

# V&V Reference Report

## L2 ASCDS Version : 8.5

Observation 4508 - L2 Version 3  
Chandra X-Ray Center

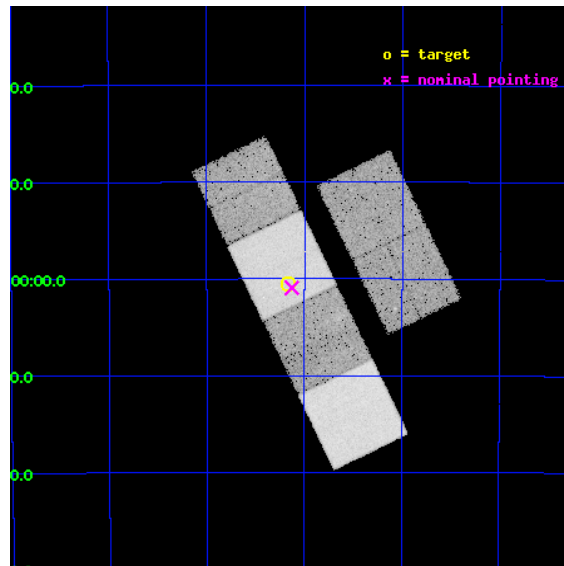
L2 Processing Date : Dec 10 2012

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# 1 Front

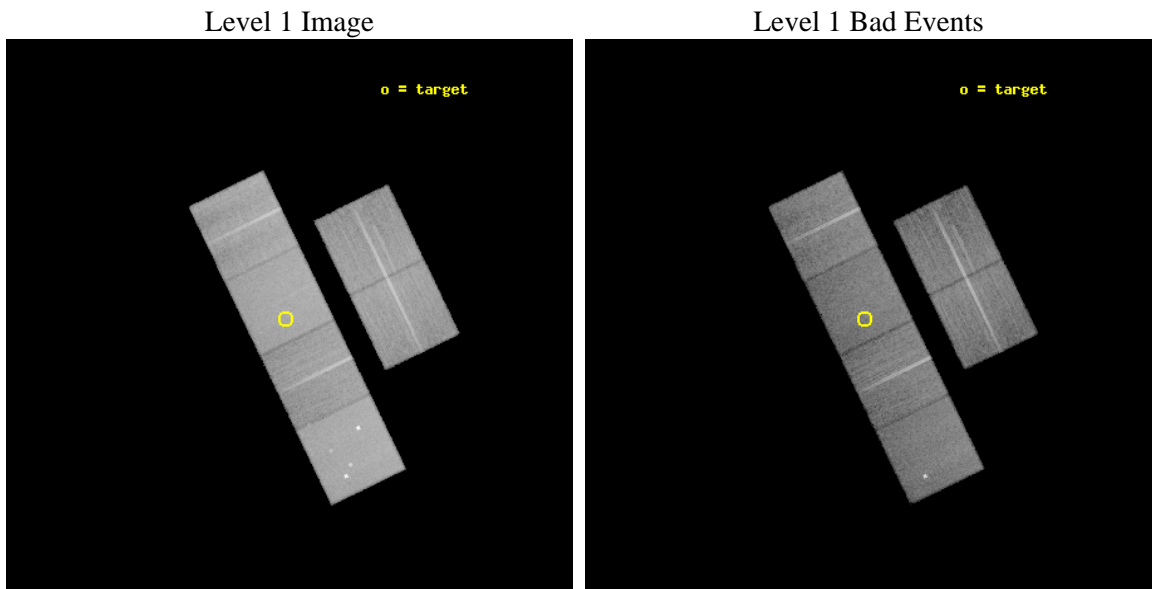
|          |   |   |
|----------|---|---|
| seq_num  | 200277  | Sequence number                             |
| obs_id   | 4508  | Observation id                              |
| title    | Wind-Wind Interactions and Stellar Magnetic Fields in Pre-Planetary Nebulae | Proposal title                              |
| observer | Dr. Raghvendra Sahai  | Principal investigator                      |
| object   | IRAS16594-4656  | Source name                                 |
| dtcycle  | 0   | &#160                                       |
| cycle    | P   | events from which exps?<br>Prim/Second/Both |
| ra_targ  | 255.790417  | Observer's specified target RA [deg]        |
| dec_targ | -47.007778  | Observer's specified target Dec [deg]       |
| ra_nom   | 255.78213641199   | Nominal RA [deg]                            |
| dec_nom  | -47.015600829927  | Nominal Dec [deg]                           |
| roll_nom | 244.15057669777   | Nominal Roll [deg]                          |
| revision | 3   | Processing version of data                  |
| ontime   | 20278.399924457   | Sum of GTIs [s]                             |
| livetime | 20021.622614427   | Livetime [s]                                |
| ontime2  | 20278.399924457   | Sum of GTIs [s]                             |
| ontime3  | 20278.399924457   | Sum of GTIs [s]                             |
| ontime5  | 20278.399924457   | Sum of GTIs [s]                             |
| ontime6  | 20278.399924457   | Sum of GTIs [s]                             |
| ontime7  | 20278.399924457   | Sum of GTIs [s]                             |
| ontime8  | 20278.399924457   | Sum of GTIs [s]                             |
| l2events | 263457  | Number of level 2 events                    |



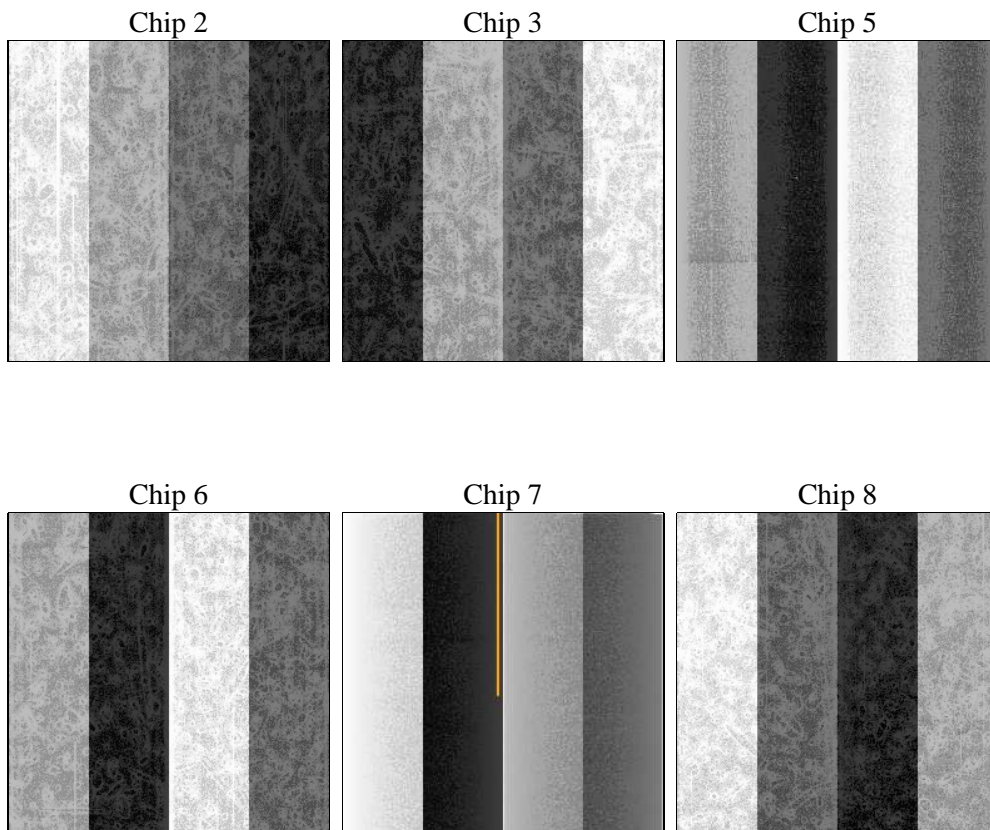
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

|          |                     |                                |                |                 |   |
|----------|---------------------|--------------------------------|----------------|-----------------|---|
| obi_num  | 0                   | Obi number                     | sched_exp_time | 20120.000000    | [s] Scheduled observation exposure time |
| ascdsver | 8.5                 | Processing system revision     | ontime         | 20278.399924457 | Sum of GTIs [s]                         |
| caldbver | 4.5.4               | &#160                          | ontime2        | 20278.399924457 | Sum of GTIs [s]                         |
| date     | 2012-12-10T11:55:39 | Date and time of file creation | ontime3        | 20278.399924457 | Sum of GTIs [s]                         |
| revision | 3                   | Processing version of data     | ontime5        | 20278.399924457 | Sum of GTIs [s]                         |
|          |                     |                                | ontime6        | 20278.399924457 | Sum of GTIs [s]                         |
|          |                     |                                | ontime7        | 20278.399924457 | Sum of GTIs [s]                         |
|          |                     |                                | ontime8        | 20278.399924457 | Sum of GTIs [s]                         |
|          |                     |                                | l1events       | 1204457         | Number of level 1 events                |

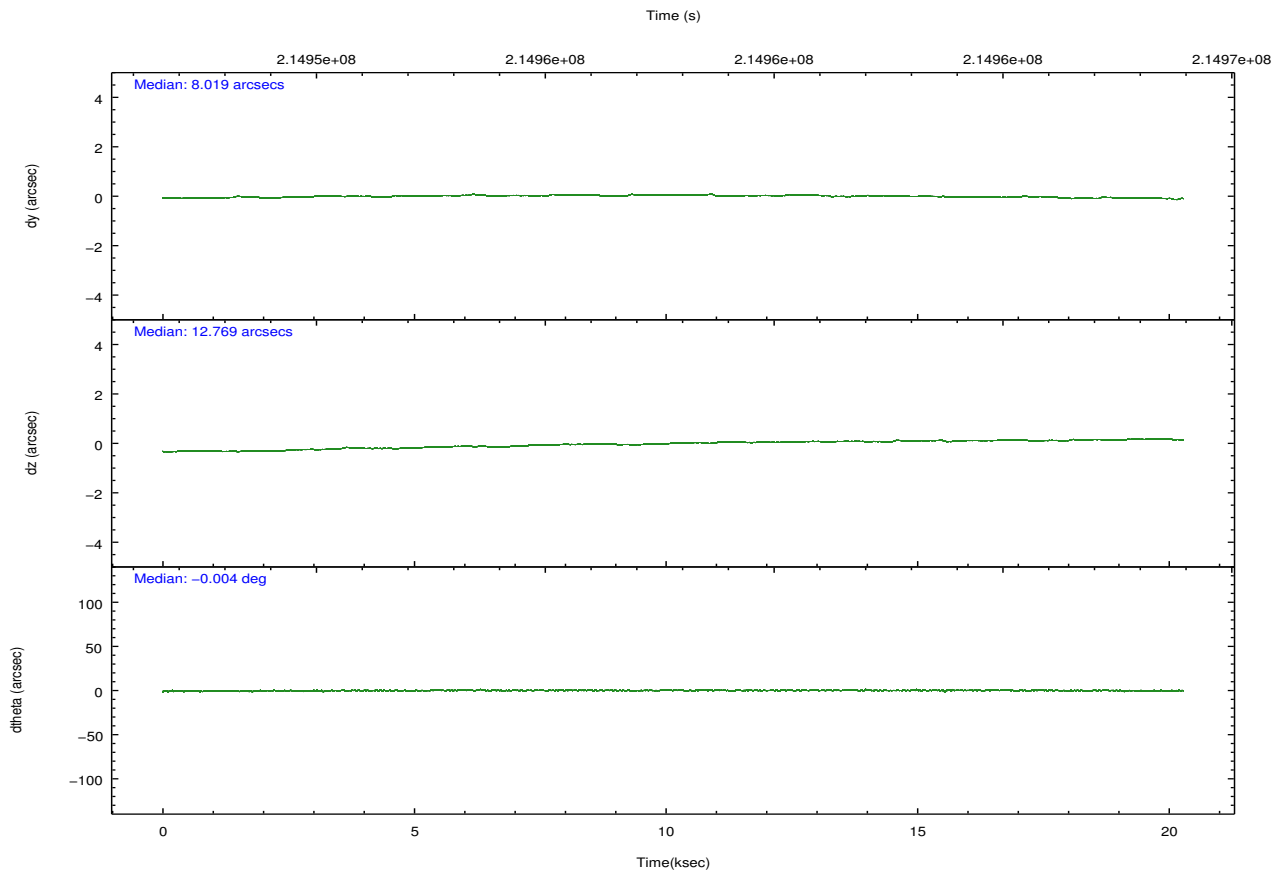
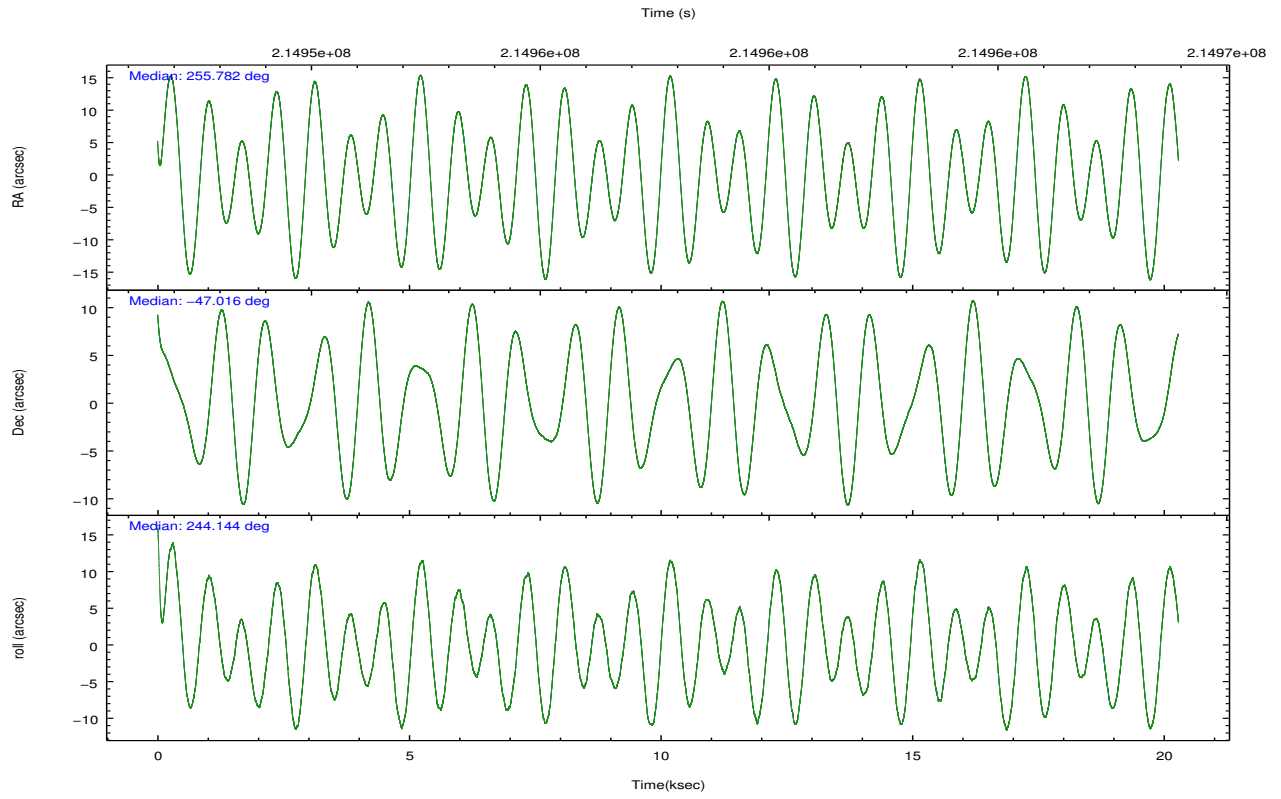
### 2.1.4 Events

|                 | 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  | 175151 | 165925 | 258169 | 168937 | 225537 | 210738 | grade 0 events | 9230   | 8446   | 16291  | 8391   | 8260   | 14235  |
| rejected events | 155769 | 147420 | 141027 | 148953 | 134668 | 167116 |                | 5%     | 5%     | 6%     | 4%     | 3%     | 6%     |
| rejected %      | 88%    | 88%    | 54%    | 88%    | 59%    | 79%    | grade 1 events | 99     | 108    | 2841   | 87     | 208    | 143    |
|                 |        |        |        |        |        |        |                | 0%     | 0%     | 1%     | 0%     | 0%     | 0%     |
|                 |        |        |        |        |        |        | grade 2 events | 4172   | 3582   | 34978  | 4171   | 18765  | 9895   |
|                 |        |        |        |        |        |        |                | 2%     | 2%     | 13%    | 2%     | 8%     | 4%     |
|                 |        |        |        |        |        |        | grade 3 events | 1800   | 1886   | 4702   | 1966   | 8347   | 4867   |
|                 |        |        |        |        |        |        |                | 1%     | 1%     | 1%     | 1%     | 3%     | 2%     |
|                 |        |        |        |        |        |        | grade 4 events | 1901   | 1942   | 4669   | 1984   | 8240   | 4526   |
|                 |        |        |        |        |        |        |                | 1%     | 1%     | 1%     | 1%     | 3%     | 2%     |
|                 |        |        |        |        |        |        | grade 5 events | 6612   | 7340   | 18614  | 7865   | 21543  | 9933   |
|                 |        |        |        |        |        |        |                | 3%     | 4%     | 7%     | 4%     | 9%     | 4%     |
|                 |        |        |        |        |        |        | grade 6 events | 3226   | 3278   | 60411  | 4122   | 50219  | 11424  |
|                 |        |        |        |        |        |        |                | 1%     | 1%     | 23%    | 2%     | 22%    | 5%     |
|                 |        |        |        |        |        |        | grade 7 events | 148111 | 139343 | 115663 | 140351 | 109955 | 155715 |
|                 |        |        |        |        |        |        |                | 84%    | 83%    | 44%    | 83%    | 48%    | 73%    |

## 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                         | FAINT               | FAINT                | Number of optional ACIS chips dropped | 0         | 0       |
| Observation mode                  | POINTING            | POINTING             | On-chip summing requested             | N         | N       |
| [deg] Pointing RA                 | 255.778665          | 255.7821364119929    | Subarray requested                    | NONE      | NONE    |
| [deg] Pointing Dec                | -46.988471          | -47.01560082992749   | Alternating exposures requested       | N         | N       |
| [deg] Pointing Roll               | 243.991412          | 244.1505766977743    | [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)  | 214947810.184000    | 214946420.19339      |                                       |           |         |
| Observation start date            | 2004-10-23T19:42:26 | 2004-10-23T19:20:20  |                                       |           |         |
| [s] Observation end time (MET)    | 214967930.184000    | 214968825.15689      |                                       |           |         |
| Observation end date              | 2004-10-24T01:17:46 | 2004-10-24T01:33:45  |                                       |           |         |
| Read mode                         | TIMED               | TIMED                |                                       |           |         |

## 2.3 Aspect



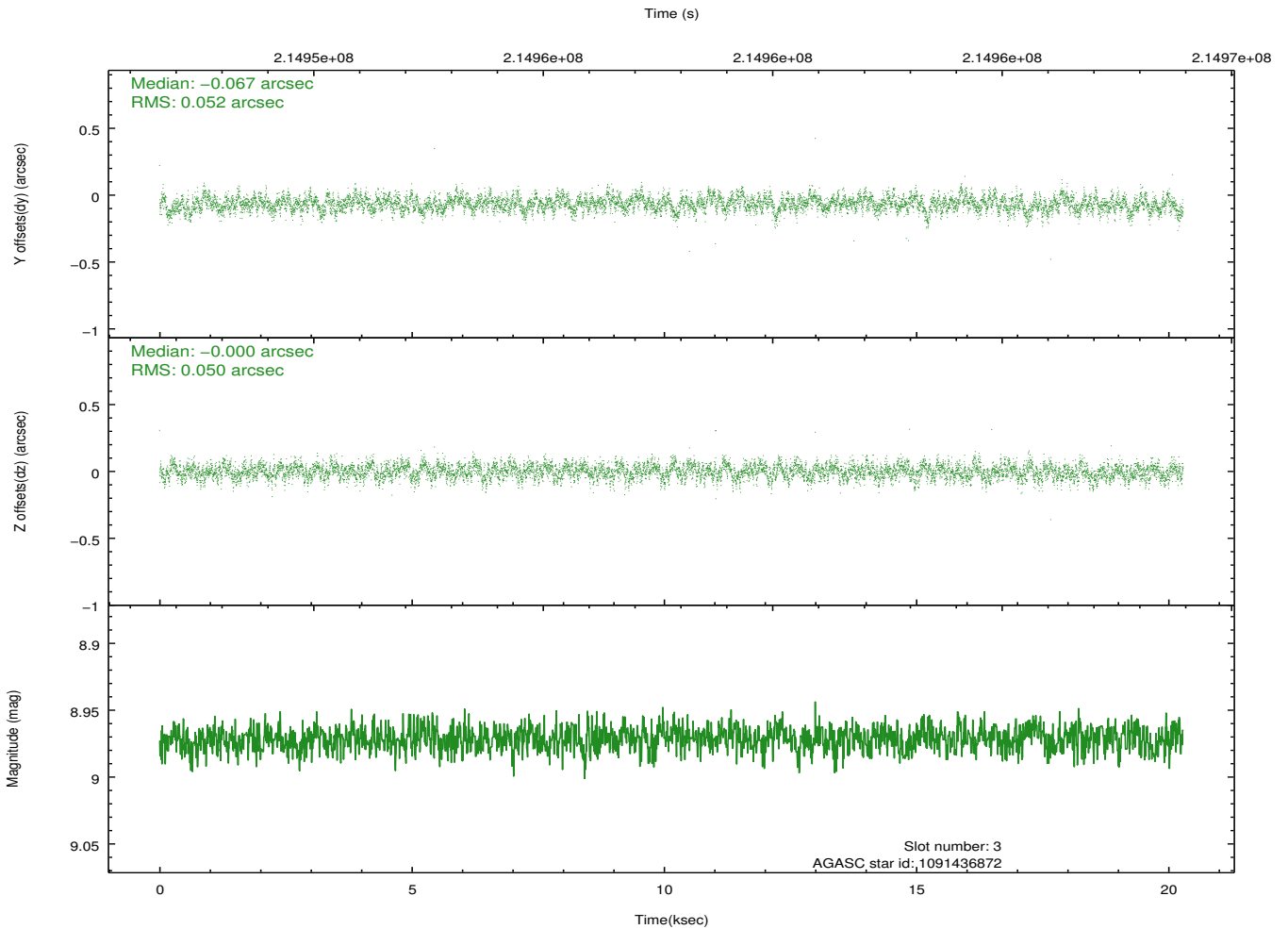
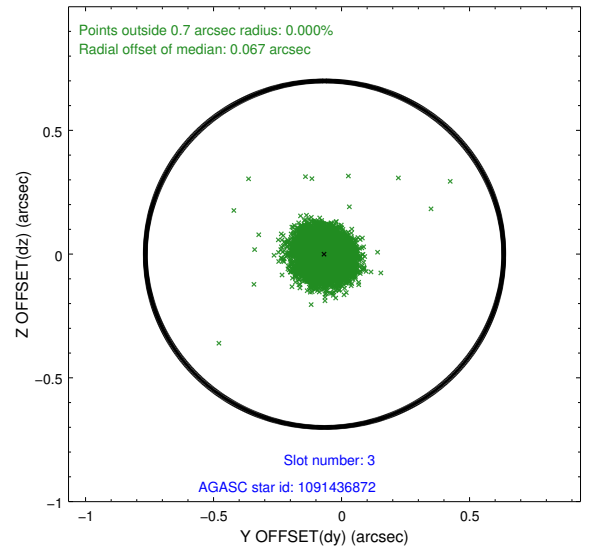
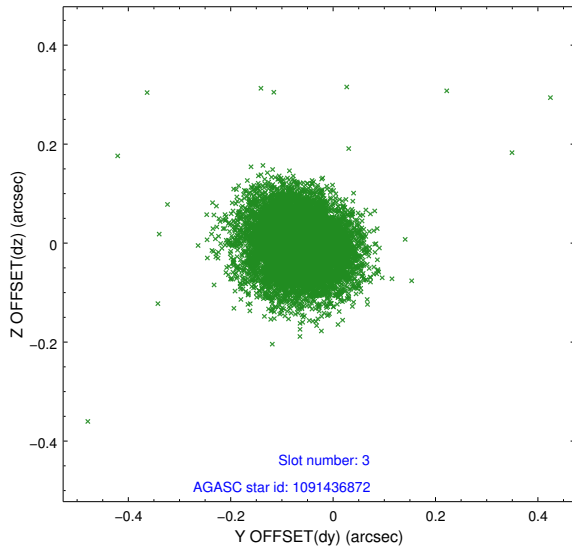
### Slot Statistics

| slot | status | id         | mag  | n_pts | med_dy | med_dz | dr1   | dr2   | ra         | dec        | mean_y   | mean_z   |
|------|--------|------------|------|-------|--------|--------|-------|-------|------------|------------|----------|----------|
| 0    | FID    | ACIS-S-2   | 7.10 | 4949  | 0.002  | -0.027 | 0.010 | 0.021 | 0.000000   | 0.000000   | -760.80  | -1734.07 |
| 1    | FID    | ACIS-S-4   | 7.19 | 4949  | 0.059  | 0.006  | 0.008 | 0.024 | 0.000000   | 0.000000   | 2152.47  | 174.24   |
| 2    | FID    | ACIS-S-5   | 7.23 | 4949  | -0.093 | 0.030  | 0.009 | 0.017 | 0.000000   | 0.000000   | -1813.49 | 168.17   |
| 3    | GUIDE  | 1091436872 | 8.97 | 9890  | -0.067 | -0.000 | 0.076 | 0.123 | 255.728542 | -46.511740 | -1487.65 | -864.10  |
| 4    | GUIDE  | 1091578616 | 7.19 | 9894  | -0.171 | 0.121  | 0.073 | 0.116 | 256.896475 | -46.679685 | -2192.21 | 2001.99  |
| 5    | GUIDE  | 1091962048 | 9.34 | 9891  | 0.123  | -0.022 | 0.088 | 0.145 | 255.249687 | -47.258259 | 1443.80  | -733.16  |
| 6    | GUIDE  | 1091963760 | 8.82 | 9895  | 0.201  | -0.221 | 0.108 | 0.173 | 254.534918 | -47.241344 | 2173.75  | -2321.96 |
| 7    | GUIDE  | 1091568688 | 9.20 | 9888  | -0.090 | 0.127  | 0.100 | 0.166 | 257.031467 | -46.735947 | -2150.05 | 2390.07  |

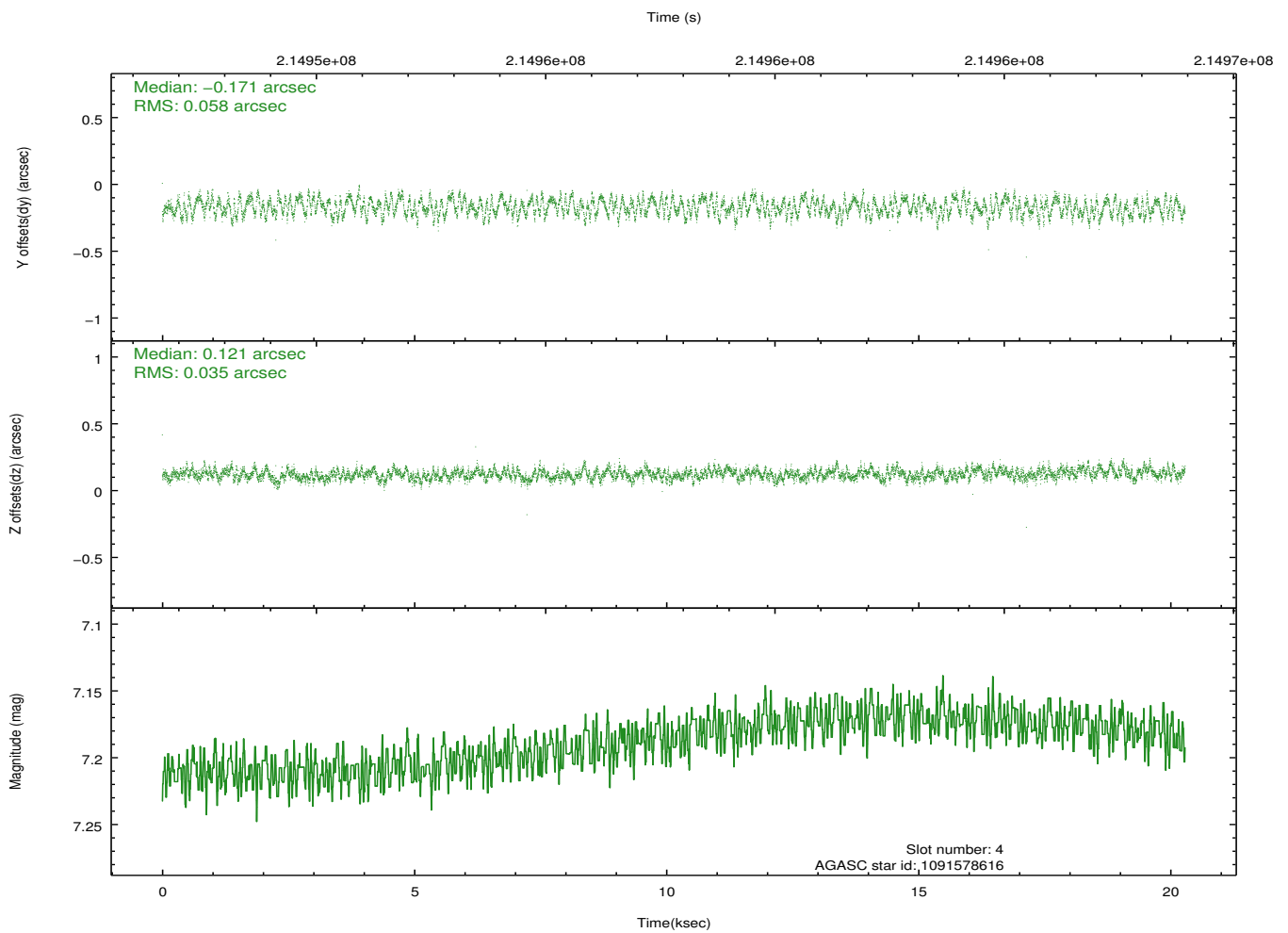
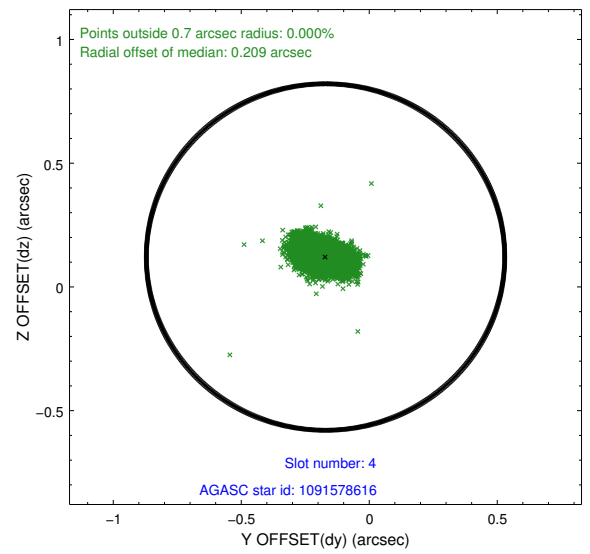
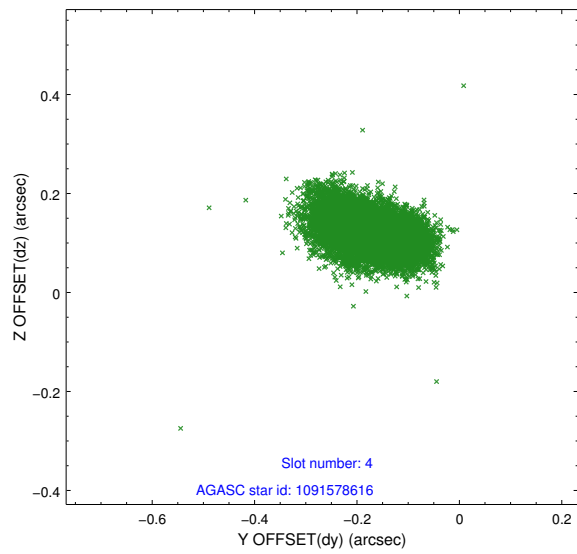
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## 2.4 Star Slots

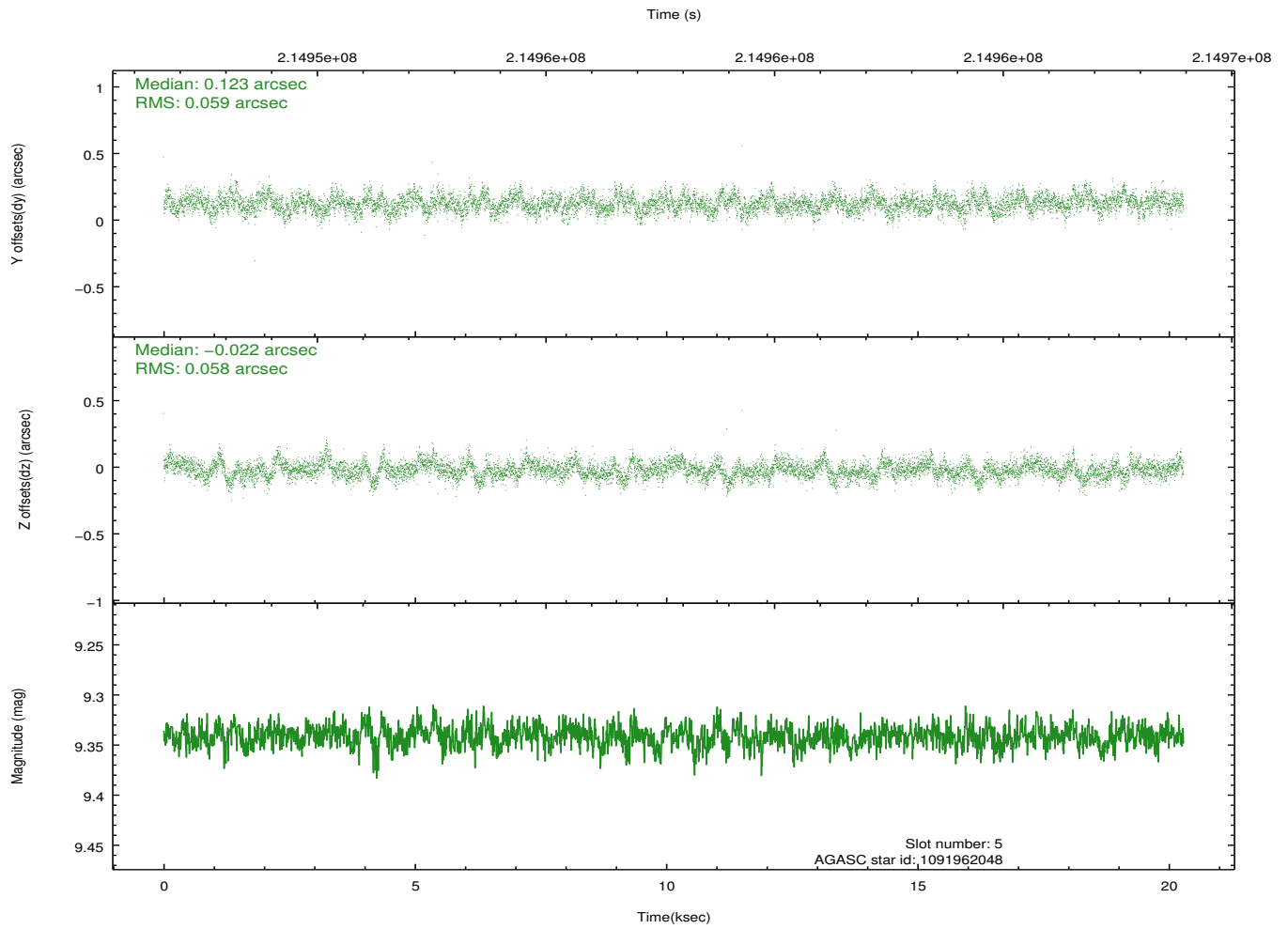
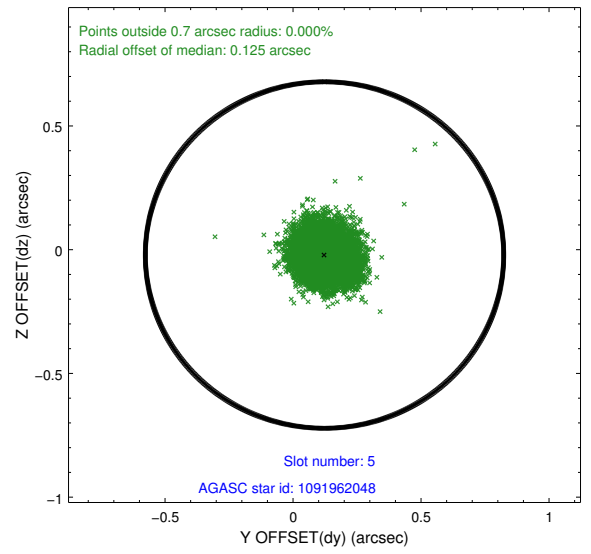
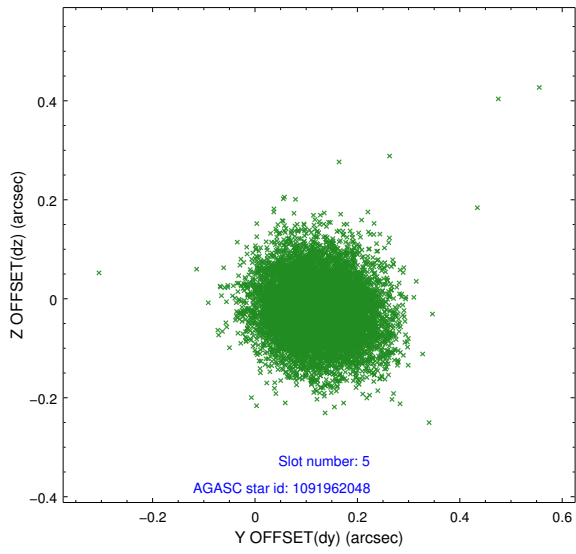
### 2.4.1 Slot 3



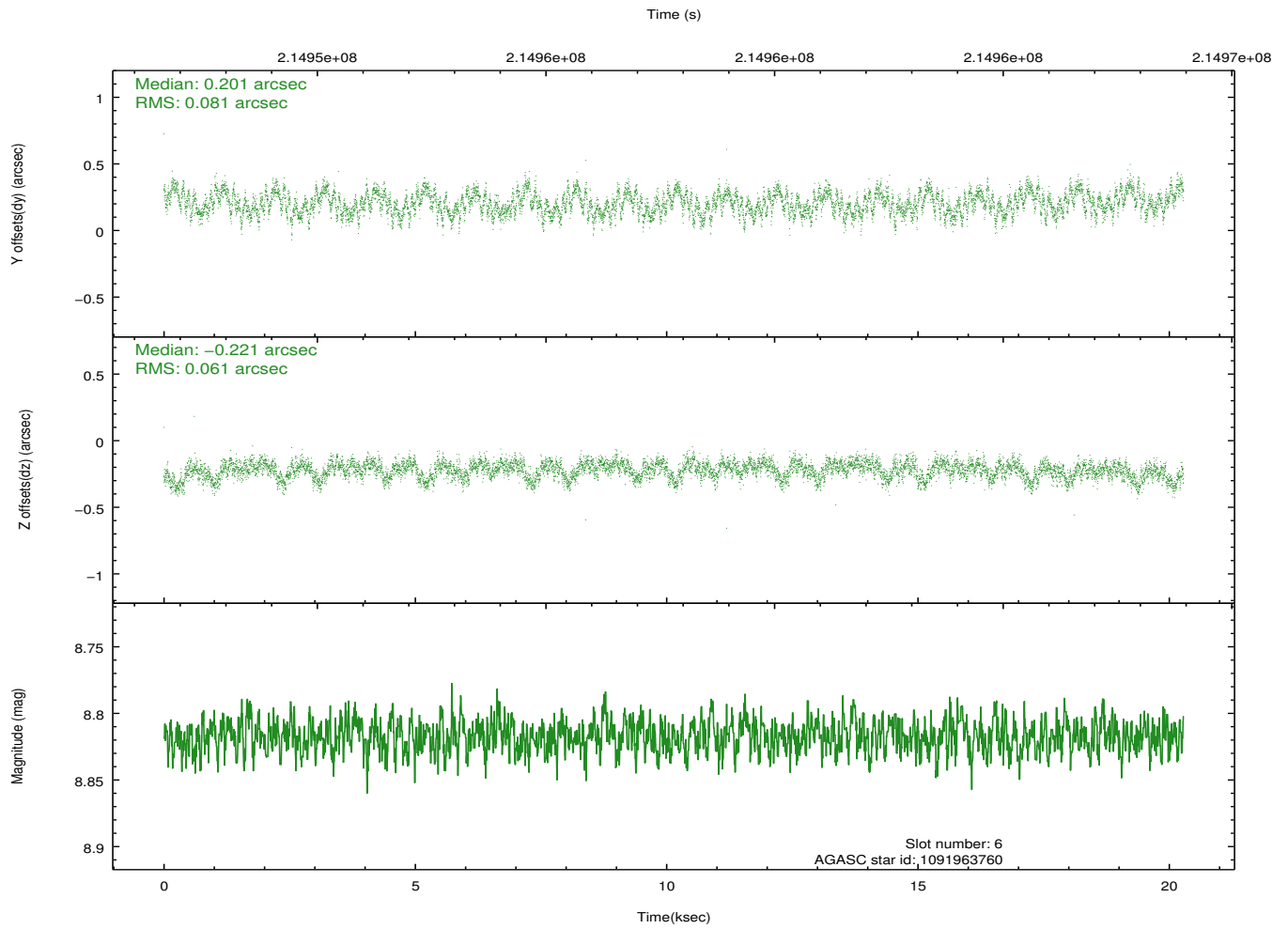
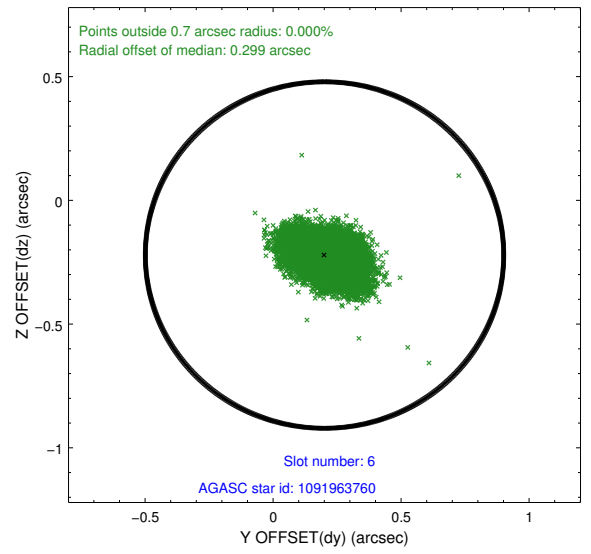
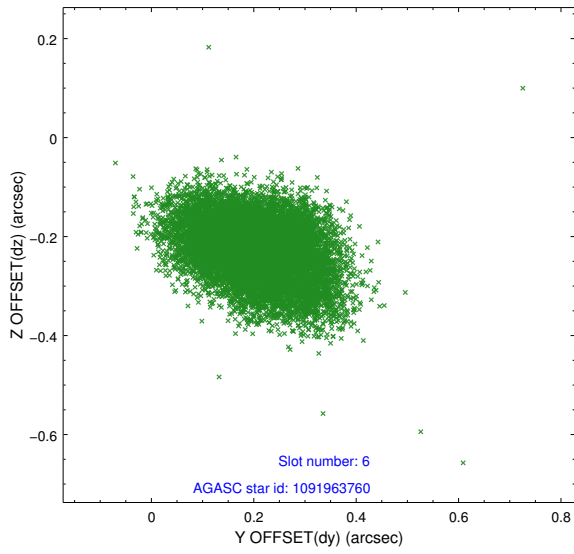
## 2.4.2 Slot 4



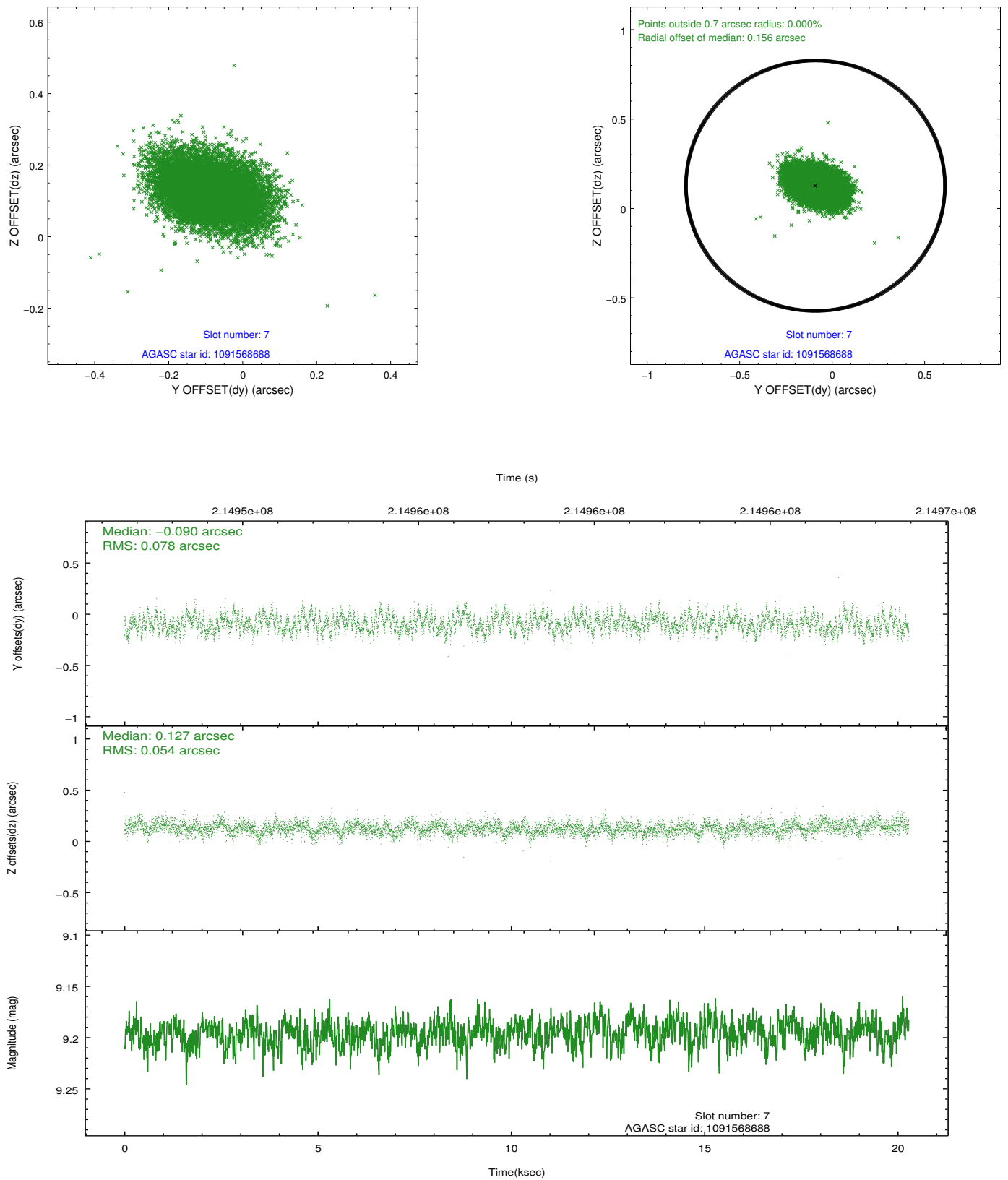
### 2.4.3 Slot 5



### 2.4.4 Slot 6

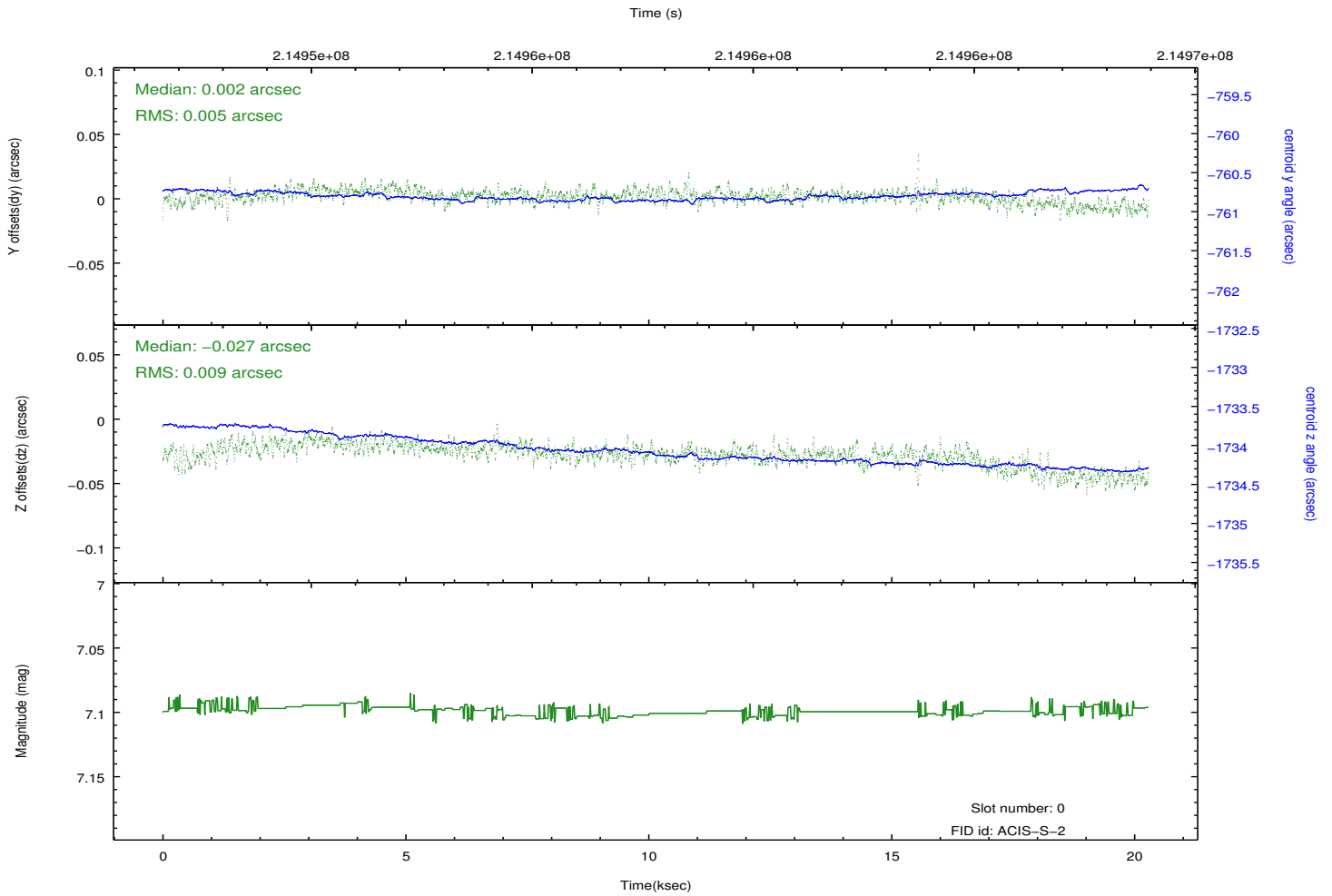
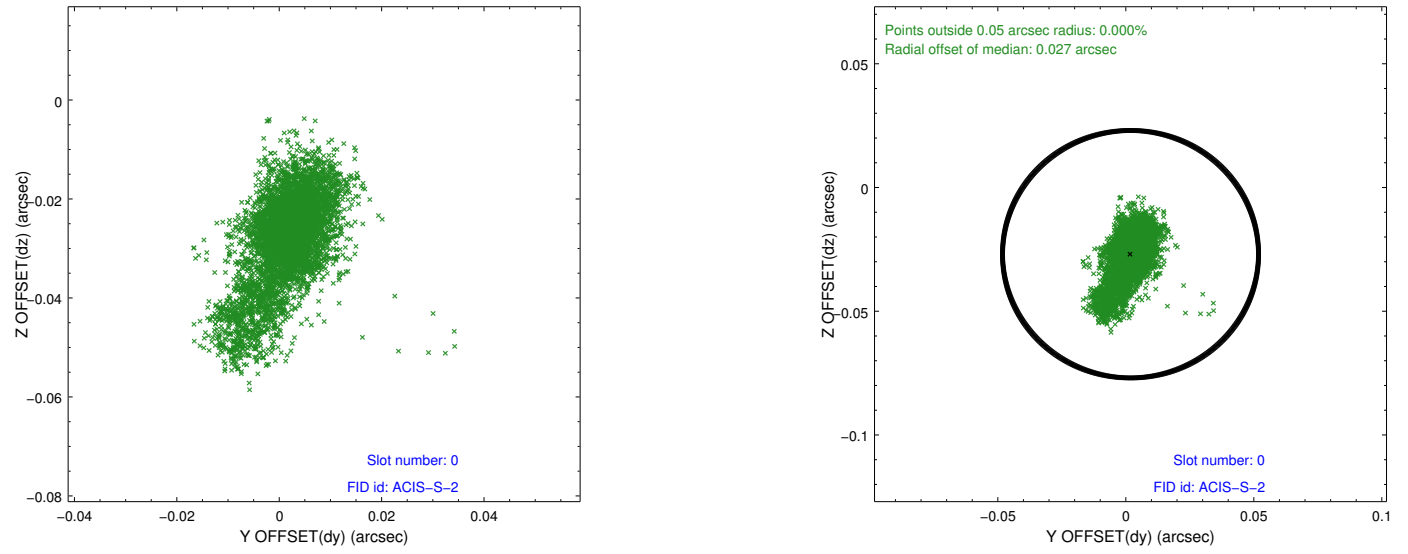


## 2.4.5 Slot 7

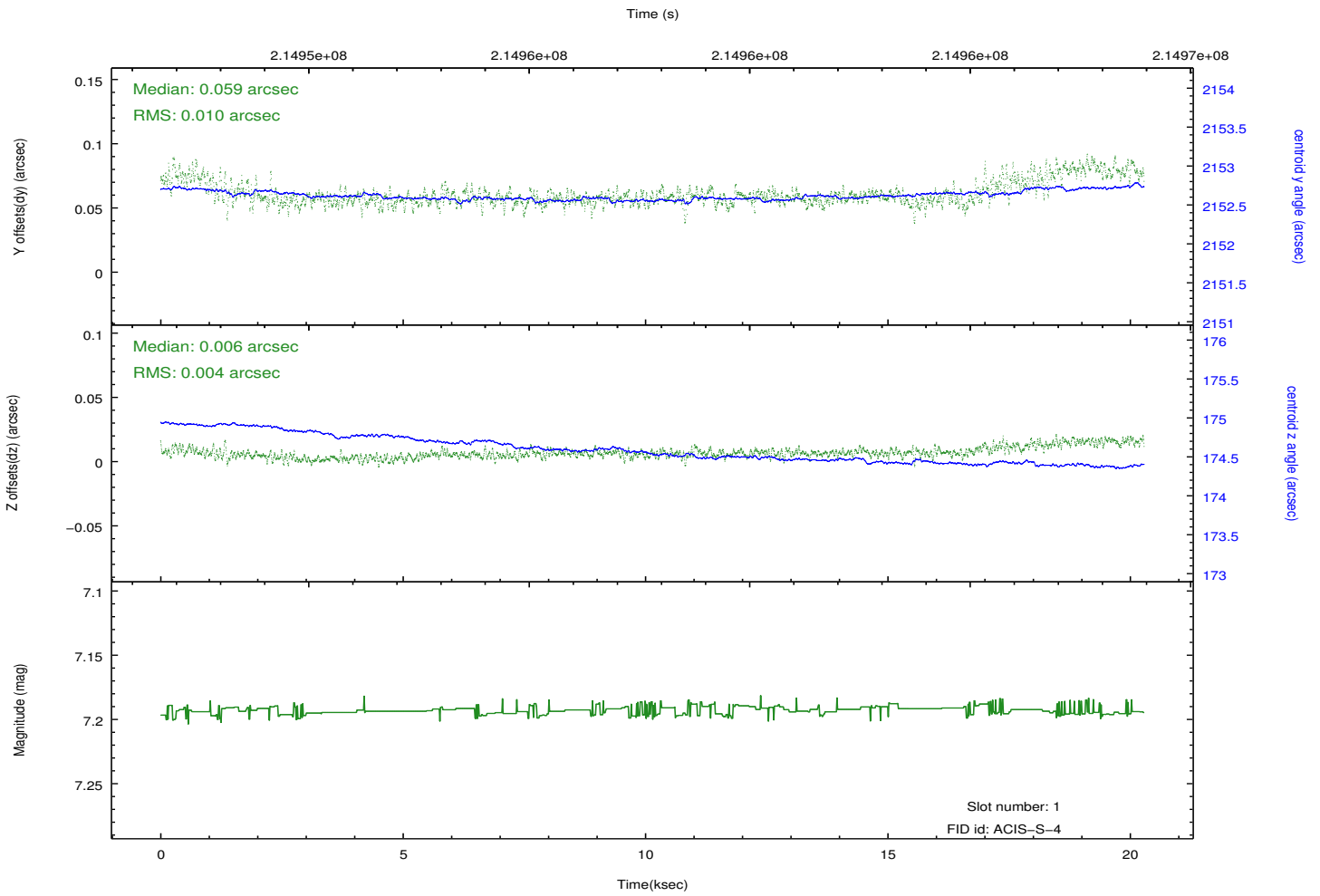
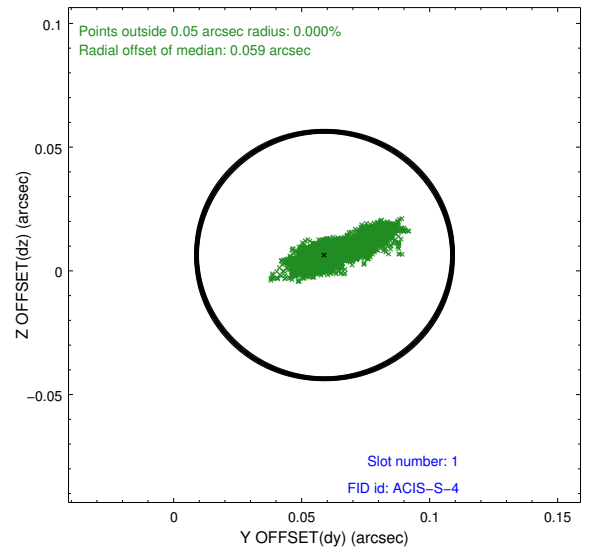
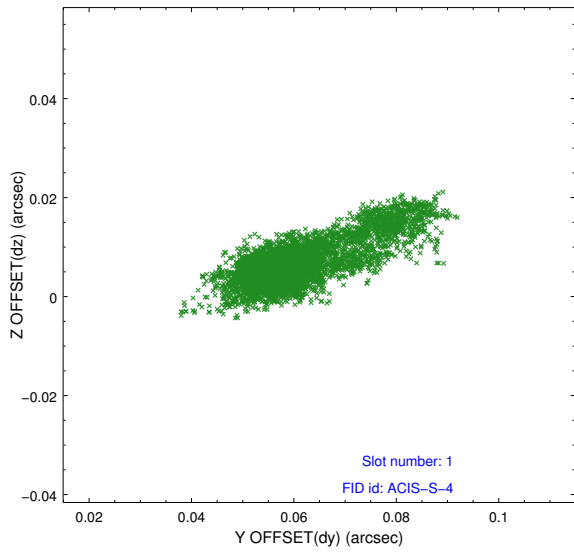


## 2.5 FID Slots

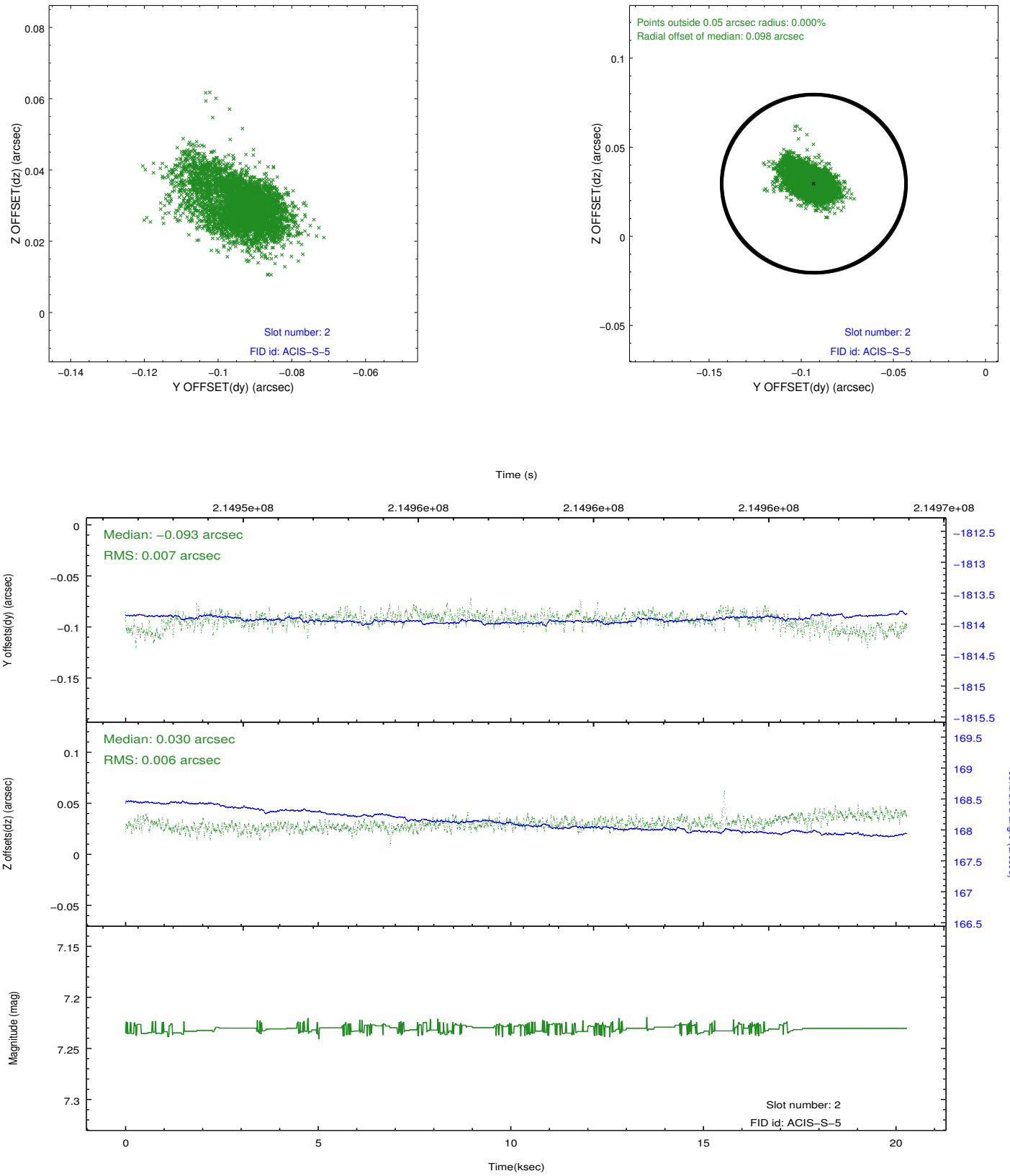
### 2.5.1 Slot 0



## 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)      | 2013.01.03 |
| V&V Edition                | 1          |
| V&V Disposition and Status | OK         |
| V&V Charge Time            | 20.278     |

## A.2 Comments