

# V&V Reference Report

## L2 ASCDS Version : 8.5.1.1

Observation 2220 - L2 Version 3  
Chandra X-Ray Center

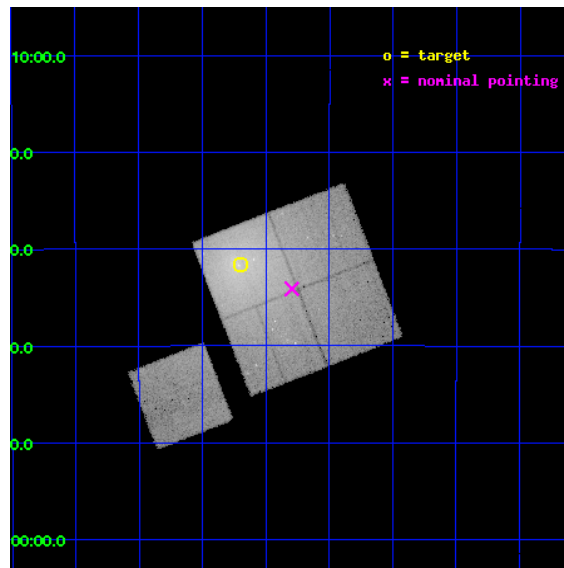
L2 Processing Date : Jan 15 2013

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# 1 Front

|          |   |   |
|----------|---|---|
| seq_num  | 800159  | Sequence number                             |
| obs_id   | 2220  | Observation id                              |
| title    | GRAVITATIONAL POTENTIAL PROFILE IN A1060CLUSTER OF GALAXIES | Propos                                      |
| observer | Dr. Takaya Ohashi   | Principal investigator                      |
| object   | A1060   | Source name                                 |
| dtcycle  | 0   | &#160                                       |
| cycle    | P   | events from which exps?<br>Prim/Second/Both |
| ra_targ  | 159.175   | Observer's specified target RA [deg]        |
| dec_targ | -27.5275  | Observer's specified target Dec [deg]       |
| ra_nom   | 159.07384089591   | Nominal RA [deg]                            |
| dec_nom  | -27.568657649244  | Nominal Dec [deg]                           |
| roll_nom | 248.80543739688   | Nominal Roll [deg]                          |
| revision | 3   | Processing version of data                  |
| ontime   | 32320.599937856   | Sum of GTIs [s]                             |
| livetime | 31898.307505589   | Livetime [s]                                |
| ontime0  | 32311.177007303   | Sum of GTIs [s]                             |
| ontime1  | 32314.317927614   | Sum of GTIs [s]                             |
| ontime2  | 32320.599937856   | Sum of GTIs [s]                             |
| ontime3  | 32320.599937856   | Sum of GTIs [s]                             |
| ontime6  | 32317.45897761  | Sum of GTIs [s]                             |
| l2events | 289788  | Number of level 2 events                    |

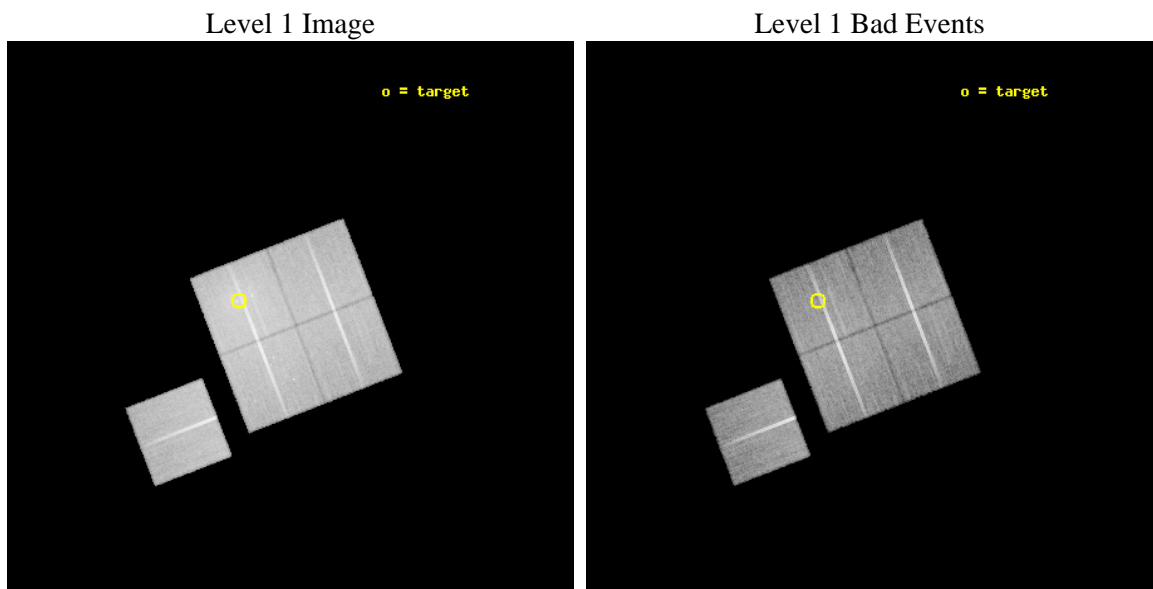




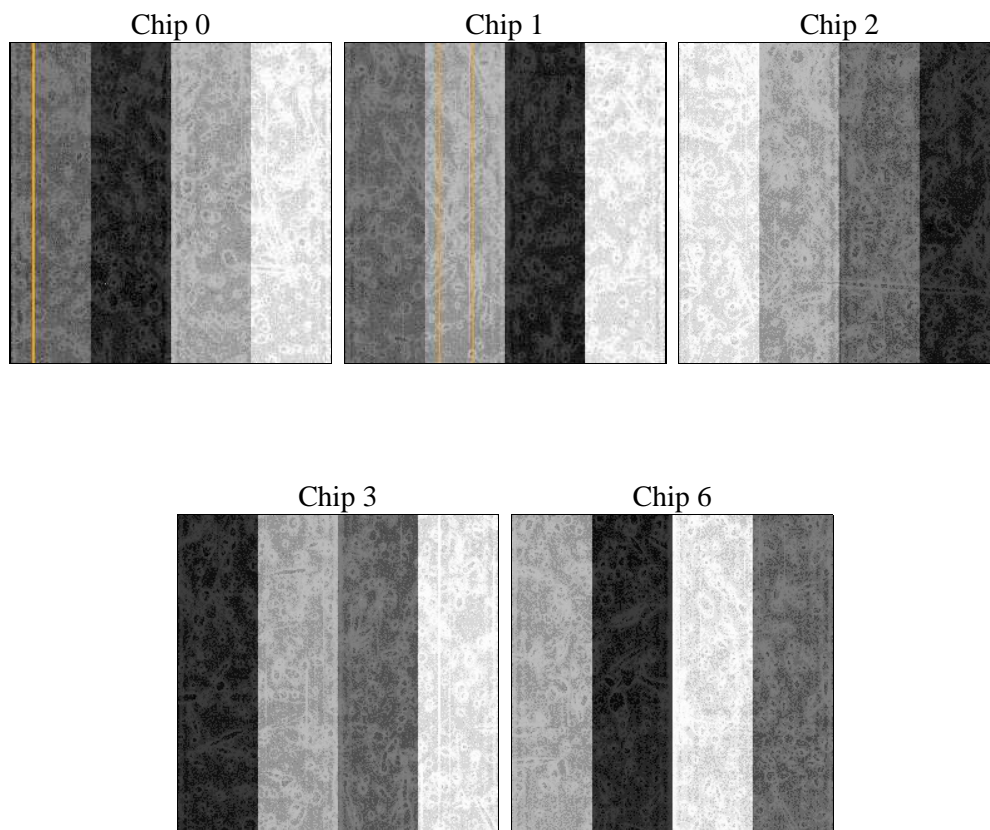
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

|          |                     |                                |                |                 |   |
|----------|---------------------|--------------------------------|----------------|-----------------|---|
| obi_num  | 0                   | Obi number                     | sched_exp_time | 32137.786000    | [s] Scheduled observation exposure time |
| ascdsver | 8.5.1.1             | Processing system revision     | ontime         | 32320.599937856 | Sum of GTIs [s]                         |
| caldsver | 4.5.5               | &#160                          | ontime0        | 32311.177007303 | Sum of GTIs [s]                         |
| date     | 2013-01-15T01:30:49 | Date and time of file creation | ontime1        | 32314.317927614 | Sum of GTIs [s]                         |
| revision | 3                   | Processing version of data     | ontime2        | 32320.599937856 | Sum of GTIs [s]                         |
|          |                     |                                | ontime3        | 32320.599937856 | Sum of GTIs [s]                         |
|          |                     |                                | ontime6        | 32317.45897761  | Sum of GTIs [s]                         |
|          |                     |                                | l1events       | 1228879         | Number of level 1 events                |

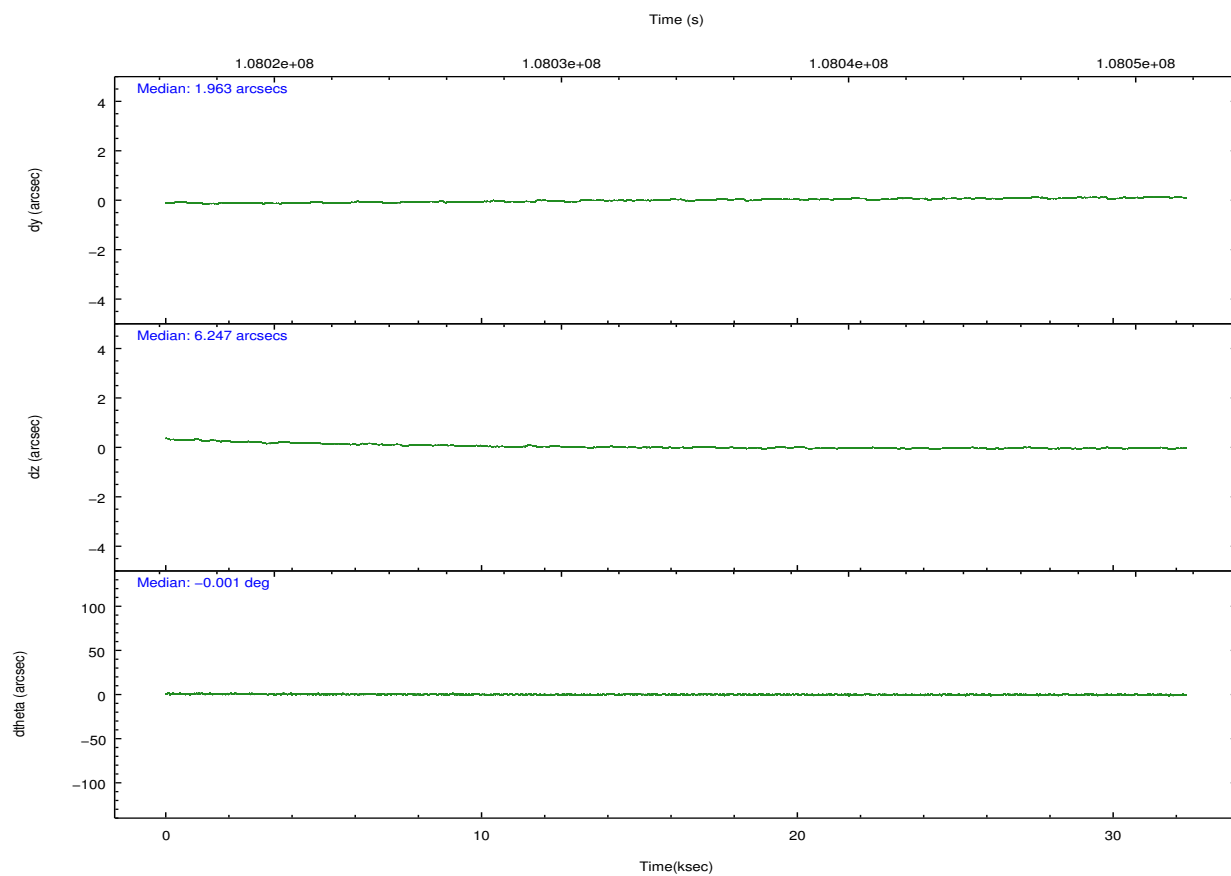
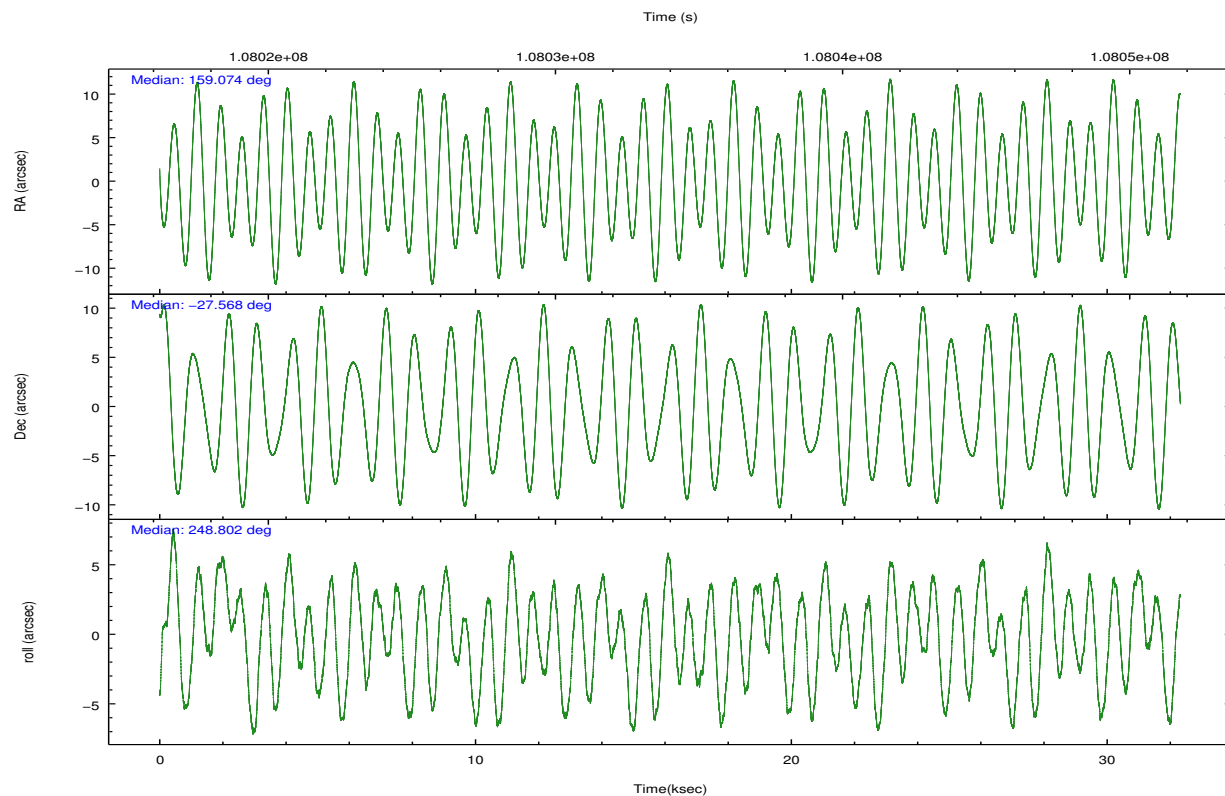
### 2.1.4 Events

|                 | ccd 0  | ccd 1  | ccd 2  | ccd 3  | ccd 6  |                | ccd 0  | ccd 1  | ccd 2  | ccd 3  | ccd 6  |
|-----------------|--------|--------|--------|--------|--------|----------------|--------|--------|--------|--------|--------|
| level 1 events  | 204255 | 225504 | 247543 | 328300 | 223277 | grade 0 events | 21384  | 33722  | 36532  | 103659 | 17146  |
| rejected events | 166366 | 172149 | 192055 | 191701 | 190252 |                | 10%    | 14%    | 14%    | 31%    | 7%     |
| rejected %      | 81%    | 76%    | 77%    | 58%    | 85%    | grade 1 events | 161    | 178    | 204    | 448    | 124    |
|                 |        |        |        |        |        |                | 0%     | 0%     | 0%     | 0%     | 0%     |
|                 |        |        |        |        |        | grade 2 events | 6408   | 7738   | 8188   | 15770  | 5802   |
|                 |        |        |        |        |        |                | 3%     | 3%     | 3%     | 4%     | 2%     |
|                 |        |        |        |        |        | grade 3 events | 2958   | 3412   | 3092   | 5380   | 2598   |
|                 |        |        |        |        |        |                | 1%     | 1%     | 1%     | 1%     | 1%     |
|                 |        |        |        |        |        | grade 4 events | 2663   | 3273   | 3044   | 5554   | 2641   |
|                 |        |        |        |        |        |                | 1%     | 1%     | 1%     | 1%     | 1%     |
|                 |        |        |        |        |        | grade 5 events | 7517   | 7953   | 7285   | 8554   | 8711   |
|                 |        |        |        |        |        |                | 3%     | 3%     | 2%     | 2%     | 3%     |
|                 |        |        |        |        |        | grade 6 events | 4527   | 5274   | 4693   | 6395   | 4887   |
|                 |        |        |        |        |        |                | 2%     | 2%     | 1%     | 1%     | 2%     |
|                 |        |        |        |        |        | grade 7 events | 158637 | 163954 | 184505 | 182540 | 181368 |
|                 |        |        |        |        |        |                | 77%    | 72%    | 74%    | 55%    | 81%    |

## 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                | Number of optional ACIS chips dropped | 0         | 0       |
| Observation mode                  | POINTING            | POINTING              | On-chip summing requested             | N         | N       |
| [deg] Pointing RA                 | 159.069079          | 159.0738408959061     | Subarray requested                    | NONE      | NONE    |
| [deg] Pointing Dec                | -27.541555          | -27.56865764924432    | Alternating exposures requested       | N         | N       |
| [deg] Pointing Roll               | 248.594549          | 248.8054373968849     | [s] Primary exposure time             | 0.000000  | 3.1     |
| [mm] SIM focus pos                | -0.782348           | -0.7809083437167272   |                                       |           |         |
| [mm] SIM defocus                  | 0                   | 0.001439871863259334  |                                       |           |         |
| [mm] SIM translation stage pos    | -233.592463         | -233.5874344608287    |                                       |           |         |
| [mm] SIM translation stage offset | 0                   | -0.005018542100998502 |                                       |           |         |
| [s] Observation start time (MET)  | 108018016.184000    | 108017003.76637       |                                       |           |         |
| Observation start date            | 2001-06-04T04:59:12 | 2001-06-04T04:43:23   |                                       |           |         |
| [s] Observation end time (MET)    | 108050154.184000    | 108050467.96767       |                                       |           |         |
| Observation end date              | 2001-06-04T13:54:50 | 2001-06-04T14:01:07   |                                       |           |         |
| Read mode                         | TIMED               | TIMED                 |                                       |           |         |

## 2.3 Aspect

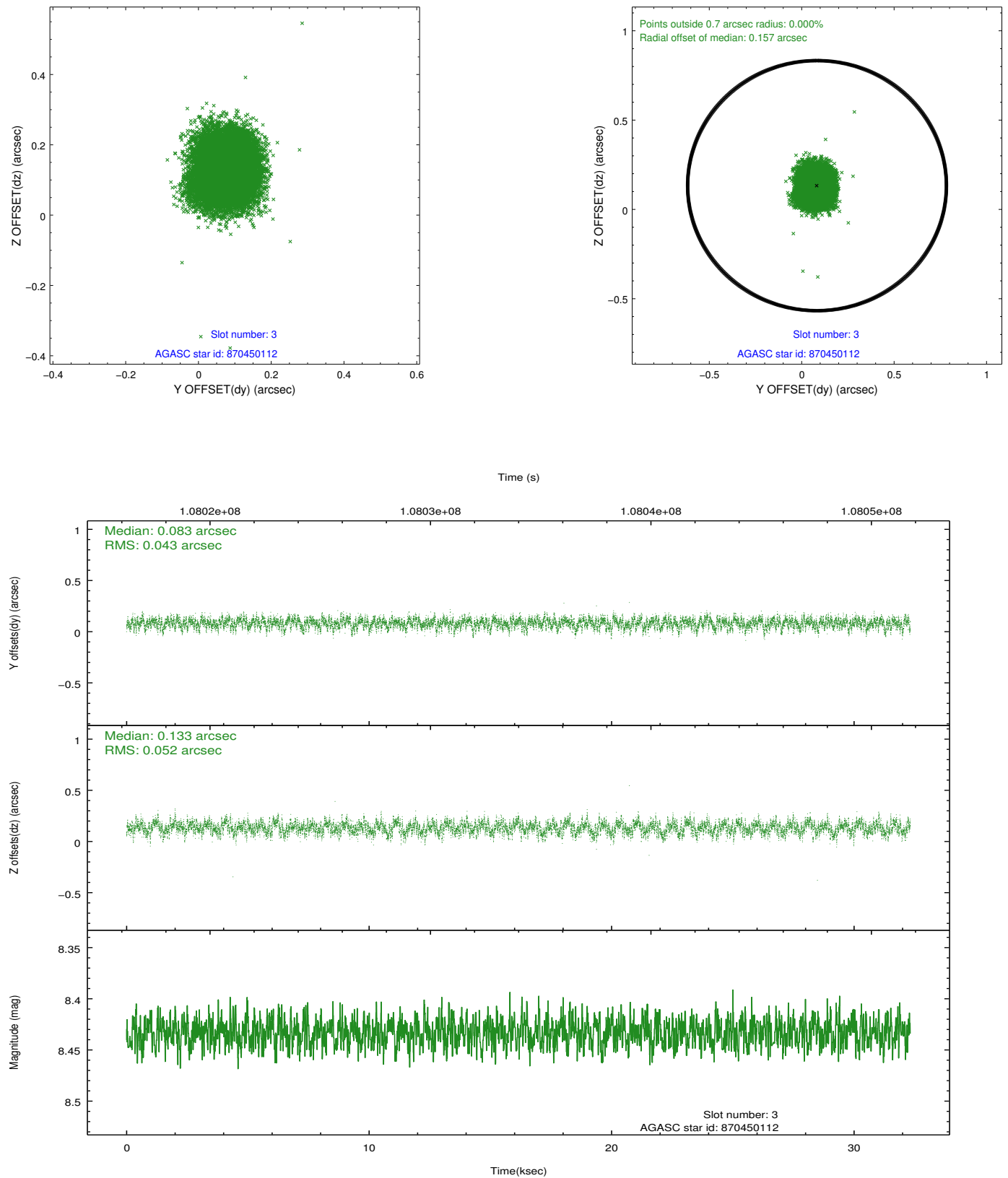


### Slot Statistics

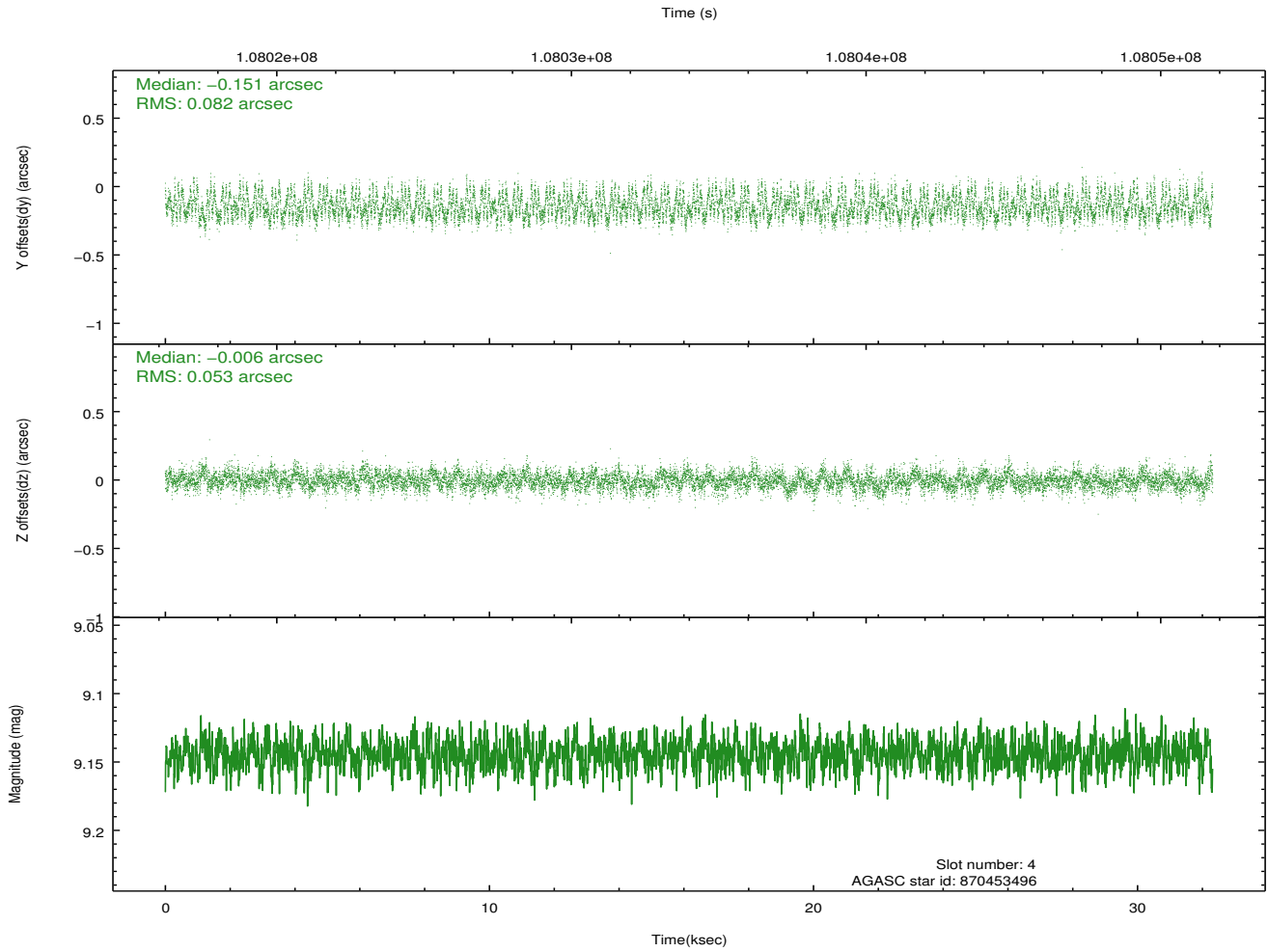
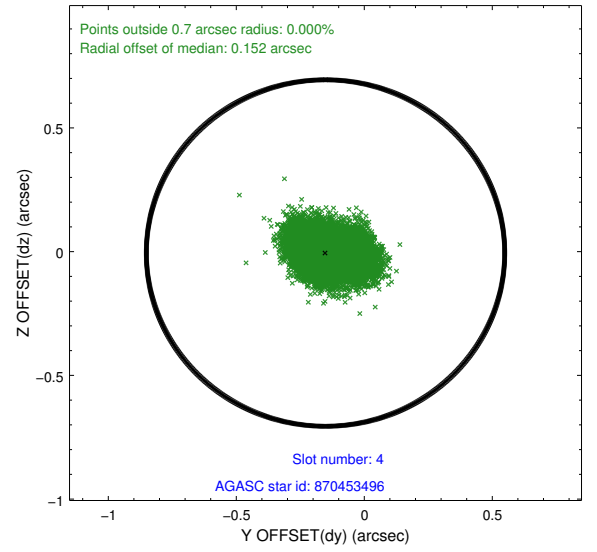
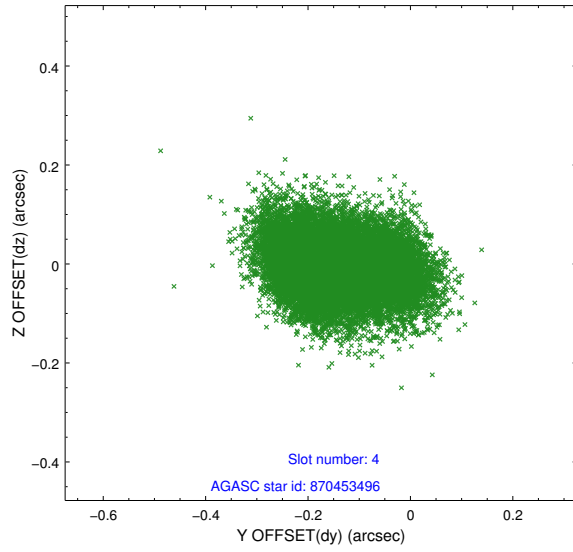
| slot | status | id        | mag   | n_pts | med_dy | med_dz | dr1   | dr2   | ra         | dec        | mean_y   | mean_z   |
|------|--------|-----------|-------|-------|--------|--------|-------|-------|------------|------------|----------|----------|
| 0    | FID    | ACIS-I-1  | 7.25  | 7883  | -0.007 | 0.010  | 0.006 | 0.011 | 0.000000   | 0.000000   | 937.84   | -829.67  |
| 1    | FID    | ACIS-I-5  | 7.24  | 7881  | -0.044 | 0.044  | 0.006 | 0.011 | 0.000000   | 0.000000   | -1810.24 | 1067.87  |
| 2    | FID    | ACIS-I-6  | 7.26  | 7882  | -0.041 | 0.016  | 0.007 | 0.012 | 0.000000   | 0.000000   | 403.33   | 1712.38  |
| 3    | GUIDE  | 870450112 | 8.43  | 15762 | 0.083  | 0.133  | 0.072 | 0.117 | 159.404165 | -28.068797 | 1381.02  | 1683.97  |
| 4    | GUIDE  | 870453496 | 9.14  | 15763 | -0.151 | -0.006 | 0.105 | 0.169 | 159.887499 | -27.253052 | -1914.11 | 2062.16  |
| 5    | GUIDE  | 868746184 | 9.56  | 15691 | 0.124  | -0.128 | 0.096 | 0.160 | 158.390269 | -27.831577 | 1767.42  | -1629.25 |
| 6    | GUIDE  | 868746256 | 9.62  | 15763 | 0.144  | 0.055  | 0.092 | 0.152 | 159.026799 | -28.098430 | 1916.73  | 606.22   |
| 7    | GUIDE  | 868754984 | 10.34 | 15761 | -0.205 | -0.062 | 0.147 | 0.235 | 158.634720 | -26.835736 | -1853.15 | -2226.31 |

## 2.4 Star Slots

### 2.4.1 Slot 3

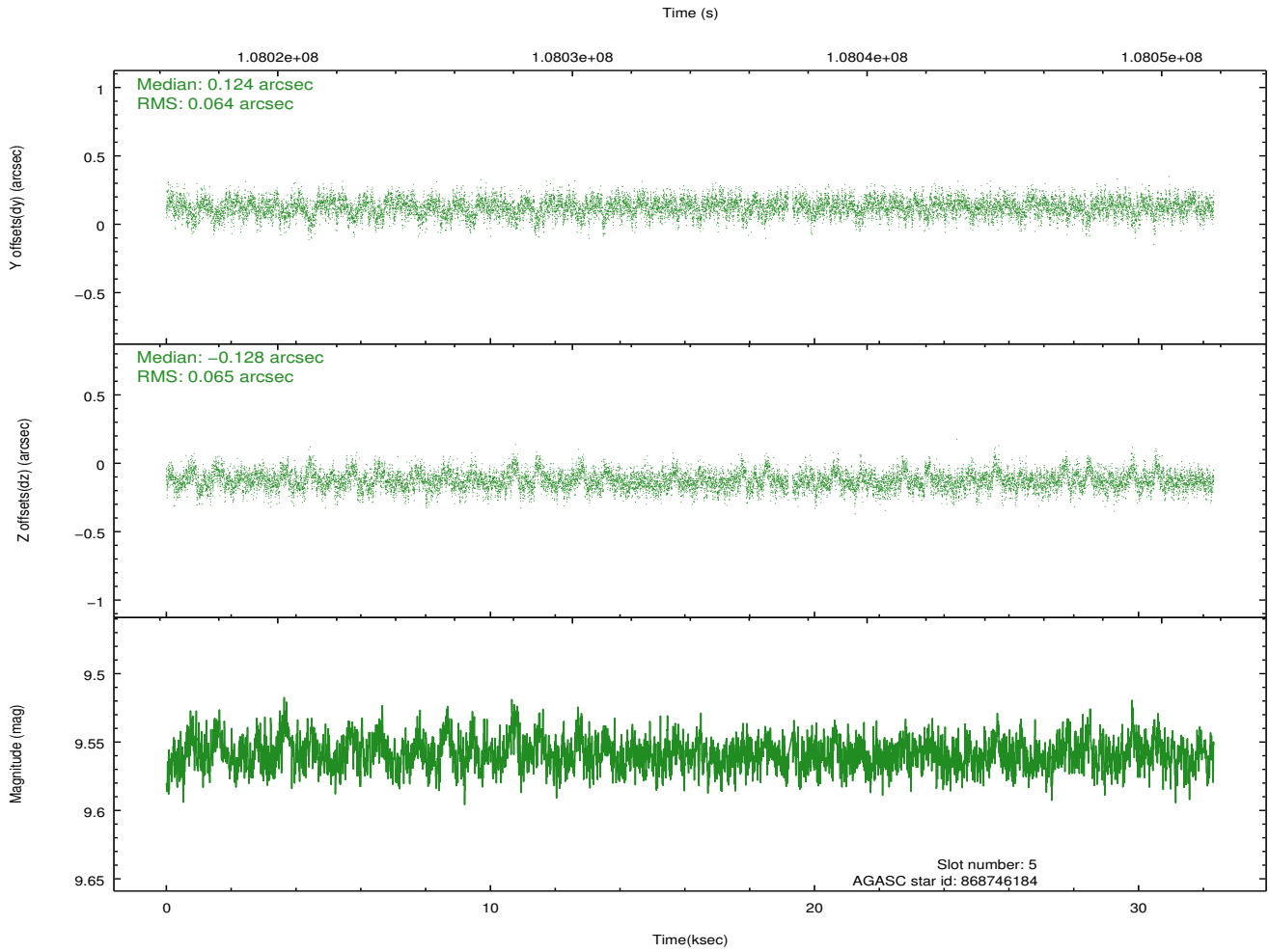
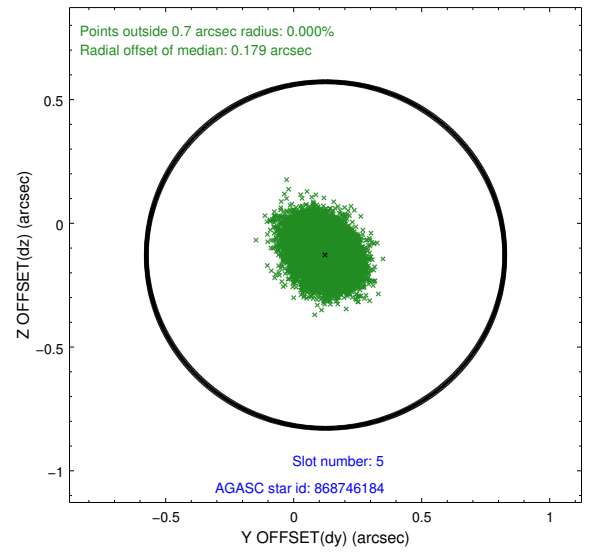
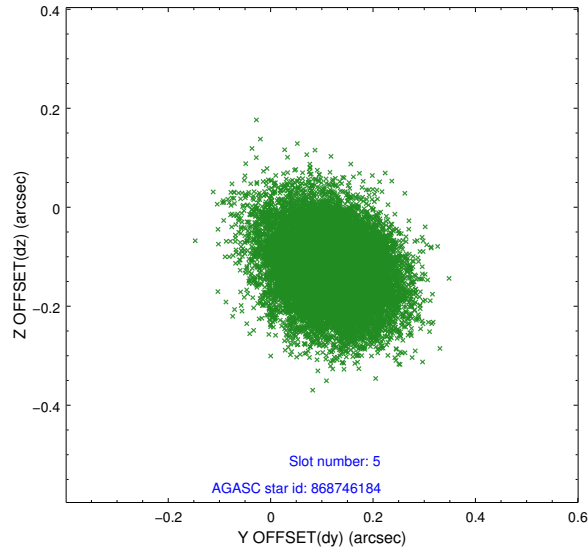


## 2.4.2 Slot 4

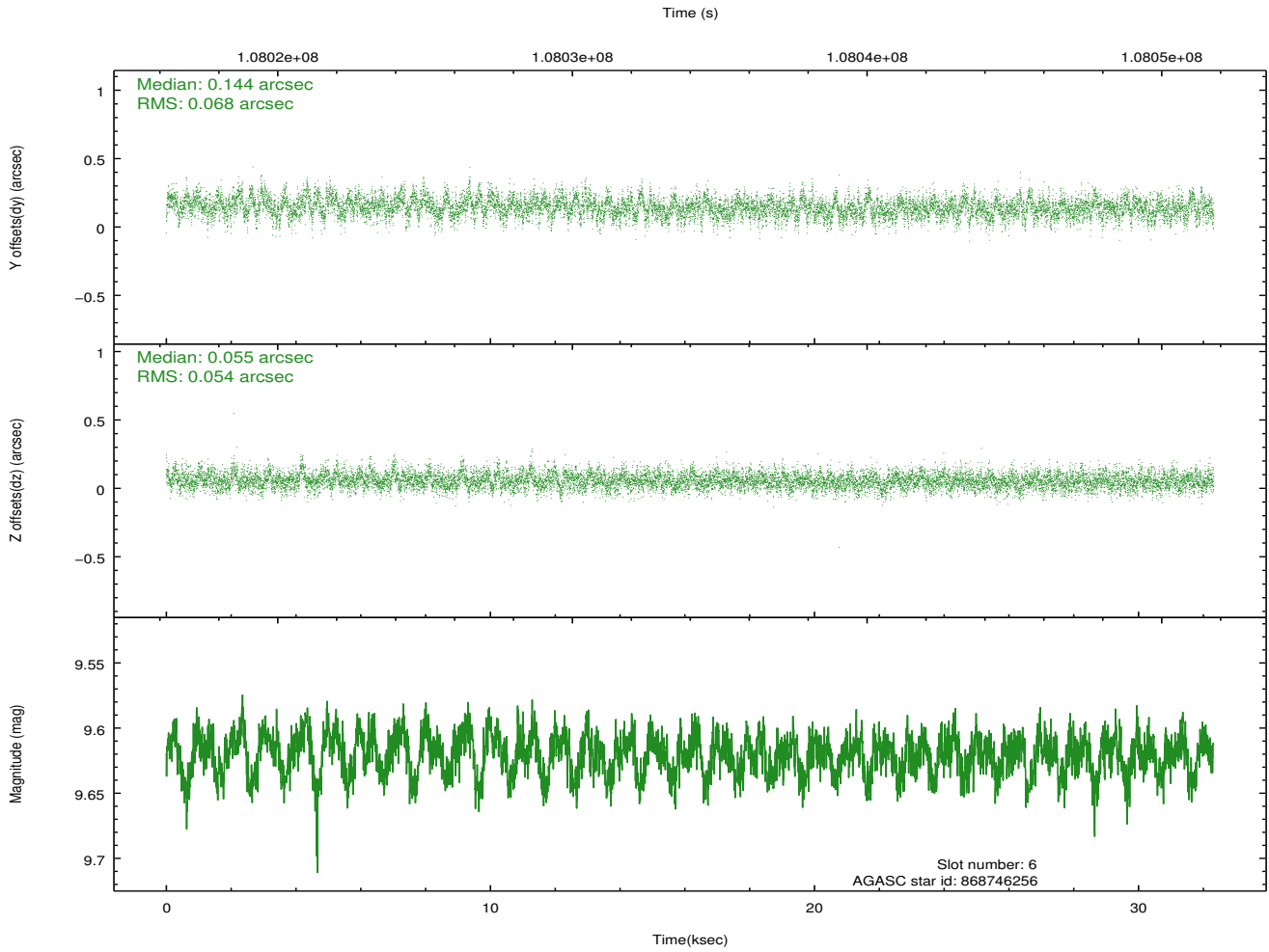
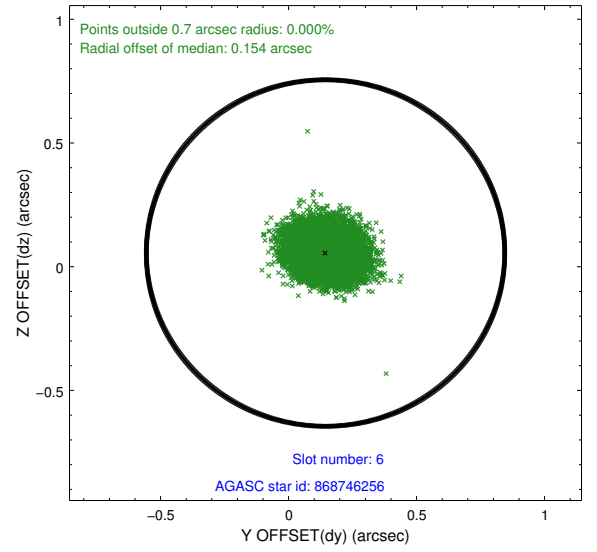
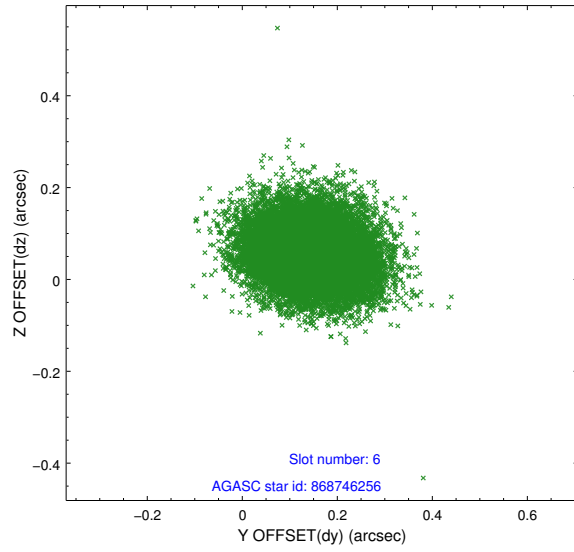




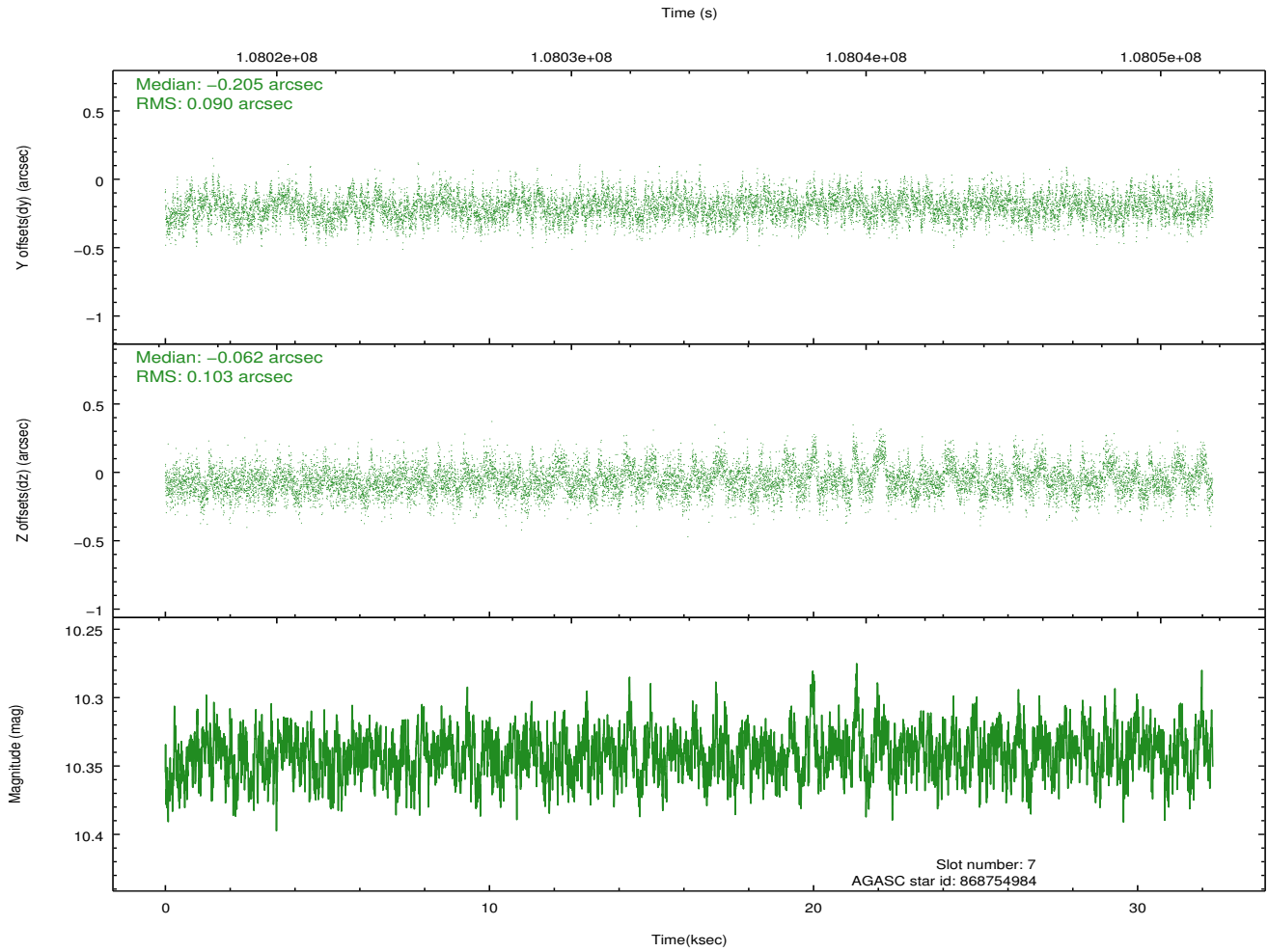
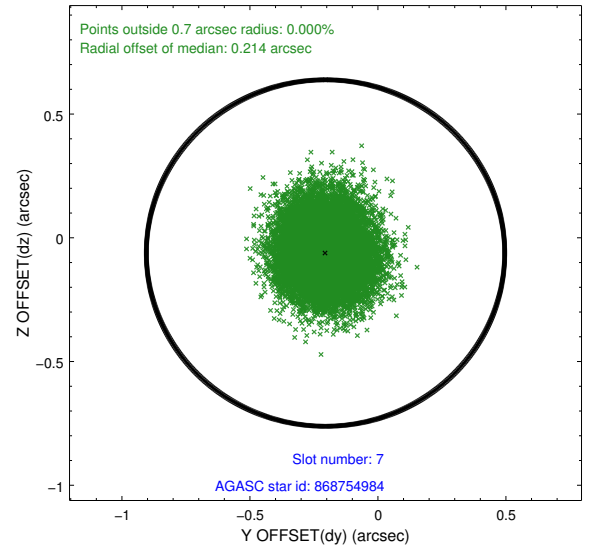
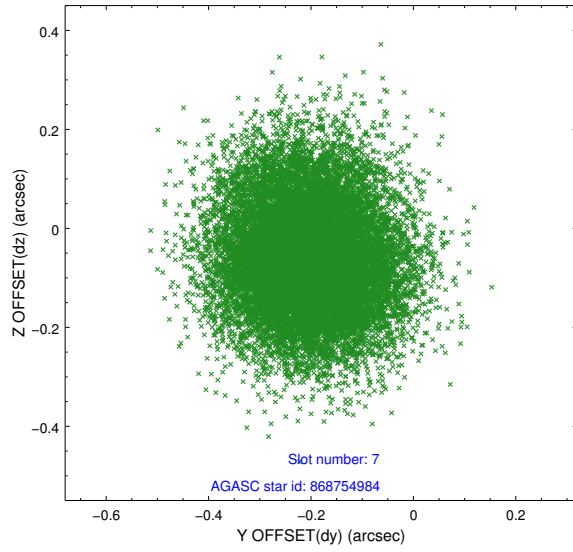
### 2.4.3 Slot 5



## 2.4.4 Slot 6

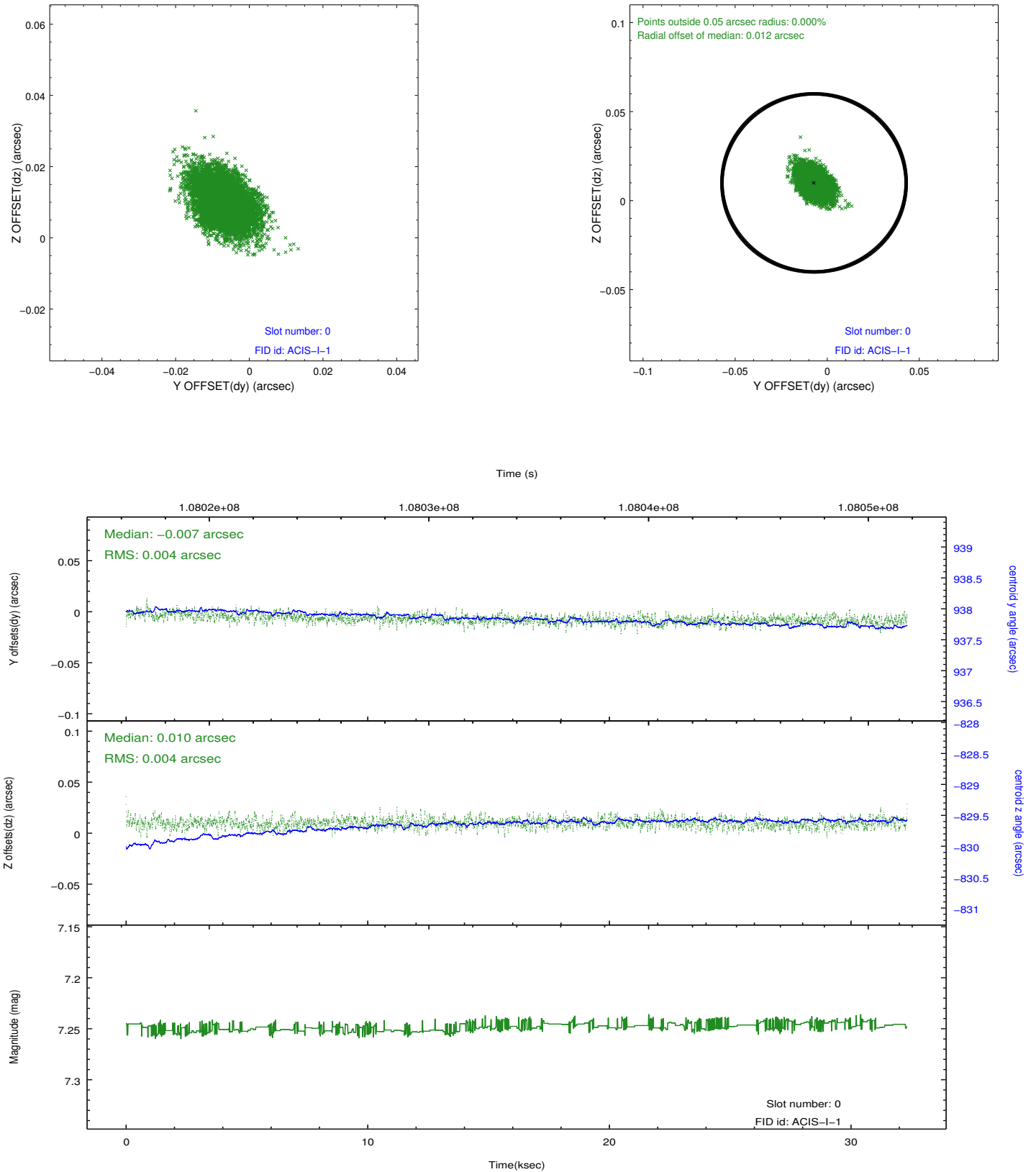


## 2.4.5 Slot 7

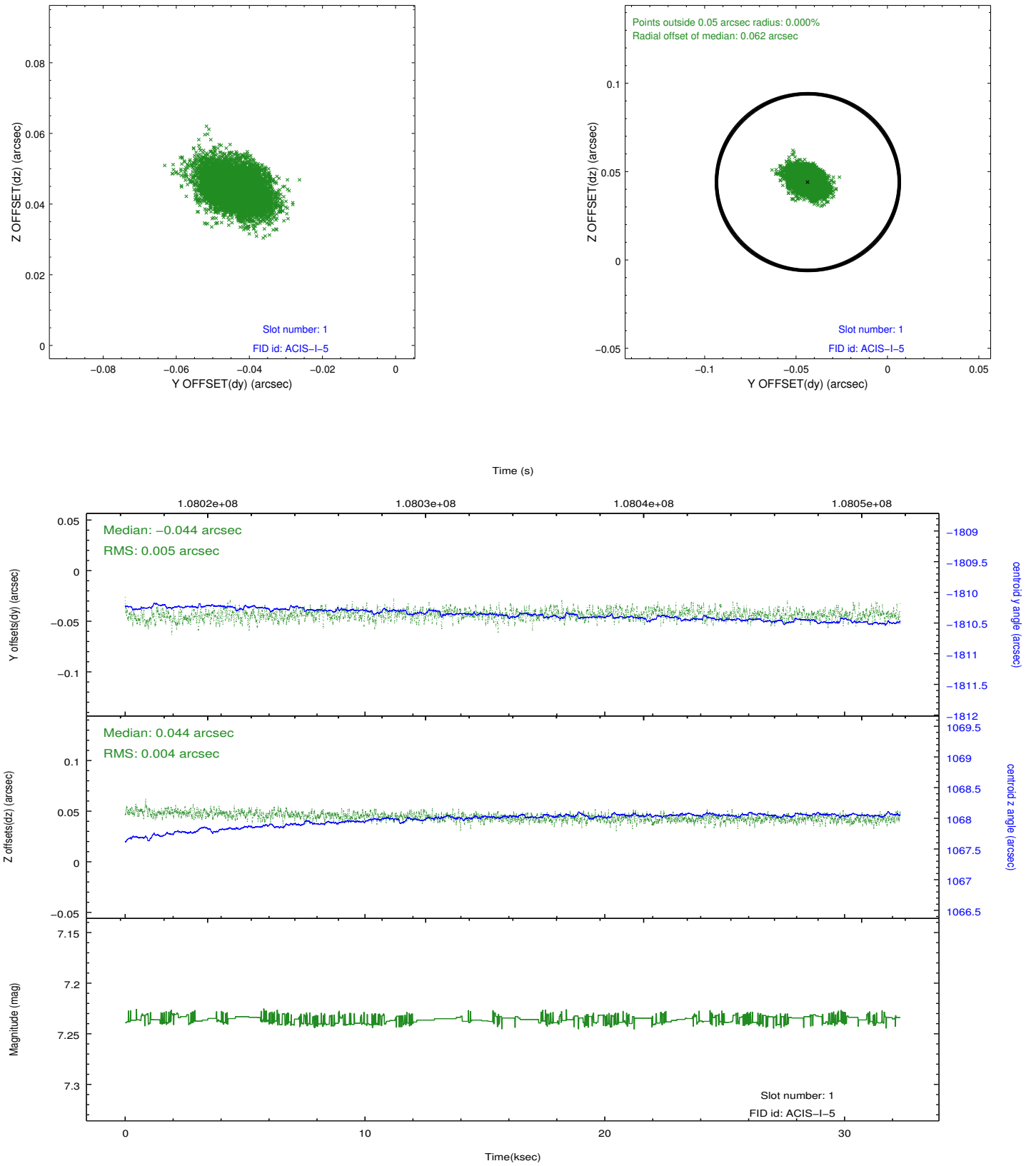


## 2.5 FID Slots

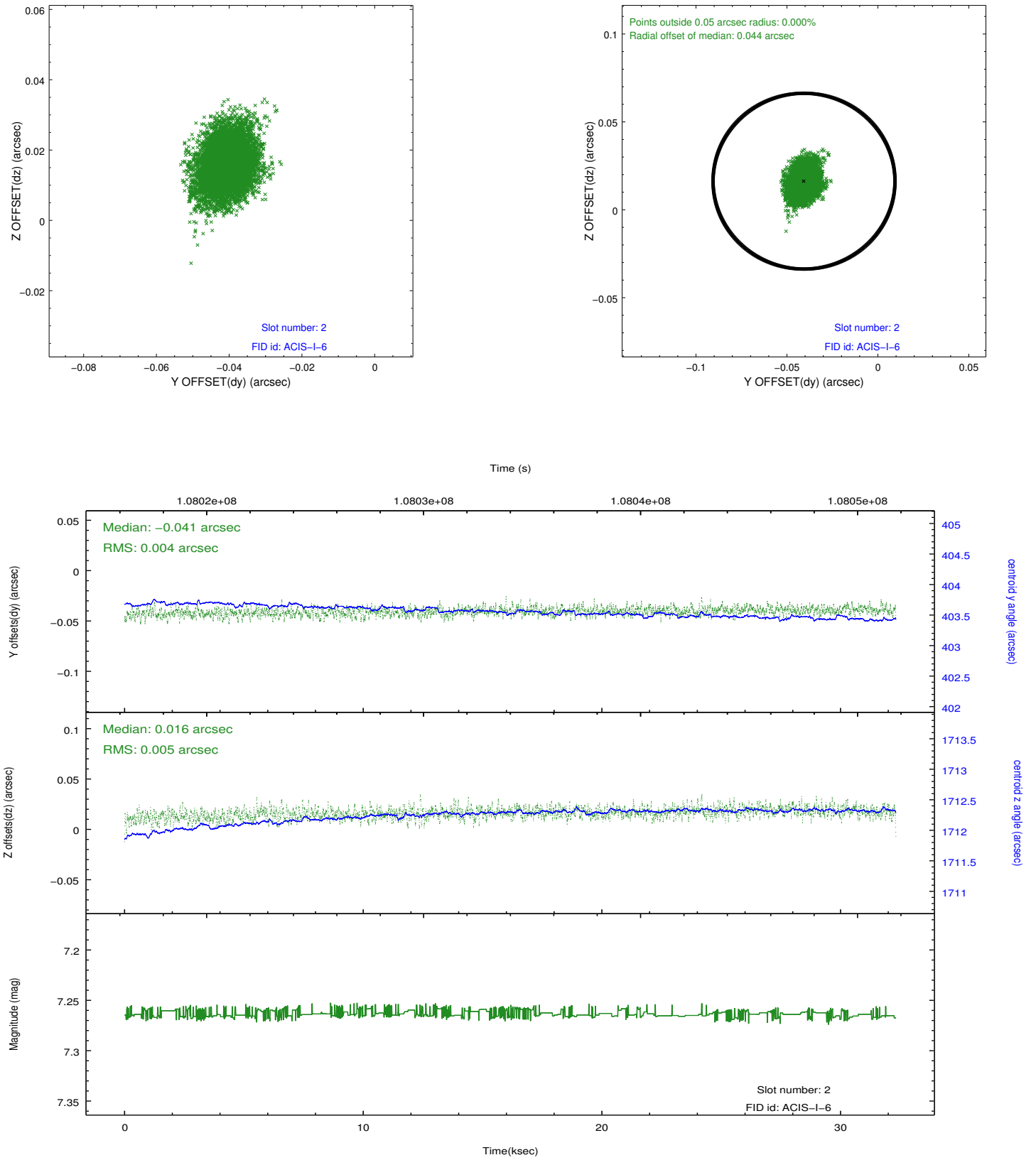
### 2.5.1 Slot 0



## 2.5.2 Slot 1



### 2.5.3 Slot 2



## A Summary

### A.1 Status

|                            |             |
|----------------------------|-------------|
| V&V Scientist              | Joy Nichols |
| V&V Date (YYYY-MM-DD)      | 2013.01.25  |
| V&V Edition                | 1           |
| V&V Disposition and Status | OK          |
| V&V Charge Time            | 32.32       |

### A.2 Comments