

# V&V Reference Report

## L2 ASCDS Version : 10.9.1

Observation 7055 - L2 Version 3  
Chandra X-Ray Center

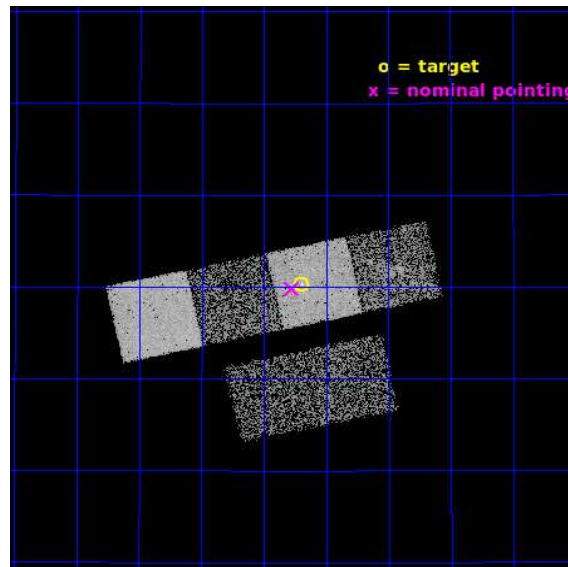
L2 Processing Date : Oct 12 2020

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# 1 Front

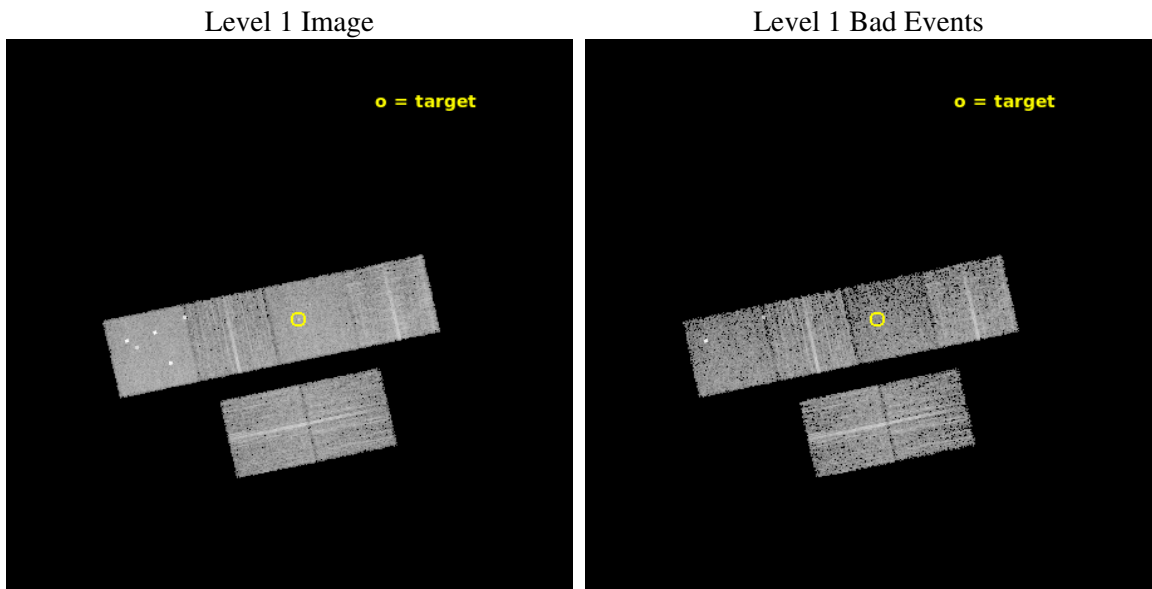
|          |                      |  |
|----------|----------------------|--|
| seq_num  | 600493               | Sequence number                          |
| obs_id   | 7055                 | Observation id                           |
| title    | Isolated Ellipticals | Proposal title                           |
| observer | Dr. Stephen Murray   | Principal investigator                   |
| object   | NGC6487              | Source name                              |
| dtcycle  | 0                    | &#160                                    |
| cycle    | P                    | events from which exps? Prim/Second/Both |
| ra_targ  | 268.174583           | Observer's specified target RA [deg]     |
| dec_targ | 29.838889            | Observer's specified target Dec [deg]    |
| ra_nom   | 268.19385472256      | Nominal RA [deg]                         |
| dec_nom  | 29.830200679582      | Nominal Dec [deg]                        |
| roll_nom | 347.81803809137      | Nominal Roll [deg]                       |
| revision | 3                    | Processing version of data               |
| ontime   | 5151.9999808073      | Sum of GTIs [s]                          |
| livetime | 5086.7622548884      | Livetime [s]                             |
| ontime2  | 5151.9999808073      | Sum of GTIs [s]                          |
| ontime3  | 5151.9999808073      | Sum of GTIs [s]                          |
| ontime5  | 5151.9999808073      | Sum of GTIs [s]                          |
| ontime6  | 5151.9999808073      | Sum of GTIs [s]                          |
| ontime7  | 5151.9999808073      | Sum of GTIs [s]                          |
| ontime8  | 5151.9999808073      | Sum of GTIs [s]                          |
| l2events | 52104                | Number of level 2 events                 |



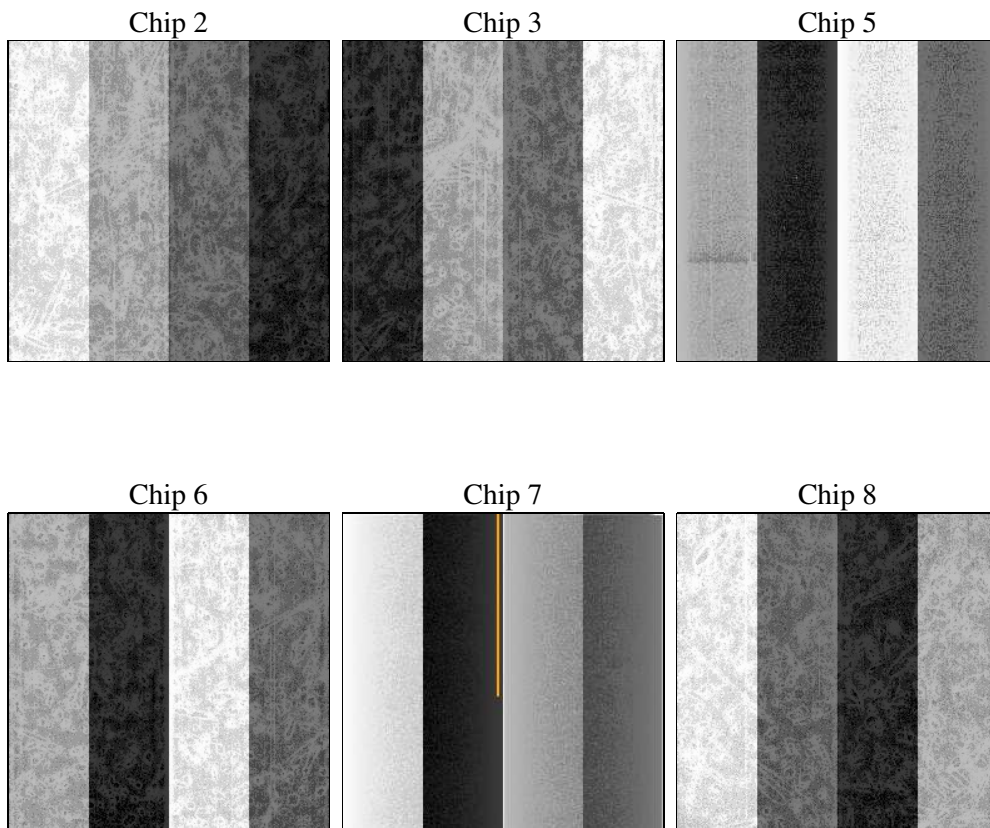
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

|          |                     |                                |                |                 |   |
|----------|---------------------|--------------------------------|----------------|-----------------|---|
| obi_num  | 0                   | Obi number                     | sched_exp_time | 5000.000000     | [s] Scheduled observation exposure time |
| ascdsver | 10.9.1              | Processing system revision     | ontime         | 5151.9999808073 | Sum of GTIs [s]                         |
| caldsver | 4.9.2               | &#160                          | ontime2        | 5151.9999808073 | Sum of GTIs [s]                         |
| date     | 2020-10-12T04:28:54 | Date and time of file creation | ontime3        | 5151.9999808073 | Sum of GTIs [s]                         |
| revision | 3                   | Processing version of data     | ontime5        | 5151.9999808073 | Sum of GTIs [s]                         |
|          |                     |                                | ontime6        | 5151.9999808073 | Sum of GTIs [s]                         |
|          |                     |                                | ontime7        | 5151.9999808073 | Sum of GTIs [s]                         |
|          |                     |                                | ontime8        | 5151.9999808073 | Sum of GTIs [s]                         |
|          |                     |                                | l1events       | 253031          | Number of level 1 events                |

### 2.1.4 Events

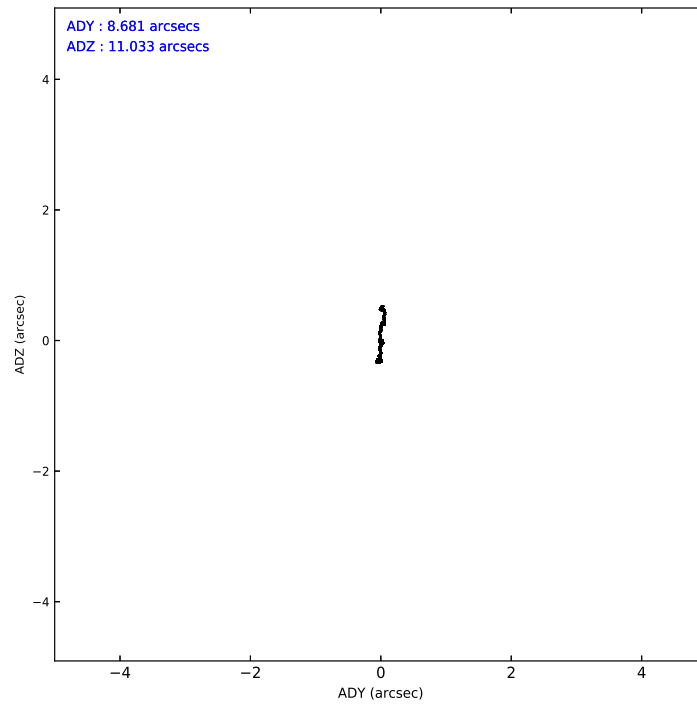
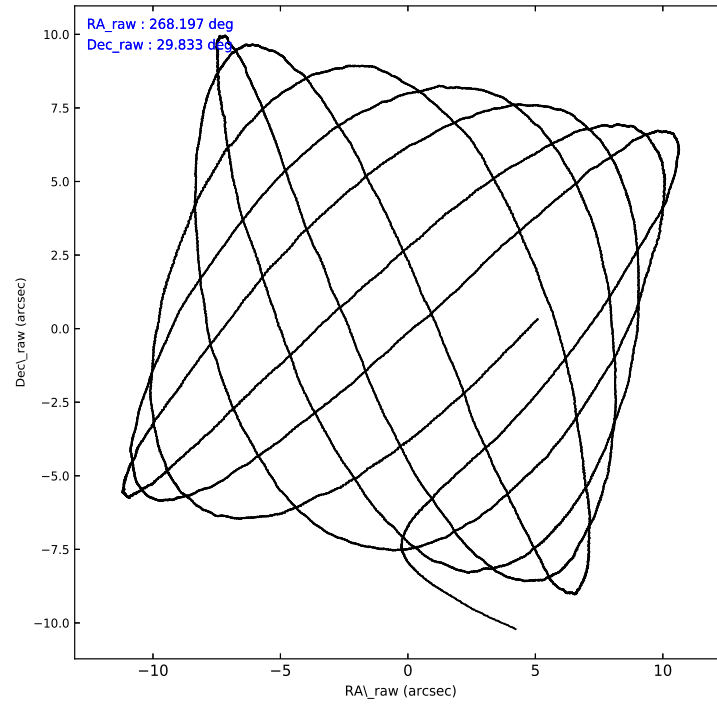
|                 | ccd 2 | ccd 3 | ccd 5 | ccd 6 | ccd 7 | ccd 8 |                | ccd 2 | ccd 3 | ccd 5 | ccd 6 | ccd 7 | ccd 8 |
|-----------------|-------|-------|-------|-------|-------|-------|----------------|-------|-------|-------|-------|-------|-------|
| level 1 events  | 38893 | 35682 | 53983 | 37090 | 41217 | 46166 | grade 0 events | 1263  | 1181  | 5017  | 1383  | 1898  | 3572  |
| rejected events | 35522 | 32463 | 27670 | 33411 | 22769 | 35694 |                | 3%    | 3%    | 9%    | 3%    | 4%    | 7%    |
| rejected %      | 91%   | 90%   | 51%   | 90%   | 55%   | 77%   | grade 1 events | 23    | 18    | 142   | 14    | 27    | 43    |
|                 |       |       |       |       |       |       |                | 0%    | 0%    | 0%    | 0%    | 0%    | 0%    |
|                 |       |       |       |       |       |       | grade 2 events | 829   | 723   | 7435  | 797   | 3978  | 2406  |
|                 |       |       |       |       |       |       |                | 2%    | 2%    | 13%   | 2%    | 9%    | 5%    |
|                 |       |       |       |       |       |       | grade 3 events | 381   | 419   | 1109  | 434   | 1831  | 1139  |
|                 |       |       |       |       |       |       |                | 0%    | 1%    | 2%    | 1%    | 4%    | 2%    |
|                 |       |       |       |       |       |       | grade 4 events | 380   | 369   | 1050  | 412   | 1833  | 1030  |
|                 |       |       |       |       |       |       |                | 0%    | 1%    | 1%    | 1%    | 4%    | 2%    |
|                 |       |       |       |       |       |       | grade 5 events | 1220  | 1410  | 4712  | 1429  | 4381  | 2007  |
|                 |       |       |       |       |       |       |                | 3%    | 3%    | 8%    | 3%    | 10%   | 4%    |
|                 |       |       |       |       |       |       | grade 6 events | 655   | 678   | 12905 | 805   | 9729  | 2738  |
|                 |       |       |       |       |       |       |                | 1%    | 1%    | 23%   | 2%    | 23%   | 5%    |
|                 |       |       |       |       |       |       | grade 7 events | 34142 | 30884 | 21613 | 31816 | 17540 | 33231 |
|                 |       |       |       |       |       |       |                | 87%   | 86%   | 40%   | 85%   | 42%   | 71%   |

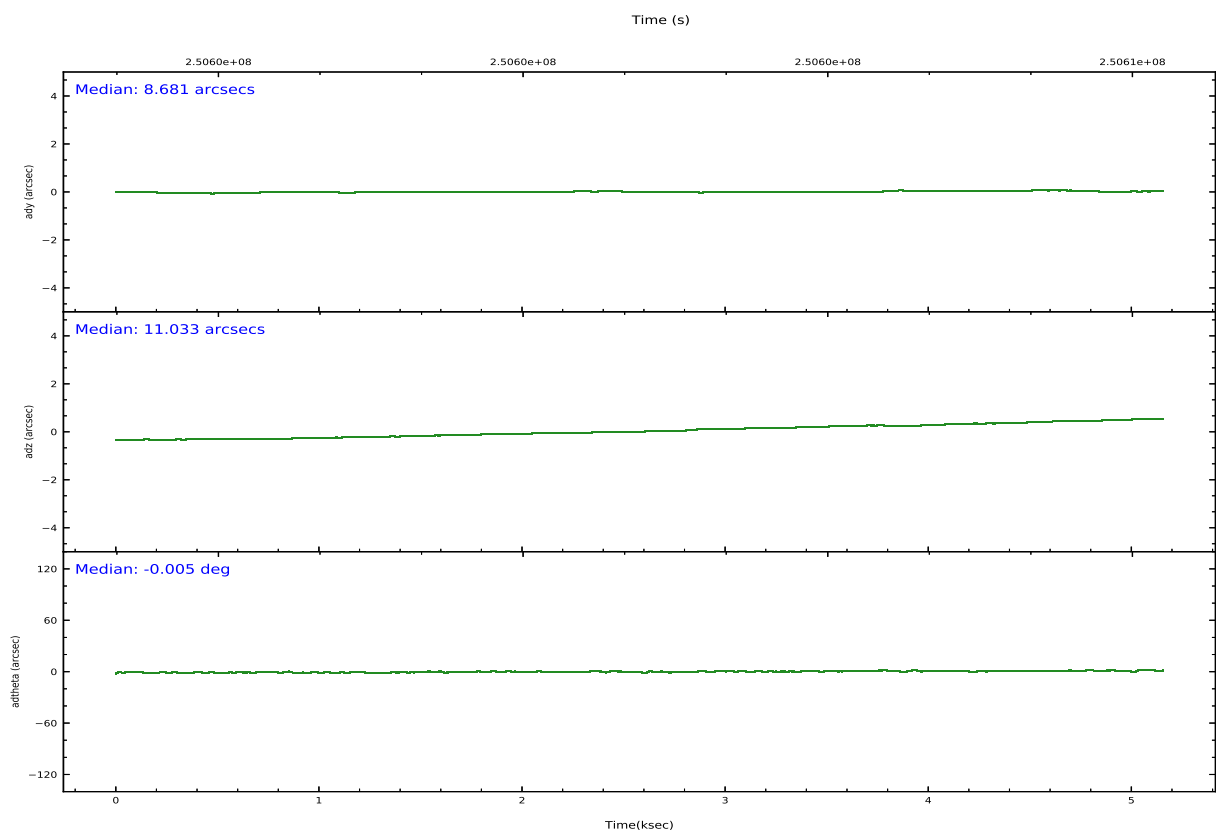
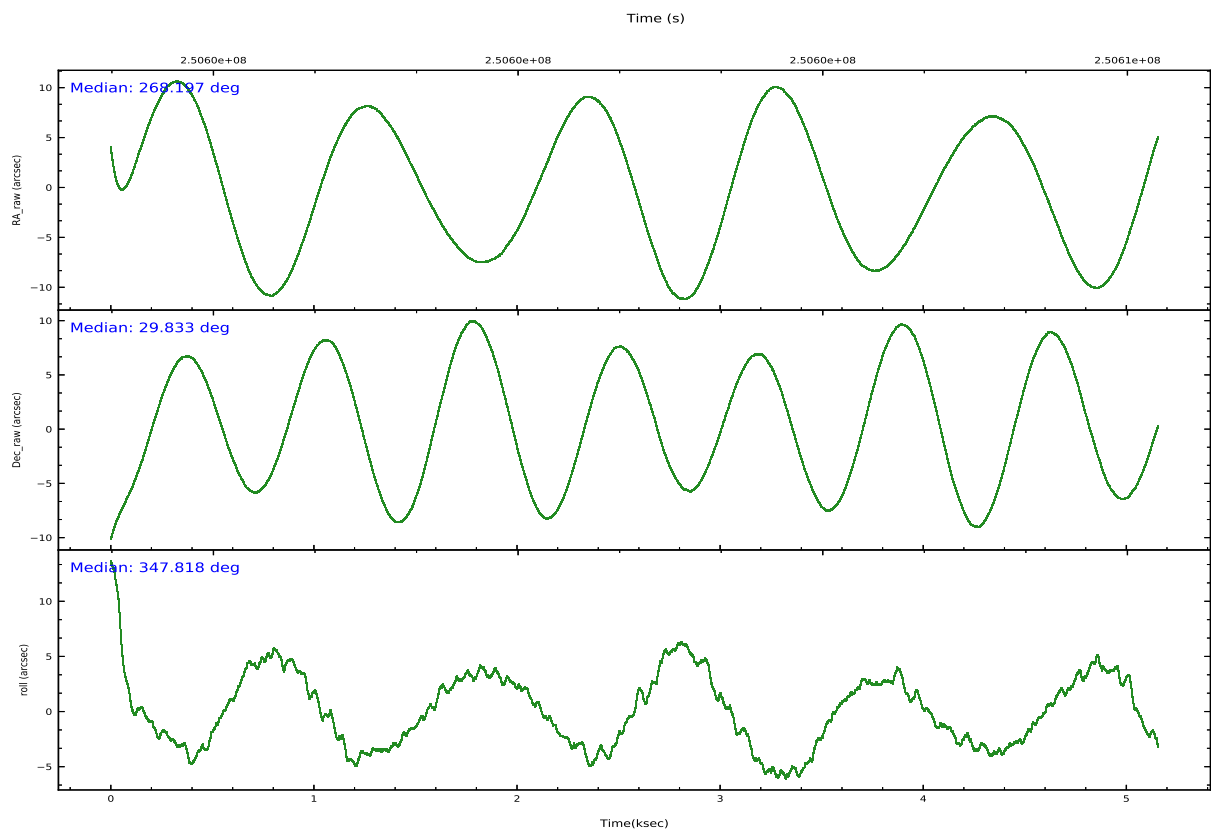


## 2.2 Compared Parameters

| Parameter                         | Planned             | Actual               | Parameter                             | Planned   | Actual  |
|-----------------------------------|---------------------|----------------------|---------------------------------------|-----------|---------|
| Instrument                        | ACIS                | ACIS                 | Obspar version number                 | 8         | 8       |
| Detector                          | ACIS-235678         | ACIS-235678          | 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                 | 268.167724          | 268.19385472256      | Subarray requested                    | NONE      | NONE    |
| [deg] Pointing Dec                | 29.824147           | 29.830200679582      | Alternating exposures requested       | N         | N       |
| [deg] Pointing Roll               | 347.676804          | 347.81803809137      | [s] Primary exposure time             | 0.000000  | 3.2     |
| [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)  | 250601152.184000    | 250599978.25482      |                                       |           |         |
| Observation start date            | 2005-12-10T11:24:48 | 2005-12-10T11:06:18  |                                       |           |         |
| [s] Observation end time (MET)    | 250606152.184000    | 250606967.73015      |                                       |           |         |
| Observation end date              | 2005-12-10T12:48:08 | 2005-12-10T13:02:47  |                                       |           |         |
| Read mode                         | TIMED               | TIMED                |                                       |           |         |

## 2.3 Aspect



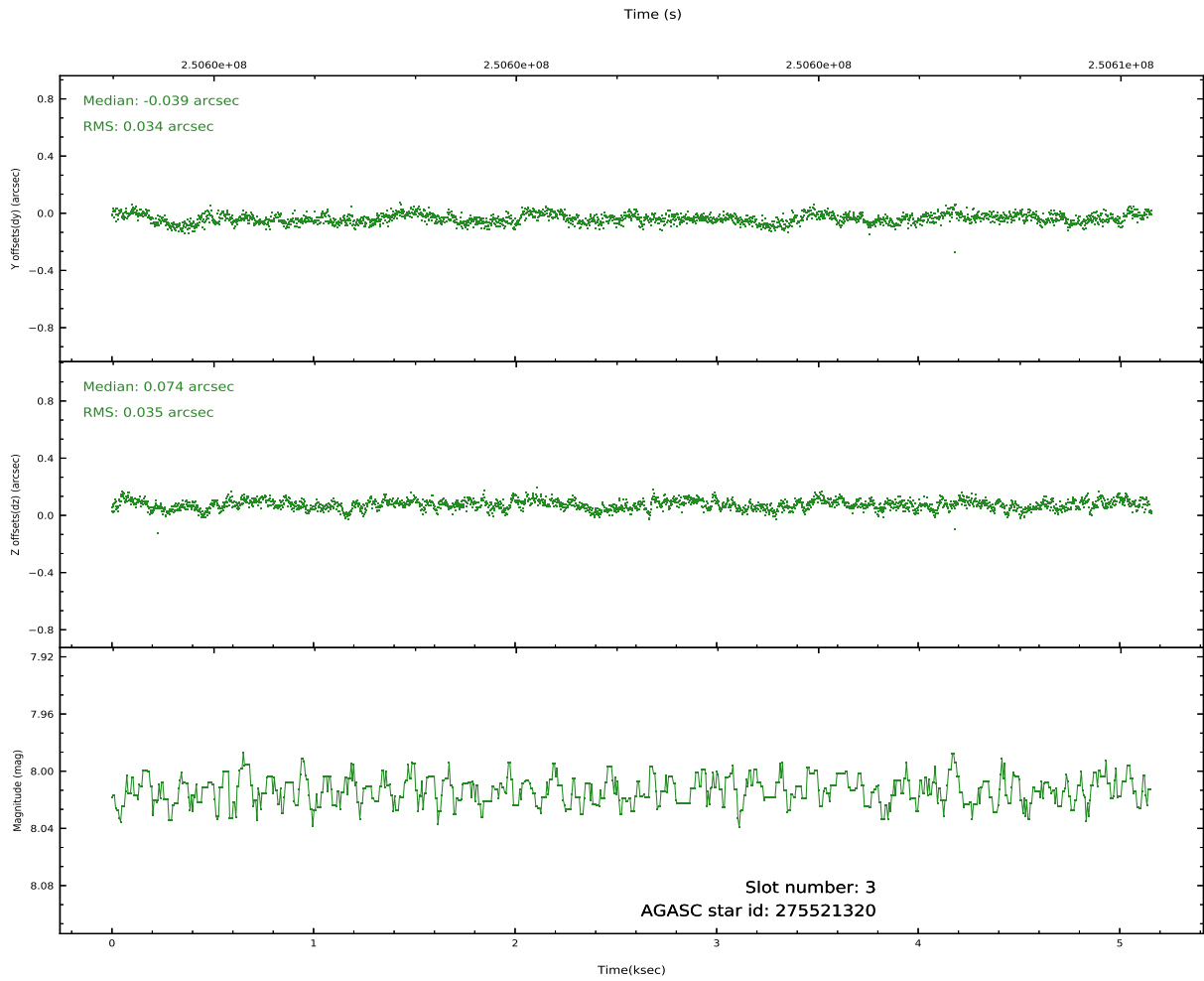
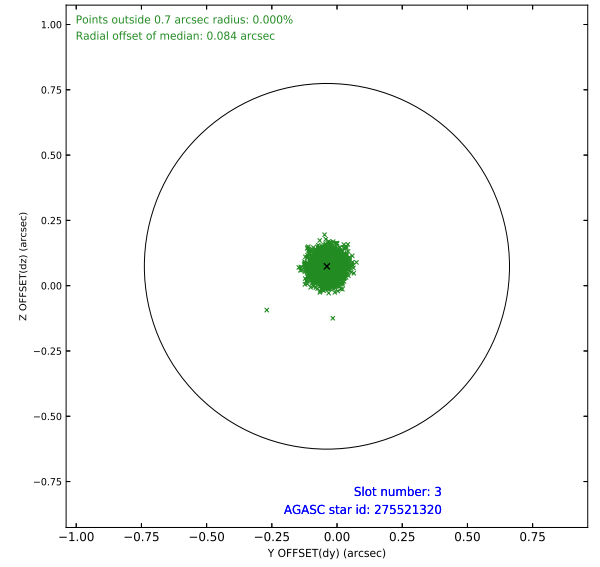
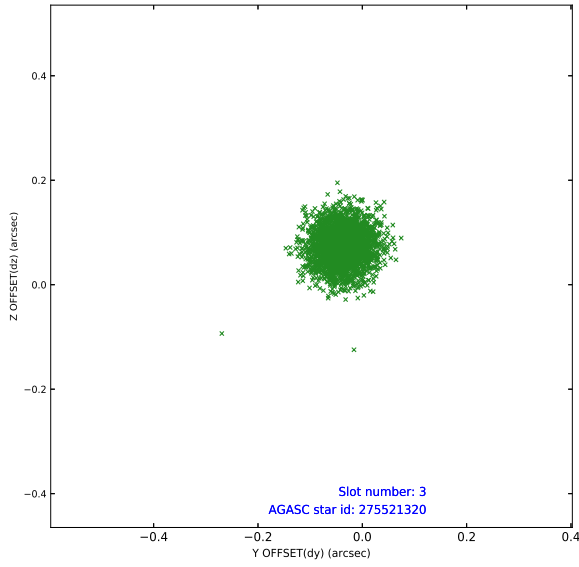


Slot Statistics

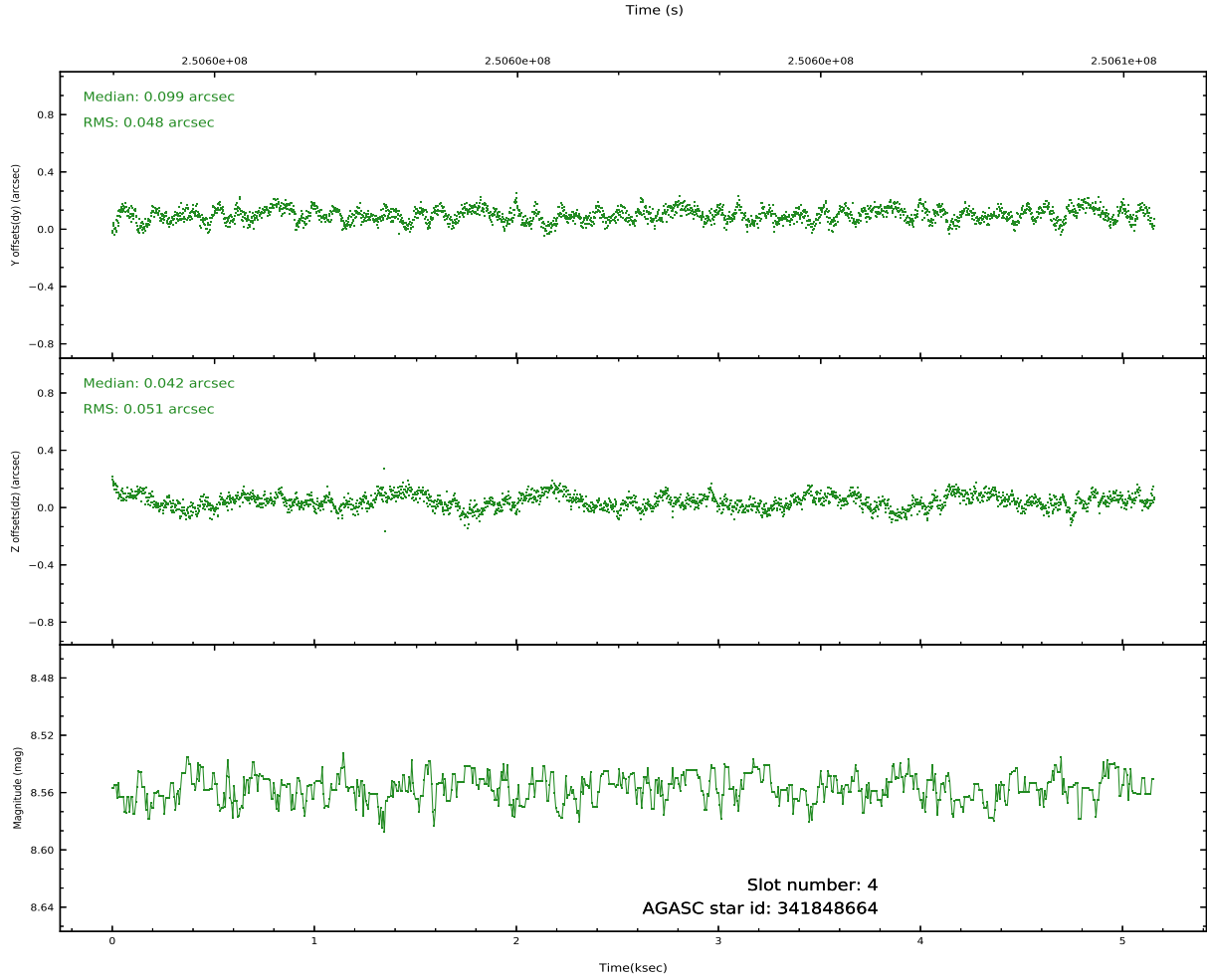
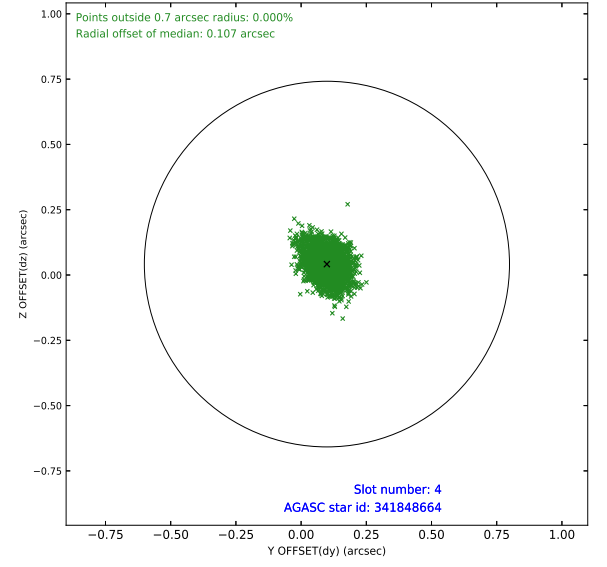
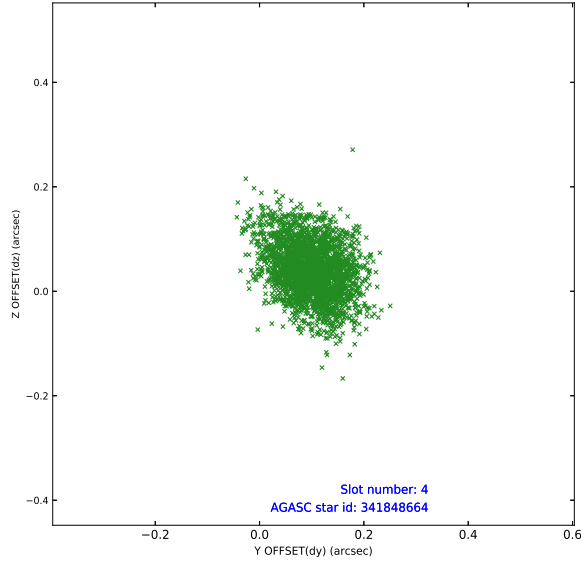
| pt | status | used | id        | mag  | n_pts | frac_pts | med_dy | med_dz | dr1   | dr2   | ra         | dec       | mean_y   | mea   |
|----|--------|------|-----------|------|-------|----------|--------|--------|-------|-------|------------|-----------|----------|-------|
| 0  | FID    |      | ACIS-S-1  | 7.19 | 1258  | 1.000    | 0.005  | -0.086 | 0.010 | 0.018 | 0.000000   | 0.000000  | 934.54   | -1728 |
| 1  | FID    |      | ACIS-S-2  | 7.11 | 1259  | 1.000    | -0.130 | -0.038 | 0.008 | 0.014 | 0.000000   | 0.000000  | -760.85  | -1733 |
| 2  | FID    |      | ACIS-S-4  | 7.20 | 1258  | 1.000    | 0.100  | 0.128  | 0.007 | 0.011 | 0.000000   | 0.000000  | 2151.36  | 175   |
| 3  | GUIDE  | used | 275521320 | 8.01 | 2517  | 1.000    | -0.039 | 0.074  | 0.052 | 0.083 | 268.582061 | 29.524593 | 1497.91  | -773  |
| 4  | GUIDE  | used | 341848664 | 8.56 | 2515  | 1.000    | 0.099  | 0.042  | 0.074 | 0.123 | 267.765030 | 30.233677 | -1538.07 | 1174  |
| 5  | GUIDE  | used | 273812992 | 7.21 | 2517  | 1.000    | -0.116 | -0.043 | 0.074 | 0.123 | 267.738613 | 29.995813 | -1440.06 | 321   |
| 6  | GUIDE  | used | 275526008 | 8.85 | 2517  | 1.000    | 0.046  | -0.017 | 0.068 | 0.111 | 268.301646 | 29.486721 | 669.16   | -1096 |
| 7  | GUIDE  | used | 341853776 | 7.82 | 2515  | 1.000    | 0.005  | -0.058 | 0.083 | 0.132 | 268.457068 | 30.370380 | 458.31   | 2113  |

## 2.4 Star Slots

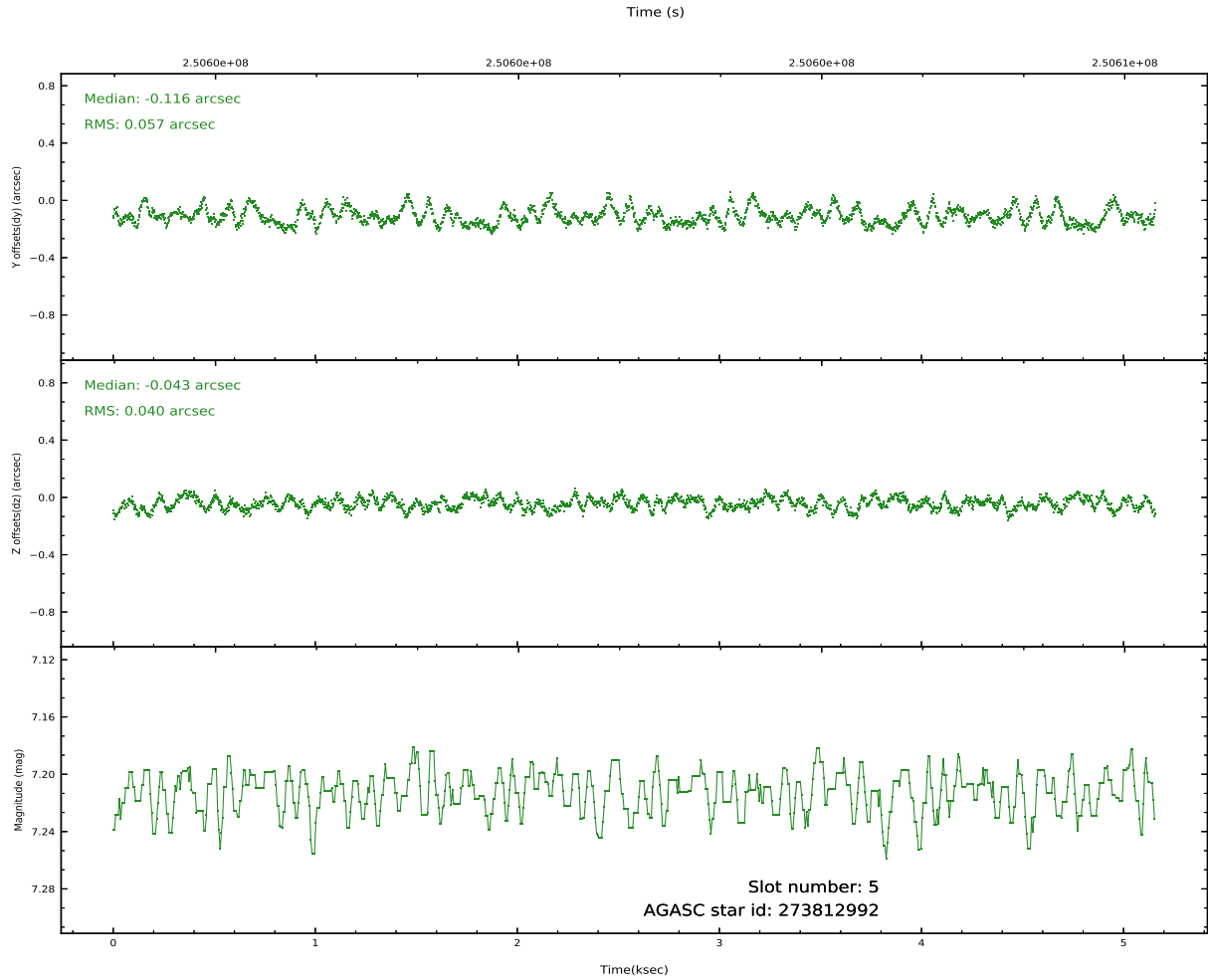
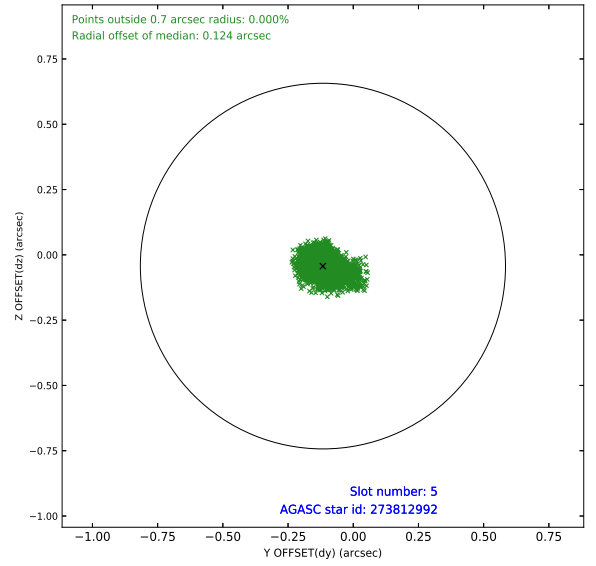
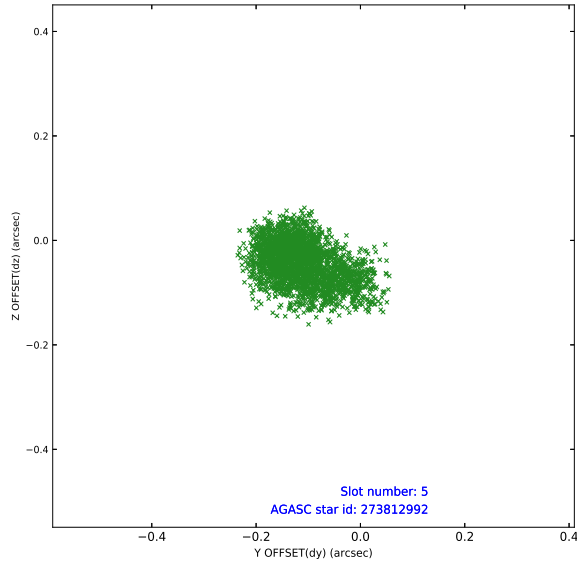
### 2.4.1 Slot 3



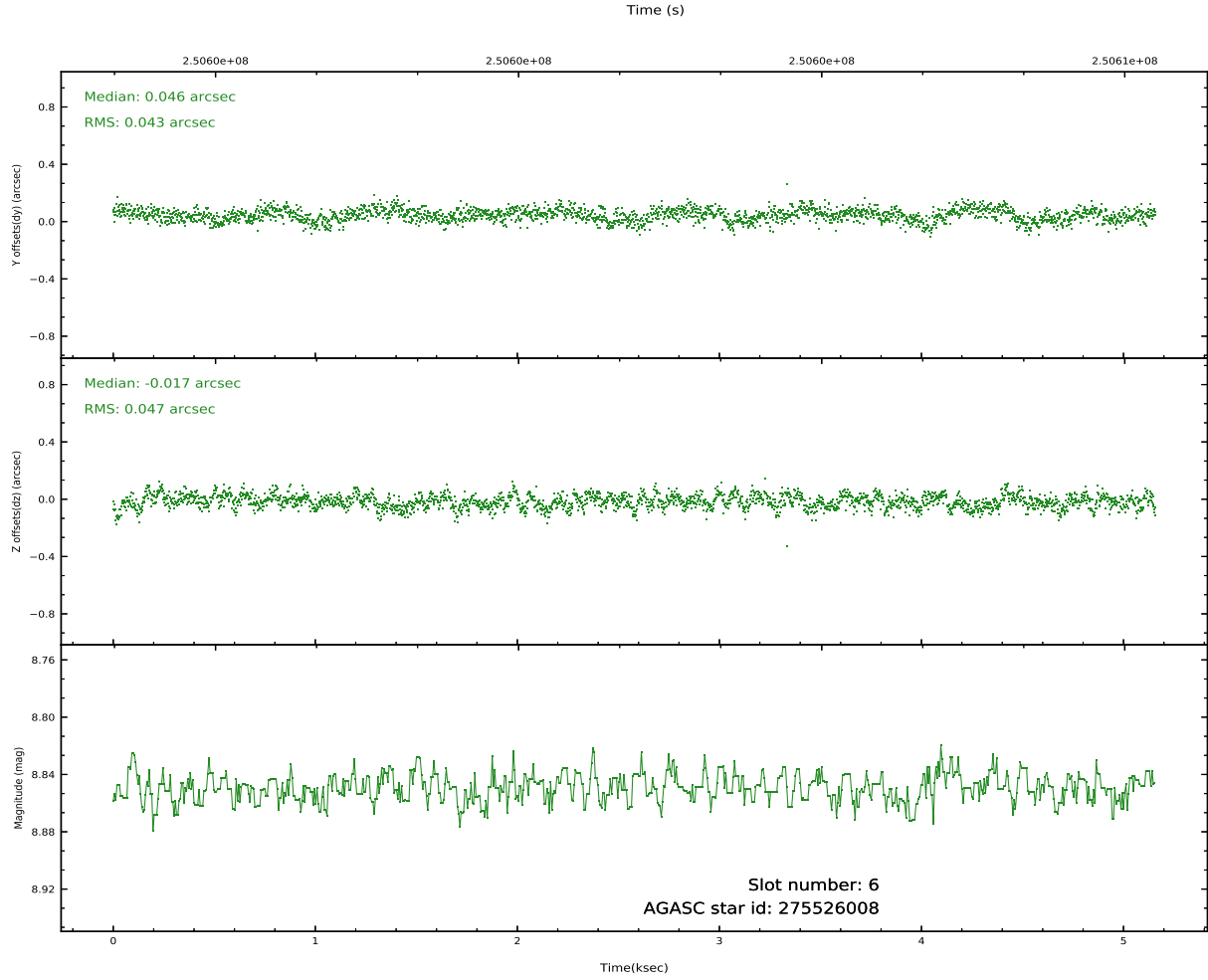
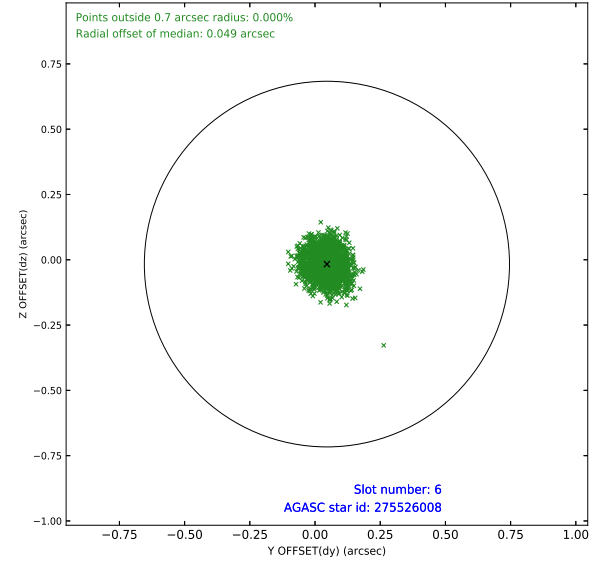
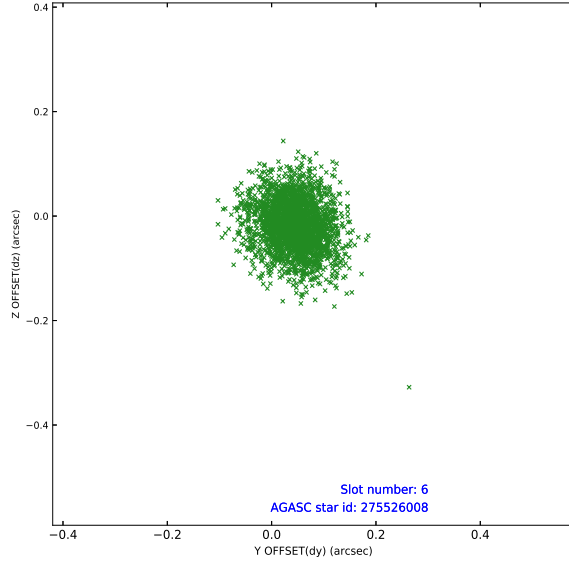
## 2.4.2 Slot 4



### 2.4.3 Slot 5

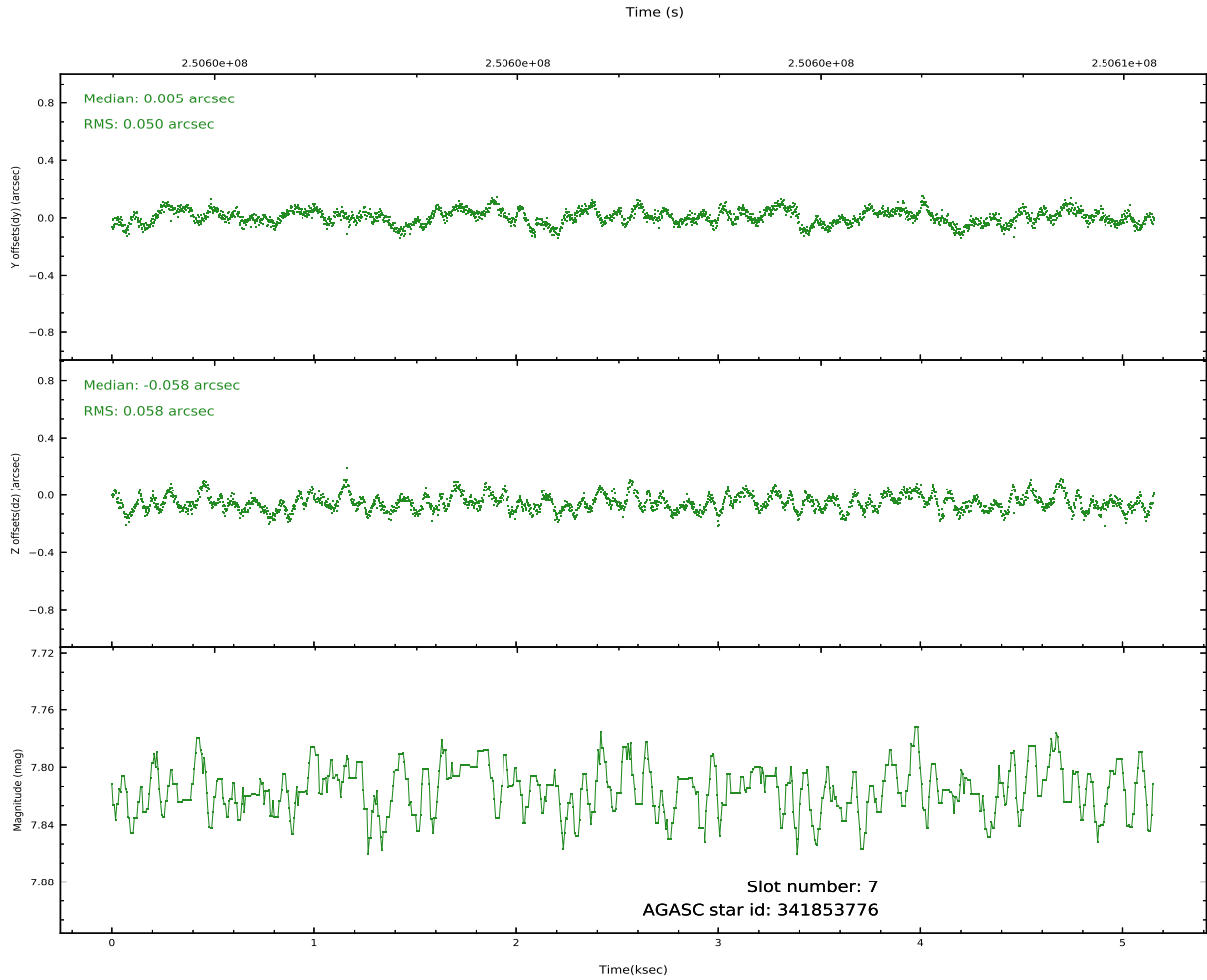
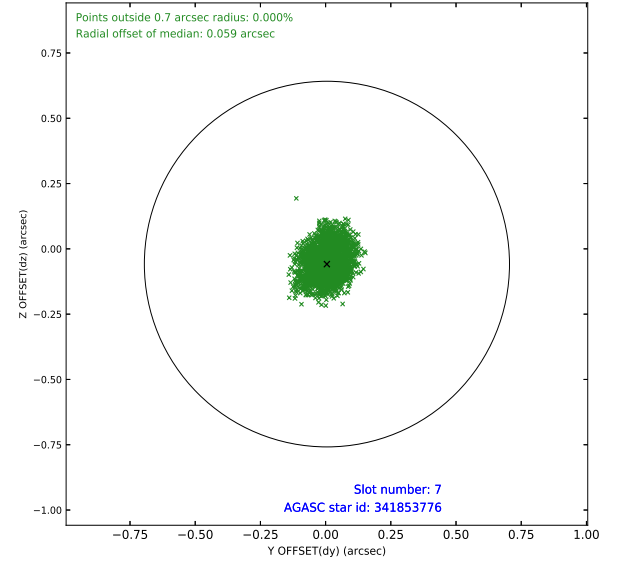
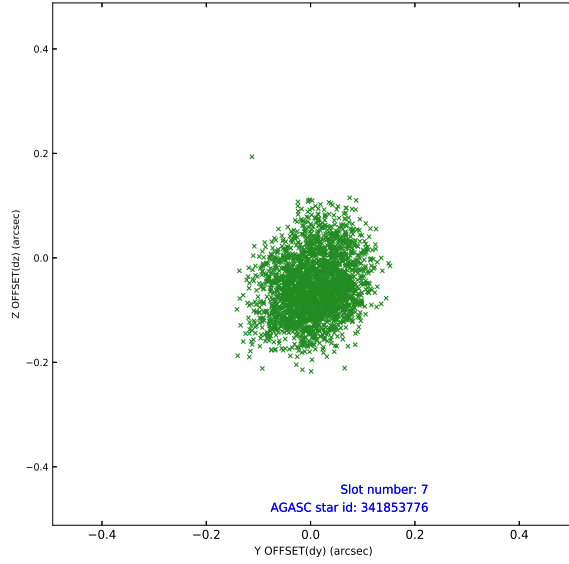


## 2.4.4 Slot 6



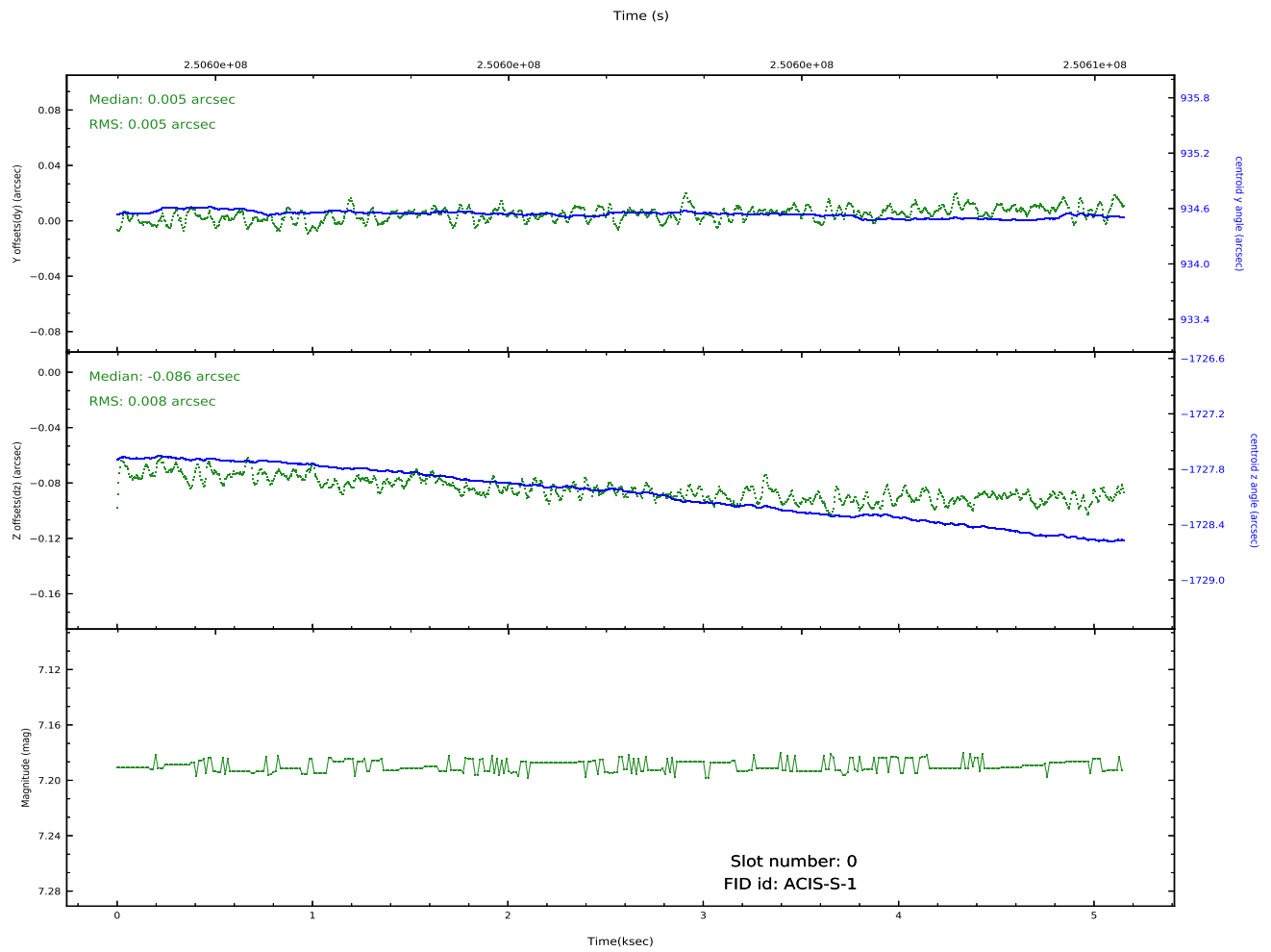
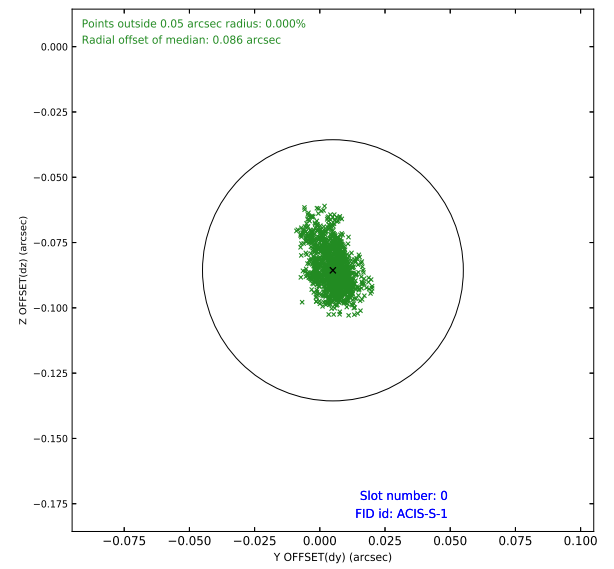
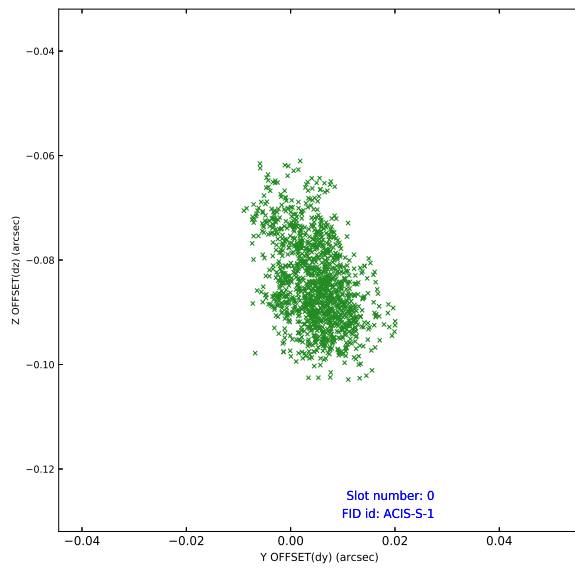


## 2.4.5 Slot 7

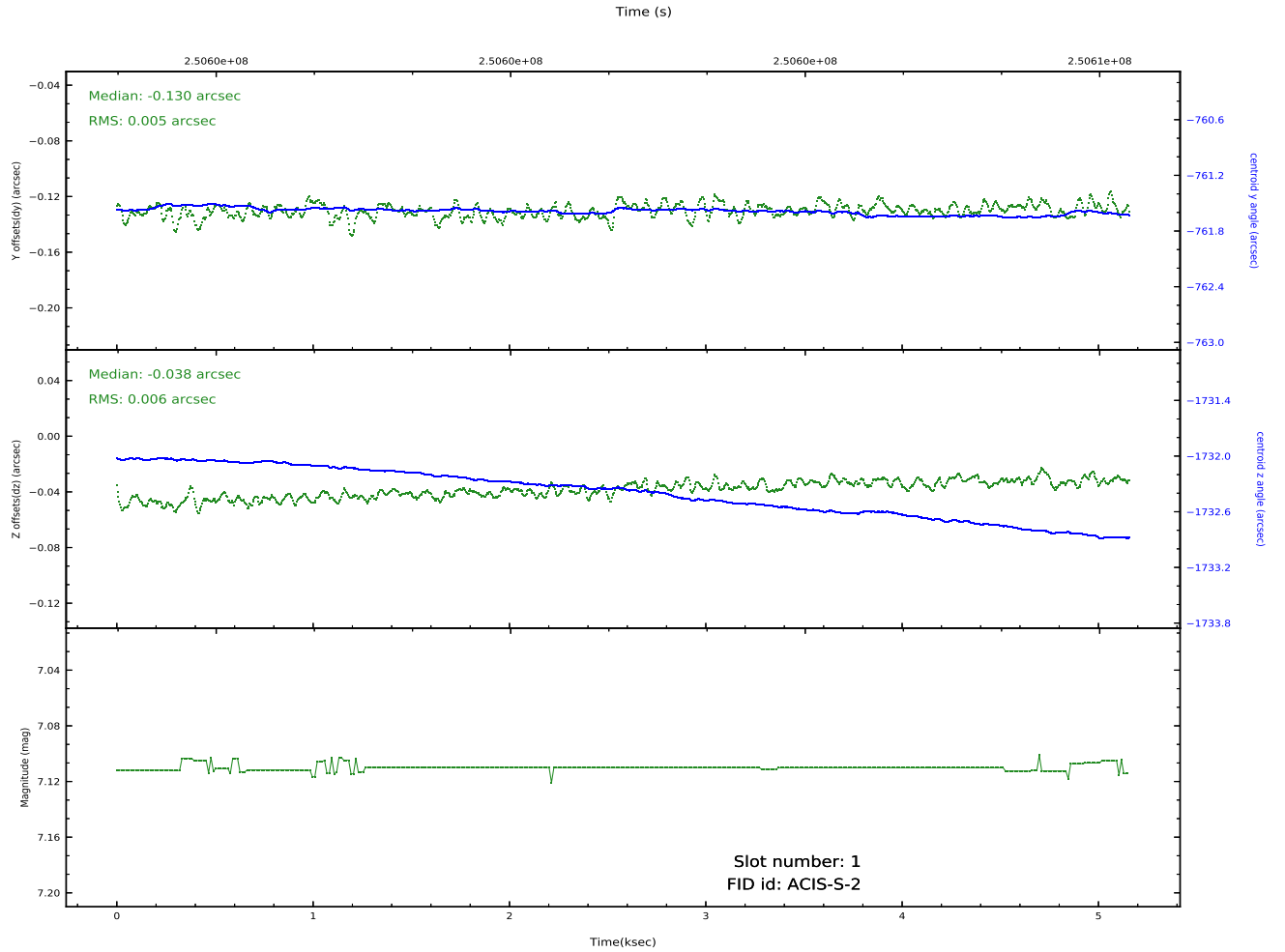
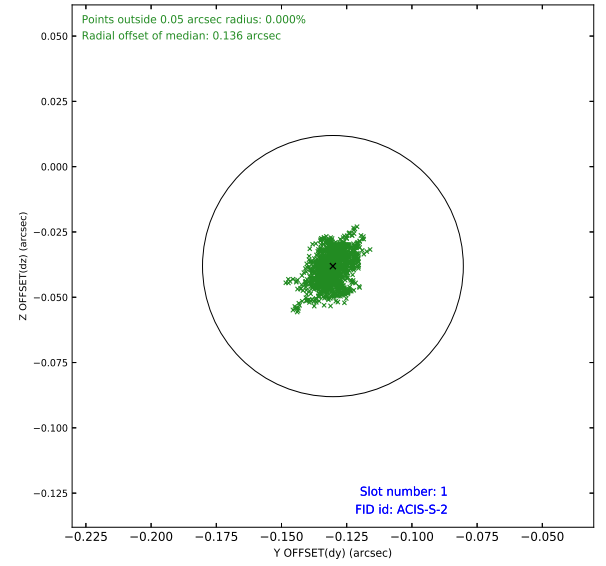
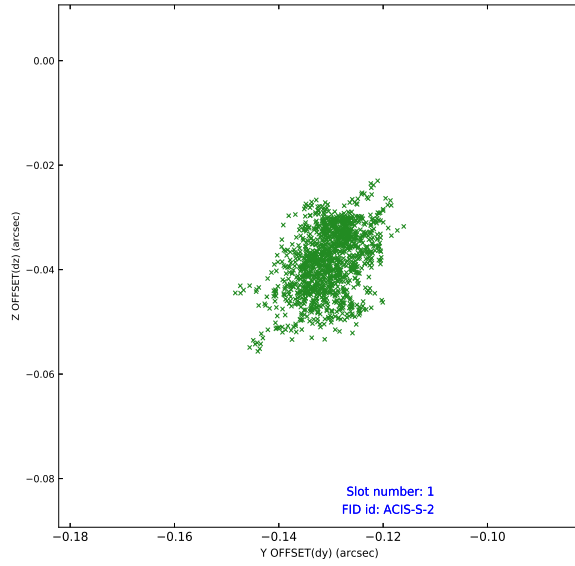


## 2.5 FID Slots

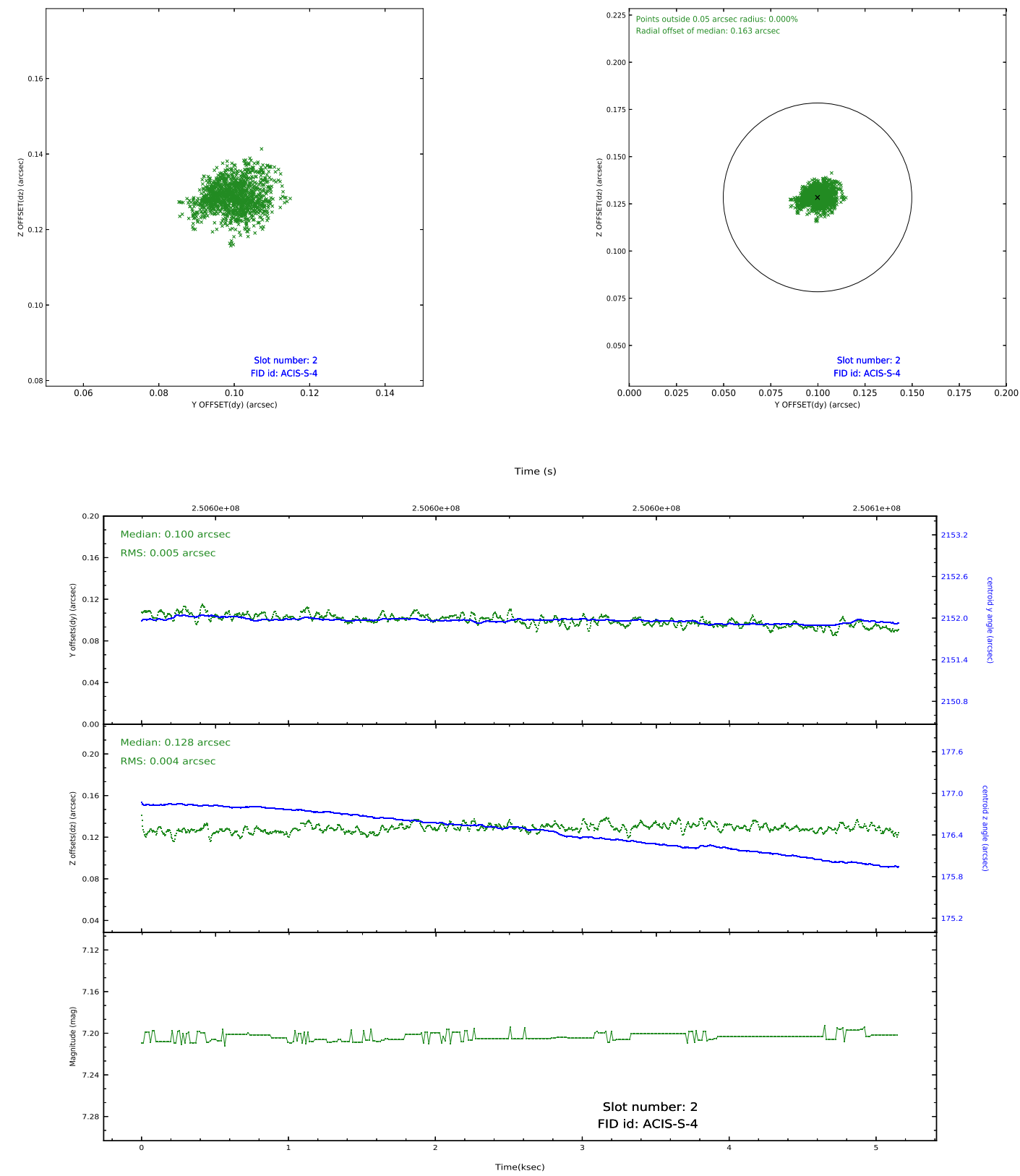
### 2.5.1 Slot 0



## 2.5.2 Slot 1



2.5.3 Slot 2



## A Summary

### A.1 Status

|                            |                  |
|----------------------------|------------------|
| V&V Scientist              | Francesca Civano |
| V&V Date (YYYY-MM-DD)      | 2020.10.15       |
| V&V Edition                | 1                |
| V&V Disposition and Status | OK               |
| V&V Charge Time            | 5.151999         |

### A.2 Comments