

# V&V Reference Report

## L2 ASCDS Version : 10.7.1

Observation 22013 - L2 Version 1  
Chandra X-Ray Center

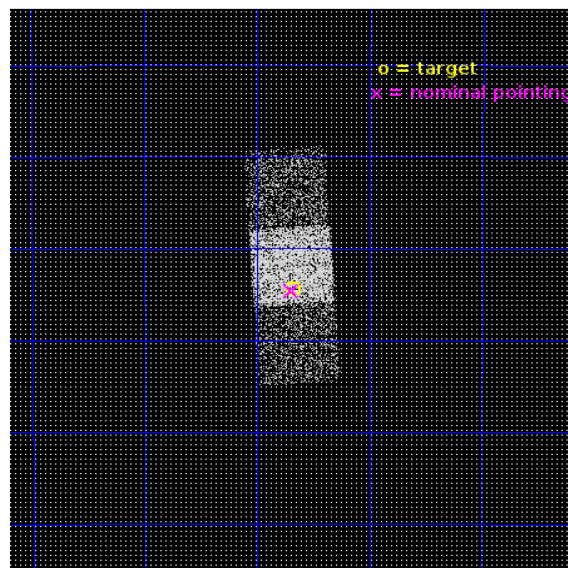
L2 Processing Date : Jan 29 2019

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# 1 Front

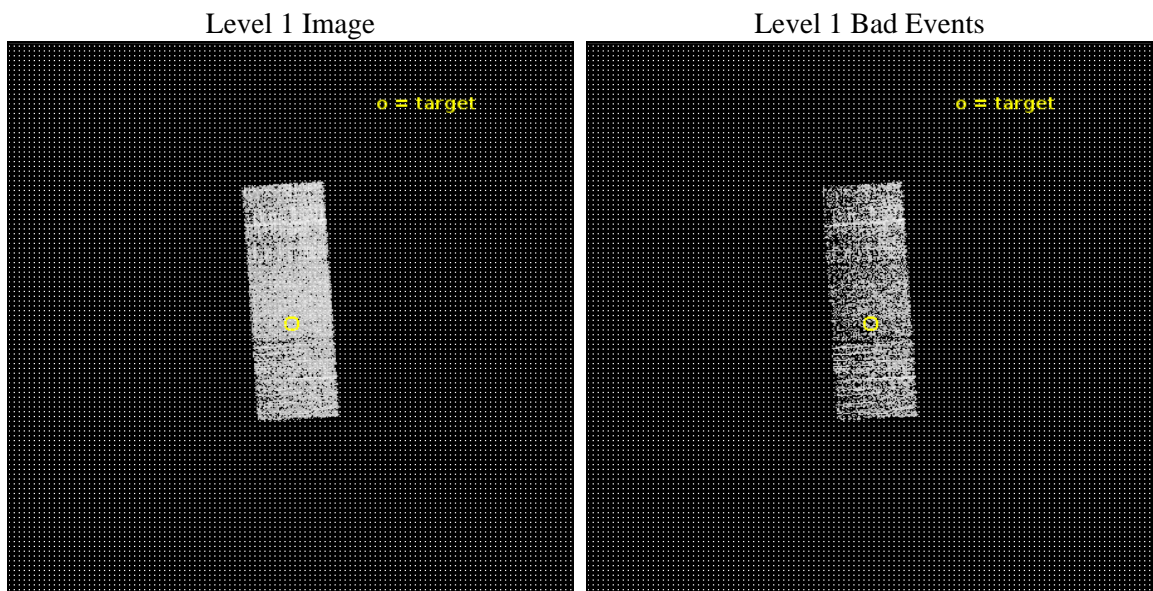
|          |  |   |
|----------|--|---|
| seq_num  | 703833   | Sequence number                             |
| obs_id   | 22013  | Observation id                              |
| title    | Timely Assessment of the X-ray Flux of Newly Discovered Quadruply Lensed Quasars | Proposal title                              |
| observer | David Pooley   | Principal investigator                      |
| object   | DESJ0029-3814  | Source name                                 |
| dtcycle  | 0  | &#160                                       |
| cycle    | P  | events from which exps?<br>Prim/Second/Both |
| ra_targ  | 7.419167   | Observer's specified<br>target RA [deg]     |
| dec_targ | -38.240556   | Observer's specified<br>target Dec [deg]    |
| ra_nom   | 7.4242955637763  | Nominal RA [deg]                            |
| dec_nom  | -38.243283120415   | Nominal Dec [deg]                           |
| roll_nom | 266.15908613526  | Nominal Roll [deg]                          |
| revision | 1  | Processing version of<br>data               |
| ontime   | 1608.6789889336  | Sum of GTIs [s]                             |
| livetime | 1587.6604136509  | Livetime [s]                                |
| ontime6  | 1608.6379489899  | Sum of GTIs [s]                             |
| ontime7  | 1608.6789889336  | Sum of GTIs [s]                             |
| ontime8  | 1608.596908927   | Sum of GTIs [s]                             |
| l2events | 9085   | Number of level 2<br>events                 |



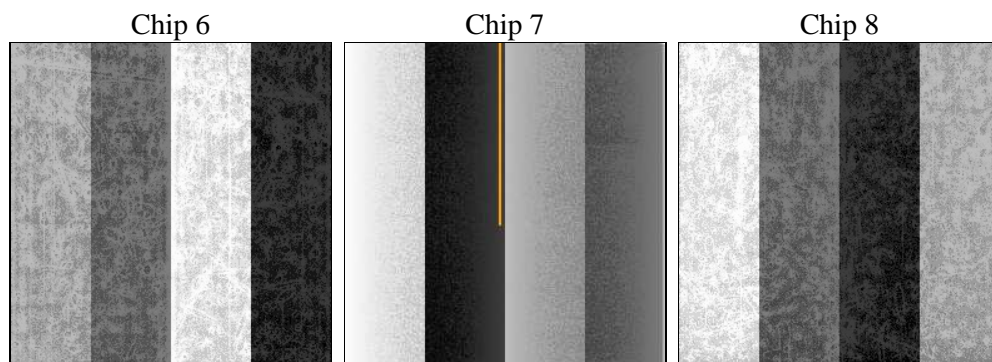
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

|          |                     |                                |                |                 |   |
|----------|---------------------|--------------------------------|----------------|-----------------|---|
| obi_num  | 0                   | Obi number                     | sched_exp_time | 1500.000000     | [s] Scheduled observation exposure time |
| ascdsver | 10.7.1              | Processing system revision     | ontime         | 1608.6789889336 | Sum of GTIs [s]                         |
| caldsver | 4.8.2               | &#160                          | ontime6        | 1608.6379489899 | Sum of GTIs [s]                         |
| date     | 2019-01-30T01:45:22 | Date and time of file creation | ontime7        | 1608.6789889336 | Sum of GTIs [s]                         |
| revision | 1                   | Processing version of data     | ontime8        | 1608.596908927  | Sum of GTIs [s]                         |
|          |                     |                                | l1events       | 44582           | Number of level 1 events                |

### 2.1.4 Events

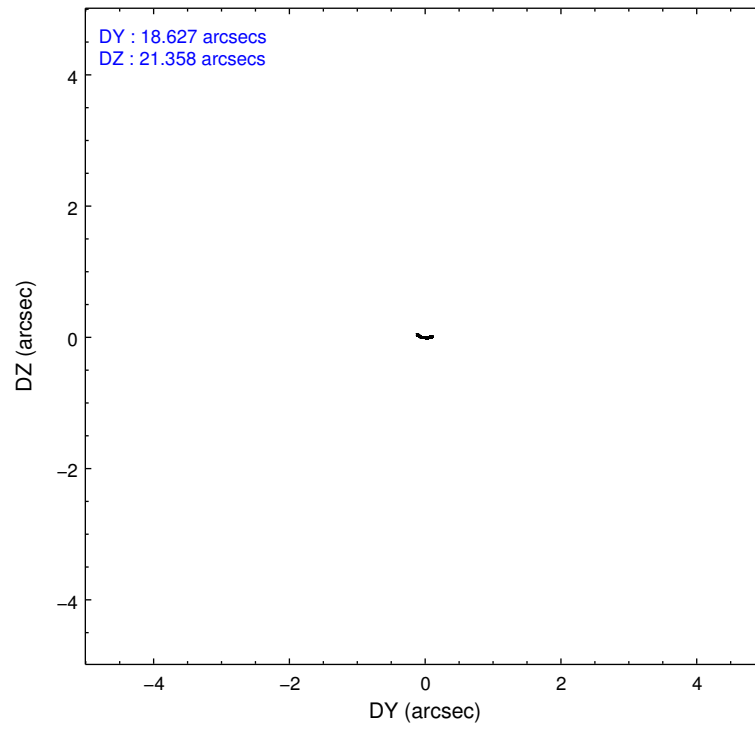
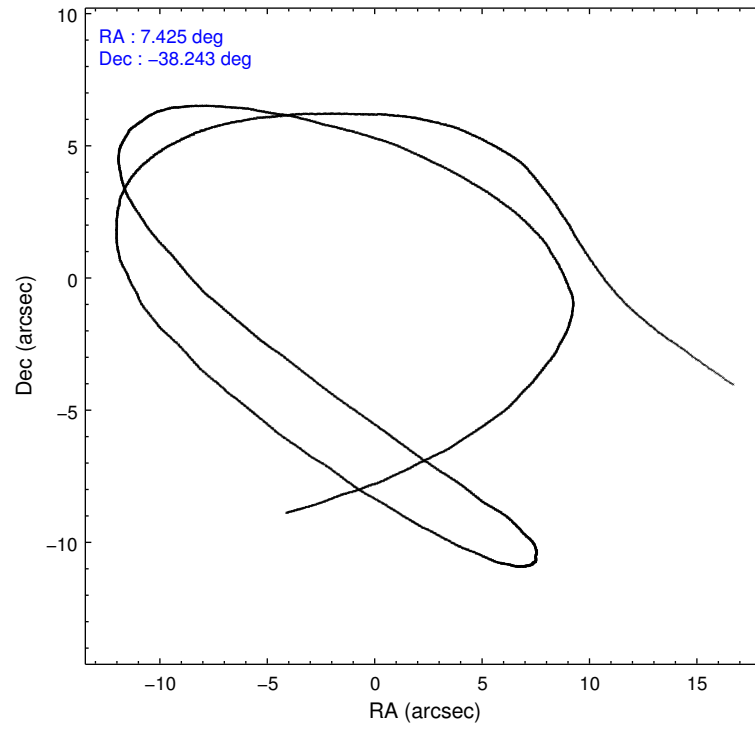
|                 | ccd 6 | ccd 7 | ccd 8 |
|-----------------|-------|-------|-------|
| level 1 events  | 12792 | 15470 | 16320 |
| rejected events | 11423 | 8705  | 12115 |
| rejected %      | 89%   | 56%   | 74%   |

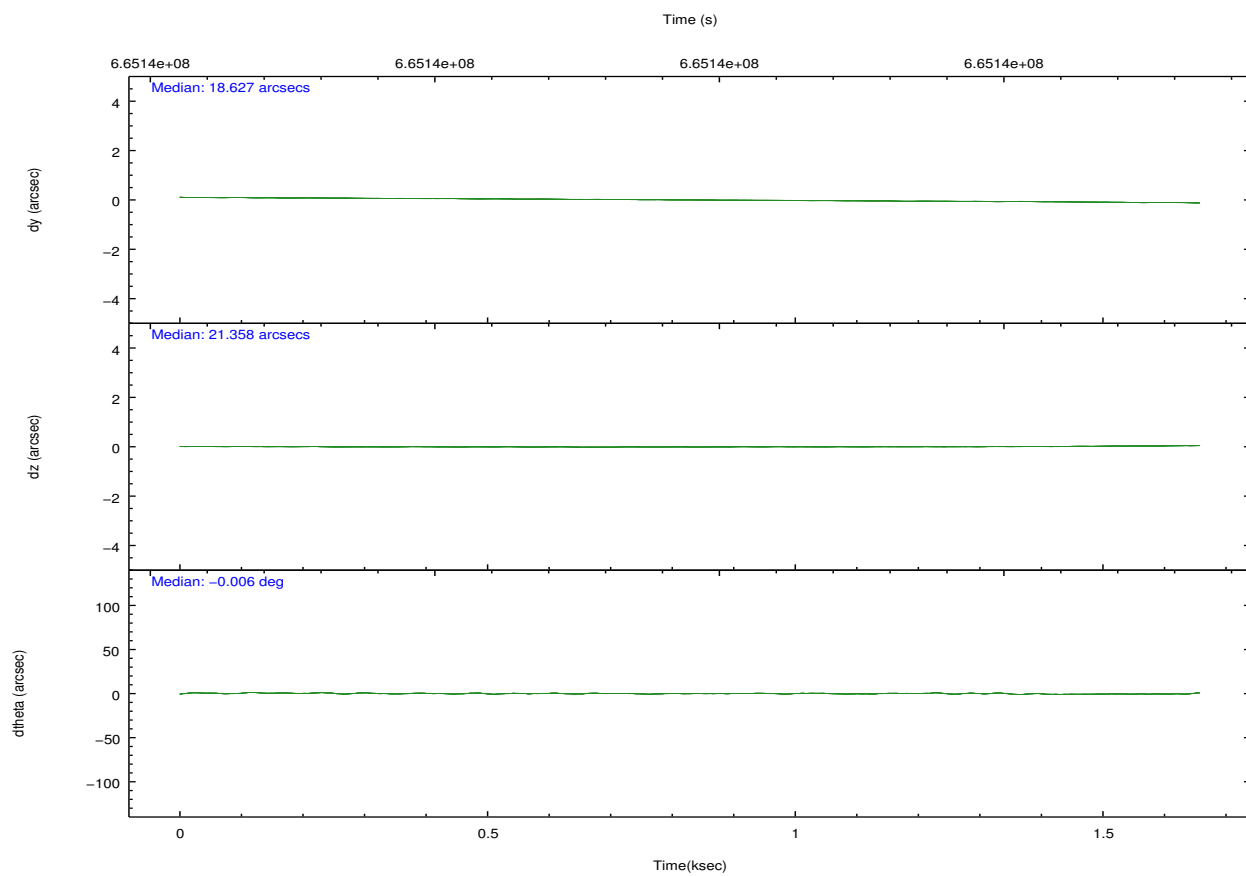
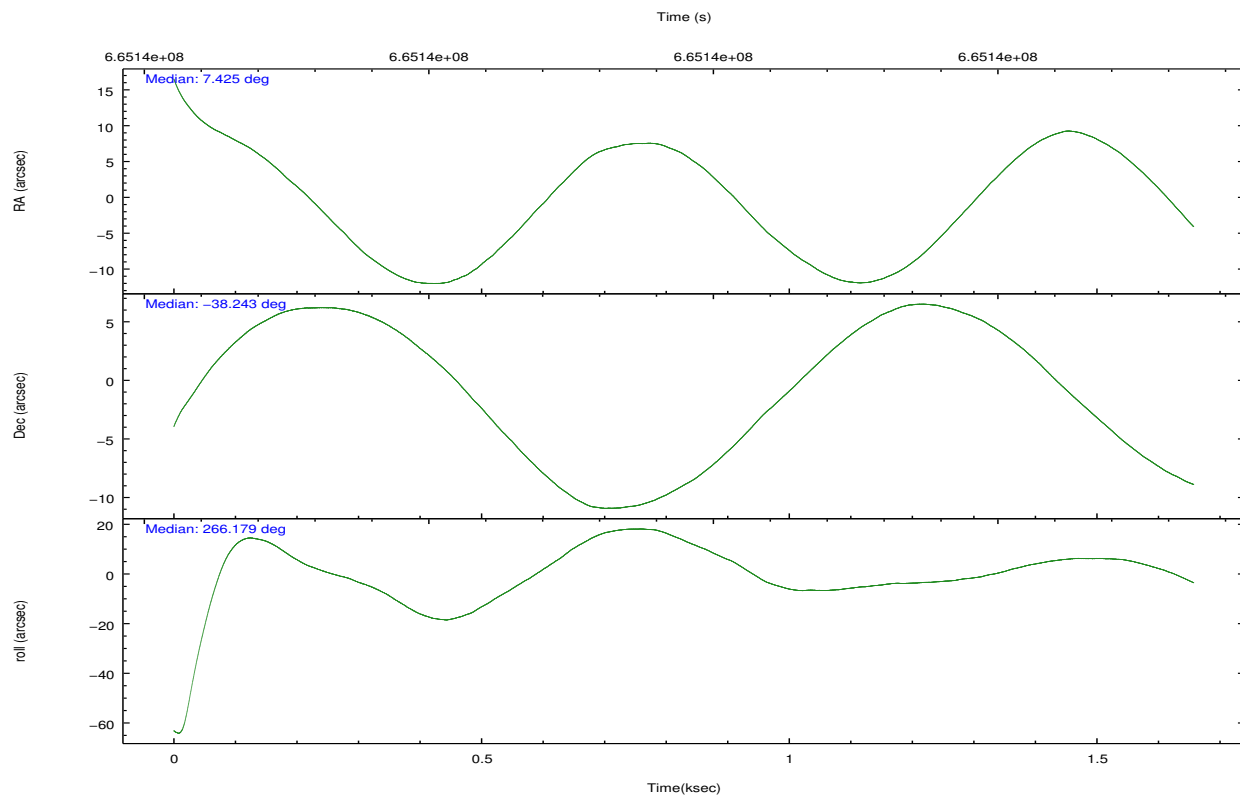
|                | ccd 6 | ccd 7 | ccd 8 |
|----------------|-------|-------|-------|
| grade 0 events | 393   | 606   | 1122  |
|                | 3%    | 3%    | 6%    |
| grade 1 events | 10    | 19    | 18    |
|                | 0%    | 0%    | 0%    |
| grade 2 events | 390   | 1444  | 1074  |
|                | 3%    | 9%    | 6%    |
| grade 3 events | 117   | 508   | 393   |
|                | 0%    | 3%    | 2%    |
| grade 4 events | 116   | 540   | 427   |
|                | 0%    | 3%    | 2%    |
| grade 5 events | 539   | 1412  | 825   |
|                | 4%    | 9%    | 5%    |
| grade 6 events | 360   | 3694  | 1199  |
|                | 2%    | 23%   | 7%    |
| grade 7 events | 10867 | 7247  | 11262 |
|                | 84%   | 46%   | 69%   |

## 2.2 Compared Parameters

| Parameter                         | Planned             | Actual               | Parameter                             | Planned   | Actual  |
|-----------------------------------|---------------------|----------------------|---------------------------------------|-----------|---------|
| Instrument                        | ACIS                | ACIS                 | Obspar format version number          | 7         | 7       |
| Detector                          | ACIS-678            | ACIS-678             | 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                 | 7.408104            | 7.424295563776269    | CCD I2 on                             | N         | N       |
| [deg] Pointing Dec                | -38.219089          | -38.24328312041464   | CCD I3 on                             | N         | N       |
| [deg] Pointing Roll               | 265.993150          | 266.1590861352604    | CCD S0 on                             | N         | N       |
| [mm] SIM focus pos                | -0.684267           | -0.6828225247311905  | CCD S1 on                             | N         | N       |
| [mm] SIM defocus                  | 0                   | 0.001444936568705701 | CCD S2 on                             | O2        | Y       |
| [mm] SIM translation stage pos    | -190.132523         | -190.1400660498719   | CCD S3 on                             | Y         | Y       |
| [mm] SIM translation stage offset | 0                   | 0.00754346686406393  | CCD S4 on                             | O1        | Y       |
| [s] Observation start time (MET)  | 665143784.184000    | 665142411.80871      | CCD S5 on                             | N         | N       |
| Observation start date            | 2019-01-29T10:08:35 | 2019-01-29T09:46:51  | Number of optional ACIS chips dropped | 0         | 0       |
| [s] Observation end time (MET)    | 665145284.184000    | 665145831.20891      | On-chip summing requested             | N         | N       |
| Observation end date              | 2019-01-29T10:33:35 | 2019-01-29T10:43:51  | Subarray requested                    | NONE      | NONE    |
| Read mode                         | TIMED               | TIMED                | Alternating exposures requested       | N         | N       |
|                                   |                     |                      | [s] Primary exposure time             | 0.000000  | 3.1     |

## 2.3 Aspect





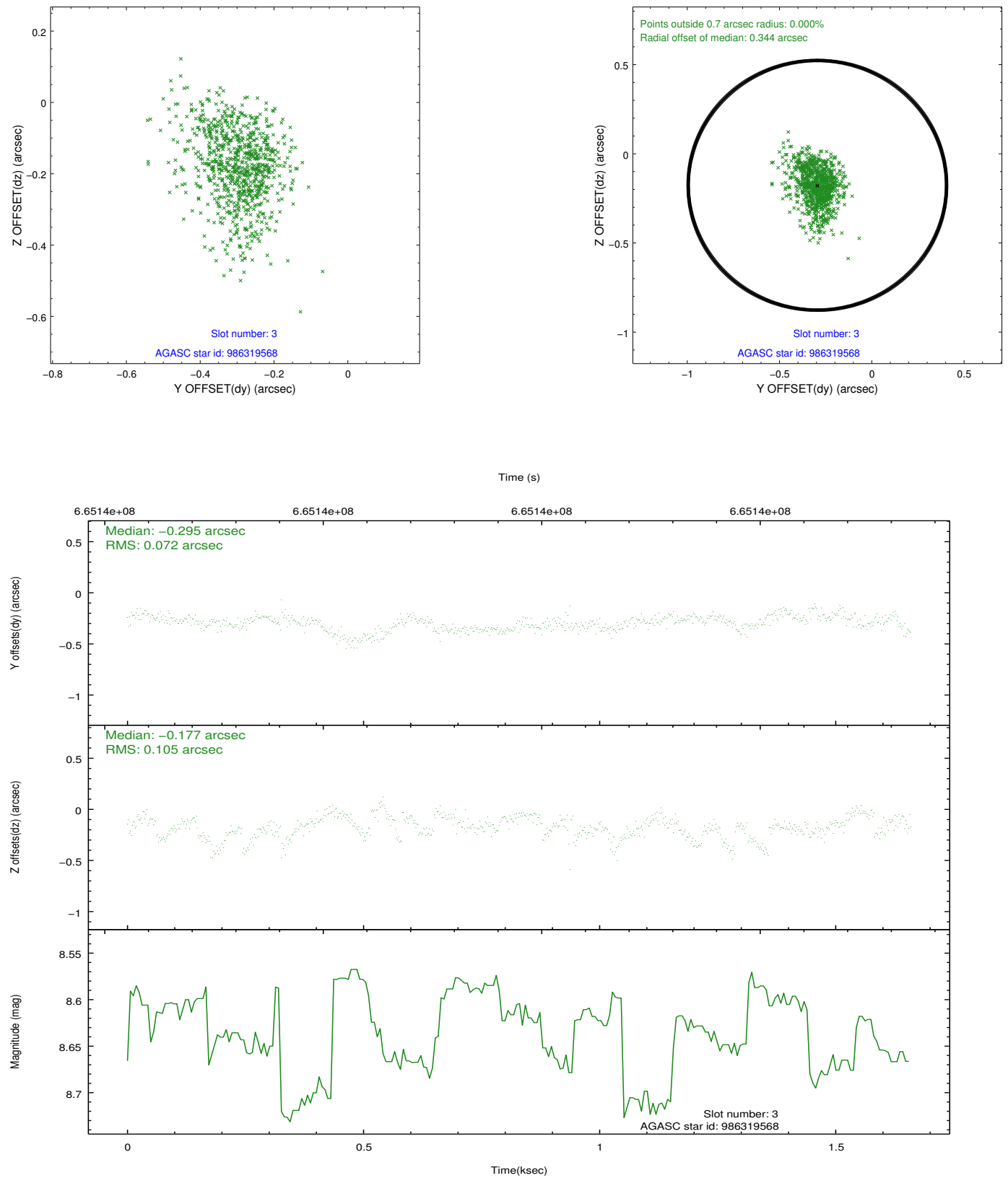
Slot Statistics

| pt | status  | used | id        | mag  | n_pts | frac_pts | med_dy | med_dz | dr1   | dr2   | ra       | dec        | mean_y   | mea   |
|----|---------|------|-----------|------|-------|----------|--------|--------|-------|-------|----------|------------|----------|-------|
| 0  | FID     |      | ACIS-S-2  | 7.07 | 405   | 1.000    | -0.354 | -0.272 | 0.007 | 0.011 | 0.000000 | 0.000000   | -771.98  | -1743 |
| 1  | FID     |      | ACIS-S-4  | 7.17 | 405   | 1.000    | 0.823  | 0.243  | 0.005 | 0.008 | 0.000000 | 0.000000   | 2140.57  | 161   |
| 2  | FID     |      | ACIS-S-5  | 7.15 | 405   | 1.000    | -0.501 | 0.037  | 0.006 | 0.010 | 0.000000 | 0.000000   | -1819.95 | 159   |
| 3  | GUIDE   | used | 986319568 | 8.63 | 810   | 1.000    | -0.295 | -0.177 | 0.132 | 0.228 | 8.114497 | -38.277665 | 80.03    | 2004  |
| 4  | GUIDE   | used | 986320480 | 8.14 | 810   | 1.000    | 0.273  | 0.034  | 0.113 | 0.218 | 7.736728 | -37.787785 | -1610.76 | 825   |
| 5  | GUIDE   | used | 986321160 | 7.86 | 810   | 1.000    | 0.238  | 0.192  | 0.118 | 0.181 | 7.778619 | -37.605008 | -2276.91 | 901   |
| 6  | GUIDE   | used | 986321776 | 9.54 | 810   | 1.000    | -0.208 | -0.050 | 0.205 | 0.333 | 8.041774 | -38.445665 | 693.75   | 1838  |
| 7  | OMITTED |      |           | 0.00 | 0     | 0.000    | 0.000  | 0.000  | 0.000 | 0.000 | 0.000000 | 0.000000   | 0.00     | 0     |

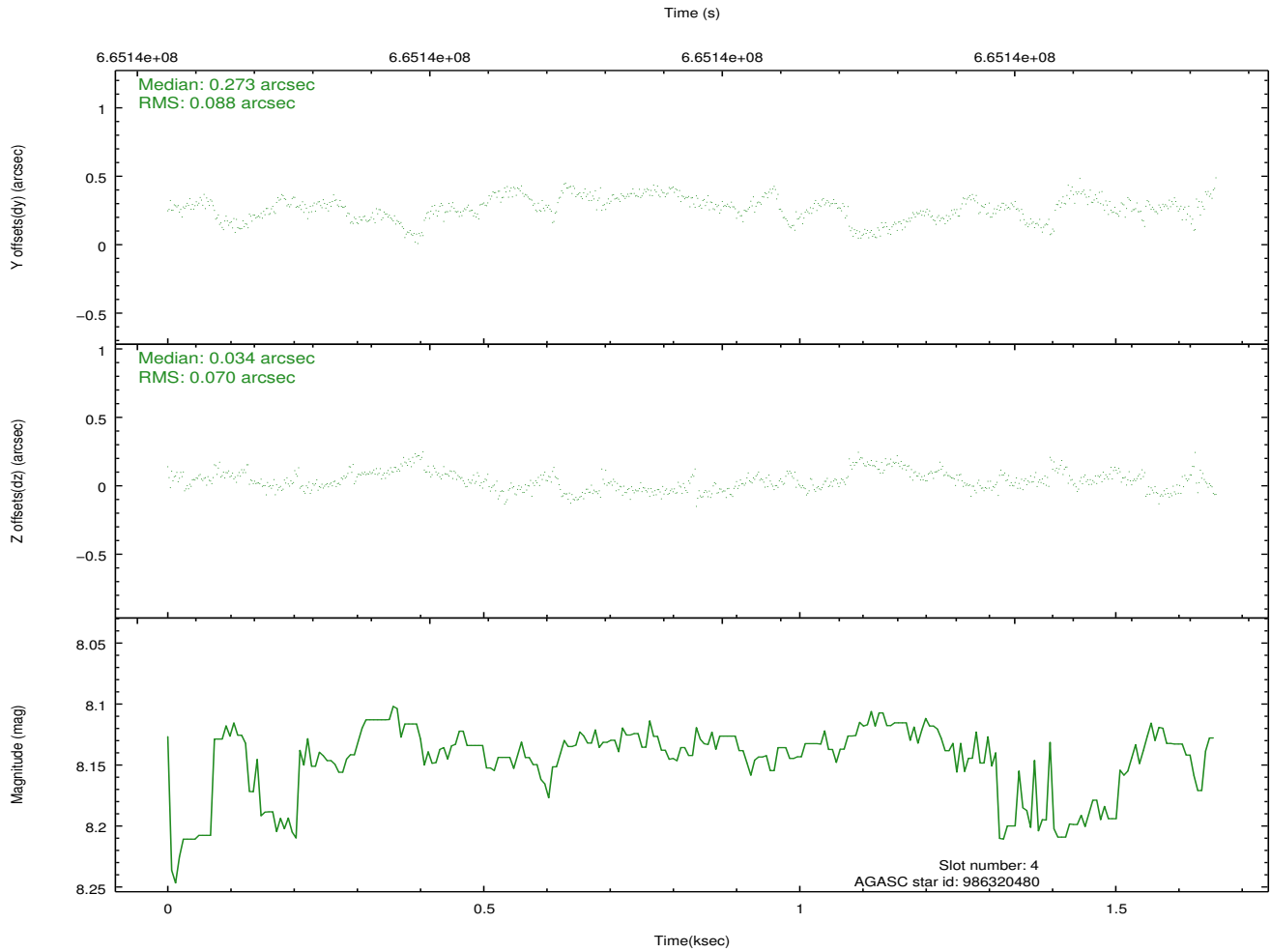
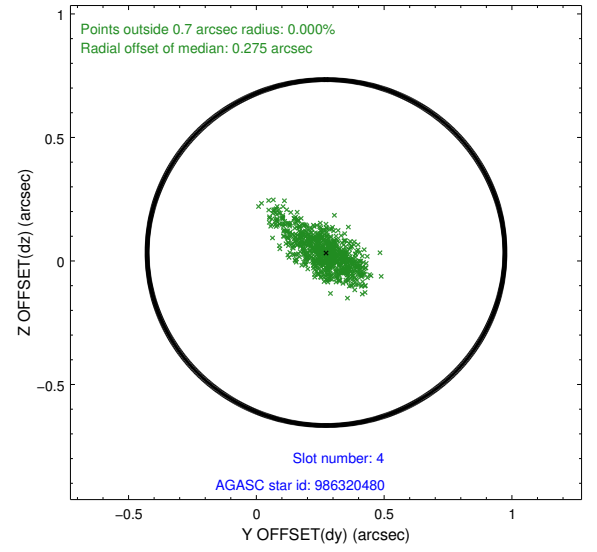
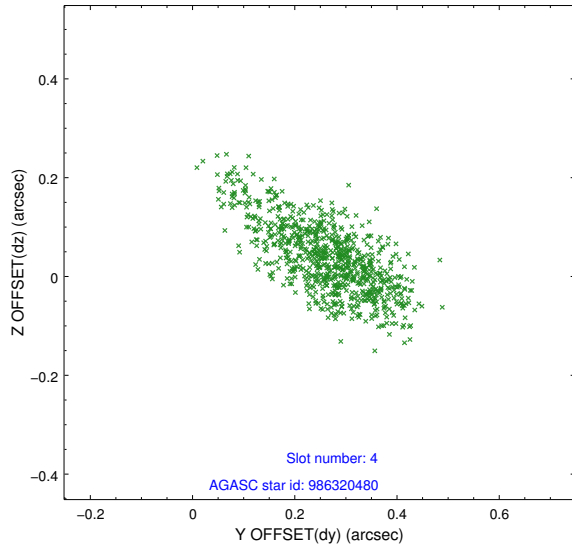


## 2.4 Star Slots

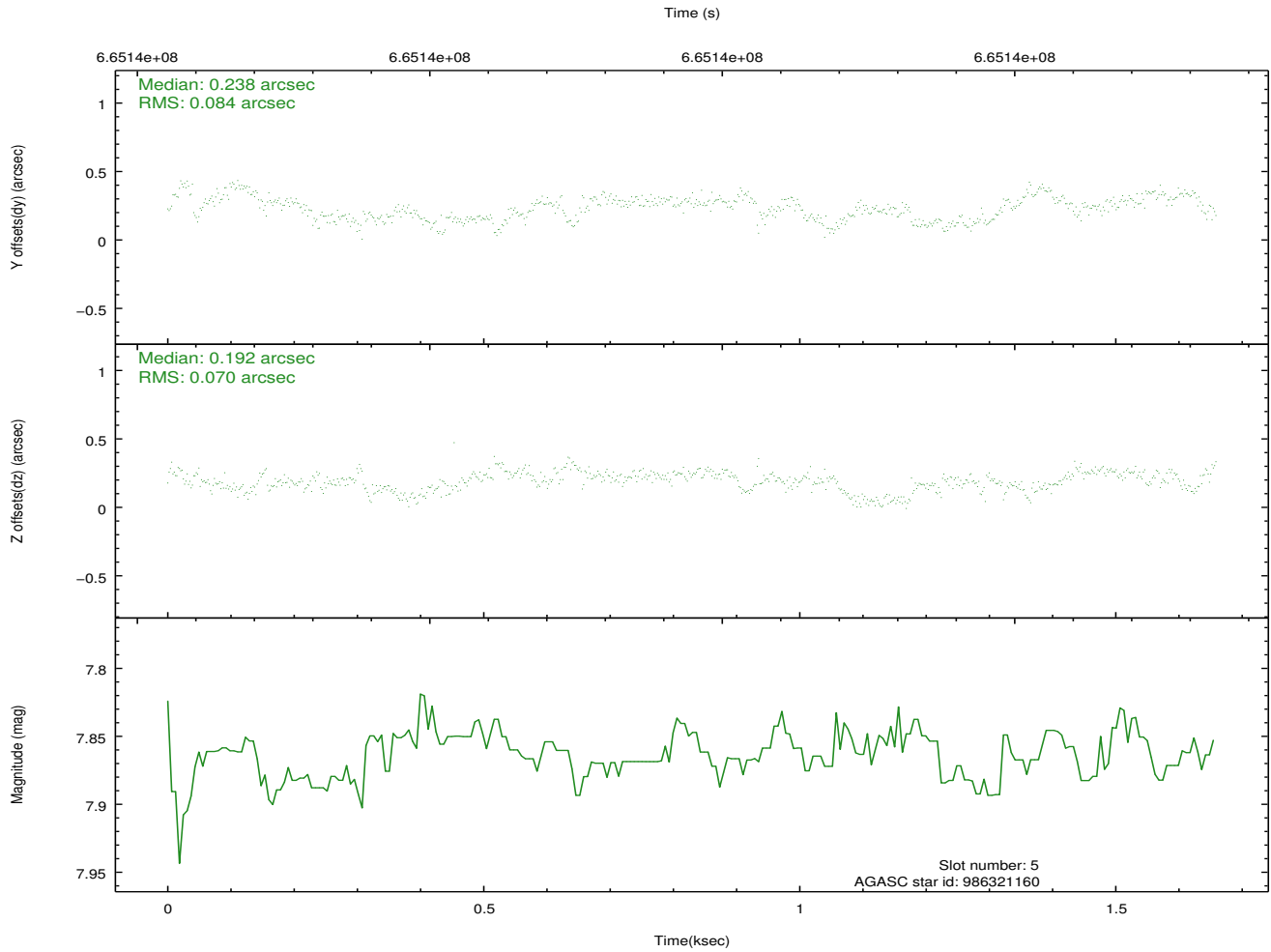
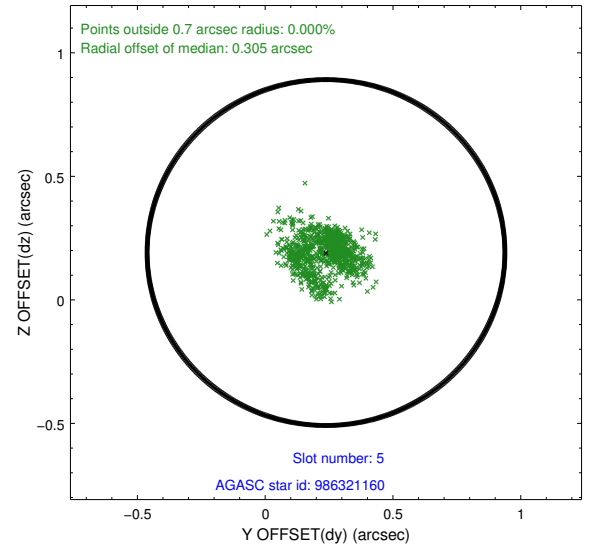
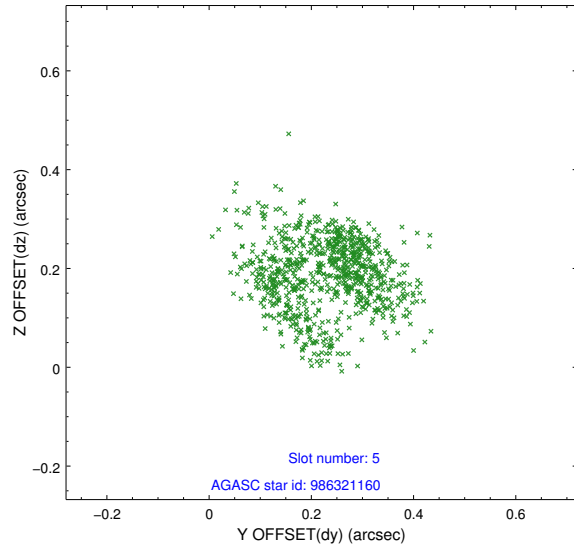
### 2.4.1 Slot 3



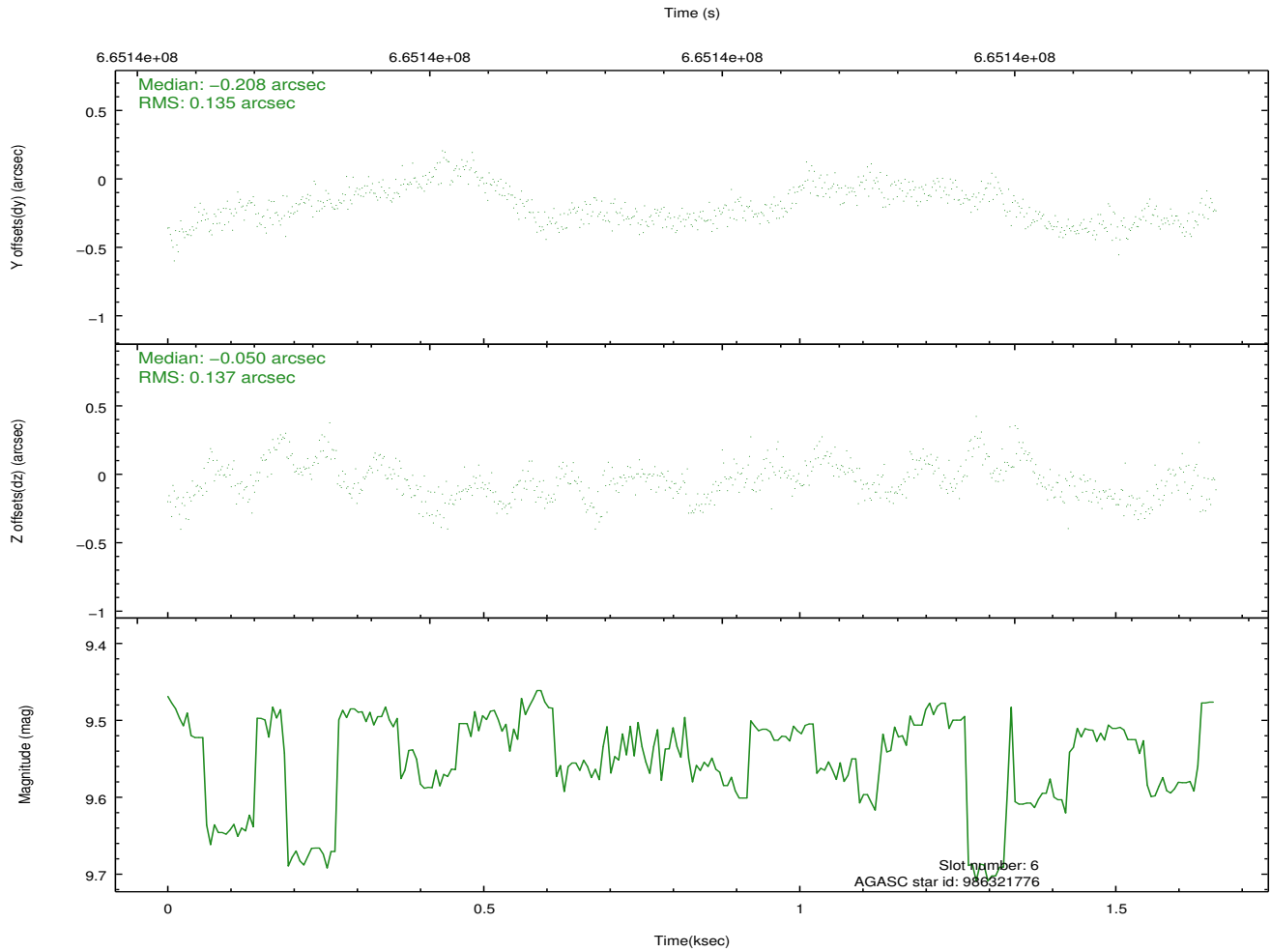
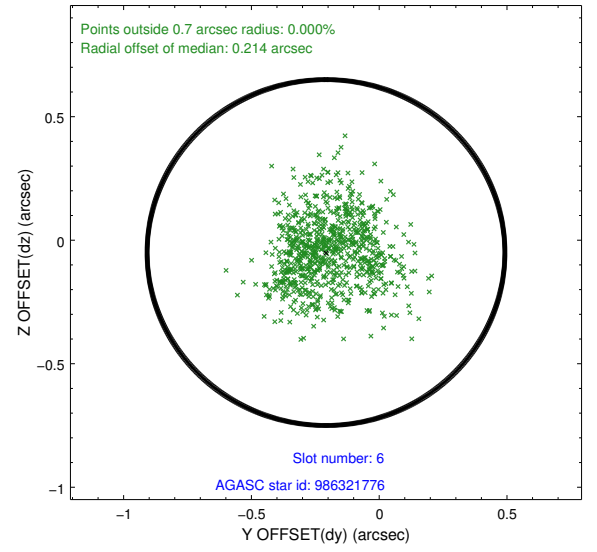
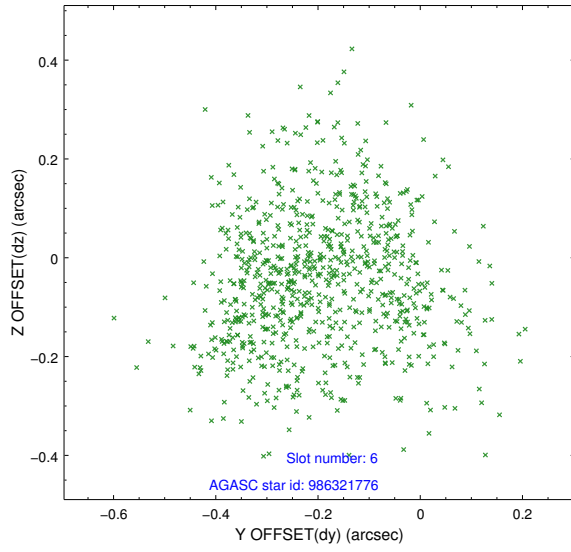
## 2.4.2 Slot 4



### 2.4.3 Slot 5

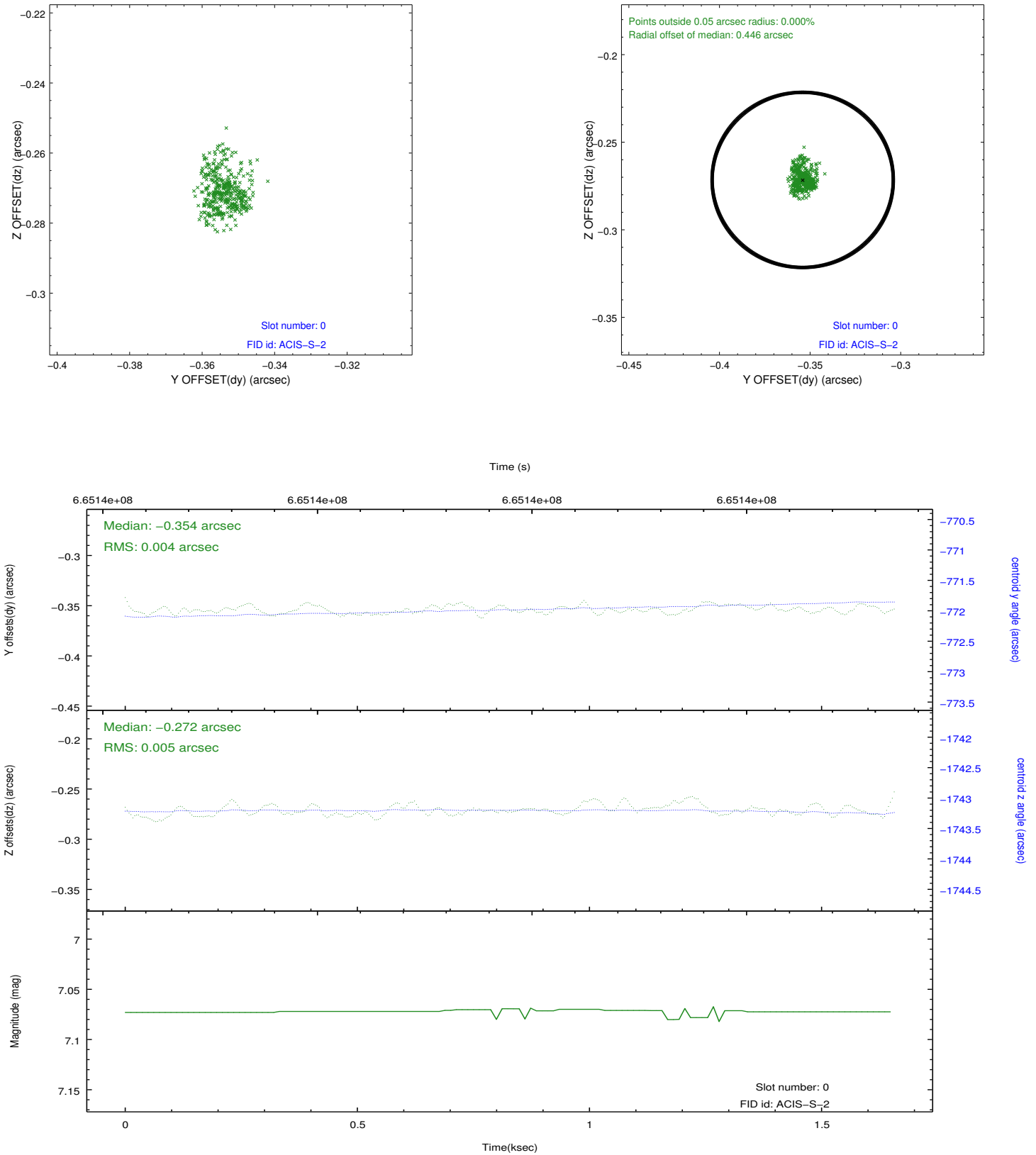


## 2.4.4 Slot 6

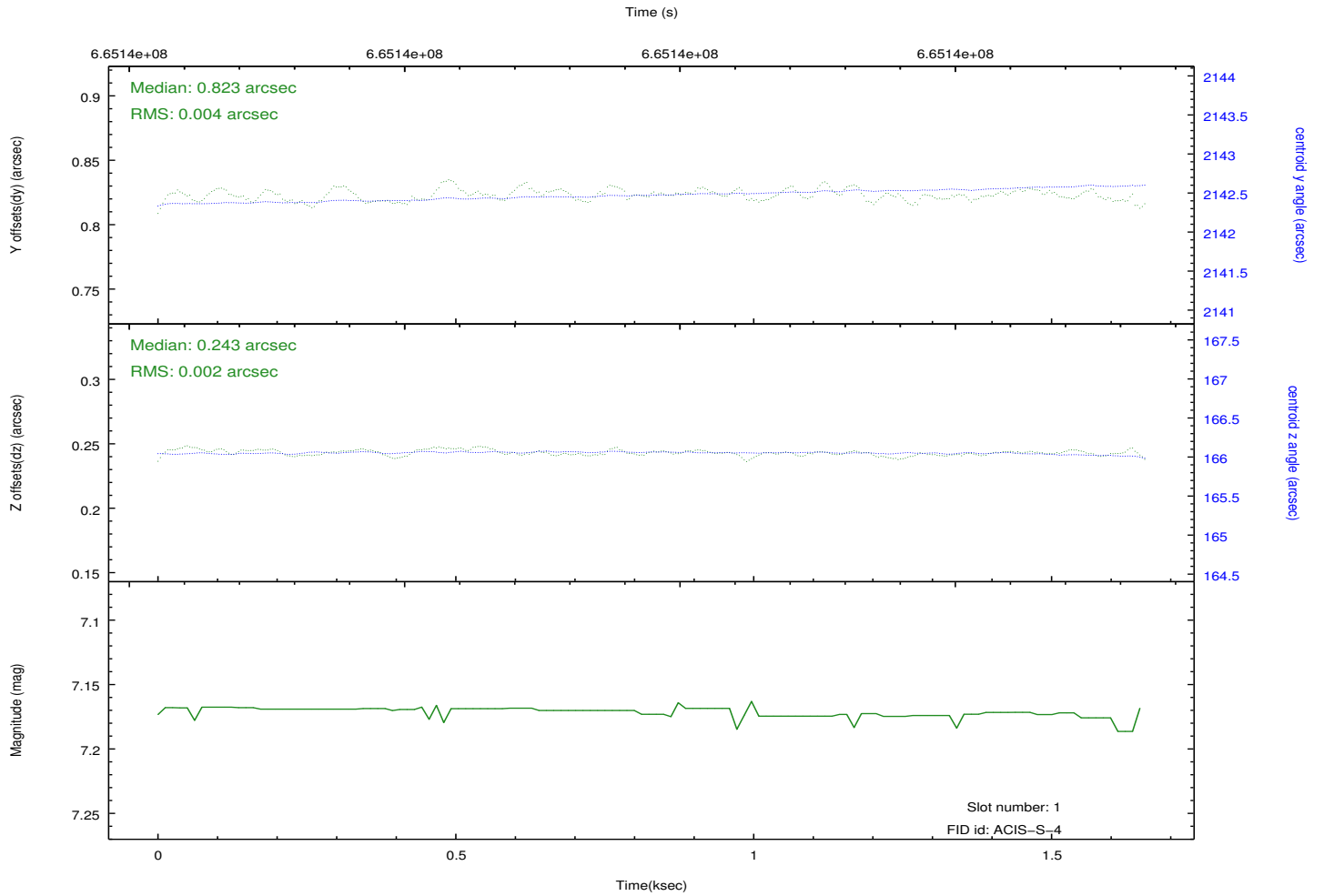
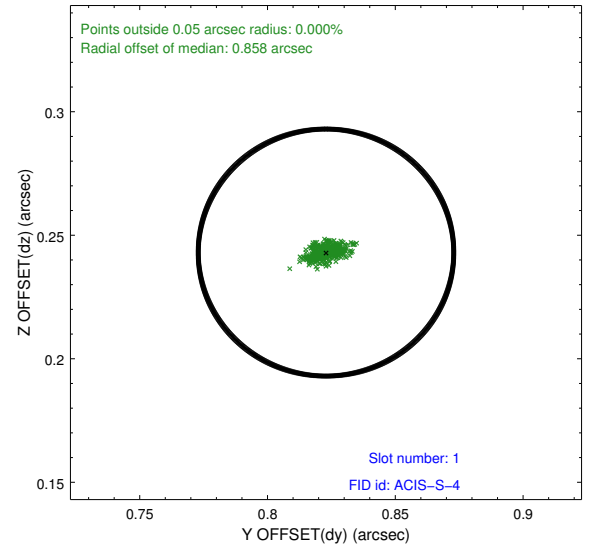
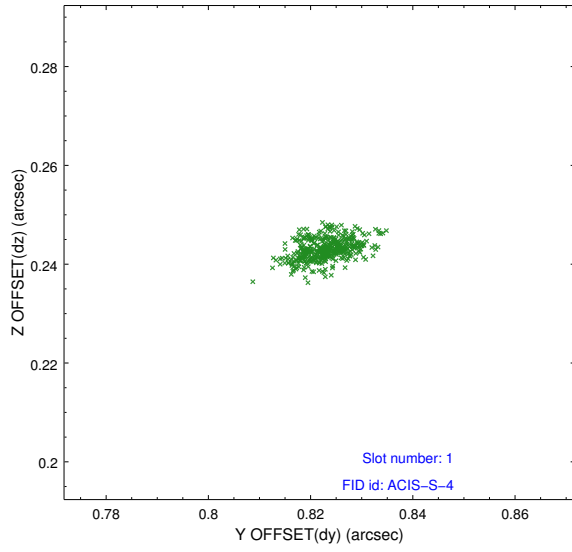


## 2.5 FID Slots

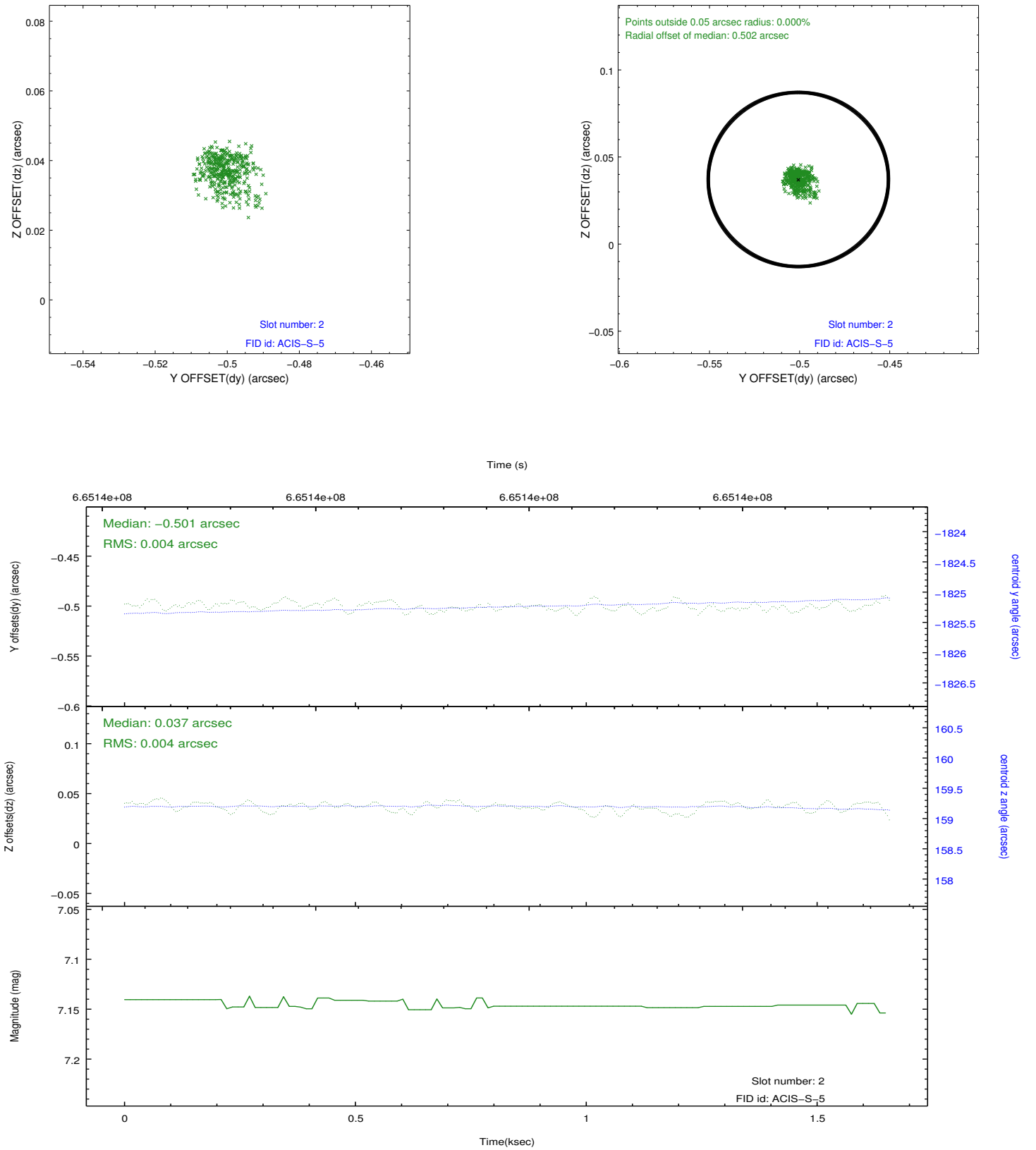
### 2.5.1 Slot 0



## 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)      | 2019.01.30      |
| V&V Edition                | 1               |
| V&V Disposition and Status | OK              |
| V&V Charge Time            | 1.6086789889336 |

### A.2 Comments

The guide star in slot 7 was removed from the aspect solution due to poor data quality. The aspect solution is improved by the removal of this guide star from the solution.