

# V&V Reference Report

## L2 ASCDS Version : 10.9.1

Observation 5032 - L2 Version 5  
Chandra X-Ray Center

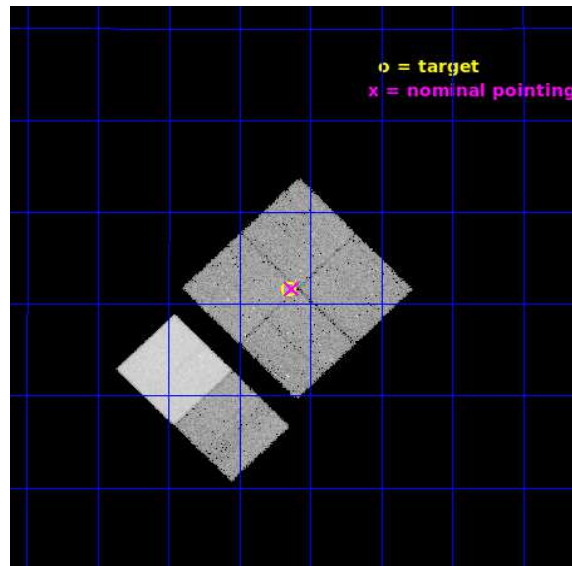
L2 Processing Date : Sep 26 2020

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# 1 Front

|          |   |   |
|----------|---|---|
| seq_num  | 900339                                    | Sequence number                             |
| obs_id   | 5032                                      | Observation id                              |
| title    | A Chandra survey of Extremely Red Objects | Proposal title                              |
| observer | Marcella Brusa                            | Principal investigator                      |
| object   | Daddi field - 1                           | Source name                                 |
| dtcycle  | 0   | &#160                                       |
| cycle    | P   | events from which exps?<br>Prim/Second/Both |
| ra_targ  | 222.287917                                | Observer's specified target RA [deg]        |
| dec_targ | 9.026667                                  | Observer's specified target Dec [deg]       |
| ra_nom   | 222.28293895181                           | Nominal RA [deg]                            |
| dec_nom  | 9.0278676511458                           | Nominal Dec [deg]                           |
| roll_nom | 225.45496038748                           | Nominal Roll [deg]                          |
| revision | 5   | Processing version of data                  |
| ontime   | 29123.158911228                           | Sum of GTIs [s]                             |
| livetime | 28754.383937233                           | Livetime [s]                                |
| ontime0  | 29126.399891496                           | Sum of GTIs [s]                             |
| ontime1  | 29126.399891496                           | Sum of GTIs [s]                             |
| ontime2  | 29126.399891496                           | Sum of GTIs [s]                             |
| ontime3  | 29123.158911228                           | Sum of GTIs [s]                             |
| ontime6  | 29126.399891496                           | Sum of GTIs [s]                             |
| ontime7  | 29126.399891496                           | Sum of GTIs [s]                             |
| l2events | 224761                                    | Number of level 2 events                    |

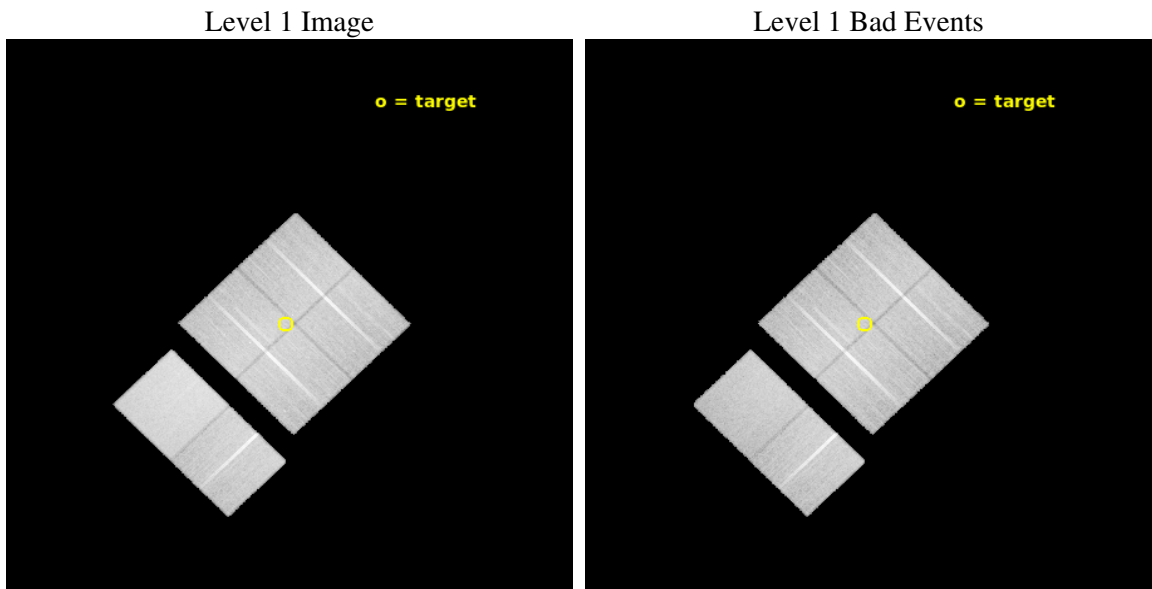




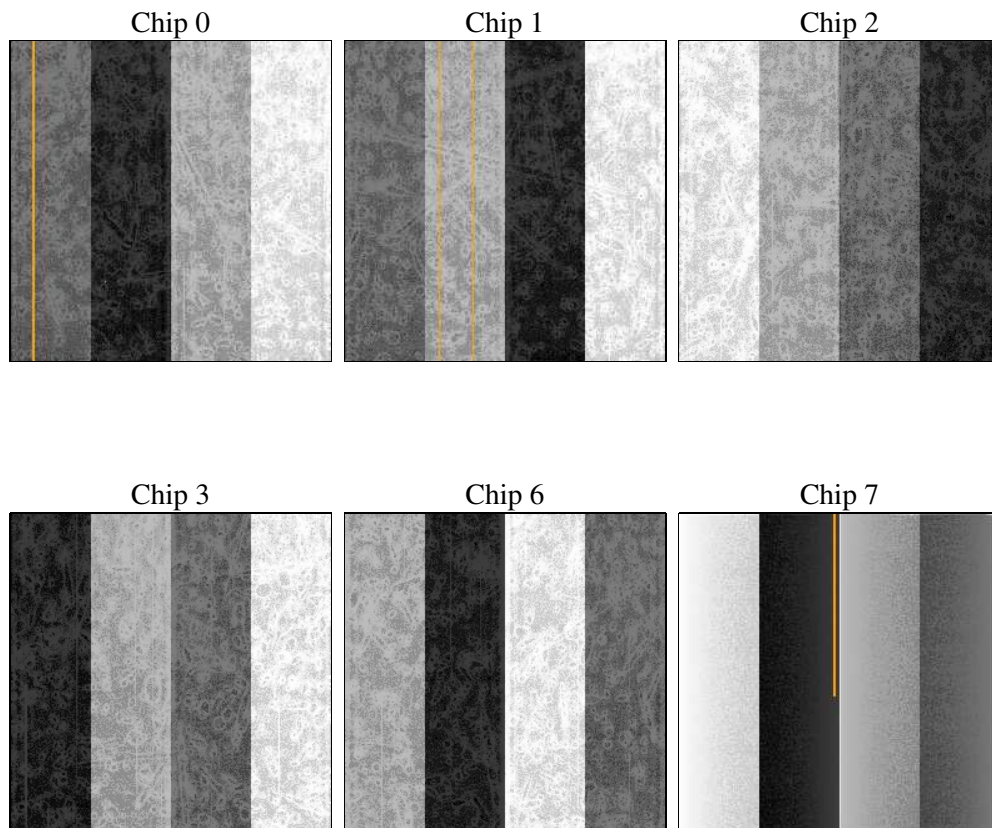
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

|          |                     |                                |                |                 |   |
|----------|---------------------|--------------------------------|----------------|-----------------|---|
| obi_num  | 0                   | Obi number                     | sched_exp_time | 28971.000000    | [s] Scheduled observation exposure time |
| ascdsver | 10.9.1              | Processing system revision     | ontime         | 29123.158911228 | Sum of GTIs [s]                         |
| caldsver | 4.9.2               | &#160                          | ontime0        | 29126.399891496 | Sum of GTIs [s]                         |
| date     | 2020-09-26T10:30:50 | Date and time of file creation | ontime1        | 29126.399891496 | Sum of GTIs [s]                         |
| revision | 5                   | Processing version of data     | ontime2        | 29126.399891496 | Sum of GTIs [s]                         |
|          |                     |                                | ontime3        | 29123.158911228 | Sum of GTIs [s]                         |
|          |                     |                                | ontime6        | 29126.399891496 | Sum of GTIs [s]                         |
|          |                     |                                | ontime7        | 29126.399891496 | Sum of GTIs [s]                         |
|          |                     |                                | l1events       | 1315112         | Number of level 1 events                |

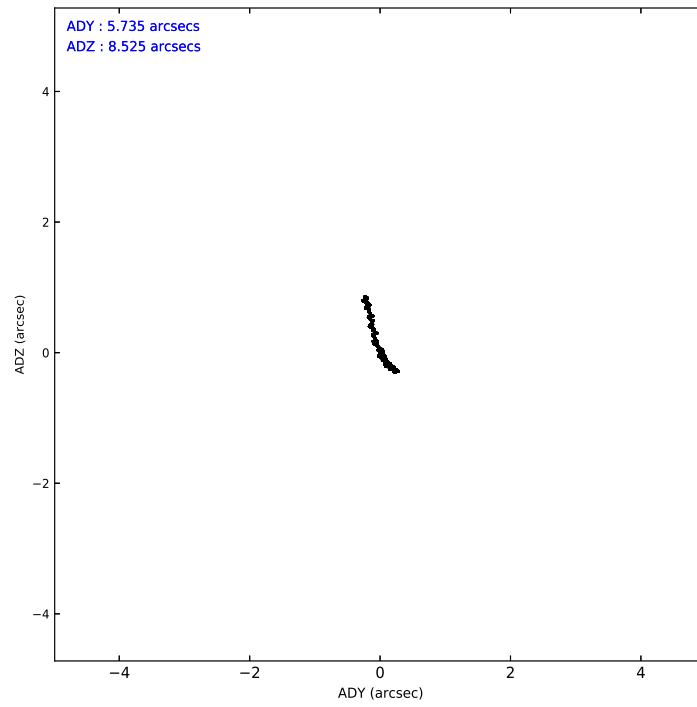
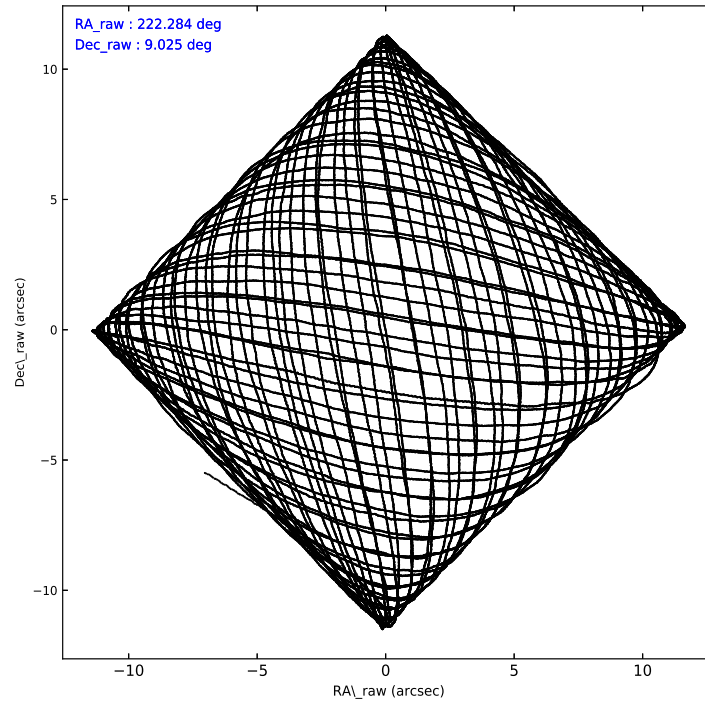
### 2.1.4 Events

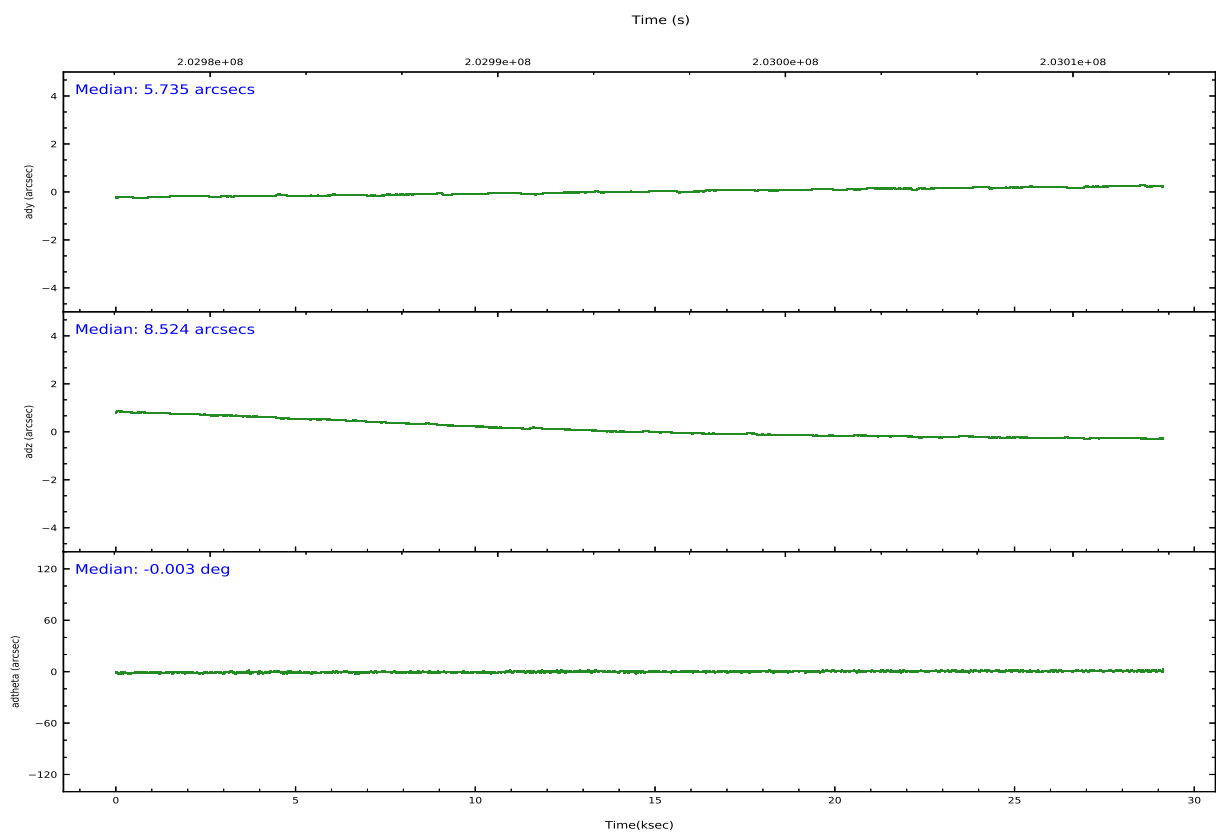
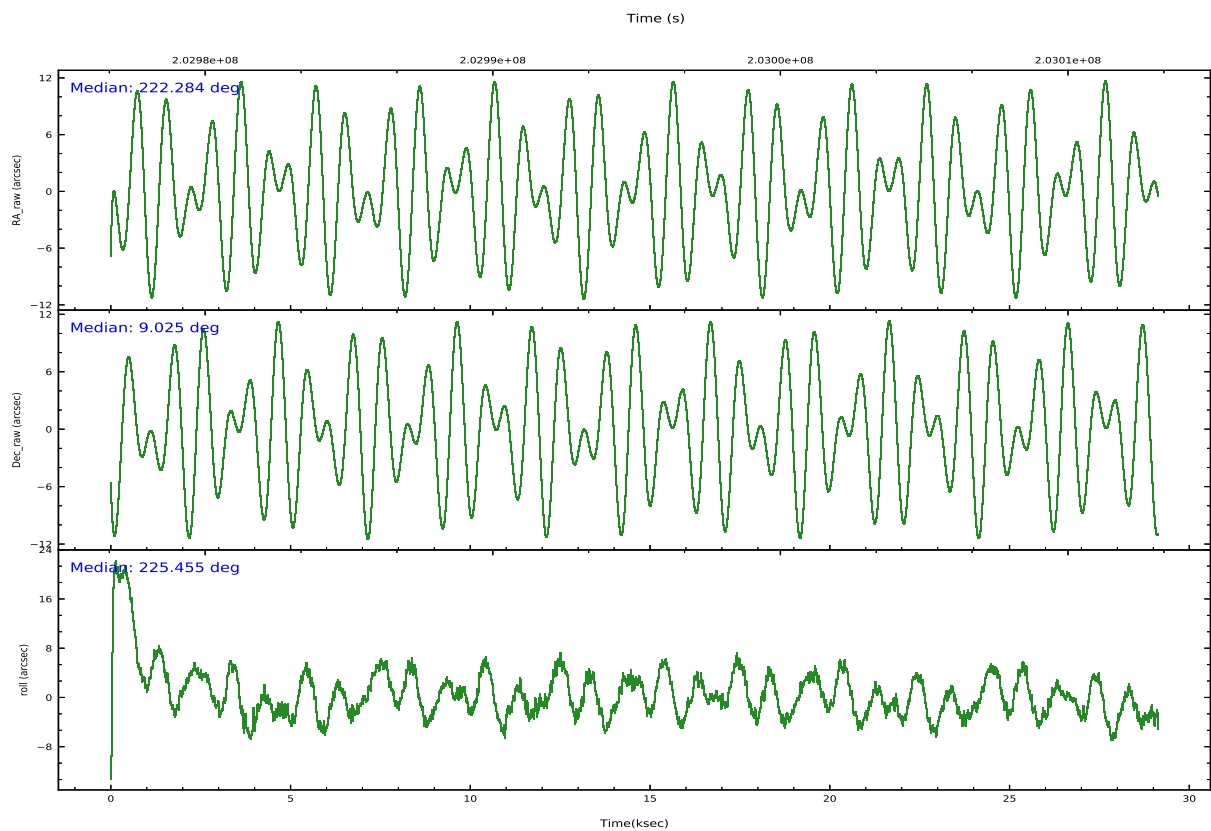
|                 | ccd 0  | ccd 1  | ccd 2  | ccd 3  | ccd 6  | ccd 7  |                | ccd 0  | ccd 1  | ccd 2  | ccd 3  | ccd 6  | ccd 7  |
|-----------------|--------|--------|--------|--------|--------|--------|----------------|--------|--------|--------|--------|--------|--------|
| level 1 events  | 194049 | 195580 | 211166 | 210296 | 215918 | 288103 | grade 0 events | 11334  | 10629  | 11337  | 11226  | 9909   | 10846  |
| rejected events | 168484 | 169260 | 185907 | 185251 | 190671 | 169518 |                | 5%     | 5%     | 5%     | 5%     | 4%     | 3%     |
| rejected %      | 86%    | 86%    | 88%    | 88%    | 88%    | 58%    | grade 1 events | 119    | 101    | 107    | 136    | 105    | 307    |
|                 |        |        |        |        |        |        |                | 0%     | 0%     | 0%     | 0%     | 0%     | 0%     |
|                 |        |        |        |        |        |        | grade 2 events | 5254   | 5661   | 5119   | 4751   | 5338   | 23698  |
|                 |        |        |        |        |        |        |                | 2%     | 2%     | 2%     | 2%     | 2%     | 8%     |
|                 |        |        |        |        |        |        | grade 3 events | 2432   | 2598   | 2454   | 2403   | 2488   | 10541  |
|                 |        |        |        |        |        |        |                | 1%     | 1%     | 1%     | 1%     | 1%     | 3%     |
|                 |        |        |        |        |        |        | grade 4 events | 2324   | 2571   | 2356   | 2373   | 2461   | 10561  |
|                 |        |        |        |        |        |        |                | 1%     | 1%     | 1%     | 1%     | 1%     | 3%     |
|                 |        |        |        |        |        |        | grade 5 events | 8702   | 9149   | 8332   | 9456   | 10004  | 27658  |
|                 |        |        |        |        |        |        |                | 4%     | 4%     | 3%     | 4%     | 4%     | 9%     |
|                 |        |        |        |        |        |        | grade 6 events | 4275   | 4916   | 4035   | 4355   | 5104   | 63228  |
|                 |        |        |        |        |        |        |                | 2%     | 2%     | 1%     | 2%     | 2%     | 21%    |
|                 |        |        |        |        |        |        | grade 7 events | 159609 | 159955 | 177426 | 175596 | 180509 | 141264 |
|                 |        |        |        |        |        |        |                | 82%    | 81%    | 84%    | 83%    | 83%    | 49%    |

## 2.2 Compared Parameters

| Parameter                         | Planned             | Actual                | Parameter                             | Planned   | Actual  |
|-----------------------------------|---------------------|-----------------------|---------------------------------------|-----------|---------|
| Instrument                        | ACIS                | ACIS                  | Obspar version number                 | 8         | 8       |
| Detector                          | ACIS-012367         | ACIS-012367           | 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                 | 222.290437          | 222.28293895181       | Subarray requested                    | NONE      | NONE    |
| [deg] Pointing Dec                | 9.051429            | 9.027867651145799     | Alternating exposures requested       | N         | N       |
| [deg] Pointing Roll               | 225.249541          | 225.45496038748       | [s] Primary exposure time             | 0.000000  | 3.2     |
| [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)  | 202981536.184000    | 202980448.71082       |                                       |           |         |
| Observation start date            | 2004-06-07T07:44:32 | 2004-06-07T07:27:28   |                                       |           |         |
| [s] Observation end time (MET)    | 203010507.184000    | 203011320.68719       |                                       |           |         |
| Observation end date              | 2004-06-07T15:47:23 | 2004-06-07T16:02:00   |                                       |           |         |
| Read mode                         | TIMED               | TIMED                 |                                       |           |         |

## 2.3 Aspect



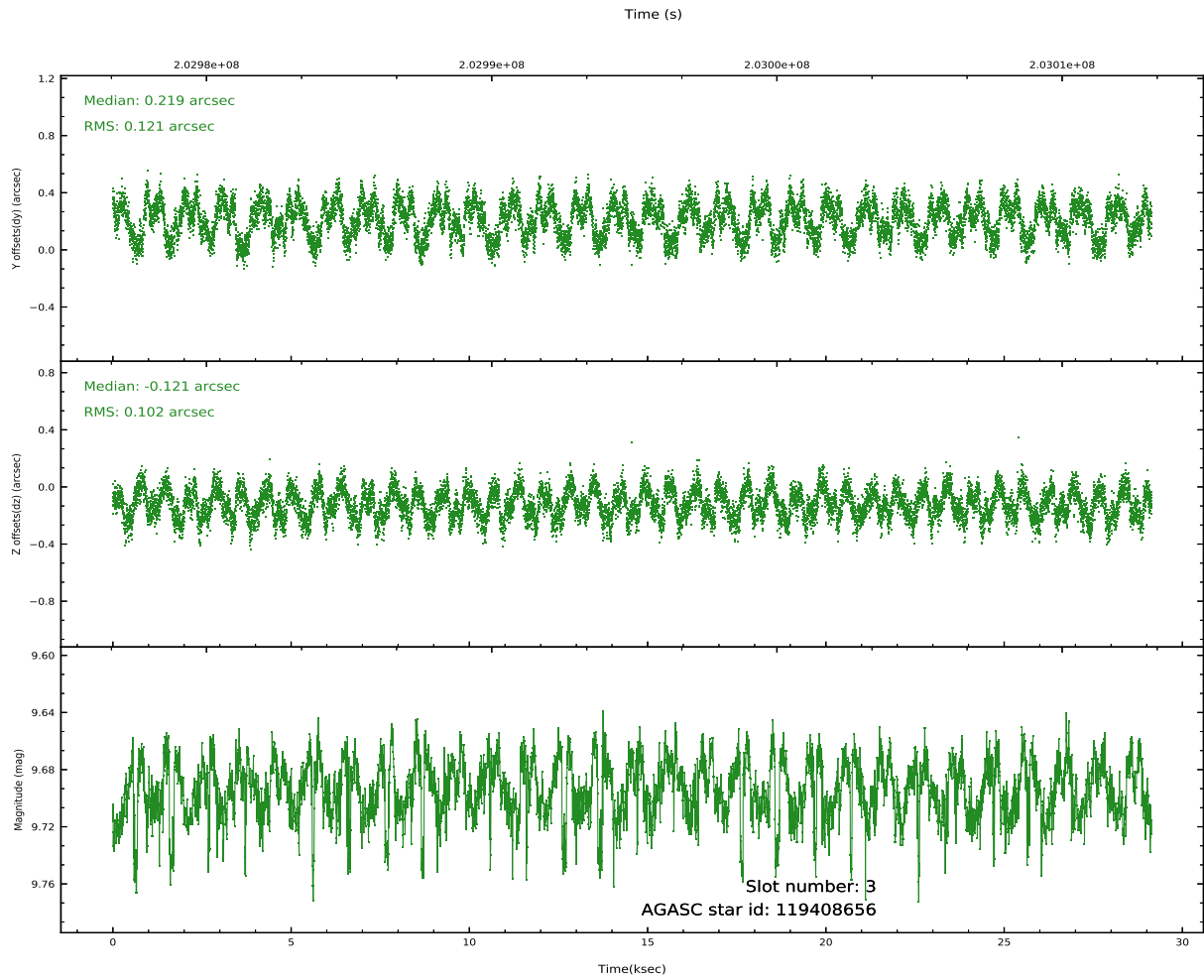
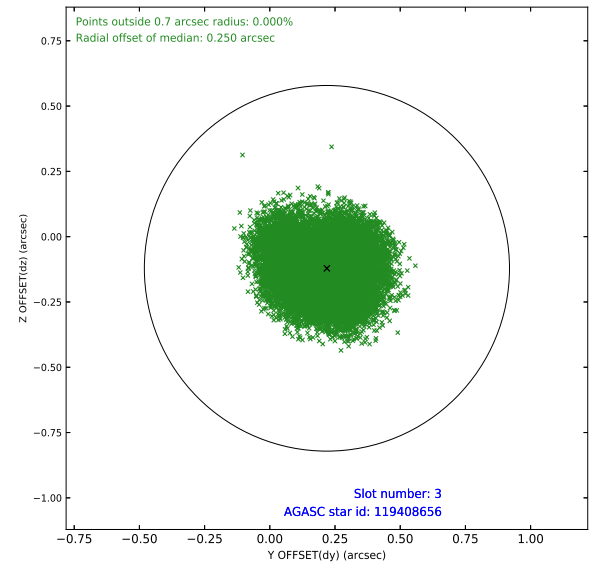
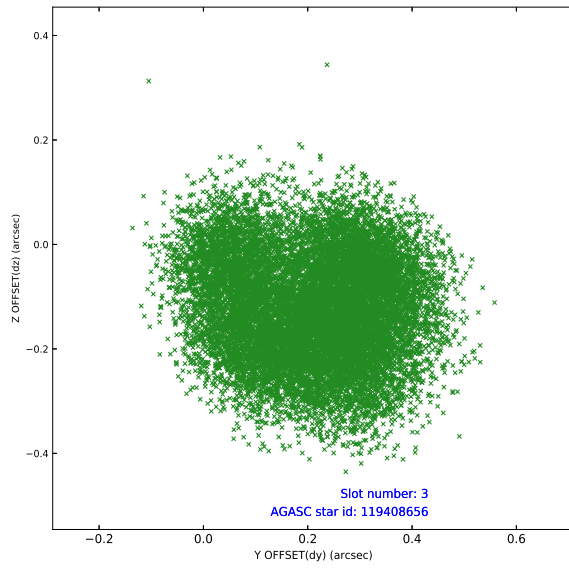


Slot Statistics

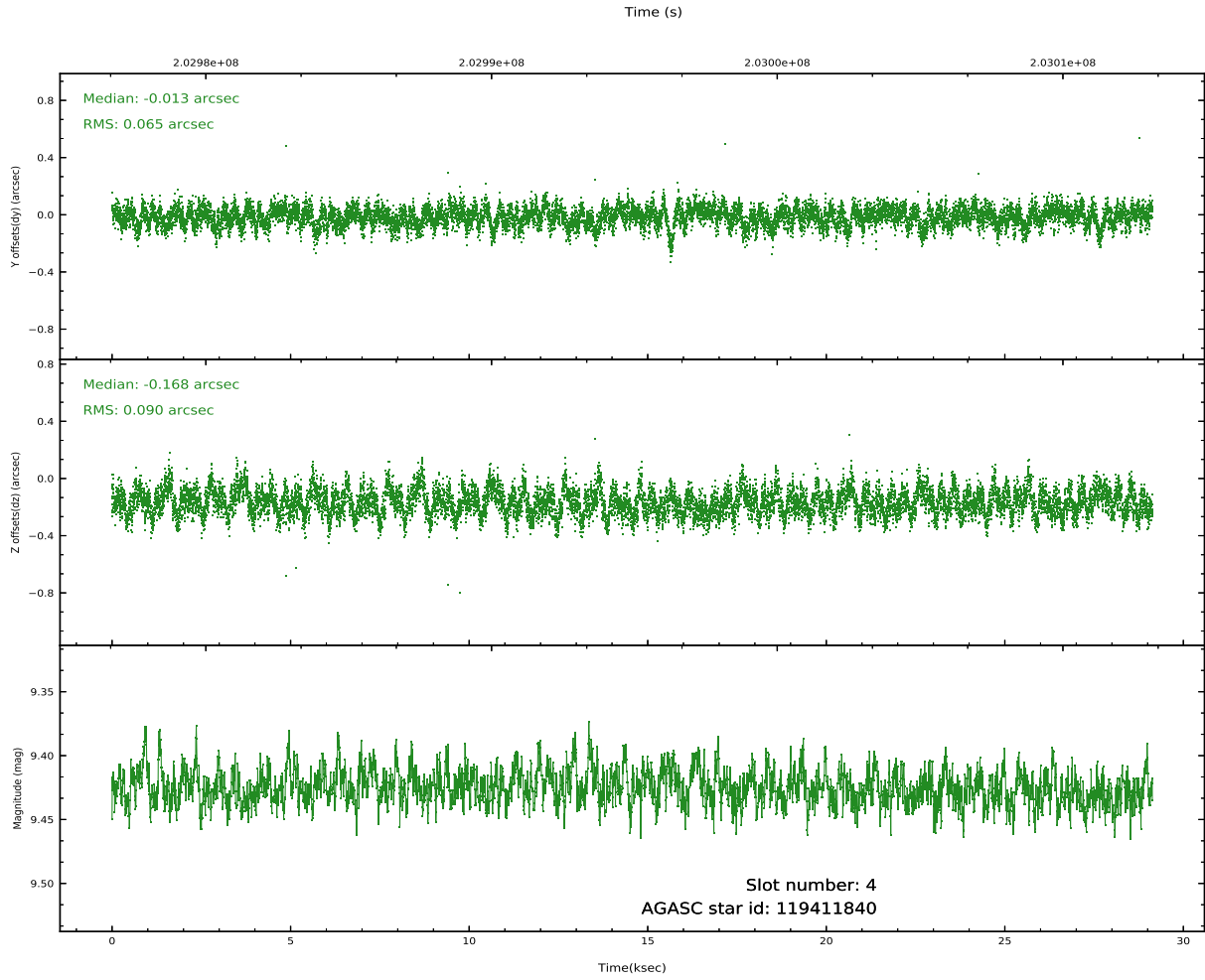
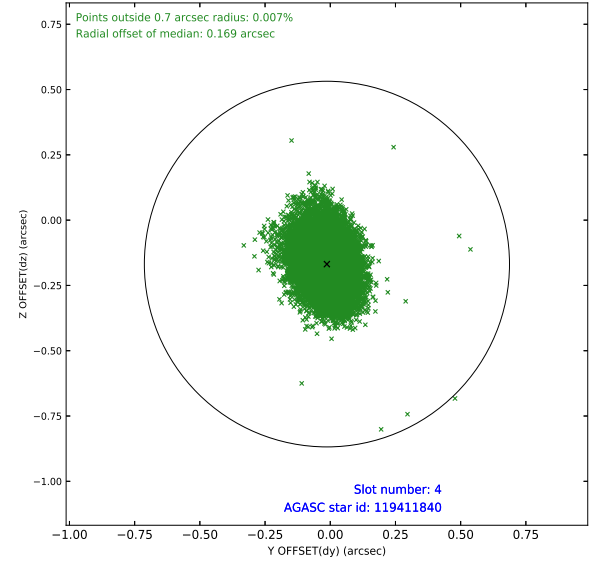
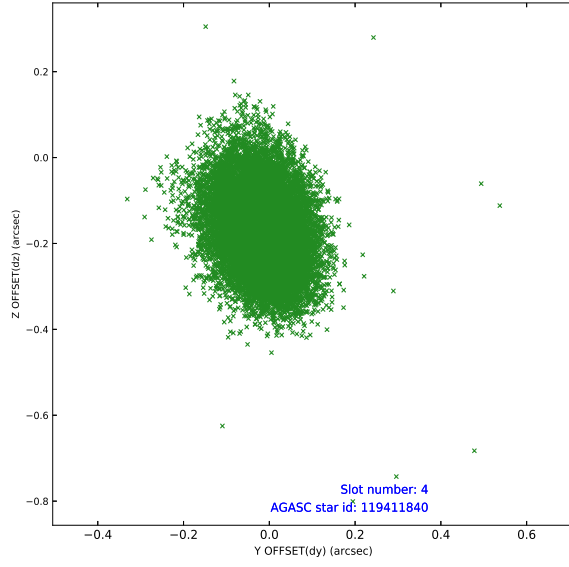
| pt | status | used | id        | mag  | n_pts | frac_pts | med_dy | med_dz | dr1   | dr2   | ra         | dec      | mean_y   | mea   |
|----|--------|------|-----------|------|-------|----------|--------|--------|-------|-------|------------|----------|----------|-------|
| 0  | FID    |      | ACIS-I-2  | 7.14 | 7105  | 1.000    | -0.079 | -0.098 | 0.009 | 0.017 | 0.000000   | 0.000000 | -760.27  | -838  |
| 1  | FID    |      | ACIS-I-4  | 7.19 | 7104  | 1.000    | 0.175  | 0.076  | 0.009 | 0.017 | 0.000000   | 0.000000 | 2153.99  | 1067  |
| 2  | FID    |      | ACIS-I-5  | 7.23 | 7106  | 1.000    | -0.197 | 0.091  | 0.011 | 0.018 | 0.000000   | 0.000000 | -1814.13 | 1065  |
| 3  | GUIDE  | used | 119408656 | 9.69 | 14183 | 1.000    | 0.219  | -0.121 | 0.174 | 0.254 | 222.086631 | 8.778551 | 1208.44  | 176   |
| 4  | GUIDE  | used | 119411840 | 9.43 | 14207 | 1.000    | -0.013 | -0.168 | 0.118 | 0.191 | 222.041386 | 9.490009 | -498.47  | -1739 |
| 5  | GUIDE  | used | 120325072 | 9.27 | 14210 | 1.000    | -0.109 | 0.152  | 0.086 | 0.140 | 222.613060 | 9.408510 | -1719.96 | -91   |
| 6  | GUIDE  | used | 120333112 | 7.51 | 14213 | 1.000    | -0.146 | 0.017  | 0.073 | 0.115 | 222.982560 | 8.825335 | -1156.95 | 2319  |
| 7  | GUIDE  | used | 120327320 | 9.67 | 14193 | 1.000    | 0.048  | 0.127  | 0.209 | 0.374 | 222.306742 | 8.399268 | 1626.48  | 1694  |

## 2.4 Star Slots

### 2.4.1 Slot 3

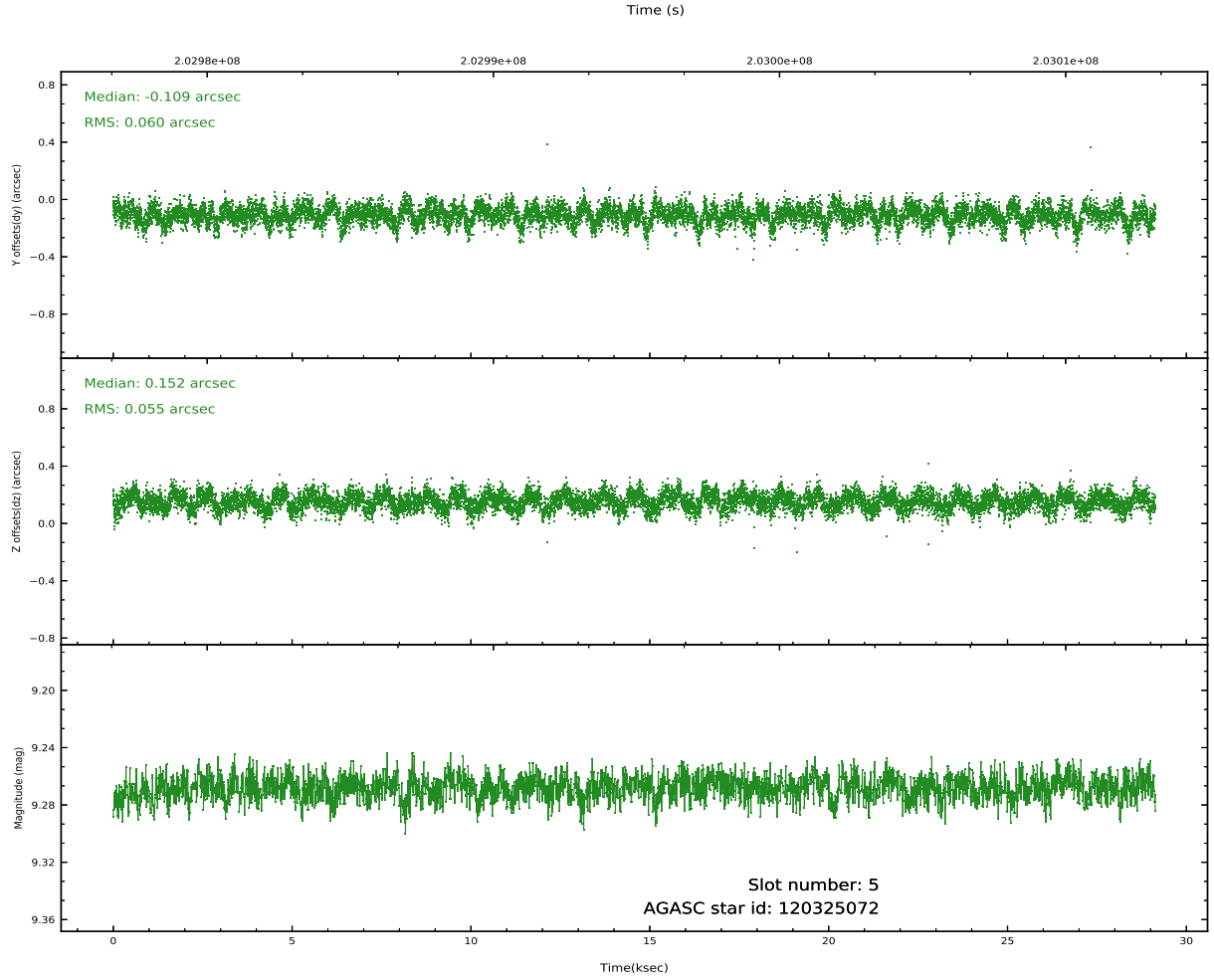
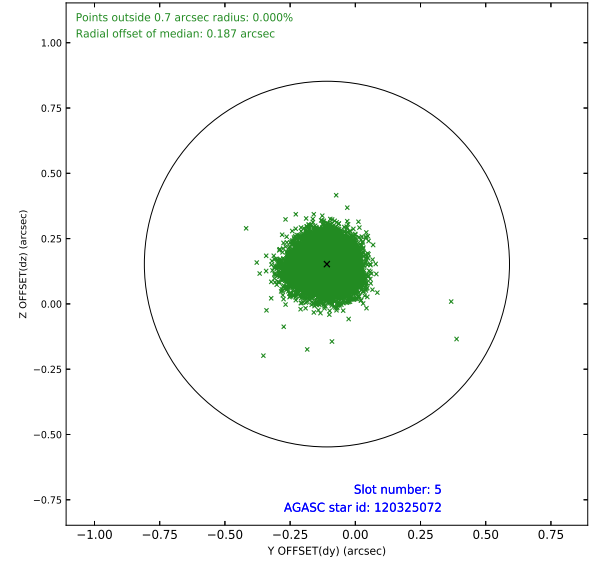
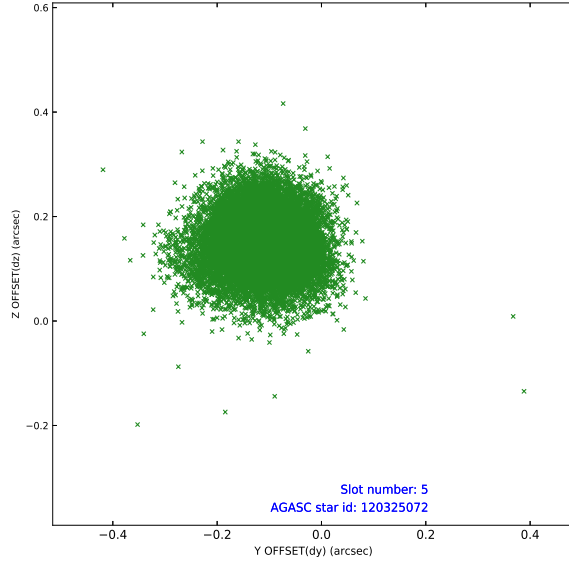


## 2.4.2 Slot 4

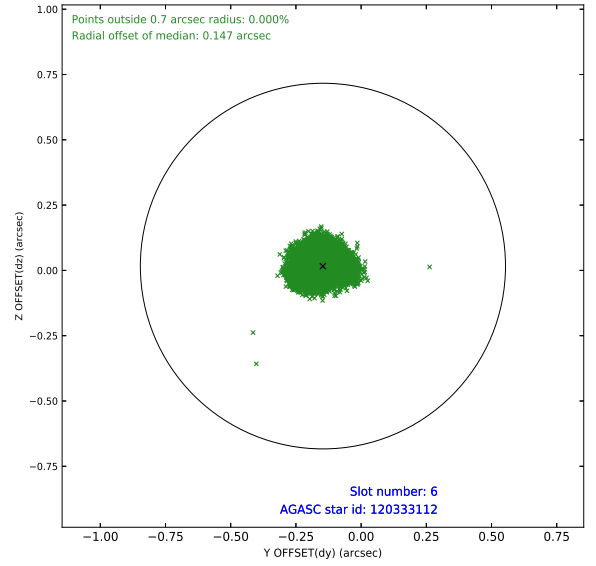
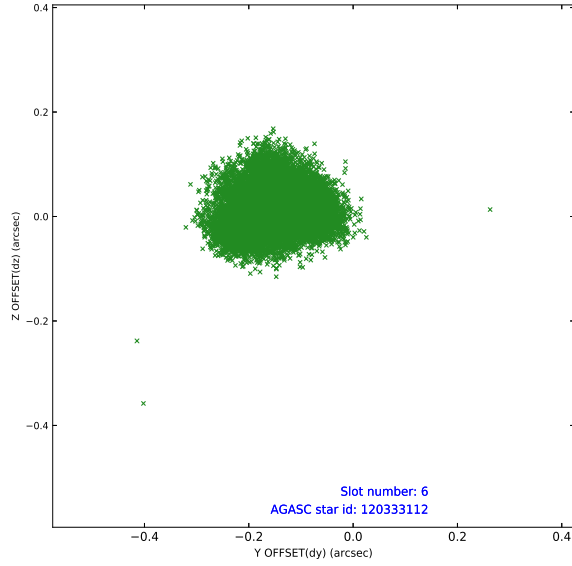




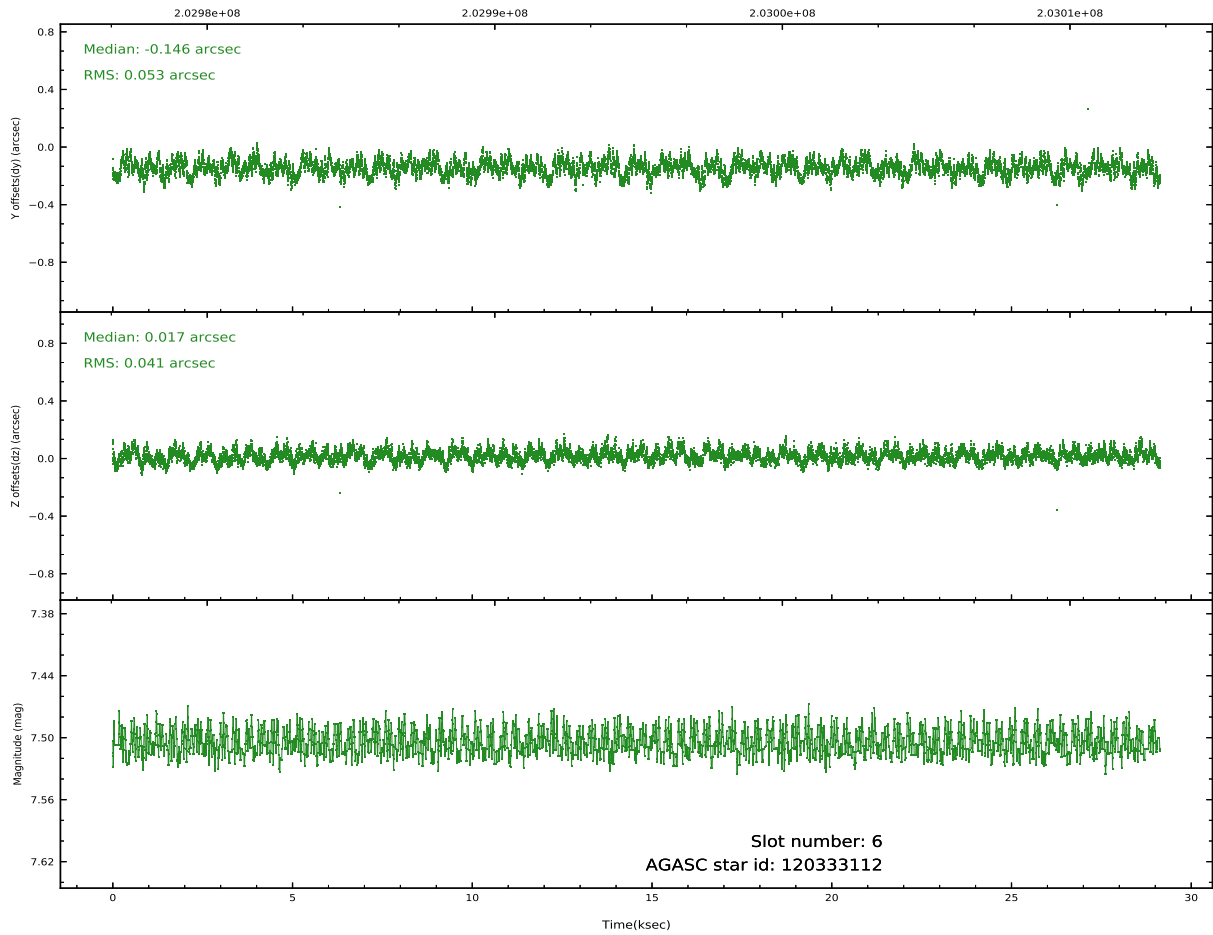
### 2.4.3 Slot 5



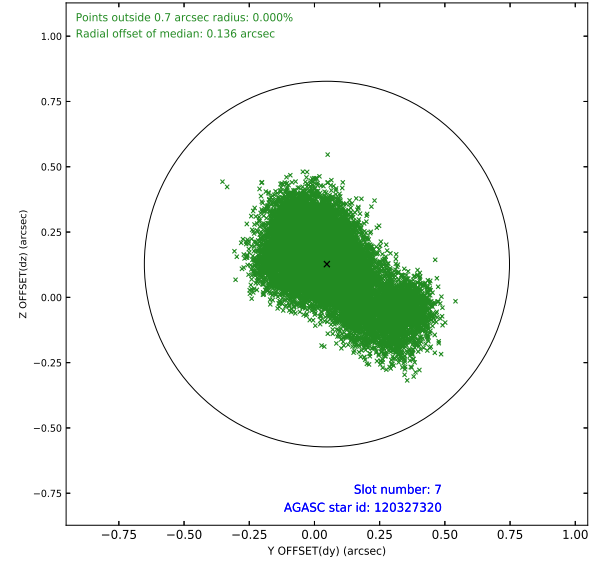
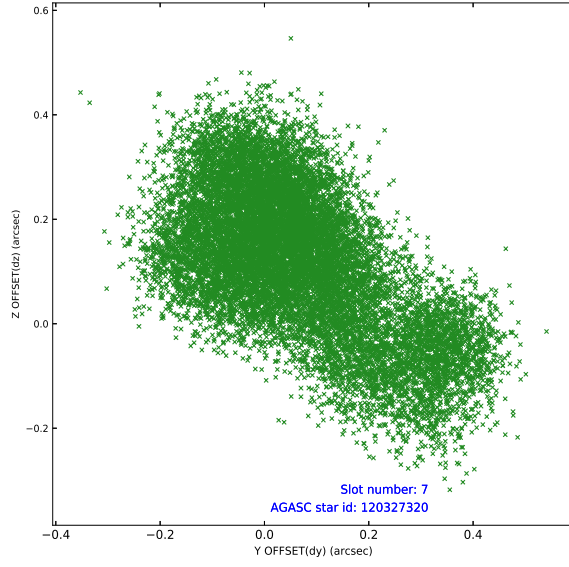
## 2.4.4 Slot 6



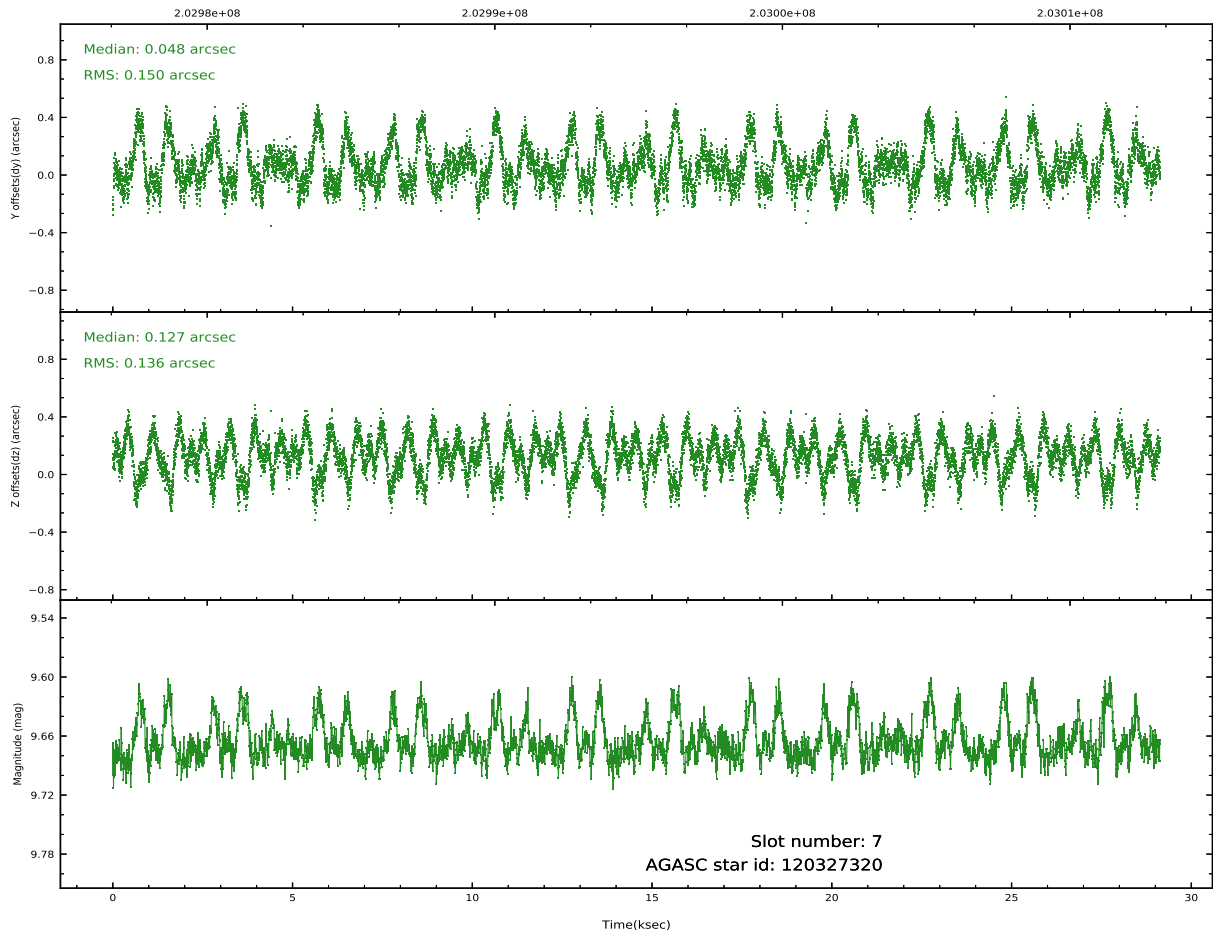
Time (s)



## 2.4.5 Slot 7

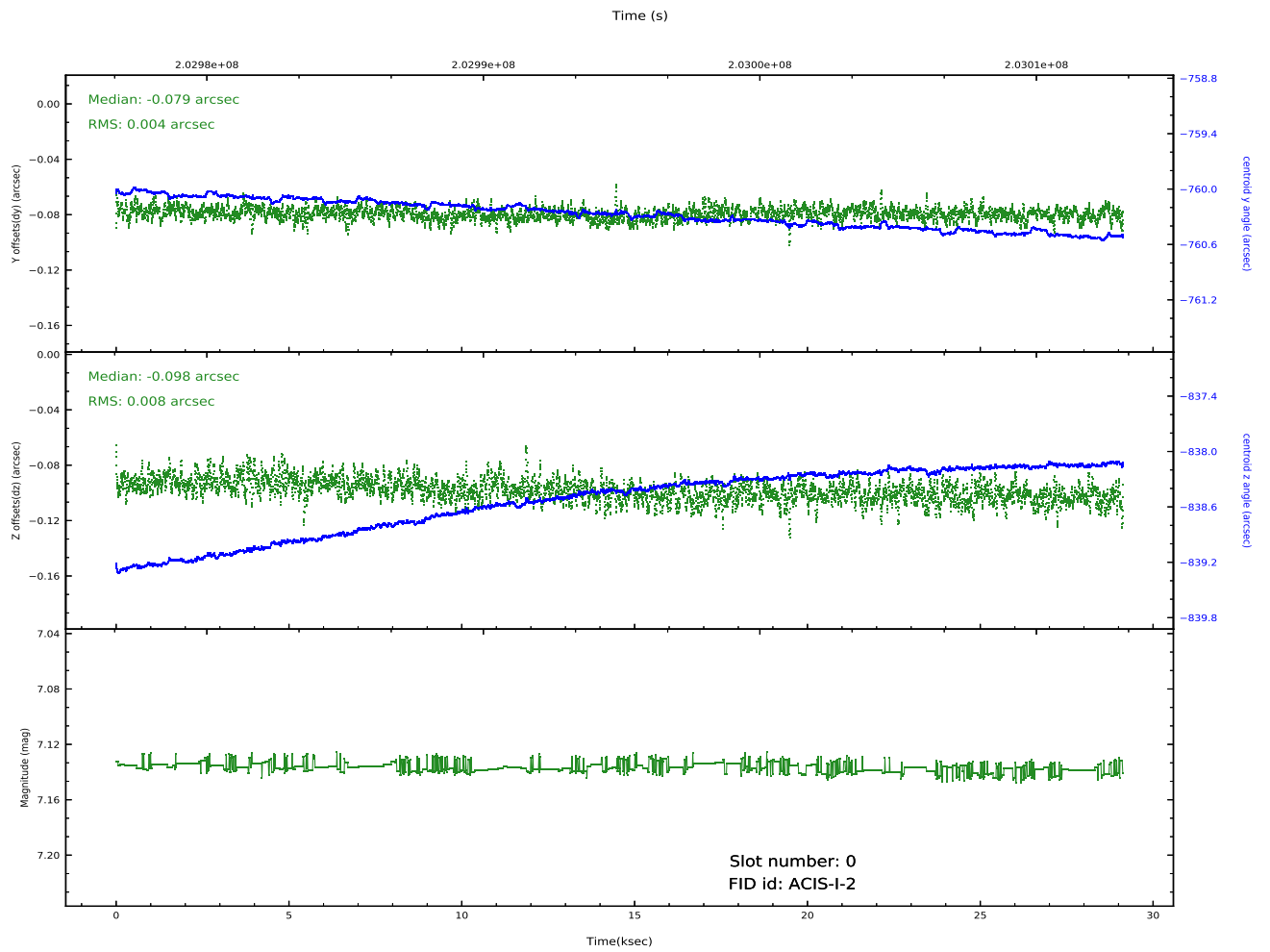
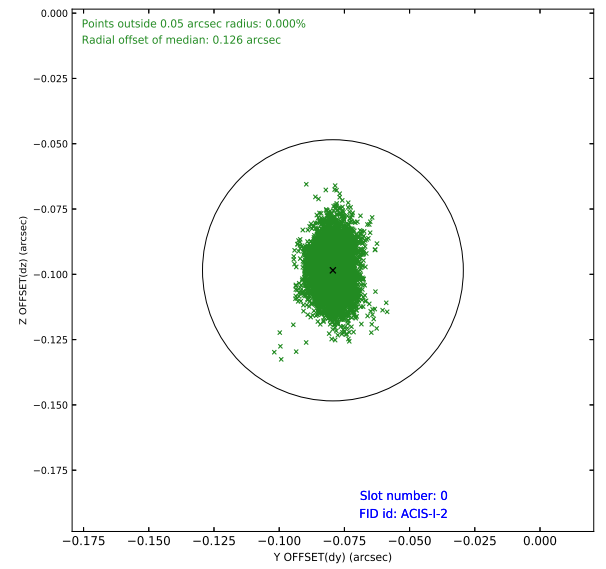
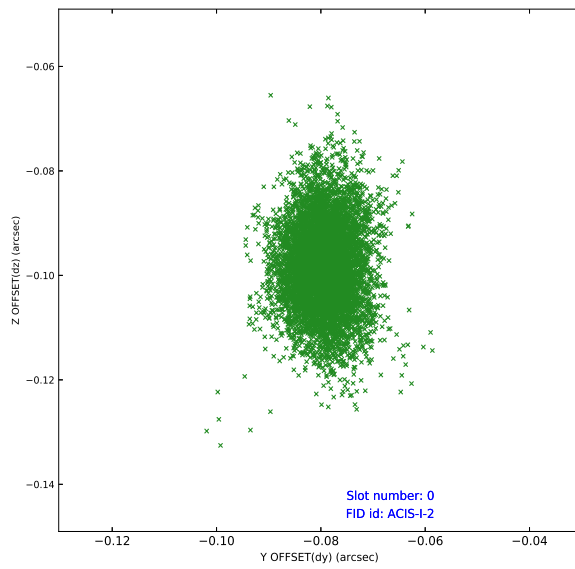


Time (s)

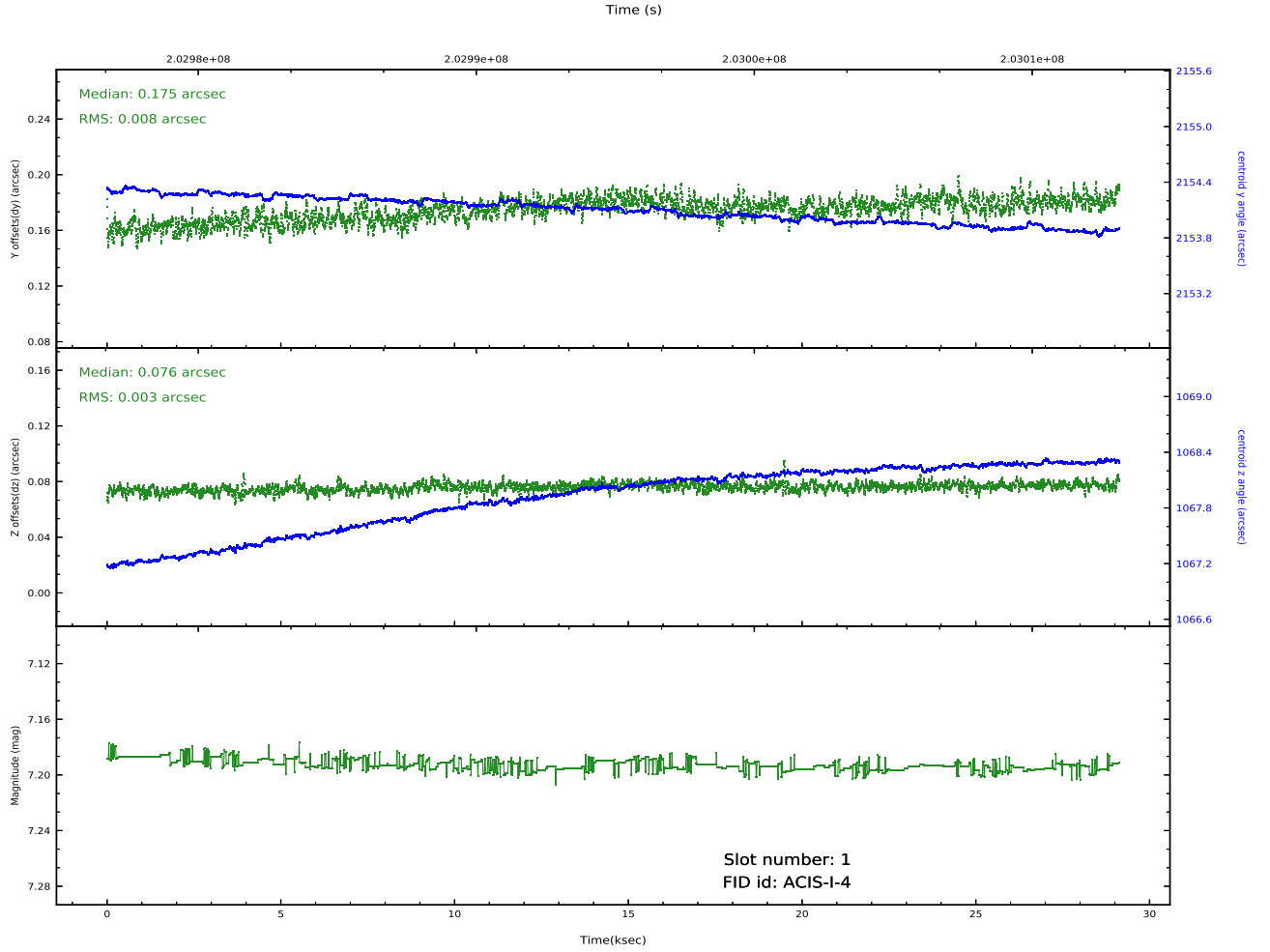
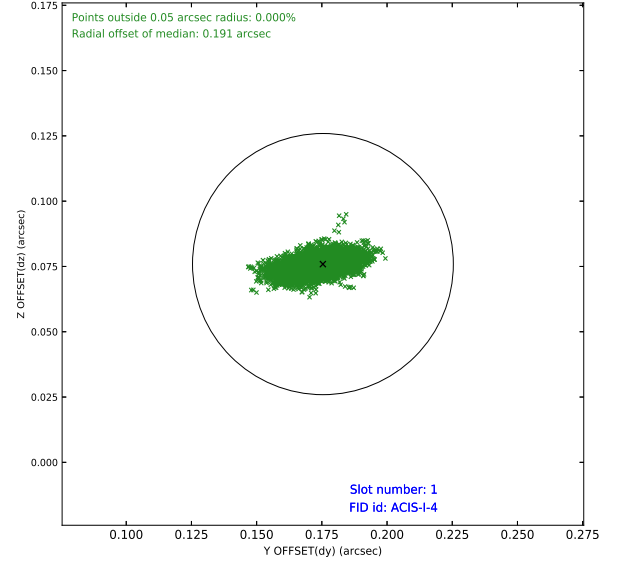
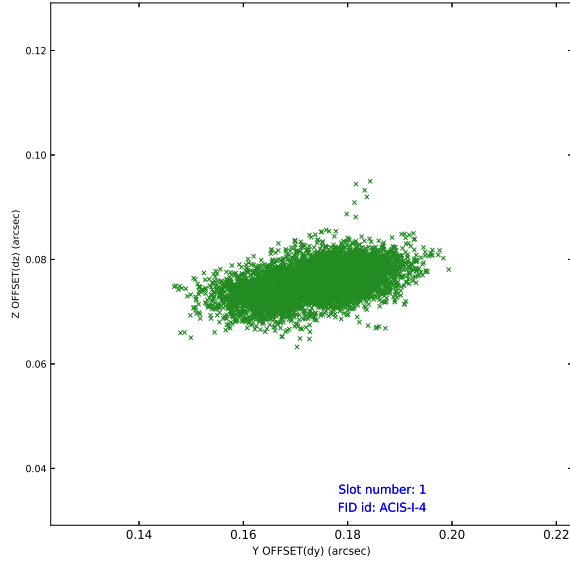


## 2.5 FID Slots

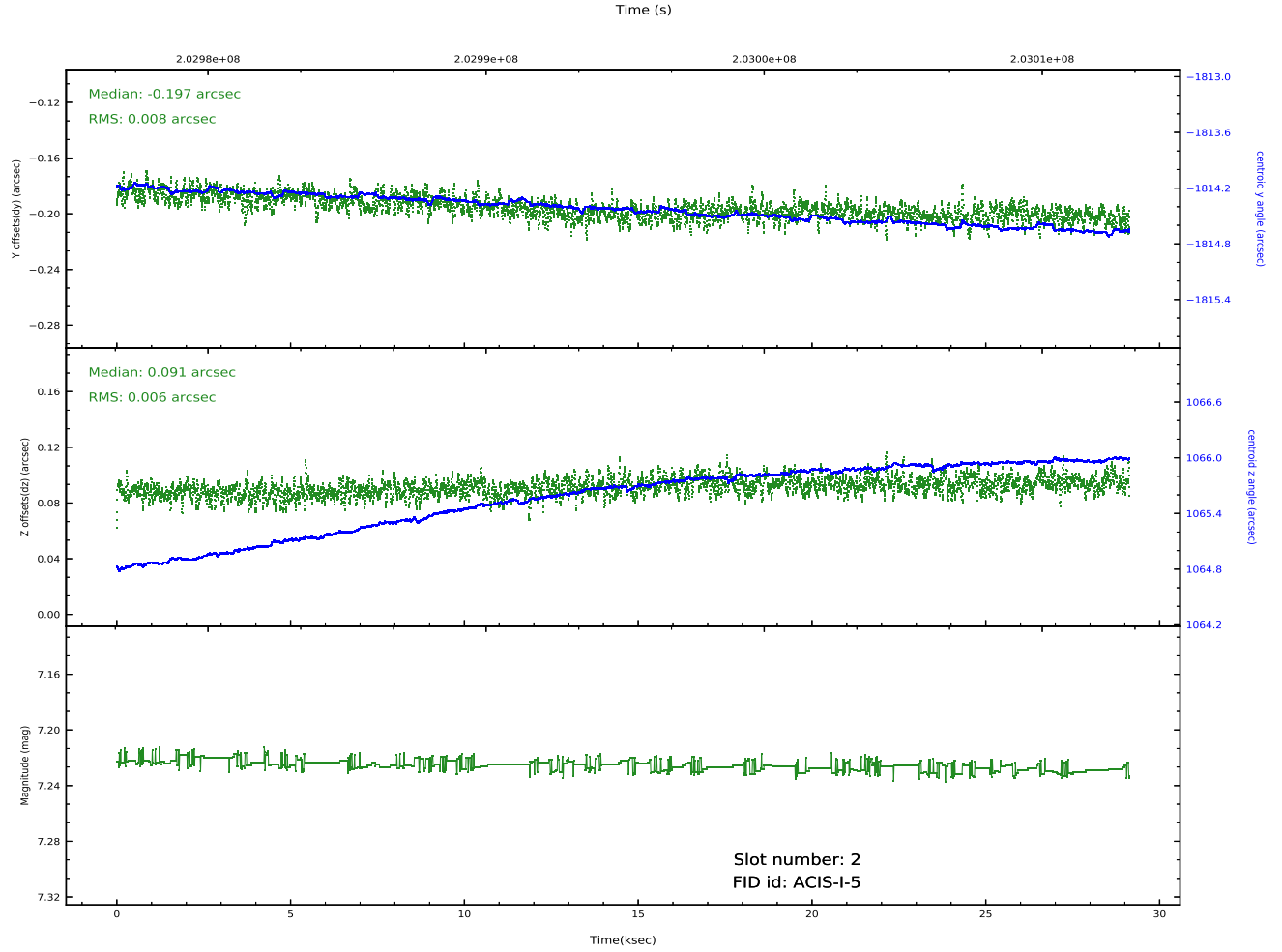
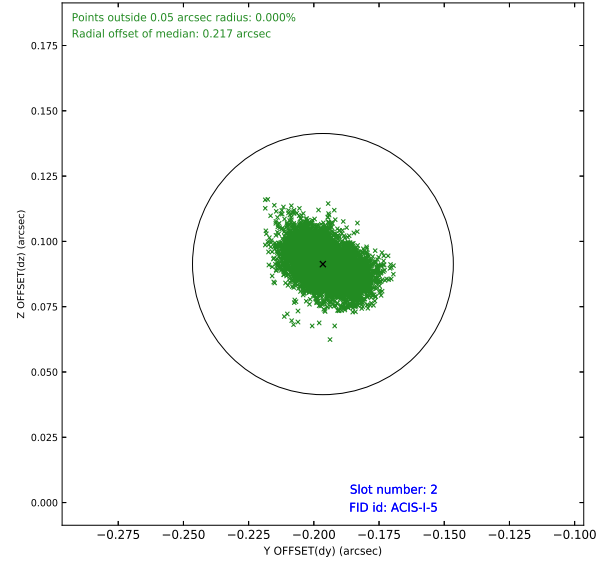
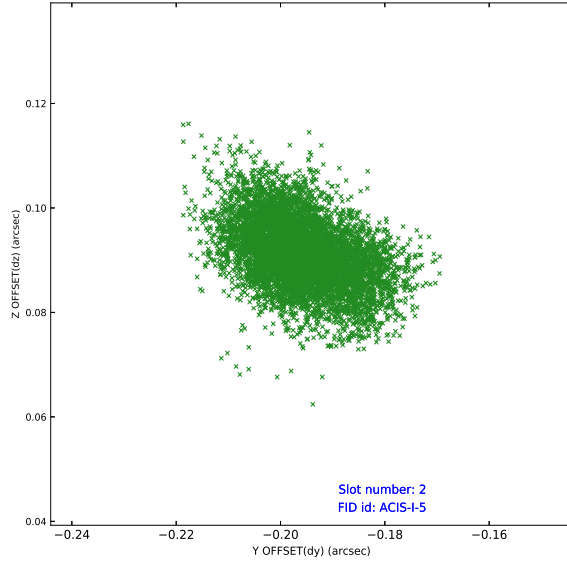
### 2.5.1 Slot 0



## 2.5.2 Slot 1



### 2.5.3 Slot 2



## A Summary

### A.1 Status

|                            |            |
|----------------------------|------------|
| V&V Scientist              | Jen Lauer  |
| V&V Date (YYYY-MM-DD)      | 2020.09.28 |
| V&V Edition                | 1          |
| V&V Disposition and Status | OK         |
| V&V Charge Time            | 29.123     |

### A.2 Comments