

# V&V Reference Report

## L2 ASCDS Version : 8.1.2

Observation 1250 - L2 Version 3

Chandra X-Ray Center

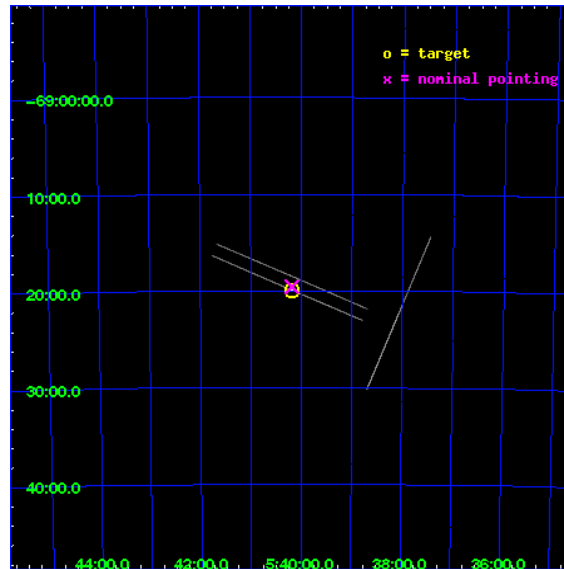
L2 Processing Date : Dec 17 2009

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# 1 Front

|          |  |                                 |
|----------|--|---------------------------------|
| seq_num  | 580200                                 | Sequence number                 |
| obs_id   | 1250                                   | Observation id                  |
| title    | VERIFICATION OF AXAF TIMING CAPABILITY | Proposal title                  |
| observer | Dr. CXC Calibration                    | Principal investigator          |
| object   | PSR B0540-69                           | Source name                     |
| ra_targ  | 85.04625                               | Observer's specified target RA  |
| dec_targ | -69.332                                | Observer's specified target Dec |
| ra_nom   | 85.046539647568                        | Nominal RA                      |
| dec_nom  | -69.326293310827                       | Nominal Dec                     |
| roll_nom | 113.03211115427                        | Nominal Roll                    |
| revision | 3                                      | Processing version of data      |
| ontime   | 9671.75                                | Sum of GTIs [s]                 |
| livetime | 9633.9697265625                        | Livetime [s]                    |
| ontime0  | 9671.75                                | Sum of GTIs [s]                 |
| ontime1  | 9671.75                                | Sum of GTIs [s]                 |
| ontime2  | 9671.75                                | Sum of GTIs [s]                 |
| ontime3  | 9671.75                                | Sum of GTIs [s]                 |
| ontime6  | 9671.75                                | Sum of GTIs [s]                 |
| ontime7  | 9671.75                                | Sum of GTIs [s]                 |
| l2events | 133245                                 | Number of level 2 events        |

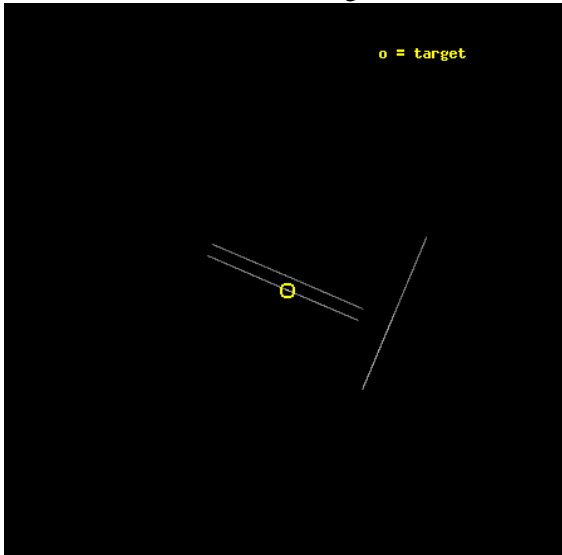


## 2 OBI

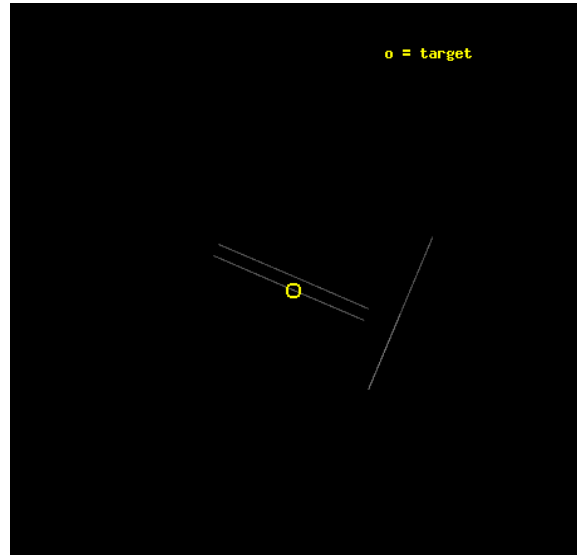
### 2.1 OBI

#### 2.1.1 Images

Level 1 Image



Level 1 Bad Events



## 2.1.2 Parameters

|          |                     |                                |                |              |                                     |
|----------|---------------------|--------------------------------|----------------|--------------|-------------------------------------|
| obi_num  | 1                   | Obi number                     | sched_exp_time | 10000.000000 | Scheduled observation exposure time |
| ascdsver | 8.1.2               | ASCDS version number           | ontime         | 9671.75      | Sum of GTIs [s]                     |
| caldbver | 4.1.4               | &#160                          | ontime0        | 9671.75      | Sum of GTIs [s]                     |
| date     | 2009-12-17T09:34:15 | Date and time of file creation | ontime1        | 9671.75      | Sum of GTIs [s]                     |
| revision | 4                   | Processing version of data     | ontime2        | 9671.75      | Sum of GTIs [s]                     |
|          |                     |                                | ontime3        | 9671.75      | Sum of GTIs [s]                     |
|          |                     |                                | ontime6        | 9671.75      | Sum of GTIs [s]                     |
|          |                     |                                | ontime7        | 9671.75      | Sum of GTIs [s]                     |
|          |                     |                                | l1events       | 155865       | Number of level 1 events            |

## 2.1.3 Events

|                 | ccd 0 | ccd 1 | ccd 2 | ccd 3 | ccd 6 | ccd 7 |
|-----------------|-------|-------|-------|-------|-------|-------|
| level 1 events  | 13546 | 15066 | 13775 | 51928 | 15636 | 45914 |
| rejected events | 1919  | 2067  | 1935  | 2392  | 2042  | 5476  |
| rejected %      | 14%   | 13%   | 14%   | 4%    | 13%   | 11%   |

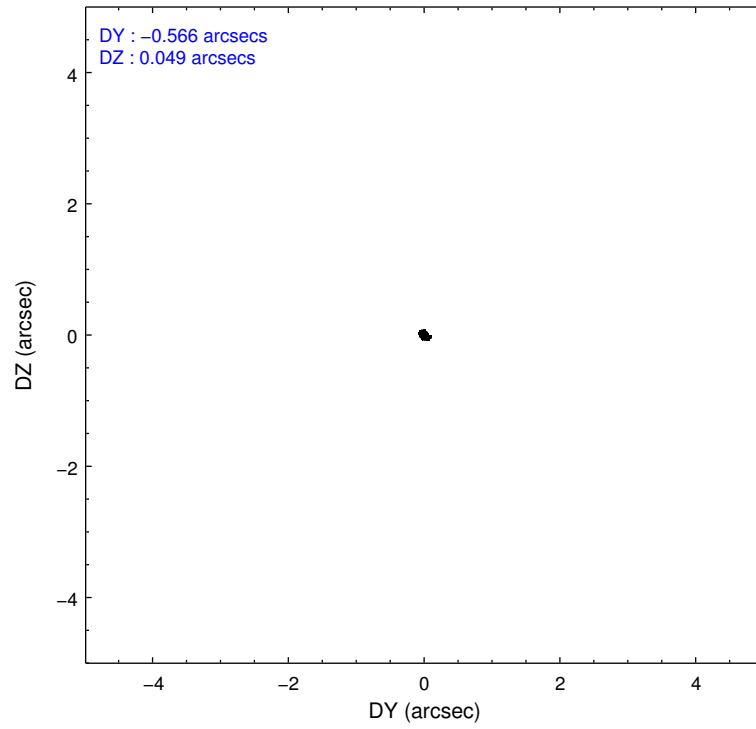
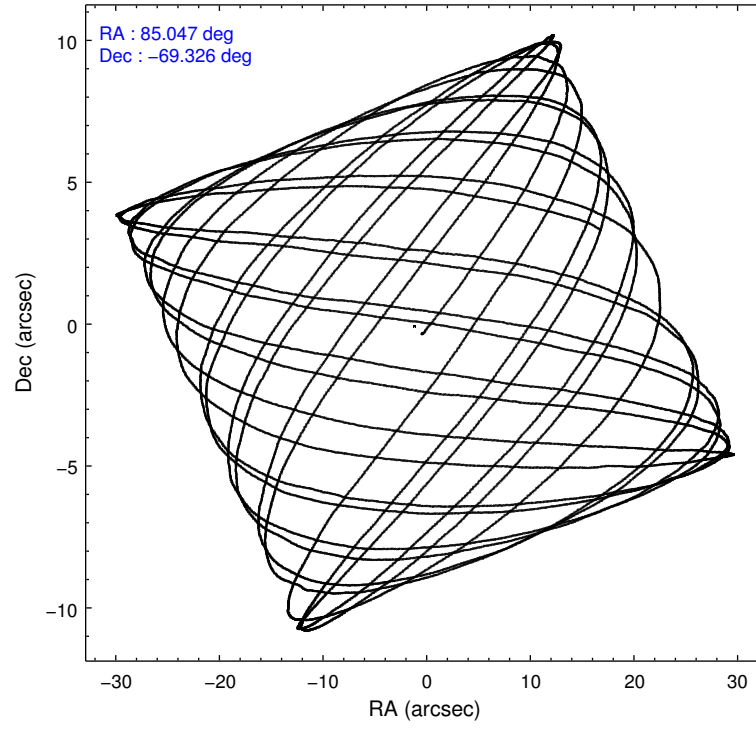
|                | ccd 0 | ccd 1 | ccd 2 | ccd 3 | ccd 6 | ccd 7 |
|----------------|-------|-------|-------|-------|-------|-------|
| grade 0 events | 3628  | 5333  | 4022  | 32375 | 4638  | 6158  |
|                | 26%   | 35%   | 29%   | 62%   | 29%   | 13%   |
| grade 1 events | 55    | 59    | 59    | 194   | 68    | 141   |
|                | 0%    | 0%    | 0%    | 0%    | 0%    | 0%    |
| grade 2 events | 1836  | 2158  | 1858  | 7310  | 2542  | 8806  |
|                | 13%   | 14%   | 13%   | 14%   | 16%   | 19%   |
| grade 3 events | 2524  | 1932  | 2239  | 3895  | 2414  | 4644  |
|                | 18%   | 12%   | 16%   | 7%    | 15%   | 10%   |
| grade 4 events | 2284  | 2008  | 2460  | 3454  | 2353  | 4076  |
|                | 16%   | 13%   | 17%   | 6%    | 15%   | 8%    |
| grade 5 events | 1864  | 2004  | 1875  | 2190  | 1970  | 5223  |
|                | 13%   | 13%   | 13%   | 4%    | 12%   | 11%   |
| grade 6 events | 1355  | 1572  | 1262  | 2510  | 1651  | 16866 |
|                | 10%   | 10%   | 9%    | 4%    | 10%   | 36%   |
| grade 7 events | 0     | 0     | 0     | 0     | 0     | 0     |
|                | 0%    | 0%    | 0%    | 0%    | 0%    | 0%    |

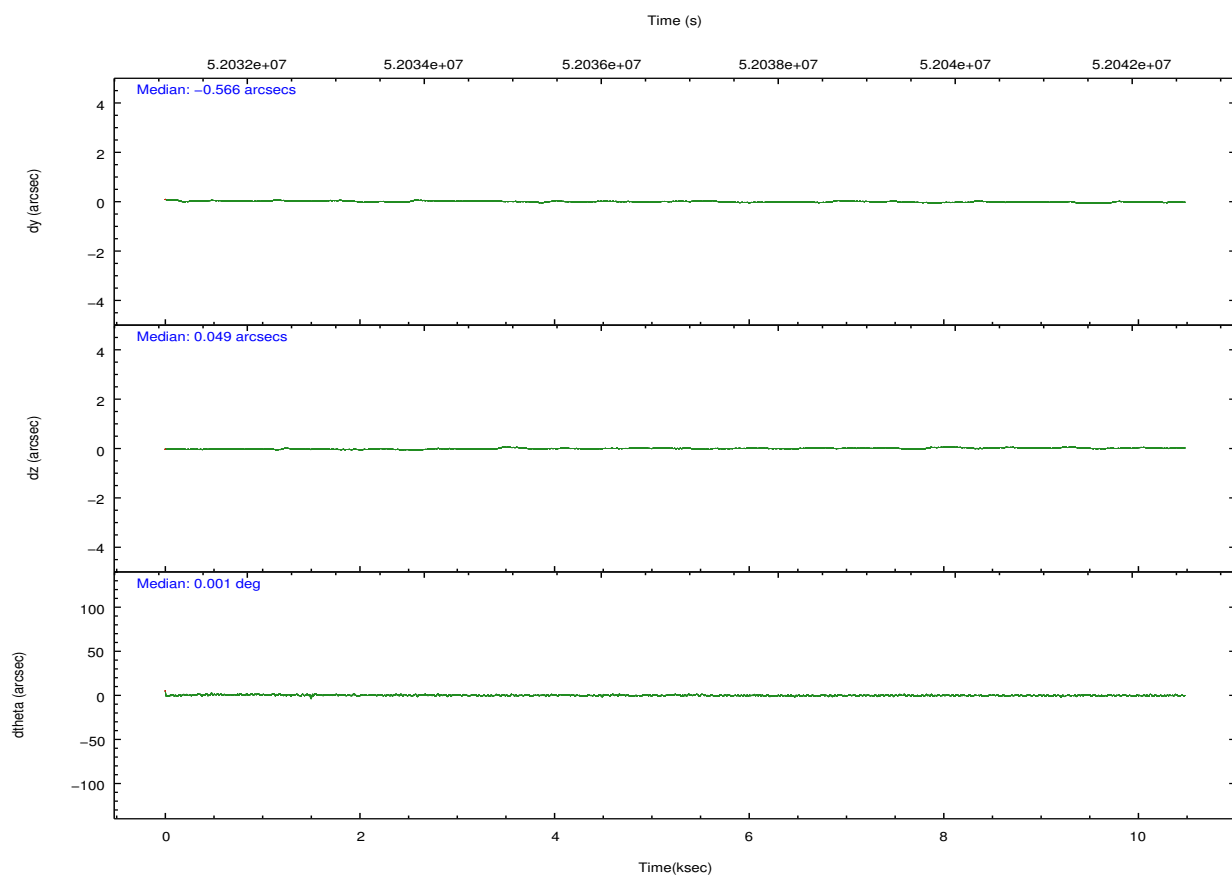
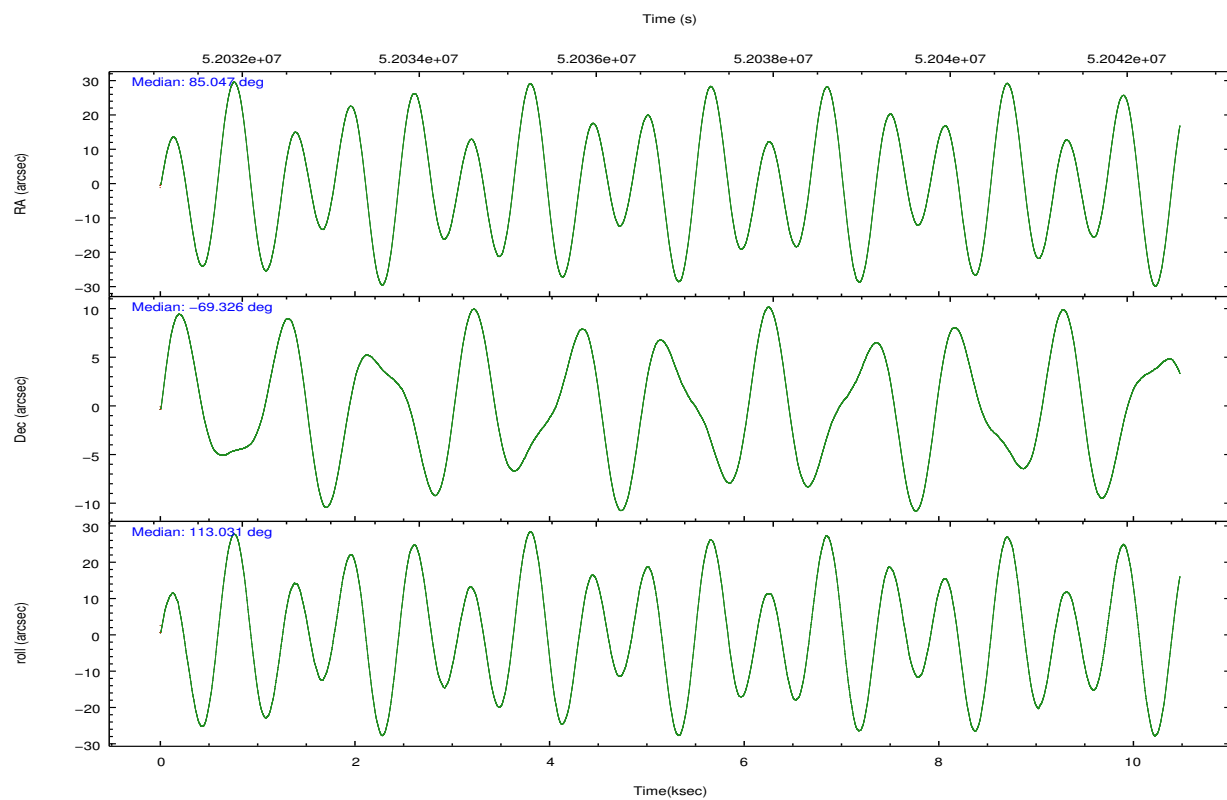


## 2.2 Compared Parameters

| Parameter                         | Planned             | Actual                | Parameter                             | Planned   | Actual  |
|-----------------------------------|---------------------|-----------------------|---------------------------------------|-----------|---------|
| Instrument                        | ACIS                | ACIS                  | Obspar format version number          | 6         | 6       |
| Detector                          | ACIS-012367         | ACIS-012367           | Obspar file type                      | PREDICTED | ACTUAL  |
| Grating                           | NONE                | NONE                  | Obspar update status                  | NONE      | UPDATED |
| Data mode                         | CC33_GRADED         | CC33_GRADED           | Number of optional ACIS chips dropped | 0         | 0       |
| Observation mode                  | POINTING            | POINTING              | On-chip summing requested             | N         | N       |
| Pointing RA                       | 85.108445           | 85.04653964756847     | Subarray requested                    | NONE      | NONE    |
| Pointing Dec                      | -69.343731          | -69.32629331082724    | Alternating exposures requested       | N         | N       |
| Pointing Roll                     | 112.881347          | 113.0321111542686     | Primary exposure time                 | 0.000000  | 0       |
| SIM focus pos (mm)                | -0.782348           | -0.7362356599963374   |                                       |           |         |
| SIM defocus (mm)                  | 0                   | 0.04611255558364913   |                                       |           |         |
| SIM translation stage pos (mm)    | -233.592463         | -233.5874344608287    |                                       |           |         |
| SIM translation stage offset (mm) | 0                   | -0.005018542100998502 |                                       |           |         |
| Observation start time            | 52032075.184000     | 52031409.369364       |                                       |           |         |
| Observation start date            | 1999-08-26T05:20:11 | 1999-08-26T05:10:09   |                                       |           |         |
| Observation end time              | 52042075.184000     | 52042208.769752       |                                       |           |         |
| Observation end date              | 1999-08-26T08:06:51 | 1999-08-26T08:10:08   |                                       |           |         |
| Read mode                         | CONTINUOUS          | CONTINUOUS            |                                       |           |         |

## 2.3 Aspect



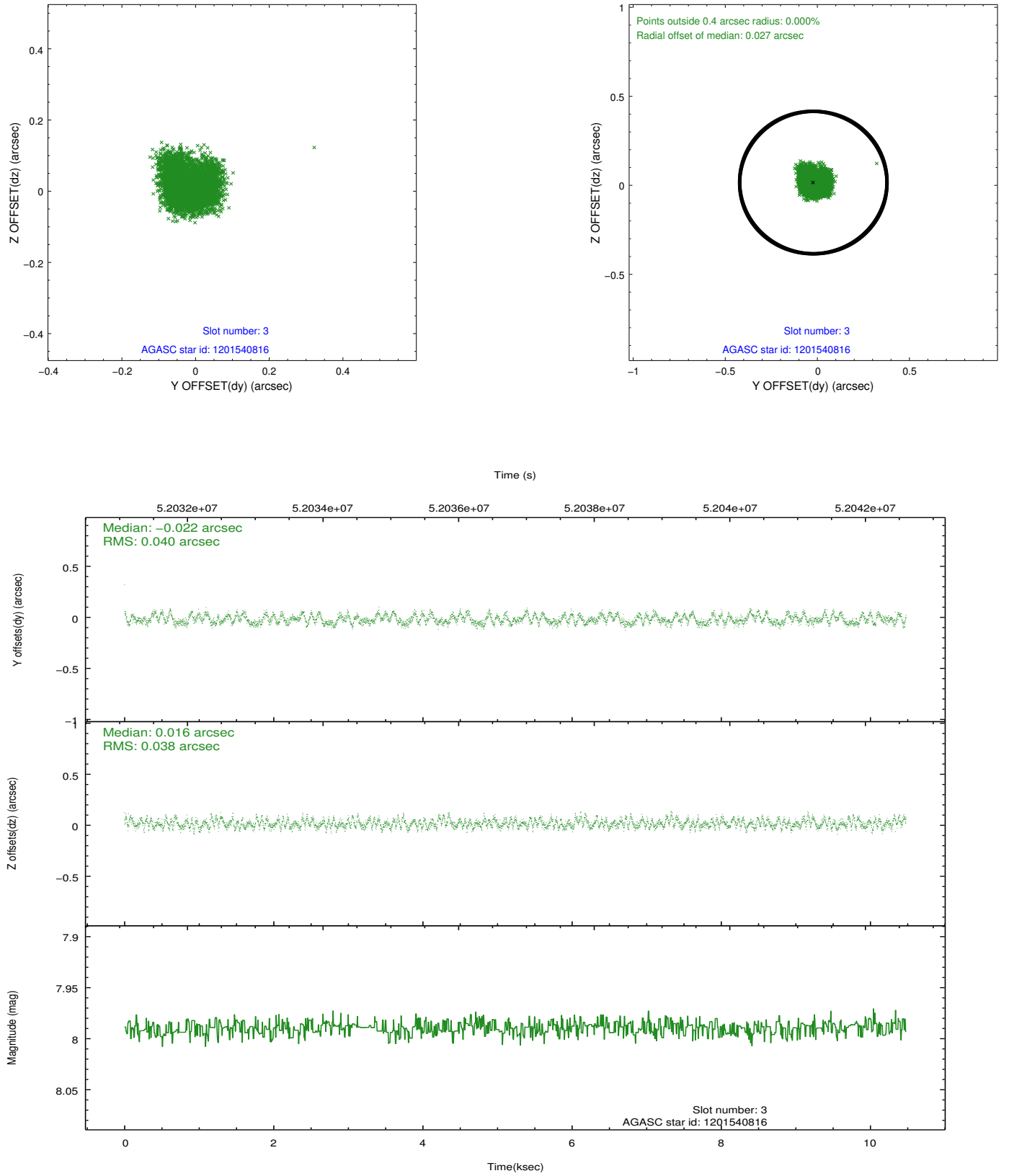


Slot Statistics

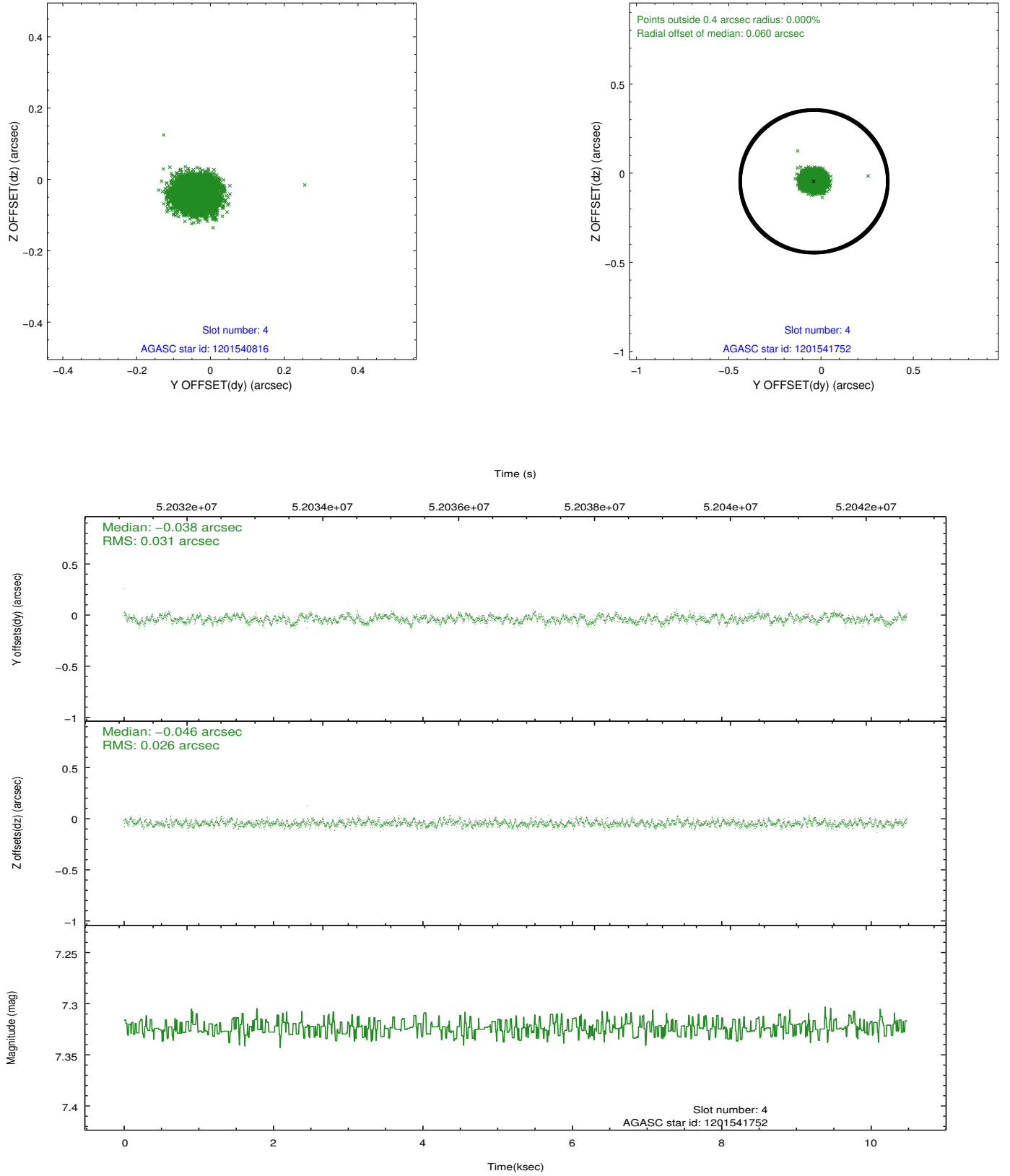
| slot | status | id         | mag  | n_pts | med_dy | med_dz | dr1   | dr2   | ra        | dec        | mean_y   | mean_z   |
|------|--------|------------|------|-------|--------|--------|-------|-------|-----------|------------|----------|----------|
| 0    | FID    | ACIS-I-2   | 7.21 | 5113  | -0.033 | 0.055  | 0.009 | 0.015 | 0.000000  | 0.000000   | -753.79  | -829.53  |
| 1    | FID    | ACIS-I-4   | 7.24 | 5113  | 0.134  | 0.013  | 0.007 | 0.013 | 0.000000  | 0.000000   | 2160.47  | 1076.37  |
| 2    | FID    | ACIS-I-5   | 7.23 | 5113  | -0.202 | 0.001  | 0.008 | 0.014 | 0.000000  | 0.000000   | -1807.47 | 1074.62  |
| 3    | GUIDE  | 1201540816 | 7.99 | 5111  | -0.022 | 0.016  | 0.060 | 0.091 | 86.998494 | -69.749817 | -2295.73 | -1586.86 |
| 4    | GUIDE  | 1201541752 | 7.32 | 5111  | -0.038 | -0.046 | 0.043 | 0.067 | 85.373891 | -70.033762 | -2416.42 | 665.23   |
| 5    | GUIDE  | 1201019200 | 9.48 | 5106  | 0.007  | 0.007  | 0.082 | 0.132 | 84.213591 | -68.777384 | 2323.78  | 285.19   |
| 6    | GUIDE  | 1200886544 | 9.58 | 5107  | 0.056  | 0.021  | 0.094 | 0.151 | 82.995430 | -69.160893 | 1616.20  | 2255.11  |
| 7    | UNUSED |            | 0.00 | 0     | 0.000  | 0.000  | 0.000 | 0.000 | 0.000000  | 0.000000   | 0.00     | 0.00     |

## 2.4 Star Slots

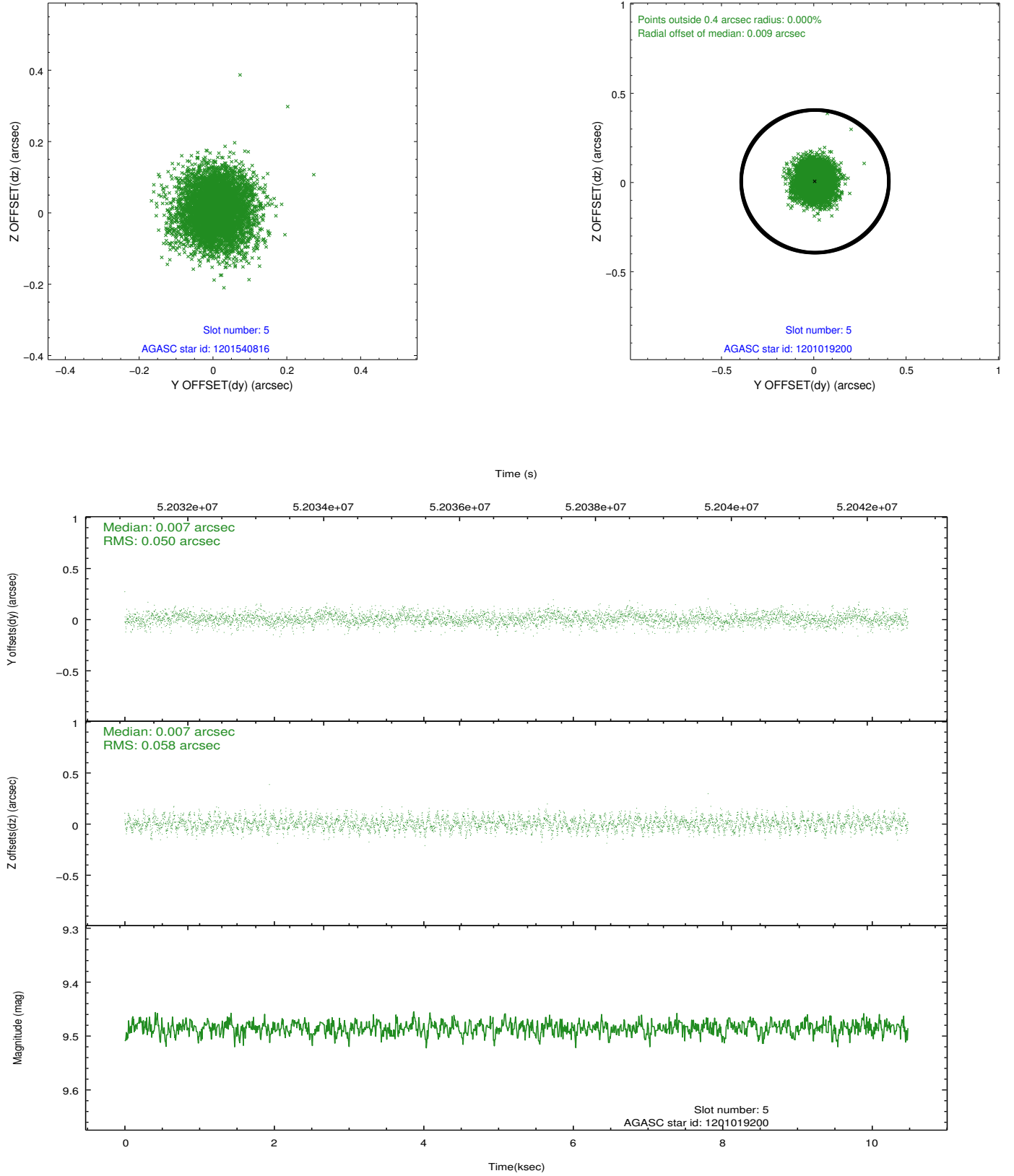
### 2.4.1 Slot 3



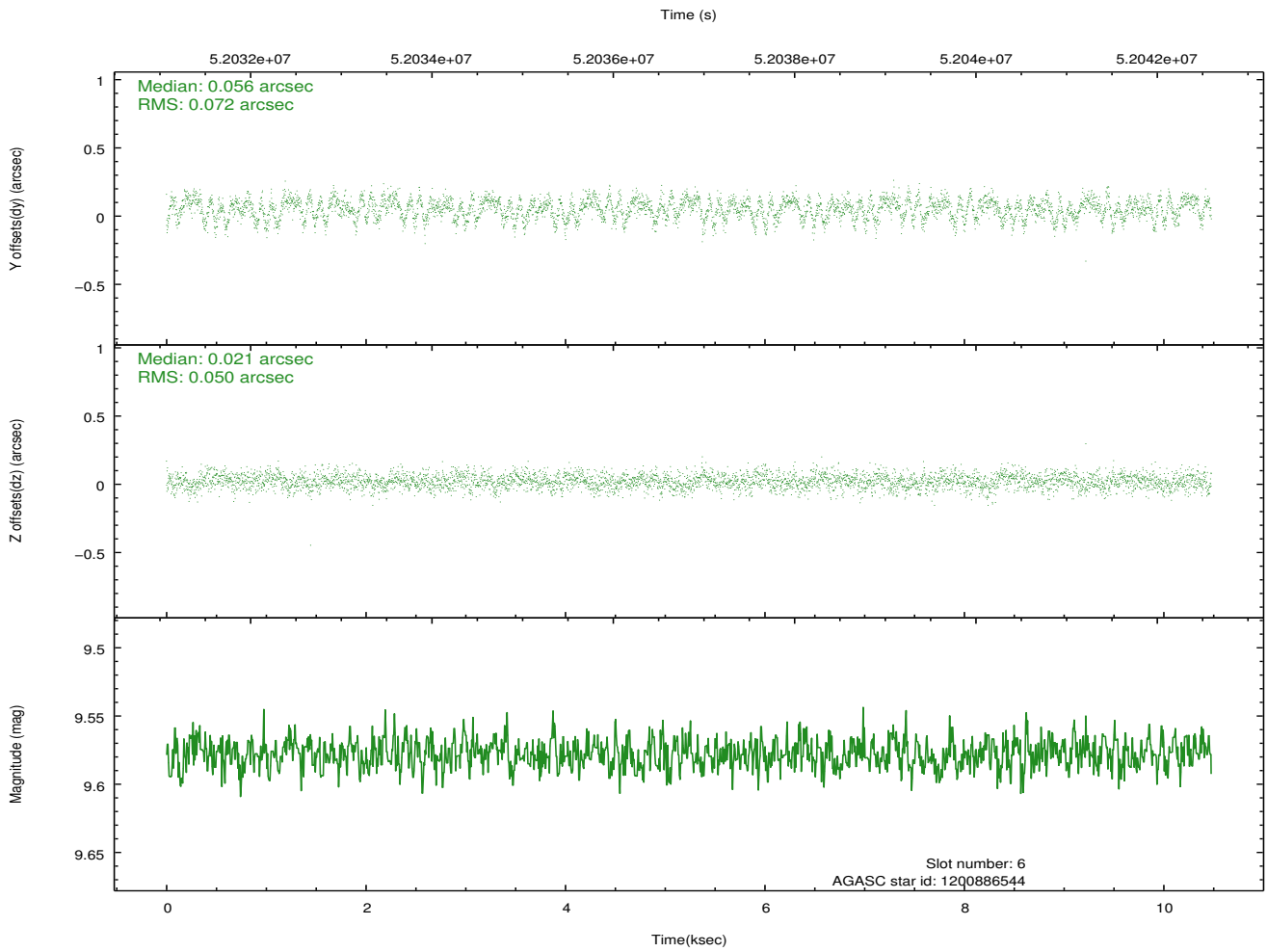
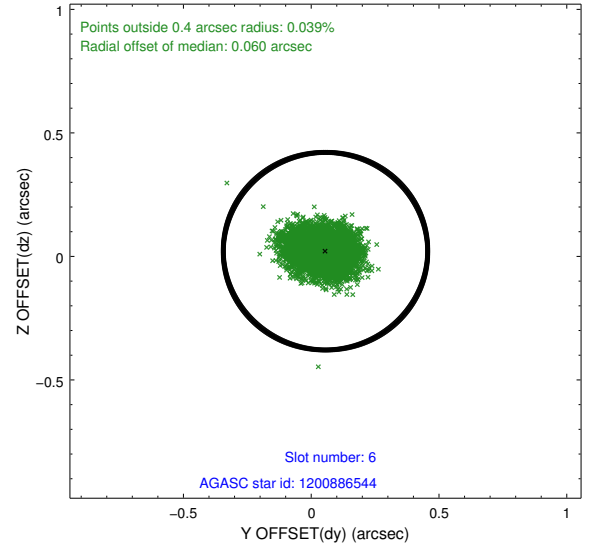
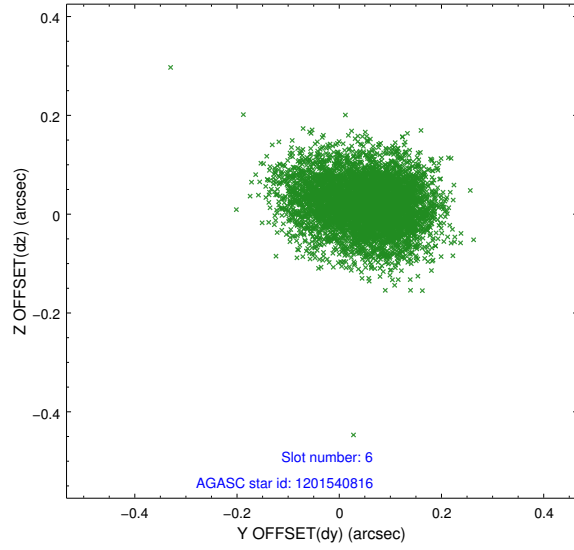
## 2.4.2 Slot 4



### 2.4.3 Slot 5



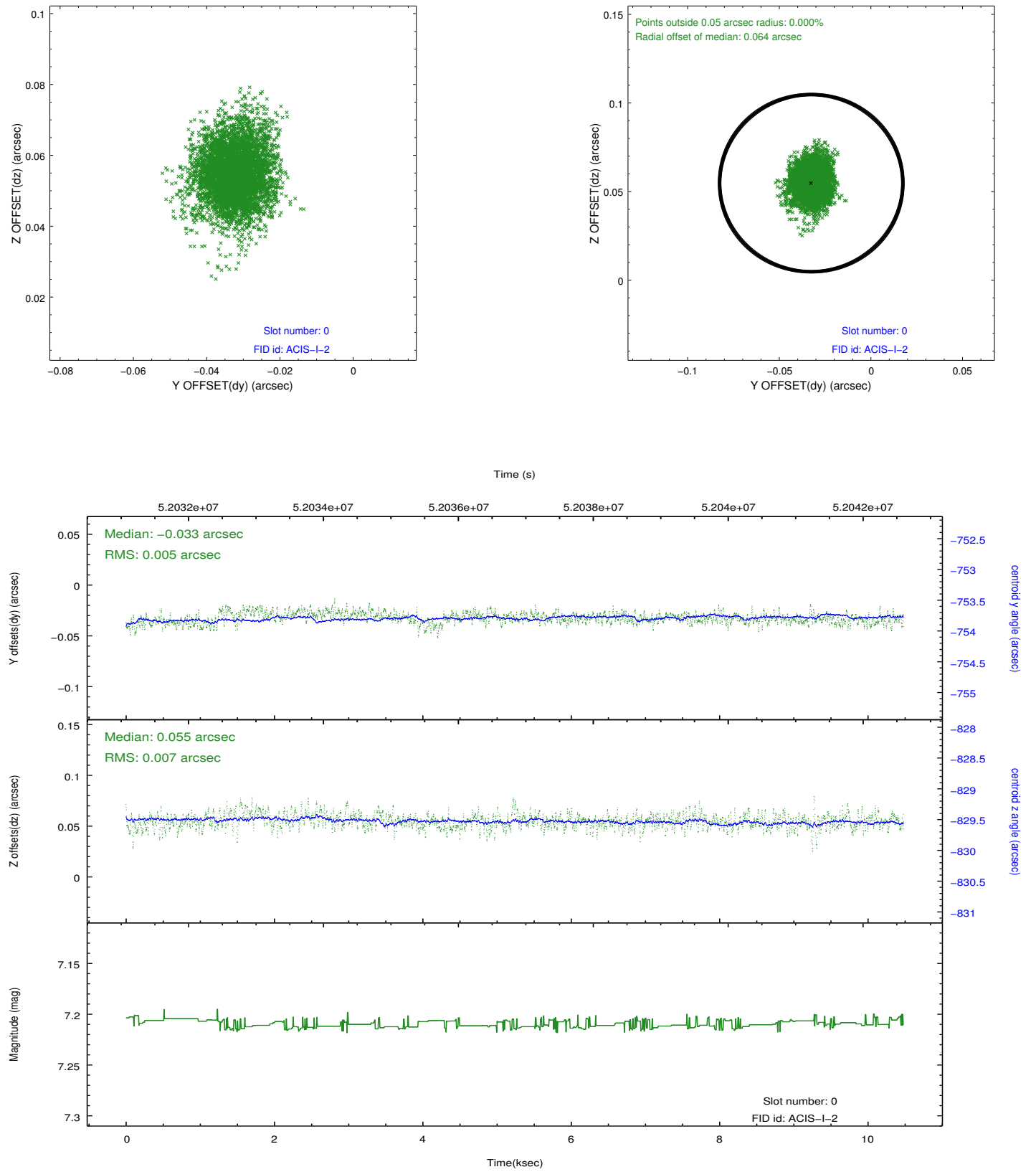
## 2.4.4 Slot 6



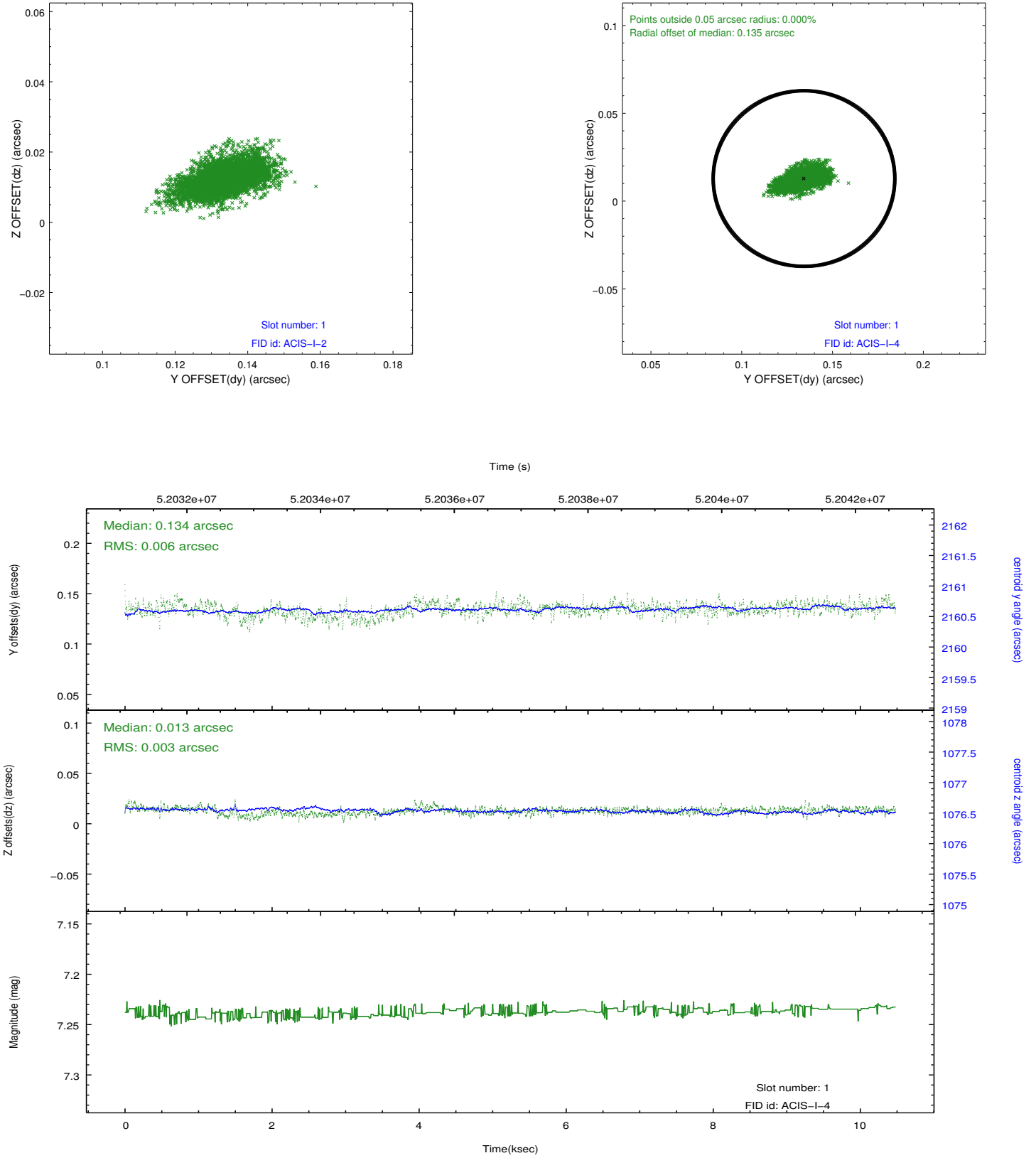


## 2.5 FID Slots

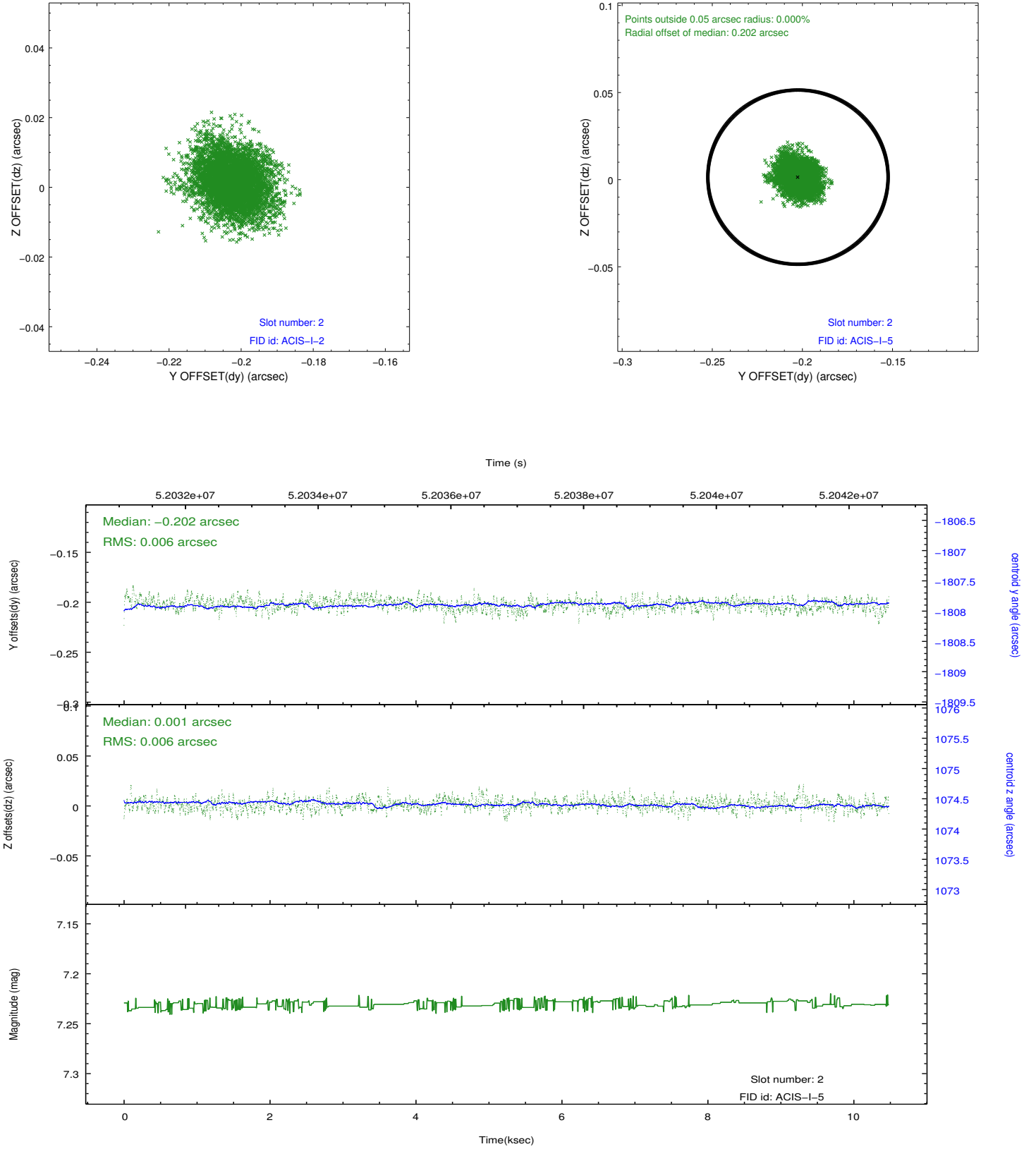
### 2.5.1 Slot 0



## 2.5.2 Slot 1



### 2.5.3 Slot 2



## A Summary

### A.1 Status

|                            |             |
|----------------------------|-------------|
| V&V Scientist              | Glenn Allen |
| V&V Date (YYYY-MM-DD)      | 2010.02.01  |
| V&V Edition                | 1           |
| V&V Disposition and Status | OK          |
| V&V Charge Time            | 9.673       |

### A.2 Comments