

# V&V Reference Report

## L2 ASCDS Version : 8.4.4

Observation 8986 - L2 Version 2  
Chandra X-Ray Center

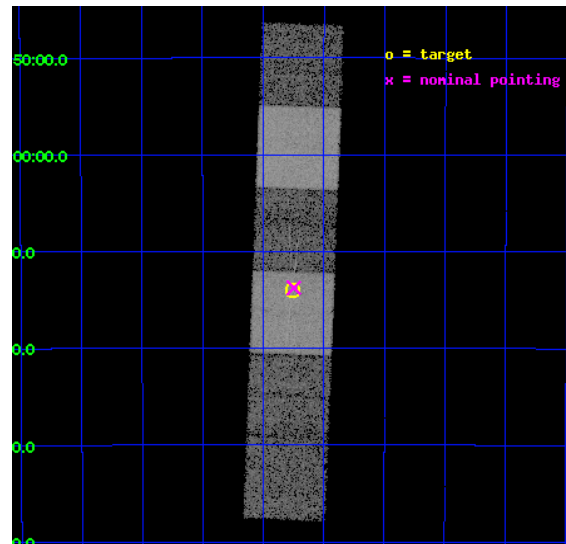
L2 Processing Date : May 10 2012

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# 1 Front

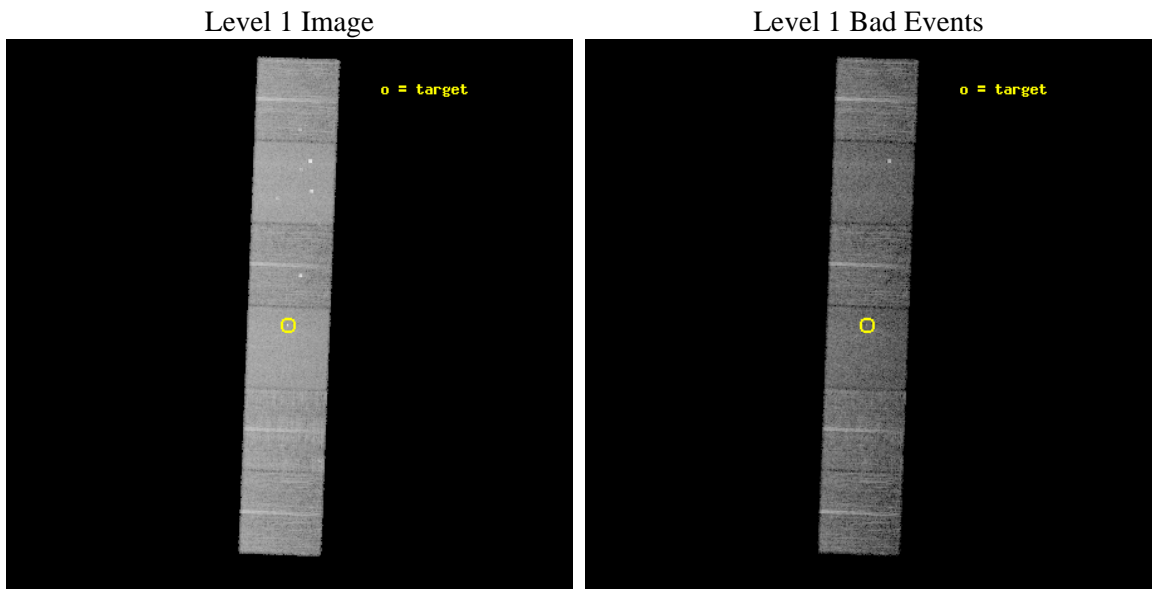
|          |                                                                |                                             |
|----------|----------------------------------------------------------------|---------------------------------------------|
| seq_num  | 400837                                                         | Sequence number                             |
| obs_id   | 8986                                                           | Observation id                              |
| title    | Following a black hole candidate X-ray transient to quiescence | Pro                                         |
| observer | dr Peter Jonker                                                | Principal investigator                      |
| object   | H 1743-322                                                     | Source name                                 |
| dtcycle  | 0                                                              | &#160                                       |
| cycle    | P                                                              | events from which exps?<br>Prim/Second/Both |
| ra_targ  | 266.565                                                        | Observer's specified target RA [deg]        |
| dec_targ | -32.2333                                                       | Observer's specified target Dec [deg]       |
| ra_nom   | 266.56181858159                                                | Nominal RA [deg]                            |
| dec_nom  | -32.229330549195                                               | Nominal Dec [deg]                           |
| roll_nom | 92.1850357125                                                  | Nominal Roll [deg]                          |
| revision | 2                                                              | Processing version of data                  |
| ontime   | 7721.5999712944                                                | Sum of GTIs [s]                             |
| livetime | 7623.8244230686                                                | Livetime [s]                                |
| ontime4  | 7721.5999712944                                                | Sum of GTIs [s]                             |
| ontime5  | 7721.5999712944                                                | Sum of GTIs [s]                             |
| ontime6  | 7721.5999712944                                                | Sum of GTIs [s]                             |
| ontime7  | 7721.5999712944                                                | Sum of GTIs [s]                             |
| ontime8  | 7721.5999712944                                                | Sum of GTIs [s]                             |
| ontime9  | 7718.3589510918                                                | Sum of GTIs [s]                             |
| l2events | 126886                                                         | Number of level 2 events                    |



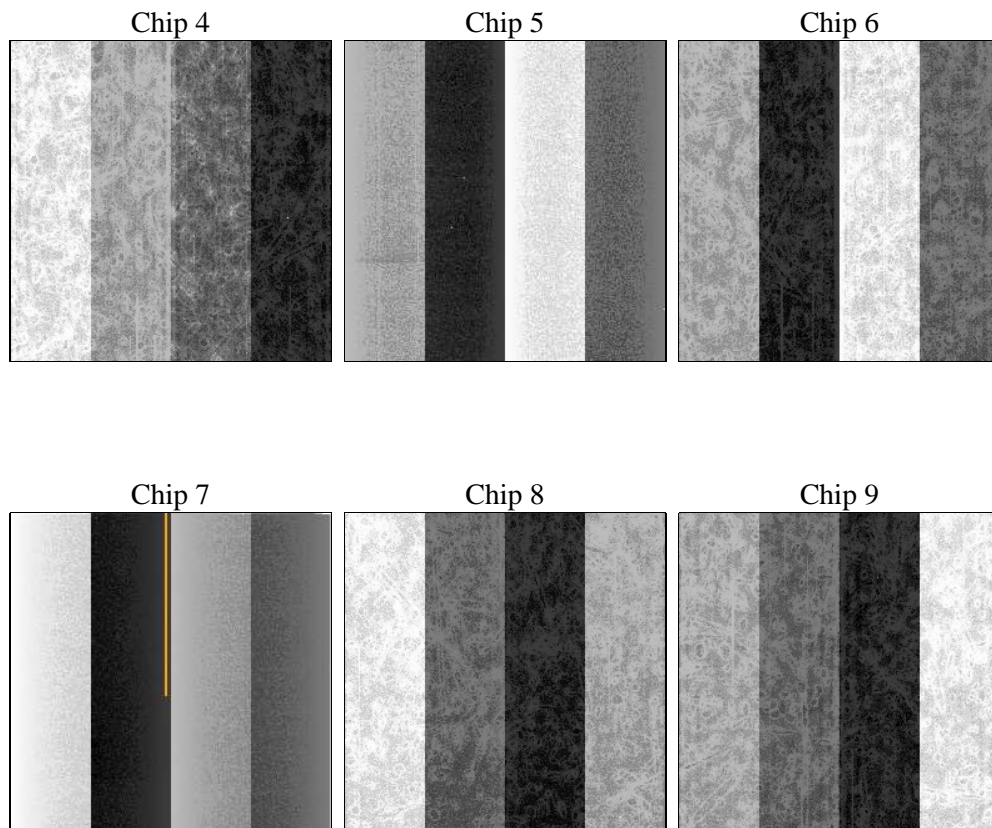
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

|          |                     |                                |                |                 |                                         |
|----------|---------------------|--------------------------------|----------------|-----------------|-----------------------------------------|
| obi_num  | 1                   | Obi number                     | sched_exp_time | 7639.195000     | [s] Scheduled observation exposure time |
| ascdsver | 8.4.4               | Processing system revision     | ontime         | 7721.5999712944 | Sum of GTIs [s]                         |
| caldsver | 4.4.9               | &#160                          | ontime4        | 7721.5999712944 | Sum of GTIs [s]                         |
| date     | 2012-05-10T08:38:38 | Date and time of file creation | ontime5        | 7721.5999712944 | Sum of GTIs [s]                         |
| revision | 2                   | Processing version of data     | ontime6        | 7721.5999712944 | Sum of GTIs [s]                         |
|          |                     |                                | ontime7        | 7721.5999712944 | Sum of GTIs [s]                         |
|          |                     |                                | ontime8        | 7721.5999712944 | Sum of GTIs [s]                         |
|          |                     |                                | ontime9        | 7718.3589510918 | Sum of GTIs [s]                         |
|          |                     |                                | l1events       | 559714          | Number of level 1 events                |

### 2.1.4 Events

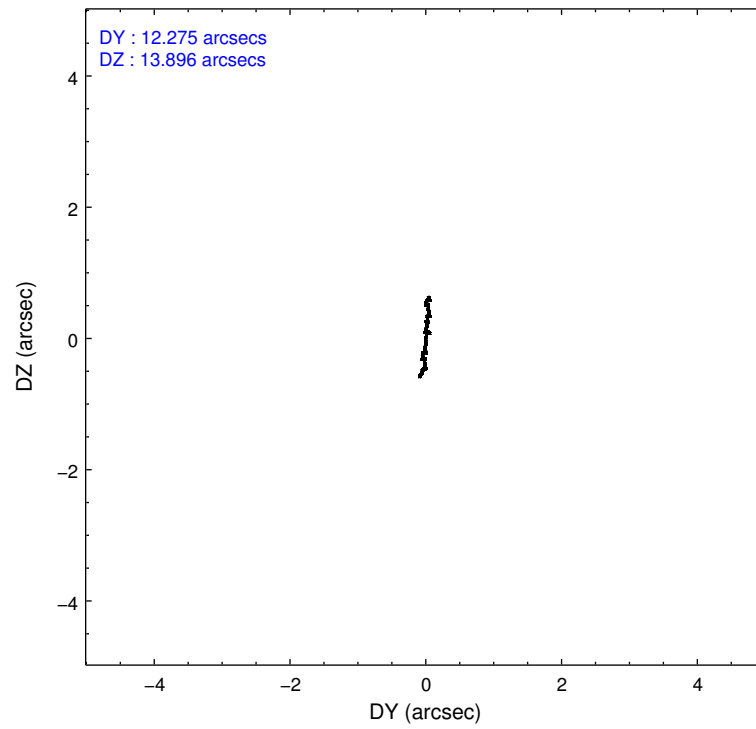
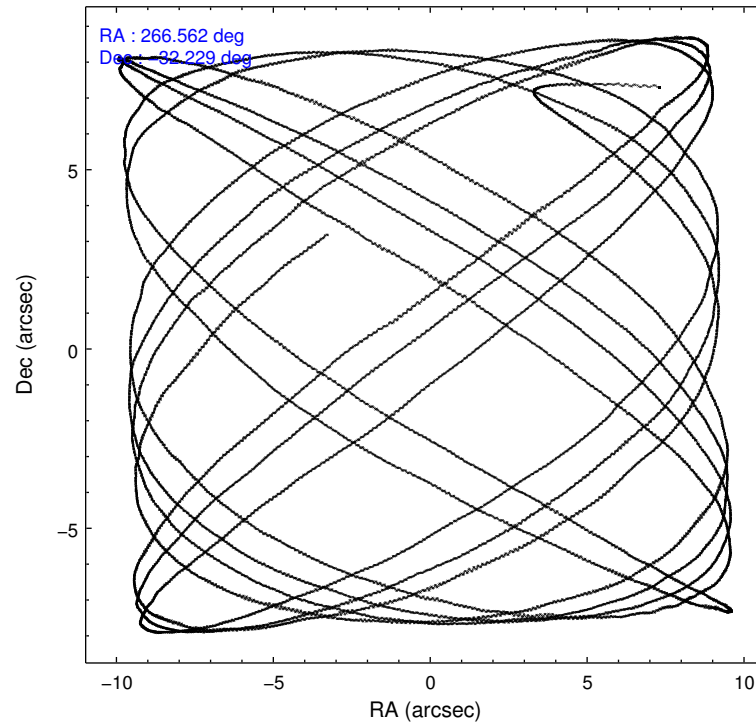
|                 | ccd 4 | ccd 5  | ccd 6 | ccd 7  | ccd 8 | ccd 9 |                | ccd 4 | ccd 5 | ccd 6 | ccd 7 | ccd 8 | ccd 9 |
|-----------------|-------|--------|-------|--------|-------|-------|----------------|-------|-------|-------|-------|-------|-------|
| level 1 events  | 87043 | 116549 | 78606 | 104650 | 95867 | 76999 | grade 0 events | 4755  | 5451  | 5042  | 3721  | 7270  | 4123  |
| rejected events | 76927 | 62625  | 67604 | 60932  | 73511 | 67385 |                | 5%    | 4%    | 6%    | 3%    | 7%    | 5%    |
| rejected %      | 88%   | 53%    | 86%   | 58%    | 76%   | 87%   | grade 1 events | 105   | 895   | 45    | 103   | 91    | 46    |
|                 |       |        |       |        |       |       |                | 0%    | 0%    | 0%    | 0%    | 0%    | 0%    |
|                 |       |        |       |        |       |       | grade 2 events | 1962  | 16576 | 2175  | 8866  | 5105  | 1904  |
|                 |       |        |       |        |       |       |                | 2%    | 14%   | 2%    | 8%    | 5%    | 2%    |
|                 |       |        |       |        |       |       | grade 3 events | 955   | 1694  | 894   | 3526  | 2142  | 911   |
|                 |       |        |       |        |       |       |                | 1%    | 1%    | 1%    | 3%    | 2%    | 1%    |
|                 |       |        |       |        |       |       | grade 4 events | 933   | 1693  | 904   | 3670  | 2003  | 818   |
|                 |       |        |       |        |       |       |                | 1%    | 1%    | 1%    | 3%    | 2%    | 1%    |
|                 |       |        |       |        |       |       | grade 5 events | 3417  | 7706  | 3490  | 9677  | 4701  | 3760  |
|                 |       |        |       |        |       |       |                | 3%    | 6%    | 4%    | 9%    | 4%    | 4%    |
|                 |       |        |       |        |       |       | grade 6 events | 1511  | 28530 | 1995  | 23956 | 5839  | 1865  |
|                 |       |        |       |        |       |       |                | 1%    | 24%   | 2%    | 22%   | 6%    | 2%    |
|                 |       |        |       |        |       |       | grade 7 events | 73405 | 54004 | 64061 | 51131 | 68716 | 63572 |
|                 |       |        |       |        |       |       |                | 84%   | 46%   | 81%   | 48%   | 71%   | 82%   |

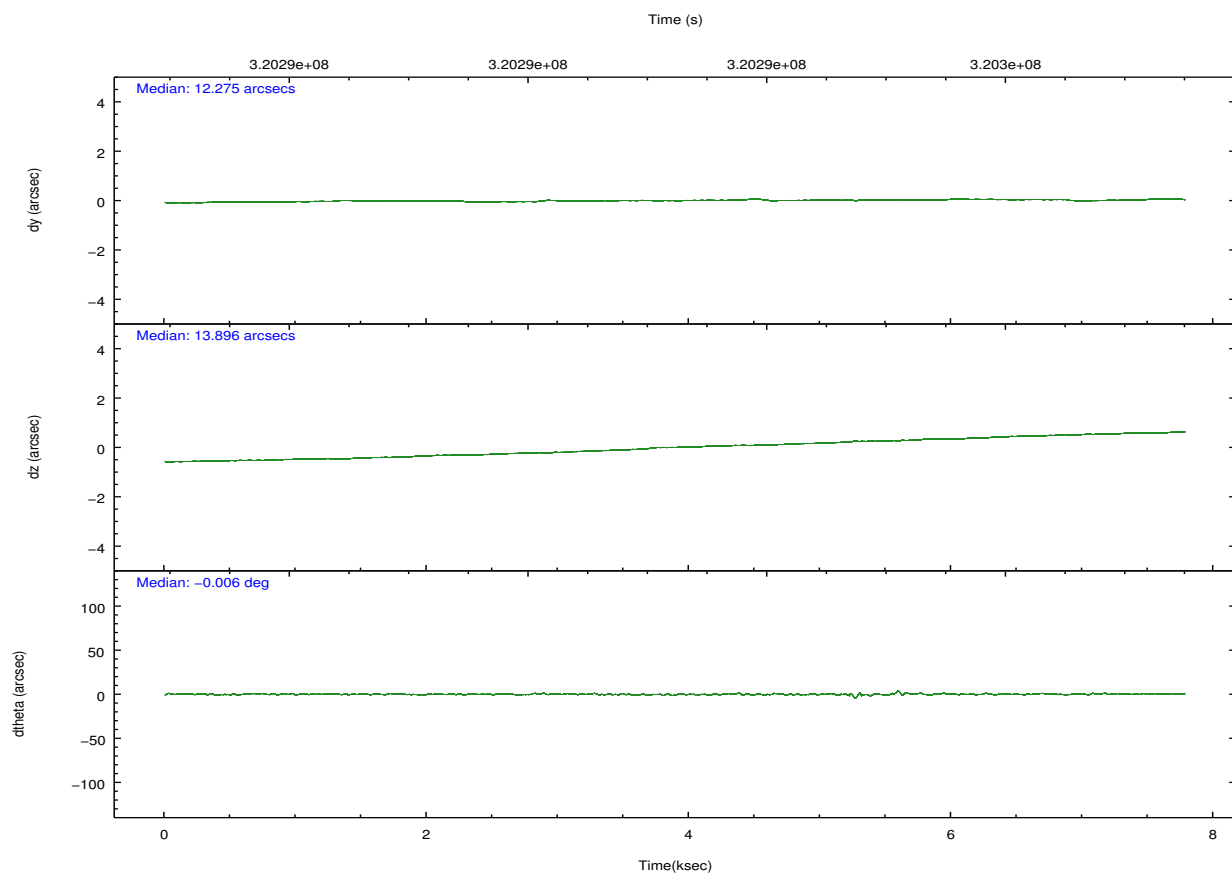
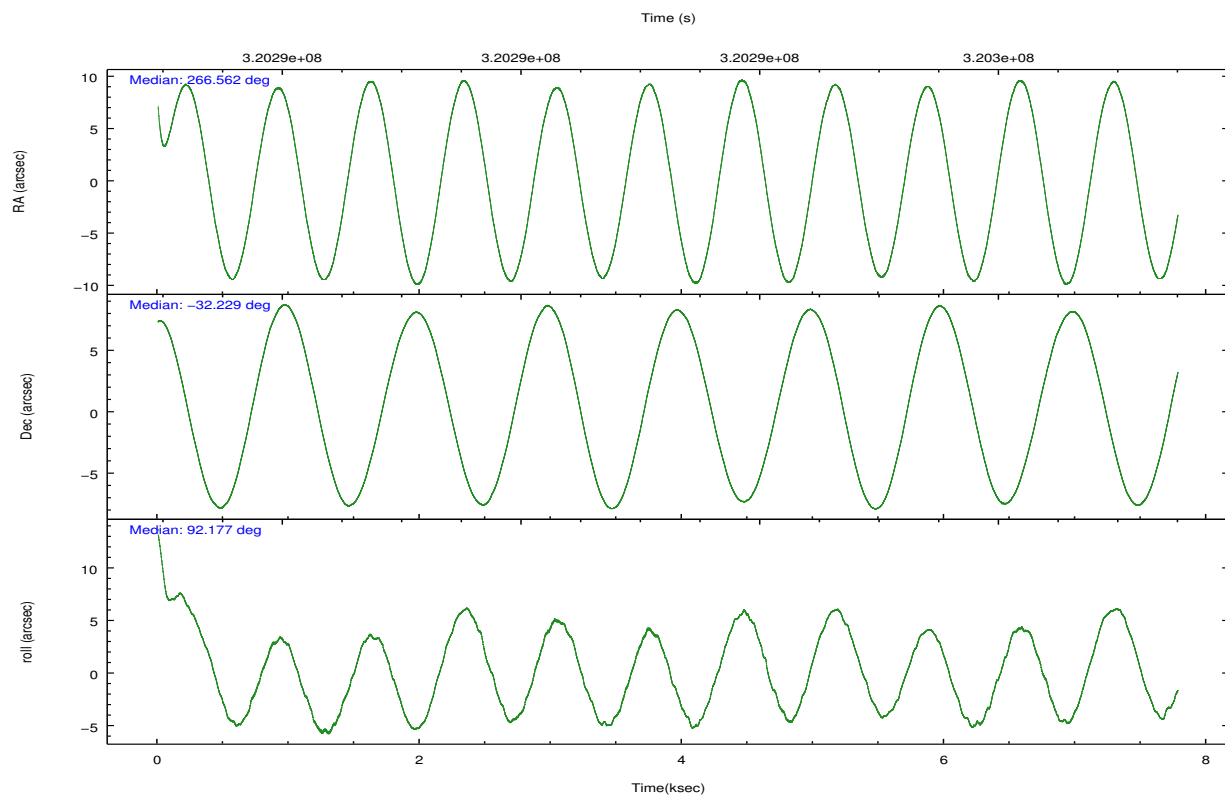


## 2.2 Compared Parameters

| Parameter                         | Planned             | Actual               | Parameter                             | Planned   | Actual  |
|-----------------------------------|---------------------|----------------------|---------------------------------------|-----------|---------|
| Instrument                        | ACIS                | ACIS                 | Obspar format version number          | 7         | 7       |
| Detector                          | ACIS-456789         | ACIS-456789          | Obspar file type                      | PREDICTED | ACTUAL  |
| Grating                           | HETG                | HETG                 | Obspar update status                  | NONE      | UPDATED |
| Data mode                         | FAINT               | FAINT                | Number of optional ACIS chips dropped | 0         | 0       |
| Observation mode                  | POINTING            | POINTING             | On-chip summing requested             | N         | N       |
| [deg] Pointing RA                 | 266.579400          | 266.5618185815889    | Subarray requested                    | NONE      | NONE    |
| [deg] Pointing Dec                | -32.252214          | -32.22933054919525   | Alternating exposures requested       | N         | N       |
| [deg] Pointing Roll               | 92.037782           | 92.18503571250004    | [s] Primary exposure time             | 0.000000  | 3.2     |
| [mm] SIM focus pos                | -0.684267           | -0.6828225247311905  |                                       |           |         |
| [mm] SIM defocus                  | 0                   | 0.001444936568705701 |                                       |           |         |
| [mm] SIM translation stage pos    | -190.132523         | -190.1400660498719   |                                       |           |         |
| [mm] SIM translation stage offset | 0                   | 0.00754346686406393  |                                       |           |         |
| [s] Observation start time (MET)  | 320289494.184000    | 320288319.621        |                                       |           |         |
| Observation start date            | 2008-02-25T01:17:09 | 2008-02-25T00:58:39  |                                       |           |         |
| [s] Observation end time (MET)    | 320297133.184000    | 320297346.28394      |                                       |           |         |
| Observation end date              | 2008-02-25T03:24:28 | 2008-02-25T03:29:06  |                                       |           |         |
| Read mode                         | TIMED               | TIMED                |                                       |           |         |

## 2.3 Aspect



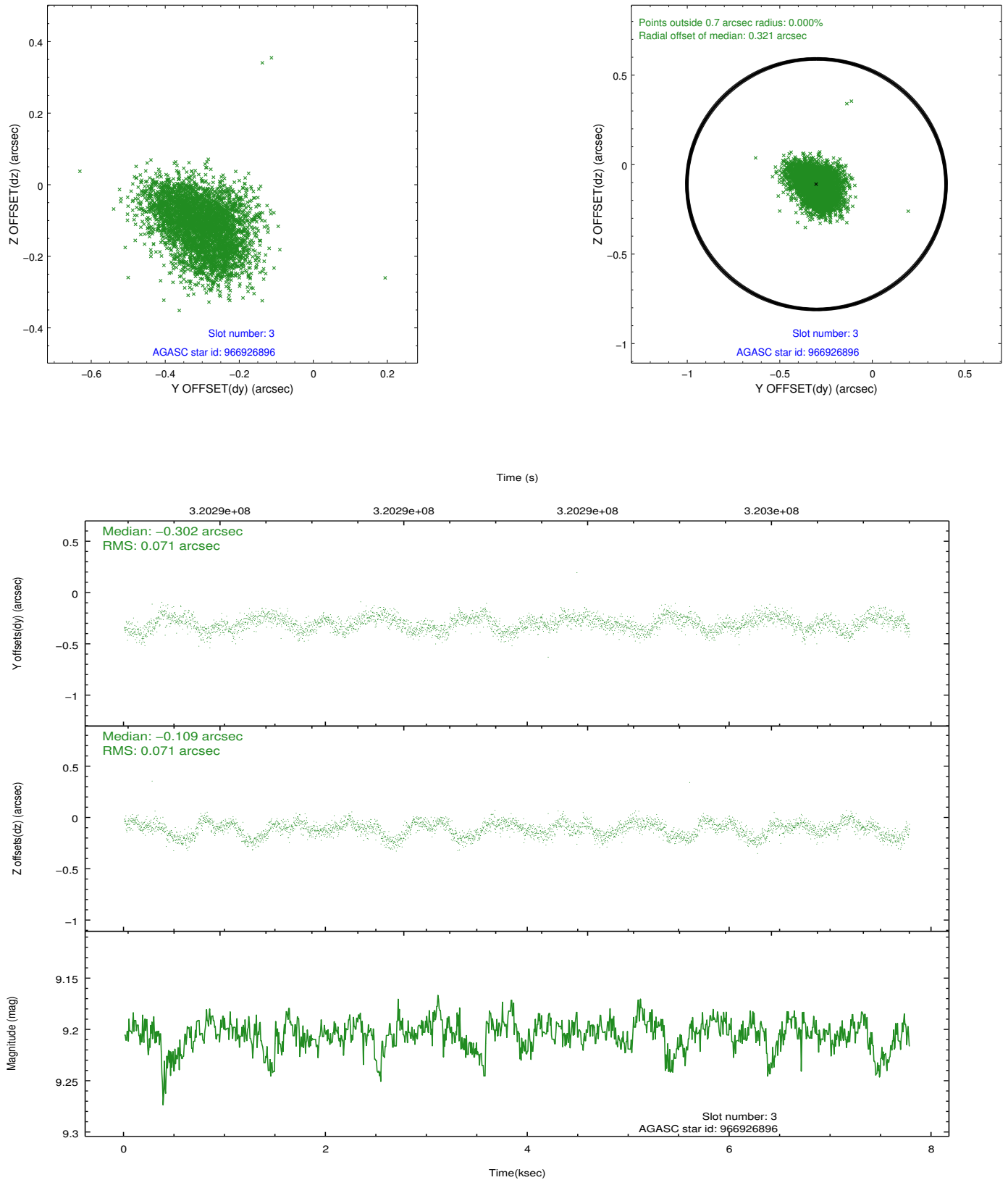


### Slot Statistics

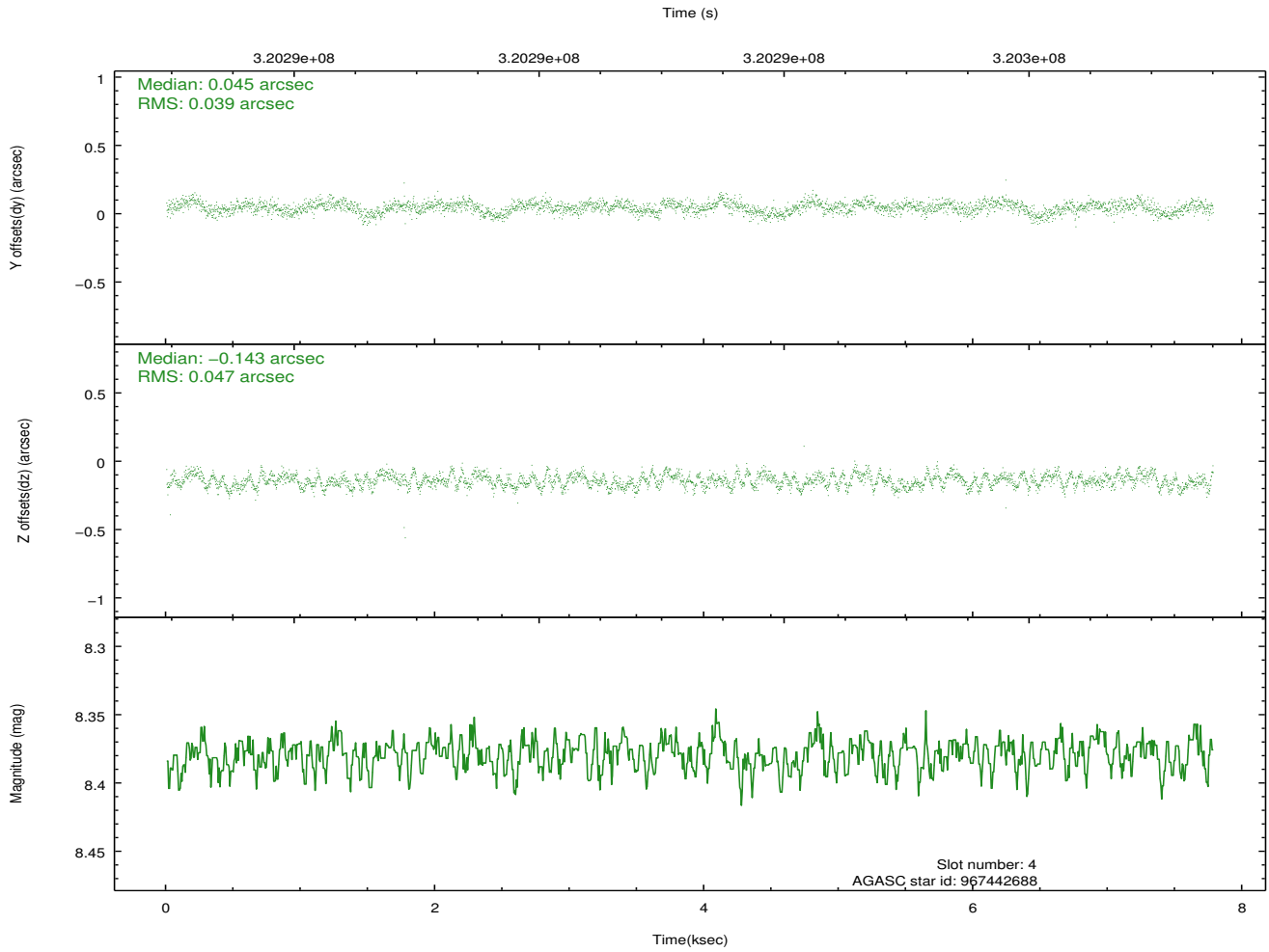
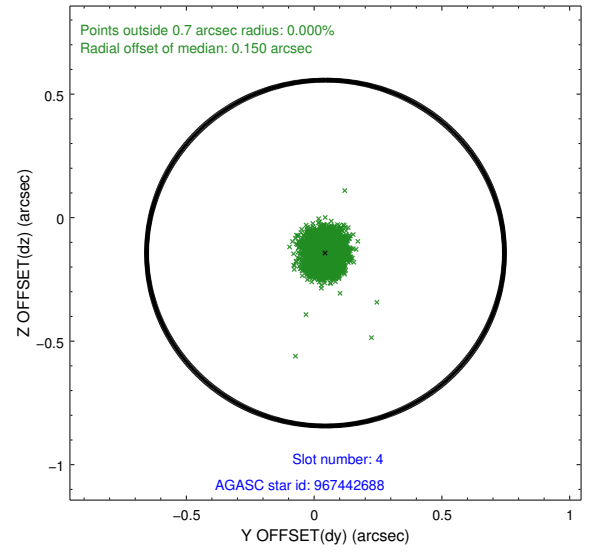
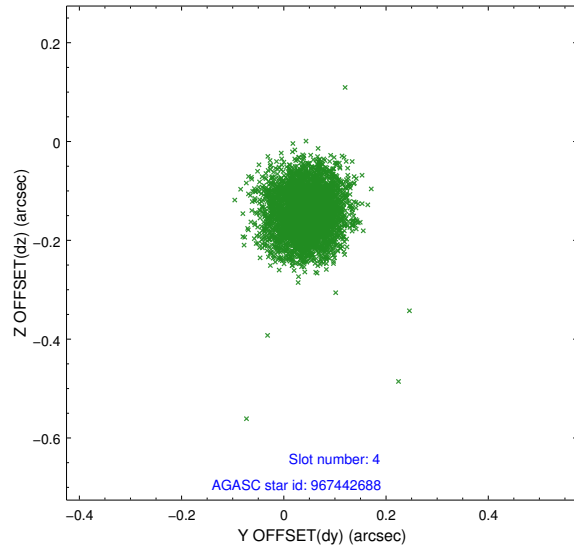
| slot | status | id        | mag  | n_pts | med_dy | med_dz | dr1   | dr2   | ra         | dec        | mean_y   | mean_z   |
|------|--------|-----------|------|-------|--------|--------|-------|-------|------------|------------|----------|----------|
| 0    | FID    | ACIS-S-1  | 7.20 | 1897  | -0.008 | 0.001  | 0.008 | 0.014 | 0.000000   | 0.000000   | 930.88   | -1730.85 |
| 1    | FID    | ACIS-S-4  | 7.19 | 1898  | 0.053  | -0.015 | 0.008 | 0.014 | 0.000000   | 0.000000   | 2148.72  | 172.56   |
| 2    | FID    | ACIS-S-6  | 7.33 | 1898  | -0.069 | 0.024  | 0.008 | 0.013 | 0.000000   | 0.000000   | 397.65   | 810.75   |
| 3    | GUIDE  | 966926896 | 9.20 | 3793  | -0.302 | -0.109 | 0.109 | 0.169 | 266.197771 | -31.663459 | 2157.63  | 1093.71  |
| 4    | GUIDE  | 967442688 | 8.38 | 3795  | 0.045  | -0.143 | 0.065 | 0.102 | 266.096113 | -32.373763 | -387.59  | 1484.38  |
| 5    | GUIDE  | 967446352 | 7.74 | 3795  | 0.120  | 0.211  | 0.060 | 0.097 | 267.069988 | -32.671157 | -1563.24 | -1431.29 |
| 6    | GUIDE  | 967448136 | 8.85 | 3793  | 0.213  | -0.288 | 0.070 | 0.114 | 265.900071 | -32.546602 | -992.51  | 2097.46  |
| 7    | GUIDE  | 967451816 | 9.25 | 3791  | -0.071 | 0.335  | 0.122 | 0.197 | 267.266669 | -31.901374 | 1180.85  | -2142.71 |

## 2.4 Star Slots

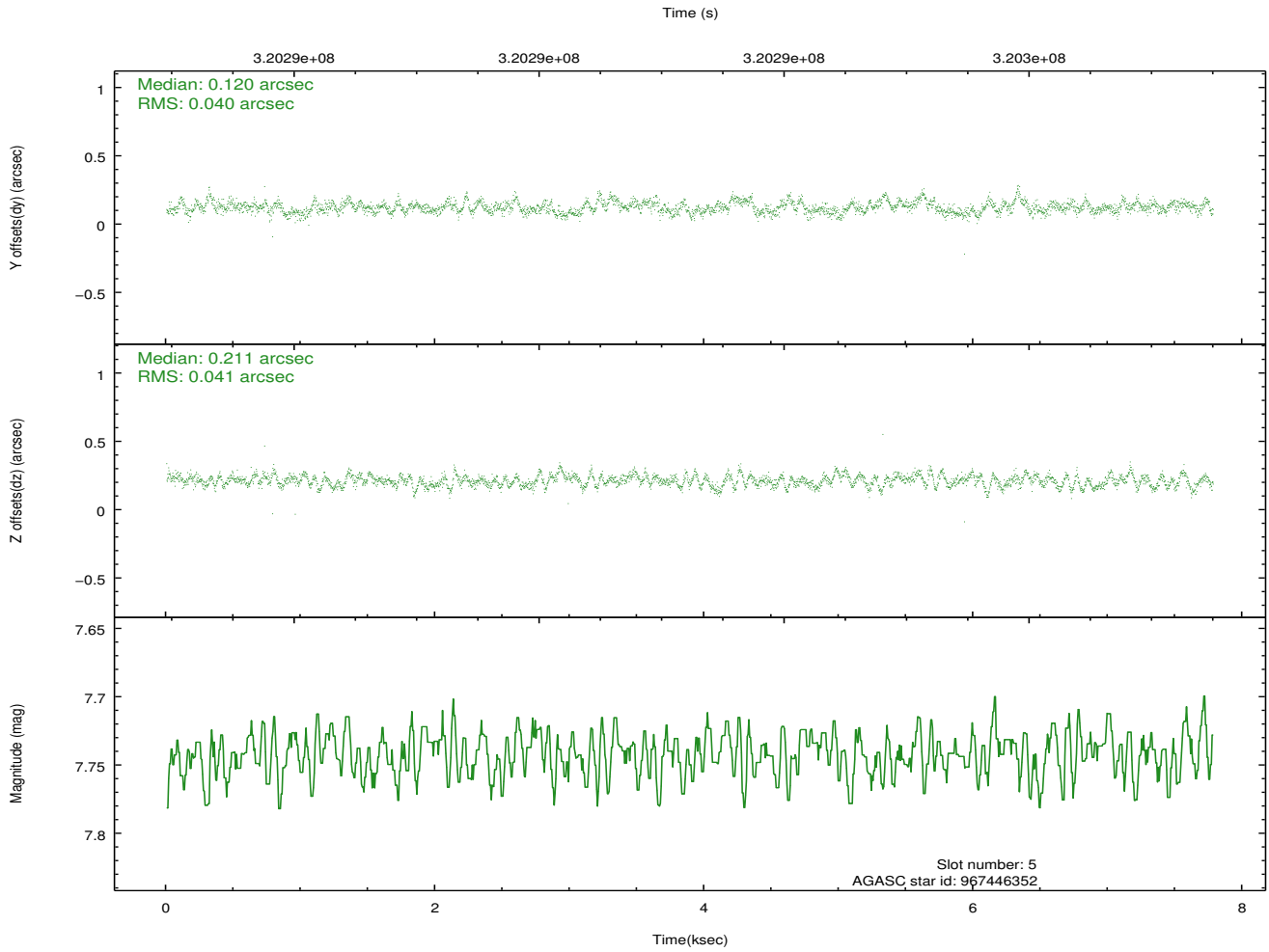
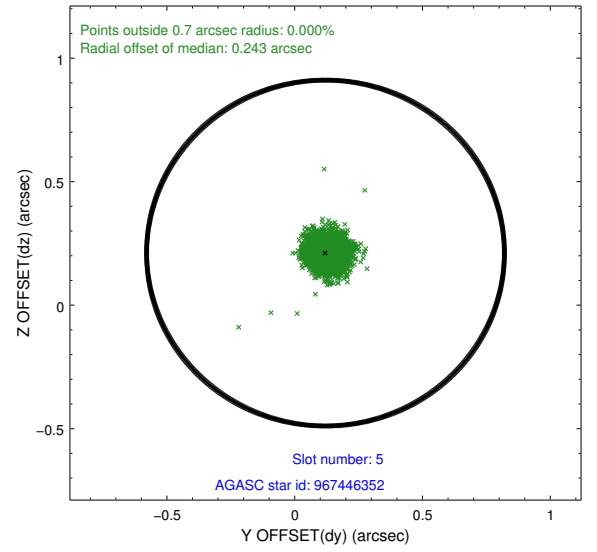
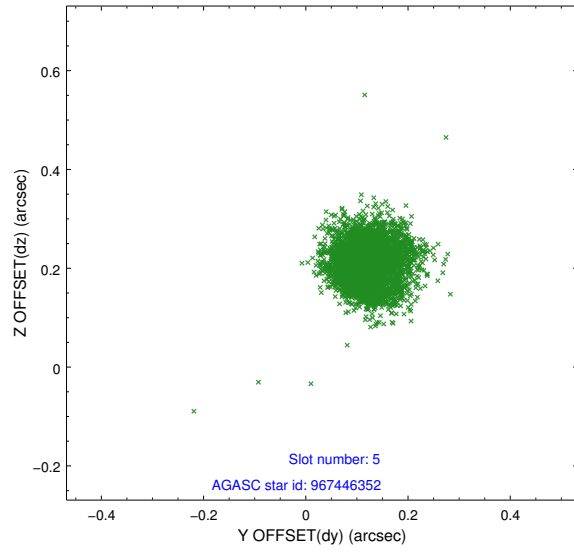
### 2.4.1 Slot 3



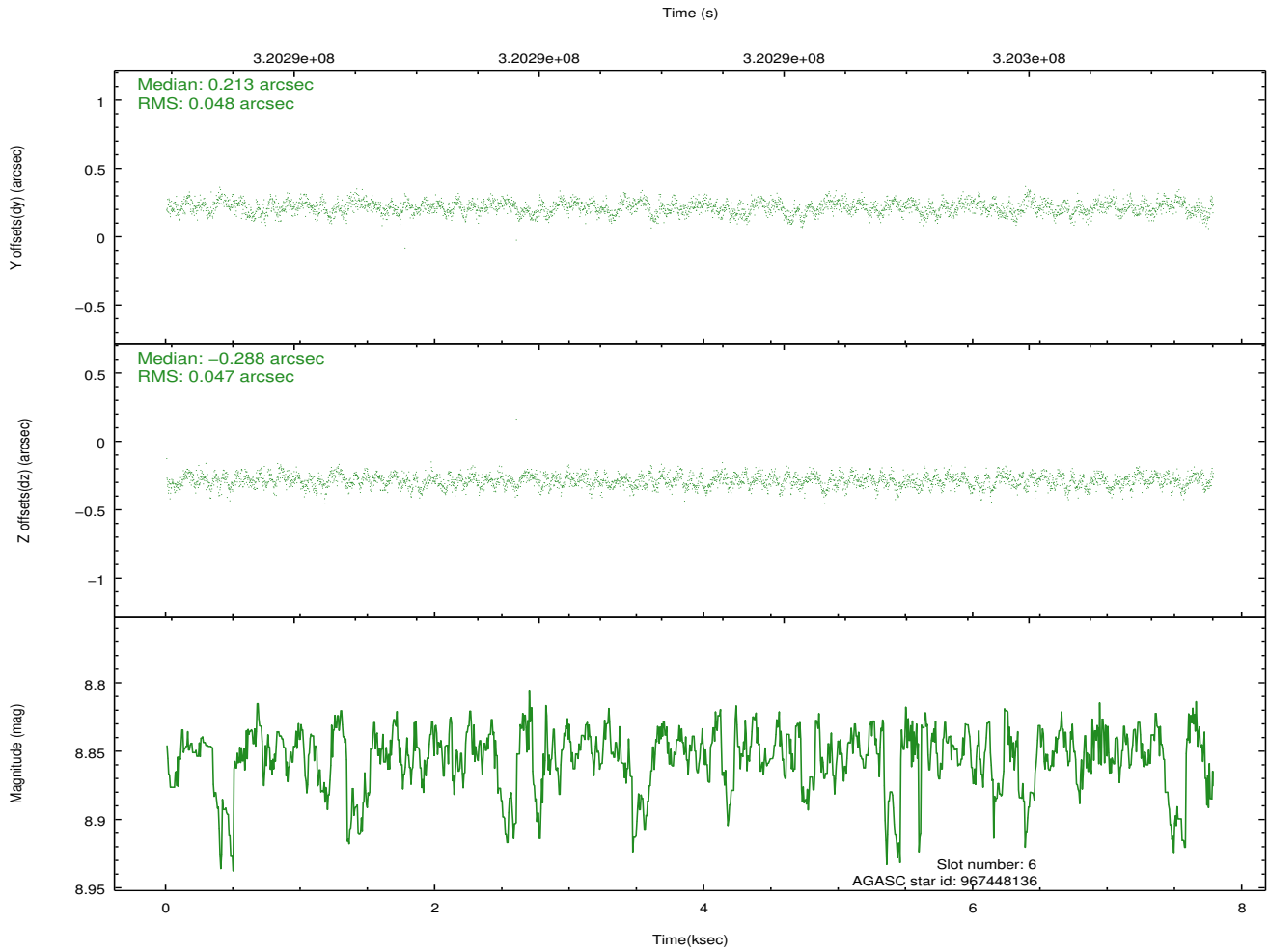
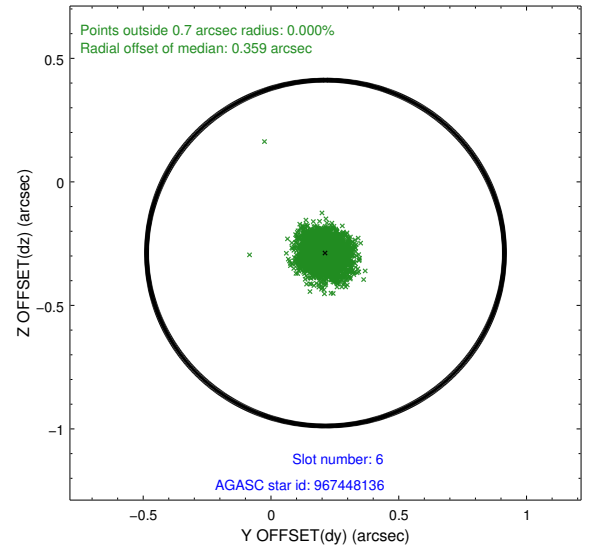
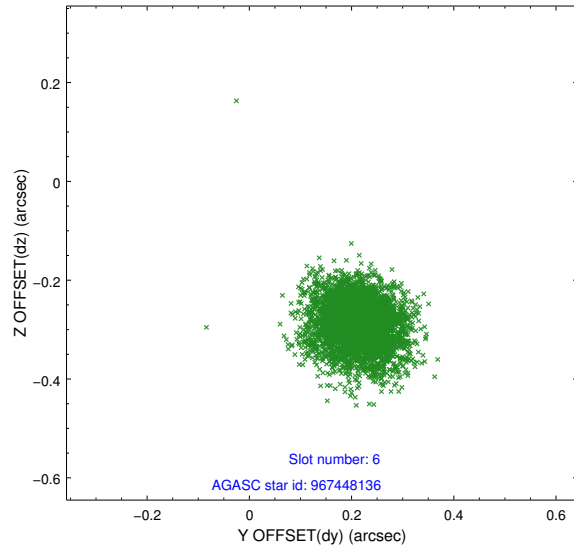
## 2.4.2 Slot 4



### 2.4.3 Slot 5

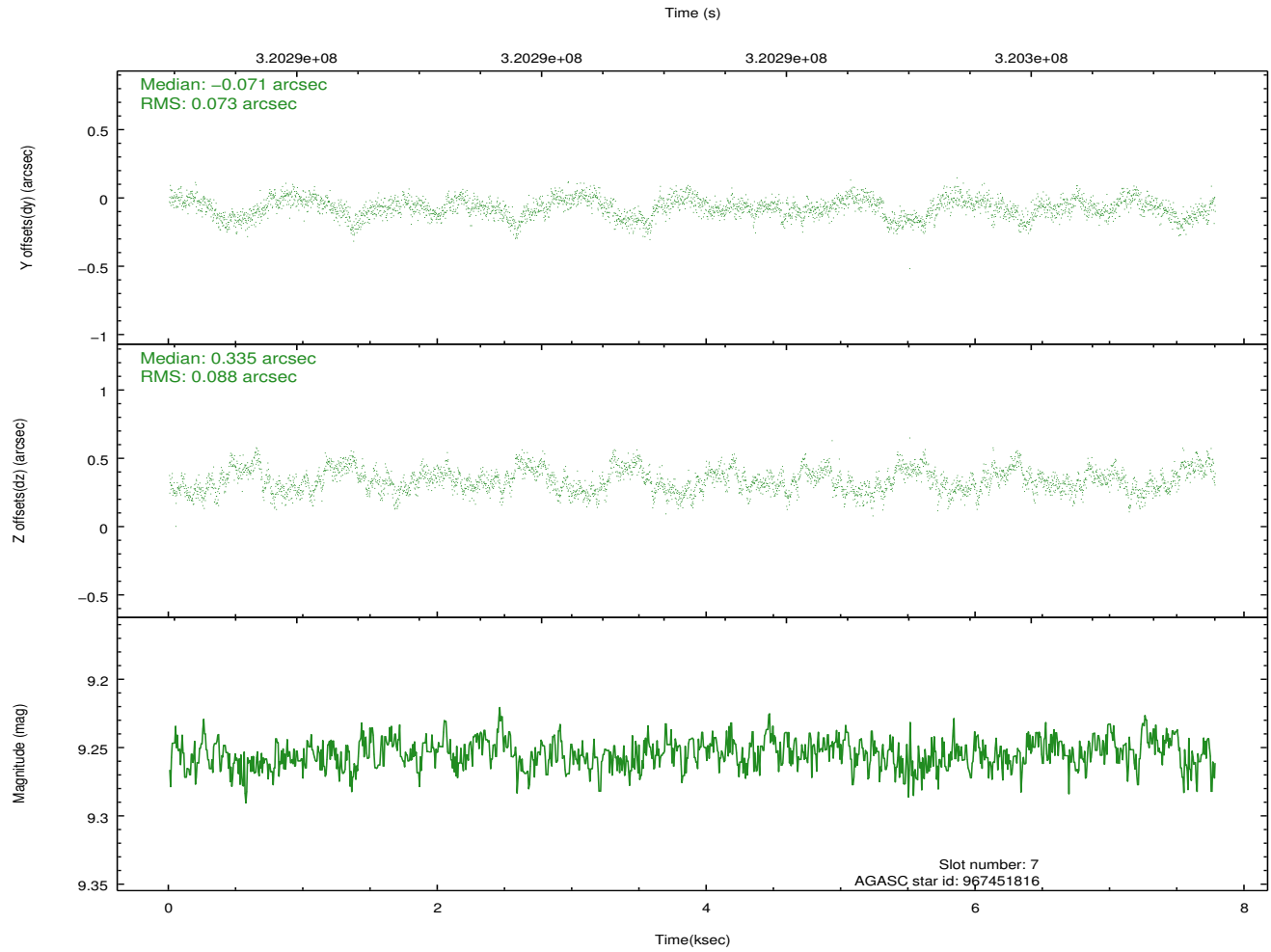
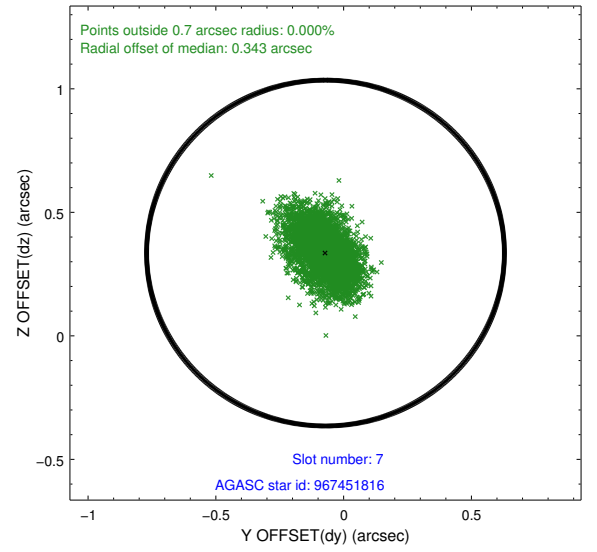
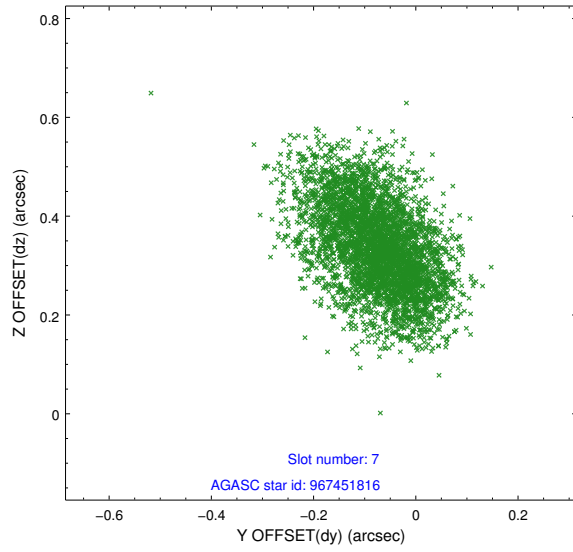


## 2.4.4 Slot 6



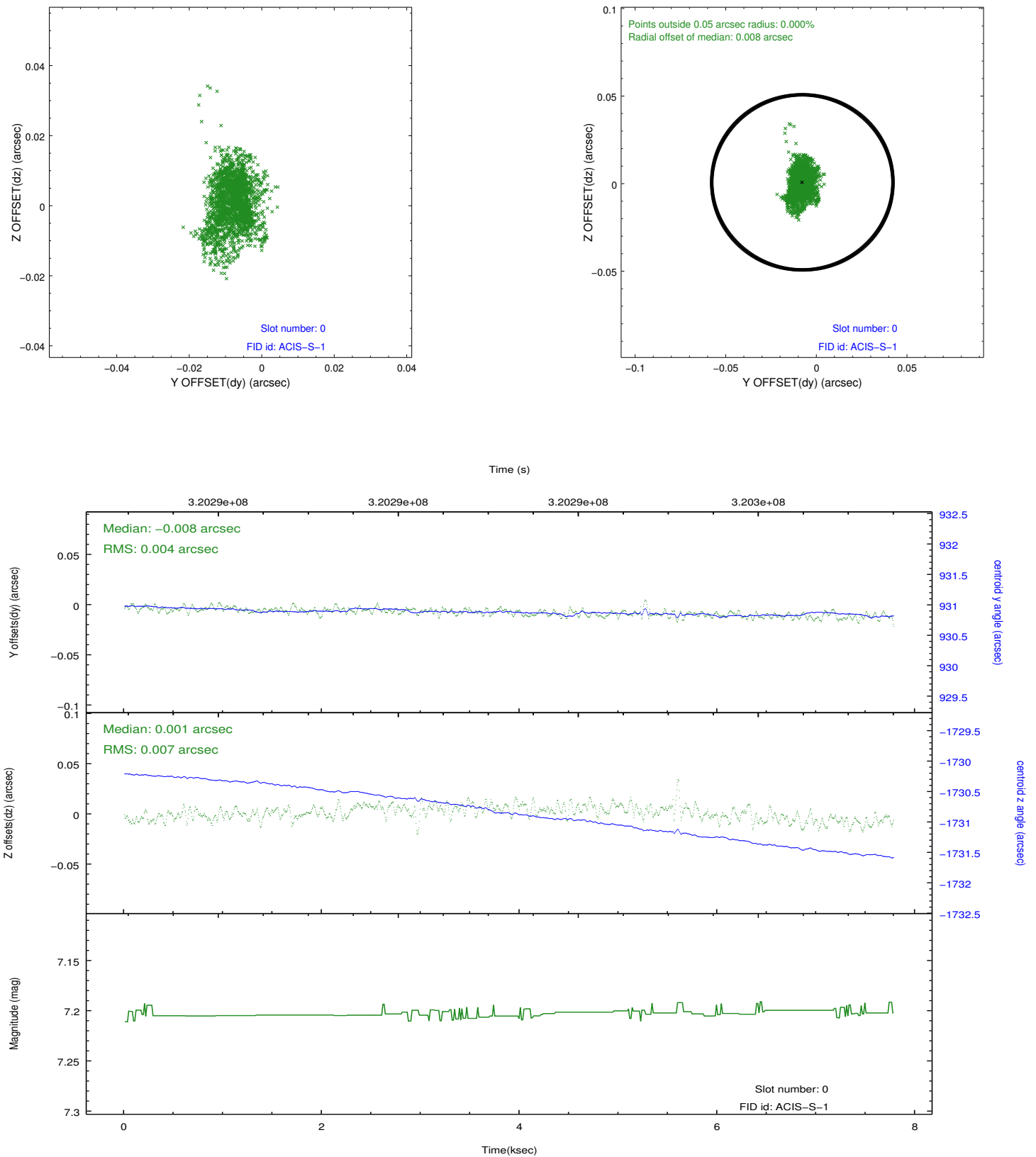


## 2.4.5 Slot 7

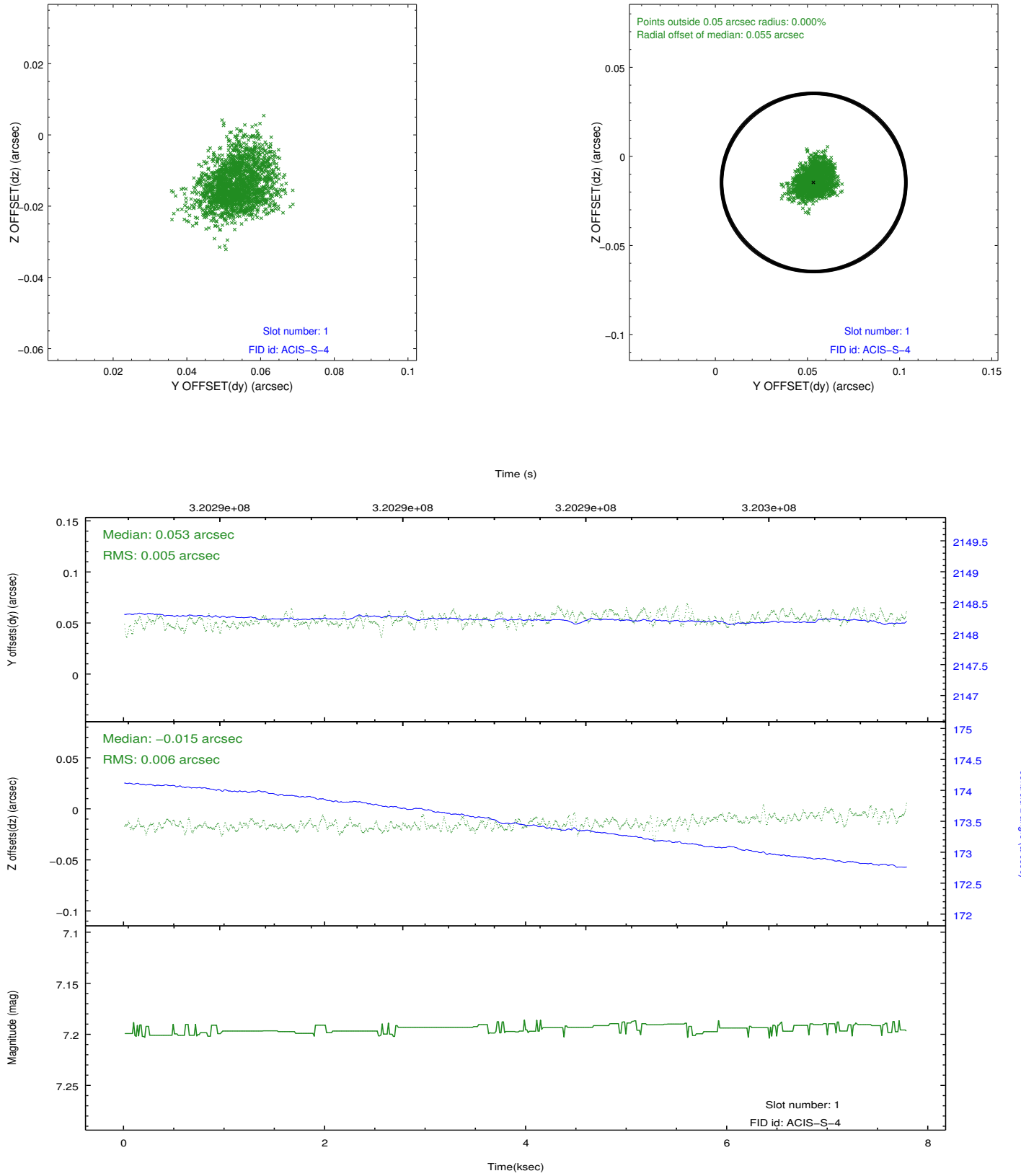


## 2.5 FID Slots

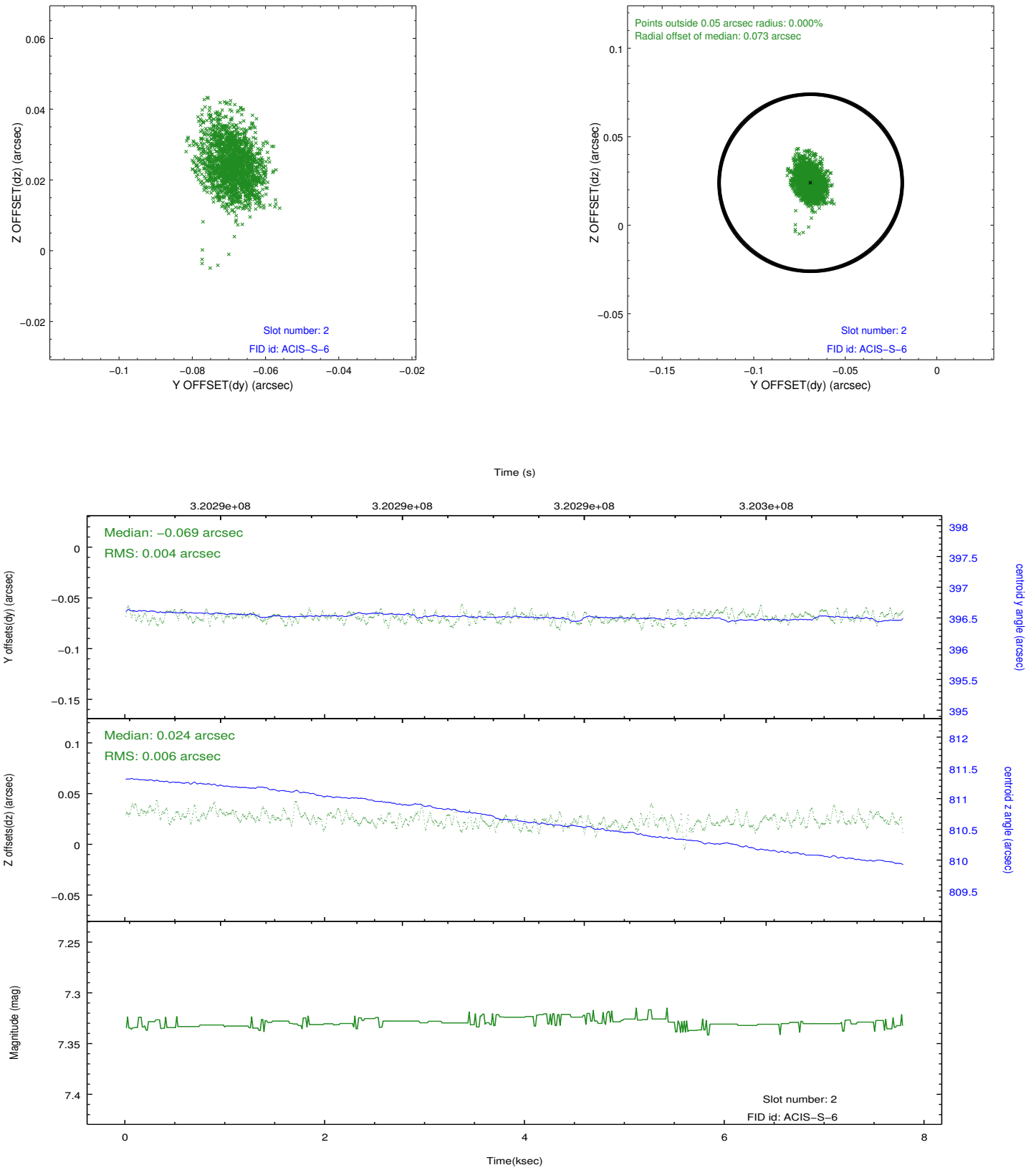
### 2.5.1 Slot 0



## 2.5.2 Slot 1

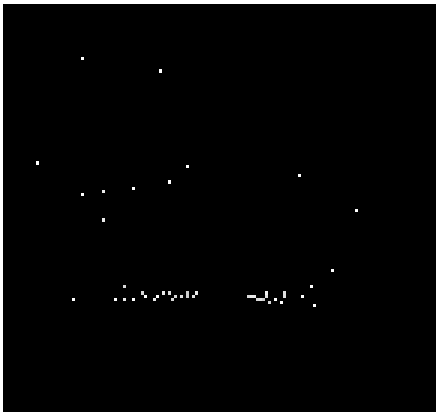


### 2.5.3 Slot 2

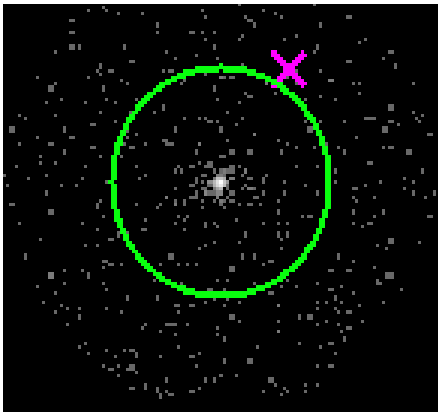


# 3 Gratings

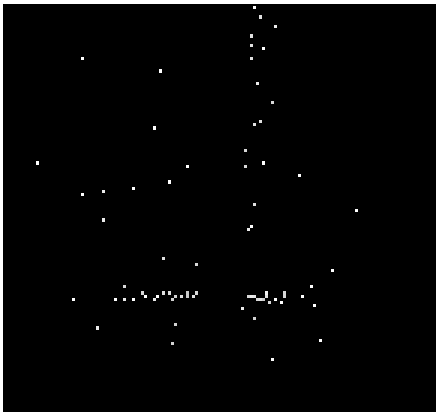
## 3.1 HEG Arm



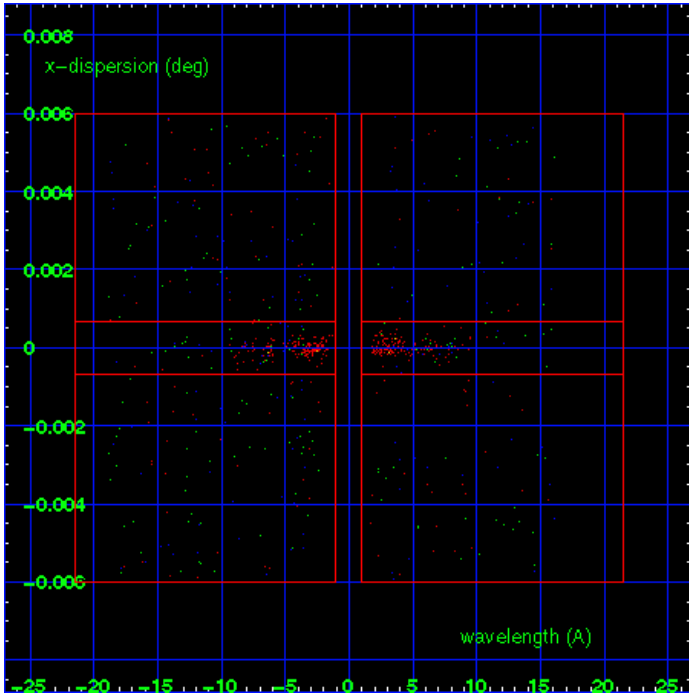
HEG Order Sort 123



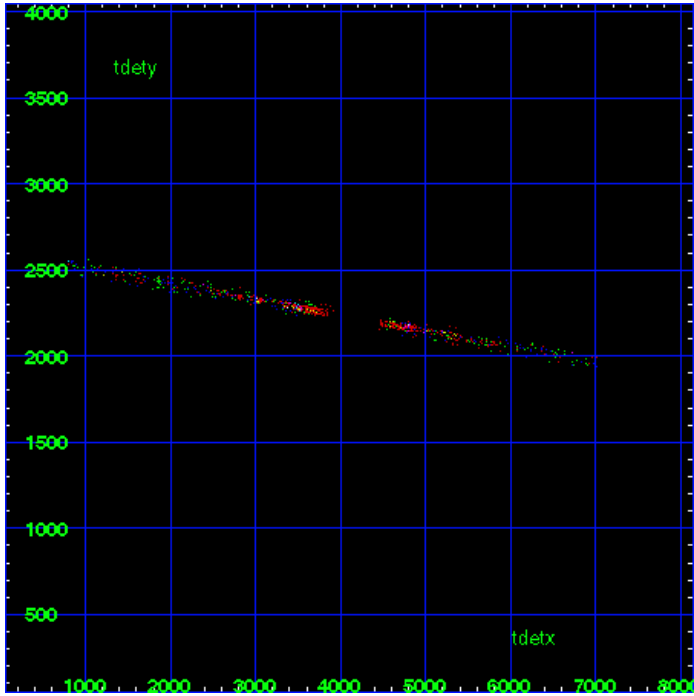
HEG Zero Order



HEG Order Sort ALL

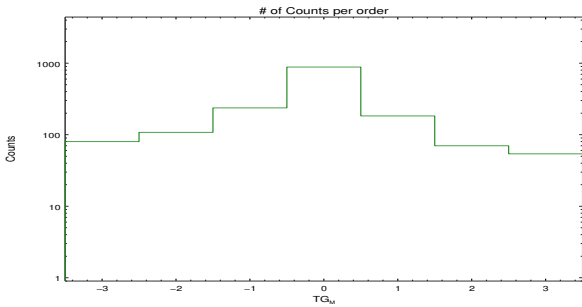


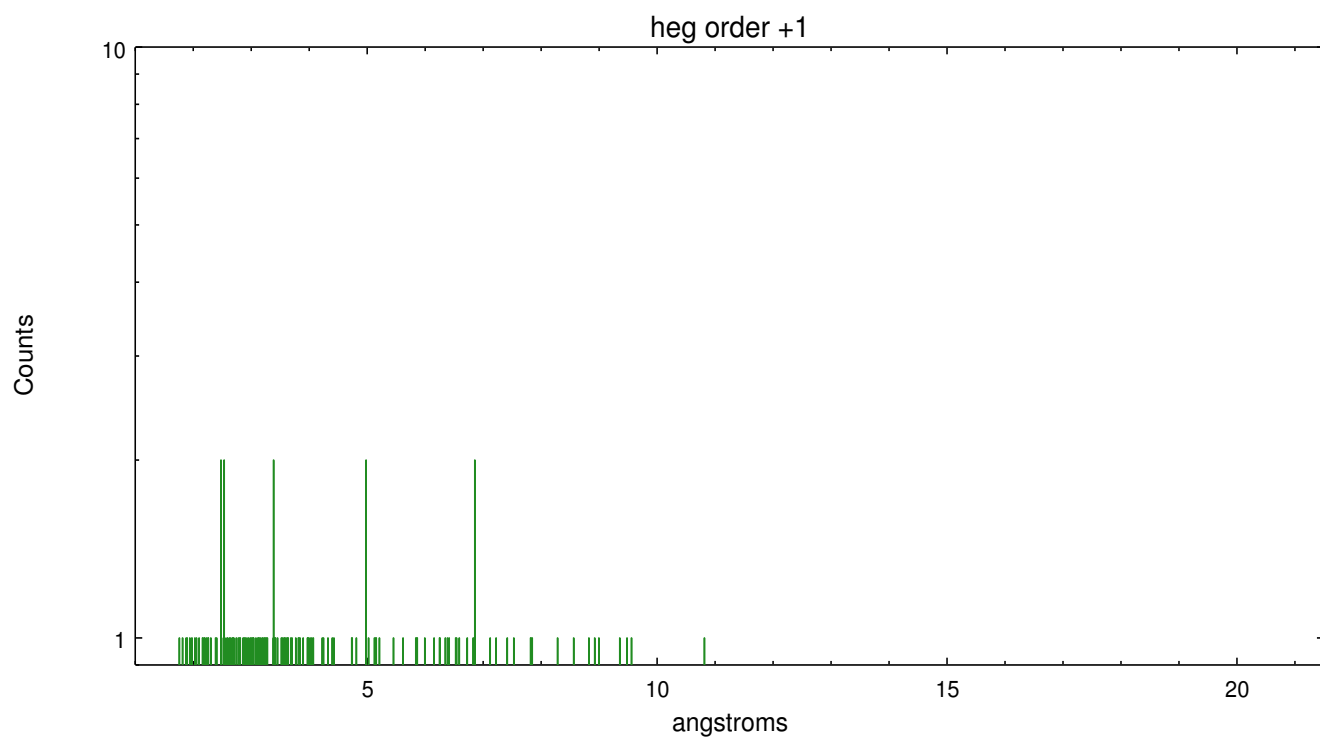
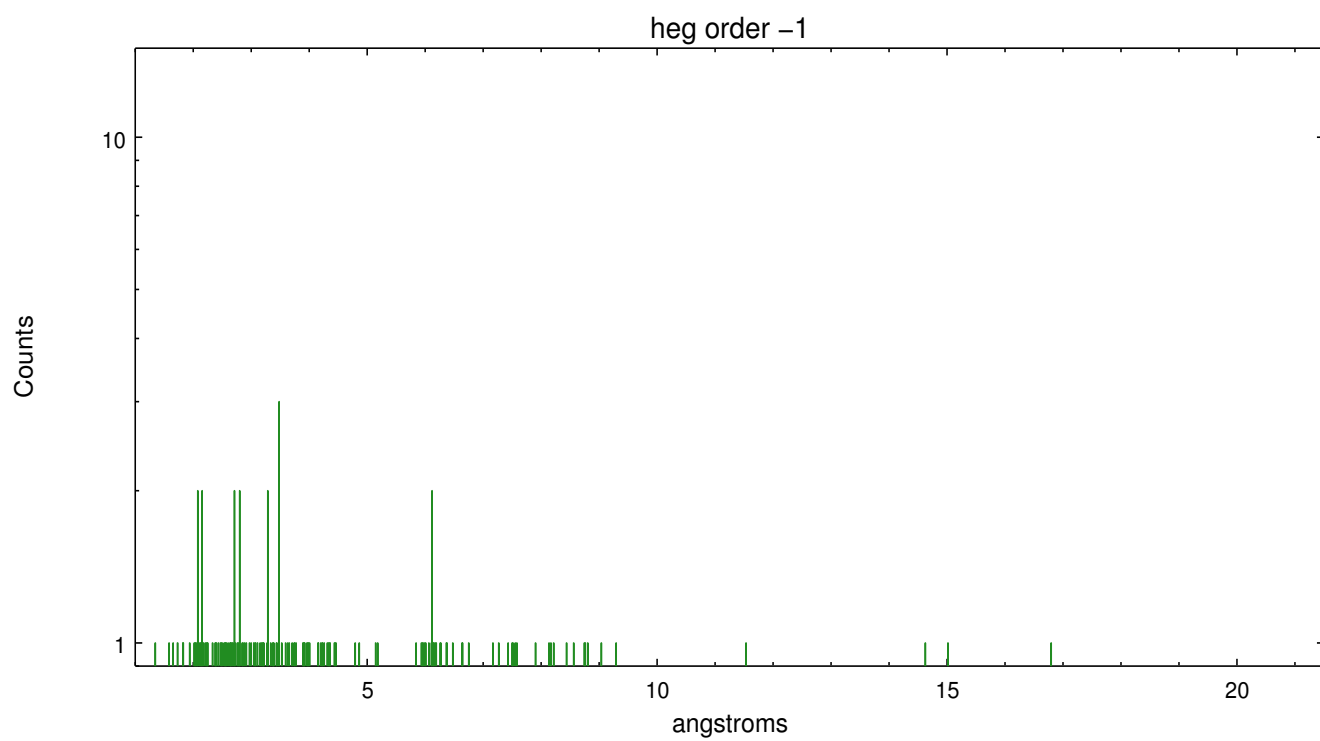
Spot Image HEG



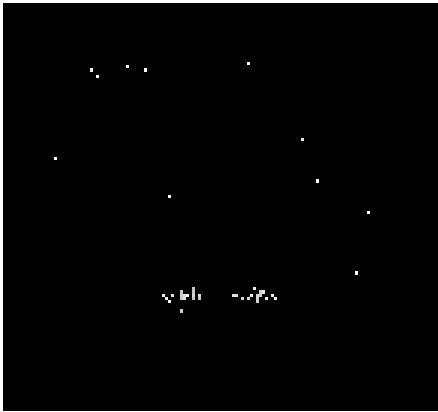
Full Detector HEG

|        | order<br>-3 | order<br>-2 | order<br>-1 | order<br>0 | order<br>1 | order<br>2 | order<br>3 |
|--------|-------------|-------------|-------------|------------|------------|------------|------------|
| Events | 80          | 108         | 237         | 883        | 183        | 70         | 54         |

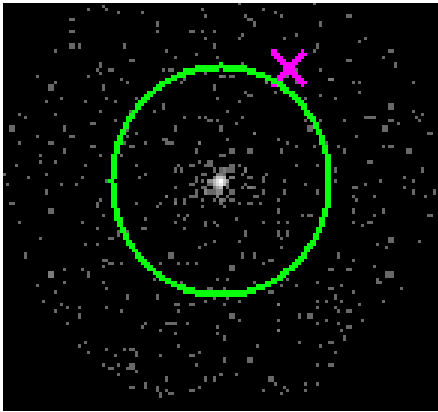




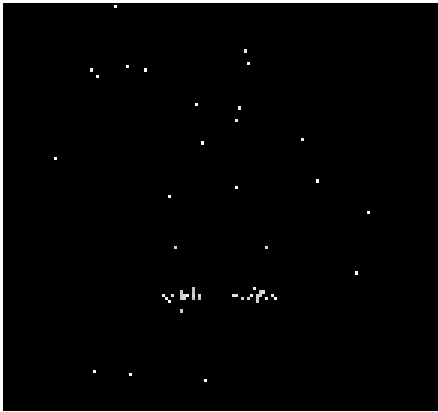
3.2 MEG Arm



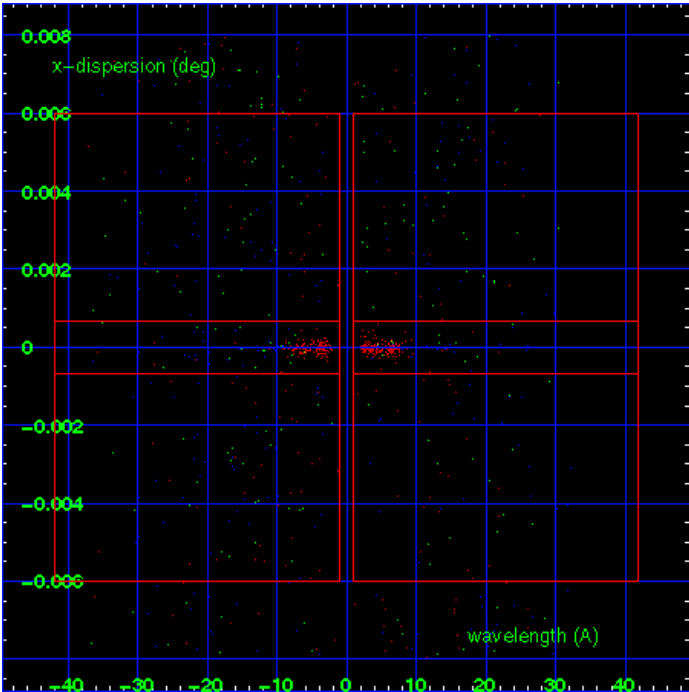
MEG Order Sort 123



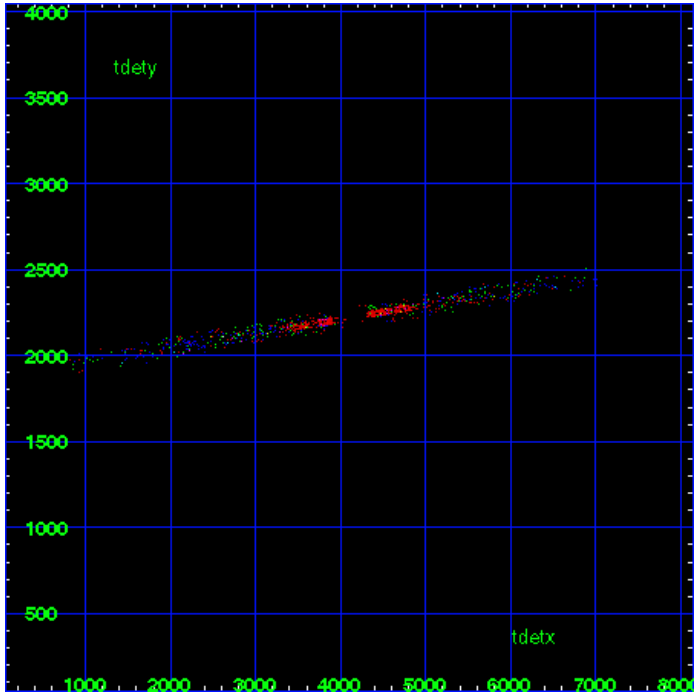
MEG Zero Order



MEG Order Sort ALL

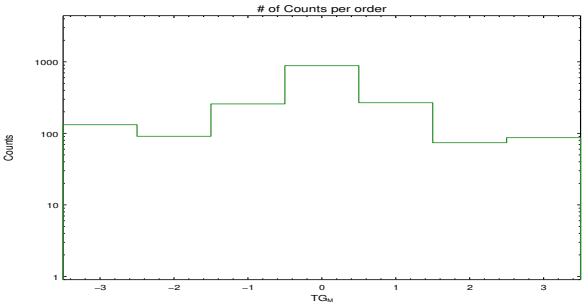


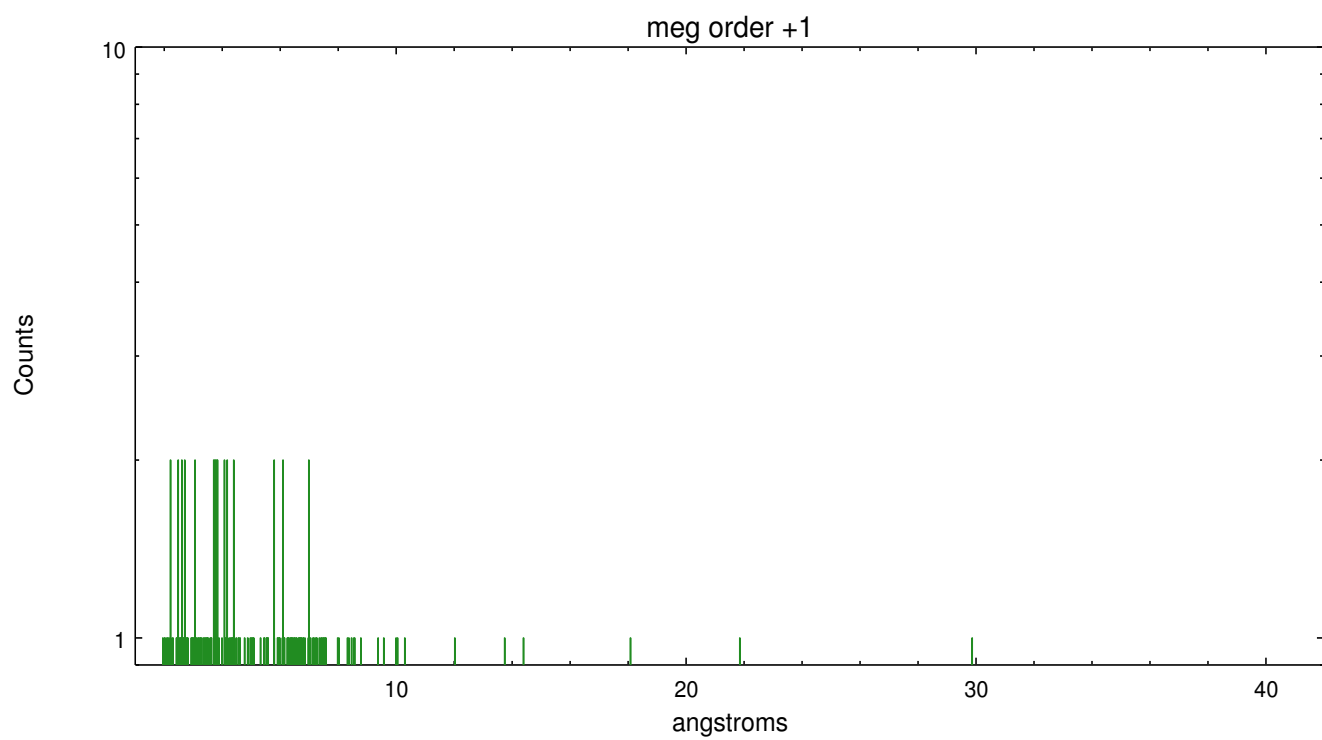
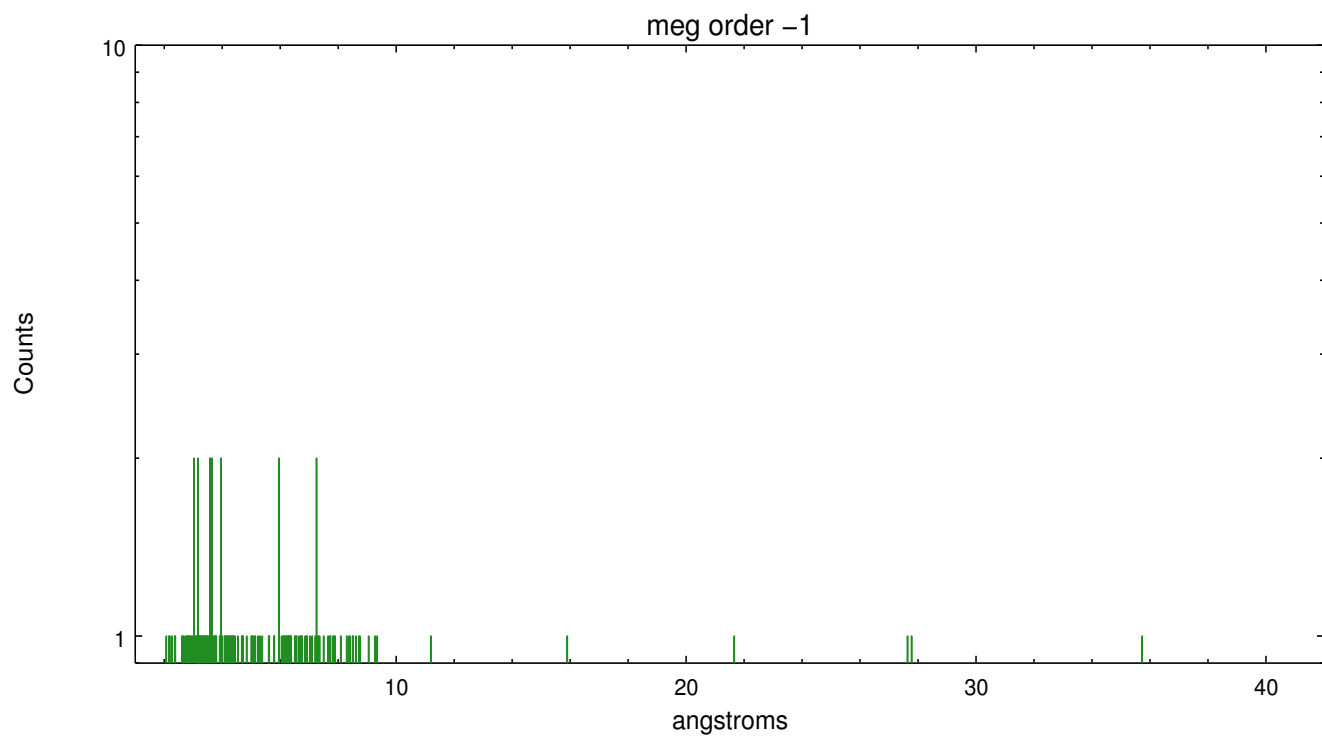
Spot Image MEG



Full Detector MEG

|        | order<br>-3 | order<br>-2 | order<br>-1 | order<br>0 | order<br>1 | order<br>2 | order<br>3 |
|--------|-------------|-------------|-------------|------------|------------|------------|------------|
| Events | 132         | 91          | 258         | 883        | 268        | 74         | 87         |







## A Summary

### A.1 Status

|                            |            |
|----------------------------|------------|
| V&V Scientist              | Mike Nowak |
| V&V Date (YYYY-MM-DD)      | 2012.05.17 |
| V&V Edition                | 1          |
| V&V Disposition and Status | OK         |
| V&V Charge Time            | 7.72159997 |

### A.2 Comments