

# V&V Reference Report

## L2 ASCDS Version : 10.9.1

Observation 6322 - L2 Version 4  
Chandra X-Ray Center

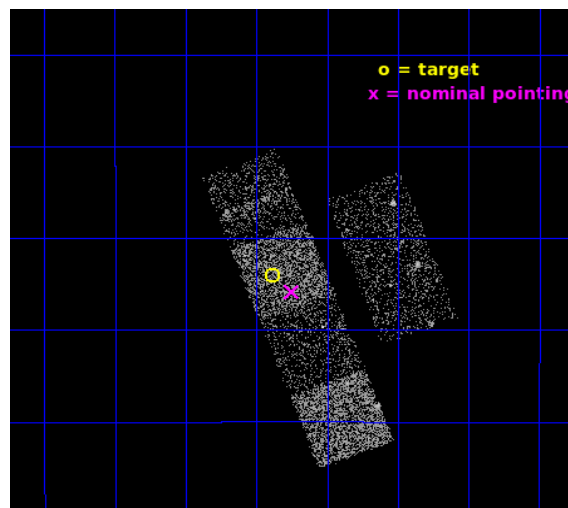
L2 Processing Date : Oct 9 2020

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# 1 Front

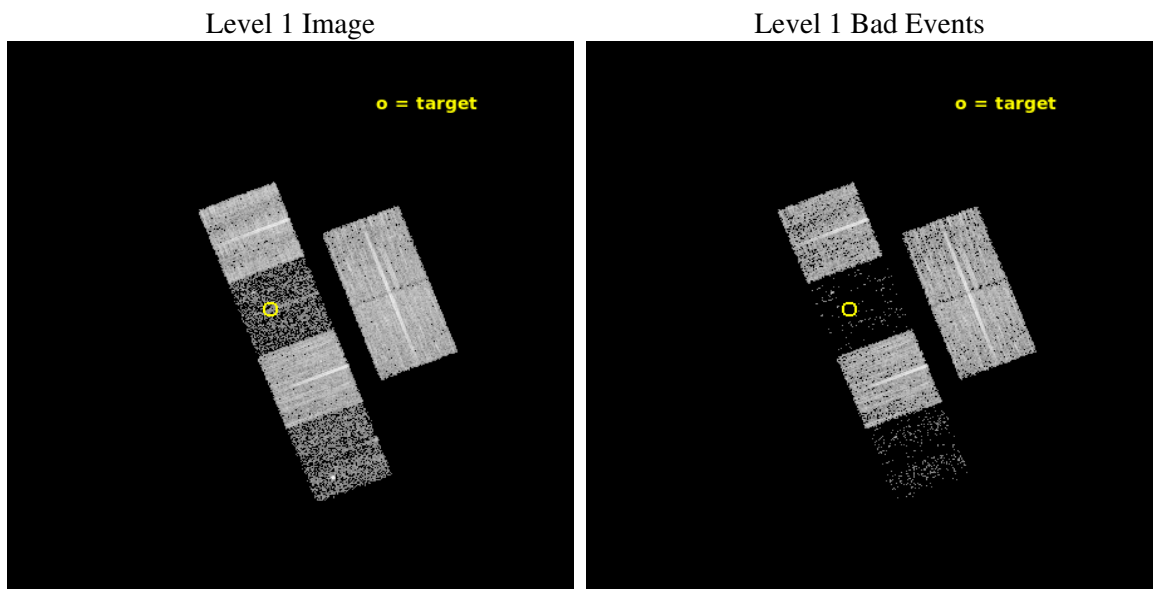
|          |  |   |
|----------|--|---|
| seq_num  | 100060   | Sequence number                             |
| obs_id   | 6322   | Observation id                              |
| title    | Comet 9P/Tempel 1 During the Deep Impact Encounter | Proposal title                              |
| observer | Carey Lisse  | Principal investigator                      |
| object   | Comet 9P/Tempel 1                                  | Source name                                 |
| dtcycle  | 0  | &#160                                       |
| cycle    | P  | events from which exps?<br>Prim/Second/Both |
| ra_targ  | 204.597275   | Observer's specified<br>target RA [deg]     |
| dec_targ | -9.733692  | Observer's specified<br>target Dec [deg]    |
| ra_nom   | 204.56233539728                                    | Nominal RA [deg]                            |
| dec_nom  | -9.7638720833478                                   | Nominal Dec [deg]                           |
| roll_nom | 248.871378993                                      | Nominal Roll [deg]                          |
| revision | 4  | Processing version of<br>data               |
| ontime   | 7180.7999732494                                    | Sum of GTIs [s]                             |
| livetime | 7089.8723602295                                    | Livetime [s]                                |
| ontime2  | 7180.7999732494                                    | Sum of GTIs [s]                             |
| ontime3  | 7177.5590029657                                    | Sum of GTIs [s]                             |
| ontime5  | 7180.7999732494                                    | Sum of GTIs [s]                             |
| ontime6  | 7180.7999732494                                    | Sum of GTIs [s]                             |
| ontime7  | 7180.7999732494                                    | Sum of GTIs [s]                             |
| ontime8  | 7180.7999732494                                    | Sum of GTIs [s]                             |
| l2events | 10409  | Number of level 2 events                    |



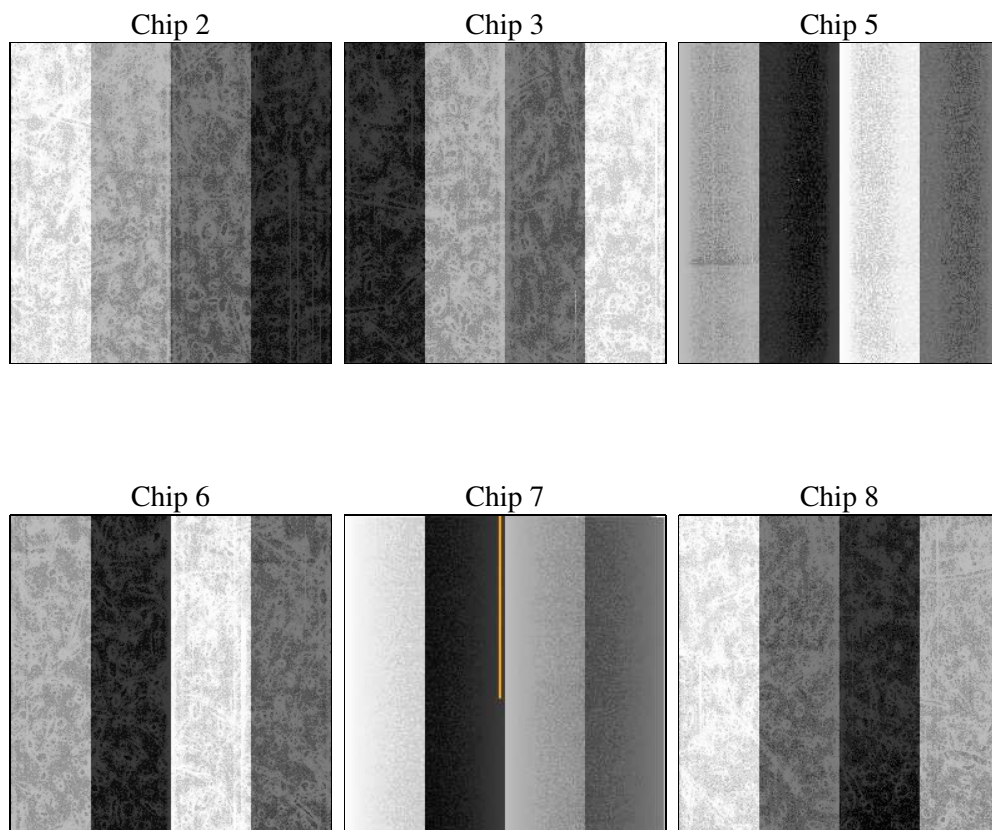
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

|          |                     |                                |                |                 |   |
|----------|---------------------|--------------------------------|----------------|-----------------|---|
| obi_num  | 0                   | Obi number                     | sched_exp_time | 7000.000000     | [s] Scheduled observation exposure time |
| ascdsver | 10.9.1              | Processing system revision     | ontime         | 7180.7999732494 | Sum of GTIs [s]                         |
| caldsver | 4.9.2               | &#160                          | ontime2        | 7180.7999732494 | Sum of GTIs [s]                         |
| date     | 2020-10-09T07:18:06 | Date and time of file creation | ontime3        | 7177.5590029657 | Sum of GTIs [s]                         |
| revision | 4                   | Processing version of data     | ontime5        | 7180.7999732494 | Sum of GTIs [s]                         |
|          |                     |                                | ontime6        | 7180.7999732494 | Sum of GTIs [s]                         |
|          |                     |                                | ontime7        | 7180.7999732494 | Sum of GTIs [s]                         |
|          |                     |                                | ontime8        | 7180.7999732494 | Sum of GTIs [s]                         |
|          |                     |                                | l1events       | 154185          | Number of level 1 events                |

### 2.1.4 Events

|                 | ccd 2 | ccd 3 | ccd 5 | ccd 6 | ccd 7 | ccd 8 |
|-----------------|-------|-------|-------|-------|-------|-------|
| level 1 events  | 37897 | 33597 | 6324  | 33549 | 4570  | 38248 |
| rejected events | 36254 | 32382 | 2030  | 32074 | 1104  | 28887 |
| rejected %      | 95%   | 96%   | 32%   | 95%   | 24%   | 75%   |

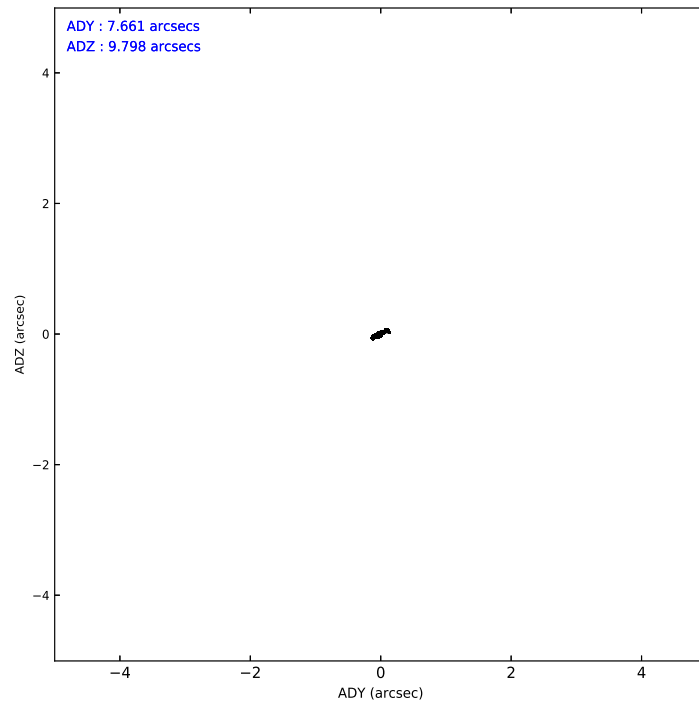
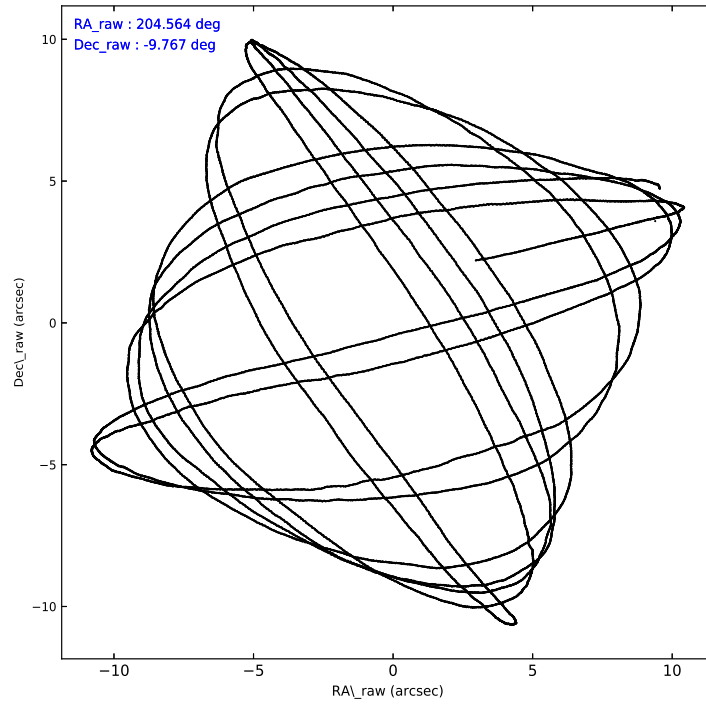
|                | ccd 2 | ccd 3 | ccd 5 | ccd 6 | ccd 7 | ccd 8 |
|----------------|-------|-------|-------|-------|-------|-------|
| grade 0 events | 733   | 603   | 1498  | 746   | 965   | 2570  |
|                | 1%    | 1%    | 23%   | 2%    | 21%   | 6%    |
| grade 1 events | 12    | 14    | 40    | 6     | 21    | 38    |
|                | 0%    | 0%    | 0%    | 0%    | 0%    | 0%    |
| grade 2 events | 390   | 167   | 1548  | 294   | 1187  | 2186  |
|                | 1%    | 0%    | 24%   | 0%    | 25%   | 5%    |
| grade 3 events | 194   | 202   | 487   | 213   | 565   | 1124  |
|                | 0%    | 0%    | 7%    | 0%    | 12%   | 2%    |
| grade 4 events | 231   | 192   | 464   | 198   | 464   | 1009  |
|                | 0%    | 0%    | 7%    | 0%    | 10%   | 2%    |
| grade 5 events | 40    | 38    | 329   | 26    | 131   | 214   |
|                | 0%    | 0%    | 5%    | 0%    | 2%    | 0%    |
| grade 6 events | 171   | 110   | 477   | 89    | 434   | 2791  |
|                | 0%    | 0%    | 7%    | 0%    | 9%    | 7%    |
| grade 7 events | 36126 | 32271 | 1481  | 31977 | 803   | 28316 |
|                | 95%   | 96%   | 23%   | 95%   | 17%   | 74%   |

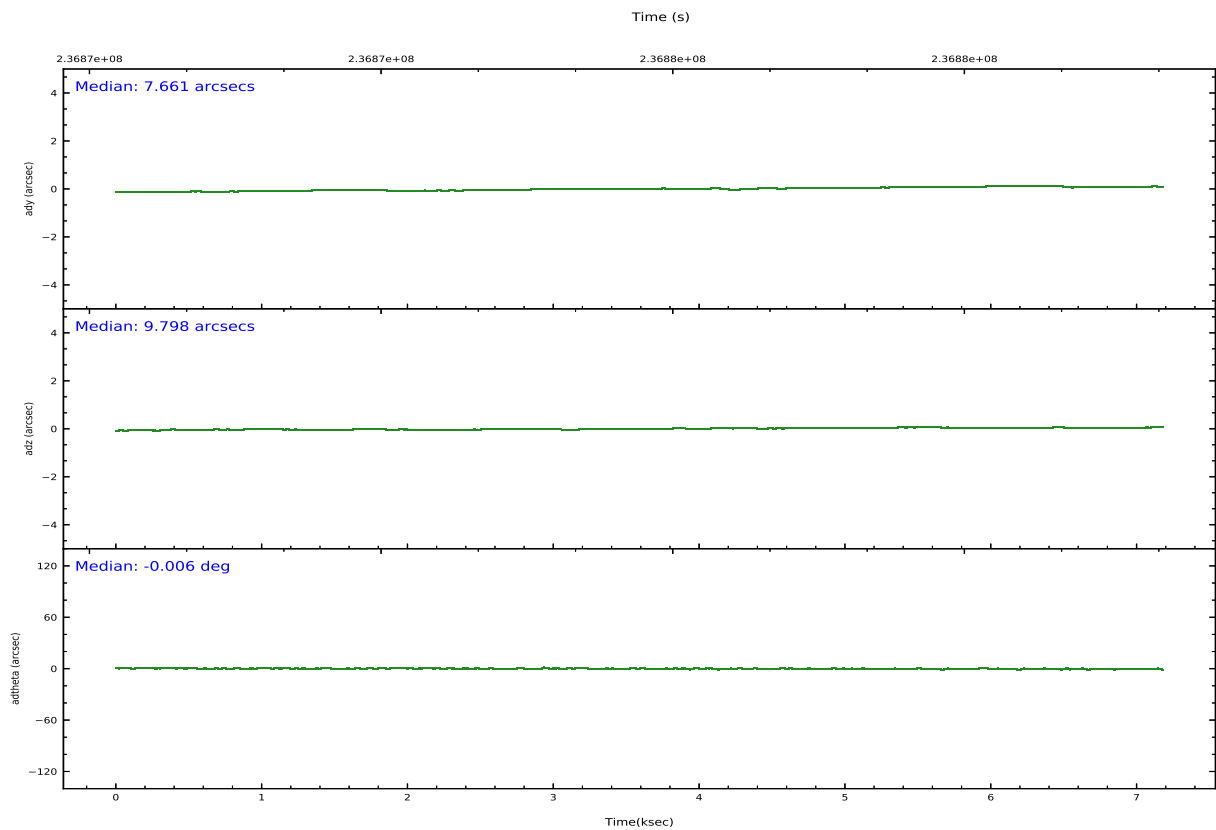
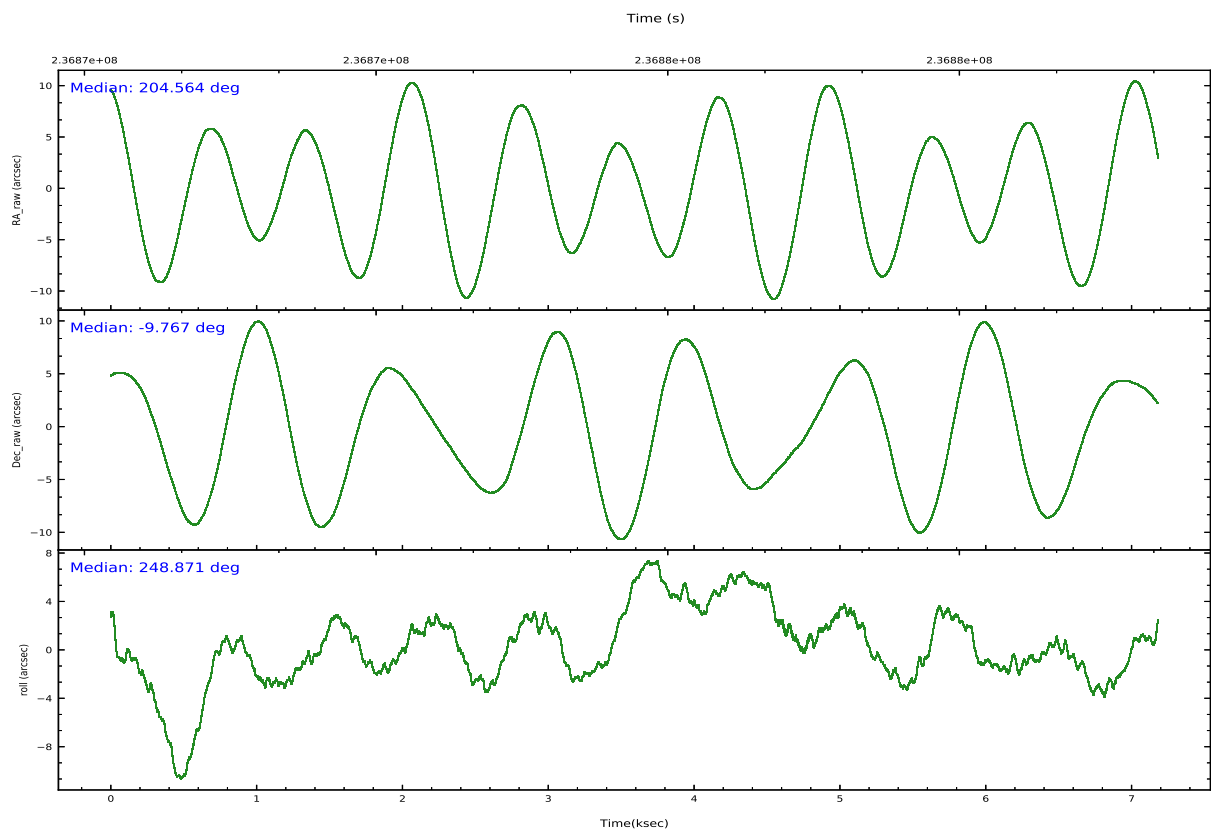


## 2.2 Compared Parameters

| 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                 | 204.559557          | 204.56233539728      | Subarray requested                    | NONE      | NONE    |
| [deg] Pointing Dec                | -9.740137           | -9.763872083347801   | Alternating exposures requested       | N         | N       |
| [deg] Pointing Roll               | 248.714267          | 248.871378993        | [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         | -190.145094680475    |                                       |           |         |
| [mm] SIM translation stage offset | 0                   | 0.01257209746719923  |                                       |           |         |
| [s] Observation start time (MET)  | 236872363.184000    | 236871987.59858      |                                       |           |         |
| Observation start date            | 2005-07-04T13:51:39 | 2005-07-04T13:46:27  |                                       |           |         |
| [s] Observation end time (MET)    | 236879363.184000    | 236879497.26142      |                                       |           |         |
| Observation end date              | 2005-07-04T15:48:19 | 2005-07-04T15:51:37  |                                       |           |         |
| Read mode                         | TIMED               | TIMED                |                                       |           |         |

## 2.3 Aspect



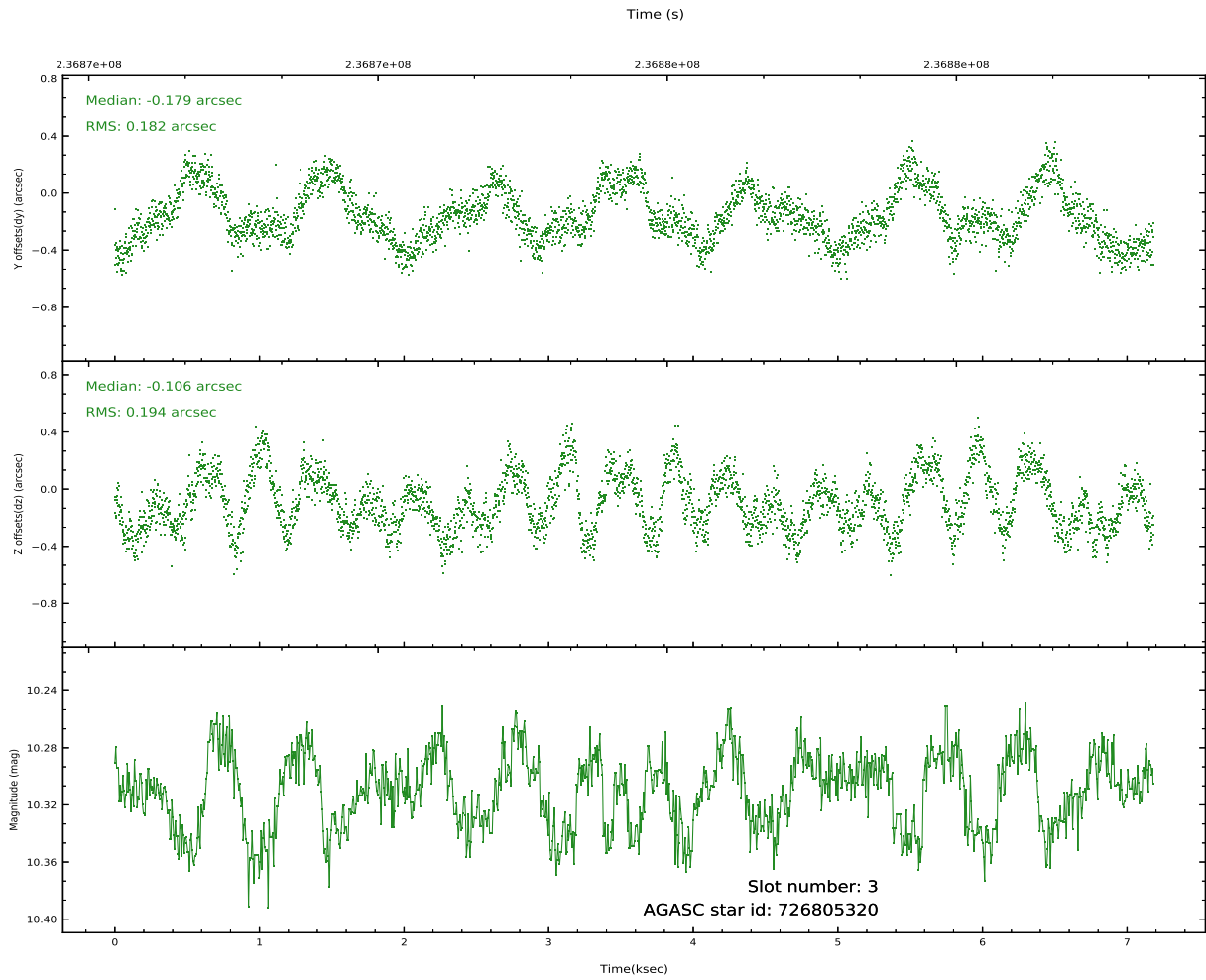
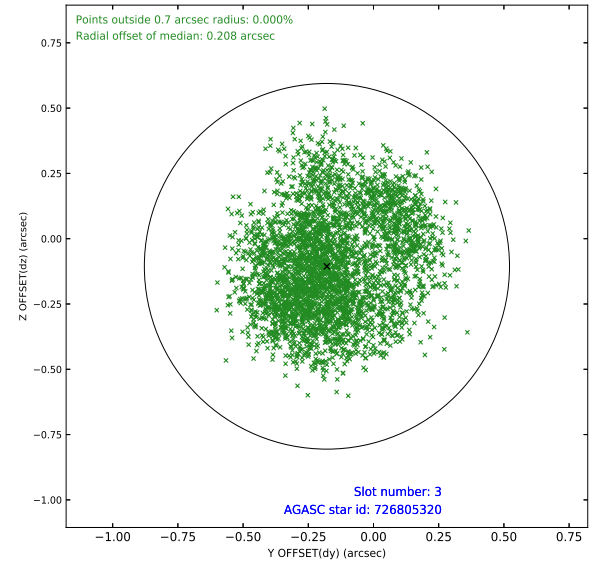
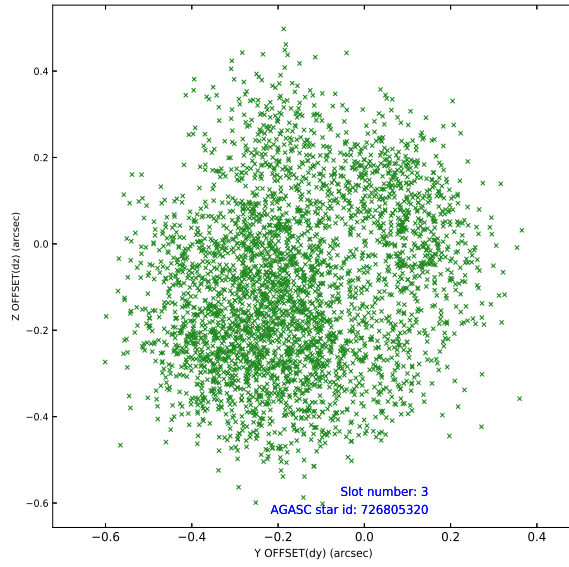


Slot Statistics

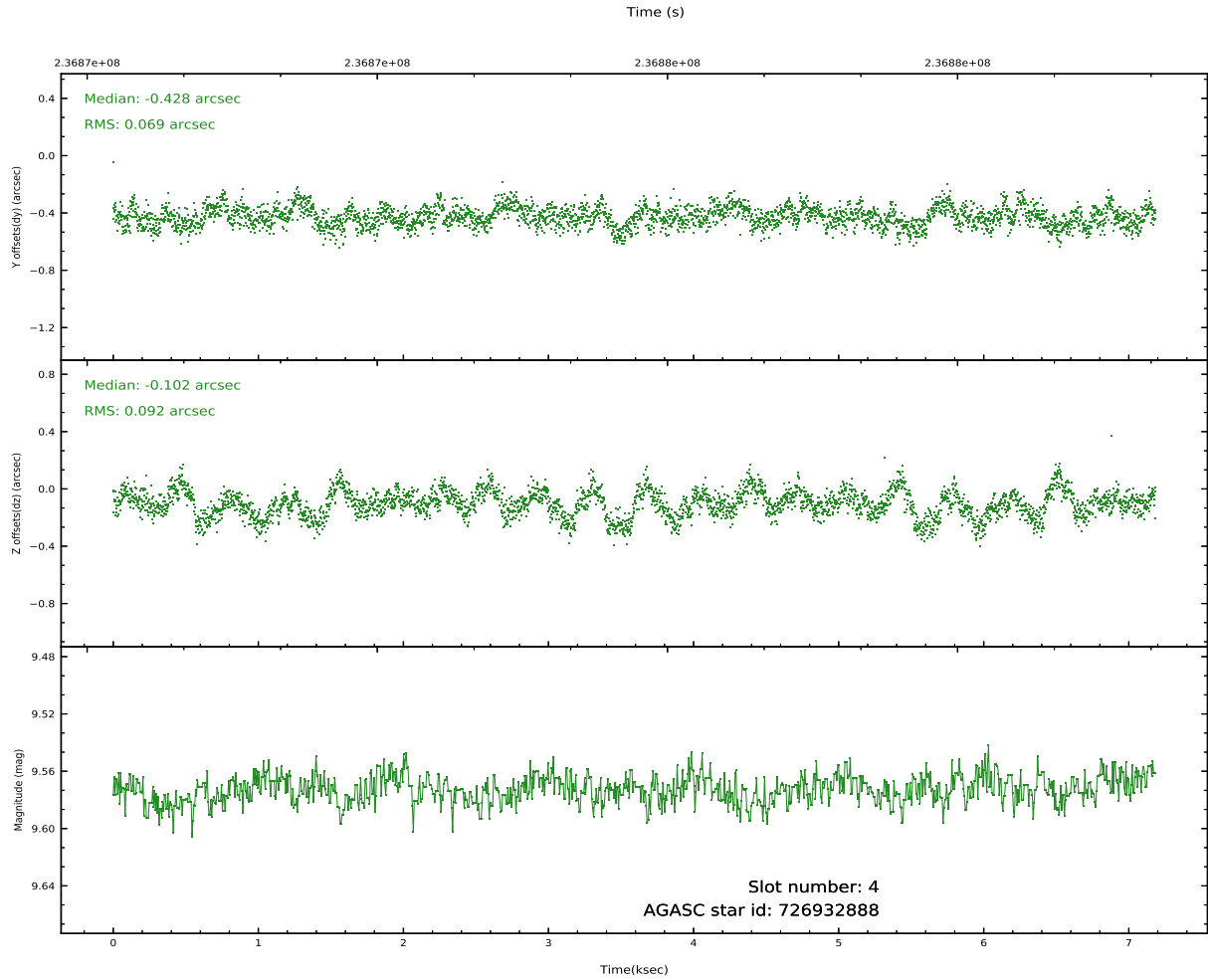
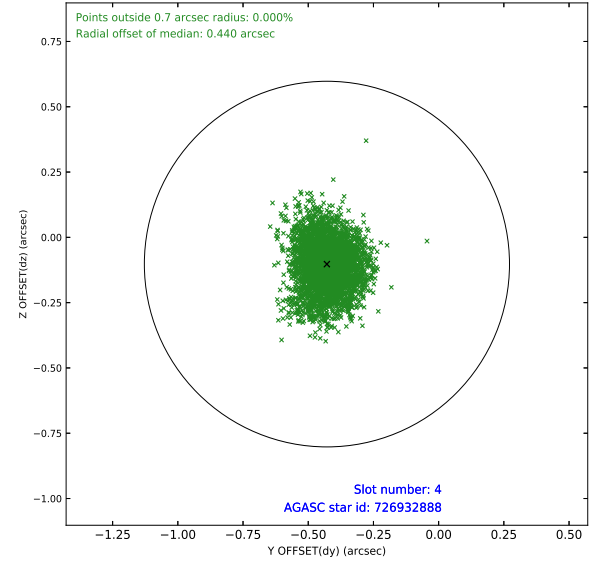
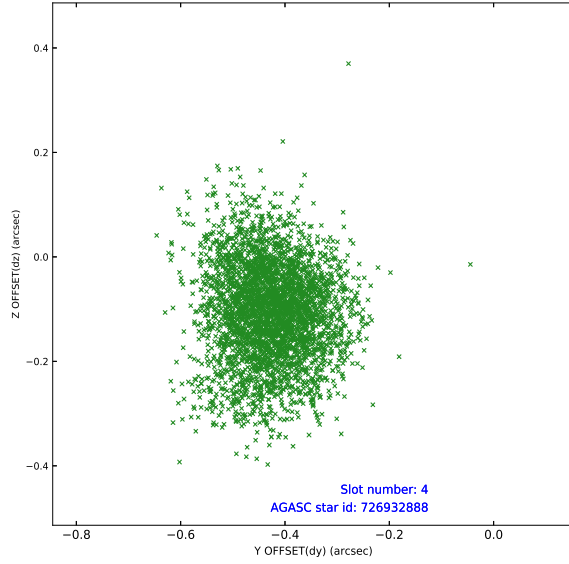
| pt | status | used | id        | mag   | n_pts | frac_pts | med_dy | med_dz | dr1   | dr2   | ra         | dec        | mean_y   | mea   |
|----|--------|------|-----------|-------|-------|----------|--------|--------|-------|-------|------------|------------|----------|-------|
| 0  | FID    |      | ACIS-S-2  | 7.10  | 1752  | 1.000    | -0.067 | -0.065 | 0.006 | 0.010 | 0.000000   | 0.000000   | -760.43  | -1731 |
| 1  | FID    |      | ACIS-S-4  | 7.20  | 1752  | 1.000    | 0.158  | 0.050  | 0.007 | 0.013 | 0.000000   | 0.000000   | 2152.64  | 176   |
| 2  | FID    |      | ACIS-S-5  | 7.23  | 1753  | 1.000    | -0.123 | 0.025  | 0.007 | 0.013 | 0.000000   | 0.000000   | -1812.37 | 171   |
| 3  | GUIDE  | used | 726805320 | 10.31 | 3502  | 1.000    | -0.179 | -0.106 | 0.298 | 0.425 | 204.212849 | -9.734967  | 430.08   | -1152 |
| 4  | GUIDE  | used | 726932888 | 9.57  | 3499  | 1.000    | -0.428 | -0.102 | 0.121 | 0.200 | 204.640397 | -9.165404  | -2032.01 | -484  |
| 5  | GUIDE  | used | 726935840 | 9.51  | 3503  | 1.000    | 0.446  | -0.147 | 0.146 | 0.226 | 205.084608 | -9.297514  | -2160.37 | 1159  |
| 6  | GUIDE  | used | 727320712 | 10.39 | 3501  | 1.000    | 0.232  | 0.042  | 0.273 | 0.417 | 204.468965 | -10.254166 | 1840.77  | 373   |
| 7  | GUIDE  | used | 727321032 | 9.99  | 3498  | 1.000    | -0.059 | 0.323  | 0.162 | 0.255 | 205.073686 | -10.196206 | 870.51   | 2294  |

## 2.4 Star Slots

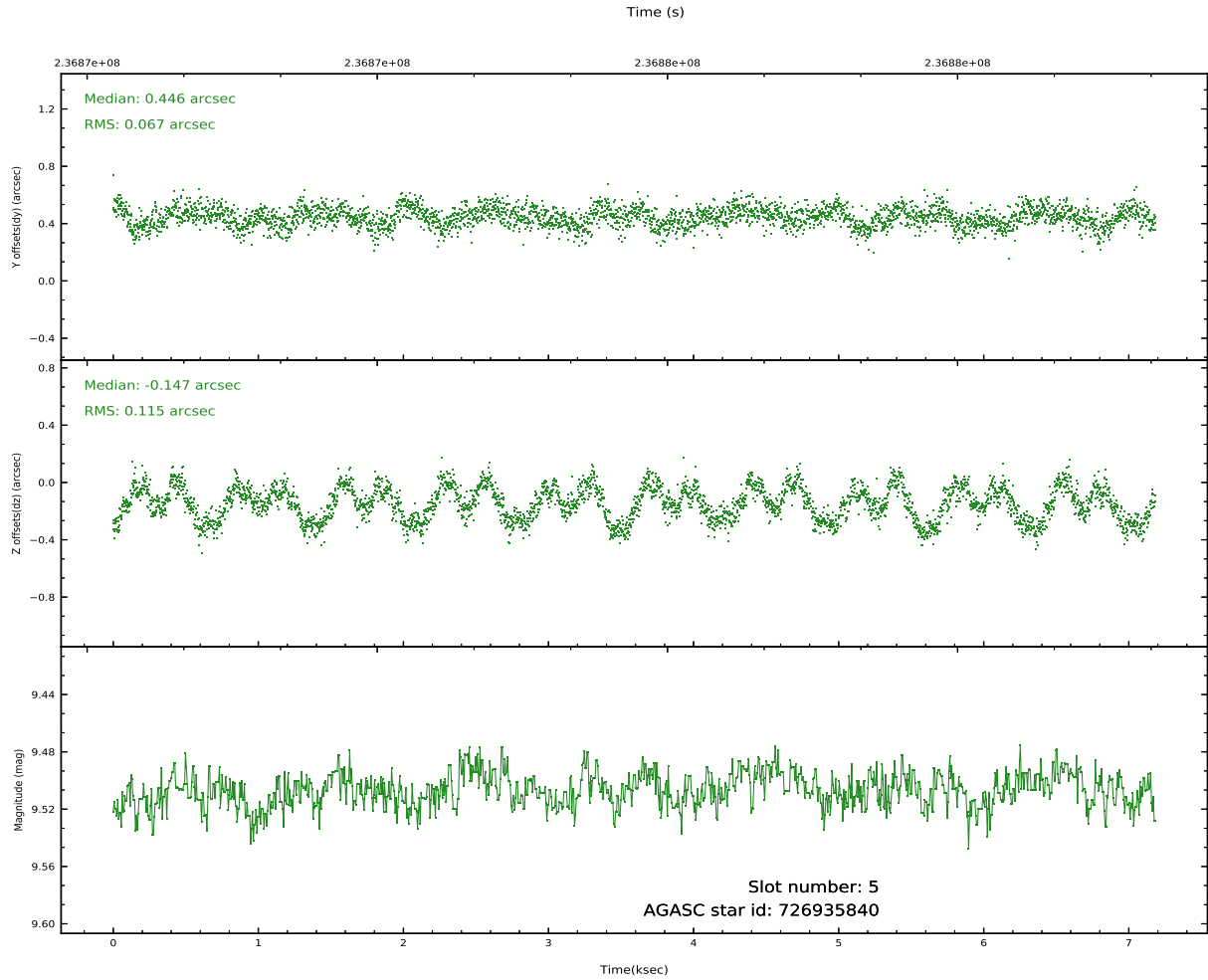
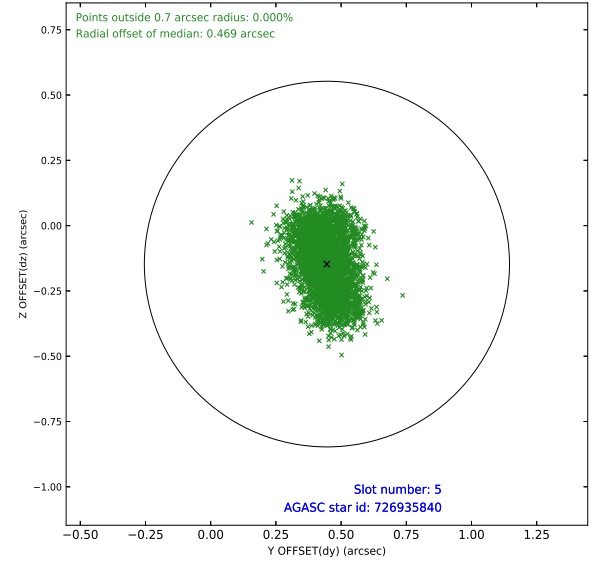
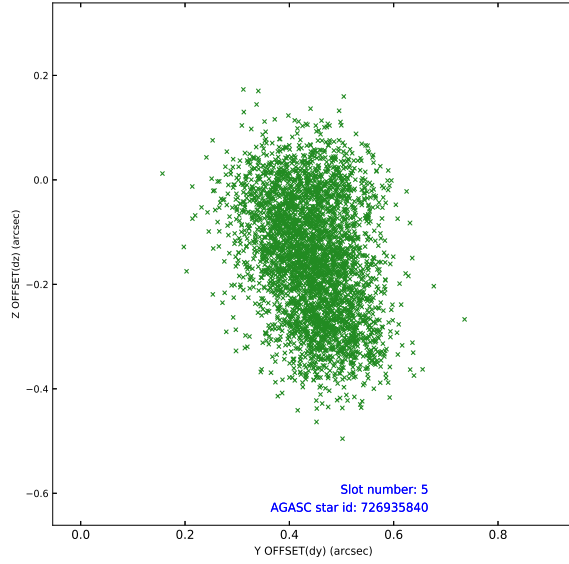
### 2.4.1 Slot 3



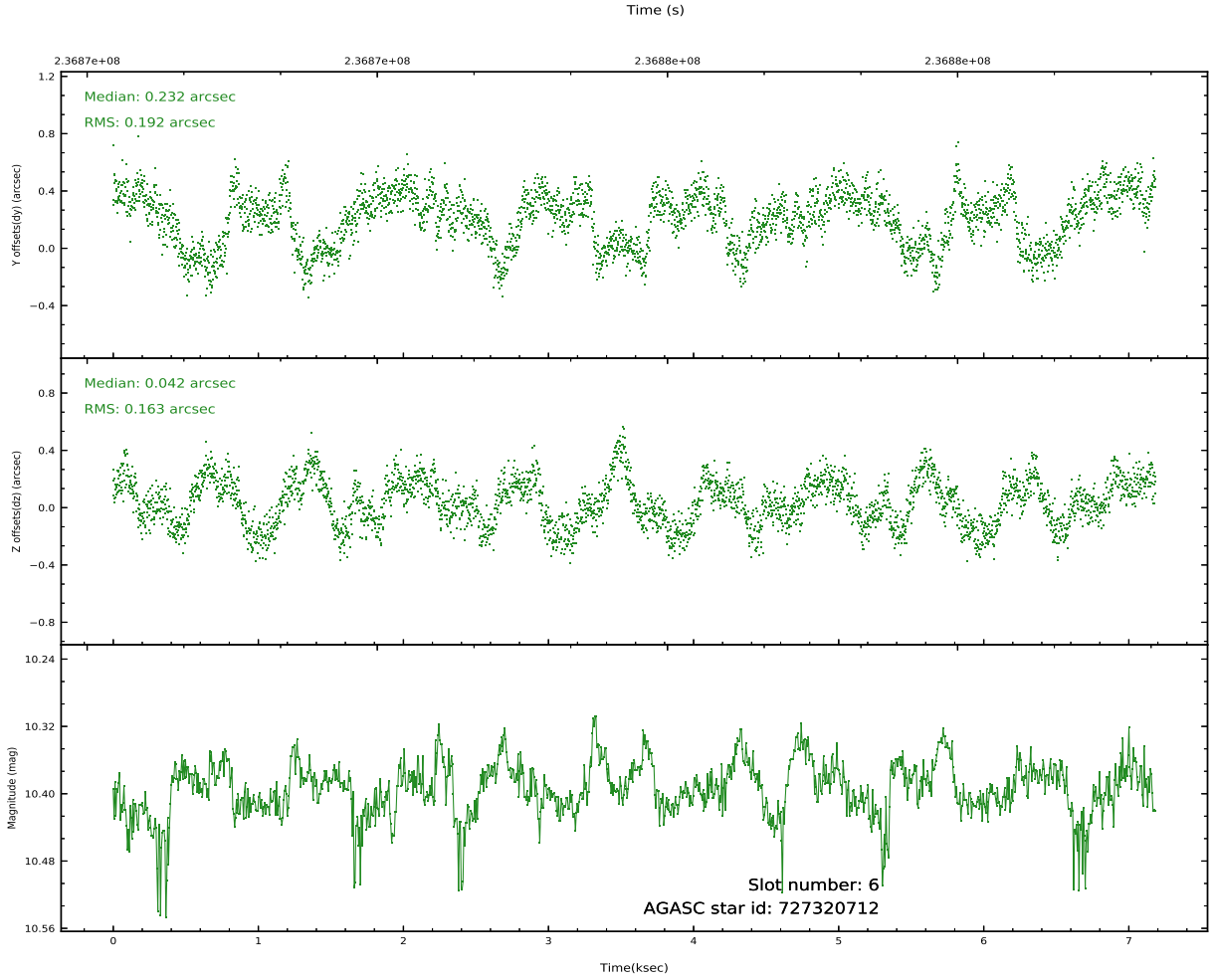
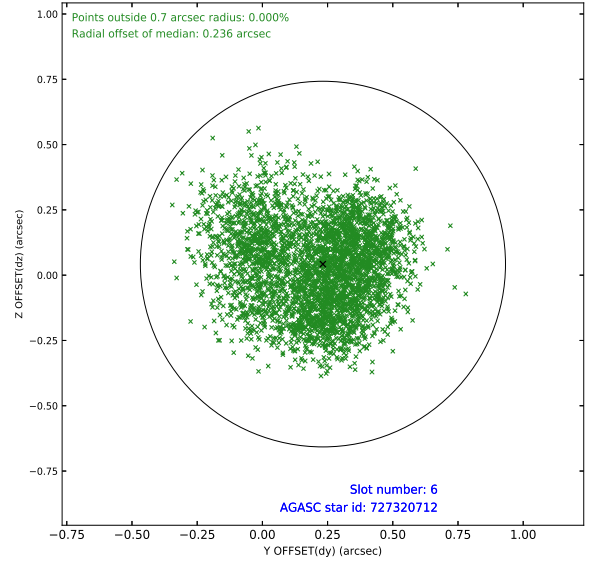
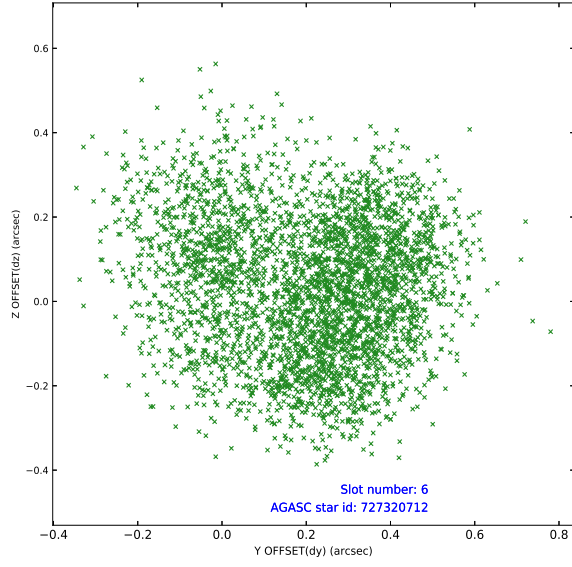
## 2.4.2 Slot 4



### 2.4.3 Slot 5

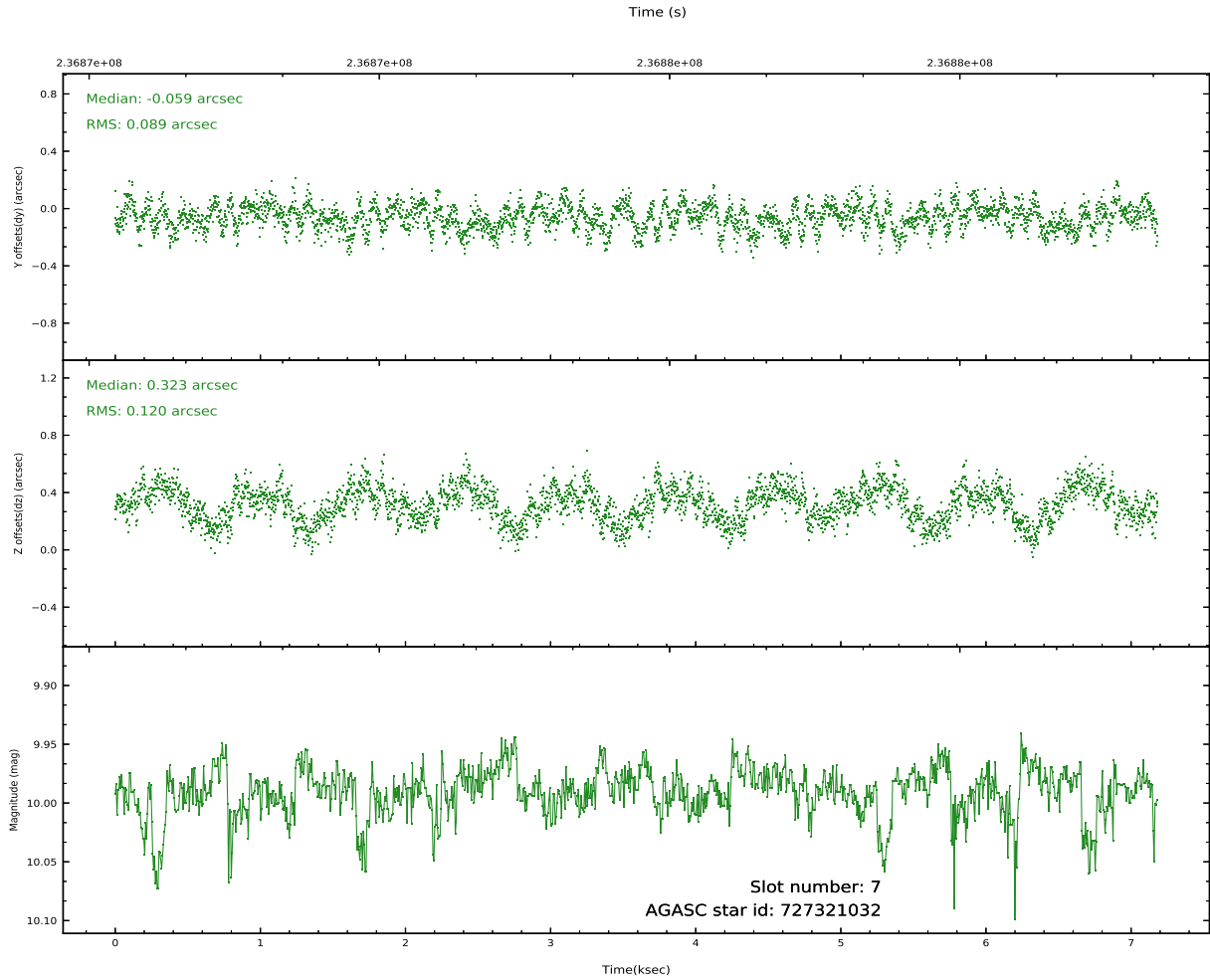
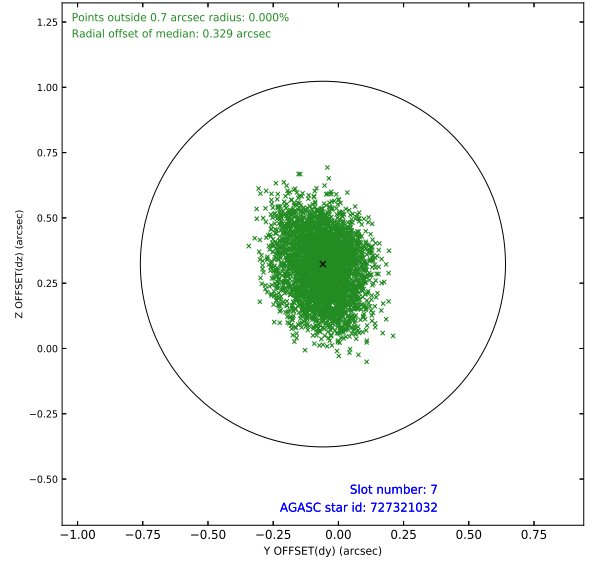
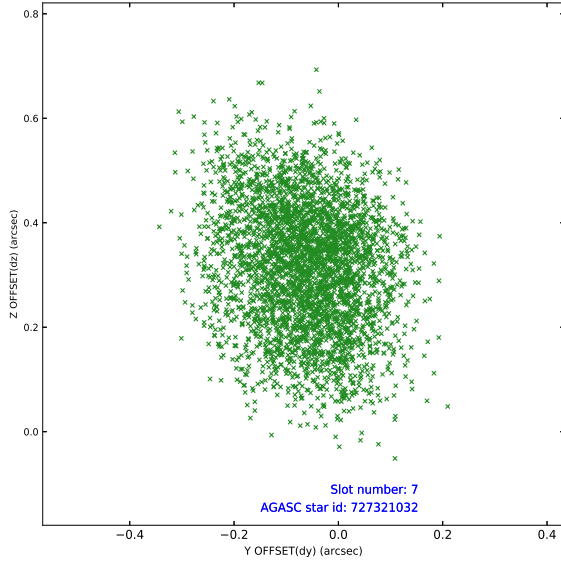


## 2.4.4 Slot 6



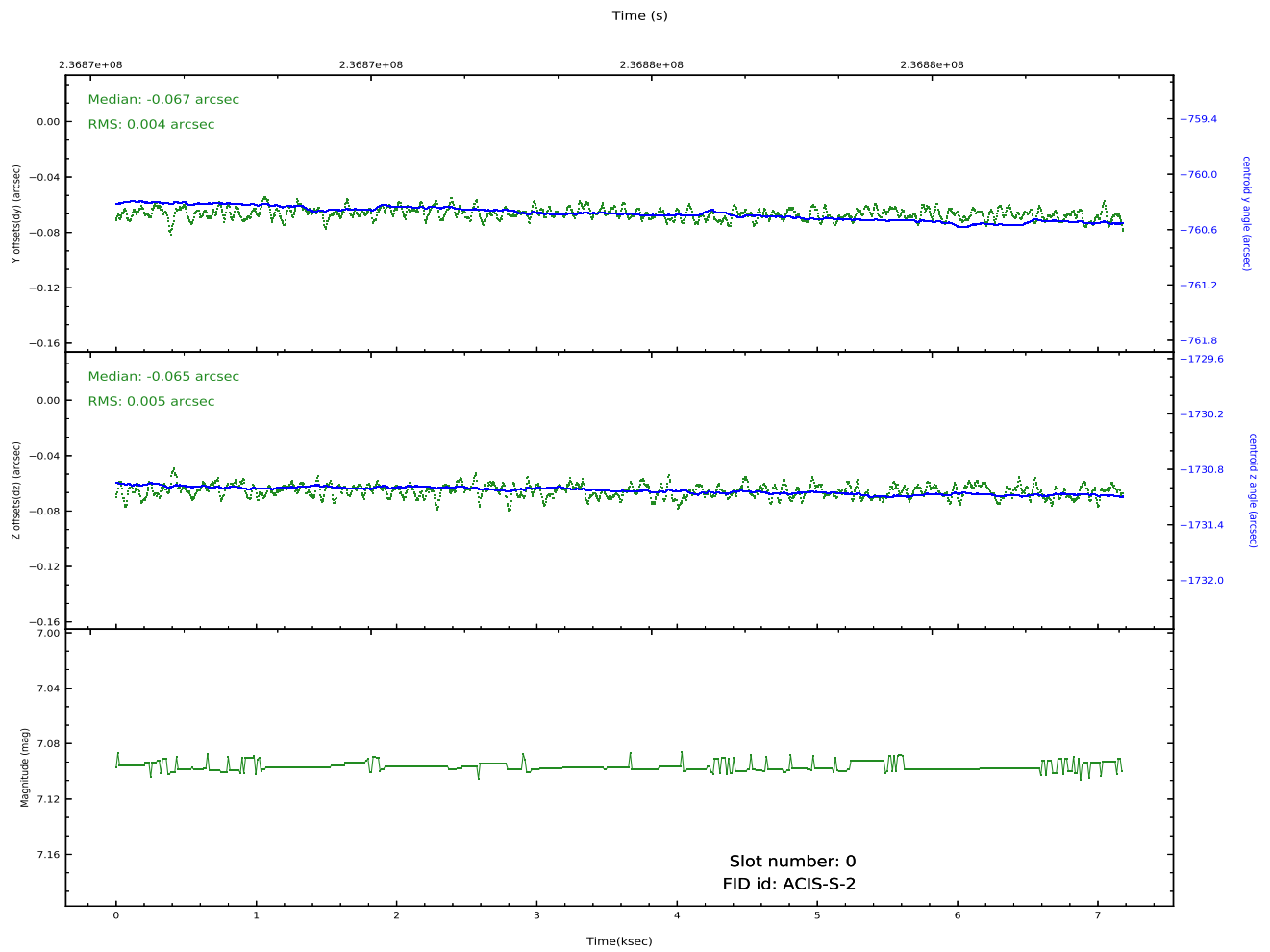
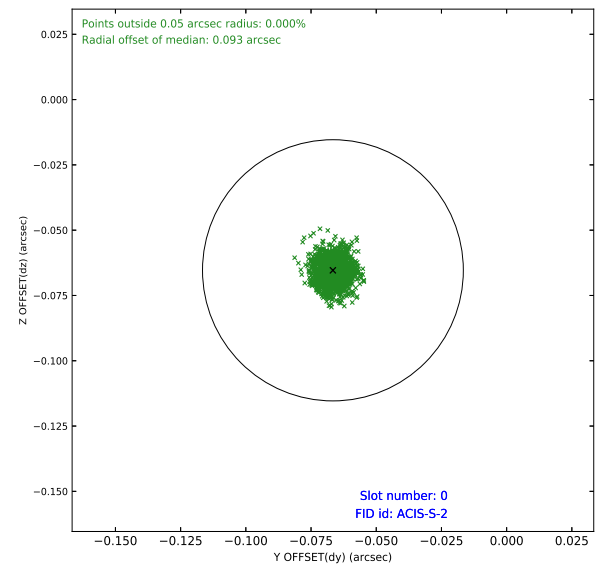
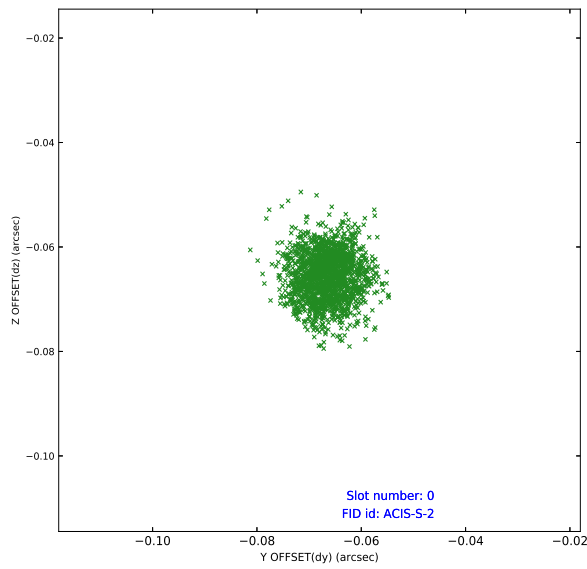


## 2.4.5 Slot 7

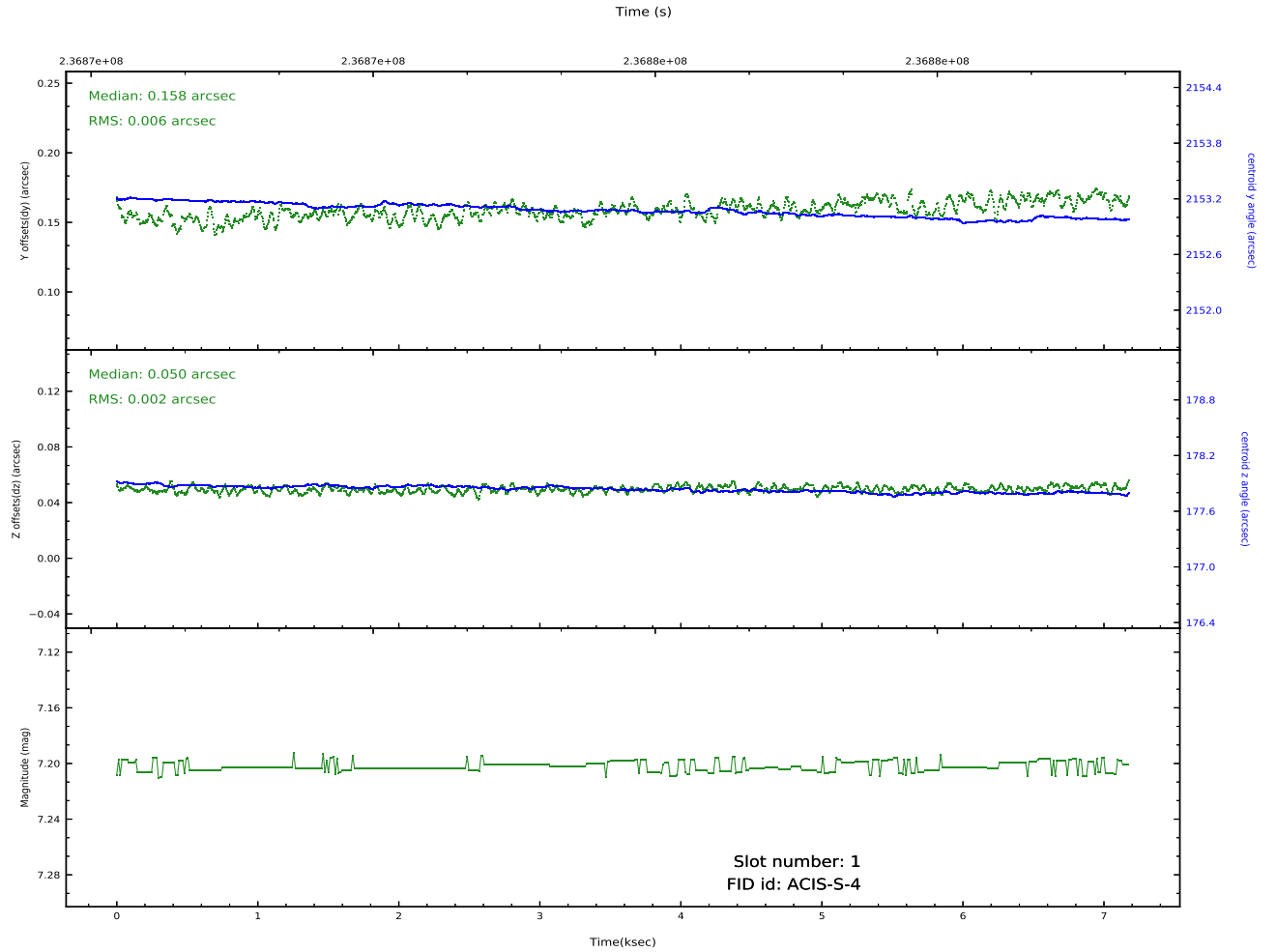
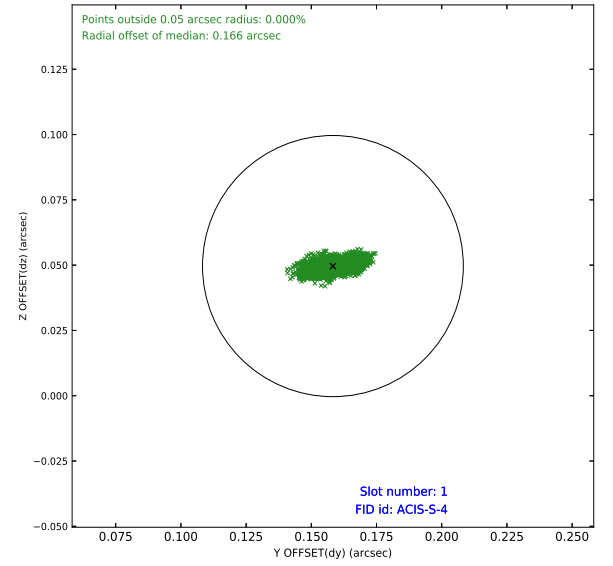
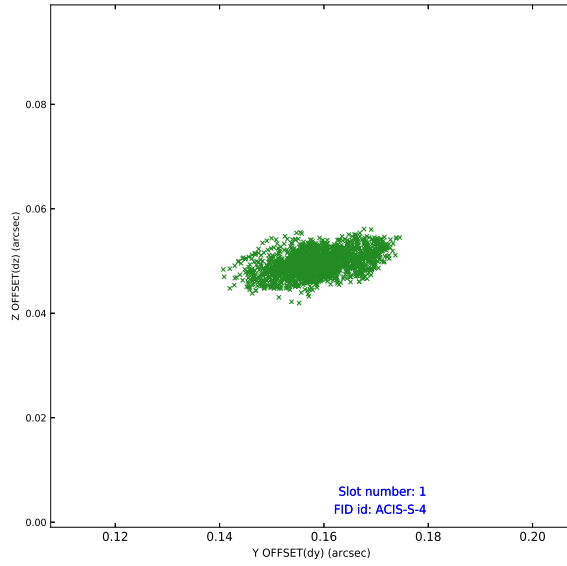


## 2.5 FID Slots

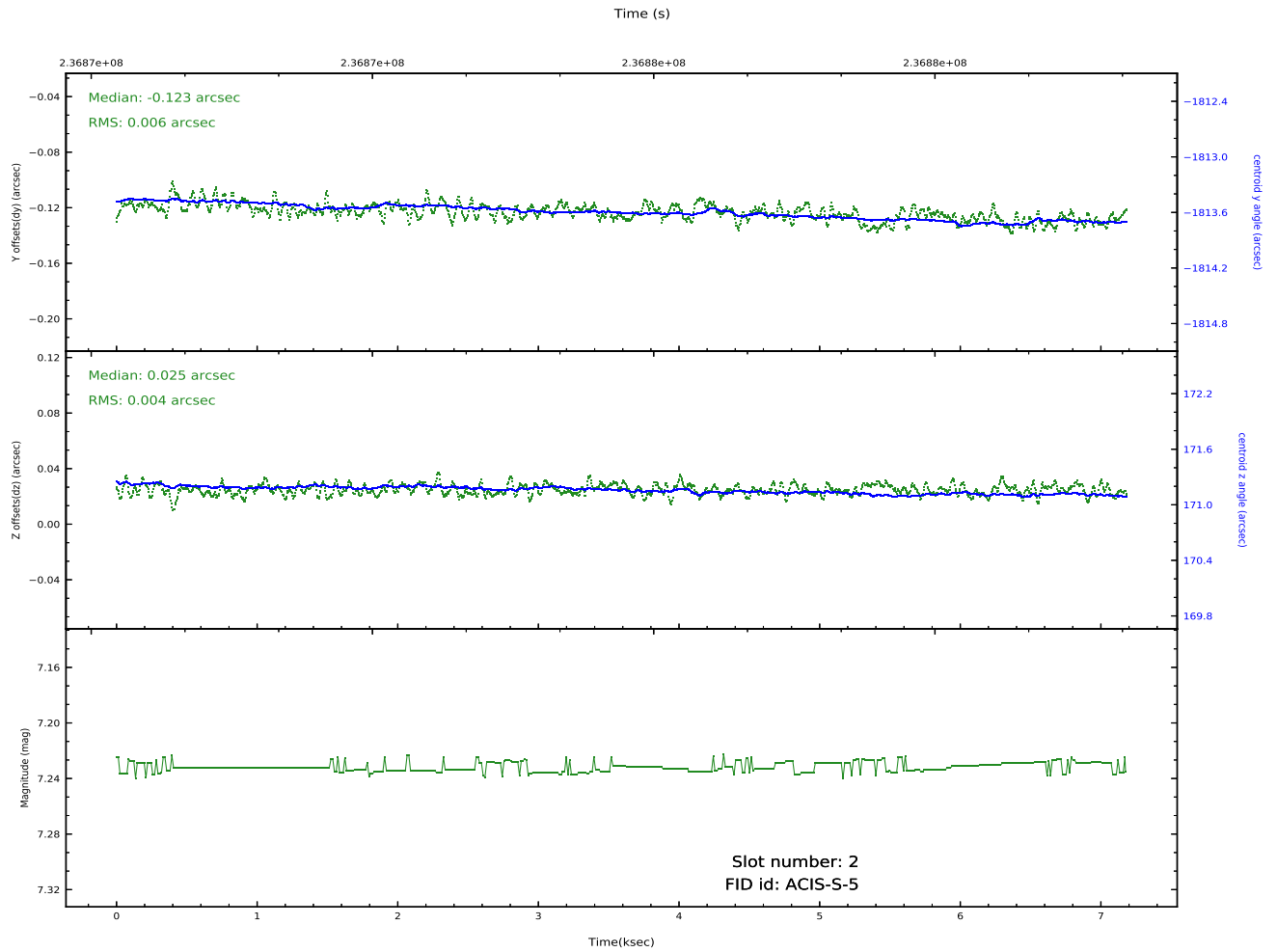
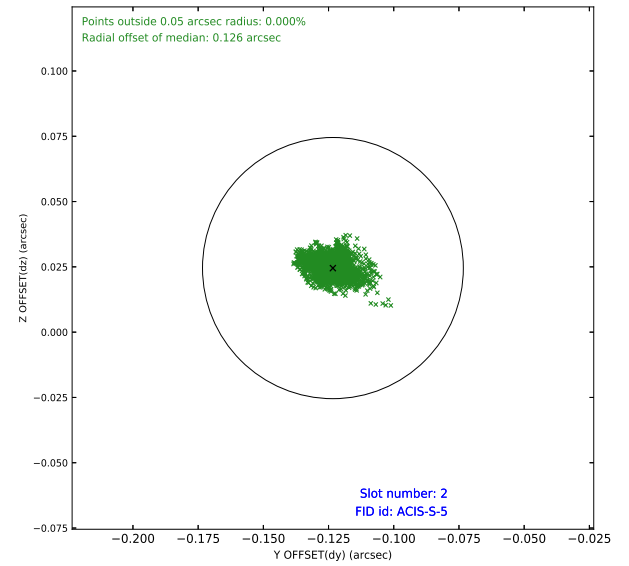
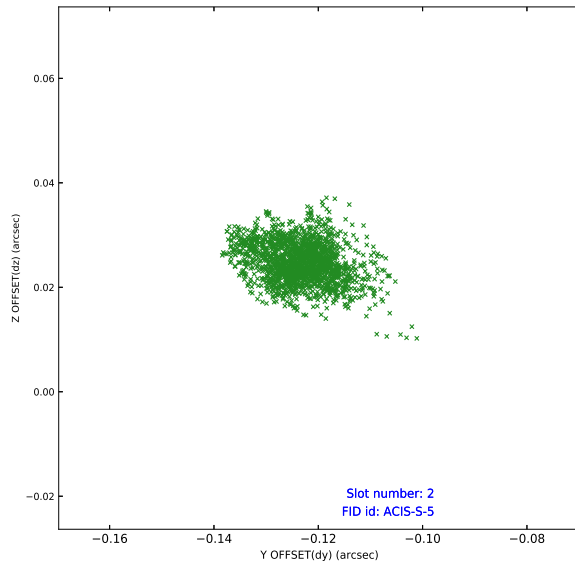
### 2.5.1 Slot 0



## 2.5.2 Slot 1



### 2.5.3 Slot 2



# A Summary

## A.1 Status

|                            |            |
|----------------------------|------------|
| V&V Scientist              | Jen Lauer  |
| V&V Date (YYYY-MM-DD)      | 2020.10.14 |
| V&V Edition                | 1          |
| V&V Disposition and Status | OK         |
| V&V Charge Time            | 7.180799   |

## A.2 Comments

This is a moving target. Users will need to run `sso_freeze` or similar software to position the events in the reference frame of the target