

# V&V Reference Report

## L2 ASCDS Version : 10.9.2

Observation 20287 - L2 Version 2  
Chandra X-Ray Center

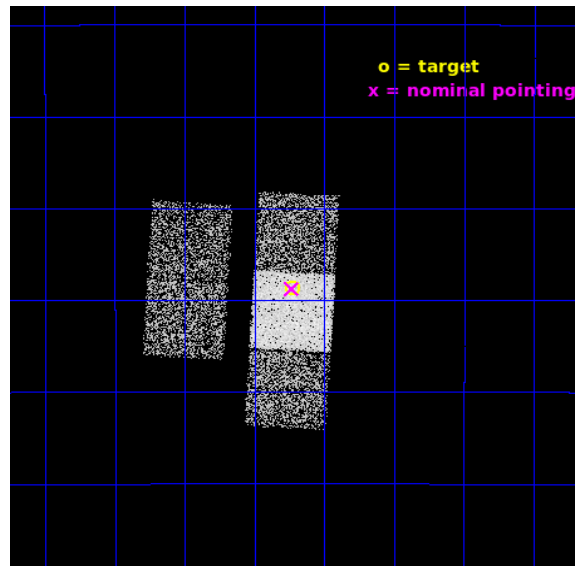
L2 Processing Date : Oct 25 2020

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# 1 Front

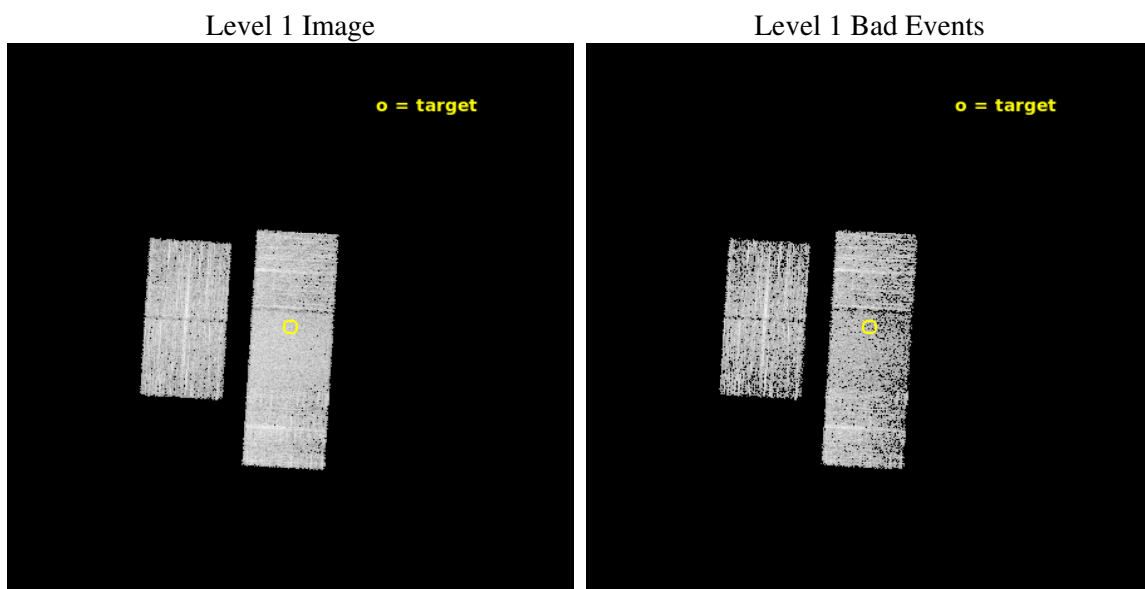
|          |  |   |
|----------|--|---|
| seq_num  | 502986   | Sequence number                             |
| obs_id   | 20287  | Observation id                              |
| title    | Where Have All the Central Compact Objects Gone? | Proposal title                              |
| observer | Eric Gotthelf                                    | Principal investigator                      |
| object   | PSR J1819-1318                                   | Source name                                 |
| dtcycle  | 0  | &#160                                       |
| cycle    | P  | events from which exps?<br>Prim/Second/Both |
| ra_targ  | 274.931667                                       | Observer's specified target RA [deg]        |
| dec_targ | -13.311667                                       | Observer's specified target Dec [deg]       |
| ra_nom   | 274.933064221                                    | Nominal RA [deg]                            |
| dec_nom  | -13.312527440982                                 | Nominal Dec [deg]                           |
| roll_nom | 93.357723723337                                  | Nominal Roll [deg]                          |
| revision | 2  | Processing version of data                  |
| ontime   | 3549.5000274181                                  | Sum of GTIs [s]                             |
| livetime | 3503.123196456                                   | Livetime [s]                                |
| ontime2  | 3549.5000274181                                  | Sum of GTIs [s]                             |
| ontime3  | 3549.5000274181                                  | Sum of GTIs [s]                             |
| ontime6  | 3549.5000274181                                  | Sum of GTIs [s]                             |
| ontime7  | 3549.5000274181                                  | Sum of GTIs [s]                             |
| ontime8  | 3549.5000274181                                  | Sum of GTIs [s]                             |
| l2events | 24060  | Number of level 2 events                    |



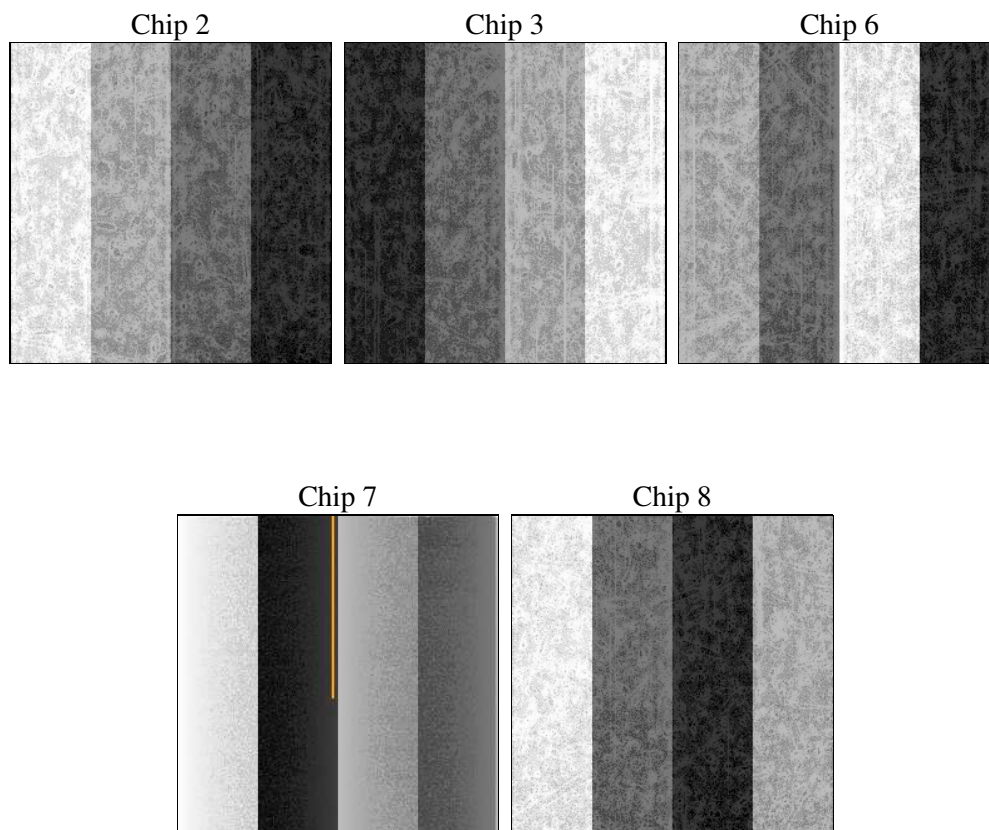
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

|          |                     |                                |                |                 |   |
|----------|---------------------|--------------------------------|----------------|-----------------|---|
| obi_num  | 0                   | Obi number                     | sched_exp_time | 3500.000000     | [s] Scheduled observation exposure time |
| ascdsver | 10.9.2              | Processing system revision     | ontime         | 3549.5000274181 | Sum of GTIs [s]                         |
| caldsver | 4.9.3               | &#160                          | ontime2        | 3549.5000274181 | Sum of GTIs [s]                         |
| date     | 2020-10-25T10:49:18 | Date and time of file creation | ontime3        | 3549.5000274181 | Sum of GTIs [s]                         |
| revision | 2                   | Processing version of data     | ontime6        | 3549.5000274181 | Sum of GTIs [s]                         |
|          |                     |                                | ontime7        | 3549.5000274181 | Sum of GTIs [s]                         |
|          |                     |                                | ontime8        | 3549.5000274181 | Sum of GTIs [s]                         |
|          |                     |                                | l1events       | 150062          | Number of level 1 events                |

### 2.1.4 Events

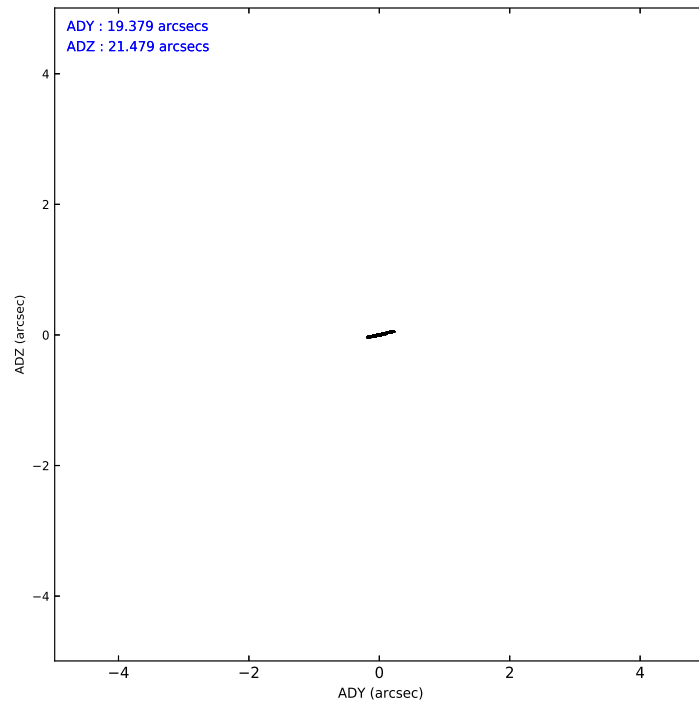
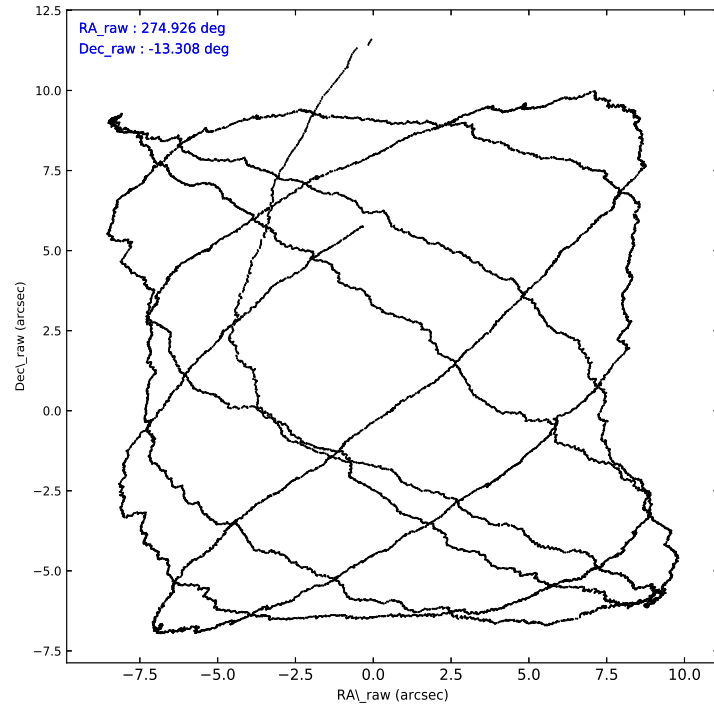
|                 | <b>ccd 2</b> | <b>ccd 3</b> | <b>ccd 6</b> | <b>ccd 7</b> | <b>ccd 8</b> |
|-----------------|--------------|--------------|--------------|--------------|--------------|
| level 1 events  | 27478        | 26776        | 28290        | 33013        | 34505        |
| rejected events | 24835        | 23984        | 25167        | 18816        | 26480        |
| rejected %      | 90%          | 89%          | 88%          | 56%          | 76%          |

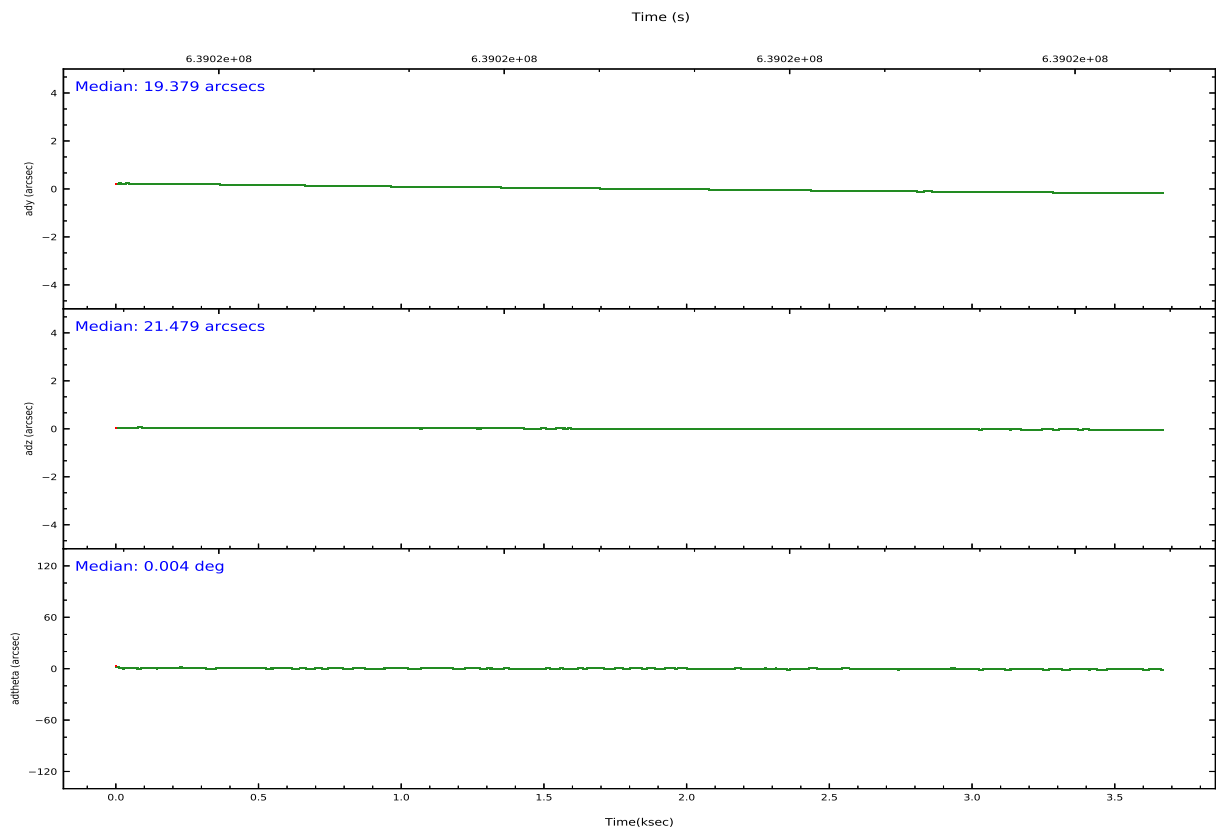
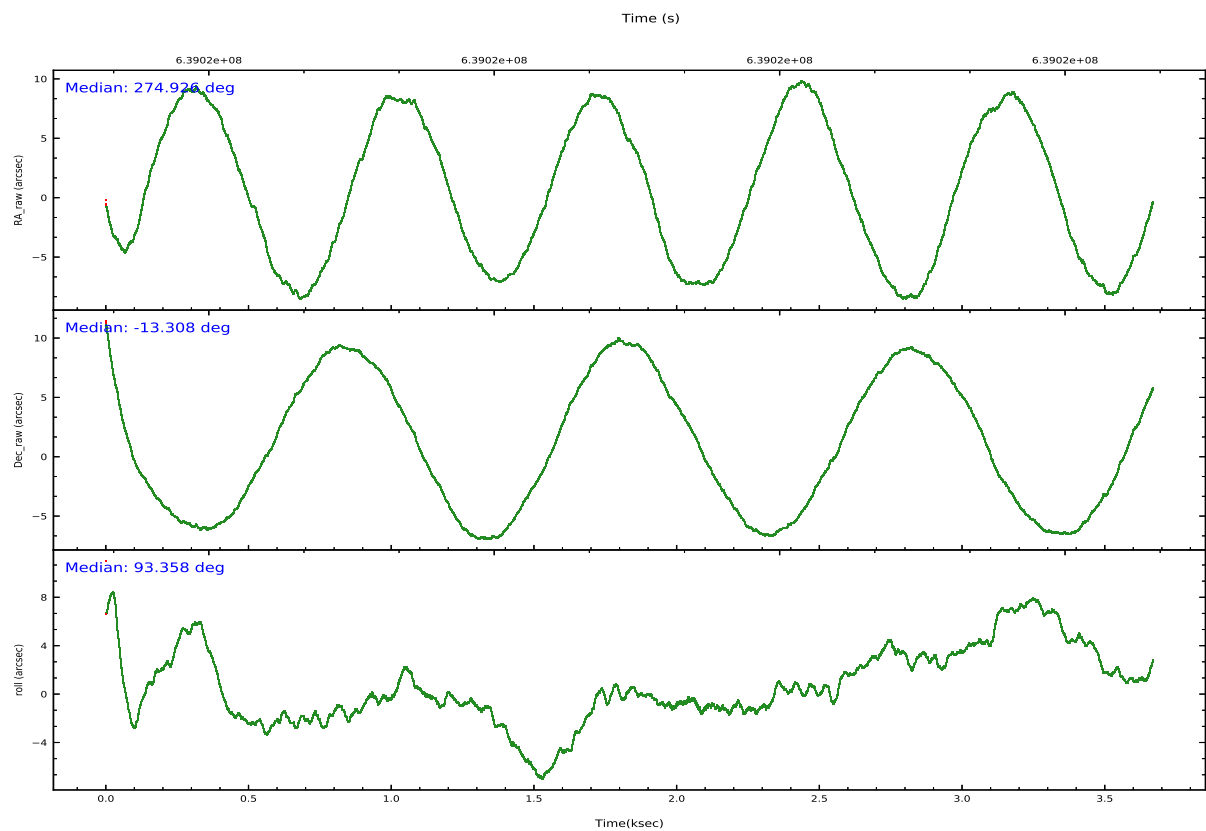
|                | <b>ccd 2</b> | <b>ccd 3</b> | <b>ccd 6</b> | <b>ccd 7</b> | <b>ccd 8</b> |
|----------------|--------------|--------------|--------------|--------------|--------------|
| grade 0 events | 962          | 1005         | 957          | 1222         | 2180         |
|                | 3%           | 3%           | 3%           | 3%           | 6%           |
| grade 1 events | 15           | 12           | 9            | 55           | 22           |
|                | 0%           | 0%           | 0%           | 0%           | 0%           |
| grade 2 events | 639          | 609          | 861          | 2974         | 2078         |
|                | 2%           | 2%           | 3%           | 9%           | 6%           |
| grade 3 events | 244          | 294          | 263          | 1059         | 730          |
|                | 0%           | 1%           | 0%           | 3%           | 2%           |
| grade 4 events | 263          | 287          | 267          | 1079         | 713          |
|                | 0%           | 1%           | 0%           | 3%           | 2%           |
| grade 5 events | 938          | 1122         | 1088         | 3239         | 1698         |
|                | 3%           | 4%           | 3%           | 9%           | 4%           |
| grade 6 events | 537          | 604          | 782          | 7894         | 2328         |
|                | 1%           | 2%           | 2%           | 23%          | 6%           |
| grade 7 events | 23880        | 22843        | 24063        | 15491        | 24756        |
|                | 86%          | 85%          | 85%          | 46%          | 71%          |

## 2.2 Compared Parameters

| Parameter                         | Planned             | Actual               | Parameter                             | Planned   | Actual  |
|-----------------------------------|---------------------|----------------------|---------------------------------------|-----------|---------|
| Instrument                        | ACIS                | ACIS                 | Obspar version number                 | 8         | 8       |
| Detector                          | ACIS-23678          | ACIS-23678           | Obspar file type                      | PREDICTED | ACTUAL  |
| Grating                           | NONE                | NONE                 | Obspar update status                  | NONE      | UPDATED |
| Data mode                         | VFAINT              | VFAINT               | CCD I0 on                             | N         | N       |
| Observation mode                  | POINTING            | POINTING             | CCD I1 on                             | N         | N       |
| [deg] Pointing RA                 | 274.942256          | 274.933064221        | CCD I2 on                             | O1        | Y       |
| [deg] Pointing Dec                | -13.329907          | -13.312527440982     | CCD I3 on                             | O2        | Y       |
| [deg] Pointing Roll               | 93.212437           | 93.357723723337      | CCD S0 on                             | N         | N       |
| [mm] SIM focus pos                | -0.684267           | -0.6828225247311905  | CCD S1 on                             | N         | N       |
| [mm] SIM defocus                  | 0                   | 0.001444936568705701 | CCD S2 on                             | Y         | Y       |
| [mm] SIM translation stage pos    | -190.132523         | -190.1400660498719   | CCD S3 on                             | Y         | Y       |
| [mm] SIM translation stage offset | 0                   | 0.00754346686406393  | CCD S4 on                             | Y         | Y       |
| [s] Observation start time (MET)  | 639021809.184000    | 639020829.4531       | CCD S5 on                             | N         | N       |
| Observation start date            | 2018-04-02T02:02:20 | 2018-04-02T01:47:09  | Number of optional ACIS chips dropped | 0         | 0       |
| [s] Observation end time (MET)    | 639025309.184000    | 639026301.41592      | On-chip summing requested             | N         | N       |
| Observation end date              | 2018-04-02T03:00:40 | 2018-04-02T03:18:21  | Subarray requested                    | NONE      | NONE    |
| Read mode                         | TIMED               | TIMED                | Alternating exposures requested       | N         | N       |
|                                   |                     |                      | [s] Primary exposure time             | 0.000000  | 3.1     |

## 2.3 Aspect





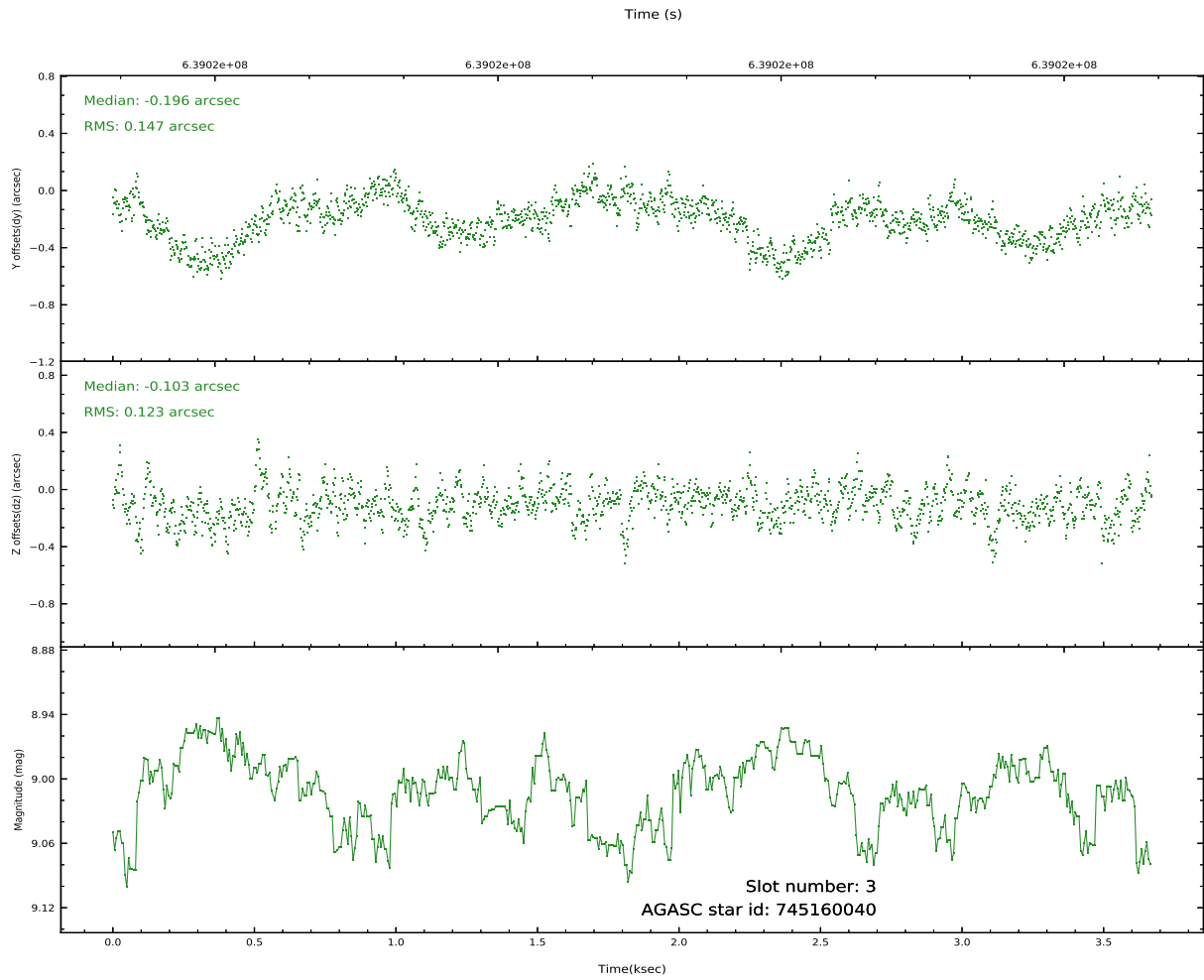
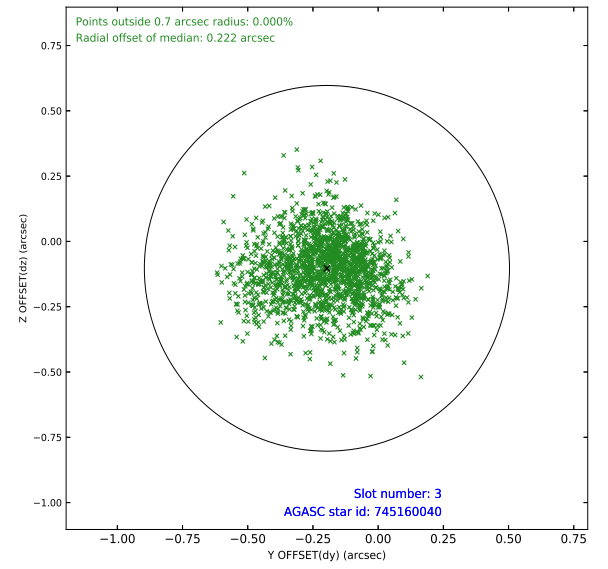
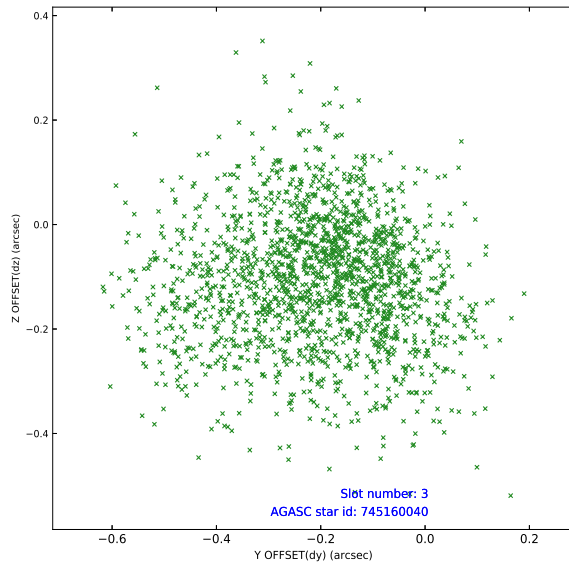
Slot Statistics

| pt | status | used | id        | mag  | n_pts | frac_pts | med_dy | med_dz | dr1   | dr2   | ra         | dec        | mean_y   | mea   |
|----|--------|------|-----------|------|-------|----------|--------|--------|-------|-------|------------|------------|----------|-------|
| 0  | FID    |      | ACIS-S-1  | 7.24 | 896   | 1.000    | 0.310  | -0.153 | 0.008 | 0.013 | 0.000000   | 0.000000   | 923.57   | -1738 |
| 1  | FID    |      | ACIS-S-4  | 7.26 | 896   | 1.000    | 0.036  | -0.037 | 0.007 | 0.011 | 0.000000   | 0.000000   | 2141.96  | 163   |
| 2  | FID    |      | ACIS-S-5  | 7.25 | 896   | 1.000    | -0.372 | 0.204  | 0.007 | 0.012 | 0.000000   | 0.000000   | -1823.48 | 159   |
| 3  | GUIDE  | used | 745160040 | 9.01 | 1788  | 1.000    | -0.196 | -0.103 | 0.204 | 0.336 | 274.659256 | -12.904009 | 1586.36  | 905   |
| 4  | GUIDE  | used | 745164072 | 8.45 | 1789  | 1.000    | -0.307 | -0.167 | 0.213 | 0.337 | 274.766958 | -12.776111 | 2026.06  | 503   |
| 5  | GUIDE  | used | 745671608 | 9.10 | 1791  | 1.000    | 0.499  | 0.317  | 0.188 | 0.321 | 275.327786 | -13.786724 | -1716.36 | -1253 |
| 6  | GUIDE  | used | 745674432 | 7.13 | 1791  | 1.000    | -0.010 | -0.008 | 0.134 | 0.233 | 274.729377 | -13.541343 | -719.12  | 785   |
| 7  | GUIDE  | used | 745675656 | 7.93 | 1788  | 1.000    | 0.025  | -0.029 | 0.142 | 0.232 | 274.656383 | -13.977352 | -2271.51 | 1128  |

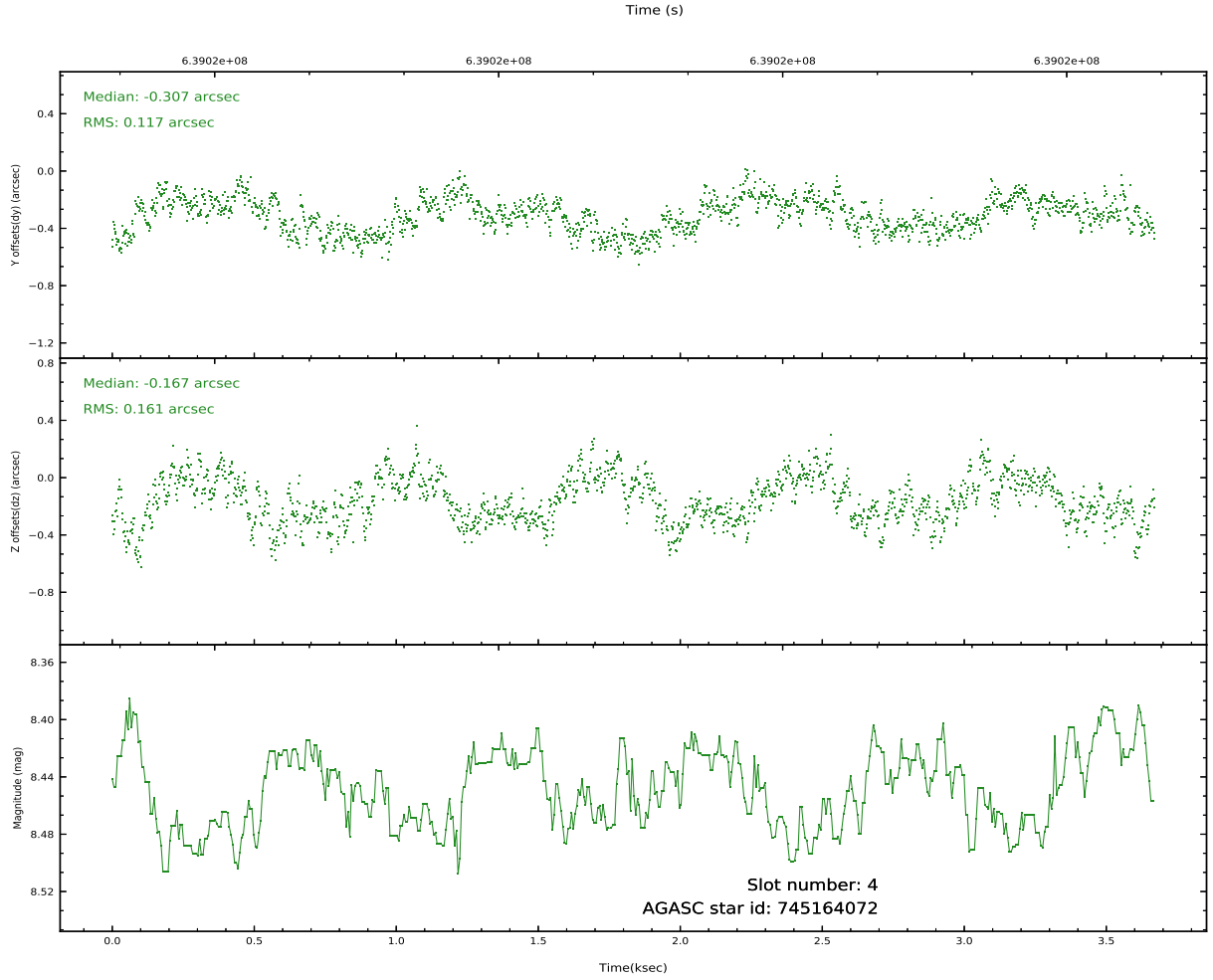
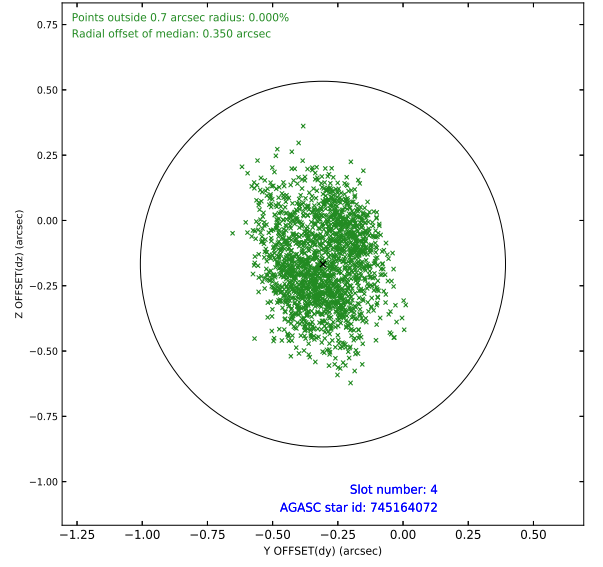
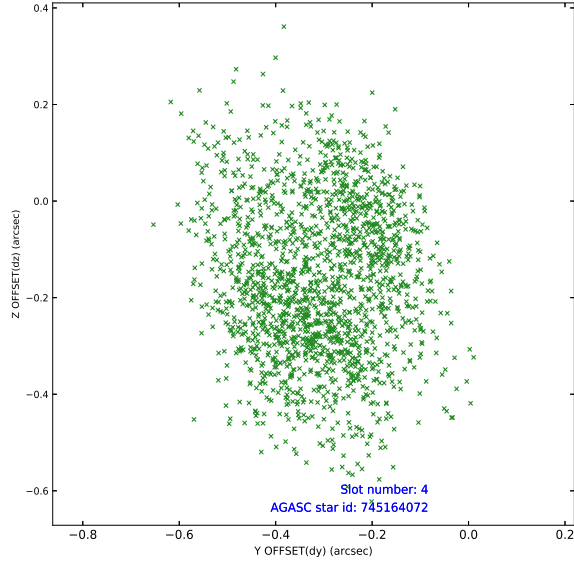


## 2.4 Star Slots

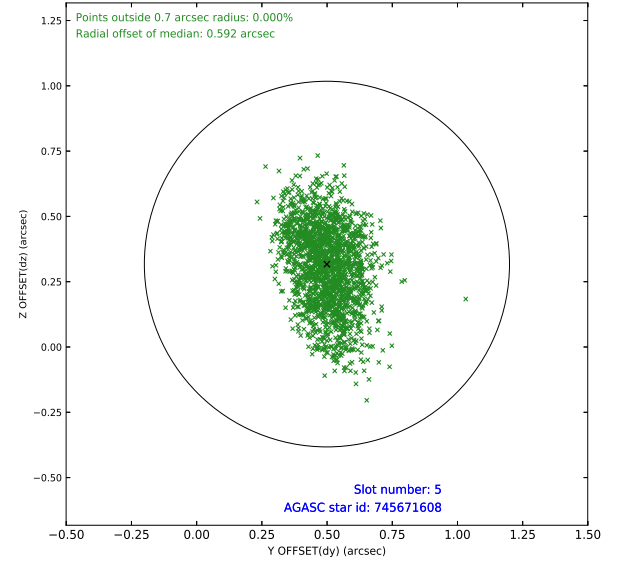
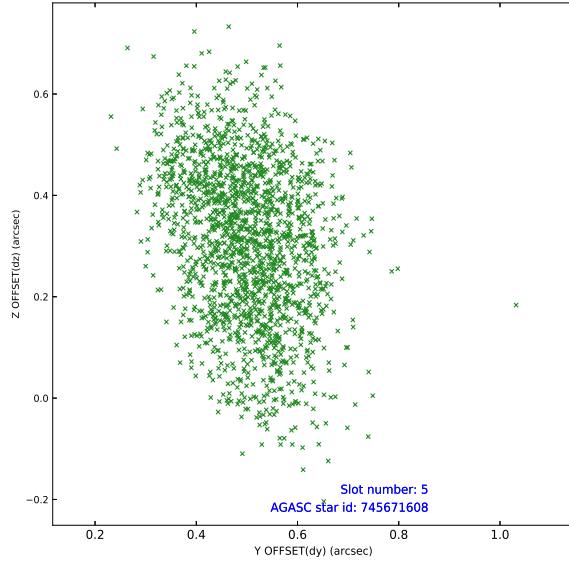
### 2.4.1 Slot 3



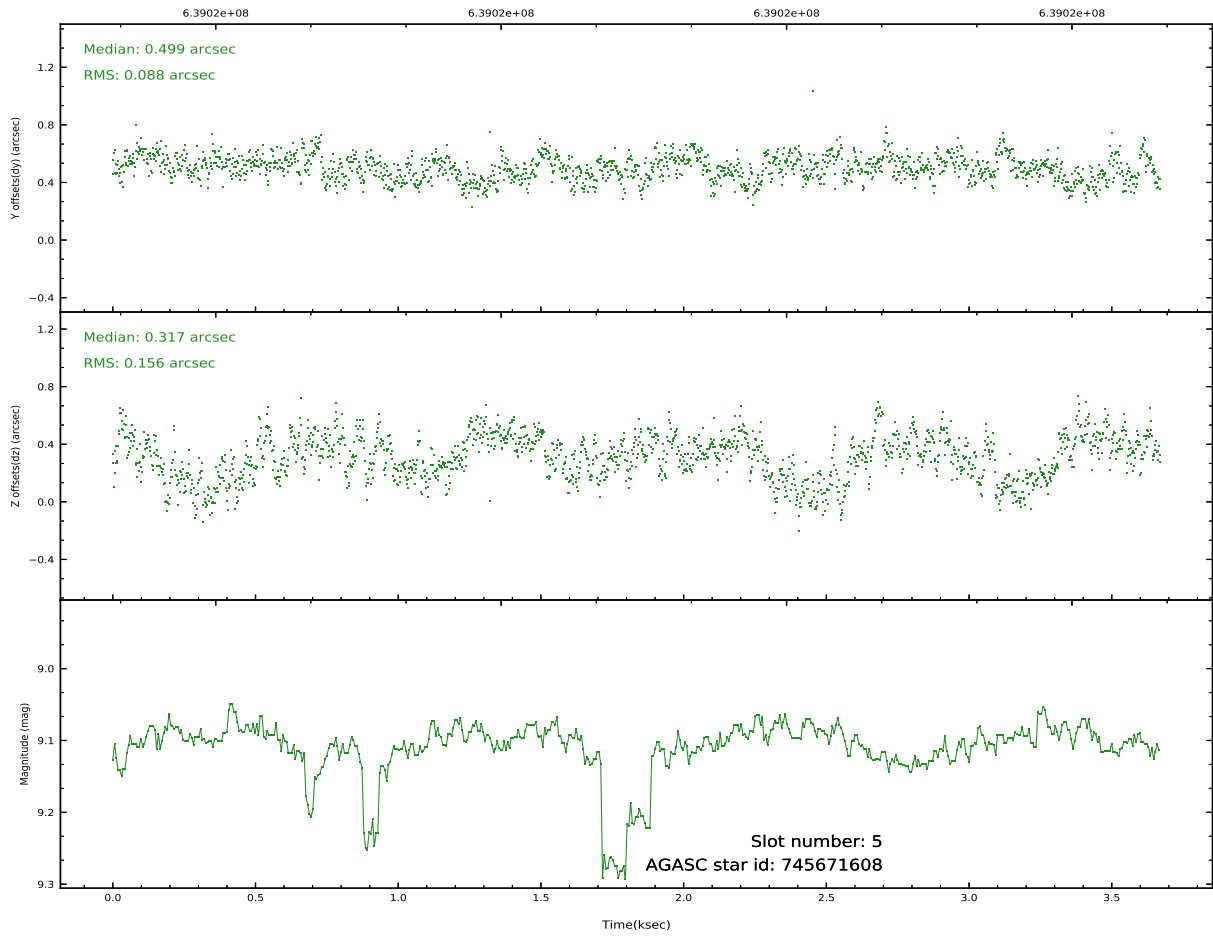
## 2.4.2 Slot 4



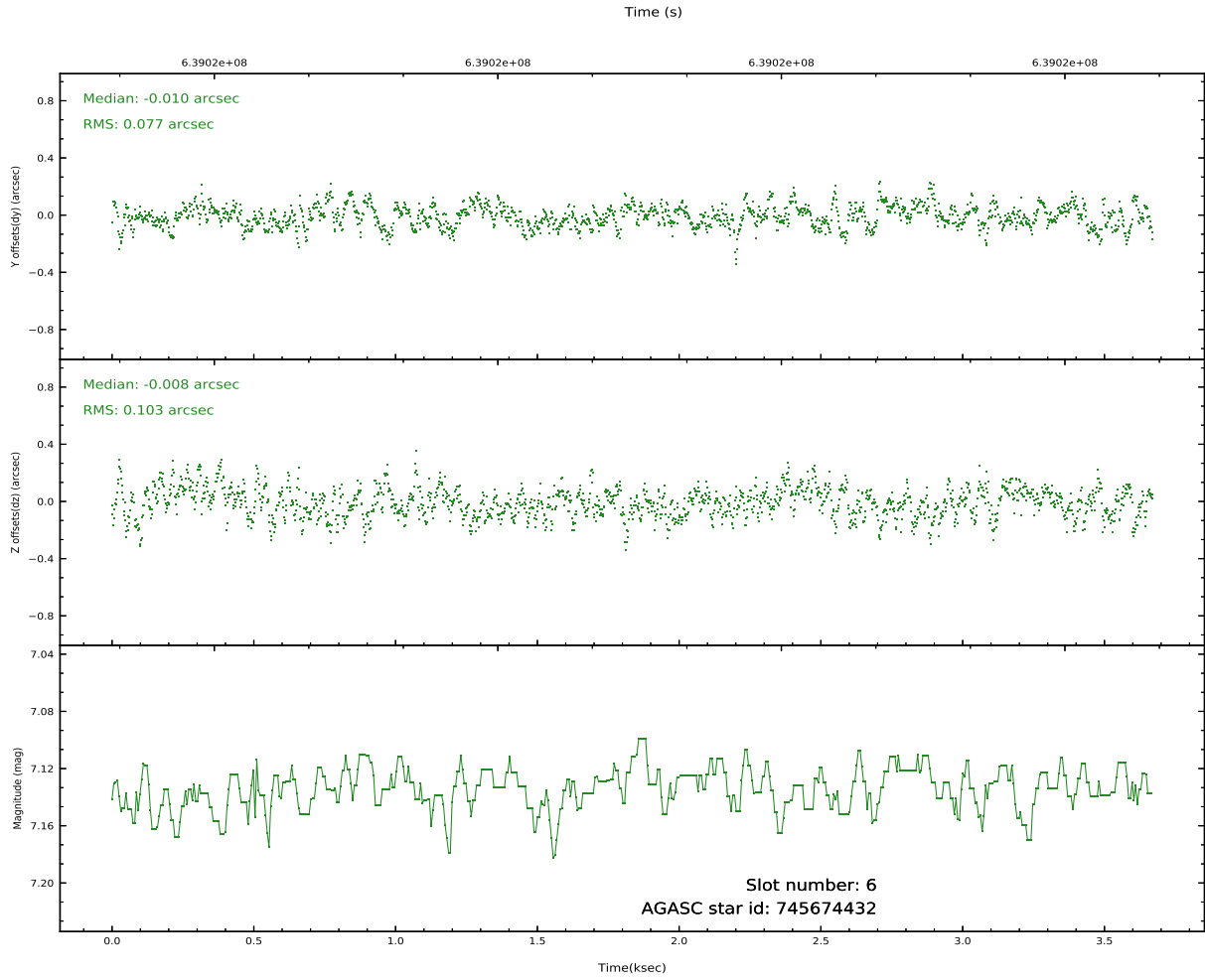
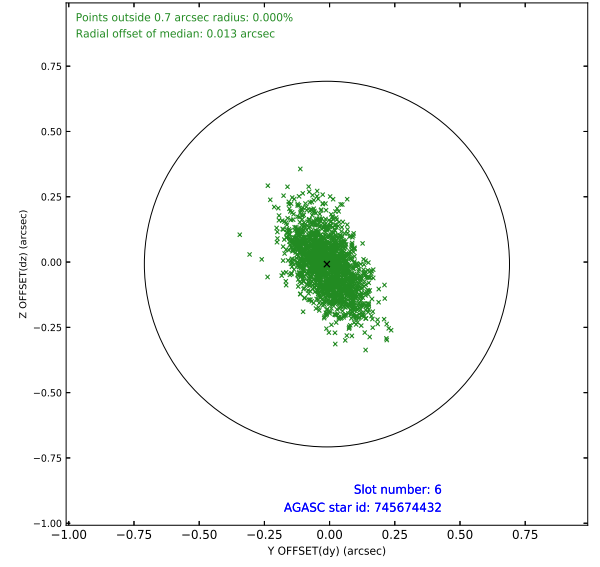
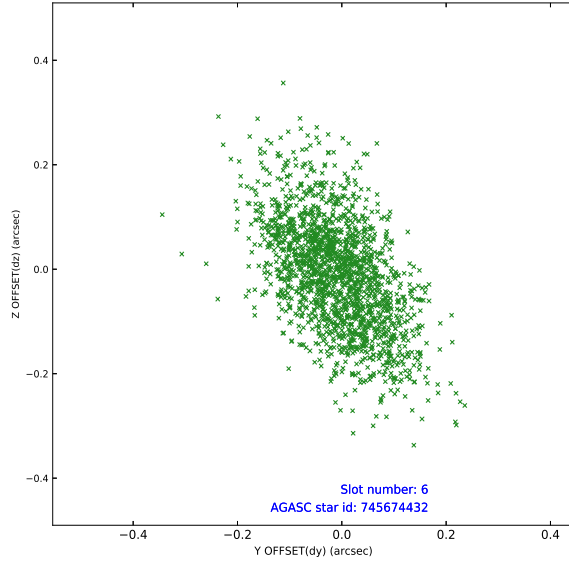
### 2.4.3 Slot 5



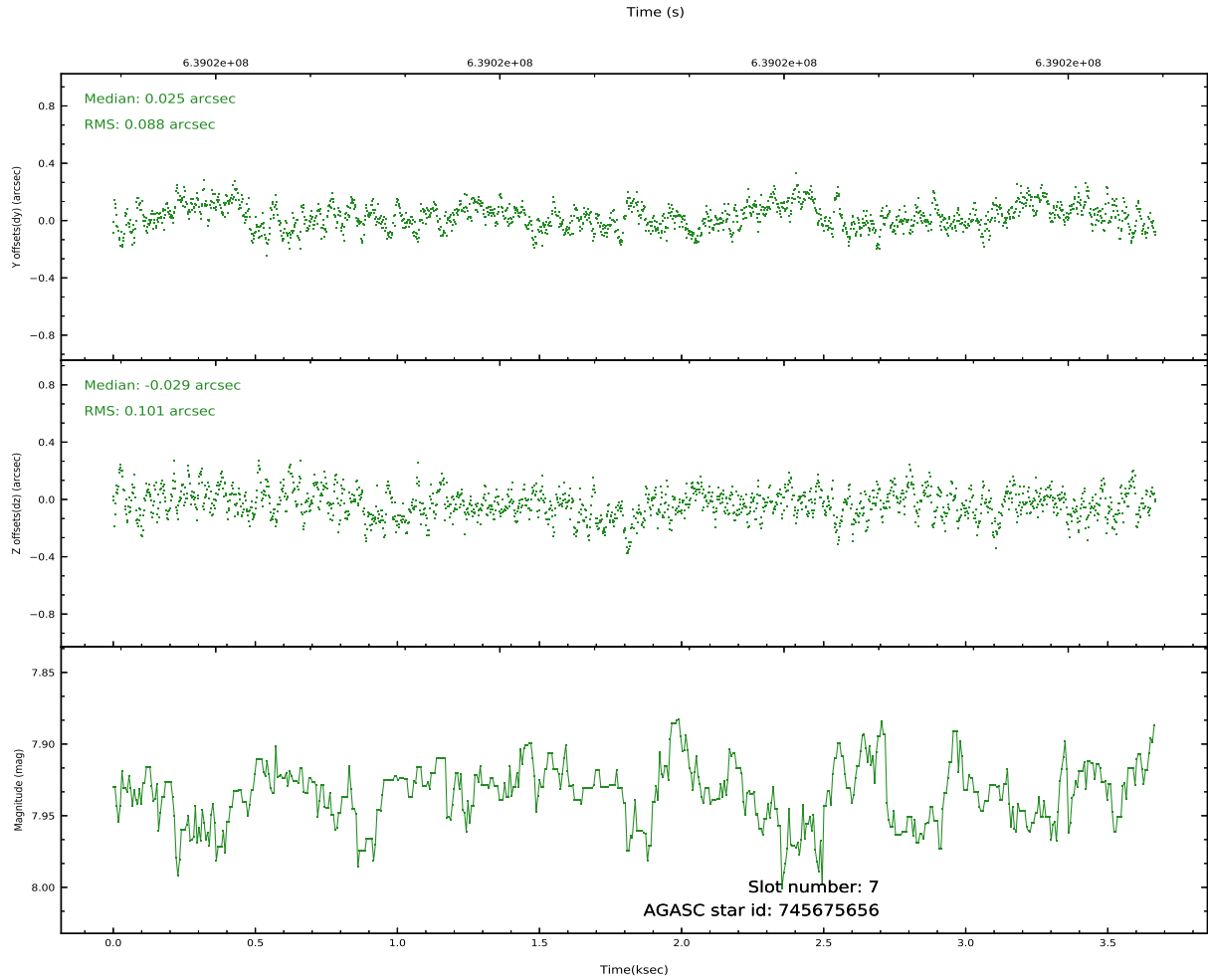
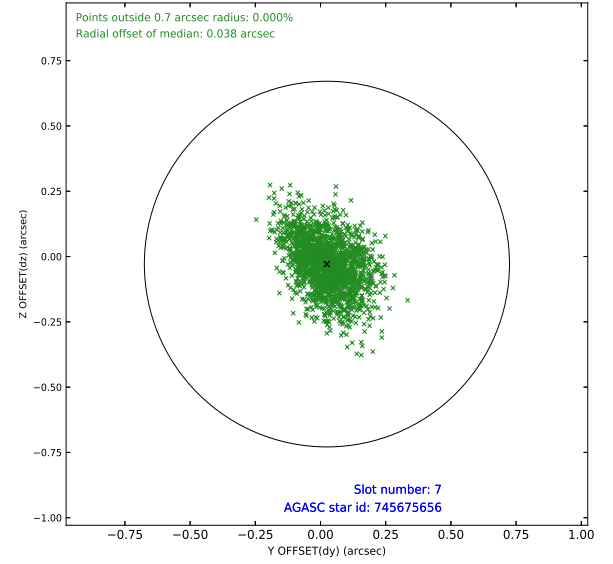
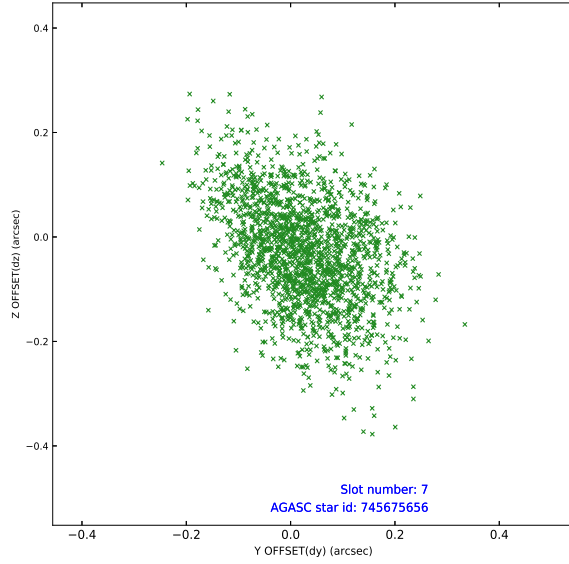
Time (s)



## 2.4.4 Slot 6

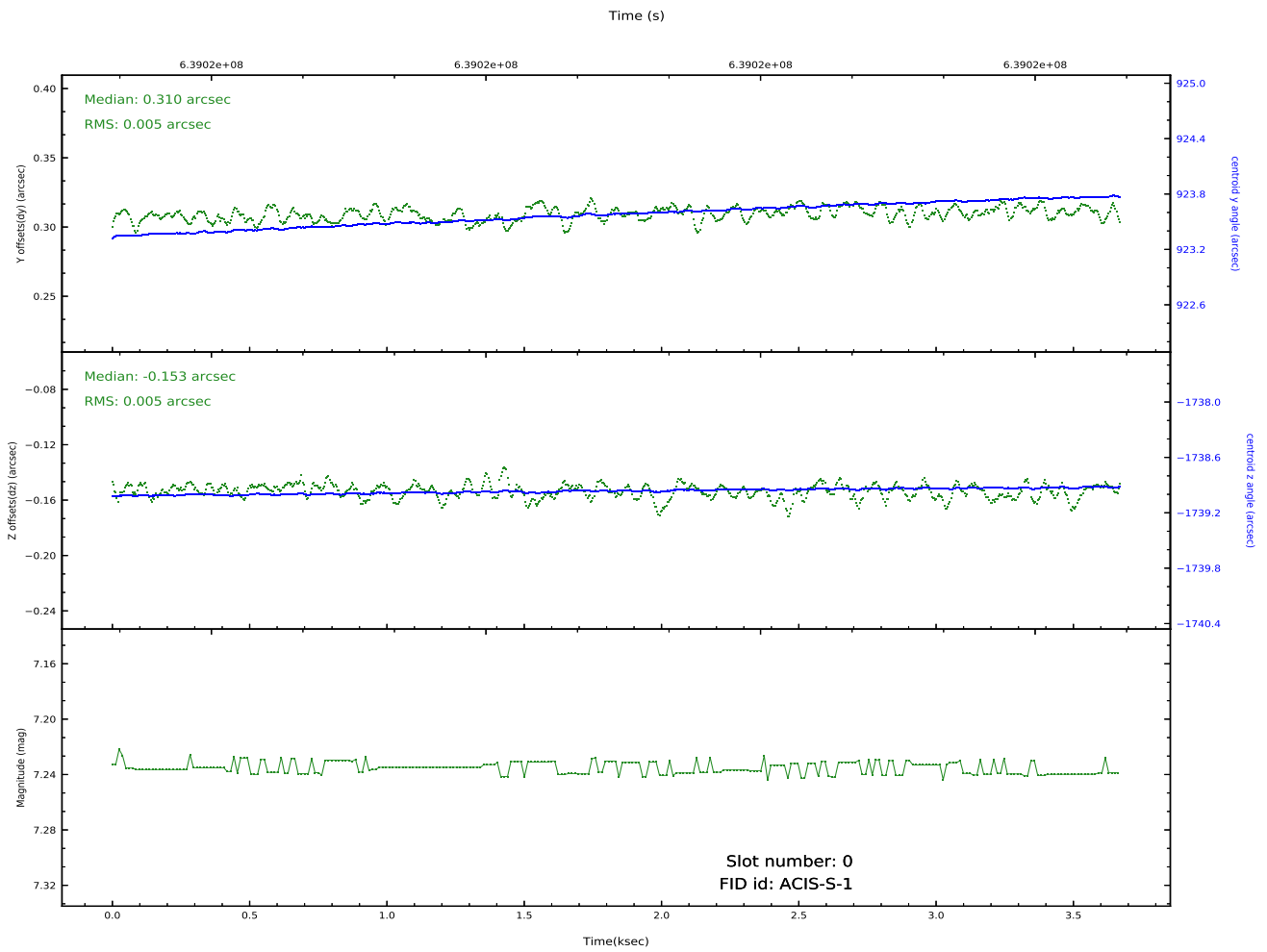
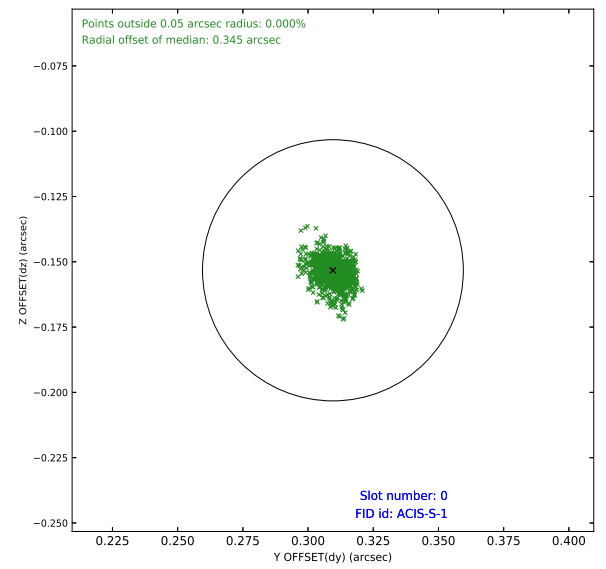
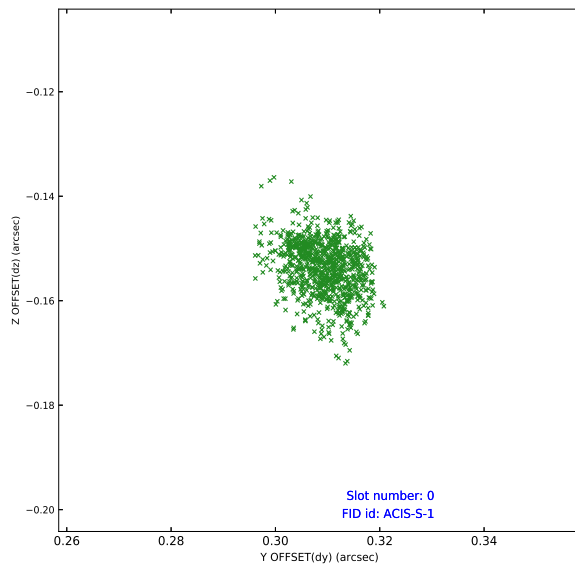


## 2.4.5 Slot 7

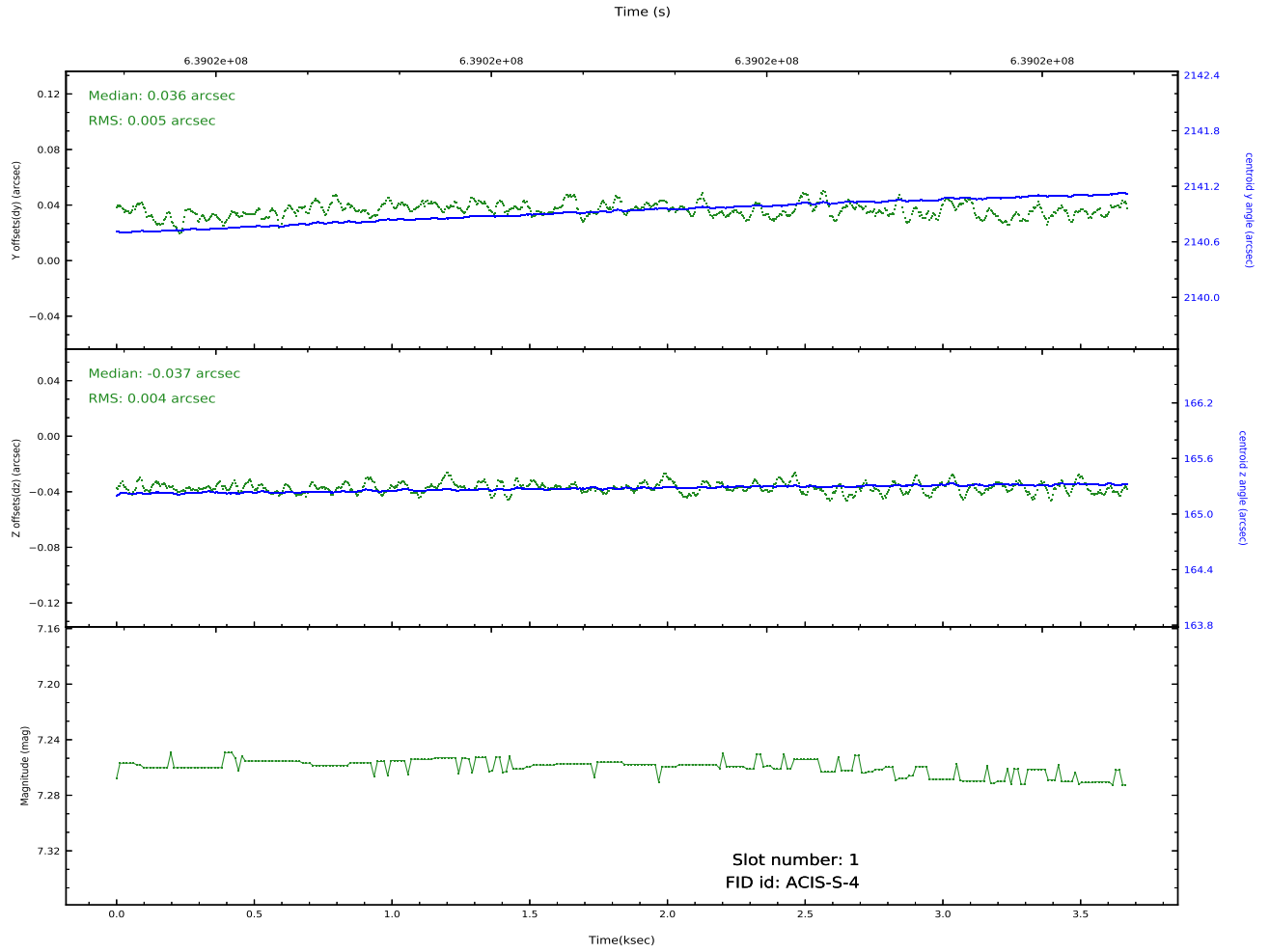
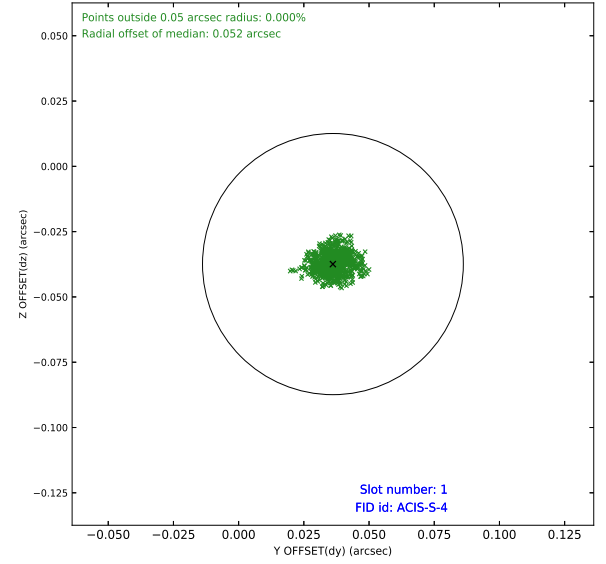
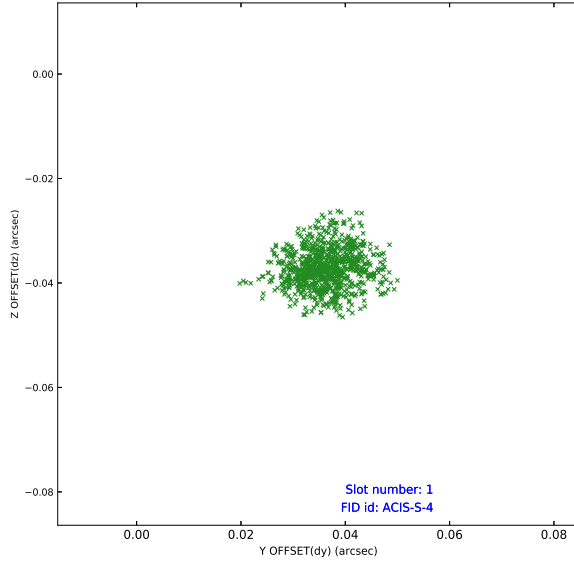


## 2.5 FID Slots

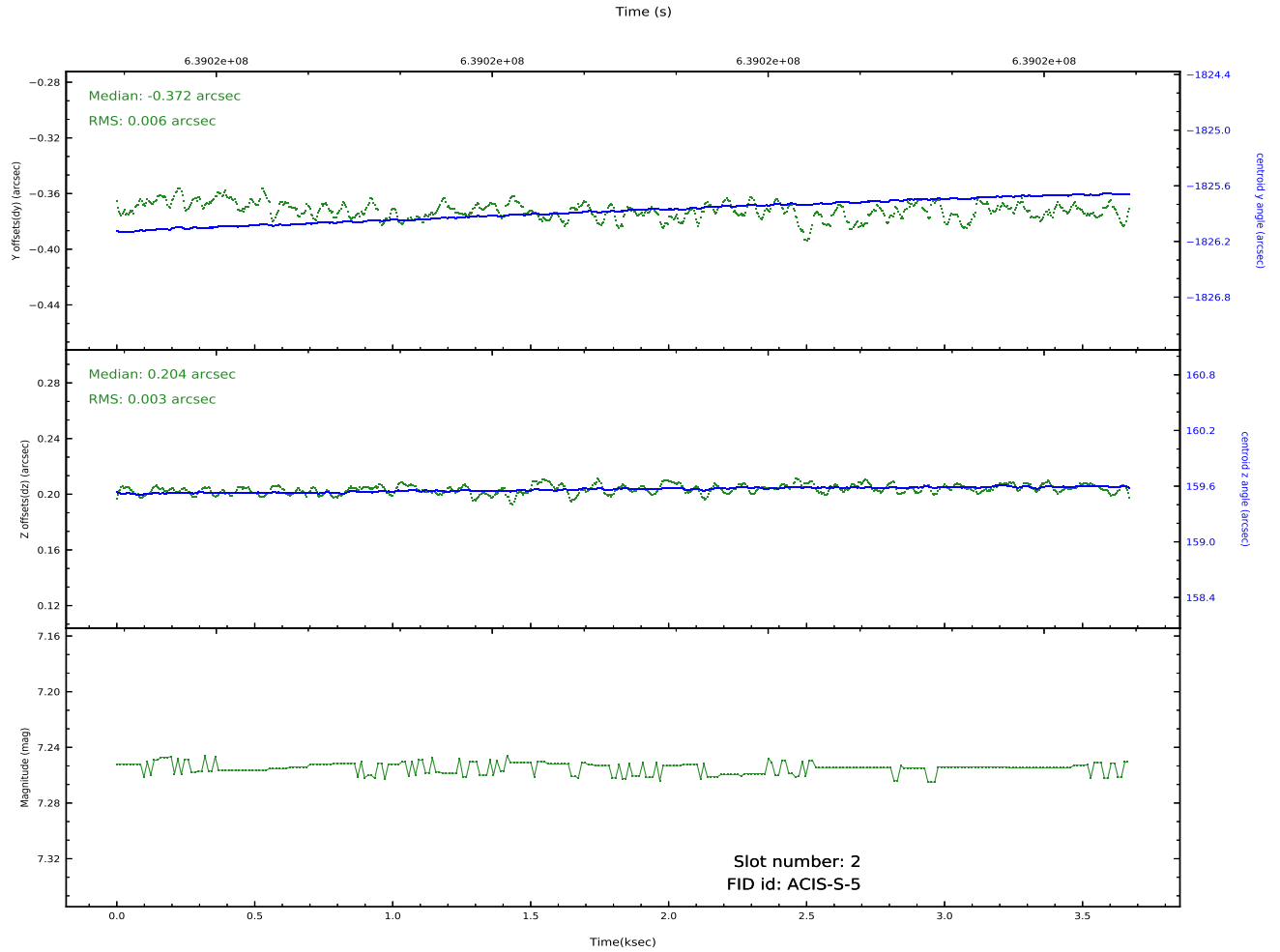
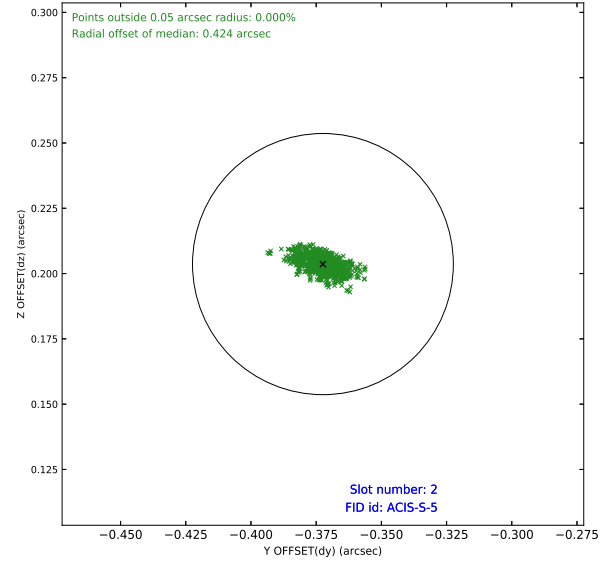
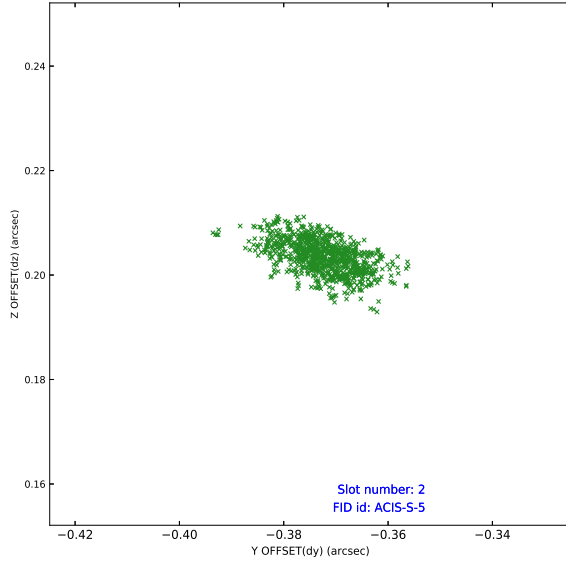
### 2.5.1 Slot 0



## 2.5.2 Slot 1



## 2.5.3 Slot 2





## A Summary

### A.1 Status

|                            |                 |
|----------------------------|-----------------|
| V&V Scientist              | 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            | 3.5495000274181 |

### A.2 Comments