

# V&V Reference Report

## L2 ASCDS Version : 10.8

Observation 21616 - L2 Version 1  
Chandra X-Ray Center

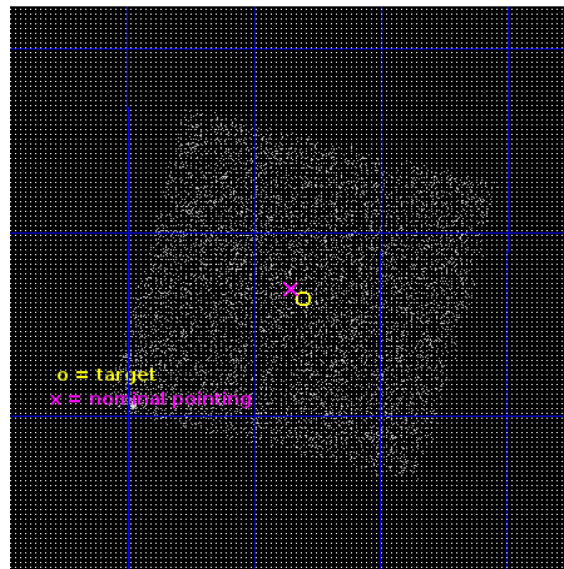
L2 Processing Date : Jul 8 2019

## 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

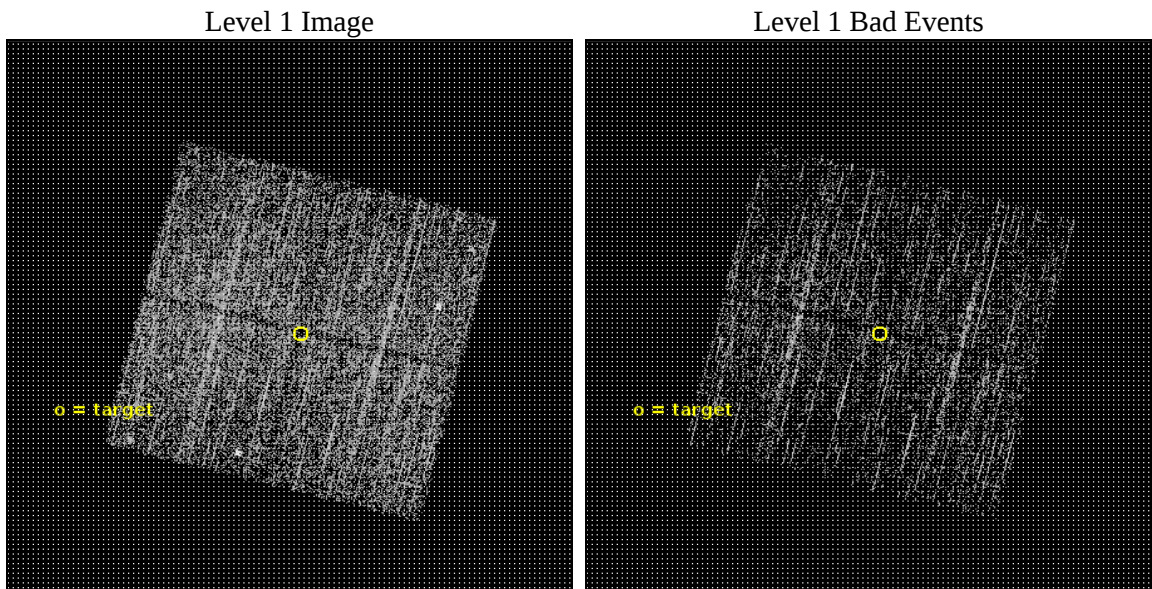
|          |                                                |                                             |
|----------|------------------------------------------------|---------------------------------------------|
| seq_num  | 300448                                         | Sequence number                             |
| obs_id   | 21616                                          | Observation id                              |
| title    | Chandra Mapping of the Galactic Central Region | Proposal title                              |
| observer | Daniel Wang                                    | Principal investigator                      |
| object   | GCR Gap 3                                      | Source name                                 |
| dtcycle  | 0                                              | &#160                                       |
| cycle    | P                                              | events from which exps?<br>Prim/Second/Both |
| ra_targ  | 266.20128                                      | Observer's specified target RA [deg]        |
| dec_targ | -28.060253                                     | Observer's specified target Dec [deg]       |
| ra_nom   | 266.2129214182                                 | Nominal RA [deg]                            |
| dec_nom  | -28.051309229816                               | Nominal Dec [deg]                           |
| roll_nom | 284.21418263642                                | Nominal Roll [deg]                          |
| revision | 1                                              | Processing version of data                  |
| ontime   | 1909.2602465153                                | Sum of GTIs [s]                             |
| livetime | 1884.3143558176                                | Livetime [s]                                |
| ontime0  | 1909.137126565                                 | Sum of GTIs [s]                             |
| ontime1  | 1906.0370963812                                | Sum of GTIs [s]                             |
| ontime2  | 1909.2192065716                                | Sum of GTIs [s]                             |
| ontime3  | 1909.2602465153                                | Sum of GTIs [s]                             |
| l2events | 6123                                           | Number of level 2 events                    |



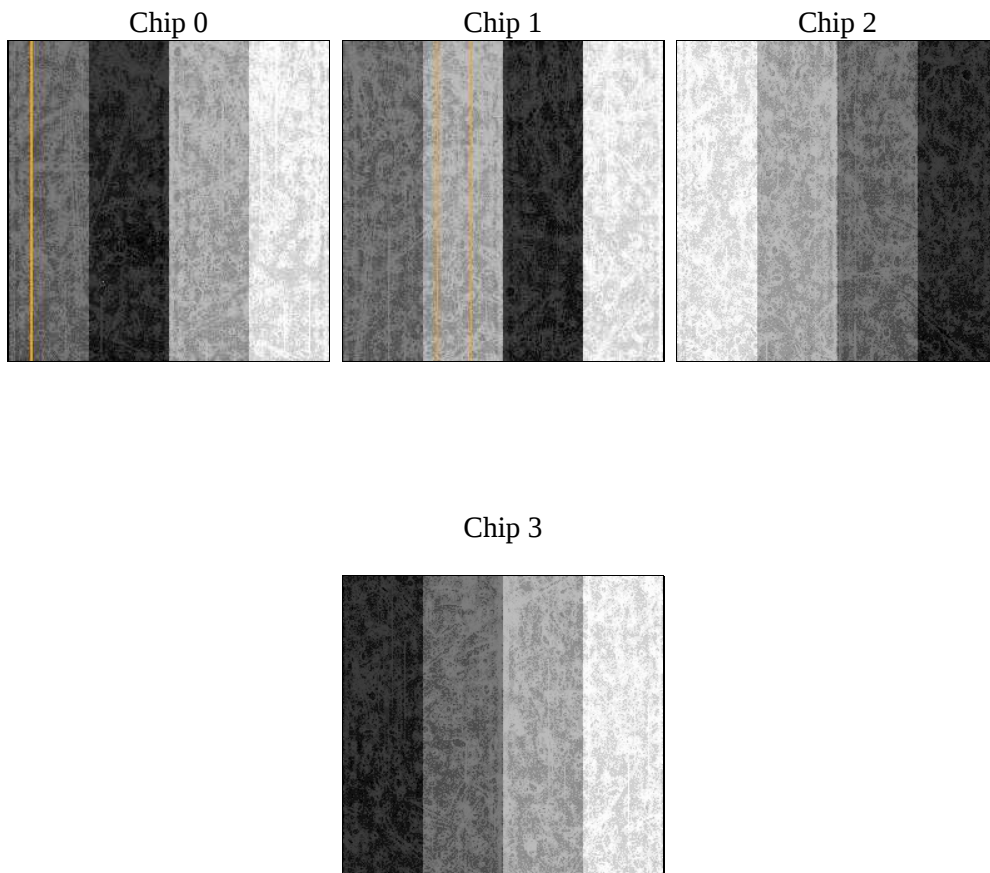
## 2 OBI

### 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     | [s] Scheduled observation exposure time |
| ascdsver | 10.8                | Processing system revision     | ontime         | 1909.2602465153 | Sum of GTIs [s]                         |
| caldsver | 4.8.3.1             | &#160                          | ontime0        | 1909.137126565  | Sum of GTIs [s]                         |
| date     | 2019-07-08T12:09:43 | Date and time of file creation | ontime1        | 1906.0370963812 | Sum of GTIs [s]                         |
| revision | 1                   | Processing version of data     | ontime2        | 1909.2192065716 | Sum of GTIs [s]                         |
|          |                     |                                | ontime3        | 1909.2602465153 | Sum of GTIs [s]                         |
|          |                     |                                | l1events       | 61927           | Number of level 1 events                |

### 2.1.4 Events

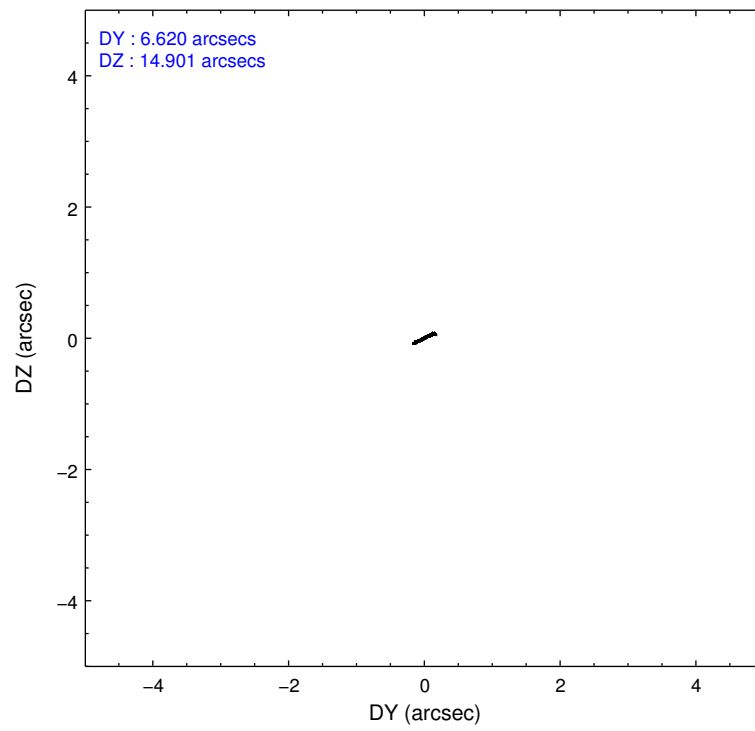
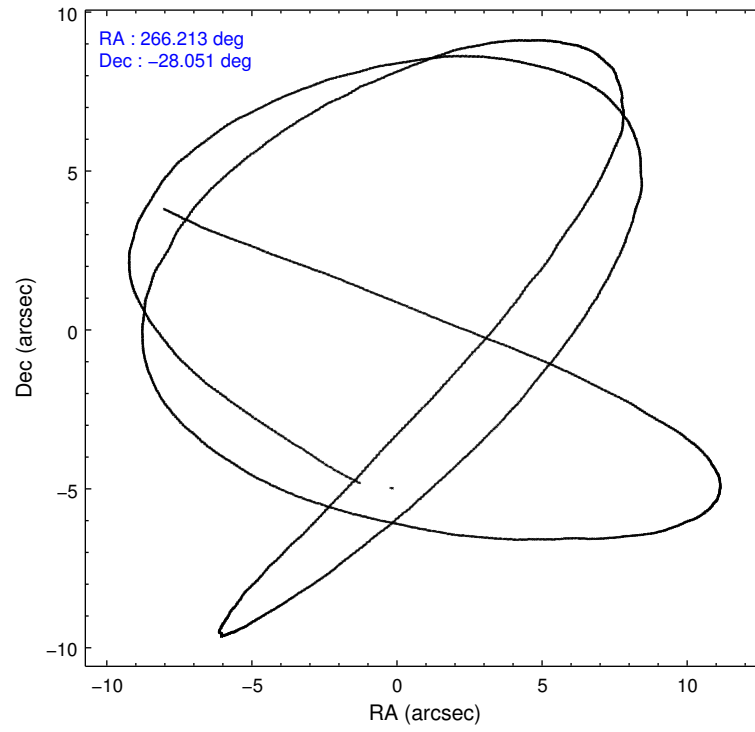
|                 | ccd 0 | ccd 1 | ccd 2 | ccd 3 |
|-----------------|-------|-------|-------|-------|
| level 1 events  | 15466 | 15085 | 16550 | 14826 |
| rejected events | 13591 | 12544 | 14127 | 13108 |
| rejected %      | 87%   | 83%   | 85%   | 88%   |

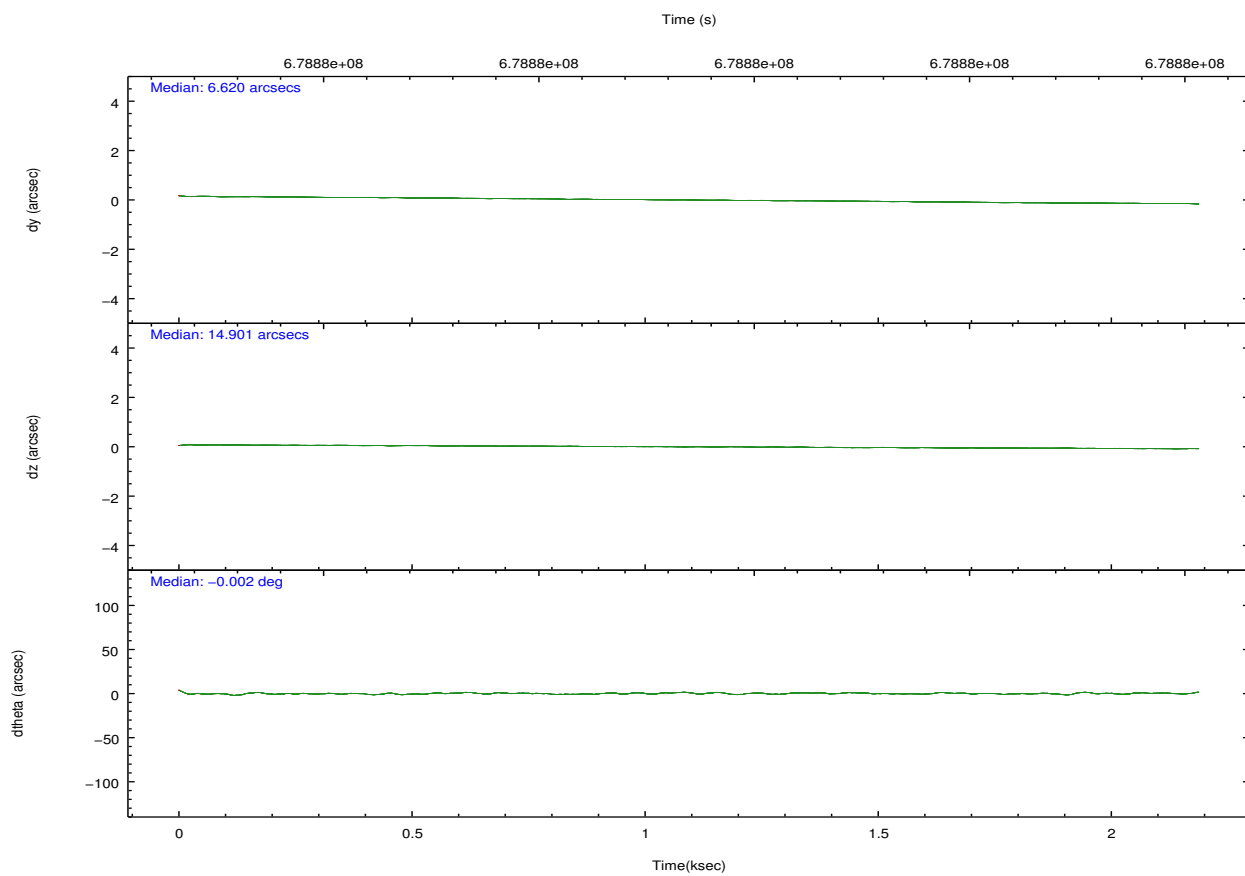
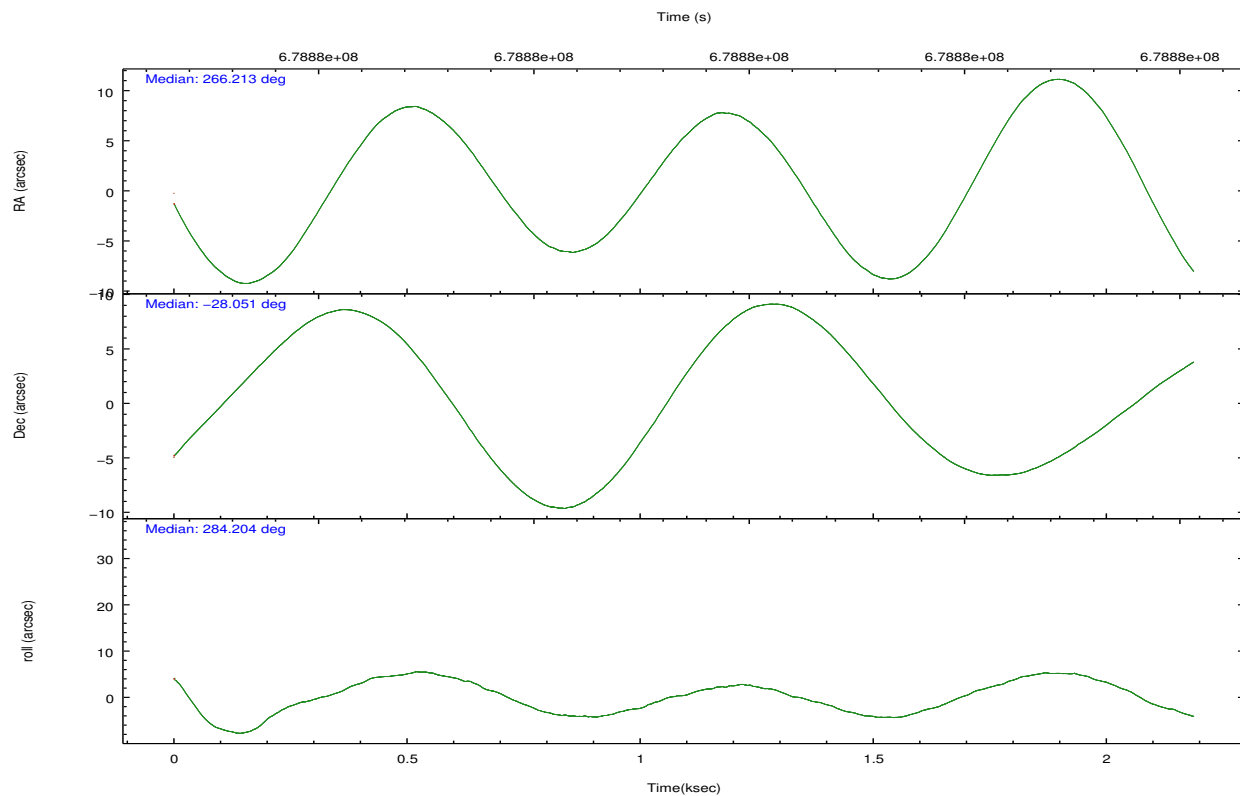
|                | ccd 0 | ccd 1 | ccd 2 | ccd 3 |
|----------------|-------|-------|-------|-------|
| grade 0 events | 682   | 1270  | 1372  | 670   |
|                | 4%    | 8%    | 8%    | 4%    |
| grade 1 events | 5     | 14    | 13    | 9     |
|                | 0%    | 0%    | 0%    | 0%    |
| grade 2 events | 458   | 478   | 404   | 347   |
|                | 2%    | 3%    | 2%    | 2%    |
| grade 3 events | 178   | 174   | 155   | 168   |
|                | 1%    | 1%    | 0%    | 1%    |
| grade 4 events | 171   | 140   | 179   | 164   |
|                | 1%    | 0%    | 1%    | 1%    |
| grade 5 events | 636   | 594   | 586   | 653   |
|                | 4%    | 3%    | 3%    | 4%    |
| grade 6 events | 388   | 482   | 315   | 372   |
|                | 2%    | 3%    | 1%    | 2%    |
| grade 7 events | 12948 | 11933 | 13526 | 12443 |
|                | 83%   | 79%   | 81%   | 83%   |

## 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                 | 266.191040          | 266.2129214181954     | Subarray requested                    | NONE      | NONE    |
| [deg] Pointing Dec                | -28.031609          | -28.05130922981557    | Alternating exposures requested       | N         | N       |
| [deg] Pointing Roll               | 283.995189          | 284.2141826364199     | [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)  | 678881932.184000    | 678881522.8813601     |                                       |           |         |
| Observation start date            | 2019-07-07T10:17:43 | 2019-07-07T10:12:02   |                                       |           |         |
| [s] Observation end time (MET)    | 678883932.184000    | 678884693.20655       |                                       |           |         |
| Observation end date              | 2019-07-07T10:51:03 | 2019-07-07T11:04:53   |                                       |           |         |
| Read mode                         | TIMED               | TIMED                 |                                       |           |         |

## 2.3 Aspect



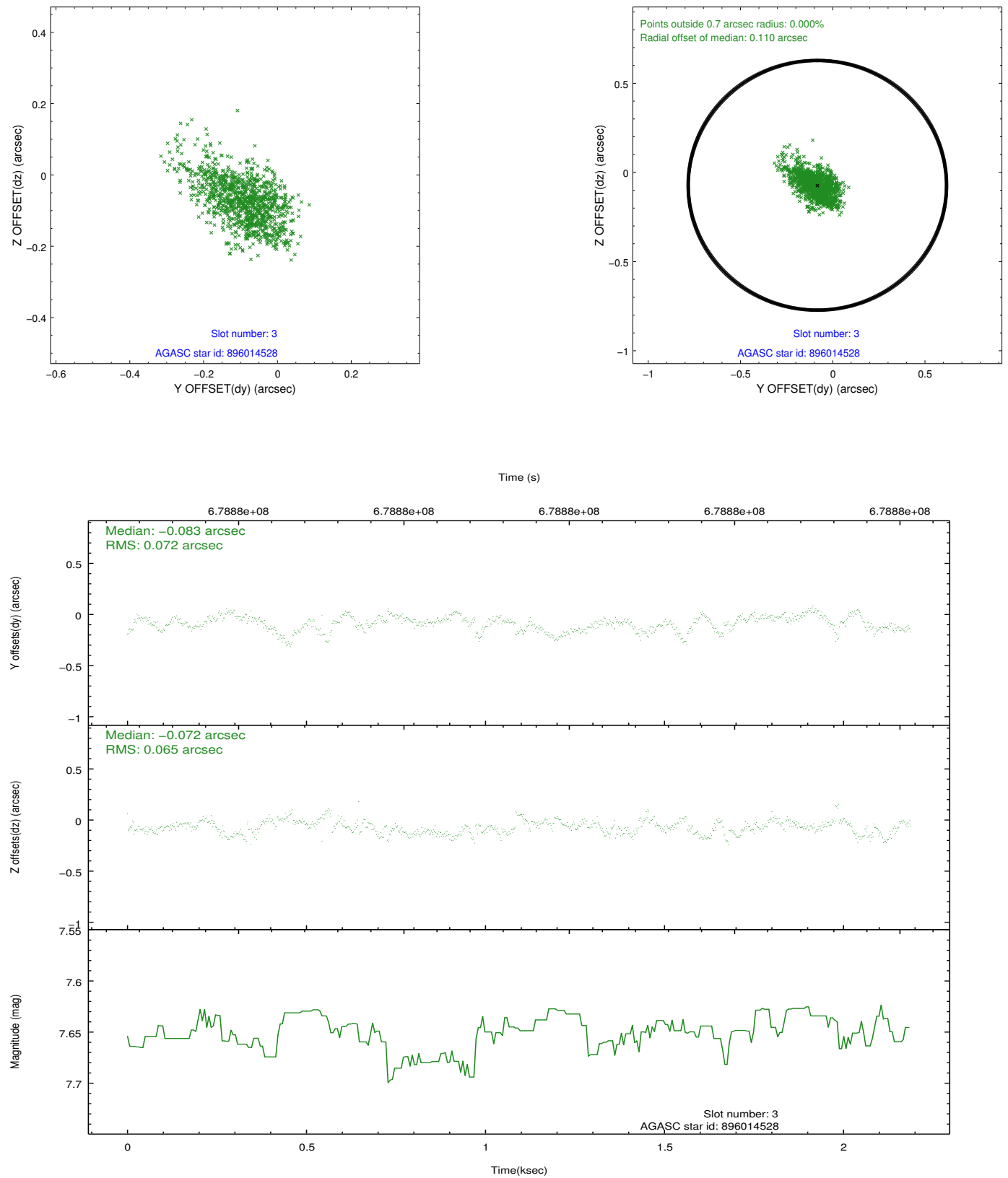


# Slot Statistics

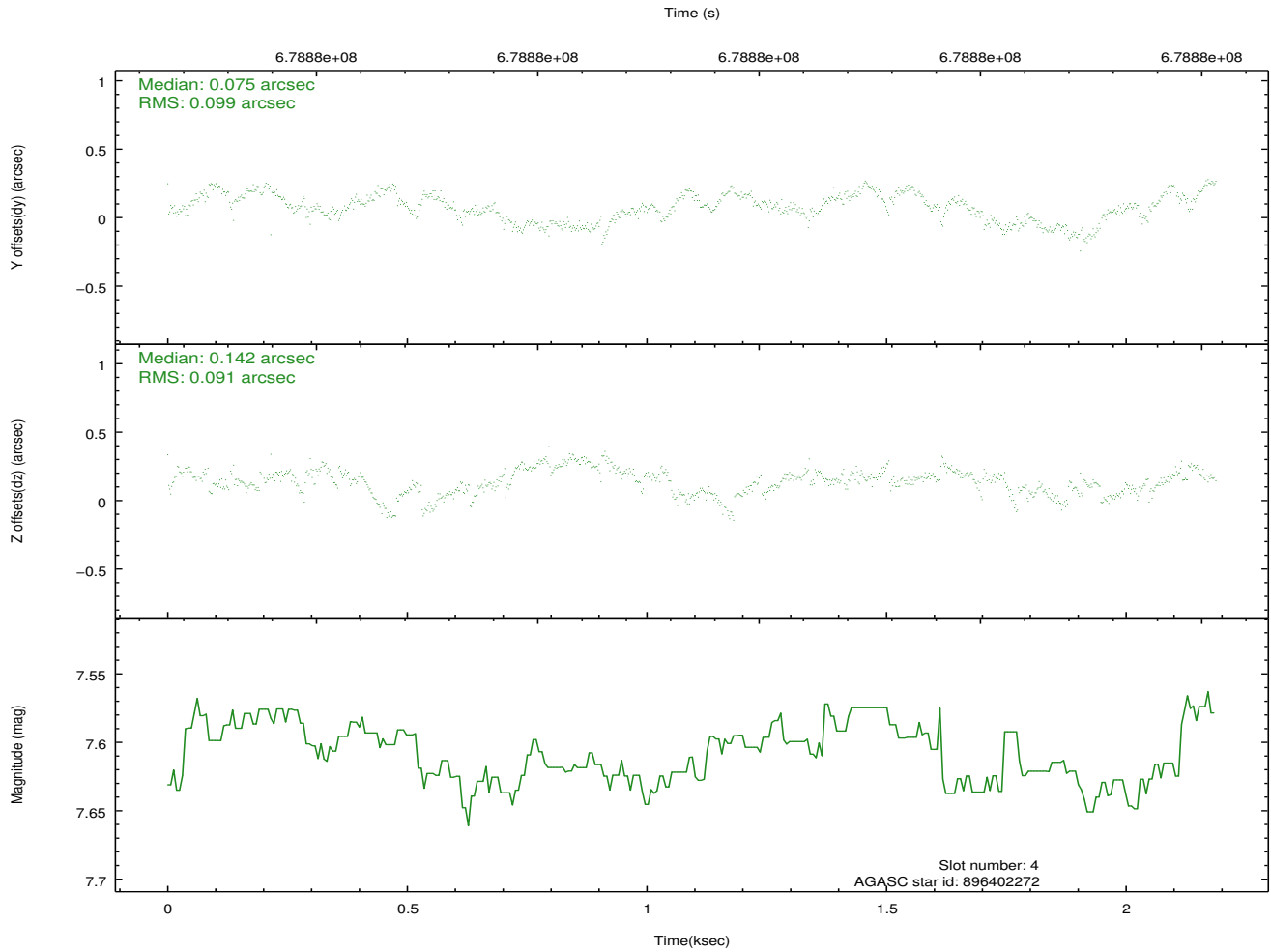
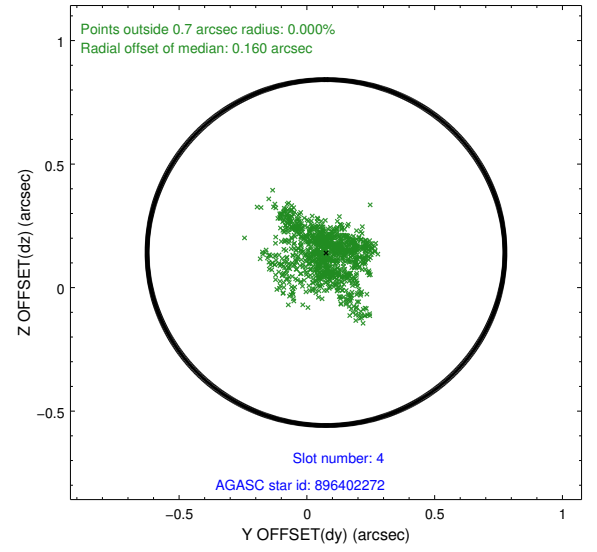
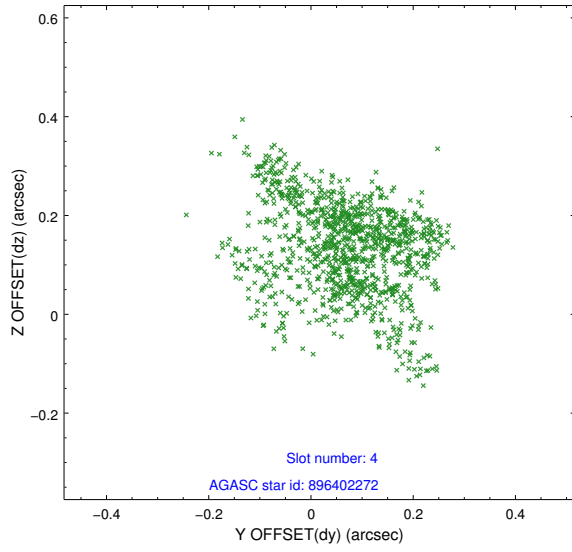
| pt | status | used | id        | mag  | n_pts | frac_pts | med_dy | med_dz | dr1   | dr2   | ra         | dec        | mean_y   | mea   |
|----|--------|------|-----------|------|-------|----------|--------|--------|-------|-------|------------|------------|----------|-------|
| 0  | FID    |      | ACIS-I-1  | 7.23 | 534   | 1.000    | 0.155  | 0.011  | 0.009 | 0.015 | 0.000000   | 0.000000   | 933.23   | -838  |
| 1  | FID    |      | ACIS-I-2  | 7.12 | 534   | 1.000    | -0.319 | -0.212 | 0.009 | 0.015 | 0.000000   | 0.000000   | -759.67  | -846  |
| 2  | FID    |      | ACIS-I-6  | 7.20 | 534   | 1.000    | 0.073  | 0.269  | 0.009 | 0.017 | 0.000000   | 0.000000   | 397.42   | 1702  |
| 3  | GUIDE  | used | 896014528 | 7.65 | 1067  | 1.000    | -0.083 | -0.072 | 0.100 | 0.170 | 266.628858 | -27.438607 | -1730.71 | 1872  |
| 4  | GUIDE  | used | 896402272 | 7.61 | 1068  | 1.000    | 0.075  | 0.142  | 0.146 | 0.234 | 265.637294 | -28.313189 | 562.33   | -1946 |
| 5  | GUIDE  | used | 896404568 | 7.85 | 1068  | 1.000    | -0.010 | 0.146  | 0.092 | 0.149 | 265.687293 | -28.431080 | 1014.29  | -1897 |
| 6  | GUIDE  | used | 896534664 | 8.21 | 1068  | 1.000    | 0.050  | -0.469 | 0.084 | 0.142 | 266.405570 | -28.407461 | 1480.13  | 329   |
| 7  | GUIDE  | used | 896402656 | 8.83 | 1067  | 1.000    | -0.014 | 0.262  | 0.106 | 0.177 | 265.739192 | -28.230753 | 353.75   | -1563 |

## 2.4 Star Slots

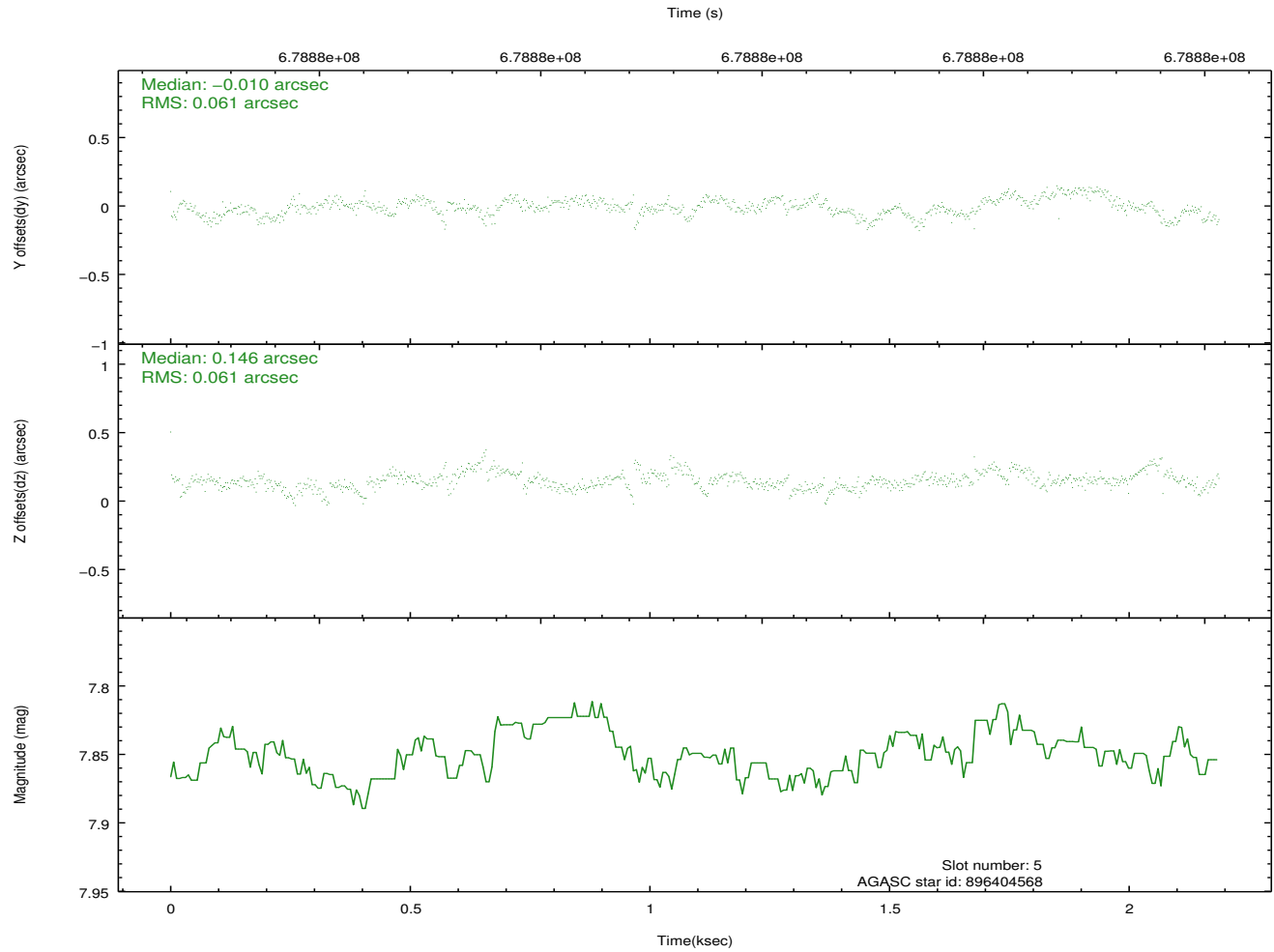
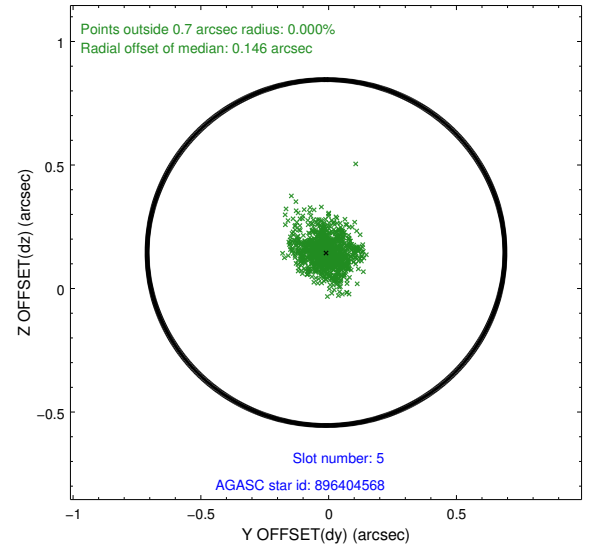
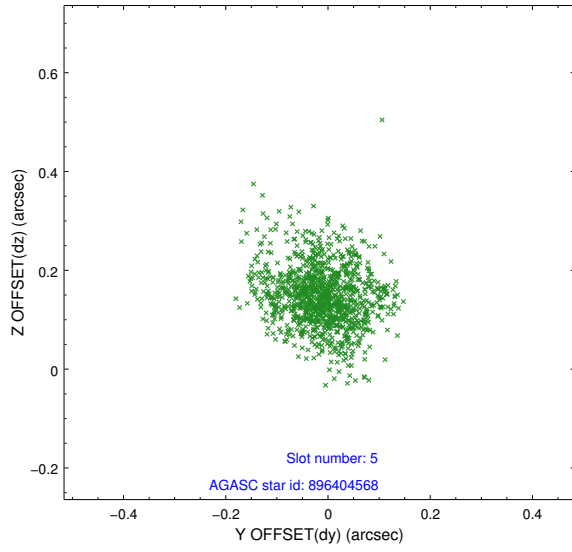
### 2.4.1 Slot 3



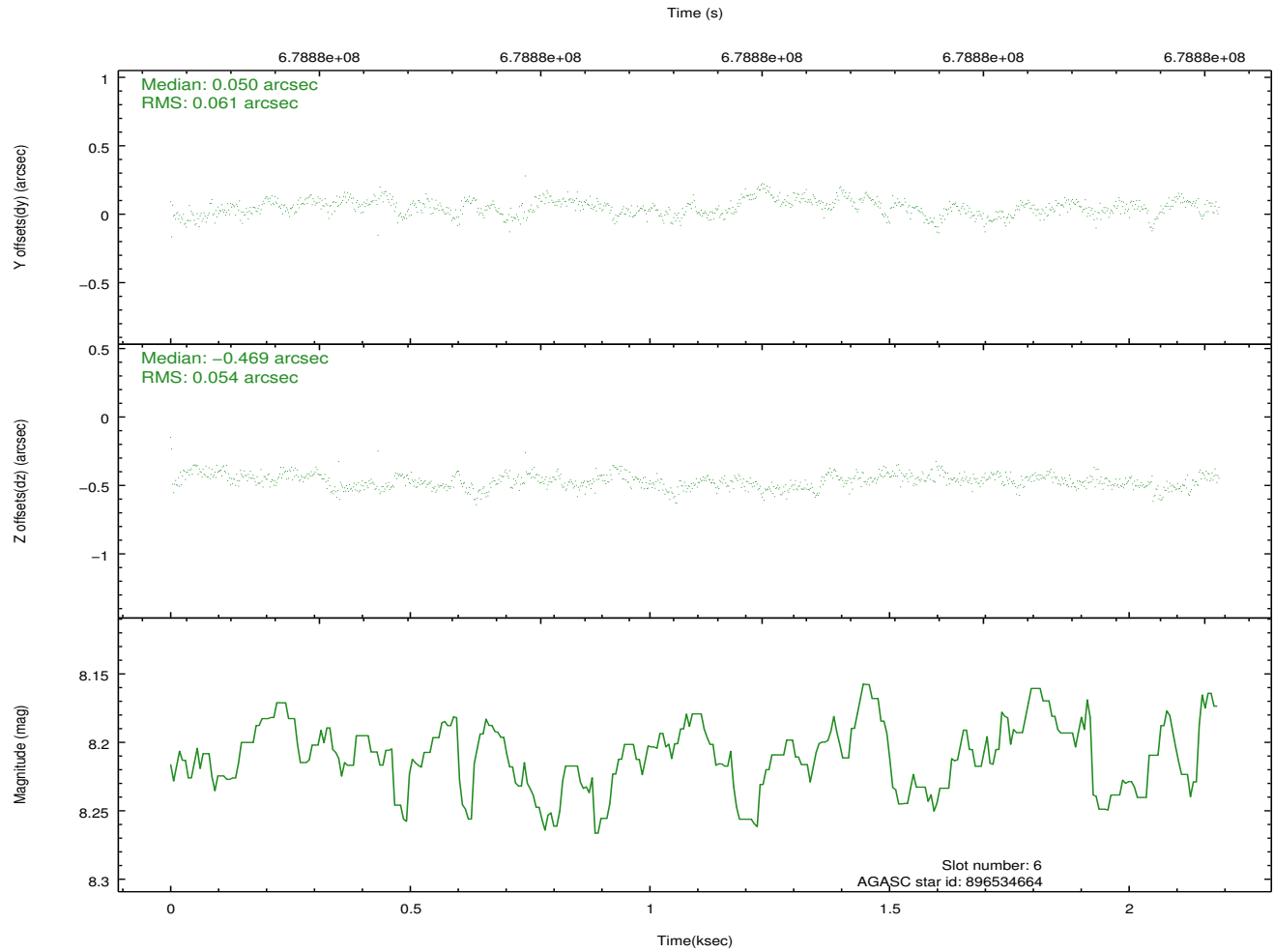
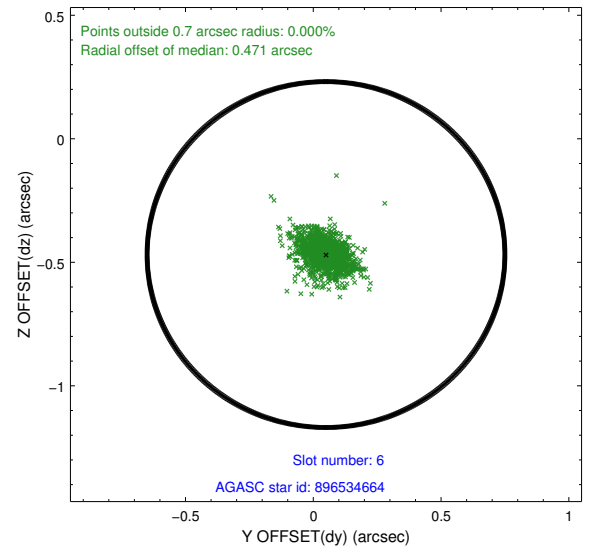
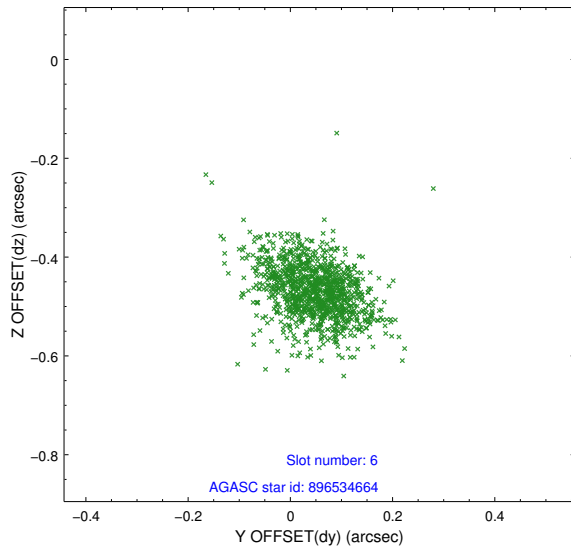
## 2.4.2 Slot 4



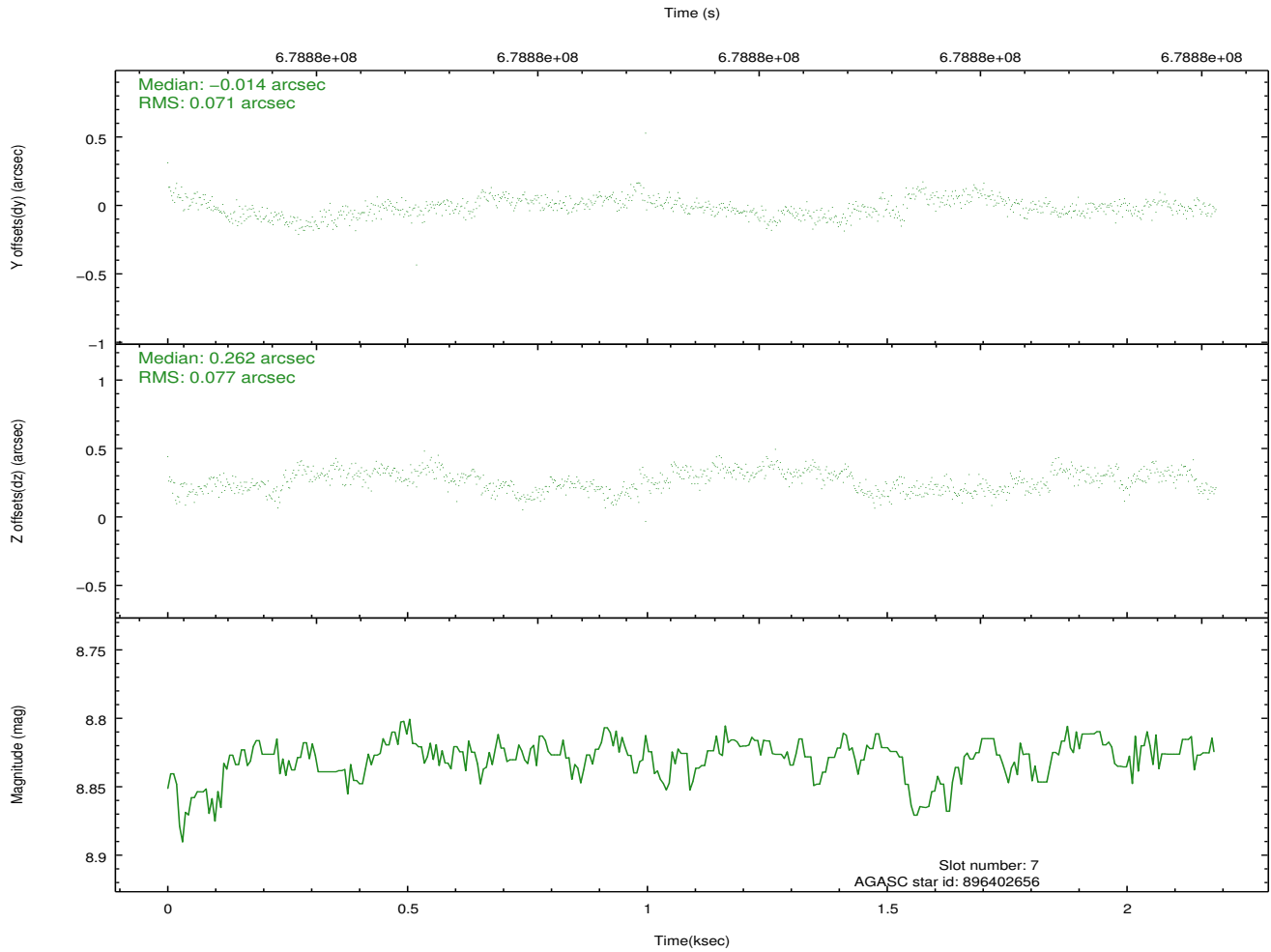
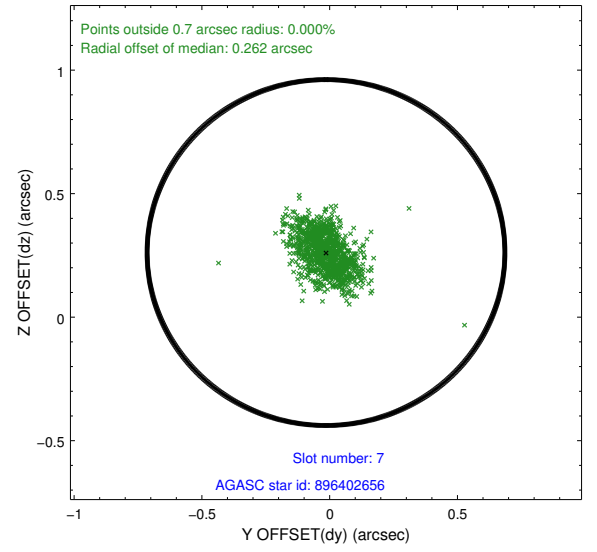
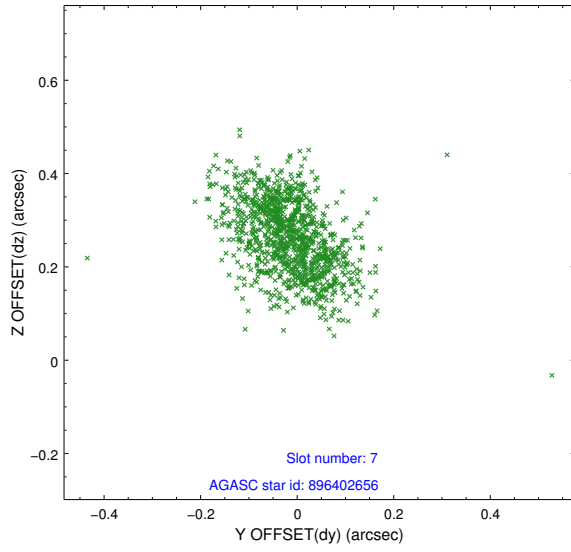
### 2.4.3 Slot 5



## 2.4.4 Slot 6

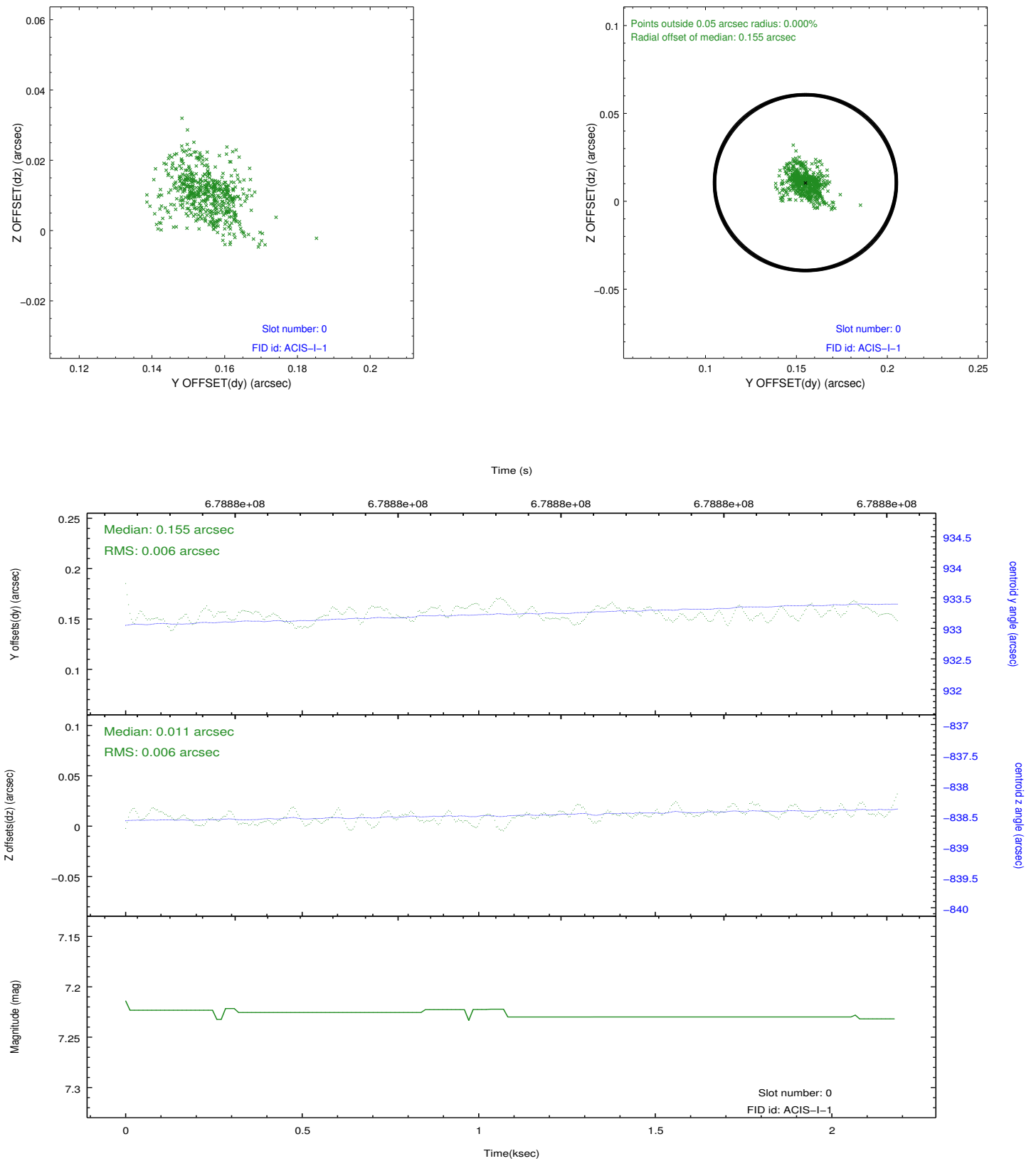


## 2.4.5 Slot 7

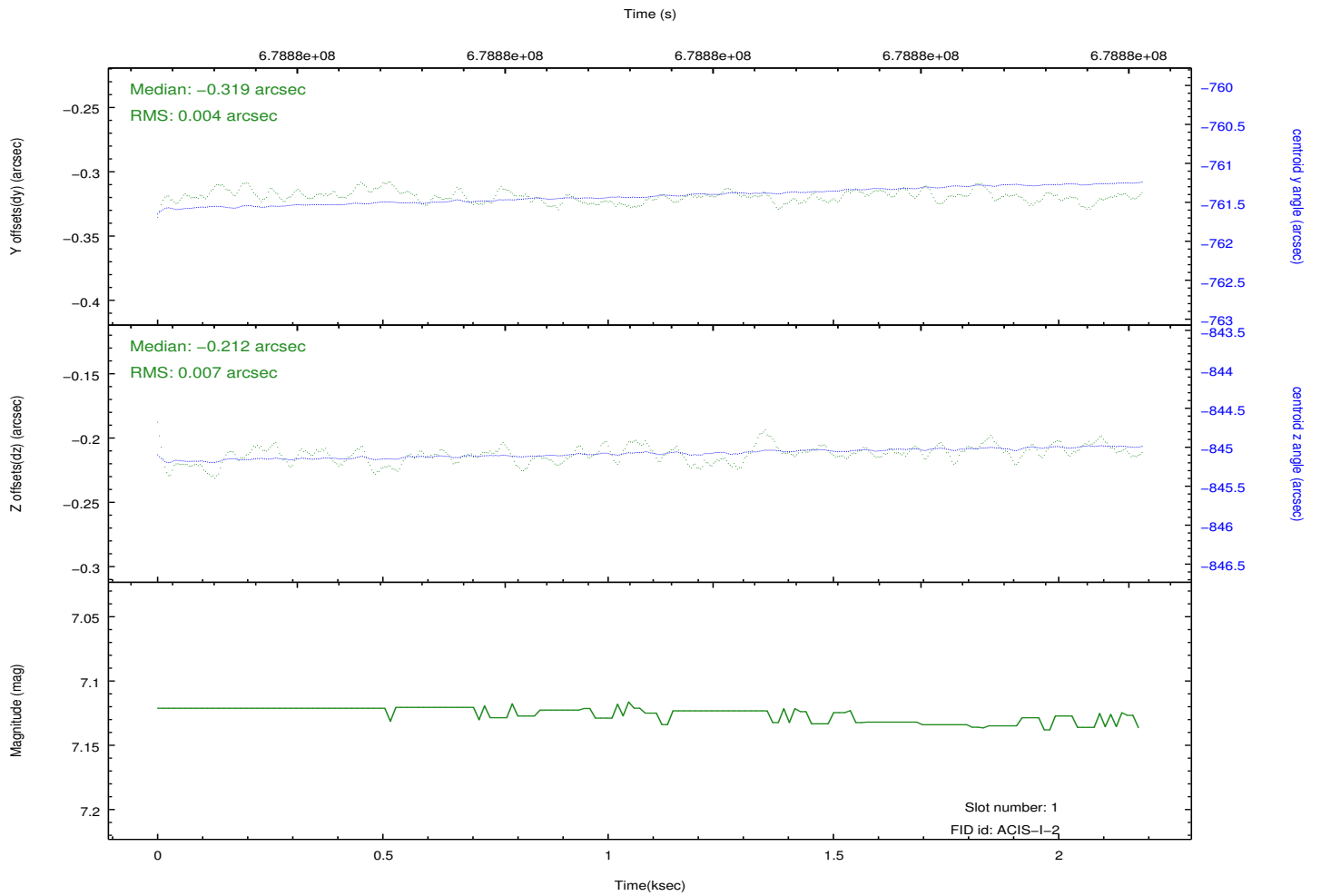
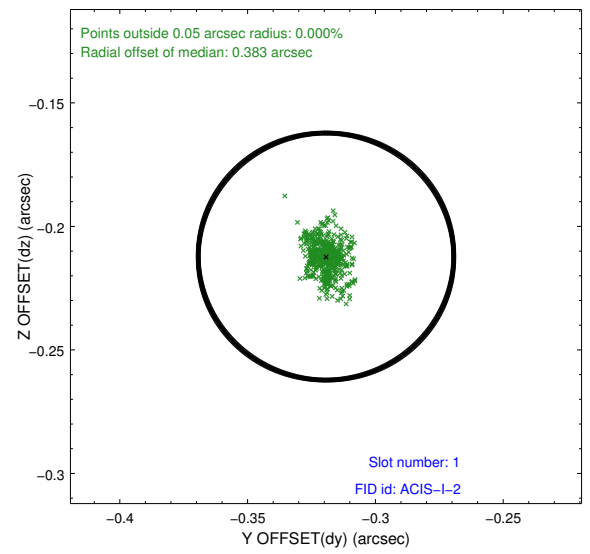
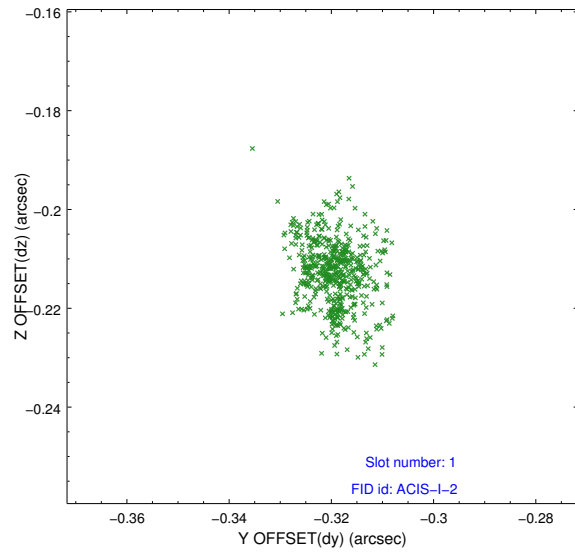


## 2.5 FID Slots

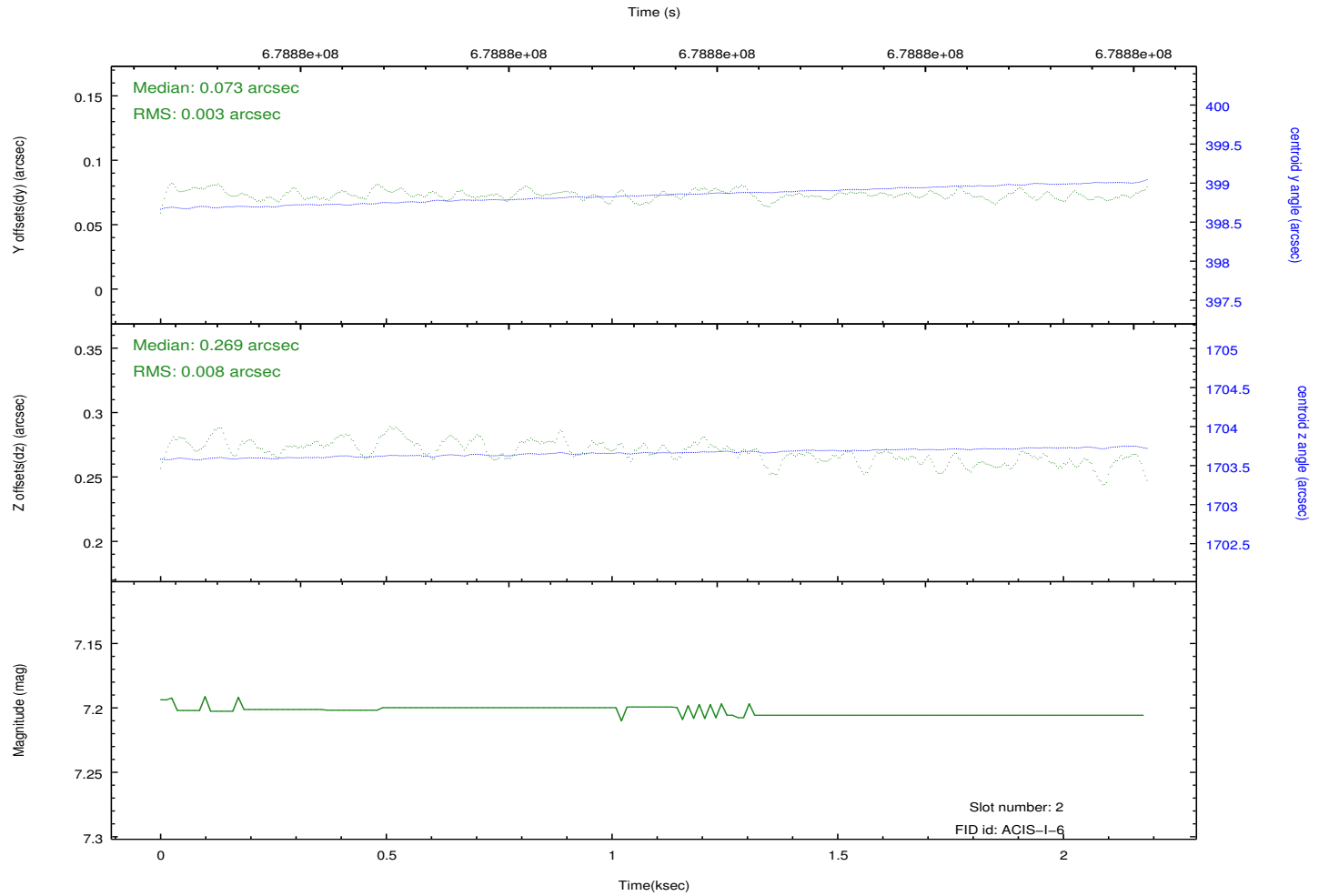
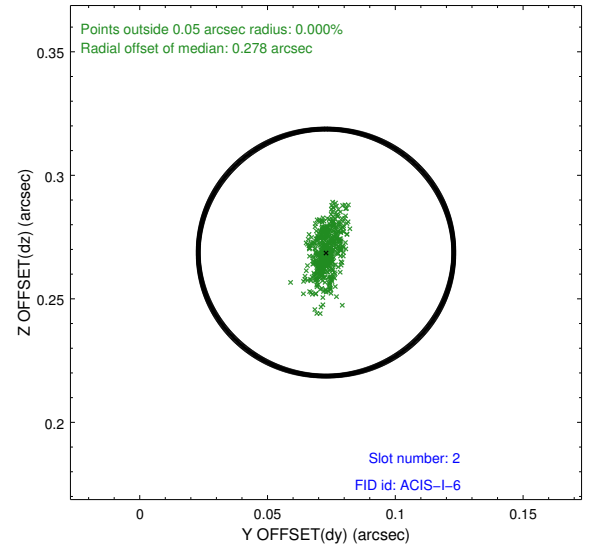
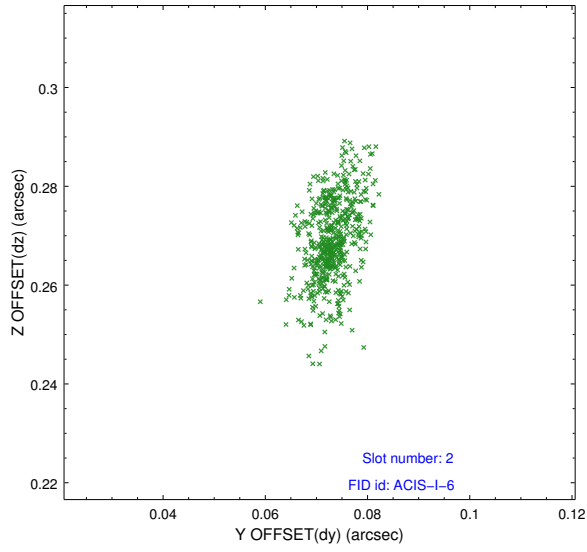
### 2.5.1 Slot 0



## 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)      | 2019.07.08      |
| V&V Edition                | 1               |
| V&V Disposition and Status | OK              |
| V&V Charge Time            | 1.9092602465153 |

### A.2 Comments