

# V&V Reference Report

## L2 ASCDS Version : 10.6

Observation 19318 - L2 Version 1  
Chandra X-Ray Center

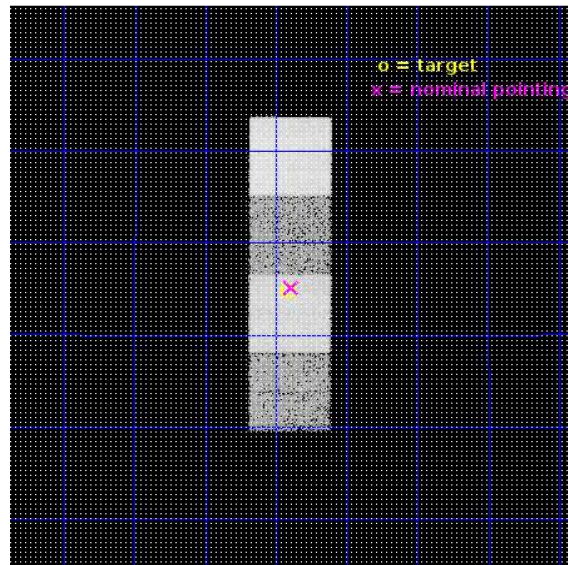
L2 Processing Date : Nov 21 2017

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# 1 Front

|          |                                                                  |                                             |
|----------|------------------------------------------------------------------|---------------------------------------------|
| seq_num  | 601275                                                           | Sequence number                             |
| obs_id   | 19318                                                            | Observation id                              |
| title    | A homogeneous view of X-ray halos in massive early-type galaxies | P                                           |
| observer | Andy Goulding                                                    | Principal investigator                      |
| object   | NGC2513                                                          | Source name                                 |
| dtcycle  | 0                                                                | &#160                                       |
| cycle    | P                                                                | events from which exps?<br>Prim/Second/Both |
| ra_targ  | 120.602917                                                       | Observer's specified target RA [deg]        |
| dec_targ | 9.413611                                                         | Observer's specified target Dec [deg]       |
| ra_nom   | 120.59781338904                                                  | Nominal RA [deg]                            |
| dec_nom  | 9.4188619721789                                                  | Nominal Dec [deg]                           |
| roll_nom | 90.157457732101                                                  | Nominal Roll [deg]                          |
| revision | 1                                                                | Processing version of data                  |
| ontime   | 14058.500108242                                                  | Sum of GTIs [s]                             |
| livetime | 13874.815454611                                                  | Livetime [s]                                |
| ontime5  | 14058.500108242                                                  | Sum of GTIs [s]                             |
| ontime6  | 14055.359027982                                                  | Sum of GTIs [s]                             |
| ontime7  | 14058.500108242                                                  | Sum of GTIs [s]                             |
| ontime8  | 14055.359037995                                                  | Sum of GTIs [s]                             |
| l2events | 151275                                                           | Number of level 2 events                    |

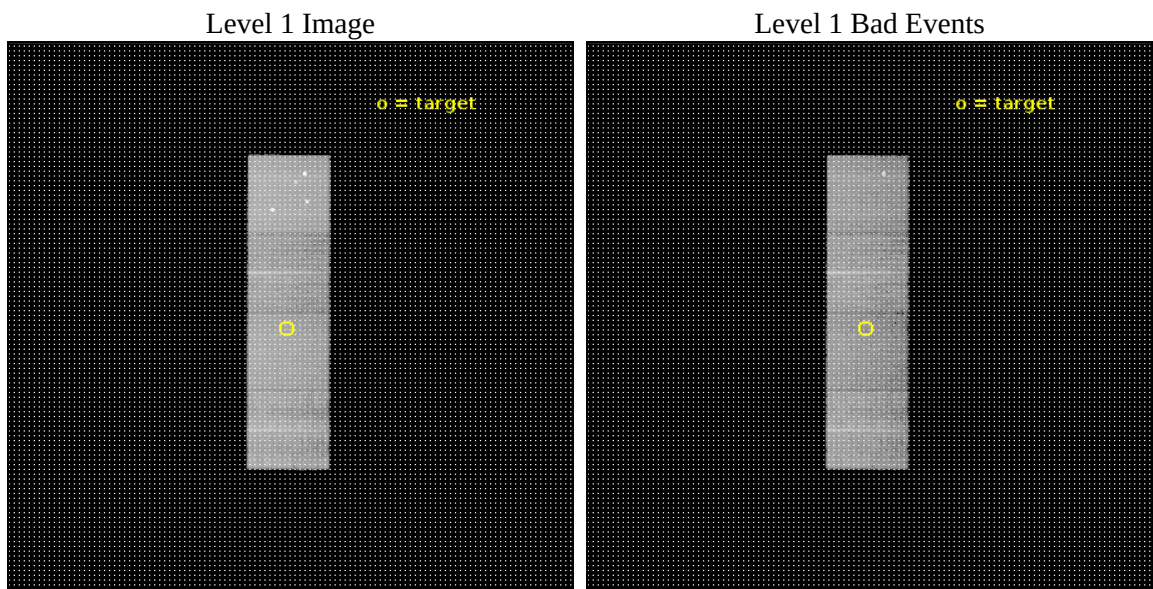




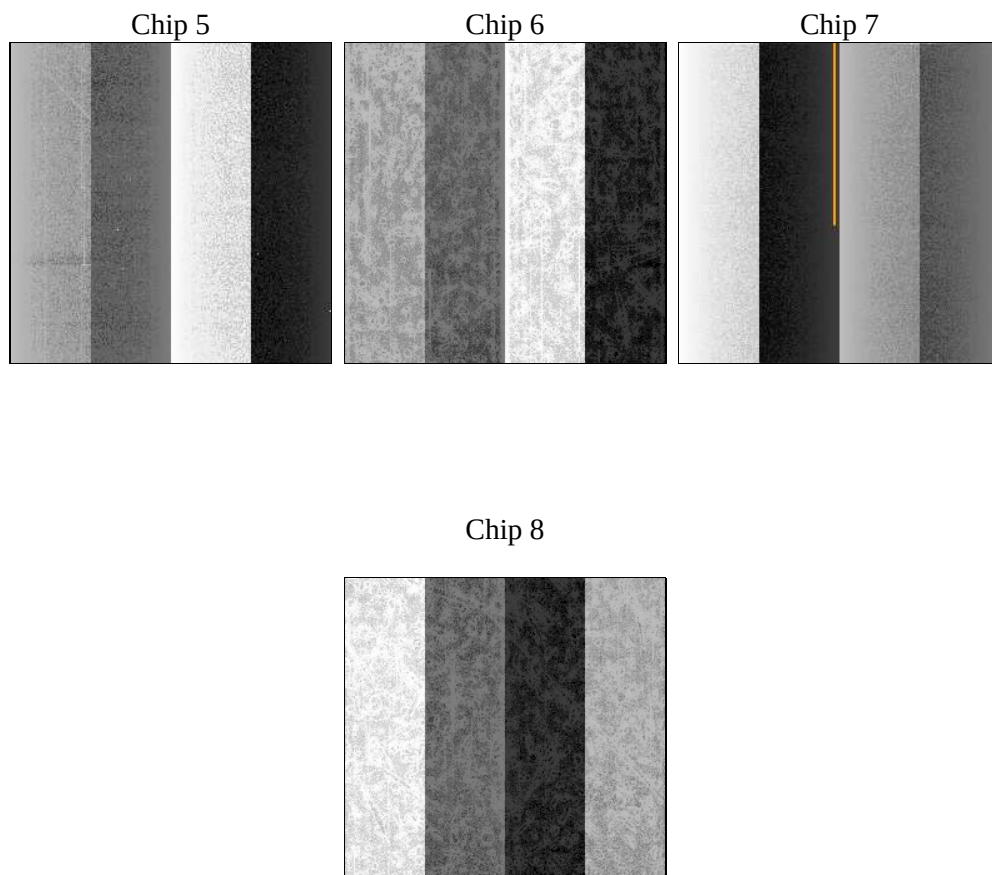
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

|          |                     |                                |                |                 |                                         |
|----------|---------------------|--------------------------------|----------------|-----------------|-----------------------------------------|
| obi_num  | 1                   | Obi number                     | sched_exp_time | 14000.000000    | [s] Scheduled observation exposure time |
| ascdsver | 10.6                | Processing system revision     | ontime         | 14058.500108242 | Sum of GTIs [s]                         |
| caldsver | 4.7.6               | &#160                          | ontime5        | 14058.500108242 | Sum of GTIs [s]                         |
| date     | 2017-11-21T04:31:15 | Date and time of file creation | ontime6        | 14055.359027982 | Sum of GTIs [s]                         |
| revision | 1                   | Processing version of data     | ontime7        | 14058.500108242 | Sum of GTIs [s]                         |
|          |                     |                                | ontime8        | 14055.359037995 | Sum of GTIs [s]                         |
|          |                     |                                | l1events       | 551513          | Number of level 1 events                |

### 2.1.4 Events

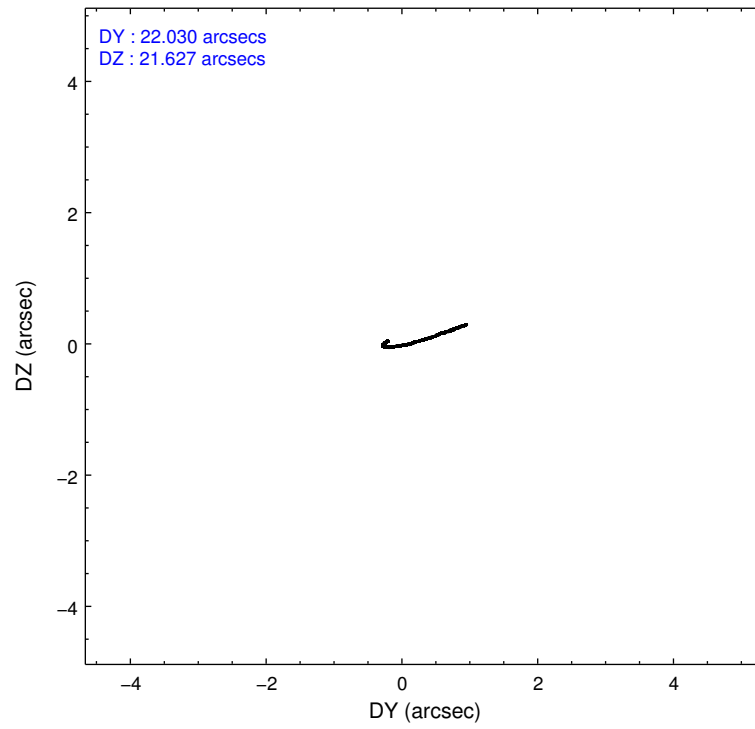
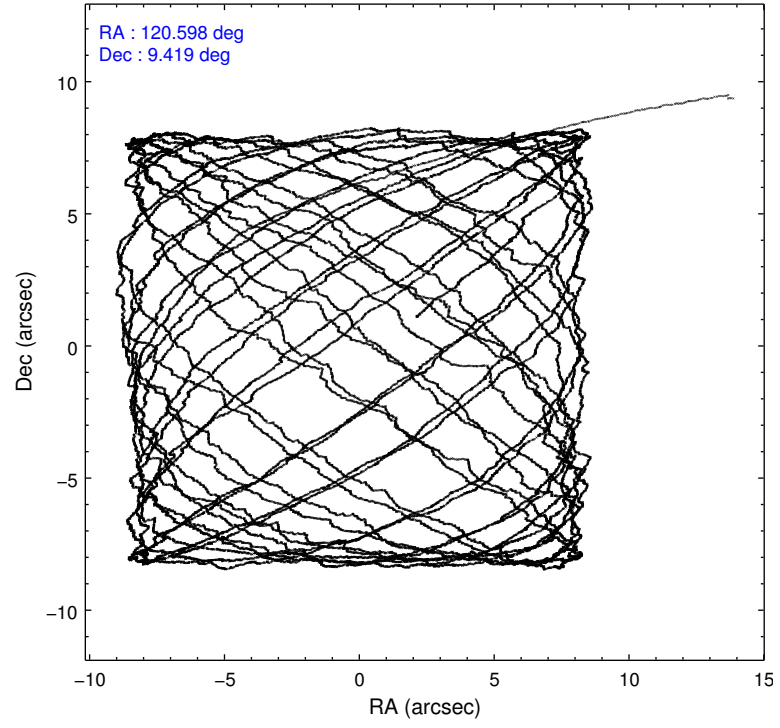
|                 | ccd 5  | ccd 6  | ccd 7  | ccd 8  |
|-----------------|--------|--------|--------|--------|
| level 1 events  | 175094 | 109928 | 132389 | 134102 |
| rejected events | 88214  | 98464  | 74836  | 101780 |
| rejected %      | 50%    | 89%    | 56%    | 75%    |

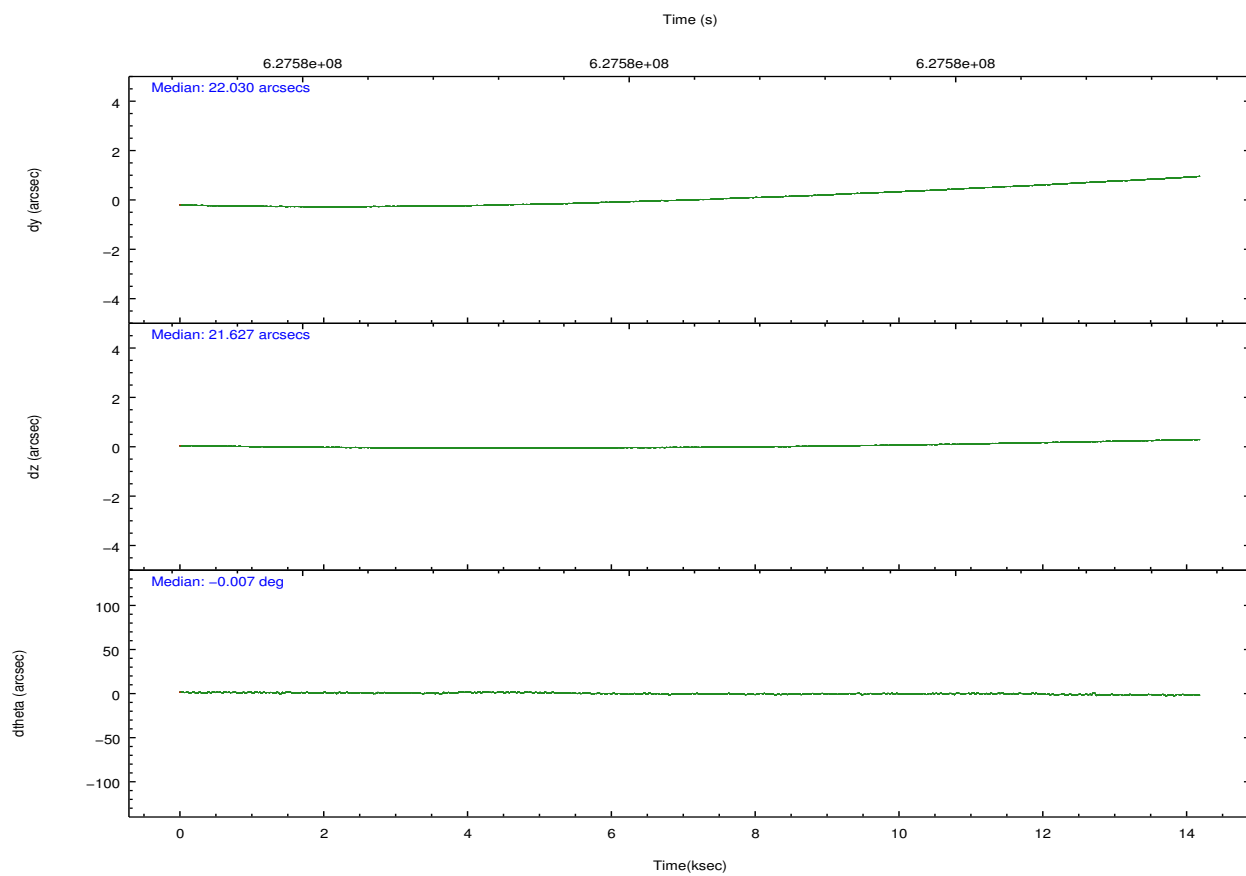
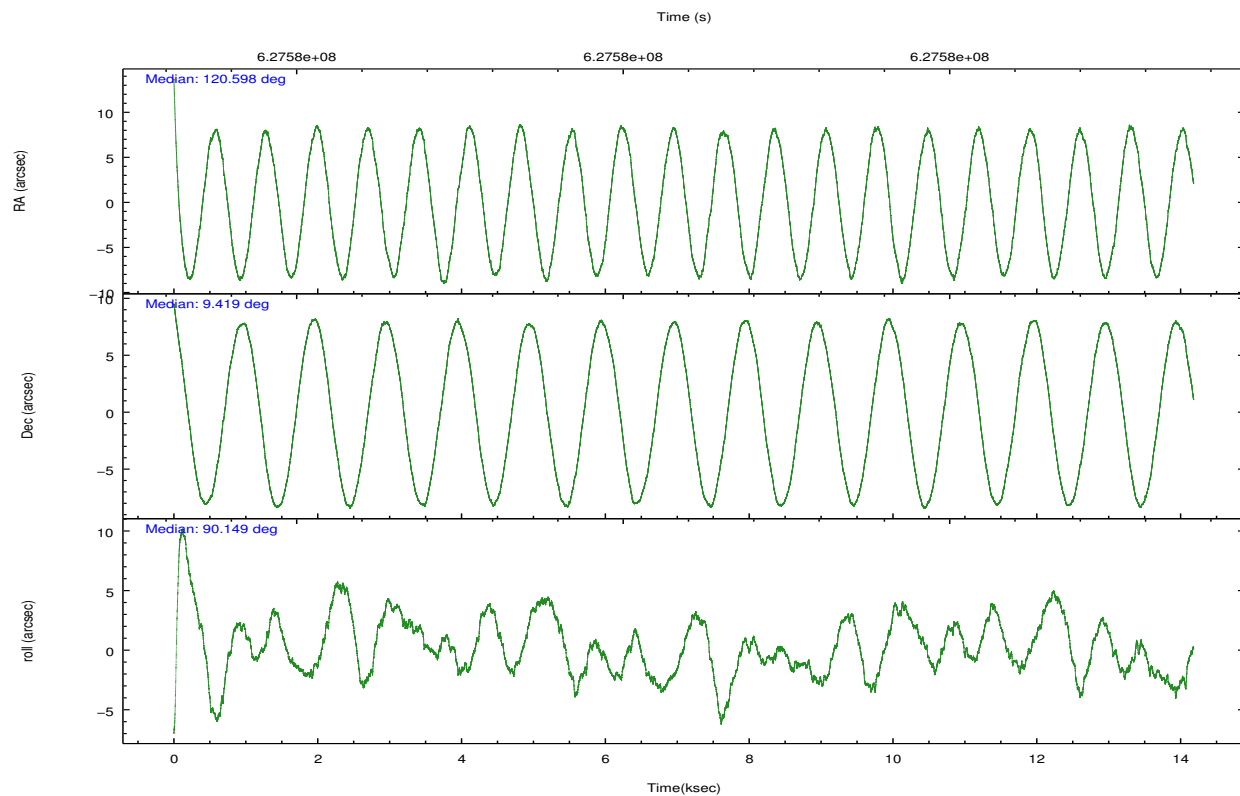
|                | ccd 5 | ccd 6 | ccd 7 | ccd 8 |
|----------------|-------|-------|-------|-------|
| grade 0 events | 13264 | 3598  | 5070  | 8686  |
|                | 7%    | 3%    | 3%    | 6%    |
| grade 1 events | 2014  | 42    | 181   | 103   |
|                | 1%    | 0%    | 0%    | 0%    |
| grade 2 events | 25404 | 2815  | 12027 | 7956  |
|                | 14%   | 2%    | 9%    | 5%    |
| grade 3 events | 2430  | 1007  | 4659  | 3391  |
|                | 1%    | 0%    | 3%    | 2%    |
| grade 4 events | 2184  | 1050  | 4606  | 3114  |
|                | 1%    | 0%    | 3%    | 2%    |
| grade 5 events | 10549 | 4312  | 12960 | 7026  |
|                | 6%    | 3%    | 9%    | 5%    |
| grade 6 events | 43632 | 2995  | 31225 | 9182  |
|                | 24%   | 2%    | 23%   | 6%    |
| grade 7 events | 75617 | 94109 | 61661 | 94644 |
|                | 43%   | 85%   | 46%   | 70%   |

## 2.2 Compared Parameters

| Parameter                         | Planned             | Actual               | Parameter                             | Planned   | Actual  |
|-----------------------------------|---------------------|----------------------|---------------------------------------|-----------|---------|
| Instrument                        | ACIS                | ACIS                 | Obspar format version number          | 7         | 7       |
| Detector                          | ACIS-5678           | ACIS-5678            | Obspar file type                      | PREDICTED | ACTUAL  |
| Grating                           | NONE                | NONE                 | Obspar update status                  | NONE      | UPDATED |
| Data mode                         | VFAINT              | VFAINT               | CCD I0 on                             | N         | N       |
| Observation mode                  | POINTING            | POINTING             | CCD I1 on                             | N         | N       |
| [deg] Pointing RA                 | 120.612101          | 120.5978133890357    | CCD I2 on                             | O1        | N       |
| [deg] Pointing Dec                | 9.395295            | 9.41886197217887     | CCD I3 on                             | O2        | N       |
| [deg] Pointing Roll               | 89.998497           | 90.15745773210143    | CCD S0 on                             | N         | N       |
| [mm] SIM focus pos                | -0.684267           | -0.6828225247311905  | CCD S1 on                             | Y         | Y       |
| [mm] SIM defocus                  | 0                   | 0.001444936568705701 | CCD S2 on                             | Y         | Y       |
| [mm] SIM translation stage pos    | -190.132523         | -190.1425803651734   | CCD S3 on                             | Y         | Y       |
| [mm] SIM translation stage offset | 0                   | 0.01005778216563158  | CCD S4 on                             | Y         | Y       |
| [s] Observation start time (MET)  | 627574001.184000    | 627572877.4543       | CCD S5 on                             | N         | N       |
| Observation start date            | 2017-11-20T14:05:32 | 2017-11-20T13:47:57  | Number of optional ACIS chips dropped | 2         | 2       |
| [s] Observation end time (MET)    | 627588001.184000    | 627588882.83023      | On-chip summing requested             | N         | N       |
| Observation end date              | 2017-11-20T17:58:52 | 2017-11-20T18:14:42  | Subarray requested                    | NONE      | NONE    |
| Read mode                         | TIMED               | TIMED                | Alternating exposures requested       | N         | N       |
|                                   |                     |                      | [s] Primary exposure time             | 0.000000  | 3.1     |

## 2.3 Aspect



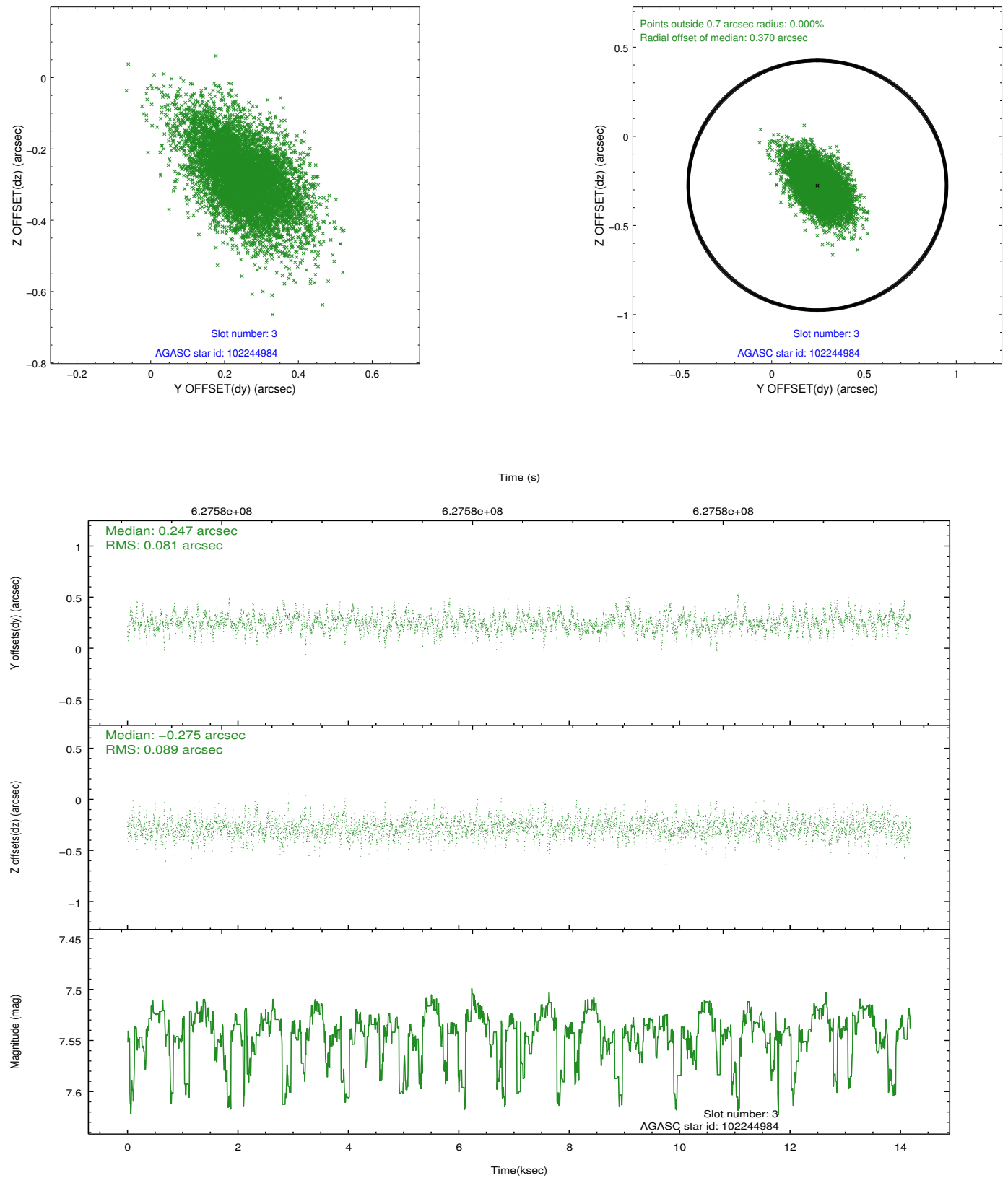


# Slot Statistics

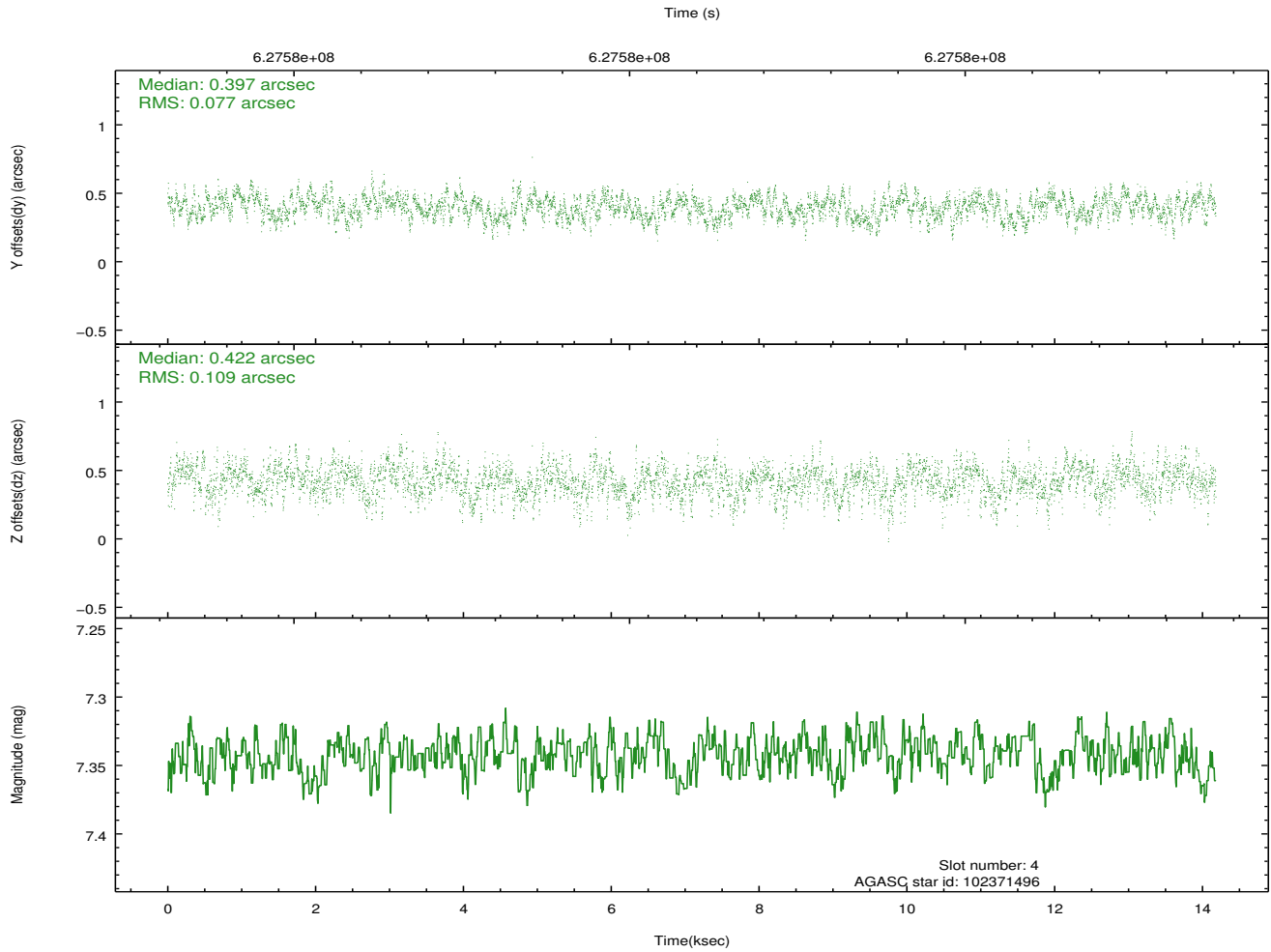
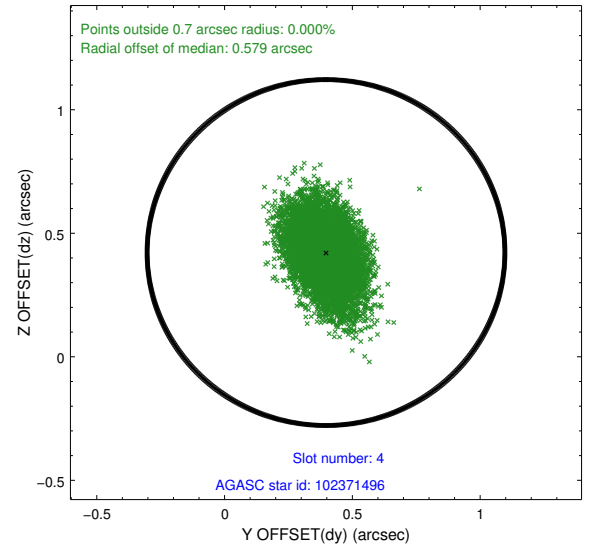
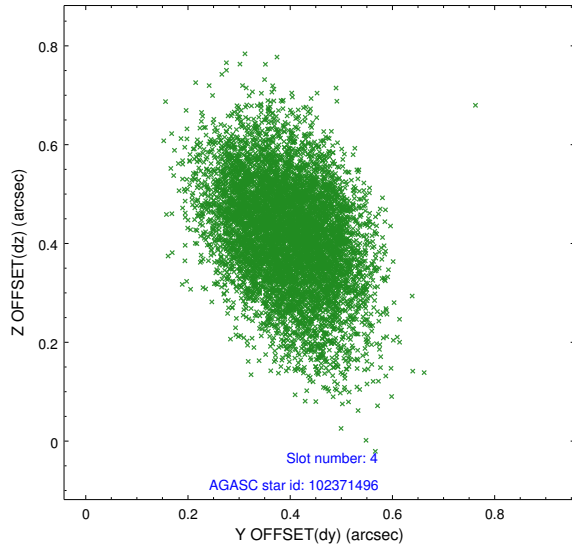
| slot | status | used | id        | mag  | n_pts | med_dy | med_dz | dr1   | dr2   | ra         | dec      | mean_y   | mean_z   |
|------|--------|------|-----------|------|-------|--------|--------|-------|-------|------------|----------|----------|----------|
| 0    | FID    |      | ACIS-S-1  | 7.21 | 3460  | 0.046  | -0.084 | 0.015 | 0.022 | 0.000000   | 0.000000 | 920.82   | -1738.86 |
| 1    | FID    |      | ACIS-S-4  | 7.23 | 3460  | 0.410  | 0.042  | 0.011 | 0.023 | 0.000000   | 0.000000 | 2138.71  | 165.12   |
| 2    | FID    |      | ACIS-S-5  | 7.23 | 3460  | -0.481 | 0.056  | 0.013 | 0.026 | 0.000000   | 0.000000 | -1828.23 | 158.96   |
| 3    | GUIDE  | used | 102244984 | 7.54 | 6919  | 0.247  | -0.275 | 0.124 | 0.220 | 120.078572 | 8.974274 | -1513.87 | 1897.15  |
| 4    | GUIDE  | used | 102371496 | 7.34 | 6916  | 0.397  | 0.422  | 0.139 | 0.238 | 121.124350 | 9.267923 | -456.26  | -1824.04 |
| 5    | GUIDE  | used | 102766472 | 8.02 | 6918  | -0.402 | -0.855 | 0.140 | 0.236 | 119.972460 | 9.898695 | 1811.07  | 2265.66  |
| 6    | GUIDE  | used | 102900672 | 6.80 | 6919  | -0.380 | -0.018 | 0.187 | 0.291 | 120.810412 | 9.942835 | 1971.48  | -702.34  |
| 7    | GUIDE  | used | 102906352 | 8.18 | 6916  | 0.127  | 0.722  | 0.150 | 0.256 | 121.166930 | 9.466946 | 260.46   | -1969.35 |

## 2.4 Star Slots

### 2.4.1 Slot 3

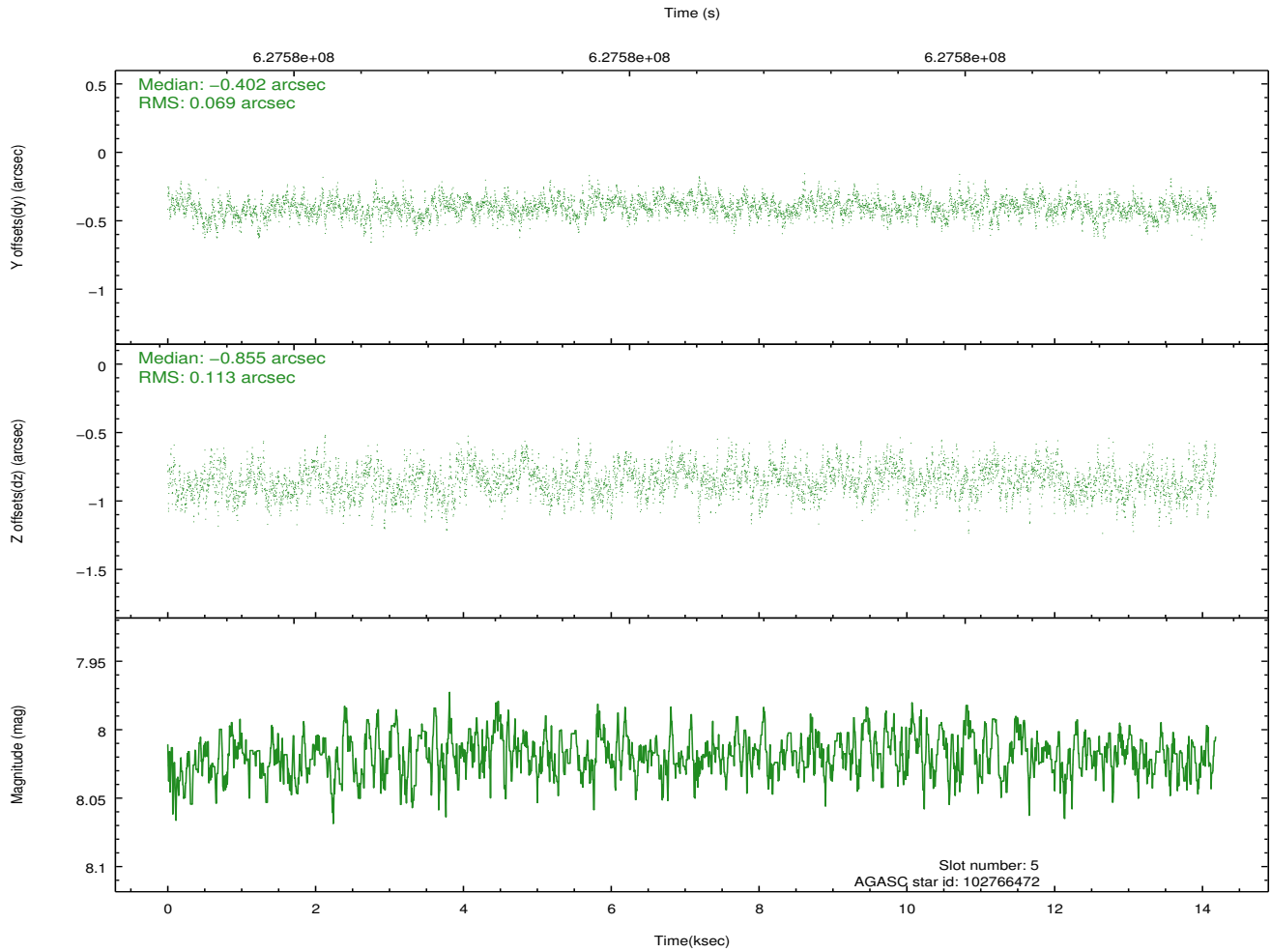
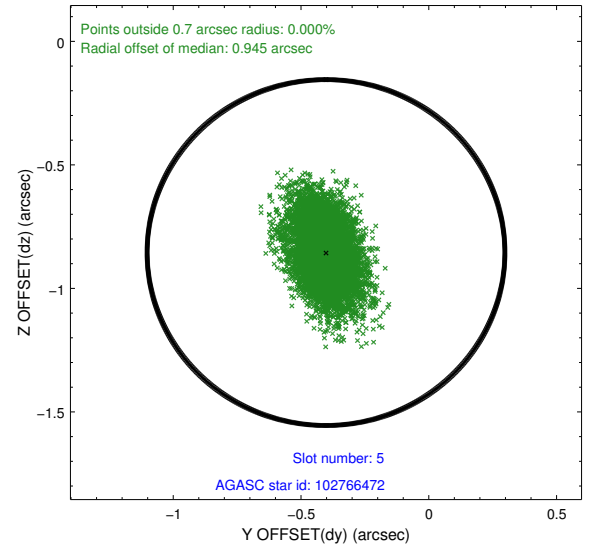
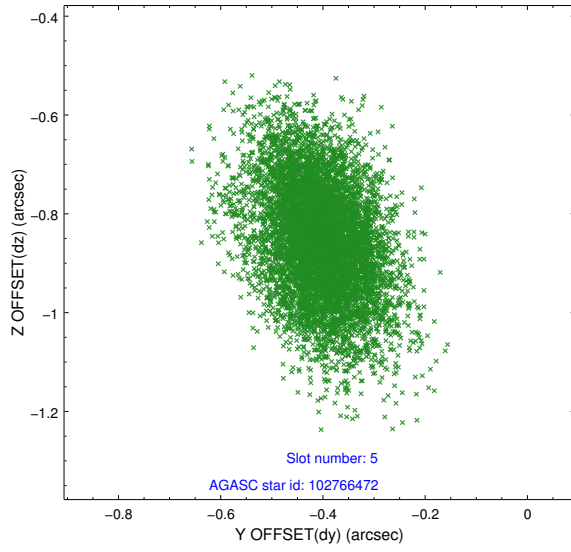


## 2.4.2 Slot 4

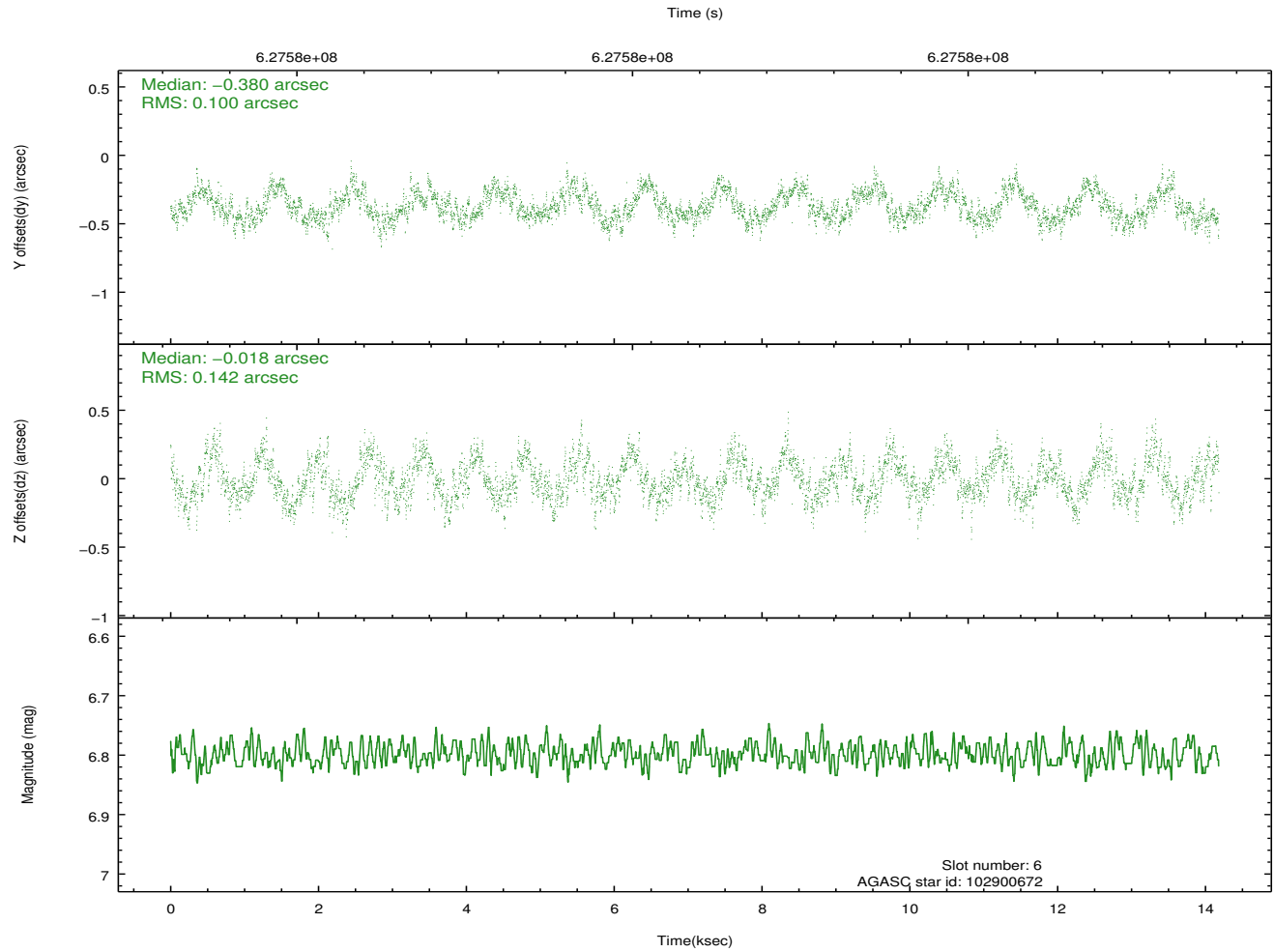
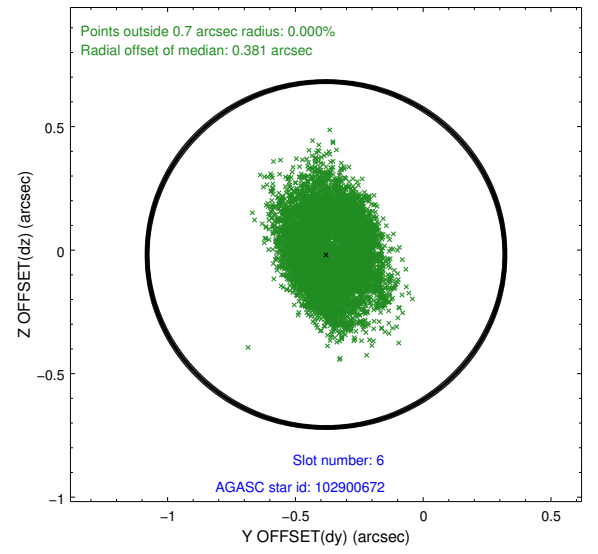
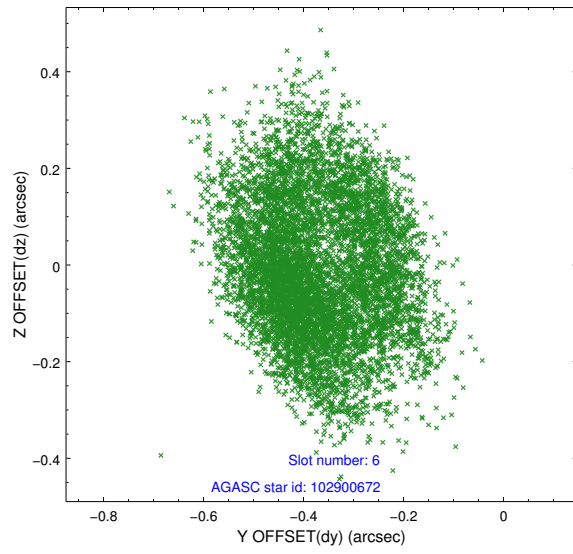




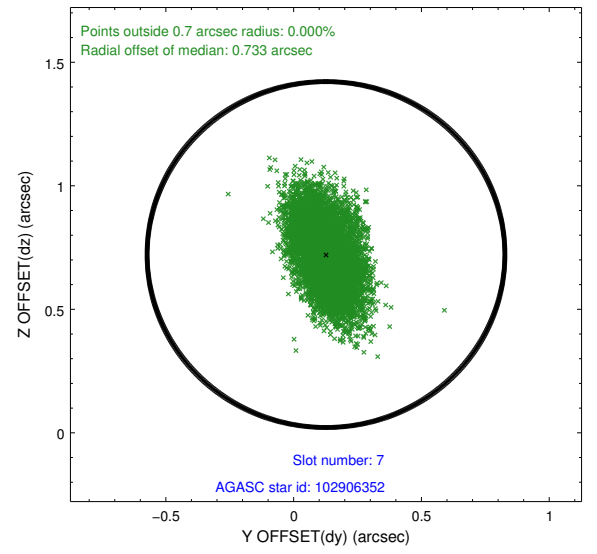
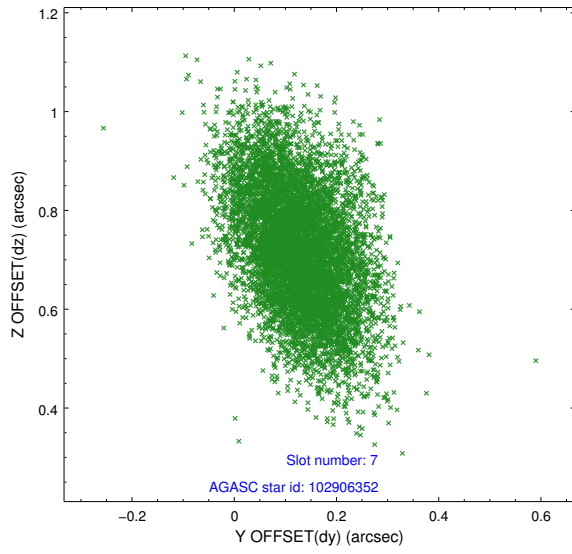
### 2.4.3 Slot 5



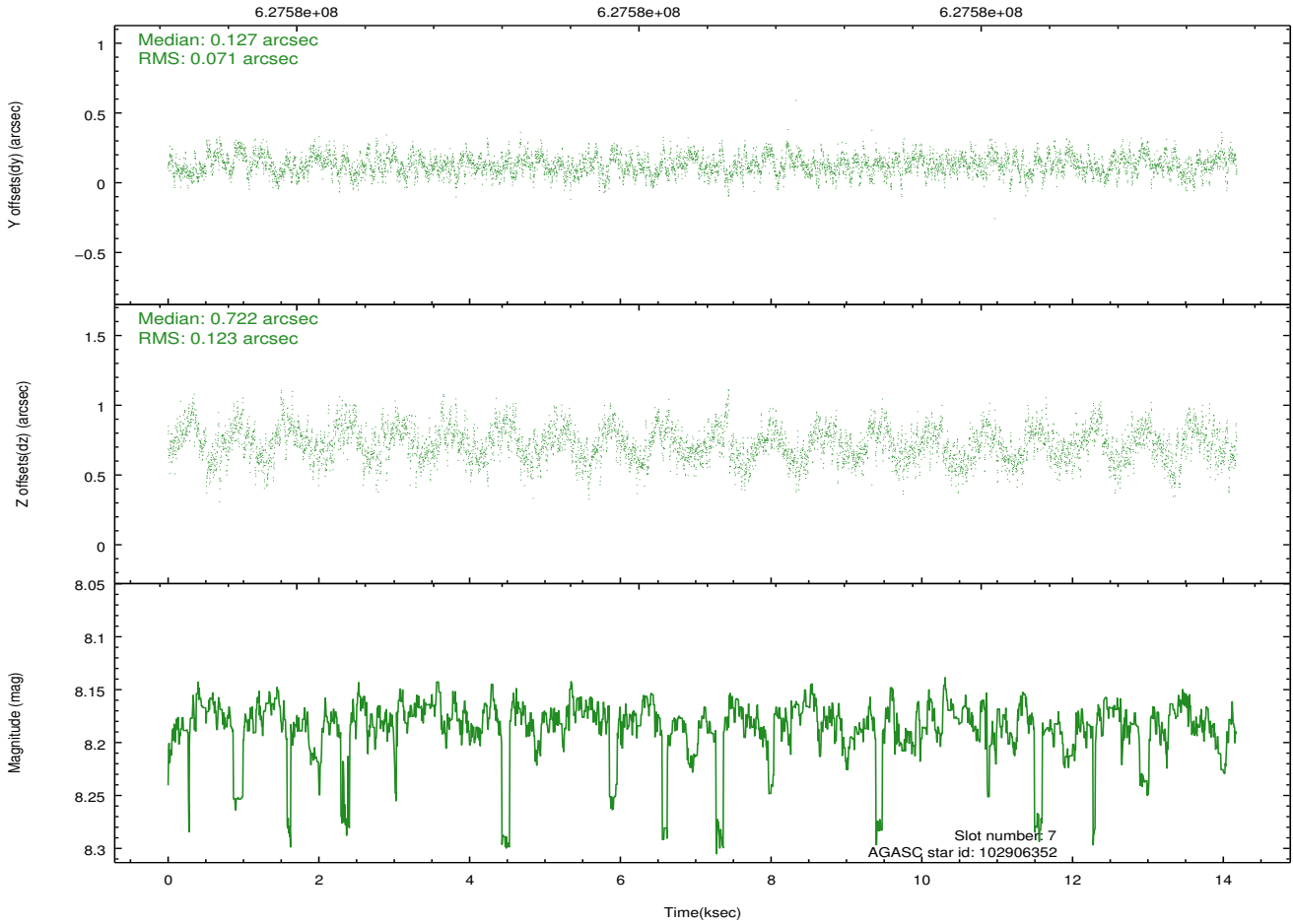
## 2.4.4 Slot 6



## 2.4.5 Slot 7

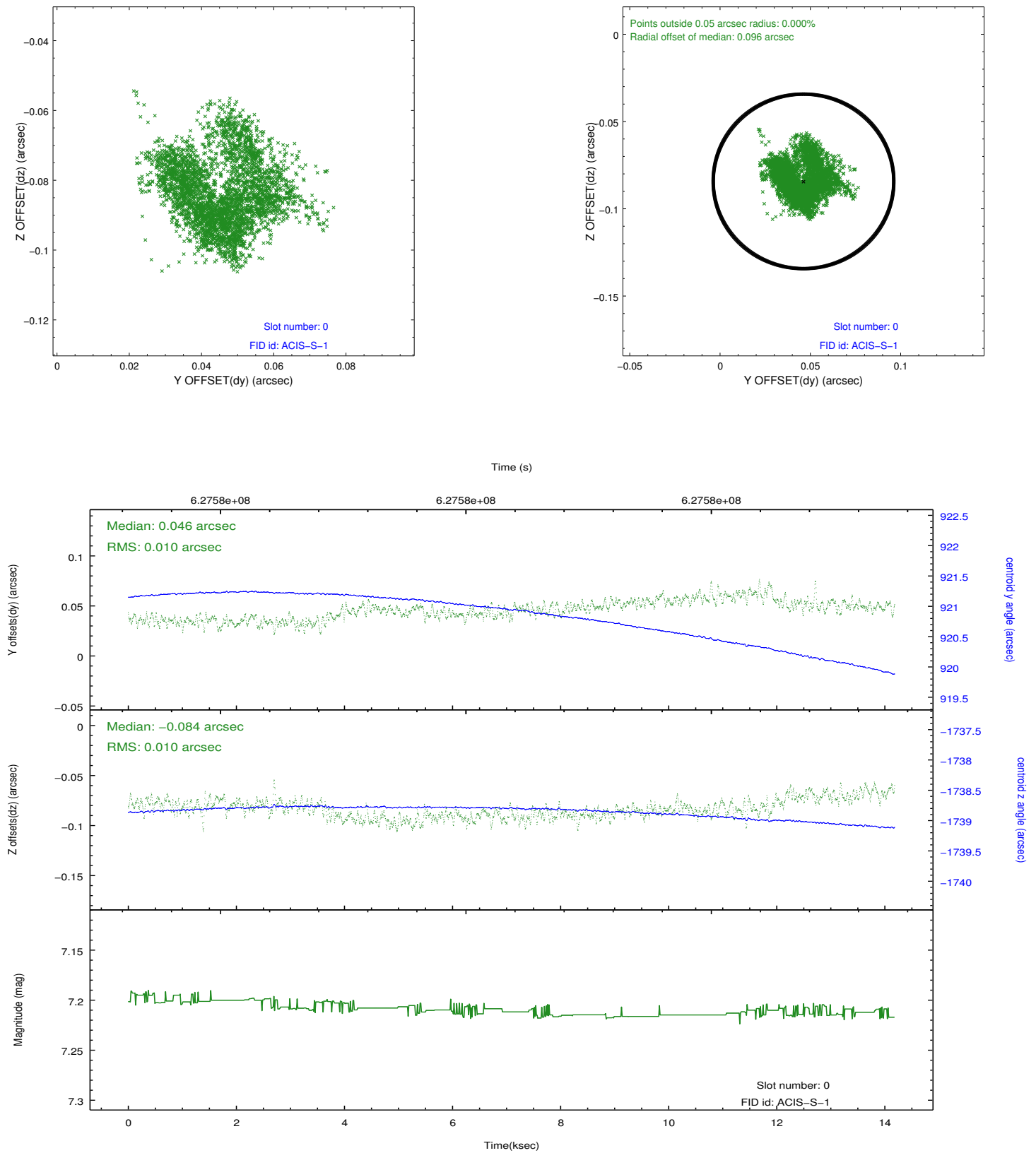


Time (s)

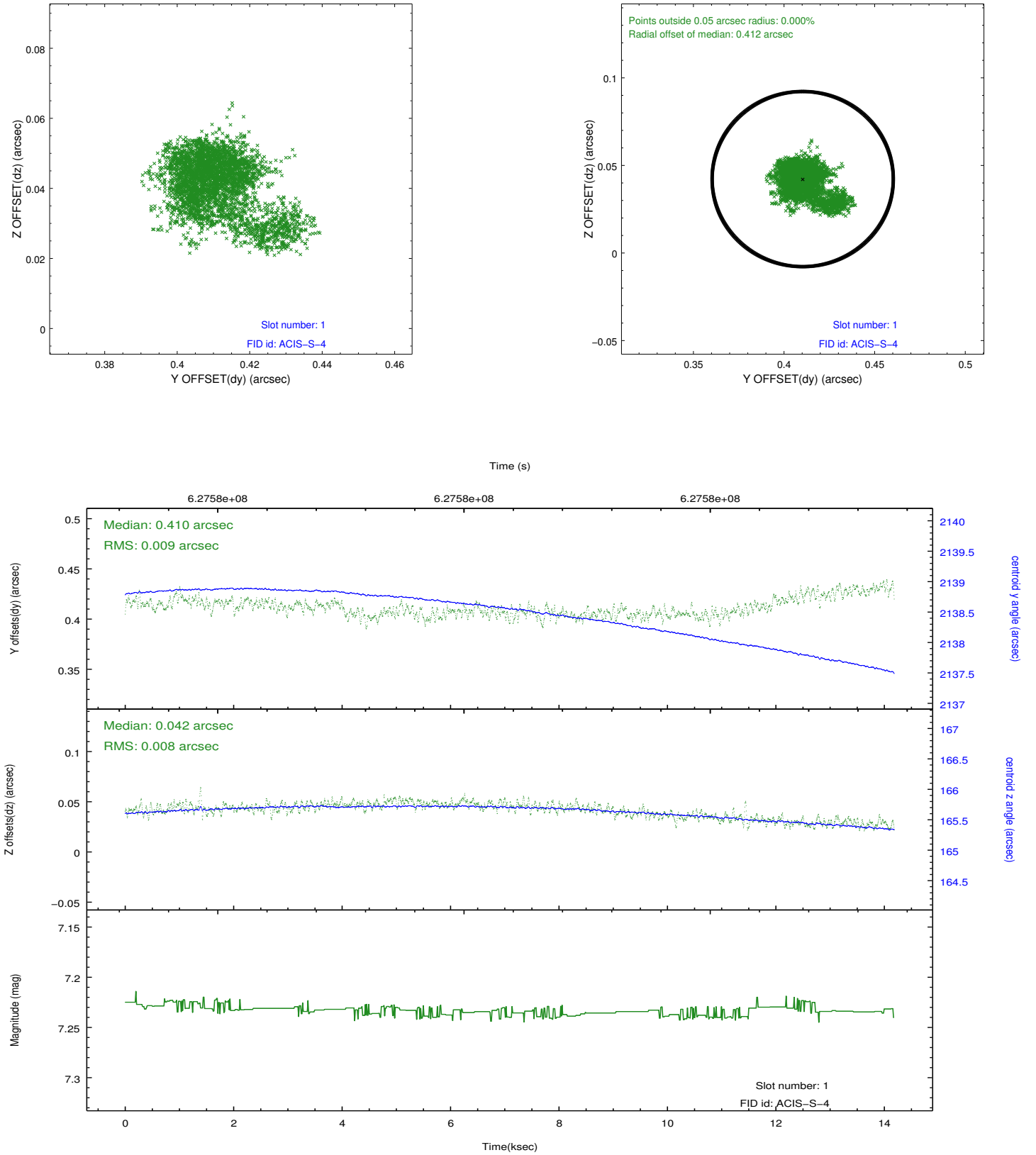


## 2.5 FID Slots

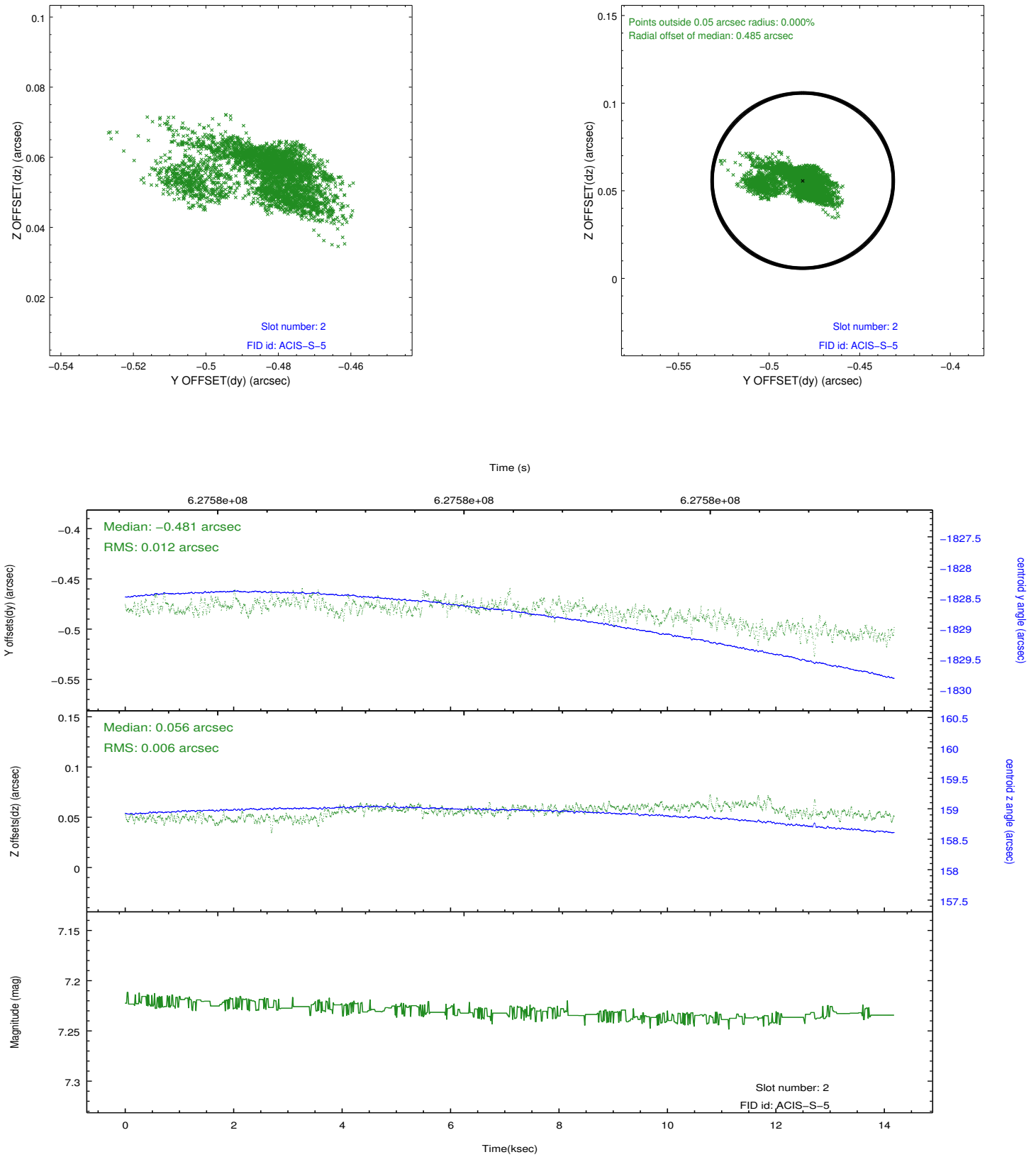
### 2.5.1 Slot 0



## 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)      | 2017.11.21      |
| V&V Edition                | 1               |
| V&V Disposition and Status | OK              |
| V&V Charge Time            | 14.058500108242 |

### A.2 Comments

Optional chips I2 and I3 not included.