

# V&V Reference Report

## L2 ASCDS Version : 10.4.3

Observation 18228 - L2 Version 1  
Chandra X-Ray Center

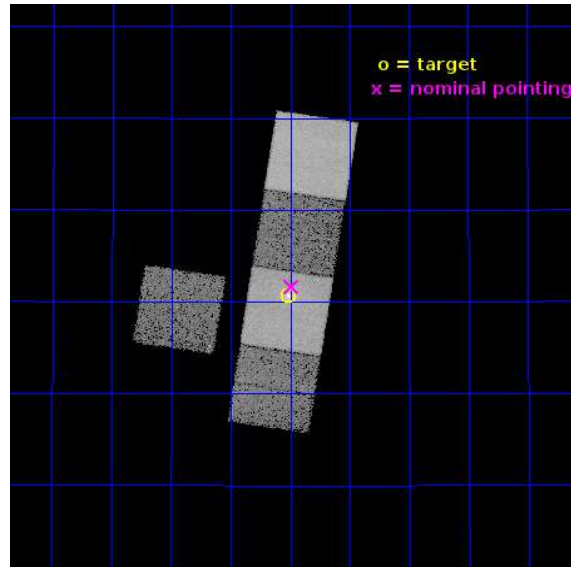
L2 Processing Date : Dec 18 2015

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# 1 Front

|          |                                                               |                                             |
|----------|---------------------------------------------------------------|---------------------------------------------|
| seq_num  | 801556                                                        | Sequence number                             |
| obs_id   | 18228                                                         | Observation id                              |
| title    | Fossil group: the real spherical cow to study<br>AGN feedback | Proposa                                     |
| observer | Dr Ka-Wah Wong                                                | Principal investigator                      |
| object   | J0807                                                         | Source name                                 |
| dtcycle  | 0                                                             | &#160                                       |
| cycle    | P                                                             | events from which exps?<br>Prim/Second/Both |
| ra_targ  | 121.878333                                                    | Observer's specified target RA [deg]        |
| dec_targ | 34.011556                                                     | Observer's specified target Dec [deg]       |
| ra_nom   | 121.87249251967                                               | Nominal RA [deg]                            |
| dec_nom  | 34.027629549476                                               | Nominal Dec [deg]                           |
| roll_nom | 98.642099345862                                               | Nominal Roll [deg]                          |
| revision | 1                                                             | Processing version of data                  |
| ontime   | 20060.1001544                                                 | Sum of GTIs [s]                             |
| livetime | 19798.000177852                                               | Livetime [s]                                |
| ontime3  | 20060.1001544                                                 | Sum of GTIs [s]                             |
| ontime5  | 20060.1001544                                                 | Sum of GTIs [s]                             |
| ontime6  | 20056.959033728                                               | Sum of GTIs [s]                             |
| ontime7  | 20060.1001544                                                 | Sum of GTIs [s]                             |
| ontime8  | 20060.1001544                                                 | Sum of GTIs [s]                             |
| l2events | 183642                                                        | Number of level 2 events                    |

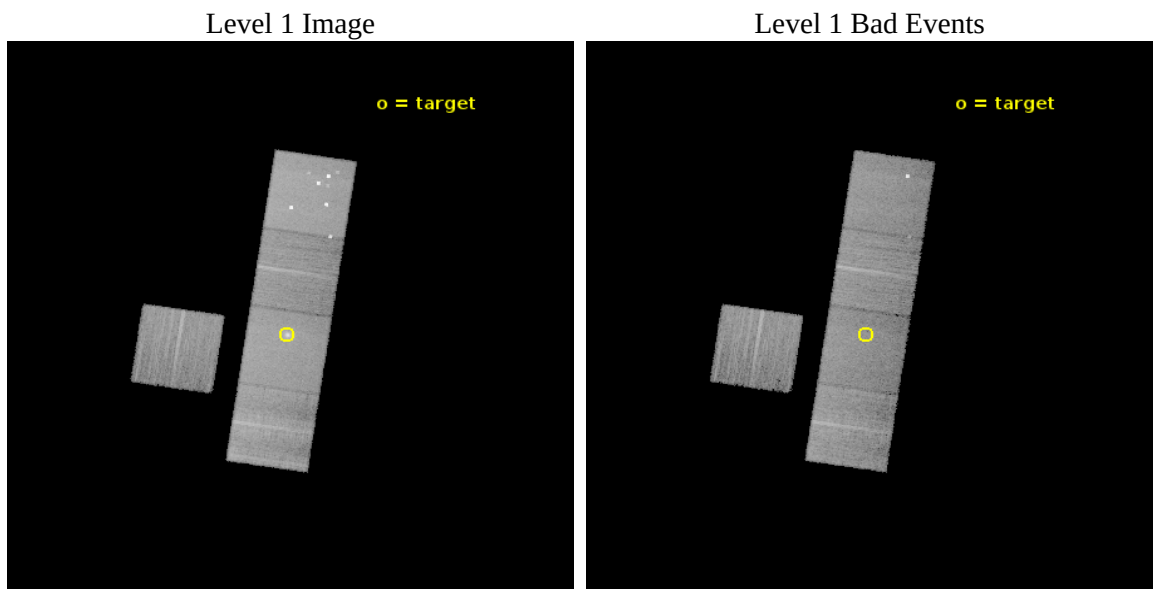




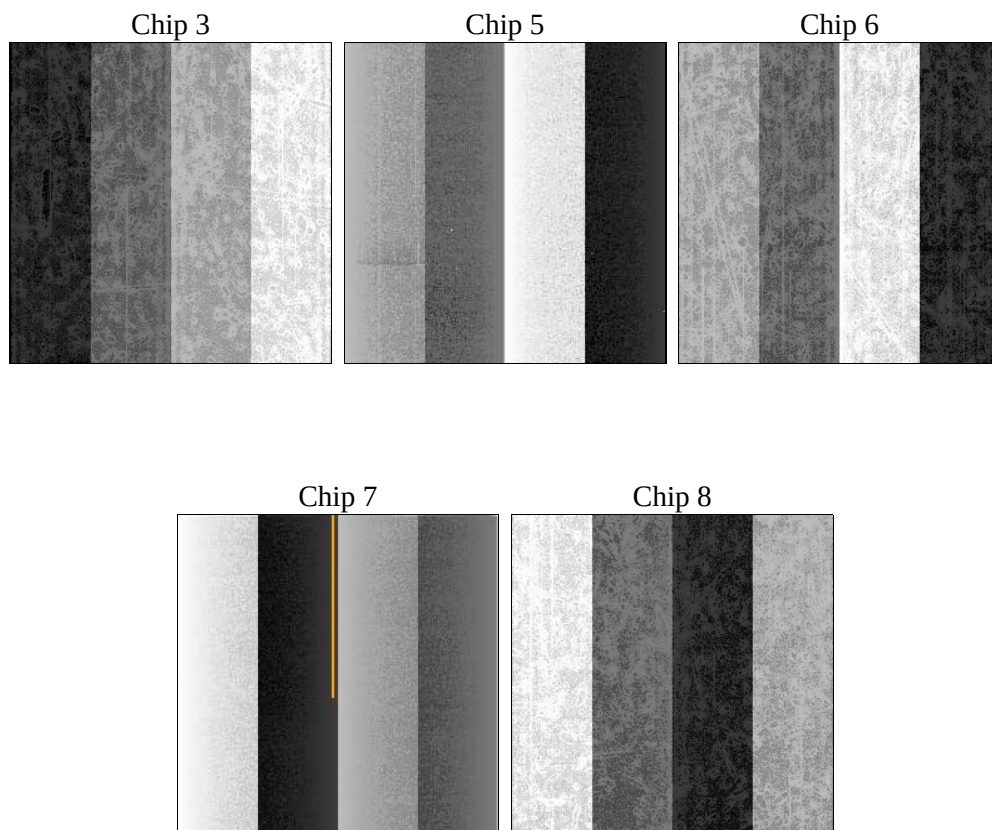
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

|          |                     |                                |                |                 |                                         |
|----------|---------------------|--------------------------------|----------------|-----------------|-----------------------------------------|
| obi_num  | 0                   | Obi number                     | sched_exp_time | 20000.000000    | [s] Scheduled observation exposure time |
| ascdsver | 10.4.3              | Processing system revision     | ontime         | 20060.1001544   | Sum of GTIs [s]                         |
| caldbver | 4.7.0               | &#160                          | ontime3        | 20060.1001544   | Sum of GTIs [s]                         |
| date     | 2015-12-18T17:40:09 | Date and time of file creation | ontime5        | 20060.1001544   | Sum of GTIs [s]                         |
| revision | 1                   | Processing version of data     | ontime6        | 20056.959033728 | Sum of GTIs [s]                         |
|          |                     |                                | ontime7        | 20060.1001544   | Sum of GTIs [s]                         |
|          |                     |                                | ontime8        | 20060.1001544   | Sum of GTIs [s]                         |
|          |                     |                                | l1events       | 722772          | Number of level 1 events                |

### 2.1.4 Events

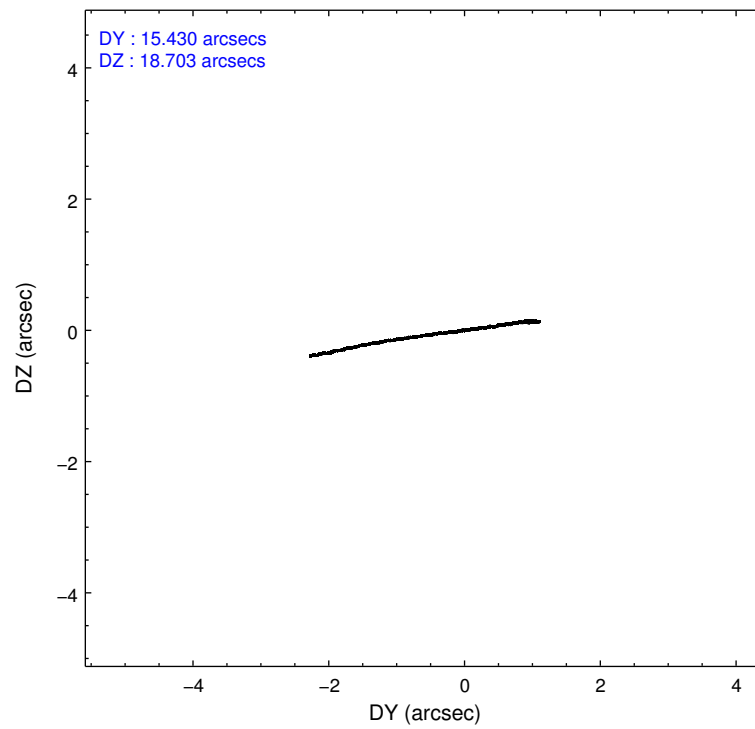
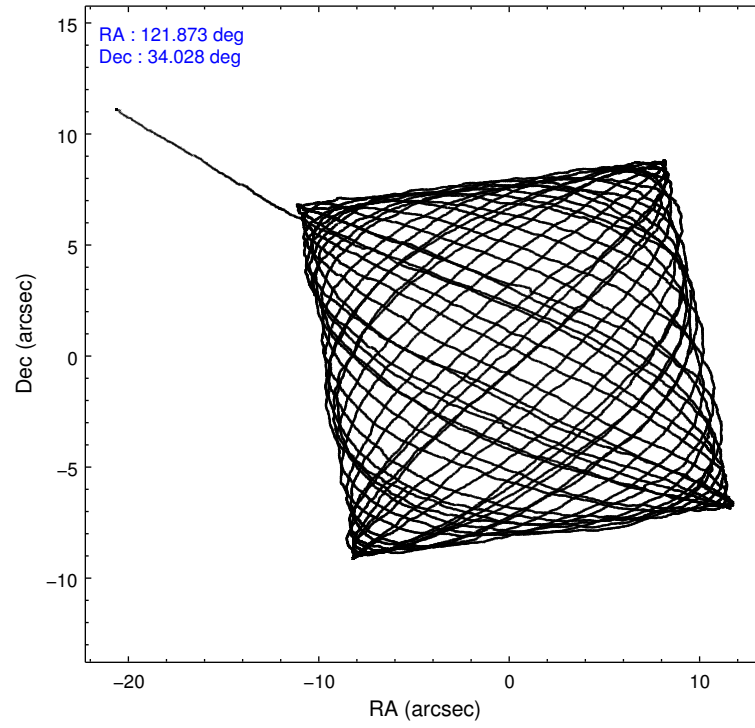
|                 | ccd 3  | ccd 5  | ccd 6  | ccd 7  | ccd 8  |
|-----------------|--------|--------|--------|--------|--------|
| level 1 events  | 106657 | 204141 | 113670 | 153835 | 144469 |
| rejected events | 94982  | 98559  | 100698 | 85223  | 107325 |
| rejected %      | 89%    | 48%    | 88%    | 55%    | 74%    |

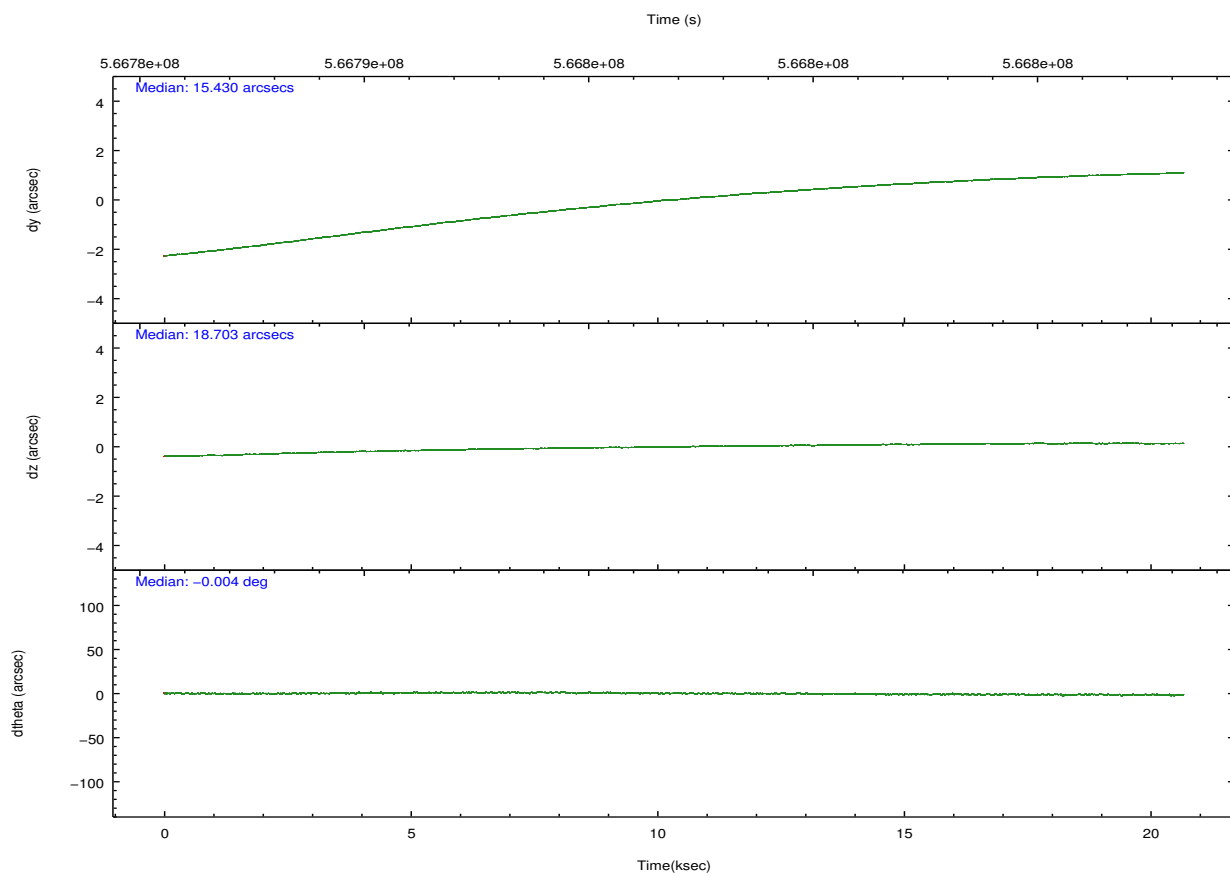
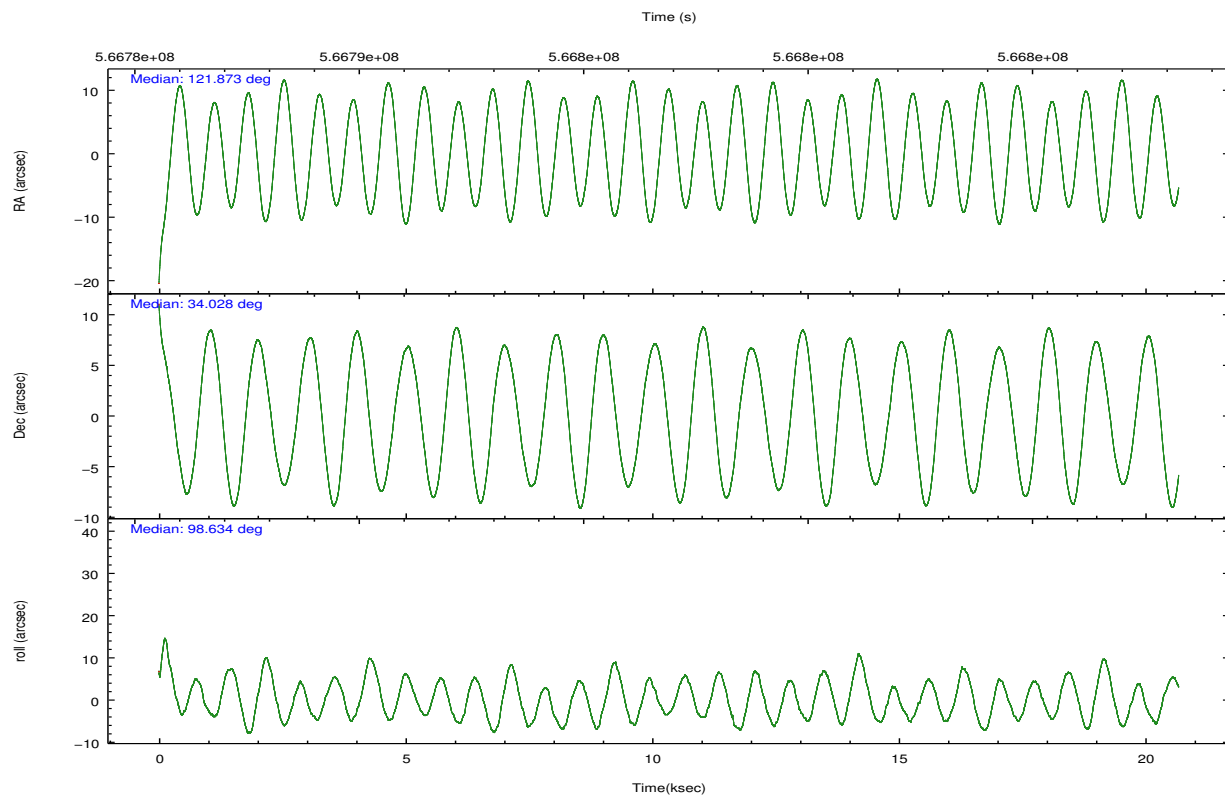
|                | ccd 3 | ccd 5 | ccd 6 | ccd 7 | ccd 8 |
|----------------|-------|-------|-------|-------|-------|
| grade 0 events | 4059  | 22999 | 4265  | 7008  | 10040 |
|                | 3%    | 11%   | 3%    | 4%    | 6%    |
| grade 1 events | 56    | 369   | 55    | 165   | 107   |
|                | 0%    | 0%    | 0%    | 0%    | 0%    |
| grade 2 events | 2551  | 28283 | 3078  | 14667 | 9339  |
|                | 2%    | 13%   | 2%    | 9%    | 6%    |
| grade 3 events | 1269  | 3293  | 1285  | 5762  | 3781  |
|                | 1%    | 1%    | 1%    | 3%    | 2%    |
| grade 4 events | 1238  | 3255  | 1277  | 5663  | 3435  |
|                | 1%    | 1%    | 1%    | 3%    | 2%    |
| grade 5 events | 5518  | 13306 | 5726  | 15024 | 8247  |
|                | 5%    | 6%    | 5%    | 9%    | 5%    |
| grade 6 events | 2562  | 47769 | 3069  | 35520 | 10553 |
|                | 2%    | 23%   | 2%    | 23%   | 7%    |
| grade 7 events | 89404 | 84867 | 94915 | 70026 | 98967 |
|                | 83%   | 41%   | 83%   | 45%   | 68%   |

## 2.2 Compared Parameters

| Parameter                         | Planned             | Actual               | Parameter                             | Planned   | Actual  |
|-----------------------------------|---------------------|----------------------|---------------------------------------|-----------|---------|
| Instrument                        | ACIS                | ACIS                 | Obspar format version number          | 7         | 7       |
| Detector                          | ACIS-35678          | ACIS-35678           | 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                 | 121.893541          | 121.8724925196698    | CCD I2 on                             | N         | N       |
| [deg] Pointing Dec                | 34.006432           | 34.02762954947635    | CCD I3 on                             | O1        | Y       |
| [deg] Pointing Roll               | 98.473704           | 98.64209934586194    | 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         | -190.1400660498719   | CCD S3 on                             | Y         | Y       |
| [mm] SIM translation stage offset | 0                   | 0.00754346686406393  | CCD S4 on                             | Y         | Y       |
| [s] Observation start time (MET)  | 566787222.184000    | 566785891.68384      | CCD S5 on                             | N         | N       |
| Observation start date            | 2015-12-18T00:52:34 | 2015-12-18T00:31:31  | Number of optional ACIS chips dropped | 0         | 0       |
| [s] Observation end time (MET)    | 566807222.184000    | 566808421.18512      | On-chip summing requested             | N         | N       |
| Observation end date              | 2015-12-18T06:25:54 | 2015-12-18T06:47:01  | Subarray requested                    | NONE      | NONE    |
| Read mode                         | TIMED               | TIMED                | Alternating exposures requested       | N         | N       |
|                                   |                     |                      | [s] Primary exposure time             | 0.000000  | 3.1     |

## 2.3 Aspect



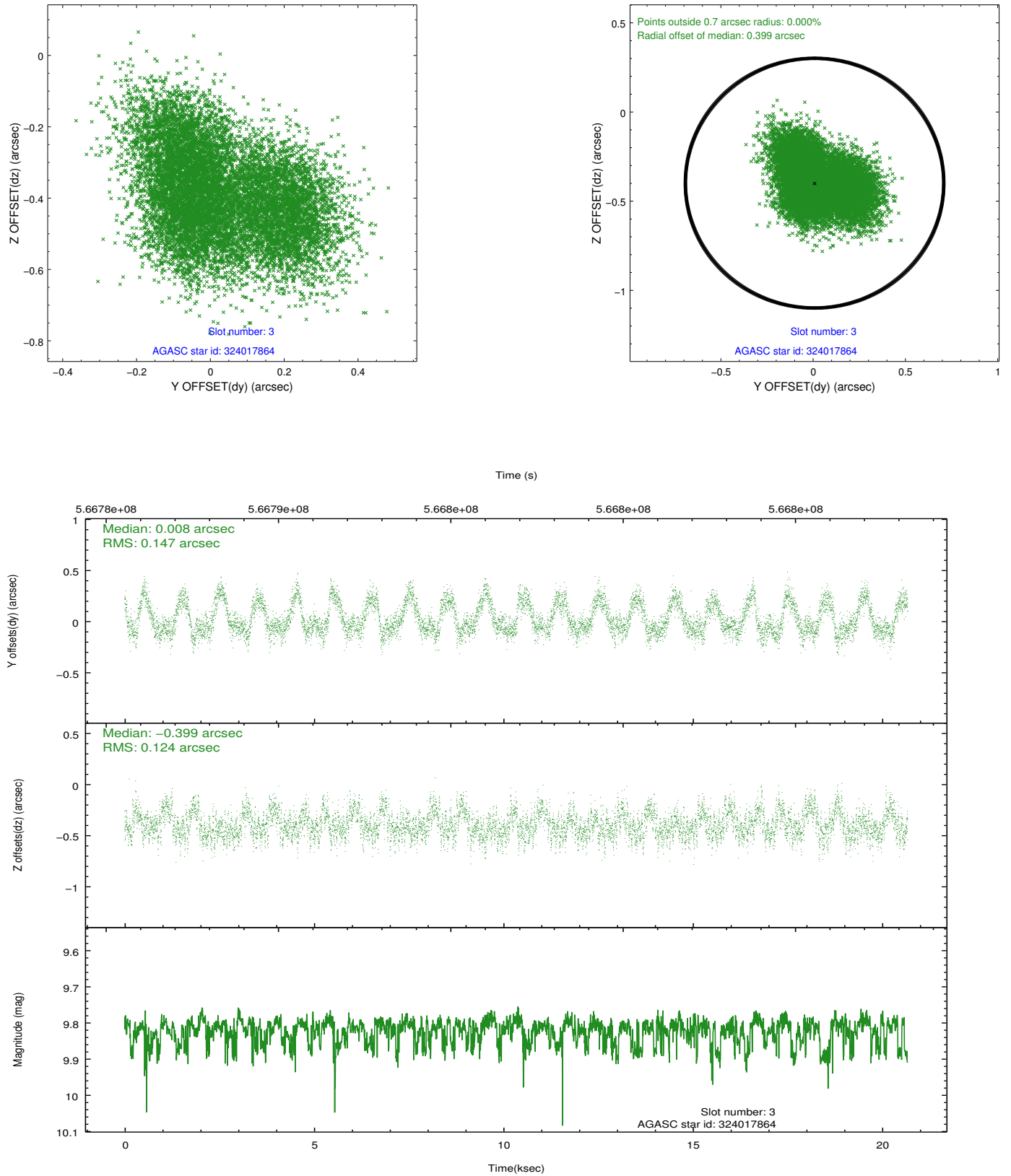


# Slot Statistics

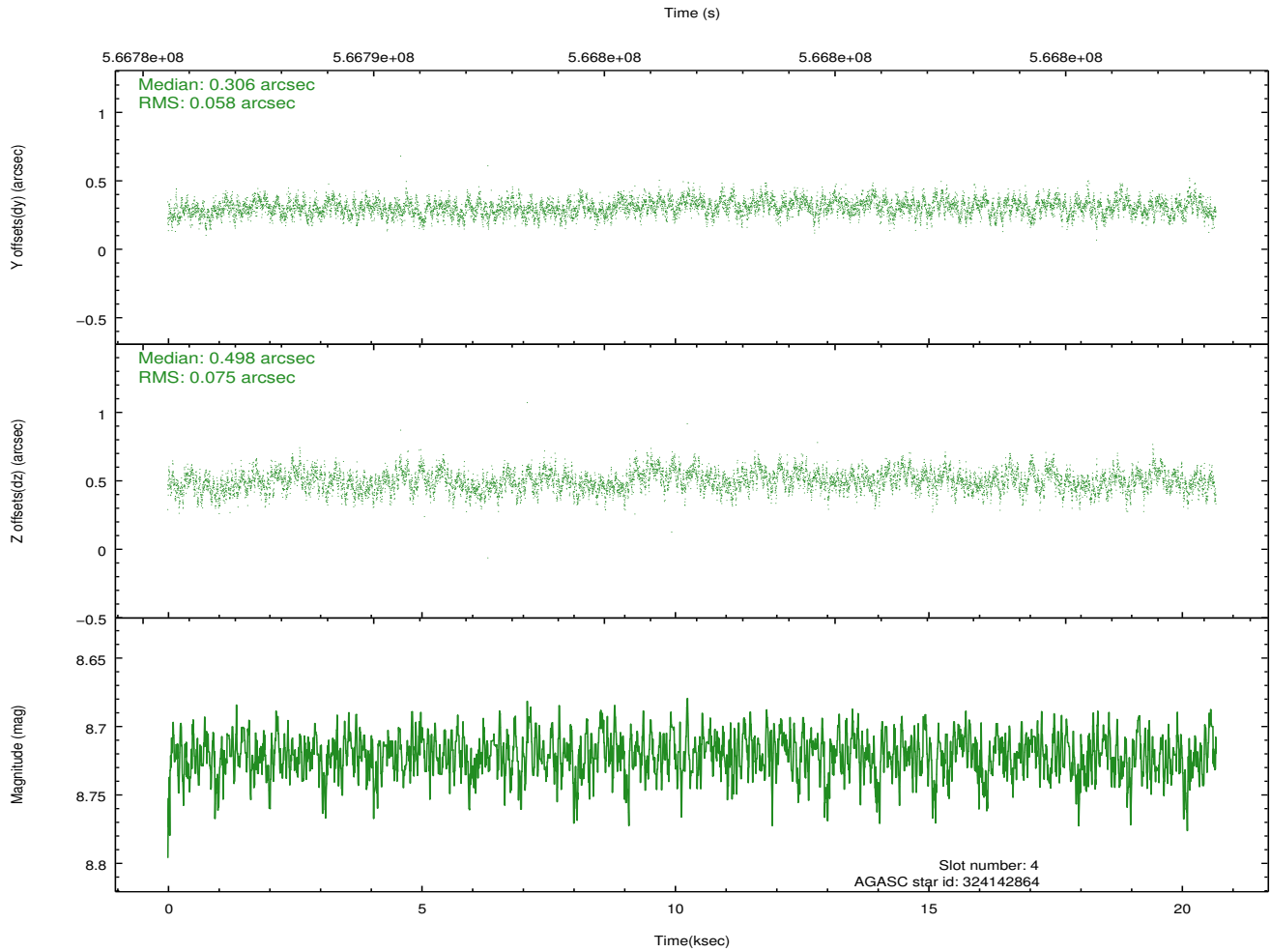
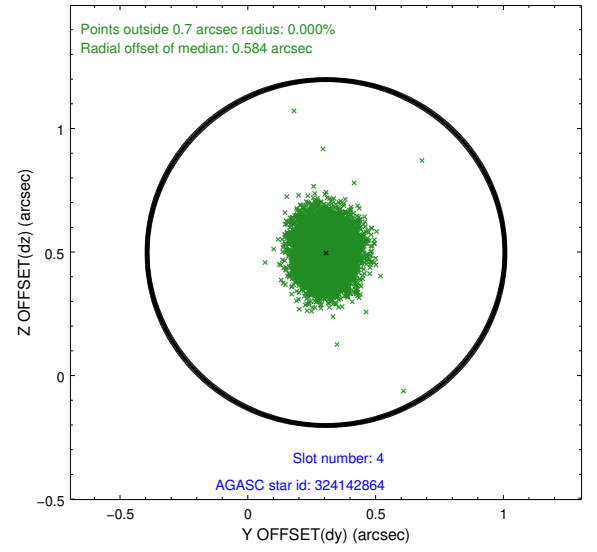
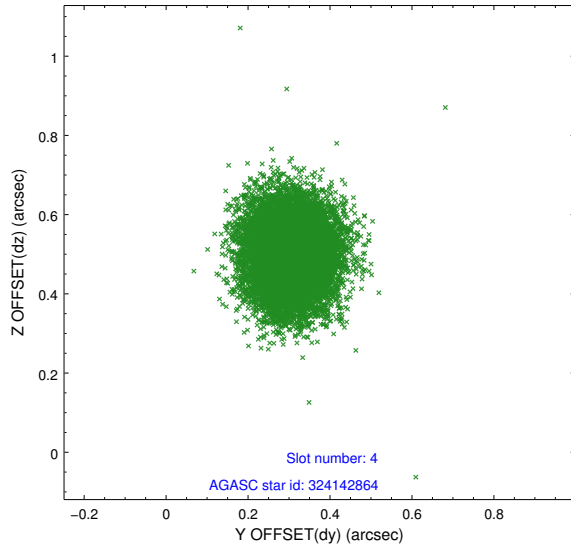
| slot | status | used | id        | mag  | n_pts | med_dy | med_dz | dr1   | dr2   | ra         | dec       | mean_y   | mean_z   |
|------|--------|------|-----------|------|-------|--------|--------|-------|-------|------------|-----------|----------|----------|
| 0    | FID    |      | ACIS-S-2  | 7.13 | 5044  | -0.165 | -0.124 | 0.014 | 0.060 | 0.000000   | 0.000000  | -768.35  | -1740.26 |
| 1    | FID    |      | ACIS-S-4  | 7.22 | 5044  | 0.405  | 0.113  | 0.012 | 0.042 | 0.000000   | 0.000000  | 2145.41  | 168.26   |
| 2    | FID    |      | ACIS-S-5  | 7.23 | 5044  | -0.272 | 0.022  | 0.018 | 0.040 | 0.000000   | 0.000000  | -1821.08 | 162.06   |
| 3    | GUIDE  | used | 324017864 | 9.82 | 10023 | 0.008  | -0.399 | 0.210 | 0.323 | 121.399940 | 33.721443 | -793.82  | 1612.39  |
| 4    | GUIDE  | used | 324142864 | 8.72 | 10084 | 0.306  | 0.498  | 0.101 | 0.163 | 122.794023 | 33.502614 | -2180.62 | -2407.37 |
| 5    | GUIDE  | used | 324541216 | 9.31 | 10076 | -0.384 | -0.118 | 0.145 | 0.227 | 121.459550 | 34.591470 | 2274.70  | 961.52   |
| 6    | GUIDE  | used | 324669392 | 8.49 | 10084 | -0.107 | -0.031 | 0.075 | 0.121 | 122.314154 | 34.306803 | 888.13   | -1396.55 |
| 7    | GUIDE  | used | 324672736 | 9.51 | 10076 | 0.151  | 0.044  | 0.171 | 0.276 | 122.158406 | 34.314057 | 979.78   | -943.08  |

## 2.4 Star Slots

### 2.4.1 Slot 3

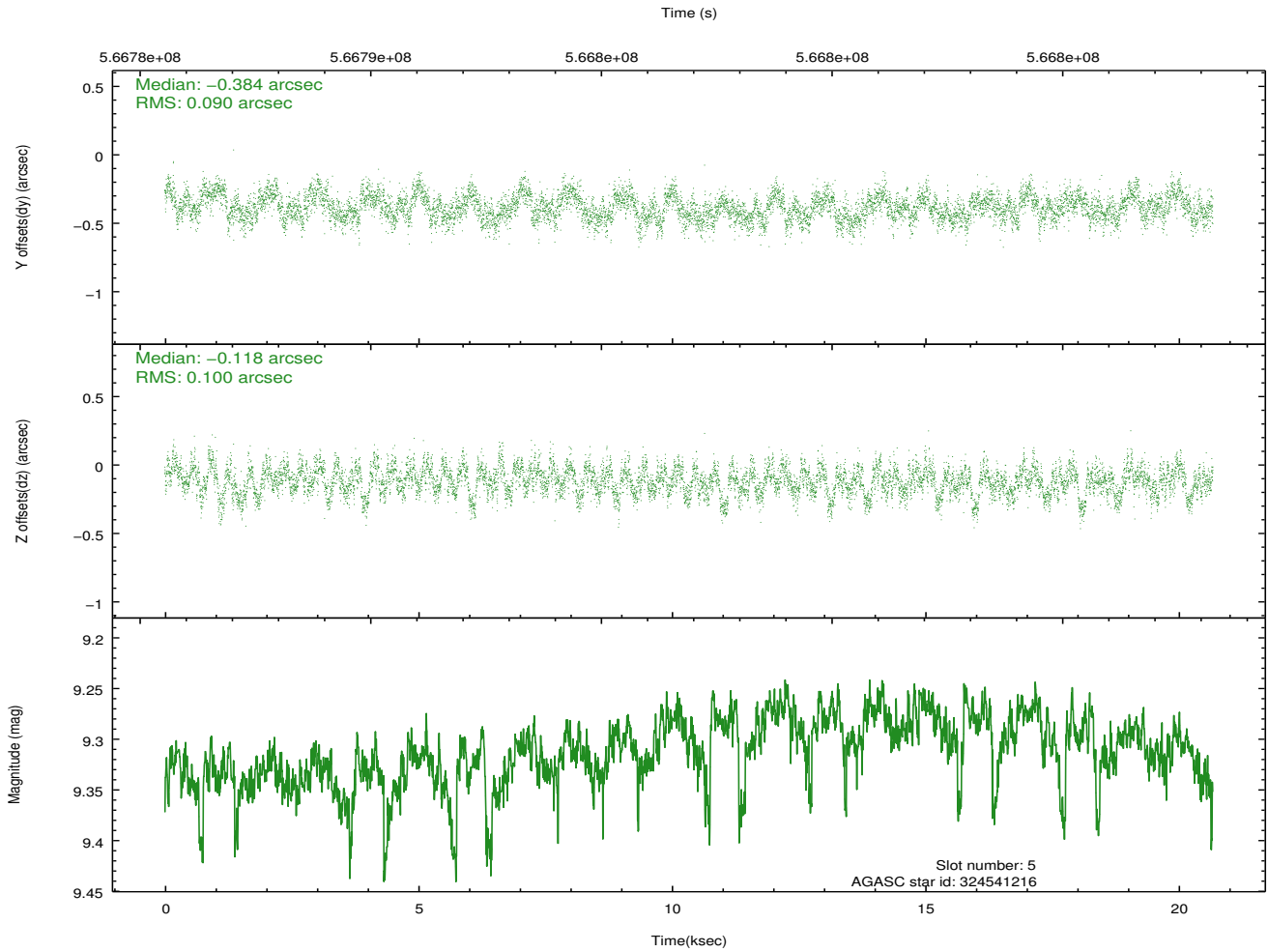
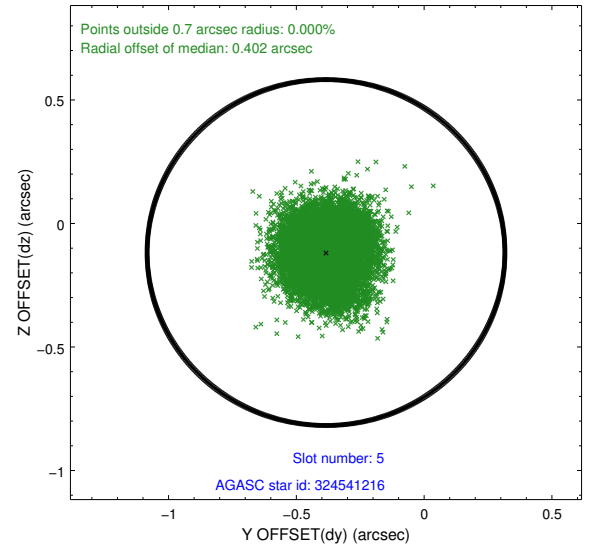
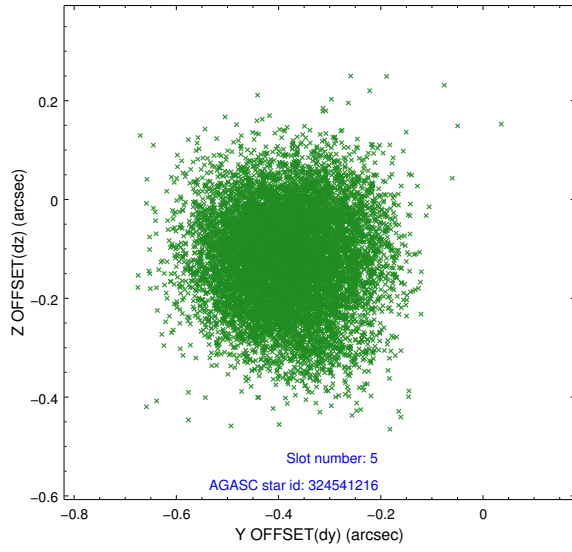


## 2.4.2 Slot 4

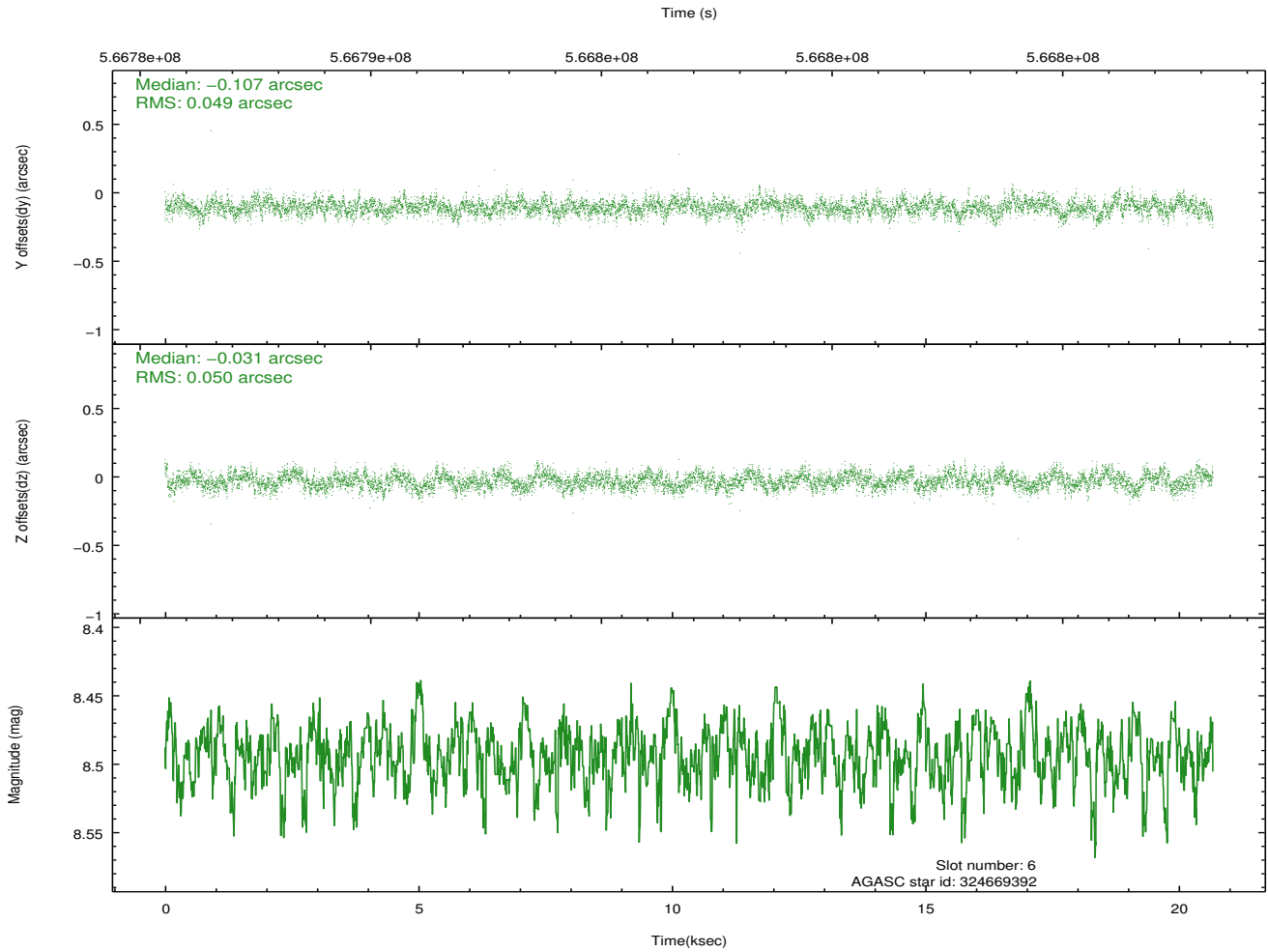
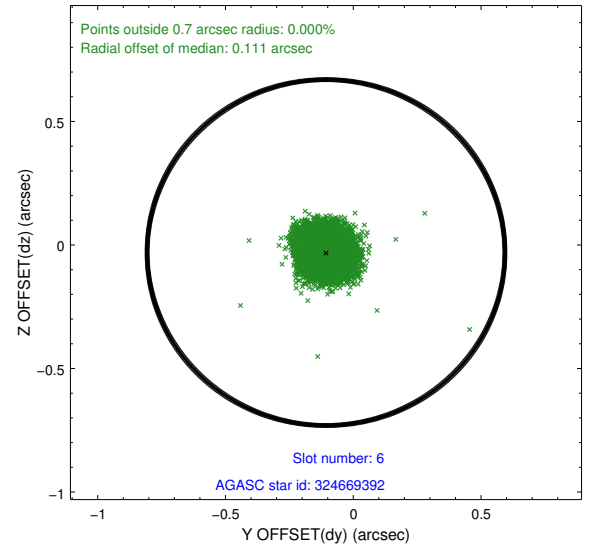
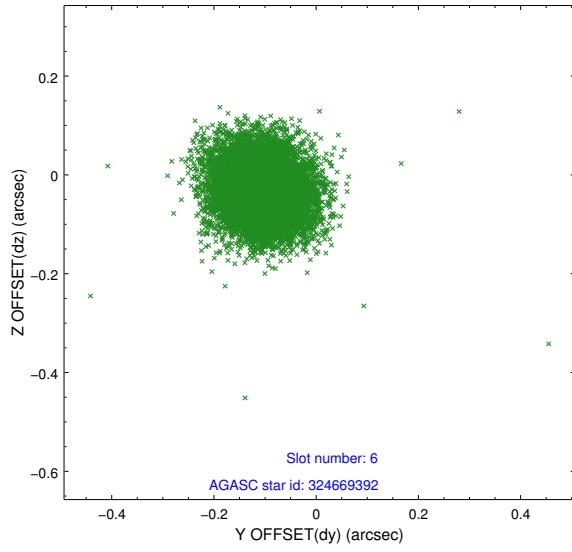




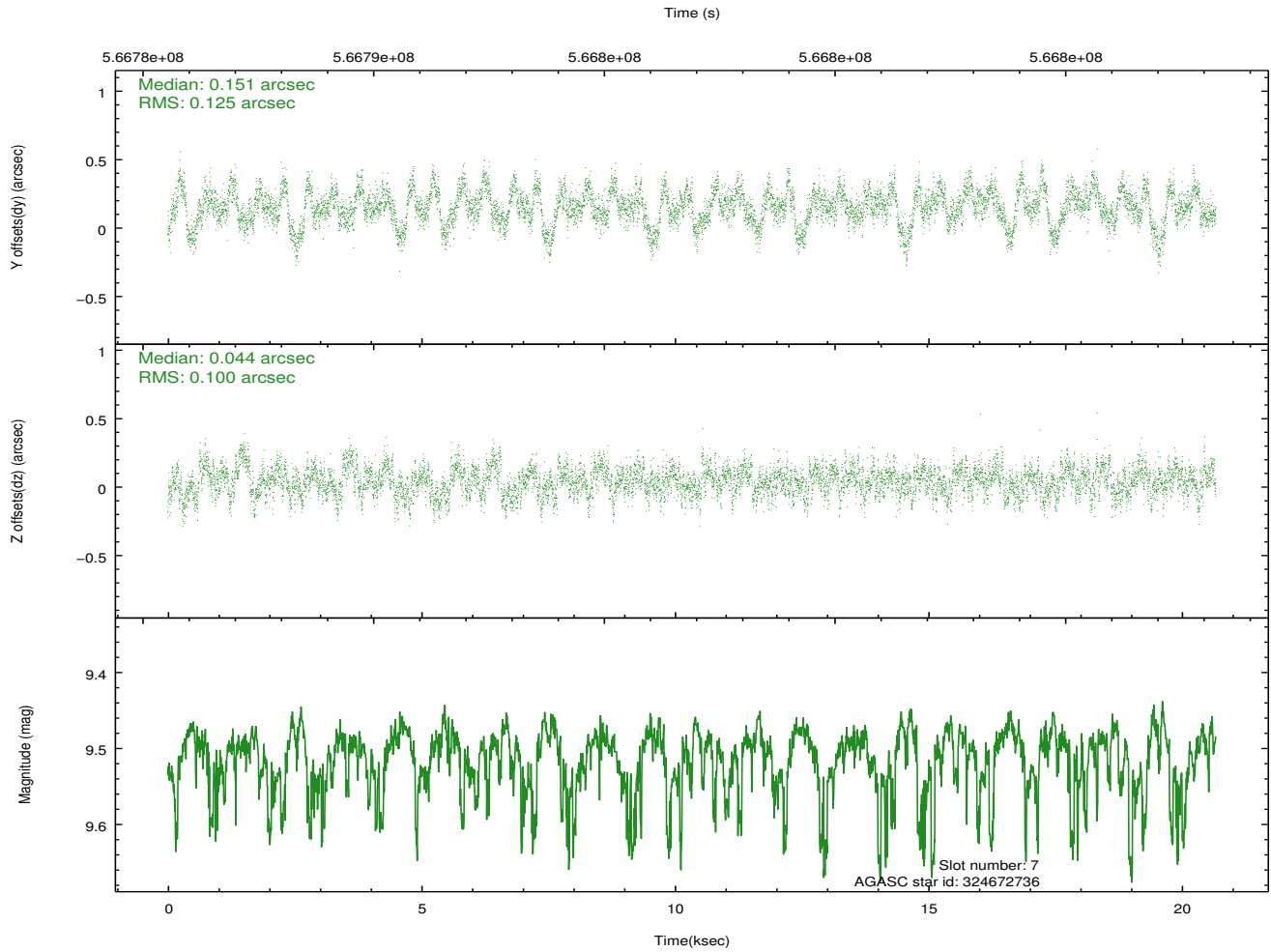
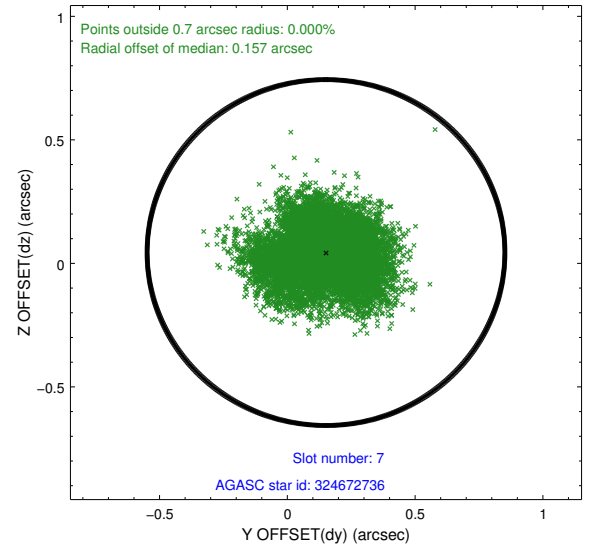
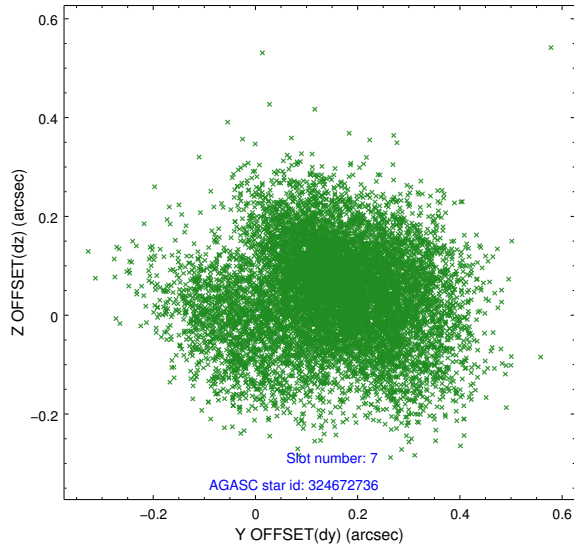
### 2.4.3 Slot 5



## 2.4.4 Slot 6

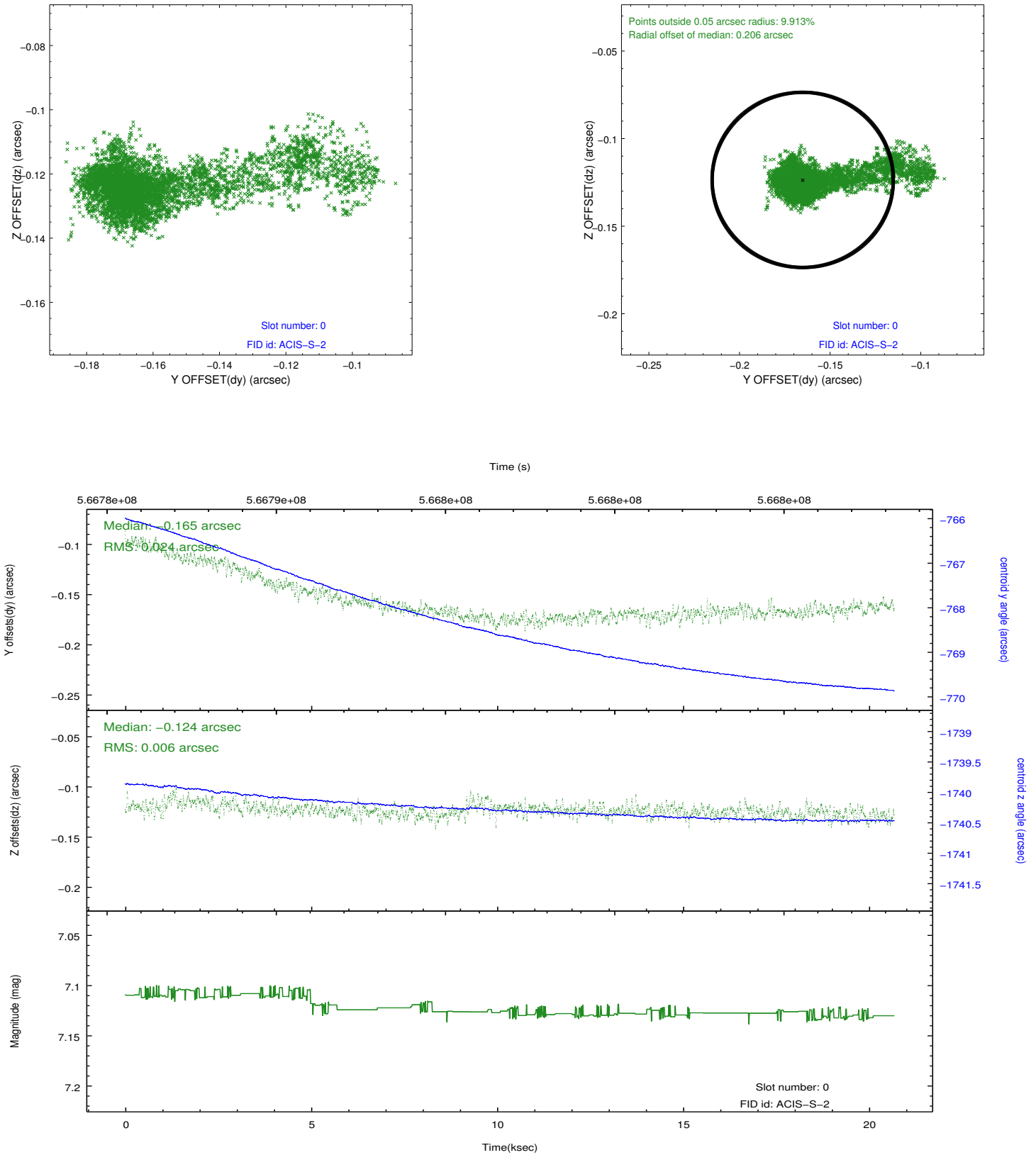


## 2.4.5 Slot 7

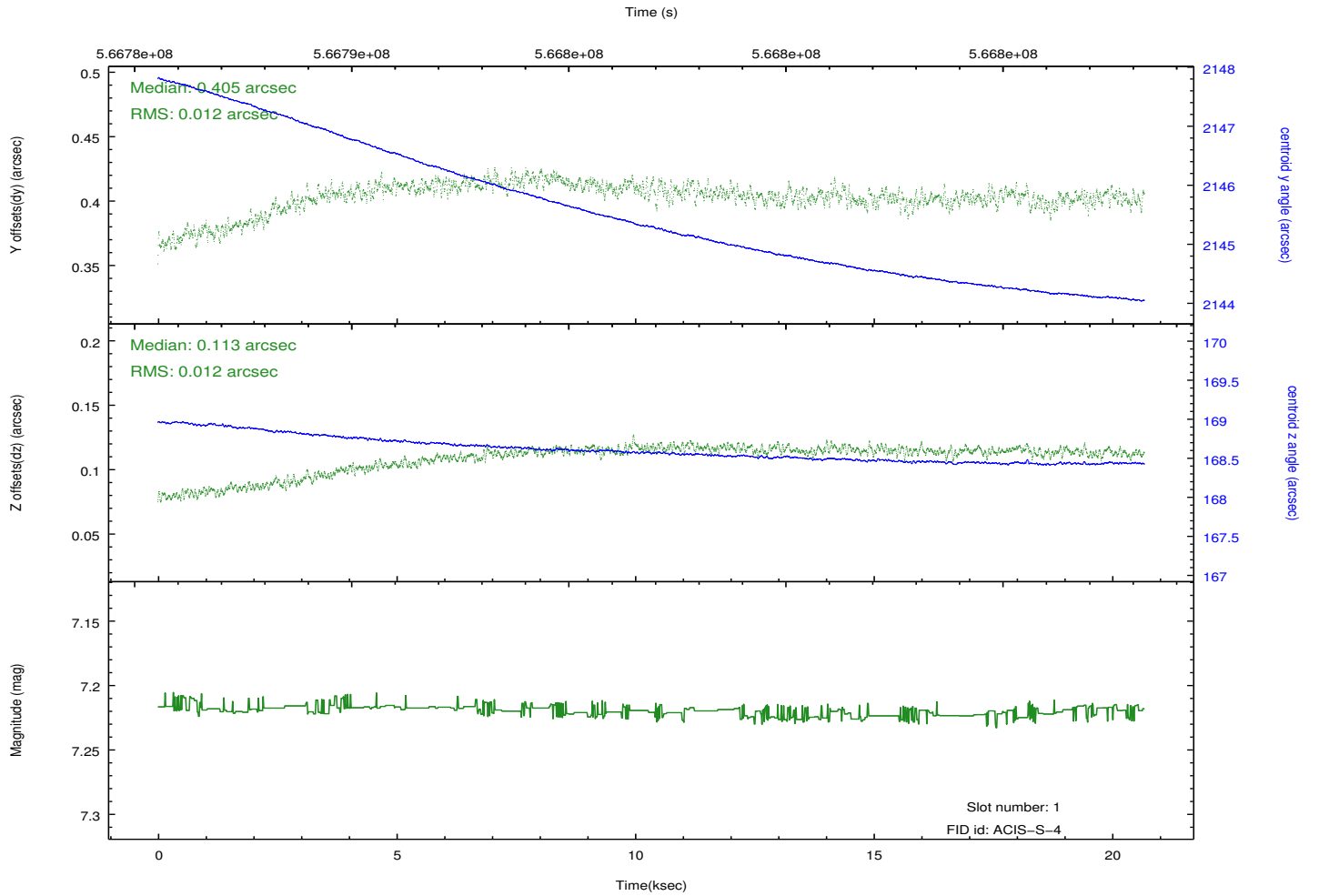
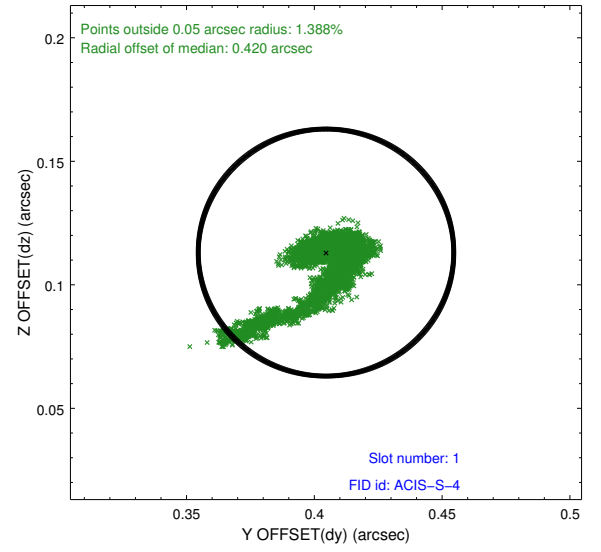
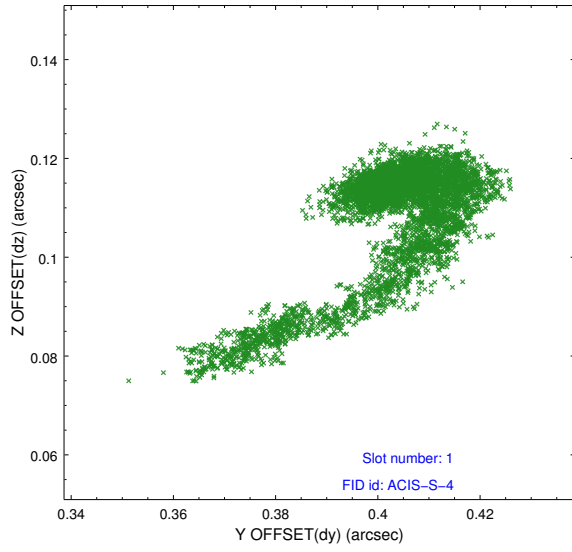


## 2.5 FID Slots

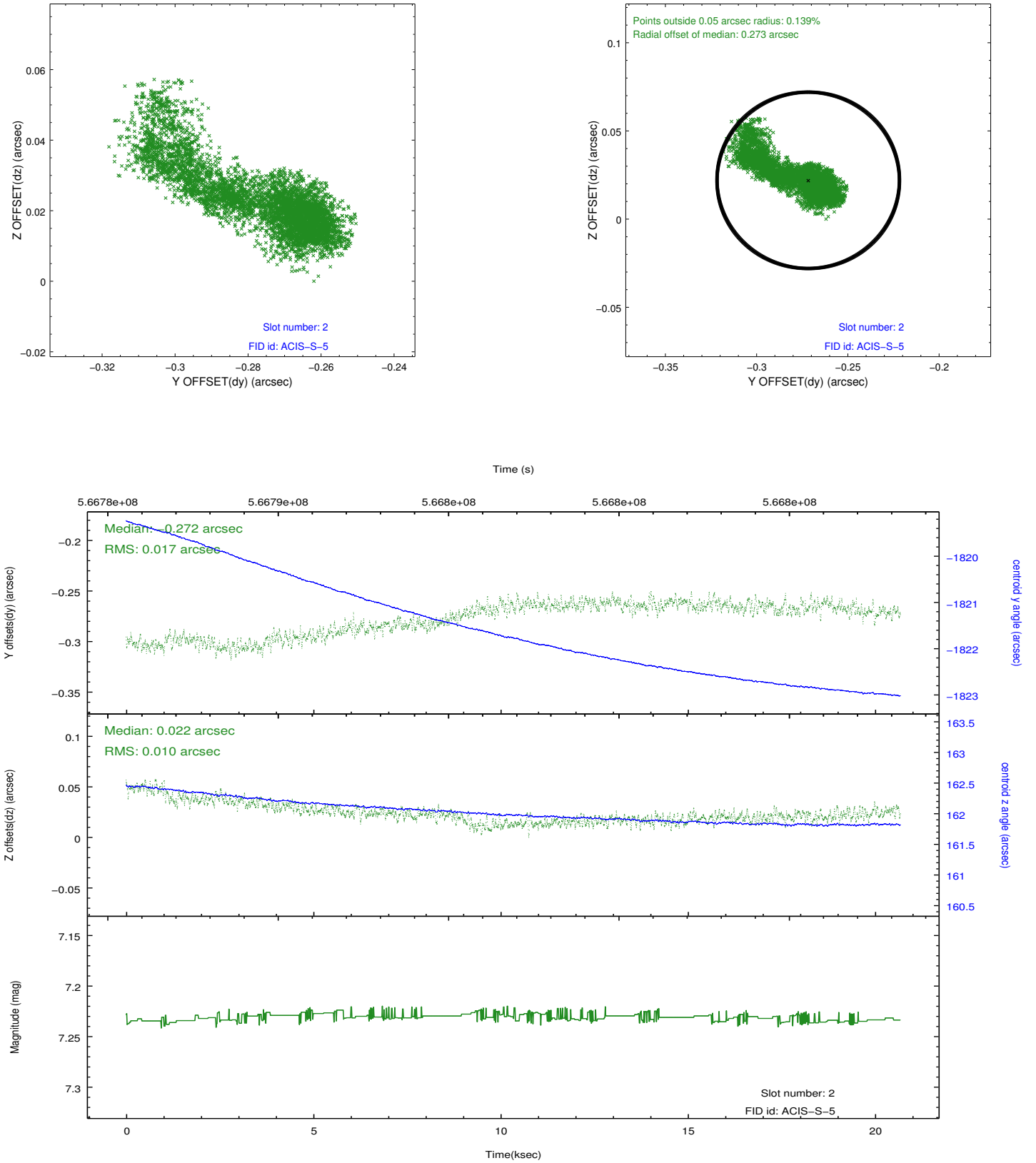
### 2.5.1 Slot 0



## 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)      | 2015.12.18    |
| V&V Edition                | 1             |
| V&V Disposition and Status | OK            |
| V&V Charge Time            | 20.0601001544 |

### A.2 Comments