

# V&V Reference Report

## L2 ASCDS Version : 10.5.4

Observation 20081 - L2 Version 1  
Chandra X-Ray Center

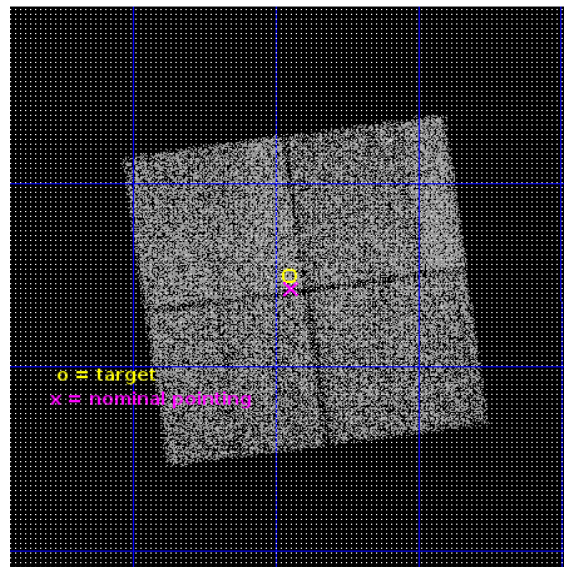
L2 Processing Date : May 28 2017

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# 1 Front

|          |                                                                   |                                             |
|----------|-------------------------------------------------------------------|---------------------------------------------|
| seq_num  | 703249                                                            | Sequence number                             |
| obs_id   | 20081                                                             | Observation id                              |
| title    | QSOs at z=6: Black Hole Growth and Feedback in the Early Universe | &#160                                       |
| observer | Dr Roberto Gilli                                                  | Principal investigator                      |
| object   | SDSSJ1030+0524                                                    | Source name                                 |
| dtcycle  | 0                                                                 | &#160                                       |
| cycle    | P                                                                 | events from which exps?<br>Prim/Second/Both |
| ra_targ  | 157.612917                                                        | Observer's specified target RA [deg]        |
| dec_targ | 5.415278                                                          | Observer's specified target Dec [deg]       |
| ra_nom   | 157.61108476388                                                   | Nominal RA [deg]                            |
| dec_nom  | 5.4042180903539                                                   | Nominal Dec [deg]                           |
| roll_nom | 262.20886325227                                                   | Nominal Roll [deg]                          |
| revision | 1                                                                 | Processing version of data                  |
| ontime   | 25236.936223507                                                   | Sum of GTIs [s]                             |
| livetime | 24907.197072585                                                   | Livetime [s]                                |
| ontime0  | 25249.500194311                                                   | Sum of GTIs [s]                             |
| ontime1  | 25243.218213916                                                   | Sum of GTIs [s]                             |
| ontime2  | 25243.218233824                                                   | Sum of GTIs [s]                             |
| ontime3  | 25236.936223507                                                   | Sum of GTIs [s]                             |
| l2events | 68080                                                             | Number of level 2 events                    |

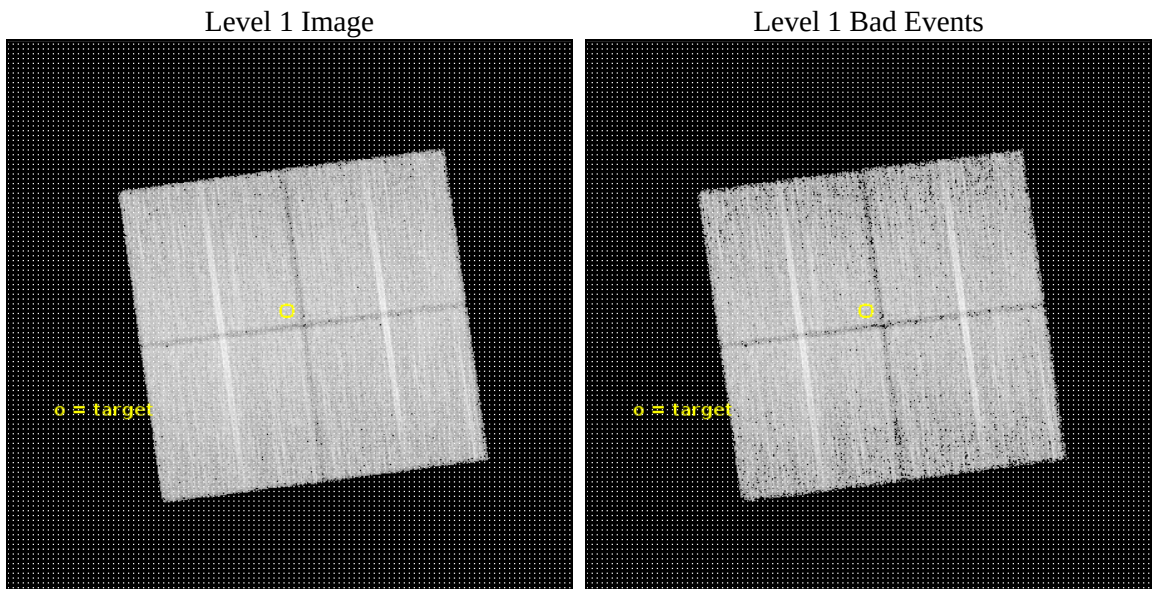




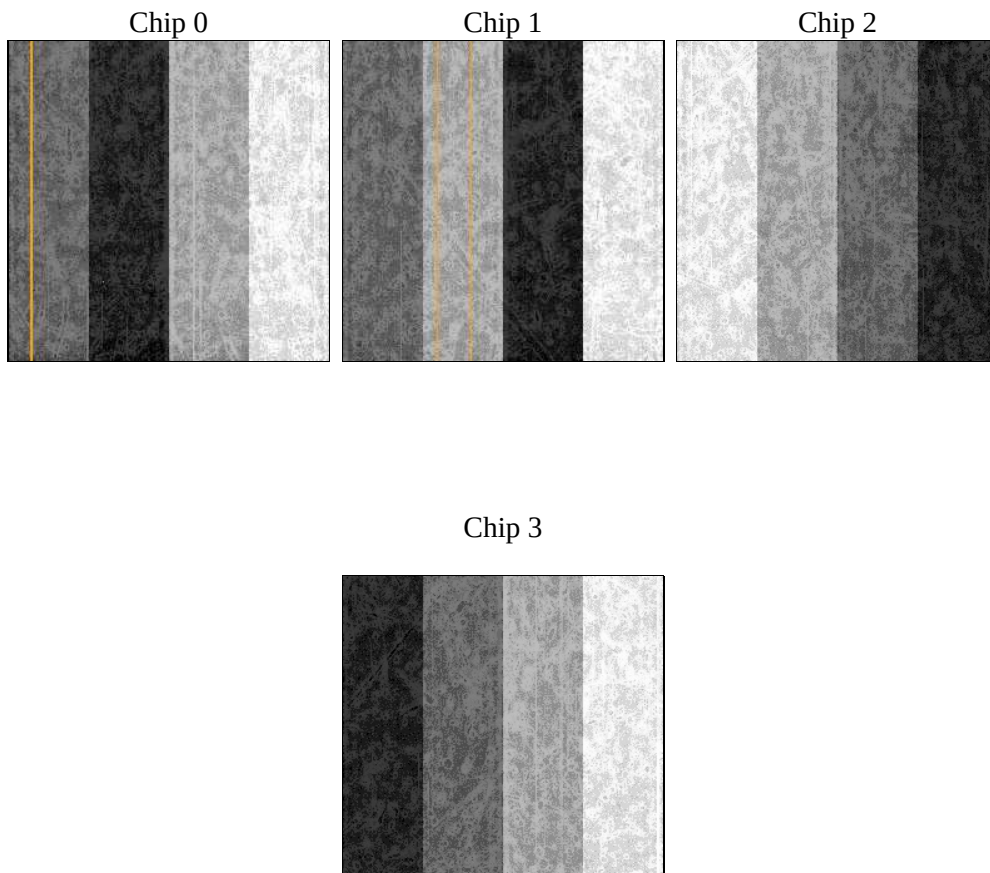
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

|          |                     |                                |                |                 |                                         |
|----------|---------------------|--------------------------------|----------------|-----------------|-----------------------------------------|
| obi_num  | 0                   | Obi number                     | sched_exp_time | 25168.545000    | [s] Scheduled observation exposure time |
| ascdsver | 10.5.4              | Processing system revision     | ontime         | 25236.936223507 | Sum of GTIs [s]                         |
| caldsver | 4.7.4               | &#160                          | ontime0        | 25249.500194311 | Sum of GTIs [s]                         |
| date     | 2017-05-28T04:07:15 | Date and time of file creation | ontime1        | 25243.218213916 | Sum of GTIs [s]                         |
| revision | 1                   | Processing version of data     | ontime2        | 25243.218233824 | Sum of GTIs [s]                         |
|          |                     |                                | ontime3        | 25236.936223507 | Sum of GTIs [s]                         |
|          |                     |                                | l1events       | 696608          | Number of level 1 events                |

### 2.1.4 Events

|                 | ccd 0  | ccd 1  | ccd 2  | ccd 3  |
|-----------------|--------|--------|--------|--------|
| level 1 events  | 170972 | 169608 | 179449 | 176579 |
| rejected events | 150959 | 147333 | 159972 | 156483 |
| rejected %      | 88%    | 86%    | 89%    | 88%    |

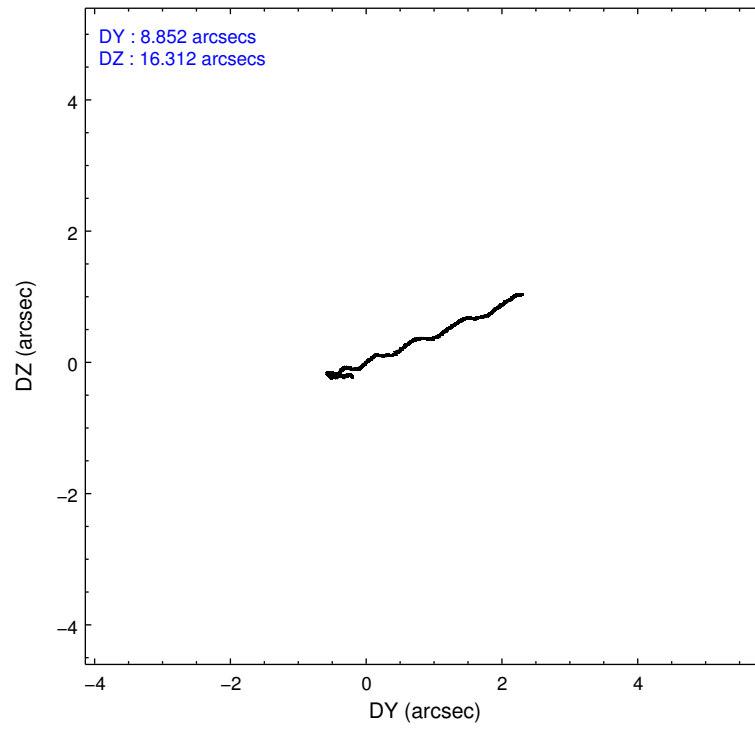
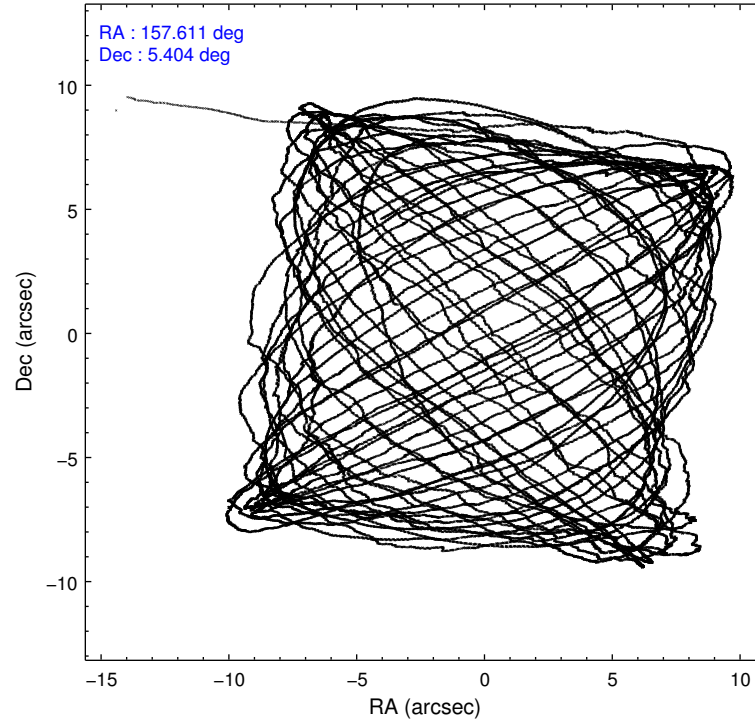
|                | ccd 0  | ccd 1  | ccd 2  | ccd 3  |
|----------------|--------|--------|--------|--------|
| grade 0 events | 6791   | 7386   | 6844   | 7699   |
|                | 3%     | 4%     | 3%     | 4%     |
| grade 1 events | 92     | 82     | 89     | 114    |
|                | 0%     | 0%     | 0%     | 0%     |
| grade 2 events | 5074   | 5745   | 4914   | 4238   |
|                | 2%     | 3%     | 2%     | 2%     |
| grade 3 events | 2124   | 2120   | 2040   | 2025   |
|                | 1%     | 1%     | 1%     | 1%     |
| grade 4 events | 1901   | 2030   | 1970   | 2009   |
|                | 1%     | 1%     | 1%     | 1%     |
| grade 5 events | 7387   | 7812   | 7070   | 8726   |
|                | 4%     | 4%     | 3%     | 4%     |
| grade 6 events | 4129   | 4997   | 3711   | 4126   |
|                | 2%     | 2%     | 2%     | 2%     |
| grade 7 events | 143474 | 139436 | 152811 | 147642 |
|                | 83%    | 82%    | 85%    | 83%    |

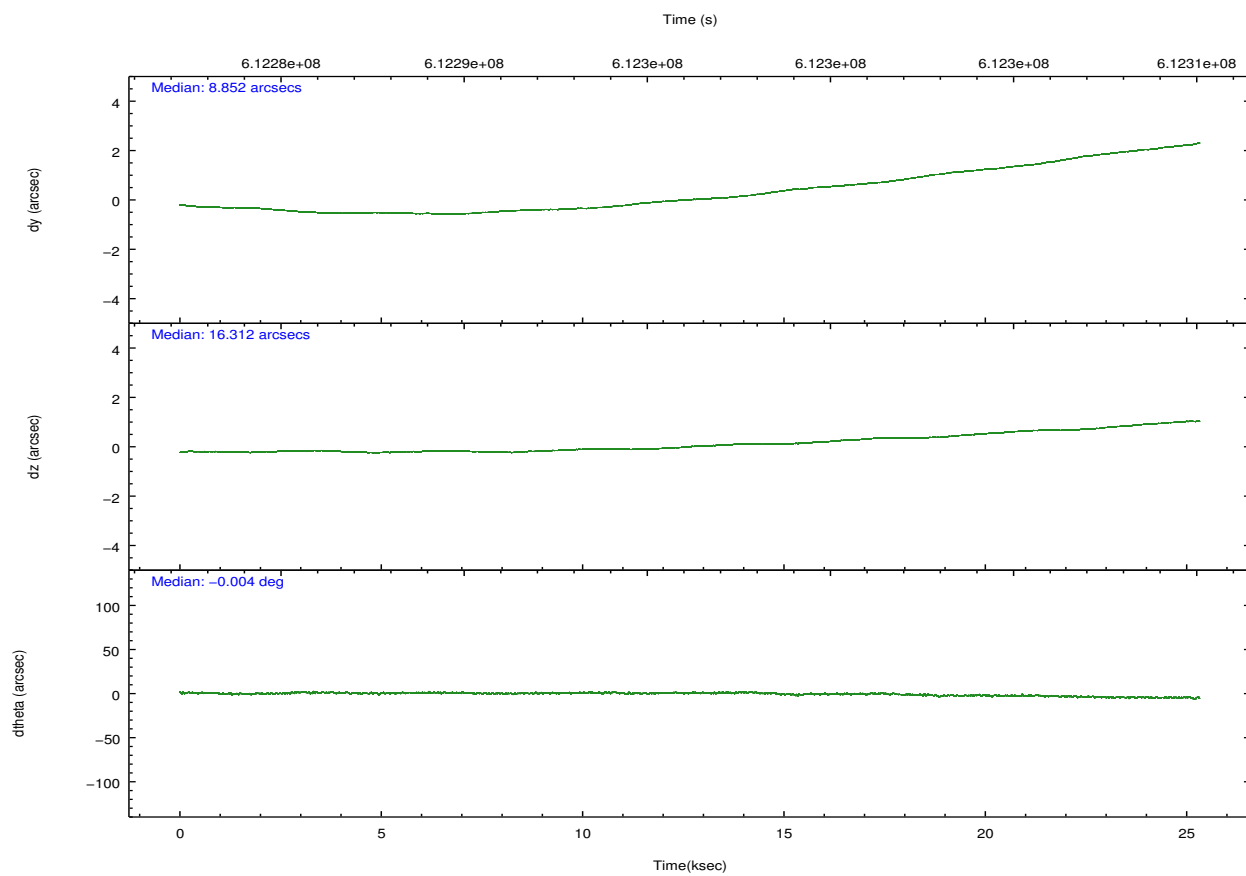
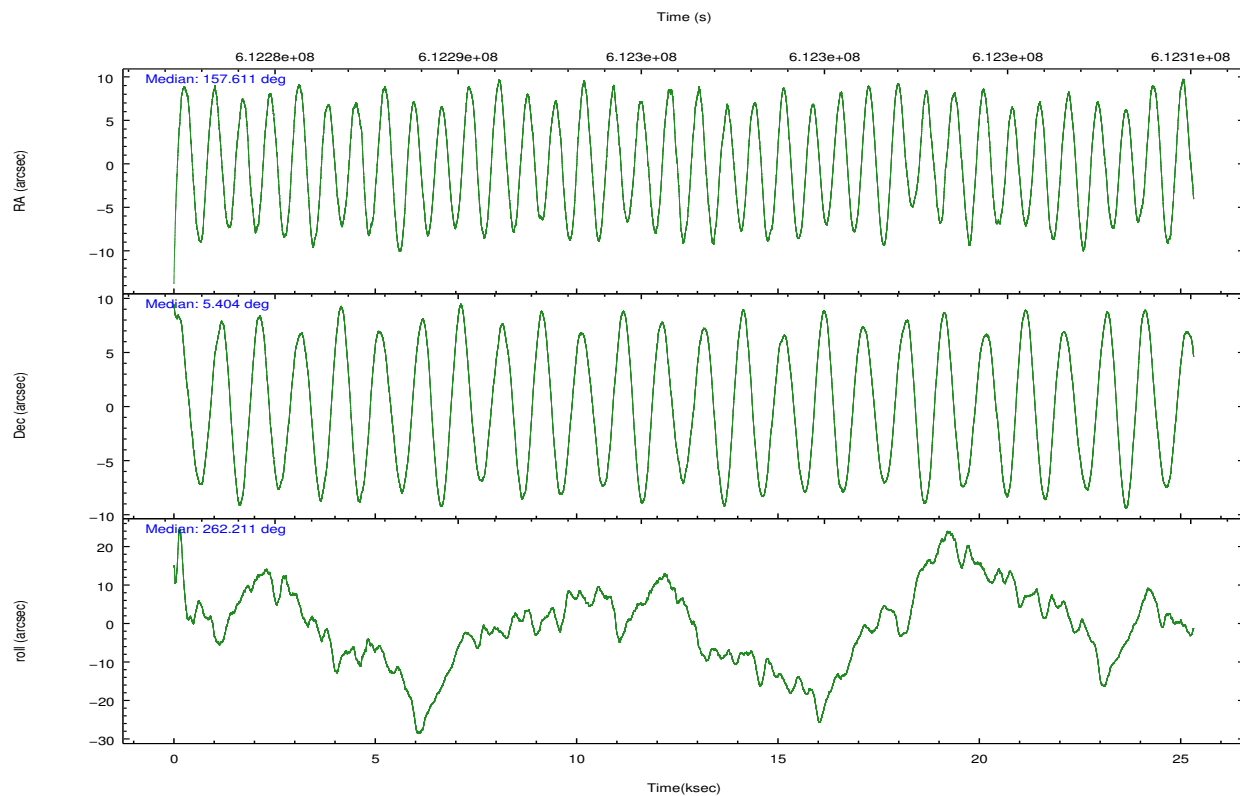
## 2.2 Compared Parameters

| Parameter                         | Planned             | Actual                |
|-----------------------------------|---------------------|-----------------------|
| Instrument                        | ACIS                | ACIS                  |
| Detector                          | ACIS-0123           | ACIS-0123             |
| Grating                           | NONE                | NONE                  |
| Data mode                         | VFAINT              | VFAINT                |
| Observation mode                  | POINTING            | POINTING              |
| [deg] Pointing RA                 | 157.600501          | 157.611084763878      |
| [deg] Pointing Dec                | 5.429706            | 5.404218090353941     |
| [deg] Pointing Roll               | 262.001170          | 262.2088632522718     |
| [mm] SIM focus pos                | -0.782348           | -0.7809083437167272   |
| [mm] SIM defocus                  | 0                   | 0.001439871863259334  |
| [mm] SIM translation stage pos    | -233.592463         | -233.5874344608287    |
| [mm] SIM translation stage offset | 0                   | -0.005018542100998502 |
| [s] Observation start time (MET)  | 612283662.184000    | 612281988.0607001     |
| Observation start date            | 2017-05-27T14:46:33 | 2017-05-27T14:19:48   |
| [s] Observation end time (MET)    | 612308830.184000    | 612309061.89977       |
| Observation end date              | 2017-05-27T21:46:01 | 2017-05-27T21:51:01   |
| Read mode                         | TIMED               | TIMED                 |

| Parameter                             | Planned   | Actual  |
|---------------------------------------|-----------|---------|
| Obspar format version number          | 7         | 7       |
| Obspar file type                      | PREDICTED | ACTUAL  |
| Obspar update status                  | NONE      | UPDATED |
| Number of optional ACIS chips dropped | 0         | 0       |
| On-chip summing requested             | N         | N       |
| Subarray requested                    | NONE      | NONE    |
| Alternating exposures requested       | N         | N       |
| [s] Primary exposure time             | 0.000000  | 3.1     |

## 2.3 Aspect



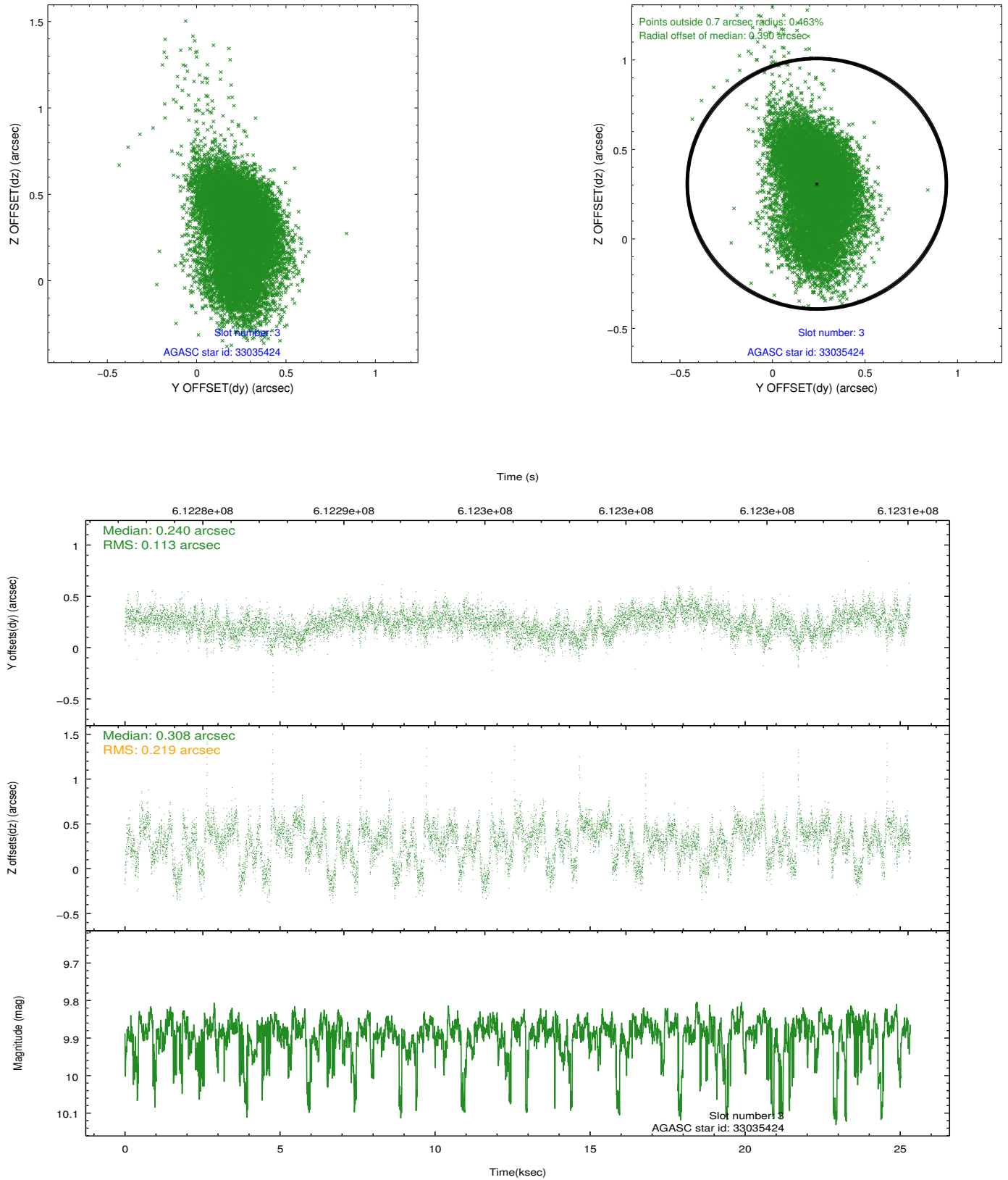


# Slot Statistics

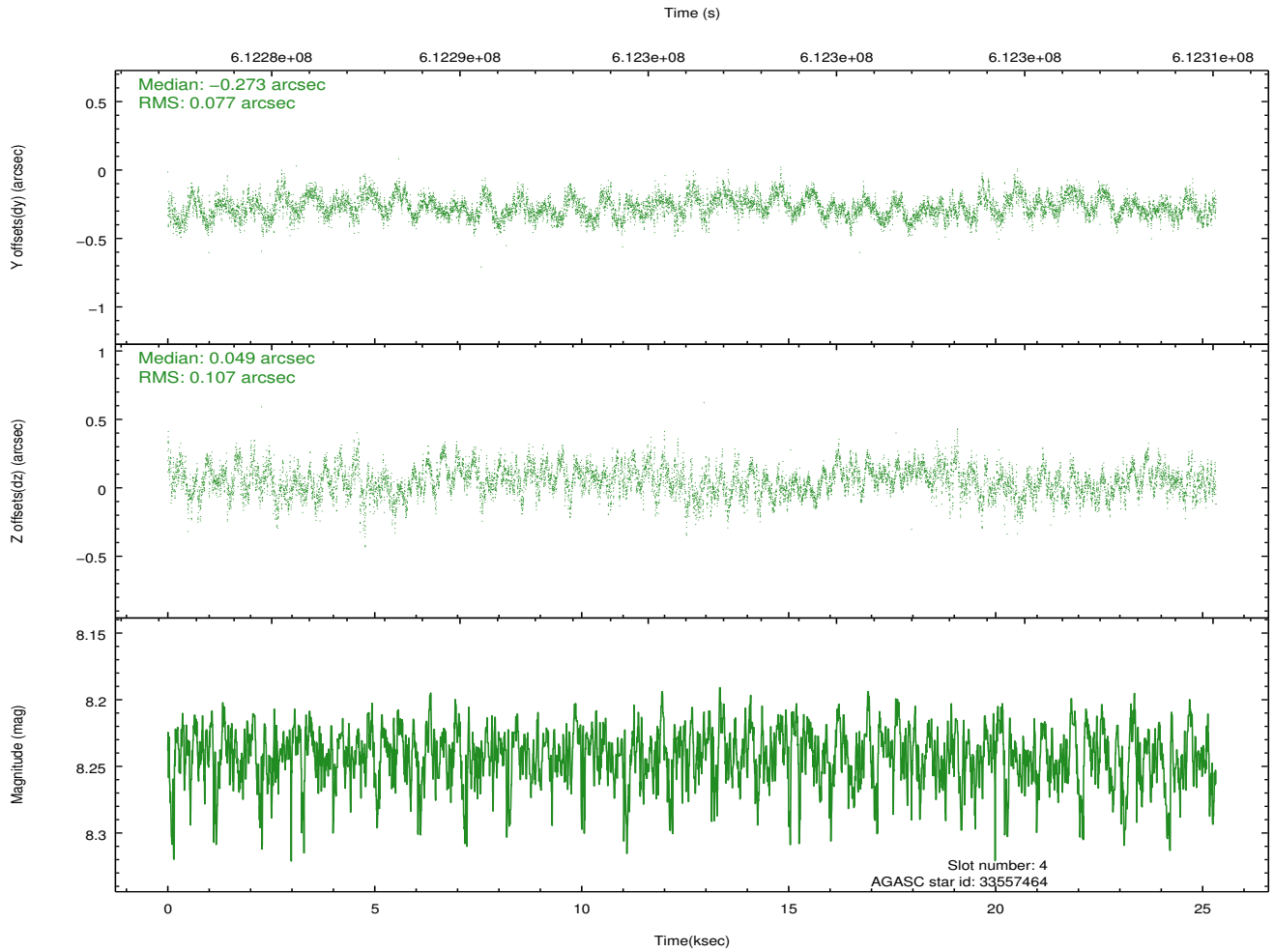
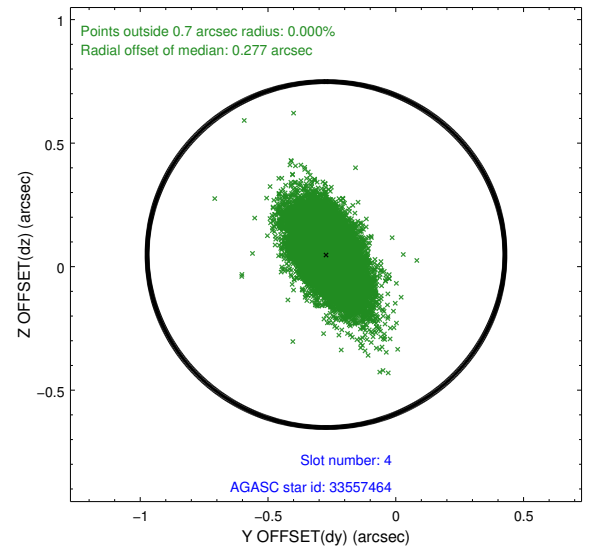
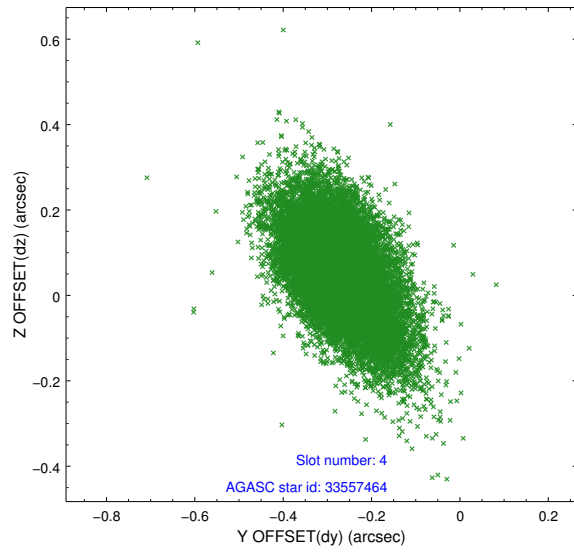
| slot | status | used | id       | mag  | n_pts | med_dy | med_dz | dr1   | dr2   | ra         | dec      | mean_y   | mean_z  |
|------|--------|------|----------|------|-------|--------|--------|-------|-------|------------|----------|----------|---------|
| 0    | FID    |      | ACIS-I-1 | 7.17 | 6177  | 0.001  | -0.089 | 0.012 | 0.020 | 0.000000   | 0.000000 | 930.45   | -840.16 |
| 1    | FID    |      | ACIS-I-4 | 7.10 | 6177  | 0.308  | 0.085  | 0.013 | 0.021 | 0.000000   | 0.000000 | 2150.80  | 1059.80 |
| 2    | FID    |      | ACIS-I-5 | 7.15 | 6177  | -0.410 | 0.075  | 0.015 | 0.029 | 0.000000   | 0.000000 | -1817.87 | 1057.64 |
| 3    | GUIDE  | used | 33035424 | 9.89 | 12314 | 0.240  | 0.308  | 0.247 | 0.443 | 157.358260 | 5.687209 | -796.59  | -988.02 |
| 4    | GUIDE  | used | 33557464 | 8.24 | 12346 | -0.273 | 0.049  | 0.136 | 0.235 | 157.961805 | 4.935650 | 1580.87  | 1529.46 |
| 5    | GUIDE  | used | 33948960 | 9.31 | 12334 | 0.689  | 0.368  | 0.164 | 0.296 | 158.045331 | 5.204179 | 583.04   | 1692.66 |
| 6    | GUIDE  | used | 33949536 | 9.16 | 12340 | -0.390 | -0.724 | 0.171 | 0.275 | 158.026617 | 5.246866 | 439.08   | 1603.66 |
| 7    | GUIDE  | used | 33951168 | 8.19 | 12344 | -0.271 | 0.034  | 0.123 | 0.215 | 157.753293 | 5.341322 | 239.41   | 586.17  |

## 2.4 Star Slots

### 2.4.1 Slot 3

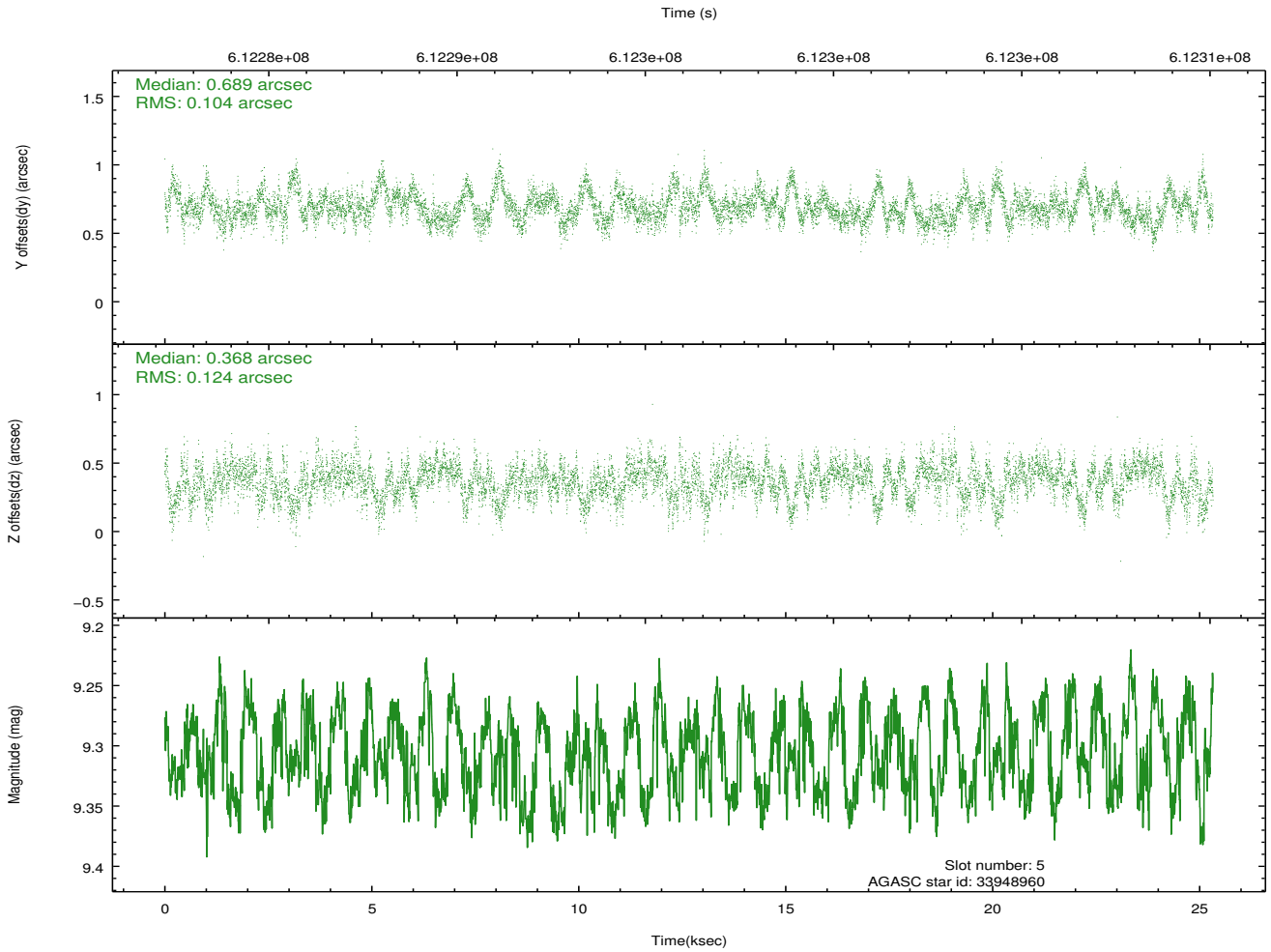
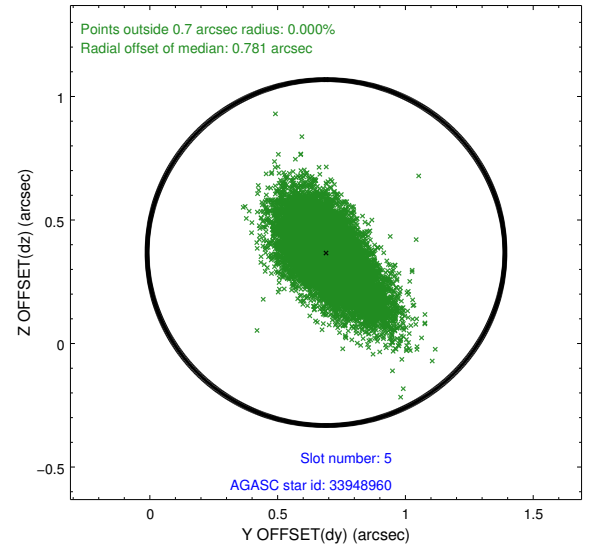
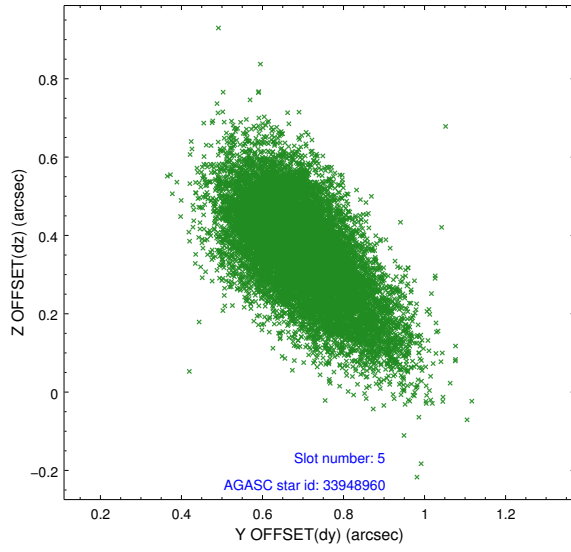


## 2.4.2 Slot 4

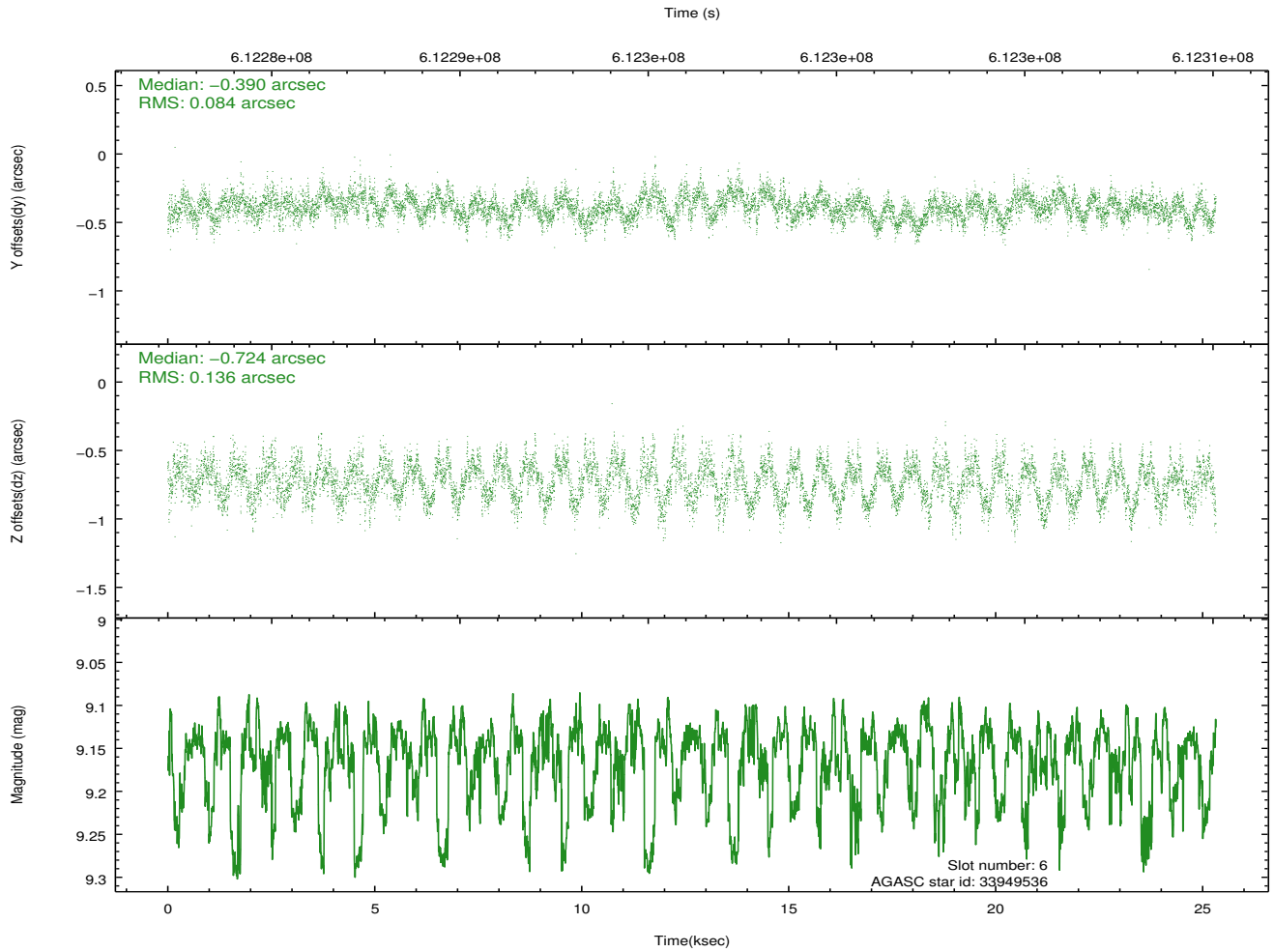
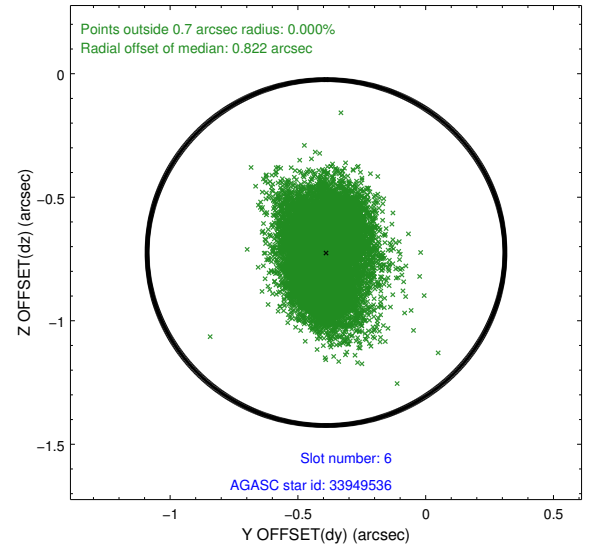
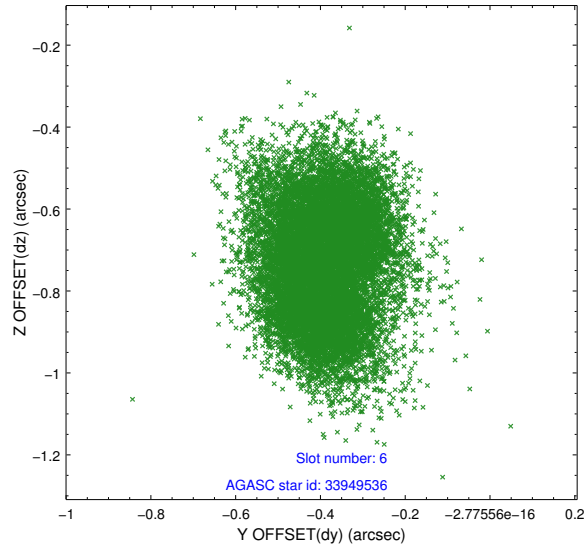




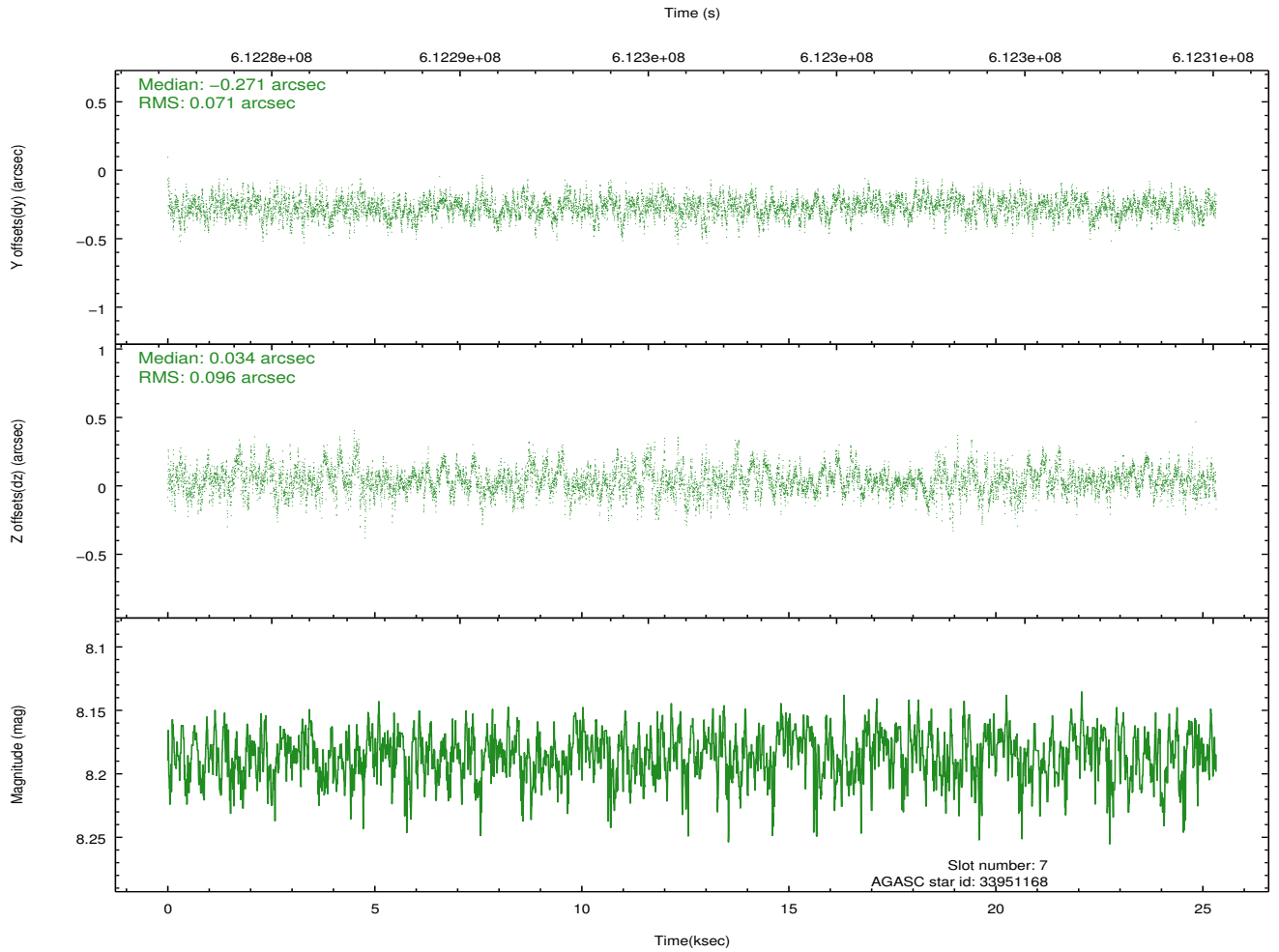
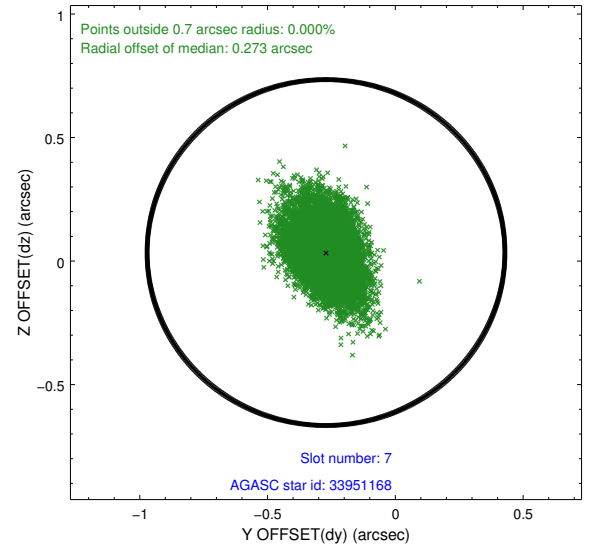
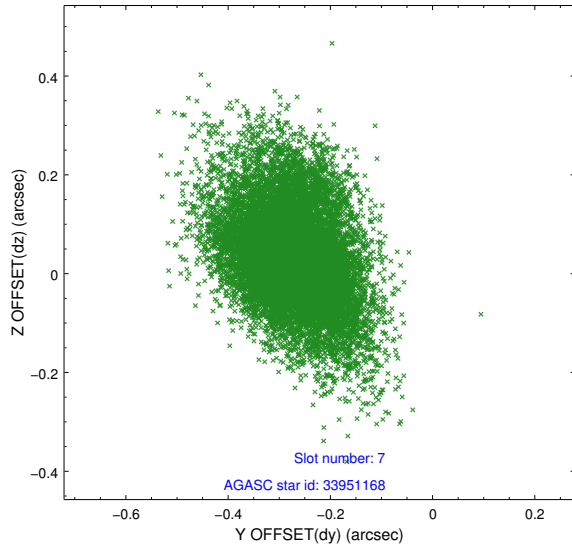
### 2.4.3 Slot 5



## 2.4.4 Slot 6

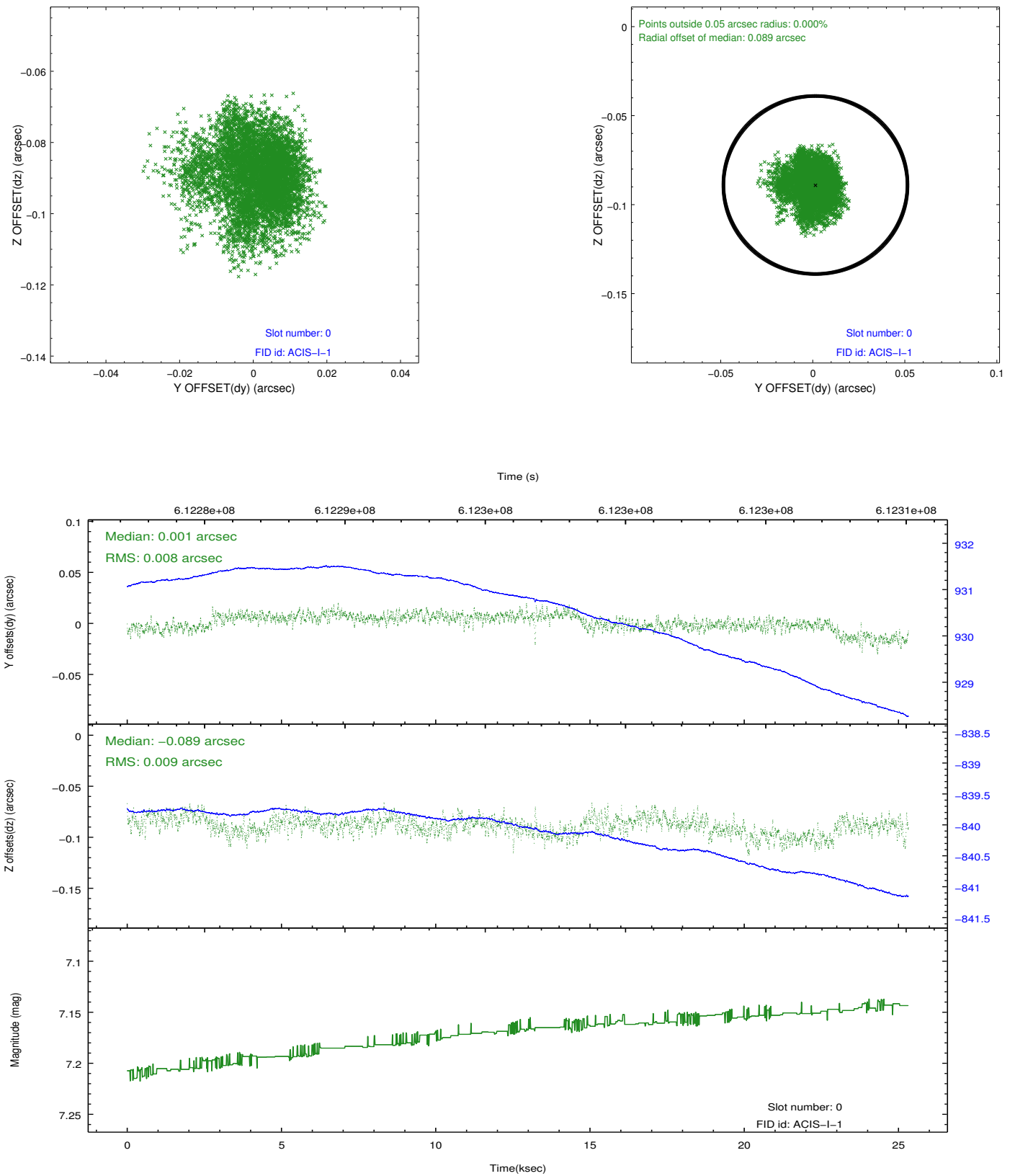


## 2.4.5 Slot 7

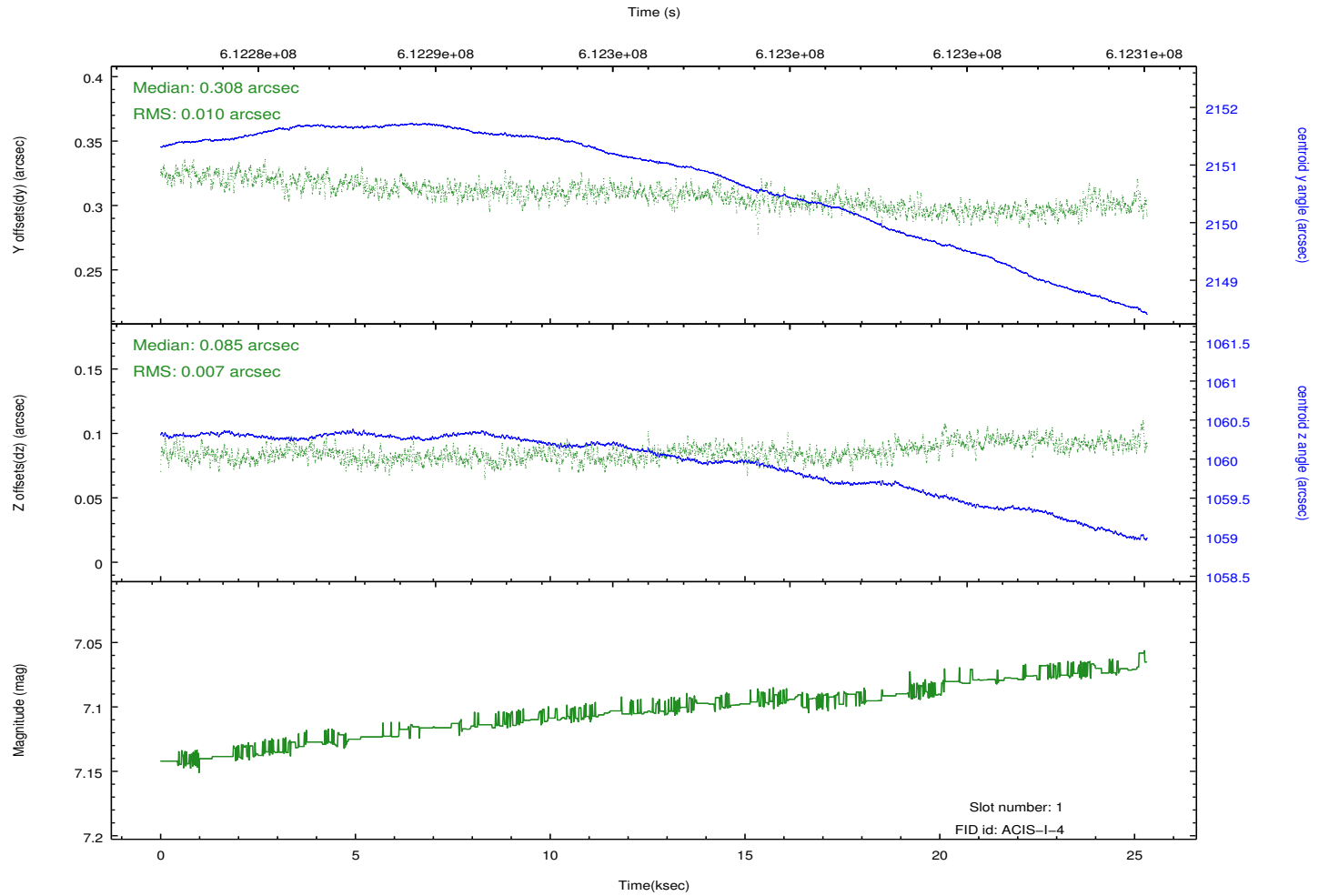
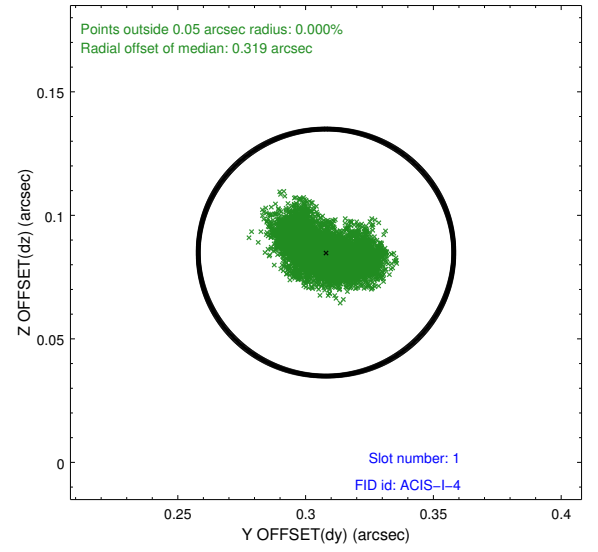
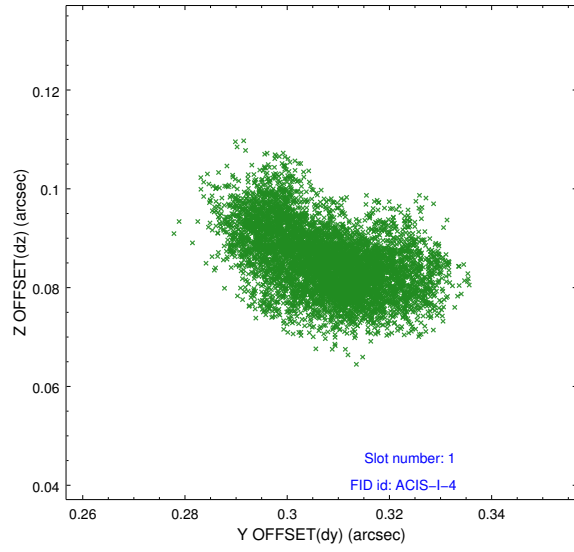


## 2.5 FID Slots

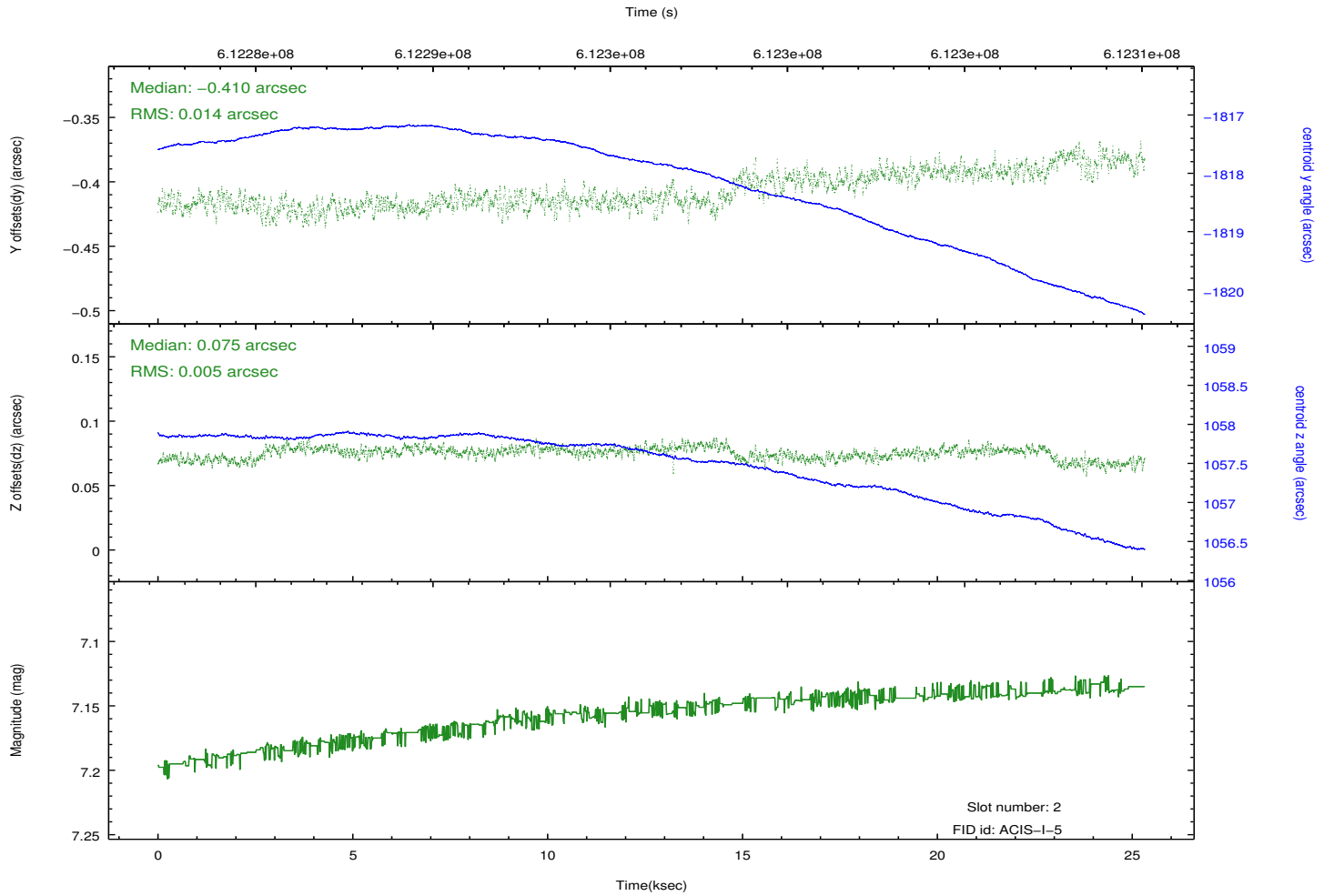
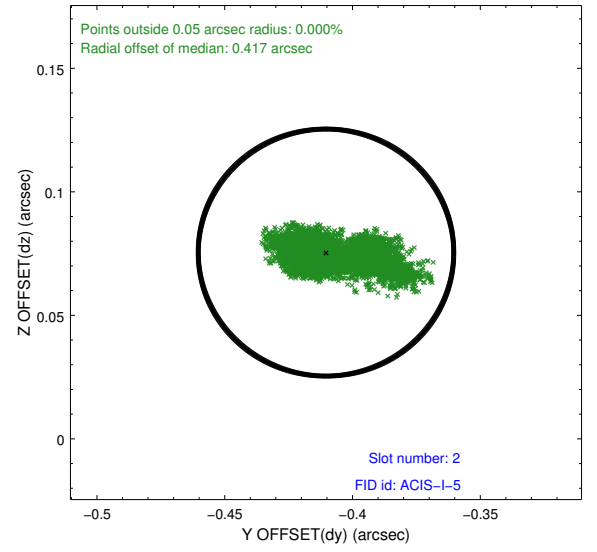
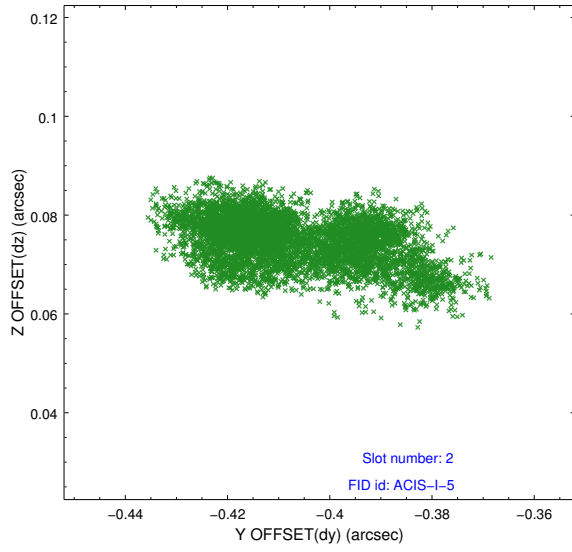
### 2.5.1 Slot 0



## 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)      | 2017.05.29      |
| V&V Edition                | 1               |
| V&V Disposition and Status | OK              |
| V&V Charge Time            | 25.236936223507 |

### A.2 Comments