

# V&V Reference Report

## L2 ASCDS Version : 10.4.2.1

Observation 17724 - L2 Version 1  
Chandra X-Ray Center

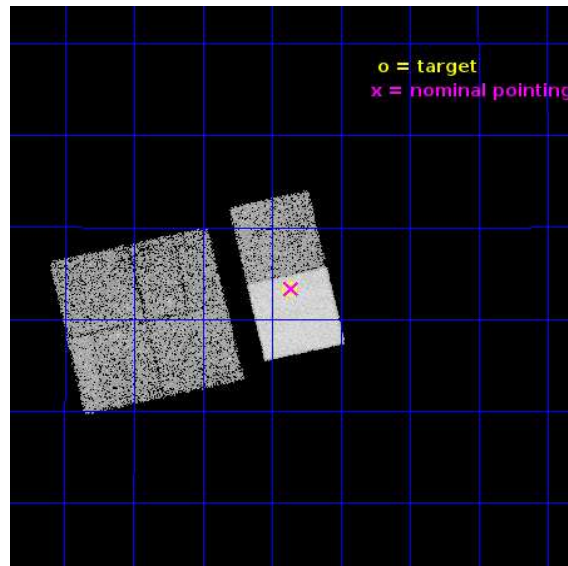
L2 Processing Date : Dec 7 2015

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# 1 Front

|          |                                            |                                             |
|----------|--------------------------------------------|---------------------------------------------|
| seq_num  | 201035                                     | Sequence number                             |
| obs_id   | 17724                                      | Observation id                              |
| title    | The rotation/activity relation of M dwarfs | Proposal title                              |
| observer | Dr Beate Stelzer                           | Principal investigator                      |
| object   | 202059222                                  | Source name                                 |
| dtcycle  | 0                                          | &#160                                       |
| cycle    | P                                          | events from which exps?<br>Prim/Second/Both |
| ra_targ  | 100.216667                                 | Observer's specified target RA [deg]        |
| dec_targ | 15.721667                                  | Observer's specified target Dec [deg]       |
| ra_nom   | 100.21421941292                            | Nominal RA [deg]                            |
| dec_nom  | 15.722145306281                            | Nominal Dec [deg]                           |
| roll_nom | 77.157302854492                            | Nominal Roll [deg]                          |
| revision | 1                                          | Processing version of data                  |
| ontime   | 14942.565142512                            | Sum of GTIs [s]                             |
| livetime | 14753.353385345                            | Livetime [s]                                |
| ontime0  | 14942.606182456                            | Sum of GTIs [s]                             |
| ontime1  | 14942.400982499                            | Sum of GTIs [s]                             |
| ontime2  | 14942.442022443                            | Sum of GTIs [s]                             |
| ontime3  | 14942.483062506                            | Sum of GTIs [s]                             |
| ontime6  | 14942.524102449                            | Sum of GTIs [s]                             |
| ontime7  | 14942.565142512                            | Sum of GTIs [s]                             |
| l2events | 85900                                      | Number of level 2 events                    |

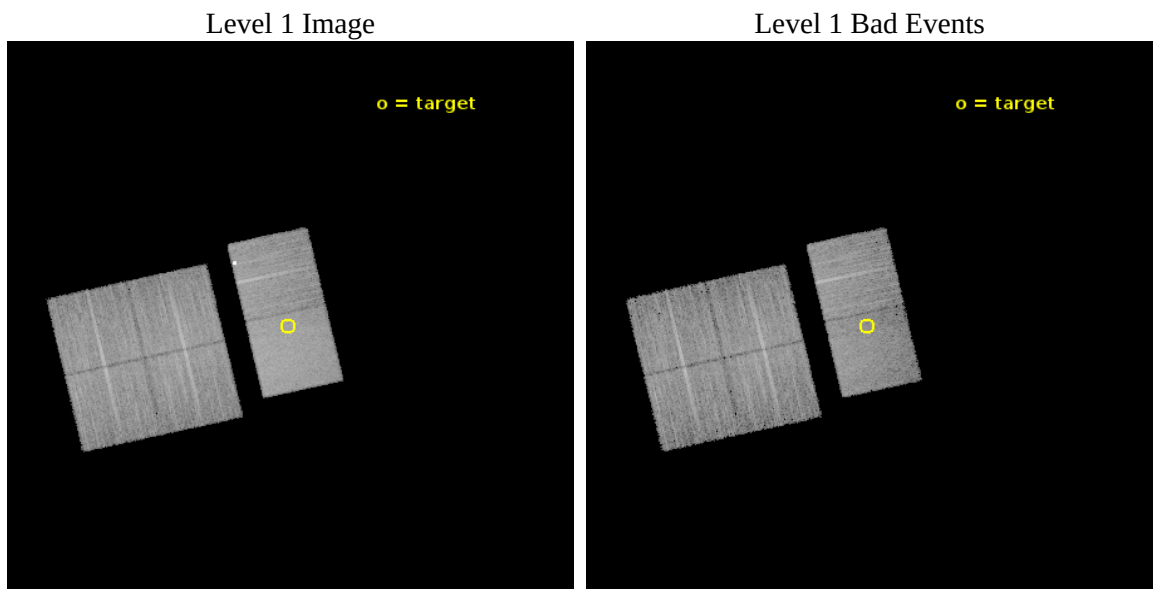




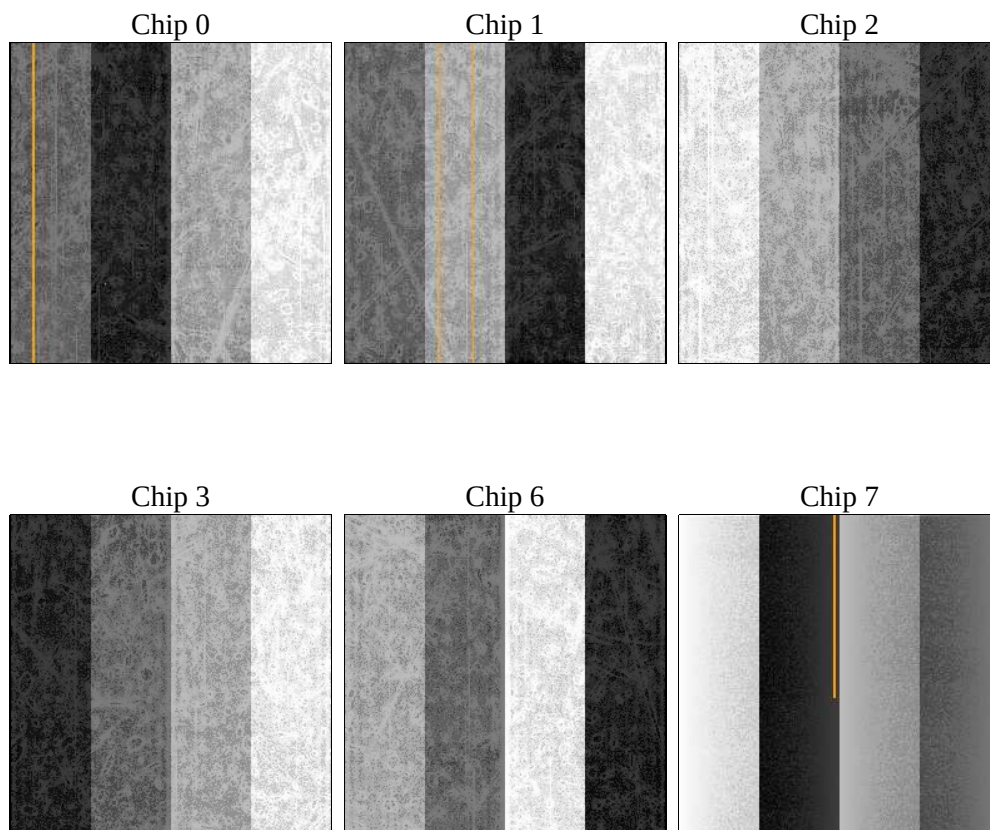
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

|          |                     |                                |                |                 |                                         |
|----------|---------------------|--------------------------------|----------------|-----------------|-----------------------------------------|
| obi_num  | 1                   | Obi number                     | sched_exp_time | 15000.000000    | [s] Scheduled observation exposure time |
| ascdsver | 10.4.2.1            | Processing system revision     | ontime         | 14942.565142512 | Sum of GTIs [s]                         |
| caldsver | 4.6.10a             | &#160                          | ontime0        | 14942.606182456 | Sum of GTIs [s]                         |
| date     | 2015-12-07T20:40:00 | Date and time of file creation | ontime1        | 14942.400982499 | Sum of GTIs [s]                         |
| revision | 1                   | Processing version of data     | ontime2        | 14942.442022443 | Sum of GTIs [s]                         |
|          |                     |                                | ontime3        | 14942.483062506 | Sum of GTIs [s]                         |
|          |                     |                                | ontime6        | 14942.524102449 | Sum of GTIs [s]                         |
|          |                     |                                | ontime7        | 14942.565142512 | Sum of GTIs [s]                         |
|          |                     |                                | l1events       | 510957          | Number of level 1 events                |

### 2.1.4 Events

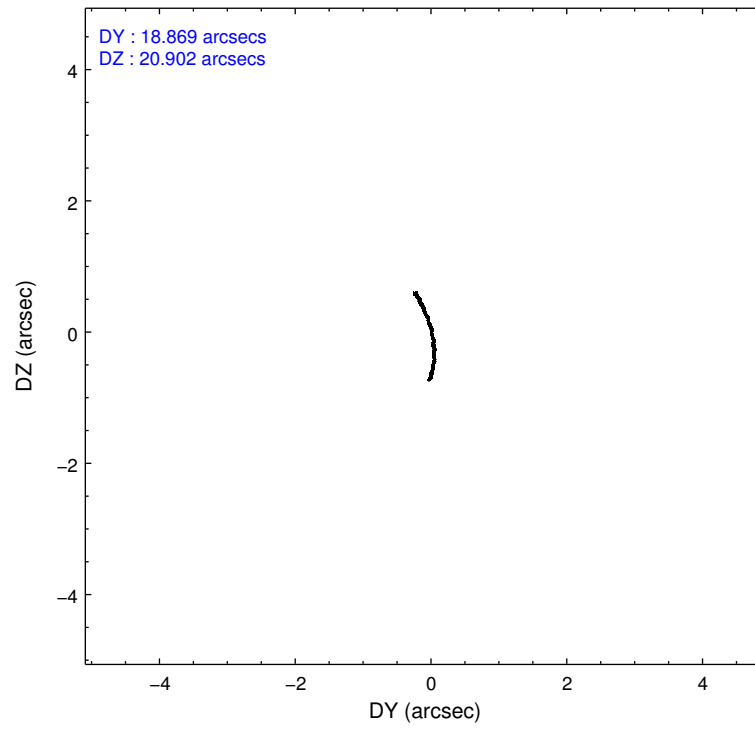
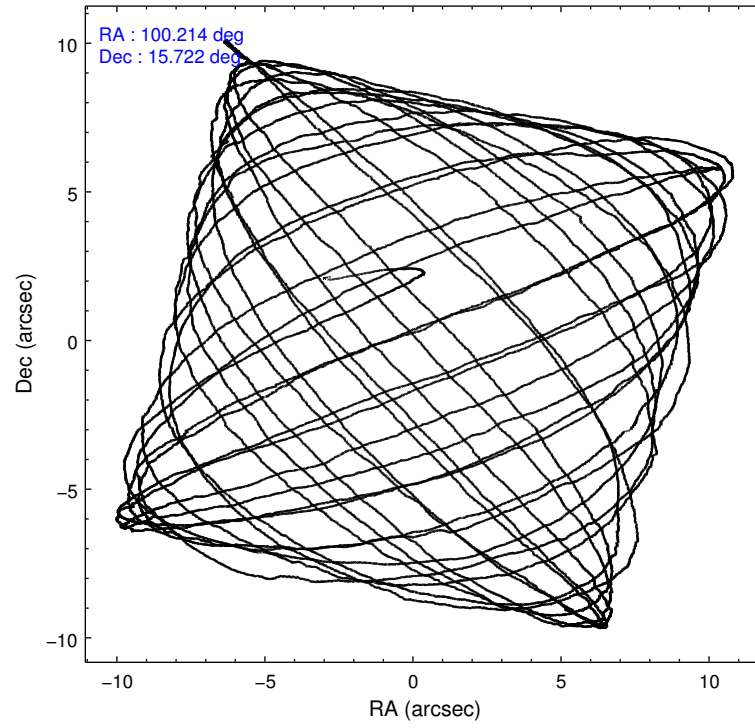
|                 | ccd 0 | ccd 1 | ccd 2 | ccd 3 | ccd 6 | ccd 7  |                | ccd 0 | ccd 1 | ccd 2 | ccd 3 | ccd 6 | ccd 7 |
|-----------------|-------|-------|-------|-------|-------|--------|----------------|-------|-------|-------|-------|-------|-------|
| level 1 events  | 77807 | 76044 | 80518 | 77084 | 89428 | 110076 | grade 0 events | 3127  | 3455  | 3174  | 2895  | 7609  | 4095  |
| rejected events | 68582 | 65853 | 71708 | 68665 | 75292 | 62334  |                | 4%    | 4%    | 3%    | 3%    | 8%    | 3%    |
| rejected %      | 88%   | 86%   | 89%   | 89%   | 84%   | 56%    | grade 1 events | 47    | 41    | 43    | 45    | 61    | 126   |
|                 |       |       |       |       |       |        |                | 0%    | 0%    | 0%    | 0%    | 0%    | 0%    |
|                 |       |       |       |       |       |        | grade 2 events | 2373  | 2500  | 2145  | 1862  | 2268  | 10061 |
|                 |       |       |       |       |       |        |                | 3%    | 3%    | 2%    | 2%    | 2%    | 9%    |
|                 |       |       |       |       |       |        | grade 3 events | 914   | 976   | 924   | 938   | 977   | 3795  |
|                 |       |       |       |       |       |        |                | 1%    | 1%    | 1%    | 1%    | 1%    | 3%    |
|                 |       |       |       |       |       |        | grade 4 events | 858   | 998   | 917   | 921   | 958   | 3786  |
|                 |       |       |       |       |       |        |                | 1%    | 1%    | 1%    | 1%    | 1%    | 3%    |
|                 |       |       |       |       |       |        | grade 5 events | 3753  | 3774  | 3381  | 4146  | 4153  | 10877 |
|                 |       |       |       |       |       |        |                | 4%    | 4%    | 4%    | 5%    | 4%    | 9%    |
|                 |       |       |       |       |       |        | grade 6 events | 1957  | 2263  | 1656  | 1809  | 2334  | 26027 |
|                 |       |       |       |       |       |        |                | 2%    | 2%    | 2%    | 2%    | 2%    | 23%   |
|                 |       |       |       |       |       |        | grade 7 events | 64778 | 62037 | 68278 | 64468 | 71068 | 51309 |
|                 |       |       |       |       |       |        |                | 83%   | 81%   | 84%   | 83%   | 79%   | 46%   |

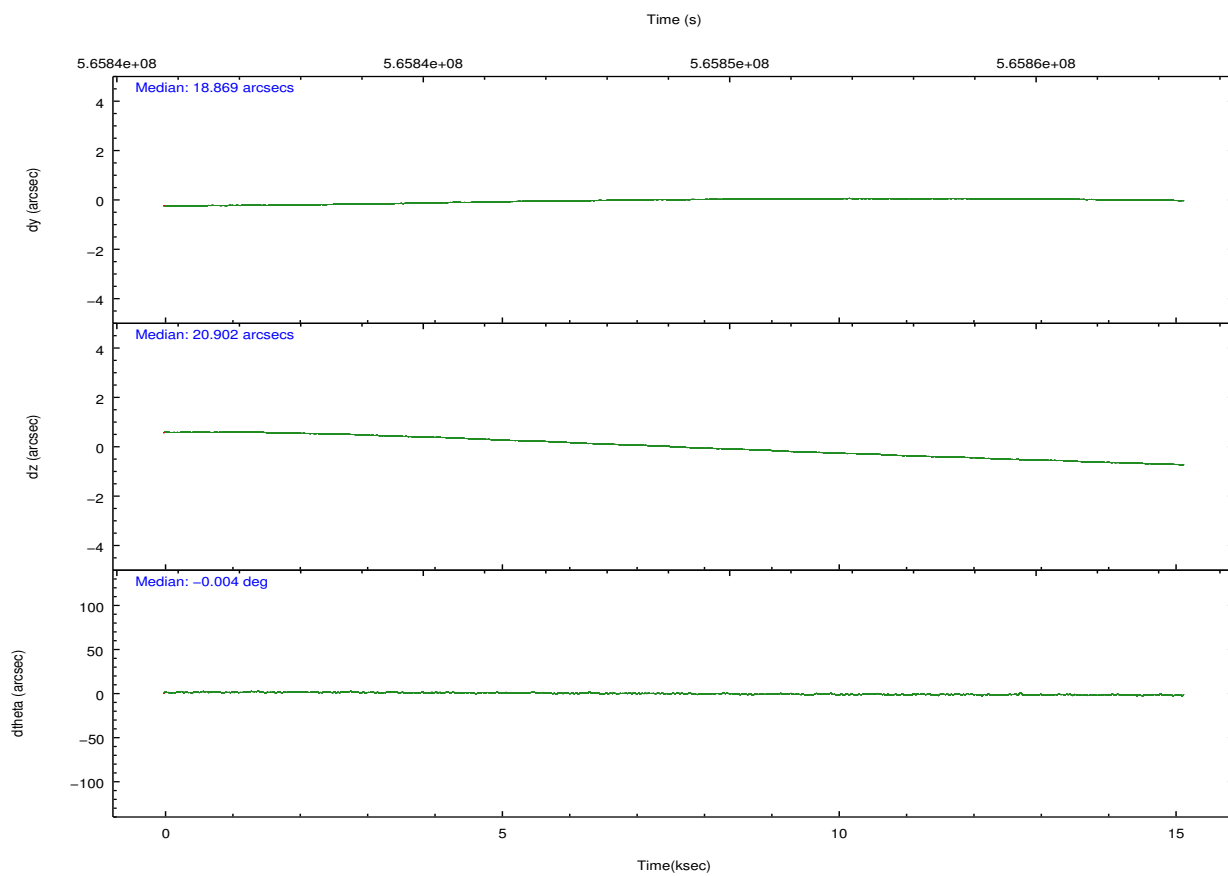
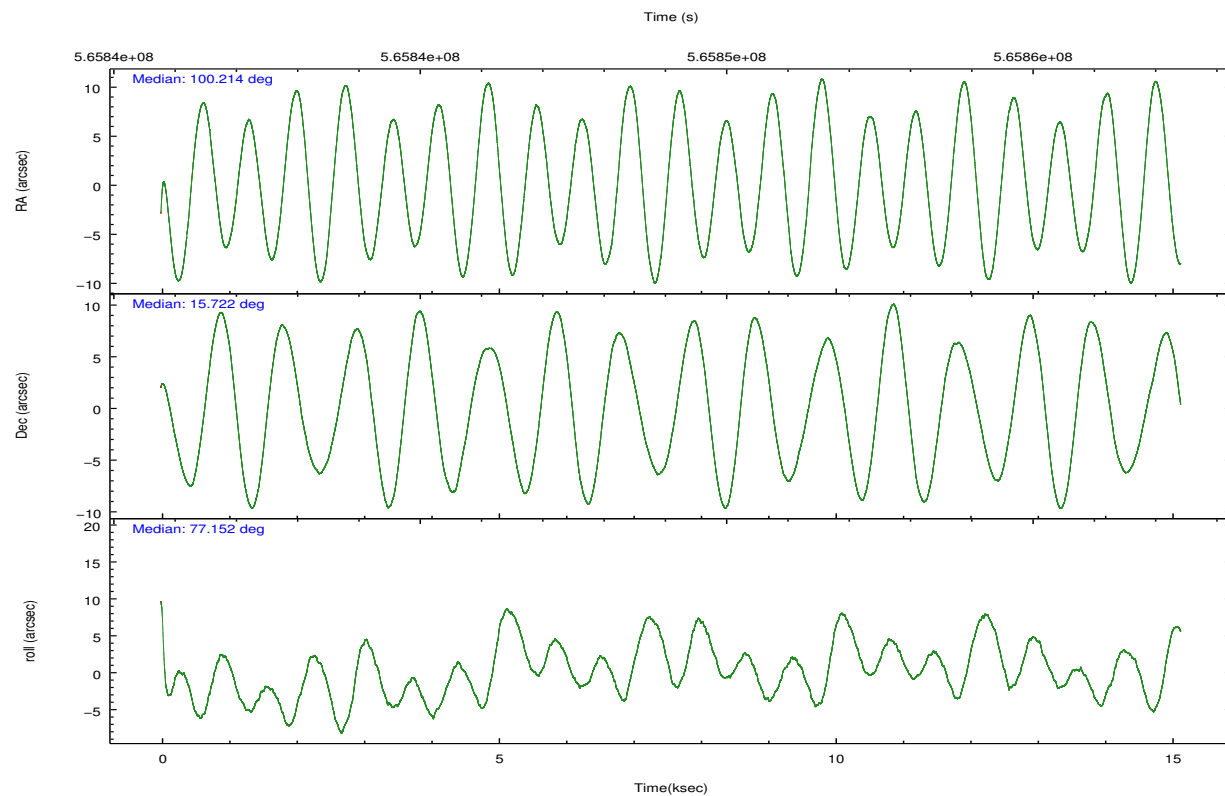
## 2.2 Compared Parameters

| Parameter                         | Planned             | Actual               |
|-----------------------------------|---------------------|----------------------|
| Instrument                        | ACIS                | ACIS                 |
| Detector                          | ACIS-012367         | ACIS-012367          |
| Grating                           | NONE                | NONE                 |
| Data mode                         | VFAINT              | VFAINT               |
| Observation mode                  | POINTING            | POINTING             |
| [deg] Pointing RA                 | 100.223022          | 100.2142194129214    |
| [deg] Pointing Dec                | 15.696021           | 15.72214530628103    |
| [deg] Pointing Roll               | 76.998278           | 77.15730285449153    |
| [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)  | 565841650.184000    | 565840401.9052401    |
| Observation start date            | 2015-12-07T02:13:02 | 2015-12-07T01:53:21  |
| [s] Observation end time (MET)    | 565856650.184000    | 565857071.99368      |
| Observation end date              | 2015-12-07T06:23:02 | 2015-12-07T06:31:11  |
| Read mode                         | TIMED               | TIMED                |

| Parameter                             | Planned   | Actual  |
|---------------------------------------|-----------|---------|
| Obspar format version number          | 7         | 7       |
| Obspar file type                      | PREDICTED | ACTUAL  |
| Obspar update status                  | NONE      | UPDATED |
| CCD I0 on                             | O1        | Y       |
| CCD I1 on                             | O2        | Y       |
| CCD I2 on                             | O3        | Y       |
| CCD I3 on                             | O4        | Y       |
| CCD S0 on                             | N         | N       |
| CCD S1 on                             | N         | N       |
| CCD S2 on                             | O5        | Y       |
| CCD S3 on                             | Y         | Y       |
| CCD S4 on                             | N         | N       |
| CCD S5 on                             | N         | N       |
| Number of optional ACIS chips dropped | 0         | 0       |
| On-chip summing requested             | N         | N       |
| Subarray requested                    | NONE      | NONE    |
| Alternating exposures requested       | N         | N       |
| [s] Primary exposure time             | 0.000000  | 3.2     |

## 2.3 Aspect



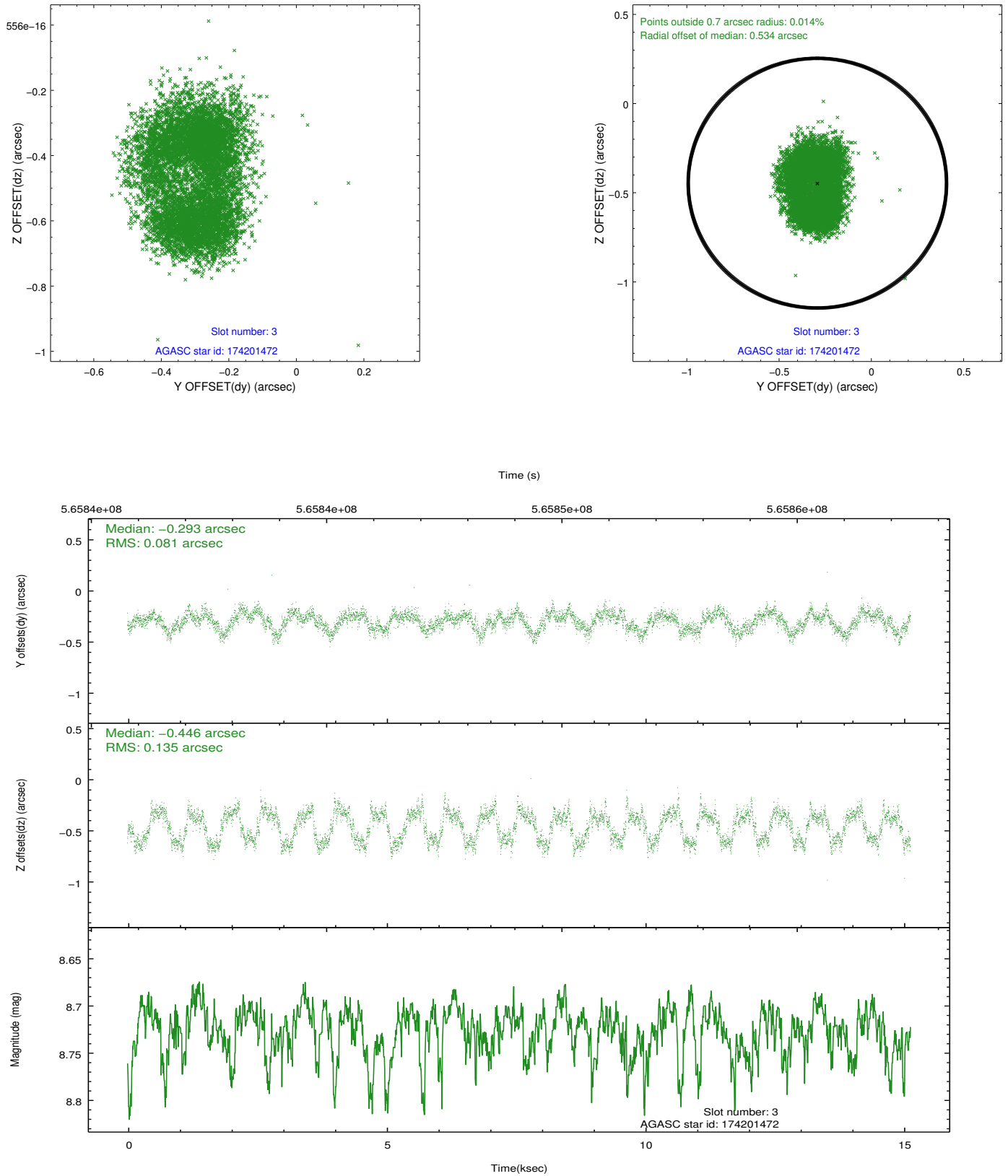


### Slot Statistics

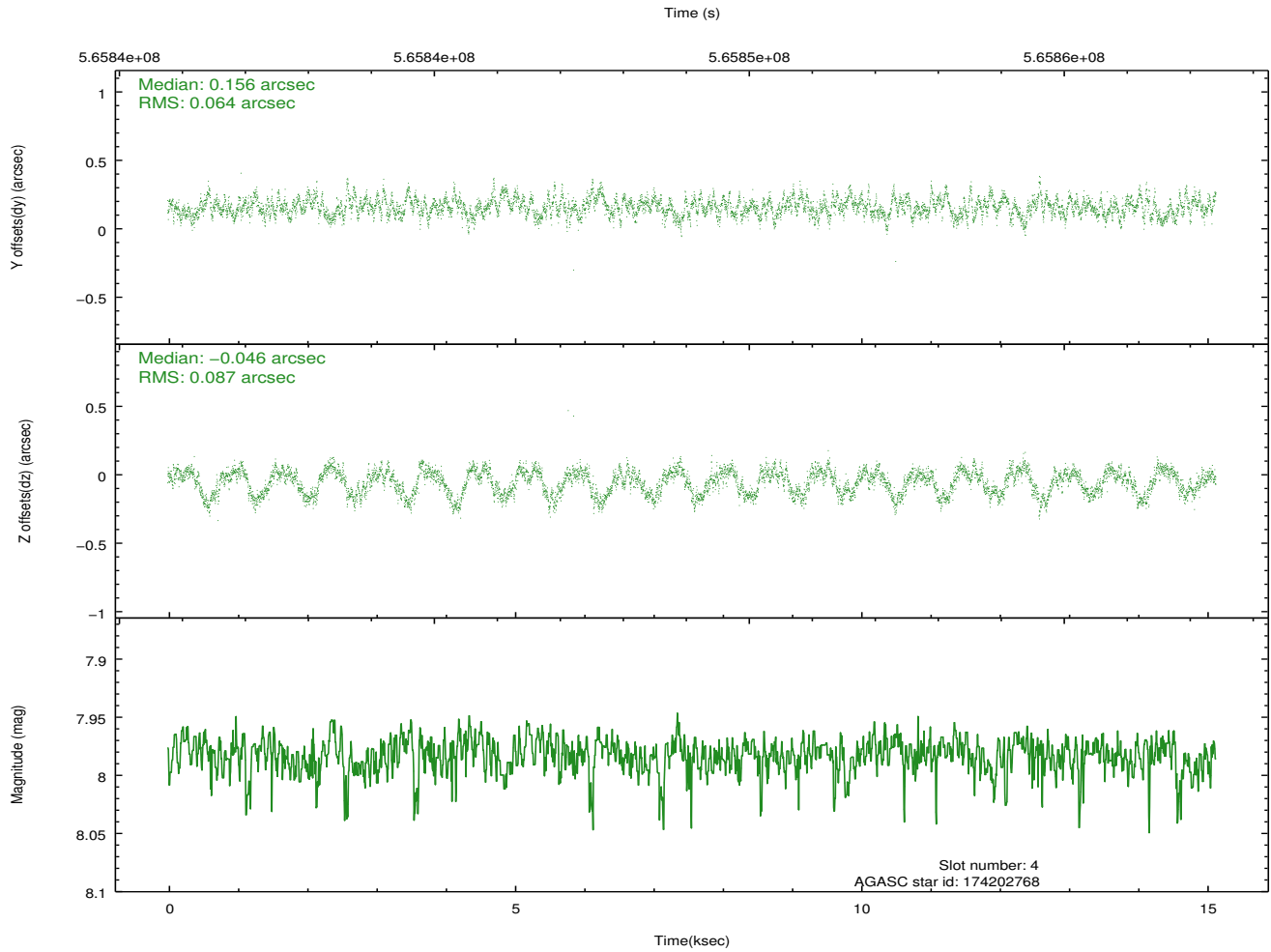
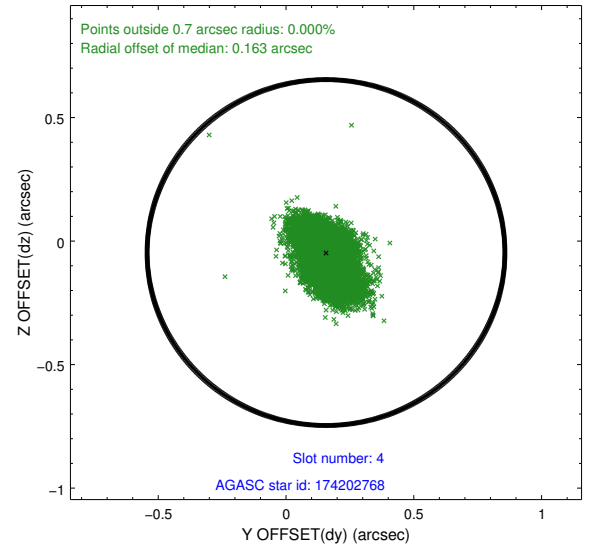
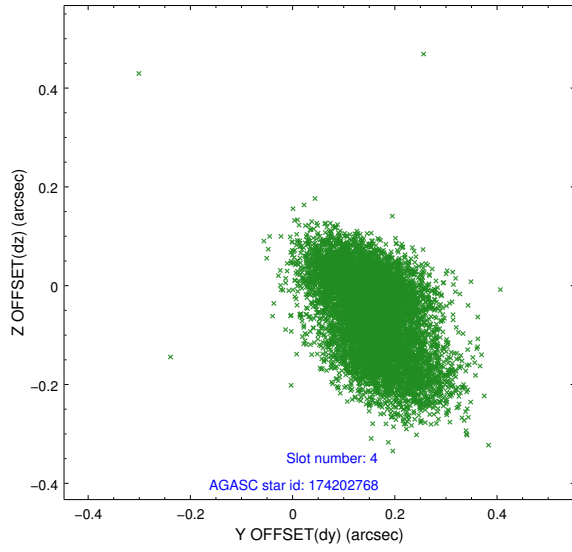
| slot | status | used | id        | mag  | n_pts | med_dy | med_dz | dr1   | dr2   | ra         | dec       | mean_y   | mean_z   |
|------|--------|------|-----------|------|-------|--------|--------|-------|-------|------------|-----------|----------|----------|
| 0    | FID    |      | ACIS-S-2  | 7.13 | 3693  | -0.210 | -0.133 | 0.015 | 0.023 | 0.000000   | 0.000000  | -772.09  | -1742.57 |
| 1    | FID    |      | ACIS-S-4  | 7.22 | 3693  | 0.463  | 0.137  | 0.011 | 0.019 | 0.000000   | 0.000000  | 2141.71  | 165.89   |
| 2    | FID    |      | ACIS-S-5  | 7.23 | 3693  | -0.284 | 0.005  | 0.013 | 0.020 | 0.000000   | 0.000000  | -1824.64 | 159.74   |
| 3    | GUIDE  | used | 174201472 | 8.73 | 7382  | -0.293 | -0.446 | 0.174 | 0.247 | 99.738066  | 16.078662 | 966.50   | 1944.51  |
| 4    | GUIDE  | used | 174202768 | 7.98 | 7384  | 0.156  | -0.046 | 0.114 | 0.188 | 99.732742  | 15.206831 | -2097.61 | 1263.98  |
| 5    | GUIDE  | used | 174338032 | 8.90 | 7380  | 0.012  | 0.301  | 0.121 | 0.191 | 100.582538 | 15.823937 | 729.83   | -1109.16 |
| 6    | GUIDE  | used | 174343968 | 9.21 | 7379  | -0.079 | -0.199 | 0.147 | 0.221 | 100.214997 | 15.797038 | 348.39   | 108.55   |
| 7    | GUIDE  | used | 174344128 | 8.41 | 7378  | 0.210  | 0.423  | 0.129 | 0.199 | 100.345441 | 15.427307 | -846.28  | -631.22  |

## 2.4 Star Slots

### 2.4.1 Slot 3

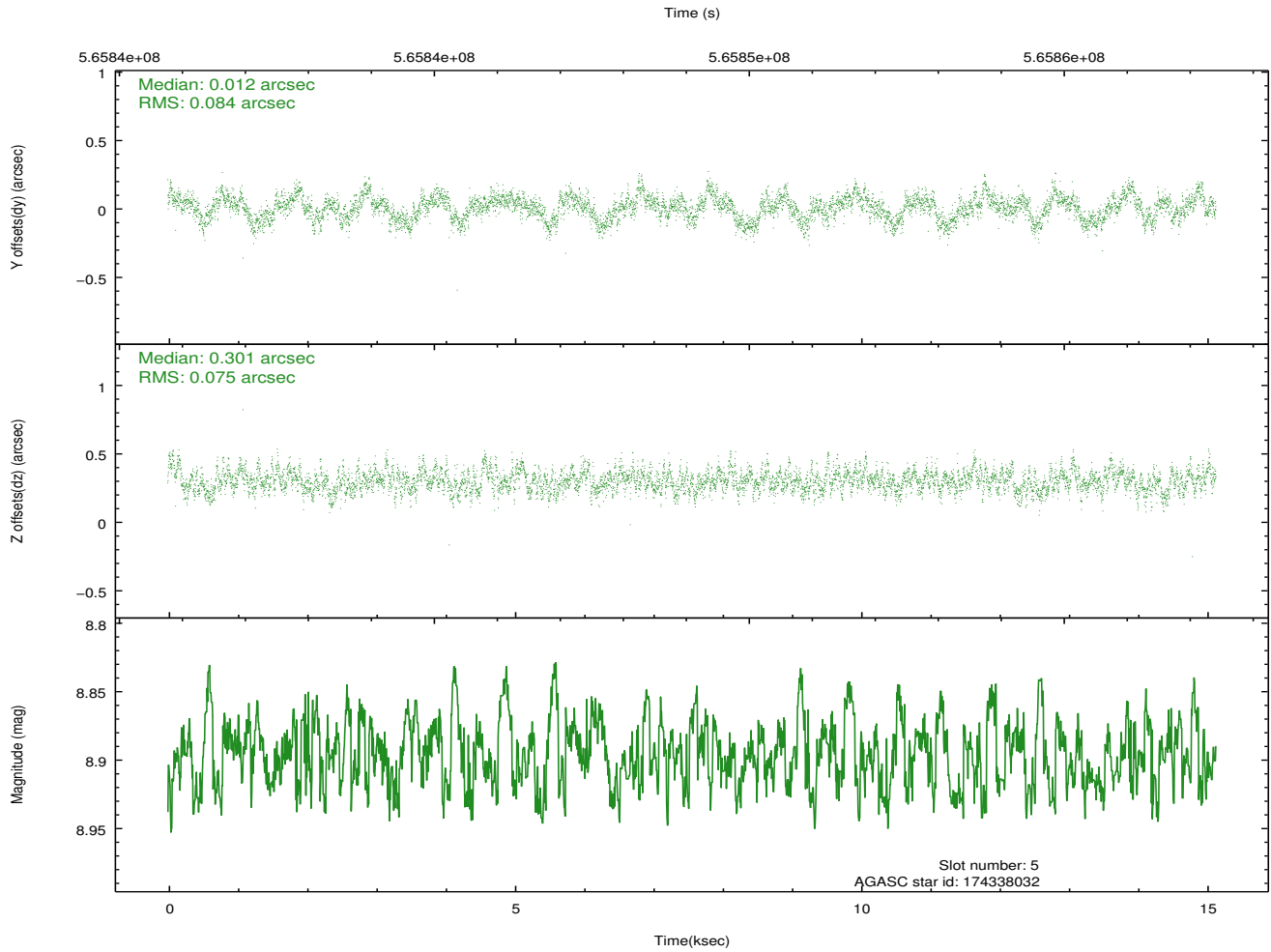
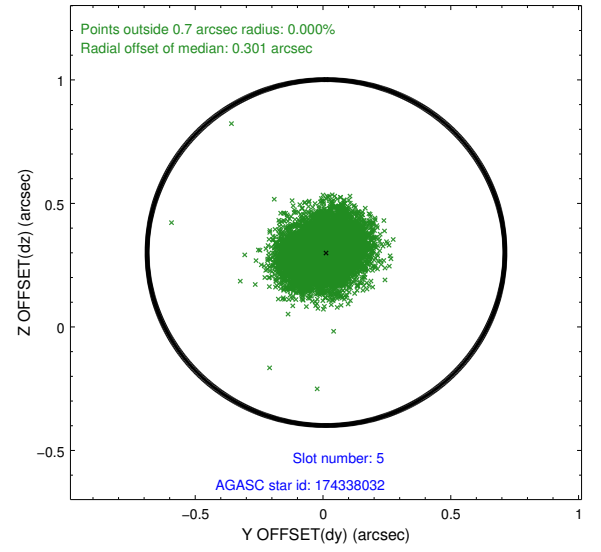
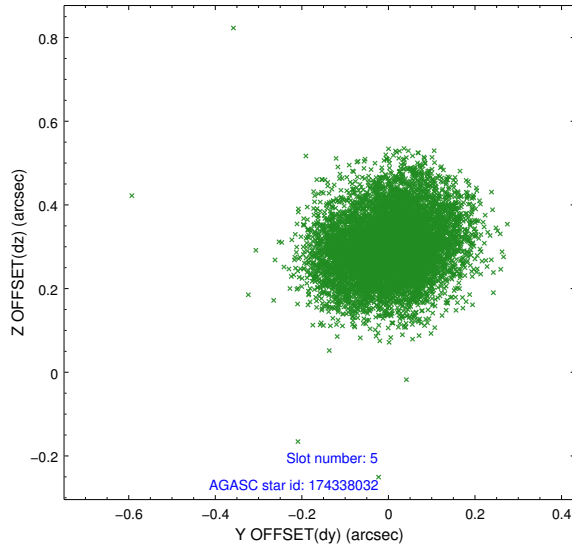


## 2.4.2 Slot 4

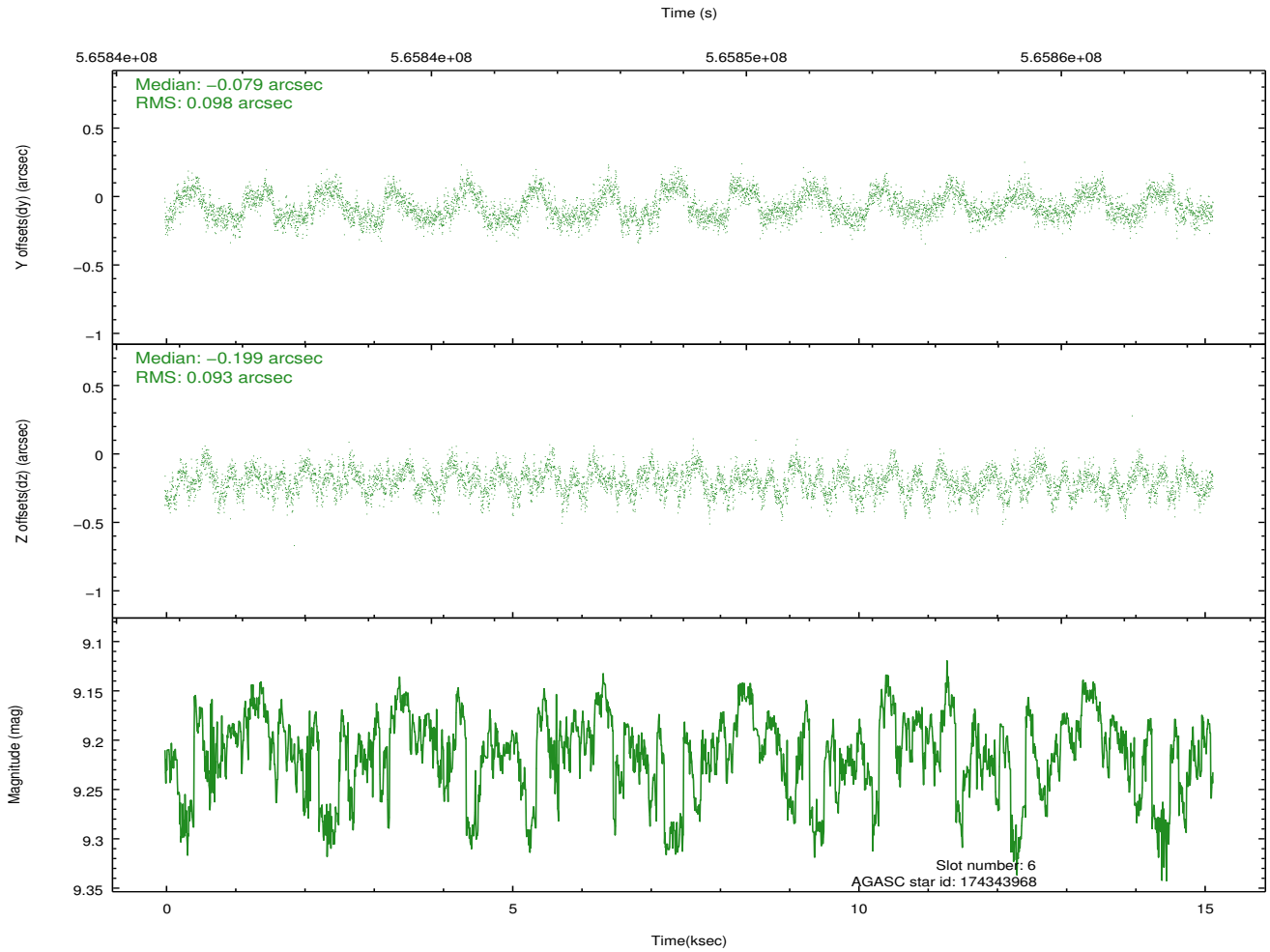
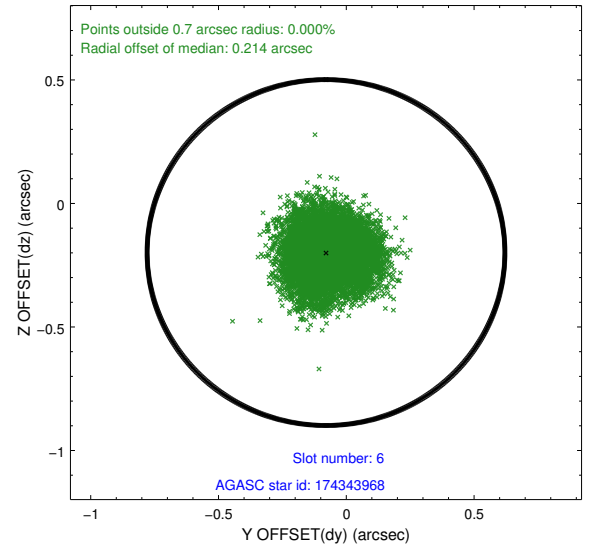
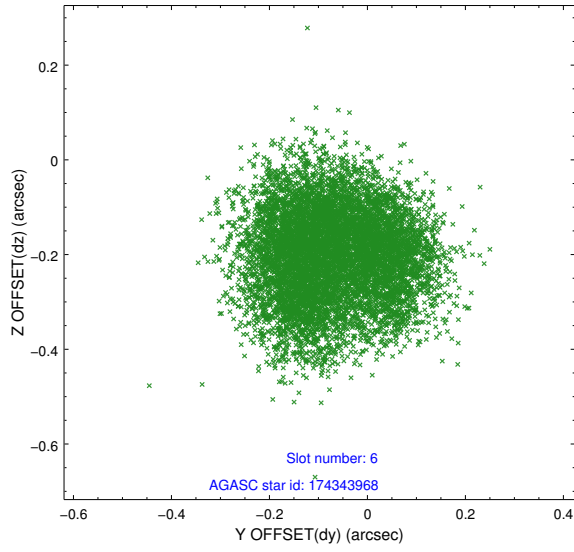




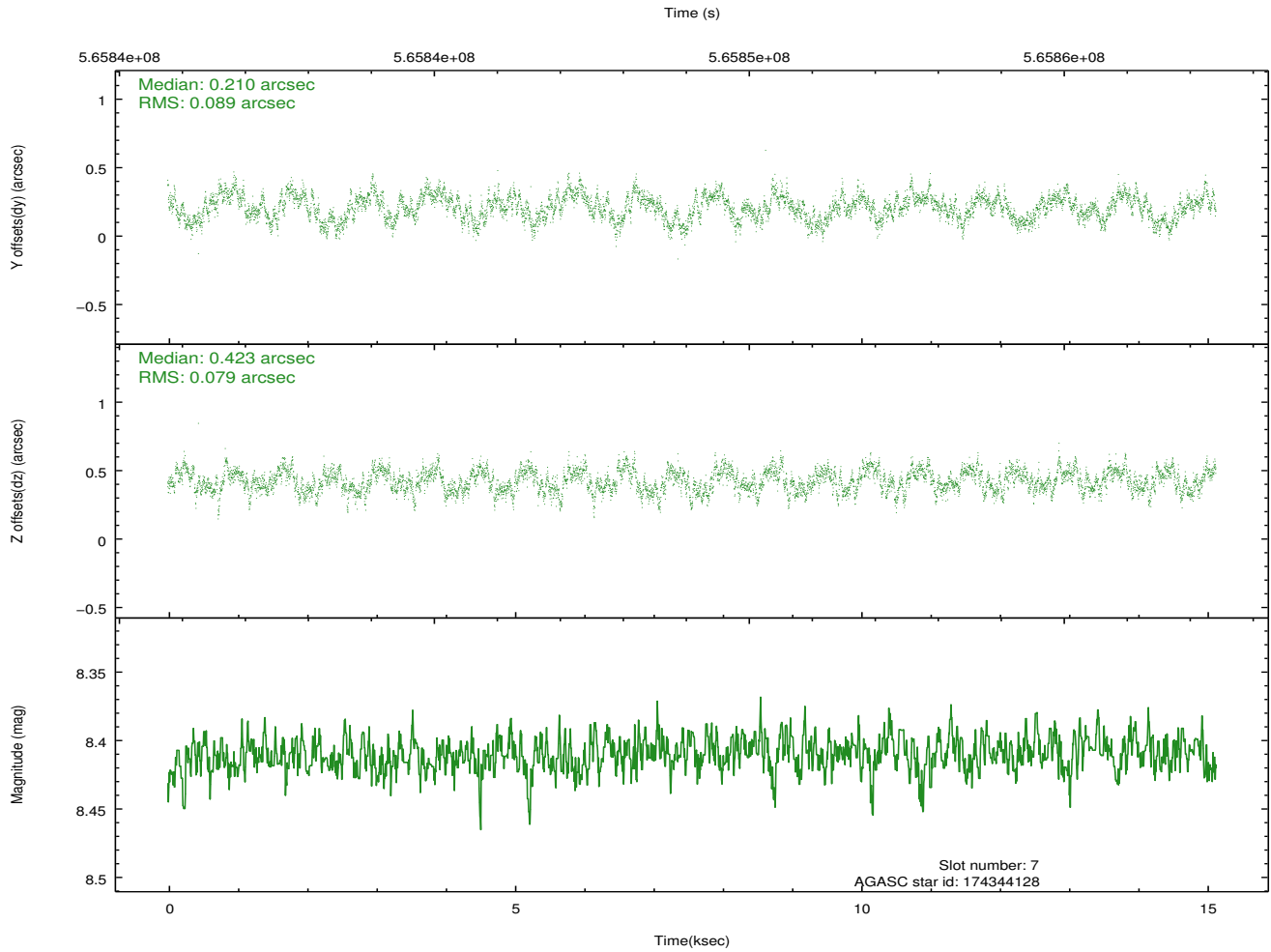
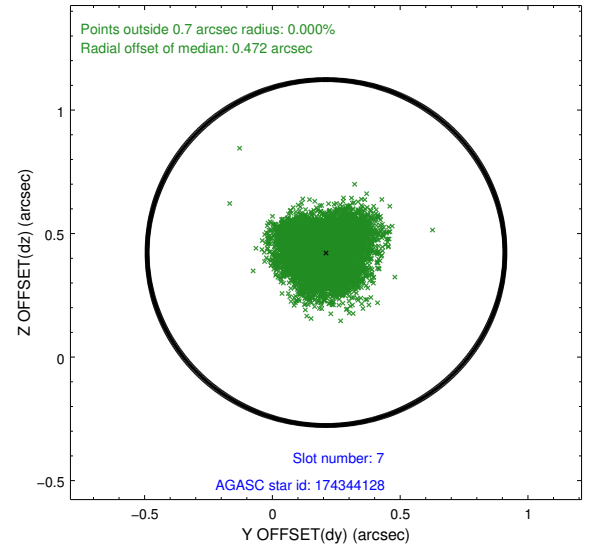
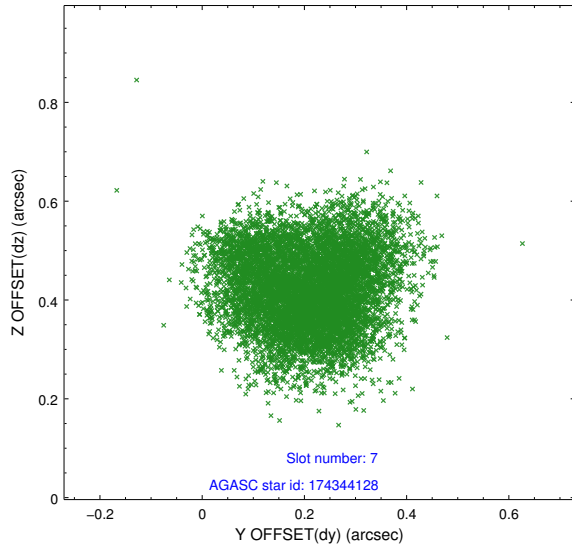
### 2.4.3 Slot 5



## 2.4.4 Slot 6

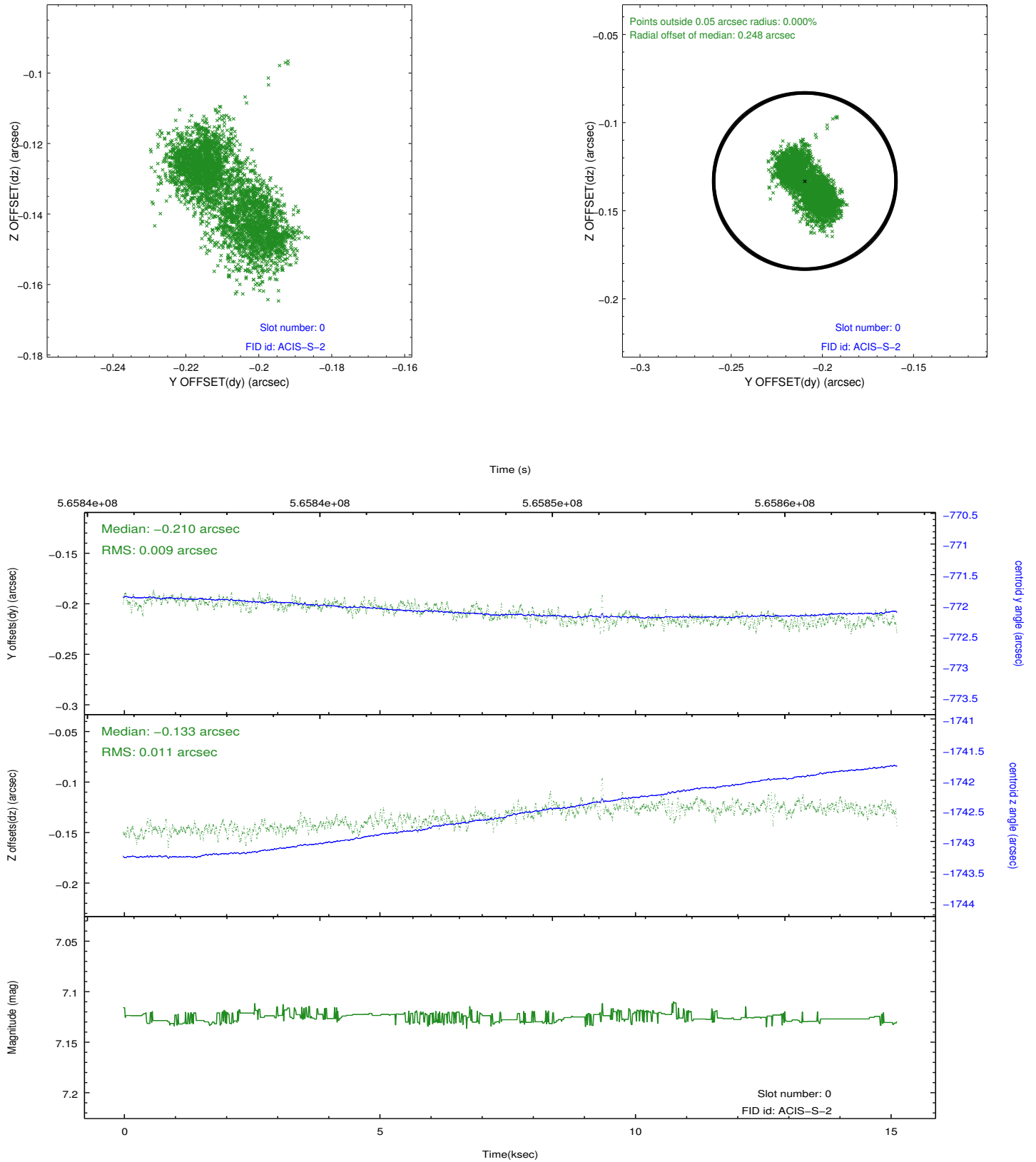


## 2.4.5 Slot 7

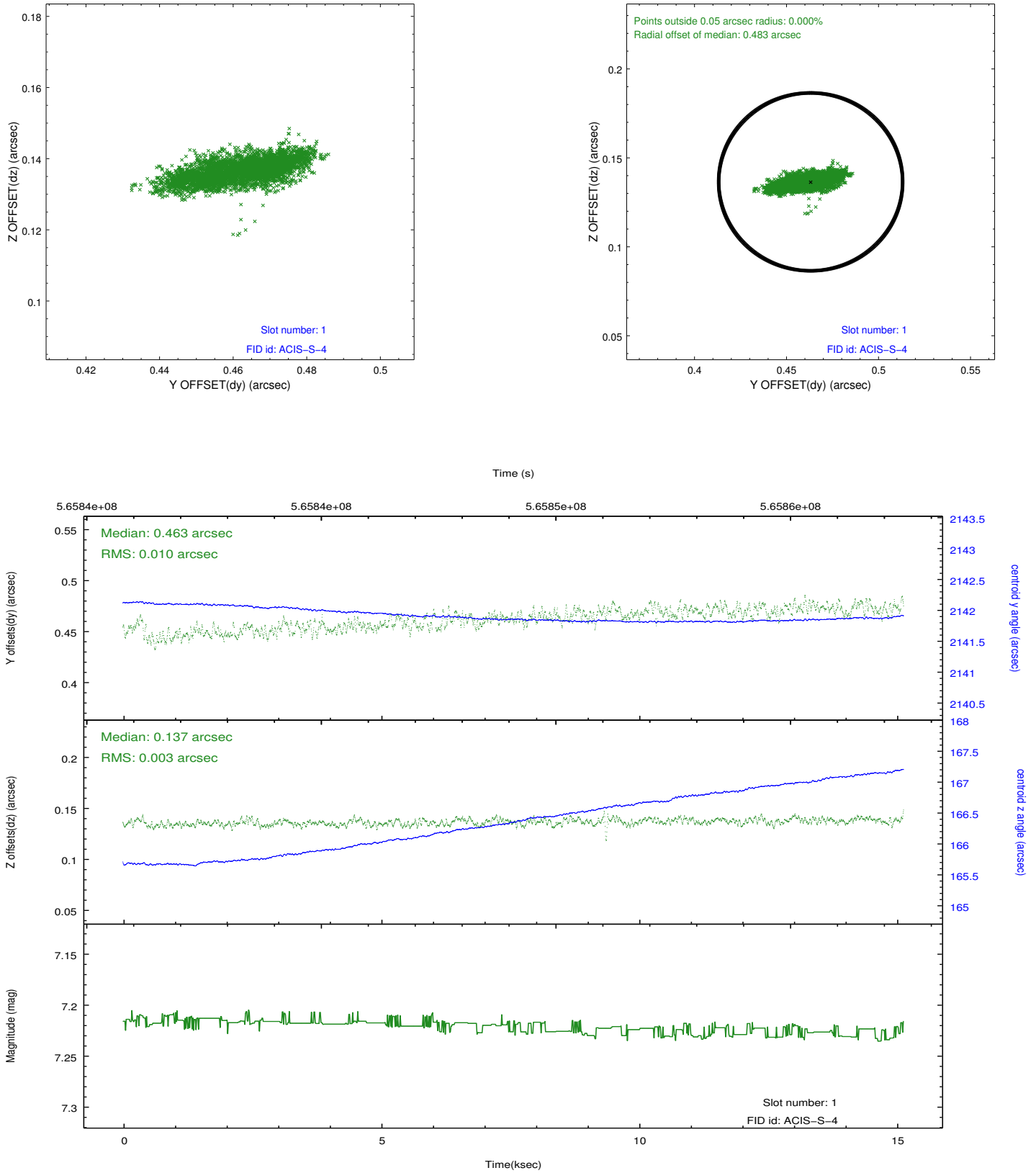


## 2.5 FID Slots

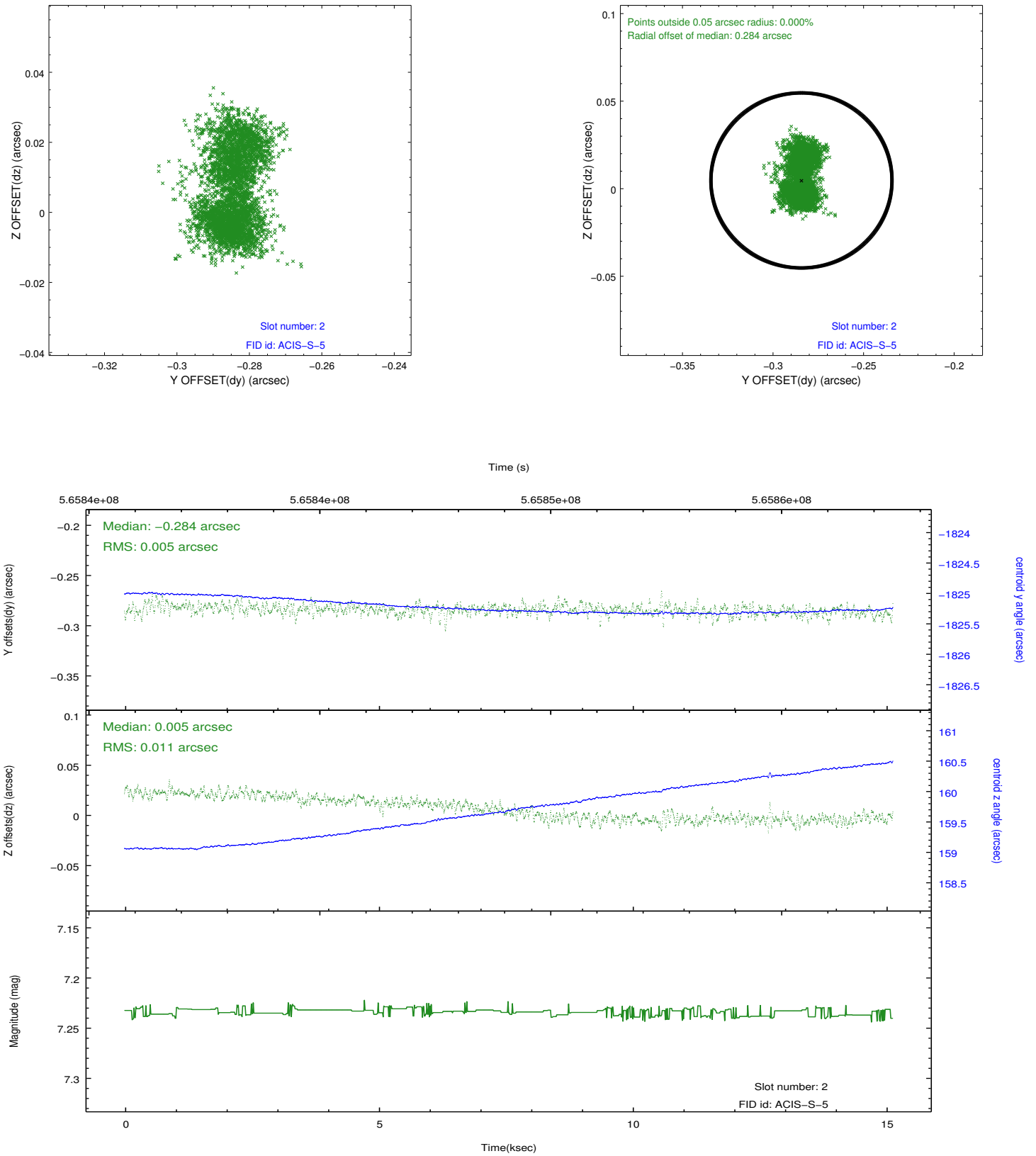
### 2.5.1 Slot 0



## 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)      | 2015.12.08      |
| V&V Edition                | 1               |
| V&V Disposition and Status | OK              |
| V&V Charge Time            | 14.942565142512 |

### A.2 Comments