

# V&V Reference Report

## L2 ASCDS Version : 8.4.5

Observation 1958 - L2 Version 3  
Chandra X-Ray Center

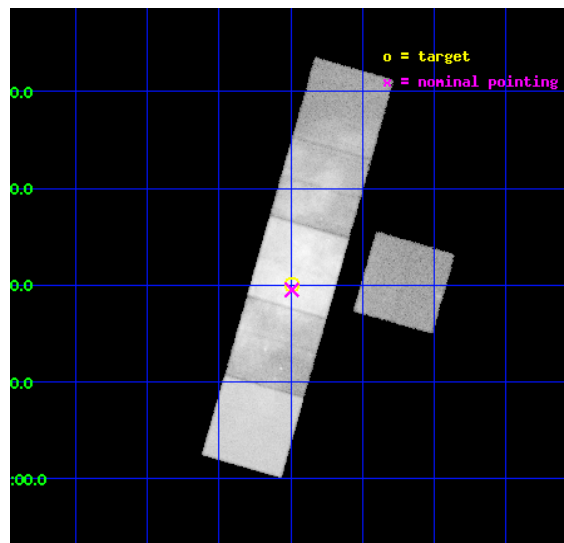
L2 Processing Date : Sep 3 2012

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# 1 Front

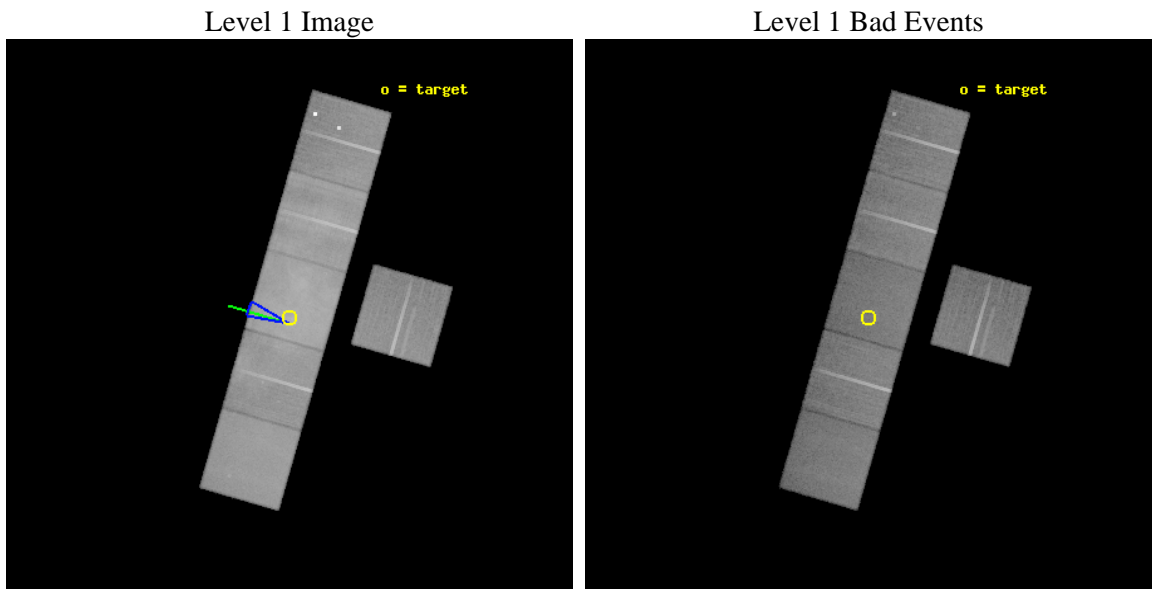
|          |  |   |
|----------|--|---|
| seq_num  | 500135   | Sequence number                             |
| obs_id   | 1958   | Observation id                              |
| title    | EXPLORING THE MYSTERIES OF MIXED MORPHOLOGY SUPERNOVA REMNANTS | Pro   |
| observer | Dr. Robin Shelton  | Principal investigator                      |
| object   | W44 CENTER   | Source name                                 |
| dtycycle | 0  | &#160                                       |
| cycle    | P  | events from which exps?<br>Prim/Second/Both |
| ra_targ  | 283.997083   | Observer's specified target RA [deg]        |
| dec_targ | 1.335278   | Observer's specified target Dec [deg]       |
| ra_nom   | 283.9980485305   | Nominal RA [deg]                            |
| dec_nom  | 1.3254342725358  | Nominal Dec [deg]                           |
| roll_nom | 286.01292810462  | Nominal Roll [deg]                          |
| revision | 3  | Processing version of data                  |
| ontime   | 46140.800042957  | Sum of GTIs [s]                             |
| livetime | 45556.537450159  | Livetime [s]                                |
| ontime3  | 46137.559092715  | Sum of GTIs [s]                             |
| ontime5  | 46137.559082702  | Sum of GTIs [s]                             |
| ontime6  | 46140.800042957  | Sum of GTIs [s]                             |
| ontime7  | 46140.800042957  | Sum of GTIs [s]                             |
| ontime8  | 46137.559052795  | Sum of GTIs [s]                             |
| ontime9  | 46140.800042957  | Sum of GTIs [s]                             |
| l2events | 995320   | Number of level 2 events                    |



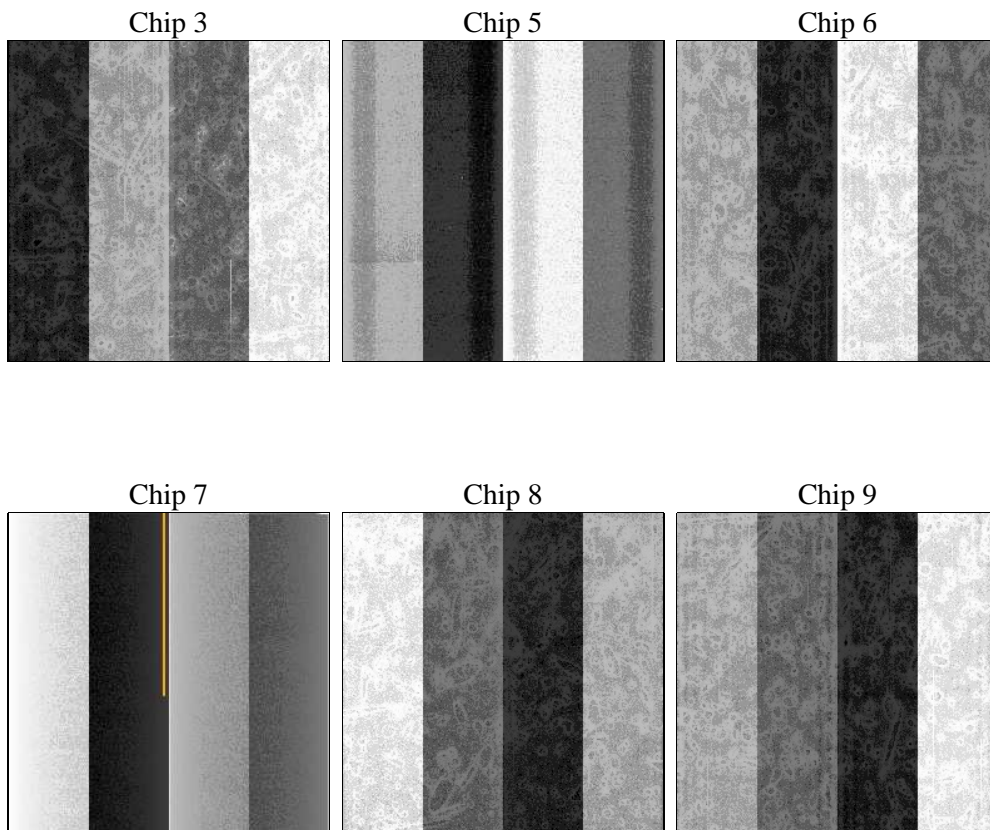
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

|          |                     |                                |                |                 |   |
|----------|---------------------|--------------------------------|----------------|-----------------|---|
| obi_num  | 0                   | Obi number                     | sched_exp_time | 46000.000000    | [s] Scheduled observation exposure time |
| ascdsver | 8.4.5               | Processing system revision     | ontime         | 46140.800042957 | Sum of GTIs [s]                         |
| caldbver | 4.5.1.1             | &#160                          | ontime3        | 46137.559092715 | Sum of GTIs [s]                         |
| date     | 2012-09-03T01:18:53 | Date and time of file creation | ontime5        | 46137.559082702 | Sum of GTIs [s]                         |
| revision | 3                   | Processing version of data     | ontime6        | 46140.800042957 | Sum of GTIs [s]                         |
|          |                     |                                | ontime7        | 46140.800042957 | Sum of GTIs [s]                         |
|          |                     |                                | ontime8        | 46137.559052795 | Sum of GTIs [s]                         |
|          |                     |                                | ontime9        | 46140.800042957 | Sum of GTIs [s]                         |
|          |                     |                                | l1events       | 2640276         | Number of level 1 events                |

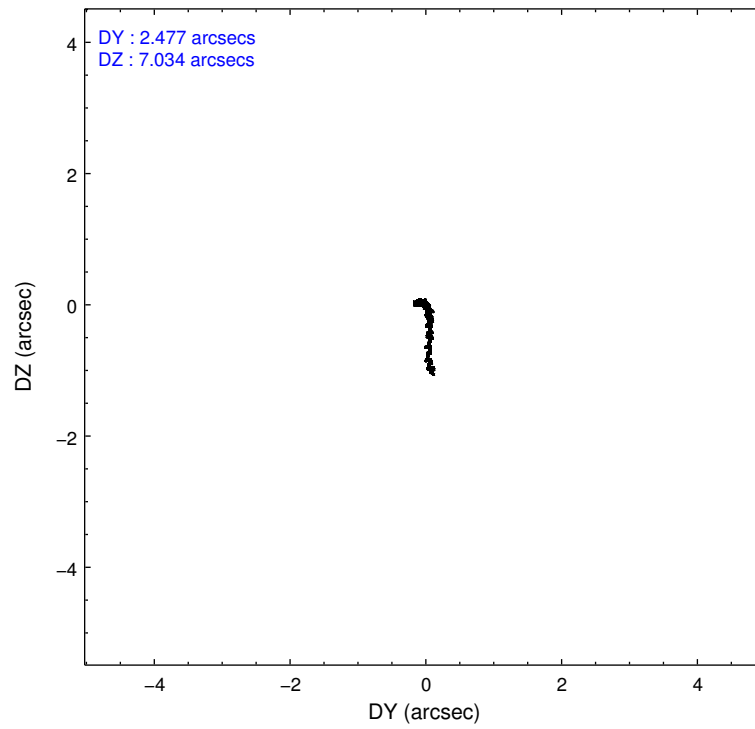
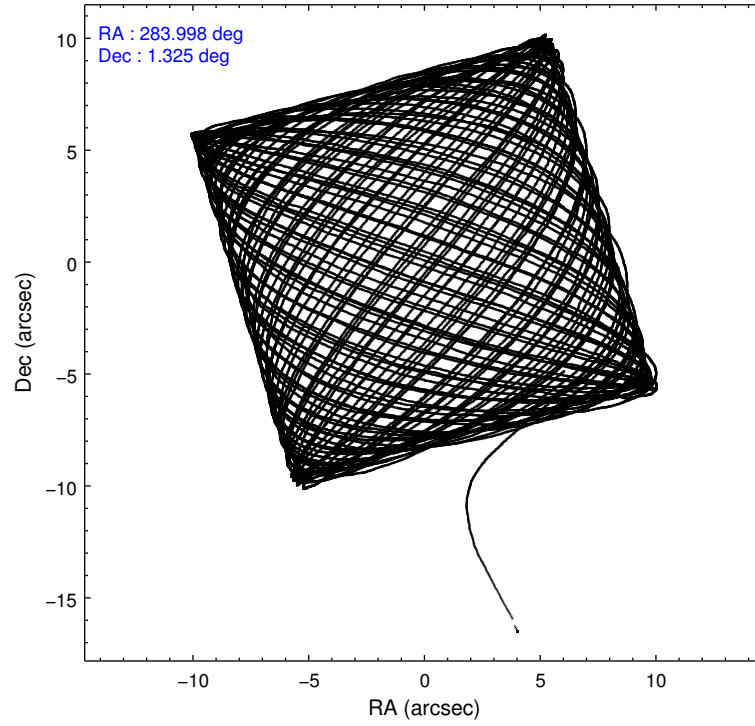
### 2.1.4 Events

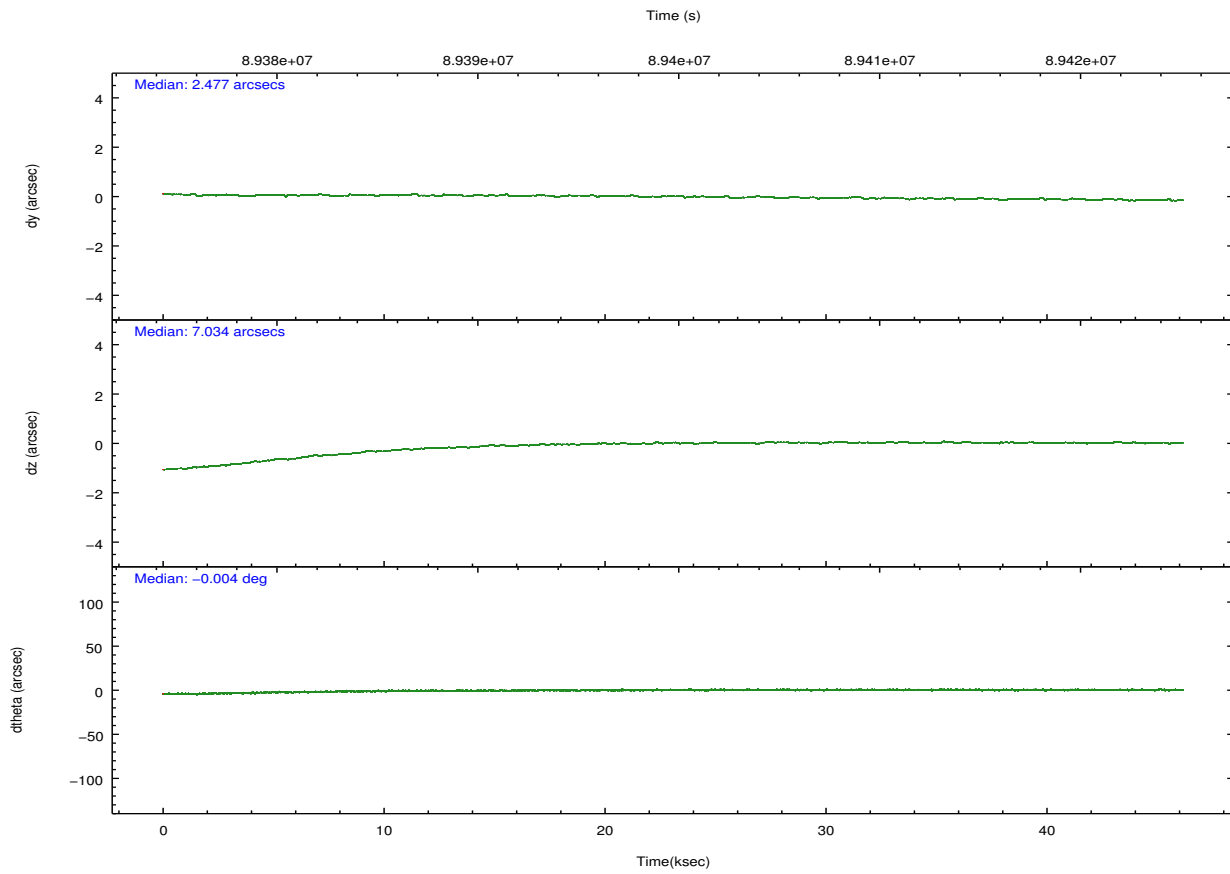
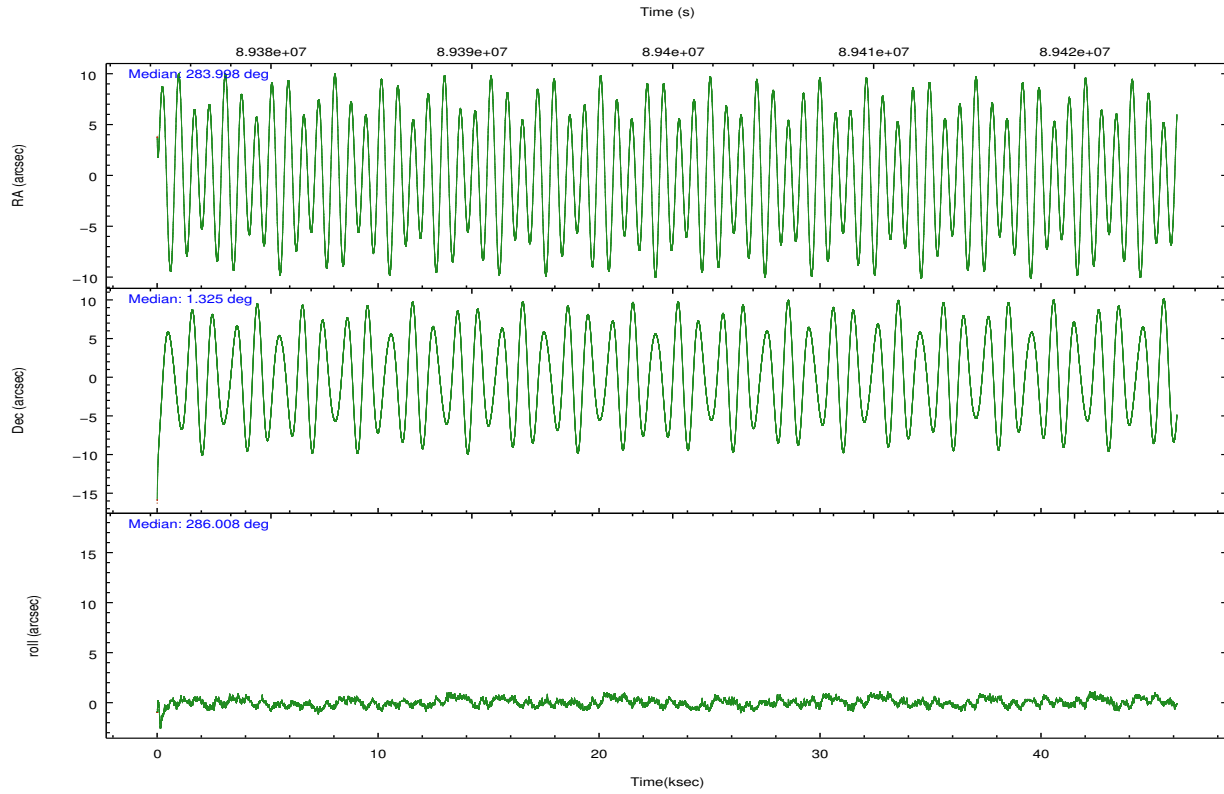
|                 | ccd 3  | ccd 5  | ccd 6  | ccd 7  | ccd 8  | ccd 9  |                | ccd 3  | ccd 5  | ccd 6  | ccd 7  | ccd 8  | ccd 9  |
|-----------------|--------|--------|--------|--------|--------|--------|----------------|--------|--------|--------|--------|--------|--------|
| level 1 events  | 293058 | 416721 | 410328 | 643823 | 510470 | 365876 | grade 0 events | 21803  | 22869  | 108623 | 87108  | 121398 | 32453  |
| rejected events | 250123 | 210061 | 261003 | 207319 | 293783 | 269792 |                | 7%     | 5%     | 26%    | 13%    | 23%    | 8%     |
| rejected %      | 85%    | 50%    | 63%    | 32%    | 57%    | 73%    | grade 1 events | 158    | 436    | 408    | 407    | 590    | 224    |
|                 |        |        |        |        |        |        |                | 0%     | 0%     | 0%     | 0%     | 0%     | 0%     |
|                 |        |        |        |        |        |        | grade 2 events | 8562   | 59915  | 19785  | 104190 | 32021  | 47161  |
|                 |        |        |        |        |        |        |                | 2%     | 14%    | 4%     | 16%    | 6%     | 12%    |
|                 |        |        |        |        |        |        | grade 3 events | 3148   | 11231  | 6397   | 47220  | 17732  | 3837   |
|                 |        |        |        |        |        |        |                | 1%     | 2%     | 1%     | 7%     | 3%     | 1%     |
|                 |        |        |        |        |        |        | grade 4 events | 3221   | 11136  | 6403   | 47188  | 16359  | 3669   |
|                 |        |        |        |        |        |        |                | 1%     | 2%     | 1%     | 7%     | 3%     | 1%     |
|                 |        |        |        |        |        |        | grade 5 events | 10219  | 30054  | 11515  | 35142  | 15276  | 13159  |
|                 |        |        |        |        |        |        |                | 3%     | 7%     | 2%     | 5%     | 2%     | 3%     |
|                 |        |        |        |        |        |        | grade 6 events | 6358   | 102221 | 8616   | 152324 | 29900  | 9318   |
|                 |        |        |        |        |        |        |                | 2%     | 24%    | 2%     | 23%    | 5%     | 2%     |
|                 |        |        |        |        |        |        | grade 7 events | 239589 | 178859 | 248581 | 170244 | 277194 | 256055 |
|                 |        |        |        |        |        |        |                | 81%    | 42%    | 60%    | 26%    | 54%    | 69%    |

## 2.2 Compared Parameters

| Parameter                            | Planned             | Actual               | Parameter                             | Planned   | Actual  |
|--------------------------------------|---------------------|----------------------|---------------------------------------|-----------|---------|
| Instrument                           | ACIS                | ACIS                 | Obspar format version number          | 7         | 7       |
| Detector                             | ACIS-356789         | ACIS-356789          | 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                    | 283.978228          | 283.9980485305049    | Subarray requested                    | NONE      | NONE    |
| [deg] Pointing Dec                   | 1.344306            | 1.325434272535753    | Alternating exposures requested       | N         | N       |
| [deg] Pointing Roll                  | 285.856758          | 286.0129281046231    | [s] Primary exposure time             | 0.000000  | 3.2     |
| [deg] Roll angle                     | 290.000000          | 290.000000           |                                       |           |         |
| [deg] Roll tolerance                 | 10.000000           | 10.000000            |                                       |           |         |
| Roll constraint allows 180D rotation | N                   | N                    |                                       |           |         |
| [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)     | 89376792.184000     | 89375654.510915      |                                       |           |         |
| Observation start date               | 2000-10-31T10:52:08 | 2000-10-31T10:34:14  |                                       |           |         |
| [s] Observation end time (MET)       | 89422792.184000     | 89423592.225225      |                                       |           |         |
| Observation end date                 | 2000-10-31T23:38:48 | 2000-10-31T23:53:12  |                                       |           |         |
| Read mode                            | TIMED               | TIMED                |                                       |           |         |

## 2.3 Aspect



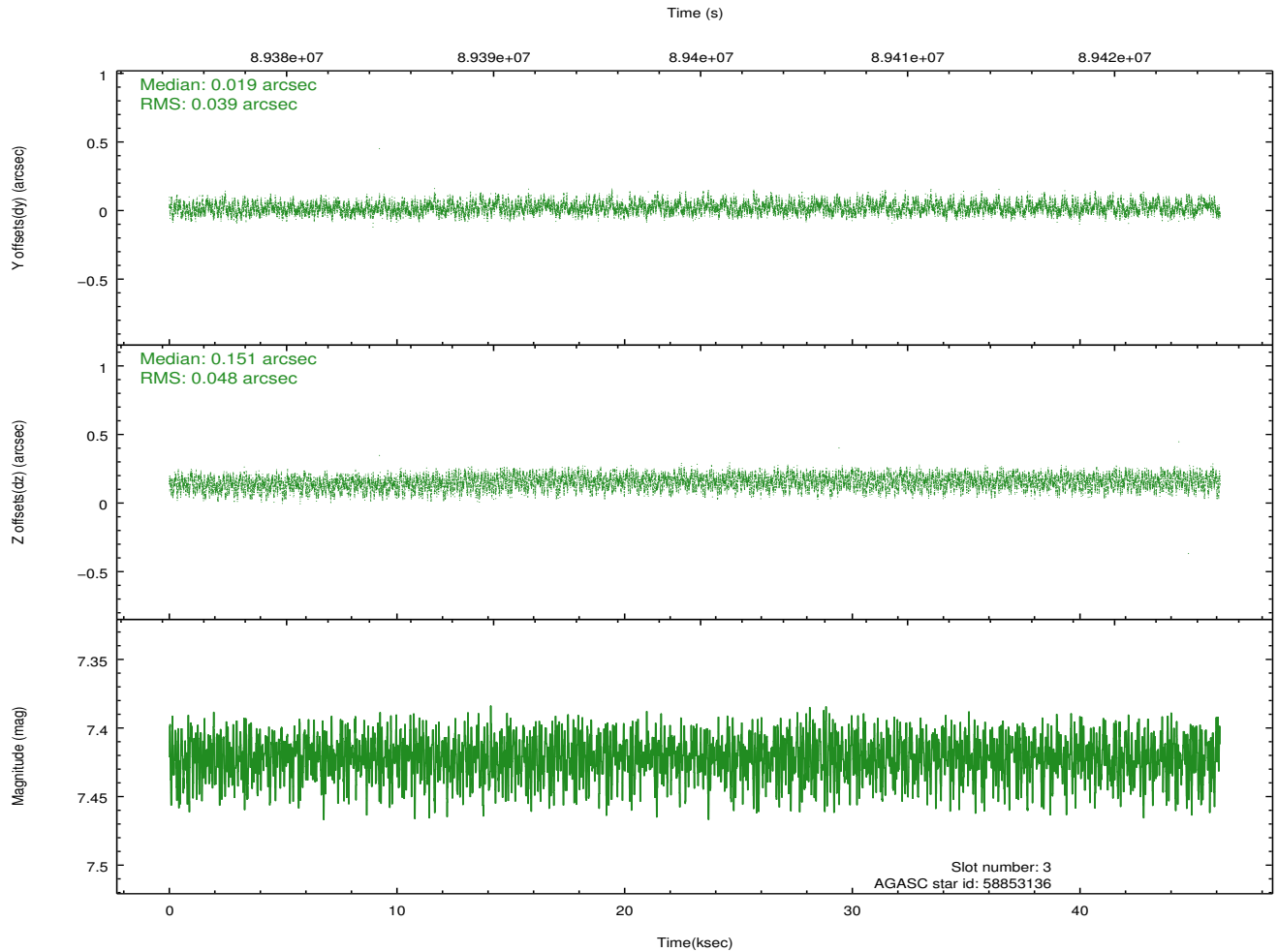
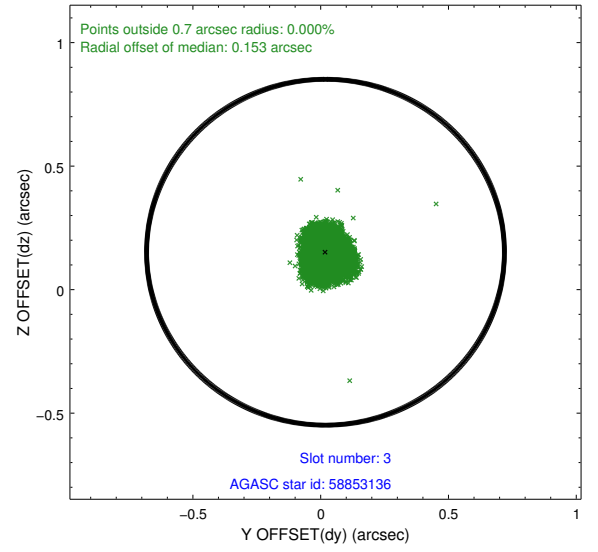
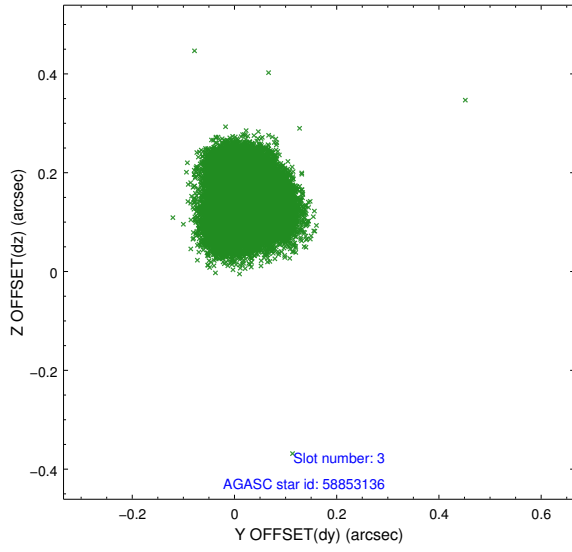


### Slot Statistics

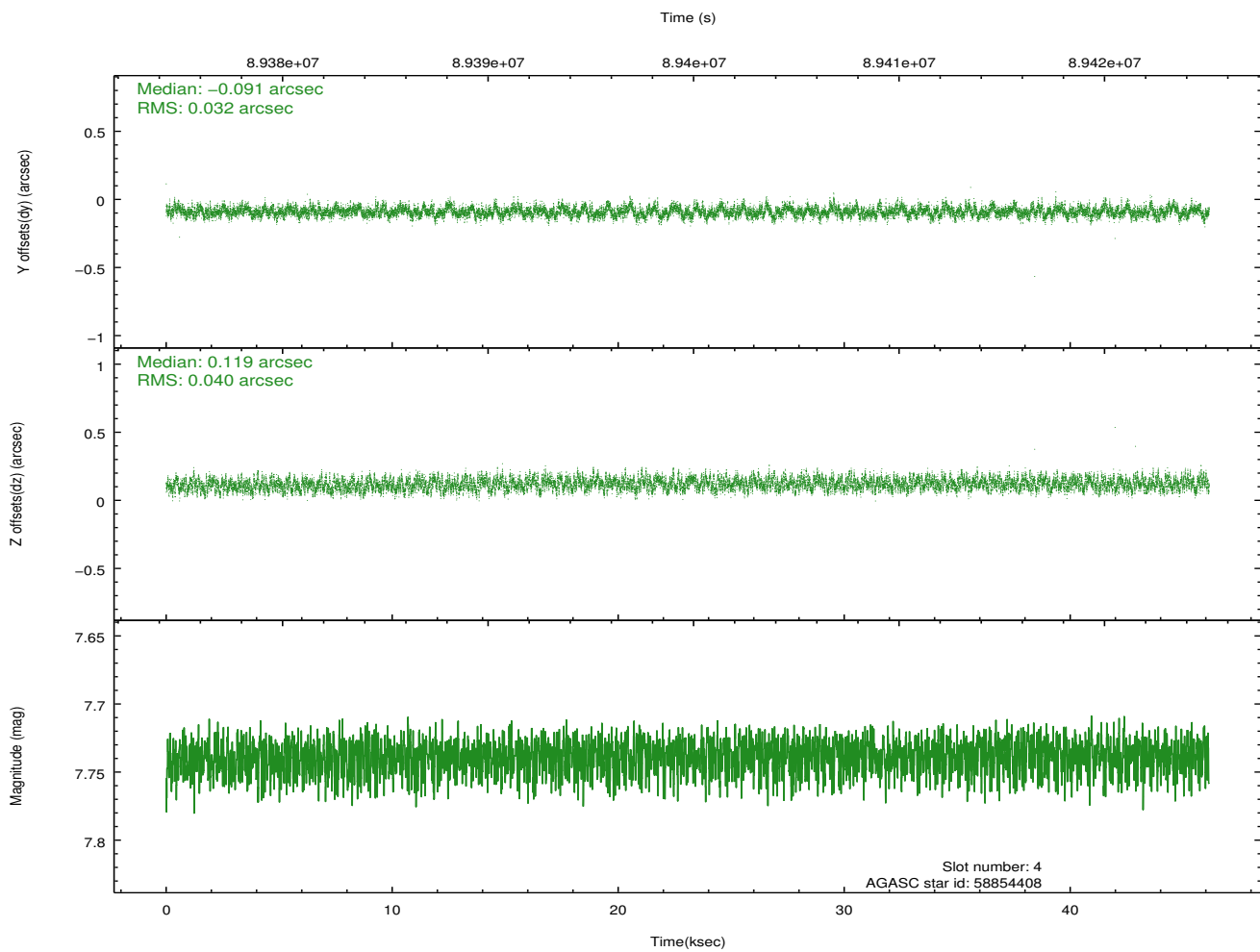
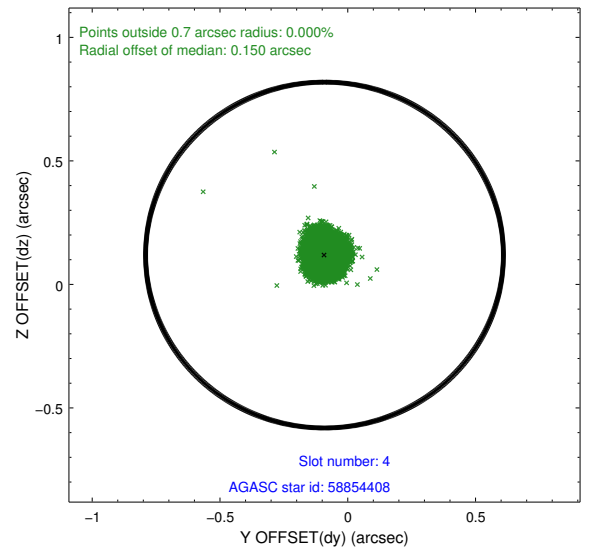
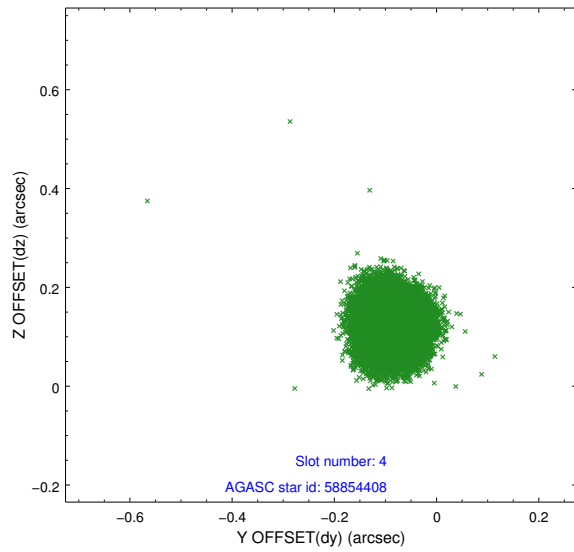
| slot | status | id       | mag  | n_pts | med_dy | med_dz | dr1   | dr2   | ra         | dec      | mean_y   | mean_z   |
|------|--------|----------|------|-------|--------|--------|-------|-------|------------|----------|----------|----------|
| 0    | FID    | ACIS-S-2 | 7.11 | 11255 | -0.021 | -0.002 | 0.011 | 0.025 | 0.000000   | 0.000000 | -755.11  | -1728.03 |
| 1    | FID    | ACIS-S-4 | 7.20 | 11254 | -0.024 | 0.010  | 0.010 | 0.020 | 0.000000   | 0.000000 | 2158.17  | 180.46   |
| 2    | FID    | ACIS-S-5 | 7.23 | 11255 | 0.015  | 0.000  | 0.012 | 0.025 | 0.000000   | 0.000000 | -1807.92 | 174.12   |
| 3    | GUIDE  | 58853136 | 7.42 | 22508 | 0.019  | 0.151  | 0.067 | 0.103 | 284.607098 | 1.198128 | 1124.22  | 2034.29  |
| 4    | GUIDE  | 58854408 | 7.74 | 22507 | -0.091 | 0.119  | 0.055 | 0.087 | 284.268664 | 1.500448 | -255.40  | 1159.65  |
| 5    | GUIDE  | 58851592 | 8.00 | 22507 | -0.234 | -0.141 | 0.065 | 0.113 | 283.282615 | 1.755471 | -2108.36 | -2003.19 |
| 6    | GUIDE  | 58857944 | 8.54 | 22498 | 0.208  | -0.079 | 0.052 | 0.083 | 284.113428 | 0.970825 | 1426.39  | 101.14   |
| 7    | GUIDE  | 58852304 | 9.34 | 22495 | 0.097  | -0.041 | 0.090 | 0.149 | 283.709254 | 1.197635 | 243.55   | -1075.14 |

## 2.4 Star Slots

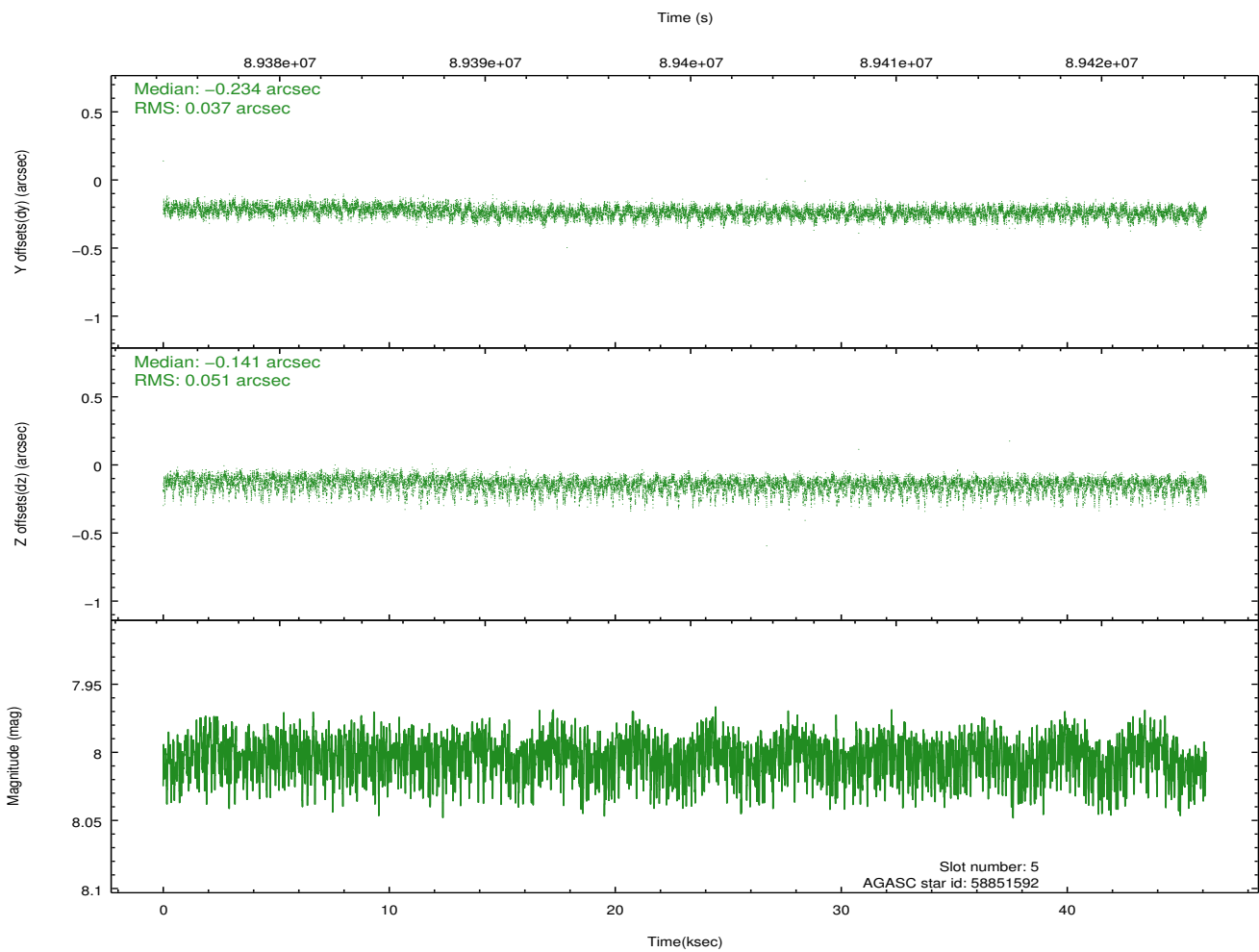
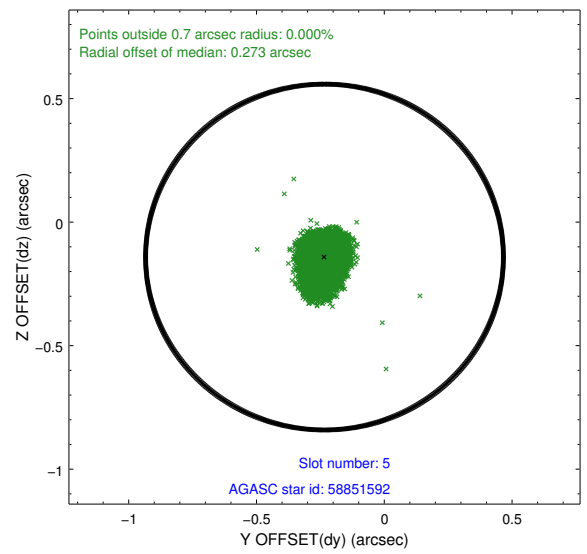
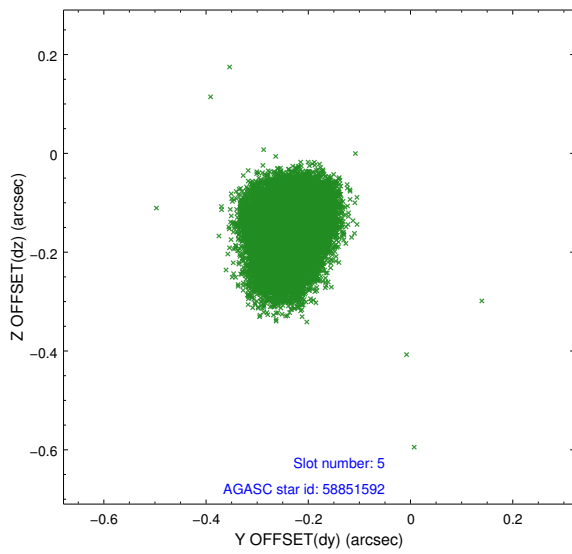
### 2.4.1 Slot 3



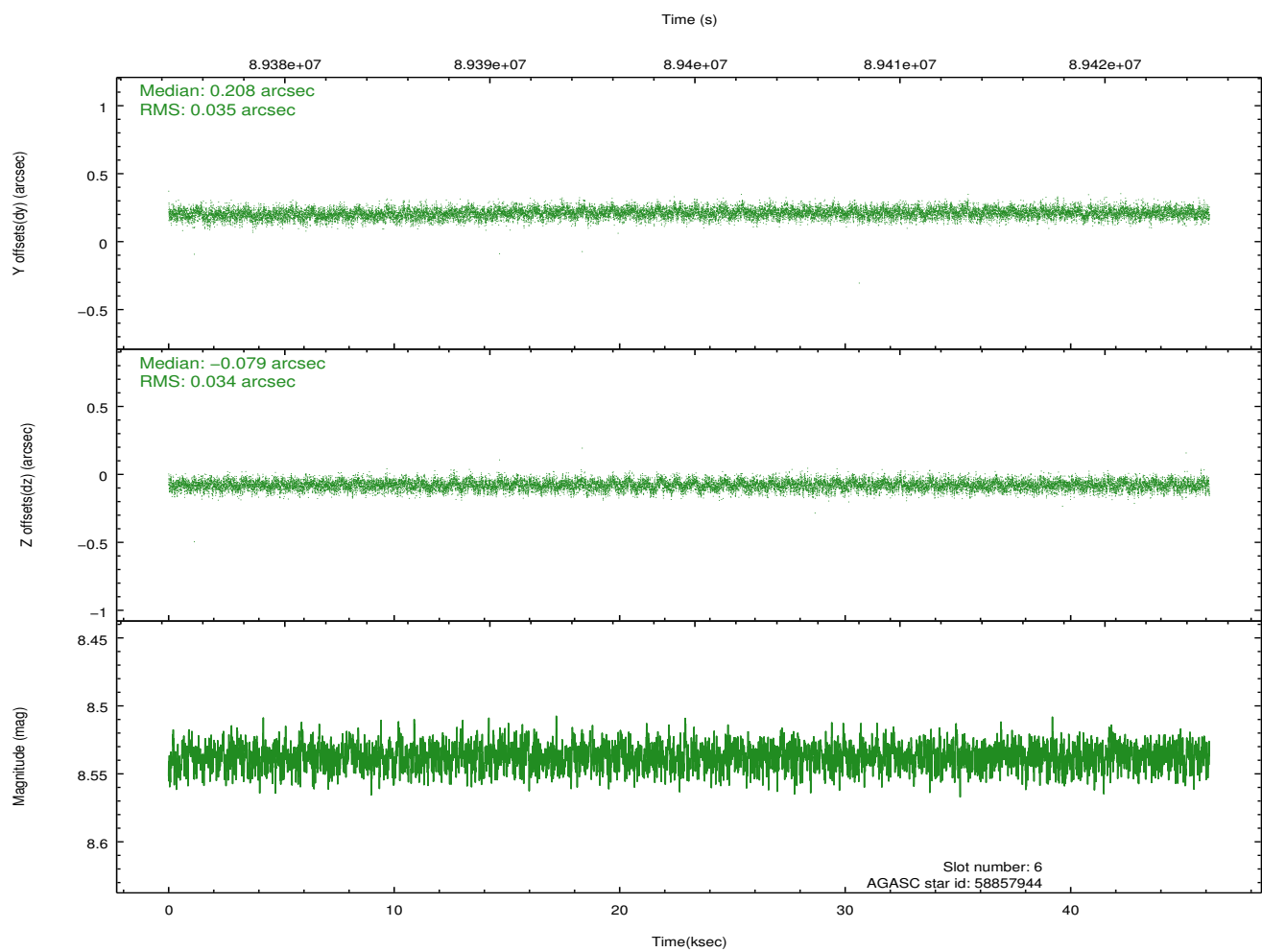
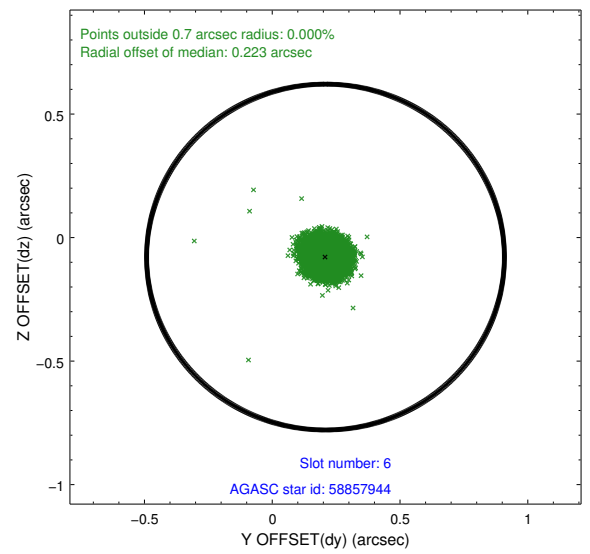
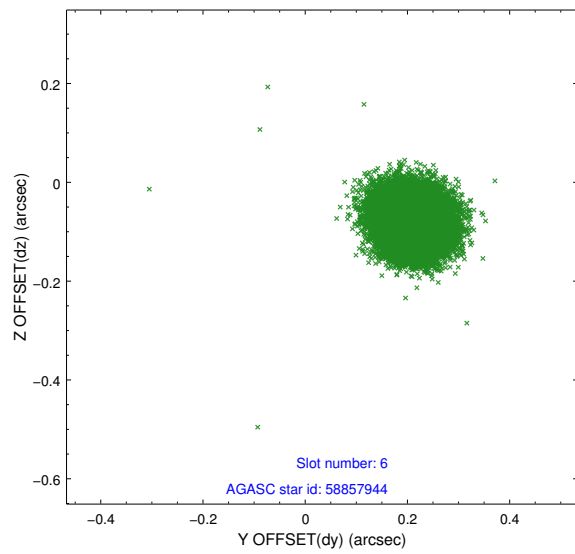
## 2.4.2 Slot 4



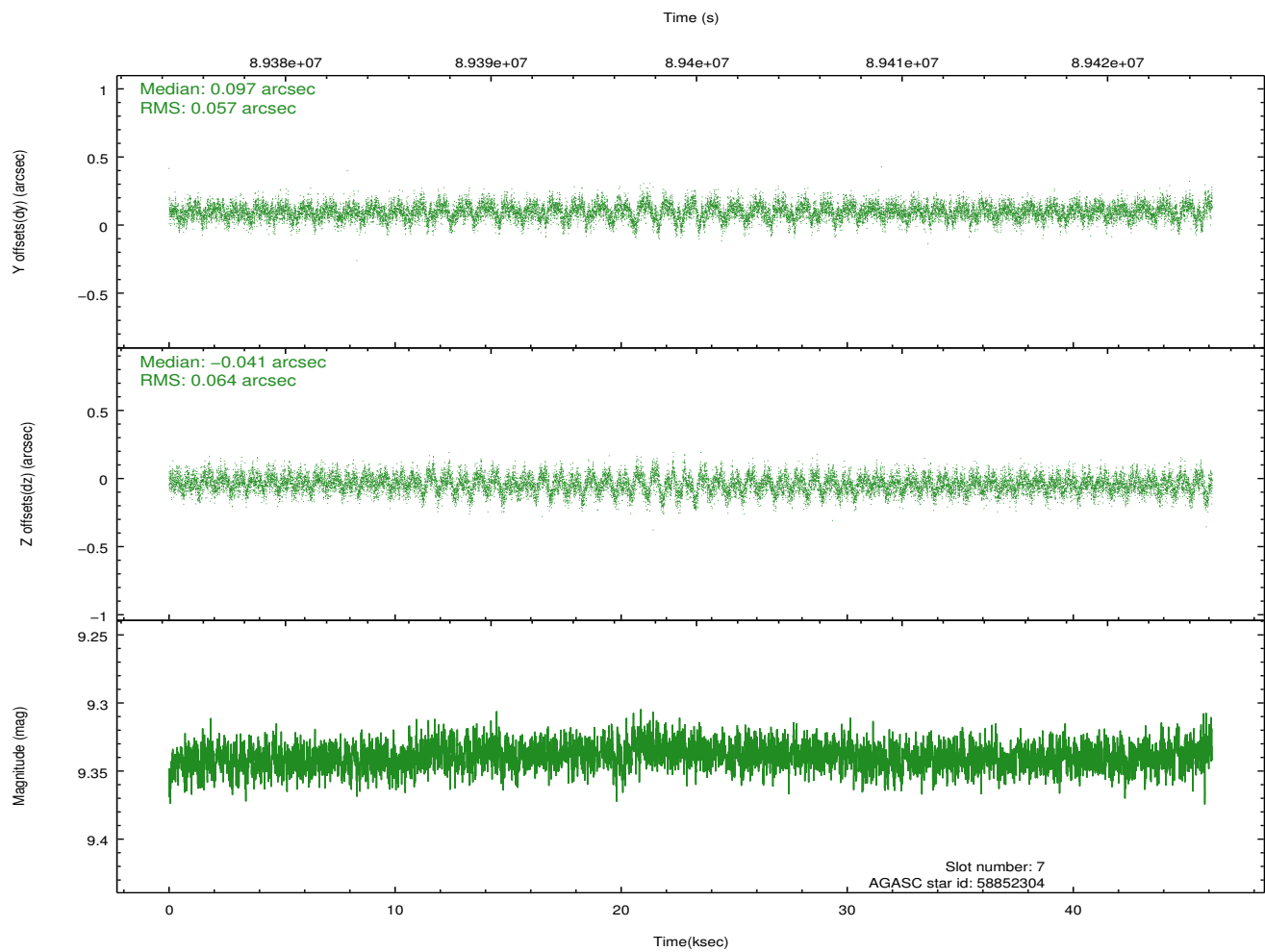
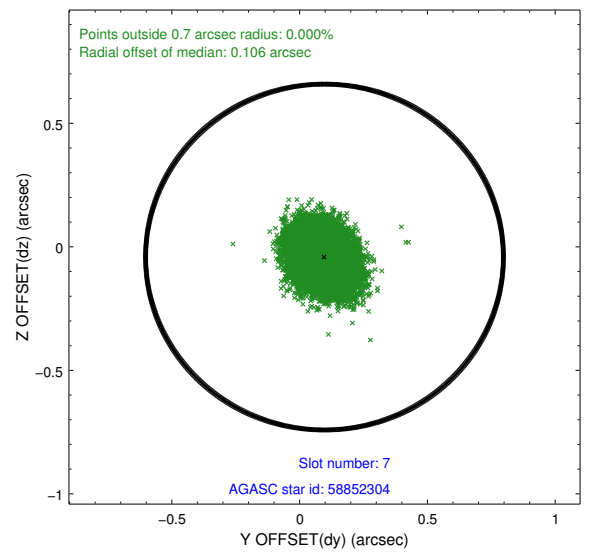
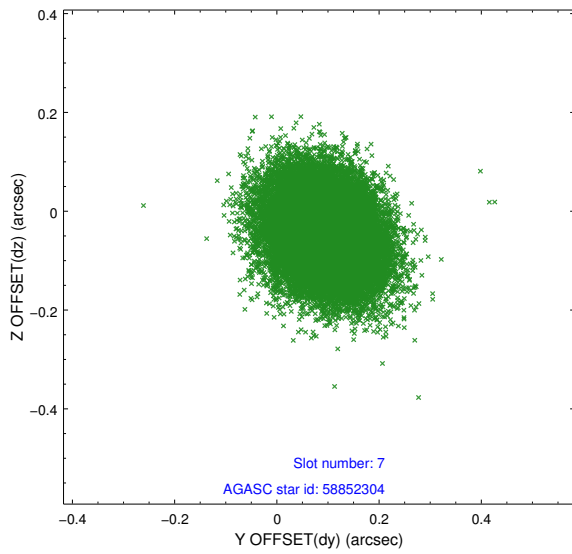
### 2.4.3 Slot 5



## 2.4.4 Slot 6

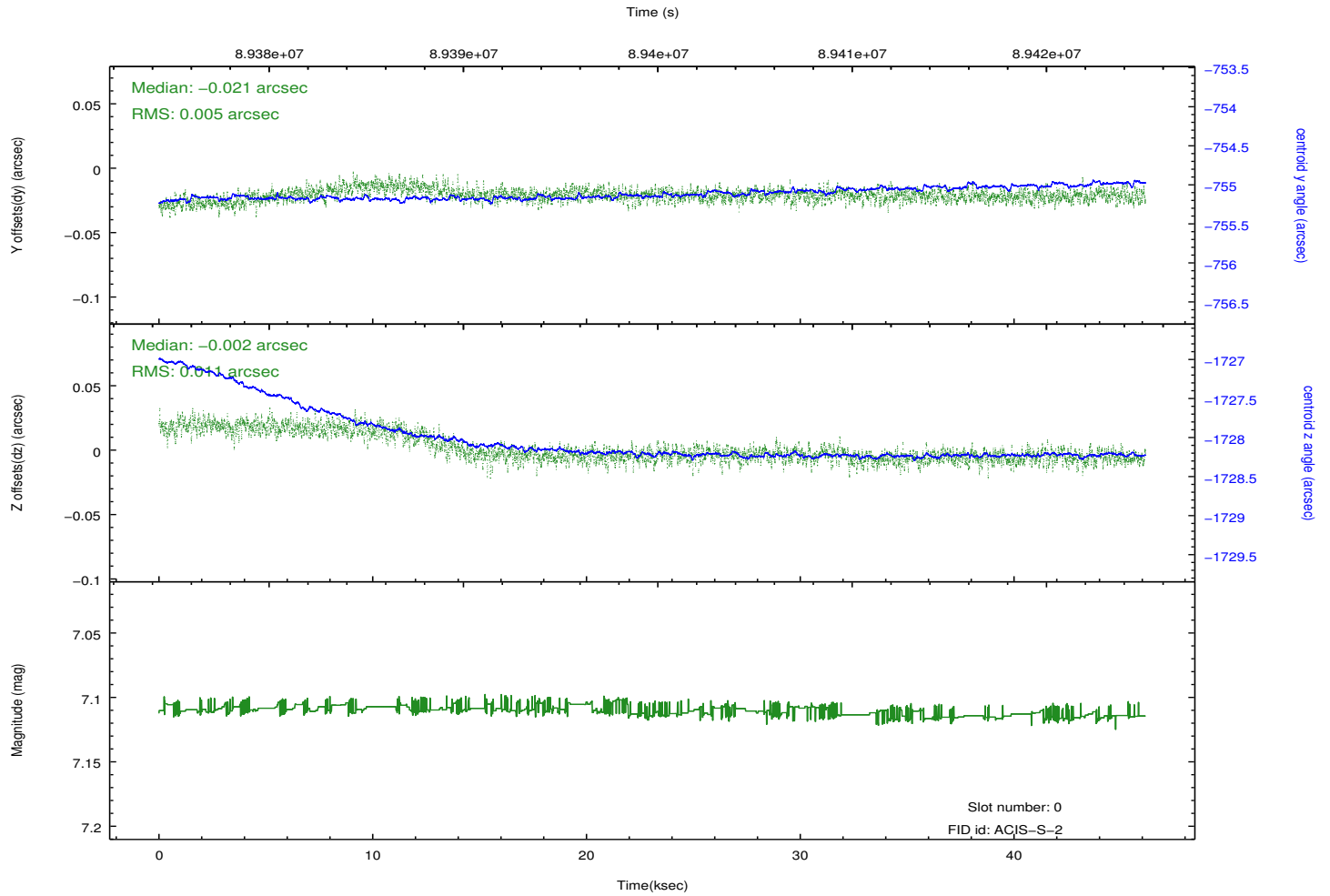
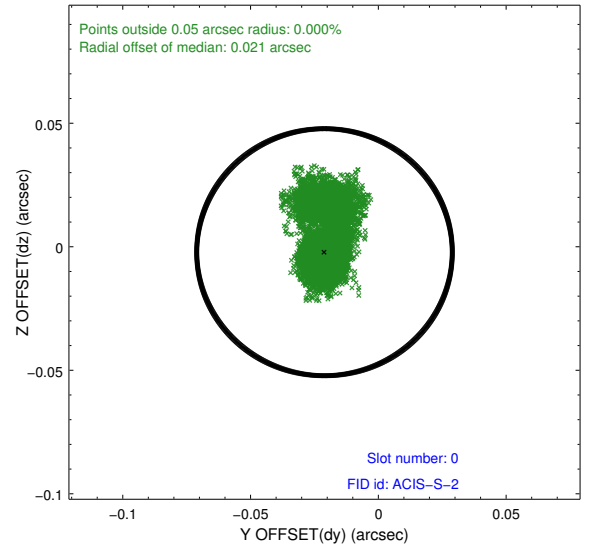
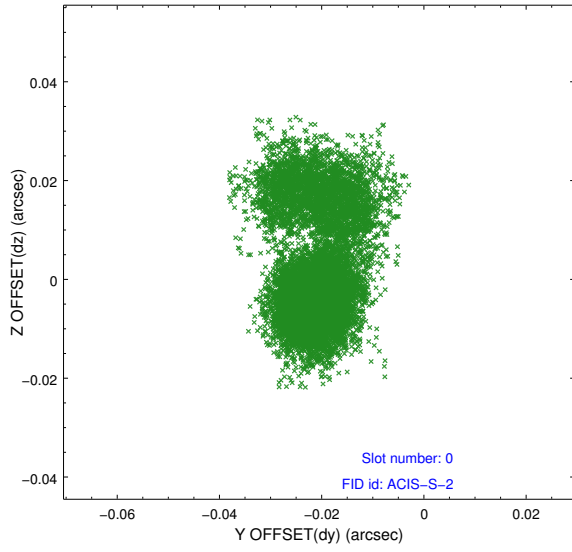


## 2.4.5 Slot 7

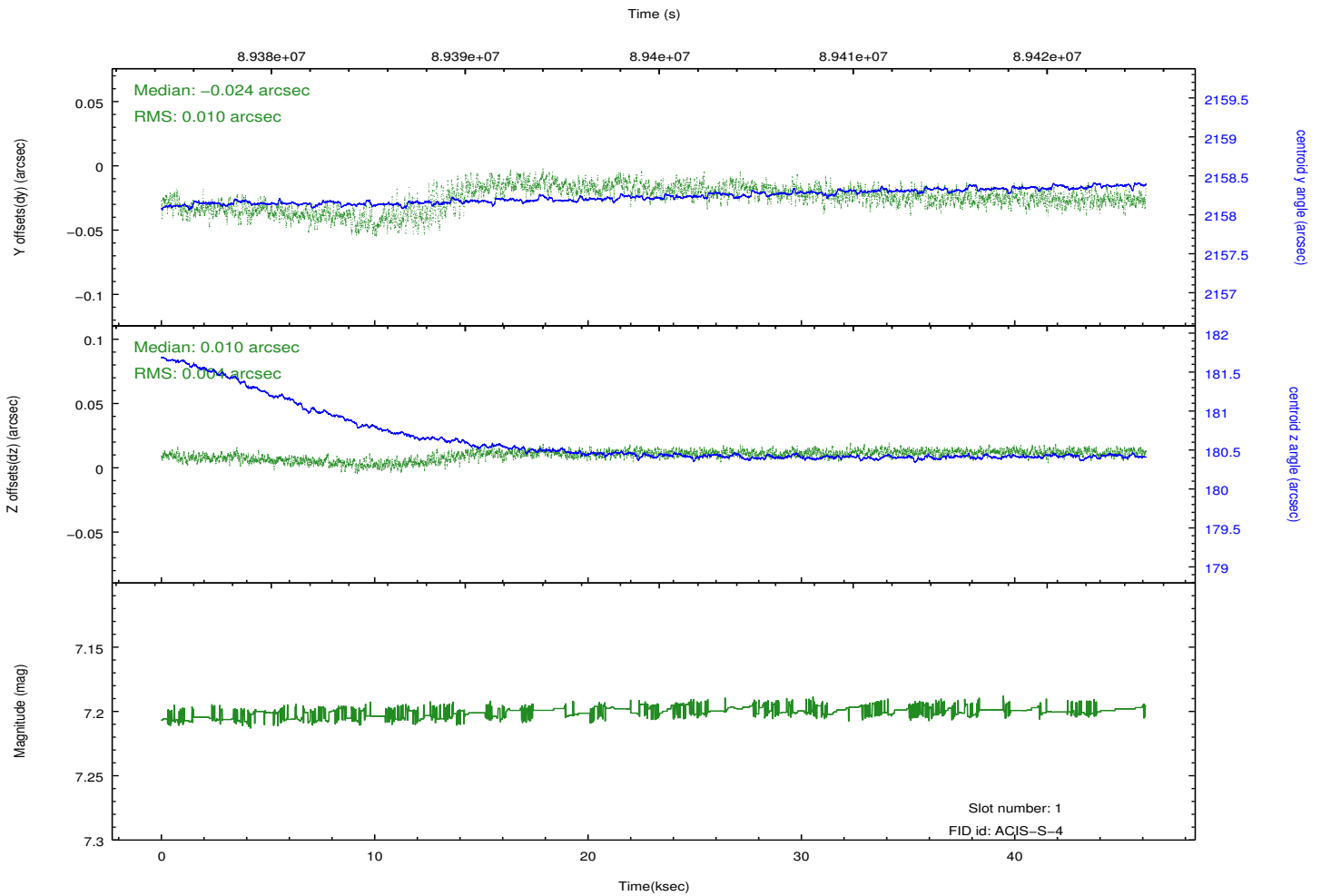
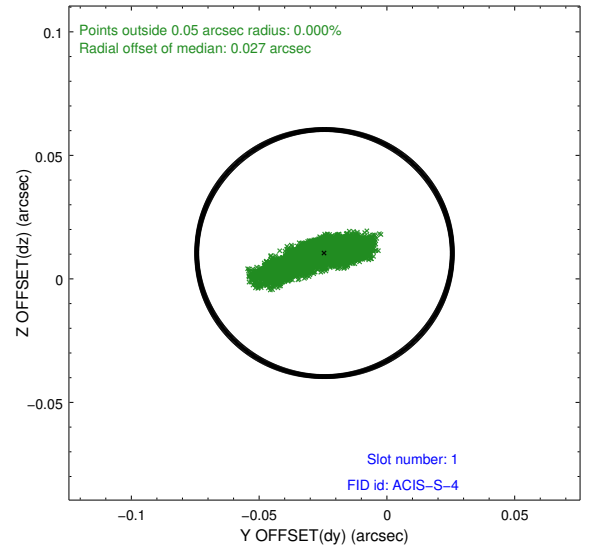
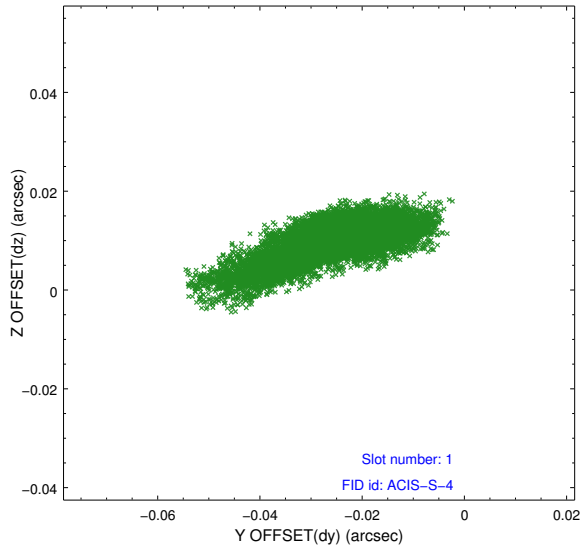


## 2.5 FID Slots

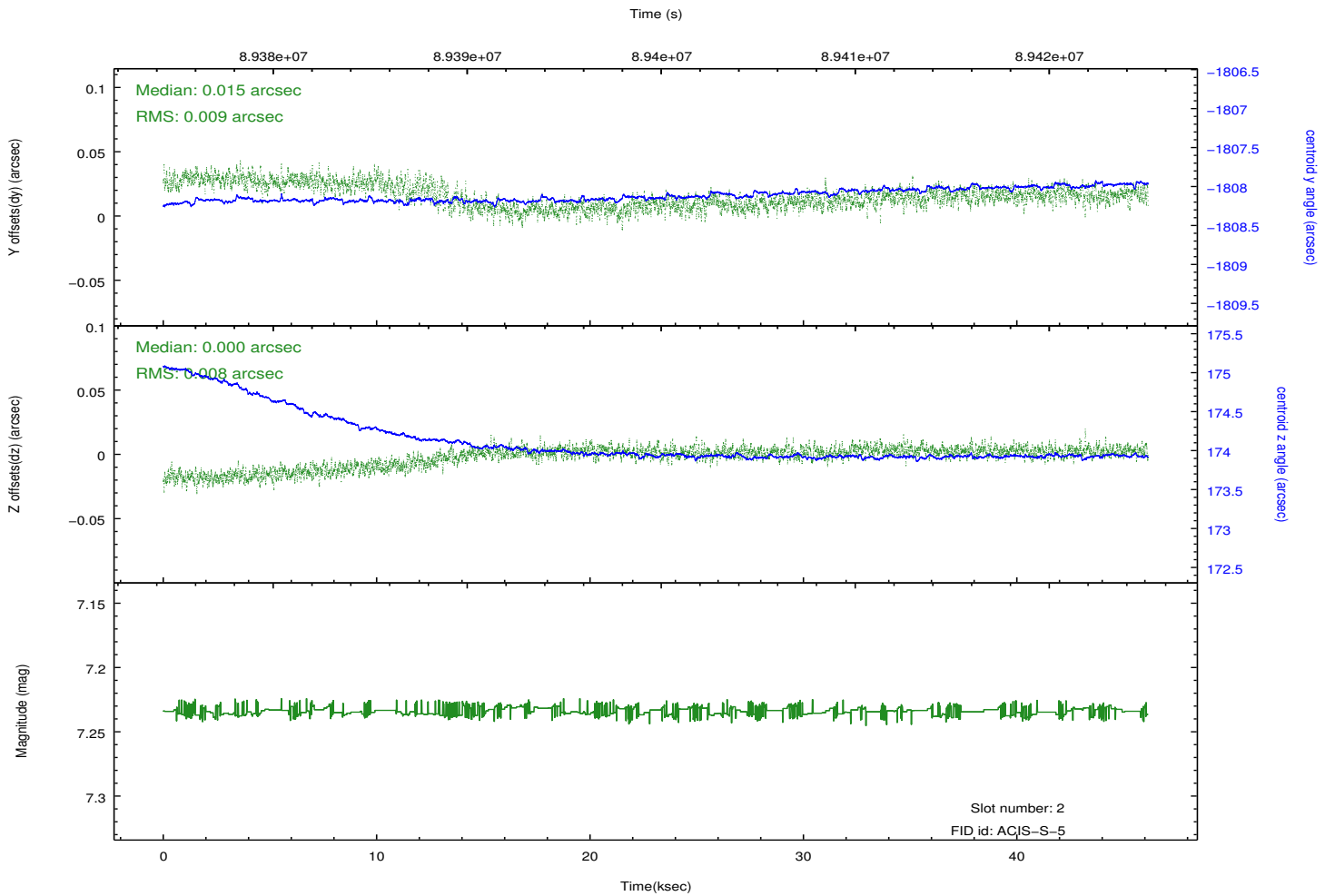
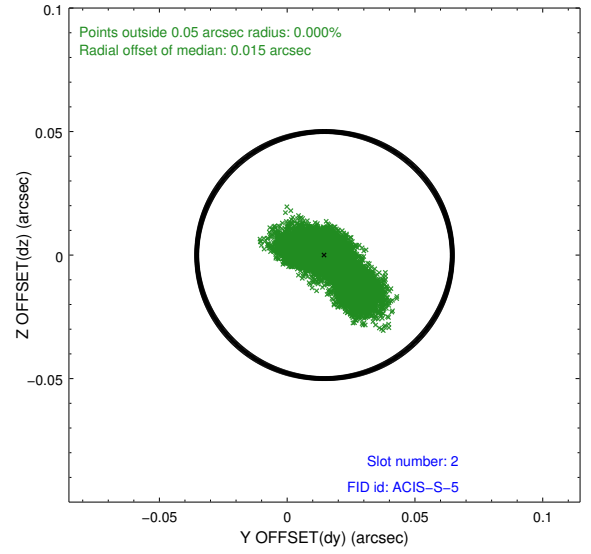
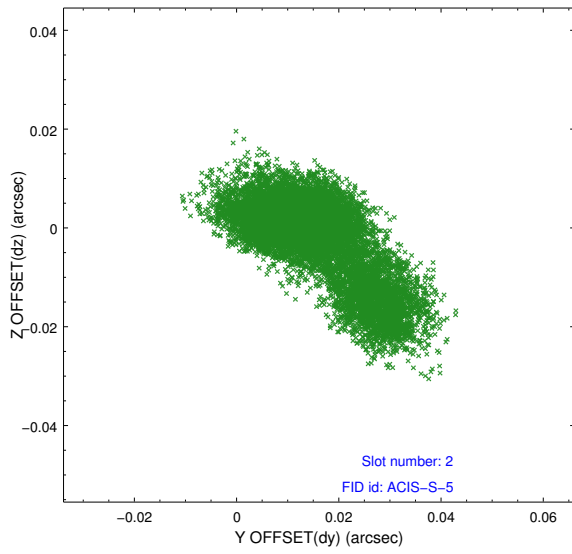
### 2.5.1 Slot 0



## 2.5.2 Slot 1



### 2.5.3 Slot 2



# A Summary

## A.1 Status

|                            |            |
|----------------------------|------------|
| V&V Scientist              | Jen Lauer  |
| V&V Date (YYYY-MM-DD)      | 2012.09.11 |
| V&V Edition                | 1          |
| V&V Disposition and Status | OK         |
| V&V Charge Time            | 46.14      |

## A.2 Comments

Roll constraint met.