

# V&V Reference Report

## L2 ASCDS Version : 8.4.5

Observation 14299 - L2 Version 2  
Chandra X-Ray Center

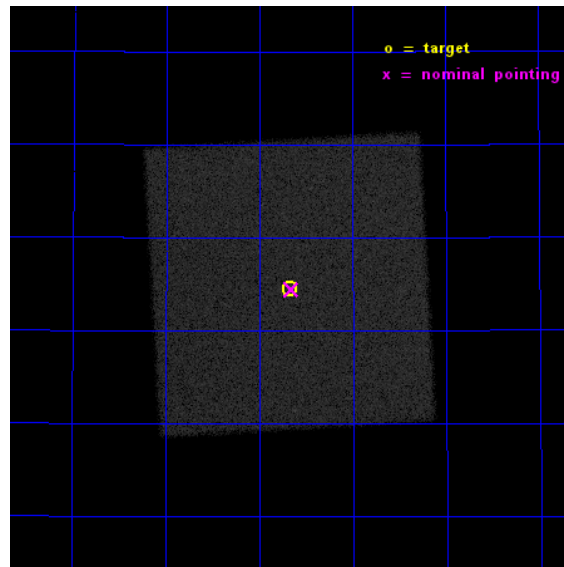
L2 Processing Date : Nov 27 2014

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# 1 Front

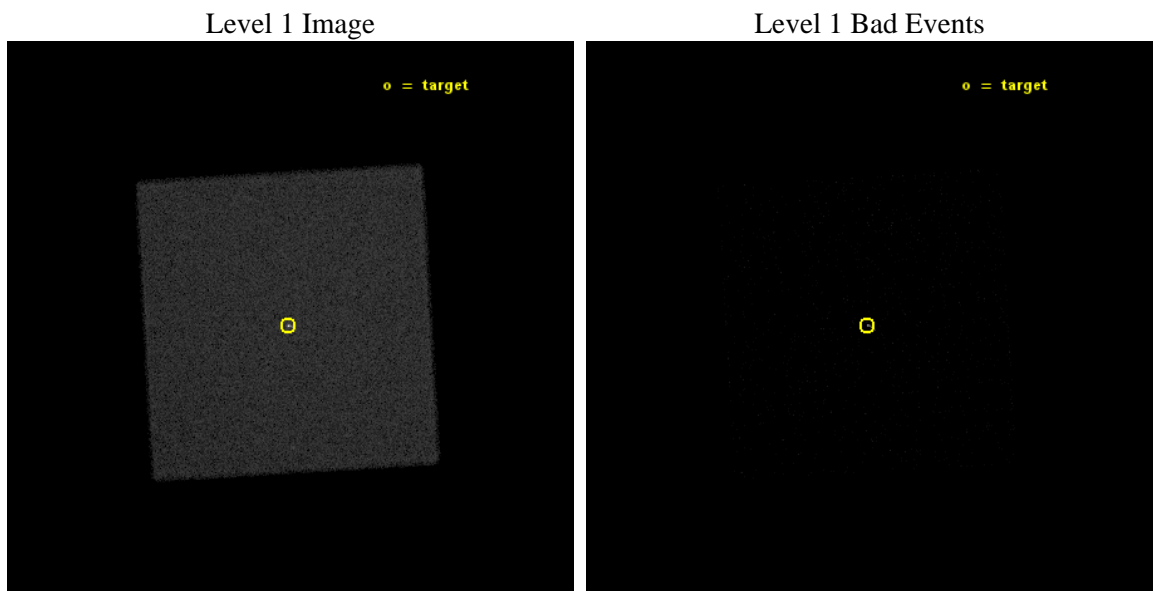
|          |  |                                       |
|----------|--|---------------------------------------|
| seq_num  | 291050   | Sequence number                       |
| obs_id   | 14299  | Observation id                        |
| title    | AO-13 Calibration Observations to Monitor the Spatial Variations in the HRC-I Gain | Proposal title                        |
| observer | Dr. CXC Calibration  | Principal investigator                |
| object   | ArLac  | Source name                           |
| ra_targ  | 332.17   | Observer's specified target RA [deg]  |
| dec_targ | 45.742306  | Observer's specified target Dec [deg] |
| ra_nom   | 332.16447406821  | Nominal RA [deg]                      |
| dec_nom  | 45.74088226435   | Nominal Dec [deg]                     |
| roll_nom | 221.67154577966  | Nominal Roll [deg]                    |
| revision | 2  | Processing version of data            |
| ontime   | 3158.2814193368  | [s]                                   |
| livetime | 3130.8123690489  | Ontime multiplied by DTCOR            |
| l2events | 211592   | Number of level 2 events              |



## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



### 2.1.2 Parameters

|          |                     |                                |                |                 |   |
|----------|---------------------|--------------------------------|----------------|-----------------|---|
| obi_num  | 0                   | Obi number                     | sched_exp_time | 3000.000000     | [s] Scheduled observation exposure time |
| ascdsver | 10.3                | Processing system revision     | ontime         | 3158.2814193368 | [s]                                     |
| caldbver | 4.6.4               | &#160                          | l1events       | 377797          | Number of level 1 events                |
| date     | 2014-11-27T07:24:54 | Date and time of file creation |                |                 |   |
| revision | 2                   | Processing version of data     |                |                 |   |

### 2.1.3 Events

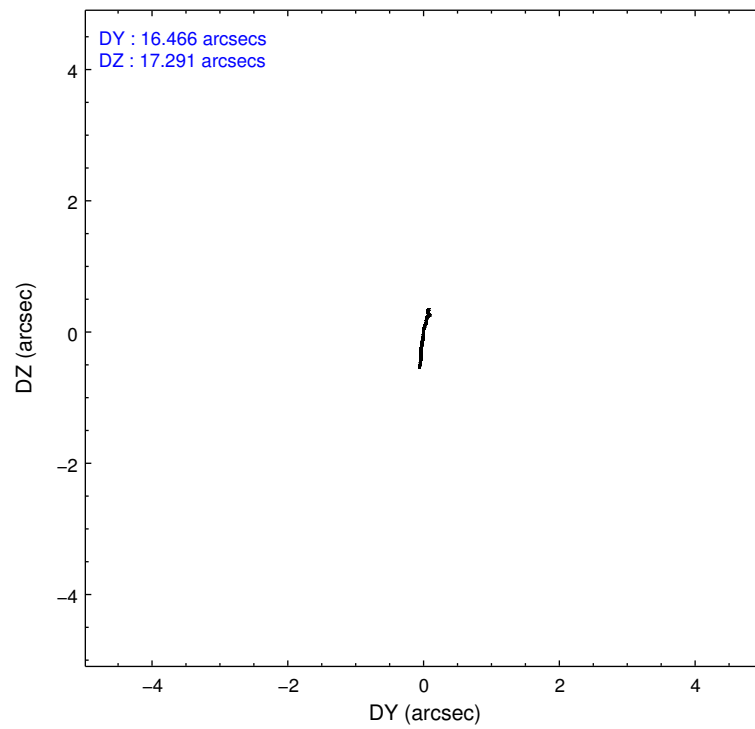
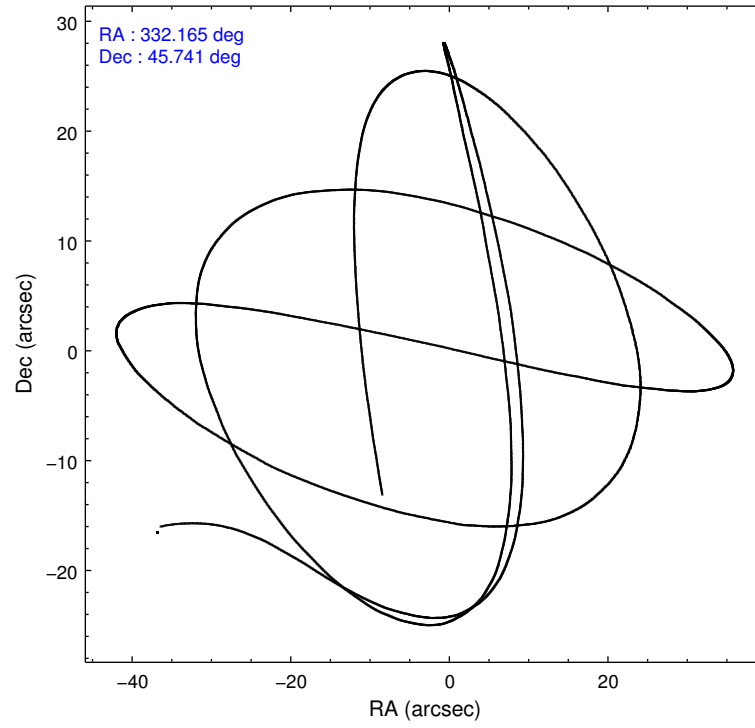
#### Level 1 Events

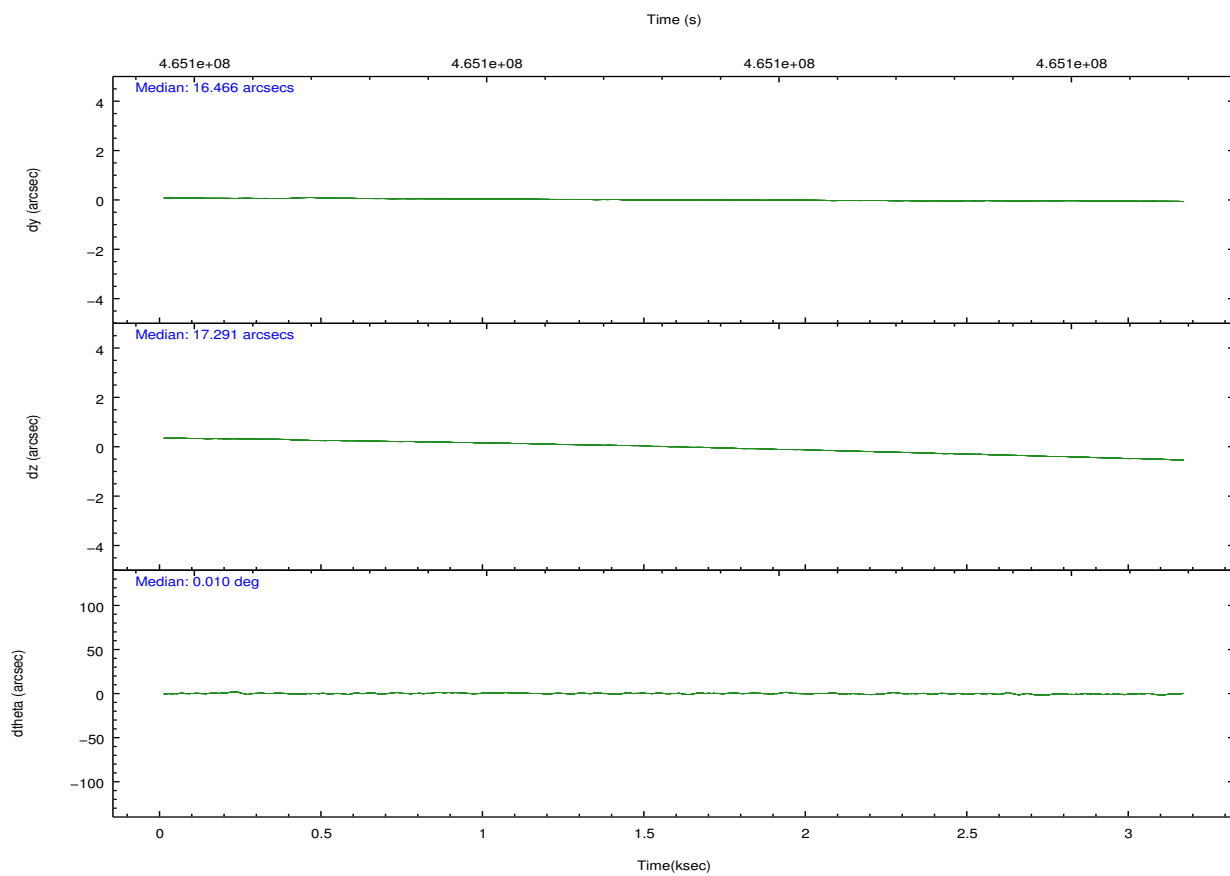
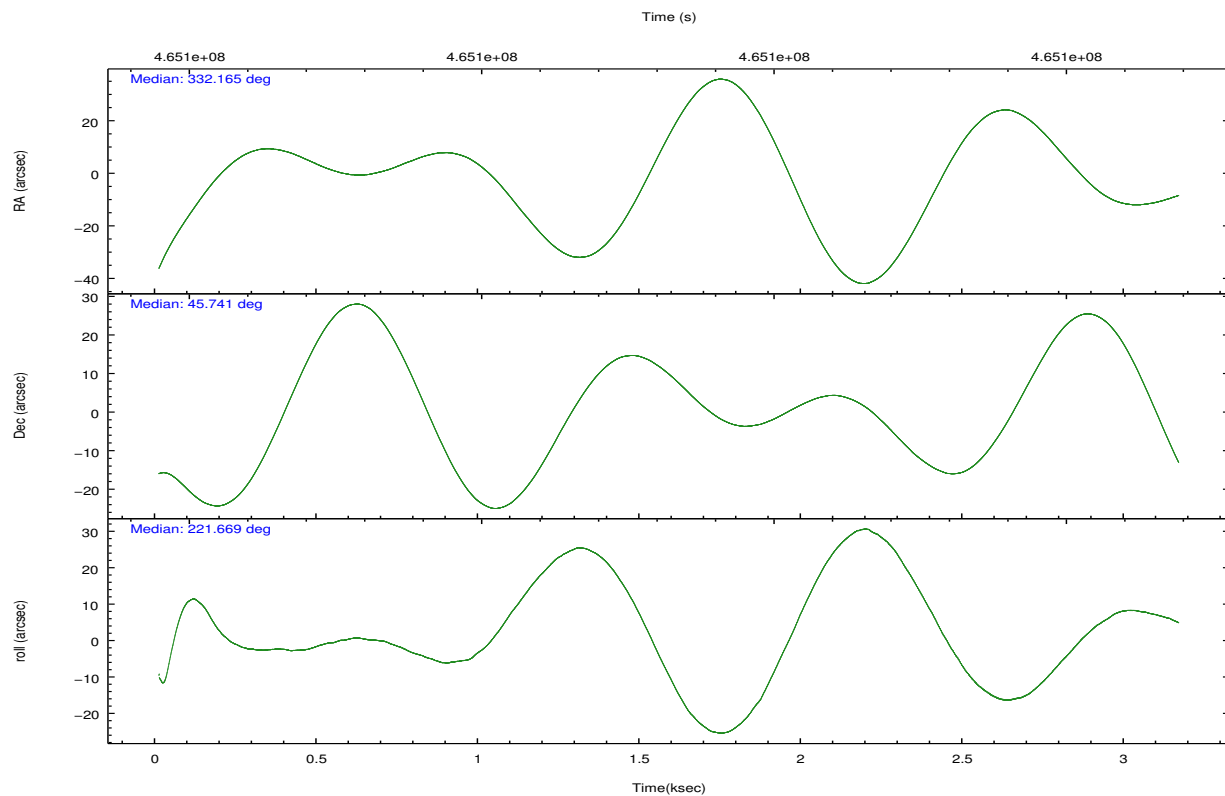
|                 |                      |
|-----------------|----------------------|
|                 | <b>segment<br/>0</b> |
| level 1 events  | 377797               |
| rejected events | 92970                |
| rejected %      | 24%                  |

## 2.2 Compared Parameters

| Parameter                         | Planned             | Actual               | Parameter                    | Planned   | Actual  |
|-----------------------------------|---------------------|----------------------|------------------------------|-----------|---------|
| Instrument                        | HRC                 | HRC                  | Obspar format version number | 7         | 7       |
| Detector                          | HRC-I               | HRC-I                | Obspar file type             | PREDICTED | ACTUAL  |
| Grating                           | NONE                | NONE                 | Obspar update status         | NONE      | UPDATED |
| Data mode                         | OBSERVING           | OBSERVING            |                              |           |         |
| Observation mode                  | POINTING            | POINTING             |                              |           |         |
| [deg] Pointing RA                 | 332.175718          | 332.1644740682138    |                              |           |         |
| [deg] Pointing Dec                | 45.766864           | 45.7408822643497     |                              |           |         |
| [deg] Pointing Roll               | 221.759130          | 221.671545779659     |                              |           |         |
| [s] Window start time (MET)       | 460166467.184000    | 460166467.184000     |                              |           |         |
| [s] Window stop time (MET)        | 468028867.184000    | 468028867.184000     |                              |           |         |
| [mm] SIM focus pos                | -1.040293           | -1.038866356238299   |                              |           |         |
| [mm] SIM defocus                  | 0                   | 0.001426264420575141 |                              |           |         |
| [mm] SIM translation stage pos    | 126.985494          | 126.9829799899862    |                              |           |         |
| [mm] SIM translation stage offset | 0                   | 0.002508901615314585 |                              |           |         |
| [s] Observation start time (MET)  | 465101228.184000    | 465100127.85831      |                              |           |         |
| Observation start date            | 2012-09-27T02:46:01 | 2012-09-27T02:28:47  |                              |           |         |
| [s] Observation end time (MET)    | 465104228.184000    | 465104361.62104      |                              |           |         |
| Observation end date              | 2012-09-27T03:36:01 | 2012-09-27T03:39:21  |                              |           |         |

## 2.3 Aspect





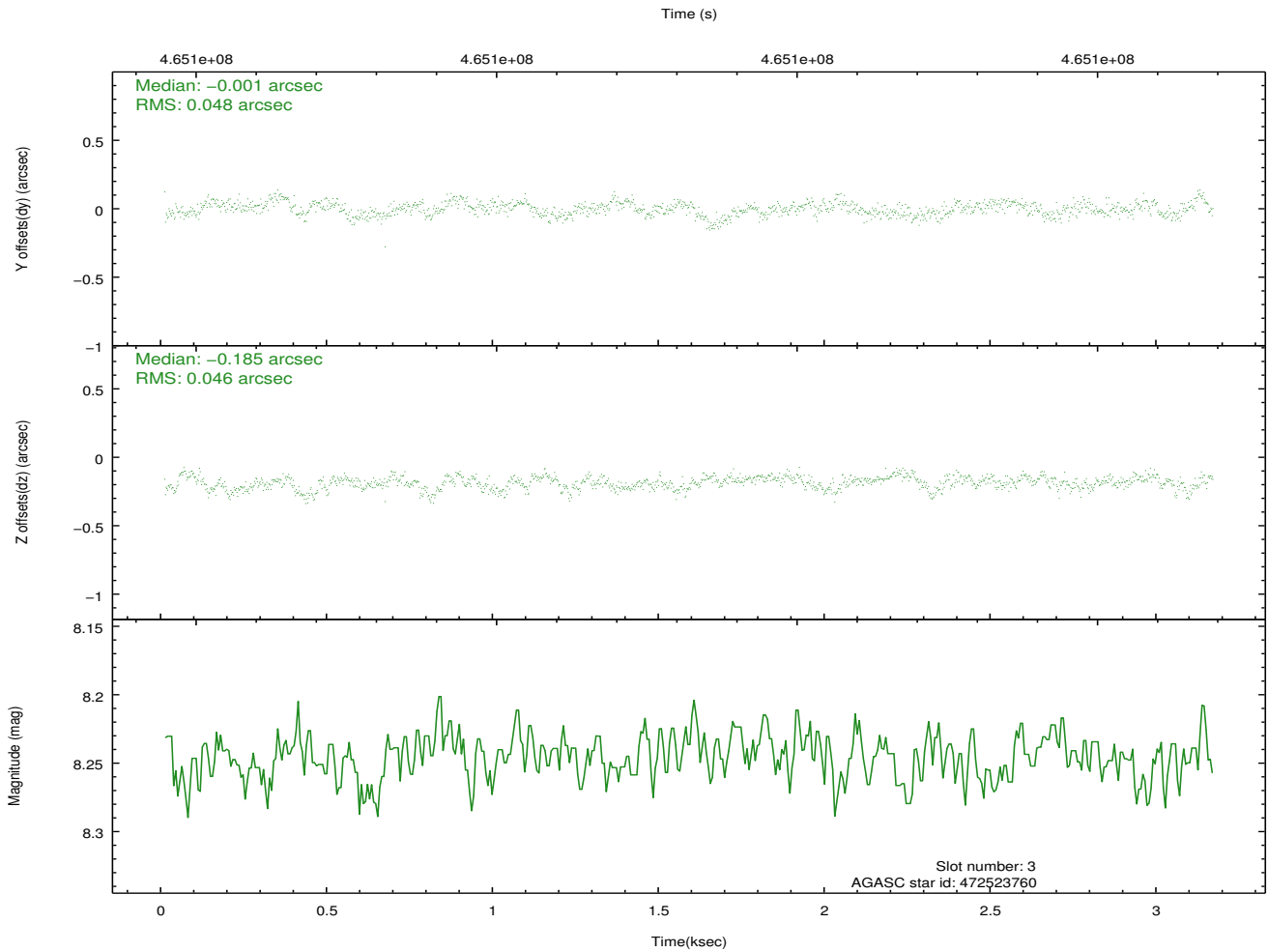
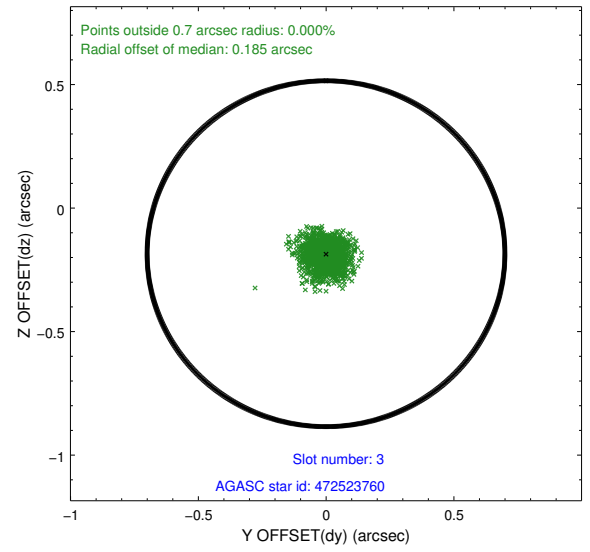
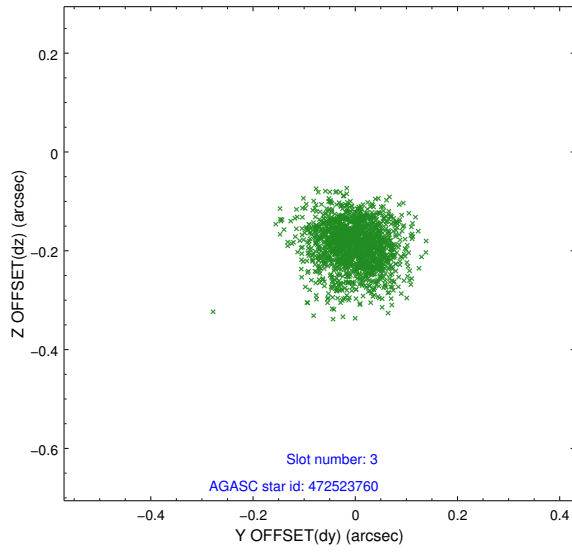
### Slot Statistics

| slot | status | used | id        | mag  | n_pts | med_dy | med_dz | dr1   | dr2   | ra         | dec       | mean_y   | mean_z   |
|------|--------|------|-----------|------|-------|--------|--------|-------|-------|------------|-----------|----------|----------|
| 0    | FID    |      | HRC-I-1   | 7.05 | 771   | -0.095 | 0.029  | 0.009 | 0.015 | 0.000000   | 0.000000  | -772.44  | -1305.36 |
| 1    | FID    |      | HRC-I-2   | 7.07 | 771   | 0.279  | -0.163 | 0.008 | 0.014 | 0.000000   | 0.000000  | 839.57   | -1308.84 |
| 2    | FID    |      | HRC-I-3   | 7.12 | 771   | -0.066 | 0.043  | 0.007 | 0.012 | 0.000000   | 0.000000  | -1199.76 | 997.53   |
| 3    | GUIDE  | used | 472523760 | 8.24 | 1542  | -0.001 | -0.185 | 0.070 | 0.117 | 331.645363 | 45.403260 | 1869.67  | 80.25    |
| 4    | GUIDE  | used | 472533912 | 9.14 | 1527  | 0.202  | 0.106  | 0.143 | 0.233 | 331.791136 | 46.368695 | -729.58  | -2253.97 |
| 5    | GUIDE  | used | 472655152 | 9.42 | 1539  | 0.050  | -0.178 | 0.137 | 0.221 | 332.504239 | 45.862991 | -845.61  | 287.67   |
| 6    | GUIDE  | used | 472665256 | 9.02 | 1542  | 0.149  | 0.201  | 0.092 | 0.169 | 332.808125 | 46.195041 | -2205.96 | -104.58  |
| 7    | GUIDE  | used | 472525528 | 6.66 | 1541  | -0.403 | 0.061  | 0.076 | 0.116 | 331.551102 | 45.248694 | 2418.08  | 332.72   |

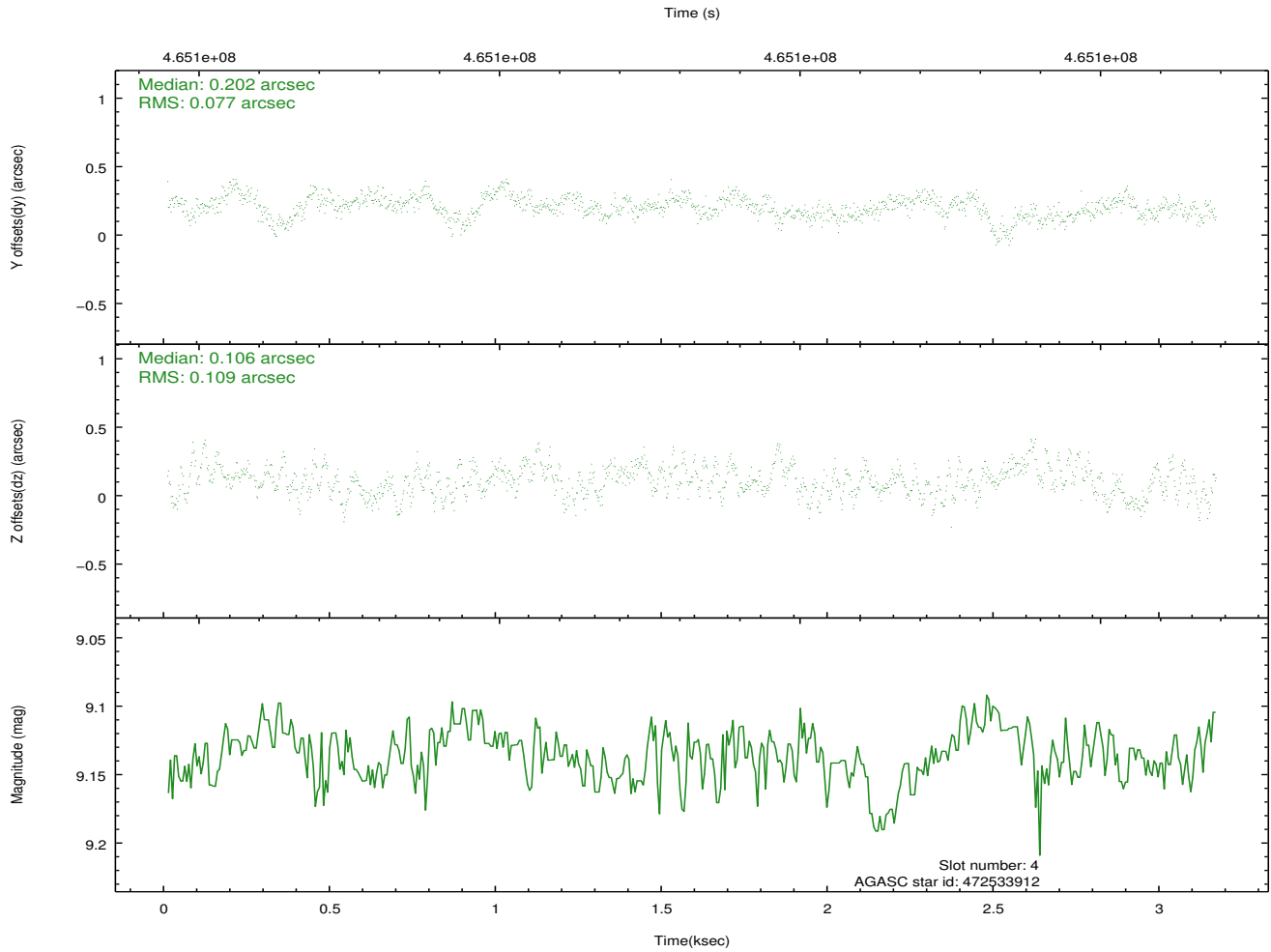
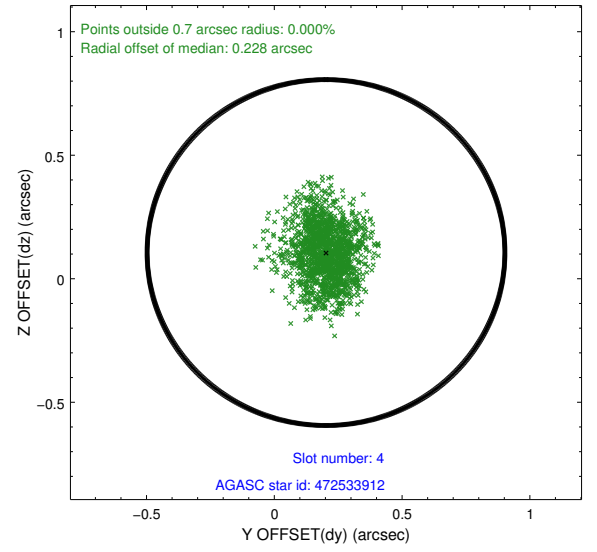
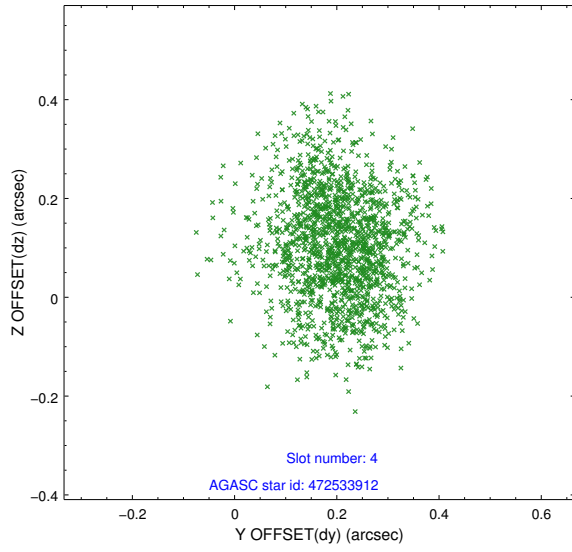


## 2.4 Star Slots

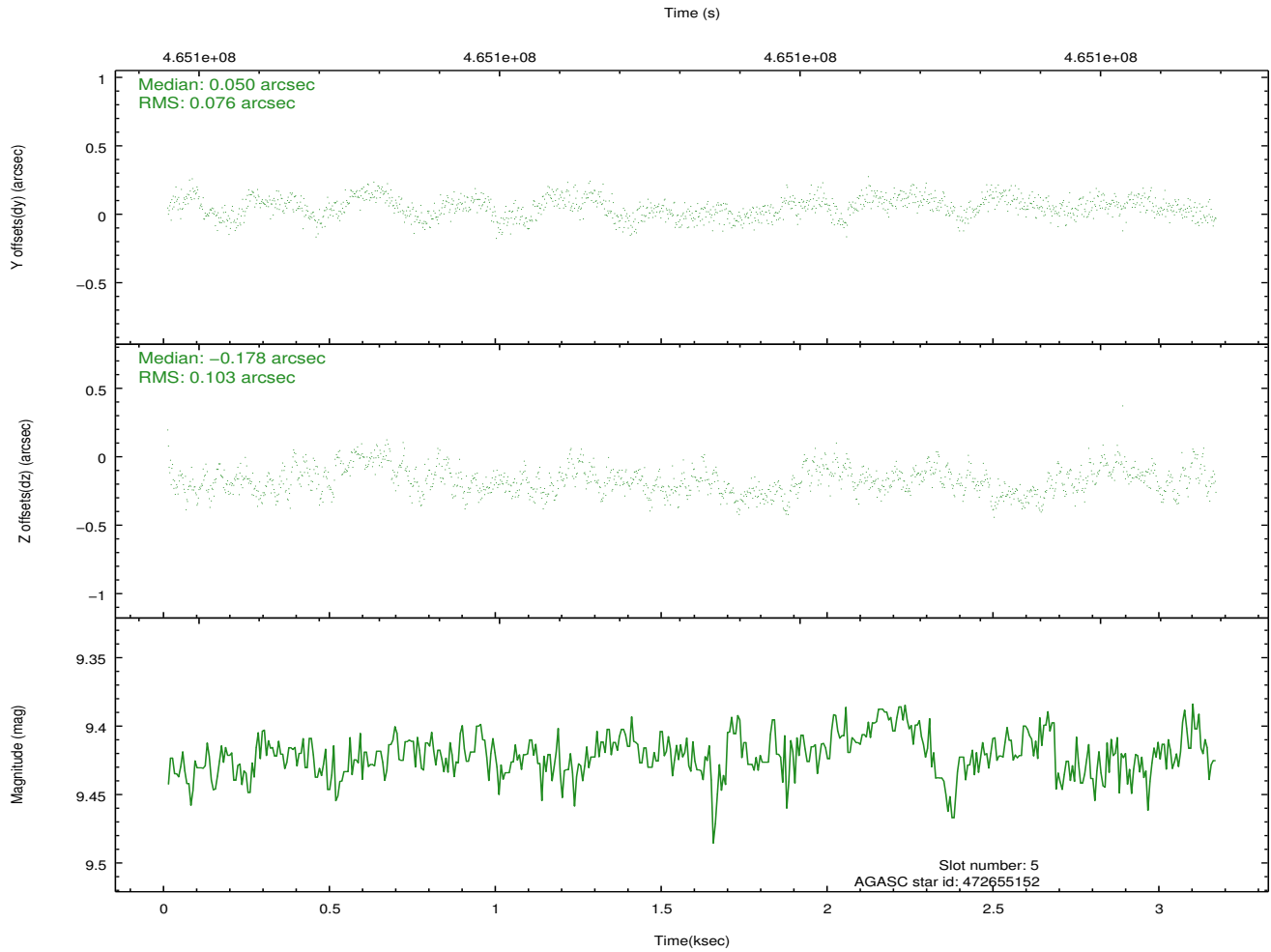
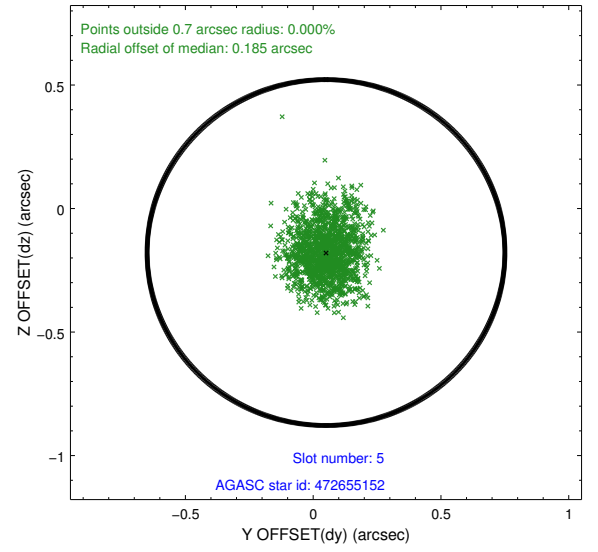
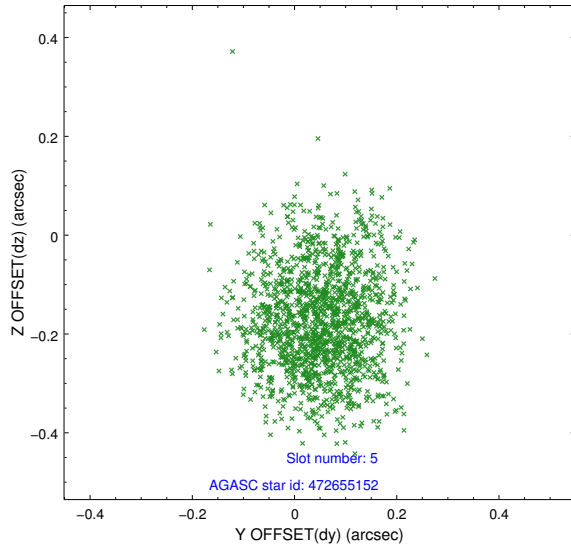
### 2.4.1 Slot 3



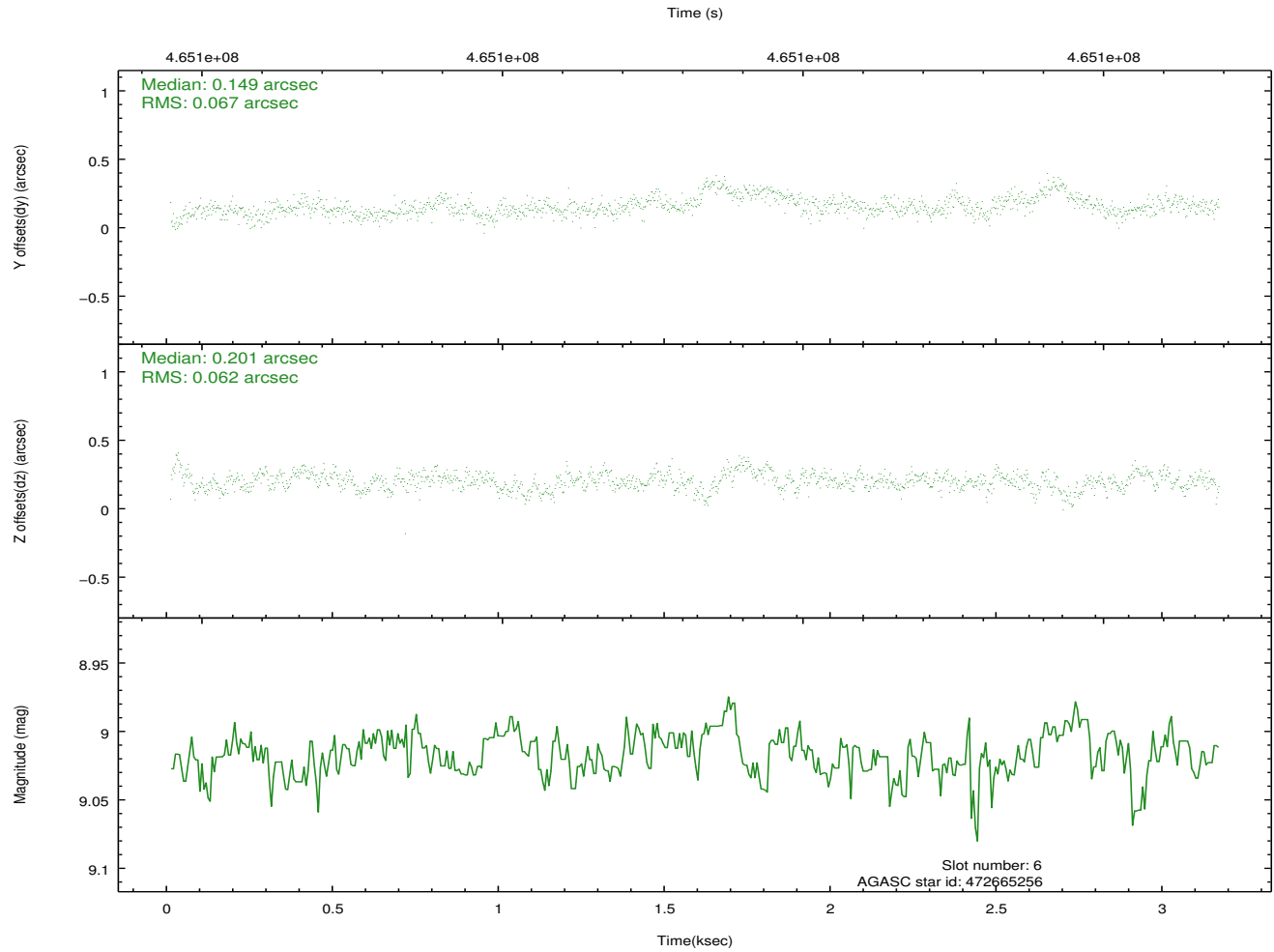
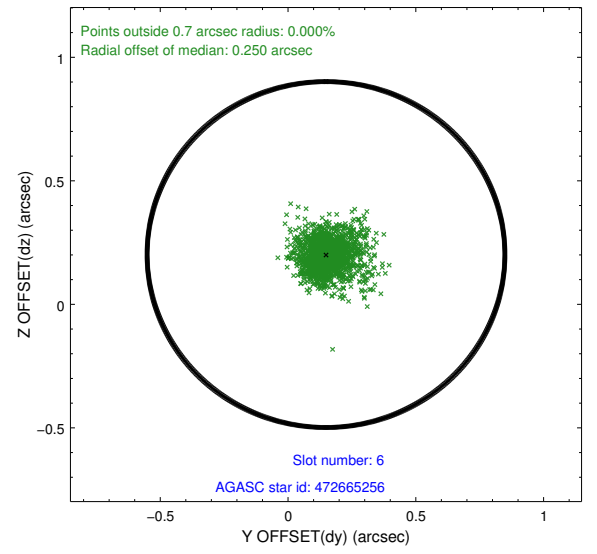
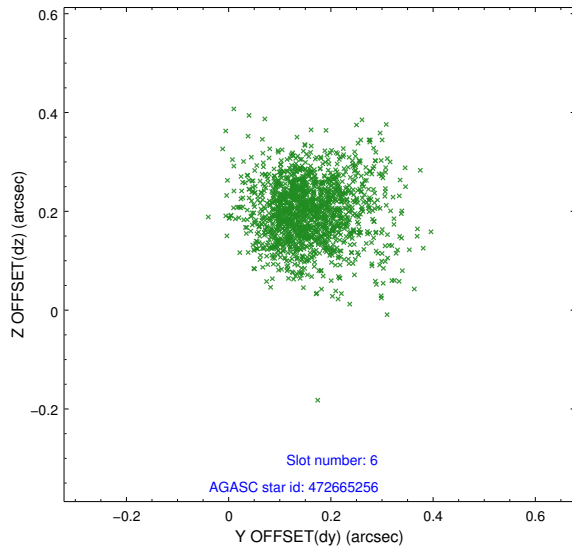
## 2.4.2 Slot 4



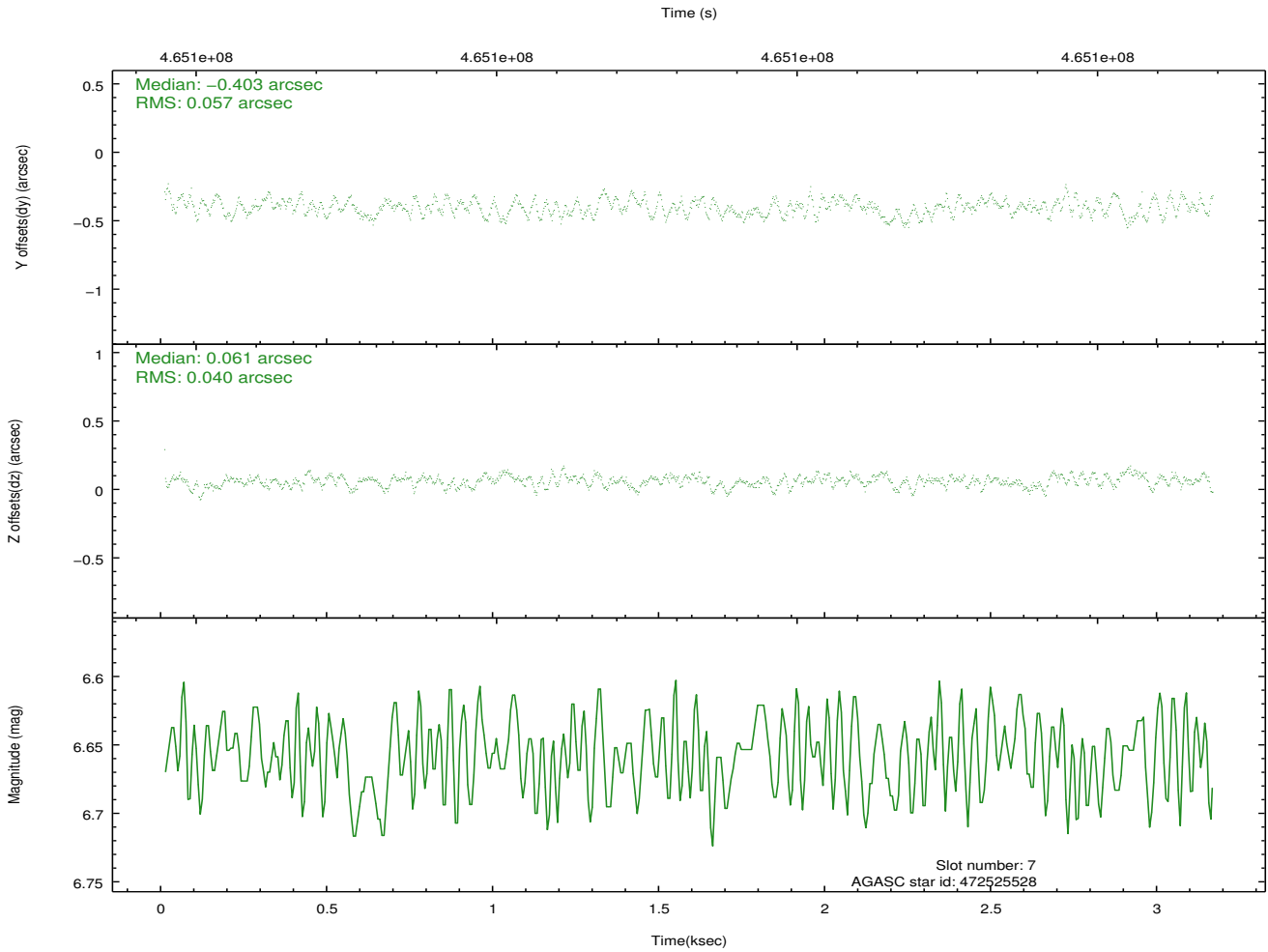
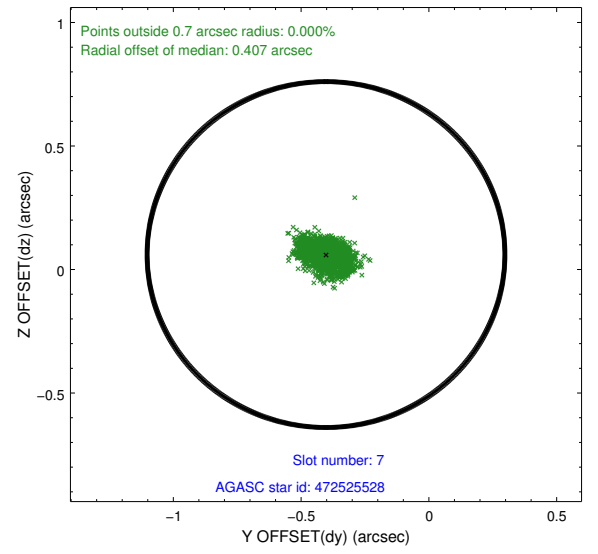
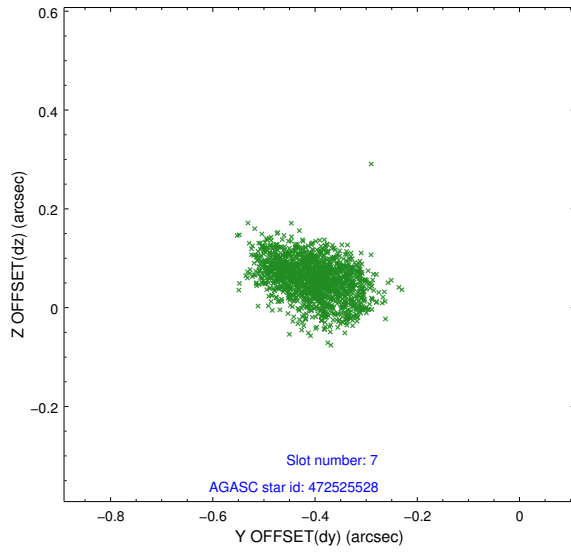
### 2.4.3 Slot 5



## 2.4.4 Slot 6

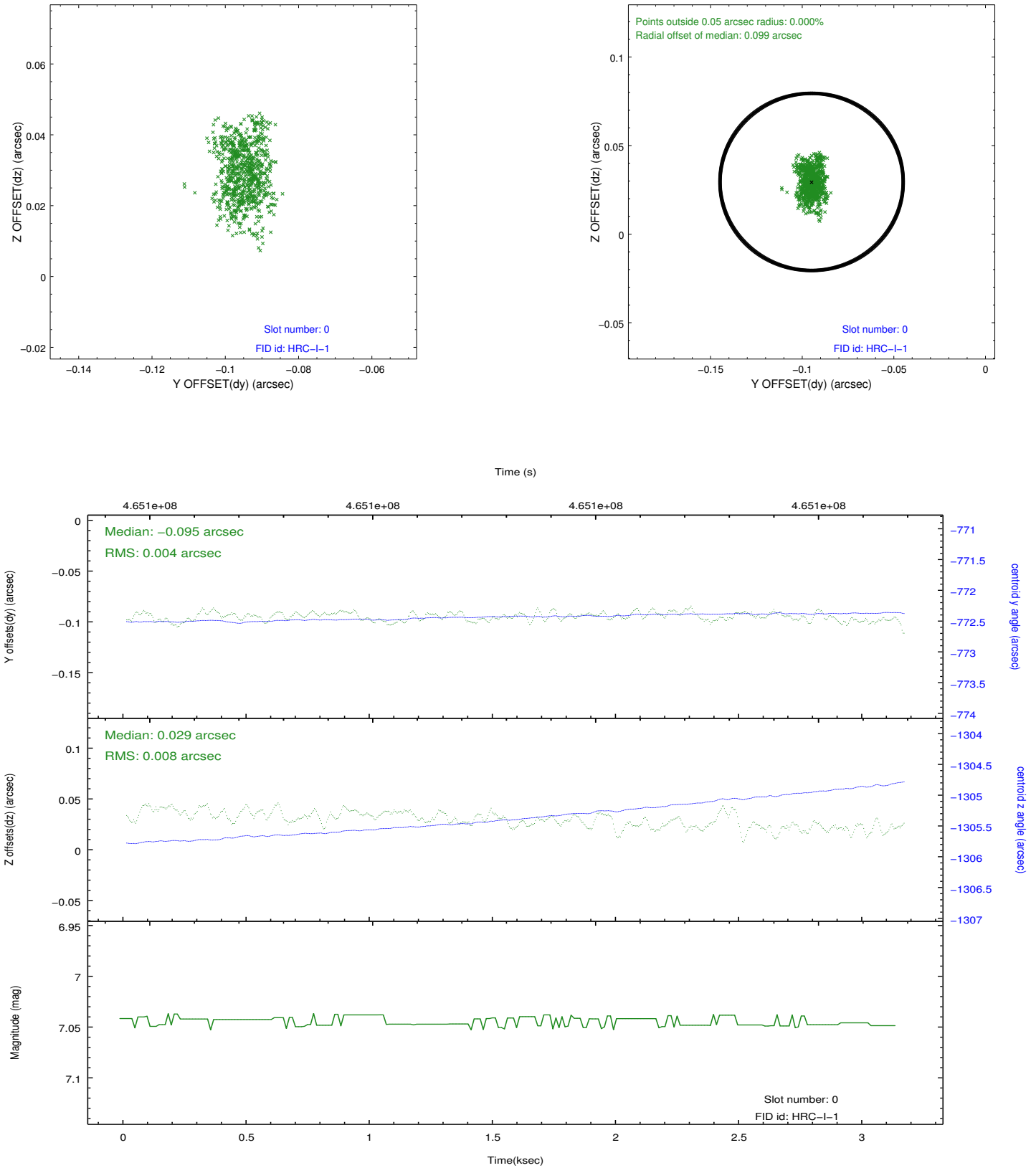


## 2.4.5 Slot 7

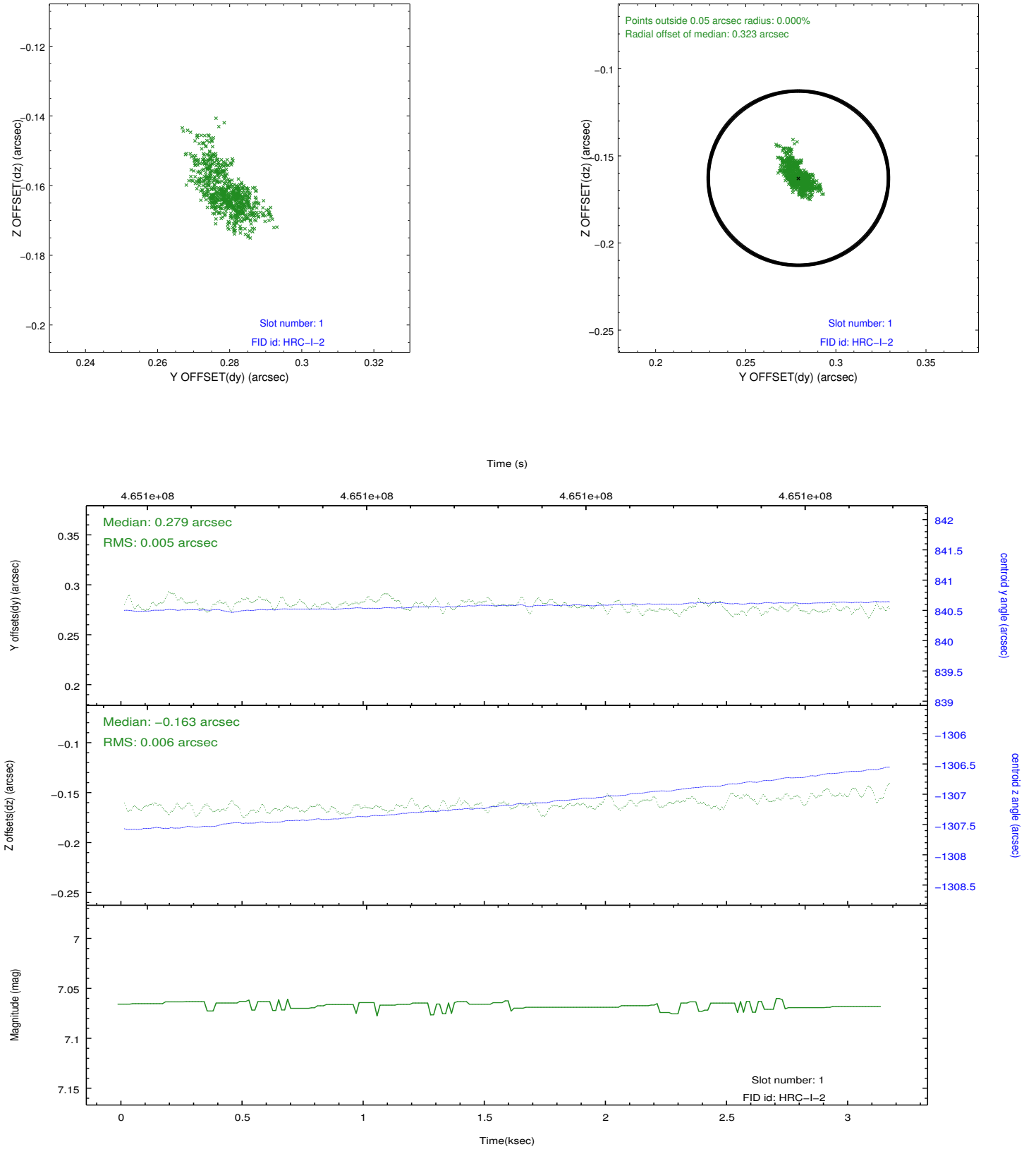


## 2.5 FID Slots

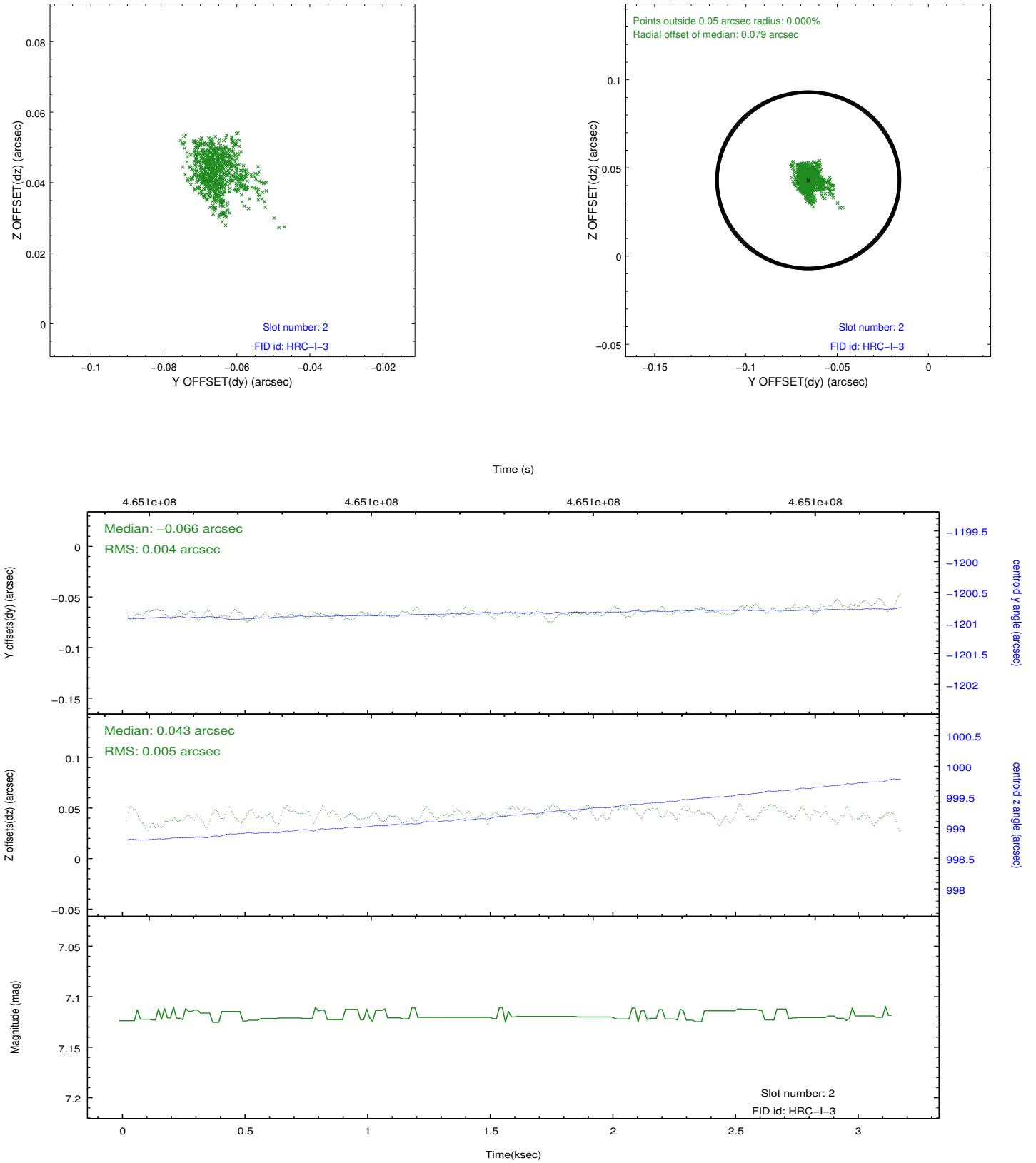
### 2.5.1 Slot 0



## 2.5.2 Slot 1



### 2.5.3 Slot 2





# A Summary

## A.1 Status

|                            |                 |
|----------------------------|-----------------|
| V&V Scientist              | Beth Sundheim   |
| V&V Date (YYYY-MM-DD)      | 2014.12.02      |
| V&V Edition                | 1               |
| V&V Disposition and Status | OK              |
| V&V Charge Time            | 3.1582814193368 |

## A.2 Comments

Window preference met.

These data have been reprocessed with new aspect alignment calibration files that correct small mean offsets (up to 0.4 arcsecs) and improve overall astrometric accuracy. The new calibration was determined using data from the time period being reprocessed and was performed using cross-correlation of X-ray sources with radio and optical counterparts.