

# V&V Reference Report

## L2 ASCDS Version : 10.3.3

Observation 17462 - L2 Version 1  
Chandra X-Ray Center

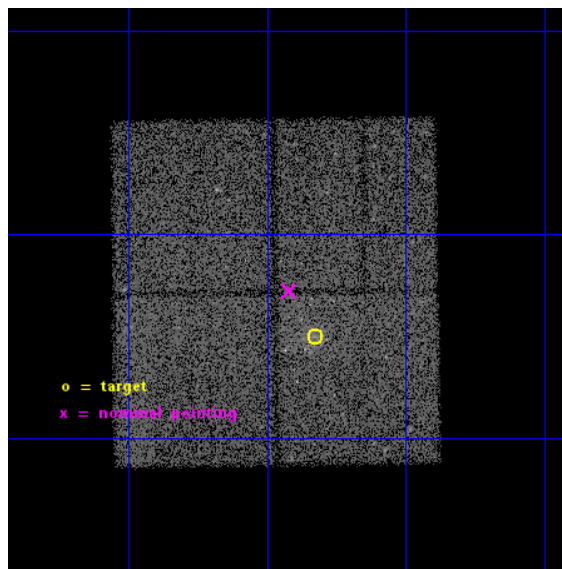
L2 Processing Date : Feb 17 2015

## 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

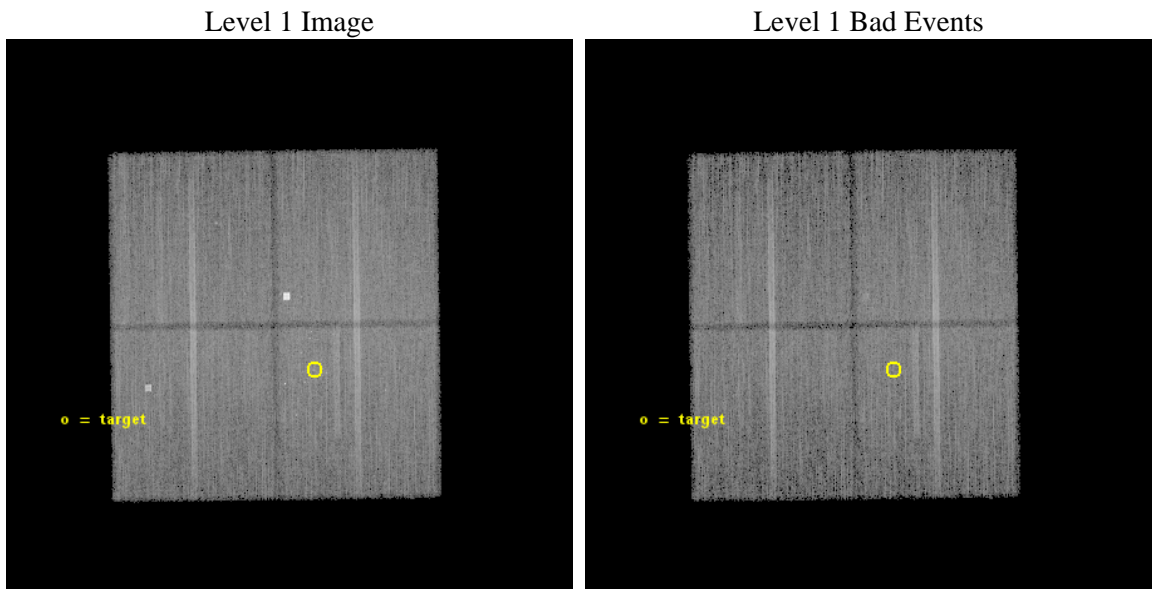
|          |  |   |
|----------|--|---|
| seq_num  | 601218   | Sequence number                             |
| obs_id   | 17462  | Observation id                              |
| title    | A Survey of nearby, nearly face-on spiral galaxies | Proposal title                              |
| observer | Professor Gordon Garmire                           | Principal investigator                      |
| object   | NGC4254  | Source name                                 |
| dtycle   | 0  | &#160                                       |
| cycle    | P  | events from which exps?<br>Prim/Second/Both |
| ra_targ  | 184.706667   | Observer's specified target RA [deg]        |
| dec_targ | 14.416389  | Observer's specified target Dec [deg]       |
| ra_nom   | 184.72970781488                                    | Nominal RA [deg]                            |
| dec_nom  | 14.45381864249                                     | Nominal Dec [deg]                           |
| roll_nom | 89.25473867127                                     | Nominal Roll [deg]                          |
| revision | 1  | Processing version of data                  |
| ontime   | 45073.918216348                                    | Sum of GTIs [s]                             |
| livetime | 44484.994291915                                    | Livetime [s]                                |
| ontime0  | 45077.059276581                                    | Sum of GTIs [s]                             |
| ontime1  | 45077.059286475                                    | Sum of GTIs [s]                             |
| ontime2  | 45080.200346828                                    | Sum of GTIs [s]                             |
| ontime3  | 45073.918216348                                    | Sum of GTIs [s]                             |
| l2events | 92351  | Number of level 2 events                    |



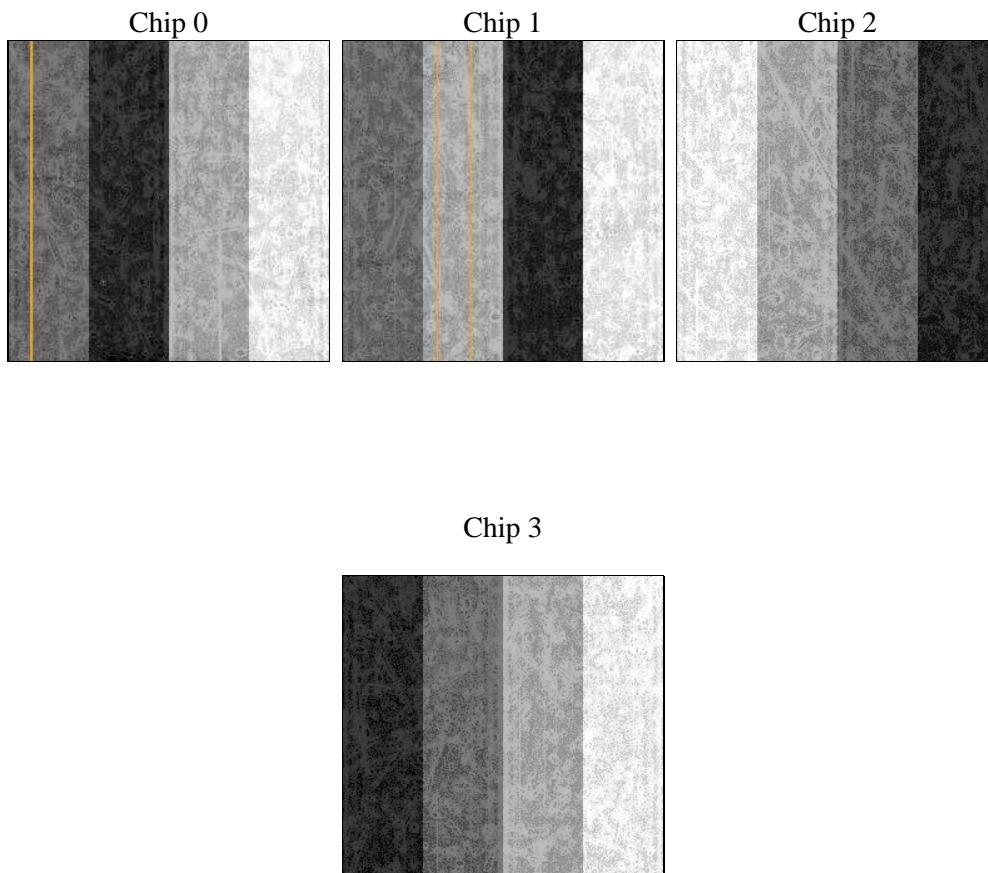
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

|          |                     |                                |                |                 |   |
|----------|---------------------|--------------------------------|----------------|-----------------|---|
| obi_num  | 1                   | Obi number                     | sched_exp_time | 45000.000000    | [s] Scheduled observation exposure time |
| ascdsver | 10.3.3              | Processing system revision     | ontime         | 45073.918216348 | Sum of GTIs [s]                         |
| caldbver | 4.6.6               | &#160                          | ontime0        | 45077.059276581 | Sum of GTIs [s]                         |
| date     | 2015-02-17T13:47:28 | Date and time of file creation | ontime1        | 45077.059286475 | Sum of GTIs [s]                         |
| revision | 1                   | Processing version of data     | ontime2        | 45080.200346828 | Sum of GTIs [s]                         |
|          |                     |                                | ontime3        | 45073.918216348 | Sum of GTIs [s]                         |
|          |                     |                                | l1events       | 915418          | Number of level 1 events                |

### 2.1.4 Events

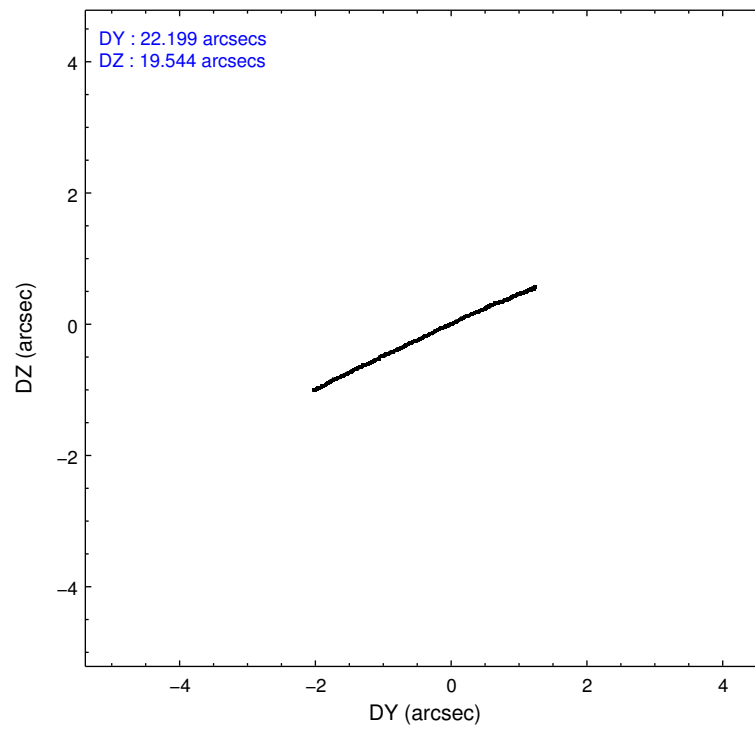
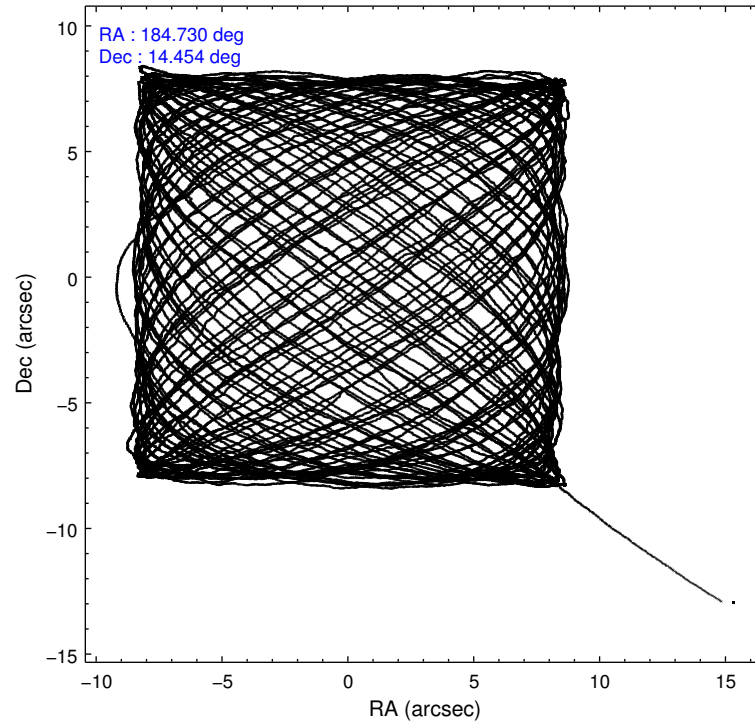
|                 | ccd 0  | ccd 1  | ccd 2  | ccd 3  |
|-----------------|--------|--------|--------|--------|
| level 1 events  | 212728 | 219493 | 249353 | 233844 |
| rejected events | 186192 | 188406 | 209824 | 205704 |
| rejected %      | 87%    | 85%    | 84%    | 87%    |

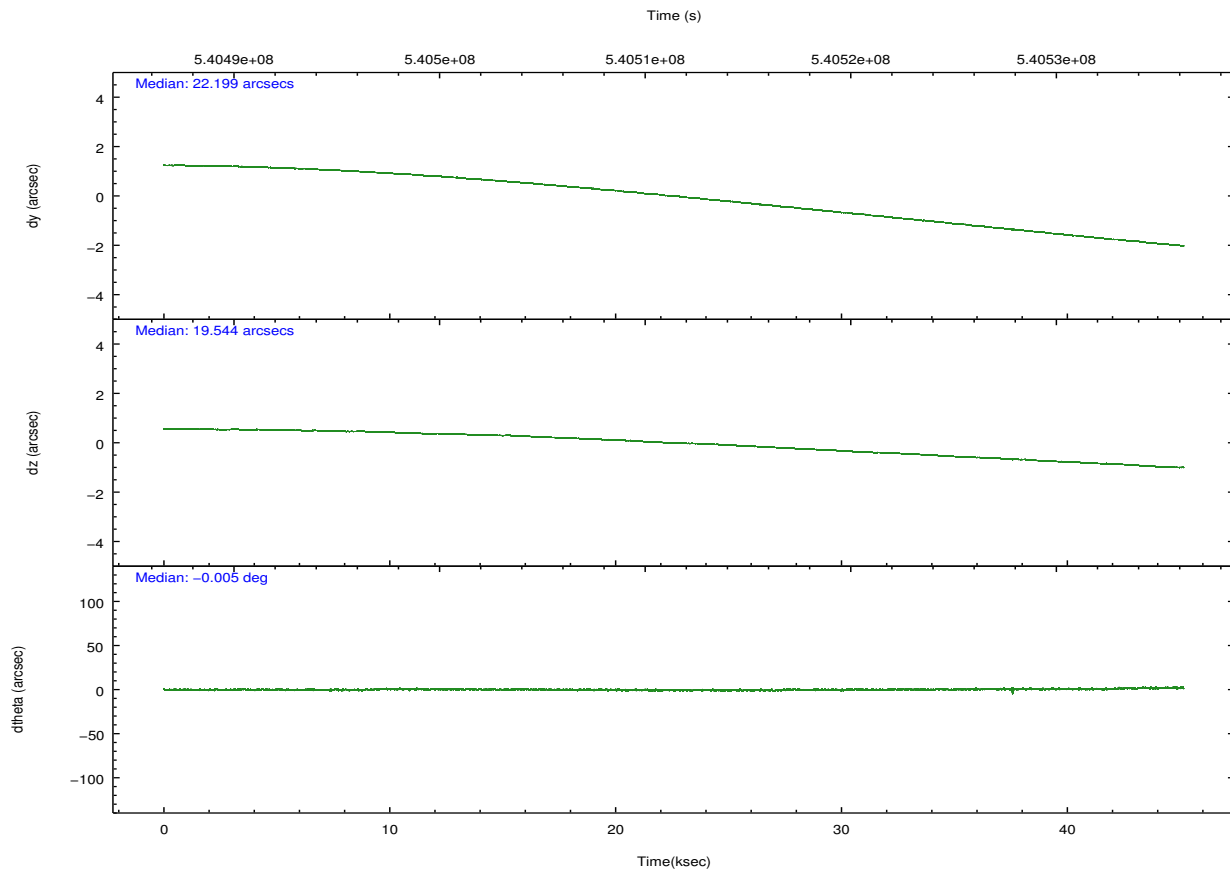
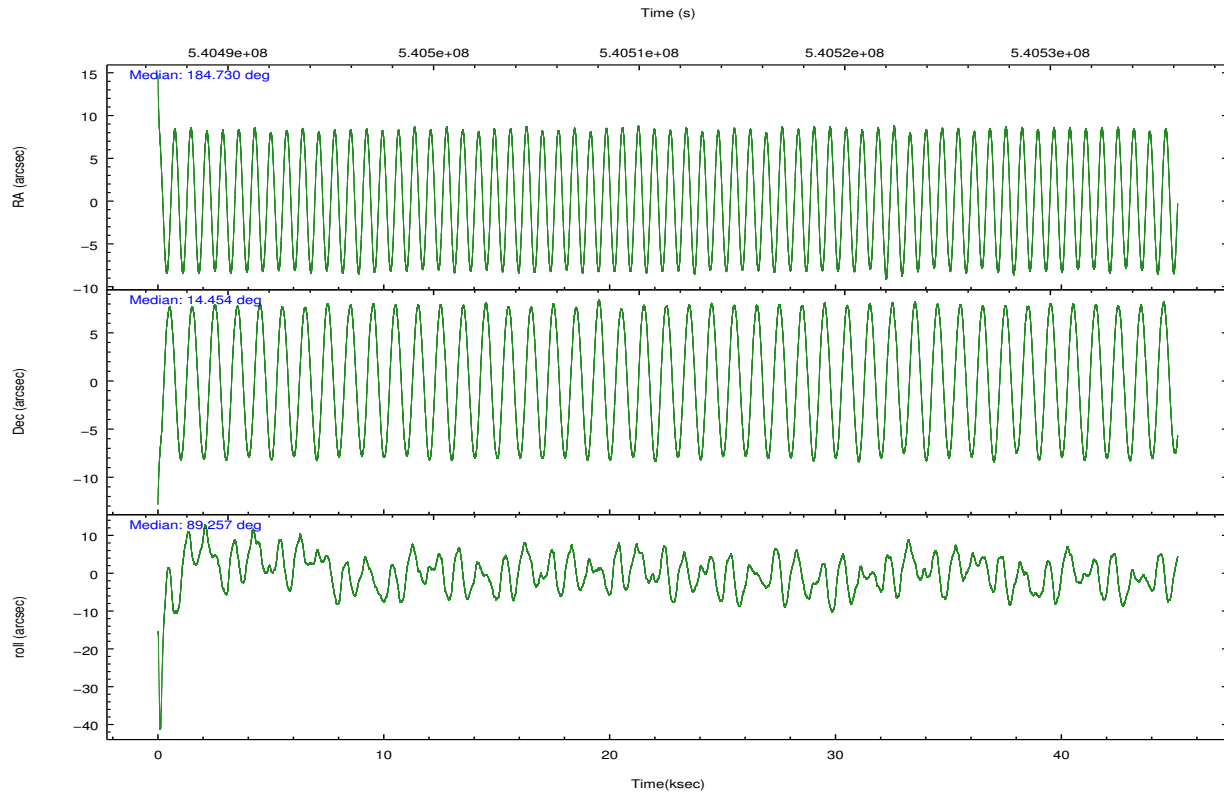
|                | ccd 0  | ccd 1  | ccd 2  | ccd 3  |
|----------------|--------|--------|--------|--------|
| grade 0 events | 9243   | 12470  | 23036  | 11152  |
|                | 4%     | 5%     | 9%     | 4%     |
| grade 1 events | 116    | 127    | 233    | 144    |
|                | 0%     | 0%     | 0%     | 0%     |
| grade 2 events | 6339   | 6563   | 6074   | 5823   |
|                | 2%     | 2%     | 2%     | 2%     |
| grade 3 events | 2786   | 2712   | 2688   | 2801   |
|                | 1%     | 1%     | 1%     | 1%     |
| grade 4 events | 2526   | 2762   | 2645   | 2790   |
|                | 1%     | 1%     | 1%     | 1%     |
| grade 5 events | 10270  | 10643  | 9680   | 12049  |
|                | 4%     | 4%     | 3%     | 5%     |
| grade 6 events | 5648   | 6584   | 5091   | 5578   |
|                | 2%     | 2%     | 2%     | 2%     |
| grade 7 events | 175800 | 177632 | 199906 | 193507 |
|                | 82%    | 80%    | 80%    | 82%    |

## 2.2 Compared Parameters

| Parameter                         | Planned             | Actual                | Parameter                             | Planned   | Actual  |
|-----------------------------------|---------------------|-----------------------|---------------------------------------|-----------|---------|
| Instrument                        | ACIS                | ACIS                  | Obspar format version number          | 7         | 7       |
| Detector                          | ACIS-0123           | ACIS-0123             | Obspar file type                      | PREDICTED | ACTUAL  |
| Grating                           | NONE                | NONE                  | Obspar update status                  | NONE      | UPDATED |
| Data mode                         | VFAINT              | VFAINT                | Number of optional ACIS chips dropped | 0         | 0       |
| Observation mode                  | POINTING            | POINTING              | On-chip summing requested             | N         | N       |
| [deg] Pointing RA                 | 184.743729          | 184.7297078148834     | Subarray requested                    | NONE      | NONE    |
| [deg] Pointing Dec                | 14.429792           | 14.4538186424899      | Alternating exposures requested       | N         | N       |
| [deg] Pointing Roll               | 89.042552           | 89.2547386712701      | [s] Primary exposure time             | 0.000000  | 3.1     |
| [mm] SIM focus pos                | -0.782348           | -0.7809083437167272   |                                       |           |         |
| [mm] SIM defocus                  | 0                   | 0.001439871863259334  |                                       |           |         |
| [mm] SIM translation stage pos    | -233.592463         | -233.5874344608287    |                                       |           |         |
| [mm] SIM translation stage offset | 0                   | -0.005018542100998502 |                                       |           |         |
| [s] Observation start time (MET)  | 540488983.184000    | 540487568.45198       |                                       |           |         |
| Observation start date            | 2015-02-16T15:48:36 | 2015-02-16T15:26:08   |                                       |           |         |
| [s] Observation end time (MET)    | 540533983.184000    | 540534809.16712       |                                       |           |         |
| Observation end date              | 2015-02-17T04:18:36 | 2015-02-17T04:33:29   |                                       |           |         |
| Read mode                         | TIMED               | TIMED                 |                                       |           |         |

## 2.3 Aspect





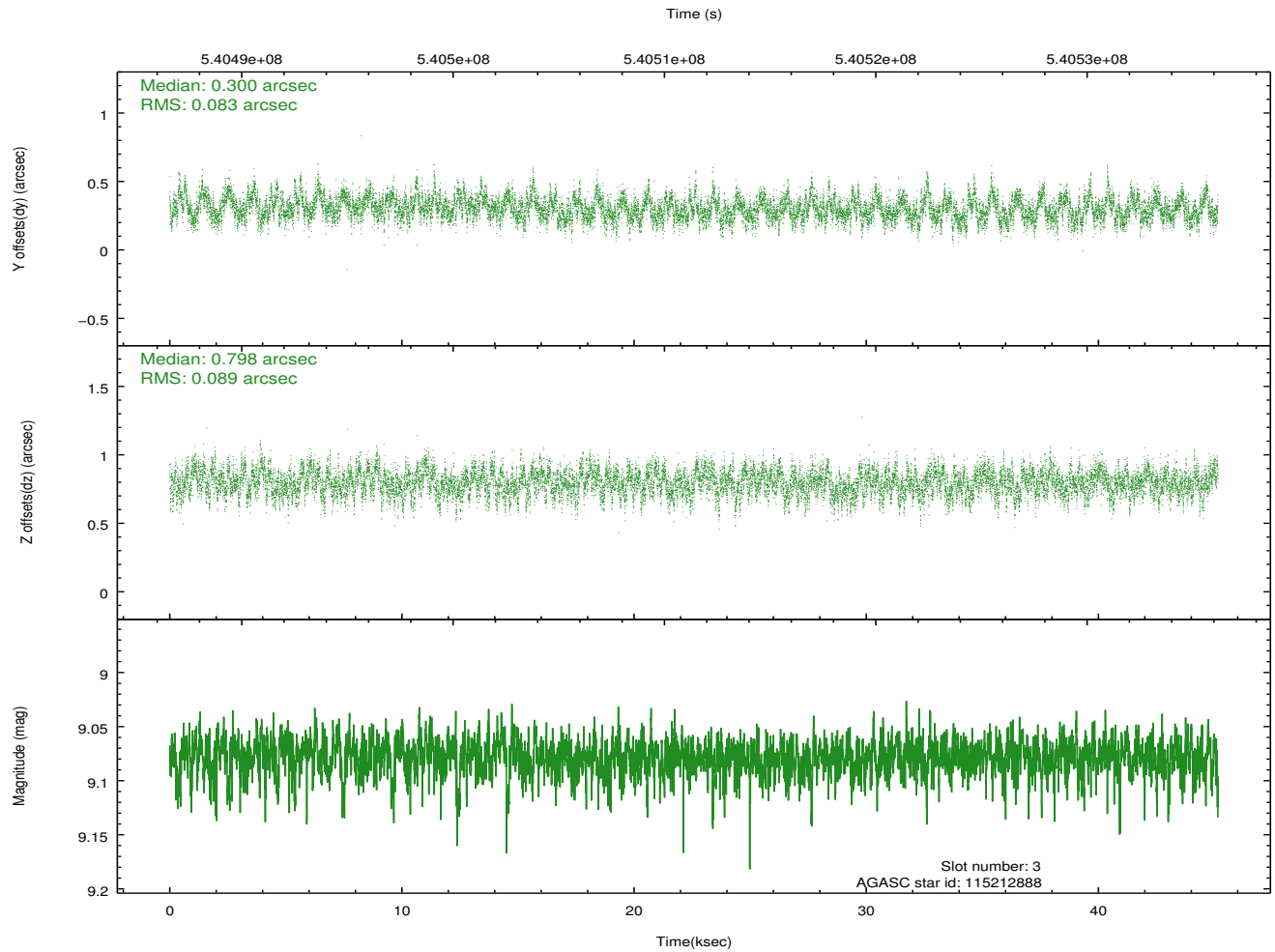
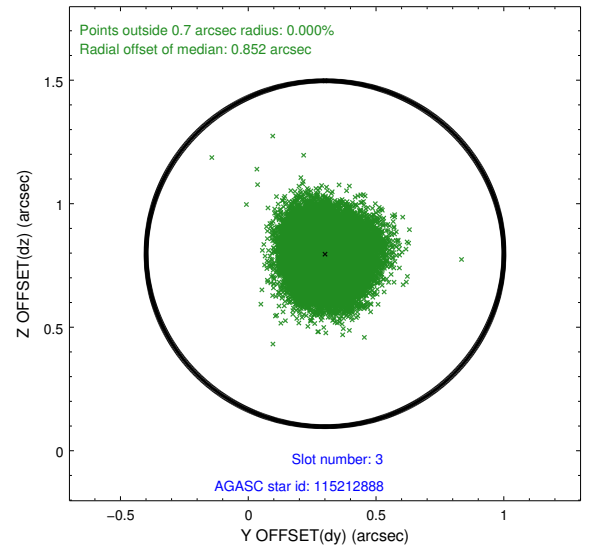
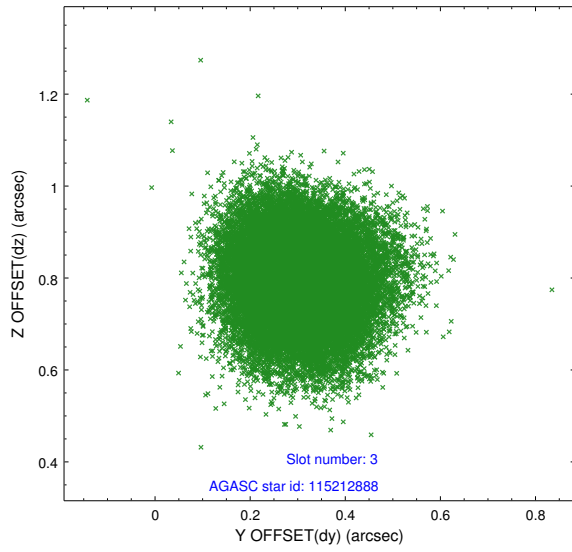
### Slot Statistics

| slot | status | used | id        | mag  | n_pts | med_dy | med_dz | dr1   | dr2   | ra         | dec       | mean_y   | mean_z   |
|------|--------|------|-----------|------|-------|--------|--------|-------|-------|------------|-----------|----------|----------|
| 0    | FID    |      | ACIS-I-1  | 7.24 | 11011 | 0.071  | -0.022 | 0.026 | 0.038 | 0.000000   | 0.000000  | 917.30   | -843.16  |
| 1    | FID    |      | ACIS-I-5  | 7.23 | 11012 | -0.352 | 0.036  | 0.008 | 0.013 | 0.000000   | 0.000000  | -1831.32 | 1054.25  |
| 2    | FID    |      | ACIS-I-6  | 7.24 | 11013 | 0.190  | 0.056  | 0.025 | 0.036 | 0.000000   | 0.000000  | 382.85   | 1698.88  |
| 3    | GUIDE  | used | 115212888 | 9.08 | 22012 | 0.300  | 0.798  | 0.131 | 0.207 | 184.962096 | 14.383434 | -153.28  | -763.04  |
| 4    | GUIDE  | used | 115216168 | 9.93 | 21960 | 0.490  | 0.689  | 0.237 | 0.370 | 185.303483 | 13.870081 | -1979.08 | -1988.73 |
| 5    | GUIDE  | used | 115217168 | 9.61 | 21897 | 0.041  | -0.639 | 0.185 | 0.297 | 184.139200 | 14.158763 | -1007.69 | 2093.61  |
| 6    | GUIDE  | used | 189416408 | 8.45 | 22017 | -0.365 | -0.364 | 0.110 | 0.193 | 184.461757 | 15.019223 | 2105.84  | 1017.77  |
| 7    | GUIDE  | used | 115218424 | 9.08 | 22008 | -0.462 | -0.484 | 0.167 | 0.259 | 184.237137 | 14.820527 | 1378.36  | 1786.57  |

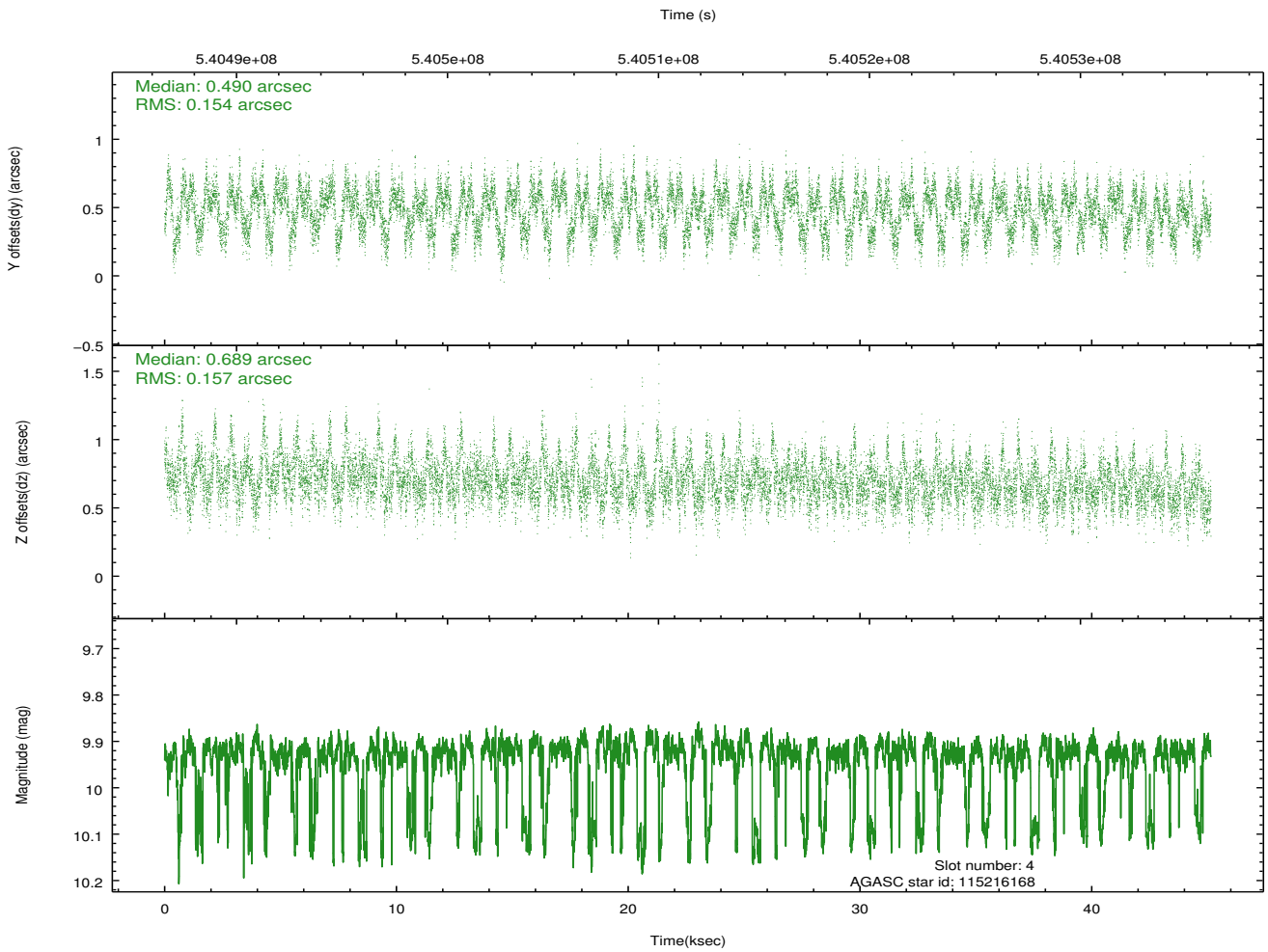
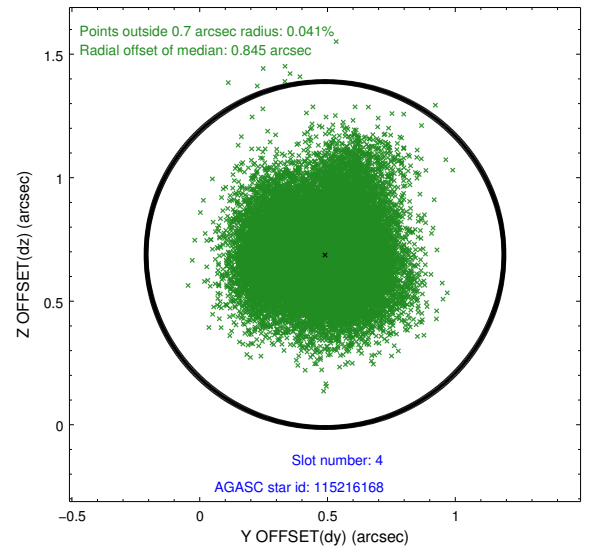
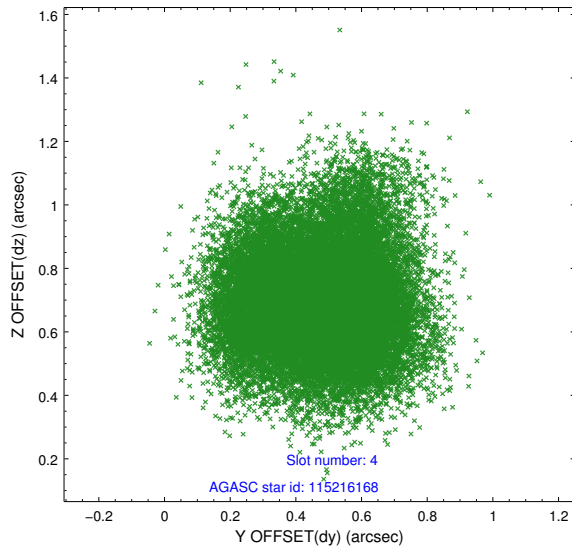
∞

## 2.4 Star Slots

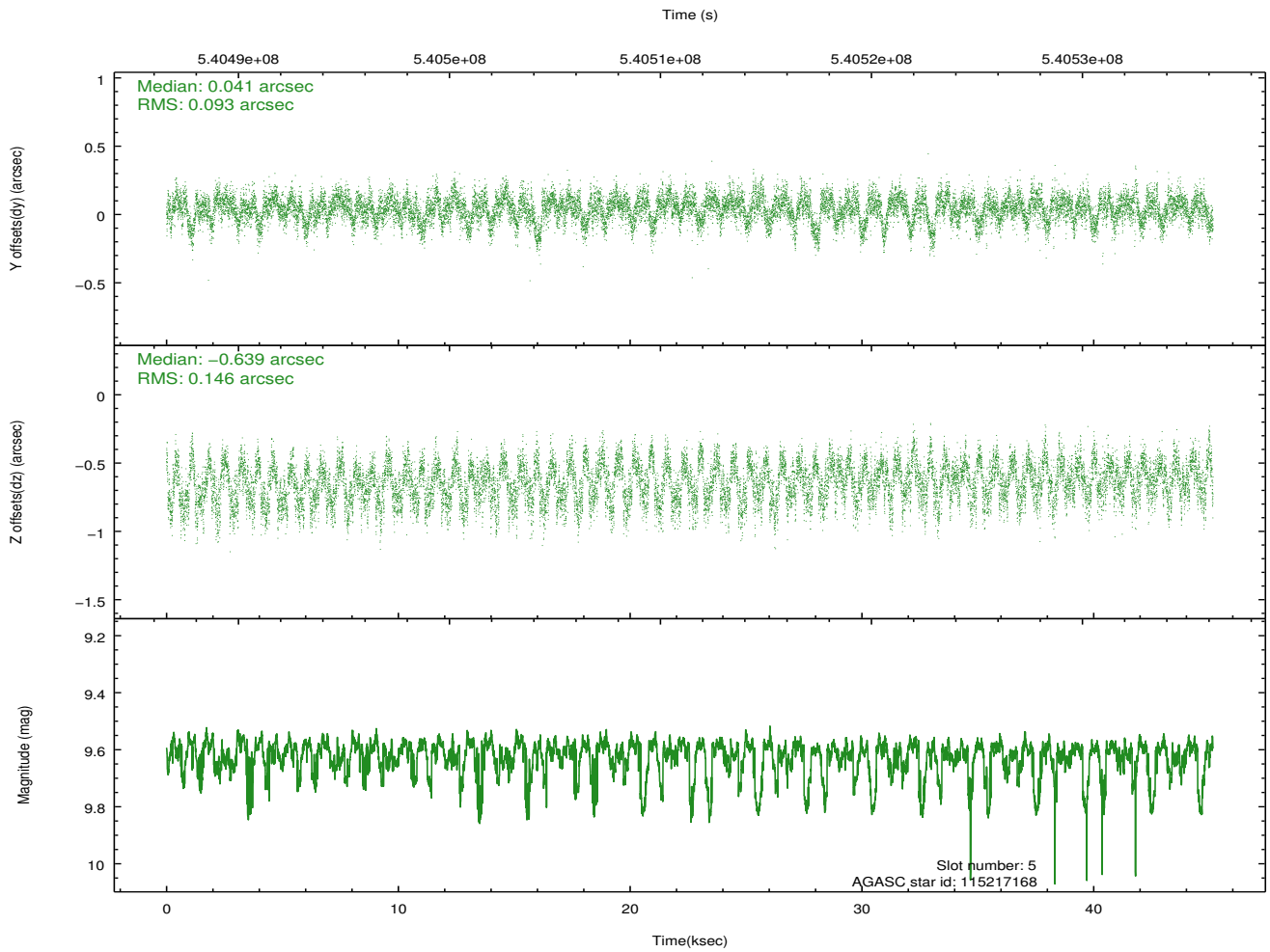
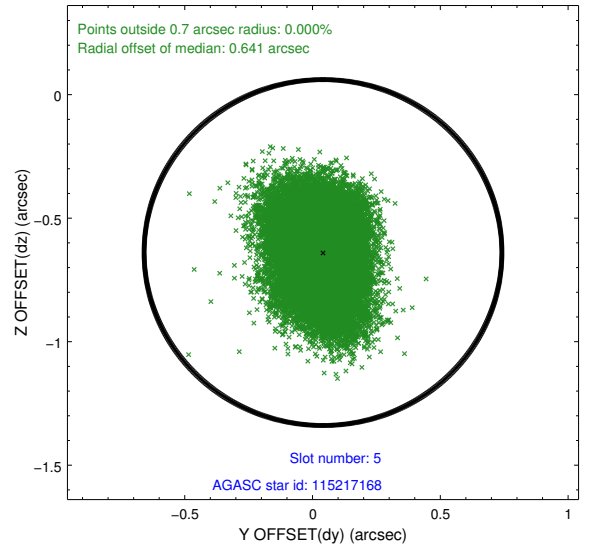
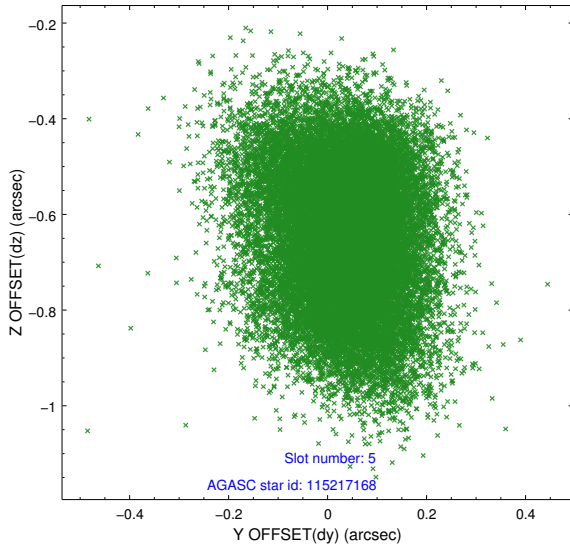
### 2.4.1 Slot 3



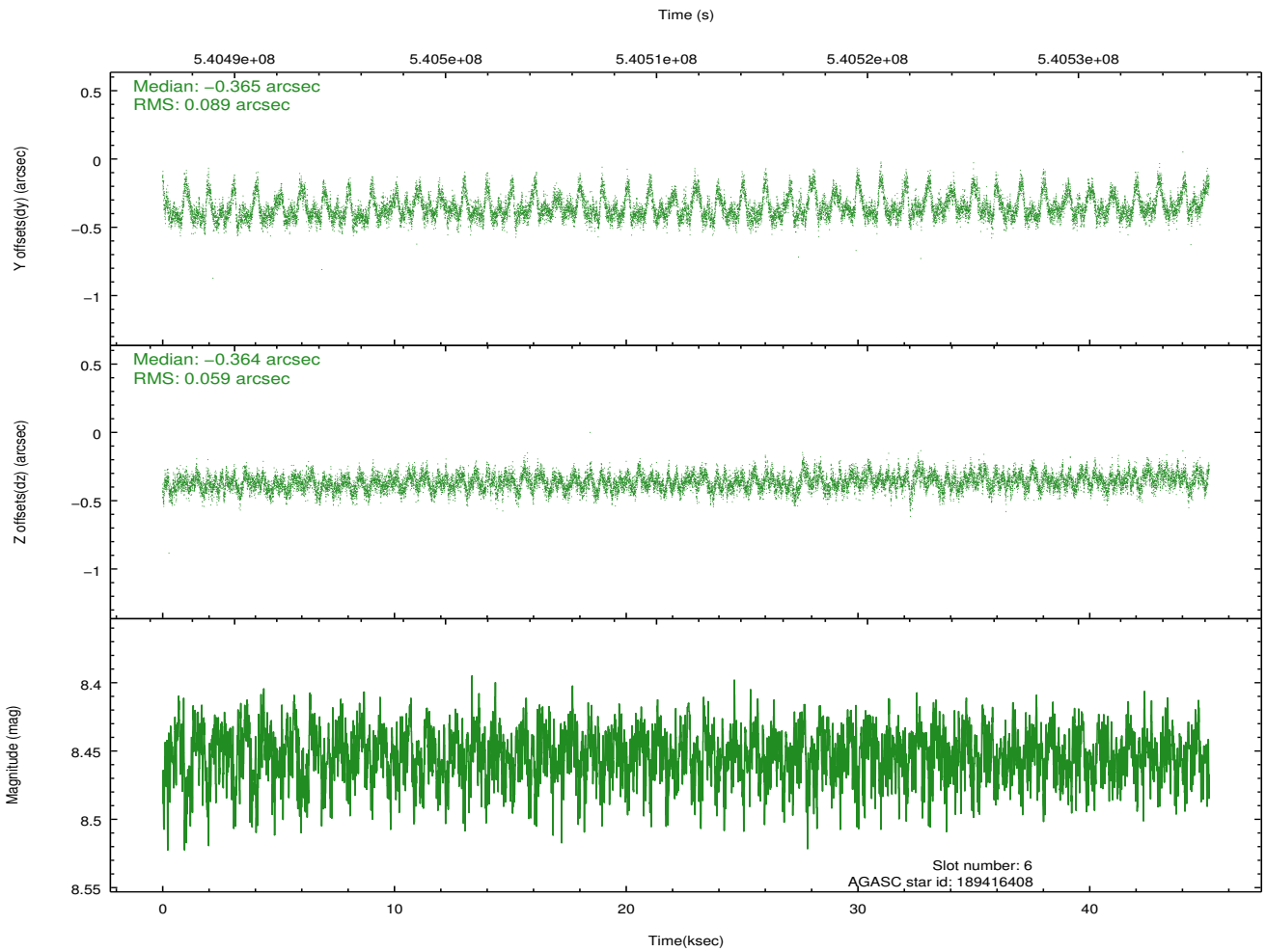
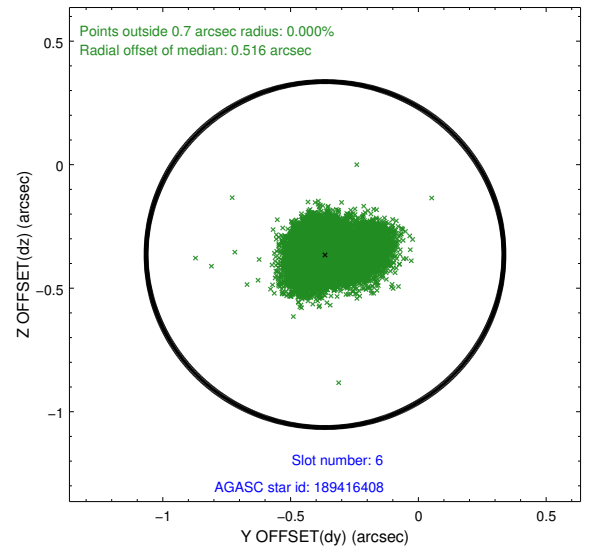
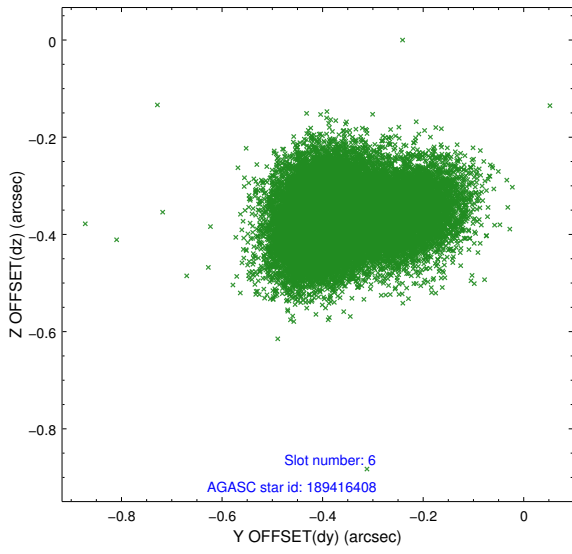
## 2.4.2 Slot 4



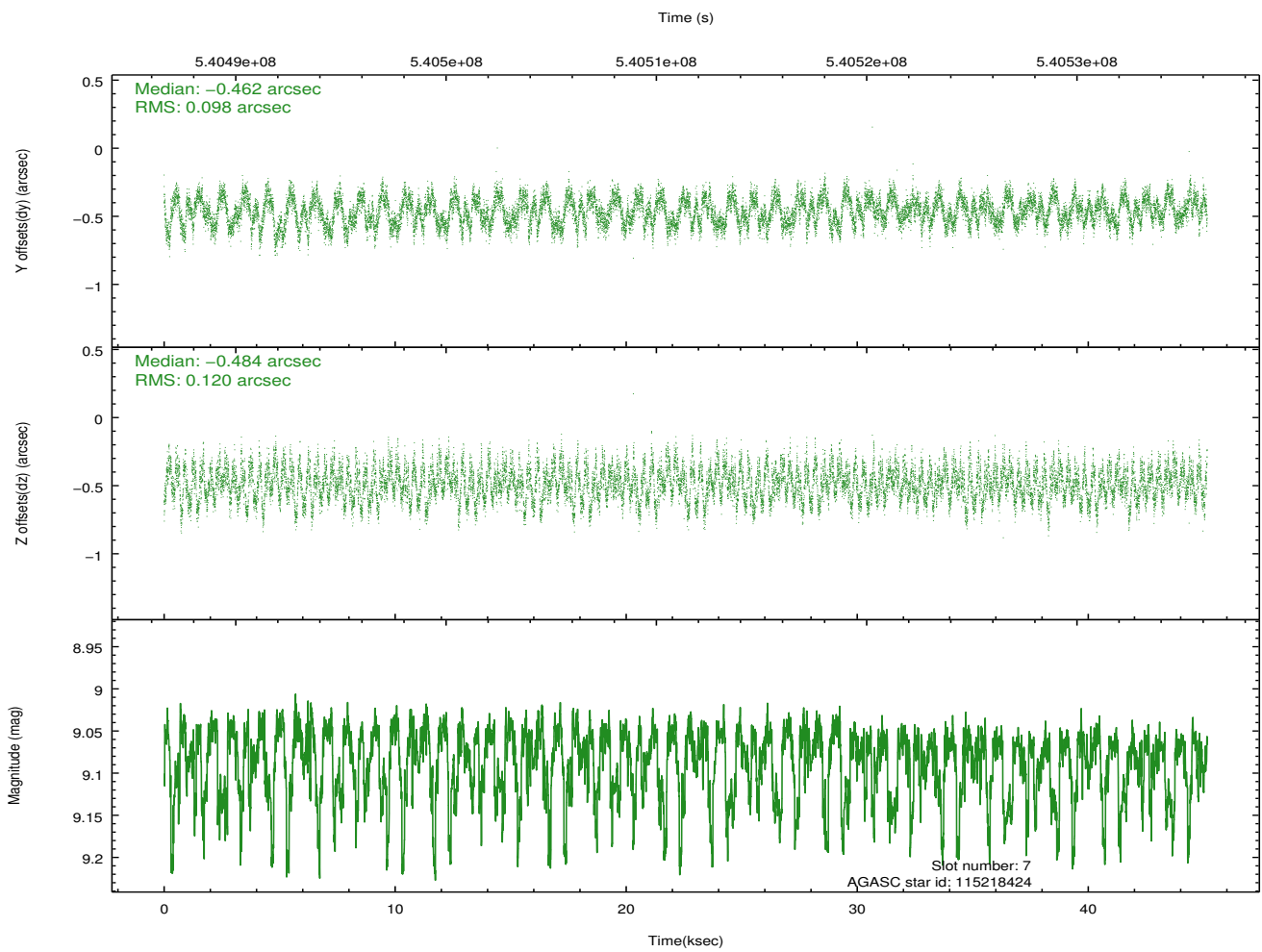
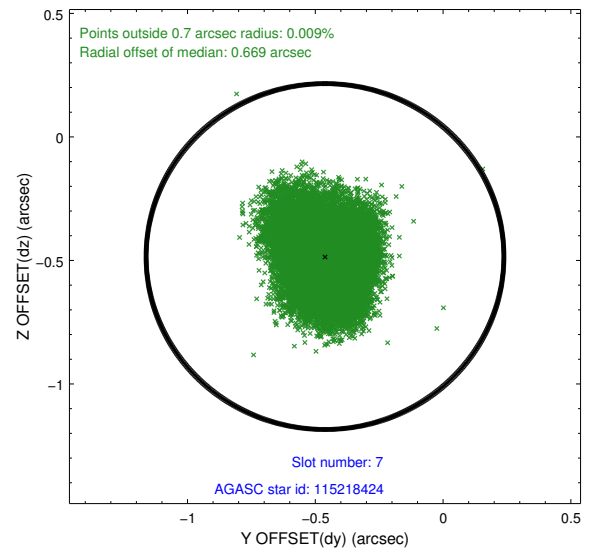
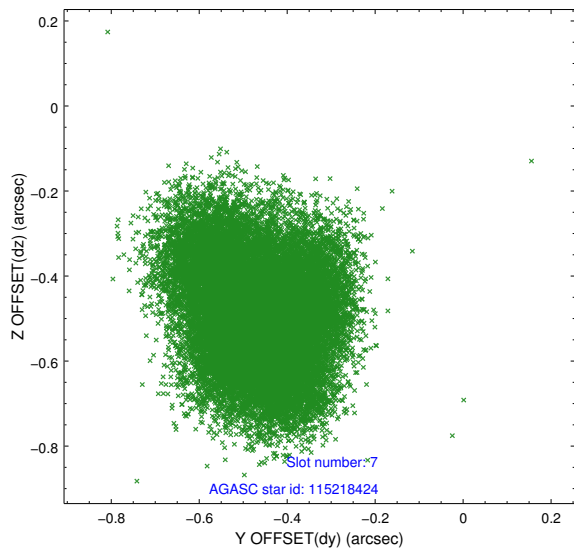
### 2.4.3 Slot 5



### 2.4.4 Slot 6

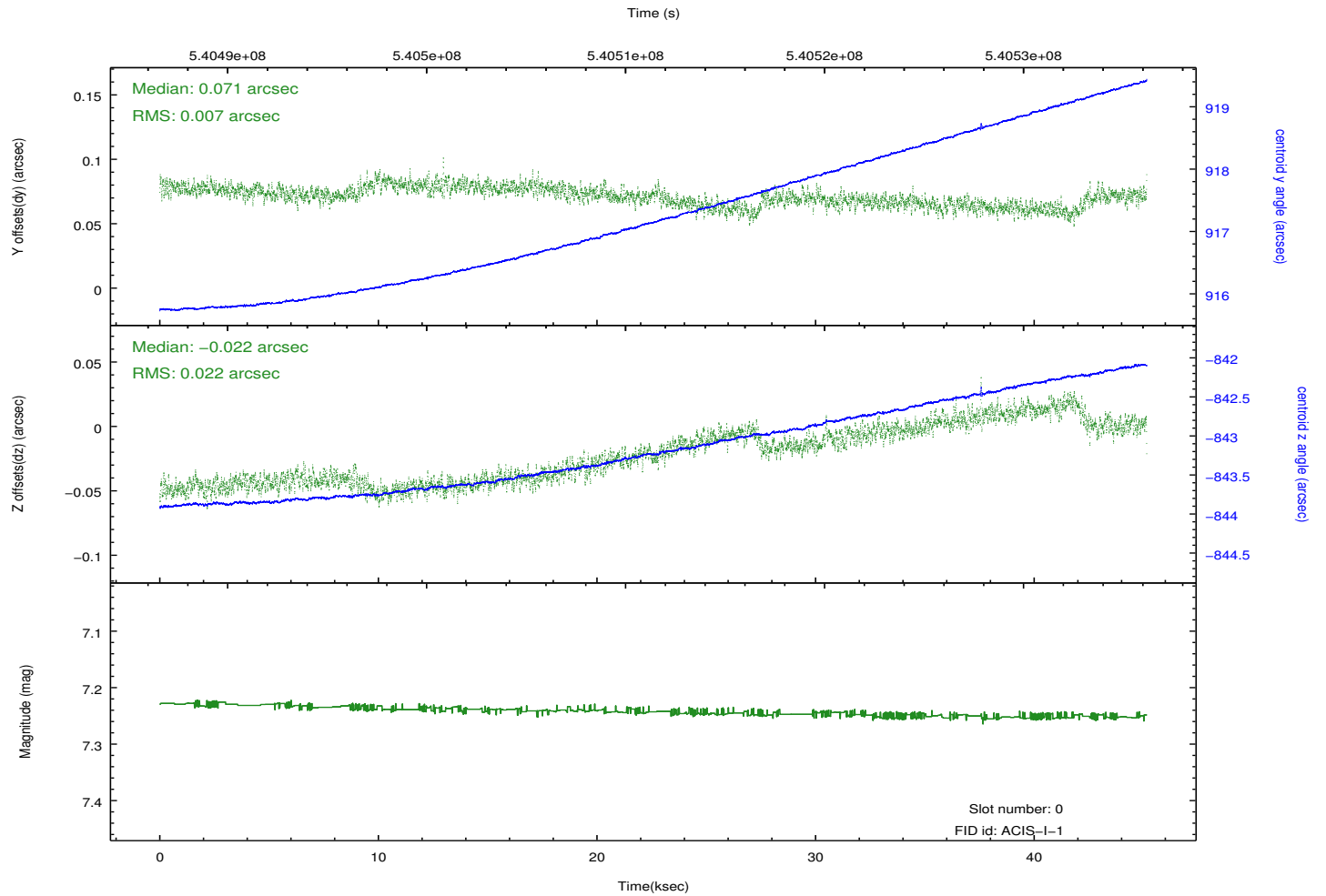
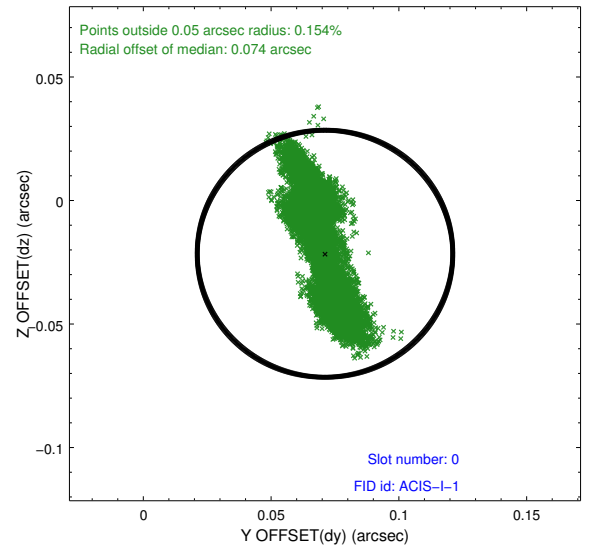
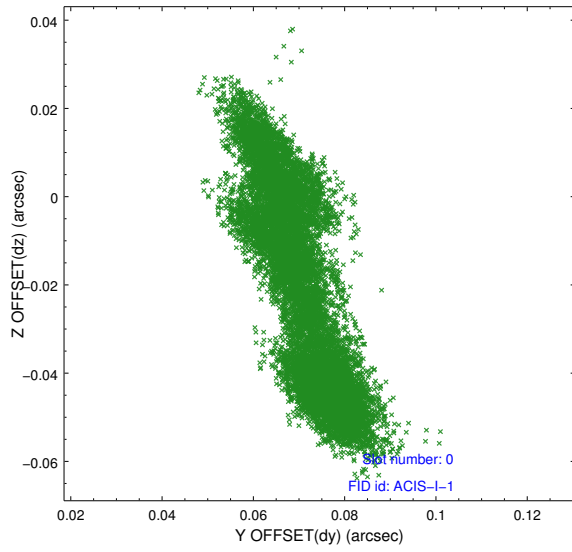


## 2.4.5 Slot 7

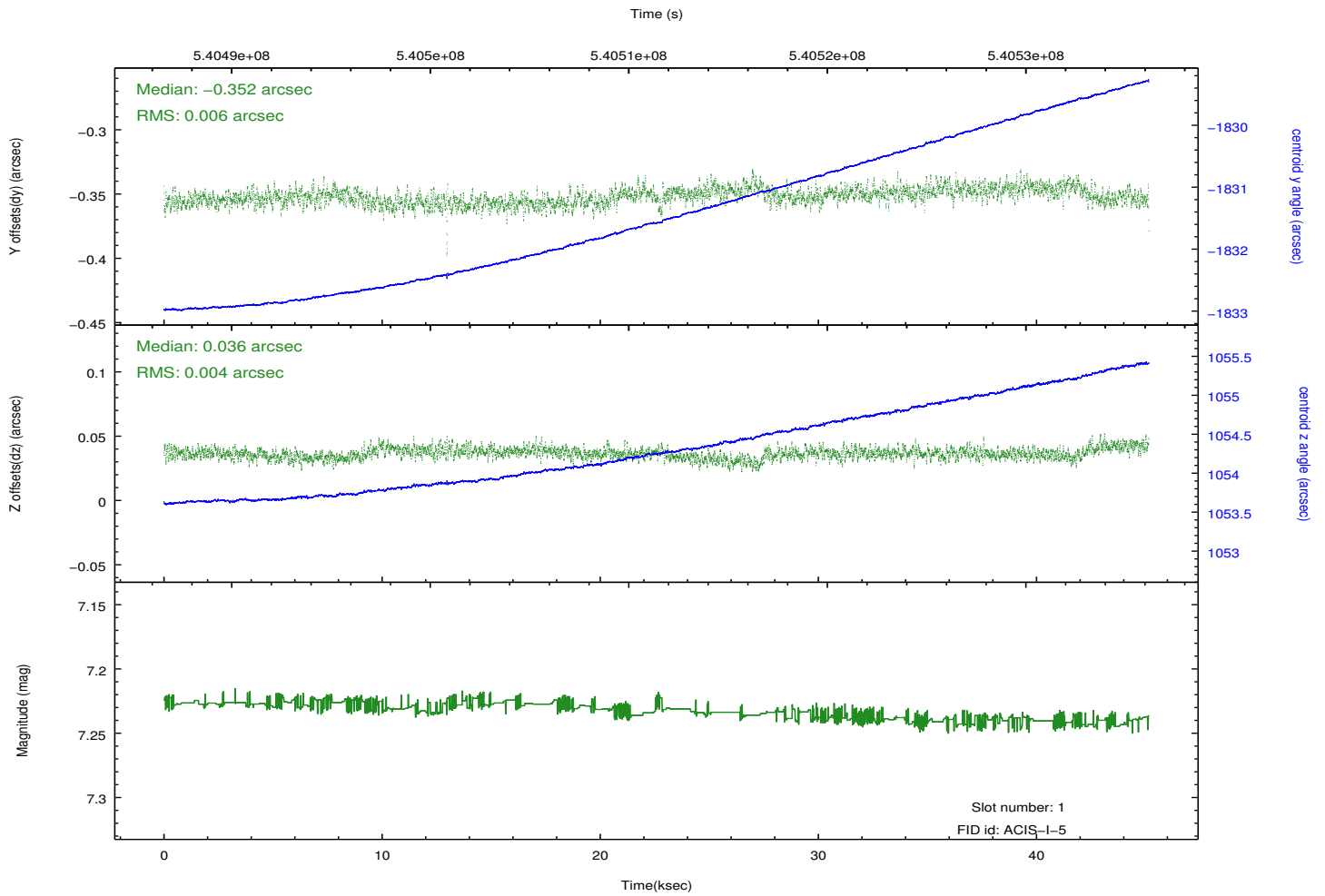
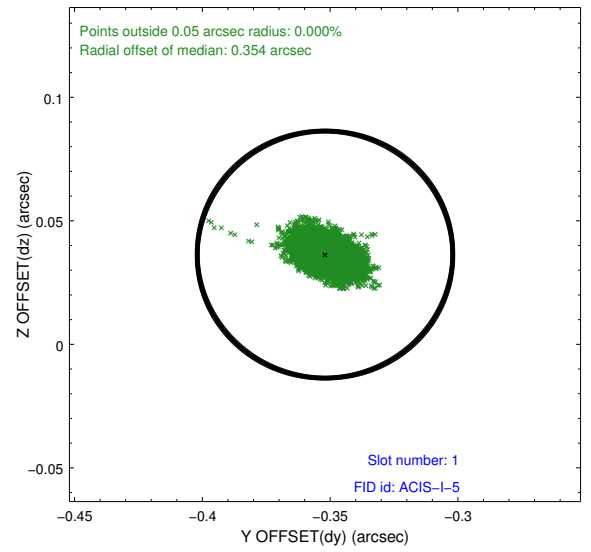
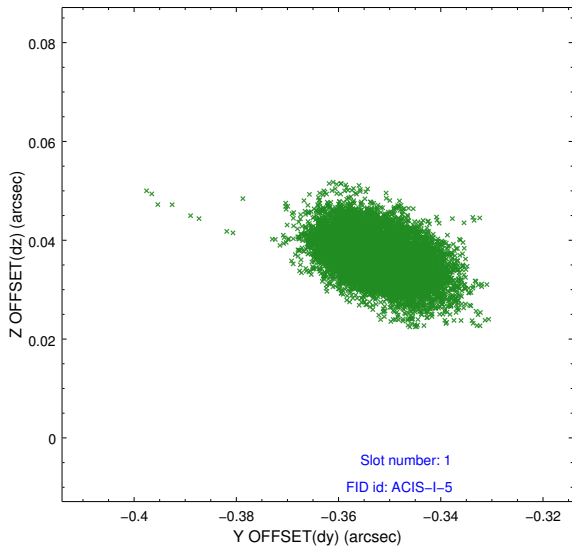


## 2.5 FID Slots

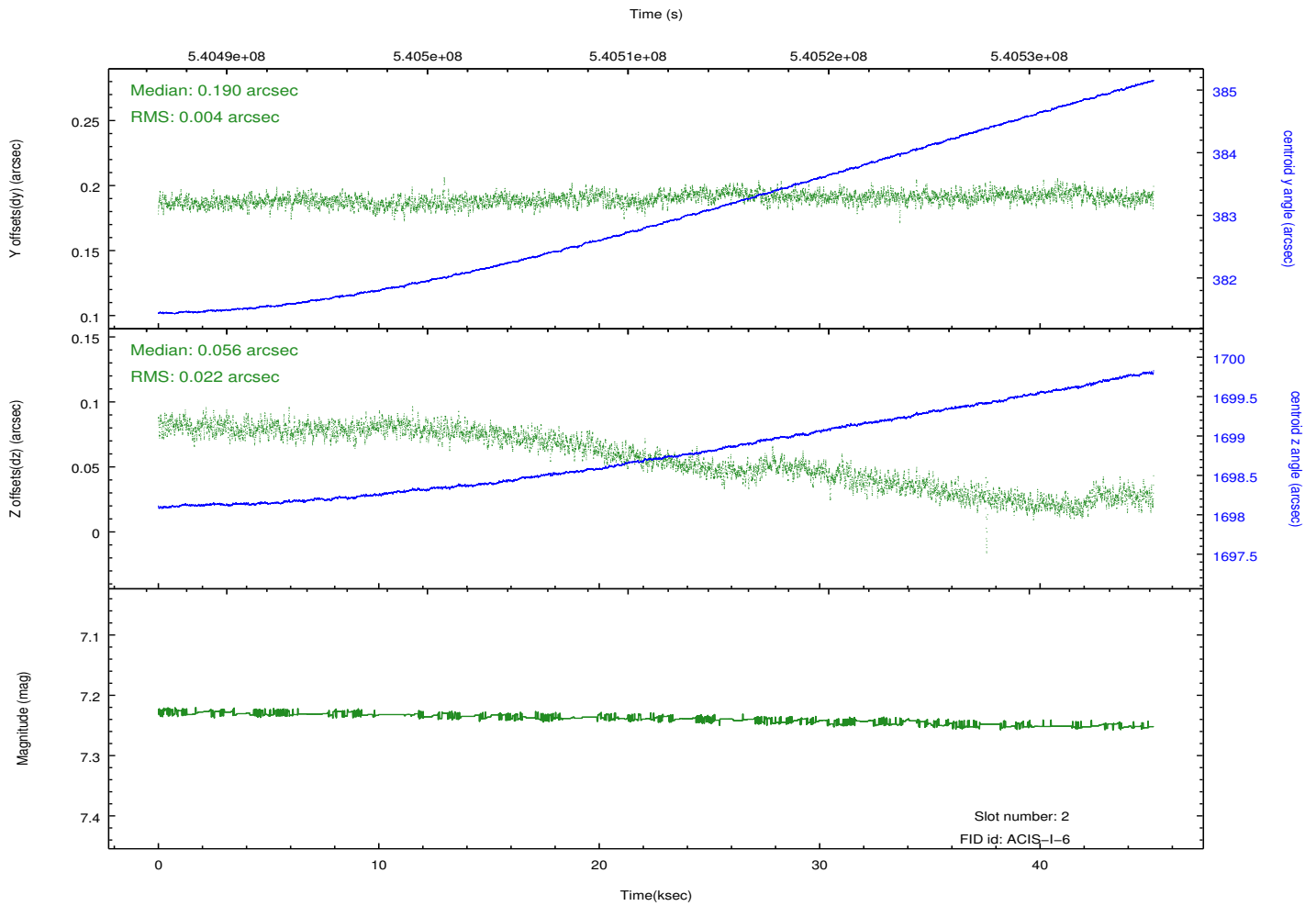
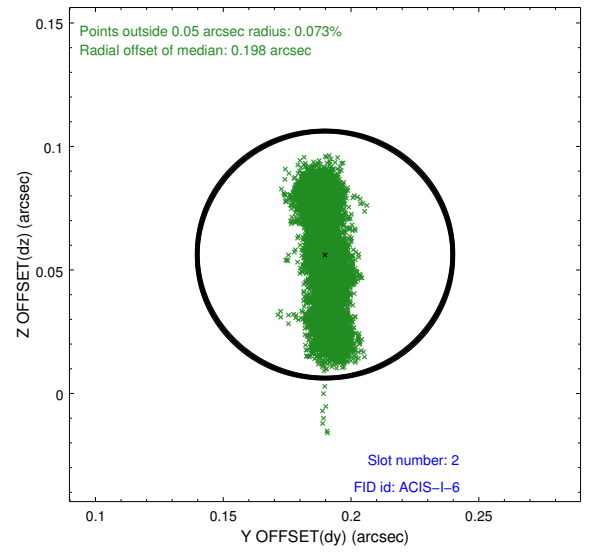
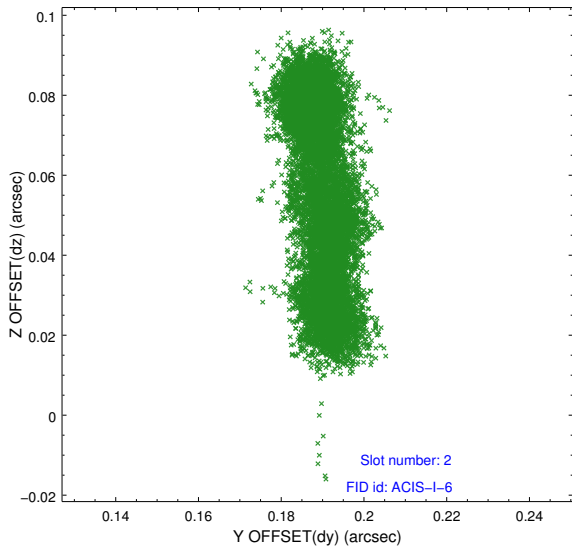
### 2.5.1 Slot 0



## 2.5.2 Slot 1



### 2.5.3 Slot 2



# A Summary

## A.1 Status

|                            |                 |
|----------------------------|-----------------|
| V&V Scientist              | Beth Sundheim   |
| V&V Date (YYYY-MM-DD)      | 2015.02.17      |
| V&V Edition                | 1               |
| V&V Disposition and Status | OK              |
| V&V Charge Time            | 45.073918216348 |

## A.2 Comments