

# V&V Reference Report

## L2 ASCDS Version : 8.4.4

Observation 7509 - L2 Version 3  
Chandra X-Ray Center

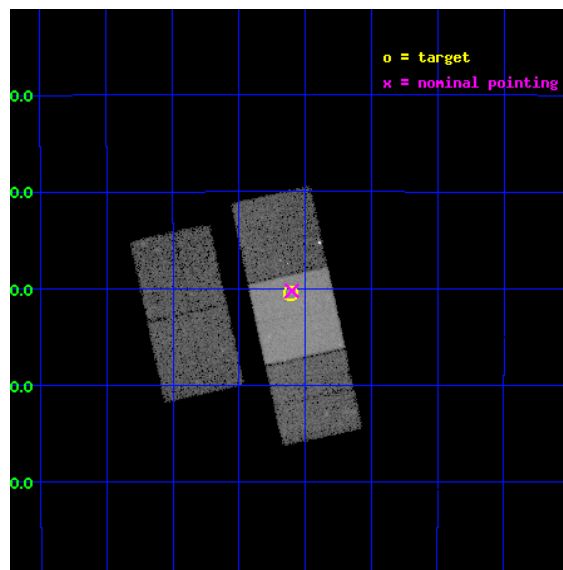
L2 Processing Date : Apr 23 2012

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# 1 Front

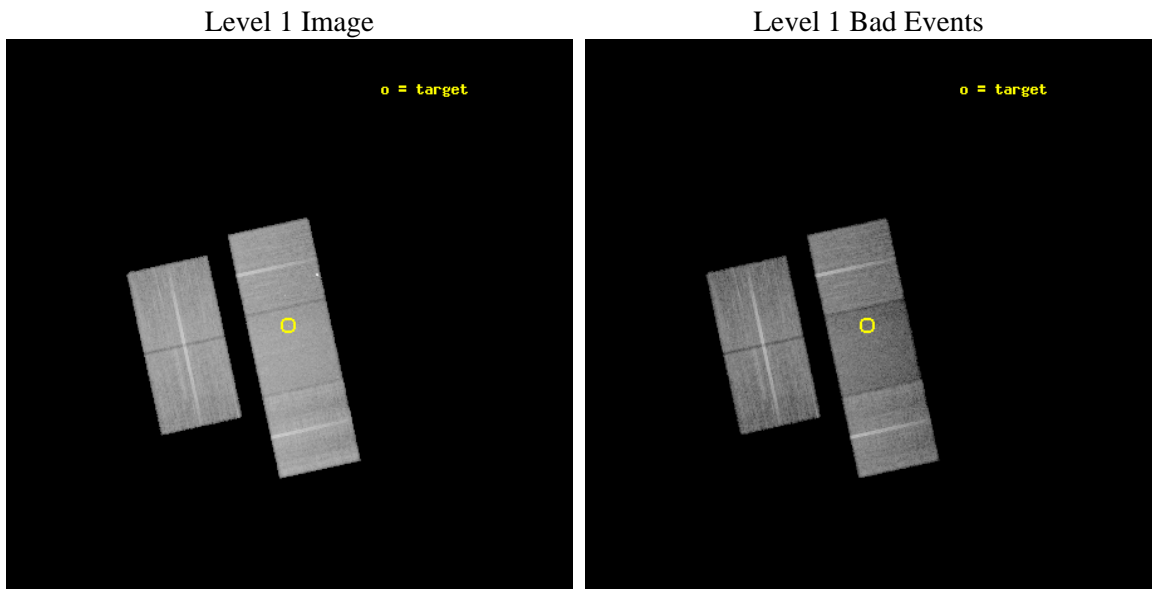
|          |   |   |
|----------|---|---|
| seq_num  | 400619  | Sequence number                             |
| obs_id   | 7509  | Observation id                              |
| title    | Confirming the Structure of the Nebular Trail of PSR J1614-2230 | Pr  |
| observer | Dr. Mallory Roberts   | Principal investigator                      |
| object   | PSR J1614-2230  | Source name                                 |
| dtycycle | 0   | &#160                                       |
| cycle    | P   | events from which exps?<br>Prim/Second/Both |
| ra_targ  | 243.652083  | Observer's specified target RA [deg]        |
| dec_targ | -22.508667  | Observer's specified target Dec [deg]       |
| ra_nom   | 243.65032048921   | Nominal RA [deg]                            |
| dec_nom  | -22.504110143479  | Nominal Dec [deg]                           |
| roll_nom | 77.731436237318   | Nominal Roll [deg]                          |
| revision | 3   | Processing version of data                  |
| ontime   | 20031.328415573   | Sum of GTIs [s]                             |
| livetime | 19769.604362974   | Livetime [s]                                |
| ontime2  | 20021.741294622   | Sum of GTIs [s]                             |
| ontime3  | 20028.105355263   | Sum of GTIs [s]                             |
| ontime6  | 20031.287375569   | Sum of GTIs [s]                             |
| ontime7  | 20031.328415573   | Sum of GTIs [s]                             |
| ontime8  | 20024.9232952   | Sum of GTIs [s]                             |
| l2events | 140606  | Number of level 2 events                    |



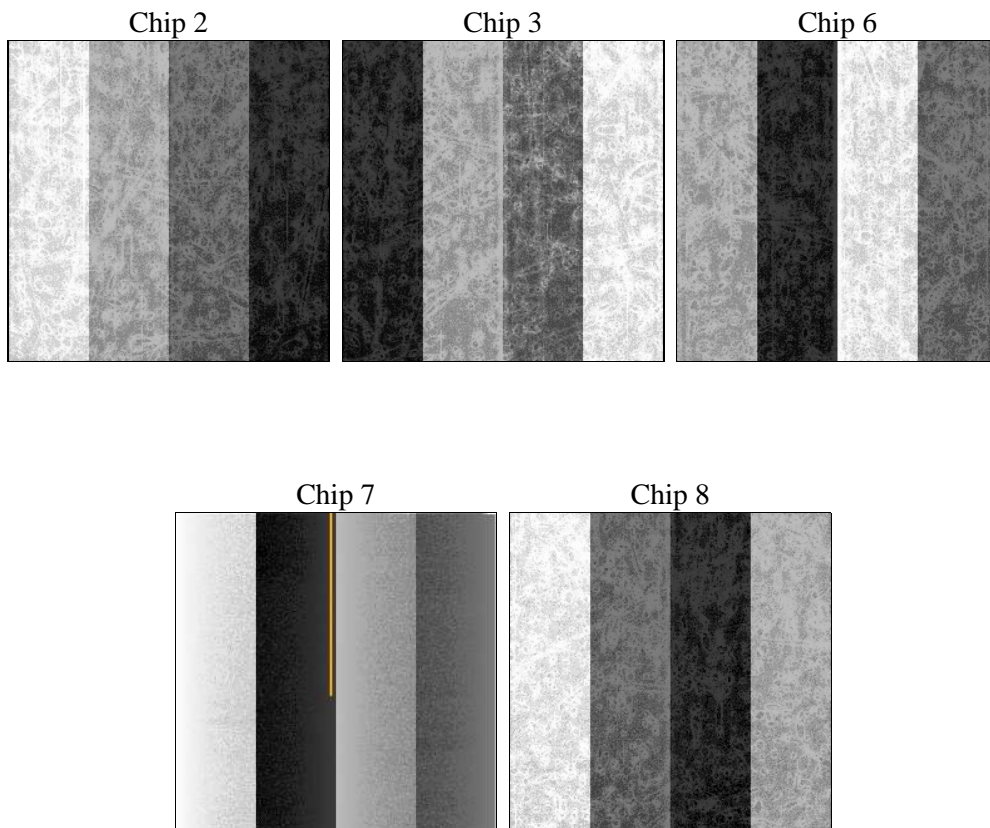
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

|          |                     |                                |                |                 |   |
|----------|---------------------|--------------------------------|----------------|-----------------|---|
| obi_num  | 0                   | Obi number                     | sched_exp_time | 20000.000000    | [s] Scheduled observation exposure time |
| ascdsver | 8.4.4               | Processing system revision     | ontime         | 20031.328415573 | Sum of GTIs [s]                         |
| caldbver | 4.4.9               | &#160                          | ontime2        | 20021.741294622 | Sum of GTIs [s]                         |
| date     | 2012-04-23T20:35:30 | Date and time of file creation | ontime3        | 20028.105355263 | Sum of GTIs [s]                         |
| revision | 3                   | Processing version of data     | ontime6        | 20031.287375569 | Sum of GTIs [s]                         |
|          |                     |                                | ontime7        | 20031.328415573 | Sum of GTIs [s]                         |
|          |                     |                                | ontime8        | 20024.9232952   | Sum of GTIs [s]                         |
|          |                     |                                | l1events       | 865067          | Number of level 1 events                |

### 2.1.4 Events

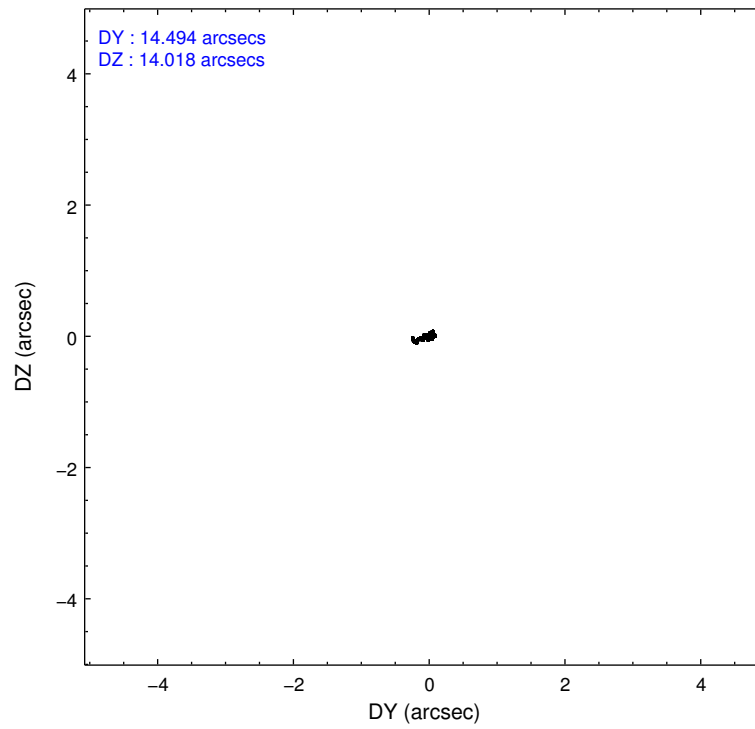
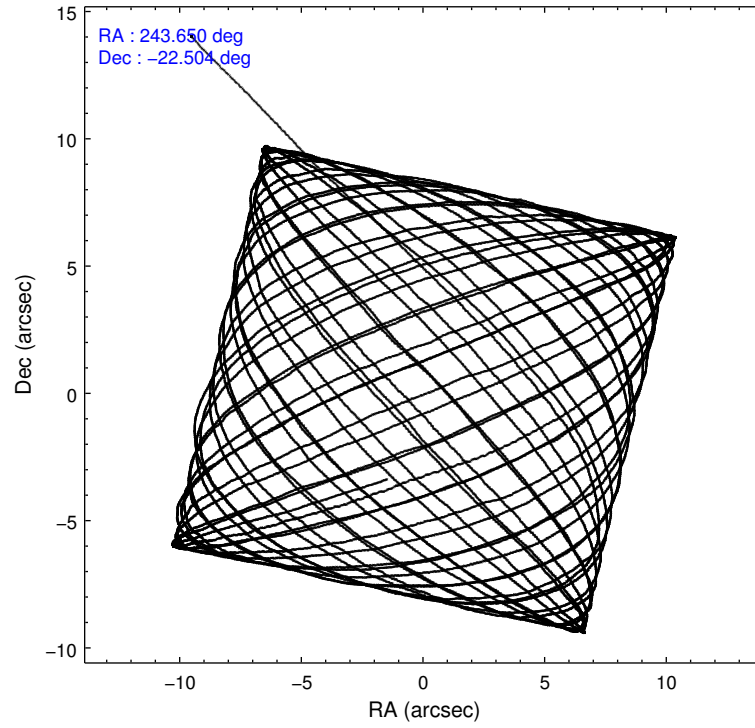
|                 | ccd 2  | ccd 3  | ccd 6  | ccd 7  | ccd 8  |
|-----------------|--------|--------|--------|--------|--------|
| level 1 events  | 163221 | 156459 | 164565 | 177904 | 202918 |
| rejected events | 147528 | 141289 | 144962 | 95975  | 154412 |
| rejected %      | 90%    | 90%    | 88%    | 53%    | 76%    |

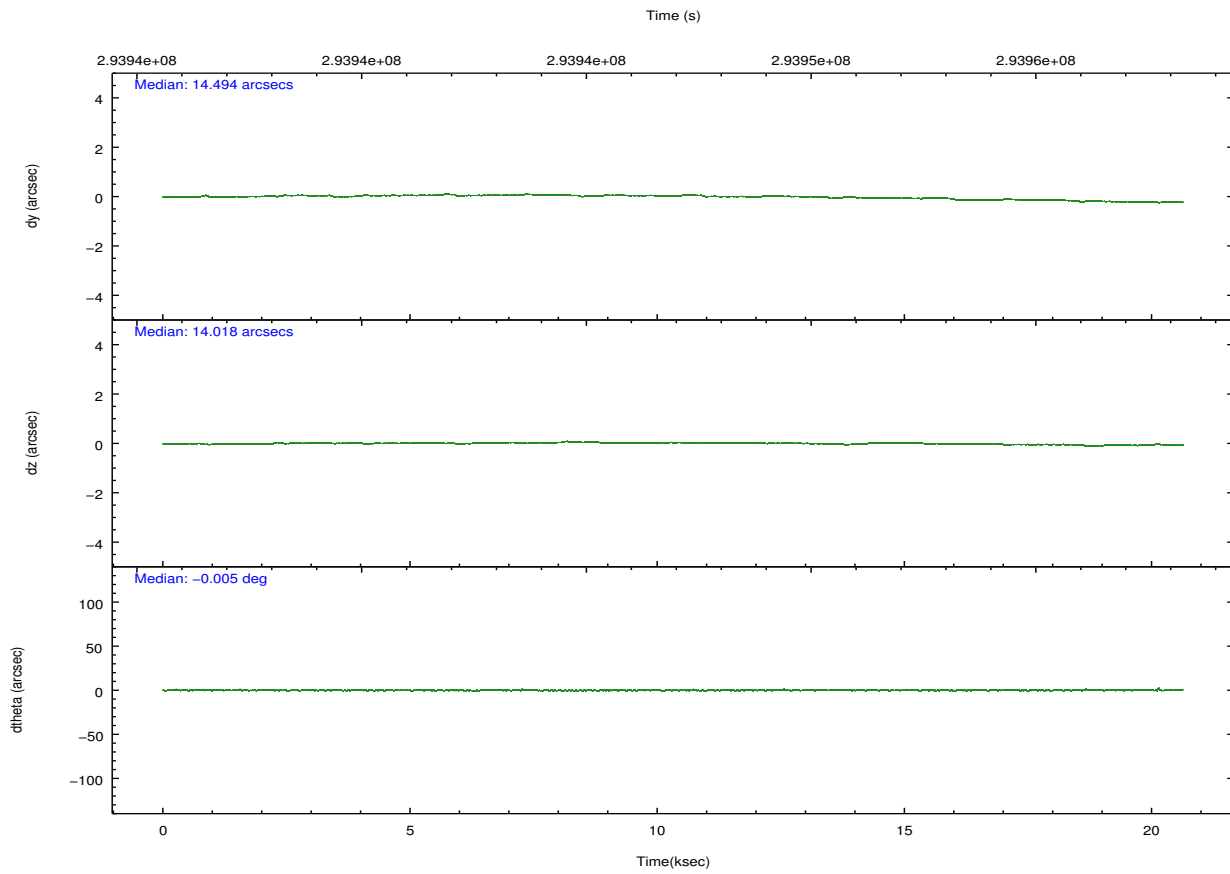
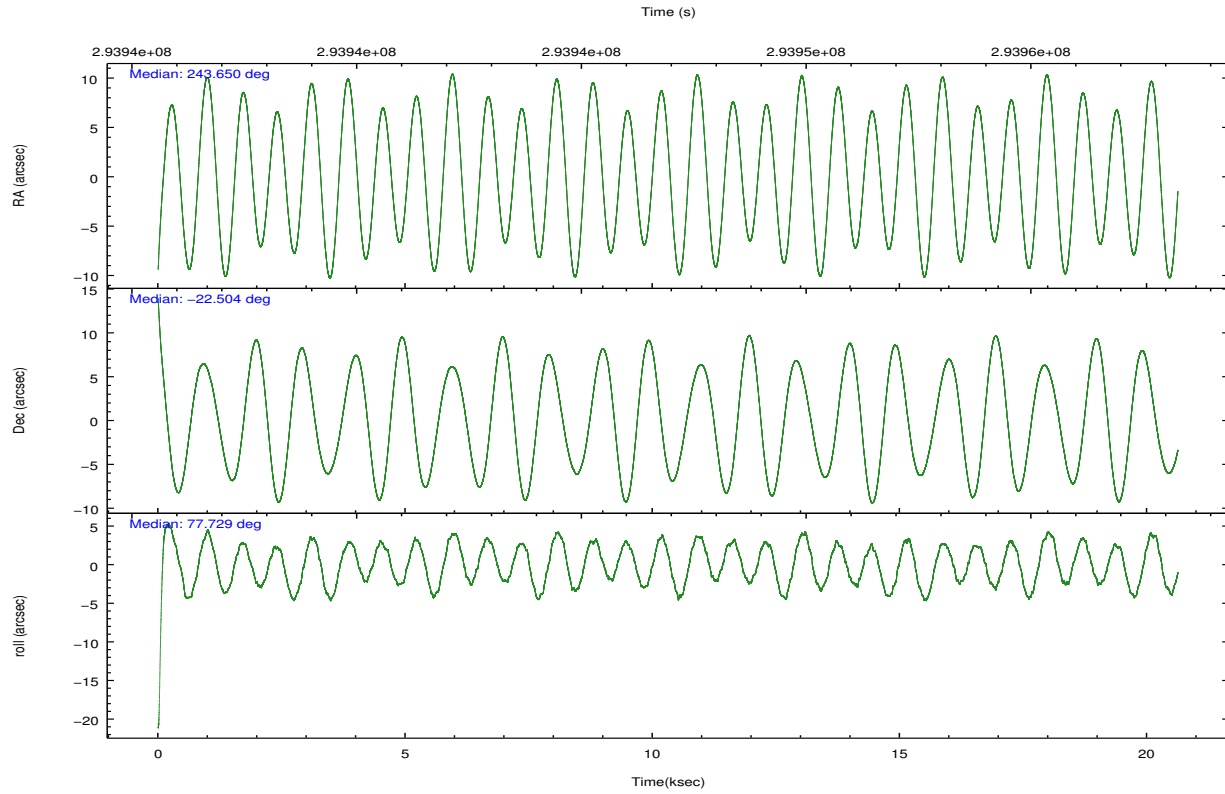
|                | ccd 2  | ccd 3  | ccd 6  | ccd 7 | ccd 8  |
|----------------|--------|--------|--------|-------|--------|
| grade 0 events | 5940   | 5633   | 8436   | 8184  | 14980  |
|                | 3%     | 3%     | 5%     | 4%    | 7%     |
| grade 1 events | 70     | 74     | 102    | 222   | 145    |
|                | 0%     | 0%     | 0%     | 0%    | 0%     |
| grade 2 events | 3555   | 3156   | 3853   | 16692 | 11106  |
|                | 2%     | 2%     | 2%     | 9%    | 5%     |
| grade 3 events | 1684   | 1715   | 1884   | 7582  | 5044   |
|                | 1%     | 1%     | 1%     | 4%    | 2%     |
| grade 4 events | 1699   | 1660   | 1795   | 7496  | 4612   |
|                | 1%     | 1%     | 1%     | 4%    | 2%     |
| grade 5 events | 4922   | 6195   | 6508   | 18460 | 9141   |
|                | 3%     | 3%     | 3%     | 10%   | 4%     |
| grade 6 events | 2819   | 3012   | 3637   | 42003 | 12772  |
|                | 1%     | 1%     | 2%     | 23%   | 6%     |
| grade 7 events | 142532 | 135014 | 138350 | 77265 | 145118 |
|                | 87%    | 86%    | 84%    | 43%   | 71%    |

## 2.2 Compared Parameters

| Parameter                         | Planned             | Actual               | Parameter                             | Planned   | Actual  |
|-----------------------------------|---------------------|----------------------|---------------------------------------|-----------|---------|
| Instrument                        | ACIS                | ACIS                 | Obspar format version number          | 7         | 7       |
| Detector                          | ACIS-23678          | ACIS-23678           | 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                 | 243.659736          | 243.650320489214     | CCD I2 on                             | O1        | Y       |
| [deg] Pointing Dec                | -22.530023          | -22.5041101434786    | CCD I3 on                             | Y         | Y       |
| [deg] Pointing Roll               | 77.578421           | 77.73143623731842    | 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                             | 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)  | 293937242.184000    | 293936089.56499      | CCD S5 on                             | N         | N       |
| Observation start date            | 2007-04-26T01:12:57 | 2007-04-26T00:54:49  | Number of optional ACIS chips dropped | 0         | 0       |
| [s] Observation end time (MET)    | 293957242.184000    | 293958102.97854      | On-chip summing requested             | N         | N       |
| Observation end date              | 2007-04-26T06:46:17 | 2007-04-26T07:01:42  | Subarray requested                    | NONE      | NONE    |
| Read mode                         | TIMED               | TIMED                | Alternating exposures requested       | N         | N       |
|                                   |                     |                      | [s] Primary exposure time             | 0.000000  | 3.1     |

## 2.3 Aspect



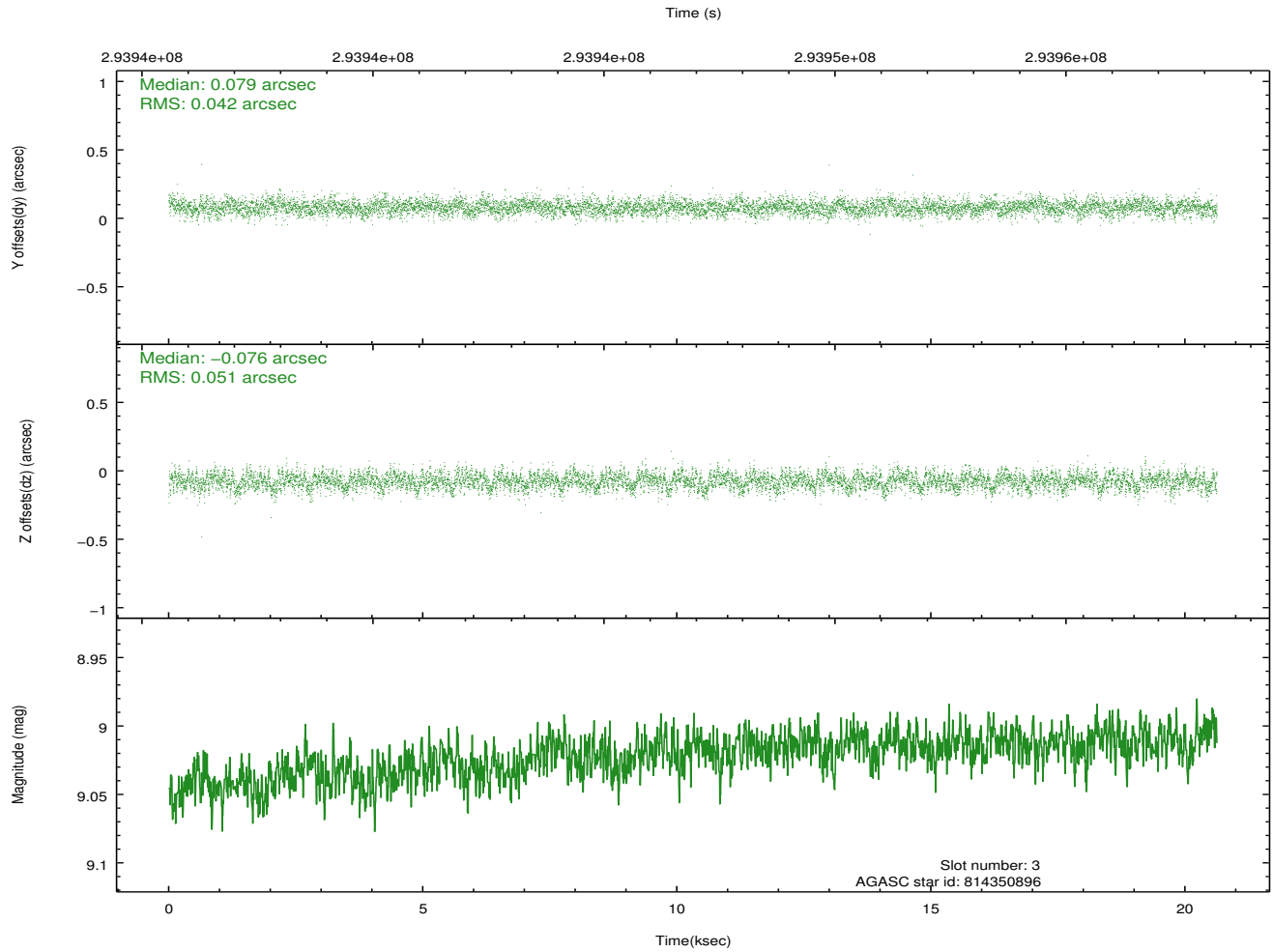
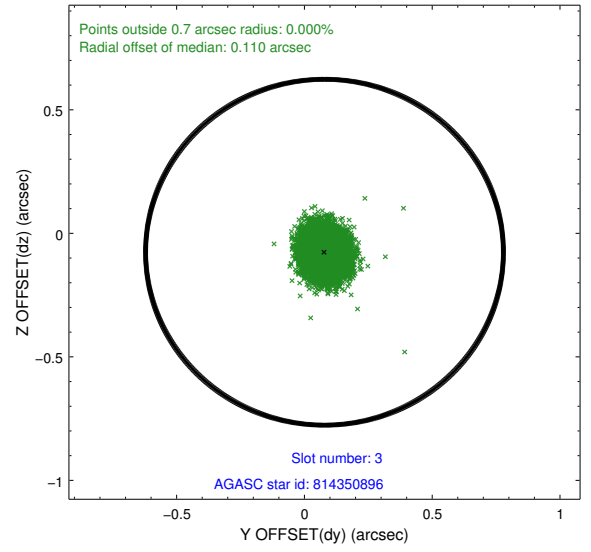
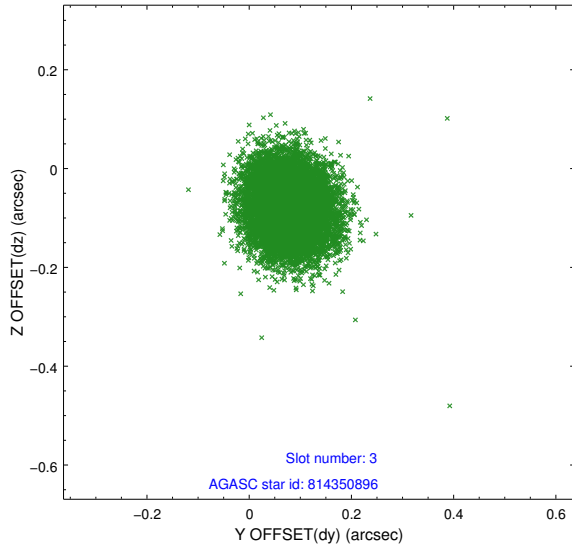


### Slot Statistics

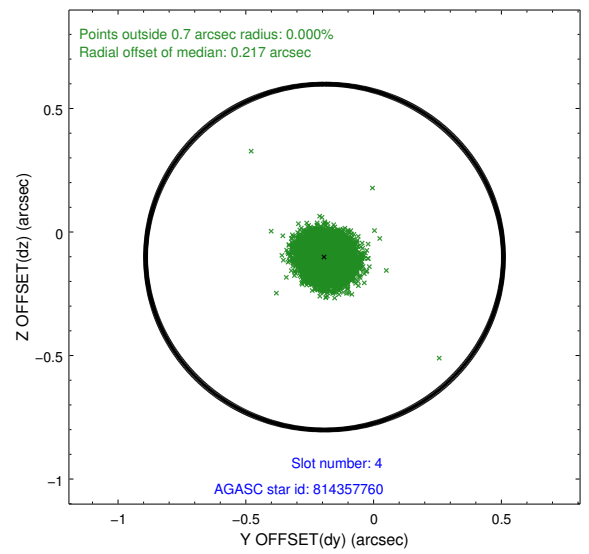
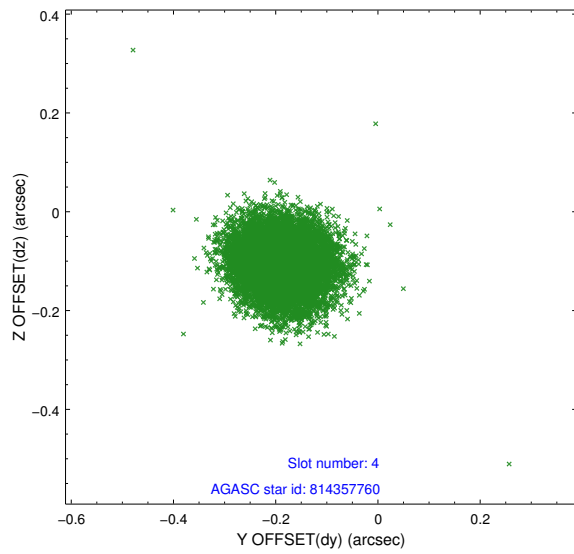
| slot | status | id        | mag  | n_pts | med_dy | med_dz | dr1   | dr2   | ra         | dec        | mean_y   | mean_z   |
|------|--------|-----------|------|-------|--------|--------|-------|-------|------------|------------|----------|----------|
| 0    | FID    | ACIS-S-1  | 7.18 | 5032  | 0.034  | -0.018 | 0.007 | 0.012 | 0.000000   | 0.000000   | 928.63   | -1730.97 |
| 1    | FID    | ACIS-S-4  | 7.19 | 5032  | 0.163  | 0.001  | 0.006 | 0.011 | 0.000000   | 0.000000   | 2146.27  | 173.02   |
| 2    | FID    | ACIS-S-5  | 7.22 | 5032  | -0.223 | 0.030  | 0.006 | 0.011 | 0.000000   | 0.000000   | -1820.26 | 166.87   |
| 3    | GUIDE  | 814350896 | 9.02 | 10057 | 0.079  | -0.076 | 0.070 | 0.114 | 243.298302 | -22.485170 | -102.21  | 1208.45  |
| 4    | GUIDE  | 814357760 | 8.82 | 10056 | -0.192 | -0.101 | 0.073 | 0.116 | 243.345847 | -21.962900 | 1767.27  | 1462.57  |
| 5    | GUIDE  | 814365904 | 7.77 | 10063 | 0.043  | 0.171  | 0.074 | 0.114 | 243.722190 | -22.380303 | 571.37   | -86.70   |
| 6    | GUIDE  | 890374872 | 8.04 | 10063 | 0.097  | 0.211  | 0.052 | 0.082 | 244.077405 | -23.163114 | -1930.49 | -1840.71 |
| 7    | GUIDE  | 890380944 | 8.52 | 10059 | -0.029 | -0.199 | 0.061 | 0.097 | 243.587117 | -22.682885 | -589.31  | 116.76   |

## 2.4 Star Slots

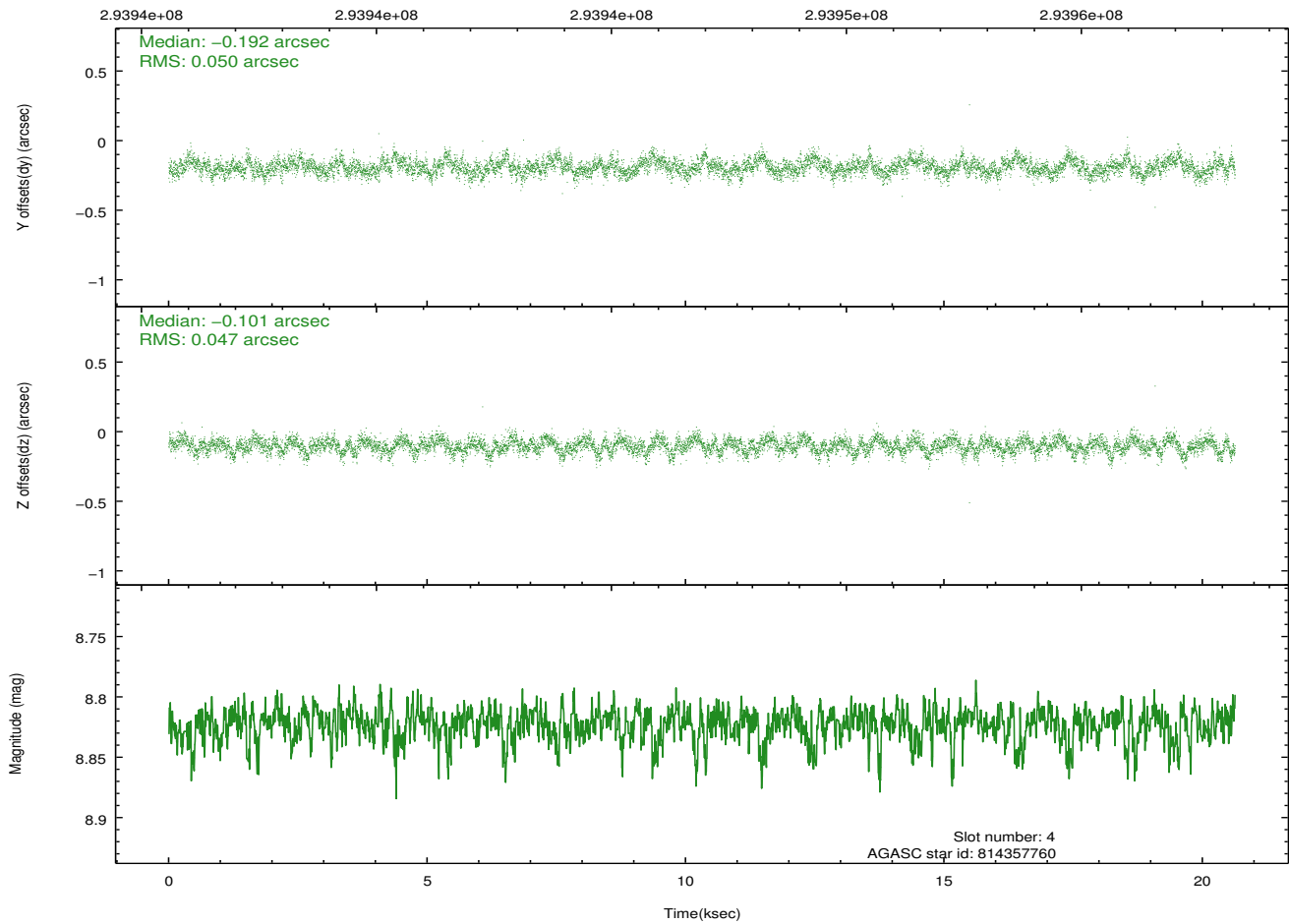
### 2.4.1 Slot 3



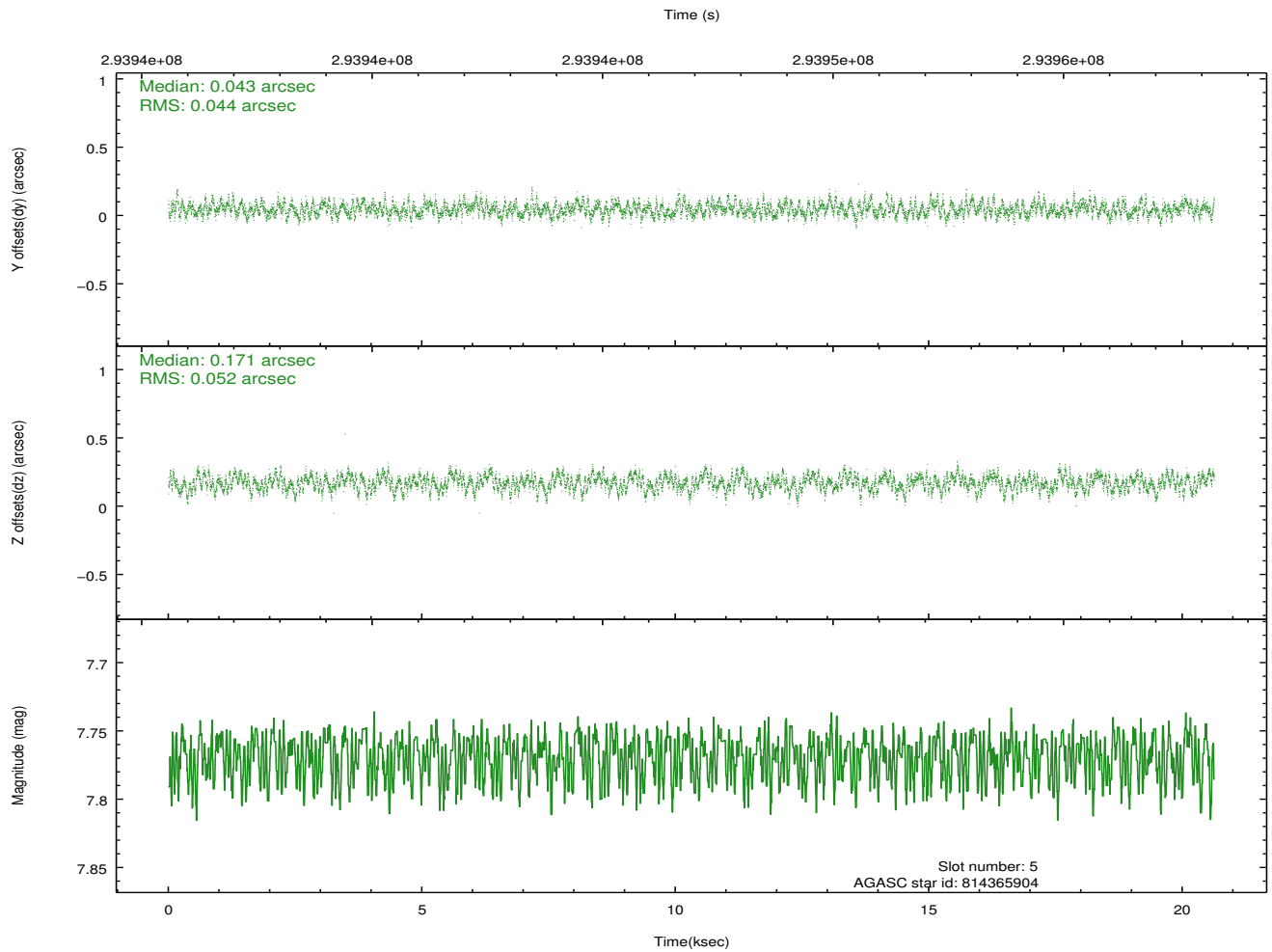
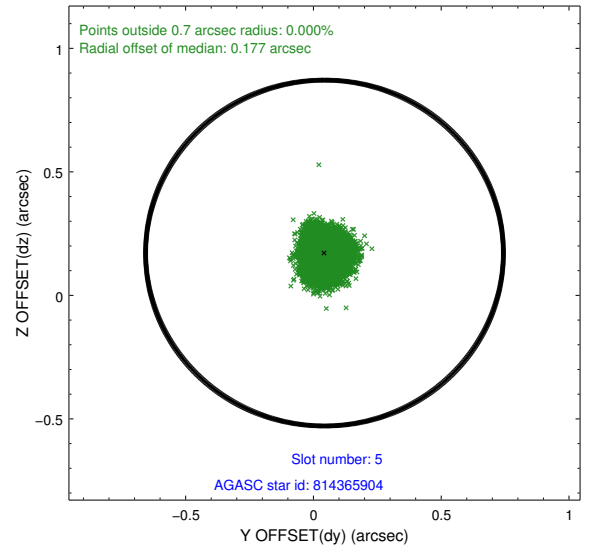
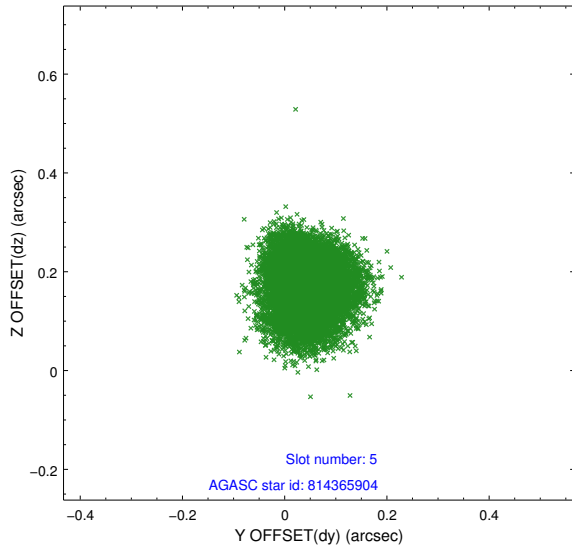
## 2.4.2 Slot 4



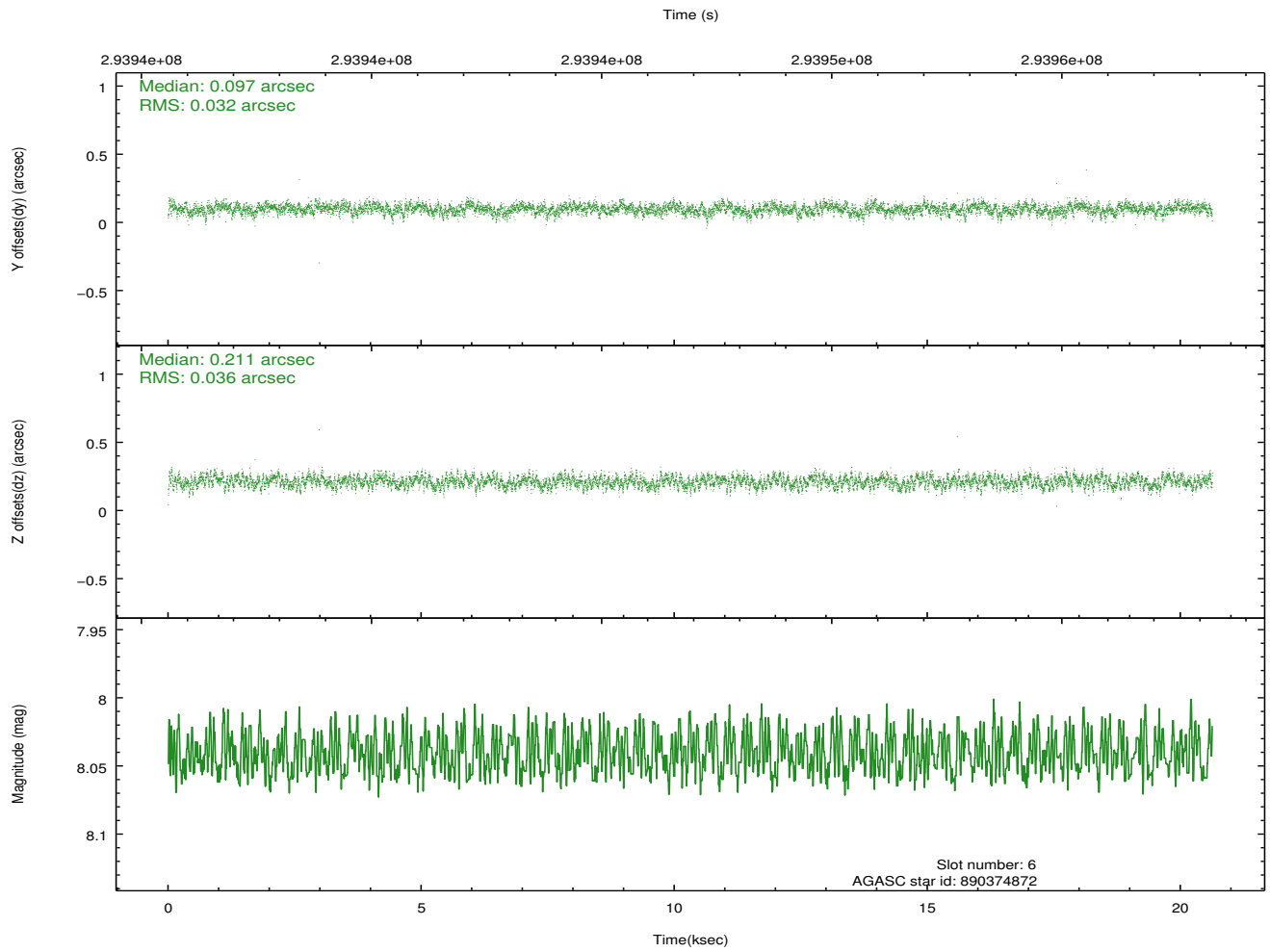
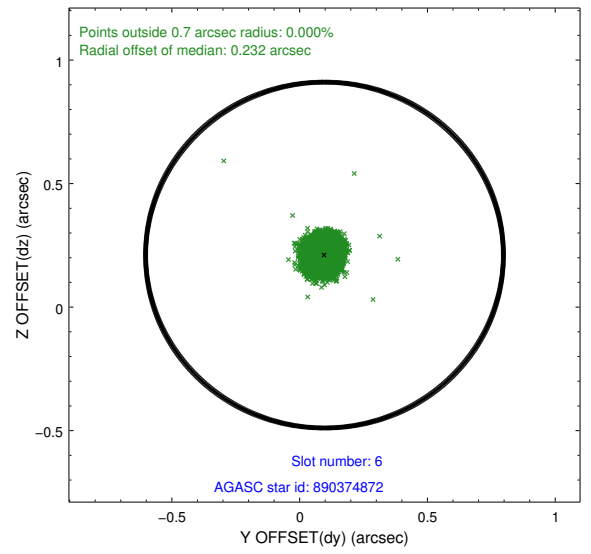
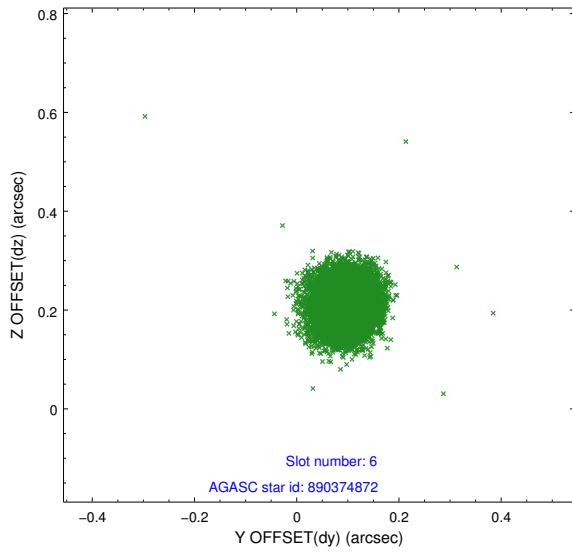
Time (s)



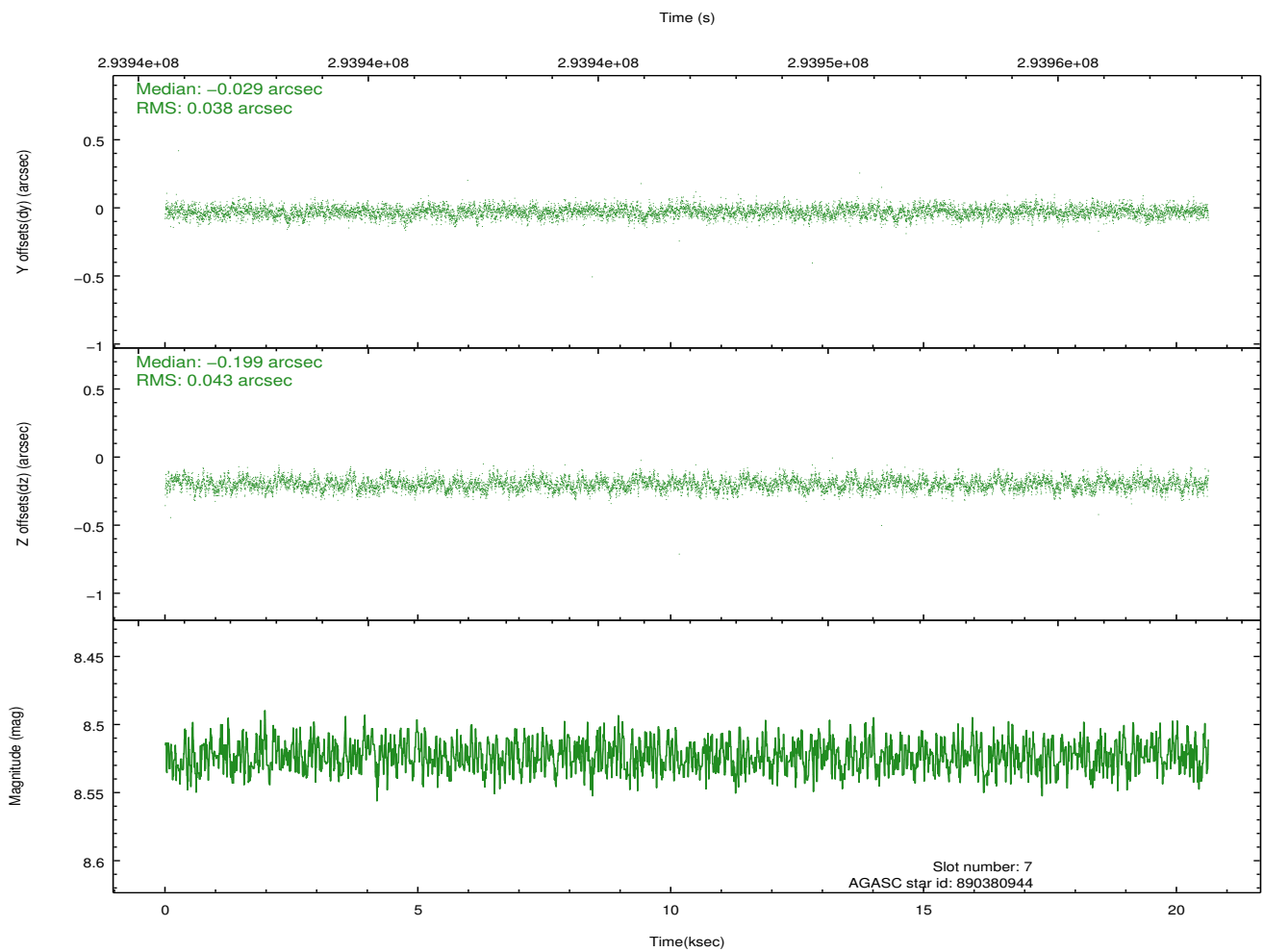
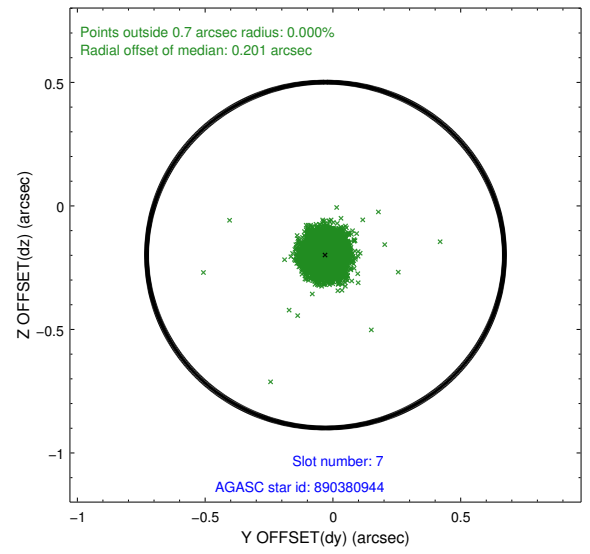
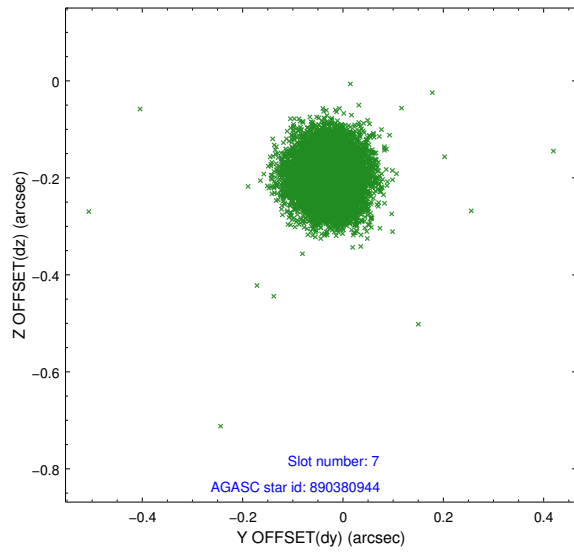
### 2.4.3 Slot 5



## 2.4.4 Slot 6

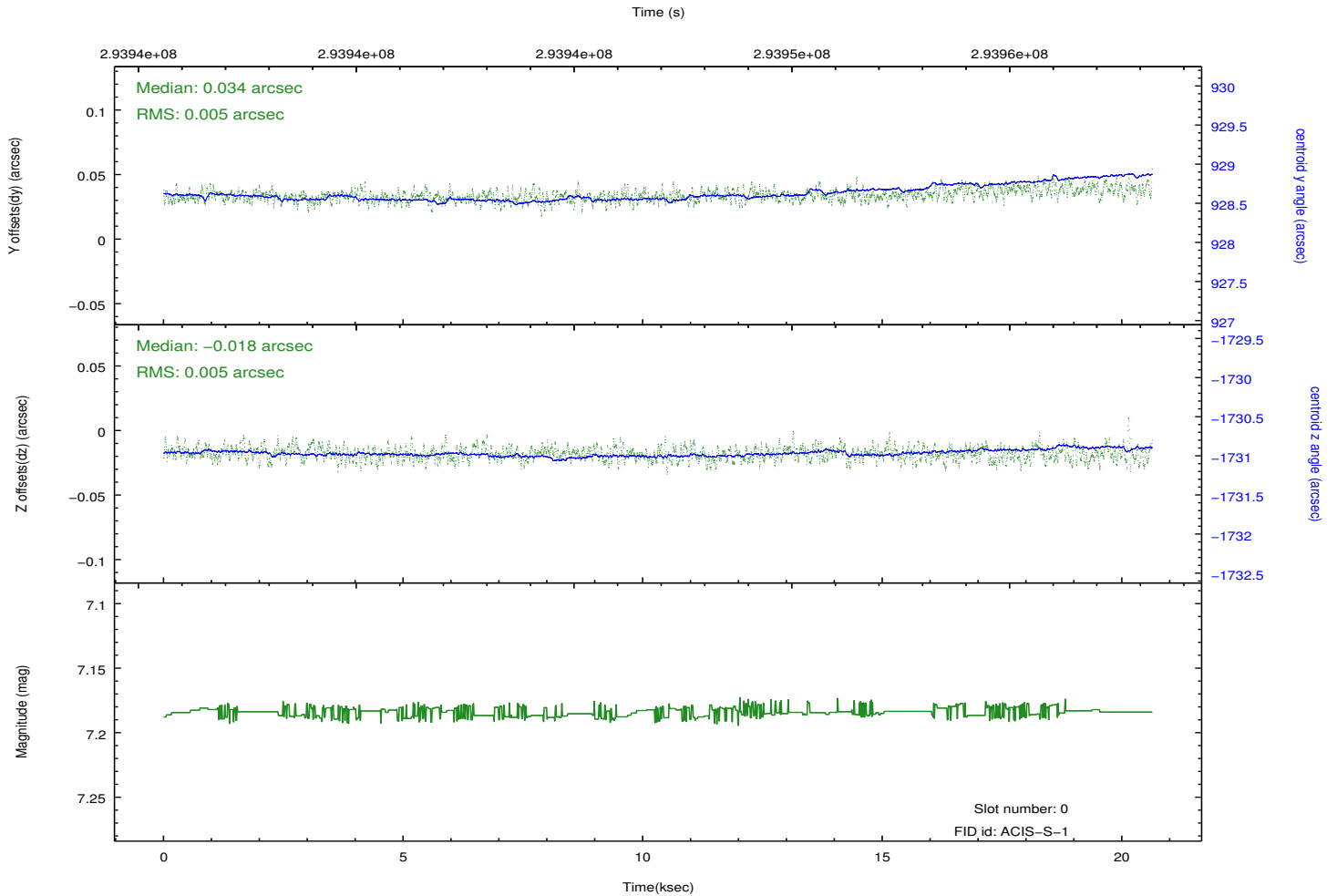
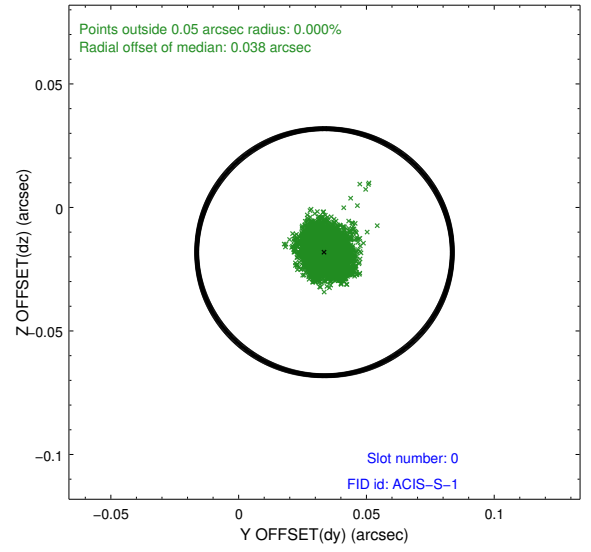
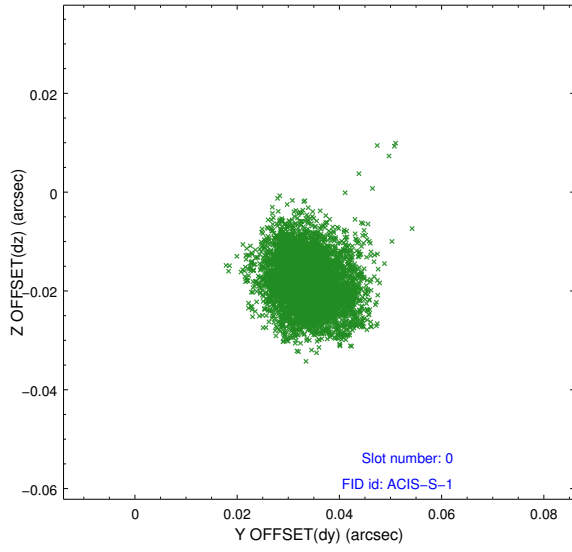


## 2.4.5 Slot 7

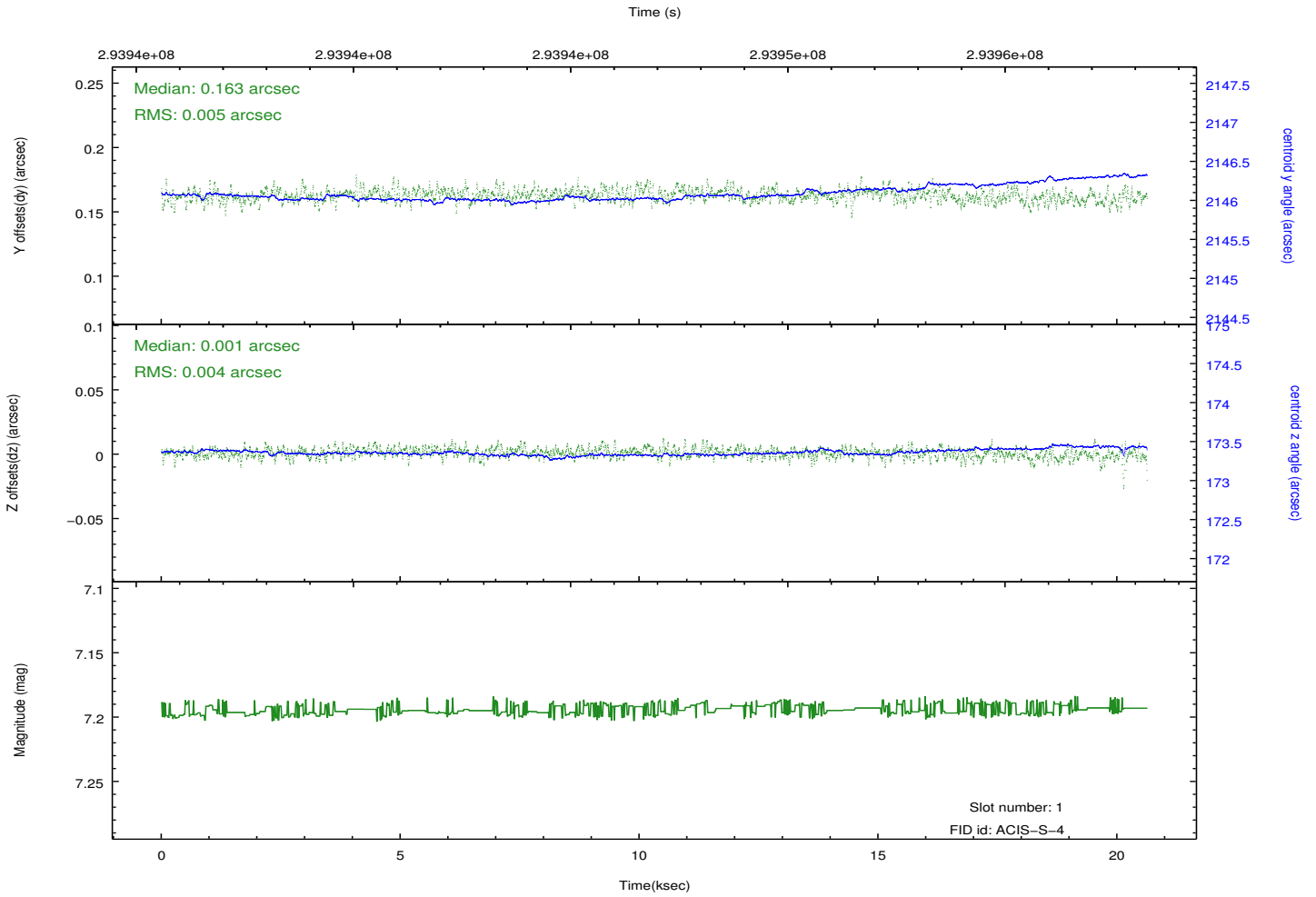
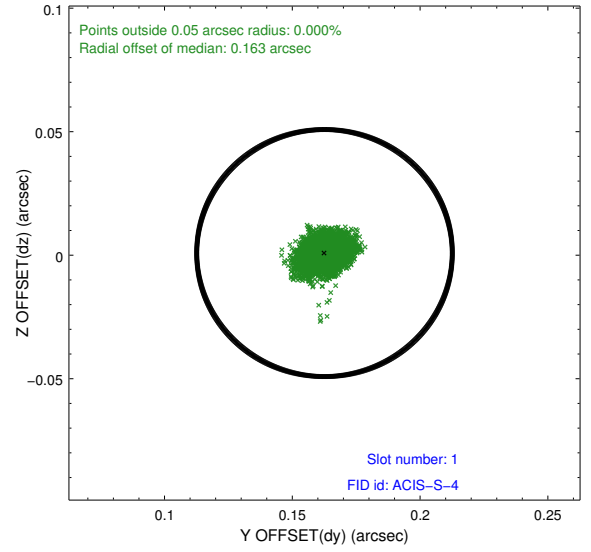
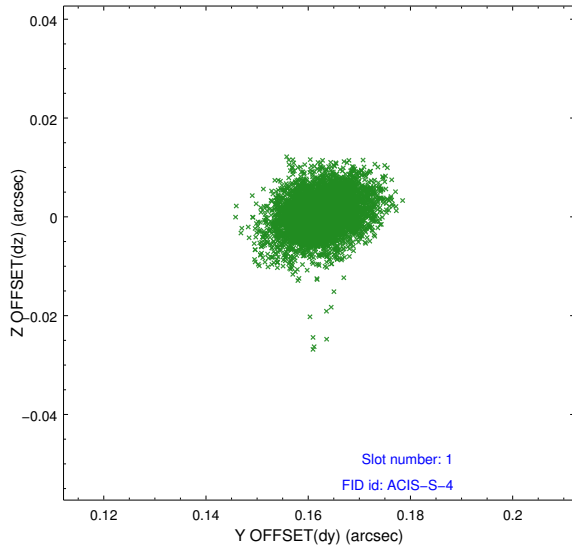


## 2.5 FID Slots

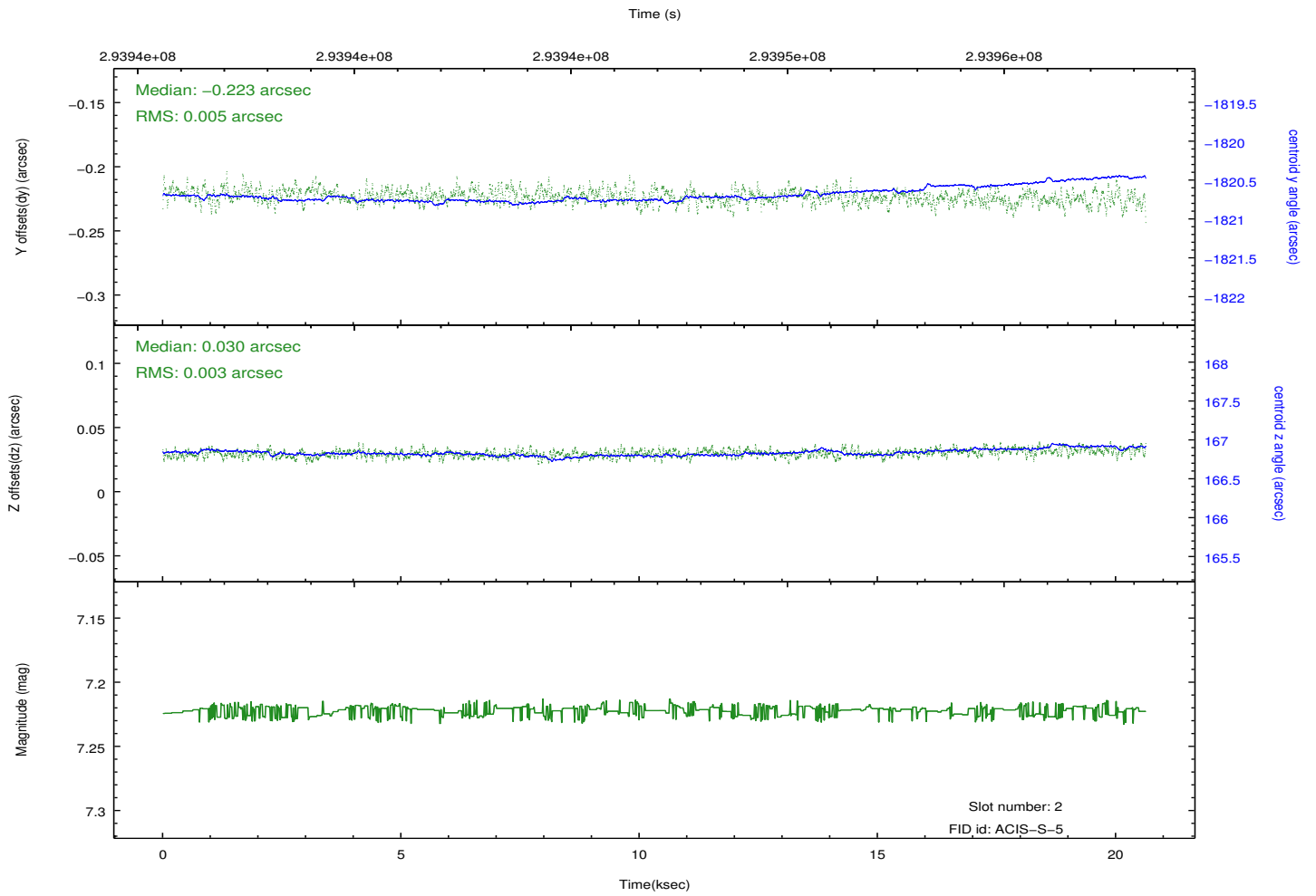
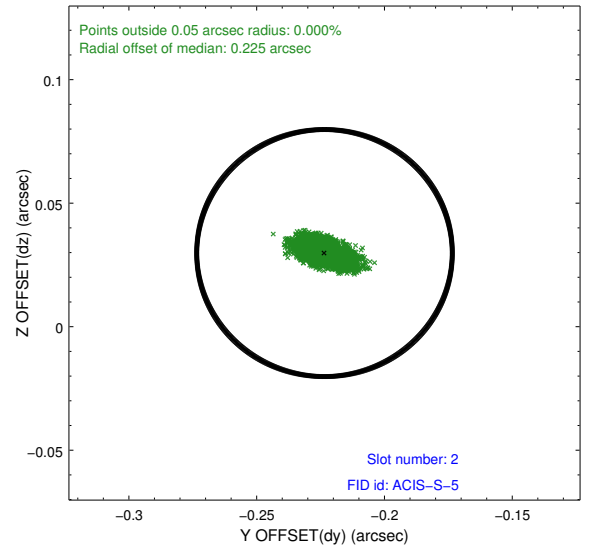
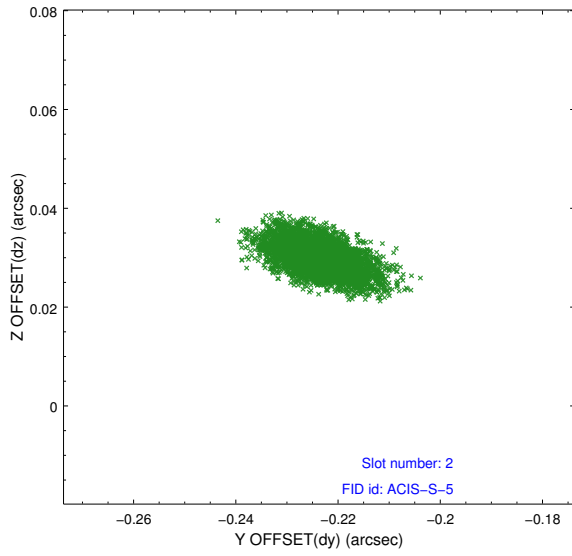
### 2.5.1 Slot 0



## 2.5.2 Slot 1



### 2.5.3 Slot 2



# A Summary

## A.1 Status

|                            |            |
|----------------------------|------------|
| V&V Scientist              | Jen Lauer  |
| V&V Date (YYYY-MM-DD)      | 2012.04.24 |
| V&V Edition                | 1          |
| V&V Disposition and Status | OK         |
| V&V Charge Time            | 20.0322001 |

## A.2 Comments