

# V&V Reference Report

## L2 ASCDS Version : 8.4.4

Observation 9508 - L2 Version 2  
Chandra X-Ray Center

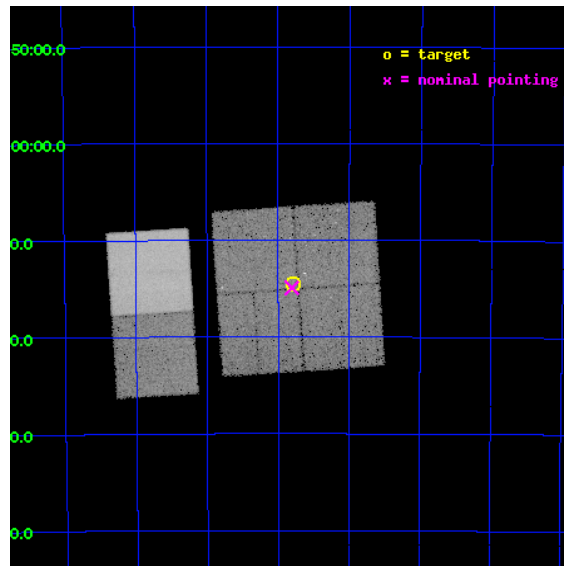
L2 Processing Date : May 15 2012

## Contents

|          |                               |           |
|----------|-------------------------------|-----------|
| <b>1</b> | <b>Front</b>                  | <b>2</b>  |
| <b>2</b> | <b>OBI</b>                    | <b>3</b>  |
| 2.1      | OBI . . . . .                 | 3         |
| 2.1.1    | Images . . . . .              | 3         |
| 2.1.2    | Bias . . . . .                | 3         |
| 2.1.3    | Parameters . . . . .          | 4         |
| 2.1.4    | Events . . . . .              | 4         |
| 2.2      | Compared Parameters . . . . . | 5         |
| 2.3      | Aspect . . . . .              | 6         |
| 2.4      | Star Slots . . . . .          | 9         |
| 2.4.1    | Slot 3 . . . . .              | 9         |
| 2.4.2    | Slot 4 . . . . .              | 10        |
| 2.4.3    | Slot 5 . . . . .              | 11        |
| 2.4.4    | Slot 6 . . . . .              | 12        |
| 2.4.5    | Slot 7 . . . . .              | 13        |
| 2.5      | FID Slots . . . . .           | 14        |
| 2.5.1    | Slot 0 . . . . .              | 14        |
| 2.5.2    | Slot 1 . . . . .              | 15        |
| 2.5.3    | Slot 2 . . . . .              | 16        |
| <b>A</b> | <b>Summary</b>                | <b>17</b> |
| A.1      | Status . . . . .              | 17        |
| A.2      | Comments . . . . .            | 17        |

# 1 Front

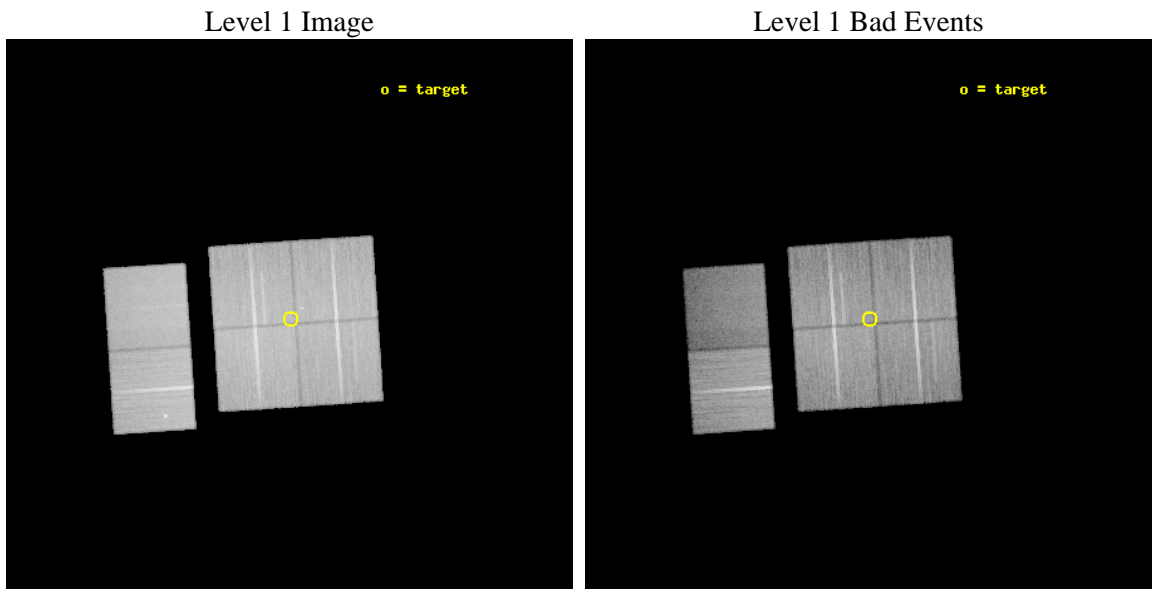
|          |  |   |
|----------|--|---|
| seq_num  | 900840   | Sequence number                             |
| obs_id   | 9508   | Observation id                              |
| title    | The Great Nebula in Carina: Protoplanetary Disks to Starburst Galaxies | Proposal title                              |
| observer | Dr. Leisa Townsley   | Principal investigator                      |
| object   | Carina South Pillars Ptg 3   | Source name                                 |
| dtycycle | 0  | &#160                                       |
| cycle    | P  | events from which exps?<br>Prim/Second/Both |
| ra_targ  | 162.197917   | Observer's specified target RA [deg]        |
| dec_targ | -60.241028   | Observer's specified target Dec [deg]       |
| ra_nom   | 162.20170971562  | Nominal RA [deg]                            |
| dec_nom  | -60.248868302093   | Nominal Dec [deg]                           |
| roll_nom | 266.21198125157  | Nominal Roll [deg]                          |
| revision | 2  | Processing version of data                  |
| ontime   | 36038.358865559  | Sum of GTIs [s]                             |
| livetime | 35582.019465909  | Livetime [s]                                |
| ontime0  | 36041.599865794  | Sum of GTIs [s]                             |
| ontime1  | 36035.117865324  | Sum of GTIs [s]                             |
| ontime2  | 36035.117885232  | Sum of GTIs [s]                             |
| ontime3  | 36038.358865559  | Sum of GTIs [s]                             |
| ontime6  | 36041.599865794  | Sum of GTIs [s]                             |
| ontime7  | 36038.358905375  | Sum of GTIs [s]                             |
| l2events | 236054   | Number of level 2 events                    |



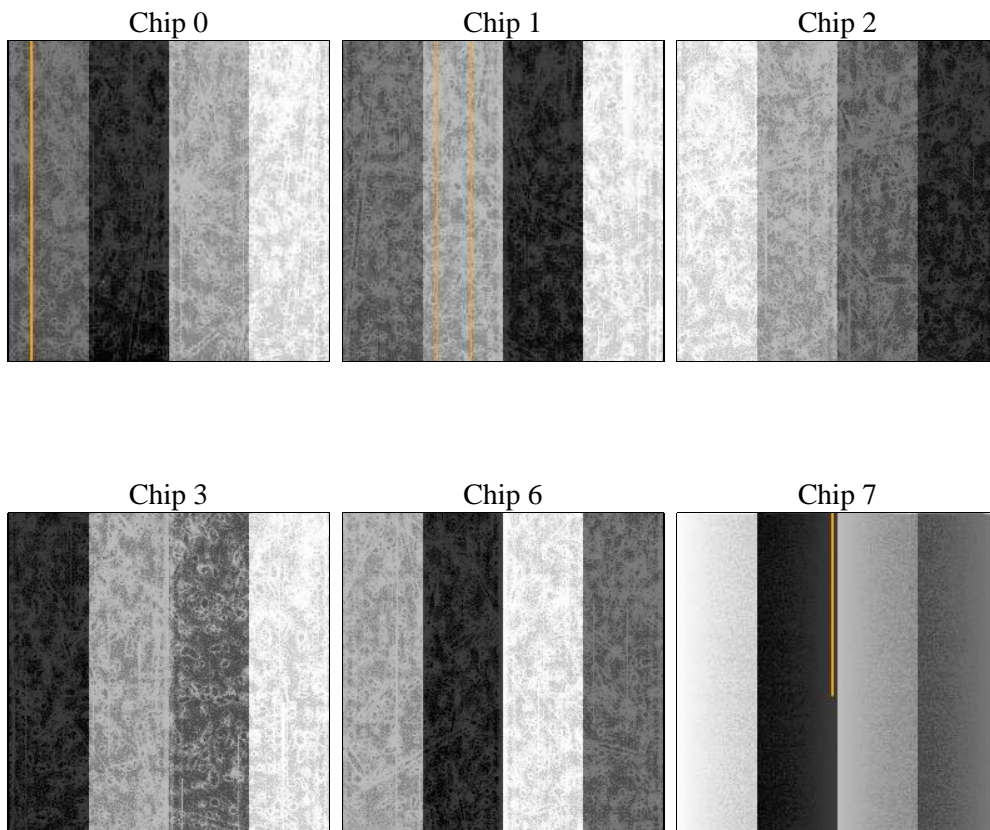
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

|          |                     |                                |                |                 |   |
|----------|---------------------|--------------------------------|----------------|-----------------|---|
| obi_num  | 1                   | Obi number                     | sched_exp_time | 36000.000000    | [s] Scheduled observation exposure time |
| ascdsver | 8.4.4               | Processing system revision     | ontime         | 36038.358865559 | Sum of GTIs [s]                         |
| caldbver | 4.4.9               | &#160                          | ontime0        | 36041.599865794 | Sum of GTIs [s]                         |
| date     | 2012-05-15T16:13:15 | Date and time of file creation | ontime1        | 36035.117865324 | Sum of GTIs [s]                         |
| revision | 2                   | Processing version of data     | ontime2        | 36035.117885232 | Sum of GTIs [s]                         |
|          |                     |                                | ontime3        | 36038.358865559 | Sum of GTIs [s]                         |
|          |                     |                                | ontime6        | 36041.599865794 | Sum of GTIs [s]                         |
|          |                     |                                | ontime7        | 36038.358905375 | Sum of GTIs [s]                         |
|          |                     |                                | l1events       | 1557690         | Number of level 1 events                |

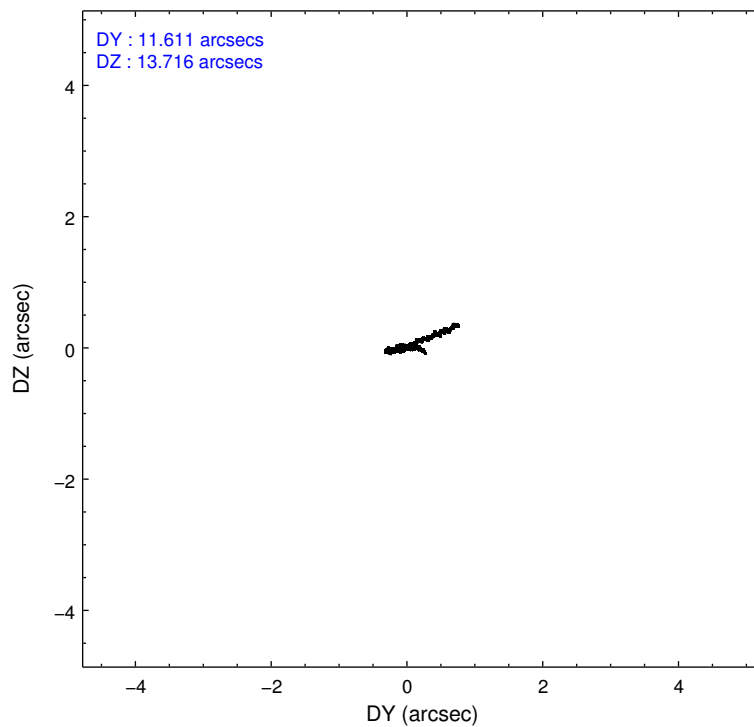
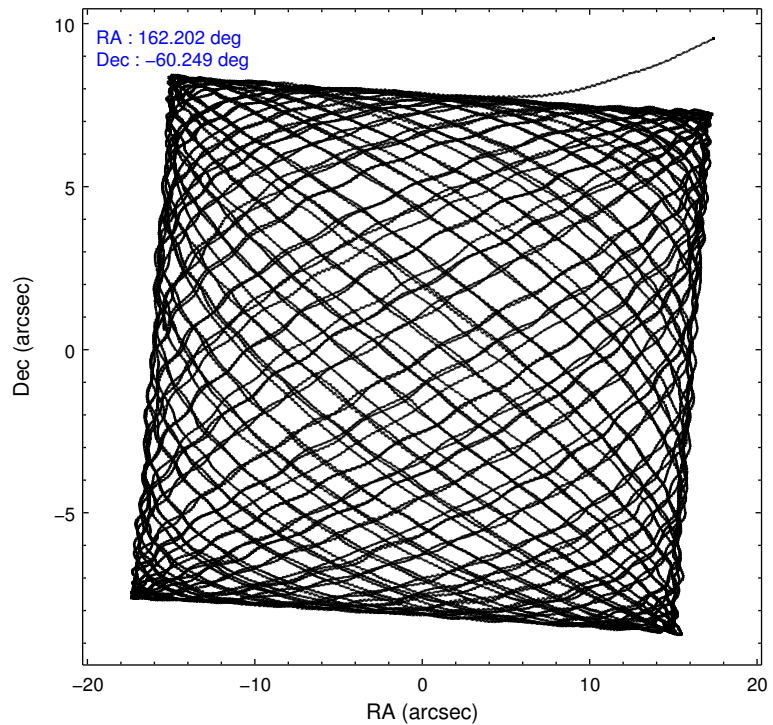
### 2.1.4 Events

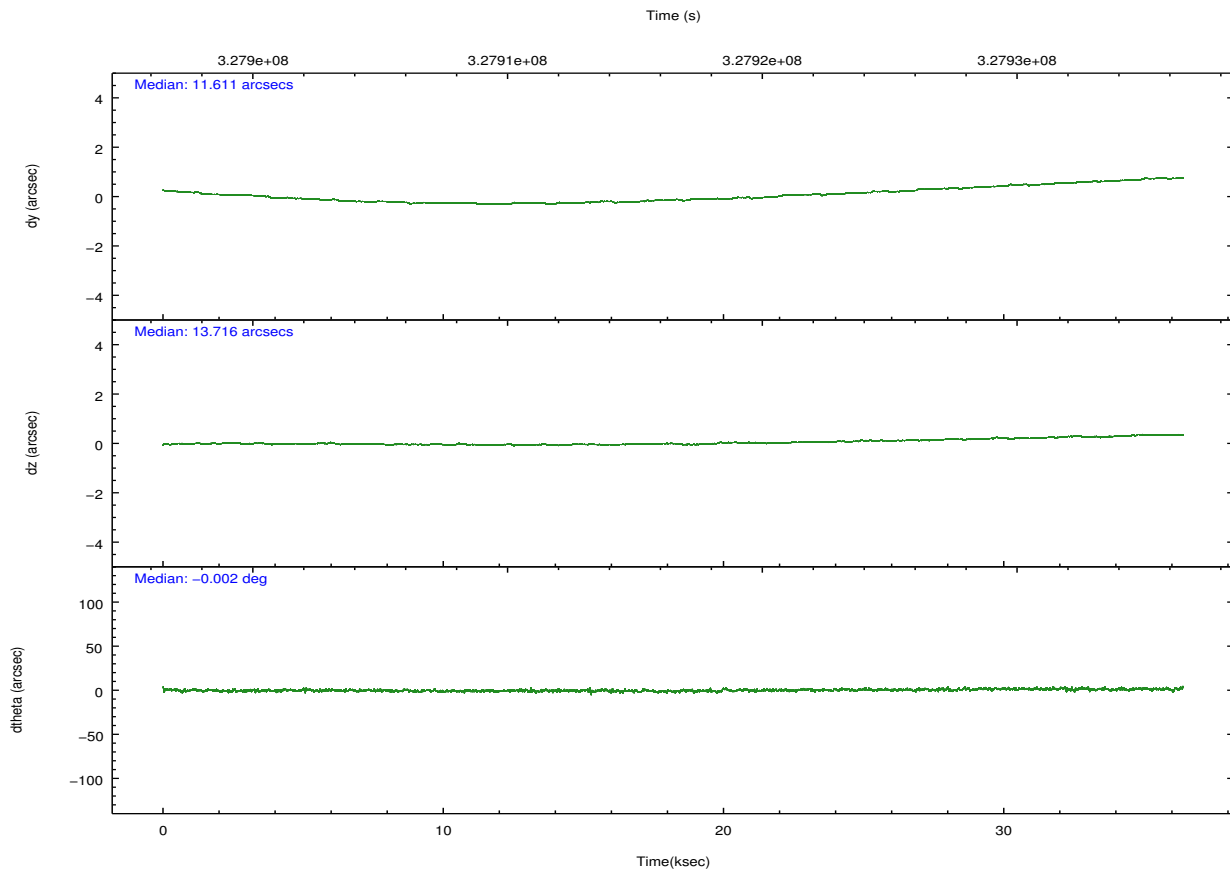
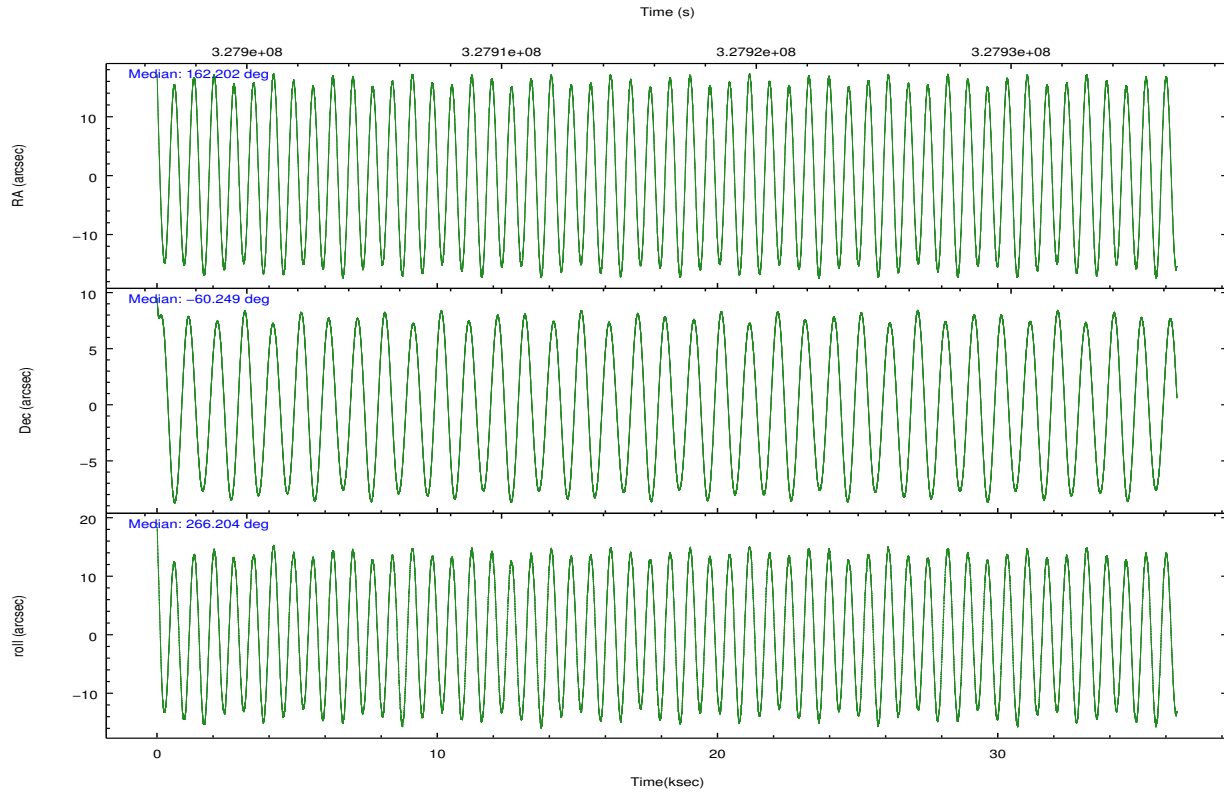
|                 | ccd 0  | ccd 1  | ccd 2  | ccd 3  | ccd 6  | ccd 7  |                | ccd 0  | ccd 1  | ccd 2  | ccd 3  | ccd 6  | ccd 7  |
|-----------------|--------|--------|--------|--------|--------|--------|----------------|--------|--------|--------|--------|--------|--------|
| level 1 events  | 243557 | 248010 | 275337 | 258413 | 276911 | 255462 | grade 0 events | 10137  | 11272  | 10461  | 10677  | 10778  | 13287  |
| rejected events | 216864 | 218695 | 248823 | 232144 | 246772 | 128870 |                | 4%     | 4%     | 3%     | 4%     | 3%     | 5%     |
| rejected %      | 89%    | 88%    | 90%    | 89%    | 89%    | 50%    | grade 1 events | 154    | 130    | 136    | 167    | 126    | 398    |
|                 |        |        |        |        |        |        |                | 0%     | 0%     | 0%     | 0%     | 0%     | 0%     |
|                 |        |        |        |        |        |        | grade 2 events | 6305   | 6307   | 6155   | 5466   | 7967   | 26991  |
|                 |        |        |        |        |        |        |                | 2%     | 2%     | 2%     | 2%     | 2%     | 10%    |
|                 |        |        |        |        |        |        | grade 3 events | 2862   | 3124   | 2685   | 2710   | 2915   | 11839  |
|                 |        |        |        |        |        |        |                | 1%     | 1%     | 0%     | 1%     | 1%     | 4%     |
|                 |        |        |        |        |        |        | grade 4 events | 2687   | 3155   | 2836   | 2689   | 2880   | 12102  |
|                 |        |        |        |        |        |        |                | 1%     | 1%     | 1%     | 1%     | 1%     | 4%     |
|                 |        |        |        |        |        |        | grade 5 events | 7578   | 8850   | 7328   | 9103   | 9438   | 27472  |
|                 |        |        |        |        |        |        |                | 3%     | 3%     | 2%     | 3%     | 3%     | 10%    |
|                 |        |        |        |        |        |        | grade 6 events | 4703   | 5459   | 4380   | 4727   | 5605   | 62384  |
|                 |        |        |        |        |        |        |                | 1%     | 2%     | 1%     | 1%     | 2%     | 24%    |
|                 |        |        |        |        |        |        | grade 7 events | 209131 | 209713 | 241356 | 222874 | 237202 | 100989 |
|                 |        |        |        |        |        |        |                | 85%    | 84%    | 87%    | 86%    | 85%    | 39%    |

## 2.2 Compared Parameters

| Parameter                         | Planned             | Actual                | Parameter                             | Planned   | Actual  |
|-----------------------------------|---------------------|-----------------------|---------------------------------------|-----------|---------|
| Instrument                        | ACIS                | ACIS                  | Obspar format version number          | 7         | 7       |
| Detector                          | ACIS-012367         | ACIS-012367           | Obspar file type                      | PREDICTED | ACTUAL  |
| Grating                           | NONE                | NONE                  | Obspar update status                  | NONE      | UPDATED |
| Data mode                         | VFAINT              | VFAINT                | CCD I0 on                             | Y         | Y       |
| Observation mode                  | POINTING            | POINTING              | CCD I1 on                             | Y         | Y       |
| [deg] Pointing RA                 | 162.177060          | 162.201709715621      | CCD I2 on                             | Y         | Y       |
| [deg] Pointing Dec                | -60.224271          | -60.24886830209279    | CCD I3 on                             | Y         | Y       |
| [deg] Pointing Roll               | 265.981896          | 266.2119812515672     | CCD S0 on                             | N         | N       |
| [mm] SIM focus pos                | -0.782348           | -0.7809083437167272   | CCD S1 on                             | N         | N       |
| [mm] SIM defocus                  | 0                   | 0.001439871863259334  | CCD S2 on                             | O1        | Y       |
| [mm] SIM translation stage pos    | -233.592463         | -233.5874344608287    | CCD S3 on                             | O2        | Y       |
| [mm] SIM translation stage offset | 0                   | -0.005018542100998502 | CCD S4 on                             | N         | N       |
| [s] Observation start time (MET)  | 327898696.184000    | 327897589.42889       | CCD S5 on                             | N         | N       |
| Observation start date            | 2008-05-23T02:57:11 | 2008-05-23T02:39:49   | Number of optional ACIS chips dropped | 0         | 0       |
| [s] Observation end time (MET)    | 327934696.184000    | 327935645.63075       | On-chip summing requested             | N         | N       |
| Observation end date              | 2008-05-23T12:57:11 | 2008-05-23T13:14:05   | Subarray requested                    | NONE      | NONE    |
| Read mode                         | TIMED               | TIMED                 | Alternating exposures requested       | N         | N       |
|                                   |                     |                       | [s] Primary exposure time             | 0.000000  | 3.2     |

## 2.3 Aspect



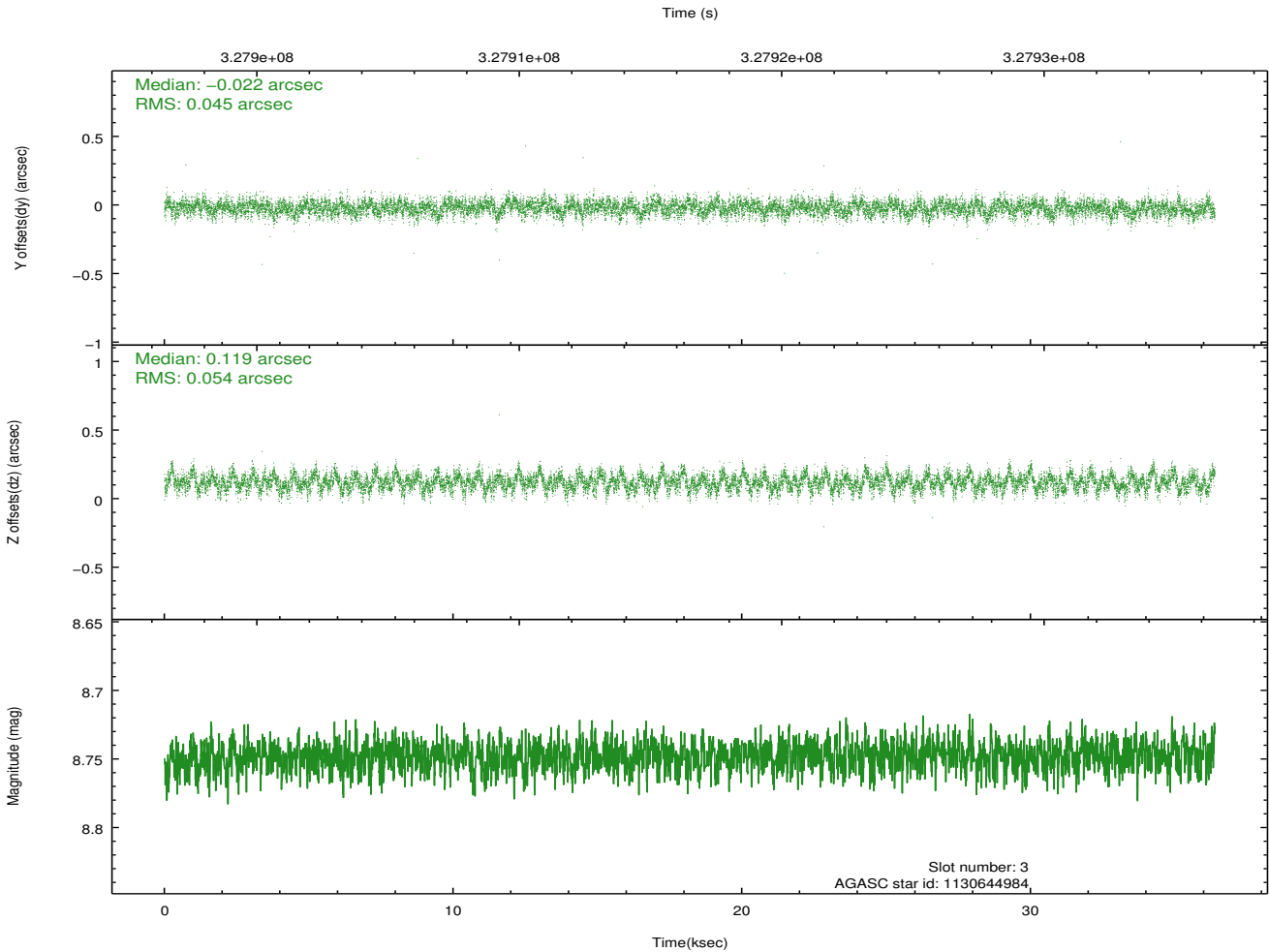
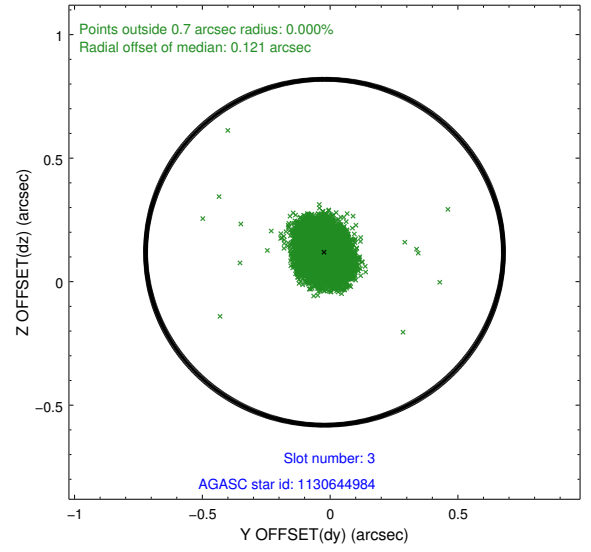
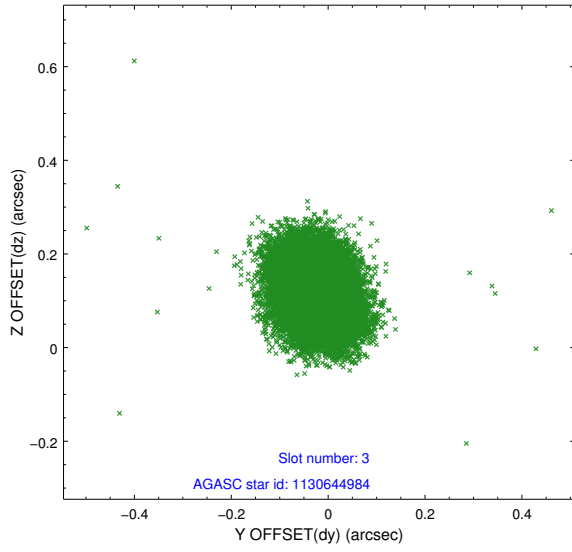


### Slot Statistics

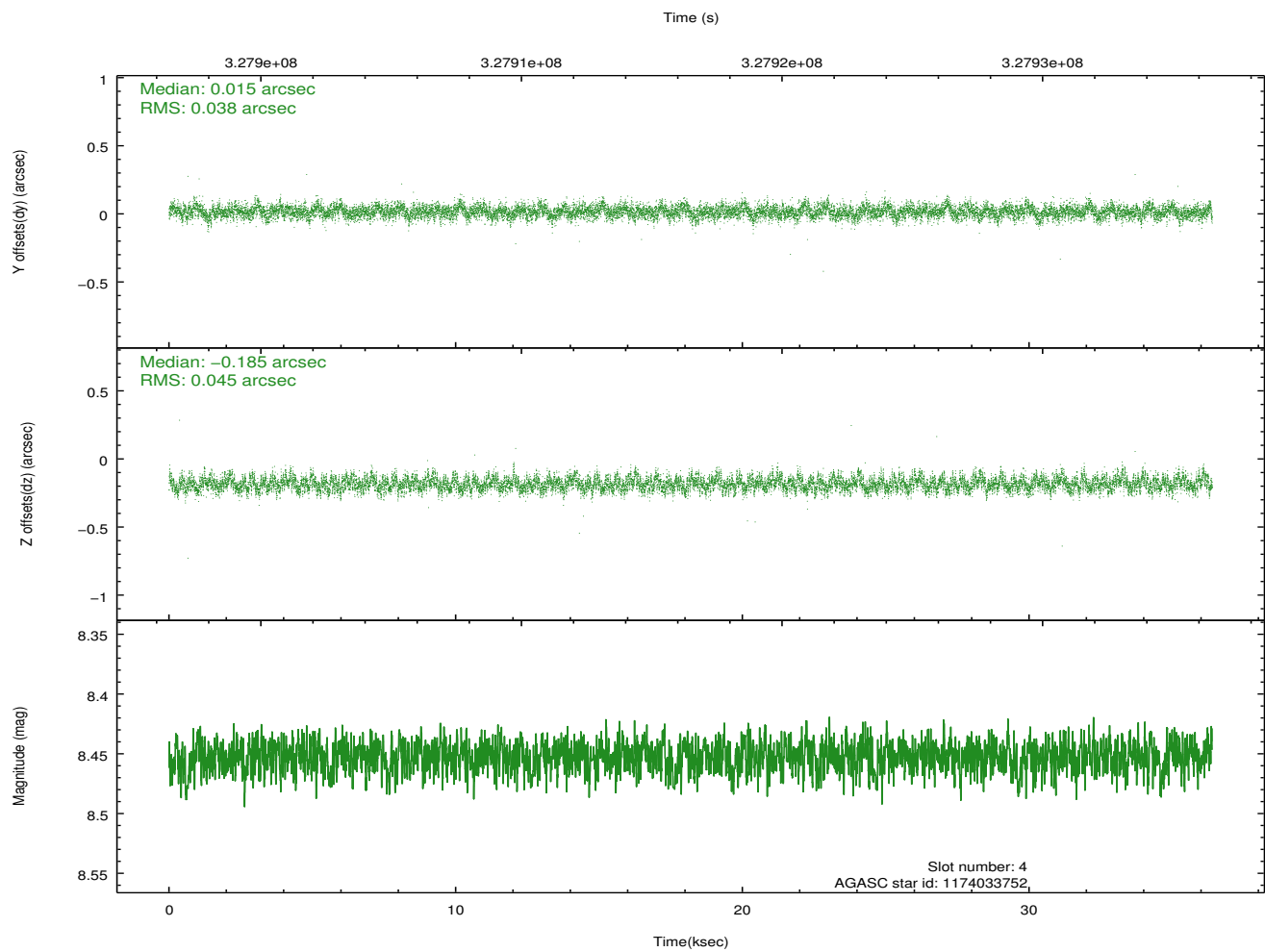
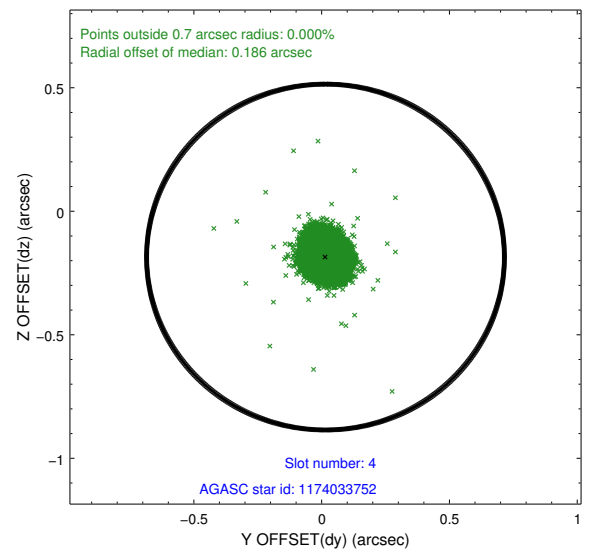
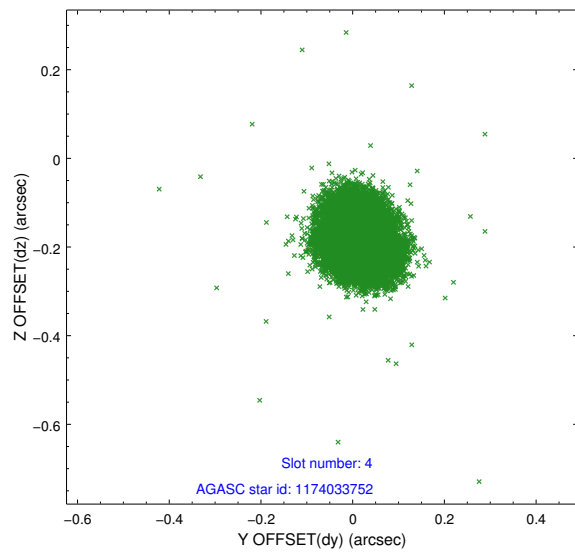
| slot | status | id         | mag  | n_pts | med_dy | med_dz | dr1   | dr2   | ra         | dec        | mean_y   | mean_z   |
|------|--------|------------|------|-------|--------|--------|-------|-------|------------|------------|----------|----------|
| 0    | FID    | ACIS-I-1   | 7.01 | 8875  | -0.057 | 0.082  | 0.011 | 0.017 | 0.000000   | 0.000000   | 927.81   | -837.26  |
| 1    | FID    | ACIS-I-2   | 6.92 | 8876  | -0.130 | -0.085 | 0.008 | 0.013 | 0.000000   | 0.000000   | -766.34  | -843.88  |
| 2    | FID    | ACIS-I-4   | 6.95 | 8873  | 0.089  | 0.070  | 0.009 | 0.016 | 0.000000   | 0.000000   | 2147.84  | 1062.50  |
| 3    | GUIDE  | 1130644984 | 8.75 | 17743 | -0.022 | 0.119  | 0.074 | 0.120 | 162.123834 | -59.745452 | -1712.29 | -217.00  |
| 4    | GUIDE  | 1174033752 | 8.45 | 17741 | 0.015  | -0.185 | 0.062 | 0.100 | 162.418977 | -60.164599 | -243.58  | 417.19   |
| 5    | GUIDE  | 1174163024 | 7.68 | 17741 | -0.004 | 0.079  | 0.060 | 0.097 | 163.312914 | -60.814777 | 1998.21  | 2139.81  |
| 6    | GUIDE  | 1174012960 | 7.16 | 17751 | -0.070 | -0.023 | 0.049 | 0.078 | 160.855674 | -60.332270 | 577.13   | -2319.35 |
| 7    | GUIDE  | 1174021440 | 8.41 | 17740 | 0.078  | 0.011  | 0.066 | 0.106 | 160.869011 | -60.314711 | 511.85   | -2301.91 |

## 2.4 Star Slots

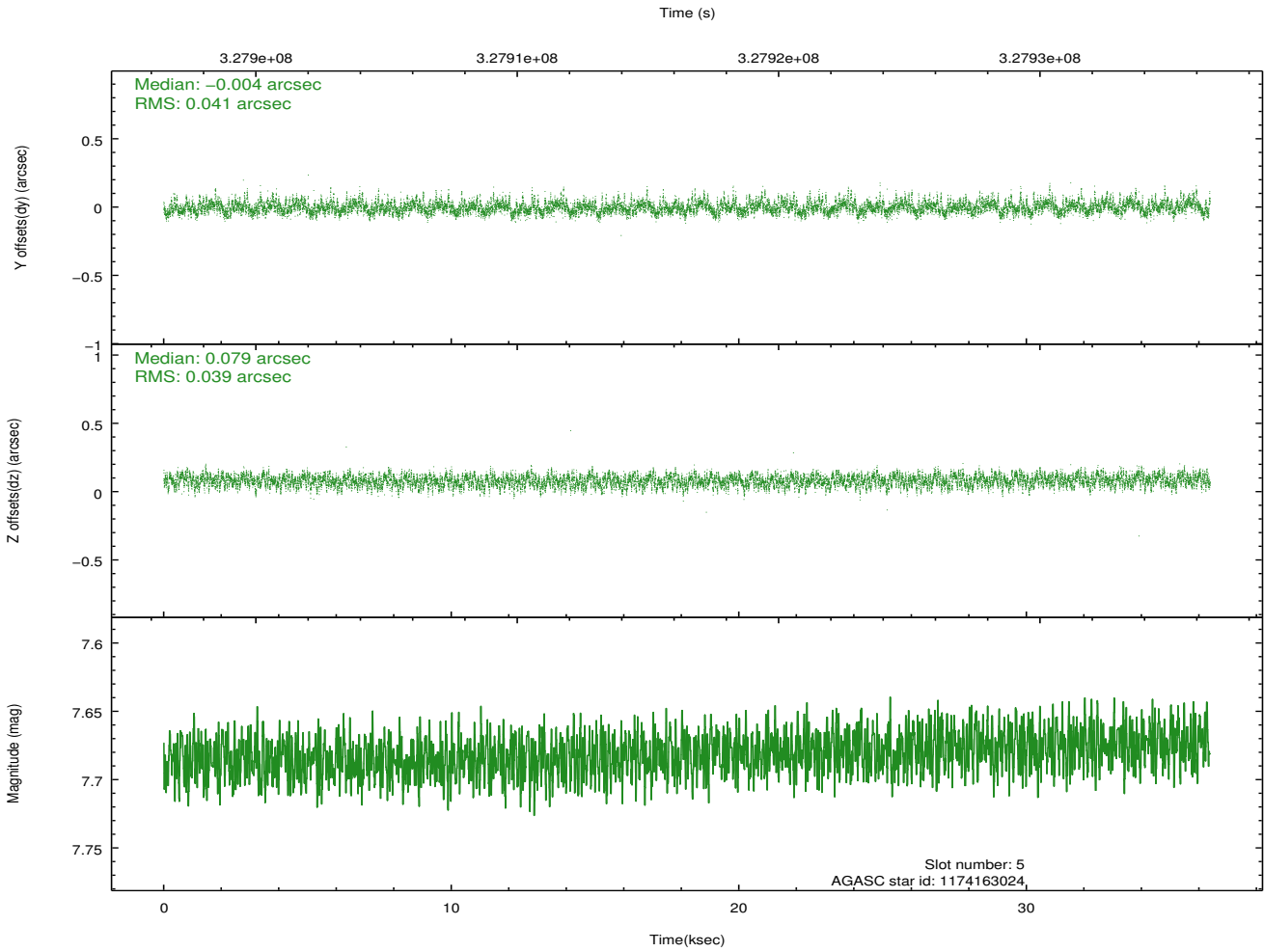
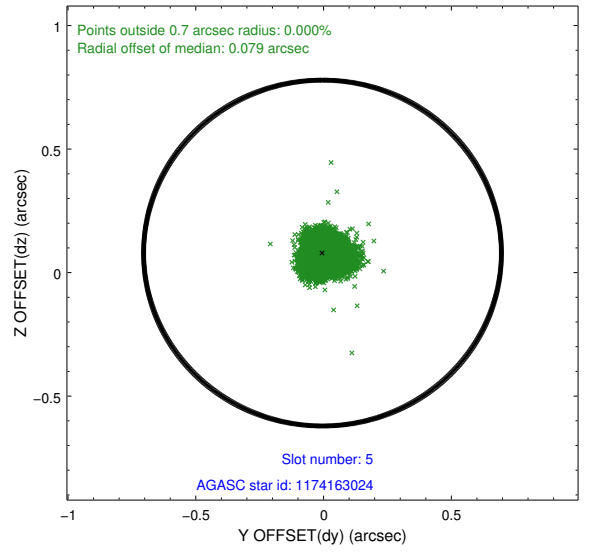
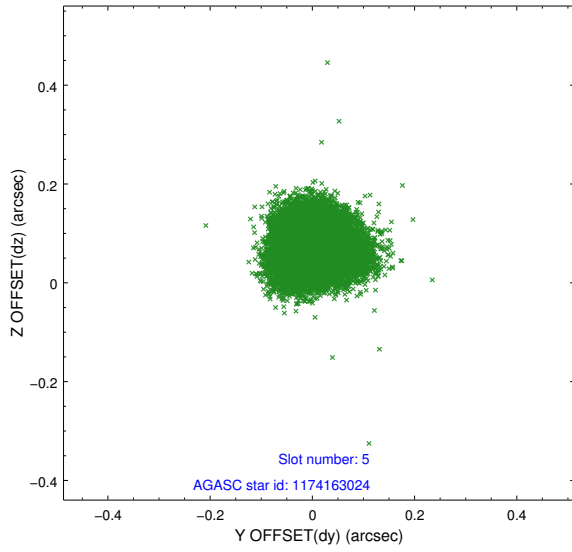
### 2.4.1 Slot 3



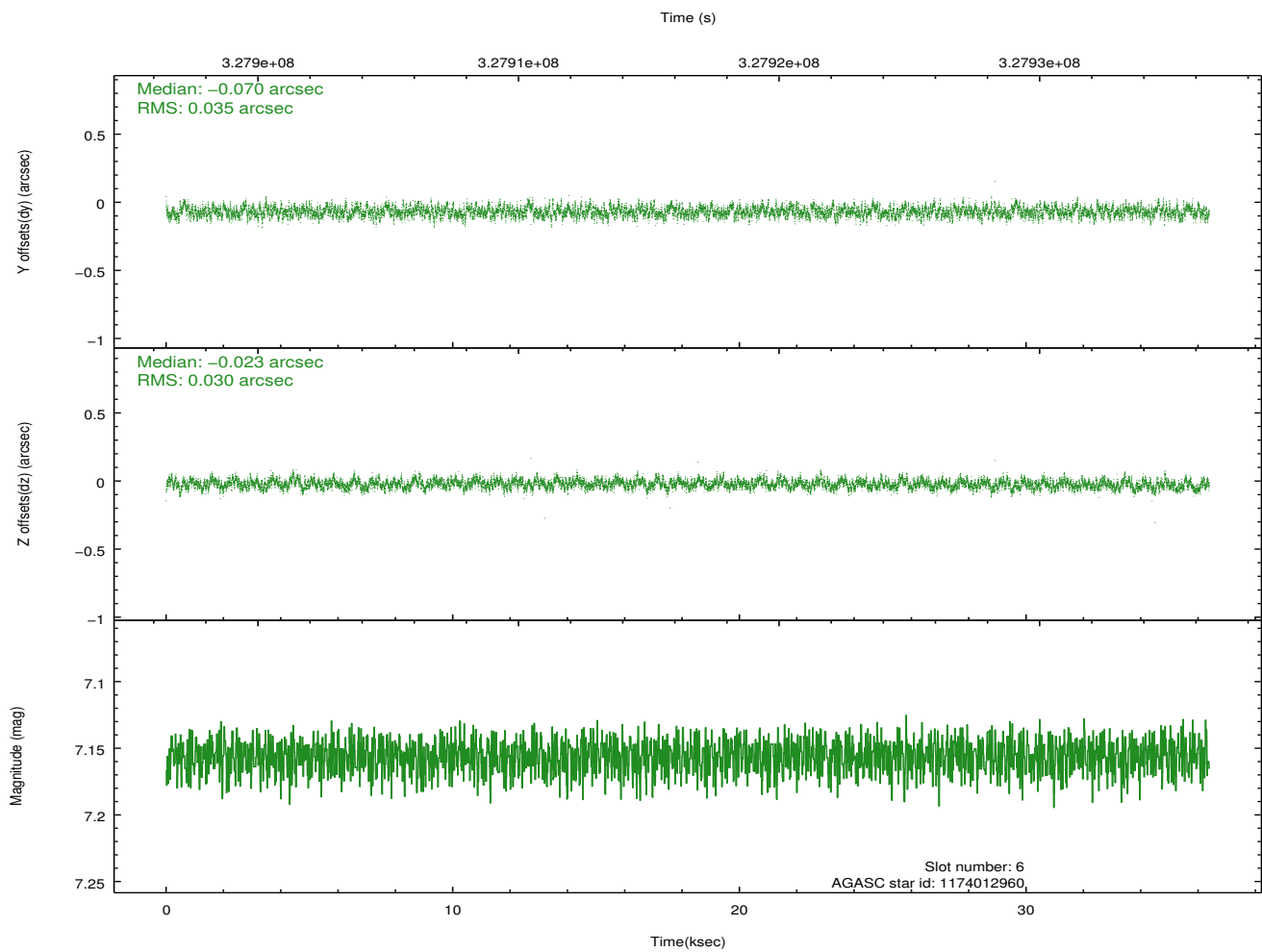
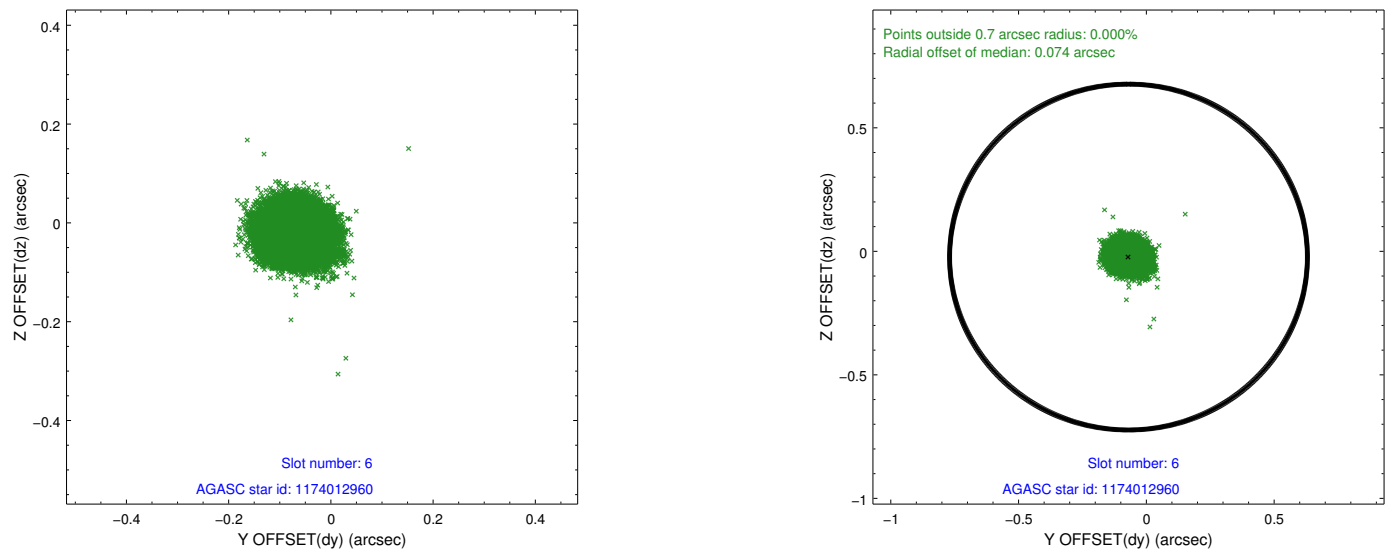
## 2.4.2 Slot 4



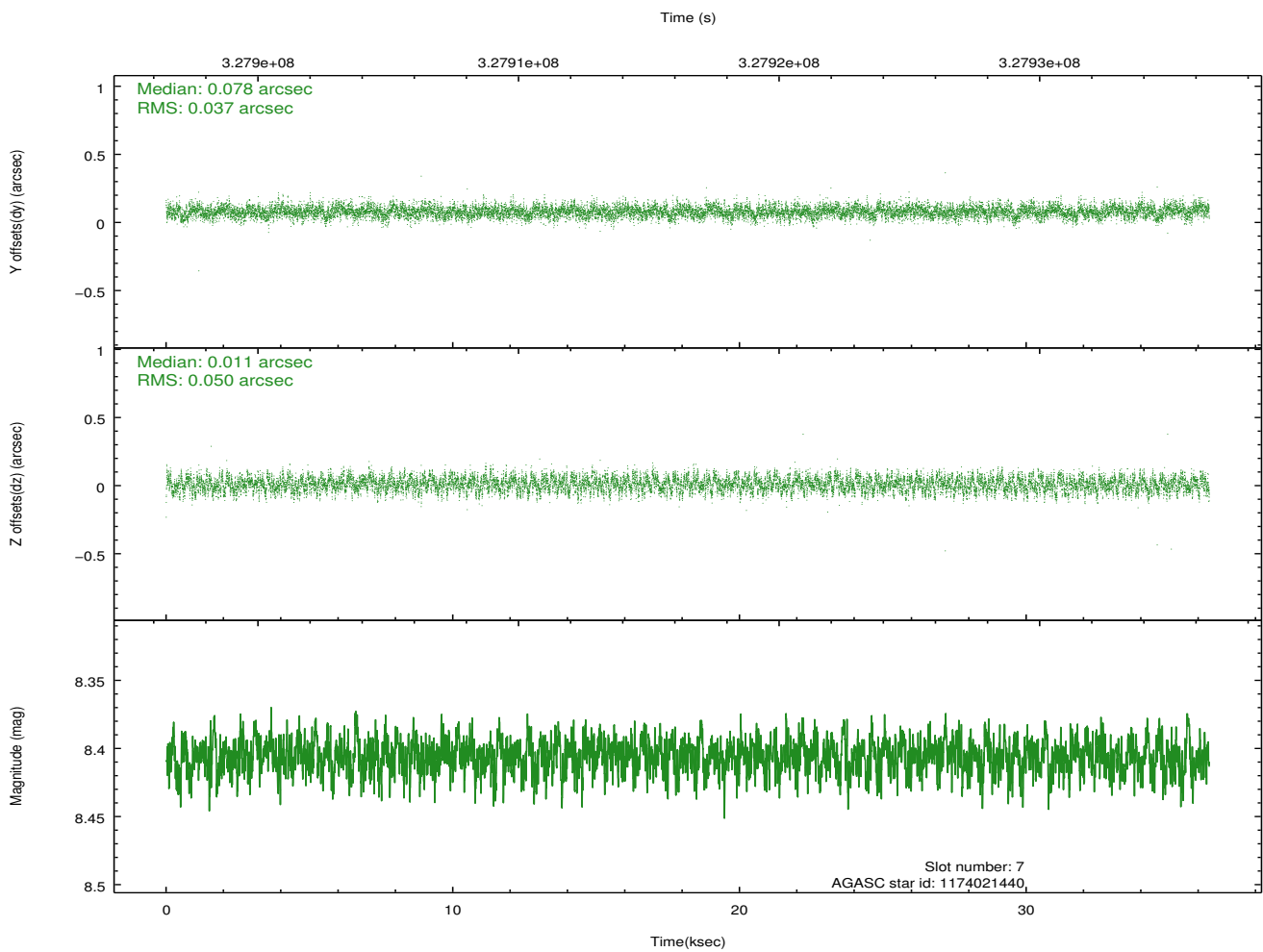
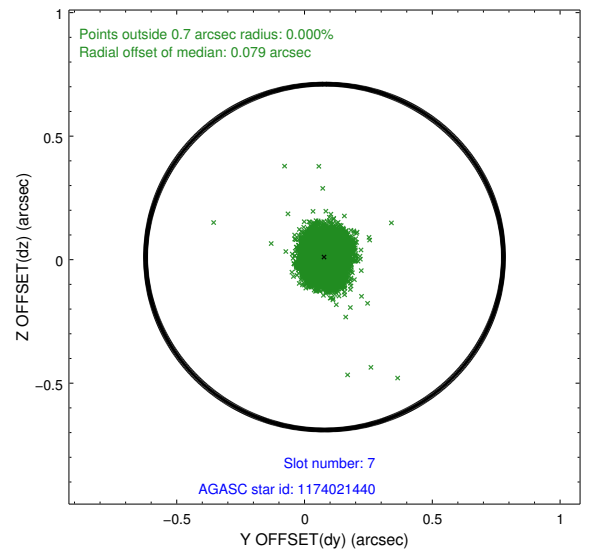
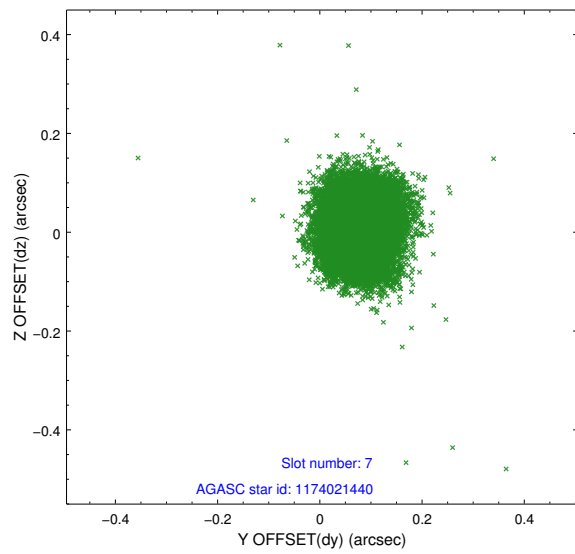
### 2.4.3 Slot 5



## 2.4.4 Slot 6

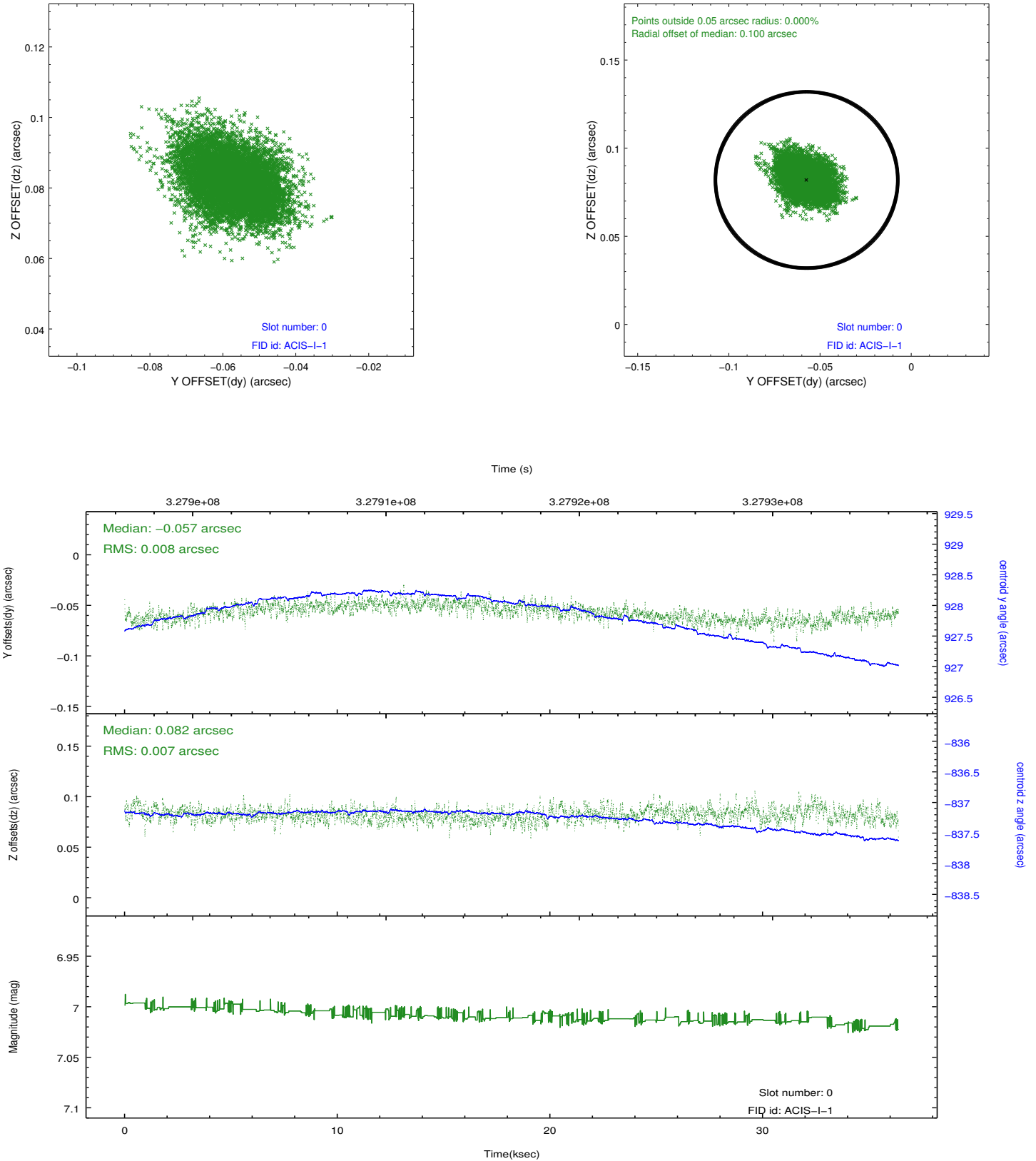


## 2.4.5 Slot 7

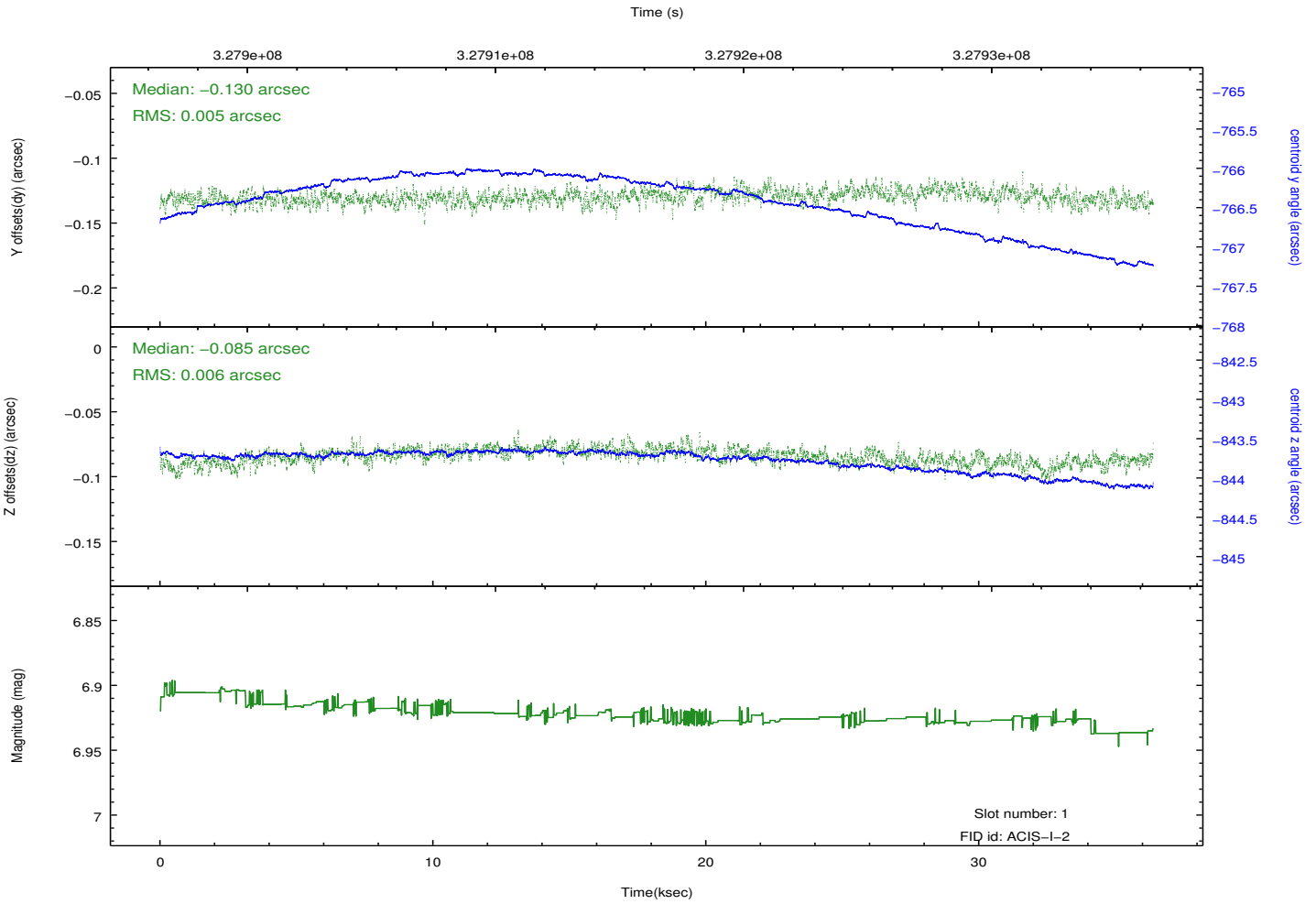
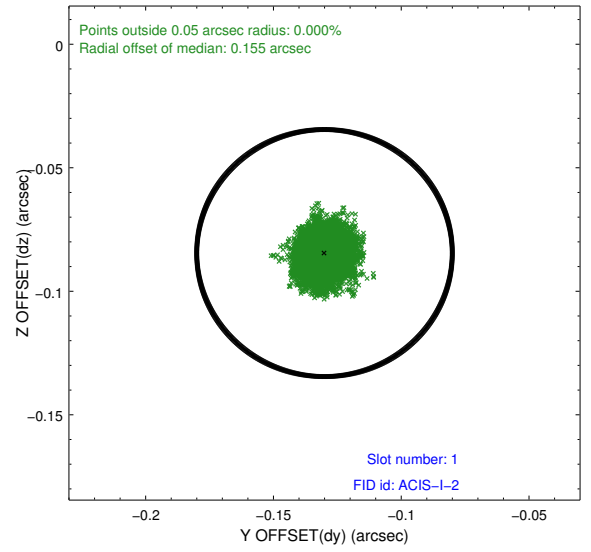
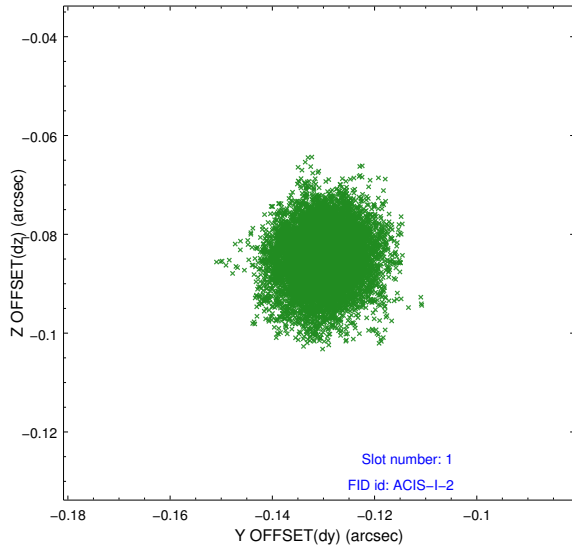


## 2.5 FID Slots

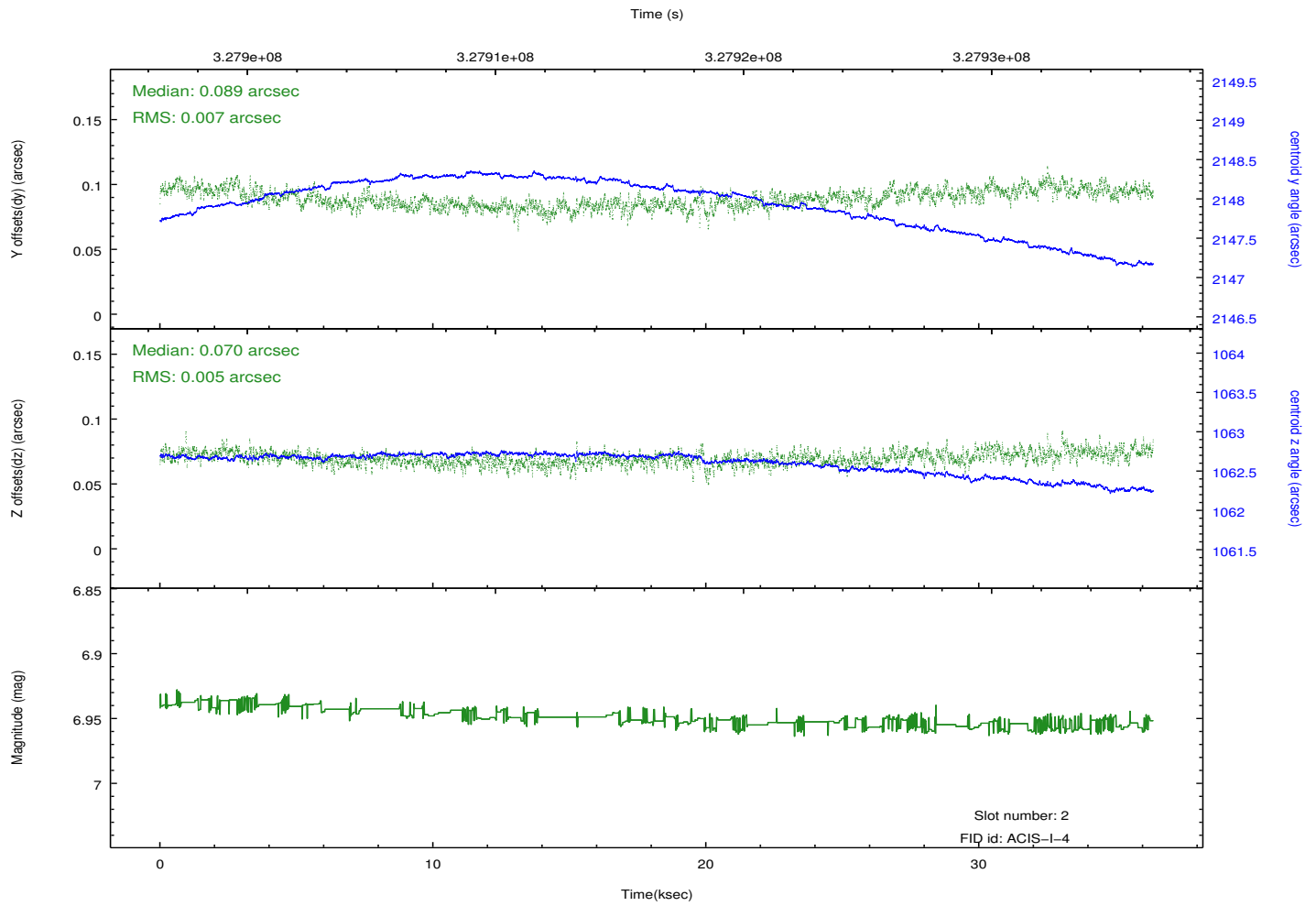
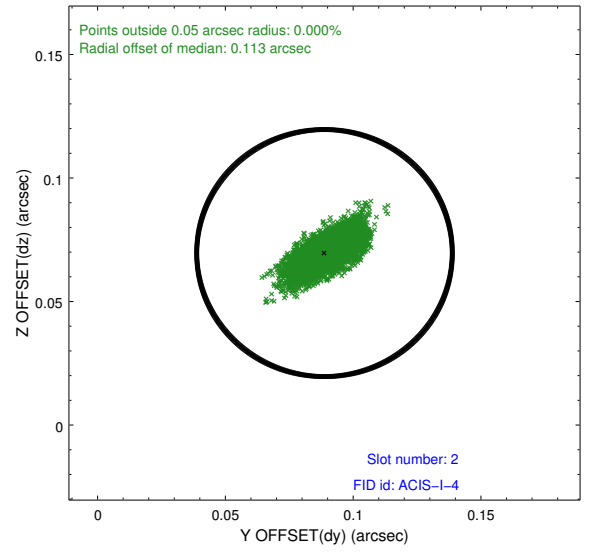
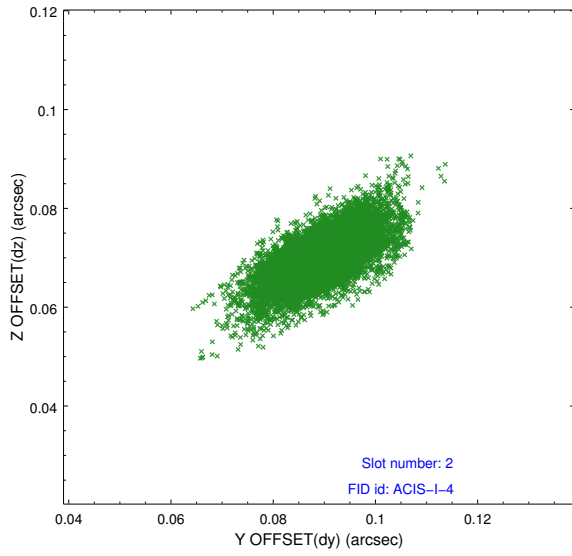
### 2.5.1 Slot 0



## 2.5.2 Slot 1



### 2.5.3 Slot 2



## A Summary

### A.1 Status

|                            |               |
|----------------------------|---------------|
| V&V Scientist              | Beth Sundheim |
| V&V Date (YYYY-MM-DD)      | 2012.05.21    |
| V&V Edition                | 1             |
| V&V Disposition and Status | OK            |
| V&V Charge Time            | 36.0383588    |

### A.2 Comments