

# V&V Reference Report

## L2 ASCDS Version : 8.4.5

Observation 1626 - L2 Version 3  
Chandra X-Ray Center

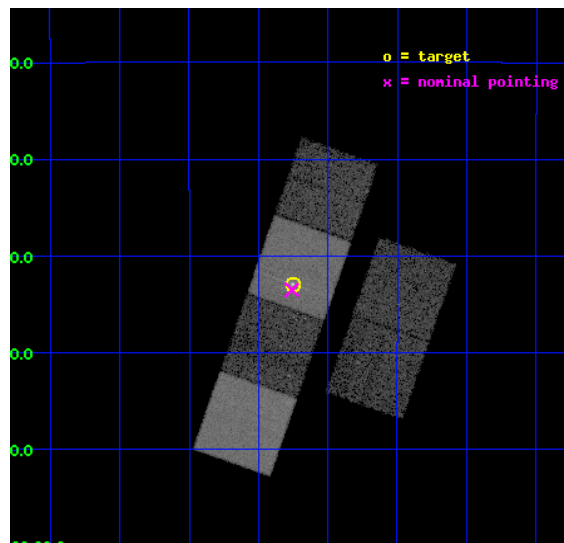
L2 Processing Date : Sep 25 2012

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# 1 Front

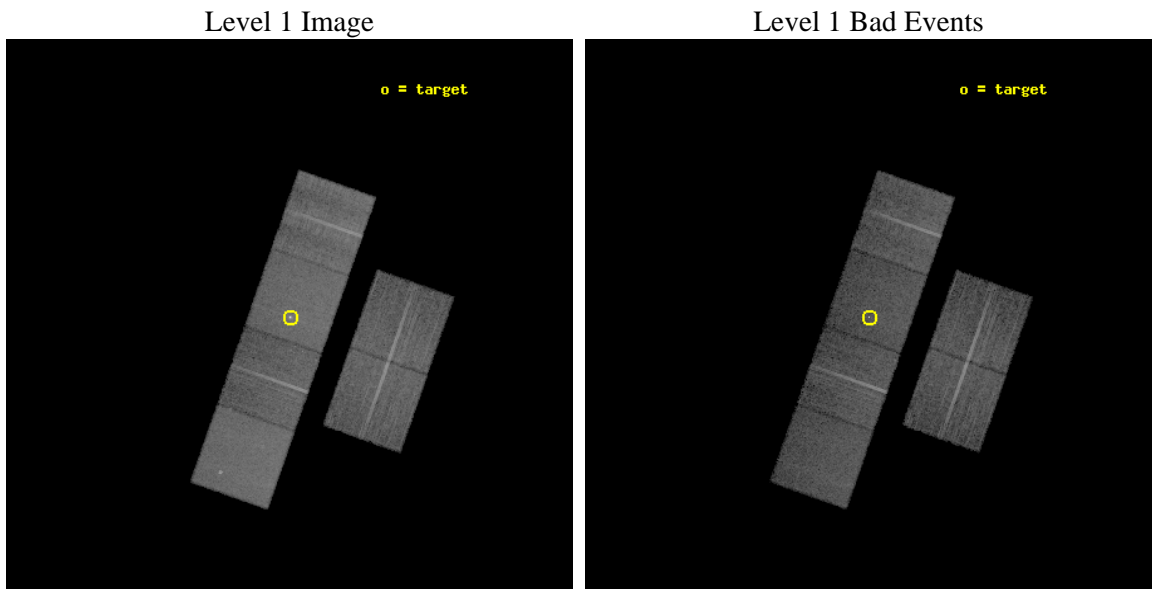
|          |                                                                      |                                             |
|----------|----------------------------------------------------------------------|---------------------------------------------|
| seq_num  | 700242                                                               | Sequence number                             |
| obs_id   | 1626                                                                 | Observation id                              |
| title    | STUDIES OF RADIO JETS AND THE NARROW LINE REGIONS OF ACTIVE GALAXIES | &#160                                       |
| observer | Professor Andrew Wilson                                              | Principal investigator                      |
| object   | PKS 2135-14                                                          | Source name                                 |
| dtcycle  | 0                                                                    | &#160                                       |
| cycle    | P                                                                    | events from which exps?<br>Prim/Second/Both |
| ra_targ  | 324.438333                                                           | Observer's specified target RA [deg]        |
| dec_targ | -14.548722                                                           | Observer's specified target Dec [deg]       |
| ra_nom   | 324.43992411251                                                      | Nominal RA [deg]                            |
| dec_nom  | -14.558357689945                                                     | Nominal Dec [deg]                           |
| roll_nom | 289.34583875691                                                      | Nominal Roll [deg]                          |
| revision | 3                                                                    | Processing version of data                  |
| ontime   | 15125.332741812                                                      | Sum of GTIs [s]                             |
| livetime | 14933.806671253                                                      | Livetime [s]                                |
| ontime2  | 15125.373781815                                                      | Sum of GTIs [s]                             |
| ontime3  | 15125.209621817                                                      | Sum of GTIs [s]                             |
| ontime5  | 15125.291701809                                                      | Sum of GTIs [s]                             |
| ontime6  | 15125.25066182                                                       | Sum of GTIs [s]                             |
| ontime7  | 15125.332741812                                                      | Sum of GTIs [s]                             |
| ontime8  | 15125.168581814                                                      | Sum of GTIs [s]                             |
| l2events | 152551                                                               | Number of level 2 events                    |



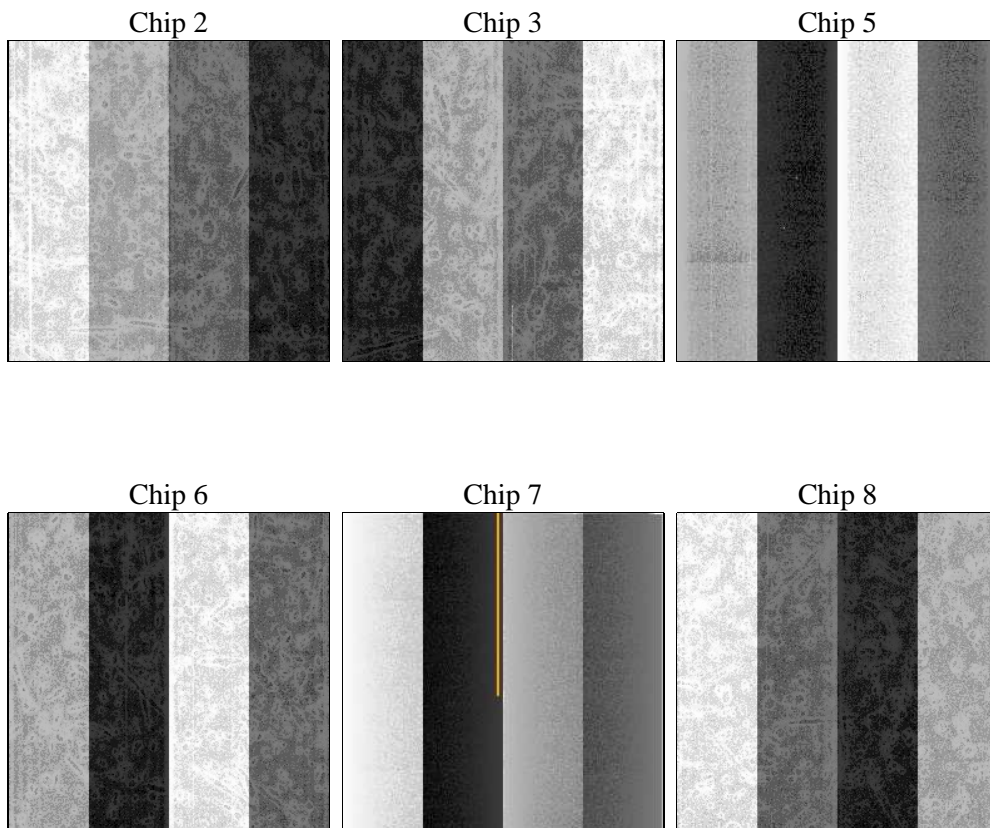
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

|          |                     |                                |                |                 |                                         |
|----------|---------------------|--------------------------------|----------------|-----------------|-----------------------------------------|
| obi_num  | 1                   | Obi number                     | sched_exp_time | 15000.000000    | [s] Scheduled observation exposure time |
| ascdsver | 8.4.5               | Processing system revision     | ontime         | 15125.332741812 | Sum of GTIs [s]                         |
| caldbver | 4.5.1.1             | &#160                          | ontime2        | 15125.373781815 | Sum of GTIs [s]                         |
| date     | 2012-09-25T03:56:17 | Date and time of file creation | ontime3        | 15125.209621817 | Sum of GTIs [s]                         |
| revision | 3                   | Processing version of data     | ontime5        | 15125.291701809 | Sum of GTIs [s]                         |
|          |                     |                                | ontime6        | 15125.25066182  | Sum of GTIs [s]                         |
|          |                     |                                | ontime7        | 15125.332741812 | Sum of GTIs [s]                         |
|          |                     |                                | ontime8        | 15125.168581814 | Sum of GTIs [s]                         |
|          |                     |                                | l1events       | 667640          | Number of level 1 events                |

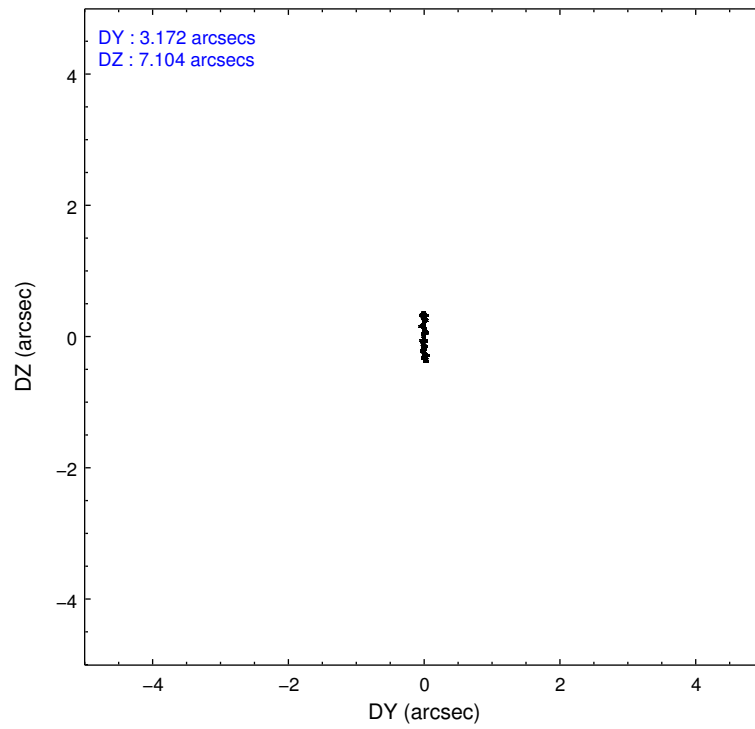
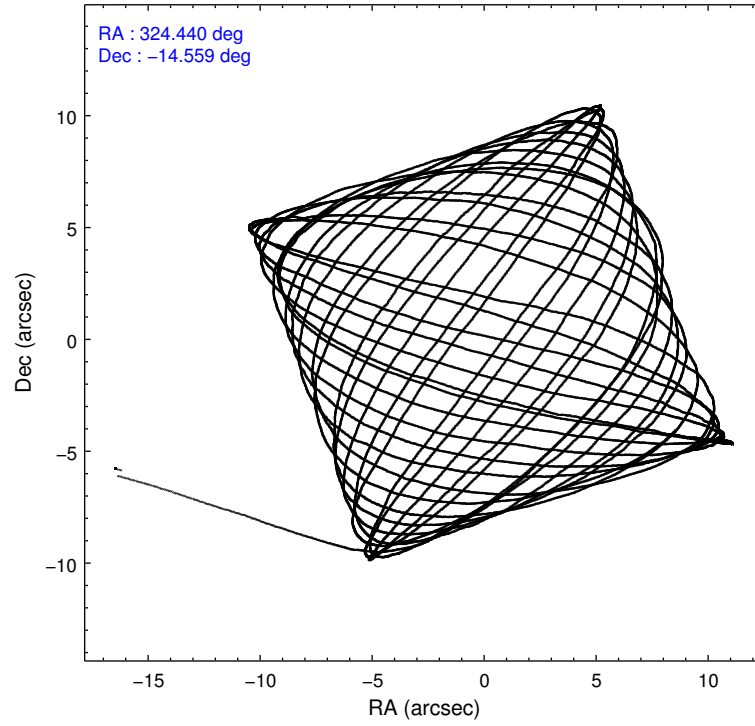
### 2.1.4 Events

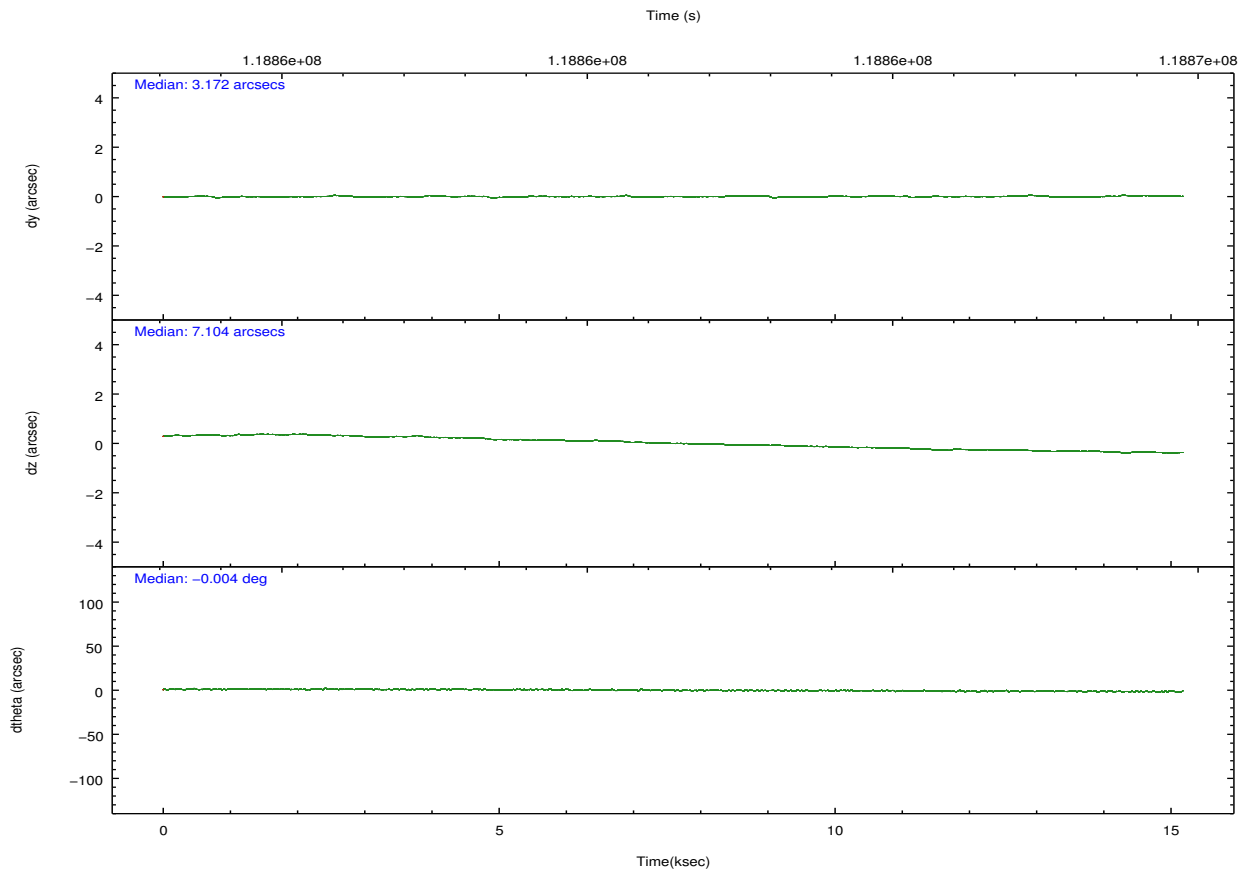
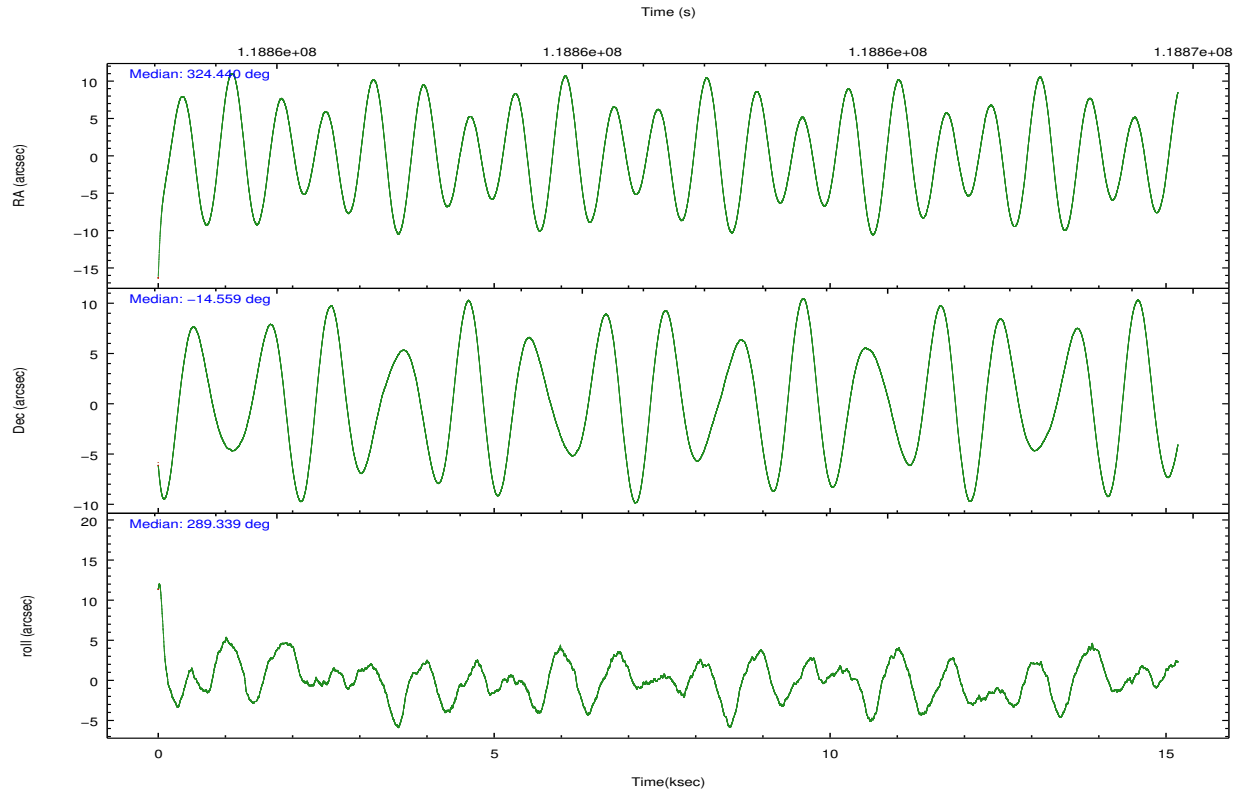
|                 | ccd 2 | ccd 3 | ccd 5  | ccd 6 | ccd 7  | ccd 8  |                | ccd 2 | ccd 3 | ccd 5 | ccd 6 | ccd 7 | ccd 8 |
|-----------------|-------|-------|--------|-------|--------|--------|----------------|-------|-------|-------|-------|-------|-------|
| level 1 events  | 96569 | 92640 | 130055 | 94207 | 128938 | 125231 | grade 0 events | 4756  | 4690  | 4801  | 5028  | 6141  | 10190 |
| rejected events | 85188 | 81491 | 71050  | 82181 | 73712  | 93467  |                | 4%    | 5%    | 3%    | 5%    | 4%    | 8%    |
| rejected %      | 88%   | 87%   | 54%    | 87%   | 57%    | 74%    | grade 1 events | 53    | 47    | 183   | 49    | 192   | 95    |
|                 |       |       |        |       |        |        |                | 0%    | 0%    | 0%    | 0%    | 0%    | 0%    |
|                 |       |       |        |       |        |        | grade 2 events | 2636  | 2418  | 17644 | 2552  | 10864 | 6245  |
|                 |       |       |        |       |        |        |                | 2%    | 2%    | 13%   | 2%    | 8%    | 4%    |
|                 |       |       |        |       |        |        | grade 3 events | 1026  | 1029  | 2602  | 1077  | 5087  | 3887  |
|                 |       |       |        |       |        |        |                | 1%    | 1%    | 2%    | 1%    | 3%    | 3%    |
|                 |       |       |        |       |        |        | grade 4 events | 1020  | 999   | 2561  | 1094  | 4948  | 3552  |
|                 |       |       |        |       |        |        |                | 1%    | 1%    | 1%    | 1%    | 3%    | 2%    |
|                 |       |       |        |       |        |        | grade 5 events | 3171  | 3698  | 9865  | 3863  | 11830 | 5111  |
|                 |       |       |        |       |        |        |                | 3%    | 3%    | 7%    | 4%    | 9%    | 4%    |
|                 |       |       |        |       |        |        | grade 6 events | 1949  | 2017  | 31410 | 2276  | 28193 | 7890  |
|                 |       |       |        |       |        |        |                | 2%    | 2%    | 24%   | 2%    | 21%   | 6%    |
|                 |       |       |        |       |        |        | grade 7 events | 81958 | 77742 | 60989 | 78268 | 61683 | 88261 |
|                 |       |       |        |       |        |        |                | 84%   | 83%   | 46%   | 83%   | 47%   | 70%   |

## 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                         | VFAINT              | VFAINT               | Number of optional ACIS chips dropped | 0         | 0       |
| Observation mode                  | POINTING            | POINTING             | On-chip summing requested             | N         | N       |
| [deg] Pointing RA                 | 324.418350          | 324.4399241125072    | Subarray requested                    | NONE      | NONE    |
| [deg] Pointing Dec                | -14.540812          | -14.55835768994539   | Alternating exposures requested       | N         | N       |
| [deg] Pointing Roll               | 289.183783          | 289.3458387569127    | [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)  | 118853993.184000    | 118852922.89238      |                                       |           |         |
| Observation start date            | 2001-10-07T14:58:49 | 2001-10-07T14:42:02  |                                       |           |         |
| [s] Observation end time (MET)    | 118868993.184000    | 118869376.70553      |                                       |           |         |
| Observation end date              | 2001-10-07T19:08:49 | 2001-10-07T19:16:16  |                                       |           |         |
| Read mode                         | TIMED               | TIMED                |                                       |           |         |

## 2.3 Aspect





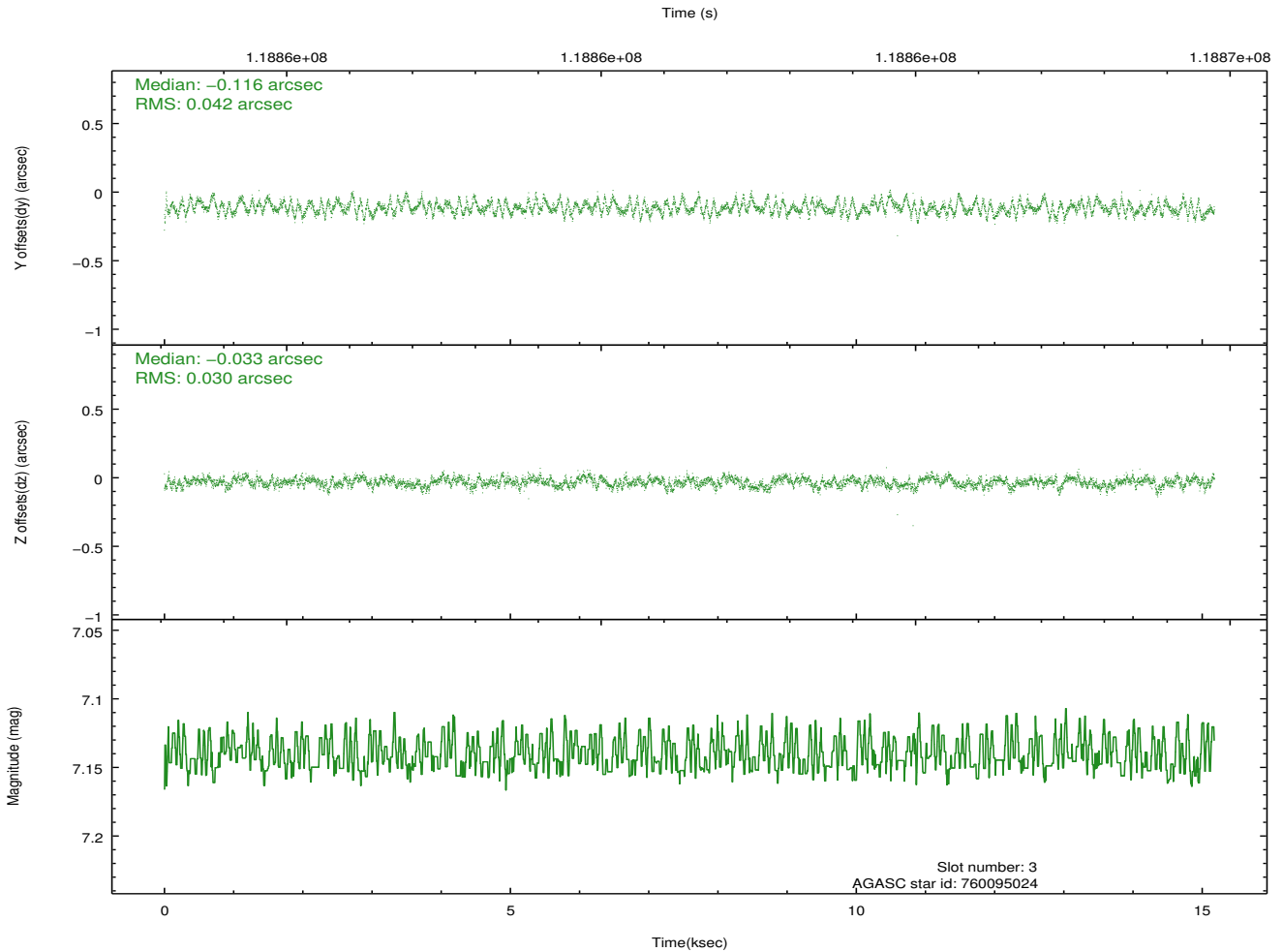
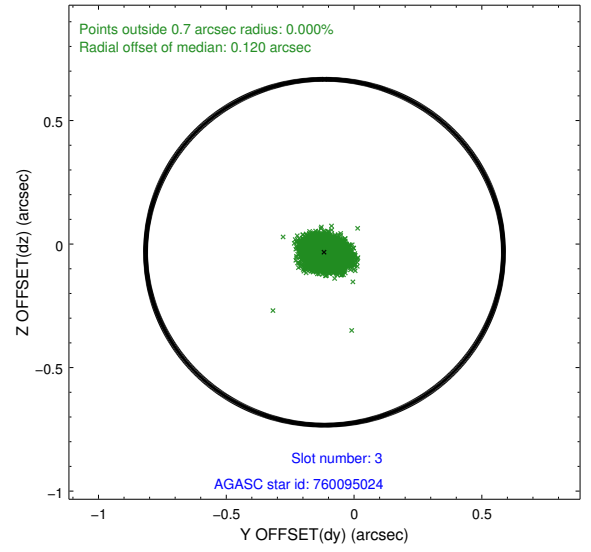
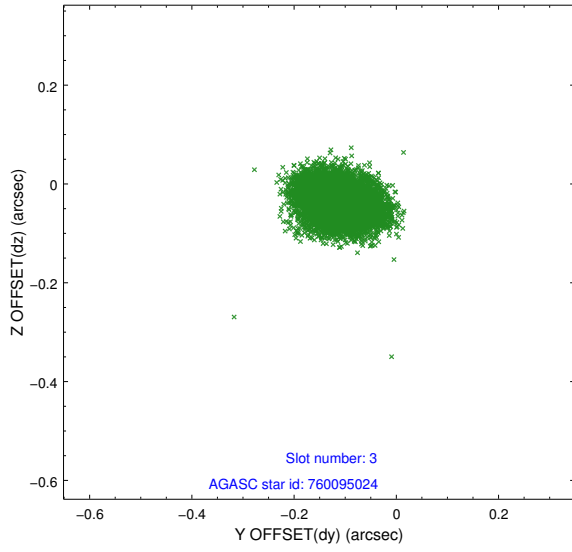
### Slot Statistics

| slot | status | id        | mag  | n_pts | med_dy | med_dz | dr1   | dr2   | ra         | dec        | mean_y   | mean_z   |
|------|--------|-----------|------|-------|--------|--------|-------|-------|------------|------------|----------|----------|
| 0    | FID    | ACIS-S-2  | 7.12 | 3703  | -0.006 | 0.006  | 0.009 | 0.014 | 0.000000   | 0.000000   | -755.82  | -1728.28 |
| 1    | FID    | ACIS-S-4  | 7.20 | 3703  | -0.032 | 0.001  | 0.007 | 0.013 | 0.000000   | 0.000000   | 2157.29  | 179.90   |
| 2    | FID    | ACIS-S-5  | 7.24 | 3703  | 0.007  | 0.002  | 0.008 | 0.012 | 0.000000   | 0.000000   | -1808.27 | 173.90   |
| 3    | GUIDE  | 760095024 | 7.14 | 7402  | -0.116 | -0.033 | 0.054 | 0.089 | 324.813350 | -13.894859 | -1742.92 | 2067.11  |
| 4    | GUIDE  | 760087264 | 8.78 | 7402  | -0.128 | 0.005  | 0.078 | 0.121 | 323.928594 | -14.062450 | -2188.04 | -1050.33 |
| 5    | GUIDE  | 760092504 | 9.34 | 7392  | 0.084  | -0.138 | 0.092 | 0.150 | 323.979177 | -14.585530 | -350.41  | -1499.07 |
| 6    | GUIDE  | 760091120 | 9.43 | 7404  | 0.184  | 0.133  | 0.137 | 0.222 | 325.186892 | -14.699006 | 1420.45  | 2338.88  |
| 7    | GUIDE  | 760088424 | 9.26 | 7398  | -0.029 | 0.032  | 0.077 | 0.128 | 324.102285 | -13.978674 | -2274.26 | -378.27  |

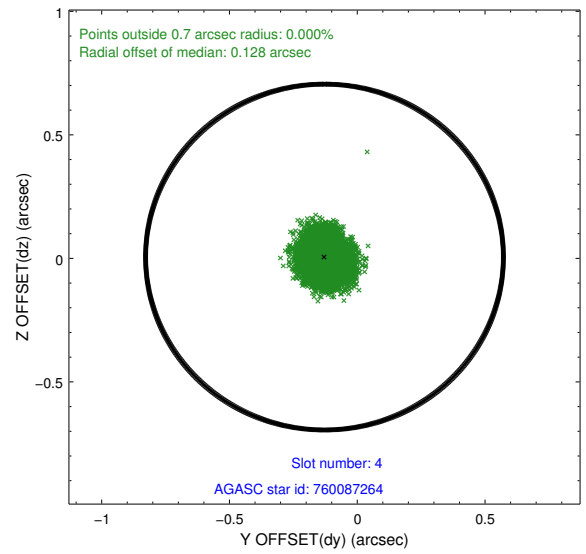
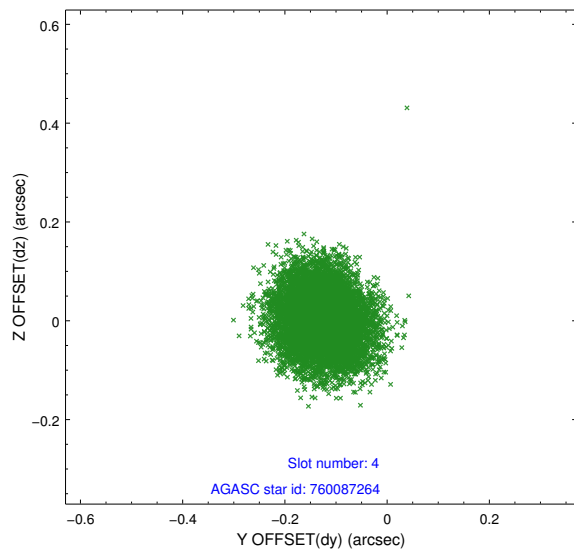
∞

## 2.4 Star Slots

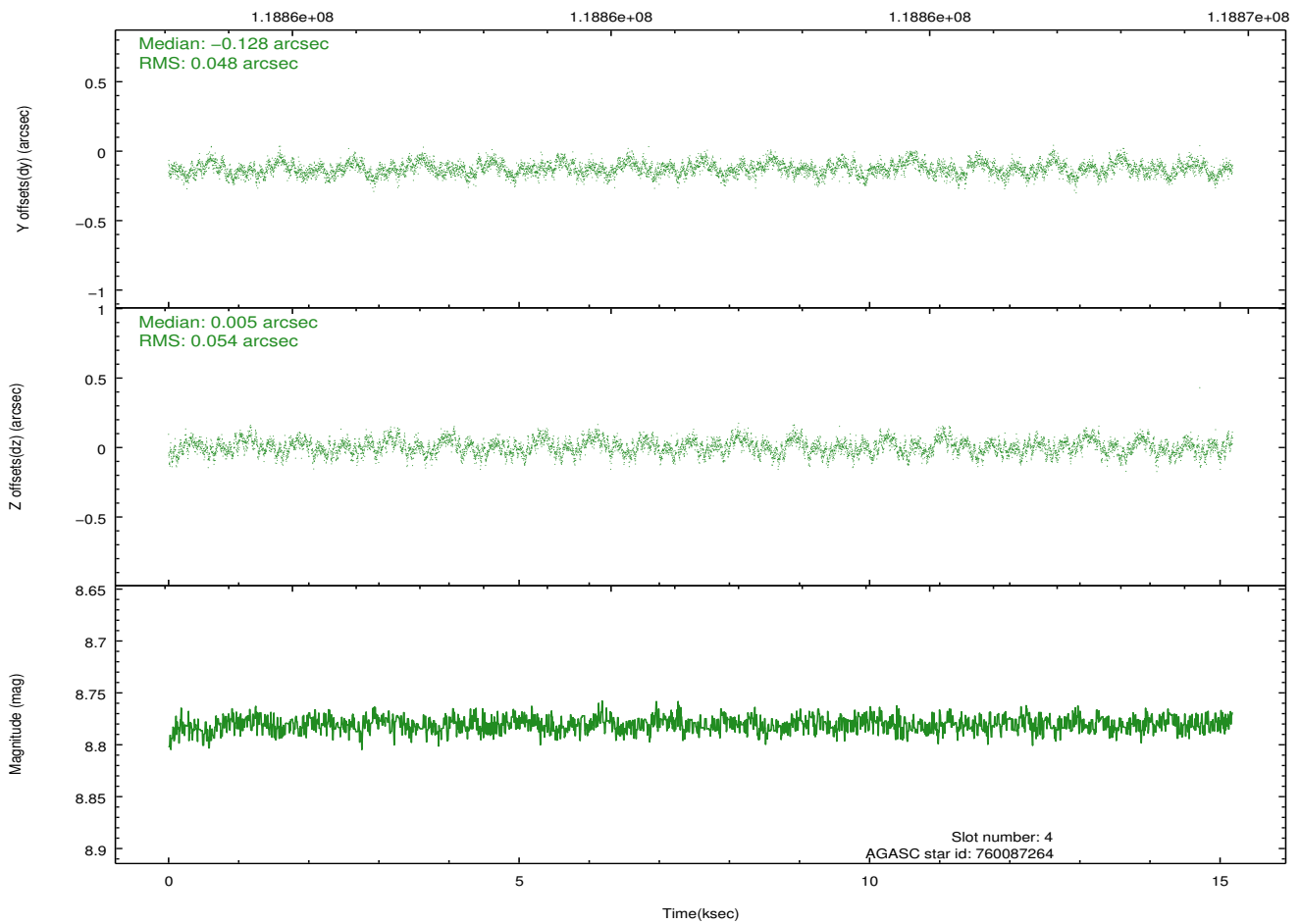
### 2.4.1 Slot 3



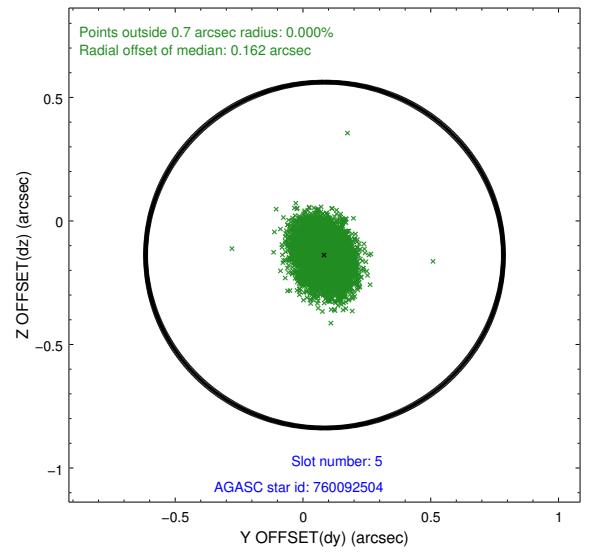
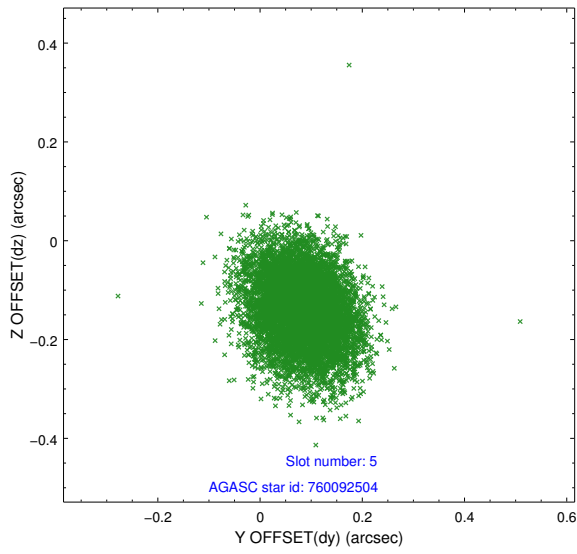
## 2.4.2 Slot 4



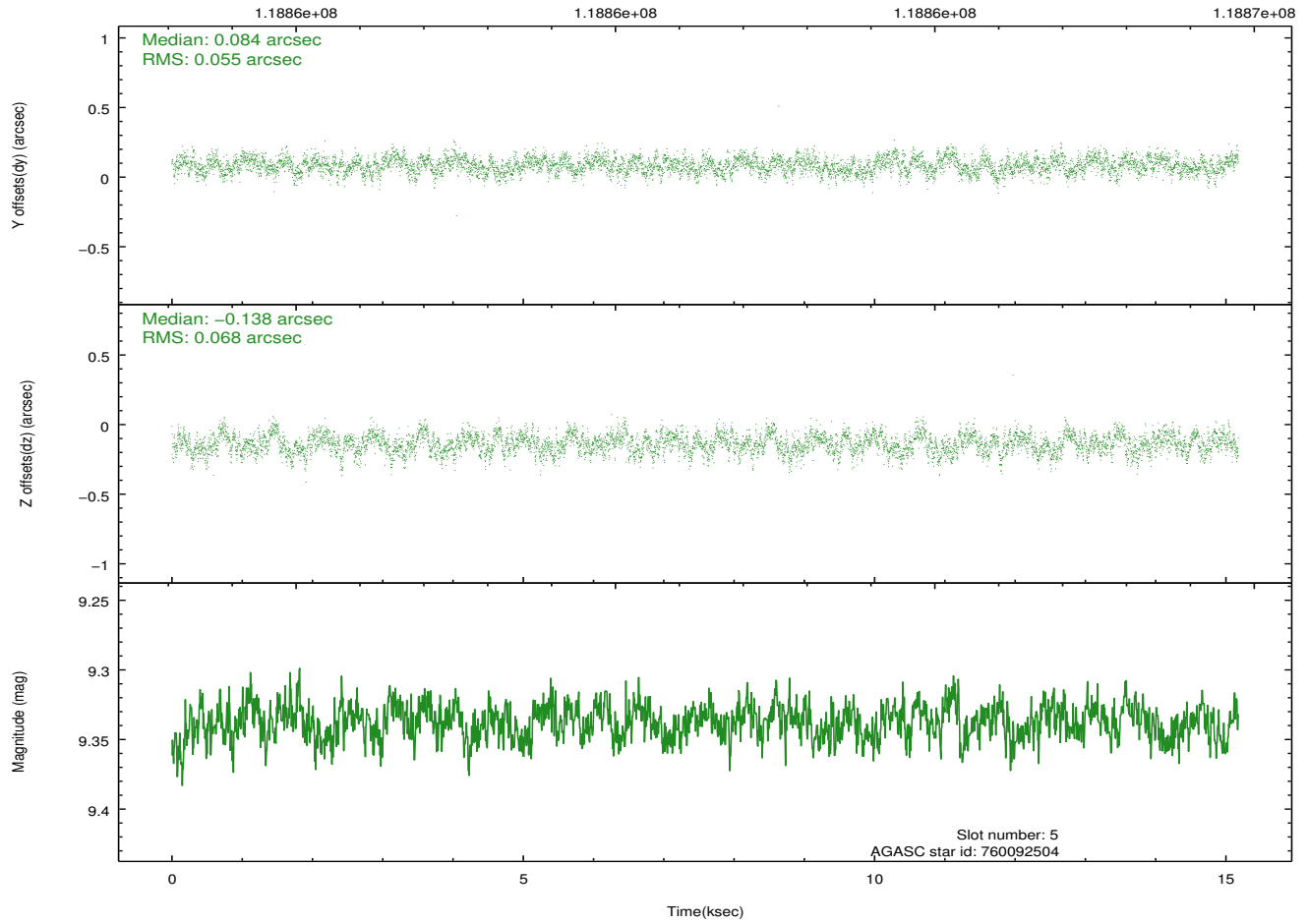
Time (s)



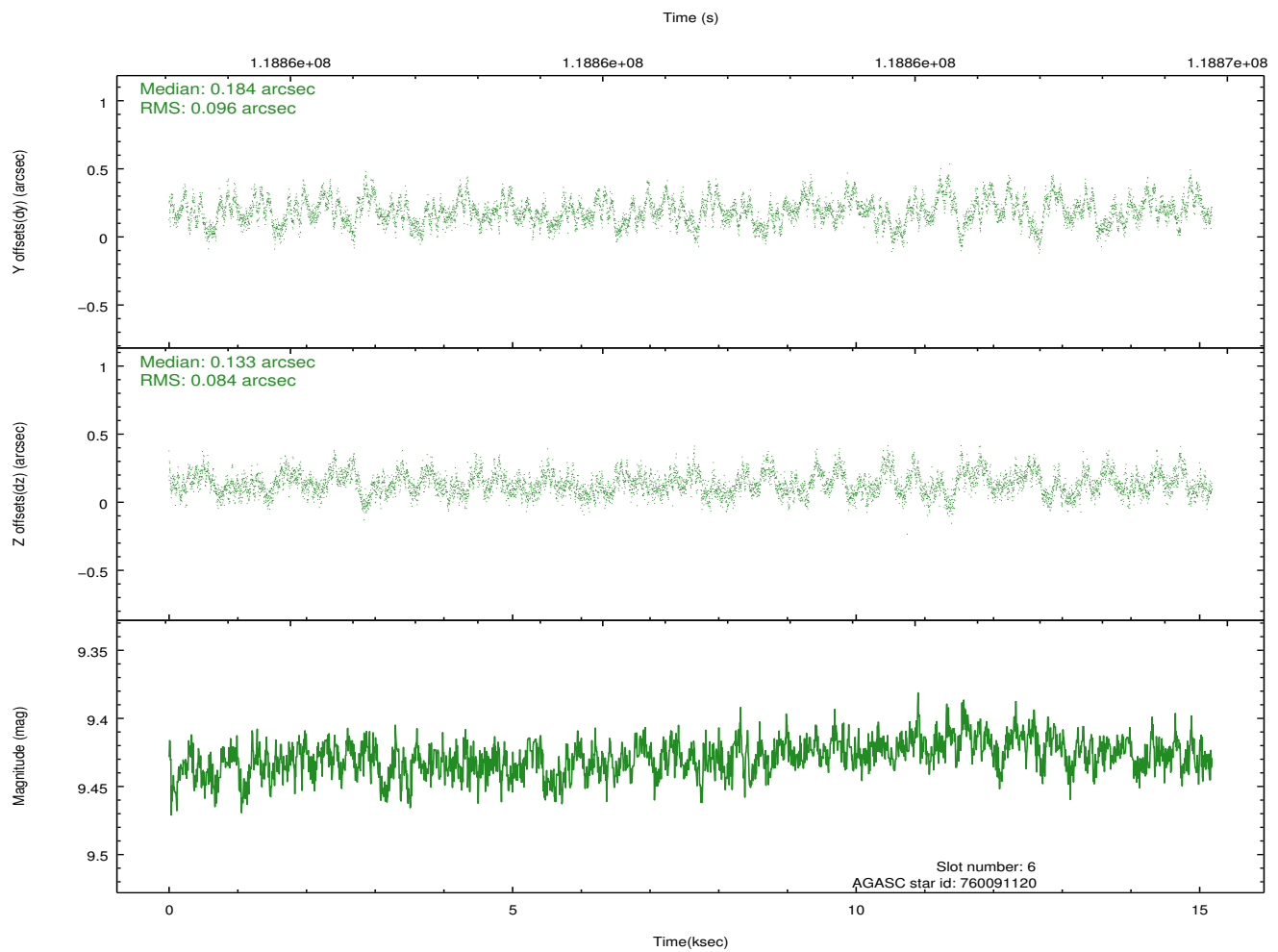
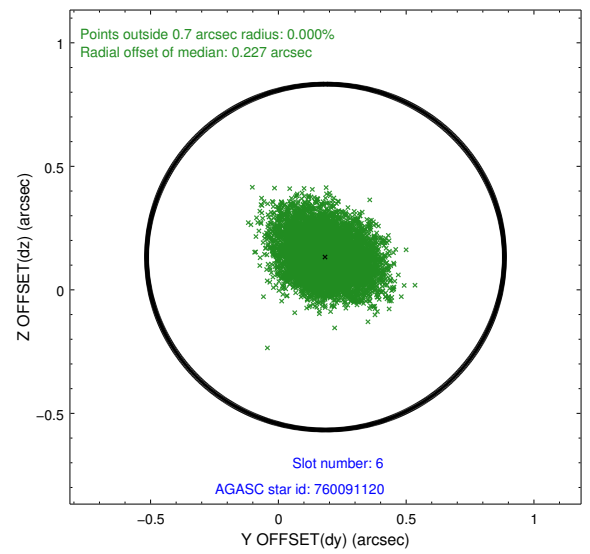
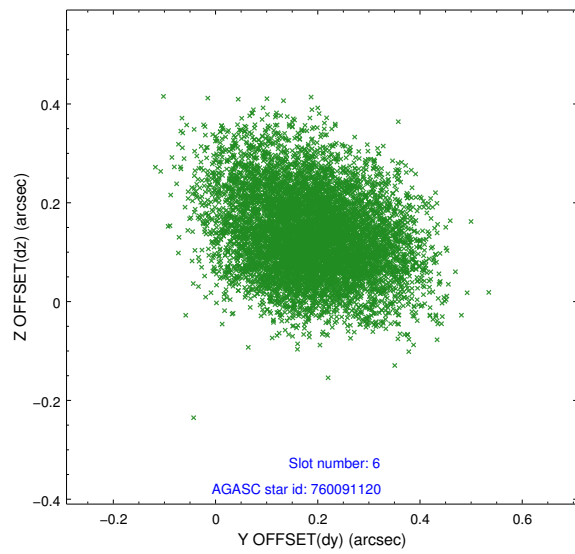
### 2.4.3 Slot 5



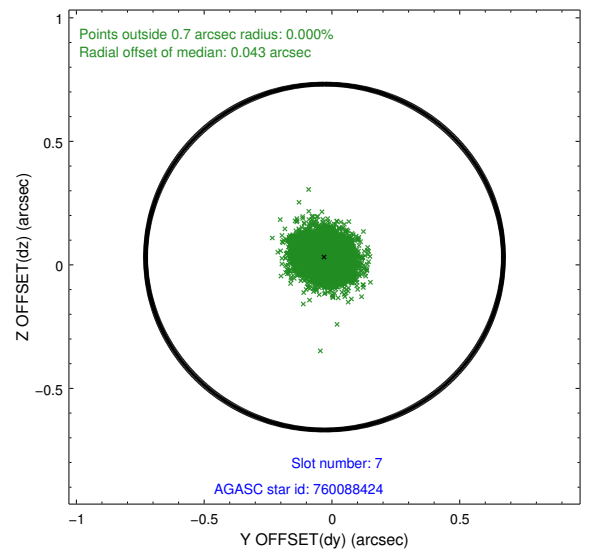
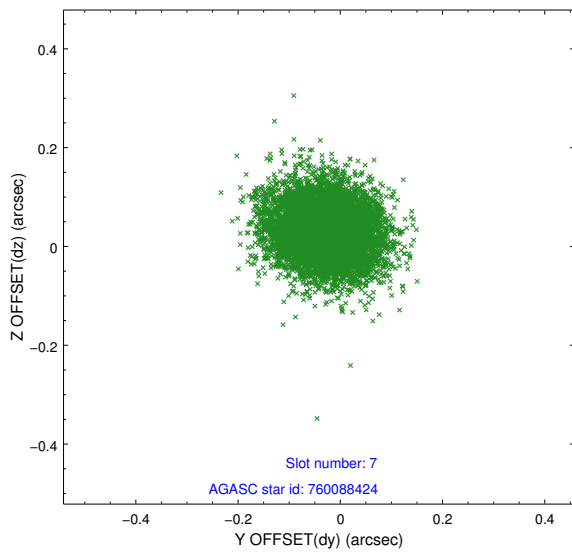
Time (s)



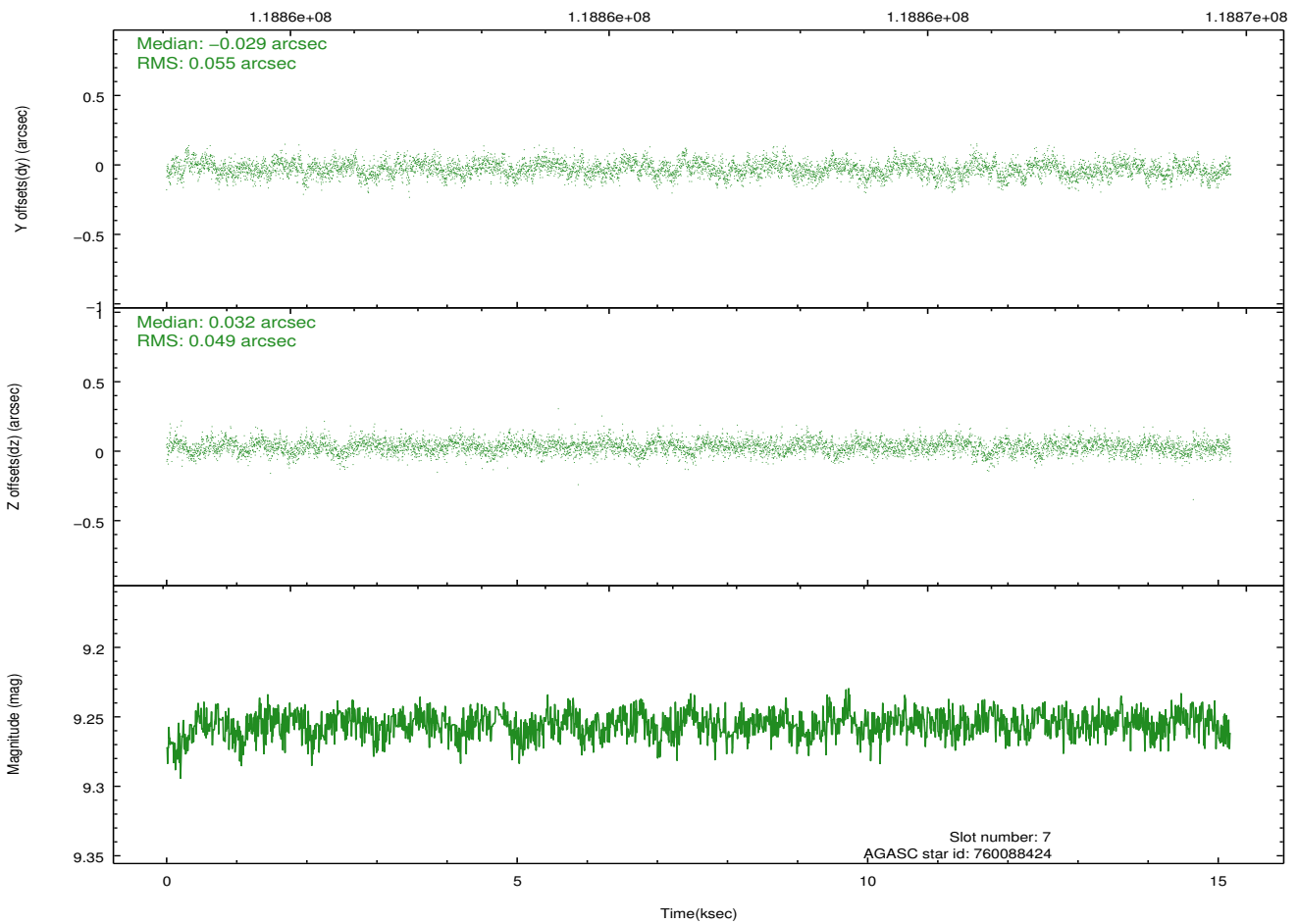
## 2.4.4 Slot 6



## 2.4.5 Slot 7

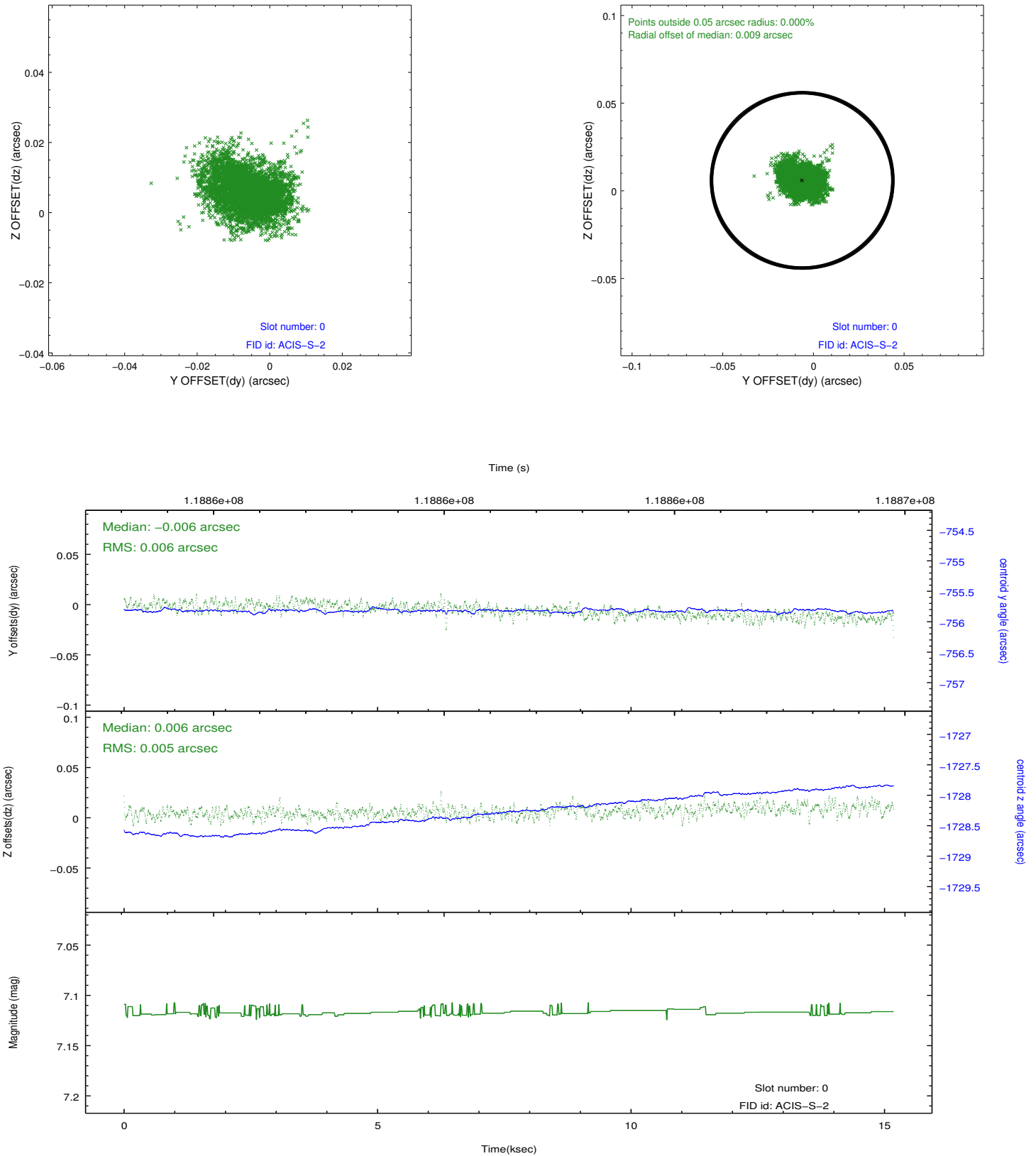


Time (s)

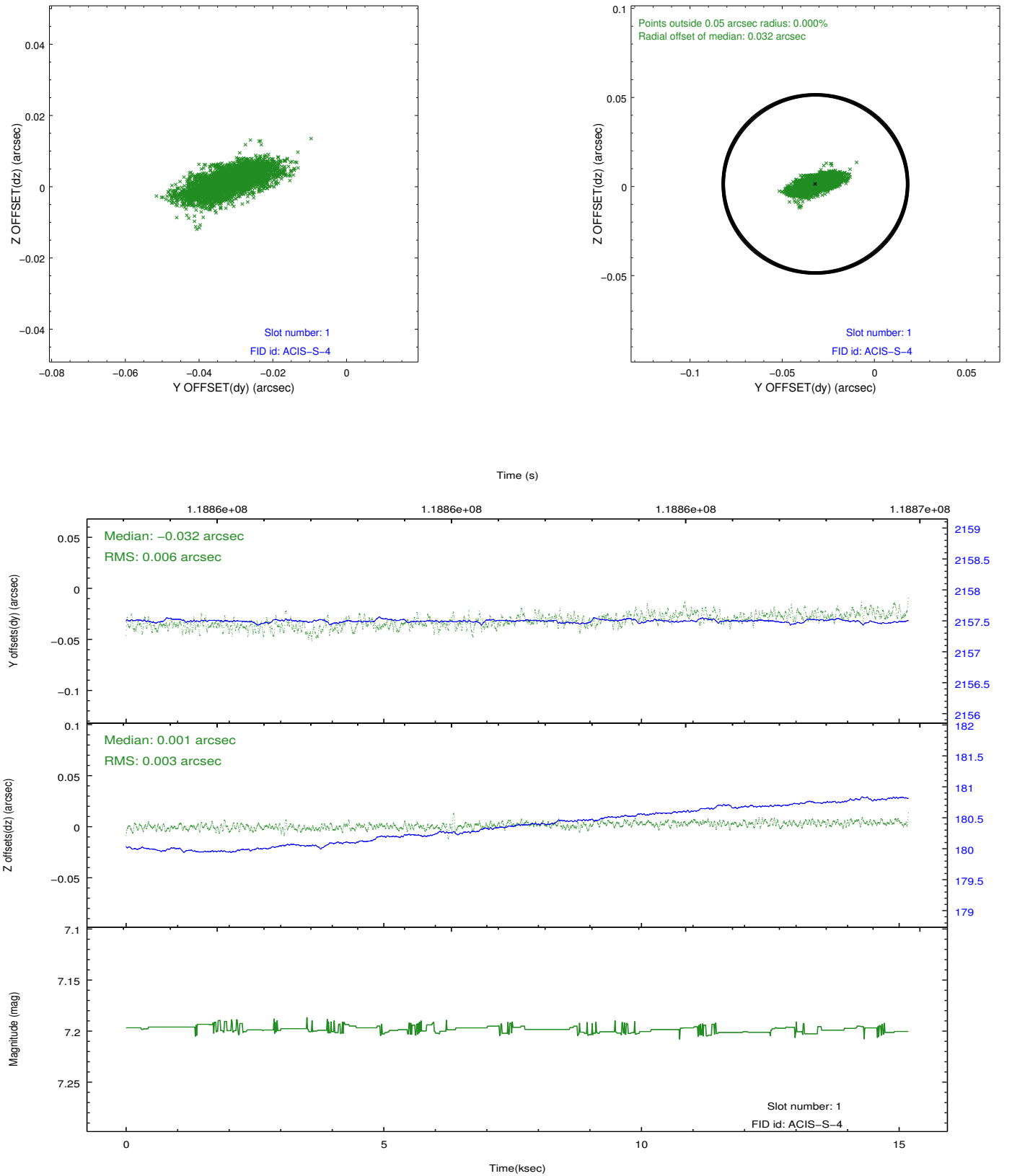


## 2.5 FID Slots

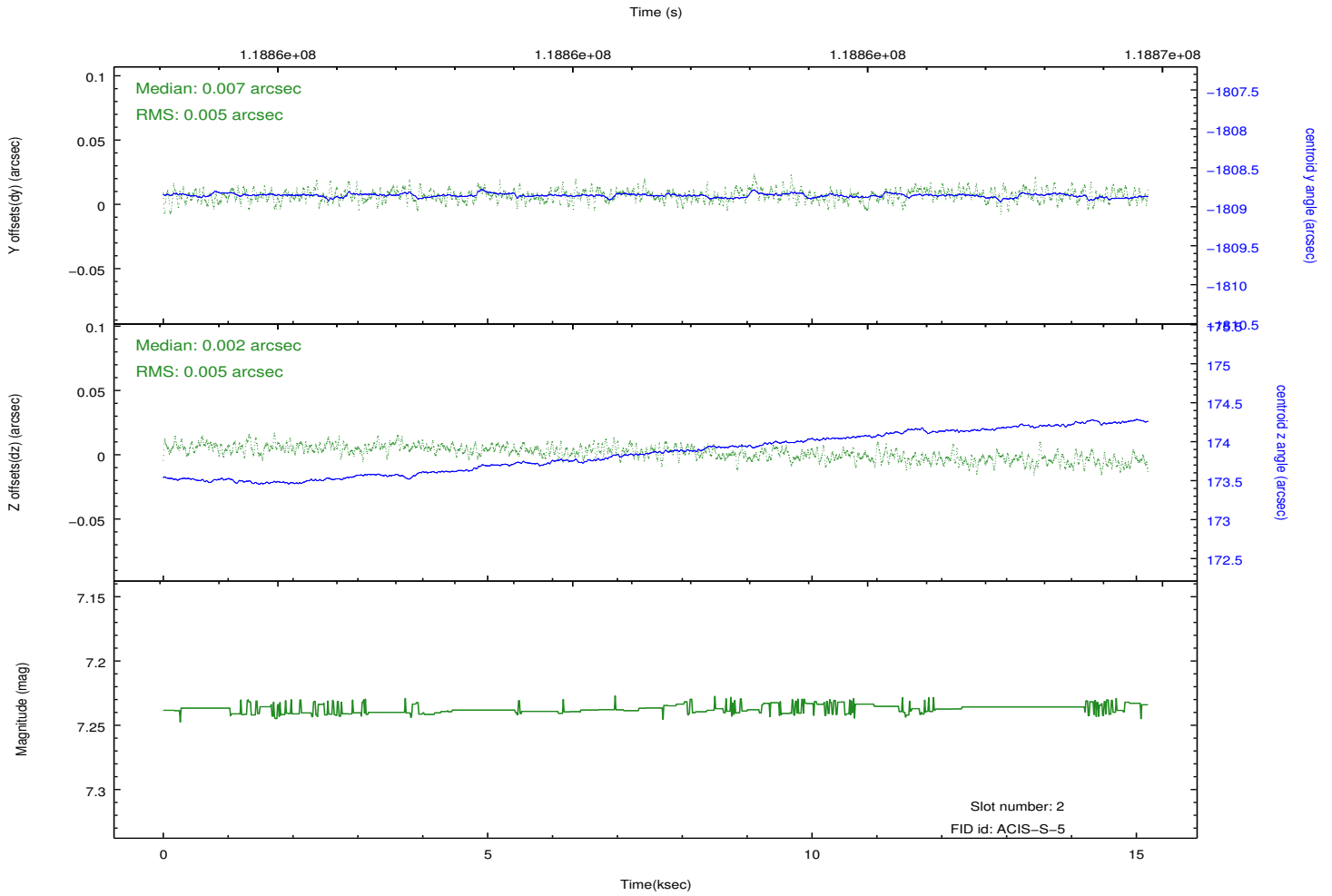
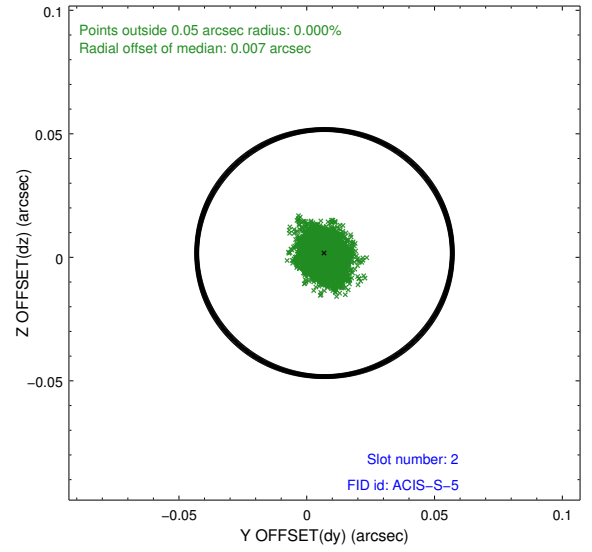
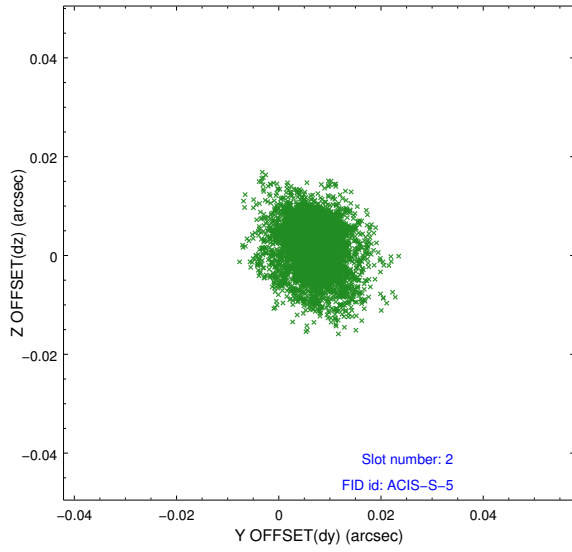
### 2.5.1 Slot 0



## 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)      | 2012.09.27 |
| V&V Edition                | 1          |
| V&V Disposition and Status | OK         |
| V&V Charge Time            | 15.126     |

## A.2 Comments