

# V&V Reference Report

## L2 ASCDS Version : 7.6.8

Observation 4113 - L2 Version 001  
Chandra X-Ray Center

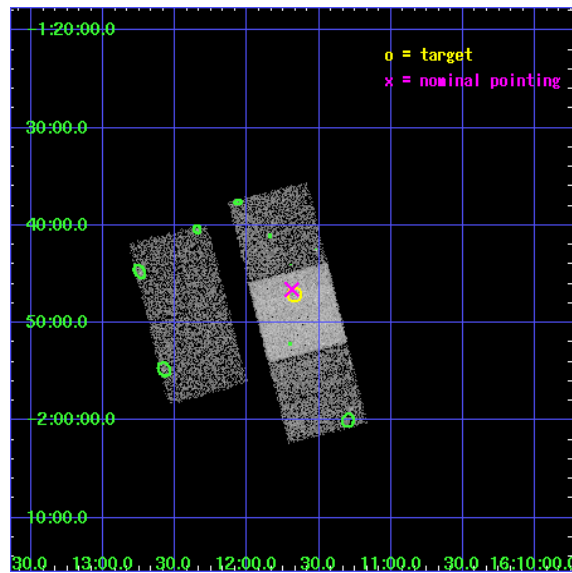
L2 Processing Date : Jul 20 2006

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# 1 Front

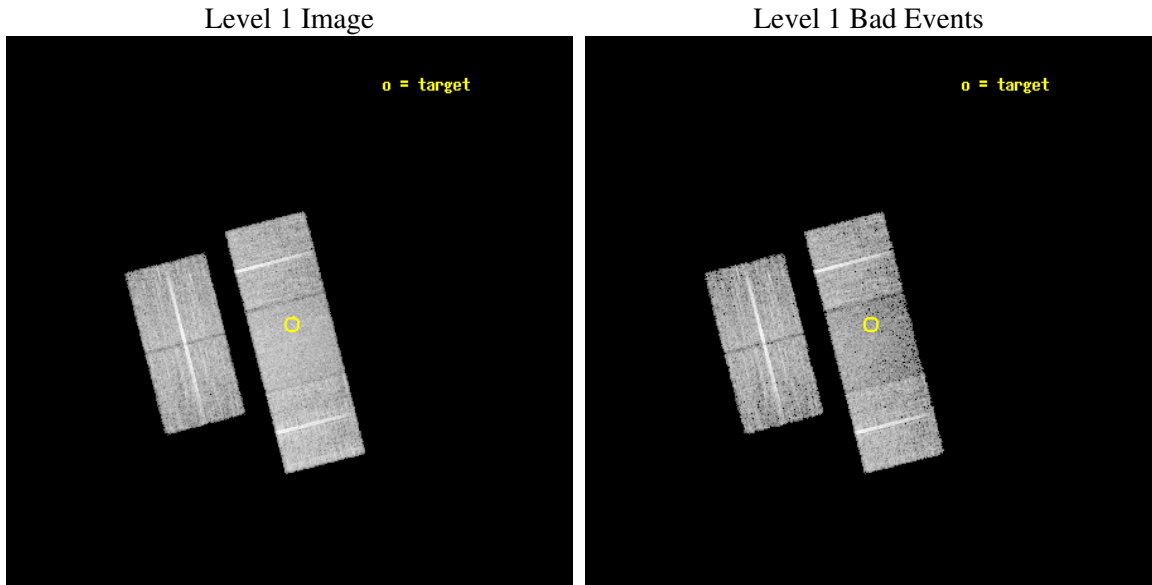
|          |   |
|----------|---|
| seq_num  | 700792  |
| obs_id   | 4113  |
| title    | THE X-RAY PROPERTIES OF ULTRALUMINOUS INFRARED GALAXIES (ULIGS) |
| observer | Prof. Andrew Wilson   |
| object   | F16090-0139   |
| dtcycle  | 0   |
| cycle    | P   |
| ra_targ  | 242.918333  |
| dec_targ | -1.785139   |
| ra_nom   | 242.92236585448   |
| dec_nom  | -1.7763501691009  |
| roll_nom | 75.657656304065   |
| revision | 2   |
| ontime   | 9873.4999810159   |
| livetime | 9744.495434999  |
| ontime2  | 9873.4999810159   |
| ontime3  | 9873.4999810159   |
| ontime6  | 9873.4999810159   |
| ontime7  | 9873.4999810159   |
| ontime8  | 9867.2180206478   |
| l2events | 44157   |



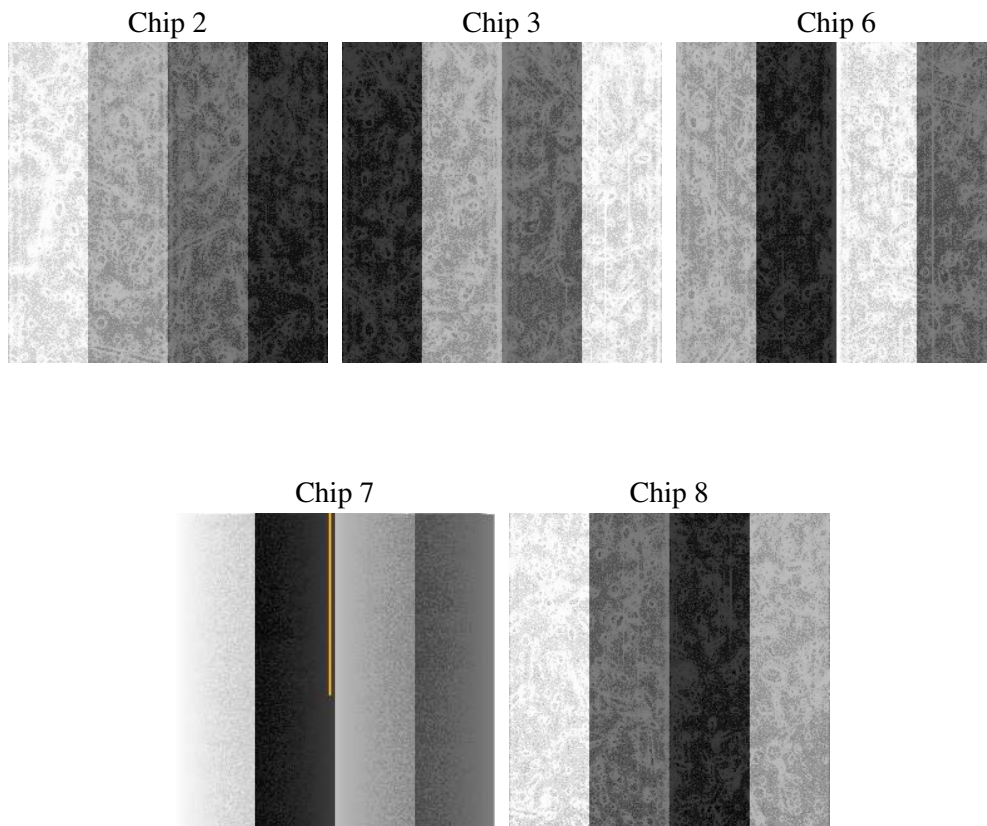
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

|          |                     |
|----------|---------------------|
| obi_num  | 0                   |
| ascdsver | 7.6.8               |
| caldbver | 3.2.2               |
| date     | 2006-07-20T22:52:52 |
| revision | 2                   |

|                |                 |
|----------------|-----------------|
| sched_exp_time | 10100.000000    |
| ontime         | 9878.4498045146 |
| ontime2        | 9878.4497745931 |
| ontime3        | 9878.4497745931 |
| ontime6        | 9878.4497745931 |
| ontime7        | 9878.4498045146 |
| ontime8        | 9872.1676946282 |
| llevents       | 295533          |

### 2.1.4 Events

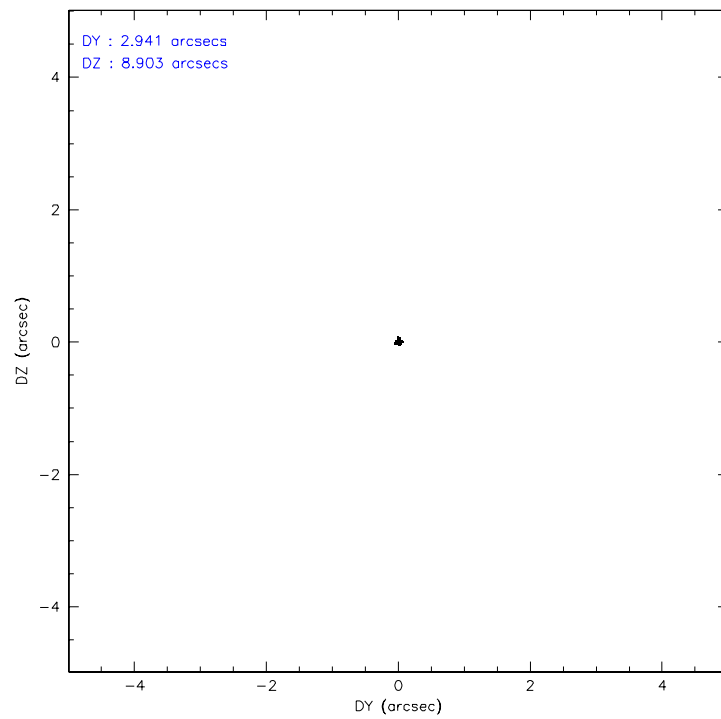
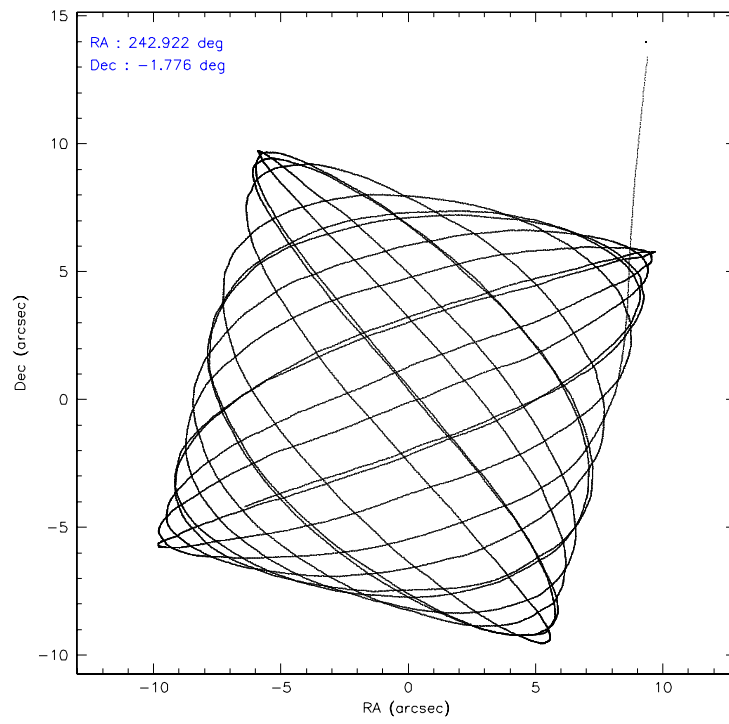
|                 | ccd 2 | ccd 3 | ccd 6 | ccd 7 | ccd 8 |
|-----------------|-------|-------|-------|-------|-------|
| level 1 events  | 55087 | 54177 | 55612 | 59199 | 71458 |
| rejected events | 49700 | 49221 | 49795 | 33829 | 55964 |
| rejected %      | 90%   | 90%   | 89%   | 57%   | 78%   |

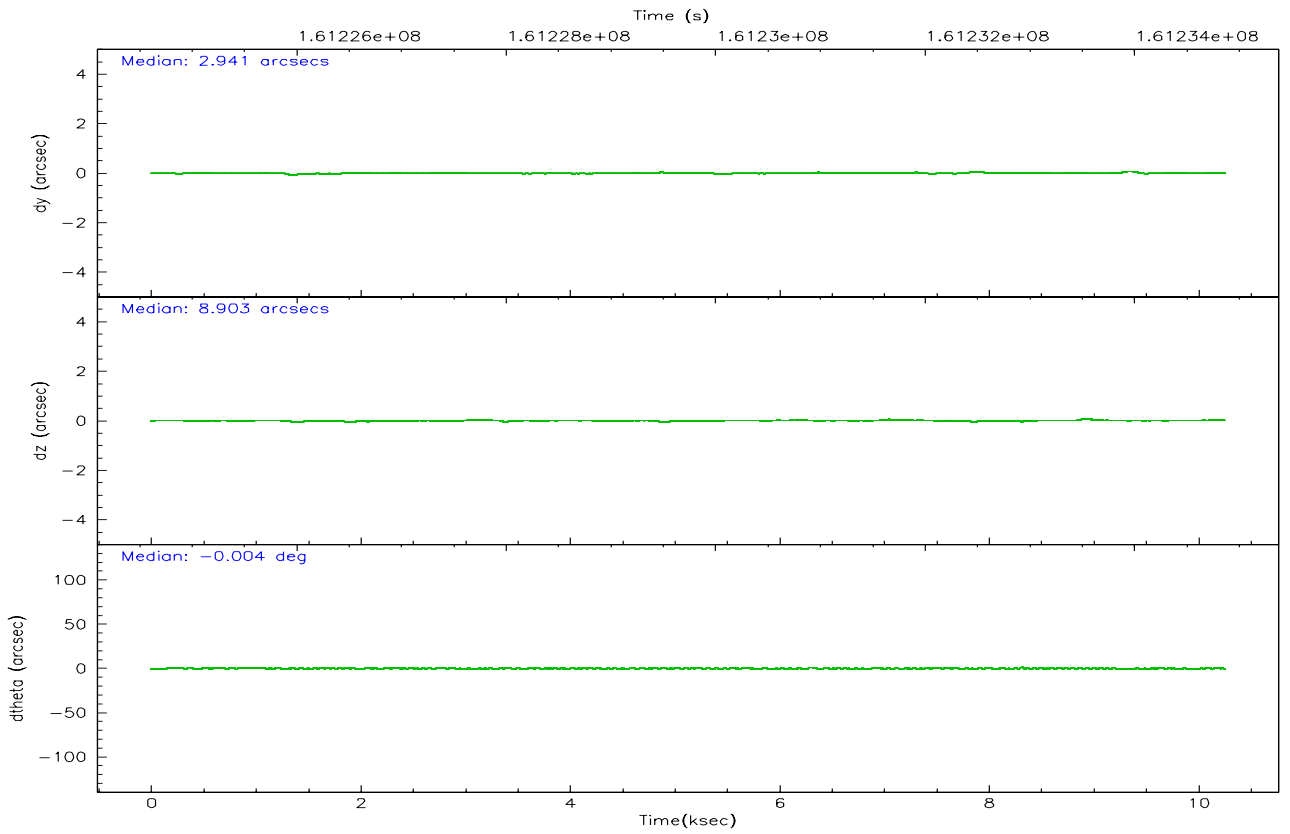
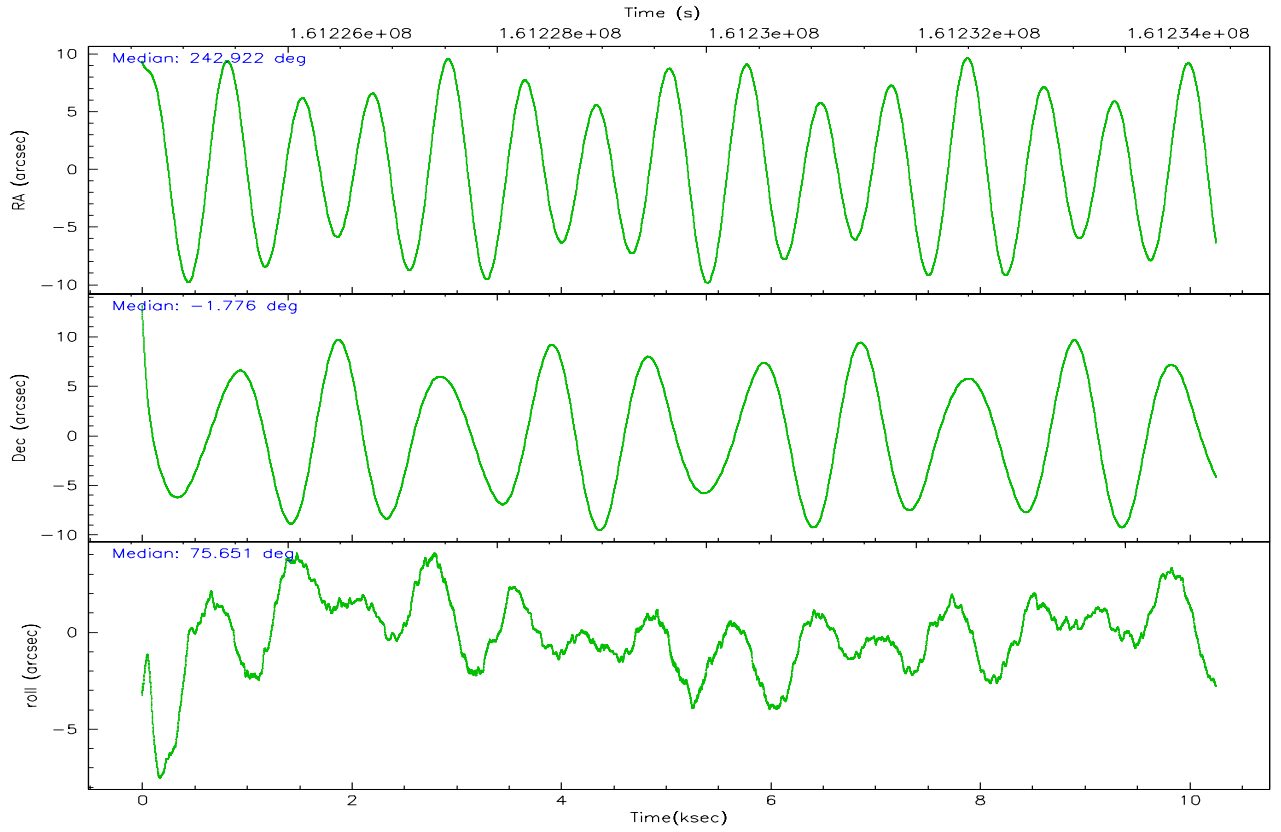
|                | ccd 2 | ccd 3 | ccd 6 | ccd 7 | ccd 8 |
|----------------|-------|-------|-------|-------|-------|
| grade 0 events | 1991  | 1739  | 2154  | 1777  | 4863  |
|                | 3%    | 3%    | 3%    | 3%    | 6%    |
| grade 1 events | 21    | 24    | 28    | 32    | 46    |
|                | 0%    | 0%    | 0%    | 0%    | 0%    |
| grade 2 events | 1258  | 1092  | 1255  | 6205  | 3363  |
|                | 2%    | 2%    | 2%    | 10%   | 4%    |
| grade 3 events | 610   | 579   | 624   | 1576  | 1739  |
|                | 1%    | 1%    | 1%    | 2%    | 2%    |
| grade 4 events | 603   | 591   | 613   | 1561  | 1607  |
|                | 1%    | 1%    | 1%    | 2%    | 2%    |
| grade 5 events | 1700  | 2107  | 2145  | 4596  | 2954  |
|                | 3%    | 3%    | 3%    | 7%    | 4%    |
| grade 6 events | 929   | 956   | 1173  | 14262 | 3924  |
|                | 1%    | 1%    | 2%    | 24%   | 5%    |
| grade 7 events | 47975 | 47089 | 47620 | 29190 | 52962 |
|                | 87%   | 86%   | 85%   | 49%   | 74%   |

## 2.2 Compared Parameters

| Parameter                         | Planned             | Actual               | Parameter                       | Planned   | Actual  |
|-----------------------------------|---------------------|----------------------|---------------------------------|-----------|---------|
| Instrument                        | ACIS                | ACIS                 | Obspar format version number    | 6         | 6       |
| Detector                          | ACIS-23678          | ACIS-23678           | Obspar file type                | PREDICTED | ACTUAL  |
| Grating                           | NONE                | NONE                 | Obspar update status            | NONE      | UPDATED |
| Data mode                         | VFAINT              | VFAINT               | On-chip summing requested       | N         | N       |
| Observation mode                  | POINTING            | POINTING             | Subarray requested              | NONE      | NONE    |
| Pointing RA                       | 242.930041          | 242.9223658544814    | Alternating exposures requested | N         | N       |
| Pointing Dec                      | -1.802457           | -1.776350169100925   | Primary exposure time           | 0.000000  | 3.1     |
| Pointing Roll                     | 75.501263           | 75.6576563040652     |                                 |           |         |
| SIM focus pos (mm)                | -0.684267           | -0.6828225247311905  |                                 |           |         |
| SIM defocus (mm)                  | 0                   | 0.001444936568705701 |                                 |           |         |
| SIM translation stage pos (mm)    | -190.132523         | -190.1400660498719   |                                 |           |         |
| SIM translation stage offset (mm) | 0                   | 0.00754346686406393  |                                 |           |         |
| Observation start time            | 161224760.184000    | 161223778.0746       |                                 |           |         |
| Observation start date            | 2003-02-10T00:38:16 | 2003-02-10T00:22:58  |                                 |           |         |
| Observation end time              | 161234860.184000    | 161235722.4001       |                                 |           |         |
| Observation end date              | 2003-02-10T03:26:36 | 2003-02-10T03:42:02  |                                 |           |         |
| Read mode                         | TIMED               | TIMED                |                                 |           |         |

## 2.3 Aspect



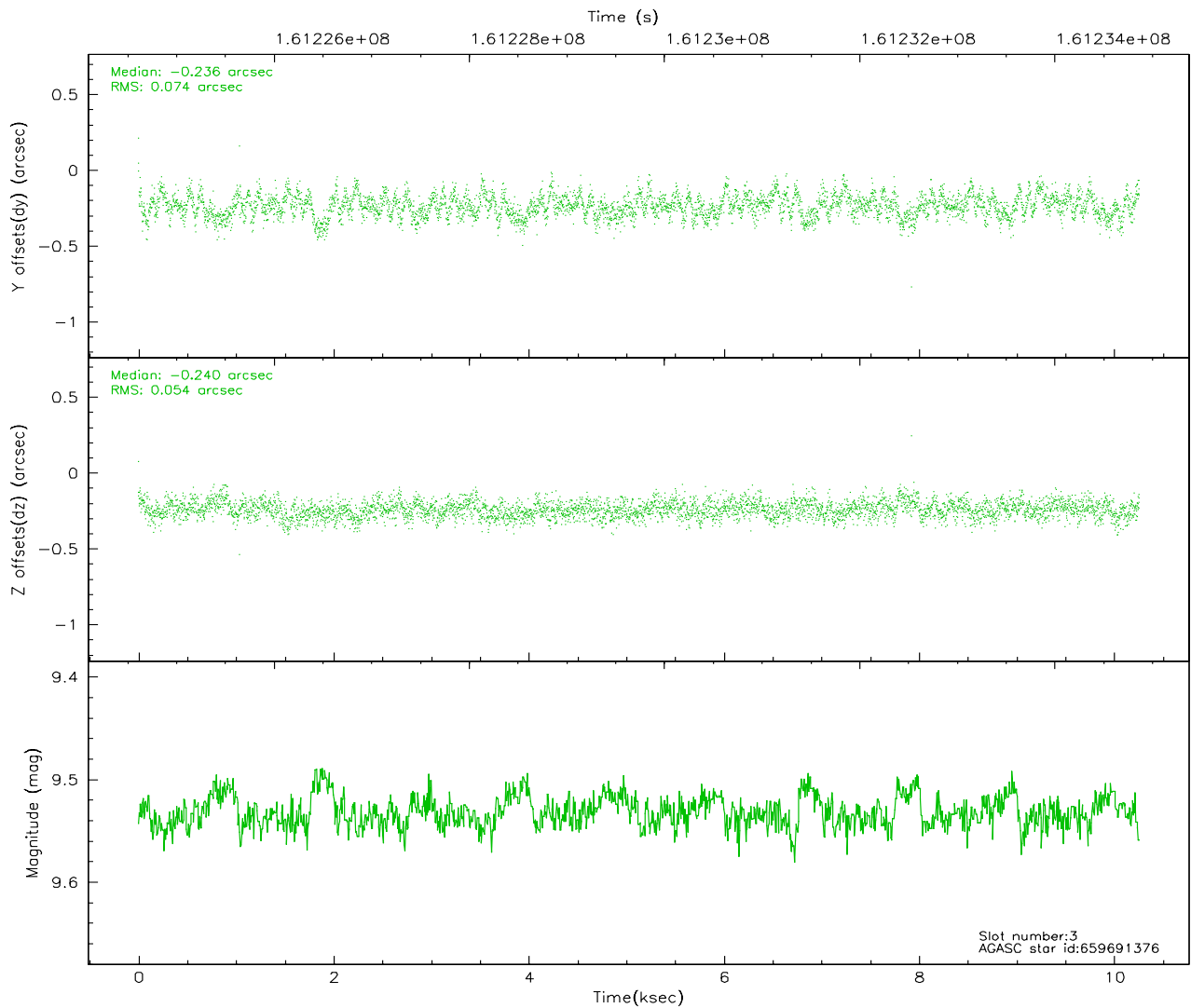
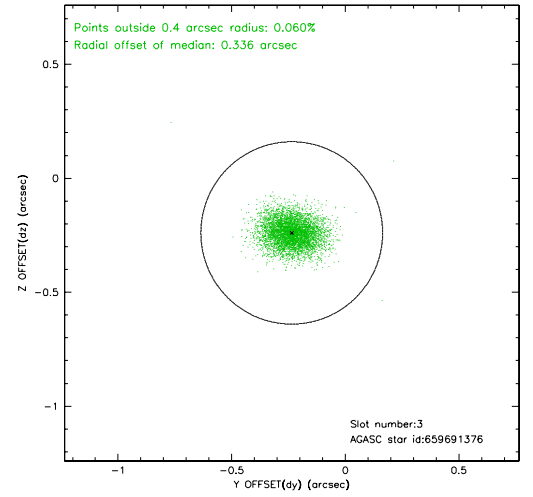
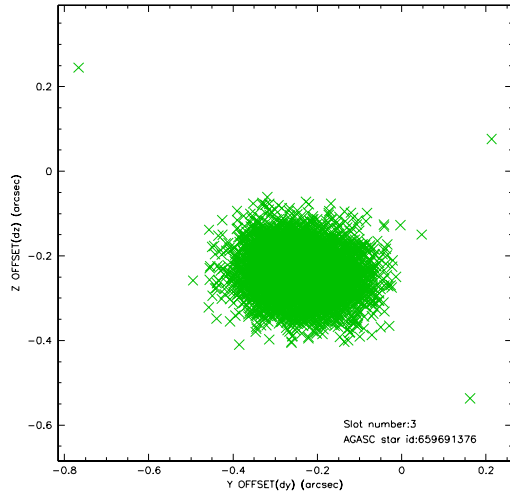


### Slot Statistics

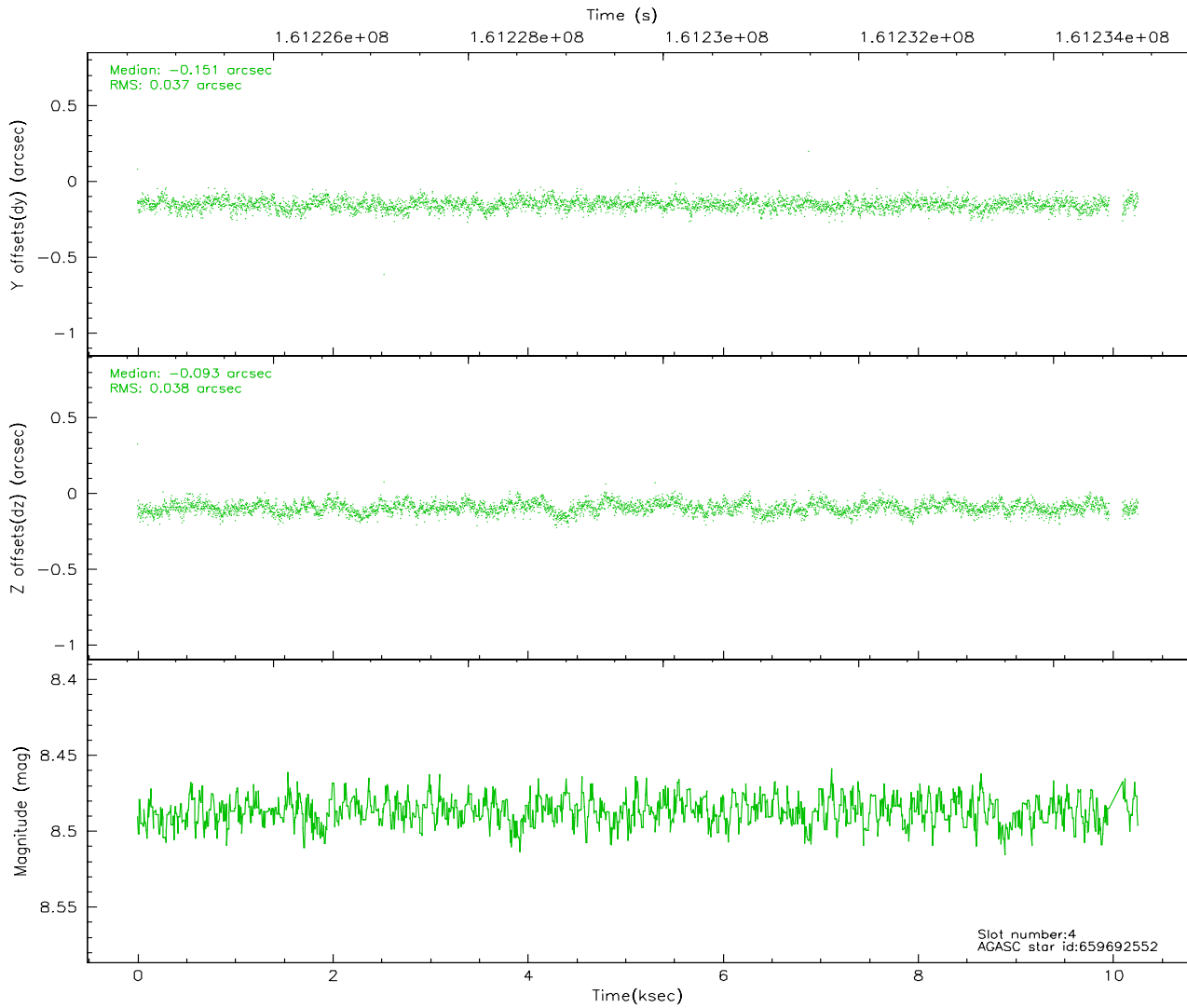
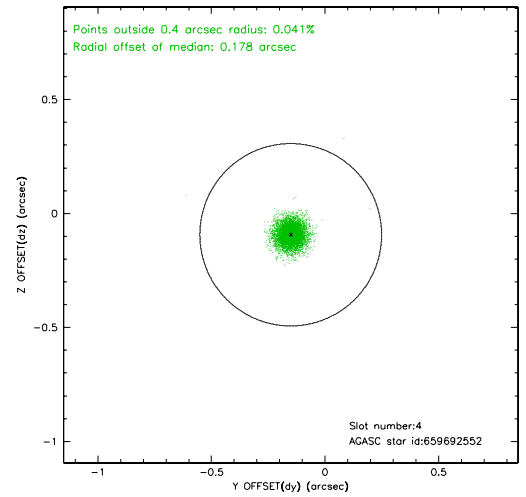
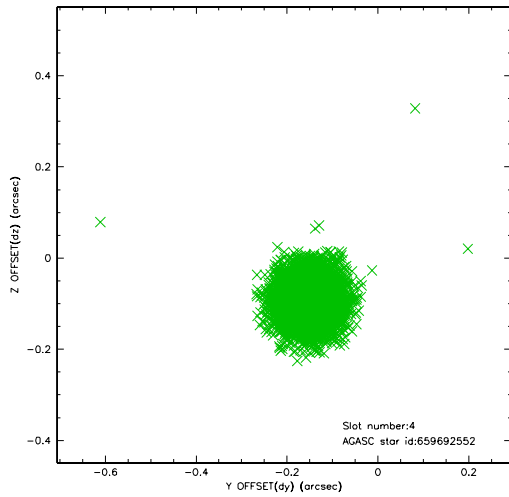
| slot | status | id        | mag  | n_pts | med_dy | med_dz | dr1   | dr2   | ra         | dec       | mean_y   | mean_z   |
|------|--------|-----------|------|-------|--------|--------|-------|-------|------------|-----------|----------|----------|
| 0    | FID    | ACIS-S-2  | 7.11 | 2502  | -0.019 | 0.006  | 0.007 | 0.011 | 0.000000   | 0.000000  | -755.59  | -1730.12 |
| 1    | FID    | ACIS-S-4  | 7.20 | 2502  | -0.031 | 0.007  | 0.005 | 0.008 | 0.000000   | 0.000000  | 2157.43  | 177.85   |
| 2    | FID    | ACIS-S-5  | 7.24 | 2502  | 0.018  | -0.005 | 0.006 | 0.010 | 0.000000   | 0.000000  | -1807.74 | 172.07   |
| 3    | GUIDE  | 659691376 | 9.53 | 4999  | -0.236 | -0.240 | 0.097 | 0.160 | 242.510650 | -1.124902 | 1983.26  | 2072.31  |
| 4    | GUIDE  | 659692552 | 8.49 | 4938  | -0.151 | -0.093 | 0.055 | 0.090 | 242.783252 | -1.114160 | 2266.63  | 1132.67  |
| 5    | GUIDE  | 660210240 | 9.33 | 5003  | 0.180  | 0.206  | 0.087 | 0.142 | 243.323915 | -2.227406 | -1125.49 | -1754.38 |
| 6    | GUIDE  | 660210816 | 8.82 | 5005  | 0.193  | -0.056 | 0.072 | 0.117 | 242.610370 | -2.064751 | -1202.07 | 876.73   |
| 7    | GUIDE  | 660212896 | 9.34 | 5002  | 0.013  | 0.184  | 0.096 | 0.161 | 243.504085 | -1.927880 | 79.87    | -2112.23 |

## 2.4 Star Slots

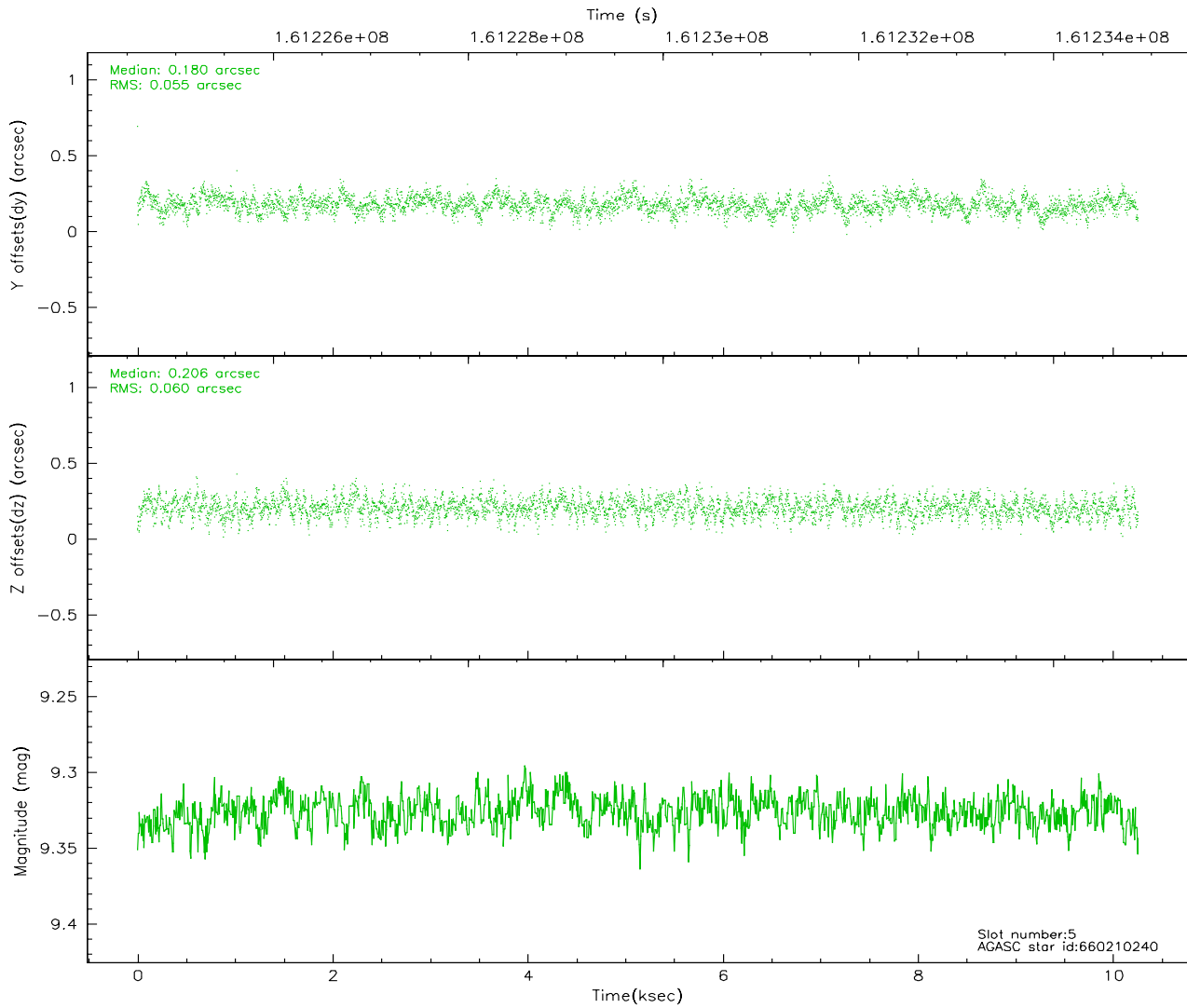
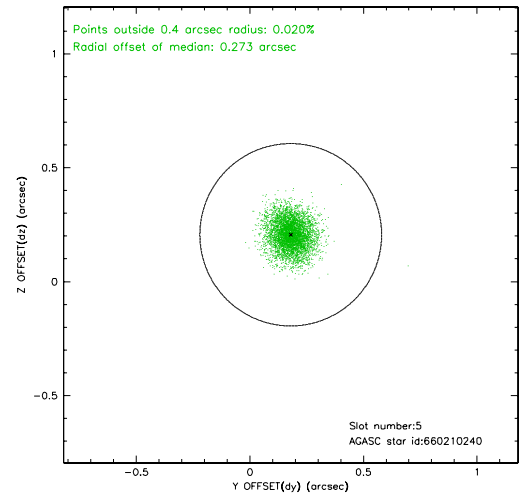
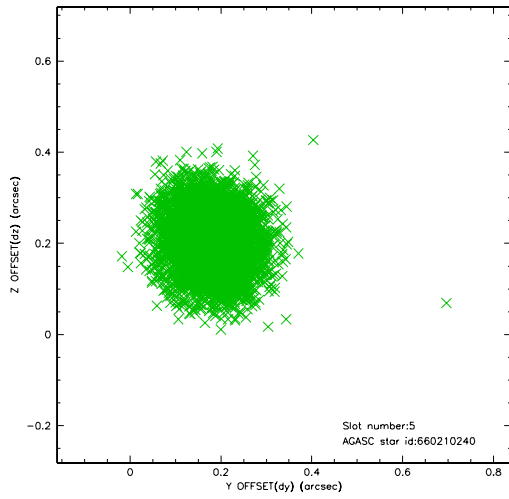
### 2.4.1 Slot 3



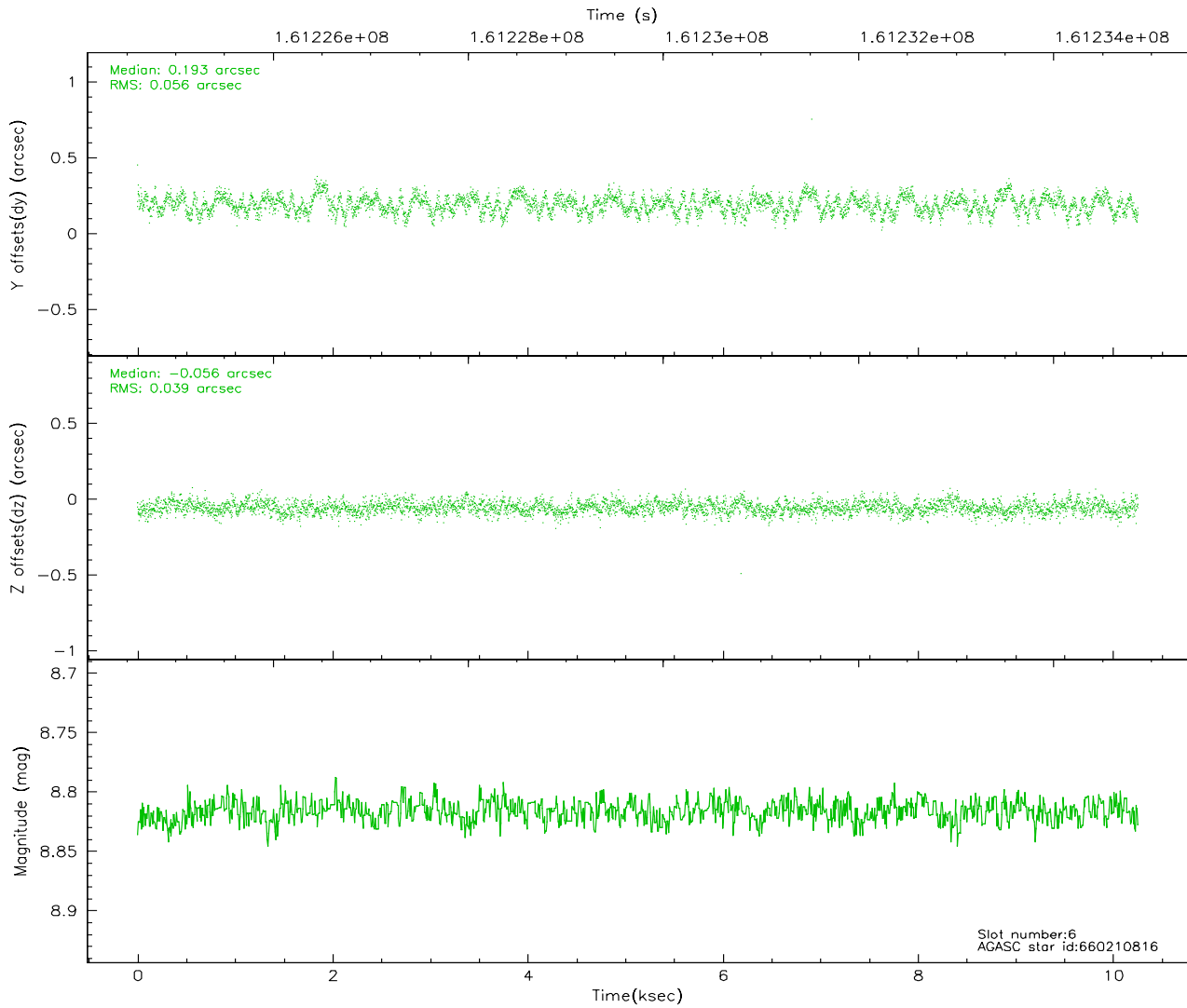
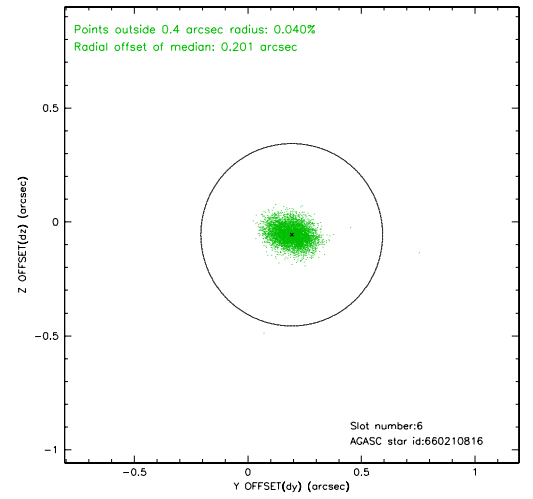
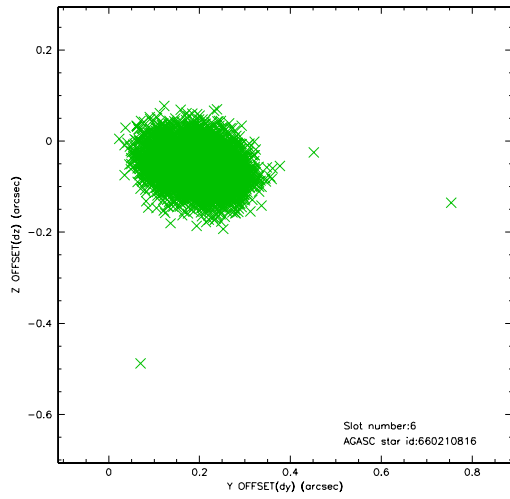
### 2.4.2 Slot 4



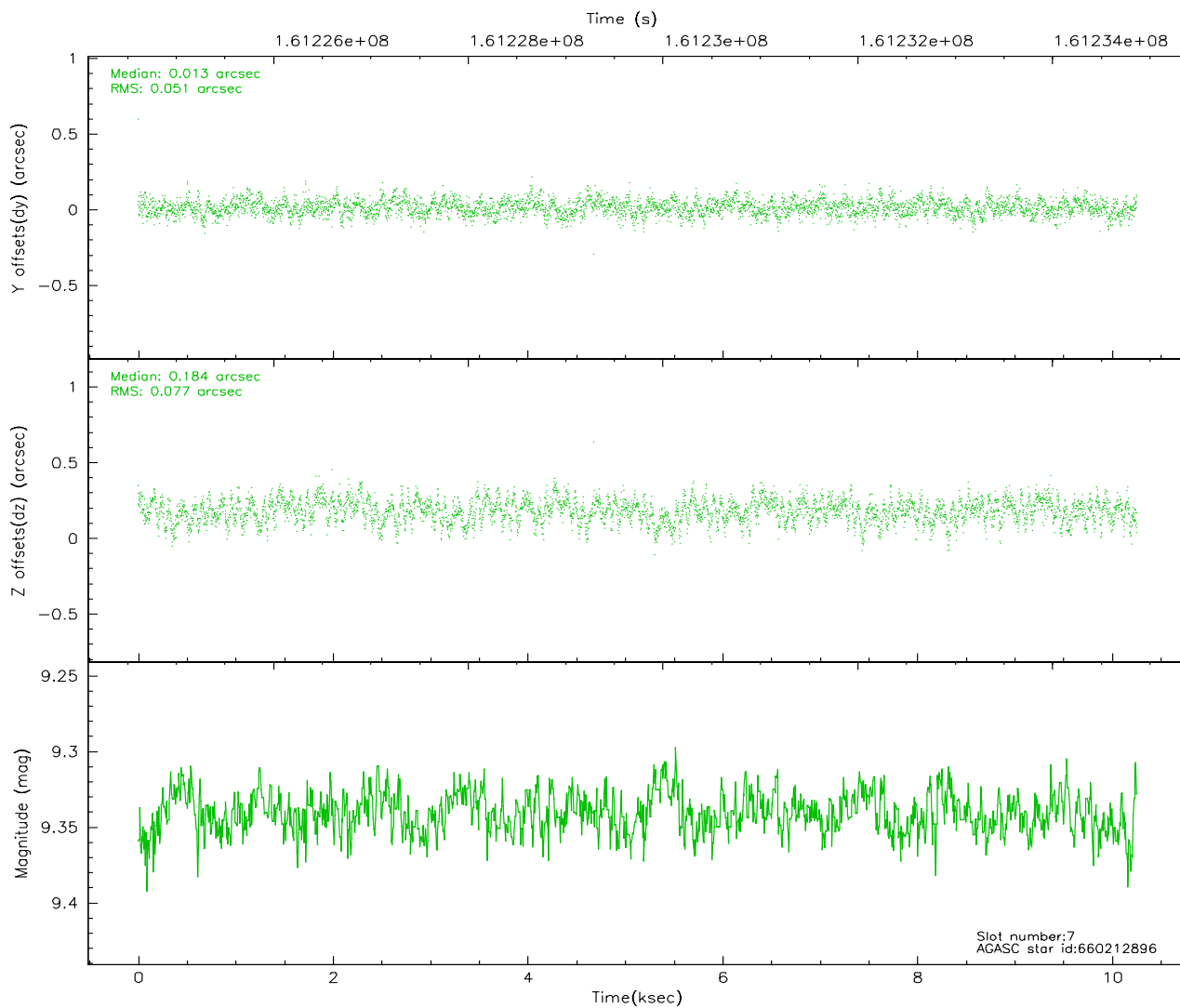
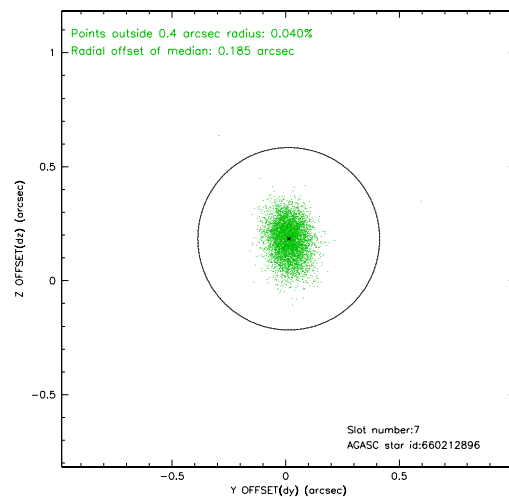
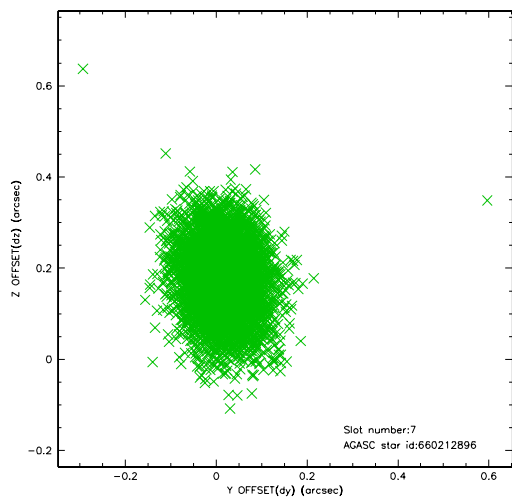
### 2.4.3 Slot 5



### 2.4.4 Slot 6

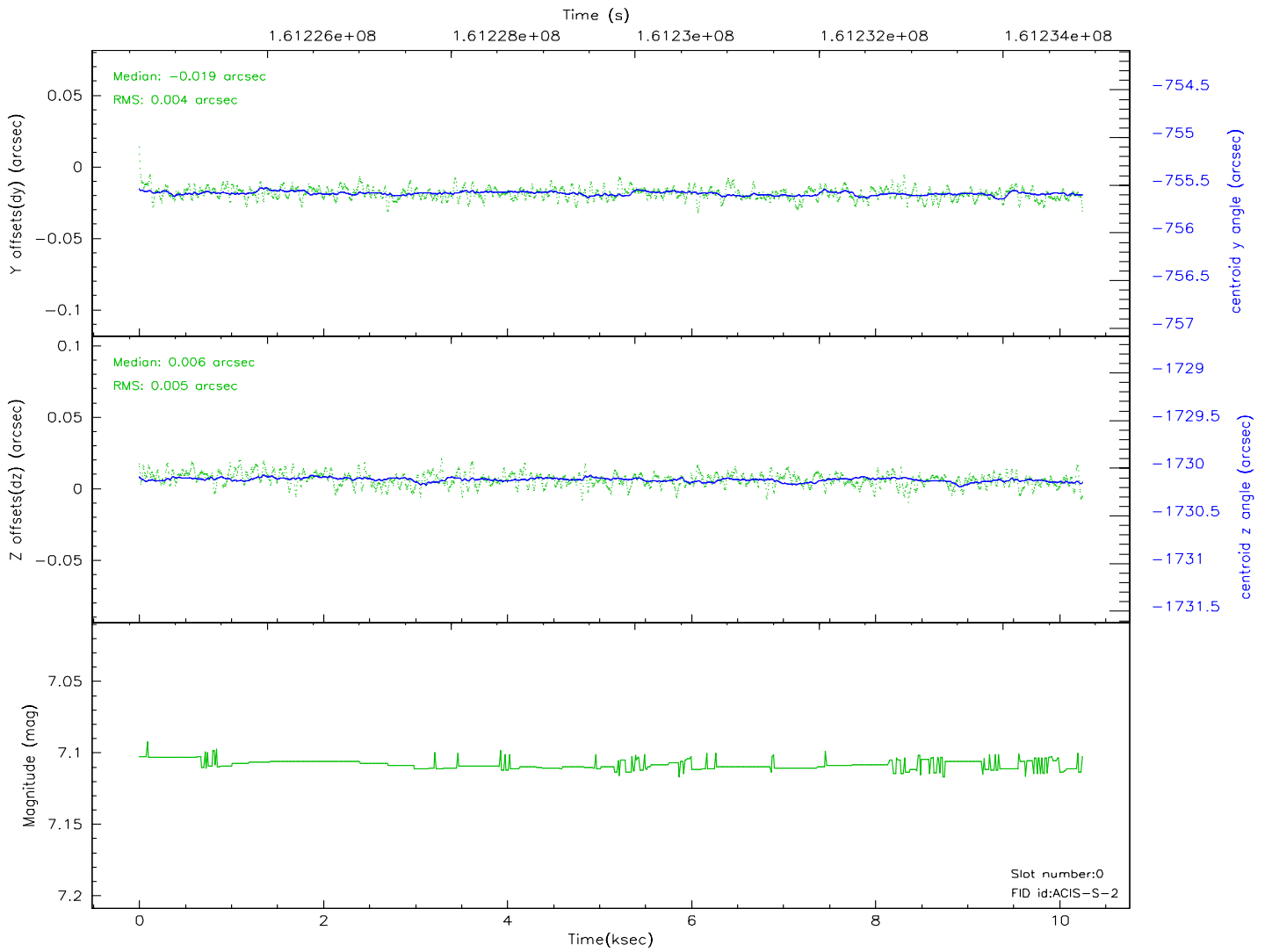
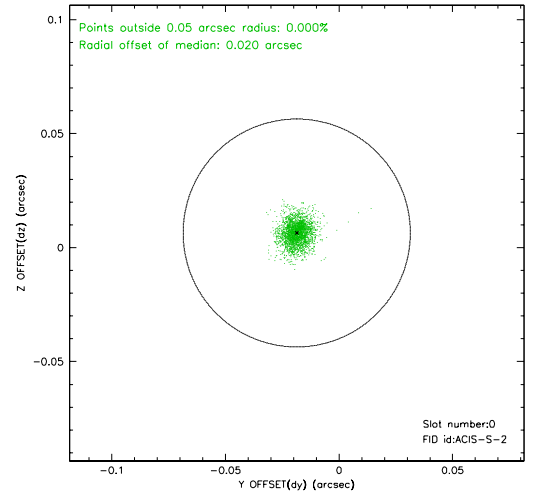
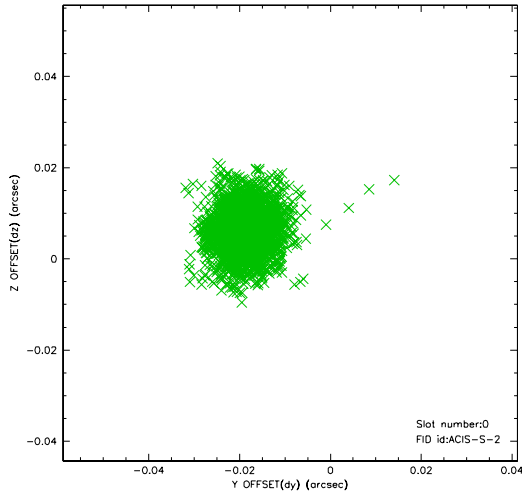


## 2.4.5 Slot 7

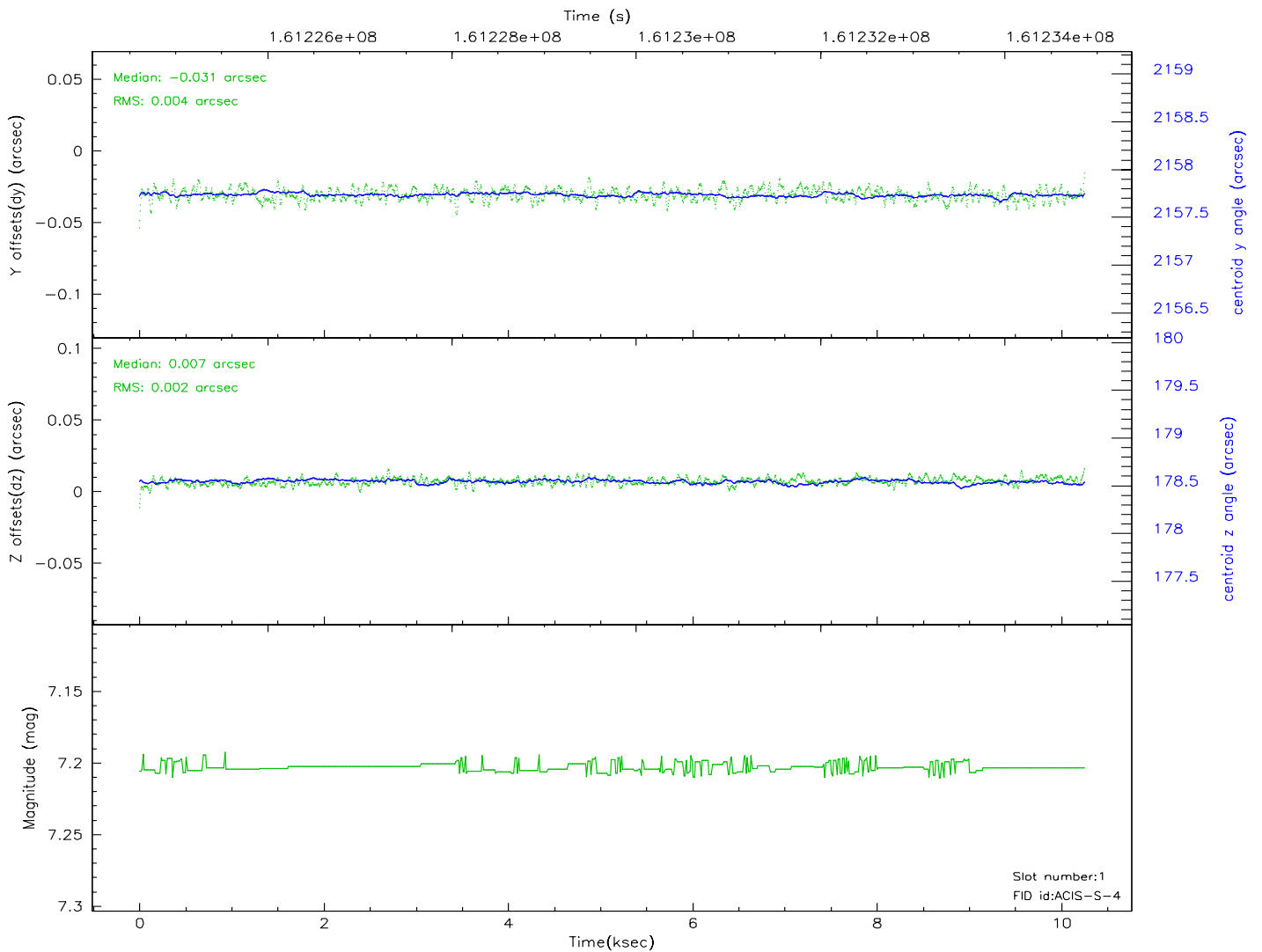
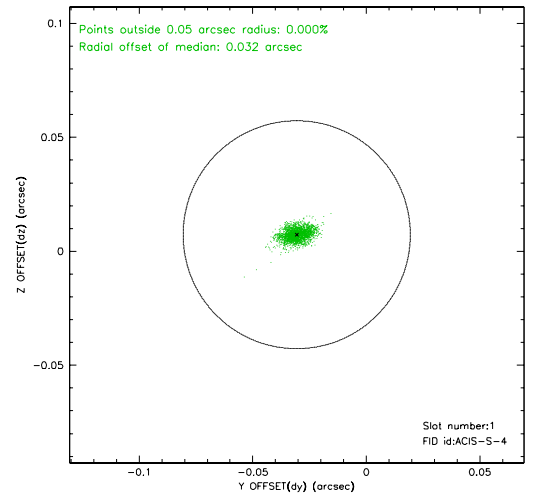
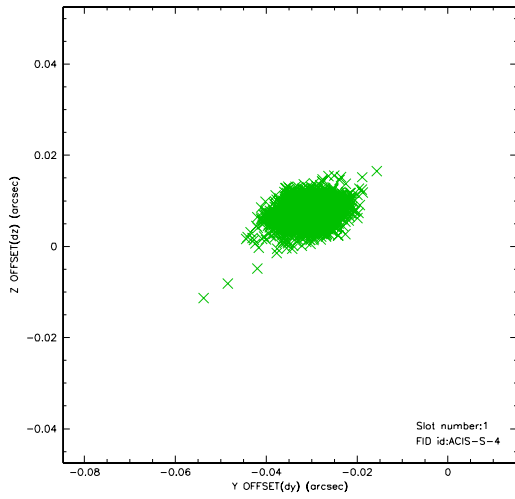


## 2.5 FID Slots

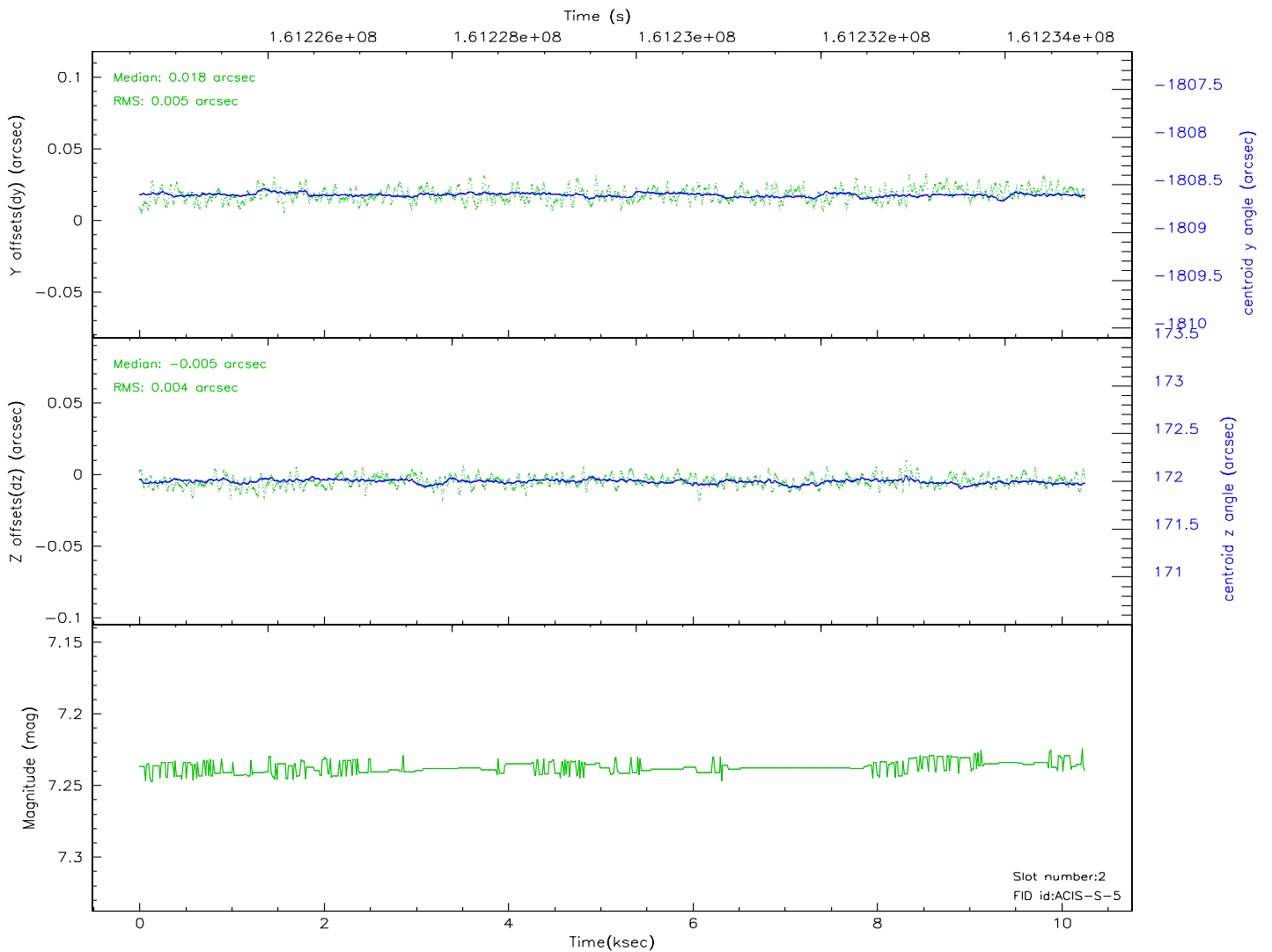
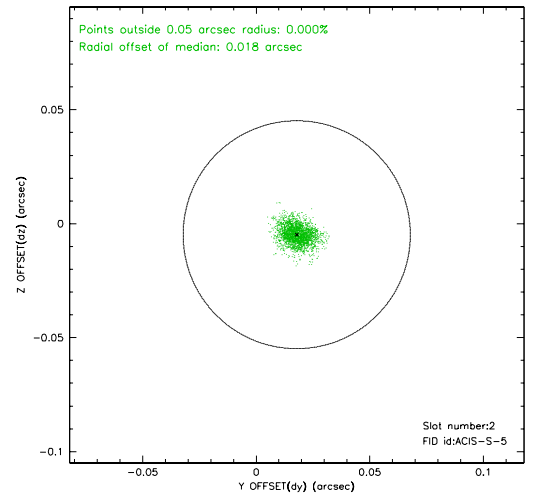
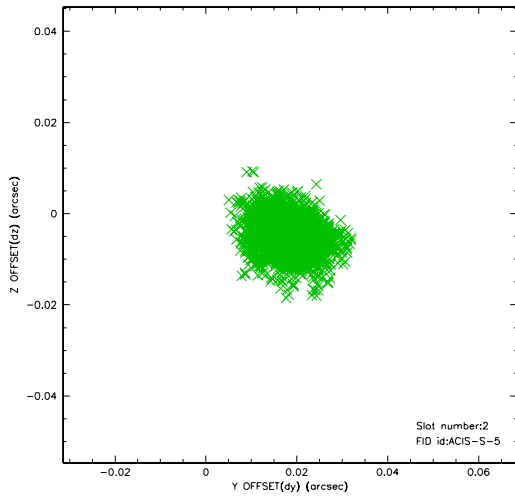
### 2.5.1 Slot 0



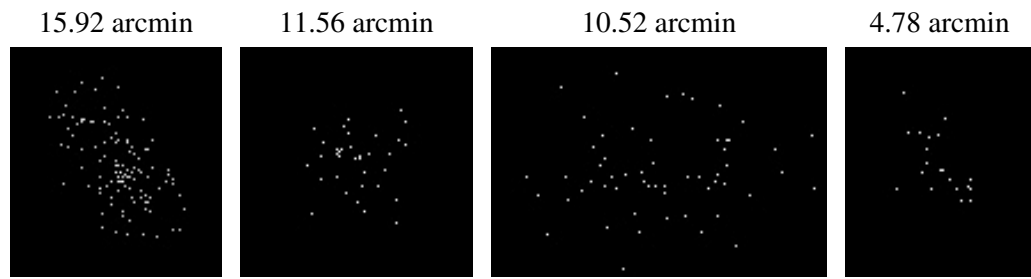
## 2.5.2 Slot 1



### 2.5.3 Slot 2



### 3 Point Sources



# A Summary

## A.1 Status

|                            |            |
|----------------------------|------------|
| V&V Scientist              | Jen Lauer  |
| V&V Date (YYYY-MM-DD)      | 2006.07.21 |
| V&V Edition                | 1          |
| V&V Disposition and Status | OK         |
| V&V Charge Time            | 9.876      |

## A.2 Comments