

# V&V Reference Report

## L2 ASCDS Version : 7.6.9

Observation 3138 - L2 Version 001  
Chandra X-Ray Center

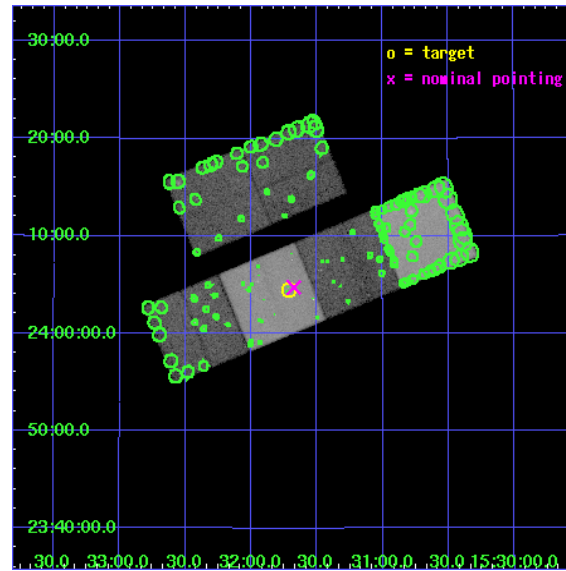
L2 Processing Date : Sep 14 2006

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# 1 Front

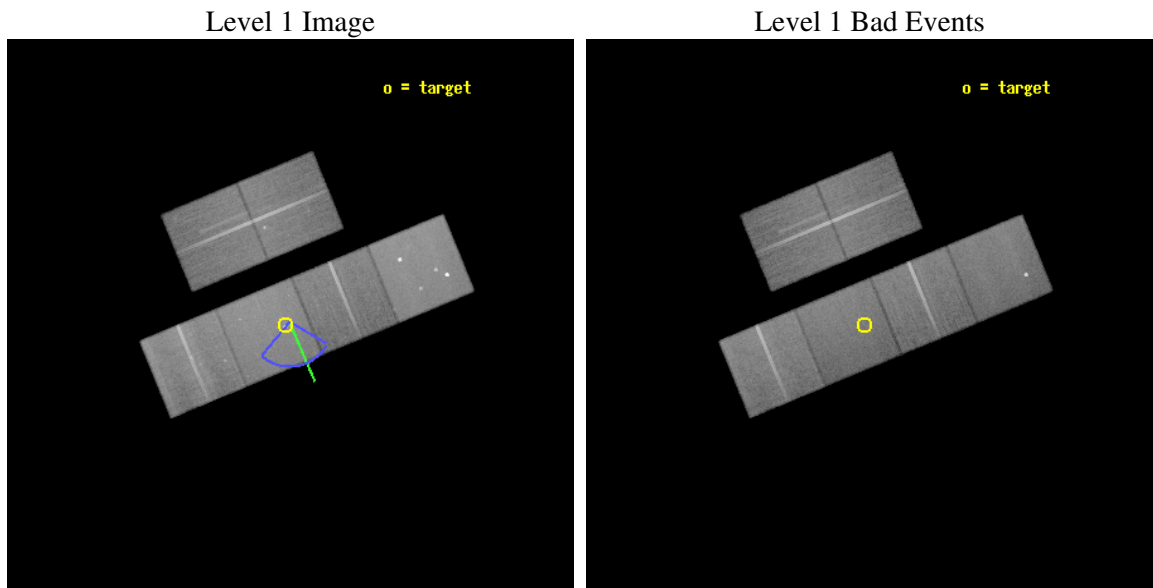
|          |                                      |
|----------|--------------------------------------|
| seq_num  | 700577                               |
| obs_id   | 3138                                 |
| title    | MASSIVE GAS INFLOW IN RADIO GALAXIES |
| observer | DR MAKOTO KISHIMOTO                  |
| object   | 3C321                                |
| dtcycle  | 0                                    |
| cycle    | P                                    |
| ra_targ  | 232.927917                           |
| dec_targ | 24.073611                            |
| ra_nom   | 232.91897112321                      |
| dec_nom  | 24.078830023016                      |
| roll_nom | 157.55615306084                      |
| revision | 2                                    |
| ontime   | 47731.199822187                      |
| livetime | 47126.798629761                      |
| ontime2  | 47727.95884195                       |
| ontime3  | 47731.199822187                      |
| ontime5  | 47731.199822187                      |
| ontime6  | 47731.199822187                      |
| ontime7  | 47731.199822187                      |
| ontime8  | 47721.476931304                      |
| l2events | 475345                               |



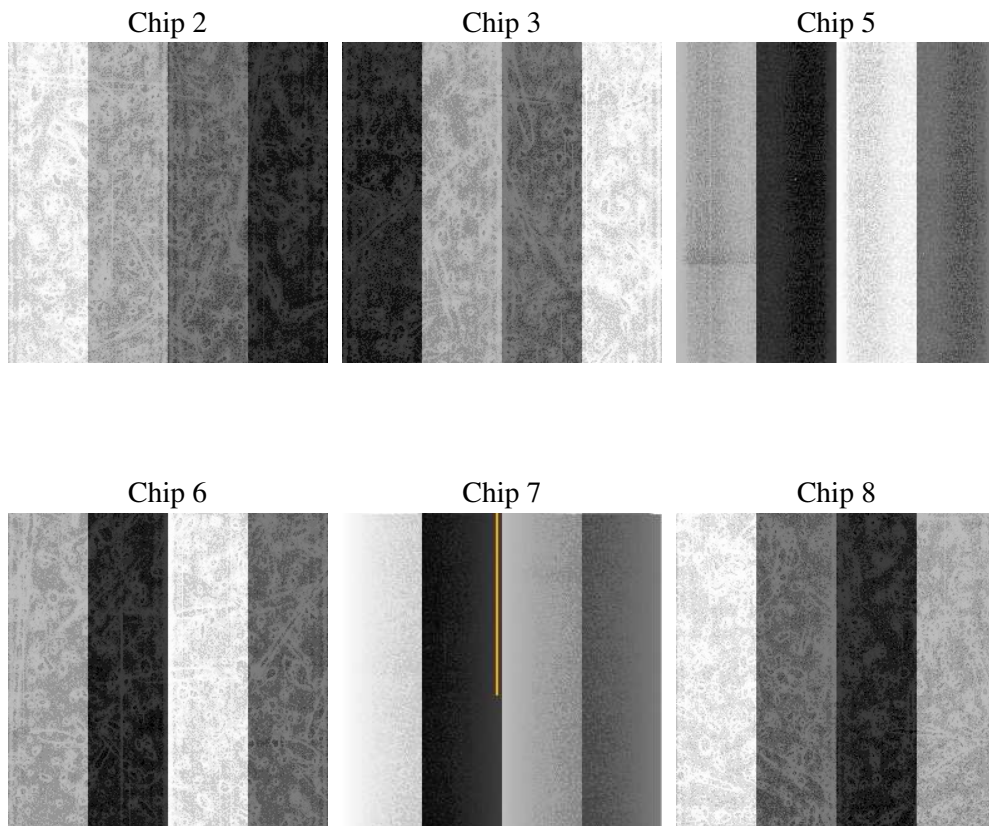
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

|          |                     |
|----------|---------------------|
| obi_num  | 0                   |
| ascdsver | 7.6.9               |
| caldsver | 3.2.3               |
| date     | 2006-09-14T20:54:23 |
| revision | 2                   |

|                |                 |
|----------------|-----------------|
| sched_exp_time | 47645.563000    |
| ontime         | 47736.767666101 |
| ontime2        | 47730.285645872 |
| ontime3        | 47736.767646194 |
| ontime5        | 47736.767646194 |
| ontime6        | 47736.767646194 |
| ontime7        | 47736.767666101 |
| ontime8        | 47727.04475531  |
| l1events       | 2182137         |

### 2.1.4 Events

|                 | ccd 2  | ccd 3  | ccd 5  | ccd 6  | ccd 7  | ccd 8  |
|-----------------|--------|--------|--------|--------|--------|--------|
| level 1 events  | 313263 | 299151 | 458284 | 310473 | 406720 | 394246 |
| rejected events | 275355 | 262817 | 250688 | 273407 | 246289 | 309045 |
| rejected %      | 87%    | 87%    | 54%    | 88%    | 60%    | 78%    |

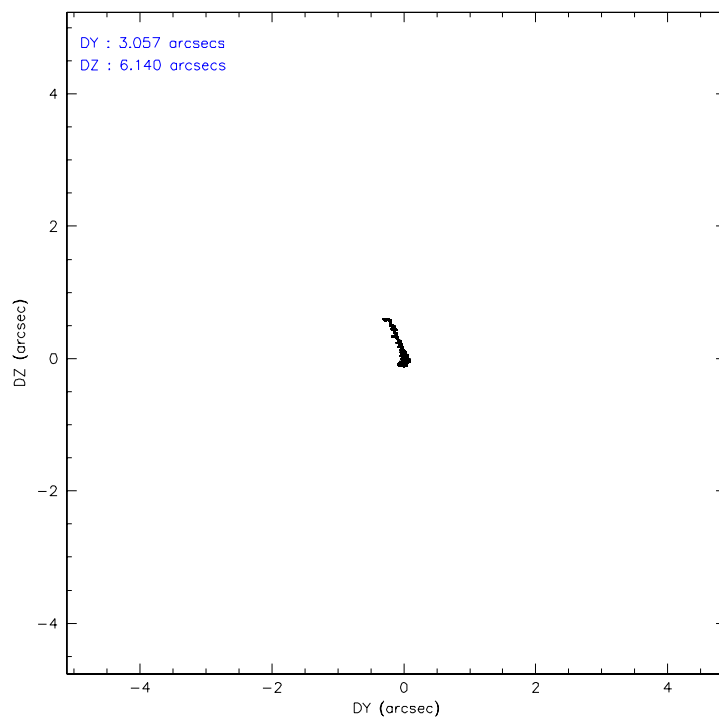
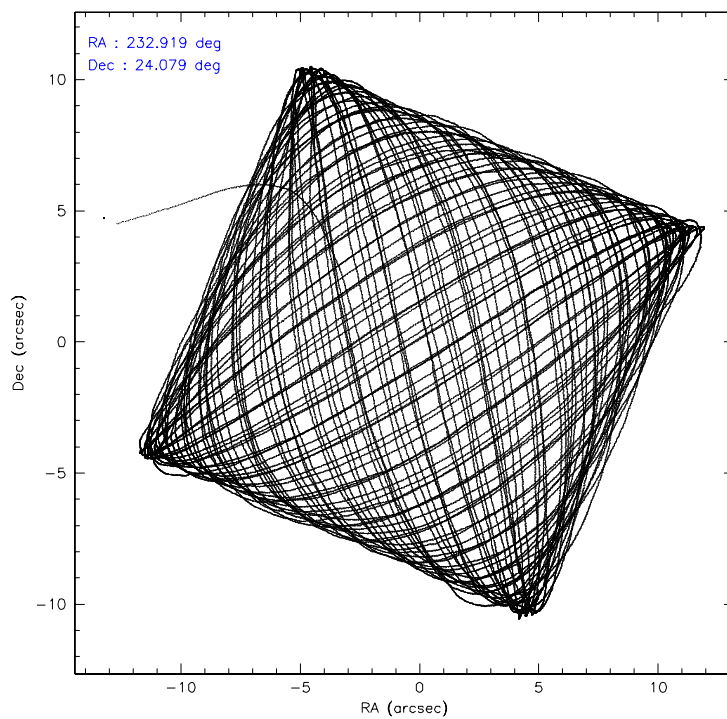
|                | ccd 2  | ccd 3  | ccd 5  | ccd 6  | ccd 7  | ccd 8  |
|----------------|--------|--------|--------|--------|--------|--------|
| grade 0 events | 16808  | 15927  | 22626  | 15262  | 11588  | 28099  |
|                | 5%     | 5%     | 4%     | 4%     | 2%     | 7%     |
| grade 1 events | 145    | 145    | 341    | 152    | 246    | 205    |
|                | 0%     | 0%     | 0%     | 0%     | 0%     | 0%     |
| grade 2 events | 8056   | 7251   | 65606  | 7541   | 39766  | 18402  |
|                | 2%     | 2%     | 14%    | 2%     | 9%     | 4%     |
| grade 3 events | 3446   | 3369   | 4750   | 3527   | 8801   | 8869   |
|                | 1%     | 1%     | 1%     | 1%     | 2%     | 2%     |
| grade 4 events | 3237   | 3421   | 4210   | 3585   | 8789   | 8150   |
|                | 1%     | 1%     | 0%     | 1%     | 2%     | 2%     |
| grade 5 events | 11239  | 12202  | 23395  | 13586  | 27537  | 16973  |
|                | 3%     | 4%     | 5%     | 4%     | 6%     | 4%     |
| grade 6 events | 6363   | 6369   | 110435 | 7160   | 91512  | 21752  |
|                | 2%     | 2%     | 24%    | 2%     | 22%    | 5%     |
| grade 7 events | 263969 | 250467 | 226921 | 259660 | 218481 | 291796 |
|                | 84%    | 83%    | 49%    | 83%    | 53%    | 74%    |

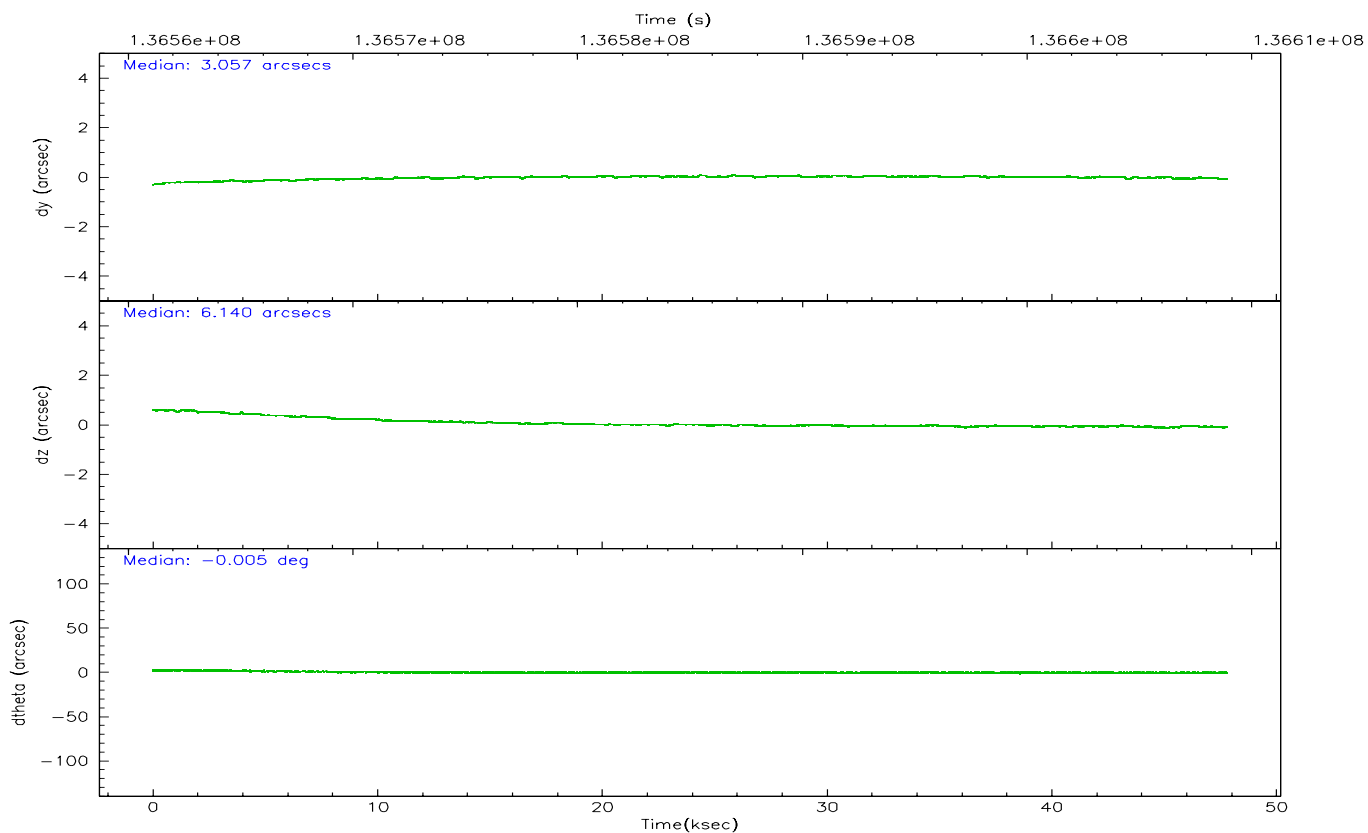
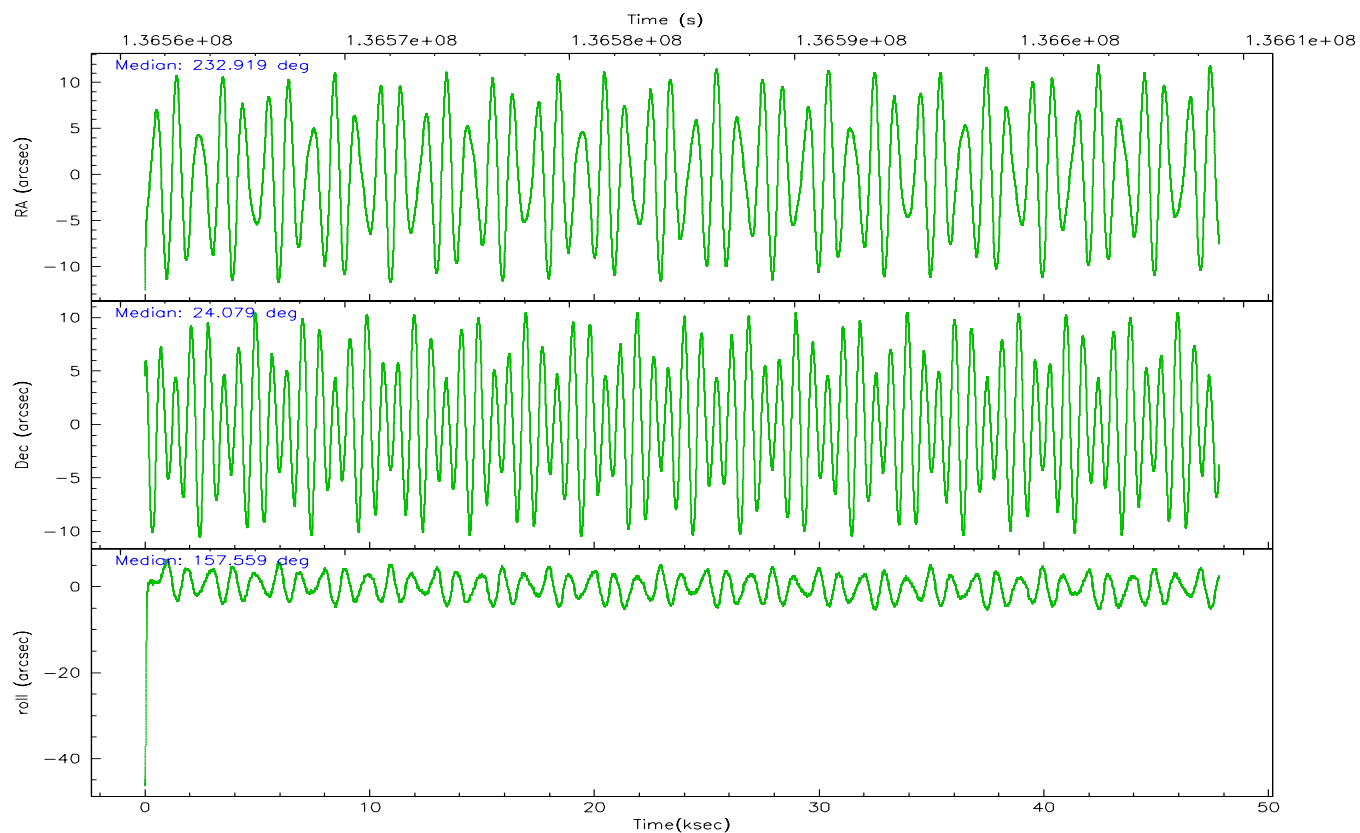


## 2.2 Compared Parameters

| Parameter                            | Planned             | Actual               | Parameter                             | Planned   | Actual  |
|--------------------------------------|---------------------|----------------------|---------------------------------------|-----------|---------|
| Instrument                           | ACIS                | ACIS                 | Obspar format version number          | 6         | 6       |
| 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       |
| Pointing RA                          | 232.948500          | 232.9189711232067    | Subarray requested                    | NONE      | NONE    |
| Pointing Dec                         | 24.082752           | 24.07883002301558    | Alternating exposures requested       | N         | N       |
| Pointing Roll                        | 157.387494          | 157.5561530608403    | Primary exposure time                 | 0.000000  | 3.2     |
| Roll angle                           | 170.000000          | 170.000000           |                                       |           |         |
| Roll tolerance                       | 50.000000           | 50.000000            |                                       |           |         |
| Roll constraint allows 180D rotation | N                   | N                    |                                       |           |         |
| SIM focus pos (mm)                   | -0.684267           | -0.6828225247311905  |                                       |           |         |
| SIM defocus (mm)                     | 0                   | 0.001444936568705701 |                                       |           |         |
| SIM translation stage pos (mm)       | -190.132523         | -190.1425803651734   |                                       |           |         |
| SIM translation stage offset (mm)    | 0                   | 0.01005778216563158  |                                       |           |         |
| Observation start time               | 136561262.184000    | 136560238.8421       |                                       |           |         |
| Observation start date               | 2002-04-30T13:39:58 | 2002-04-30T13:23:58  |                                       |           |         |
| Observation end time                 | 136608907.184000    | 136609222.05659      |                                       |           |         |
| Observation end date                 | 2002-05-01T02:54:03 | 2002-05-01T03:00:22  |                                       |           |         |
| Read mode                            | TIMED               | TIMED                |                                       |           |         |

## 2.3 Aspect



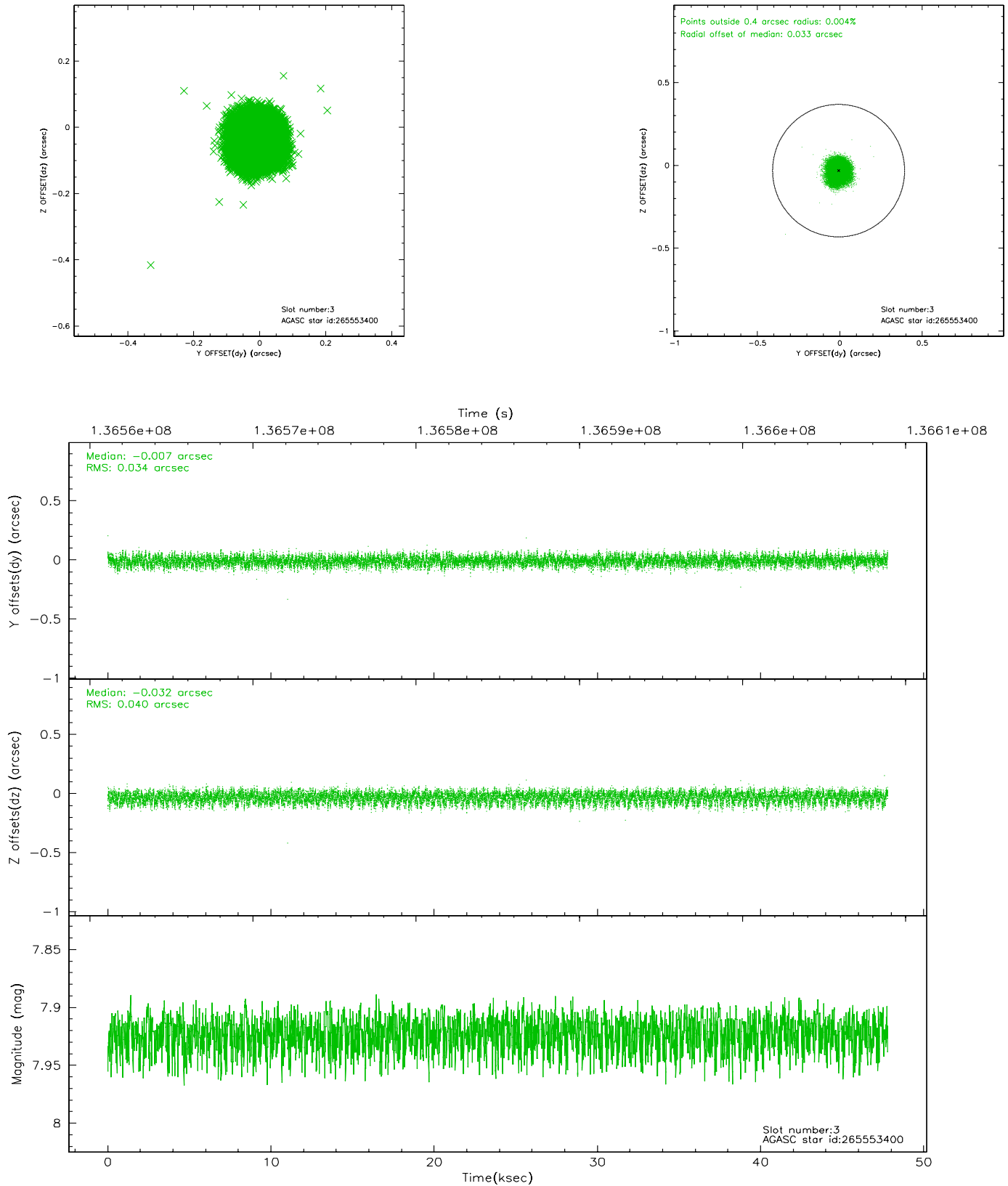


### Slot Statistics

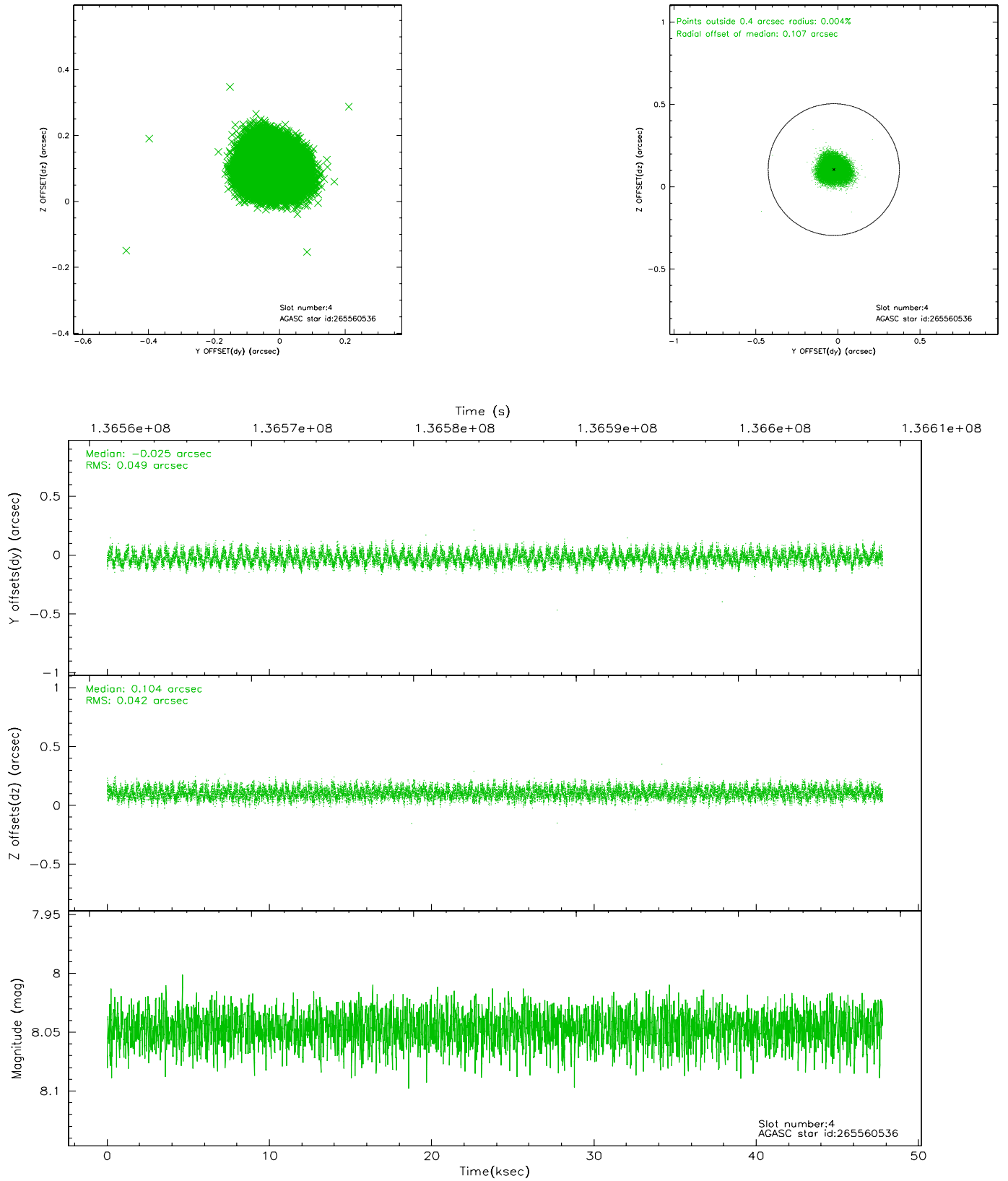
| slot | status | id        | mag  | n_pts | med_dy | med_dz | dr1   | dr2   | ra         | dec       | mean_y   | mean_z   |
|------|--------|-----------|------|-------|--------|--------|-------|-------|------------|-----------|----------|----------|
| 0    | FID    | ACIS-S-2  | 7.11 | 11658 | -0.019 | 0.033  | 0.009 | 0.016 | 0.000000   | 0.000000  | -755.66  | -1727.29 |
| 1    | FID    | ACIS-S-4  | 7.20 | 11658 | -0.055 | 0.001  | 0.009 | 0.023 | 0.000000   | 0.000000  | 2157.55  | 181.23   |
| 2    | FID    | ACIS-S-5  | 7.24 | 11659 | 0.044  | -0.024 | 0.007 | 0.011 | 0.000000   | 0.000000  | -1808.49 | 174.78   |
| 3    | GUIDE  | 265553400 | 7.92 | 23312 | -0.007 | -0.032 | 0.057 | 0.089 | 232.475560 | 23.817136 | 1071.09  | 1479.69  |
| 4    | GUIDE  | 265560536 | 8.05 | 23305 | -0.025 | 0.104  | 0.070 | 0.106 | 232.543821 | 23.755517 | 778.57   | 1599.09  |
| 5    | GUIDE  | 265561672 | 8.41 | 23311 | 0.020  | -0.054 | 0.060 | 0.098 | 233.051219 | 23.521427 | -1090.08 | 1735.57  |
| 6    | GUIDE  | 265563224 | 8.51 | 23312 | 0.032  | 0.063  | 0.069 | 0.112 | 233.424580 | 23.443962 | -2334.84 | 1516.72  |
| 7    | GUIDE  | 265564608 | 8.57 | 23307 | -0.019 | -0.081 | 0.068 | 0.107 | 233.145057 | 23.882493 | -874.51  | 416.76   |

## 2.4 Star Slots

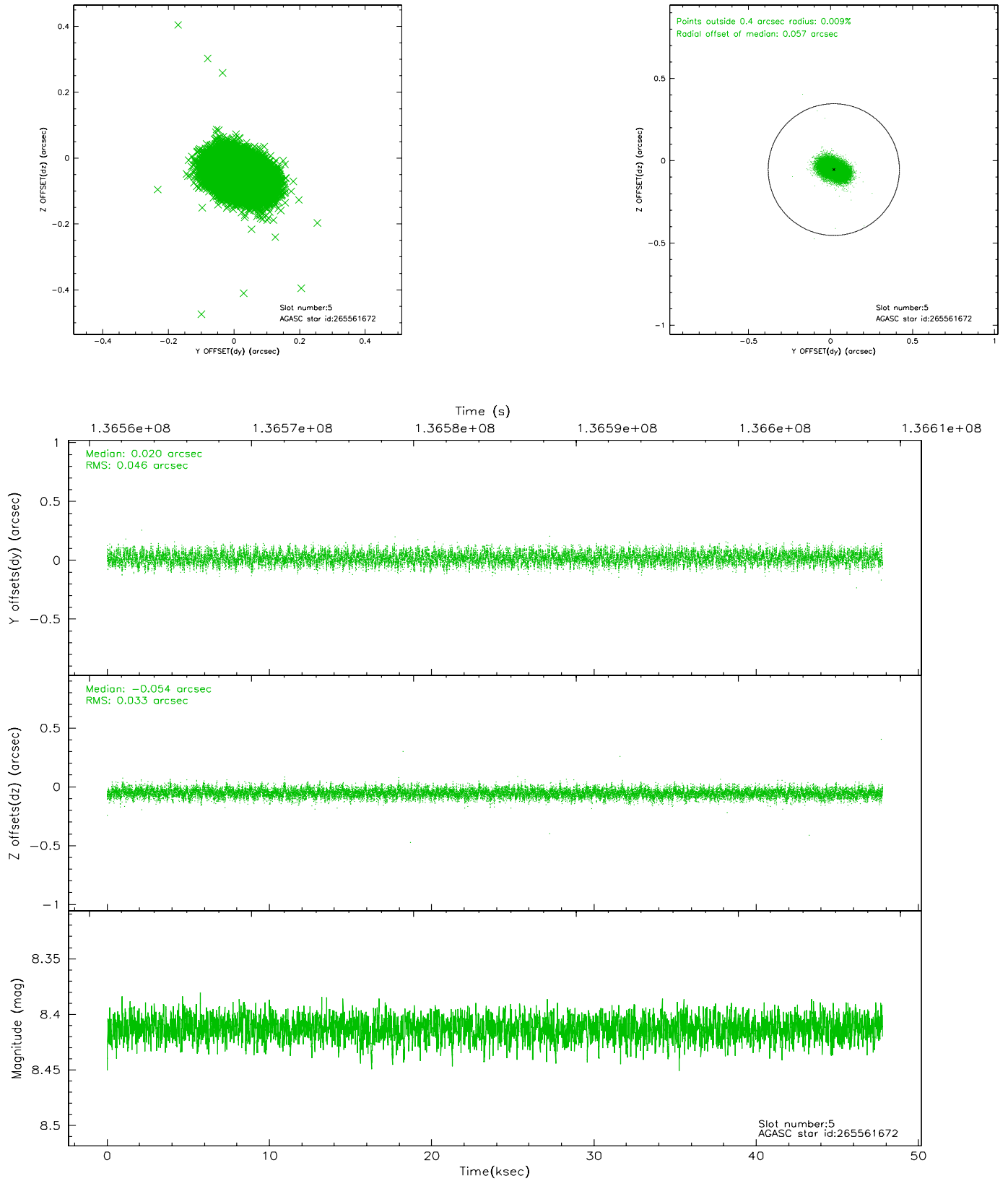
### 2.4.1 Slot 3



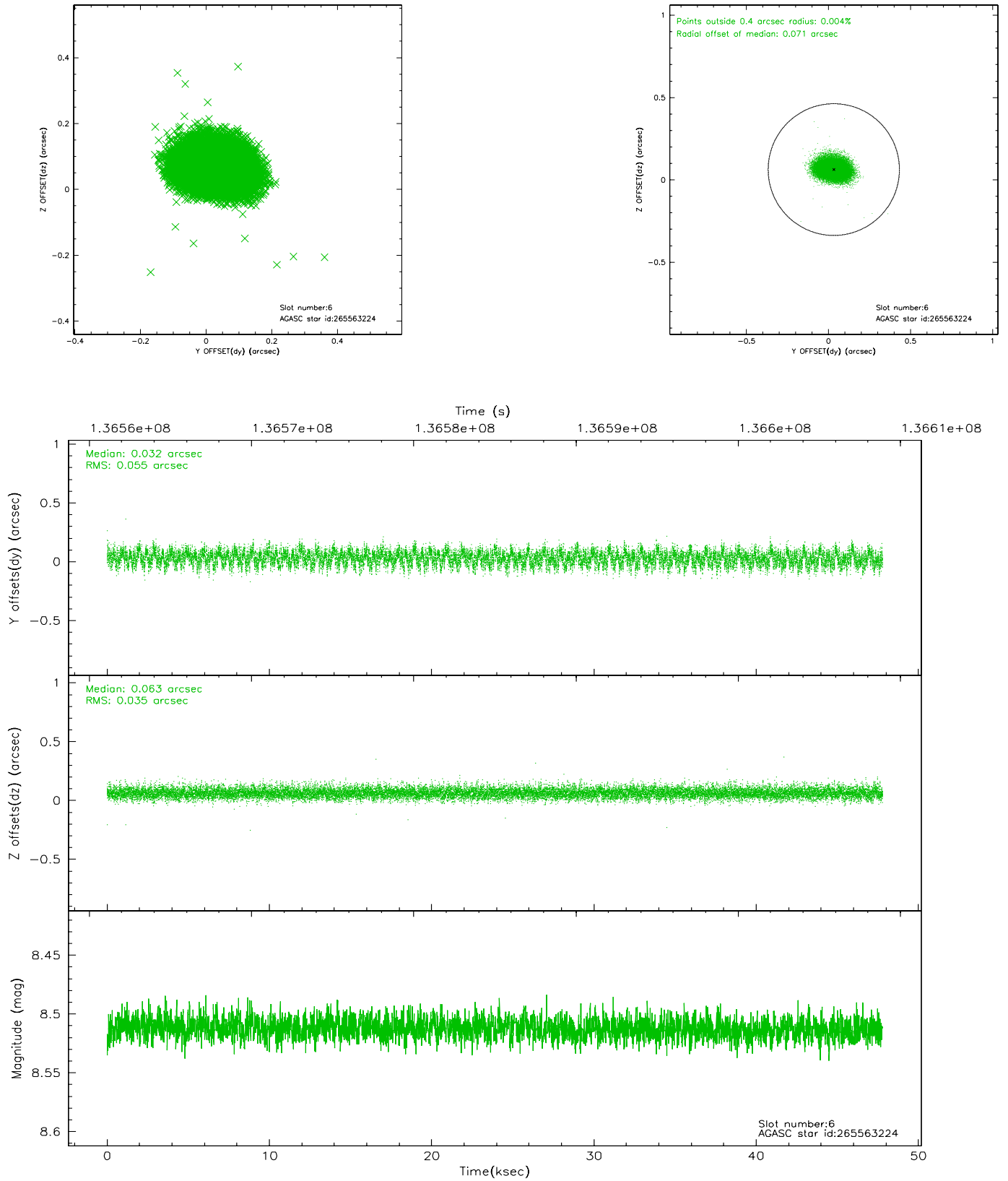
## 2.4.2 Slot 4



### 2.4.3 Slot 5

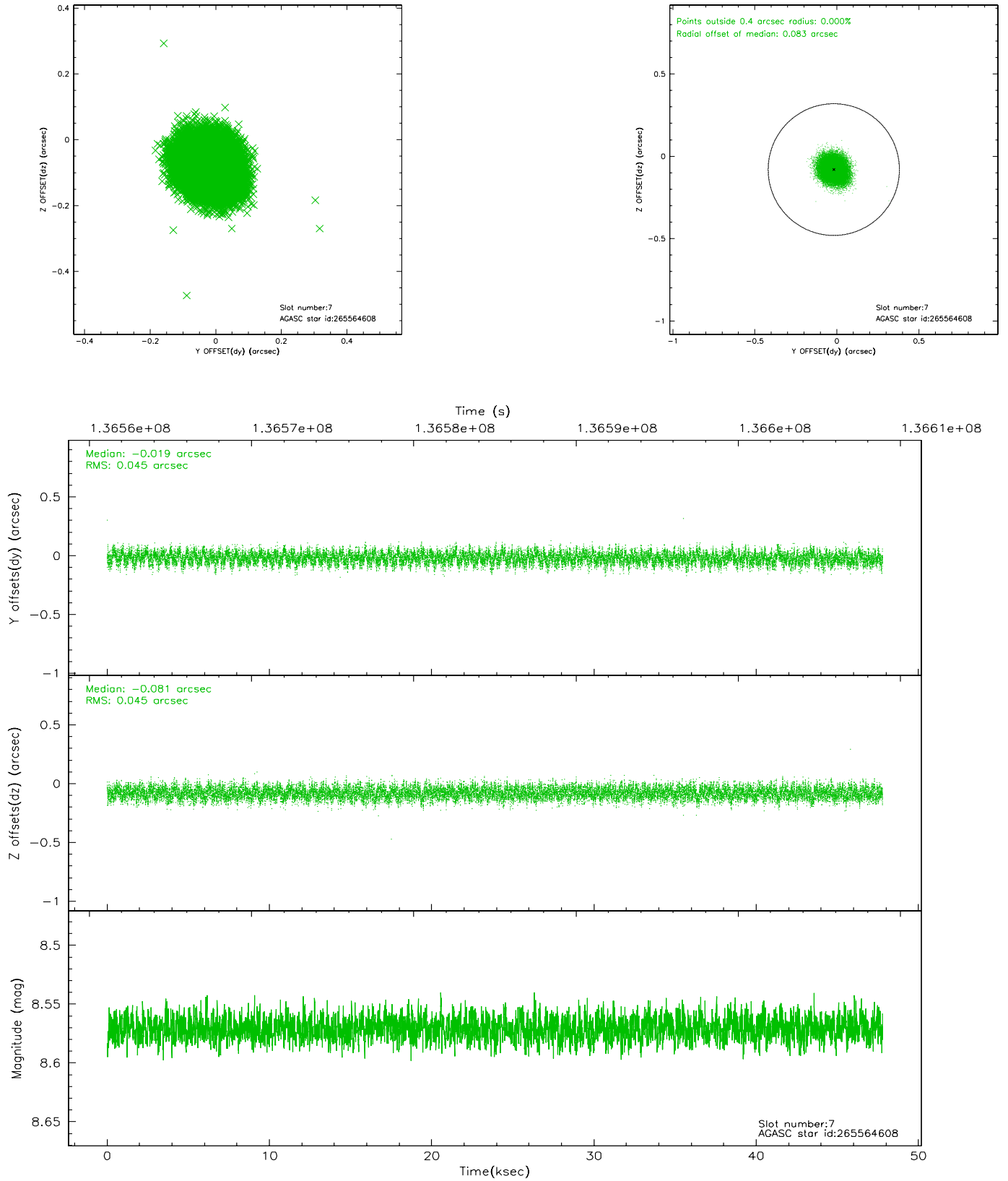


## 2.4.4 Slot 6



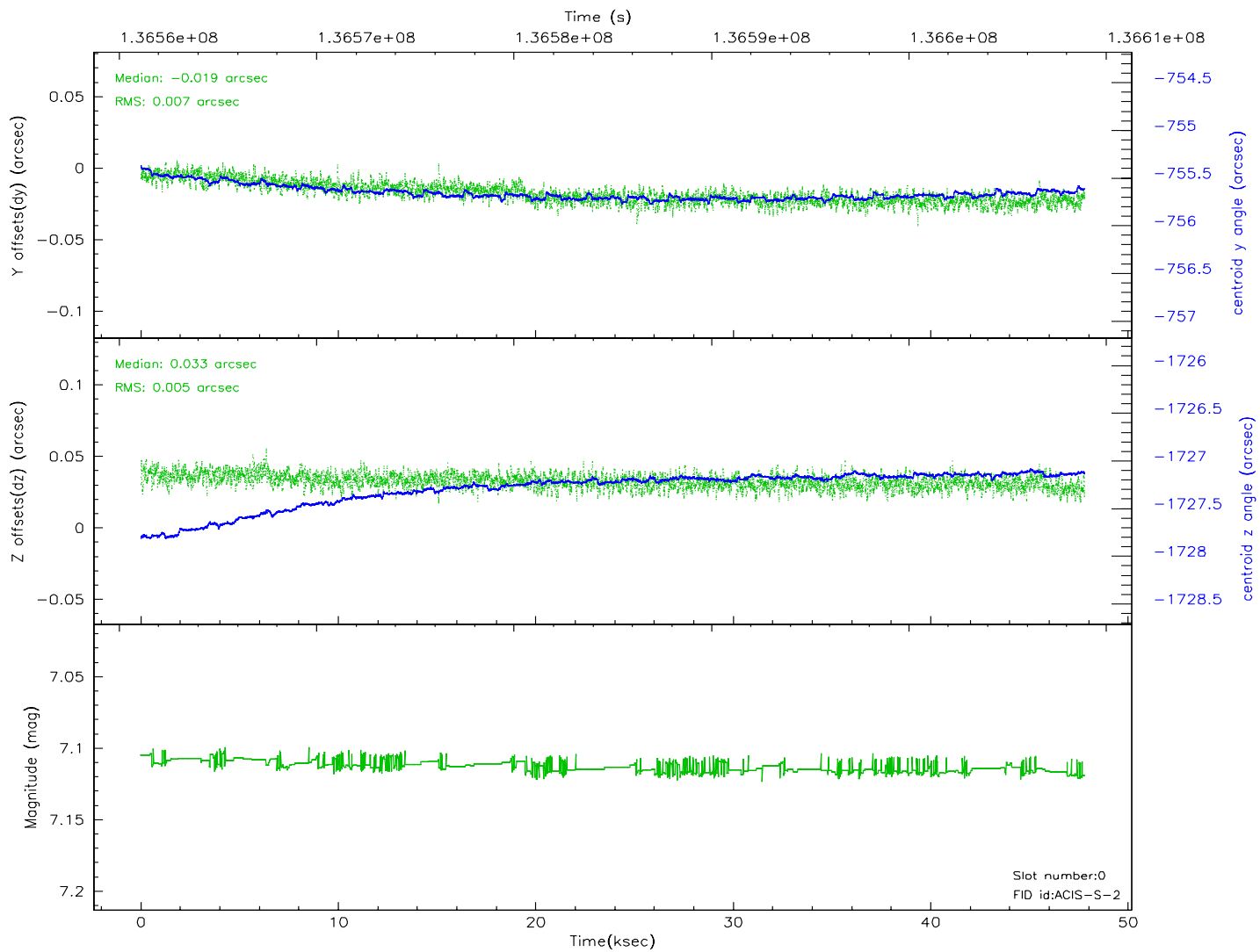
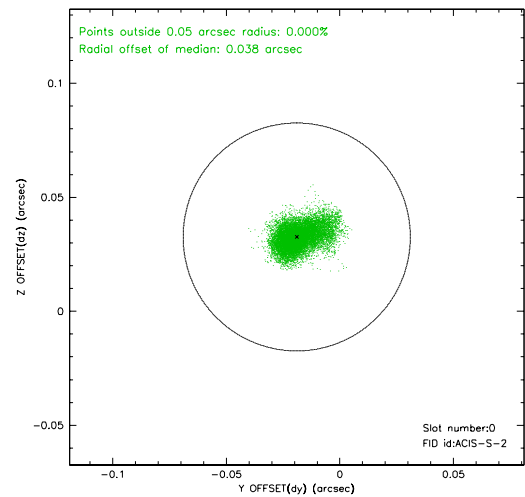
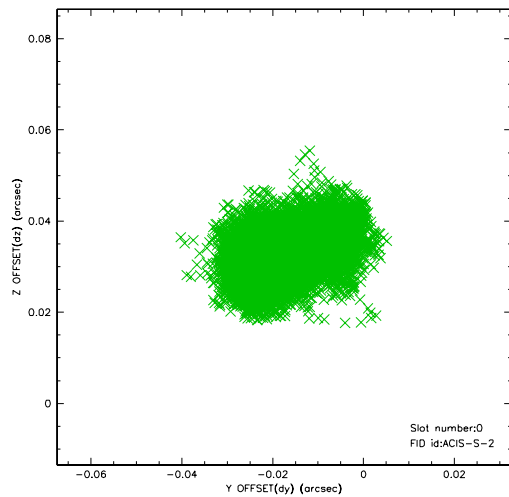


## 2.4.5 Slot 7

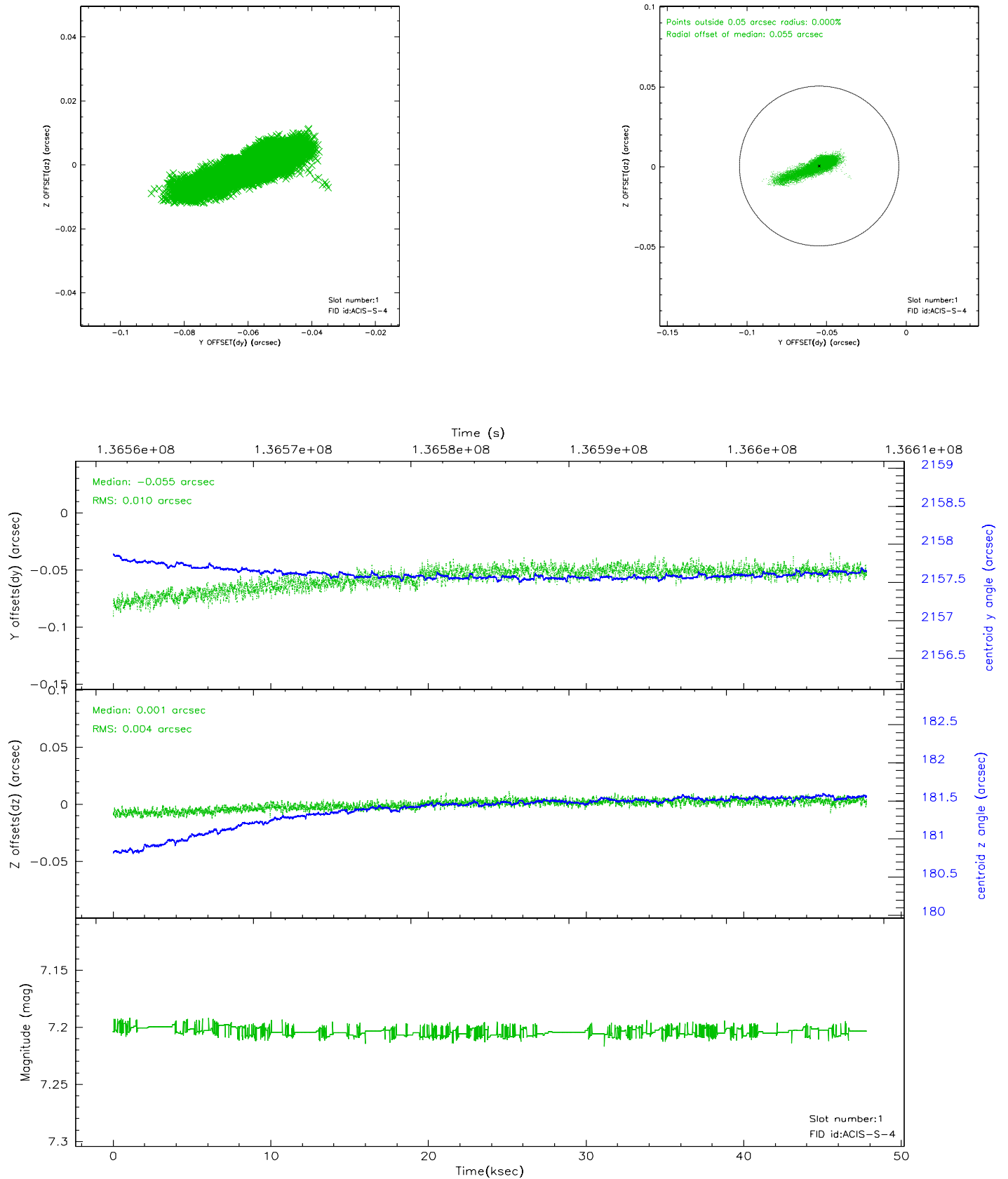


## 2.5 FID Slots

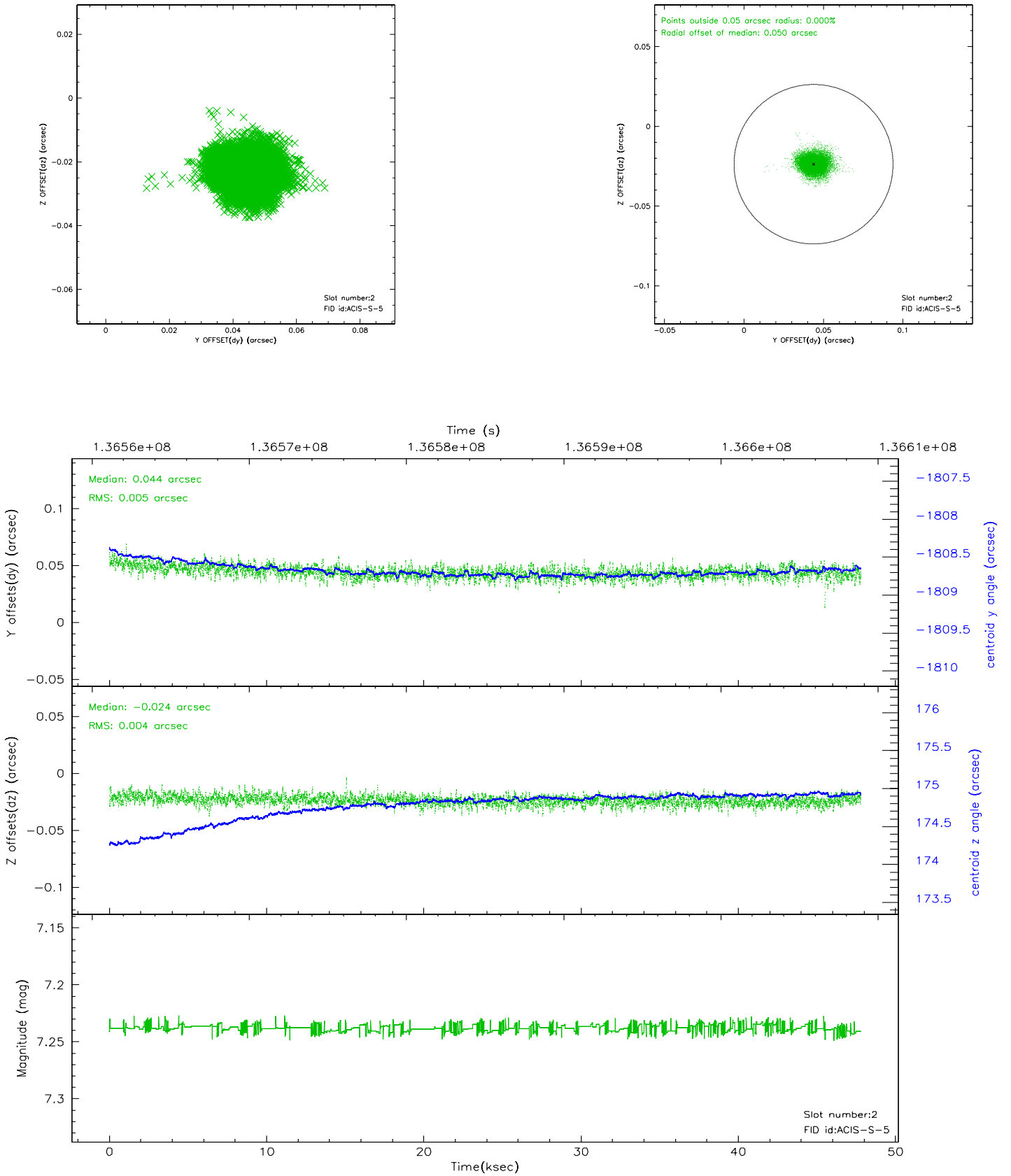
### 2.5.1 Slot 0



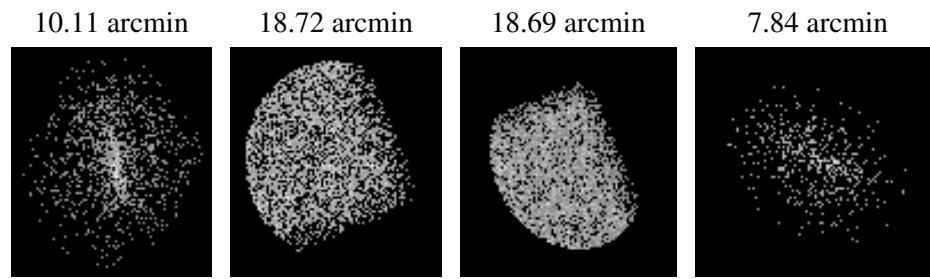
## 2.5.2 Slot 1



### 2.5.3 Slot 2



### 3 Point Sources



## A Summary

### A.1 Status

|                            |            |
|----------------------------|------------|
| V&V Scientist              | Jen Lauer  |
| V&V Date (YYYY-MM-DD)      | 2006.09.18 |
| V&V Edition                | 1          |
| V&V Disposition and Status | OK         |
| V&V Charge Time            | 47.734     |

### A.2 Comments

Roll constraint met.