

# V&V Reference Report

## L2 ASCDS Version : 8.4.5

Observation 789 - L2 Version 4  
Chandra X-Ray Center

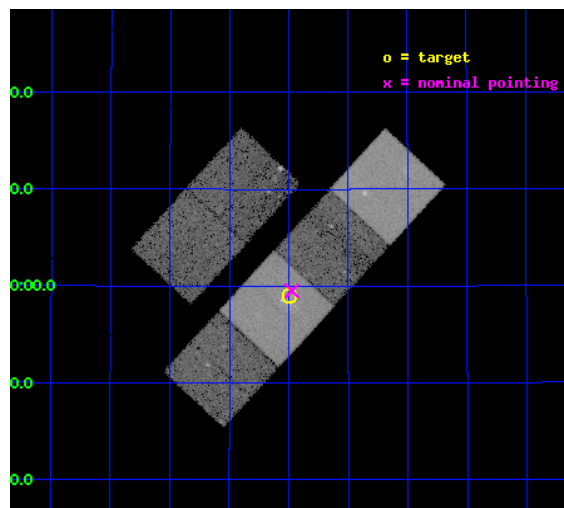
L2 Processing Date : Aug 30 2012

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# 1 Front

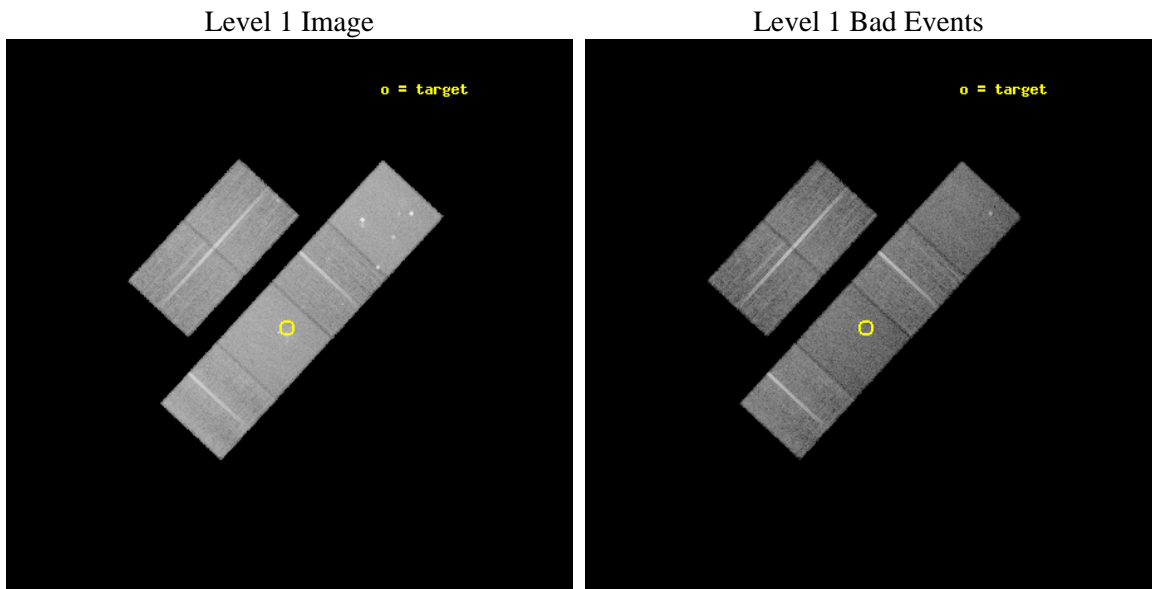
|          |                                                   |                                             |
|----------|---------------------------------------------------|---------------------------------------------|
| seq_num  | 600092                                            | Sequence number                             |
| obs_id   | 789                                               | Observation id                              |
| title    | RESOLVING THE X-RAY EMISSION IN STEPHAN'S QUINTET | Proposal title                              |
| observer | Dr. Ginevra Trinchieri                            | Principal investigator                      |
| object   | HCG 92                                            | Source name                                 |
| dtcycle  | 0                                                 | &#160                                       |
| cycle    | P                                                 | events from which exps?<br>Prim/Second/Both |
| ra_targ  | 339.0                                             | Observer's specified<br>target RA [deg]     |
| dec_targ | 33.983333                                         | Observer's specified<br>target Dec [deg]    |
| ra_nom   | 338.99357677544                                   | Nominal RA [deg]                            |
| dec_nom  | 33.991741348583                                   | Nominal Dec [deg]                           |
| roll_nom | 132.6915900115                                    | Nominal Roll [deg]                          |
| revision | 4                                                 | Processing version of<br>data               |
| ontime   | 19954.460444078                                   | Sum of GTIs [s]                             |
| livetime | 19701.785050801                                   | Livetime [s]                                |
| ontime2  | 19954.501484081                                   | Sum of GTIs [s]                             |
| ontime3  | 19954.337324083                                   | Sum of GTIs [s]                             |
| ontime5  | 19954.419404075                                   | Sum of GTIs [s]                             |
| ontime6  | 19954.378364086                                   | Sum of GTIs [s]                             |
| ontime7  | 19954.460444078                                   | Sum of GTIs [s]                             |
| ontime8  | 19954.29628408                                    | Sum of GTIs [s]                             |
| l2events | 211026                                            | Number of level 2 events                    |



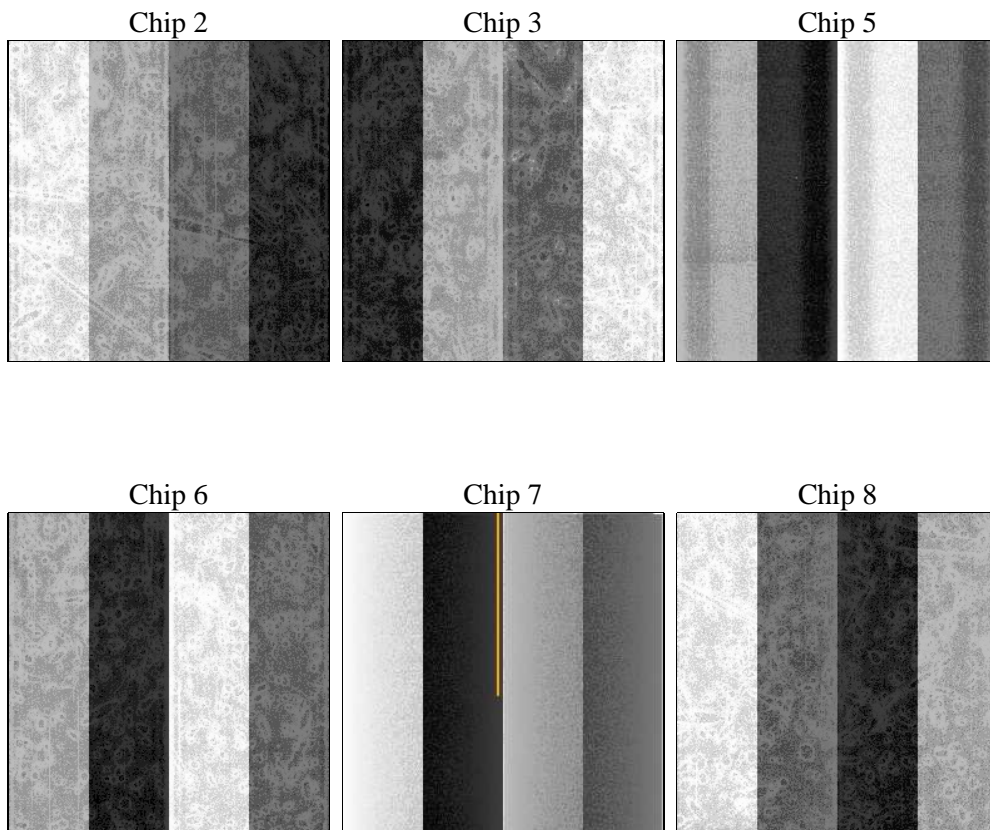
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

|          |                     |                                |                |                 |                                         |
|----------|---------------------|--------------------------------|----------------|-----------------|-----------------------------------------|
| obi_num  | 0                   | Obi number                     | sched_exp_time | 20000.000000    | [s] Scheduled observation exposure time |
| ascdsver | 8.4.5               | Processing system revision     | ontime         | 19954.460444078 | Sum of GTIs [s]                         |
| caldbver | 4.5.1.1             | &#160                          | ontime2        | 19954.501484081 | Sum of GTIs [s]                         |
| date     | 2012-08-30T14:05:58 | Date and time of file creation | ontime3        | 19954.337324083 | Sum of GTIs [s]                         |
| revision | 4                   | Processing version of data     | ontime5        | 19954.419404075 | Sum of GTIs [s]                         |
|          |                     |                                | ontime6        | 19954.378364086 | Sum of GTIs [s]                         |
|          |                     |                                | ontime7        | 19954.460444078 | Sum of GTIs [s]                         |
|          |                     |                                | ontime8        | 19954.29628408  | Sum of GTIs [s]                         |
|          |                     |                                | l1events       | 919256          | Number of level 1 events                |

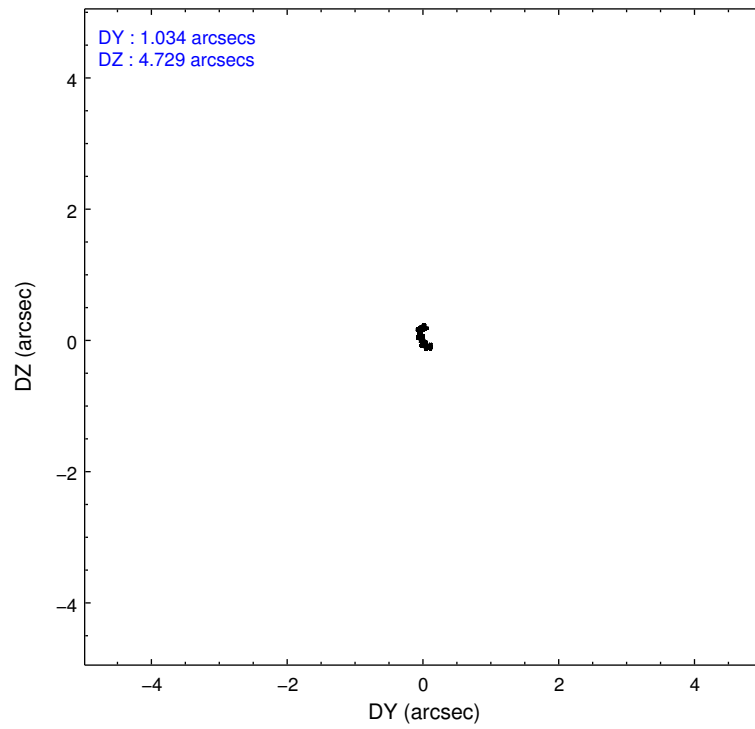
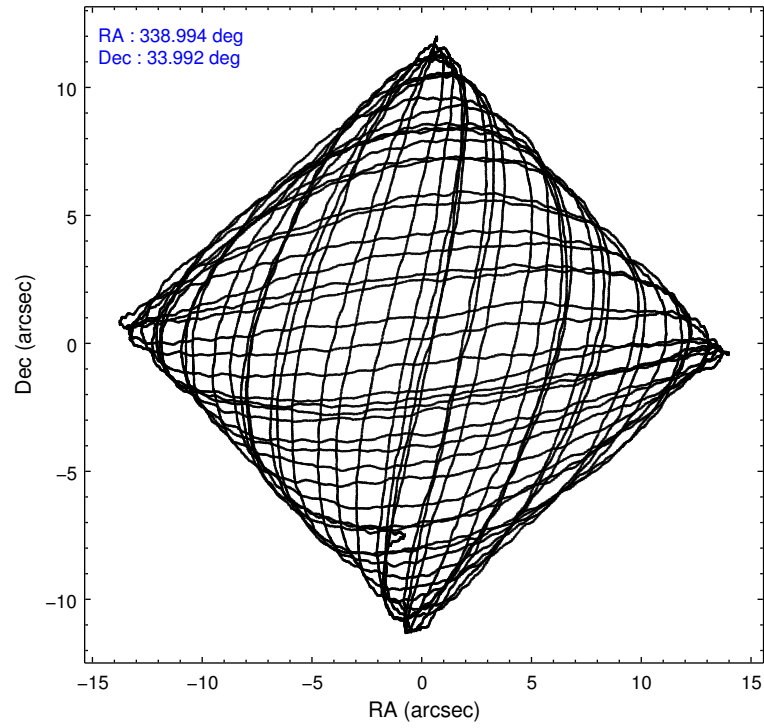
### 2.1.4 Events

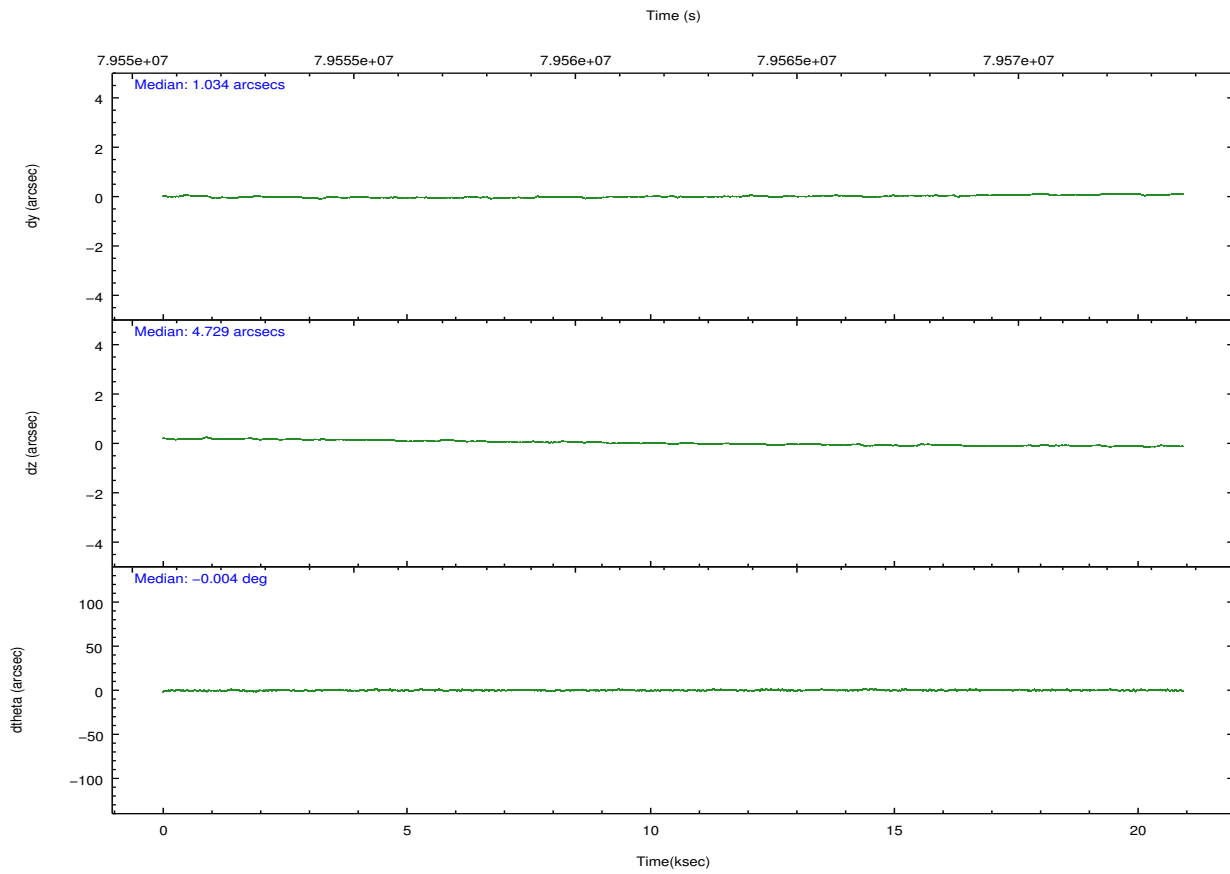
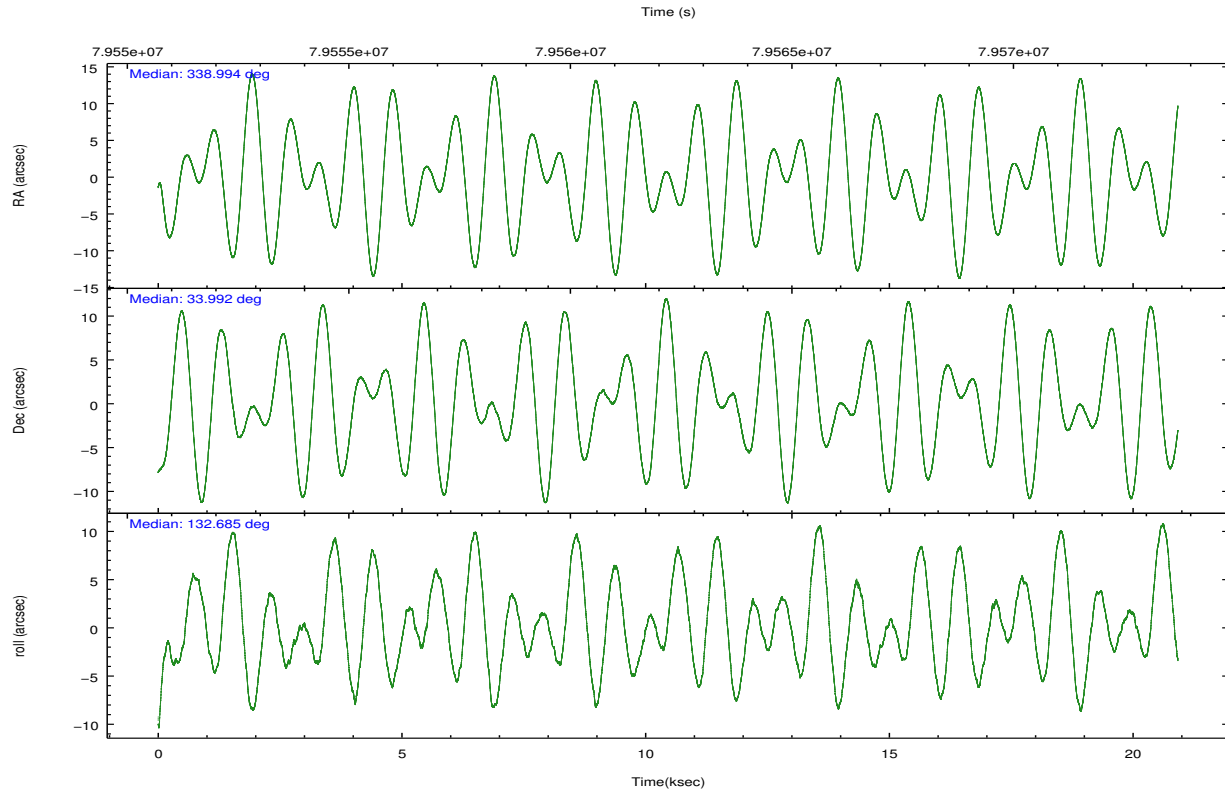
|                 | ccd 2  | ccd 3  | ccd 5  | ccd 6  | ccd 7  | ccd 8  |                | ccd 2  | ccd 3  | ccd 5 | ccd 6  | ccd 7 | ccd 8  |
|-----------------|--------|--------|--------|--------|--------|--------|----------------|--------|--------|-------|--------|-------|--------|
| level 1 events  | 139824 | 132645 | 183219 | 134671 | 163479 | 165418 | grade 0 events | 7103   | 7079   | 12937 | 7893   | 8306  | 12227  |
| rejected events | 123791 | 116887 | 93535  | 117384 | 89516  | 130608 |                | 5%     | 5%     | 7%    | 5%     | 5%    | 7%     |
| rejected %      | 88%    | 88%    | 51%    | 87%    | 54%    | 78%    | grade 1 events | 76     | 61     | 230   | 69     | 167   | 108    |
|                 |        |        |        |        |        |        |                | 0%     | 0%     | 0%    | 0%     | 0%    | 0%     |
|                 |        |        |        |        |        |        | grade 2 events | 3626   | 3345   | 26231 | 3472   | 14698 | 7688   |
|                 |        |        |        |        |        |        |                | 2%     | 2%     | 14%   | 2%     | 8%    | 4%     |
|                 |        |        |        |        |        |        | grade 3 events | 1343   | 1314   | 3979  | 1502   | 6776  | 3450   |
|                 |        |        |        |        |        |        |                | 0%     | 0%     | 2%    | 1%     | 4%    | 2%     |
|                 |        |        |        |        |        |        | grade 4 events | 1406   | 1443   | 3811  | 1518   | 6824  | 3275   |
|                 |        |        |        |        |        |        |                | 1%     | 1%     | 2%    | 1%     | 4%    | 1%     |
|                 |        |        |        |        |        |        | grade 5 events | 4221   | 4392   | 13811 | 5120   | 15054 | 6172   |
|                 |        |        |        |        |        |        |                | 3%     | 3%     | 7%    | 3%     | 9%    | 3%     |
|                 |        |        |        |        |        |        | grade 6 events | 2555   | 2579   | 42743 | 2908   | 37370 | 8177   |
|                 |        |        |        |        |        |        |                | 1%     | 1%     | 23%   | 2%     | 22%   | 4%     |
|                 |        |        |        |        |        |        | grade 7 events | 119494 | 112432 | 79477 | 112189 | 74284 | 124321 |
|                 |        |        |        |        |        |        |                | 85%    | 84%    | 43%   | 83%    | 45%   | 75%    |

## 2.2 Compared Parameters

| Parameter                         | Planned             | Actual               | Parameter                             | Planned   | Actual  |
|-----------------------------------|---------------------|----------------------|---------------------------------------|-----------|---------|
| Instrument                        | ACIS                | ACIS                 | Obspar format version number          | 7         | 7       |
| Detector                          | ACIS-235678         | ACIS-235678          | Obspar file type                      | PREDICTED | ACTUAL  |
| Grating                           | NONE                | NONE                 | 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                 | 339.025210          | 338.9935767754419    | Subarray requested                    | NONE      | NONE    |
| [deg] Pointing Dec                | 33.983729           | 33.99174134858314    | Alternating exposures requested       | N         | N       |
| [deg] Pointing Roll               | 132.517277          | 132.6915900115026    | [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)  | 79552424.184000     | 79551217.742548      |                                       |           |         |
| Observation start date            | 2000-07-09T17:52:40 | 2000-07-09T17:33:37  |                                       |           |         |
| [s] Observation end time (MET)    | 79572424.184000     | 79573401.305865      |                                       |           |         |
| Observation end date              | 2000-07-09T23:26:00 | 2000-07-09T23:43:21  |                                       |           |         |
| Read mode                         | TIMED               | TIMED                |                                       |           |         |

## 2.3 Aspect



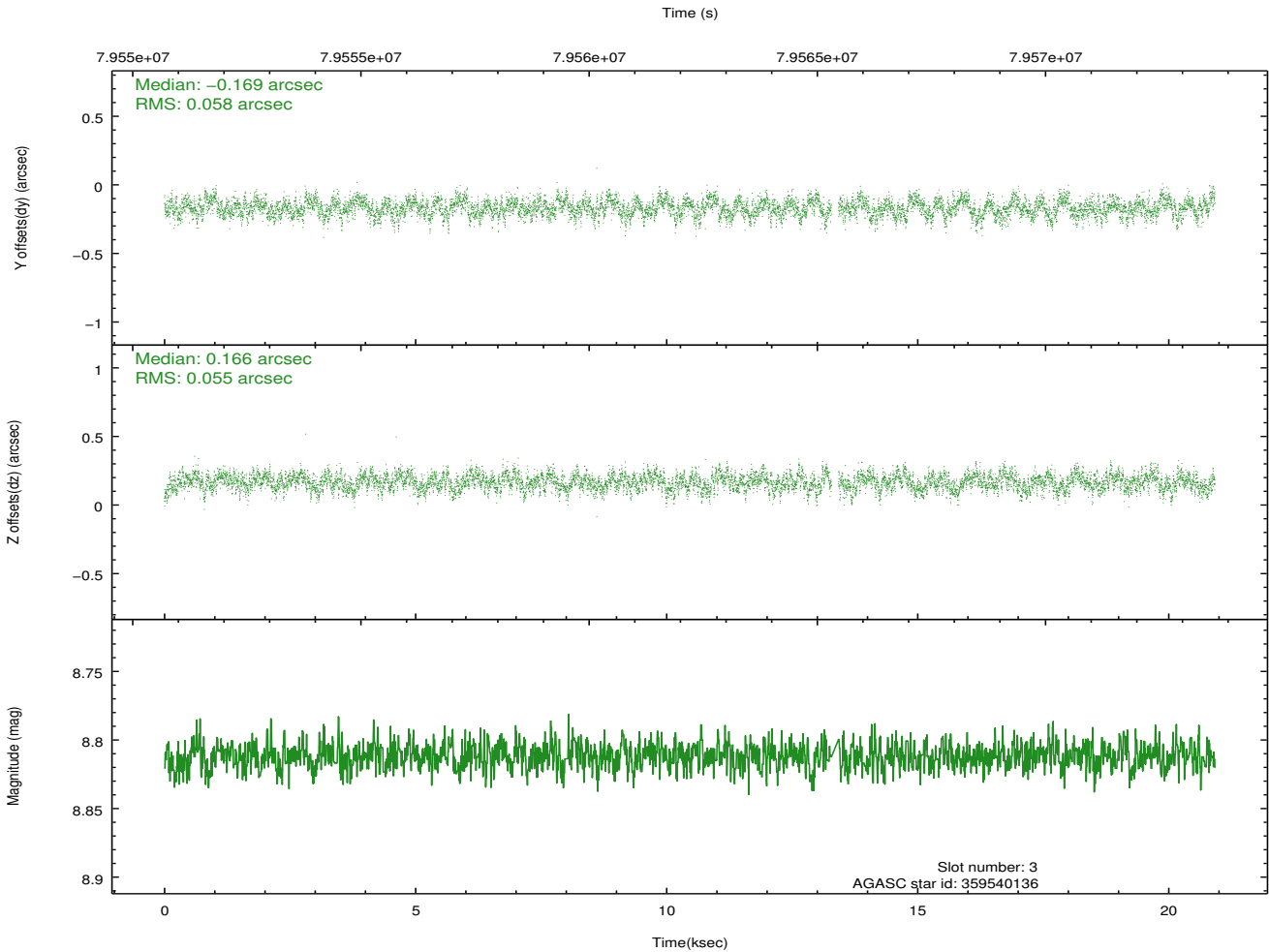
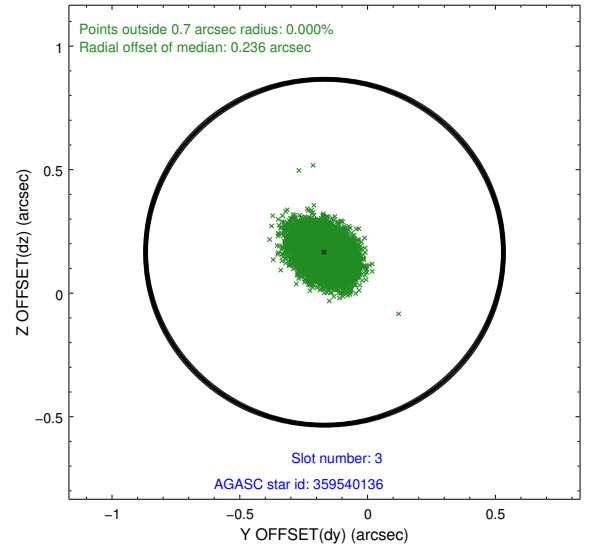
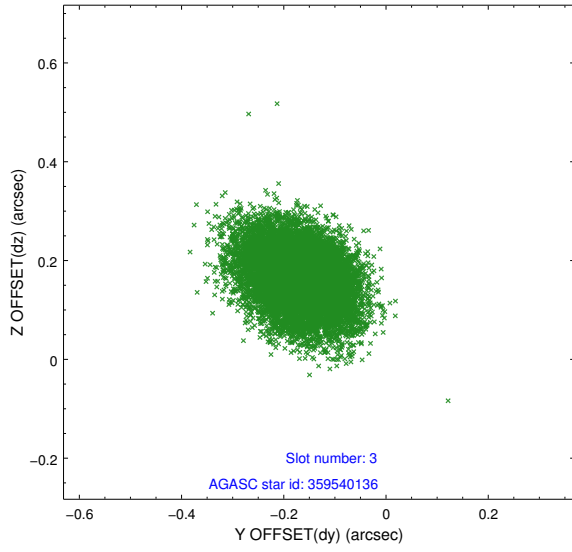


### Slot Statistics

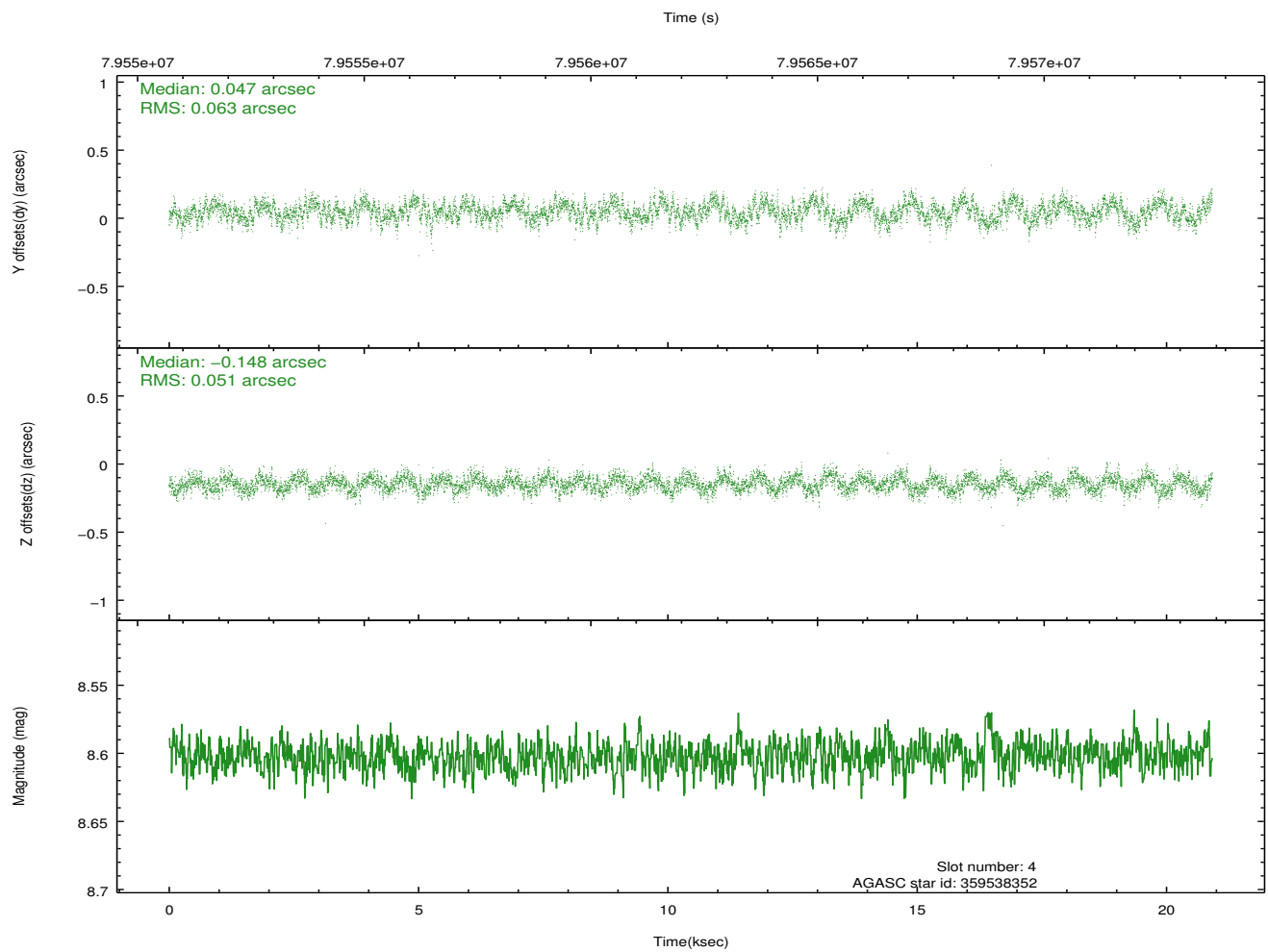
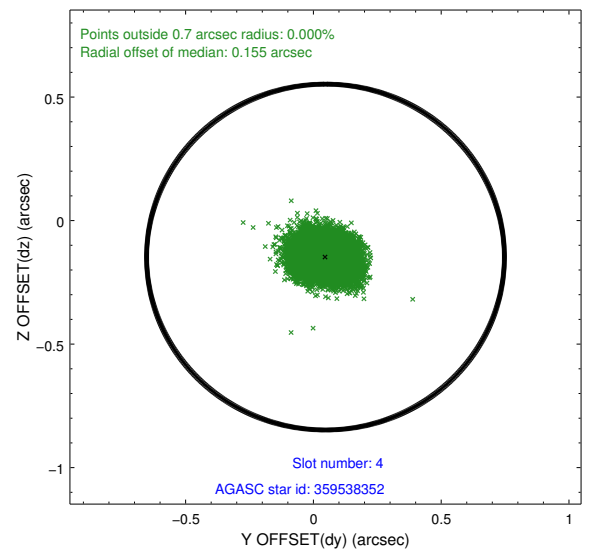
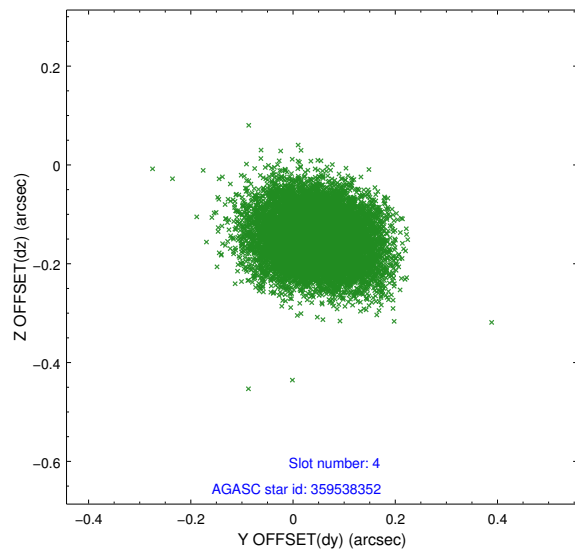
| slot | status | id        | mag  | n_pts | med_dy | med_dz | dr1   | dr2   | ra         | dec       | mean_y   | mean_z   |
|------|--------|-----------|------|-------|--------|--------|-------|-------|------------|-----------|----------|----------|
| 0    | FID    | ACIS-S-1  | 7.18 | 5101  | 0.017  | 0.070  | 0.008 | 0.014 | 0.000000   | 0.000000  | 942.39   | -1721.43 |
| 1    | FID    | ACIS-S-2  | 7.11 | 5103  | -0.039 | -0.035 | 0.007 | 0.011 | 0.000000   | 0.000000  | -753.48  | -1726.23 |
| 2    | FID    | ACIS-S-4  | 7.20 | 5103  | -0.005 | -0.030 | 0.006 | 0.011 | 0.000000   | 0.000000  | 2159.56  | 182.43   |
| 3    | GUIDE  | 359540136 | 8.81 | 10139 | -0.169 | 0.166  | 0.085 | 0.138 | 339.014971 | 34.618247 | 1705.03  | -1520.43 |
| 4    | GUIDE  | 359538352 | 8.60 | 10206 | 0.047  | -0.148 | 0.087 | 0.138 | 338.308674 | 33.941529 | 1340.57  | 1675.50  |
| 5    | GUIDE  | 359013608 | 8.95 | 10202 | 0.085  | -0.294 | 0.111 | 0.179 | 338.668767 | 33.432409 | -737.10  | 2129.83  |
| 6    | GUIDE  | 359663880 | 8.94 | 10206 | 0.178  | 0.098  | 0.218 | 0.305 | 339.815953 | 33.889479 | -1839.35 | -1517.88 |
| 7    | GUIDE  | 359547944 | 9.38 | 10204 | -0.122 | 0.176  | 0.102 | 0.159 | 338.858049 | 34.436167 | 1536.81  | -734.36  |

## 2.4 Star Slots

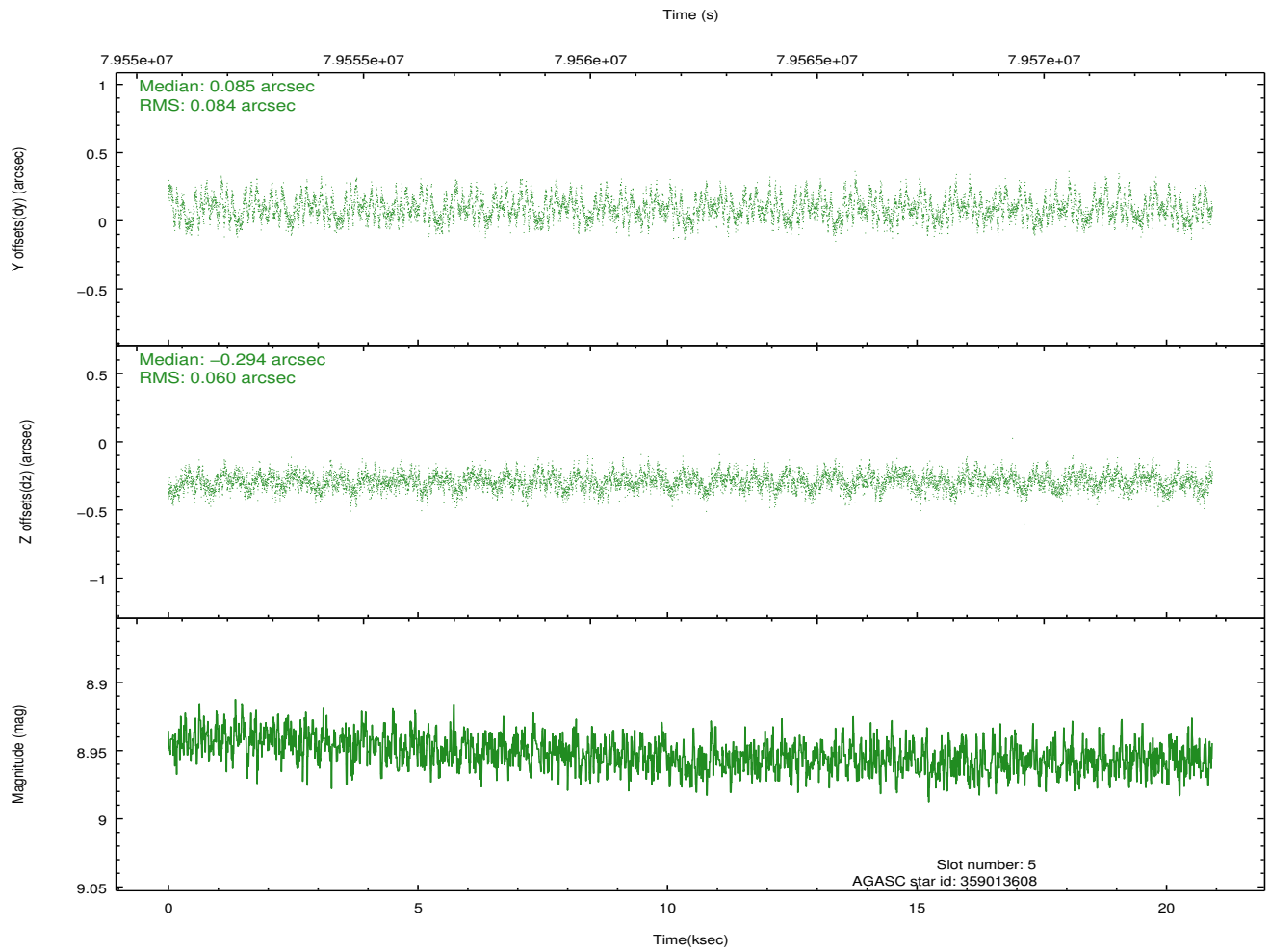
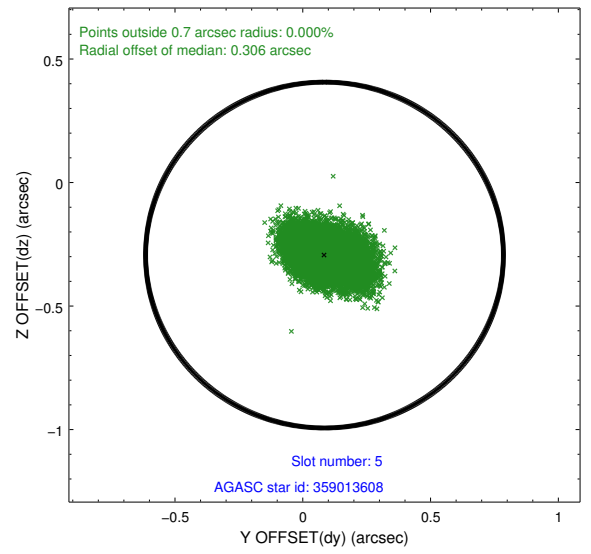
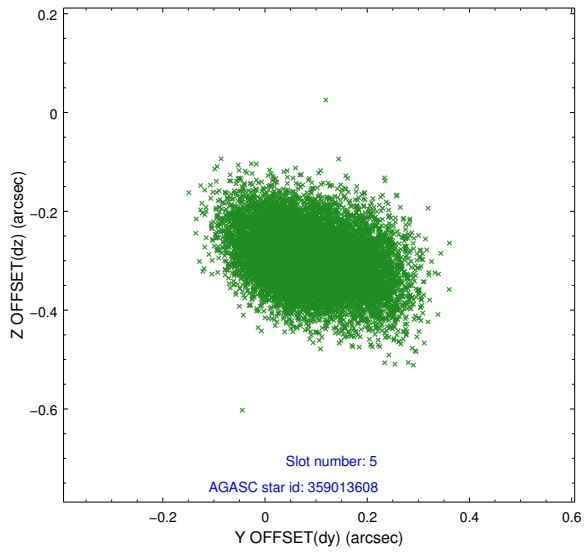
### 2.4.1 Slot 3



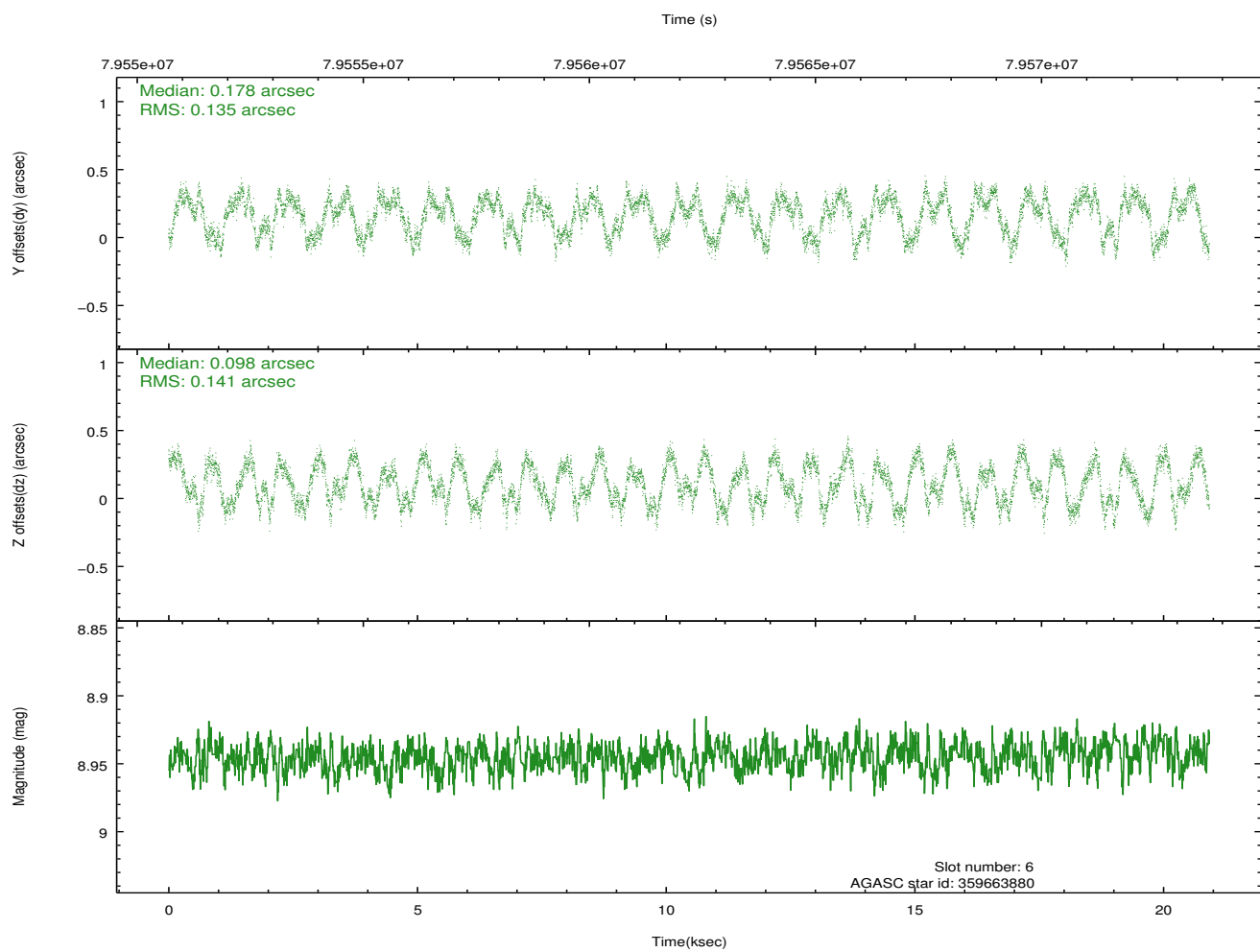
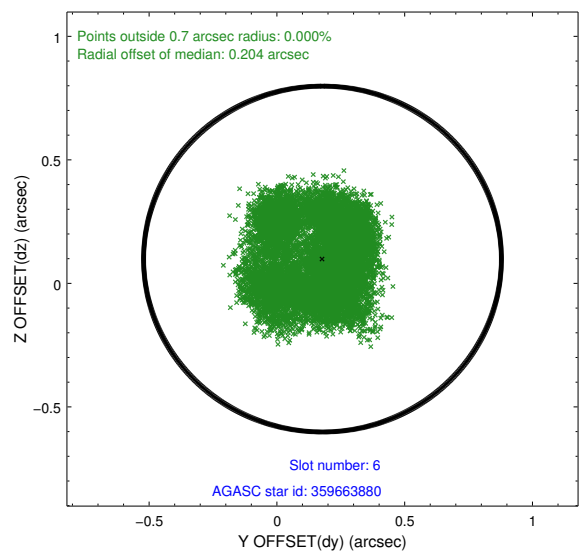
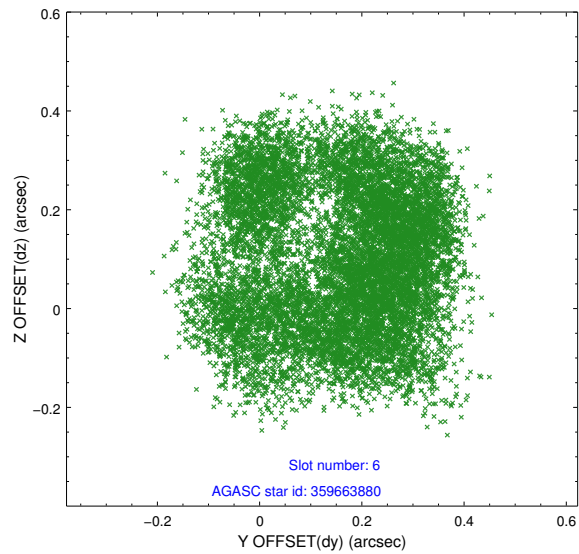
## 2.4.2 Slot 4



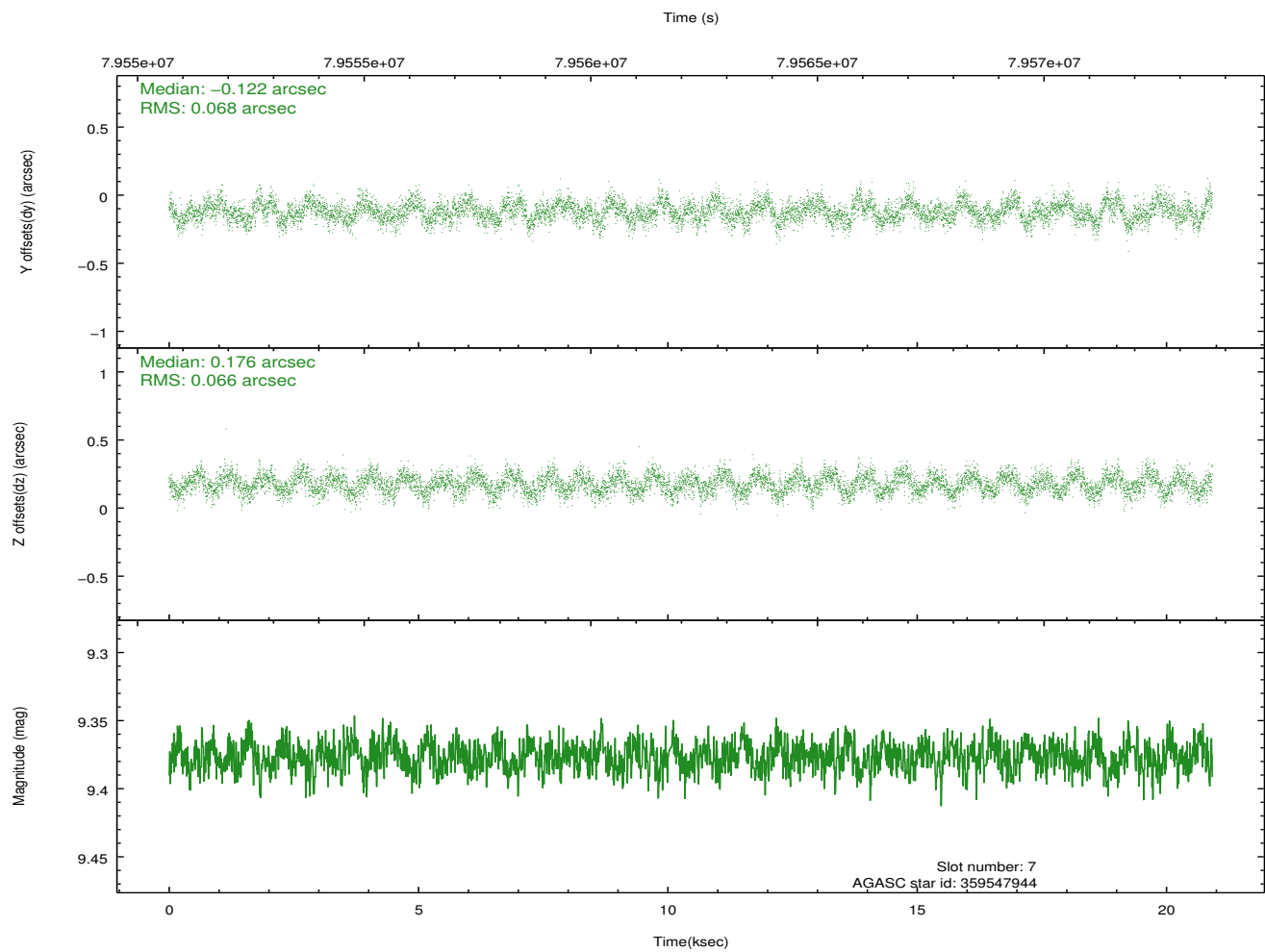
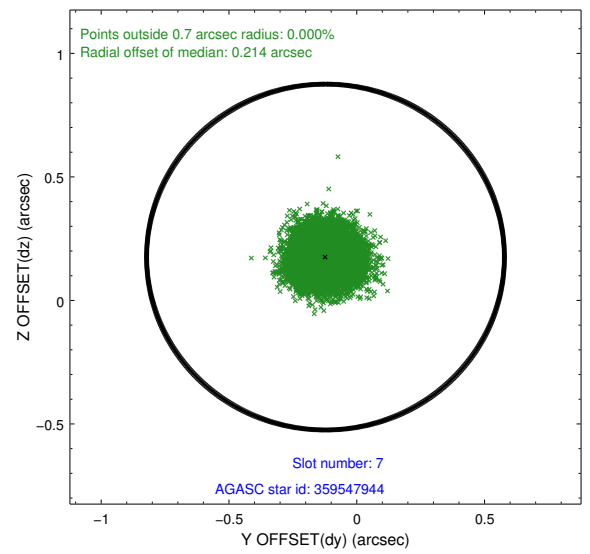
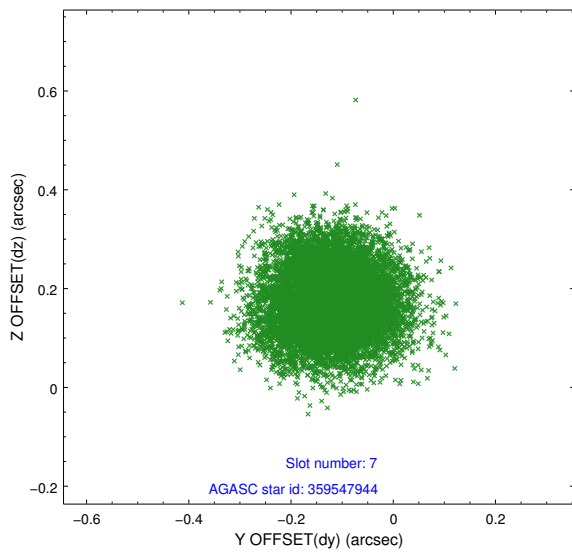
### 2.4.3 Slot 5



## 2.4.4 Slot 6

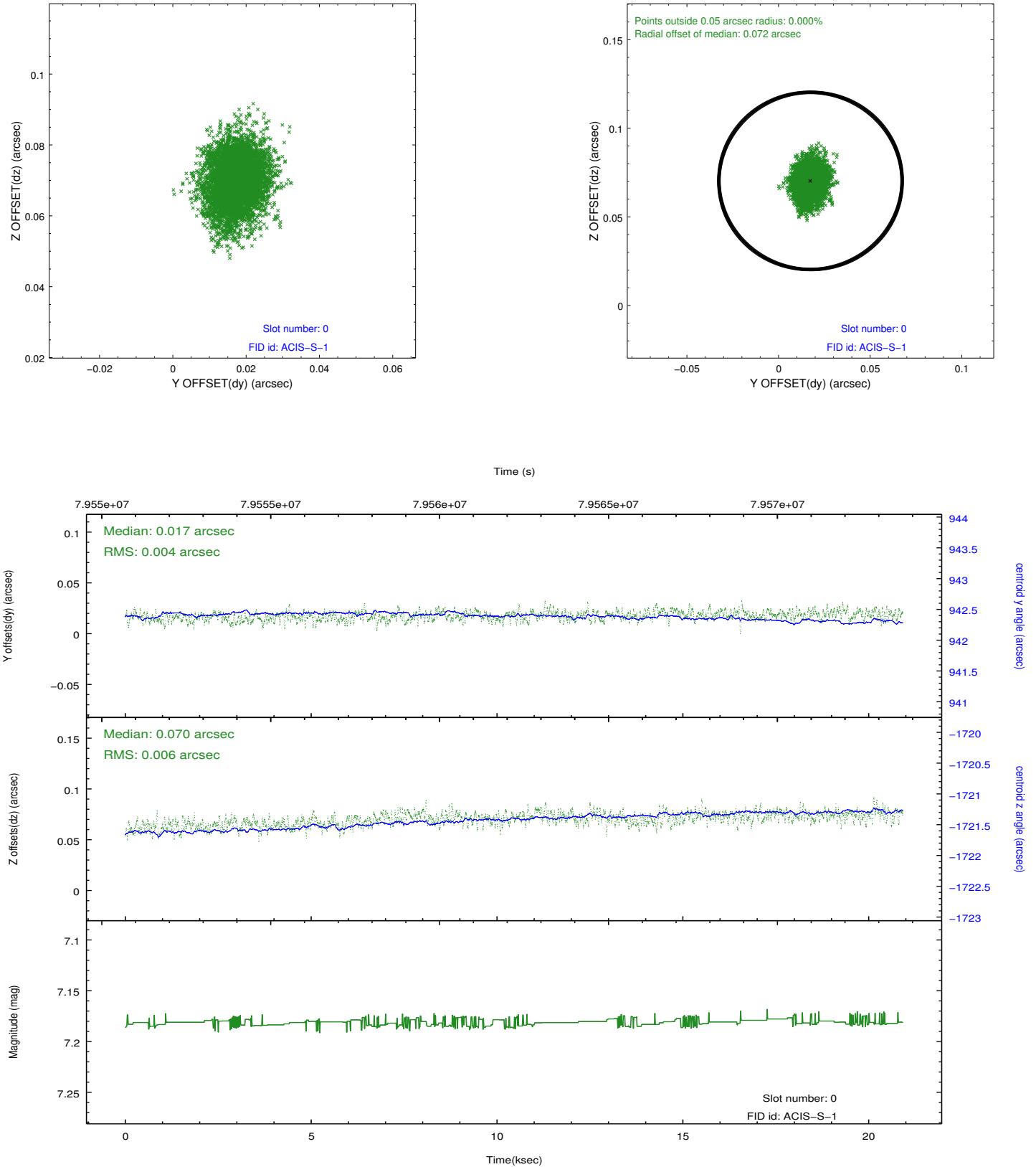


## 2.4.5 Slot 7

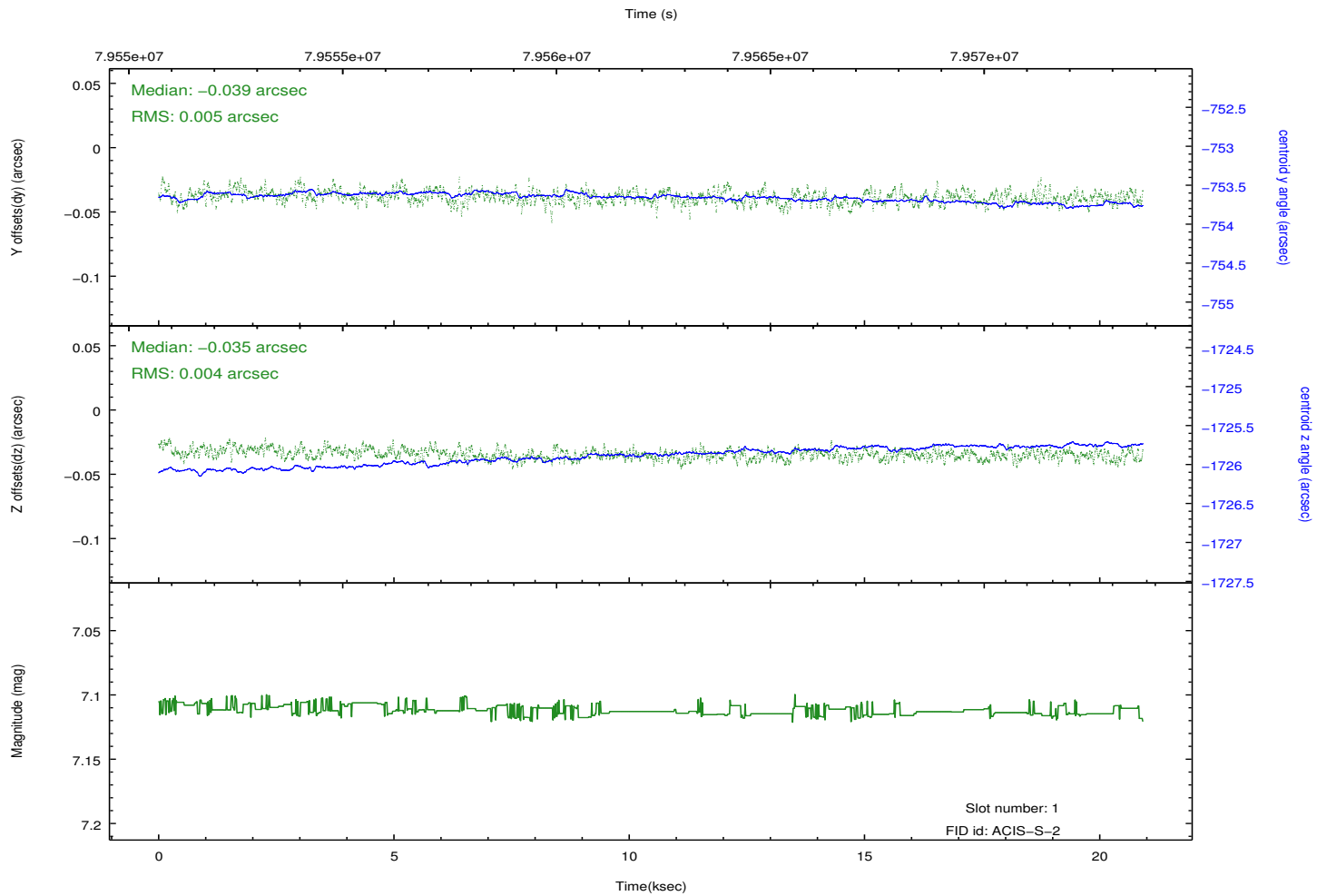
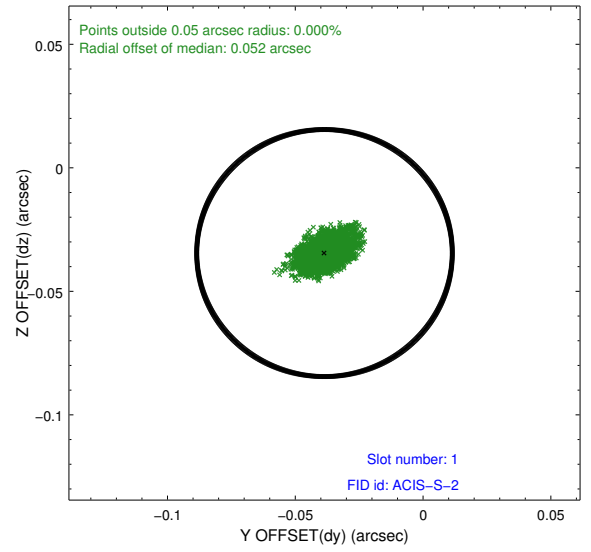
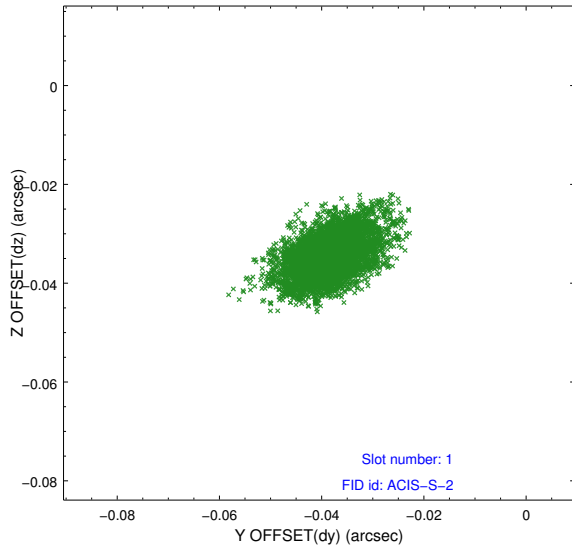


## 2.5 FID Slots

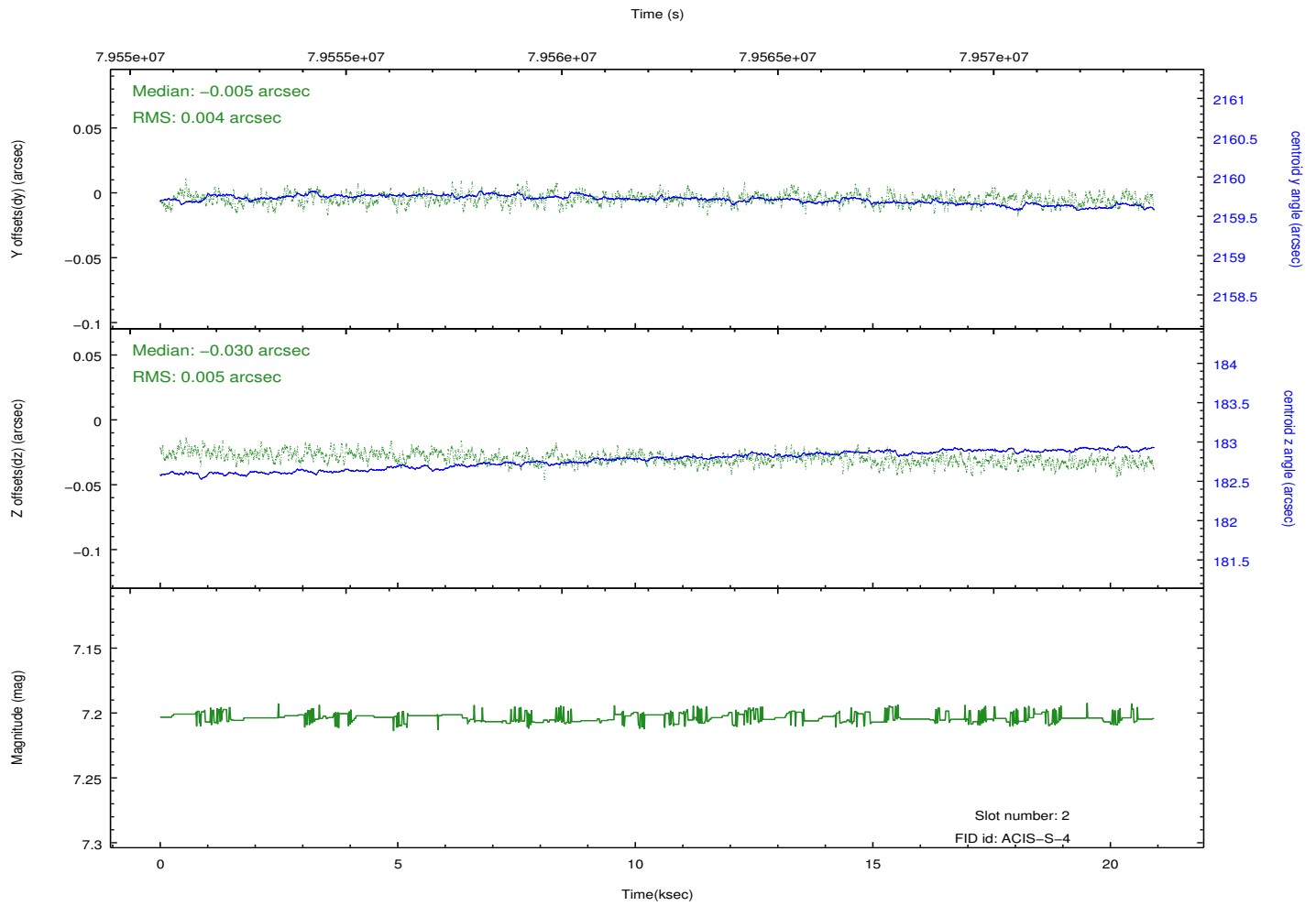
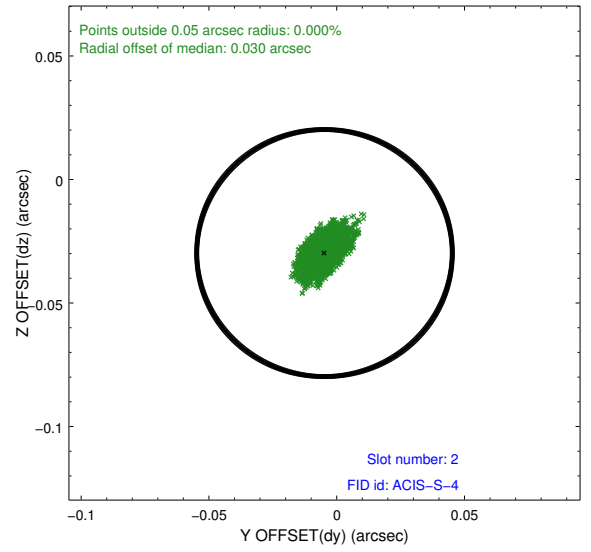
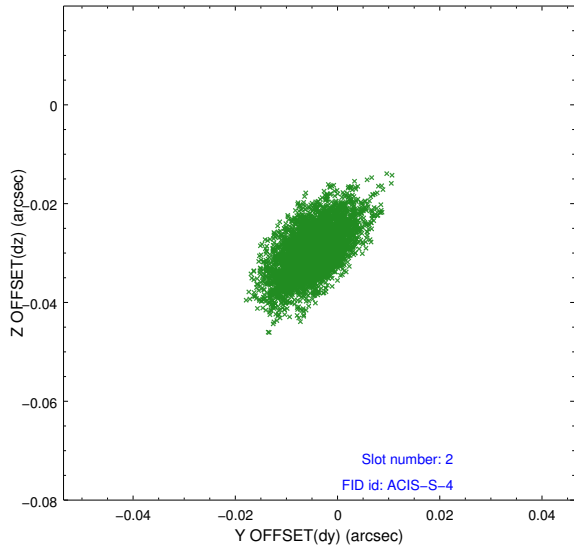
### 2.5.1 Slot 0



## 2.5.2 Slot 1



### 2.5.3 Slot 2



# A Summary

## A.1 Status

|                            |               |
|----------------------------|---------------|
| V&V Scientist              | Beth Sundheim |
| V&V Date (YYYY-MM-DD)      | 2012.09.04    |
| V&V Edition                | 1             |
| V&V Disposition and Status | OK            |
| V&V Charge Time            | 19.958        |

## A.2 Comments