

# V&V Reference Report

## L2 ASCDS Version : 8.4.5

Observation 1888 - L2 Version 4  
Chandra X-Ray Center

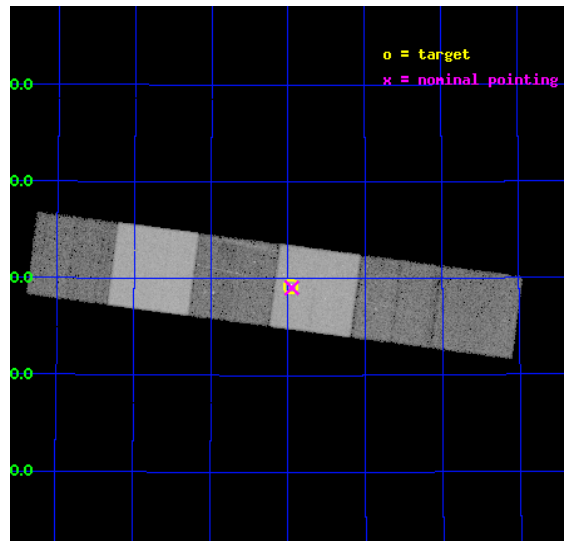
L2 Processing Date : Sep 16 2012

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# 1 Front

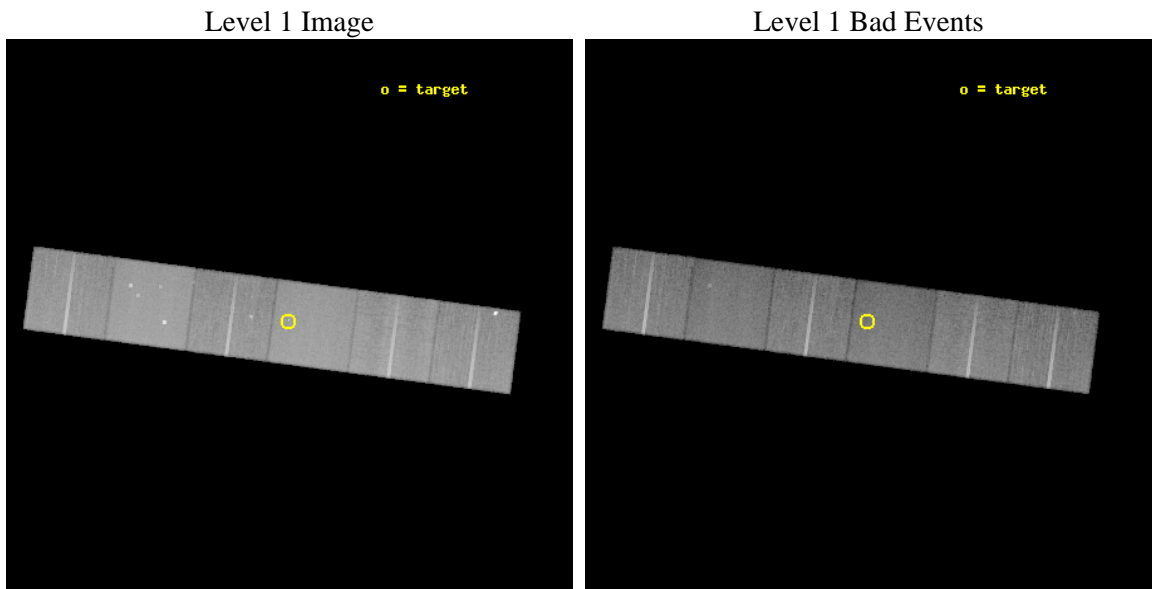
|          |  |   |
|----------|--|---|
| seq_num  | 200116   | Sequence number                             |
| obs_id   | 1888   | Observation id                              |
| title    | HIGH RESOLUTION SPECTROSCOPY AND VARIABILITY OF THE TRAPEZIUM-LIKE SYSTEM HD 206267 IN IC 1396 | Proposal title                              |
| observer | DR. NORBERT SCHULZ   | Principal investigator                      |
| object   | HD 206267  | Source name                                 |
| dtcycle  | 0  | &#160                                       |
| cycle    | P  | events from which exps?<br>Prim/Second/Both |
| ra_targ  | 324.739583   | Observer's specified target RA [deg]        |
| dec_targ | 57.486389  | Observer's specified target Dec [deg]       |
| ra_nom   | 324.73752423741  | Nominal RA [deg]                            |
| dec_nom  | 57.484509081789  | Nominal Dec [deg]                           |
| roll_nom | 7.5063549847656  | Nominal Roll [deg]                          |
| revision | 4  | Processing version of data                  |
| ontime   | 34562.099711701  | Sum of GTIs [s]                             |
| livetime | 34124.453594354  | Livetime [s]                                |
| ontime4  | 34562.140751705  | Sum of GTIs [s]                             |
| ontime5  | 34562.058671698  | Sum of GTIs [s]                             |
| ontime6  | 34562.01763171   | Sum of GTIs [s]                             |
| ontime7  | 34562.099711701  | Sum of GTIs [s]                             |
| ontime8  | 34561.976591706  | Sum of GTIs [s]                             |
| ontime9  | 34558.694561526  | Sum of GTIs [s]                             |
| l2events | 324107   | Number of level 2 events                    |



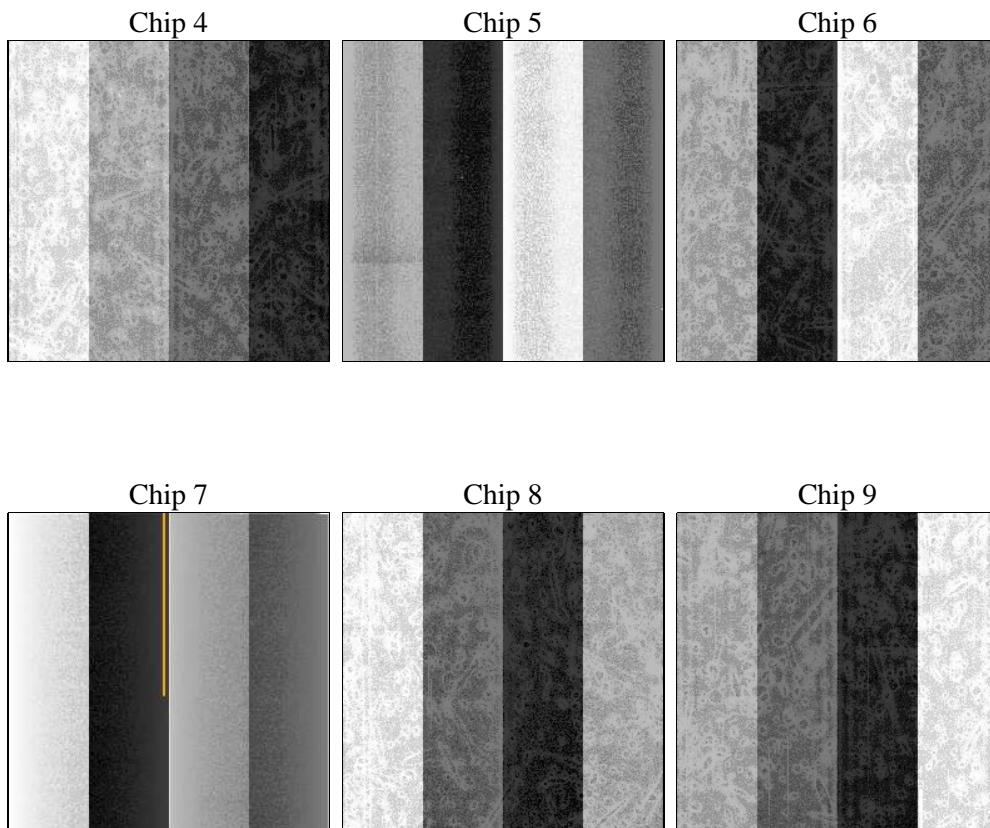
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

|          |                     |                                |                |                 |   |
|----------|---------------------|--------------------------------|----------------|-----------------|---|
| obi_num  | 0                   | Obi number                     | sched_exp_time | 34700.000000    | [s] Scheduled observation exposure time |
| ascdsver | 8.4.5               | Processing system revision     | ontime         | 34562.099711701 | Sum of GTIs [s]                         |
| caldbver | 4.5.1.1             | &#160                          | ontime4        | 34562.140751705 | Sum of GTIs [s]                         |
| date     | 2012-09-16T06:10:40 | Date and time of file creation | ontime5        | 34562.058671698 | Sum of GTIs [s]                         |
| revision | 4                   | Processing version of data     | ontime6        | 34562.01763171  | Sum of GTIs [s]                         |
|          |                     |                                | ontime7        | 34562.099711701 | Sum of GTIs [s]                         |
|          |                     |                                | ontime8        | 34561.976591706 | Sum of GTIs [s]                         |
|          |                     |                                | ontime9        | 34558.694561526 | Sum of GTIs [s]                         |
|          |                     |                                | l1events       | 1531918         | Number of level 1 events                |

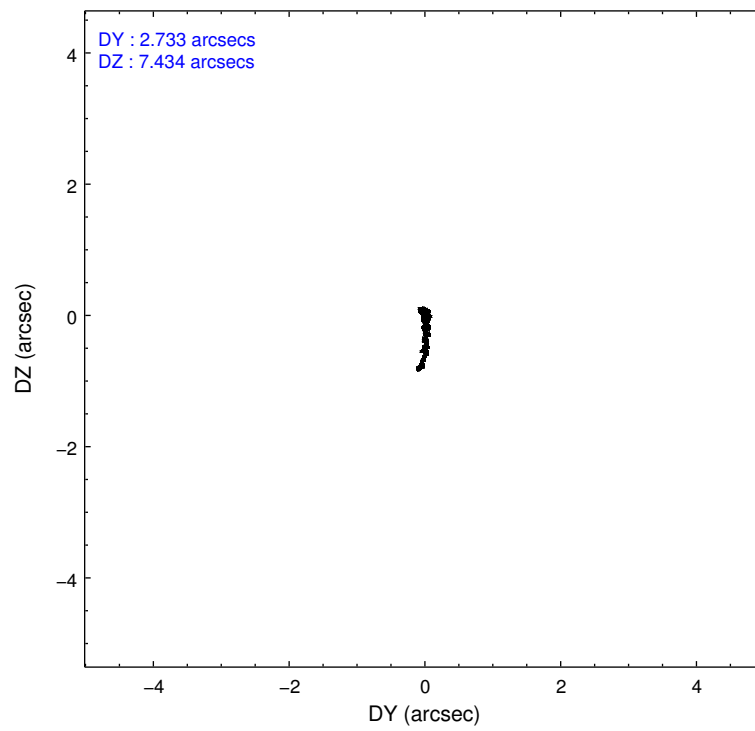
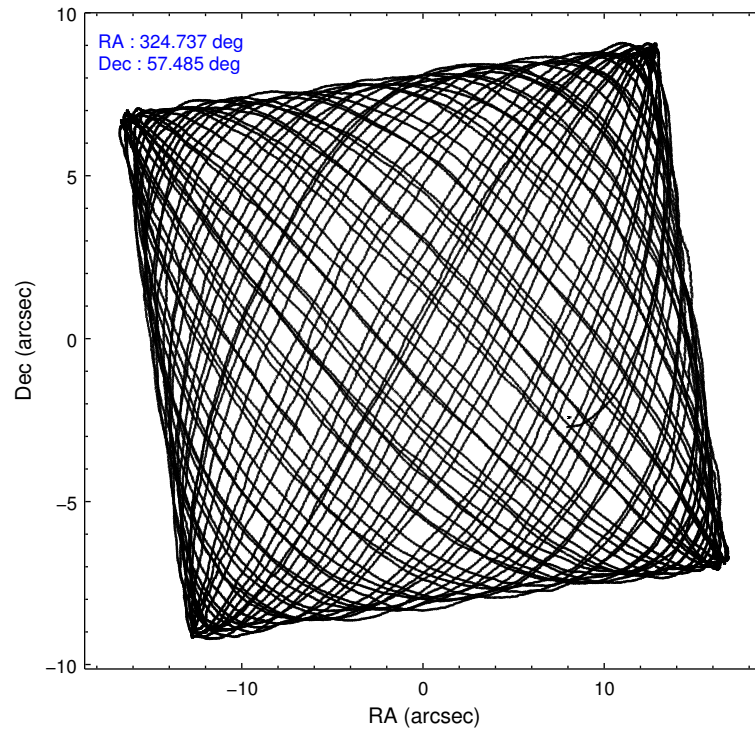
### 2.1.4 Events

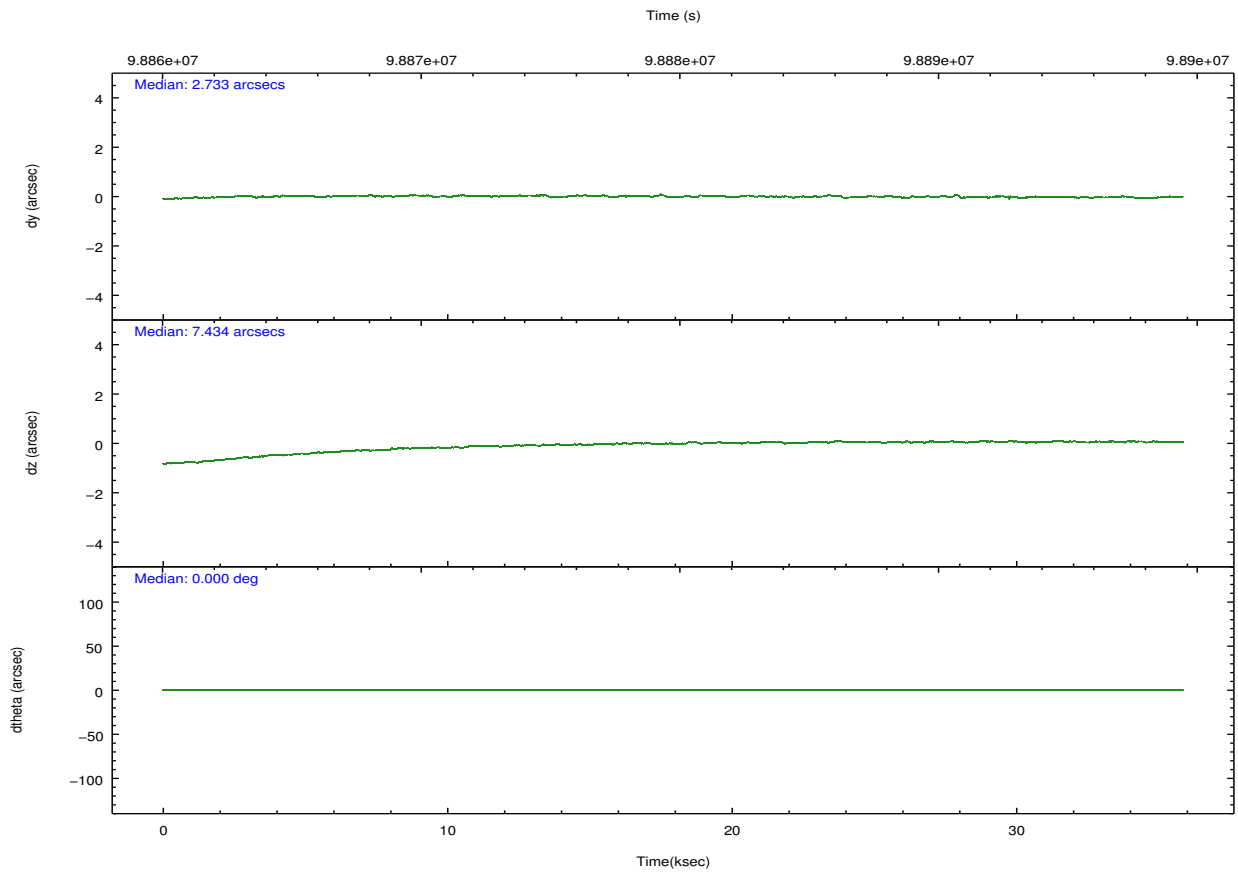
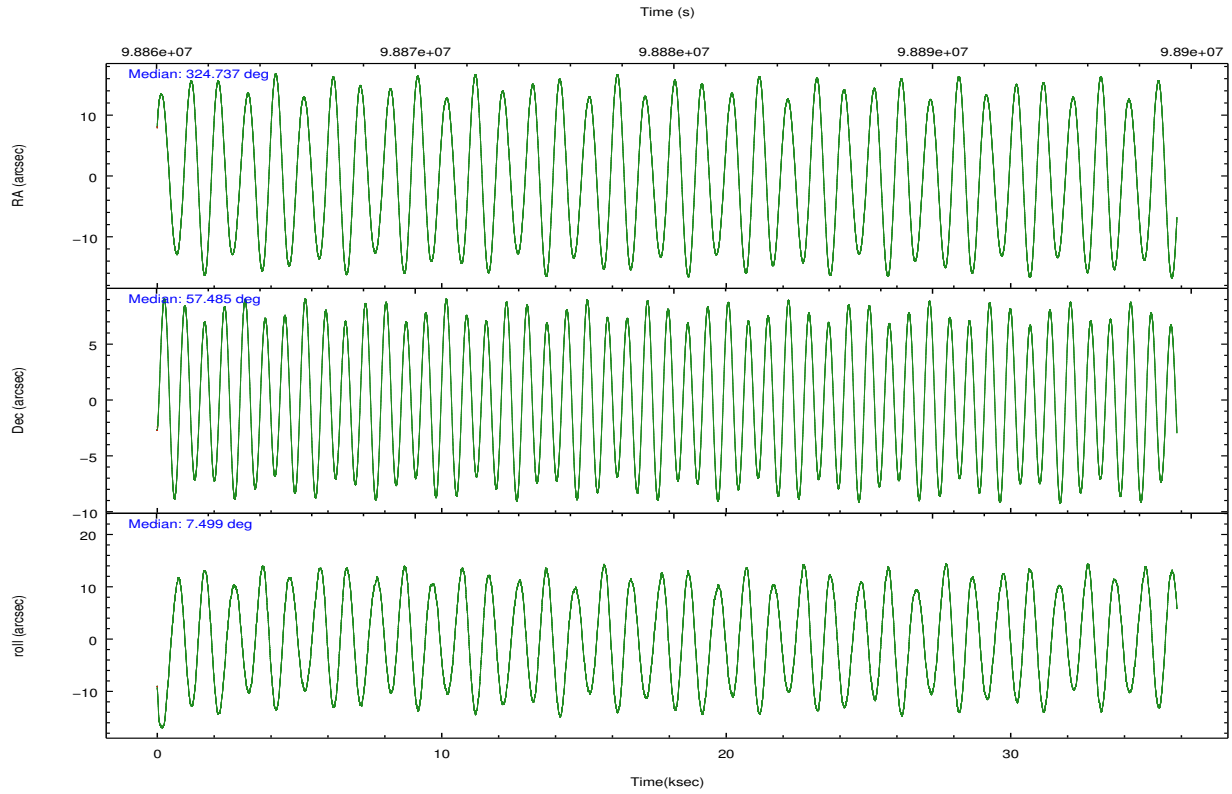
|                 | ccd 4  | ccd 5  | ccd 6  | ccd 7  | ccd 8  | ccd 9  |                | ccd 4  | ccd 5  | ccd 6  | ccd 7  | ccd 8  | ccd 9  |
|-----------------|--------|--------|--------|--------|--------|--------|----------------|--------|--------|--------|--------|--------|--------|
| level 1 events  | 234863 | 301621 | 218485 | 273341 | 274648 | 228960 | grade 0 events | 10154  | 16404  | 11925  | 10297  | 17217  | 20521  |
| rejected events | 209858 | 163730 | 191958 | 160602 | 220673 | 193604 |                | 4%     | 5%     | 5%     | 3%     | 6%     | 8%     |
| rejected %      | 89%    | 54%    | 87%    | 58%    | 80%    | 84%    | grade 1 events | 88     | 353    | 101    | 254    | 157    | 144    |
|                 |        |        |        |        |        |        |                | 0%     | 0%     | 0%     | 0%     | 0%     | 0%     |
|                 |        |        |        |        |        |        | grade 2 events | 5938   | 39324  | 4877   | 22136  | 11637  | 5025   |
|                 |        |        |        |        |        |        |                | 2%     | 13%    | 2%     | 8%     | 4%     | 2%     |
|                 |        |        |        |        |        |        | grade 3 events | 2391   | 6025   | 2483   | 10395  | 5697   | 2546   |
|                 |        |        |        |        |        |        |                | 1%     | 1%     | 1%     | 3%     | 2%     | 1%     |
|                 |        |        |        |        |        |        | grade 4 events | 2173   | 5485   | 2478   | 10331  | 5409   | 2390   |
|                 |        |        |        |        |        |        |                | 0%     | 1%     | 1%     | 3%     | 1%     | 1%     |
|                 |        |        |        |        |        |        | grade 5 events | 7554   | 23219  | 9047   | 26620  | 11686  | 9358   |
|                 |        |        |        |        |        |        |                | 3%     | 7%     | 4%     | 9%     | 4%     | 4%     |
|                 |        |        |        |        |        |        | grade 6 events | 4392   | 70882  | 4808   | 59770  | 14109  | 4944   |
|                 |        |        |        |        |        |        |                | 1%     | 23%    | 2%     | 21%    | 5%     | 2%     |
|                 |        |        |        |        |        |        | grade 7 events | 202173 | 139929 | 182766 | 133538 | 208736 | 184032 |
|                 |        |        |        |        |        |        |                | 86%    | 46%    | 83%    | 48%    | 76%    | 80%    |

## 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                  | OVERRIDE  | OVERRIDE |
| 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                 | 324.7375242374068    | 324.7375242374068    | Subarray requested                    | NONE      | NONE     |
| [deg] Pointing Dec                | 57.48450908178859    | 57.48450908178862    | Alternating exposures requested       | N         | N        |
| [deg] Pointing Roll               | 7.506354984765641    | 7.506354984765648    | [s] Primary exposure time             | 3.2       | 3.2      |
| [mm] SIM focus pos                | -0.68282252473119    | -0.68282252473119    |                                       |           |          |
| [mm] SIM defocus                  | 0.001444942264670734 | 0.001444942264670734 |                                       |           |          |
| [mm] SIM translation stage pos    | -190.1400660499      | -190.1400660499      |                                       |           |          |
| [mm] SIM translation stage offset | 0.007542945932812017 | 0.007542945932812017 |                                       |           |          |
| Phase constraints                 | Y                    | Y                    |                                       |           |          |
| [d] Phase period                  | 3.709800             | 3.709800             |                                       |           |          |
| [d] Phase epoch (MJD)             | 51094.120000         | 51094.120000         |                                       |           |          |
| Phase start                       | 0.950000             | 0.950000             |                                       |           |          |
| Phase end                         | 0.050000             | 0.050000             |                                       |           |          |
| Phase start error                 | 0.050000             | 0.050000             |                                       |           |          |
| Phase end error                   | 0.050000             | 0.050000             |                                       |           |          |
| [s] Observation start time (MET)  | 98861811.548719      | 98861811.548719      |                                       |           |          |
| Observation start date            | 2001-02-18T05:54:55  | 2001-02-18T05:36:51  |                                       |           |          |
| [s] Observation end time (MET)    | 98897660.925099      | 98897660.925099      |                                       |           |          |
| Observation end date              | 2001-02-18T15:33:15  | 2001-02-18T15:34:20  |                                       |           |          |
| Read mode                         | TIMED                | TIMED                |                                       |           |          |

## 2.3 Aspect



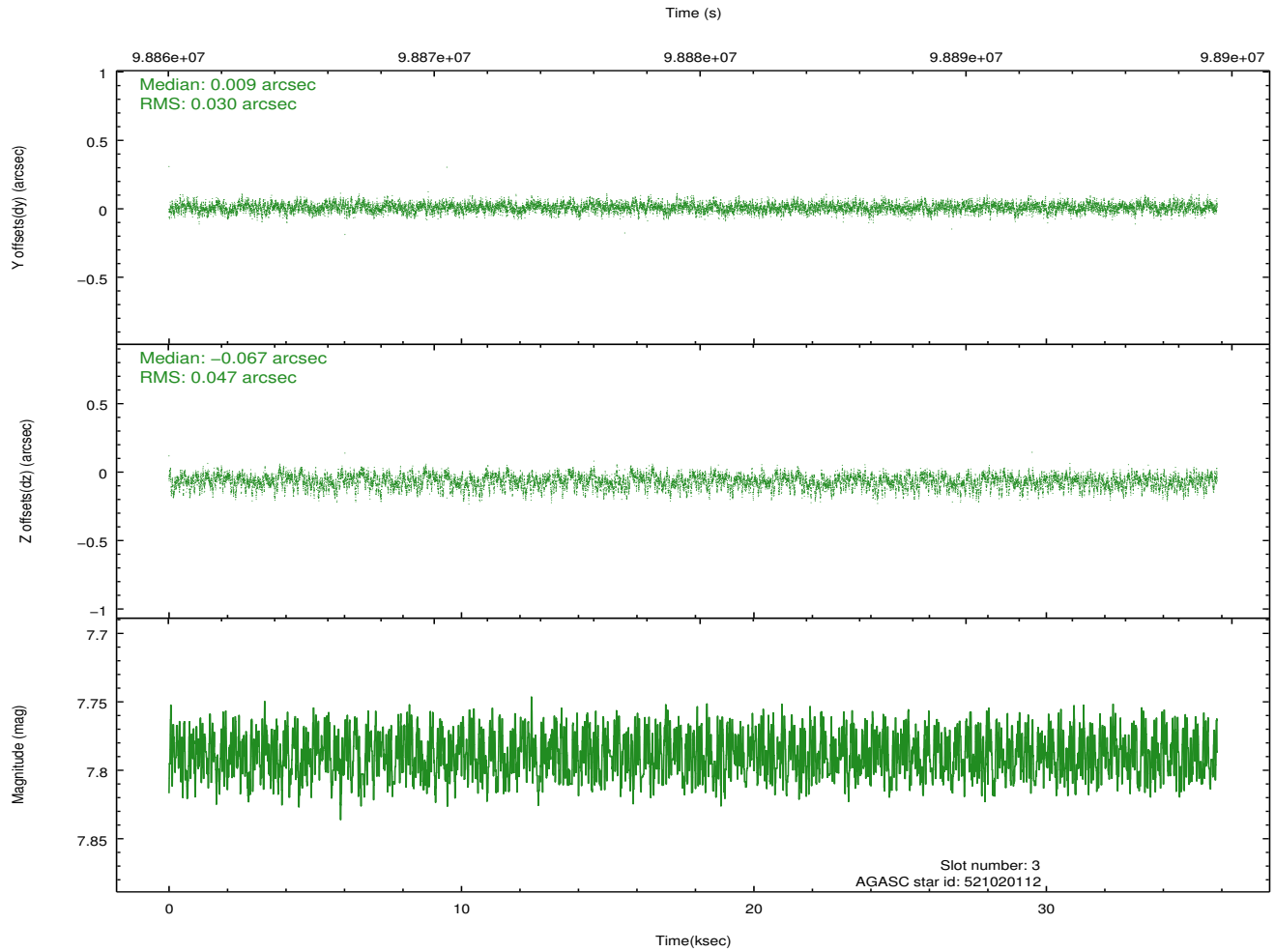
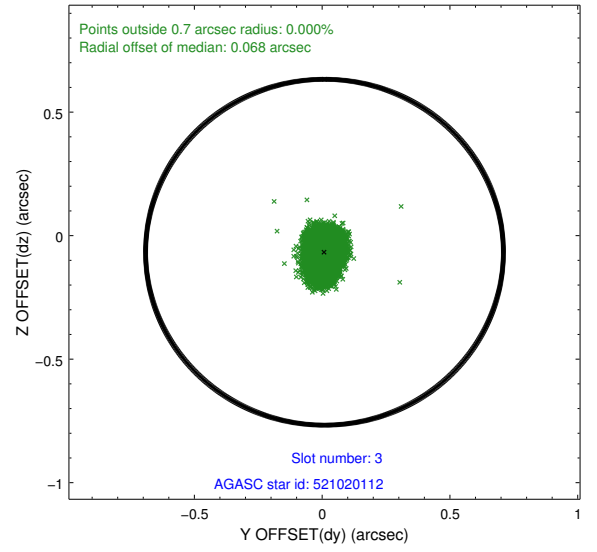
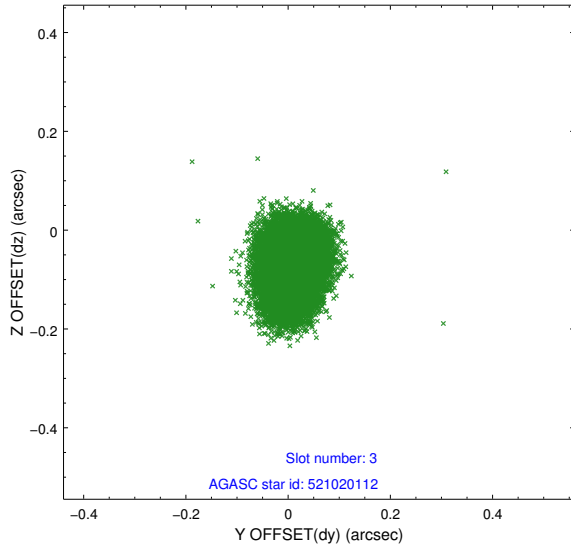


### Slot Statistics

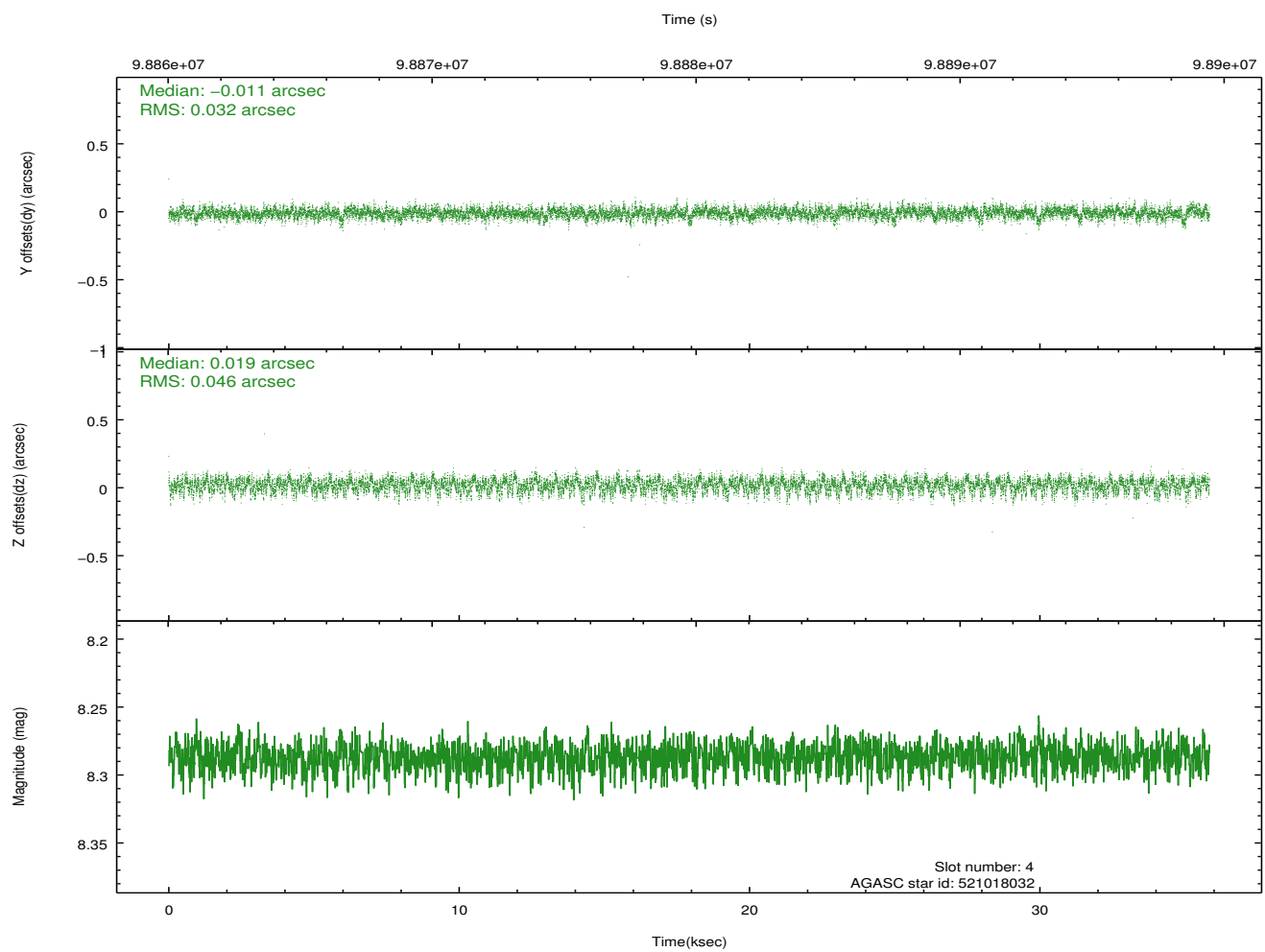
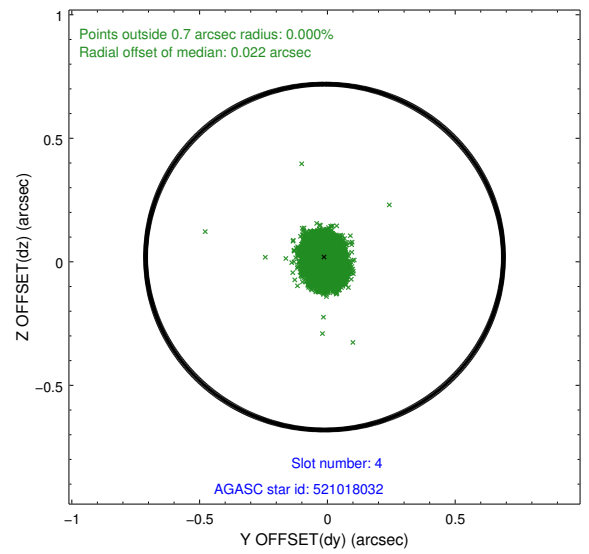
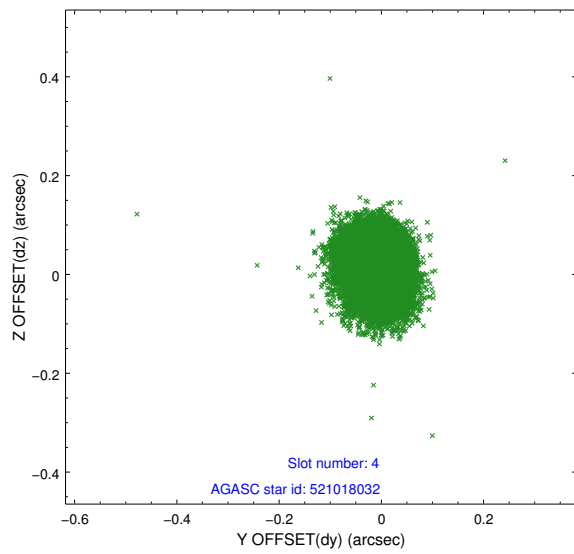
| slot | status | id        | mag  | n_pts | med_dy | med_dz | dr1   | dr2   | ra         | dec       | mean_y   | mean_z   |
|------|--------|-----------|------|-------|--------|--------|-------|-------|------------|-----------|----------|----------|
| 0    | UNUSED |           | 0.00 | 0     | 0.000  | 0.000  | 0.000 | 0.000 | 0.000000   | 0.000000  | 0.00     | 0.00     |
| 1    | FID    | ACIS-S-5  | 7.23 | 8744  | -0.010 | 0.005  | 0.000 | 0.000 | 0.000000   | 0.000000  | -1808.41 | 173.78   |
| 2    | UNUSED |           | 0.00 | 0     | 0.000  | 0.000  | 0.000 | 0.000 | 0.000000   | 0.000000  | 0.00     | 0.00     |
| 3    | GUIDE  | 521020112 | 7.79 | 17475 | 0.009  | -0.067 | 0.059 | 0.098 | 324.609515 | 56.973735 | -398.68  | -1741.36 |
| 4    | GUIDE  | 521018032 | 8.29 | 17479 | -0.011 | 0.019  | 0.059 | 0.097 | 324.637664 | 57.165729 | -254.62  | -1063.15 |
| 5    | GUIDE  | 521023608 | 8.78 | 17472 | -0.001 | 0.003  | 0.058 | 0.094 | 325.041395 | 57.195436 | 540.36   | -1056.52 |
| 6    | GUIDE  | 521014200 | 9.13 | 17473 | -0.028 | 0.023  | 0.106 | 0.159 | 325.156422 | 58.109888 | 1163.59  | 2183.63  |
| 7    | GUIDE  | 521012392 | 9.11 | 17481 | 0.037  | 0.024  | 0.108 | 0.179 | 323.590514 | 58.057896 | -1815.15 | 2395.04  |

## 2.4 Star Slots

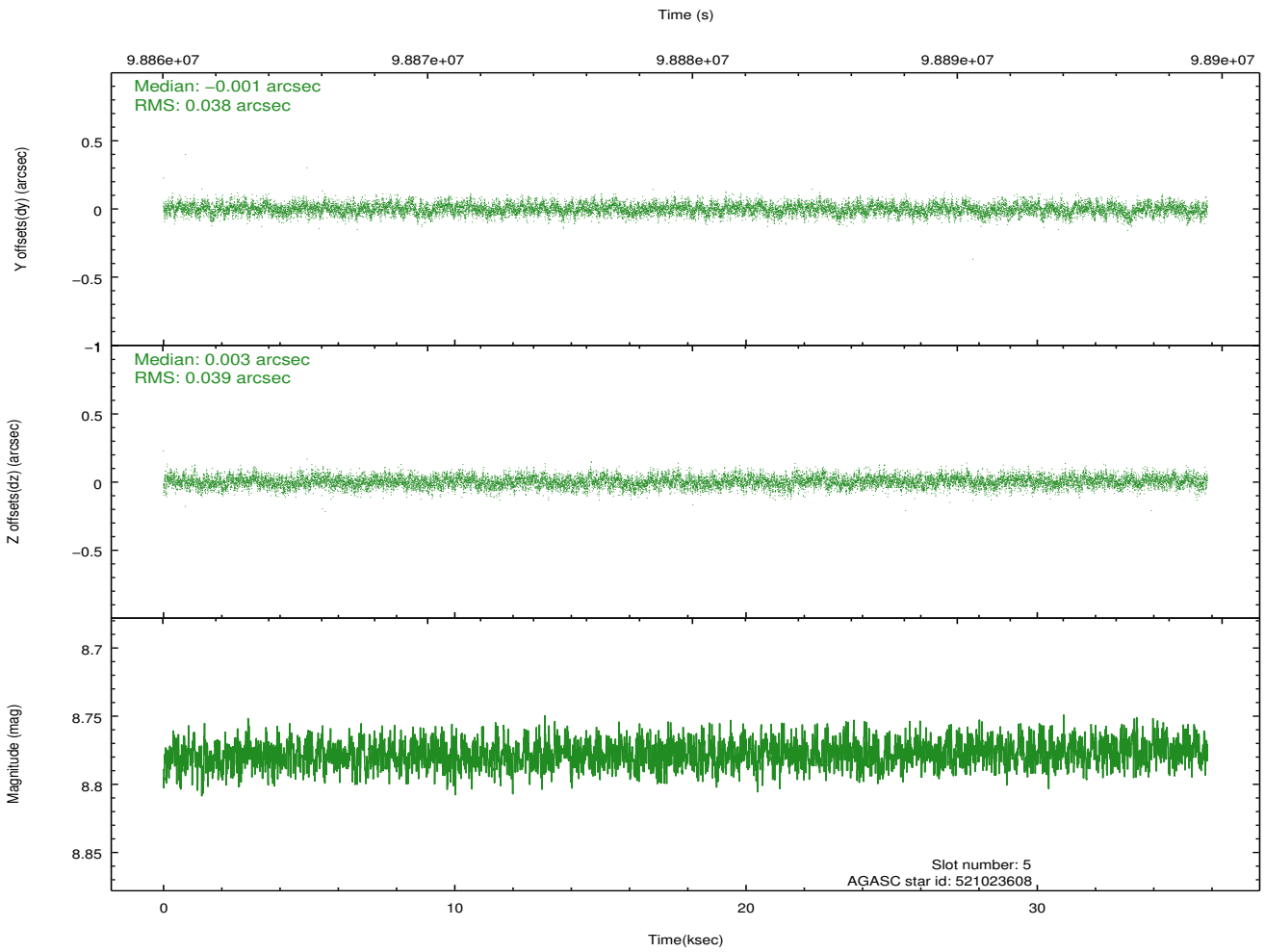
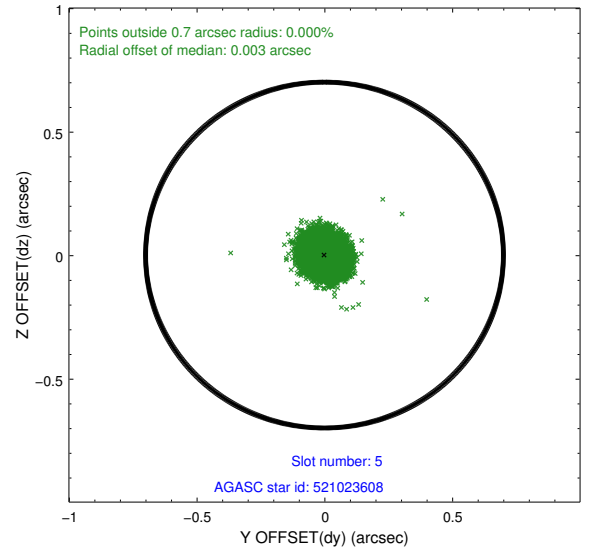
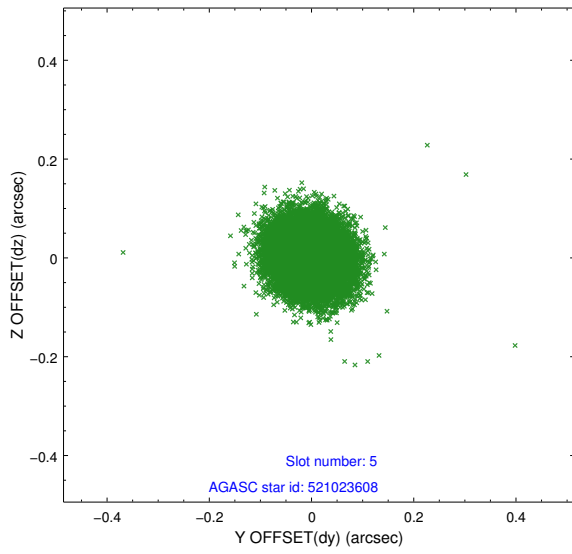
### 2.4.1 Slot 3



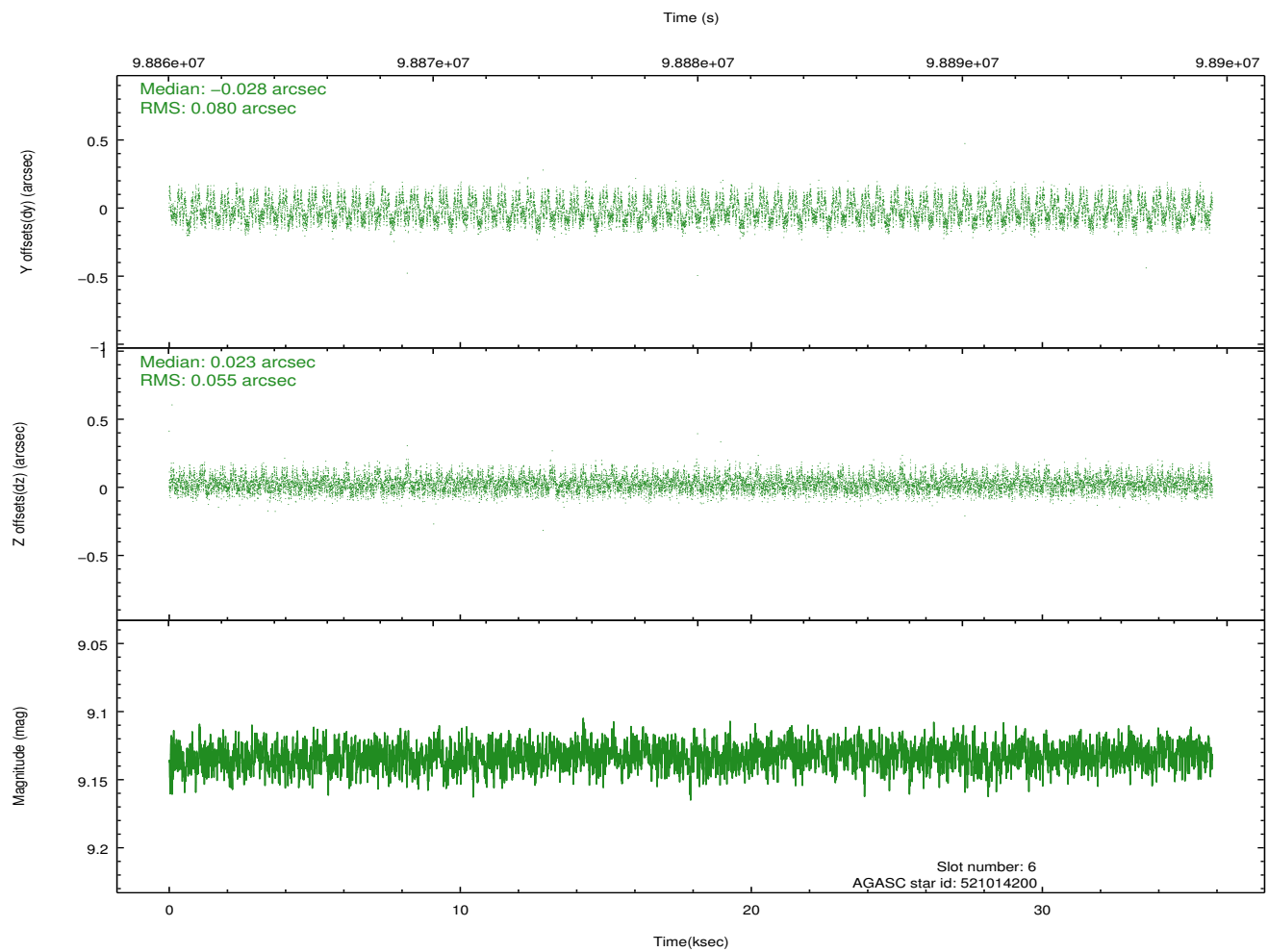
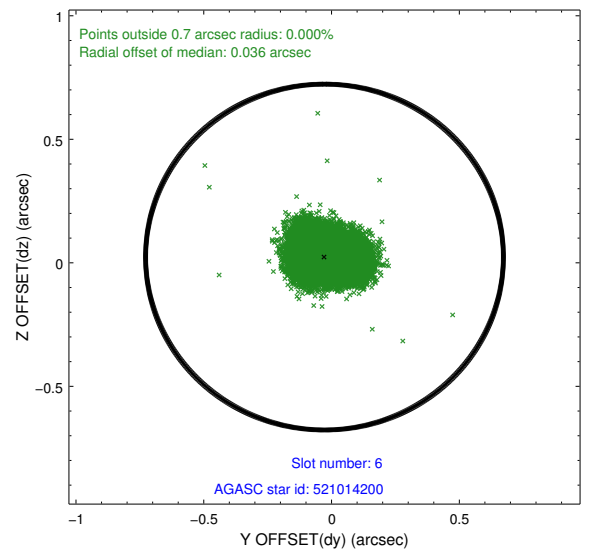
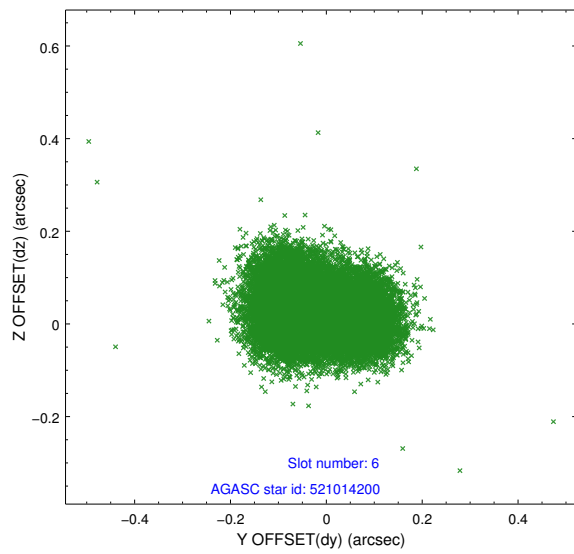
## 2.4.2 Slot 4



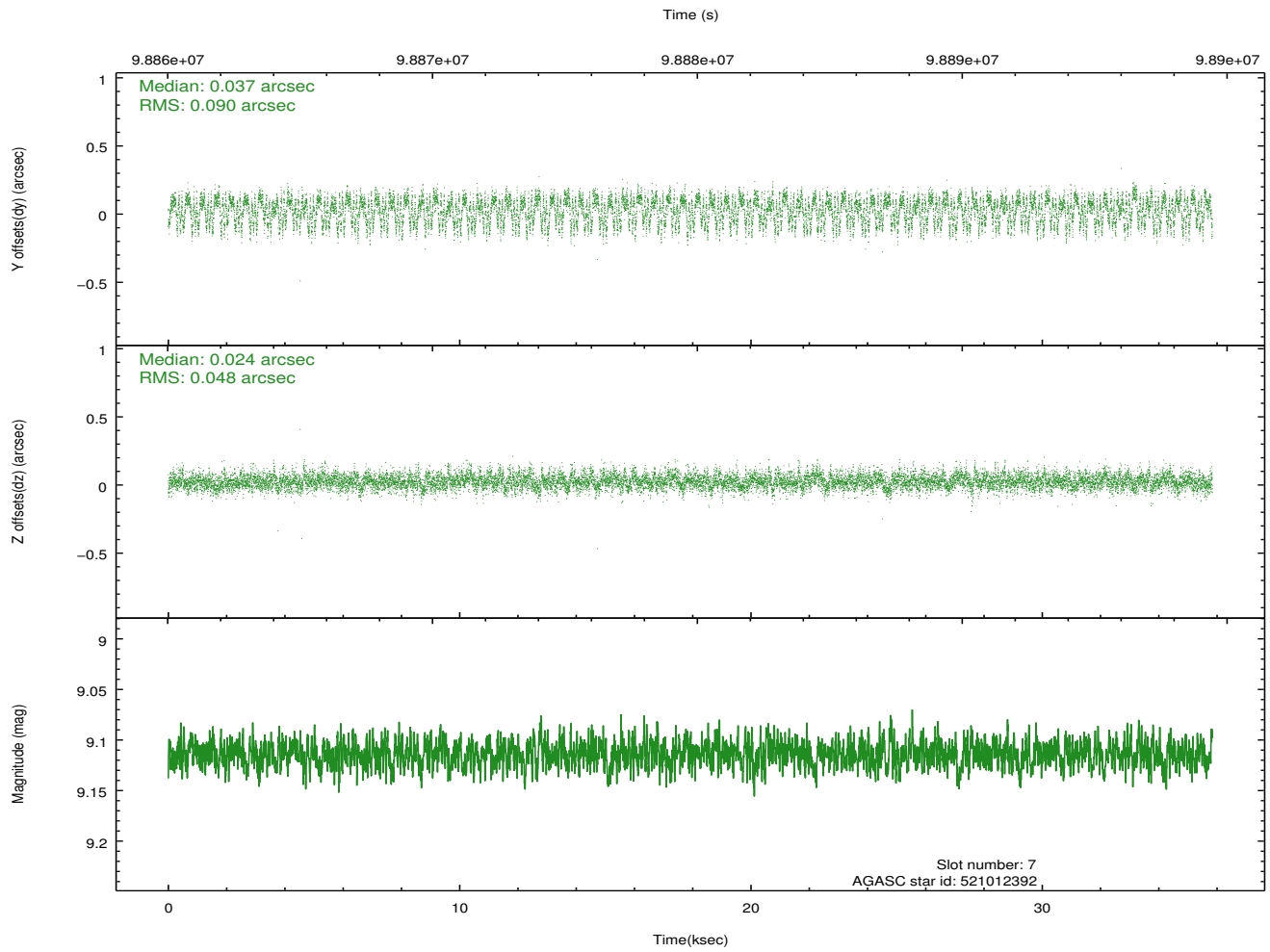
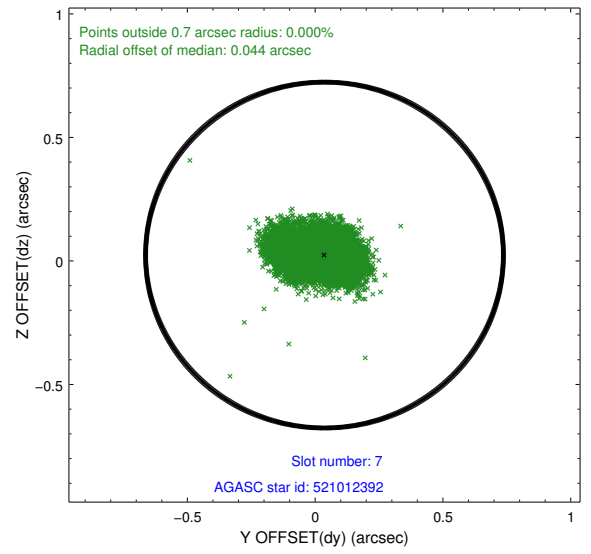
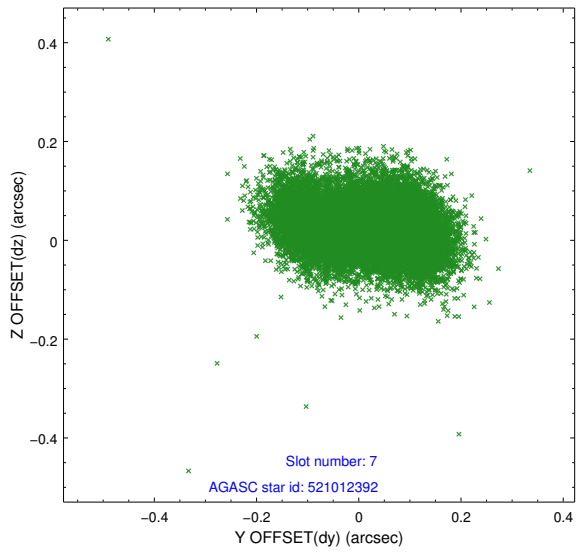
### 2.4.3 Slot 5



## 2.4.4 Slot 6

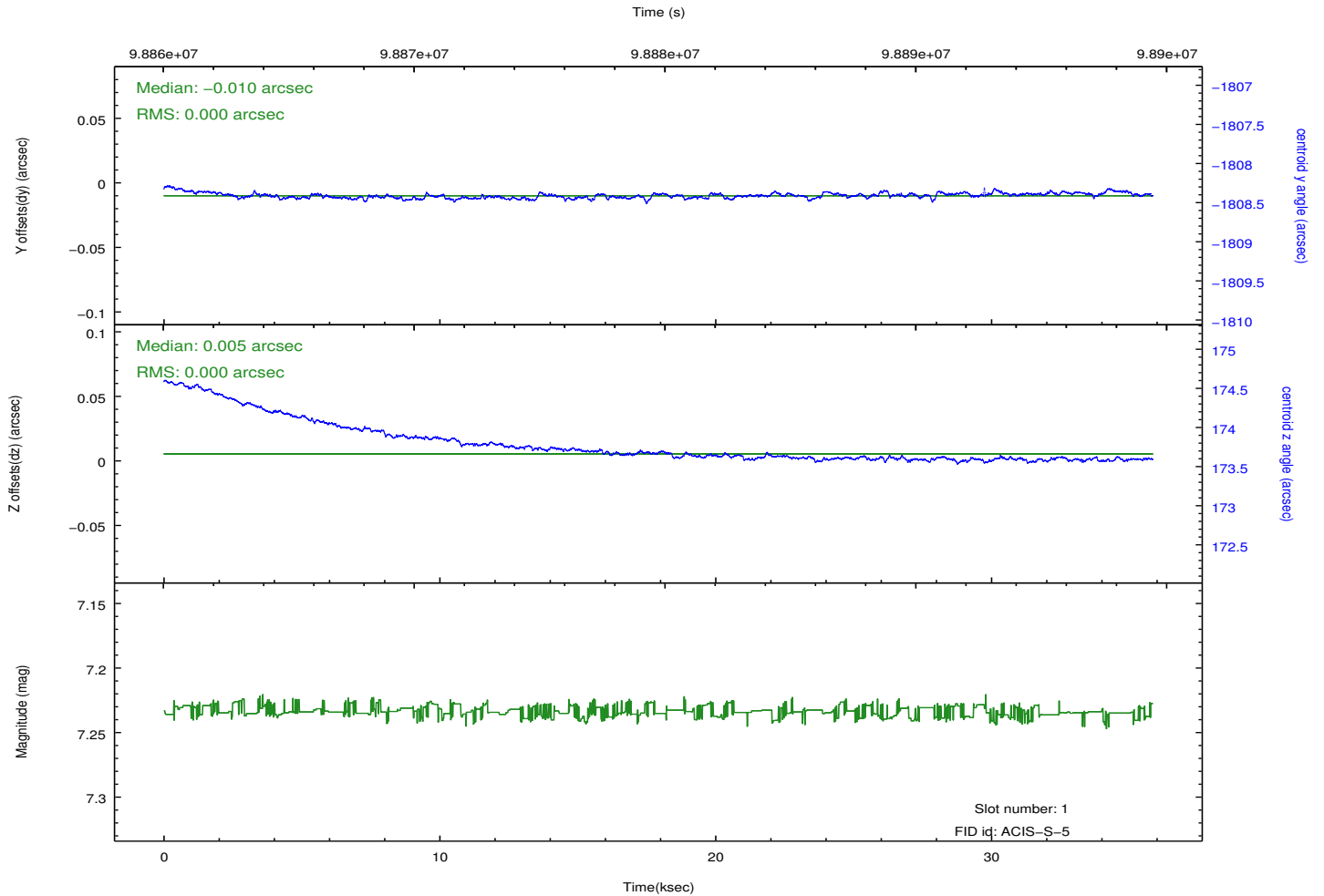
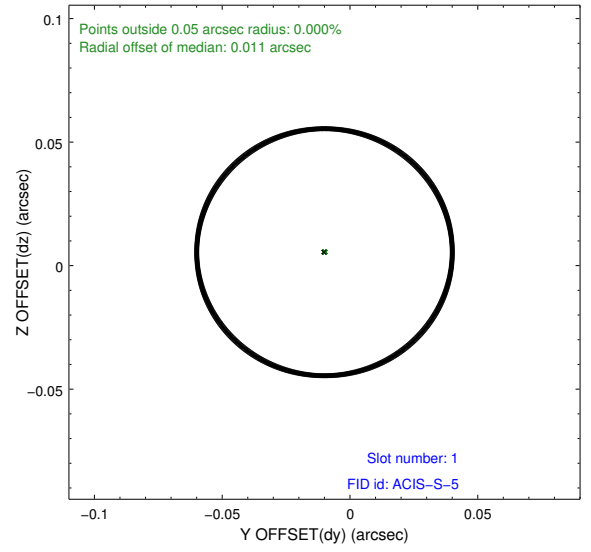
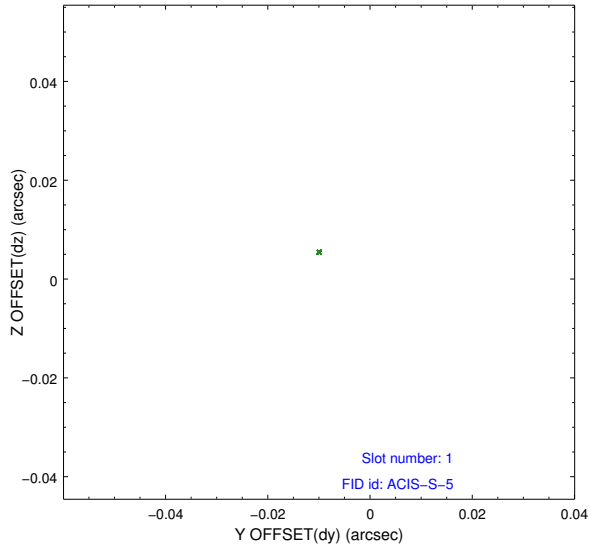


### 2.4.5 Slot 7



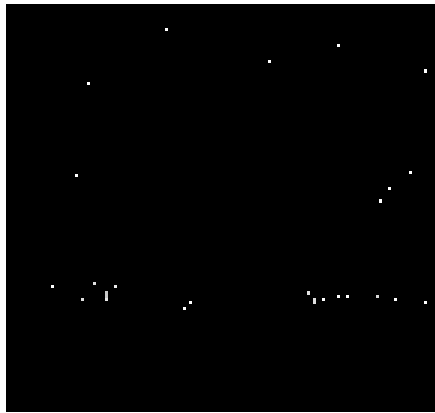
## 2.5 FID Slots

### 2.5.1 Slot 1

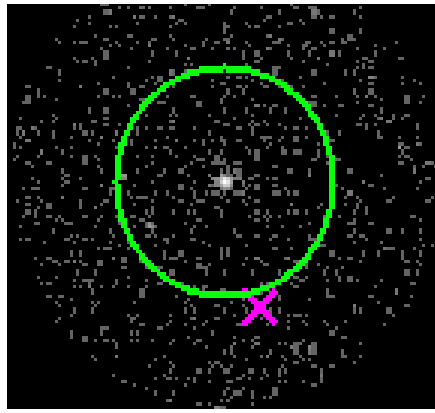


### 3 Gratings

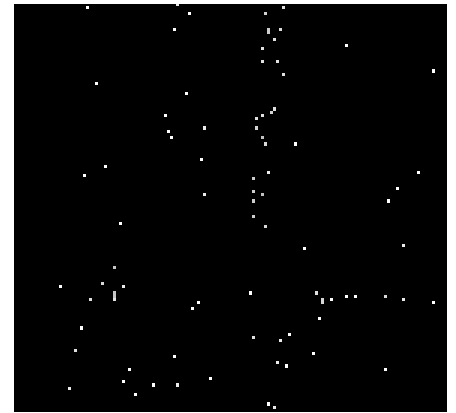
#### 3.1 HEG Arm



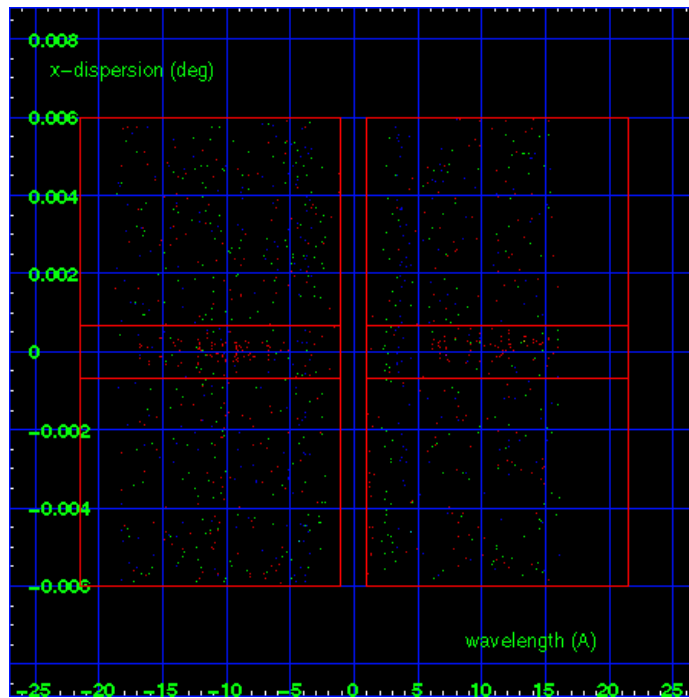
HEG Order Sort 123



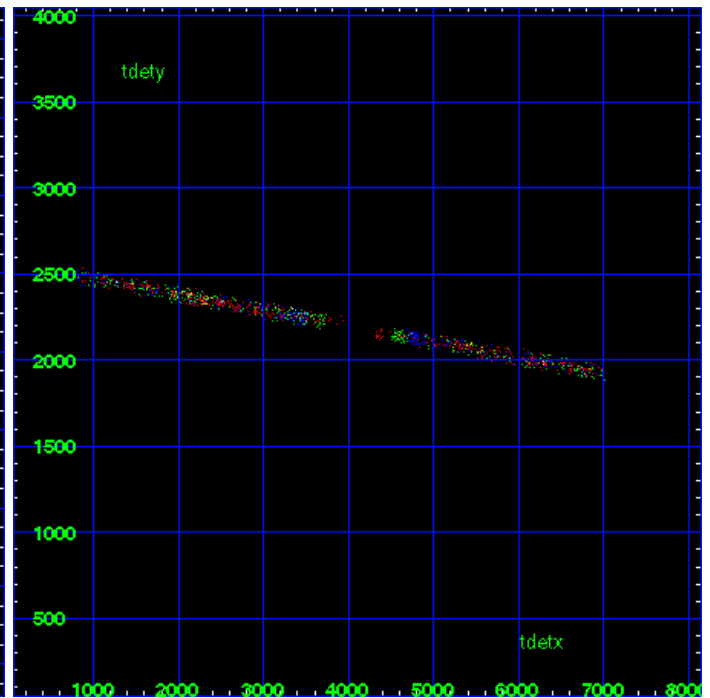
HEG Zero Order



HEG Order Sort ALL

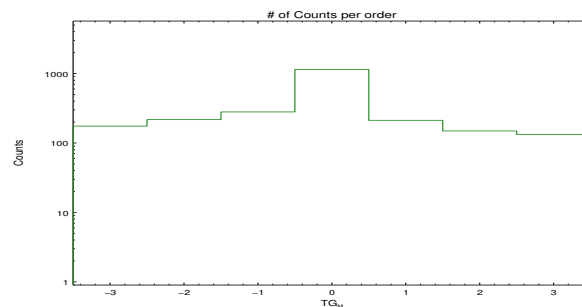


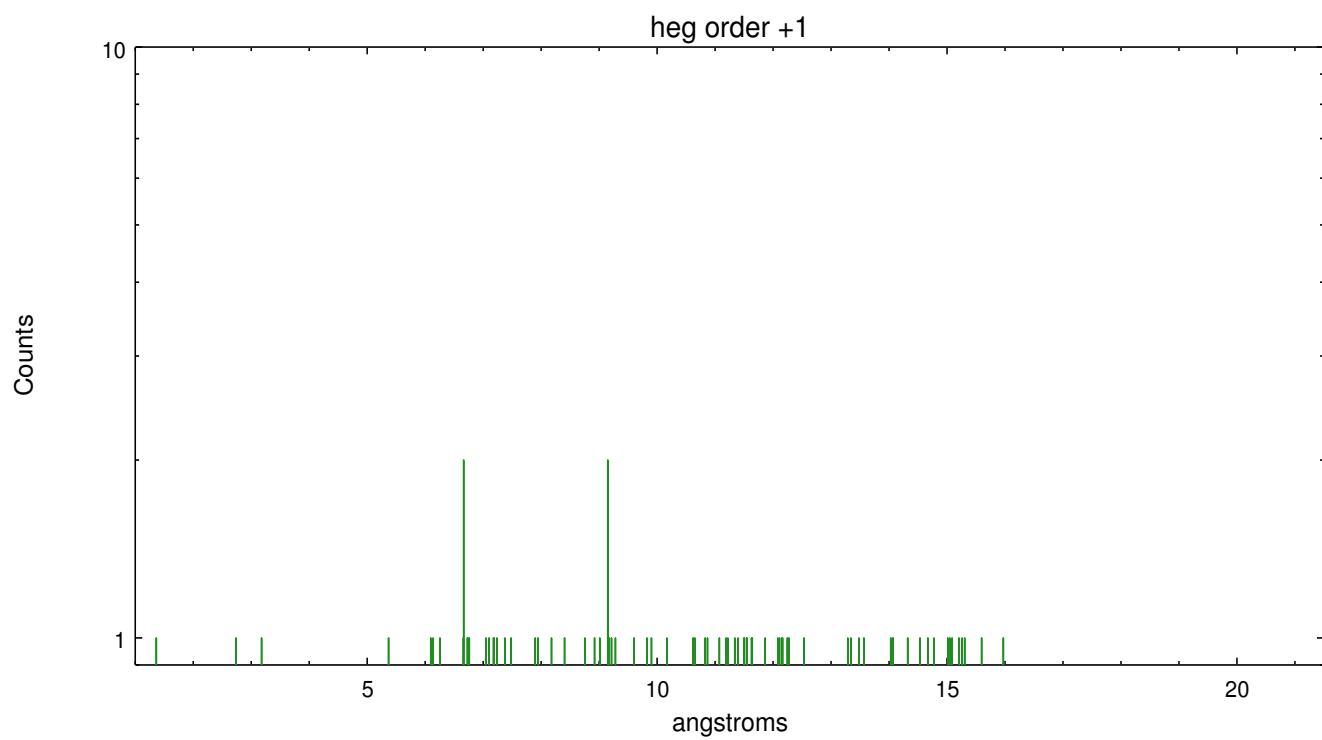
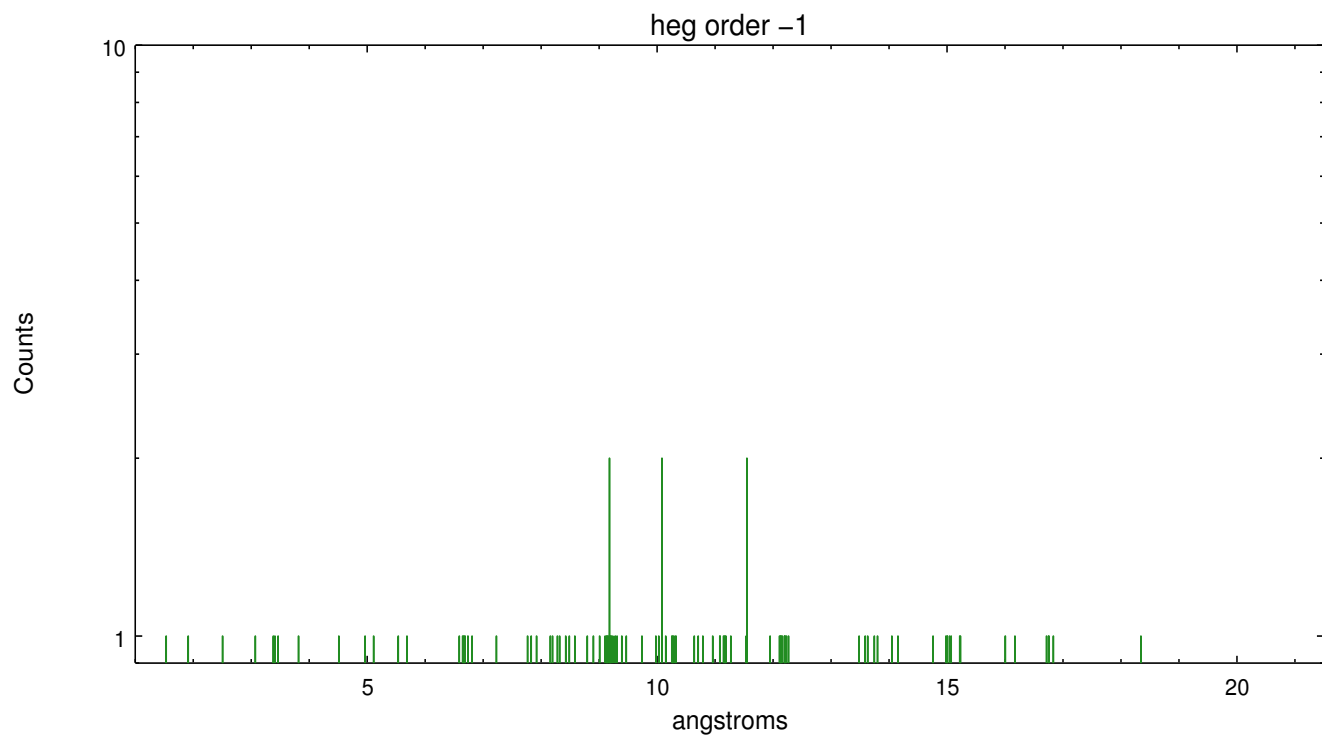
Spot Image HEG



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 | 175         | 217         | 280         | 1140       | 212        | 149        | 133        |

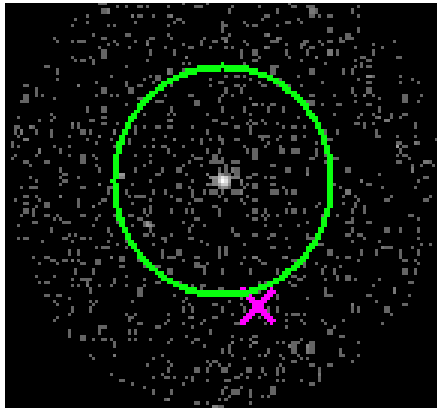




### 3.2 MEG Arm



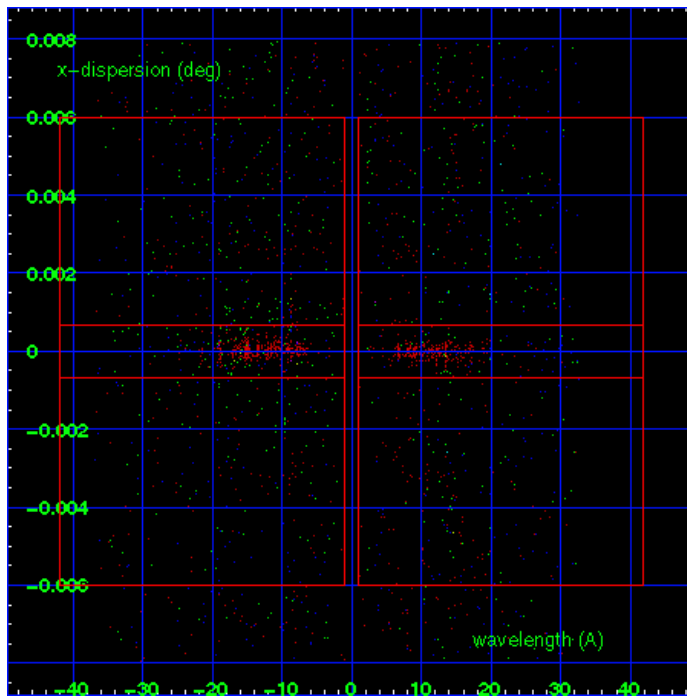
MEG Order Sort 123



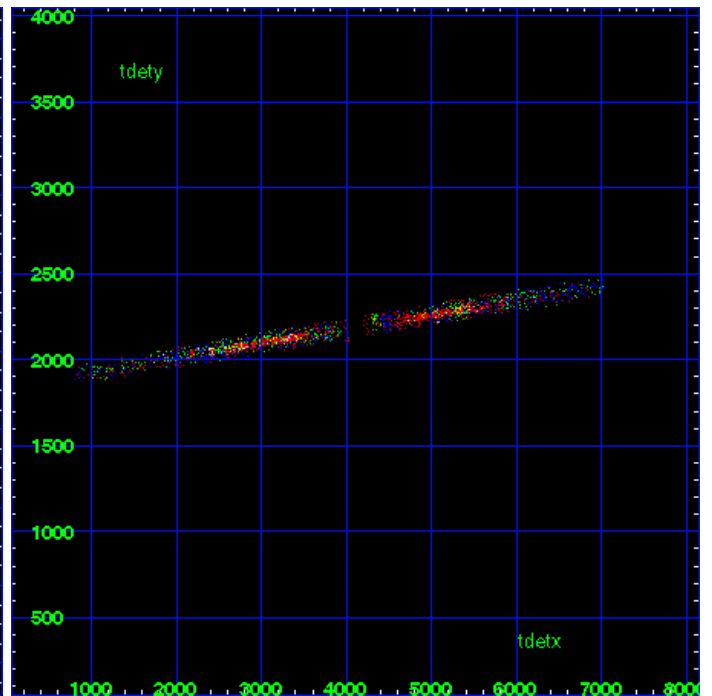
MEG Zero Order



MEG Order Sort ALL

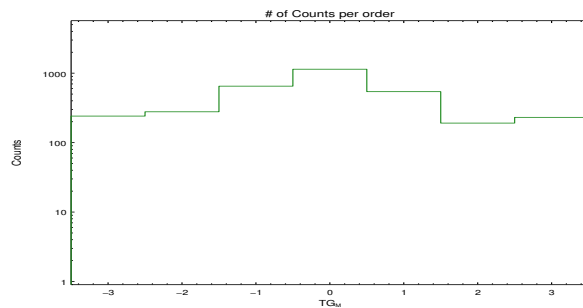


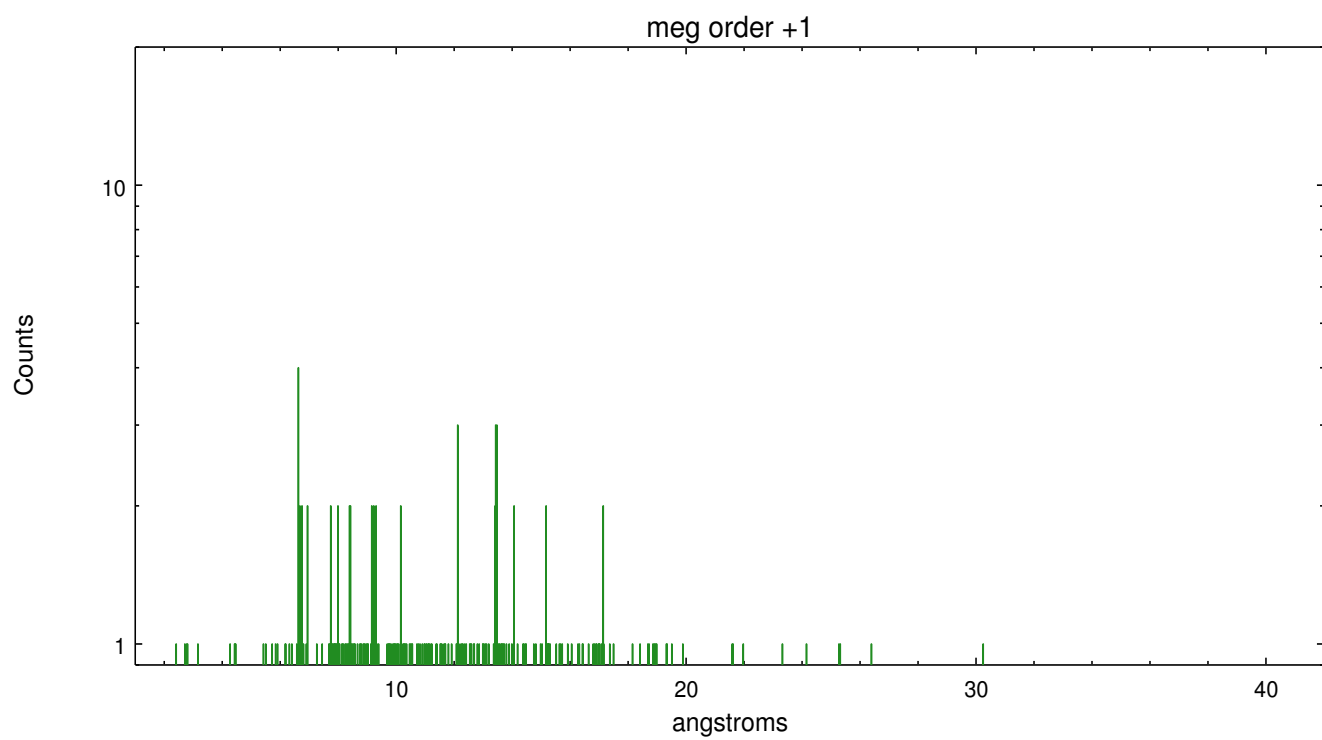
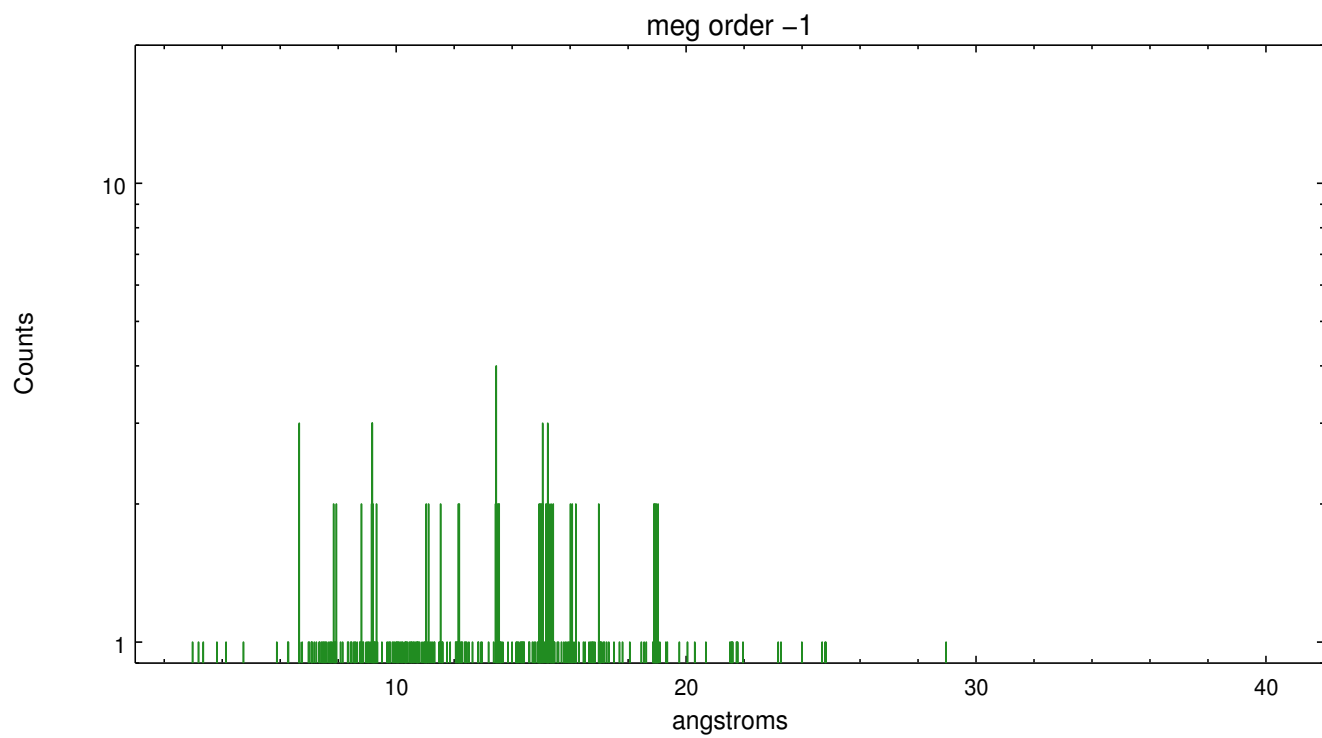
Spot Image MEG



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 | 241         | 278         | 650         | 1140       | 542        | 191        | 231        |





# A Summary

## A.1 Status

|                            |             |
|----------------------------|-------------|
| V&V Scientist              | Joy Nichols |
| V&V Date (YYYY-MM-DD)      | 2012.09.19  |
| V&V Edition                | 1           |
| V&V Disposition and Status | OK          |
| V&V Charge Time            | 34.564      |

## A.2 Comments

FIDS 1 and 3 not acquired for OPSID 1888 due to an operational error.  
Phase constrained observation.