

# V&V Reference Report

## L2 ASCDS Version : 10.4.3

Observation 18216 - L2 Version 1  
Chandra X-Ray Center

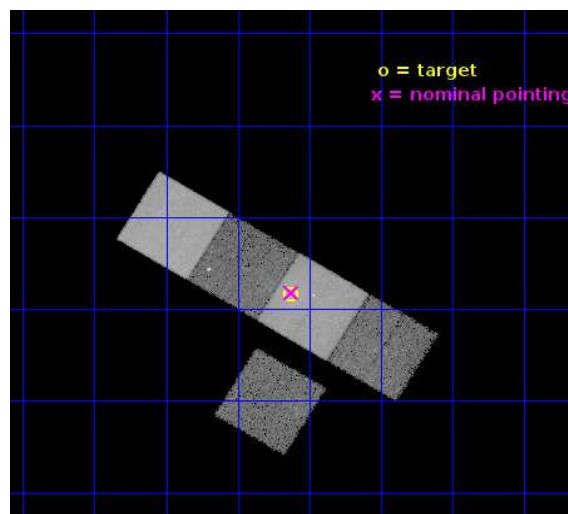
L2 Processing Date : Jan 4 2016

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# 1 Front

|          |                                                              |                                             |
|----------|--------------------------------------------------------------|---------------------------------------------|
| seq_num  | 801544                                                       | Sequence number                             |
| obs_id   | 18216                                                        | Observation id                              |
| title    | Bending of WAT Radio Lobes in Abell 623 Through ICM Sloshing | Propo                                       |
| observer | Prof. Elizabeth Blanton                                      | Principal investigator                      |
| object   | Abell 623                                                    | Source name                                 |
| dtcycle  | 0                                                            | &#160                                       |
| cycle    | P                                                            | events from which exps?<br>Prim/Second/Both |
| ra_targ  | 121.4075                                                     | Observer's specified<br>target RA [deg]     |
| dec_targ | -0.972361                                                    | Observer's specified<br>target Dec [deg]    |
| ra_nom   | 121.40637677844                                              | Nominal RA [deg]                            |
| dec_nom  | -0.97024253097767                                            | Nominal Dec [deg]                           |
| roll_nom | 31.156619108241                                              | Nominal Roll [deg]                          |
| revision | 1                                                            | Processing version of<br>data               |
| ontime   | 28058.034781098                                              | Sum of GTIs [s]                             |
| livetime | 27691.435900659                                              | Livetime [s]                                |
| ontime3  | 28057.911661148                                              | Sum of GTIs [s]                             |
| ontime5  | 28057.993741155                                              | Sum of GTIs [s]                             |
| ontime6  | 28057.952701092                                              | Sum of GTIs [s]                             |
| ontime7  | 28058.034781098                                              | Sum of GTIs [s]                             |
| ontime8  | 28051.588590384                                              | Sum of GTIs [s]                             |
| l2events | 273109                                                       | Number of level 2<br>events                 |

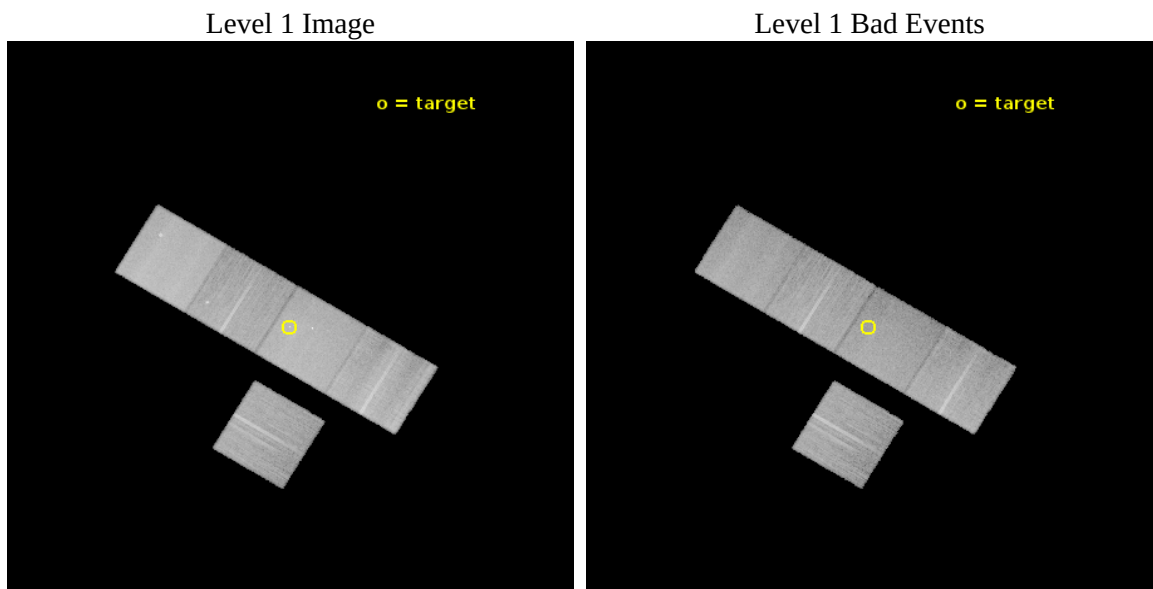




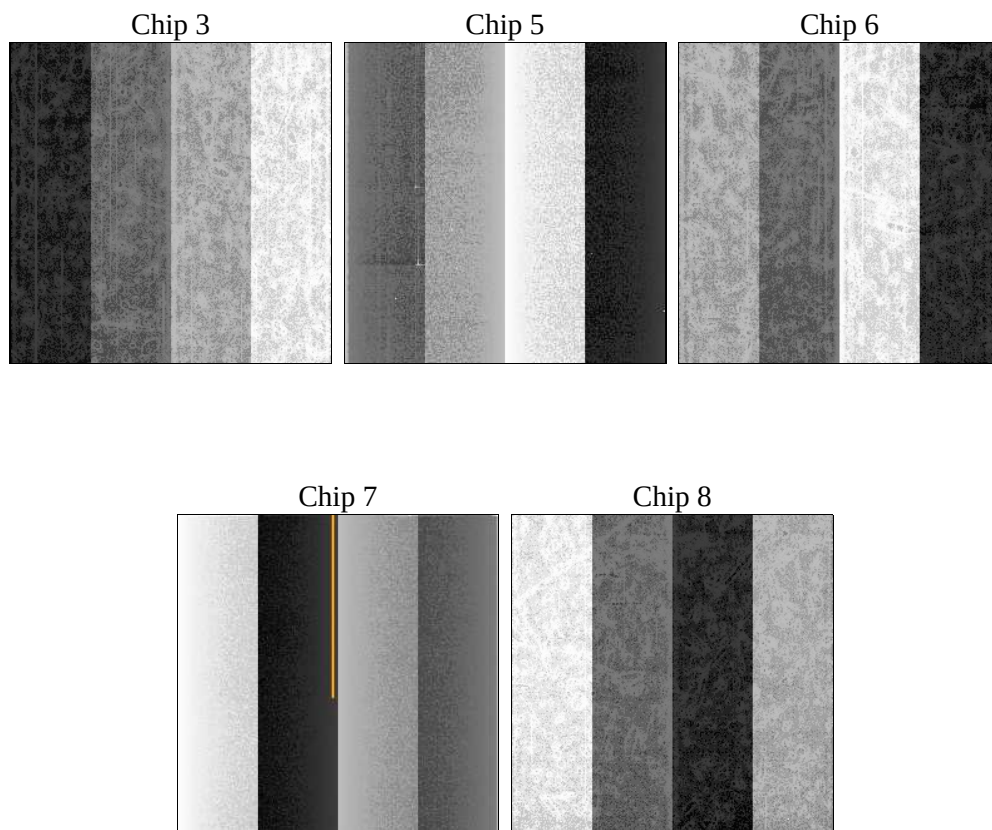
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

|          |                     |                                |                |                 |                                         |
|----------|---------------------|--------------------------------|----------------|-----------------|-----------------------------------------|
| obi_num  | 0                   | Obi number                     | sched_exp_time | 28000.000000    | [s] Scheduled observation exposure time |
| ascdsver | 10.4.3              | Processing system revision     | ontime         | 28058.034781098 | Sum of GTIs [s]                         |
| caldsver | 4.7.0               | &#160                          | ontime3        | 28057.911661148 | Sum of GTIs [s]                         |
| date     | 2016-01-05T00:02:53 | Date and time of file creation | ontime5        | 28057.993741155 | Sum of GTIs [s]                         |
| revision | 1                   | Processing version of data     | ontime6        | 28057.952701092 | Sum of GTIs [s]                         |
|          |                     |                                | ontime7        | 28058.034781098 | Sum of GTIs [s]                         |
|          |                     |                                | ontime8        | 28051.588590384 | Sum of GTIs [s]                         |
|          |                     |                                | l1events       | 1021138         | Number of level 1 events                |

### 2.1.4 Events

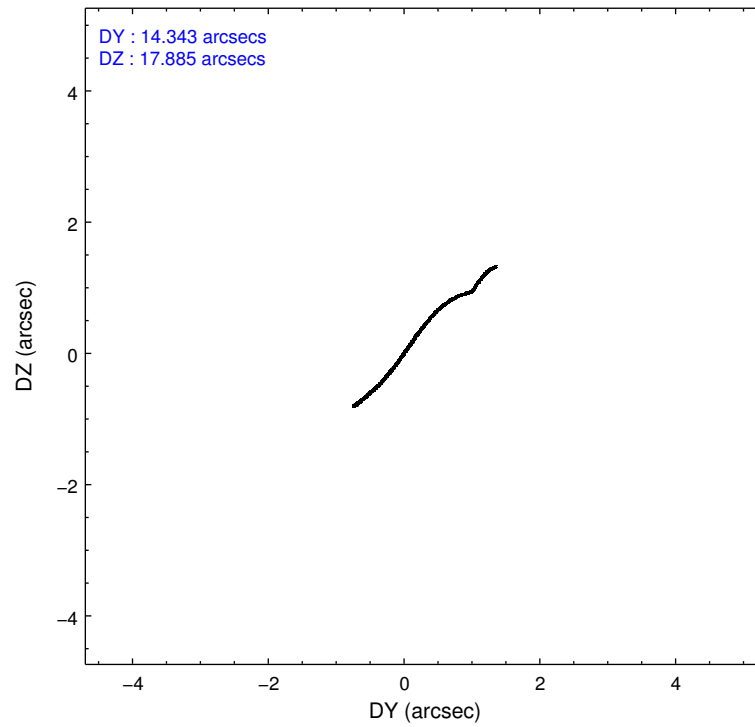
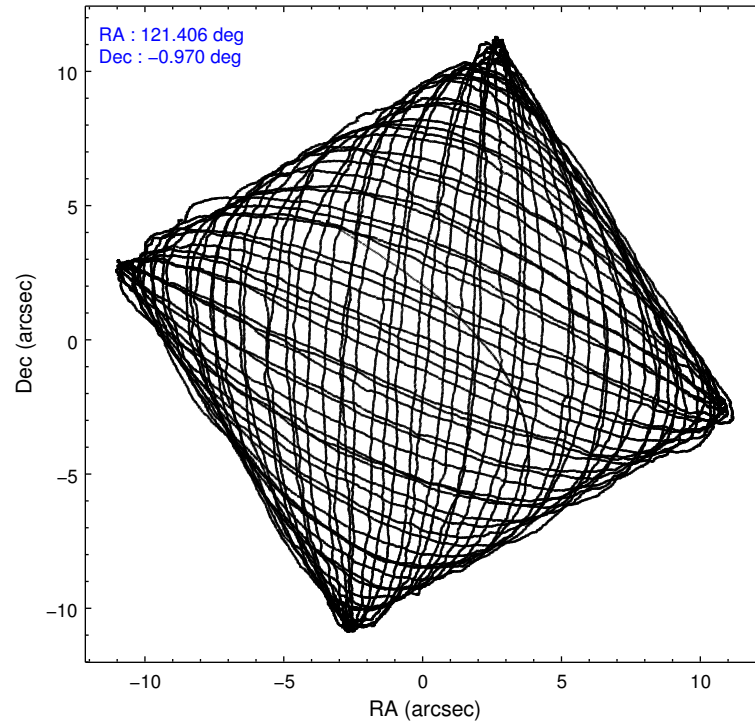
|                 | ccd 3  | ccd 5  | ccd 6  | ccd 7  | ccd 8  |                | ccd 3  | ccd 5  | ccd 6  | ccd 7  | ccd 8  |
|-----------------|--------|--------|--------|--------|--------|----------------|--------|--------|--------|--------|--------|
| level 1 events  | 160018 | 256043 | 167395 | 223980 | 213702 | grade 0 events | 7611   | 6655   | 8470   | 10372  | 17024  |
| rejected events | 140955 | 136068 | 145919 | 121985 | 155528 |                | 4%     | 2%     | 5%     | 4%     | 7%     |
| rejected %      | 88%    | 53%    | 87%    | 54%    | 72%    | grade 1 events | 77     | 591    | 80     | 287    | 163    |
|                 |        |        |        |        |        |                | 0%     | 0%     | 0%     | 0%     | 0%     |
|                 |        |        |        |        |        | grade 2 events | 3808   | 37236  | 4621   | 22155  | 13600  |
|                 |        |        |        |        |        |                | 2%     | 14%    | 2%     | 9%     | 6%     |
|                 |        |        |        |        |        | grade 3 events | 1941   | 3591   | 1878   | 8281   | 6549   |
|                 |        |        |        |        |        |                | 1%     | 1%     | 1%     | 3%     | 3%     |
|                 |        |        |        |        |        | grade 4 events | 1882   | 3383   | 1887   | 8208   | 5944   |
|                 |        |        |        |        |        |                | 1%     | 1%     | 1%     | 3%     | 2%     |
|                 |        |        |        |        |        | grade 5 events | 7903   | 17217  | 7847   | 20645  | 11557  |
|                 |        |        |        |        |        |                | 4%     | 6%     | 4%     | 9%     | 5%     |
|                 |        |        |        |        |        | grade 6 events | 3821   | 69121  | 4622   | 52990  | 15065  |
|                 |        |        |        |        |        |                | 2%     | 26%    | 2%     | 23%    | 7%     |
|                 |        |        |        |        |        | grade 7 events | 132975 | 118249 | 137990 | 101042 | 143800 |
|                 |        |        |        |        |        |                | 83%    | 46%    | 82%    | 45%    | 67%    |

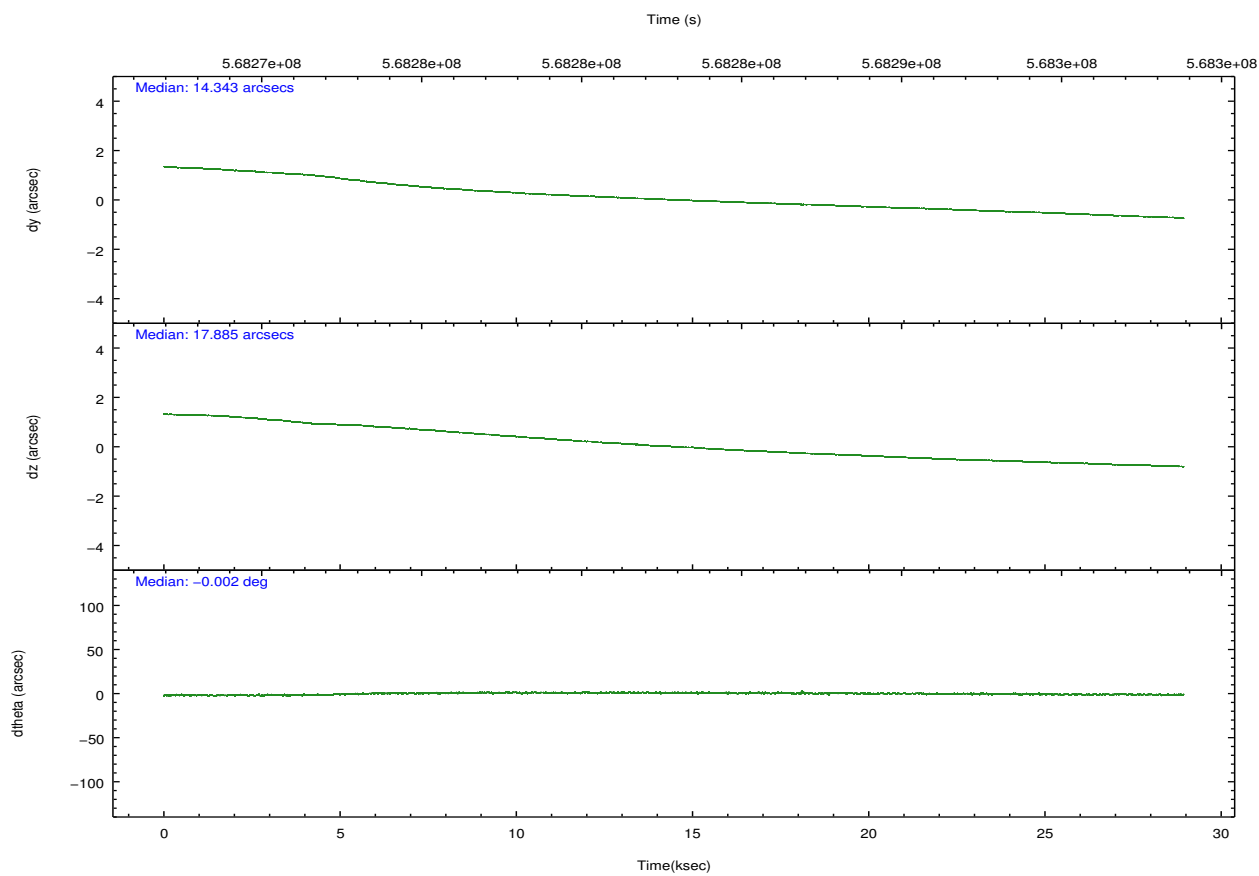
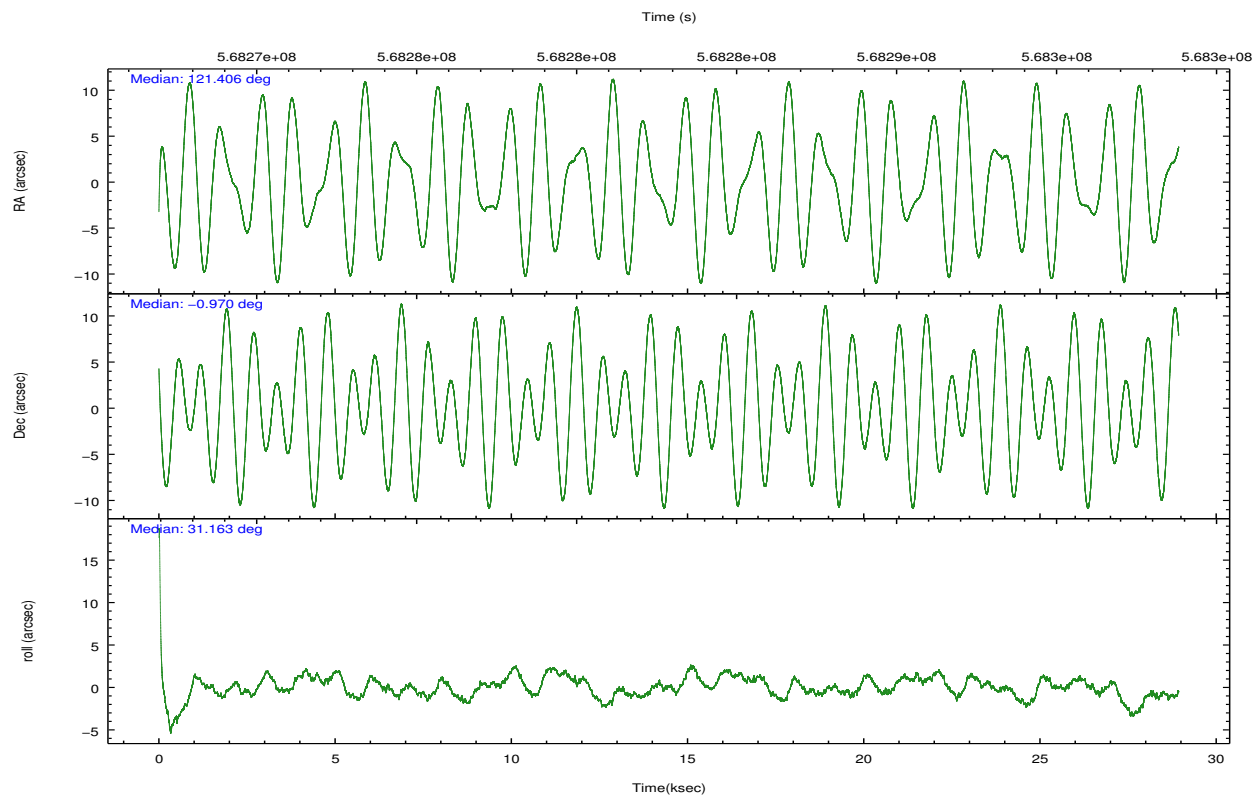
## 2.2 Compared Parameters

| Parameter                         | Planned             | Actual               |
|-----------------------------------|---------------------|----------------------|
| Instrument                        | ACIS                | ACIS                 |
| Detector                          | ACIS-35678          | ACIS-35678           |
| Grating                           | NONE                | NONE                 |
| Data mode                         | VFAINT              | VFAINT               |
| Observation mode                  | POINTING            | POINTING             |
| [deg] Pointing RA                 | 121.393458          | 121.4063767784353    |
| [deg] Pointing Dec                | -0.994456           | -0.9702425309776714  |
| [deg] Pointing Roll               | 30.999763           | 31.15661910824147    |
| [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)  | 568269353.184000    | 568267273.5304199    |
| Observation start date            | 2016-01-04T04:34:45 | 2016-01-04T04:01:13  |
| [s] Observation end time (MET)    | 568297353.184000    | 568298271.58218      |
| Observation end date              | 2016-01-04T12:21:25 | 2016-01-04T12:37:51  |
| 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                             | N         | N       |
| CCD I1 on                             | N         | N       |
| CCD I2 on                             | O1        | N       |
| CCD I3 on                             | Y         | Y       |
| CCD S0 on                             | N         | N       |
| CCD S1 on                             | Y         | Y       |
| CCD S2 on                             | Y         | Y       |
| CCD S3 on                             | Y         | Y       |
| CCD S4 on                             | Y         | Y       |
| CCD S5 on                             | N         | N       |
| Number of optional ACIS chips dropped | 1         | 1       |
| On-chip summing requested             | N         | N       |
| Subarray requested                    | NONE      | NONE    |
| Alternating exposures requested       | N         | N       |
| [s] Primary exposure time             | 0.000000  | 3.1     |

## 2.3 Aspect



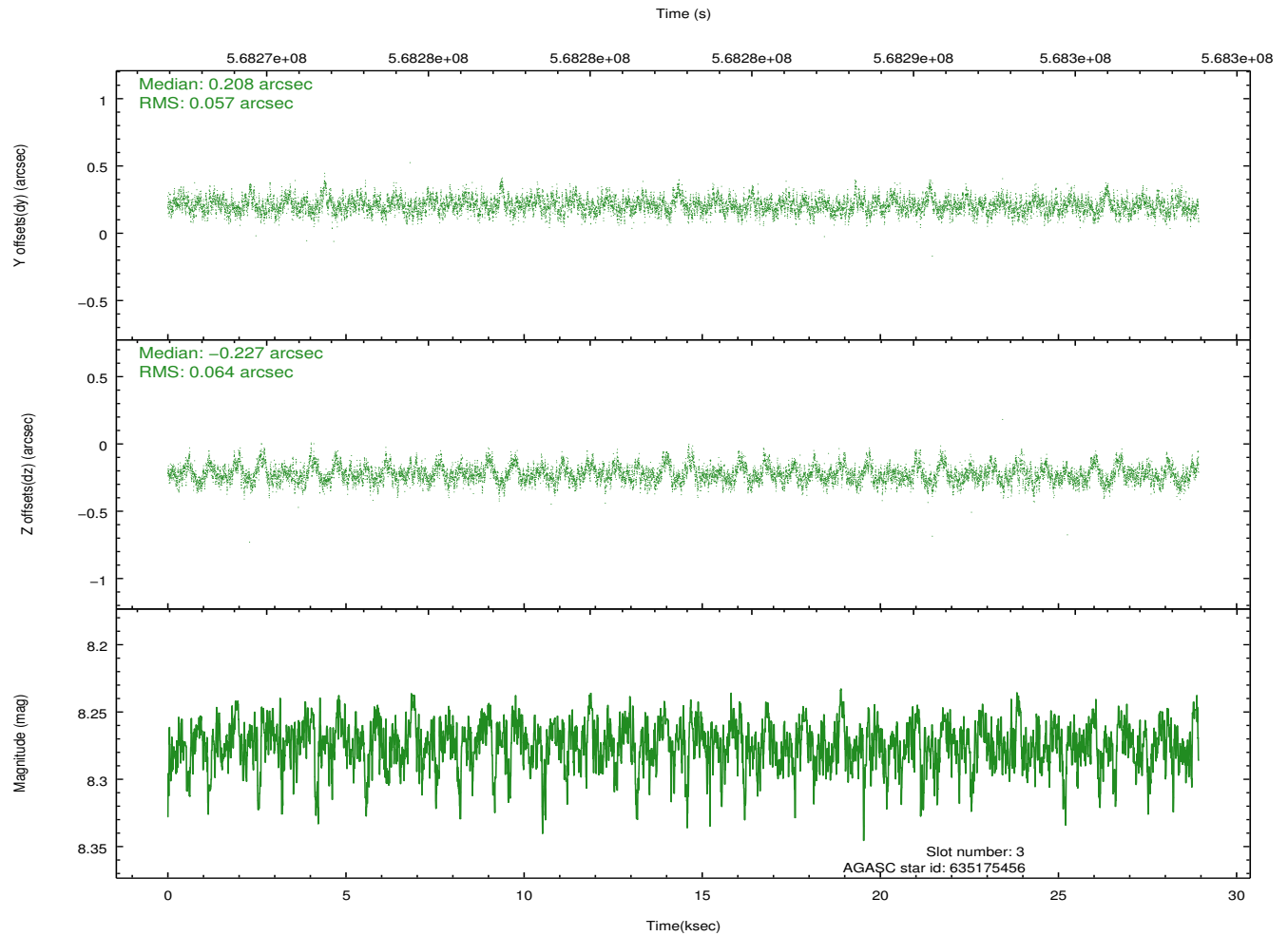
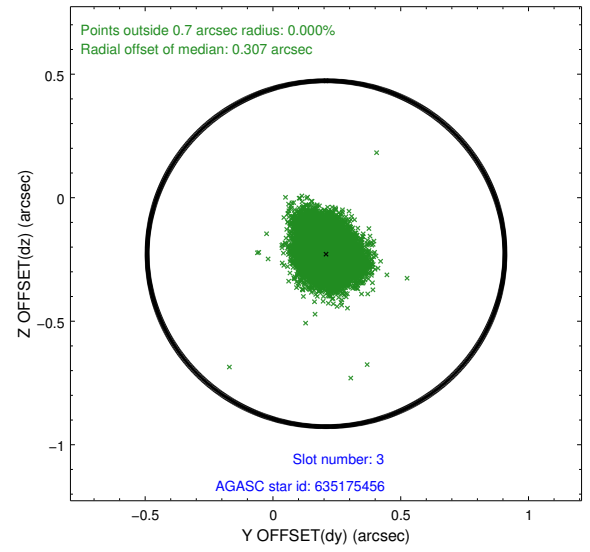
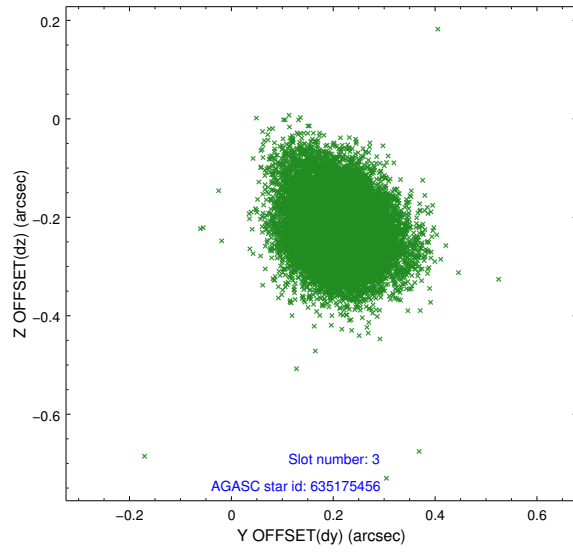


# Slot Statistics

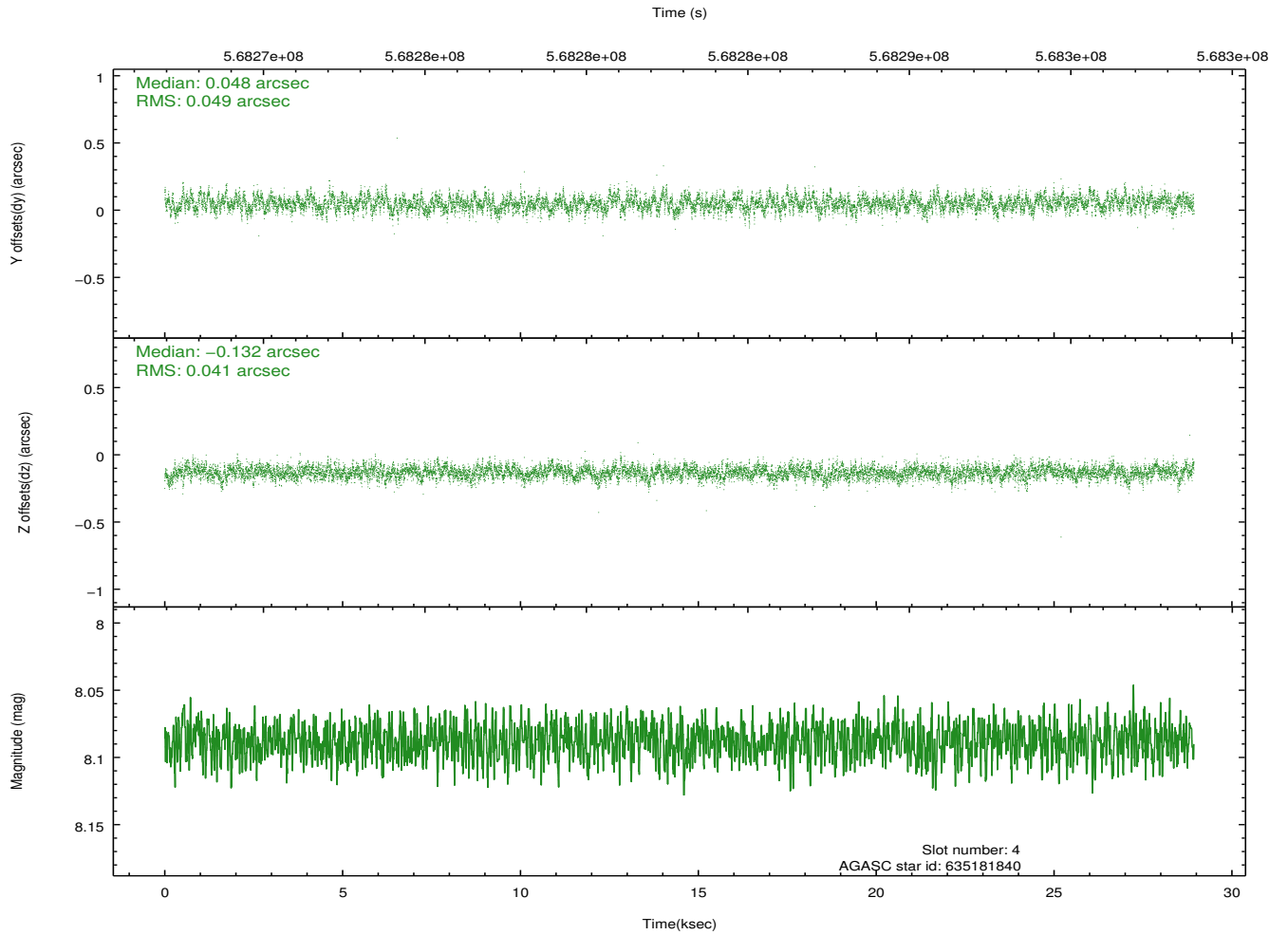
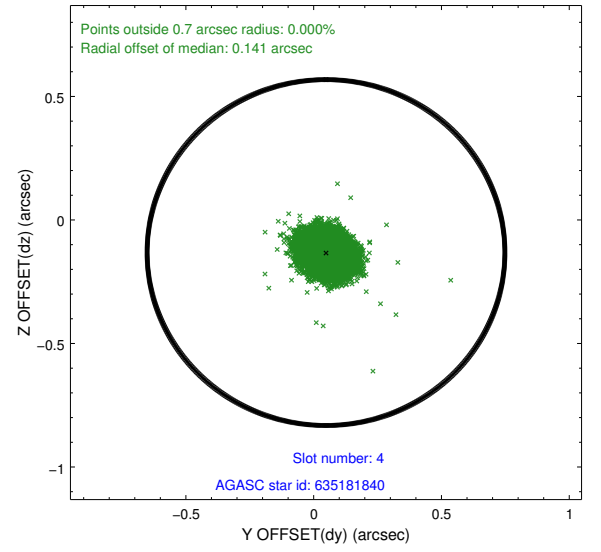
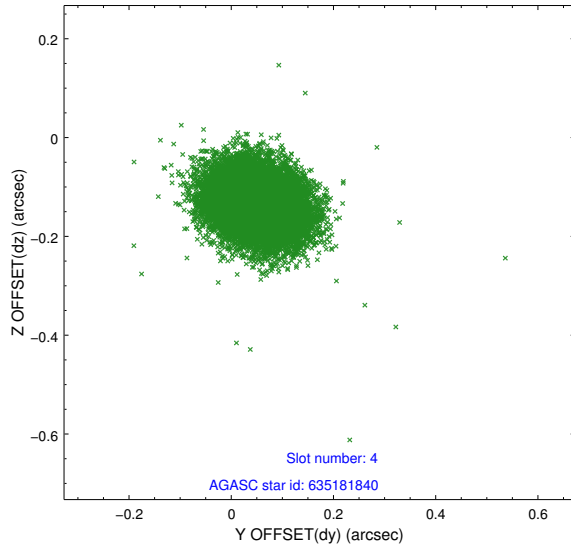
| slot | status | used | id        | mag  | n_pts | med_dy | med_dz | dr1   | dr2   | ra         | dec       | mean_y   | mean_z   |
|------|--------|------|-----------|------|-------|--------|--------|-------|-------|------------|-----------|----------|----------|
| 0    | FID    |      | ACIS-S-2  | 7.12 | 7058  | -0.245 | -0.165 | 0.019 | 0.027 | 0.000000   | 0.000000  | -767.72  | -1739.61 |
| 1    | FID    |      | ACIS-S-4  | 7.22 | 7058  | 0.285  | 0.131  | 0.018 | 0.029 | 0.000000   | 0.000000  | 2146.10  | 169.00   |
| 2    | FID    |      | ACIS-S-6  | 7.36 | 7058  | -0.068 | 0.042  | 0.014 | 0.022 | 0.000000   | 0.000000  | 394.61   | 806.45   |
| 3    | GUIDE  | used | 635175456 | 8.27 | 14109 | 0.208  | -0.227 | 0.091 | 0.149 | 120.869443 | -1.162712 | -1931.04 | 449.84   |
| 4    | GUIDE  | used | 635181840 | 8.09 | 14114 | 0.048  | -0.132 | 0.067 | 0.110 | 121.314480 | -0.875496 | -23.22   | 513.54   |
| 5    | GUIDE  | used | 635188464 | 8.34 | 14106 | 0.019  | 0.495  | 0.082 | 0.130 | 121.115178 | -1.595138 | -1972.24 | -1337.05 |
| 6    | GUIDE  | used | 635191912 | 6.29 | 14116 | -0.439 | 0.006  | 0.087 | 0.134 | 121.456804 | -0.573324 | 975.93   | 1182.02  |
| 7    | GUIDE  | used | 635185504 | 9.17 | 14104 | 0.165  | -0.128 | 0.124 | 0.223 | 120.991092 | -1.061098 | -1364.65 | 540.22   |

## 2.4 Star Slots

### 2.4.1 Slot 3

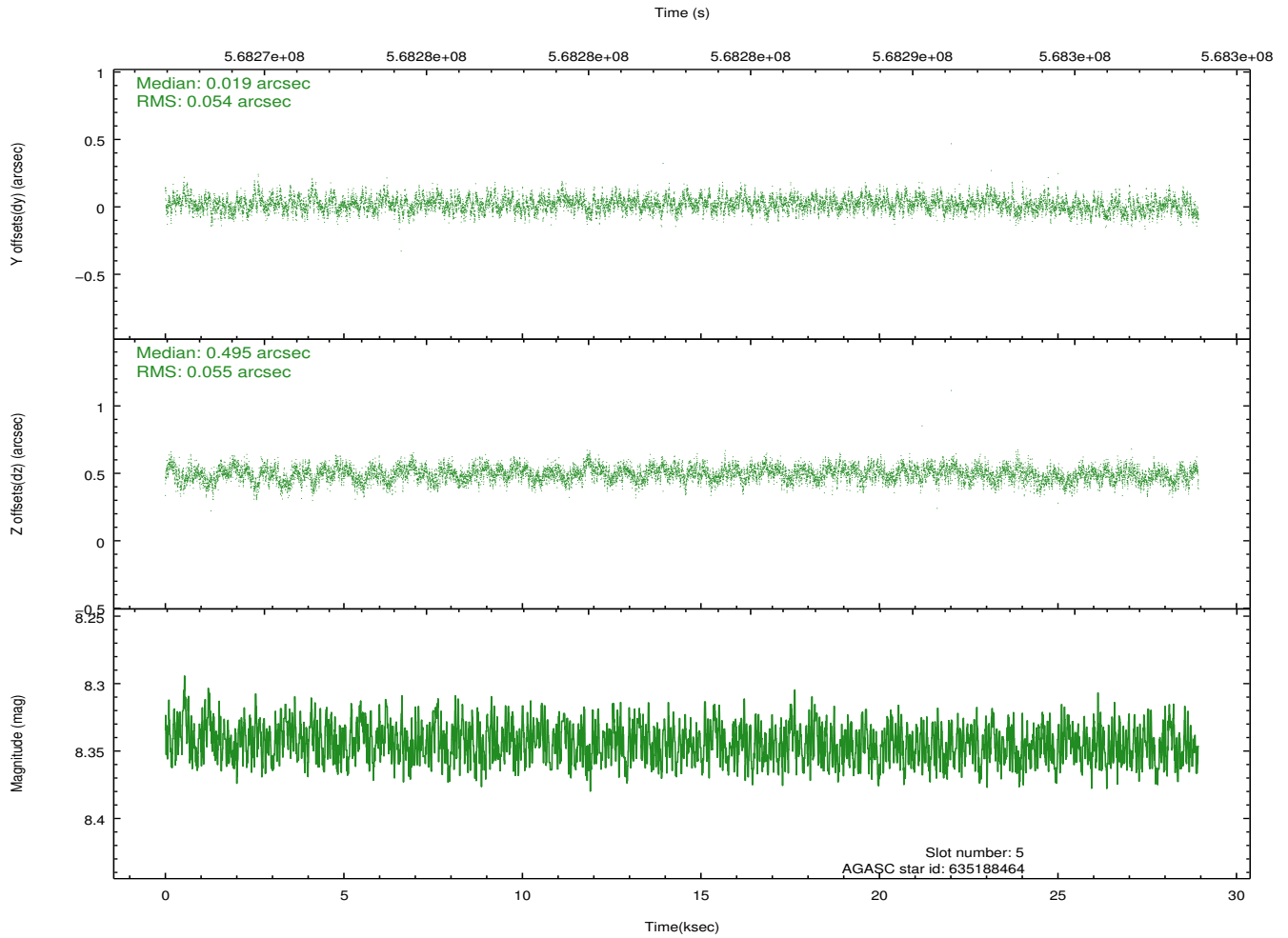
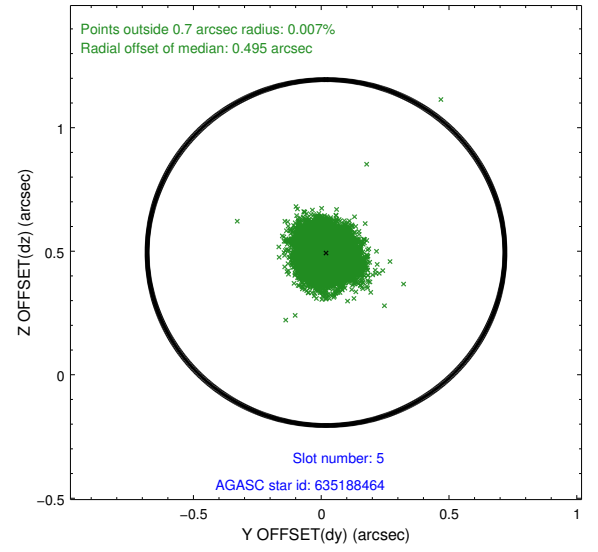
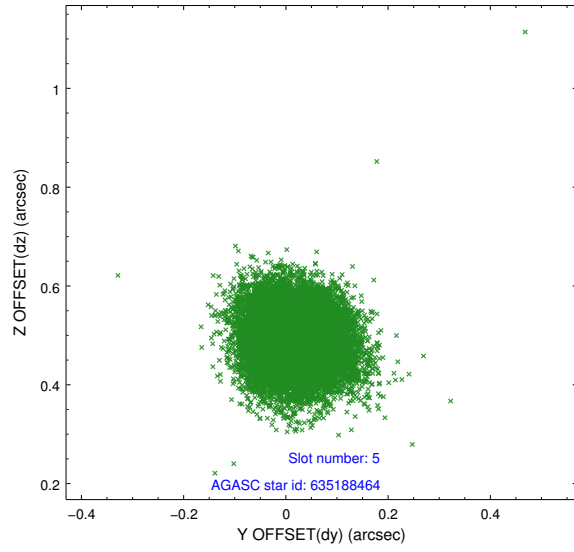


## 2.4.2 Slot 4

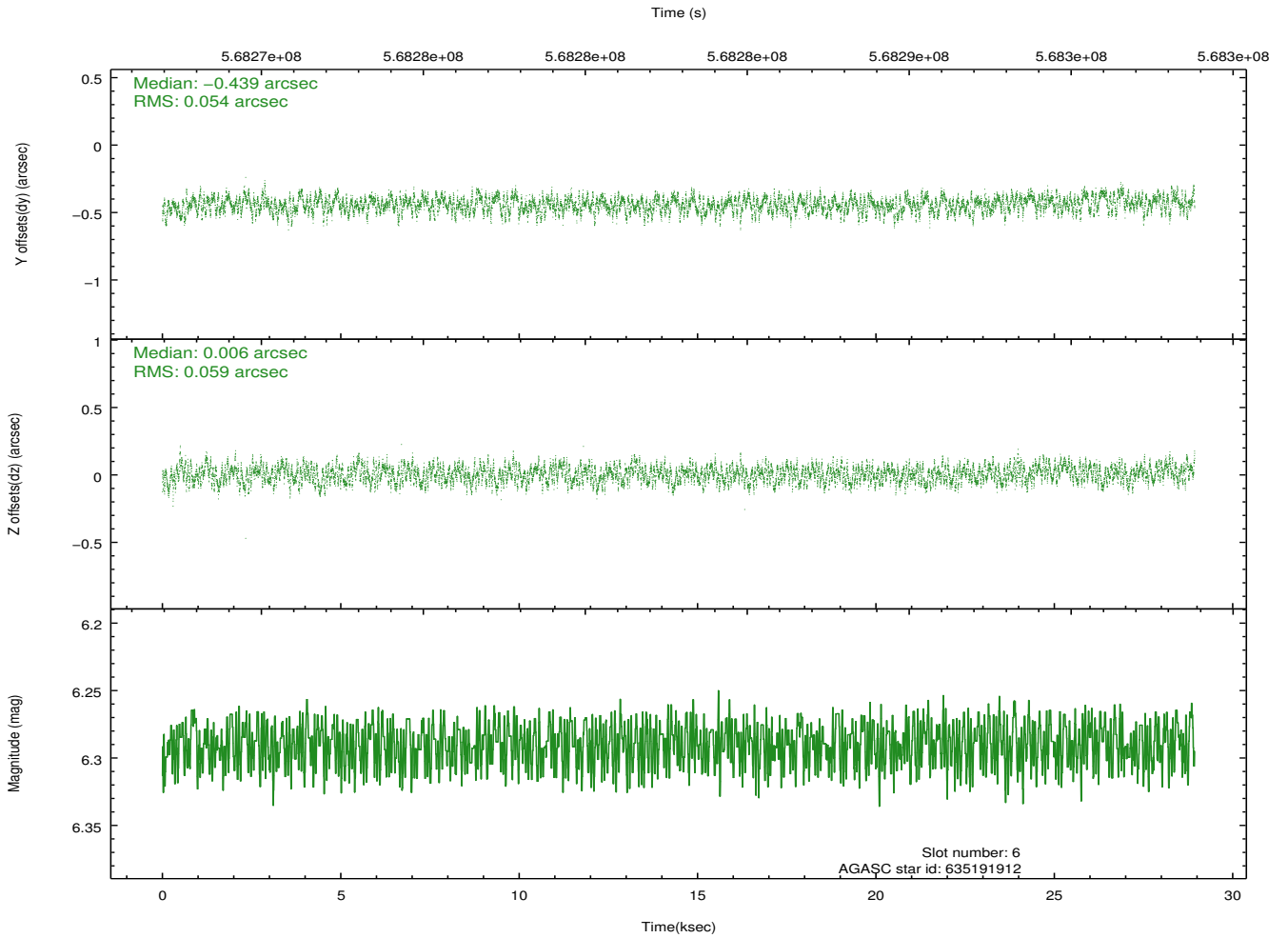
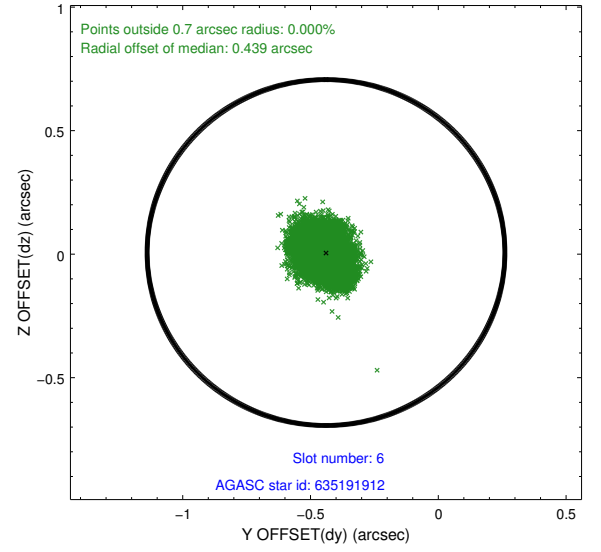
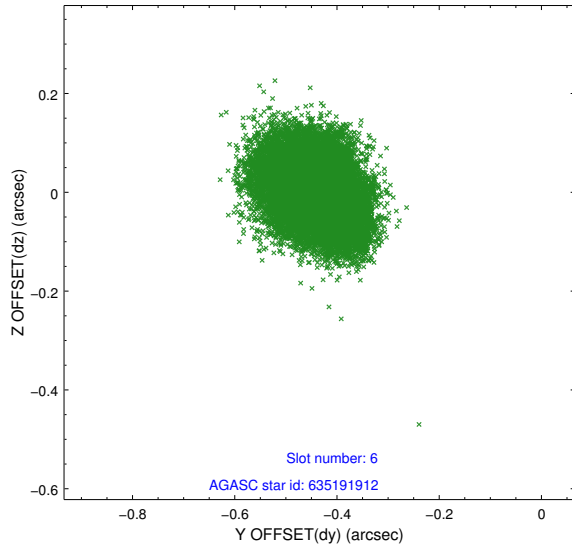




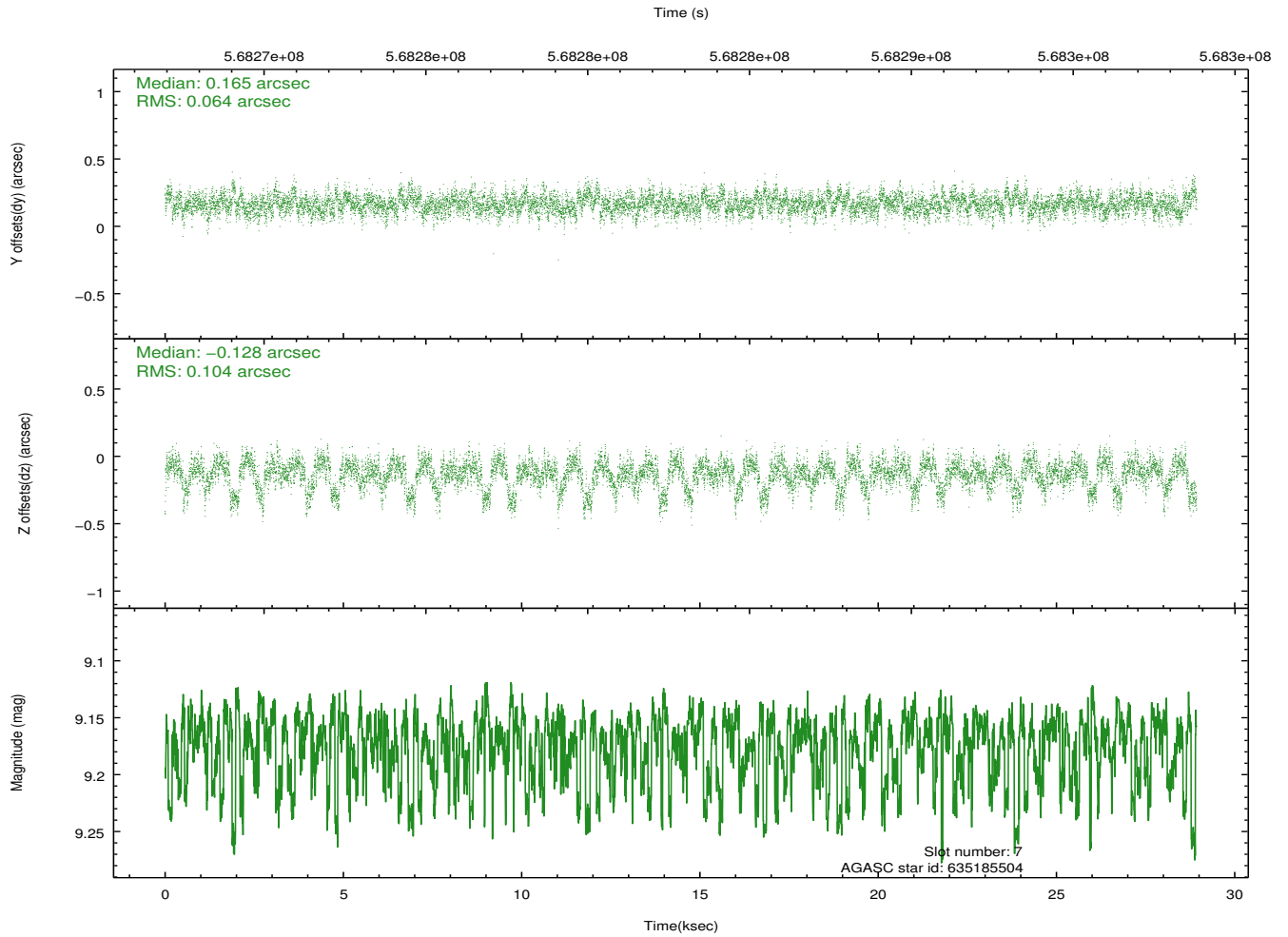
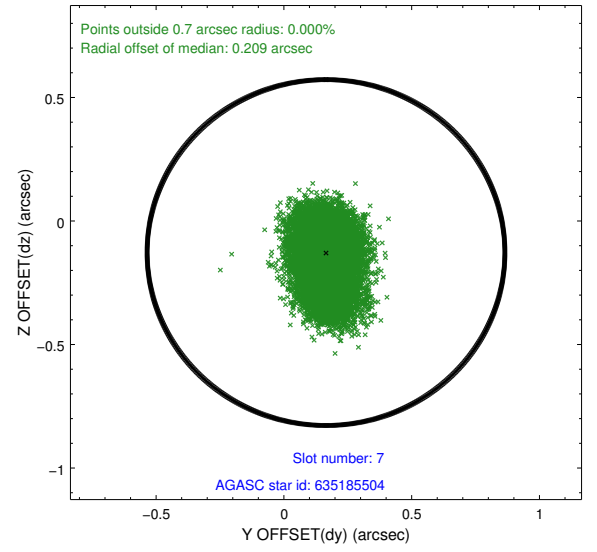
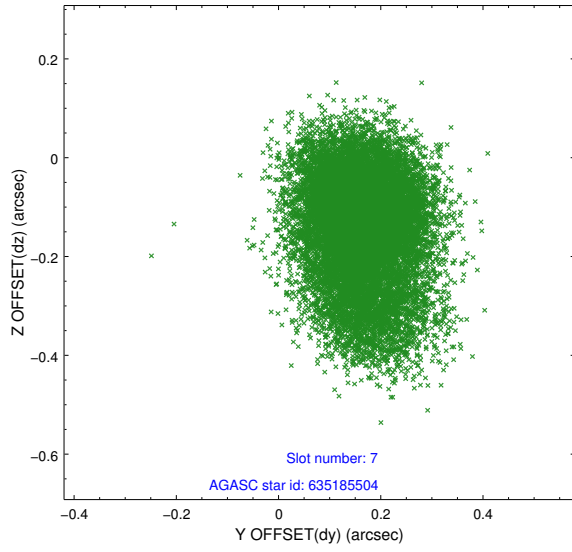
### 2.4.3 Slot 5



## 2.4.4 Slot 6

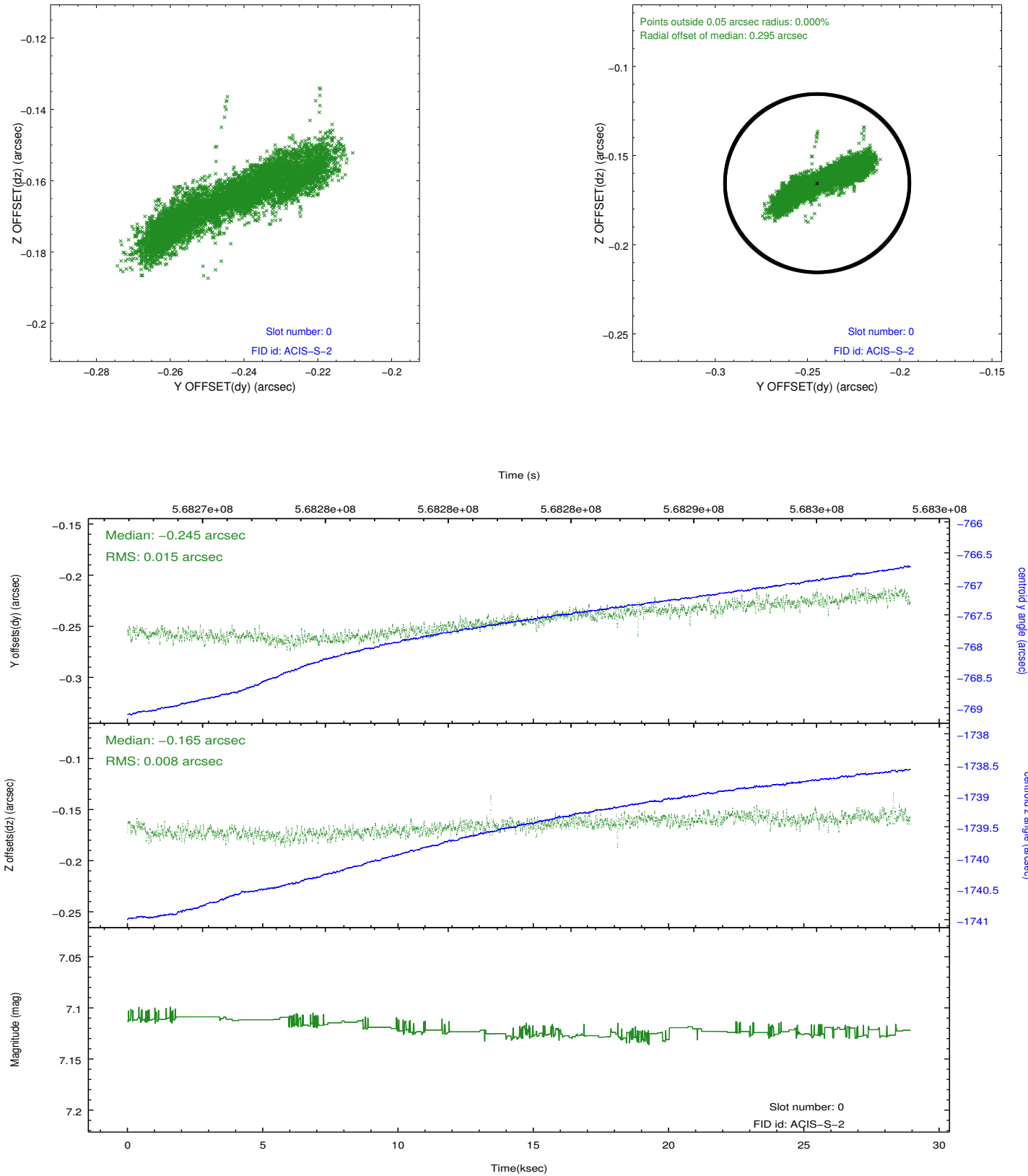


## 2.4.5 Slot 7

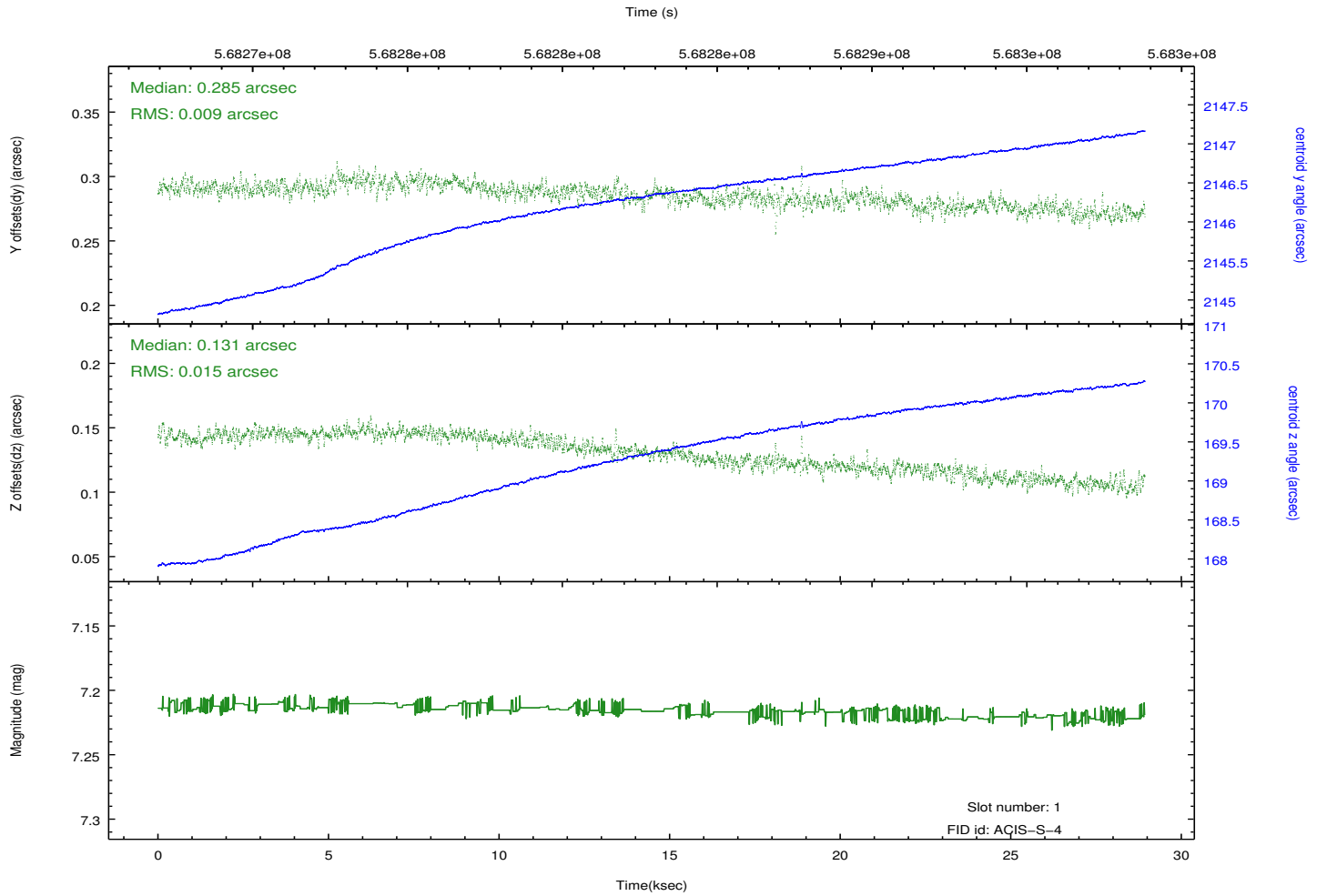
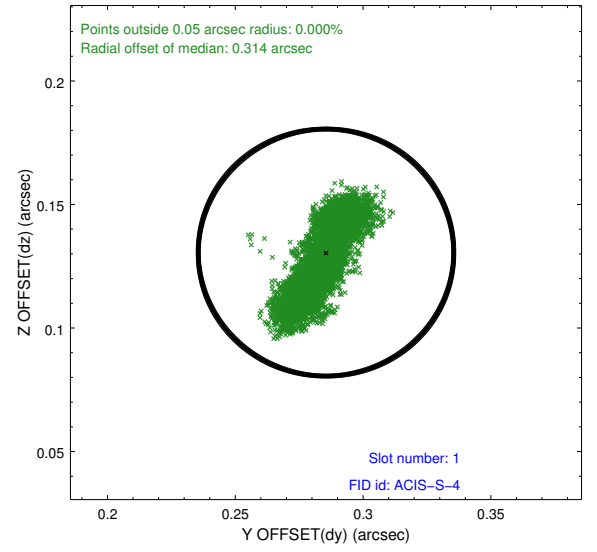
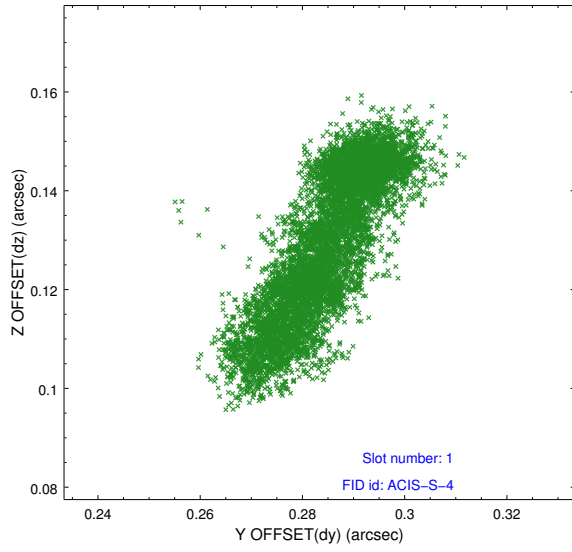


## 2.5 FID Slots

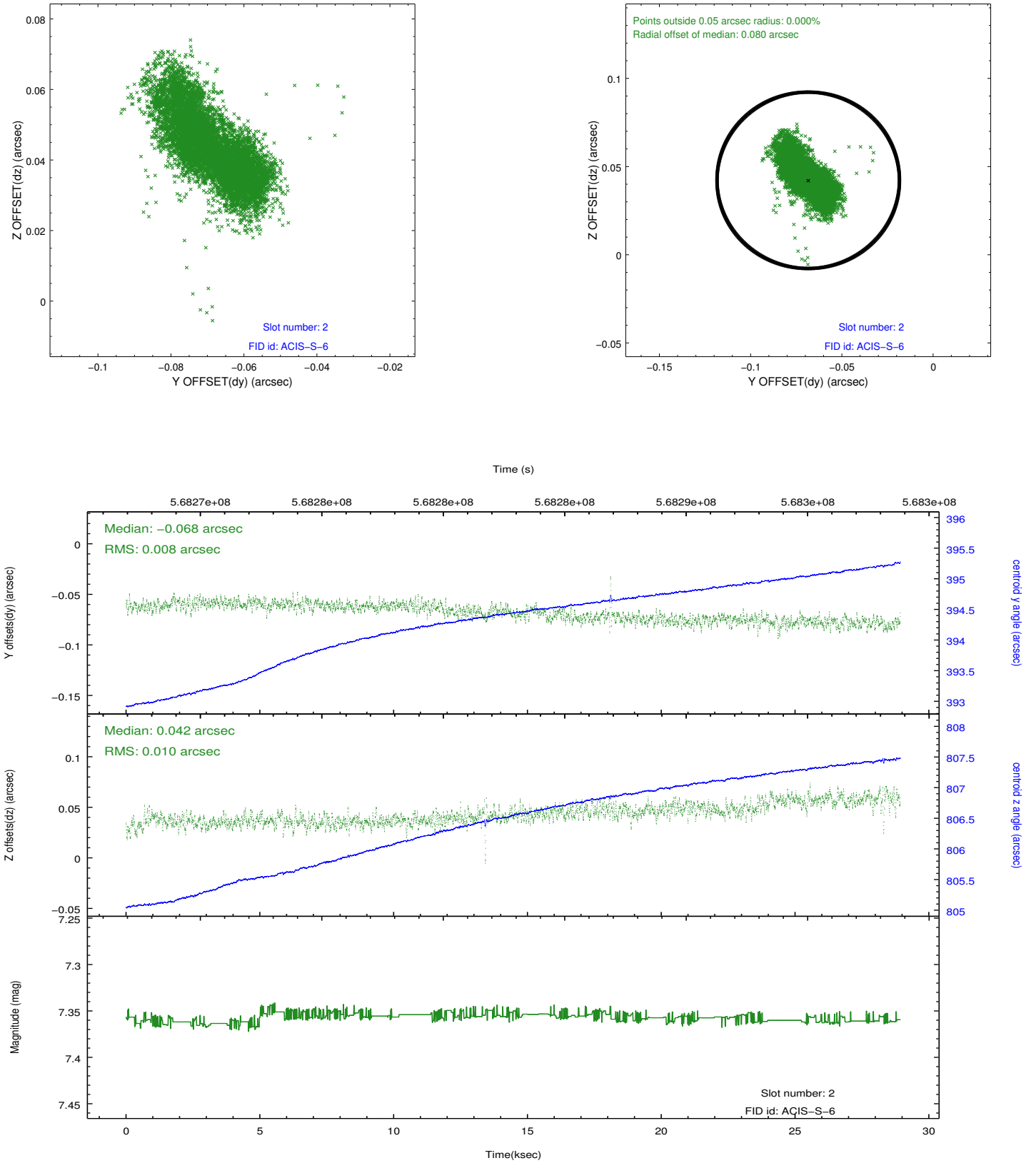
### 2.5.1 Slot 0



## 2.5.2 Slot 1



### 2.5.3 Slot 2



## A Summary

### A.1 Status

|                            |                 |
|----------------------------|-----------------|
| V&V Scientist              | Joy Nichols     |
| V&V Date (YYYY-MM-DD)      | 2016.01.05      |
| V&V Edition                | 1               |
| V&V Disposition and Status | OK              |
| V&V Charge Time            | 28.058034781098 |

### A.2 Comments