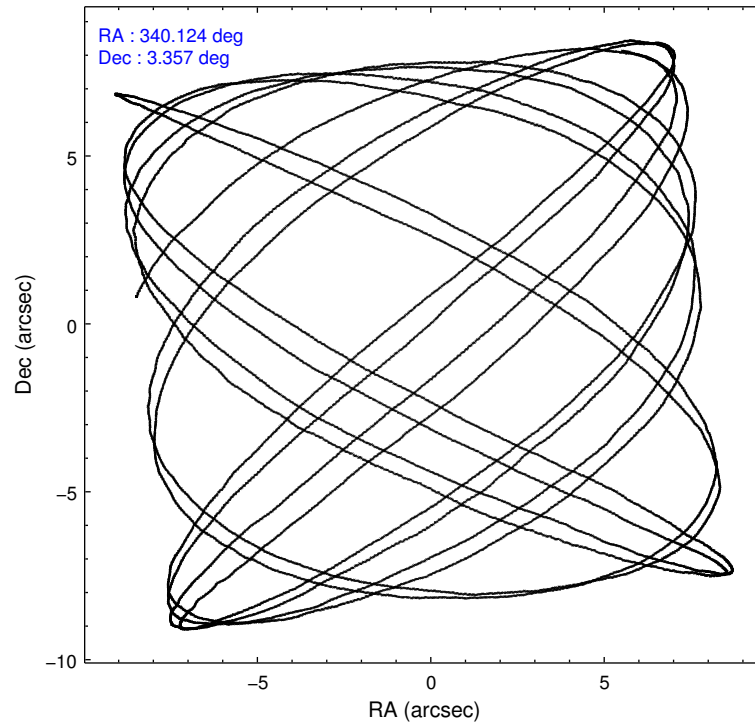
|                | ccd 2 | ccd 3 | ccd 6 | ccd 7 | ccd 8 |
|----------------|-------|-------|-------|-------|-------|
| grade 0 events | 1979  | 1955  | 1751  | 2192  | 3518  |
|                | 4%    | 4%    | 4%    | 4%    | 6%    |
| grade 1 events | 18    | 20    | 19    | 65    | 33    |
|                | 0%    | 0%    | 0%    | 0%    | 0%    |
| grade 2 events | 980   | 908   | 1048  | 4847  | 2680  |
|                | 2%    | 2%    | 2%    | 8%    | 4%    |
| grade 3 events | 539   | 523   | 574   | 2206  | 1307  |
|                | 1%    | 1%    | 1%    | 4%    | 2%    |
| grade 4 events | 496   | 502   | 588   | 2191  | 1213  |
|                | 1%    | 1%    | 1%    | 4%    | 2%    |
| grade 5 events | 1550  | 1812  | 1840  | 5131  | 2337  |
|                | 3%    | 4%    | 4%    | 9%    | 4%    |
| grade 6 events | 696   | 849   | 905   | 11615 | 3484  |
|                | 1%    | 2%    | 2%    | 21%   | 6%    |
| grade 7 events | 33655 | 33935 | 36320 | 26312 | 41033 |
|                | 84%   | 83%   | 84%   | 48%   | 73%   |

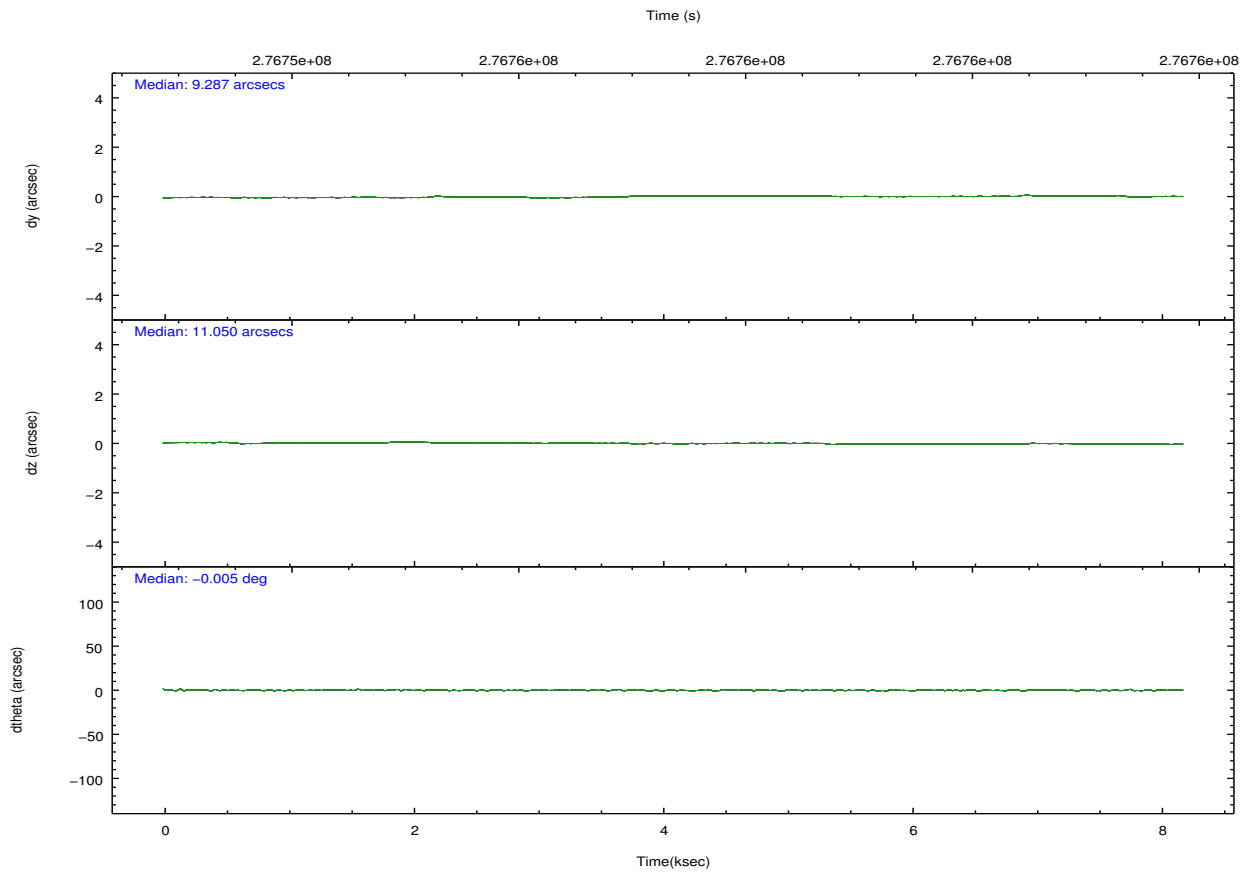
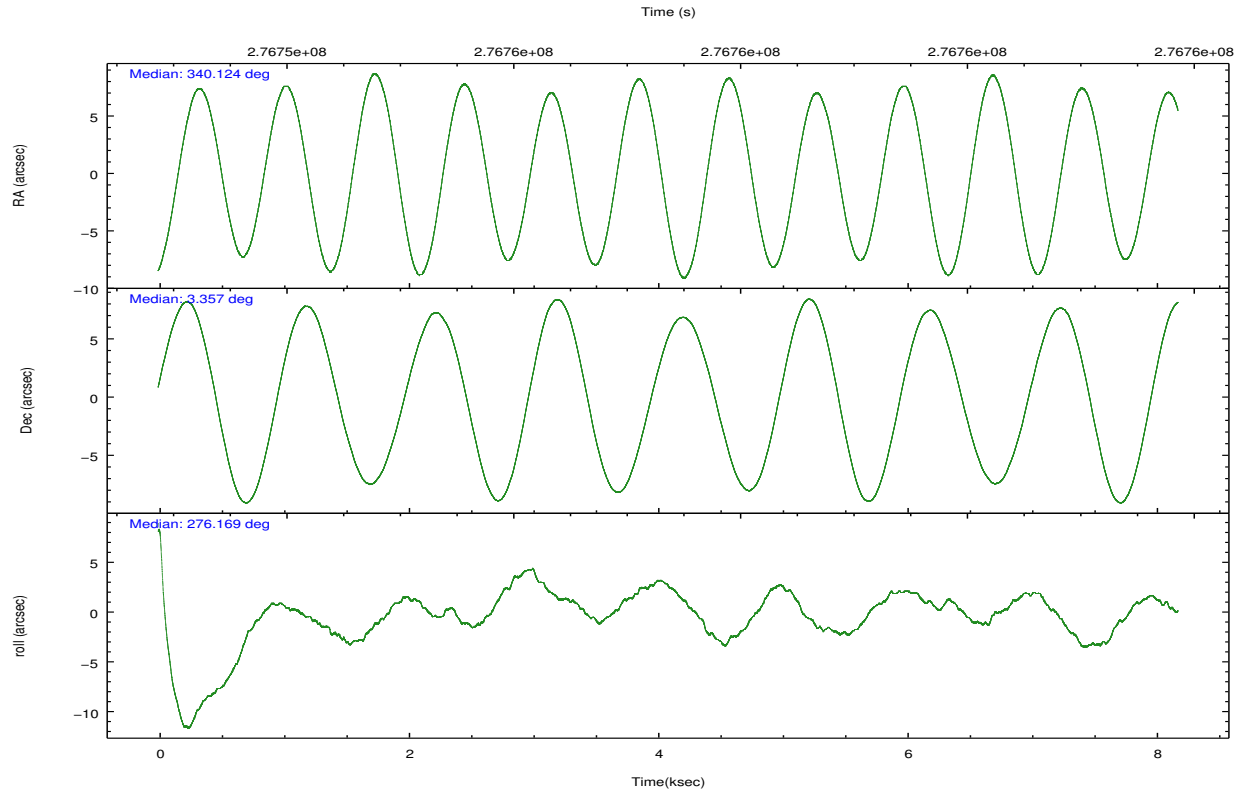


## 2.2 Compared Parameters

| Parameter                         | Planned             | Actual               | Parameter                             | Planned   | Actual  |
|-----------------------------------|---------------------|----------------------|---------------------------------------|-----------|---------|
| Instrument                        | ACIS                | ACIS                 | Obspar format version number          | 7         | 7       |
| Detector                          | ACIS-23678          | ACIS-23678           | 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                 | 340.107909          | 340.1243457932169    | Subarray requested                    | CUSTOM    | 1/2     |
| [deg] Pointing Dec                | 3.378677            | 3.356945310161518    | Subarray start row                    | 257       | 257     |
| [deg] Pointing Roll               | 276.023550          | 276.1792122831223    | Subarray row count                    | 512       | 512     |
| [mm] SIM focus pos                | -0.684267           | -0.6828225247311905  | Alternating exposures requested       | N         | N       |
| [mm] SIM defocus                  | 0                   | 0.001444936568705701 | [s] Primary exposure time             | 0.000000  | 1.7     |
| [mm] SIM translation stage pos    | -190.132523         | -190.1425803651734   |                                       |           |         |
| [mm] SIM translation stage offset | 0                   | 0.01005778216563158  |                                       |           |         |
| [s] Observation start time (MET)  | 276753444.184000    | 276752528.52536      |                                       |           |         |
| Observation start date            | 2006-10-09T03:56:19 | 2006-10-09T03:42:08  |                                       |           |         |
| [s] Observation end time (MET)    | 276761444.184000    | 276762403.88832      |                                       |           |         |
| Observation end date              | 2006-10-09T06:09:39 | 2006-10-09T06:26:43  |                                       |           |         |
| Read mode                         | TIMED               | TIMED                |                                       |           |         |

## 2.3 Aspect



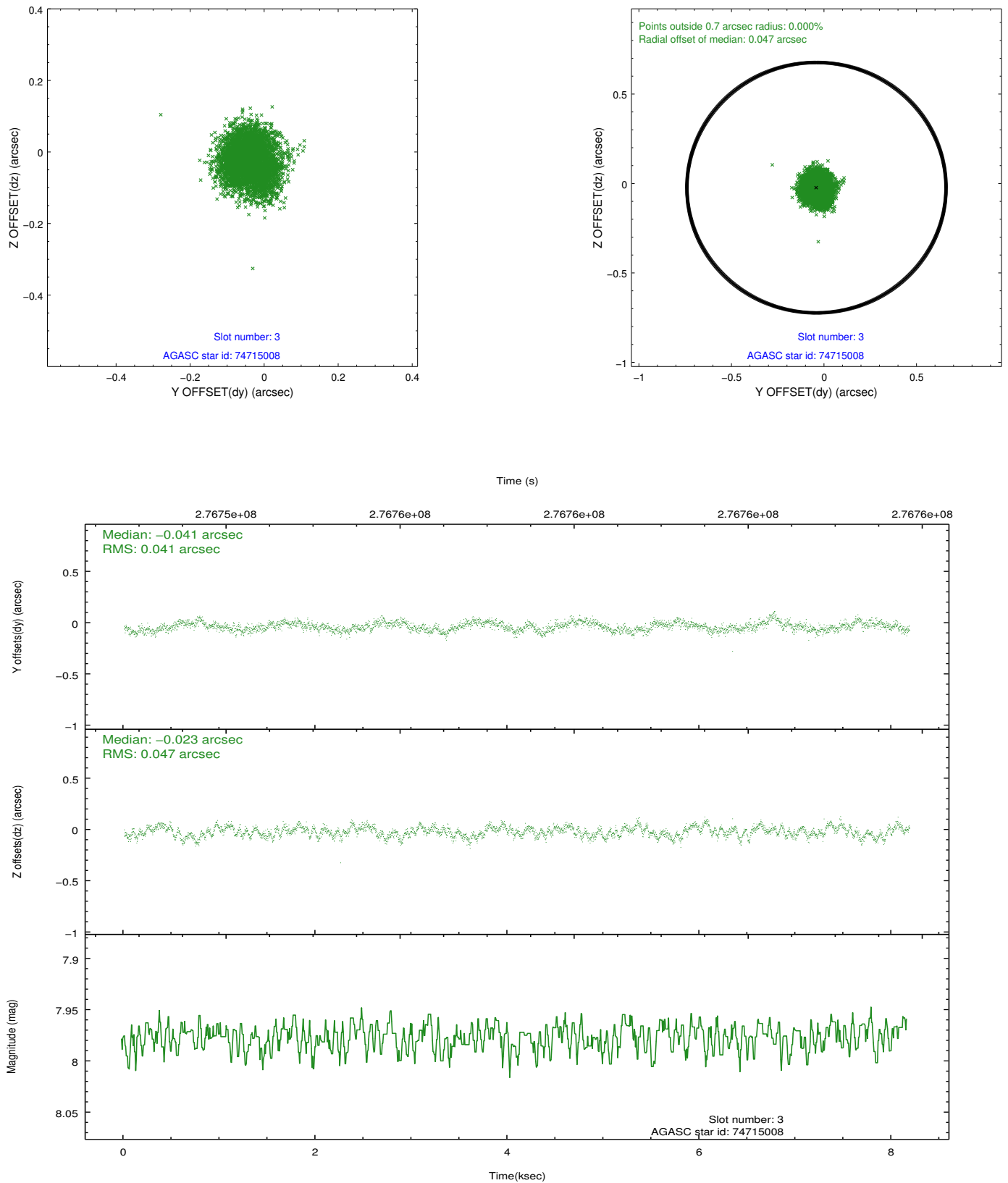


### Slot Statistics

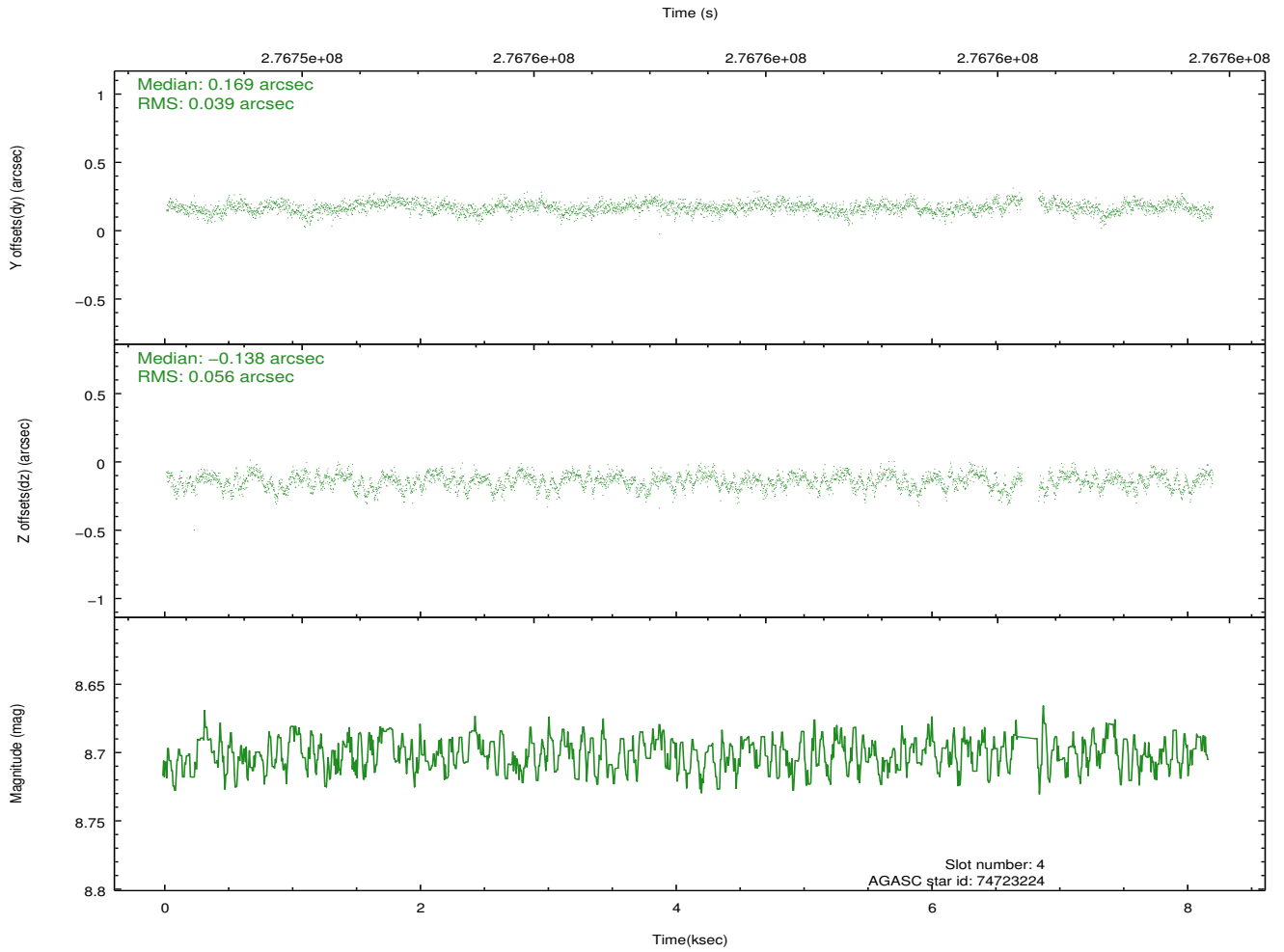
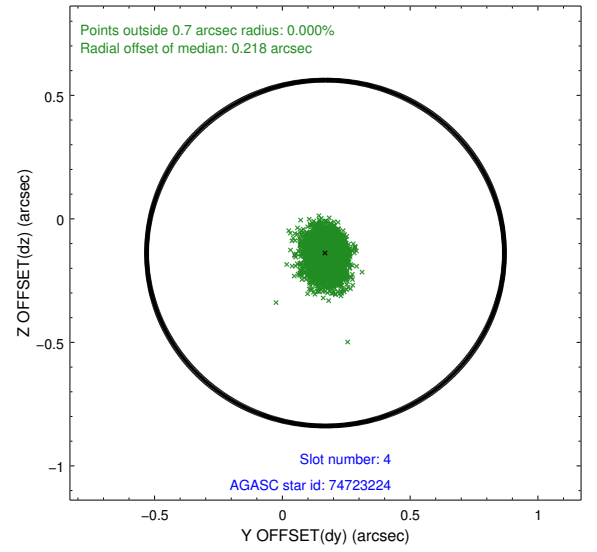
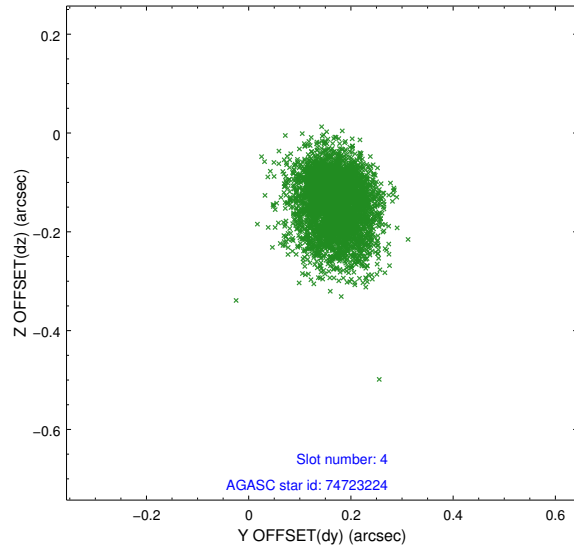
| slot | status | id       | mag  | n_pts | med_dy | med_dz | dr1   | dr2   | ra         | dec      | mean_y   | mean_z   |
|------|--------|----------|------|-------|--------|--------|-------|-------|------------|----------|----------|----------|
| 0    | FID    | ACIS-S-1 | 7.19 | 1996  | 0.021  | -0.088 | 0.007 | 0.011 | 0.000000   | 0.000000 | 933.96   | -1727.99 |
| 1    | FID    | ACIS-S-4 | 7.21 | 1996  | 0.143  | 0.056  | 0.006 | 0.010 | 0.000000   | 0.000000 | 2151.86  | 175.61   |
| 2    | FID    | ACIS-S-5 | 7.23 | 1996  | -0.191 | 0.045  | 0.006 | 0.011 | 0.000000   | 0.000000 | -1814.25 | 169.96   |
| 3    | GUIDE  | 74715008 | 7.98 | 3990  | -0.041 | -0.023 | 0.067 | 0.107 | 339.956848 | 3.242441 | 431.24   | -591.16  |
| 4    | GUIDE  | 74723224 | 8.70 | 3927  | 0.169  | -0.138 | 0.072 | 0.119 | 339.594650 | 3.574222 | -892.95  | -1760.20 |
| 5    | GUIDE  | 74727584 | 6.99 | 3992  | -0.094 | -0.097 | 0.085 | 0.130 | 339.633744 | 3.463732 | -483.30  | -1662.72 |
| 6    | GUIDE  | 74854992 | 8.28 | 3991  | -0.051 | 0.015  | 0.059 | 0.096 | 340.342808 | 3.603730 | -717.02  | 923.86   |
| 7    | GUIDE  | 74855640 | 8.85 | 3991  | 0.013  | 0.254  | 0.064 | 0.106 | 340.341123 | 3.746937 | -1230.51 | 972.77   |

## 2.4 Star Slots

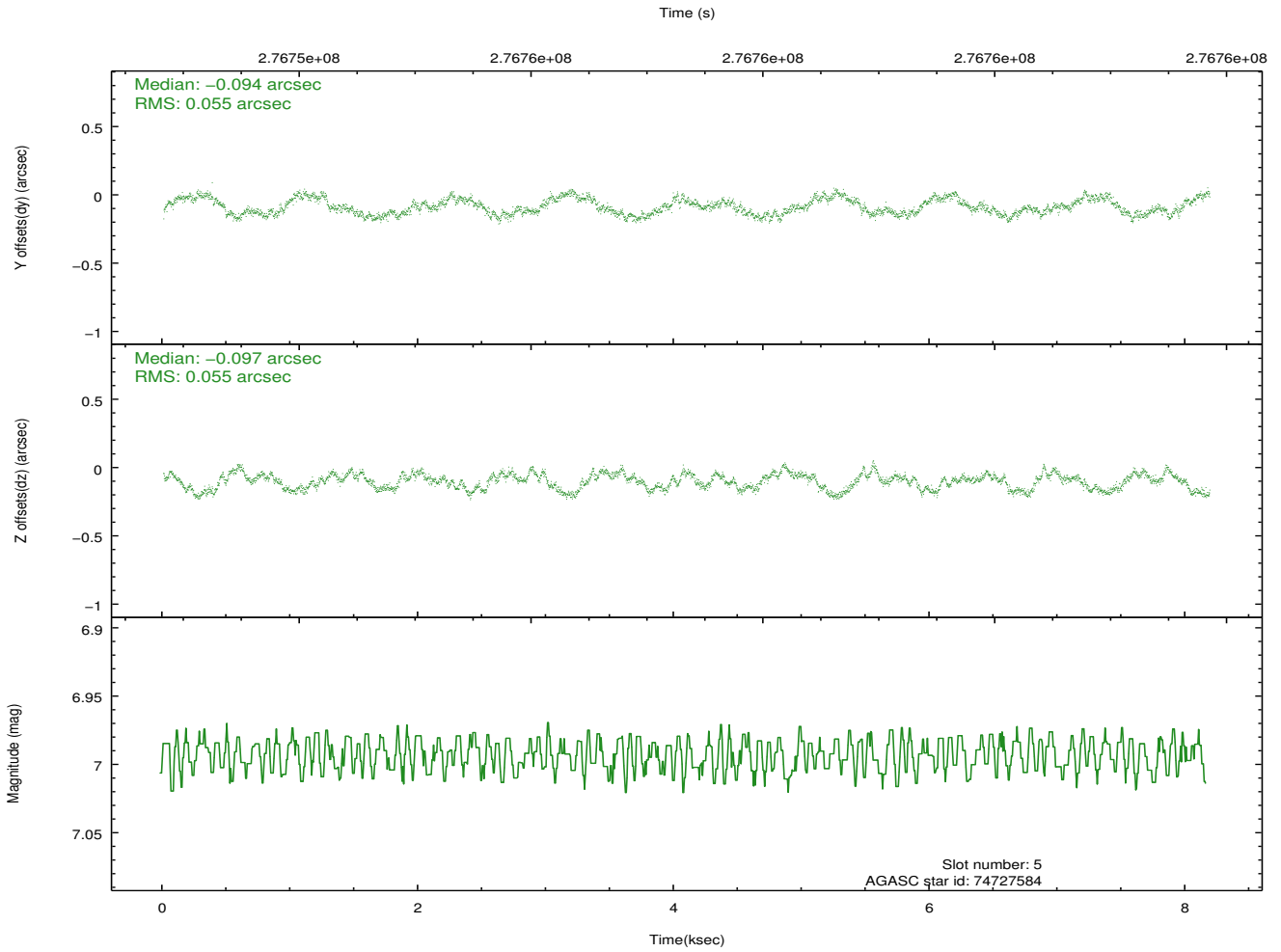
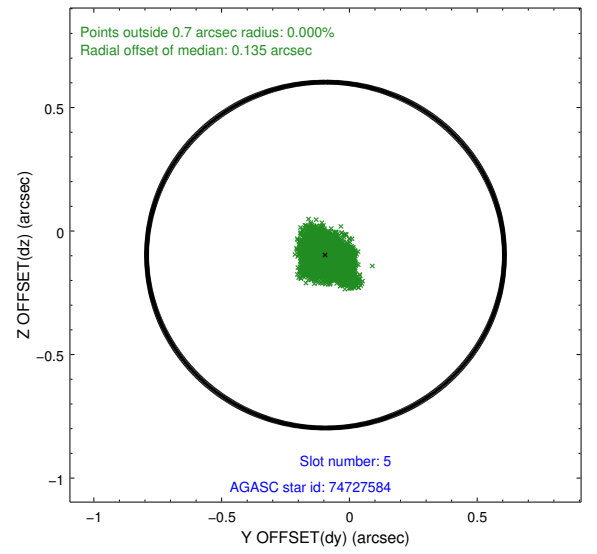
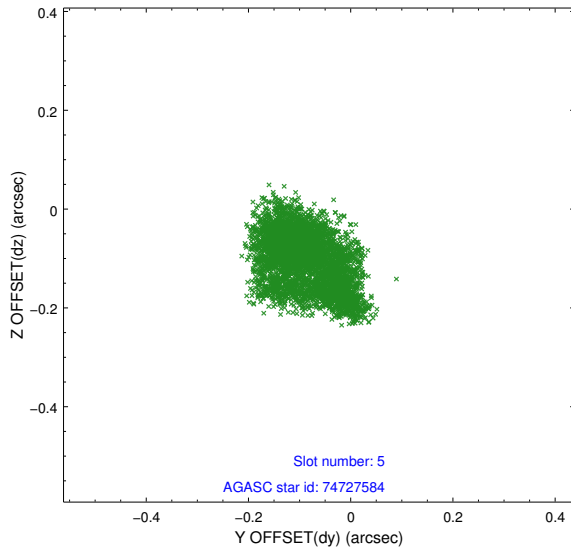
### 2.4.1 Slot 3



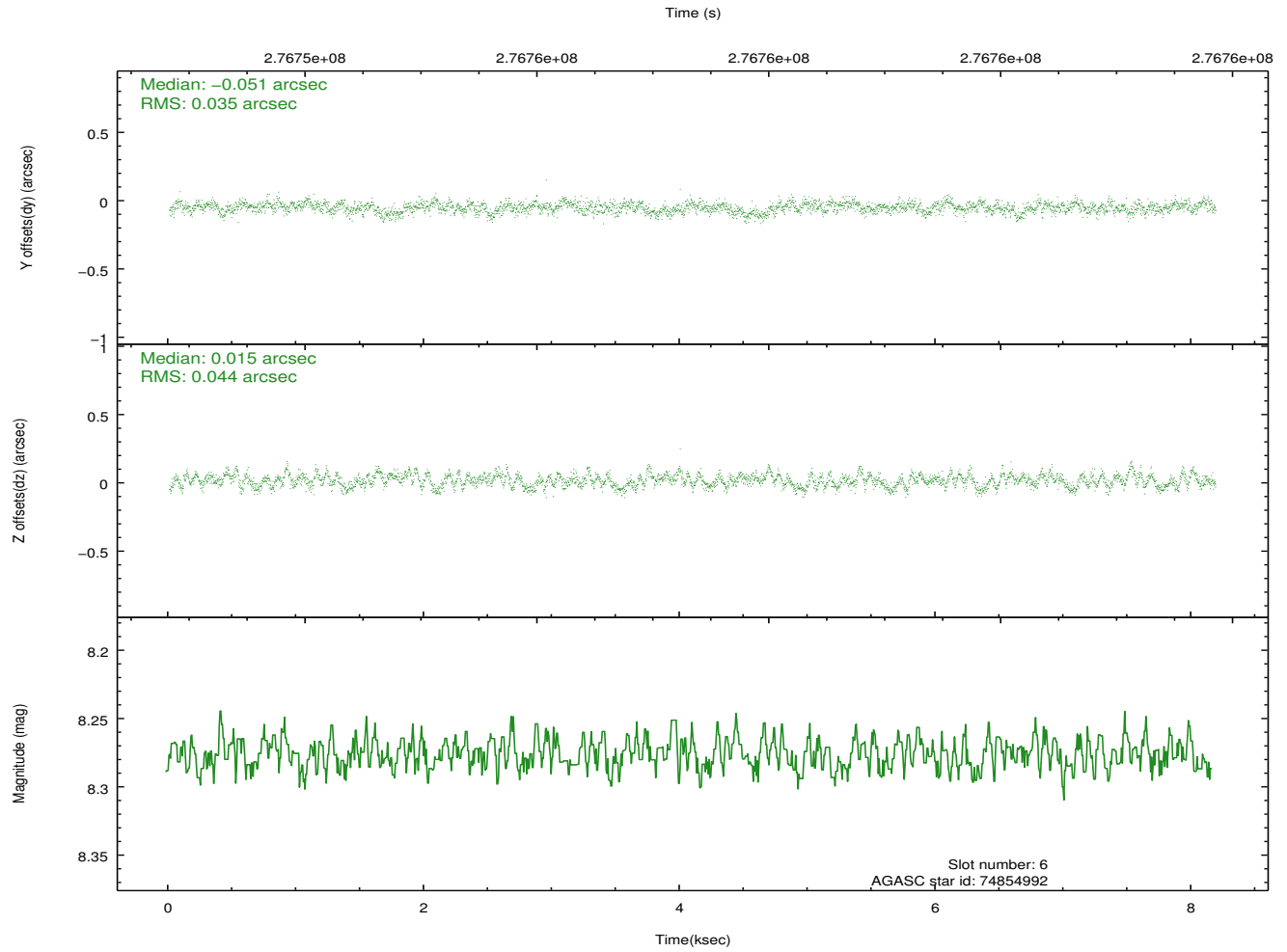
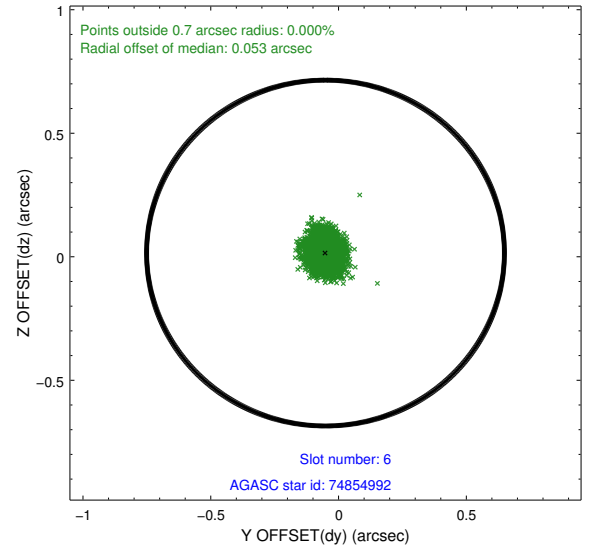
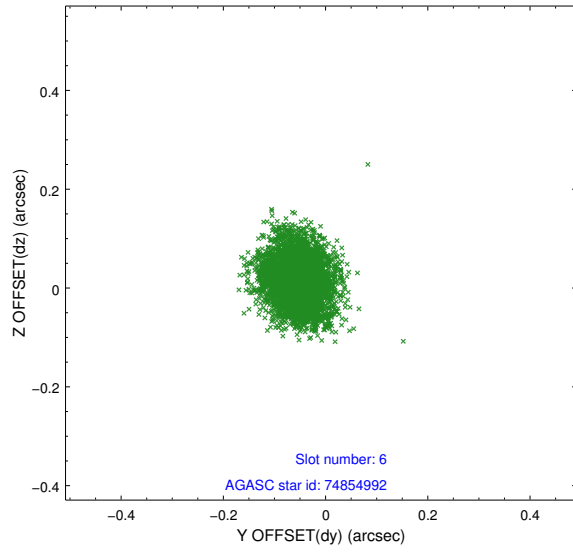
## 2.4.2 Slot 4



### 2.4.3 Slot 5

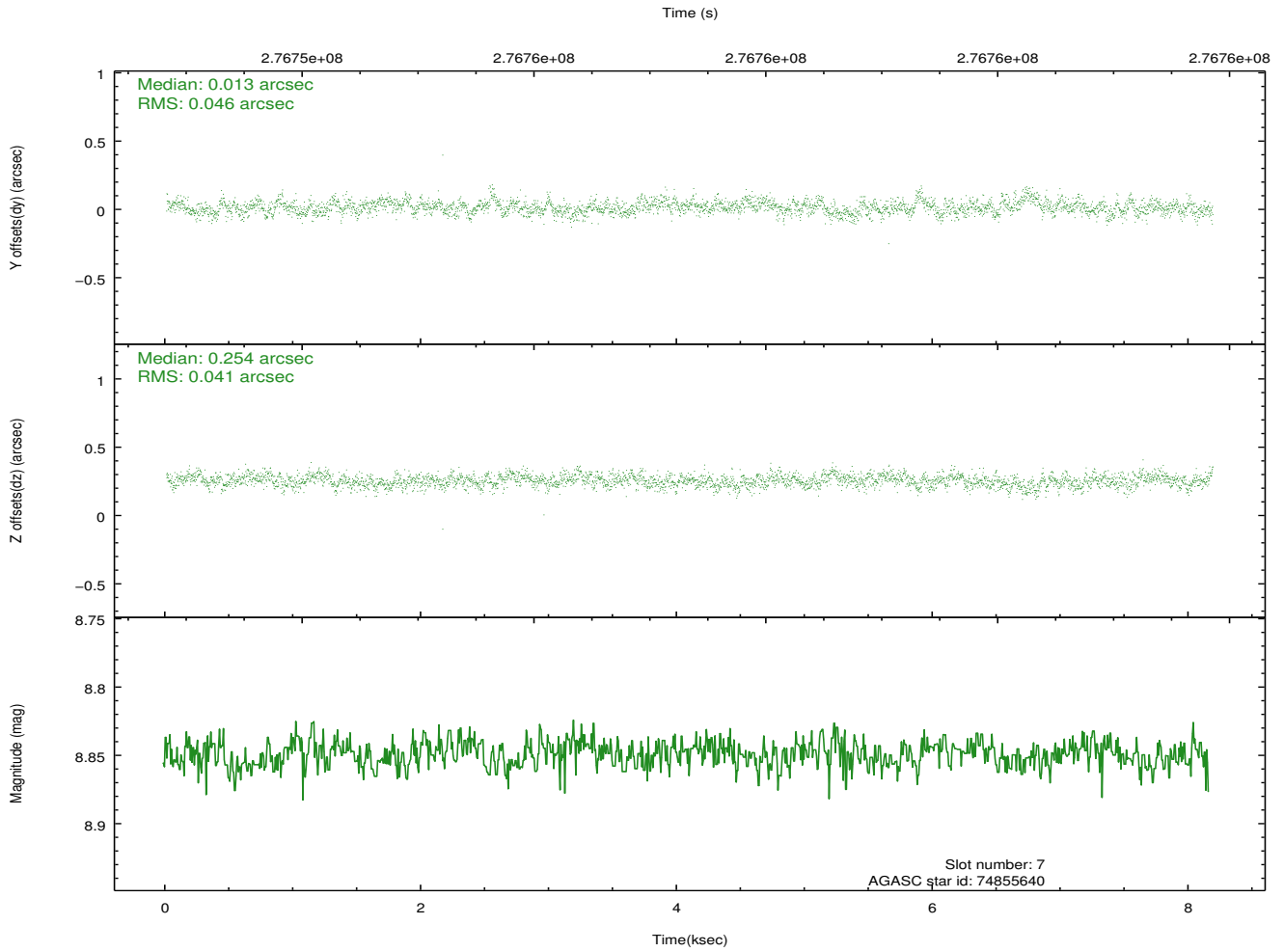
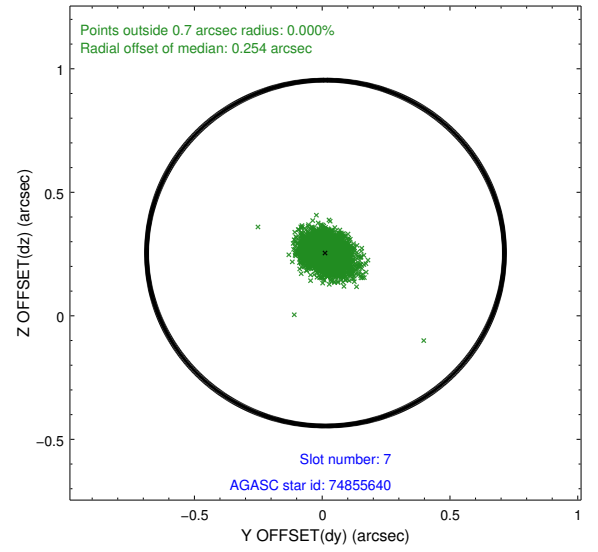
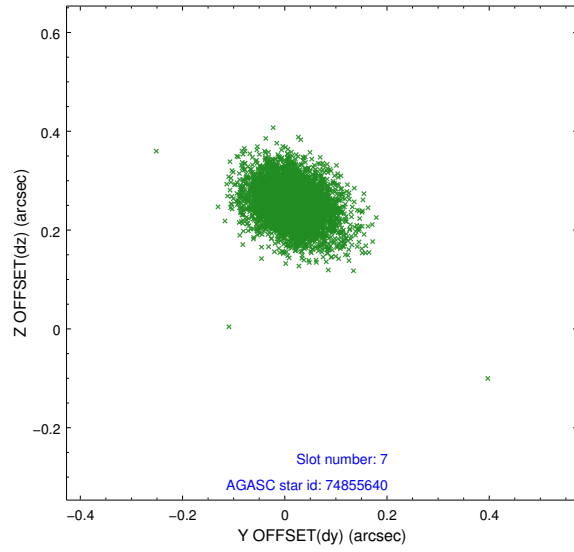


## 2.4.4 Slot 6



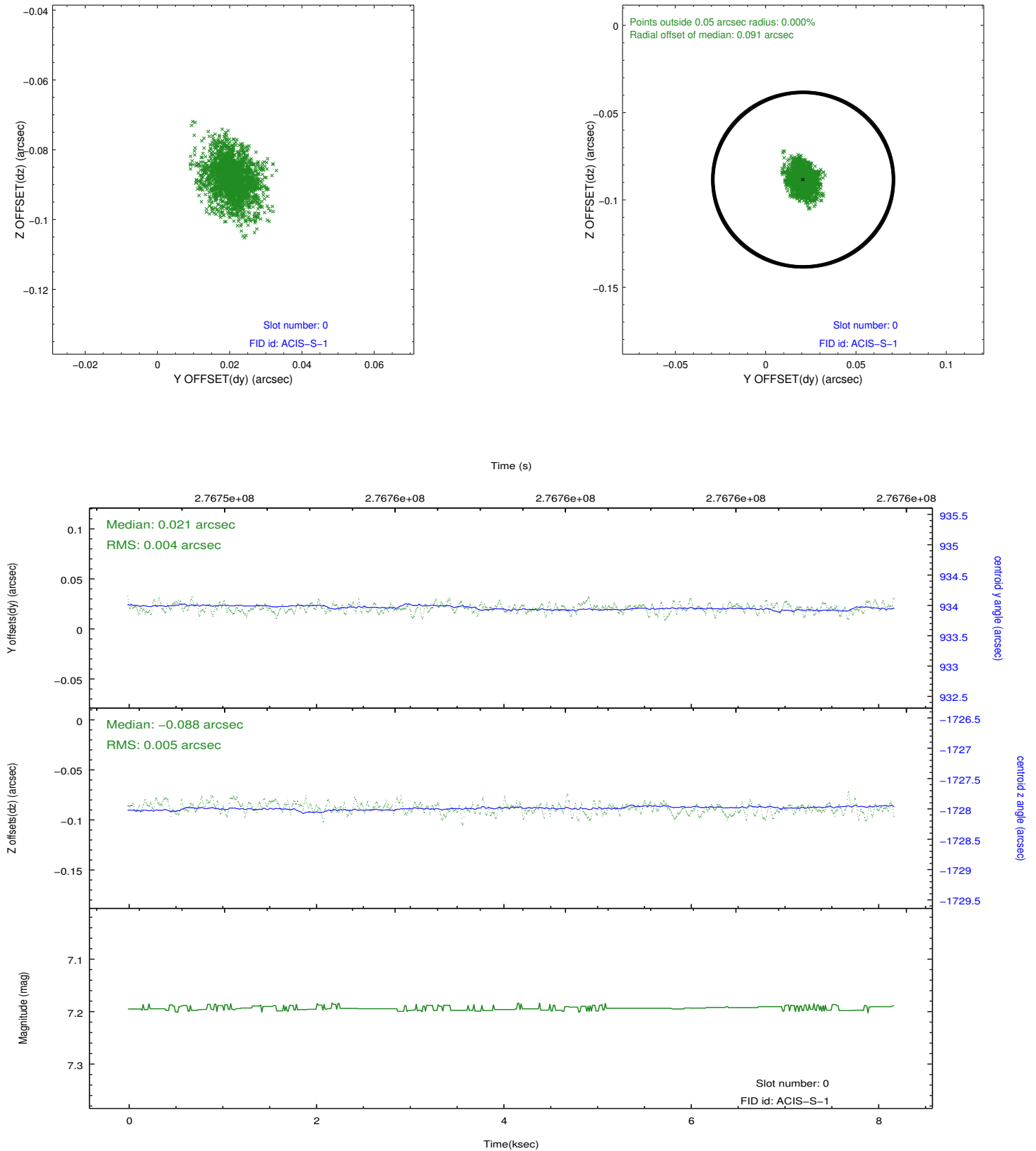


## 2.4.5 Slot 7

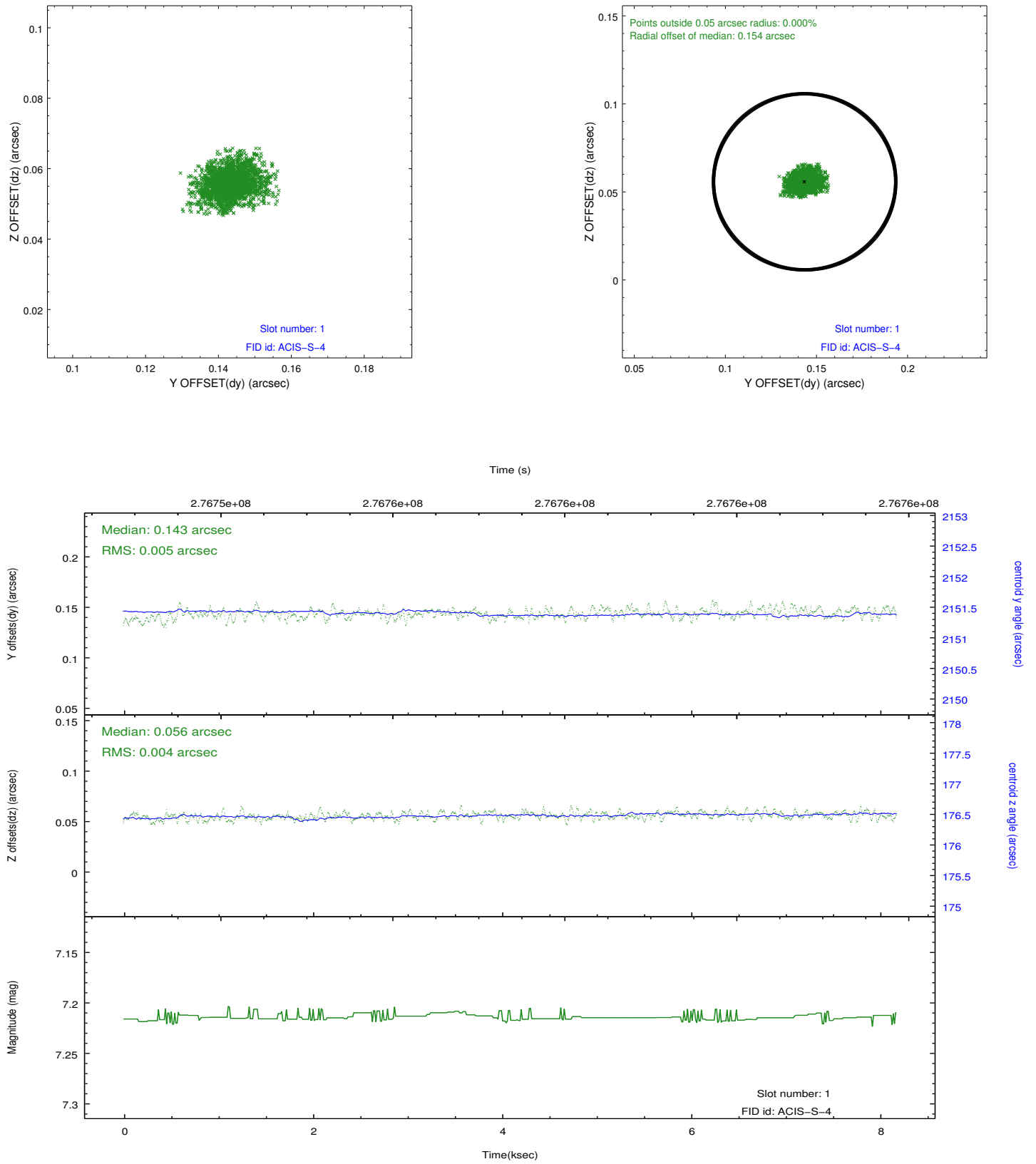


## 2.5 FID Slots

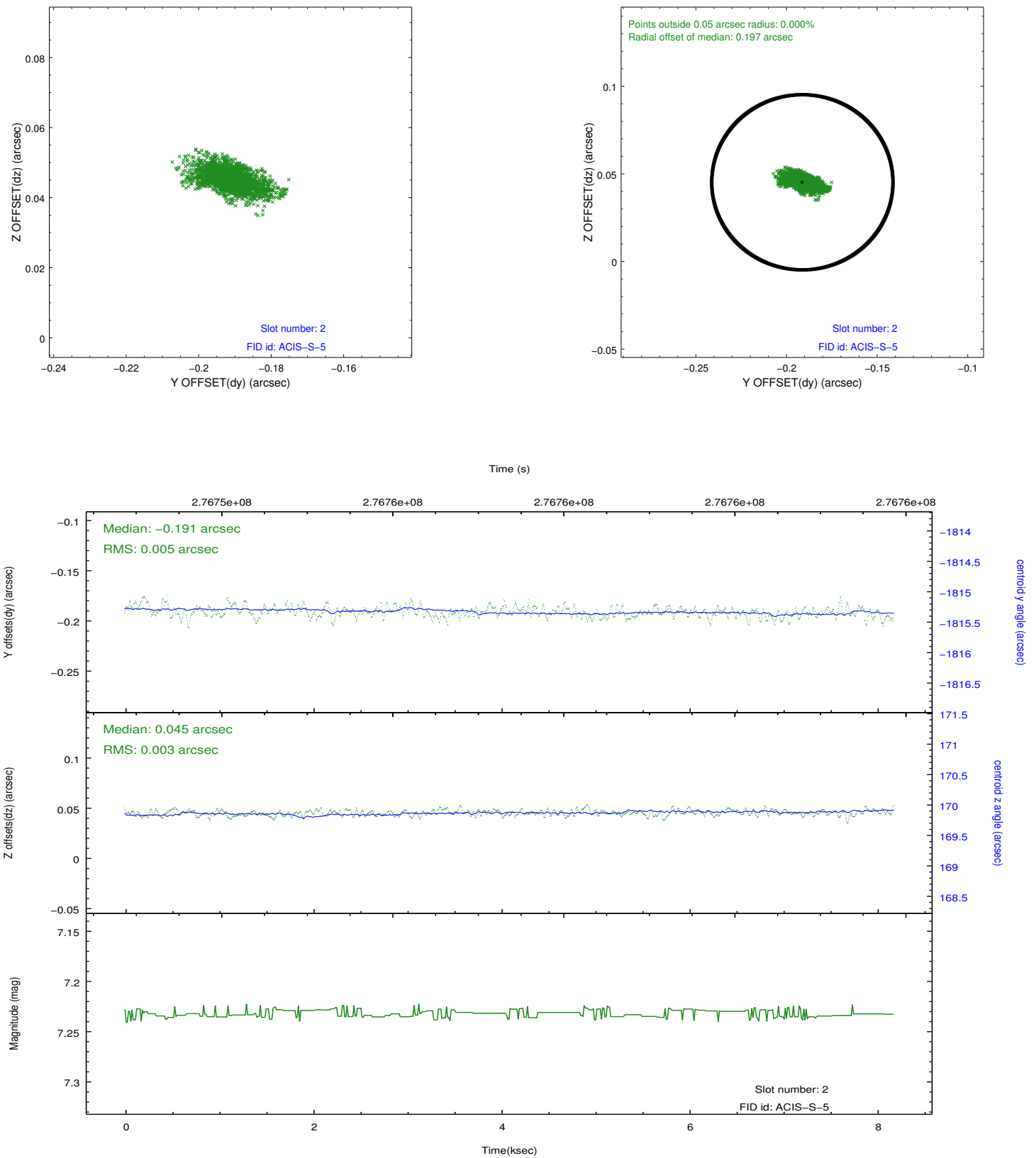
### 2.5.1 Slot 0



## 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)      | 2012.04.11    |
| V&V Edition                | 1             |
| V&V Disposition and Status | OK            |
| V&V Charge Time            | 8.17699994    |

### A.2 Comments