

# V&V Reference Report

## L2 ASCDS Version : 10.5.4

Observation 19474 - L2 Version 1  
Chandra X-Ray Center

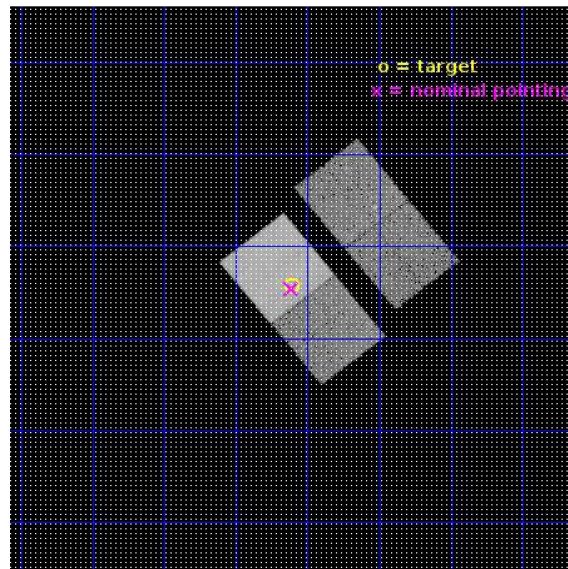
L2 Processing Date : May 8 2017

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# 1 Front

|          |                                                           |                                             |
|----------|-----------------------------------------------------------|---------------------------------------------|
| seq_num  | 703322                                                    | Sequence number                             |
| obs_id   | 19474                                                     | Observation id                              |
| title    | Changing-Look Quasars: Radical Changes in Accretion Rate? | Proposal                                    |
| observer | Paul Green                                                | Principal investigator                      |
| object   | SDSS J1338-0124                                           | Source name                                 |
| dtcycle  | 0                                                         | &#160                                       |
| cycle    | P                                                         | events from which exps?<br>Prim/Second/Both |
| ra_targ  | 204.527458                                                | Observer's specified target RA [deg]        |
| dec_targ | -1.403572                                                 | Observer's specified target Dec [deg]       |
| ra_nom   | 204.52825330264                                           | Nominal RA [deg]                            |
| dec_nom  | -1.410012613677                                           | Nominal Dec [deg]                           |
| roll_nom | 231.38064624045                                           | Nominal Roll [deg]                          |
| revision | 1                                                         | Processing version of data                  |
| ontime   | 33067.70025444                                            | Sum of GTIs [s]                             |
| livetime | 32635.646406529                                           | Livetime [s]                                |
| ontime2  | 33061.41809392                                            | Sum of GTIs [s]                             |
| ontime3  | 33061.41809392                                            | Sum of GTIs [s]                             |
| ontime6  | 33064.55917418                                            | Sum of GTIs [s]                             |
| ontime7  | 33067.70025444                                            | Sum of GTIs [s]                             |
| l2events | 165901                                                    | Number of level 2 events                    |

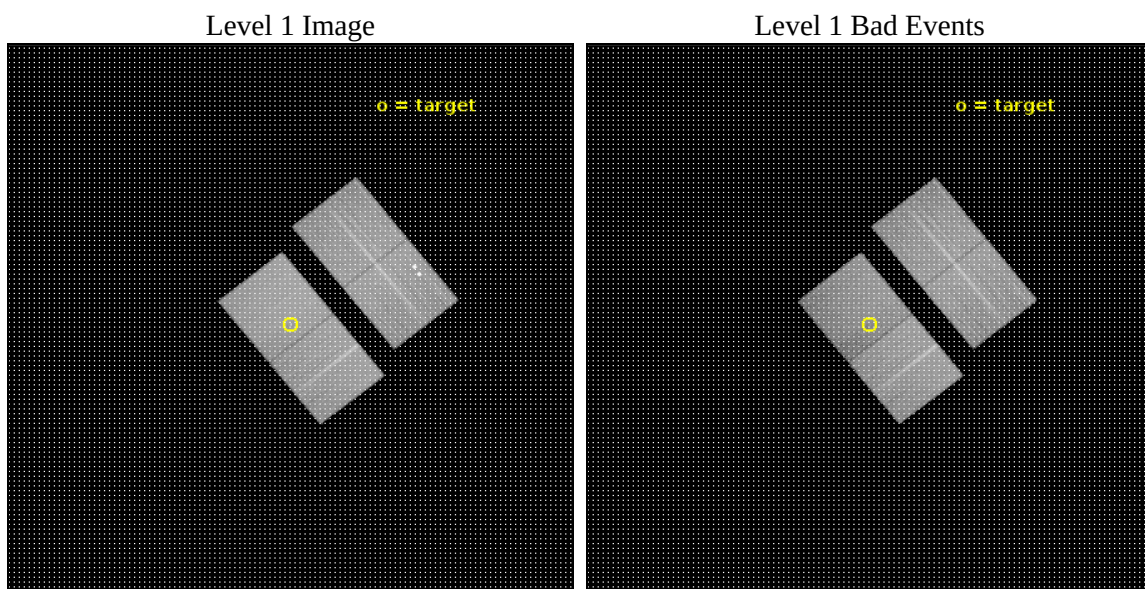




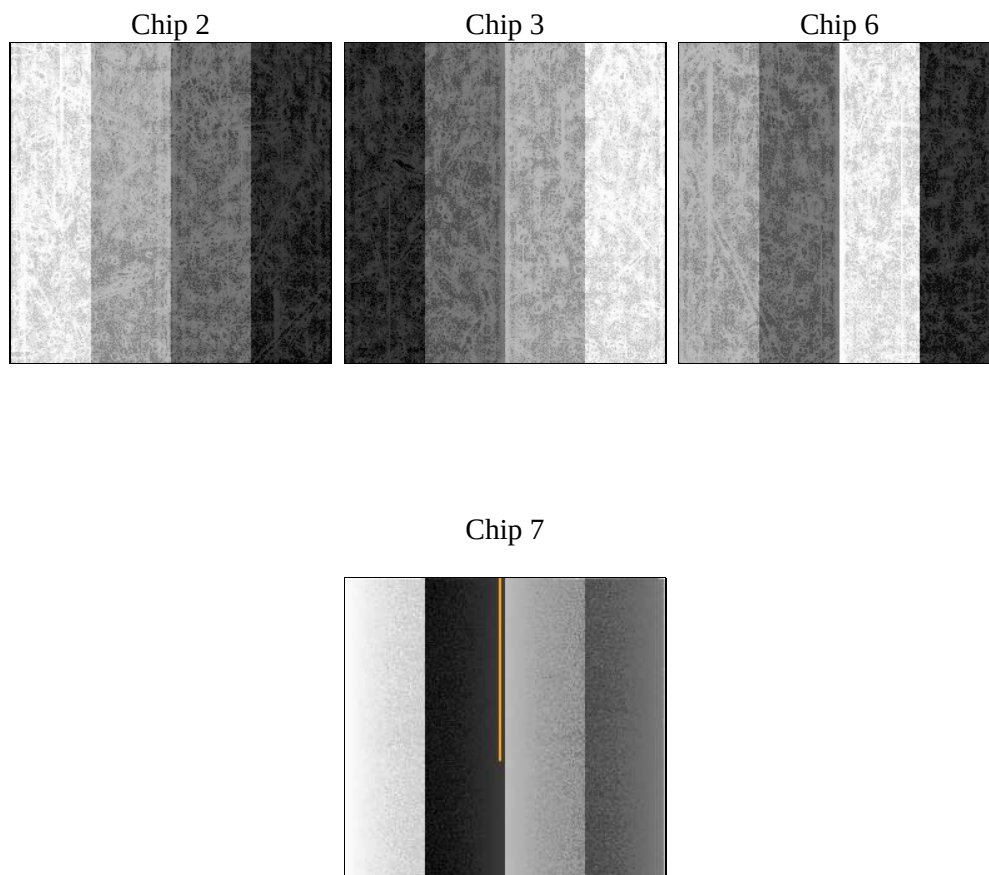
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

|          |                     |                                |                |                |                                         |
|----------|---------------------|--------------------------------|----------------|----------------|-----------------------------------------|
| obi_num  | 0                   | Obi number                     | sched_exp_time | 33000.000000   | [s] Scheduled observation exposure time |
| ascdsver | 10.5.4              | Processing system revision     | ontime         | 33067.70025444 | Sum of GTIs [s]                         |
| caldsver | 4.7.4               | &#160                          | ontime2        | 33061.41809392 | Sum of GTIs [s]                         |
| date     | 2017-05-08T23:51:54 | Date and time of file creation | ontime3        | 33061.41809392 | Sum of GTIs [s]                         |
| revision | 1                   | Processing version of data     | ontime6        | 33064.55917418 | Sum of GTIs [s]                         |
|          |                     |                                | ontime7        | 33067.70025444 | Sum of GTIs [s]                         |
|          |                     |                                | l1events       | 931035         | Number of level 1 events                |

### 2.1.4 Events

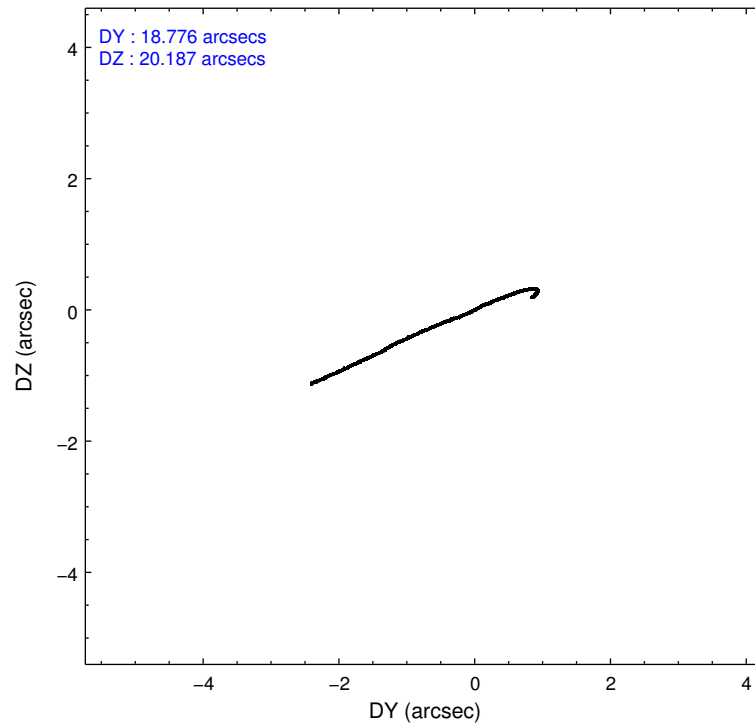
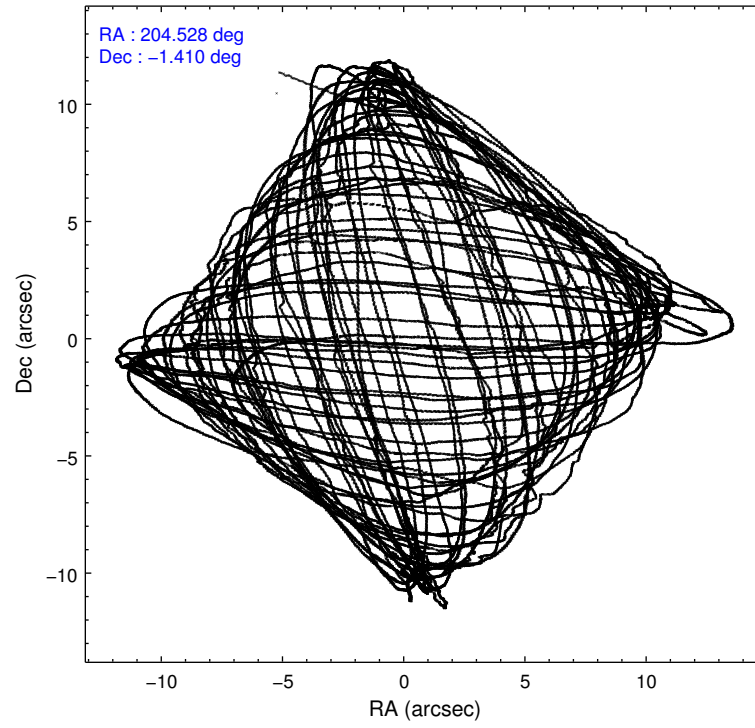
|                 | ccd 2  | ccd 3  | ccd 6  | ccd 7  |
|-----------------|--------|--------|--------|--------|
| level 1 events  | 248323 | 212557 | 228469 | 241686 |
| rejected events | 206522 | 190638 | 204628 | 130808 |
| rejected %      | 83%    | 89%    | 89%    | 54%    |

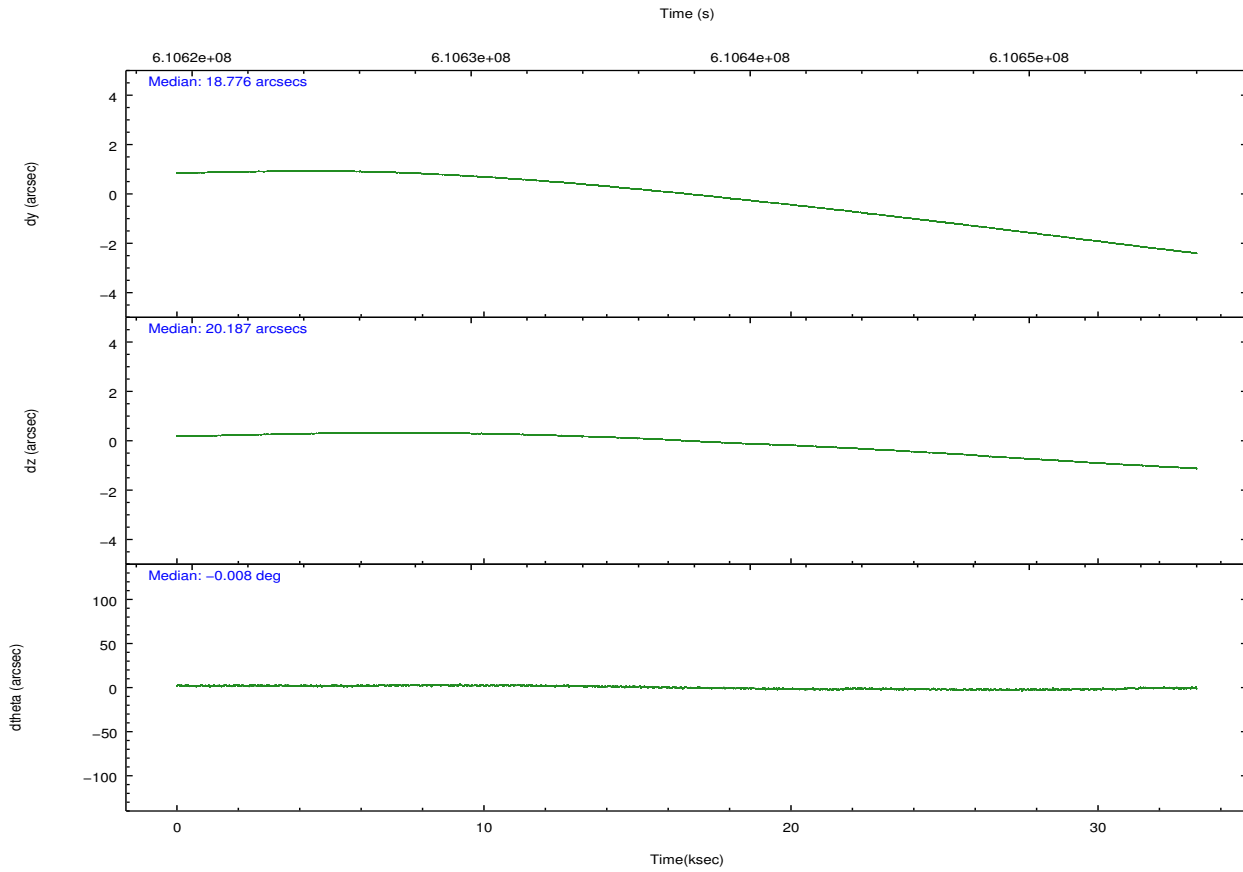
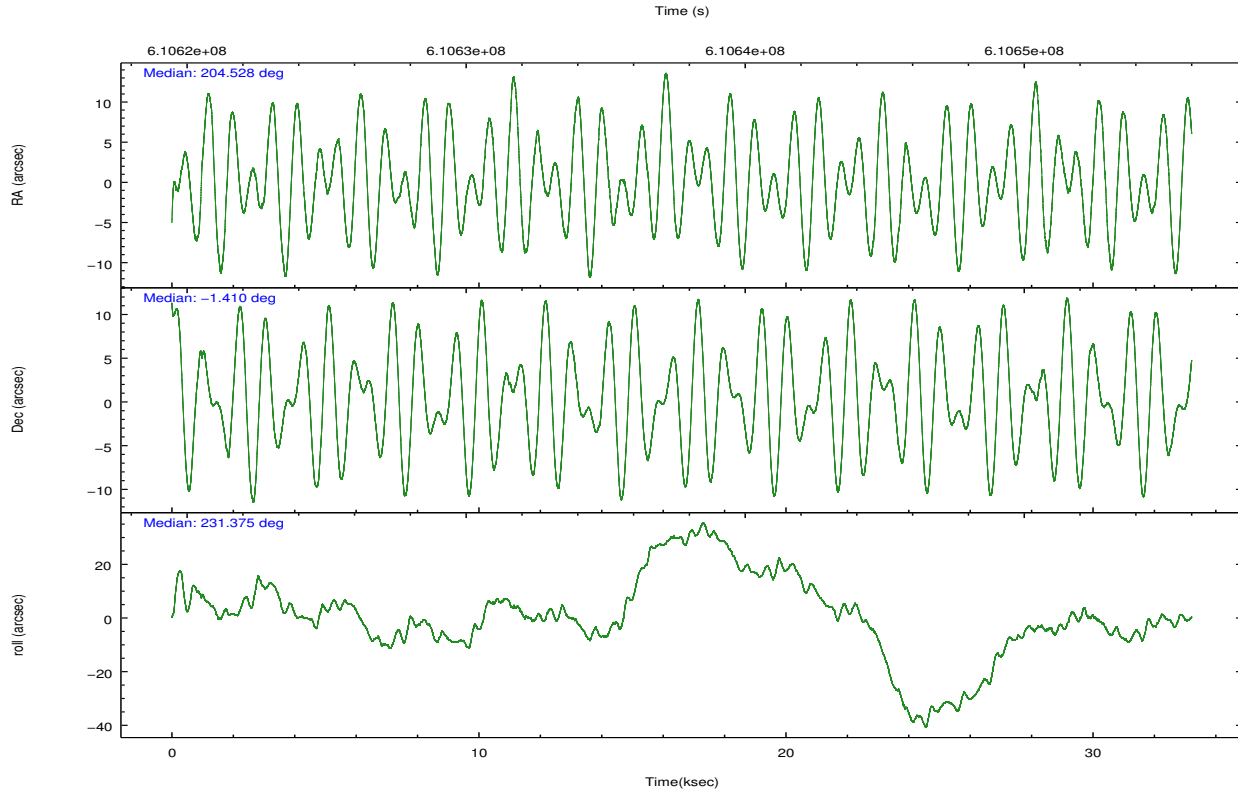
|                | ccd 2  | ccd 3  | ccd 6  | ccd 7  |
|----------------|--------|--------|--------|--------|
| grade 0 events | 17850  | 8056   | 7475   | 9808   |
|                | 7%     | 3%     | 3%     | 4%     |
| grade 1 events | 178    | 129    | 108    | 363    |
|                | 0%     | 0%     | 0%     | 0%     |
| grade 2 events | 15296  | 4852   | 6104   | 24685  |
|                | 6%     | 2%     | 2%     | 10%    |
| grade 3 events | 2155   | 2300   | 2222   | 8323   |
|                | 0%     | 1%     | 0%     | 3%     |
| grade 4 events | 2356   | 2300   | 2177   | 8066   |
|                | 0%     | 1%     | 0%     | 3%     |
| grade 5 events | 6747   | 8642   | 8326   | 22794  |
|                | 2%     | 4%     | 3%     | 9%     |
| grade 6 events | 4151   | 4412   | 5866   | 60011  |
|                | 1%     | 2%     | 2%     | 24%    |
| grade 7 events | 199590 | 181866 | 196191 | 107636 |
|                | 80%    | 85%    | 85%    | 44%    |

## 2.2 Compared Parameters

| Parameter                         | Planned             | Actual               | Parameter                             | Planned   | Actual  |
|-----------------------------------|---------------------|----------------------|---------------------------------------|-----------|---------|
| Instrument                        | ACIS                | ACIS                 | Obspar format version number          | 7         | 7       |
| Detector                          | ACIS-2367           | ACIS-2367            | 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                 | 204.532004          | 204.5282533026399    | Subarray requested                    | NONE      | NONE    |
| [deg] Pointing Dec                | -1.382834           | -1.410012613676996   | Alternating exposures requested       | N         | N       |
| [deg] Pointing Roll               | 231.224114          | 231.3806462404524    | [s] Primary exposure time             | 0.000000  | 3.1     |
| [mm] SIM focus pos                | -0.684267           | -0.6828225247311905  |                                       |           |         |
| [mm] SIM defocus                  | 0                   | 0.001444936568705701 |                                       |           |         |
| [mm] SIM translation stage pos    | -190.132523         | -190.1425803651734   |                                       |           |         |
| [mm] SIM translation stage offset | 0                   | 0.01005778216563158  |                                       |           |         |
| [s] Observation start time (MET)  | 610621311.184000    | 610620397.87656      |                                       |           |         |
| Observation start date            | 2017-05-08T09:00:42 | 2017-05-08T08:46:37  |                                       |           |         |
| [s] Observation end time (MET)    | 610654311.184000    | 610655635.84111      |                                       |           |         |
| Observation end date              | 2017-05-08T18:10:42 | 2017-05-08T18:33:55  |                                       |           |         |
| Read mode                         | TIMED               | TIMED                |                                       |           |         |

## 2.3 Aspect



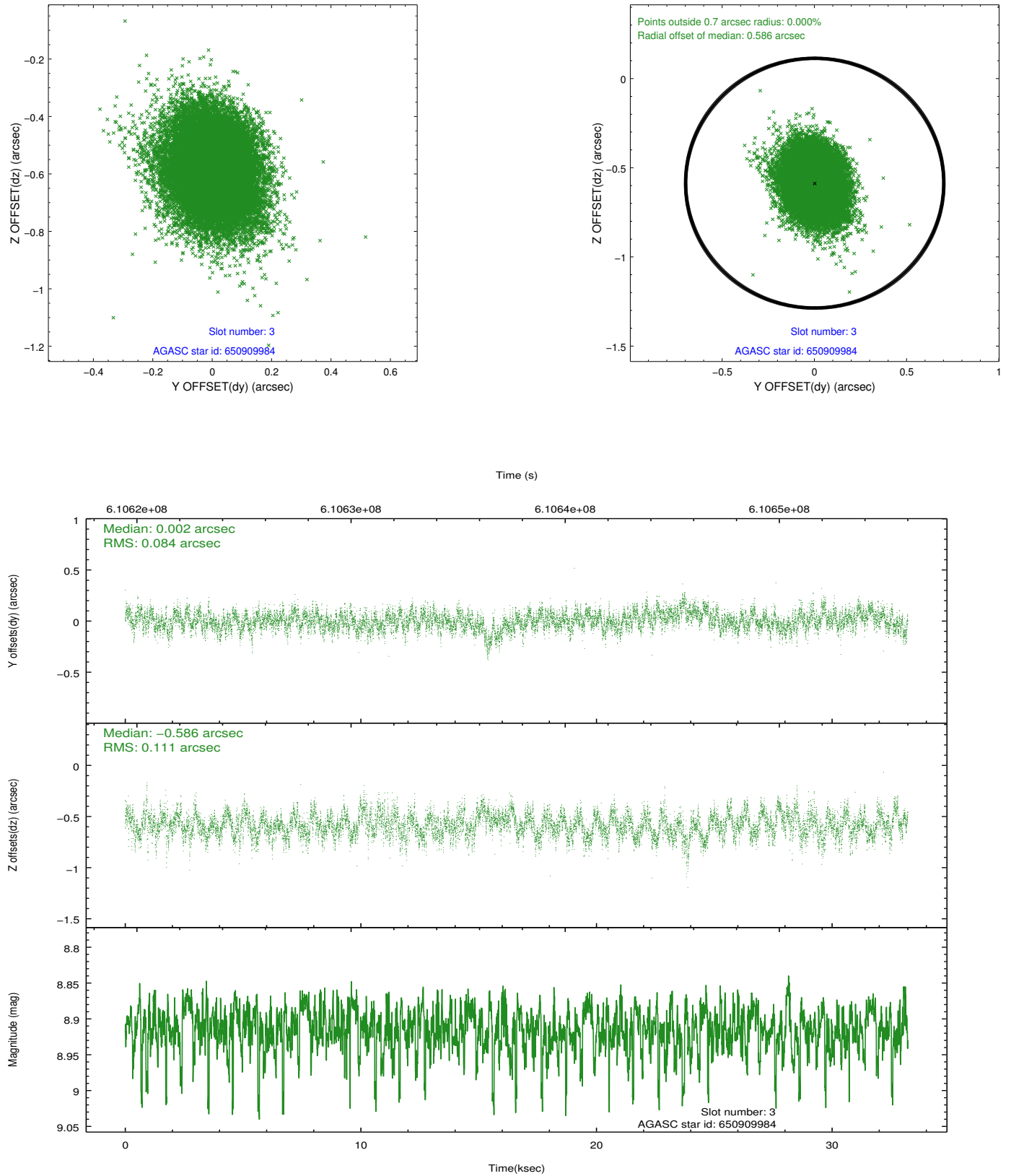


# Slot Statistics

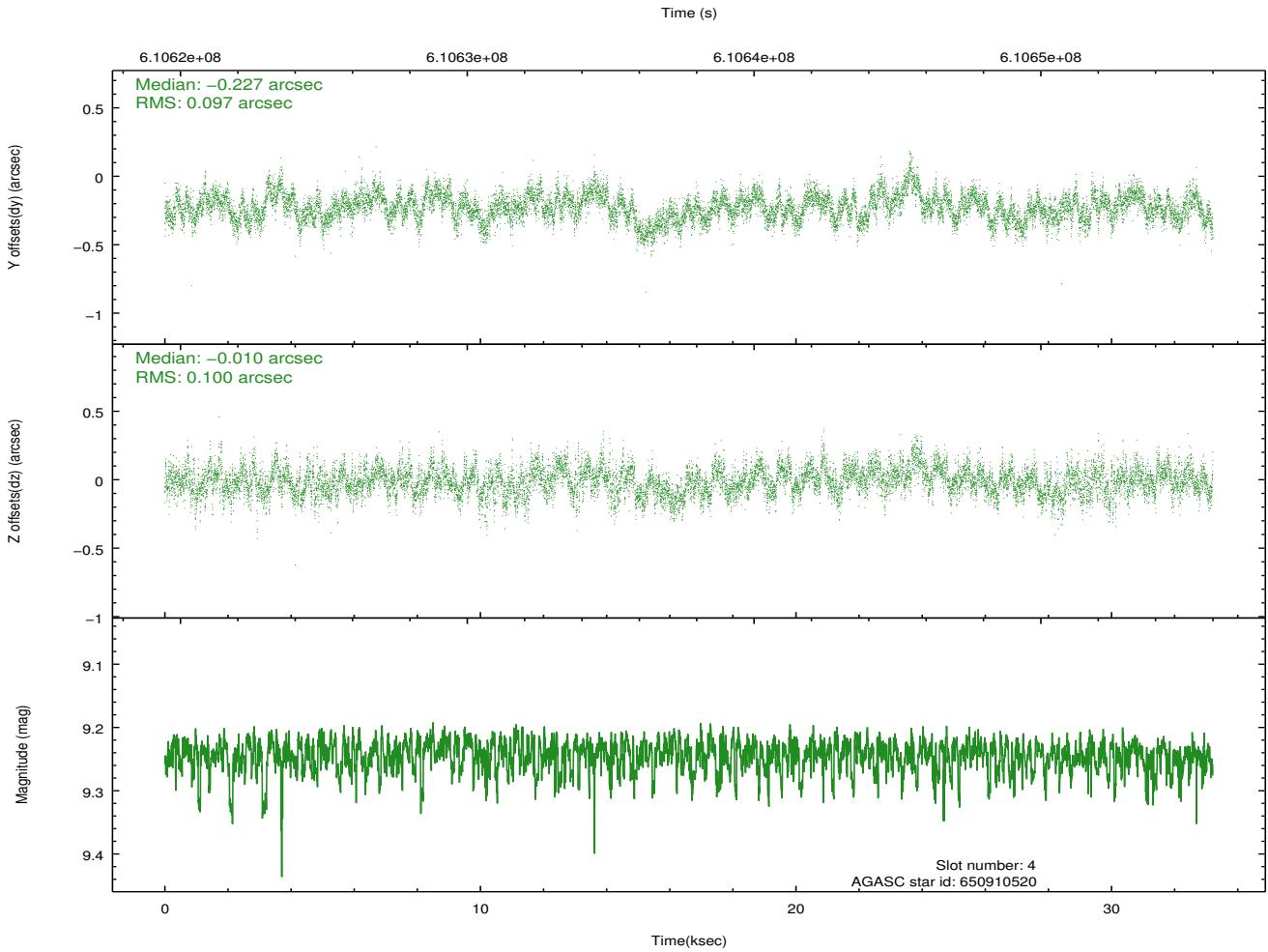
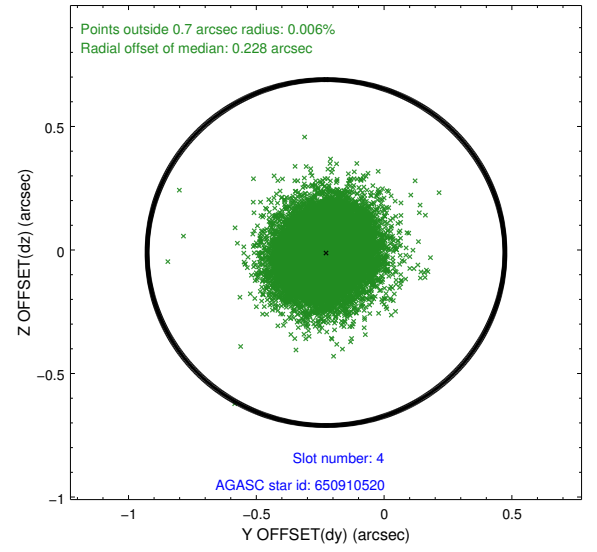
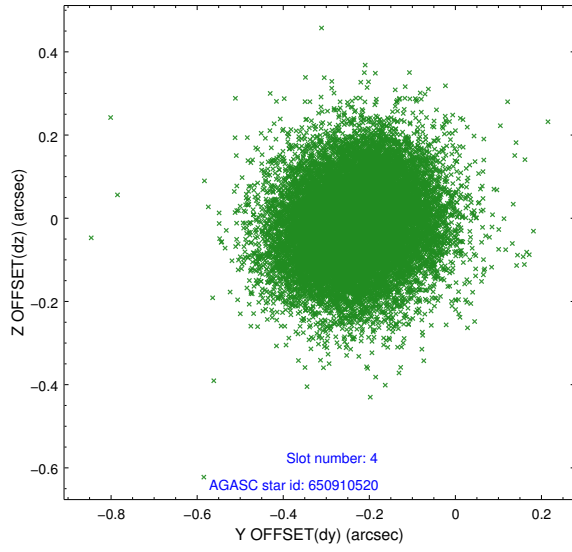
| slot | status | used | id        | mag  | n_pts | med_dy | med_dz | dr1   | dr2   | ra         | dec       | mean_y   | mean_z   |
|------|--------|------|-----------|------|-------|--------|--------|-------|-------|------------|-----------|----------|----------|
| 0    | FID    |      | ACIS-S-1  | 7.23 | 8101  | 0.162  | -0.109 | 0.020 | 0.047 | 0.000000   | 0.000000  | 924.67   | -1737.20 |
| 1    | FID    |      | ACIS-S-5  | 7.24 | 8100  | -0.366 | 0.071  | 0.021 | 0.028 | 0.000000   | 0.000000  | -1824.90 | 160.37   |
| 2    | FID    |      | ACIS-S-6  | 7.38 | 8100  | 0.187  | 0.049  | 0.029 | 0.053 | 0.000000   | 0.000000  | 390.10   | 804.45   |
| 3    | GUIDE  | used | 650909984 | 8.92 | 16183 | 0.002  | -0.586 | 0.148 | 0.239 | 204.482837 | -1.574100 | 648.11   | 293.08   |
| 4    | GUIDE  | used | 650910520 | 9.24 | 16185 | -0.227 | -0.010 | 0.149 | 0.238 | 204.897806 | -1.224284 | -1268.63 | 668.92   |
| 5    | GUIDE  | used | 650911400 | 8.19 | 16195 | -0.060 | 0.068  | 0.117 | 0.195 | 204.183307 | -1.260588 | 443.46   | -1253.24 |
| 6    | GUIDE  | used | 650911488 | 7.20 | 16200 | 0.306  | 0.209  | 0.130 | 0.222 | 204.061036 | -0.930991 | -202.09  | -2342.25 |
| 7    | GUIDE  | used | 650912968 | 9.22 | 16109 | -0.018 | 0.333  | 0.129 | 0.222 | 204.601960 | -1.000318 | -1230.22 | -666.65  |

## 2.4 Star Slots

### 2.4.1 Slot 3

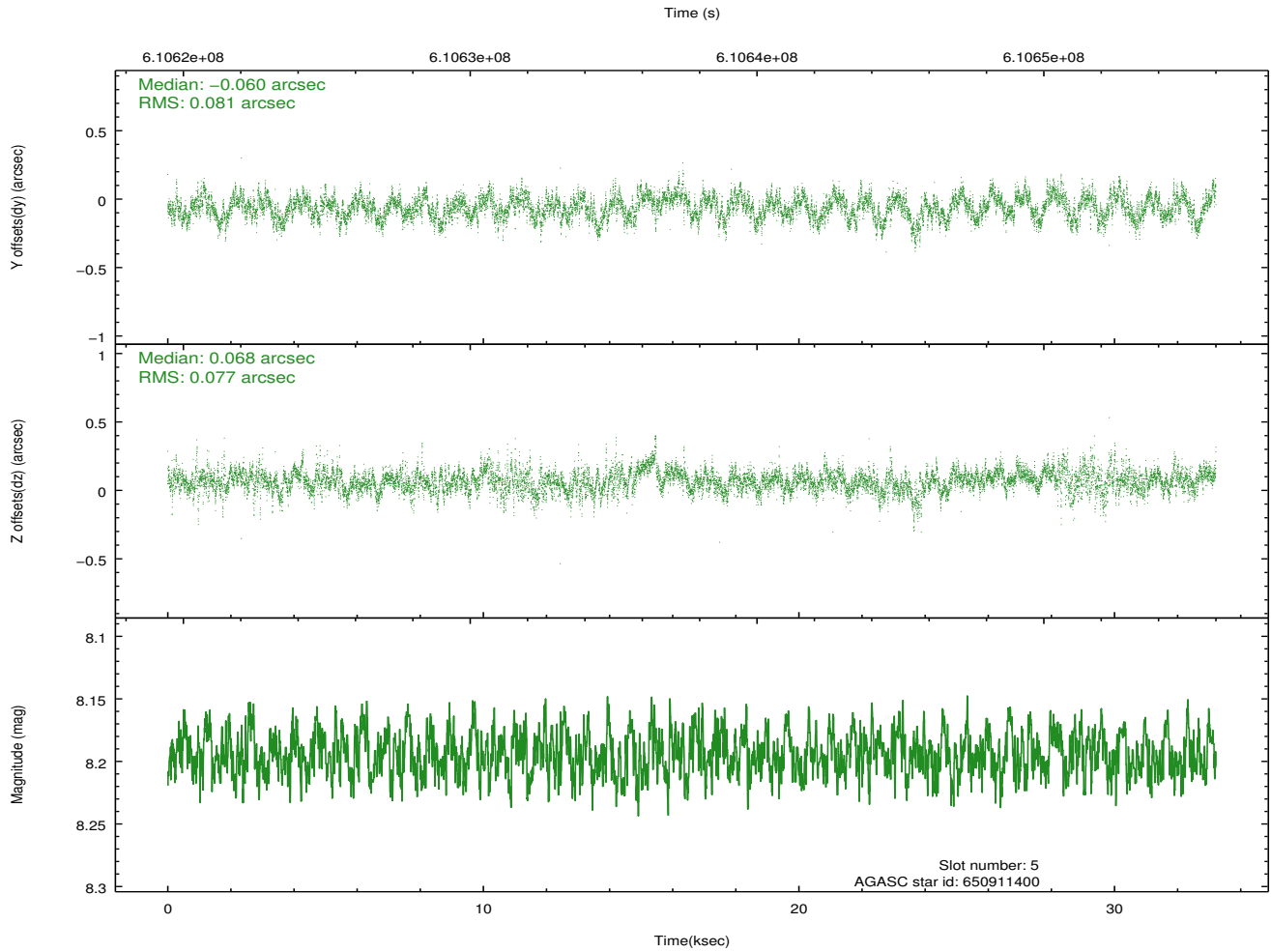
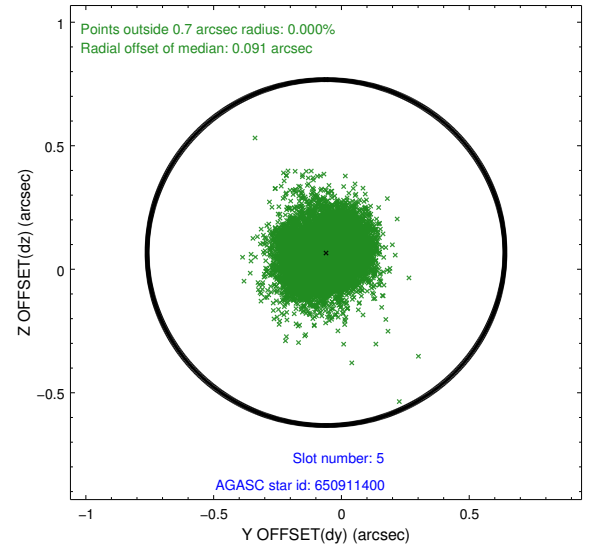
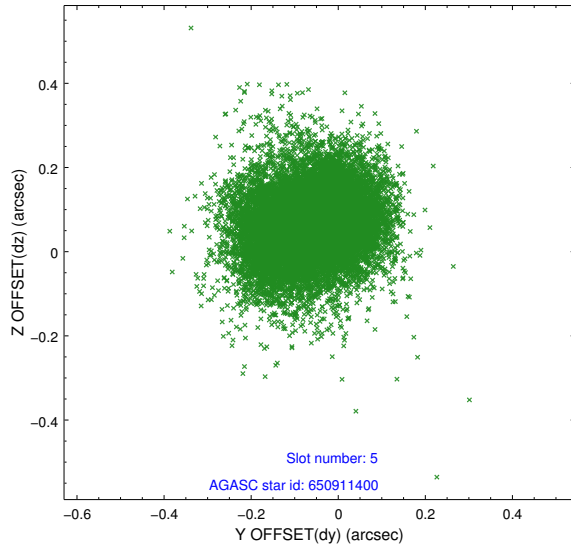


## 2.4.2 Slot 4

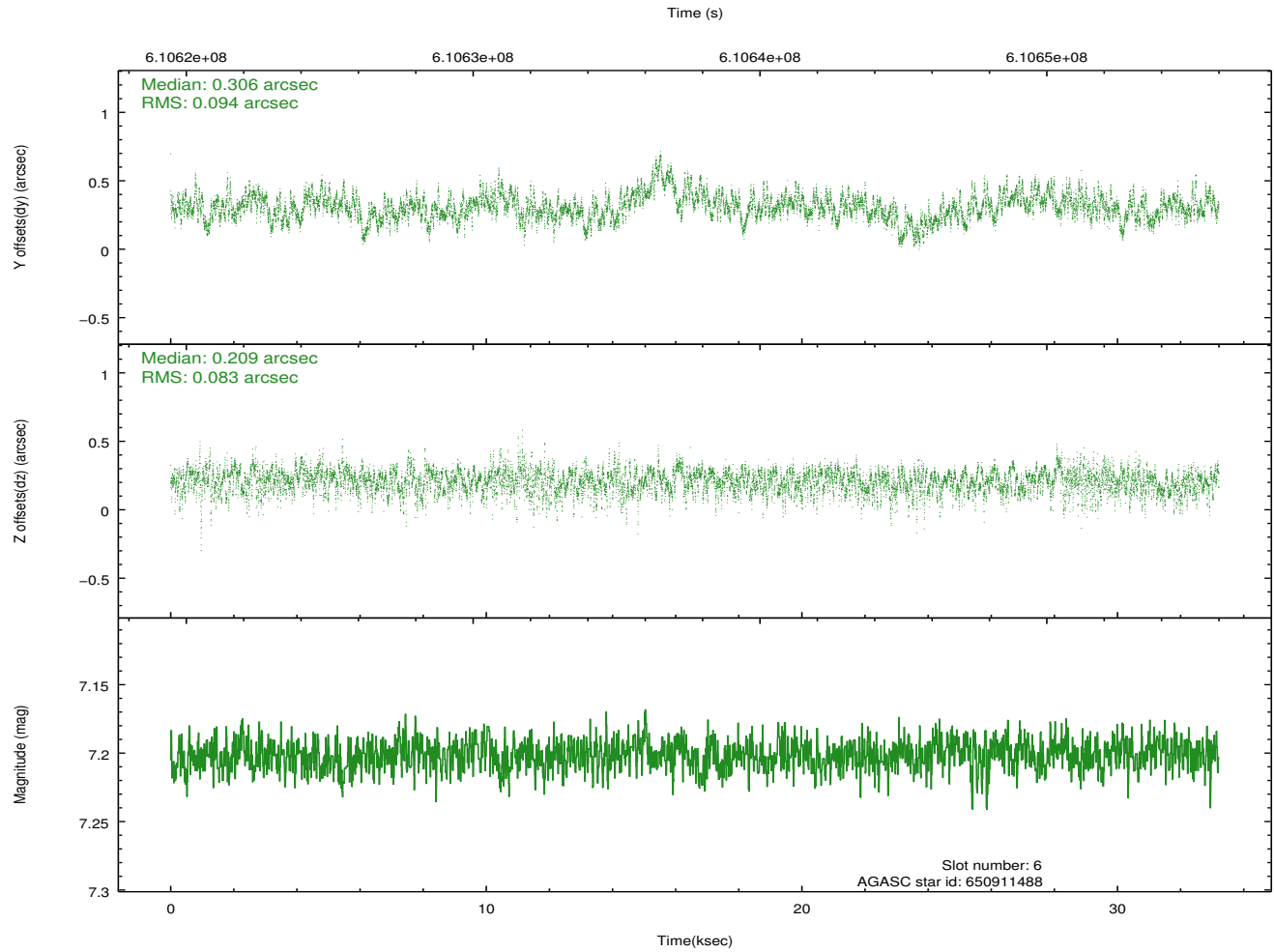
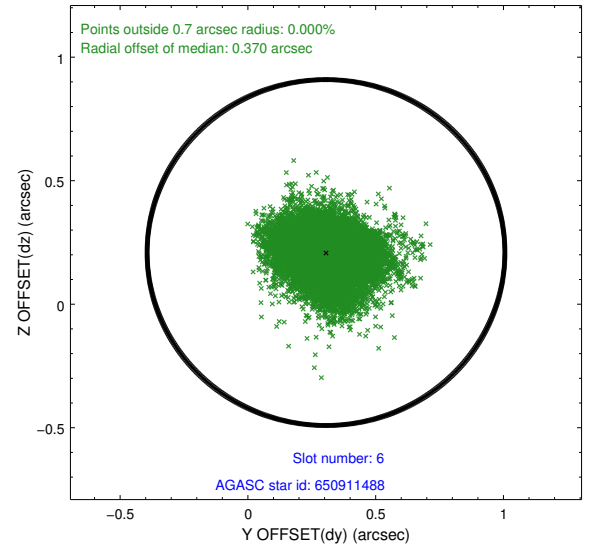
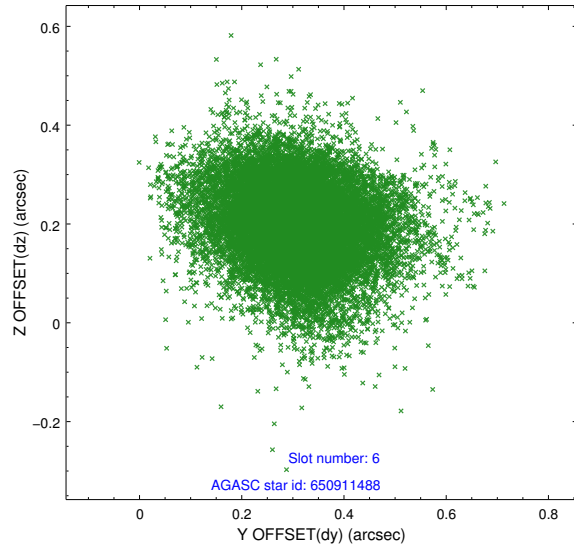




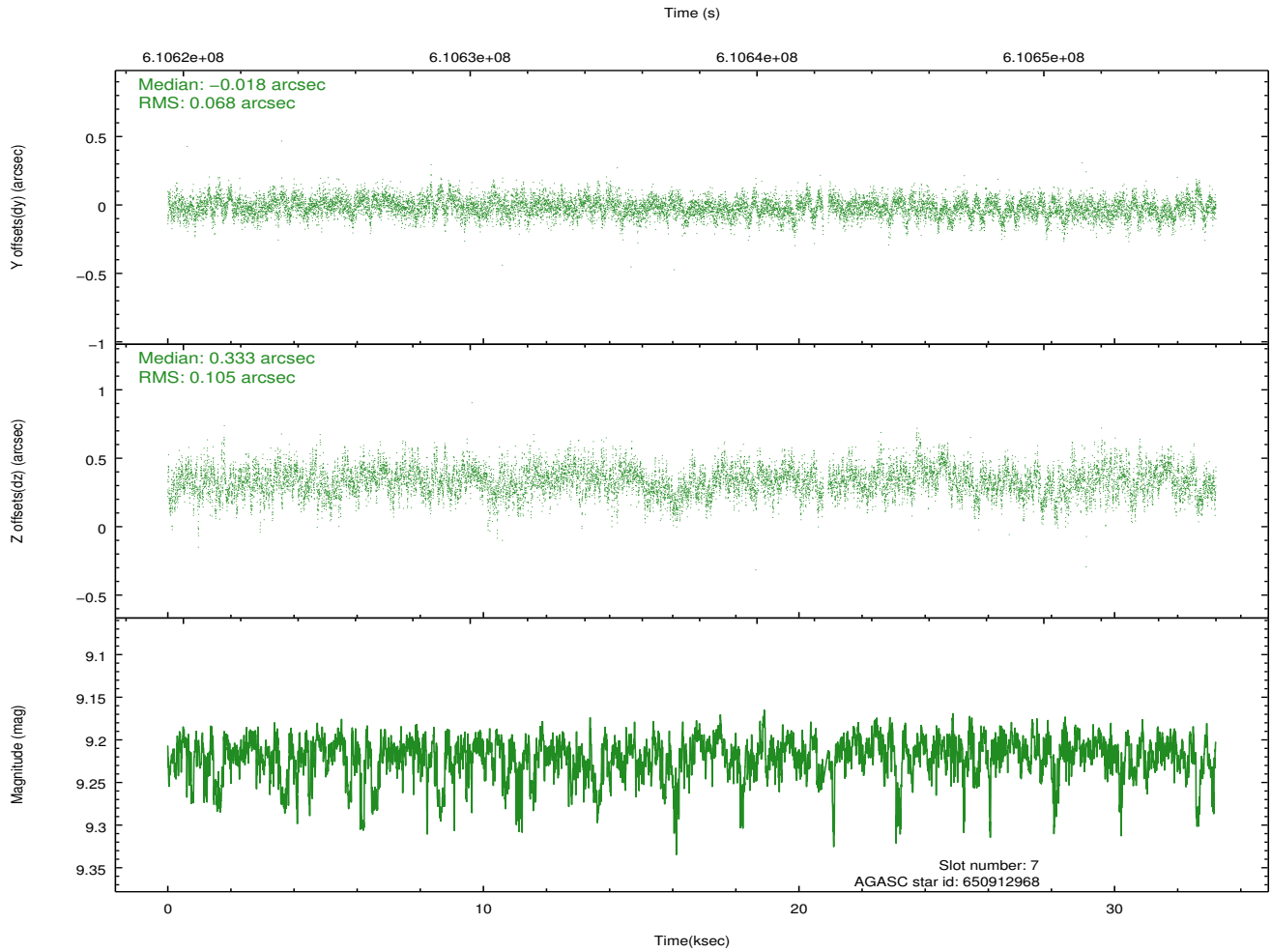
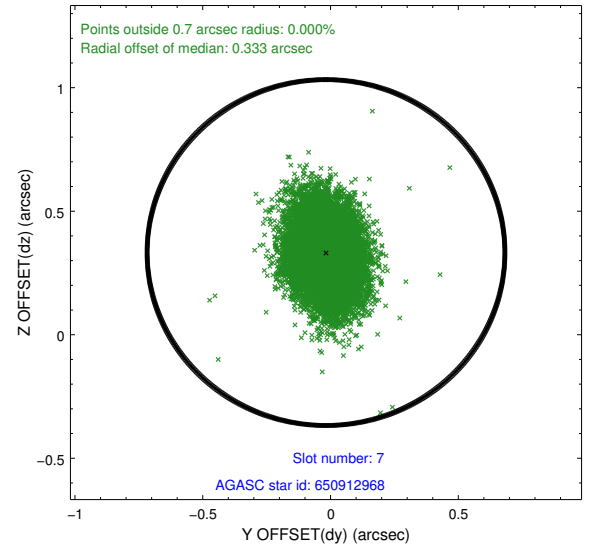
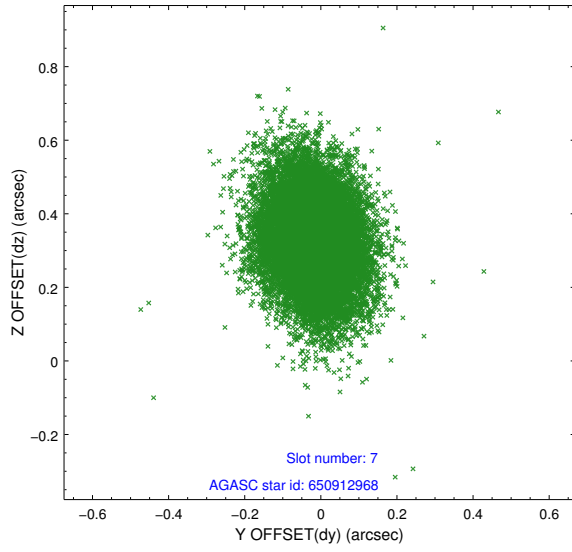
### 2.4.3 Slot 5



## 2.4.4 Slot 6

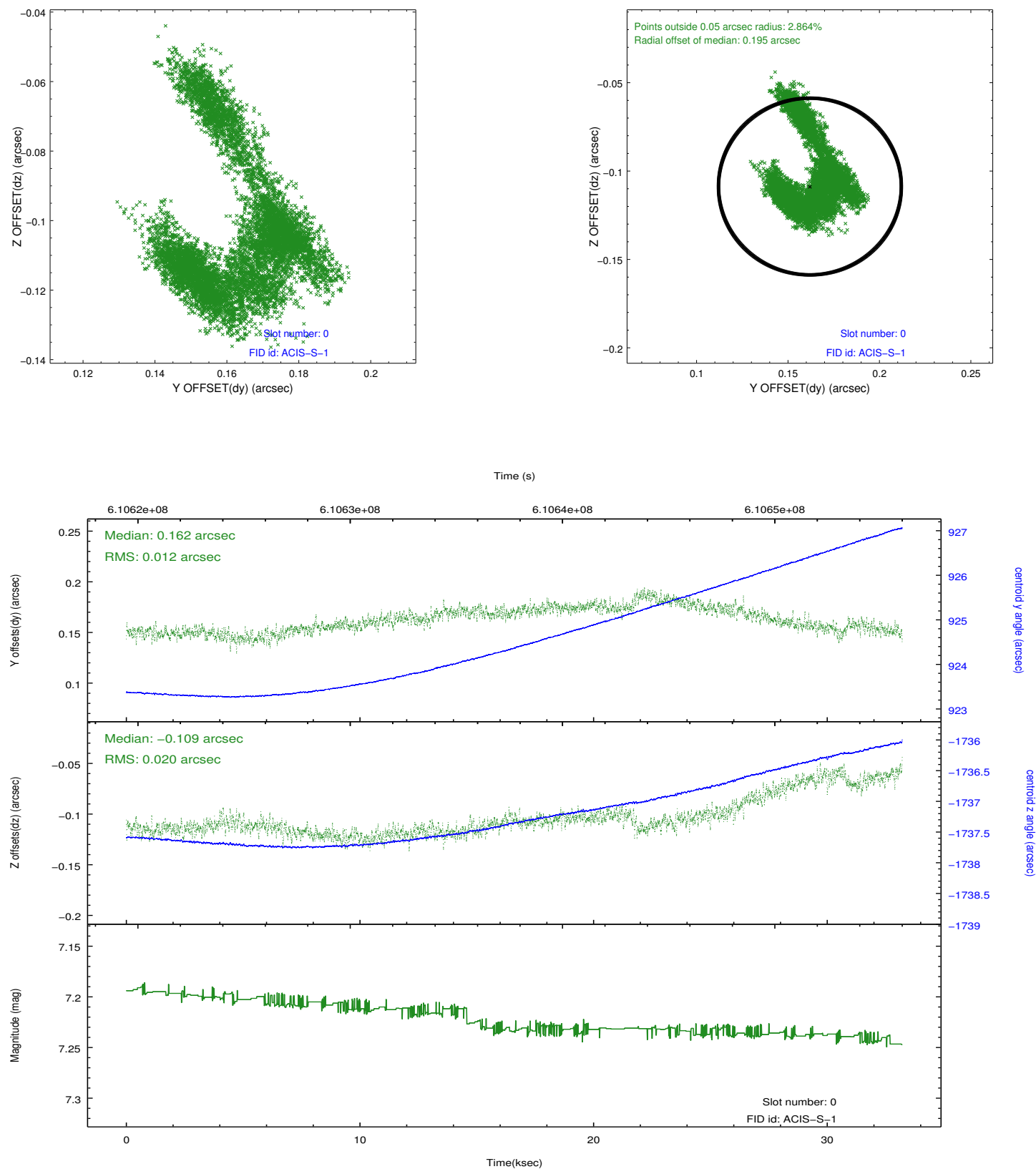


## 2.4.5 Slot 7

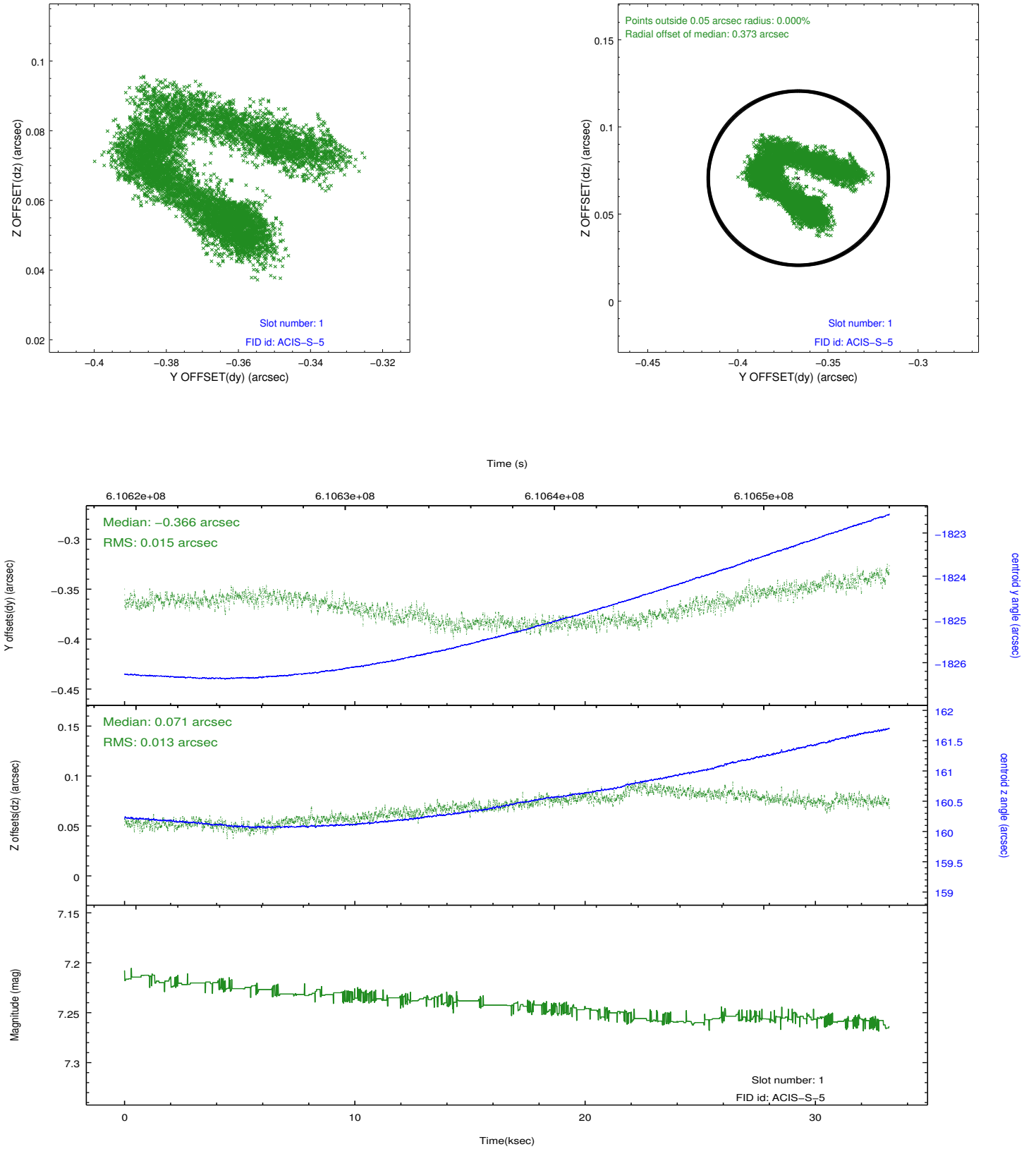


## 2.5 FID Slots

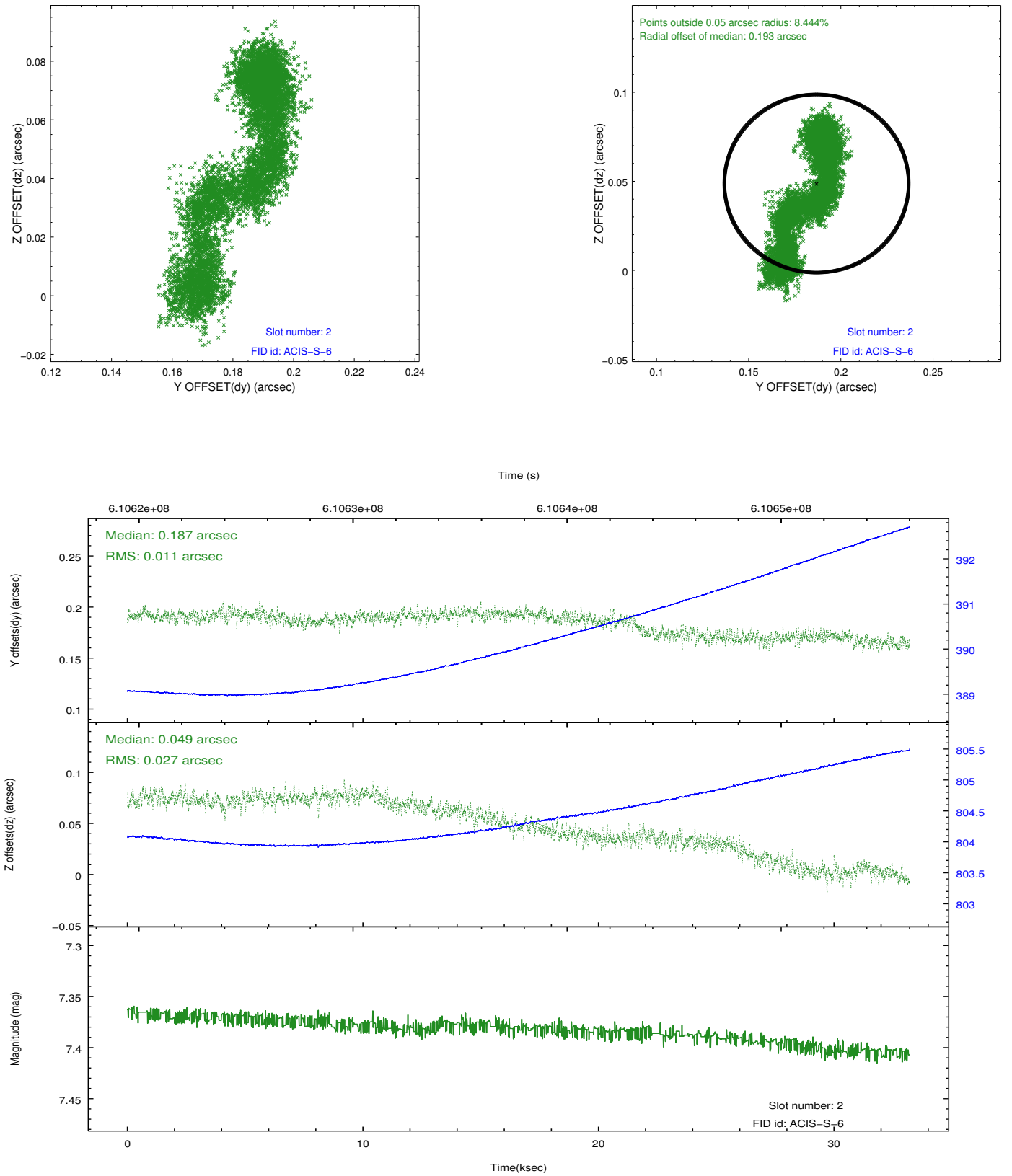
### 2.5.1 Slot 0



## 2.5.2 Slot 1



### 2.5.3 Slot 2



## A Summary

### A.1 Status

|                            |                |
|----------------------------|----------------|
| V&V Scientist              | Joy Nichols    |
| V&V Date (YYYY-MM-DD)      | 2017.05.09     |
| V&V Edition                | 1              |
| V&V Disposition and Status | OK             |
| V&V Charge Time            | 33.06770025444 |

### A.2 Comments