

# V&V Reference Report

## L2 ASCDS Version : 10.4

Observation 17121 - L2 Version 1  
Chandra X-Ray Center

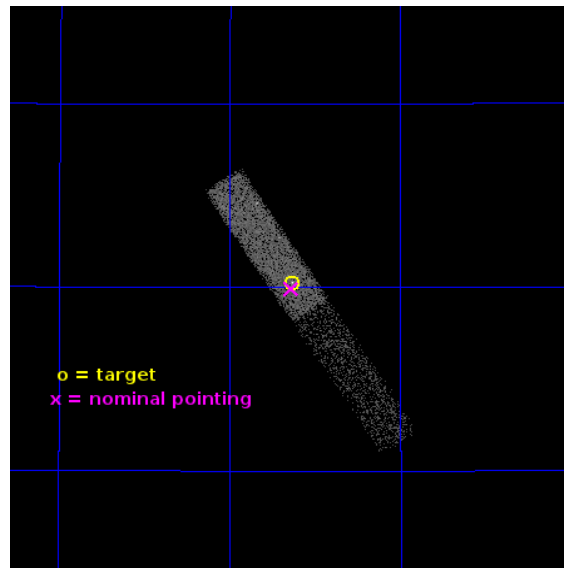
L2 Processing Date : Jul 6 2015

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# 1 Front

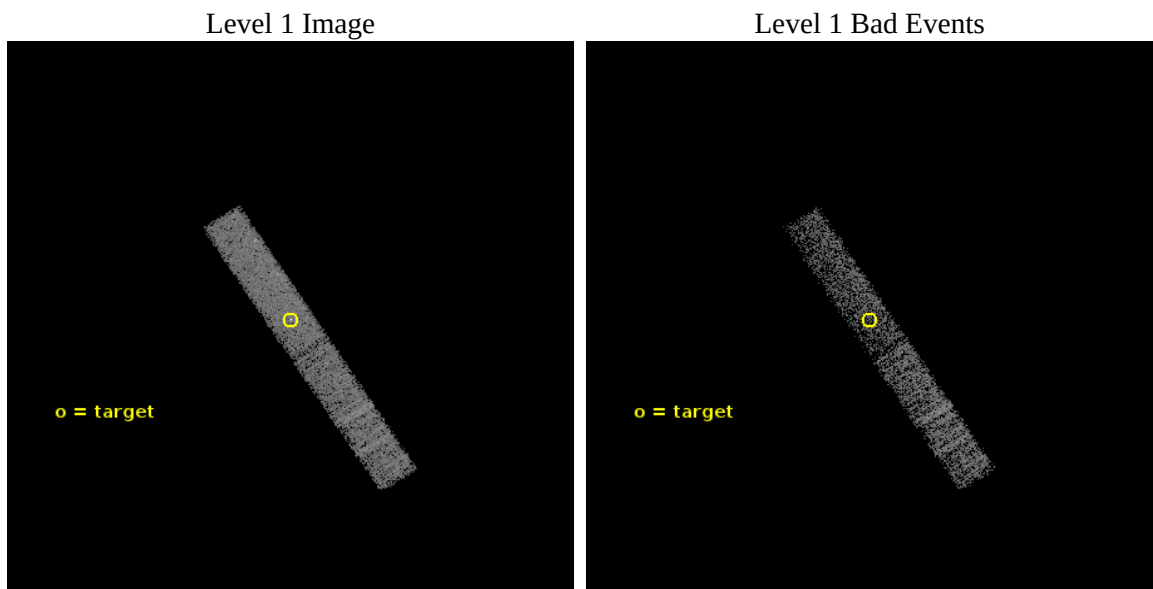
|          |                                                       |                                             |
|----------|-------------------------------------------------------|---------------------------------------------|
| seq_num  | 703120                                                | Sequence number                             |
| obs_id   | 17121                                                 | Observation id                              |
| title    | UNCOVERING AGN FUELING AND FEEDBACK IN DWARF GALAXIES | Proposal tit                                |
| observer | Professor Richard Mushotzky                           | Principal investigator                      |
| object   | Mrk477                                                | Source name                                 |
| dtcycle  | 0                                                     | &#160                                       |
| cycle    | P                                                     | events from which exps?<br>Prim/Second/Both |
| ra_targ  | 220.158333                                            | Observer's specified target RA [deg]        |
| dec_targ | 53.504167                                             | Observer's specified target Dec [deg]       |
| ra_nom   | 220.1593091838                                        | Nominal RA [deg]                            |
| dec_nom  | 53.498701668134                                       | Nominal Dec [deg]                           |
| roll_nom | 237.00172864536                                       | Nominal Roll [deg]                          |
| revision | 1                                                     | Processing version of data                  |
| ontime   | 10097.999732375                                       | Sum of GTIs [s]                             |
| livetime | 9657.6125979104                                       | Livetime [s]                                |
| ontime6  | 10097.999732375                                       | Sum of GTIs [s]                             |
| ontime7  | 10097.999732375                                       | Sum of GTIs [s]                             |
| l2events | 10635                                                 | Number of level 2 events                    |



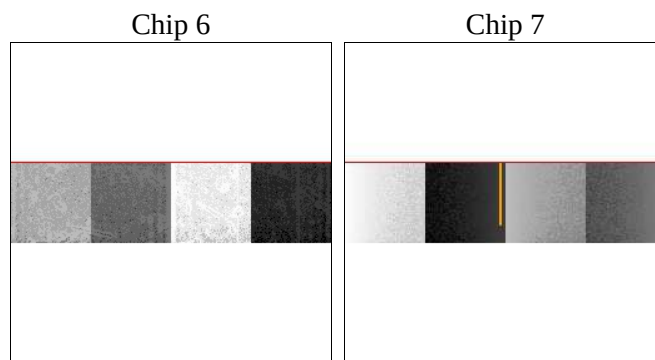
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

|          |                     |                                |                |                 |                                         |
|----------|---------------------|--------------------------------|----------------|-----------------|-----------------------------------------|
| obi_num  | 1                   | Obi number                     | sched_exp_time | 10000.000000    | [s] Scheduled observation exposure time |
| ascdsver | 10.4                | Processing system revision     | ontime         | 10097.999732375 | Sum of GTIs [s]                         |
| caldsver | 4.6.7               | &#160                          | ontime6        | 10097.999732375 | Sum of GTIs [s]                         |
| date     | 2015-07-06T23:04:56 | Date and time of file creation | ontime7        | 10097.999732375 | Sum of GTIs [s]                         |
| revision | 1                   | Processing version of data     | l1events       | 34117           | Number of level 1 events                |

### 2.1.4 Events

|                 | ccd 6 | ccd 7 |
|-----------------|-------|-------|
| level 1 events  | 15560 | 18557 |
| rejected events | 13744 | 9187  |
| rejected %      | 88%   | 49%   |

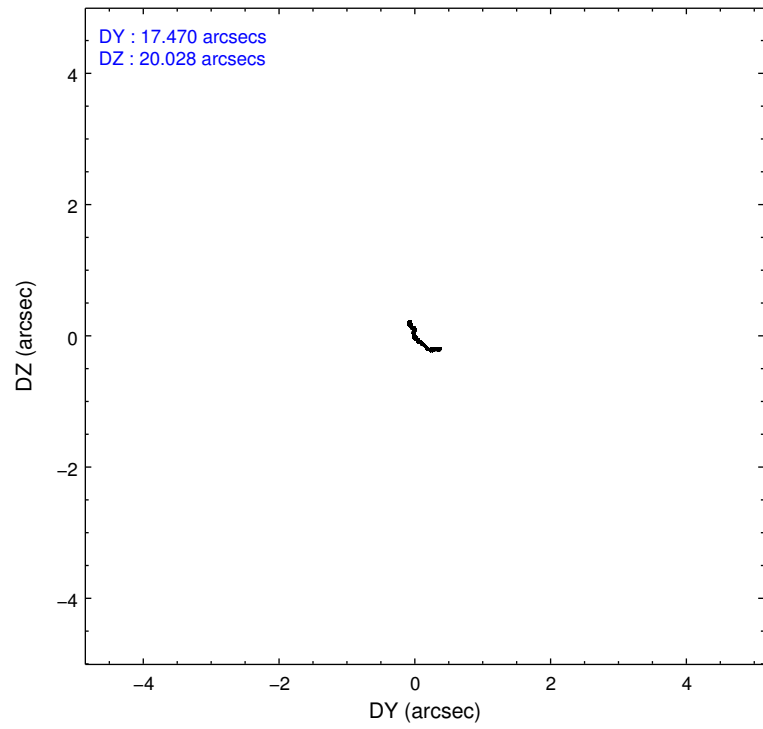
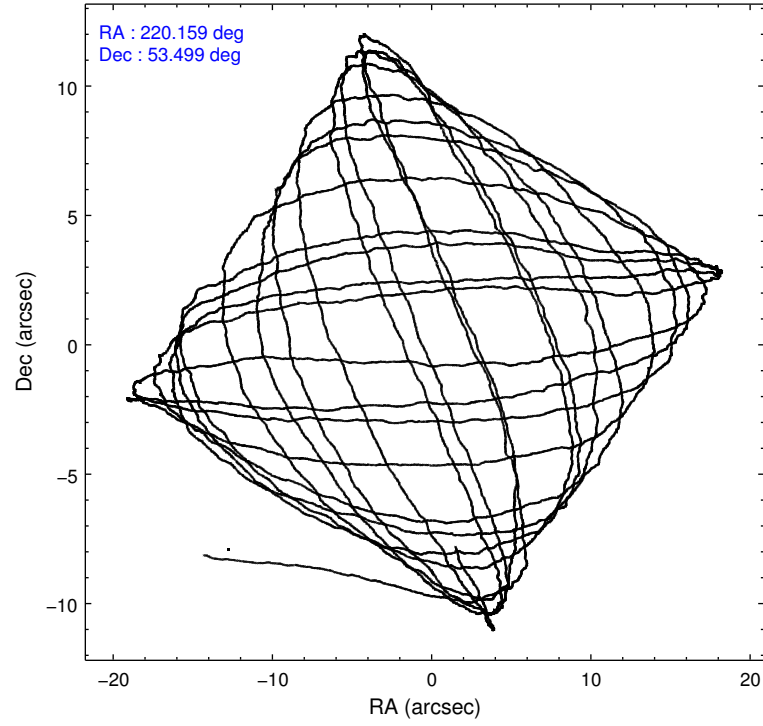
|                | ccd 6 | ccd 7 |
|----------------|-------|-------|
| grade 0 events | 511   | 1105  |
|                | 3%    | 5%    |
| grade 1 events | 2     | 27    |
|                | 0%    | 0%    |
| grade 2 events | 363   | 1929  |
|                | 2%    | 10%   |
| grade 3 events | 291   | 1047  |
|                | 1%    | 5%    |
| grade 4 events | 272   | 1005  |
|                | 1%    | 5%    |
| grade 5 events | 698   | 1897  |
|                | 4%    | 10%   |
| grade 6 events | 379   | 4285  |
|                | 2%    | 23%   |
| grade 7 events | 13044 | 7262  |
|                | 83%   | 39%   |

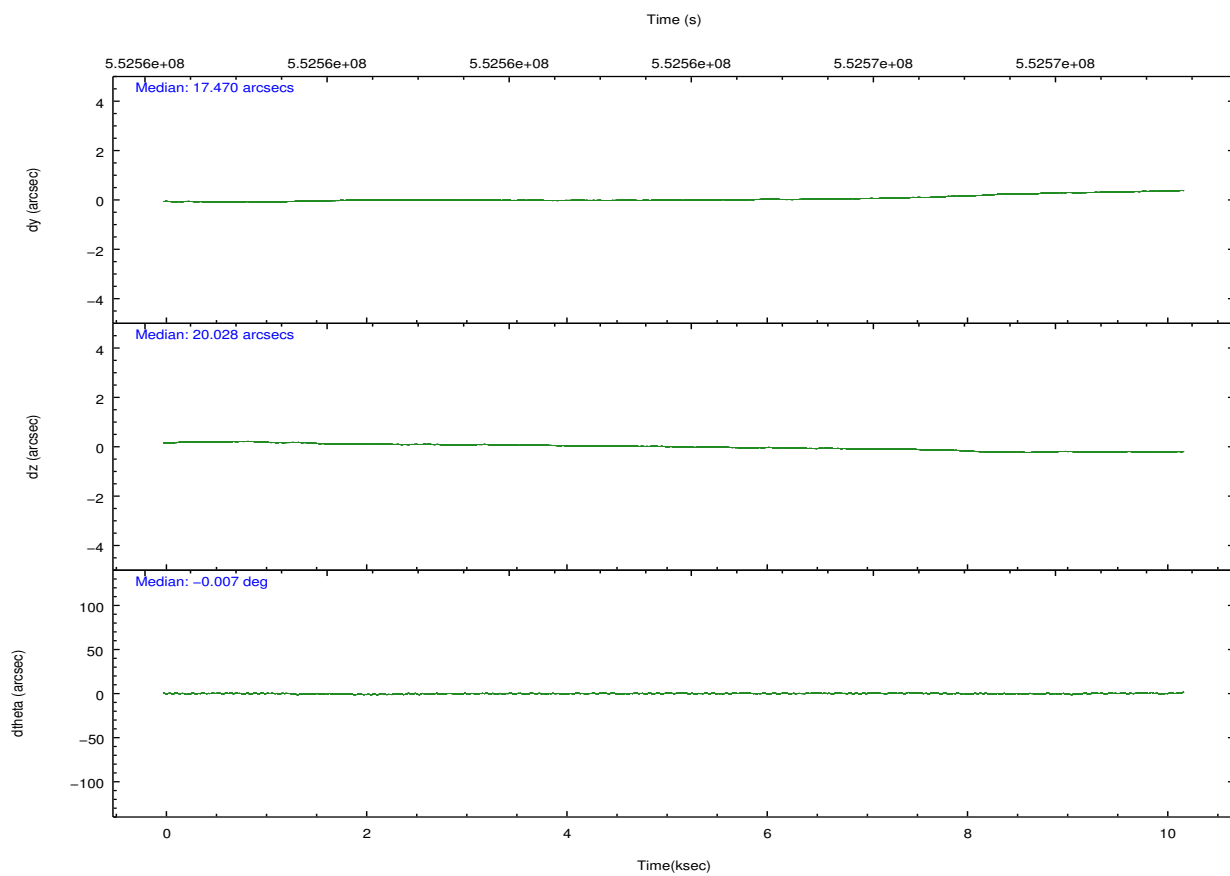
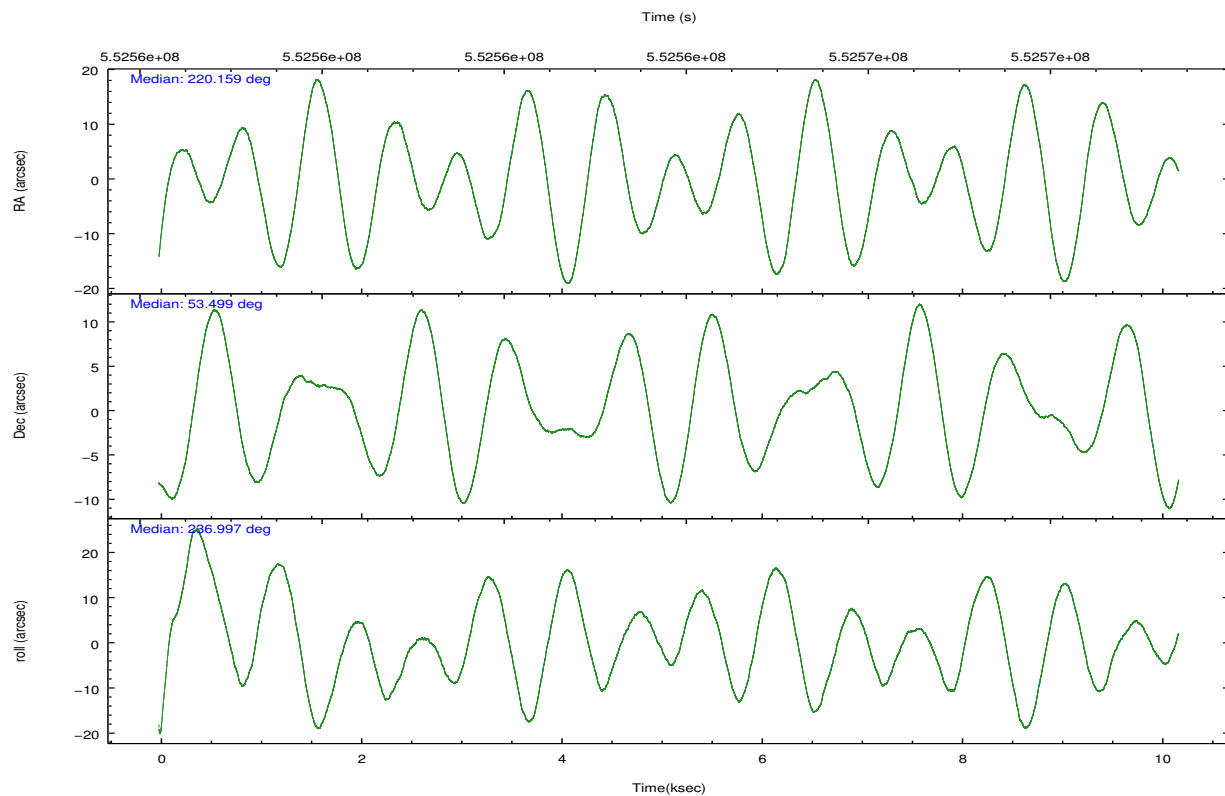


## 2.2 Compared Parameters

| Parameter                         | Planned             | Actual               | Parameter                             | Planned   | Actual  |
|-----------------------------------|---------------------|----------------------|---------------------------------------|-----------|---------|
| Instrument                        | ACIS                | ACIS                 | Obspar format version number          | 7         | 7       |
| Detector                          | ACIS-67             | ACIS-67              | 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                 | 220.161082          | 220.1593091838006    | Subarray requested                    | CUSTOM    | 1/4     |
| [deg] Pointing Dec                | 53.526192           | 53.4987016681343     | Subarray start row                    | 385       | 385     |
| [deg] Pointing Roll               | 236.843733          | 237.0017286453576    | Subarray row count                    | 256       | 256     |
| [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  | 0.9     |
| [mm] SIM translation stage pos    | -190.132523         | -190.145094680475    |                                       |           |         |
| [mm] SIM translation stage offset | 0                   | 0.01257209746719923  |                                       |           |         |
| [s] Observation start time (MET)  | 552558880.184000    | 552557670.34113      |                                       |           |         |
| Observation start date            | 2015-07-06T08:33:32 | 2015-07-06T08:14:30  |                                       |           |         |
| [s] Observation end time (MET)    | 552568880.184000    | 552569755.09181      |                                       |           |         |
| Observation end date              | 2015-07-06T11:20:12 | 2015-07-06T11:35:55  |                                       |           |         |
| Read mode                         | TIMED               | TIMED                |                                       |           |         |

## 2.3 Aspect



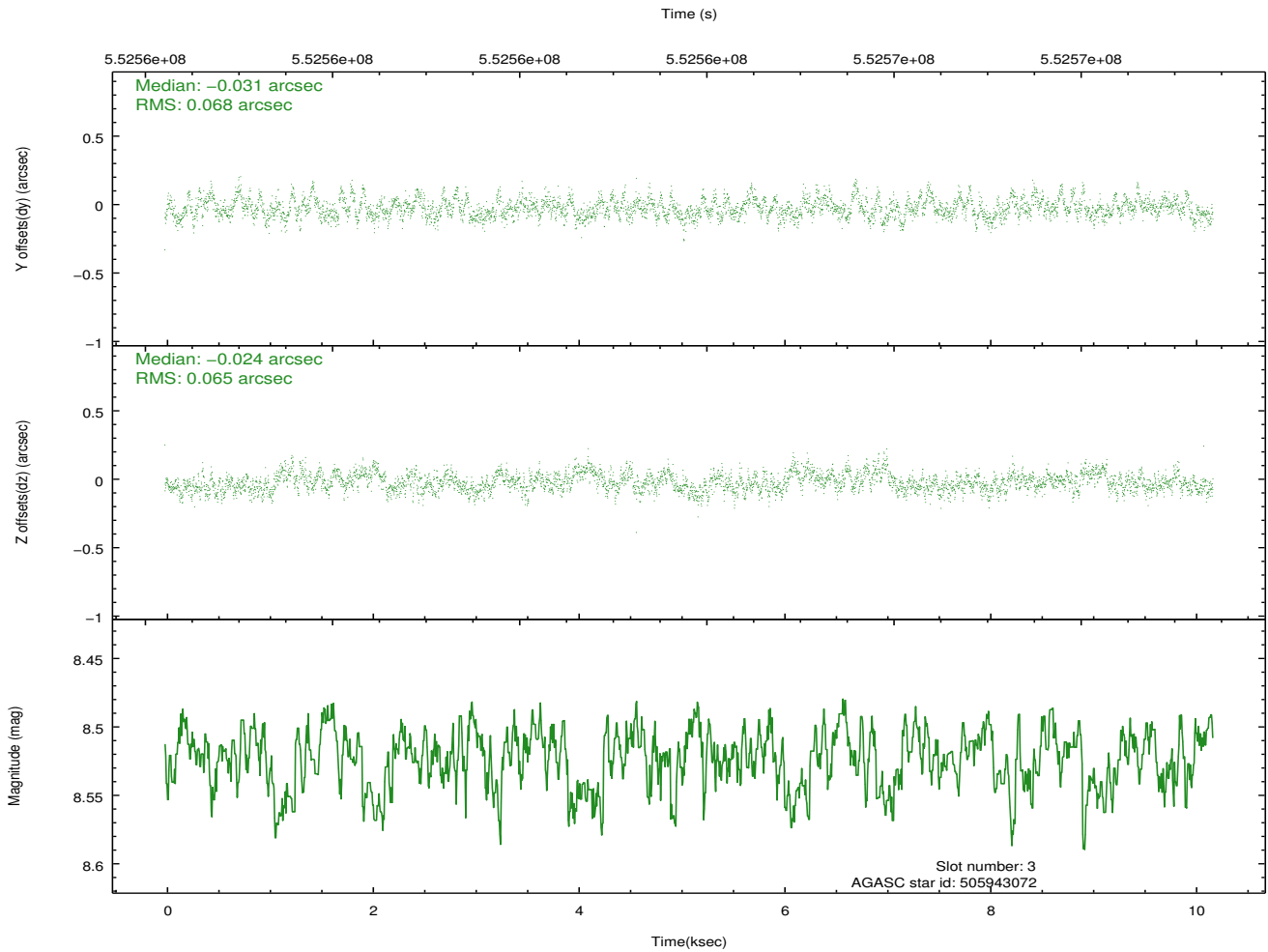
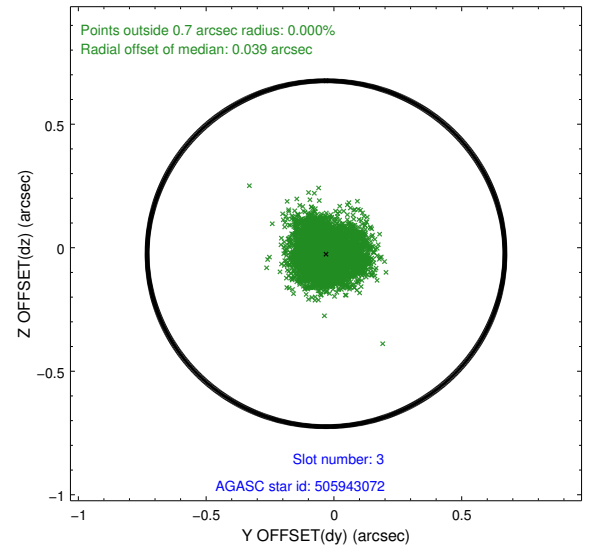
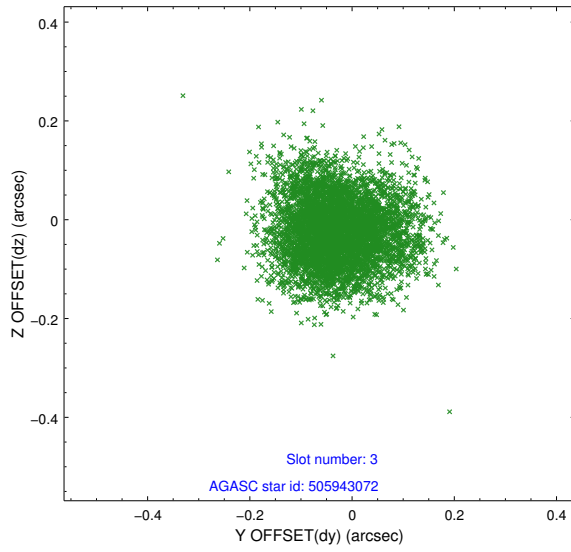


# Slot Statistics

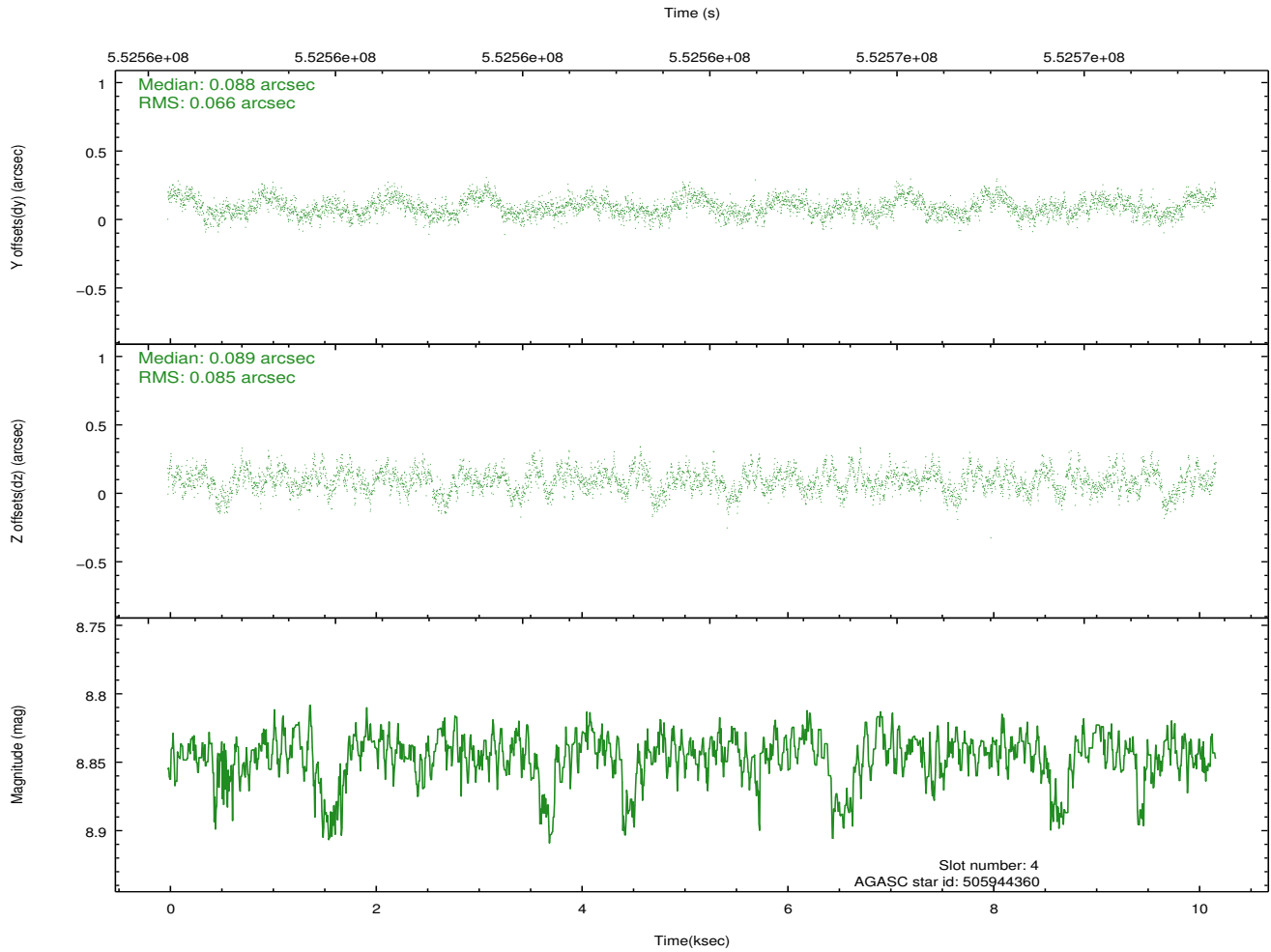
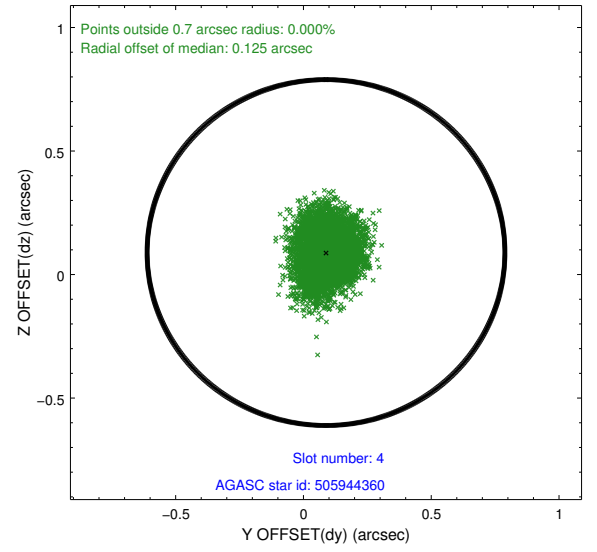
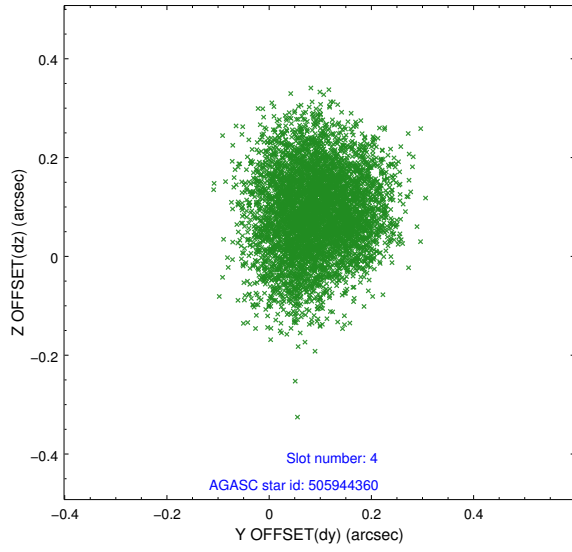
| slot | status | used | id        | mag  | n_pts | med_dy | med_dz | dr1   | dr2   | ra         | dec       | mean_y   | mean_z   |
|------|--------|------|-----------|------|-------|--------|--------|-------|-------|------------|-----------|----------|----------|
| 0    | FID    |      | ACIS-S-1  | 7.02 | 2484  | 0.052  | -0.023 | 0.009 | 0.015 | 0.000000   | 0.000000  | 925.55   | -1737.06 |
| 1    | FID    |      | ACIS-S-4  | 7.03 | 2484  | 0.213  | -0.005 | 0.010 | 0.015 | 0.000000   | 0.000000  | 2143.36  | 166.61   |
| 2    | FID    |      | ACIS-S-5  | 7.05 | 2484  | -0.291 | 0.040  | 0.010 | 0.018 | 0.000000   | 0.000000  | -1823.04 | 160.74   |
| 3    | GUIDE  | used | 505943072 | 8.52 | 4968  | -0.031 | -0.024 | 0.100 | 0.162 | 219.487846 | 53.043862 | 2245.64  | -273.72  |
| 4    | GUIDE  | used | 505944360 | 8.84 | 4967  | 0.088  | 0.089  | 0.116 | 0.182 | 219.647750 | 54.058329 | -1012.43 | -1958.32 |
| 5    | GUIDE  | used | 505944928 | 9.69 | 4964  | -0.135 | -0.025 | 0.186 | 0.297 | 221.599156 | 53.713086 | -2264.86 | 2179.71  |
| 6    | GUIDE  | used | 505950256 | 9.22 | 4967  | 0.103  | -0.158 | 0.136 | 0.213 | 219.728415 | 53.274715 | 1264.08  | -286.82  |
| 7    | GUIDE  | used | 505951272 | 6.32 | 4968  | -0.040 | 0.122  | 0.093 | 0.153 | 219.563423 | 54.023339 | -810.86  | -2039.27 |

## 2.4 Star Slots

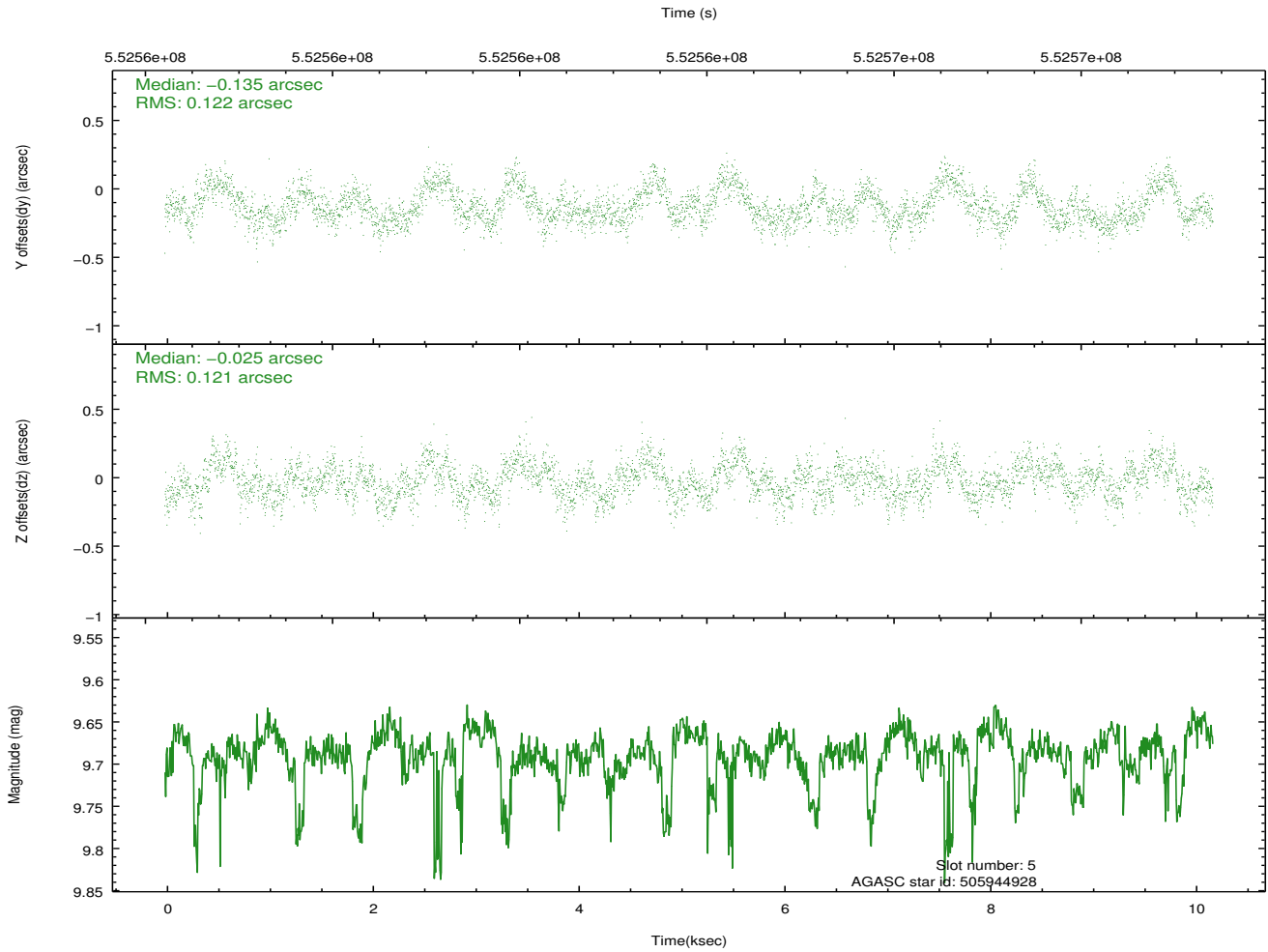
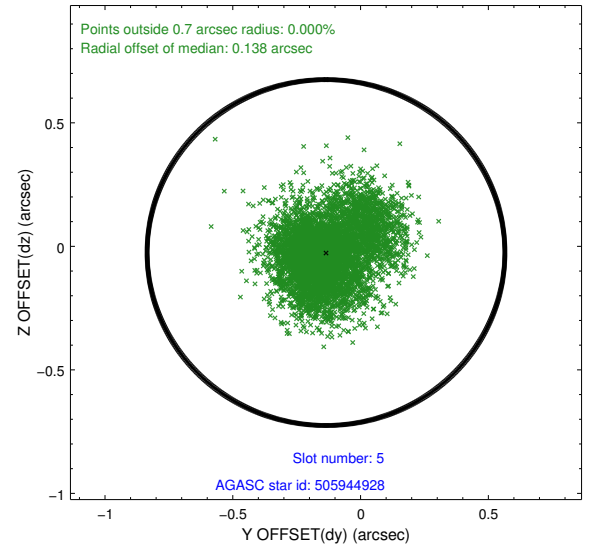
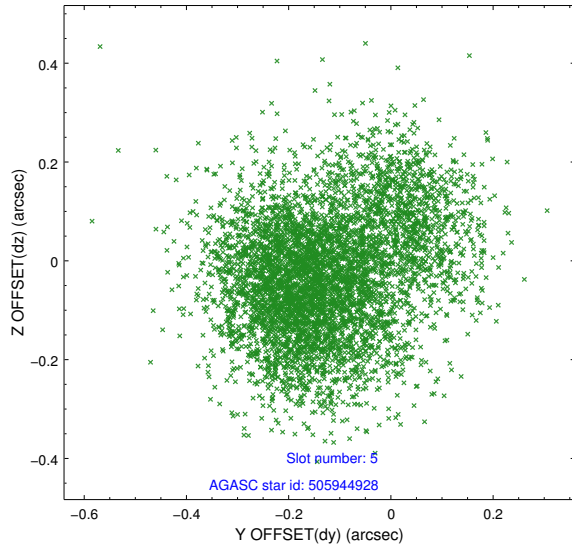
### 2.4.1 Slot 3



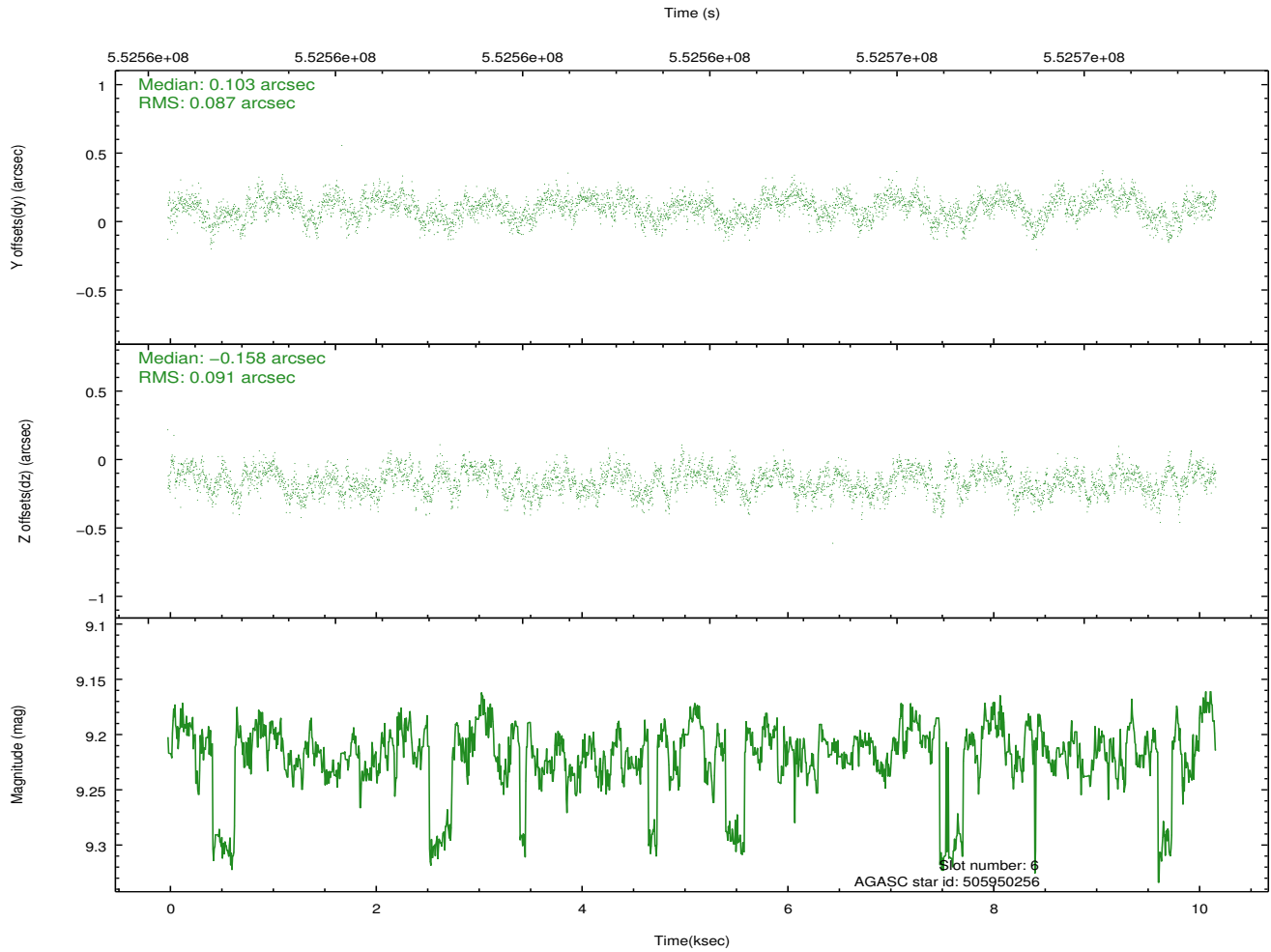
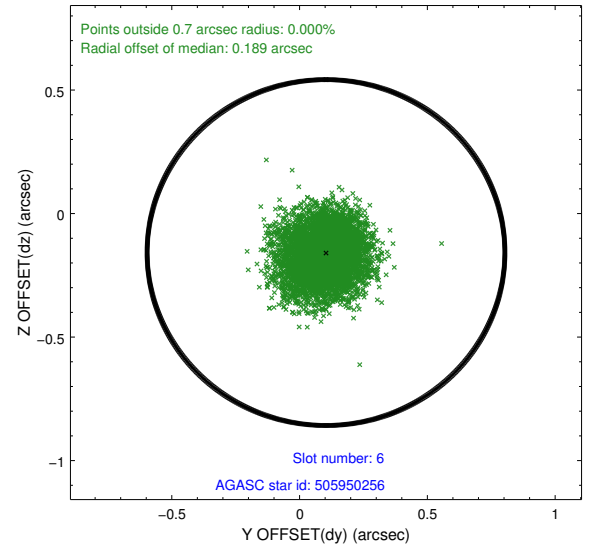
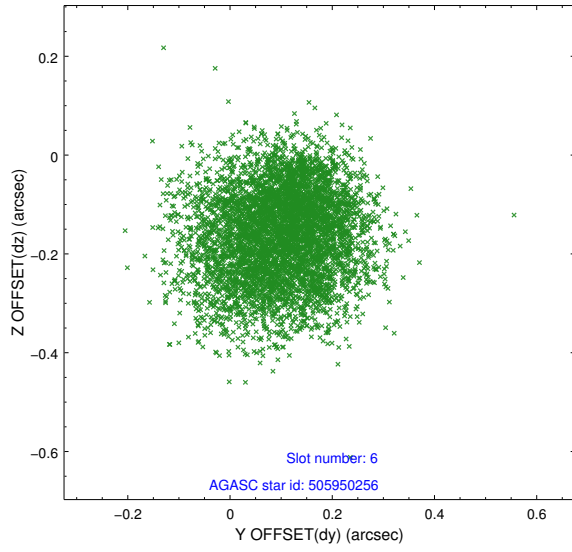
## 2.4.2 Slot 4



### 2.4.3 Slot 5

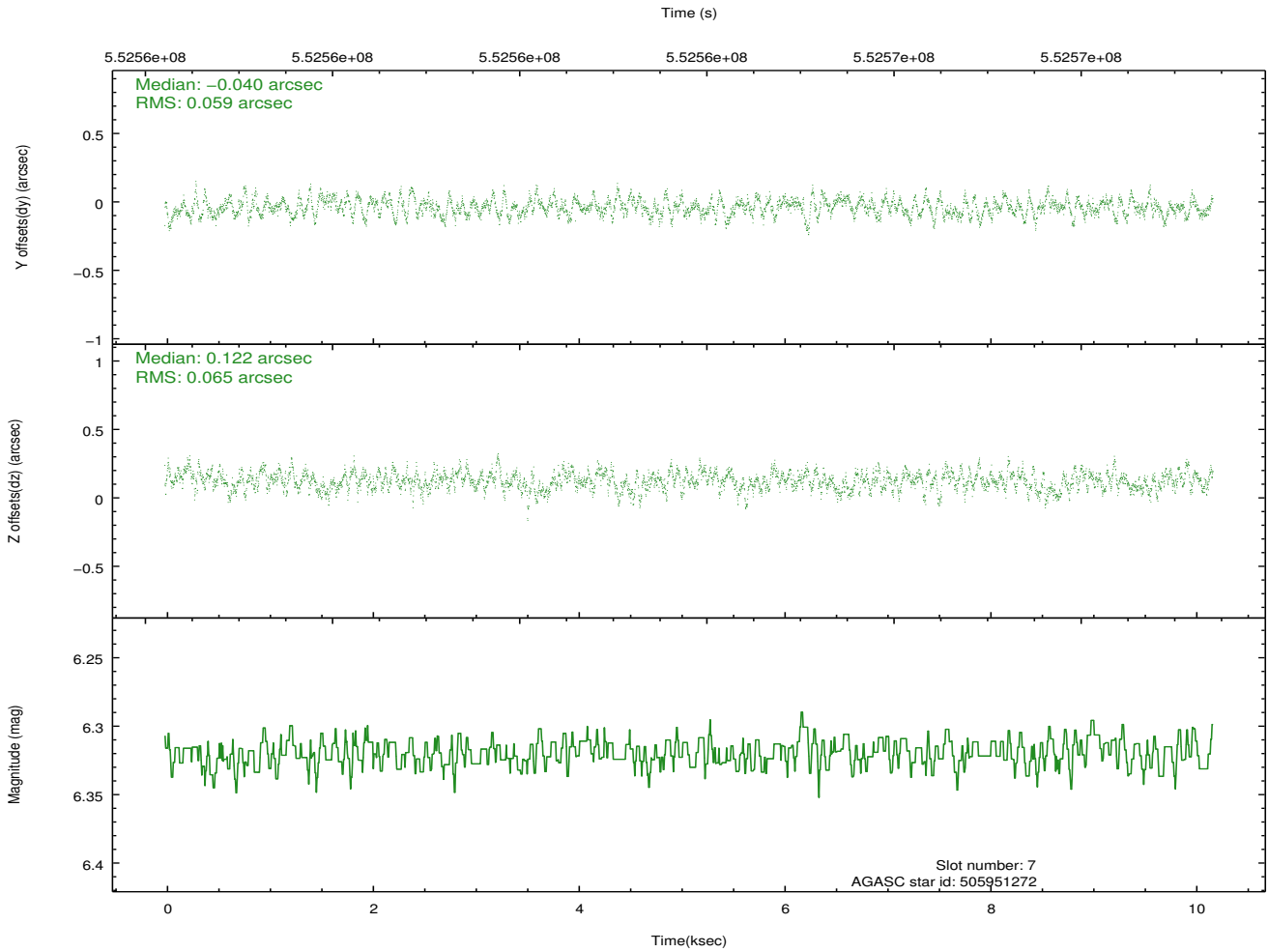
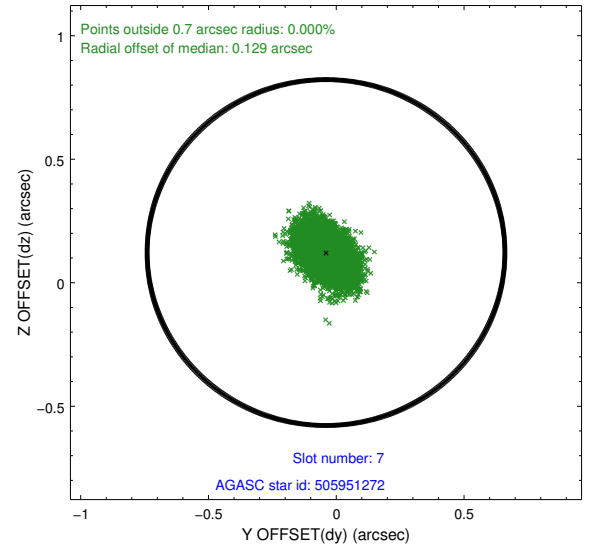
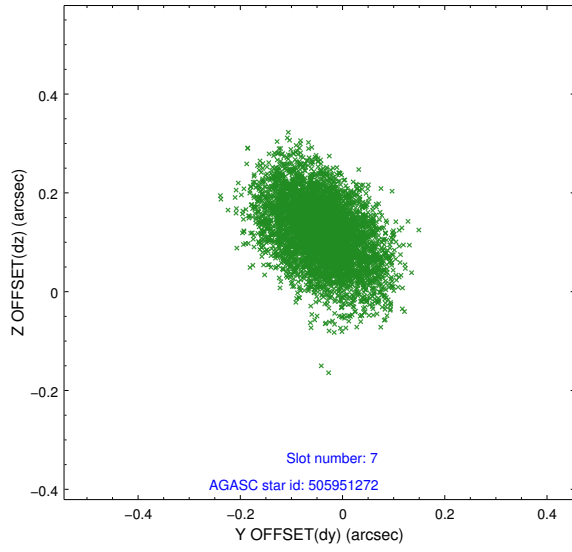


## 2.4.4 Slot 6



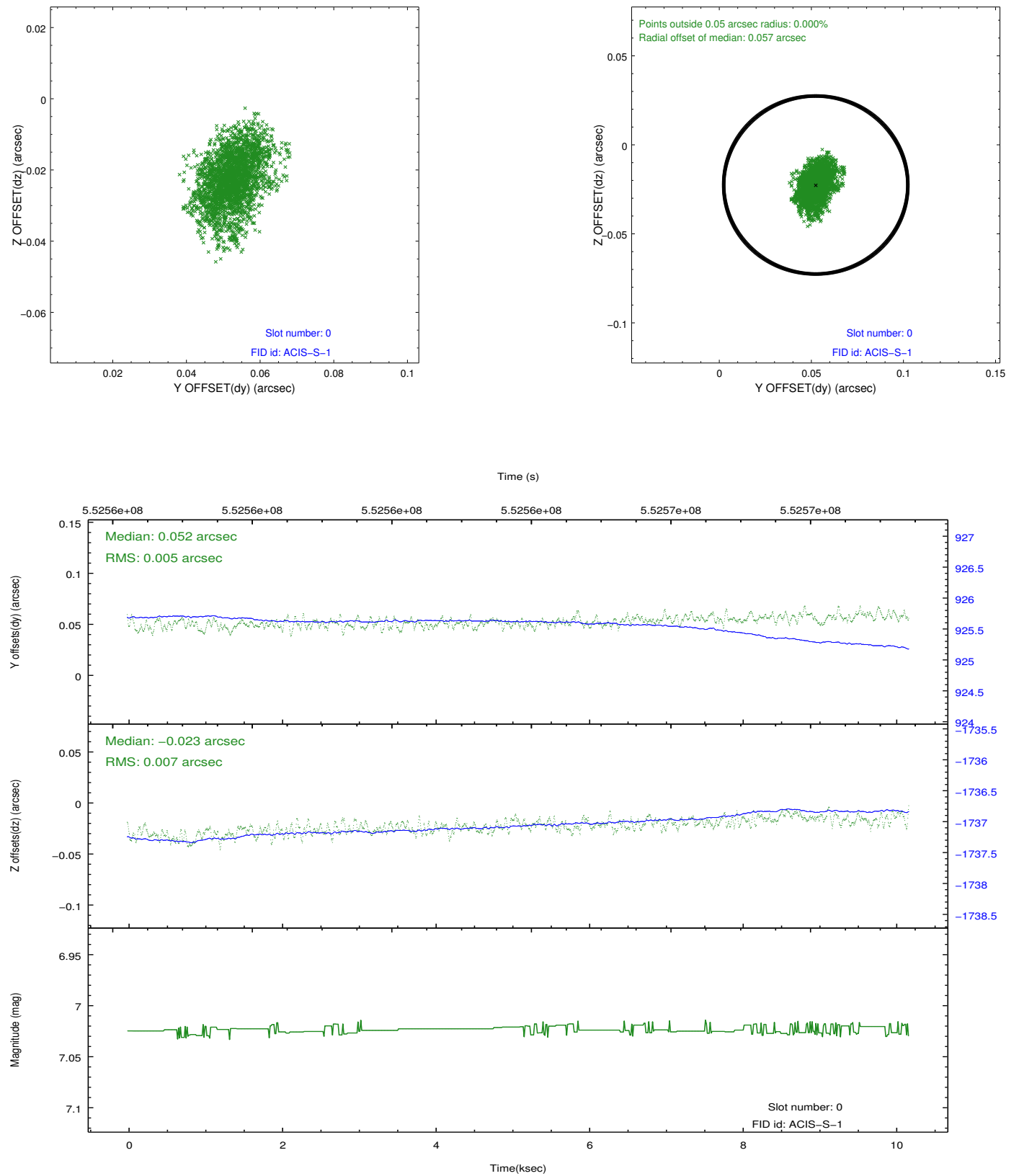


## 2.4.5 Slot 7

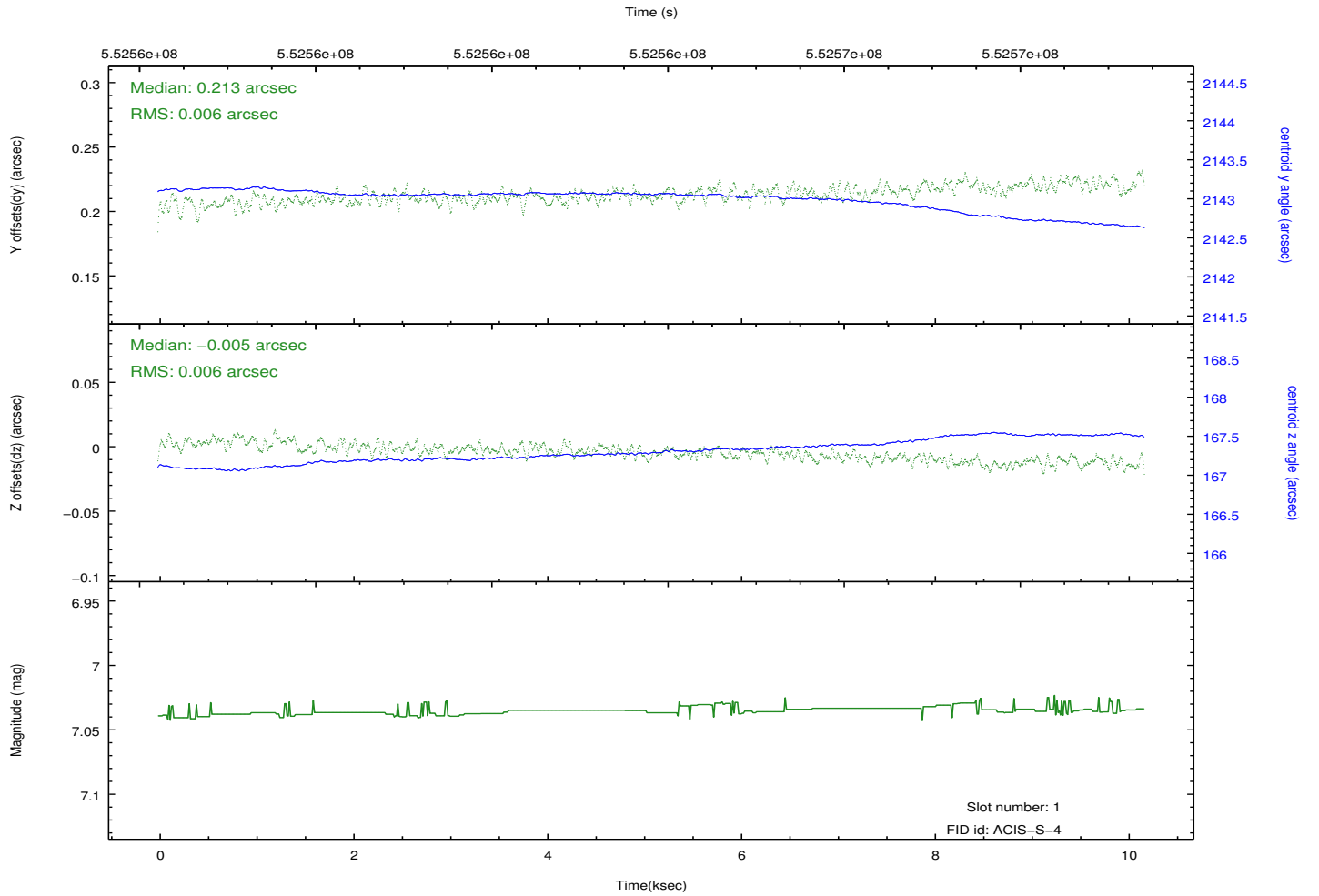
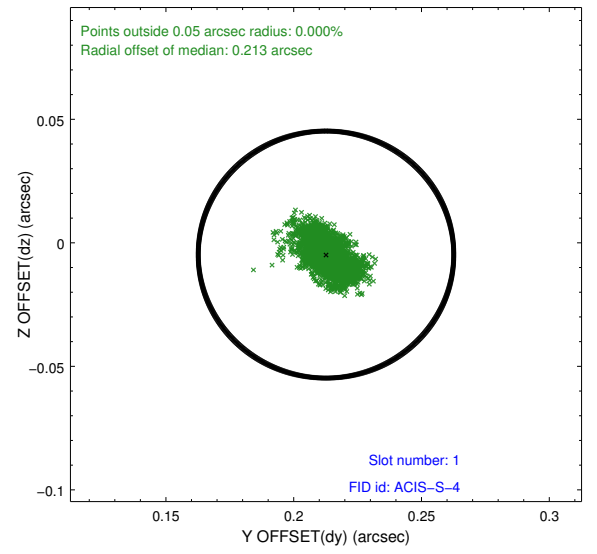
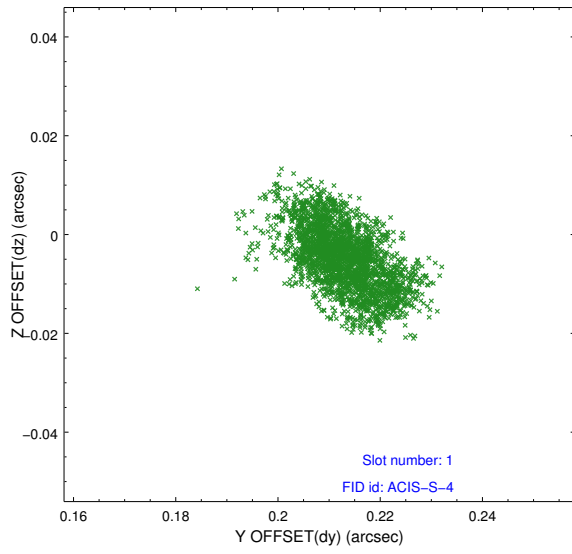


## 2.5 FID Slots

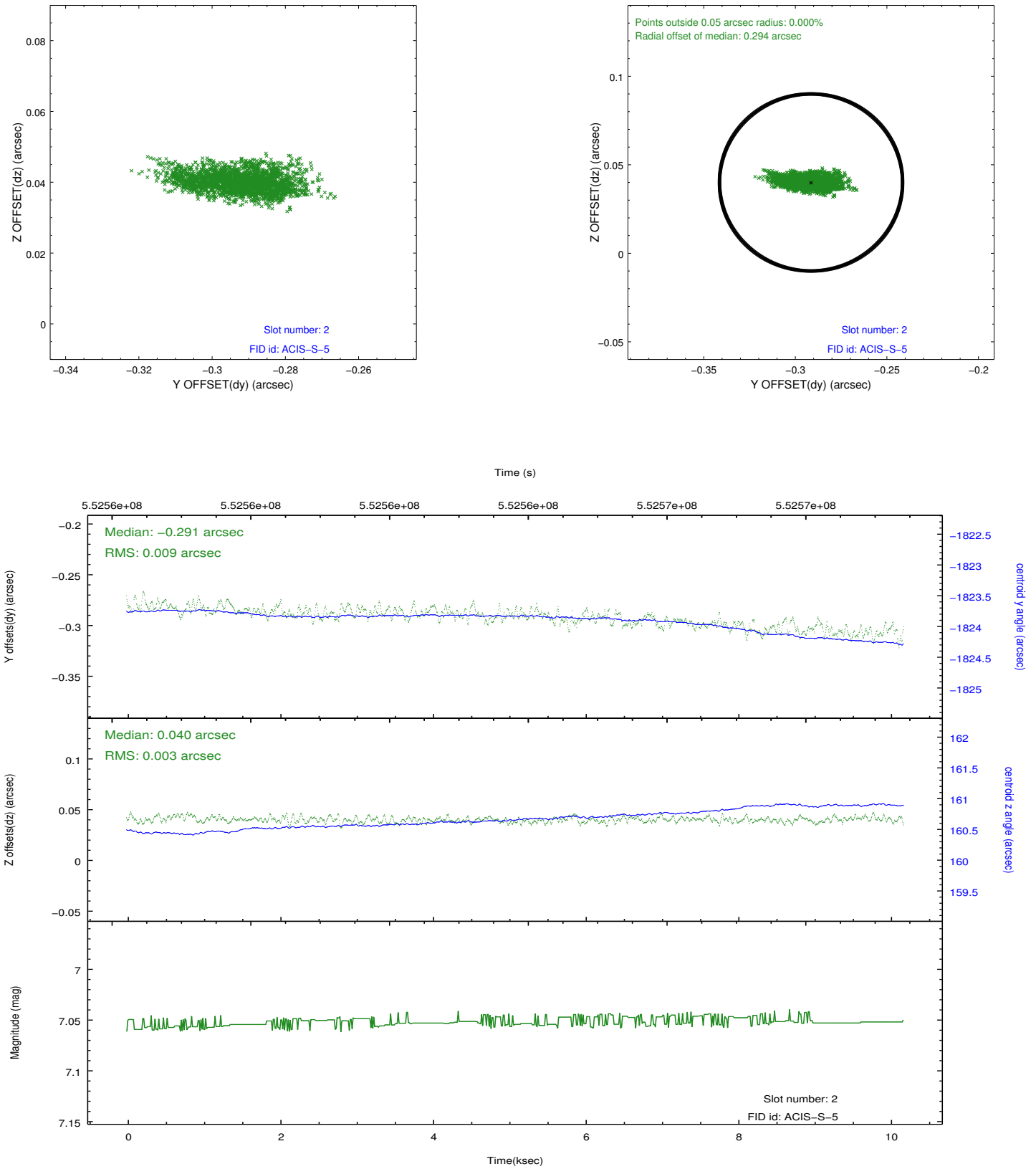
### 2.5.1 Slot 0



## 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)      | 2015.07.06      |
| V&V Edition                | 1               |
| V&V Disposition and Status | OK              |
| V&V Charge Time            | 10.097999732375 |

### A.2 Comments