

# V&V Reference Report

## L2 ASCDS Version : 10.9.2

Observation 19775 - L2 Version 2  
Chandra X-Ray Center

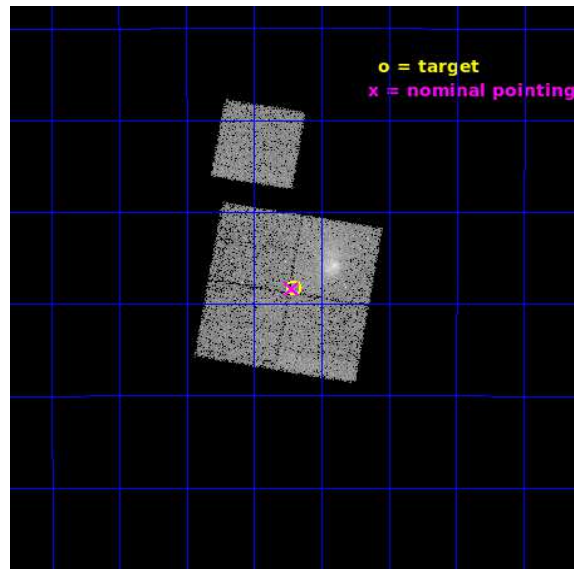
L2 Processing Date : Oct 24 2020

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# 1 Front

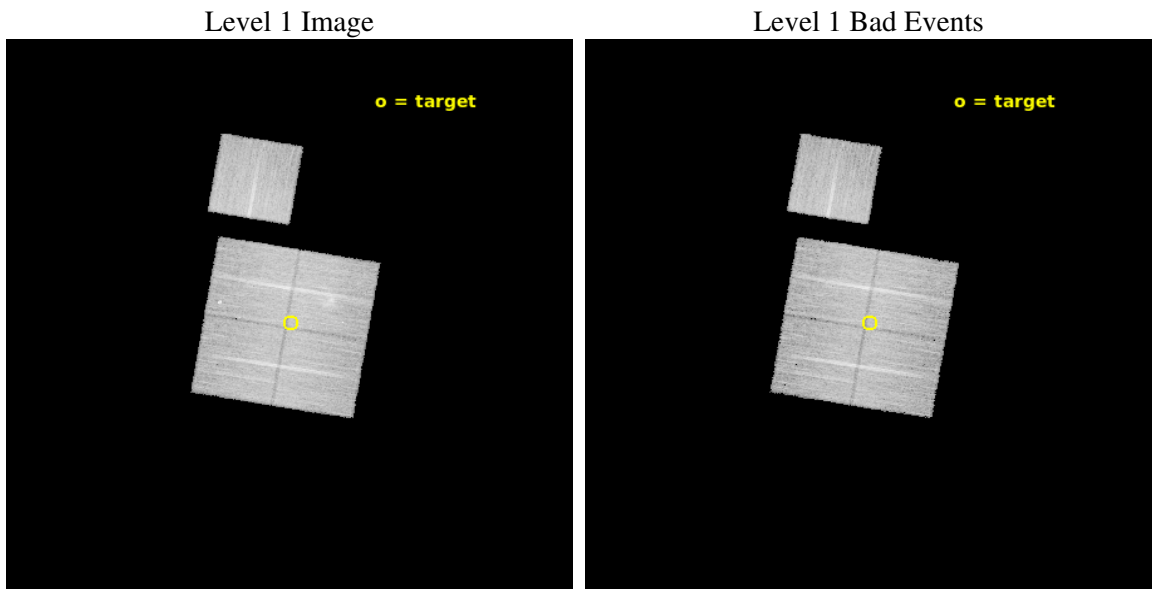
|          |                                                                           |                                             |
|----------|---------------------------------------------------------------------------|---------------------------------------------|
| seq_num  | 801712                                                                    | Sequence number                             |
| obs_id   | 19775                                                                     | Observation id                              |
| title    | Deep observation of a merging cluster with a radio halo and a radio relic | Proposal title                              |
| observer | Ralph Kraft                                                               | Principal investigator                      |
| object   | Abell 1300                                                                | Source name                                 |
| dtcycle  | 0                                                                         | &#160                                       |
| cycle    | P                                                                         | events from which exps?<br>Prim/Second/Both |
| ra_targ  | 173.050546                                                                | Observer's specified target RA [deg]        |
| dec_targ | -19.9715                                                                  | Observer's specified target Dec [deg]       |
| ra_nom   | 173.05492380621                                                           | Nominal RA [deg]                            |
| dec_nom  | -19.97250784307                                                           | Nominal Dec [deg]                           |
| roll_nom | 9.7011456567911                                                           | Nominal Roll [deg]                          |
| revision | 2                                                                         | Processing version of data                  |
| ontime   | 15379.059128046                                                           | Sum of GTIs [s]                             |
| livetime | 15178.120398639                                                           | Livetime [s]                                |
| ontime0  | 15382.200118423                                                           | Sum of GTIs [s]                             |
| ontime1  | 15382.200118423                                                           | Sum of GTIs [s]                             |
| ontime2  | 15379.059108138                                                           | Sum of GTIs [s]                             |
| ontime3  | 15379.059128046                                                           | Sum of GTIs [s]                             |
| ontime6  | 15382.200118423                                                           | Sum of GTIs [s]                             |
| l2events | 59812                                                                     | Number of level 2 events                    |



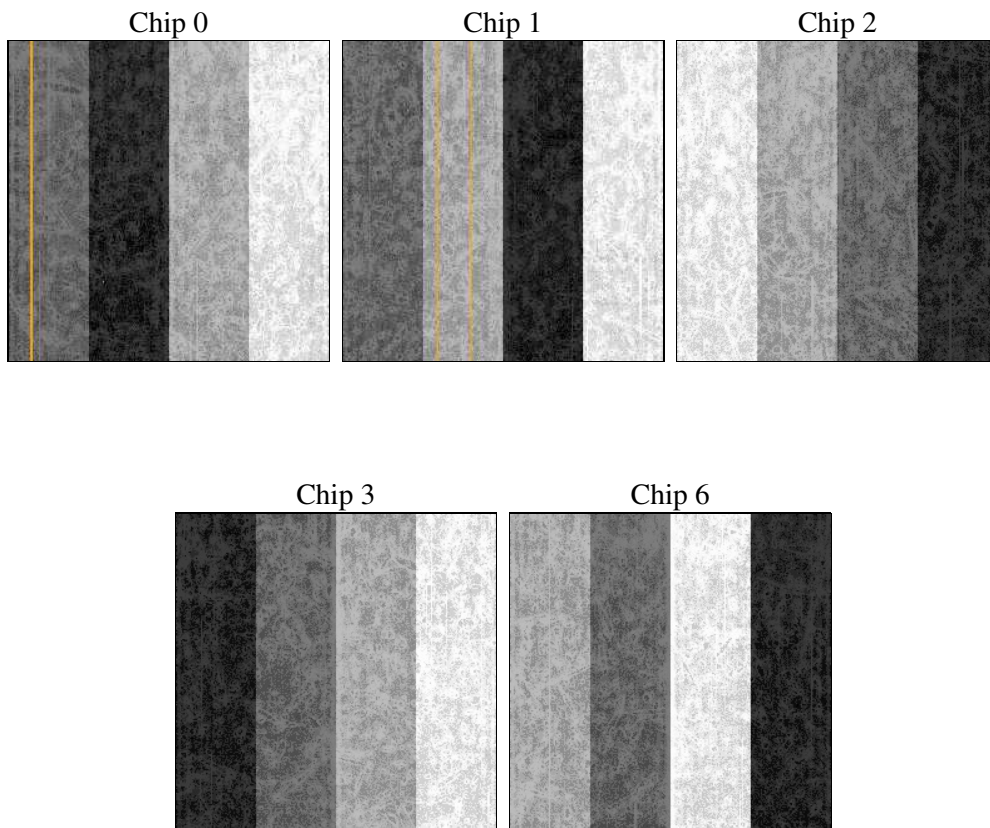
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

|          |                     |                                |                |                 |                                         |
|----------|---------------------|--------------------------------|----------------|-----------------|-----------------------------------------|
| obi_num  | 0                   | Obi number                     | sched_exp_time | 15321.000000    | [s] Scheduled observation exposure time |
| ascdsver | 10.9.2              | Processing system revision     | ontime         | 15379.059128046 | Sum of GTIs [s]                         |
| caldsver | 4.9.3               | &#160                          | ontime0        | 15382.200118423 | Sum of GTIs [s]                         |
| date     | 2020-10-25T01:44:37 | Date and time of file creation | ontime1        | 15382.200118423 | Sum of GTIs [s]                         |
| revision | 2                   | Processing version of data     | ontime2        | 15379.059108138 | Sum of GTIs [s]                         |
|          |                     |                                | ontime3        | 15379.059128046 | Sum of GTIs [s]                         |
|          |                     |                                | ontime6        | 15382.200118423 | Sum of GTIs [s]                         |
|          |                     |                                | l1events       | 551061          | Number of level 1 events                |

### 2.1.4 Events

|                 | ccd 0  | ccd 1  | ccd 2  | ccd 3  | ccd 6  |
|-----------------|--------|--------|--------|--------|--------|
| level 1 events  | 102066 | 104438 | 113958 | 116868 | 113731 |
| rejected events | 89343  | 90451  | 100889 | 98082  | 101166 |
| rejected %      | 87%    | 86%    | 88%    | 83%    | 88%    |

|                | ccd 0 | ccd 1 | ccd 2 | ccd 3 | ccd 6 |
|----------------|-------|-------|-------|-------|-------|
| grade 0 events | 4391  | 4658  | 5350  | 9537  | 4115  |
|                | 4%    | 4%    | 4%    | 8%    | 3%    |
| grade 1 events | 47    | 50    | 73    | 97    | 51    |
|                | 0%    | 0%    | 0%    | 0%    | 0%    |
| grade 2 events | 3236  | 3495  | 2975  | 3464  | 2967  |
|                | 3%    | 3%    | 2%    | 2%    | 2%    |
| grade 3 events | 1259  | 1403  | 1185  | 1457  | 1245  |
|                | 1%    | 1%    | 1%    | 1%    | 1%    |
| grade 4 events | 1240  | 1289  | 1217  | 1513  | 1269  |
|                | 1%    | 1%    | 1%    | 1%    | 1%    |
| grade 5 events | 4806  | 5063  | 4518  | 5446  | 5340  |
|                | 4%    | 4%    | 3%    | 4%    | 4%    |
| grade 6 events | 2599  | 3146  | 2343  | 2821  | 2969  |
|                | 2%    | 3%    | 2%    | 2%    | 2%    |
| grade 7 events | 84488 | 85334 | 96297 | 92533 | 95775 |
|                | 82%   | 81%   | 84%   | 79%   | 84%   |

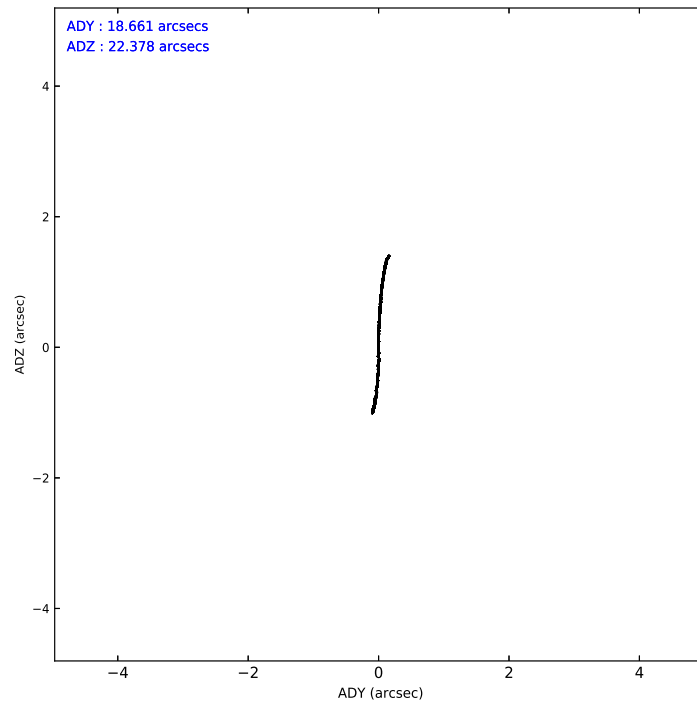
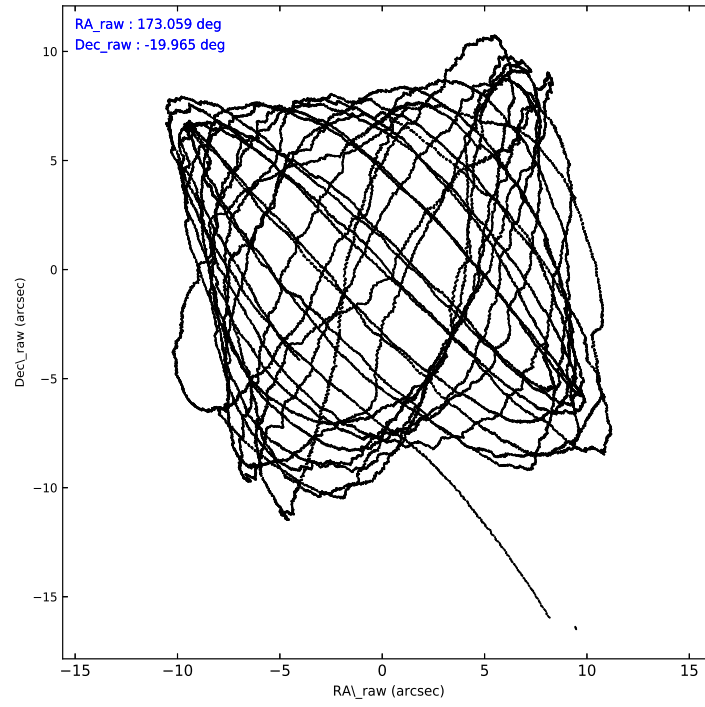


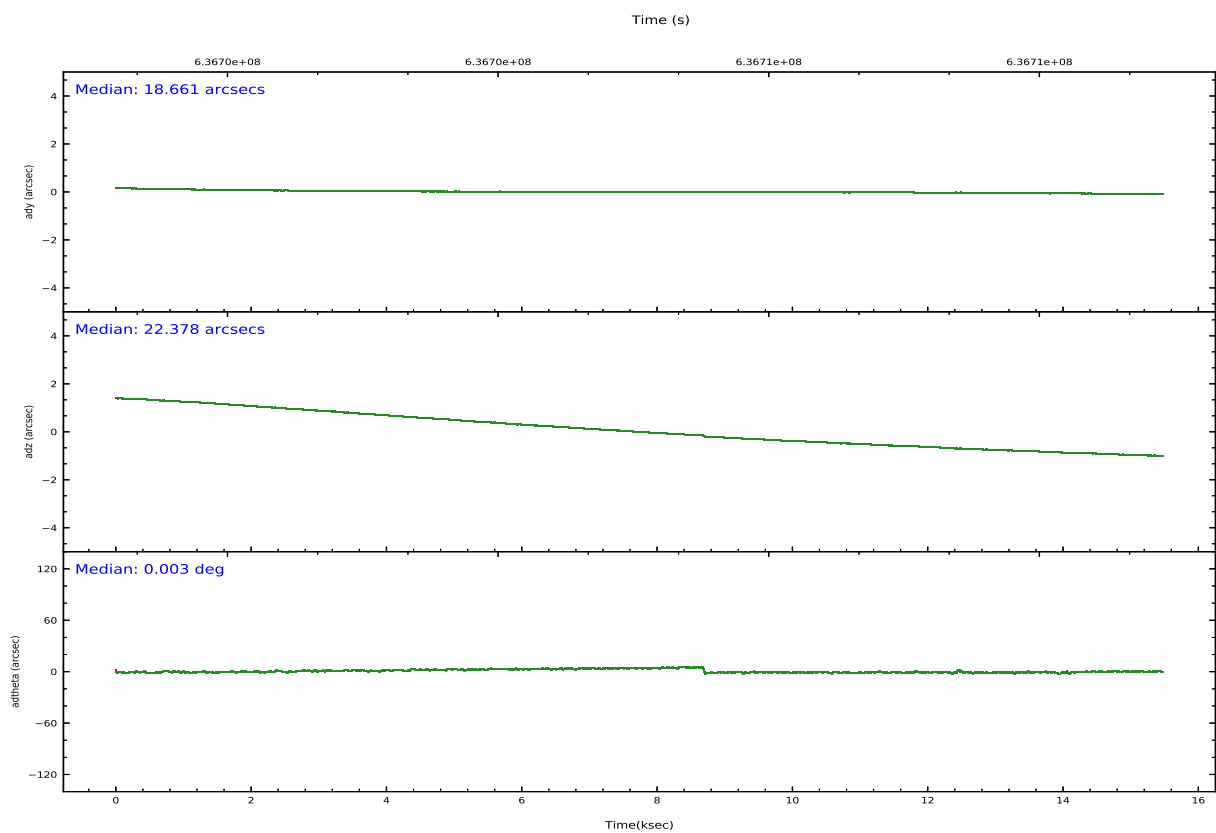
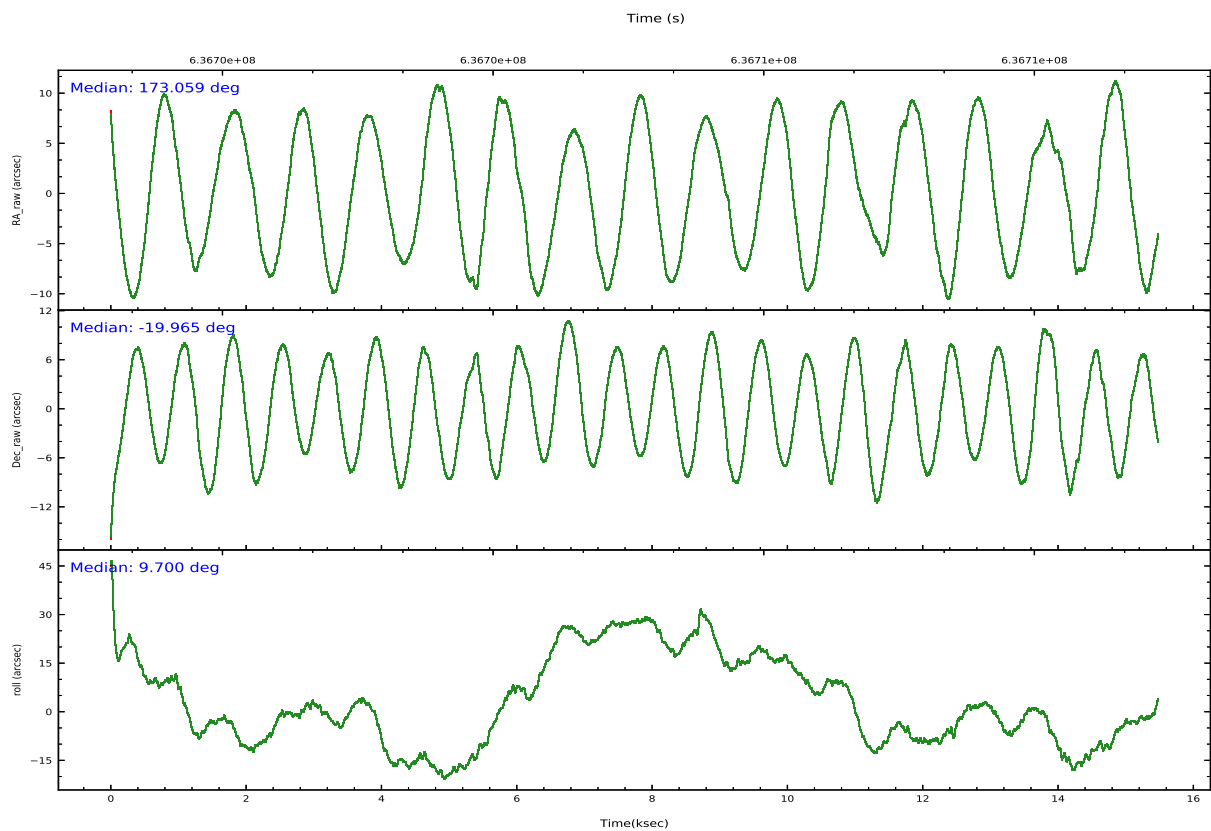
## 2.2 Compared Parameters

| Parameter                         | Planned             | Actual                |
|-----------------------------------|---------------------|-----------------------|
| Instrument                        | ACIS                | ACIS                  |
| Detector                          | ACIS-01236          | ACIS-01236            |
| Grating                           | NONE                | NONE                  |
| Data mode                         | VFAINT              | VFAINT                |
| Observation mode                  | POINTING            | POINTING              |
| [deg] Pointing RA                 | 173.036980          | 173.05492380621       |
| [deg] Pointing Dec                | -19.982956          | -19.97250784307       |
| [deg] Pointing Roll               | 9.495370            | 9.7011456567911       |
| [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)  | 636698509.184000    | 636697226.0660599     |
| Observation start date            | 2018-03-06T04:40:40 | 2018-03-06T04:20:26   |
| [s] Observation end time (MET)    | 636713830.184000    | 636714886.3046        |
| Observation end date              | 2018-03-06T08:56:01 | 2018-03-06T09:14:46   |
| Read mode                         | TIMED               | TIMED                 |

| Parameter                             | Planned   | Actual  |
|---------------------------------------|-----------|---------|
| Obspar version number                 | 8         | 8       |
| Obspar file type                      | PREDICTED | ACTUAL  |
| Obspar update status                  | NONE      | UPDATED |
| CCD I0 on                             | Y         | Y       |
| CCD I1 on                             | Y         | Y       |
| CCD I2 on                             | Y         | Y       |
| CCD I3 on                             | Y         | Y       |
| CCD S0 on                             | N         | N       |
| CCD S1 on                             | N         | N       |
| CCD S2 on                             | O1        | Y       |
| CCD S3 on                             | N         | N       |
| CCD S4 on                             | N         | N       |
| CCD S5 on                             | N         | N       |
| 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



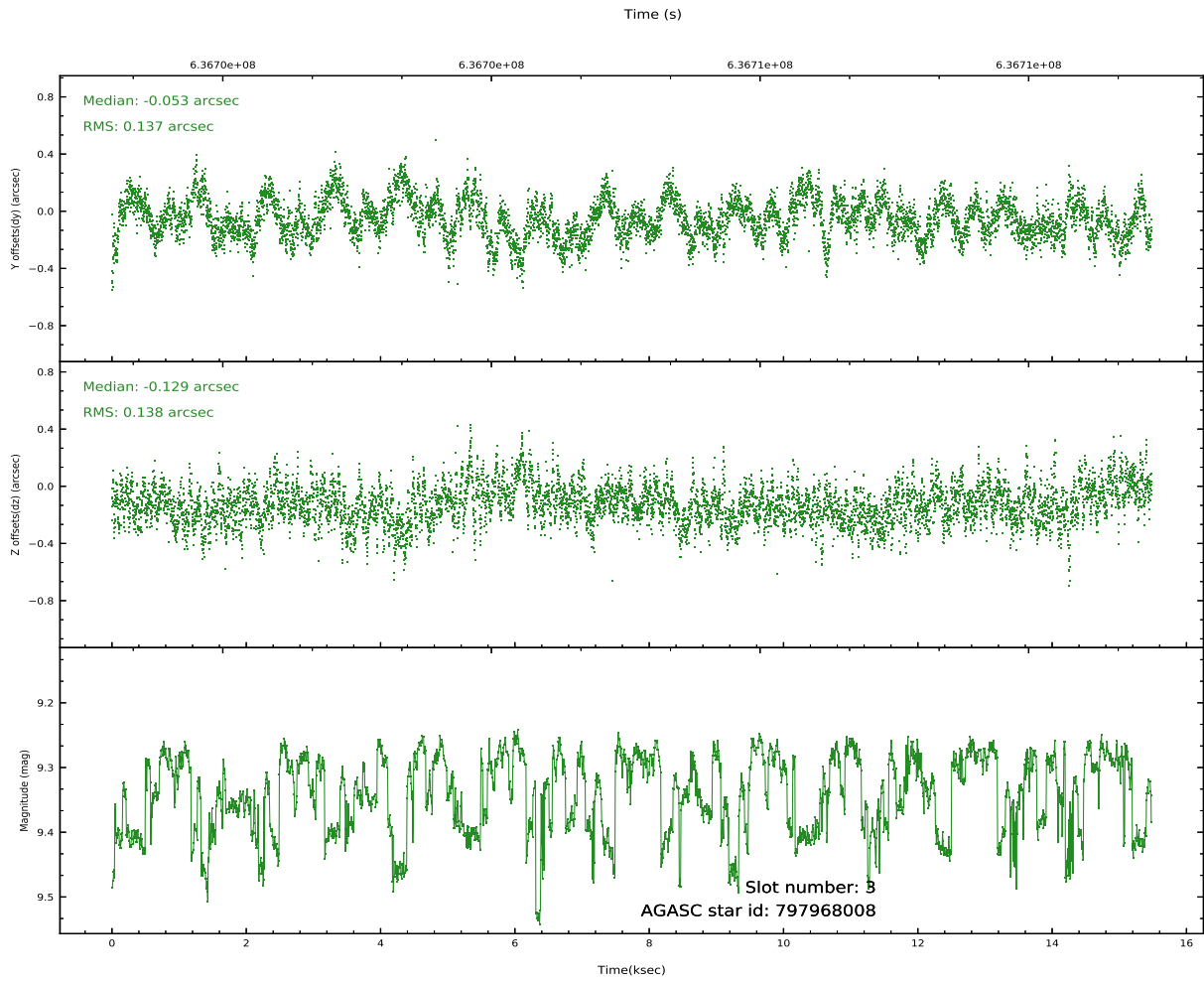
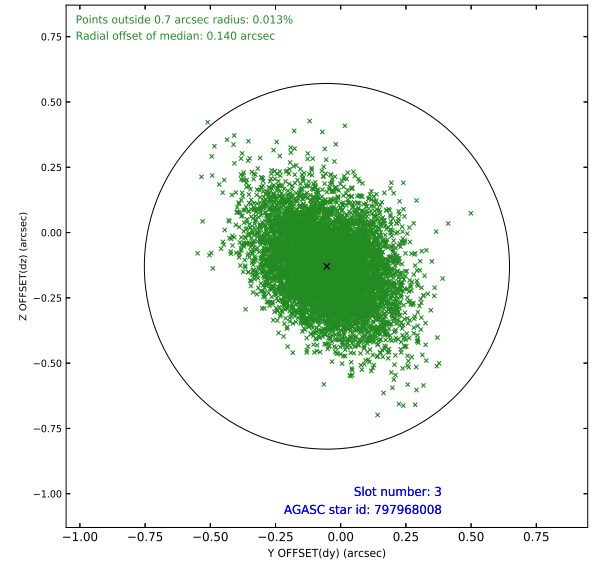
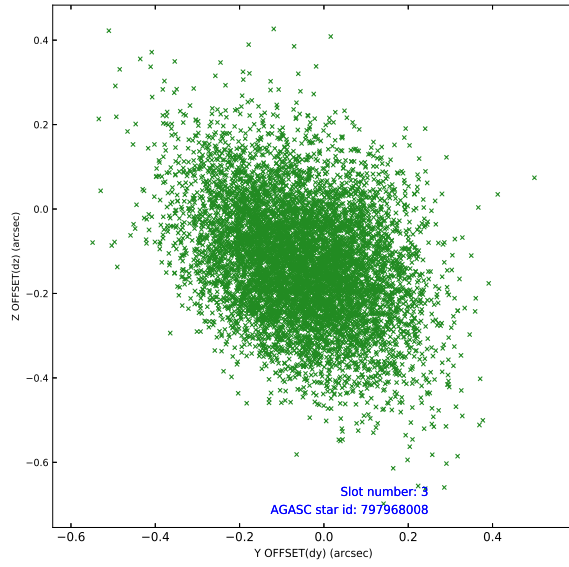


Slot Statistics

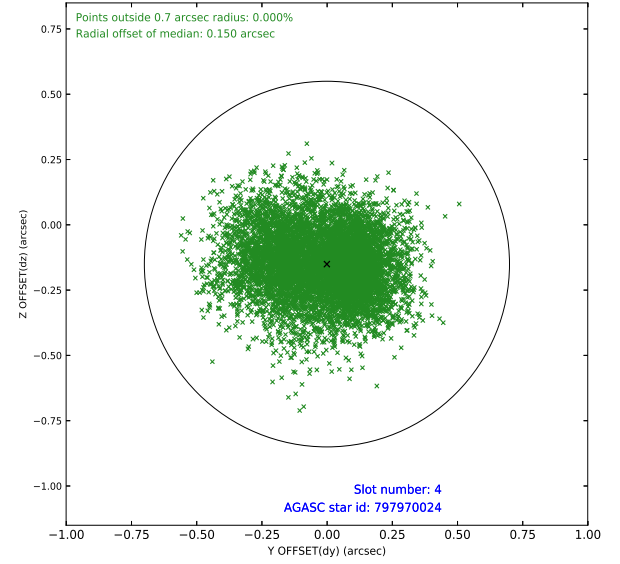
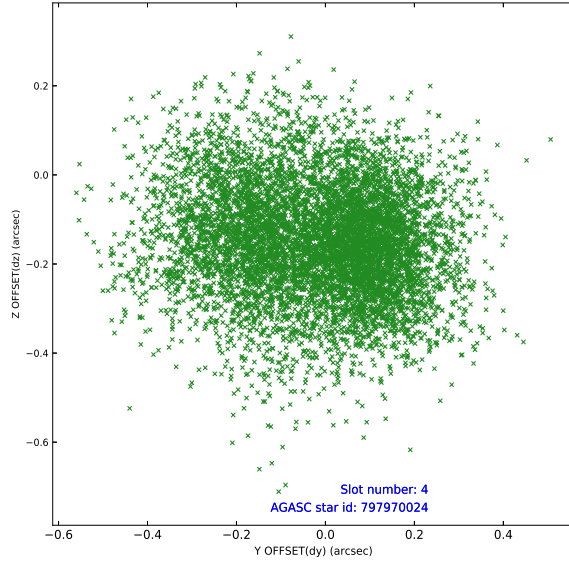
| pt | status | used | id        | mag  | n_pts | frac_pts | med_dy | med_dz | dr1   | dr2   | ra         | dec        | mean_y   | mea   |
|----|--------|------|-----------|------|-------|----------|--------|--------|-------|-------|------------|------------|----------|-------|
| 0  | FID    |      | ACIS-I-1  | 7.18 | 3776  | 1.000    | 0.125  | -0.054 | 0.097 | 0.116 | 0.000000   | 0.000000   | 920.72   | -846  |
| 1  | FID    |      | ACIS-I-4  | 7.12 | 3775  | 1.000    | 0.125  | -0.001 | 0.068 | 0.081 | 0.000000   | 0.000000   | 2141.11  | 1053  |
| 2  | FID    |      | ACIS-I-5  | 7.16 | 3775  | 1.000    | -0.345 | 0.126  | 0.033 | 0.039 | 0.000000   | 0.000000   | -1827.19 | 1051  |
| 3  | GUIDE  | used | 797968008 | 9.33 | 7541  | 1.000    | -0.053 | -0.129 | 0.203 | 0.340 | 173.274298 | -19.815834 | 892.33   | 460   |
| 4  | GUIDE  | used | 797970024 | 9.02 | 7545  | 1.000    | -0.001 | -0.150 | 0.223 | 0.368 | 172.716766 | -19.832014 | -979.66  | 713   |
| 5  | GUIDE  | used | 798375016 | 9.26 | 7543  | 1.000    | 0.037  | 0.183  | 0.182 | 0.321 | 172.536267 | -20.217781 | -1807.98 | -557  |
| 6  | GUIDE  | used | 798492464 | 8.98 | 7546  | 1.000    | -0.094 | -0.019 | 0.189 | 0.320 | 173.652158 | -20.299483 | 1860.47  | -1470 |
| 7  | GUIDE  | used | 798495824 | 8.69 | 7545  | 1.000    | 0.132  | 0.104  | 0.173 | 0.293 | 173.403222 | -20.546440 | 883.10   | -2205 |

## 2.4 Star Slots

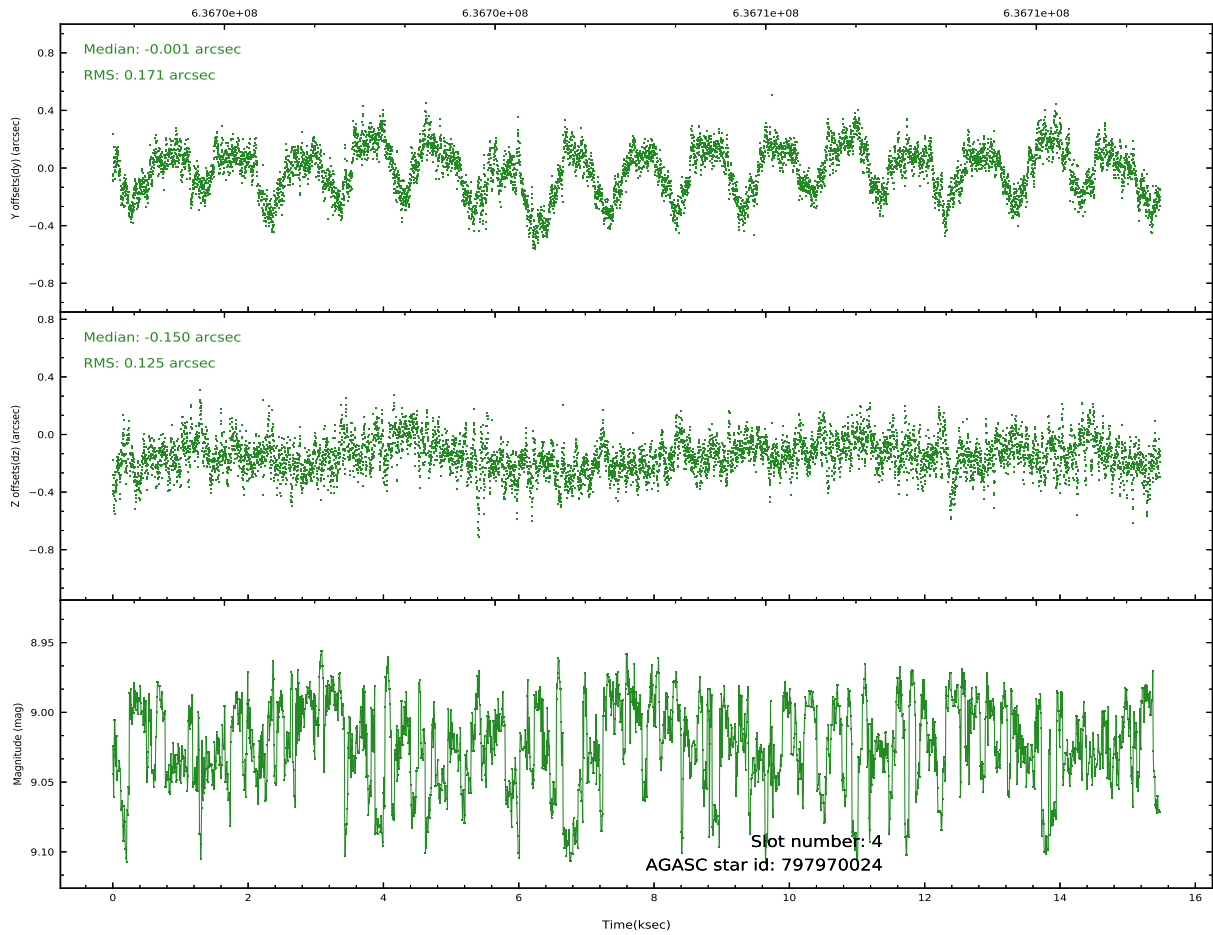
### 2.4.1 Slot 3



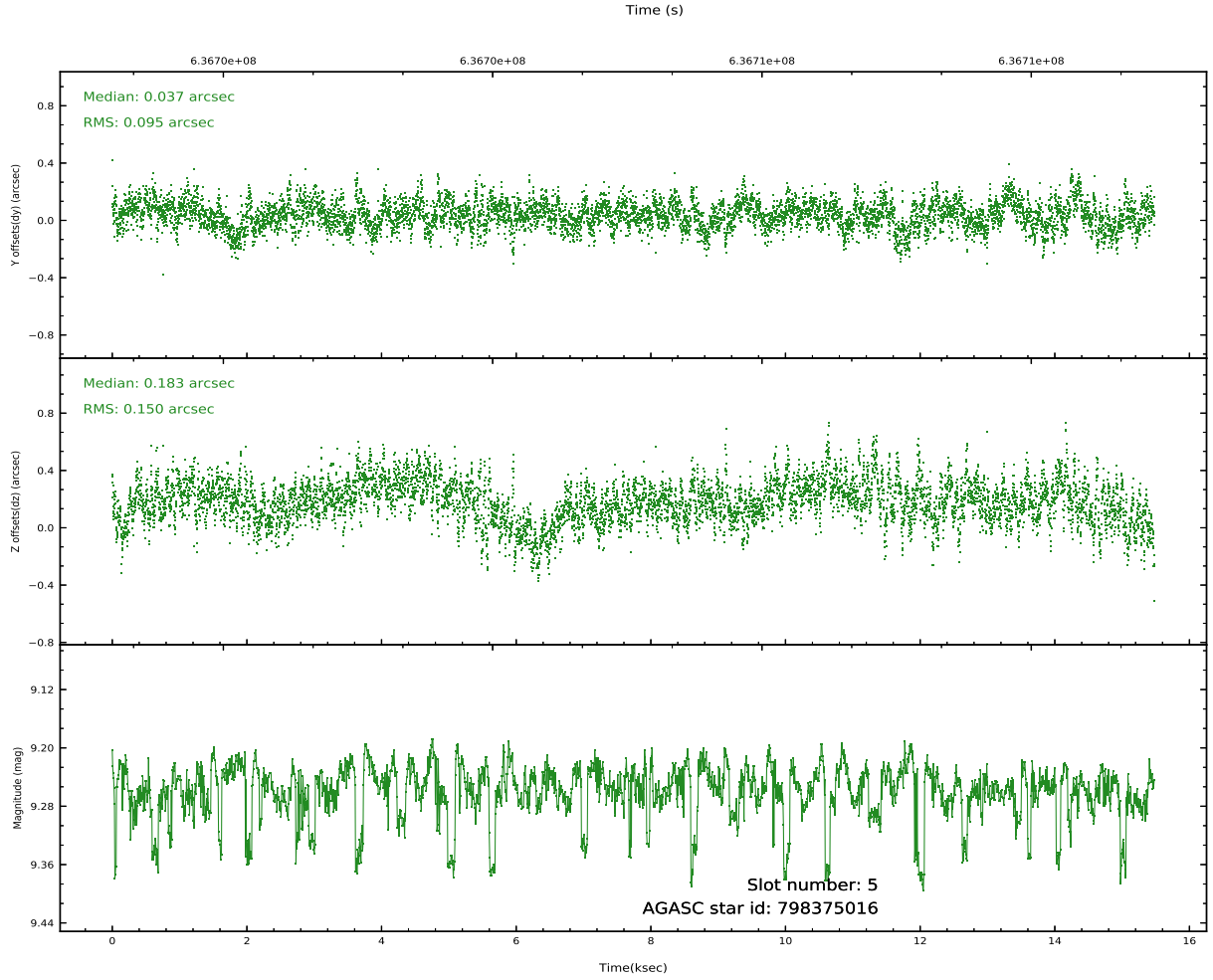
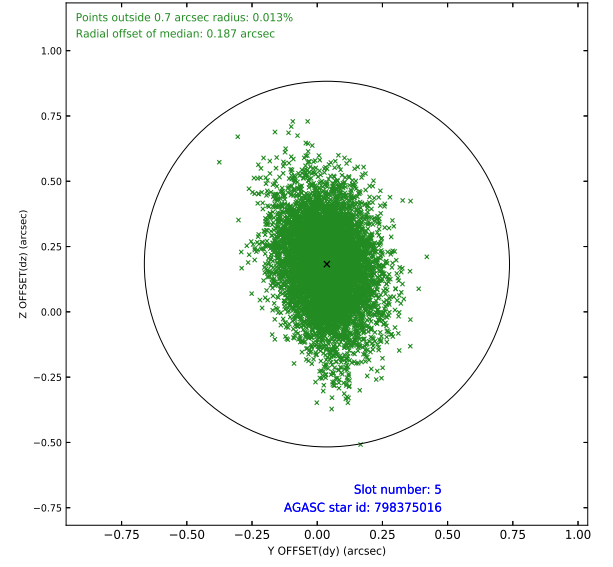
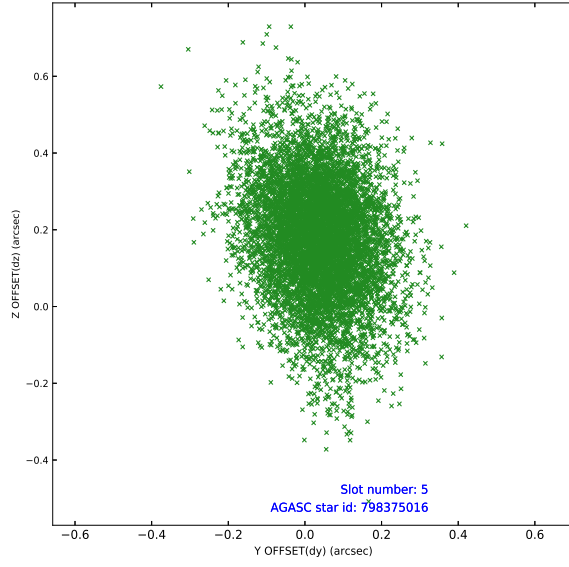
## 2.4.2 Slot 4



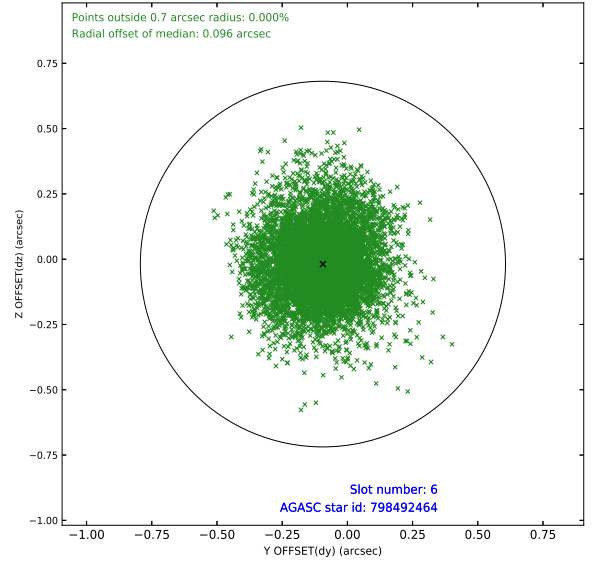
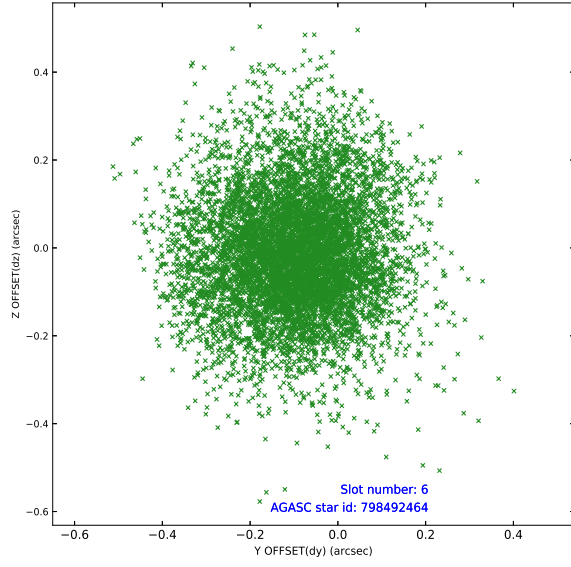
Time (s)



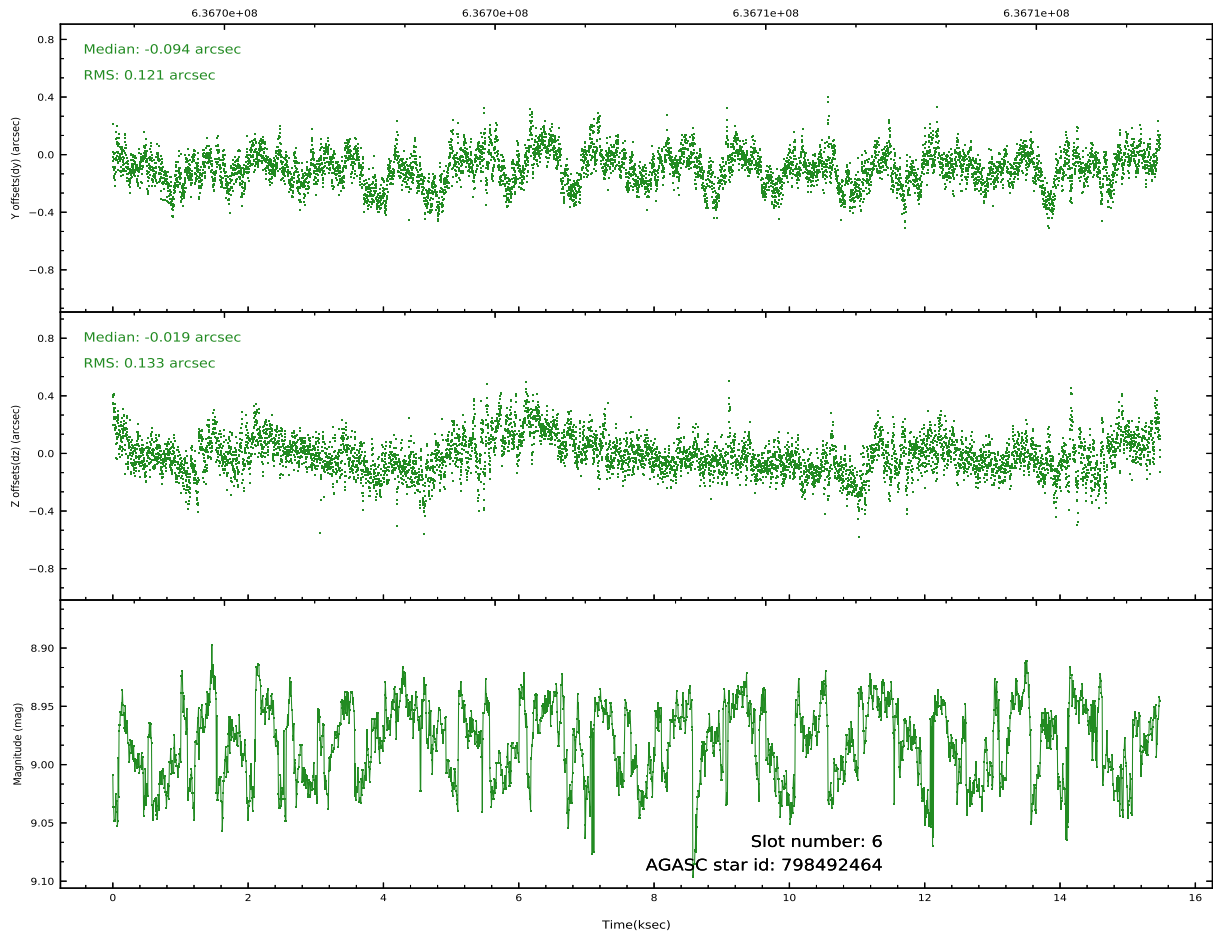
### 2.4.3 Slot 5



## 2.4.4 Slot 6

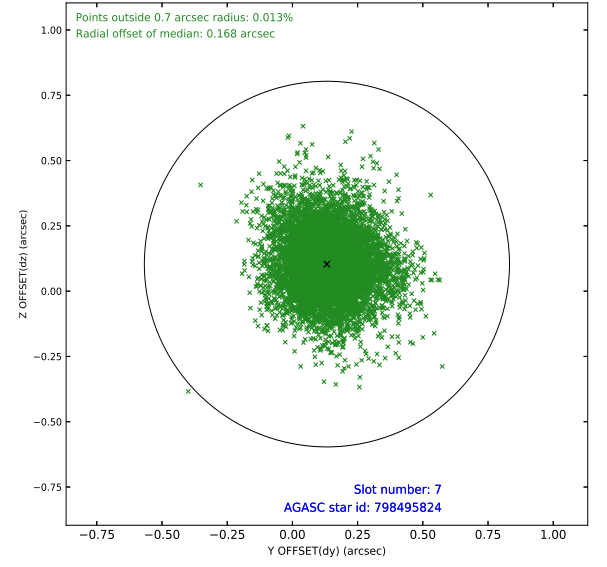
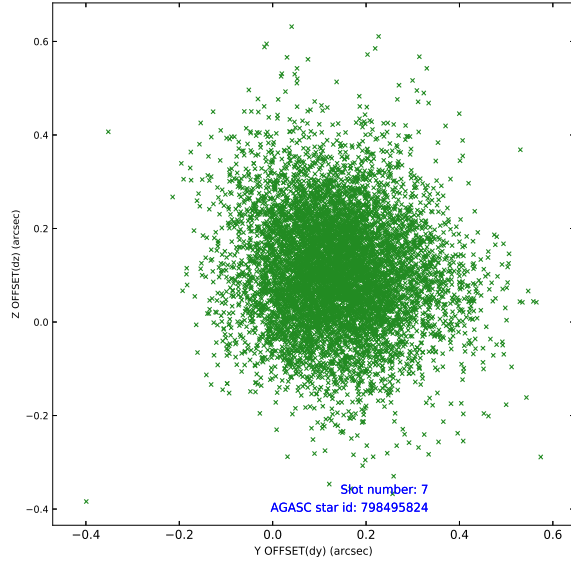


Time (s)

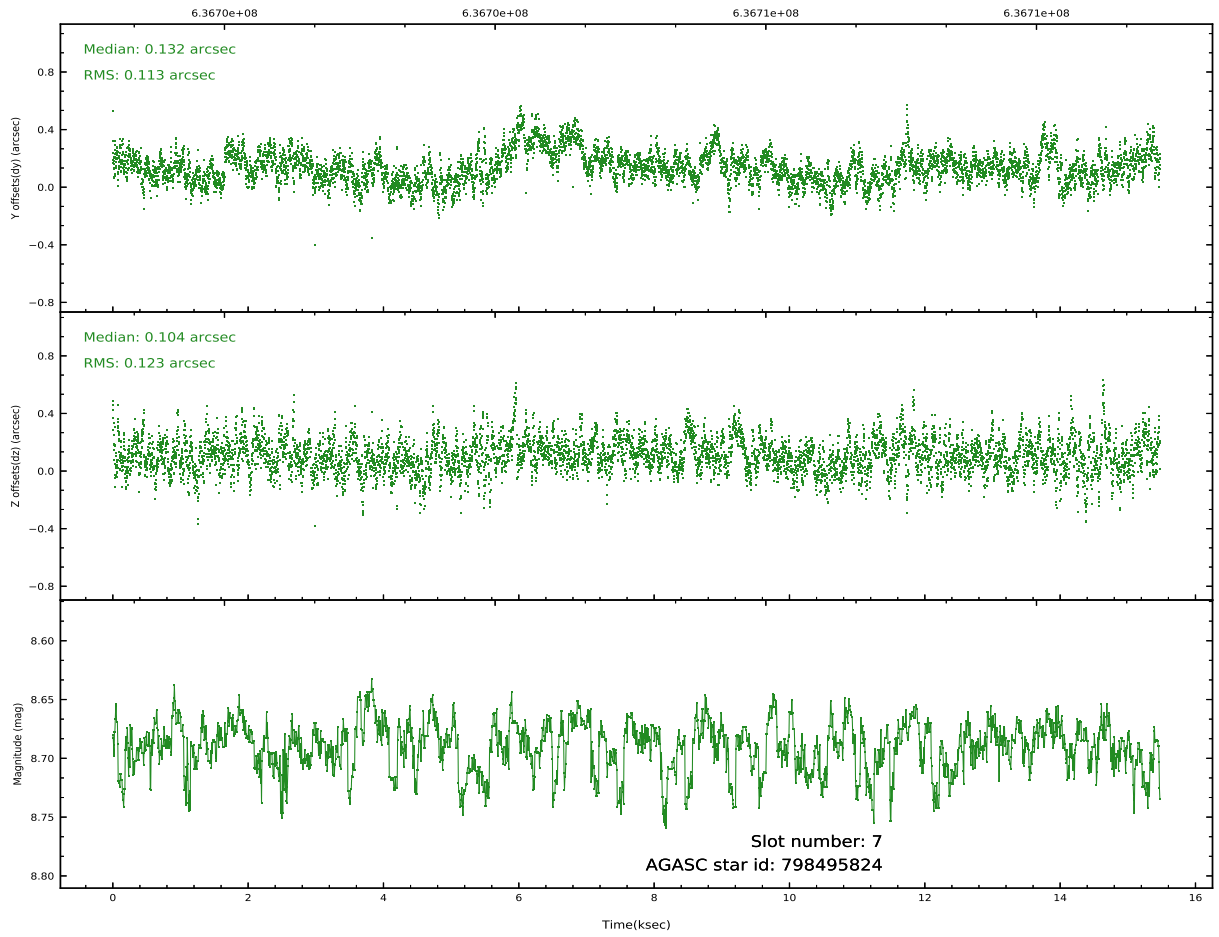




## 2.4.5 Slot 7

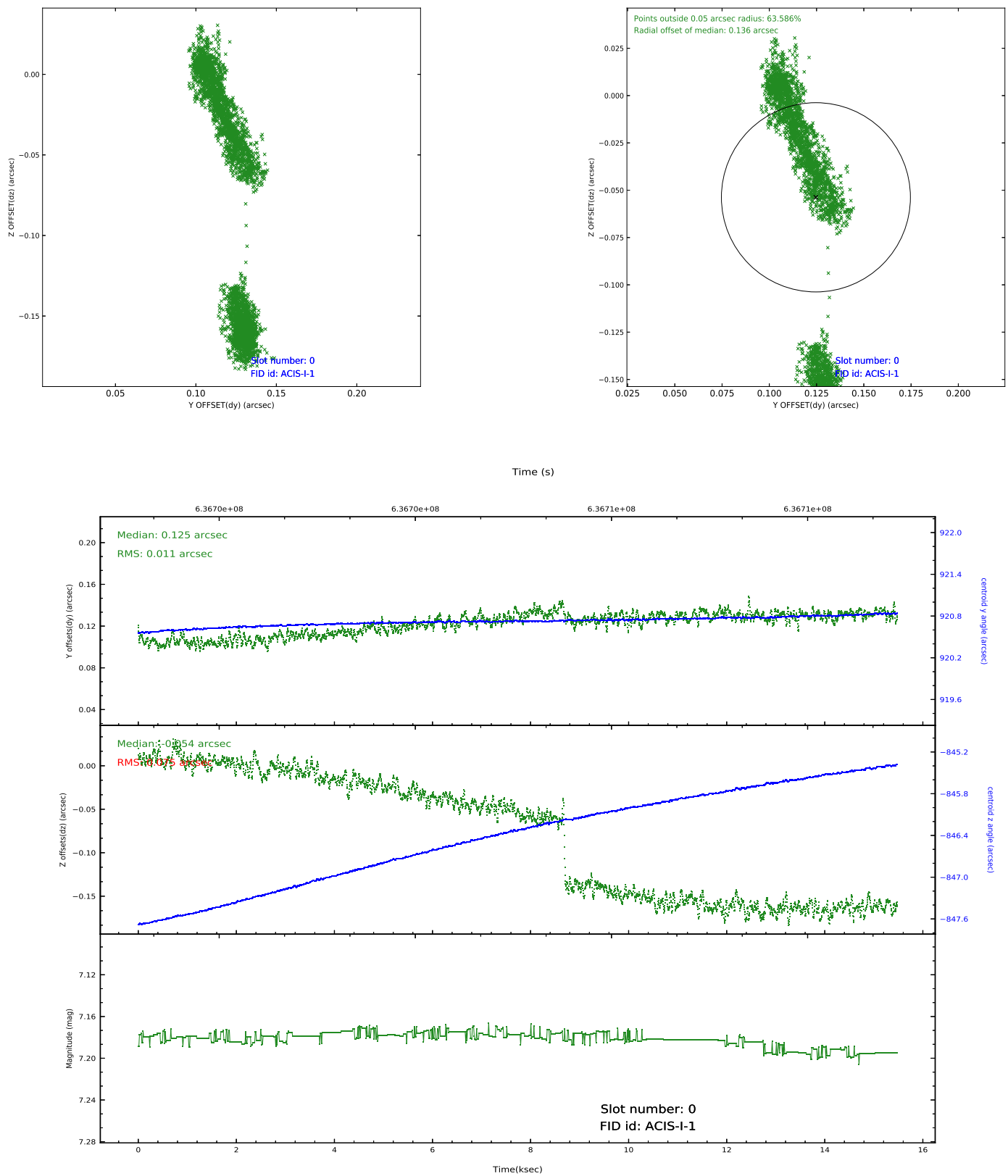


Time (s)

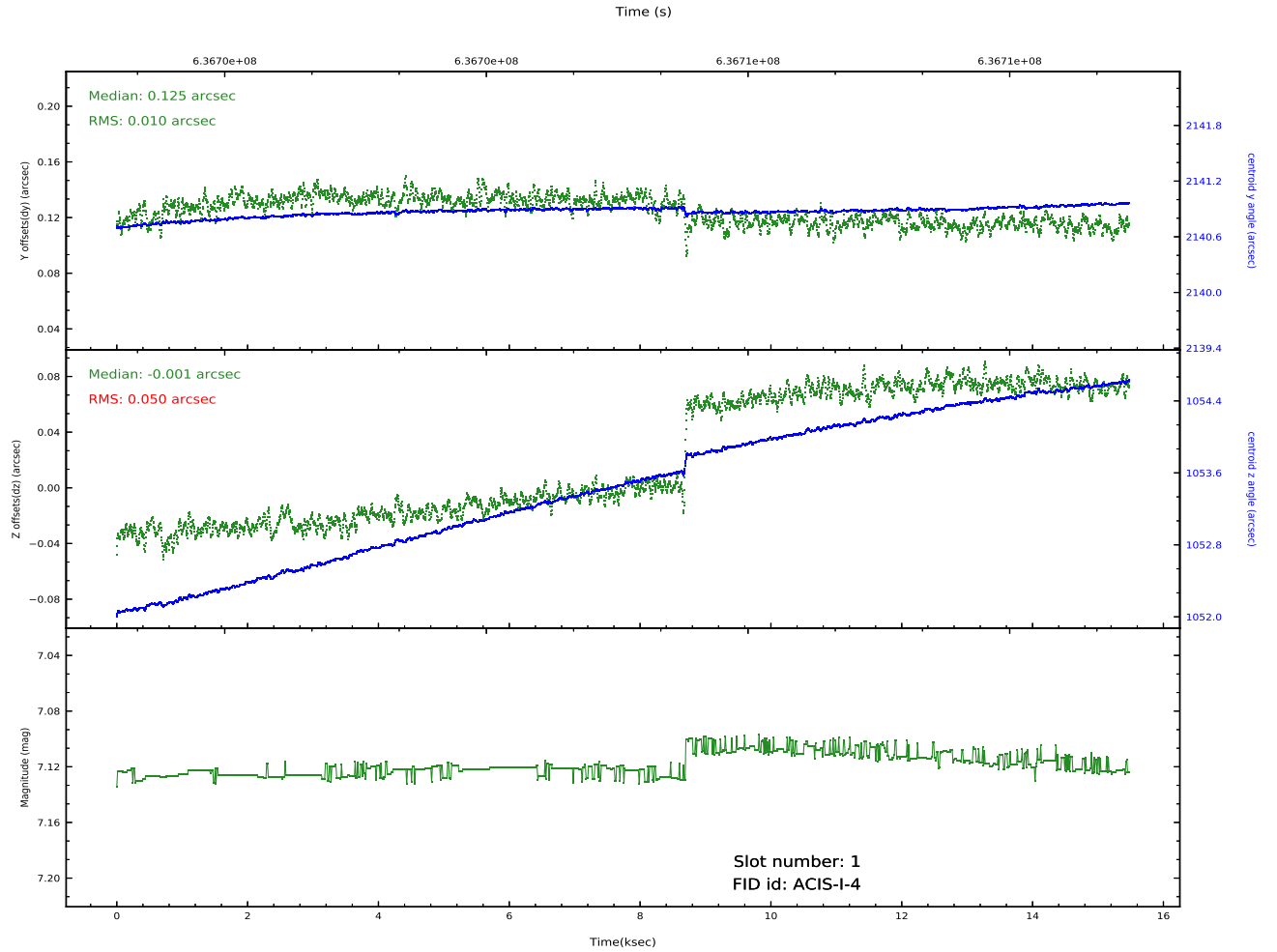
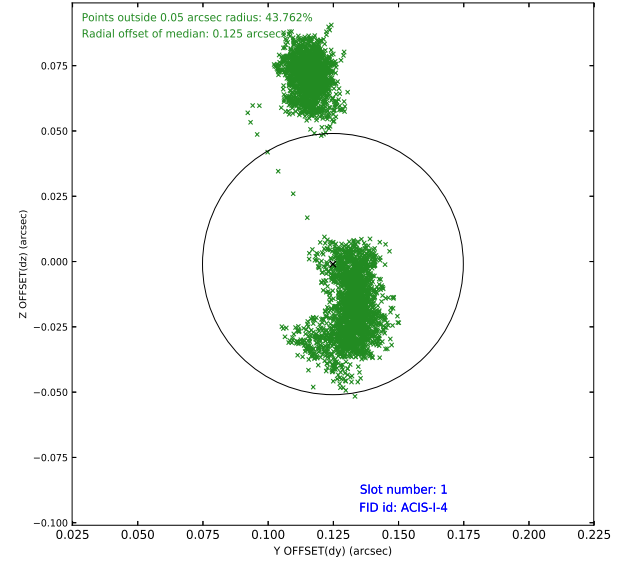
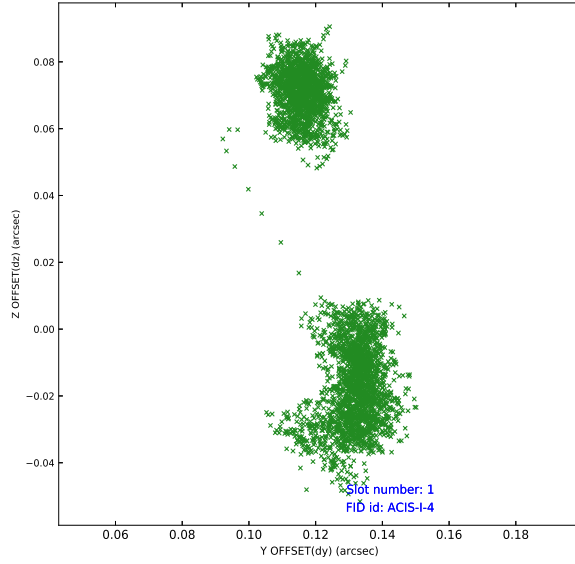


## 2.5 FID Slots

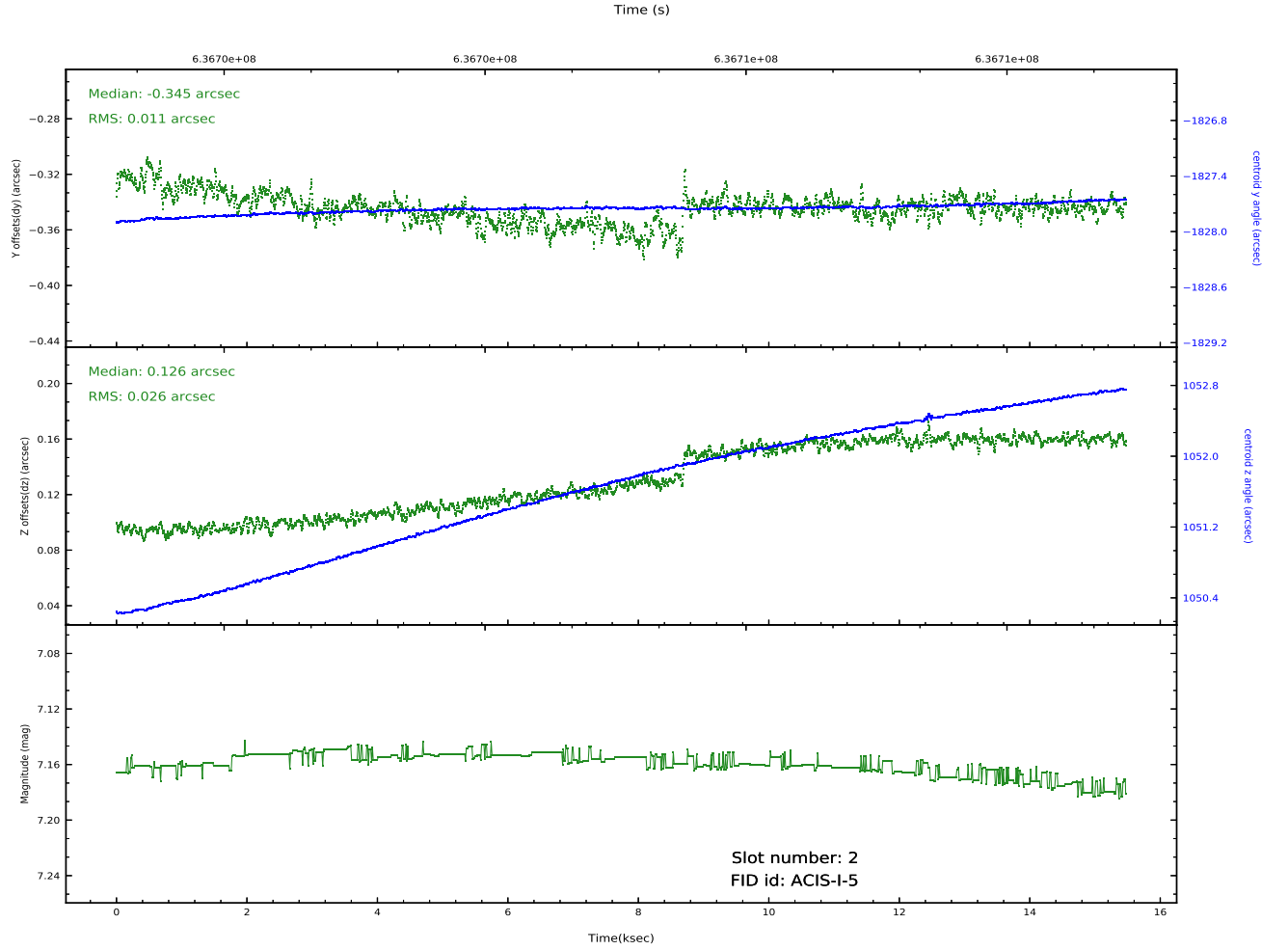
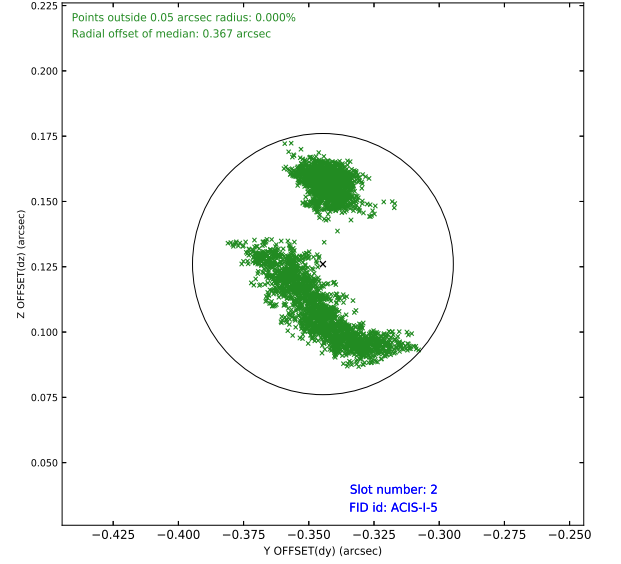
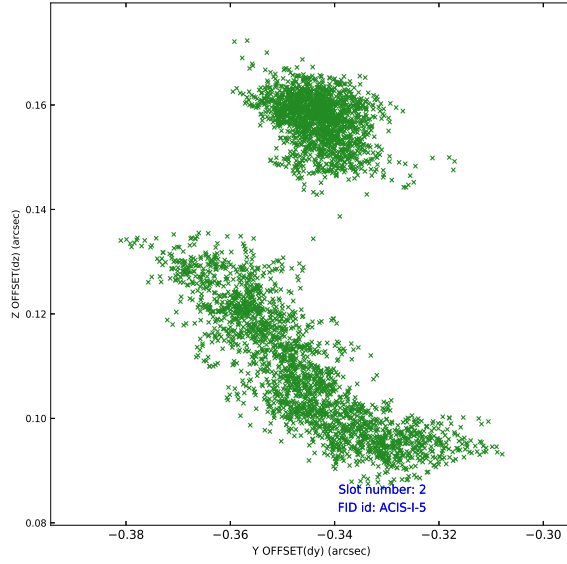
### 2.5.1 Slot 0



## 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)      | 2020.10.26      |
| V&V Edition                | 1               |
| V&V Disposition and Status | OK              |
| V&V Charge Time            | 15.379059128165 |

### A.2 Comments