

# V&V Reference Report

## L2 ASCDS Version : 8.4.4

Observation 9413 - L2 Version 2  
Chandra X-Ray Center

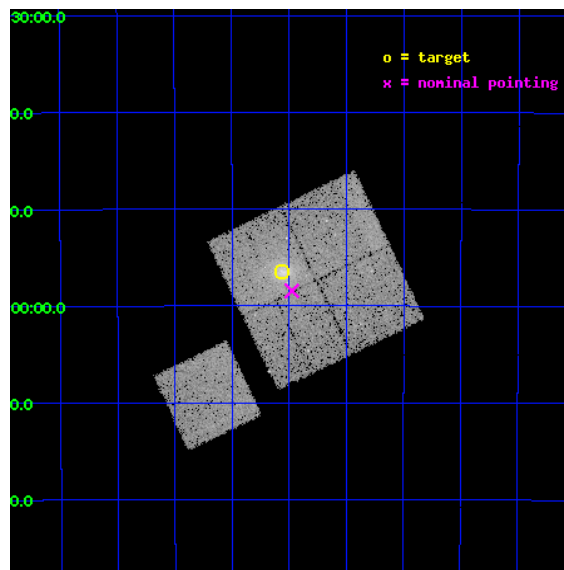
L2 Processing Date : May 11 2012

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# 1 Front

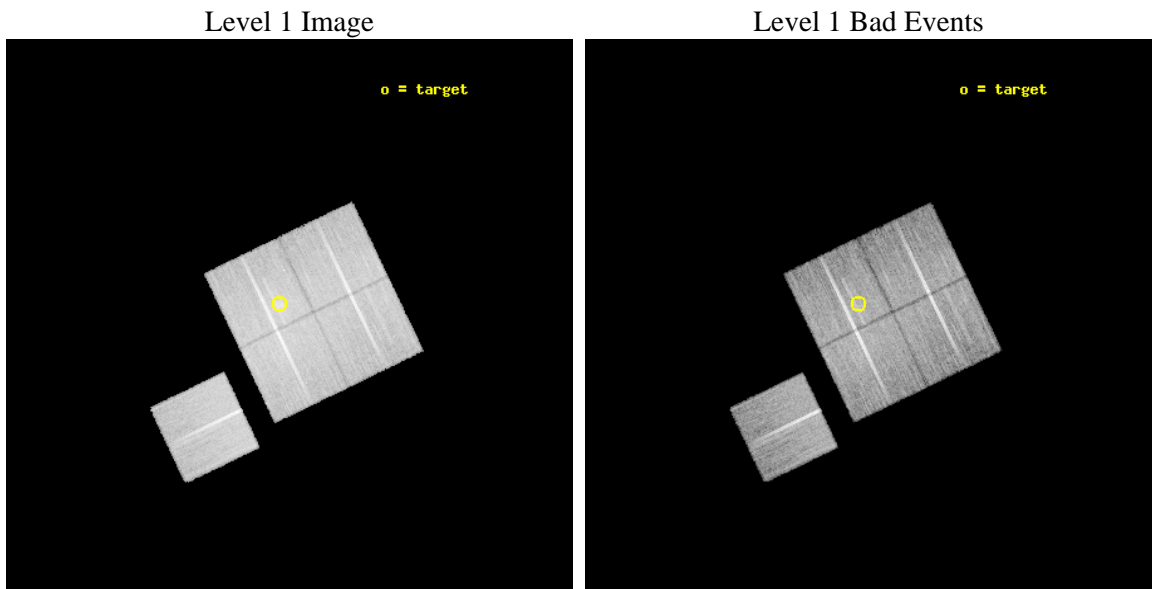
|          |  |   |
|----------|--|---|
| seq_num  | 800749   | Sequence number                             |
| obs_id   | 9413   | Observation id                              |
| title    | LoCuSS: Cluster Mass Comparison with Chandra and HST --<br>Observational Discrepancy or Agreement in the New Millennium? | Proposal title                              |
| observer | Dr Graham Smith  | Principal investigator                      |
| object   | RXCJ0304.1-3656  | Source name                                 |
| dtcycle  | 0  | &#160                                       |
| cycle    | P  | events from which exps?<br>Prim/Second/Both |
| ra_targ  | 46.016708  | Observer's specified target RA<br>[deg]     |
| dec_targ | -36.940833   | Observer's specified target Dec<br>[deg]    |
| ra_nom   | 45.994193628604  | Nominal RA [deg]                            |
| dec_nom  | -36.974025819778   | Nominal Dec [deg]                           |
| roll_nom | 244.34916889178  | Nominal Roll [deg]                          |
| revision | 2  | Processing version of data                  |
| ontime   | 20131.318333864  | Sum of GTIs [s]                             |
| livetime | 19868.287839371  | Livetime [s]                                |
| ontime0  | 20134.459194601  | Sum of GTIs [s]                             |
| ontime1  | 20134.459194541  | Sum of GTIs [s]                             |
| ontime2  | 20125.03625375   | Sum of GTIs [s]                             |
| ontime3  | 20131.318333864  | Sum of GTIs [s]                             |
| ontime6  | 20134.459164619  | Sum of GTIs [s]                             |
| l2events | 74294  | Number of level 2 events                    |



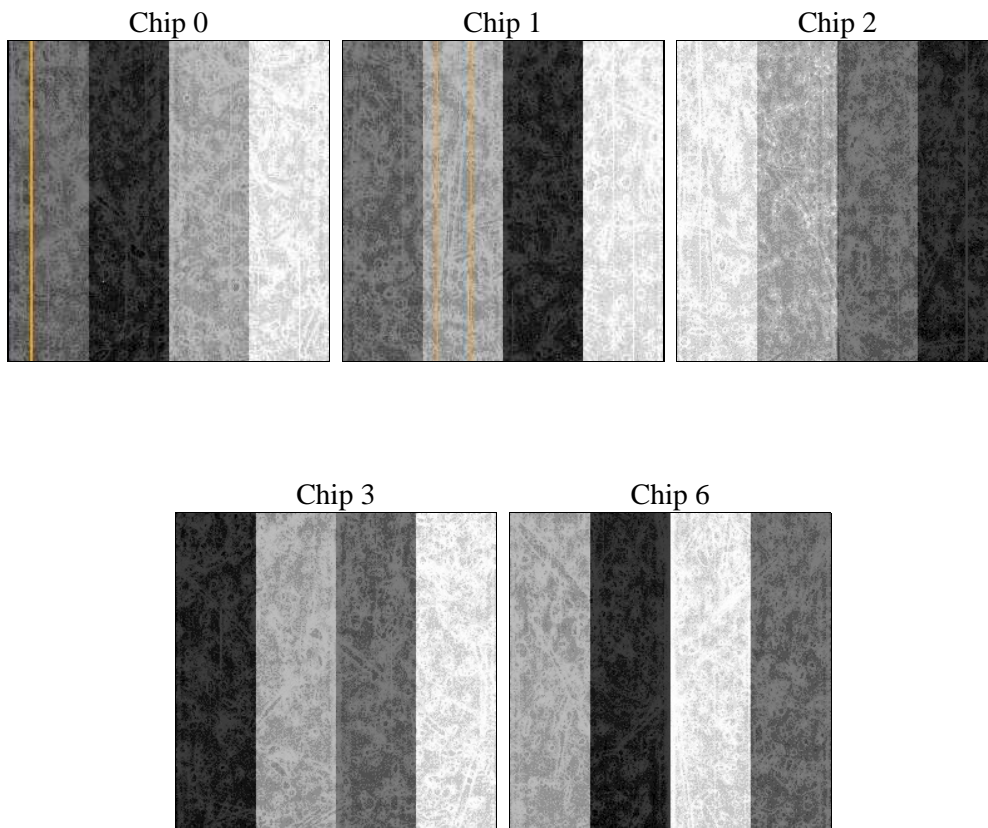
## 2 OBI

### 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         | 20131.318333864 | Sum of GTIs [s]                         |
| caldbver | 4.4.9               | &#160                          | ontime0        | 20134.459194601 | Sum of GTIs [s]                         |
| date     | 2012-05-11T13:28:51 | Date and time of file creation | ontime1        | 20134.459194541 | Sum of GTIs [s]                         |
| revision | 2                   | Processing version of data     | ontime2        | 20125.03625375  | Sum of GTIs [s]                         |
|          |                     |                                | ontime3        | 20131.318333864 | Sum of GTIs [s]                         |
|          |                     |                                | ontime6        | 20134.459164619 | Sum of GTIs [s]                         |
|          |                     |                                | l1events       | 819776          | Number of level 1 events                |

### 2.1.4 Events

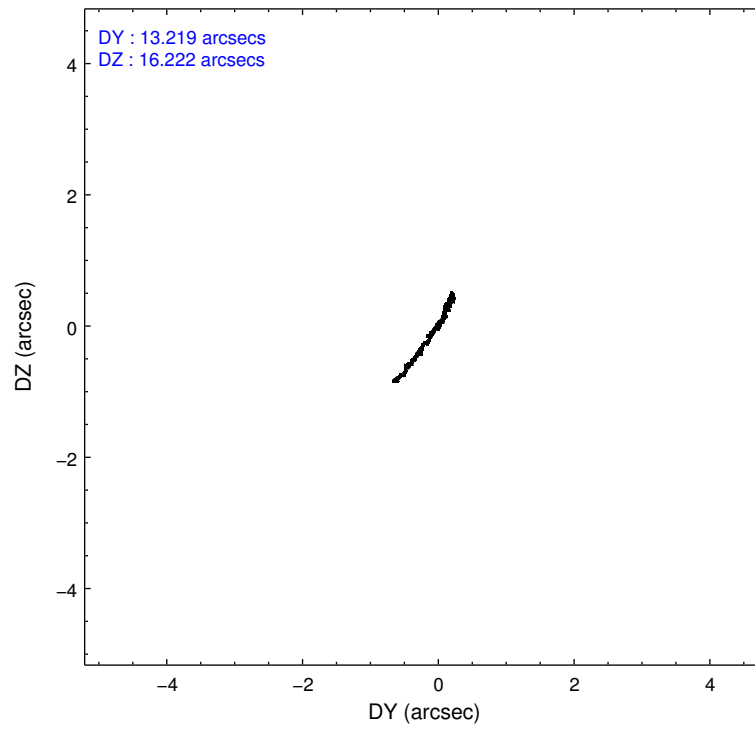
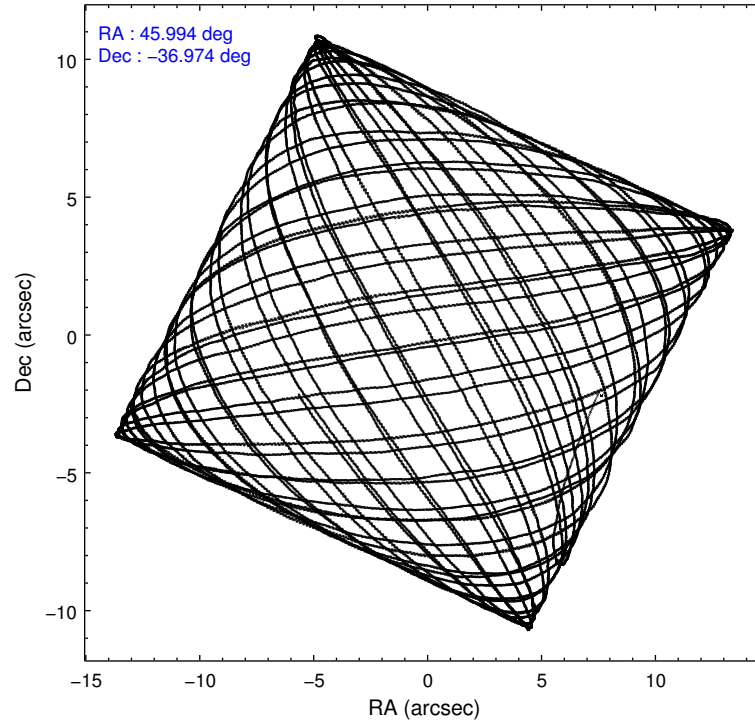
|                 | ccd 0  | ccd 1  | ccd 2  | ccd 3  | ccd 6  |
|-----------------|--------|--------|--------|--------|--------|
| level 1 events  | 155821 | 153534 | 172044 | 172189 | 166188 |
| rejected events | 139692 | 135282 | 155772 | 150611 | 149838 |
| rejected %      | 89%    | 88%    | 90%    | 87%    | 90%    |

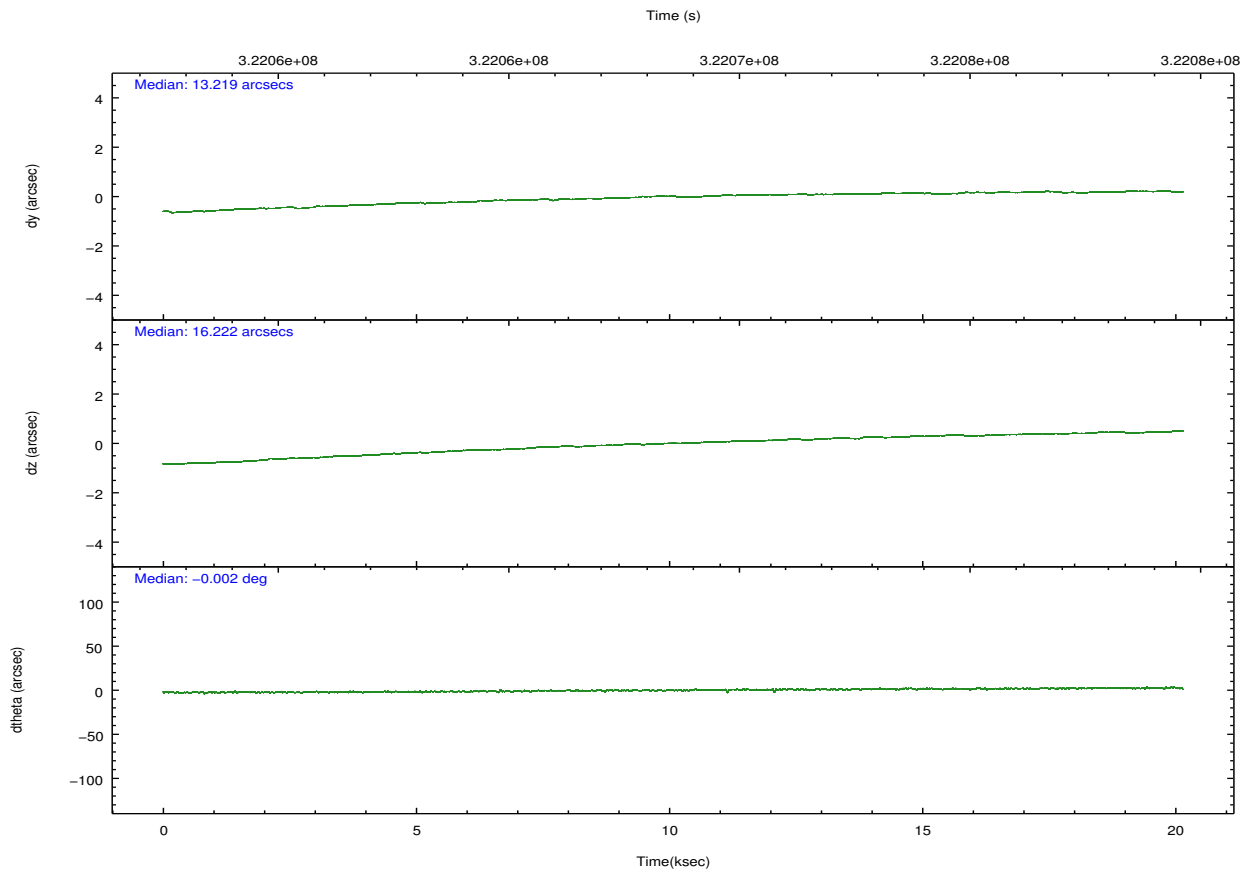
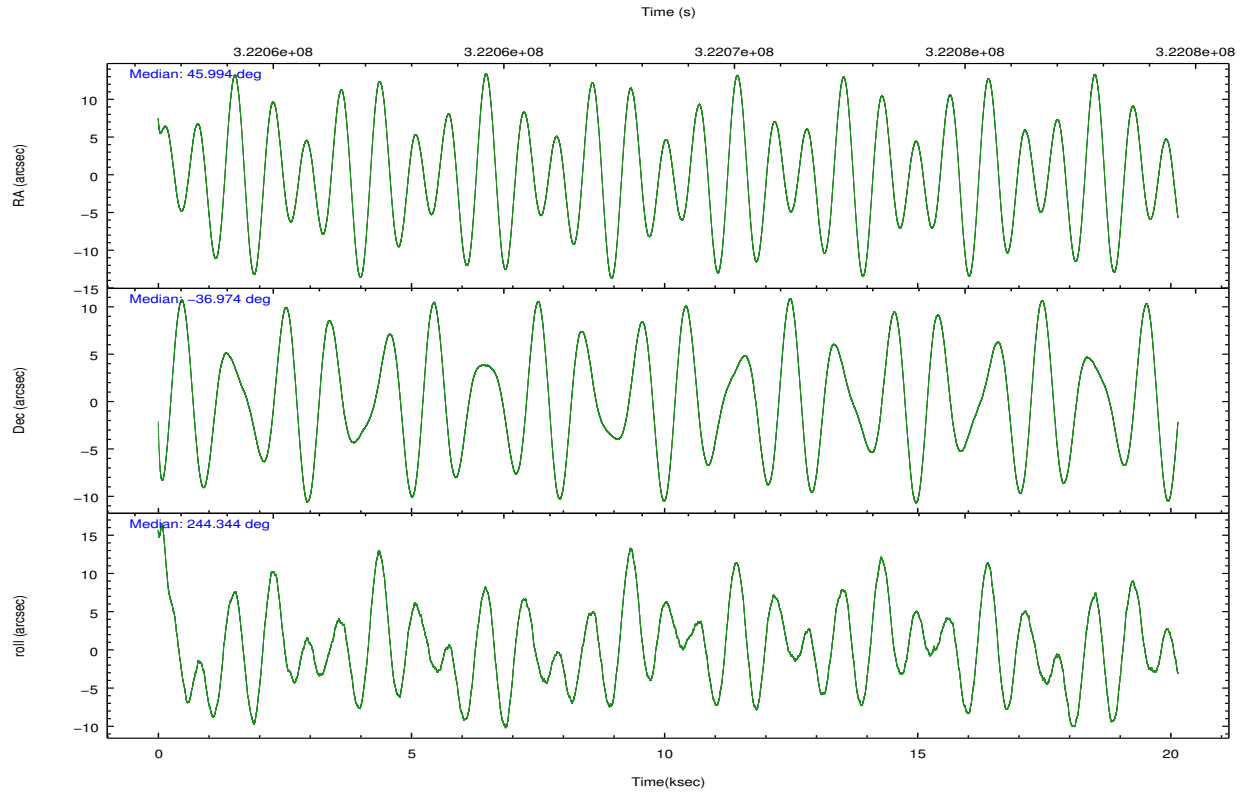
|                | ccd 0  | ccd 1  | ccd 2  | ccd 3  | ccd 6  |
|----------------|--------|--------|--------|--------|--------|
| grade 0 events | 5828   | 6771   | 6061   | 10820  | 5757   |
|                | 3%     | 4%     | 3%     | 6%     | 3%     |
| grade 1 events | 98     | 75     | 116    | 125    | 79     |
|                | 0%     | 0%     | 0%     | 0%     | 0%     |
| grade 2 events | 4004   | 4241   | 4147   | 4050   | 3740   |
|                | 2%     | 2%     | 2%     | 2%     | 2%     |
| grade 3 events | 1993   | 2041   | 1747   | 1917   | 1863   |
|                | 1%     | 1%     | 1%     | 1%     | 1%     |
| grade 4 events | 1733   | 2024   | 1741   | 1987   | 1829   |
|                | 1%     | 1%     | 1%     | 1%     | 1%     |
| grade 5 events | 5805   | 6556   | 5472   | 6851   | 6556   |
|                | 3%     | 4%     | 3%     | 3%     | 3%     |
| grade 6 events | 3074   | 3755   | 3081   | 3402   | 3694   |
|                | 1%     | 2%     | 1%     | 1%     | 2%     |
| grade 7 events | 133286 | 128071 | 149679 | 143037 | 142670 |
|                | 85%    | 83%    | 87%    | 83%    | 85%    |

## 2.2 Compared Parameters

| Parameter                         | Planned             | Actual               | Parameter                             | Planned   | Actual  |
|-----------------------------------|---------------------|----------------------|---------------------------------------|-----------|---------|
| Instrument                        | ACIS                | ACIS                 | Obspar format version number          | 7         | 7       |
| Detector                          | ACIS-01236          | ACIS-01236           | Obspar file type                      | PREDICTED | ACTUAL  |
| Grating                           | NONE                | NONE                 | Obspar update status                  | NONE      | UPDATED |
| Data mode                         | VFAINT              | VFAINT               | Number of optional ACIS chips dropped | 0         | 0       |
| Observation mode                  | POINTING            | POINTING             | On-chip summing requested             | N         | N       |
| [deg] Pointing RA                 | 45.991432           | 45.99419362860402    | Subarray requested                    | NONE      | NONE    |
| [deg] Pointing Dec                | -36.946601          | -36.97402581977828   | Alternating exposures requested       | N         | N       |
| [deg] Pointing Roll               | 244.138826          | 244.3491688917805    | [s] Primary exposure time             | 0.000000  | 3.1     |
| [mm] SIM focus pos                | -0.782348           | -0.7809083437167272  |                                       |           |         |
| [mm] SIM defocus                  | 0                   | 0.001439871863259334 |                                       |           |         |
| [mm] SIM translation stage pos    | -227.592463         | -227.5933067819097   |                                       |           |         |
| [mm] SIM translation stage offset | -6                  | -5.999146221020027   |                                       |           |         |
| [s] Observation start time (MET)  | 322058635.184000    | 322057335.43195      |                                       |           |         |
| Observation start date            | 2008-03-16T12:42:50 | 2008-03-16T12:22:15  |                                       |           |         |
| [s] Observation end time (MET)    | 322078635.184000    | 322080139.63306      |                                       |           |         |
| Observation end date              | 2008-03-16T18:16:10 | 2008-03-16T18:42:19  |                                       |           |         |
| Read mode                         | TIMED               | TIMED                |                                       |           |         |

## 2.3 Aspect



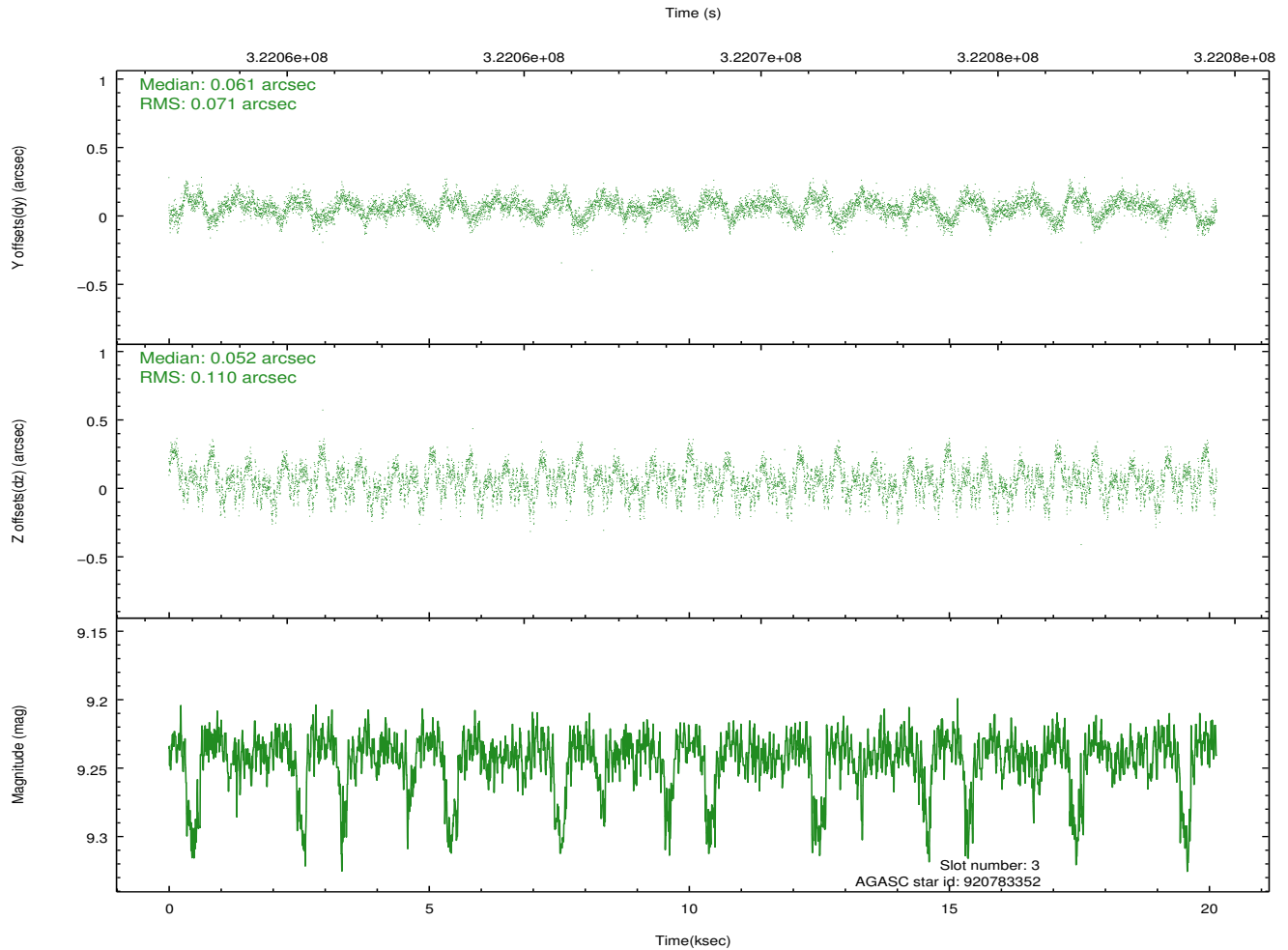
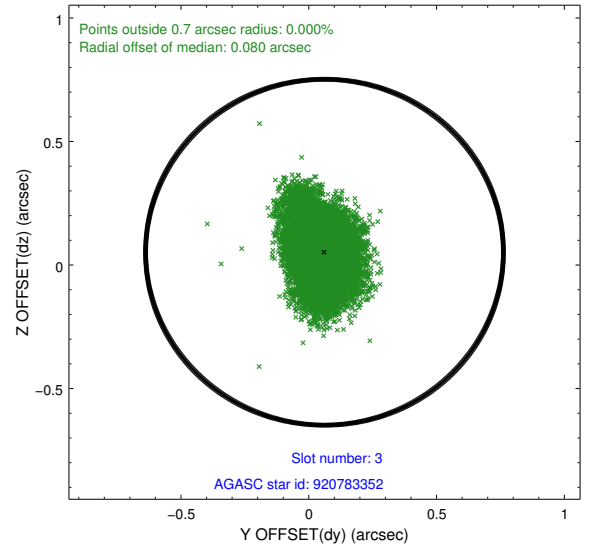
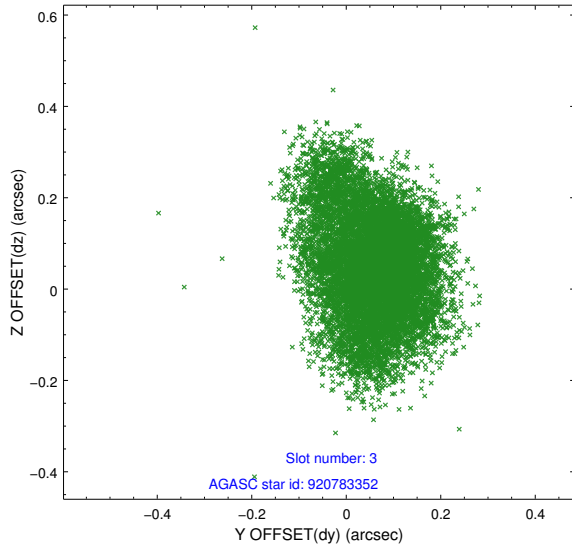


### Slot Statistics

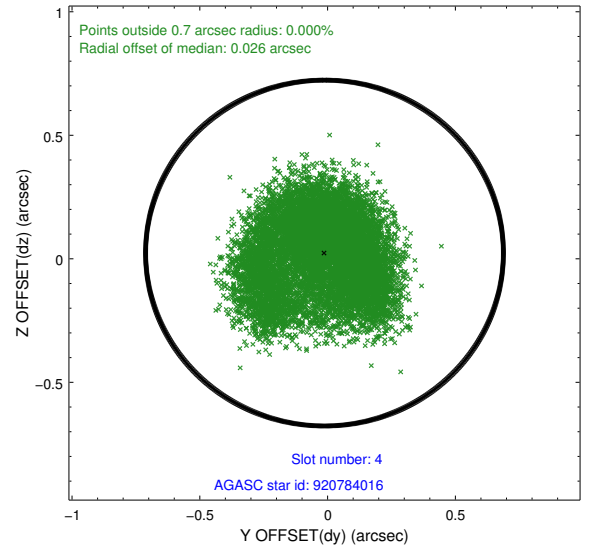
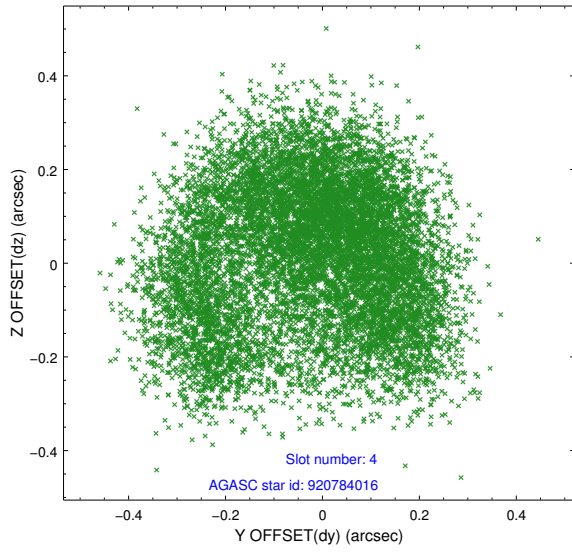
| slot | status | id        | mag  | n_pts | med_dy | med_dz | dr1   | dr2   | ra        | dec        | mean_y   | mean_z   |
|------|--------|-----------|------|-------|--------|--------|-------|-------|-----------|------------|----------|----------|
| 0    | FID    | ACIS-I-1  | 7.22 | 4914  | 0.092  | -0.058 | 0.020 | 0.036 | 0.000000  | 0.000000   | 926.36   | -962.97  |
| 1    | FID    | ACIS-I-5  | 7.22 | 4914  | -0.253 | 0.081  | 0.014 | 0.024 | 0.000000  | 0.000000   | -1822.00 | 934.52   |
| 2    | FID    | ACIS-I-6  | 7.23 | 4914  | 0.069  | 0.047  | 0.011 | 0.022 | 0.000000  | 0.000000   | 391.66   | 1579.21  |
| 3    | GUIDE  | 920783352 | 9.24 | 9821  | 0.061  | 0.052  | 0.139 | 0.232 | 45.293038 | -36.611454 | -198.44  | -2338.66 |
| 4    | GUIDE  | 920784016 | 9.83 | 9811  | -0.012 | 0.023  | 0.239 | 0.350 | 45.666906 | -36.189998 | -2037.91 | -2036.00 |
| 5    | GUIDE  | 920784328 | 9.91 | 9741  | 0.197  | 0.026  | 0.163 | 0.323 | 46.662261 | -36.994785 | -678.92  | 1814.32  |
| 6    | GUIDE  | 920784488 | 8.18 | 9825  | -0.231 | -0.078 | 0.067 | 0.103 | 46.442272 | -36.926776 | -627.37  | 1138.15  |
| 7    | GUIDE  | 920786896 | 9.62 | 9814  | 0.011  | -0.026 | 0.159 | 0.249 | 45.538779 | -36.901400 | 425.85   | -1241.88 |

## 2.4 Star Slots

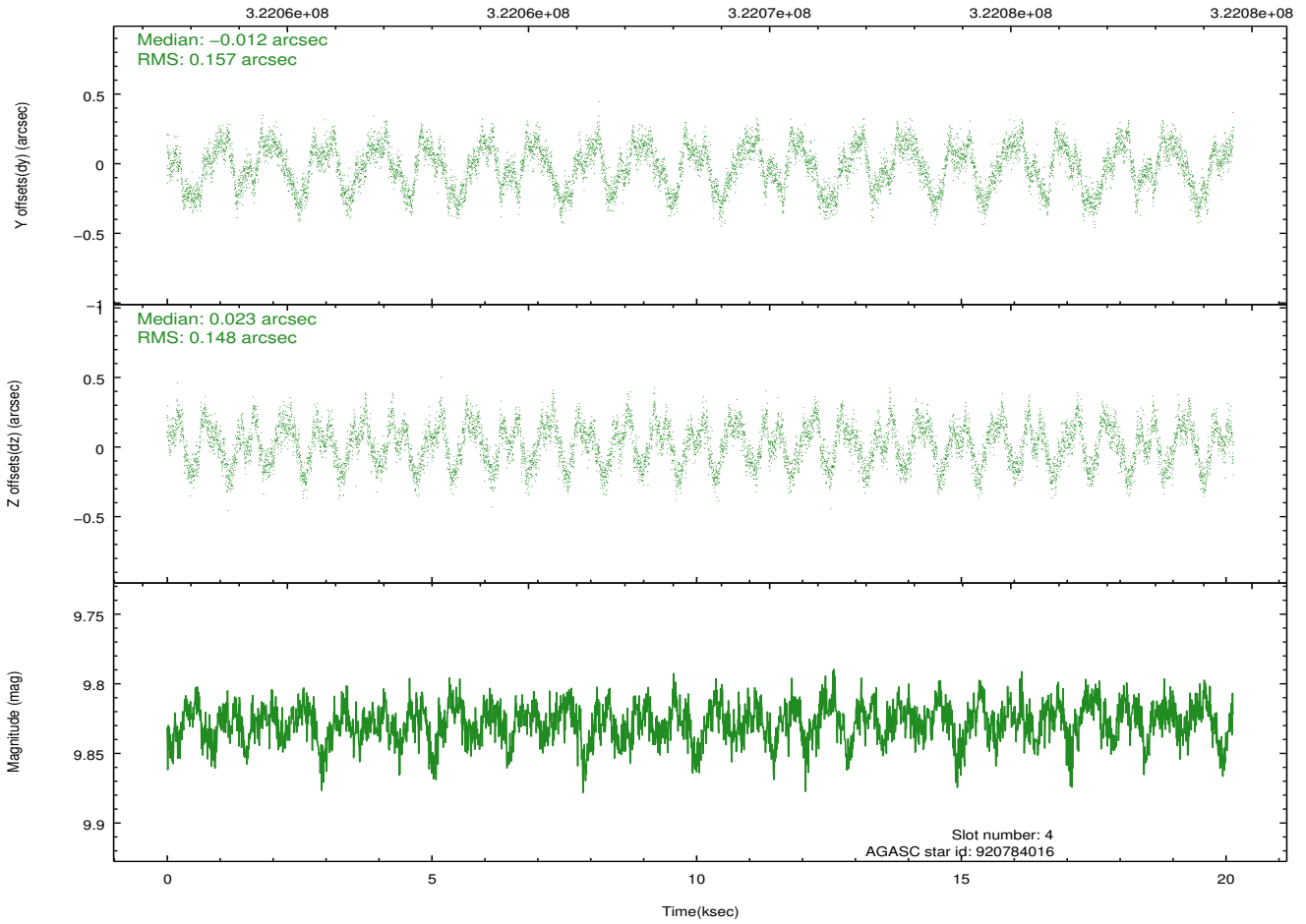
### 2.4.1 Slot 3



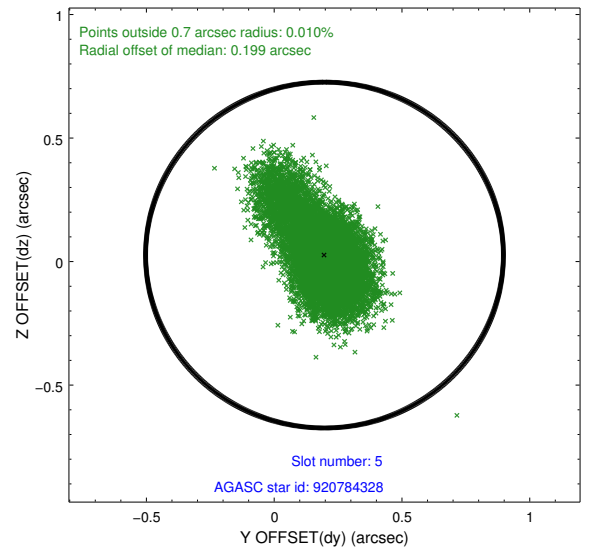
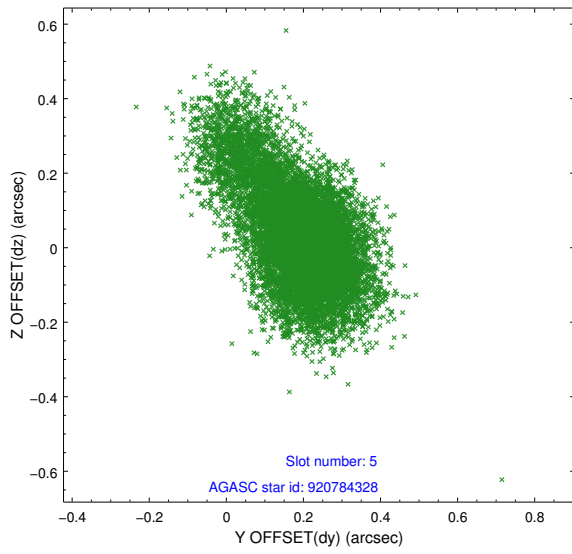
## 2.4.2 Slot 4



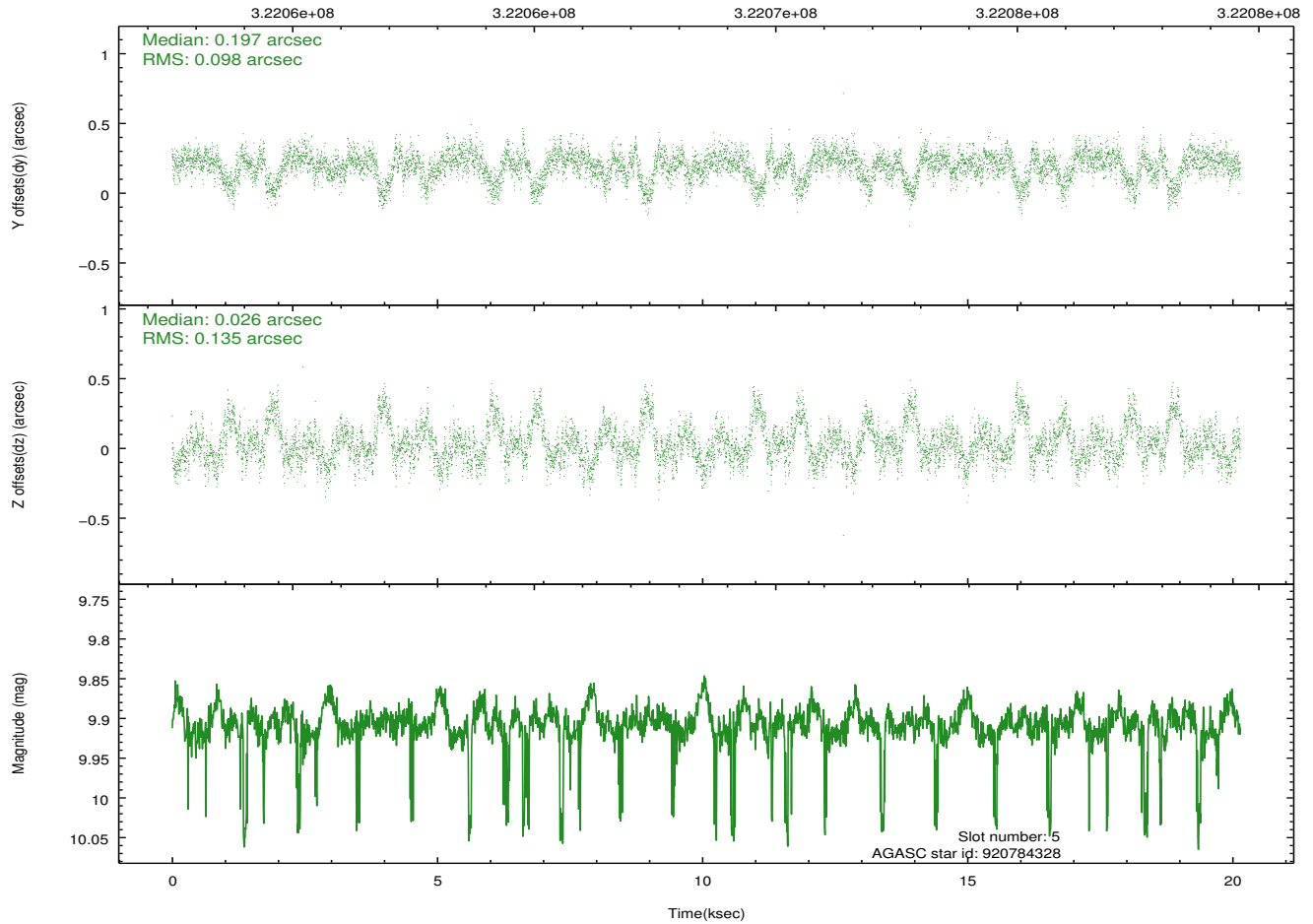
Time (s)



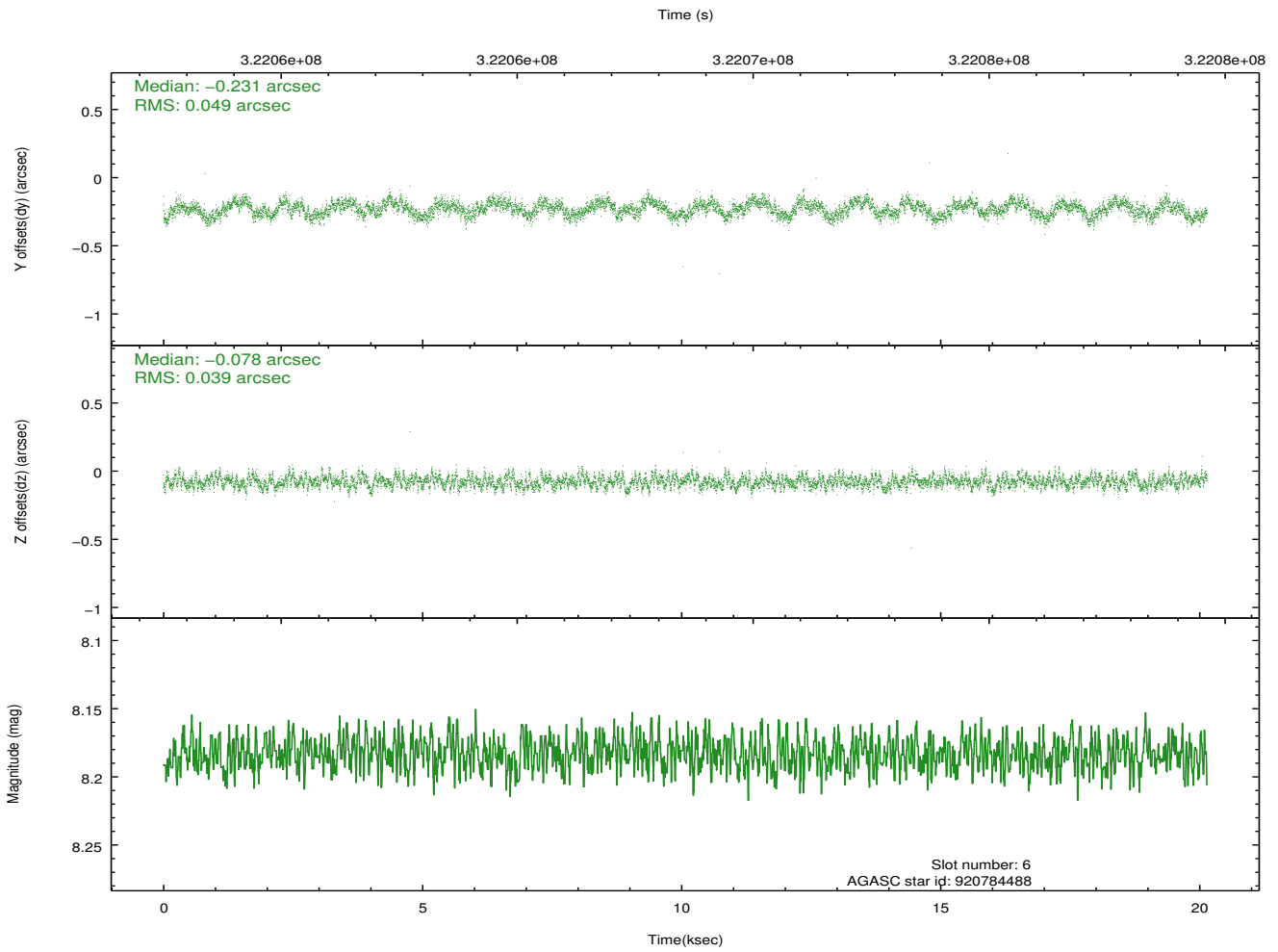
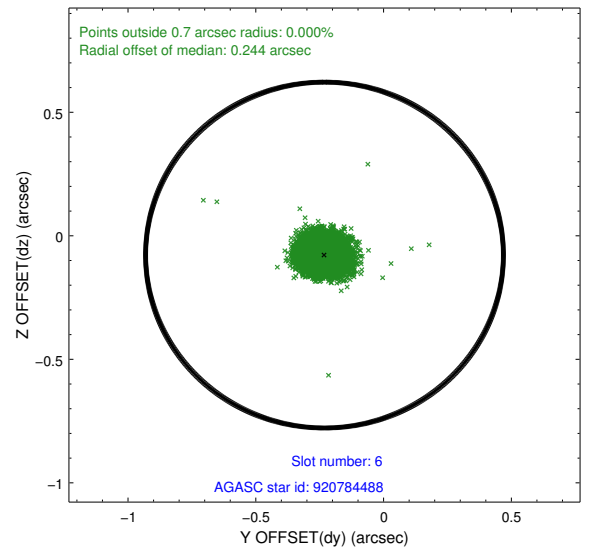
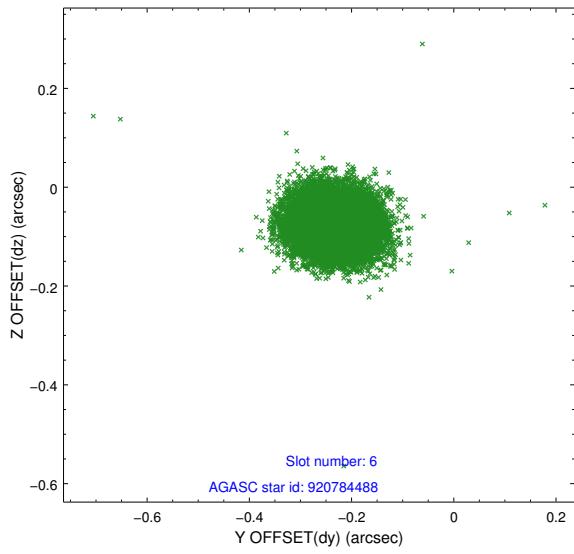
### 2.4.3 Slot 5



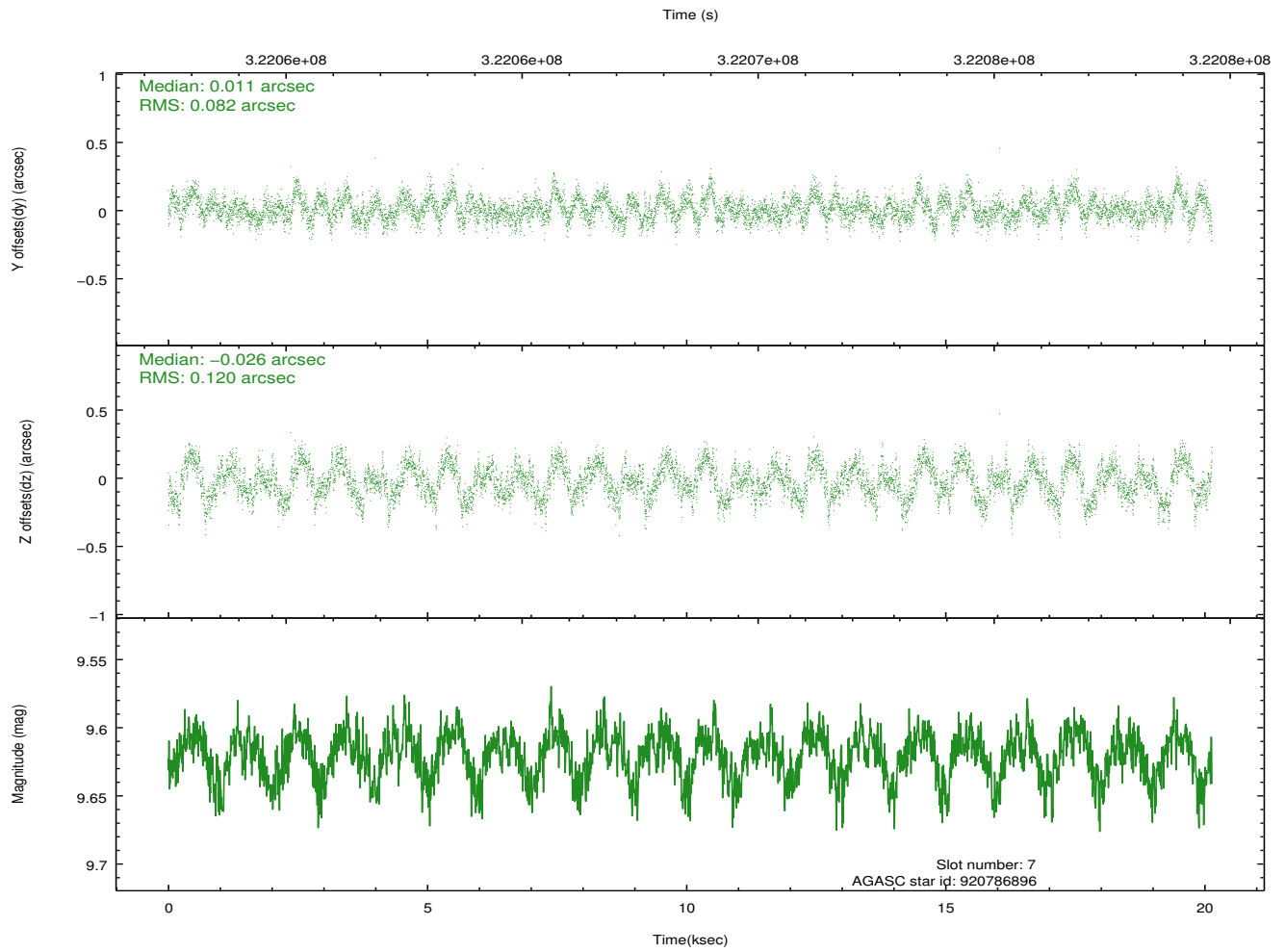
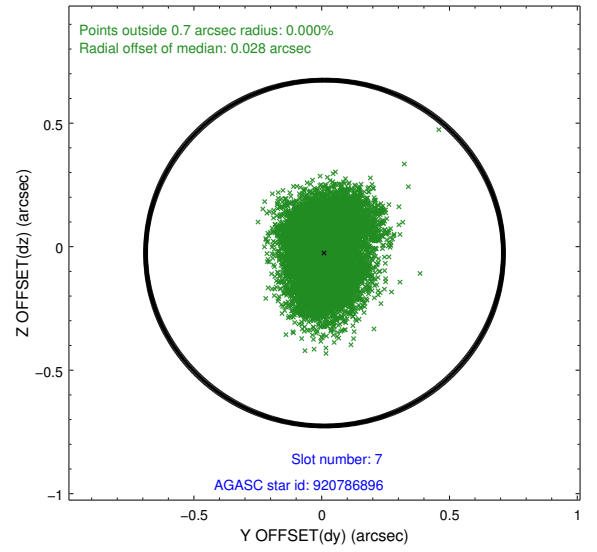
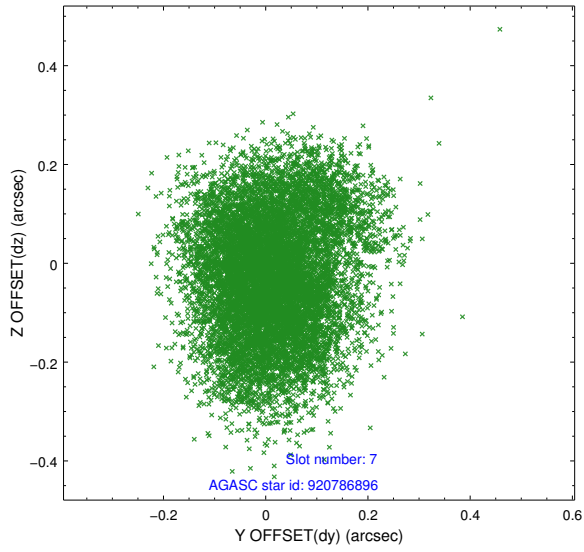
Time (s)



### 2.4.4 Slot 6

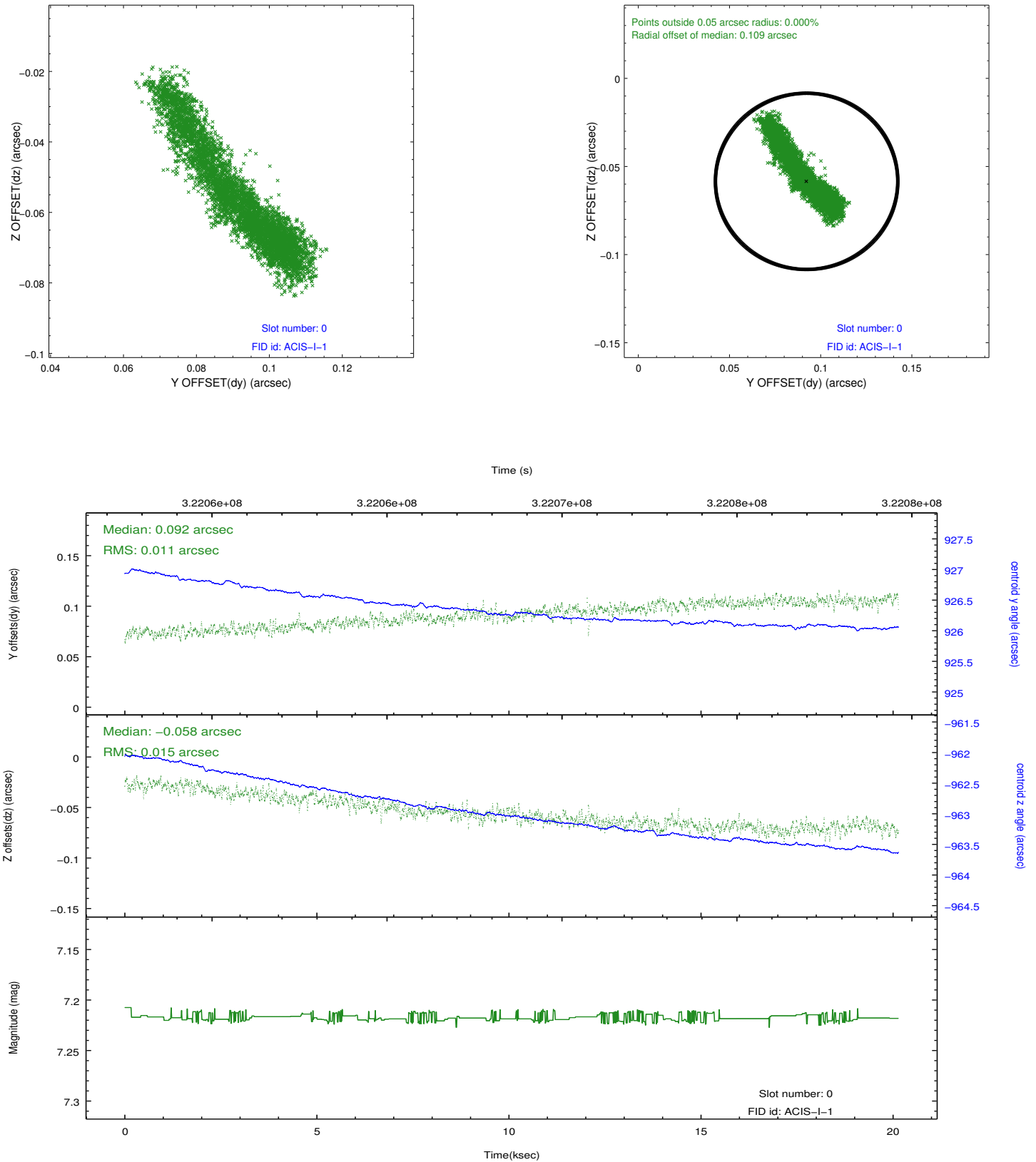


### 2.4.5 Slot 7

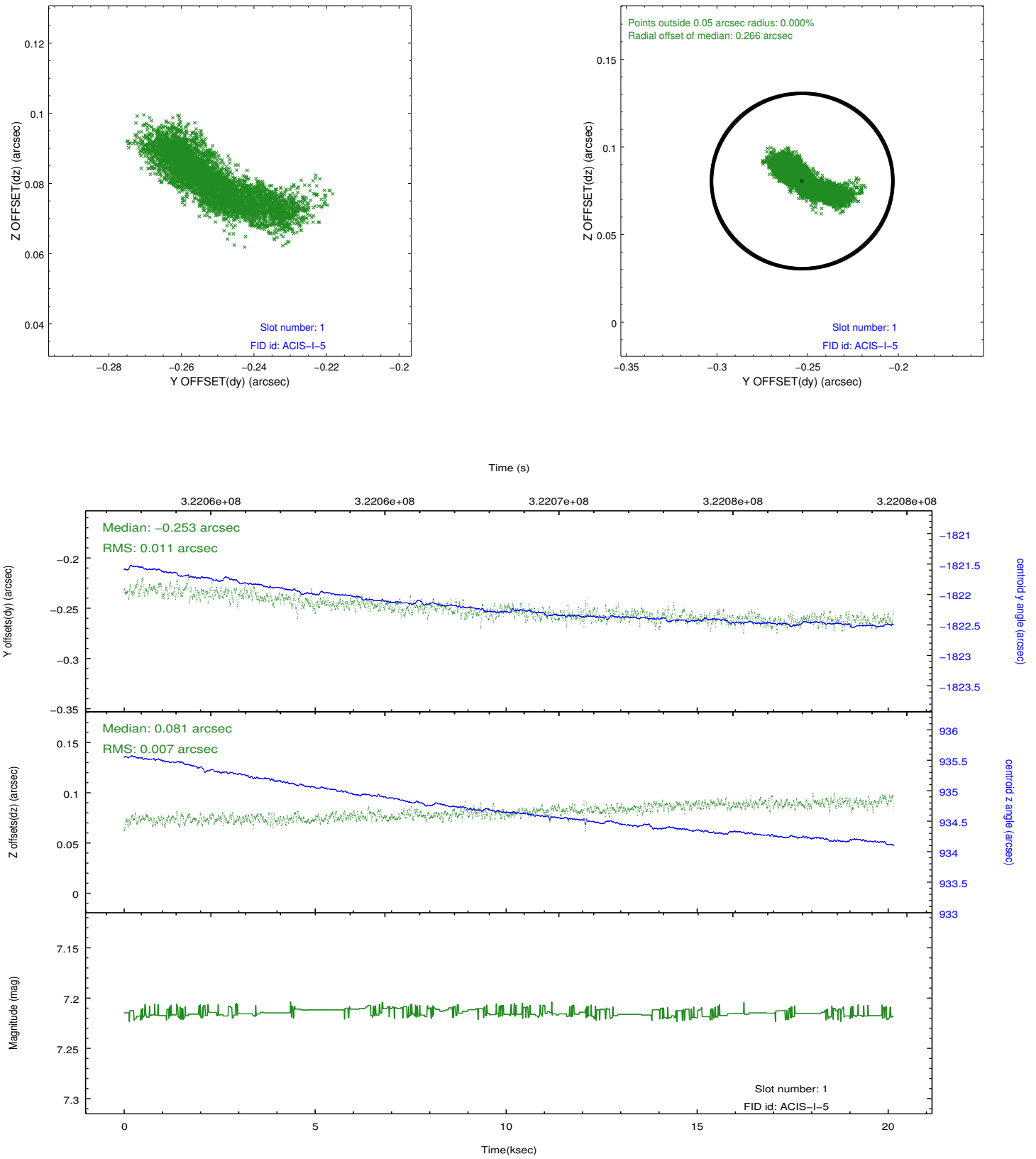


## 2.5 FID Slots

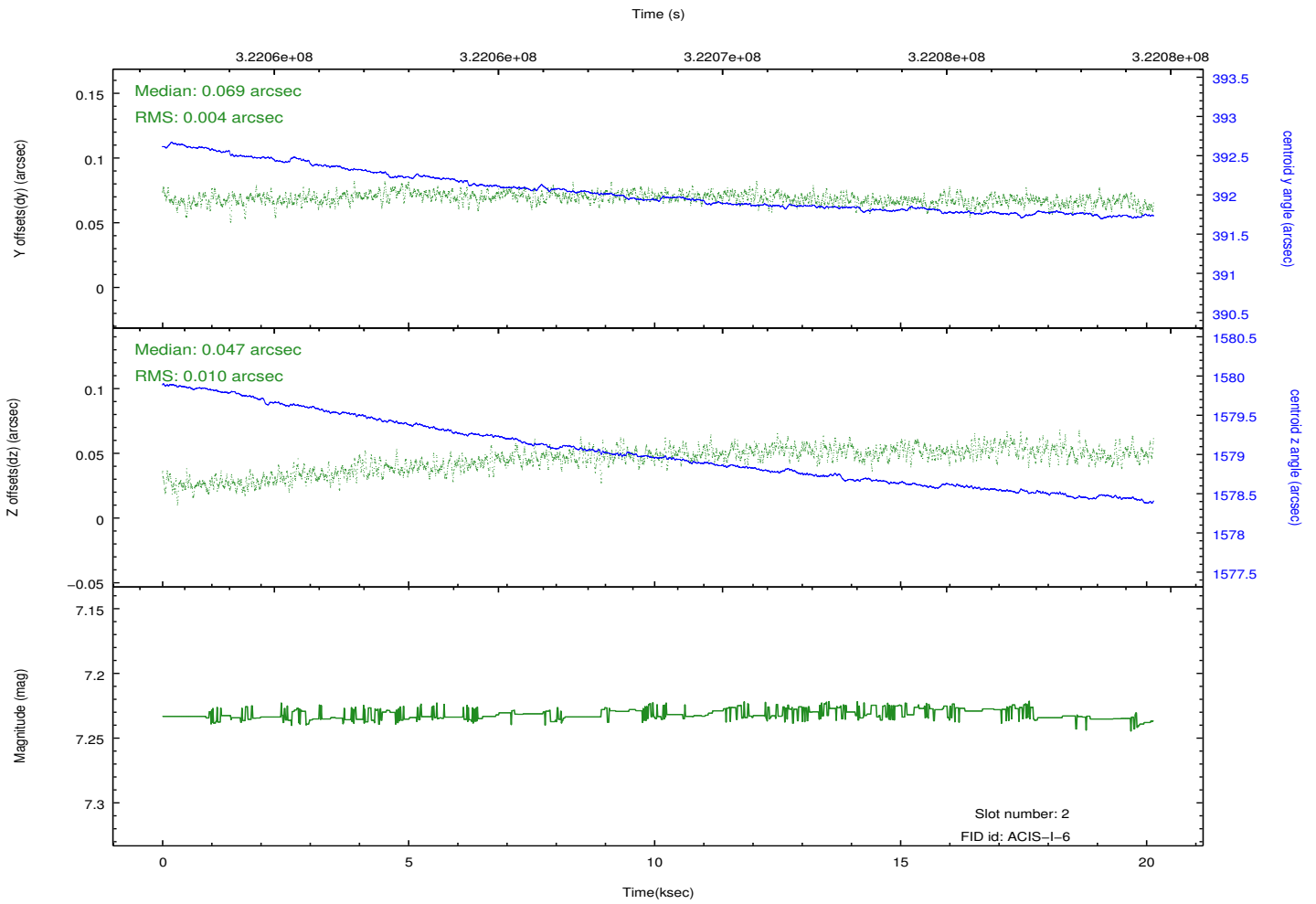
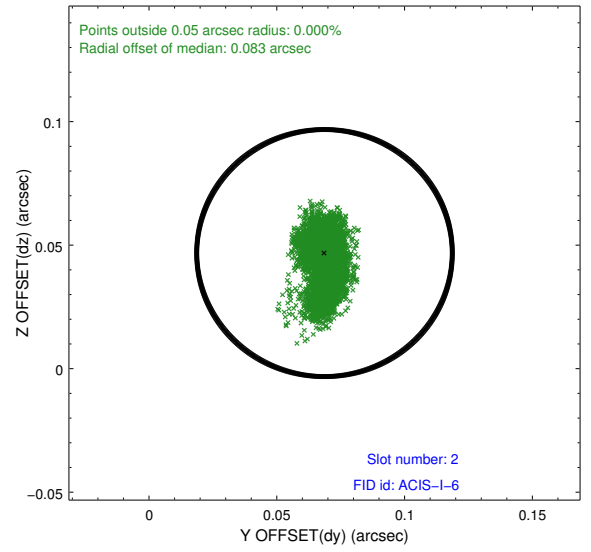
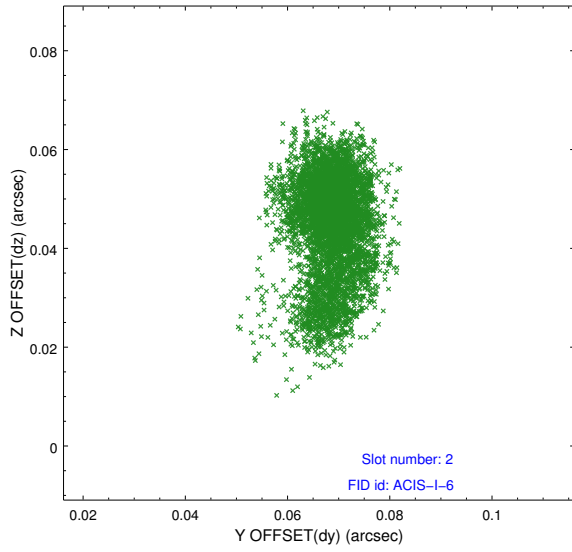
### 2.5.1 Slot 0



## 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)      | 2012.05.14 |
| V&V Edition                | 1          |
| V&V Disposition and Status | OK         |
| V&V Charge Time            | 20.1313183 |

## A.2 Comments