

# V&V Reference Report

## L2 ASCDS Version : 10.4.3.1

Observation 18130 - L2 Version 2  
Chandra X-Ray Center

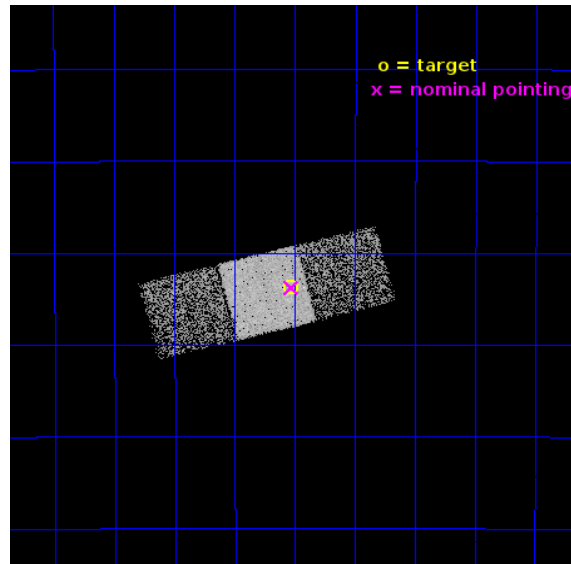
L2 Processing Date : Jun 1 2016

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# 1 Front

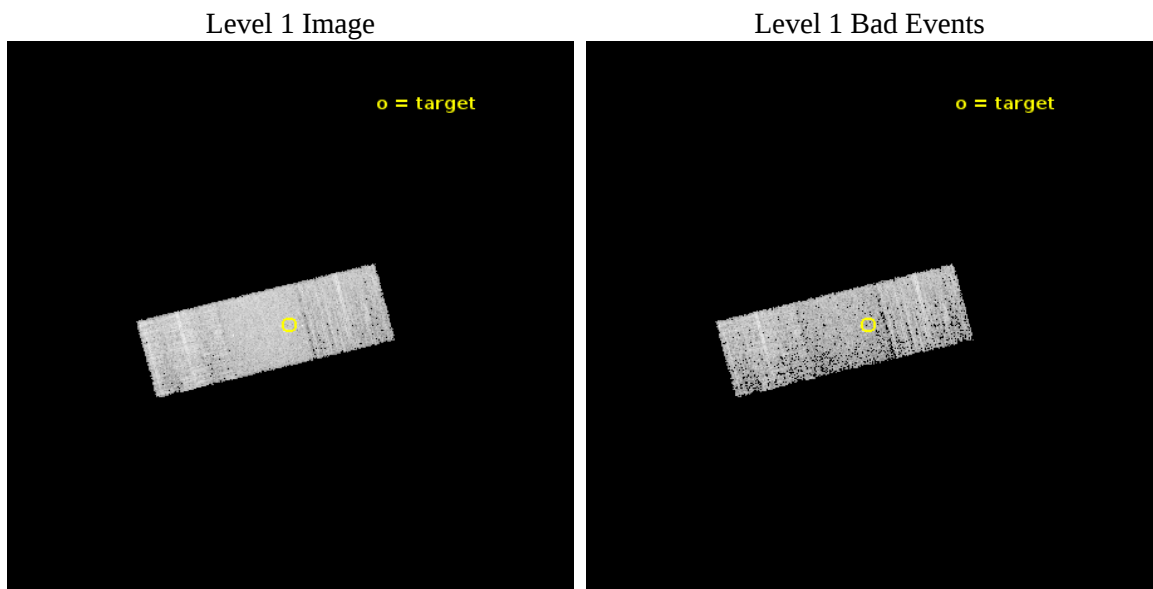
|          |                  |                                          |
|----------|------------------|------------------------------------------|
| seq_num  | 703196           | Sequence number                          |
| obs_id   | 18130            | Observation id                           |
| title    | X-RAYING FORNAX  | Proposal title                           |
| observer | Elena Gallo      | Principal investigator                   |
| object   | fcc43            | Source name                              |
| dtcycle  | 0                | &#160                                    |
| cycle    | P                | events from which exps? Prim/Second/Both |
| ra_targ  | 51.509167        | Observer's specified target RA [deg]     |
| dec_targ | -32.894556       | Observer's specified target Dec [deg]    |
| ra_nom   | 51.507296169579  | Nominal RA [deg]                         |
| dec_nom  | -32.896731899509 | Nominal Dec [deg]                        |
| roll_nom | 165.74484771309  | Nominal Roll [deg]                       |
| revision | 2                | Processing version of data               |
| ontime   | 4913.5000379086  | Sum of GTIs [s]                          |
| livetime | 4849.3015426472  | Livetime [s]                             |
| ontime6  | 4913.5000379086  | Sum of GTIs [s]                          |
| ontime7  | 4913.5000379086  | Sum of GTIs [s]                          |
| ontime8  | 4913.5000379086  | Sum of GTIs [s]                          |
| l2events | 23741            | Number of level 2 events                 |



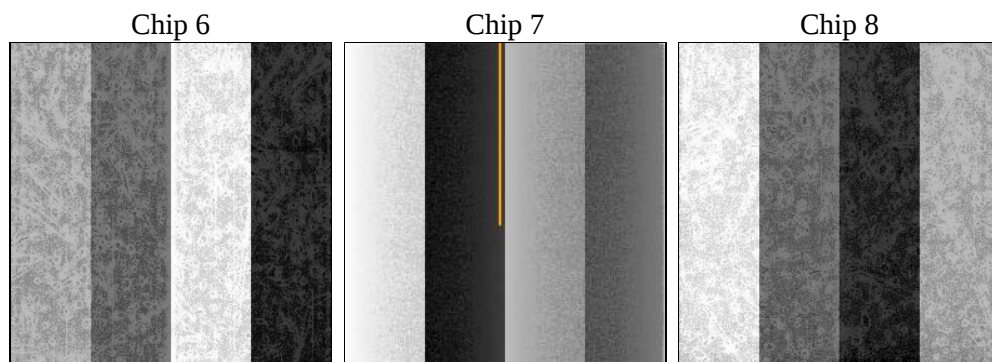
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

|          |                     |                                |                |                 |                                         |
|----------|---------------------|--------------------------------|----------------|-----------------|-----------------------------------------|
| obi_num  | 0                   | Obi number                     | sched_exp_time | 4800.000000     | [s] Scheduled observation exposure time |
| ascdsver | 10.4.3.1            | Processing system revision     | ontime         | 4913.5000379086 | Sum of GTIs [s]                         |
| caldbver | 4.7.2               | &#160                          | ontime6        | 4913.5000379086 | Sum of GTIs [s]                         |
| date     | 2016-06-01T21:49:23 | Date and time of file creation | ontime7        | 4913.5000379086 | Sum of GTIs [s]                         |
| revision | 2                   | Processing version of data     | ontime8        | 4913.5000379086 | Sum of GTIs [s]                         |
|          |                     |                                | l1events       | 115356          | Number of level 1 events                |

### 2.1.4 Events

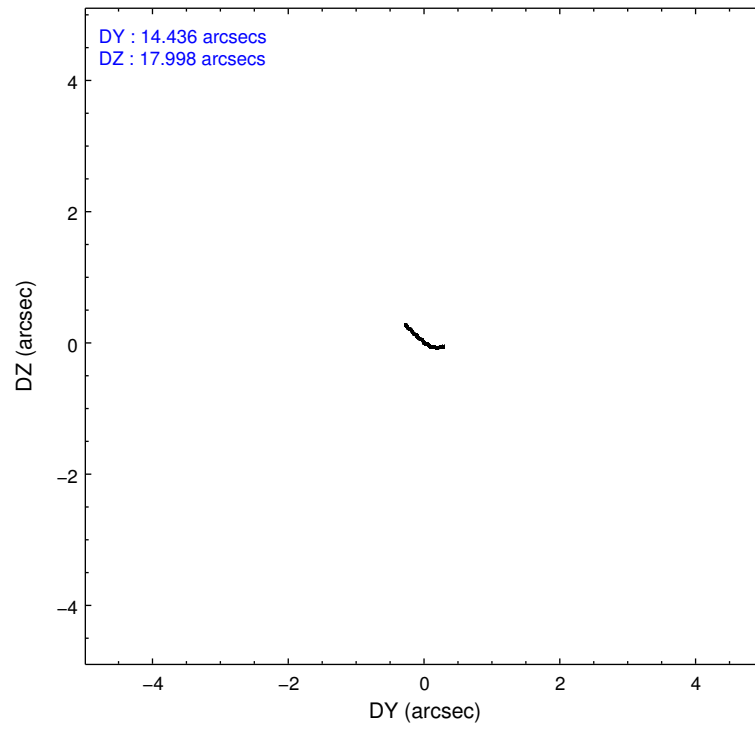
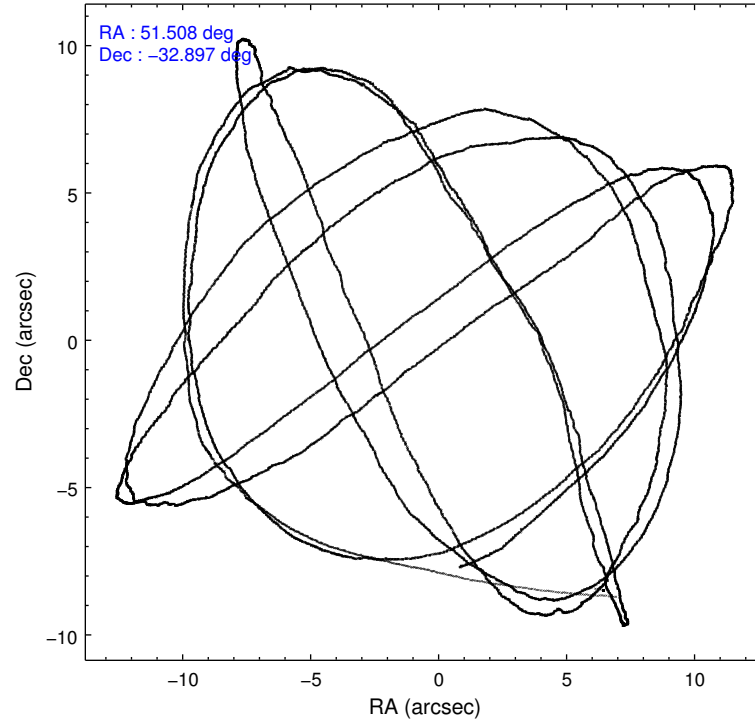
|                 | <b>ccd 6</b> | <b>ccd 7</b> | <b>ccd 8</b> |
|-----------------|--------------|--------------|--------------|
| level 1 events  | 32947        | 40485        | 41924        |
| rejected events | 29283        | 22906        | 30873        |
| rejected %      | 88%          | 56%          | 73%          |

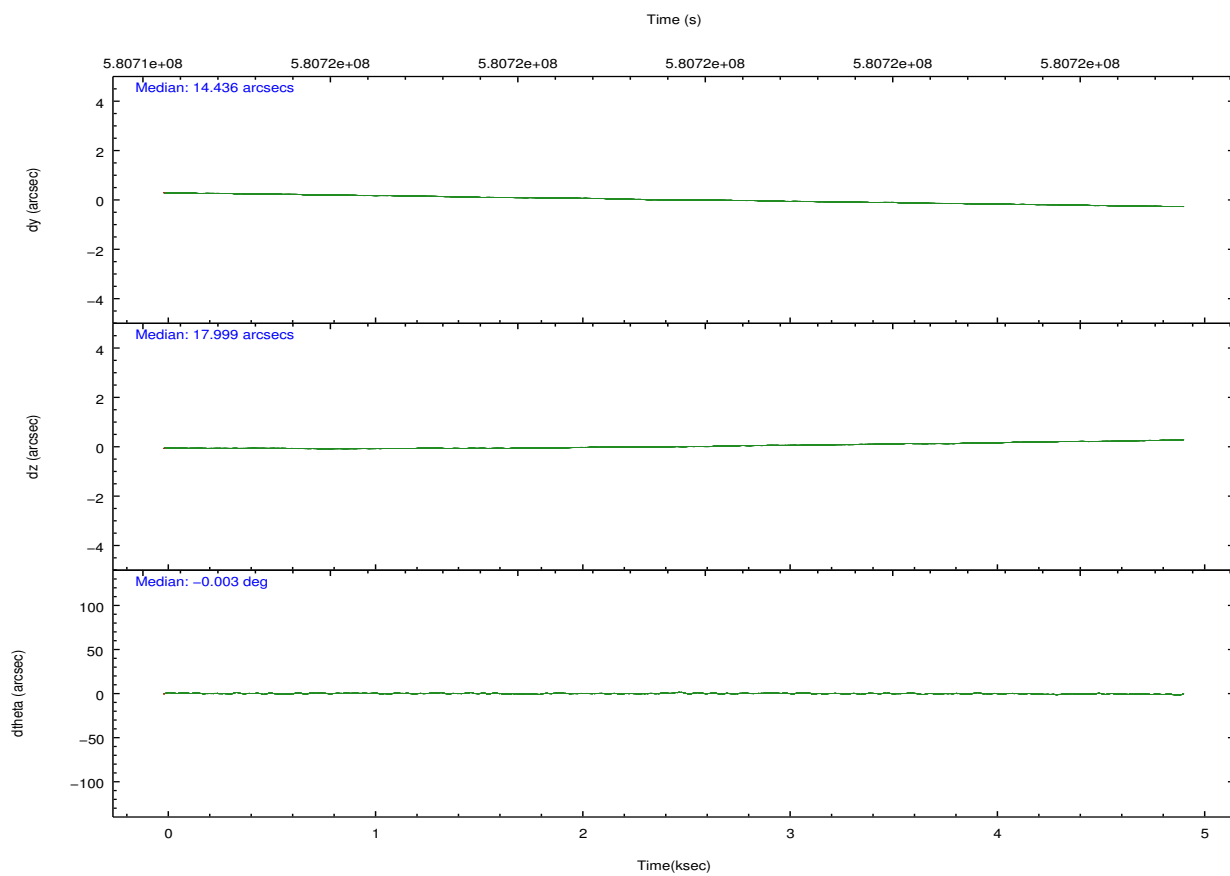
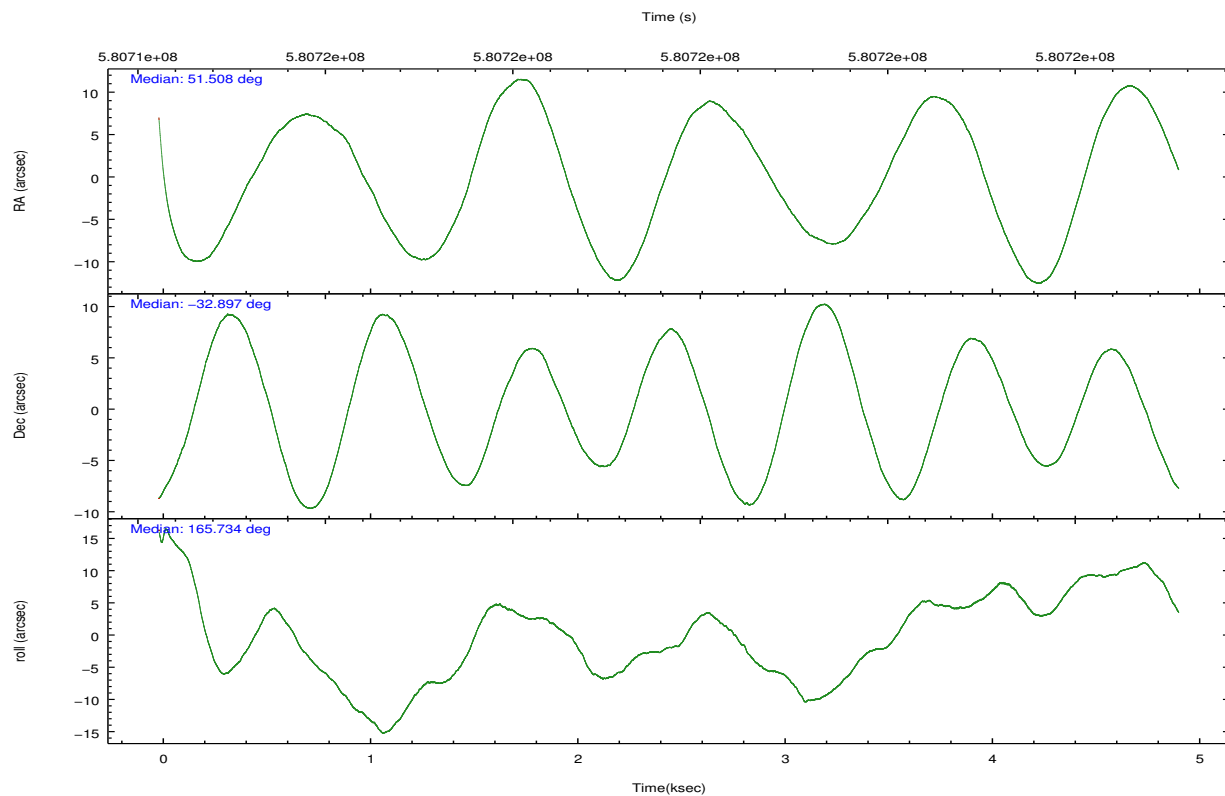
|                | <b>ccd 6</b> | <b>ccd 7</b> | <b>ccd 8</b> |
|----------------|--------------|--------------|--------------|
| grade 0 events | 1251         | 1552         | 3199         |
|                | 3%           | 3%           | 7%           |
| grade 1 events | 10           | 53           | 37           |
|                | 0%           | 0%           | 0%           |
| grade 2 events | 852          | 3698         | 2662         |
|                | 2%           | 9%           | 6%           |
| grade 3 events | 362          | 1401         | 1158         |
|                | 1%           | 3%           | 2%           |
| grade 4 events | 346          | 1429         | 1062         |
|                | 1%           | 3%           | 2%           |
| grade 5 events | 1559         | 4025         | 2264         |
|                | 4%           | 9%           | 5%           |
| grade 6 events | 855          | 9511         | 2976         |
|                | 2%           | 23%          | 7%           |
| grade 7 events | 27712        | 18816        | 28566        |
|                | 84%          | 46%          | 68%          |

## 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                 | 51.538612           | 51.50729616957938    | CCD I2 on                             | N         | N       |
| [deg] Pointing Dec                | -32.888936          | -32.89673189950851   | CCD I3 on                             | N         | N       |
| [deg] Pointing Roll               | 165.605242          | 165.7448477130926    | 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)  | 580714468.184000    | 580713171.13809      | CCD S5 on                             | N         | N       |
| Observation start date            | 2016-05-27T05:33:20 | 2016-05-27T05:12:51  | Number of optional ACIS chips dropped | 0         | 0       |
| [s] Observation end time (MET)    | 580719268.184000    | 580719563.03845      | On-chip summing requested             | N         | N       |
| Observation end date              | 2016-05-27T06:53:20 | 2016-05-27T06:59:23  | Subarray requested                    | NONE      | NONE    |
| Read mode                         | TIMED               | TIMED                | Alternating exposures requested       | N         | N       |
|                                   |                     |                      | [s] Primary exposure time             | 0.000000  | 3.1     |

## 2.3 Aspect



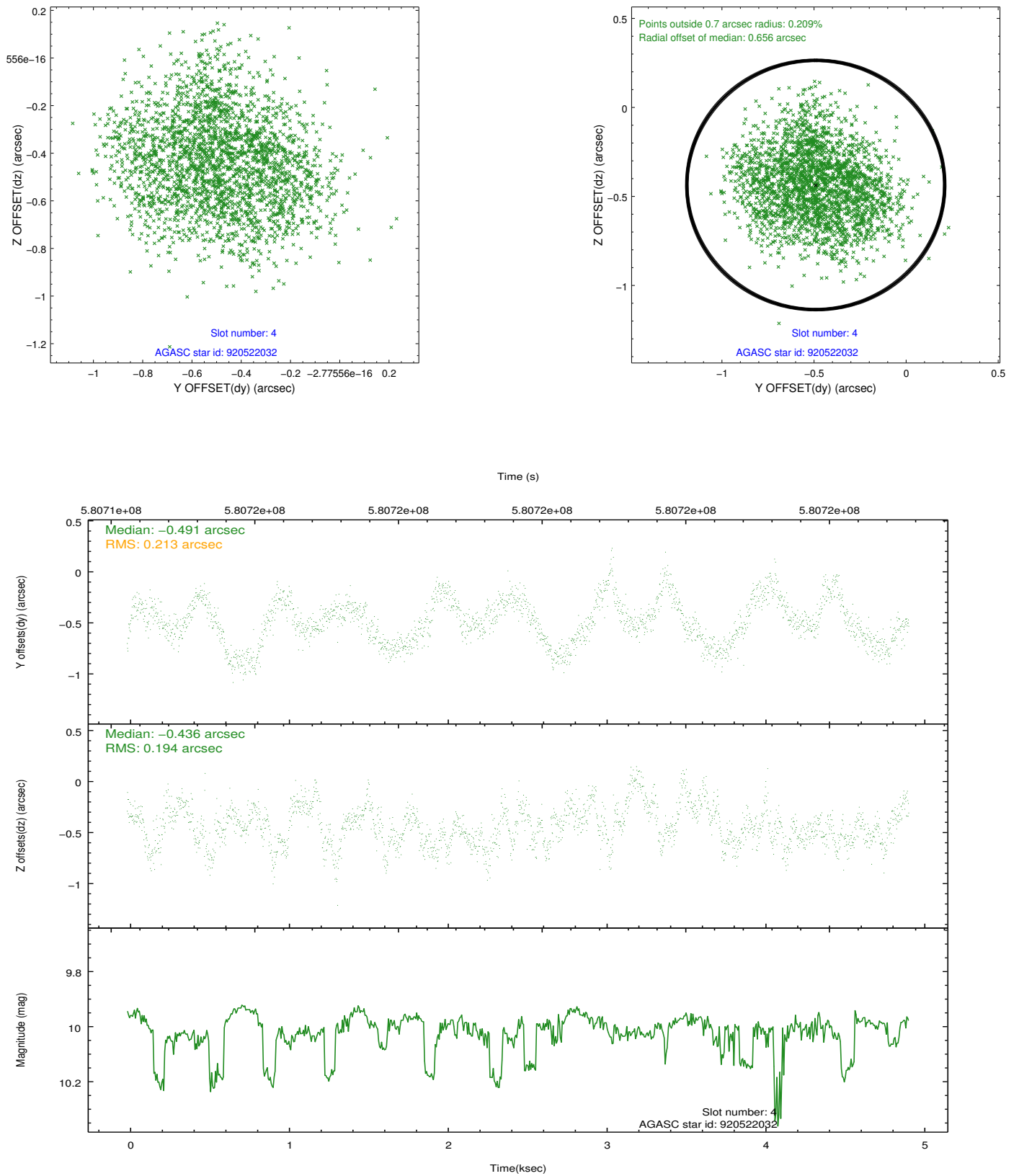


# Slot Statistics

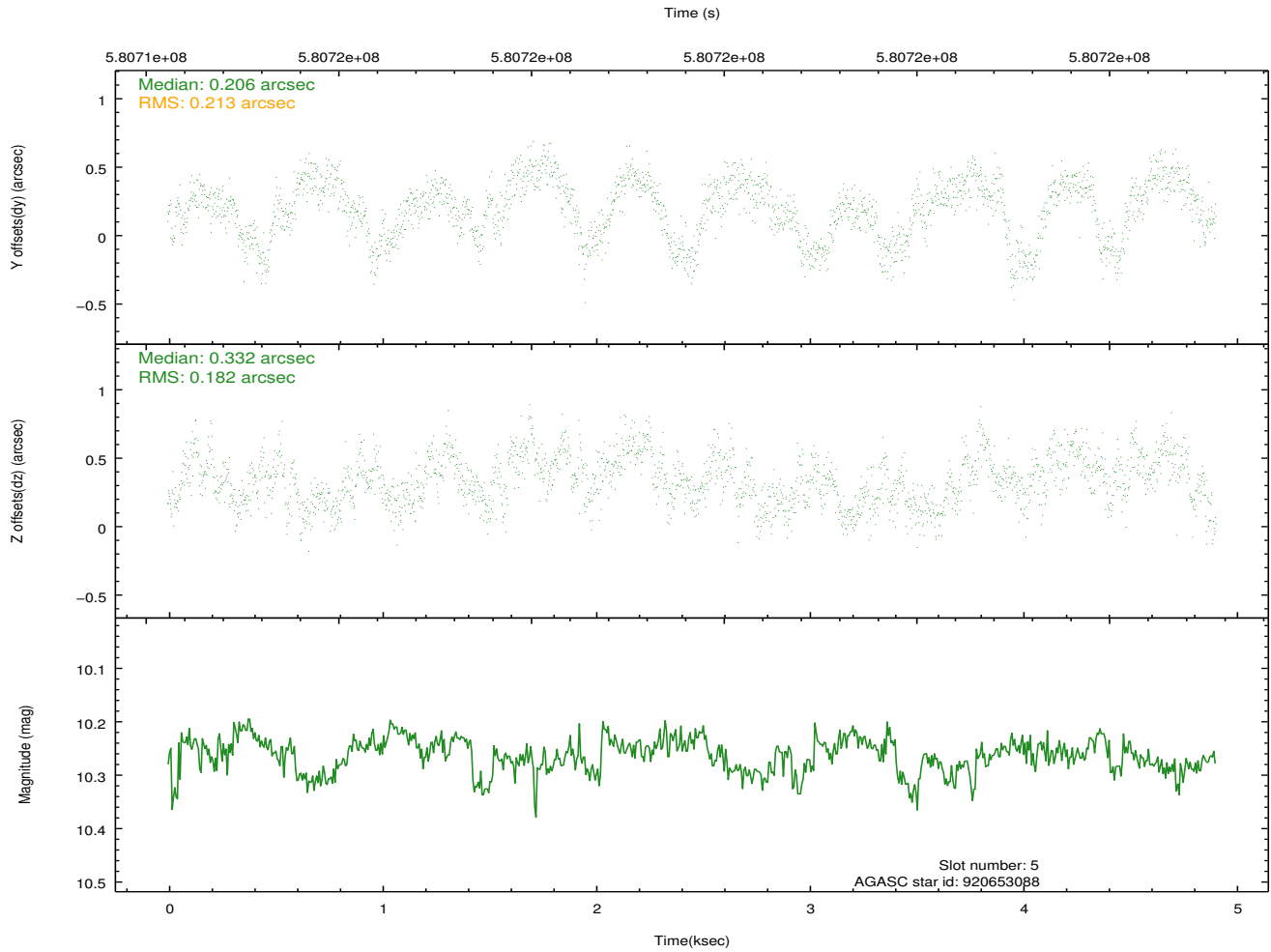
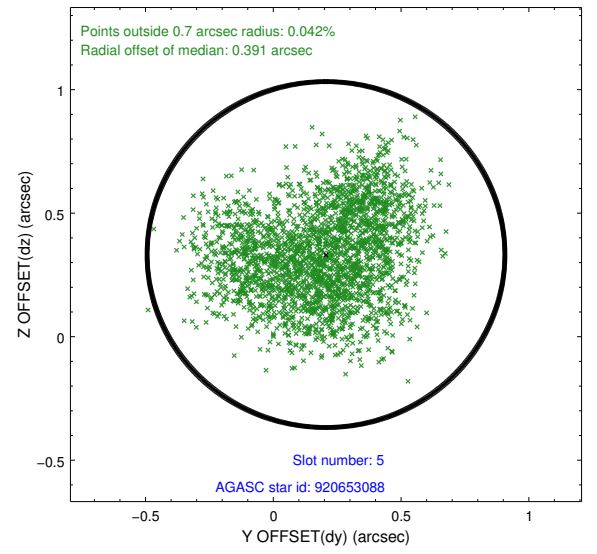
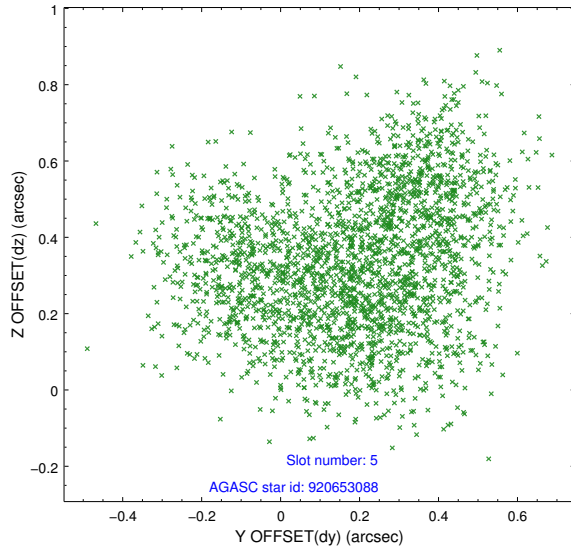
| slot | status  | used | id        | mag   | n_pts | med_dy | med_dz | dr1   | dr2   | ra        | dec        | mean_y   | mean_z   |
|------|---------|------|-----------|-------|-------|--------|--------|-------|-------|-----------|------------|----------|----------|
| 0    | FID     |      | ACIS-S-2  | 7.12  | 1201  | -0.161 | -0.126 | 0.011 | 0.016 | 0.000000  | 0.000000   | -767.59  | -1739.61 |
| 1    | FID     |      | ACIS-S-4  | 7.22  | 1201  | 0.432  | 0.111  | 0.006 | 0.011 | 0.000000  | 0.000000   | 2145.74  | 167.78   |
| 2    | FID     |      | ACIS-S-5  | 7.23  | 1201  | -0.303 | 0.024  | 0.011 | 0.017 | 0.000000  | 0.000000   | -1818.96 | 162.83   |
| 3    | OMITTED |      |           | 0.00  | 0     | 0.000  | 0.000  | 0.000 | 0.000 | 0.000000  | 0.000000   | 0.00     | 0.00     |
| 4    | GUIDE   | used | 920522032 | 10.01 | 2396  | -0.491 | -0.436 | 0.319 | 0.472 | 50.693422 | -33.331557 | 2063.40  | 2185.71  |
| 5    | GUIDE   | used | 920653088 | 10.26 | 2392  | 0.206  | 0.332  | 0.309 | 0.467 | 52.326823 | -32.539524 | -2004.63 | -1803.28 |
| 6    | GUIDE   | used | 920655080 | 9.18  | 2399  | -0.023 | -0.108 | 0.209 | 0.290 | 52.180556 | -33.207498 | -2159.64 | 635.53   |
| 7    | GUIDE   | used | 920650552 | 9.92  | 2396  | 0.330  | 0.211  | 0.196 | 0.330 | 52.137456 | -32.782311 | -1661.28 | -816.92  |

## 2.4 Star Slots

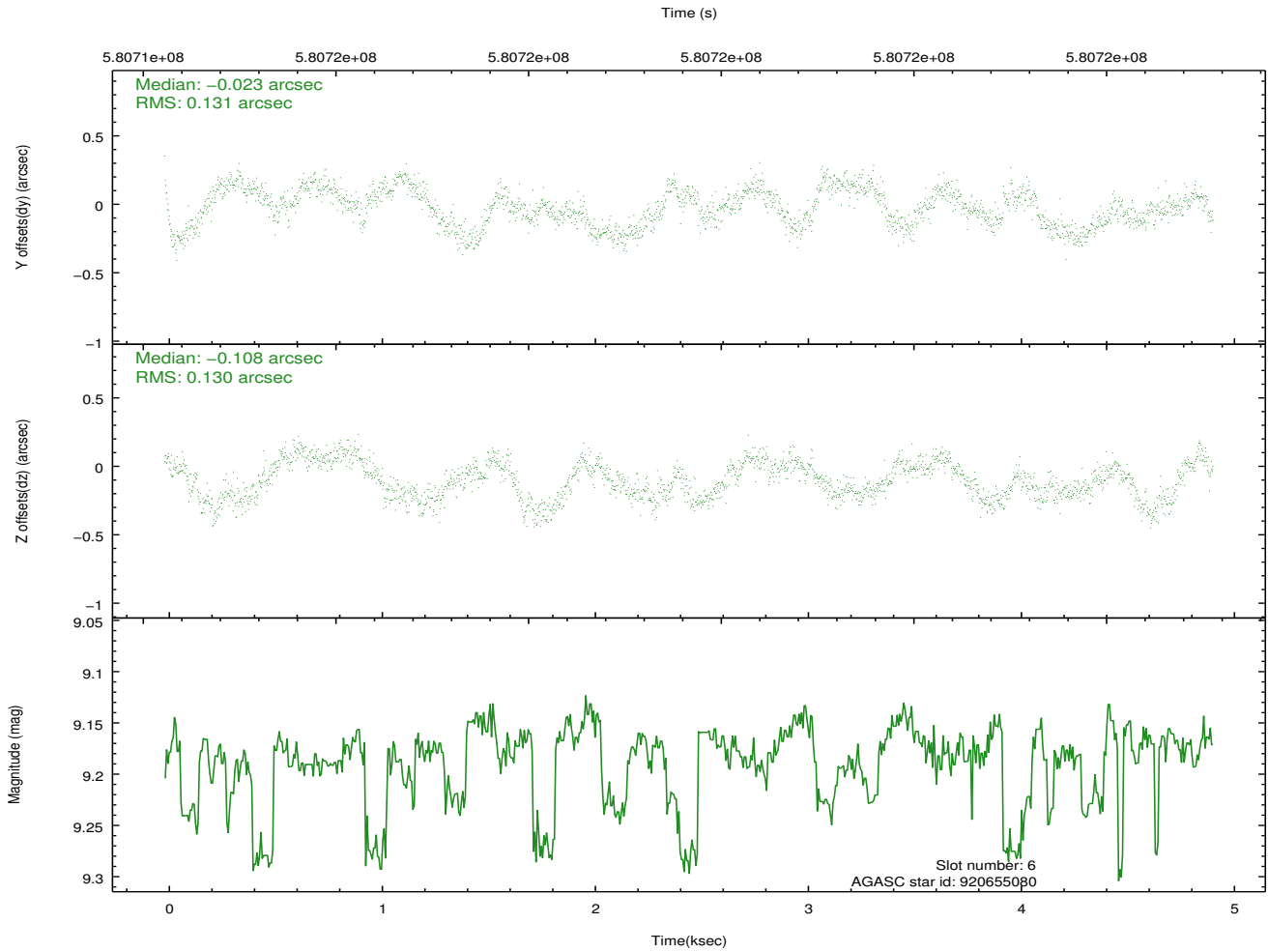
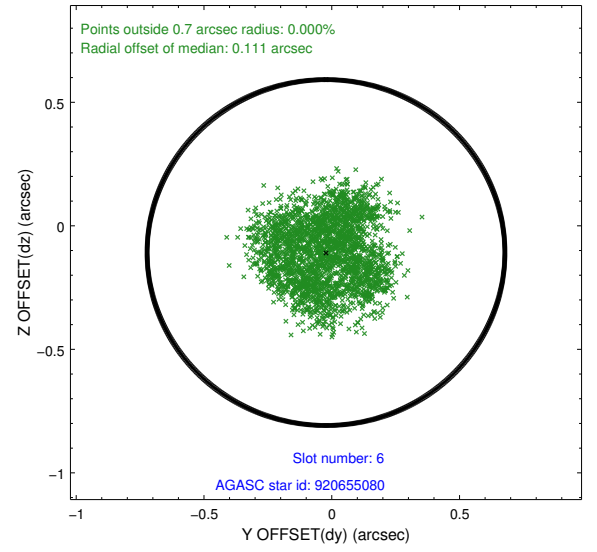
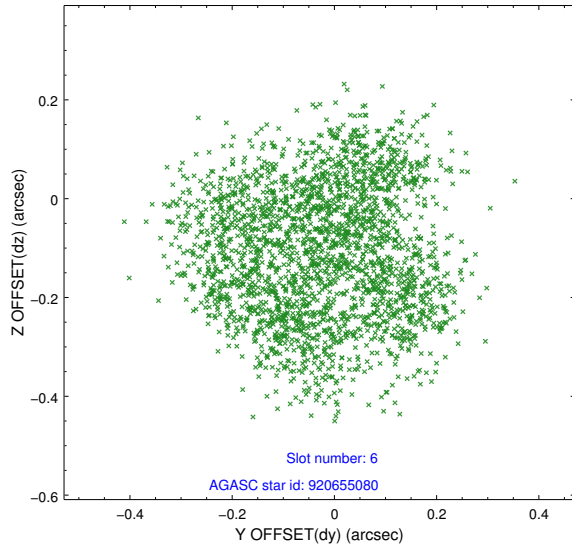
### 2.4.1 Slot 4



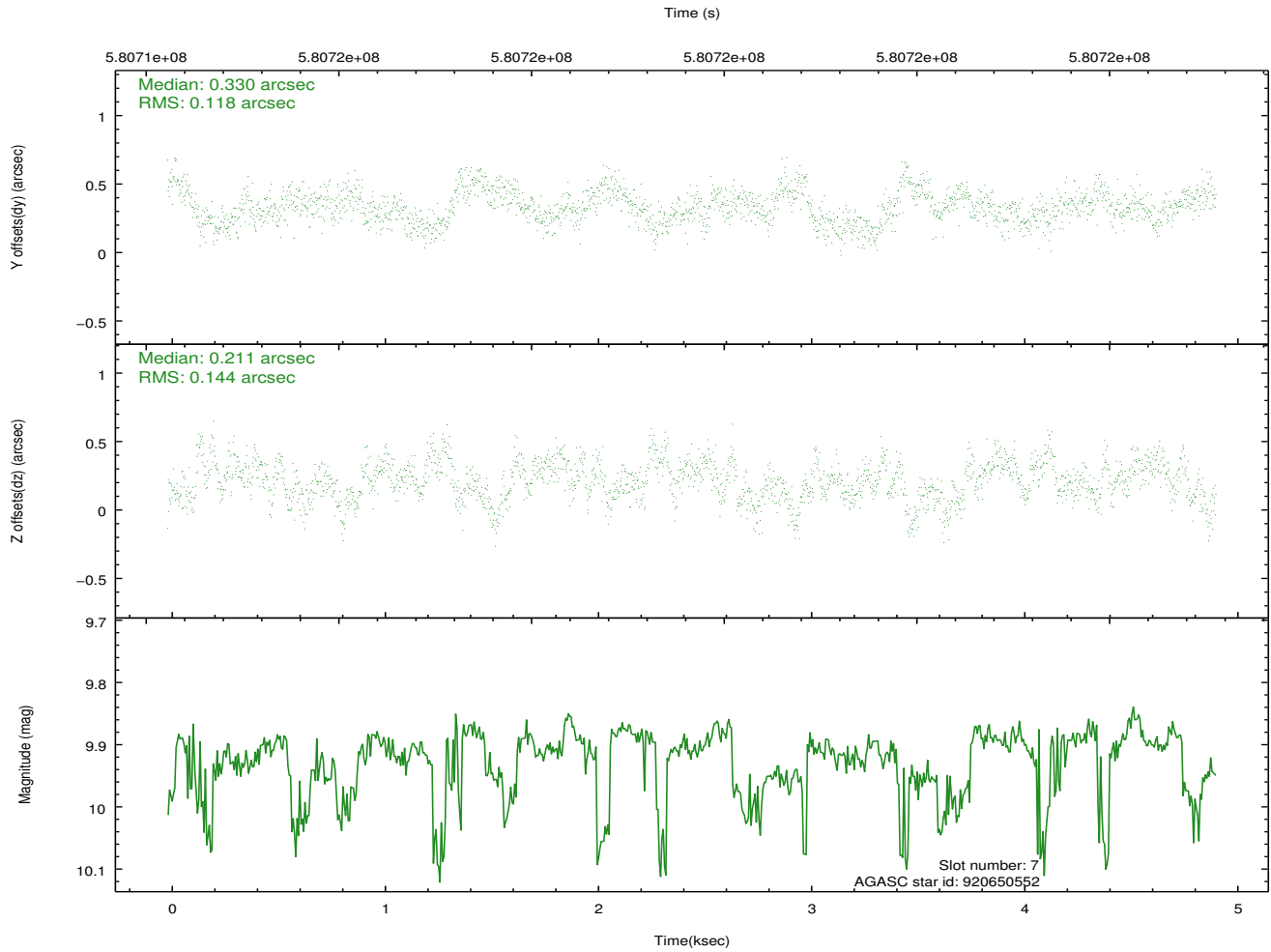
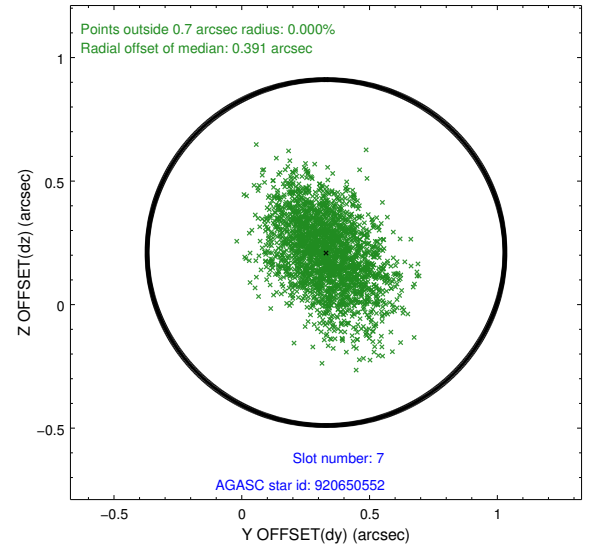
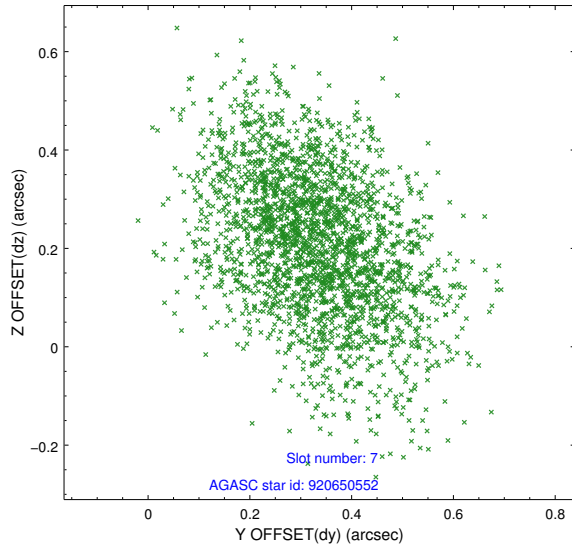
## 2.4.2 Slot 5



### 2.4.3 Slot 6

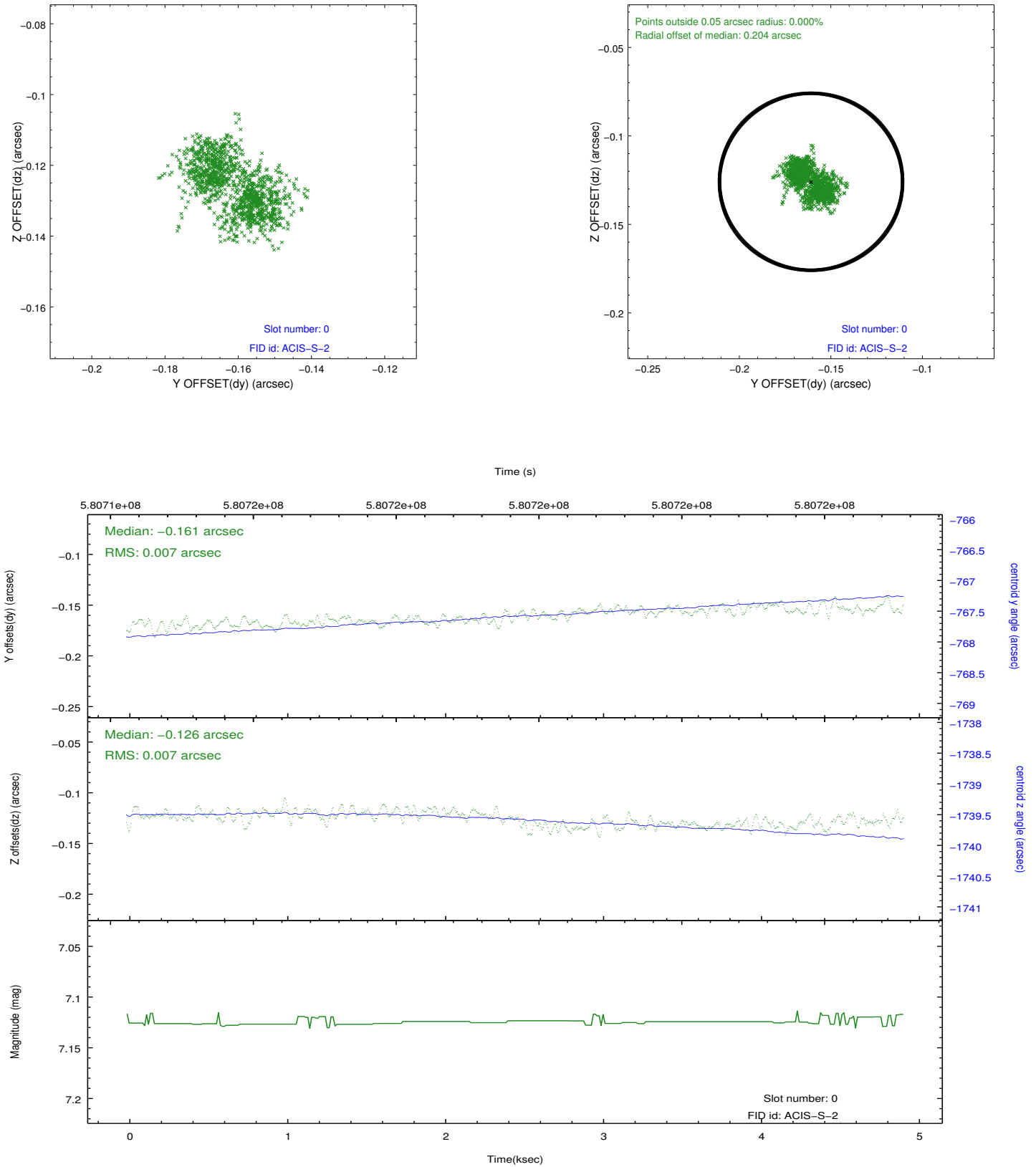


## 2.4.4 Slot 7

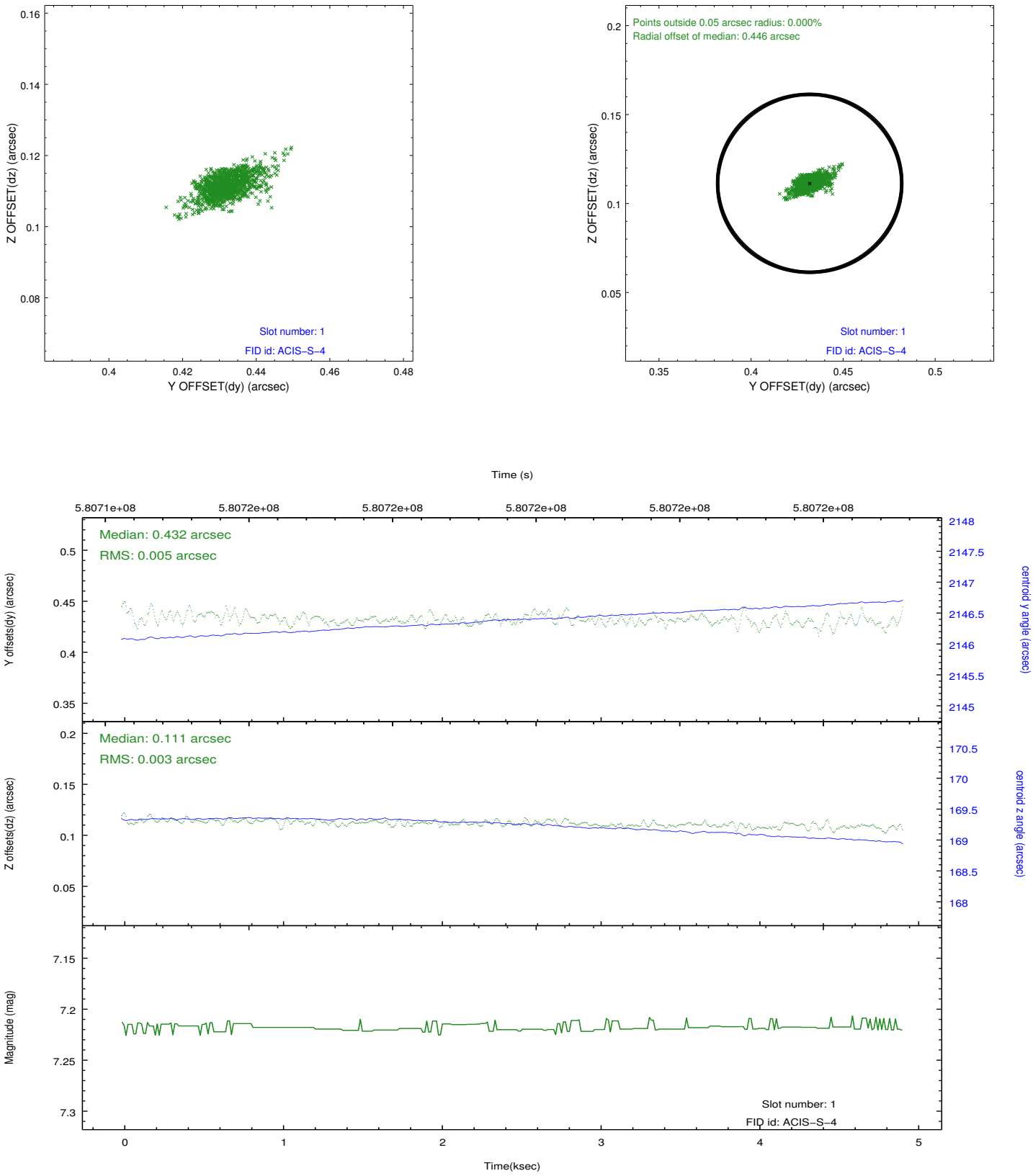


## 2.5 FID Slots

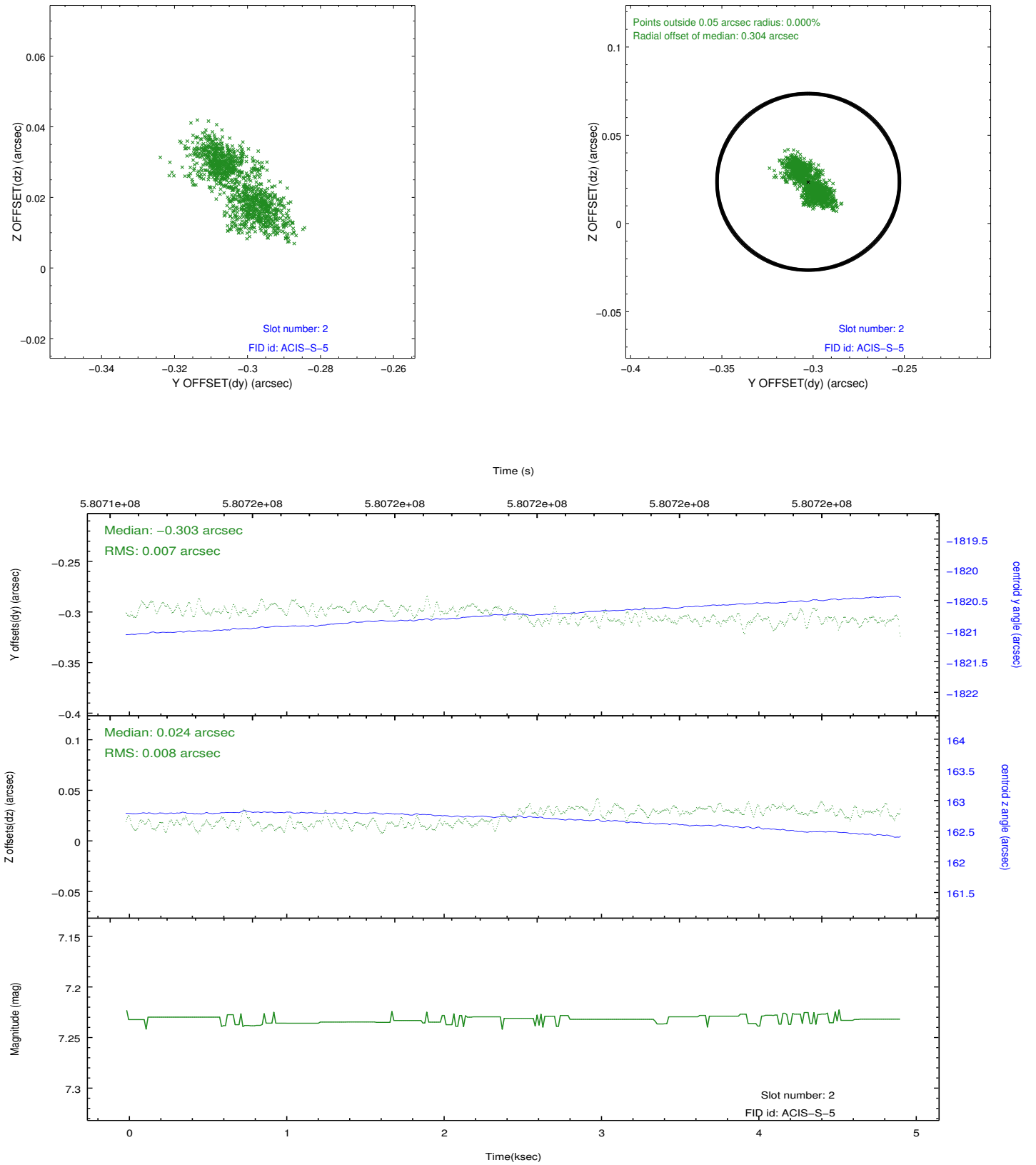
### 2.5.1 Slot 0



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)      | 2016.06.02      |
| V&V Edition                | 1               |
| V&V Disposition and Status | OK              |
| V&V Charge Time            | 4.9135000379086 |

### A.2 Comments

The guide star in slot 3 was removed from the aspect solution due to poor data quality. The aspect solution is improved by the removal of this star from the solution.