

# V&V Reference Report

## L2 ASCDS Version : 7.6.9

Observation 2532 - L2 Version 001  
Chandra X-Ray Center

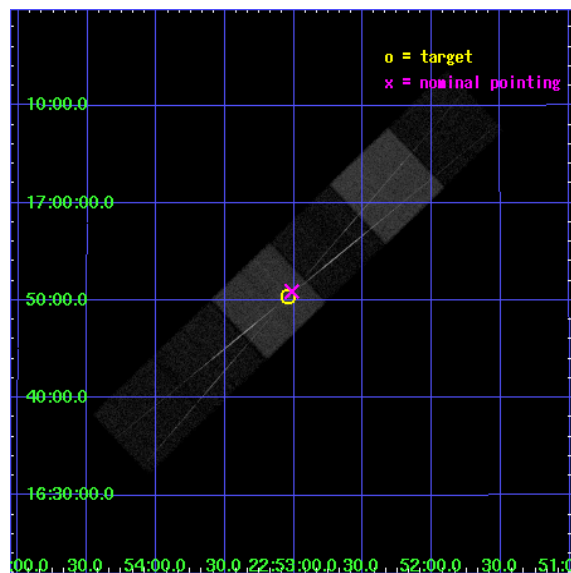
L2 Processing Date : Sep 26 2006

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# 1 Front

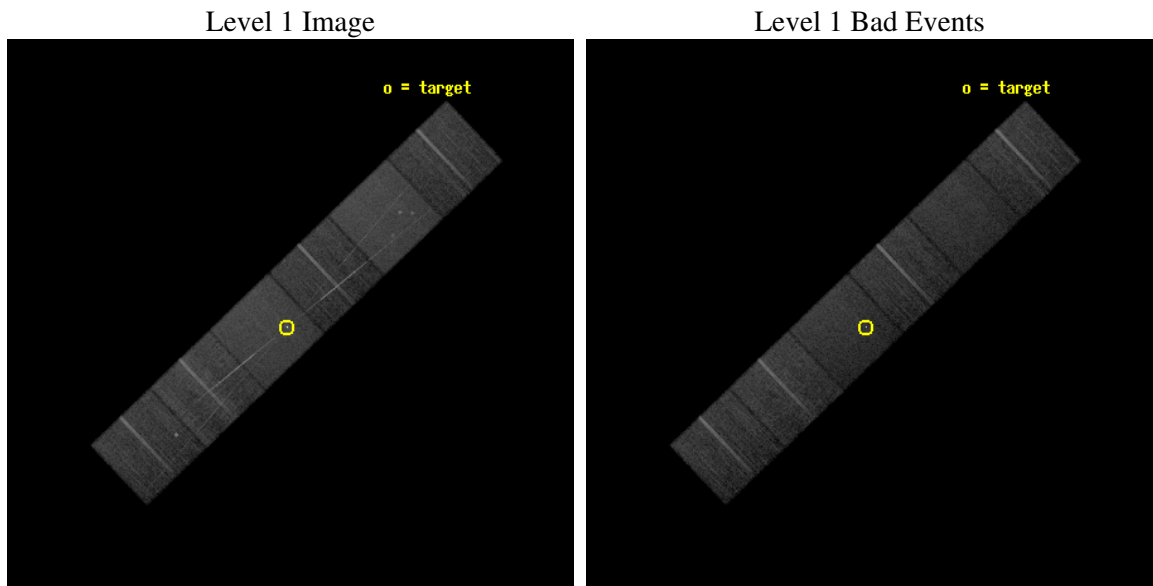
|          |   |
|----------|---|
| seq_num  | 200140  |
| obs_id   | 2532  |
| title    | HETGS SPECTROSCOPY OF THE LONG-PERIOD ACTIVE BINARY, IM PEGASI. |
| observer | Dr. David Huenemoerder  |
| object   | IM PEG  |
| dtcycle  | 0   |
| cycle    | P   |
| ra_targ  | 343.259583  |
| dec_targ | 16.841194   |
| ra_nom   | 343.25362412042   |
| dec_nom  | 16.849007463438   |
| roll_nom | 136.26423715079   |
| revision | 2   |
| ontime   | 22751.999915242   |
| livetime | 22463.900392706   |
| ontime4  | 22751.999915242   |
| ontime5  | 22751.999915242   |
| ontime6  | 22751.999915242   |
| ontime7  | 22751.999915242   |
| ontime8  | 22751.999915242   |
| ontime9  | 22751.999915242   |
| l2events | 212937  |



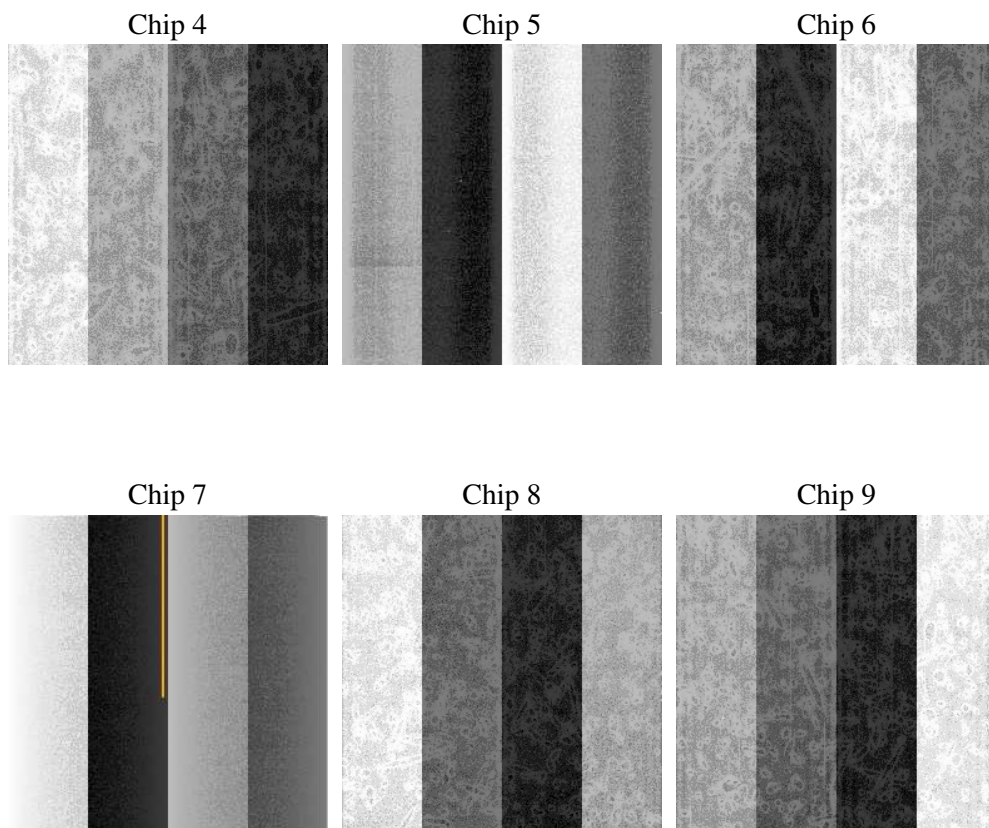
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

|          |                     |
|----------|---------------------|
| obi_num  | 0                   |
| ascdsver | 7.6.9               |
| caldsver | 3.2.3               |
| date     | 2006-09-26T18:40:07 |
| revision | 2                   |

|                |                 |
|----------------|-----------------|
| sched_exp_time | 23000.000000    |
| ontime         | 22758.342755854 |
| ontime4        | 22758.342755884 |
| ontime5        | 22758.342755854 |
| ontime6        | 22758.342775762 |
| ontime7        | 22758.342755854 |
| ontime8        | 22758.342666179 |
| ontime9        | 22758.342755884 |
| l1events       | 920610          |

### 2.1.4 Events

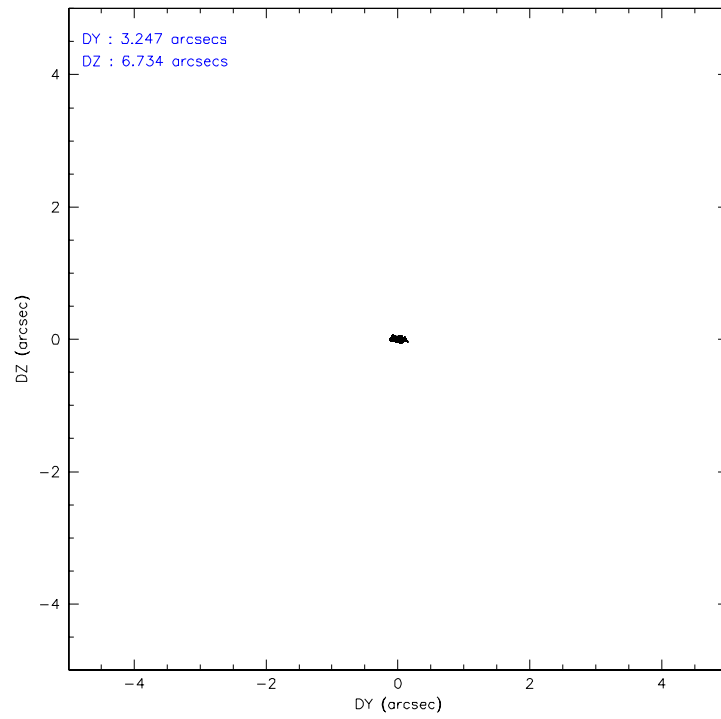
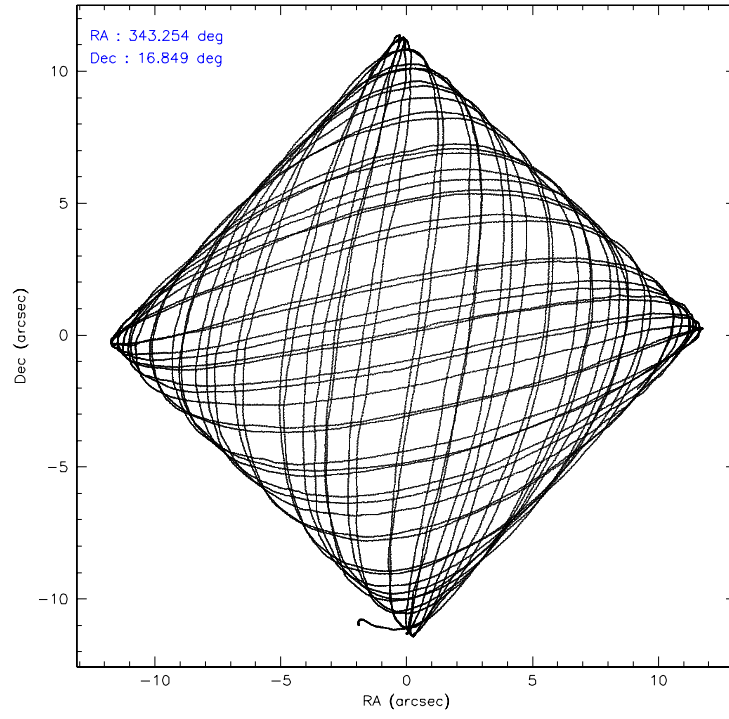
|                 | ccd 4  | ccd 5  | ccd 6  | ccd 7  | ccd 8  | ccd 9  |
|-----------------|--------|--------|--------|--------|--------|--------|
| level 1 events  | 136251 | 179639 | 136241 | 175760 | 164345 | 128374 |
| rejected events | 120330 | 101073 | 113657 | 104492 | 126923 | 111374 |
| rejected %      | 88%    | 56%    | 83%    | 59%    | 77%    | 86%    |

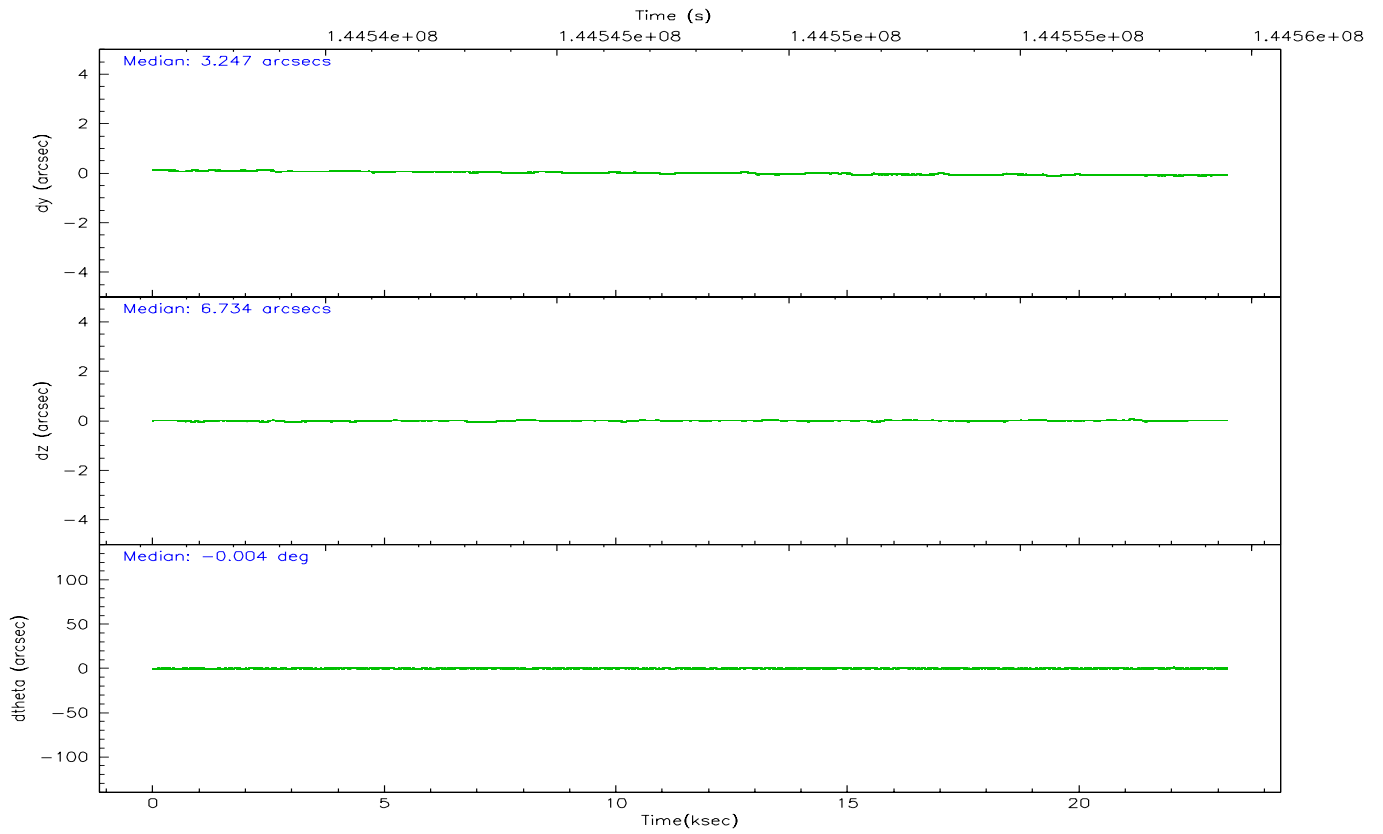
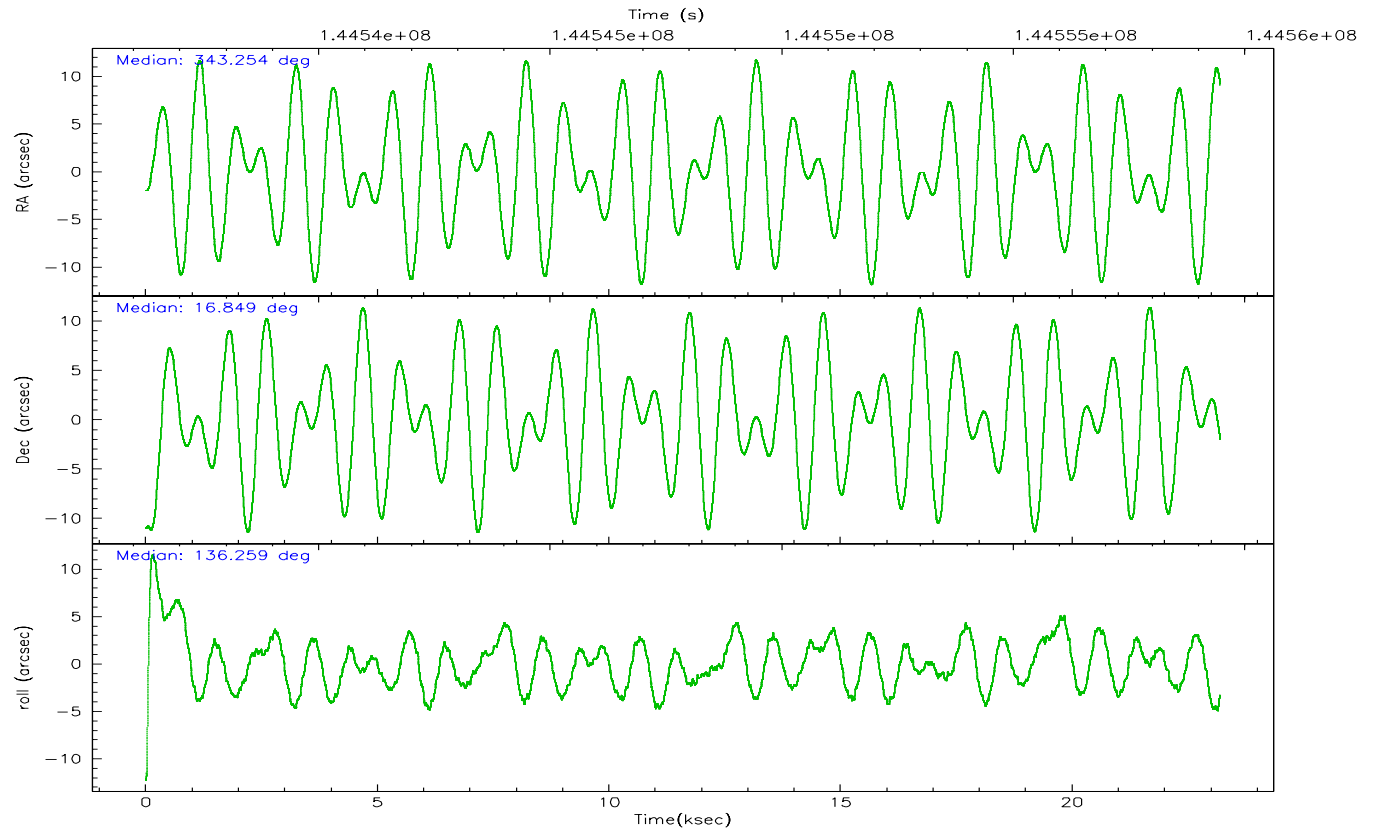
|                | ccd 4  | ccd 5 | ccd 6  | ccd 7 | ccd 8  | ccd 9  |
|----------------|--------|-------|--------|-------|--------|--------|
| grade 0 events | 6706   | 5070  | 12236  | 5148  | 14946  | 7603   |
|                | 4%     | 2%    | 8%     | 2%    | 9%     | 5%     |
| grade 1 events | 61     | 134   | 92     | 243   | 109    | 57     |
|                | 0%     | 0%    | 0%     | 0%    | 0%     | 0%     |
| grade 2 events | 3841   | 24565 | 3821   | 17471 | 7457   | 3311   |
|                | 2%     | 13%   | 2%     | 9%    | 4%     | 2%     |
| grade 3 events | 1436   | 1967  | 1691   | 4146  | 3445   | 1543   |
|                | 1%     | 1%    | 1%     | 2%    | 2%     | 1%     |
| grade 4 events | 1324   | 1894  | 1661   | 4058  | 3240   | 1459   |
|                | 0%     | 1%    | 1%     | 2%    | 1%     | 1%     |
| grade 5 events | 4674   | 8699  | 5680   | 11805 | 7046   | 5800   |
|                | 3%     | 4%    | 4%     | 6%    | 4%     | 4%     |
| grade 6 events | 2619   | 45093 | 3178   | 40464 | 8336   | 3092   |
|                | 1%     | 25%   | 2%     | 23%   | 5%     | 2%     |
| grade 7 events | 115590 | 92217 | 107882 | 92425 | 119766 | 105509 |
|                | 84%    | 51%   | 79%    | 52%   | 72%    | 82%    |

## 2.2 Compared Parameters

| Parameter                         | Planned             | Actual               | Parameter                             | Planned   | Actual  |
|-----------------------------------|---------------------|----------------------|---------------------------------------|-----------|---------|
| Instrument                        | ACIS                | ACIS                 | Obspar format version number          | 6         | 6       |
| 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       |
| Pointing RA                       | 343.281353          | 343.2536241204235    | Subarray requested                    | NONE      | NONE    |
| Pointing Dec                      | 16.842895           | 16.84900746343754    | Alternating exposures requested       | N         | N       |
| Pointing Roll                     | 136.099590          | 136.2642371507947    | Primary exposure time                 | 0.000000  | 3.2     |
| SIM focus pos (mm)                | -0.684267           | -0.6828225247311905  |                                       |           |         |
| SIM defocus (mm)                  | 0                   | 0.001444936568705701 |                                       |           |         |
| SIM translation stage pos (mm)    | -187.132523         | -187.1254020033014   |                                       |           |         |
| SIM translation stage offset (mm) | -3                  | -3.007120579706367   |                                       |           |         |
| Observation start time            | 144536472.184000    | 144535559.16851      |                                       |           |         |
| Observation start date            | 2002-07-31T21:00:08 | 2002-07-31T20:45:59  |                                       |           |         |
| Observation end time              | 144559472.184000    | 144560361.09453      |                                       |           |         |
| Observation end date              | 2002-08-01T03:23:28 | 2002-08-01T03:39:21  |                                       |           |         |
| Read mode                         | TIMED               | TIMED                |                                       |           |         |

## 2.3 Aspect





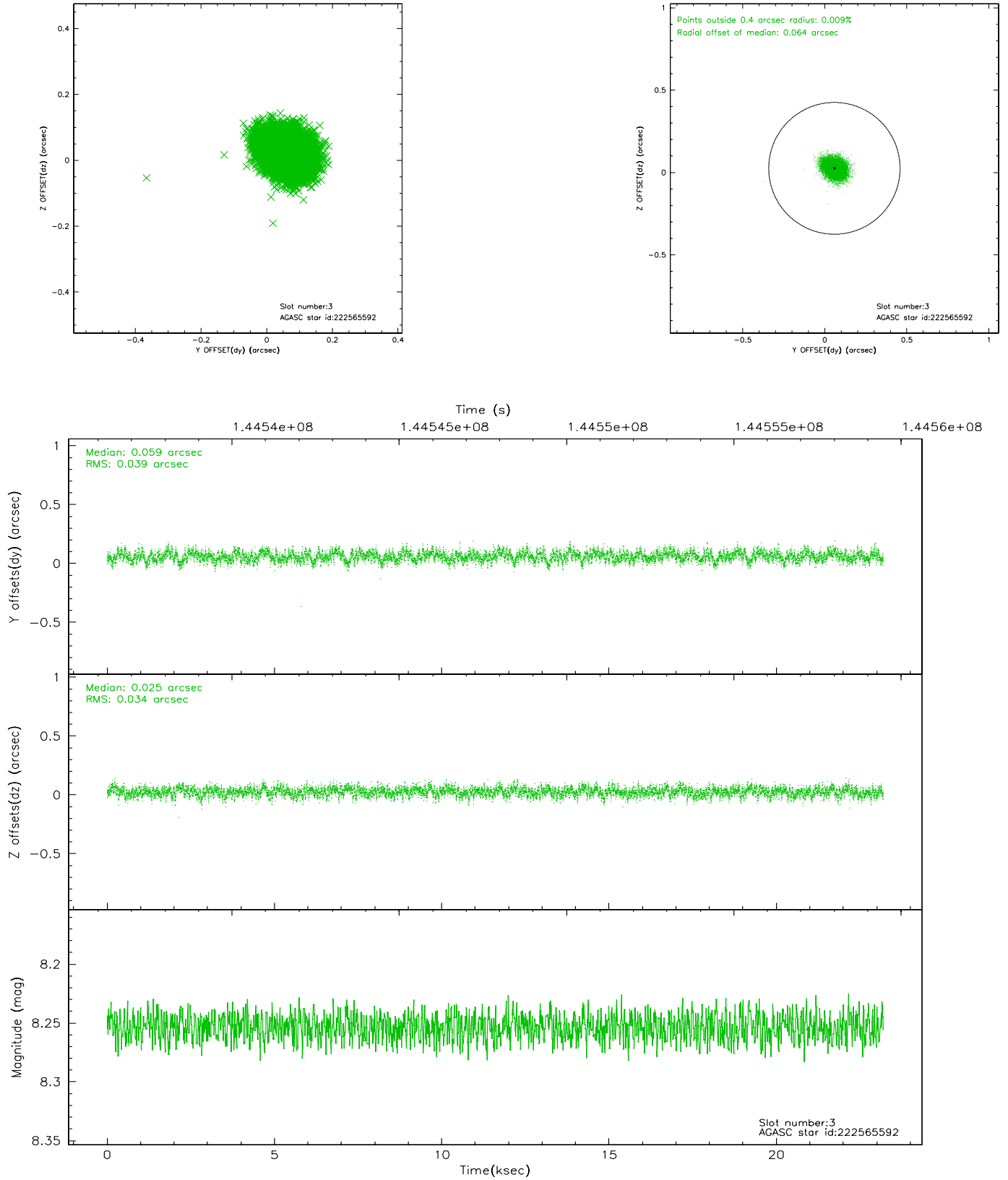
### Slot Statistics

| slot | status | id        | mag  | n_pts | med_dy | med_dz | dr1   | dr2   | ra         | dec       | mean_y   | mean_z   |
|------|--------|-----------|------|-------|--------|--------|-------|-------|------------|-----------|----------|----------|
| 0    | FID    | ACIS-S-2  | 7.10 | 5658  | -0.030 | -0.035 | 0.006 | 0.010 | 0.000000   | 0.000000  | -755.70  | -1790.02 |
| 1    | FID    | ACIS-S-4  | 7.20 | 5657  | -0.019 | 0.024  | 0.005 | 0.010 | 0.000000   | 0.000000  | 2157.50  | 118.39   |
| 2    | FID    | ACIS-S-5  | 7.23 | 5657  | 0.017  | 0.020  | 0.007 | 0.011 | 0.000000   | 0.000000  | -1808.33 | 112.18   |
| 3    | GUIDE  | 222565592 | 8.25 | 11313 | 0.059  | 0.025  | 0.055 | 0.088 | 343.291662 | 16.508291 | -861.25  | 843.92   |
| 4    | GUIDE  | 222563744 | 8.74 | 11314 | -0.092 | -0.145 | 0.065 | 0.104 | 342.392259 | 16.776439 | 2046.38  | 2293.21  |
| 5    | GUIDE  | 222562432 | 8.94 | 11314 | 0.228  | -0.002 | 0.062 | 0.102 | 343.698150 | 16.309399 | -2368.48 | 384.68   |
| 6    | GUIDE  | 222563736 | 8.83 | 11312 | 0.017  | -0.145 | 0.074 | 0.120 | 343.076284 | 16.308502 | -824.07  | 1877.29  |
| 7    | GUIDE  | 223089808 | 9.09 | 11311 | -0.210 | 0.266  | 0.070 | 0.113 | 343.220223 | 17.508272 | 1811.44  | -1579.73 |

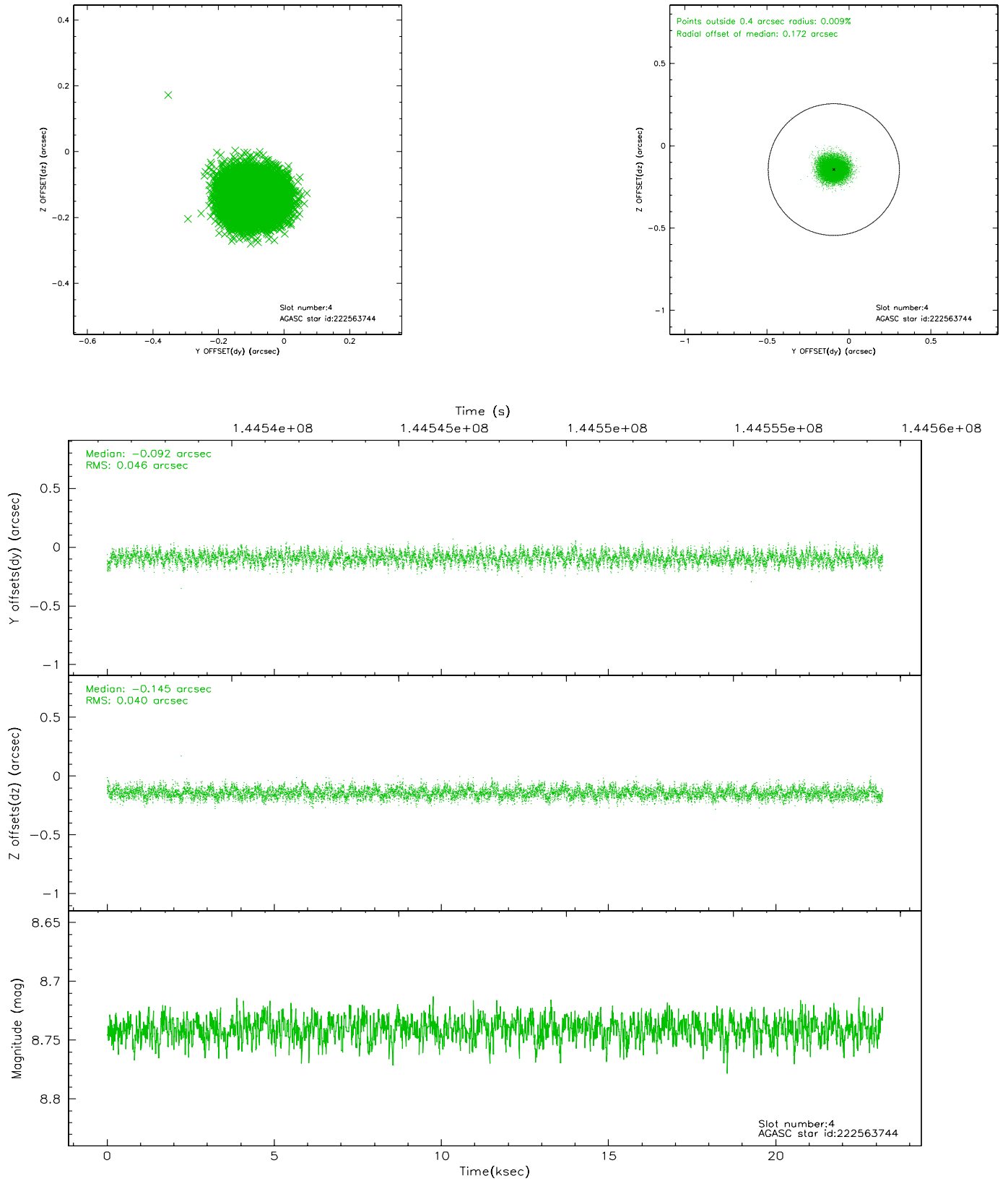


## 2.4 Star Slots

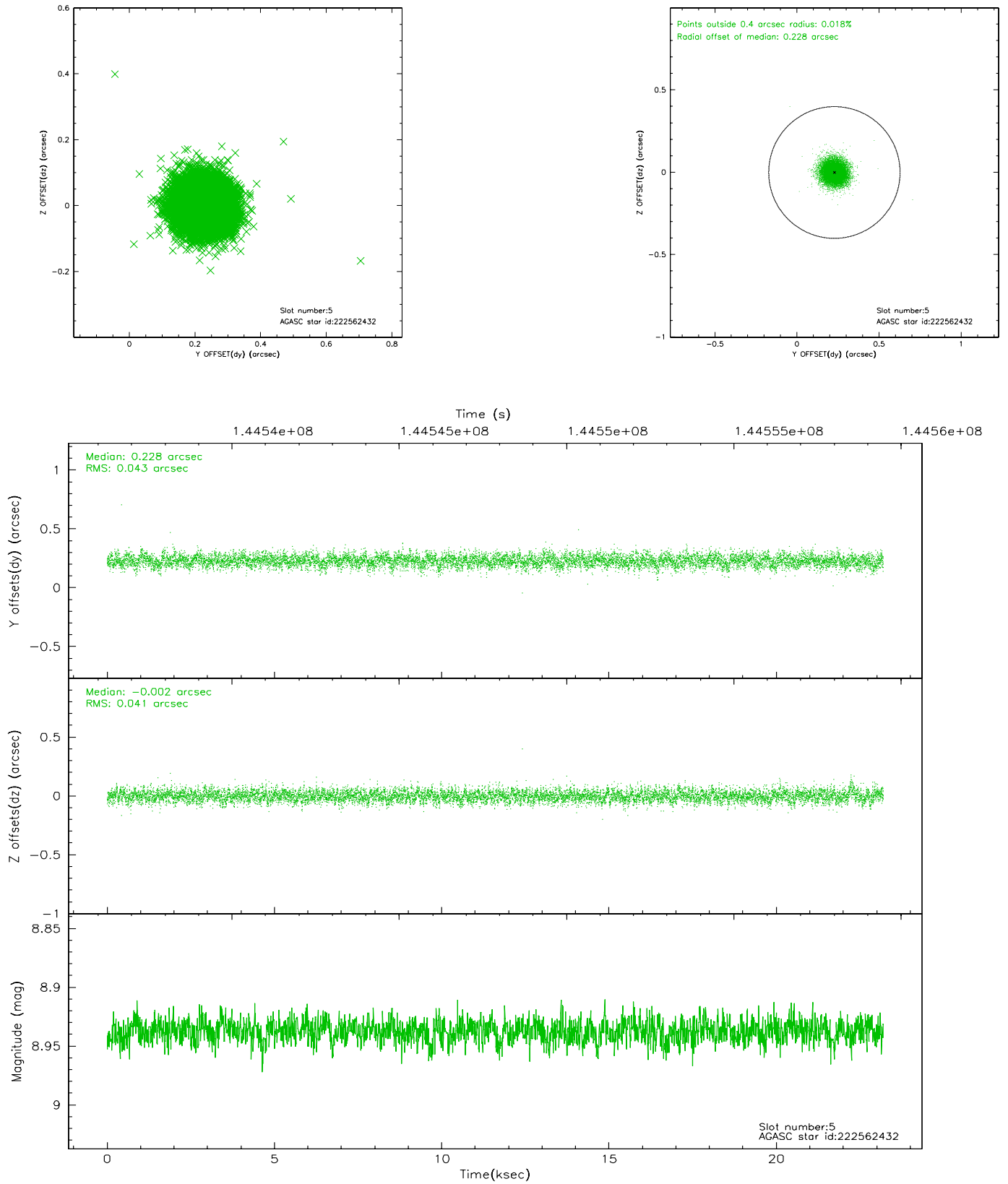
### 2.4.1 Slot 3



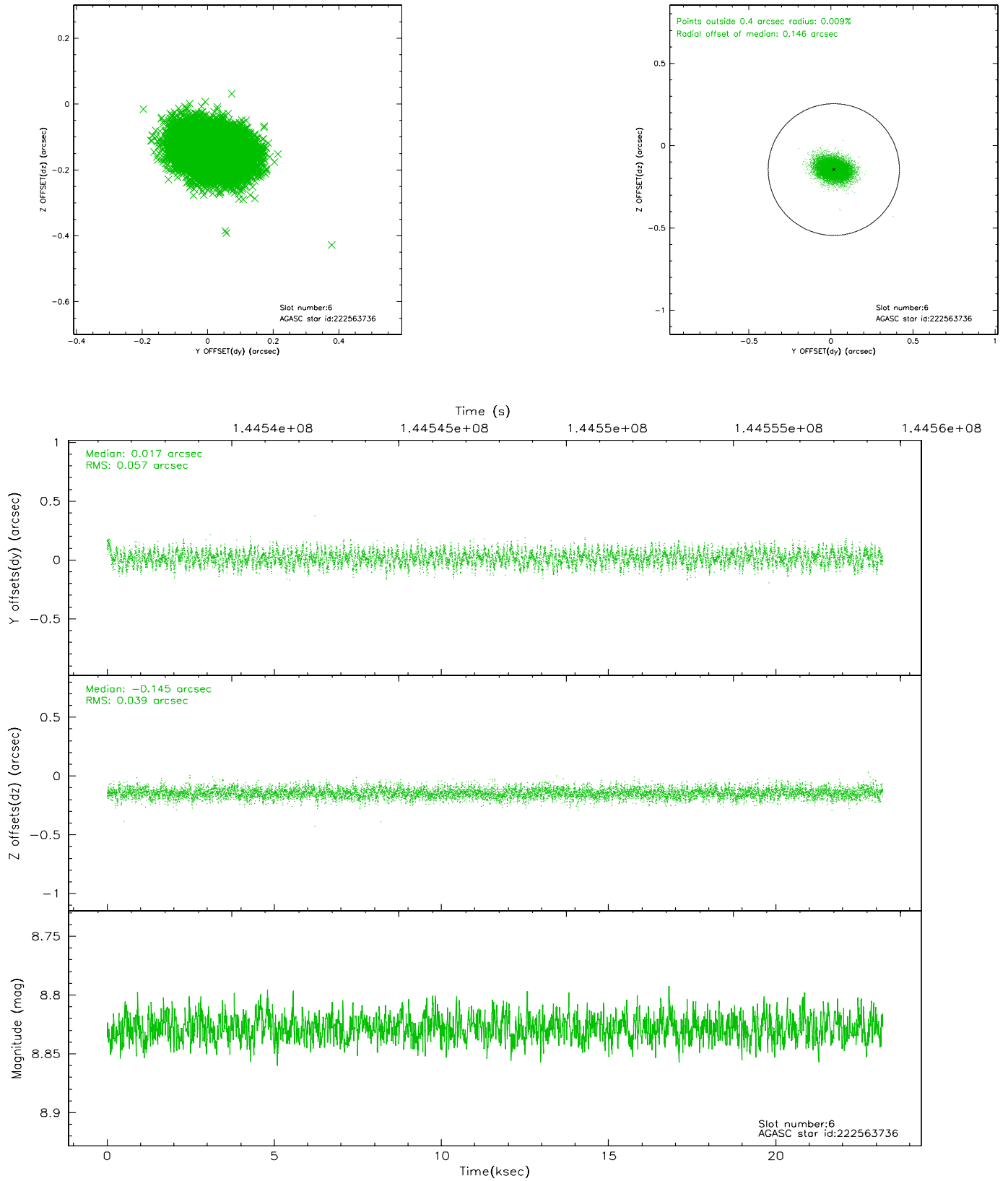
## 2.4.2 Slot 4



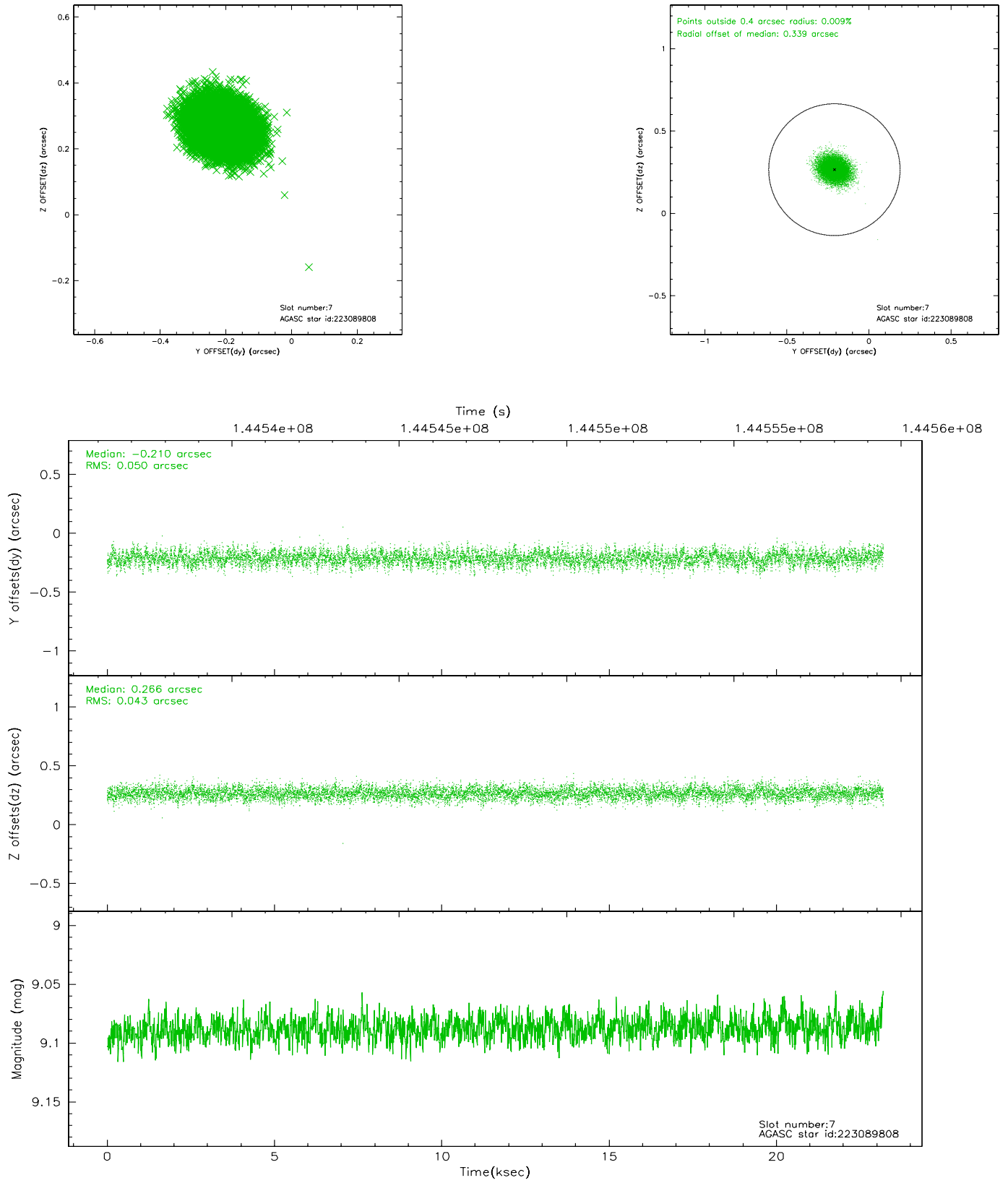
### 2.4.3 Slot 5



## 2.4.4 Slot 6

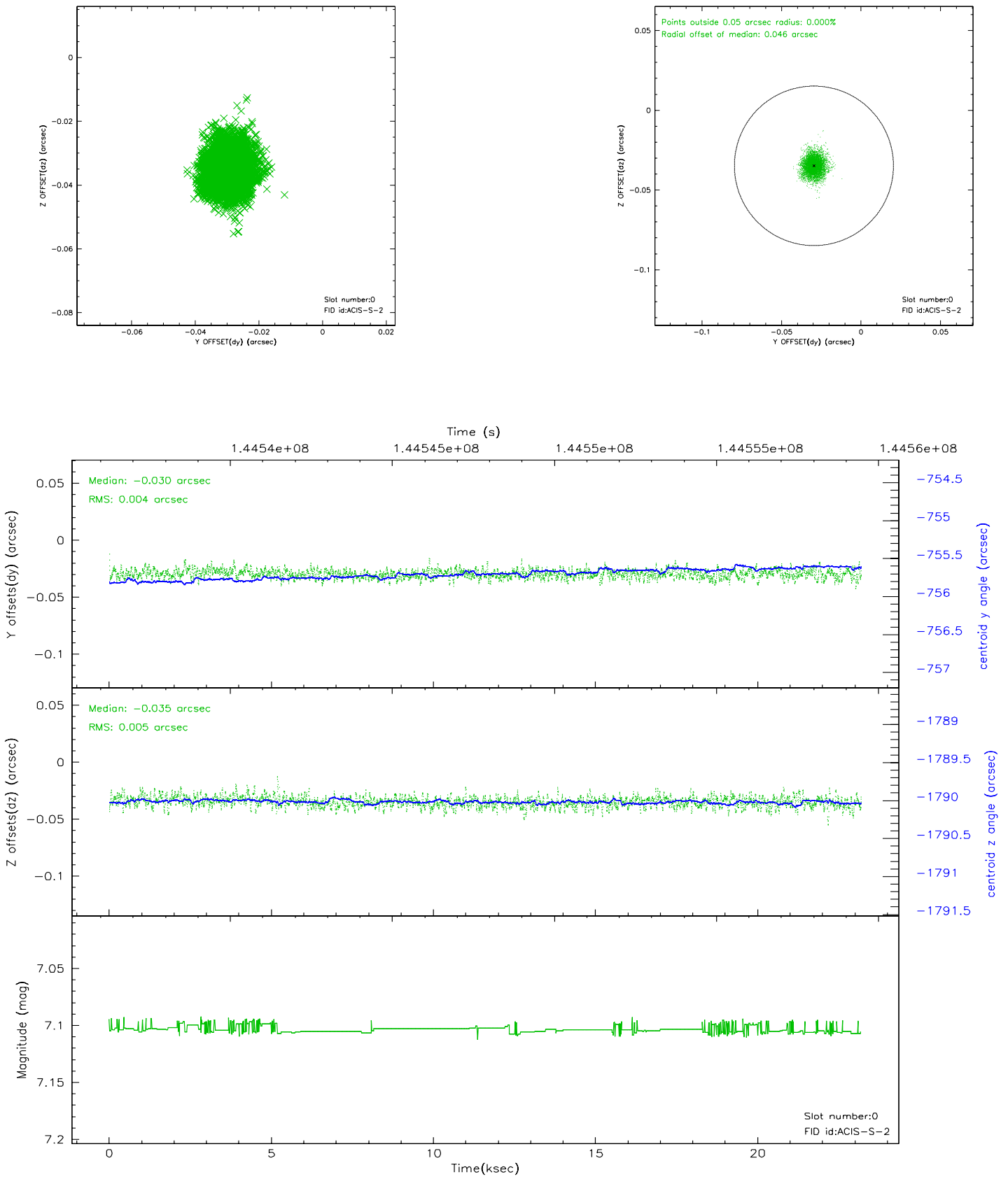


## 2.4.5 Slot 7

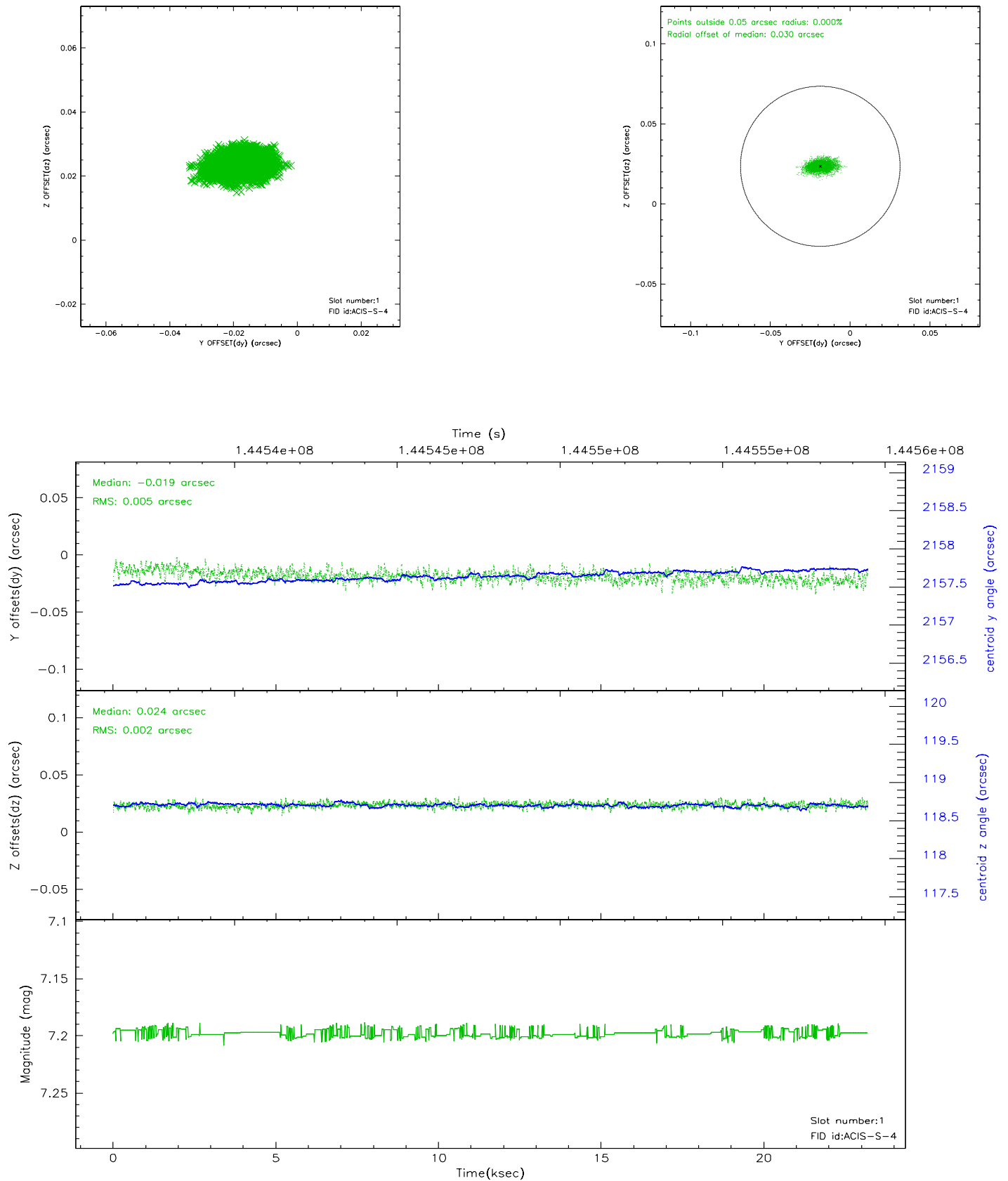


## 2.5 FID Slots

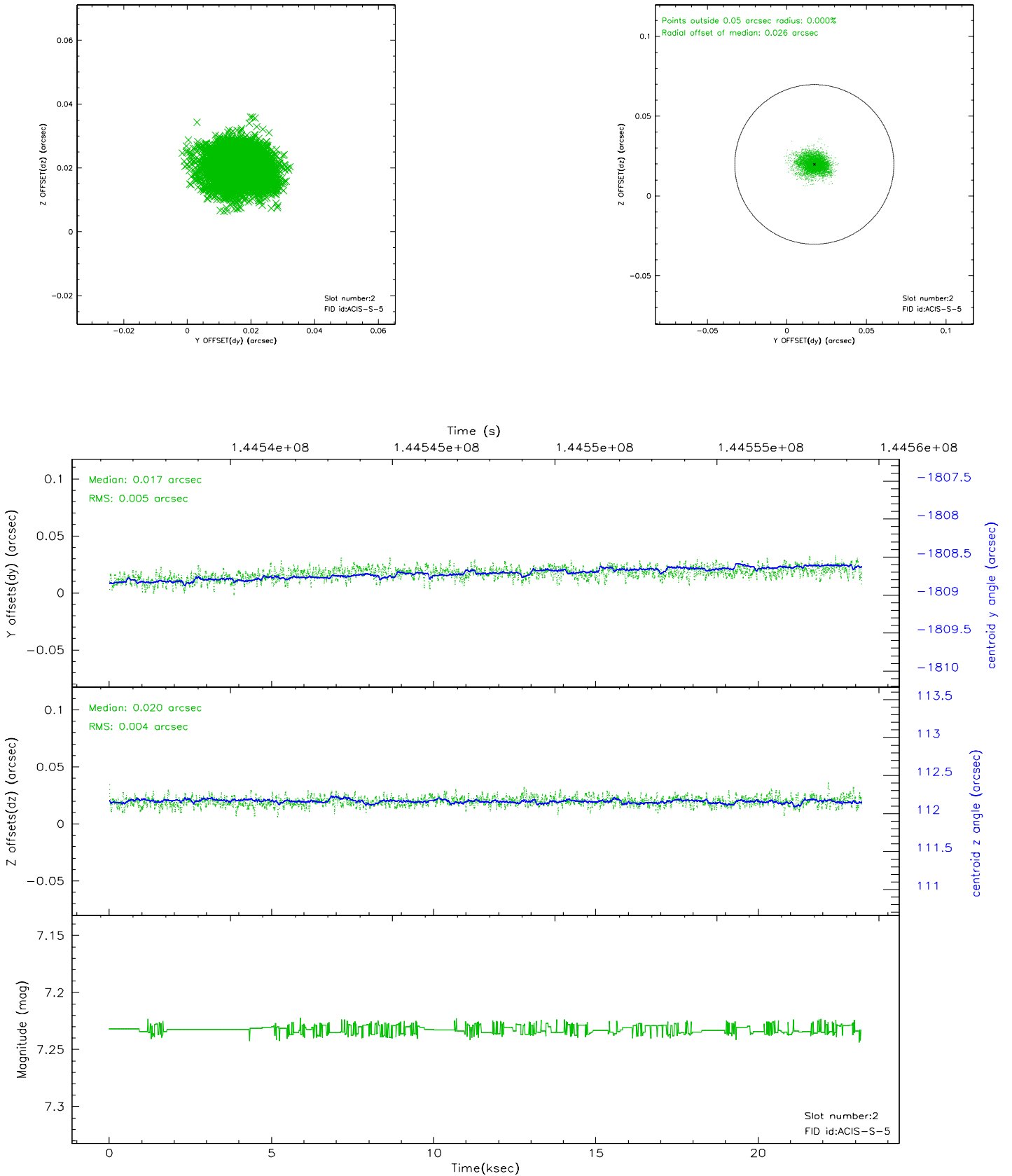
### 2.5.1 Slot 0



## 2.5.2 Slot 1



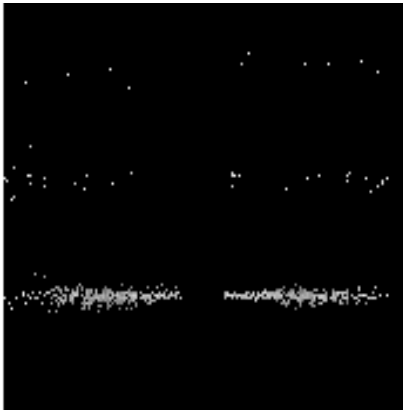
### 2.5.3 Slot 2





# 3 Gratings

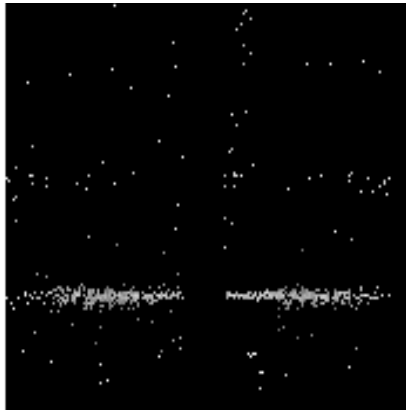
## 3.1 HEG Arm



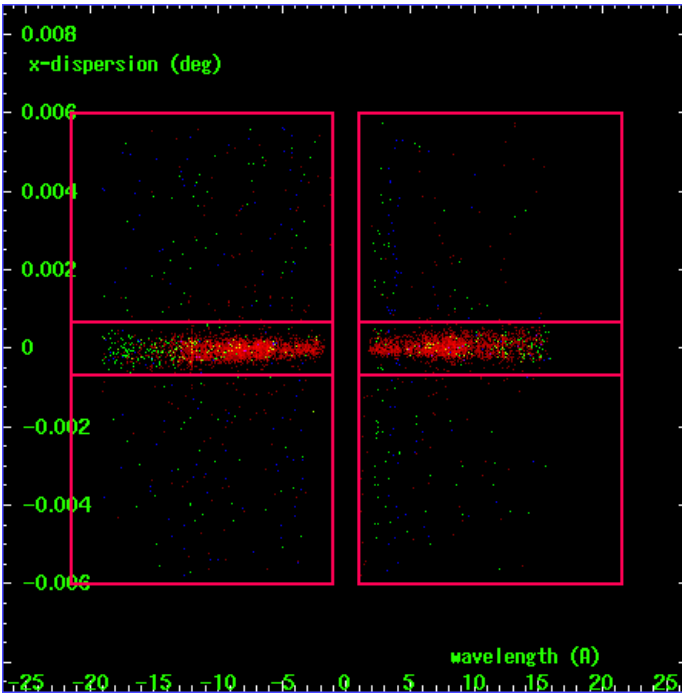
HEG Order Sort 123



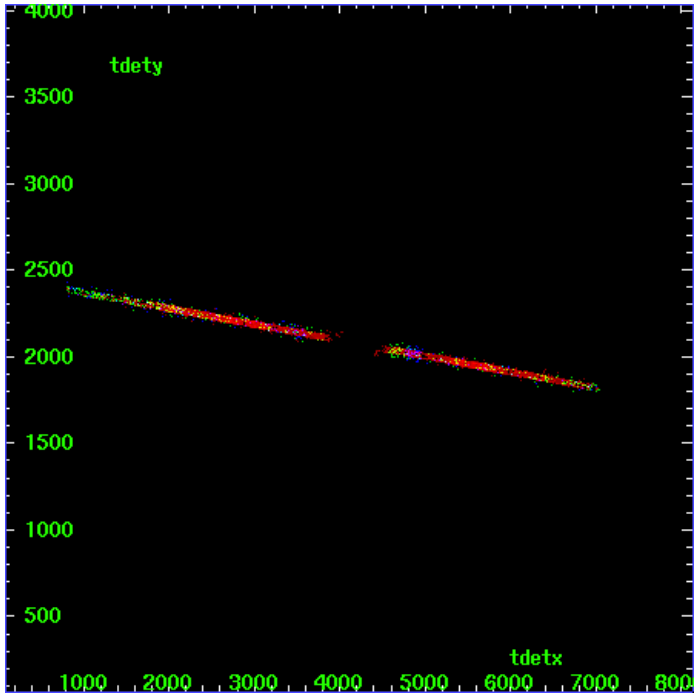
HEG Zero Order



HEG Order Sort ALL

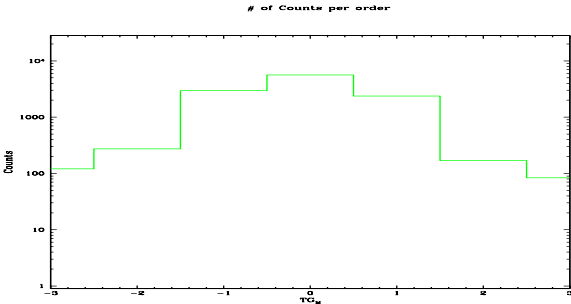


Spot Image HEG

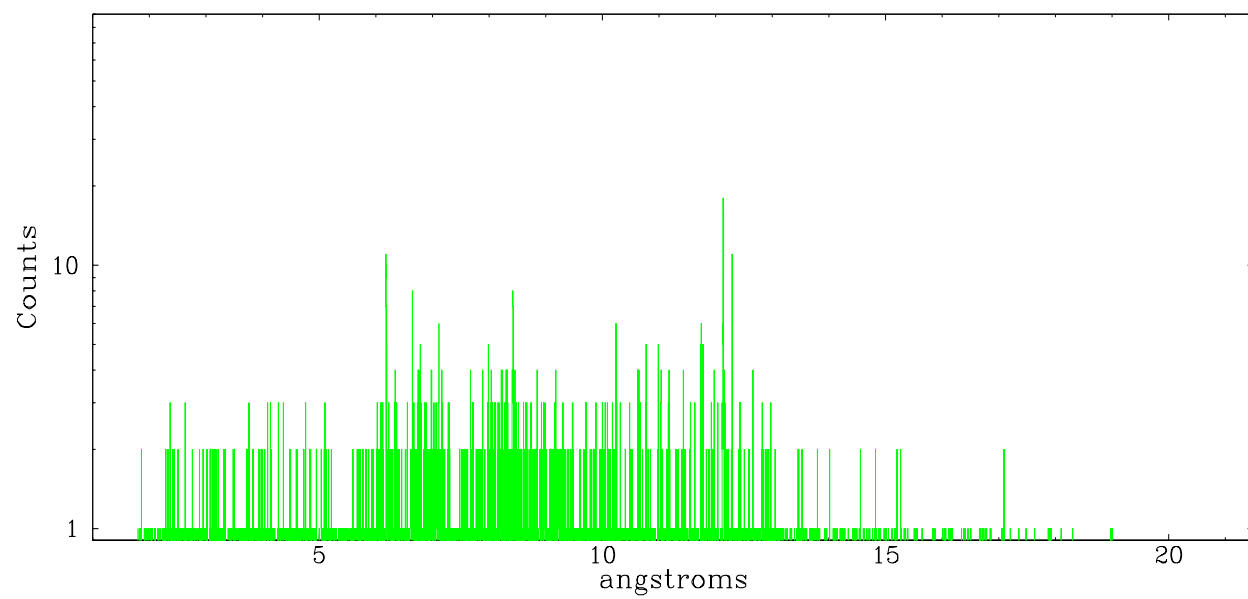


Full Detector HEG

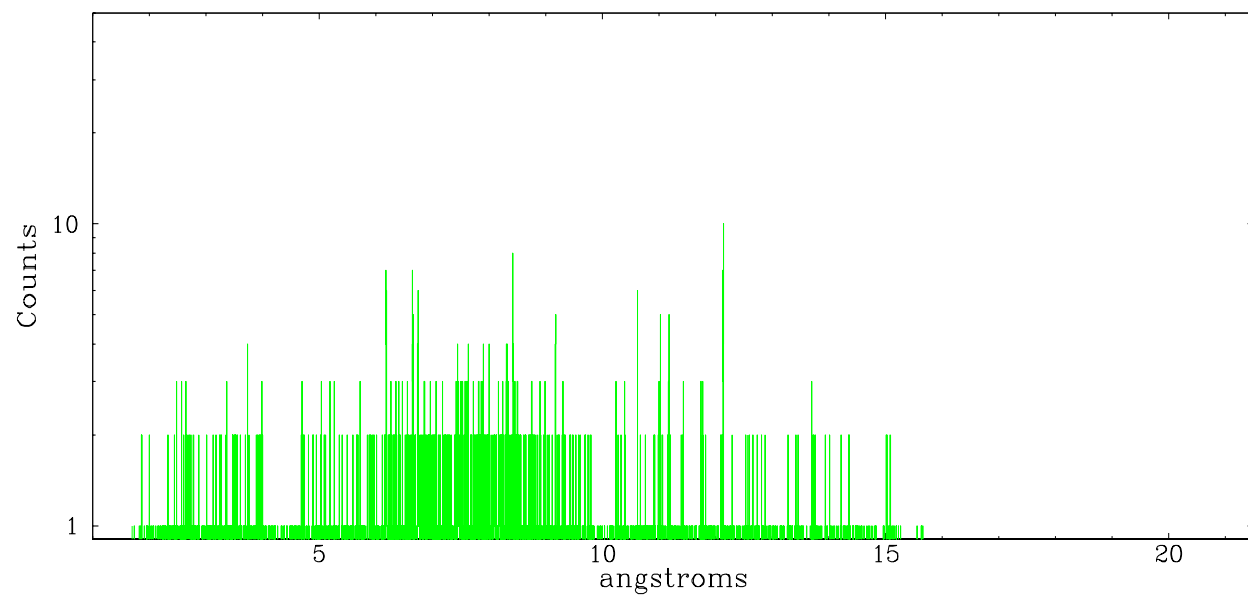
|        | order<br>-3 | order<br>-2 | order<br>-1 | order<br>0 | order<br>1 | order<br>2 | order<br>3 |
|--------|-------------|-------------|-------------|------------|------------|------------|------------|
| Events | 121         | 274         | 2956        | 5617       | 2376       | 169        | 84         |



heg order -1



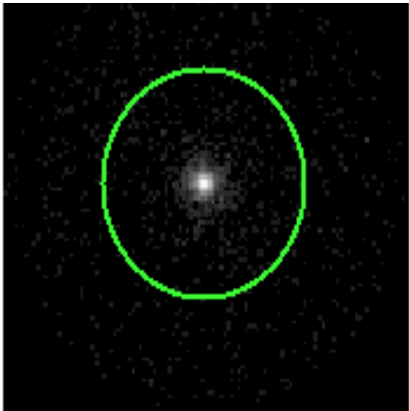
heg order +1



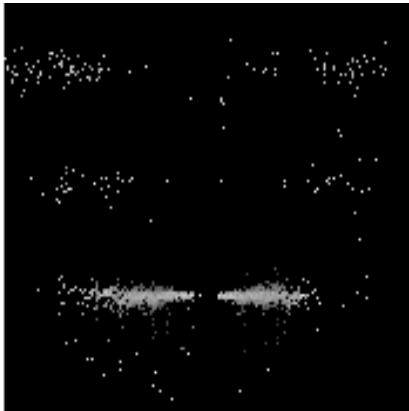
3.2 MEG Arm



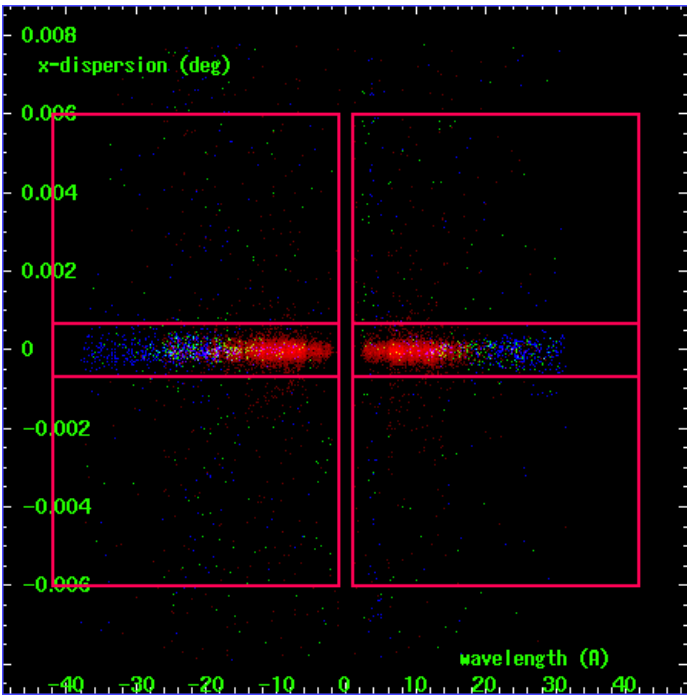
MEG Order Sort 123



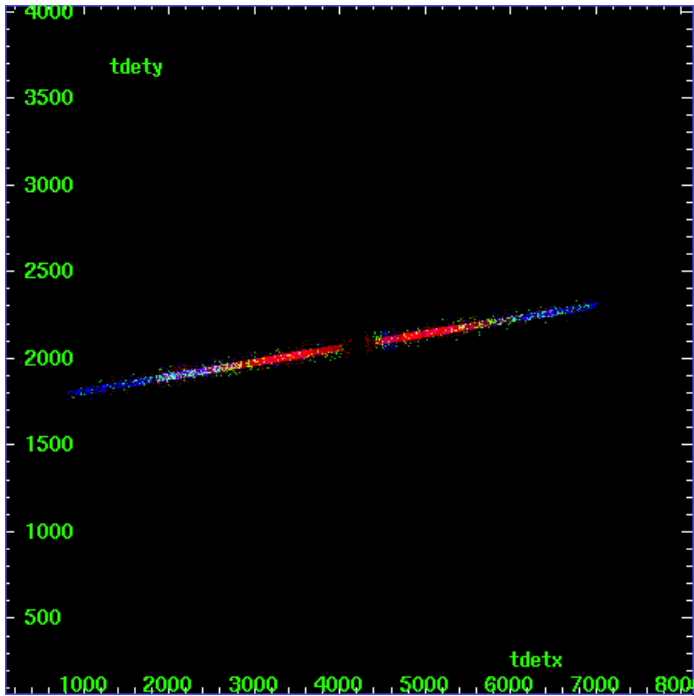
MEG Zero Order



MEG Order Sort ALL

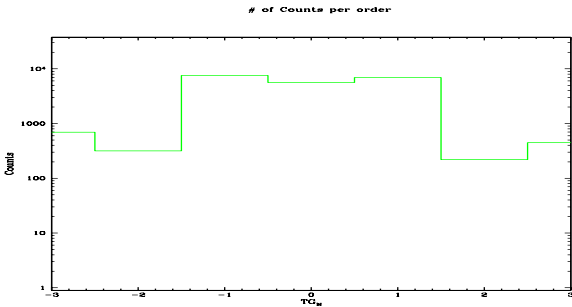


Spot Image MEG

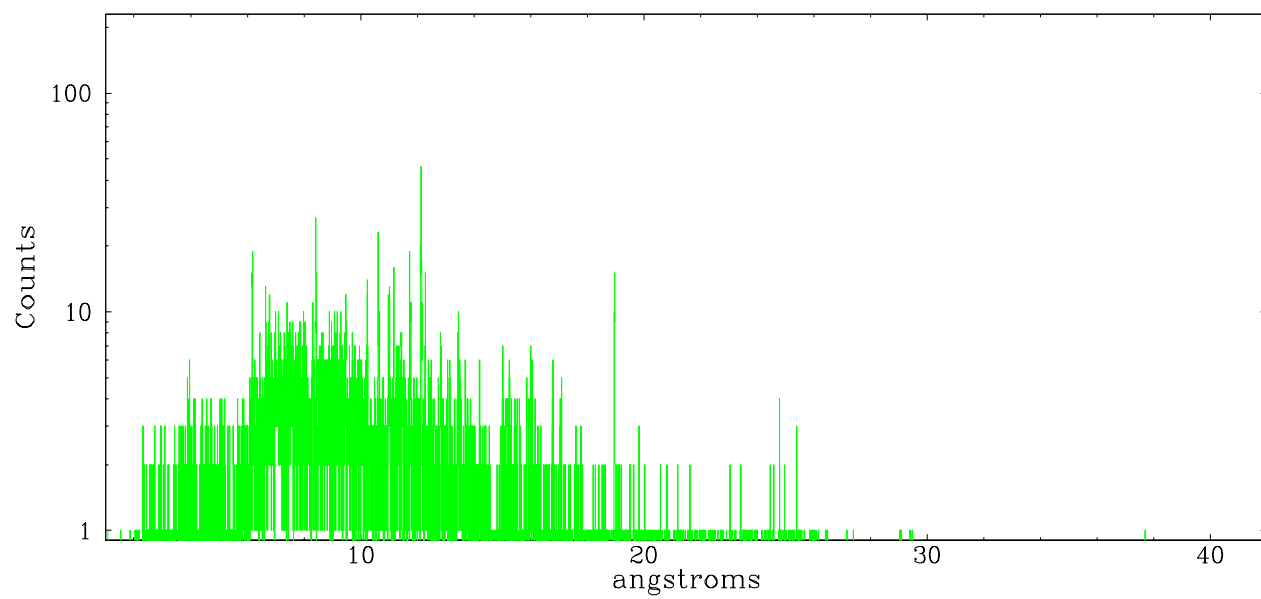


Full Detector MEG

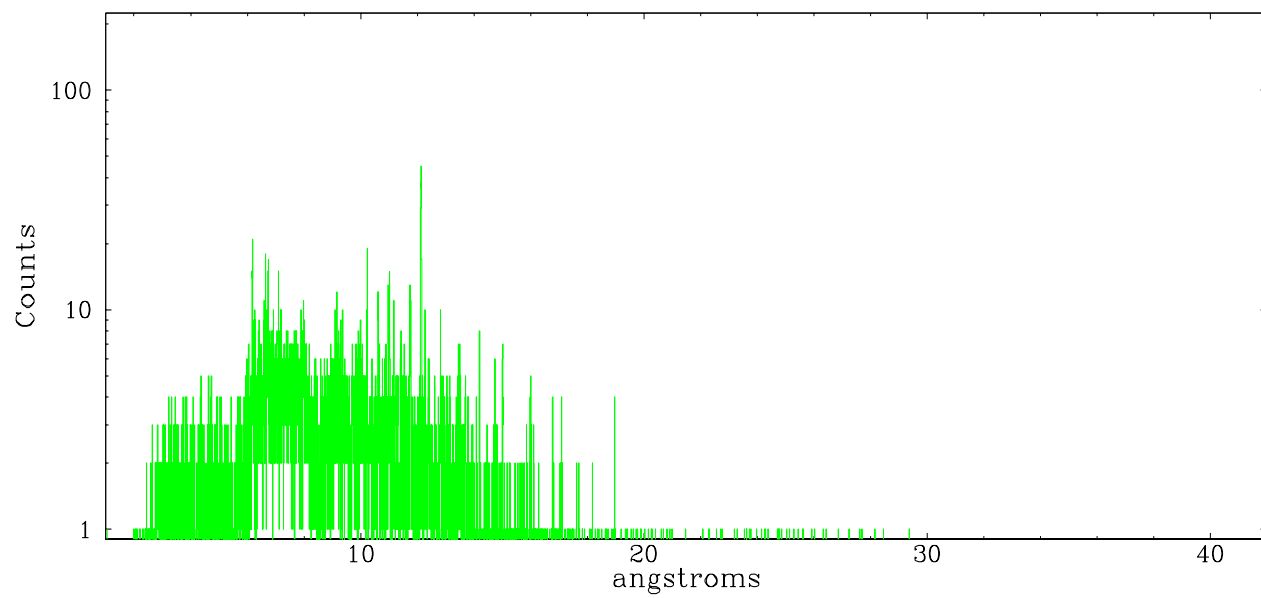
|        | order<br>-3 | order<br>-2 | order<br>-1 | order<br>0 | order<br>1 | order<br>2 | order<br>3 |
|--------|-------------|-------------|-------------|------------|------------|------------|------------|
| Events | 696         | 317         | 7533        | 5617       | 6921       | 219        | 449        |



meg order -1



meg order +1



# A Summary

## A.1 Status

|                            |             |
|----------------------------|-------------|
| V&V Scientist              | Joy Nichols |
| V&V Date (YYYY-MM-DD)      | 2006.09.27  |
| V&V Edition                | 1           |
| V&V Disposition and Status | OK          |
| V&V Charge Time            | 22.755      |

## A.2 Comments

Observation taken 6 days after Obsid 2531, within time interval constraints provided by PI.