

# V&V Reference Report

## L2 ASCDS Version : 8.5.1.1

Observation 5591 - L2 Version 3  
Chandra X-Ray Center

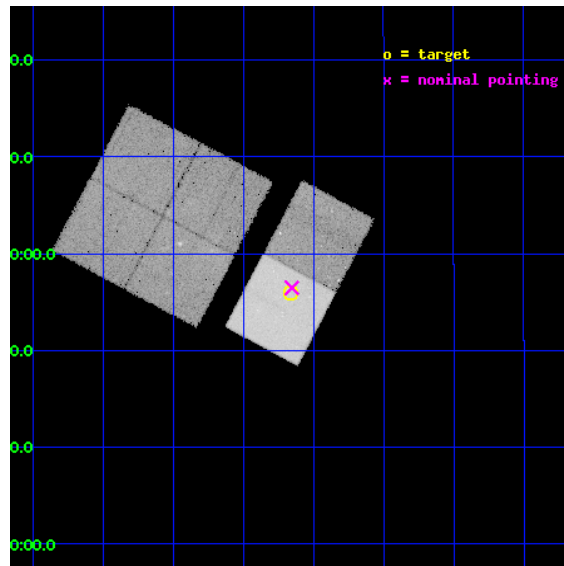
L2 Processing Date : Dec 22 2012

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# 1 Front

|          |  |   |
|----------|--|---|
| seq_num  | 500580   | Sequence number                             |
| obs_id   | 5591   | Observation id                              |
| title    | Double Neutron Star Binary with PSR J1537+1155 | Proposal title                              |
| observer | Professor Gordon Garmire                       | Principal investigator                      |
| object   | PSR J1537+1155                                 | Source name                                 |
| dtcycle  | 0  | &#160                                       |
| cycle    | P  | events from which exps?<br>Prim/Second/Both |
| ra_targ  | 234.2915                                       | Observer's specified target RA [deg]        |
| dec_targ | 11.932097                                      | Observer's specified target Dec [deg]       |
| ra_nom   | 234.28845094866                                | Nominal RA [deg]                            |
| dec_nom  | 11.941302347932                                | Nominal Dec [deg]                           |
| roll_nom | 117.98359234647                                | Nominal Roll [deg]                          |
| revision | 3  | Processing version of data                  |
| ontime   | 36082.514949441                                | Sum of GTIs [s]                             |
| livetime | 35625.616418869                                | Livetime [s]                                |
| ontime0  | 36082.555989444                                | Sum of GTIs [s]                             |
| ontime1  | 36072.627868384                                | Sum of GTIs [s]                             |
| ontime2  | 36082.391829431                                | Sum of GTIs [s]                             |
| ontime3  | 36079.191879153                                | Sum of GTIs [s]                             |
| ontime6  | 36079.232909262                                | Sum of GTIs [s]                             |
| ontime7  | 36082.514949441                                | Sum of GTIs [s]                             |
| l2events | 295043   | Number of level 2 events                    |

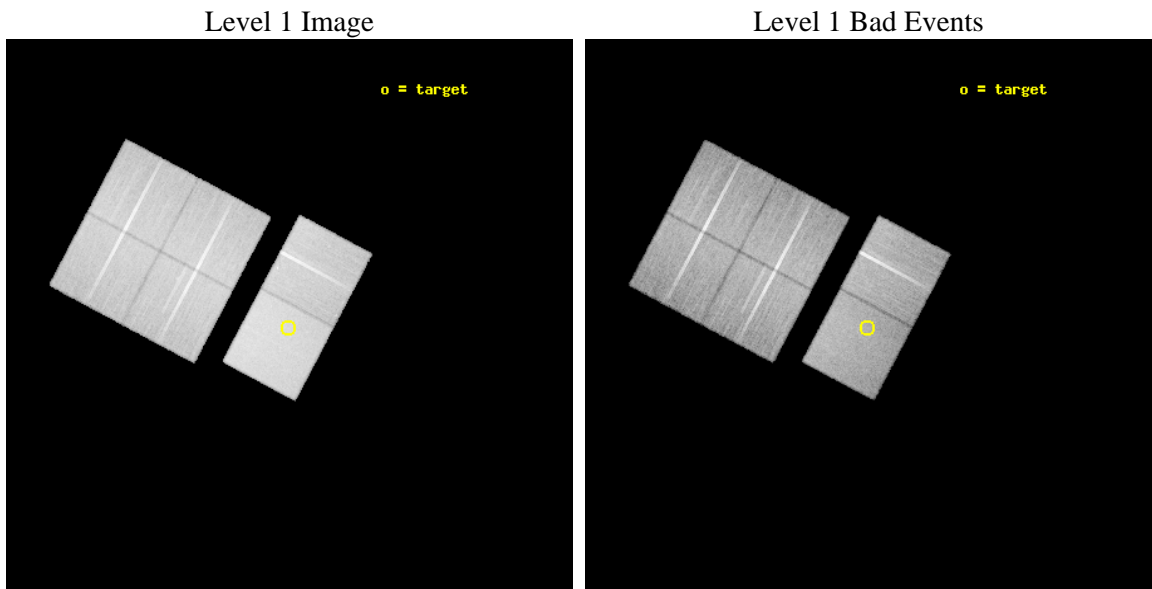




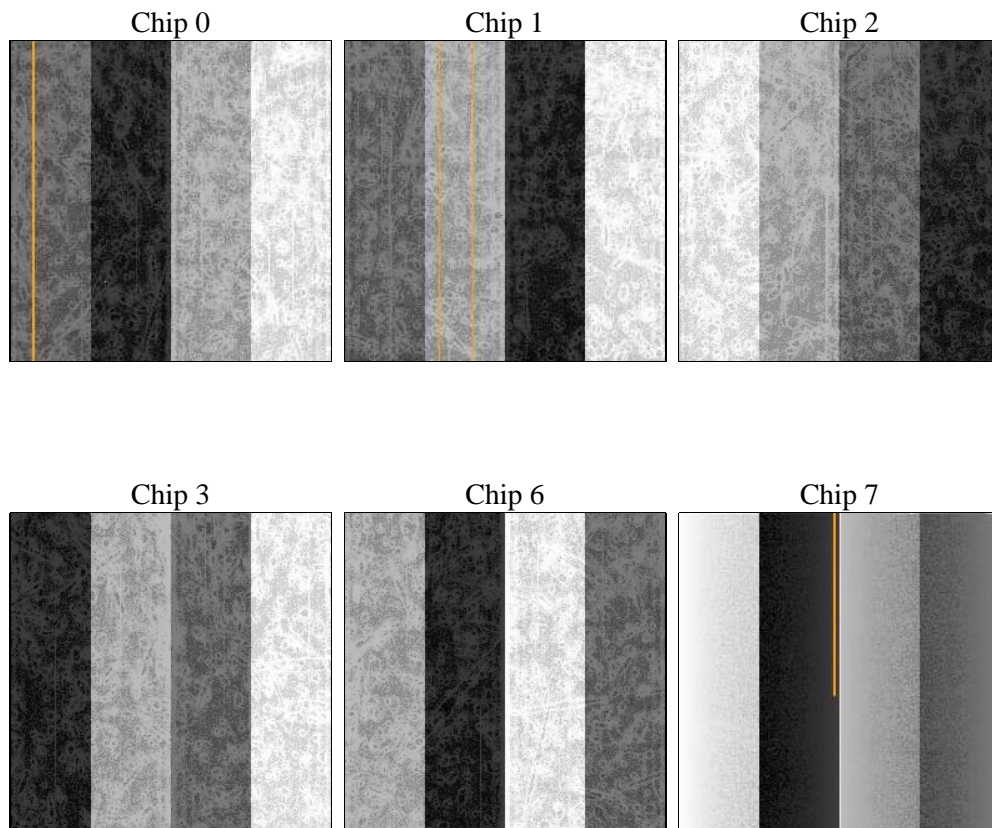
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

|          |                     |                                |                |                 |   |
|----------|---------------------|--------------------------------|----------------|-----------------|---|
| obi_num  | 1                   | Obi number                     | sched_exp_time | 36000.000000    | [s] Scheduled observation exposure time |
| ascdsver | 8.5.1.1             | Processing system revision     | ontime         | 36082.514949441 | Sum of GTIs [s]                         |
| caldsver | 4.5.5               | &#160                          | ontime0        | 36082.555989444 | Sum of GTIs [s]                         |
| date     | 2012-12-22T00:54:39 | Date and time of file creation | ontime1        | 36072.627868384 | Sum of GTIs [s]                         |
| revision | 3                   | Processing version of data     | ontime2        | 36082.391829431 | Sum of GTIs [s]                         |
|          |                     |                                | ontime3        | 36079.191879153 | Sum of GTIs [s]                         |
|          |                     |                                | ontime6        | 36079.232909262 | Sum of GTIs [s]                         |
|          |                     |                                | ontime7        | 36082.514949441 | Sum of GTIs [s]                         |
|          |                     |                                | l1events       | 1705802         | Number of level 1 events                |

### 2.1.4 Events

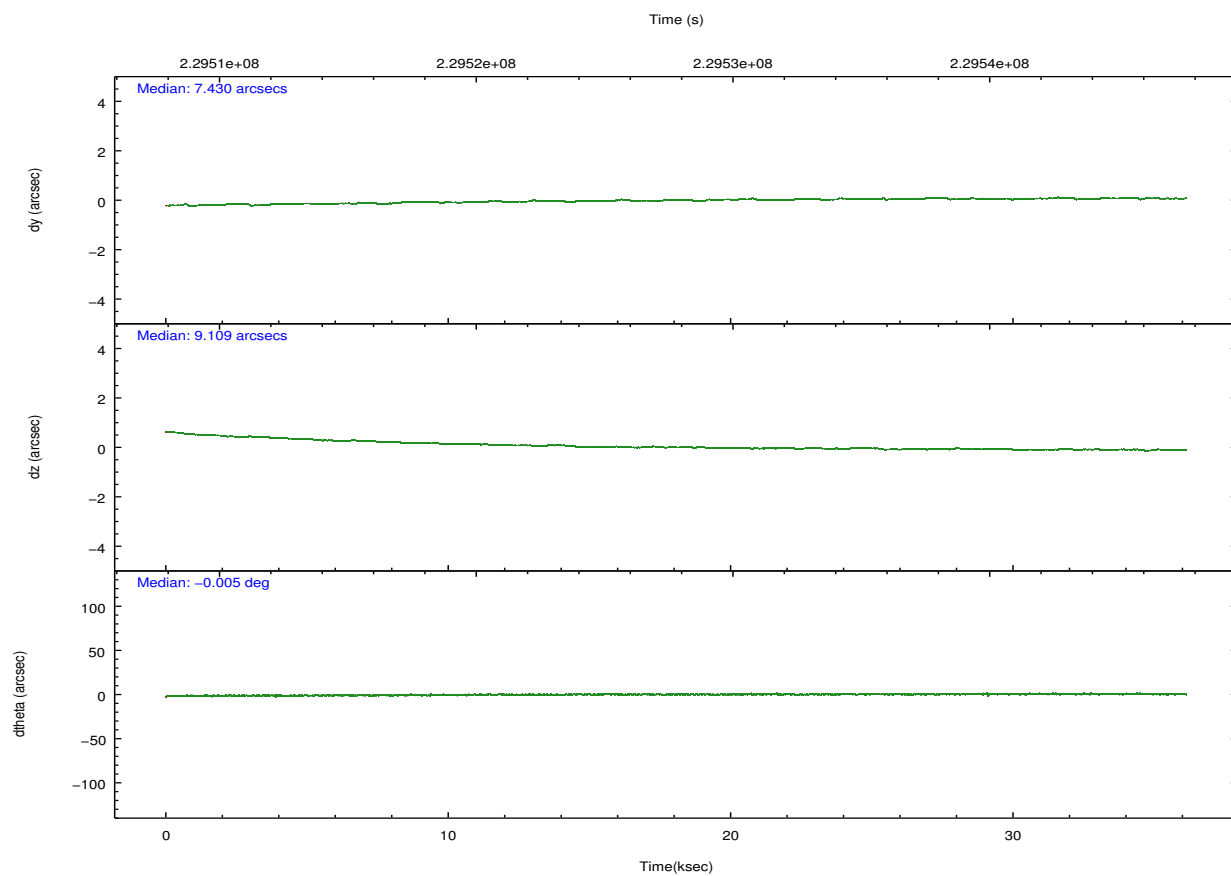
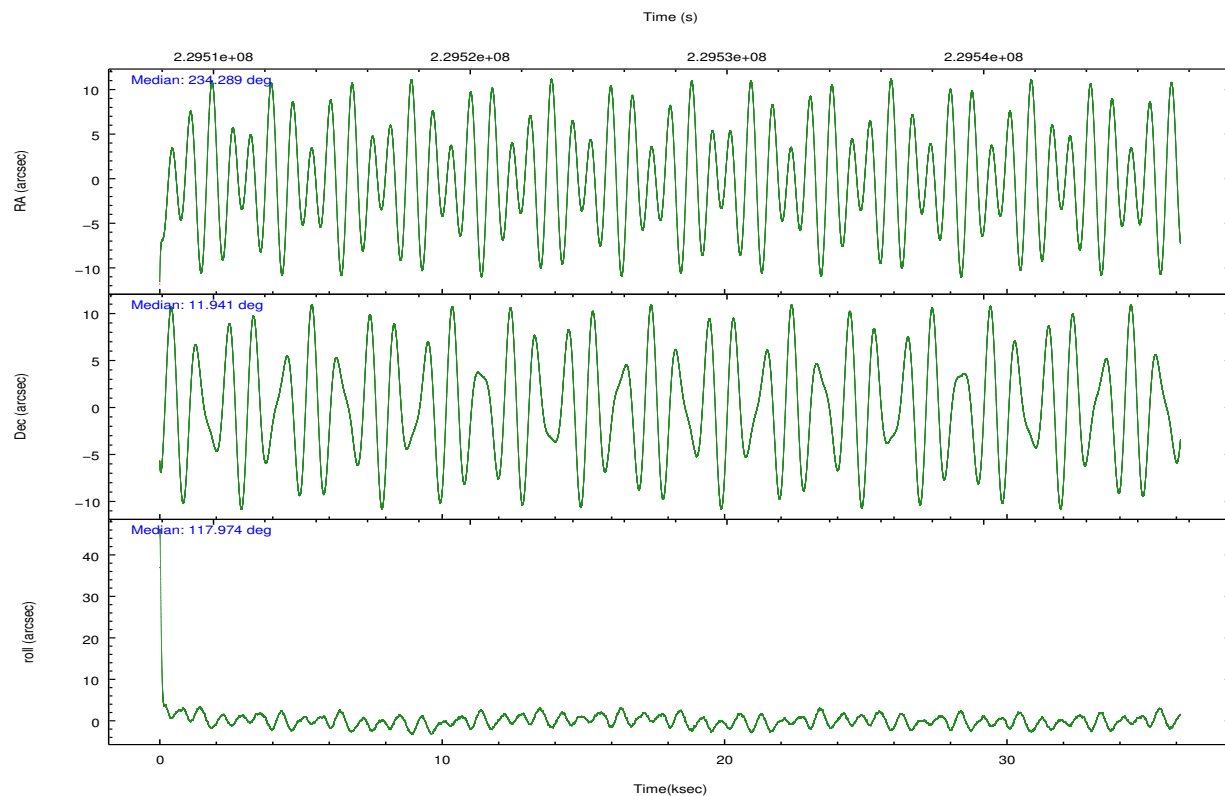
|                 | ccd 0  | ccd 1  | ccd 2  | ccd 3  | ccd 6  | ccd 7  |                | ccd 0  | ccd 1  | ccd 2  | ccd 3  | ccd 6  | ccd 7  |
|-----------------|--------|--------|--------|--------|--------|--------|----------------|--------|--------|--------|--------|--------|--------|
| level 1 events  | 265185 | 250448 | 270700 | 265730 | 281862 | 371877 | grade 0 events | 14331  | 13426  | 14655  | 14973  | 13968  | 14113  |
| rejected events | 231349 | 216332 | 238447 | 232671 | 247858 | 217805 |                | 5%     | 5%     | 5%     | 5%     | 4%     | 3%     |
| rejected %      | 87%    | 86%    | 88%    | 87%    | 87%    | 58%    | grade 1 events | 165    | 117    | 151    | 175    | 151    | 388    |
|                 |        |        |        |        |        |        |                | 0%     | 0%     | 0%     | 0%     | 0%     | 0%     |
|                 |        |        |        |        |        |        | grade 2 events | 7376   | 7456   | 6454   | 6303   | 6993   | 30729  |
|                 |        |        |        |        |        |        |                | 2%     | 2%     | 2%     | 2%     | 2%     | 8%     |
|                 |        |        |        |        |        |        | grade 3 events | 3222   | 3346   | 2928   | 3063   | 3197   | 13619  |
|                 |        |        |        |        |        |        |                | 1%     | 1%     | 1%     | 1%     | 1%     | 3%     |
|                 |        |        |        |        |        |        | grade 4 events | 3082   | 3368   | 2981   | 3120   | 3144   | 13448  |
|                 |        |        |        |        |        |        |                | 1%     | 1%     | 1%     | 1%     | 1%     | 3%     |
|                 |        |        |        |        |        |        | grade 5 events | 11546  | 11581  | 10415  | 12488  | 12851  | 34907  |
|                 |        |        |        |        |        |        |                | 4%     | 4%     | 3%     | 4%     | 4%     | 9%     |
|                 |        |        |        |        |        |        | grade 6 events | 5830   | 6528   | 5238   | 5607   | 6707   | 82187  |
|                 |        |        |        |        |        |        |                | 2%     | 2%     | 1%     | 2%     | 2%     | 22%    |
|                 |        |        |        |        |        |        | grade 7 events | 219633 | 204626 | 227878 | 220001 | 234851 | 182486 |
|                 |        |        |        |        |        |        |                | 82%    | 81%    | 84%    | 82%    | 83%    | 49%    |

## 2.2 Compared Parameters

| Parameter                         | Planned             | Actual               |
|-----------------------------------|---------------------|----------------------|
| Instrument                        | ACIS                | ACIS                 |
| Detector                          | ACIS-012367         | ACIS-012367          |
| Grating                           | NONE                | NONE                 |
| Data mode                         | VFAINT              | VFAINT               |
| Observation mode                  | POINTING            | POINTING             |
| [deg] Pointing RA                 | 234.312264          | 234.2884509486591    |
| [deg] Pointing Dec                | 11.927172           | 11.94130234793196    |
| [deg] Pointing Roll               | 117.822023          | 117.9835923464708    |
| [mm] SIM focus pos                | -0.684267           | -0.6828225247311905  |
| [mm] SIM defocus                  | 0                   | 0.001444936568705701 |
| [mm] SIM translation stage pos    | -190.132523         | -190.145094680475    |
| [mm] SIM translation stage offset | 0                   | 0.01257209746719923  |
| [s] Observation start time (MET)  | 229509855.184000    | 229508831.60049      |
| Observation start date            | 2005-04-10T08:43:11 | 2005-04-10T08:27:11  |
| [s] Observation end time (MET)    | 229545855.184000    | 229546376.3272       |
| Observation end date              | 2005-04-10T18:43:11 | 2005-04-10T18:52:56  |
| Read mode                         | TIMED               | TIMED                |

| Parameter                             | Planned   | Actual  |
|---------------------------------------|-----------|---------|
| Obspar format version number          | 7         | 7       |
| Obspar file type                      | PREDICTED | ACTUAL  |
| Obspar update status                  | NONE      | UPDATED |
| Number of optional ACIS chips dropped | 0         | 0       |
| On-chip summing requested             | N         | N       |
| Subarray requested                    | NONE      | NONE    |
| Alternating exposures requested       | N         | N       |
| [s] Primary exposure time             | 0.000000  | 3.2     |

## 2.3 Aspect

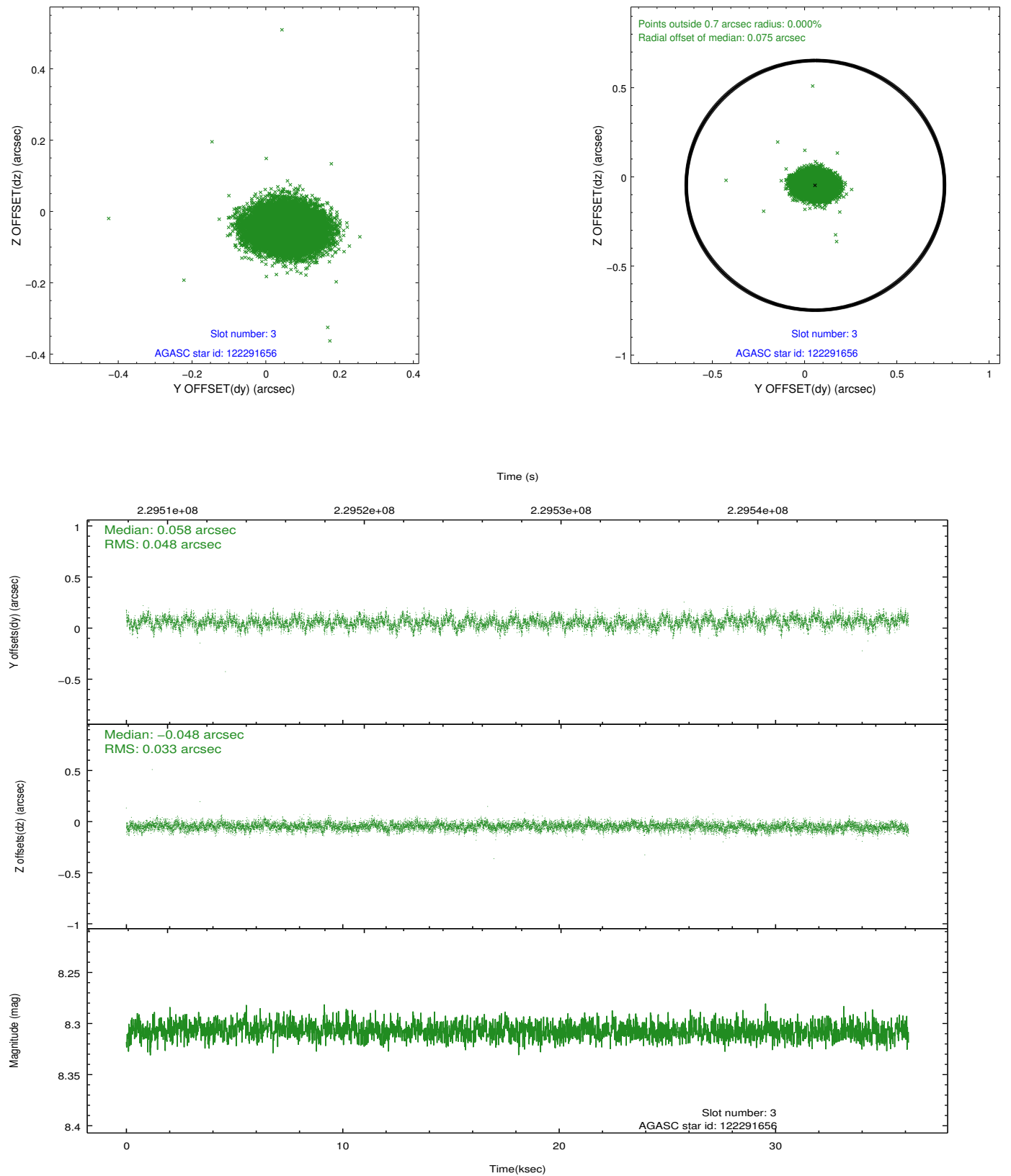


### Slot Statistics

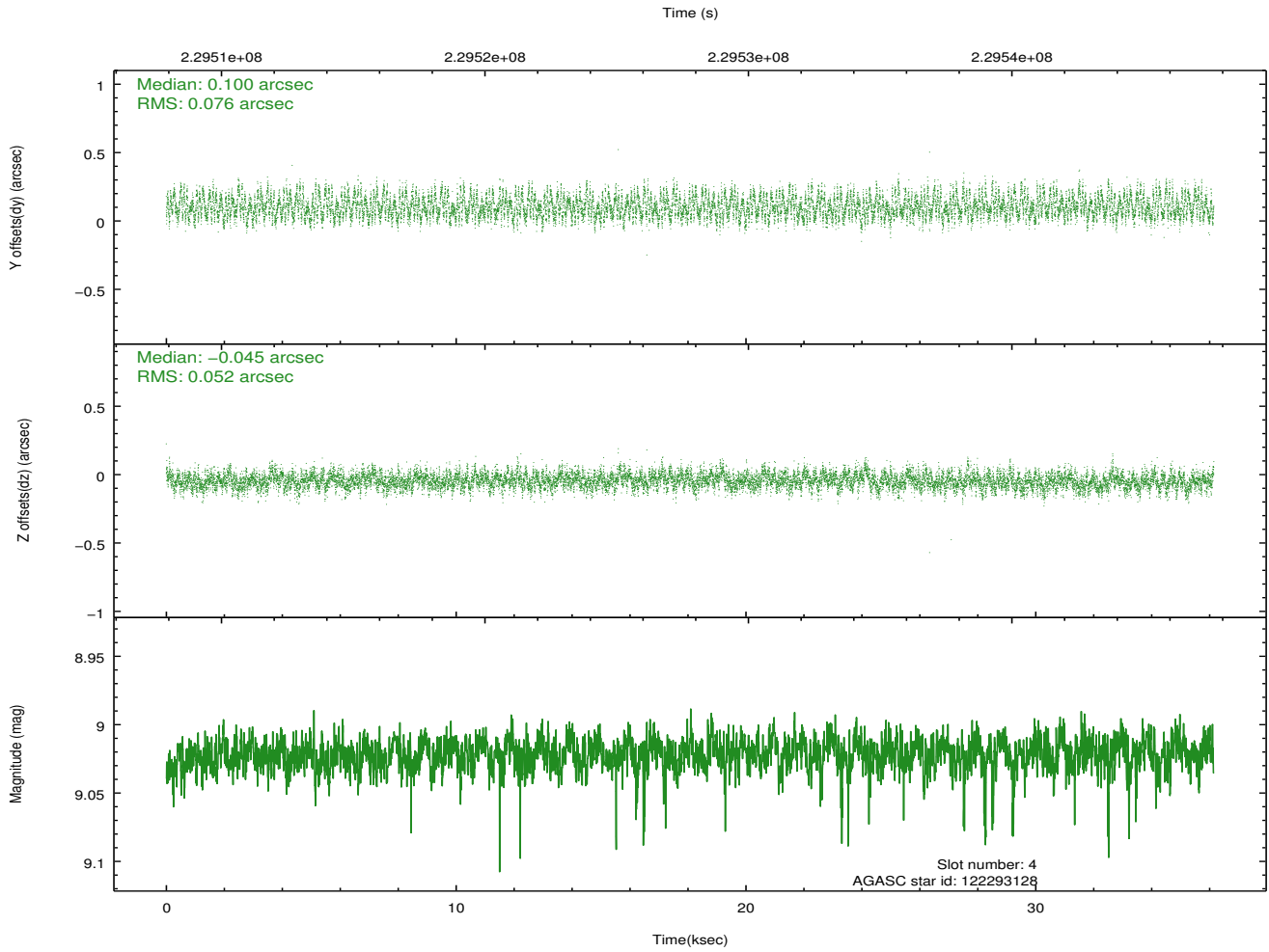
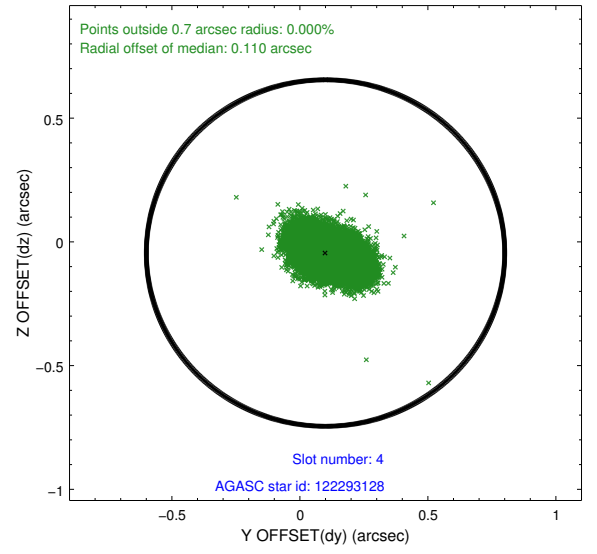
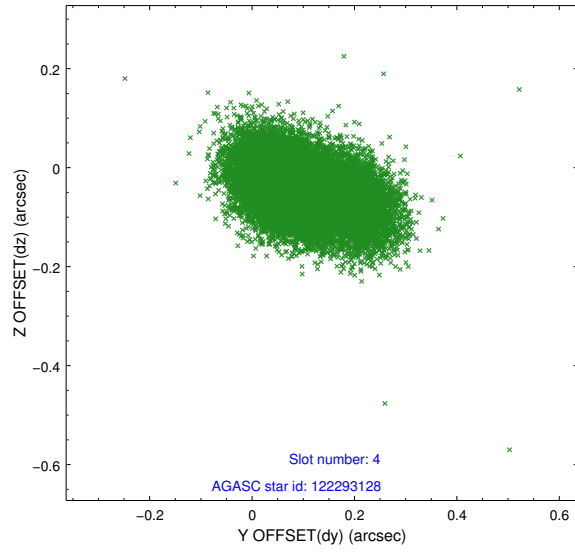
| slot | status | id        | mag  | n_pts | med_dy | med_dz | dr1   | dr2   | ra         | dec       | mean_y   | mean_z   |
|------|--------|-----------|------|-------|--------|--------|-------|-------|------------|-----------|----------|----------|
| 0    | FID    | ACIS-S-2  | 7.10 | 8817  | -0.032 | -0.045 | 0.012 | 0.018 | 0.000000   | 0.000000  | -760.18  | -1730.36 |
| 1    | FID    | ACIS-S-4  | 7.21 | 8816  | 0.096  | 0.028  | 0.011 | 0.025 | 0.000000   | 0.000000  | 2153.19  | 178.19   |
| 2    | FID    | ACIS-S-5  | 7.23 | 8817  | -0.093 | 0.027  | 0.010 | 0.017 | 0.000000   | 0.000000  | -1813.06 | 171.86   |
| 3    | GUIDE  | 122291656 | 8.31 | 17628 | 0.058  | -0.048 | 0.061 | 0.102 | 234.191931 | 11.180080 | -2180.41 | 1631.09  |
| 4    | GUIDE  | 122293128 | 9.02 | 17625 | 0.100  | -0.045 | 0.098 | 0.159 | 234.009057 | 11.238754 | -1691.83 | 2103.97  |
| 5    | GUIDE  | 122821072 | 7.92 | 17631 | -0.046 | 0.065  | 0.062 | 0.099 | 234.683443 | 12.253214 | 429.60   | -1702.44 |
| 6    | GUIDE  | 122821656 | 7.42 | 17632 | -0.086 | -0.052 | 0.060 | 0.093 | 234.186532 | 11.600903 | -832.18  | 940.51   |
| 7    | GUIDE  | 122814752 | 7.35 | 17630 | -0.036 | 0.078  | 0.057 | 0.091 | 234.348228 | 12.301633 | 1133.66  | -740.21  |

## 2.4 Star Slots

### 2.4.1 Slot 3

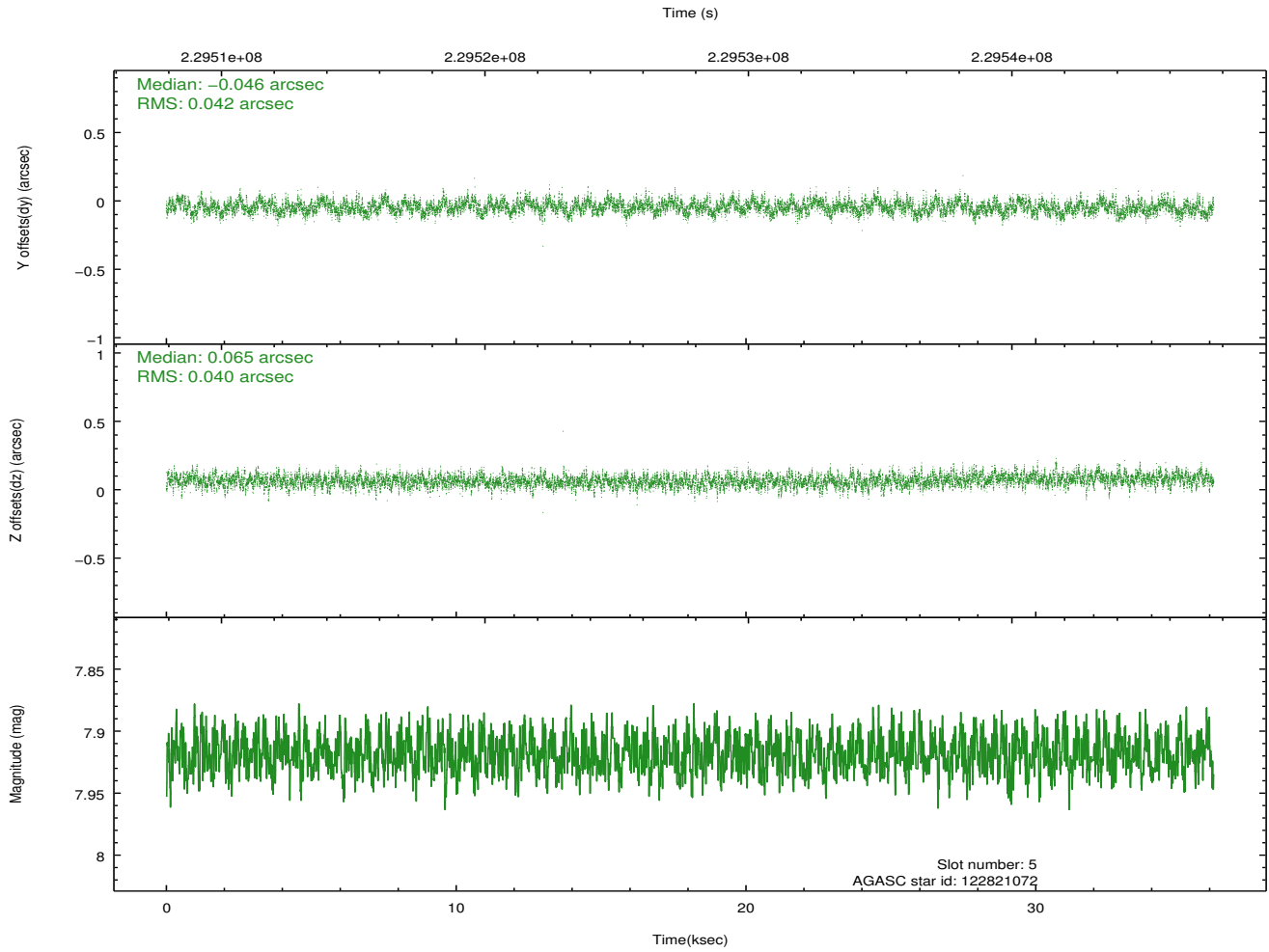
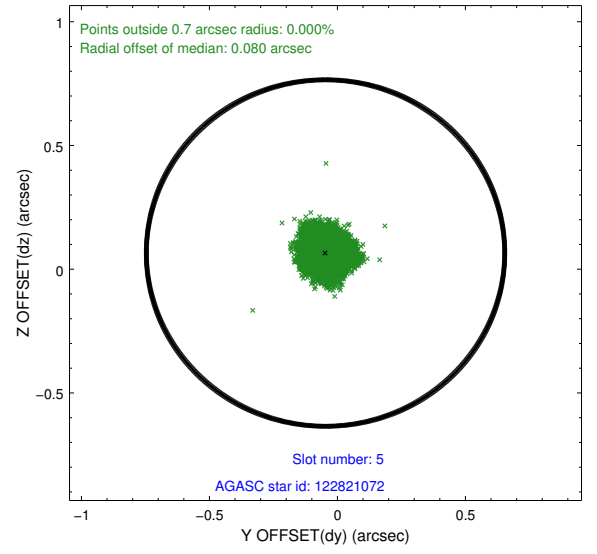
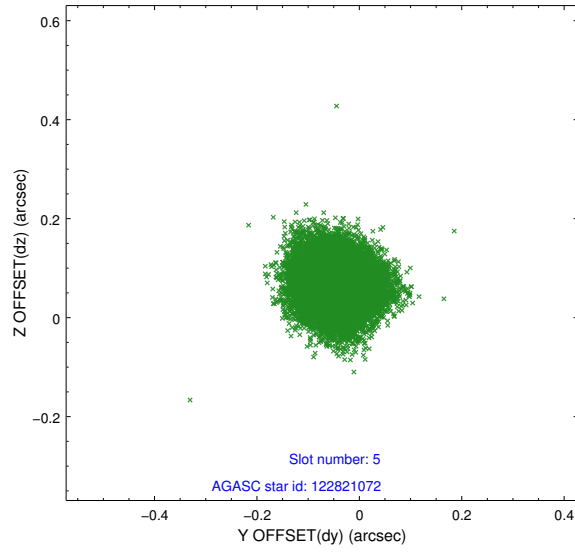


## 2.4.2 Slot 4

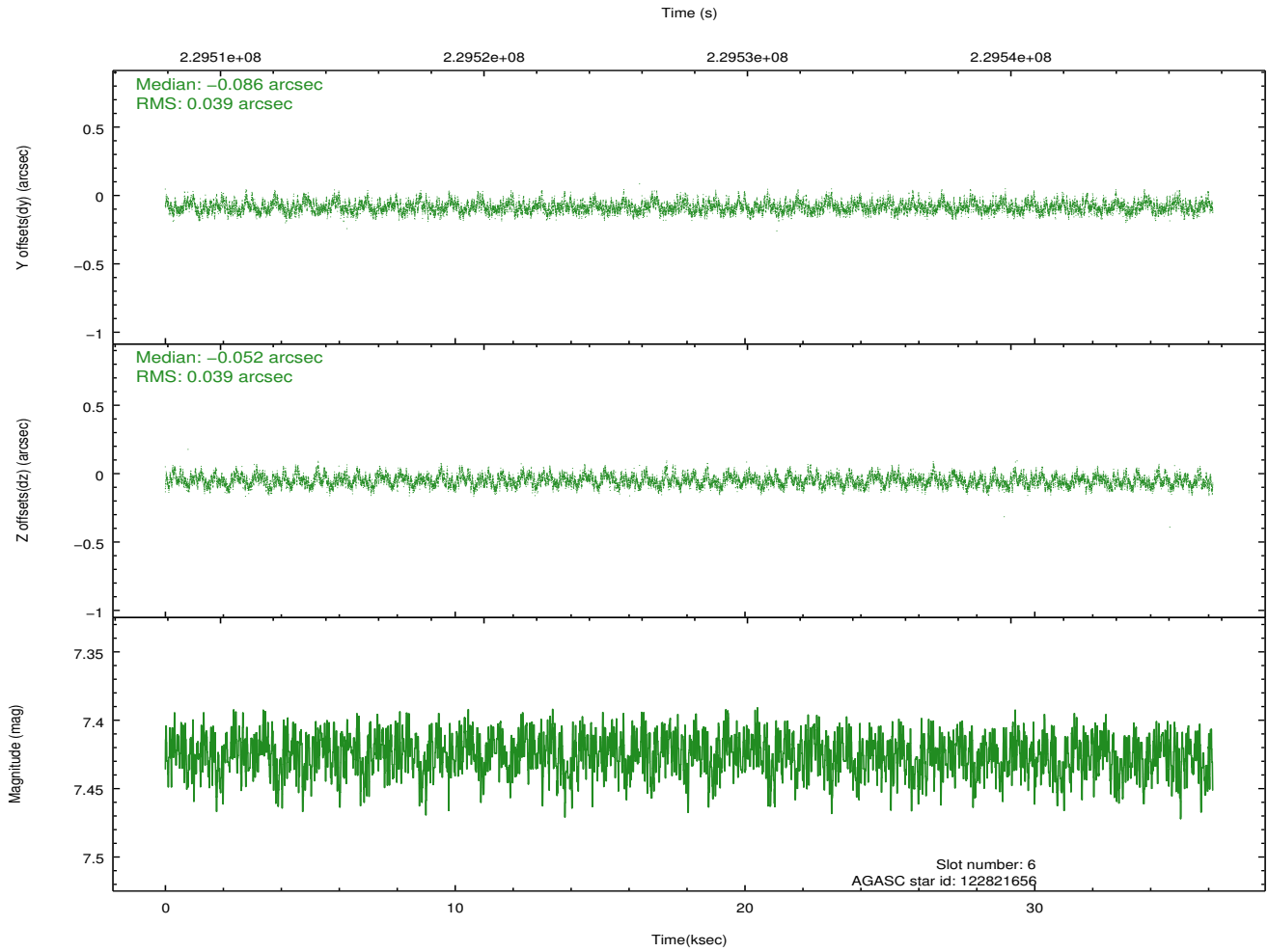
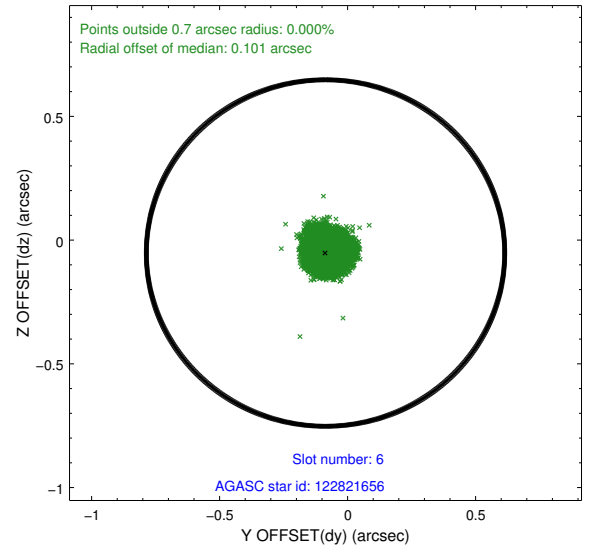
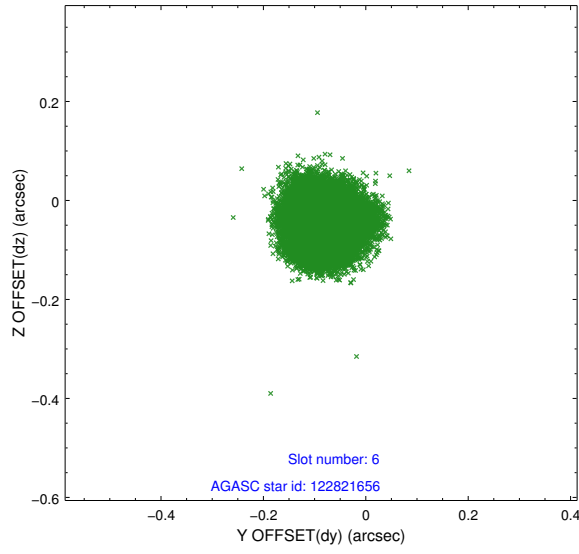




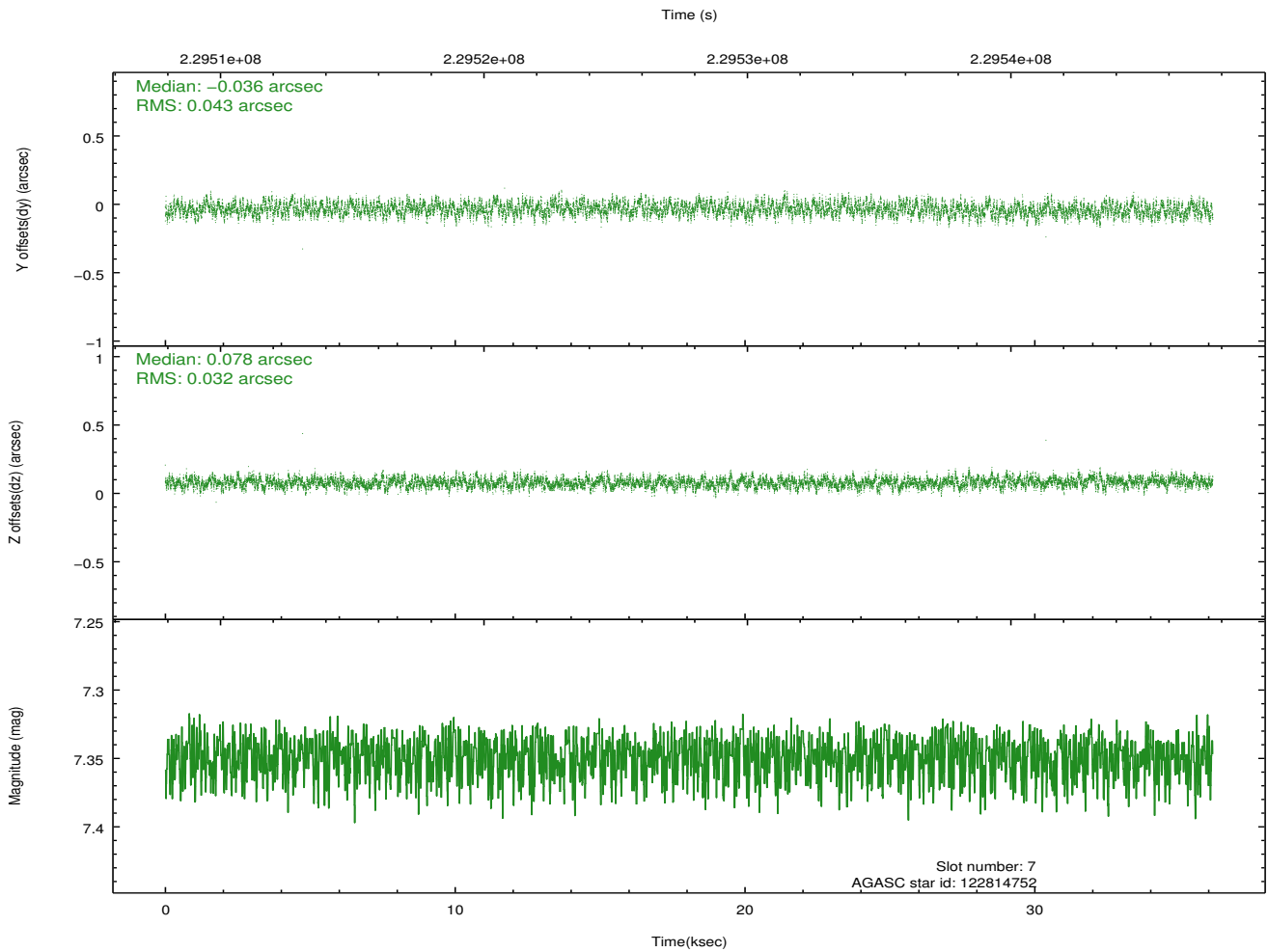
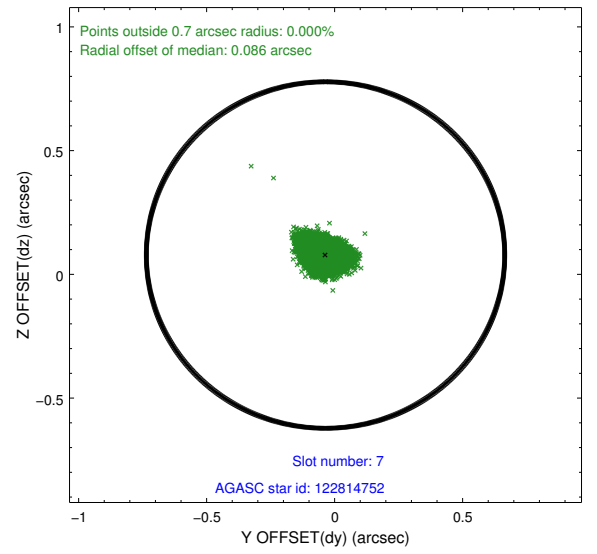
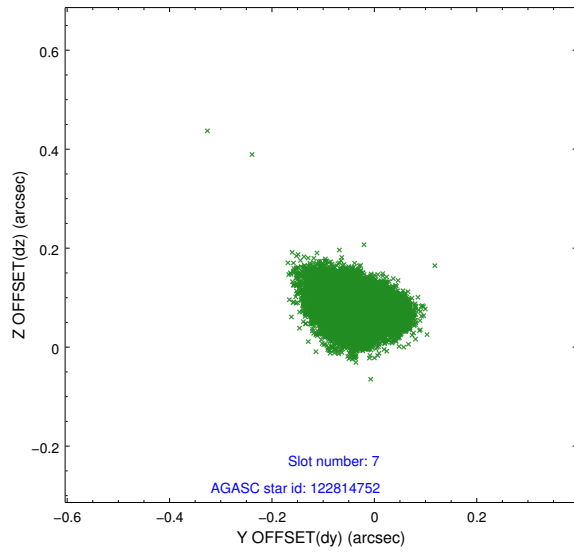
### 2.4.3 Slot 5



## 2.4.4 Slot 6

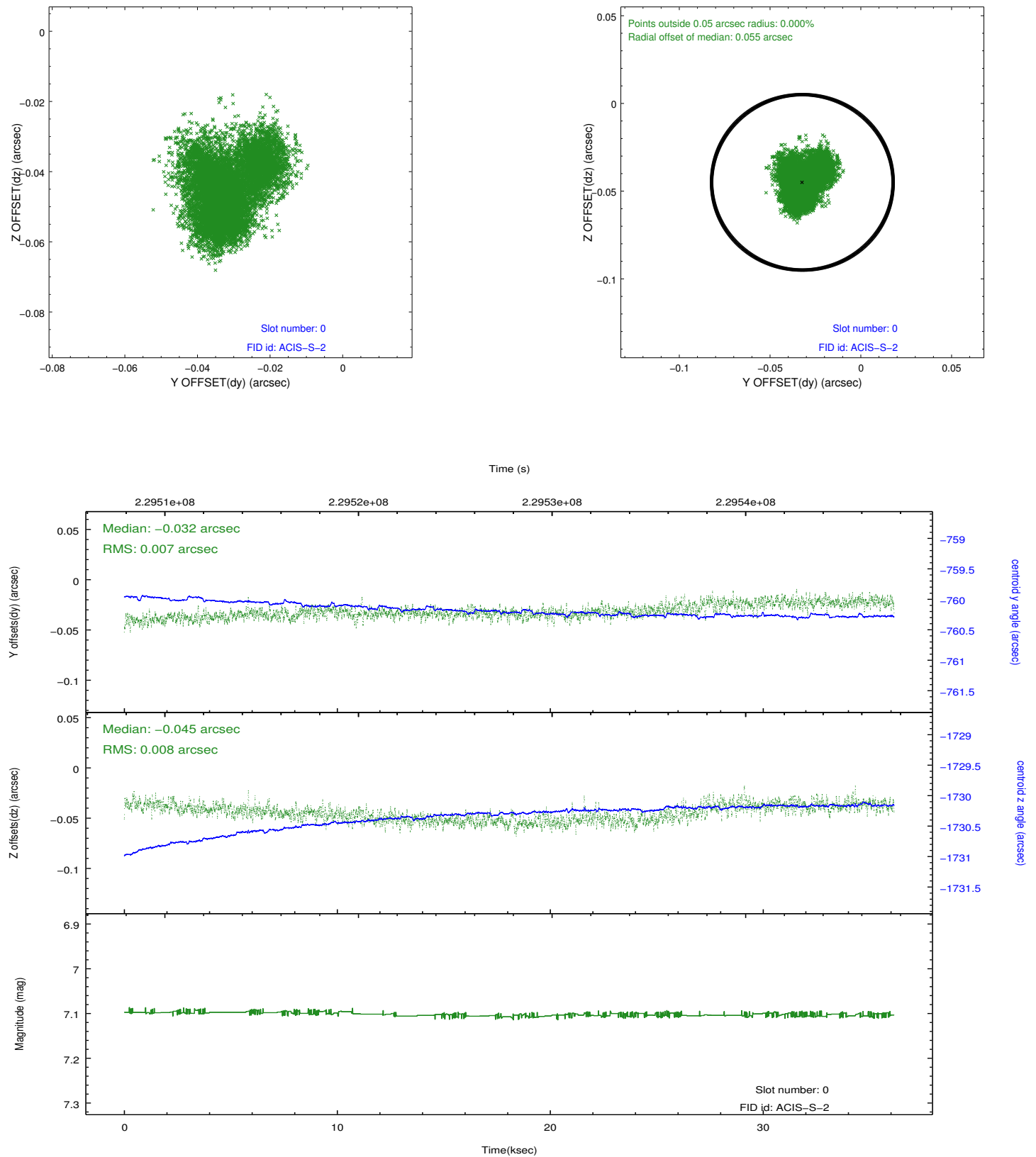


## 2.4.5 Slot 7

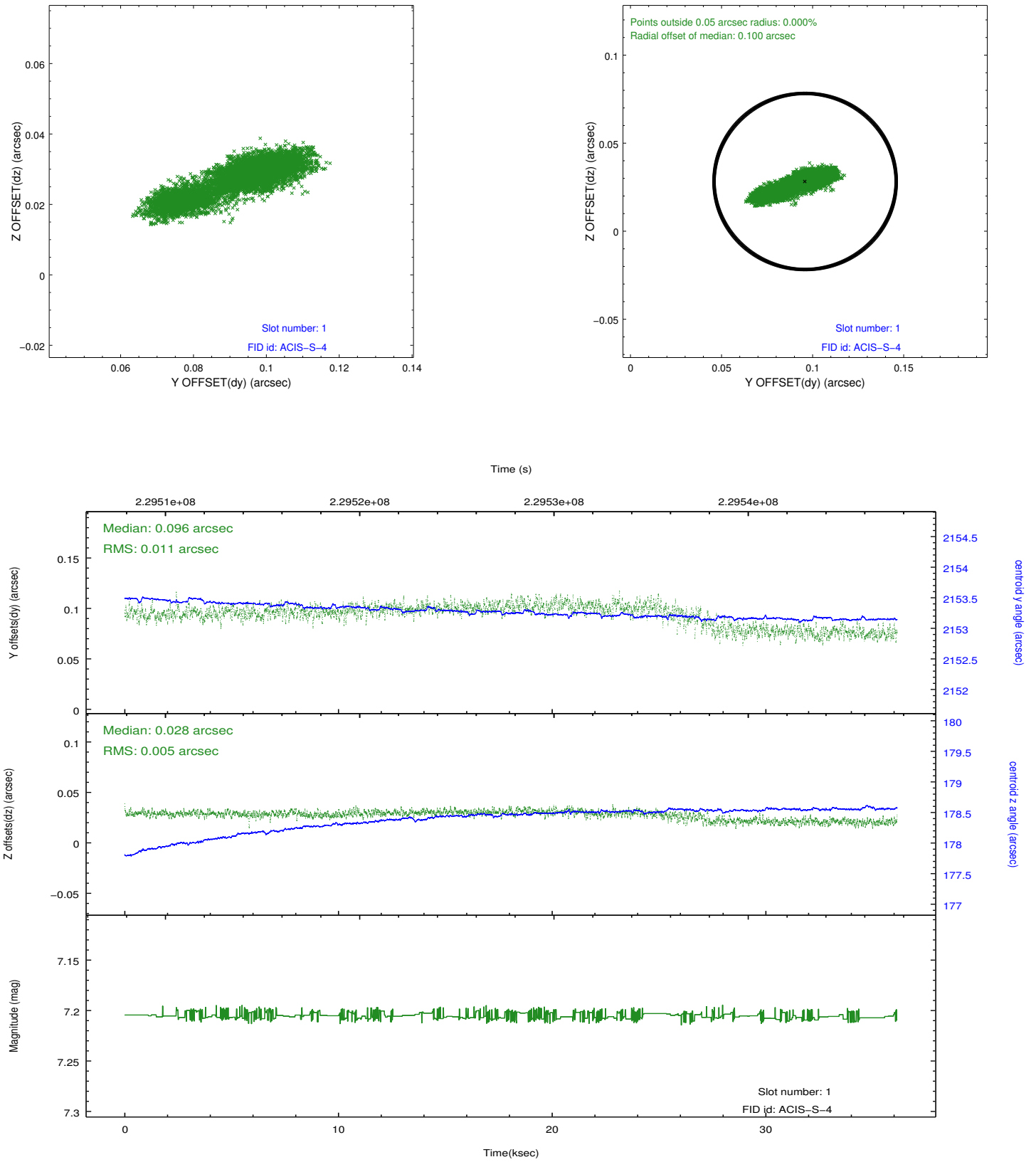


## 2.5 FID Slots

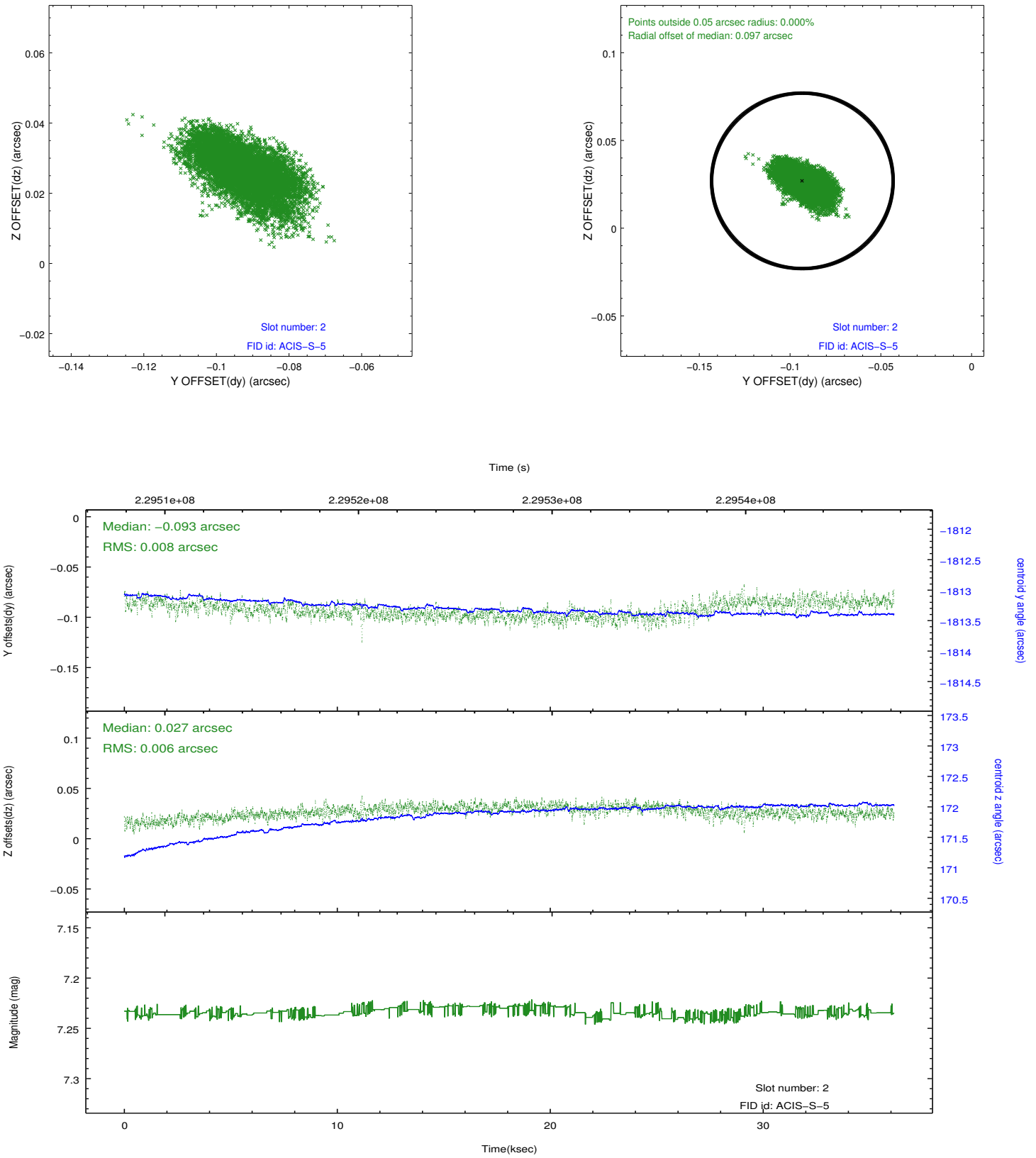
### 2.5.1 Slot 0



## 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)      | 2013.01.15 |
| V&V Edition                | 1          |
| V&V Disposition and Status | OK         |
| V&V Charge Time            | 36.08319   |

### A.2 Comments