

# V&V Reference Report

## L2 ASCDS Version : 8.4.3

Observation 12428 - L2 Version 2  
Chandra X-Ray Center

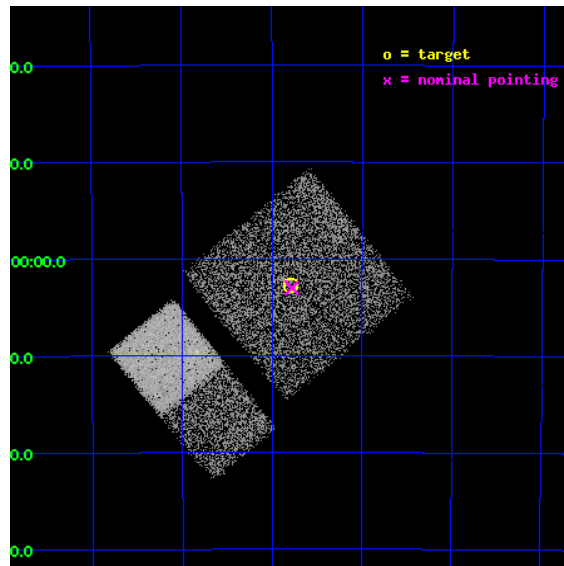
L2 Processing Date : Feb 24 2012

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# 1 Front

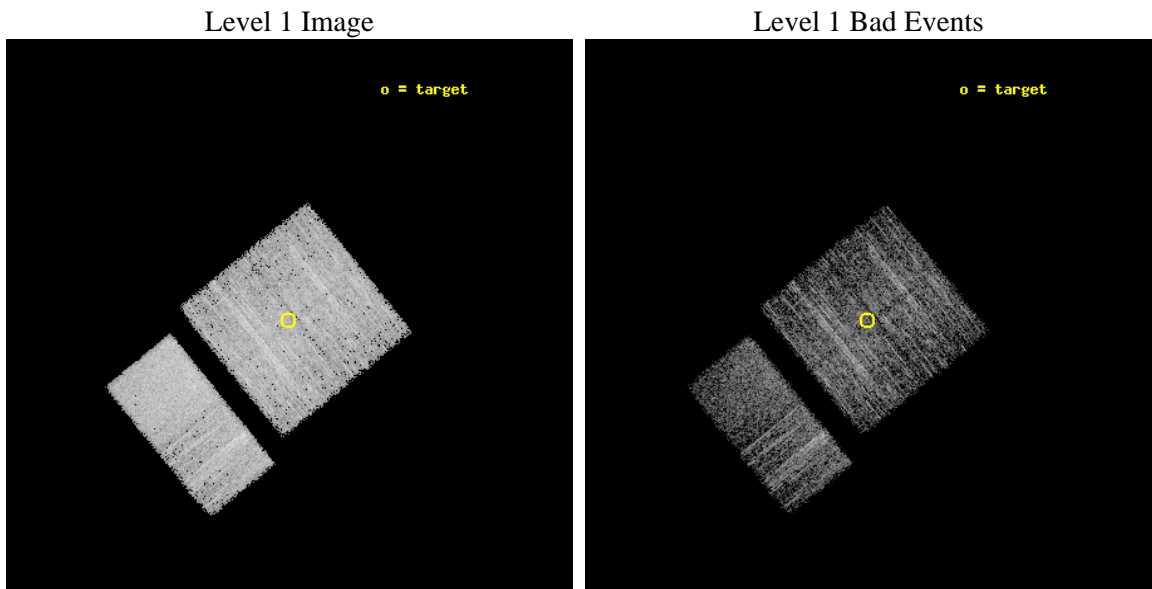
|          |  |   |
|----------|--|---|
| seq_num  | 401169   | Sequence number                             |
| obs_id   | 12428  | Observation id                              |
| title    | The Nature of INTEGRAL Sources in the Galactic Plane | Proposal titl                               |
| observer | Dr. John Tomsick                                     | Principal investigator                      |
| object   | IGR J15368-5102                                      | Source name                                 |
| dtcycle  | 0  | &#160                                       |
| cycle    | P  | events from which exps?<br>Prim/Second/Both |
| ra_targ  | 234.197083   | Observer's specified target RA [deg]        |
| dec_targ | -51.045  | Observer's specified target Dec [deg]       |
| ra_nom   | 234.19501053147                                      | Nominal RA [deg]                            |
| dec_nom  | -51.05000503219                                      | Nominal Dec [deg]                           |
| roll_nom | 230.86359209616                                      | Nominal Roll [deg]                          |
| revision | 2  | Processing version of data                  |
| ontime   | 4755.0500822067                                      | Sum of GTIs [s]                             |
| livetime | 4694.8387749184                                      | Livetime [s]                                |
| ontime0  | 4754.9269621968                                      | Sum of GTIs [s]                             |
| ontime1  | 4754.9680022001                                      | Sum of GTIs [s]                             |
| ontime2  | 4755.0090422034                                      | Sum of GTIs [s]                             |
| ontime3  | 4755.0500822067                                      | Sum of GTIs [s]                             |
| ontime6  | 4755.1321622133                                      | Sum of GTIs [s]                             |
| ontime7  | 4755.09112221  | Sum of GTIs [s]                             |
| l2events | 30332  | Number of level 2 events                    |



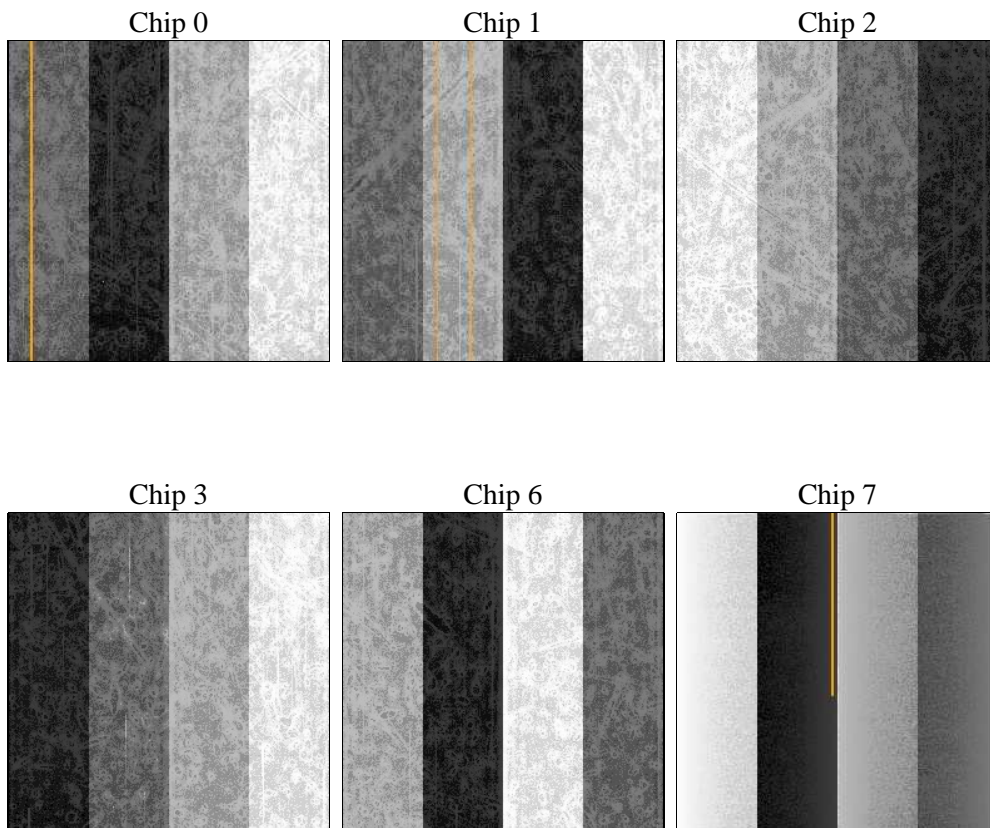
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

|          |                     |                                |                |                 |   |
|----------|---------------------|--------------------------------|----------------|-----------------|---|
| obi_num  | 1                   | Obi number                     | sched_exp_time | 5000.000000     | [s] Scheduled observation exposure time |
| ascdsver | 8.4.3               | Processing system revision     | ontime         | 4755.0500822067 | Sum of GTIs [s]                         |
| caldbver | 4.4.8               | &#160                          | ontime0        | 4754.9269621968 | Sum of GTIs [s]                         |
| date     | 2012-02-24T04:30:58 | Date and time of file creation | ontime1        | 4754.9680022001 | Sum of GTIs [s]                         |
| revision | 2                   | Processing version of data     | ontime2        | 4755.0090422034 | Sum of GTIs [s]                         |
|          |                     |                                | ontime3        | 4755.0500822067 | Sum of GTIs [s]                         |
|          |                     |                                | ontime6        | 4755.1321622133 | Sum of GTIs [s]                         |
|          |                     |                                | ontime7        | 4755.09112221   | Sum of GTIs [s]                         |
|          |                     |                                | l1events       | 171191          | Number of level 1 events                |

### 2.1.4 Events

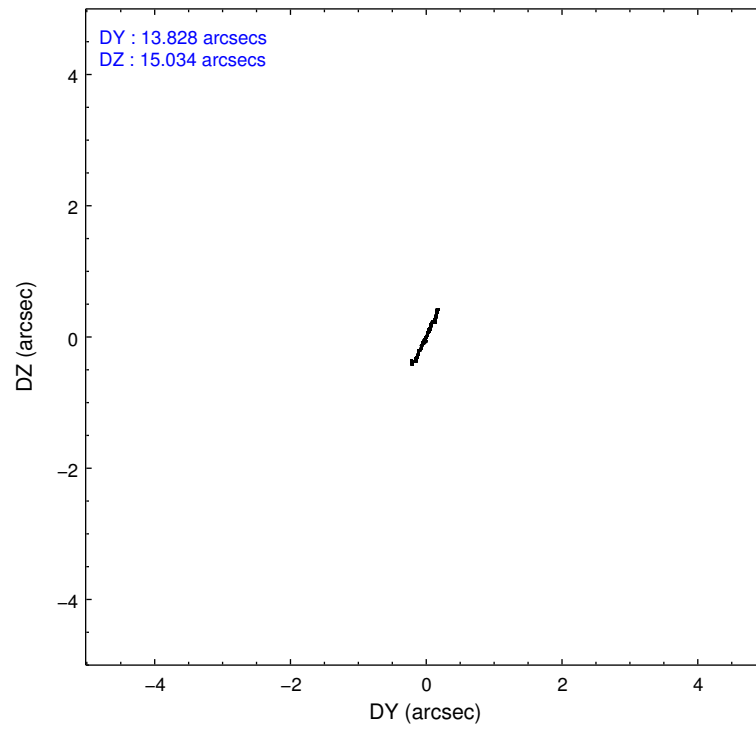
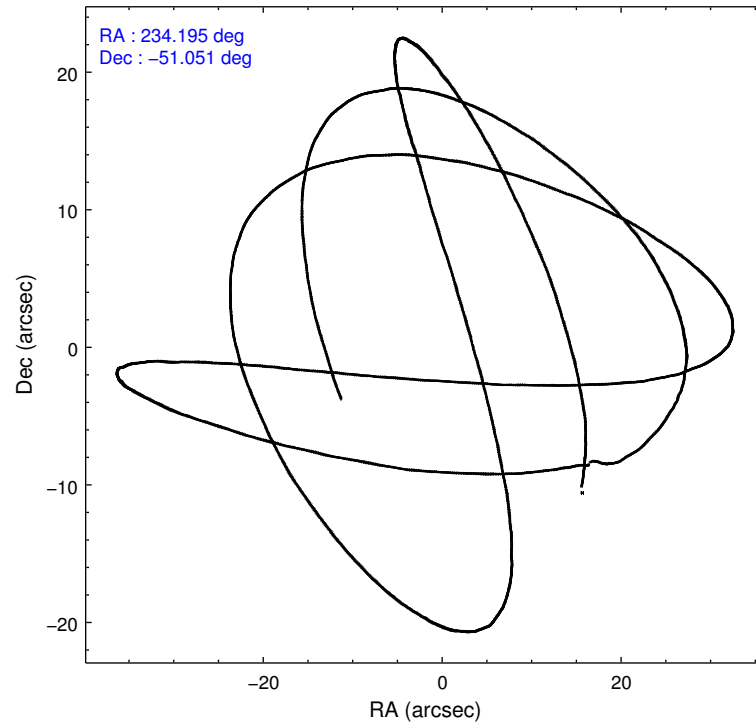
|                 | ccd 0 | ccd 1 | ccd 2 | ccd 3 | ccd 6 | ccd 7 |                | ccd 0 | ccd 1 | ccd 2 | ccd 3 | ccd 6 | ccd 7 |
|-----------------|-------|-------|-------|-------|-------|-------|----------------|-------|-------|-------|-------|-------|-------|
| level 1 events  | 25495 | 25471 | 28835 | 27054 | 27695 | 36641 | grade 0 events | 1227  | 1400  | 1209  | 1227  | 1280  | 1589  |
| rejected events | 22326 | 21744 | 25544 | 23813 | 24319 | 20158 |                | 4%    | 5%    | 4%    | 4%    | 4%    | 4%    |
| rejected %      | 87%   | 85%   | 88%   | 88%   | 87%   | 55%   | grade 1 events | 12    | 13    | 21    | 18    | 11    | 38    |
|                 |       |       |       |       |       |       |                | 0%    | 0%    | 0%    | 0%    | 0%    | 0%    |
|                 |       |       |       |       |       |       | grade 2 events | 735   | 888   | 781   | 696   | 719   | 3399  |
|                 |       |       |       |       |       |       |                | 2%    | 3%    | 2%    | 2%    | 2%    | 9%    |
|                 |       |       |       |       |       |       | grade 3 events | 335   | 345   | 356   | 324   | 352   | 1461  |
|                 |       |       |       |       |       |       |                | 1%    | 1%    | 1%    | 1%    | 1%    | 3%    |
|                 |       |       |       |       |       |       | grade 4 events | 326   | 373   | 329   | 359   | 307   | 1387  |
|                 |       |       |       |       |       |       |                | 1%    | 1%    | 1%    | 1%    | 1%    | 3%    |
|                 |       |       |       |       |       |       | grade 5 events | 1216  | 1286  | 1178  | 1306  | 1423  | 3694  |
|                 |       |       |       |       |       |       |                | 4%    | 5%    | 4%    | 4%    | 5%    | 10%   |
|                 |       |       |       |       |       |       | grade 6 events | 551   | 723   | 616   | 638   | 727   | 8668  |
|                 |       |       |       |       |       |       |                | 2%    | 2%    | 2%    | 2%    | 2%    | 23%   |
|                 |       |       |       |       |       |       | grade 7 events | 21093 | 20443 | 24345 | 22486 | 22876 | 16405 |
|                 |       |       |       |       |       |       |                | 82%   | 80%   | 84%   | 83%   | 82%   | 44%   |

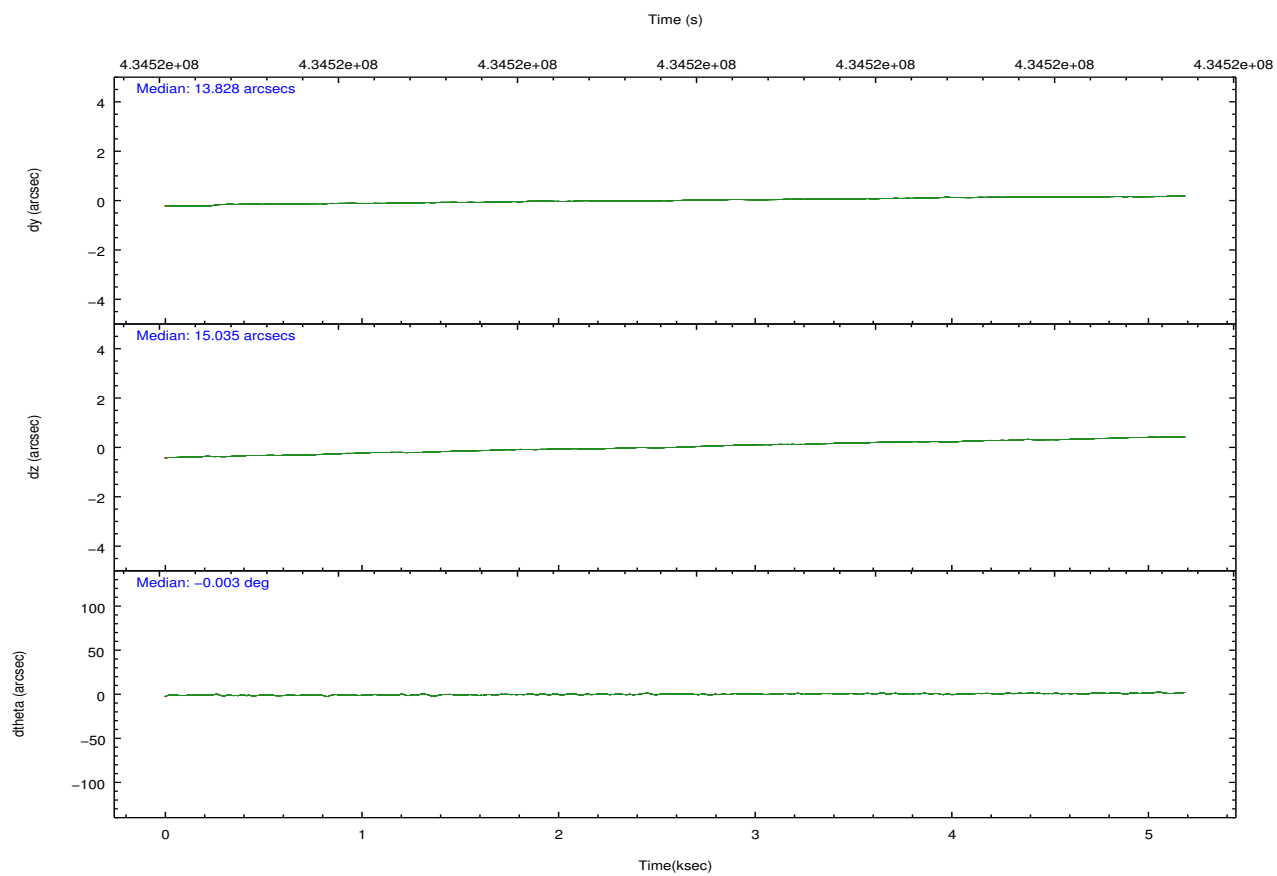
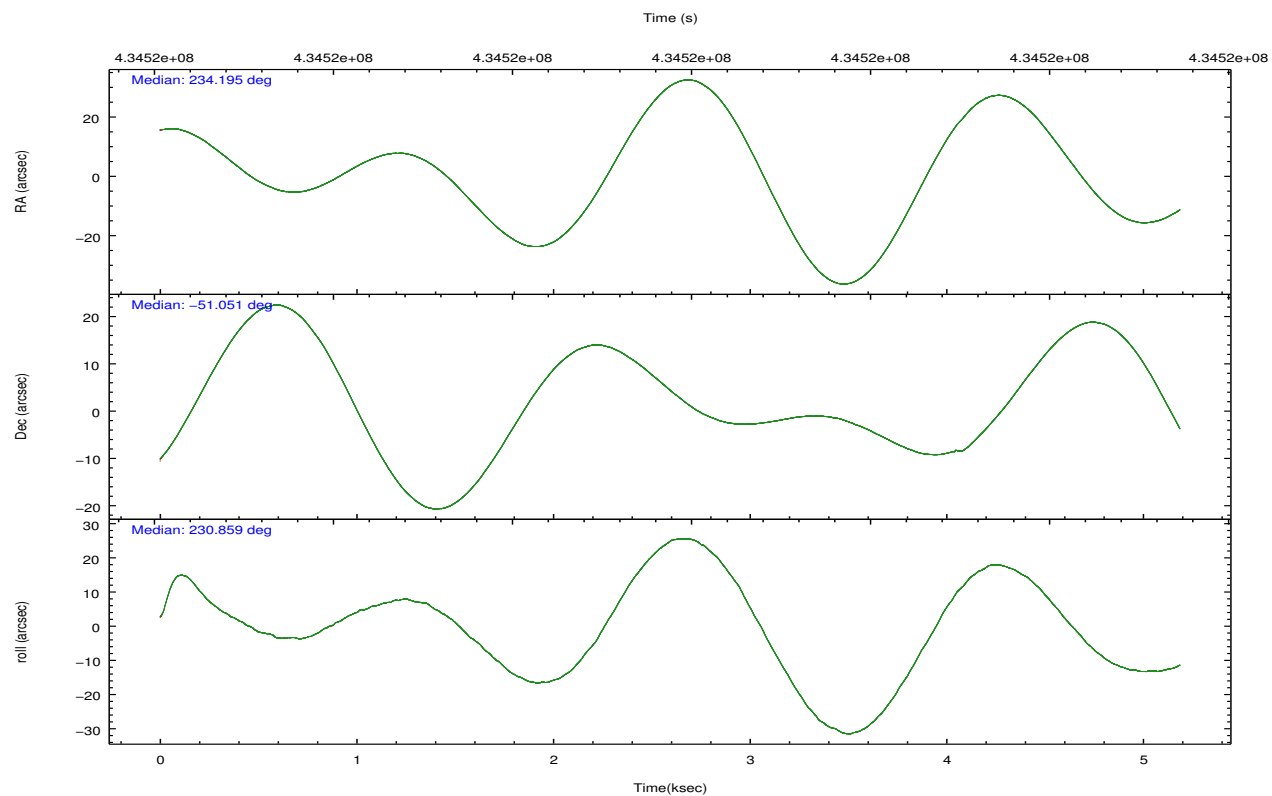


## 2.2 Compared Parameters

| Parameter                         | Planned             | Actual                | Parameter                             | Planned   | Actual  |
|-----------------------------------|---------------------|-----------------------|---------------------------------------|-----------|---------|
| Instrument                        | ACIS                | ACIS                  | Obspar format version number          | 7         | 7       |
| Detector                          | ACIS-012367         | ACIS-012367           | Obspar file type                      | PREDICTED | ACTUAL  |
| Grating                           | NONE                | NONE                  | Obspar update status                  | NONE      | UPDATED |
| Data mode                         | FAINT               | FAINT                 | CCD I0 on                             | Y         | Y       |
| Observation mode                  | POINTING            | POINTING              | CCD I1 on                             | Y         | Y       |
| [deg] Pointing RA                 | 234.201597          | 234.195010531473      | CCD I2 on                             | Y         | Y       |
| [deg] Pointing Dec                | -51.023403          | -51.05000503218997    | CCD I3 on                             | Y         | Y       |
| [deg] Pointing Roll               | 230.660056          | 230.863592096159      | 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    | -233.592463         | -233.5874344608287    | CCD S3 on                             | O2        | Y       |
| [mm] SIM translation stage offset | 0                   | -0.005018542100998502 | CCD S4 on                             | N         | N       |
| [s] Observation start time (MET)  | 434516473.184000    | 434516087.78927       | CCD S5 on                             | N         | N       |
| Observation start date            | 2011-10-09T03:00:07 | 2011-10-09T02:54:47   | Number of optional ACIS chips dropped | 0         | 0       |
| [s] Observation end time (MET)    | 434521473.184000    | 434521961.03958       | On-chip summing requested             | N         | N       |
| Observation end date              | 2011-10-09T04:23:27 | 2011-10-09T04:32:41   | Subarray requested                    | NONE      | NONE    |
| Read mode                         | TIMED               | TIMED                 | Alternating exposures requested       | N         | N       |
|                                   |                     |                       | [s] Primary exposure time             | 0.000000  | 3.2     |

## 2.3 Aspect



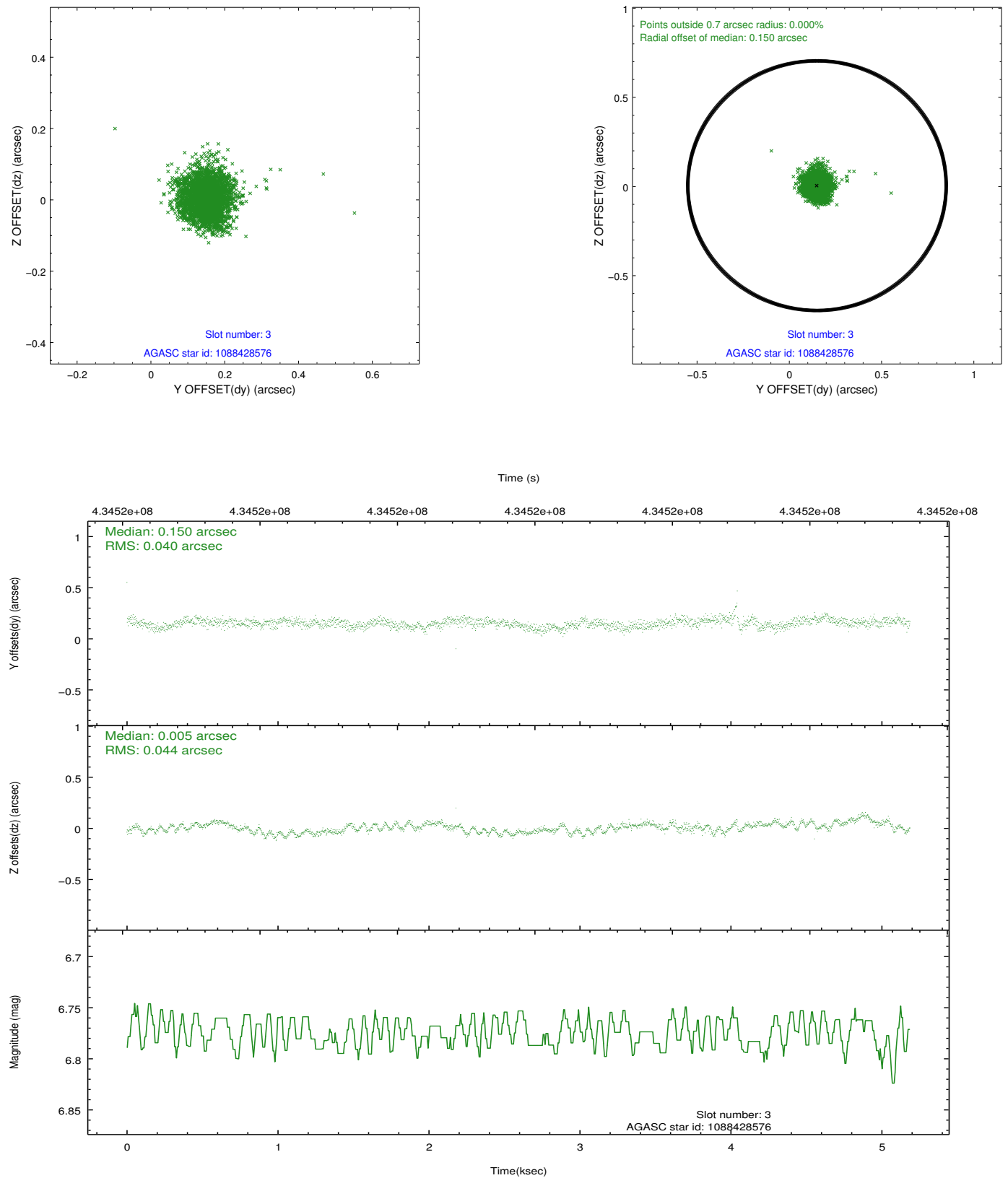


### Slot Statistics

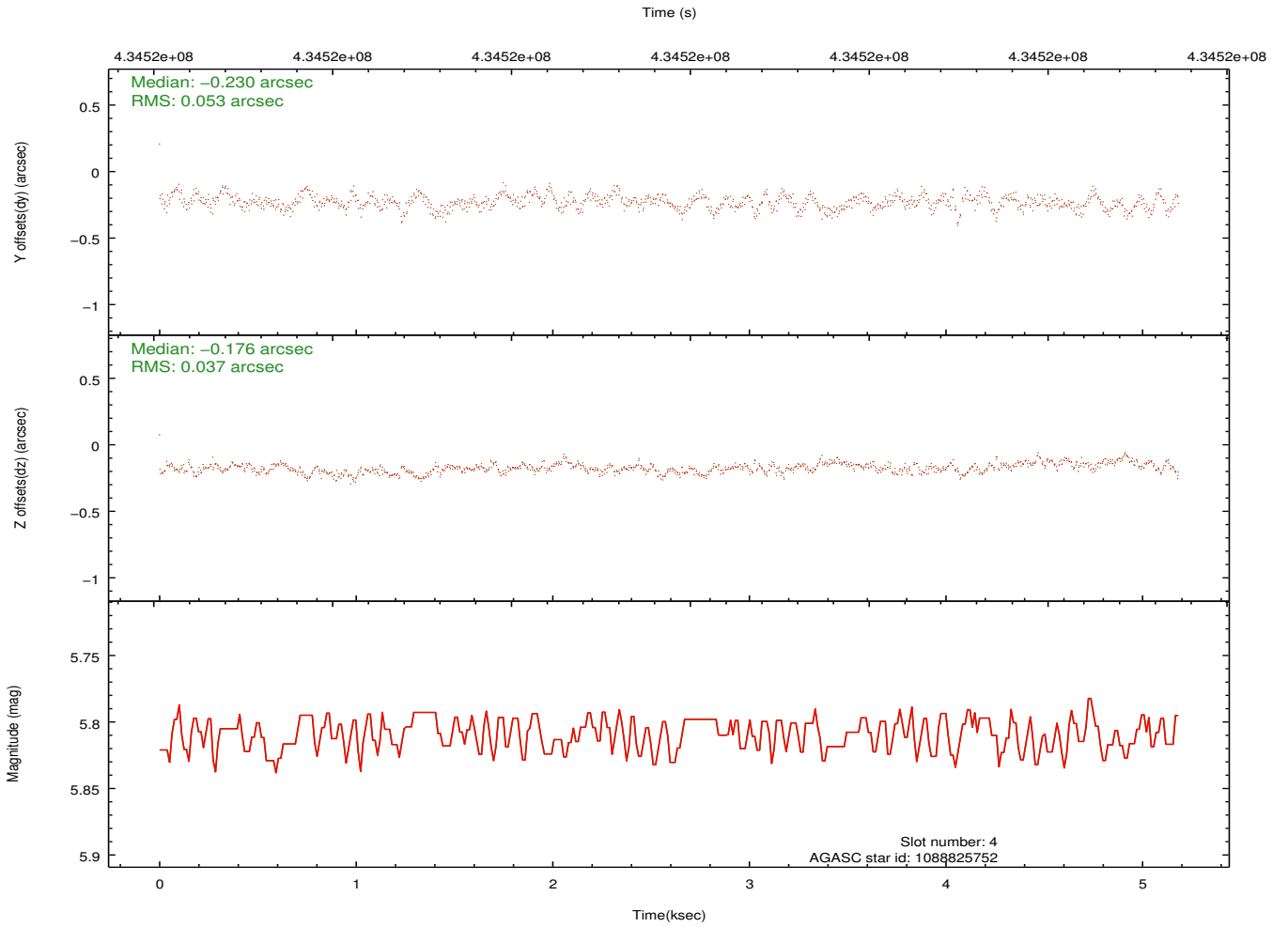
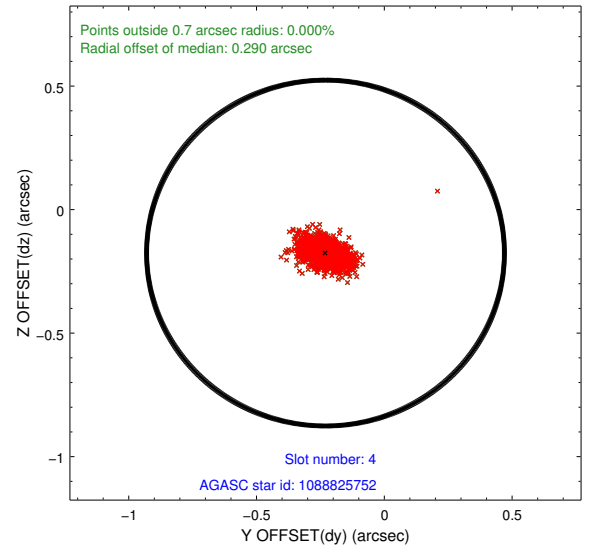
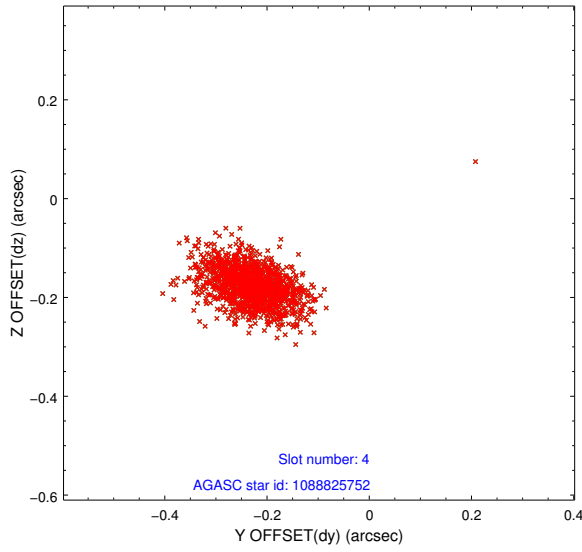
| slot | status | id         | mag  | n_pts | med_dy | med_dz | dr1   | dr2   | ra         | dec        | mean_y   | mean_z   |
|------|--------|------------|------|-------|--------|--------|-------|-------|------------|------------|----------|----------|
| 0    | FID    | ACIS-I-1   | 7.01 | 1266  | 0.047  | -0.014 | 0.010 | 0.019 | 0.000000   | 0.000000   | 925.72   | -838.66  |
| 1    | FID    | ACIS-I-5   | 7.01 | 1265  | -0.231 | 0.047  | 0.007 | 0.012 | 0.000000   | 0.000000   | -1822.05 | 1058.27  |
| 2    | FID    | ACIS-I-6   | 7.00 | 1265  | 0.093  | 0.038  | 0.010 | 0.017 | 0.000000   | 0.000000   | 390.00   | 1704.12  |
| 3    | GUIDE  | 1088428576 | 6.77 | 2531  | 0.150  | 0.005  | 0.062 | 0.097 | 233.965323 | -50.289168 | -1696.89 | -2094.48 |
| 4    | BAD    | 1088825752 | 5.81 | 1266  | -0.230 | -0.176 | 0.066 | 0.116 | 233.068856 | -50.871168 | 1224.04  | -2325.23 |
| 5    | GUIDE  | 1088962800 | 8.29 | 2530  | 0.021  | 0.083  | 0.074 | 0.123 | 234.863462 | -51.077936 | -789.62  | 1286.65  |
| 6    | GUIDE  | 1088964784 | 8.11 | 2531  | -0.018 | 0.045  | 0.070 | 0.114 | 234.767788 | -51.241711 | -195.83  | 1489.83  |
| 7    | GUIDE  | 1088956664 | 9.24 | 2529  | -0.038 | -0.043 | 0.123 | 0.197 | 235.360266 | -51.187226 | -1183.71 | 2410.36  |

## 2.4 Star Slots

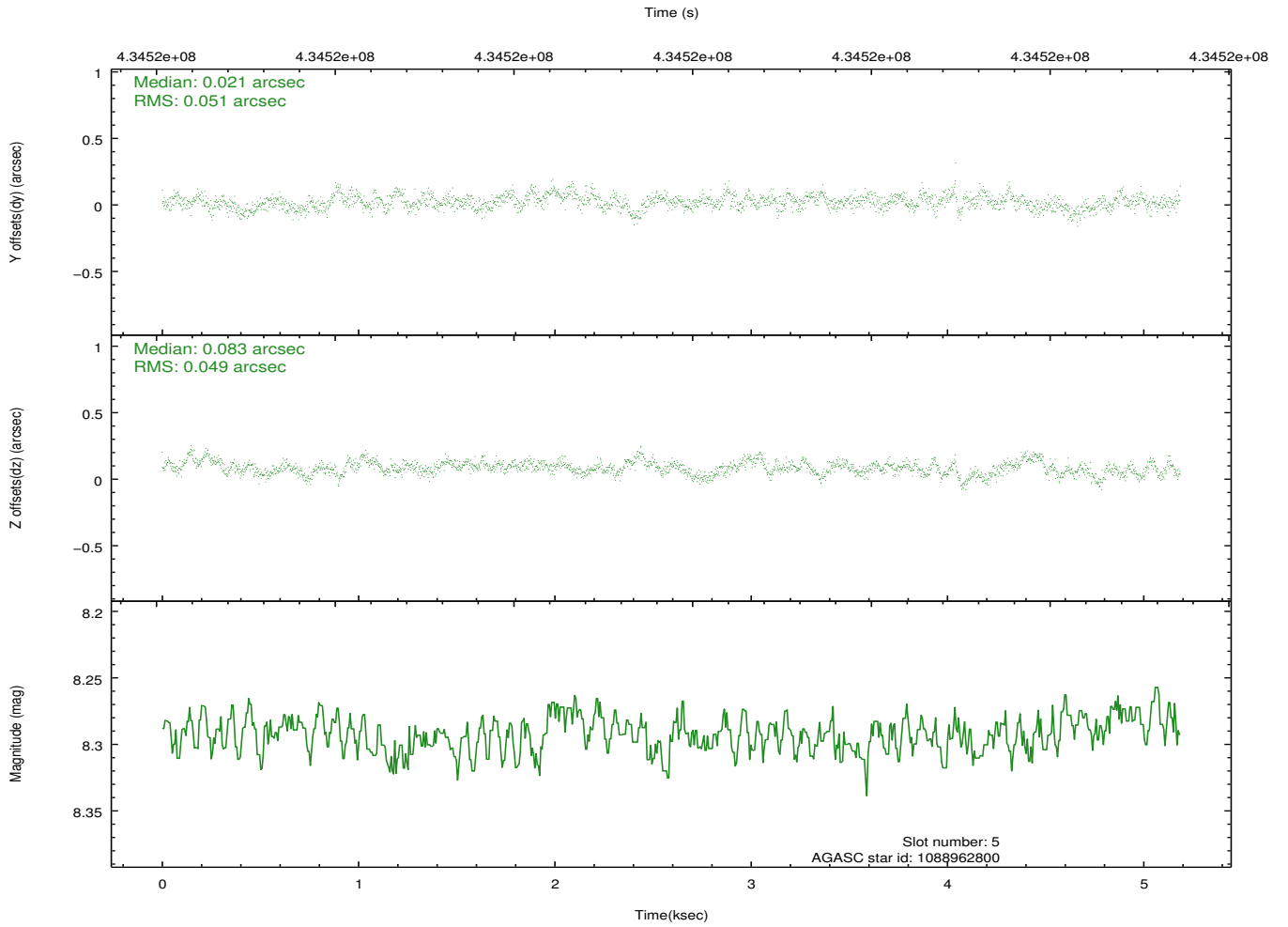
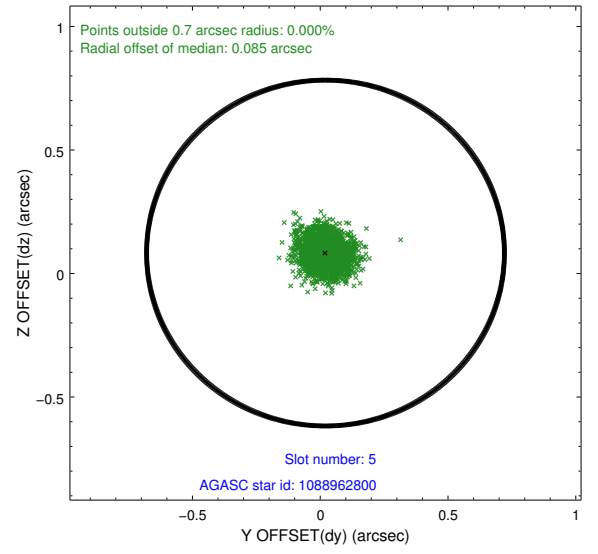
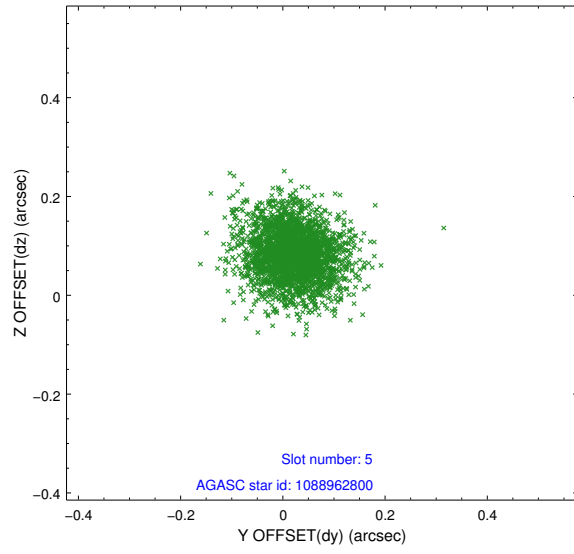
### 2.4.1 Slot 3



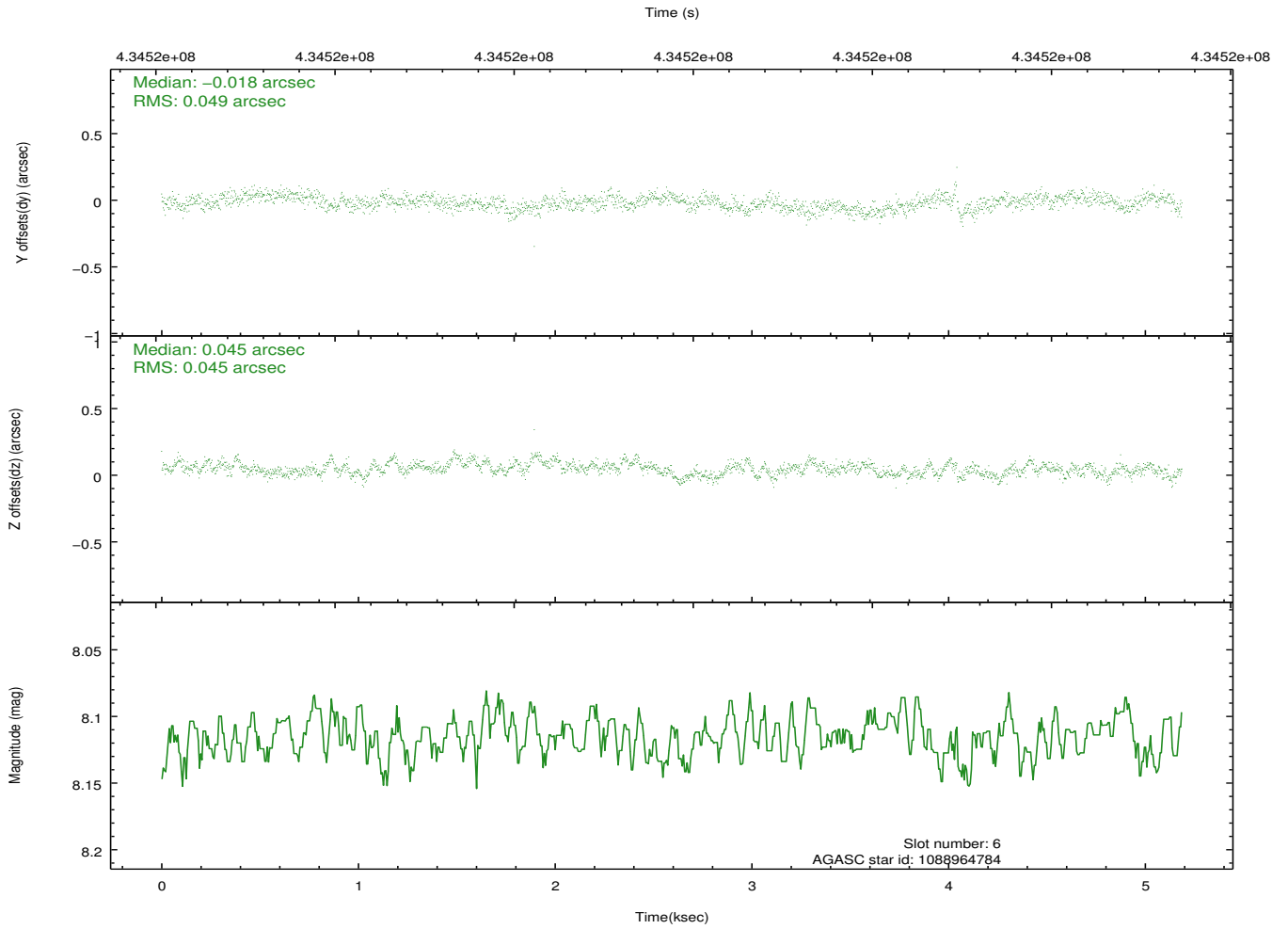
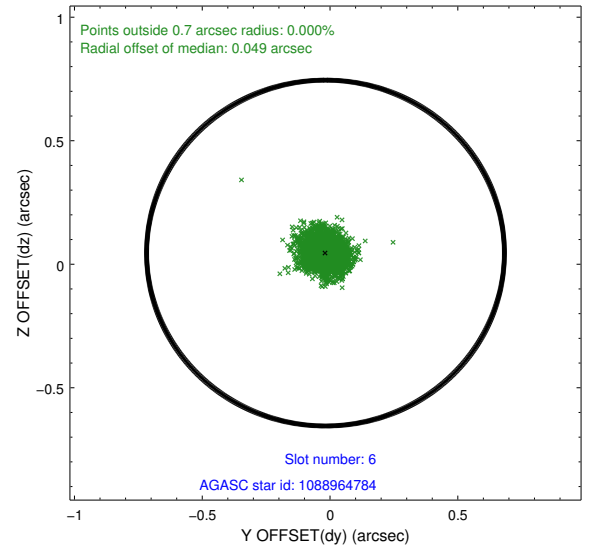
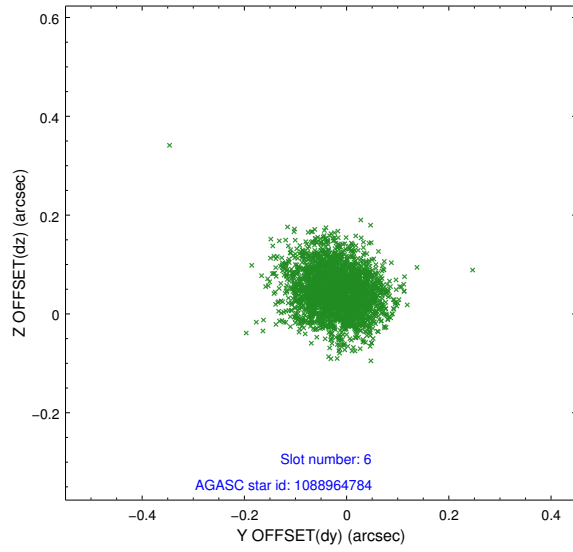
## 2.4.2 Slot 4



### 2.4.3 Slot 5

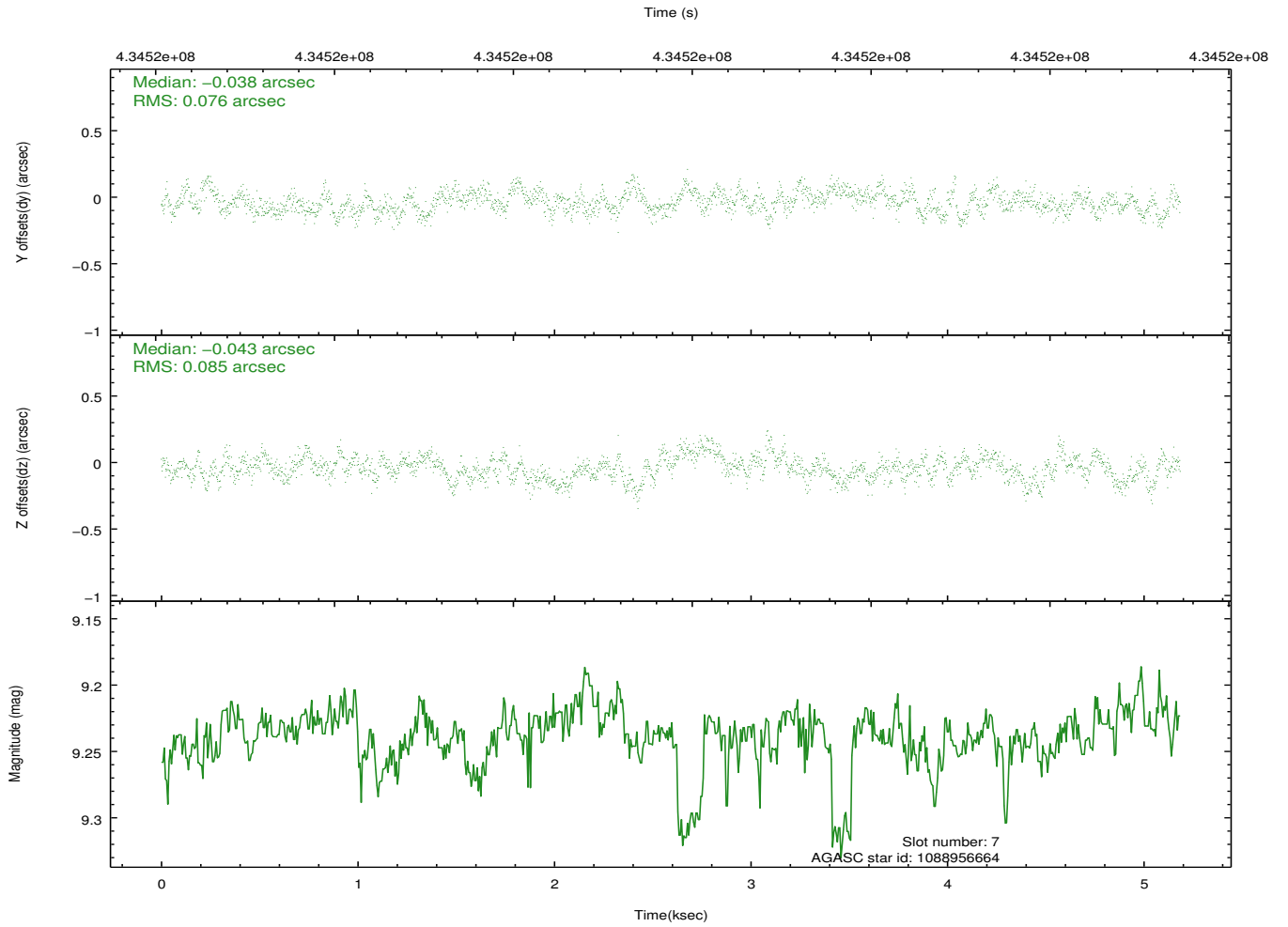
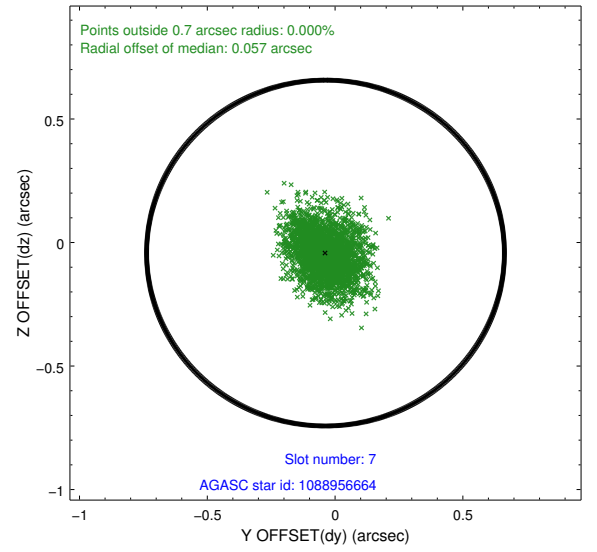
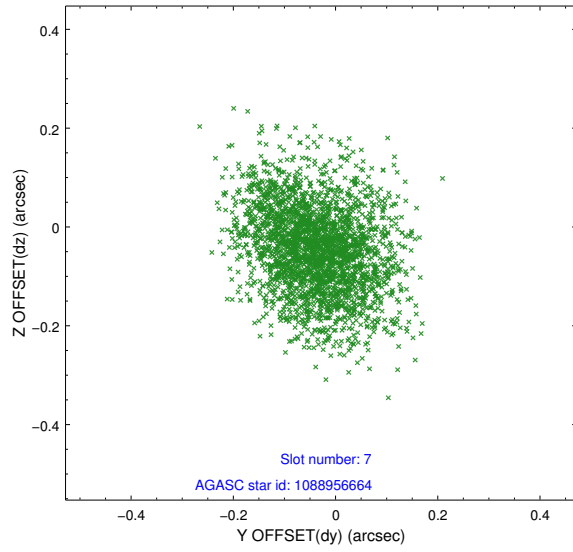


## 2.4.4 Slot 6



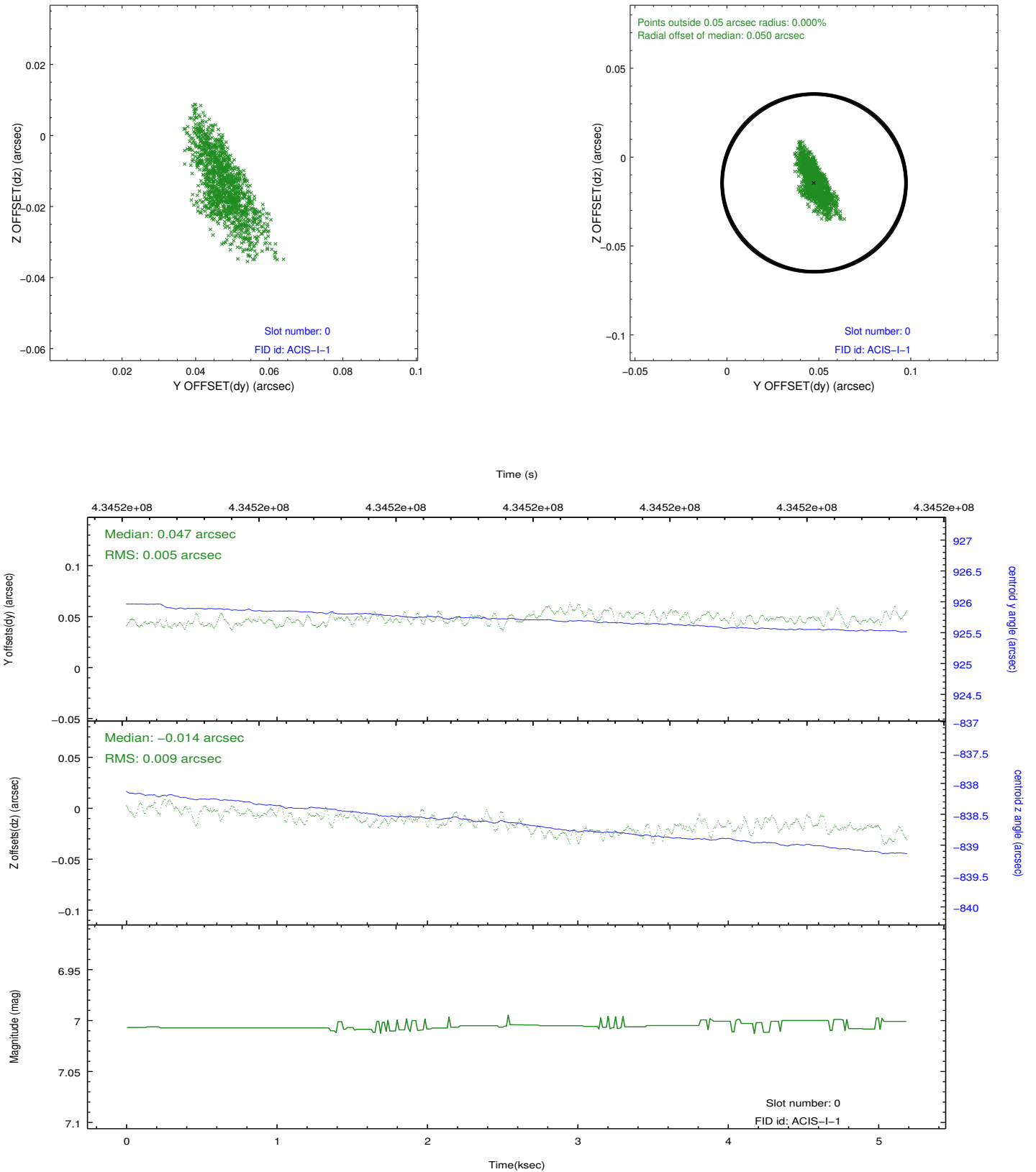


## 2.4.5 Slot 7

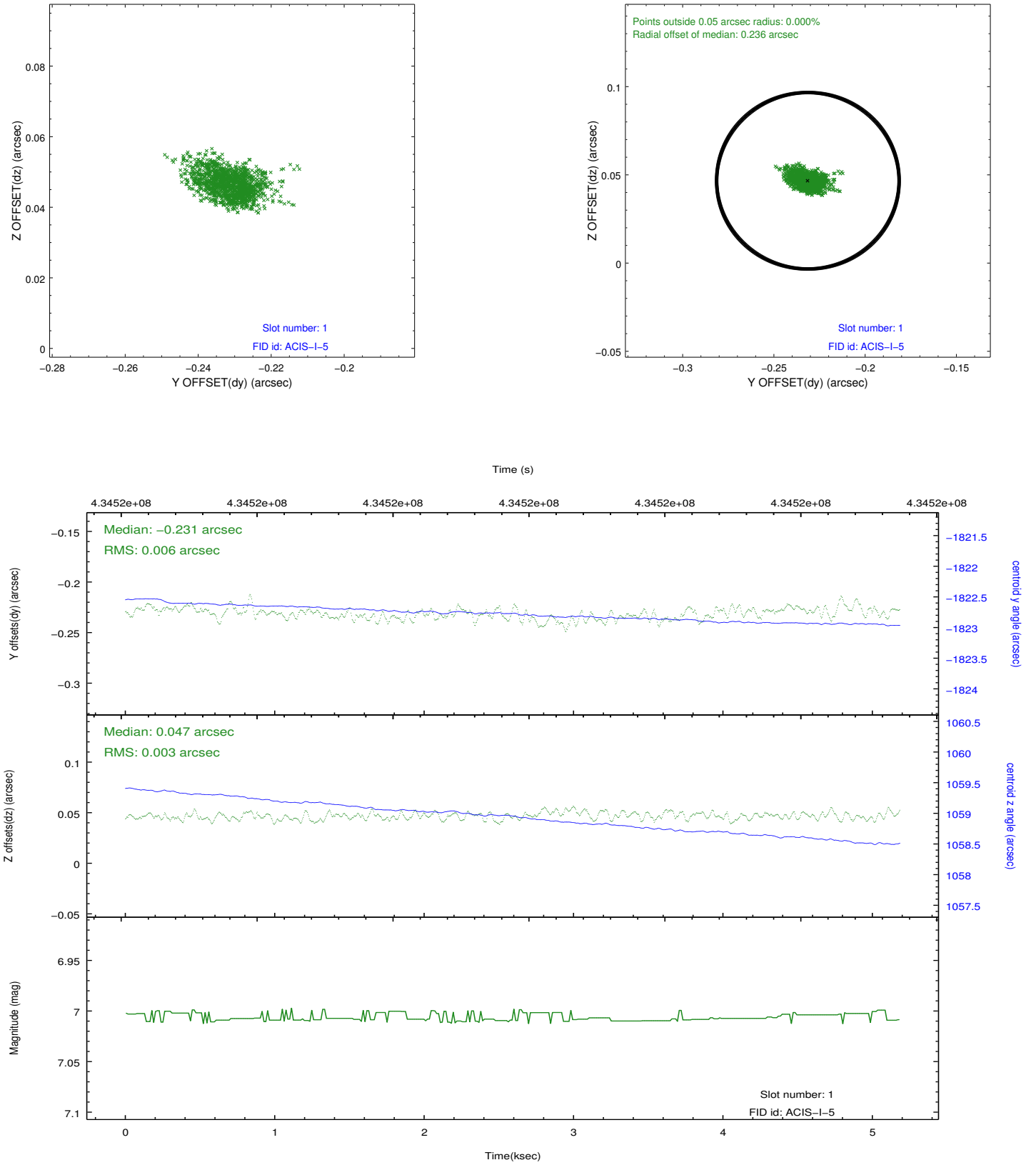


## 2.5 FID Slots

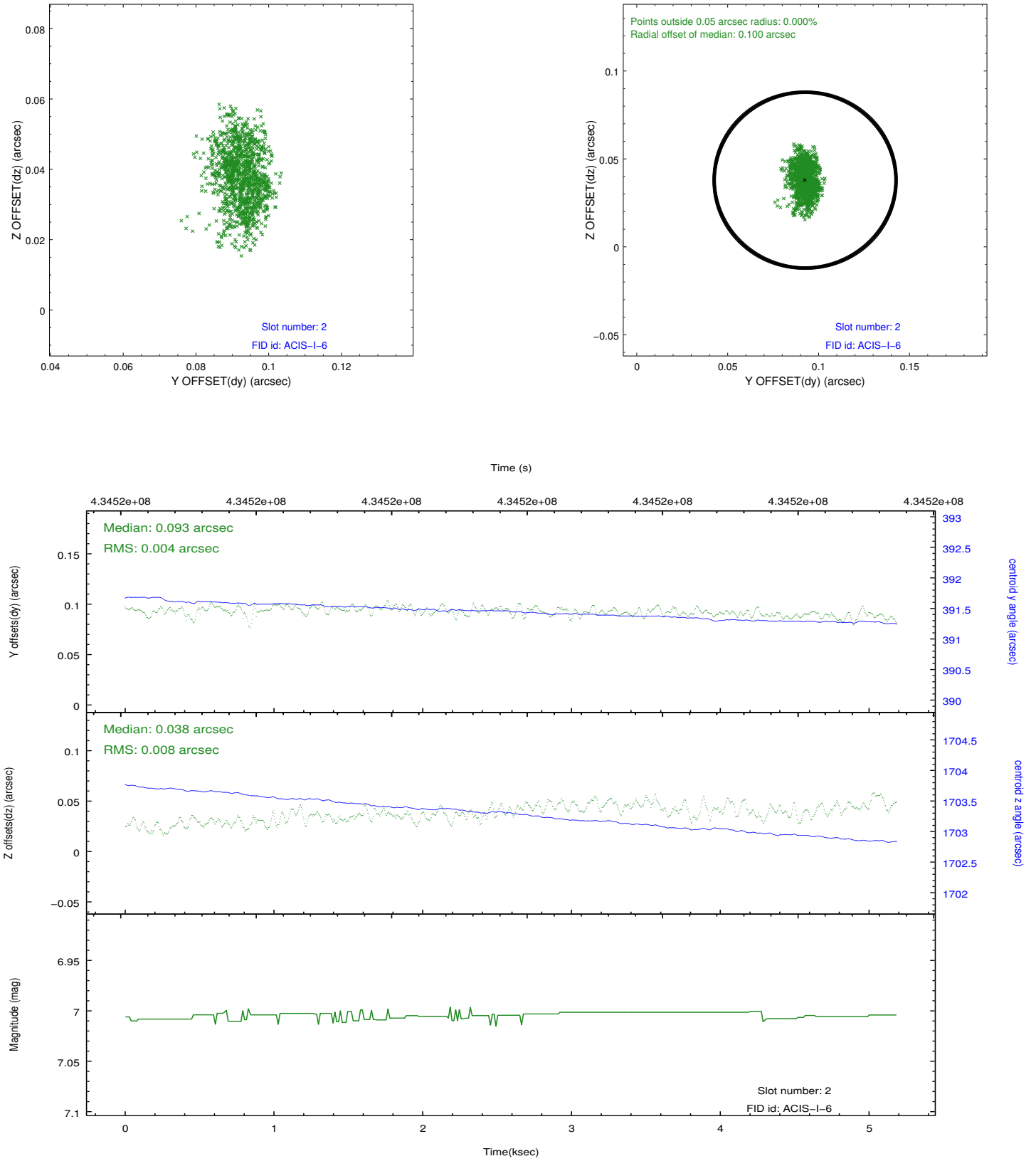
### 2.5.1 Slot 0



## 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)      | 2012.02.24      |
| V&V Edition                | 1               |
| V&V Disposition and Status | OK              |
| V&V Charge Time            | 4.7550500863194 |

## A.2 Comments

The star in slot 4 was used in the solution according to the `cel_loc_flag` in `gsprops`. It looks like the star was only tracked for 1/3 of the observation, but this was likely due to it being too bright. Its position is OK and including it does not perturb the solution, so this is OK for aspect.