

# V&V Reference Report

## L2 ASCDS Version : 8.4.3

Observation 12528 - L2 Version 3  
Chandra X-Ray Center

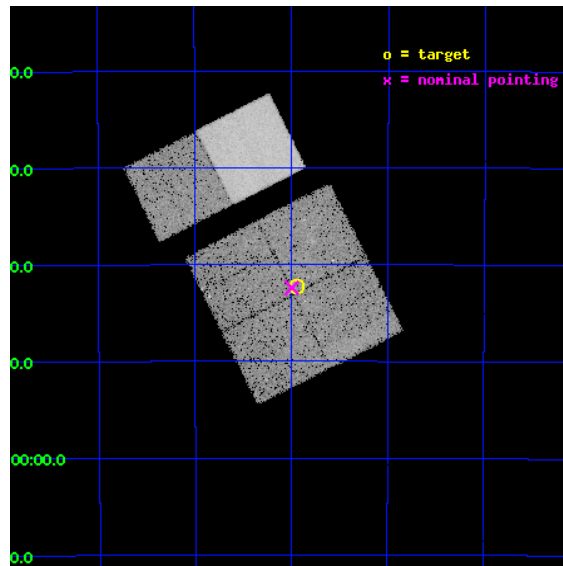
L2 Processing Date : Feb 12 2012

## 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        |
| 2.4.5    | Slot 7 . . . . .              | 13        |
| 2.5      | FID Slots . . . . .           | 14        |
| 2.5.1    | Slot 0 . . . . .              | 14        |
| 2.5.2    | Slot 1 . . . . .              | 15        |
| 2.5.3    | Slot 2 . . . . .              | 16        |
| <b>A</b> | <b>Summary</b>                | <b>17</b> |
| A.1      | Status . . . . .              | 17        |
| A.2      | Comments . . . . .            | 17        |

# 1 Front

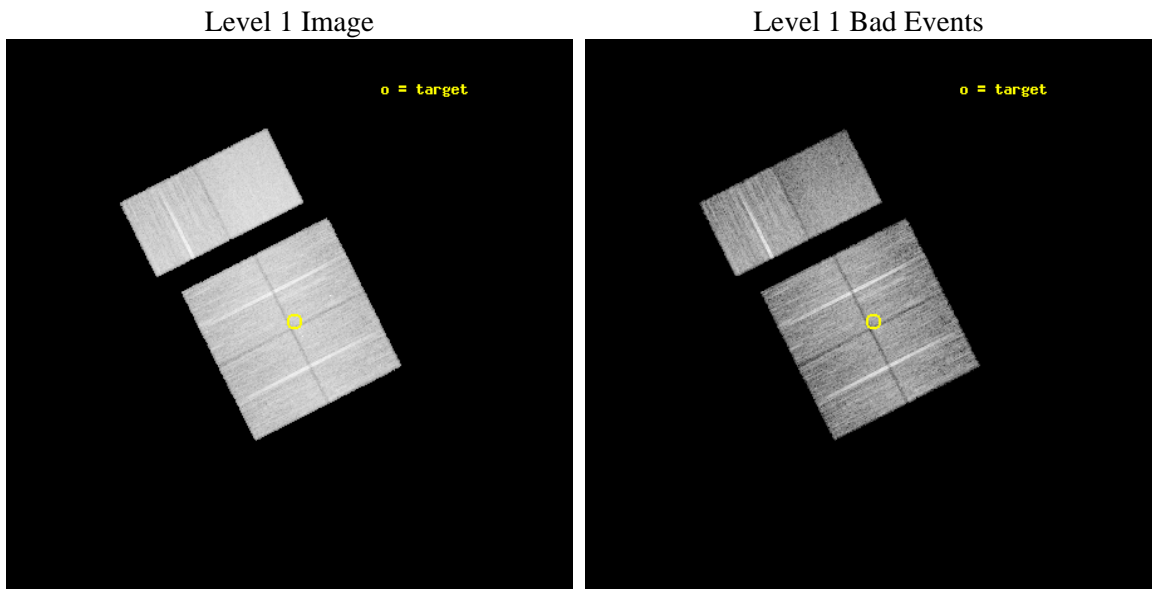
|          |  |   |
|----------|--|---|
| seq_num  | 401269                                 | Sequence number                             |
| obs_id   | 12528                                  | Observation id                              |
| title    | Census of the Normal Spiral Arm Region | Proposal title                              |
| observer | Dr. John Tomsick                       | Principal investigator                      |
| object   | Norma Region                           | Source name                                 |
| dtcycle  | 0                                      | &#160                                       |
| cycle    | P                                      | events from which exps?<br>Prim/Second/Both |
| ra_targ  | 248.986943                             | Observer's specified target RA [deg]        |
| dec_targ | -47.705685                             | Observer's specified target Dec [deg]       |
| ra_nom   | 248.99883069273                        | Nominal RA [deg]                            |
| dec_nom  | -47.707016332626                       | Nominal Dec [deg]                           |
| roll_nom | 333.21748244034                        | Nominal Roll [deg]                          |
| revision | 3                                      | Processing version of data                  |
| ontime   | 19254.399928331                        | Sum of GTIs [s]                             |
| livetime | 19010.589122831                        | Livetime [s]                                |
| ontime0  | 19251.097621322                        | Sum of GTIs [s]                             |
| ontime1  | 19254.379701674                        | Sum of GTIs [s]                             |
| ontime2  | 19251.158887982                        | Sum of GTIs [s]                             |
| ontime3  | 19254.399928331                        | Sum of GTIs [s]                             |
| ontime6  | 19247.917817295                        | Sum of GTIs [s]                             |
| ontime7  | 19254.399928331                        | Sum of GTIs [s]                             |
| l2events | 132348                                 | Number of level 2 events                    |



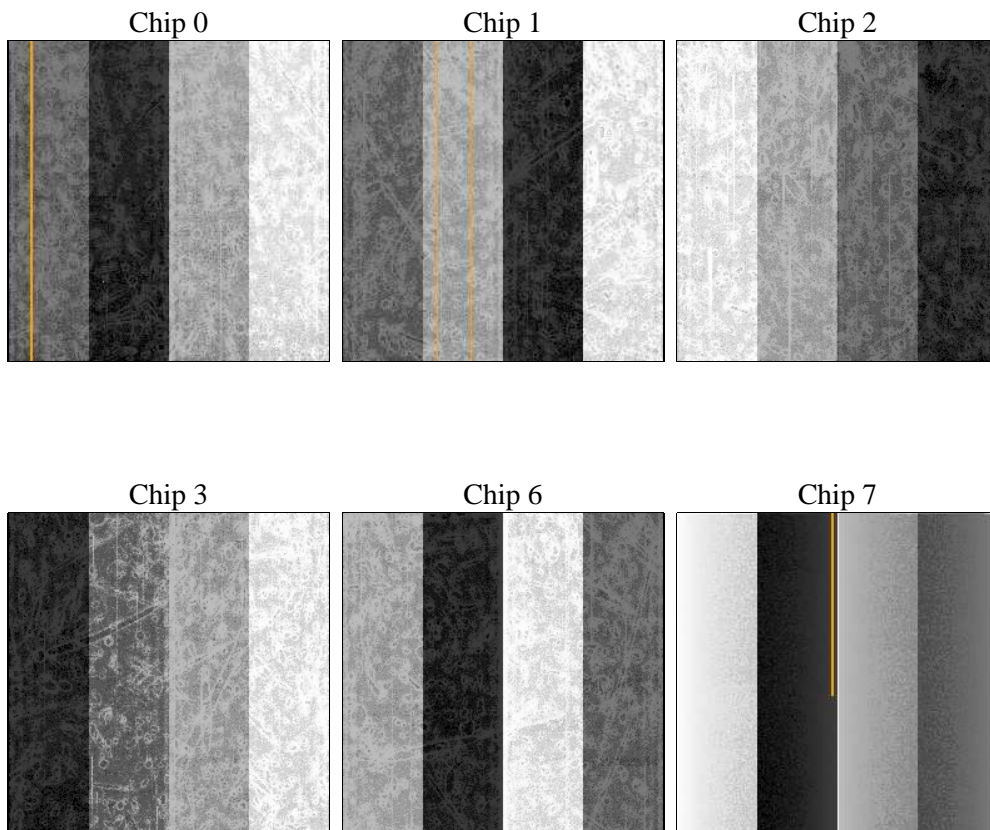
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

|          |                     |                                |                |                 |   |
|----------|---------------------|--------------------------------|----------------|-----------------|---|
| obi_num  | 0                   | Obi number                     | sched_exp_time | 19500.000000    | [s] Scheduled observation exposure time |
| ascdsver | 8.4.3               | Processing system revision     | ontime         | 19254.399928331 | Sum of GTIs [s]                         |
| caldbver | 4.4.7               | &#160                          | ontime0        | 19251.097621322 | Sum of GTIs [s]                         |
| date     | 2012-02-12T11:21:53 | Date and time of file creation | ontime1        | 19254.379701674 | Sum of GTIs [s]                         |
| revision | 3                   | Processing version of data     | ontime2        | 19251.158887982 | Sum of GTIs [s]                         |
|          |                     |                                | ontime3        | 19254.399928331 | Sum of GTIs [s]                         |
|          |                     |                                | ontime6        | 19247.917817295 | Sum of GTIs [s]                         |
|          |                     |                                | ontime7        | 19254.399928331 | Sum of GTIs [s]                         |
|          |                     |                                | l1events       | 741800          | Number of level 1 events                |

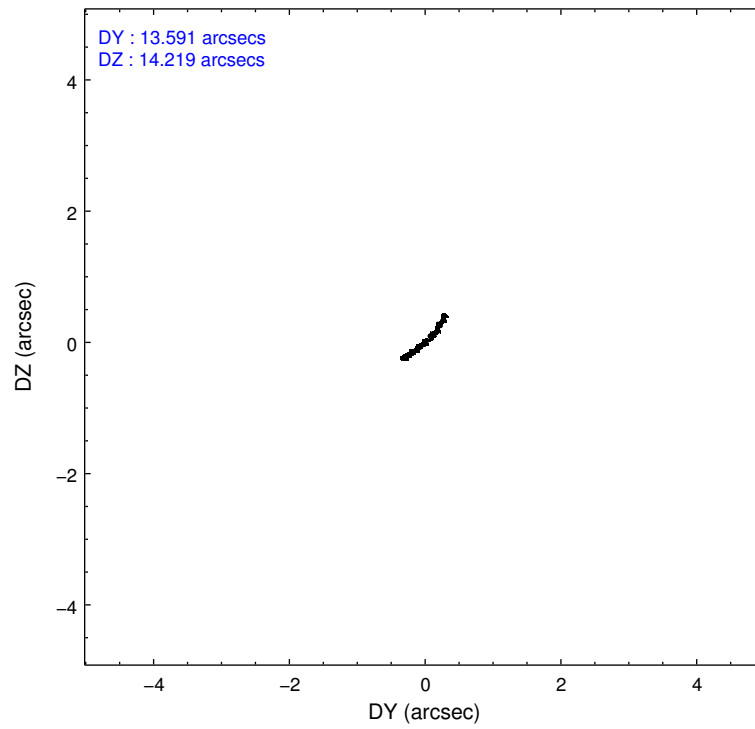
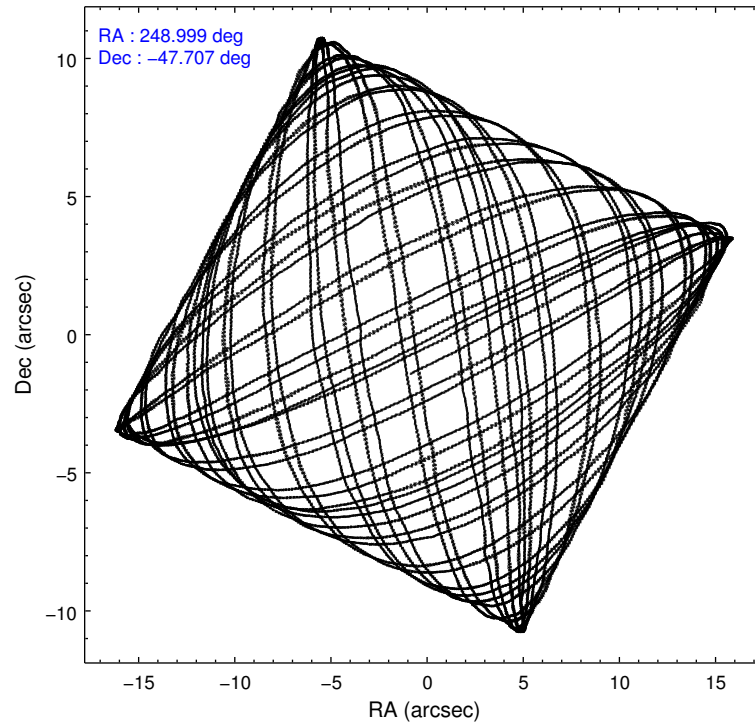
### 2.1.4 Events

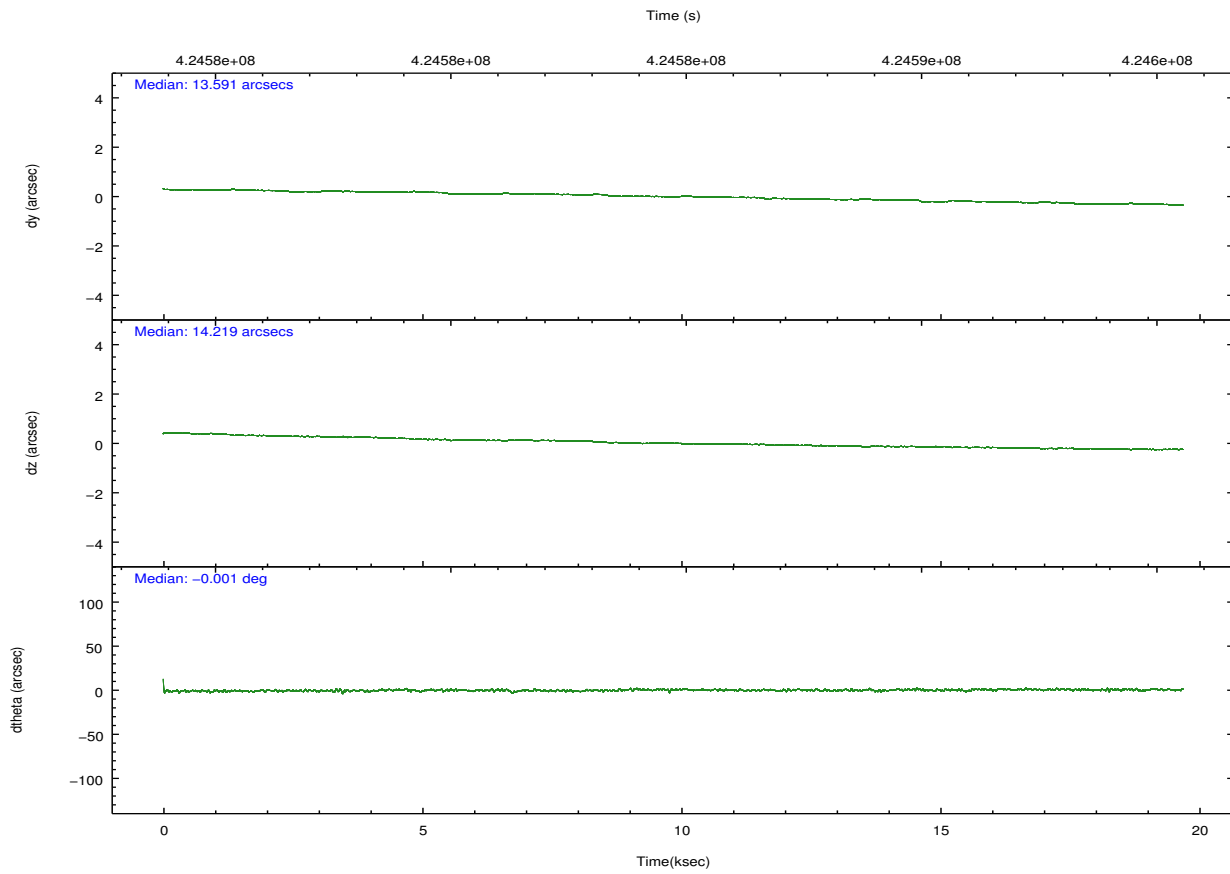
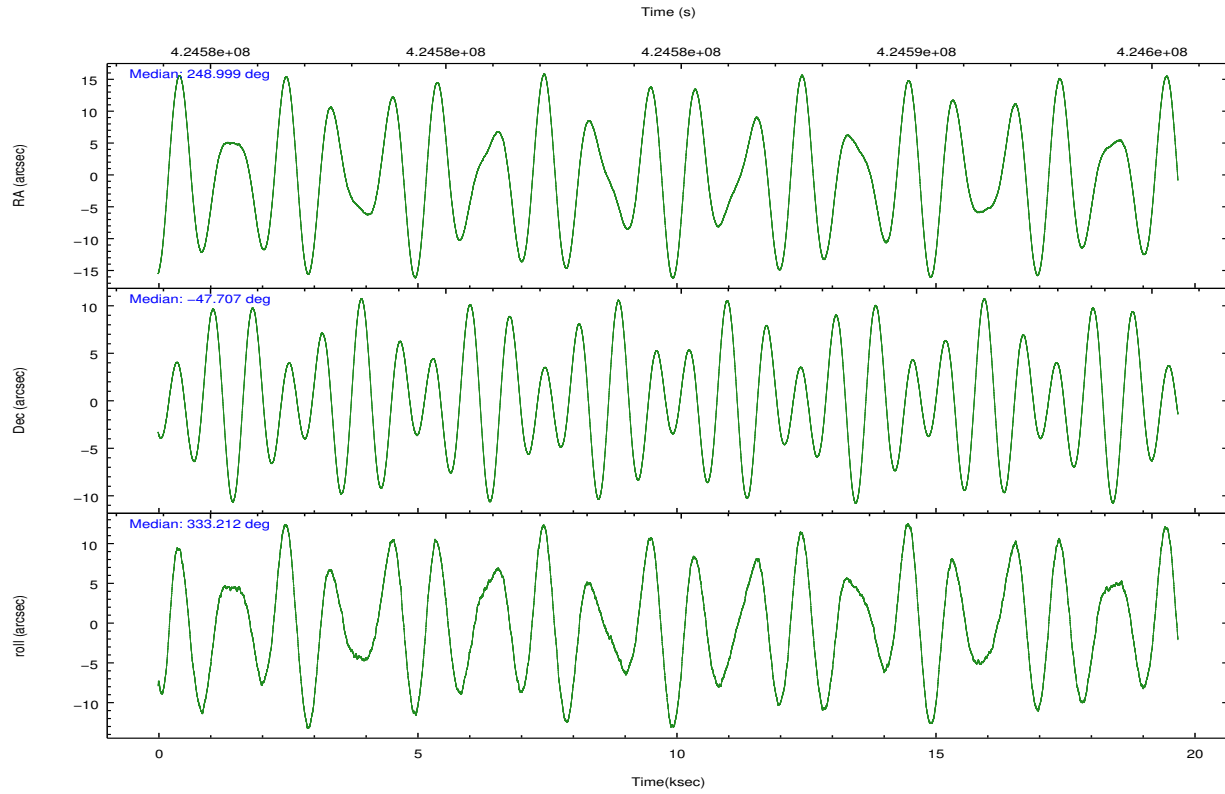
|                 | ccd 0  | ccd 1  | ccd 2  | ccd 3  | ccd 6  | ccd 7  |                | ccd 0 | ccd 1 | ccd 2  | ccd 3 | ccd 6  | ccd 7 |
|-----------------|--------|--------|--------|--------|--------|--------|----------------|-------|-------|--------|-------|--------|-------|
| level 1 events  | 108374 | 111837 | 120662 | 117908 | 127348 | 155671 | grade 0 events | 5681  | 6473  | 5693   | 5900  | 5447   | 6562  |
| rejected events | 93580  | 95442  | 105988 | 103381 | 112291 | 85639  |                | 5%    | 5%    | 4%     | 5%    | 4%     | 4%    |
| rejected %      | 86%    | 85%    | 87%    | 87%    | 88%    | 55%    | grade 1 events | 66    | 79    | 80     | 84    | 77     | 166   |
|                 |        |        |        |        |        |        |                | 0%    | 0%    | 0%     | 0%    | 0%     | 0%    |
|                 |        |        |        |        |        |        | grade 2 events | 3441  | 3799  | 3408   | 3027  | 3392   | 14403 |
|                 |        |        |        |        |        |        |                | 3%    | 3%    | 2%     | 2%    | 2%     | 9%    |
|                 |        |        |        |        |        |        | grade 3 events | 1525  | 1468  | 1403   | 1419  | 1455   | 6285  |
|                 |        |        |        |        |        |        |                | 1%    | 1%    | 1%     | 1%    | 1%     | 4%    |
|                 |        |        |        |        |        |        | grade 4 events | 1348  | 1544  | 1478   | 1451  | 1489   | 6307  |
|                 |        |        |        |        |        |        |                | 1%    | 1%    | 1%     | 1%    | 1%     | 4%    |
|                 |        |        |        |        |        |        | grade 5 events | 4954  | 5547  | 4807   | 5749  | 5962   | 16088 |
|                 |        |        |        |        |        |        |                | 4%    | 4%    | 3%     | 4%    | 4%     | 10%   |
|                 |        |        |        |        |        |        | grade 6 events | 2802  | 3114  | 2695   | 2735  | 3278   | 36483 |
|                 |        |        |        |        |        |        |                | 2%    | 2%    | 2%     | 2%    | 2%     | 23%   |
|                 |        |        |        |        |        |        | grade 7 events | 88557 | 89813 | 101098 | 97543 | 106248 | 69377 |
|                 |        |        |        |        |        |        |                | 81%   | 80%   | 83%    | 82%   | 83%    | 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                         | VFAINT              | VFAINT                | CCD I0 on                             | Y         | Y       |
| Observation mode                  | POINTING            | POINTING              | CCD I1 on                             | Y         | Y       |
| [deg] Pointing RA                 | 248.957988          | 248.998830692735      | CCD I2 on                             | Y         | Y       |
| [deg] Pointing Dec                | -47.708669          | -47.70701633262566    | CCD I3 on                             | Y         | Y       |
| [deg] Pointing Roll               | 332.978581          | 333.217482440344      | 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                             | O2        | Y       |
| [mm] SIM translation stage pos    | -233.592463         | -233.5874344608287    | CCD S3 on                             | O1        | Y       |
| [mm] SIM translation stage offset | 0                   | -0.005018542100998502 | CCD S4 on                             | N         | N       |
| [s] Observation start time (MET)  | 424575051.184000    | 424574675.16626       | CCD S5 on                             | N         | N       |
| Observation start date            | 2011-06-16T01:29:45 | 2011-06-16T01:24:35   | Number of optional ACIS chips dropped | 0         | 0       |
| [s] Observation end time (MET)    | 424594551.184000    | 424594685.2173        | On-chip summing requested             | N         | N       |
| Observation end date              | 2011-06-16T06:54:45 | 2011-06-16T06:58:05   | Subarray requested                    | NONE      | NONE    |
| Read mode                         | TIMED               | TIMED                 | Alternating exposures requested       | N         | N       |
|                                   |                     |                       | [s] Primary exposure time             | 0.000000  | 3.2     |

## 2.3 Aspect



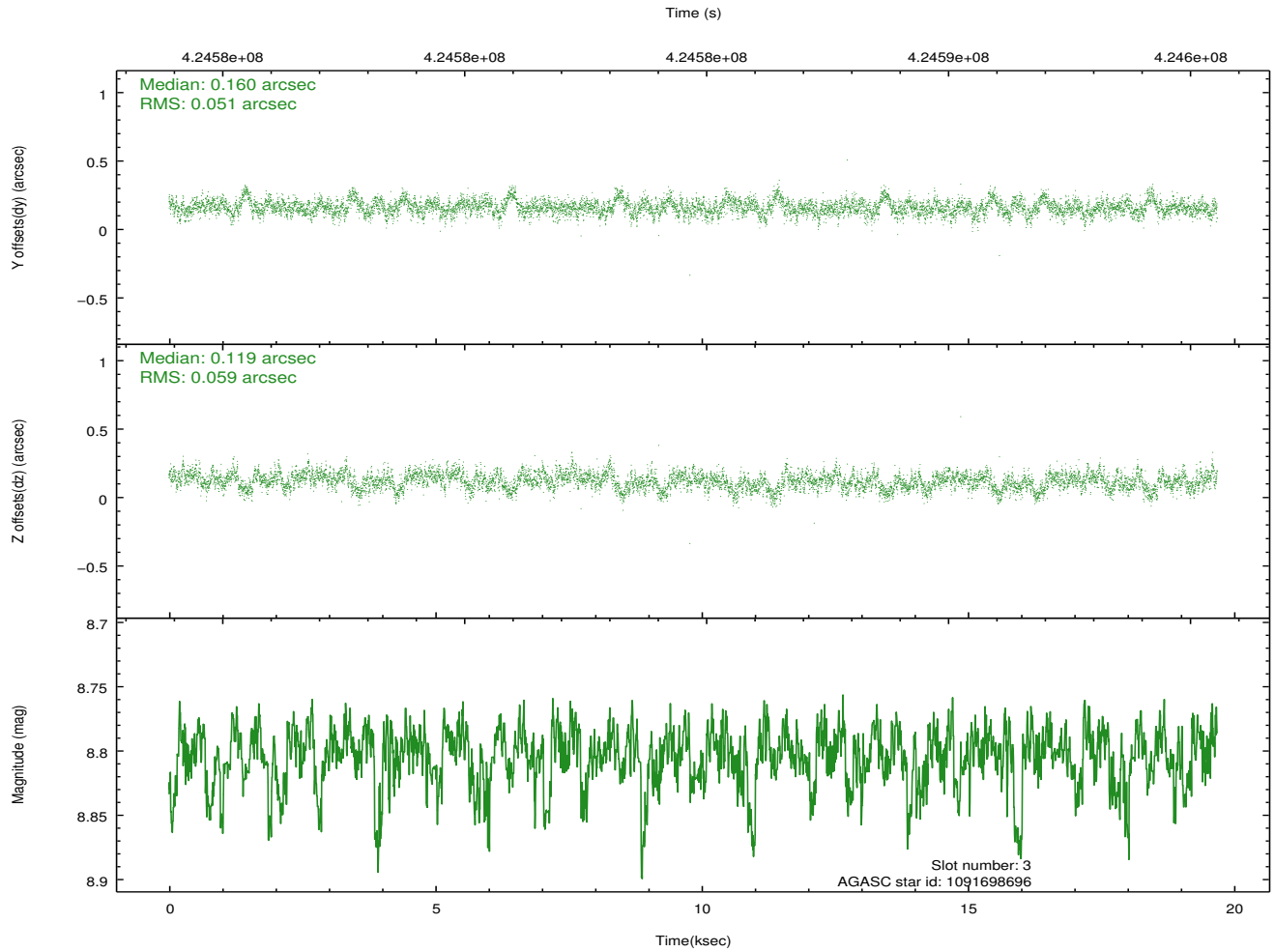
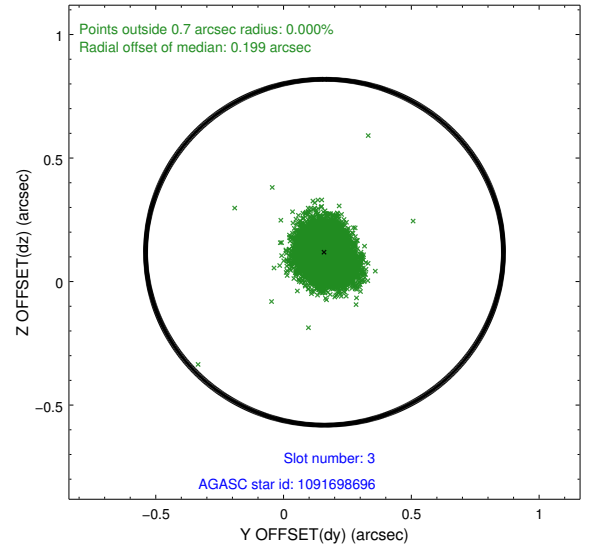
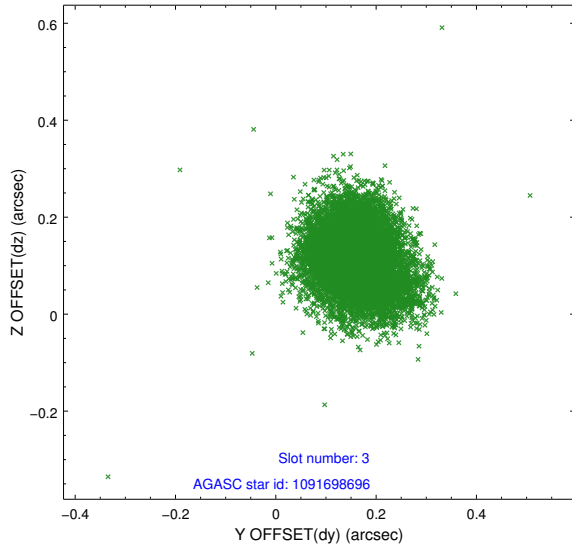


### Slot Statistics

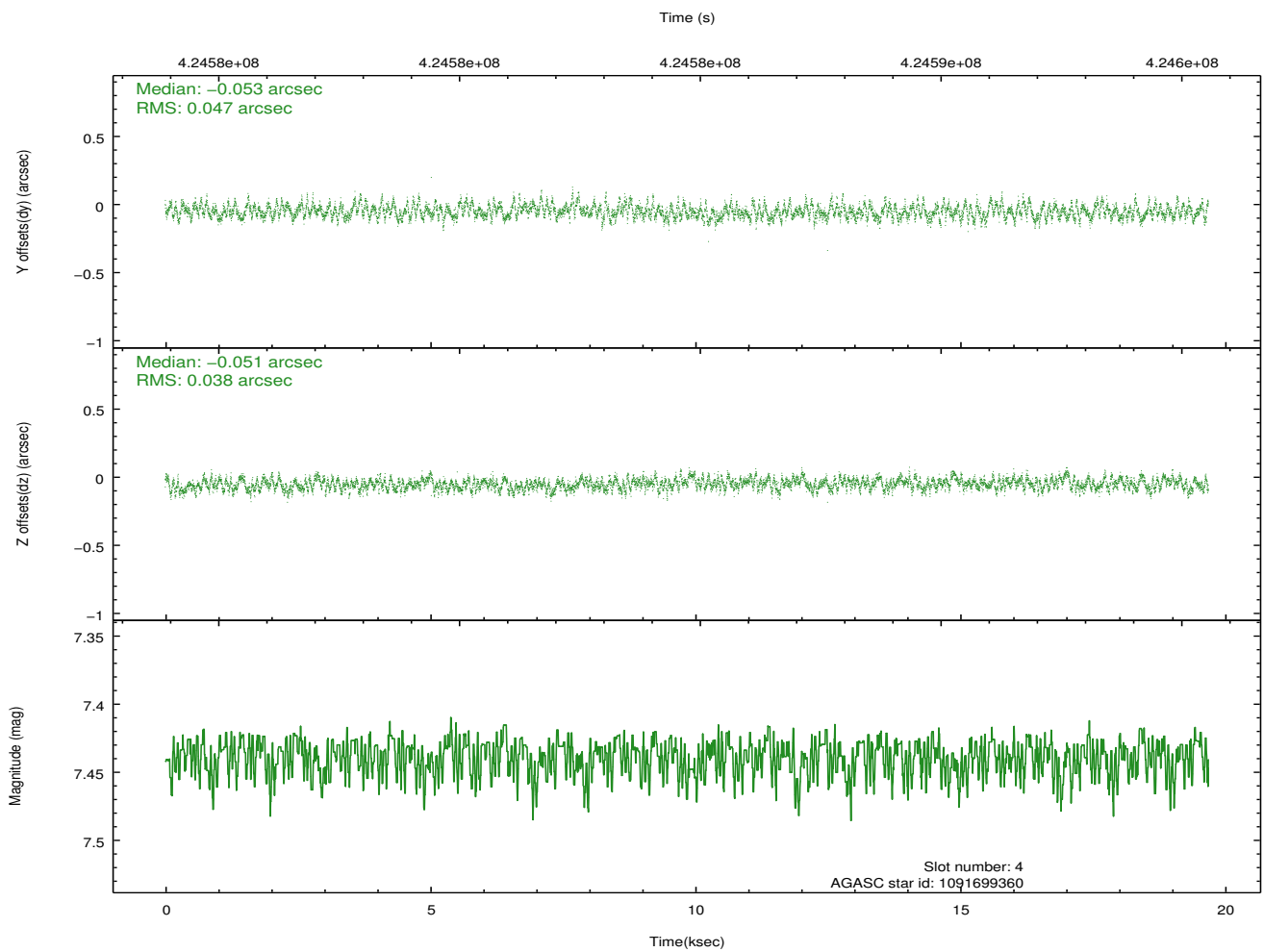
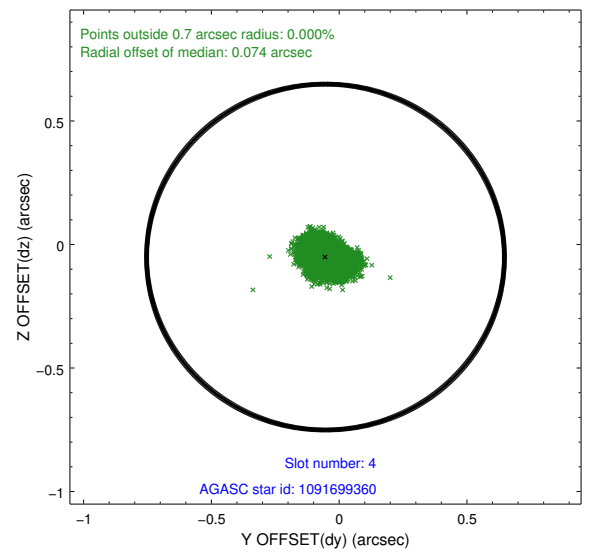
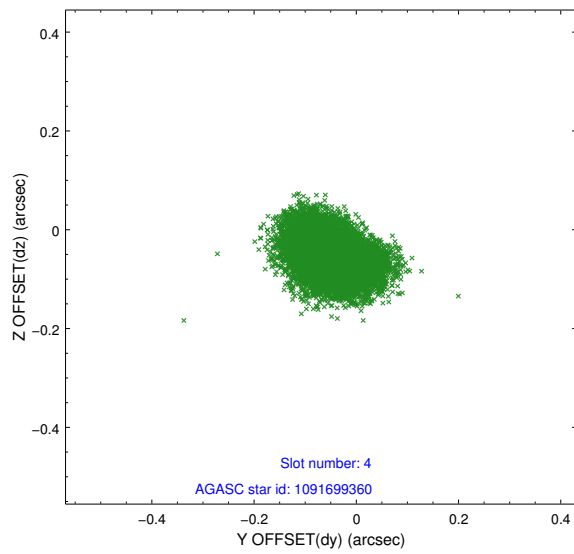
| slot | status | id         | mag  | n_pts | med_dy | med_dz | dr1   | dr2   | ra         | dec        | mean_y   | mean_z   |
|------|--------|------------|------|-------|--------|--------|-------|-------|------------|------------|----------|----------|
| 0    | FID    | ACIS-I-2   | 6.98 | 4800  | -0.158 | -0.062 | 0.012 | 0.021 | 0.000000   | 0.000000   | -768.43  | -844.24  |
| 1    | FID    | ACIS-I-4   | 6.98 | 4800  | 0.116  | 0.093  | 0.015 | 0.023 | 0.000000   | 0.000000   | 2145.84  | 1061.95  |
| 2    | FID    | ACIS-I-6   | 7.07 | 4802  | -0.057 | 0.034  | 0.018 | 0.028 | 0.000000   | 0.000000   | 392.03   | 1704.32  |
| 3    | GUIDE  | 1091698696 | 8.80 | 9583  | 0.160  | 0.119  | 0.082 | 0.135 | 248.529134 | -48.079711 | -310.22  | -1661.22 |
| 4    | GUIDE  | 1091699360 | 7.44 | 9603  | -0.053 | -0.051 | 0.065 | 0.104 | 248.660725 | -47.004364 | -1801.64 | 1925.63  |
| 5    | GUIDE  | 1091702440 | 8.74 | 9595  | 0.093  | 0.241  | 0.080 | 0.127 | 248.295809 | -47.683380 | -1467.84 | -654.02  |
| 6    | GUIDE  | 1091705016 | 7.81 | 9602  | -0.229 | -0.188 | 0.067 | 0.101 | 249.888030 | -47.558250 | 1772.52  | 1496.87  |
| 7    | GUIDE  | 1091709768 | 7.68 | 9597  | 0.023  | -0.120 | 0.070 | 0.109 | 249.435228 | -47.706899 | 1029.10  | 527.76   |

## 2.4 Star Slots

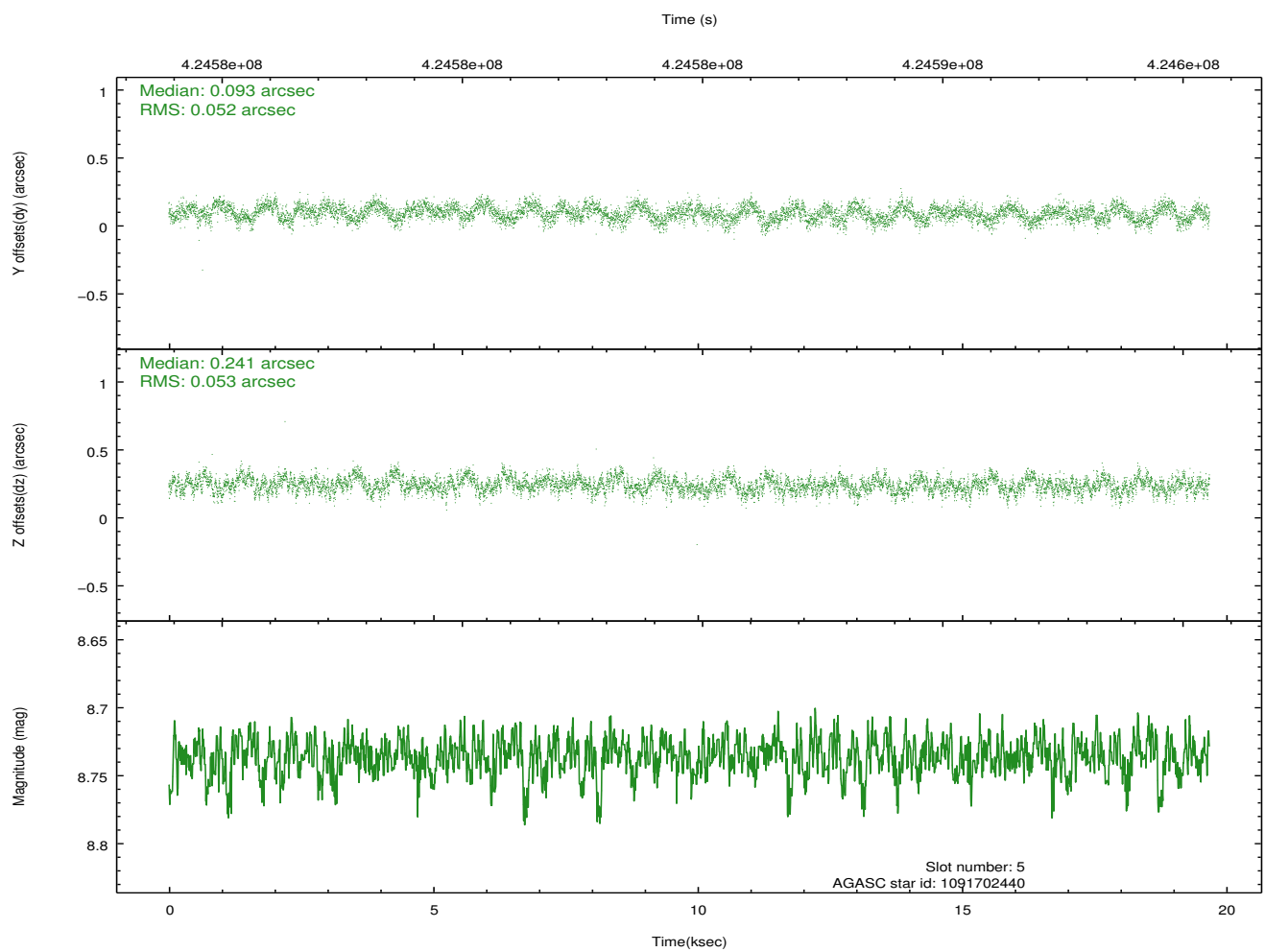
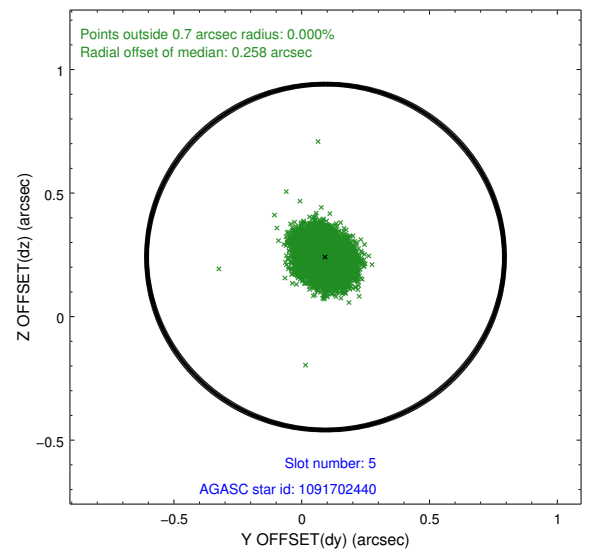
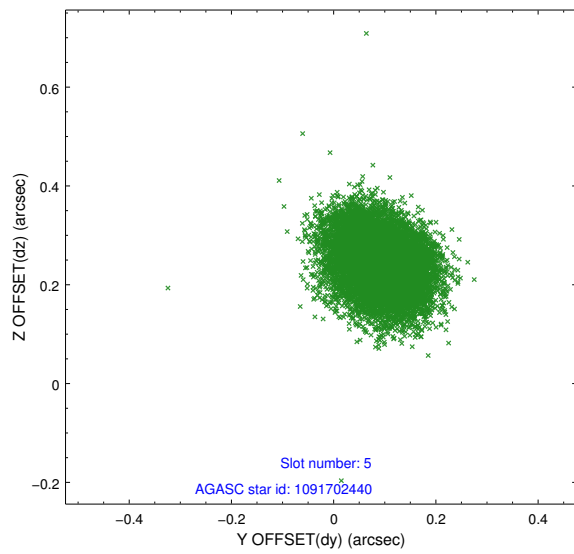
### 2.4.1 Slot 3



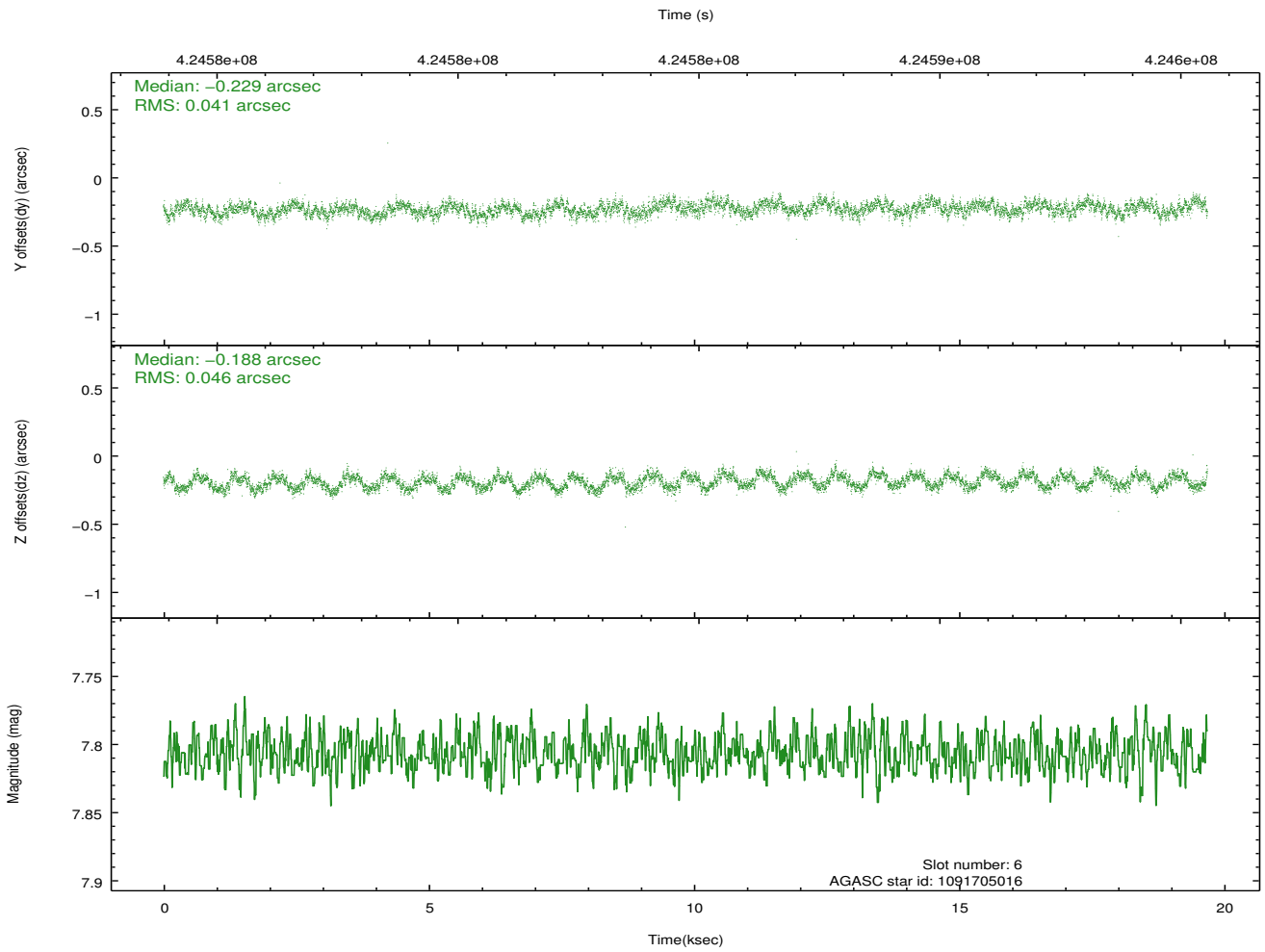
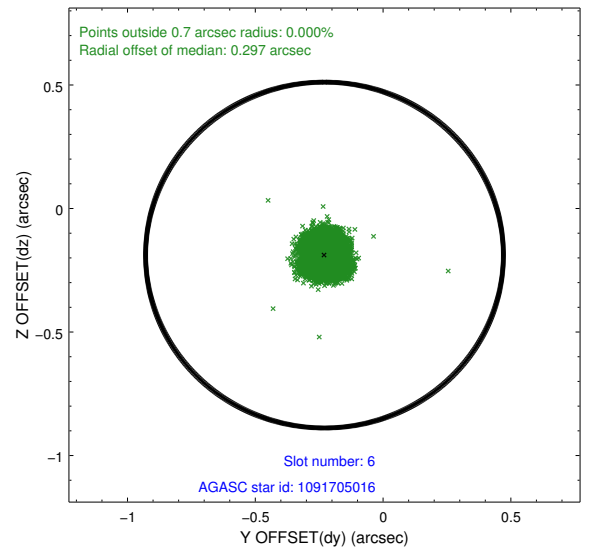
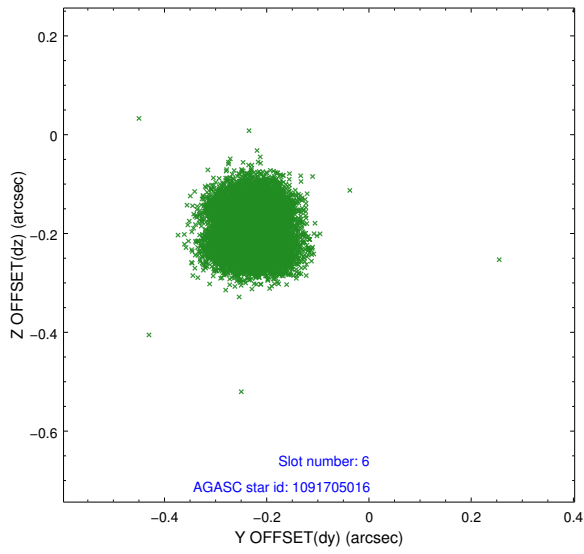
## 2.4.2 Slot 4



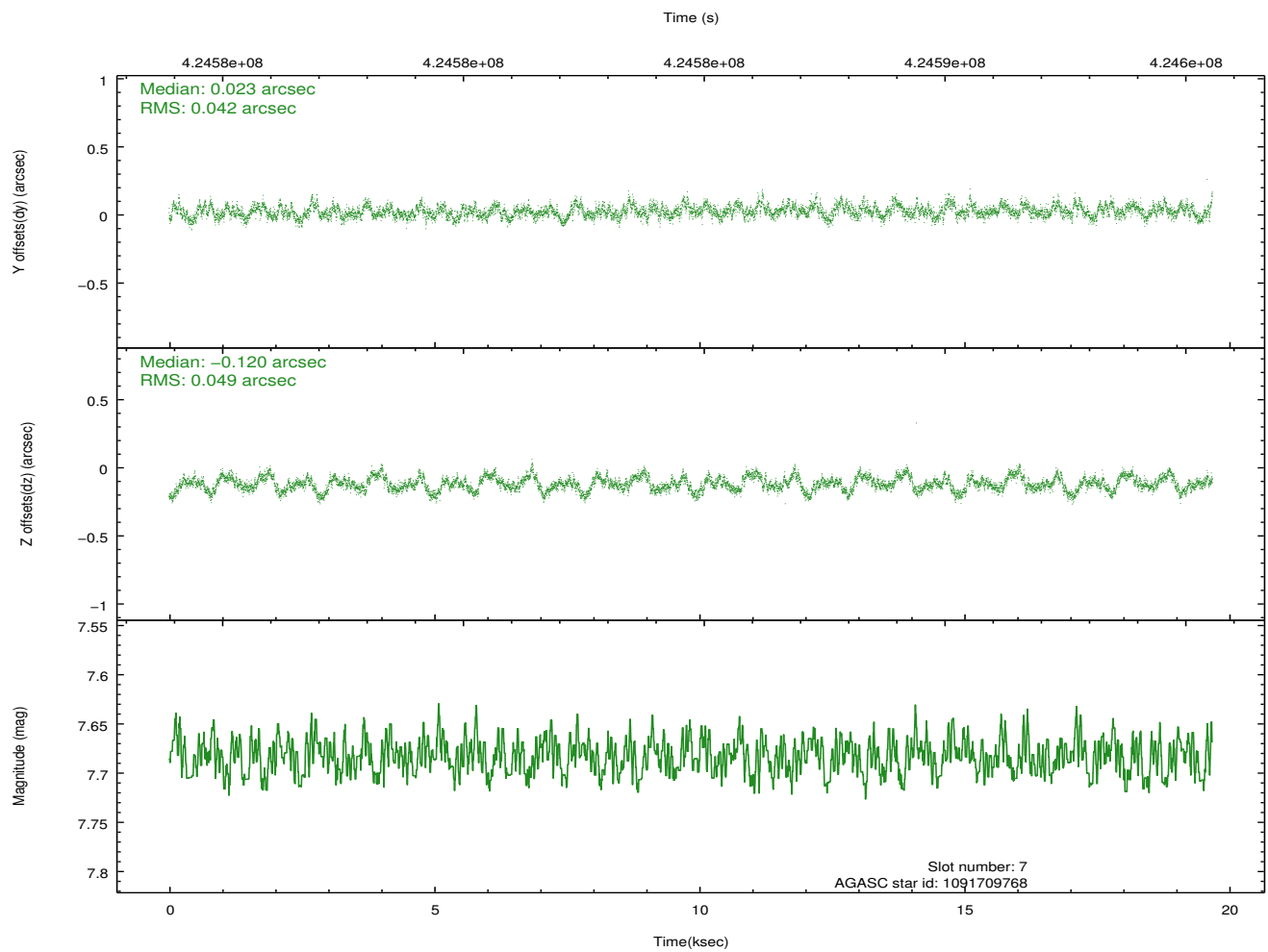
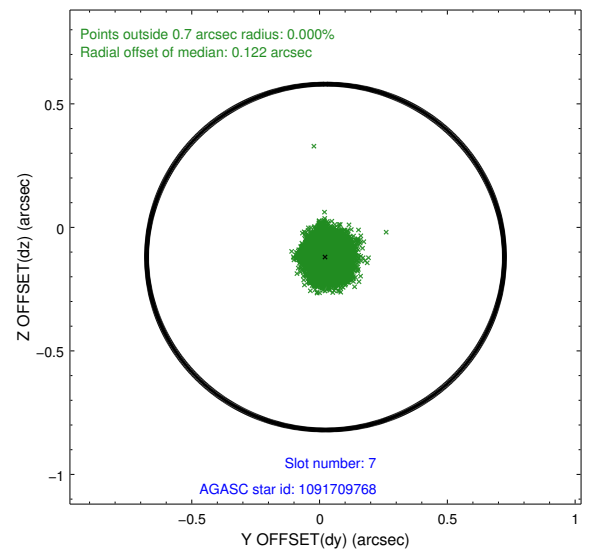
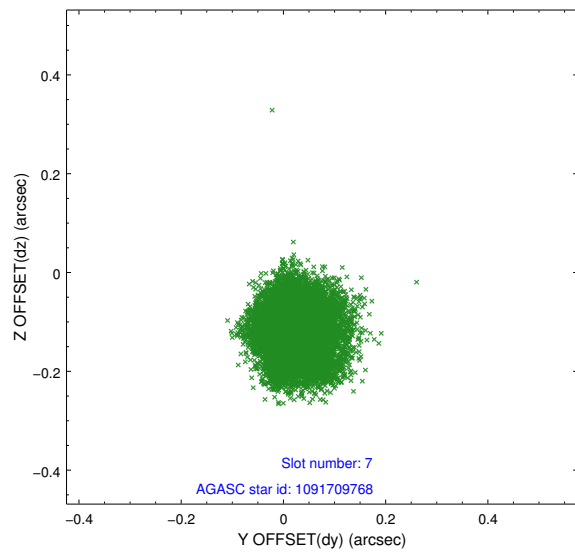
### 2.4.3 Slot 5



### 2.4.4 Slot 6

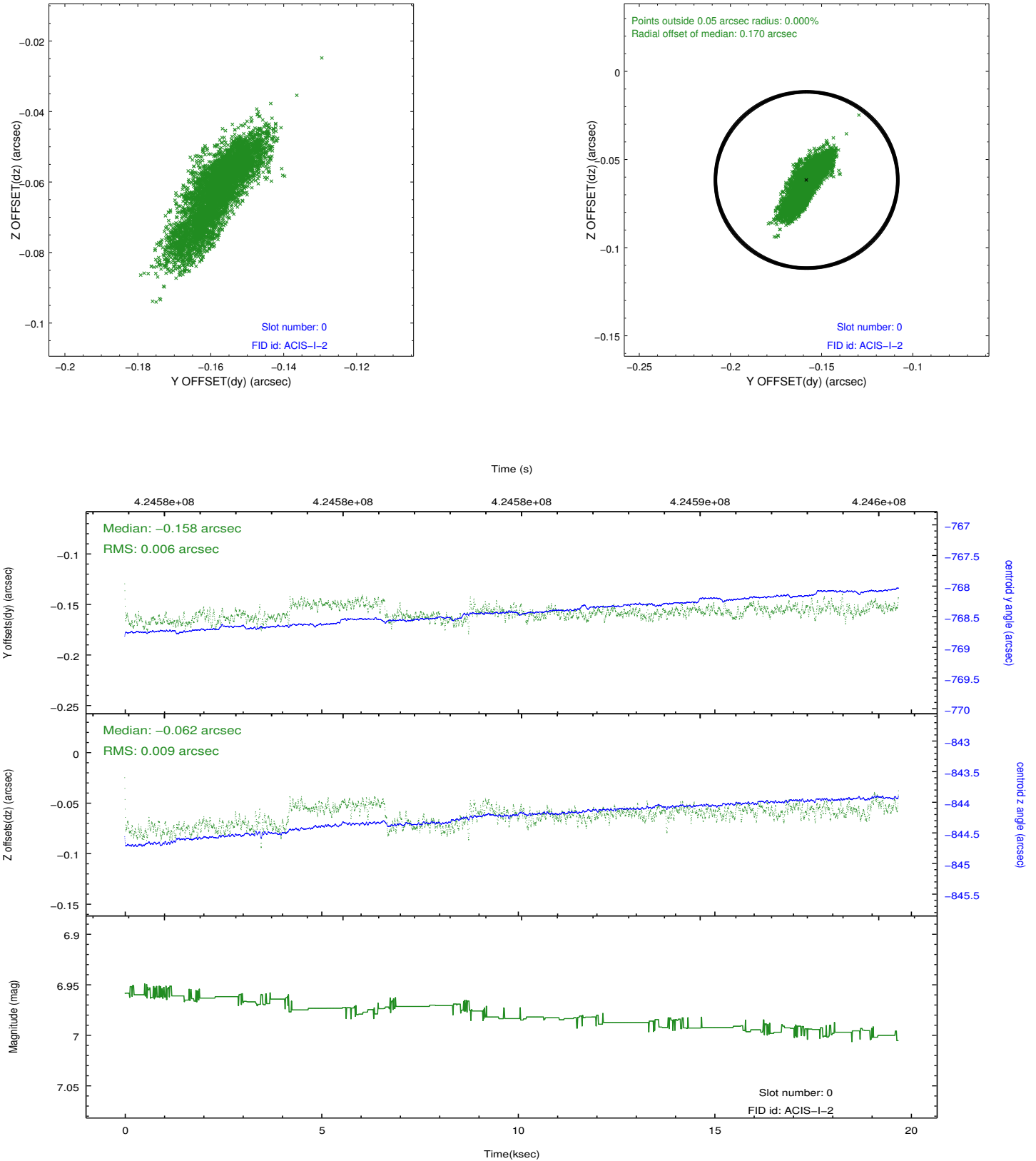


## 2.4.5 Slot 7

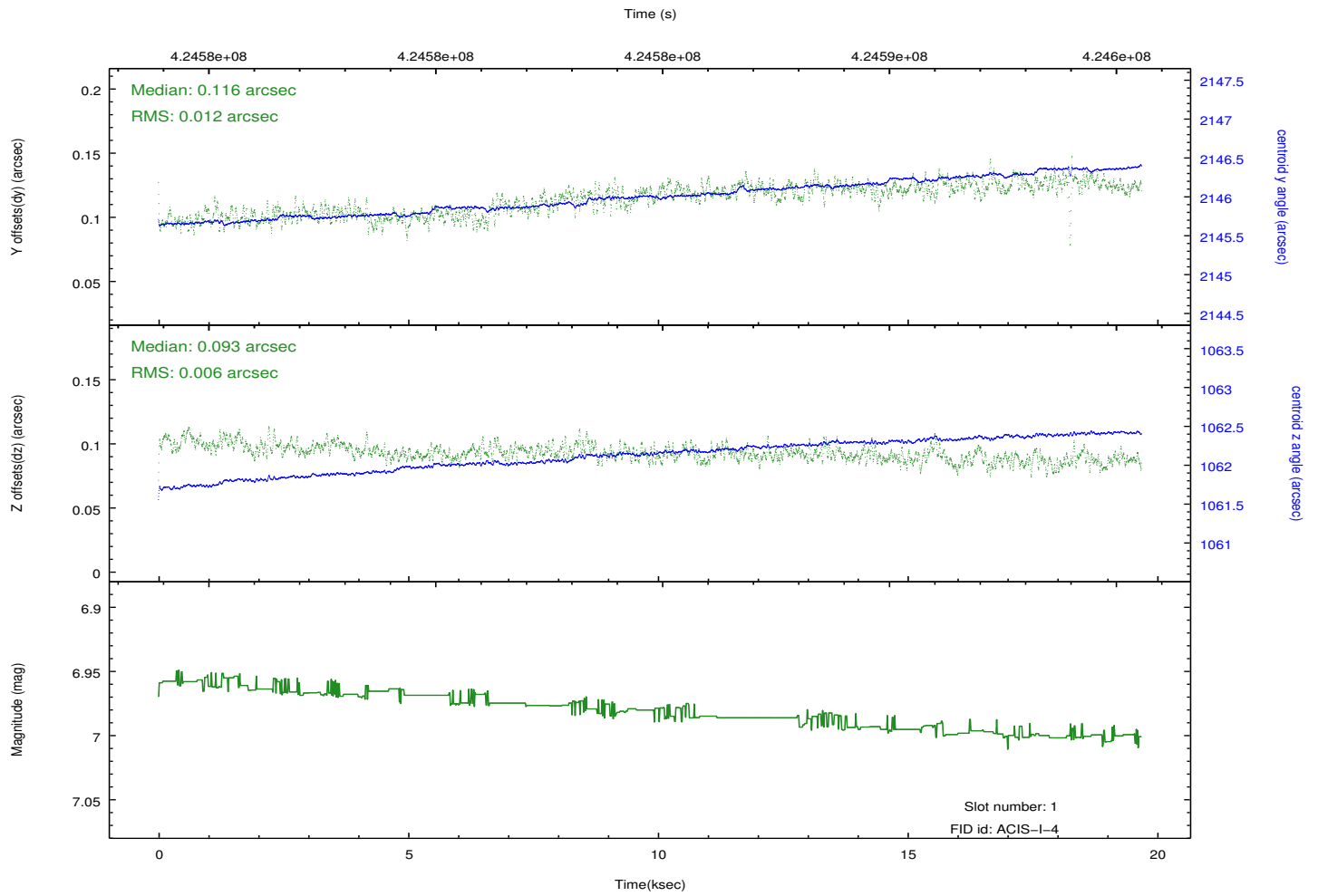
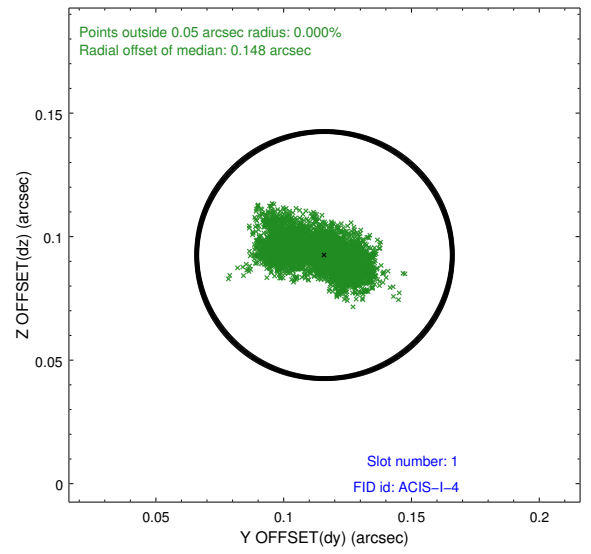
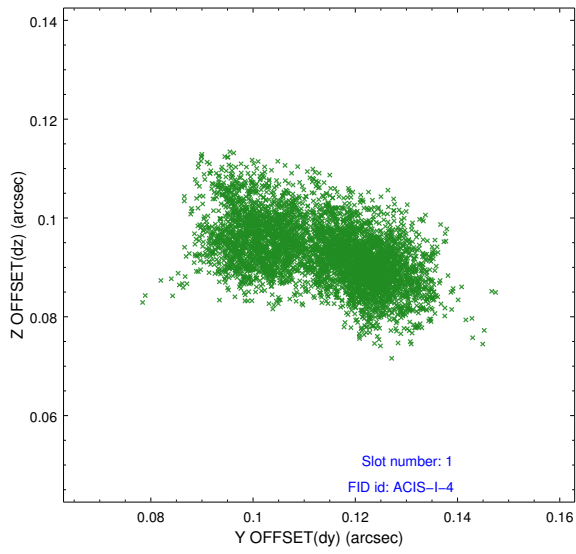


## 2.5 FID Slots

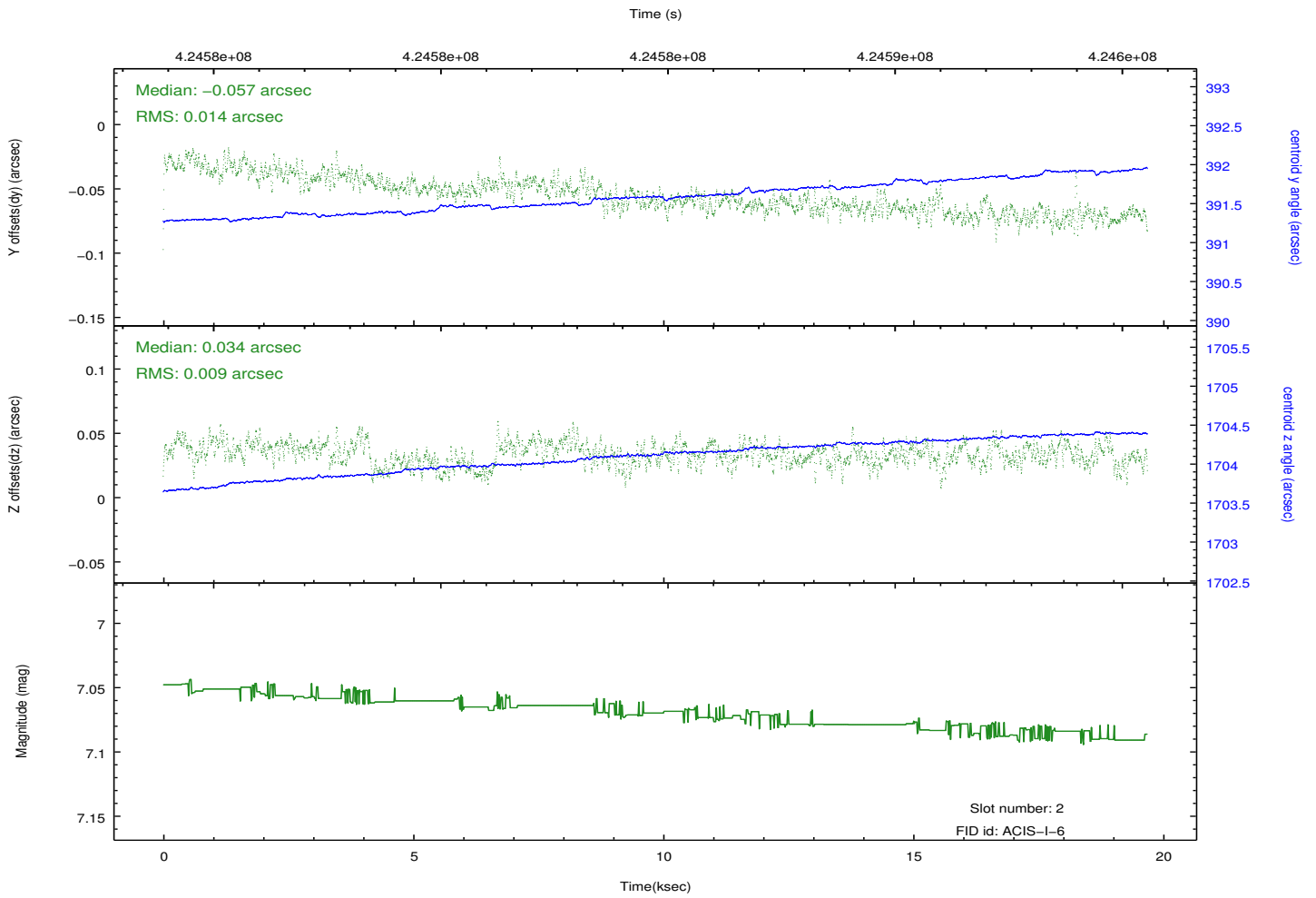
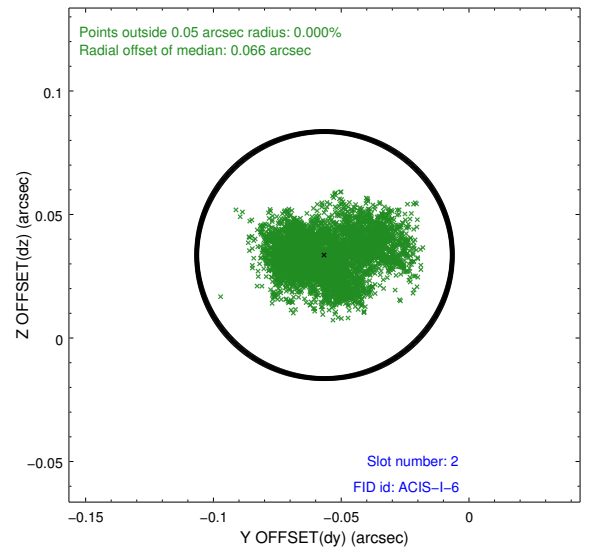
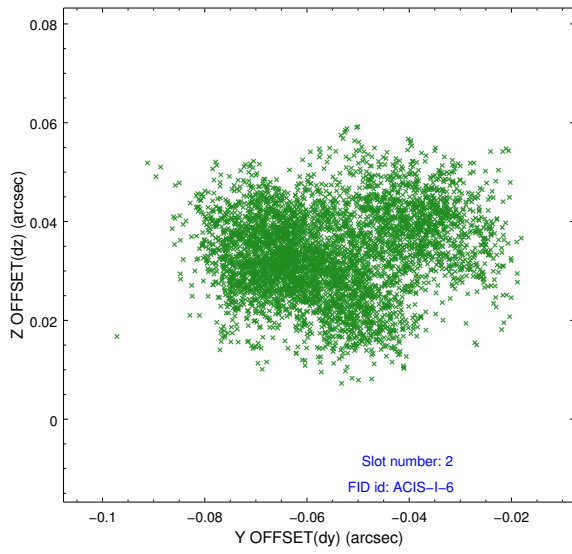
### 2.5.1 Slot 0



## 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)      | 2012.02.14      |
| V&V Edition                | 1               |
| V&V Disposition and Status | OK              |
| V&V Charge Time            | 19.254399928331 |

## A.2 Comments

Joint Proposal: NOAO