

# V&V Reference Report

## L2 ASCDS Version : 8.1.1

Observation 320 - L2 Version 3  
Chandra X-Ray Center

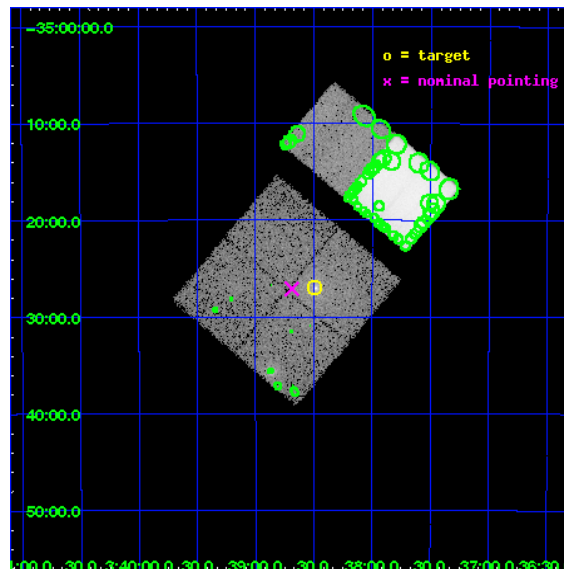
L2 Processing Date : Nov 20 2009

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# 1 Front

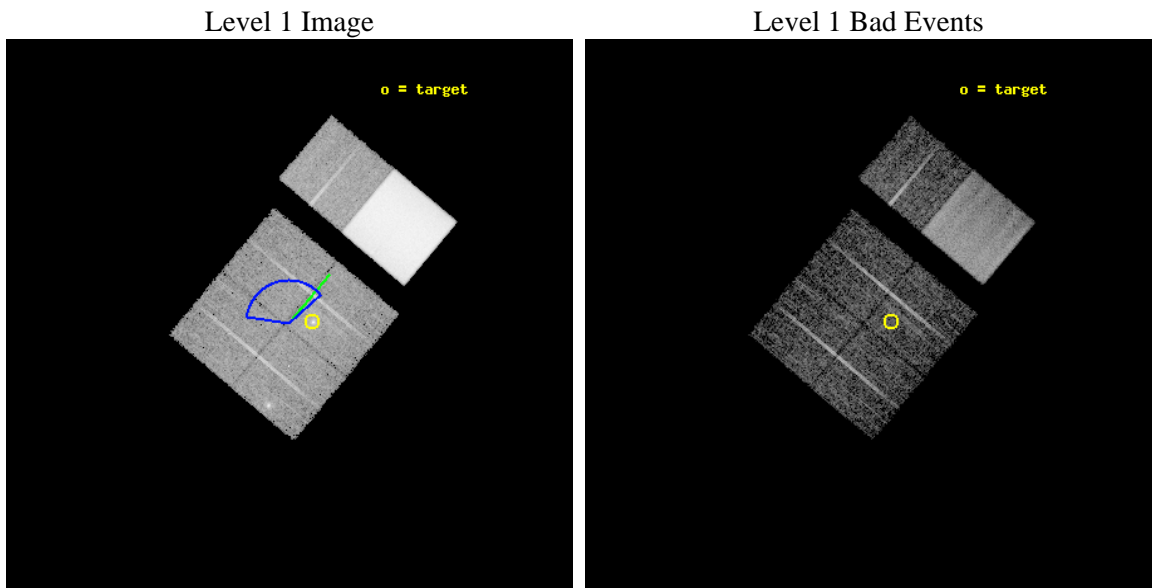
|          |   |   |
|----------|---|---|
| seq_num  | 600080  | Sequence number                             |
| obs_id   | 320   | Observation id                              |
| title    | BRIGHT ELLIPTICAL GALAXIES AND HIGH REDSHIFT CLUSTERS | Proposal tit                                |
| observer | DR Richard Mushotzky                                  | Principal investigator                      |
| object   | NGC 1399  | Source name                                 |
| dtcycle  | 0   | &#160                                       |
| cycle    | P   | events from which exps?<br>Prim/Second/Both |
| ra_targ  | 54.6225   | Observer's specified target RA              |
| dec_targ | -35.45011   | Observer's specified target Dec             |
| ra_nom   | 54.671964454203                                       | Nominal RA                                  |
| dec_nom  | -35.451700692809                                      | Nominal Dec                                 |
| roll_nom | 40.083988400621                                       | Nominal Roll                                |
| revision | 3   | Processing version of data                  |
| ontime   | 3425.7750378549                                       | Sum of GTIs [s]                             |
| livetime | 3382.3958115715                                       | Livetime [s]                                |
| ontime0  | 3438.430796057  | Sum of GTIs [s]                             |
| ontime1  | 3587.4765189961                                       | Sum of GTIs [s]                             |
| ontime2  | 3289.2608955577                                       | Sum of GTIs [s]                             |
| ontime3  | 3425.7750378549                                       | Sum of GTIs [s]                             |
| ontime6  | 3953.5889149755                                       | Sum of GTIs [s]                             |
| ontime7  | 6248.4225122184                                       | Sum of GTIs [s]                             |
| l2events | 516793  | Number of level 2 events                    |



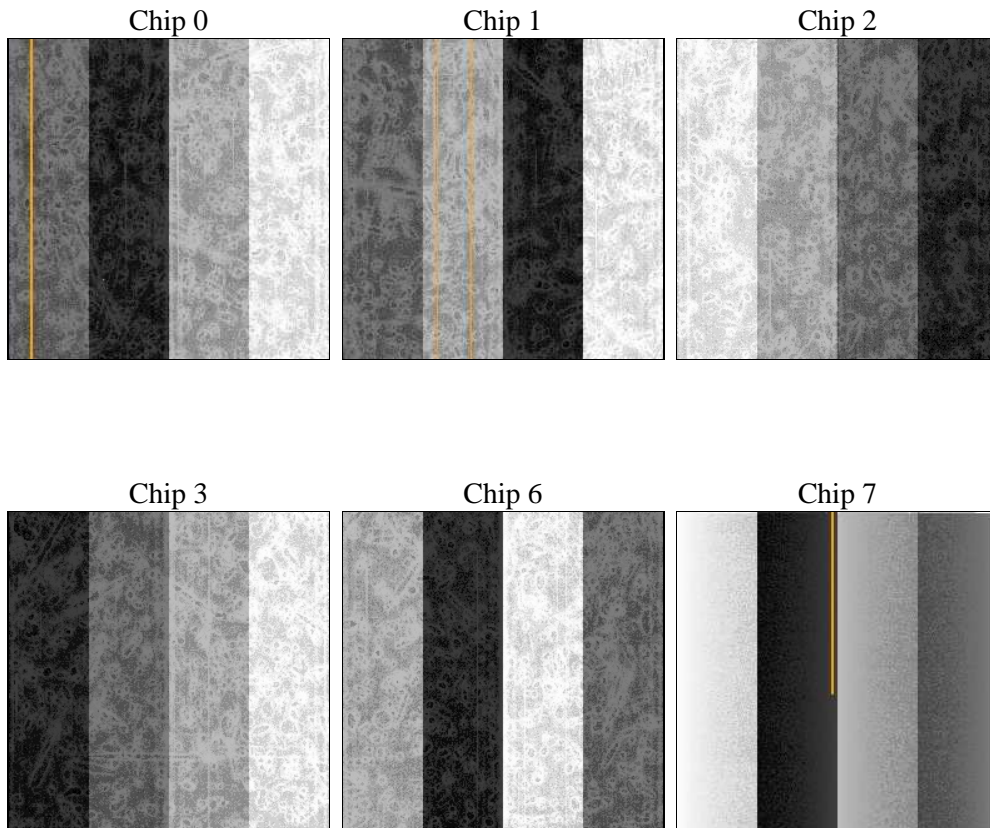
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

|          |                     |                                |                |                 |                                     |
|----------|---------------------|--------------------------------|----------------|-----------------|-------------------------------------|
| obi_num  | 1                   | Obi number                     | sched_exp_time | 10000.000000    | Scheduled observation exposure time |
| ascdsver | 8.1.1               | ASCDS version number           | ontime         | 3425.7750378549 | Sum of GTIs [s]                     |
| caldbver | 4.1.4               | &#160                          | ontime0        | 3438.430796057  | Sum of GTIs [s]                     |
| date     | 2009-11-20T11:25:03 | Date and time of file creation | ontime1        | 3587.4765189961 | Sum of GTIs [s]                     |
| revision | 3                   | Processing version of data     | ontime2        | 3289.2608955577 | Sum of GTIs [s]                     |
|          |                     |                                | ontime3        | 3425.7750378549 | Sum of GTIs [s]                     |
|          |                     |                                | ontime6        | 3953.5889149755 | Sum of GTIs [s]                     |
|          |                     |                                | ontime7        | 6248.4225122184 | Sum of GTIs [s]                     |
|          |                     |                                | l1events       | 746798          | Number of level 1 events            |

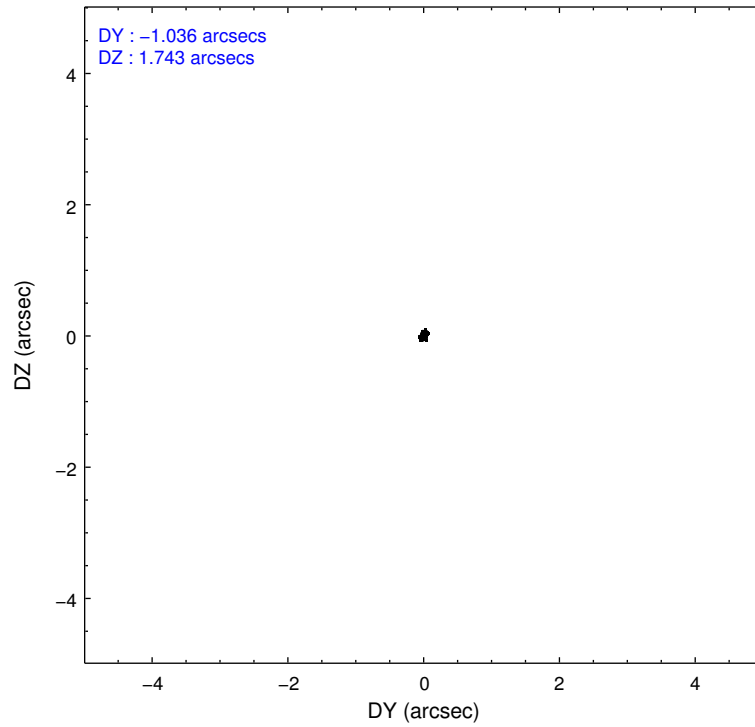
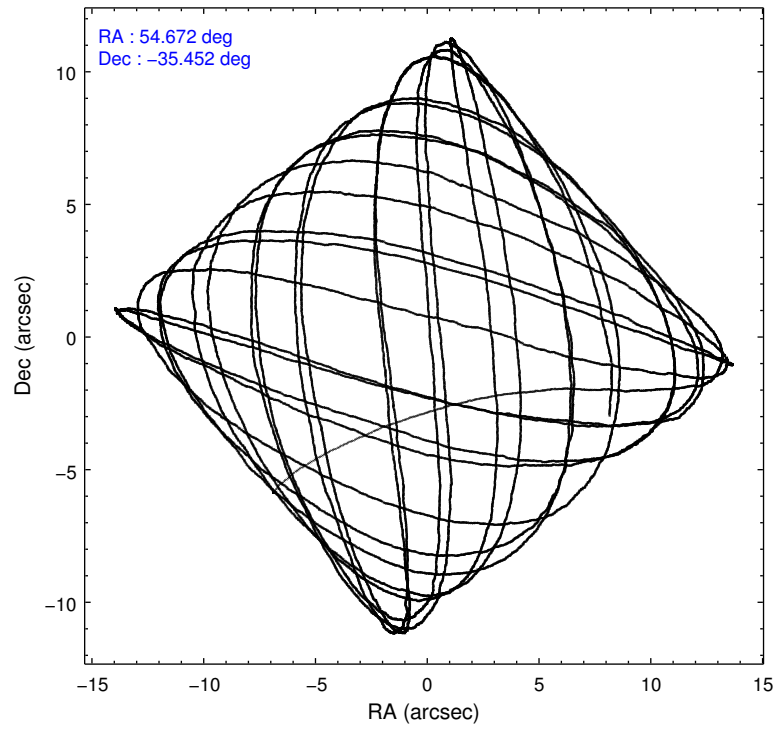
### 2.1.4 Events

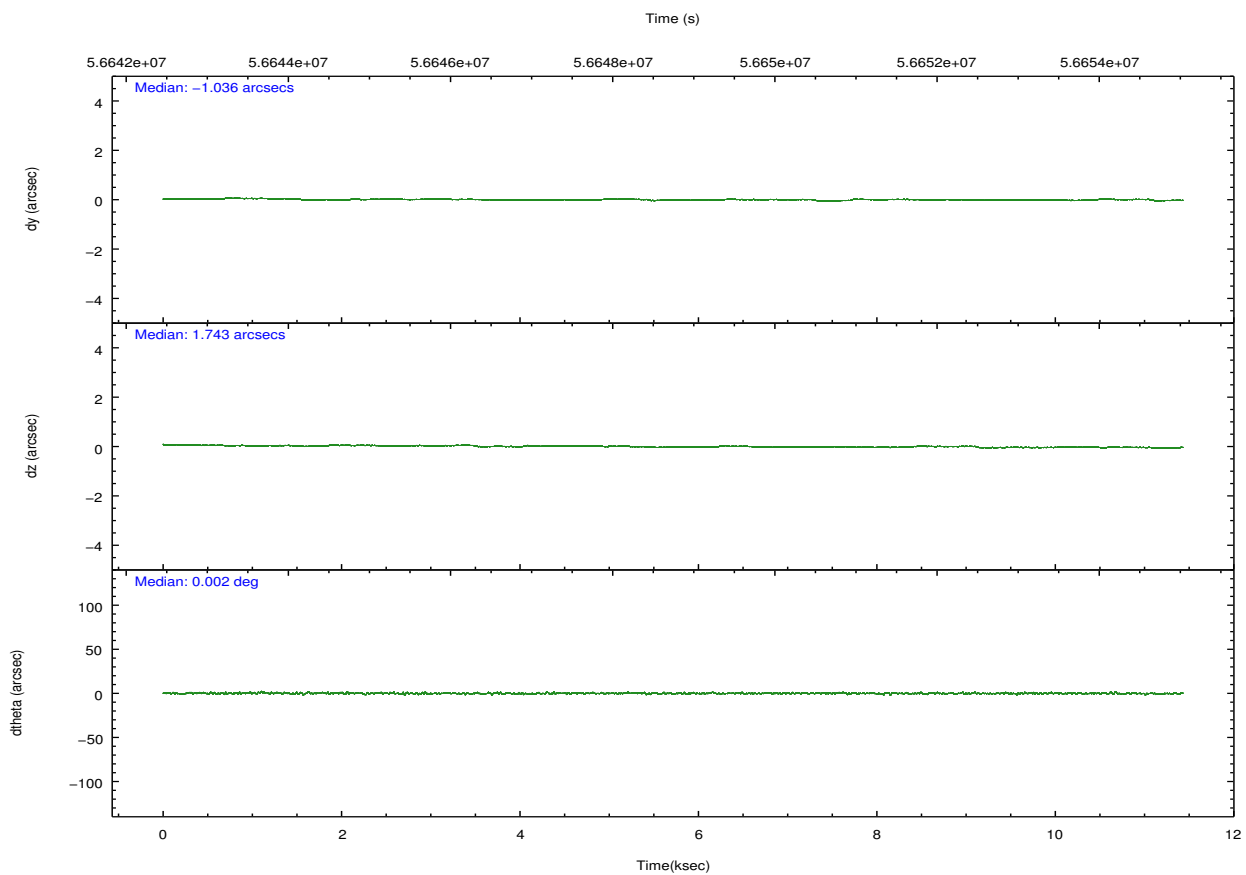
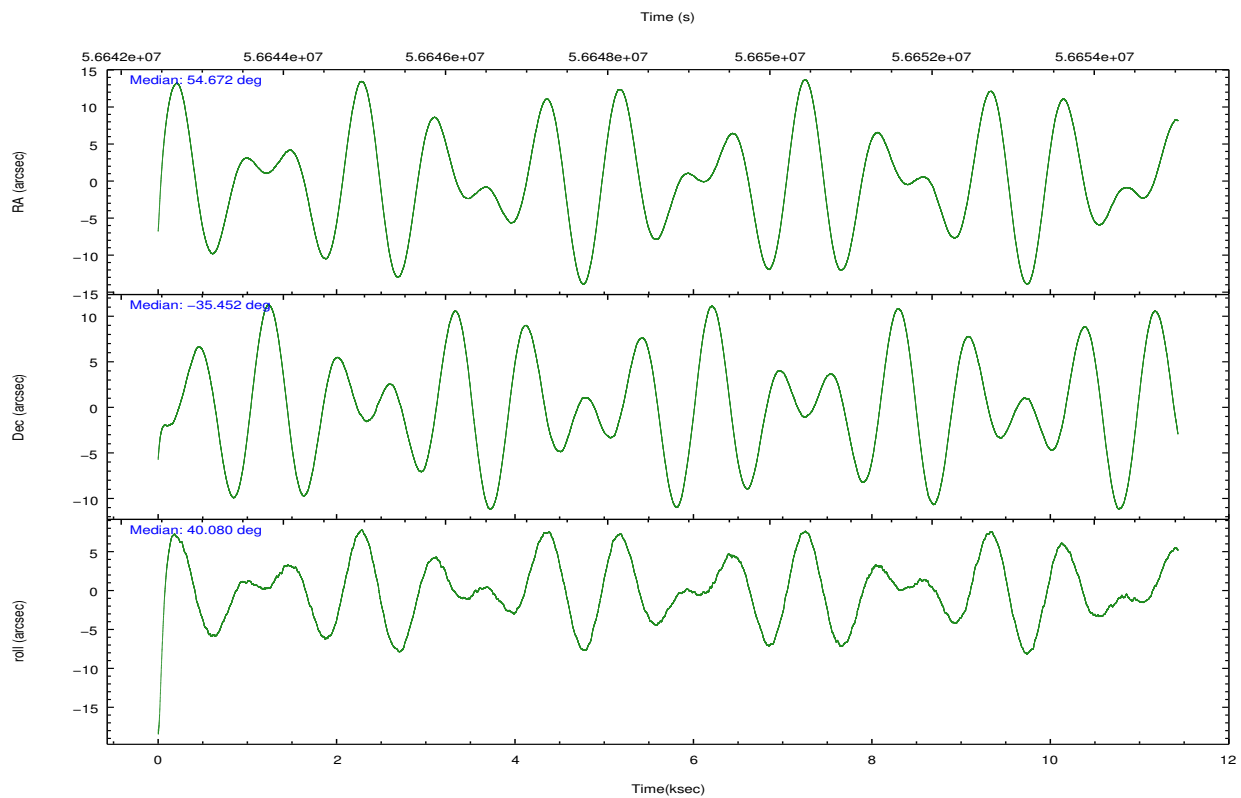
|                 | ccd 0 | ccd 1 | ccd 2 | ccd 3 | ccd 6 | ccd 7  |                | ccd 0 | ccd 1 | ccd 2 | ccd 3 | ccd 6 | ccd 7  |
|-----------------|-------|-------|-------|-------|-------|--------|----------------|-------|-------|-------|-------|-------|--------|
| level 1 events  | 36218 | 38802 | 35928 | 41233 | 50290 | 544327 | grade 0 events | 4292  | 6163  | 4102  | 7168  | 7326  | 55894  |
| rejected events | 26333 | 26267 | 25885 | 26665 | 30679 | 88185  |                | 11%   | 15%   | 11%   | 17%   | 14%   | 10%    |
| rejected %      | 72%   | 67%   | 72%   | 64%   | 61%   | 16%    | grade 1 events | 19    | 18    | 10    | 21    | 22    | 110    |
|                 |       |       |       |       |       |        |                | 0%    | 0%    | 0%    | 0%    | 0%    | 0%     |
|                 |       |       |       |       |       |        | grade 2 events | 4178  | 4757  | 4712  | 5910  | 10551 | 88744  |
|                 |       |       |       |       |       |        |                | 11%   | 12%   | 13%   | 14%   | 20%   | 16%    |
|                 |       |       |       |       |       |        | grade 3 events | 262   | 344   | 235   | 313   | 302   | 31985  |
|                 |       |       |       |       |       |        |                | 0%    | 0%    | 0%    | 0%    | 0%    | 5%     |
|                 |       |       |       |       |       |        | grade 4 events | 258   | 348   | 225   | 271   | 281   | 30394  |
|                 |       |       |       |       |       |        |                | 0%    | 0%    | 0%    | 0%    | 0%    | 5%     |
|                 |       |       |       |       |       |        | grade 5 events | 611   | 692   | 483   | 607   | 737   | 7469   |
|                 |       |       |       |       |       |        |                | 1%    | 1%    | 1%    | 1%    | 1%    | 1%     |
|                 |       |       |       |       |       |        | grade 6 events | 895   | 931   | 769   | 914   | 1151  | 249317 |
|                 |       |       |       |       |       |        |                | 2%    | 2%    | 2%    | 2%    | 2%    | 45%    |
|                 |       |       |       |       |       |        | grade 7 events | 25703 | 25549 | 25392 | 26029 | 29920 | 80414  |
|                 |       |       |       |       |       |        |                | 70%   | 65%   | 70%   | 63%   | 59%   | 14%    |

## 2.2 Compared Parameters

| Parameter                            | Planned             | Actual                | Parameter                             | Planned   | Actual  |
|--------------------------------------|---------------------|-----------------------|---------------------------------------|-----------|---------|
| Instrument                           | ACIS                | ACIS                  | Obspar format version number          | 6         | 6       |
| Detector                             | ACIS-012367         | ACIS-012367           | 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       |
| Pointing RA                          | 54.659833           | 54.67196445420336     | Subarray requested                    | NONE      | NONE    |
| Pointing Dec                         | -35.477695          | -35.45170069280859    | Alternating exposures requested       | N         | N       |
| Pointing Roll                        | 39.868274           | 40.08398840062125     | Primary exposure time                 | 0.000000  | 3.2     |
| Roll angle                           | 343.000000          | 343.000000            |                                       |           |         |
| Roll tolerance                       | 65.000000           | 65.000000             |                                       |           |         |
| Roll constraint allows 180D rotation | N                   | N                     |                                       |           |         |
| SIM focus pos (mm)                   | -0.782348           | -0.7809083437167272   |                                       |           |         |
| SIM defocus (mm)                     | 0                   | 0.001439871863259334  |                                       |           |         |
| SIM translation stage pos (mm)       | -233.592463         | -233.5874344608287    |                                       |           |         |
| SIM translation stage offset (mm)    | 0                   | -0.005018542100998502 |                                       |           |         |
| Observation start time               | 56643430.184000     | 56640946.265418       |                                       |           |         |
| Observation start date               | 1999-10-18T14:16:06 | 1999-10-18T13:35:46   |                                       |           |         |
| Observation end time                 | 56654430.184000     | 56654773.003416       |                                       |           |         |
| Observation end date                 | 1999-10-18T17:19:26 | 1999-10-18T17:26:13   |                                       |           |         |
| Read mode                            | TIMED               | TIMED                 |                                       |           |         |

## 2.3 Aspect



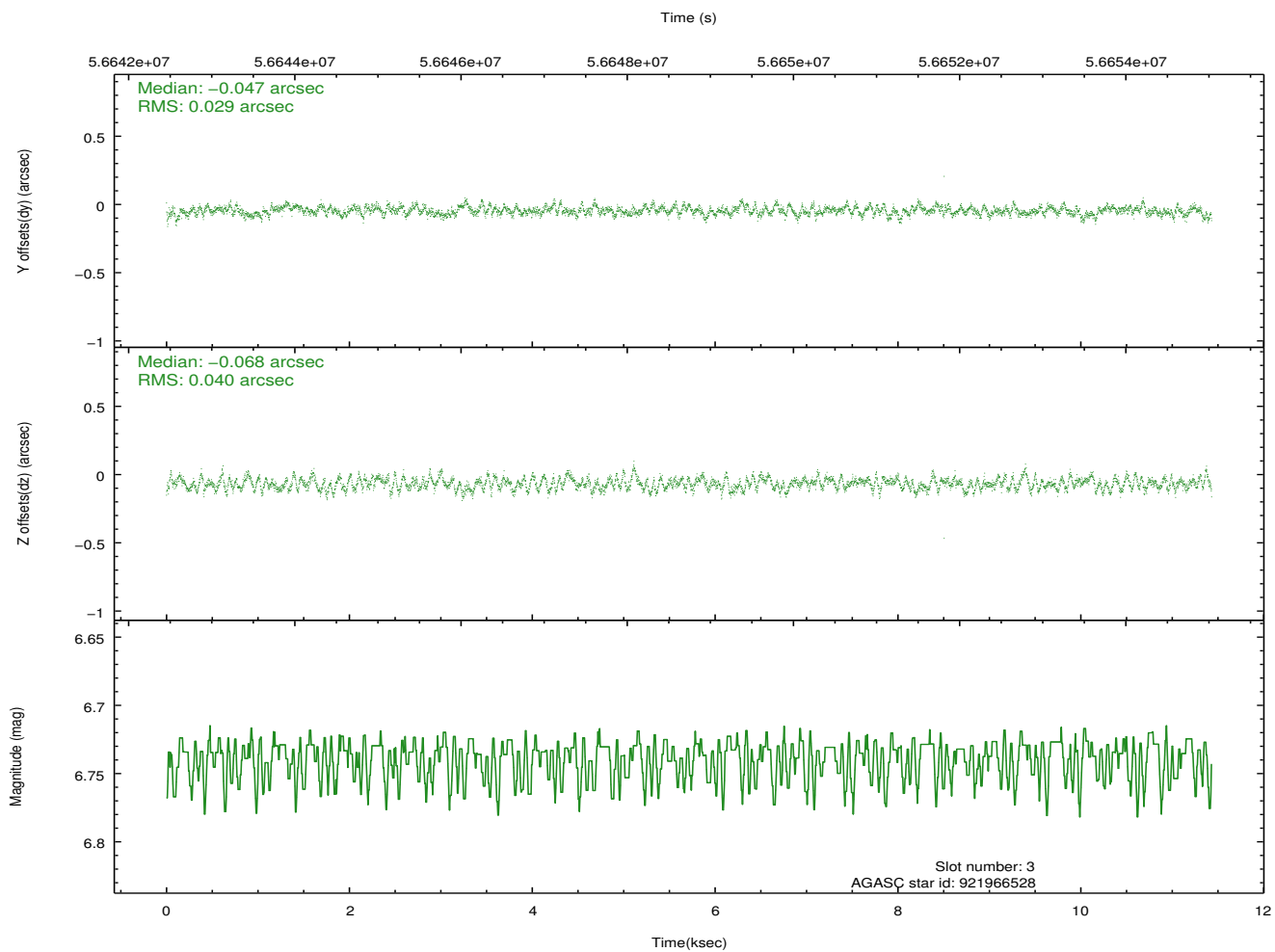
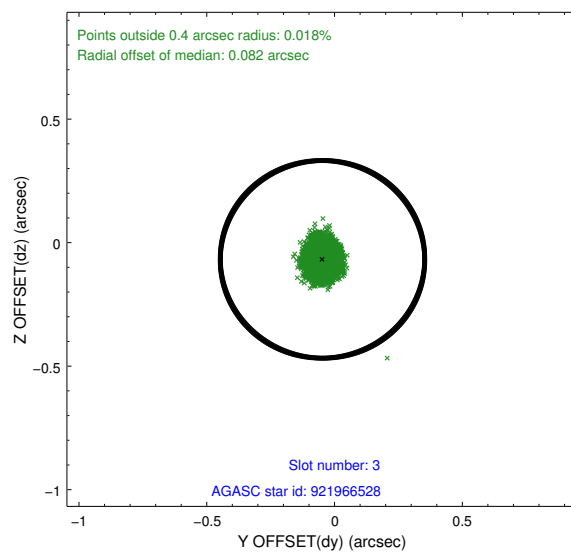
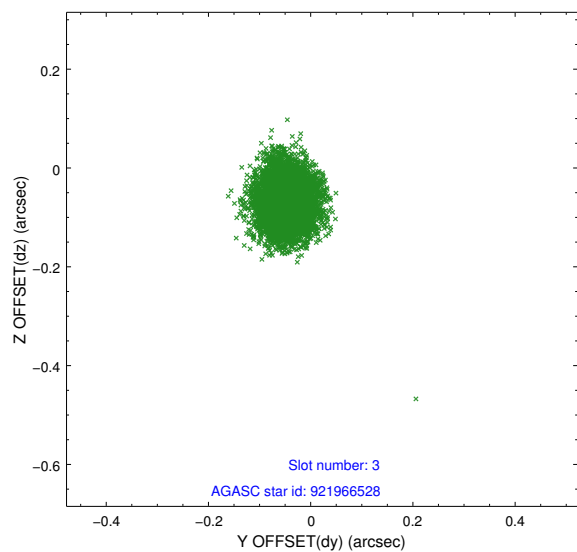


### Slot Statistics

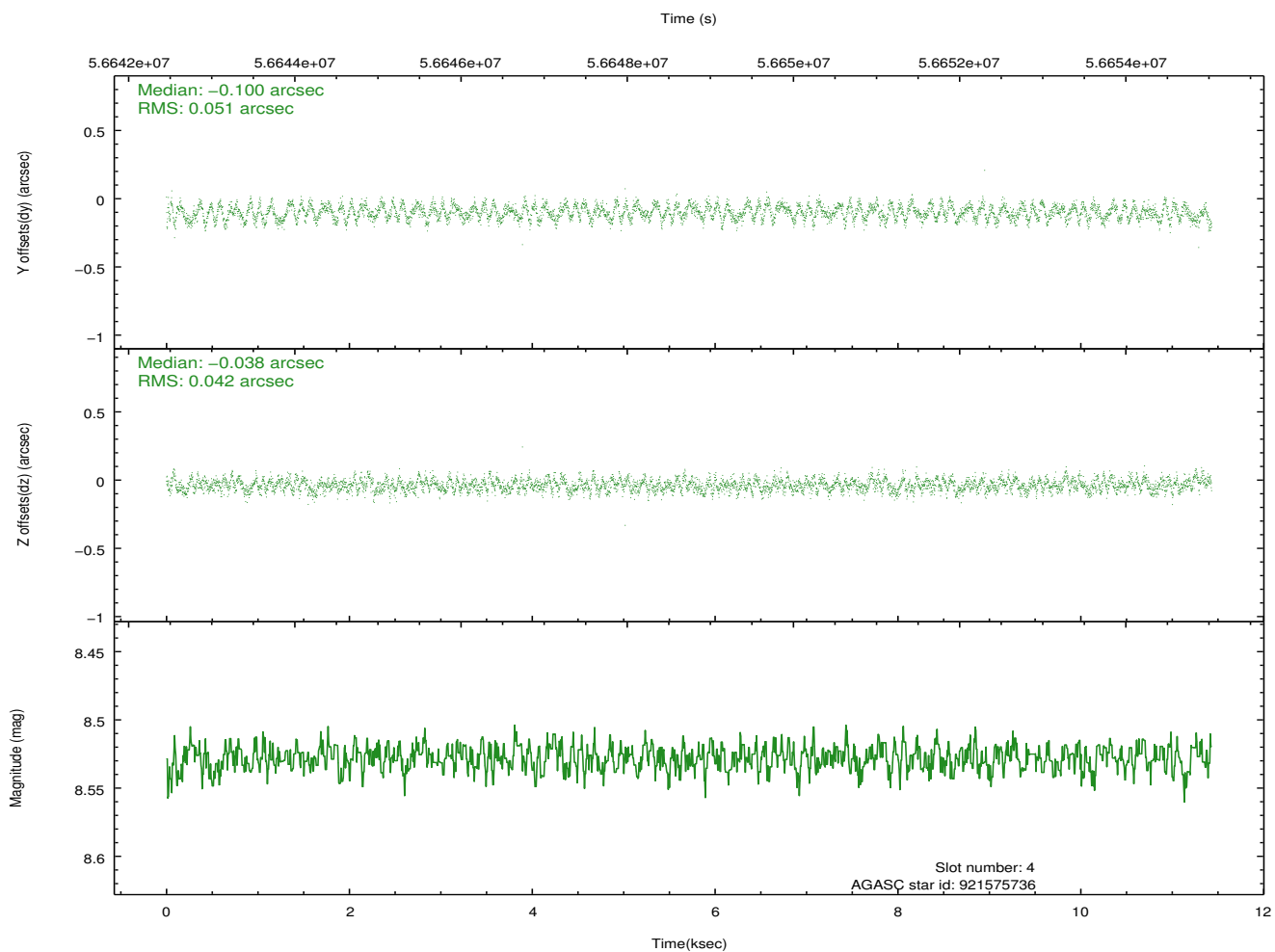
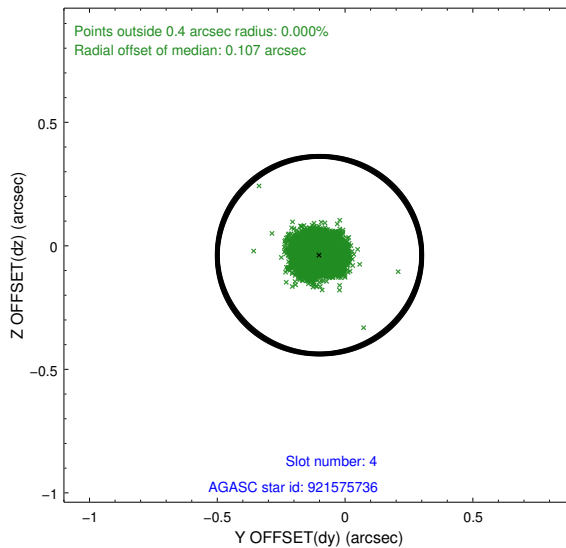
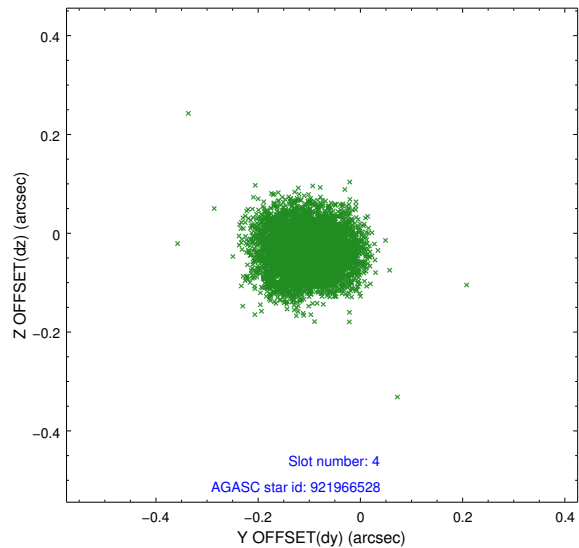
| slot | status | id        | mag  | n_pts | med_dy | med_dz | dr1   | dr2   | ra        | dec        | mean_y   | mean_z   |
|------|--------|-----------|------|-------|--------|--------|-------|-------|-----------|------------|----------|----------|
| 0    | FID    | ACIS-I-2  | 7.21 | 5577  | -0.046 | 0.046  | 0.009 | 0.015 | 0.000000  | 0.000000   | -753.34  | -831.26  |
| 1    | FID    | ACIS-I-4  | 7.22 | 5576  | 0.103  | 0.022  | 0.006 | 0.010 | 0.000000  | 0.000000   | 2160.94  | 1074.62  |
| 2    | FID    | ACIS-I-5  | 7.23 | 5577  | -0.158 | 0.001  | 0.009 | 0.015 | 0.000000  | 0.000000   | -1806.96 | 1072.88  |
| 3    | GUIDE  | 921966528 | 6.74 | 5577  | -0.047 | -0.068 | 0.054 | 0.084 | 54.675841 | -35.204254 | 667.26   | 725.24   |
| 4    | GUIDE  | 921575736 | 8.53 | 5577  | -0.100 | -0.038 | 0.071 | 0.109 | 54.586331 | -34.827401 | 1334.04  | 1936.11  |
| 5    | GUIDE  | 921965624 | 8.62 | 5576  | 0.049  | 0.043  | 0.069 | 0.112 | 54.900706 | -35.940077 | -528.13  | -1728.03 |
| 6    | GUIDE  | 921970016 | 9.40 | 5575  | 0.115  | 0.114  | 0.094 | 0.148 | 54.228536 | -36.081558 | -2358.19 | -866.69  |
| 7    | GUIDE  | 921963472 | 9.87 | 5575  | -0.016 | -0.054 | 0.103 | 0.169 | 54.743496 | -35.323890 | 543.23   | 267.11   |

## 2.4 Star Slots

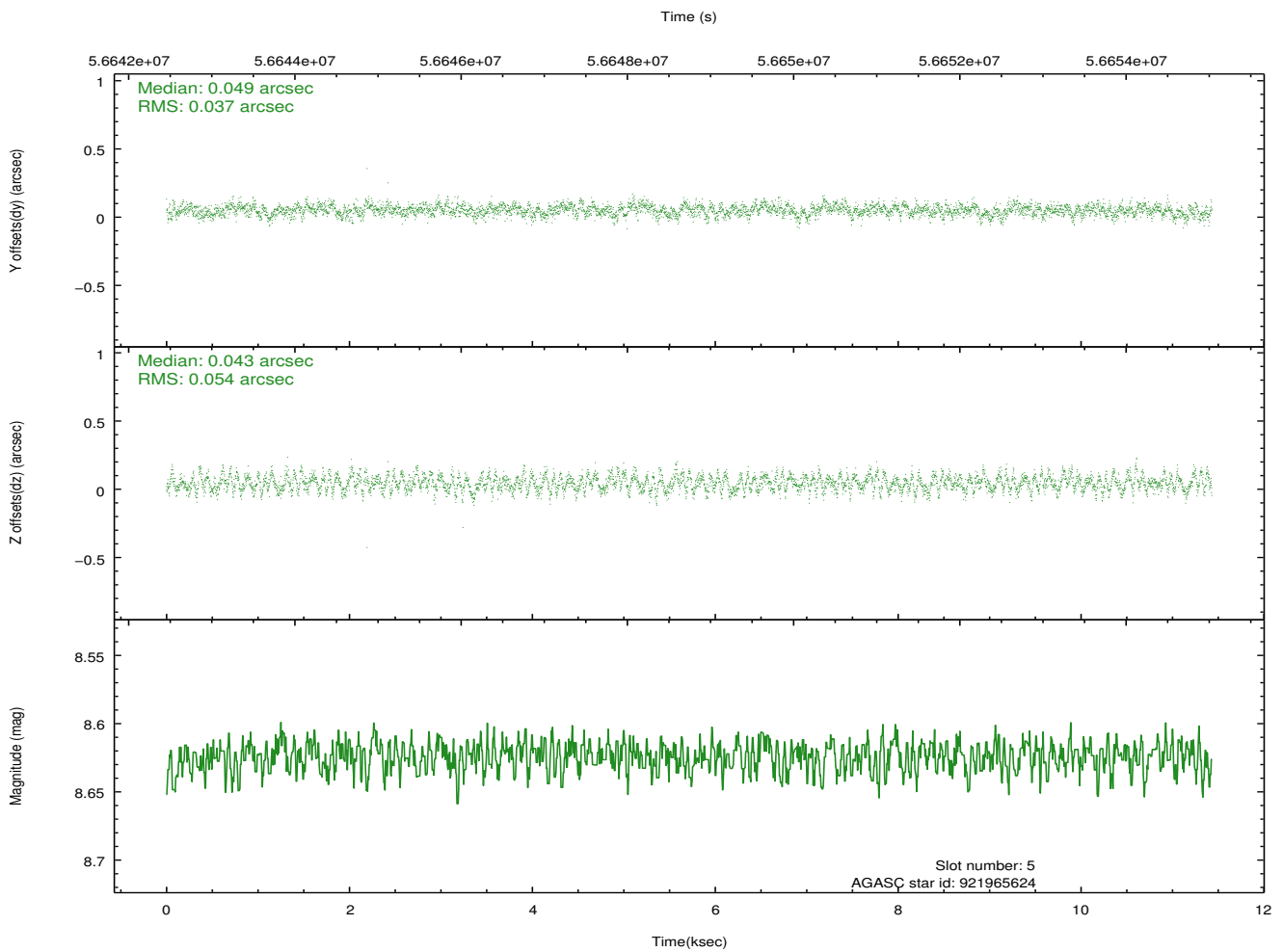
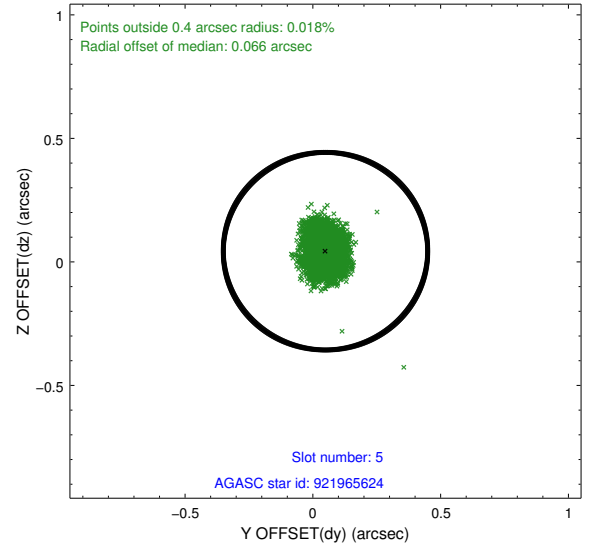
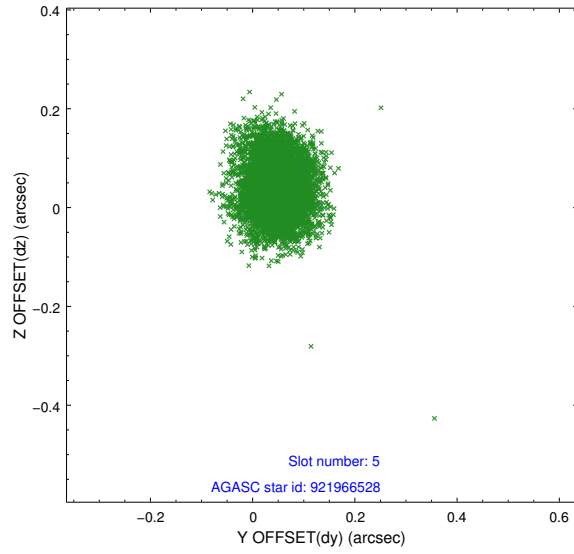
### 2.4.1 Slot 3



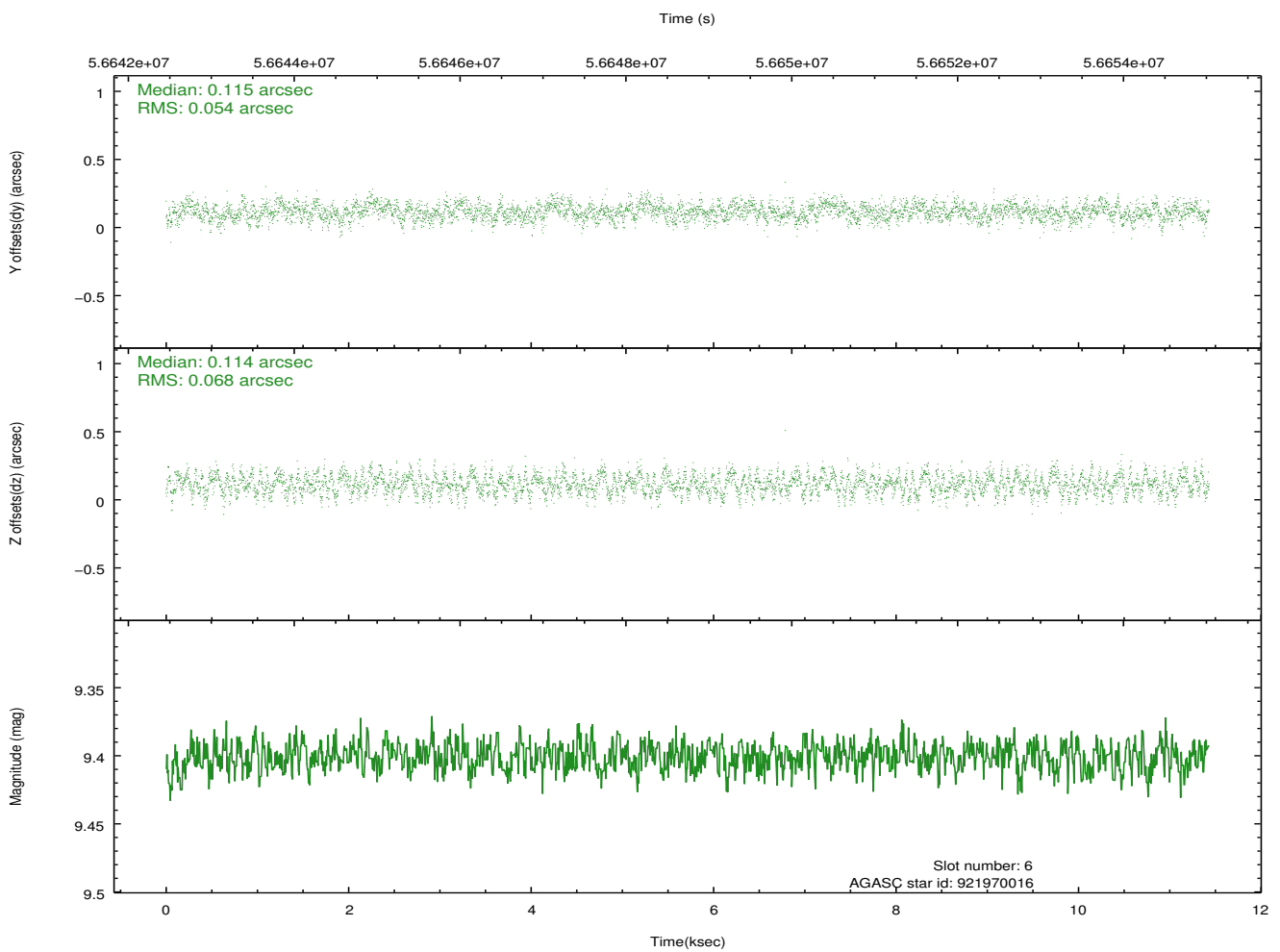
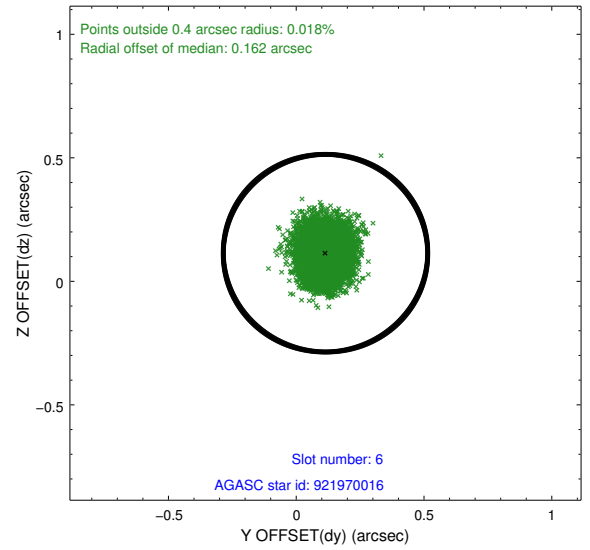
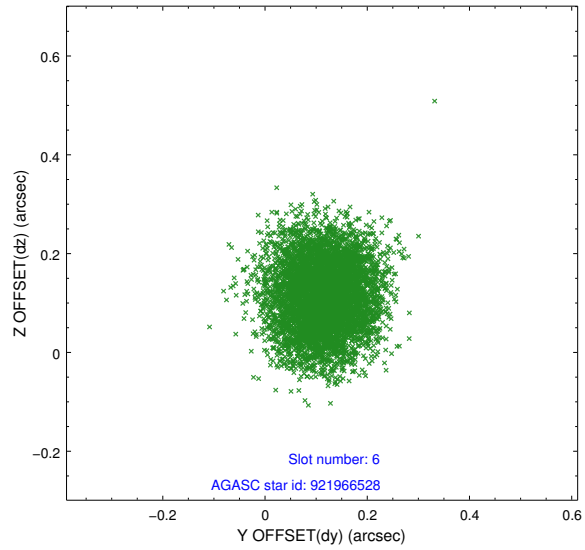
## 2.4.2 Slot 4



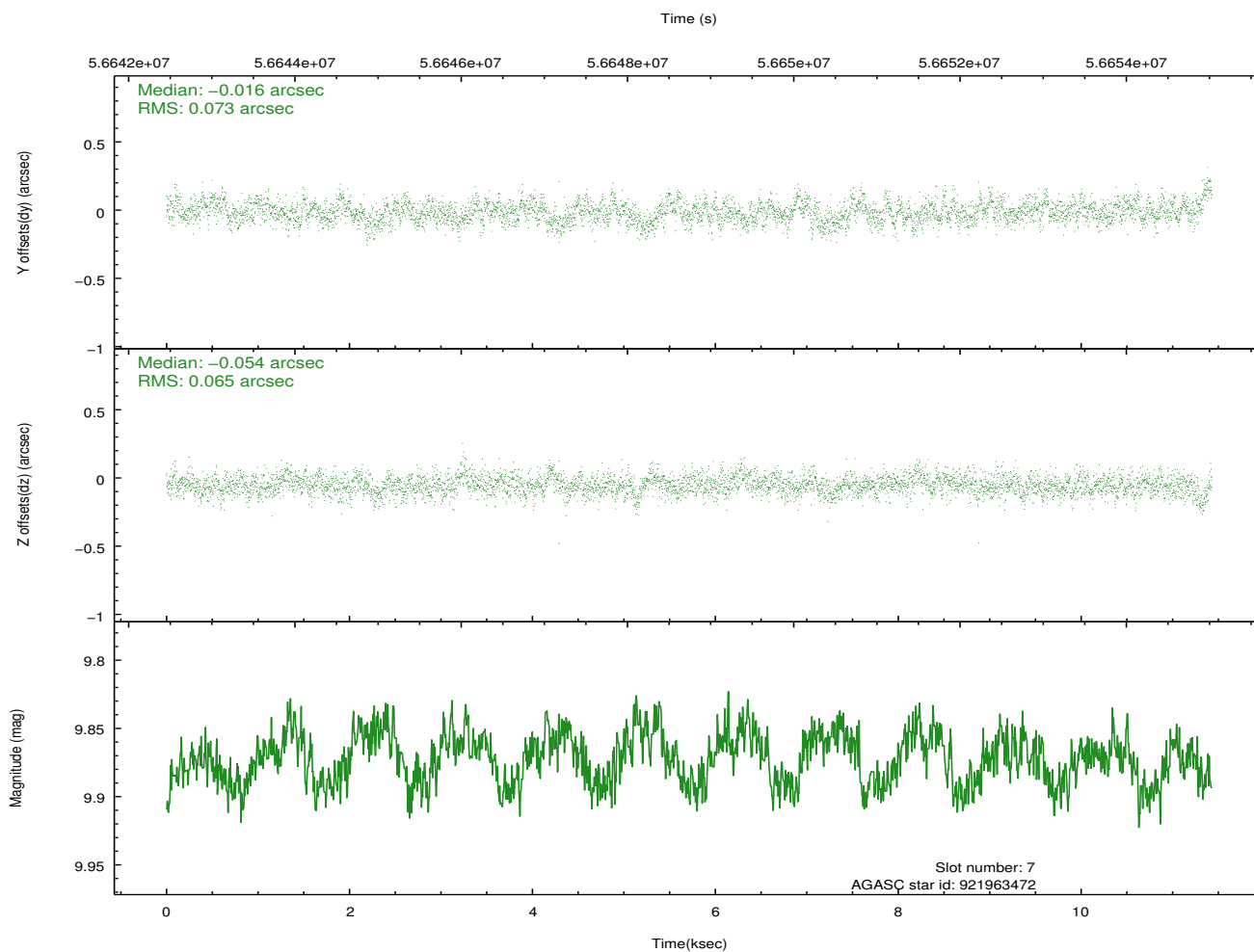
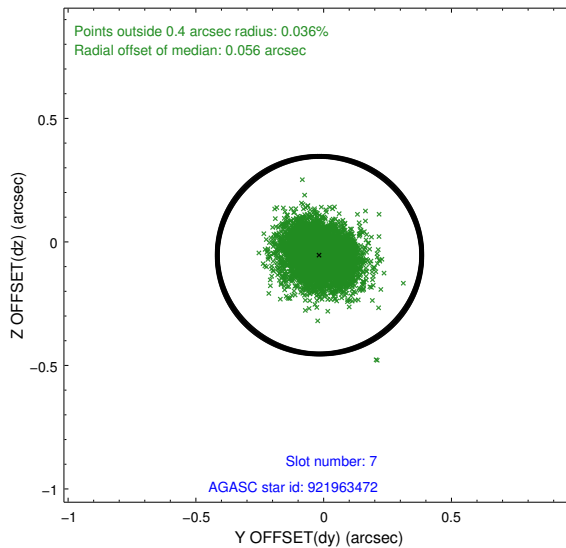
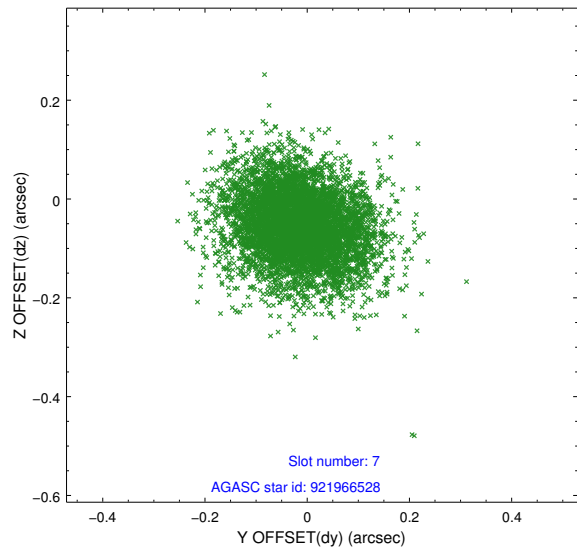
### 2.4.3 Slot 5



## 2.4.4 Slot 6

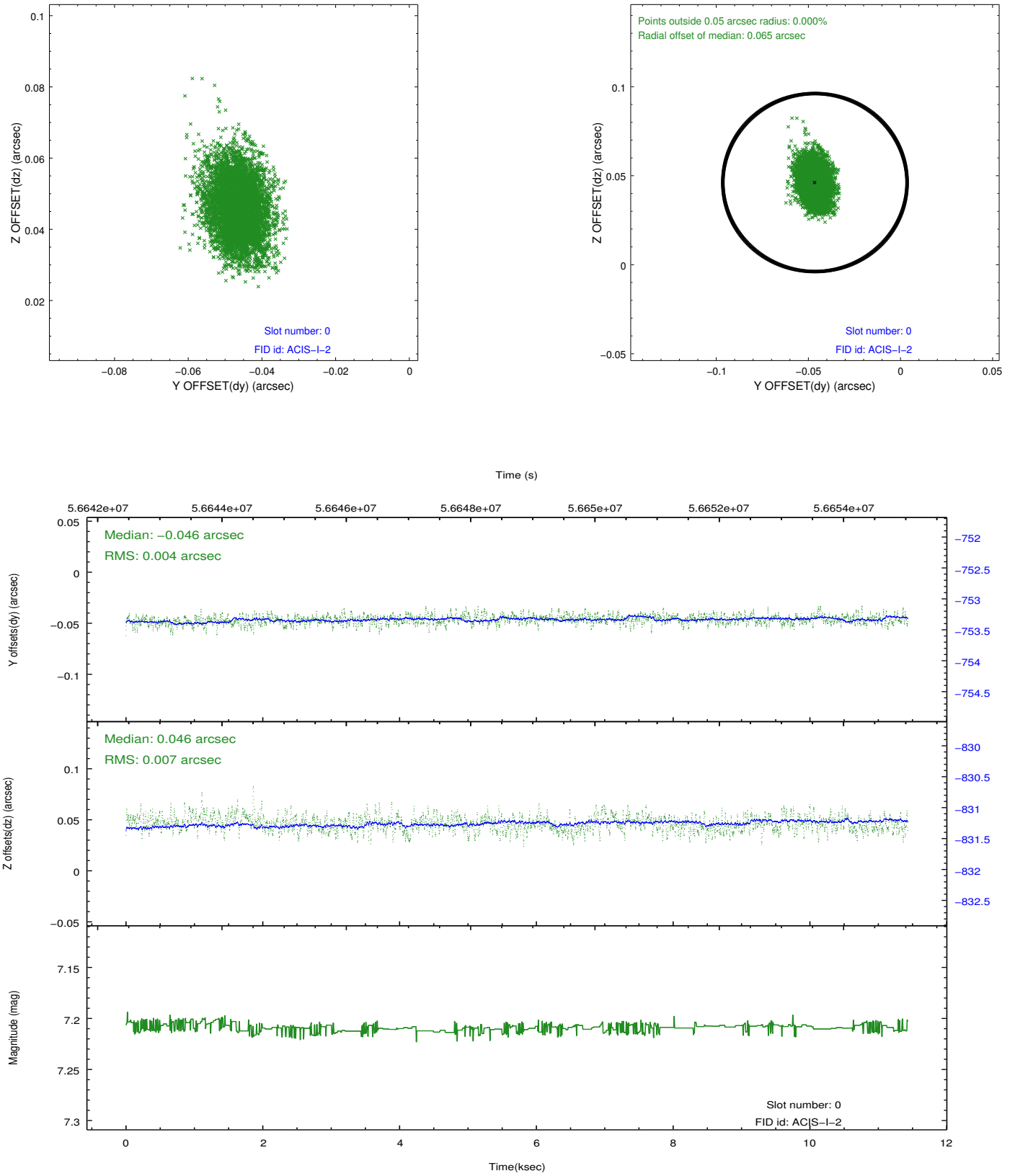


## 2.4.5 Slot 7

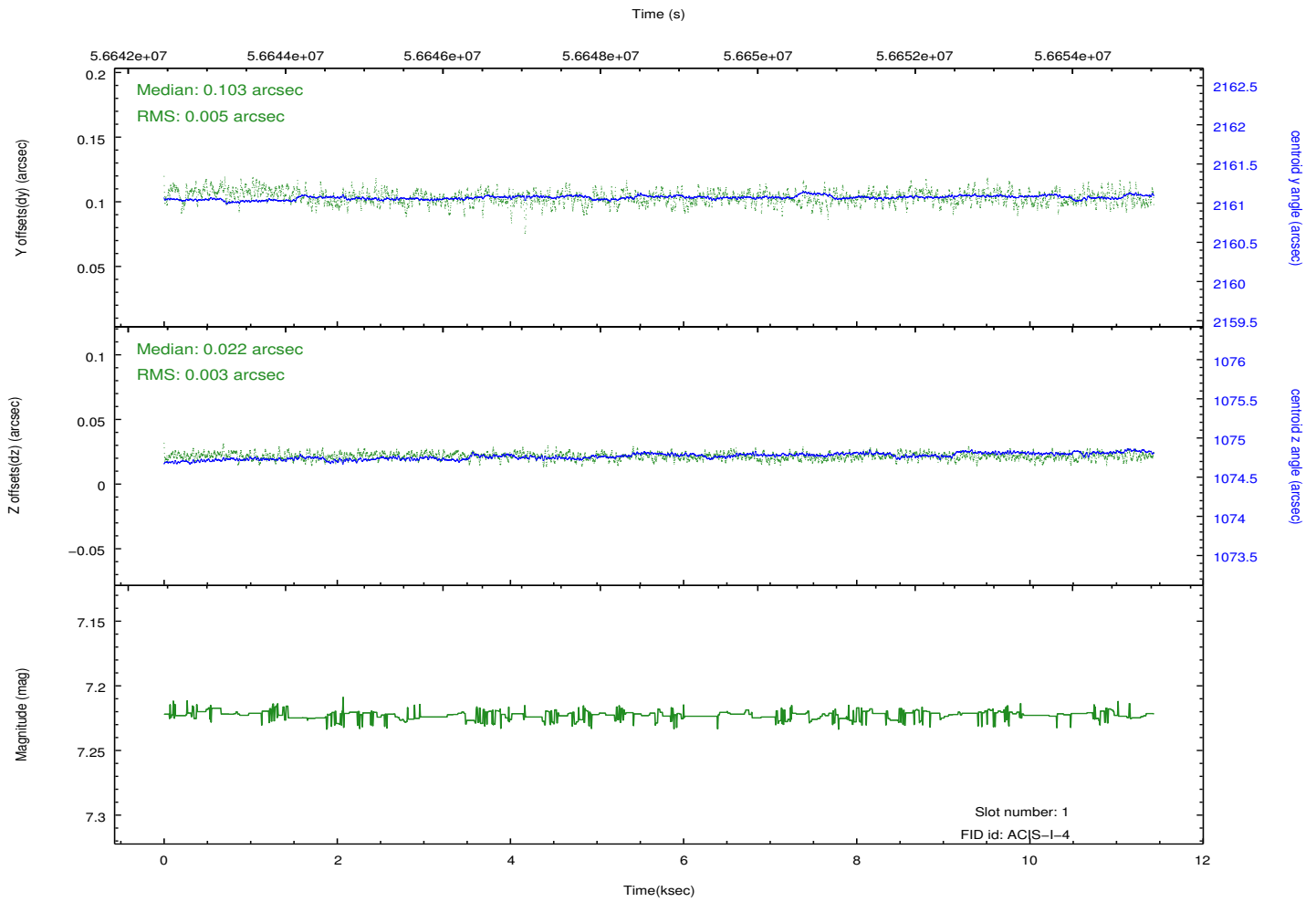
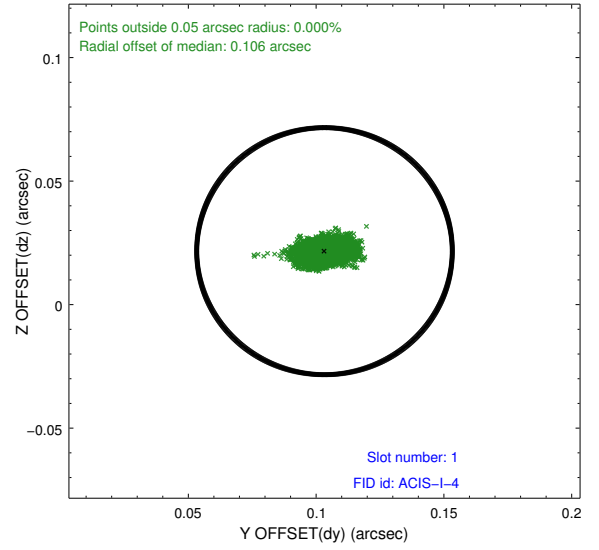
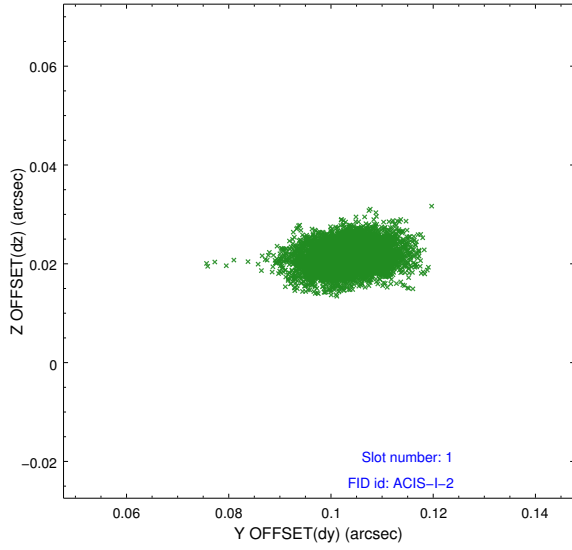


## 2.5 FID Slots

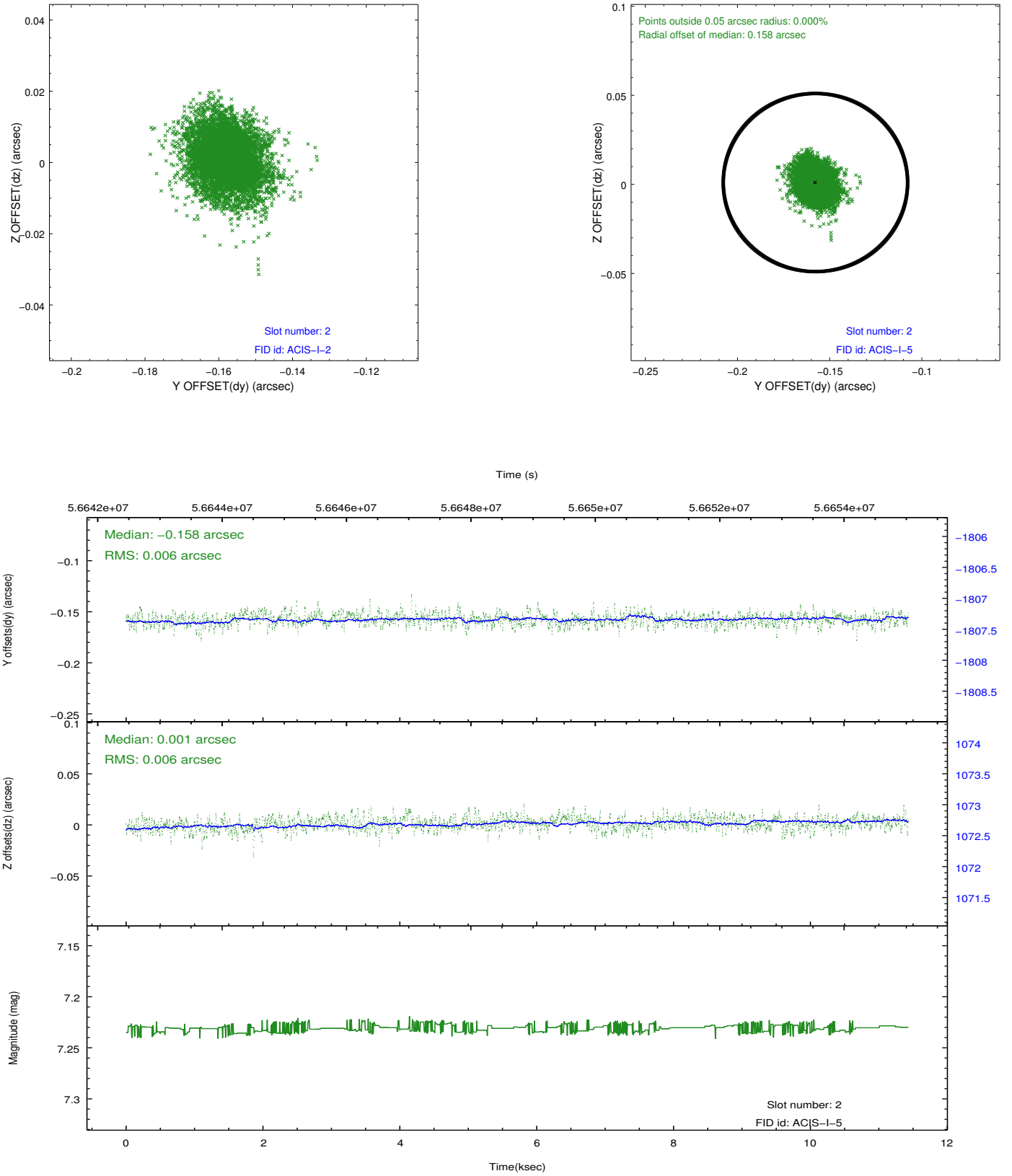
### 2.5.1 Slot 0



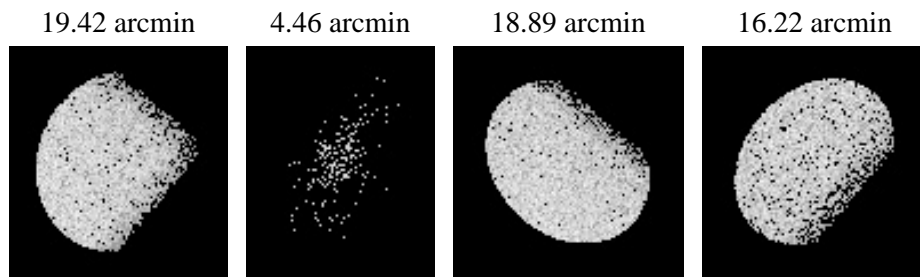
## 2.5.2 Slot 1



### 2.5.3 Slot 2



### 3 Point Sources



# A Summary

## A.1 Status

|                            |             |
|----------------------------|-------------|
| V&V Scientist              | Joy Nichols |
| V&V Date (YYYY-MM-DD)      | 2009.11.30  |
| V&V Edition                | 1           |
| V&V Disposition and Status | OK          |
| V&V Charge Time            | 3.51        |

## A.2 Comments

Due to telemetry saturation, the effective exposure time is substantially less than the duration and may vary from chip-to-chip. This is expected for bright

sources.=====

Charge time for this ObsId remains at previous value of 3.51 ksec, although with the current processing the charge time would have been 3.42 ksec.

==This calibration observation was acquired with the focal plane temperature

raised from -120C to -110C. =====

This reprocessing of the data

applies no

CTI correction because none is available for that temperature.

==

Roll preference met.