

# V&V Reference Report

## L2 ASCDS Version : 10.5

Observation 17117 - L2 Version 2  
Chandra X-Ray Center

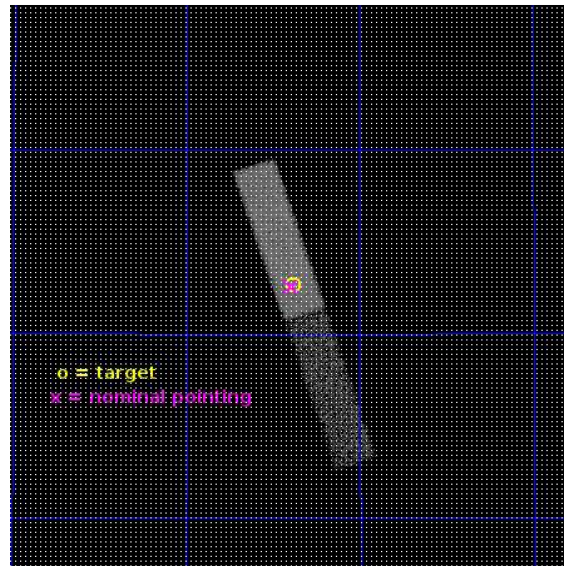
L2 Processing Date : Jun 22 2016

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# 1 Front

|          |                                                       |                                             |
|----------|-------------------------------------------------------|---------------------------------------------|
| seq_num  | 703116                                                | Sequence number                             |
| obs_id   | 17117                                                 | Observation id                              |
| title    | UNCOVERING AGN FUELING AND FEEDBACK IN DWARF GALAXIES | Proposal tit                                |
| observer | Professor Richard Mushotzky                           | Principal investigator                      |
| object   | NGC4102                                               | Source name                                 |
| dtcycle  | 0                                                     | &#160                                       |
| cycle    | P                                                     | events from which exps?<br>Prim/Second/Both |
| ra_targ  | 181.595417                                            | Observer's specified target RA [deg]        |
| dec_targ | 52.711083                                             | Observer's specified target Dec [deg]       |
| ra_nom   | 181.59888672797                                       | Nominal RA [deg]                            |
| dec_nom  | 52.70946030729                                        | Nominal Dec [deg]                           |
| roll_nom | 251.65184324557                                       | Nominal Roll [deg]                          |
| revision | 2                                                     | Processing version of data                  |
| ontime   | 30316.499196768                                       | Sum of GTIs [s]                             |
| livetime | 28994.356538607                                       | Livetime [s]                                |
| ontime6  | 30315.558156848                                       | Sum of GTIs [s]                             |
| ontime7  | 30316.499196768                                       | Sum of GTIs [s]                             |
| l2events | 35861                                                 | Number of level 2 events                    |

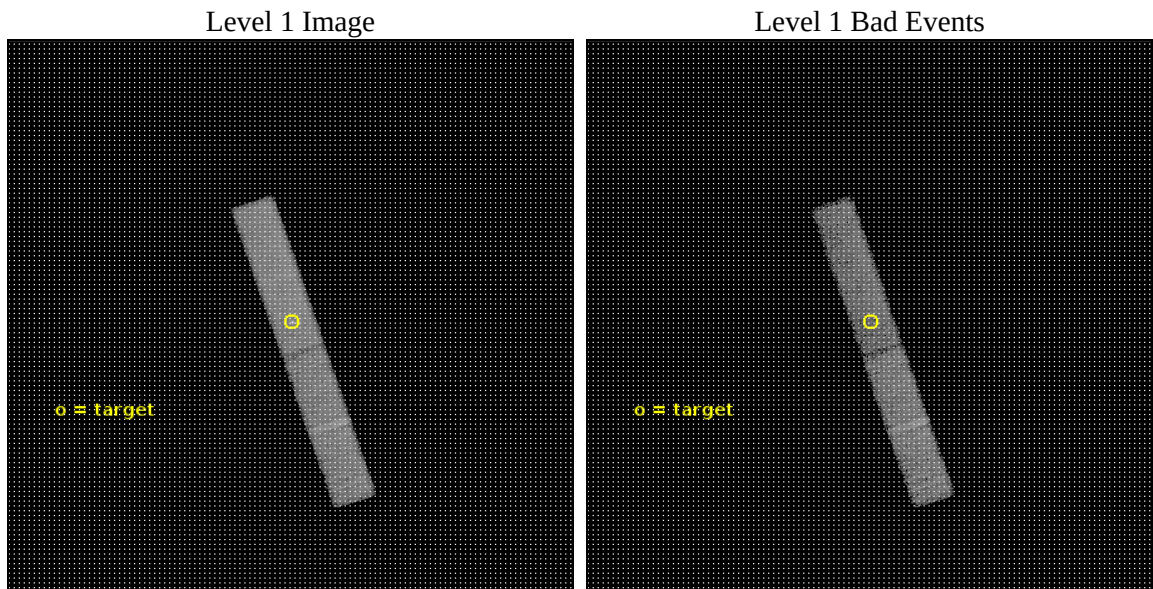




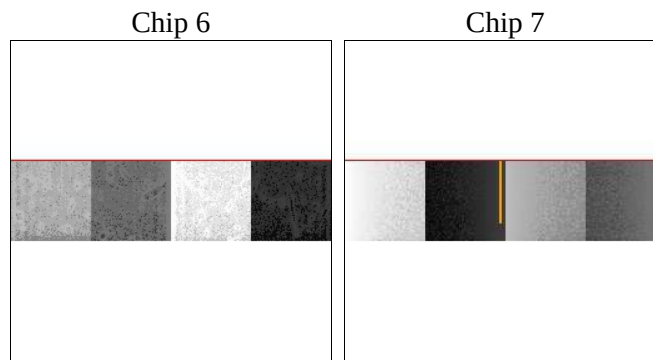
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

|          |                     |                                |                |                 |                                         |
|----------|---------------------|--------------------------------|----------------|-----------------|-----------------------------------------|
| obi_num  | 0                   | Obi number                     | sched_exp_time | 30218.064000    | [s] Scheduled observation exposure time |
| ascdsver | 10.5                | Processing system revision     | ontime         | 30316.499196768 | Sum of GTIs [s]                         |
| caldsver | 4.7.2               | &#160                          | ontime6        | 30315.558156848 | Sum of GTIs [s]                         |
| date     | 2016-06-22T12:02:40 | Date and time of file creation | ontime7        | 30316.499196768 | Sum of GTIs [s]                         |
| revision | 2                   | Processing version of data     | l1events       | 117839          | Number of level 1 events                |

### 2.1.4 Events

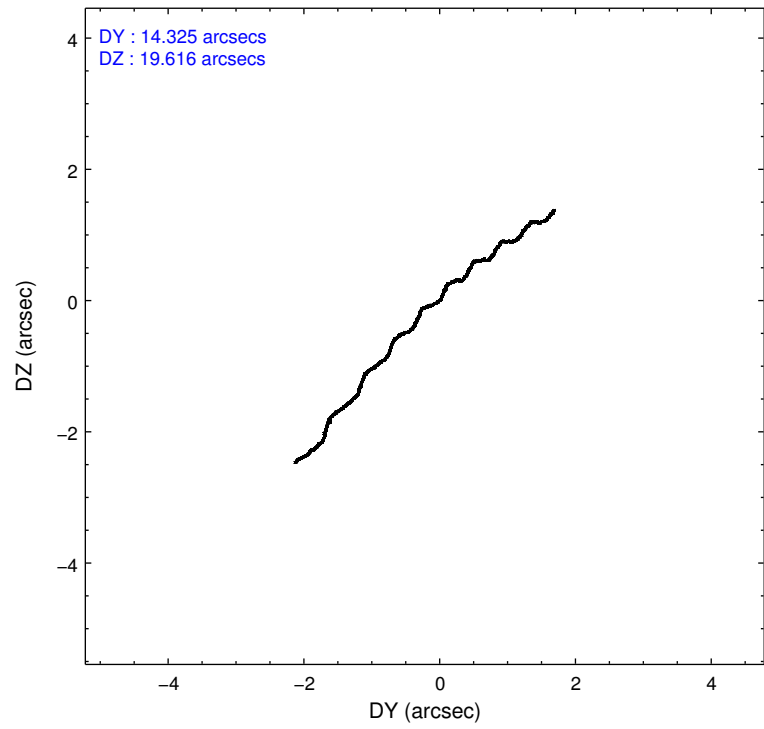
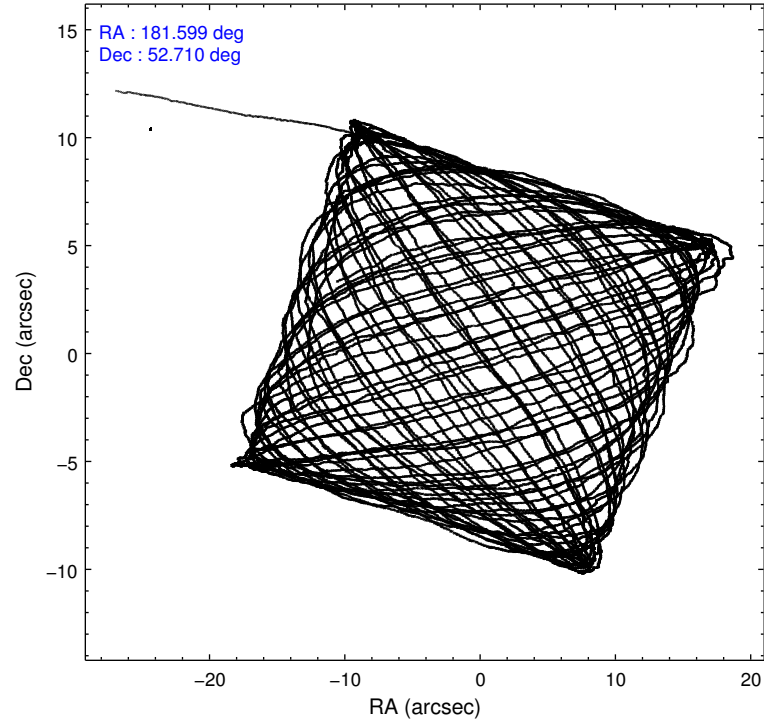
|                 | <b>ccd 6</b> | <b>ccd 7</b> |
|-----------------|--------------|--------------|
| level 1 events  | 53888        | 63951        |
| rejected events | 47697        | 32218        |
| rejected %      | <b>88%</b>   | <b>50%</b>   |

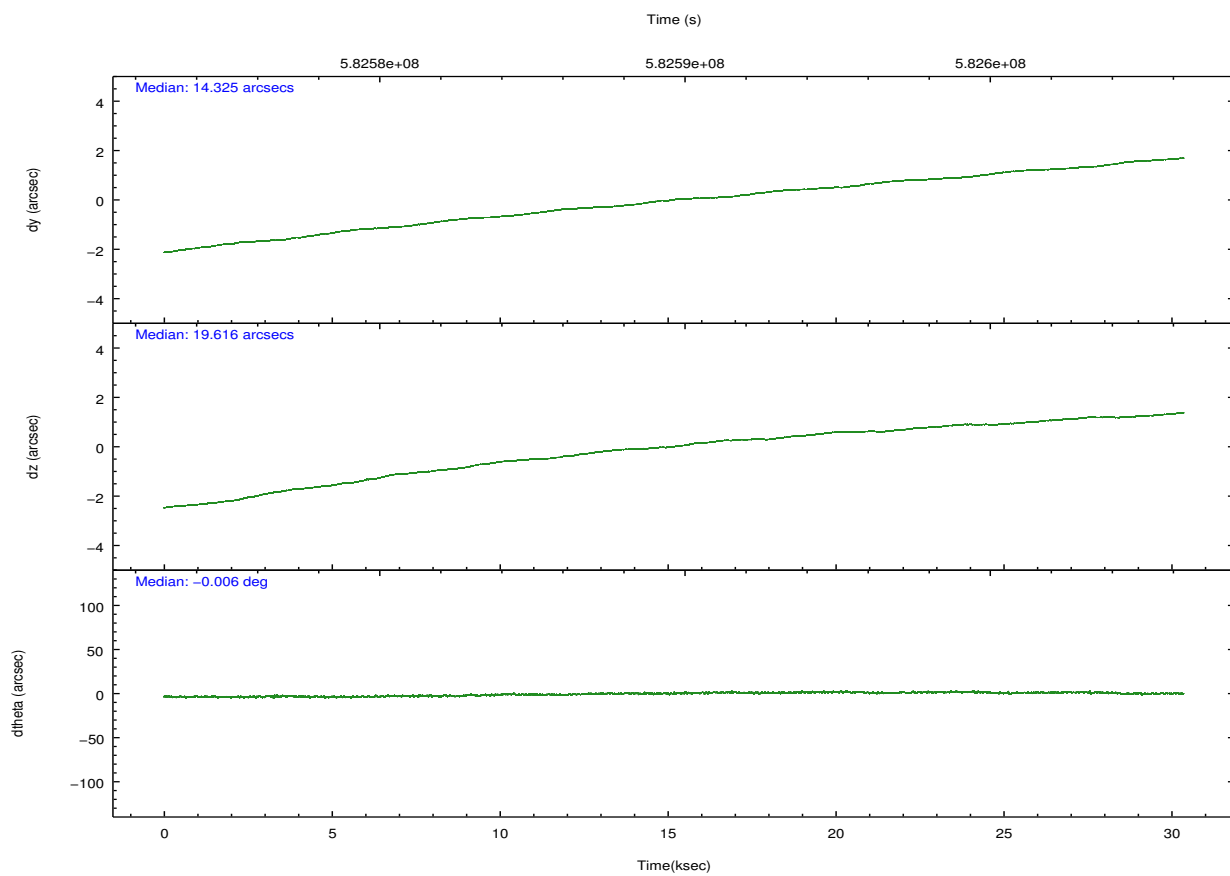
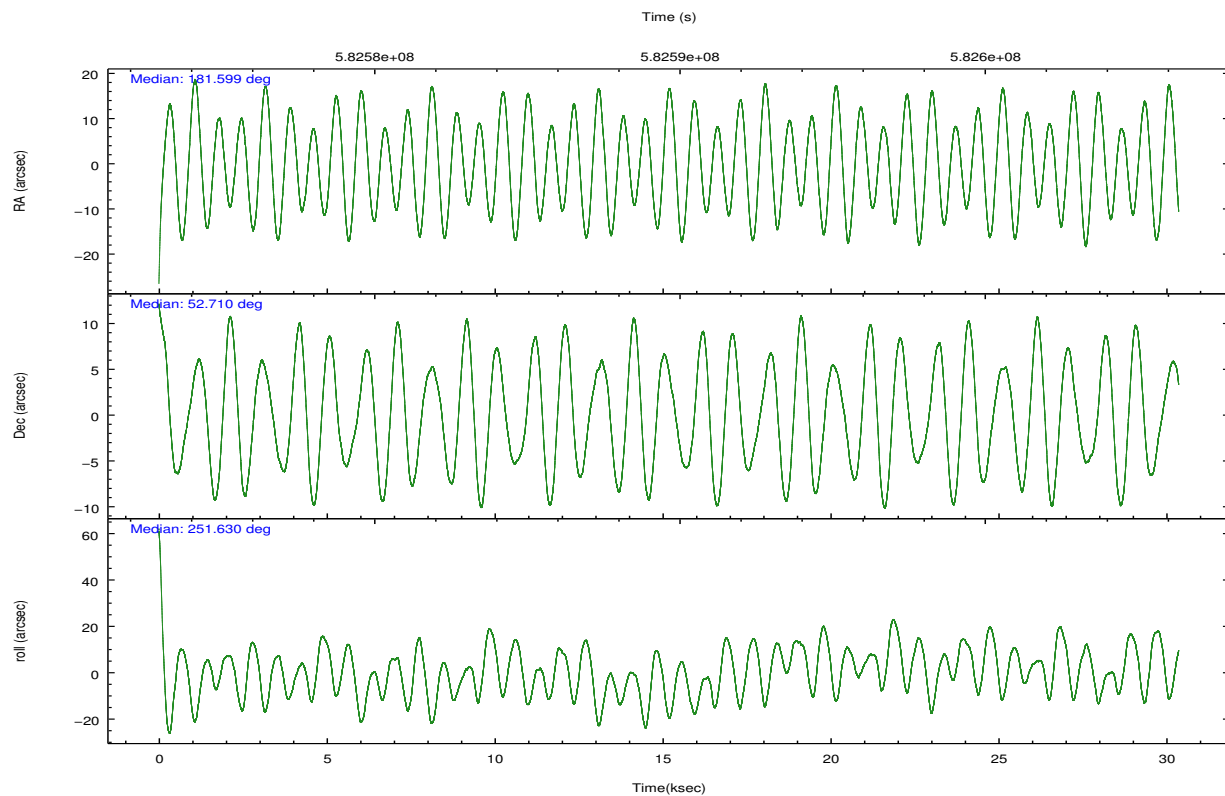
|                | <b>ccd 6</b> | <b>ccd 7</b> |
|----------------|--------------|--------------|
| grade 0 events | 1751         | 3555         |
|                | 3%           | 5%           |
| grade 1 events | 23           | 105          |
|                | 0%           | 0%           |
| grade 2 events | 1274         | 6806         |
|                | 2%           | 10%          |
| grade 3 events | 929          | 3432         |
|                | 1%           | 5%           |
| grade 4 events | 991          | 3392         |
|                | 1%           | 5%           |
| grade 5 events | 2287         | 6736         |
|                | 4%           | 10%          |
| grade 6 events | 1246         | 14548        |
|                | 2%           | 22%          |
| grade 7 events | 45387        | 25377        |
|                | 84%          | 39%          |

## 2.2 Compared Parameters

| Parameter                         | Planned             | Actual               | Parameter                             | Planned   | Actual  |
|-----------------------------------|---------------------|----------------------|---------------------------------------|-----------|---------|
| Instrument                        | ACIS                | ACIS                 | Obspar format version number          | 7         | 7       |
| Detector                          | ACIS-67             | ACIS-67              | Obspar file type                      | PREDICTED | ACTUAL  |
| Grating                           | NONE                | NONE                 | Obspar update status                  | NONE      | UPDATED |
| Data mode                         | FAINT               | FAINT                | Number of optional ACIS chips dropped | 0         | 0       |
| Observation mode                  | POINTING            | POINTING             | On-chip summing requested             | N         | N       |
| [deg] Pointing RA                 | 181.589138          | 181.598886727965     | Subarray requested                    | CUSTOM    | 1/4     |
| [deg] Pointing Dec                | 52.736249           | 52.70946030729048    | Subarray start row                    | 385       | 385     |
| [deg] Pointing Roll               | 251.502945          | 251.6518432455651    | Subarray row count                    | 256       | 256     |
| [mm] SIM focus pos                | -0.684267           | -0.6828225247311905  | Alternating exposures requested       | N         | N       |
| [mm] SIM defocus                  | 0                   | 0.001444936568705701 | [s] Primary exposure time             | 0.000000  | 0.9     |
| [mm] SIM translation stage pos    | -190.132523         | -190.1400660498719   |                                       |           |         |
| [mm] SIM translation stage offset | 0                   | 0.00754346686406393  |                                       |           |         |
| [s] Observation start time (MET)  | 582574595.184000    | 582573318.1821001    |                                       |           |         |
| Observation start date            | 2016-06-17T18:15:27 | 2016-06-17T17:55:18  |                                       |           |         |
| [s] Observation end time (MET)    | 582604813.184000    | 582605043.47142      |                                       |           |         |
| Observation end date              | 2016-06-18T02:39:05 | 2016-06-18T02:44:03  |                                       |           |         |
| Read mode                         | TIMED               | TIMED                |                                       |           |         |

## 2.3 Aspect



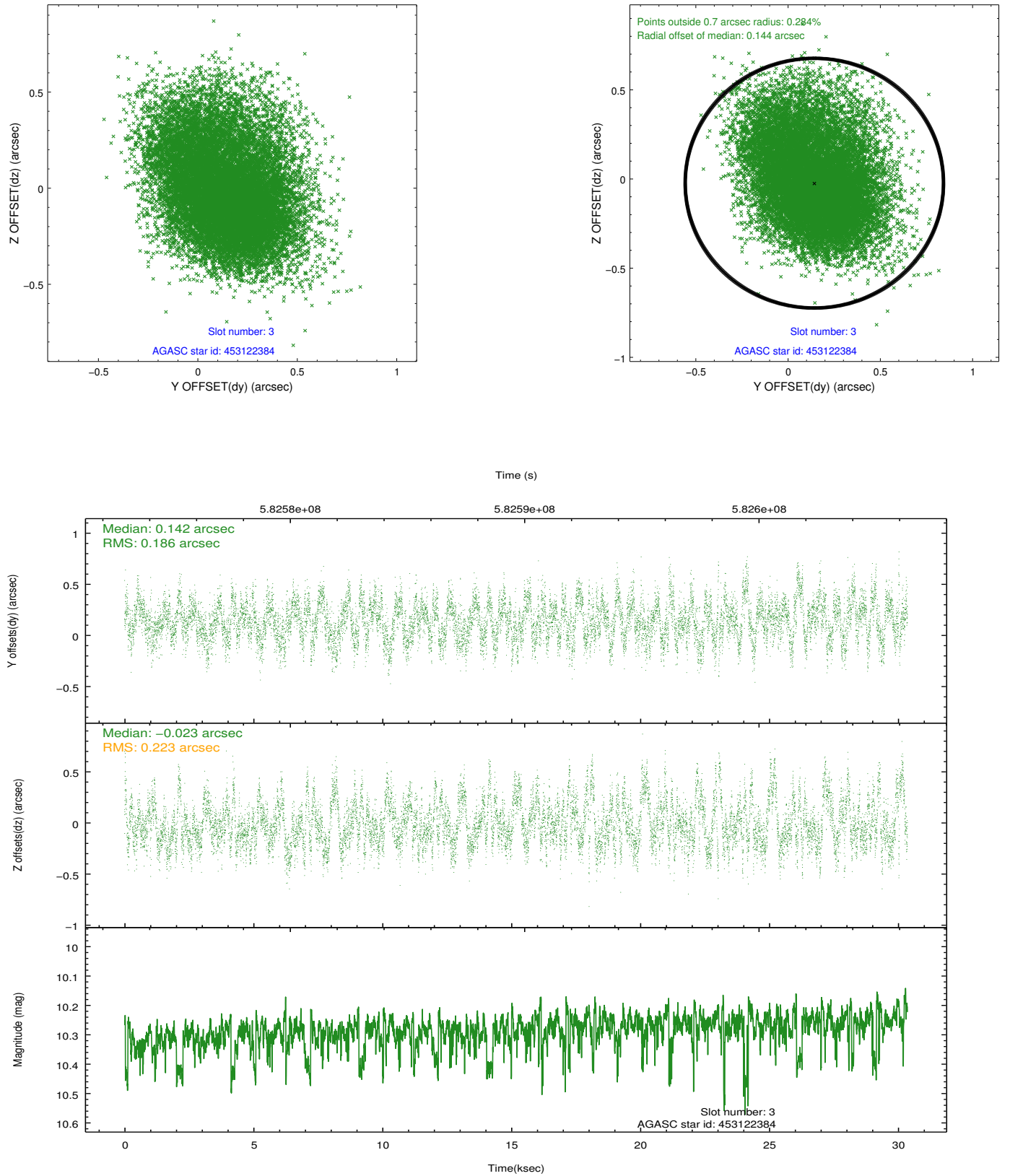


# Slot Statistics

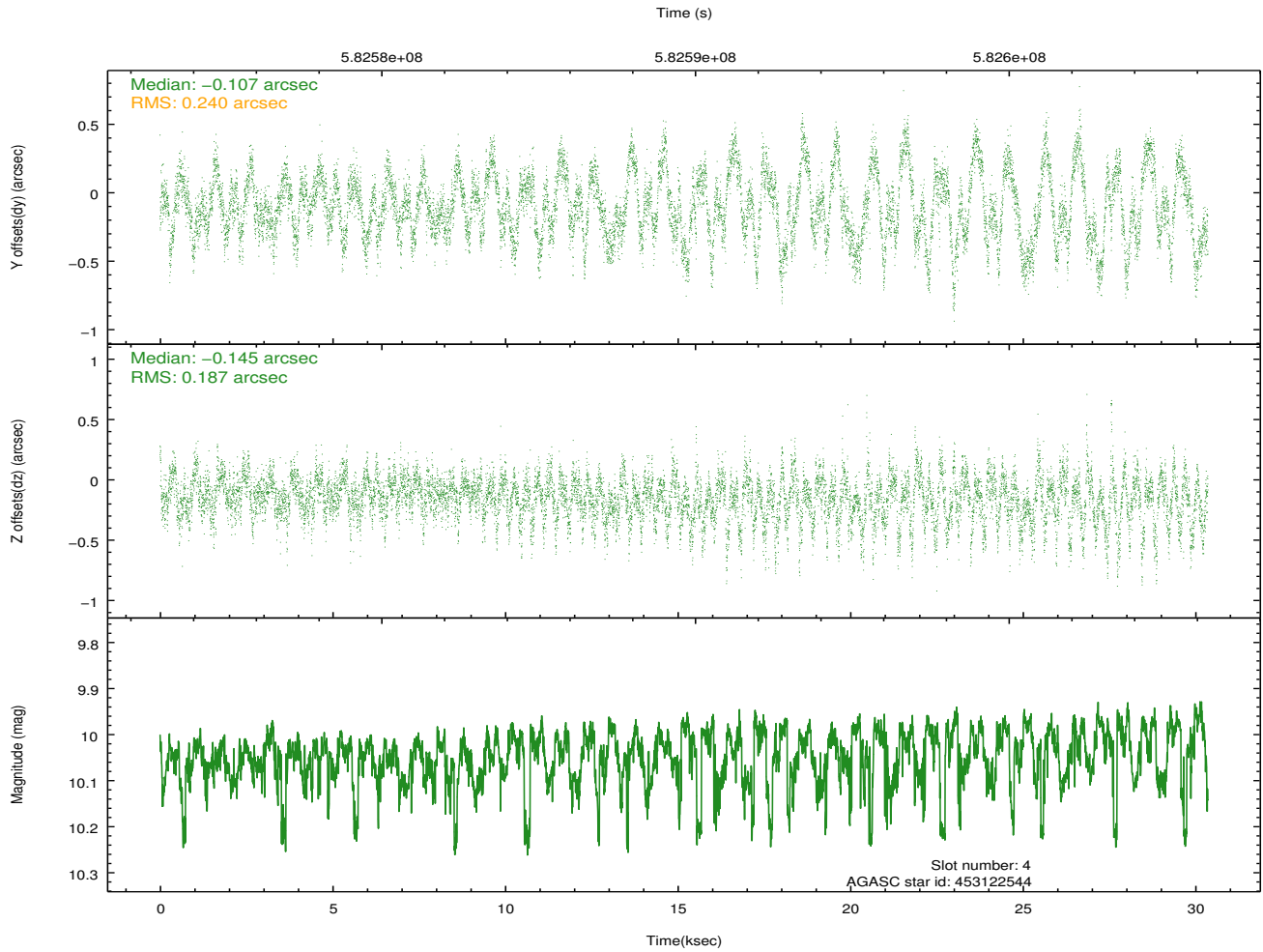
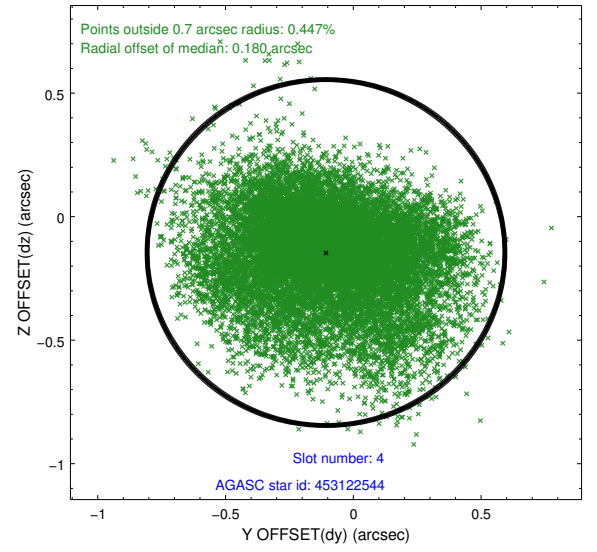
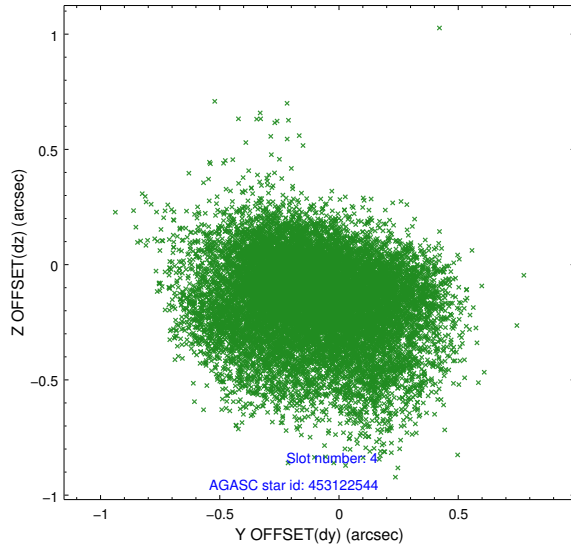
| slot | status  | used | id        | mag   | n_pts | med_dy | med_dz | dr1   | dr2   | ra         | dec       | mean_y  | mean_z   |
|------|---------|------|-----------|-------|-------|--------|--------|-------|-------|------------|-----------|---------|----------|
| 0    | FID     |      | ACIS-S-1  | 7.20  | 7406  | -0.076 | -0.072 | 0.051 | 0.069 | 0.000000   | 0.000000  | 928.79  | -1736.62 |
| 1    | FID     |      | ACIS-S-4  | 7.21  | 7406  | 0.187  | 0.061  | 0.033 | 0.062 | 0.000000   | 0.000000  | 2146.47 | 167.59   |
| 2    | FID     |      | ACIS-S-6  | 7.35  | 7406  | -0.137 | 0.035  | 0.026 | 0.037 | 0.000000   | 0.000000  | 394.72  | 805.00   |
| 3    | GUIDE   | used | 453122384 | 10.28 | 14775 | 0.142  | -0.023 | 0.307 | 0.506 | 180.597214 | 52.402858 | 1816.43 | -1690.68 |
| 4    | GUIDE   | used | 453122544 | 10.04 | 14766 | -0.107 | -0.145 | 0.326 | 0.525 | 180.534606 | 52.475376 | 1609.27 | -1900.20 |
| 5    | GUIDE   | used | 502406088 | 9.93  | 14786 | 0.212  | 0.117  | 0.301 | 0.465 | 181.997289 | 52.721139 | -232.37 | 863.17   |
| 6    | GUIDE   | used | 502531816 | 9.41  | 14795 | -0.240 | 0.031  | 0.224 | 0.340 | 182.338444 | 52.570567 | 39.05   | 1741.96  |
| 7    | OMITTED |      |           | 0.00  | 0     | 0.000  | 0.000  | 0.000 | 0.000 | 0.000000   | 0.000000  | 0.00    | 0.00     |

## 2.4 Star Slots

### 2.4.1 Slot 3

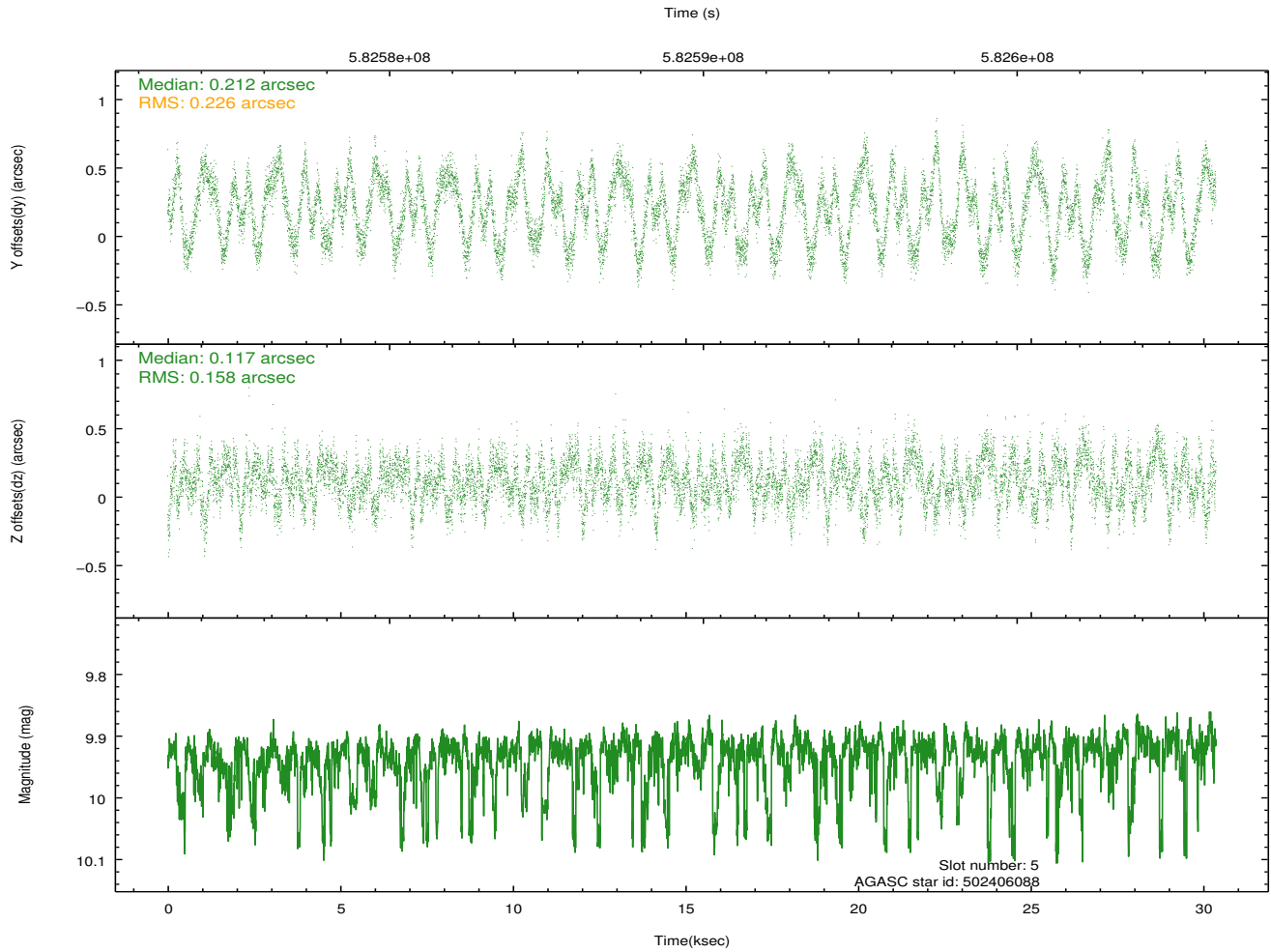
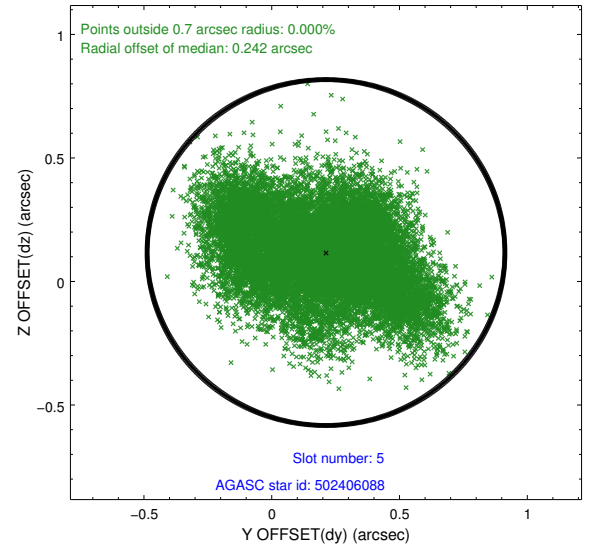
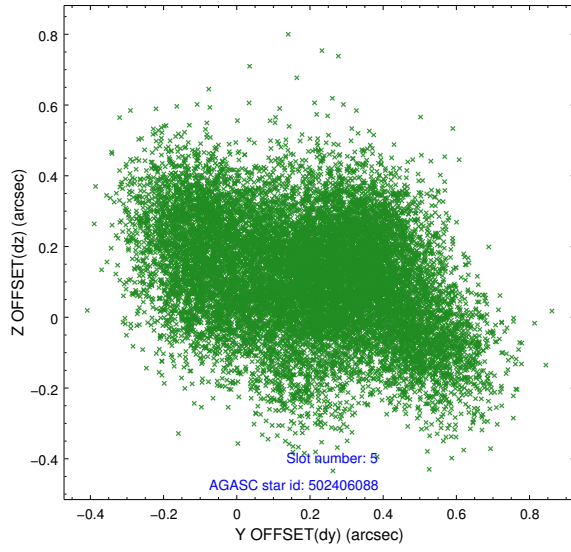


## 2.4.2 Slot 4

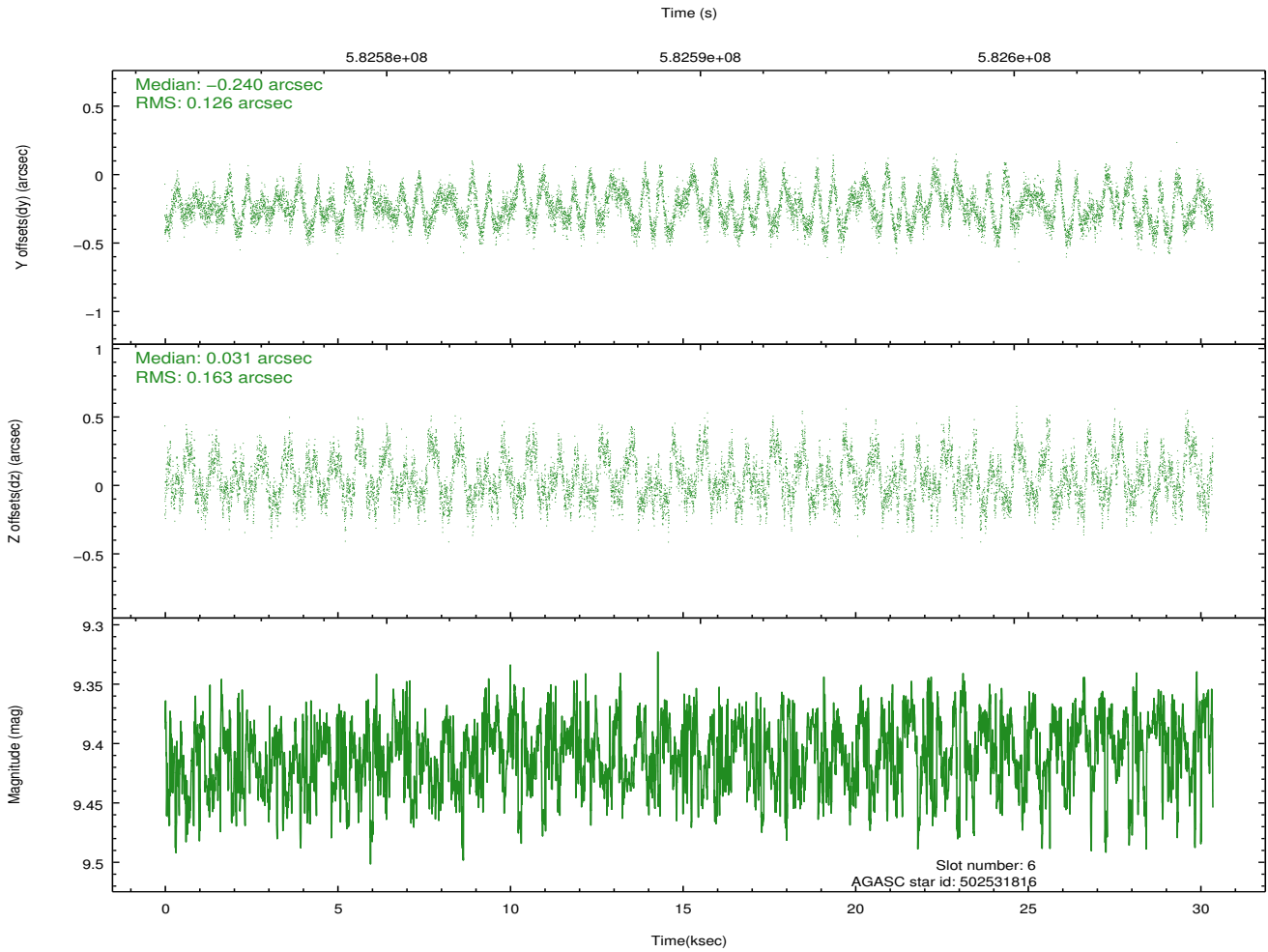
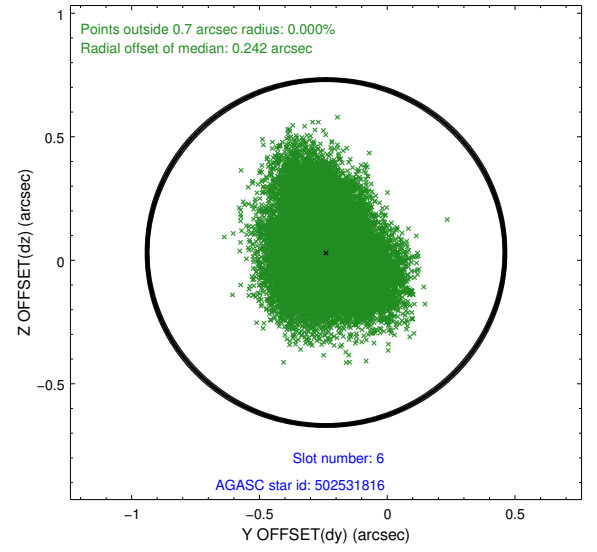
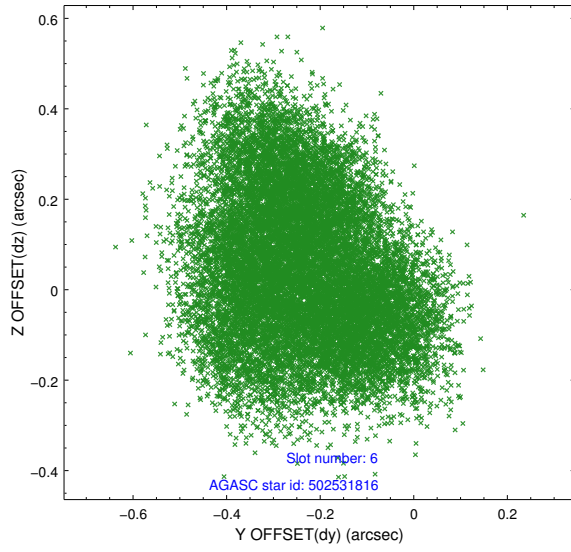




### 2.4.3 Slot 5

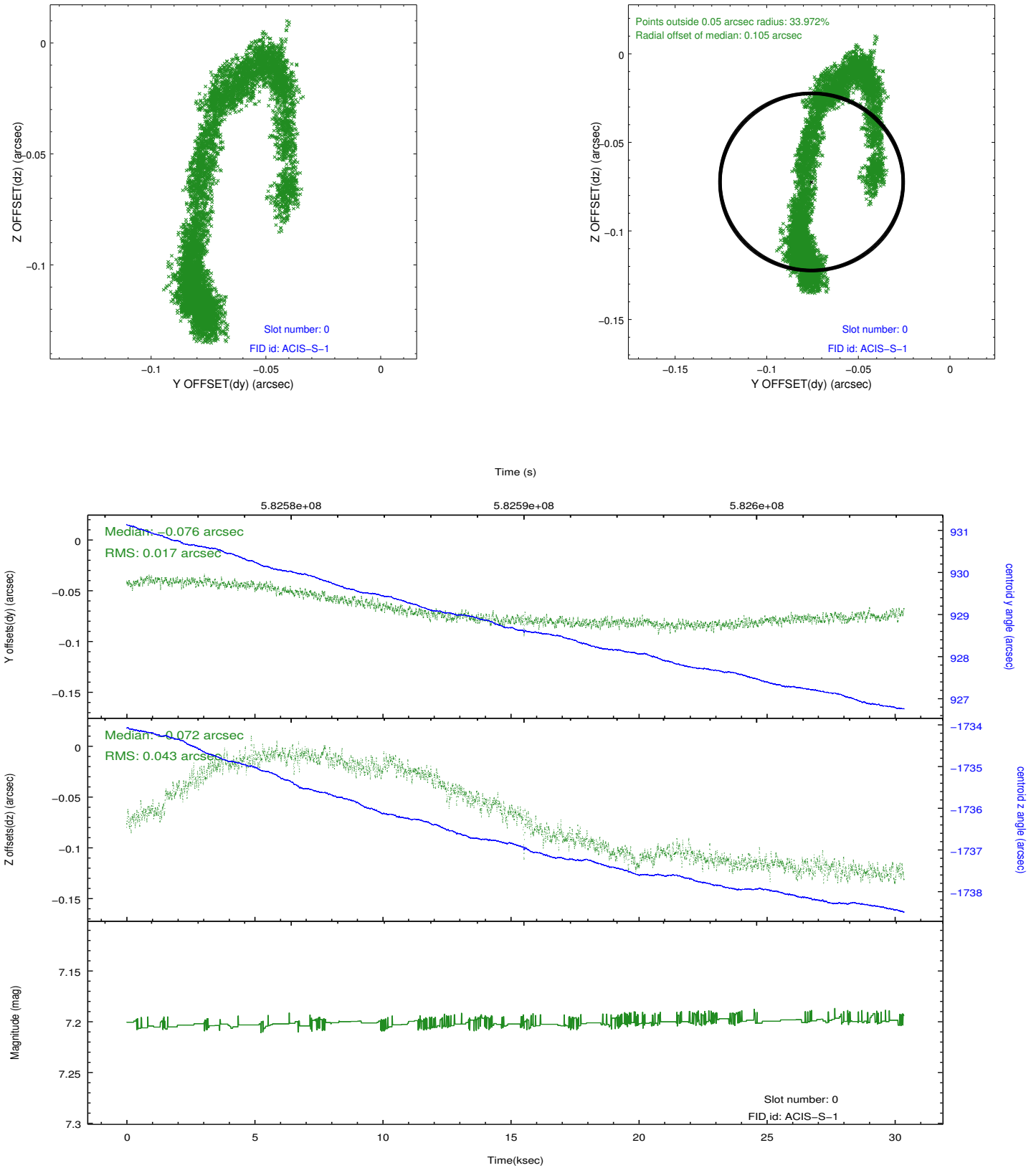


## 2.4.4 Slot 6

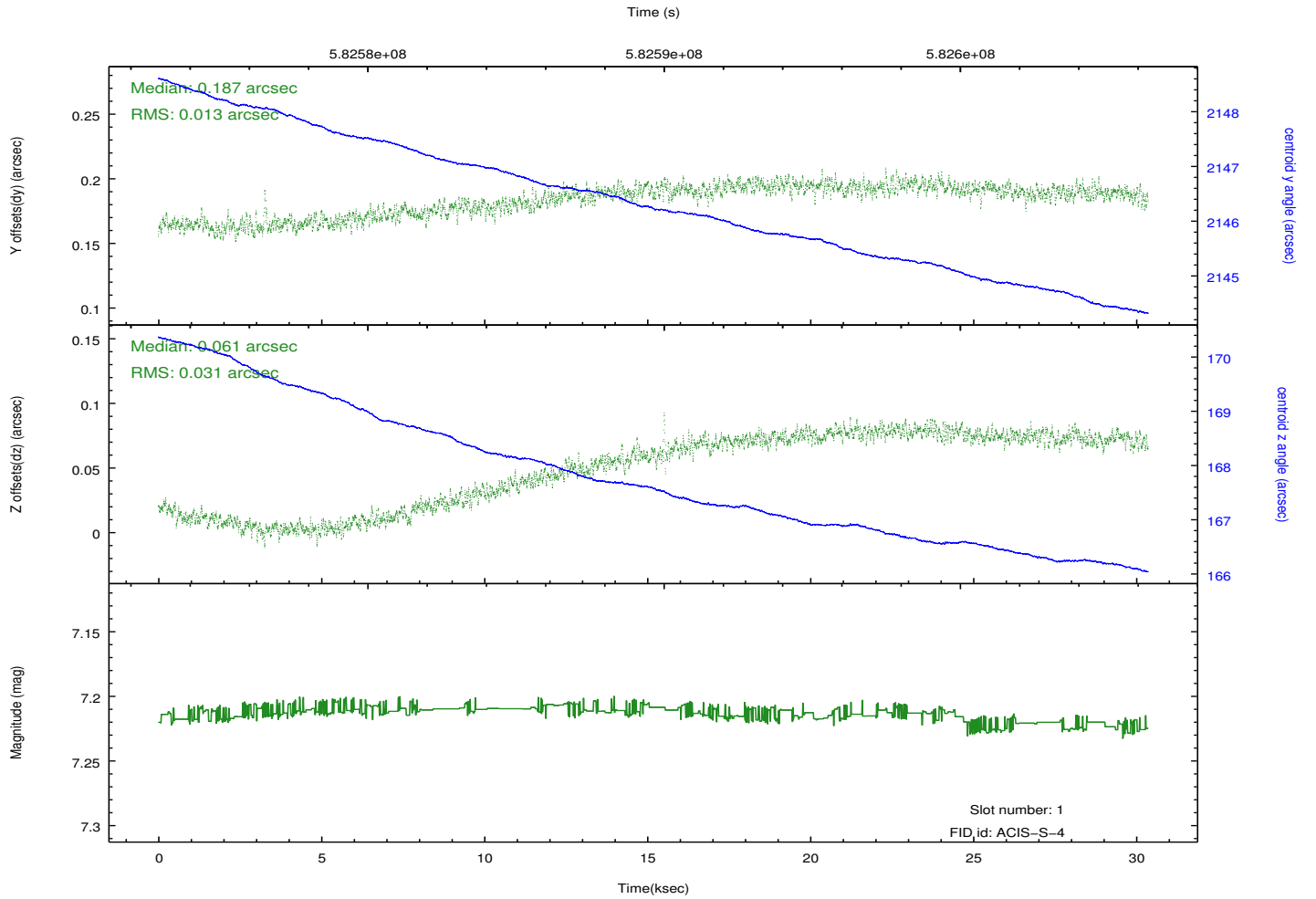
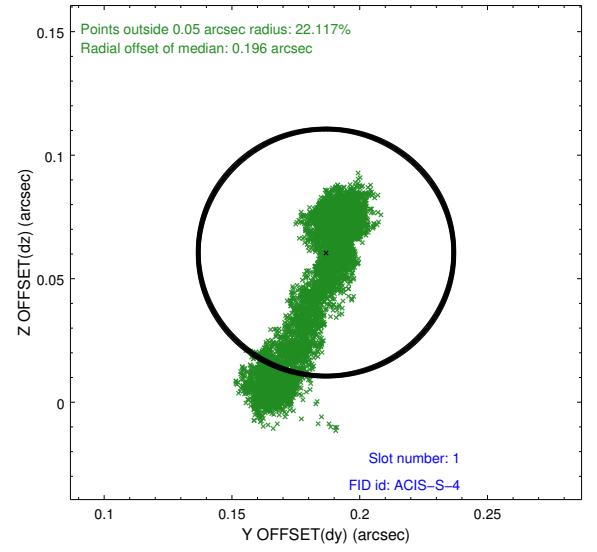
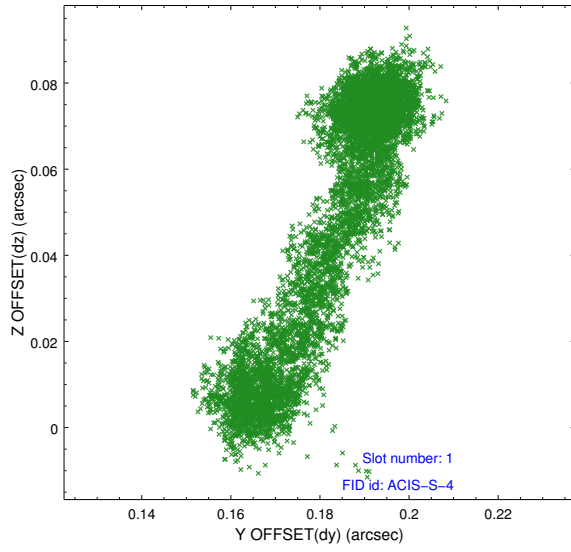


## 2.5 FID Slots

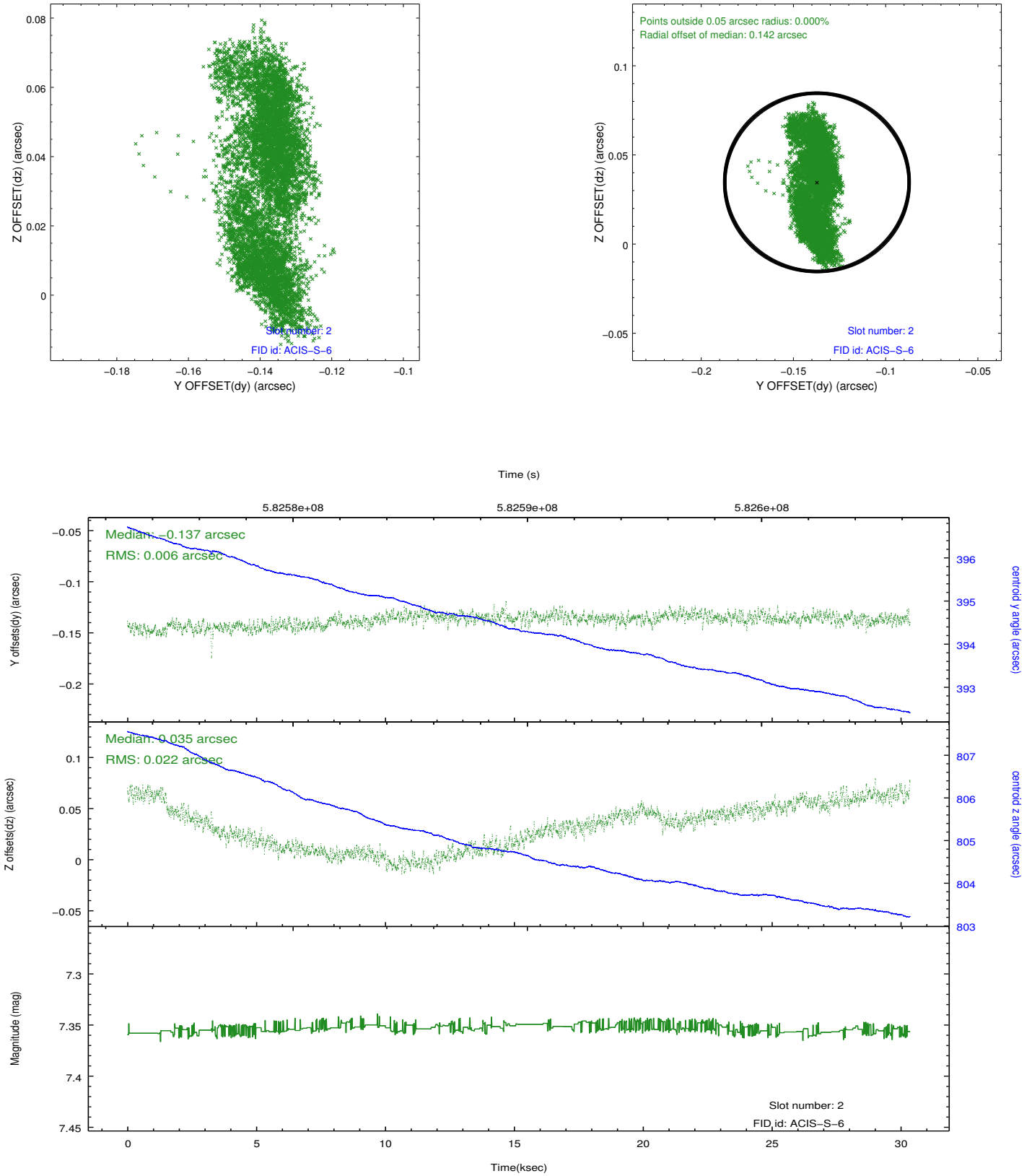
### 2.5.1 Slot 0



## 2.5.2 Slot 1



### 2.5.3 Slot 2



# A Summary

## A.1 Status

|                            |                 |
|----------------------------|-----------------|
| V&V Scientist              | Beth Sundheim   |
| V&V Date (YYYY-MM-DD)      | 2016.06.22      |
| V&V Edition                | 1               |
| V&V Disposition and Status | OK              |
| V&V Charge Time            | 30.316499196768 |

## 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 star from the solution.