

# V&V Reference Report

## L2 ASCDS Version : 8.4.5

Observation 11507 - L2 Version 2  
Chandra X-Ray Center

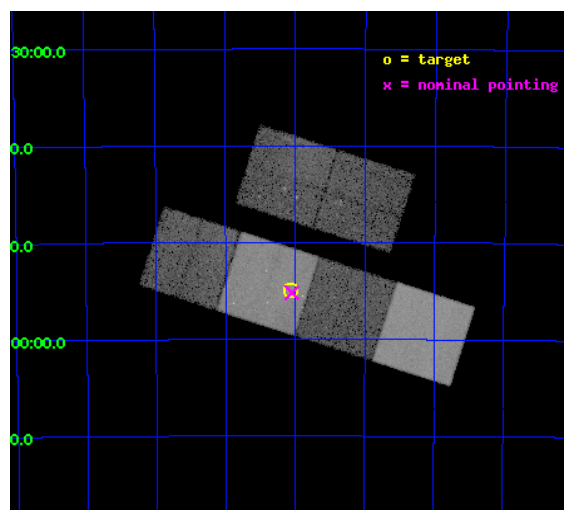
L2 Processing Date : Jun 22 2012

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# 1 Front

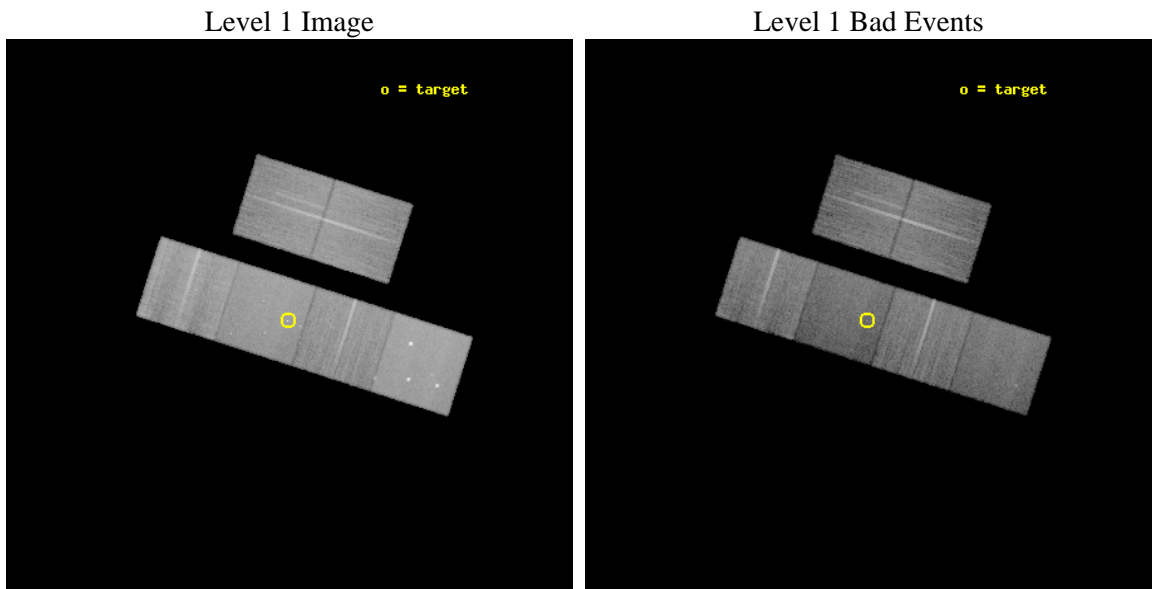
|          |   |   |
|----------|---|---|
| seq_num  | 702093  | Sequence number                             |
| obs_id   | 11507   | Observation id                              |
| title    | The nature of active nuclei in radio galaxies: observations of the 2Jy sample | Proposal title                              |
| observer | Dr Martin Hardcastle  | Principal investigator                      |
| object   | PKS 2356-61   | Source name                                 |
| dtcycle  | 0   | &#160                                       |
| cycle    | P   | events from which exps?<br>Prim/Second/Both |
| ra_targ  | 359.76875   | Observer's specified target RA [deg]        |
| dec_targ | -60.916417  | Observer's specified target Dec [deg]       |
| ra_nom   | 359.76227060308   | Nominal RA [deg]                            |
| dec_nom  | -60.920113055001  | Nominal Dec [deg]                           |
| roll_nom | 197.7055428301  | Nominal Roll [deg]                          |
| revision | 2   | Processing version of data                  |
| ontime   | 20046.809262455   | Sum of GTIs [s]                             |
| livetime | 19792.964492834   | Livetime [s]                                |
| ontime2  | 20046.850302458   | Sum of GTIs [s]                             |
| ontime3  | 20046.686142445   | Sum of GTIs [s]                             |
| ontime5  | 20046.768222451   | Sum of GTIs [s]                             |
| ontime6  | 20046.727182448   | Sum of GTIs [s]                             |
| ontime7  | 20046.809262455   | Sum of GTIs [s]                             |
| ontime8  | 20046.645102441   | Sum of GTIs [s]                             |
| l2events | 261500  | Number of level 2 events                    |



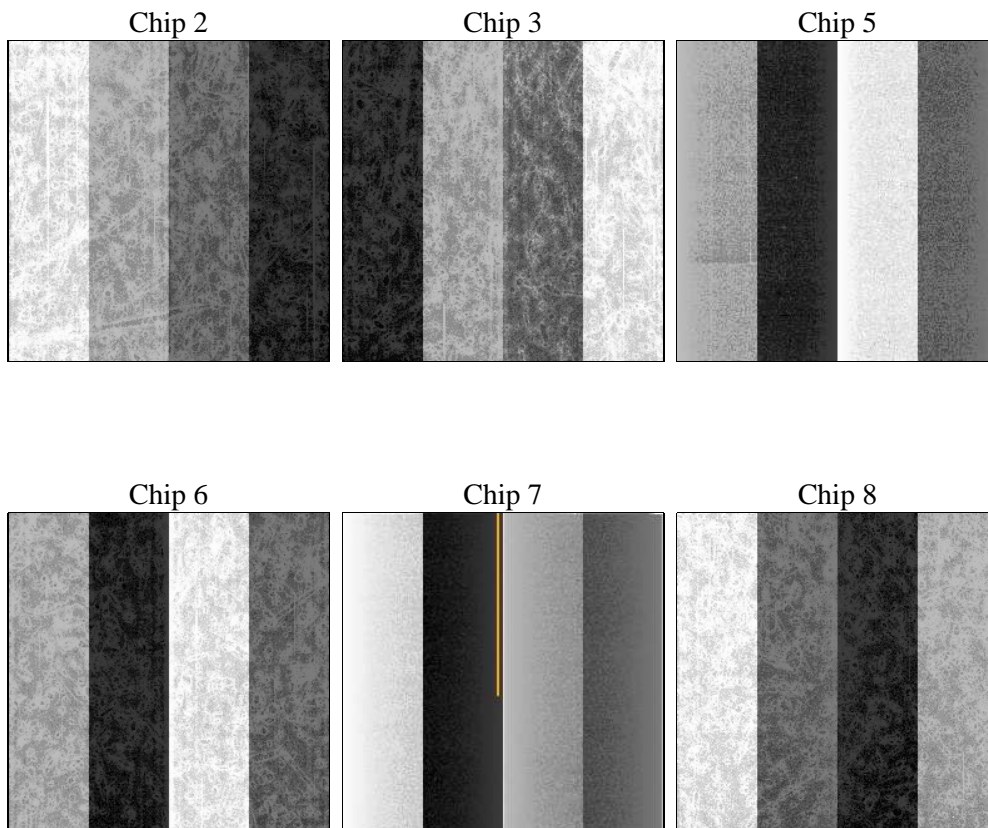
## 2 OBI

### 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 | 8.4.5               | Processing system revision     | ontime         | 20046.809262455 | Sum of GTIs [s]                         |
| caldsver | 4.4.10              | &#160                          | ontime2        | 20046.850302458 | Sum of GTIs [s]                         |
| date     | 2012-06-22T05:12:32 | Date and time of file creation | ontime3        | 20046.686142445 | Sum of GTIs [s]                         |
| revision | 2                   | Processing version of data     | ontime5        | 20046.768222451 | Sum of GTIs [s]                         |
|          |                     |                                | ontime6        | 20046.727182448 | Sum of GTIs [s]                         |
|          |                     |                                | ontime7        | 20046.809262455 | Sum of GTIs [s]                         |
|          |                     |                                | ontime8        | 20046.645102441 | Sum of GTIs [s]                         |
|          |                     |                                | l1events       | 1132250         | Number of level 1 events                |

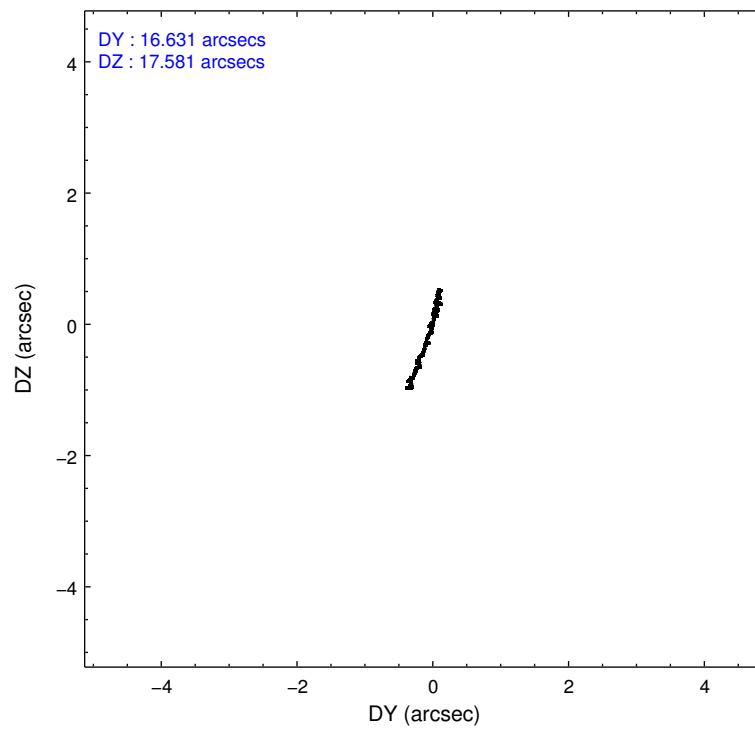
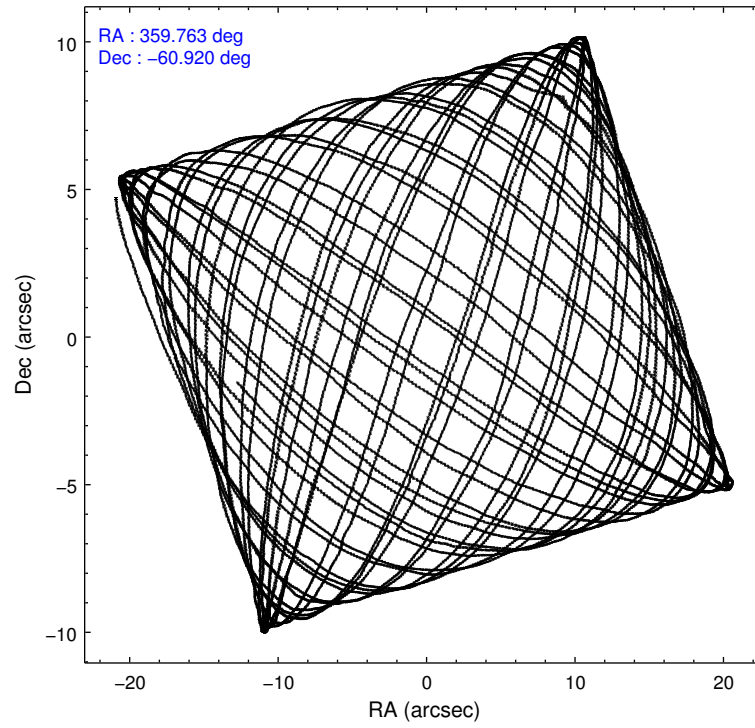
### 2.1.4 Events

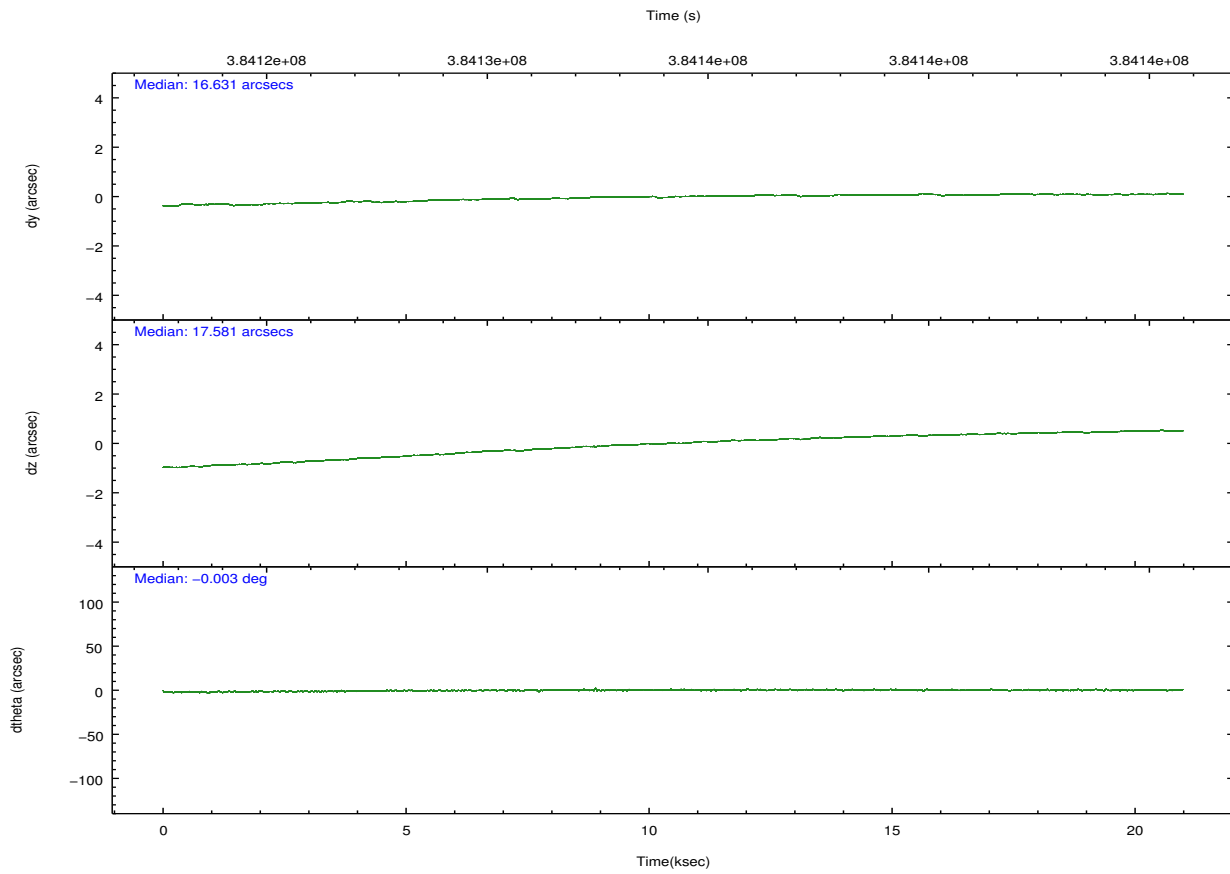
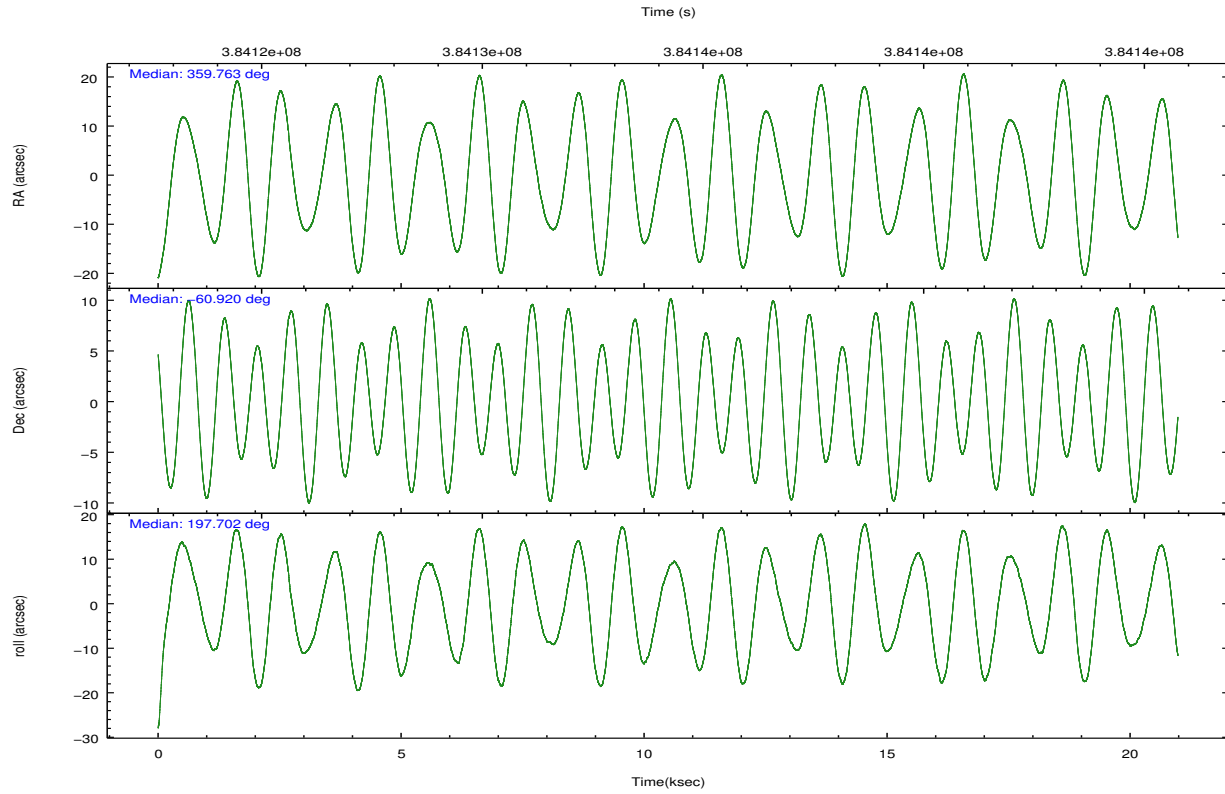
|                 | ccd 2  | ccd 3  | ccd 5  | ccd 6  | ccd 7  | ccd 8  |                | ccd 2  | ccd 3  | ccd 5 | ccd 6  | ccd 7 | ccd 8  |
|-----------------|--------|--------|--------|--------|--------|--------|----------------|--------|--------|-------|--------|-------|--------|
| level 1 events  | 167121 | 158773 | 240522 | 162661 | 191779 | 211394 | grade 0 events | 6265   | 7918   | 16507 | 6338   | 9543  | 16295  |
| rejected events | 149857 | 140233 | 117638 | 144965 | 101234 | 155949 |                | 3%     | 4%     | 6%    | 3%     | 4%    | 7%     |
| rejected %      | 89%    | 88%    | 48%    | 89%    | 52%    | 73%    | grade 1 events | 110    | 118    | 490   | 100    | 244   | 190    |
|                 |        |        |        |        |        |        |                | 0%     | 0%     | 0%    | 0%     | 0%    | 0%     |
|                 |        |        |        |        |        |        | grade 2 events | 4153   | 3650   | 36291 | 3856   | 18734 | 13007  |
|                 |        |        |        |        |        |        |                | 2%     | 2%     | 15%   | 2%     | 9%    | 6%     |
|                 |        |        |        |        |        |        | grade 3 events | 1796   | 1904   | 4850  | 1762   | 8320  | 5761   |
|                 |        |        |        |        |        |        |                | 1%     | 1%     | 2%    | 1%     | 4%    | 2%     |
|                 |        |        |        |        |        |        | grade 4 events | 1815   | 1834   | 4490  | 1801   | 8184  | 5434   |
|                 |        |        |        |        |        |        |                | 1%     | 1%     | 1%    | 1%     | 4%    | 2%     |
|                 |        |        |        |        |        |        | grade 5 events | 6014   | 6862   | 18467 | 6717   | 19788 | 9931   |
|                 |        |        |        |        |        |        |                | 3%     | 4%     | 7%    | 4%     | 10%   | 4%     |
|                 |        |        |        |        |        |        | grade 6 events | 3239   | 3238   | 60792 | 3946   | 45794 | 14962  |
|                 |        |        |        |        |        |        |                | 1%     | 2%     | 25%   | 2%     | 23%   | 7%     |
|                 |        |        |        |        |        |        | grade 7 events | 143729 | 133249 | 98635 | 138141 | 81172 | 145814 |
|                 |        |        |        |        |        |        |                | 86%    | 83%    | 41%   | 84%    | 42%   | 68%    |

## 2.2 Compared Parameters

| Parameter                         | Planned             | Actual               | Parameter                             | Planned   | Actual  |
|-----------------------------------|---------------------|----------------------|---------------------------------------|-----------|---------|
| Instrument                        | ACIS                | ACIS                 | Obspar format version number          | 7         | 7       |
| Detector                          | ACIS-235678         | ACIS-235678          | 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                 | 359.799518          | 359.7622706030806    | CCD I2 on                             | O1        | Y       |
| [deg] Pointing Dec                | -60.899616          | -60.92011305500071   | CCD I3 on                             | O2        | Y       |
| [deg] Pointing Roll               | 197.581474          | 197.7055428300999    | CCD S0 on                             | N         | N       |
| [mm] SIM focus pos                | -0.684267           | -0.6828225247311905  | CCD S1 on                             | O3        | Y       |
| [mm] SIM defocus                  | 0                   | 0.001444936568705701 | CCD S2 on                             | Y         | 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                             | Y         | Y       |
| [s] Observation start time (MET)  | 384124697.184000    | 384123290.49932      | CCD S5 on                             | N         | N       |
| Observation start date            | 2010-03-04T21:17:11 | 2010-03-04T20:54:50  | Number of optional ACIS chips dropped | 0         | 0       |
| [s] Observation end time (MET)    | 384144697.184000    | 384145456.12544      | On-chip summing requested             | N         | N       |
| Observation end date              | 2010-03-05T02:50:31 | 2010-03-05T03:04:16  | Subarray requested                    | NONE      | NONE    |
| Read mode                         | TIMED               | TIMED                | Alternating exposures requested       | N         | N       |
|                                   |                     |                      | [s] Primary exposure time             | 0.000000  | 3.2     |

## 2.3 Aspect



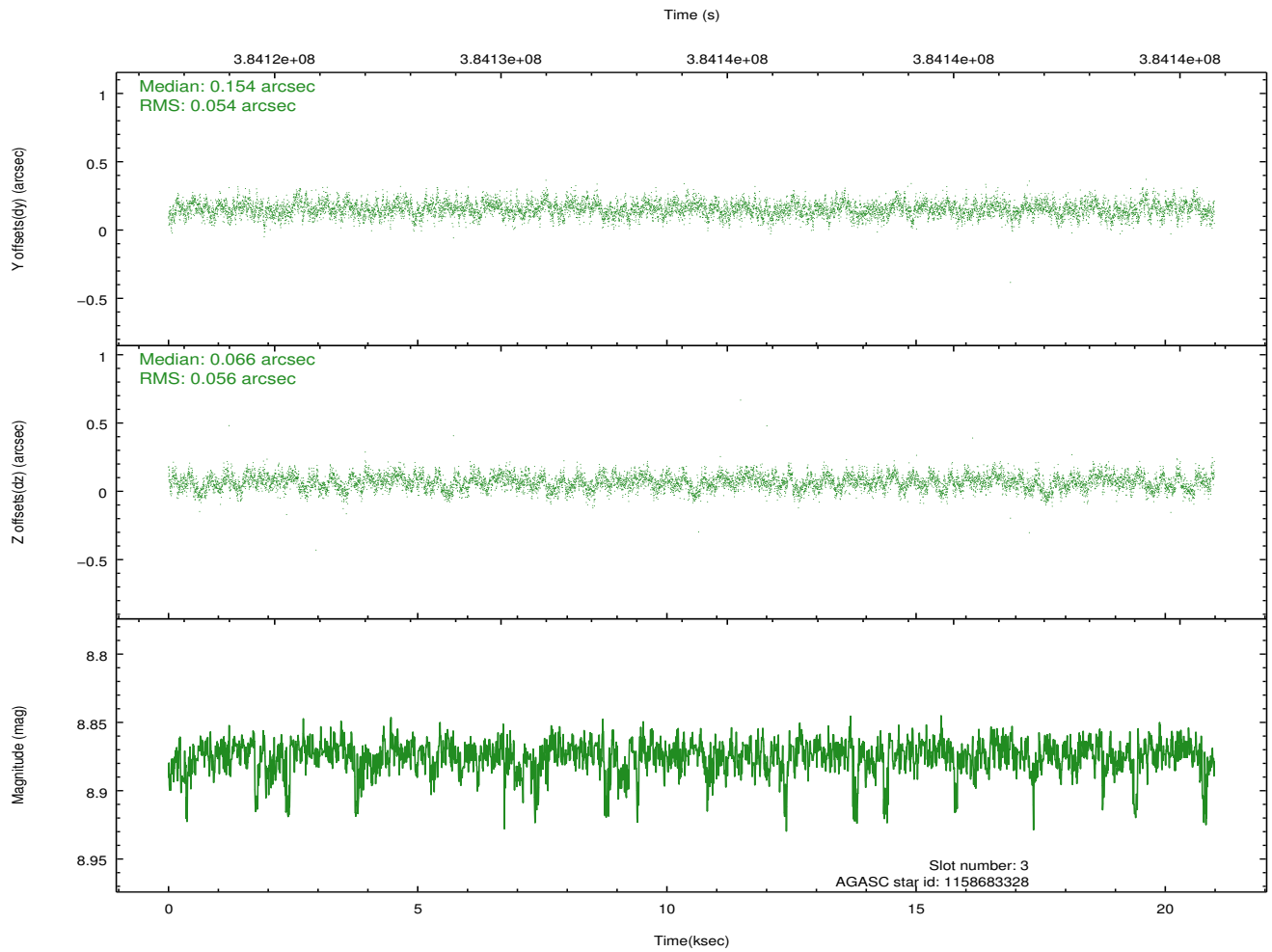
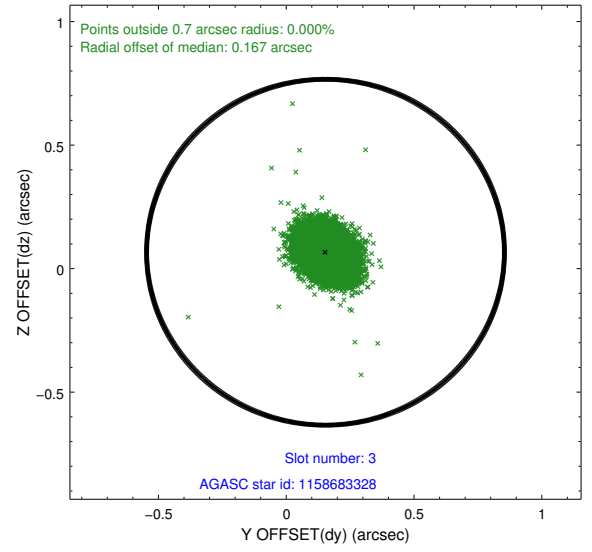
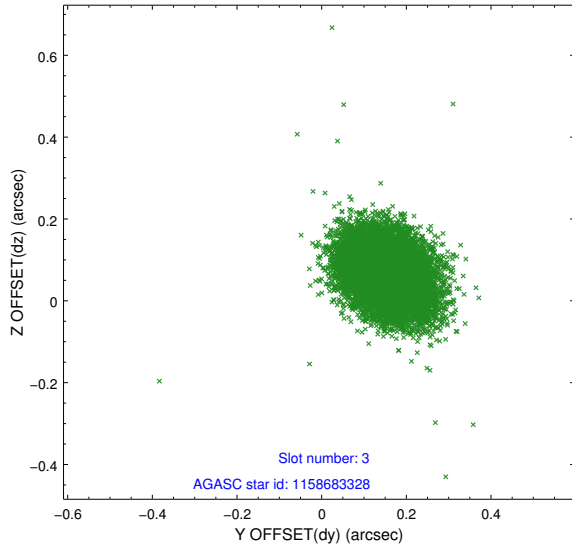


### Slot Statistics

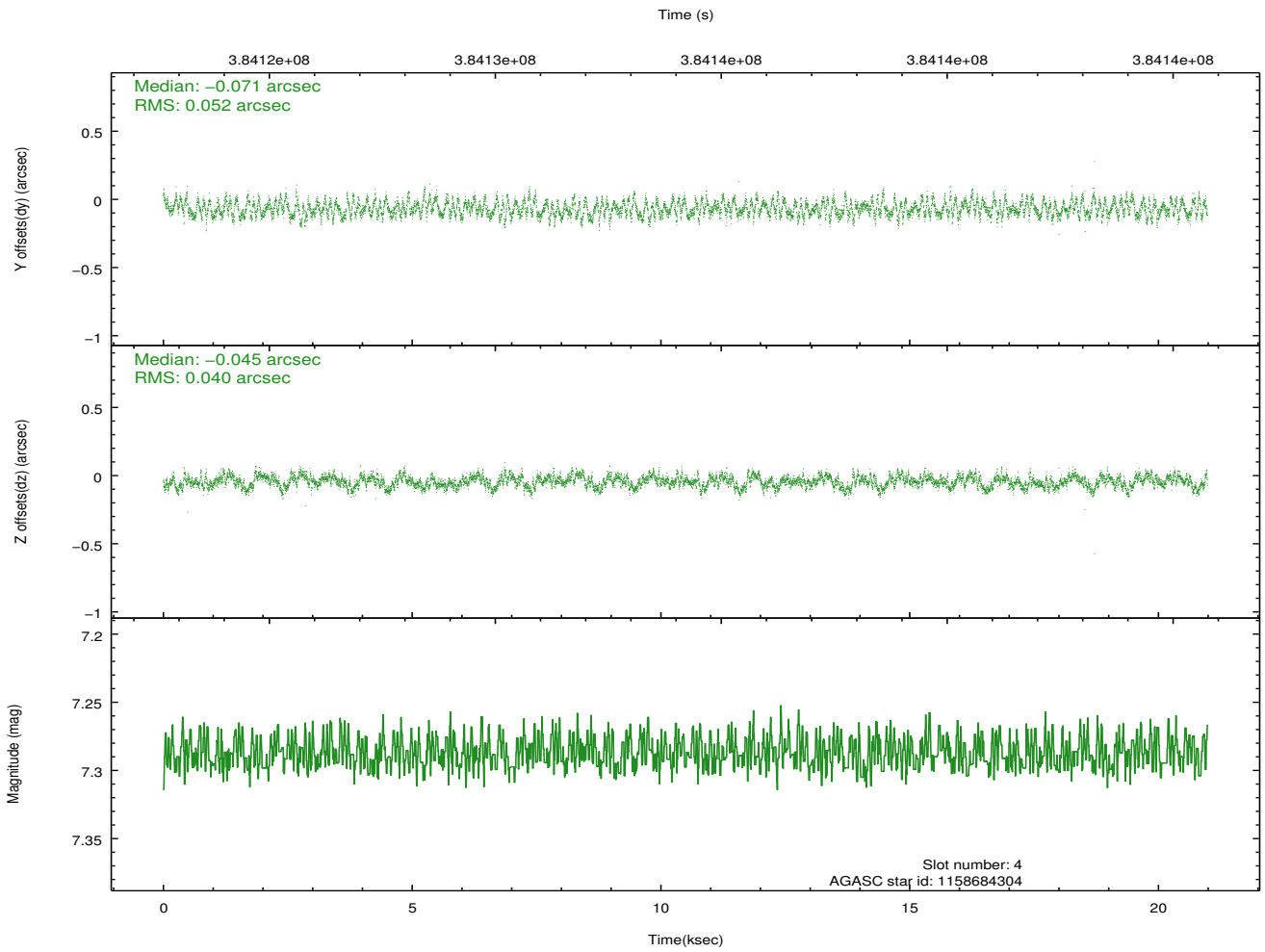
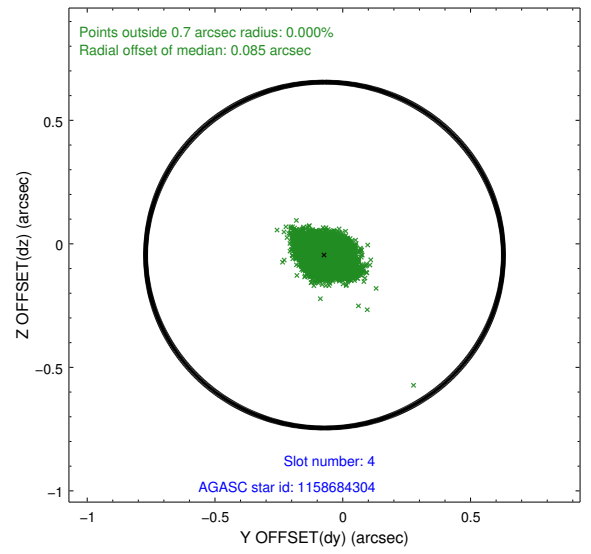
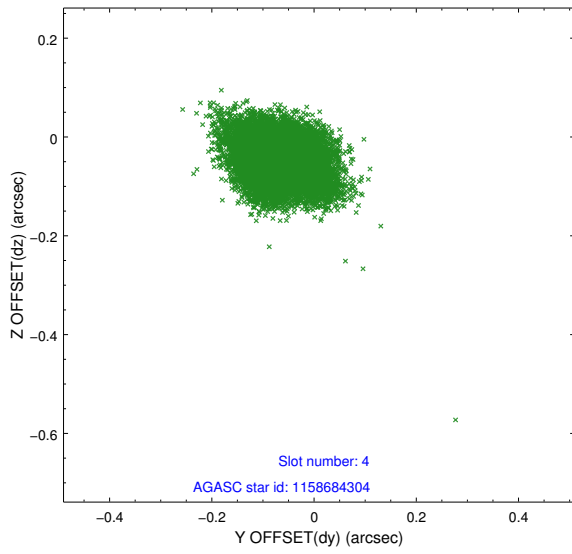
| slot | status | id         | mag  | n_pts | med_dy | med_dz | dr1   | dr2   | ra         | dec        | mean_y   | mean_z   |
|------|--------|------------|------|-------|--------|--------|-------|-------|------------|------------|----------|----------|
| 0    | FID    | ACIS-S-2   | 6.85 | 5117  | -0.061 | -0.035 | 0.012 | 0.022 | 0.000000   | 0.000000   | -769.68  | -1738.95 |
| 1    | FID    | ACIS-S-4   | 6.93 | 5118  | 0.151  | 0.039  | 0.006 | 0.011 | 0.000000   | 0.000000   | 2143.77  | 169.36   |
| 2    | FID    | ACIS-S-5   | 6.96 | 5118  | -0.121 | 0.006  | 0.011 | 0.023 | 0.000000   | 0.000000   | -1822.33 | 163.27   |
| 3    | GUIDE  | 1158683328 | 8.87 | 10227 | 0.154  | 0.066  | 0.081 | 0.134 | 1.368554   | -61.225851 | -2227.20 | 1972.93  |
| 4    | GUIDE  | 1158684304 | 7.29 | 10237 | -0.071 | -0.045 | 0.070 | 0.112 | 1.398980   | -61.309870 | -2178.60 | 2275.16  |
| 5    | GUIDE  | 1196294664 | 9.71 | 10211 | -0.076 | -0.166 | 0.128 | 0.199 | 359.448612 | -61.536765 | 1265.74  | 2006.54  |
| 6    | GUIDE  | 1196299096 | 9.75 | 10220 | 0.027  | 0.029  | 0.119 | 0.195 | 358.667410 | -60.859442 | 1853.19  | -719.66  |
| 7    | GUIDE  | 1196299136 | 8.58 | 10231 | -0.037 | 0.115  | 0.070 | 0.112 | 358.918581 | -60.979672 | 1557.30  | -179.76  |

## 2.4 Star Slots

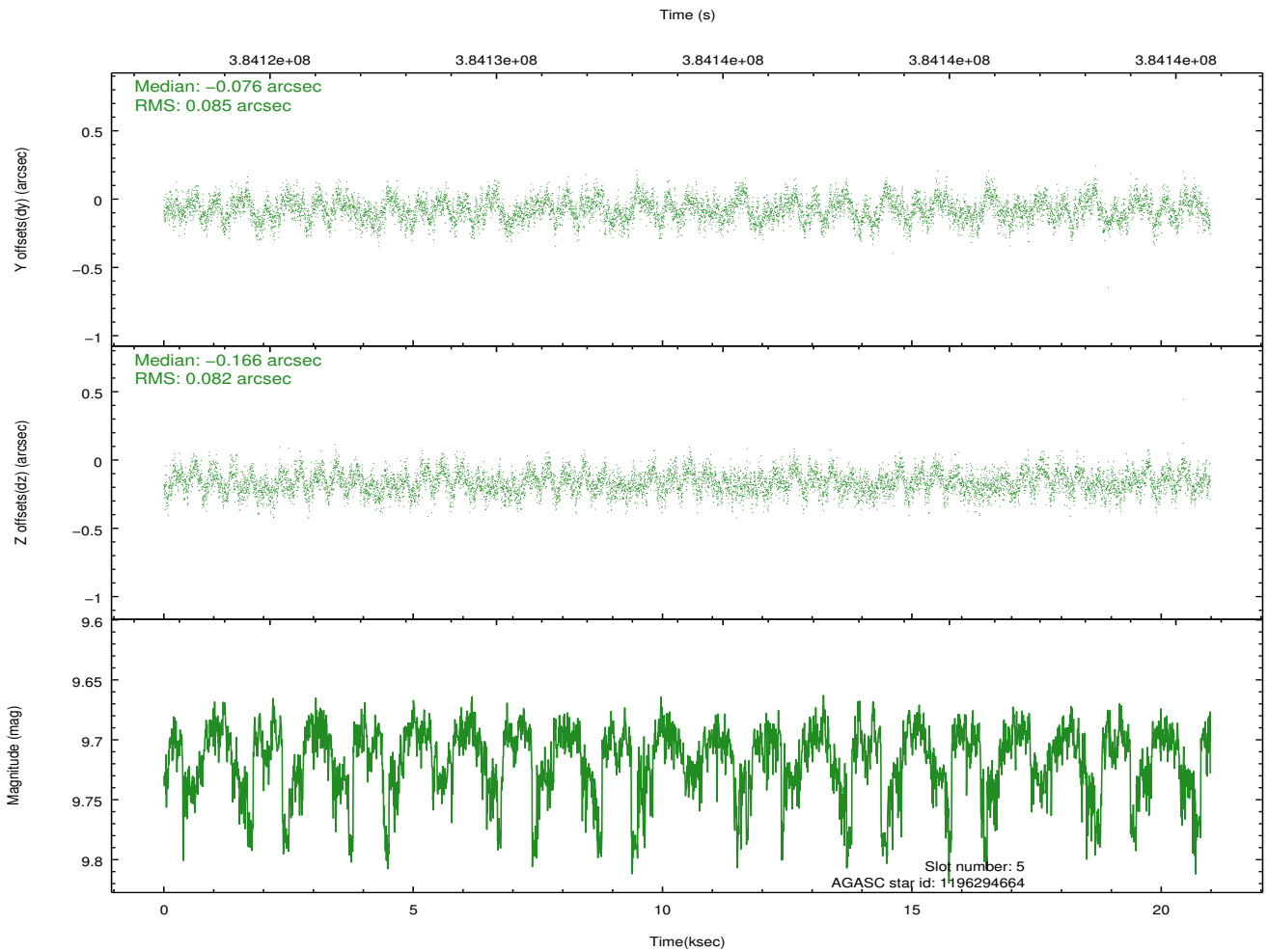
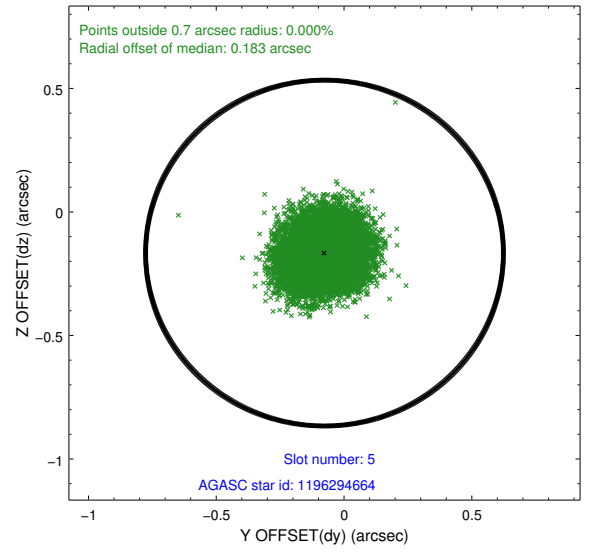
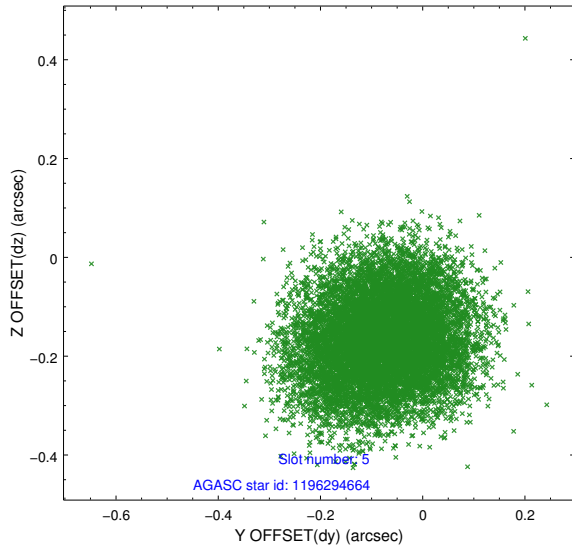
### 2.4.1 Slot 3



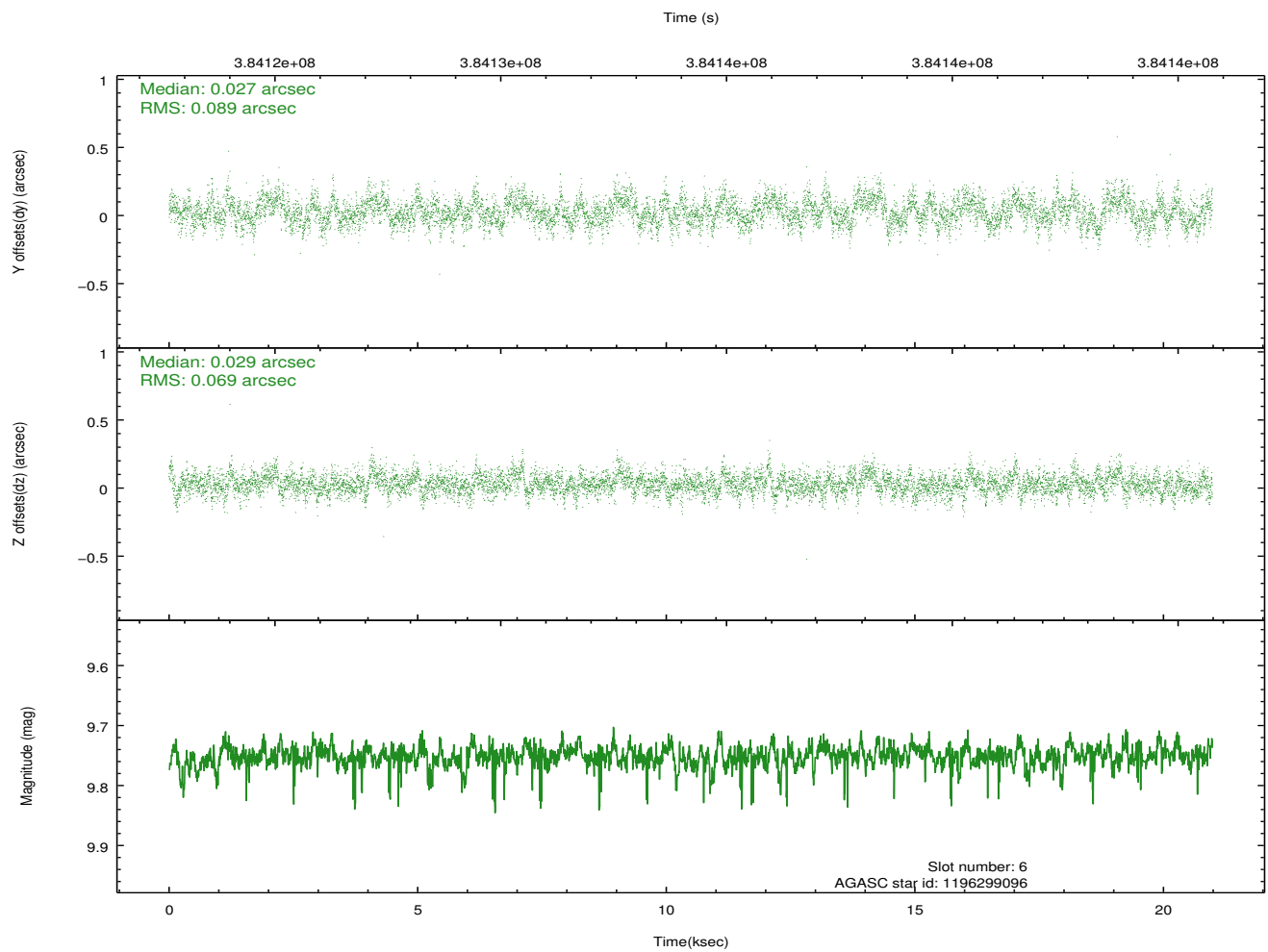
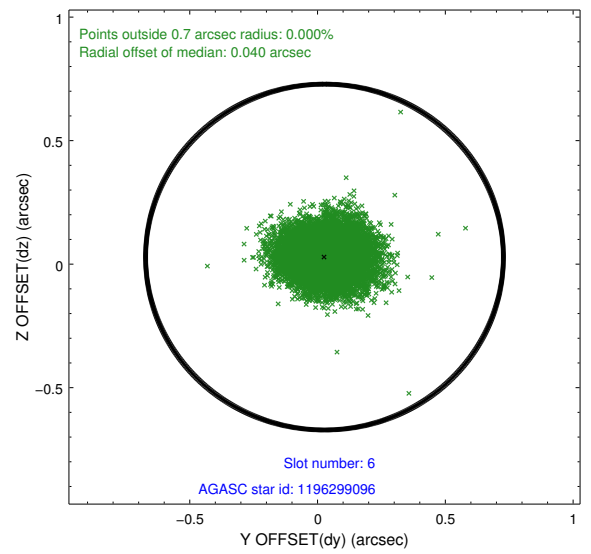
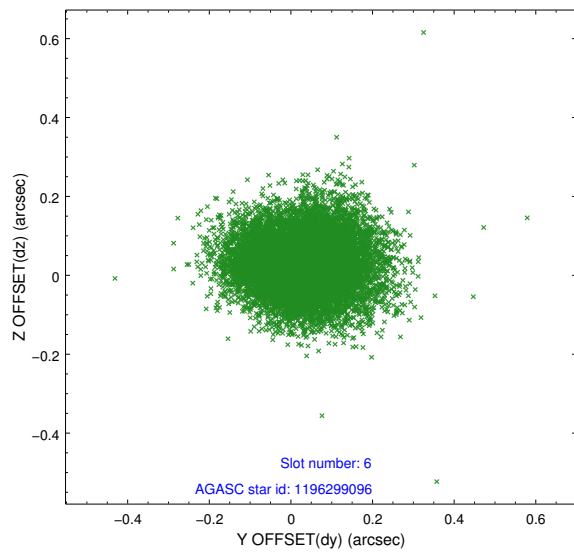
## 2.4.2 Slot 4



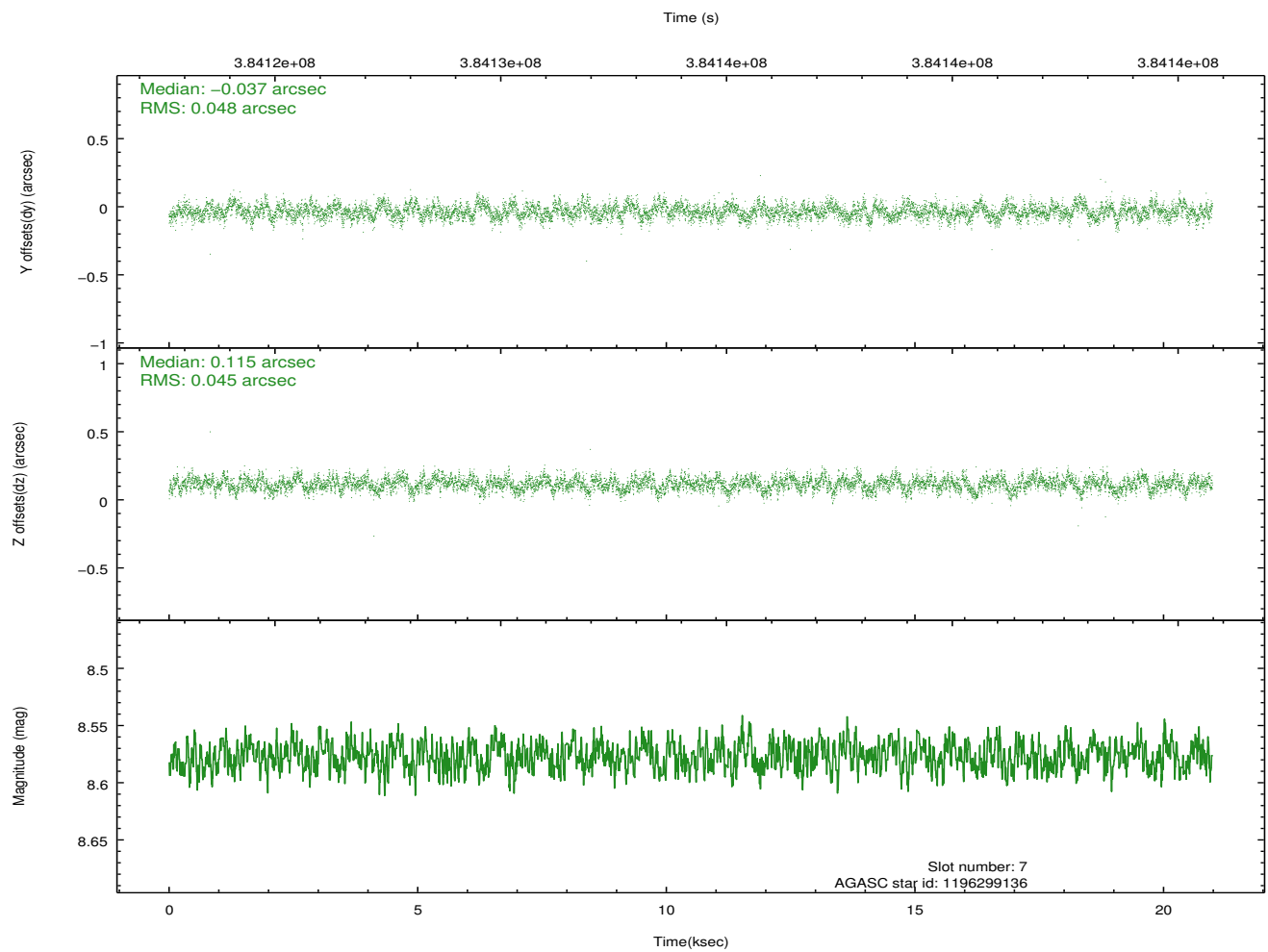
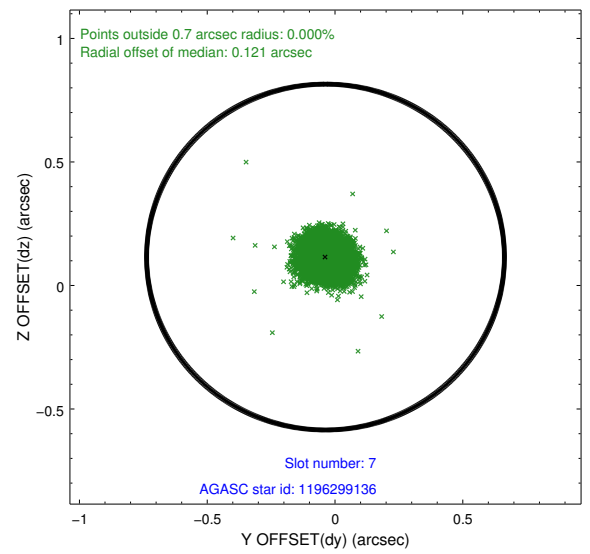
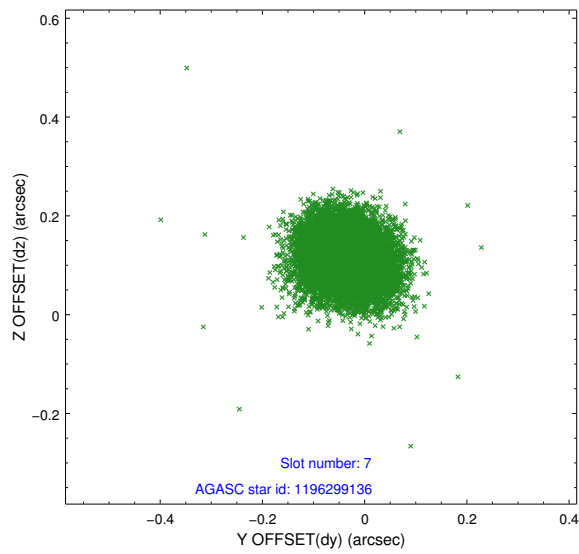
### 2.4.3 Slot 5



## 2.4.4 Slot 6

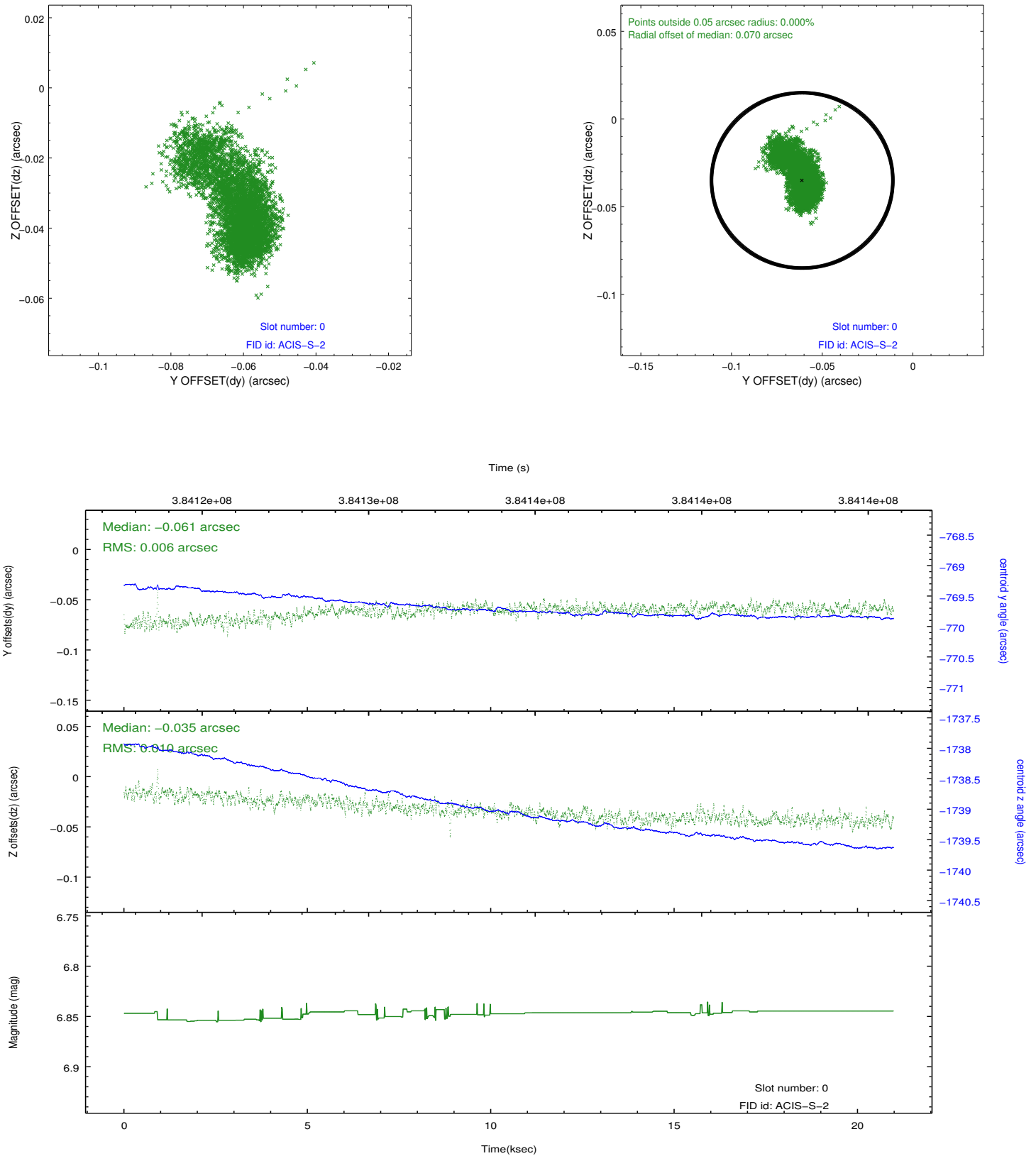


## 2.4.5 Slot 7

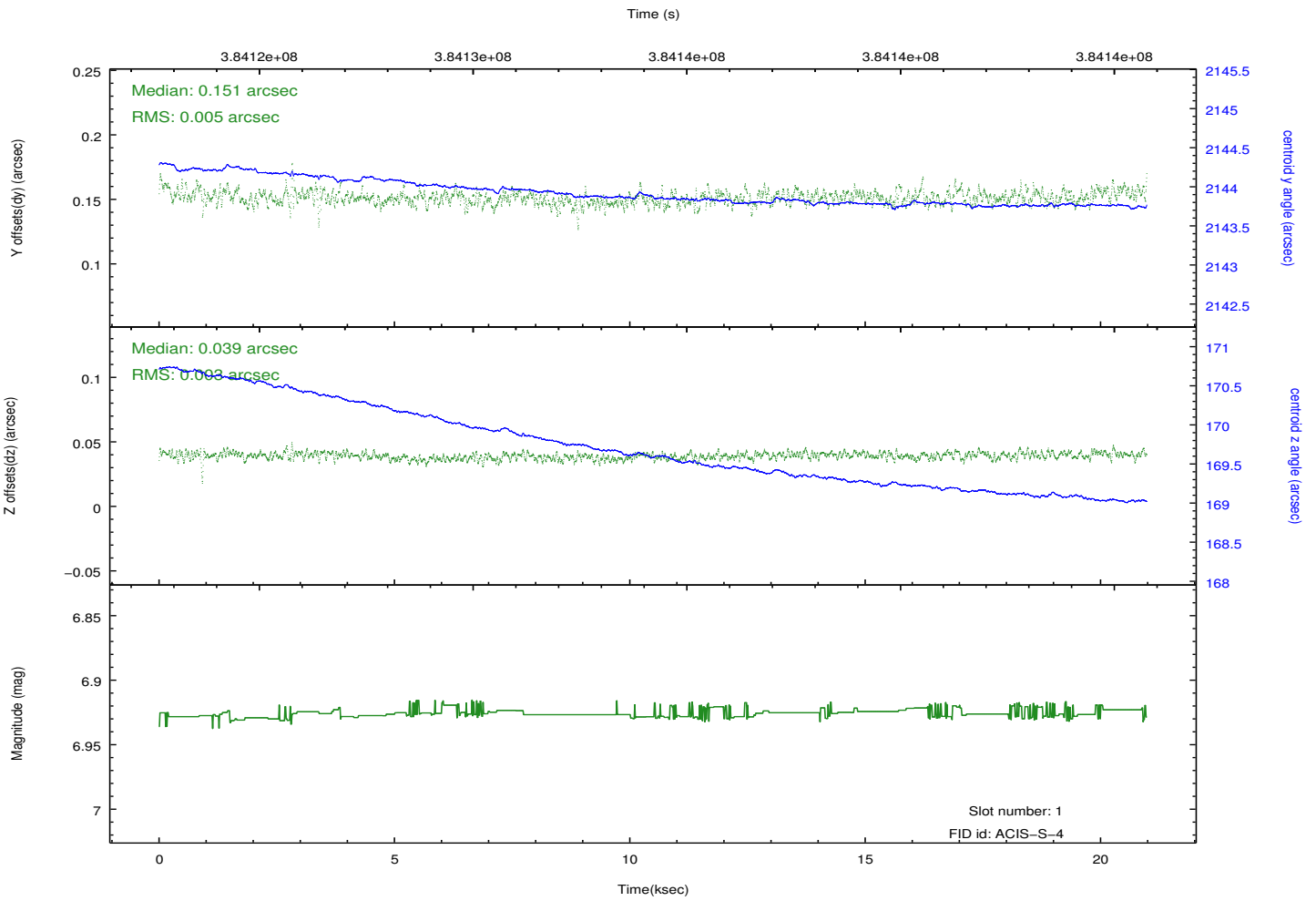
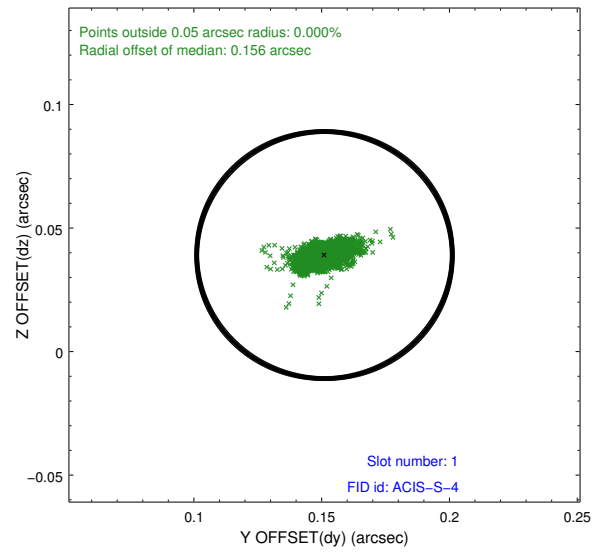
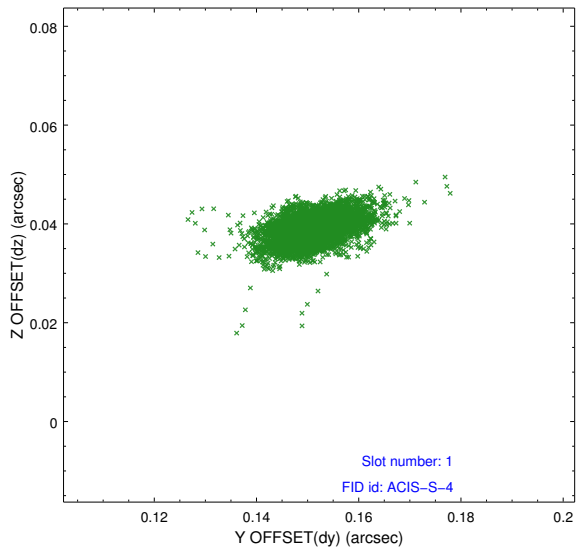


## 2.5 FID Slots

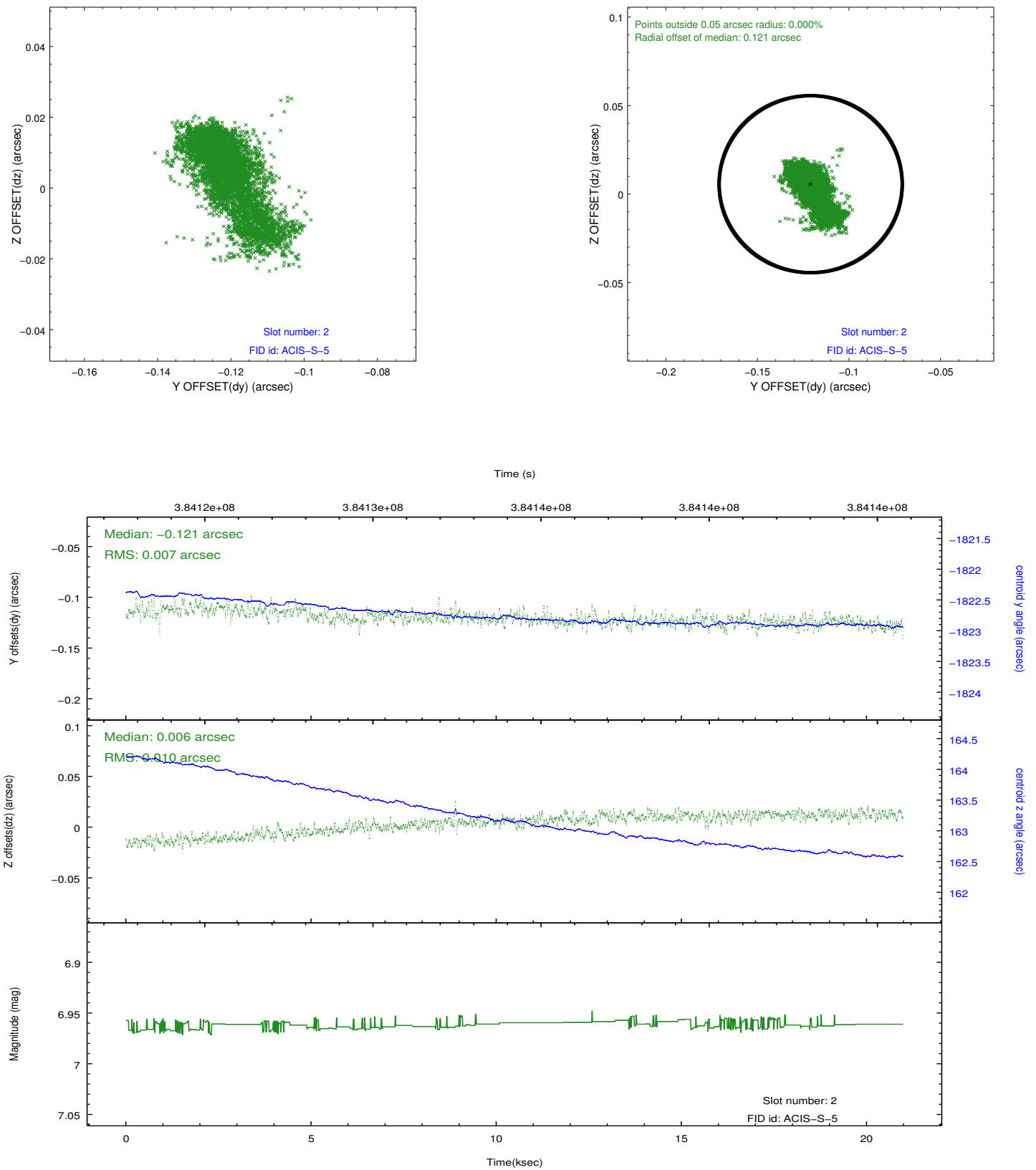
### 2.5.1 Slot 0



## 2.5.2 Slot 1



### 2.5.3 Slot 2



# A Summary

## A.1 Status

|                            |                 |
|----------------------------|-----------------|
| V&V Scientist              | Jen Lauer       |
| V&V Date (YYYY-MM-DD)      | 2012.06.28      |
| V&V Edition                | 1               |
| V&V Disposition and Status | OK              |
| V&V Charge Time            | 20.046809262872 |

## A.2 Comments