

# V&V Reference Report

## L2 ASCDS Version : 10.9.2

Observation 19623 - L2 Version 2  
Chandra X-Ray Center

L2 Processing Date : Oct 28 2020

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# 1 Front

|          |                                                                             |                                             |
|----------|-----------------------------------------------------------------------------|---------------------------------------------|
| seq_num  | 703420                                                                      | Sequence number                             |
| obs_id   | 19623                                                                       | Observation id                              |
| title    | MEASURING THE INNERMOST STABLE ORBIT USING<br>MICROLENSING OF THE FE K LINE | Proposal title                              |
| observer | George Chartas                                                              | Principal investigator                      |
| object   | RXJ1131-1231                                                                | Source name                                 |
| dtcycle  | 0                                                                           | &#160                                       |
| cycle    | P                                                                           | events from which exps?<br>Prim/Second/Both |
| ra_targ  | 172.965                                                                     | Observer's specified target RA<br>[deg]     |
| dec_targ | -12.5325                                                                    | Observer's specified target Dec<br>[deg]    |
| ra_nom   | 172.96657241824                                                             | Nominal RA [deg]                            |
| dec_nom  | -12.532020538349                                                            | Nominal Dec [deg]                           |
| roll_nom | 78.532171644872                                                             | Nominal Roll [deg]                          |
| revision | 2                                                                           | Processing version of data                  |
| ontime   | 24670.282389641                                                             | Sum of GTIs [s]                             |
| livetime | 22374.643923128                                                             | Livetime [s]                                |
| ontime7  | 24670.282389641                                                             | Sum of GTIs [s]                             |
| l2events | 30970                                                                       | Number of level 2 events                    |

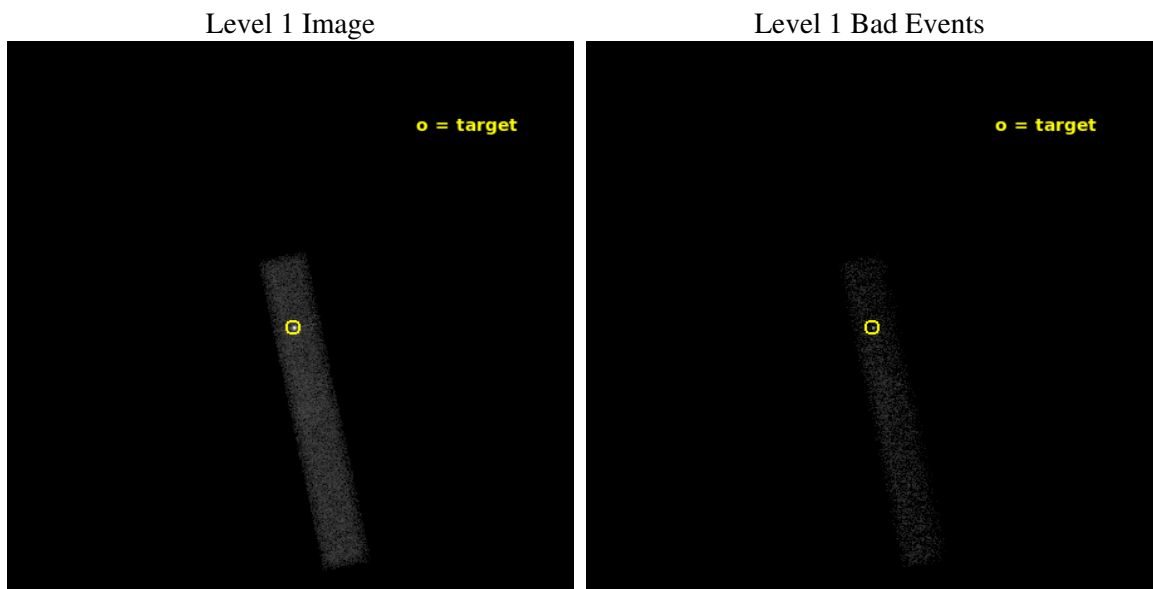




## 2 OBI

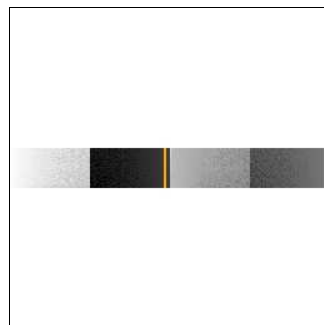
### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias

Chip 7



### 2.1.3 Parameters

|          |                     |                                |                |                 |                                         |
|----------|---------------------|--------------------------------|----------------|-----------------|-----------------------------------------|
| obi_num  | 0                   | Obi number                     | sched_exp_time | 24600.000000    | [s] Scheduled observation exposure time |
| ascdsver | 10.9.2              | Processing system revision     | ontime         | 24670.282389641 | Sum of GTIs [s]                         |
| caldsver | 4.9.3               | &#160                          | ontime7        | 24670.282389641 | Sum of GTIs [s]                         |
| date     | 2020-10-28T03:56:50 | Date and time of file creation | l1events       | 48152           | Number of level 1 events                |
| revision | 2                   | Processing version of data     |                |                 |                                         |

### 2.1.4 Events

|                 |              |
|-----------------|--------------|
|                 | <b>ccd 7</b> |
| level 1 events  | 48152        |
| rejected events | 16464        |
| rejected %      | 34%          |

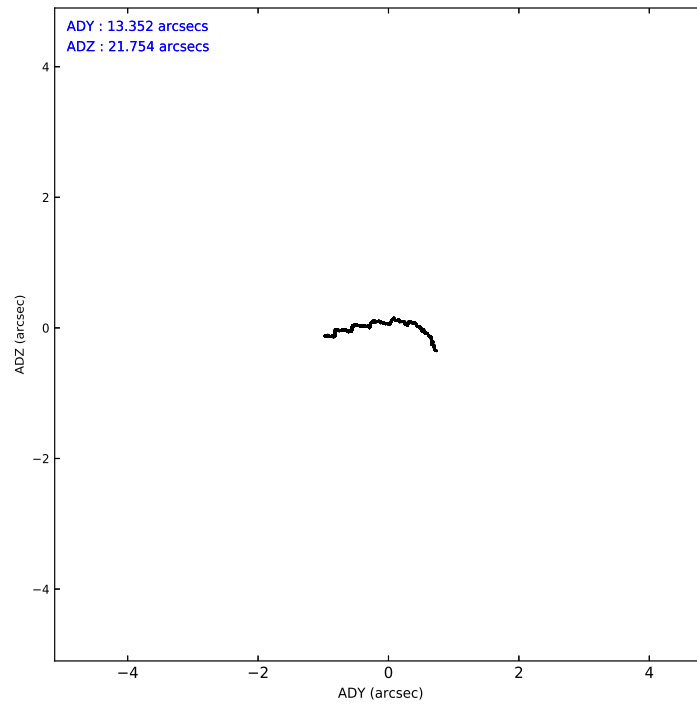
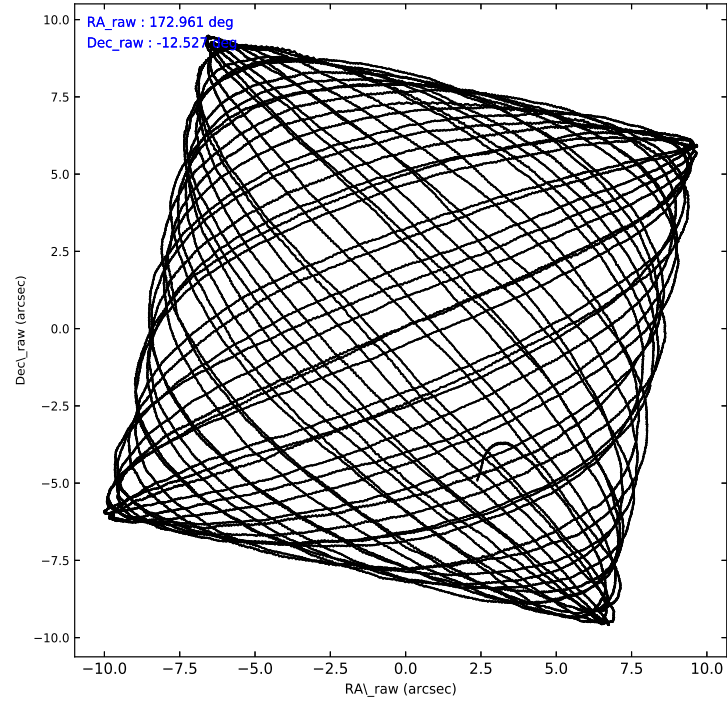
|                |              |
|----------------|--------------|
|                | <b>ccd 7</b> |
| grade 0 events | 5675         |
|                | 11%          |
| grade 1 events | 135          |
|                | 0%           |
| grade 2 events | 7509         |
|                | 15%          |
| grade 3 events | 3775         |
|                | 7%           |
| grade 4 events | 3737         |
|                | 7%           |
| grade 5 events | 3599         |
|                | 7%           |
| grade 6 events | 10992        |
|                | 22%          |
| grade 7 events | 12730        |
|                | 26%          |

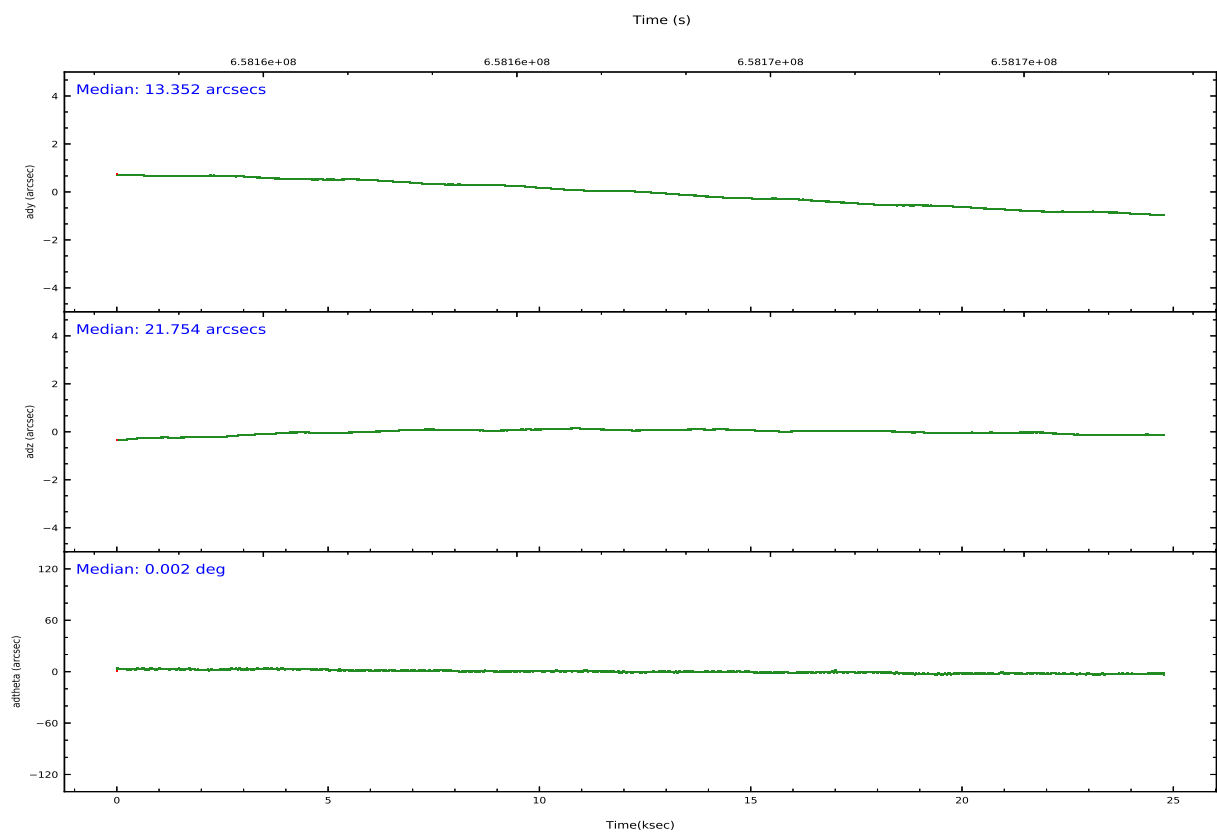
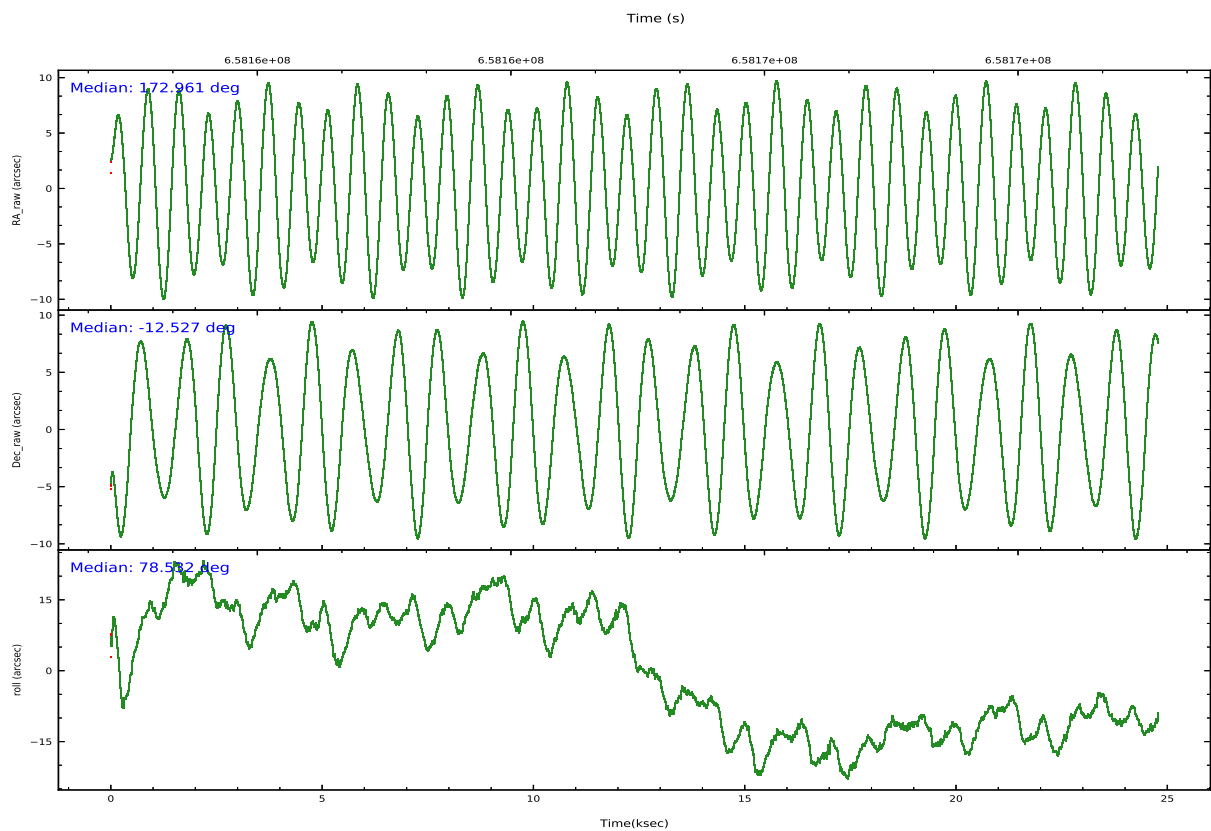
## 2.2 Compared Parameters

| Parameter                         | Planned             | Actual               |
|-----------------------------------|---------------------|----------------------|
| Instrument                        | ACIS                | ACIS                 |
| Detector                          | ACIS-7              | ACIS-7               |
| Grating                           | NONE                | NONE                 |
| Data mode                         | VFAINT              | VFAINT               |
| Observation mode                  | POINTING            | POINTING             |
| [deg] Pointing RA                 | 172.970424          | 172.96657241824      |
| [deg] Pointing Dec                | -12.552927          | -12.532020538349     |
| [deg] Pointing Roll               | 78.379959           | 78.53217164487199    |
| [mm] SIM focus pos                | -0.684267           | -0.6828225247311905  |
| [mm] SIM defocus                  | 0                   | 0.001444936568705701 |
| [mm] SIM translation stage pos    | -190.132523         | -190.145094680475    |
| [mm] SIM translation stage offset | 0                   | 0.01257209746719923  |
| [s] Observation start time (MET)  | 658152714.184000    | 658151831.4418       |
| Observation start date            | 2018-11-09T12:10:45 | 2018-11-09T11:57:11  |
| [s] Observation end time (MET)    | 658177314.184000    | 658177861.83085      |
| Observation end date              | 2018-11-09T19:00:45 | 2018-11-09T19:11:01  |
| Read mode                         | TIMED               | TIMED                |

| Parameter                             | Planned   | Actual  |
|---------------------------------------|-----------|---------|
| Obspar version number                 | 8         | 8       |
| Obspar file type                      | PREDICTED | ACTUAL  |
| Obspar update status                  | NONE      | UPDATED |
| Number of optional ACIS chips dropped | 0         | 0       |
| On-chip summing requested             | N         | N       |
| Subarray requested                    | CUSTOM    | 1/8     |
| Subarray start row                    | 449       | 449     |
| Subarray row count                    | 128       | 128     |
| Alternating exposures requested       | N         | N       |
| [s] Primary exposure time             | 0.000000  | 0.4     |

## 2.3 Aspect



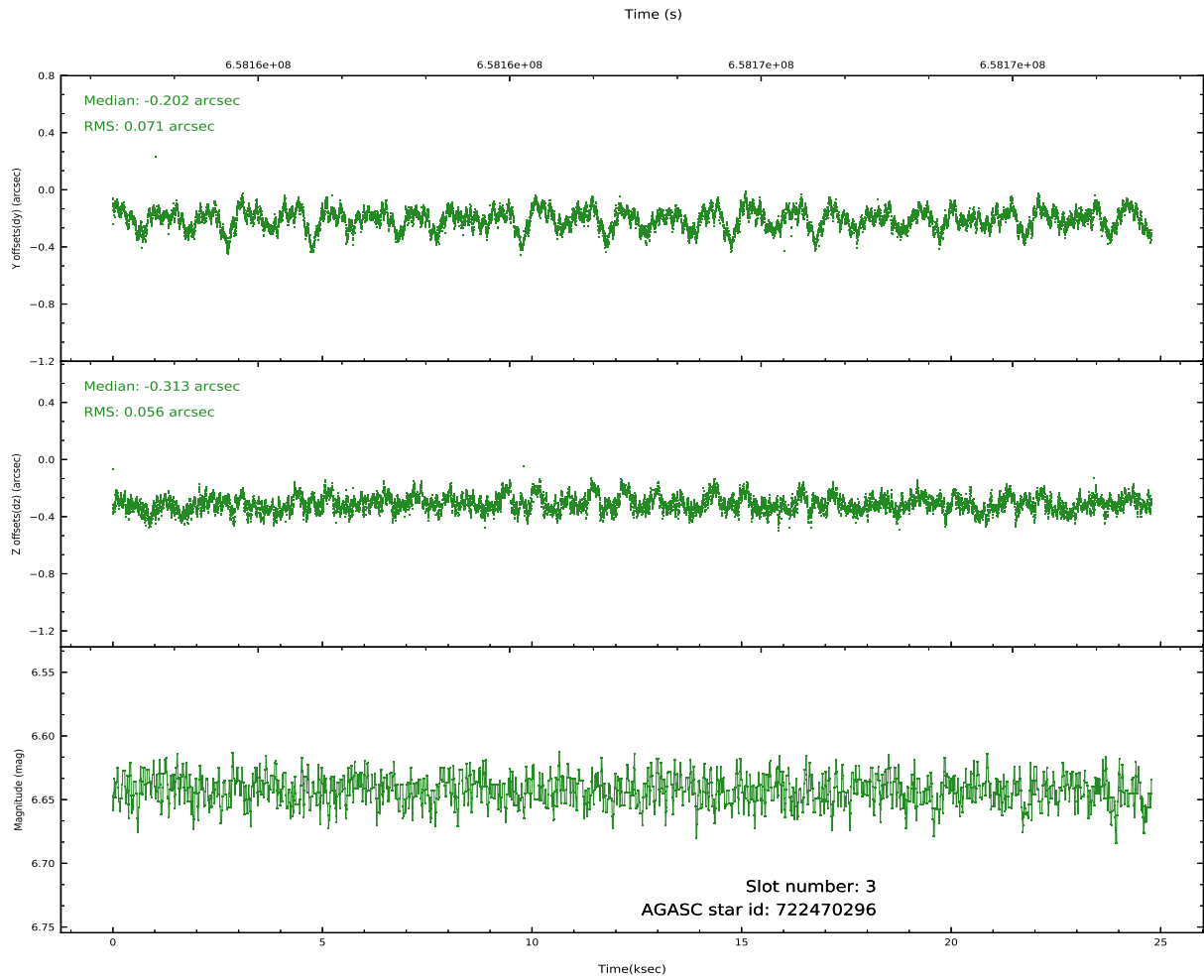
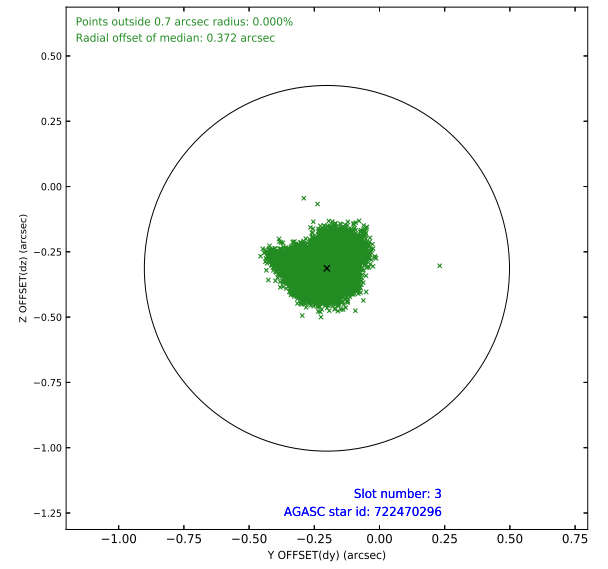
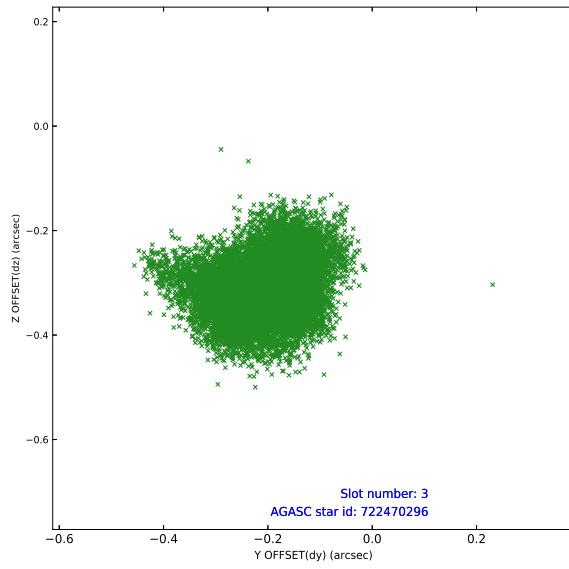


Slot Statistics

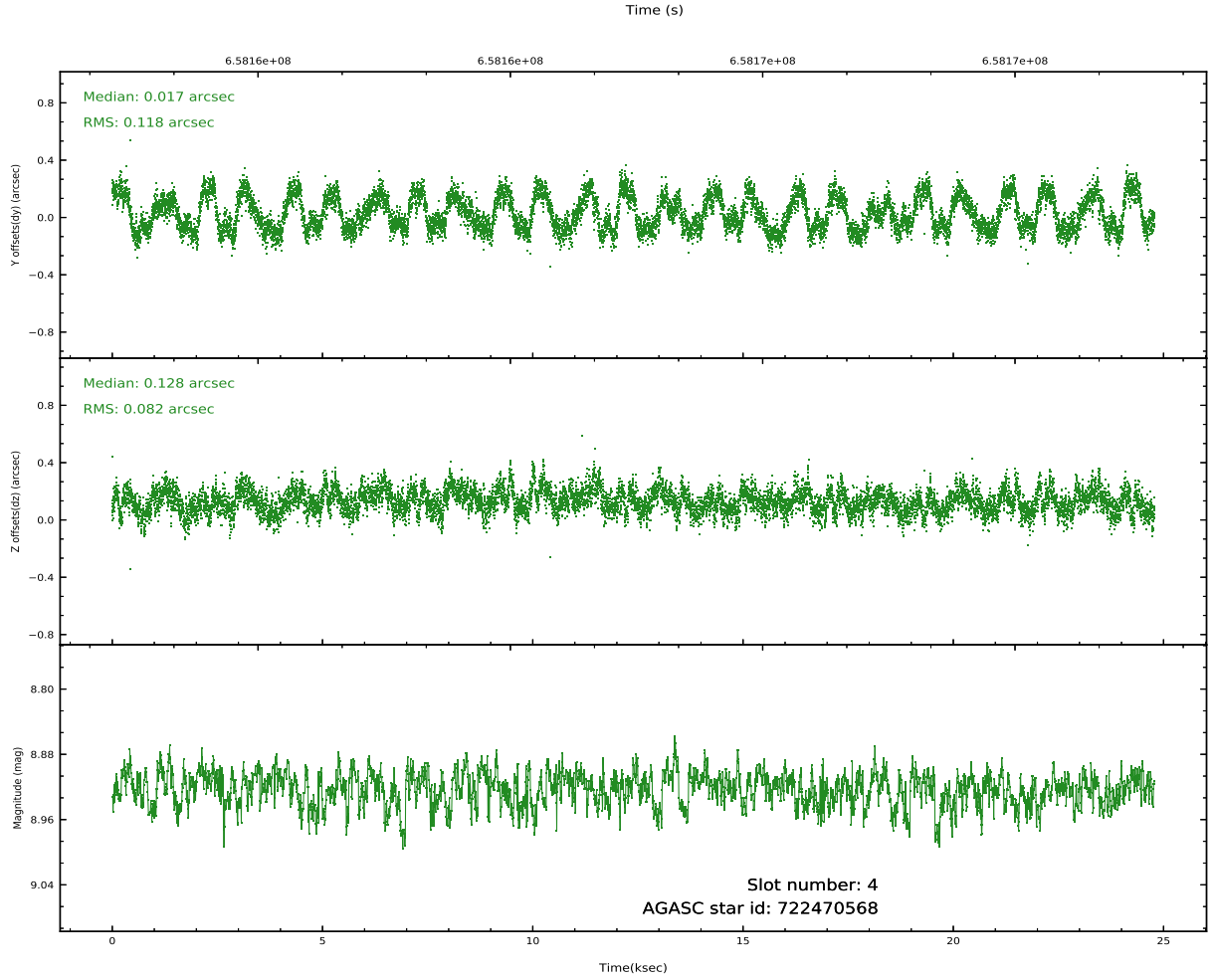
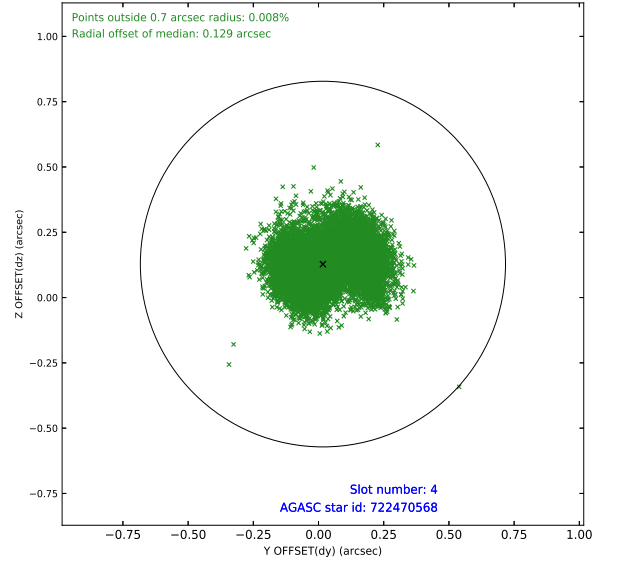
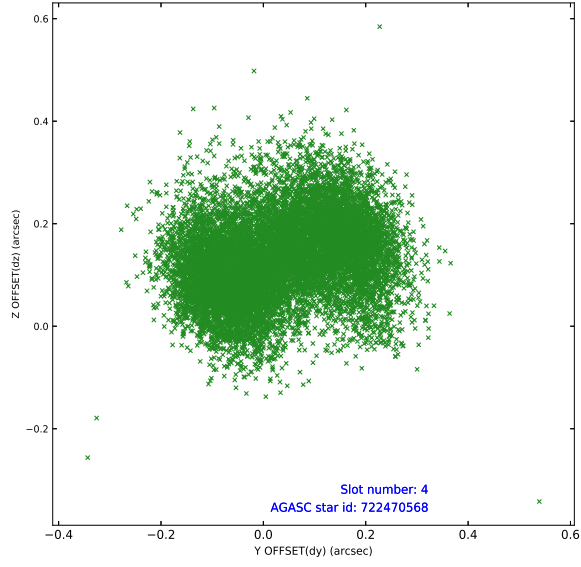
| pt | status | used | id        | mag  | n_pts | frac_pts | med_dy | med_dz | dr1   | dr2   | ra         | dec        | mean_y   | mea   |
|----|--------|------|-----------|------|-------|----------|--------|--------|-------|-------|------------|------------|----------|-------|
| 0  | FID    |      | ACIS-S-1  | 7.10 | 6045  | 1.000    | 0.376  | -0.238 | 0.018 | 0.035 | 0.000000   | 0.000000   | 929.97   | -1739 |
| 1  | FID    |      | ACIS-S-5  | 7.12 | 6044  | 1.000    | -0.342 | 0.287  | 0.027 | 0.058 | 0.000000   | 0.000000   | -1819.43 | 159   |
| 2  | FID    |      | ACIS-S-6  | 7.25 | 6042  | 1.000    | -0.057 | -0.037 | 0.016 | 0.033 | 0.000000   | 0.000000   | 395.28   | 802   |
| 3  | GUIDE  | used | 722470296 | 6.64 | 12089 | 1.000    | -0.202 | -0.313 | 0.098 | 0.154 | 172.921689 | -12.381367 | 570.54   | 292   |
| 4  | GUIDE  | used | 722470568 | 8.92 | 12080 | 1.000    | 0.017  | 0.128  | 0.158 | 0.231 | 173.210269 | -12.342558 | 911.63   | -673  |
| 5  | GUIDE  | used | 722473176 | 9.42 | 12077 | 1.000    | -0.111 | -0.129 | 0.201 | 0.336 | 172.599746 | -12.066793 | 1450.32  | 1630  |
| 6  | GUIDE  | used | 722871728 | 9.64 | 12068 | 1.000    | 0.214  | 0.236  | 0.254 | 0.400 | 173.202235 | -12.568355 | 109.89   | -808  |
| 7  | GUIDE  | used | 722873464 | 7.30 | 12084 | 1.000    | 0.078  | 0.082  | 0.122 | 0.192 | 172.661543 | -13.050266 | -1973.11 | 699   |

## 2.4 Star Slots

### 2.4.1 Slot 3

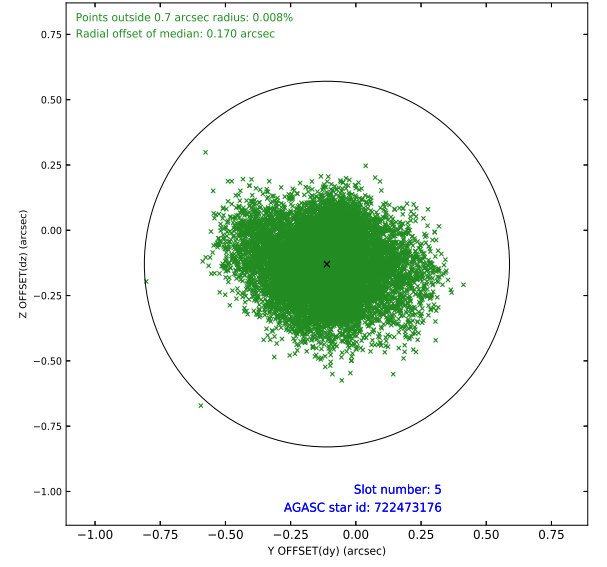
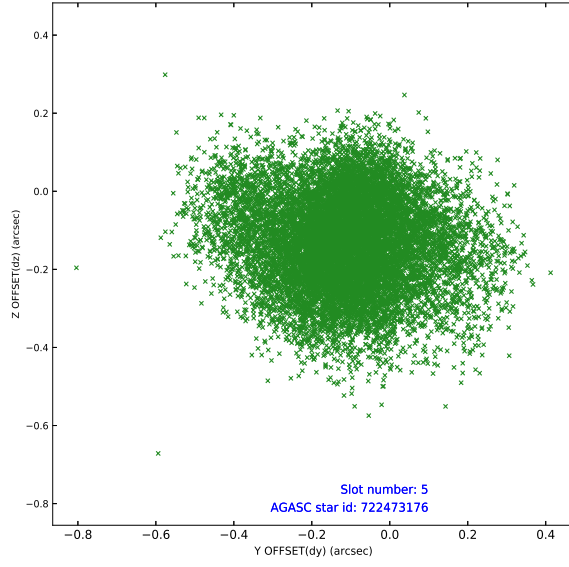


## 2.4.2 Slot 4

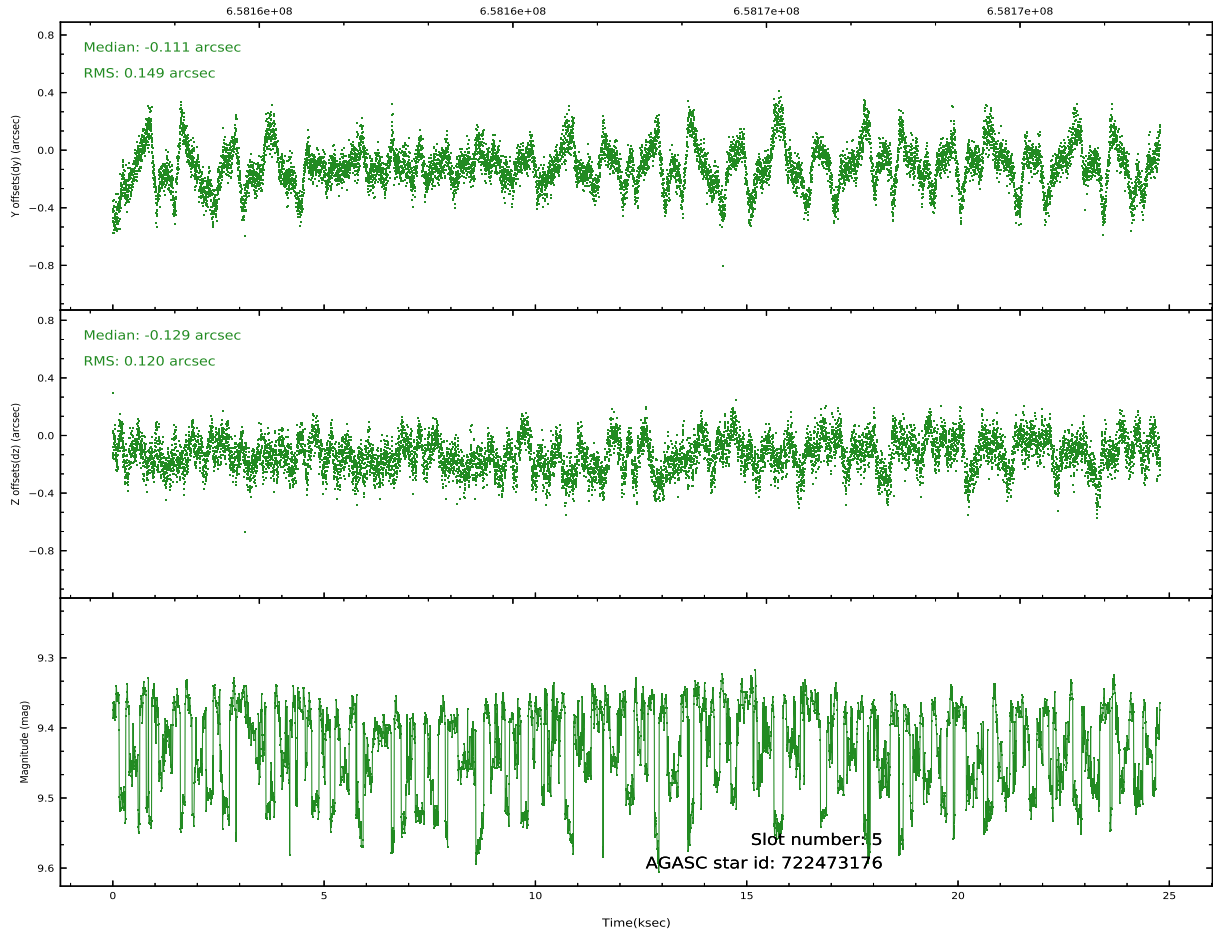




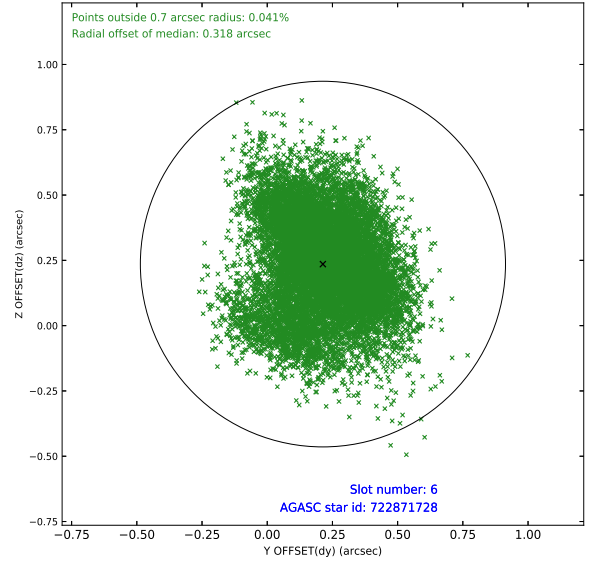
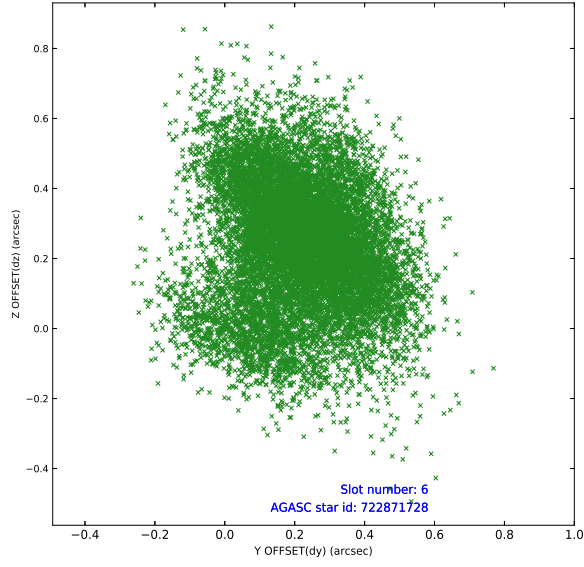
### 2.4.3 Slot 5



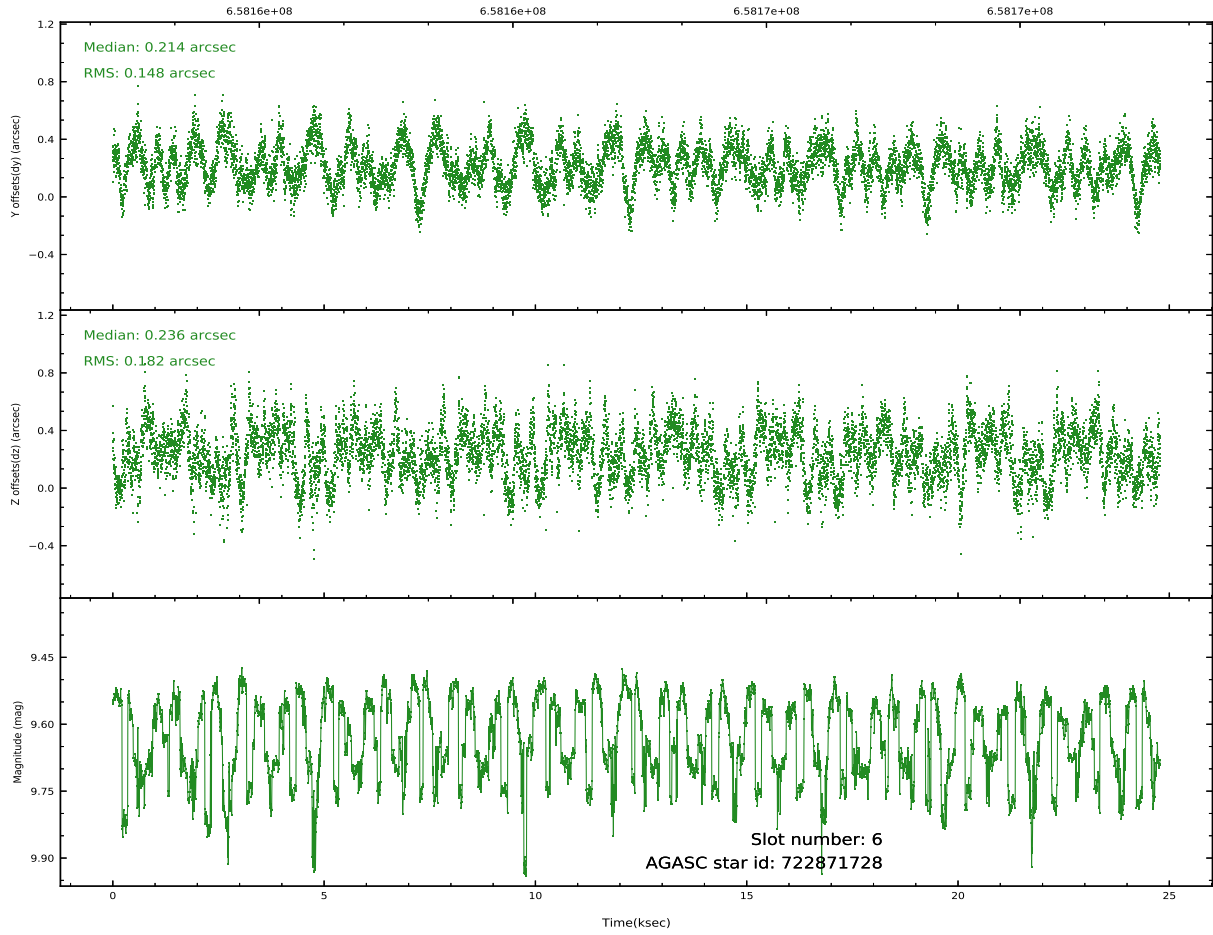
Time (s)



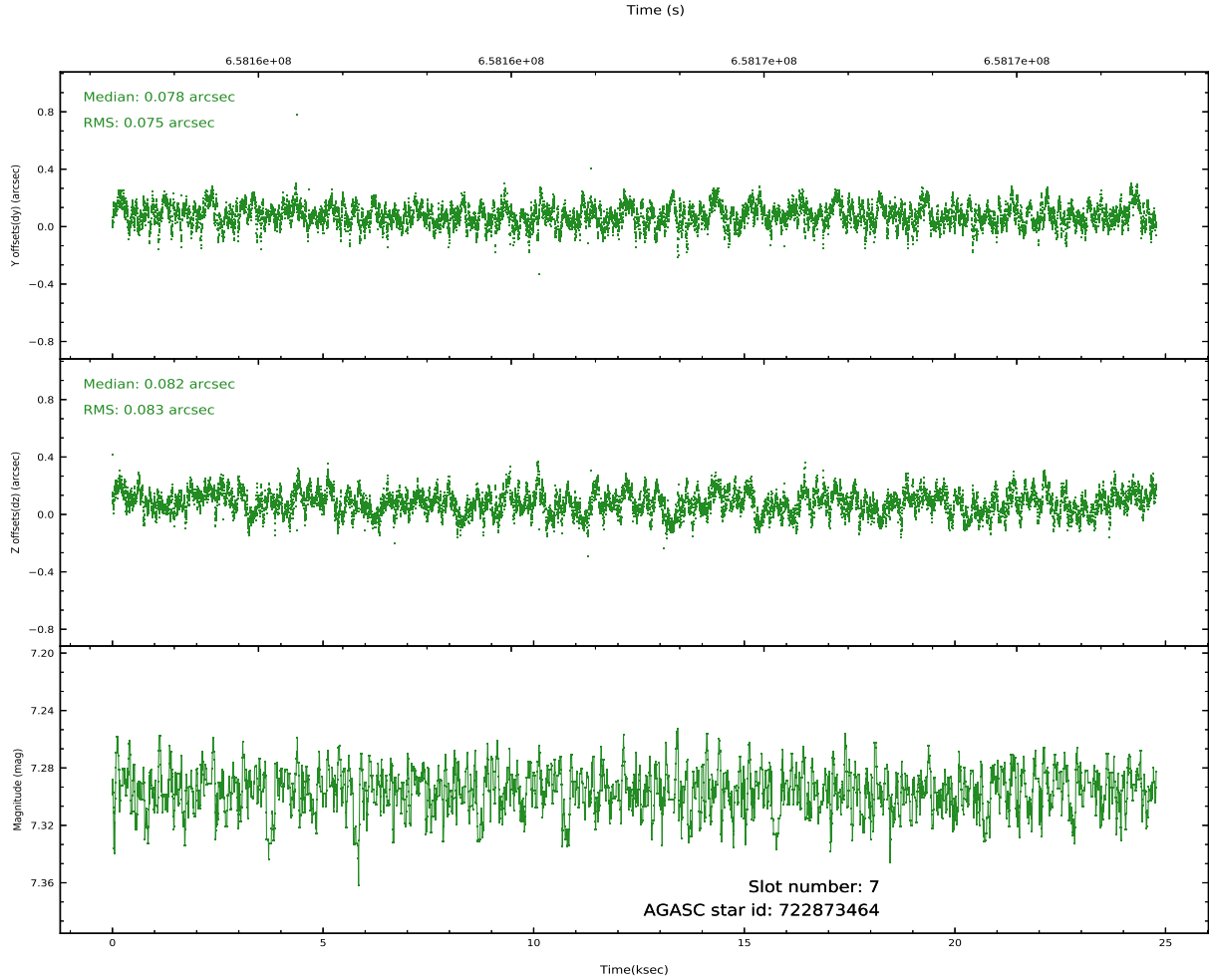
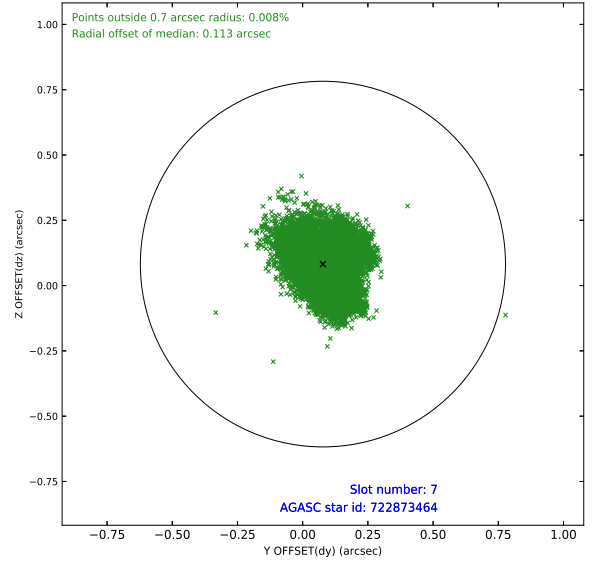
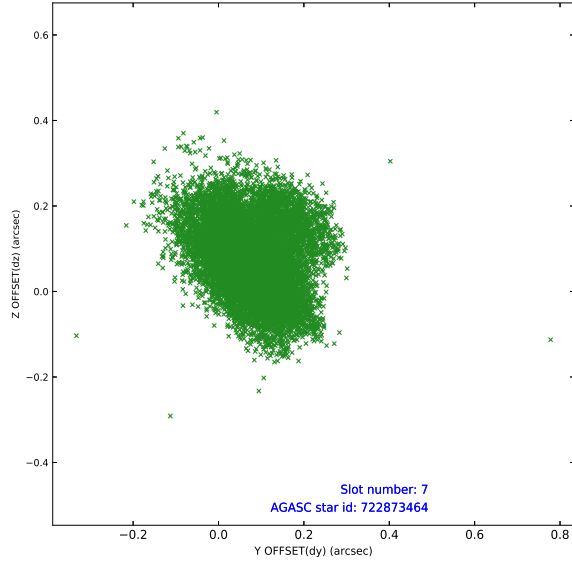
## 2.4.4 Slot 6



Time (s)

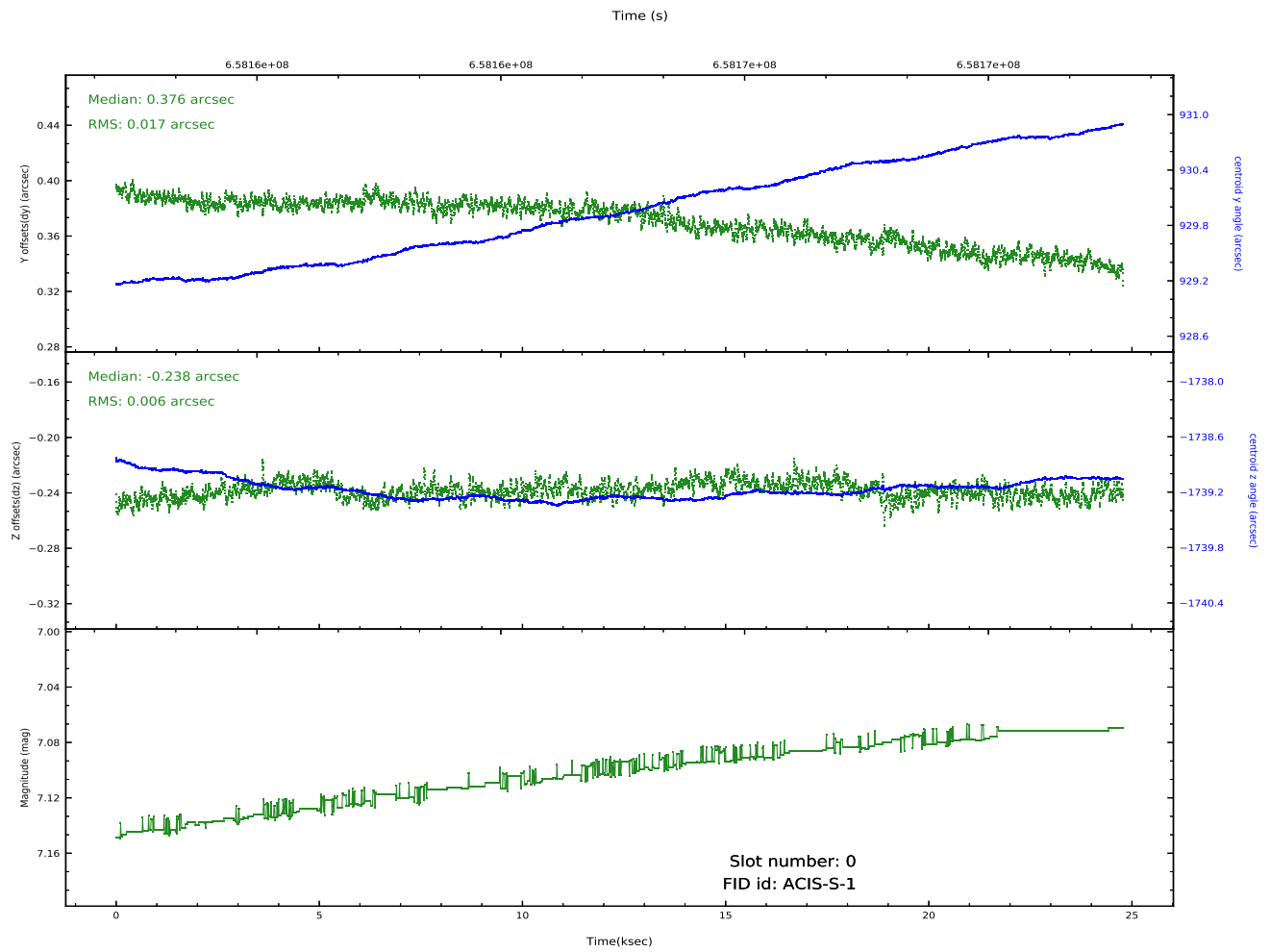
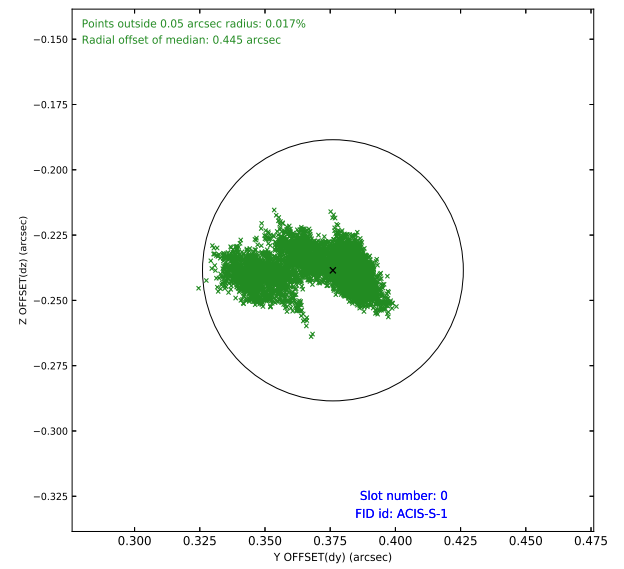
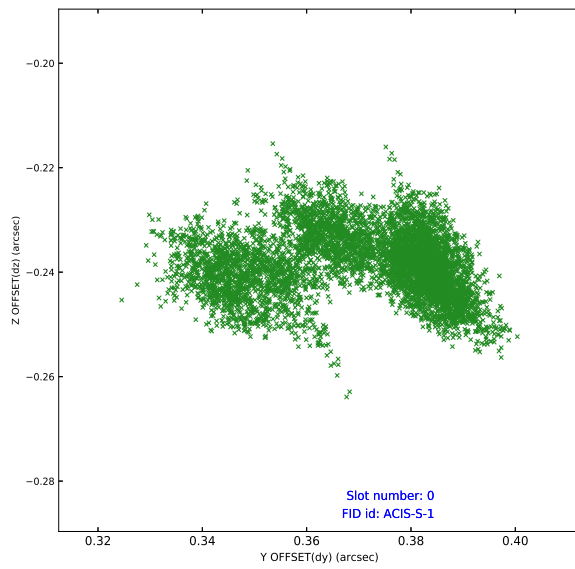


## 2.4.5 Slot 7

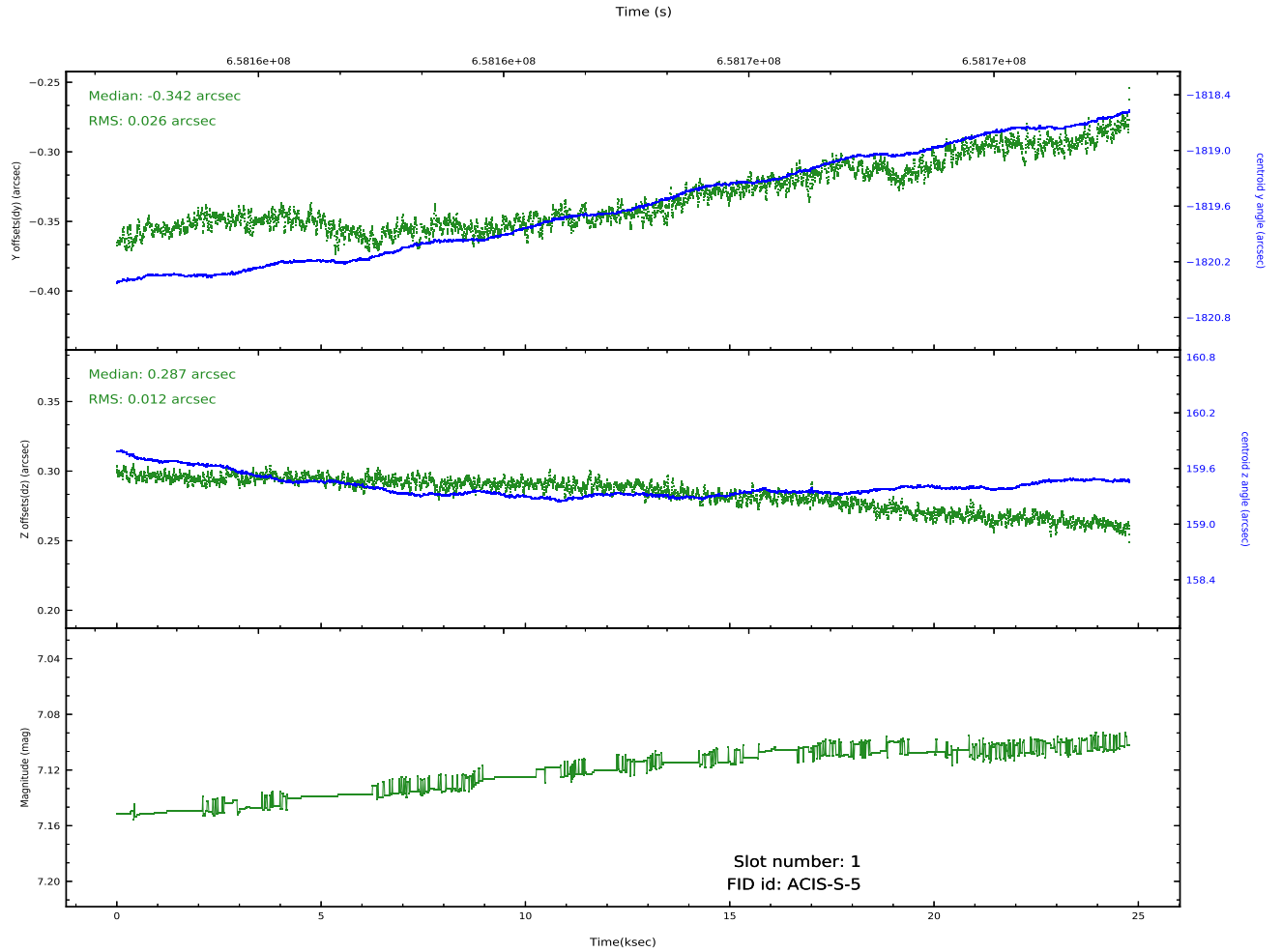
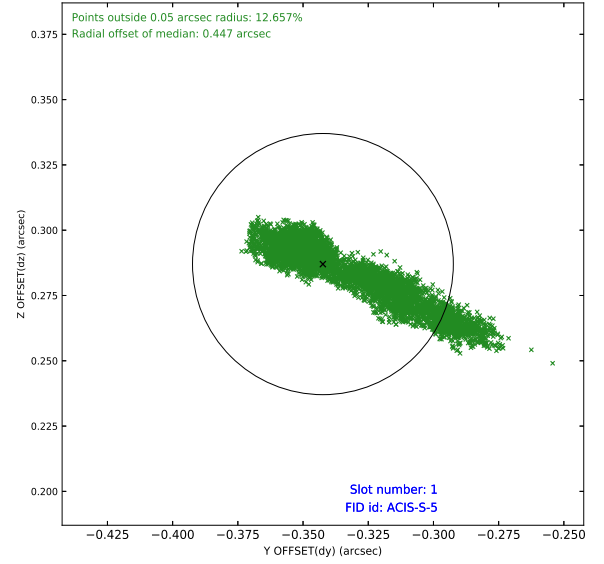
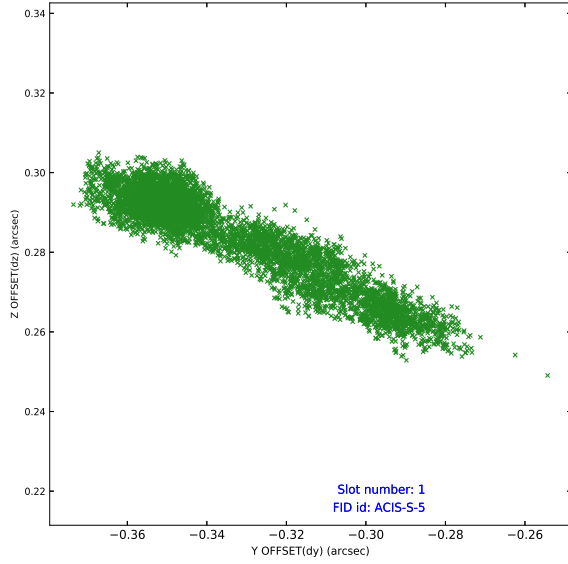


## 2.5 FID Slots

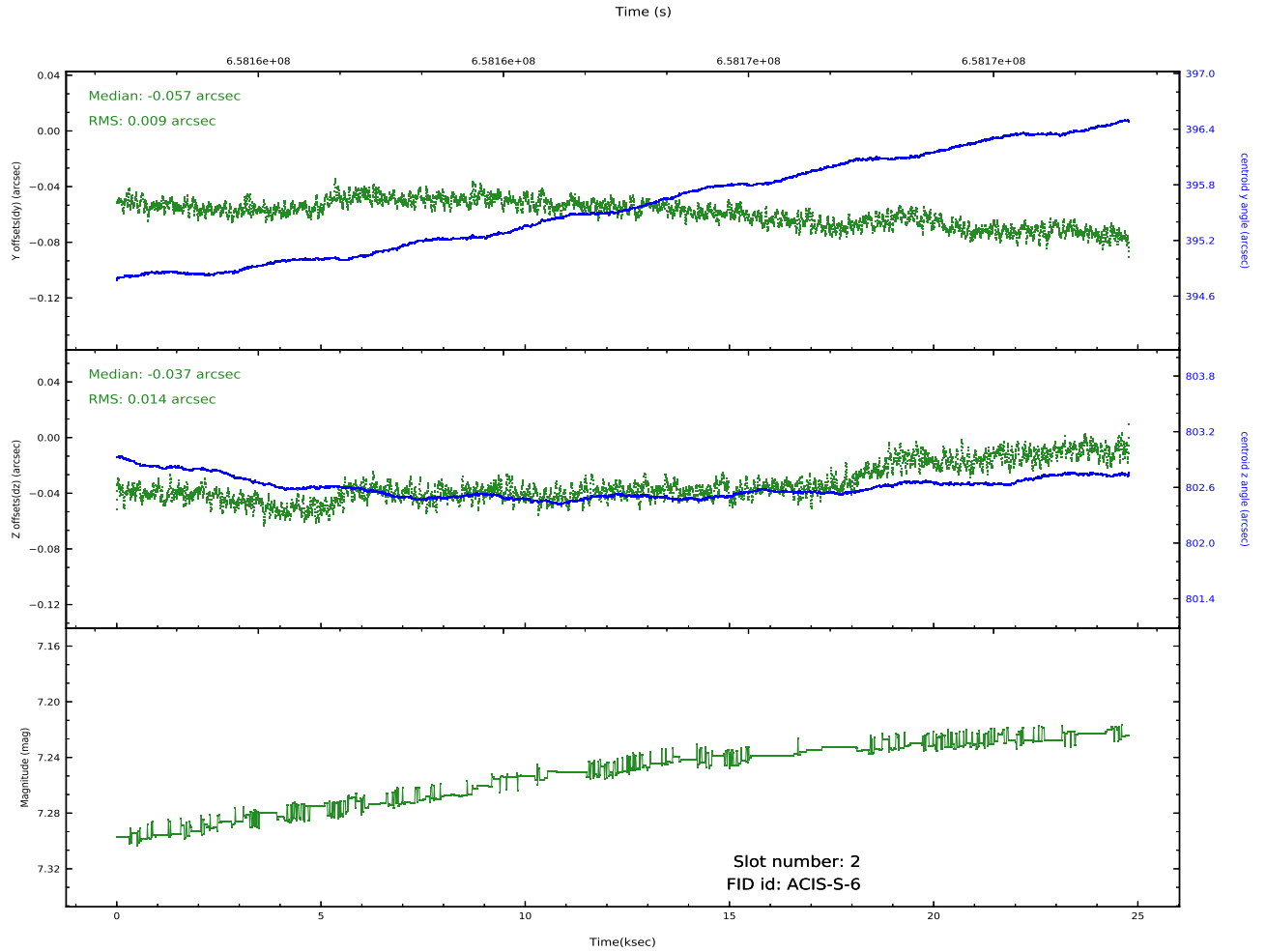
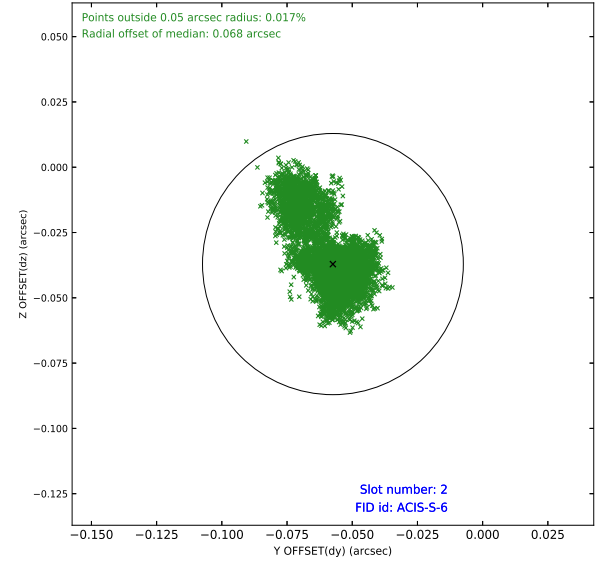
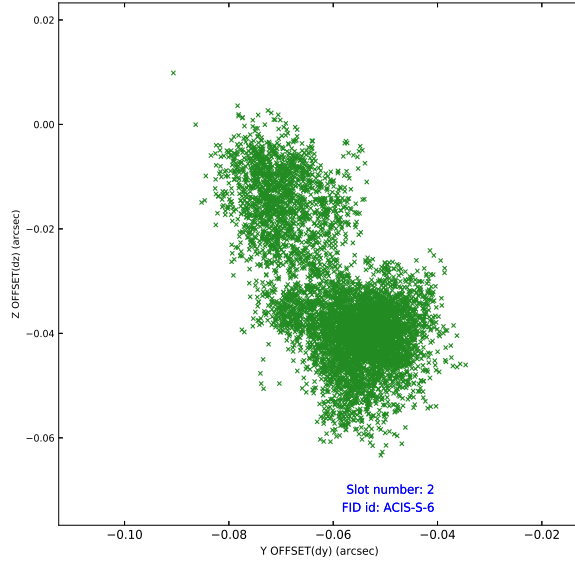
### 2.5.1 Slot 0



## 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)      | 2020.10.28      |
| V&V Edition                | 1               |
| V&V Disposition and Status | OK              |
| V&V Charge Time            | 24.670282388449 |

### A.2 Comments