

# V&V Reference Report

## L2 ASCDS Version : 10.5.2

Observation 20005 - L2 Version 1  
Chandra X-Ray Center

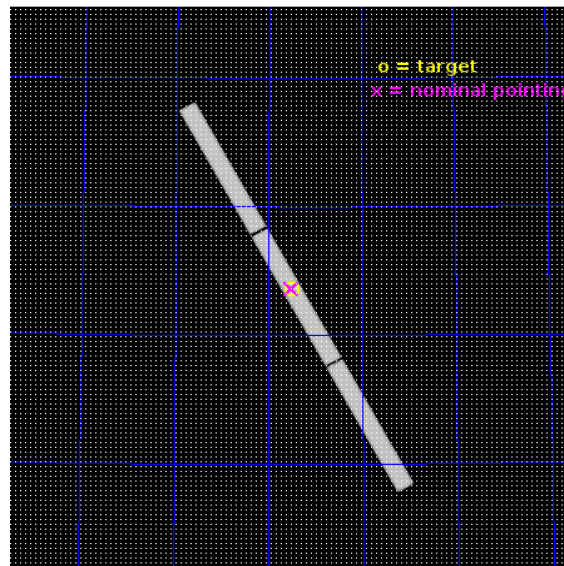
L2 Processing Date : Feb 8 2017

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# 1 Front

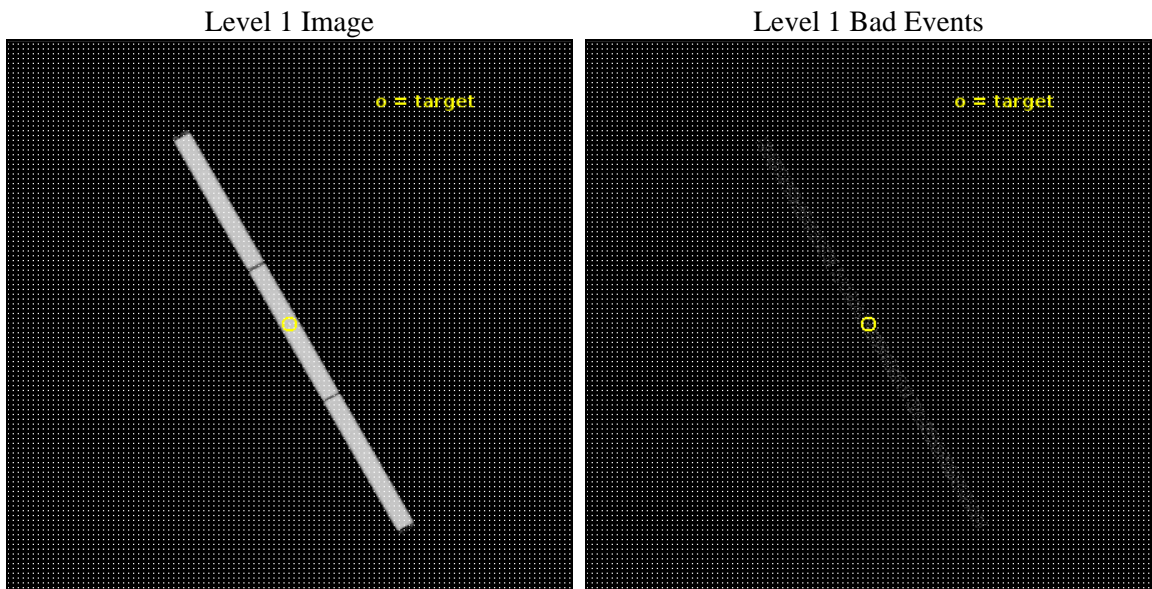
|           |  |                                       |
|-----------|--|---------------------------------------|
| seq_num   | 703217   | Sequence number                       |
| obs_id    | 20005  | Observation id                        |
| title     | The NLSy1 IRAS17020+4544: dissecting the first low ionization sub-relativistic black hole wind with LETG and HST/COS | Proposal title                        |
| observer  | Dr Anna Lia Longinotti   | Principal investigator                |
| object    | IRAS 17020+4544  | Source name                           |
| ra_targ   | 255.876667   | Observer's specified target RA [deg]  |
| dec_targ  | 45.679722  | Observer's specified target Dec [deg] |
| ra_nom    | 255.87807382464  | Nominal RA [deg]                      |
| dec_nom   | 45.681449273891  | Nominal Dec [deg]                     |
| roll_nom  | 61.066345646479  | Nominal Roll [deg]                    |
| revision  | 1  | Processing version of data            |
| ontime    | 21179.576226473  | [s]                                   |
| liveltime | 20982.713688545  | Ontime multiplied by DTCOR            |
| l2events  | 1765284  | 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 | 21000.000000         | [s] Scheduled observation exposure time |
| ascdsver | 10.5.2              | Processing system revision     | ontime         | 21179.576226473      | [s]                                     |
| caldsver | 4.7.3               | &#160                          | l1events       | 2262340              | Number of level 1 events                |
| date     | 2017-02-08T13:58:33 | Date and time of file creation | tgmethod       | TGDETECT             | Method used to create src1a file        |
| revision | 1                   | Processing version of data     | zo_pos         | (32796.49, 32719.96) | src1a sky pixel position                |

## 2.1.3 Events

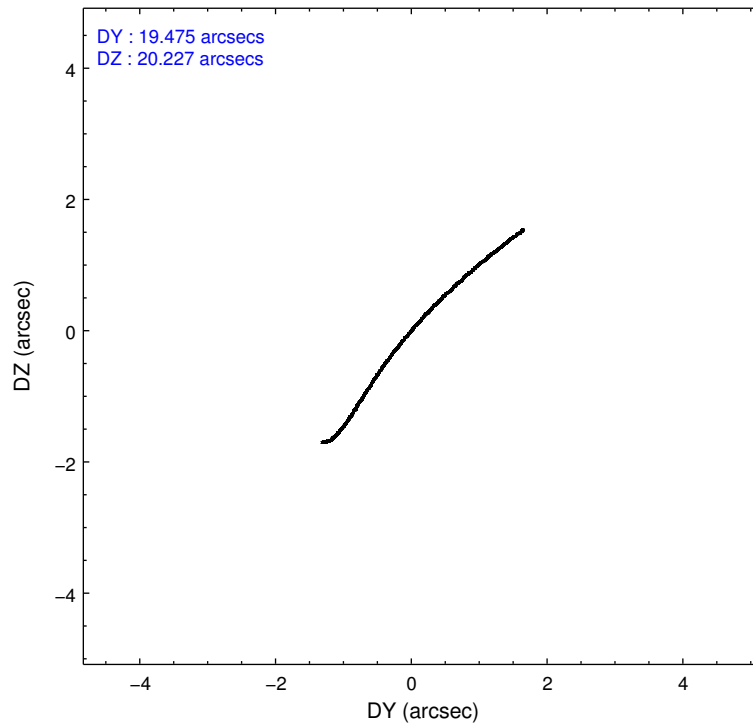
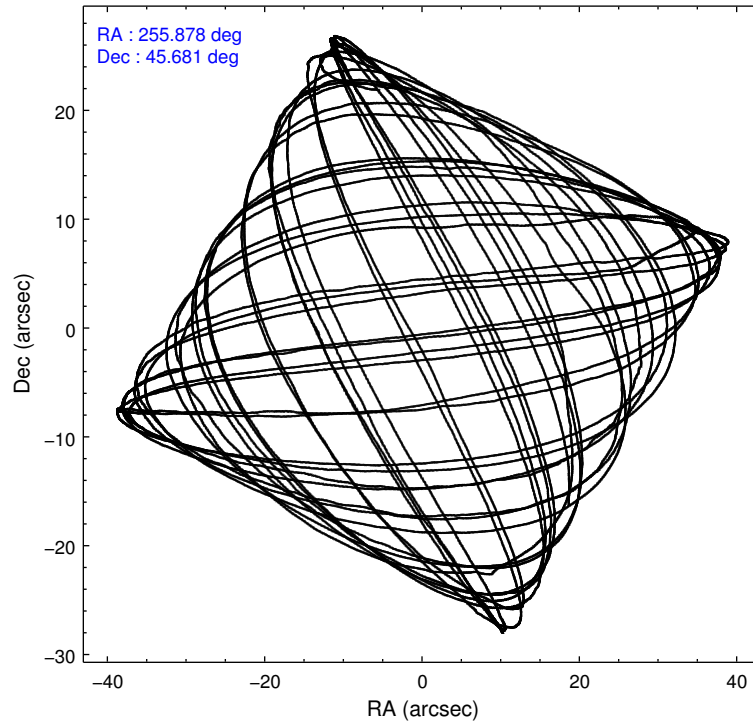
Level 1 Events

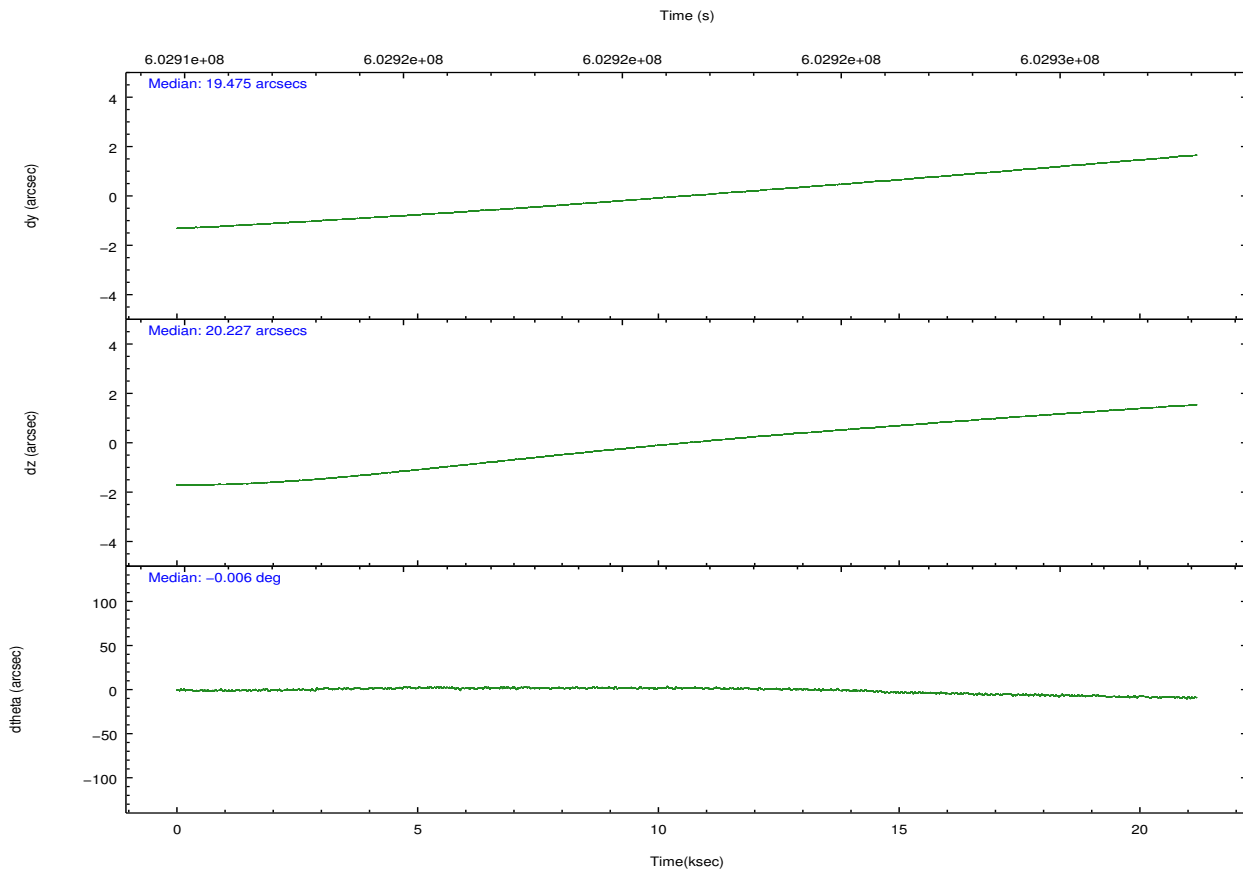
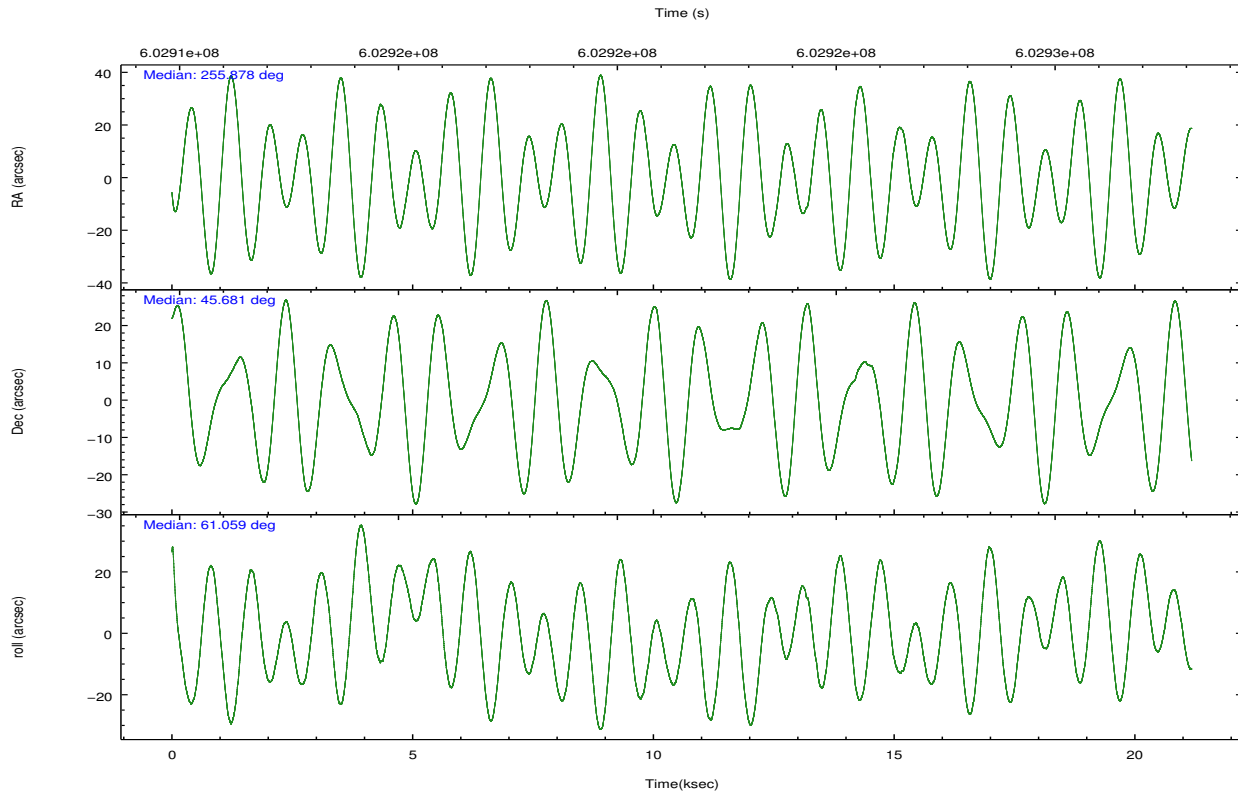
|                 | <b>segment 1</b> | <b>segment 2</b> | <b>segment 3</b> |
|-----------------|------------------|------------------|------------------|
| level 1 events  | 753149           | 757765           | 751426           |
| rejected events | 26356            | 26228            | 26442            |
| rejected %      | 3%               | 3%               | 3%               |

## 2.2 Compared Parameters

| Parameter                         | Planned             | Actual               | Parameter                    | Planned   | Actual  |
|-----------------------------------|---------------------|----------------------|------------------------------|-----------|---------|
| Instrument                        | HRC                 | HRC                  | Obspar format version number | 7         | 7       |
| Detector                          | HRC-S               | HRC-S                | Obspar file type             | PREDICTED | ACTUAL  |
| Grating                           | LETG                | LETG                 | Obspar update status         | NONE      | UPDATED |
| Data mode                         | OBSERVING           | OBSERVING            |                              |           |         |
| Observation mode                  | POINTING            | POINTING             |                              |           |         |
| [deg] Pointing RA                 | 255.880812          | 255.8780738246431    |                              |           |         |
| [deg] Pointing Dec                | 45.652562           | 45.68144927389068    |                              |           |         |
| [deg] Pointing Roll               | 60.997038           | 61.06634564647931    |                              |           |         |
| [mm] SIM focus pos                | -1.429586           | -1.428180813131781   |                              |           |         |
| [mm] SIM defocus                  | 0.1037507710433287  | 0.1051558262725154   |                              |           |         |
| [mm] SIM translation stage pos    | 250.455976          | 250.466033080201     |                              |           |         |
| [mm] SIM translation stage offset | 0                   | -0.01005468664627074 |                              |           |         |
| [s] Observation start time (MET)  | 602911034.184000    | 602910132.1791101    |                              |           |         |
| Observation start date            | 2017-02-08T03:16:05 | 2017-02-08T03:02:12  |                              |           |         |
| [s] Observation end time (MET)    | 602932034.184000    | 602932921.51793      |                              |           |         |
| Observation end date              | 2017-02-08T09:06:05 | 2017-02-08T09:22:01  |                              |           |         |

## 2.3 Aspect



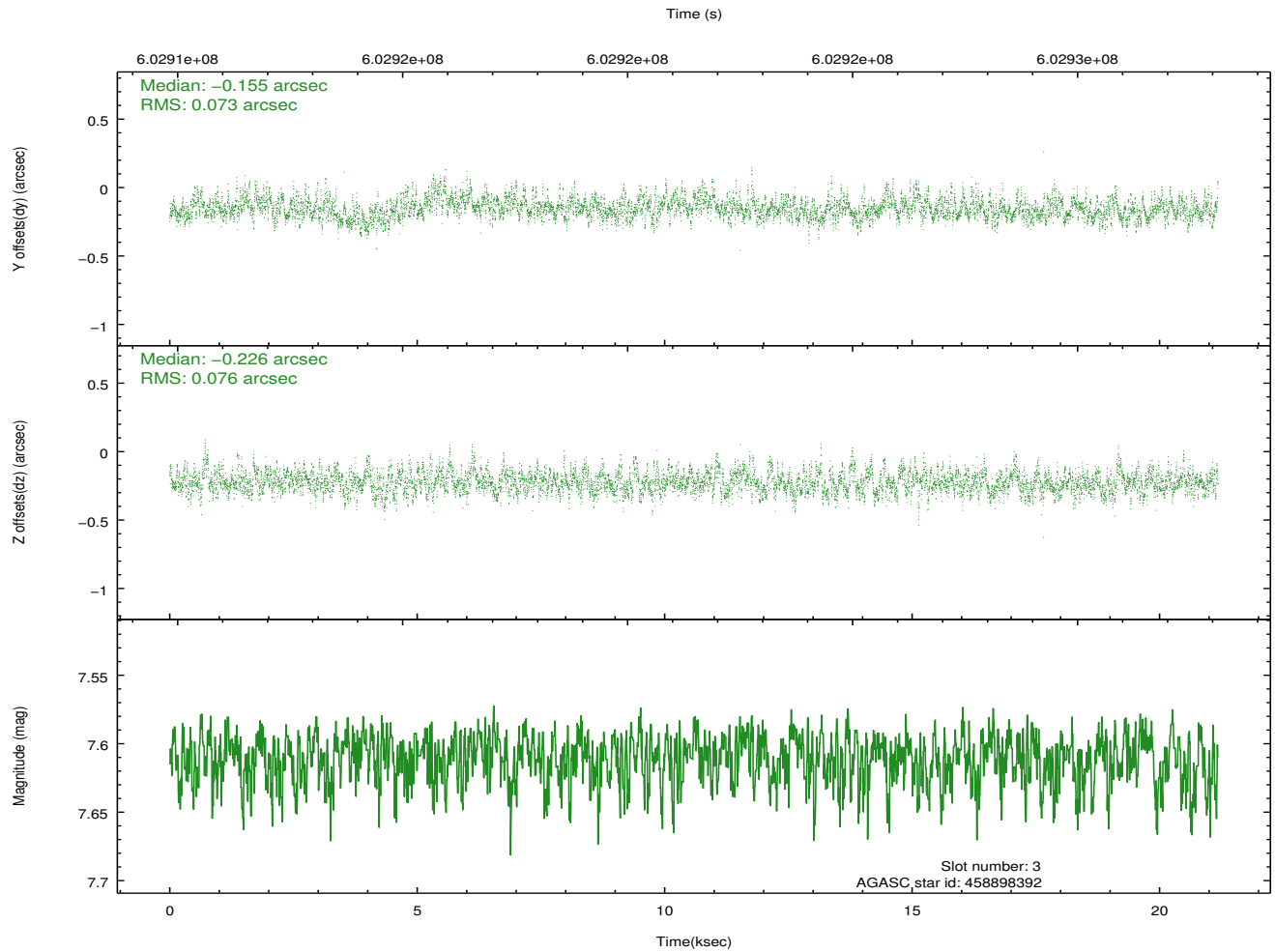
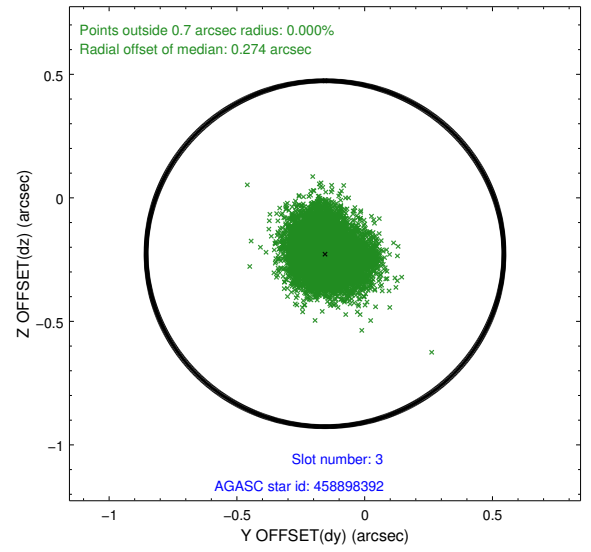
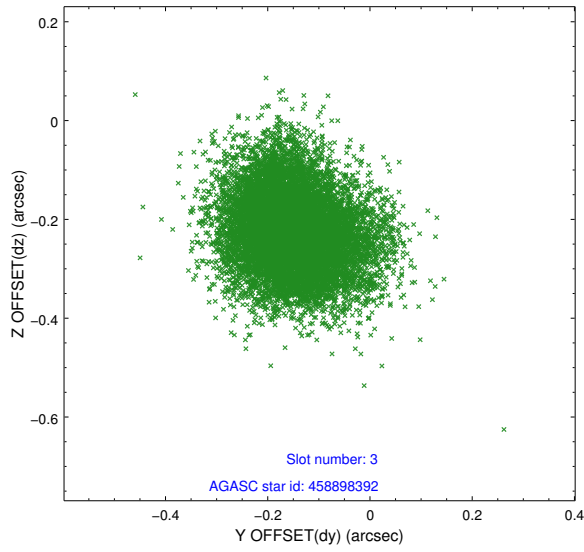


### Slot Statistics

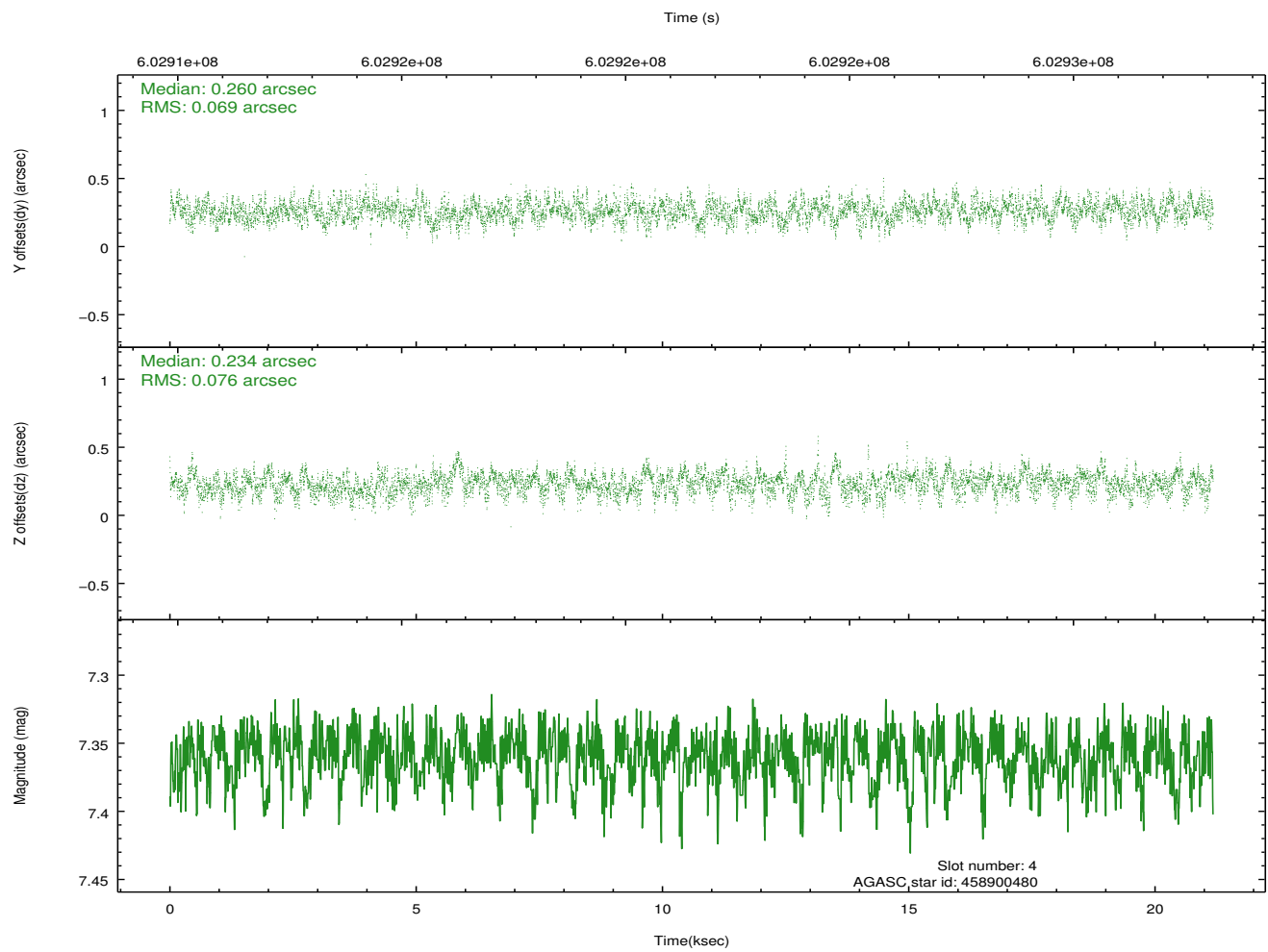
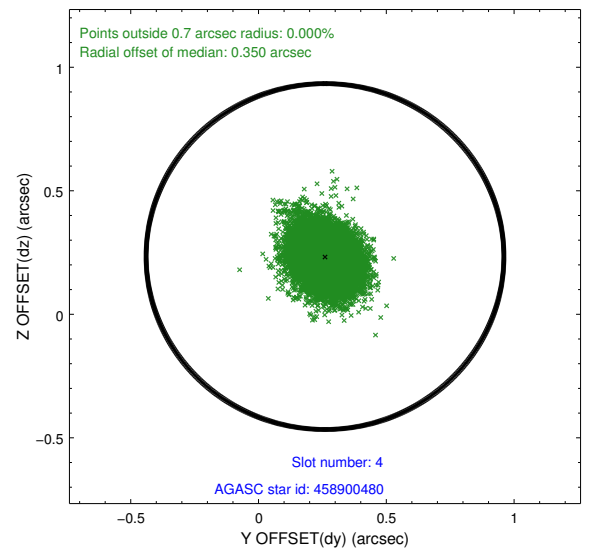
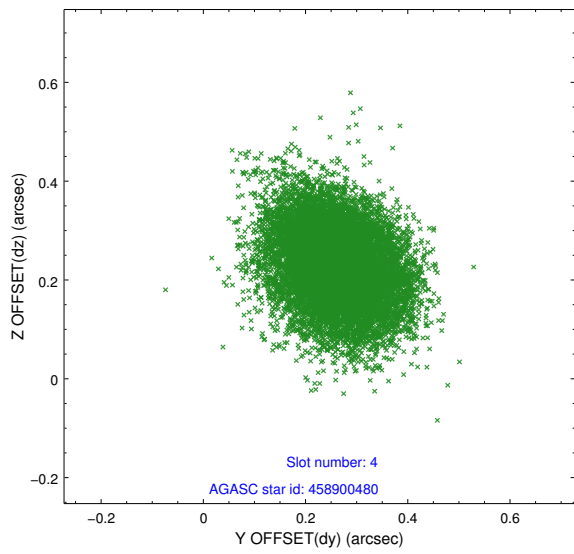
| slot | status | used | id        | mag  | n_pts | med_dy | med_dz | dr1   | dr2   | ra         | dec       | mean_y   | mean_z   |
|------|--------|------|-----------|------|-------|--------|--------|-------|-------|------------|-----------|----------|----------|
| 0    | FID    |      | HRC-S-1   | 7.03 | 5166  | -0.053 | -0.235 | 0.043 | 0.084 | 0.000000   | 0.000000  | -1174.15 | -469.29  |
| 1    | FID    |      | HRC-S-2   | 6.98 | 5166  | 0.350  | -0.118 | 0.032 | 0.074 | 0.000000   | 0.000000  | 1225.72  | -461.78  |
| 2    | FID    |      | HRC-S-3   | 7.01 | 5166  | 0.087  | 0.050  | 0.036 | 0.072 | 0.000000   | 0.000000  | -1176.55 | 560.42   |
| 3    | GUIDE  | used | 458898392 | 7.61 | 10333 | -0.155 | -0.226 | 0.112 | 0.184 | 255.120167 | 45.778808 | -521.06  | 1897.42  |
| 4    | GUIDE  | used | 458900480 | 7.36 | 10332 | 0.260  | 0.234  | 0.110 | 0.174 | 255.979899 | 45.449218 | -518.45  | -573.51  |
| 5    | GUIDE  | used | 458901632 | 7.77 | 10332 | -0.308 | -0.203 | 0.099 | 0.162 | 255.903814 | 46.023878 | 1196.05  | 597.01   |
| 6    | GUIDE  | used | 458903928 | 7.98 | 10327 | -0.128 | -0.291 | 0.100 | 0.164 | 256.022074 | 46.089865 | 1544.80  | 453.14   |
| 7    | GUIDE  | used | 458904480 | 8.94 | 10320 | 0.326  | 0.487  | 0.137 | 0.222 | 256.212390 | 45.224287 | -938.16  | -1481.17 |

## 2.4 Star Slots

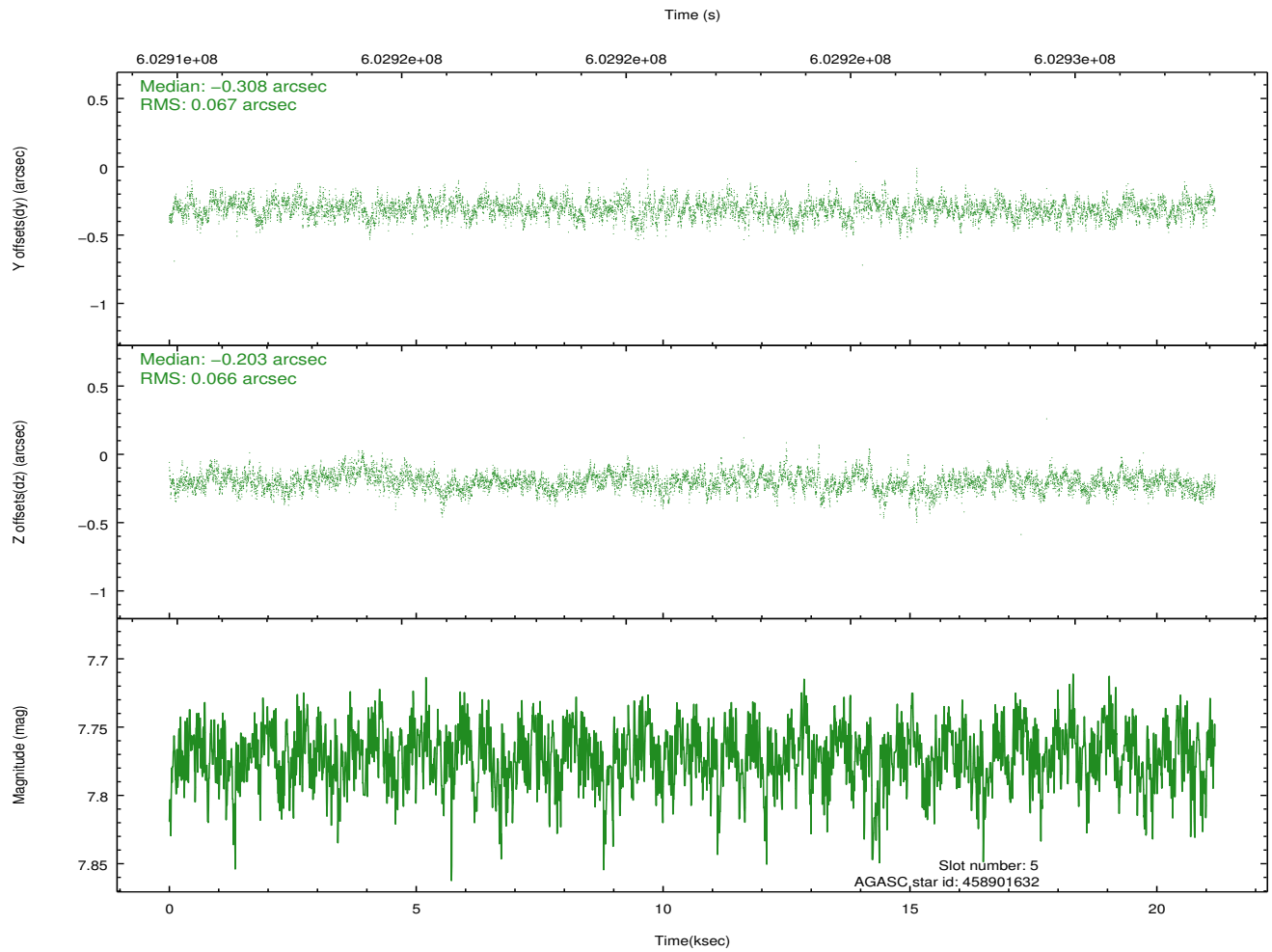
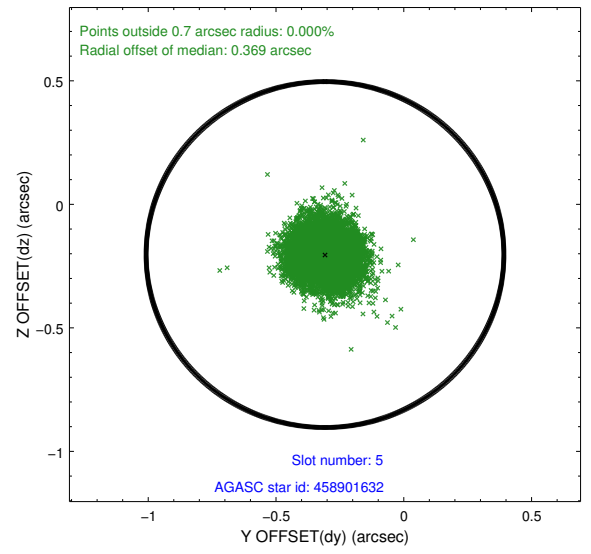
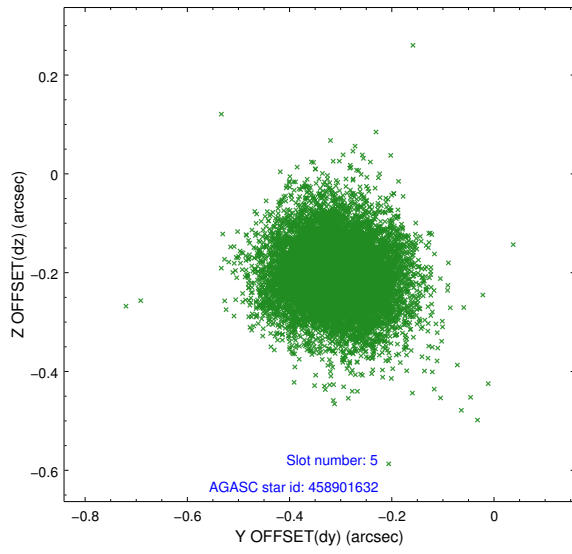
### 2.4.1 Slot 3



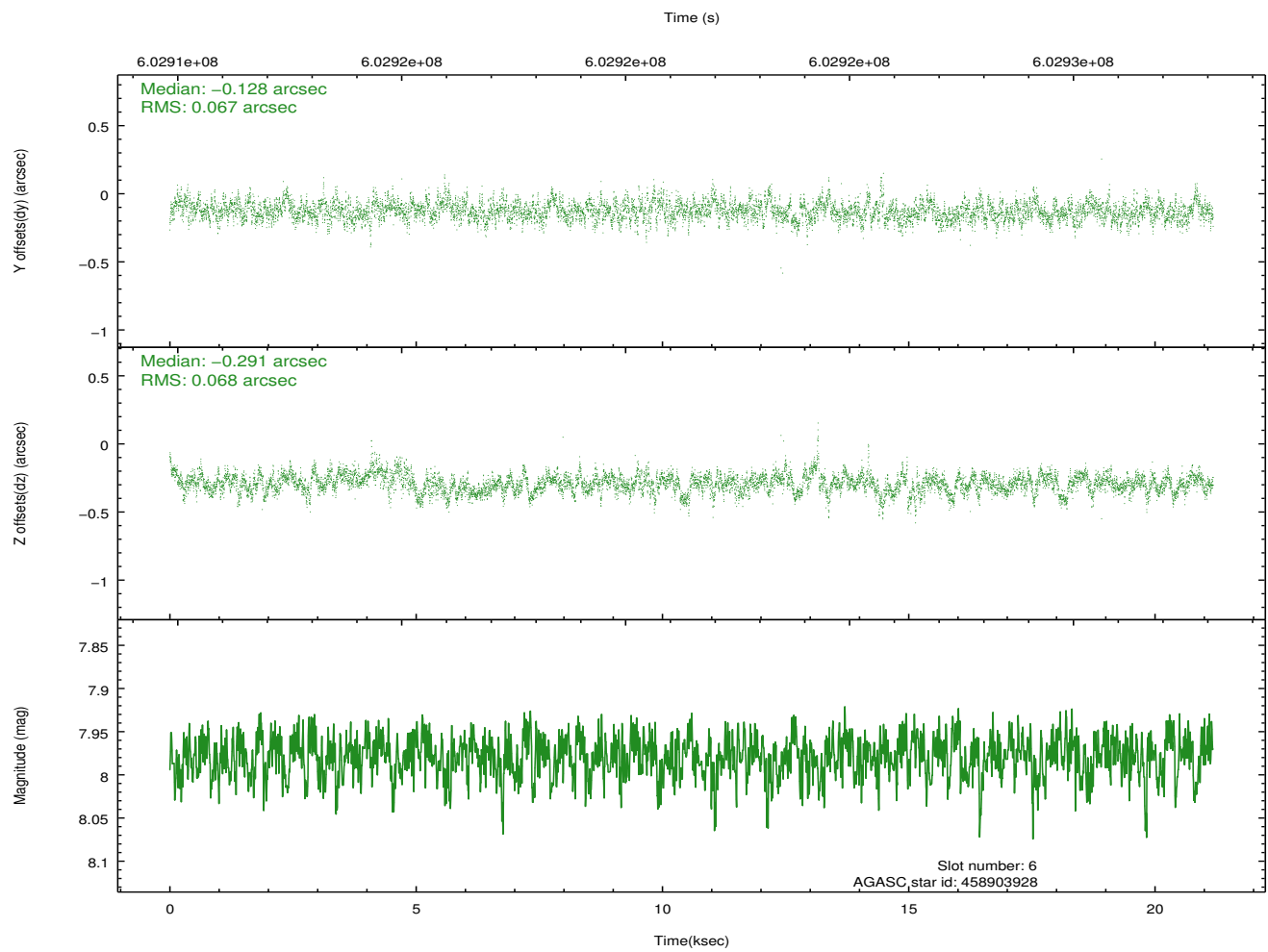
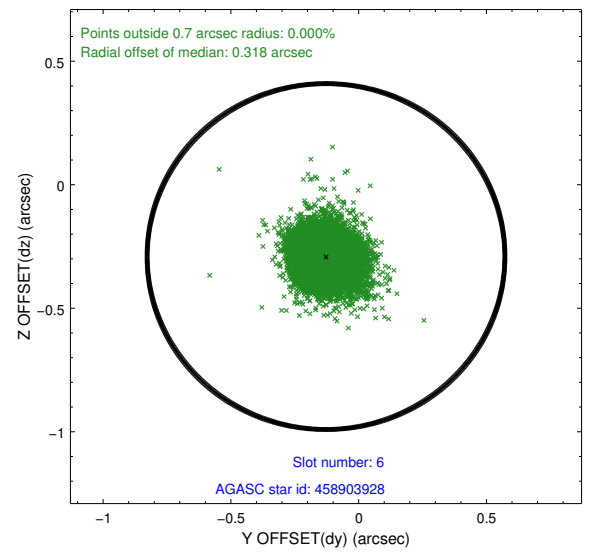
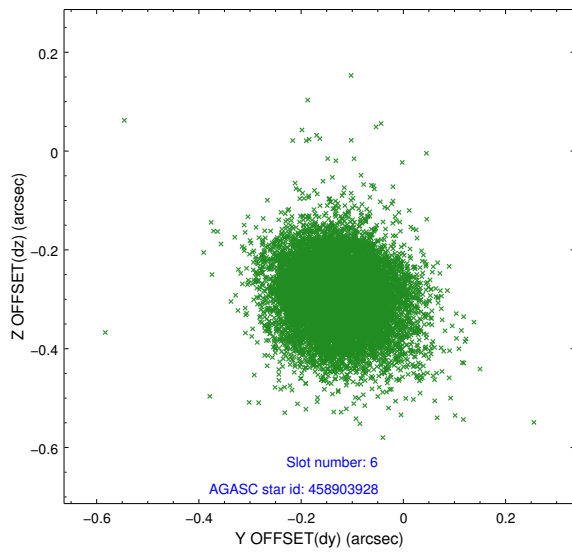
## 2.4.2 Slot 4



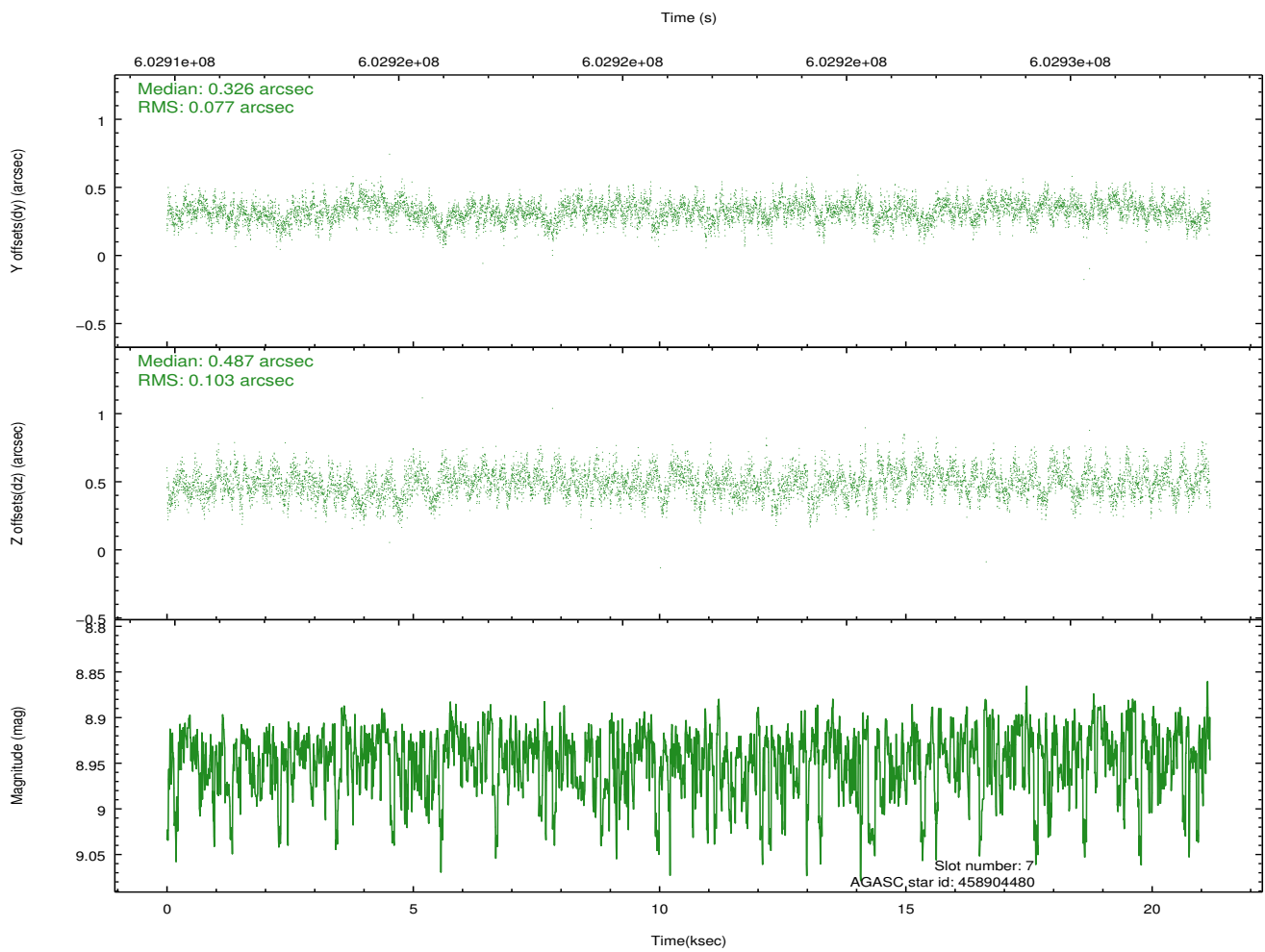
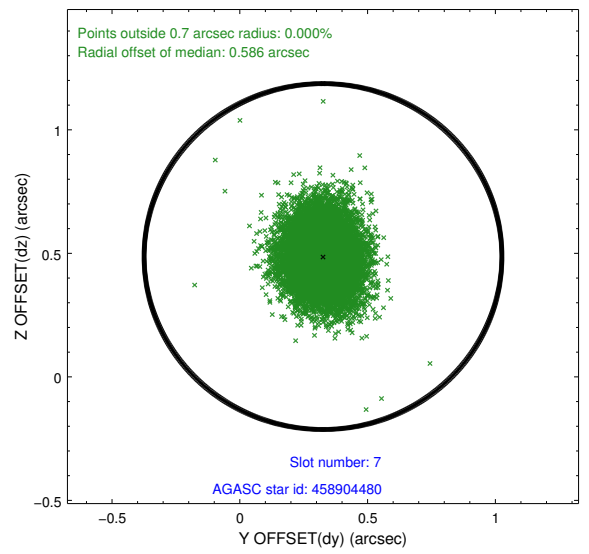
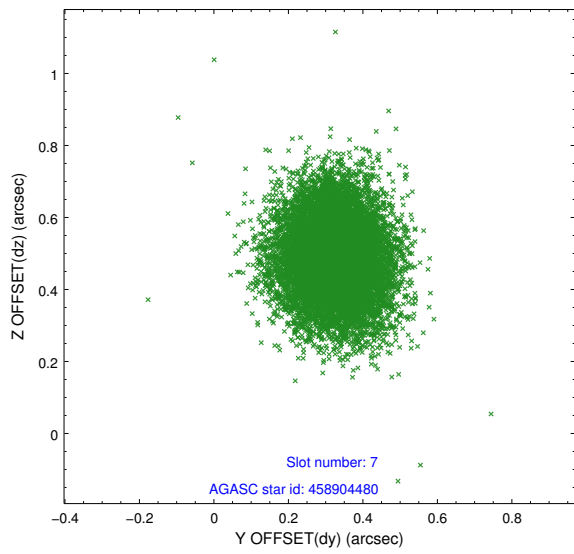
### 2.4.3 Slot 5



## 2.4.4 Slot 6

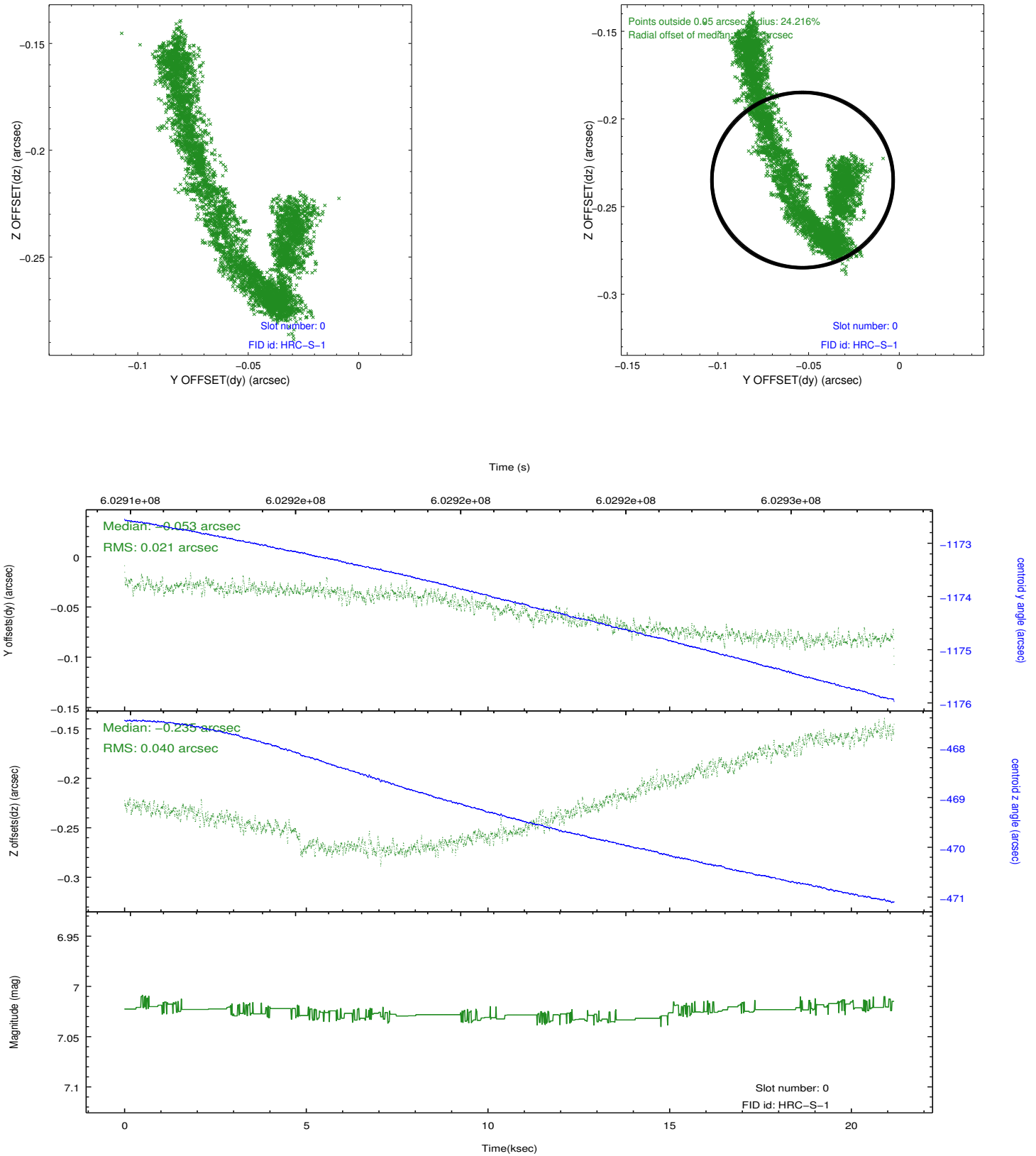


## 2.4.5 Slot 7

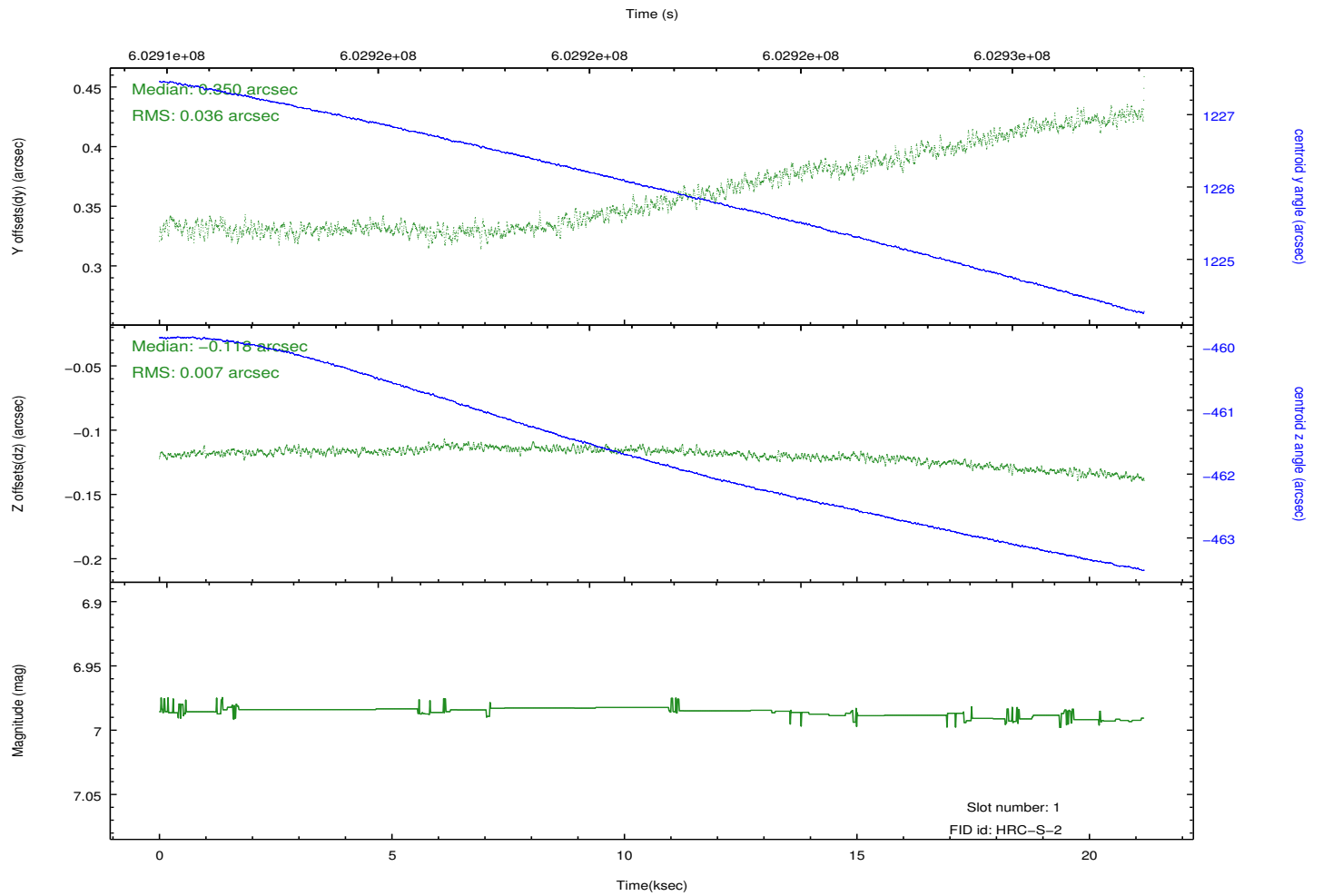
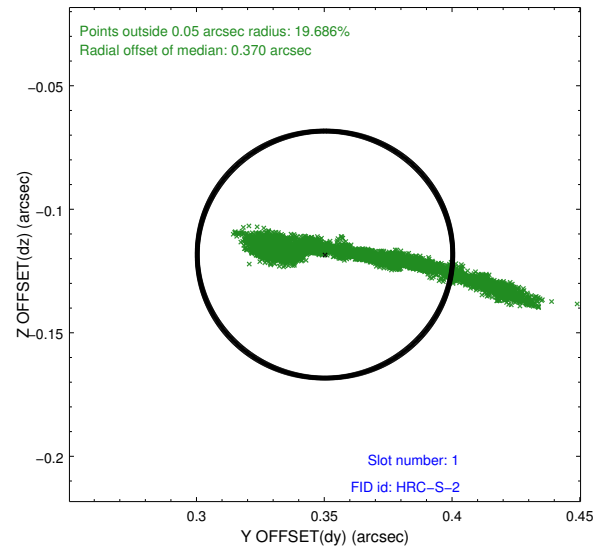
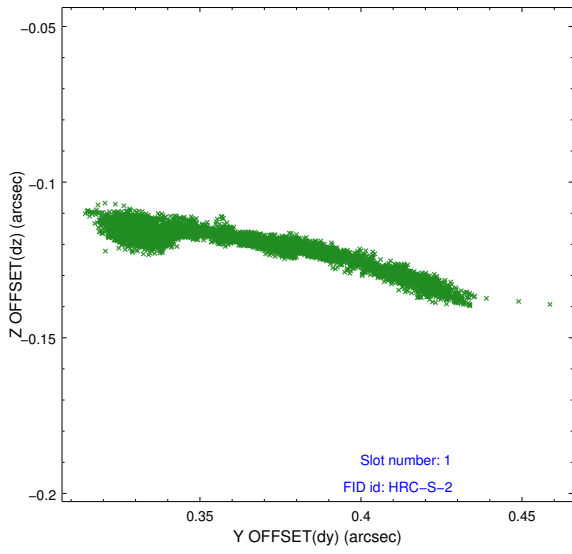


## 2.5 FID Slots

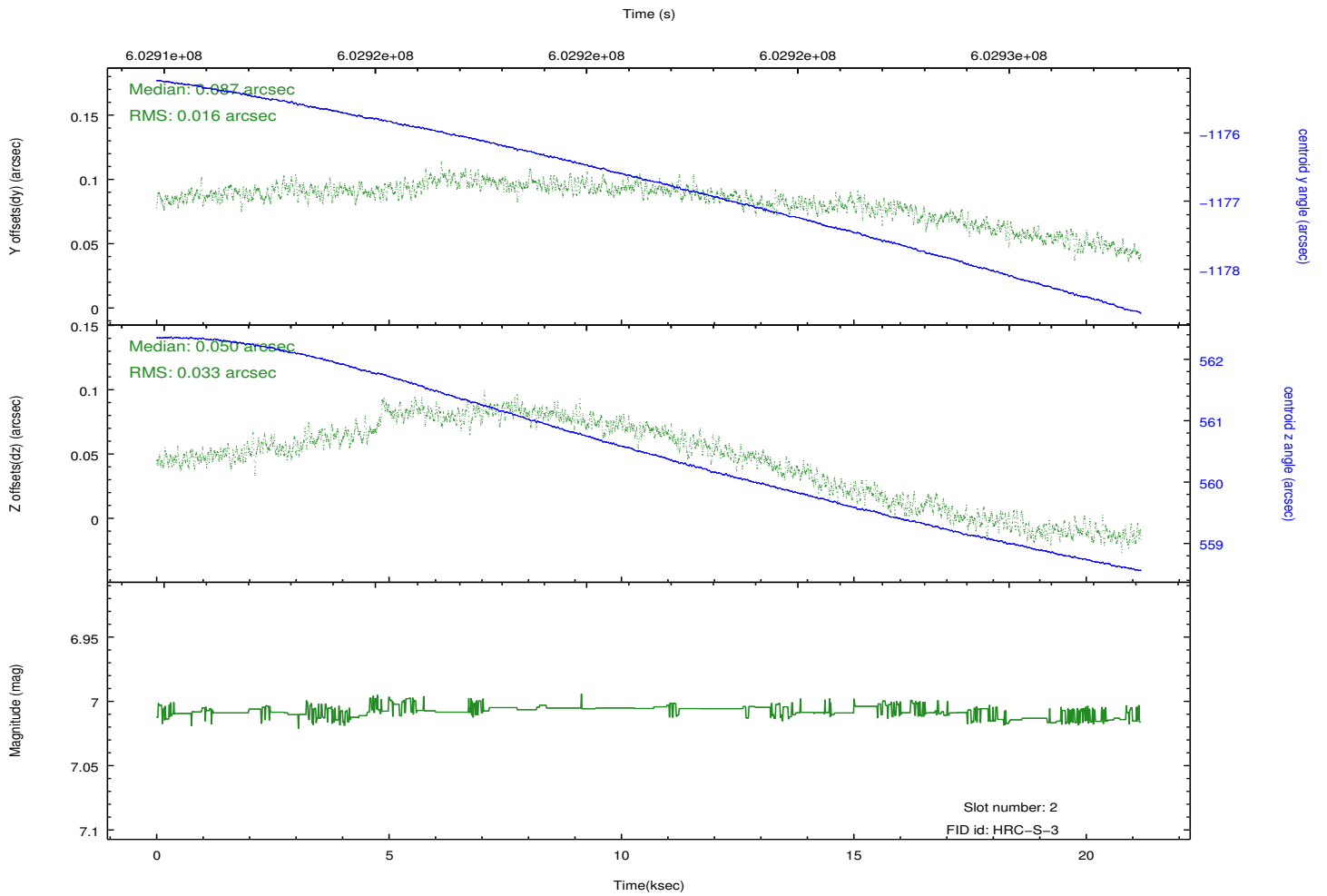
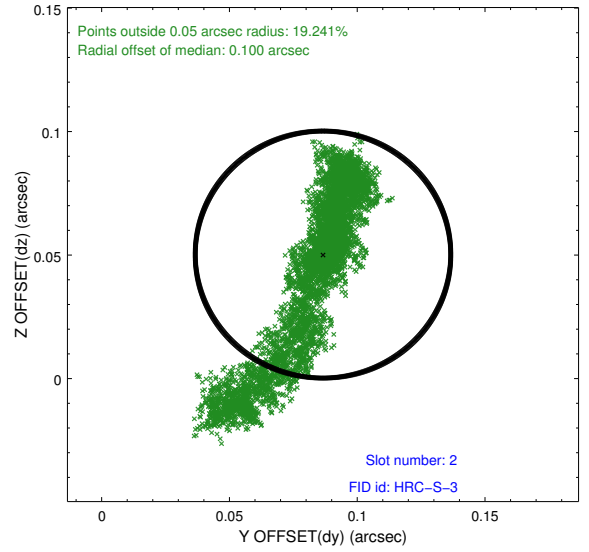
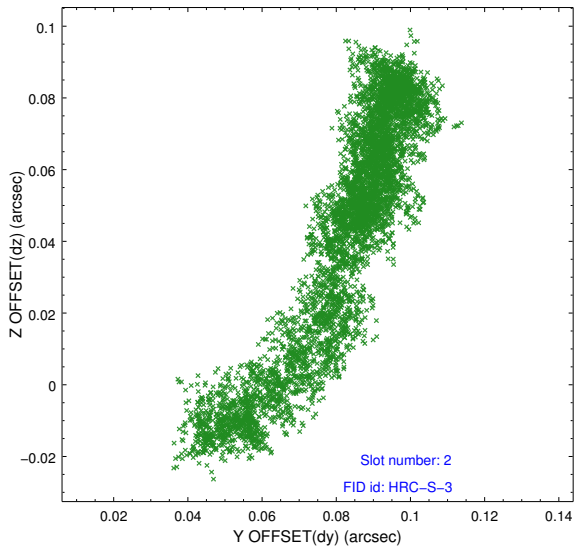
### 2.5.1 Slot 0



## 2.5.2 Slot 1

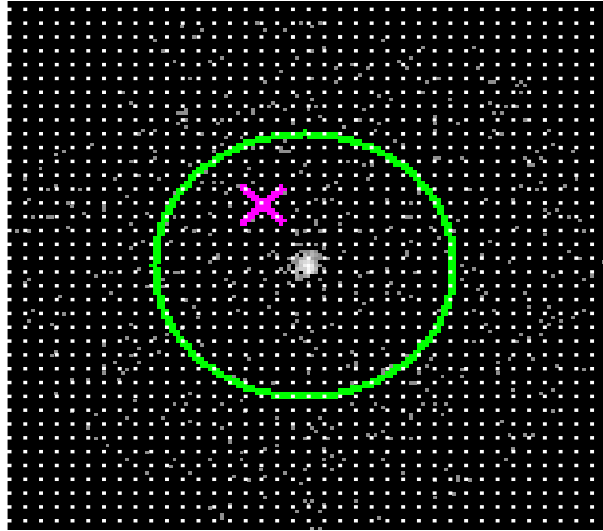


### 2.5.3 Slot 2

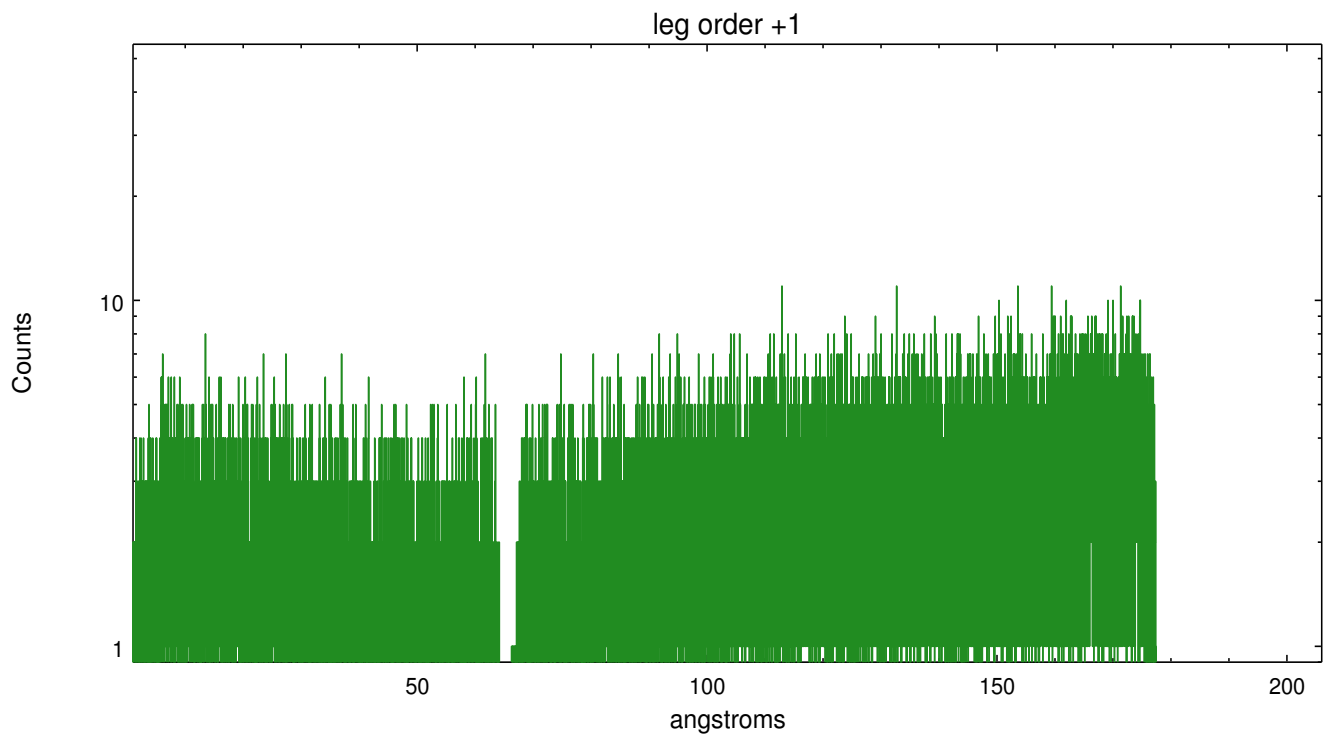
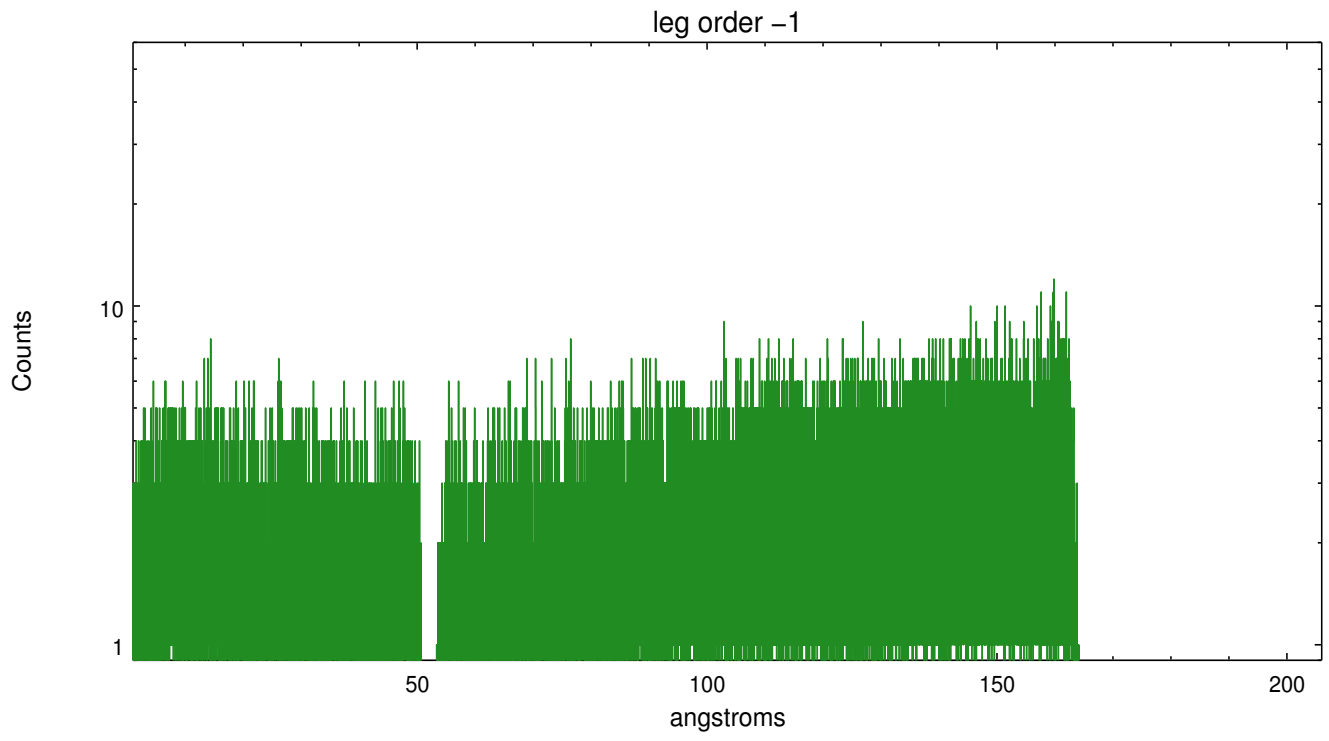


### 3 Gratings

#### 3.1 LETG Arm



LETG Zero Order



## A Summary

### A.1 Status

|                            |                 |
|----------------------------|-----------------|
| V&V Scientist              | Joy Nichols     |
| V&V Date (YYYY-MM-DD)      | 2017.02.10      |
| V&V Edition                | 1               |
| V&V Disposition and Status | OK              |
| V&V Charge Time            | 21.179576226473 |

### A.2 Comments