

# V&V Reference Report

## L2 ASCDS Version : 10.4.3.1

Observation 17076 - L2 Version 2  
Chandra X-Ray Center

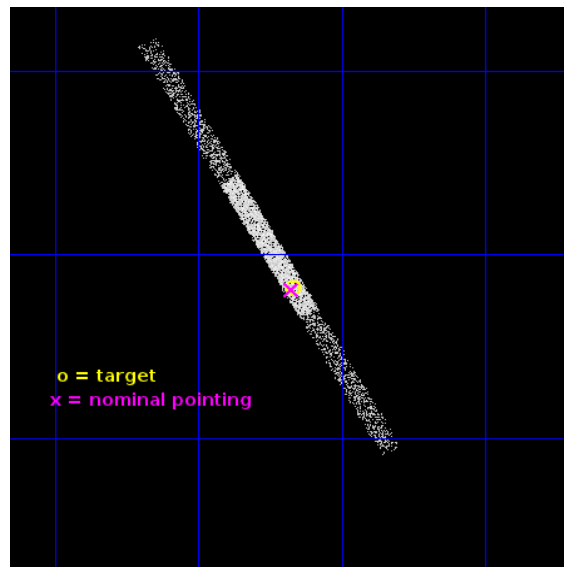
L2 Processing Date : Apr 27 2016

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# 1 Front

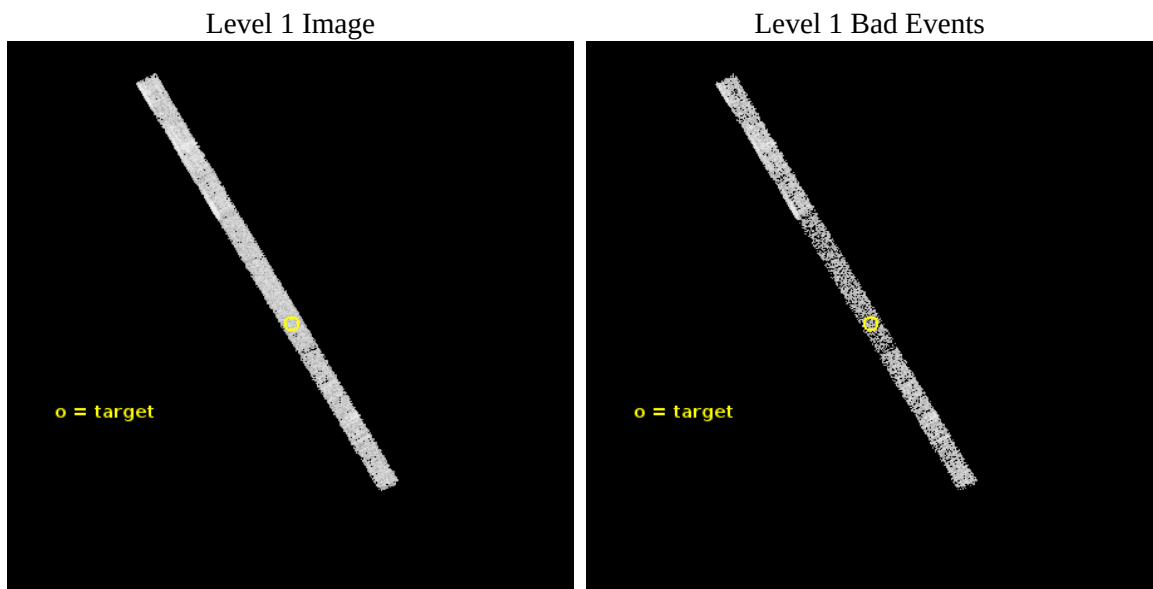
|          |                                                            |                                             |
|----------|------------------------------------------------------------|---------------------------------------------|
| seq_num  | 703080                                                     | Sequence number                             |
| obs_id   | 17076                                                      | Observation id                              |
| title    | MERGER-TRIGGERED NUCLEAR ACTIVITY AT SUB-KILOPARSEC SCALES | Proposa                                     |
| observer | Giuseppina Fabbiano                                        | Principal investigator                      |
| object   | MCG+01-32-049                                              | Source name                                 |
| dtcycle  | 0                                                          | &#160                                       |
| cycle    | P                                                          | events from which exps?<br>Prim/Second/Both |
| ra_targ  | 186.167083                                                 | Observer's specified target RA [deg]        |
| dec_targ | 3.303389                                                   | Observer's specified target Dec [deg]       |
| ra_nom   | 186.16893569527                                            | Nominal RA [deg]                            |
| dec_nom  | 3.3013713897249                                            | Nominal Dec [deg]                           |
| roll_nom | 240.1565833143                                             | Nominal Roll [deg]                          |
| revision | 2                                                          | Processing version of data                  |
| ontime   | 10103.400401592                                            | Sum of GTIs [s]                             |
| livetime | 9456.5709487011                                            | Livetime [s]                                |
| ontime6  | 10103.400401592                                            | Sum of GTIs [s]                             |
| ontime7  | 10103.400401592                                            | Sum of GTIs [s]                             |
| ontime8  | 10103.400401592                                            | Sum of GTIs [s]                             |
| l2events | 6826                                                       | Number of level 2 events                    |



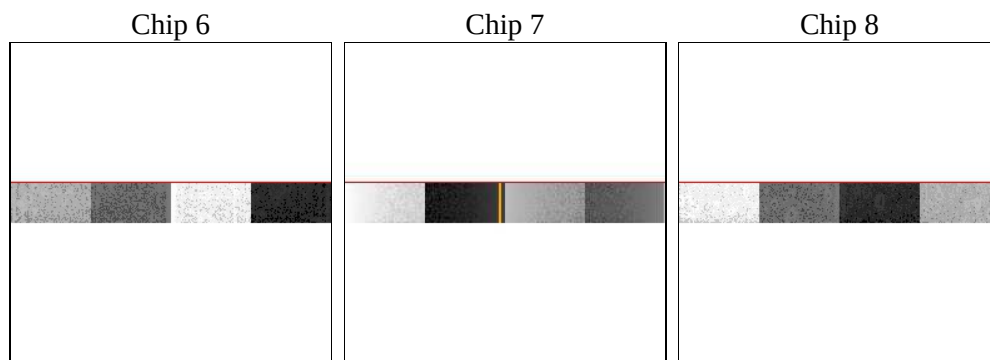
## 2 OBI

### 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    | [s] Scheduled observation exposure time |
| ascdsver | 10.4.3.1            | Processing system revision     | ontime         | 10103.400401592 | Sum of GTIs [s]                         |
| caldsver | 4.7.1               | &#160                          | ontime6        | 10103.400401592 | Sum of GTIs [s]                         |
| date     | 2016-04-27T20:16:07 | Date and time of file creation | ontime7        | 10103.400401592 | Sum of GTIs [s]                         |
| revision | 2                   | Processing version of data     | ontime8        | 10103.400401592 | Sum of GTIs [s]                         |
|          |                     |                                | l1events       | 37035           | Number of level 1 events                |

### 2.1.4 Events

|                 | ccd 6 | ccd 7 | ccd 8 |
|-----------------|-------|-------|-------|
| level 1 events  | 10437 | 10907 | 15691 |
| rejected events | 9259  | 5854  | 12362 |
| rejected %      | 88%   | 53%   | 78%   |

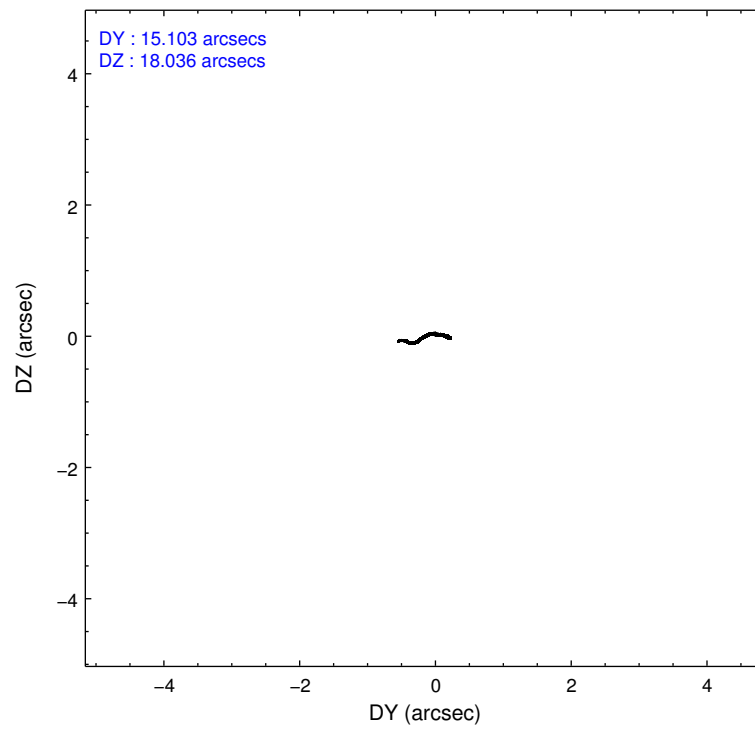
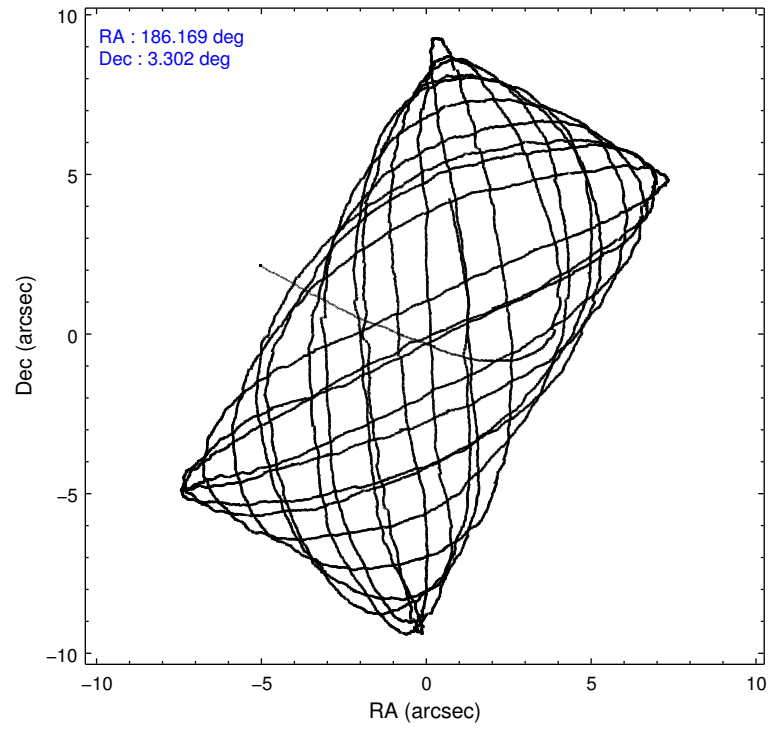
|                | ccd 6 | ccd 7 | ccd 8 |
|----------------|-------|-------|-------|
| grade 0 events | 348   | 512   | 683   |
|                | 3%    | 4%    | 4%    |
| grade 1 events | 3     | 20    | 6     |
|                | 0%    | 0%    | 0%    |
| grade 2 events | 192   | 1068  | 753   |
|                | 1%    | 9%    | 4%    |
| grade 3 events | 195   | 568   | 318   |
|                | 1%    | 5%    | 2%    |
| grade 4 events | 201   | 558   | 331   |
|                | 1%    | 5%    | 2%    |
| grade 5 events | 374   | 1057  | 568   |
|                | 3%    | 9%    | 3%    |
| grade 6 events | 242   | 2347  | 1244  |
|                | 2%    | 21%   | 7%    |
| grade 7 events | 8882  | 4777  | 11788 |
|                | 85%   | 43%   | 75%   |

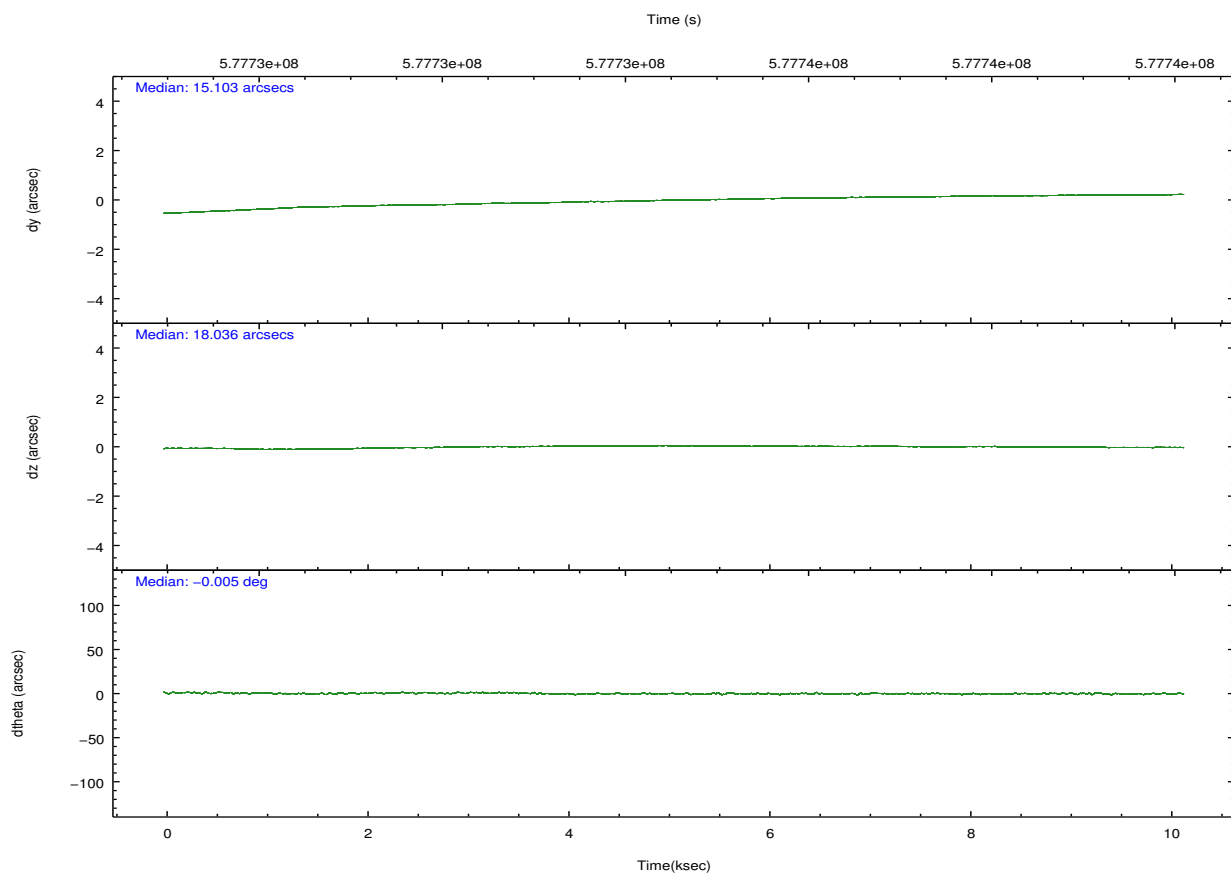
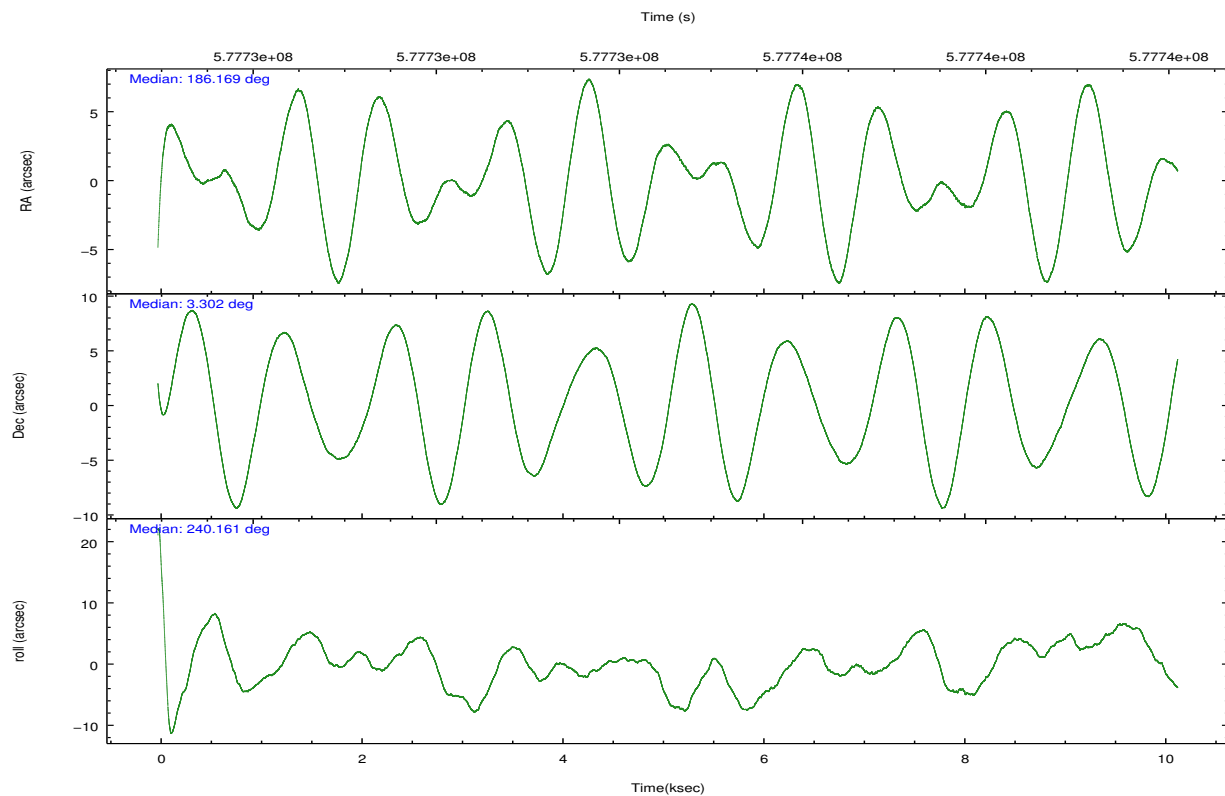


## 2.2 Compared Parameters

| Parameter                         | Planned             | Actual               | Parameter                             | Planned   | Actual  |
|-----------------------------------|---------------------|----------------------|---------------------------------------|-----------|---------|
| Instrument                        | ACIS                | ACIS                 | Obspar format version number          | 7         | 7       |
| Detector                          | ACIS-678            | ACIS-678             | 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                 | 186.168475          | 186.168935695274     | CCD I2 on                             | N         | N       |
| [deg] Pointing Dec                | 3.328818            | 3.301371389724899    | CCD I3 on                             | N         | N       |
| [deg] Pointing Roll               | 239.999920          | 240.1565833143       | CCD S0 on                             | N         | N       |
| [mm] SIM focus pos                | -0.684267           | -0.6828225247311905  | CCD S1 on                             | N         | N       |
| [mm] SIM defocus                  | 0                   | 0.001444936568705701 | CCD S2 on                             | O2        | 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                             | O1        | Y       |
| [s] Observation start time (MET)  | 577729590.184000    | 577728463.72987      | CCD S5 on                             | N         | N       |
| Observation start date            | 2016-04-22T16:25:22 | 2016-04-22T16:07:43  | Number of optional ACIS chips dropped | 0         | 0       |
| [s] Observation end time (MET)    | 577739590.184000    | 577740043.66803      | On-chip summing requested             | N         | N       |
| Observation end date              | 2016-04-22T19:12:02 | 2016-04-22T19:20:43  | Subarray requested                    | CUSTOM    | 1/8     |
| Read mode                         | TIMED               | TIMED                | Subarray start row                    | 449       | 449     |
|                                   |                     |                      | Subarray row count                    | 128       | 128     |
|                                   |                     |                      | Alternating exposures requested       | N         | N       |
|                                   |                     |                      | [s] Primary exposure time             | 0.000000  | 0.6     |

## 2.3 Aspect



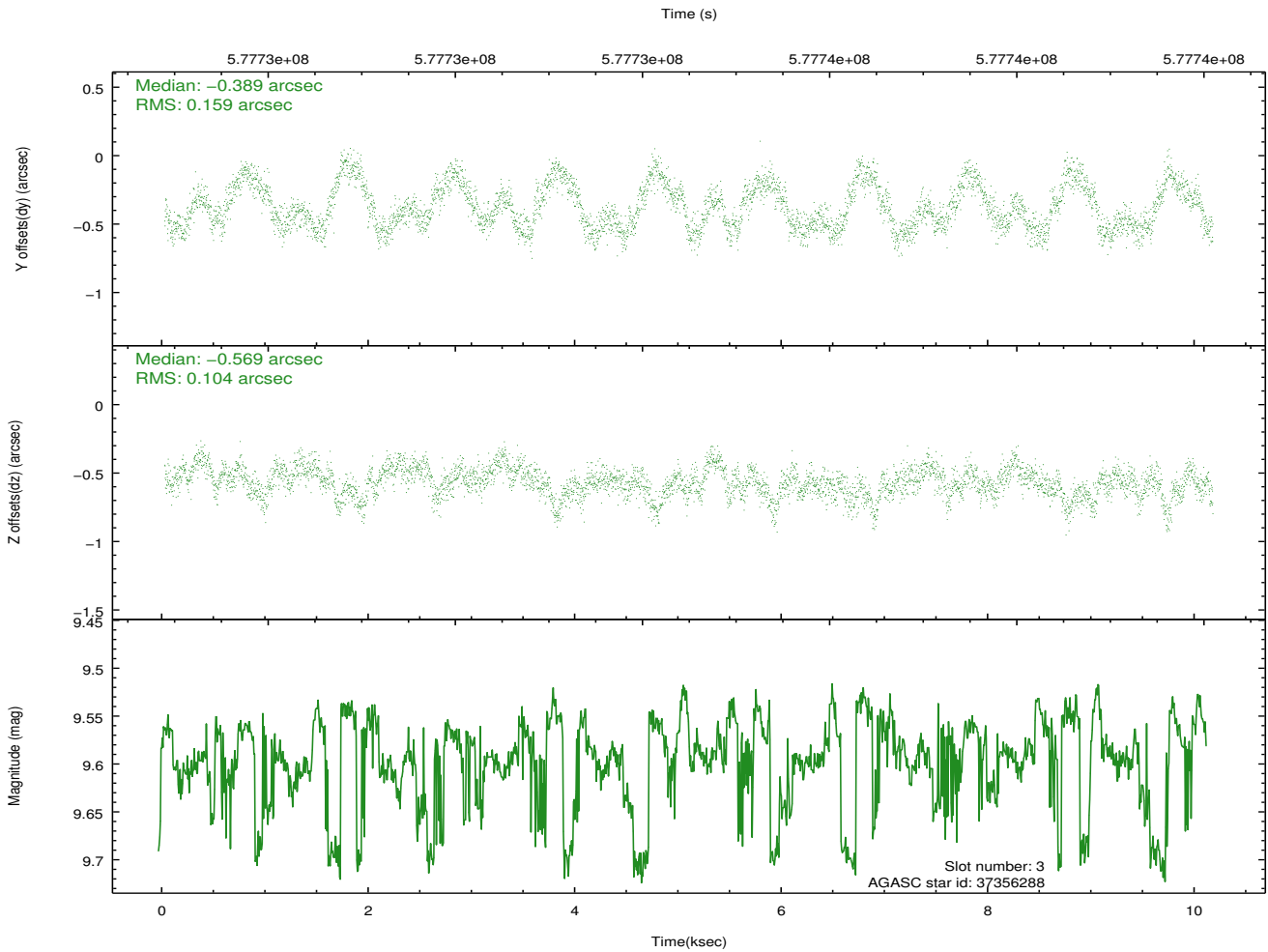
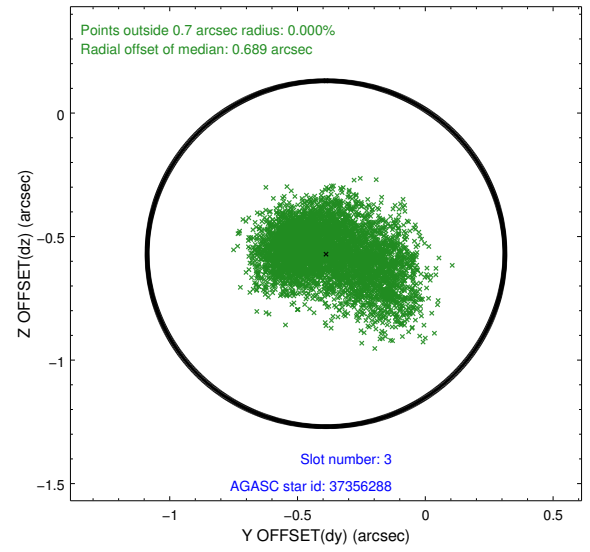
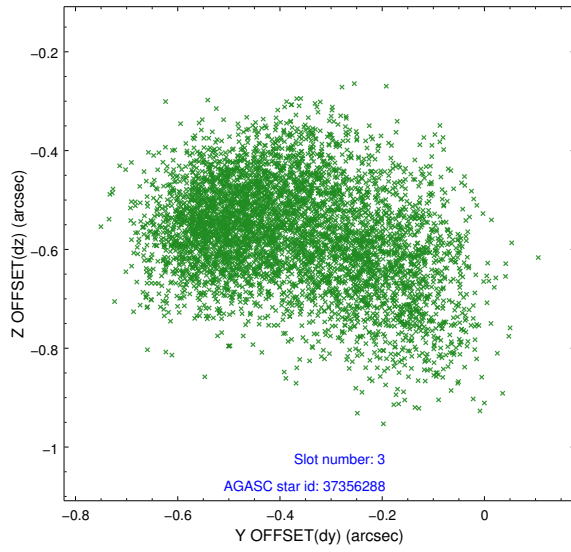


# Slot Statistics

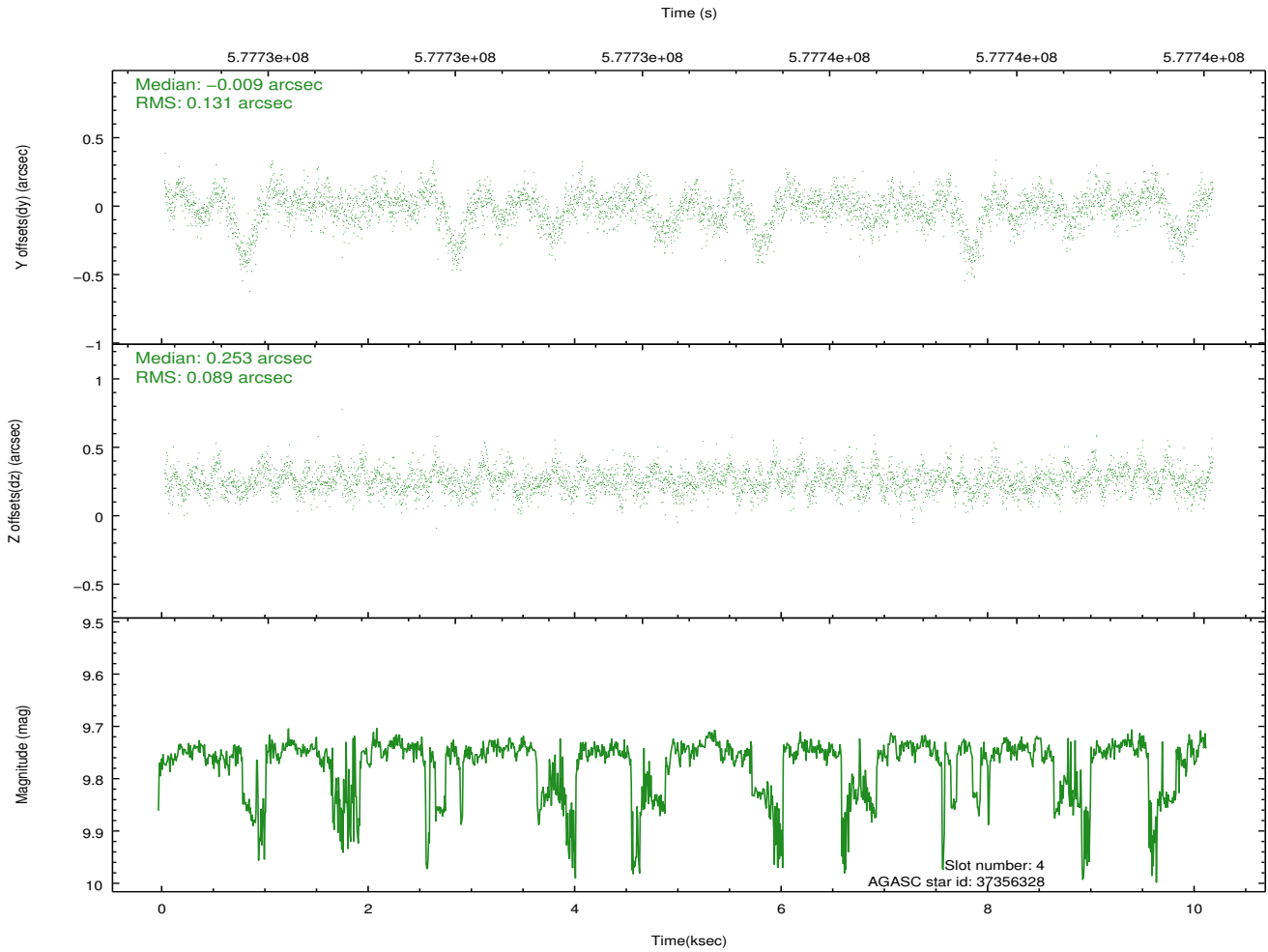
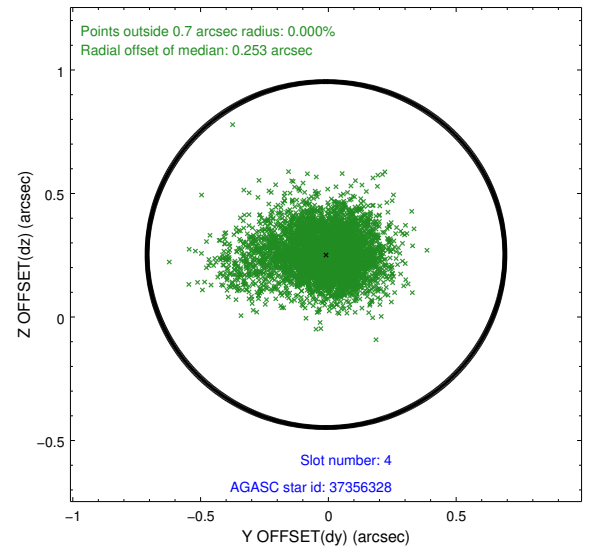
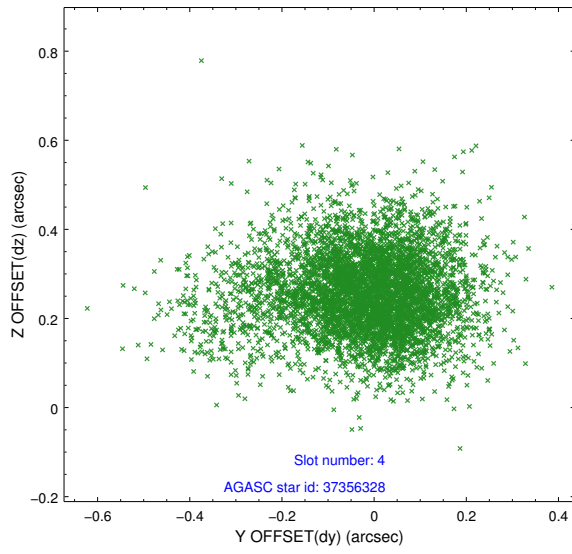
| slot | status  | used | id       | mag  | n_pts | med_dy | med_dz | dr1   | dr2   | ra         | dec      | mean_y   | mean_z   |
|------|---------|------|----------|------|-------|--------|--------|-------|-------|------------|----------|----------|----------|
| 0    | FID     |      | ACIS-S-4 | 7.21 | 2476  | 0.365  | 0.013  | 0.006 | 0.011 | 0.000000   | 0.000000 | 2145.69  | 169.26   |
| 1    | FID     |      | ACIS-S-5 | 7.23 | 2476  | -0.397 | 0.009  | 0.007 | 0.013 | 0.000000   | 0.000000 | -1820.60 | 162.75   |
| 2    | FID     |      | ACIS-S-6 | 7.36 | 2476  | 0.003  | -0.008 | 0.008 | 0.013 | 0.000000   | 0.000000 | 393.02   | 806.49   |
| 3    | GUIDE   | used | 37356288 | 9.59 | 4943  | -0.389 | -0.569 | 0.201 | 0.327 | 186.243367 | 2.724406 | 1750.16  | 1320.74  |
| 4    | GUIDE   | used | 37356328 | 9.75 | 4940  | -0.009 | 0.253  | 0.156 | 0.297 | 185.832967 | 2.815676 | 2203.86  | -121.31  |
| 5    | OMITTED |      |          | 0.00 | 0     | 0.000  | 0.000  | 0.000 | 0.000 | 0.000000   | 0.000000 | 0.00     | 0.00     |
| 6    | GUIDE   | used | 37359816 | 9.48 | 4951  | 0.216  | 0.233  | 0.131 | 0.214 | 186.448439 | 3.847681 | -2119.25 | -62.51   |
| 7    | GUIDE   | used | 37360968 | 8.14 | 4950  | 0.188  | 0.084  | 0.099 | 0.162 | 185.571453 | 3.297692 | 1170.72  | -1804.47 |

## 2.4 Star Slots

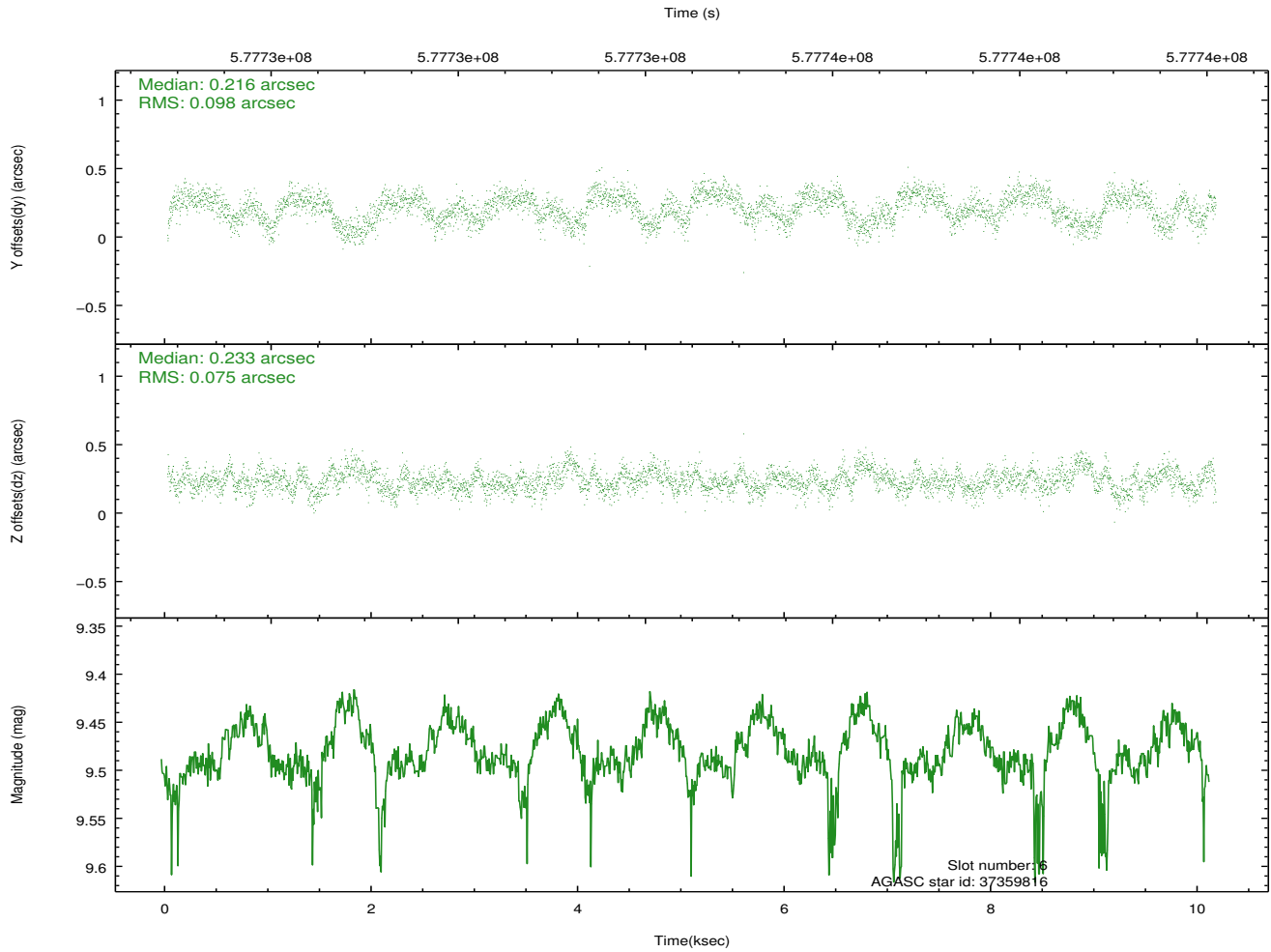
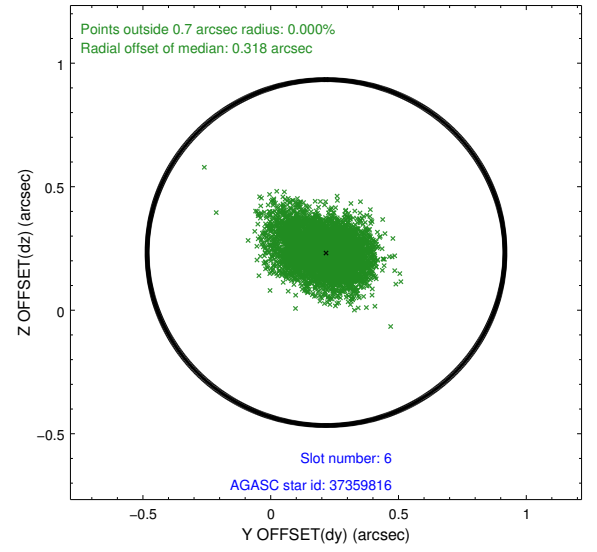
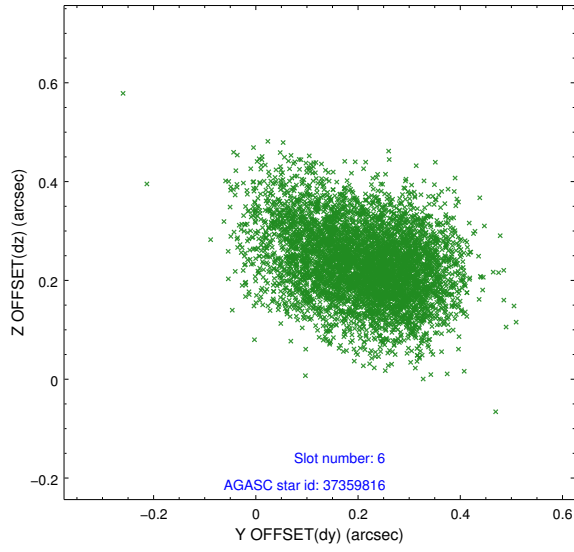
### 2.4.1 Slot 3



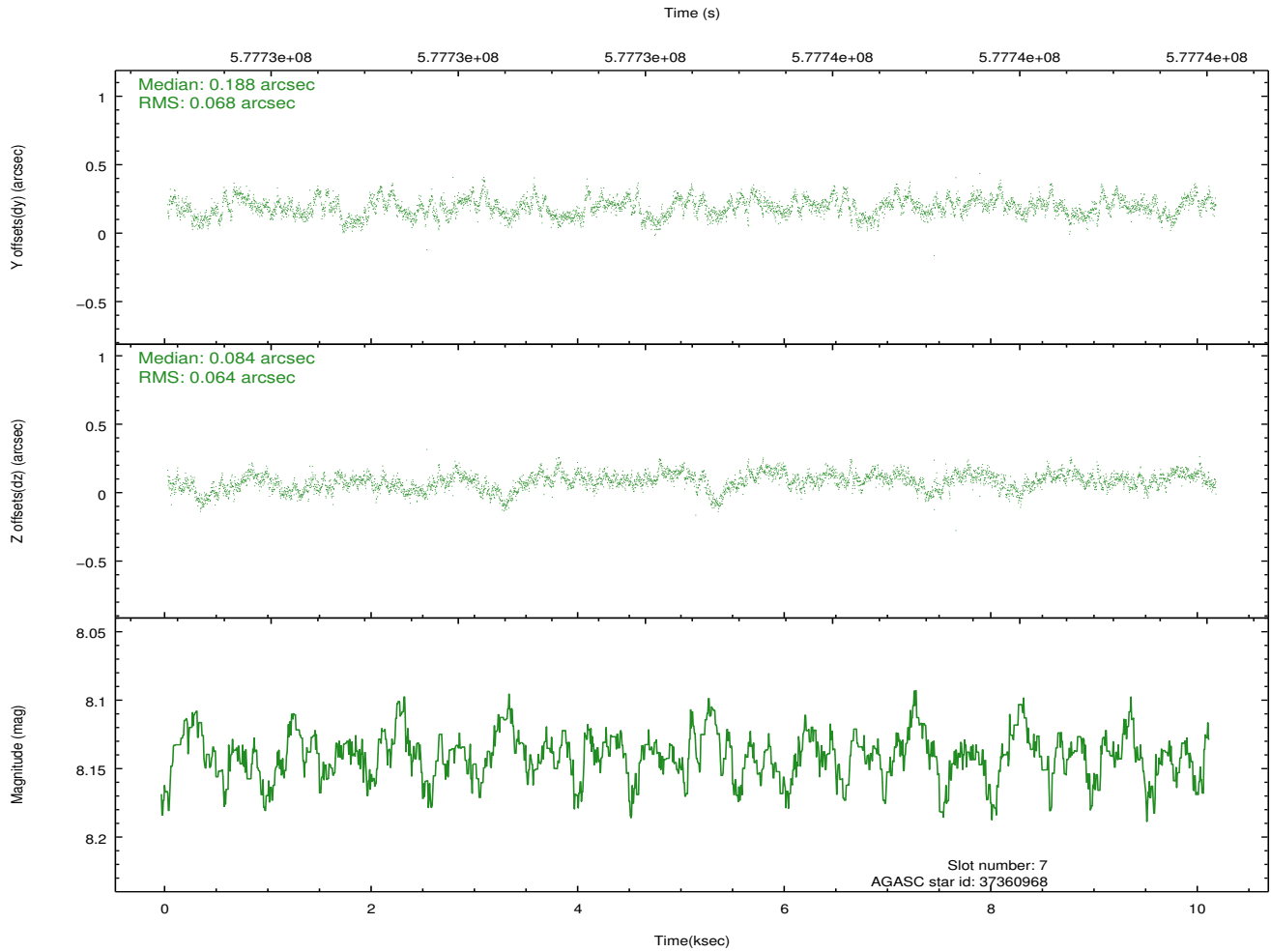
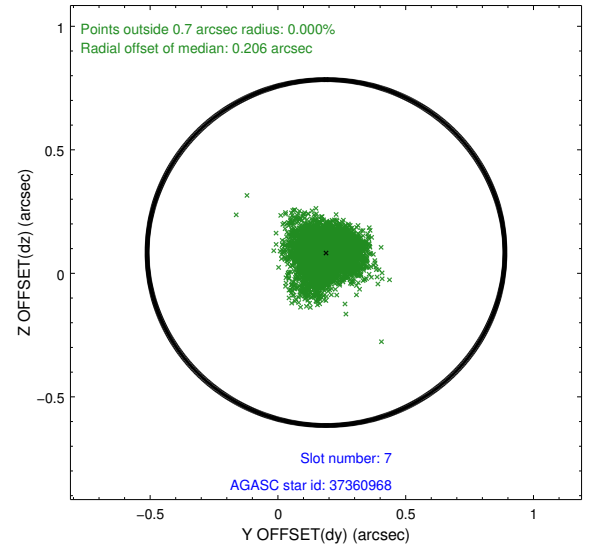
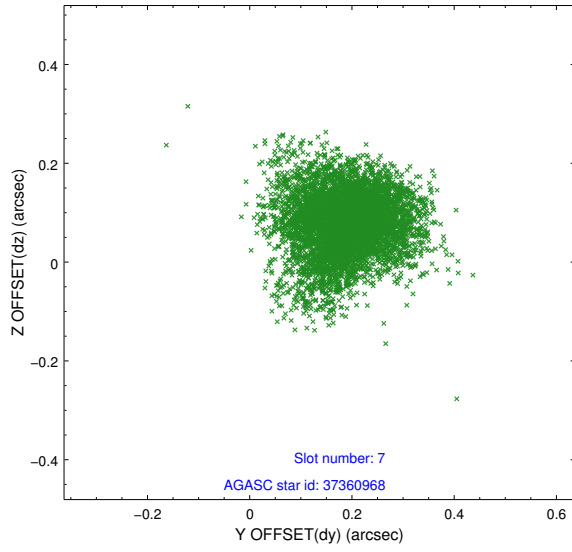
## 2.4.2 Slot 4



### 2.4.3 Slot 6



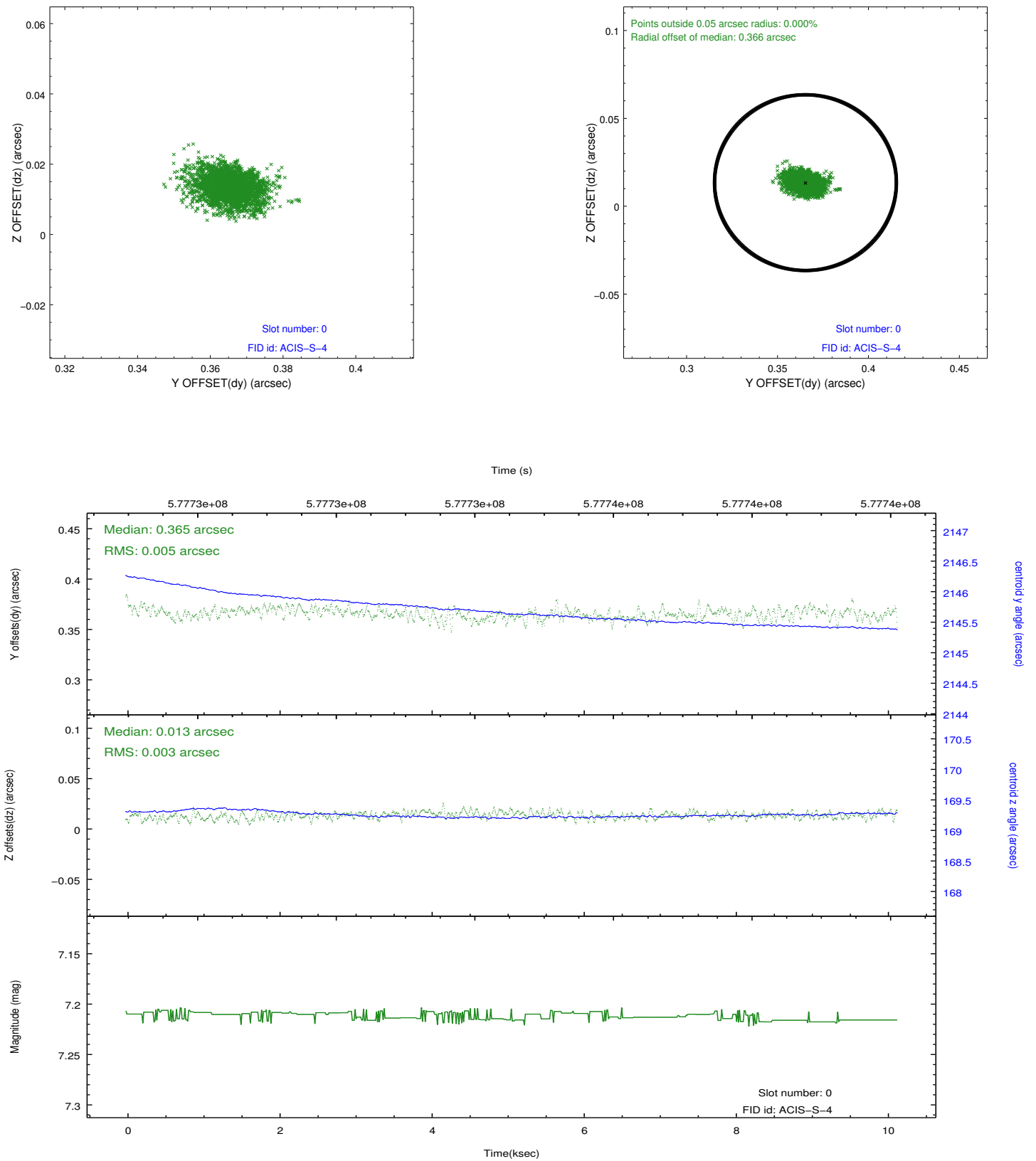
## 2.4.4 Slot 7



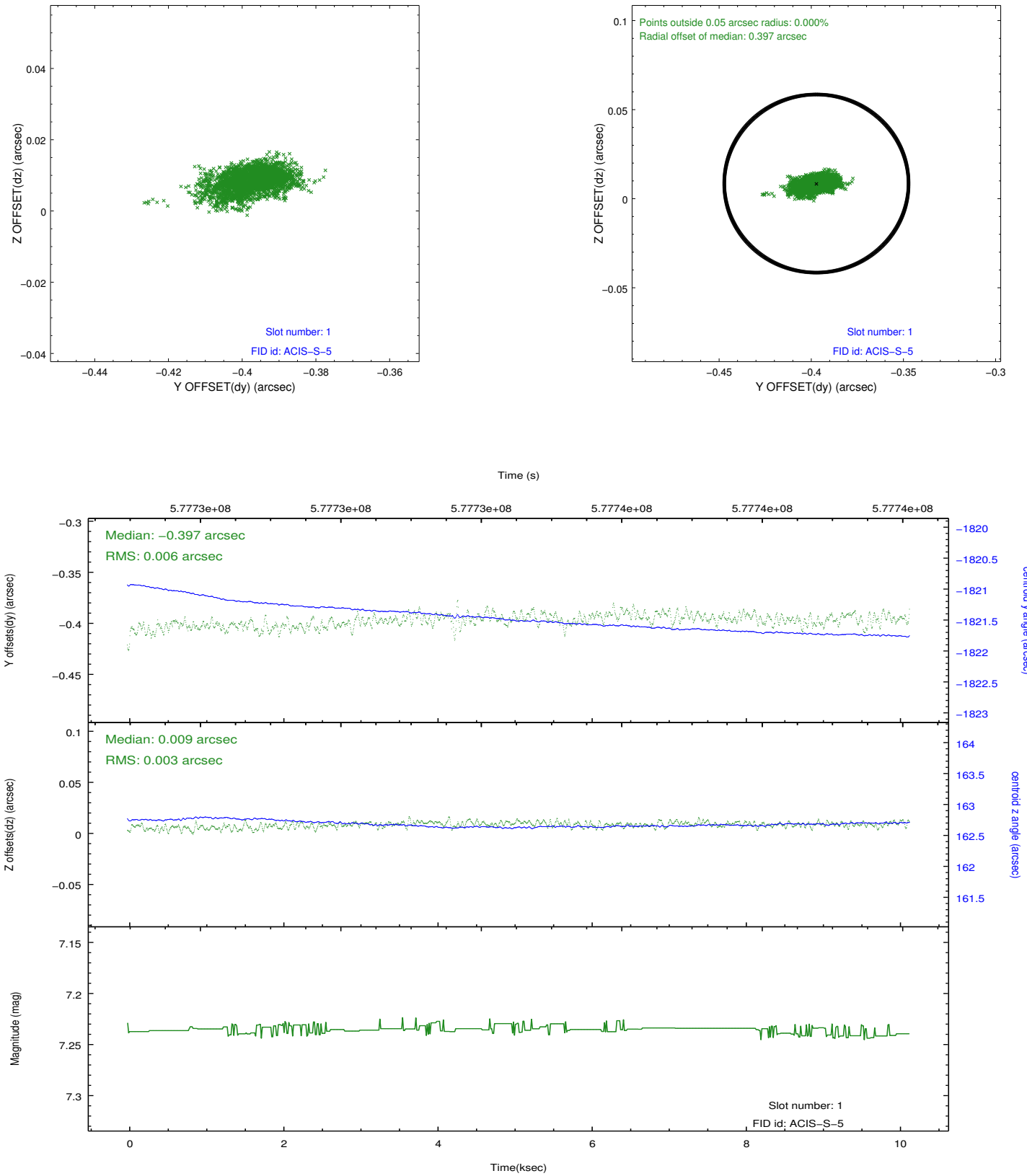


## 2.5 FID Slots

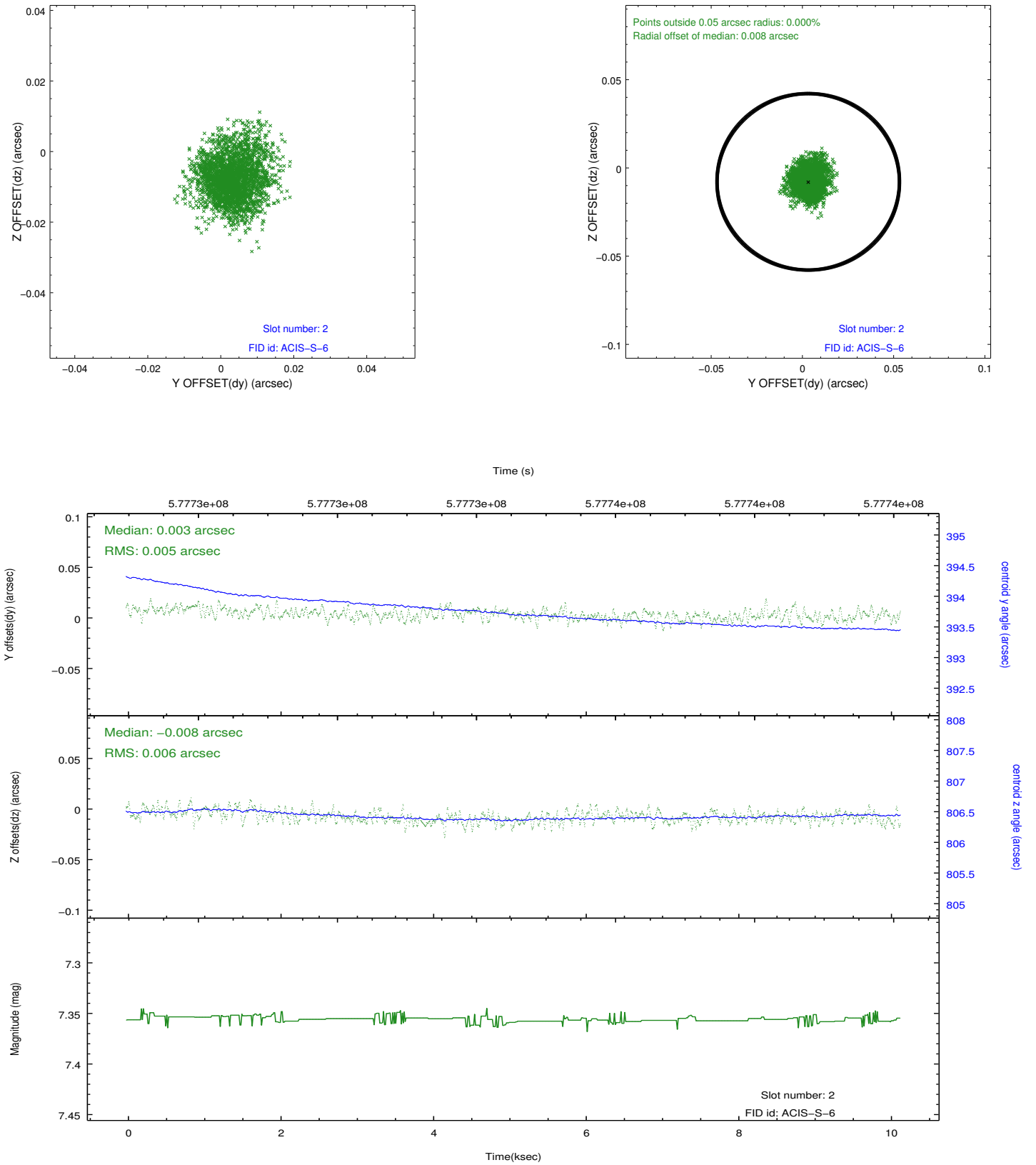
### 2.5.1 Slot 0



## 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)      | 2016.04.28      |
| V&V Edition                | 1               |
| V&V Disposition and Status | OK              |
| V&V Charge Time            | 10.103400401592 |

### A.2 Comments

The guide star in slot 5 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.