

# V&V Reference Report

## L2 ASCDS Version : 8.4.3

Observation 12345 - L2 Version 2  
Chandra X-Ray Center

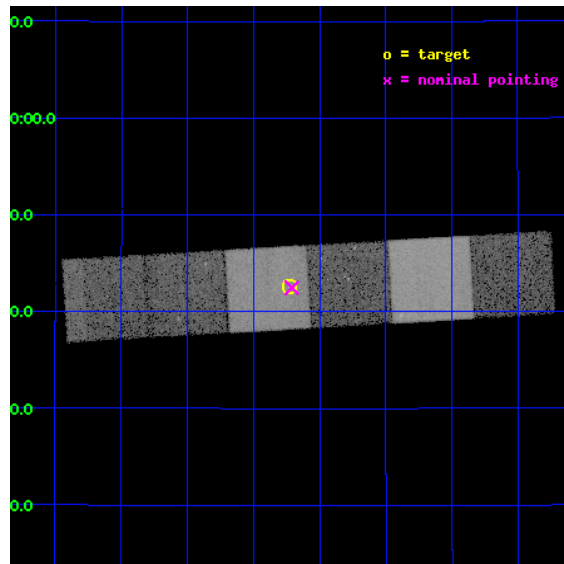
L2 Processing Date : Feb 18 2012

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# 1 Front

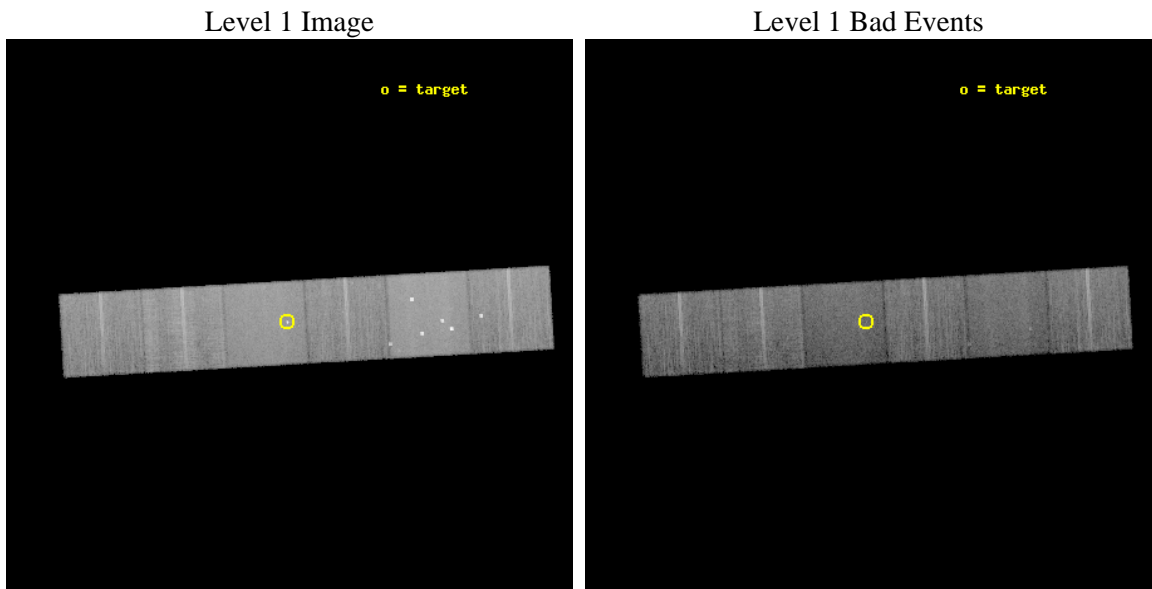
|          |   |   |
|----------|---|---|
| seq_num  | 200681                                      | Sequence number                             |
| obs_id   | 12345                                       | Observation id                              |
| title    | Making planetary transits visible in X-rays | Proposal title                              |
| observer | Dr. Katja Poppenhaeager                     | Principal investigator                      |
| object   | HD 189733                                   | Source name                                 |
| dtycycle | 0   | &#160                                       |
| cycle    | P   | events from which exps?<br>Prim/Second/Both |
| ra_targ  | 300.182083                                  | Observer's specified target RA [deg]        |
| dec_targ | 22.710111                                   | Observer's specified target Dec [deg]       |
| ra_nom   | 300.17744384446                             | Nominal RA [deg]                            |
| dec_nom  | 22.707781253567                             | Nominal Dec [deg]                           |
| roll_nom | 176.66685238963                             | Nominal Roll [deg]                          |
| revision | 2   | Processing version of data                  |
| ontime   | 20050.294315159                             | Sum of GTIs [s]                             |
| livetime | 19796.405415703                             | Livetime [s]                                |
| ontime4  | 20050.335355163                             | Sum of GTIs [s]                             |
| ontime5  | 20050.253275156                             | Sum of GTIs [s]                             |
| ontime6  | 20050.212235153                             | Sum of GTIs [s]                             |
| ontime7  | 20050.294315159                             | Sum of GTIs [s]                             |
| ontime8  | 20050.171195149                             | Sum of GTIs [s]                             |
| ontime9  | 20050.130155146                             | Sum of GTIs [s]                             |
| l2events | 211283                                      | Number of level 2 events                    |



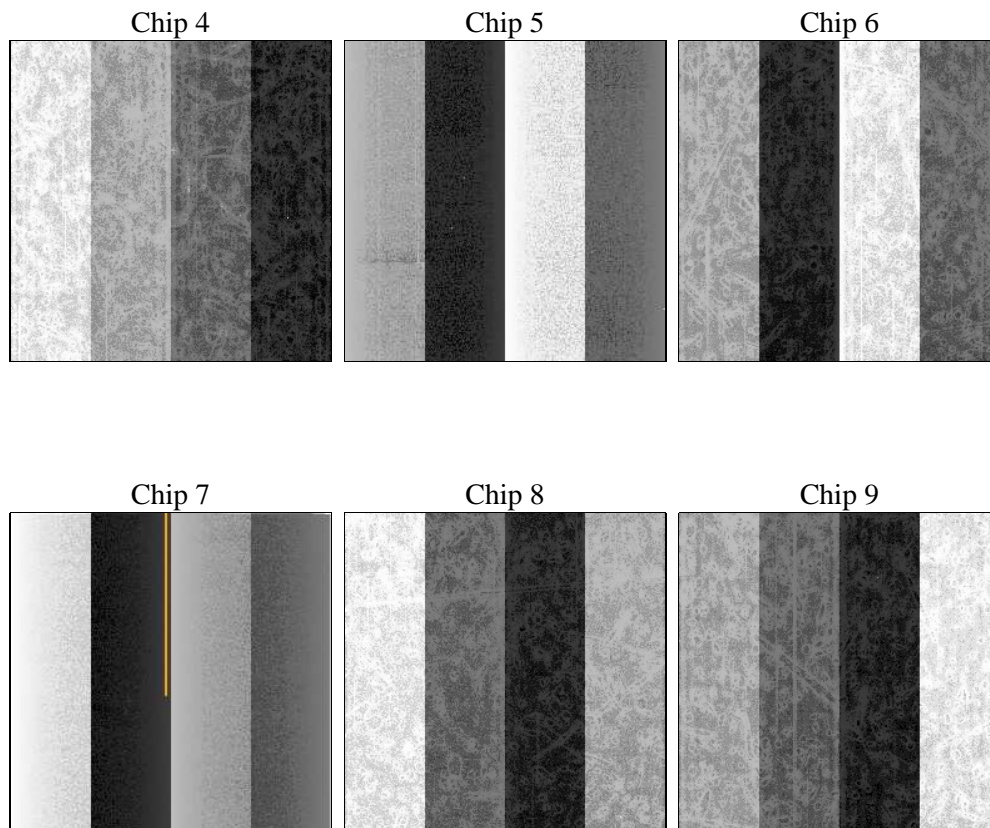
## 2 OBI

### 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 | 8.4.3               | Processing system revision     | ontime         | 20050.294315159 | Sum of GTIs [s]                         |
| caldsver | 4.4.8               | &#160                          | ontime4        | 20050.335355163 | Sum of GTIs [s]                         |
| date     | 2012-02-18T05:07:17 | Date and time of file creation | ontime5        | 20050.253275156 | Sum of GTIs [s]                         |
| revision | 2                   | Processing version of data     | ontime6        | 20050.212235153 | Sum of GTIs [s]                         |
|          |                     |                                | ontime7        | 20050.294315159 | Sum of GTIs [s]                         |
|          |                     |                                | ontime8        | 20050.171195149 | Sum of GTIs [s]                         |
|          |                     |                                | ontime9        | 20050.130155146 | Sum of GTIs [s]                         |
|          |                     |                                | l1events       | 946111          | Number of level 1 events                |

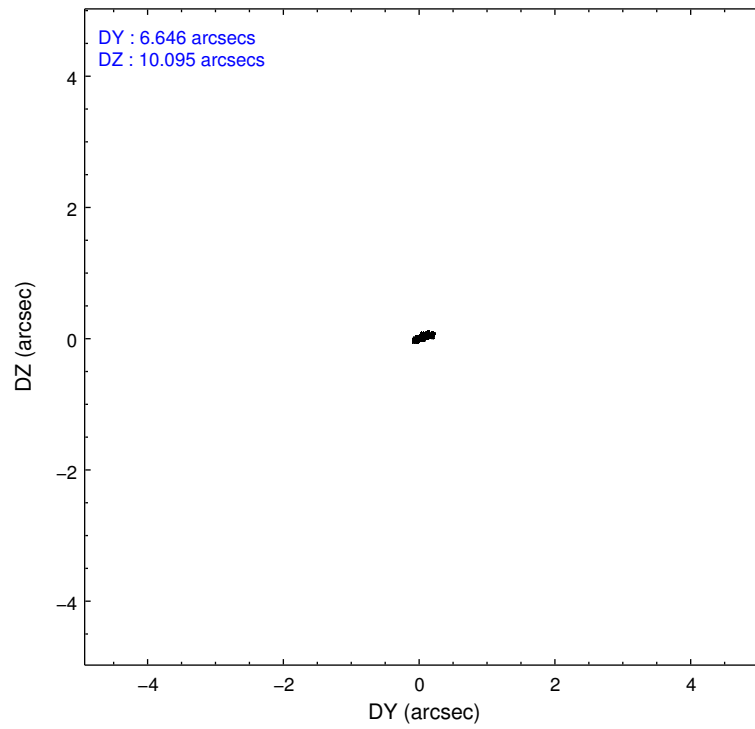
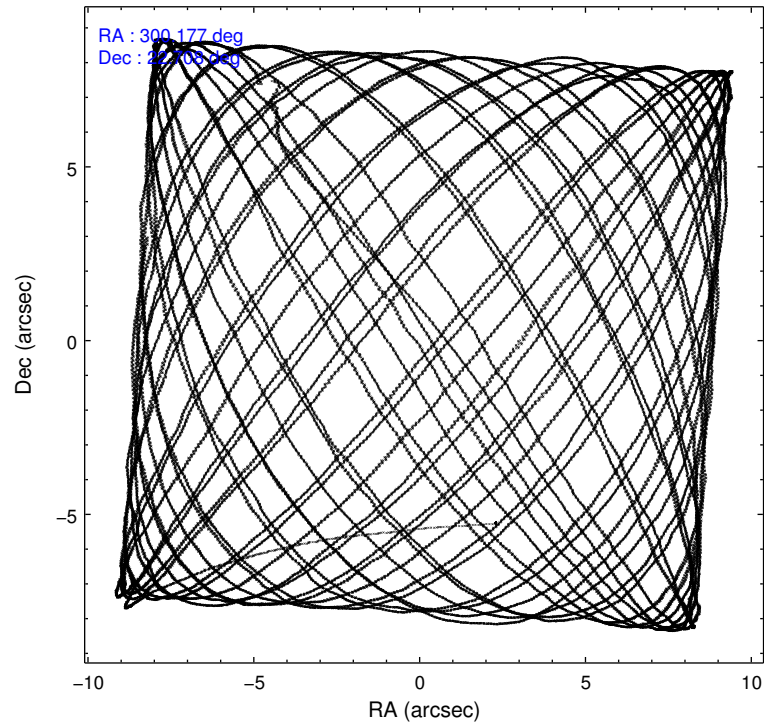
### 2.1.4 Events

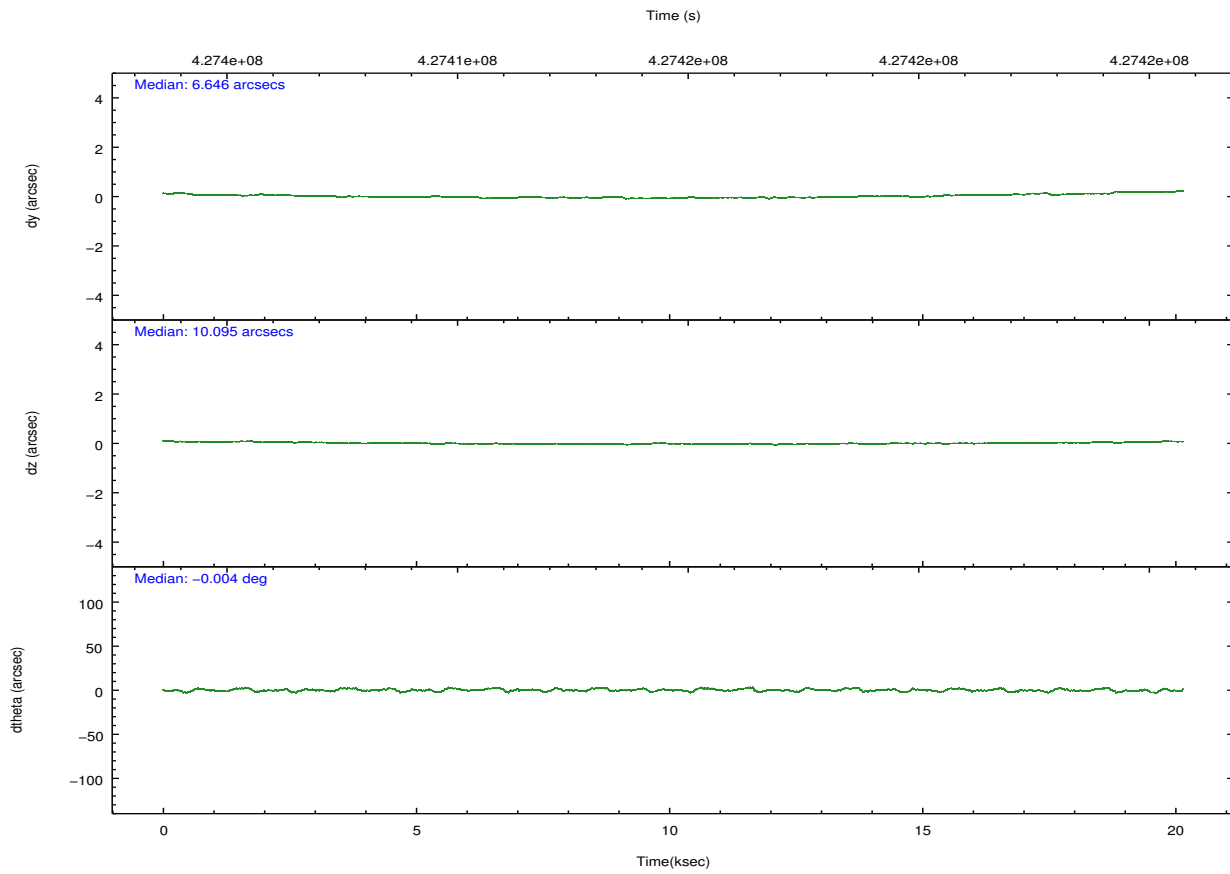
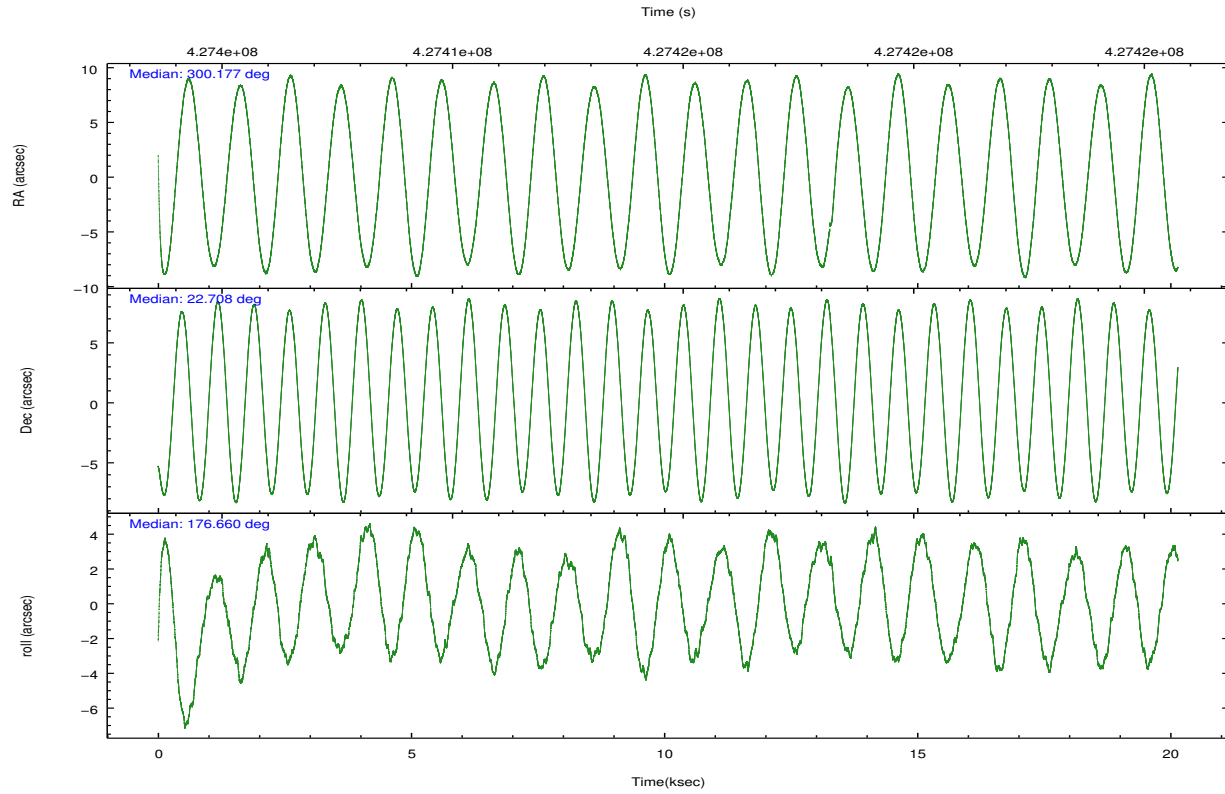
|                 | ccd 4  | ccd 5  | ccd 6  | ccd 7  | ccd 8  | ccd 9  |                | ccd 4  | ccd 5 | ccd 6  | ccd 7 | ccd 8  | ccd 9  |
|-----------------|--------|--------|--------|--------|--------|--------|----------------|--------|-------|--------|-------|--------|--------|
| level 1 events  | 150243 | 215342 | 129862 | 161573 | 161997 | 127094 | grade 0 events | 8967   | 21305 | 5219   | 6763  | 10944  | 5793   |
| rejected events | 131828 | 101188 | 114980 | 89554  | 122148 | 111662 |                | 5%     | 9%    | 4%     | 4%    | 6%     | 4%     |
| rejected %      | 87%    | 46%    | 88%    | 55%    | 75%    | 87%    | grade 1 events | 128    | 702   | 57     | 188   | 120    | 75     |
|                 |        |        |        |        |        |        |                | 0%     | 0%    | 0%     | 0%    | 0%     | 0%     |
|                 |        |        |        |        |        |        | grade 2 events | 3613   | 34698 | 3256   | 14627 | 9782   | 3184   |
|                 |        |        |        |        |        |        |                | 2%     | 16%   | 2%     | 9%    | 6%     | 2%     |
|                 |        |        |        |        |        |        | grade 3 events | 1604   | 3242  | 1536   | 6090  | 4136   | 1679   |
|                 |        |        |        |        |        |        |                | 1%     | 1%    | 1%     | 3%    | 2%     | 1%     |
|                 |        |        |        |        |        |        | grade 4 events | 1607   | 2970  | 1511   | 5920  | 3823   | 1591   |
|                 |        |        |        |        |        |        |                | 1%     | 1%    | 1%     | 3%    | 2%     | 1%     |
|                 |        |        |        |        |        |        | grade 5 events | 6111   | 13877 | 5888   | 16359 | 8795   | 6603   |
|                 |        |        |        |        |        |        |                | 4%     | 6%    | 4%     | 10%   | 5%     | 5%     |
|                 |        |        |        |        |        |        | grade 6 events | 2625   | 51981 | 3363   | 38646 | 11171  | 3186   |
|                 |        |        |        |        |        |        |                | 1%     | 24%   | 2%     | 23%   | 6%     | 2%     |
|                 |        |        |        |        |        |        | grade 7 events | 125588 | 86567 | 109032 | 72980 | 113226 | 104983 |
|                 |        |        |        |        |        |        |                | 83%    | 40%   | 83%    | 45%   | 69%    | 82%    |

## 2.2 Compared Parameters

| Parameter                         | Planned             | Actual               | Parameter                             | Planned   | Actual  |
|-----------------------------------|---------------------|----------------------|---------------------------------------|-----------|---------|
| Instrument                        | ACIS                | ACIS                 | Obspar format version number          | 7         | 7       |
| Detector                          | ACIS-456789         | ACIS-456789          | Obspar file type                      | PREDICTED | ACTUAL  |
| Grating                           | NONE                | NONE                 | Obspar update status                  | NONE      | UPDATED |
| Data mode                         | FAINT               | FAINT                | CCD I0 on                             | N         | N       |
| Observation mode                  | POINTING            | POINTING             | CCD I1 on                             | N         | N       |
| [deg] Pointing RA                 | 300.203758          | 300.177443844458     | CCD I2 on                             | N         | N       |
| [deg] Pointing Dec                | 22.720408           | 22.70778125356713    | CCD I3 on                             | N         | N       |
| [deg] Pointing Roll               | 176.500067          | 176.666852389629     | CCD S0 on                             | O1        | Y       |
| [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       |
| Phase constraints                 | Y                   | Y                    | CCD S5 on                             | O2        | Y       |
| [d] Phase period                  | 2.218573            | 2.218573             | Number of optional ACIS chips dropped | 0         | 0       |
| [d] Phase epoch (MJD)             | 55563.490403        | 55563.490403         | On-chip summing requested             | N         | N       |
| Phase start                       | 0.947800            | 0.947800             | Subarray requested                    | NONE      | NONE    |
| Phase end                         | 0.052200            | 0.052200             | Alternating exposures requested       | N         | N       |
| Phase start error                 | 0.010400            | 0.010400             | [s] Primary exposure time             | 0.000000  | 3.2     |
| Phase end error                   | 0.010400            | 0.010400             |                                       |           |         |
| [s] Observation start time (MET)  | 427404748.184000    | 427403404.34146      |                                       |           |         |
| Observation start date            | 2011-07-18T19:31:22 | 2011-07-18T19:10:04  |                                       |           |         |
| [s] Observation end time (MET)    | 427424748.184000    | 427425857.99263      |                                       |           |         |
| Observation end date              | 2011-07-19T01:04:42 | 2011-07-19T01:24:17  |                                       |           |         |
| Read mode                         | TIMED               | TIMED                |                                       |           |         |

## 2.3 Aspect



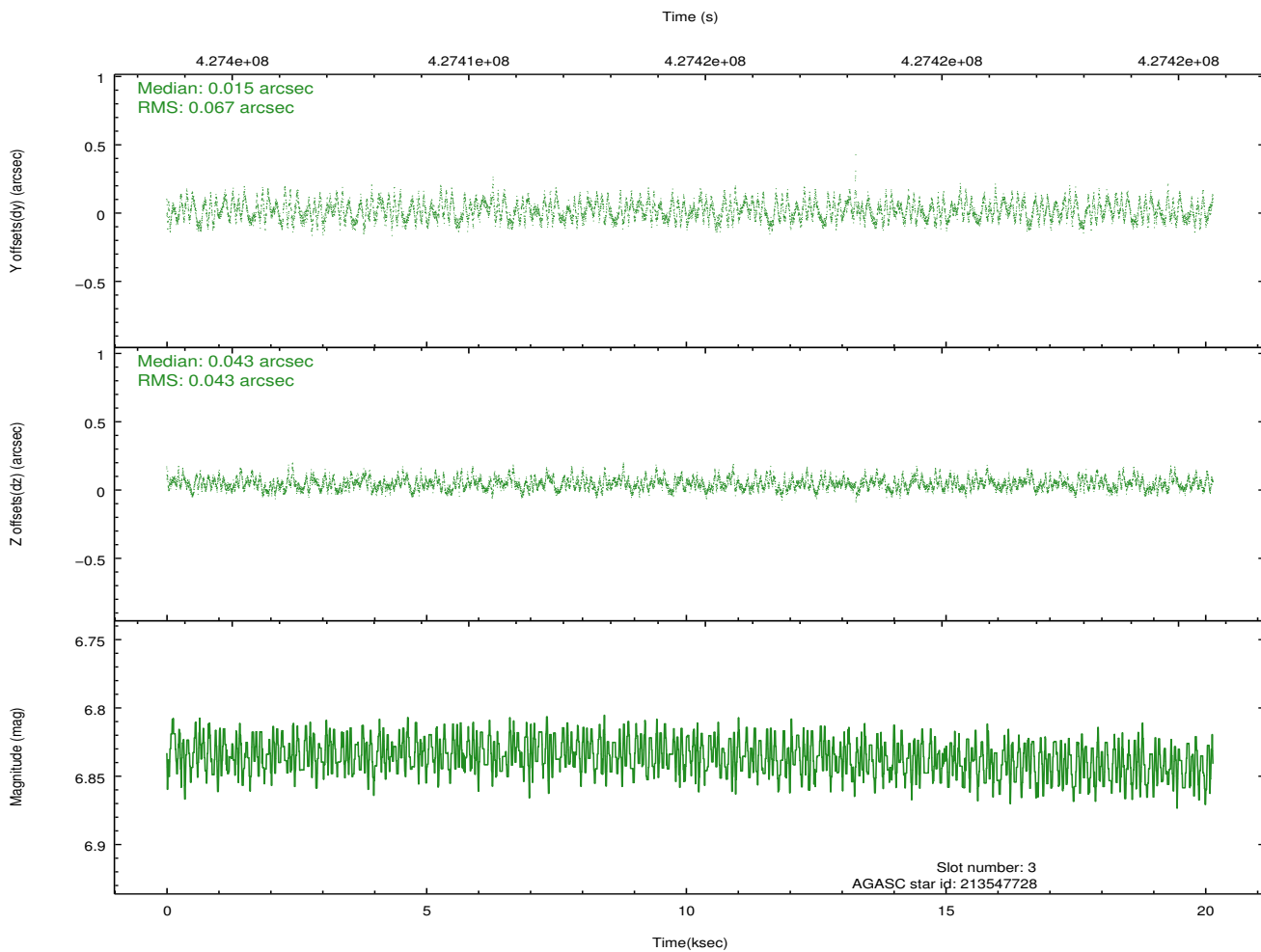
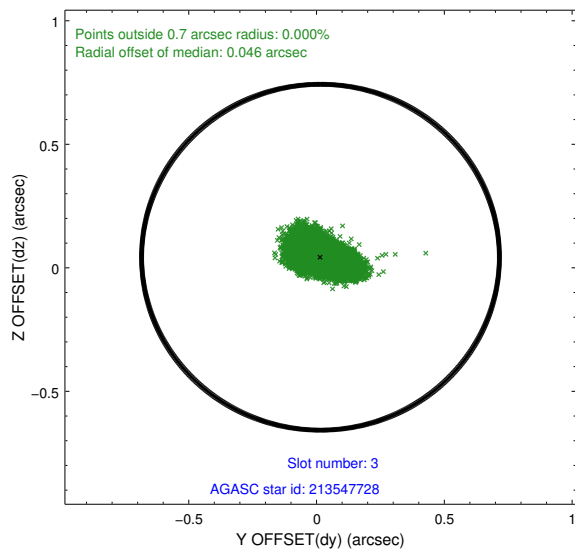
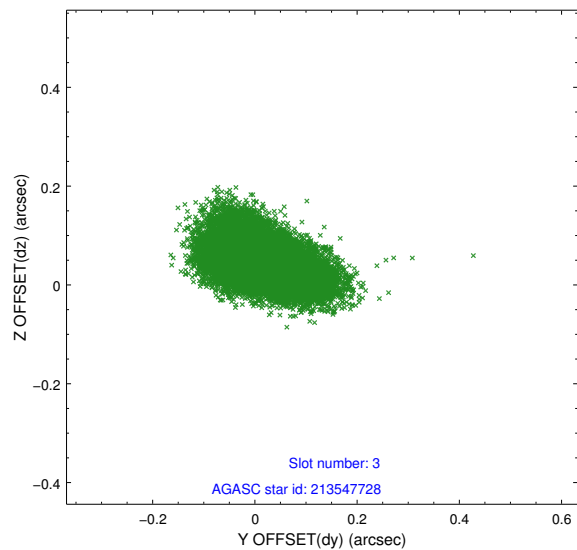


### Slot Statistics

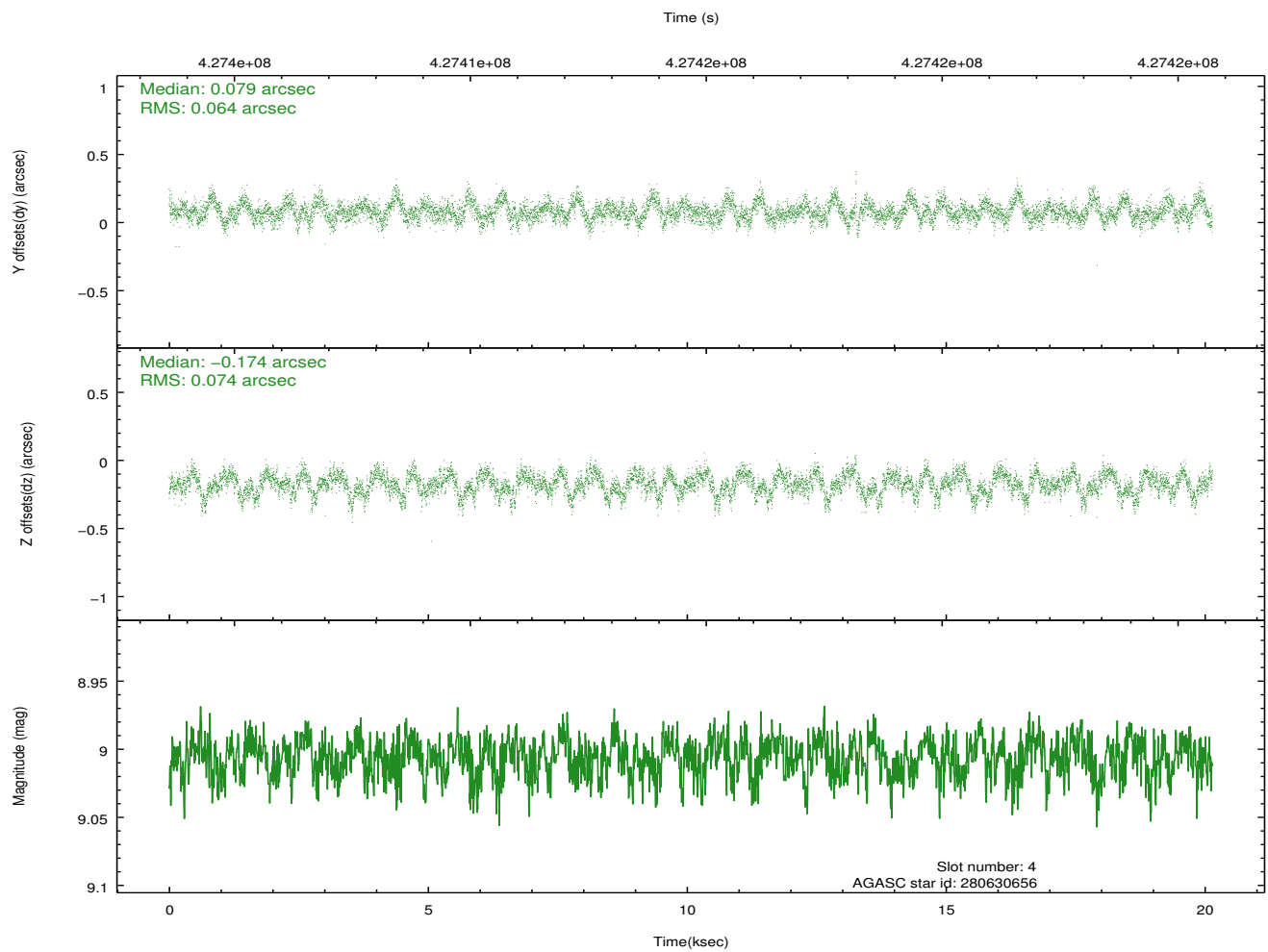
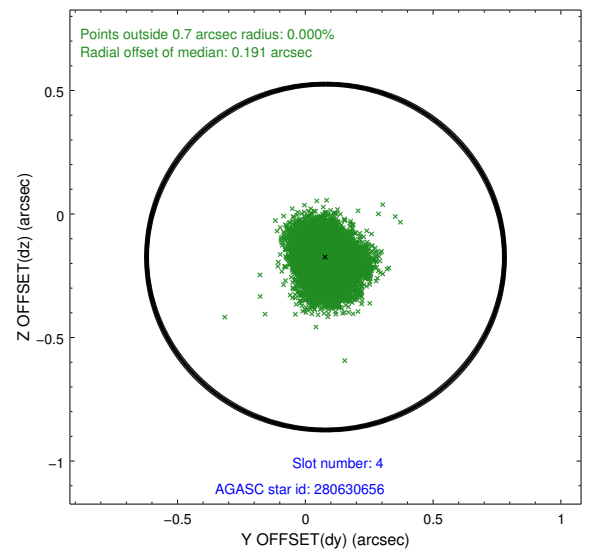
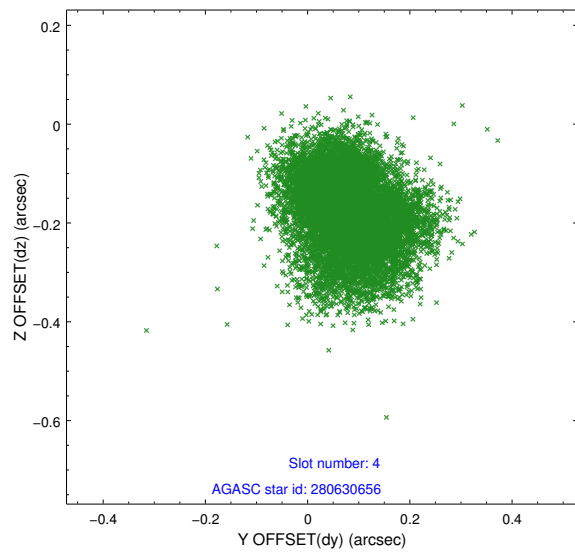
| slot | status | id        | mag  | n_pts | med_dy | med_dz | dr1   | dr2   | ra         | dec       | mean_y   | mean_z   |
|------|--------|-----------|------|-------|--------|--------|-------|-------|------------|-----------|----------|----------|
| 0    | FID    | ACIS-S-2  | 7.03 | 4914  | -0.130 | -0.109 | 0.009 | 0.021 | 0.000000   | 0.000000  | -759.55  | -1731.41 |
| 1    | FID    | ACIS-S-4  | 7.12 | 4914  | 0.152  | 0.052  | 0.016 | 0.024 | 0.000000   | 0.000000  | 2153.94  | 177.03   |
| 2    | FID    | ACIS-S-6  | 7.26 | 4914  | -0.048 | 0.064  | 0.015 | 0.025 | 0.000000   | 0.000000  | 402.77   | 814.66   |
| 3    | GUIDE  | 213547728 | 6.84 | 9828  | 0.015  | 0.043  | 0.086 | 0.135 | 300.592091 | 22.151462 | -1417.34 | 1963.69  |
| 4    | GUIDE  | 280630656 | 9.01 | 9820  | 0.079  | -0.174 | 0.105 | 0.168 | 300.025585 | 22.704884 | 586.61   | 92.09    |
| 5    | GUIDE  | 280632896 | 9.06 | 9820  | -0.208 | 0.113  | 0.093 | 0.153 | 299.532468 | 22.850727 | 2251.87  | -336.97  |
| 6    | GUIDE  | 280631080 | 8.89 | 9792  | 0.133  | -0.094 | 0.096 | 0.166 | 299.578484 | 23.303541 | 2192.81  | -1973.48 |
| 7    | GUIDE  | 280632480 | 7.97 | 9826  | -0.020 | 0.116  | 0.092 | 0.143 | 300.237301 | 22.846979 | -82.80   | -461.70  |

## 2.4 Star Slots

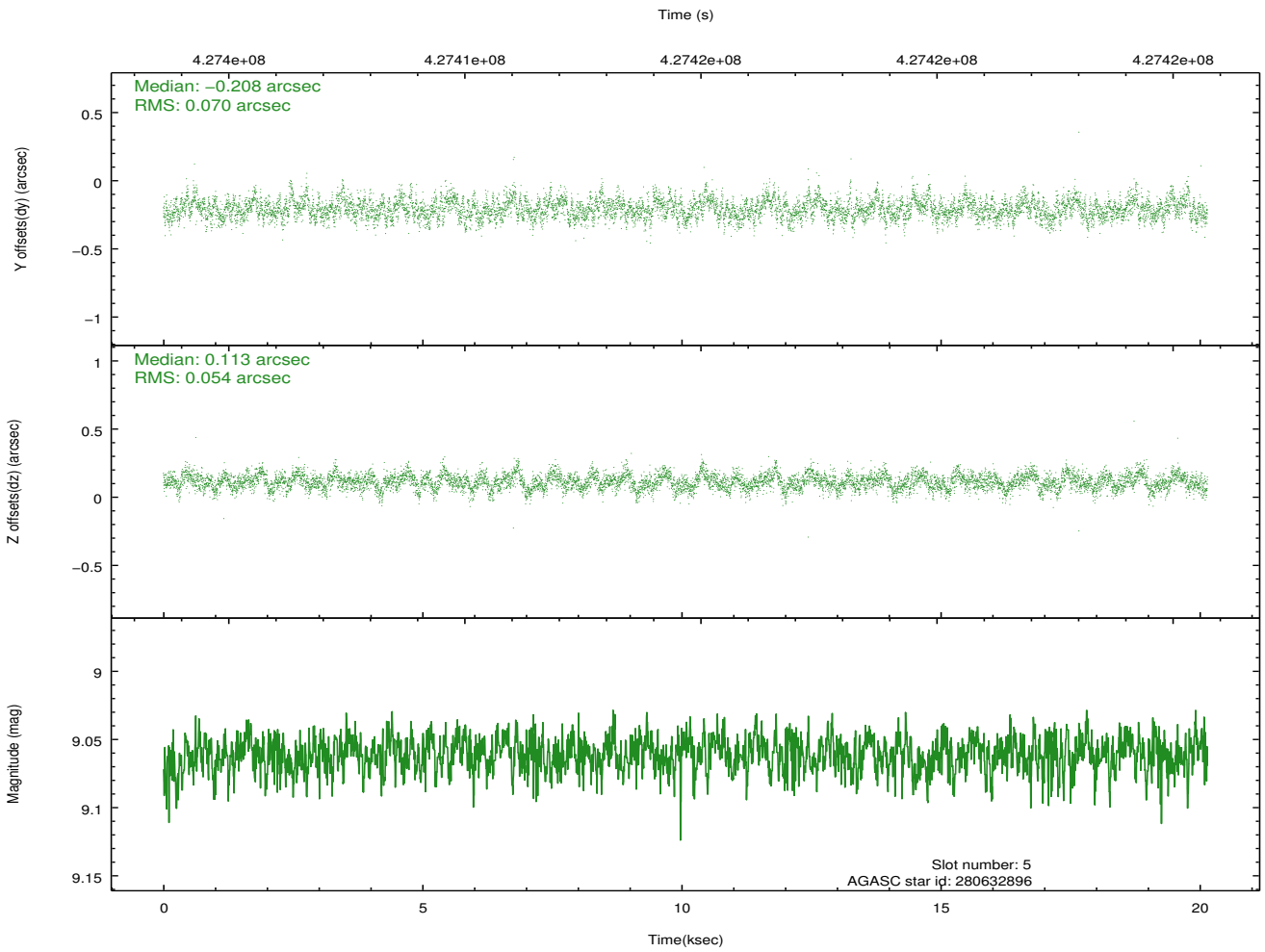
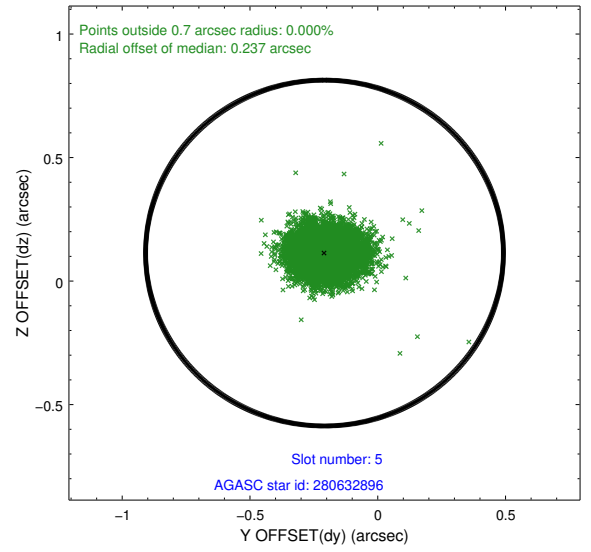
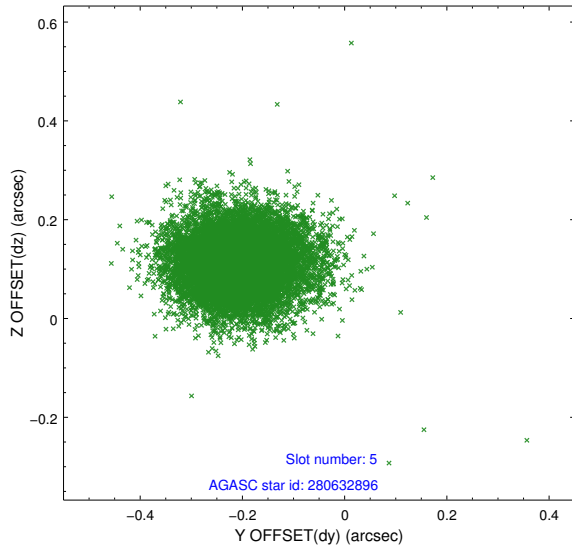
### 2.4.1 Slot 3



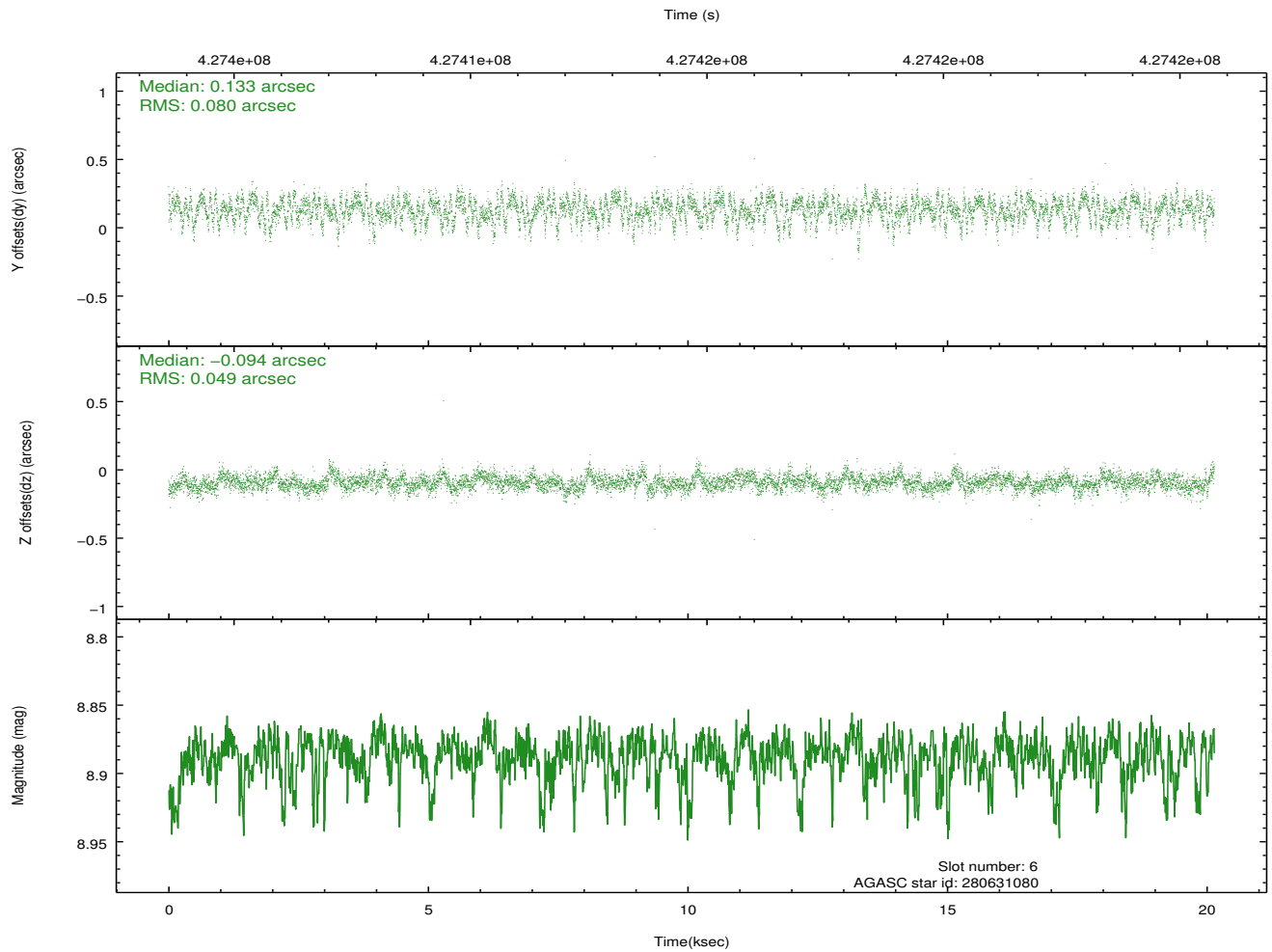
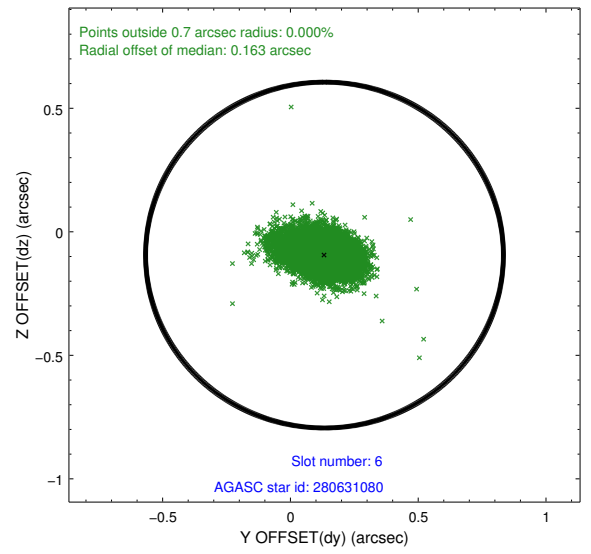
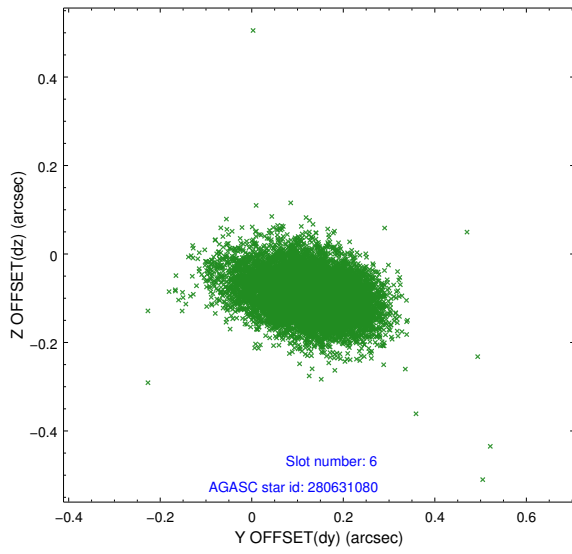
## 2.4.2 Slot 4



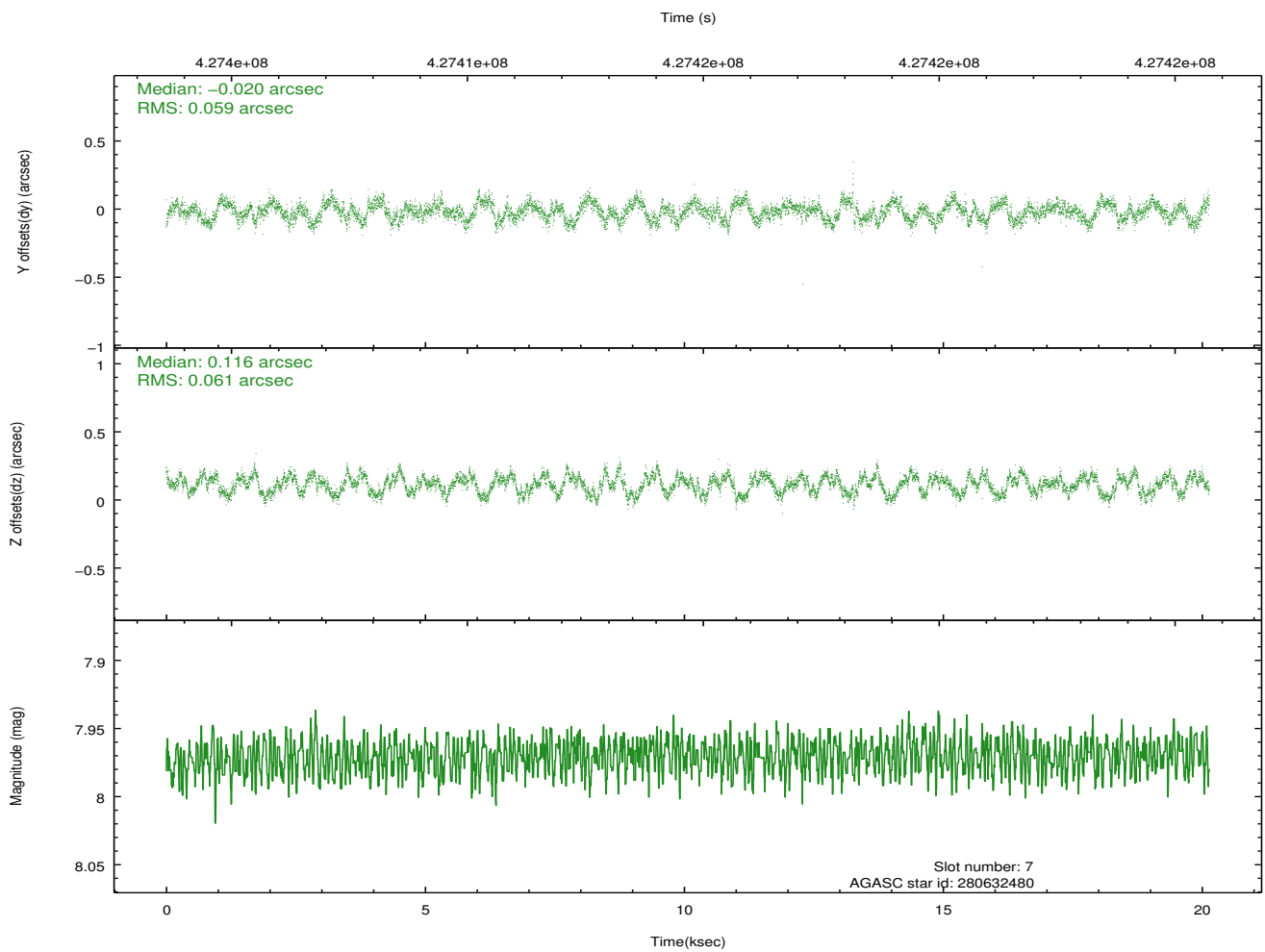
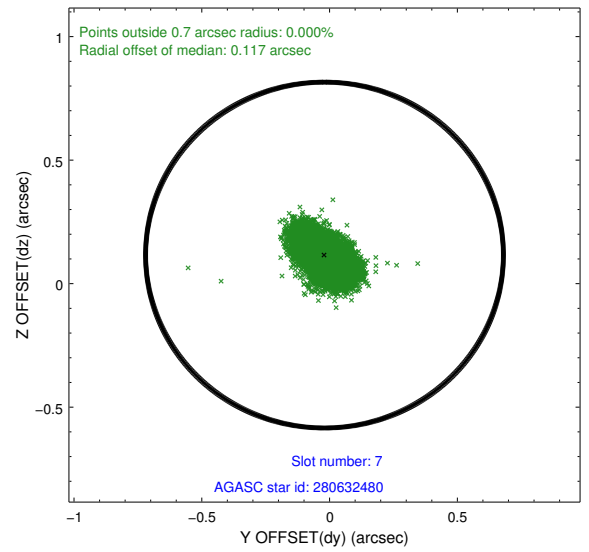
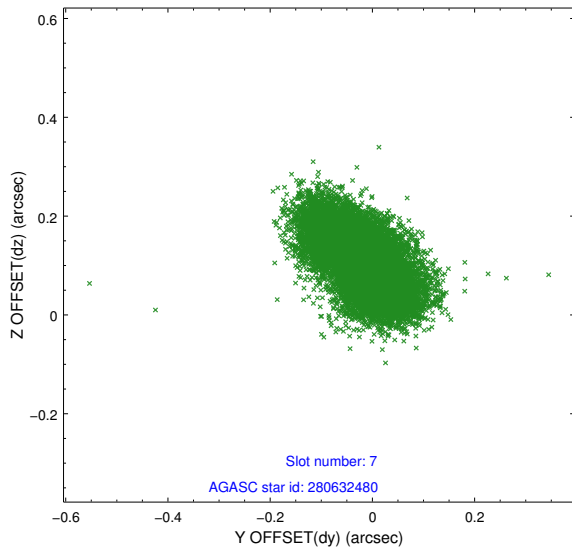
### 2.4.3 Slot 5



### 2.4.4 Slot 6

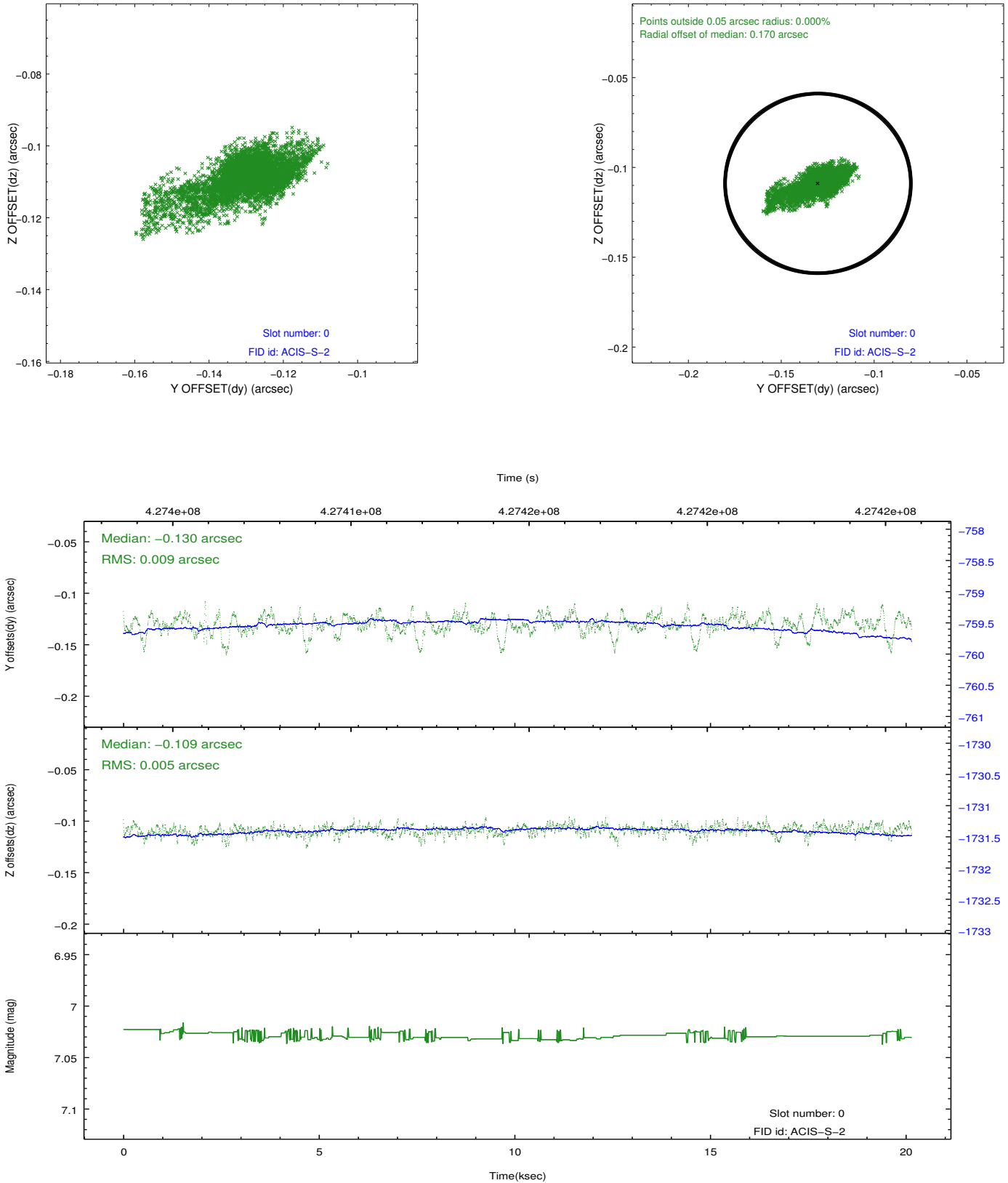


## 2.4.5 Slot 7

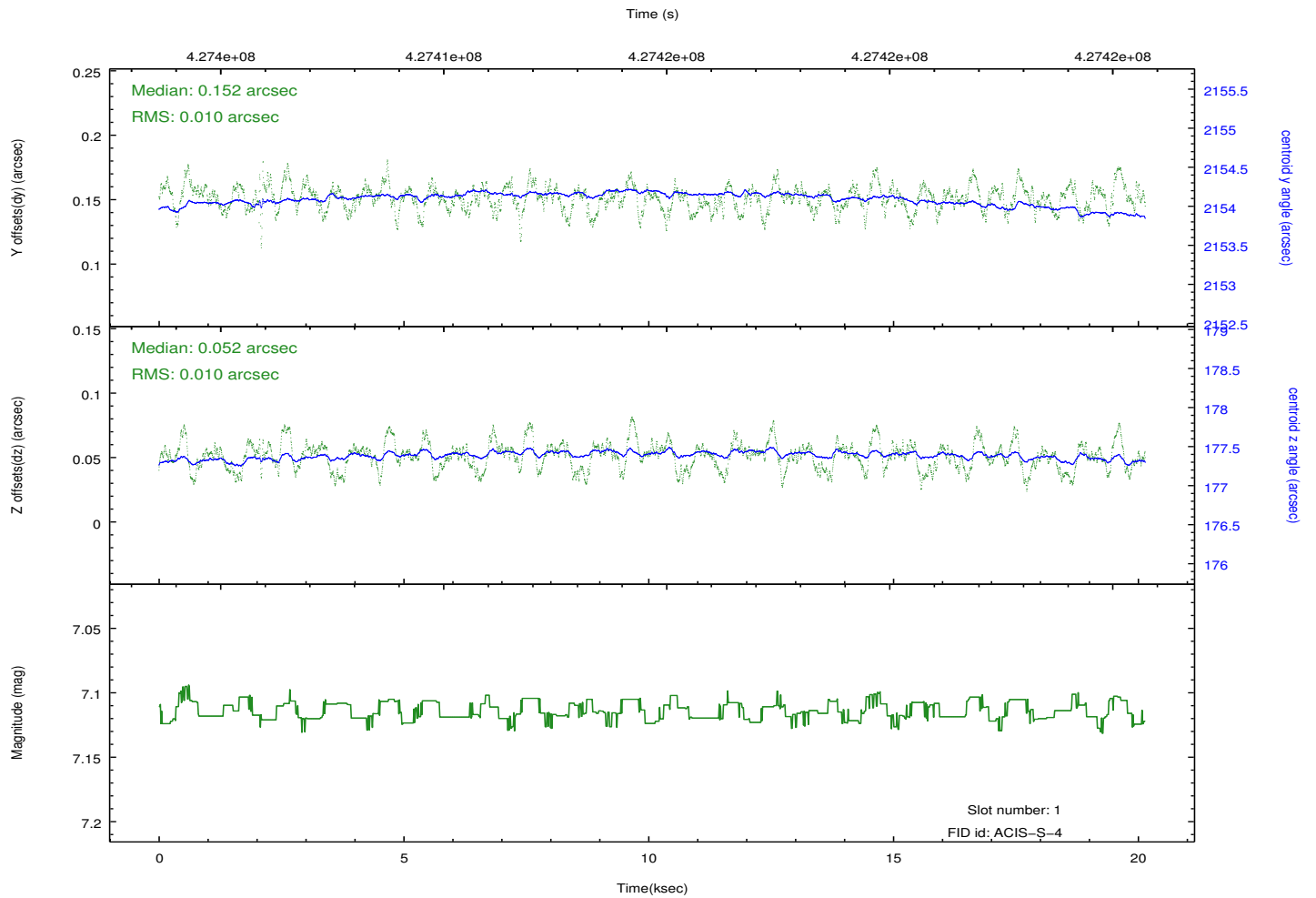
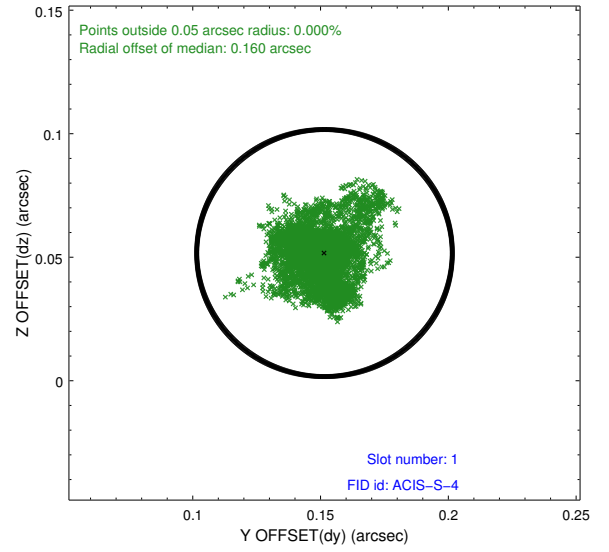
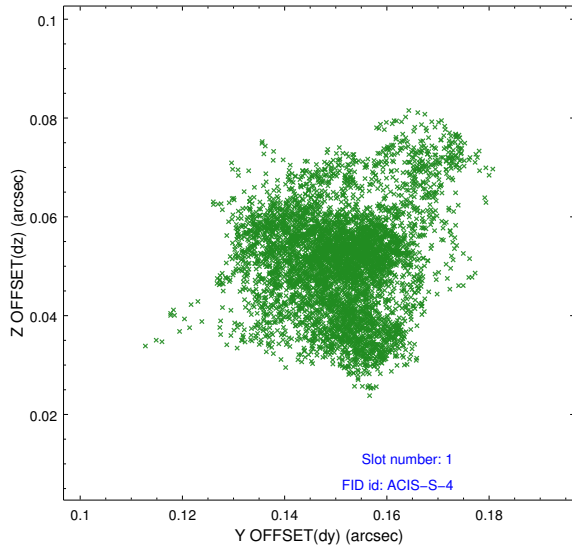


## 2.5 FID Slots

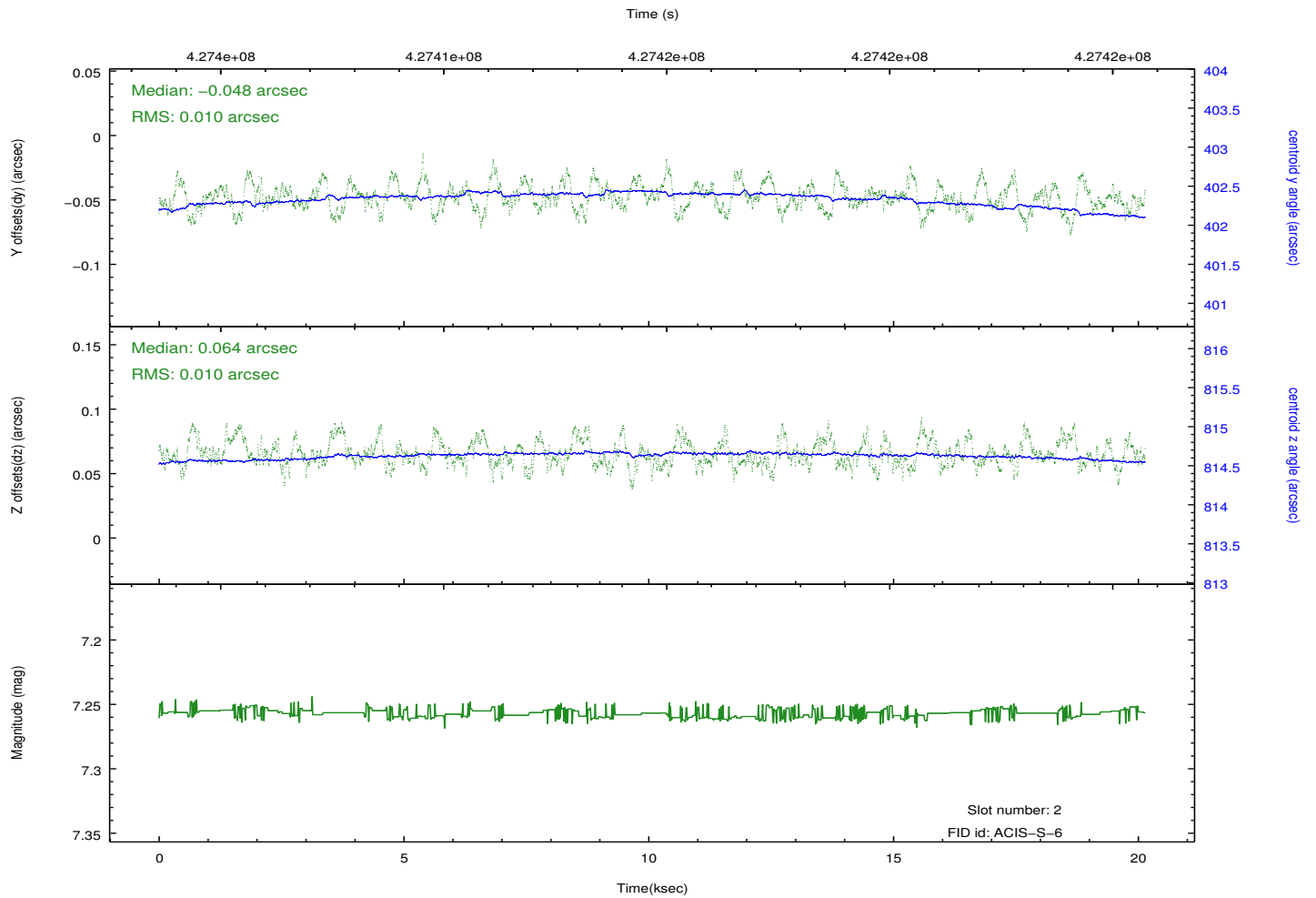
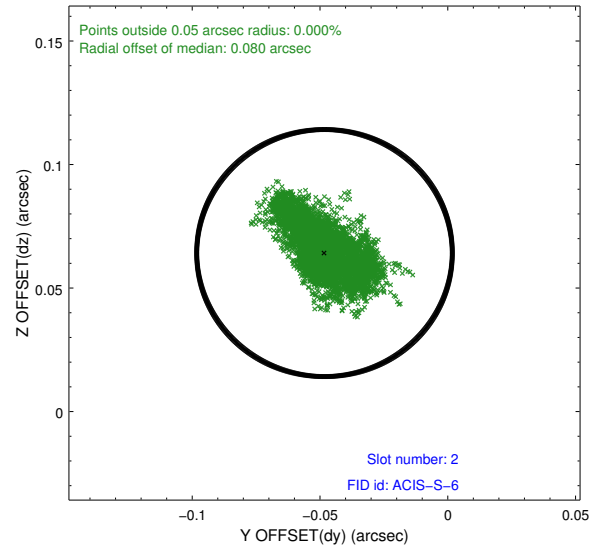
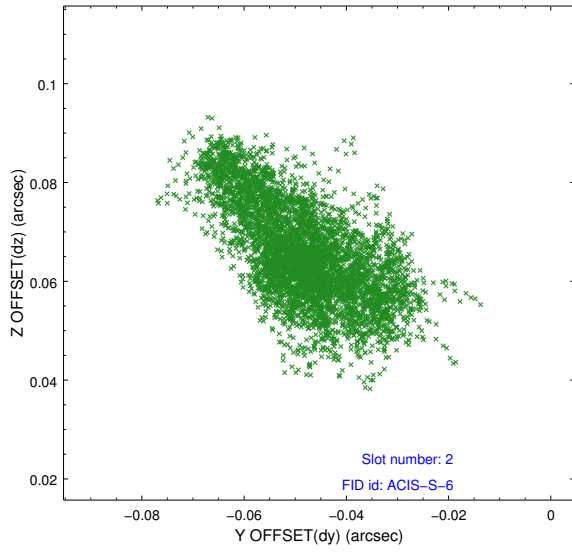
### 2.5.1 Slot 0



## 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)      | 2012.02.21      |
| V&V Edition                | 1               |
| V&V Disposition and Status | OK              |
| V&V Charge Time            | 20.050294312835 |

## A.2 Comments

Monitor constraint met.