

# V&V Reference Report

## L2 ASCDS Version : 10.2.4

Observation 17487 - L2 Version 1  
Chandra X-Ray Center

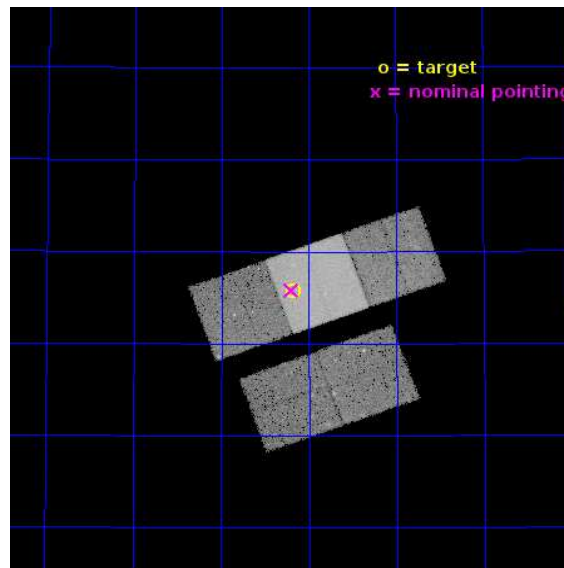
L2 Processing Date : Oct 12 2014

## 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  | 601115                                                                                      | Sequence number                             |
| obs_id   | 17487                                                                                       | Observation id                              |
| title    | Chandra Observation of the Most Luminous Off-nuclear Intermediate-mass Black Hole Candidate | Proposal title                              |
| observer | Dr Dacheng Lin                                                                              | Principal investigator                      |
| object   | 2XMM J141711.0+522541                                                                       | Source name                                 |
| dtcycle  | 0                                                                                           | &#160                                       |
| cycle    | P                                                                                           | events from which exps?<br>Prim/Second/Both |
| ra_targ  | 214.295833                                                                                  | Observer's specified target RA [deg]        |
| dec_targ | 52.428306                                                                                   | Observer's specified target Dec [deg]       |
| ra_nom   | 214.29996536751                                                                             | Nominal RA [deg]                            |
| dec_nom  | 52.430157163451                                                                             | Nominal Dec [deg]                           |
| roll_nom | 339.98386268169                                                                             | Nominal Roll [deg]                          |
| revision | 1                                                                                           | Processing version of data                  |
| ontime   | 33066.315587401                                                                             | Sum of GTIs [s]                             |
| livetime | 32634.279831185                                                                             | Livetime [s]                                |
| ontime2  | 33063.010437191                                                                             | Sum of GTIs [s]                             |
| ontime3  | 33066.233507395                                                                             | Sum of GTIs [s]                             |
| ontime6  | 33063.13352704                                                                              | Sum of GTIs [s]                             |
| ontime7  | 33066.315587401                                                                             | Sum of GTIs [s]                             |
| ontime8  | 33066.192467391                                                                             | Sum of GTIs [s]                             |
| l2events | 169151                                                                                      | Number of level 2 events                    |

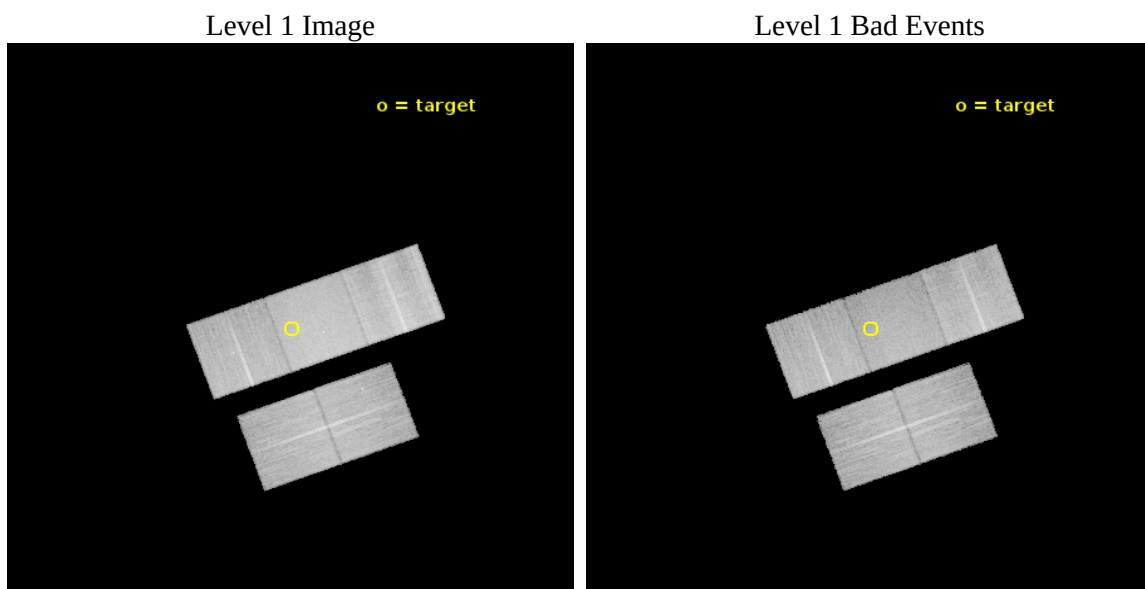




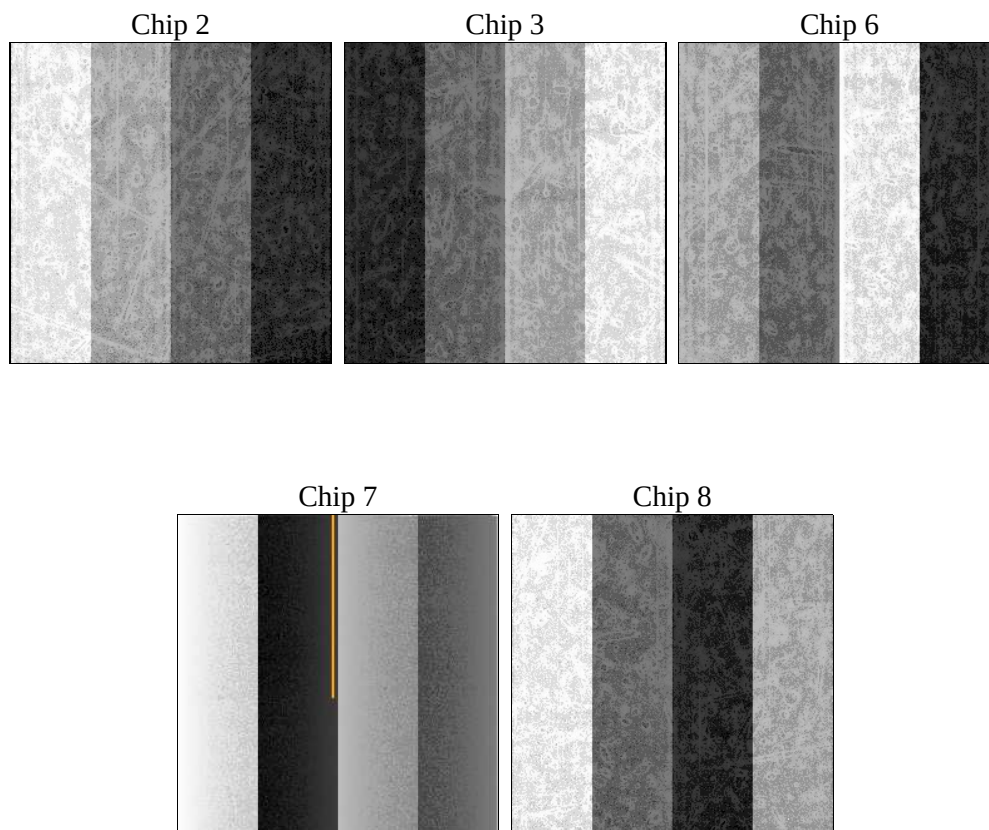
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

|          |                     |                                |                |                 |                                         |
|----------|---------------------|--------------------------------|----------------|-----------------|-----------------------------------------|
| obi_num  | 0                   | Obi number                     | sched_exp_time | 33000.000000    | [s] Scheduled observation exposure time |
| ascdsver | 10.2.4              | Processing system revision     | ontime         | 33066.315587401 | Sum of GTIs [s]                         |
| caldsver | 4.6.3               | &#160                          | ontime2        | 33063.010437191 | Sum of GTIs [s]                         |
| date     | 2014-10-12T13:29:49 | Date and time of file creation | ontime3        | 33066.233507395 | Sum of GTIs [s]                         |
| revision | 1                   | Processing version of data     | ontime6        | 33063.13352704  | Sum of GTIs [s]                         |
|          |                     |                                | ontime7        | 33066.315587401 | Sum of GTIs [s]                         |
|          |                     |                                | ontime8        | 33066.192467391 | Sum of GTIs [s]                         |
|          |                     |                                | l1events       | 949909          | Number of level 1 events                |

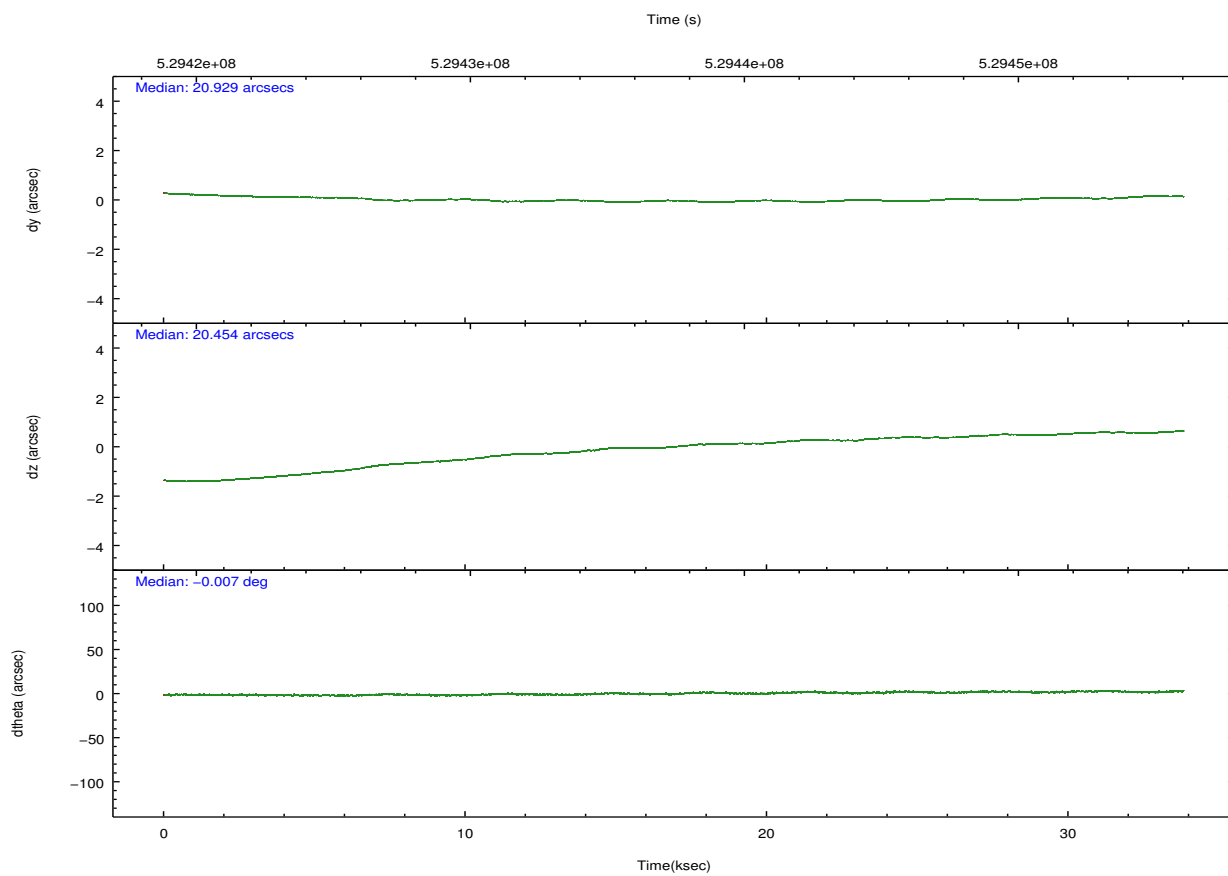
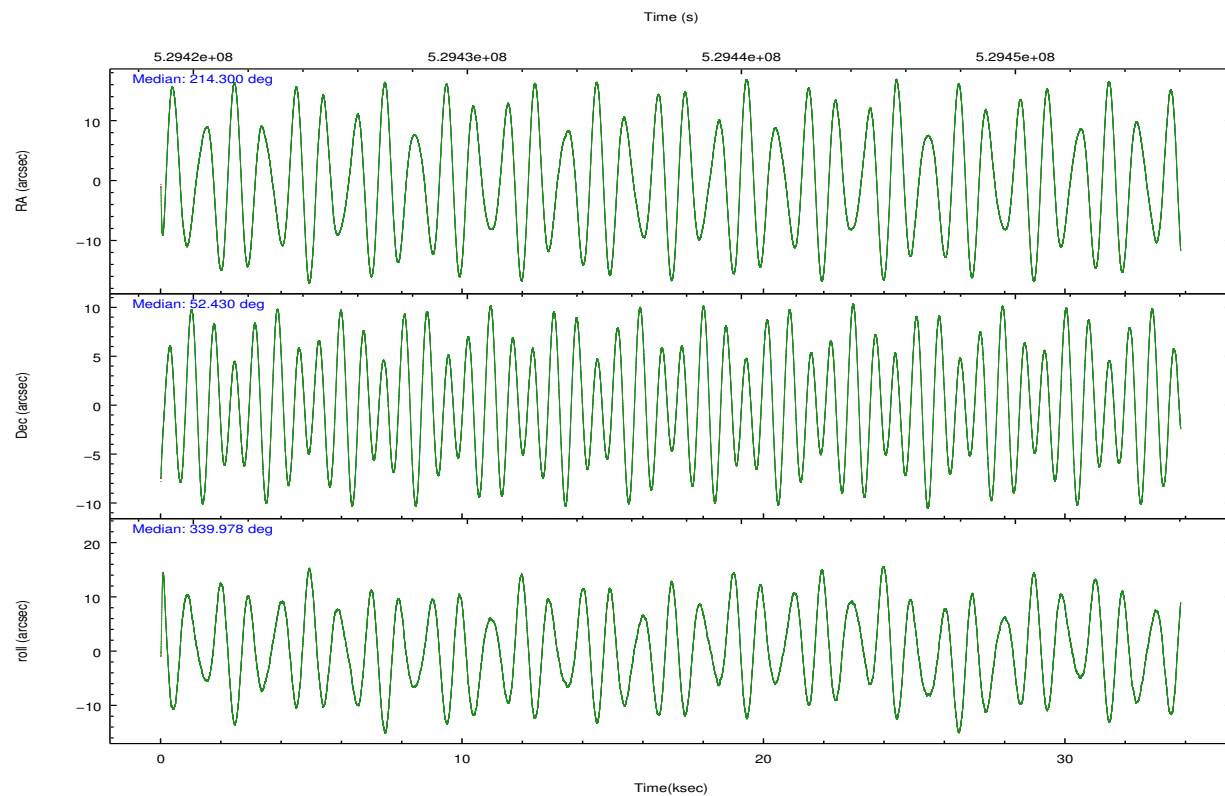
### 2.1.4 Events

|                 | ccd 2  | ccd 3  | ccd 6  | ccd 7  | ccd 8  |                | ccd 2  | ccd 3  | ccd 6  | ccd 7  | ccd 8  |
|-----------------|--------|--------|--------|--------|--------|----------------|--------|--------|--------|--------|--------|
| level 1 events  | 163685 | 160560 | 170797 | 226782 | 228085 | grade 0 events | 6782   | 6933   | 7029   | 8752   | 19308  |
| rejected events | 144459 | 141468 | 150136 | 128177 | 163012 |                | 4%     | 4%     | 4%     | 3%     | 8%     |
| rejected %      | 88%    | 88%    | 87%    | 56%    | 71%    | grade 1 events | 85     | 115    | 94     | 282    | 169    |
|                 |        |        |        |        |        |                | 0%     | 0%     | 0%     | 0%     | 0%     |
|                 |        |        |        |        |        | grade 2 events | 4889   | 4152   | 4785   | 20396  | 14851  |
|                 |        |        |        |        |        |                | 2%     | 2%     | 2%     | 8%     | 6%     |
|                 |        |        |        |        |        | grade 3 events | 1940   | 1962   | 2173   | 8273   | 6819   |
|                 |        |        |        |        |        |                | 1%     | 1%     | 1%     | 3%     | 2%     |
|                 |        |        |        |        |        | grade 4 events | 1926   | 1997   | 2050   | 8183   | 6559   |
|                 |        |        |        |        |        |                | 1%     | 1%     | 1%     | 3%     | 2%     |
|                 |        |        |        |        |        | grade 5 events | 7368   | 8762   | 8915   | 23486  | 12815  |
|                 |        |        |        |        |        |                | 4%     | 5%     | 5%     | 10%    | 5%     |
|                 |        |        |        |        |        | grade 6 events | 3692   | 4056   | 4629   | 53016  | 17546  |
|                 |        |        |        |        |        |                | 2%     | 2%     | 2%     | 23%    | 7%     |
|                 |        |        |        |        |        | grade 7 events | 137003 | 132583 | 141122 | 104394 | 150018 |
|                 |        |        |        |        |        |                | 83%    | 82%    | 82%    | 46%    | 65%    |

## 2.2 Compared Parameters

| Parameter                         | Planned             | Actual               | Parameter                             | Planned   | Actual  |
|-----------------------------------|---------------------|----------------------|---------------------------------------|-----------|---------|
| Instrument                        | ACIS                | ACIS                 | Obspar format version number          | 7         | 7       |
| Detector                          | ACIS-23678          | ACIS-23678           | 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                 | 214.255719          | 214.2999653675105    | Subarray requested                    | NONE      | NONE    |
| [deg] Pointing Dec                | 52.425038           | 52.43015716345142    | Alternating exposures requested       | N         | N       |
| [deg] Pointing Roll               | 339.862309          | 339.9838626816937    | [s] Primary exposure time             | 0.000000  | 3.1     |
| [mm] SIM focus pos                | -0.684267           | -0.6828225247311905  |                                       |           |         |
| [mm] SIM defocus                  | 0                   | 0.001444936568705701 |                                       |           |         |
| [mm] SIM translation stage pos    | -190.132523         | -190.1400660498719   |                                       |           |         |
| [mm] SIM translation stage offset | 0                   | 0.00754346686406393  |                                       |           |         |
| [s] Observation start time (MET)  | 529421352.184000    | 529419455.88515      |                                       |           |         |
| Observation start date            | 2014-10-11T13:28:05 | 2014-10-11T12:57:35  |                                       |           |         |
| [s] Observation end time (MET)    | 529454352.184000    | 529455320.63714      |                                       |           |         |
| Observation end date              | 2014-10-11T22:38:05 | 2014-10-11T22:55:20  |                                       |           |         |
| Read mode                         | TIMED               | TIMED                |                                       |           |         |

## 2.3 Aspect

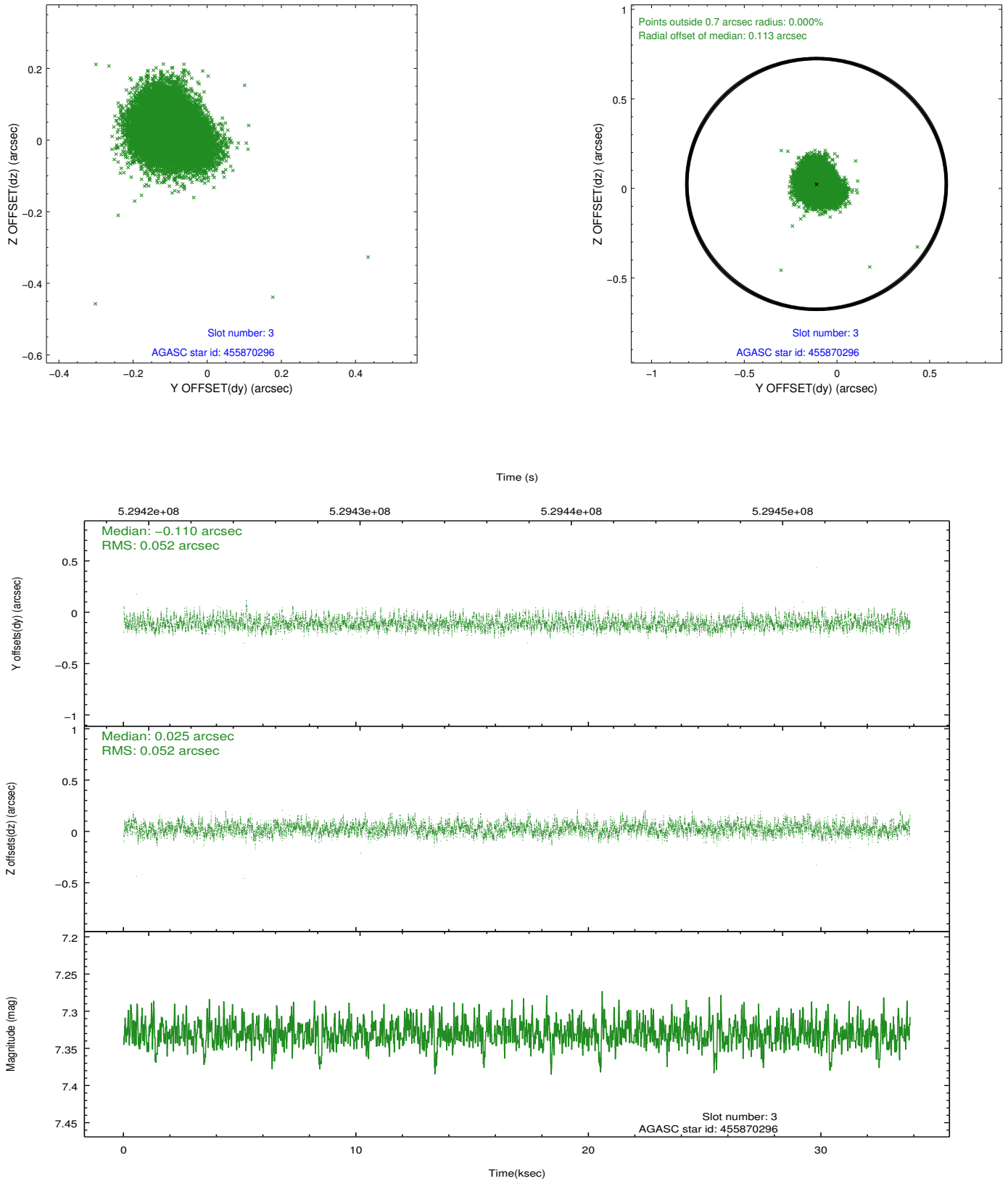


# Slot Statistics

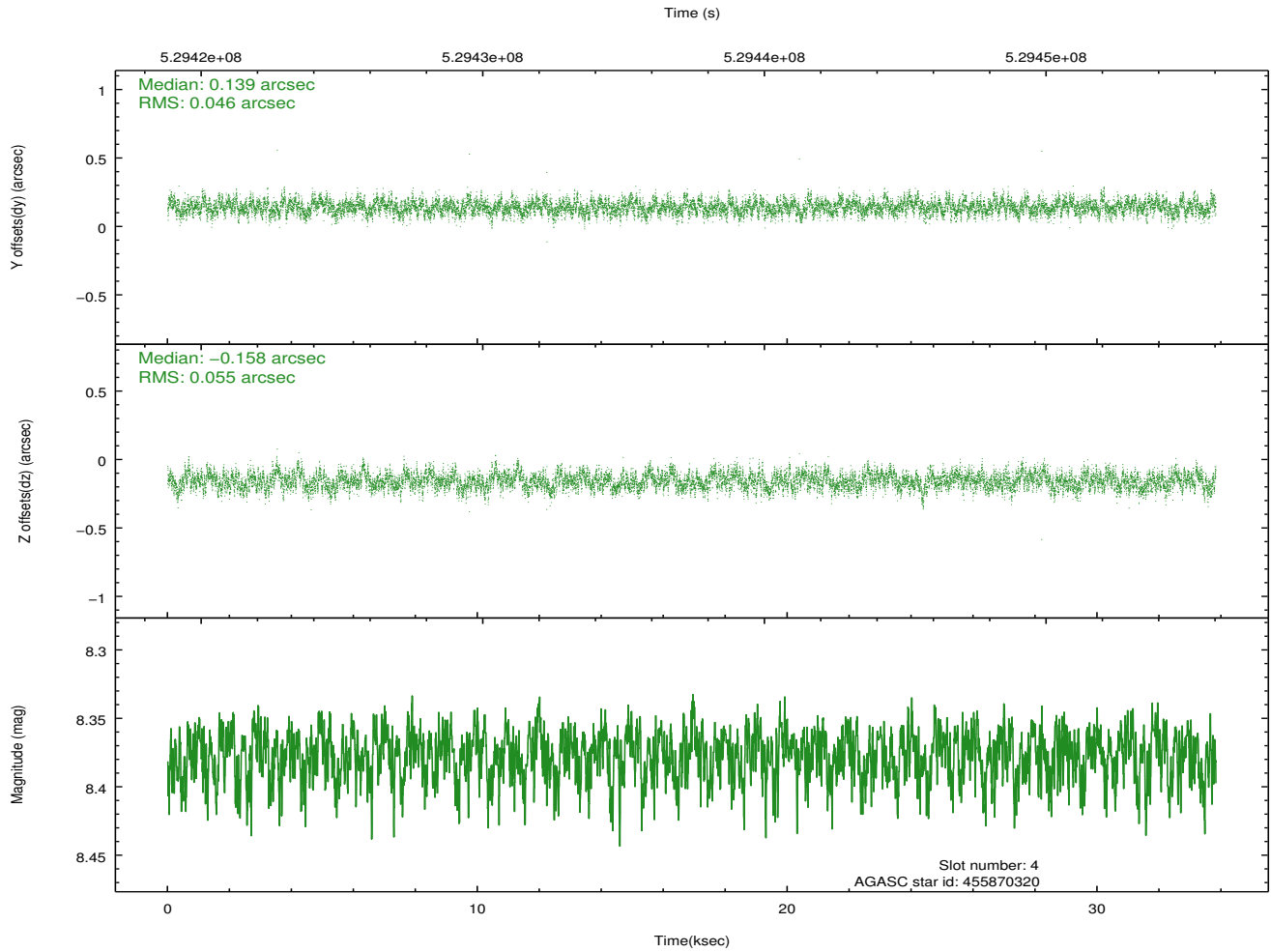
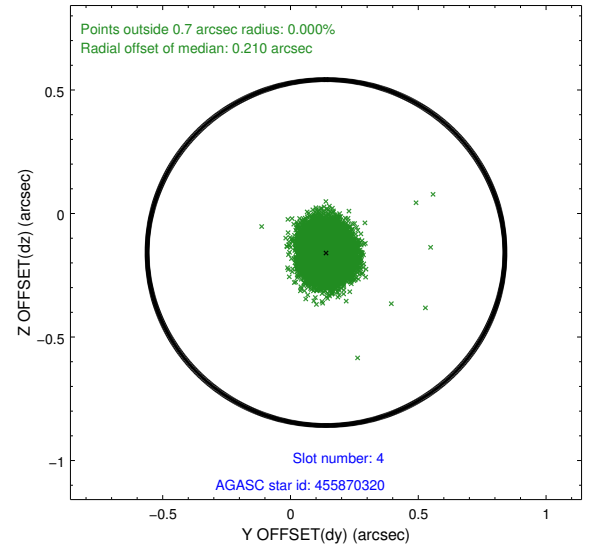
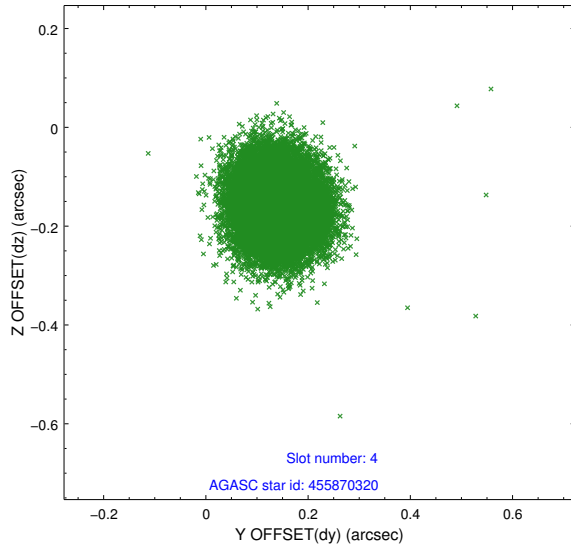
| slot | status | id        | mag  | n_pts | med_dy | med_dz | dr1   | dr2   | ra         | dec       | mean_y   | mean_z   |
|------|--------|-----------|------|-------|--------|--------|-------|-------|------------|-----------|----------|----------|
| 0    | FID    | ACIS-S-1  | 7.01 | 8251  | 0.045  | -0.037 | 0.023 | 0.052 | 0.000000   | 0.000000  | 922.03   | -1737.45 |
| 1    | FID    | ACIS-S-5  | 7.05 | 8251  | -0.118 | 0.022  | 0.008 | 0.019 | 0.000000   | 0.000000  | -1827.14 | 160.06   |
| 2    | FID    | ACIS-S-6  | 7.16 | 8251  | 0.052  | 0.030  | 0.022 | 0.071 | 0.000000   | 0.000000  | 387.49   | 804.10   |
| 3    | GUIDE  | 455870296 | 7.33 | 16500 | -0.110 | 0.025  | 0.079 | 0.125 | 214.629779 | 52.033323 | 1262.73  | -1036.55 |
| 4    | GUIDE  | 455870320 | 8.38 | 16499 | 0.139  | -0.158 | 0.077 | 0.122 | 214.874440 | 52.401638 | 1303.42  | 394.05   |
| 5    | GUIDE  | 455871352 | 8.12 | 16498 | 0.182  | 0.034  | 0.087 | 0.138 | 215.099961 | 52.172669 | 2059.45  | -200.77  |
| 6    | GUIDE  | 505812376 | 7.59 | 16502 | -0.210 | -0.011 | 0.061 | 0.098 | 214.039537 | 52.937930 | -1076.41 | 1572.63  |
| 7    | GUIDE  | 505806936 | 7.01 | 16501 | -0.010 | 0.111  | 0.096 | 0.160 | 213.820815 | 52.535927 | -1032.45 | 49.76    |

## 2.4 Star Slots

### 2.4.1 Slot 3

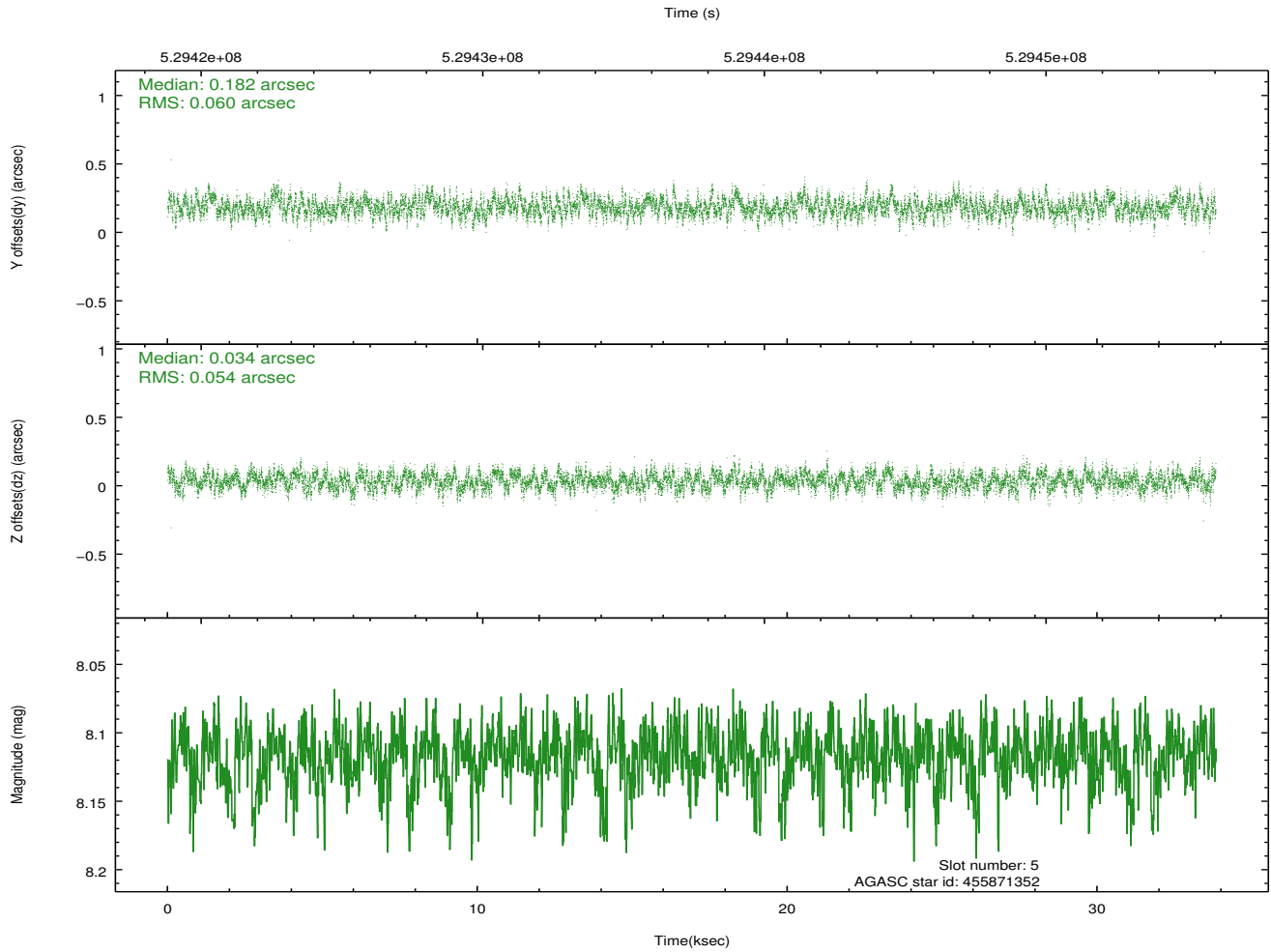
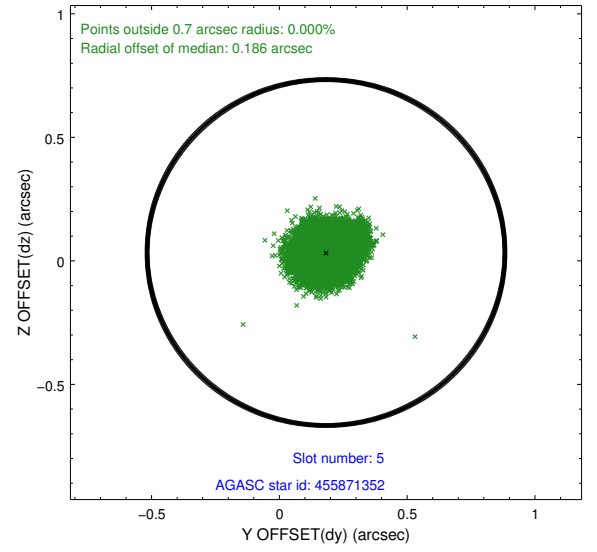
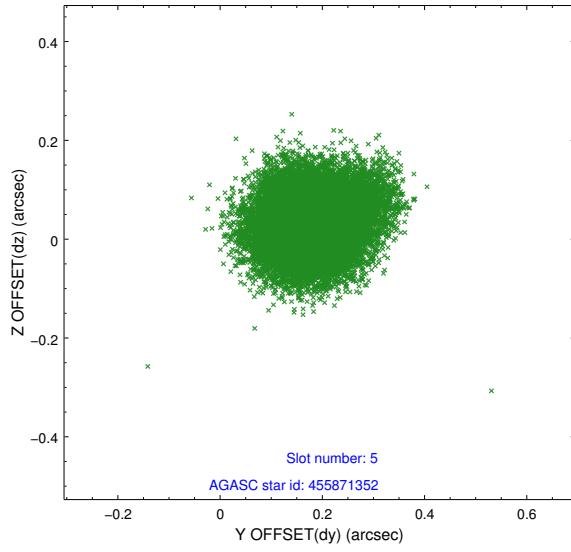


## 2.4.2 Slot 4

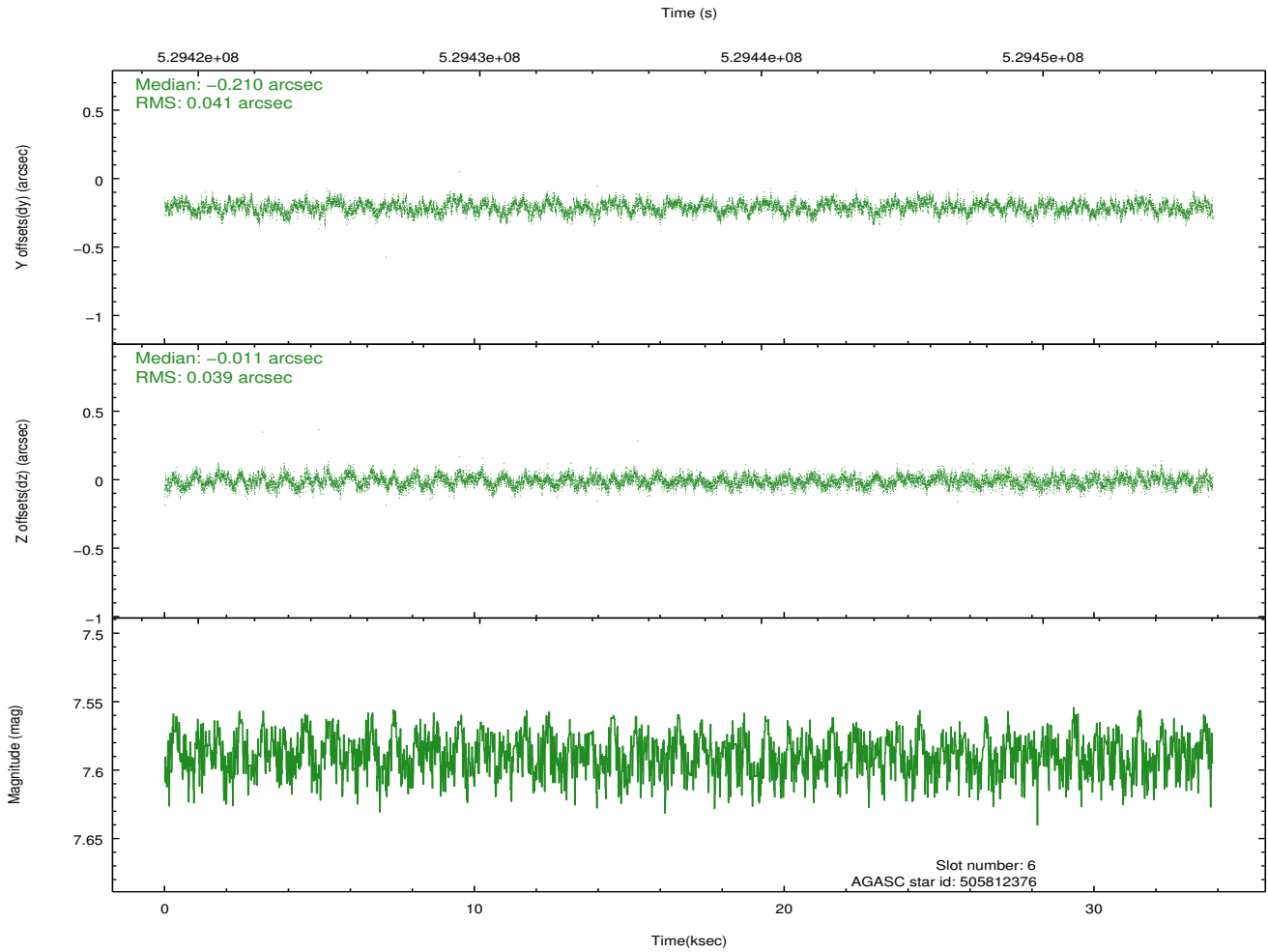
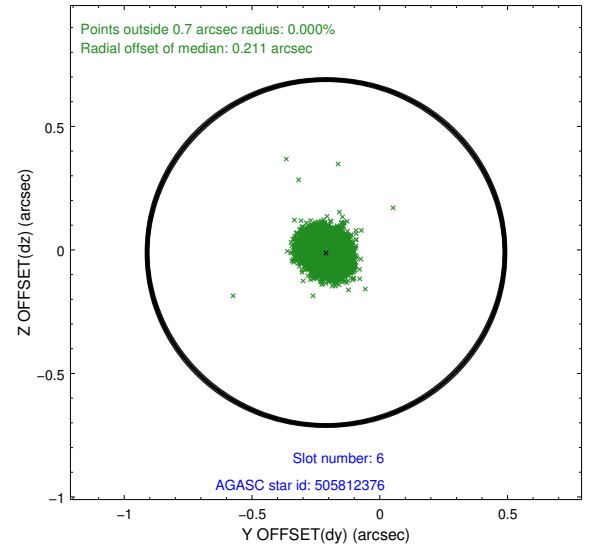
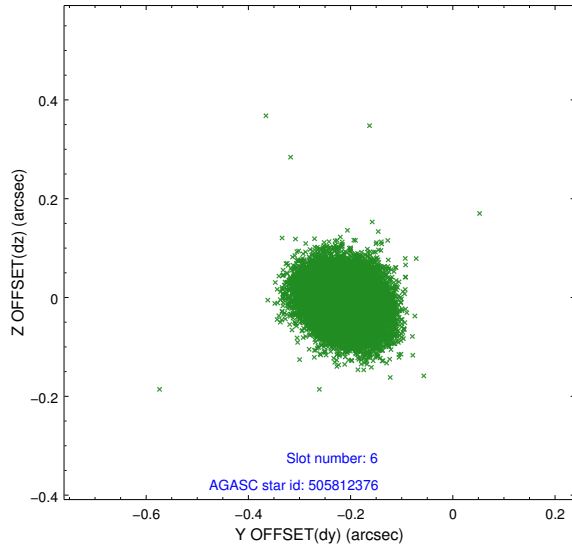




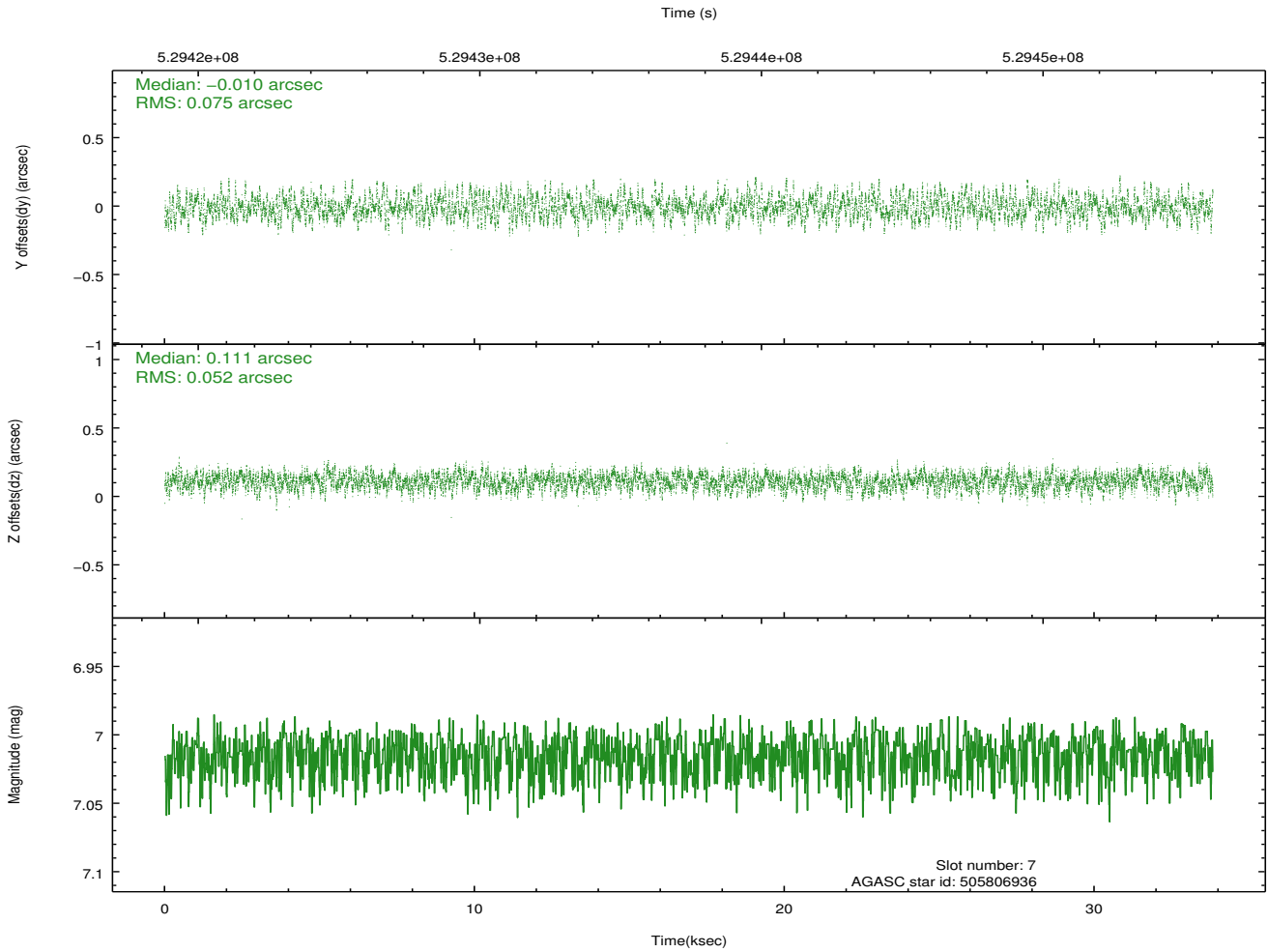
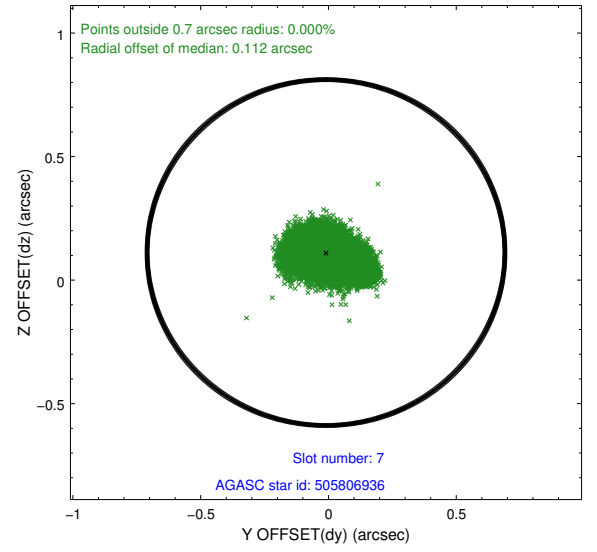
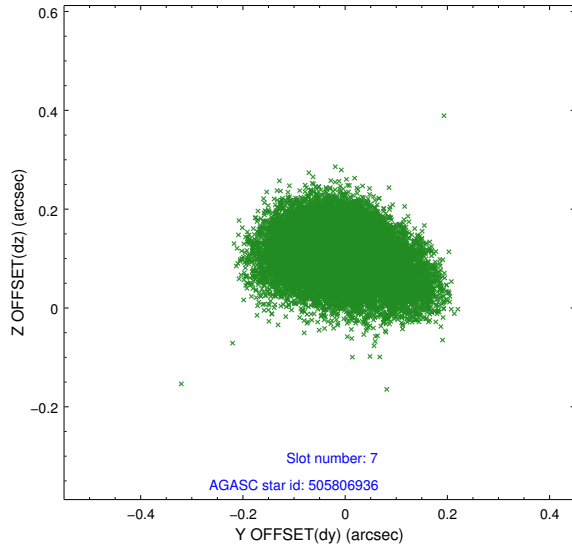
### 2.4.3 Slot 5



## 2.4.4 Slot 6

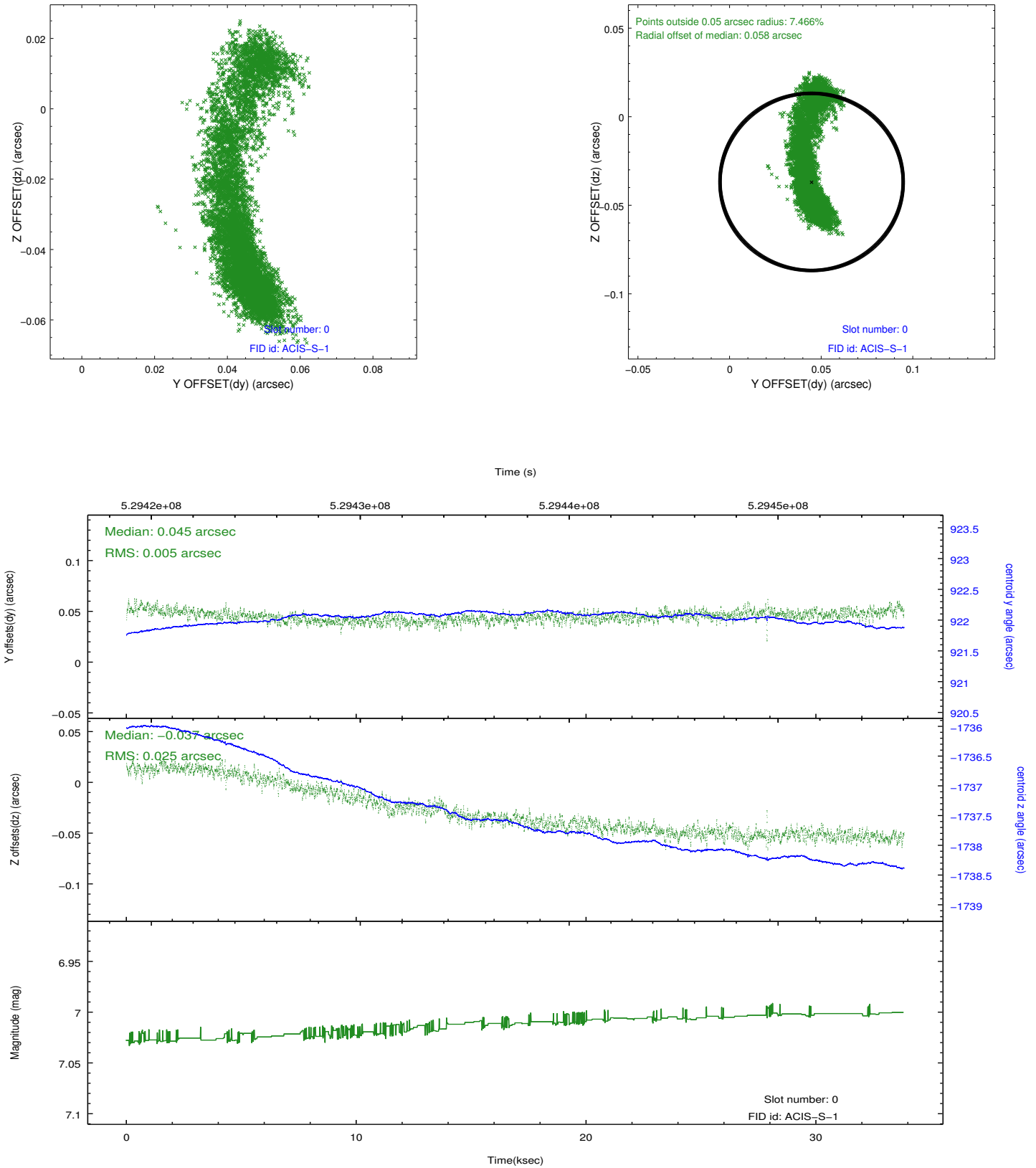


## 2.4.5 Slot 7

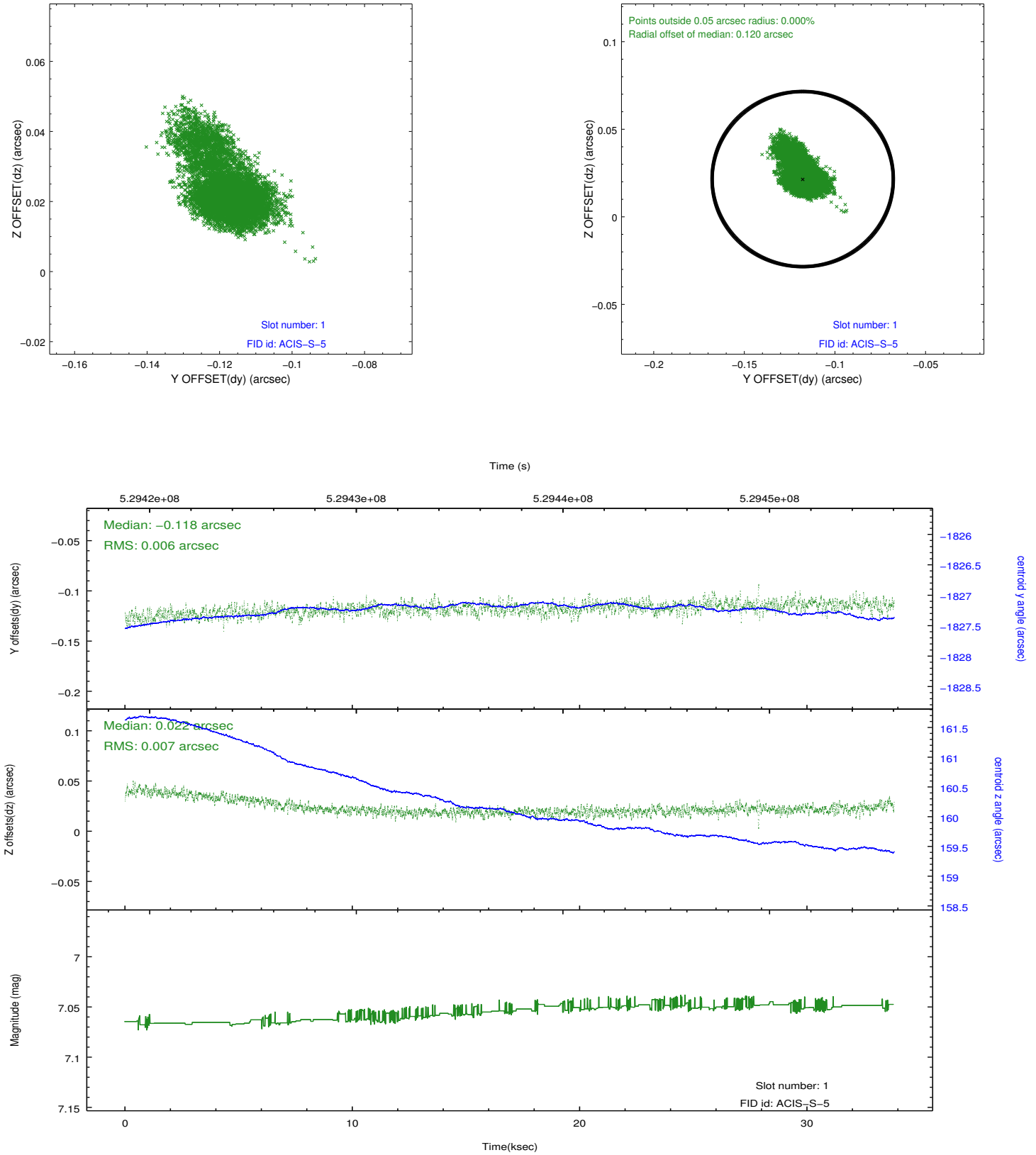


## 2.5 FID Slots

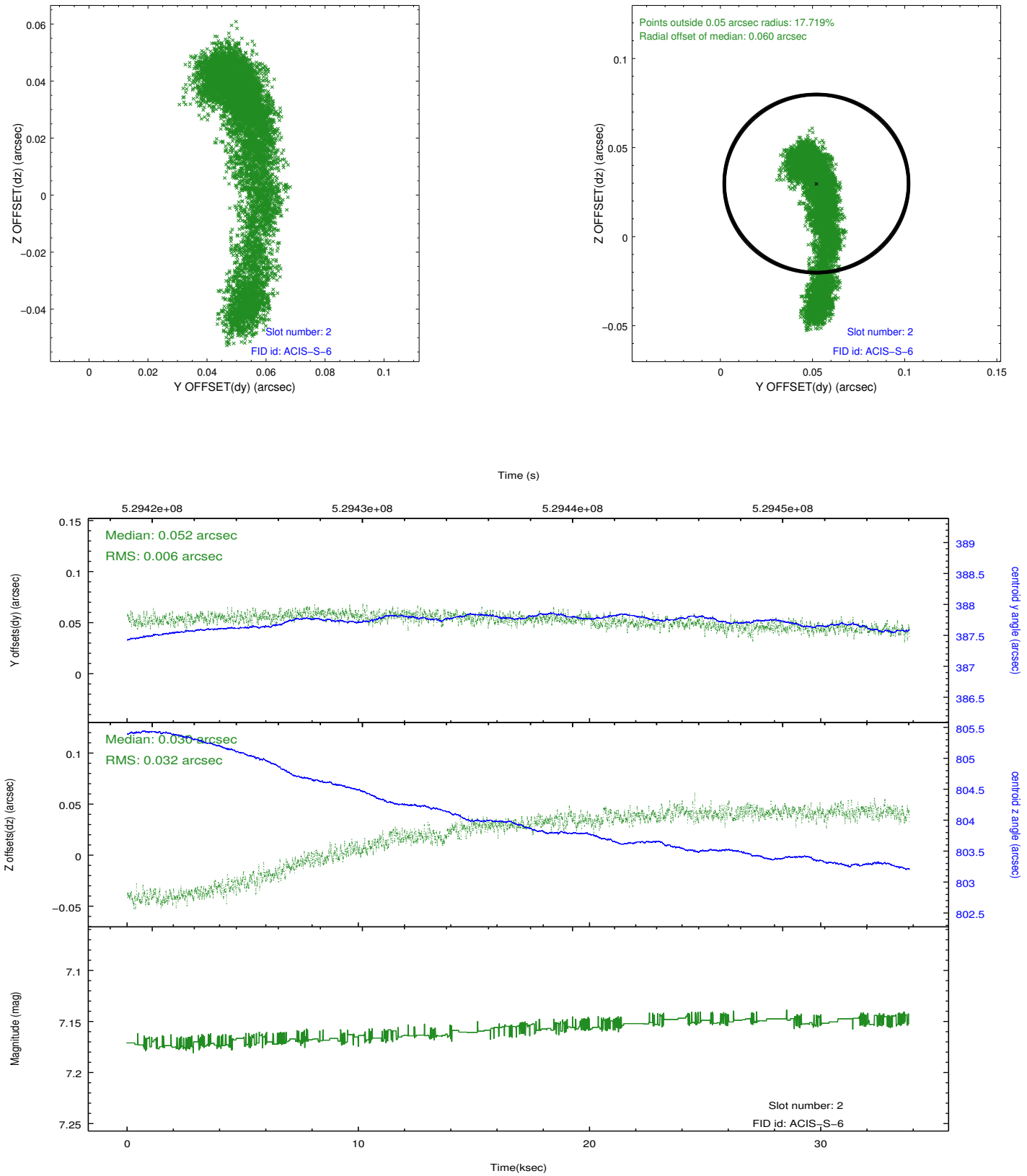
### 2.5.1 Slot 0



## 2.5.2 Slot 1



### 2.5.3 Slot 2



## A Summary

### A.1 Status

|                            |                 |
|----------------------------|-----------------|
| V&V Scientist              | Beth Sundheim   |
| V&V Date (YYYY-MM-DD)      | 2014.10.13      |
| V&V Edition                | 1               |
| V&V Disposition and Status | OK              |
| V&V Charge Time            | 33.066315587401 |

### A.2 Comments