

# V&V Reference Report

## L2 ASCDS Version : 10.5.1.1

Observation 17750 - L2 Version 2  
Chandra X-Ray Center

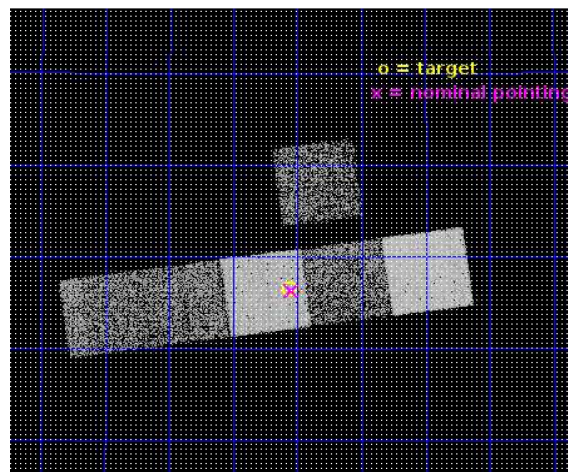
L2 Processing Date : Sep 27 2016

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# 1 Front

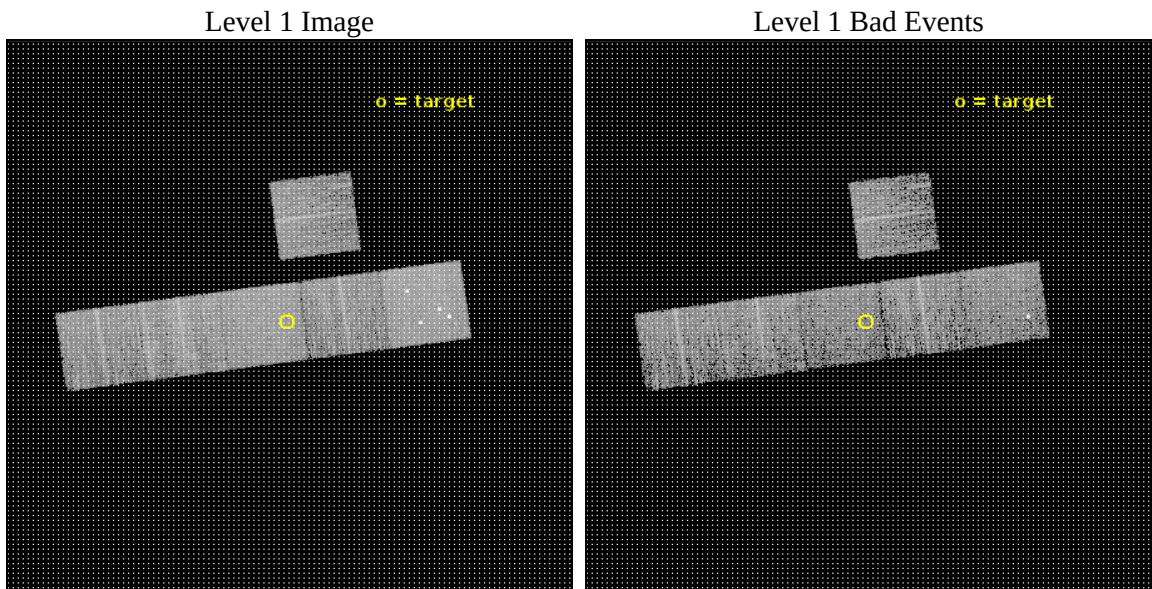
|          |                                                                                   |                                             |
|----------|-----------------------------------------------------------------------------------|---------------------------------------------|
| seq_num  | 201059                                                                            | Sequence number                             |
| obs_id   | 17750                                                                             | Observation id                              |
| title    | Understanding the Rotation/Activity Relation: A New Low-Mass, Extreme-Spin Sample | Proposal title                              |
| observer | Peter Williams                                                                    | Principal investigator                      |
| object   | 2MASS J00240376+2626299                                                           | Source name                                 |
| dtcycle  | 0                                                                                 | &#160                                       |
| cycle    | P                                                                                 | events from which exps?<br>Prim/Second/Both |
| ra_targ  | 6.015833                                                                          | Observer's specified<br>target RA [deg]     |
| dec_targ | 26.4415                                                                           | Observer's specified<br>target Dec [deg]    |
| ra_nom   | 6.0121118761055                                                                   | Nominal RA [deg]                            |
| dec_nom  | 26.438365910409                                                                   | Nominal Dec [deg]                           |
| roll_nom | 172.17864244116                                                                   | Nominal Roll [deg]                          |
| revision | 2                                                                                 | Processing version of<br>data               |
| ontime   | 5372.0037825108                                                                   | Sum of GTIs [s]                             |
| livetime | 5303.9802359843                                                                   | Livetime [s]                                |
| ontime2  | 5371.8396224976                                                                   | Sum of GTIs [s]                             |
| ontime5  | 5371.9627424479                                                                   | Sum of GTIs [s]                             |
| ontime6  | 5371.9217025042                                                                   | Sum of GTIs [s]                             |
| ontime7  | 5372.0037825108                                                                   | Sum of GTIs [s]                             |
| ontime8  | 5371.8806624413                                                                   | Sum of GTIs [s]                             |
| ontime9  | 5372.0448224545                                                                   | Sum of GTIs [s]                             |
| l2events | 60483                                                                             | Number of level 2<br>events                 |



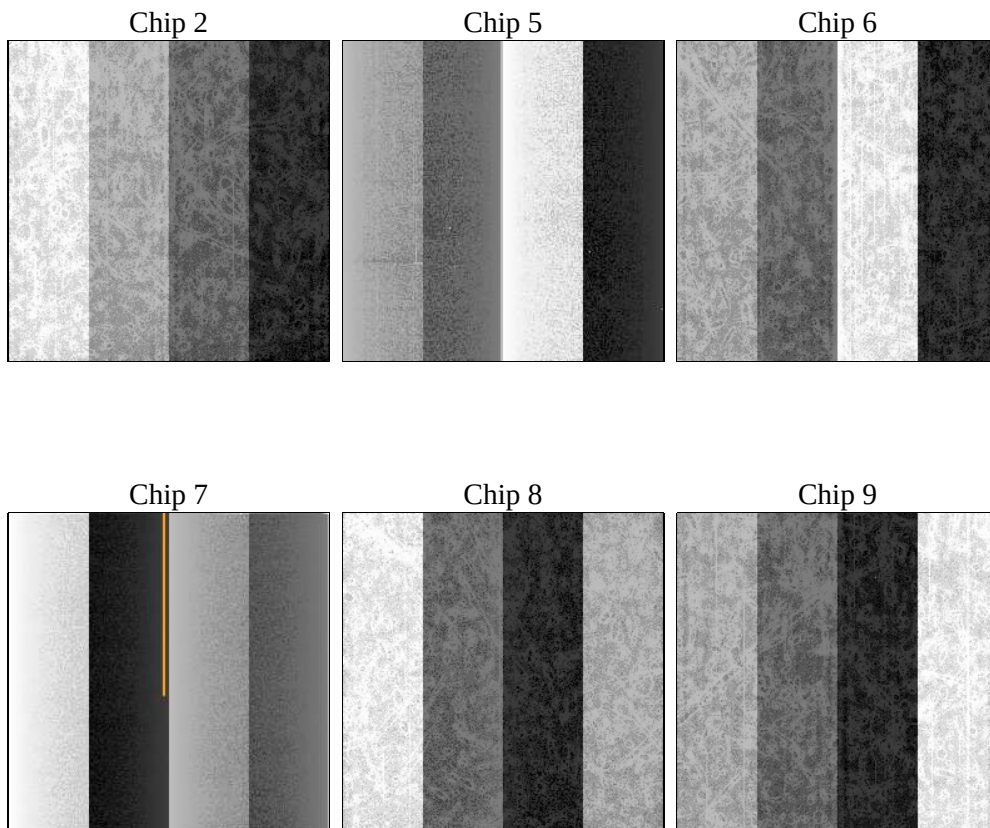
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

|          |                     |                                |                |                 |                                         |
|----------|---------------------|--------------------------------|----------------|-----------------|-----------------------------------------|
| obi_num  | 1                   | Obi number                     | sched_exp_time | 5420.000000     | [s] Scheduled observation exposure time |
| ascdsver | 10.5.1.1            | Processing system revision     | ontime         | 5372.0037825108 | Sum of GTIs [s]                         |
| caldbver | 4.7.2               | &#160                          | ontime2        | 5371.8396224976 | Sum of GTIs [s]                         |
| date     | 2016-09-27T15:40:01 | Date and time of file creation | ontime5        | 5371.9627424479 | Sum of GTIs [s]                         |
| revision | 2                   | Processing version of data     | ontime6        | 5371.9217025042 | Sum of GTIs [s]                         |
|          |                     |                                | ontime7        | 5372.0037825108 | Sum of GTIs [s]                         |
|          |                     |                                | ontime8        | 5371.8806624413 | Sum of GTIs [s]                         |
|          |                     |                                | ontime9        | 5372.0448224545 | Sum of GTIs [s]                         |
|          |                     |                                | l1events       | 265714          | Number of level 1 events                |

### 2.1.4 Events

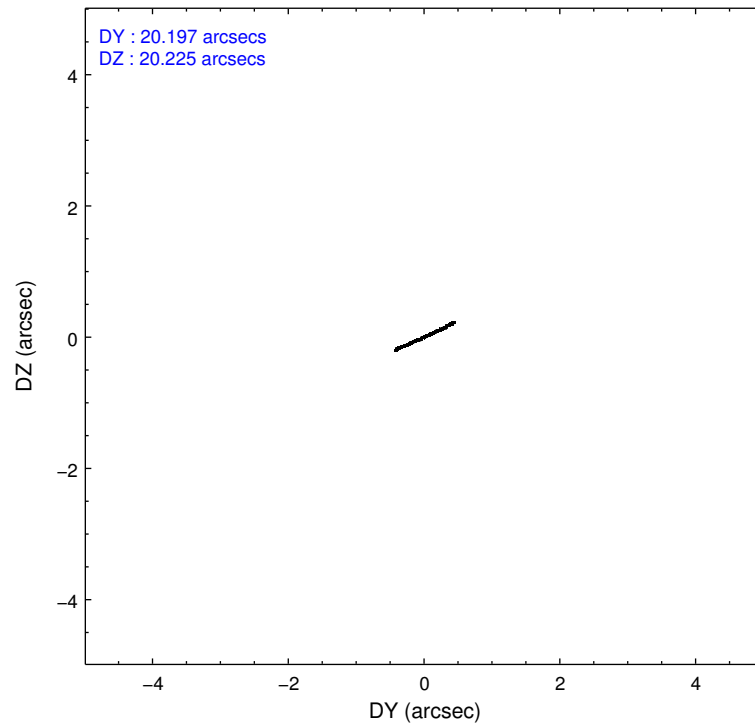
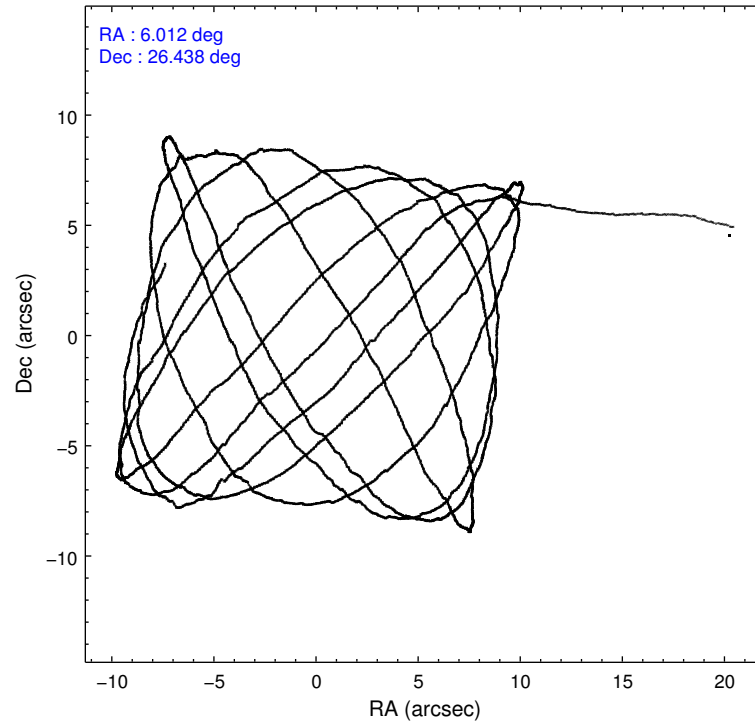
|                 | ccd 2 | ccd 5 | ccd 6 | ccd 7 | ccd 8 | ccd 9 |                | ccd 2 | ccd 5 | ccd 6 | ccd 7 | ccd 8 | ccd 9 |
|-----------------|-------|-------|-------|-------|-------|-------|----------------|-------|-------|-------|-------|-------|-------|
| level 1 events  | 35566 | 62810 | 37016 | 46929 | 47076 | 36317 | grade 0 events | 1307  | 6390  | 1338  | 1692  | 3577  | 1588  |
| rejected events | 31840 | 31008 | 32944 | 26306 | 33929 | 31793 |                | 3%    | 10%   | 3%    | 3%    | 7%    | 4%    |
| rejected %      | 89%   | 49%   | 88%   | 56%   | 72%   | 87%   | grade 1 events | 28    | 123   | 17    | 49    | 35    | 26    |
|                 |       |       |       |       |       |       |                | 0%    | 0%    | 0%    | 0%    | 0%    | 0%    |
|                 |       |       |       |       |       |       | grade 2 events | 866   | 8667  | 946   | 4418  | 3292  | 1058  |
|                 |       |       |       |       |       |       |                | 2%    | 13%   | 2%    | 9%    | 6%    | 2%    |
|                 |       |       |       |       |       |       | grade 3 events | 389   | 866   | 379   | 1597  | 1381  | 427   |
|                 |       |       |       |       |       |       |                | 1%    | 1%    | 1%    | 3%    | 2%    | 1%    |
|                 |       |       |       |       |       |       | grade 4 events | 388   | 782   | 418   | 1664  | 1280  | 453   |
|                 |       |       |       |       |       |       |                | 1%    | 1%    | 1%    | 3%    | 2%    | 1%    |
|                 |       |       |       |       |       |       | grade 5 events | 1504  | 3993  | 1681  | 4598  | 2544  | 2067  |
|                 |       |       |       |       |       |       |                | 4%    | 6%    | 4%    | 9%    | 5%    | 5%    |
|                 |       |       |       |       |       |       | grade 6 events | 778   | 15131 | 996   | 11268 | 3623  | 1001  |
|                 |       |       |       |       |       |       |                | 2%    | 24%   | 2%    | 24%   | 7%    | 2%    |
|                 |       |       |       |       |       |       | grade 7 events | 30306 | 26858 | 31241 | 21643 | 31344 | 29697 |
|                 |       |       |       |       |       |       |                | 85%   | 42%   | 84%   | 46%   | 66%   | 81%   |

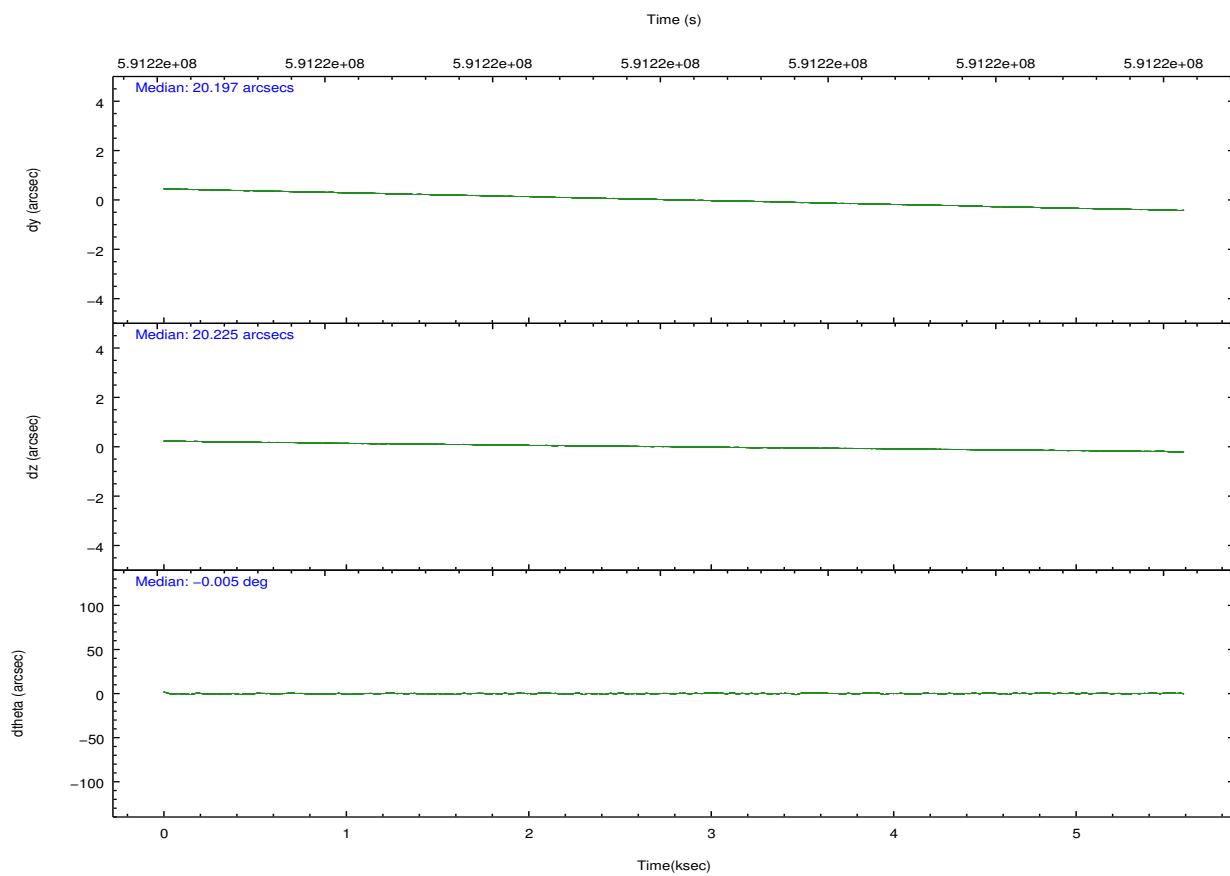
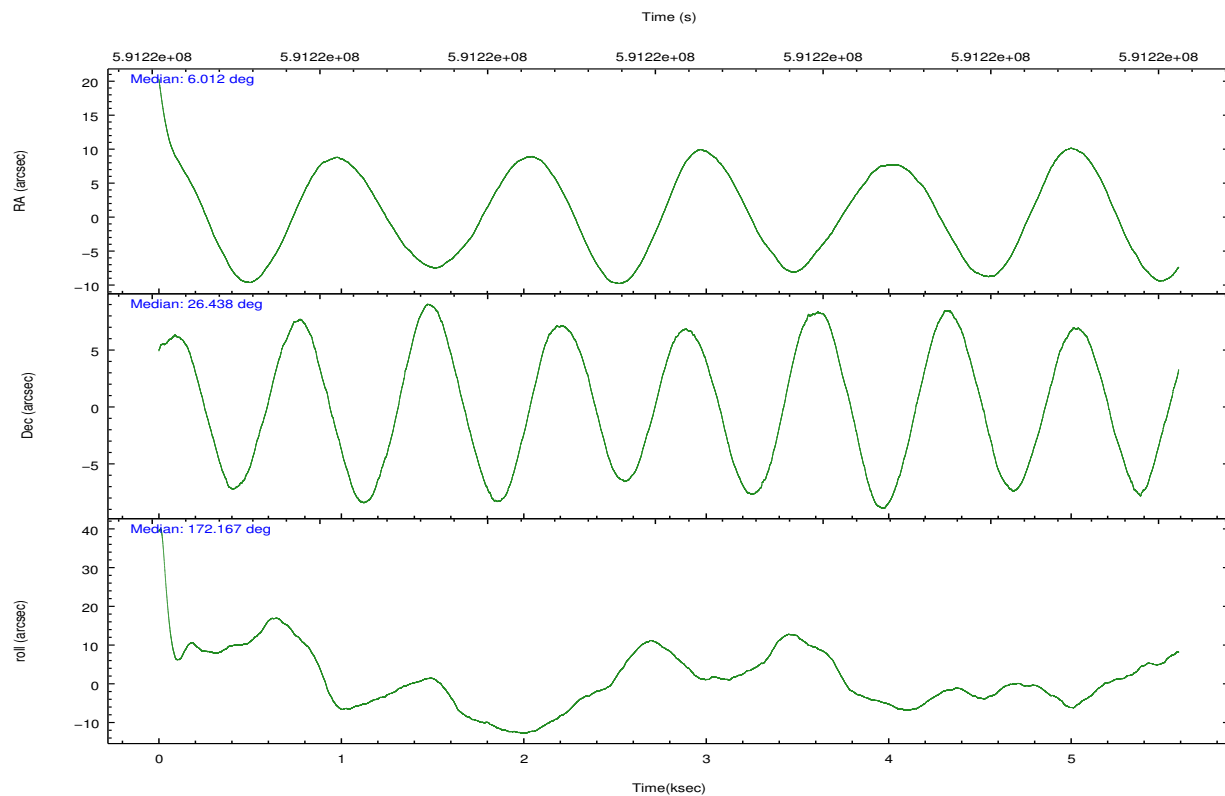


## 2.2 Compared Parameters

| Parameter                         | Planned             | Actual               | Parameter                             | Planned   | Actual  |
|-----------------------------------|---------------------|----------------------|---------------------------------------|-----------|---------|
| Instrument                        | ACIS                | ACIS                 | Obspar format version number          | 7         | 7       |
| Detector                          | ACIS-256789         | ACIS-256789          | Obspar file type                      | PREDICTED | ACTUAL  |
| Grating                           | NONE                | NONE                 | Obspar update status                  | NONE      | UPDATED |
| Data mode                         | VFAINT              | VFAINT               | CCD I0 on                             | N         | N       |
| Observation mode                  | POINTING            | POINTING             | CCD I1 on                             | N         | N       |
| [deg] Pointing RA                 | 6.040359            | 6.01211187610545     | CCD I2 on                             | O1        | Y       |
| [deg] Pointing Dec                | 26.449096           | 26.43836591040887    | CCD I3 on                             | N         | N       |
| [deg] Pointing Roll               | 172.009349          | 172.1786424411645    | CCD S0 on                             | N         | N       |
| [mm] SIM focus pos                | -0.684267           | -0.6828225247311905  | CCD S1 on                             | O3        | Y       |
| [mm] SIM defocus                  | 0                   | 0.001444936568705701 | CCD S2 on                             | O5        | Y       |
| [mm] SIM translation stage pos    | -190.132523         | -190.1425803651734   | CCD S3 on                             | Y         | Y       |
| [mm] SIM translation stage offset | 0                   | 0.01005778216563158  | CCD S4 on                             | O4        | Y       |
| [s] Observation start time (MET)  | 591215466.184000    | 591213911.85339      | CCD S5 on                             | O2        | Y       |
| Observation start date            | 2016-09-25T18:29:58 | 2016-09-25T18:05:11  | Number of optional ACIS chips dropped | 0         | 0       |
| [s] Observation end time (MET)    | 591220886.184000    | 591221756.69134      | On-chip summing requested             | N         | N       |
| Observation end date              | 2016-09-25T20:00:18 | 2016-09-25T20:15:56  | Subarray requested                    | NONE      | NONE    |
| Read mode                         | TIMED               | TIMED                | Alternating exposures requested       | N         | N       |
|                                   |                     |                      | [s] Primary exposure time             | 0.000000  | 3.2     |

## 2.3 Aspect



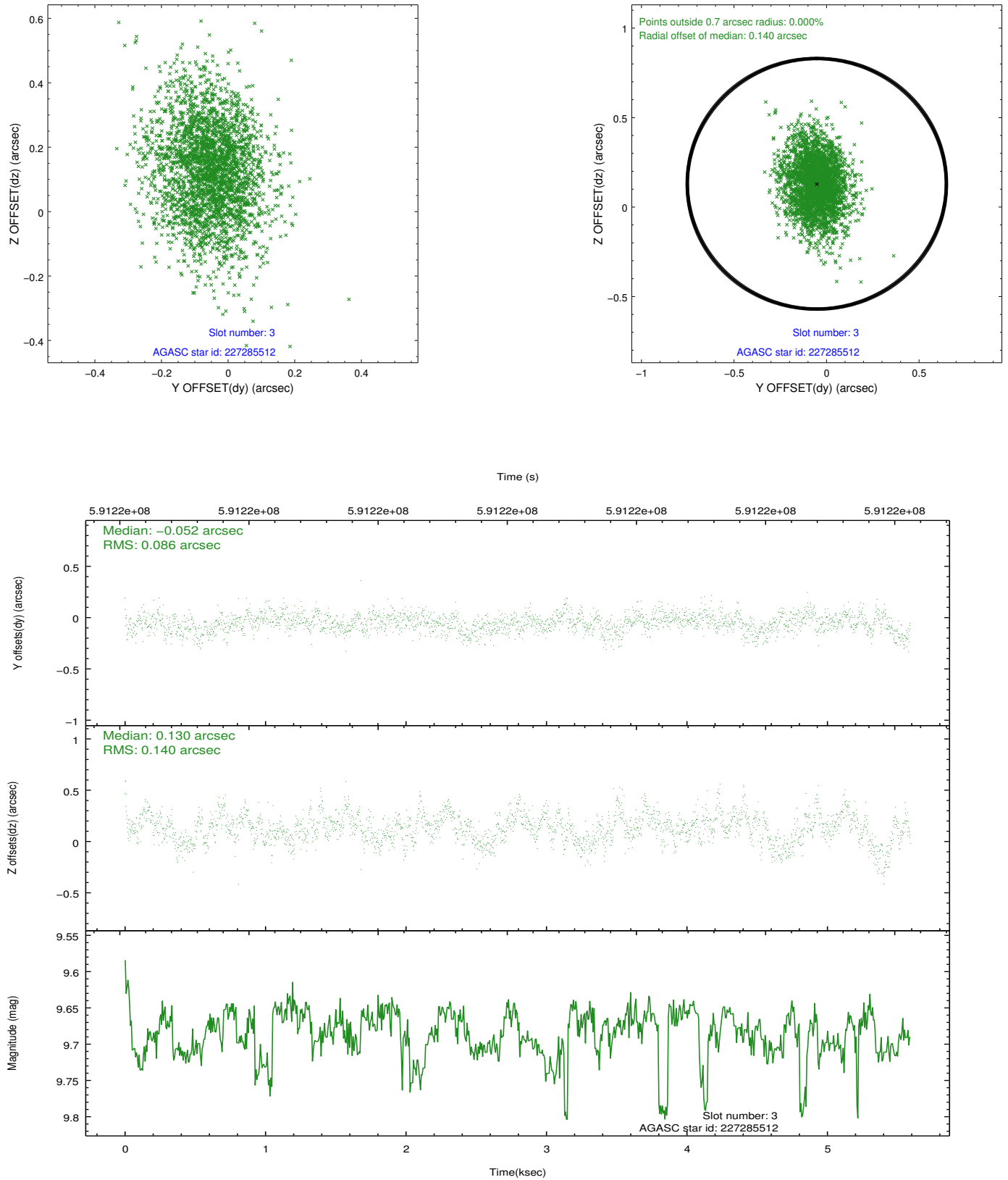


# Slot Statistics

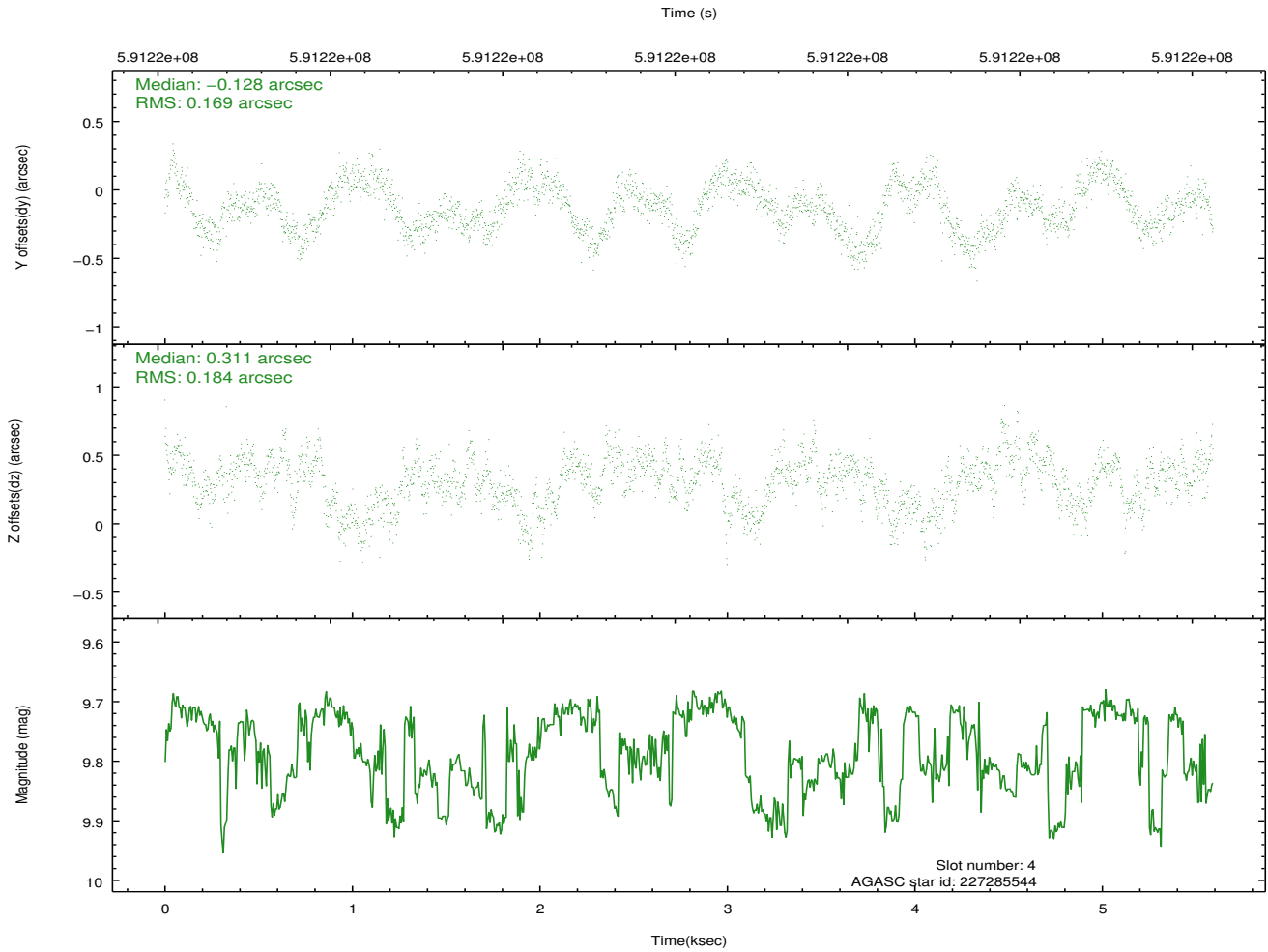
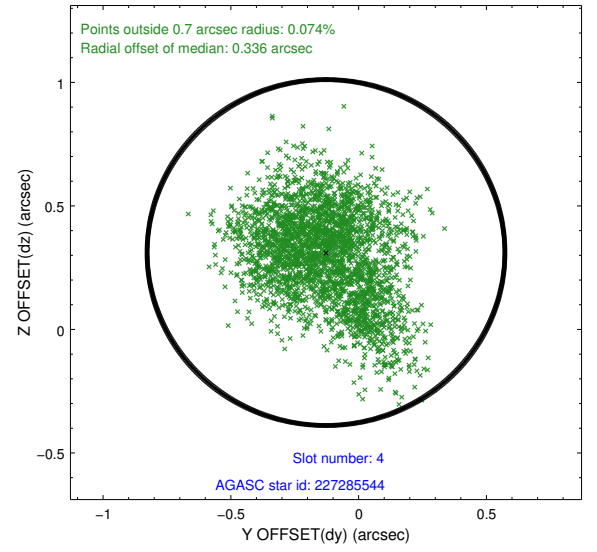
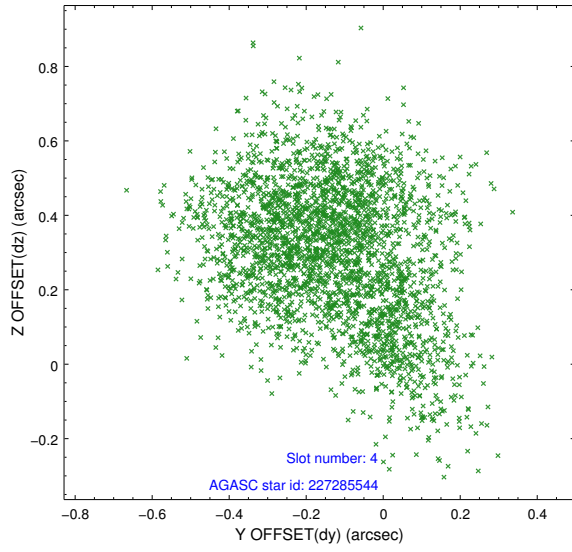
| slot | status  | used | id        | mag  | n_pts | med_dy | med_dz | dr1   | dr2   | ra       | dec       | mean_y   | mean_z   |
|------|---------|------|-----------|------|-------|--------|--------|-------|-------|----------|-----------|----------|----------|
| 0    | FID     |      | ACIS-S-2  | 7.03 | 1364  | -0.283 | -0.154 | 0.007 | 0.013 | 0.000000 | 0.000000  | -773.57  | -1741.86 |
| 1    | FID     |      | ACIS-S-4  | 7.14 | 1363  | 0.587  | 0.178  | 0.009 | 0.017 | 0.000000 | 0.000000  | 2140.05  | 165.88   |
| 2    | FID     |      | ACIS-S-5  | 7.14 | 1364  | -0.335 | -0.015 | 0.007 | 0.012 | 0.000000 | 0.000000  | -1825.12 | 160.52   |
| 3    | GUIDE   | used | 227285512 | 9.69 | 2722  | -0.052 | 0.130  | 0.169 | 0.293 | 5.853181 | 27.109747 | 925.39   | -2271.96 |
| 4    | GUIDE   | used | 227285544 | 9.79 | 2720  | -0.128 | 0.311  | 0.267 | 0.427 | 5.948992 | 27.016984 | 575.31   | -1984.28 |
| 5    | GUIDE   | used | 227286224 | 9.54 | 2704  | 0.220  | -0.023 | 0.209 | 0.364 | 6.556975 | 25.872372 | -1945.17 | 1819.00  |
| 6    | GUIDE   | used | 227287760 | 9.62 | 2723  | -0.015 | -0.408 | 0.155 | 0.252 | 6.239354 | 25.794891 | -967.00  | 2242.26  |
| 7    | OMITTED |      |           | 0.00 | 0     | 0.000  | 0.000  | 0.000 | 0.000 | 0.000000 | 0.000000  | 0.00     | 0.00     |

## 2.4 Star Slots

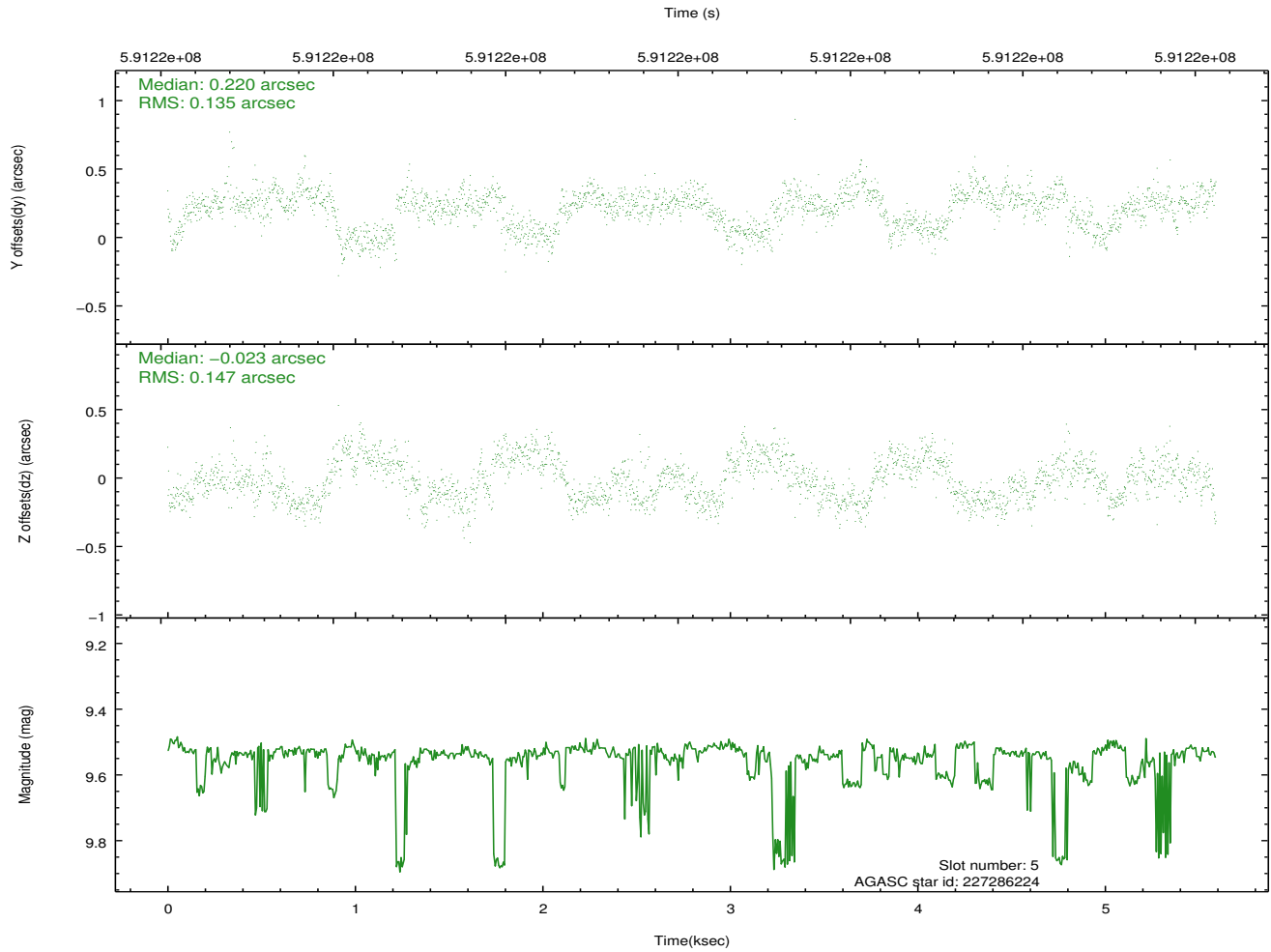
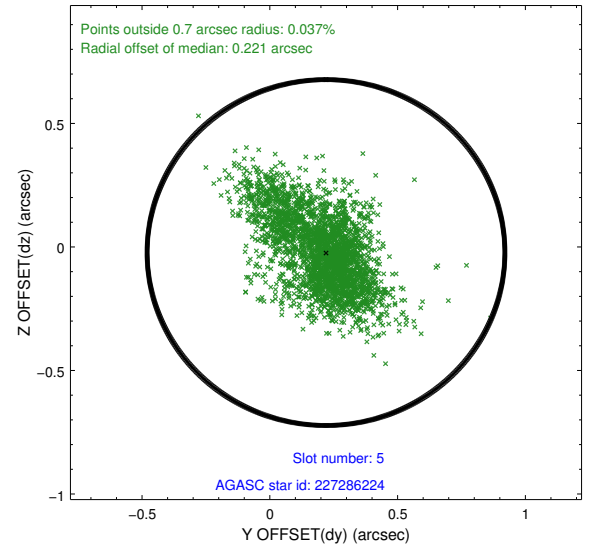
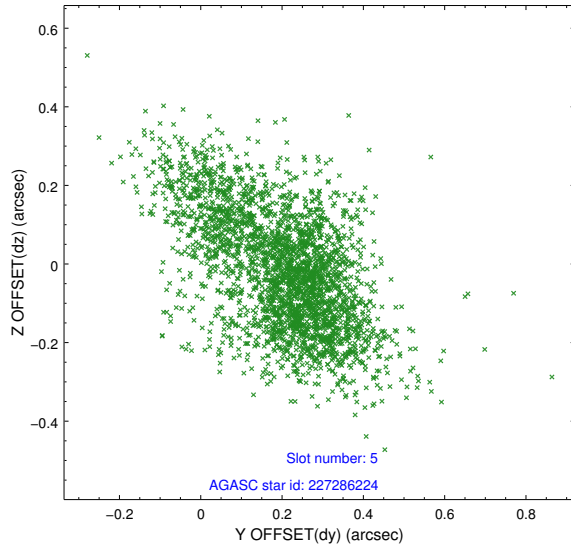
### 2.4.1 Slot 3



## 2.4.2 Slot 4

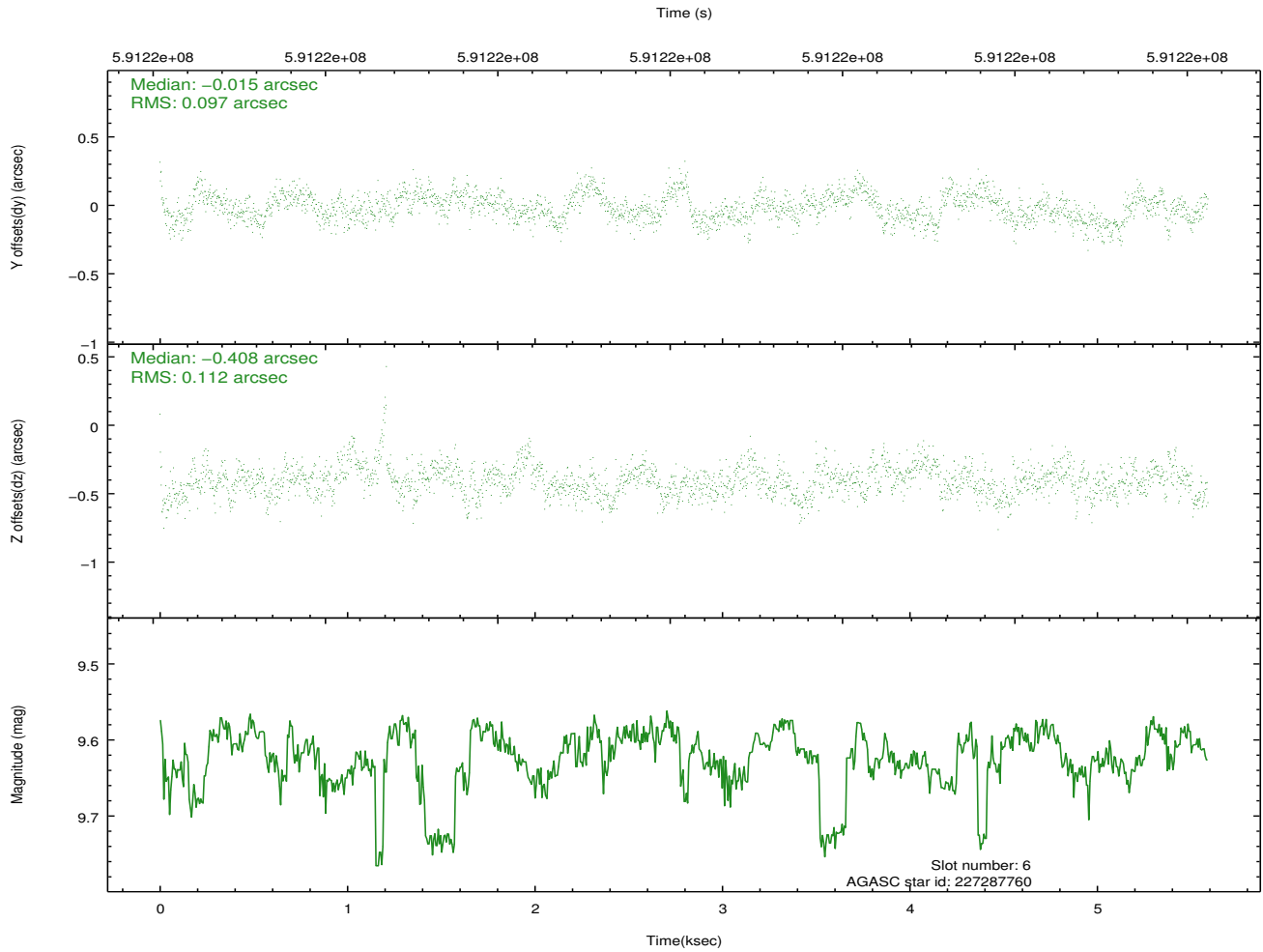
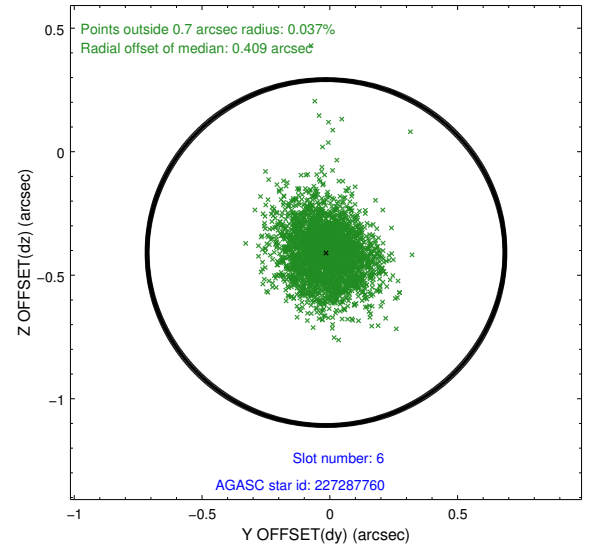
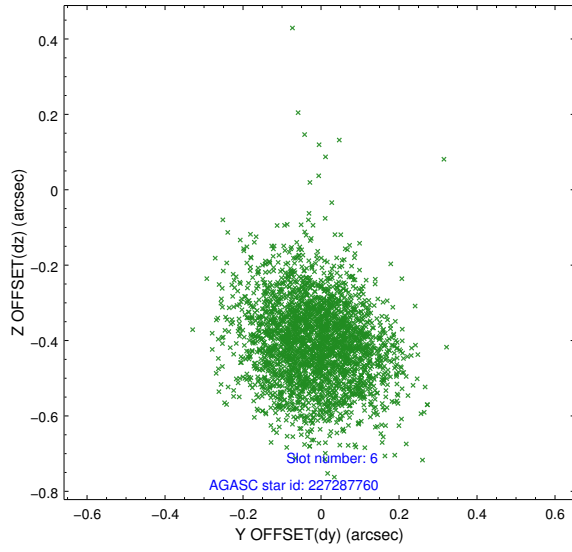


### 2.4.3 Slot 5



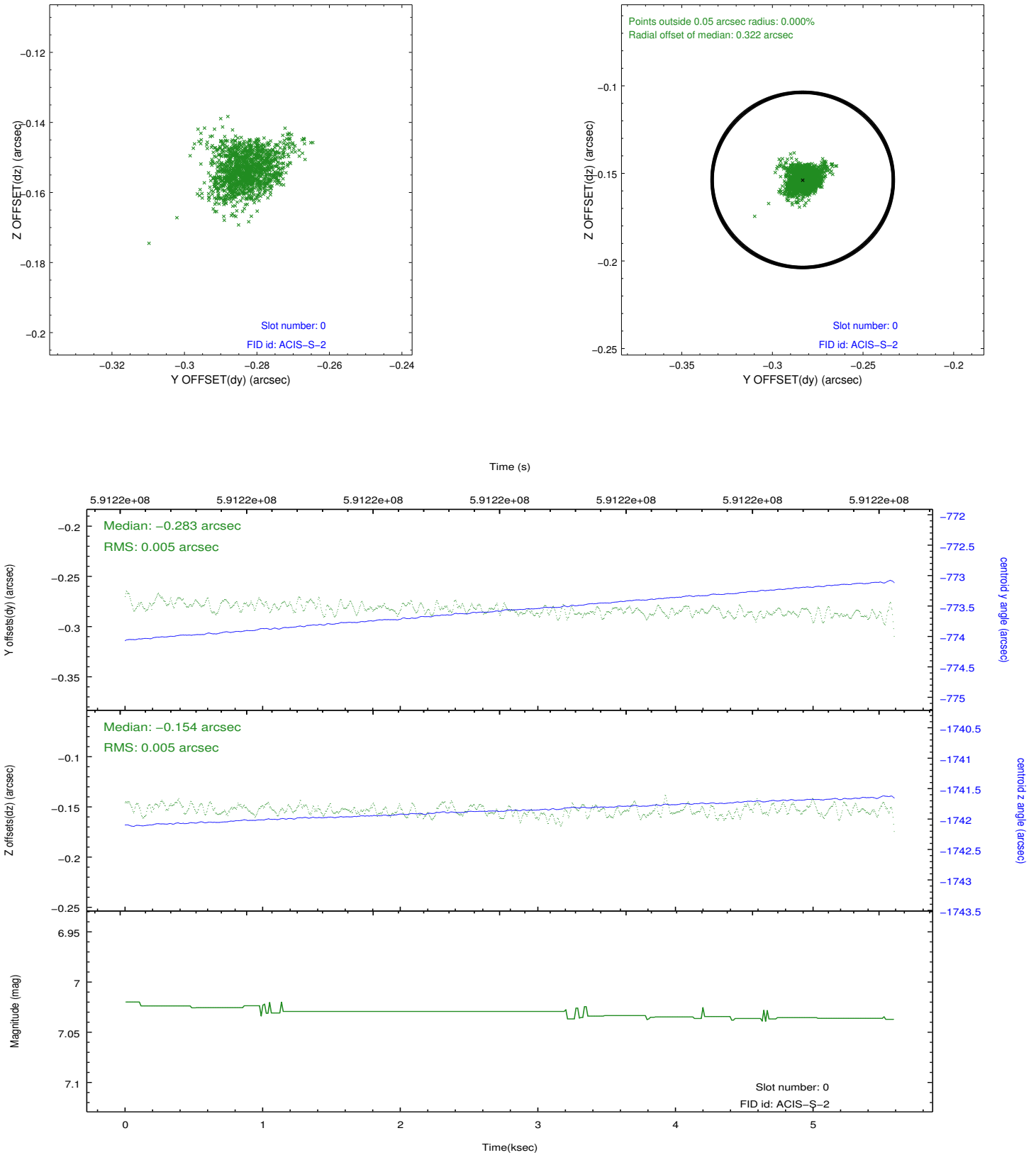


## 2.4.4 Slot 6

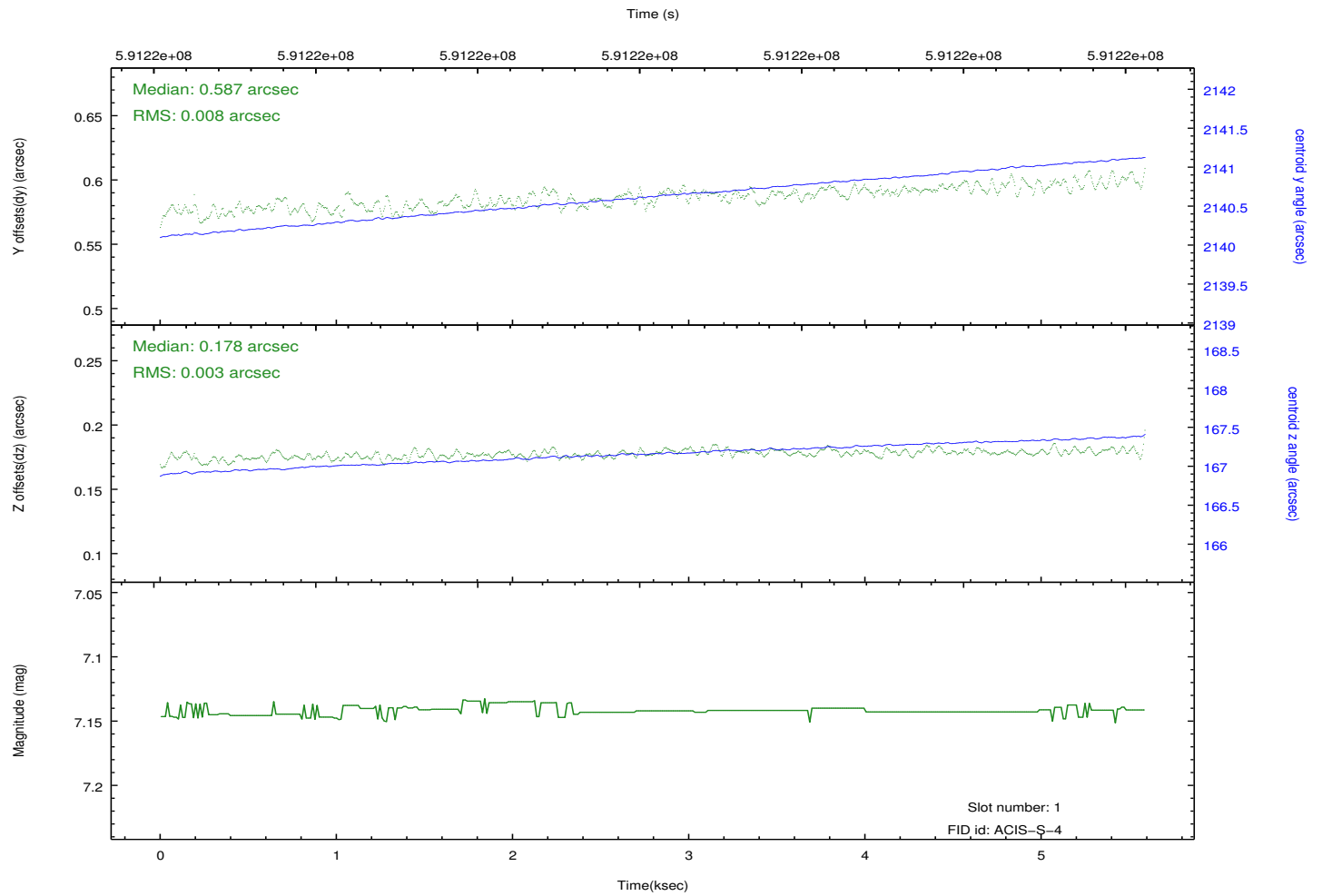
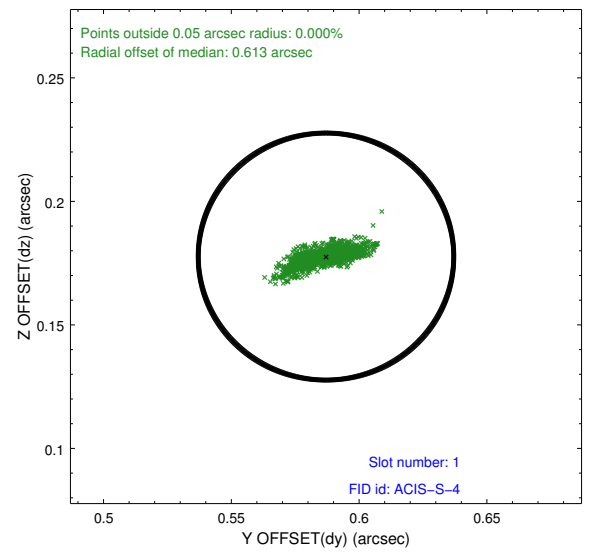
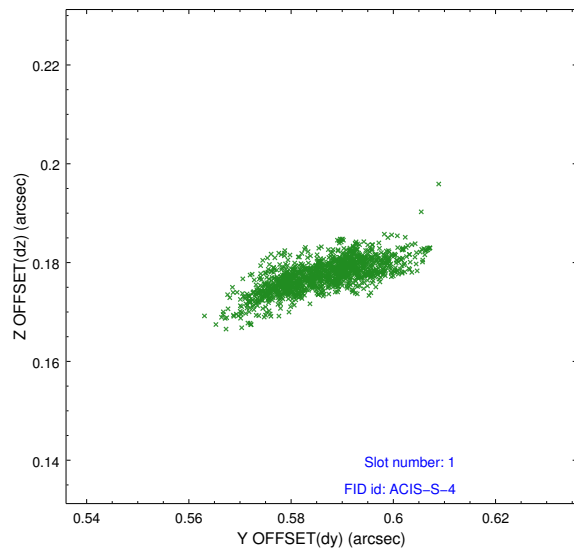


## 2.5 FID Slots

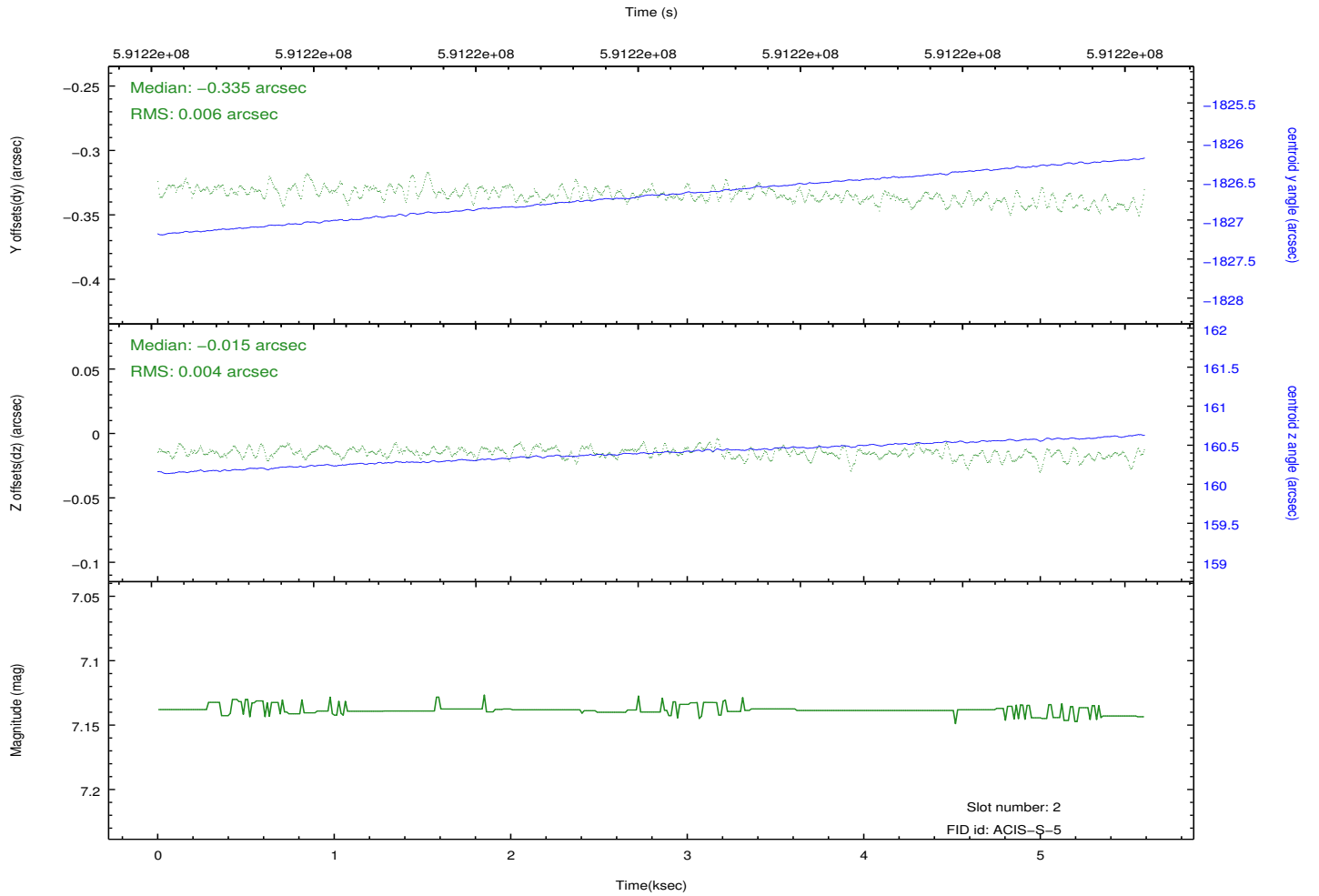
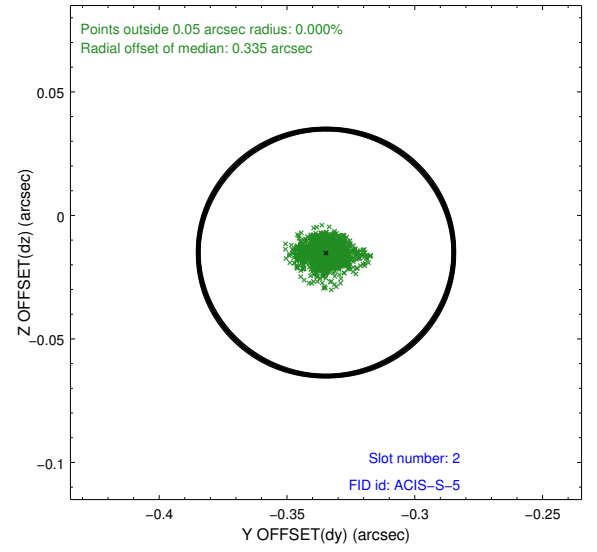
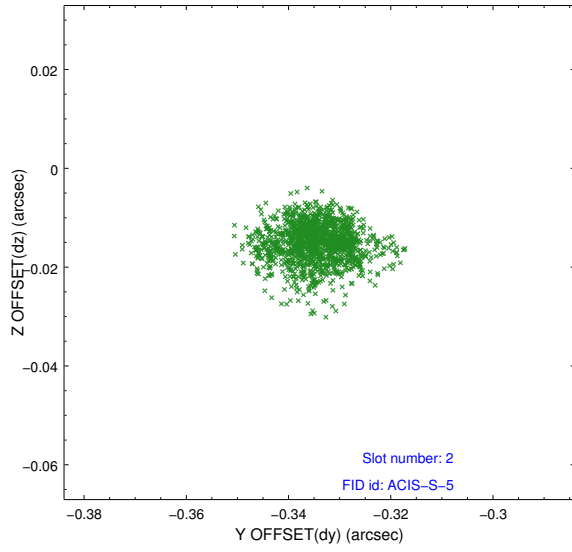
### 2.5.1 Slot 0



## 2.5.2 Slot 1



### 2.5.3 Slot 2



# A Summary

## A.1 Status

|                            |                 |
|----------------------------|-----------------|
| V&V Scientist              | Joy Nichols     |
| V&V Date (YYYY-MM-DD)      | 2016.09.28      |
| V&V Edition                | 1               |
| V&V Disposition and Status | OK              |
| V&V Charge Time            | 5.3720037825108 |

## A.2 Comments

The guide star in slot 7 was removed from the aspect solution due to poor data quality. The aspect solution is improved by the removal of this guide star from the solution. The slot 1 fid radial offset of 0.613 arcsec is acceptable. The [guide star / fid light] in slot [2] was removed from the aspect solution due to poor data quality. The aspect solution is improved by the removal of this [guide star / fid light] from the solution.