

# V&V Reference Report

## L2 ASCDS Version : 8.1.1

Observation 393 - L2 Version 4

Chandra X-Ray Center

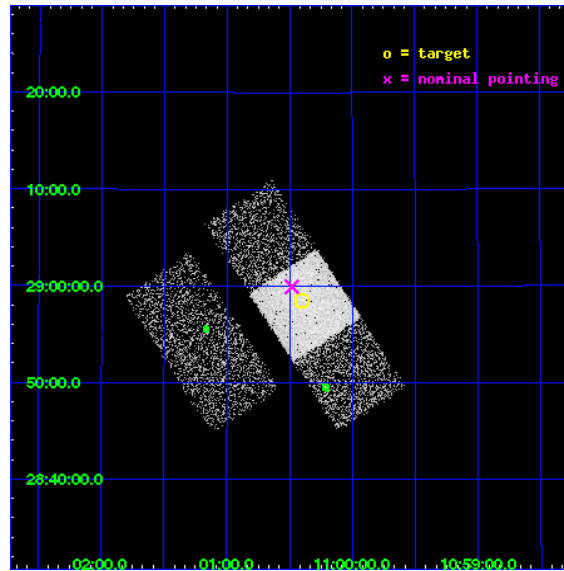
L2 Processing Date : Nov 21 2009

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# 1 Front

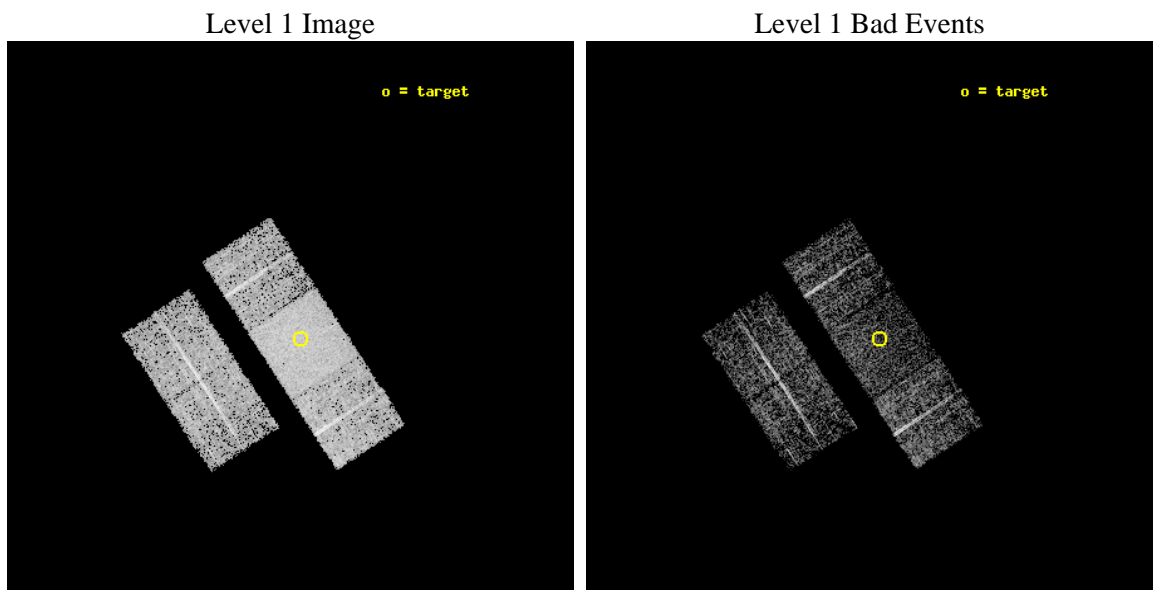
|          |  |   |
|----------|--|---|
| seq_num  | 700065   | Sequence number                             |
| obs_id   | 393  | Observation id                              |
| title    | LOW-LUMINOSITY ACTIVE GALACTIC NUCLEI IN NEARBY GALAXIES | Proposal                                    |
| observer | Prof Gordon Garmire                                      | Principal investigator                      |
| object   | NGC 3486   | Source name                                 |
| dtcycle  | 0  | &#160                                       |
| cycle    | P  | events from which exps?<br>Prim/Second/Both |
| ra_targ  | 165.099583   | Observer's specified target RA              |
| dec_targ | 28.975   | Observer's specified target Dec             |
| ra_nom   | 165.1204100843   | Nominal RA                                  |
| dec_nom  | 28.998749231621  | Nominal Dec                                 |
| roll_nom | 56.702616167257  | Nominal Roll                                |
| revision | 4  | Processing version of data                  |
| ontime   | 1777.8686610535  | Sum of GTIs [s]                             |
| livetime | 1755.3562175632  | Livetime [s]                                |
| ontime2  | 1777.8276210502  | Sum of GTIs [s]                             |
| ontime3  | 1777.7455709726  | Sum of GTIs [s]                             |
| ontime6  | 1777.7865810543  | Sum of GTIs [s]                             |
| ontime7  | 1777.8686610535  | Sum of GTIs [s]                             |
| ontime8  | 1777.7043913528  | Sum of GTIs [s]                             |
| l2events | 23172  | Number of level 2 events                    |



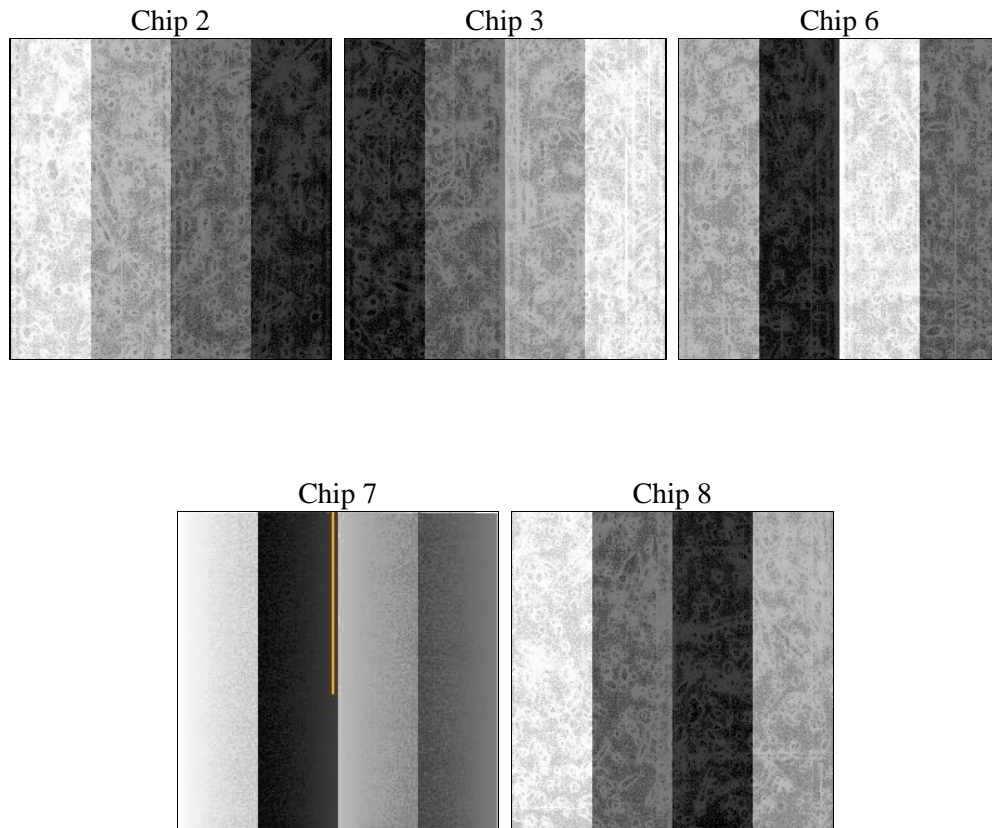
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

|          |                     |                                |                |                 |                                     |
|----------|---------------------|--------------------------------|----------------|-----------------|-------------------------------------|
| obi_num  | 1                   | Obi number                     | sched_exp_time | 2000.000000     | Scheduled observation exposure time |
| ascdsver | 8.1.1               | ASCDS version number           | ontime         | 1777.8686610535 | Sum of GTIs [s]                     |
| caldsver | 4.1.4               | &#160                          | ontime2        | 1777.8276210502 | Sum of GTIs [s]                     |
| date     | 2009-11-21T09:44:01 | Date and time of file creation | ontime3        | 1777.7455709726 | Sum of GTIs [s]                     |
| revision | 3                   | Processing version of data     | ontime6        | 1777.7865810543 | Sum of GTIs [s]                     |
|          |                     |                                | ontime7        | 1777.8686610535 | Sum of GTIs [s]                     |
|          |                     |                                | ontime8        | 1777.7043913528 | Sum of GTIs [s]                     |
|          |                     |                                | l1events       | 100283          | Number of level 1 events            |

### 2.1.4 Events

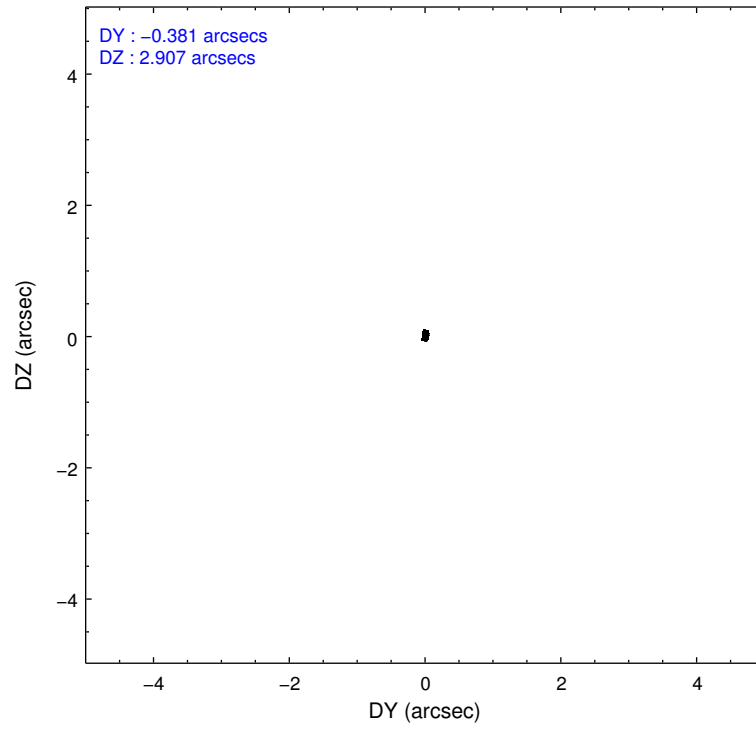
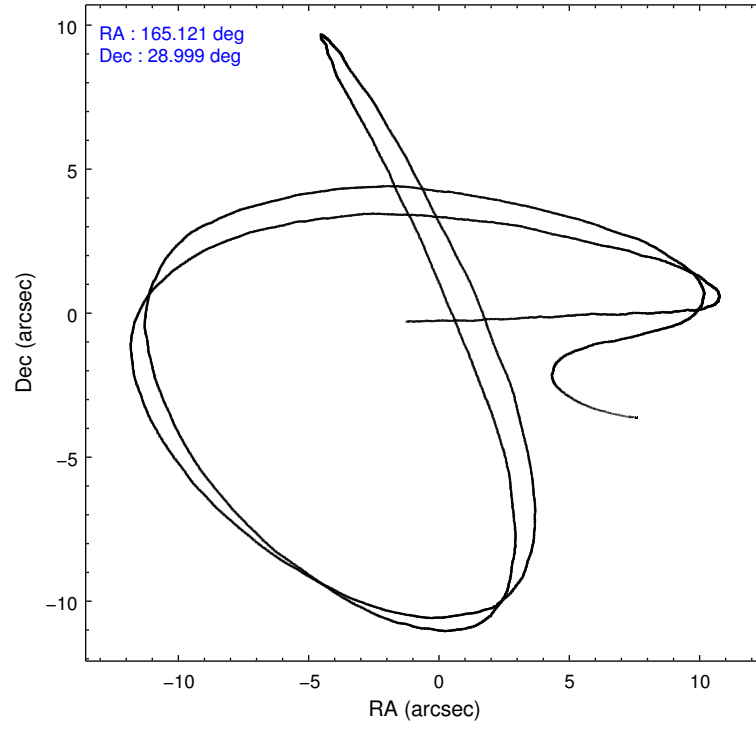
|                 | ccd 2 | ccd 3 | ccd 6 | ccd 7 | ccd 8 |
|-----------------|-------|-------|-------|-------|-------|
| level 1 events  | 16684 | 16432 | 16308 | 29072 | 21787 |
| rejected events | 15175 | 14831 | 14690 | 11751 | 18631 |
| rejected %      | 90%   | 90%   | 90%   | 40%   | 85%   |

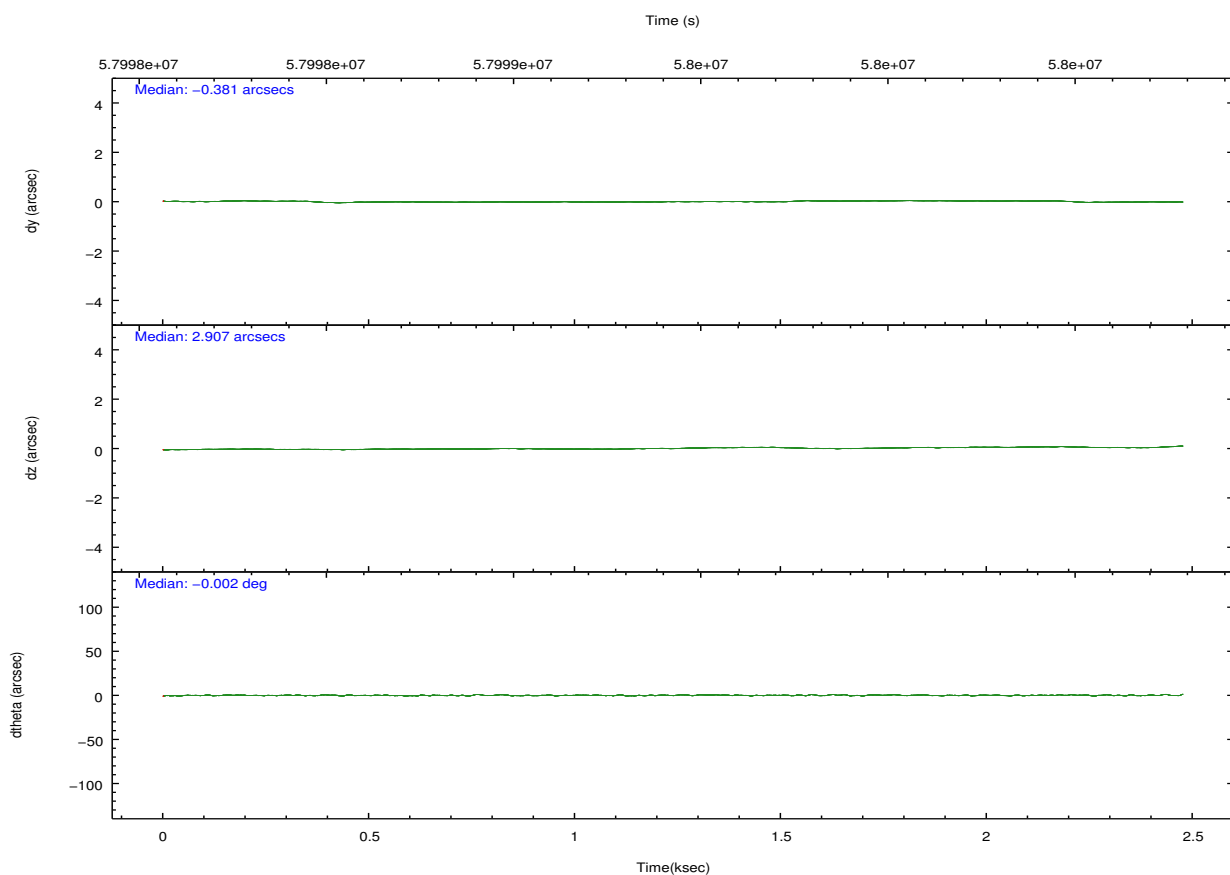
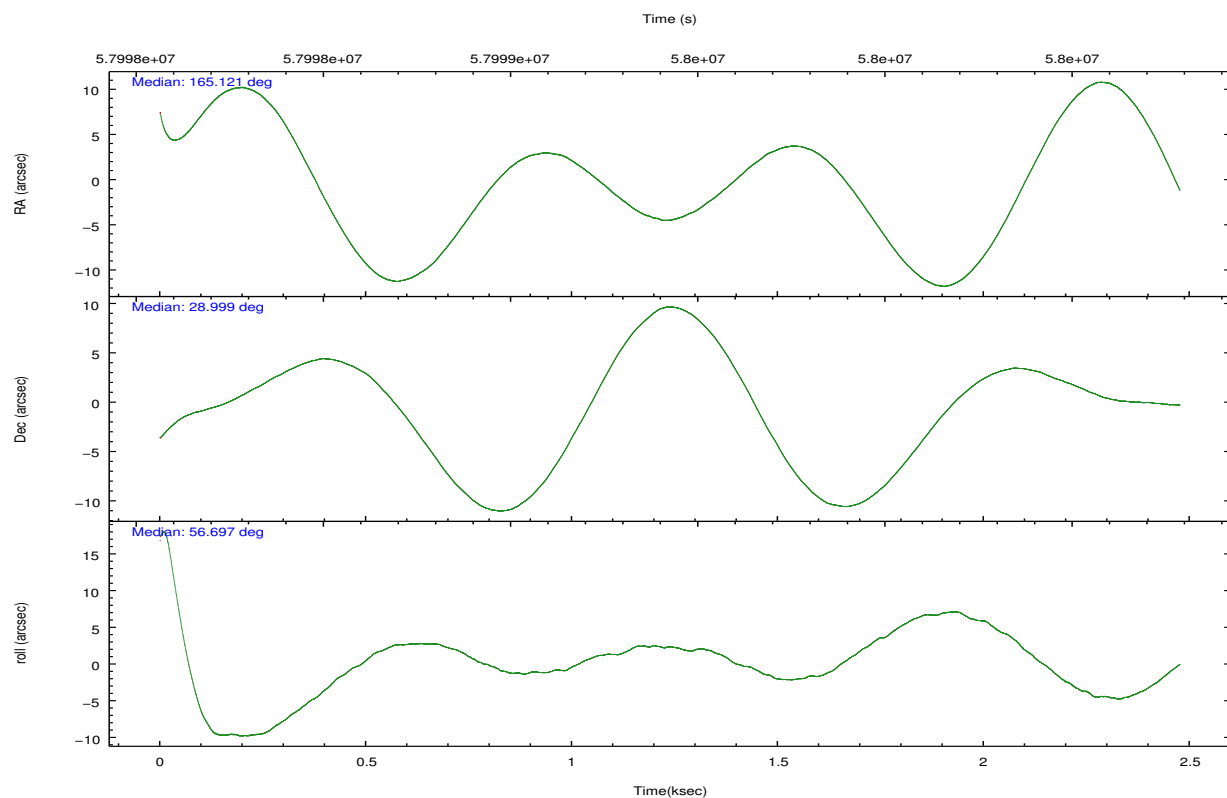
|                | ccd 2 | ccd 3 | ccd 6 | ccd 7 | ccd 8 |
|----------------|-------|-------|-------|-------|-------|
| grade 0 events | 380   | 354   | 340   | 2112  | 829   |
|                | 2%    | 2%    | 2%    | 7%    | 3%    |
| grade 1 events | 1     | 2     | 5     | 8     | 11    |
|                | 0%    | 0%    | 0%    | 0%    | 0%    |
| grade 2 events | 616   | 669   | 674   | 3697  | 1021  |
|                | 3%    | 4%    | 4%    | 12%   | 4%    |
| grade 3 events | 78    | 118   | 102   | 1243  | 223   |
|                | 0%    | 0%    | 0%    | 4%    | 1%    |
| grade 4 events | 97    | 92    | 98    | 1174  | 218   |
|                | 0%    | 0%    | 0%    | 4%    | 1%    |
| grade 5 events | 262   | 316   | 335   | 1109  | 426   |
|                | 1%    | 1%    | 2%    | 3%    | 1%    |
| grade 6 events | 340   | 369   | 407   | 9124  | 866   |
|                | 2%    | 2%    | 2%    | 31%   | 3%    |
| grade 7 events | 14910 | 14512 | 14347 | 10605 | 18193 |
|                | 89%   | 88%   | 87%   | 36%   | 83%   |

## 2.2 Compared Parameters

| Parameter                         | Planned             | Actual               | Parameter                             | Planned   | Actual  |
|-----------------------------------|---------------------|----------------------|---------------------------------------|-----------|---------|
| Instrument                        | ACIS                | ACIS                 | Obspar format version number          | 6         | 6       |
| Detector                          | ACIS-23678          | ACIS-23678           | Obspar file type                      | PREDICTED | ACTUAL  |
| Grating                           | NONE                | NONE                 | Obspar update status                  | NONE      | UPDATED |
| Data mode                         | FAINT               | FAINT                | Number of optional ACIS chips dropped | 0         | 0       |
| Observation mode                  | POINTING            | POINTING             | On-chip summing requested             | N         | N       |
| Pointing RA                       | 165.118089          | 165.1204100843026    | Subarray requested                    | NONE      | NONE    |
| Pointing Dec                      | 28.971097           | 28.99874923162126    | Alternating exposures requested       | N         | N       |
| Pointing Roll                     | 56.547009           | 56.70261616725735    | Primary exposure time                 | 0.000000  | 3.2     |
| SIM focus pos (mm)                | -0.684267           | -0.6828225247311905  |                                       |           |         |
| SIM defocus (mm)                  | 0                   | 0.001444936568705701 |                                       |           |         |
| SIM translation stage pos (mm)    | -190.132523         | -190.1400660498719   |                                       |           |         |
| SIM translation stage offset (mm) | 0                   | 0.00754346686406393  |                                       |           |         |
| Observation start time            | 57998666.184000     | 57997726.514353      |                                       |           |         |
| Observation start date            | 1999-11-03T06:43:22 | 1999-11-03T06:28:46  |                                       |           |         |
| Observation end time              | 58000666.184000     | 58001081.339474      |                                       |           |         |
| Observation end date              | 1999-11-03T07:16:42 | 1999-11-03T07:24:41  |                                       |           |         |
| Read mode                         | TIMED               | TIMED                |                                       |           |         |

## 2.3 Aspect





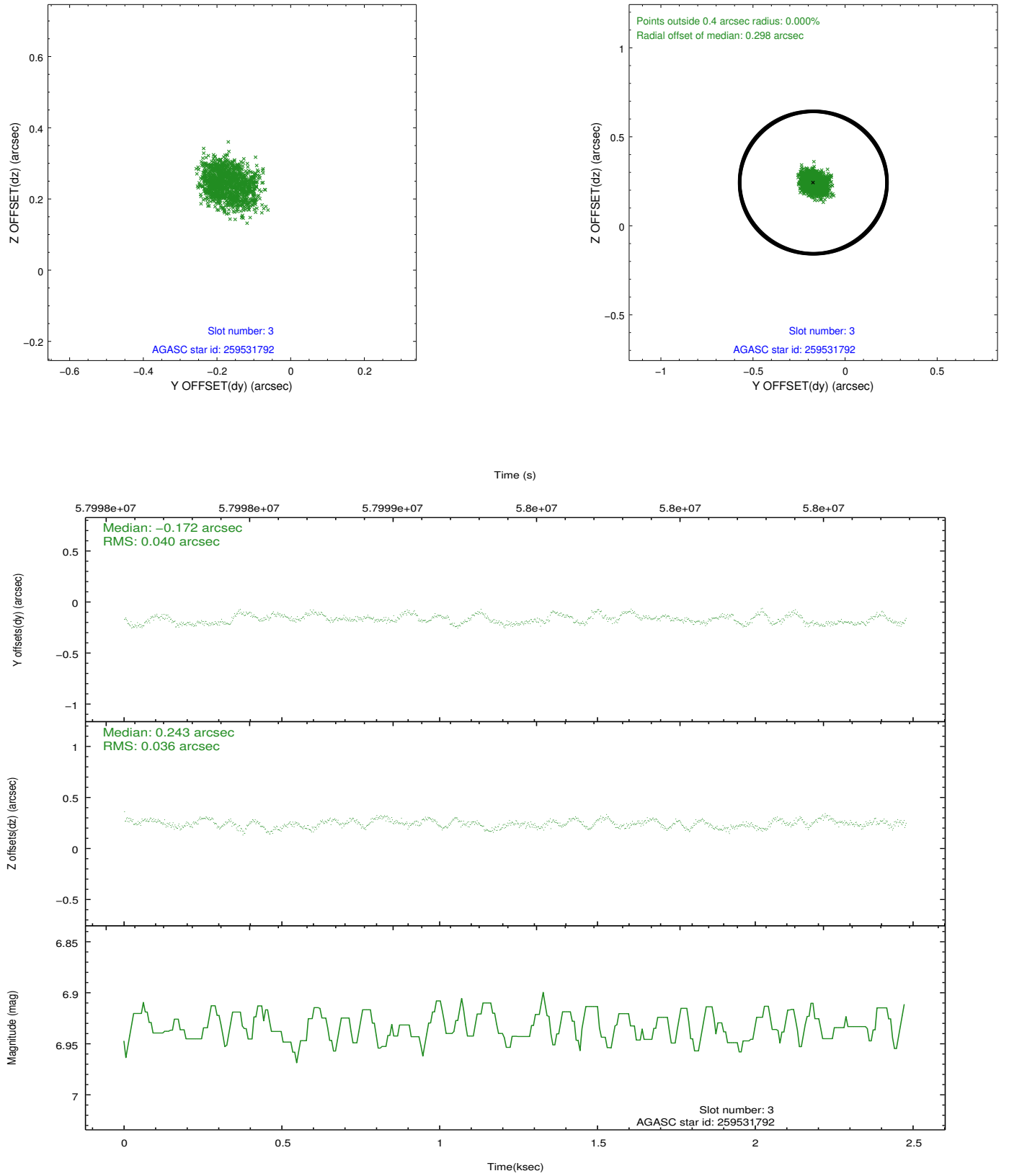
Slot Statistics

| slot | status | id        | mag  | n_pts | med_dy | med_dz | dr1   | dr2   | ra         | dec       | mean_y   | mean_z   |
|------|--------|-----------|------|-------|--------|--------|-------|-------|------------|-----------|----------|----------|
| 0    | FID    | ACIS-S-2  | 7.12 | 1209  | 0.019  | -0.002 | 0.006 | 0.010 | 0.000000   | 0.000000  | -752.22  | -1723.94 |
| 1    | FID    | ACIS-S-4  | 7.21 | 1209  | 0.039  | -0.008 | 0.005 | 0.010 | 0.000000   | 0.000000  | 2160.59  | 183.16   |
| 2    | FID    | ACIS-S-5  | 7.24 | 1209  | -0.088 | 0.019  | 0.006 | 0.010 | 0.000000   | 0.000000  | -1803.51 | 178.41   |
| 3    | GUIDE  | 259531792 | 6.93 | 1209  | -0.172 | 0.243  | 0.058 | 0.089 | 165.797842 | 28.930132 | 1060.84  | -1863.09 |
| 4    | GUIDE  | 259530752 | 8.51 | 1208  | 0.051  | -0.150 | 0.056 | 0.091 | 165.202741 | 29.218595 | 889.06   | 269.11   |
| 5    | GUIDE  | 259528640 | 8.90 | 1208  | 0.110  | 0.220  | 0.103 | 0.179 | 165.494516 | 28.515713 | -710.73  | -1894.39 |
| 6    | GUIDE  | 259531280 | 9.49 | 1208  | 0.222  | -0.282 | 0.116 | 0.185 | 164.118998 | 28.833487 | -2141.76 | 2362.48  |
| 7    | GUIDE  | 259525304 | 9.58 | 1208  | -0.203 | -0.044 | 0.087 | 0.146 | 165.318163 | 29.590973 | 2203.61  | 711.49   |

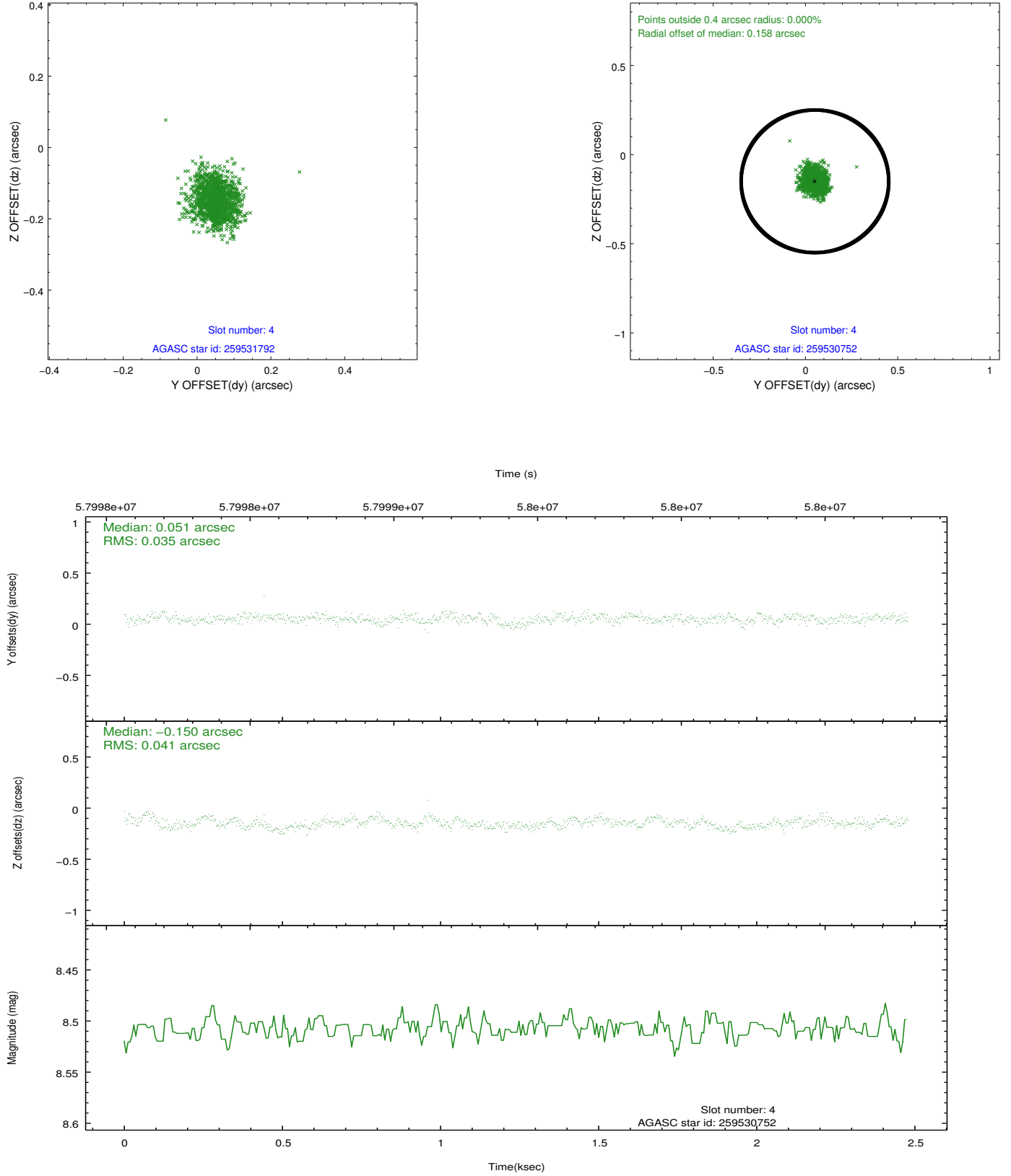


## 2.4 Star Slots

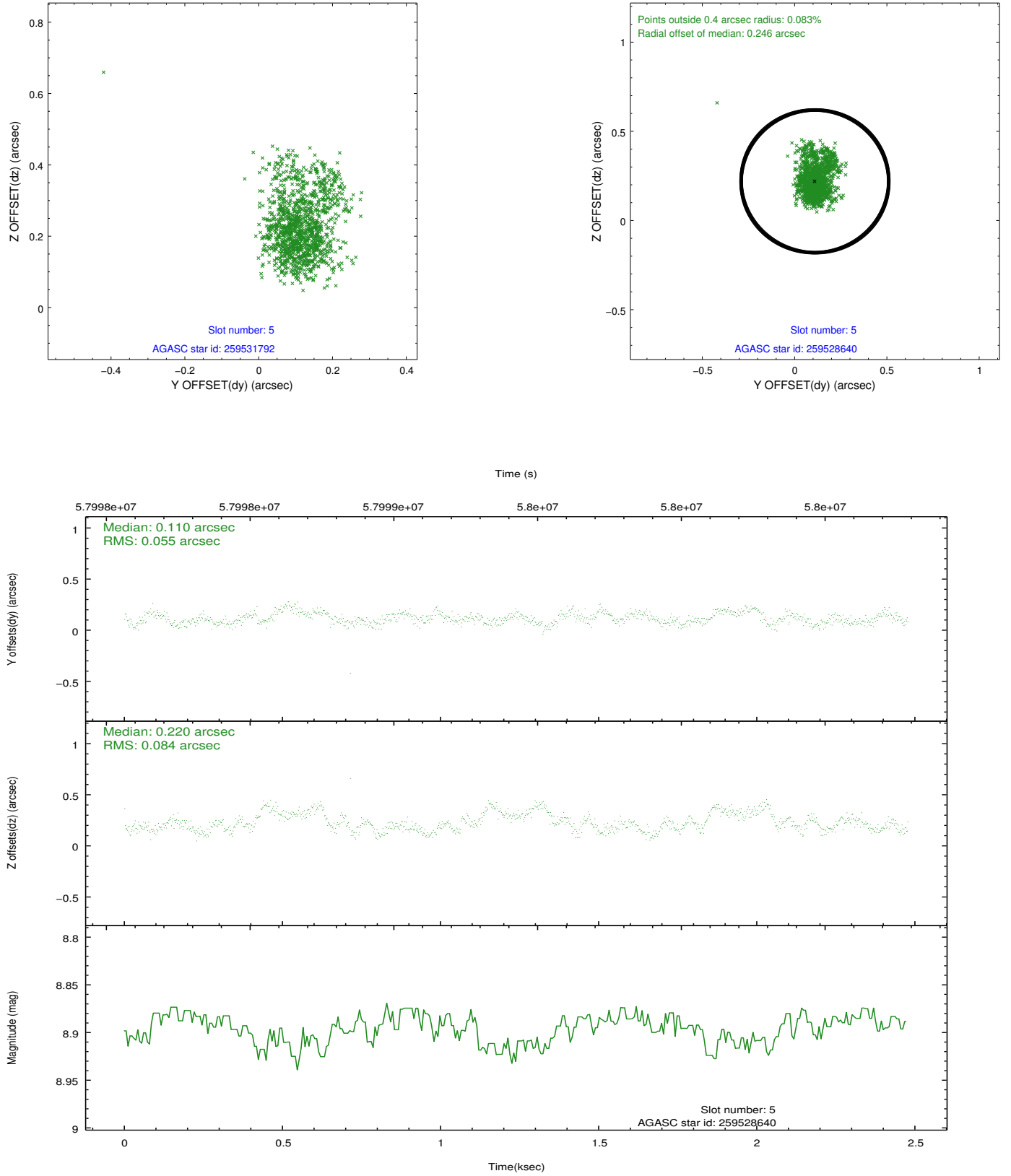
### 2.4.1 Slot 3



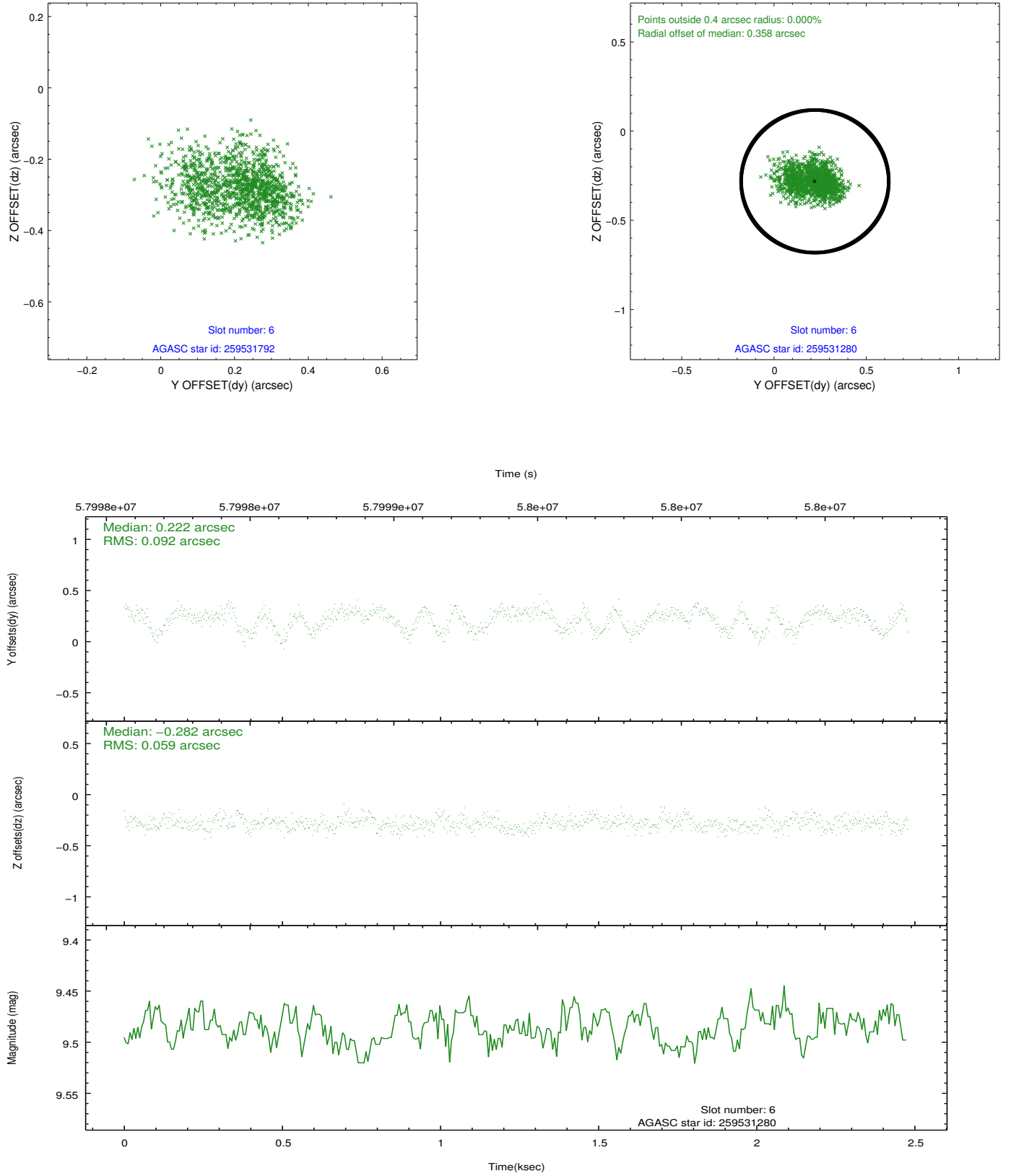
## 2.4.2 Slot 4



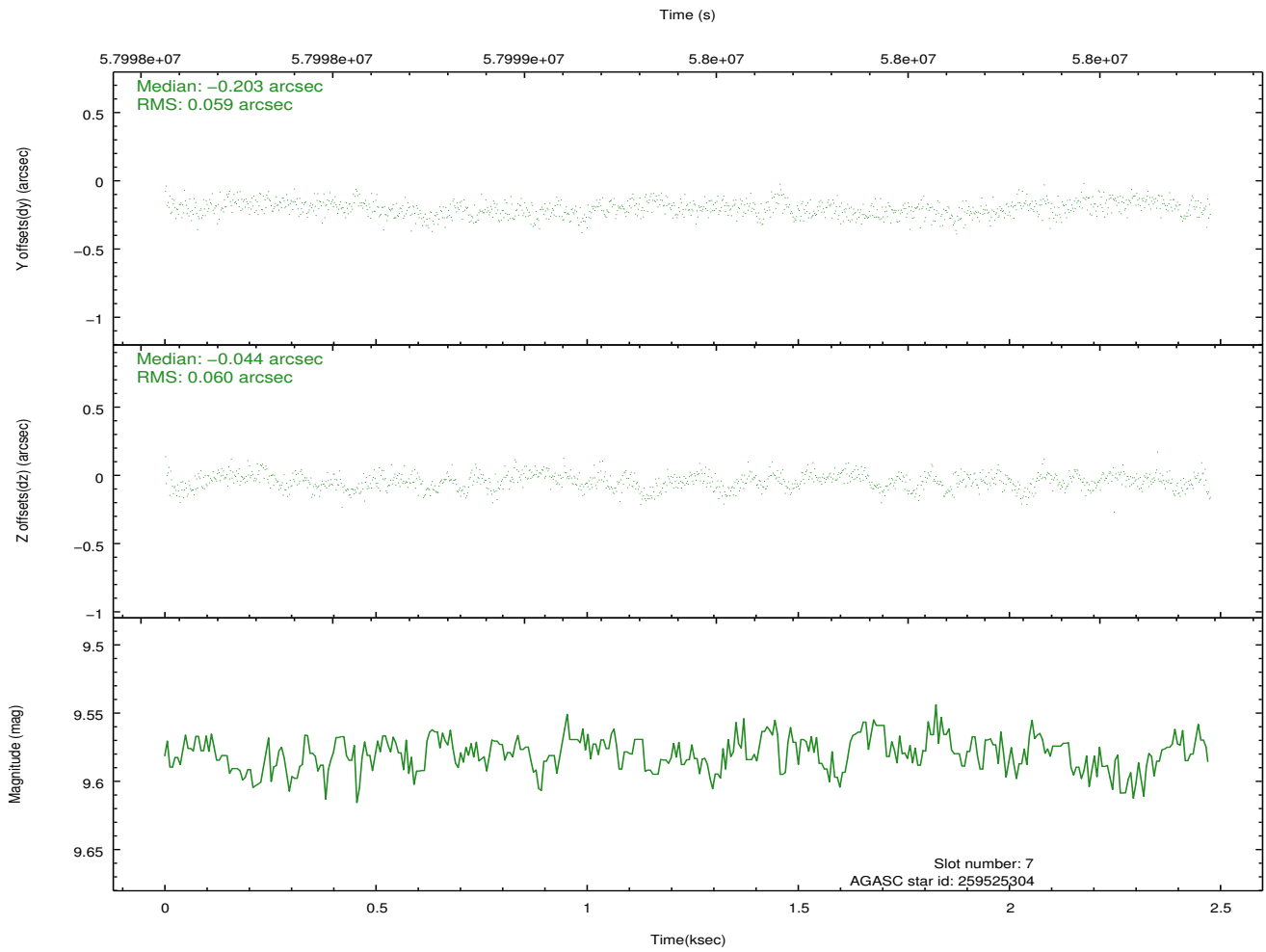
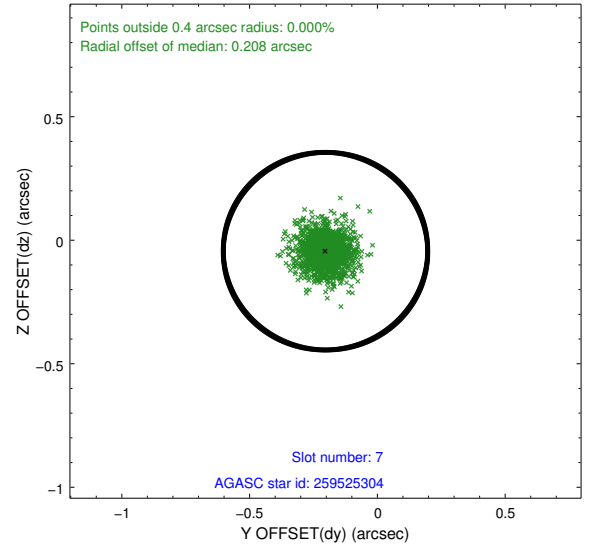
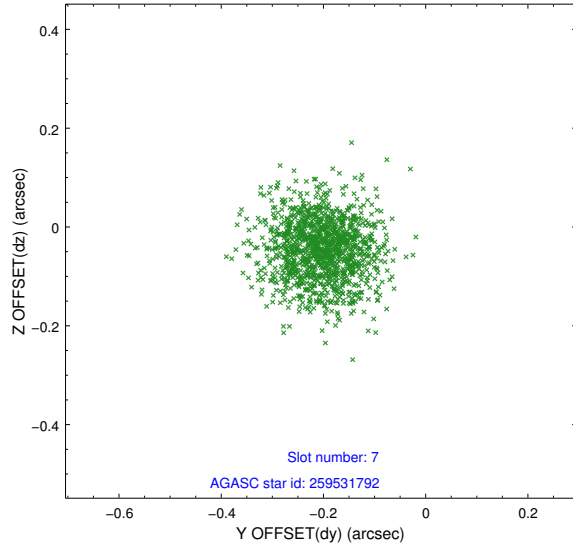
### 2.4.3 Slot 5



## 2.4.4 Slot 6

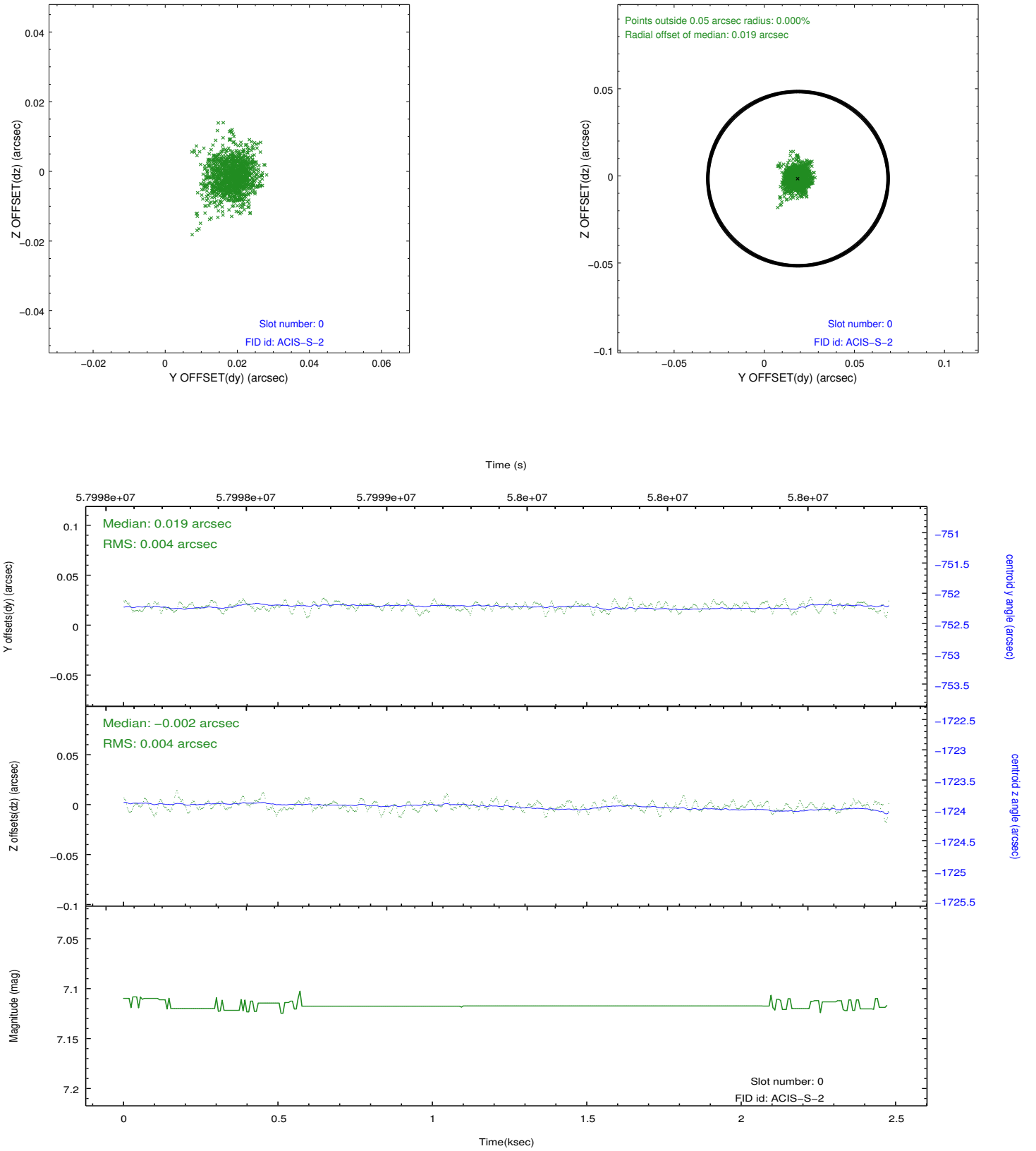


## 2.4.5 Slot 7

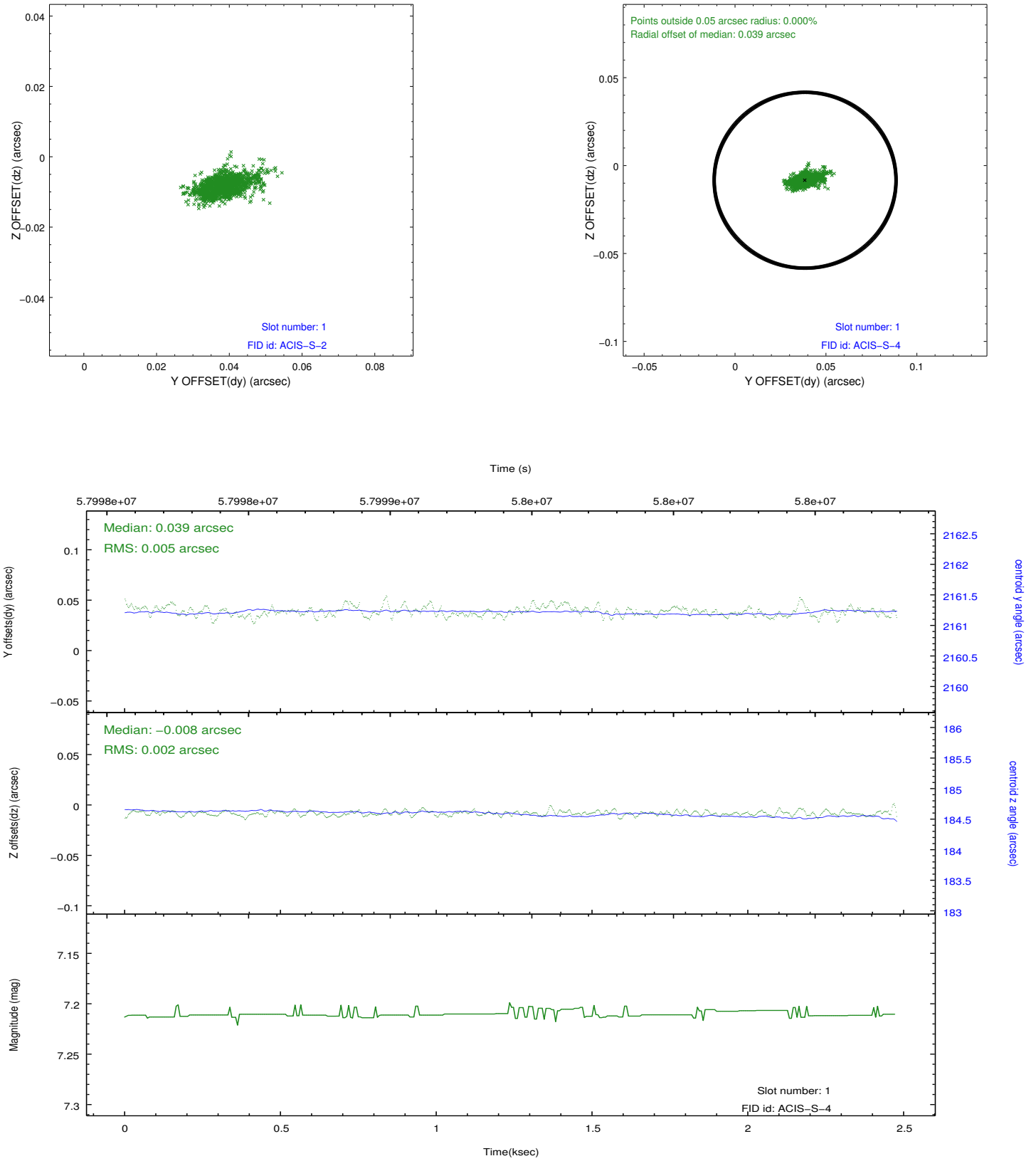


## 2.5 FID Slots

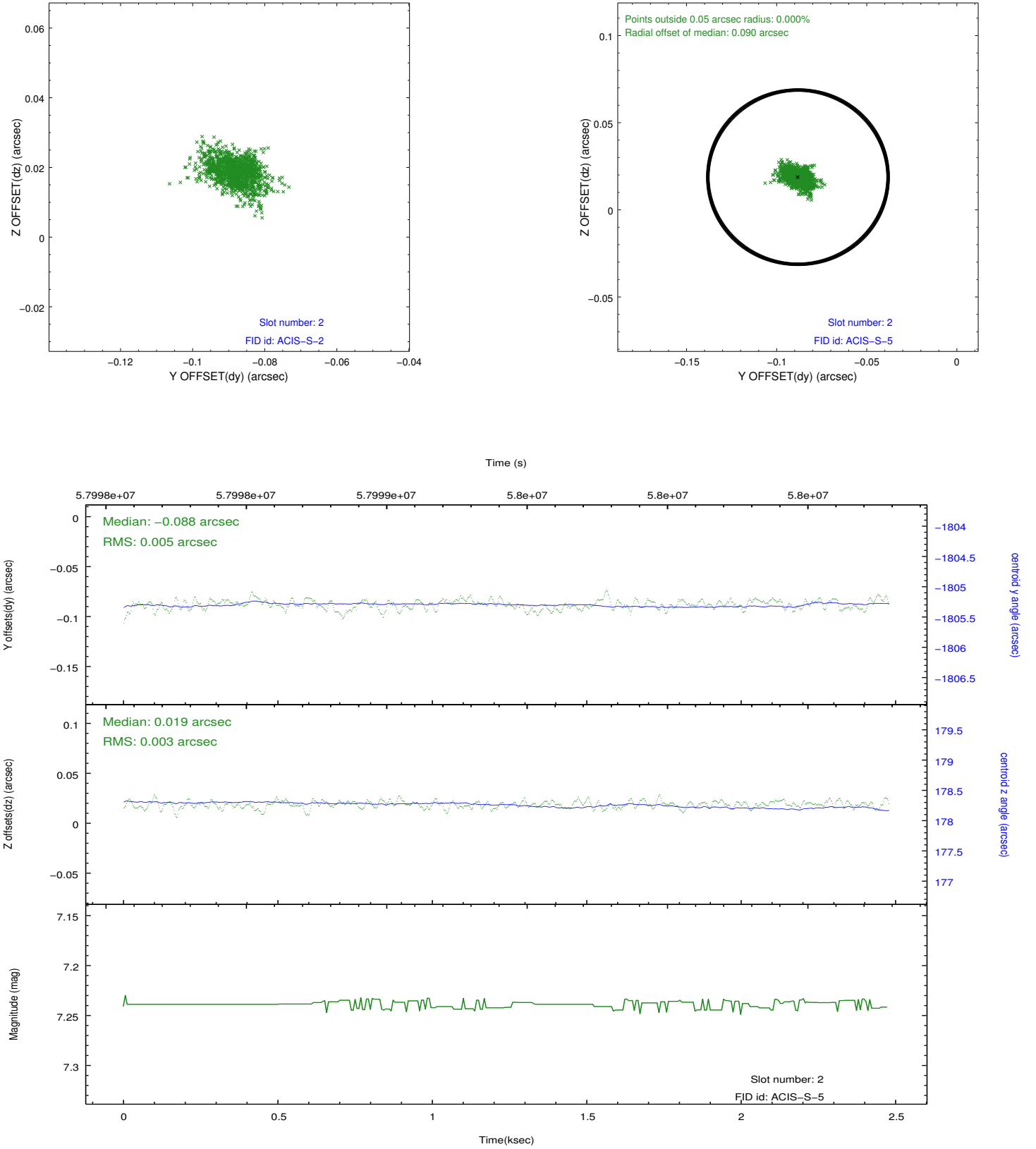
### 2.5.1 Slot 0



## 2.5.2 Slot 1

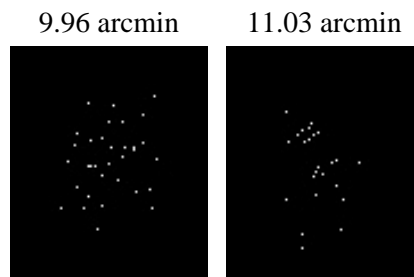


### 2.5.3 Slot 2





### 3 Point Sources



# A Summary

## A.1 Status

|                            |             |
|----------------------------|-------------|
| V&V Scientist              | Joy Nichols |
| V&V Date (YYYY-MM-DD)      | 2009.12.04  |
| V&V Edition                | 1           |
| V&V Disposition and Status | OK          |
| V&V Charge Time            | 1.779       |

## A.2 Comments

Focal plane temperature is warmer than -118.7 C degrees during the entire observation. This temperature is the upper limit of the verified ACIS calibration for the front-illuminated chips. The focal plane temperature is warmer than -116.7 degrees C for the entire observation. This temperature is the upper limit of the verified ACIS calibration for the back-illuminated chips. The ACIS spectral response calibration is less accurate at these warmer temperatures than it is at -119.7 C. Users whose science objectives depend on the most accurate spectral response (ie: fitting line-rich spectra) may notice an effect. Users whose science objectives do not depend on the most accurate spectral response should not notice an effect. This reprocessing of the data applies no CTI correction because none is available for that temperature.