

# V&V Reference Report

## L2 ASCDS Version : 8.4.5

Observation 12261 - L2 Version 2  
Chandra X-Ray Center

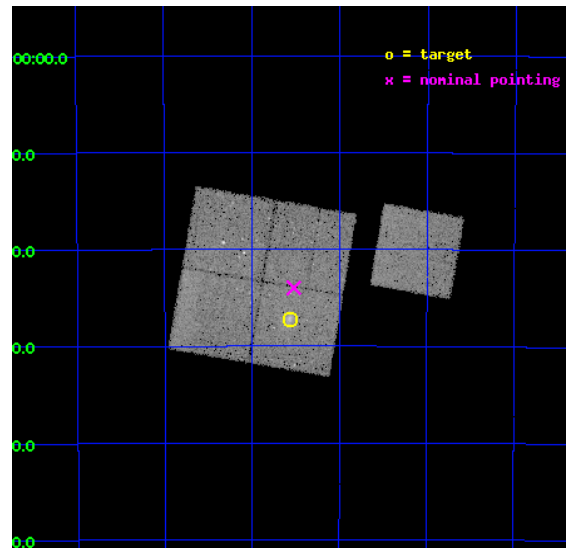
L2 Processing Date : Jul 3 2012

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# 1 Front

|          |  |   |
|----------|--|---|
| seq_num  | 800980   | Sequence number                             |
| obs_id   | 12261  | Observation id                              |
| title    | Chandra Observations of the ACT Sample of SZE-Selected Galaxy Clusters | Proposal title                              |
| observer | Prof. John Hughes  | Principal investigator                      |
| object   | ACT J0616-5227   | Source name                                 |
| dtcycle  | 0  | &#160                                       |
| cycle    | P  | events from which exps?<br>Prim/Second/Both |
| ra_targ  | 94.1425  | Observer's specified<br>target RA [deg]     |
| dec_targ | -52.453694   | Observer's specified<br>target Dec [deg]    |
| ra_nom   | 94.130452413687  | Nominal RA [deg]                            |
| dec_nom  | -52.399781425666   | Nominal Dec [deg]                           |
| roll_nom | 99.799137542573  | Nominal Roll [deg]                          |
| revision | 2  | Processing version of<br>data               |
| ontime   | 29050.059223115  | Sum of GTIs [s]                             |
| livetime | 28670.498813023  | Livetime [s]                                |
| ontime0  | 29046.918272793  | Sum of GTIs [s]                             |
| ontime1  | 29053.200223446  | Sum of GTIs [s]                             |
| ontime2  | 29040.636362076  | Sum of GTIs [s]                             |
| ontime3  | 29050.059223115  | Sum of GTIs [s]                             |
| ontime6  | 29050.059233189  | Sum of GTIs [s]                             |
| l2events | 99336  | Number of level 2 events                    |

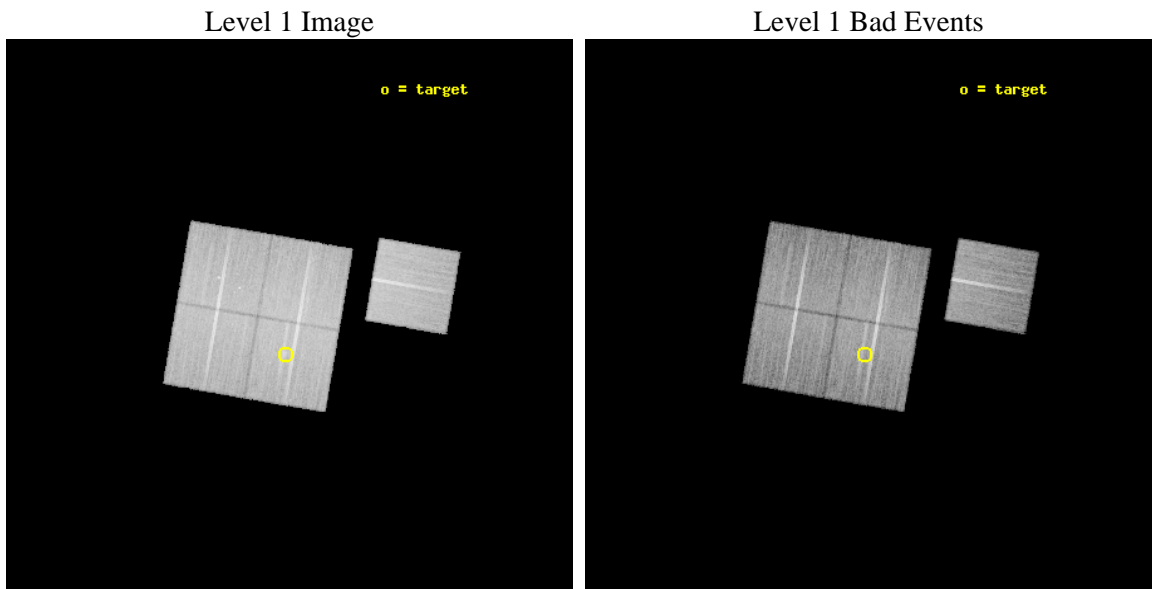




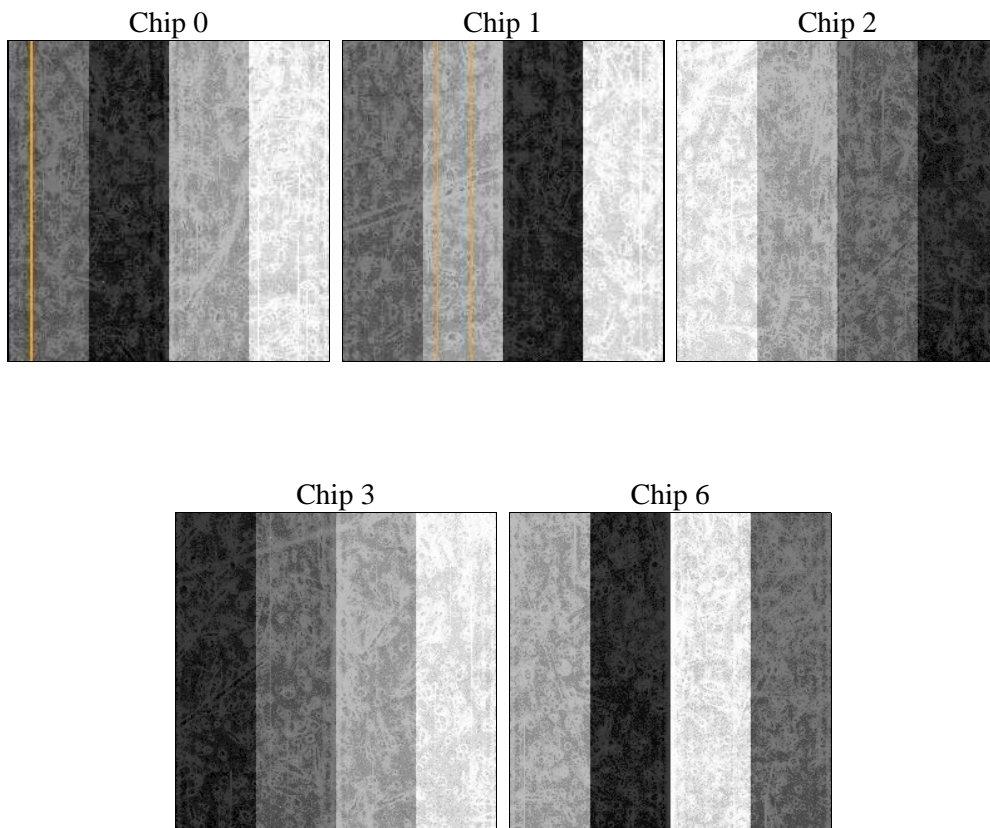
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

|          |                     |                                |                |                 |   |
|----------|---------------------|--------------------------------|----------------|-----------------|---|
| obi_num  | 0                   | Obi number                     | sched_exp_time | 29000.000000    | [s] Scheduled observation exposure time |
| ascdsver | 8.4.5               | Processing system revision     | ontime         | 29050.059223115 | Sum of GTIs [s]                         |
| caldsver | 4.5.0               | &#160                          | ontime0        | 29046.918272793 | Sum of GTIs [s]                         |
| date     | 2012-07-03T08:11:36 | Date and time of file creation | ontime1        | 29053.200223446 | Sum of GTIs [s]                         |
| revision | 2                   | Processing version of data     | ontime2        | 29040.636362076 | Sum of GTIs [s]                         |
|          |                     |                                | ontime3        | 29050.059223115 | Sum of GTIs [s]                         |
|          |                     |                                | ontime6        | 29050.059233189 | Sum of GTIs [s]                         |
|          |                     |                                | l1events       | 1003484         | Number of level 1 events                |

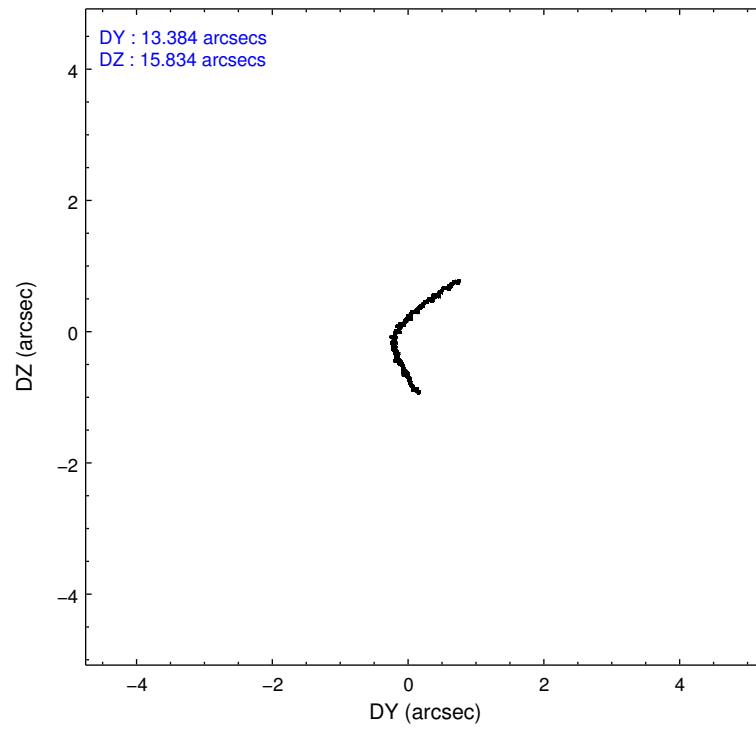
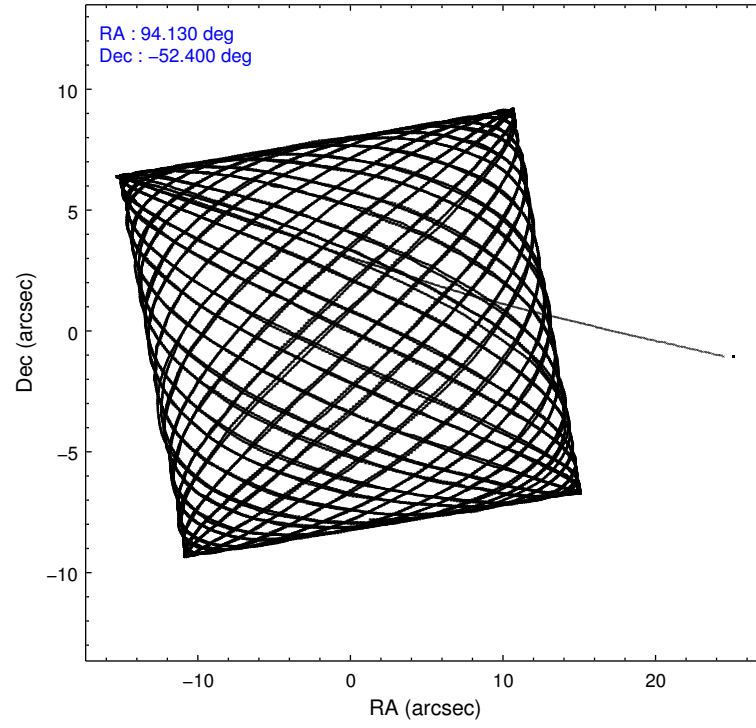
### 2.1.4 Events

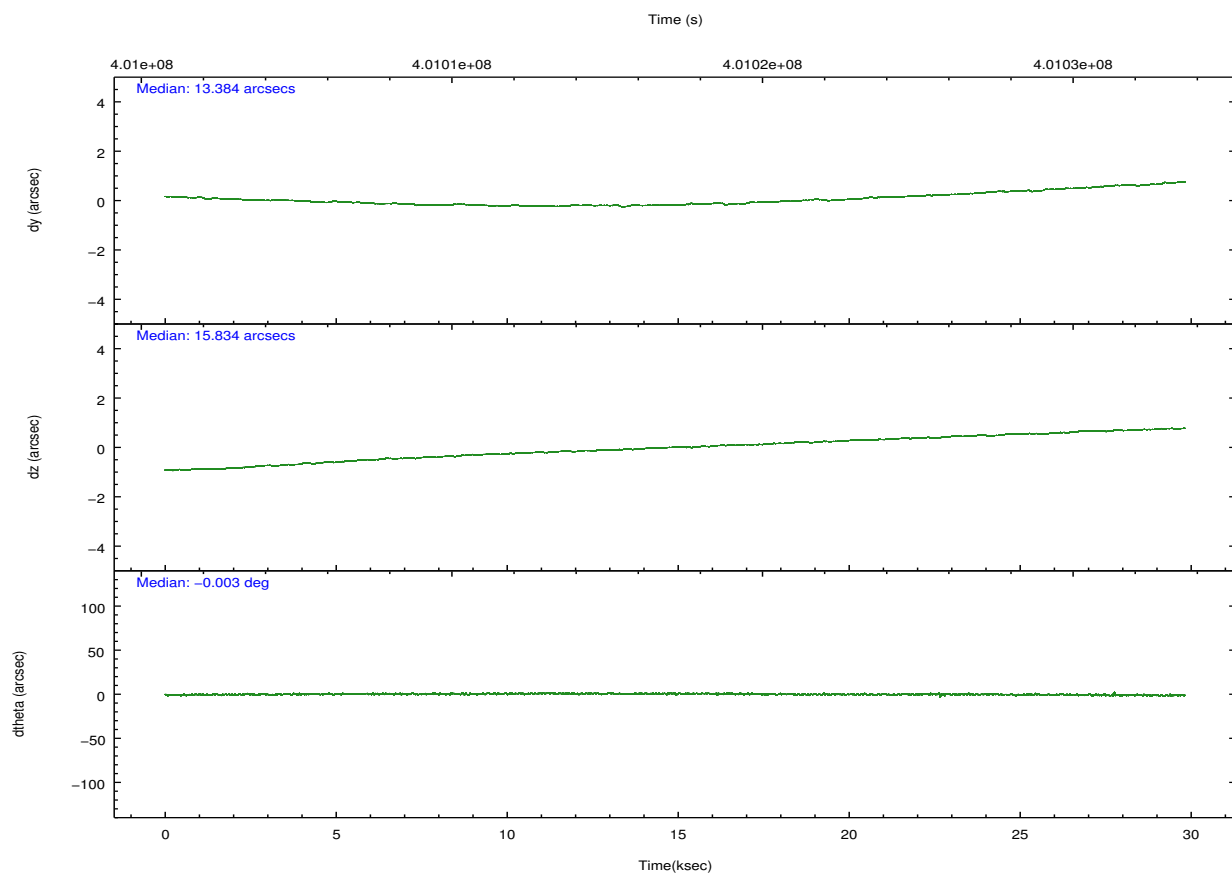
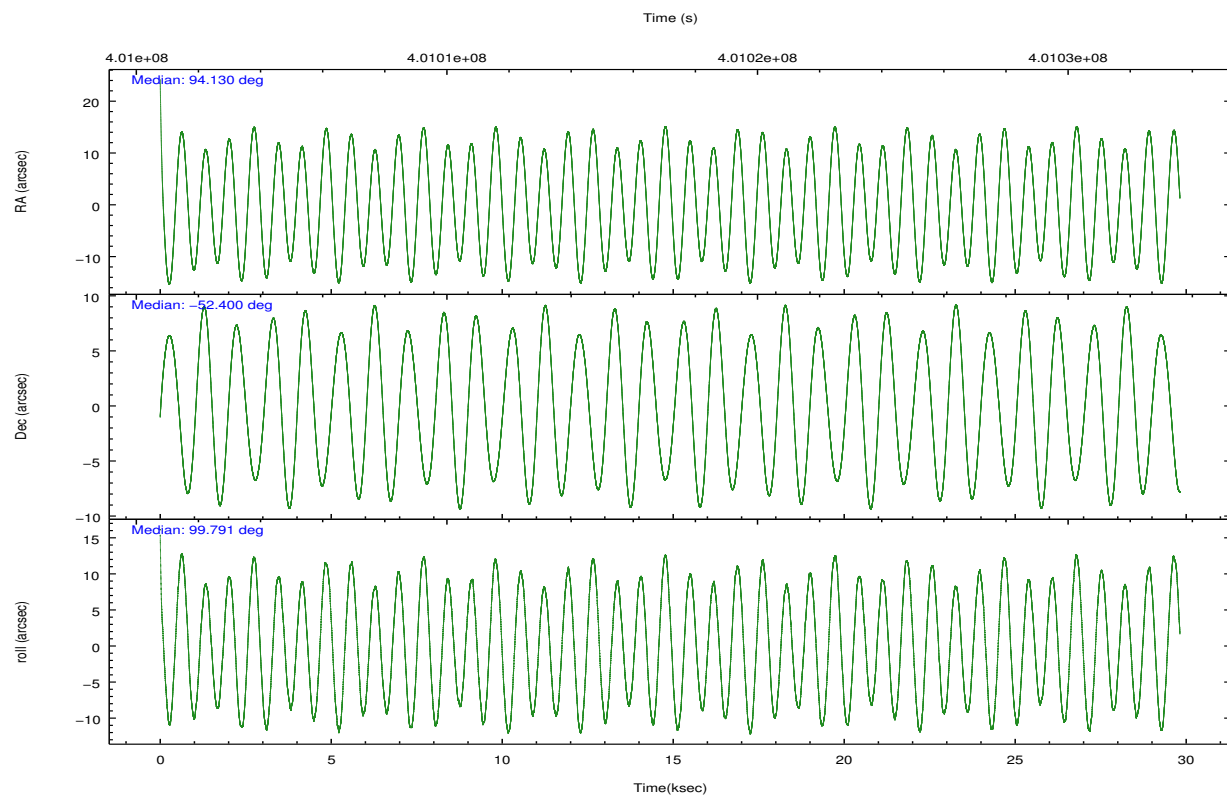
|                 | ccd 0  | ccd 1  | ccd 2  | ccd 3  | ccd 6  |                | ccd 0  | ccd 1  | ccd 2  | ccd 3  | ccd 6  |
|-----------------|--------|--------|--------|--------|--------|----------------|--------|--------|--------|--------|--------|
| level 1 events  | 194362 | 189613 | 212671 | 206626 | 200212 | grade 0 events | 9253   | 8805   | 8293   | 9024   | 7887   |
| rejected events | 170057 | 164581 | 190015 | 183423 | 177255 |                | 4%     | 4%     | 3%     | 4%     | 3%     |
| rejected %      | 87%    | 86%    | 89%    | 88%    | 88%    | grade 1 events | 116    | 109    | 123    | 116    | 96     |
|                 |        |        |        |        |        |                | 0%     | 0%     | 0%     | 0%     | 0%     |
|                 |        |        |        |        |        | grade 2 events | 5706   | 5868   | 5513   | 4960   | 4983   |
|                 |        |        |        |        |        |                | 2%     | 3%     | 2%     | 2%     | 2%     |
|                 |        |        |        |        |        | grade 3 events | 2500   | 2611   | 2357   | 2440   | 2424   |
|                 |        |        |        |        |        |                | 1%     | 1%     | 1%     | 1%     | 1%     |
|                 |        |        |        |        |        | grade 4 events | 2282   | 2558   | 2307   | 2227   | 2480   |
|                 |        |        |        |        |        |                | 1%     | 1%     | 1%     | 1%     | 1%     |
|                 |        |        |        |        |        | grade 5 events | 8413   | 8904   | 7802   | 9722   | 9177   |
|                 |        |        |        |        |        |                | 4%     | 4%     | 3%     | 4%     | 4%     |
|                 |        |        |        |        |        | grade 6 events | 4565   | 5196   | 4189   | 4556   | 5187   |
|                 |        |        |        |        |        |                | 2%     | 2%     | 1%     | 2%     | 2%     |
|                 |        |        |        |        |        | grade 7 events | 161527 | 155562 | 182087 | 173581 | 167978 |
|                 |        |        |        |        |        |                | 83%    | 82%    | 85%    | 84%    | 83%    |

## 2.2 Compared Parameters

| Parameter                         | Planned             | Actual               | Parameter                             | Planned   | Actual  |
|-----------------------------------|---------------------|----------------------|---------------------------------------|-----------|---------|
| Instrument                        | ACIS                | ACIS                 | Obspar format version number          | 7         | 7       |
| Detector                          | ACIS-01236          | ACIS-01236           | Obspar file type                      | PREDICTED | ACTUAL  |
| Grating                           | NONE                | NONE                 | Obspar update status                  | NONE      | UPDATED |
| Data mode                         | VFAINT              | VFAINT               | CCD I0 on                             | Y         | Y       |
| Observation mode                  | POINTING            | POINTING             | CCD I1 on                             | Y         | Y       |
| [deg] Pointing RA                 | 94.159439           | 94.13045241368714    | CCD I2 on                             | Y         | Y       |
| [deg] Pointing Dec                | -52.420835          | -52.39978142566642   | CCD I3 on                             | Y         | Y       |
| [deg] Pointing Roll               | 99.613418           | 99.79913754257262    | CCD S0 on                             | N         | N       |
| [mm] SIM focus pos                | -0.782348           | -0.7809083437167272  | CCD S1 on                             | N         | N       |
| [mm] SIM defocus                  | 0                   | 0.001439871863259334 | CCD S2 on                             | O1        | Y       |
| [mm] SIM translation stage pos    | -225.792463         | -225.7829997647864   | CCD S3 on                             | N         | N       |
| [mm] SIM translation stage offset | -7.8                | -7.809453238143249   | CCD S4 on                             | N         | N       |
| [s] Observation start time (MET)  | 401003090.184000    | 401001410.29756      | CCD S5 on                             | N         | N       |
| Observation start date            | 2010-09-16T05:43:44 | 2010-09-16T05:16:50  | Number of optional ACIS chips dropped | 0         | 0       |
| [s] Observation end time (MET)    | 401032090.184000    | 401033293.9492       | On-chip summing requested             | N         | N       |
| Observation end date              | 2010-09-16T13:47:04 | 2010-09-16T14:08:13  | Subarray requested                    | NONE      | NONE    |
| Read mode                         | TIMED               | TIMED                | Alternating exposures requested       | N         | N       |
|                                   |                     |                      | [s] Primary exposure time             | 0.000000  | 3.1     |

## 2.3 Aspect



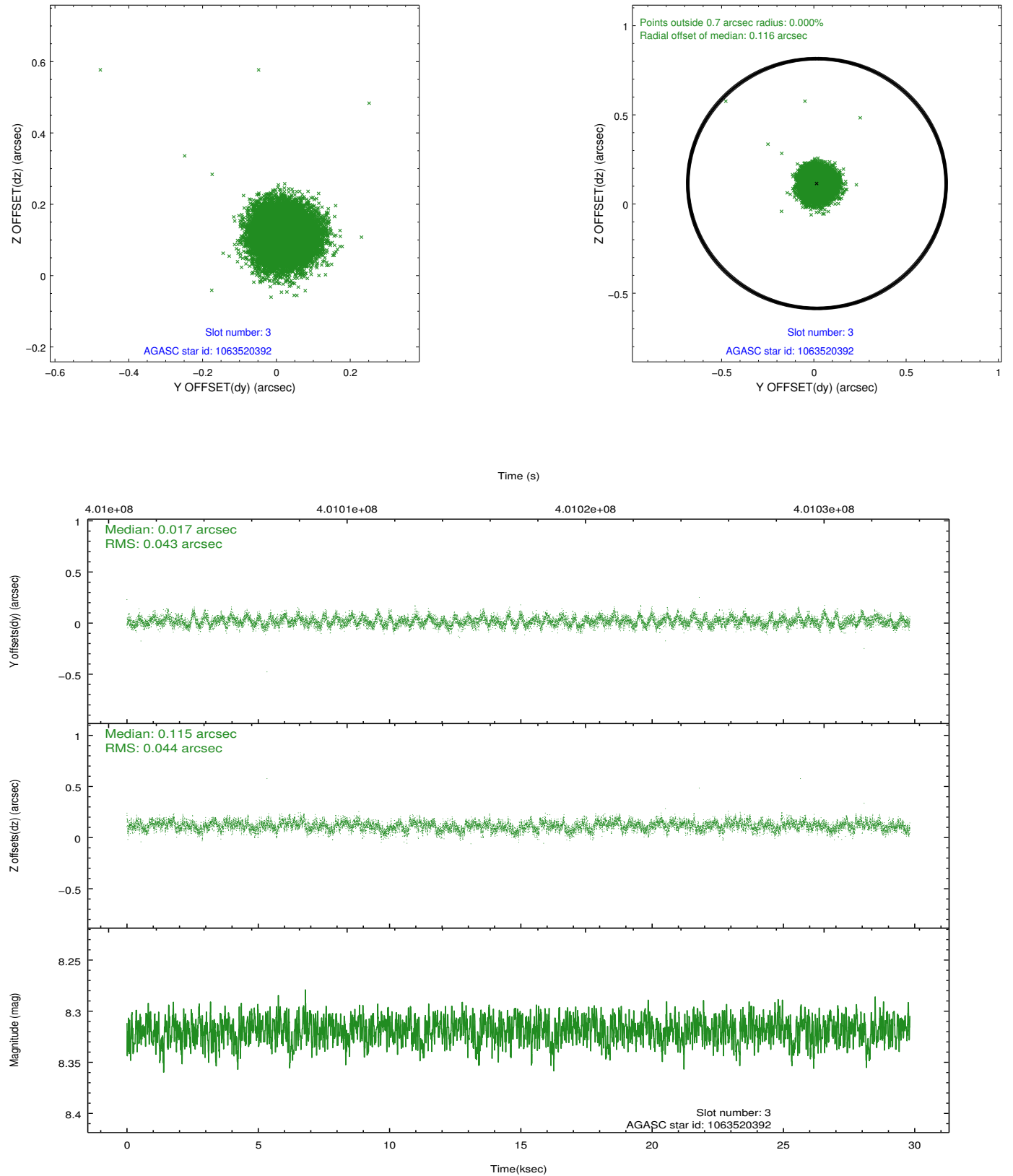


### Slot Statistics

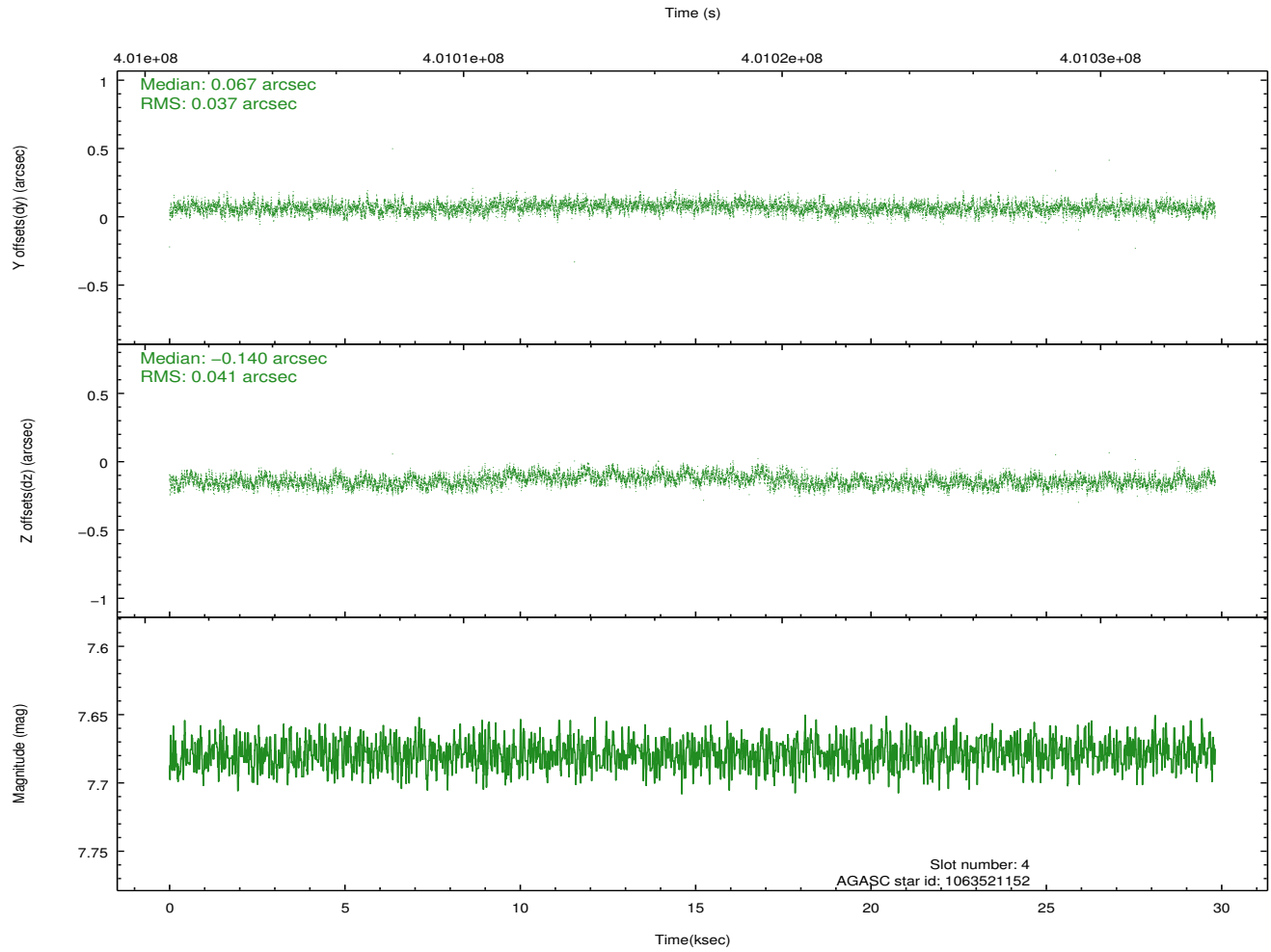
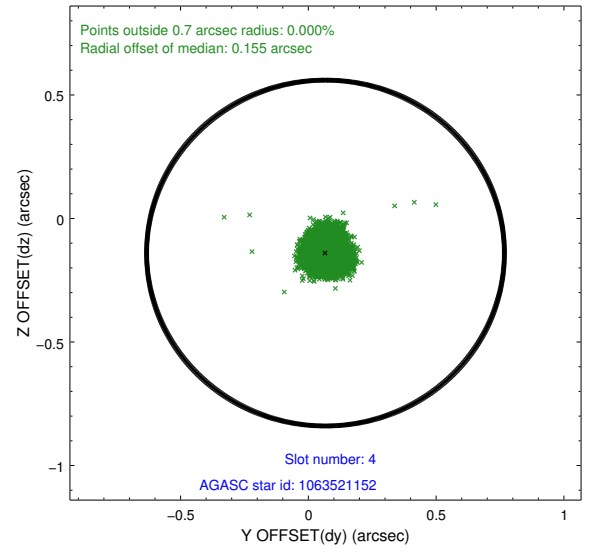
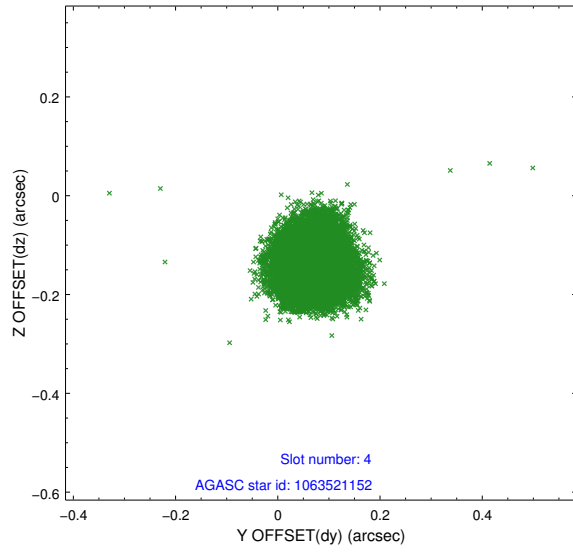
| slot | status | id         | mag  | n_pts | med_dy | med_dz | dr1   | dr2   | ra        | dec        | mean_y   | mean_z   |
|------|--------|------------|------|-------|--------|--------|-------|-------|-----------|------------|----------|----------|
| 0    | FID    | ACIS-I-1   | 7.00 | 7273  | 0.089  | -0.145 | 0.020 | 0.040 | 0.000000  | 0.000000   | 926.01   | -999.87  |
| 1    | FID    | ACIS-I-4   | 6.92 | 7273  | 0.086  | 0.081  | 0.018 | 0.031 | 0.000000  | 0.000000   | 2145.62  | 901.09   |
| 2    | FID    | ACIS-I-5   | 6.99 | 7274  | -0.274 | 0.134  | 0.014 | 0.021 | 0.000000  | 0.000000   | -1822.28 | 898.04   |
| 3    | GUIDE  | 1063520392 | 8.32 | 14535 | 0.017  | 0.115  | 0.065 | 0.103 | 94.980750 | -52.145146 | 665.81   | -1952.81 |
| 4    | GUIDE  | 1063521152 | 7.68 | 14544 | 0.067  | -0.140 | 0.059 | 0.094 | 92.979645 | -51.913324 | 2217.88  | 2281.56  |
| 5    | GUIDE  | 1063522968 | 8.75 | 14537 | -0.255 | -0.084 | 0.067 | 0.106 | 93.390451 | -51.968944 | 1879.71  | 1411.72  |
| 6    | GUIDE  | 1063522888 | 6.92 | 14545 | -0.023 | -0.051 | 0.065 | 0.115 | 95.148149 | -52.069842 | 866.31   | -2365.60 |
| 7    | GUIDE  | 1118570624 | 7.52 | 14544 | 0.192  | 0.163  | 0.061 | 0.098 | 95.354935 | -52.662457 | -1314.28 | -2424.84 |

## 2.4 Star Slots

### 2.4.1 Slot 3

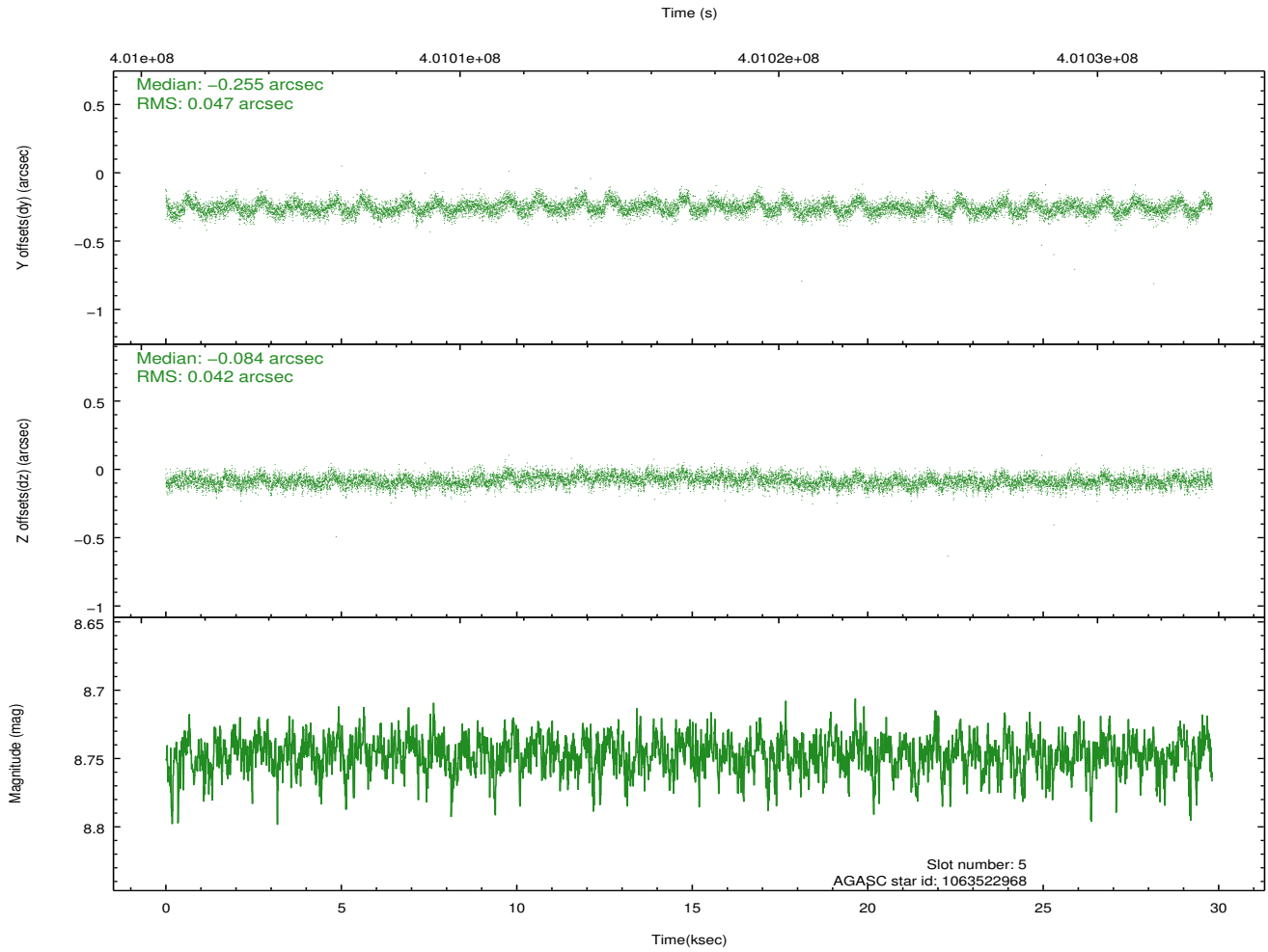
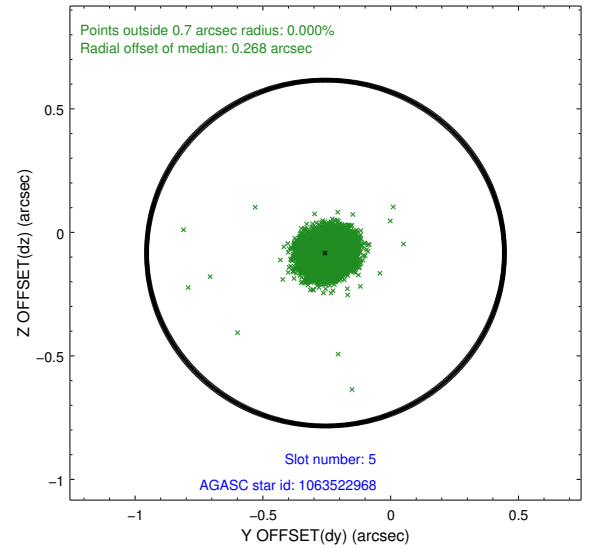
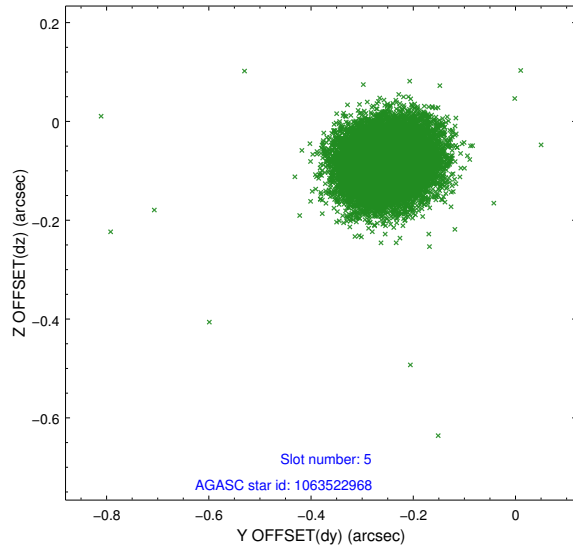


## 2.4.2 Slot 4

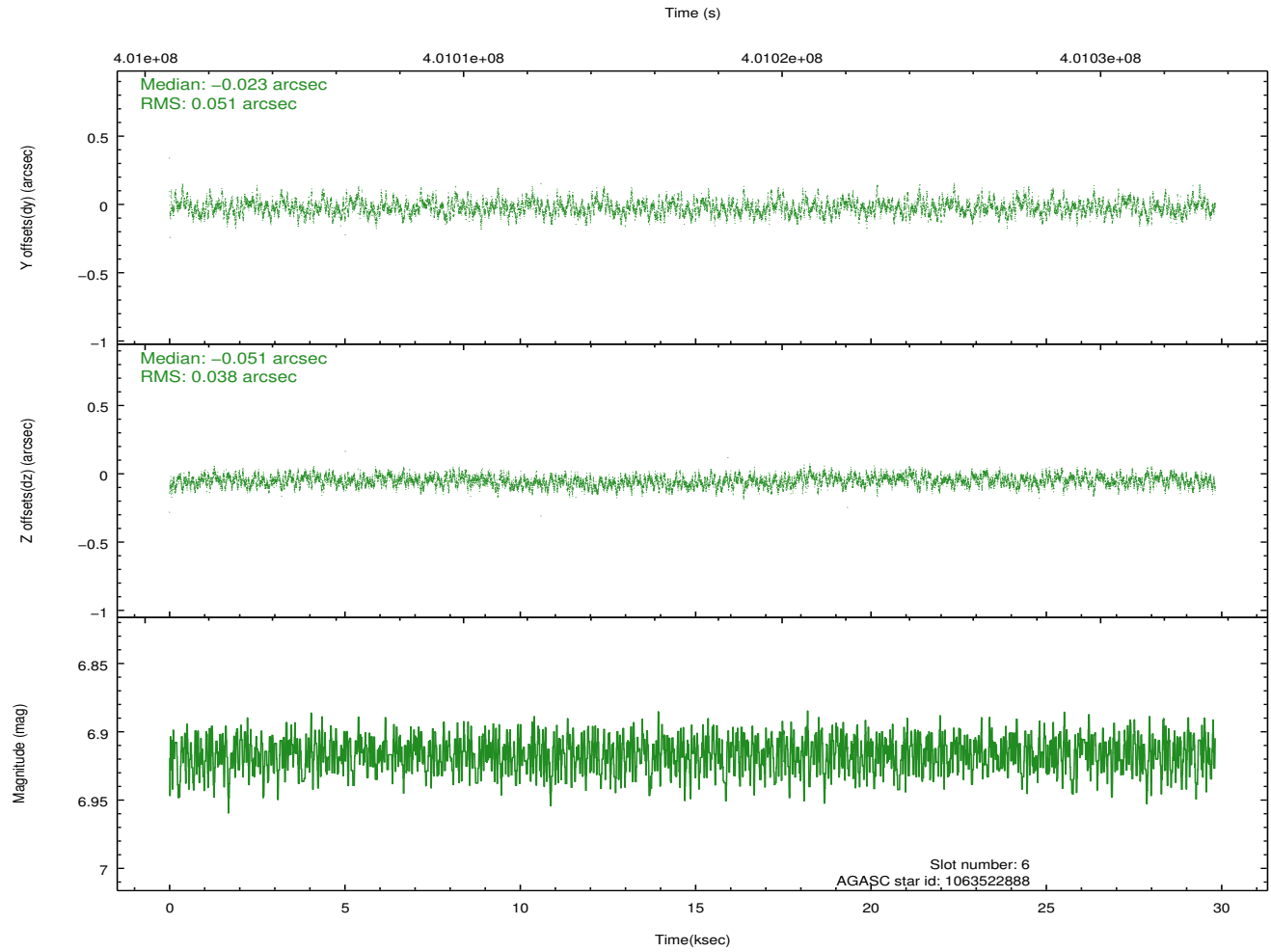
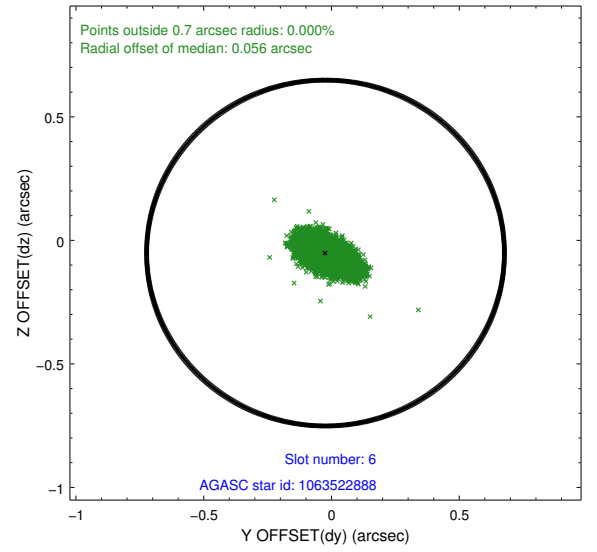
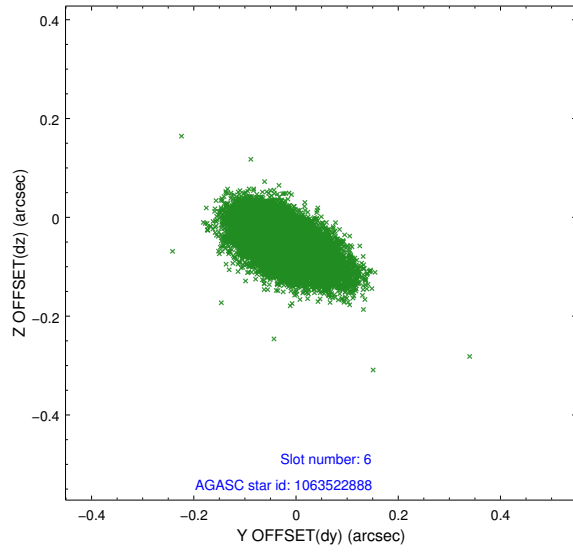




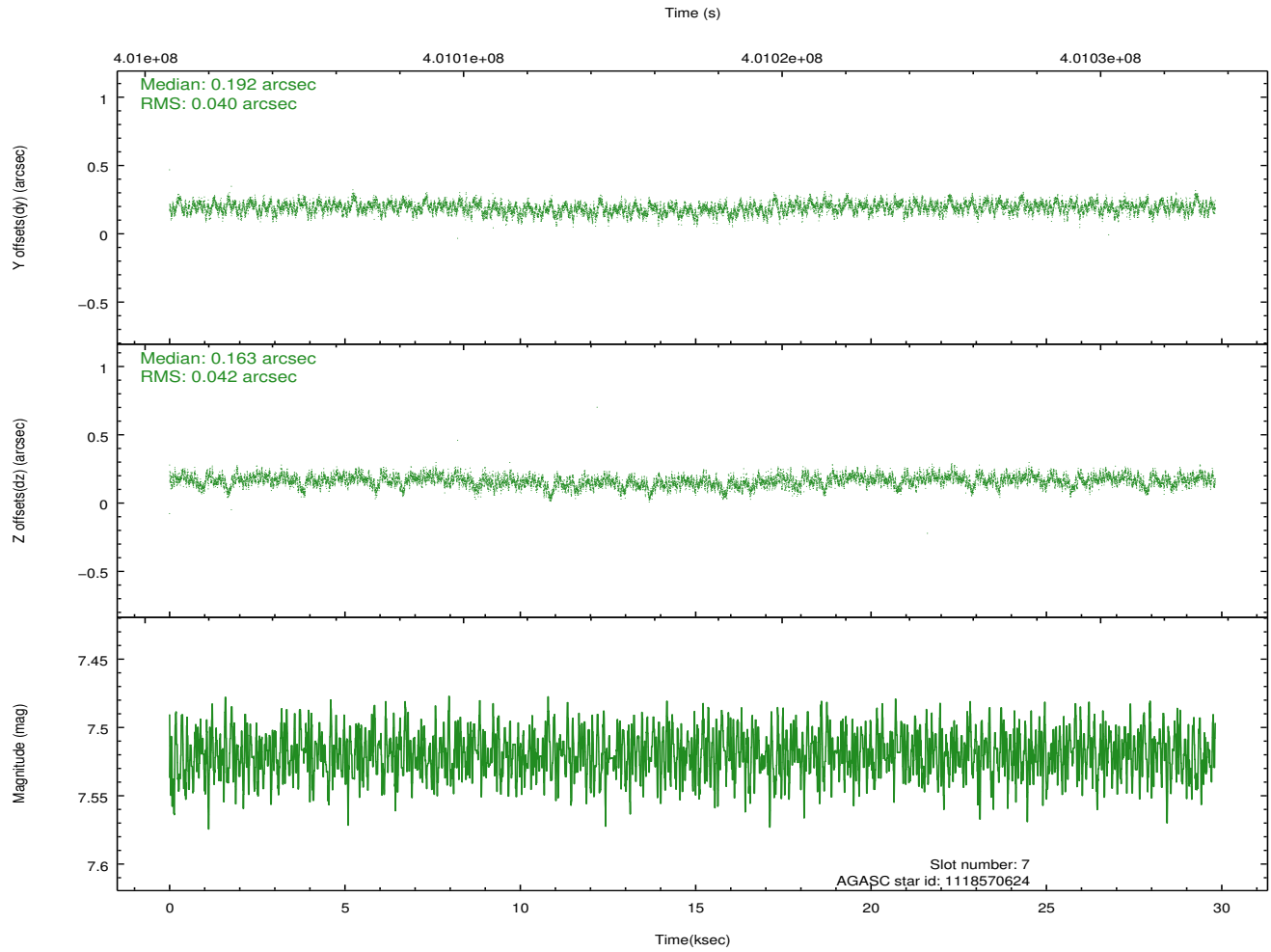
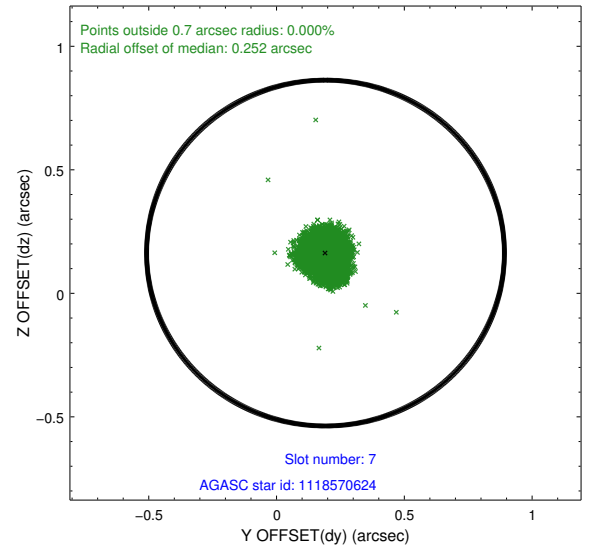
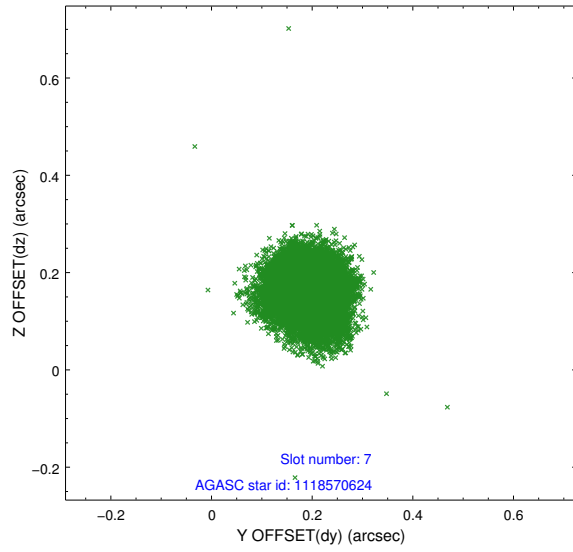
### 2.4.3 Slot 5



## 2.4.4 Slot 6

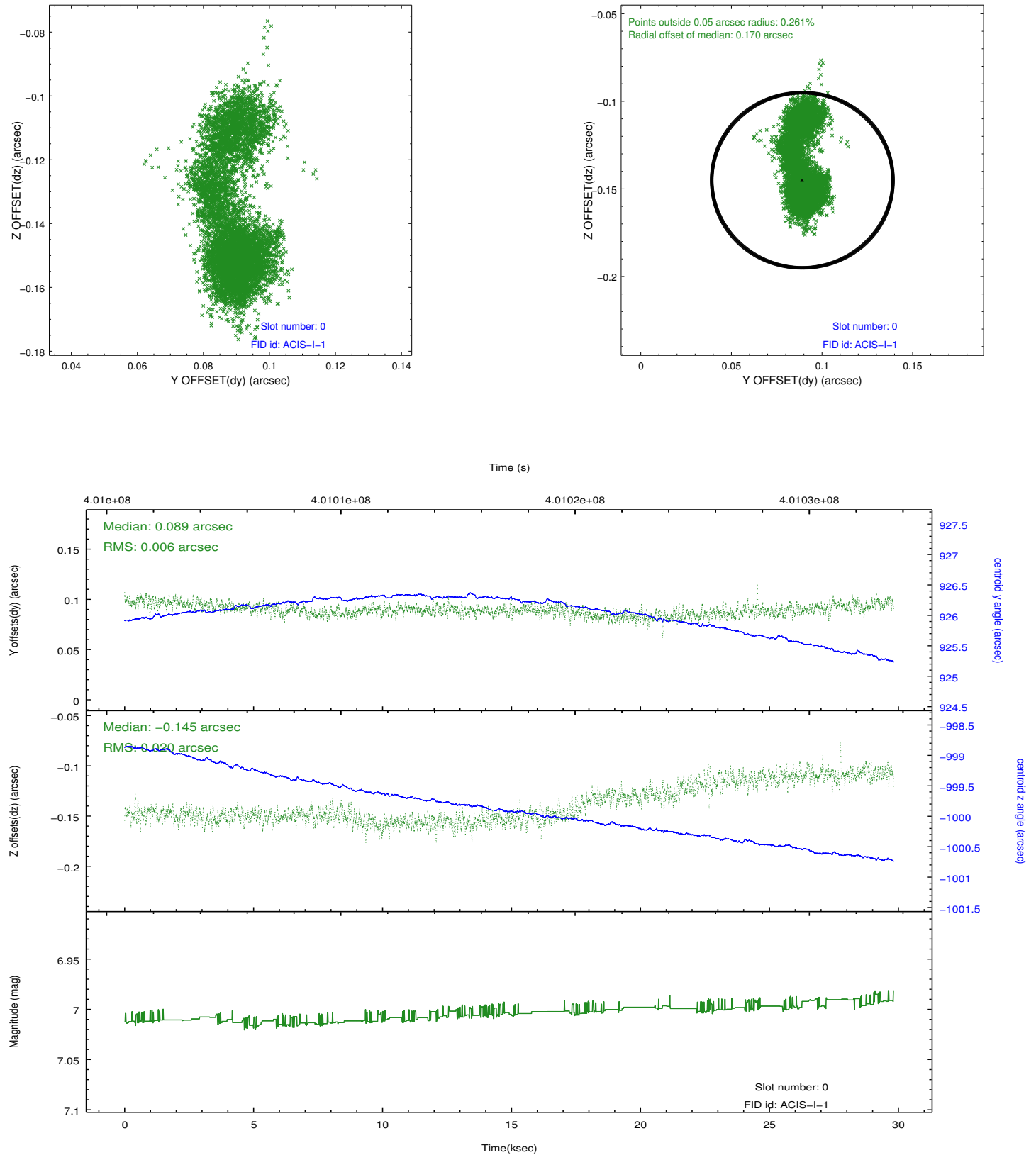


## 2.4.5 Slot 7

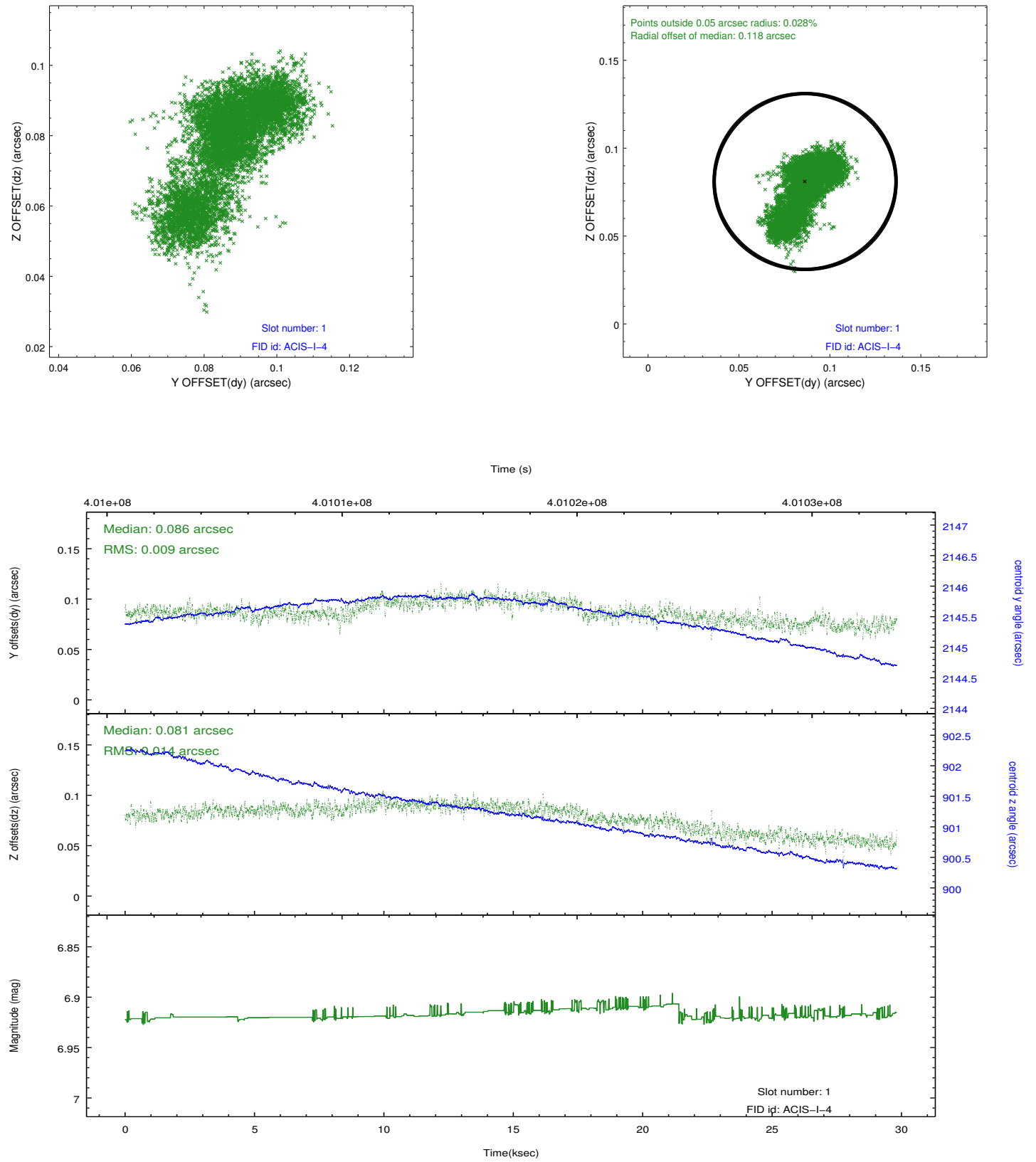


## 2.5 FID Slots

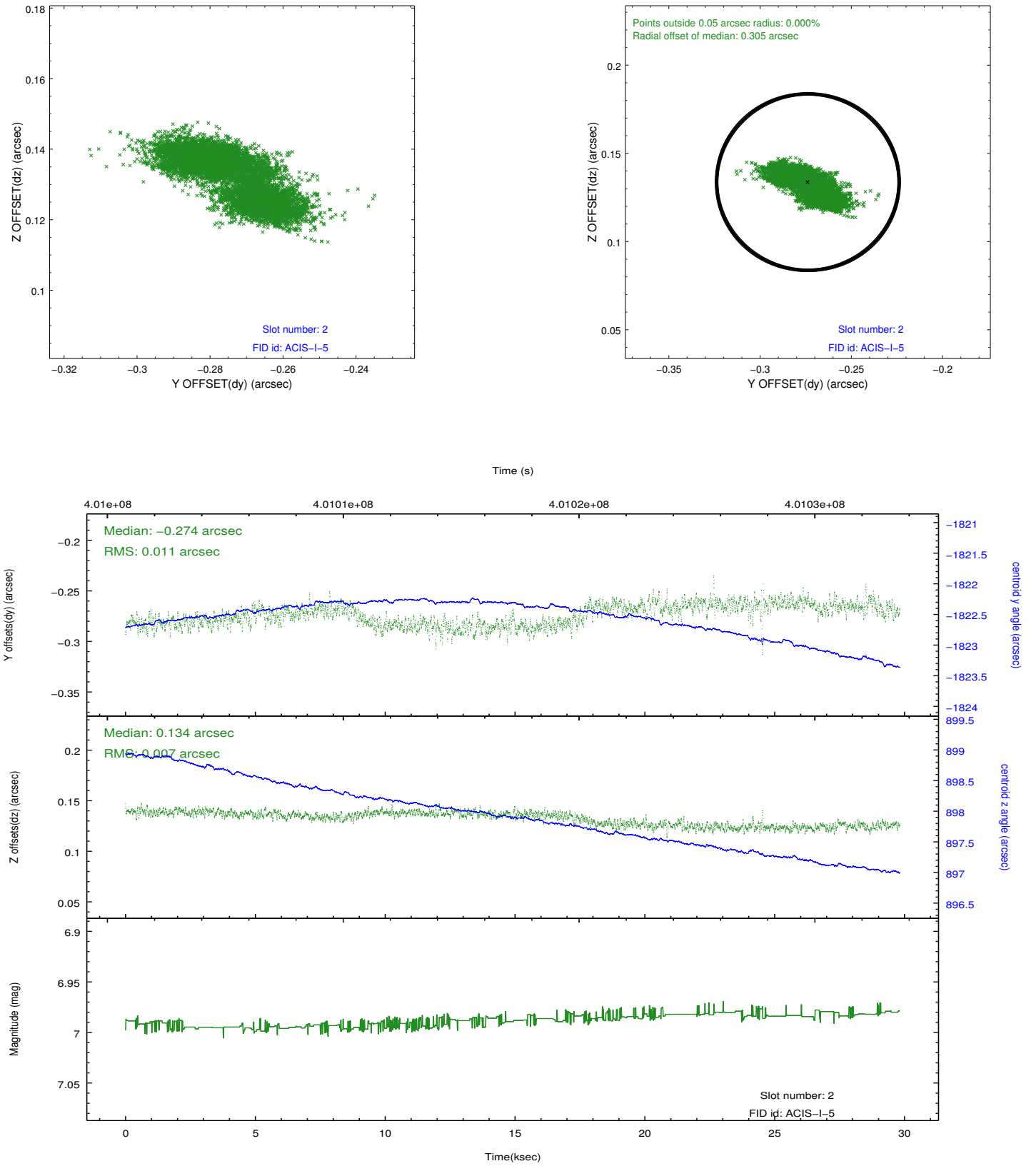
### 2.5.1 Slot 0



## 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)      | 2012.07.11      |
| V&V Edition                | 1               |
| V&V Disposition and Status | OK              |
| V&V Charge Time            | 29.050059223175 |

### A.2 Comments