

# V&V Reference Report

## L2 ASCDS Version : 10.7.1

Observation 21801 - L2 Version 1  
Chandra X-Ray Center

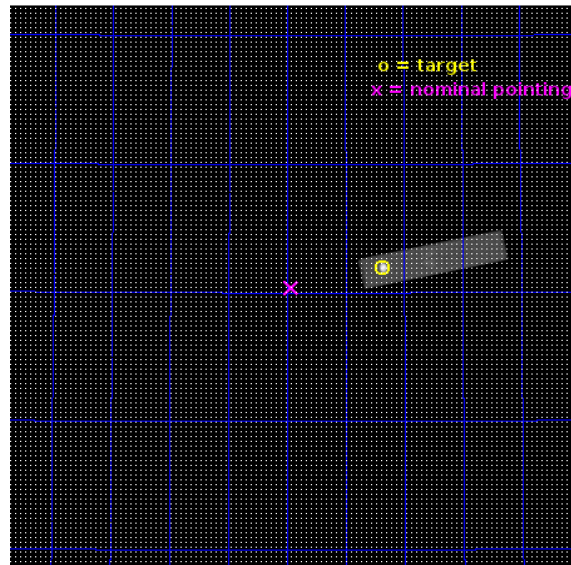
L2 Processing Date : Apr 4 2019

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# 1 Front

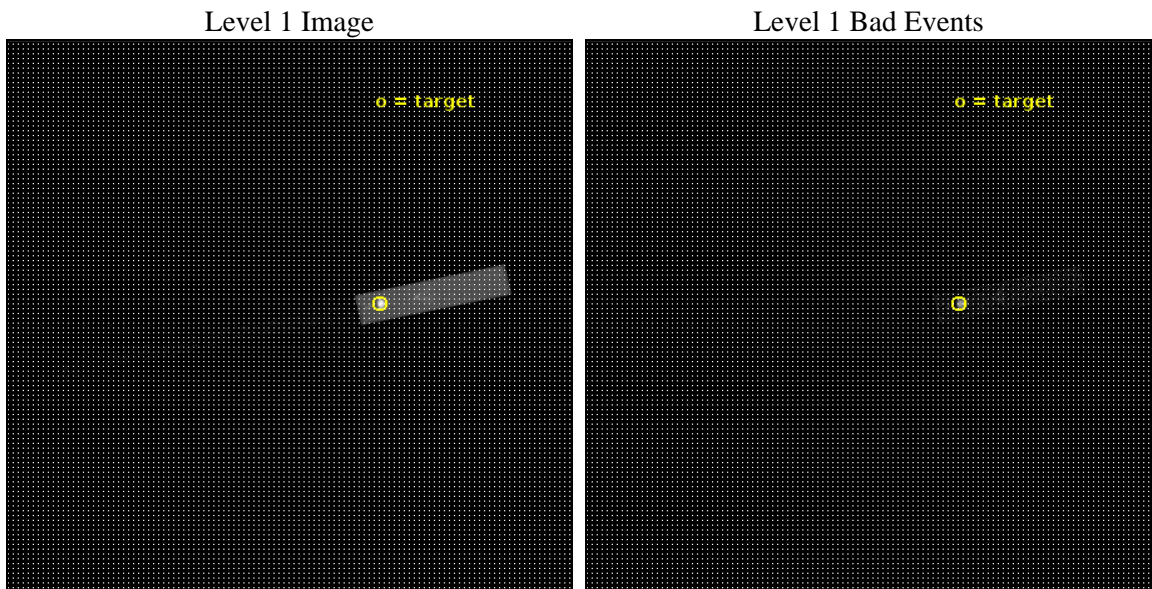
|          |   |                                       |
|----------|---|---------------------------------------|
| seq_num  | 291487  | Sequence number                       |
| obs_id   | 21801   | Observation id                        |
| title    | AO-20 HRC-S Gain Calibration Observations of HZ43 | Proposal title                        |
| observer | CXC Calibration                                   | Principal investigator                |
| object   | HZ43  | Source name                           |
| ra_targ  | 199.090076  | Observer's specified target RA [deg]  |
| dec_targ | 29.098119   | Observer's specified target Dec [deg] |
| ra_nom   | 199.48146456706                                   | Nominal RA [deg]                      |
| dec_nom  | 29.019417206591                                   | Nominal Dec [deg]                     |
| roll_nom | 167.85266541294                                   | Nominal Roll [deg]                    |
| revision | 1   | Processing version of data            |
| ontime   | 1891.3813632727                                   | [s]                                   |
| livetime | 1679.884398025                                    | Ontime multiplied by DTCOR            |
| l2events | 323202  | 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 | 1700.000000     | [s] Scheduled observation exposure time |
| ascdsver | 10.7.1              | Processing system revision     | ontime         | 1891.3813632727 | [s]                                     |
| caldbver | 4.8.2               | &#160                          | l1events       | 406723          | Number of level 1 events                |
| date     | 2019-04-04T12:34:46 | Date and time of file creation |                |                 |   |
| revision | 1                   | Processing version of data     |                |                 |   |

### 2.1.3 Events

Level 1 Events

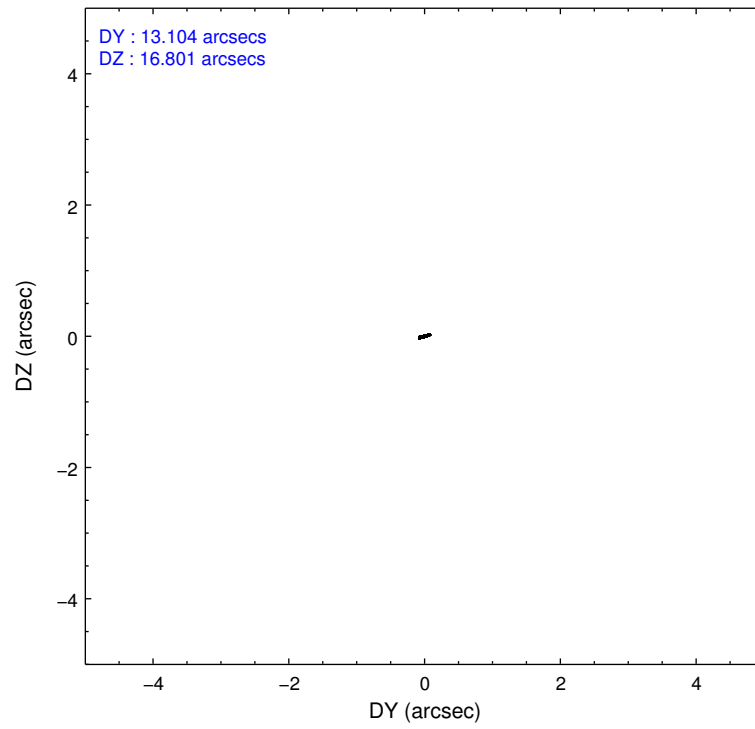
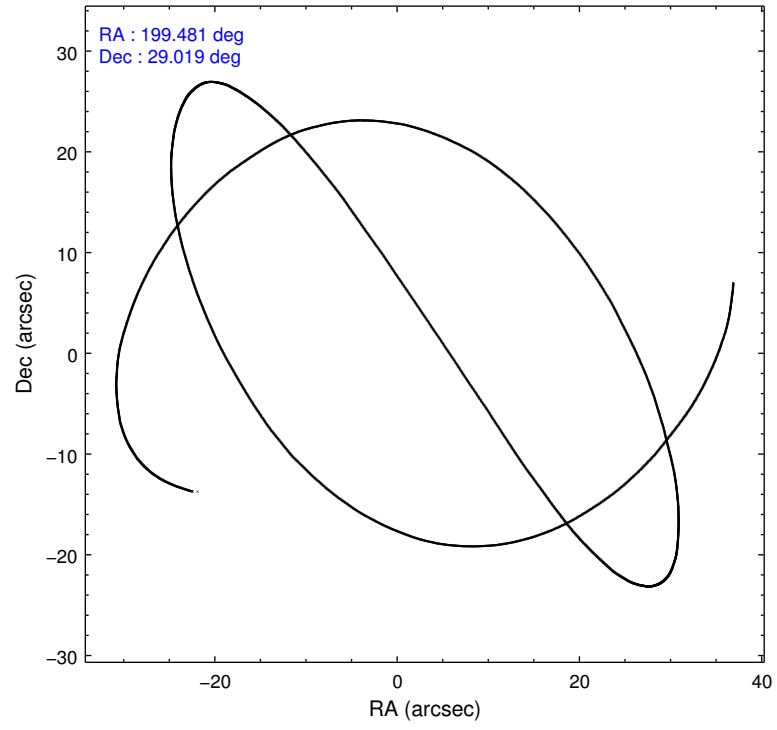
|                 | <b>segment<br/>1</b> | <b>segment<br/>2</b> | <b>segment<br/>3</b> |
|-----------------|----------------------|----------------------|----------------------|
| level 1 events  | 719                  | 755                  | 405249               |
| rejected events | 719                  | 720                  | 56542                |
| rejected %      | 100%                 | 95%                  | 13%                  |

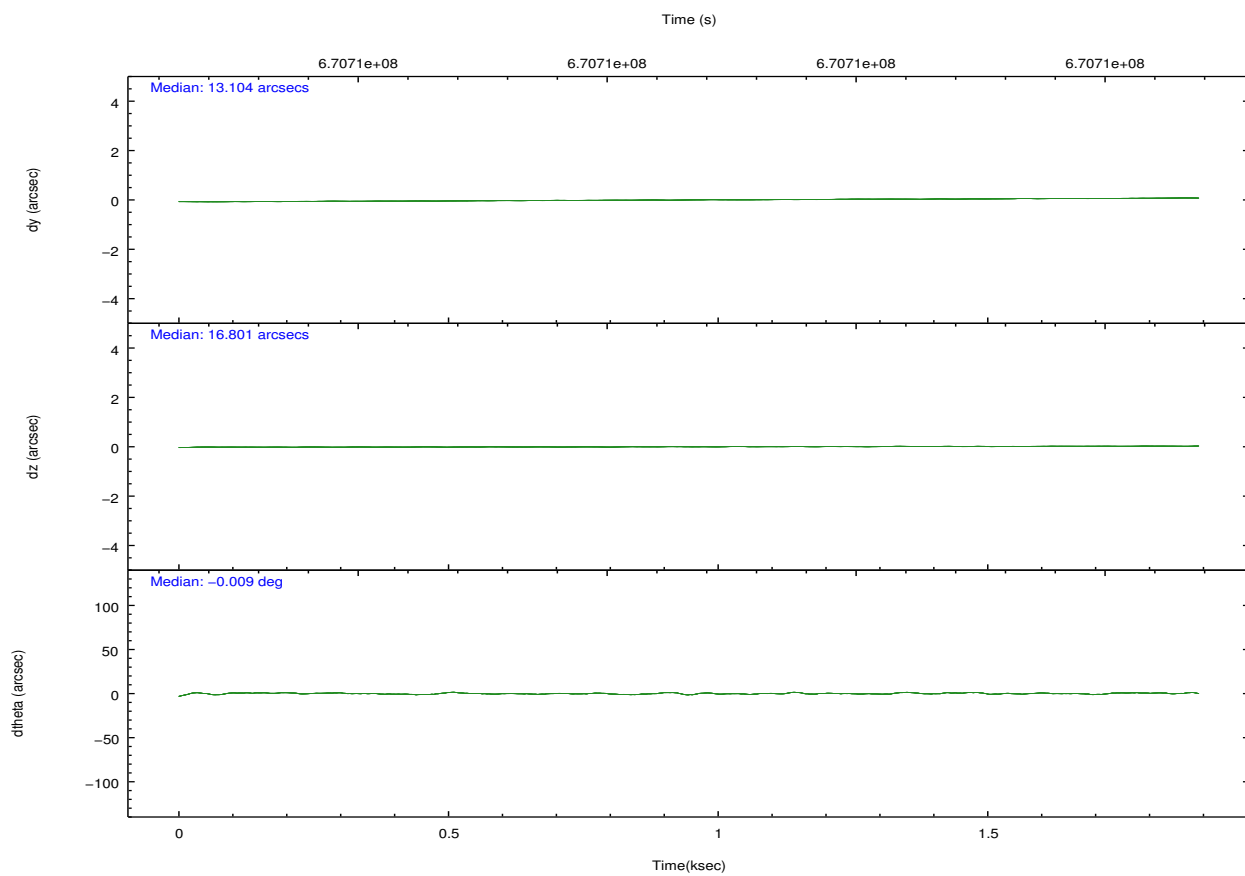
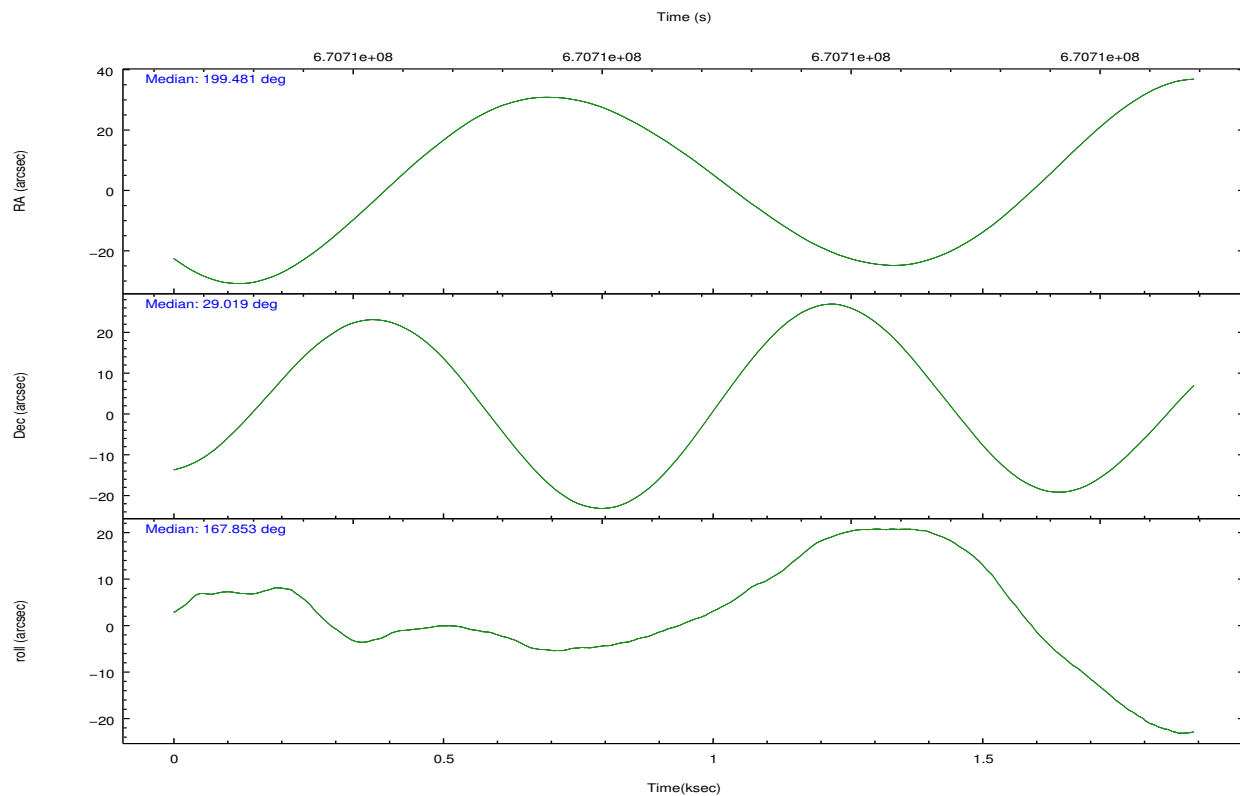
## 2.2 Compared Parameters

| Parameter                         | Planned               | Actual               |
|-----------------------------------|-----------------------|----------------------|
| Instrument                        | HRC                   | HRC                  |
| Detector                          | HRC-S                 | HRC-S                |
| Grating                           | NONE                  | NONE                 |
| Data mode                         | OBSERVING             | OBSERVING            |
| Observation mode                  | POINTING              | POINTING             |
| [deg] Pointing RA                 | 199.512968            | 199.4814645670607    |
| [deg] Pointing Dec                | 29.029820             | 29.01941720659081    |
| [deg] Pointing Roll               | 167.770025            | 167.8526654129375    |
| [mm] SIM focus pos                | -1.533336             | -1.526339935833849   |
| [mm] SIM defocus                  | 7.710433287538843e-07 | 0.006996703570447904 |
| [mm] SIM translation stage pos    | 250.455976            | 250.466033080201     |
| [mm] SIM translation stage offset | 0                     | -0.01005468664627074 |
| [s] Observation start time (MET)  | 670712902.184000      | 670712526.07918      |
| Observation start date            | 2019-04-03T21:07:13   | 2019-04-03T21:02:06  |
| [s] Observation end time (MET)    | 670714602.184000      | 670714735.97931      |
| Observation end date              | 2019-04-03T21:35:33   | 2019-04-03T21:38:55  |

| Parameter                    | Planned   | Actual  |
|------------------------------|-----------|---------|
| Obspar format version number | 7         | 7       |
| Obspar file type             | PREDICTED | ACTUAL  |
| Obspar update status         | NONE      | UPDATED |

## 2.3 Aspect





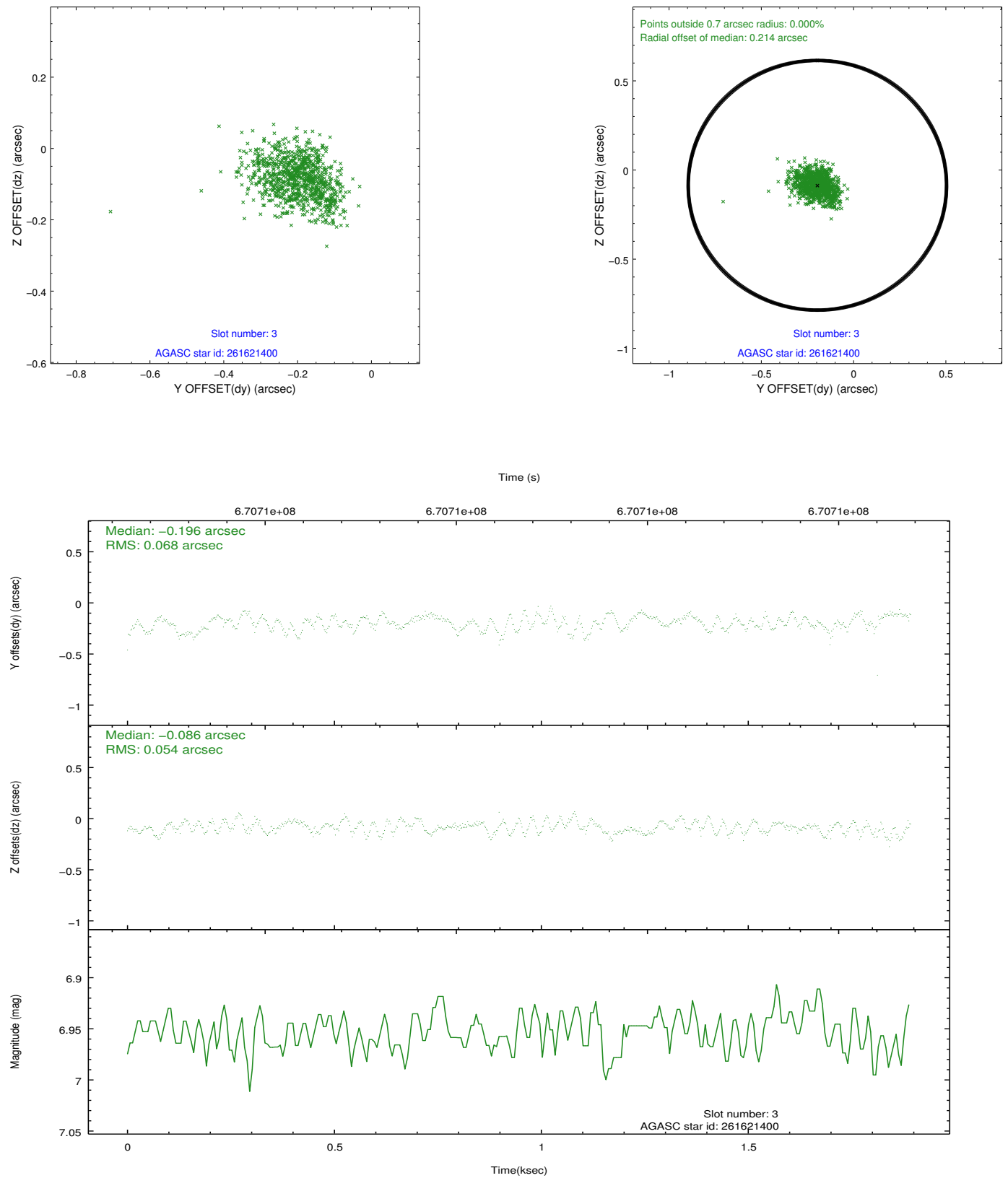
Slot Statistics

| pt | status  | used | id        | mag  | n_pts | frac_pts | med_dy | med_dz | dr1   | dr2   | ra         | dec       | mean_y   | mea  |
|----|---------|------|-----------|------|-------|----------|--------|--------|-------|-------|------------|-----------|----------|------|
| 0  | FID     |      | HRC-S-1   | 7.11 | 462   | 1.000    | -0.107 | -0.205 | 0.007 | 0.011 | 0.000000   | 0.000000  | -1167.56 | -465 |
| 1  | FID     |      | HRC-S-2   | 7.08 | 462   | 1.000    | 0.491  | -0.153 | 0.004 | 0.008 | 0.000000   | 0.000000  | 1230.16  | -459 |
| 2  | FID     |      | HRC-S-3   | 7.08 | 462   | 1.000    | 0.004  | 0.055  | 0.007 | 0.012 | 0.000000   | 0.000000  | -1167.62 | 562  |
| 3  | GUIDE   | used | 261621400 | 6.95 | 924   | 1.000    | -0.196 | -0.086 | 0.092 | 0.143 | 198.901600 | 28.741982 | 1666.29  | 1415 |
| 4  | GUIDE   | used | 261623624 | 9.07 | 919   | 1.000    | 0.021  | -0.013 | 0.155 | 0.237 | 199.611555 | 28.454113 | -743.12  | 1959 |
| 5  | GUIDE   | used | 261624456 | 7.30 | 924   | 1.000    | 0.021  | 0.066  | 0.100 | 0.177 | 199.758056 | 28.567828 | -1110.20 | 1459 |
| 6  | OMITTED |      |           | 0.00 | 0     | 0.000    | 0.000  | 0.000  | 0.000 | 0.000 | 0.000000   | 0.000000  | 0.00     | 0    |
| 7  | GUIDE   | used | 261629720 | 8.09 | 922   | 1.000    | 0.158  | 0.028  | 0.101 | 0.160 | 199.236176 | 29.044452 | 860.30   | 132  |

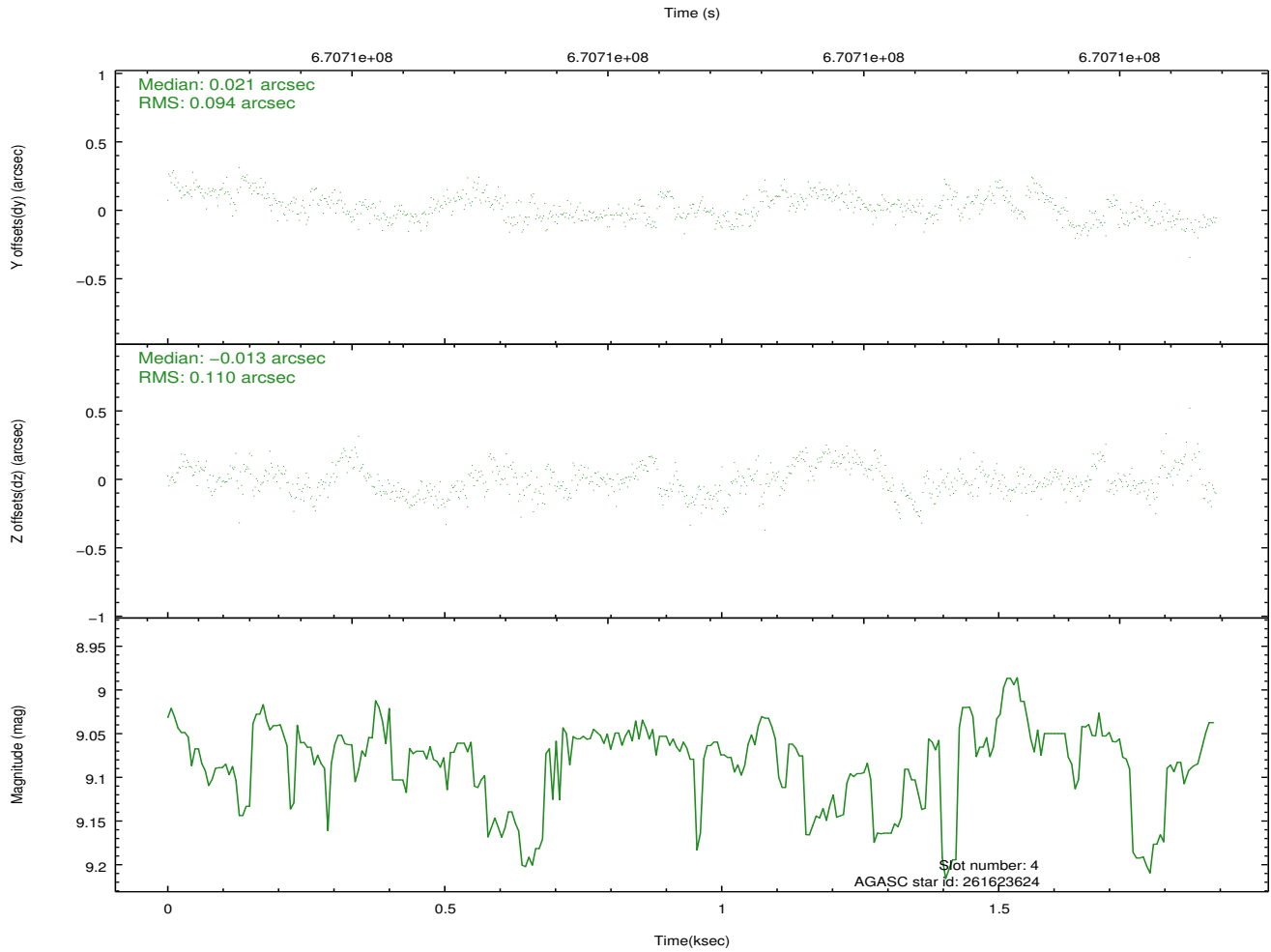
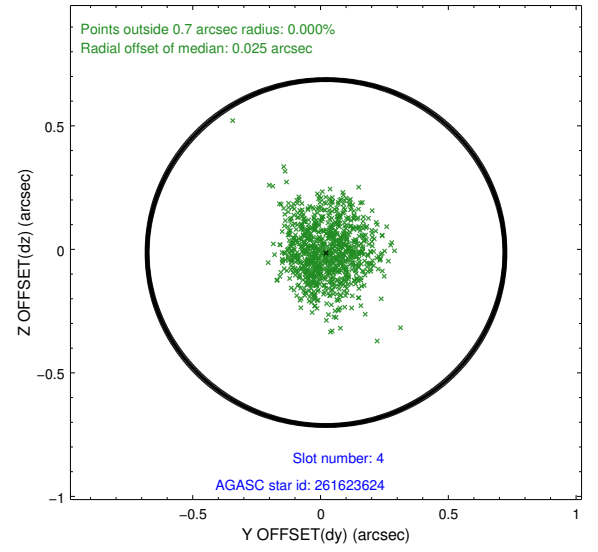
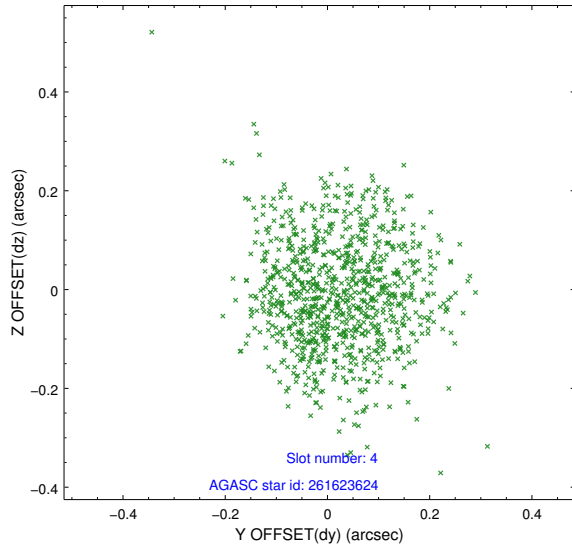


## 2.4 Star Slots

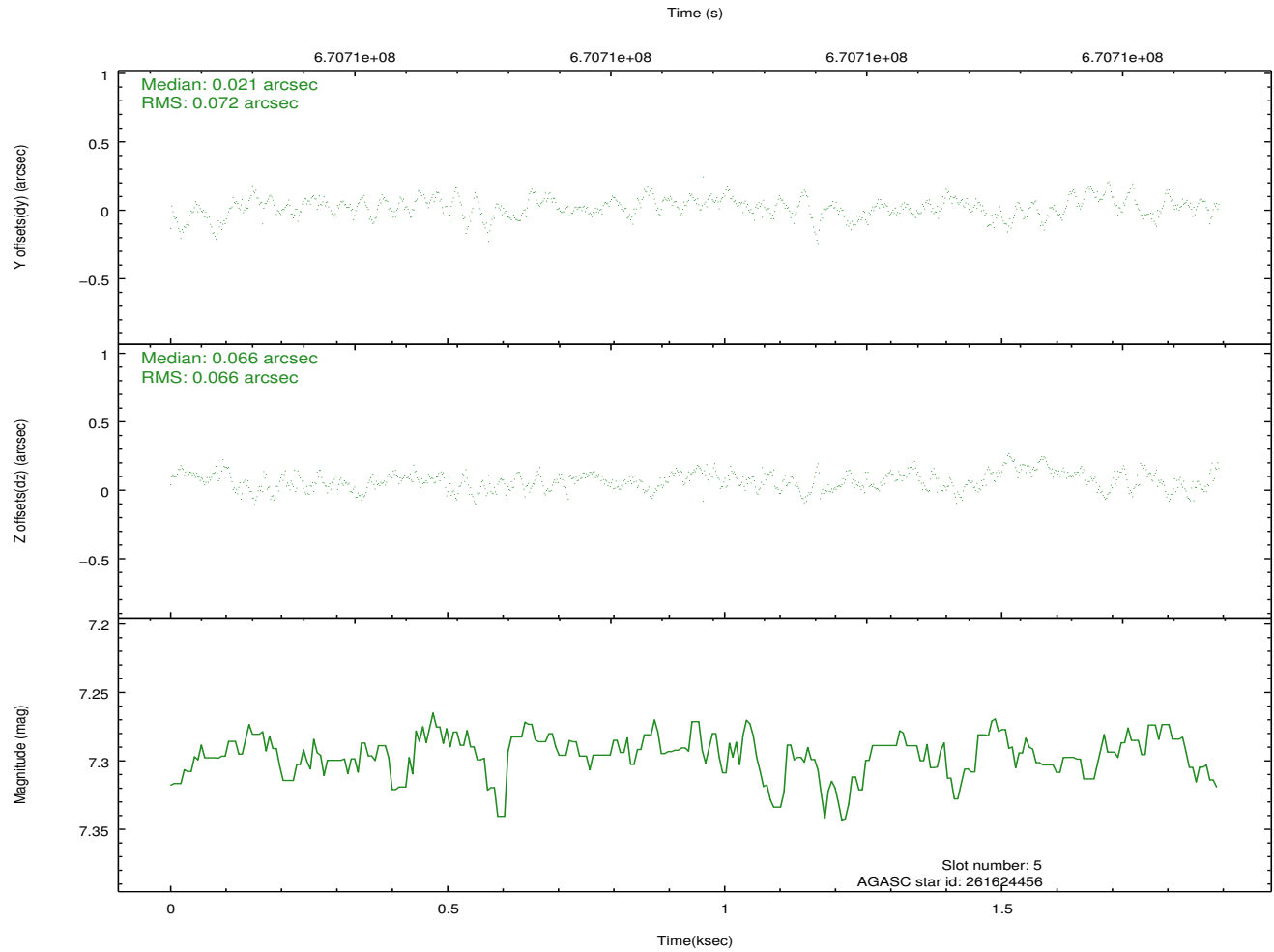
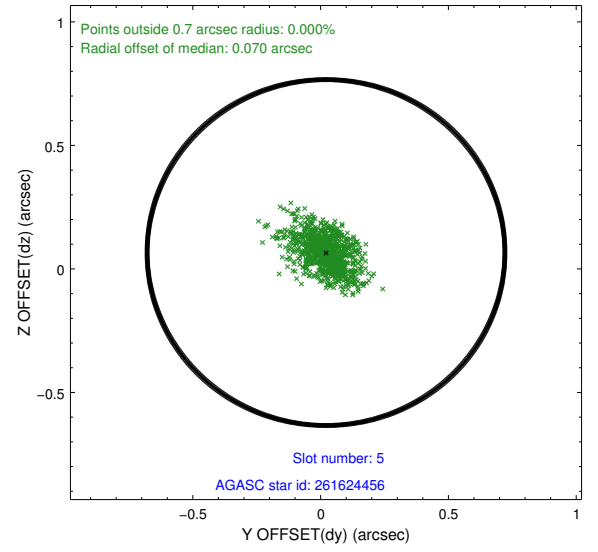
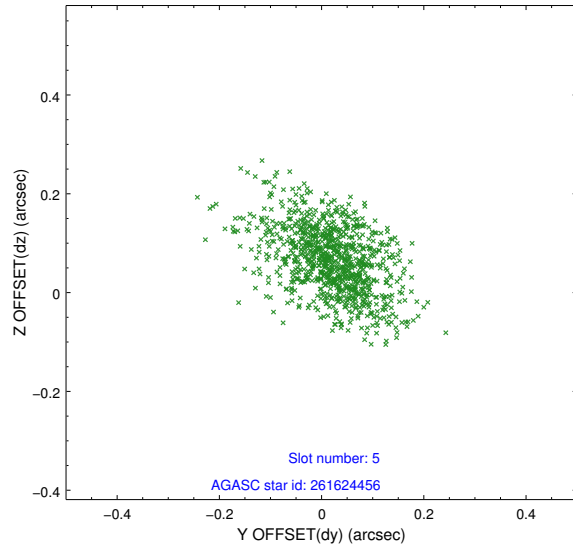
### 2.4.1 Slot 3



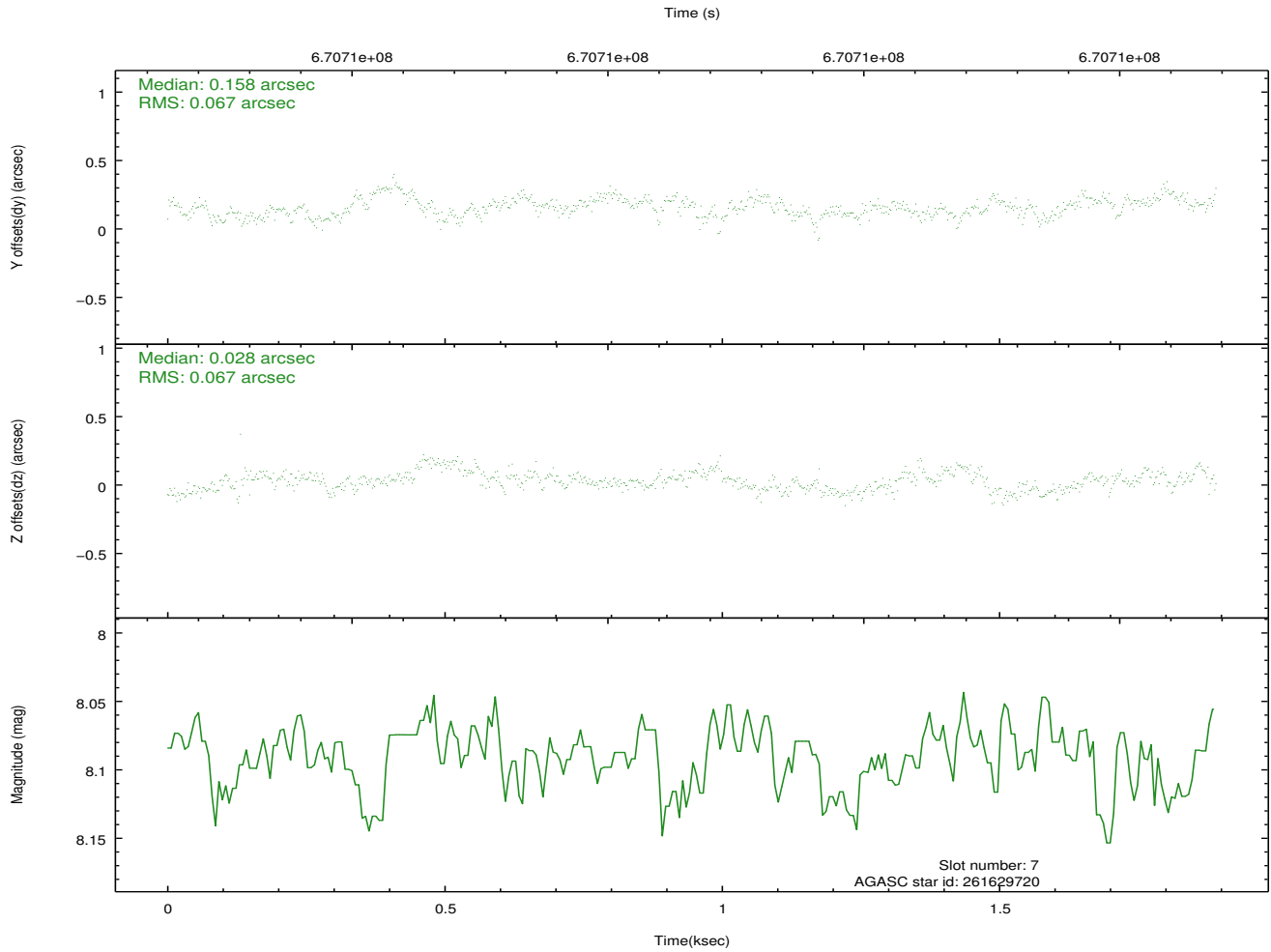
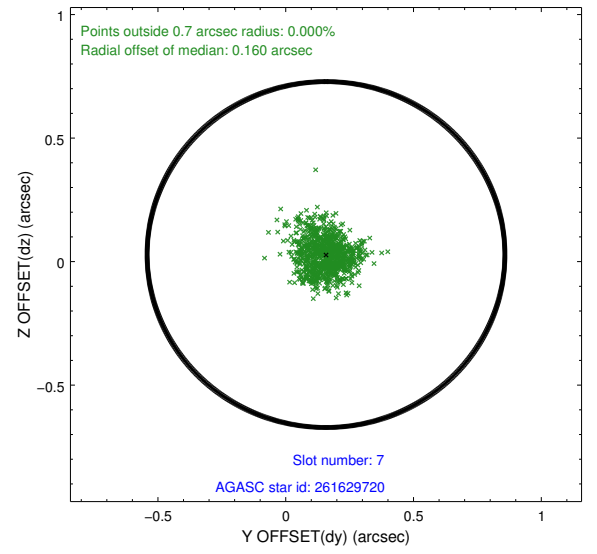
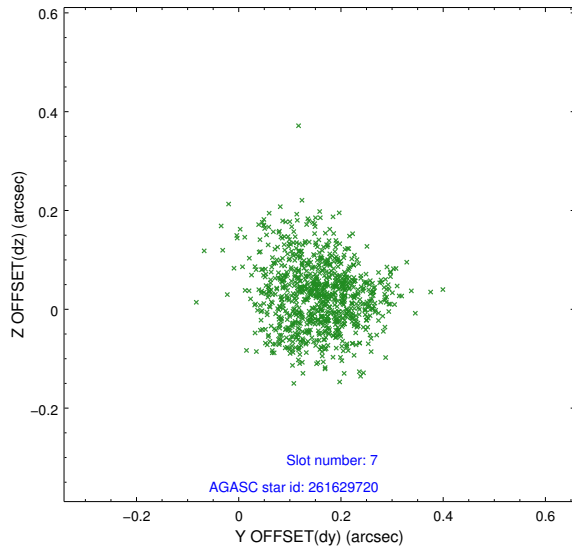
## 2.4.2 Slot 4



### 2.4.3 Slot 5

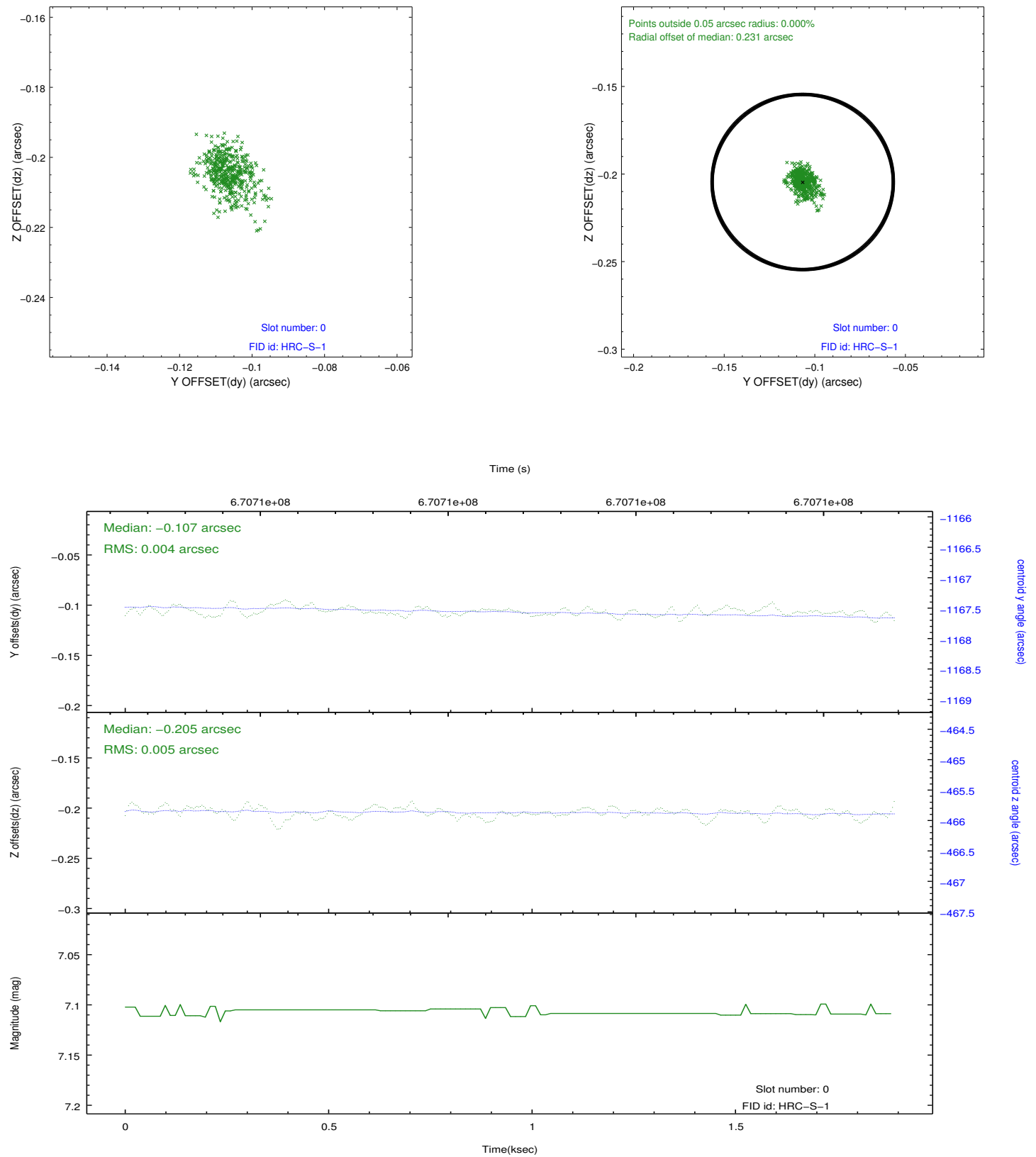


## 2.4.4 Slot 7

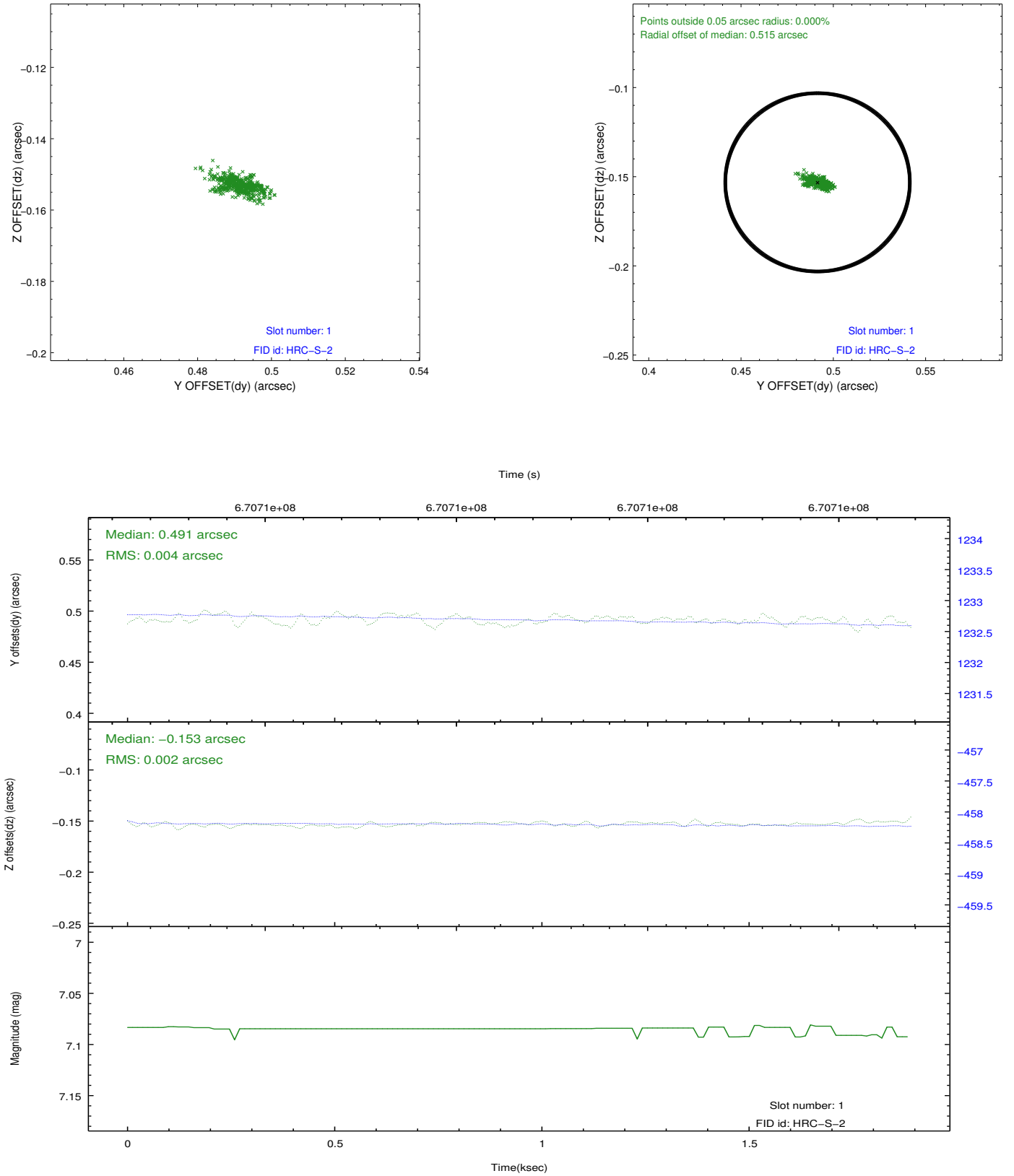


## 2.5 FID Slots

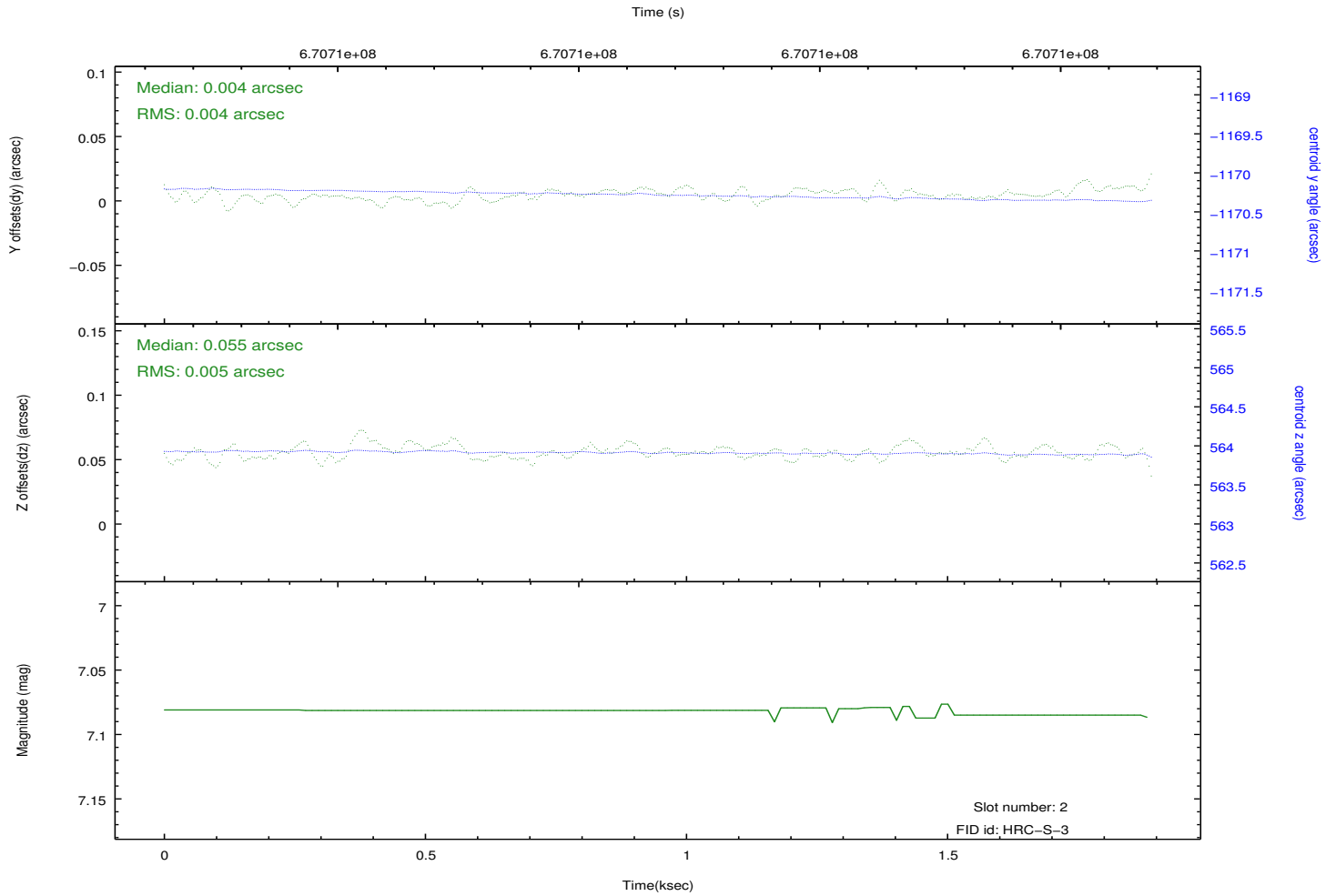
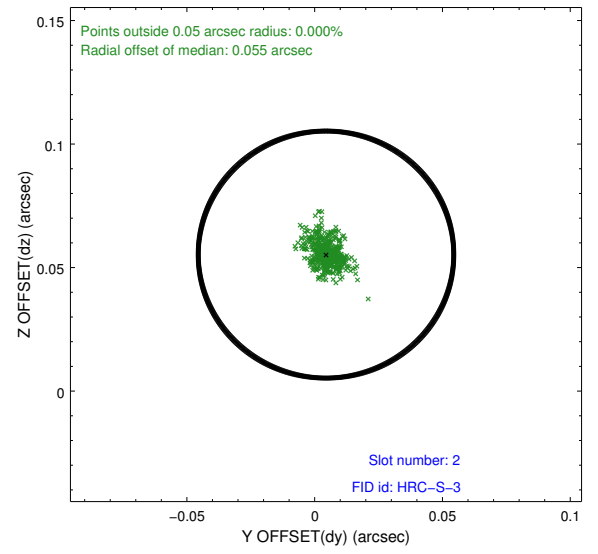
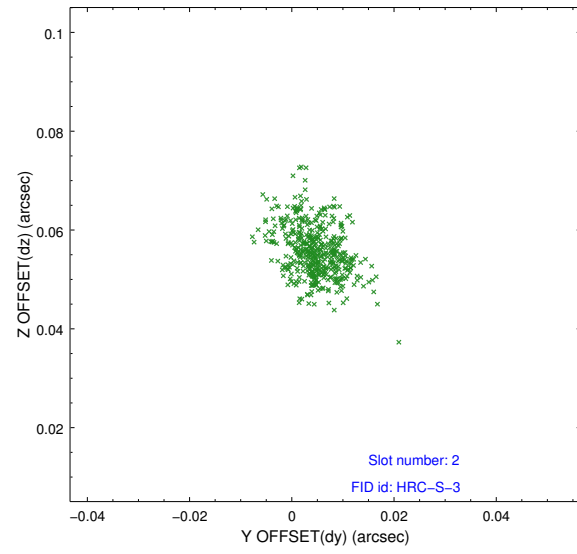
### 2.5.1 Slot 0



## 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)      | 2019.04.04      |
| V&V Edition                | 1               |
| V&V Disposition and Status | OK              |
| V&V Charge Time            | 1.8913813632727 |

### A.2 Comments

The guide star in slot 6 was removed from the aspect solution due to poor data quality. The aspect solution is improved by the removal of this slot from the solution.