

# V&V Reference Report

## L2 ASCDS Version : 10.9.1

Observation 5896 - L2 Version 4  
Chandra X-Ray Center

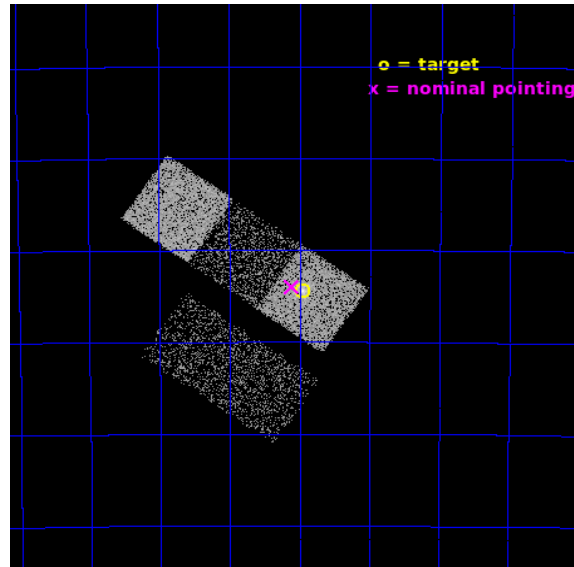
L2 Processing Date : Oct 8 2020

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# 1 Front

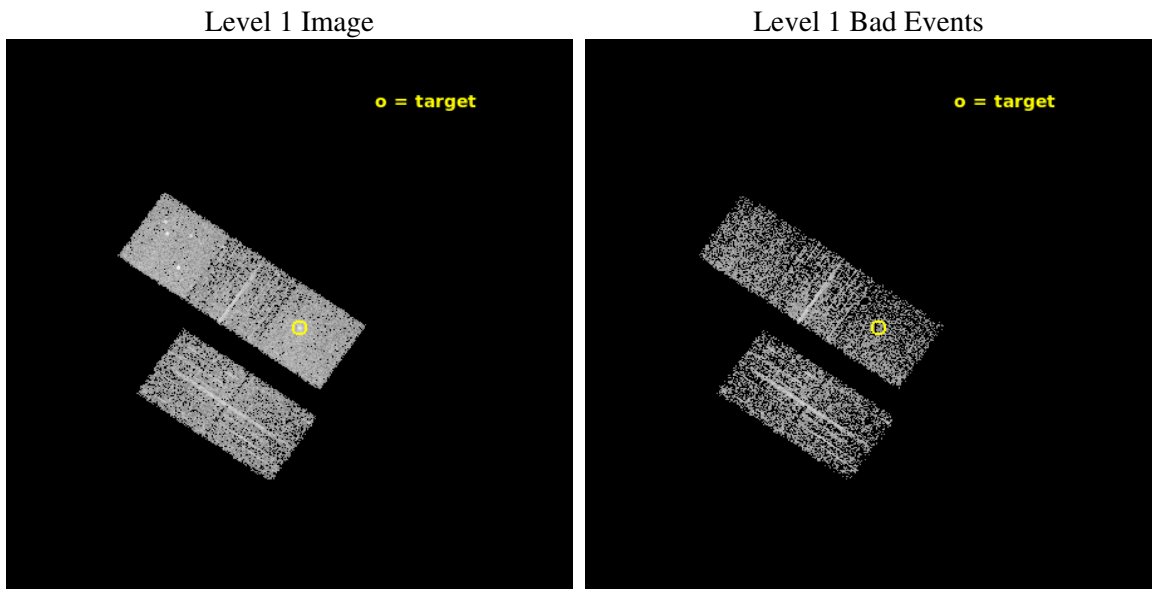
|          |   |   |
|----------|---|---|
| seq_num  | 600415  | Sequence number                             |
| obs_id   | 5896  | Observation id                              |
| title    | Snapshot Observations of X-ray Bright Early-Type Galaxies | Proposal                                    |
| observer | Dr. Stephen Murray  | Principal investigator                      |
| object   | NGC6407   | Source name                                 |
| dtcycle  | 0   | &#160                                       |
| cycle    | P   | events from which exps?<br>Prim/Second/Both |
| ra_targ  | 266.240417  | Observer's specified target RA [deg]        |
| dec_targ | -60.739722  | Observer's specified target Dec [deg]       |
| ra_nom   | 266.2772900685  | Nominal RA [deg]                            |
| dec_nom  | -60.732919981819  | Nominal Dec [deg]                           |
| roll_nom | 34.643697176774   | Nominal Roll [deg]                          |
| revision | 4   | Processing version of data                  |
| ontime   | 2176.199995786  | Sum of GTIs [s]                             |
| livetime | 2147.7663407459   | Livetime [s]                                |
| ontime2  | 2176.199995786  | Sum of GTIs [s]                             |
| ontime3  | 2176.199995786  | Sum of GTIs [s]                             |
| ontime5  | 2176.199995786  | Sum of GTIs [s]                             |
| ontime6  | 2176.199995786  | Sum of GTIs [s]                             |
| ontime7  | 2176.199995786  | Sum of GTIs [s]                             |
| l2events | 20429   | Number of level 2 events                    |



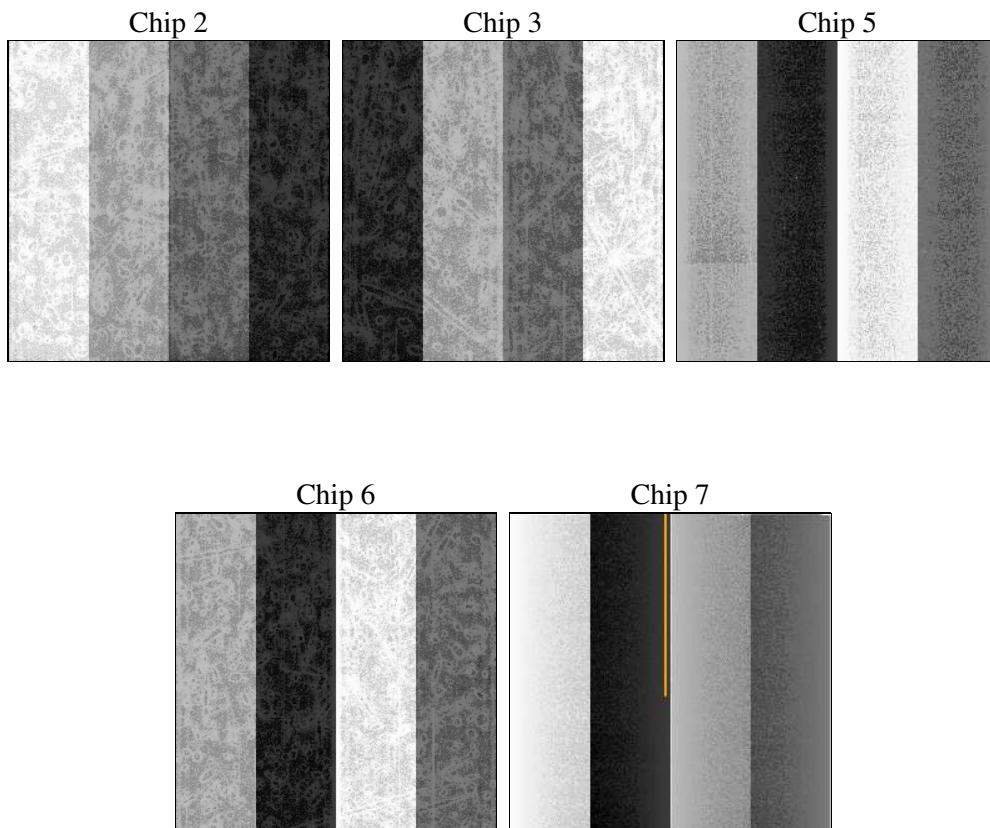
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

|          |                     |                                |                |                |   |
|----------|---------------------|--------------------------------|----------------|----------------|---|
| obi_num  | 0                   | Obi number                     | sched_exp_time | 2000.000000    | [s] Scheduled observation exposure time |
| ascdsver | 10.9.1              | Processing system revision     | ontime         | 2176.199995786 | Sum of GTIs [s]                         |
| caldsver | 4.9.2               | &#160                          | ontime2        | 2176.199995786 | Sum of GTIs [s]                         |
| date     | 2020-10-08T11:53:59 | Date and time of file creation | ontime3        | 2176.199995786 | Sum of GTIs [s]                         |
| revision | 4                   | Processing version of data     | ontime5        | 2176.199995786 | Sum of GTIs [s]                         |
|          |                     |                                | ontime6        | 2176.199995786 | Sum of GTIs [s]                         |
|          |                     |                                | ontime7        | 2176.199995786 | Sum of GTIs [s]                         |
|          |                     |                                | l1events       | 118008         | Number of level 1 events                |

### 2.1.4 Events

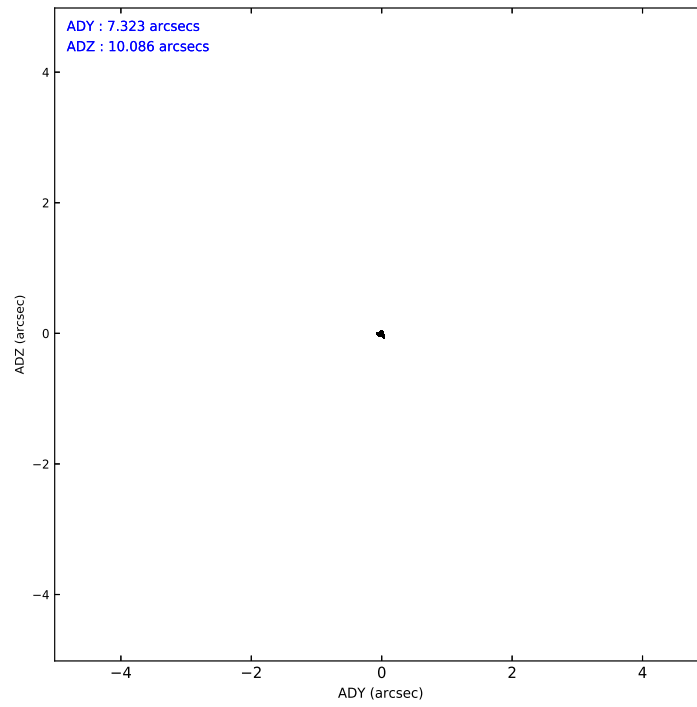
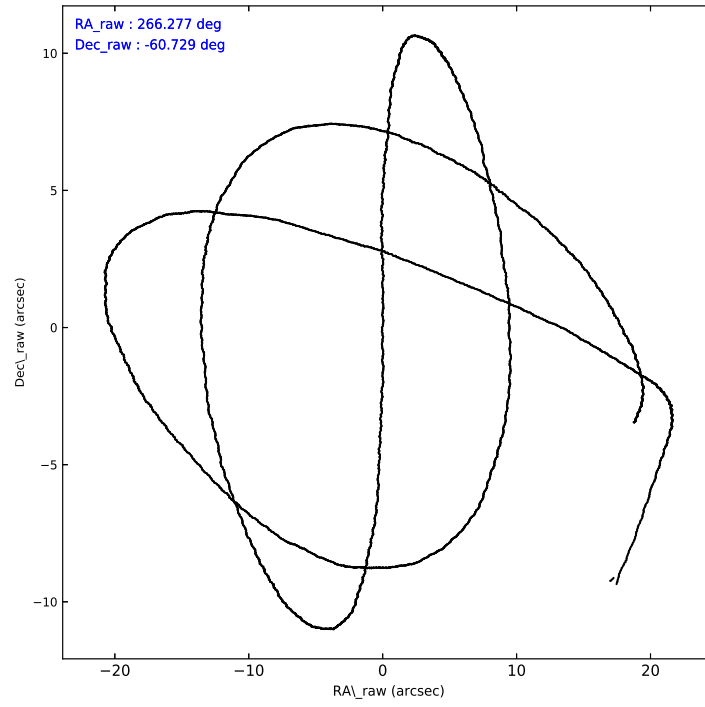
|                 | ccd 2 | ccd 3 | ccd 5 | ccd 6 | ccd 7 |
|-----------------|-------|-------|-------|-------|-------|
| level 1 events  | 21105 | 19408 | 30176 | 21511 | 25808 |
| rejected events | 19673 | 18118 | 20629 | 19861 | 17308 |
| rejected %      | 93%   | 93%   | 68%   | 92%   | 67%   |

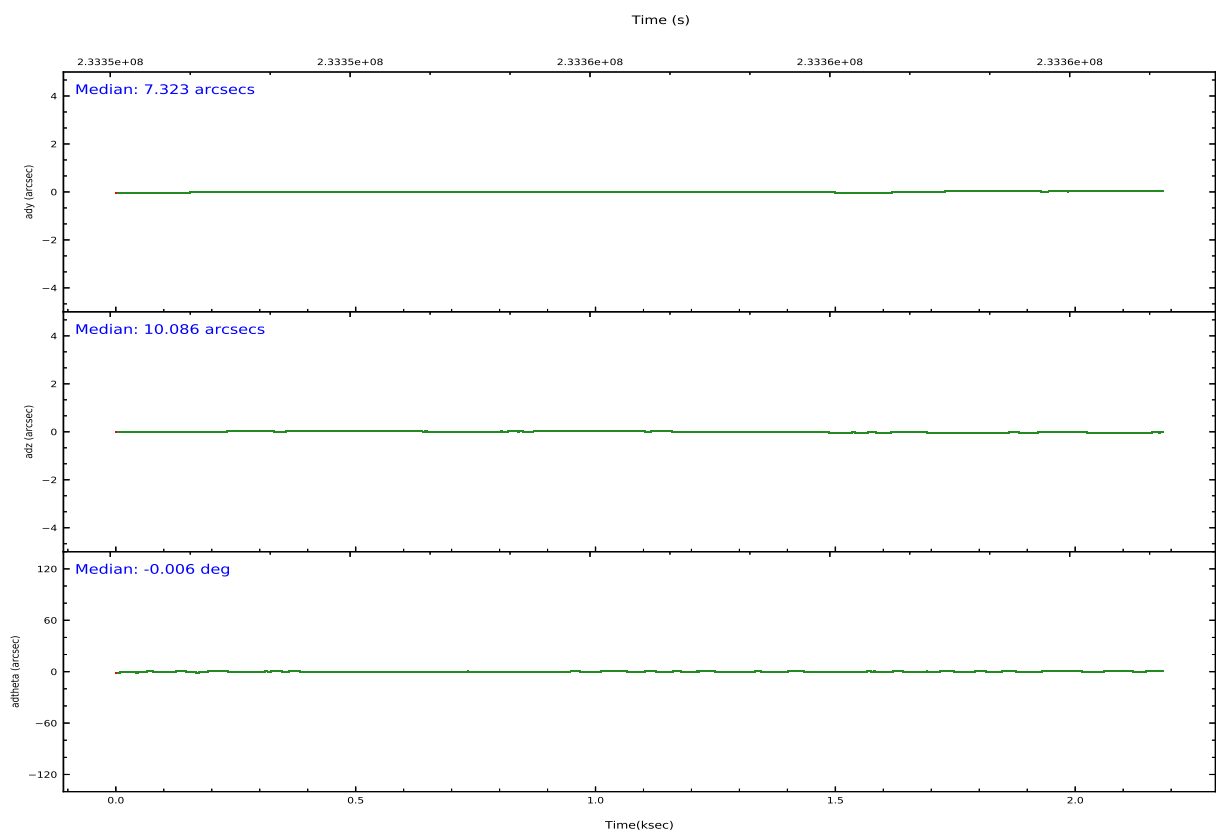
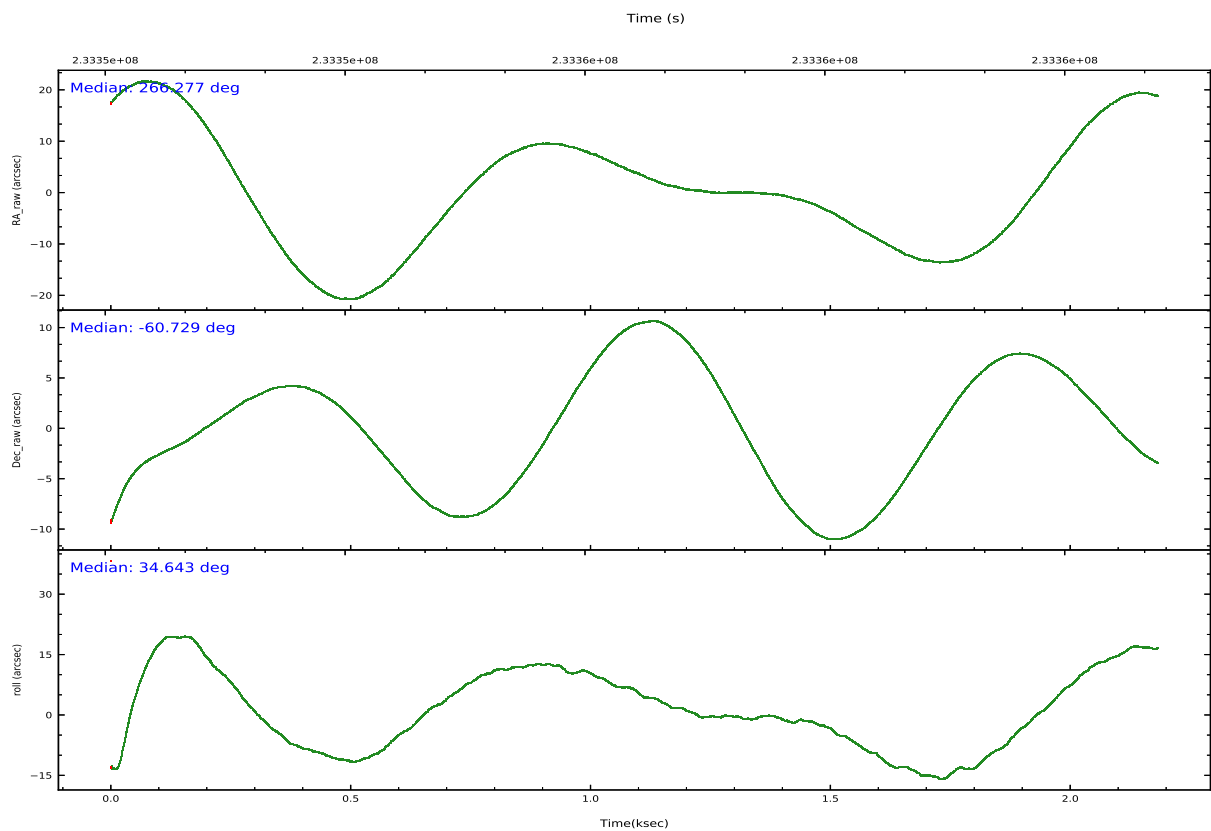
|                | ccd 2 | ccd 3 | ccd 5 | ccd 6 | ccd 7 |
|----------------|-------|-------|-------|-------|-------|
| grade 0 events | 844   | 850   | 2408  | 1033  | 1597  |
|                | 3%    | 4%    | 7%    | 4%    | 6%    |
| grade 1 events | 4     | 12    | 32    | 13    | 20    |
|                | 0%    | 0%    | 0%    | 0%    | 0%    |
| grade 2 events | 499   | 377   | 4245  | 497   | 2712  |
|                | 2%    | 1%    | 14%   | 2%    | 10%   |
| grade 3 events | 233   | 211   | 651   | 250   | 1192  |
|                | 1%    | 1%    | 2%    | 1%    | 4%    |
| grade 4 events | 234   | 233   | 649   | 246   | 1199  |
|                | 1%    | 1%    | 2%    | 1%    | 4%    |
| grade 5 events | 733   | 858   | 2446  | 867   | 2648  |
|                | 3%    | 4%    | 8%    | 4%    | 10%   |
| grade 6 events | 385   | 389   | 7356  | 487   | 5809  |
|                | 1%    | 2%    | 24%   | 2%    | 22%   |
| grade 7 events | 18173 | 16478 | 12389 | 18118 | 10631 |
|                | 86%   | 84%   | 41%   | 84%   | 41%   |

## 2.2 Compared Parameters

| Parameter                         | Planned             | Actual               | Parameter                             | Planned   | Actual  |
|-----------------------------------|---------------------|----------------------|---------------------------------------|-----------|---------|
| Instrument                        | ACIS                | ACIS                 | Obspar version number                 | 8         | 8       |
| Detector                          | ACIS-23567          | ACIS-23567           | 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                 | 266.254060          | 266.2772900685       | Subarray requested                    | NONE      | NONE    |
| [deg] Pointing Dec                | -60.754157          | -60.732919981819     | Alternating exposures requested       | N         | N       |
| [deg] Pointing Roll               | 34.465942           | 34.643697176774      | [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         | -190.1400660498719   |                                       |           |         |
| [mm] SIM translation stage offset | 0                   | 0.00754346686406393  |                                       |           |         |
| [s] Observation start time (MET)  | 233354196.184000    | 233352575.62542      |                                       |           |         |
| Observation start date            | 2005-05-24T20:35:32 | 2005-05-24T20:09:35  |                                       |           |         |
| [s] Observation end time (MET)    | 233356196.184000    | 233356947.25062      |                                       |           |         |
| Observation end date              | 2005-05-24T21:08:52 | 2005-05-24T21:22:27  |                                       |           |         |
| Read mode                         | TIMED               | TIMED                |                                       |           |         |

## 2.3 Aspect





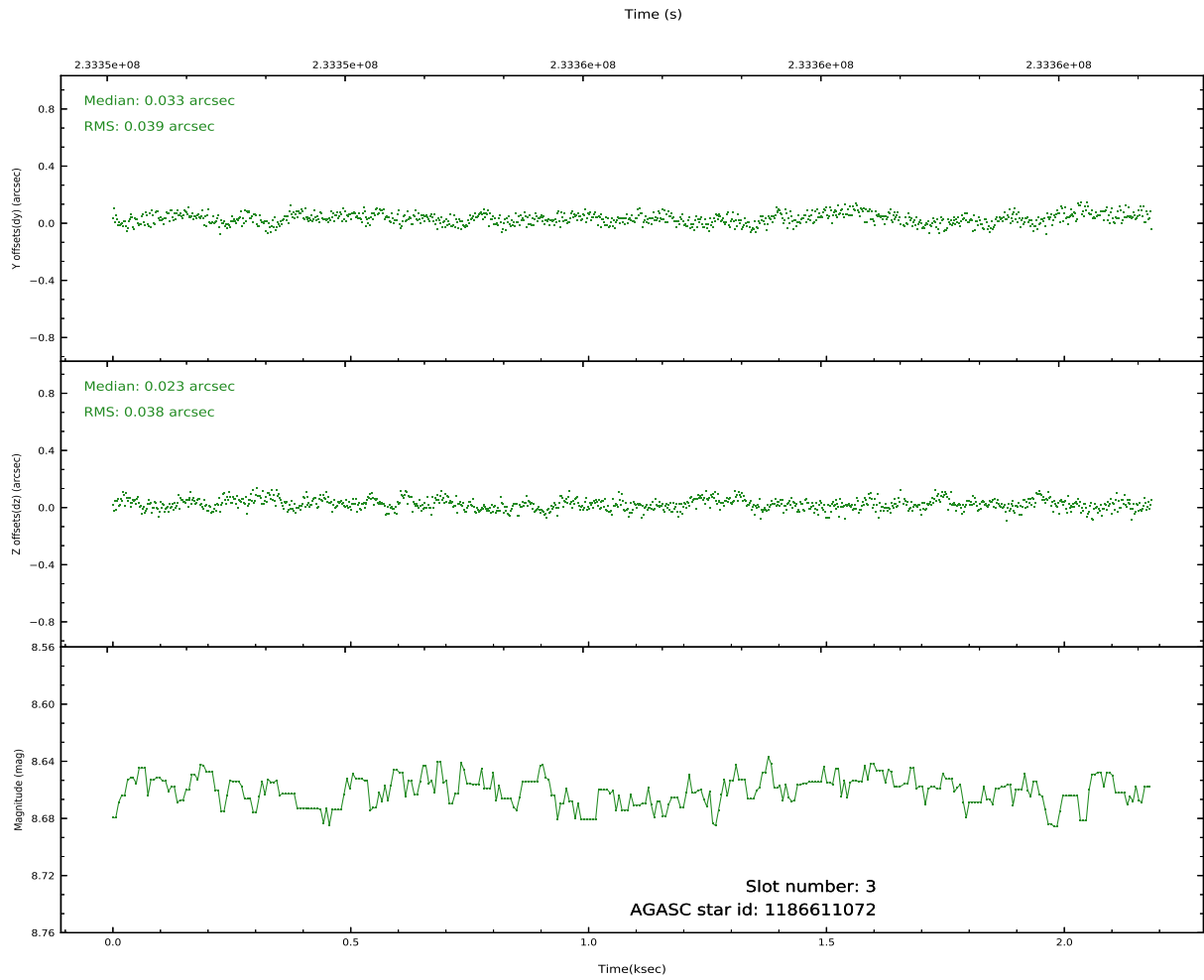
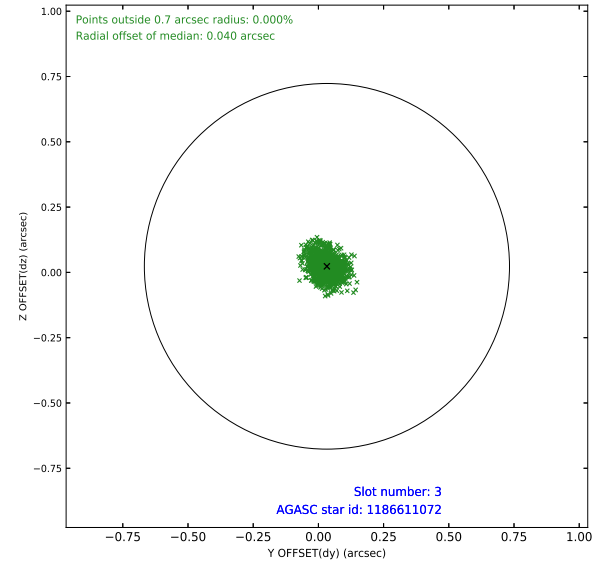
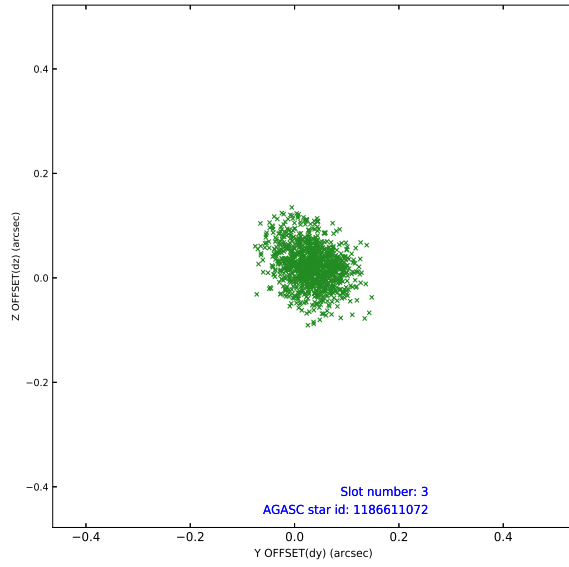
Slot Statistics

| pt | status | used | id         | mag  | n_pts | frac_pts | med_dy | med_dz | dr1   | dr2   | ra         | dec        | mean_y   | mea   |
|----|--------|------|------------|------|-------|----------|--------|--------|-------|-------|------------|------------|----------|-------|
| 0  | FID    |      | ACIS-S-2   | 7.10 | 533   | 1.000    | -0.080 | -0.062 | 0.006 | 0.012 | 0.000000   | 0.000000   | -760.09  | -1731 |
| 1  | FID    |      | ACIS-S-4   | 7.21 | 532   | 1.000    | 0.165  | 0.055  | 0.005 | 0.009 | 0.000000   | 0.000000   | 2152.00  | 174   |
| 2  | FID    |      | ACIS-S-5   | 7.23 | 533   | 1.000    | -0.116 | 0.016  | 0.006 | 0.010 | 0.000000   | 0.000000   | -1809.21 | 171   |
| 3  | GUIDE  | used | 1186611072 | 8.66 | 1064  | 1.000    | 0.033  | 0.023  | 0.058 | 0.095 | 265.701291 | -60.625646 | -545.68  | 930   |
| 4  | GUIDE  | used | 1186619936 | 8.46 | 1066  | 1.000    | 0.018  | -0.044 | 0.059 | 0.095 | 265.445635 | -60.432709 | -535.15  | 1760  |
| 5  | GUIDE  | used | 1186731440 | 7.32 | 1066  | 1.000    | -0.082 | -0.073 | 0.053 | 0.086 | 266.808716 | -60.257515 | 1824.83  | 911   |
| 6  | GUIDE  | used | 1186743184 | 9.29 | 1064  | 1.000    | 0.067  | 0.041  | 0.081 | 0.133 | 266.444910 | -61.069820 | -367.83  | -1124 |
| 7  | GUIDE  | used | 1186733824 | 8.38 | 1065  | 1.000    | -0.035 | 0.055  | 0.055 | 0.091 | 267.092534 | -60.660716 | 1403.57  | -568  |

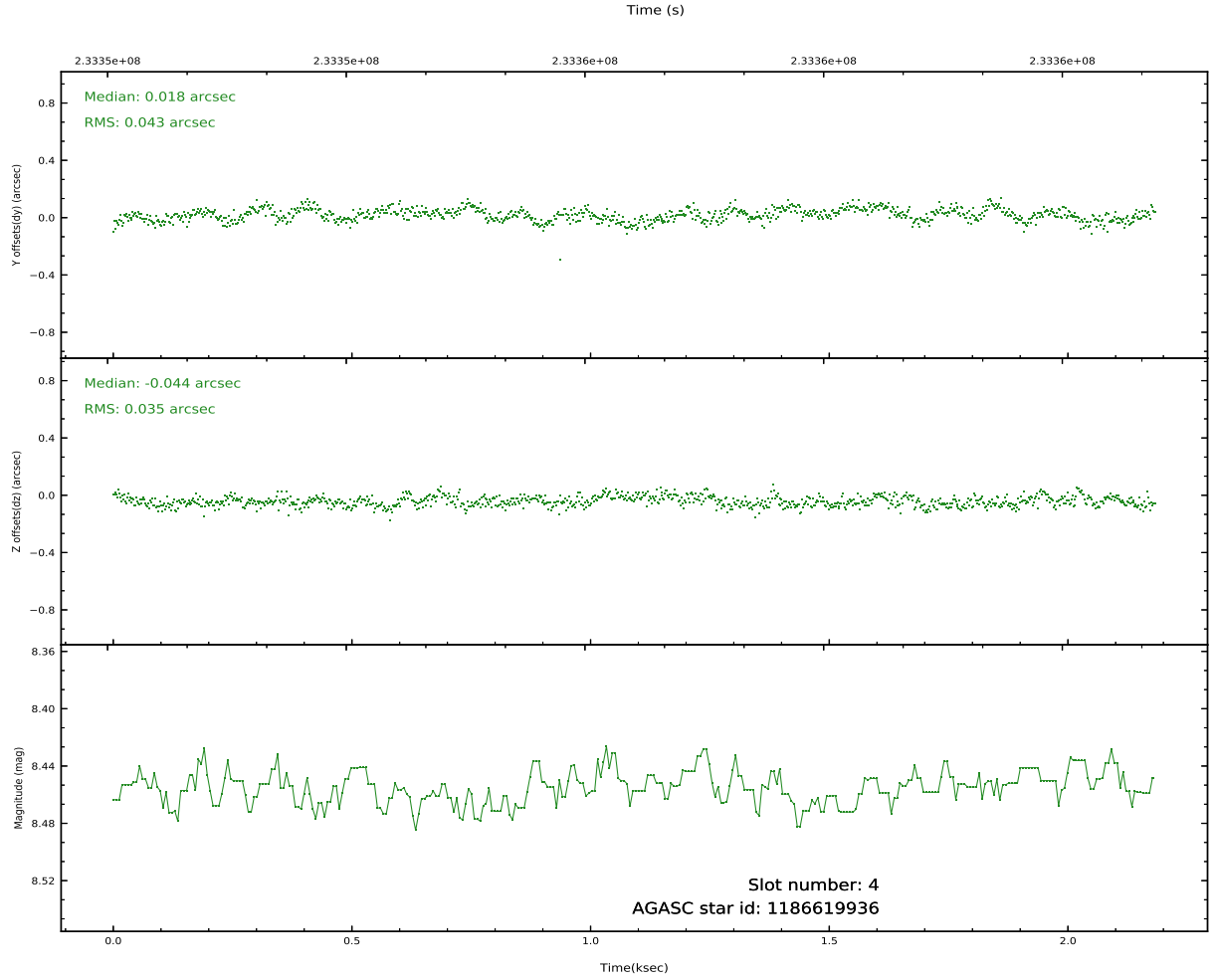
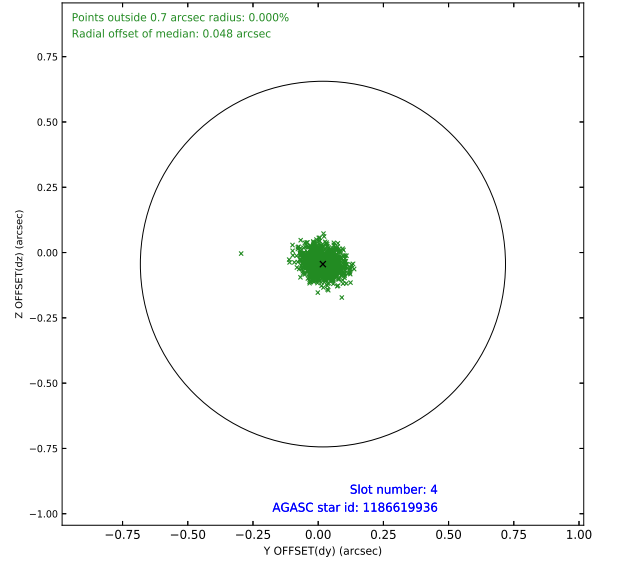
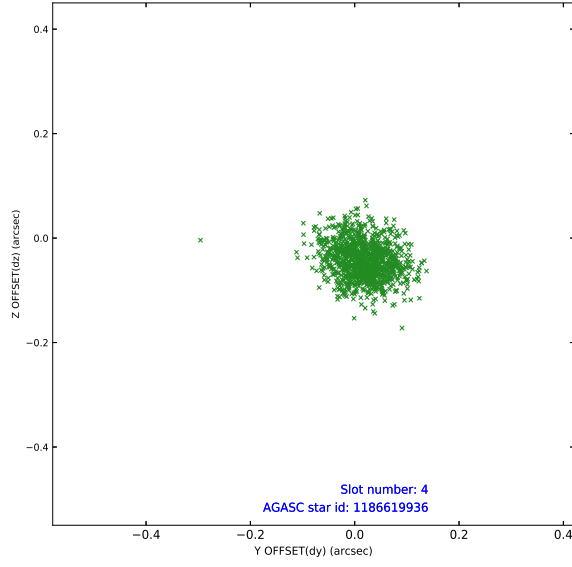


## 2.4 Star Slots

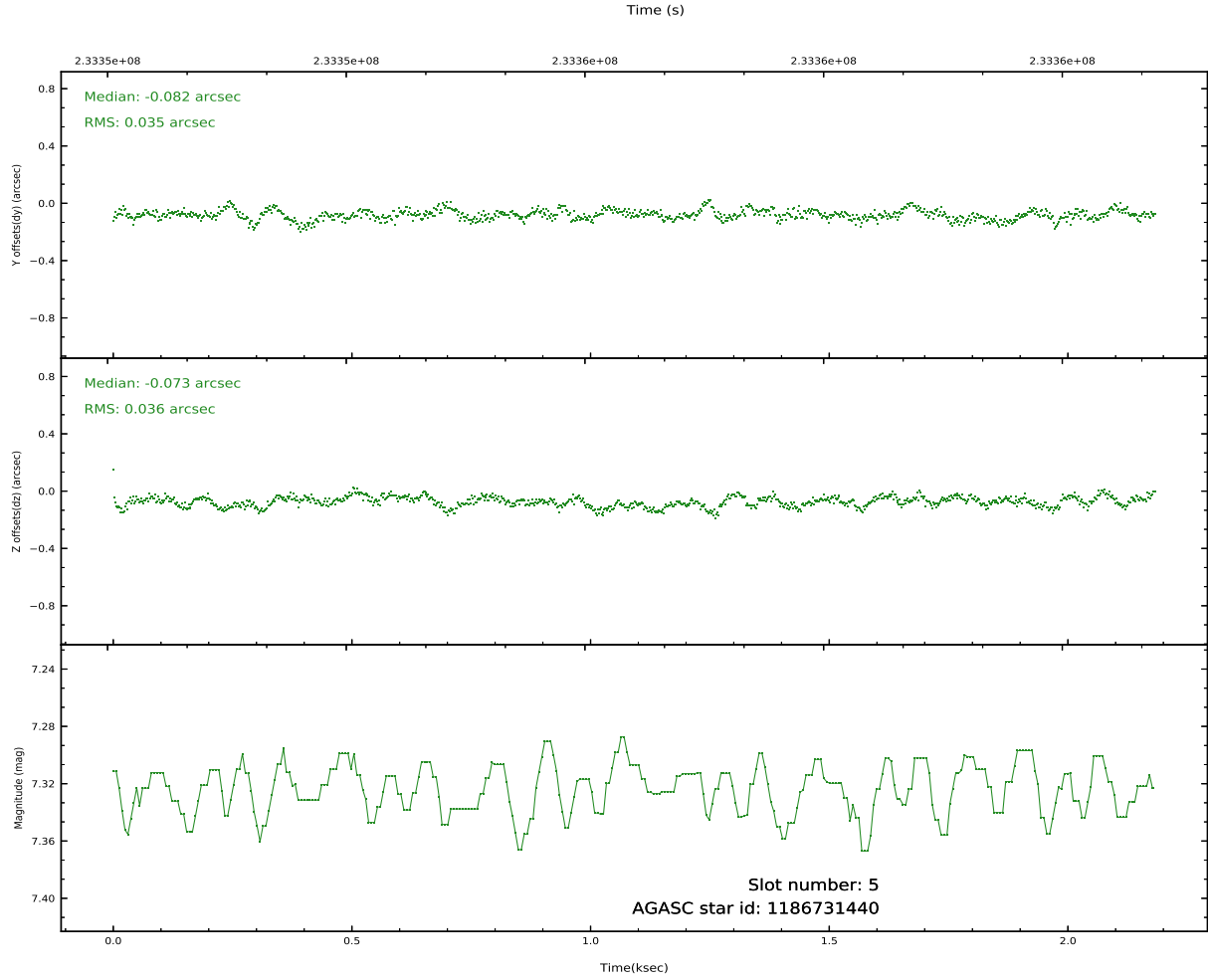
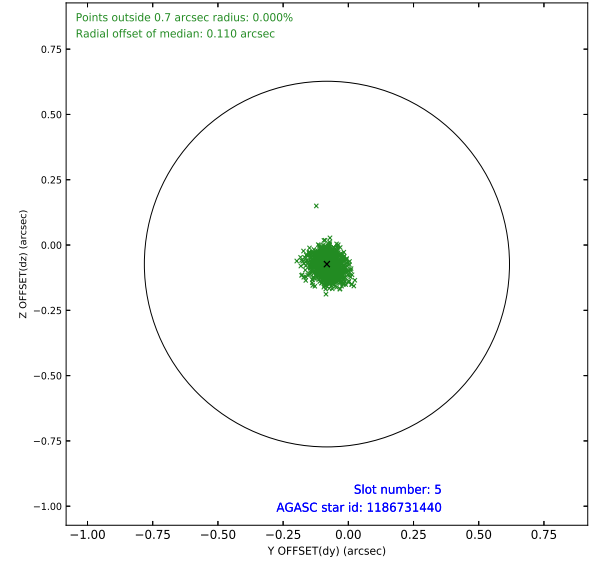
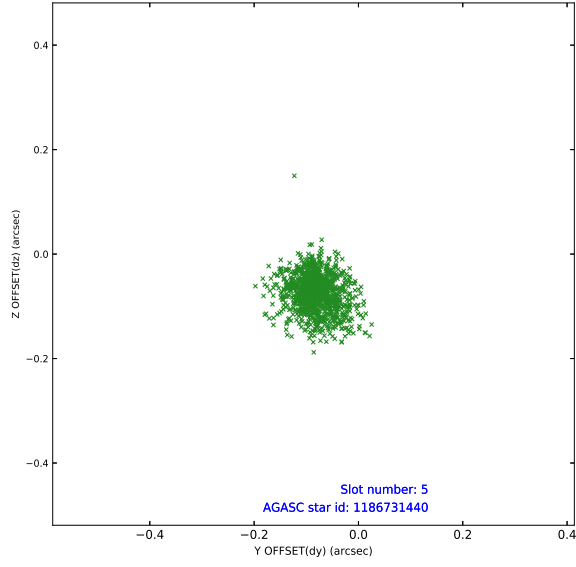
### 2.4.1 Slot 3



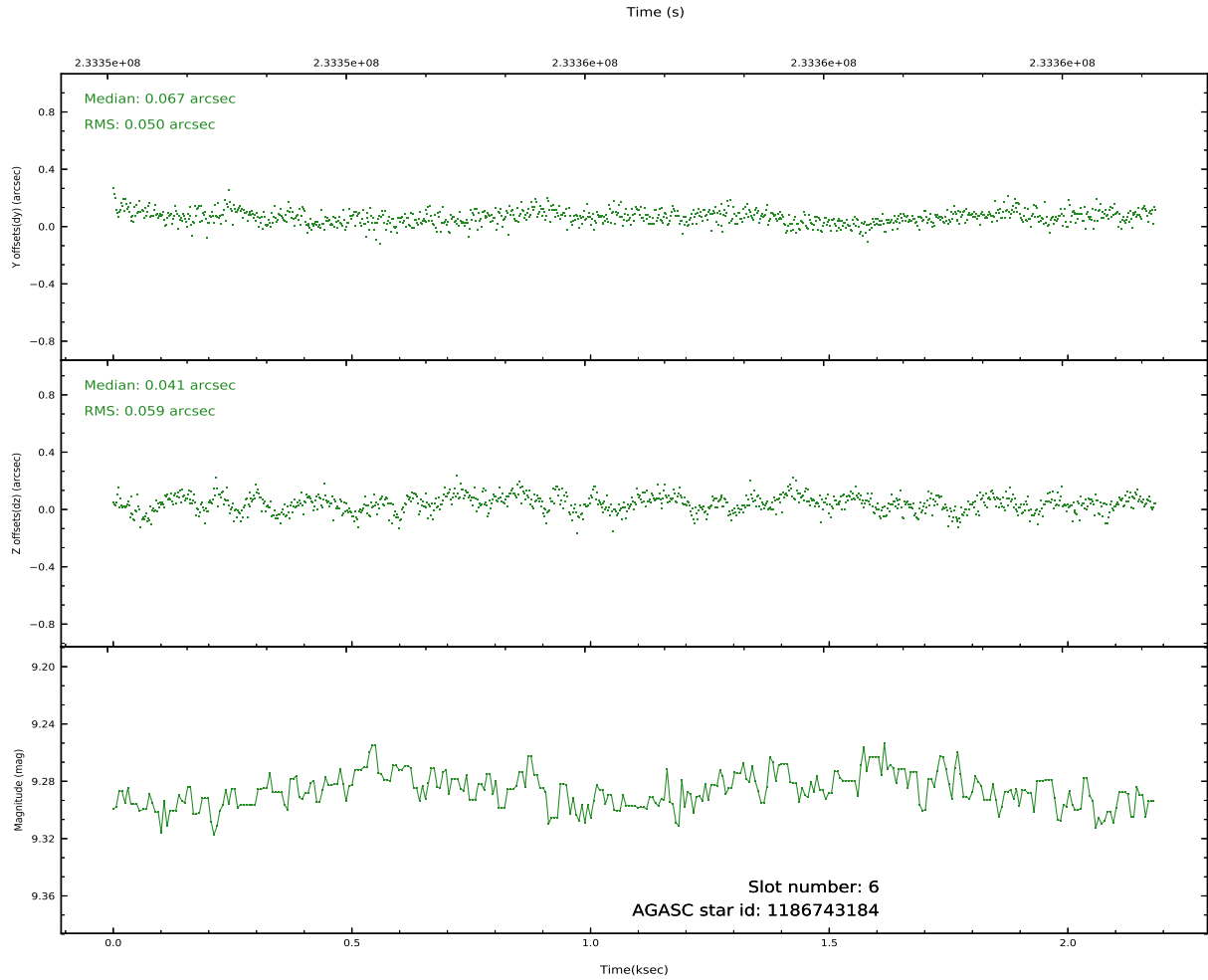
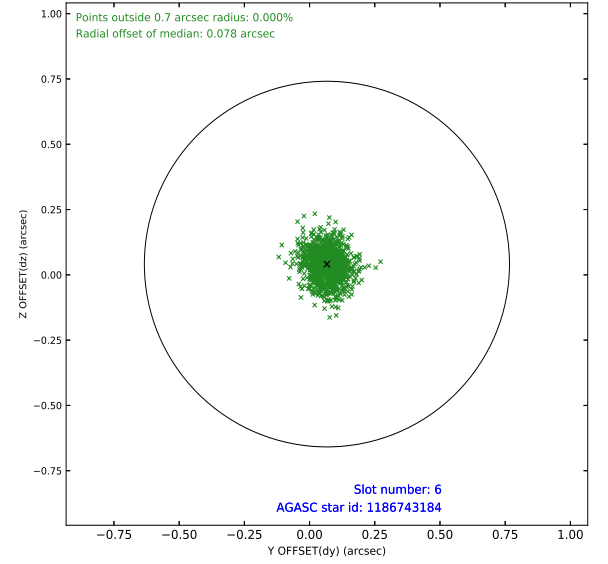
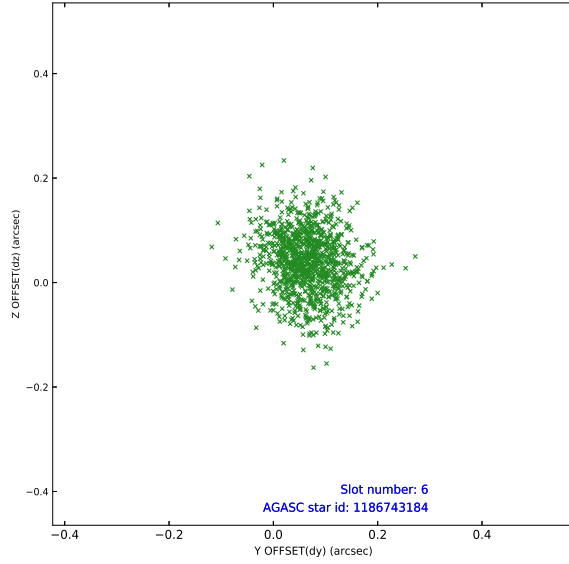
## 2.4.2 Slot 4



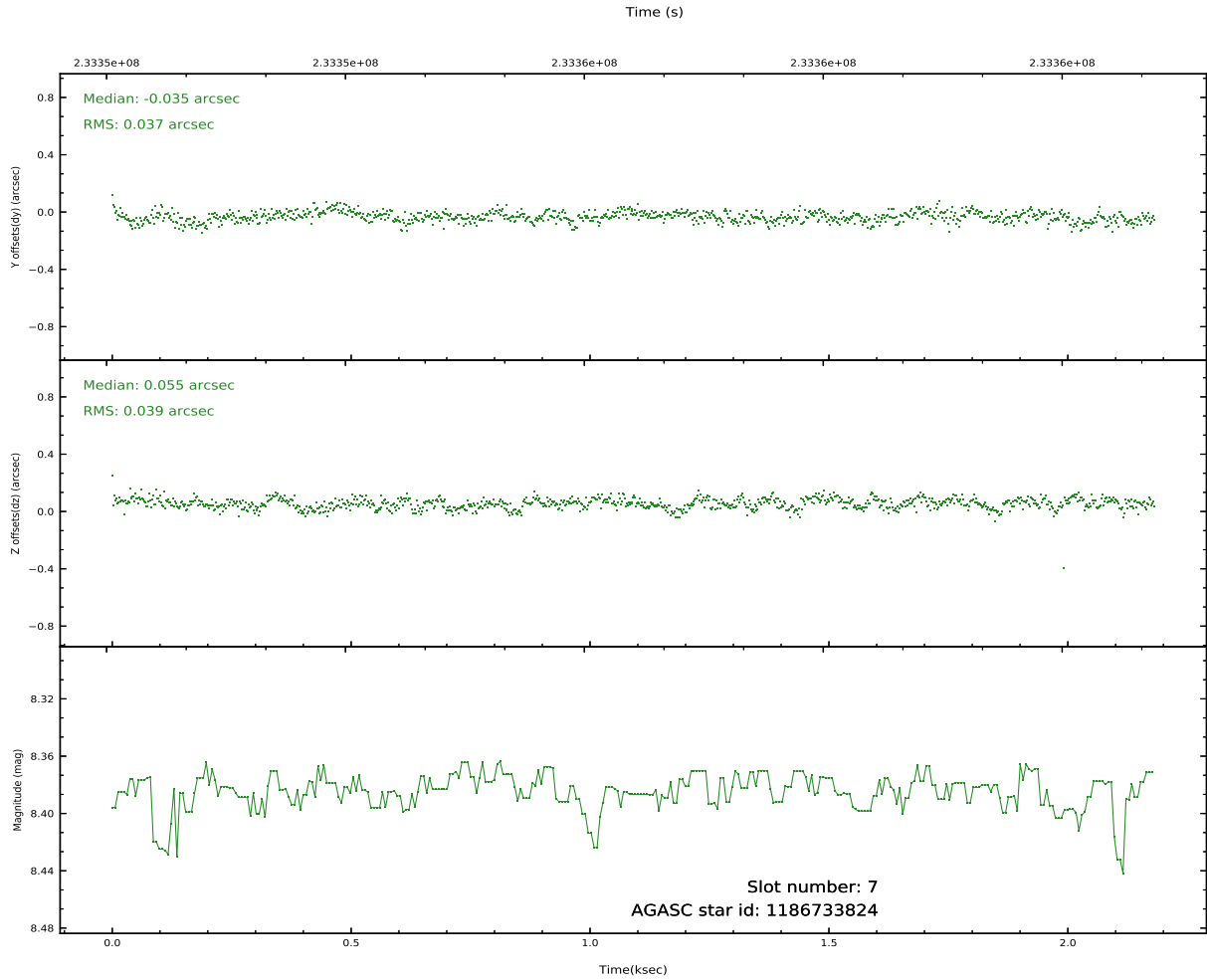
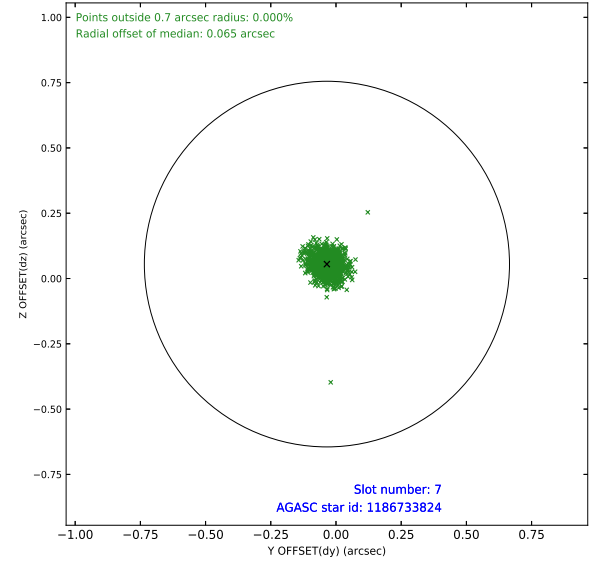
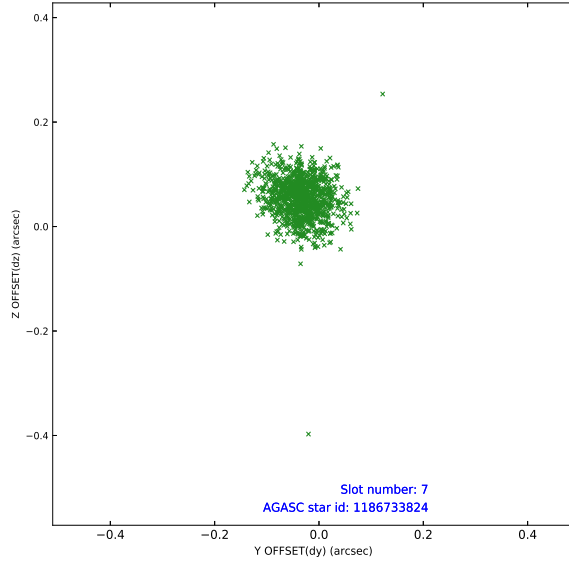
### 2.4.3 Slot 5



## 2.4.4 Slot 6

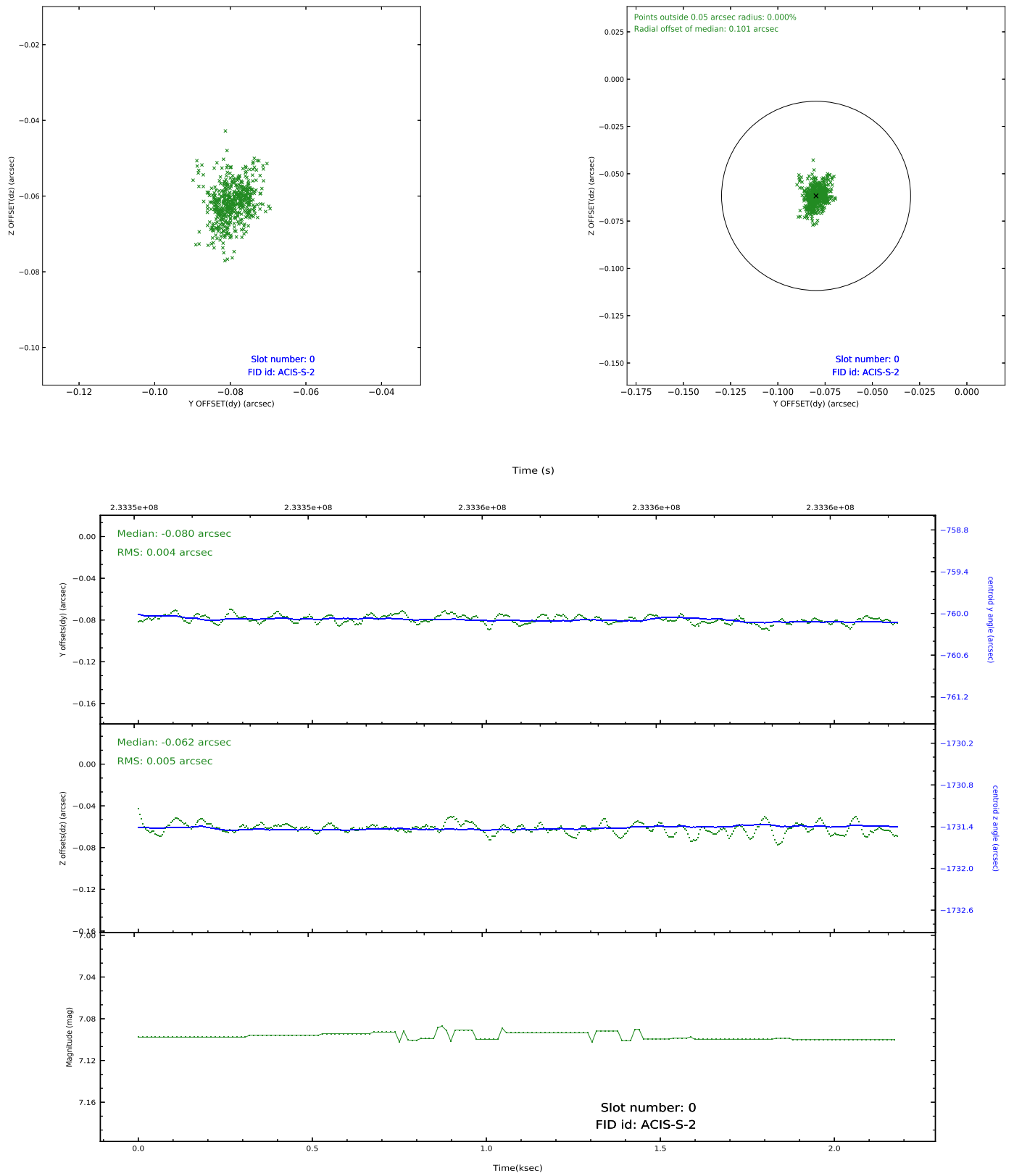


## 2.4.5 Slot 7

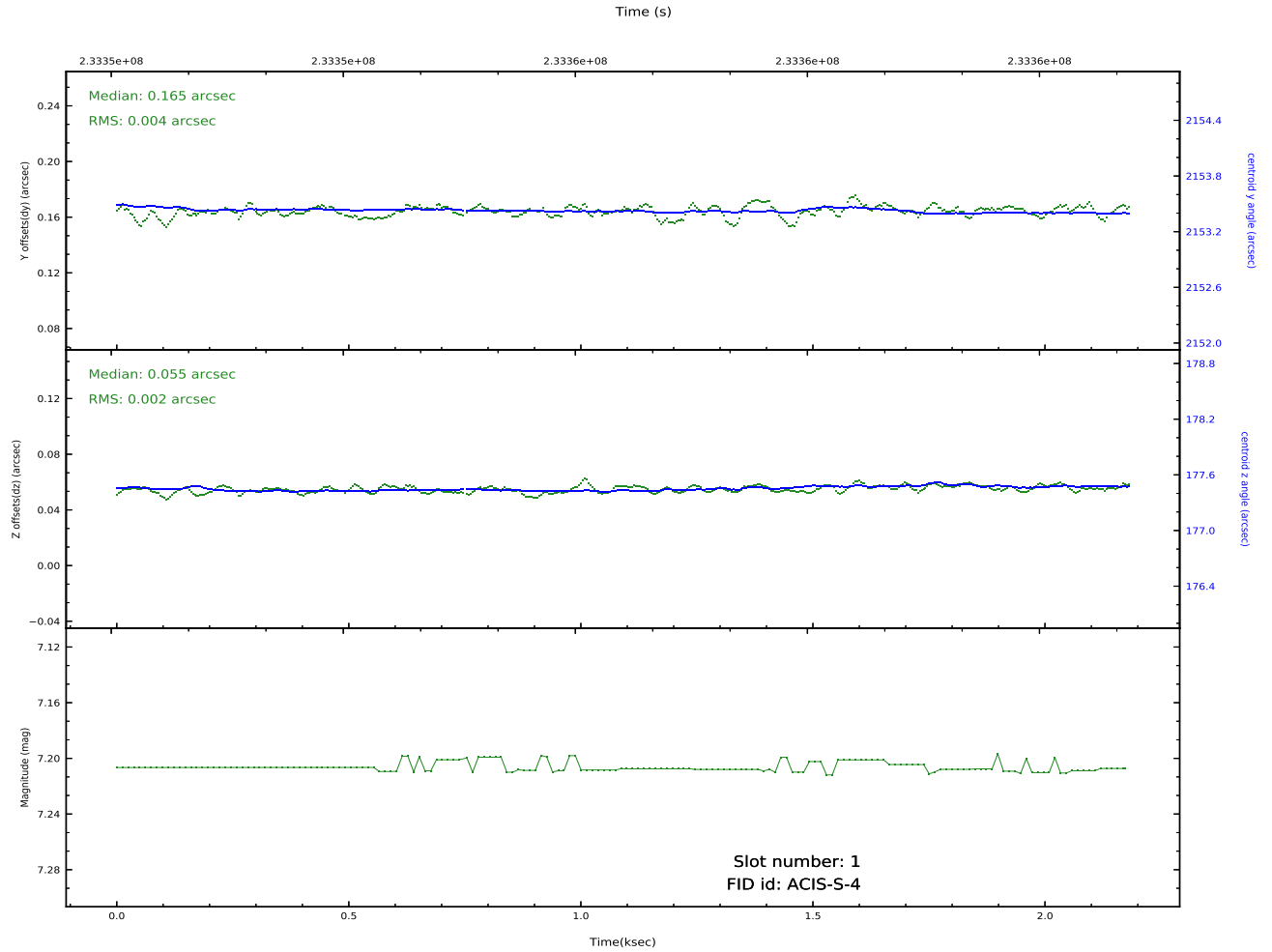
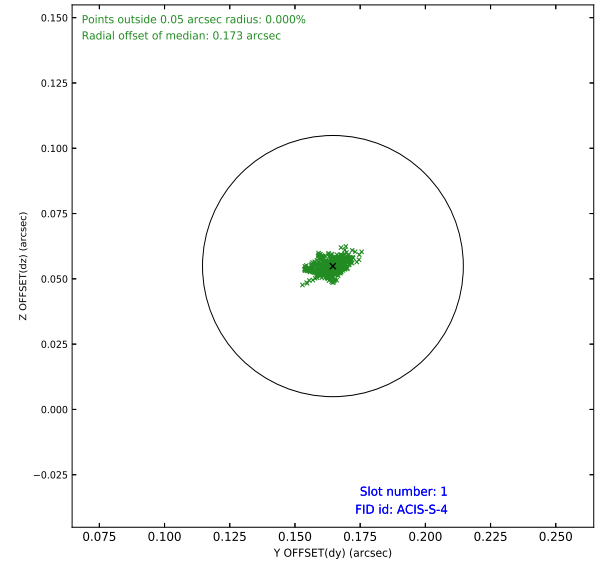
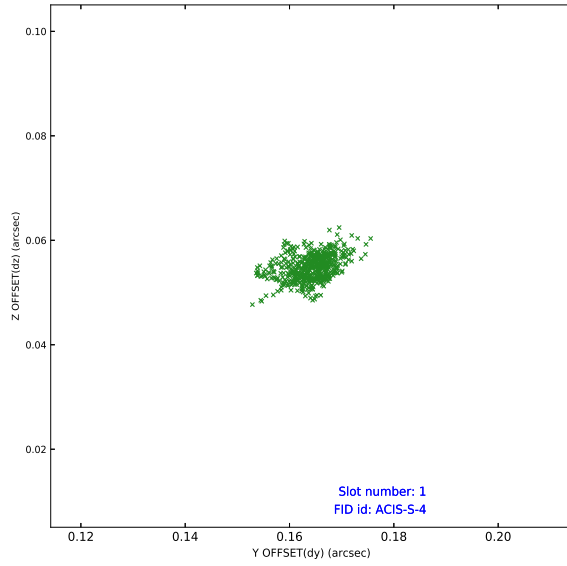


## 2.5 FID Slots

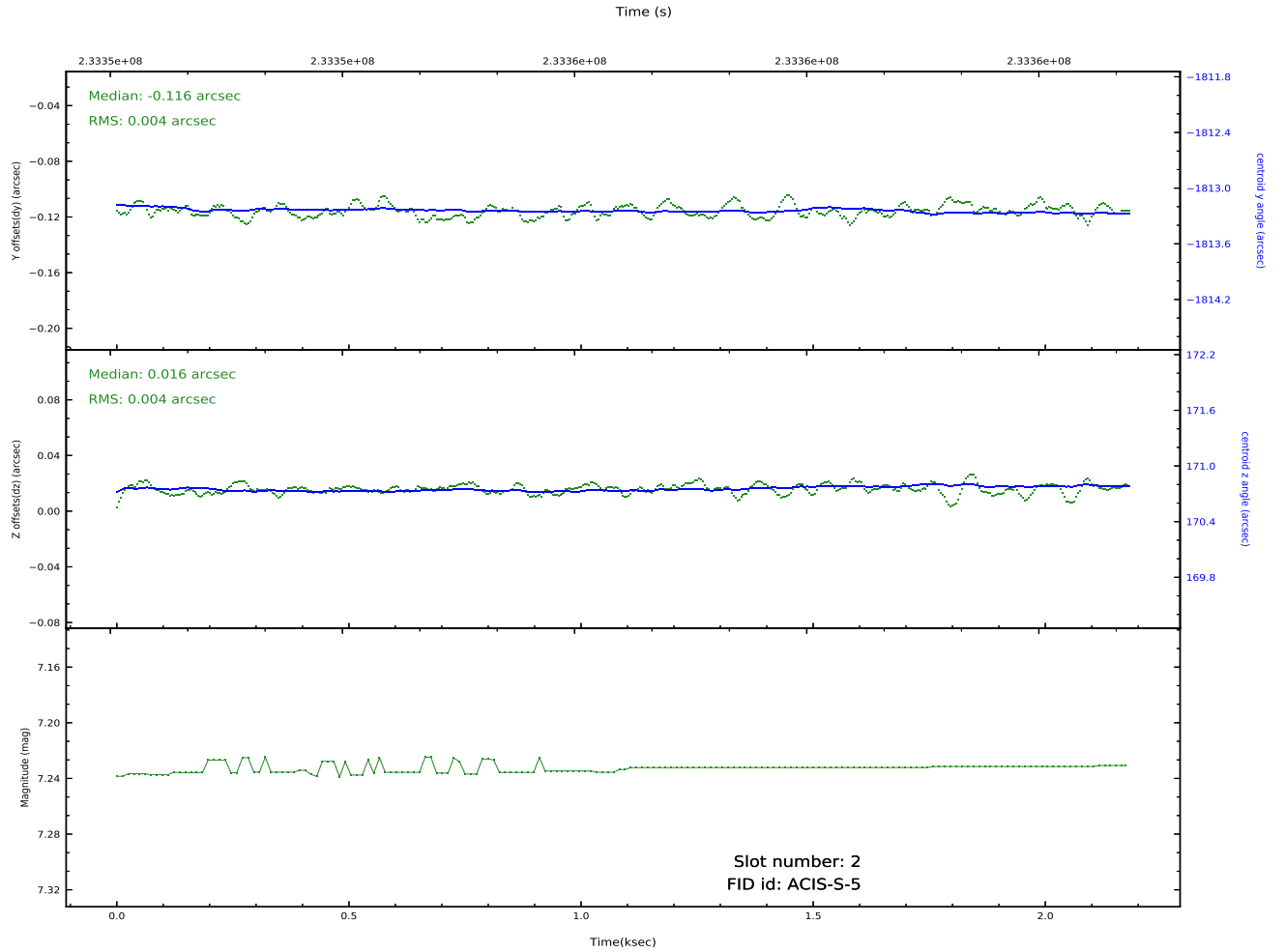
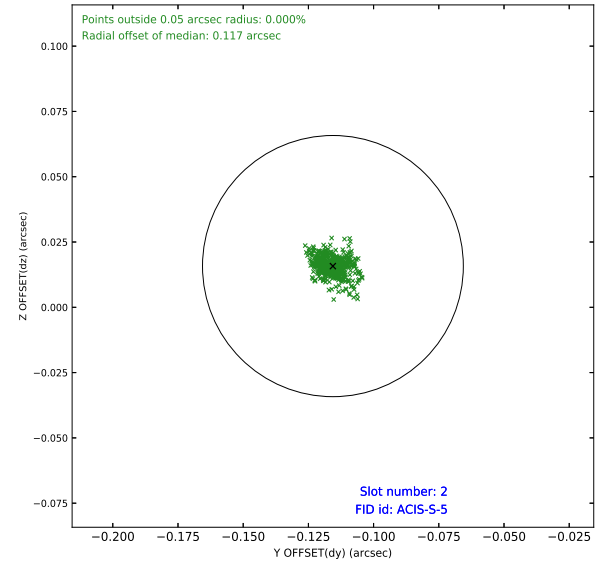
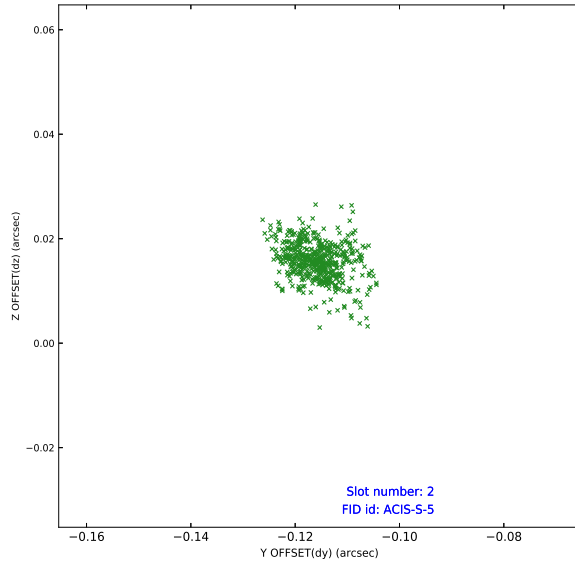
### 2.5.1 Slot 0



## 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)      | 2020.10.09 |
| V&V Edition                | 1          |
| V&V Disposition and Status | OK         |
| V&V Charge Time            | 2.176199   |

### A.2 Comments