

# V&V Reference Report

## L2 ASCDS Version : 10.5.4

Observation 19507 - L2 Version 1  
Chandra X-Ray Center

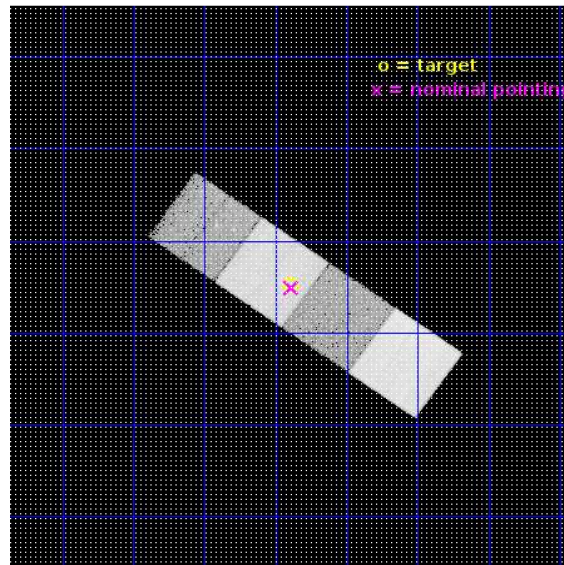
L2 Processing Date : Apr 25 2017

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# 1 Front

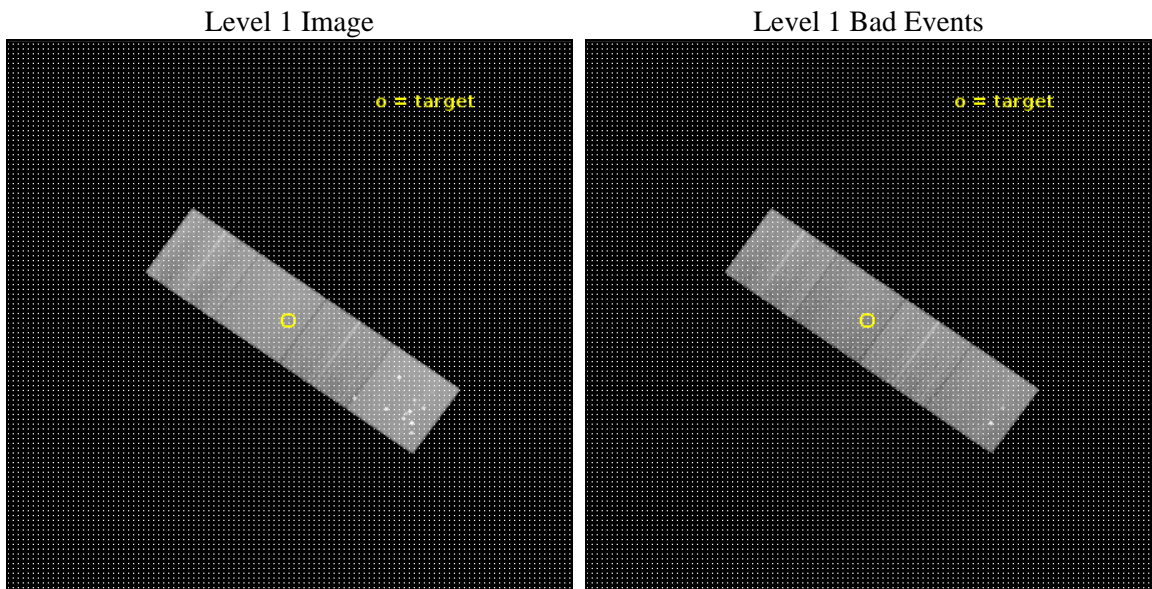
|          |  |   |
|----------|--|---|
| seq_num  | 703355   | Sequence number                             |
| obs_id   | 19507  | Observation id                              |
| title    | WISE Discovery of the Largest Sample of Obscured Dual AGNs: A Chandra and NuSTAR Follow-up | Proposal title                              |
| observer | Shobita Satyapal   | Principal investigator                      |
| object   | J1306+0735   | Source name                                 |
| dtcycle  | 0  | &#160                                       |
| cycle    | P  | events from which exps?<br>Prim/Second/Both |
| ra_targ  | 196.723333   | Observer's specified target RA [deg]        |
| dec_targ | 7.588389   | Observer's specified target Dec [deg]       |
| ra_nom   | 196.72217761964  | Nominal RA [deg]                            |
| dec_nom  | 7.5817807572183  | Nominal Dec [deg]                           |
| roll_nom | 215.15679153428  | Nominal Roll [deg]                          |
| revision | 1  | Processing version of data                  |
| ontime   | 29564.700227499  | Sum of GTIs [s]                             |
| livetime | 29178.415653811  | Livetime [s]                                |
| ontime5  | 29564.700227499  | Sum of GTIs [s]                             |
| ontime6  | 29564.700227499  | Sum of GTIs [s]                             |
| ontime7  | 29564.700227499  | Sum of GTIs [s]                             |
| ontime8  | 29564.700227499  | Sum of GTIs [s]                             |
| l2events | 293721   | Number of level 2 events                    |



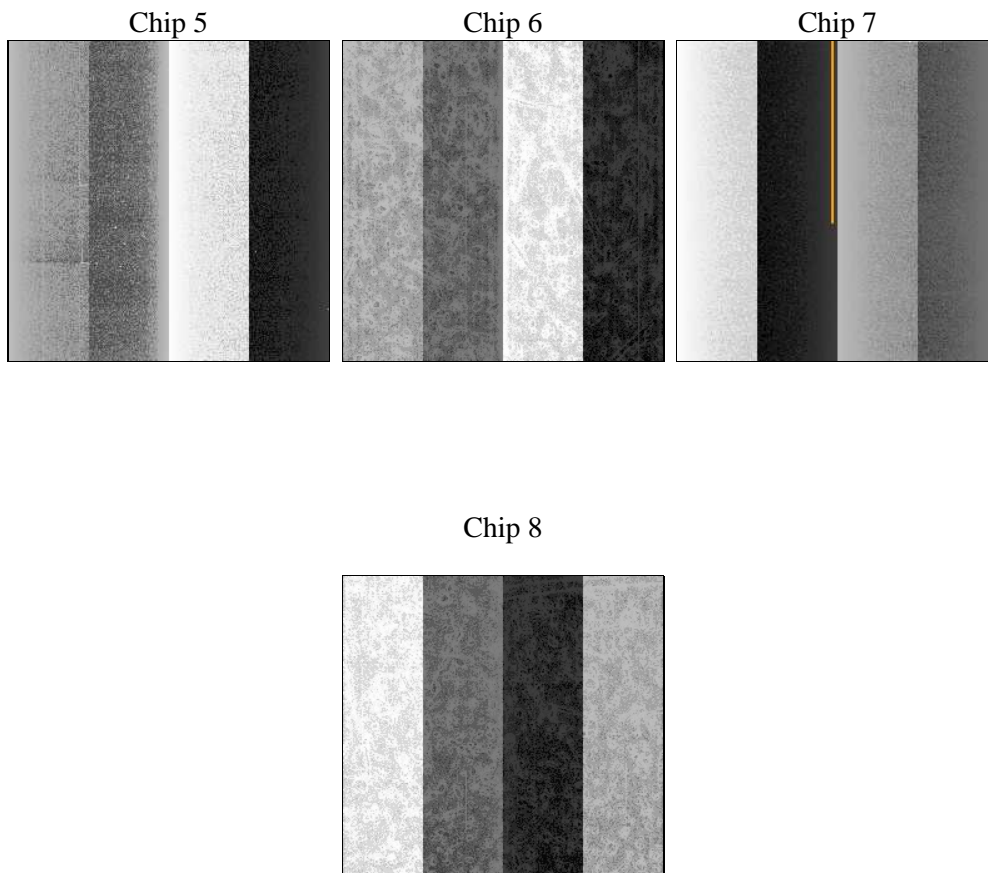
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

|          |                     |                                |                |                 |   |
|----------|---------------------|--------------------------------|----------------|-----------------|---|
| obi_num  | 0                   | Obi number                     | sched_exp_time | 29500.000000    | [s] Scheduled observation exposure time |
| ascdsver | 10.5.4              | Processing system revision     | ontime         | 29564.700227499 | Sum of GTIs [s]                         |
| caldsver | 4.7.3               | &#160                          | ontime5        | 29564.700227499 | Sum of GTIs [s]                         |
| date     | 2017-04-26T00:49:29 | Date and time of file creation | ontime6        | 29564.700227499 | Sum of GTIs [s]                         |
| revision | 1                   | Processing version of data     | ontime7        | 29564.700227499 | Sum of GTIs [s]                         |
|          |                     |                                | ontime8        | 29564.700227499 | Sum of GTIs [s]                         |
|          |                     |                                | l1events       | 1108612         | Number of level 1 events                |

### 2.1.4 Events

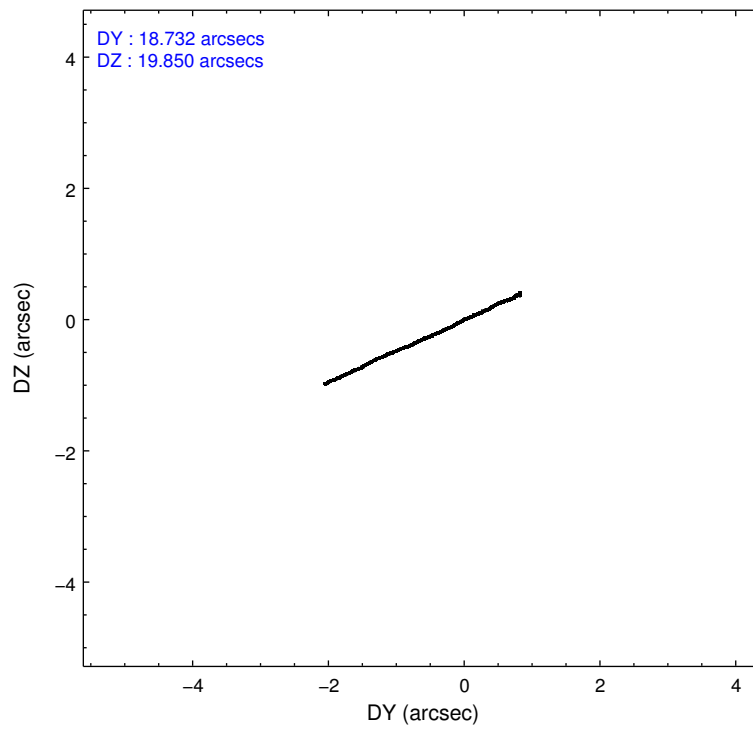
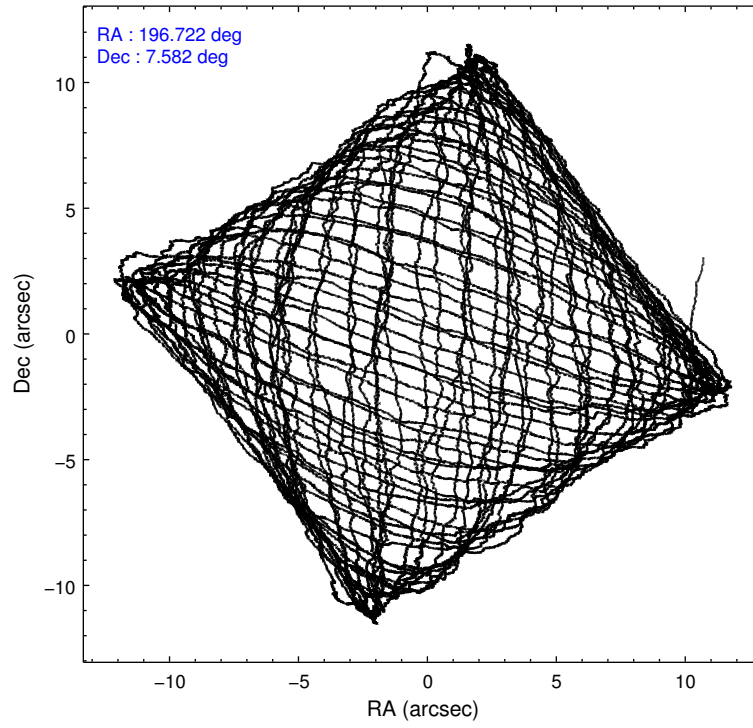
|                 | ccd 5  | ccd 6  | ccd 7  | ccd 8  |
|-----------------|--------|--------|--------|--------|
| level 1 events  | 378739 | 207309 | 257851 | 264713 |
| rejected events | 176090 | 184280 | 147412 | 196494 |
| rejected %      | 46%    | 88%    | 57%    | 74%    |

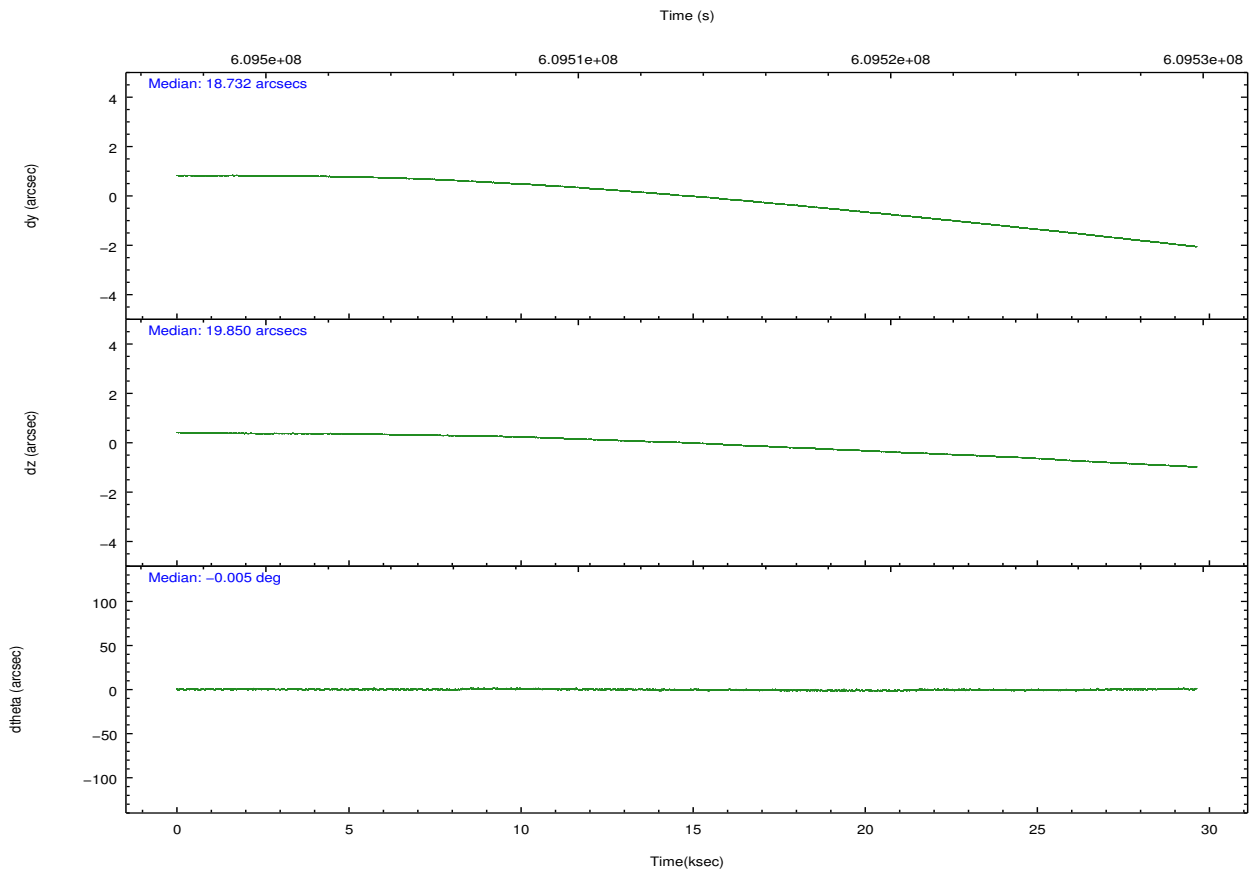
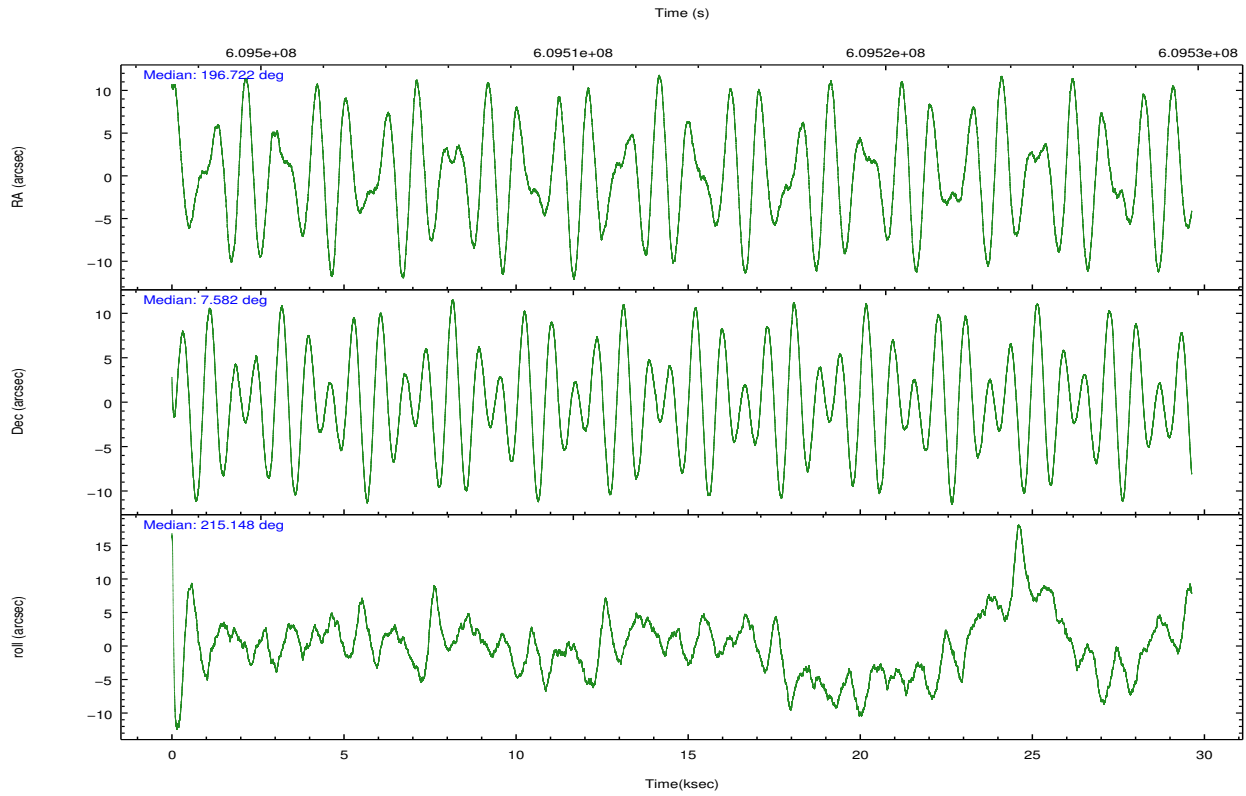
|                | ccd 5  | ccd 6  | ccd 7  | ccd 8  |
|----------------|--------|--------|--------|--------|
| grade 0 events | 49283  | 7637   | 8949   | 19635  |
|                | 13%    | 3%     | 3%     | 7%     |
| grade 1 events | 797    | 81     | 341    | 192    |
|                | 0%     | 0%     | 0%     | 0%     |
| grade 2 events | 55742  | 5412   | 23463  | 16468  |
|                | 14%    | 2%     | 9%     | 6%     |
| grade 3 events | 7309   | 2153   | 8344   | 7069   |
|                | 1%     | 1%     | 3%     | 2%     |
| grade 4 events | 5356   | 2150   | 8290   | 6569   |
|                | 1%     | 1%     | 3%     | 2%     |
| grade 5 events | 21947  | 9209   | 24673  | 14230  |
|                | 5%     | 4%     | 9%     | 5%     |
| grade 6 events | 84993  | 5680   | 61404  | 18481  |
|                | 22%    | 2%     | 23%    | 6%     |
| grade 7 events | 153312 | 174987 | 122387 | 182069 |
|                | 40%    | 84%    | 47%    | 68%    |

## 2.2 Compared Parameters

| Parameter                         | Planned             | Actual               | Parameter                             | Planned   | Actual  |
|-----------------------------------|---------------------|----------------------|---------------------------------------|-----------|---------|
| Instrument                        | ACIS                | ACIS                 | Obspar format version number          | 7         | 7       |
| Detector                          | ACIS-5678           | ACIS-5678            | Obspar file type                      | PREDICTED | ACTUAL  |
| Grating                           | NONE                | NONE                 | Obspar update status                  | NONE      | UPDATED |
| Data mode                         | FAINT               | FAINT                | CCD I0 on                             | N         | N       |
| Observation mode                  | POINTING            | POINTING             | CCD I1 on                             | N         | N       |
| [deg] Pointing RA                 | 196.733466          | 196.722177619638     | CCD I2 on                             | N         | N       |
| [deg] Pointing Dec                | 7.606832            | 7.581780757218337    | CCD I3 on                             | N         | N       |
| [deg] Pointing Roll               | 214.998658          | 215.1567915342791    | CCD S0 on                             | N         | N       |
| [mm] SIM focus pos                | -0.684267           | -0.6828225247311905  | CCD S1 on                             | O1        | Y       |
| [mm] SIM defocus                  | 0                   | 0.001444936568705701 | CCD S2 on                             | O3        | Y       |
| [mm] SIM translation stage pos    | -190.132523         | -190.1425803651734   | CCD S3 on                             | Y         | Y       |
| [mm] SIM translation stage offset | 0                   | 0.01005778216563158  | CCD S4 on                             | O2        | Y       |
| [s] Observation start time (MET)  | 609498787.184000    | 609497119.7862999    | CCD S5 on                             | N         | N       |
| Observation start date            | 2017-04-25T09:11:58 | 2017-04-25T08:45:19  | Number of optional ACIS chips dropped | 0         | 0       |
| [s] Observation end time (MET)    | 609528287.184000    | 609529319.13816      | On-chip summing requested             | N         | N       |
| Observation end date              | 2017-04-25T17:23:38 | 2017-04-25T17:41:59  | Subarray requested                    | NONE      | NONE    |
| Read mode                         | TIMED               | TIMED                | Alternating exposures requested       | N         | N       |
|                                   |                     |                      | [s] Primary exposure time             | 0.000000  | 3.1     |

## 2.3 Aspect



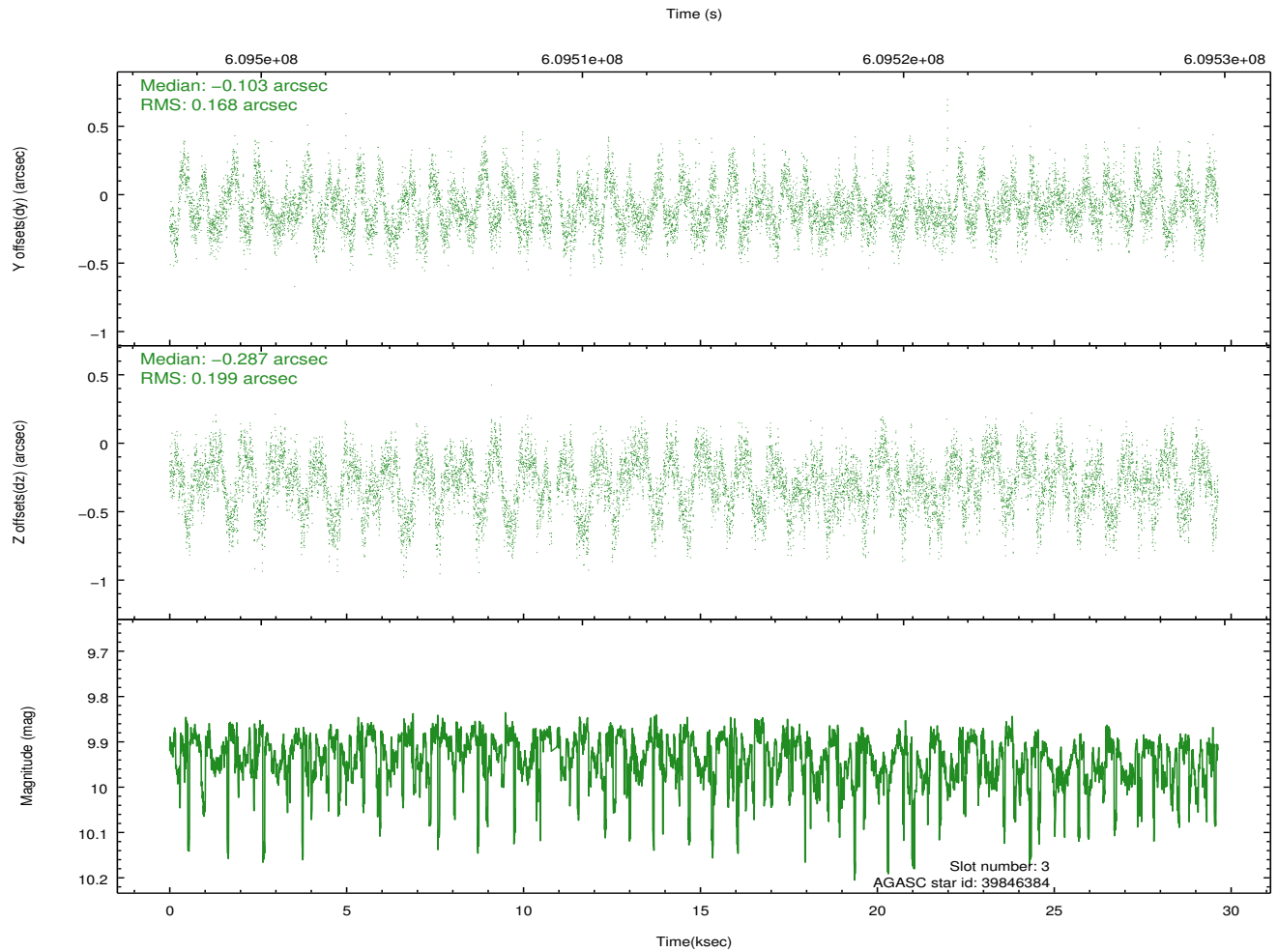
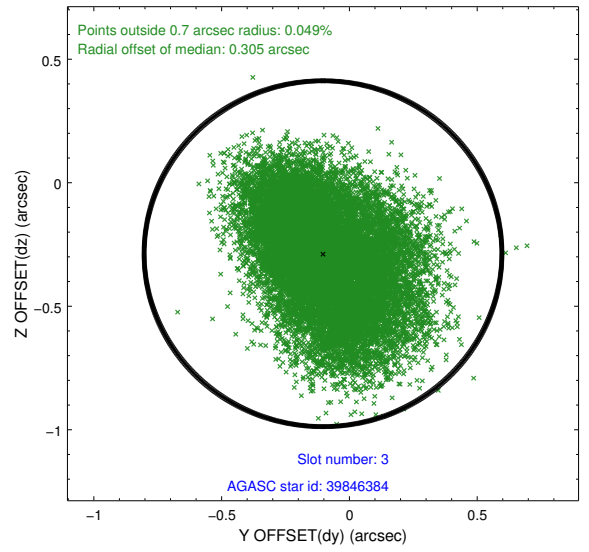
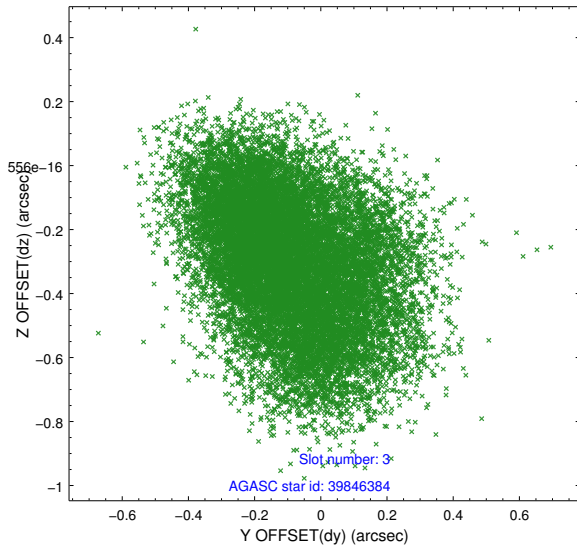


### Slot Statistics

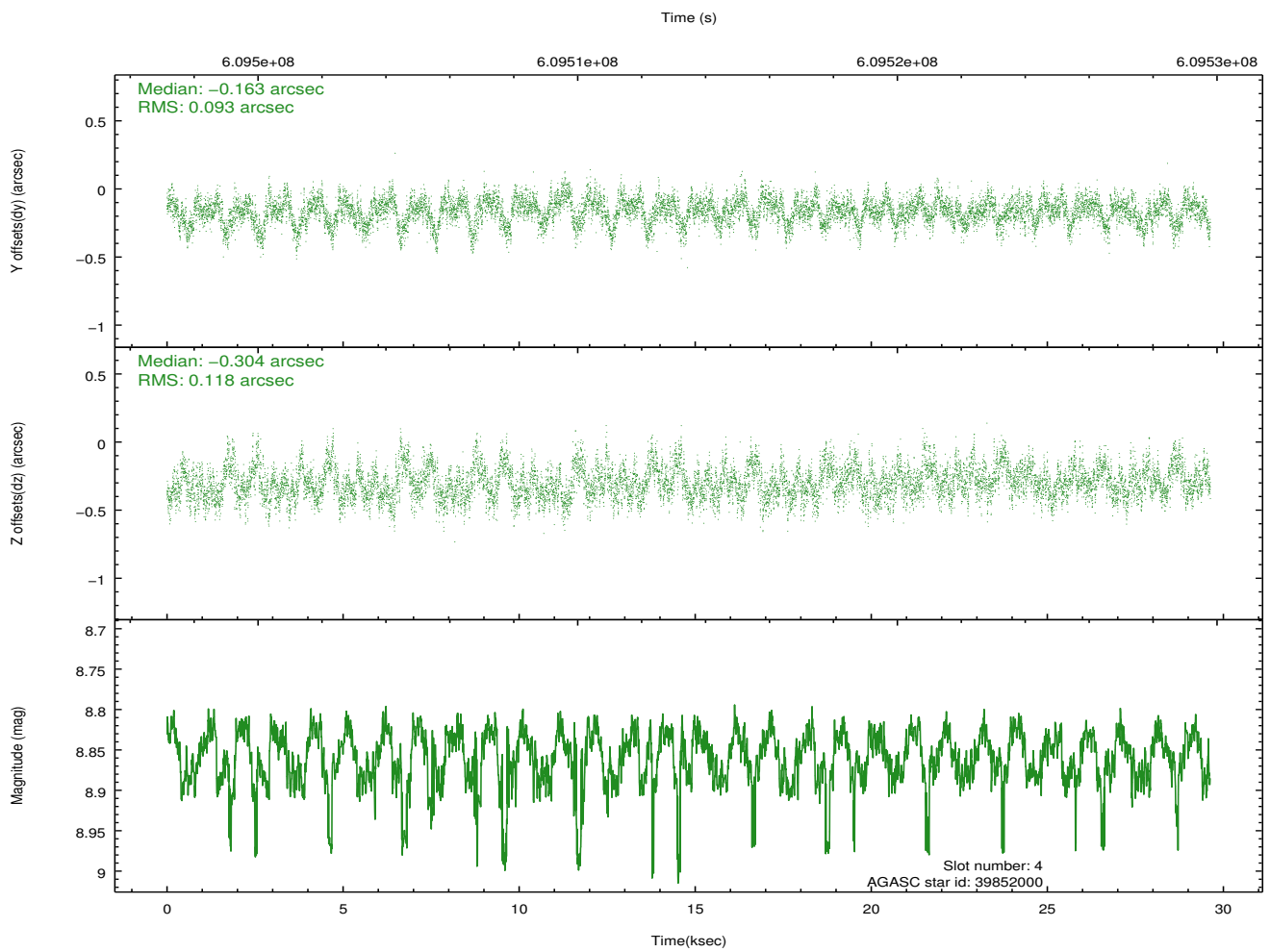
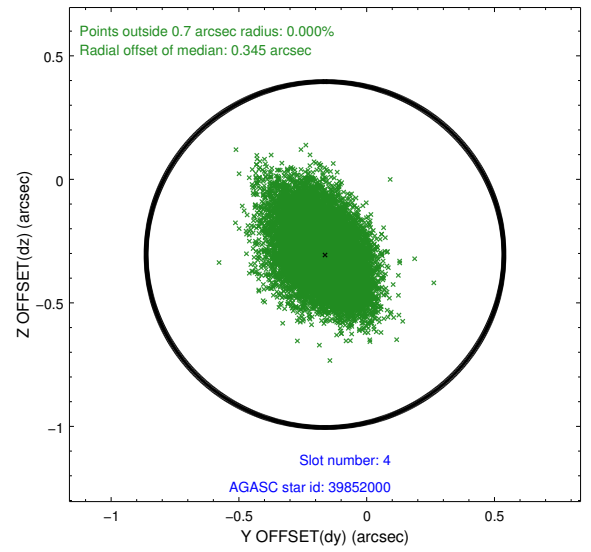
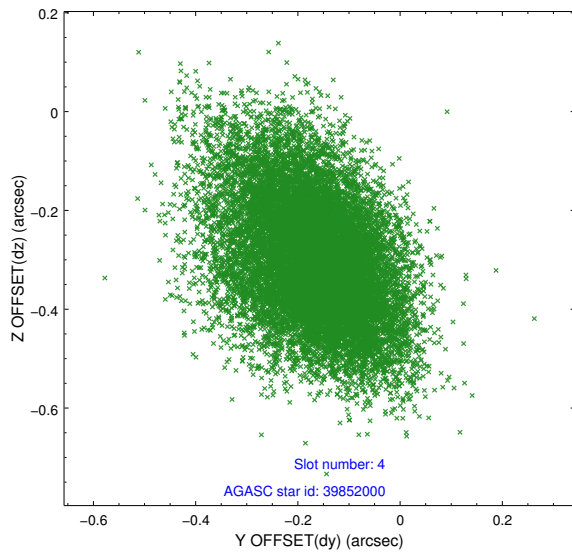
| slot | status | used | id        | mag  | n_pts | med_dy | med_dz | dr1   | dr2   | ra         | dec      | mean_y   | mean_z   |
|------|--------|------|-----------|------|-------|--------|--------|-------|-------|------------|----------|----------|----------|
| 0    | FID    |      | ACIS-S-2  | 7.04 | 7227  | -0.249 | -0.129 | 0.031 | 0.037 | 0.000000   | 0.000000 | -771.81  | -1741.35 |
| 1    | FID    |      | ACIS-S-4  | 7.14 | 7227  | 0.577  | 0.153  | 0.029 | 0.058 | 0.000000   | 0.000000 | 2142.21  | 167.40   |
| 2    | FID    |      | ACIS-S-5  | 7.13 | 7227  | -0.352 | -0.018 | 0.016 | 0.024 | 0.000000   | 0.000000 | -1824.69 | 160.90   |
| 3    | GUIDE  | used | 39846384  | 9.93 | 14353 | -0.103 | -0.287 | 0.282 | 0.446 | 196.381765 | 7.215163 | 1838.27  | 434.81   |
| 4    | GUIDE  | used | 39852000  | 8.86 | 14441 | -0.163 | -0.304 | 0.157 | 0.268 | 196.677623 | 7.146715 | 1114.68  | 1242.93  |
| 5    | GUIDE  | used | 39853768  | 8.25 | 14441 | -0.272 | -0.078 | 0.141 | 0.250 | 197.488572 | 7.436669 | -1858.09 | 2046.06  |
| 6    | GUIDE  | used | 115871672 | 9.35 | 14438 | 0.315  | 0.454  | 0.216 | 0.345 | 196.753974 | 8.303853 | -1496.91 | -2013.26 |
| 7    | GUIDE  | used | 115874184 | 9.11 | 14424 | 0.216  | 0.230  | 0.186 | 0.299 | 196.783333 | 7.757283 | -455.32  | -341.69  |

## 2.4 Star Slots

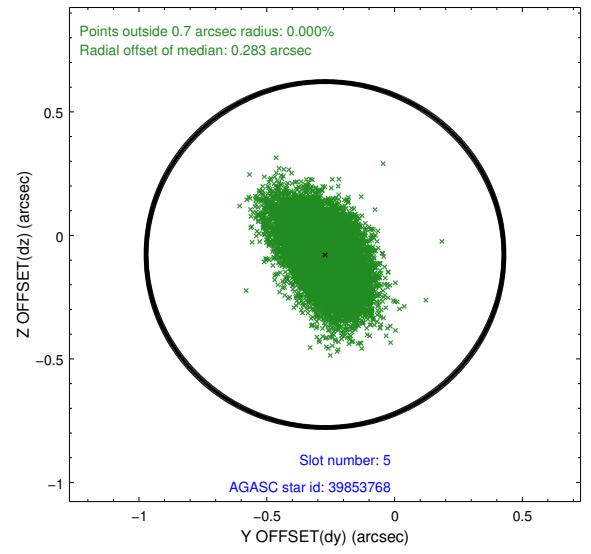
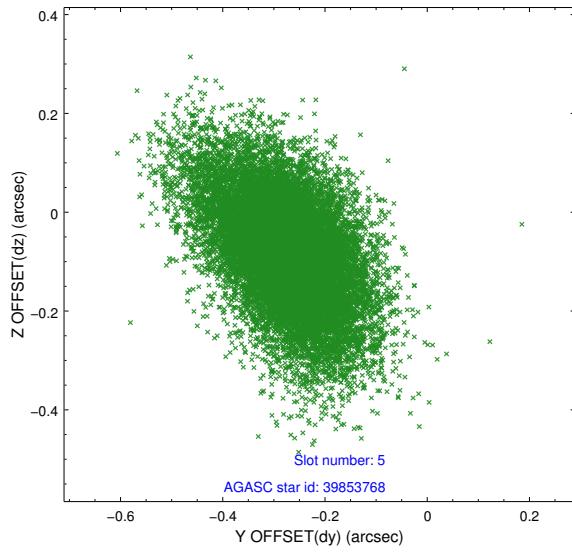
### 2.4.1 Slot 3



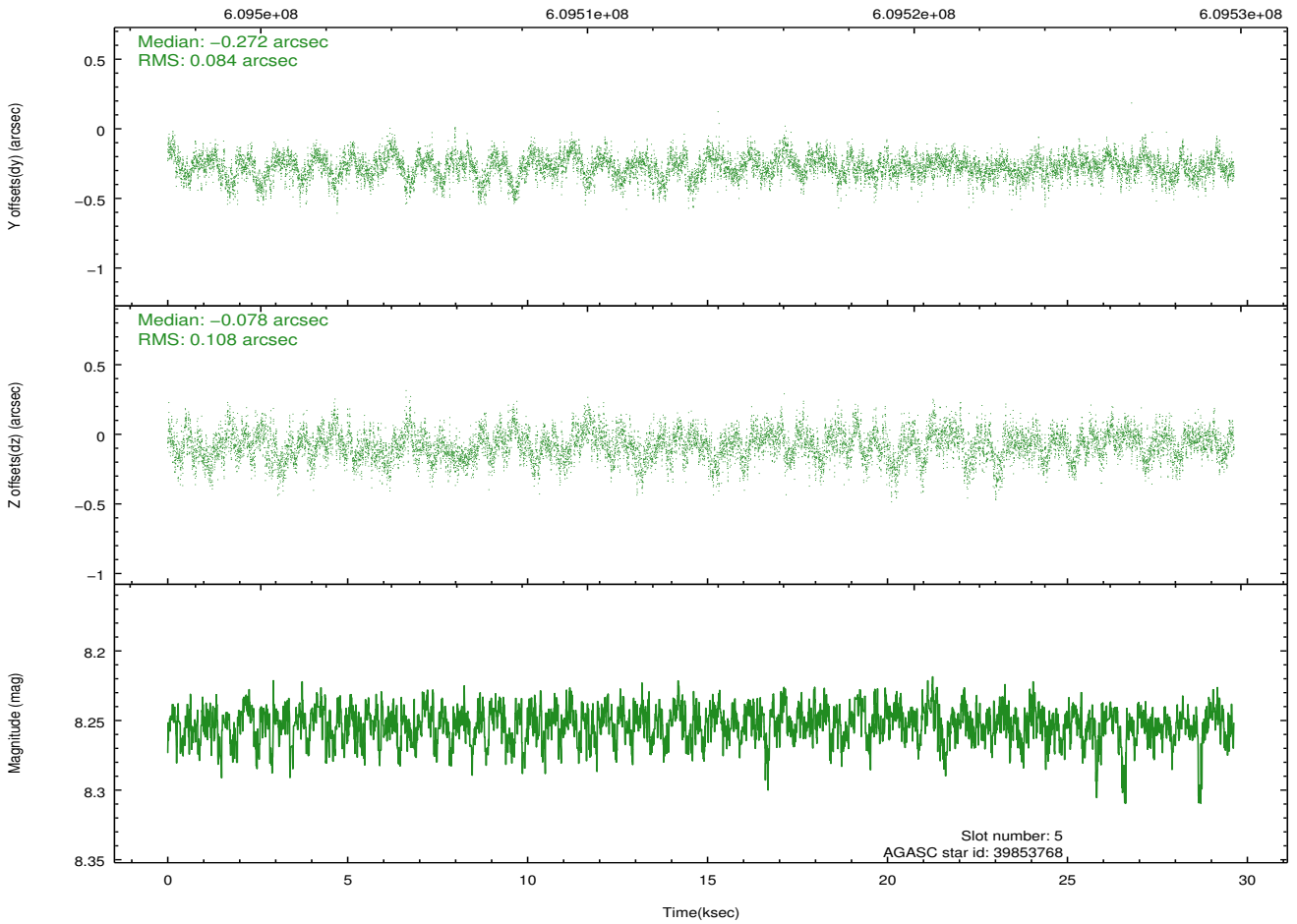
## 2.4.2 Slot 4



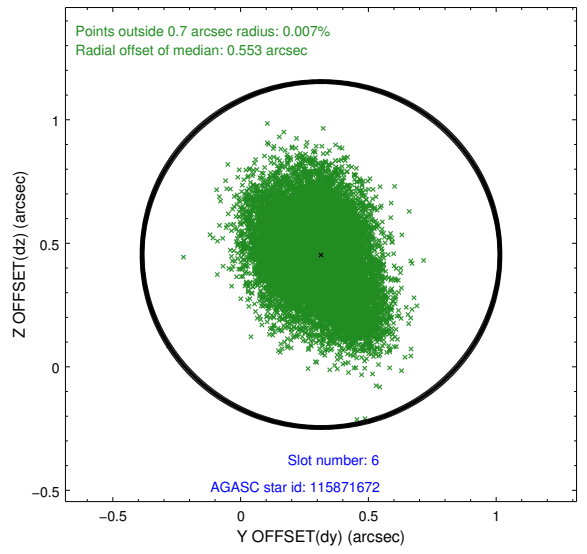
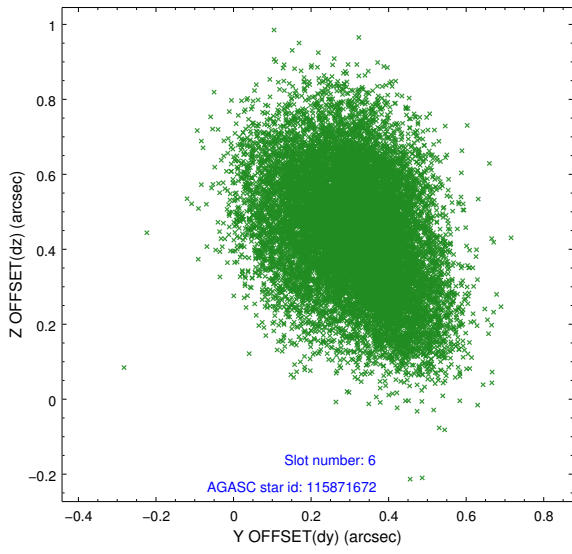
### 2.4.3 Slot 5



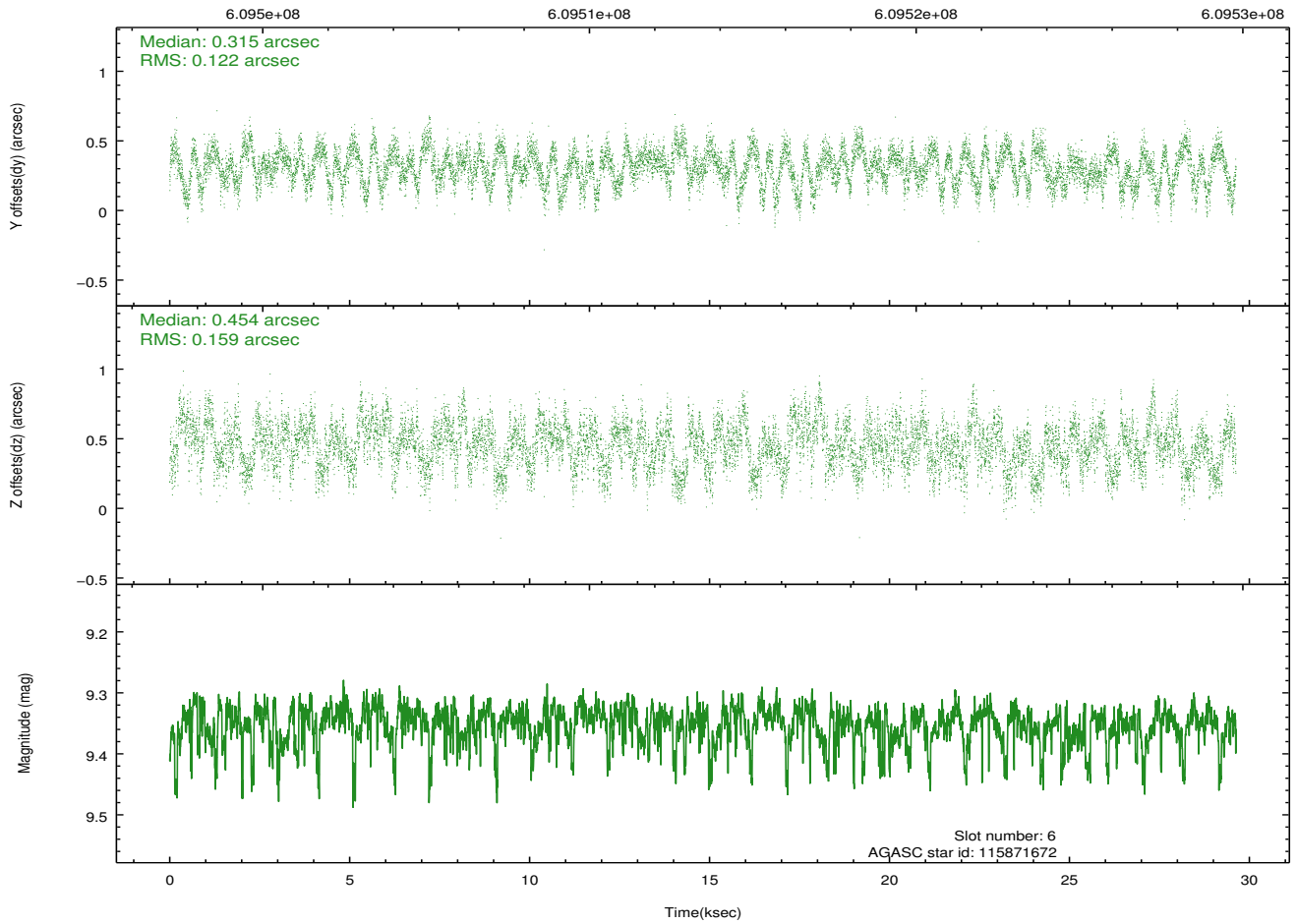
Time (s)



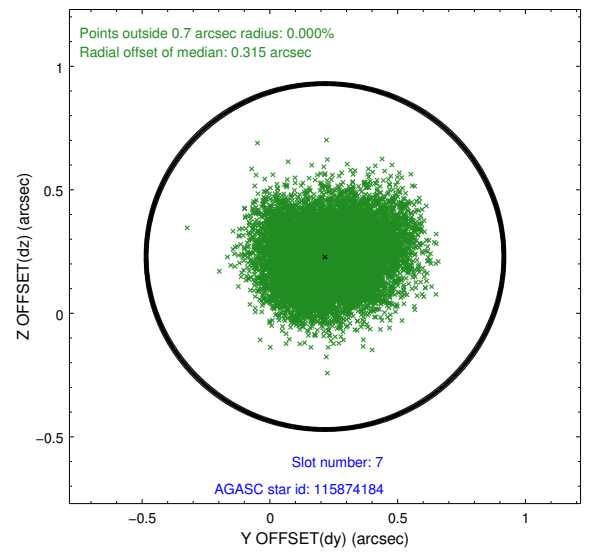
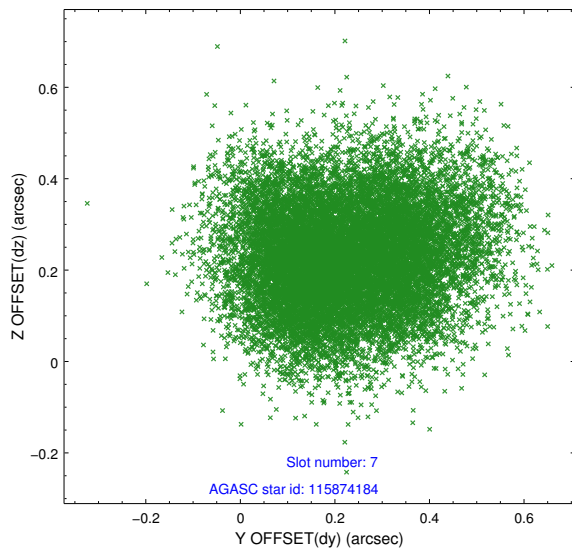
### 2.4.4 Slot 6



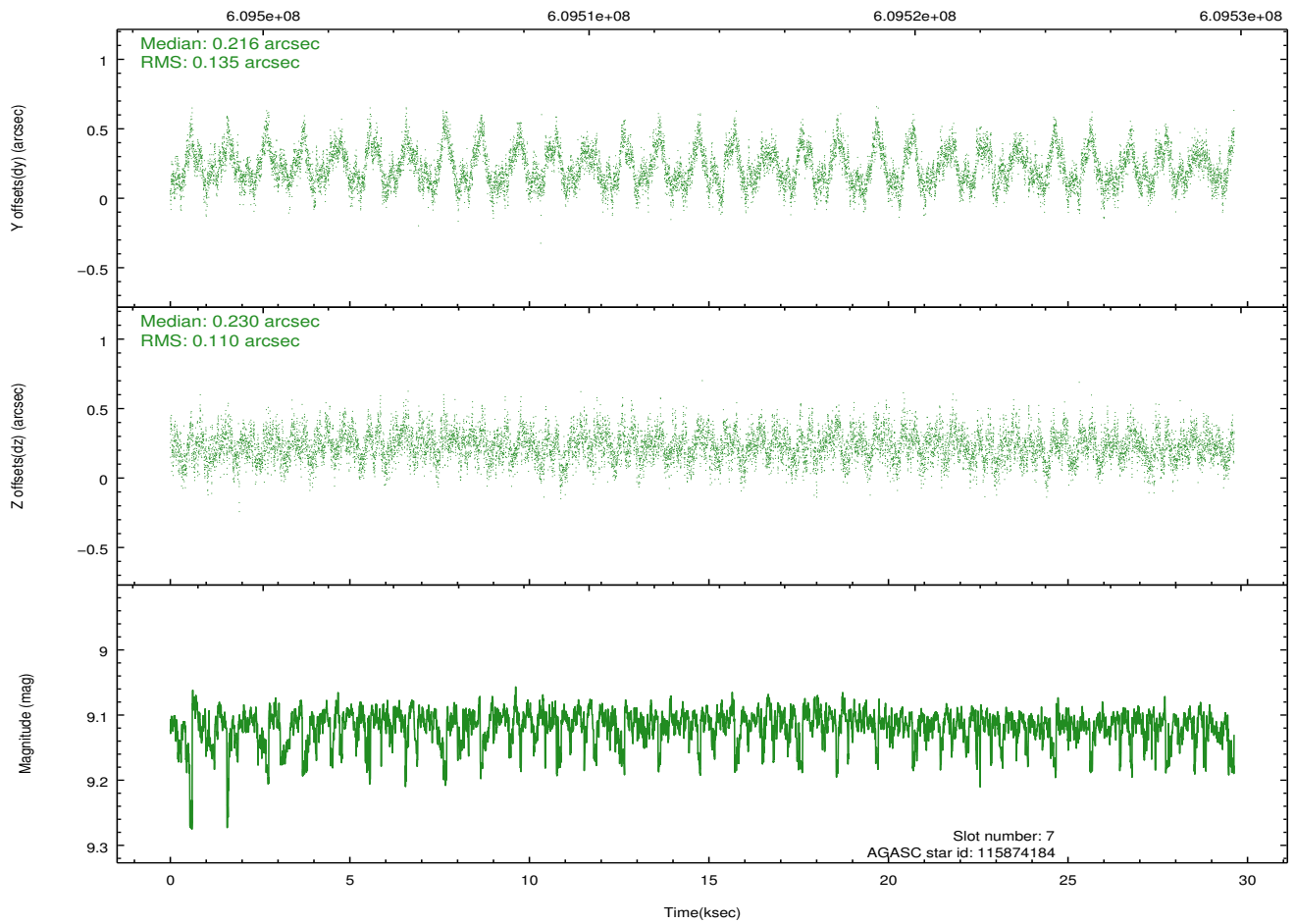
Time (s)



## 2.4.5 Slot 7

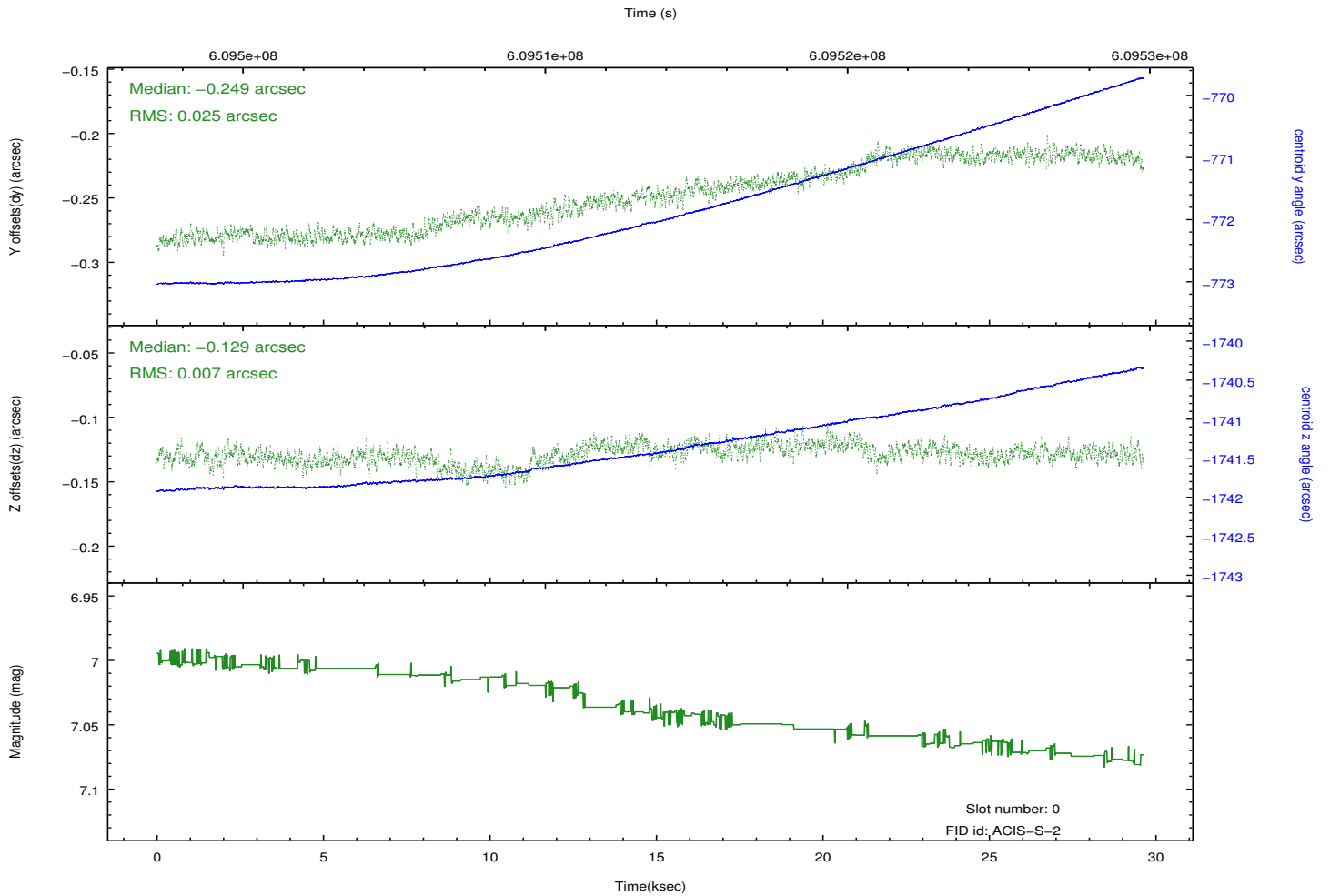
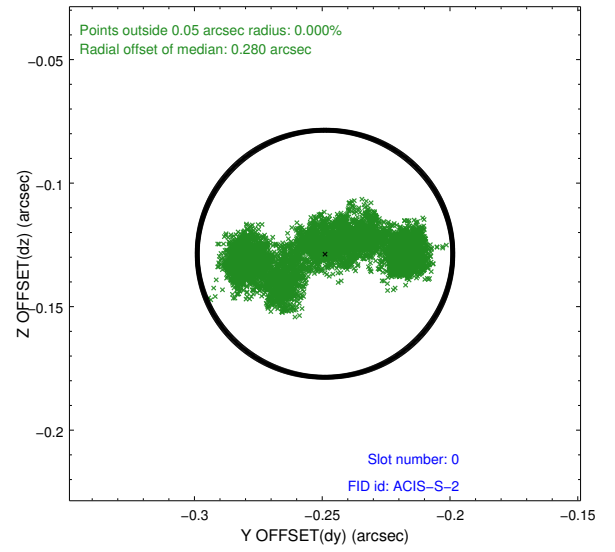
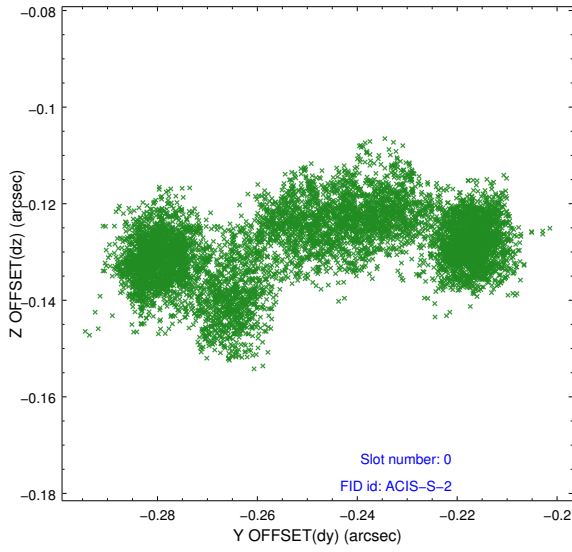


Time (s)

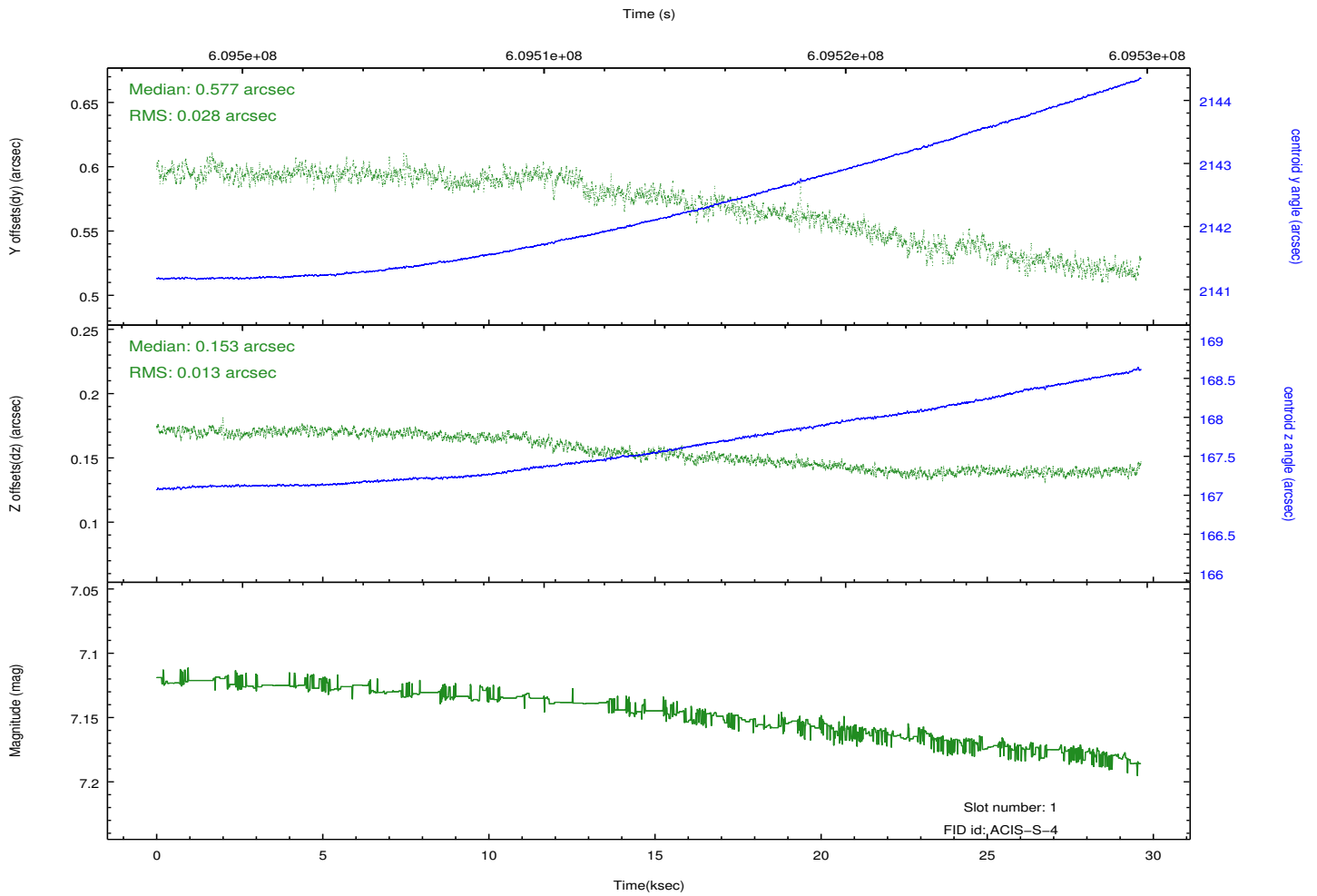
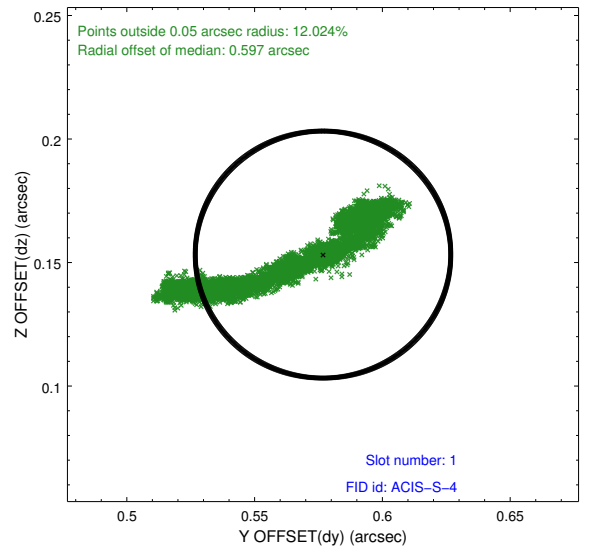
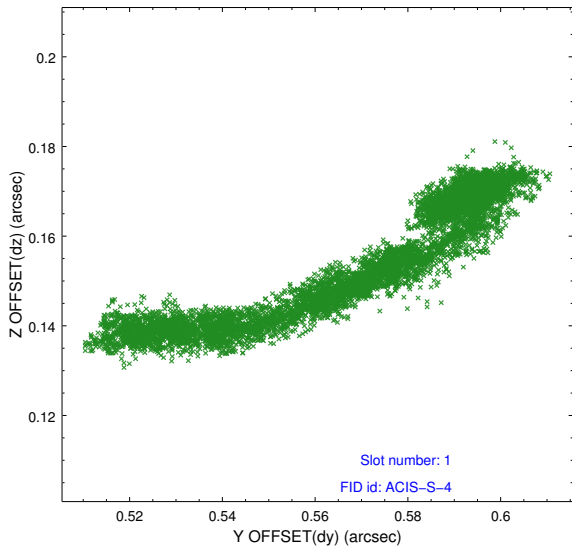


## 2.5 FID Slots

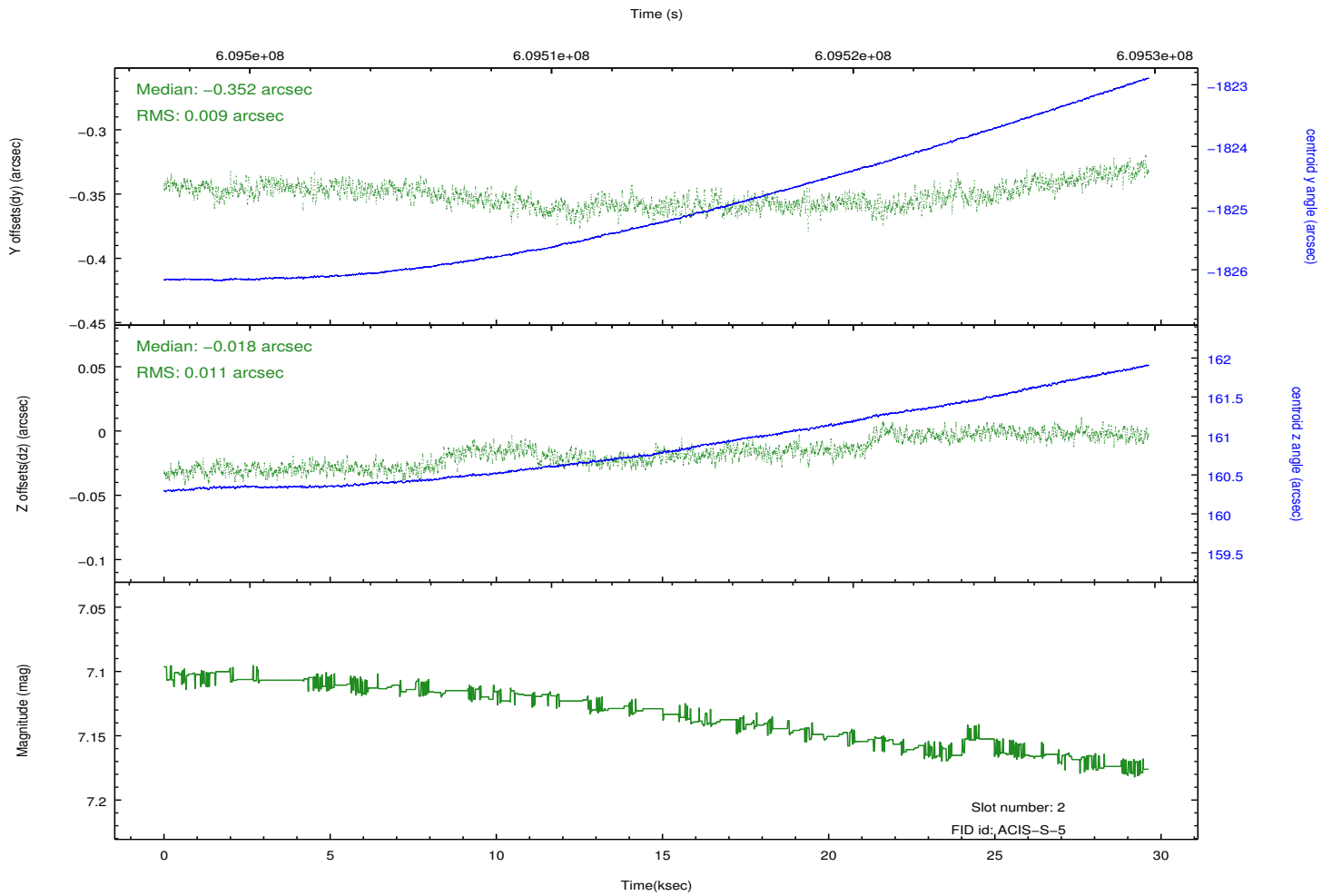
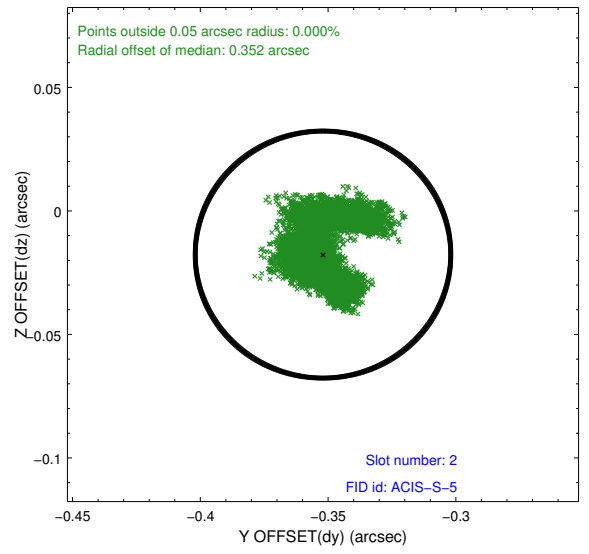
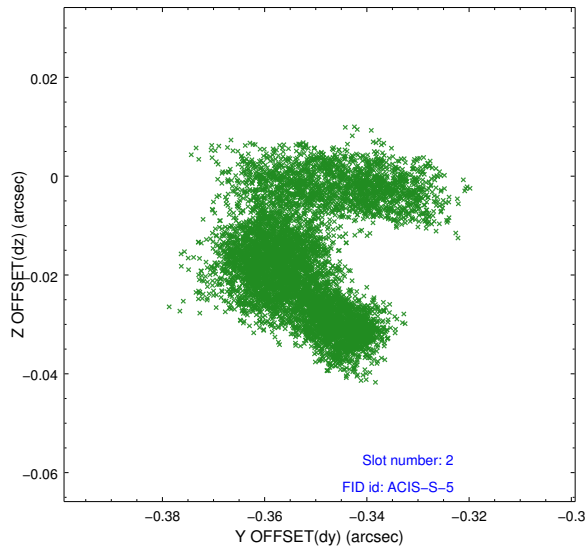
### 2.5.1 Slot 0



## 2.5.2 Slot 1



### 2.5.3 Slot 2



# A Summary

## A.1 Status

|                            |                 |
|----------------------------|-----------------|
| V&V Scientist              | Joy Nichols     |
| V&V Date (YYYY-MM-DD)      | 2017.04.26      |
| V&V Edition                | 1               |
| V&V Disposition and Status | OK              |
| V&V Charge Time            | 29.564700227499 |

## A.2 Comments

The slot 1 fid radial offset of 0.597 arcsec is acceptable.