

# V&V Reference Report

## L2 ASCDS Version : 8.5.1.1

Observation 5691 - L2 Version 3  
Chandra X-Ray Center

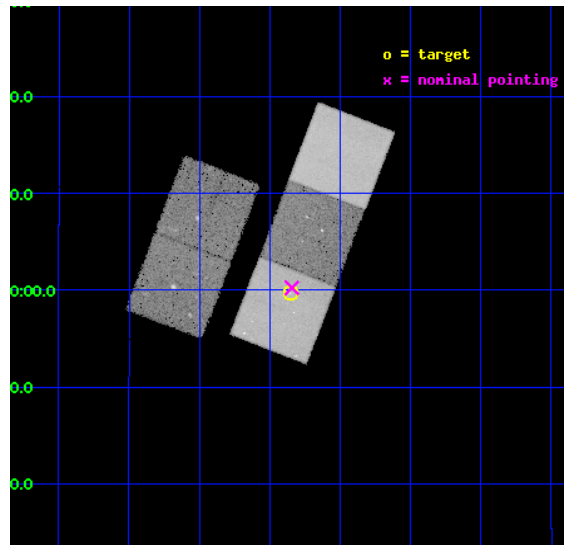
L2 Processing Date : Dec 25 2012

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# 1 Front

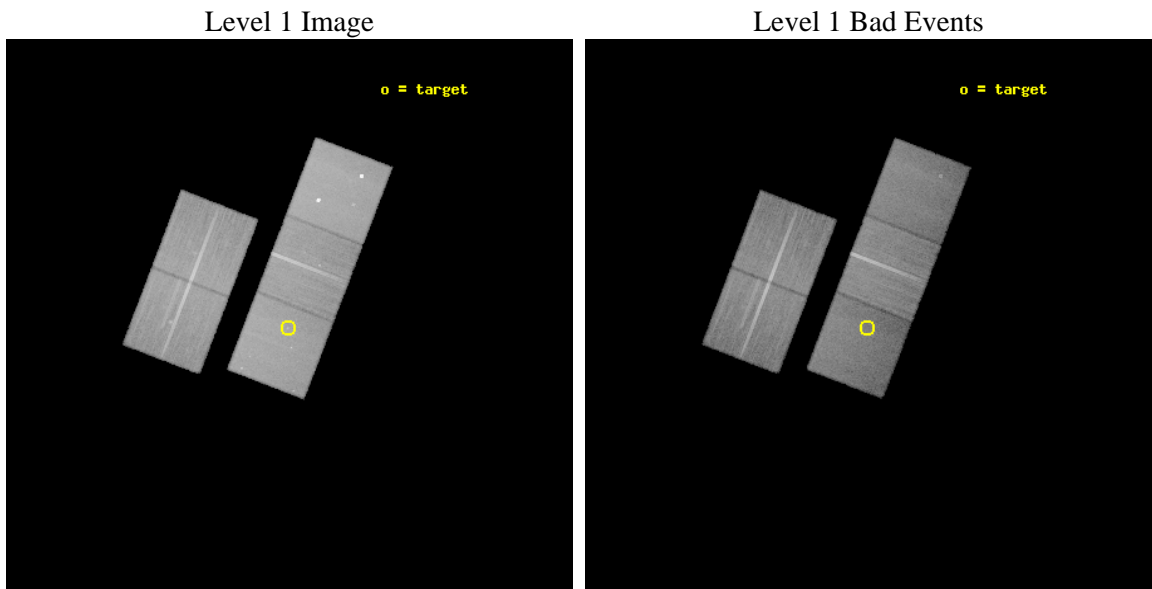
|          |   |   |
|----------|---|---|
| seq_num  | 701114  | Sequence number                             |
| obs_id   | 5691  | Observation id                              |
| title    | The X-ray Jet of the X-ray faint supermassive nuclear black hole in NGC 821 | Proposal title                              |
| observer | Dr. Giuseppina Fabbiano   | Principal investigator                      |
| object   | NGC821  | Source name                                 |
| dtcycle  | 0   | &#160                                       |
| cycle    | P   | events from which exps?<br>Prim/Second/Both |
| ra_targ  | 32.0875   | Observer's specified target RA [deg]        |
| dec_targ | 10.99475  | Observer's specified target Dec [deg]       |
| ra_nom   | 32.085617981587   | Nominal RA [deg]                            |
| dec_nom  | 11.00425318948  | Nominal Dec [deg]                           |
| roll_nom | 111.05698660293   | Nominal Roll [deg]                          |
| revision | 3   | Processing version of data                  |
| ontime   | 40123.299922824   | Sum of GTIs [s]                             |
| livetime | 39599.059470989   | Livetime [s]                                |
| ontime2  | 40117.017962396   | Sum of GTIs [s]                             |
| ontime3  | 40120.158952564   | Sum of GTIs [s]                             |
| ontime5  | 40123.299922824   | Sum of GTIs [s]                             |
| ontime6  | 40123.299922824   | Sum of GTIs [s]                             |
| ontime7  | 40123.299922824   | Sum of GTIs [s]                             |
| l2events | 357857  | Number of level 2 events                    |



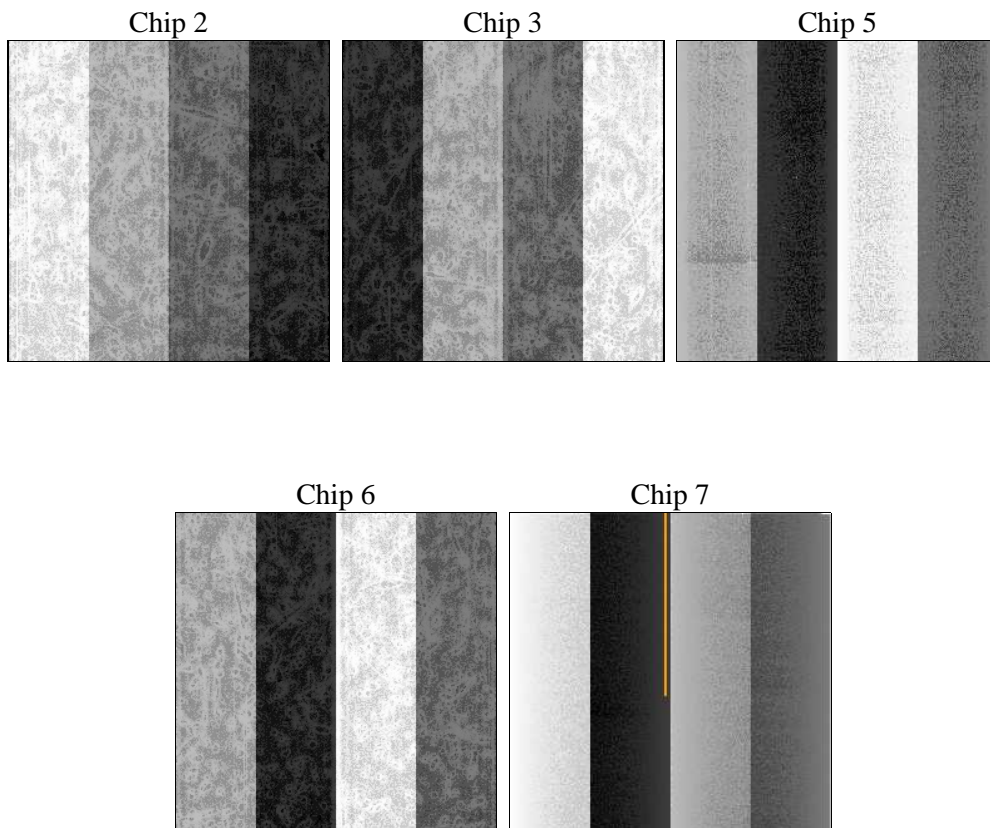
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

|          |                     |                                |                |                 |   |
|----------|---------------------|--------------------------------|----------------|-----------------|---|
| obi_num  | 0                   | Obi number                     | sched_exp_time | 40000.000000    | [s] Scheduled observation exposure time |
| ascdsver | 8.5.1.1             | Processing system revision     | ontime         | 40123.299922824 | Sum of GTIs [s]                         |
| caldbver | 4.5.5               | &#160                          | ontime2        | 40117.017962396 | Sum of GTIs [s]                         |
| date     | 2012-12-25T07:55:20 | Date and time of file creation | ontime3        | 40120.158952564 | Sum of GTIs [s]                         |
| revision | 3                   | Processing version of data     | ontime5        | 40123.299922824 | Sum of GTIs [s]                         |
|          |                     |                                | ontime6        | 40123.299922824 | Sum of GTIs [s]                         |
|          |                     |                                | ontime7        | 40123.299922824 | Sum of GTIs [s]                         |
|          |                     |                                | l1events       | 1505618         | Number of level 1 events                |

### 2.1.4 Events

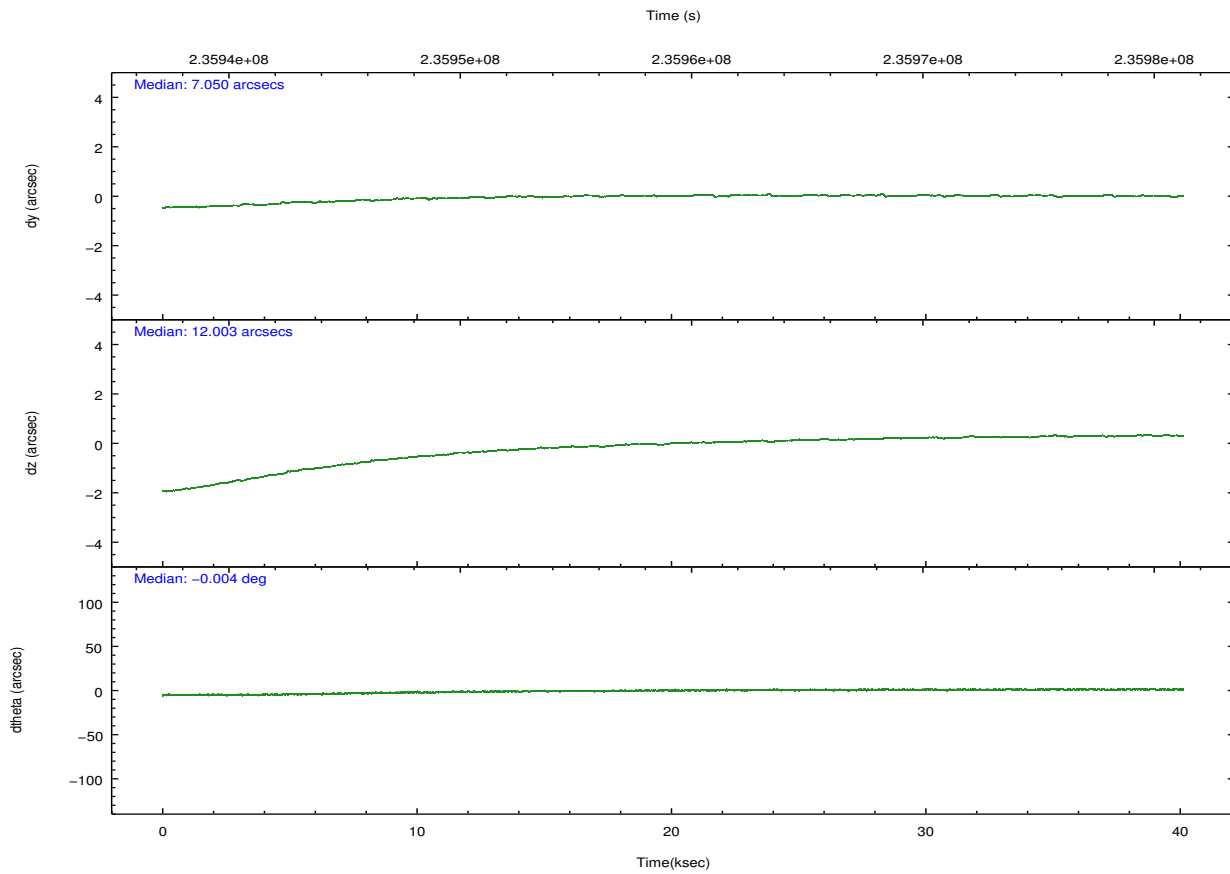
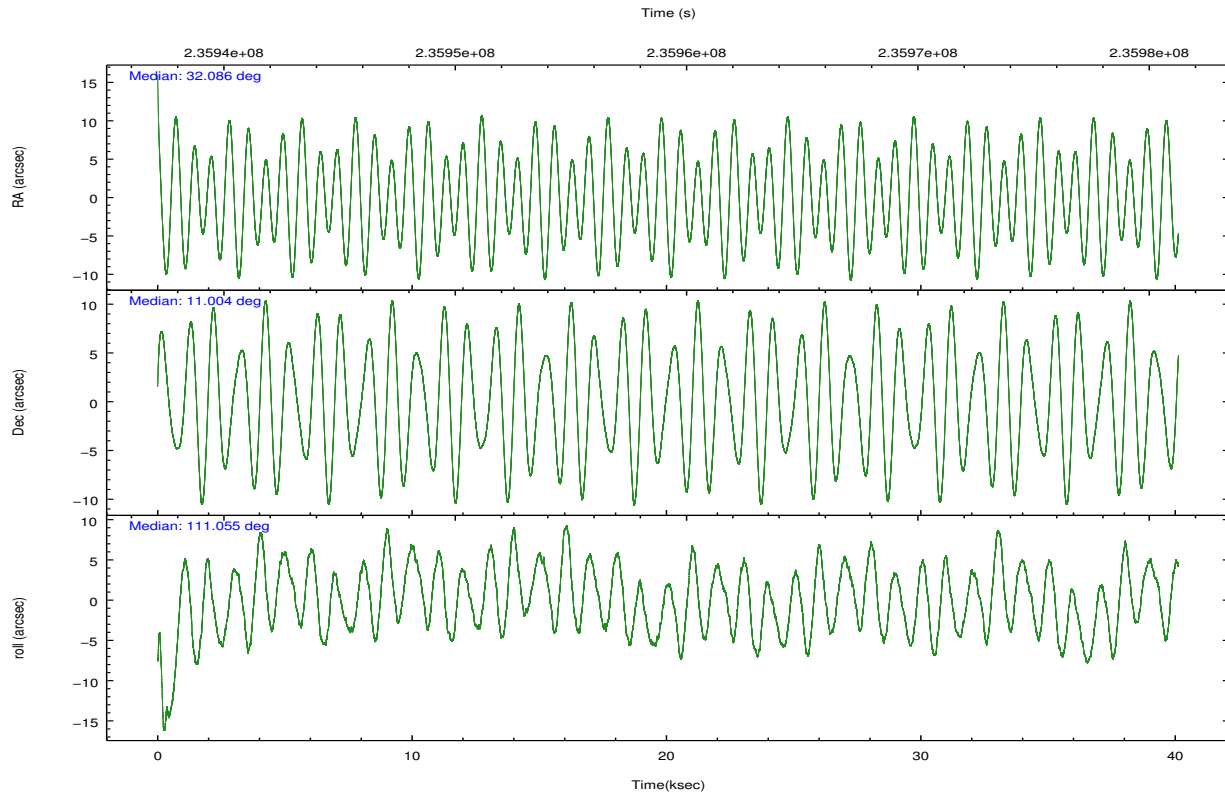
|                 | ccd 2  | ccd 3  | ccd 5  | ccd 6  | ccd 7  |
|-----------------|--------|--------|--------|--------|--------|
| level 1 events  | 280364 | 265980 | 380505 | 277931 | 300838 |
| rejected events | 254732 | 241230 | 193678 | 250506 | 169035 |
| rejected %      | 90%    | 90%    | 50%    | 90%    | 56%    |

|                | ccd 2  | ccd 3  | ccd 5  | ccd 6  | ccd 7  |
|----------------|--------|--------|--------|--------|--------|
| grade 0 events | 9601   | 9202   | 23766  | 9974   | 12141  |
|                | 3%     | 3%     | 6%     | 3%     | 4%     |
| grade 1 events | 112    | 131    | 770    | 126    | 244    |
|                | 0%     | 0%     | 0%     | 0%     | 0%     |
| grade 2 events | 6240   | 5469   | 58708  | 6130   | 27540  |
|                | 2%     | 2%     | 15%    | 2%     | 9%     |
| grade 3 events | 2895   | 2993   | 8010   | 3120   | 12791  |
|                | 1%     | 1%     | 2%     | 1%     | 4%     |
| grade 4 events | 2933   | 2914   | 7519   | 3023   | 12736  |
|                | 1%     | 1%     | 1%     | 1%     | 4%     |
| grade 5 events | 8812   | 10663  | 29805  | 10932  | 31857  |
|                | 3%     | 4%     | 7%     | 3%     | 10%    |
| grade 6 events | 4808   | 4980   | 94777  | 6085   | 70684  |
|                | 1%     | 1%     | 24%    | 2%     | 23%    |
| grade 7 events | 244963 | 229628 | 157150 | 238541 | 132845 |
|                | 87%    | 86%    | 41%    | 85%    | 44%    |

## 2.2 Compared Parameters

| Parameter                         | Planned             | Actual               | Parameter                             | Planned   | Actual  |
|-----------------------------------|---------------------|----------------------|---------------------------------------|-----------|---------|
| Instrument                        | ACIS                | ACIS                 | Obspar format version number          | 7         | 7       |
| Detector                          | ACIS-23567          | ACIS-23567           | 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                 | 32.107433           | 32.08561798158655    | Subarray requested                    | NONE      | NONE    |
| [deg] Pointing Dec                | 10.987414           | 11.00425318947971    | Alternating exposures requested       | N         | N       |
| [deg] Pointing Roll               | 110.896198          | 111.0569866029339    | [s] Primary exposure time             | 0.000000  | 3.1     |
| [mm] SIM focus pos                | -0.684267           | -0.6828225247311905  |                                       |           |         |
| [mm] SIM defocus                  | 0                   | 0.001444936568705701 |                                       |           |         |
| [mm] SIM translation stage pos    | -190.132523         | -190.1400660498719   |                                       |           |         |
| [mm] SIM translation stage offset | 0                   | 0.00754346686406393  |                                       |           |         |
| [s] Observation start time (MET)  | 235939263.184000    | 235937653.93087      |                                       |           |         |
| Observation start date            | 2005-06-23T18:39:59 | 2005-06-23T18:14:13  |                                       |           |         |
| [s] Observation end time (MET)    | 235979263.184000    | 235980352.87032      |                                       |           |         |
| Observation end date              | 2005-06-24T05:46:39 | 2005-06-24T06:05:52  |                                       |           |         |
| Read mode                         | TIMED               | TIMED                |                                       |           |         |

## 2.3 Aspect

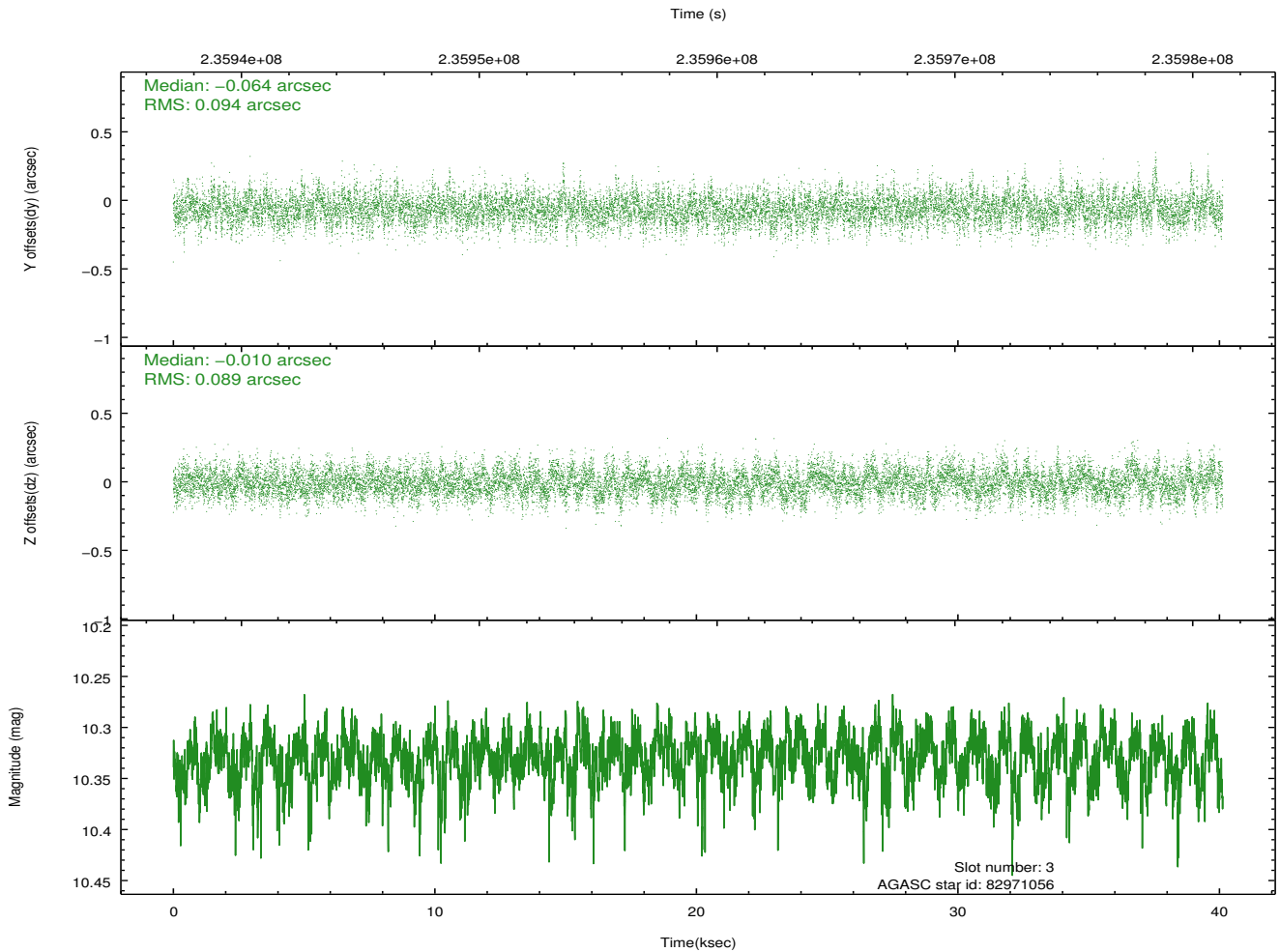
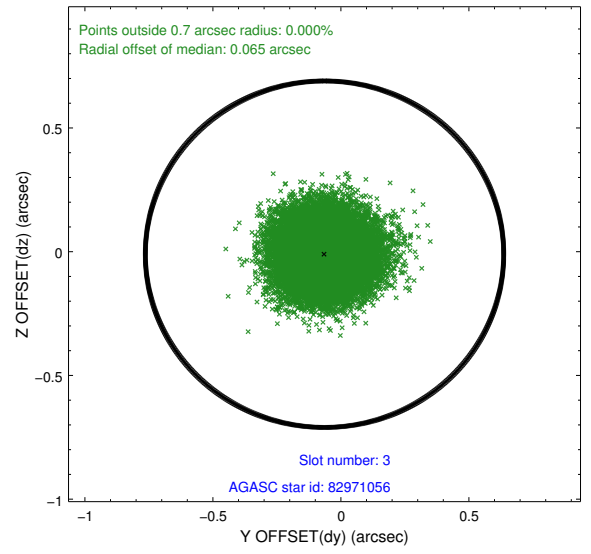
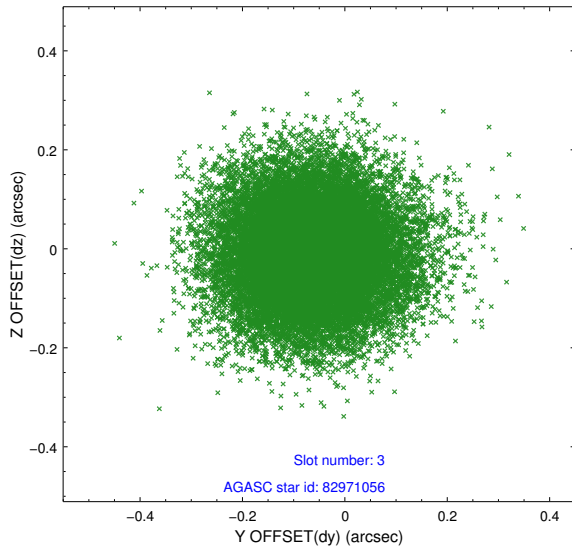


### Slot Statistics

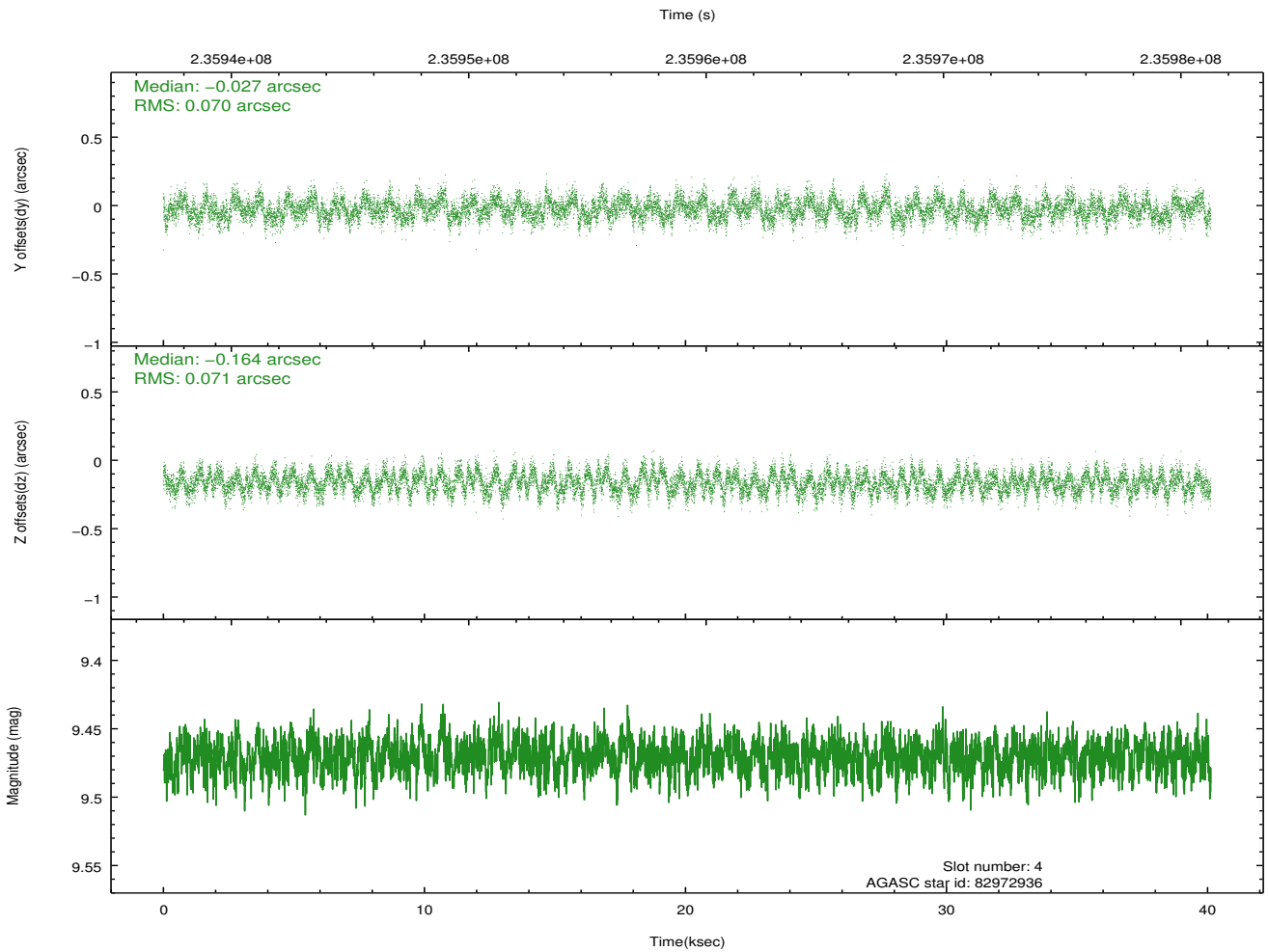
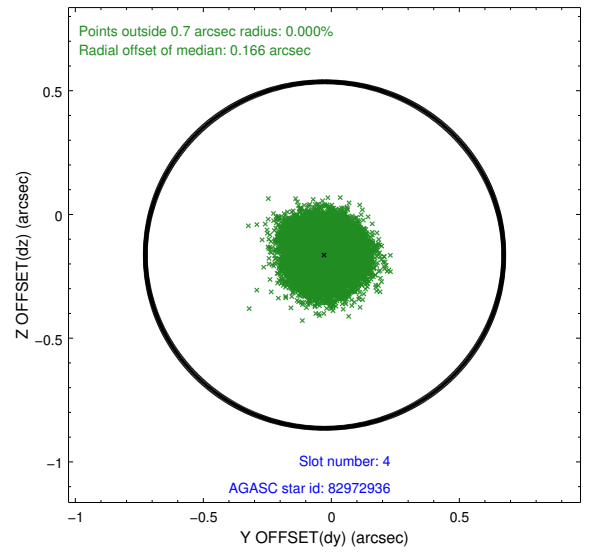
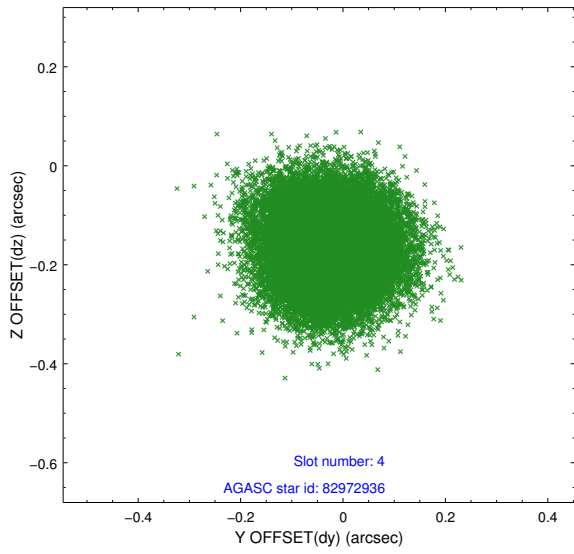
| slot | status | id       | mag   | n_pts | med_dy | med_dz | dr1   | dr2   | ra        | dec       | mean_y   | mean_z   |
|------|--------|----------|-------|-------|--------|--------|-------|-------|-----------|-----------|----------|----------|
| 0    | FID    | ACIS-S-1 | 7.18  | 9788  | 0.031  | -0.082 | 0.016 | 0.053 | 0.000000  | 0.000000  | 936.29   | -1728.77 |
| 1    | FID    | ACIS-S-4 | 7.20  | 9787  | 0.046  | 0.046  | 0.016 | 0.029 | 0.000000  | 0.000000  | 2153.76  | 175.49   |
| 2    | FID    | ACIS-S-5 | 7.23  | 9788  | -0.102 | 0.049  | 0.009 | 0.031 | 0.000000  | 0.000000  | -1812.66 | 169.15   |
| 3    | GUIDE  | 82971056 | 10.33 | 19548 | -0.064 | -0.010 | 0.138 | 0.224 | 31.381677 | 11.249277 | 1797.72  | 2056.74  |
| 4    | GUIDE  | 82972936 | 9.47  | 19564 | -0.027 | -0.164 | 0.108 | 0.167 | 31.880349 | 11.323150 | 1415.57  | 317.71   |
| 5    | GUIDE  | 82976088 | 10.29 | 19512 | 0.156  | -0.196 | 0.223 | 0.351 | 31.548572 | 10.635312 | -476.98  | 2298.29  |
| 6    | GUIDE  | 82976744 | 9.50  | 19564 | 0.162  | 0.093  | 0.106 | 0.169 | 32.095784 | 10.602457 | -1279.65 | 533.06   |
| 7    | GUIDE  | 82974960 | 9.84  | 19557 | -0.249 | 0.279  | 0.155 | 0.249 | 31.911636 | 11.621581 | 2379.11  | -168.96  |

## 2.4 Star Slots

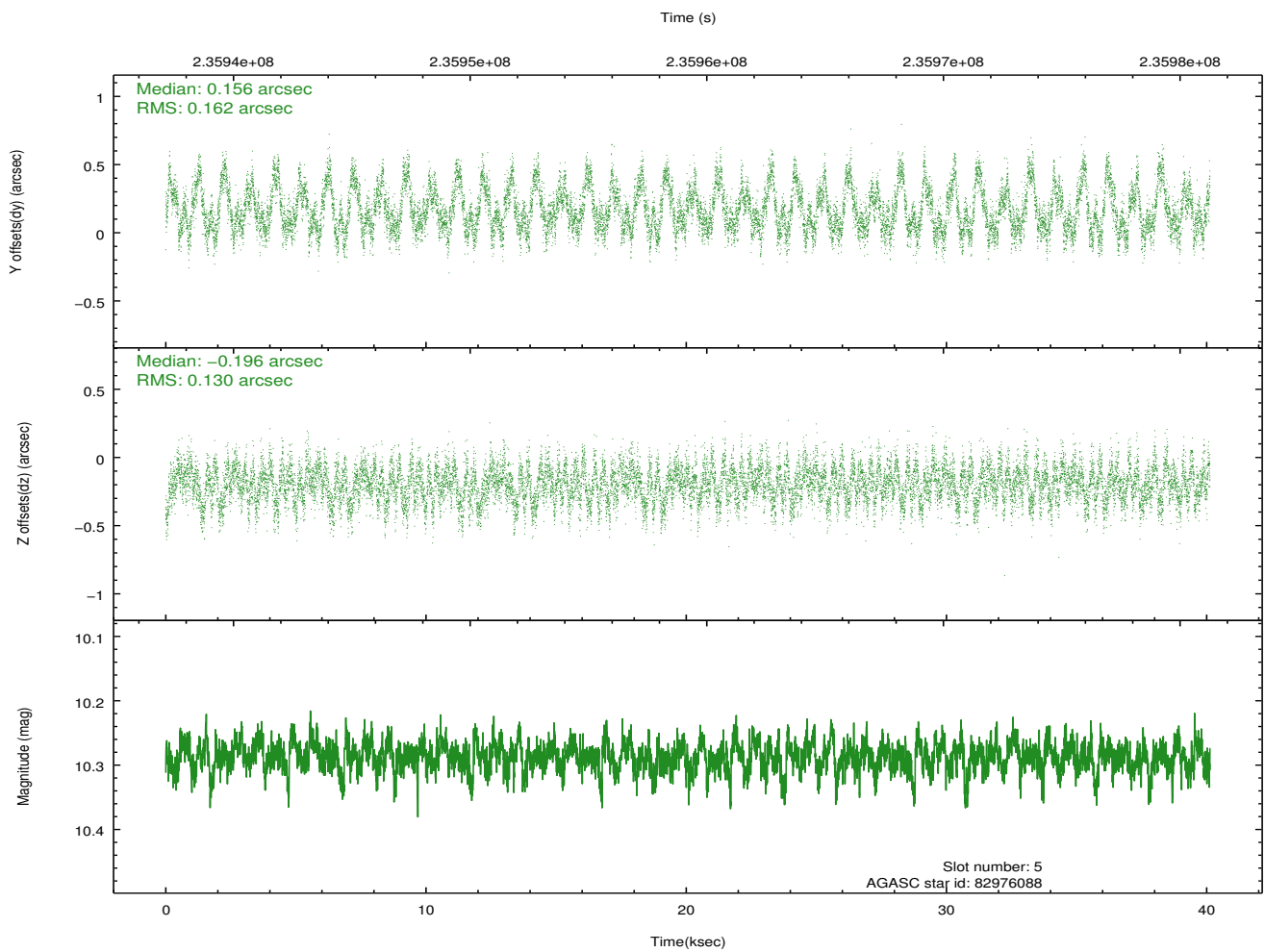
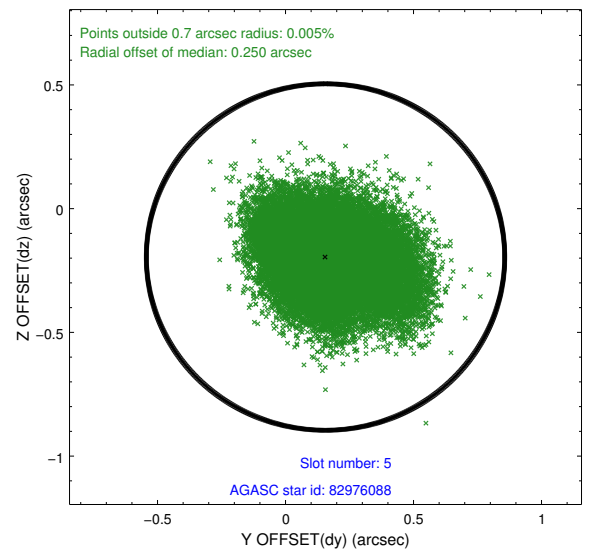
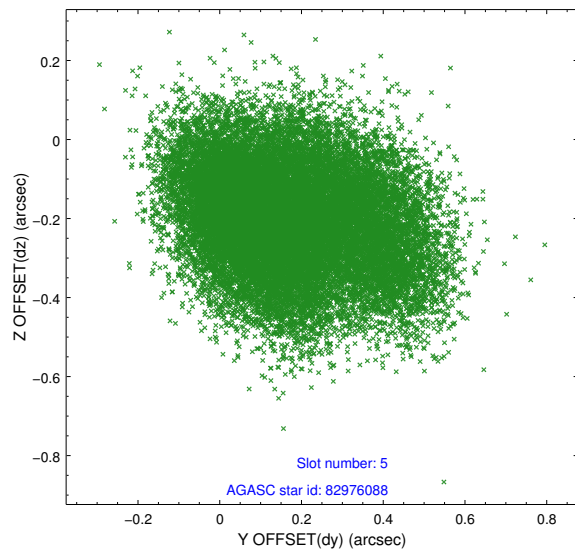
### 2.4.1 Slot 3



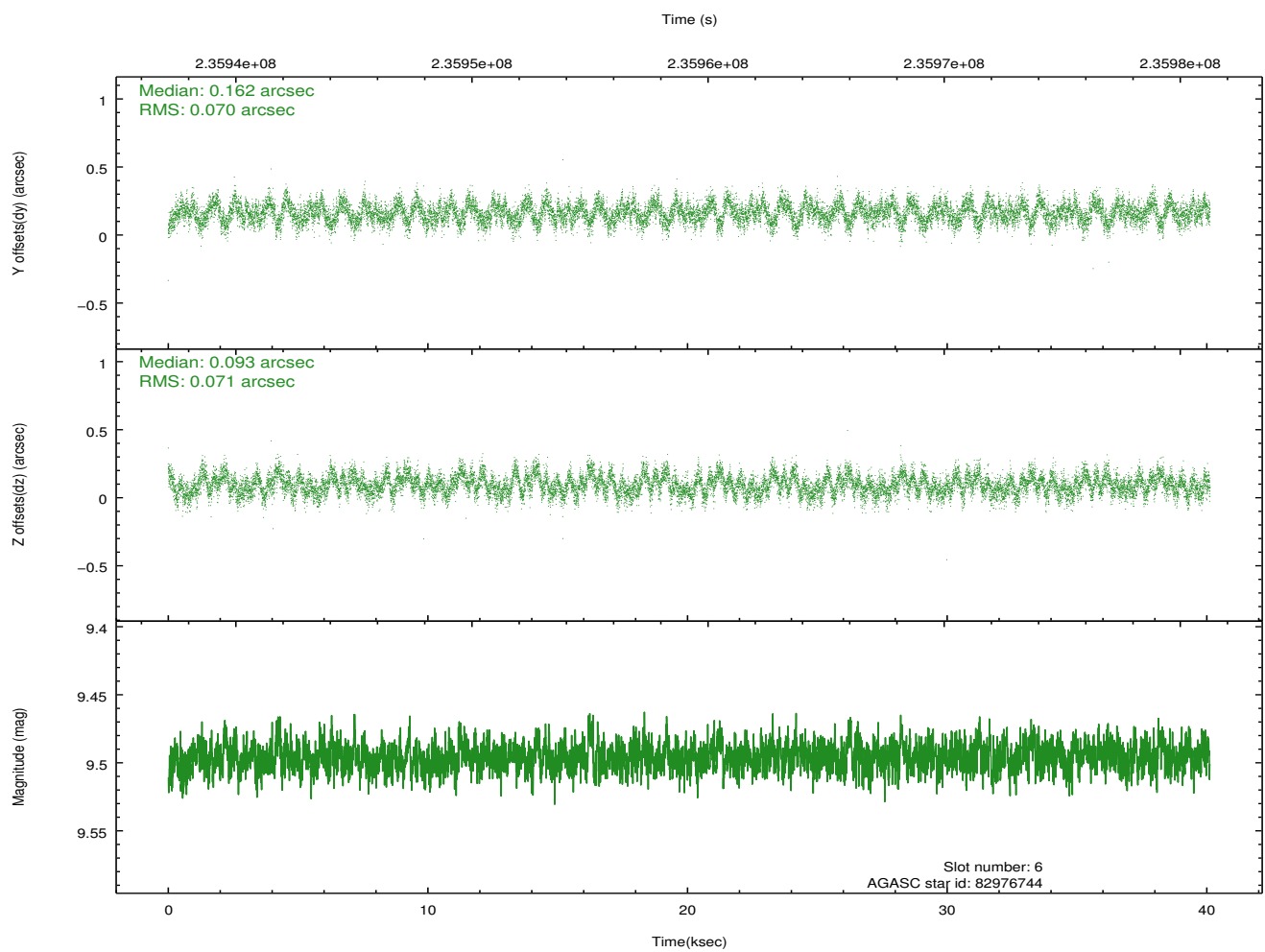
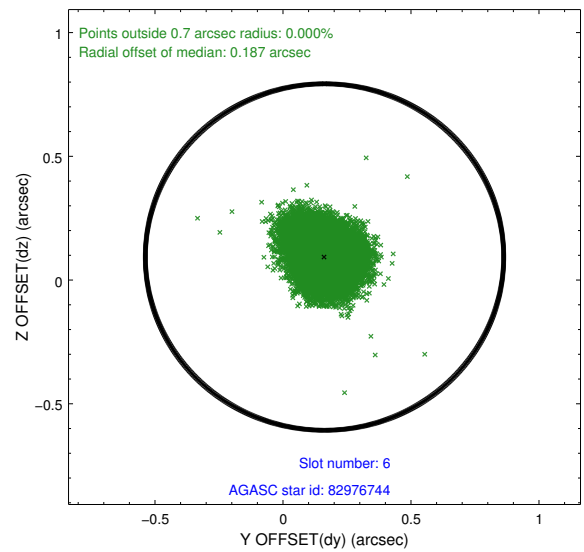
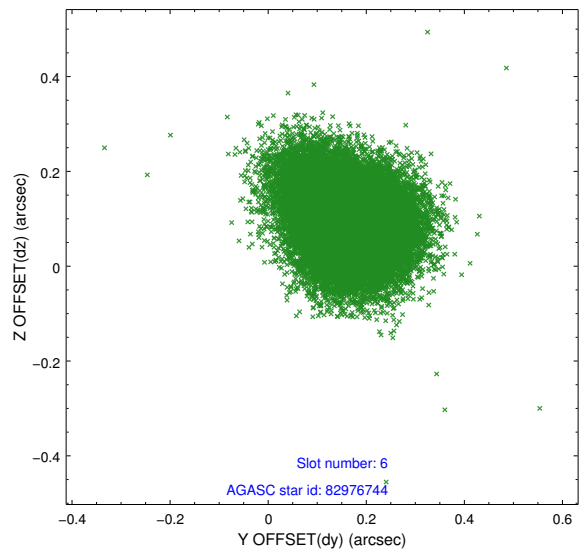
## 2.4.2 Slot 4



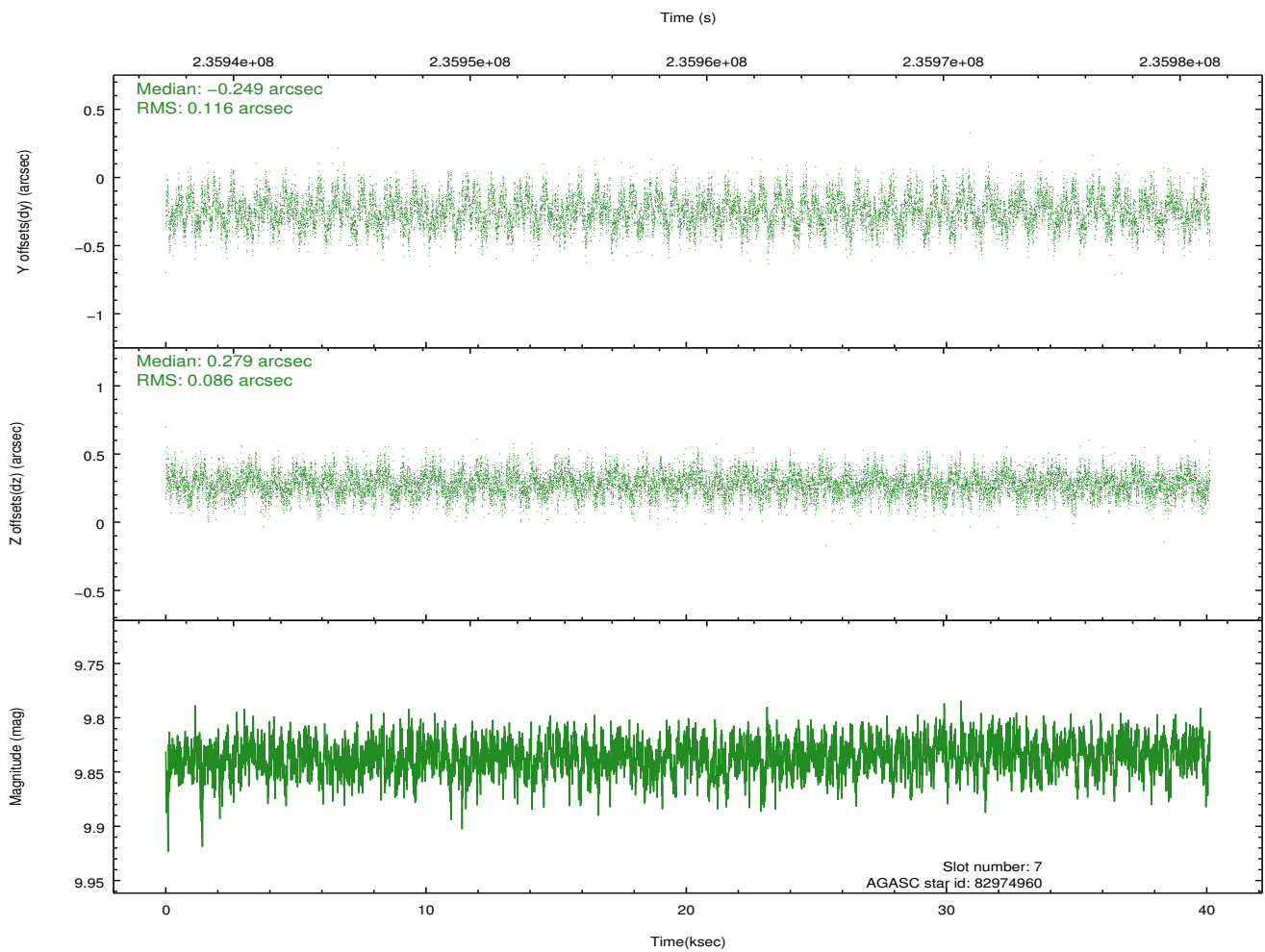
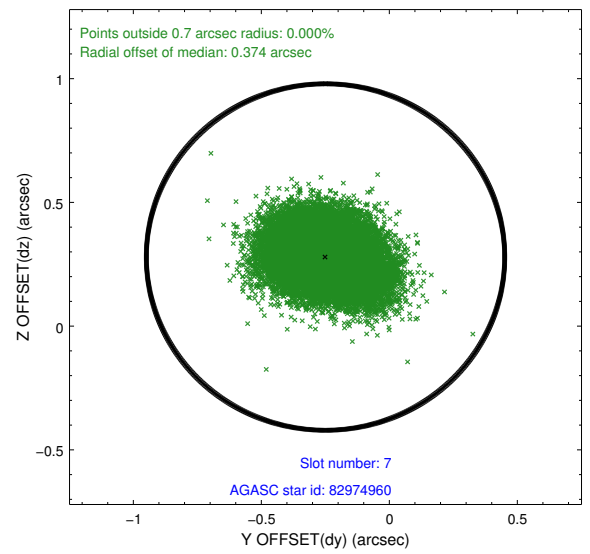
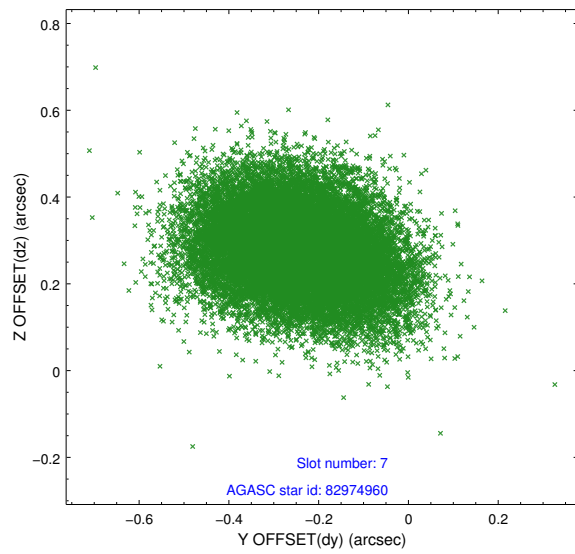
### 2.4.3 Slot 5



## 2.4.4 Slot 6

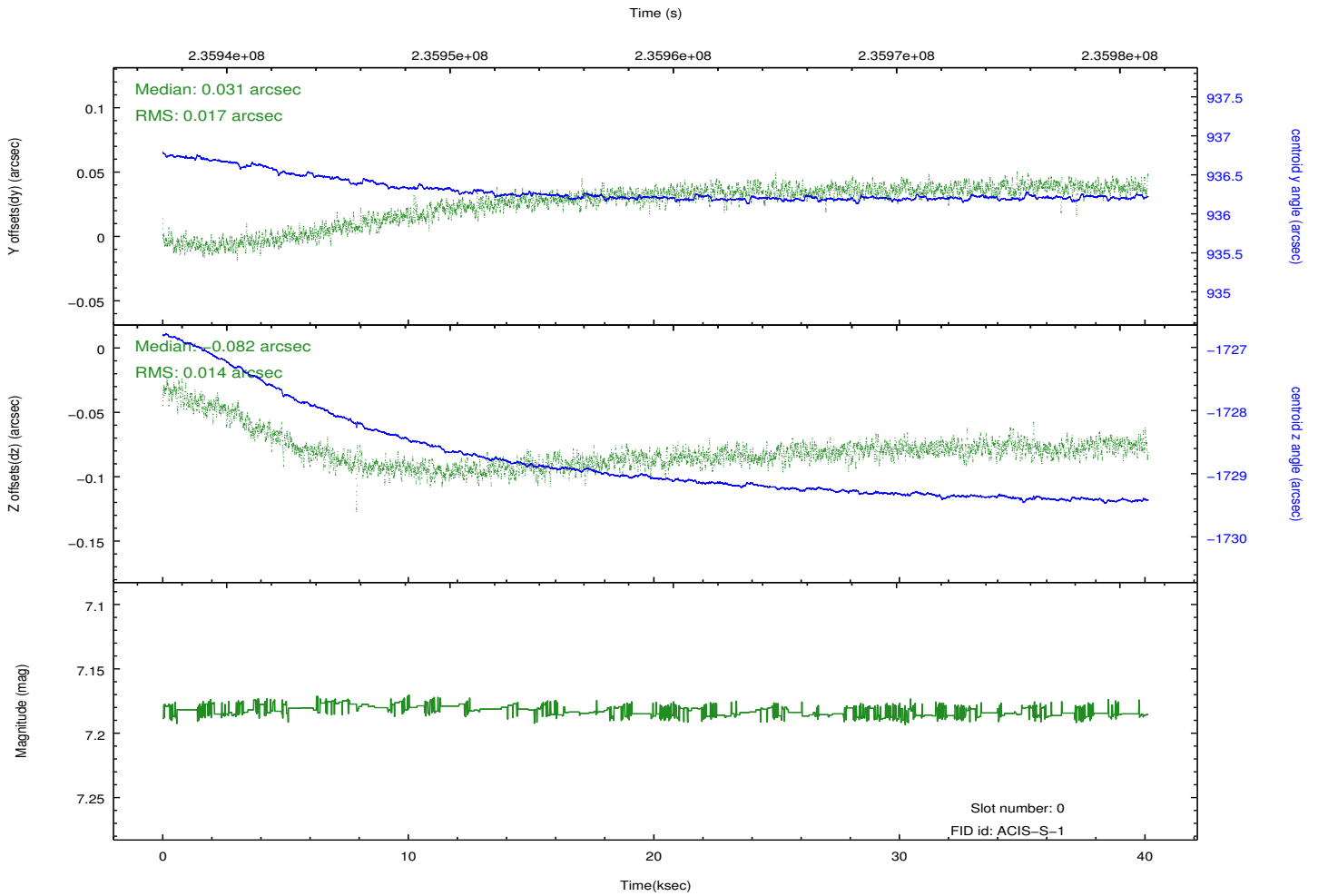
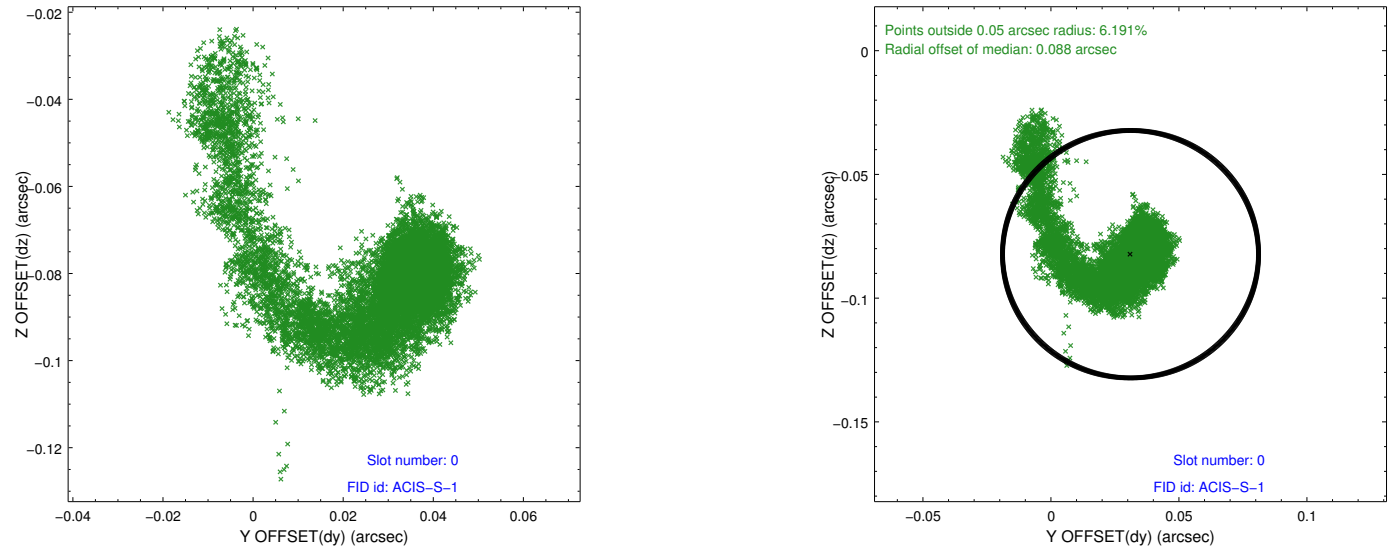


## 2.4.5 Slot 7

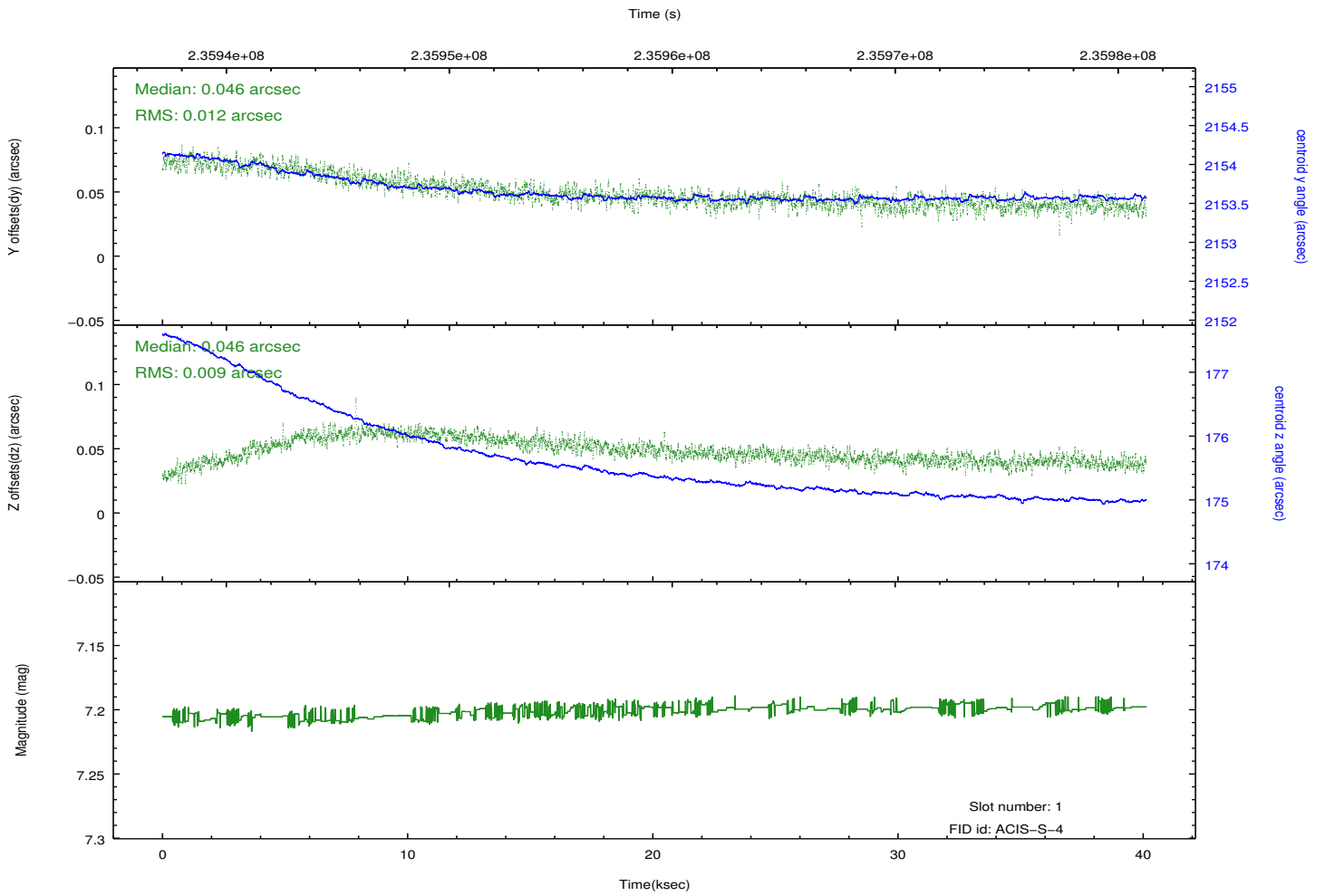
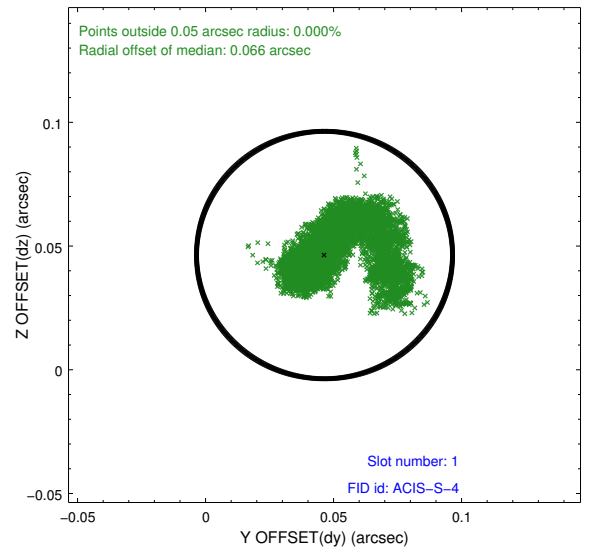
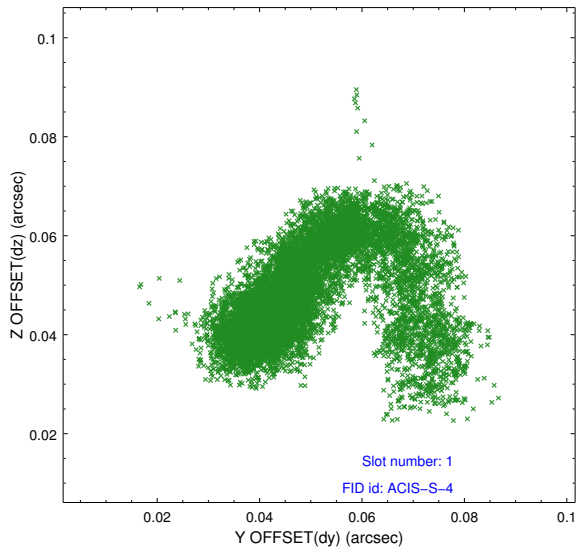


## 2.5 FID Slots

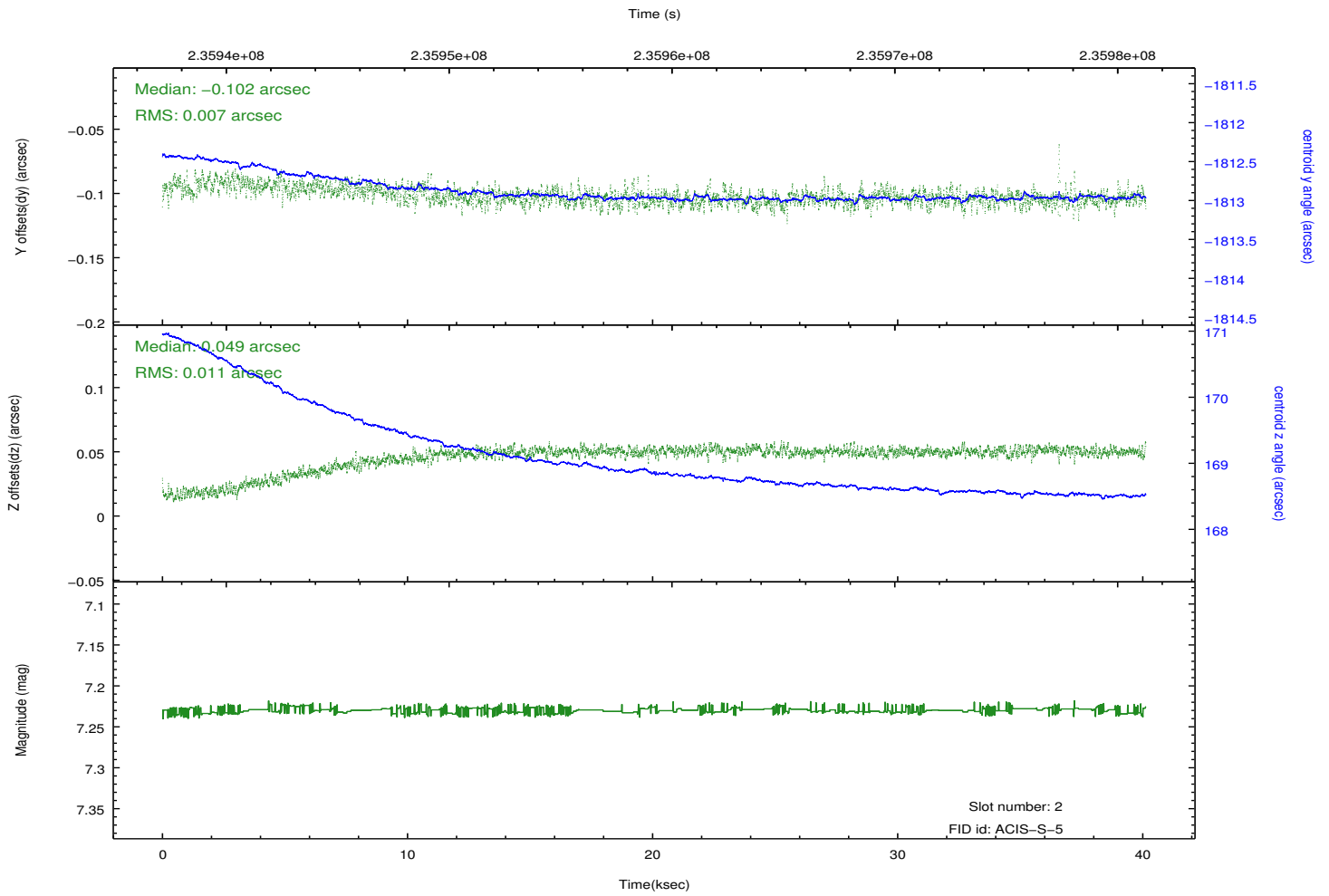
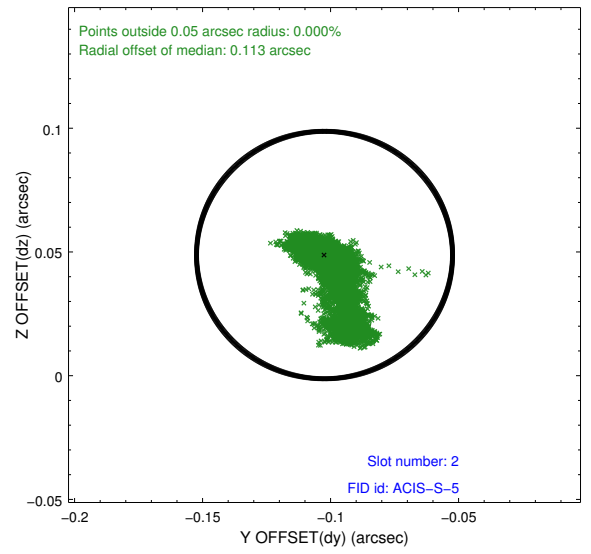
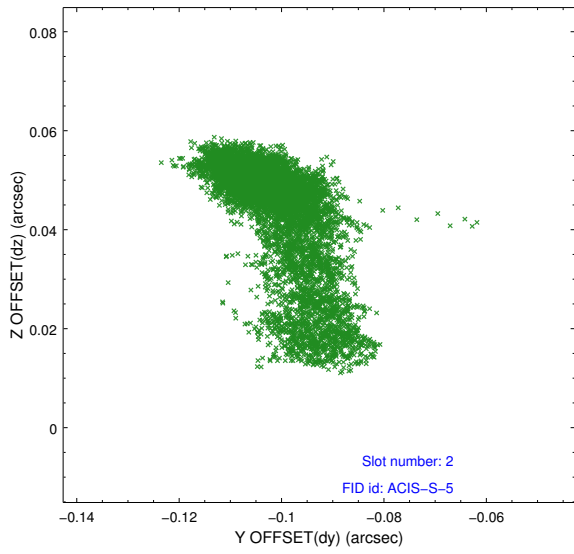
### 2.5.1 Slot 0



## 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)      | 2013.01.17 |
| V&V Edition                | 1          |
| V&V Disposition and Status | OK         |
| V&V Charge Time            | 40.12329   |

## A.2 Comments

Joint Proposal: NRAO