

# V&V Reference Report

## L2 ASCDS Version : 8.1.2

Observation 1058 - L2 Version 2

Chandra X-Ray Center

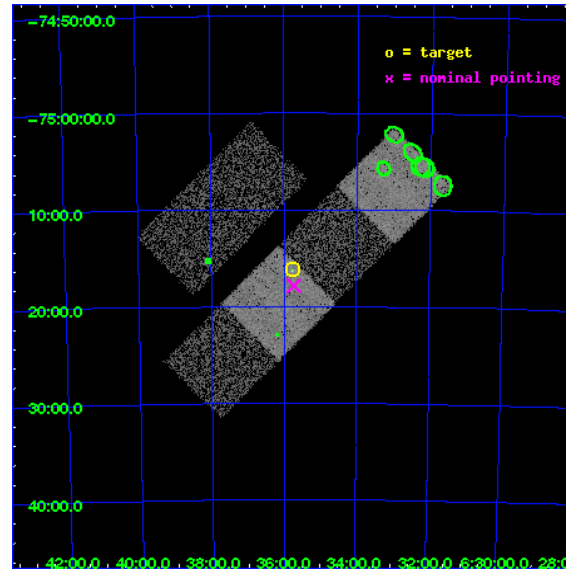
L2 Processing Date : Dec 14 2009

## Contents

|          |                               |           |
|----------|-------------------------------|-----------|
| <b>1</b> | <b>Front</b>                  | <b>2</b>  |
| <b>2</b> | <b>OBI</b>                    | <b>3</b>  |
| 2.1      | OBI . . . . .                 | 3         |
| 2.1.1    | Images . . . . .              | 3         |
| 2.1.2    | Bias . . . . .                | 3         |
| 2.1.3    | Parameters . . . . .          | 4         |
| 2.1.4    | Events . . . . .              | 4         |
| 2.2      | Compared Parameters . . . . . | 5         |
| 2.3      | Aspect . . . . .              | 6         |
| 2.4      | Star Slots . . . . .          | 9         |
| 2.4.1    | Slot 3 . . . . .              | 9         |
| 2.4.2    | Slot 4 . . . . .              | 10        |
| 2.4.3    | Slot 5 . . . . .              | 11        |
| 2.4.4    | Slot 6 . . . . .              | 12        |
| 2.5      | FID Slots . . . . .           | 13        |
| 2.5.1    | Slot 0 . . . . .              | 13        |
| 2.5.2    | Slot 1 . . . . .              | 14        |
| 2.5.3    | Slot 2 . . . . .              | 15        |
| <b>3</b> | <b>Point Sources</b>          | <b>16</b> |
| <b>A</b> | <b>Summary</b>                | <b>17</b> |
| A.1      | Status . . . . .              | 17        |
| A.2      | Comments . . . . .            | 17        |

# 1 Front

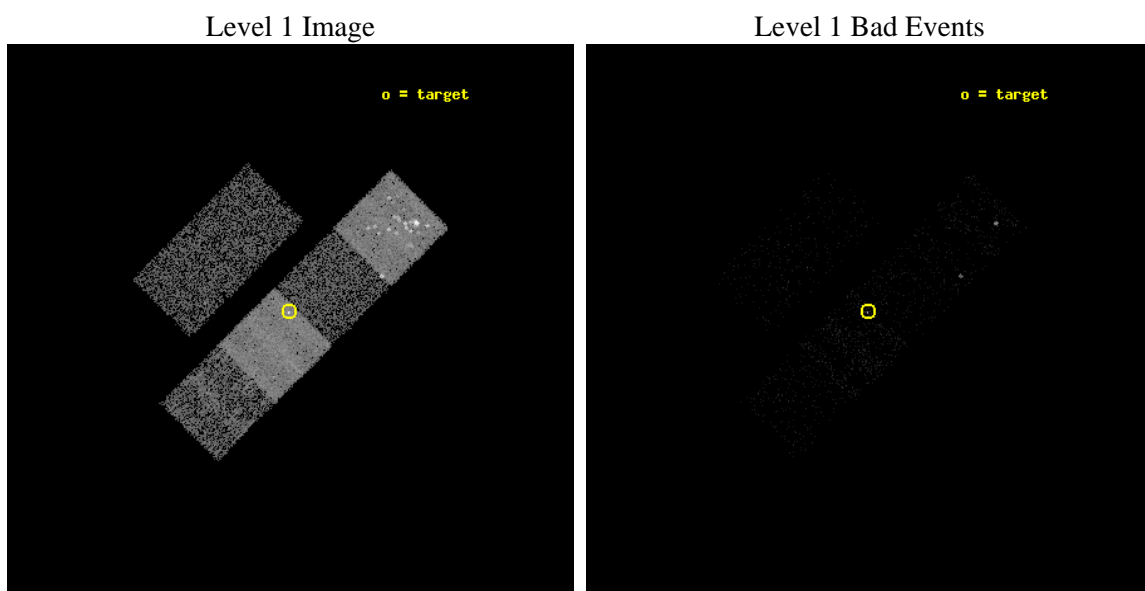
|          |                     |  |
|----------|---------------------|--|
| seq_num  | 780008              | Sequence number                          |
| obs_id   | 1058                | Observation id                           |
| title    | &#160               | Proposal title                           |
| observer | Dr. CXC Calibration | Principal investigator                   |
| object   | PKS0637-752         | Source name                              |
| dtcycle  | 0                   | &#160                                    |
| cycle    | P                   | events from which exps? Prim/Second/Both |
| ra_targ  | 98.94               | Observer's specified target RA           |
| dec_targ | -75.27              | Observer's specified target Dec          |
| ra_nom   | 98.932021081657     | Nominal RA                               |
| dec_nom  | -75.297656628892    | Nominal Dec                              |
| roll_nom | 134.95412927195     | Nominal Roll                             |
| revision | 2                   | Processing version of data               |
| ontime   | 1750.3590414226     | Sum of GTIs [s]                          |
| livetime | 1728.1949413004     | Livetime [s]                             |
| ontime2  | 1750.3590414226     | Sum of GTIs [s]                          |
| ontime3  | 1750.3590414226     | Sum of GTIs [s]                          |
| ontime5  | 1750.3590414226     | Sum of GTIs [s]                          |
| ontime6  | 1750.3590414226     | Sum of GTIs [s]                          |
| ontime7  | 1750.3590414226     | Sum of GTIs [s]                          |
| ontime8  | 1750.3590414226     | Sum of GTIs [s]                          |
| l2events | 46985               | Number of level 2 events                 |



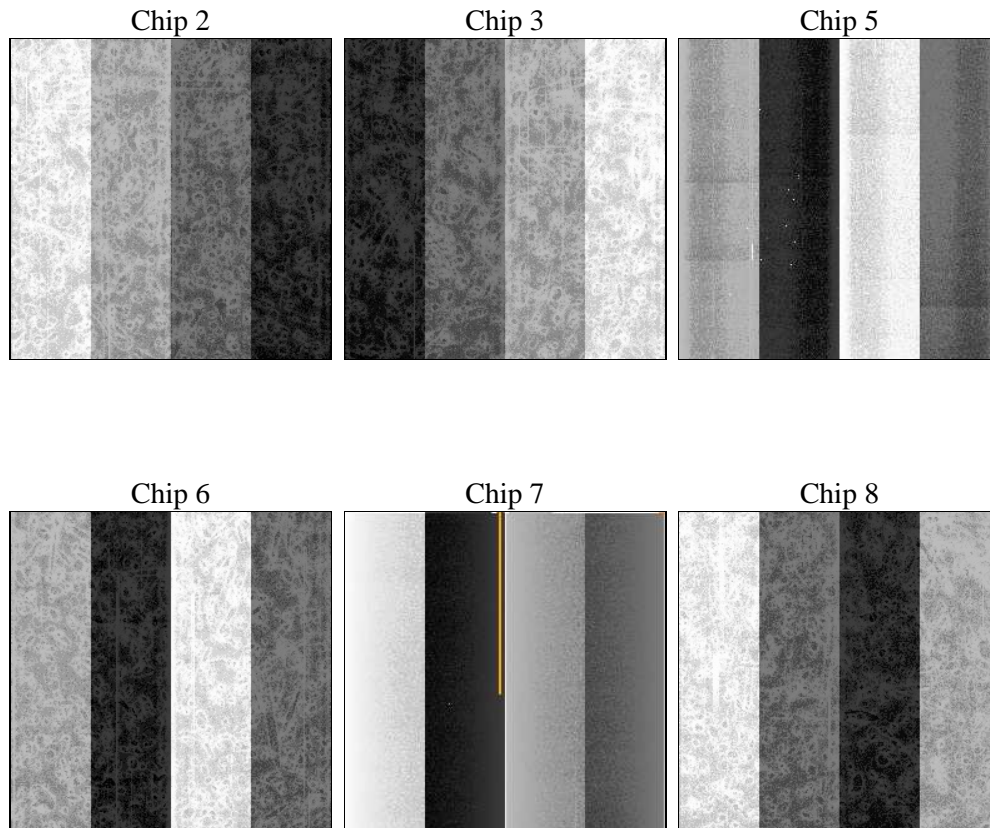
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

|          |                     |                                |                |                 |                                     |
|----------|---------------------|--------------------------------|----------------|-----------------|-------------------------------------|
| obi_num  | 0                   | Obi number                     | sched_exp_time | 2000.000000     | Scheduled observation exposure time |
| ascdsver | 8.1.2               | ASCDS version number           | ontime         | 1750.3590414226 | Sum of GTIs [s]                     |
| caldsver | 4.1.4               | &#160                          | ontime2        | 1750.3590414226 | Sum of GTIs [s]                     |
| date     | 2009-12-14T07:31:31 | Date and time of file creation | ontime3        | 1750.3590414226 | Sum of GTIs [s]                     |
| revision | 3                   | Processing version of data     | ontime5        | 1750.3590414226 | Sum of GTIs [s]                     |
|          |                     |                                | ontime6        | 1750.3590414226 | Sum of GTIs [s]                     |
|          |                     |                                | ontime7        | 1750.3590414226 | Sum of GTIs [s]                     |
|          |                     |                                | ontime8        | 1750.3590414226 | Sum of GTIs [s]                     |
|          |                     |                                | l1events       | 66664           | Number of level 1 events            |

### 2.1.4 Events

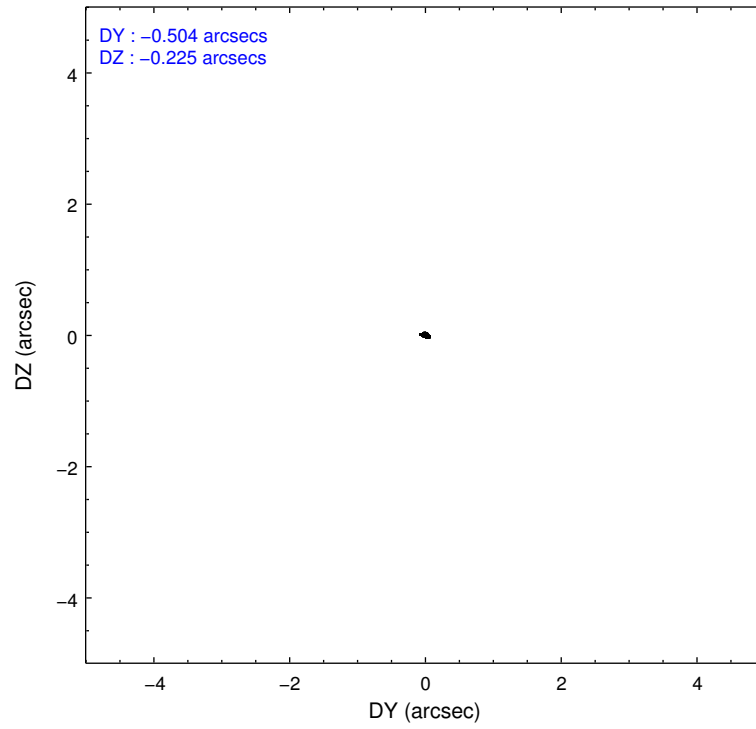
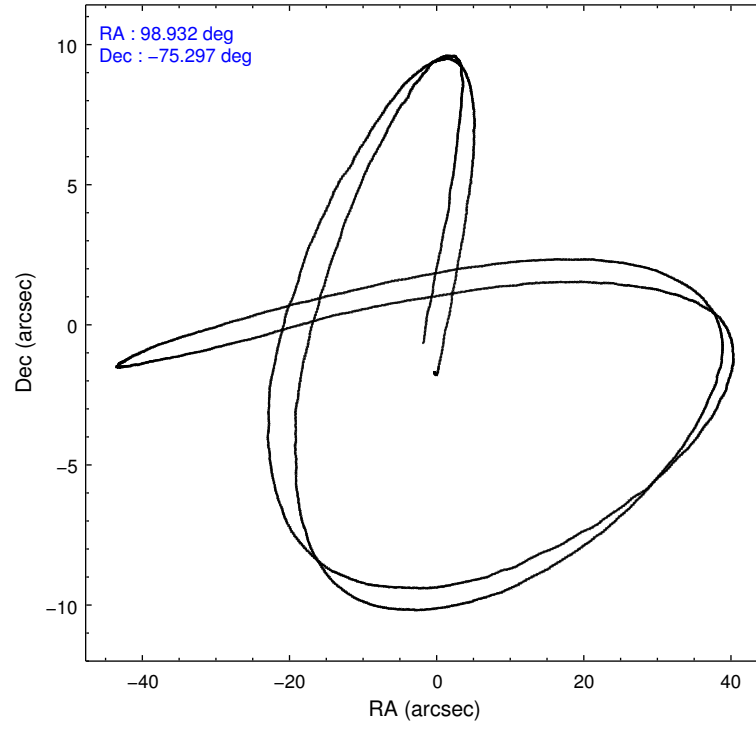
|                 | ccd 2 | ccd 3 | ccd 5 | ccd 6 | ccd 7 | ccd 8 |
|-----------------|-------|-------|-------|-------|-------|-------|
| level 1 events  | 4165  | 4317  | 26281 | 4864  | 20609 | 6428  |
| rejected events | 1092  | 1226  | 1785  | 1348  | 2475  | 1382  |
| rejected %      | 26%   | 28%   | 6%    | 27%   | 12%   | 21%   |

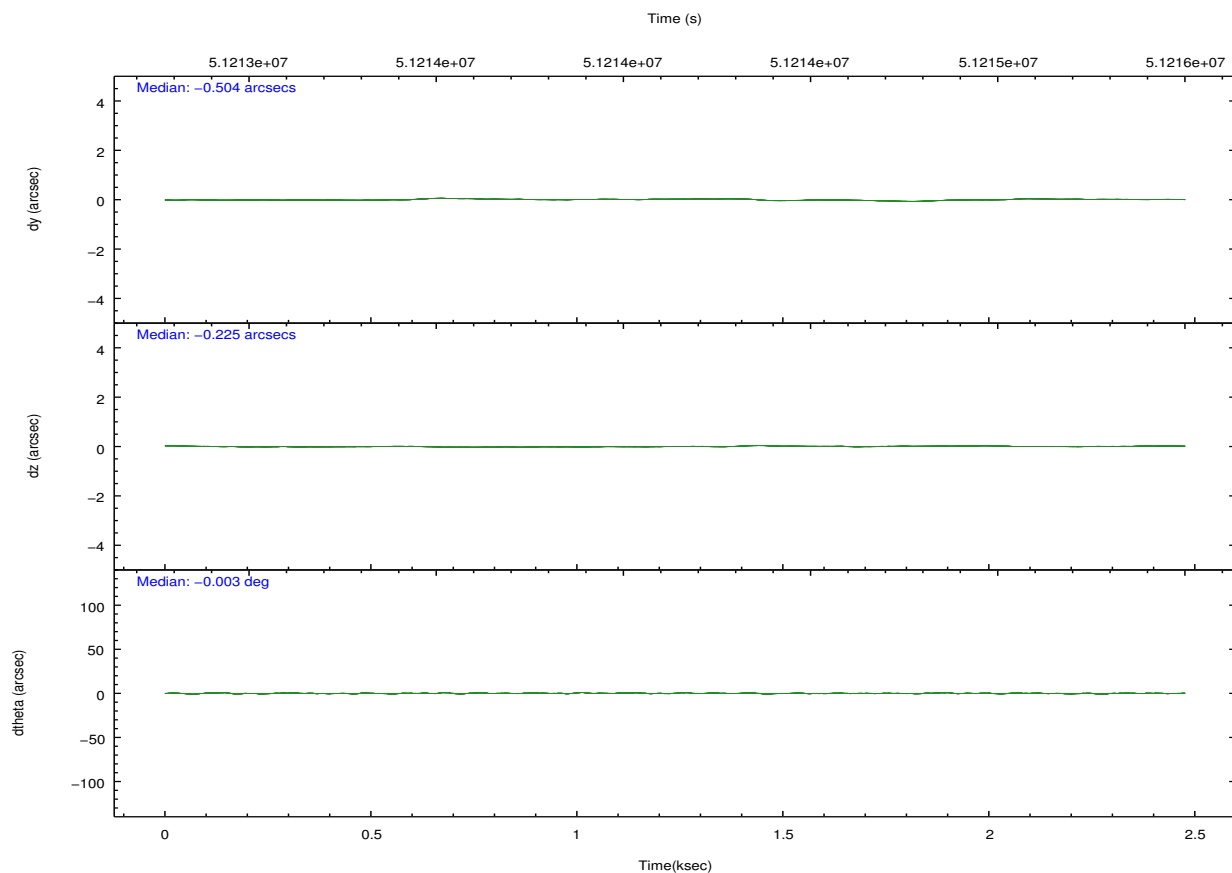
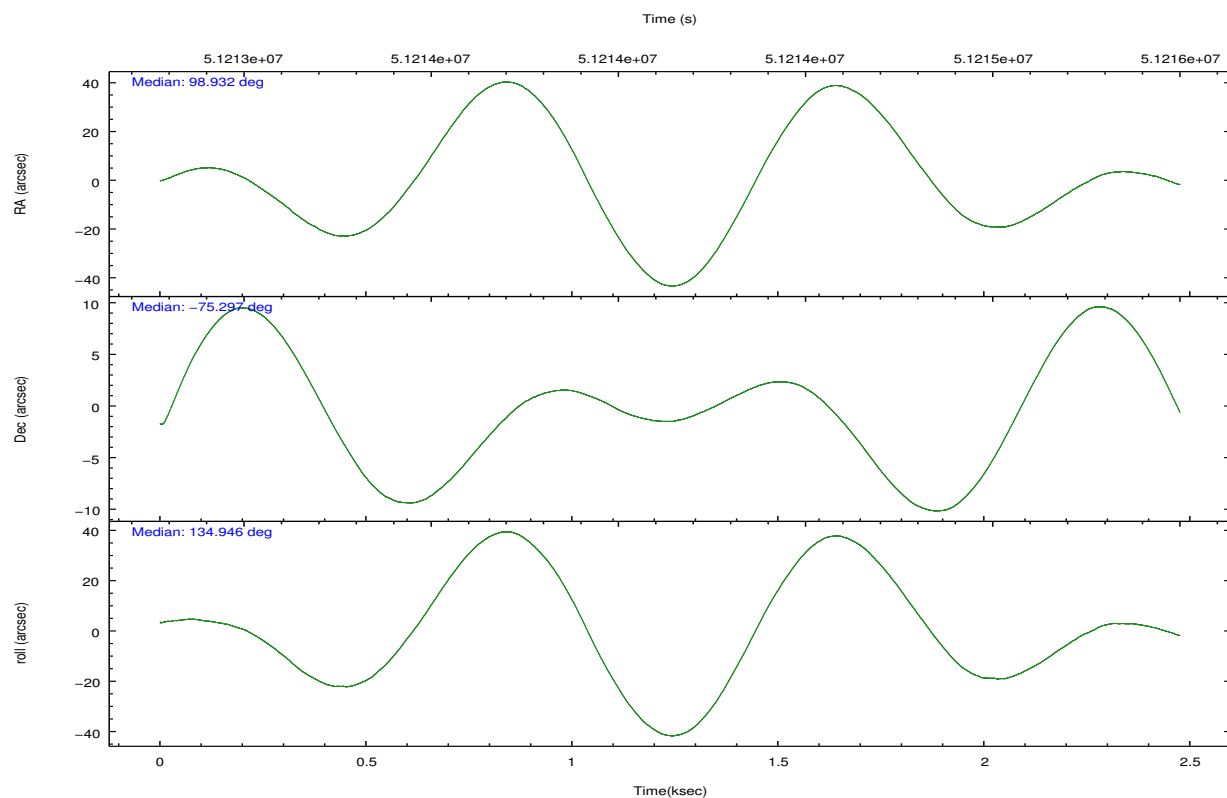
|                | ccd 2 | ccd 3 | ccd 5 | ccd 6 | ccd 7 | ccd 8 |
|----------------|-------|-------|-------|-------|-------|-------|
| grade 0 events | 849   | 822   | 6414  | 977   | 1229  | 1263  |
|                | 20%   | 19%   | 24%   | 20%   | 5%    | 19%   |
| grade 1 events | 10    | 6     | 54    | 6     | 40    | 20    |
|                | 0%    | 0%    | 0%    | 0%    | 0%    | 0%    |
| grade 2 events | 658   | 632   | 3535  | 729   | 2461  | 1311  |
|                | 15%   | 14%   | 13%   | 14%   | 11%   | 20%   |
| grade 3 events | 264   | 289   | 1216  | 304   | 1375  | 413   |
|                | 6%    | 6%    | 4%    | 6%    | 6%    | 6%    |
| grade 4 events | 237   | 295   | 1053  | 265   | 1203  | 418   |
|                | 5%    | 6%    | 4%    | 5%    | 5%    | 6%    |
| grade 5 events | 1070  | 1207  | 1469  | 1328  | 2382  | 1353  |
|                | 25%   | 27%   | 5%    | 27%   | 11%   | 21%   |
| grade 6 events | 1077  | 1066  | 12341 | 1255  | 11916 | 1650  |
|                | 25%   | 24%   | 46%   | 25%   | 57%   | 25%   |
| grade 7 events | 0     | 0     | 199   | 0     | 3     | 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-235678         | ACIS-235678           | Obspar file type                      | PREDICTED | ACTUAL  |
| Grating                           | NONE                | NONE                  | Obspar update status                  | NONE      | UPDATED |
| Observation mode                  | POINTING            | POINTING              | Number of optional ACIS chips dropped | 0         | 0       |
| Pointing RA                       | 99.037074           | 98.93202108165741     | On-chip summing requested             | N         | N       |
| Pointing Dec                      | -75.305641          | -75.29765662889199    | Subarray requested                    | NONE      | NONE    |
| Pointing Roll                     | 134.899123          | 134.9541292719547     | Alternating exposures requested       | N         | N       |
| SIM focus pos (mm)                | -1.180069           | -1.346558362777969    | Primary exposure time                 | 0.000000  | 3.2     |
| SIM defocus (mm)                  | -0.495802           | -0.6622909014780725   |                                       |           |         |
| SIM translation stage pos (mm)    | -190.132523         | -190.1325231039672    |                                       |           |         |
| SIM translation stage offset (mm) | 0                   | 5.209593894051068e-07 |                                       |           |         |
| Observation start time            | 51213387.184000     | 51212723.956371       |                                       |           |         |
| Observation start date            | 1999-08-16T17:55:23 | 1999-08-16T17:45:23   |                                       |           |         |
| Observation end time              | 51215387.184000     | 51215503.756469       |                                       |           |         |
| Observation end date              | 1999-08-16T18:28:43 | 1999-08-16T18:31:43   |                                       |           |         |
| Read mode                         | TIMED               | TIMED                 |                                       |           |         |

## 2.3 Aspect





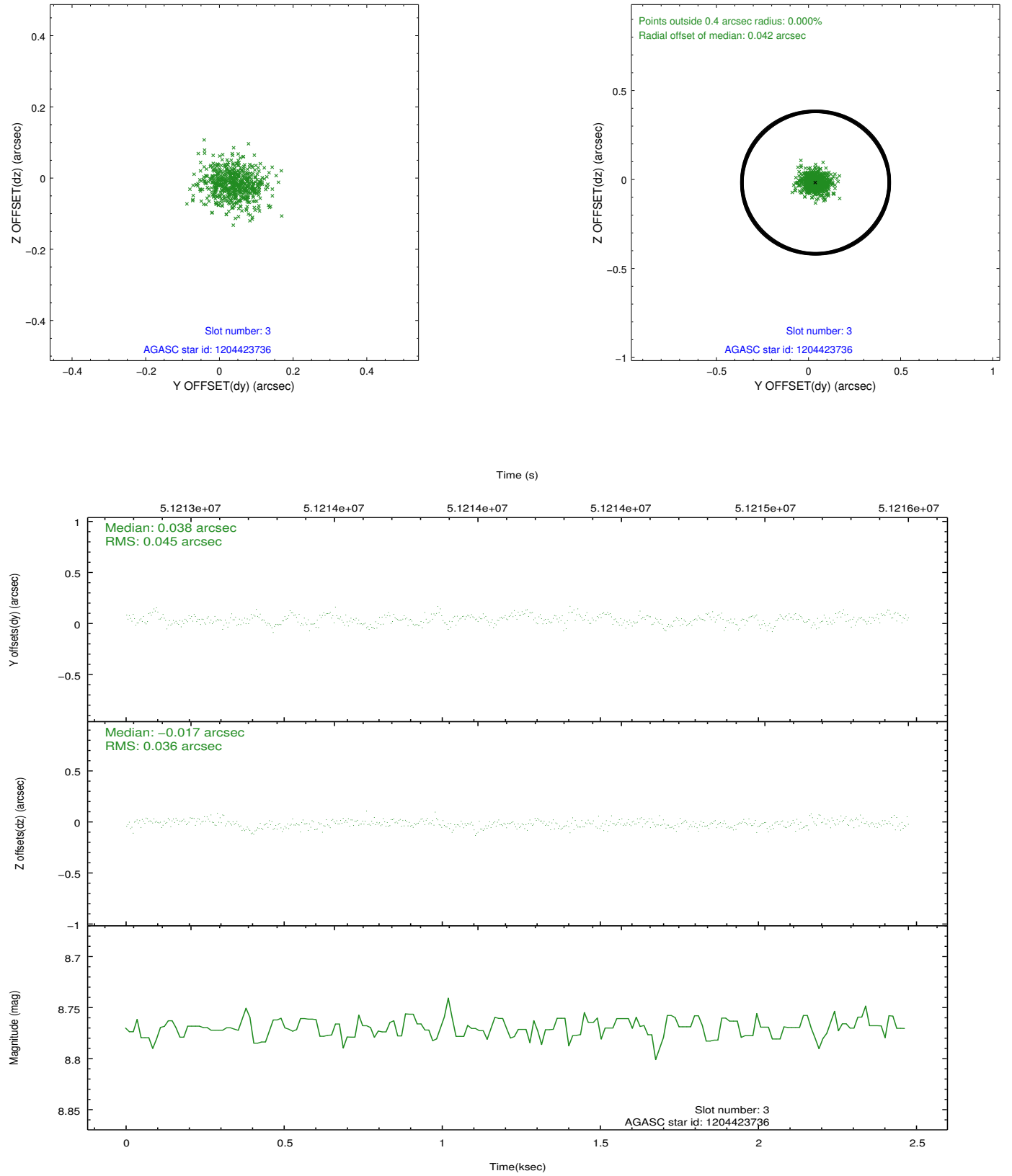
Slot Statistics

| slot | status | id         | mag  | n_pts | med_dy | med_dz | dr1   | dr2   | ra         | dec        | mean_y   | mean_z   |
|------|--------|------------|------|-------|--------|--------|-------|-------|------------|------------|----------|----------|
| 0    | FID    | ACIS-S-2   | 7.13 | 603   | -0.024 | -0.036 | 0.006 | 0.011 | 0.000000   | 0.000000   | -752.06  | -1720.80 |
| 1    | FID    | ACIS-S-4   | 7.21 | 603   | 0.154  | 0.022  | 0.006 | 0.011 | 0.000000   | 0.000000   | 2160.08  | 184.85   |
| 2    | FID    | ACIS-S-5   | 7.25 | 603   | -0.161 | 0.024  | 0.007 | 0.011 | 0.000000   | 0.000000   | -1801.54 | 181.61   |
| 3    | GUIDE  | 1204423736 | 8.77 | 603   | 0.038  | -0.017 | 0.061 | 0.101 | 99.272017  | -74.796122 | 1140.77  | -1449.89 |
| 4    | GUIDE  | 1204423512 | 8.97 | 602   | -0.064 | 0.020  | 0.101 | 0.157 | 100.368786 | -74.674048 | 706.44   | -2493.21 |
| 5    | GUIDE  | 1229331616 | 9.91 | 602   | 0.012  | 0.041  | 0.118 | 0.186 | 96.182998  | -75.347362 | 1682.17  | 1988.25  |
| 6    | GUIDE  | 1229333040 | 9.77 | 601   | 0.006  | -0.044 | 0.109 | 0.178 | 99.562583  | -75.788185 | -1559.06 | 903.27   |
| 7    | UNUSED |            | 0.00 | 0     | 0.000  | 0.000  | 0.000 | 0.000 | 0.000000   | 0.000000   | 0.00     | 0.00     |

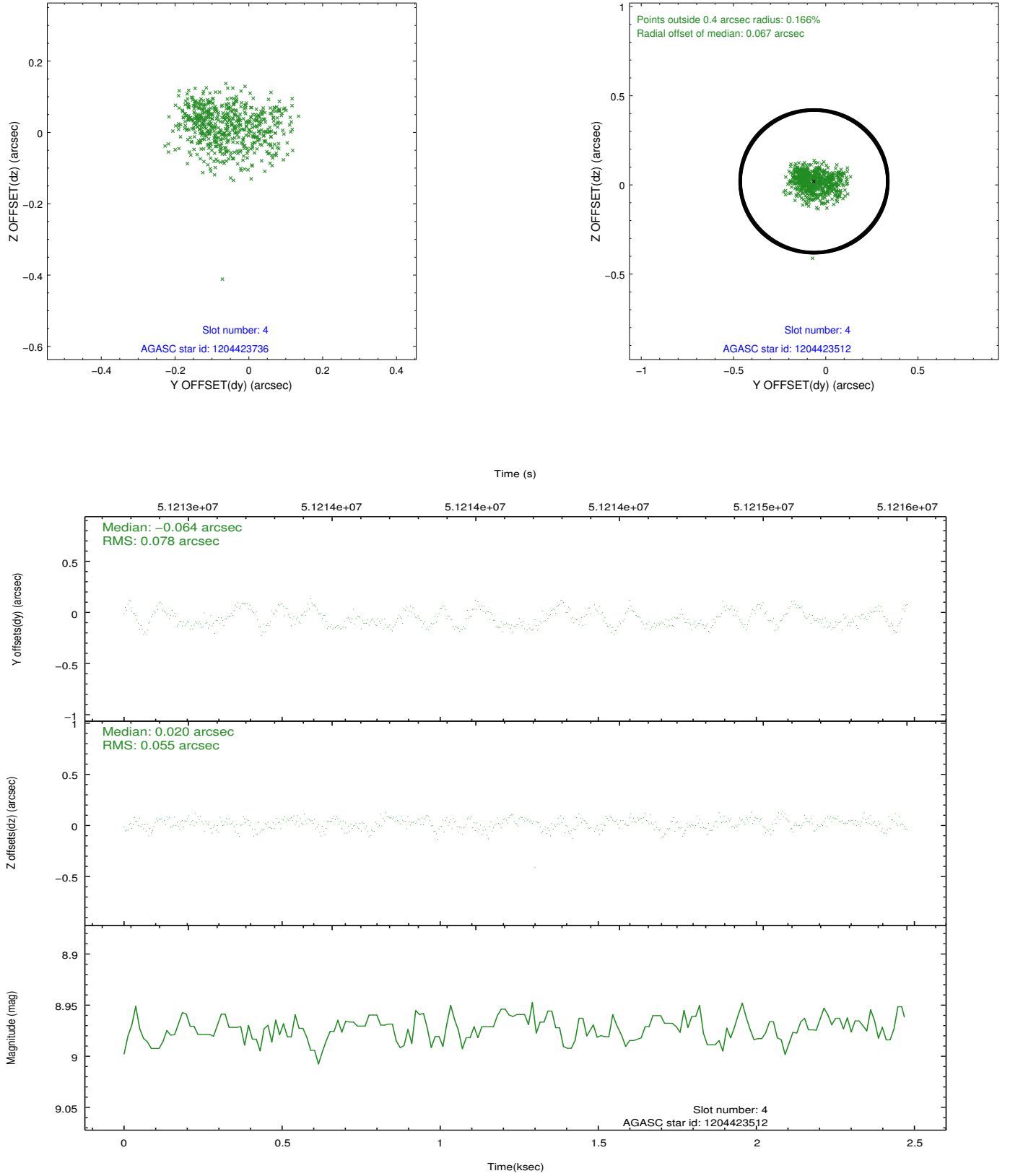


## 2.4 Star Slots

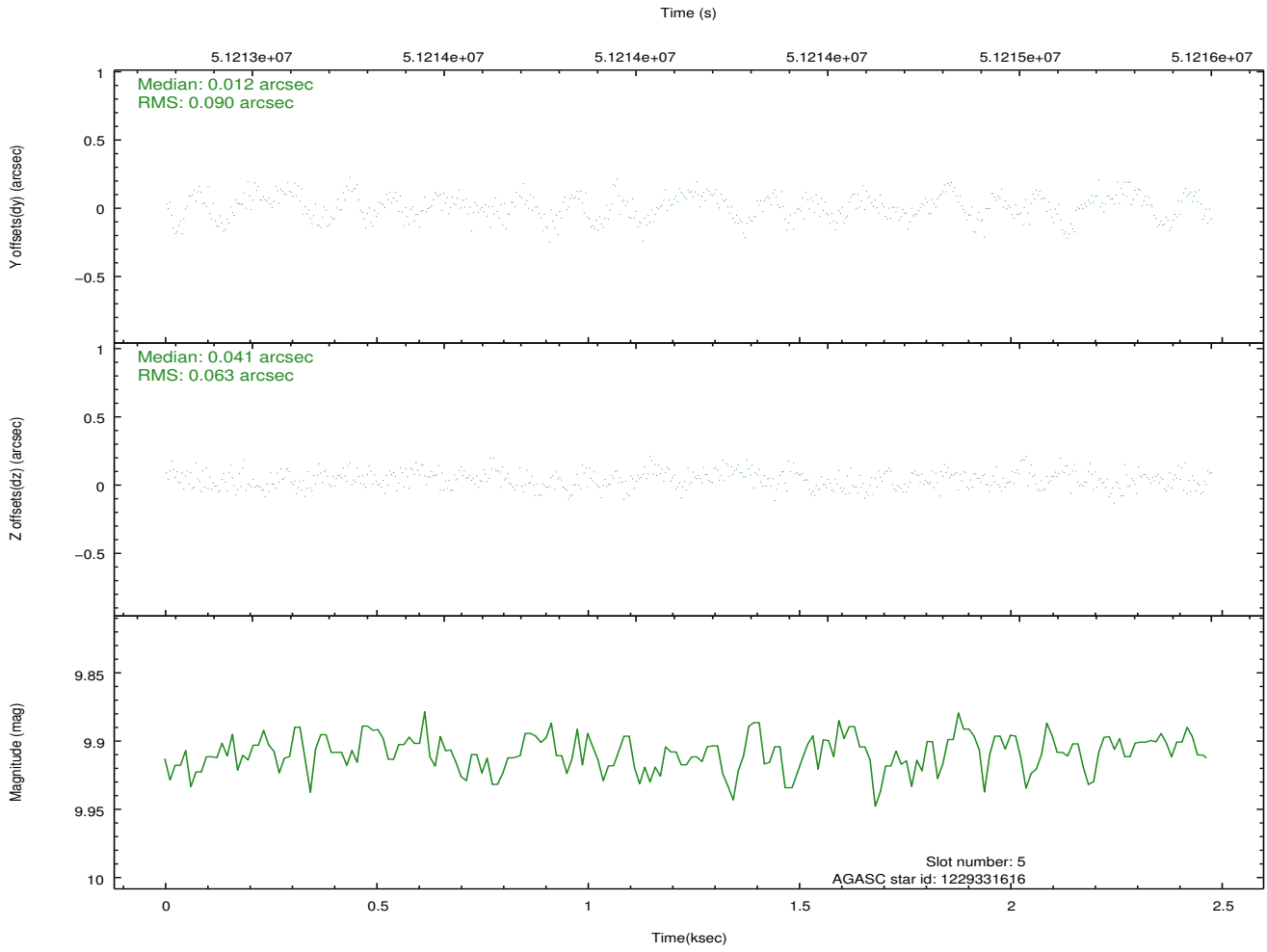
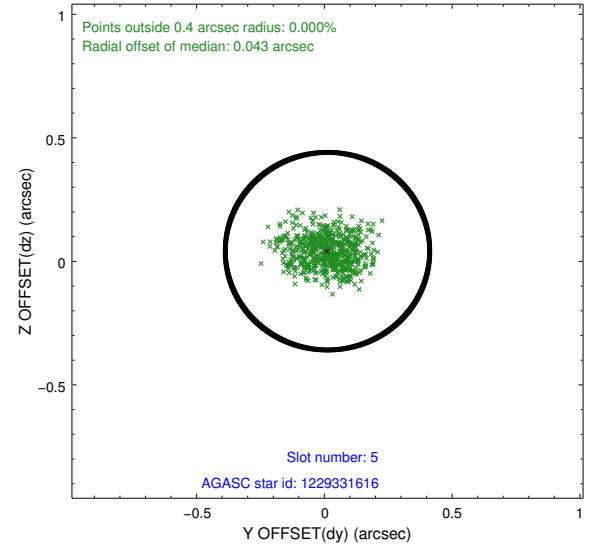
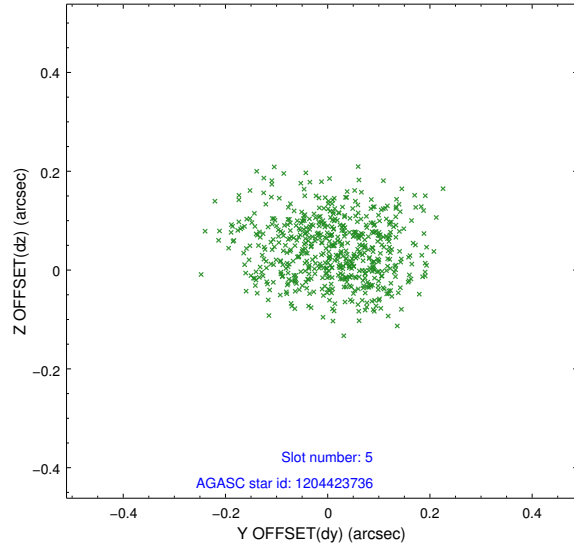
### 2.4.1 Slot 3



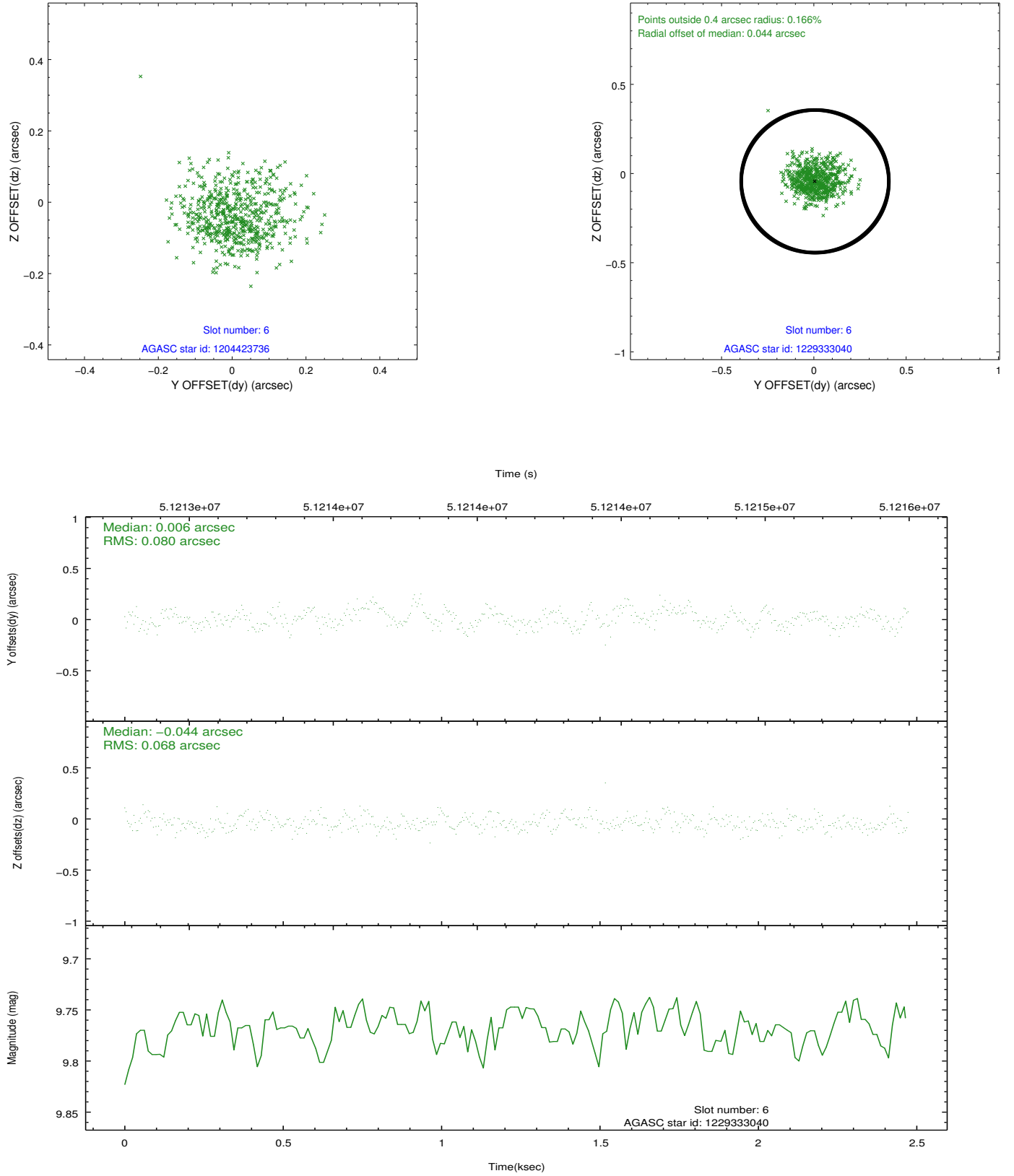
## 2.4.2 Slot 4



### 2.4.3 Slot 5

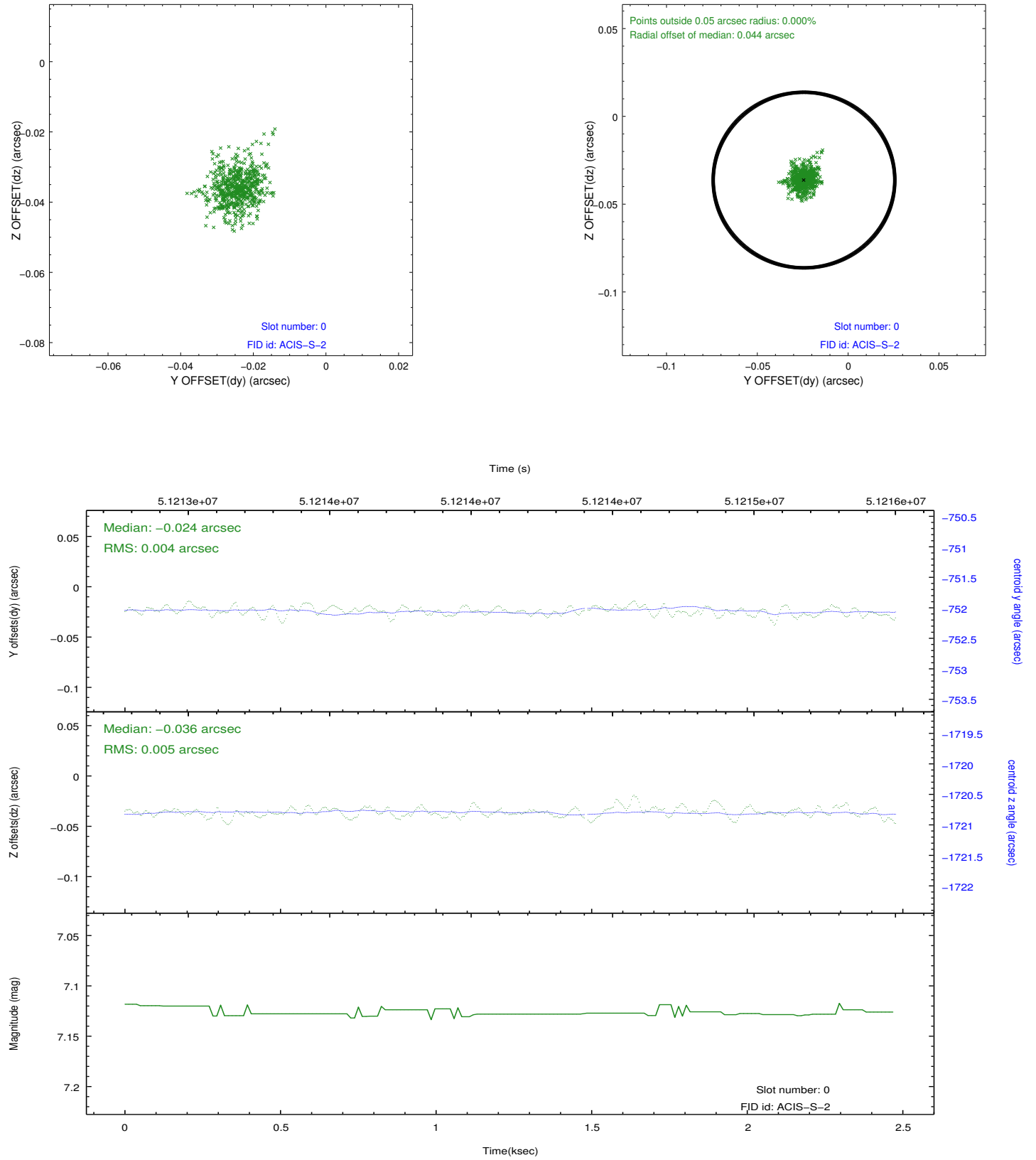


## 2.4.4 Slot 6

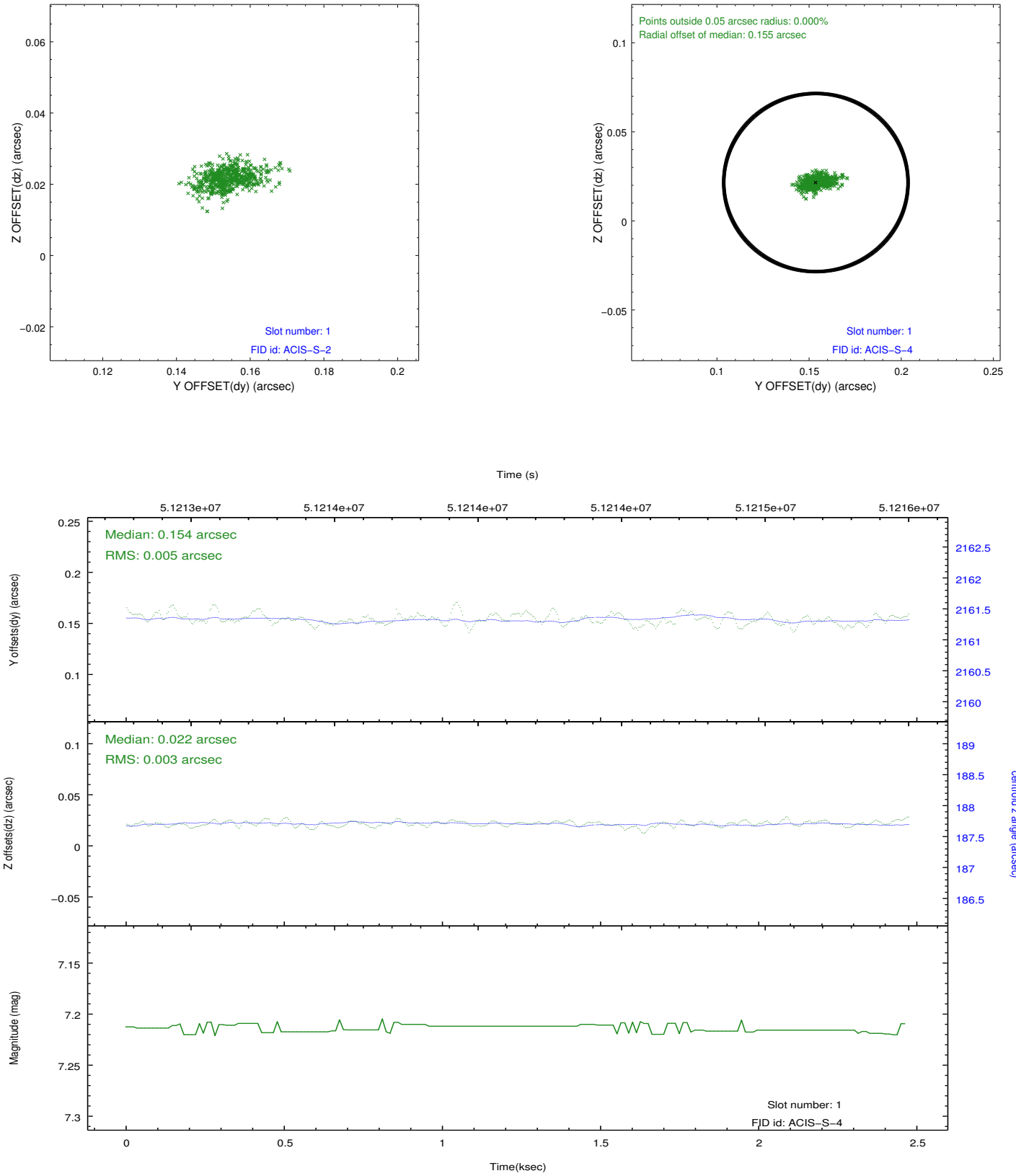


## 2.5 FID Slots

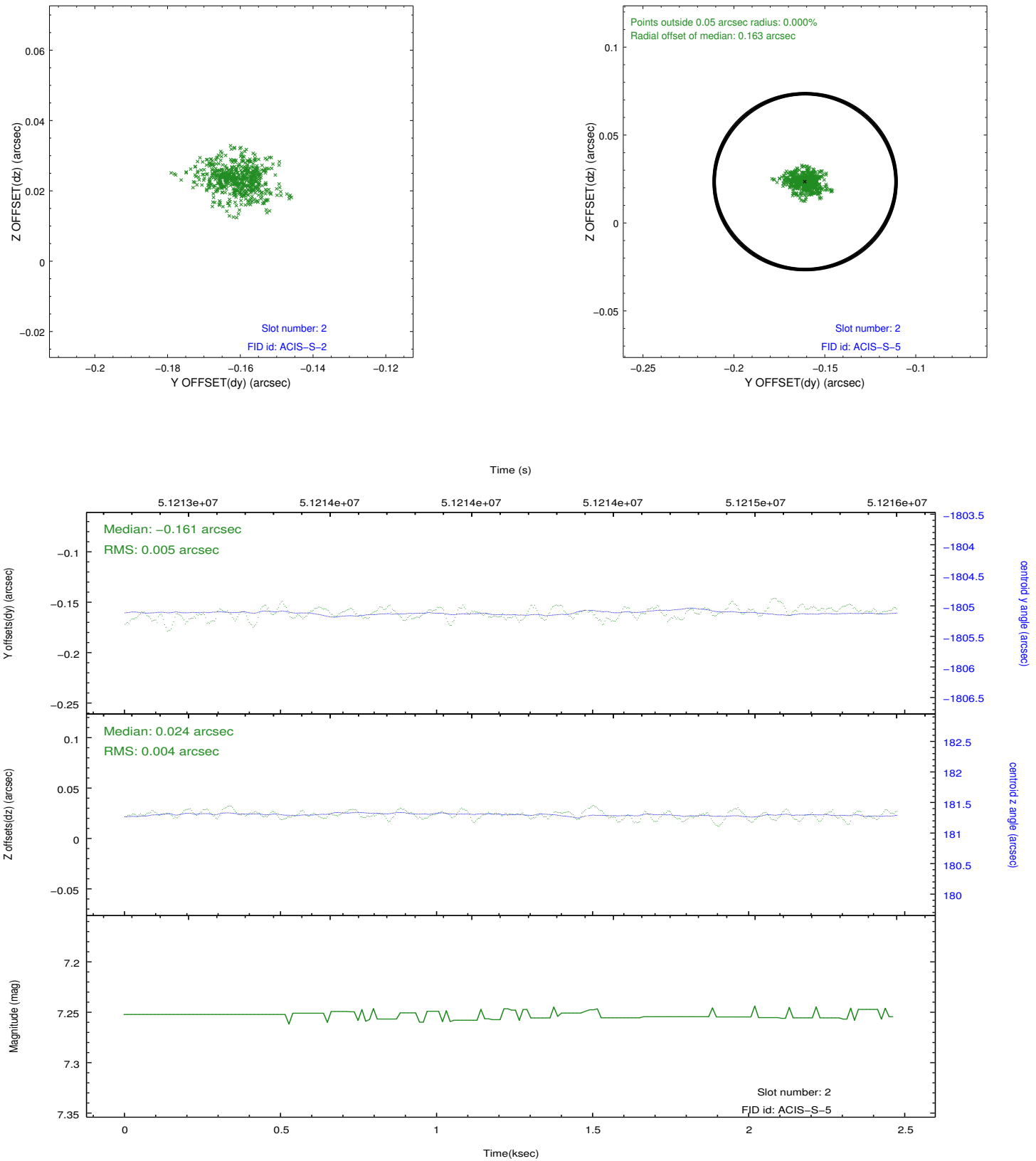
### 2.5.1 Slot 0



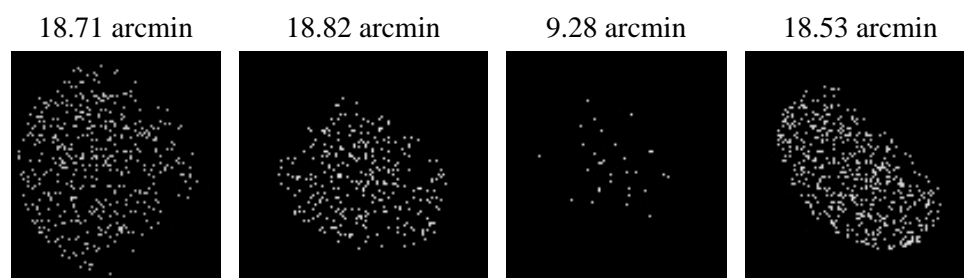
## 2.5.2 Slot 1



### 2.5.3 Slot 2



### 3 Point Sources





# A Summary

## A.1 Status

|                            |             |
|----------------------------|-------------|
| V&V Scientist              | Joy Nichols |
| V&V Date (YYYY-MM-DD)      | 2010.05.19  |
| V&V Edition                | 1           |
| V&V Disposition and Status | OK          |
| V&V Charge Time            | 1.753       |

## A.2 Comments

Crude Optical Axis Determination.

===

Charge time for this ObsId remains at previous value of 1.753 ksec, although with the current processing the charge time would have been 1.750 ksec.

==

Guide star in slot 7 not acquired.

===

The focal plane temperature is approximately -100 C during this observation. This reprocessing of the data applies no CTI correction because none is available for this temperature at present.

The ACIS CTI correction has not been calibrated at this temperature, because it was early in the mission, and ACIS had not yet been lowered to the standard -119.7 C. Both front and back illuminated chips are affected. However a T\_GAIN correction has been applied to the BI chips (ACIS-5 and ACIS-7) data included here.

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.