

# V&V Reference Report

## L2 ASCDS Version : 8.4.3

Observation 12964 - L2 Version 2  
Chandra X-Ray Center

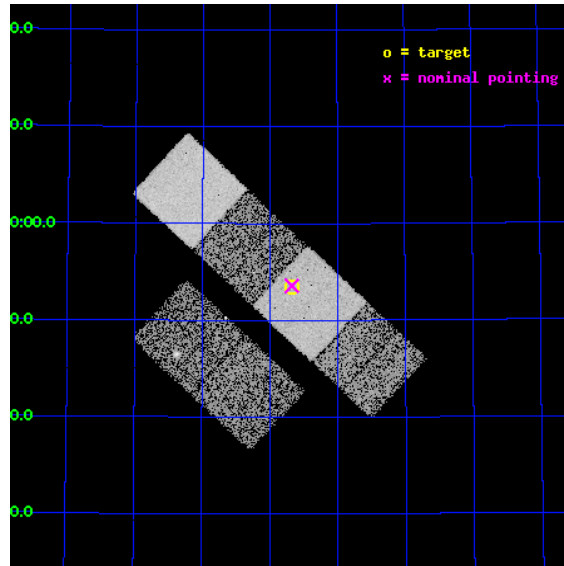
L2 Processing Date : Feb 26 2012

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# 1 Front

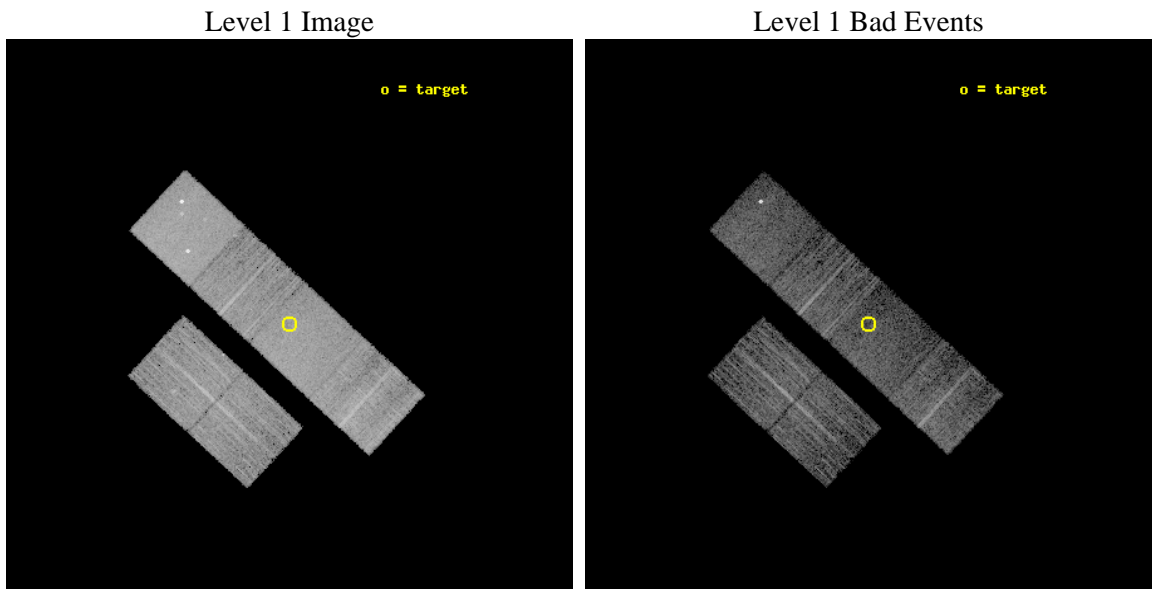
|          |  |   |
|----------|--|---|
| seq_num  | 600932                                   | Sequence number                             |
| obs_id   | 12964                                    | Observation id                              |
| title    | X-rays from Isolated Elliptical Galaxies | Proposal title                              |
| observer | Dr. DAVID BUOTE                          | Principal investigator                      |
| object   | PGC 039222                               | Source name                                 |
| dtcycle  | 0  | &#160                                       |
| cycle    | P  | events from which exps?<br>Prim/Second/Both |
| ra_targ  | 183.92                                   | Observer's specified target RA [deg]        |
| dec_targ | 61.889917                                | Observer's specified target Dec [deg]       |
| ra_nom   | 183.91888259038                          | Nominal RA [deg]                            |
| dec_nom  | 61.892906483116                          | Nominal Dec [deg]                           |
| roll_nom | 42.85870119564                           | Nominal Roll [deg]                          |
| revision | 2  | Processing version of data                  |
| ontime   | 7464.6175612807                          | Sum of GTIs [s]                             |
| livetime | 7370.0960790667                          | Livetime [s]                                |
| ontime2  | 7464.658601284                           | Sum of GTIs [s]                             |
| ontime3  | 7464.4944412708                          | Sum of GTIs [s]                             |
| ontime5  | 7464.5765212774                          | Sum of GTIs [s]                             |
| ontime6  | 7464.5354812741                          | Sum of GTIs [s]                             |
| ontime7  | 7464.6175612807                          | Sum of GTIs [s]                             |
| ontime8  | 7464.4534012675                          | Sum of GTIs [s]                             |
| l2events | 78958                                    | Number of level 2 events                    |



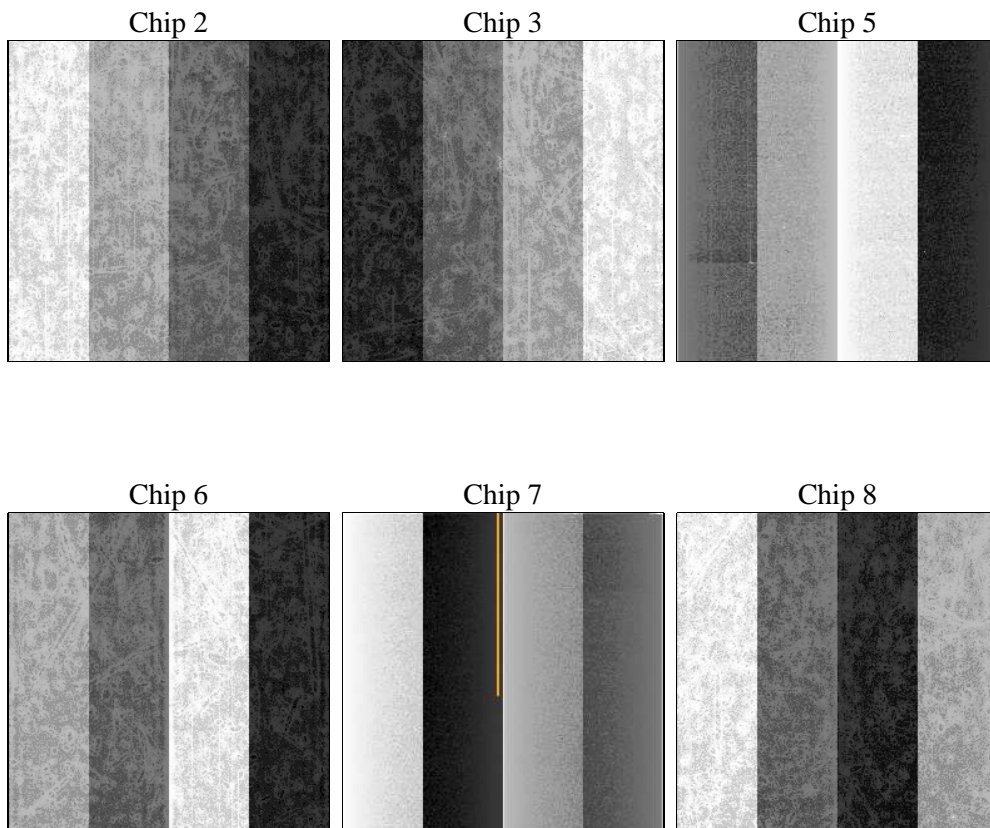
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

|          |                     |                                |                |                 |   |
|----------|---------------------|--------------------------------|----------------|-----------------|---|
| obi_num  | 0                   | Obi number                     | sched_exp_time | 7500.000000     | [s] Scheduled observation exposure time |
| ascdsver | 8.4.3               | Processing system revision     | ontime         | 7464.6175612807 | Sum of GTIs [s]                         |
| caldsver | 4.4.8               | &#160                          | ontime2        | 7464.658601284  | Sum of GTIs [s]                         |
| date     | 2012-02-26T15:21:50 | Date and time of file creation | ontime3        | 7464.4944412708 | Sum of GTIs [s]                         |
| revision | 2                   | Processing version of data     | ontime5        | 7464.5765212774 | Sum of GTIs [s]                         |
|          |                     |                                | ontime6        | 7464.5354812741 | Sum of GTIs [s]                         |
|          |                     |                                | ontime7        | 7464.6175612807 | Sum of GTIs [s]                         |
|          |                     |                                | ontime8        | 7464.4534012675 | Sum of GTIs [s]                         |
|          |                     |                                | l1events       | 338853          | Number of level 1 events                |

### 2.1.4 Events

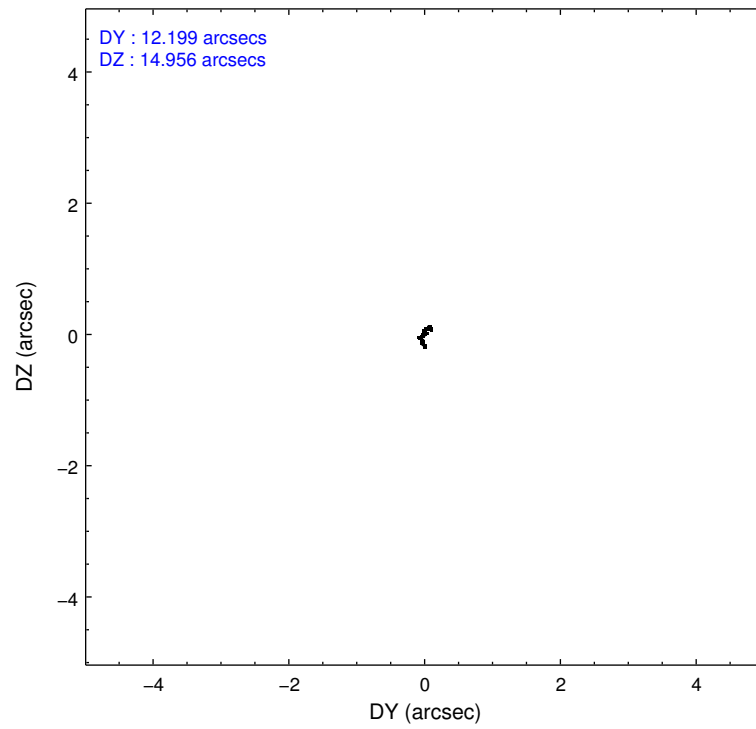
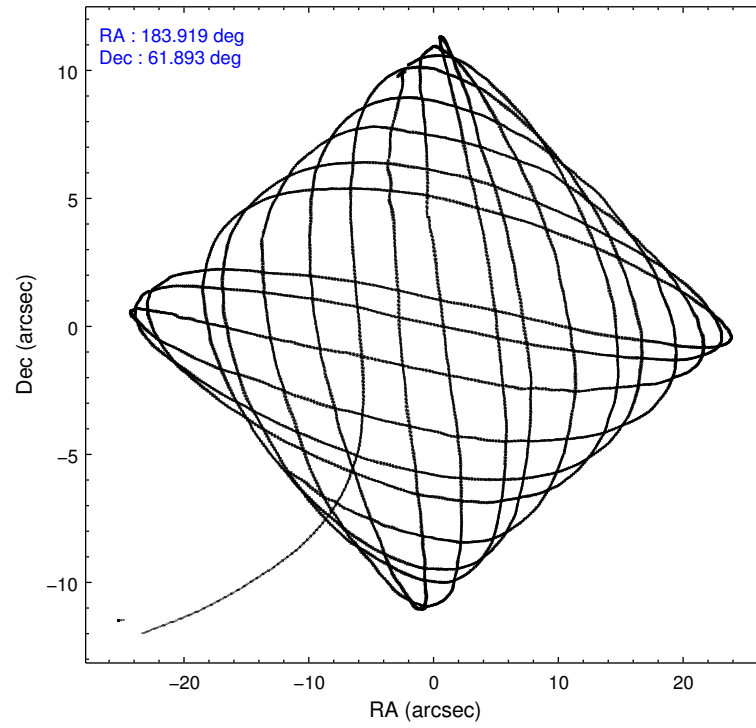
|                 | ccd 2 | ccd 3 | ccd 5 | ccd 6 | ccd 7 | ccd 8 |                | ccd 2 | ccd 3 | ccd 5 | ccd 6 | ccd 7 | ccd 8 |
|-----------------|-------|-------|-------|-------|-------|-------|----------------|-------|-------|-------|-------|-------|-------|
| level 1 events  | 50718 | 44563 | 75876 | 47658 | 59468 | 60570 | grade 0 events | 2220  | 1797  | 4140  | 1885  | 2355  | 5243  |
| rejected events | 45067 | 39490 | 39116 | 42257 | 33023 | 44279 |                | 4%    | 4%    | 5%    | 3%    | 3%    | 8%    |
| rejected %      | 88%   | 88%   | 51%   | 88%   | 55%   | 73%   | grade 1 events | 42    | 21    | 134   | 22    | 76    | 45    |
|                 |       |       |       |       |       |       |                | 0%    | 0%    | 0%    | 0%    | 0%    | 0%    |
|                 |       |       |       |       |       |       | grade 2 events | 1325  | 1097  | 10998 | 1173  | 5319  | 3686  |
|                 |       |       |       |       |       |       |                | 2%    | 2%    | 14%   | 2%    | 8%    | 6%    |
|                 |       |       |       |       |       |       | grade 3 events | 562   | 562   | 1393  | 590   | 2356  | 1785  |
|                 |       |       |       |       |       |       |                | 1%    | 1%    | 1%    | 1%    | 3%    | 2%    |
|                 |       |       |       |       |       |       | grade 4 events | 546   | 550   | 1237  | 541   | 2331  | 1626  |
|                 |       |       |       |       |       |       |                | 1%    | 1%    | 1%    | 1%    | 3%    | 2%    |
|                 |       |       |       |       |       |       | grade 5 events | 1850  | 2112  | 6816  | 2238  | 6163  | 3194  |
|                 |       |       |       |       |       |       |                | 3%    | 4%    | 8%    | 4%    | 10%   | 5%    |
|                 |       |       |       |       |       |       | grade 6 events | 1002  | 1072  | 19012 | 1217  | 14110 | 3975  |
|                 |       |       |       |       |       |       |                | 1%    | 2%    | 25%   | 2%    | 23%   | 6%    |
|                 |       |       |       |       |       |       | grade 7 events | 43171 | 37352 | 32146 | 39992 | 26758 | 41016 |
|                 |       |       |       |       |       |       |                | 85%   | 83%   | 42%   | 83%   | 44%   | 67%   |

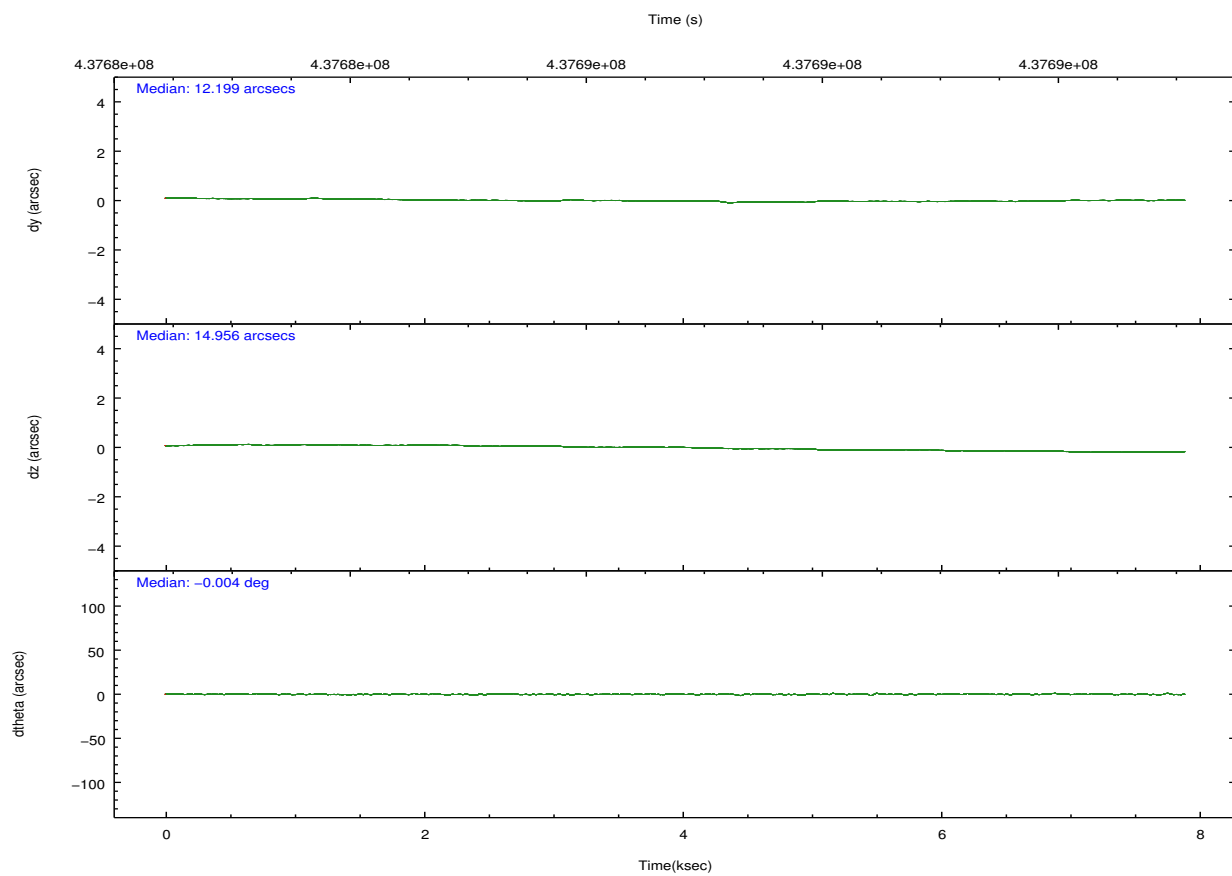
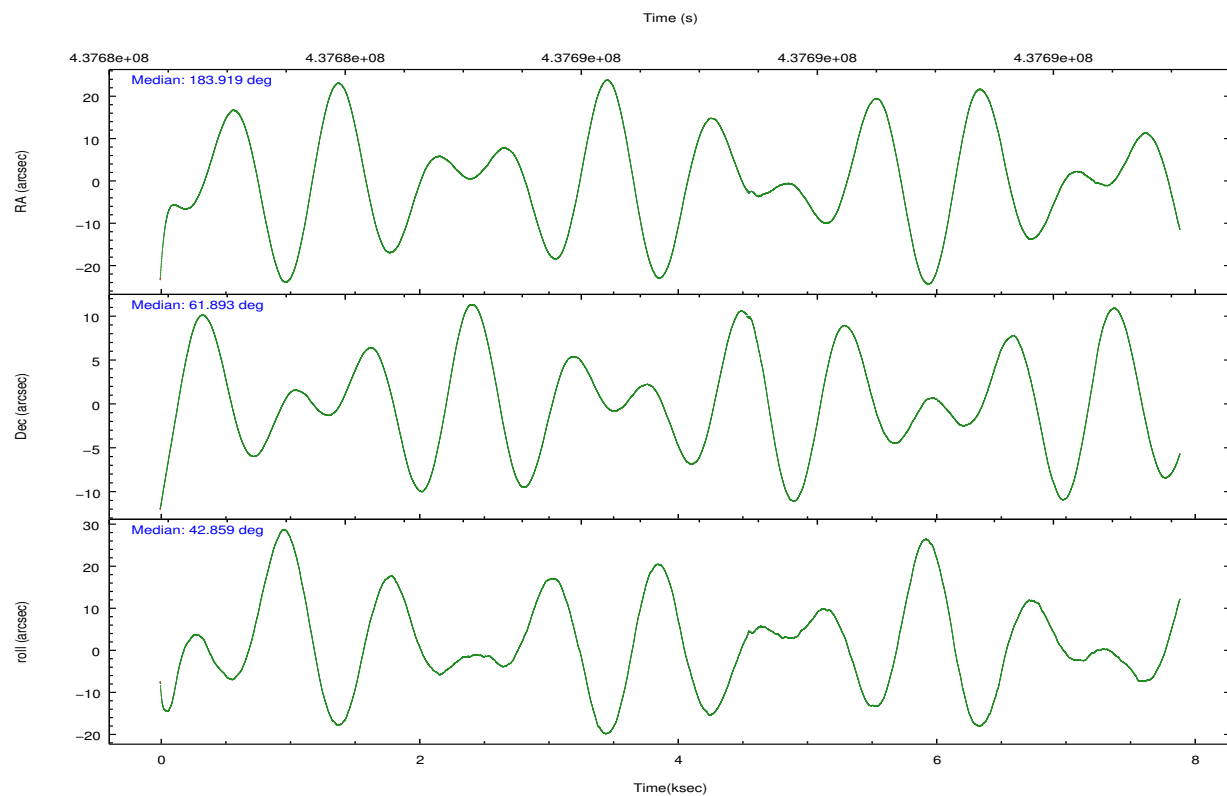


## 2.2 Compared Parameters

| 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                         | VFAINT              | VFAINT               | CCD I0 on                             | N         | N       |
| Observation mode                  | POINTING            | POINTING             | CCD I1 on                             | N         | N       |
| [deg] Pointing RA                 | 183.902510          | 183.9188825903767    | CCD I2 on                             | O2        | Y       |
| [deg] Pointing Dec                | 61.866648           | 61.89290648311628    | CCD I3 on                             | Y         | Y       |
| [deg] Pointing Roll               | 42.716535           | 42.85870119563965    | CCD S0 on                             | N         | N       |
| [mm] SIM focus pos                | -0.684267           | -0.6828225247311905  | CCD S1 on                             | Y         | Y       |
| [mm] SIM defocus                  | 0                   | 0.001444936568705701 | CCD S2 on                             | Y         | Y       |
| [mm] SIM translation stage pos    | -190.132523         | -190.1425803651734   | CCD S3 on                             | Y         | Y       |
| [mm] SIM translation stage offset | 0                   | 0.01005778216563158  | CCD S4 on                             | O1        | Y       |
| [s] Observation start time (MET)  | 437683198.184000    | 437682134.90556      | CCD S5 on                             | N         | N       |
| Observation start date            | 2011-11-14T18:38:52 | 2011-11-14T18:22:14  | Number of optional ACIS chips dropped | 0         | 0       |
| [s] Observation end time (MET)    | 437690698.184000    | 437691488.03105      | On-chip summing requested             | N         | N       |
| Observation end date              | 2011-11-14T20:43:52 | 2011-11-14T20:58:08  | Subarray requested                    | NONE      | NONE    |
| Read mode                         | TIMED               | TIMED                | Alternating exposures requested       | N         | N       |
|                                   |                     |                      | [s] Primary exposure time             | 0.000000  | 3.2     |

## 2.3 Aspect



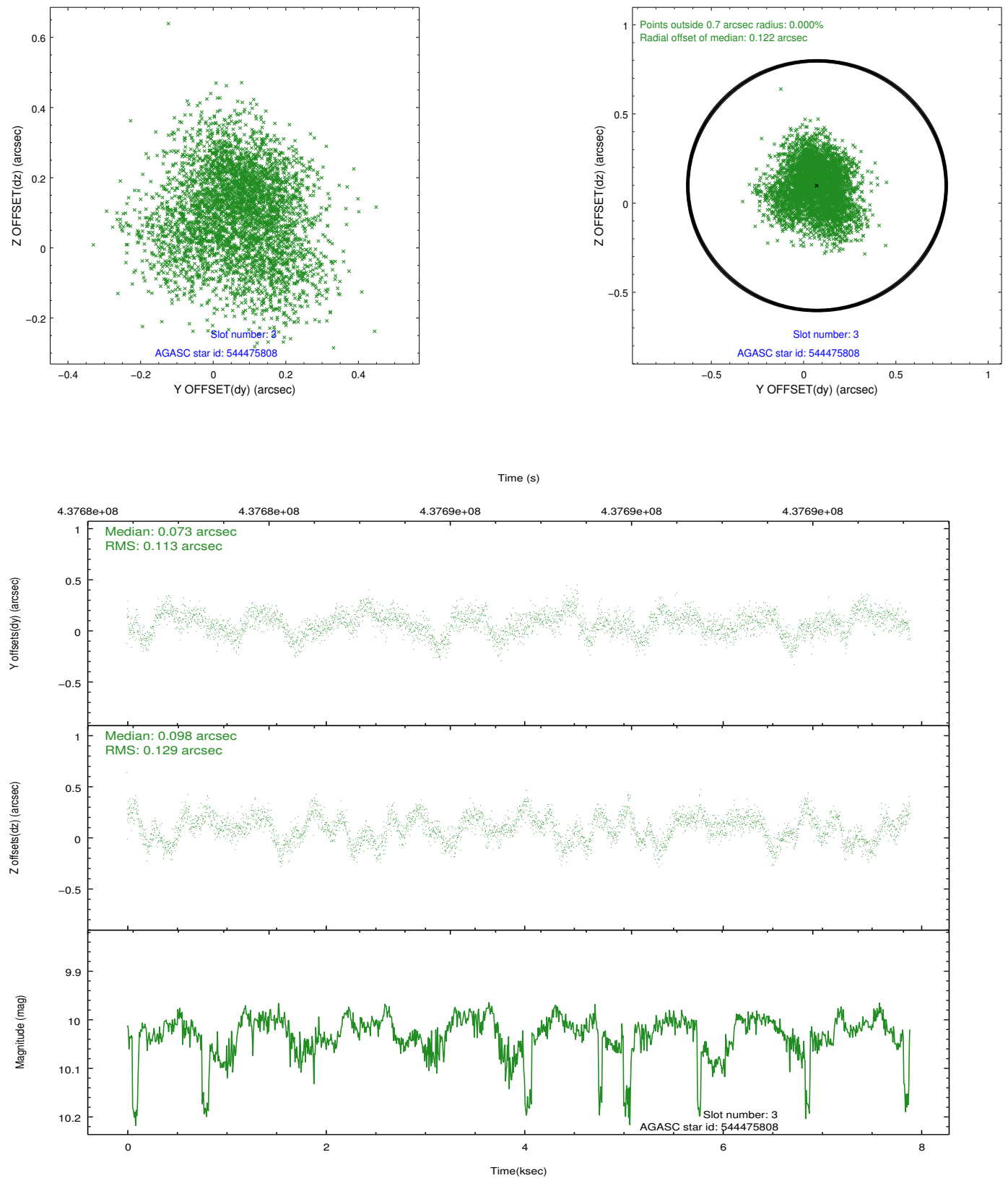


### Slot Statistics

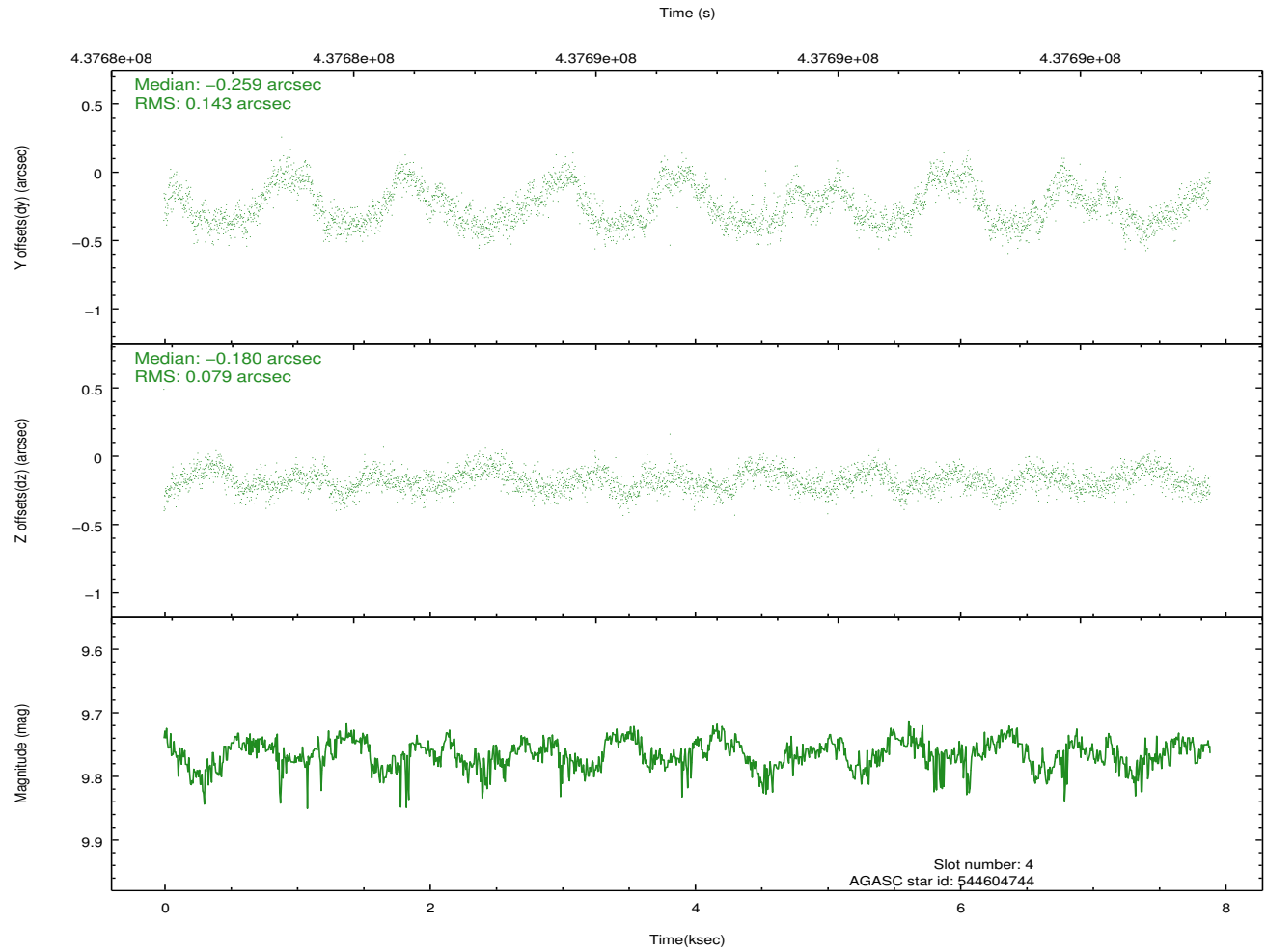
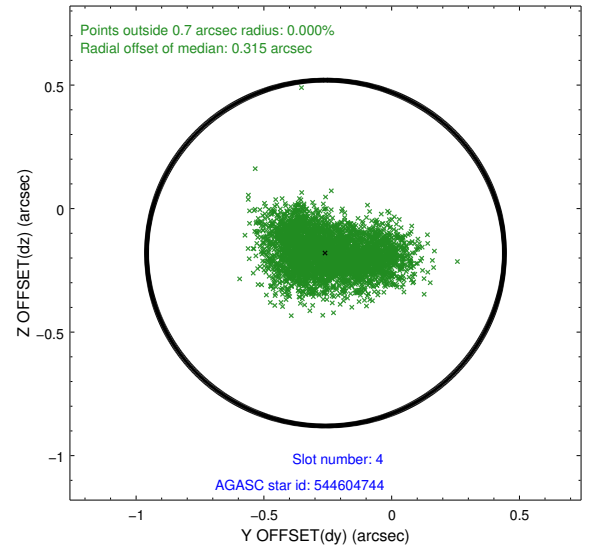
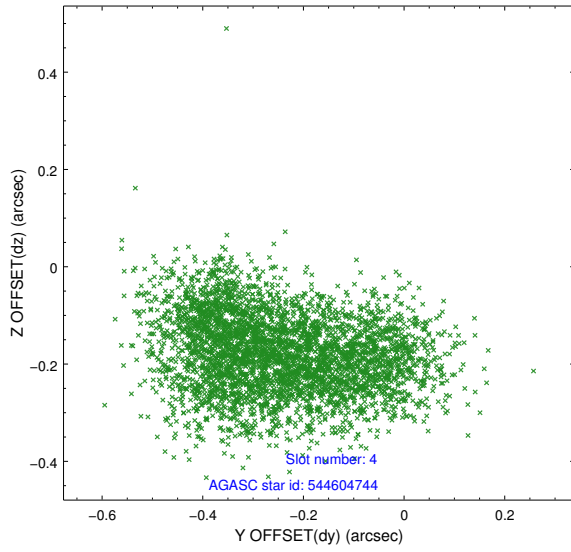
| slot | status | id        | mag   | n_pts | med_dy | med_dz | dr1   | dr2   | ra         | dec       | mean_y   | mean_z   |
|------|--------|-----------|-------|-------|--------|--------|-------|-------|------------|-----------|----------|----------|
| 0    | FID    | ACIS-S-2  | 6.92  | 1925  | -0.076 | -0.044 | 0.005 | 0.009 | 0.000000   | 0.000000  | -765.18  | -1736.30 |
| 1    | FID    | ACIS-S-4  | 7.00  | 1925  | 0.130  | 0.023  | 0.006 | 0.009 | 0.000000   | 0.000000  | 2147.98  | 171.50   |
| 2    | FID    | ACIS-S-6  | 7.13  | 1925  | -0.082 | 0.029  | 0.006 | 0.010 | 0.000000   | 0.000000  | 397.72   | 809.72   |
| 3    | GUIDE  | 544475808 | 10.03 | 3842  | 0.073  | 0.098  | 0.184 | 0.291 | 182.712064 | 61.667576 | -1967.08 | 866.77   |
| 4    | GUIDE  | 544604744 | 9.76  | 3847  | -0.259 | -0.180 | 0.174 | 0.279 | 184.408921 | 62.425632 | 1986.73  | 910.55   |
| 5    | GUIDE  | 544607696 | 9.89  | 3837  | 0.155  | 0.233  | 0.224 | 0.338 | 184.548721 | 61.343186 | -453.66  | -2136.98 |
| 6    | GUIDE  | 544610200 | 8.30  | 3847  | -0.040 | 0.073  | 0.098 | 0.158 | 185.367245 | 61.747254 | 1557.11  | -1988.95 |
| 7    | GUIDE  | 544610688 | 9.65  | 3846  | 0.062  | -0.220 | 0.132 | 0.210 | 183.161571 | 61.890606 | -858.86  | 920.28   |

## 2.4 Star Slots

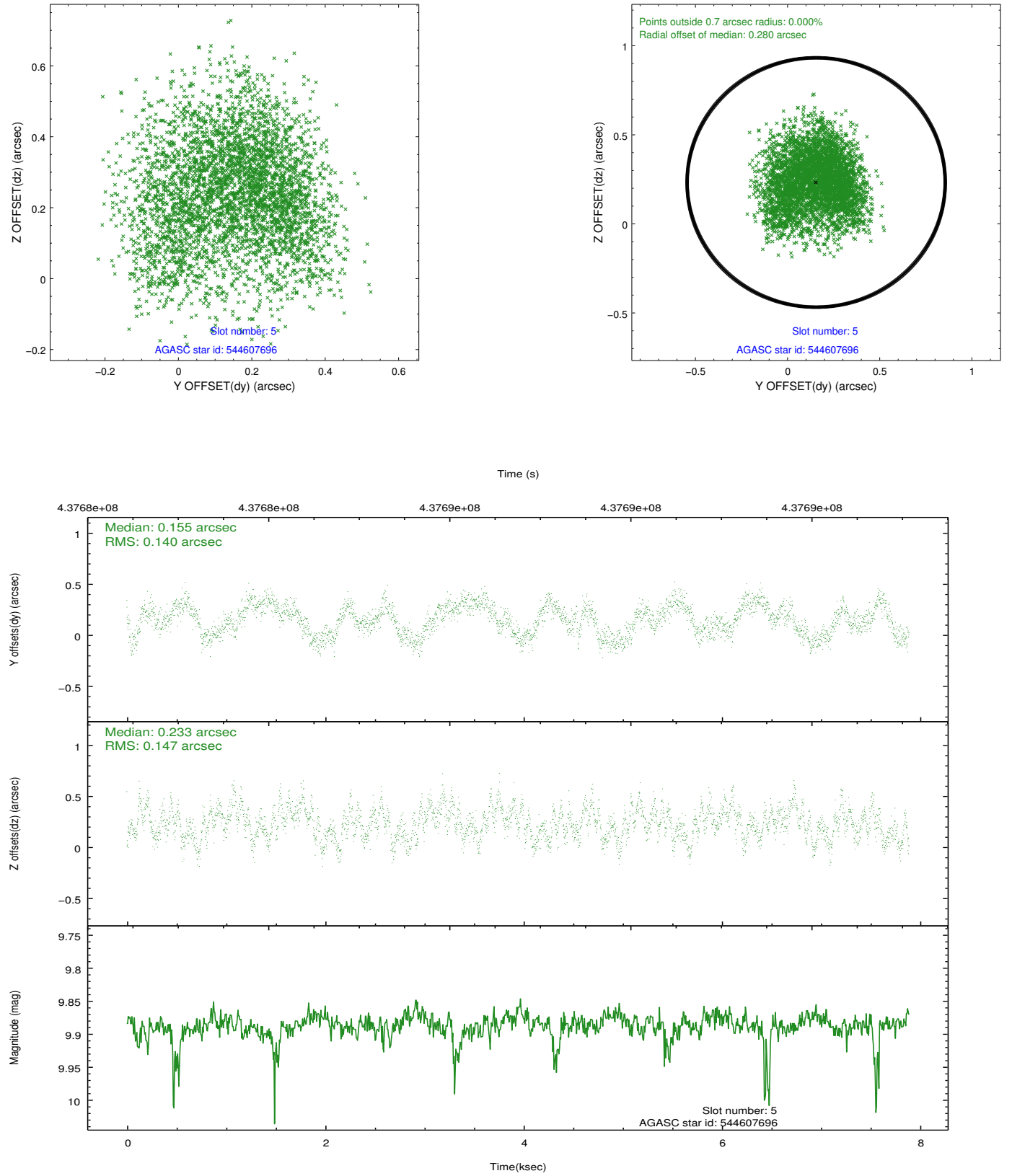
### 2.4.1 Slot 3



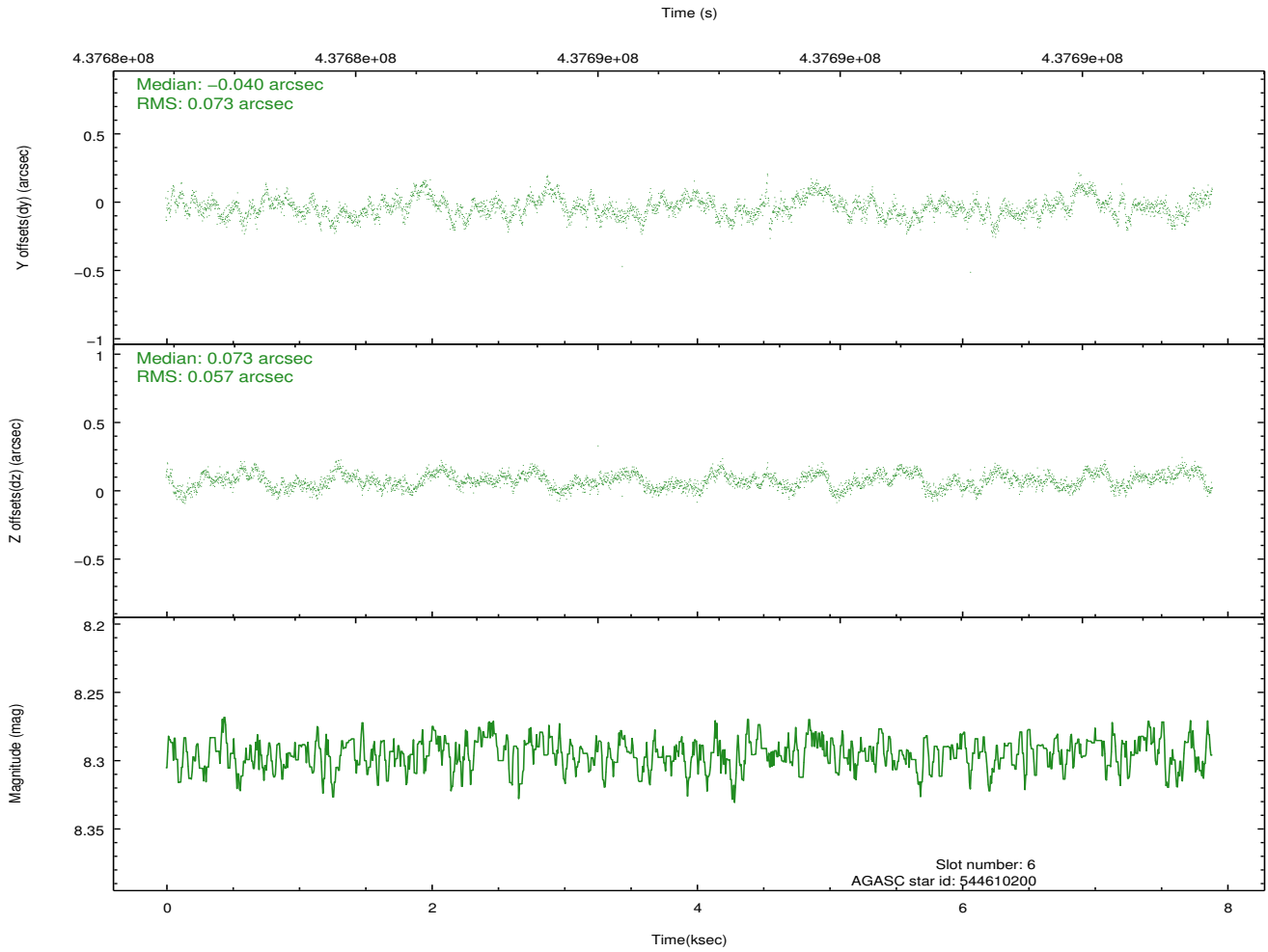
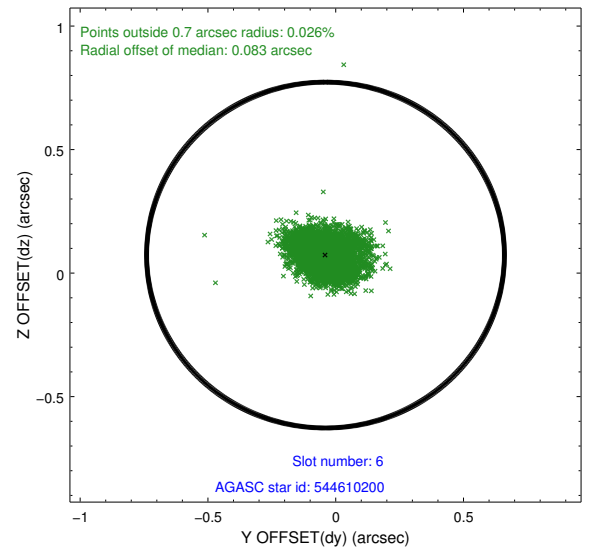
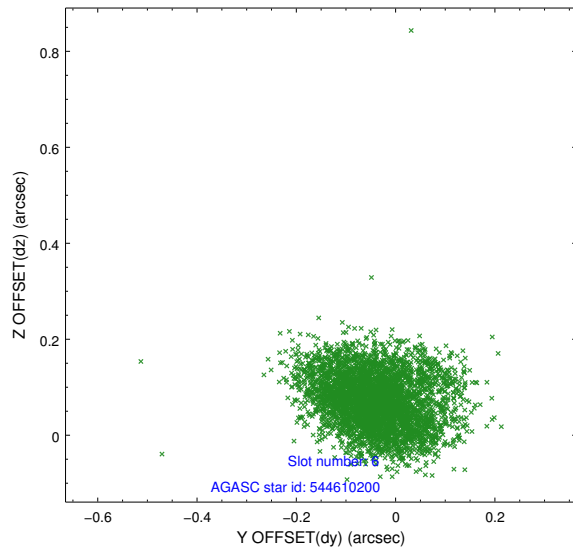
## 2.4.2 Slot 4



### 2.4.3 Slot 5

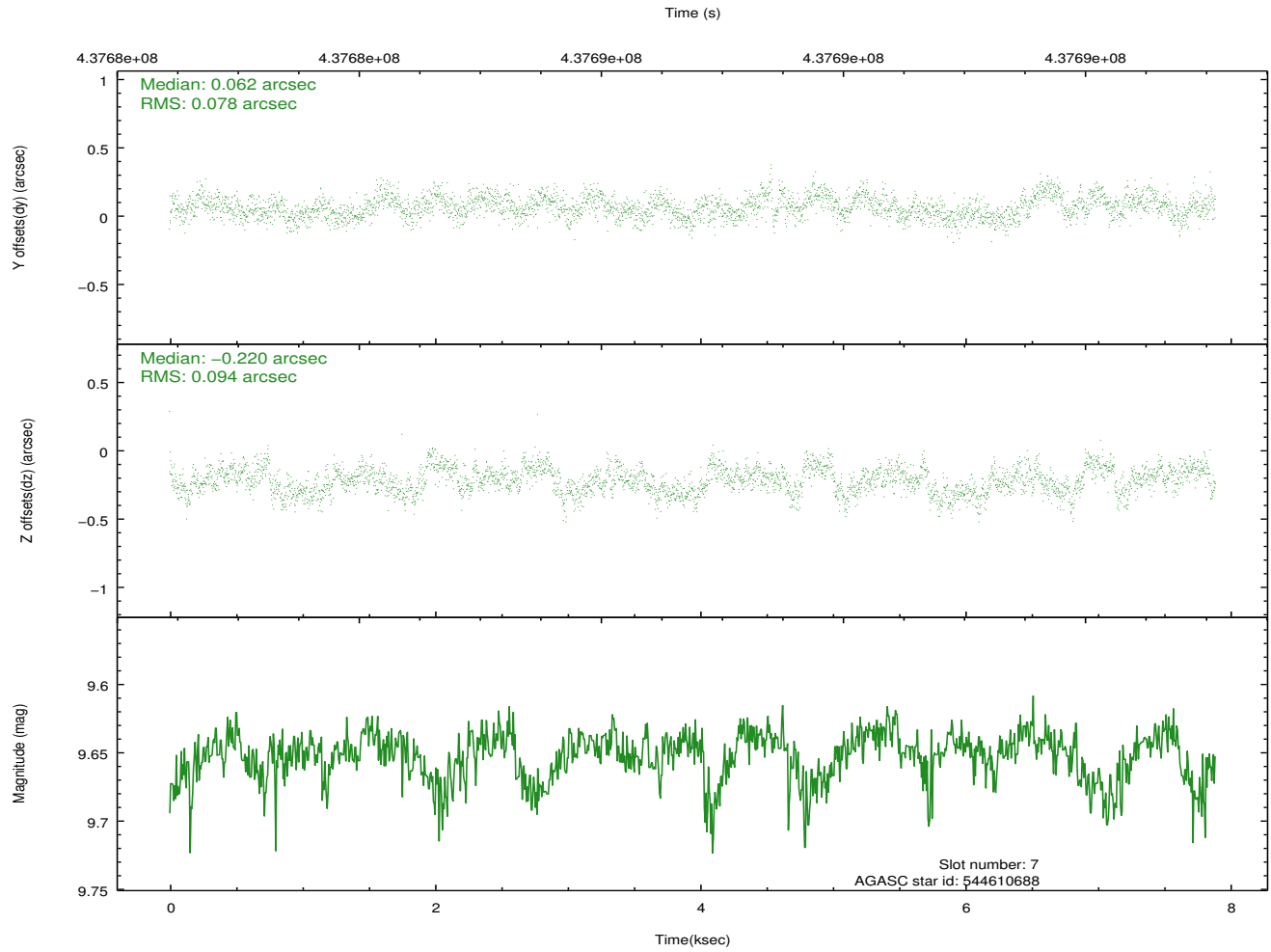
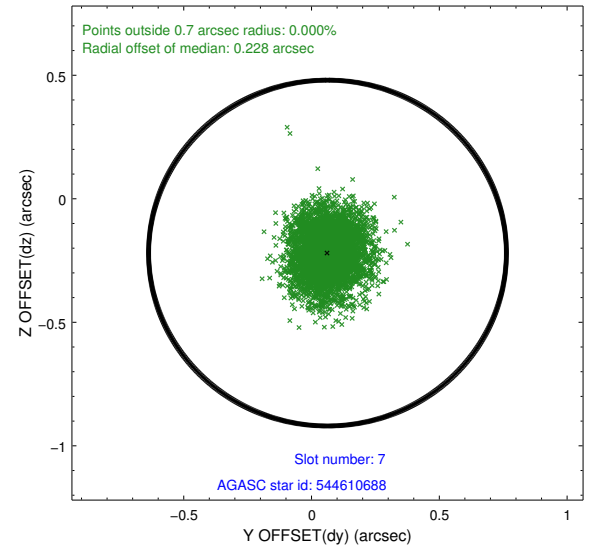
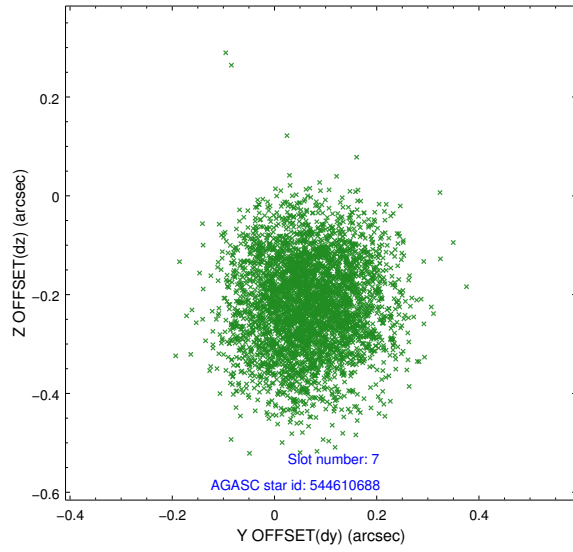


## 2.4.4 Slot 6



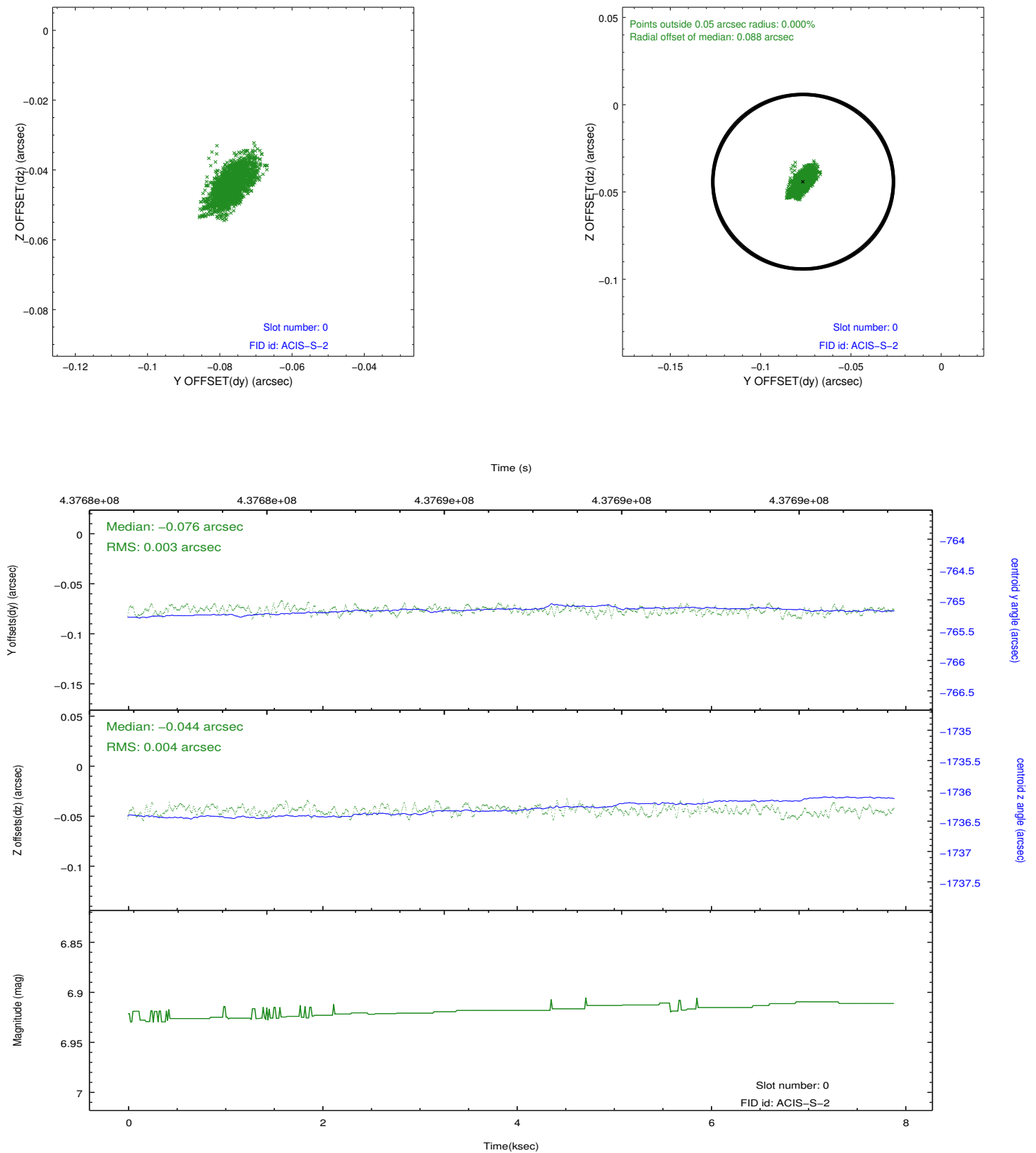


### 2.4.5 Slot 7

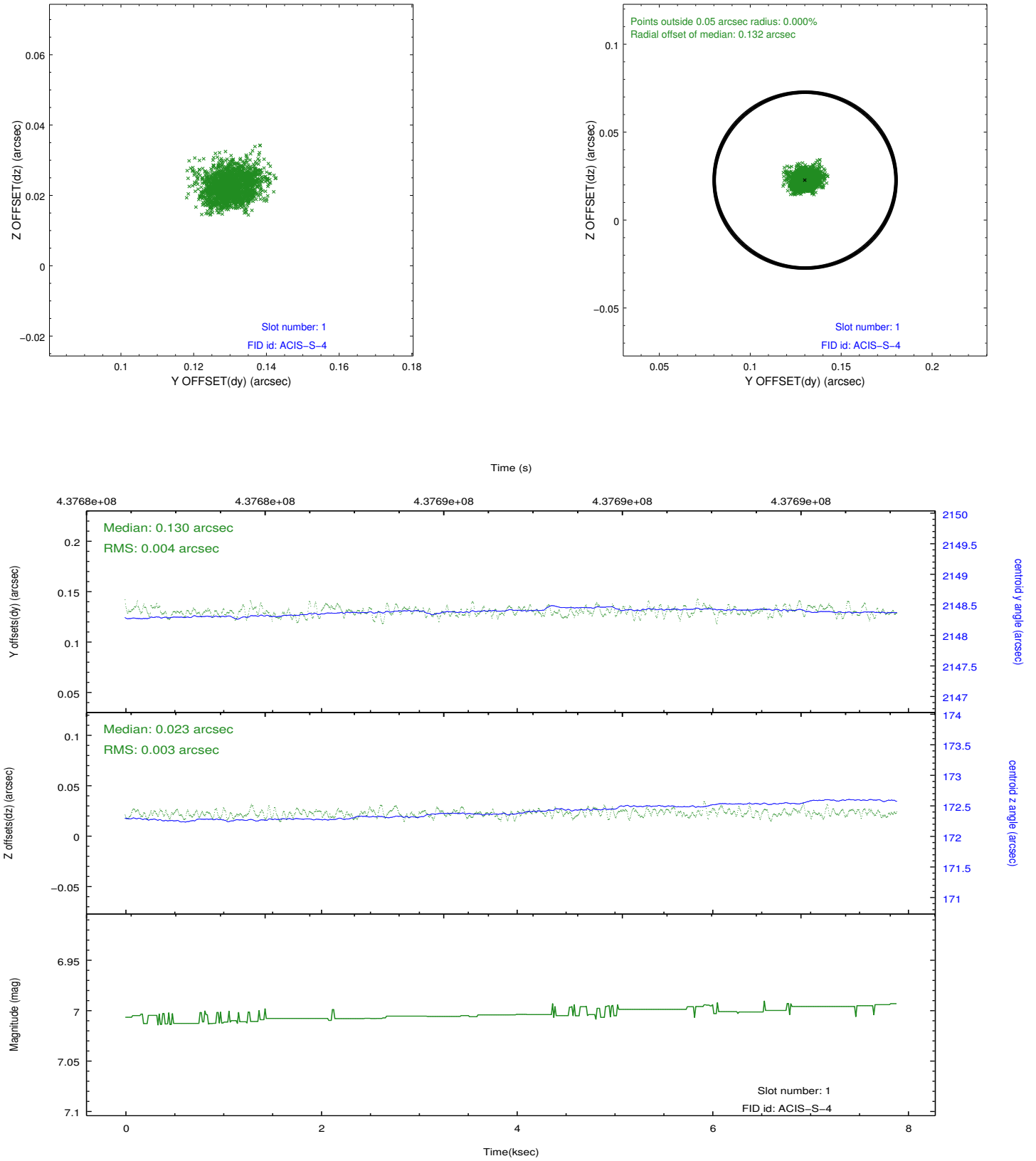


## 2.5 FID Slots

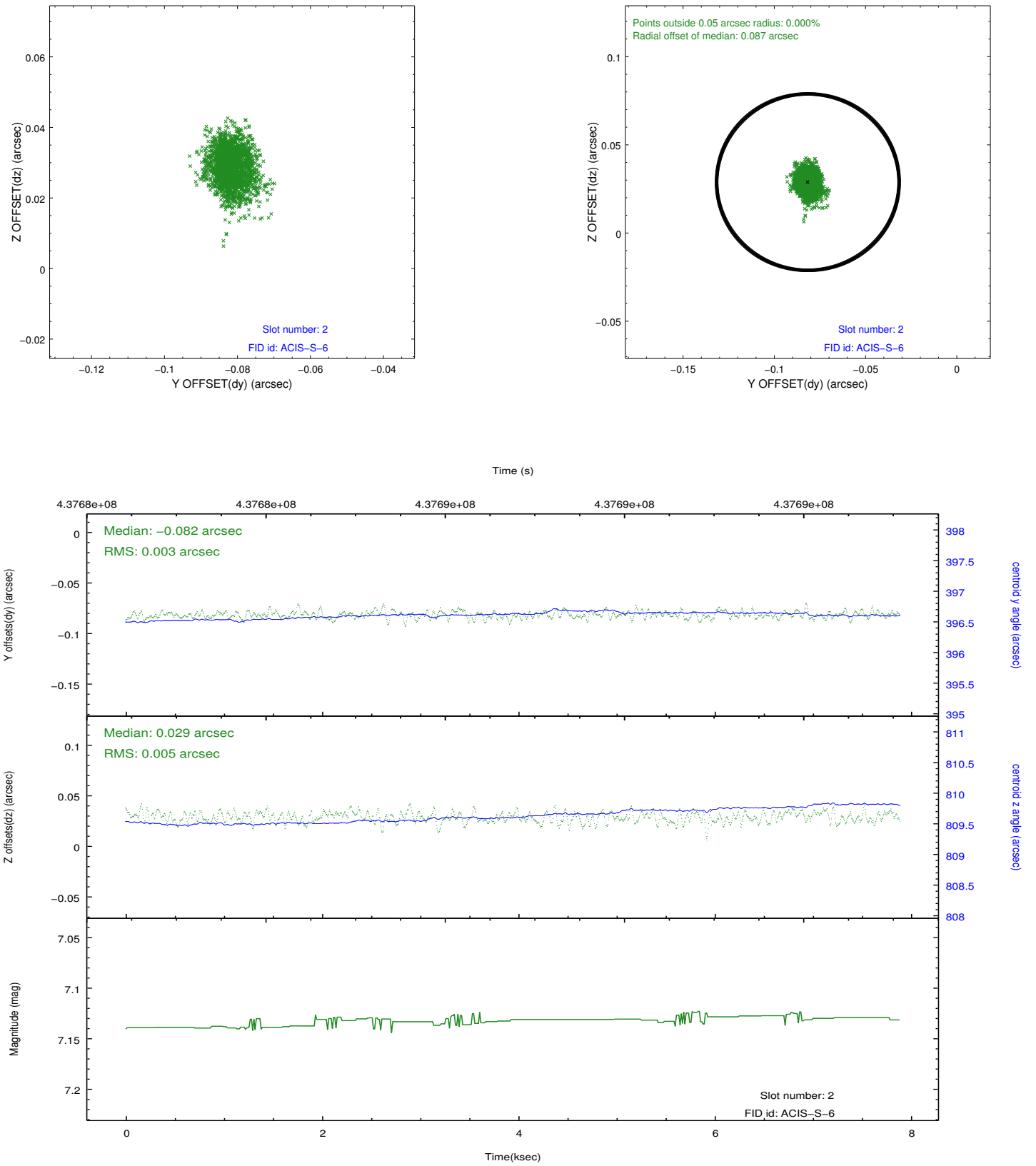
### 2.5.1 Slot 0



## 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)      | 2012.02.28     |
| V&V Edition                | 1              |
| V&V Disposition and Status | OK             |
| V&V Charge Time            | 7.464617562592 |

### A.2 Comments