

# V&V Reference Report

## L2 ASCDS Version : 7.6.8.1

Observation 2745 - L2 Version 001  
Chandra X-Ray Center

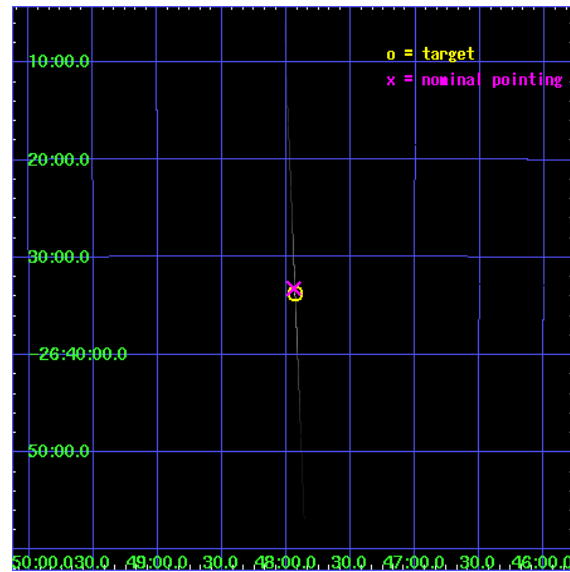
L2 Processing Date : Sep 9 2006

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# 1 Front

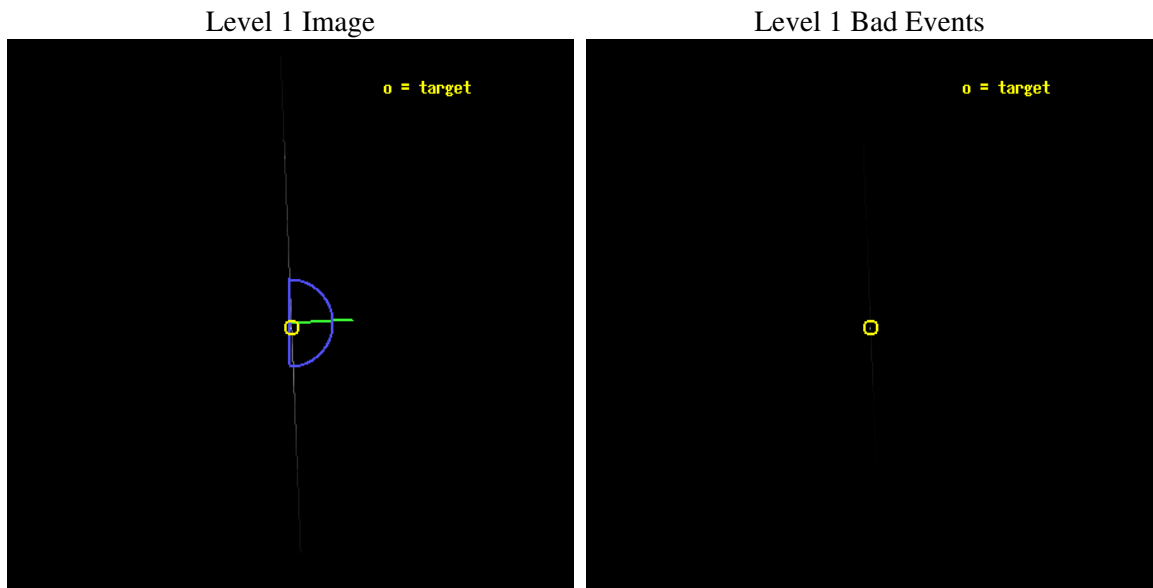
|          |   |
|----------|---|
| seq_num  | 400225                                    |
| obs_id   | 2745                                      |
| title    | WIND ACCRETION IN LOW-MASS X-RAY BINARIES |
| observer | Dr. Duncan Galloway                       |
| object   | GX 3+1                                    |
| ra_targ  | 266.983333                                |
| dec_targ | -26.5635                                  |
| ra_nom   | 266.98567250093                           |
| dec_nom  | -26.553982444173                          |
| roll_nom | 87.63368711854                            |
| revision | 3   |
| ontime   | 8999.8587467968                           |
| livetime | 8964.7030485672                           |
| ontime4  | 7763.9624061286                           |
| ontime5  | 10551.0                                   |
| ontime6  | 7019.8138562143                           |
| ontime7  | 8999.8587467968                           |
| ontime8  | 8422.0756978393                           |
| ontime9  | 8594.0413615704                           |
| l2events | 1616806                                   |



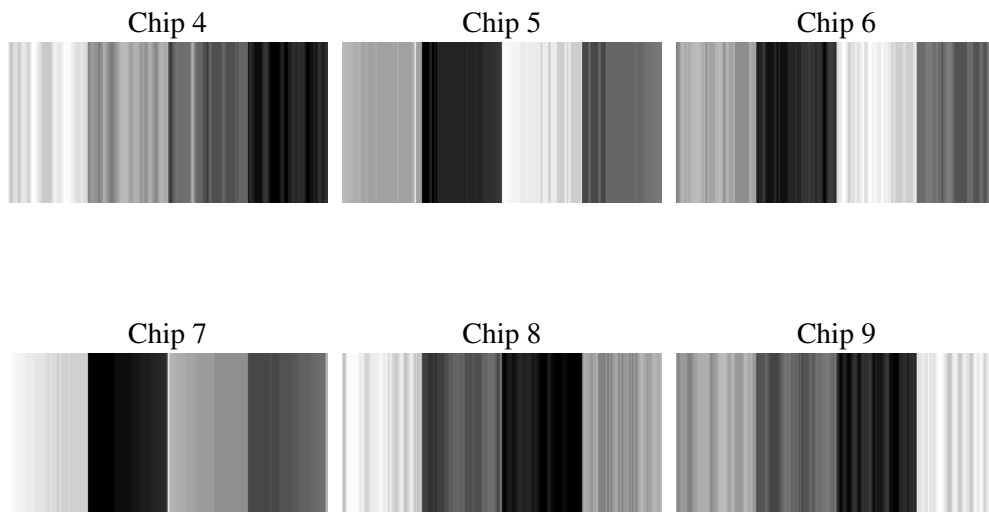
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

|          |                     |
|----------|---------------------|
| obi_num  | 1                   |
| ascdsver | 7.6.8.1             |
| caldsver | 3.2.3               |
| date     | 2006-09-09T16:41:56 |
| revision | 2                   |

|                |                 |
|----------------|-----------------|
| sched_exp_time | 9700.000000     |
| ontime         | 9210.3495590985 |
| ontime4        | 7974.4536324143 |
| ontime5        | 10762.950974047 |
| ontime6        | 7231.7646926045 |
| ontime7        | 9210.3495590985 |
| ontime8        | 8632.5663740039 |
| ontime9        | 8803.2659052014 |
| l1events       | 1818090         |

### 2.1.4 Events

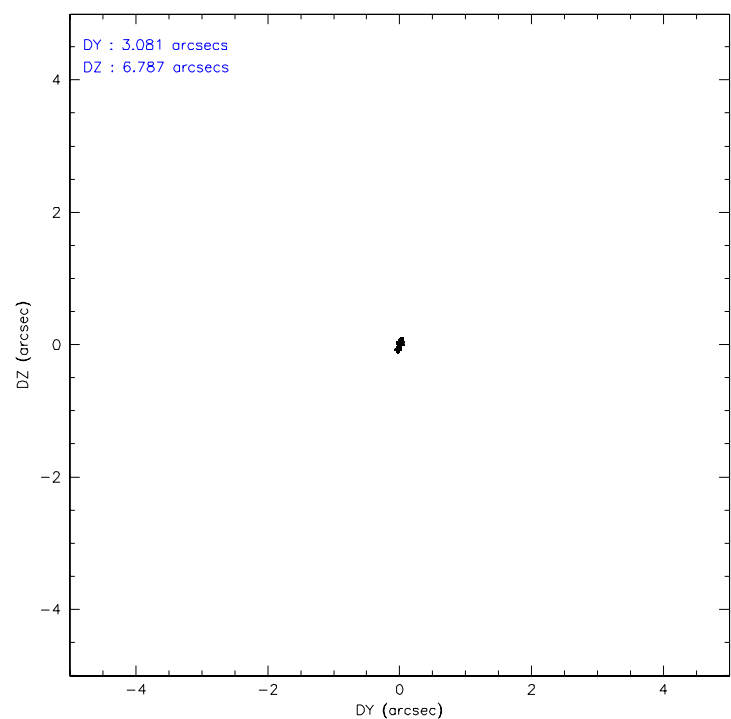
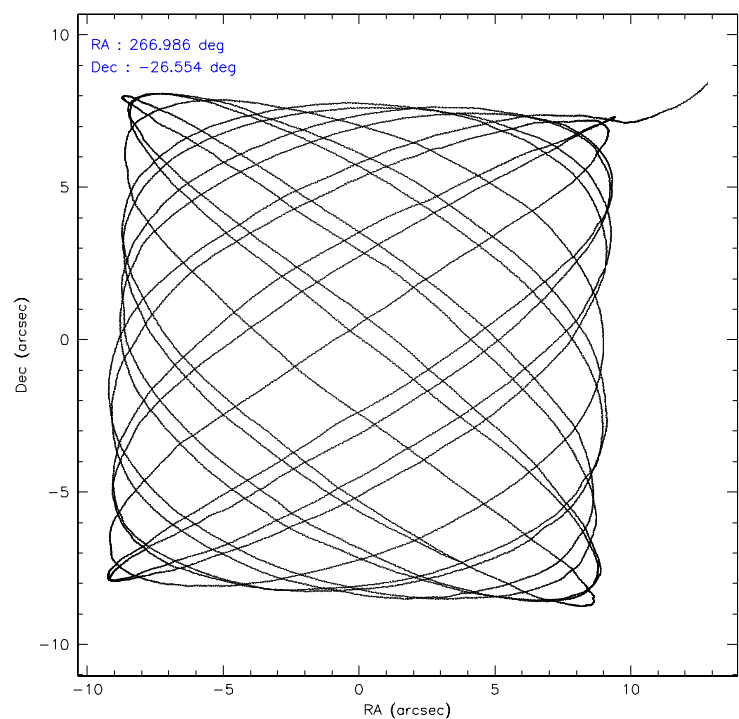
|                 | ccd 4 | ccd 5  | ccd 6  | ccd 7   | ccd 8  | ccd 9 |
|-----------------|-------|--------|--------|---------|--------|-------|
| level 1 events  | 22276 | 123625 | 305081 | 1183885 | 147992 | 35231 |
| rejected events | 2329  | 8744   | 12626  | 90630   | 6208   | 3119  |
| rejected %      | 10%   | 7%     | 4%     | 7%      | 4%     | 8%    |

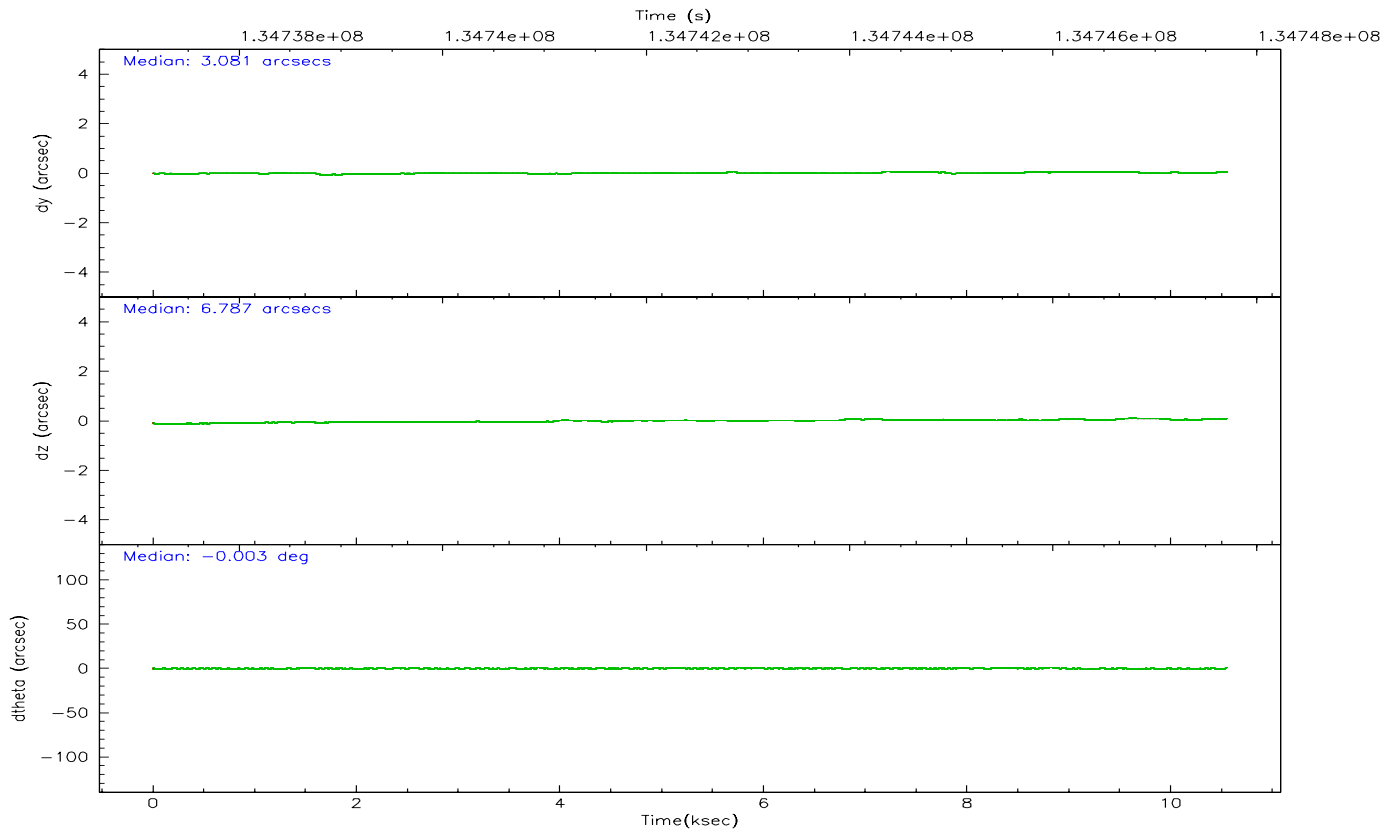
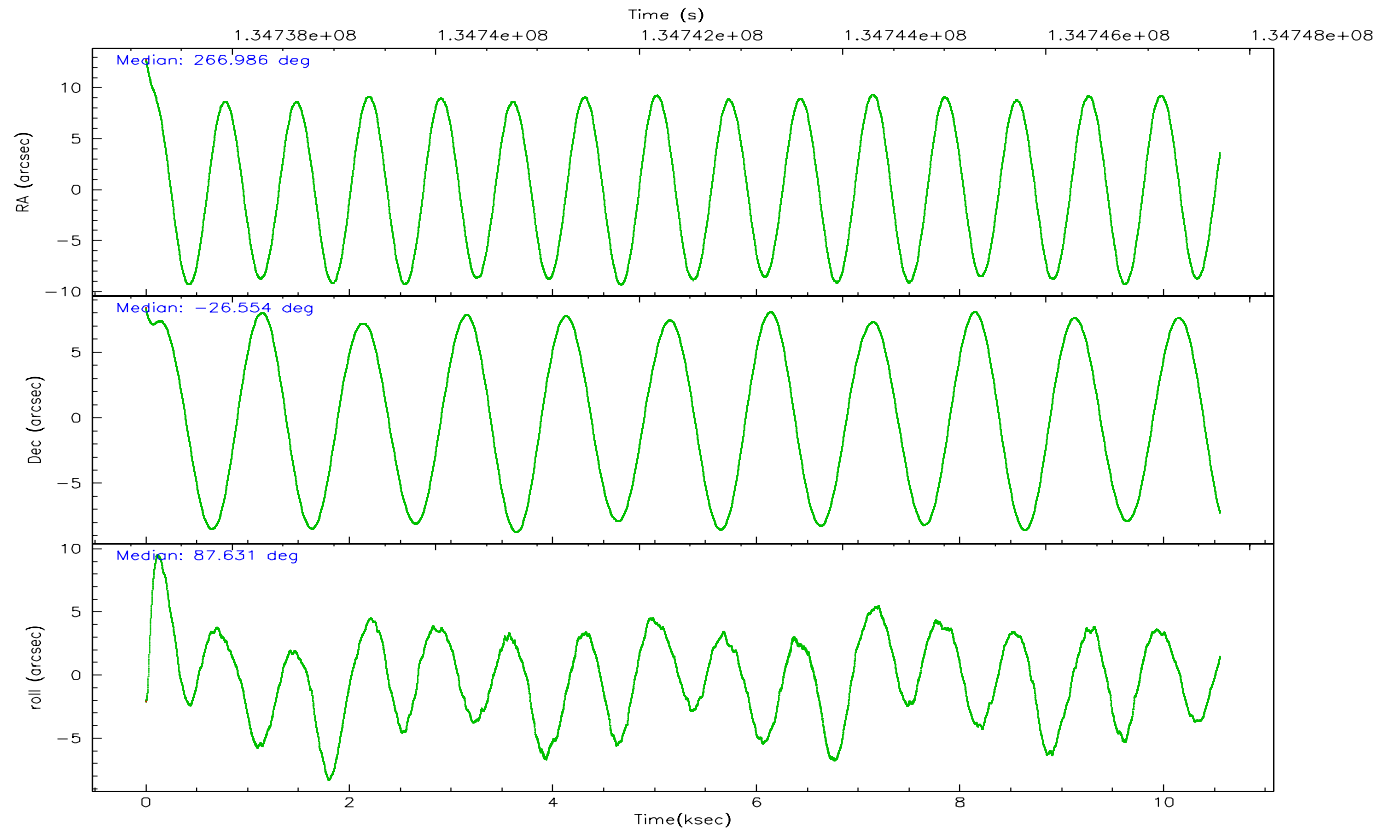
|                | ccd 4 | ccd 5 | ccd 6  | ccd 7  | ccd 8 | ccd 9 |
|----------------|-------|-------|--------|--------|-------|-------|
| grade 0 events | 4073  | 20810 | 36562  | 172086 | 70131 | 8666  |
|                | 18%   | 16%   | 11%    | 14%    | 47%   | 24%   |
| grade 1 events | 62    | 69    | 122    | 10988  | 213   | 65    |
|                | 0%    | 0%    | 0%     | 0%     | 0%    | 0%    |
| grade 2 events | 10904 | 43378 | 227153 | 304906 | 53197 | 16784 |
|                | 48%   | 35%   | 74%    | 25%    | 35%   | 47%   |
| grade 3 events | 1403  | 3555  | 3033   | 97893  | 5215  | 1637  |
|                | 6%    | 2%    | 0%     | 8%     | 3%    | 4%    |
| grade 4 events | 1446  | 3536  | 2945   | 94316  | 5053  | 1685  |
|                | 6%    | 2%    | 0%     | 7%     | 3%    | 4%    |
| grade 5 events | 1753  | 6140  | 3420   | 62728  | 3487  | 2458  |
|                | 7%    | 4%    | 1%     | 5%     | 2%    | 6%    |
| grade 6 events | 2635  | 46137 | 31846  | 440968 | 10696 | 3936  |
|                | 11%   | 37%   | 10%    | 37%    | 7%    | 11%   |
| grade 7 events | 0     | 0     | 0      | 0      | 0     | 0     |
|                | 0%    | 0%    | 0%     | 0%     | 0%    | 0%    |

## 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                            | CC33_FAINT          | CC33_FAINT           | On-chip summing requested       | N         | N       |
| Observation mode                     | POINTING            | POINTING             | Subarray requested              | NONE      | NONE    |
| Pointing RA                          | 267.000148          | 266.9856725009338    | Alternating exposures requested | N         | N       |
| Pointing Dec                         | -26.578010          | -26.55398244417251   | Primary exposure time           | 0.000000  | 0       |
| Pointing Roll                        | 87.483543           | 87.63368711854042    |                                 |           |         |
| Roll angle                           | 90.000000           | 90.000000            |                                 |           |         |
| Roll tolerance                       | 90.000000           | 90.000000            |                                 |           |         |
| Roll constraint allows 180D rotation | N                   | N                    |                                 |           |         |
| SIM focus pos (mm)                   | -0.684267           | -0.6828225247311905  |                                 |           |         |
| SIM defocus (mm)                     | 0                   | 0.001444936568705701 |                                 |           |         |
| SIM translation stage pos (mm)       | -184.272523         | -184.2666255054277   |                                 |           |         |
| SIM translation stage offset (mm)    | -5.86               | -5.865897077580087   |                                 |           |         |
| Observation start time               | 134738011.184000    | 134736714.56789      |                                 |           |         |
| Observation start date               | 2002-04-09T11:12:27 | 2002-04-09T10:51:54  |                                 |           |         |
| Observation end time                 | 134747711.184000    | 134748878.75588      |                                 |           |         |
| Observation end date                 | 2002-04-09T13:54:07 | 2002-04-09T14:14:38  |                                 |           |         |
| Read mode                            | CONTINUOUS          | CONTINUOUS           |                                 |           |         |

## 2.3 Aspect





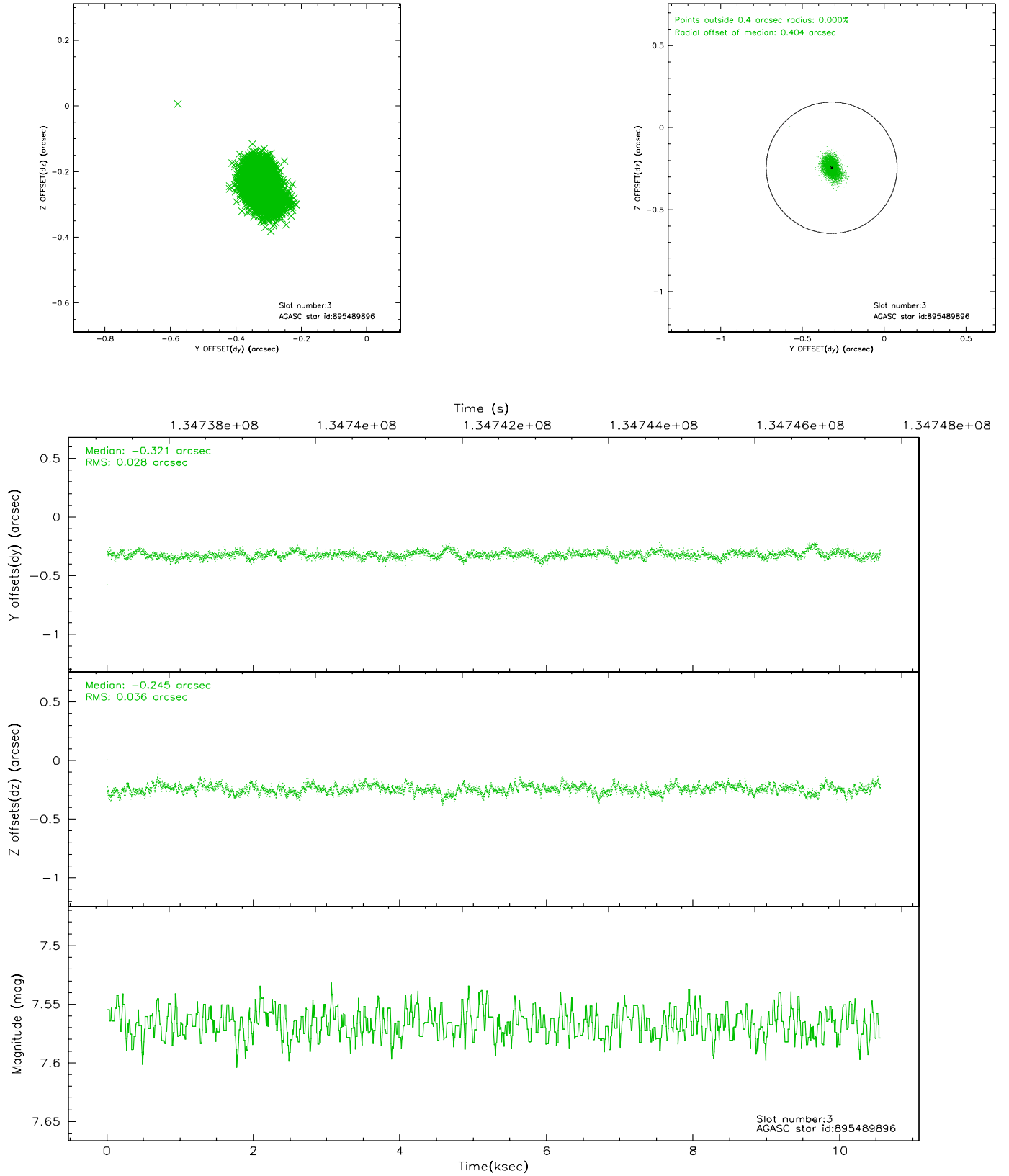
### Slot Statistics

| slot | status | id        | mag   | n_pts | med_dy | med_dz | dr1   | dr2   | ra         | dec        | mean_y   | mean_z   |
|------|--------|-----------|-------|-------|--------|--------|-------|-------|------------|------------|----------|----------|
| 0    | FID    | ACIS-S-2  | 7.08  | 2575  | -0.018 | -0.093 | 0.007 | 0.011 | 0.000000   | 0.000000   | -755.35  | -1848.94 |
| 1    | FID    | ACIS-S-4  | 7.19  | 2575  | -0.057 | 0.033  | 0.005 | 0.008 | 0.000000   | 0.000000   | 2157.68  | 59.07    |
| 2    | FID    | ACIS-S-5  | 7.24  | 2574  | 0.044  | 0.068  | 0.006 | 0.010 | 0.000000   | 0.000000   | -1807.47 | 53.39    |
| 3    | GUIDE  | 895489896 | 7.57  | 5149  | -0.321 | -0.245 | 0.047 | 0.081 | 266.605795 | -26.200300 | 1299.47  | 1331.63  |
| 4    | GUIDE  | 896008728 | 9.22  | 5150  | 0.283  | 0.239  | 0.096 | 0.153 | 267.399580 | -27.194977 | -2164.95 | -1375.46 |
| 5    | GUIDE  | 896014680 | 8.77  | 5149  | 0.285  | -0.137 | 0.088 | 0.139 | 266.460330 | -27.216583 | -2377.18 | 1624.61  |
| 6    | GUIDE  | 895487032 | 9.50  | 5135  | -0.119 | 0.122  | 0.104 | 0.164 | 267.405172 | -25.982039 | 2197.68  | -1215.26 |
| 7    | GUIDE  | 895486072 | 10.16 | 5144  | -0.132 | 0.022  | 0.167 | 0.266 | 267.061120 | -25.933414 | 2326.51  | -95.84   |

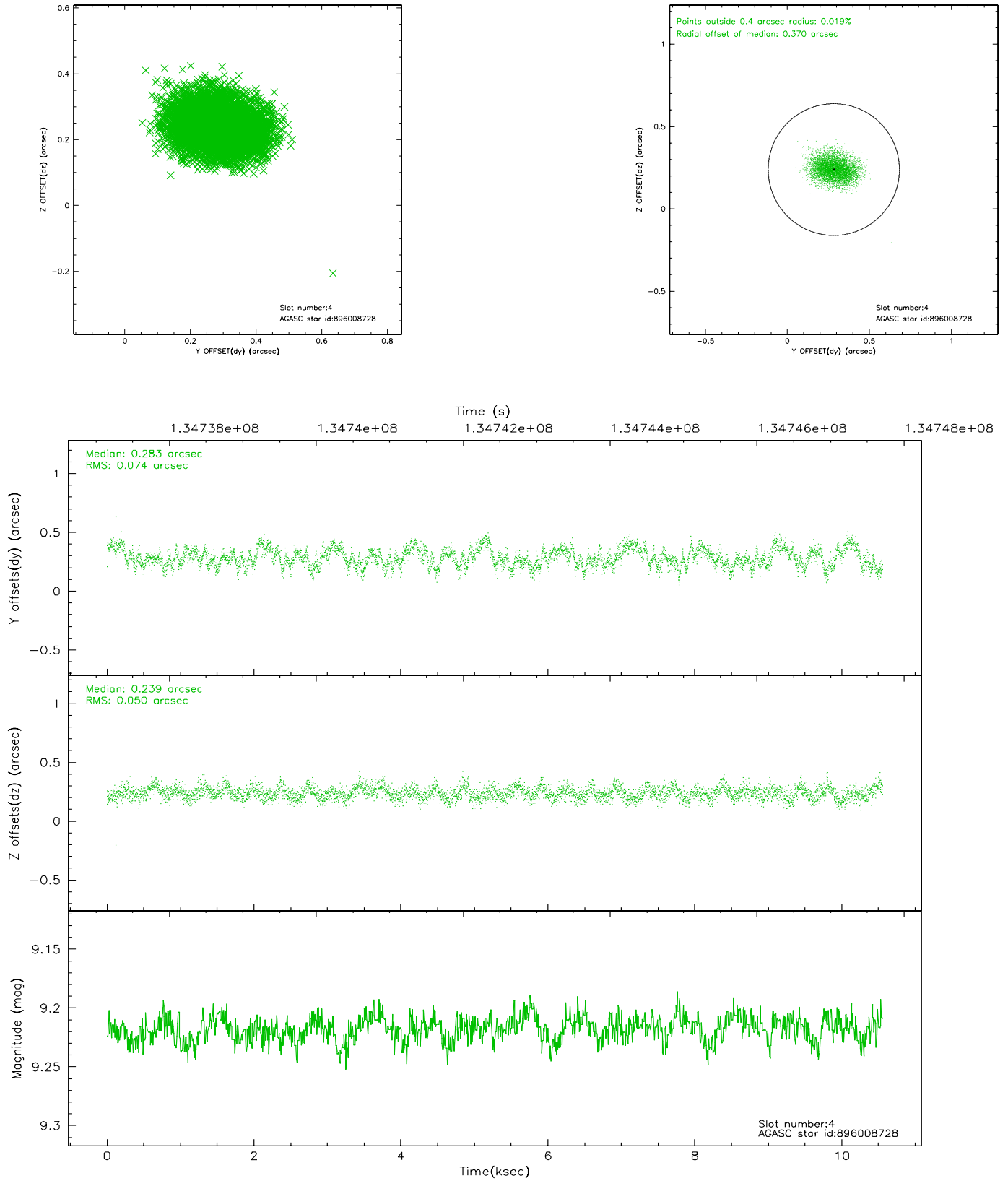


## 2.4 Star Slots

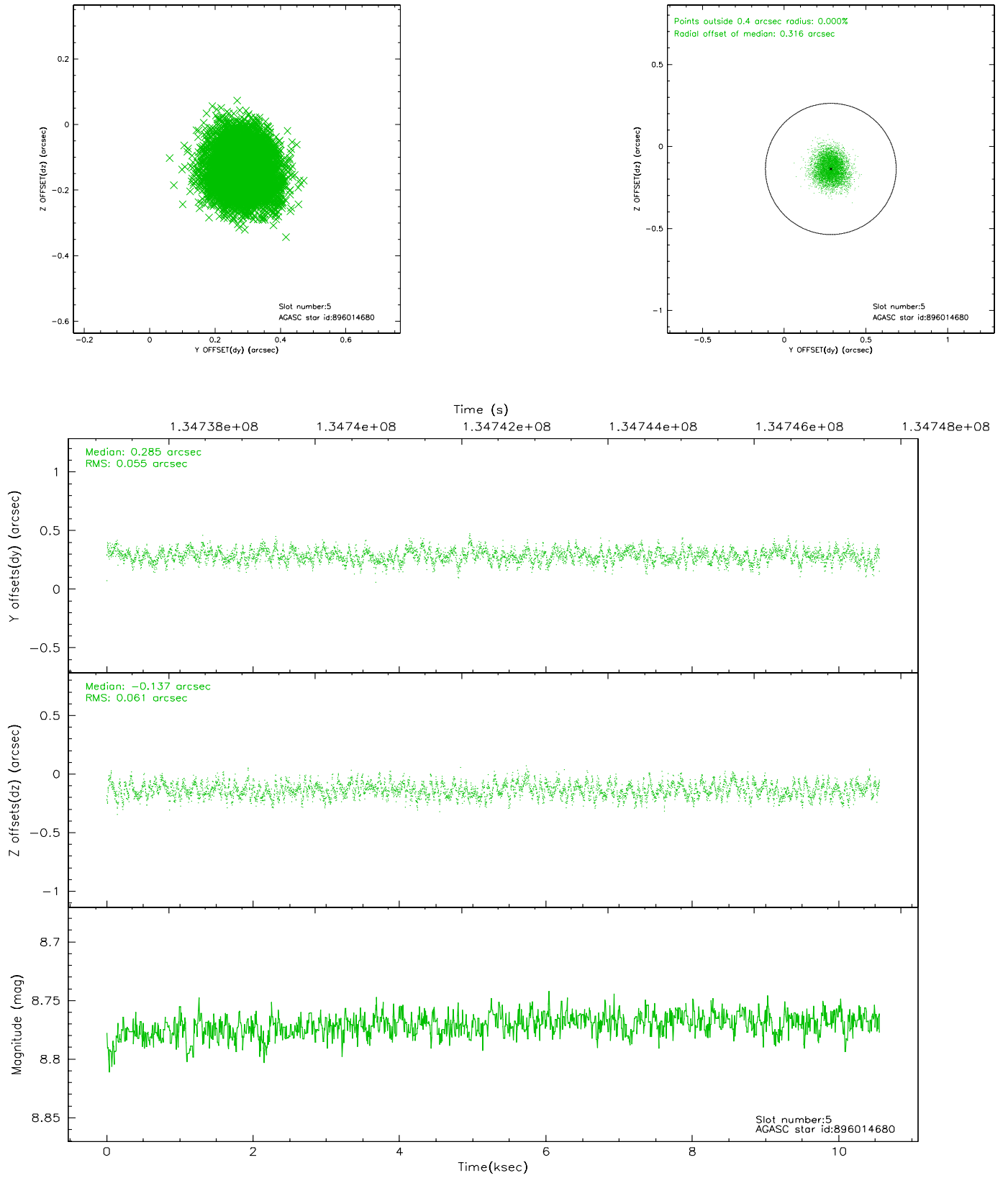
### 2.4.1 Slot 3



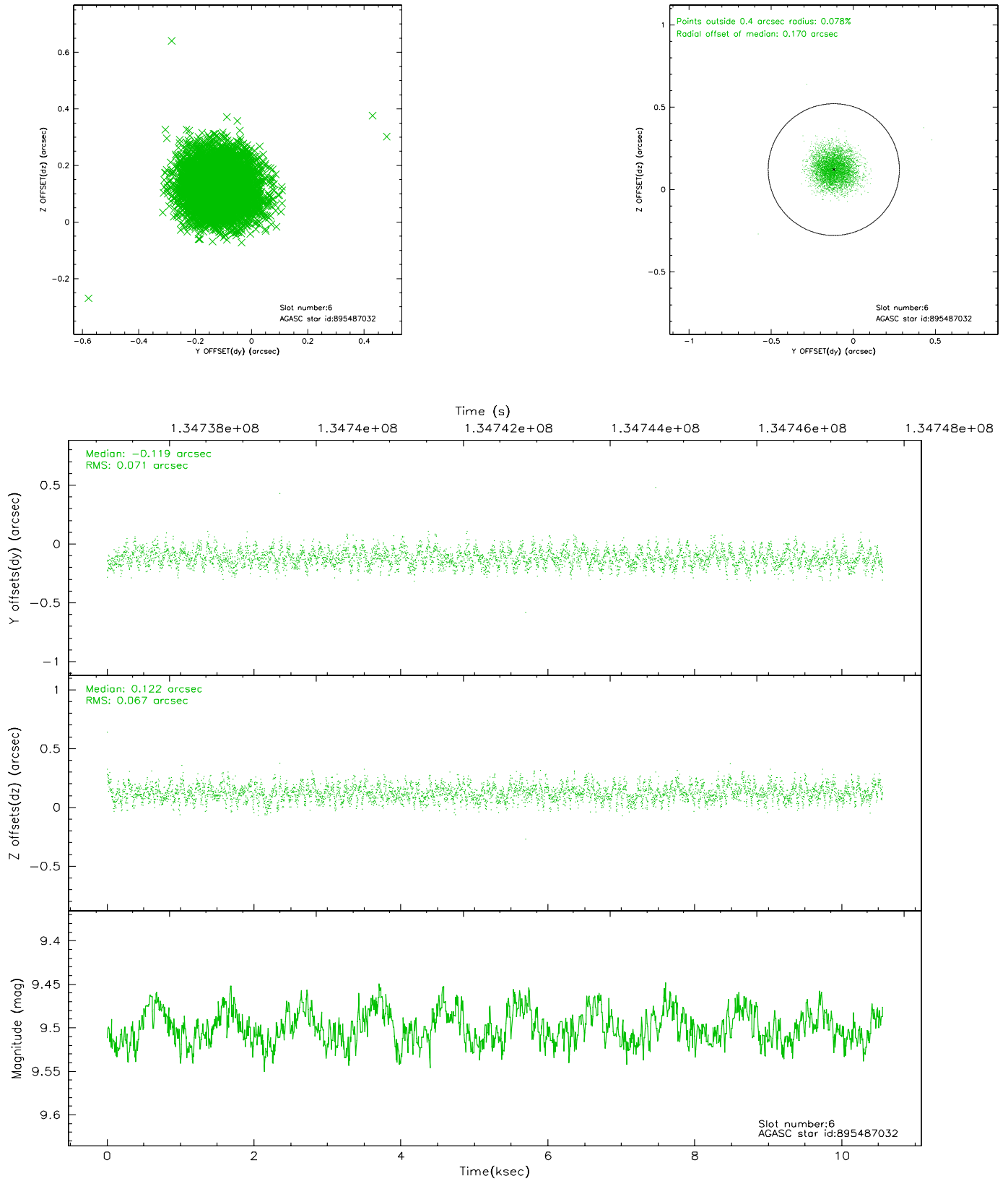
## 2.4.2 Slot 4



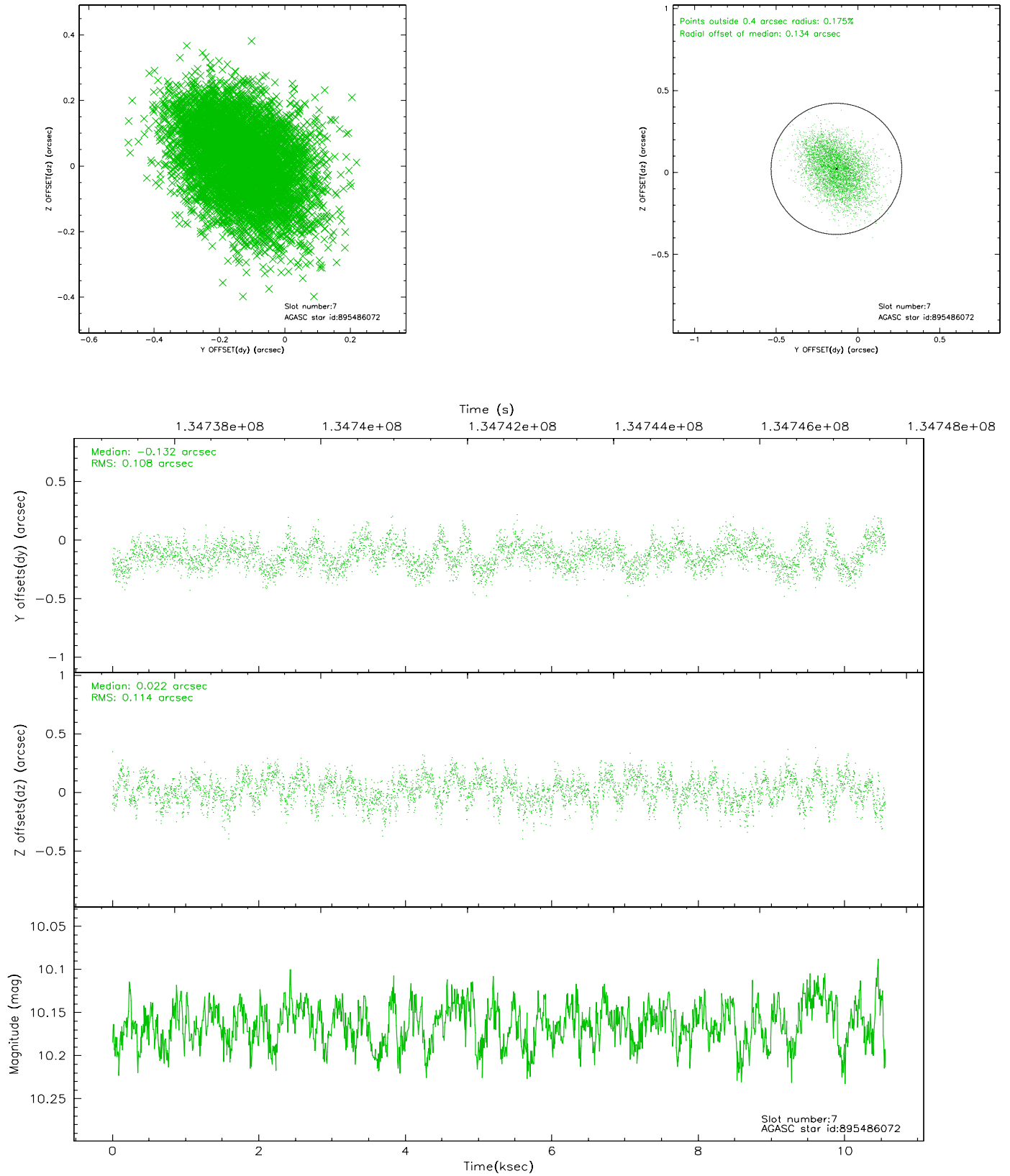
### 2.4.3 Slot 5



## 2.4.4 Slot 6

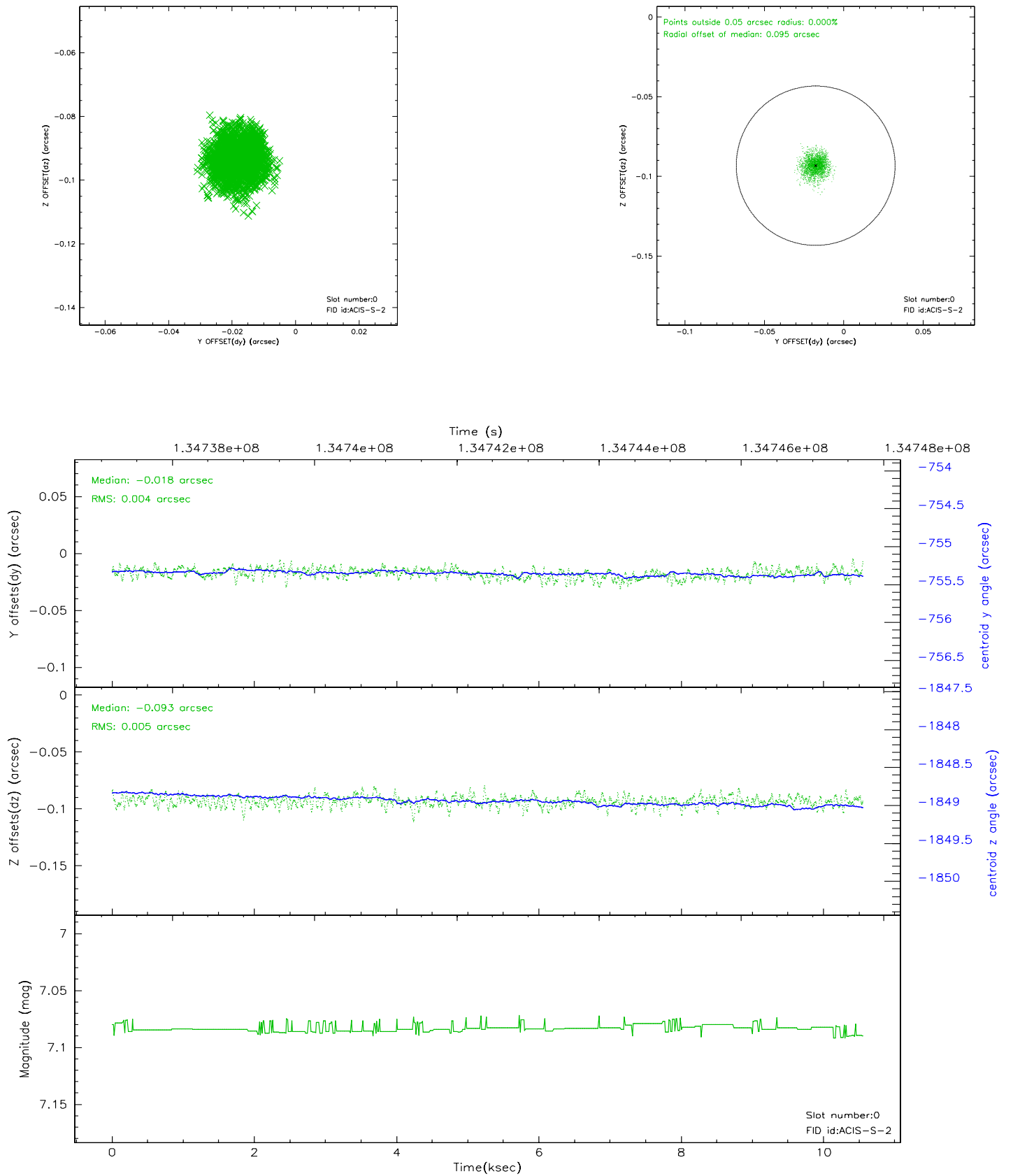


## 2.4.5 Slot 7

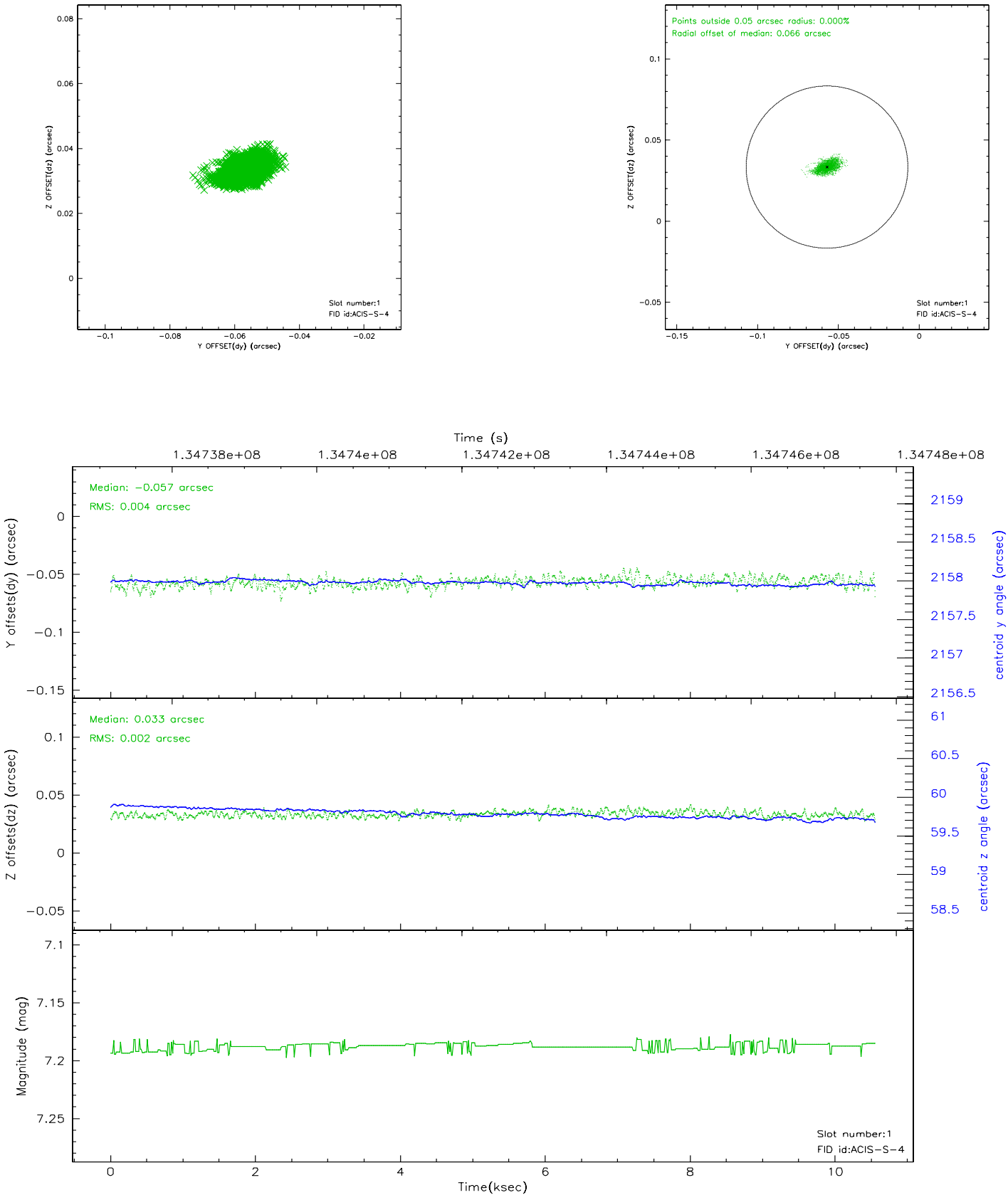


## 2.5 FID Slots

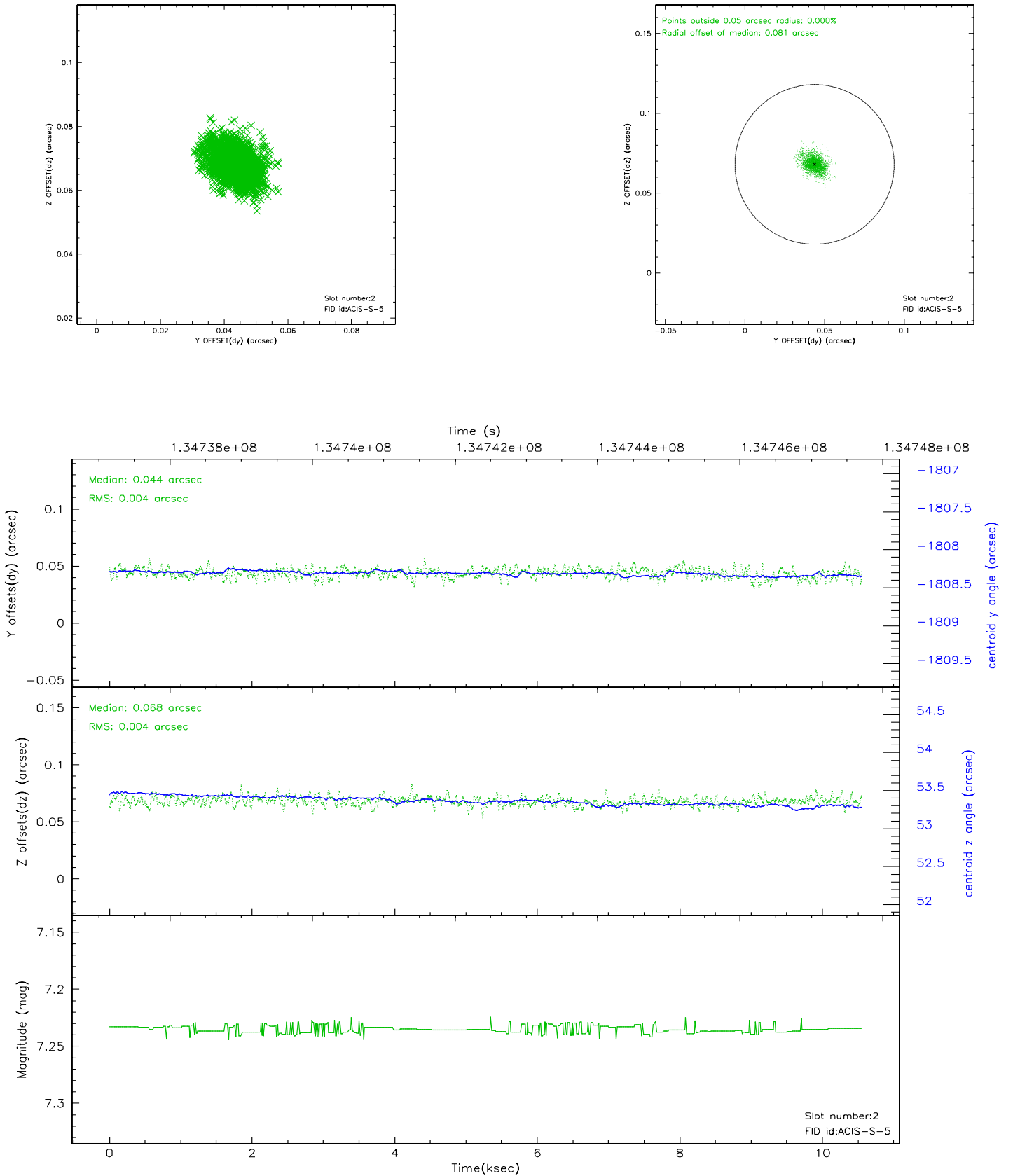
### 2.5.1 Slot 0



2.5.2 Slot 1



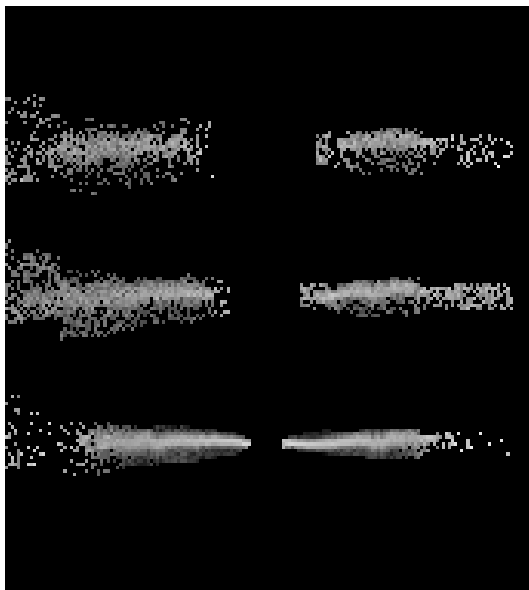
### 2.5.3 Slot 2



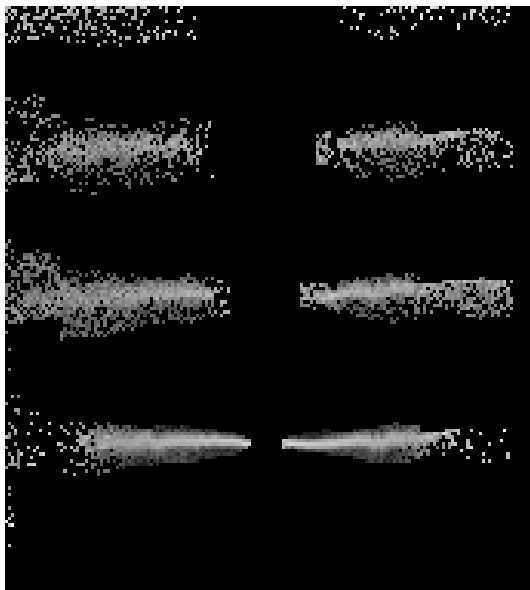


# 3 Gratings

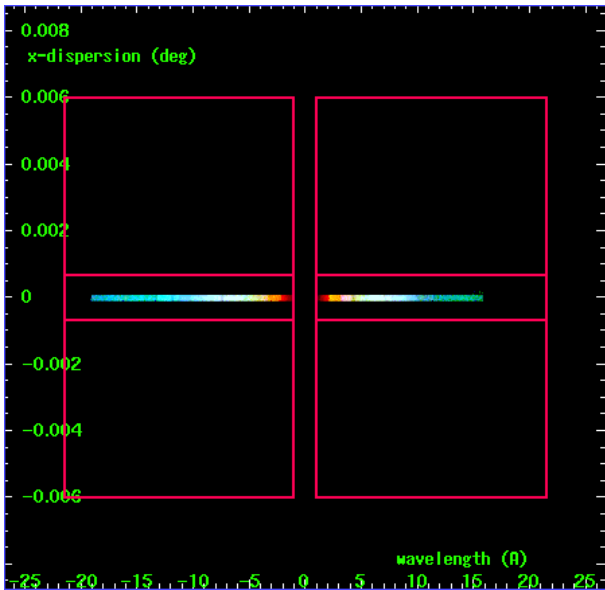
## 3.1 HEG Arm



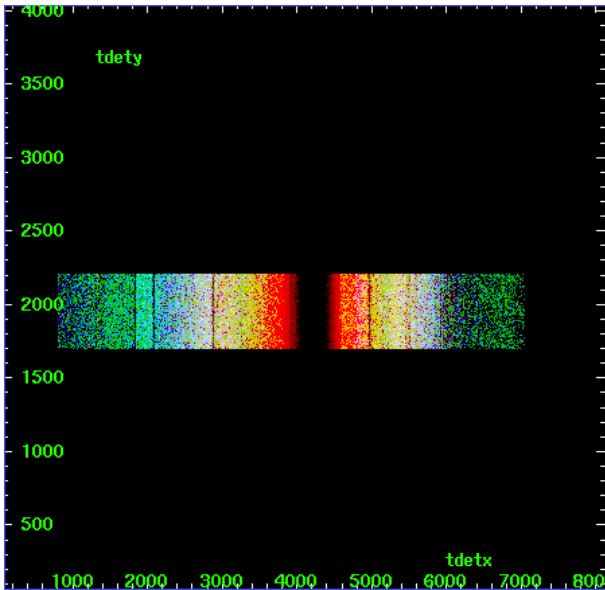
HEG Order Sort 123



HEG Order Sort ALL

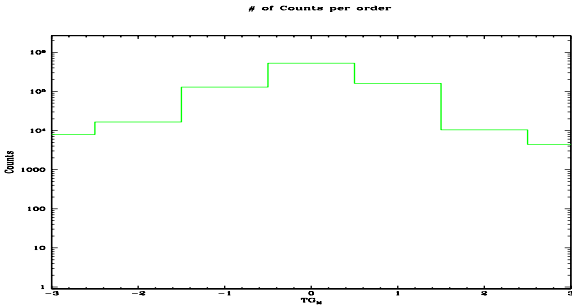


Spot Image HEG

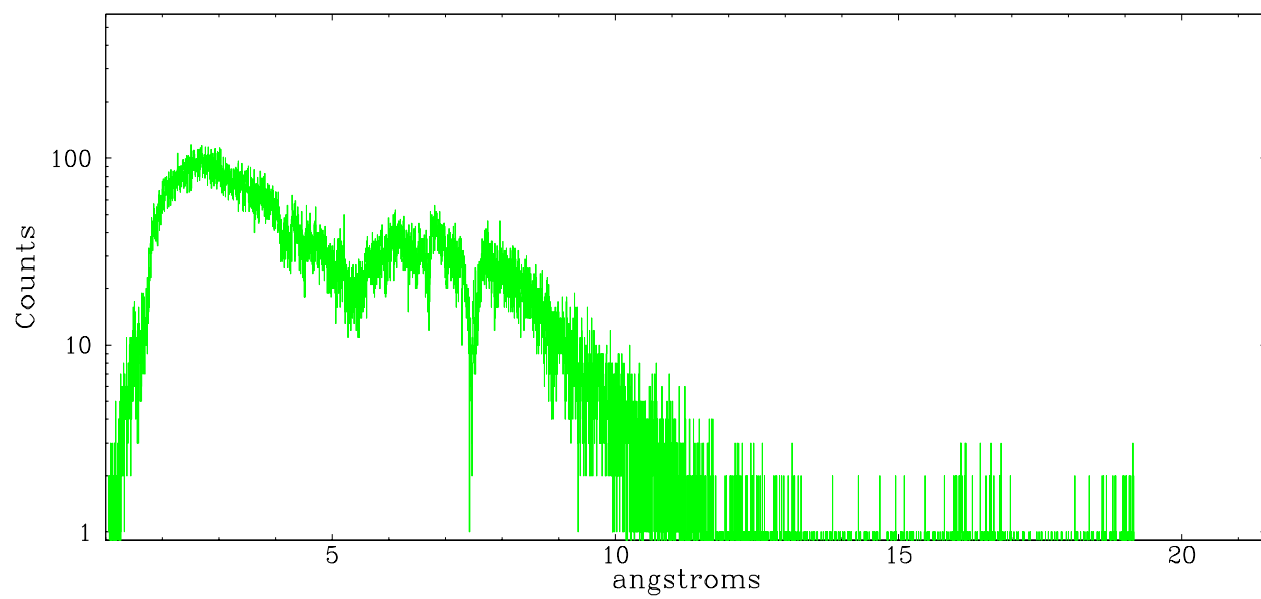


Full Detector HEG

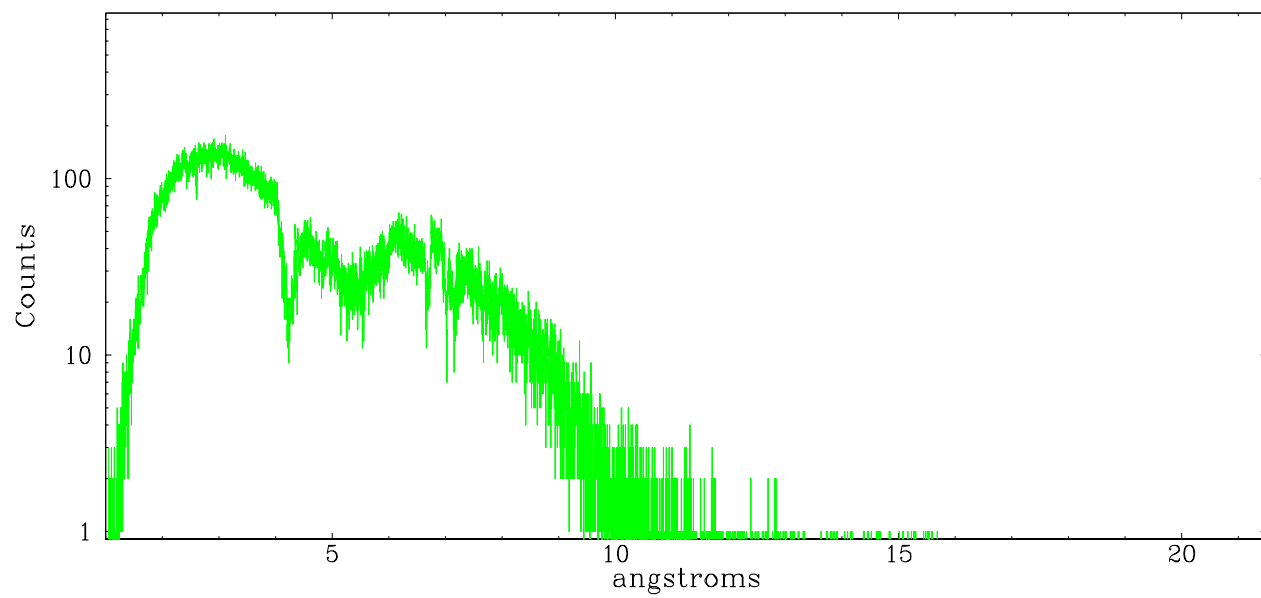
|        | order<br>-3 | order<br>-2 | order<br>-1 | order 0 | order 1 | order<br>2 | order<br>3 |
|--------|-------------|-------------|-------------|---------|---------|------------|------------|
| Events | 7895        | 16488       | 128243      | 525847  | 159746  | 10417      | 4402       |



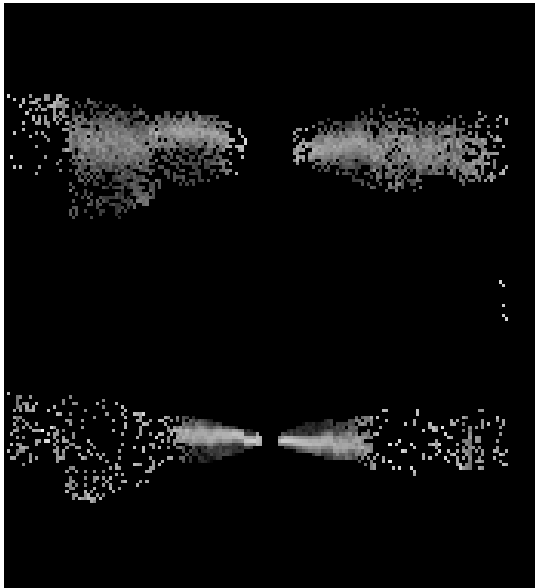
heg order -1



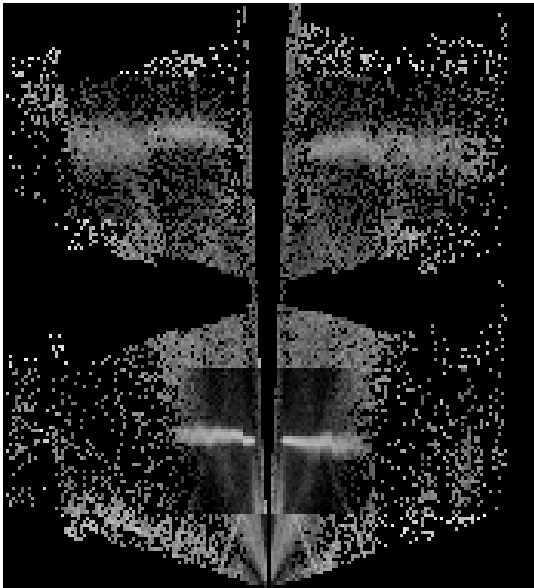
heg order +1



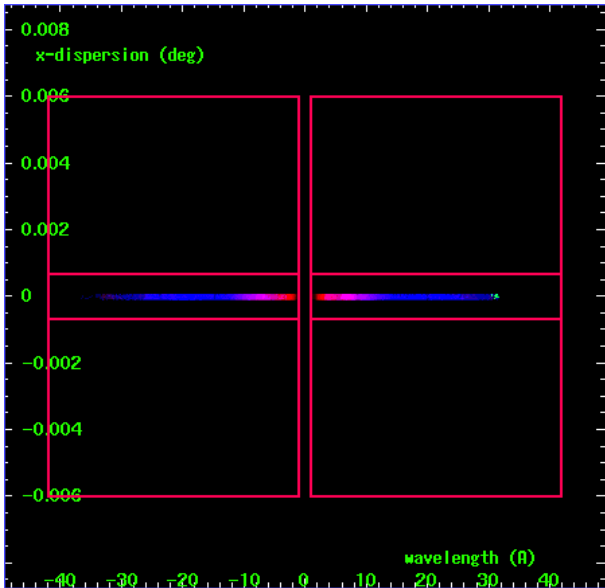
3.2 MEG Arm



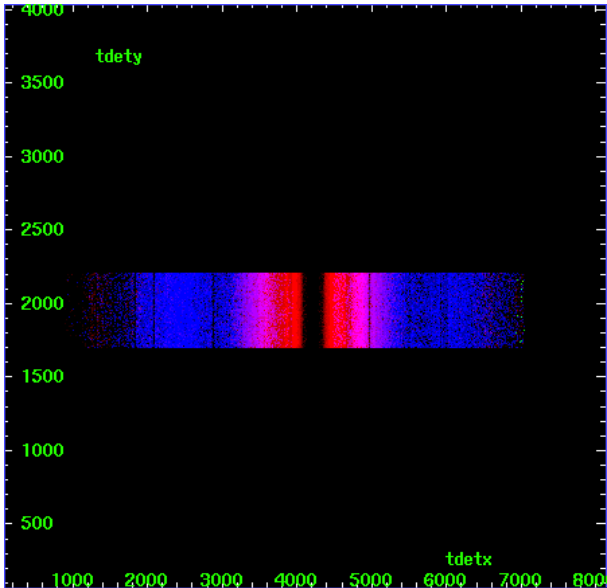
MEG Order Sort 123



MEG Order Sort ALL

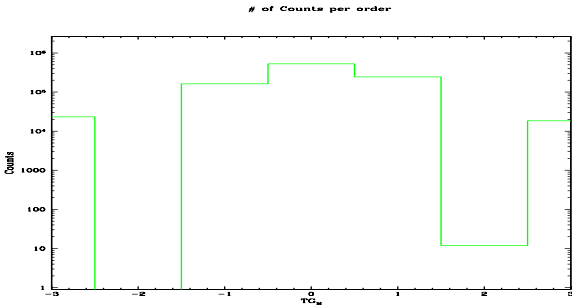


Spot Image MEG

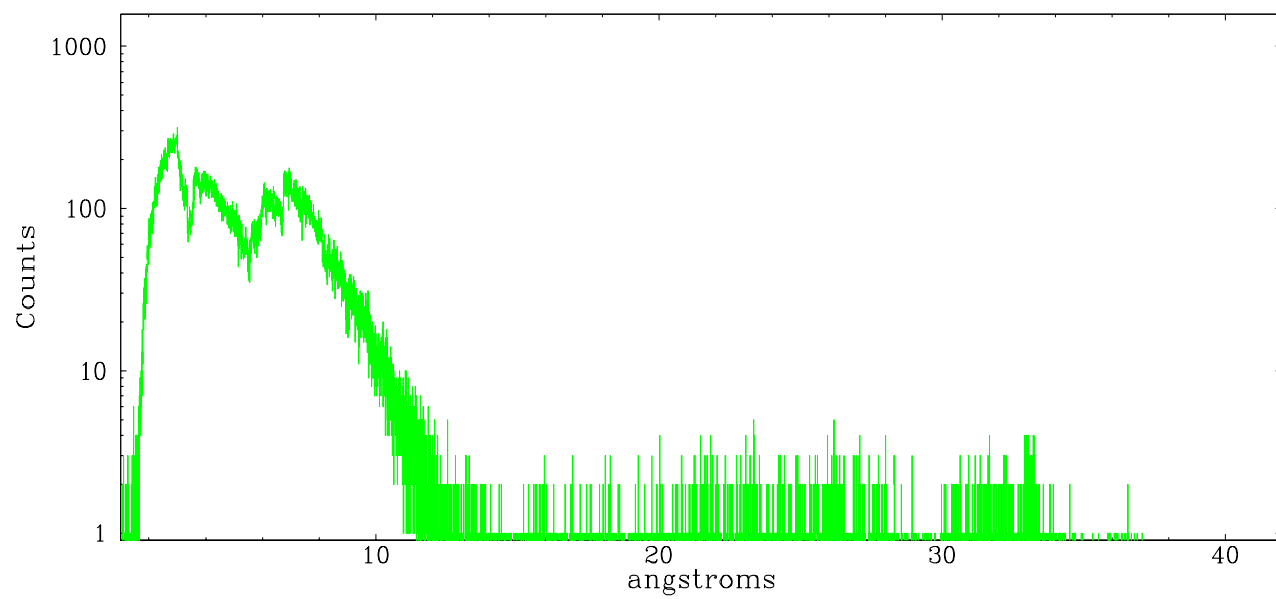


Full Detector MEG

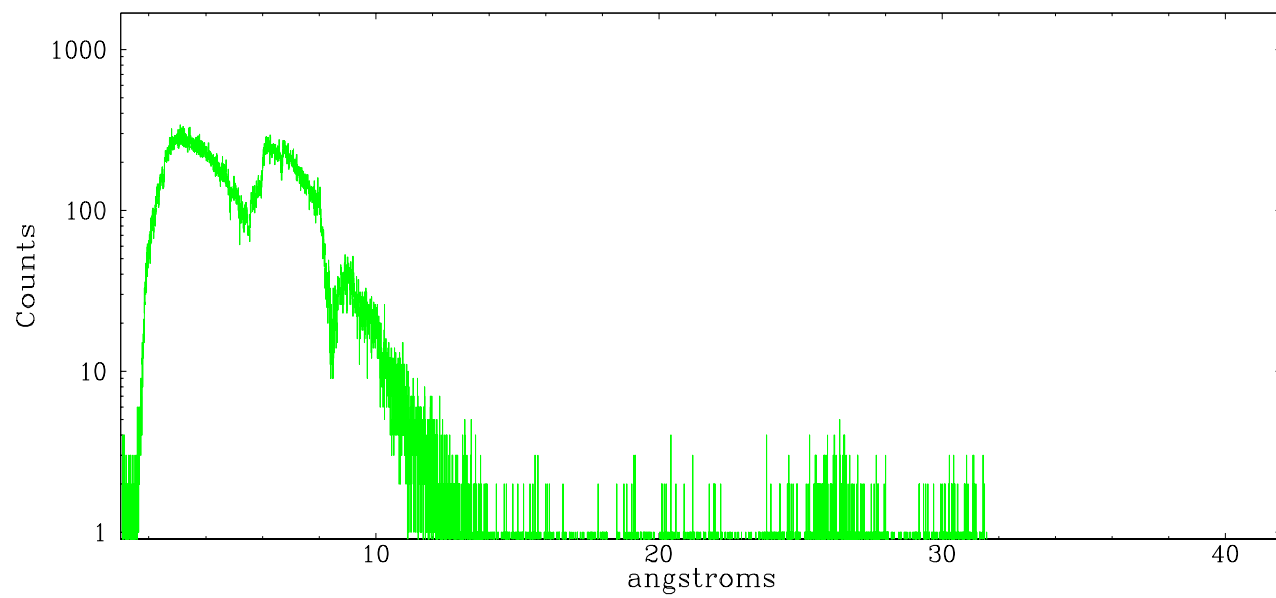
|        | order<br>-3 | order<br>-2 | order<br>-1 | order<br>0 | order<br>1 | order<br>2 | order<br>3 |
|--------|-------------|-------------|-------------|------------|------------|------------|------------|
| Events | 23175       | 0           | 162344      | 525847     | 242730     | 12         | 18504      |



meg order -1



meg order +1



## A Summary

### A.1 Status

|                            |                    |
|----------------------------|--------------------|
| V&V Scientist              | David Huenemoerder |
| V&V Date (YYYY-MM-DD)      | 2006.09.15         |
| V&V Edition                | 1                  |
| V&V Disposition and Status | OK                 |
| V&V Charge Time            | 10.55              |

### A.2 Comments