

# V&V Reference Report

## L2 ASCDS Version : 8.4.3.1

Observation 6860 - L2 Version 2  
Chandra X-Ray Center

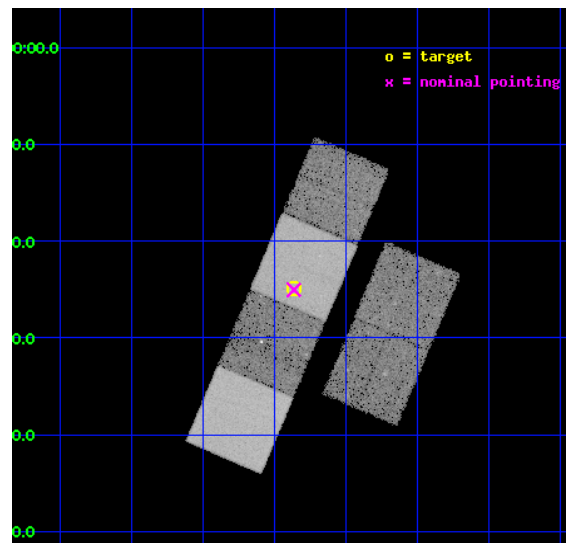
L2 Processing Date : Apr 11 2012

## 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  | 701278   | Sequence number                             |
| obs_id   | 6860   | Observation id                              |
| title    | Chandra observations of (U)LIRGs with double nuclei: search for binary AGN and X-ray luminous starbursts | Proposal title                              |
| observer | Dr. Stefanie Komossa   | Principal investigator                      |
| object   | NGC7592  | Source name                                 |
| dtcycle  | 0  | &#160                                       |
| cycle    | P  | events from which exps?<br>Prim/Second/Both |
| ra_targ  | 349.5925   | Observer's specified target RA [deg]        |
| dec_targ | -4.415556  | Observer's specified target Dec [deg]       |
| ra_nom   | 349.59149656755  | Nominal RA [deg]                            |
| dec_nom  | -4.4173610767209   | Nominal Dec [deg]                           |
| roll_nom | 293.14368891634  | Nominal Roll [deg]                          |
| revision | 2  | Processing version of data                  |
| ontime   | 15180.799943507  | Sum of GTIs [s]                             |
| livetime | 14988.571513842  | Livetime [s]                                |
| ontime2  | 15180.799943507  | Sum of GTIs [s]                             |
| ontime3  | 15180.799943507  | Sum of GTIs [s]                             |
| ontime5  | 15180.799943507  | Sum of GTIs [s]                             |
| ontime6  | 15177.558943212  | Sum of GTIs [s]                             |
| ontime7  | 15180.799943507  | Sum of GTIs [s]                             |
| ontime8  | 15180.799943507  | Sum of GTIs [s]                             |
| l2events | 224824   | Number of level 2 events                    |

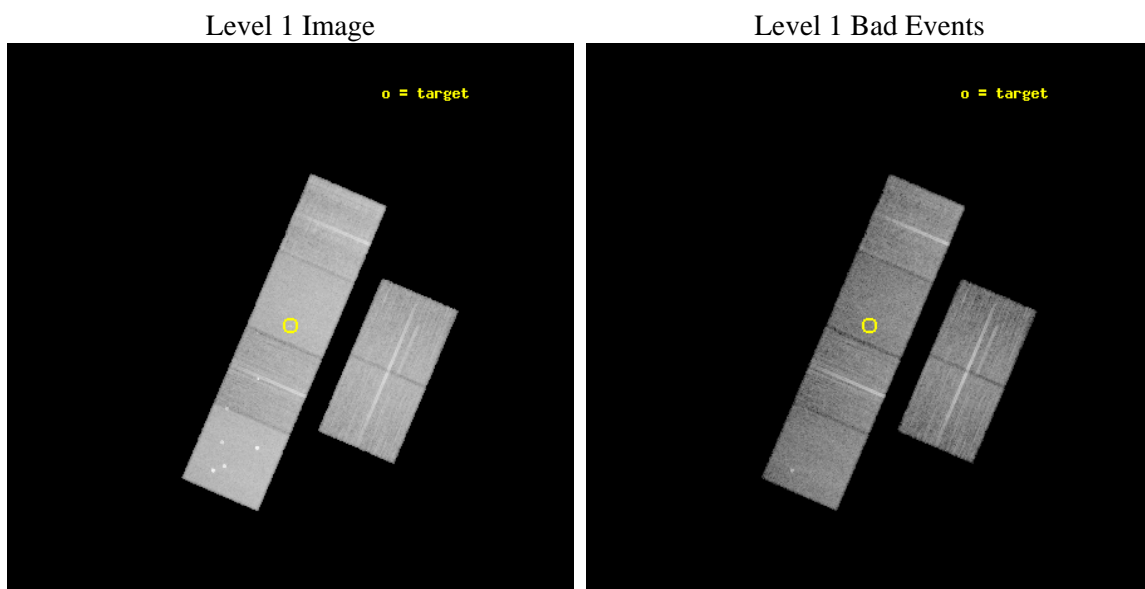




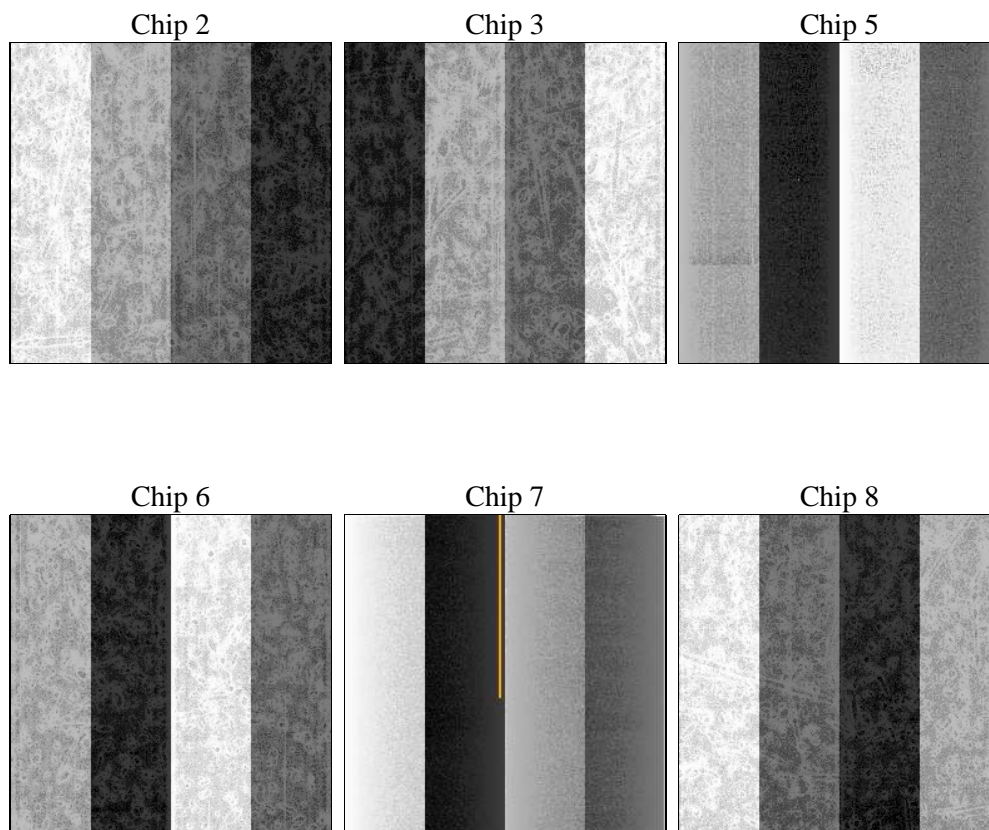
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

|          |                     |                                |                |                 |   |
|----------|---------------------|--------------------------------|----------------|-----------------|---|
| obi_num  | 0                   | Obi number                     | sched_exp_time | 15000.000000    | [s] Scheduled observation exposure time |
| ascdsver | 8.4.3.1             | Processing system revision     | ontime         | 15180.799943507 | Sum of GTIs [s]                         |
| caldsver | 4.4.9               | &#160                          | ontime2        | 15180.799943507 | Sum of GTIs [s]                         |
| date     | 2012-04-11T15:19:37 | Date and time of file creation | ontime3        | 15180.799943507 | Sum of GTIs [s]                         |
| revision | 2                   | Processing version of data     | ontime5        | 15180.799943507 | Sum of GTIs [s]                         |
|          |                     |                                | ontime6        | 15177.558943212 | Sum of GTIs [s]                         |
|          |                     |                                | ontime7        | 15180.799943507 | Sum of GTIs [s]                         |
|          |                     |                                | ontime8        | 15180.799943507 | Sum of GTIs [s]                         |
|          |                     |                                | l1events       | 1010012         | Number of level 1 events                |

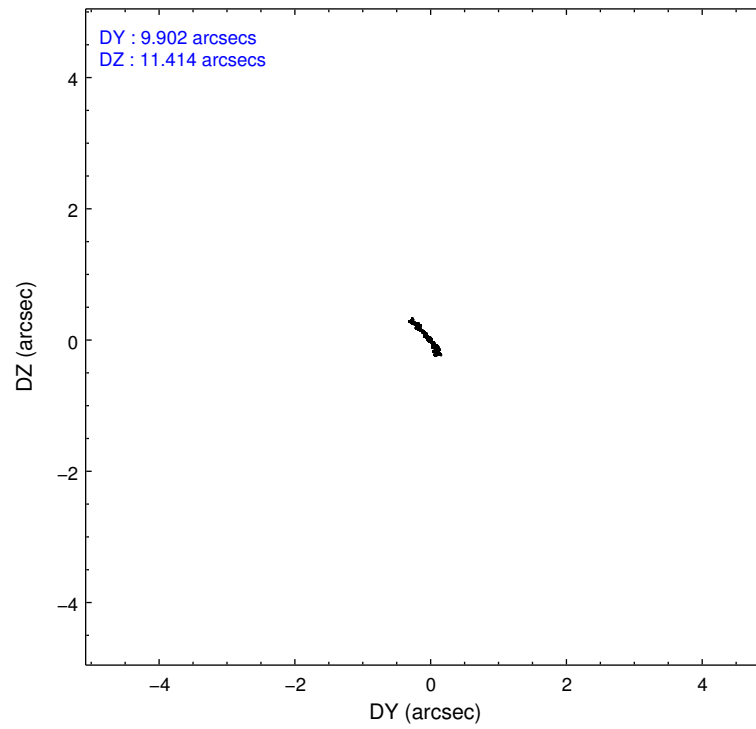
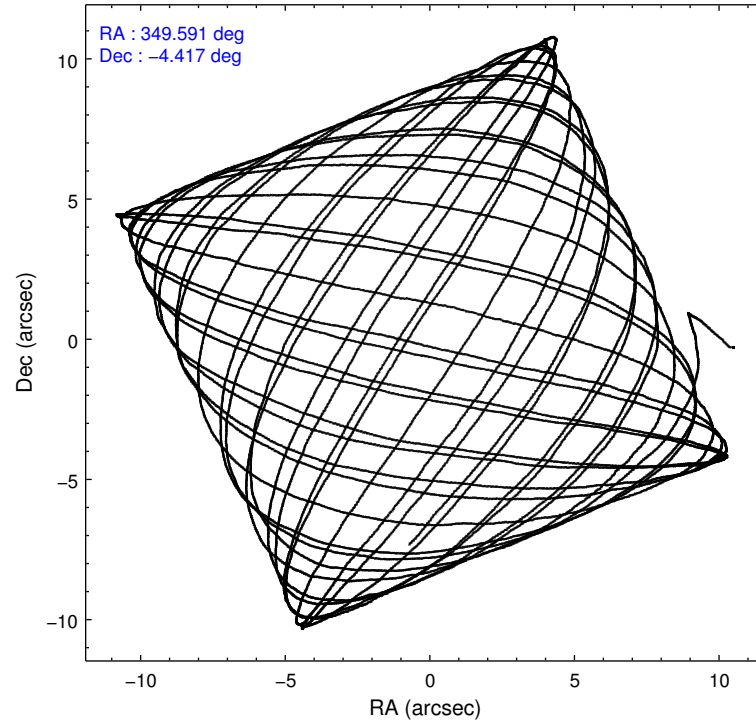
### 2.1.4 Events

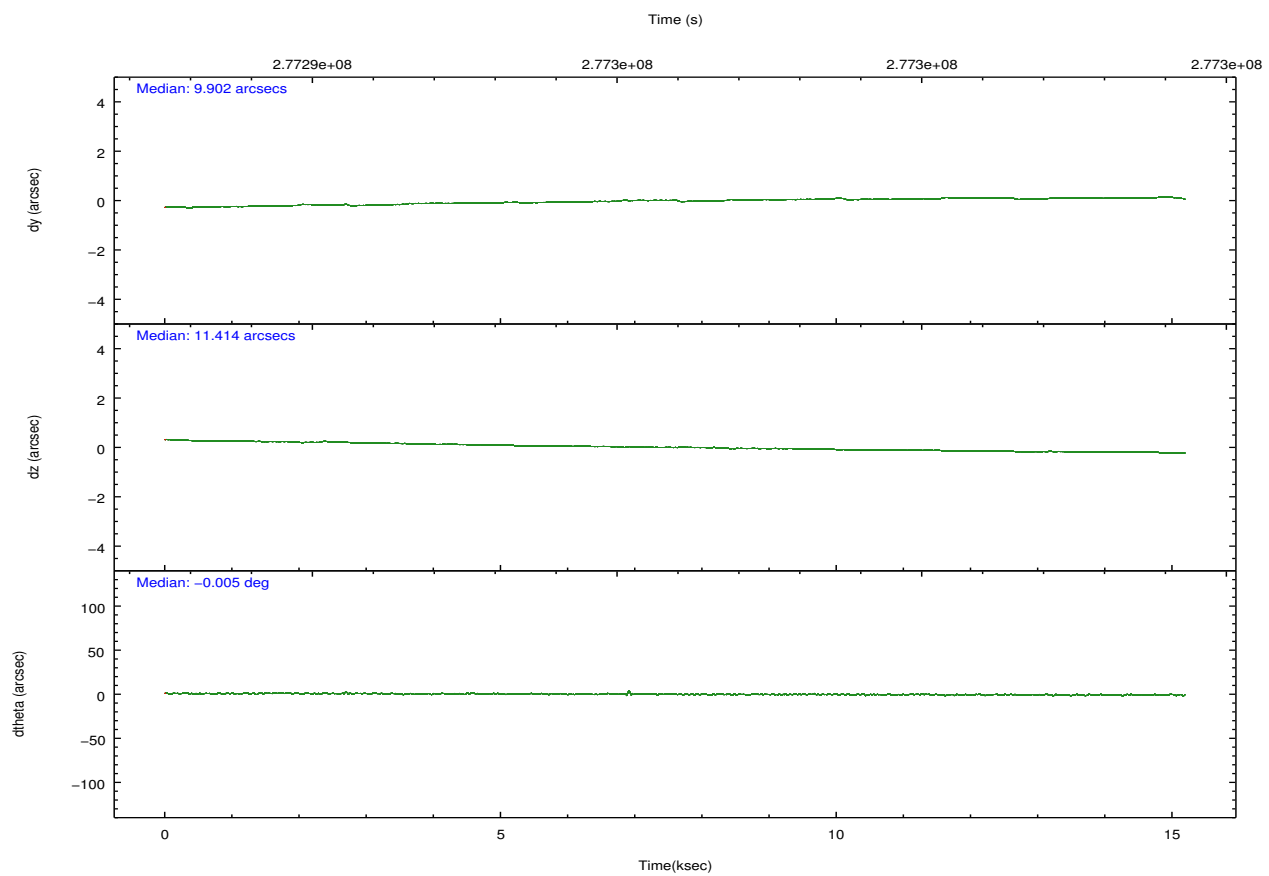
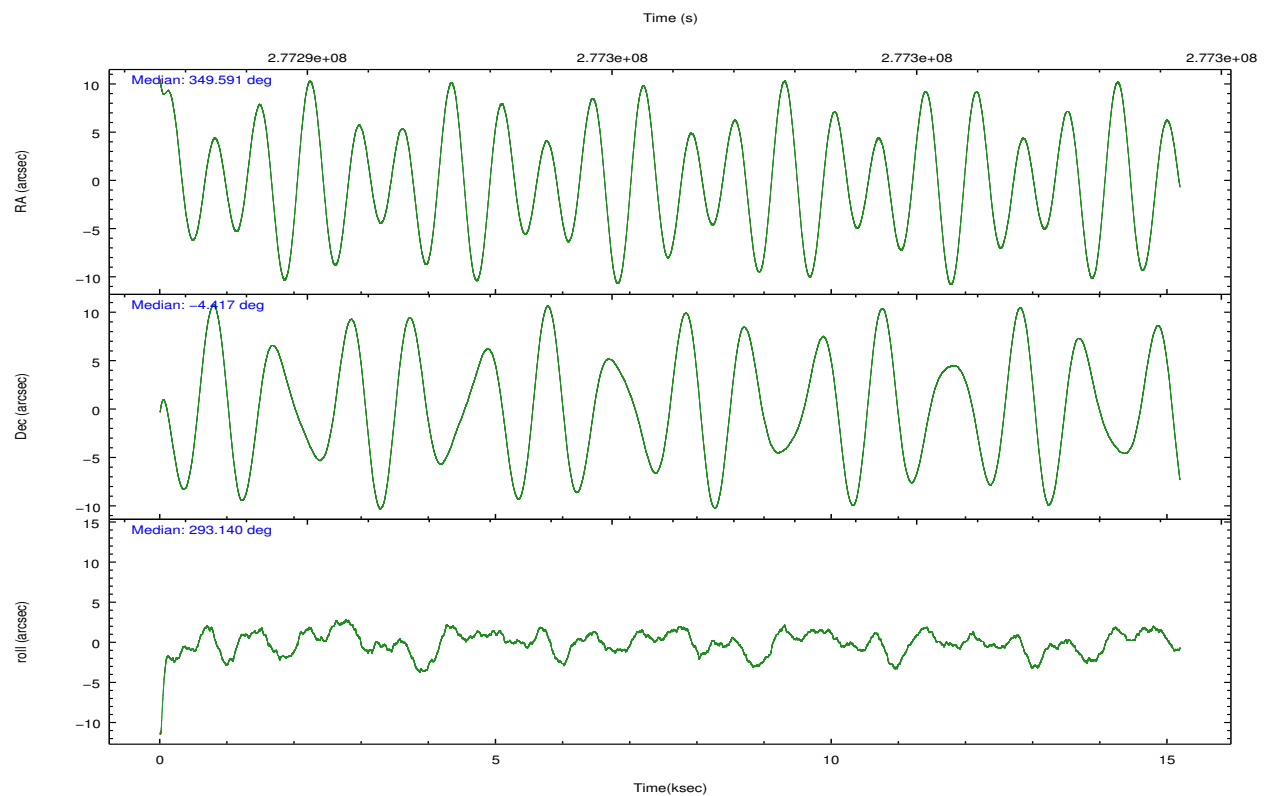
|                 | ccd 2  | ccd 3  | ccd 5  | ccd 6  | ccd 7  | ccd 8  |                | ccd 2  | ccd 3  | ccd 5 | ccd 6  | ccd 7 | ccd 8  |
|-----------------|--------|--------|--------|--------|--------|--------|----------------|--------|--------|-------|--------|-------|--------|
| level 1 events  | 145285 | 135970 | 215005 | 140941 | 191374 | 181437 | grade 0 events | 7328   | 7404   | 11651 | 7030   | 6821  | 12444  |
| rejected events | 128813 | 119658 | 116318 | 124146 | 113674 | 141882 |                | 5%     | 5%     | 5%    | 4%     | 3%    | 6%     |
| rejected %      | 88%    | 88%    | 54%    | 88%    | 59%    | 78%    | grade 1 events | 95     | 103    | 359   | 70     | 188   | 156    |
|                 |        |        |        |        |        |        |                | 0%     | 0%     | 0%    | 0%     | 0%    | 0%     |
|                 |        |        |        |        |        |        | grade 2 events | 3608   | 3200   | 30497 | 3588   | 15849 | 9235   |
|                 |        |        |        |        |        |        |                | 2%     | 2%     | 14%   | 2%     | 8%    | 5%     |
|                 |        |        |        |        |        |        | grade 3 events | 1539   | 1553   | 3550  | 1515   | 6956  | 4202   |
|                 |        |        |        |        |        |        |                | 1%     | 1%     | 1%    | 1%     | 3%    | 2%     |
|                 |        |        |        |        |        |        | grade 4 events | 1527   | 1662   | 3467  | 1561   | 6755  | 3784   |
|                 |        |        |        |        |        |        |                | 1%     | 1%     | 1%    | 1%     | 3%    | 2%     |
|                 |        |        |        |        |        |        | grade 5 events | 5580   | 6287   | 15254 | 6388   | 18342 | 8665   |
|                 |        |        |        |        |        |        |                | 3%     | 4%     | 7%    | 4%     | 9%    | 4%     |
|                 |        |        |        |        |        |        | grade 6 events | 2792   | 2829   | 51511 | 3435   | 42840 | 10654  |
|                 |        |        |        |        |        |        |                | 1%     | 2%     | 23%   | 2%     | 22%   | 5%     |
|                 |        |        |        |        |        |        | grade 7 events | 122816 | 112932 | 98716 | 117354 | 93623 | 132297 |
|                 |        |        |        |        |        |        |                | 84%    | 83%    | 45%   | 83%    | 48%   | 72%    |

## 2.2 Compared Parameters

| Parameter                         | Planned             | Actual               | Parameter                             | Planned   | Actual  |
|-----------------------------------|---------------------|----------------------|---------------------------------------|-----------|---------|
| Instrument                        | ACIS                | ACIS                 | Obspar format version number          | 7         | 7       |
| Detector                          | ACIS-235678         | ACIS-235678          | Obspar file type                      | PREDICTED | ACTUAL  |
| Grating                           | NONE                | NONE                 | Obspar update status                  | NONE      | UPDATED |
| Data mode                         | FAINT               | FAINT                | Number of optional ACIS chips dropped | 0         | 0       |
| Observation mode                  | POINTING            | POINTING             | On-chip summing requested             | N         | N       |
| [deg] Pointing RA                 | 349.569379          | 349.5914965675494    | Subarray requested                    | NONE      | NONE    |
| [deg] Pointing Dec                | -4.401318           | -4.417361076720868   | Alternating exposures requested       | N         | N       |
| [deg] Pointing Roll               | 292.985369          | 293.1436889163381    | [s] Primary exposure time             | 0.000000  | 3.2     |
| [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)  | 277288547.184000    | 277287321.27556      |                                       |           |         |
| Observation start date            | 2006-10-15T08:34:42 | 2006-10-15T08:15:21  |                                       |           |         |
| [s] Observation end time (MET)    | 277303547.184000    | 277304293.73886      |                                       |           |         |
| Observation end date              | 2006-10-15T12:44:42 | 2006-10-15T12:58:13  |                                       |           |         |
| Read mode                         | TIMED               | TIMED                |                                       |           |         |

## 2.3 Aspect



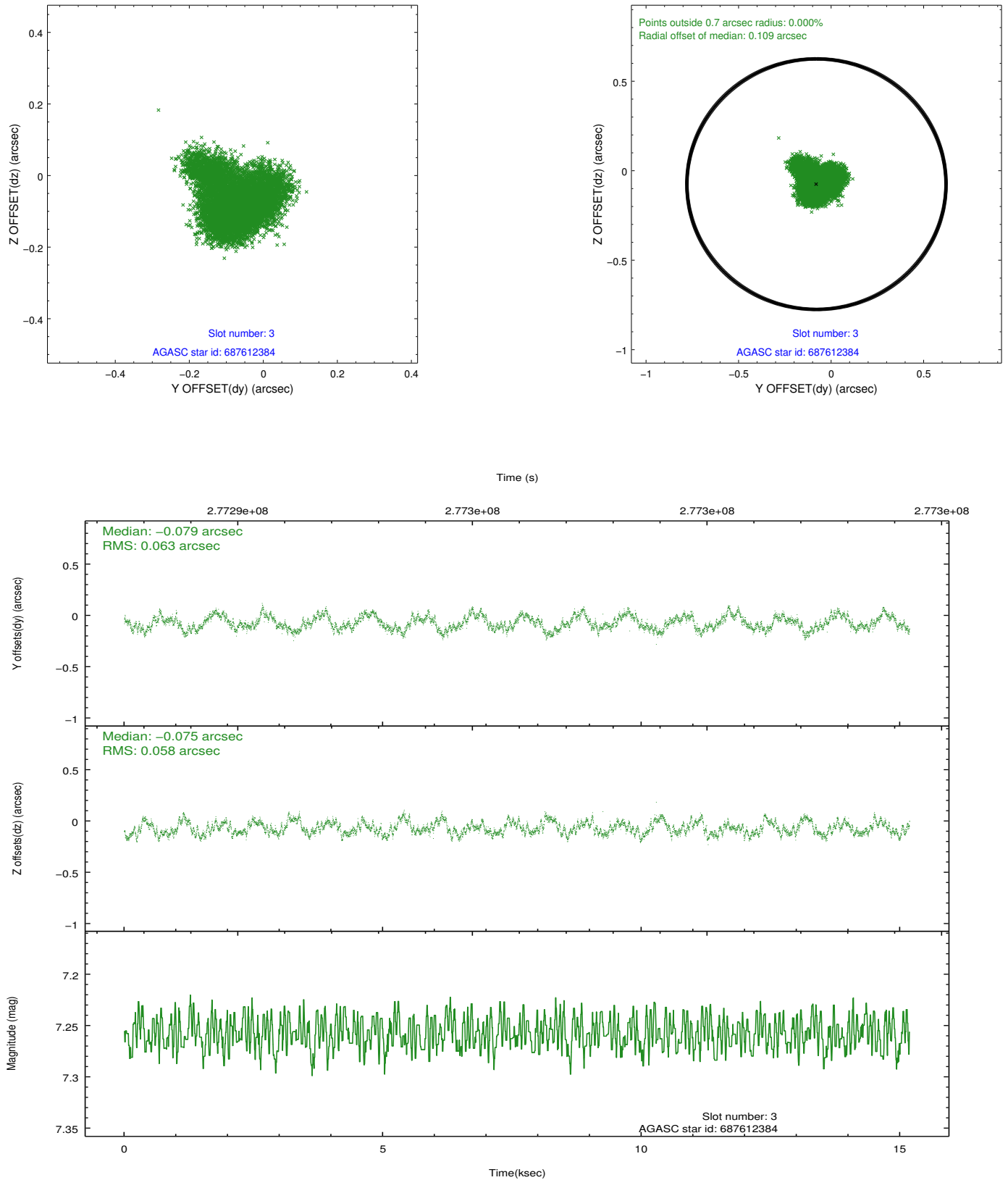


### Slot Statistics

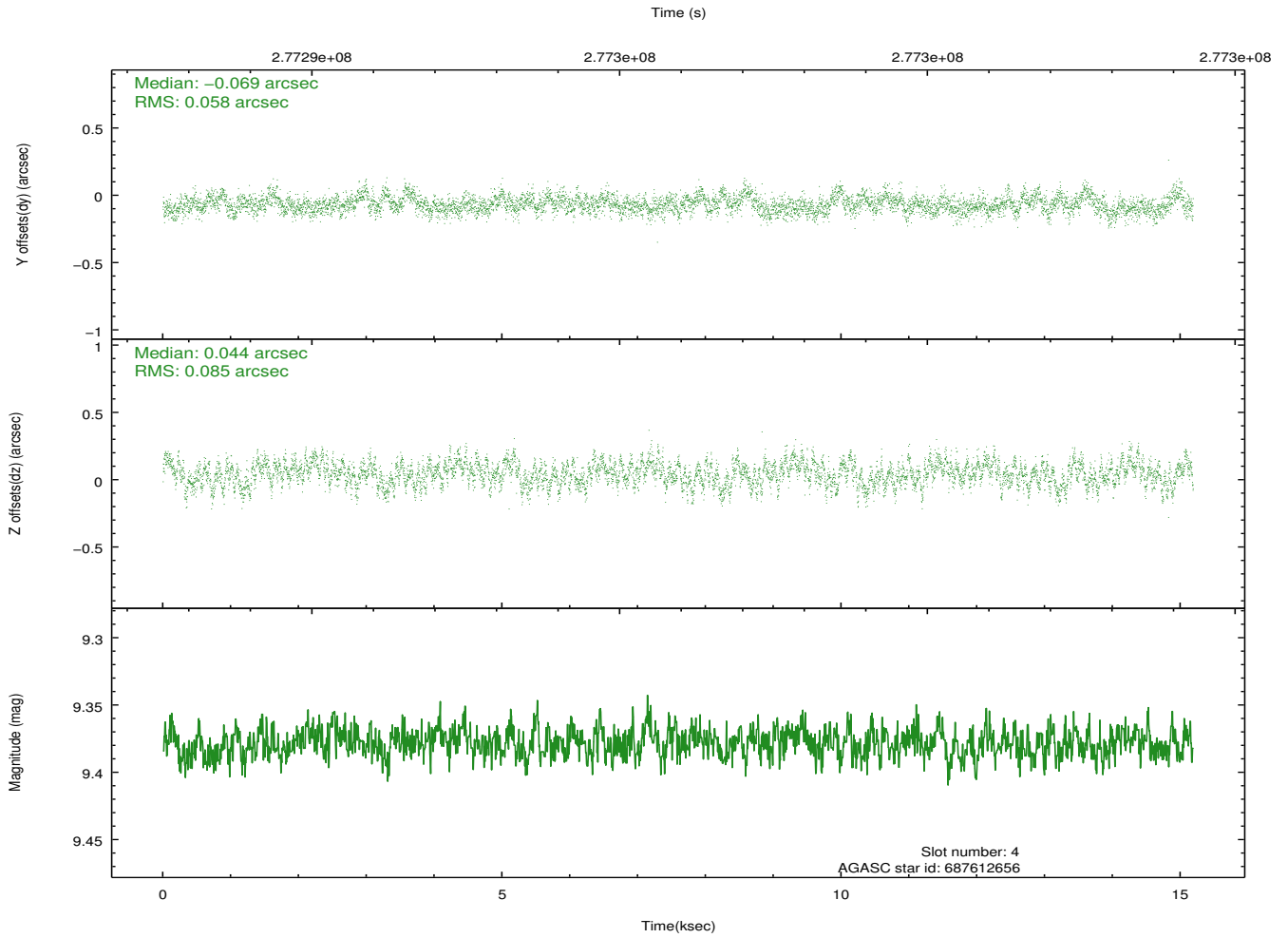
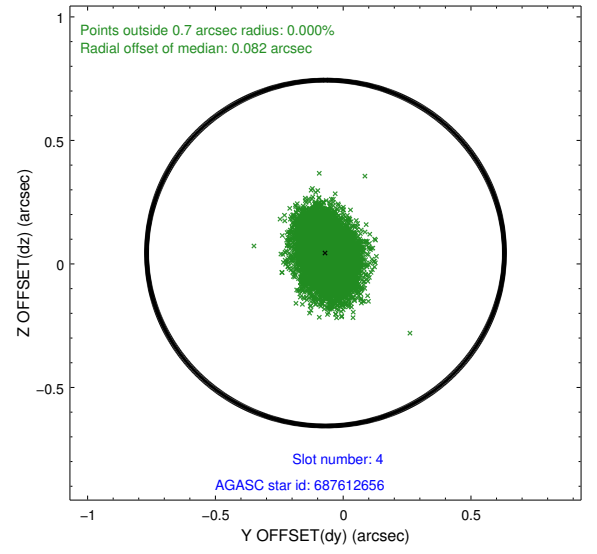
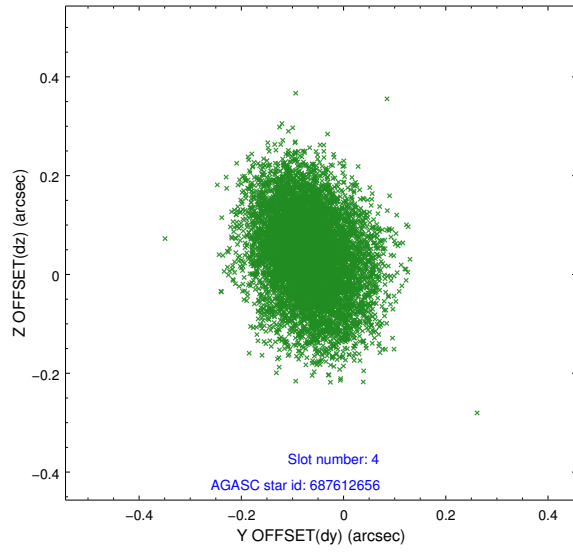
| slot | status | id        | mag  | n_pts | med_dy | med_dz | dr1   | dr2   | ra         | dec       | mean_y   | mean_z   |
|------|--------|-----------|------|-------|--------|--------|-------|-------|------------|-----------|----------|----------|
| 0    | FID    | ACIS-S-2  | 7.11 | 3704  | -0.041 | -0.020 | 0.010 | 0.017 | 0.000000   | 0.000000  | -762.72  | -1732.74 |
| 1    | FID    | ACIS-S-4  | 7.22 | 3704  | 0.145  | 0.025  | 0.008 | 0.018 | 0.000000   | 0.000000  | 2150.59  | 175.51   |
| 2    | FID    | ACIS-S-5  | 7.23 | 3705  | -0.134 | 0.004  | 0.008 | 0.025 | 0.000000   | 0.000000  | -1815.30 | 169.46   |
| 3    | GUIDE  | 687612384 | 7.26 | 7409  | -0.079 | -0.075 | 0.093 | 0.144 | 349.312734 | -4.435259 | -246.97  | -896.12  |
| 4    | GUIDE  | 687612656 | 9.38 | 7405  | -0.069 | 0.044  | 0.109 | 0.179 | 349.188921 | -4.224153 | -1120.02 | -1008.96 |
| 5    | GUIDE  | 687740064 | 8.93 | 7401  | 0.164  | 0.113  | 0.068 | 0.111 | 350.270836 | -4.770901 | 2209.14  | 1797.01  |
| 6    | GUIDE  | 687743576 | 6.83 | 7409  | -0.124 | -0.110 | 0.066 | 0.106 | 350.066040 | -3.919146 | -899.45  | 2321.31  |
| 7    | GUIDE  | 687743592 | 7.20 | 7408  | 0.099  | 0.021  | 0.072 | 0.116 | 350.339754 | -4.672765 | 1980.40  | 2162.77  |

## 2.4 Star Slots

### 2.4.1 Slot 3

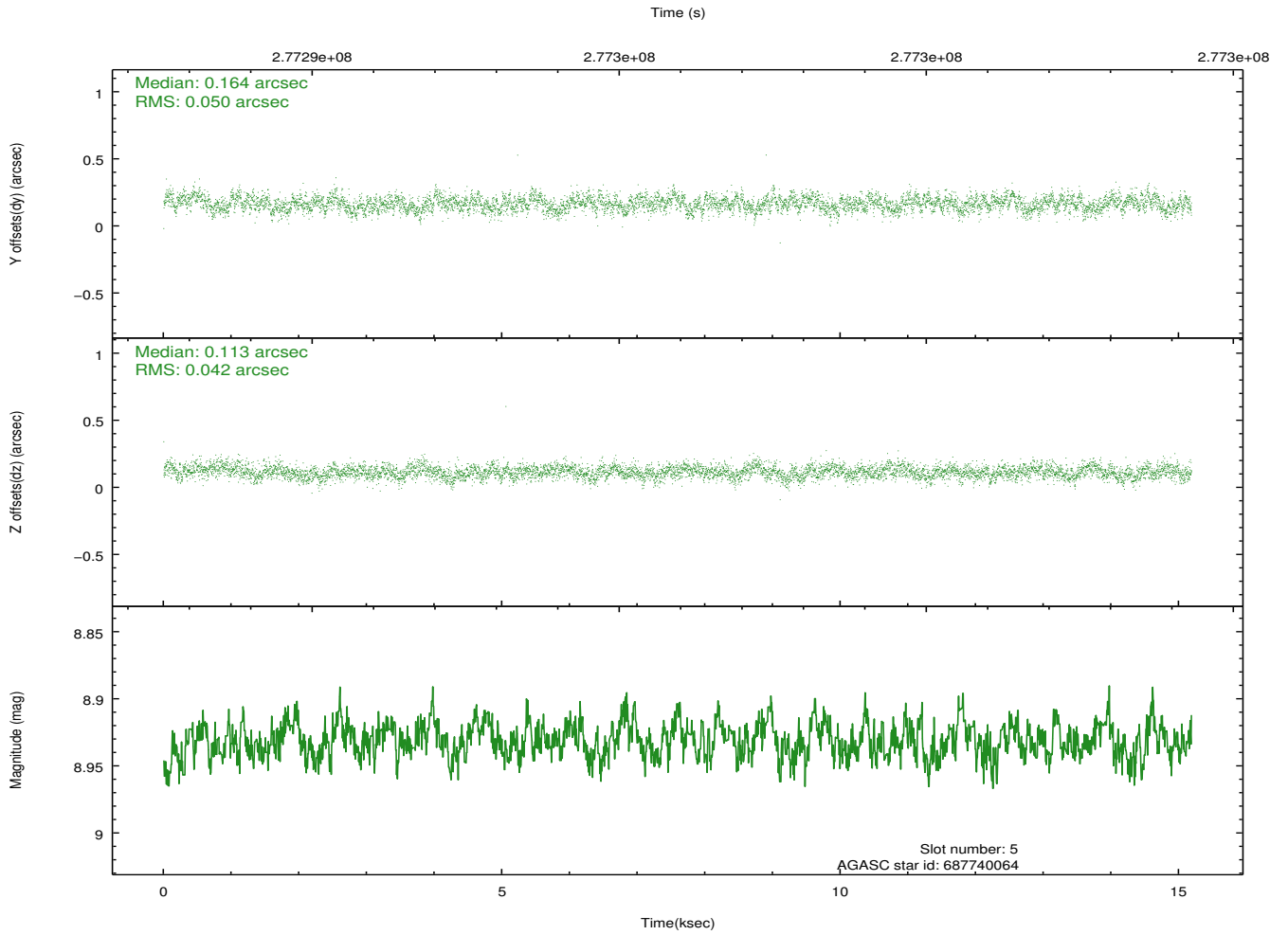
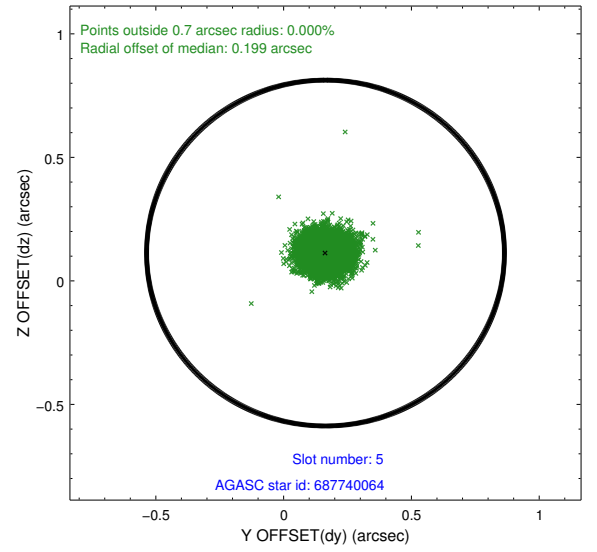
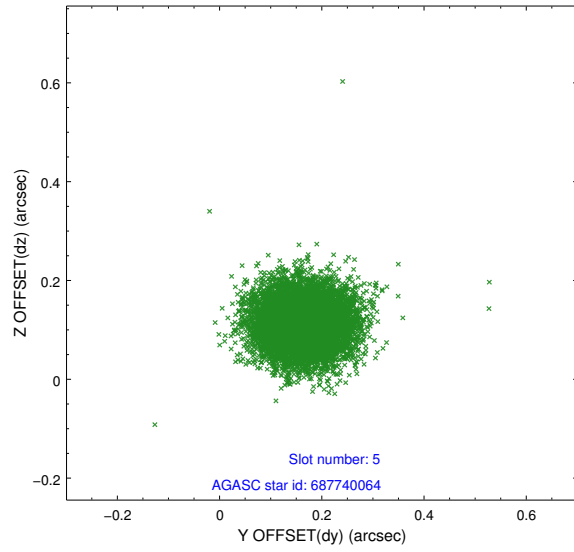


## 2.4.2 Slot 4

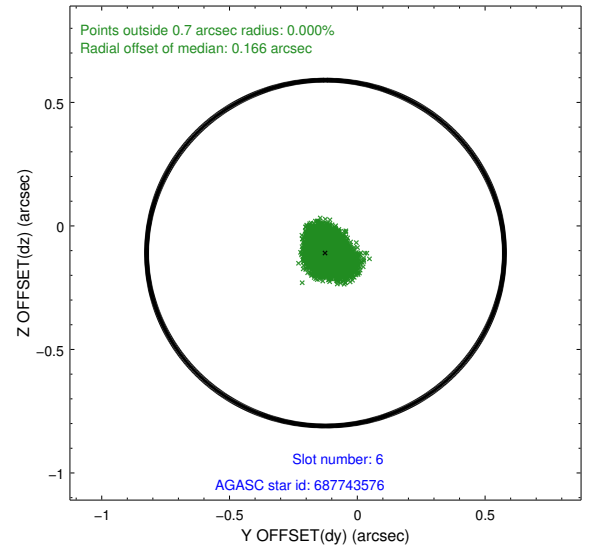
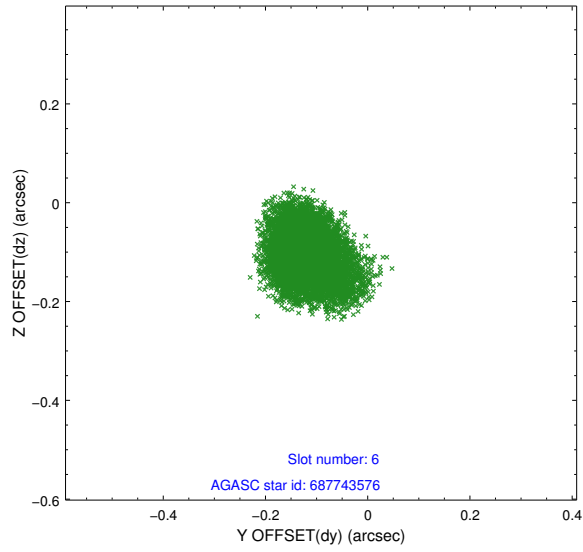




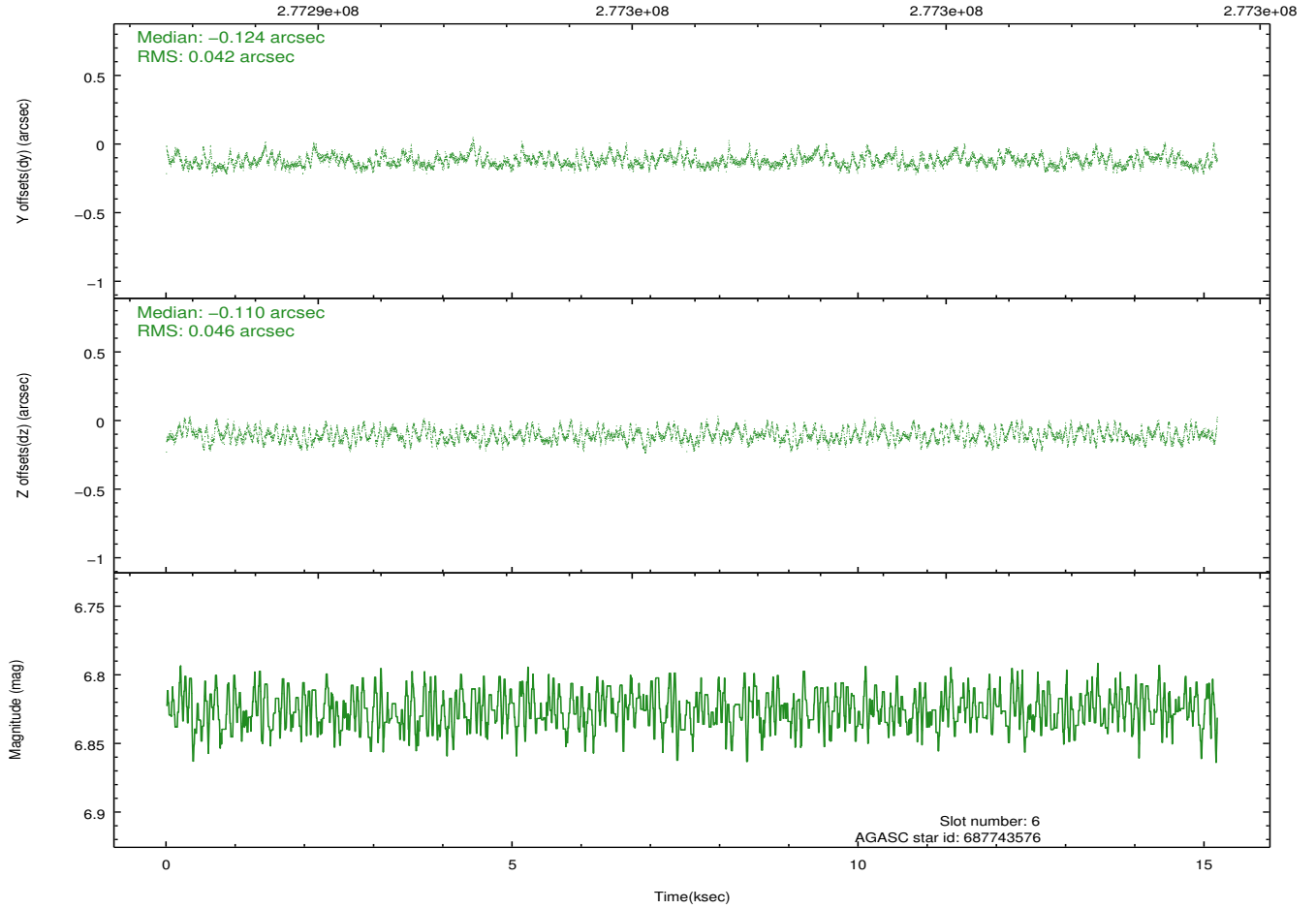
### 2.4.3 Slot 5



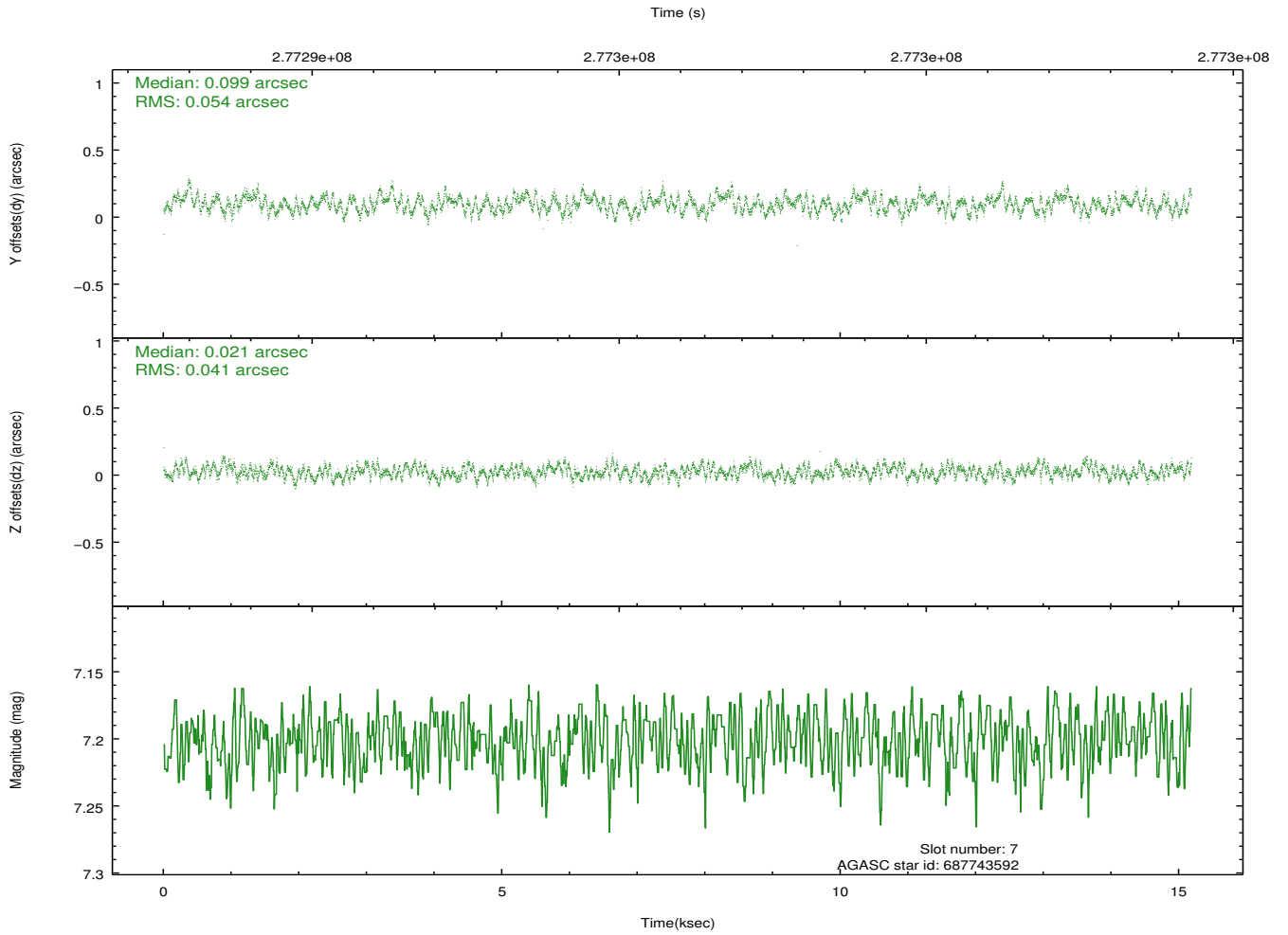
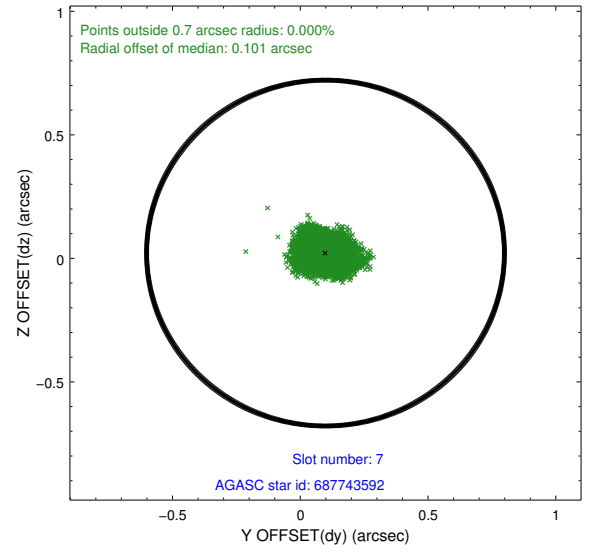
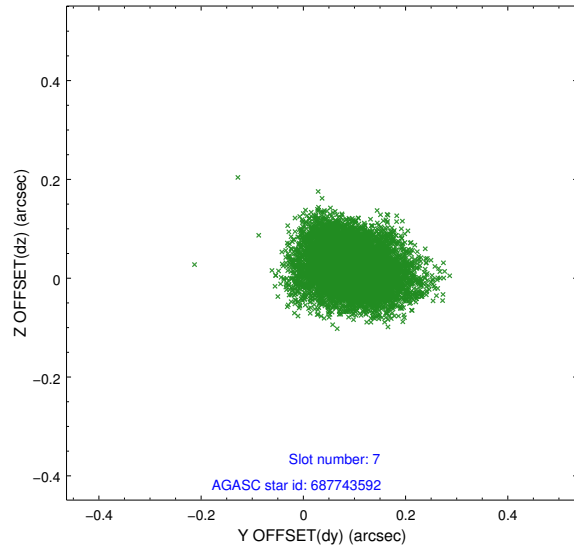
## 2.4.4 Slot 6



Time (s)

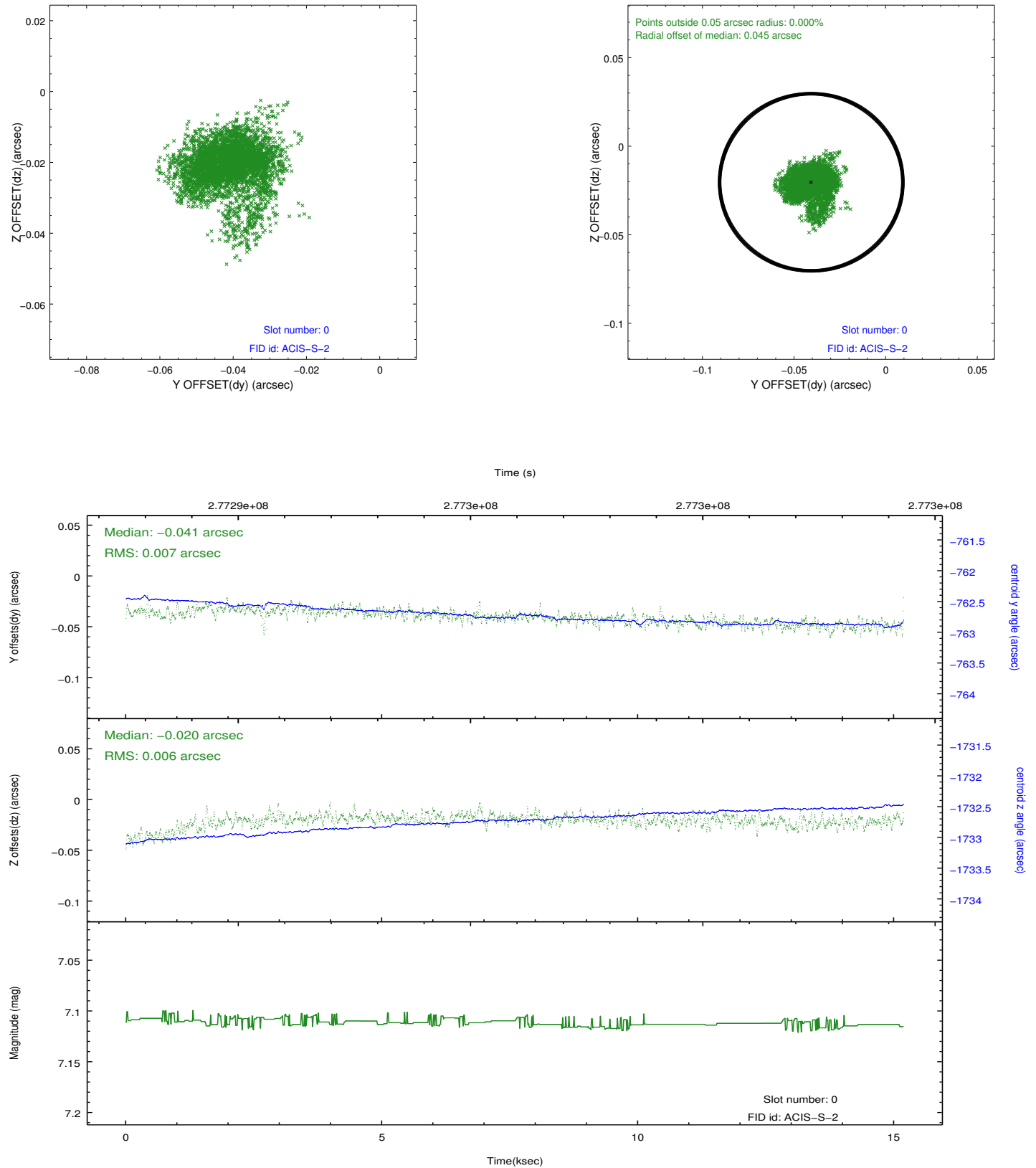


## 2.4.5 Slot 7

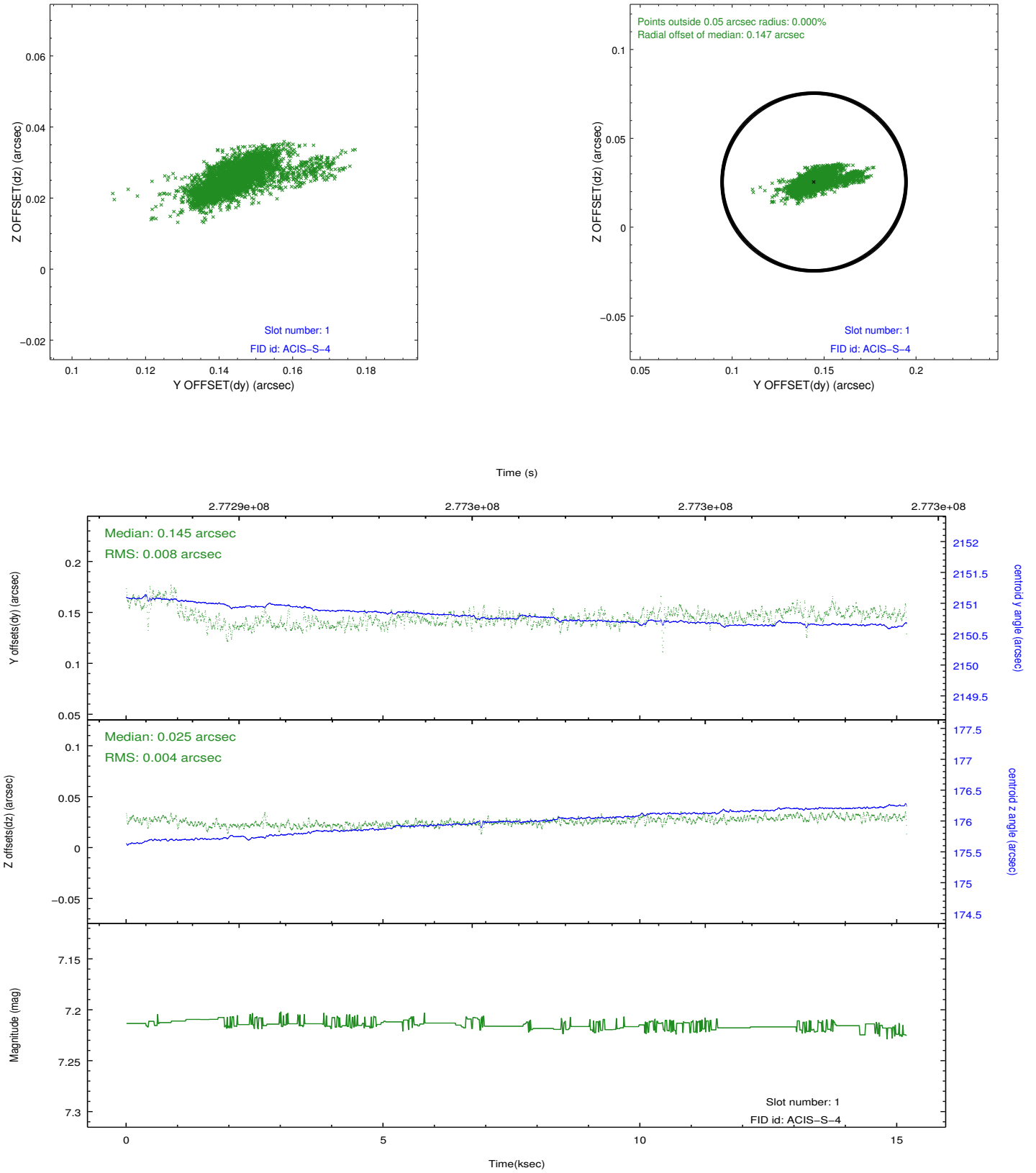


## 2.5 FID Slots

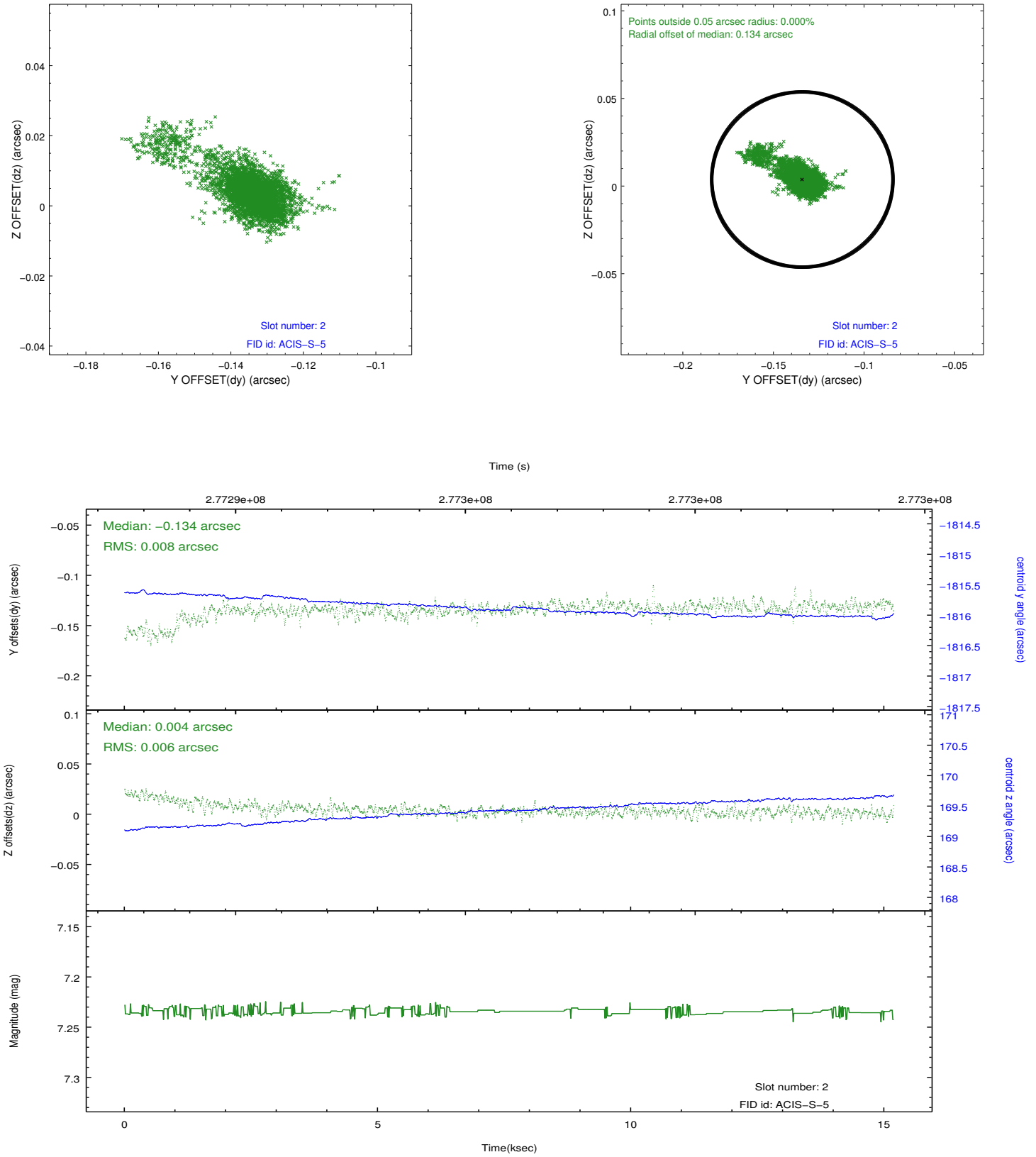
### 2.5.1 Slot 0



## 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)      | 2012.04.11    |
| V&V Edition                | 1             |
| V&V Disposition and Status | OK            |
| V&V Charge Time            | 15.1807999    |

### A.2 Comments