

V&V Reference Report

L2 ASCDS Version : 8.4.5

Observation 13302 - L2 Version 1
Chandra X-Ray Center

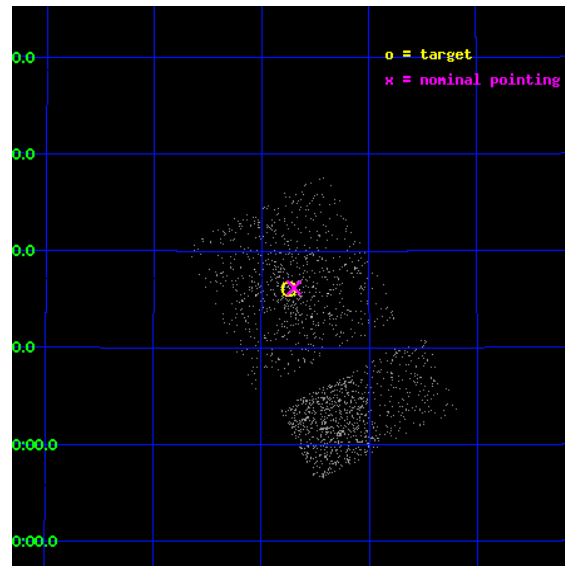
L2 Processing Date : Sep 13 2012

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1 Front

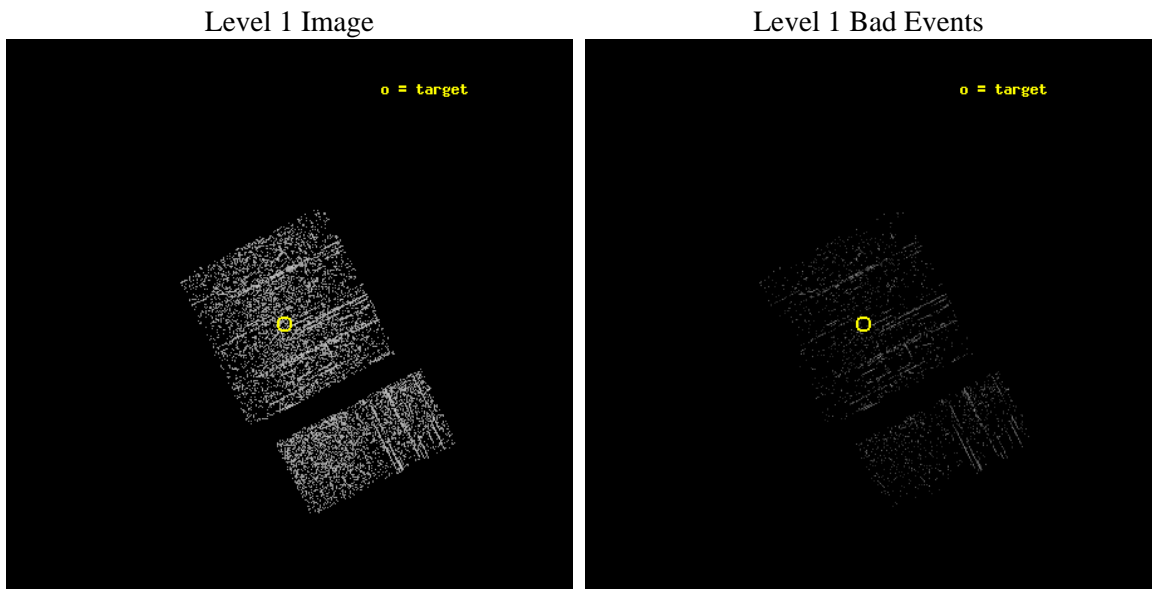
| | | |
|----------|-------------------------------|--|
| seq_num | 600990 | Sequence number |
| obs_id | 13302 | Observation id |
| title | Black Hole X-ray Novae in M31 | Proposal title |
| observer | Dr. Stephen Murray | Principal investigator |
| object | M31 | Source name |
| dtcycle | 0 | |
| cycle | P | events are from which exps? P[rimary] S[econdar |
| ra_targ | 10.685 | Observer's specified target RA [deg] |
| dec_targ | 41.268972 | Observer's specified target Dec [deg] |
| ra_nom | 10.67443166222 | Nominal RA [deg] |
| dec_nom | 41.270283576667 | Nominal Dec [deg] |
| roll_nom | 153.49048583036 | Nominal Roll [deg] |
| revision | 1 | Processing version of data |
| ontime | 922.78441333771 | Sum of GTIs [s] |
| livetime | 145.26852567131 | Livetime [s] |
| ontime0 | 922.78443324566 | Sum of GTIs [s] |
| ontime1 | 922.78442329168 | Sum of GTIs [s] |
| ontime2 | 922.78443324566 | Sum of GTIs [s] |
| ontime3 | 922.78441333771 | Sum of GTIs [s] |
| ontime6 | 922.78441333771 | Sum of GTIs [s] |
| ontime7 | 922.78441333771 | Sum of GTIs [s] |
| l2events | 2045 | Number of level 2 events |



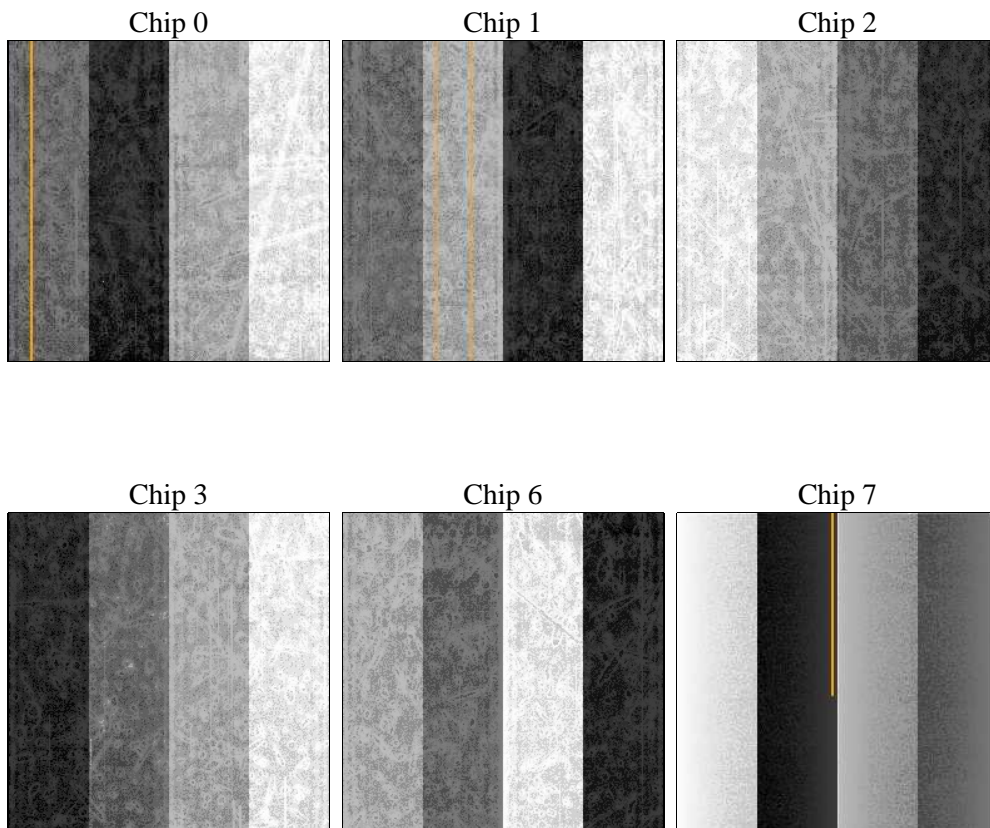
2 OBI Primary

2.1 OBI

2.1.1 Images



2.1.2 Bias



2.1.3 Parameters

| | | | | | |
|----------|---------------------|--------------------------------|----------------|-----------------|---|
| obi_num | 0 | Obi number | sched_exp_time | 5000.000000 | [s] Scheduled observation exposure time |
| ascdsver | 8.4.5 | Processing system revision | ontime | 922.78441333771 | Sum of GTIs [s] |
| caldsver | 4.5.1.1 | | ontime0 | 922.78443324566 | Sum of GTIs [s] |
| date | 2012-09-13T03:35:02 | Date and time of file creation | ontime1 | 922.78442329168 | Sum of GTIs [s] |
| revision | 1 | Processing version of data | ontime2 | 922.78443324566 | Sum of GTIs [s] |
| | | | ontime3 | 922.78441333771 | Sum of GTIs [s] |
| | | | ontime6 | 922.78441333771 | Sum of GTIs [s] |
| | | | ontime7 | 922.78441333771 | Sum of GTIs [s] |
| | | | l1events | 15010 | Number of level 1 events |

2.1.4 Events

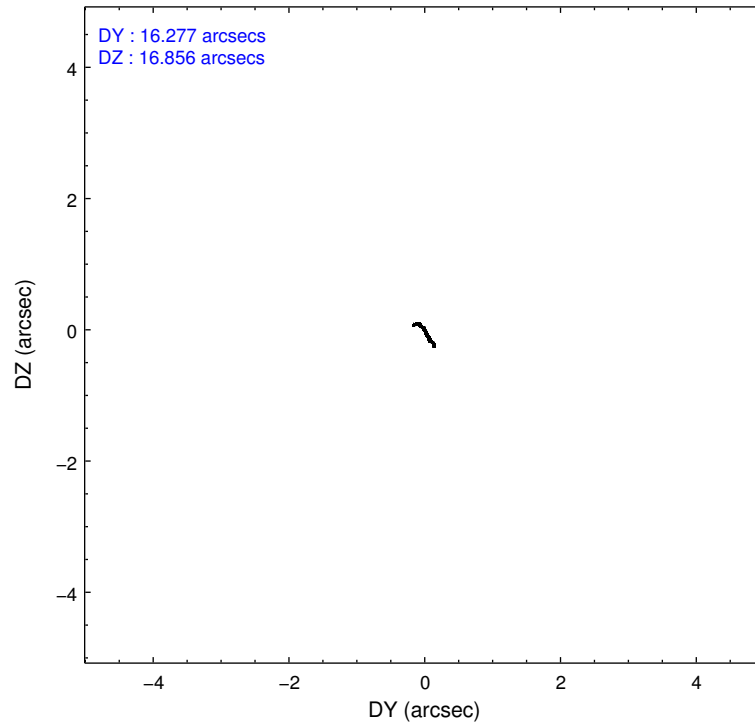
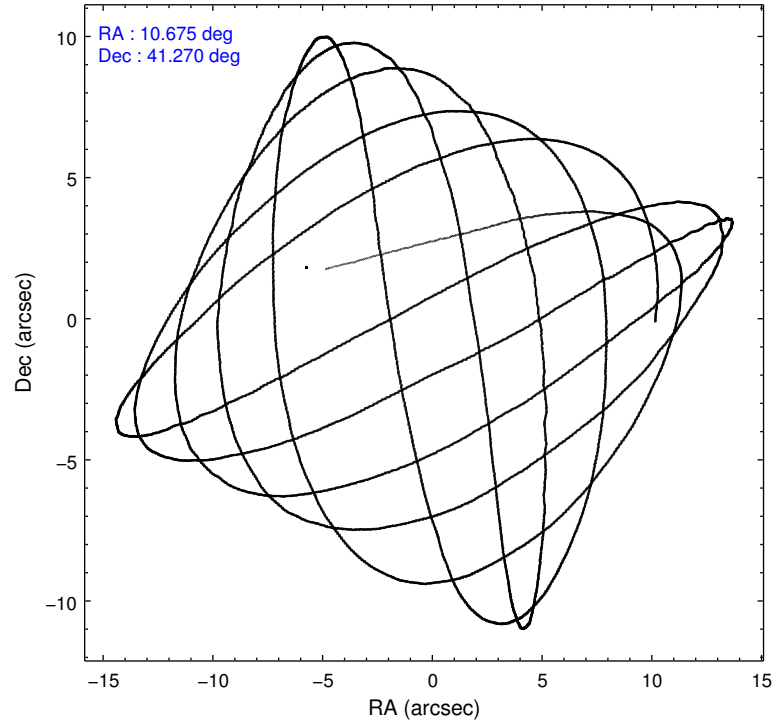
| | ccd 0 | ccd 1 | ccd 2 | ccd 3 | ccd 6 | ccd 7 |
|-----------------|-------|-------|-------|-------|-------|-------|
| level 1 events | 2109 | 2147 | 2878 | 2386 | 2877 | 2613 |
| rejected events | 1878 | 1816 | 2497 | 2073 | 2626 | 1792 |
| rejected % | 89% | 84% | 86% | 86% | 91% | 68% |

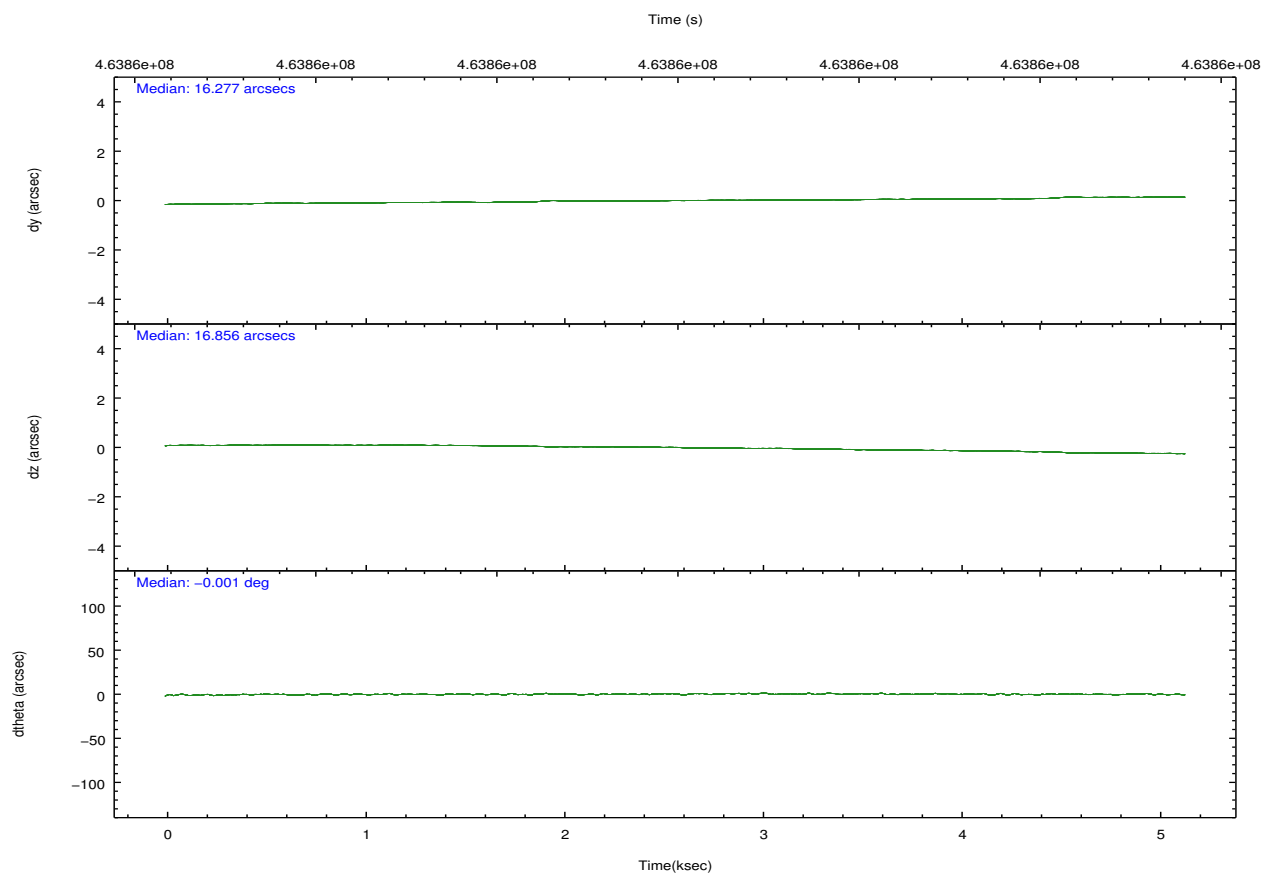
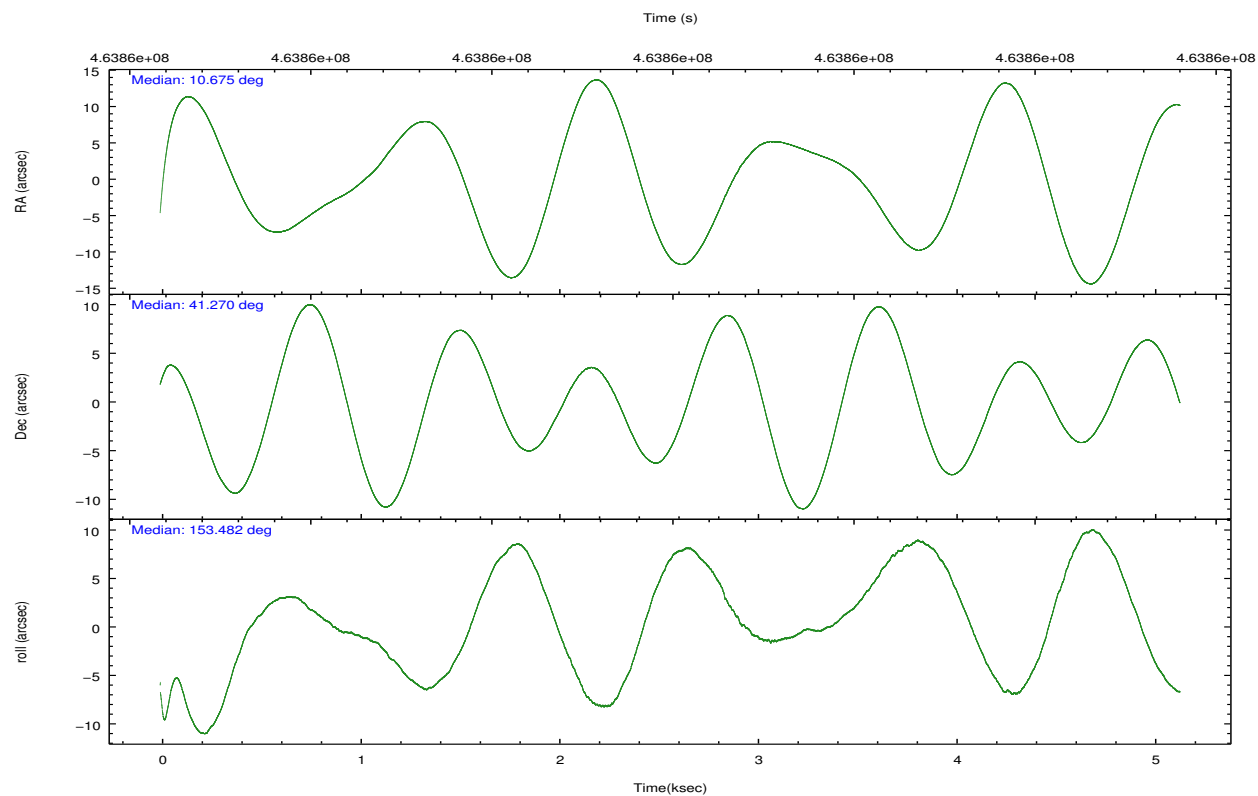
| | ccd 0 | ccd 1 | ccd 2 | ccd 3 | ccd 6 | ccd 7 |
|----------------|-------|-------|-------|-------|-------|-------|
| grade 0 events | 75 | 130 | 210 | 158 | 73 | 82 |
| | 3% | 6% | 7% | 6% | 2% | 3% |
| grade 1 events | 1 | 0 | 6 | 2 | 2 | 3 |
| | 0% | 0% | 0% | 0% | 0% | 0% |
| grade 2 events | 57 | 90 | 76 | 57 | 66 | 198 |
| | 2% | 4% | 2% | 2% | 2% | 7% |
| grade 3 events | 34 | 26 | 26 | 24 | 34 | 71 |
| | 1% | 1% | 0% | 1% | 1% | 2% |
| grade 4 events | 24 | 35 | 32 | 24 | 22 | 77 |
| | 1% | 1% | 1% | 1% | 0% | 2% |
| grade 5 events | 91 | 85 | 81 | 110 | 106 | 231 |
| | 4% | 3% | 2% | 4% | 3% | 8% |
| grade 6 events | 41 | 50 | 39 | 51 | 57 | 396 |
| | 1% | 2% | 1% | 2% | 1% | 15% |
| grade 7 events | 1786 | 1731 | 2408 | 1960 | 2517 | 1555 |
| | 84% | 80% | 83% | 82% | 87% | 59% |

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 | FAINT | FAINT | CCD I0 on | Y | Y |
| Observation mode | POINTING | POINTING | CCD I1 on | Y | Y |
| [deg] Pointing RA | 10.710892 | 10.6744316622199 | CCD I2 on | Y | Y |
| [deg] Pointing Dec | 41.272041 | 41.27028357666727 | CCD I3 on | Y | Y |
| [deg] Pointing Roll | 153.257766 | 153.4904858303642 | 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) | 463855546.184000 | 463854382.25407 | CCD S5 on | N | N |
| Observation start date | 2012-09-12T16:44:39 | 2012-09-12T16:26:22 | Number of optional ACIS chips dropped | 0 | 0 |
| [s] Observation end time (MET) | 463860546.184000 | 463861496.77945 | On-chip summing requested | N | N |
| Observation end date | 2012-09-12T18:07:59 | 2012-09-12T18:24:56 | Subarray requested | NONE | NONE |
| Read mode | TIMED | TIMED | Alternating exposures requested | Y | Y |
| | | | [s] Primary exposure time | 0.600000 | 0.6 |
| | | | [s] Secondary exposure time | 0.000000 | 3.2 |
| | | | Duty cycle | 5 | 5 |

2.3 Aspect



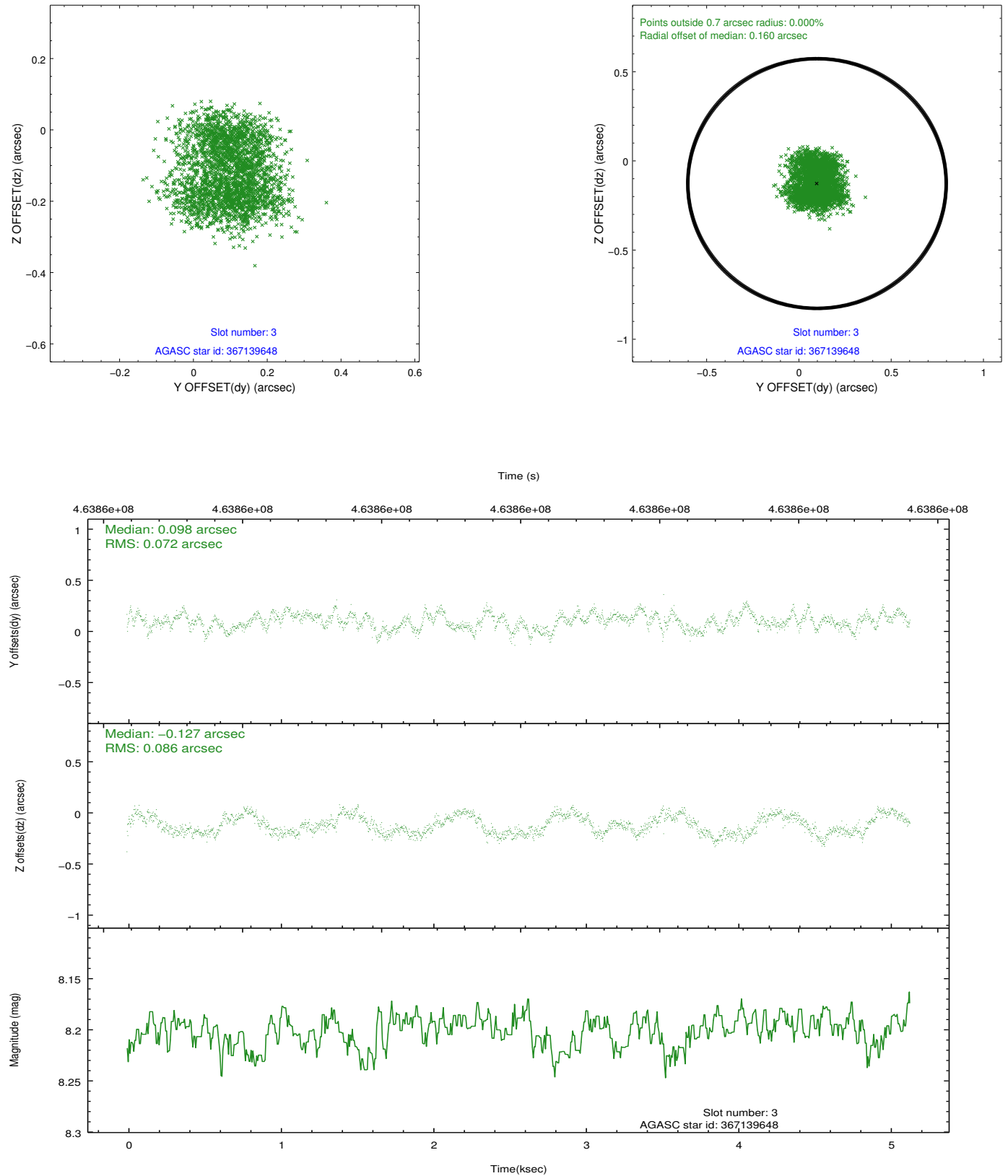


Slot Statistics

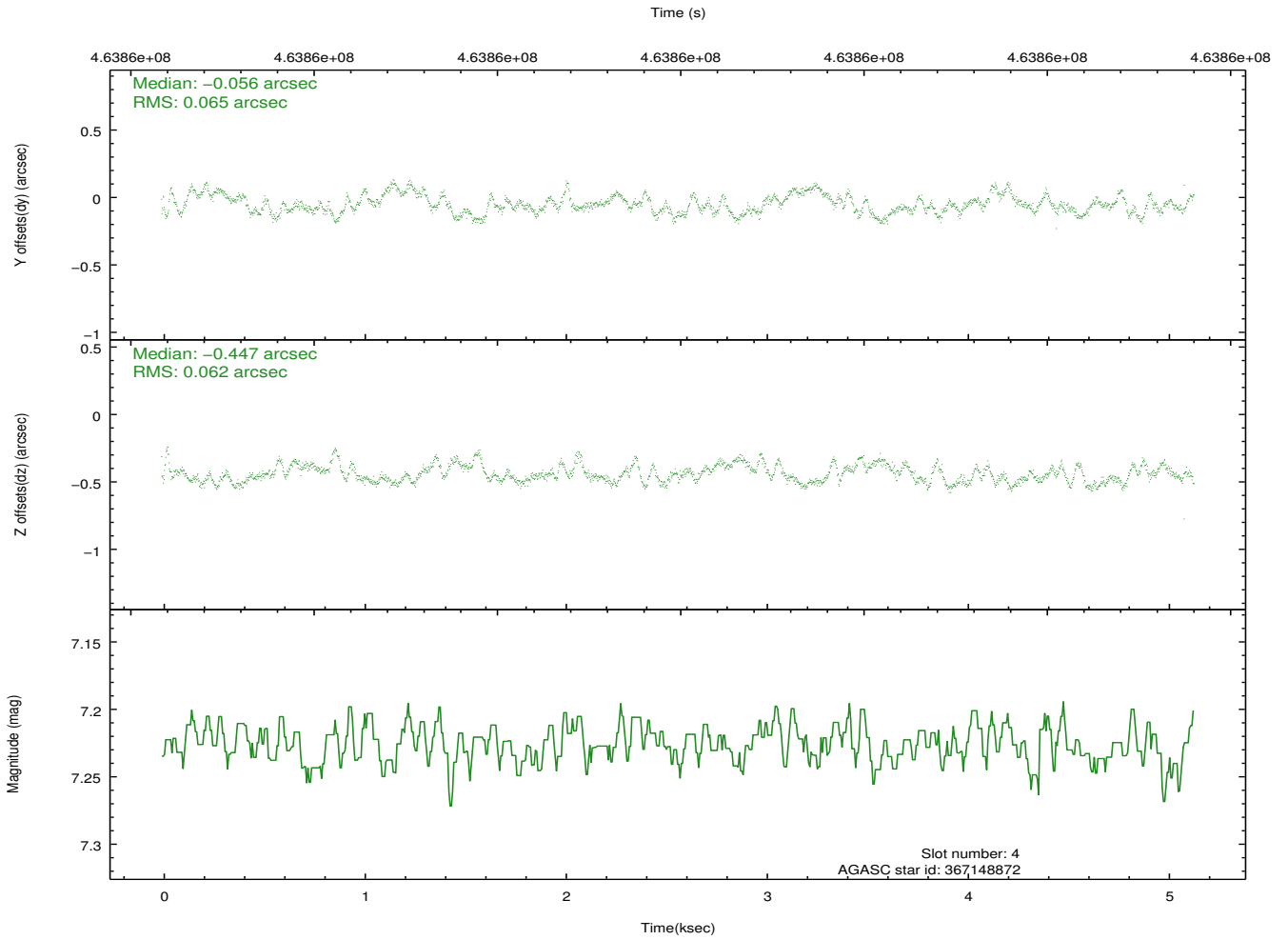
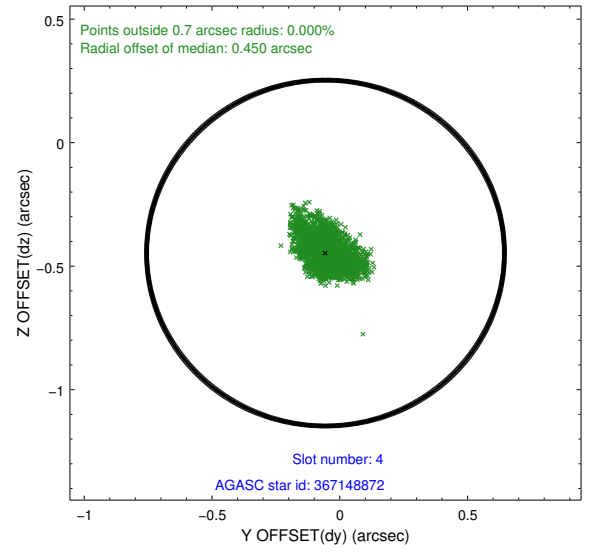
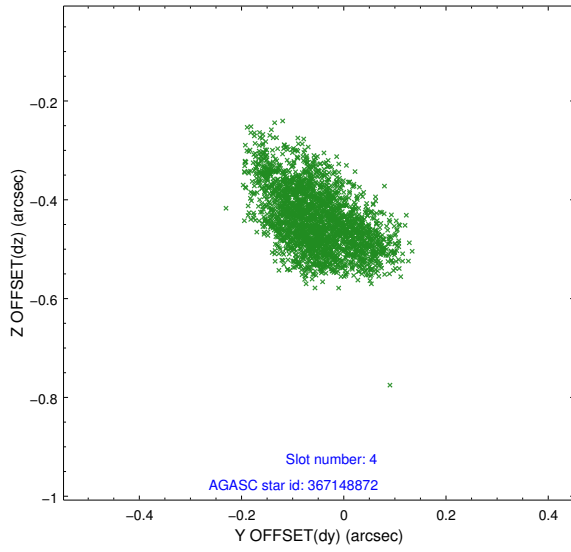
| slot | status | id | mag | n_pts | med_dy | med_dz | dr1 | dr2 | ra | dec | mean_y | mean_z |
|------|--------|-----------|------|-------|--------|--------|-------|-------|-----------|-----------|----------|----------|
| 0 | FID | ACIS-I-1 | 7.03 | 1253 | 0.079 | -0.045 | 0.009 | 0.016 | 0.000000 | 0.000000 | 923.22 | -840.53 |
| 1 | FID | ACIS-I-5 | 7.03 | 1253 | -0.242 | 0.072 | 0.008 | 0.014 | 0.000000 | 0.000000 | -1824.53 | 1056.52 |
| 2 | FID | ACIS-I-6 | 7.04 | 1253 | 0.072 | 0.044 | 0.007 | 0.011 | 0.000000 | 0.000000 | 387.50 | 1702.30 |
| 3 | GUIDE | 367139648 | 8.20 | 2503 | 0.098 | -0.127 | 0.125 | 0.179 | 11.021290 | 40.433909 | -2117.19 | 2310.57 |
| 4 | GUIDE | 367148872 | 7.23 | 2506 | -0.056 | -0.447 | 0.095 | 0.157 | 10.505940 | 40.688258 | -446.95 | 2129.60 |
| 5 | GUIDE | 367657896 | 9.02 | 2504 | 0.009 | 0.255 | 0.125 | 0.188 | 11.197765 | 41.313576 | -1106.55 | -727.89 |
| 6 | GUIDE | 367663272 | 9.24 | 2506 | -0.203 | 0.064 | 0.261 | 0.352 | 10.656279 | 41.699429 | 823.99 | -1306.80 |
| 7 | GUIDE | 367674552 | 8.85 | 2504 | 0.119 | 0.222 | 0.093 | 0.147 | 11.016238 | 41.570845 | -249.04 | -1331.89 |

2.4 Star Slots

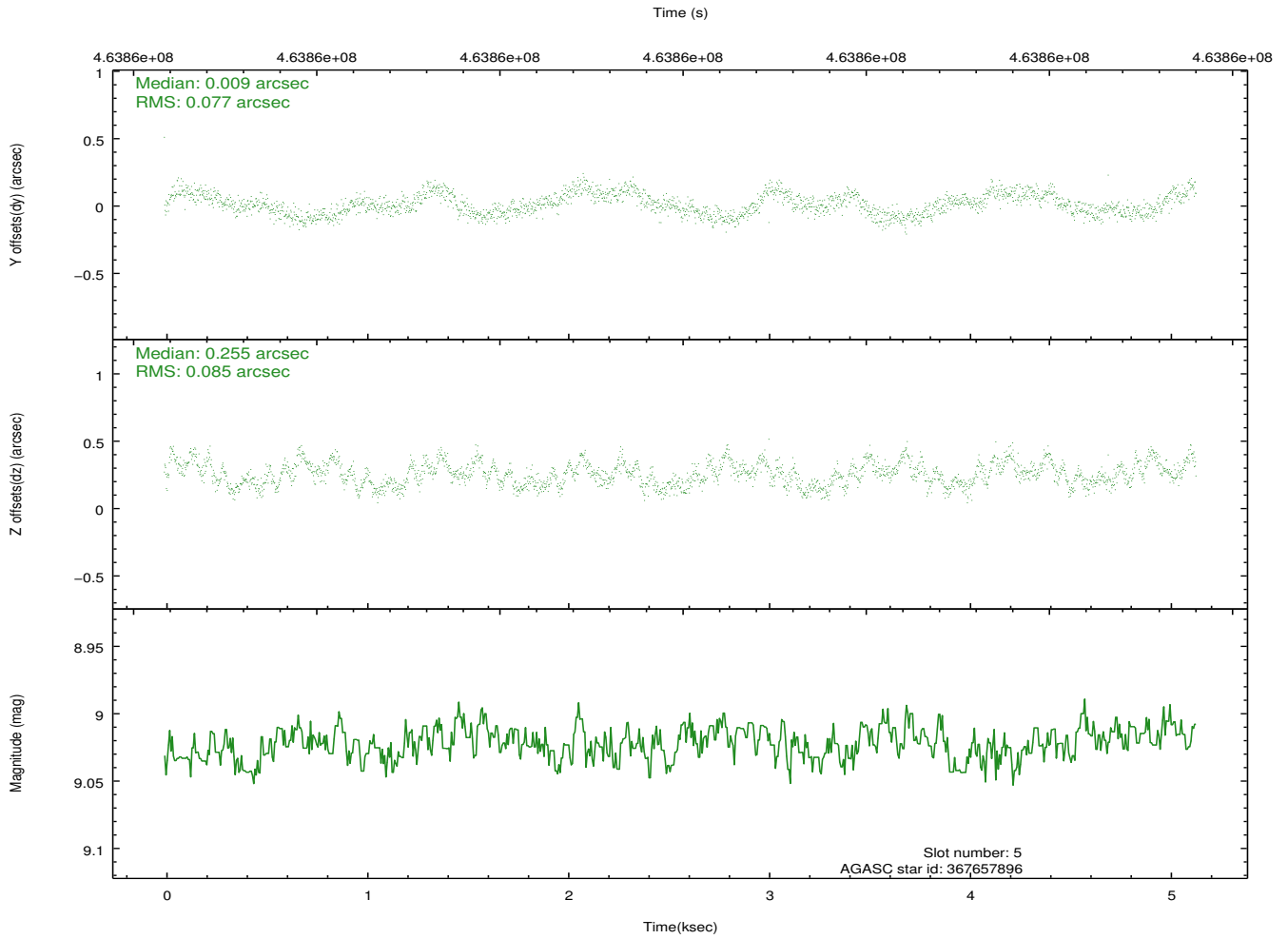
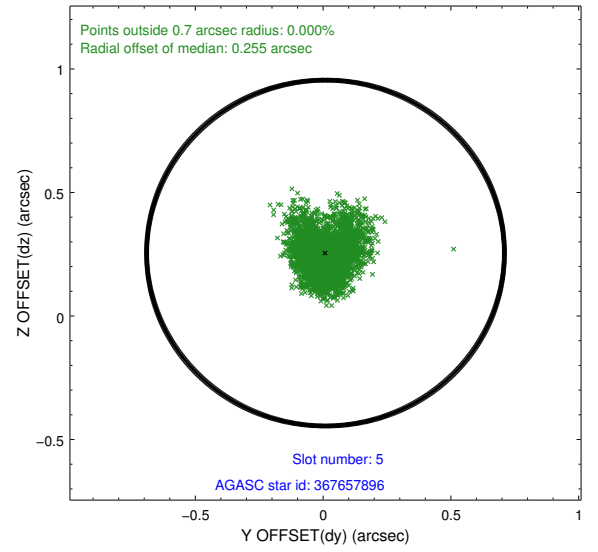
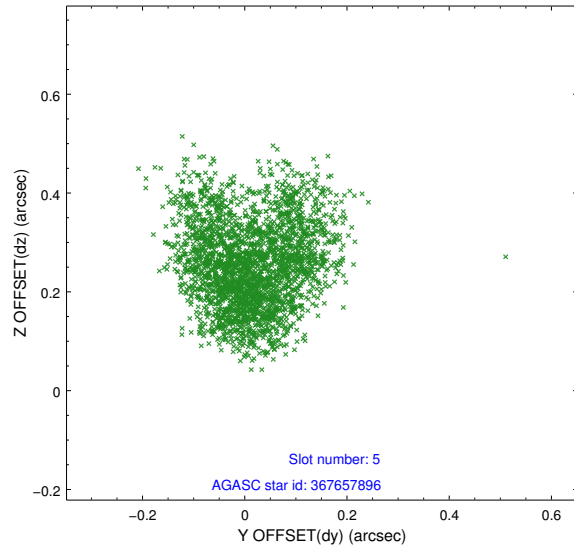
2.4.1 Slot 3



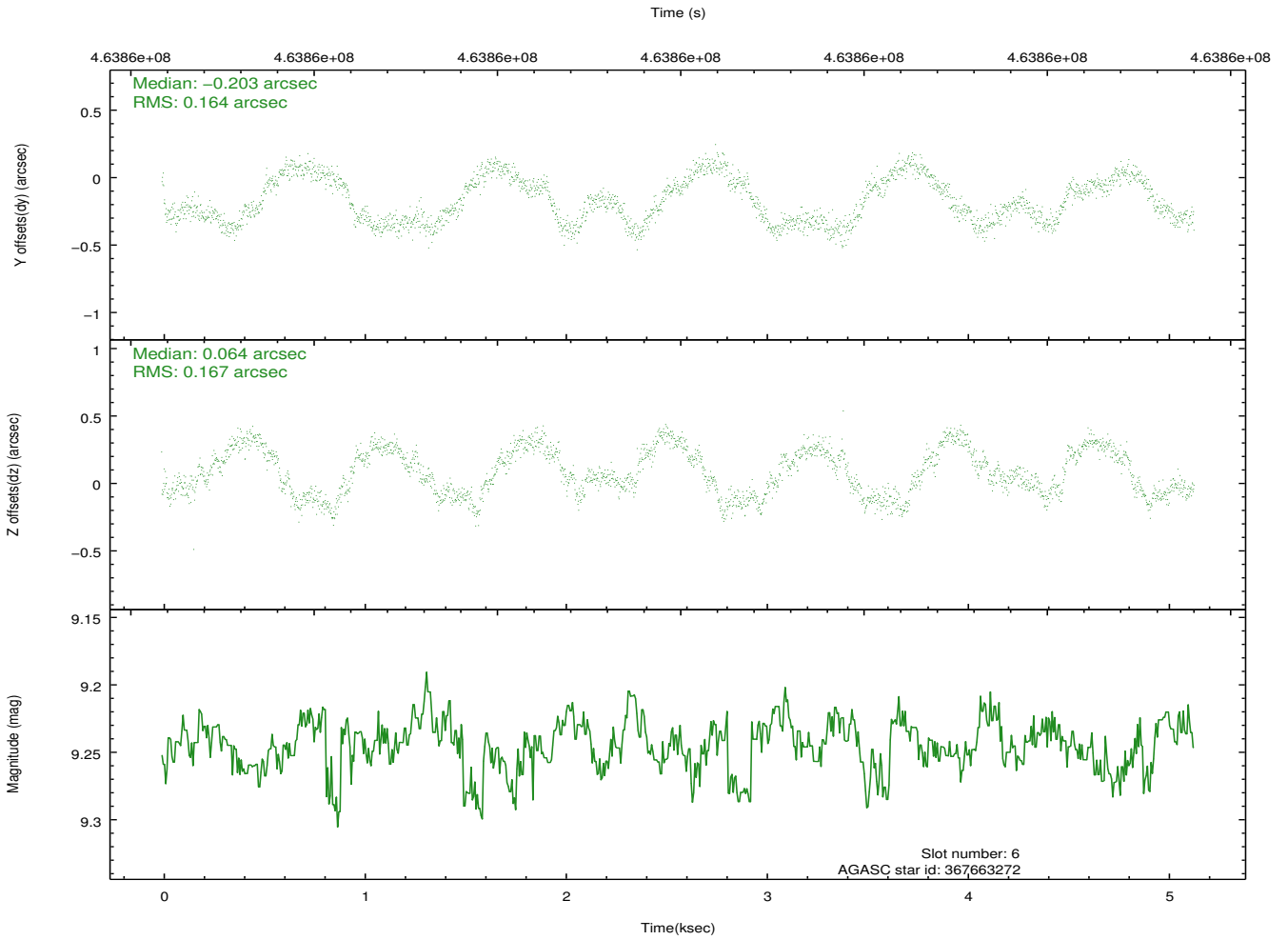
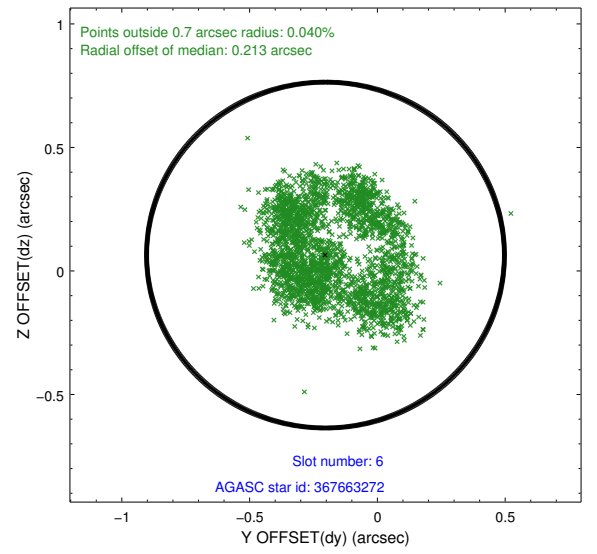
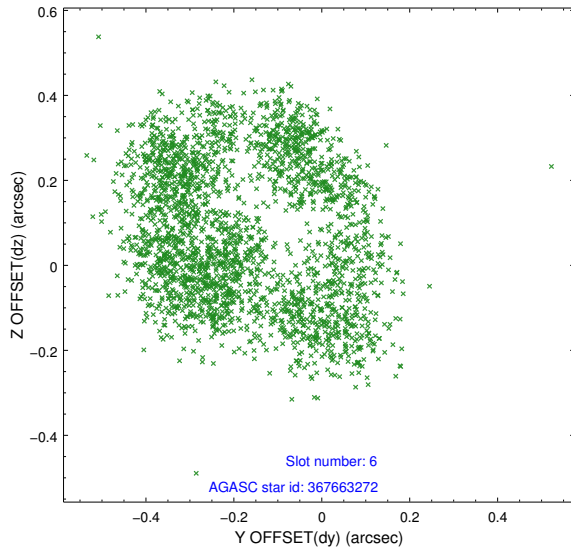
2.4.2 Slot 4



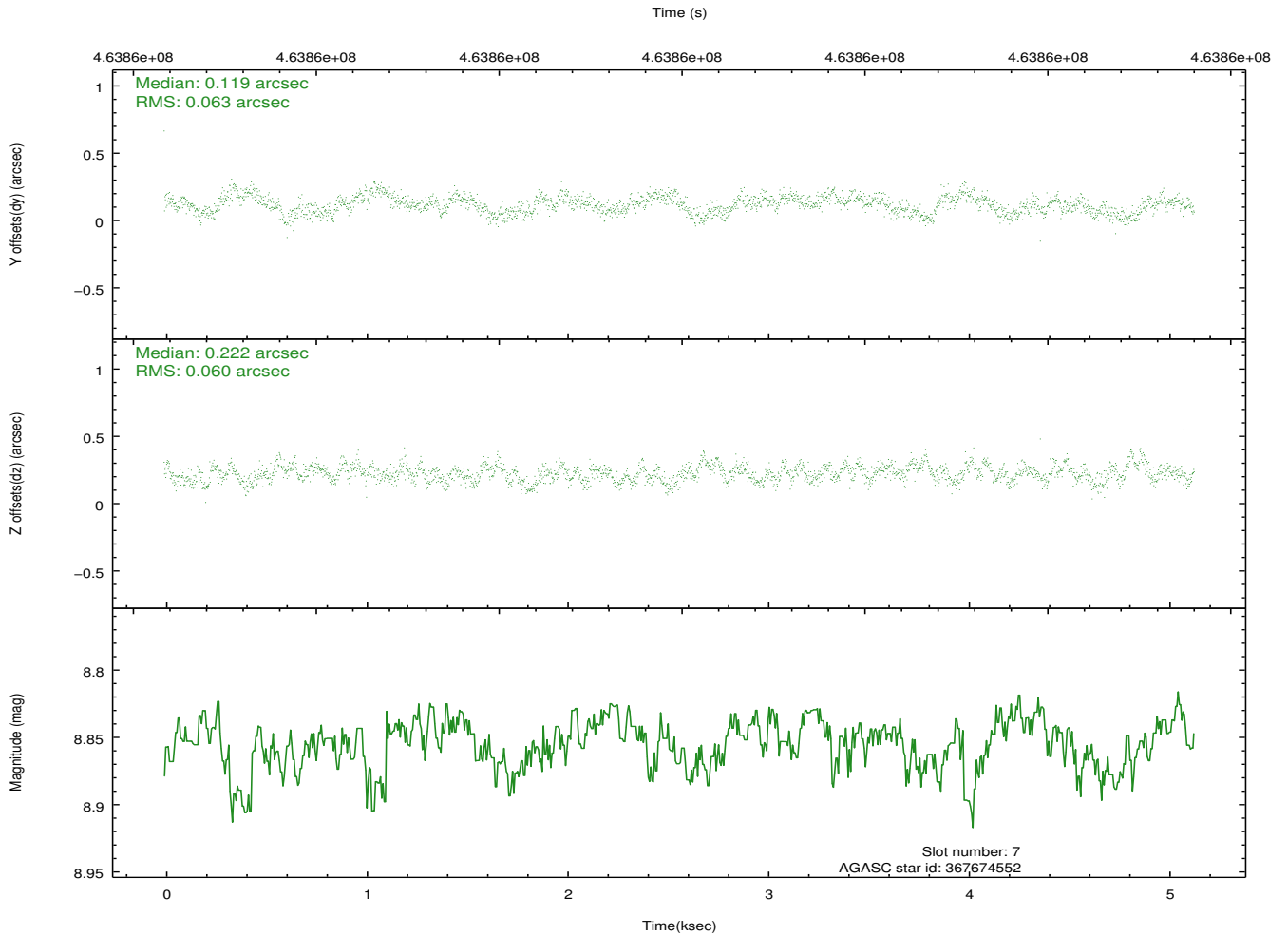
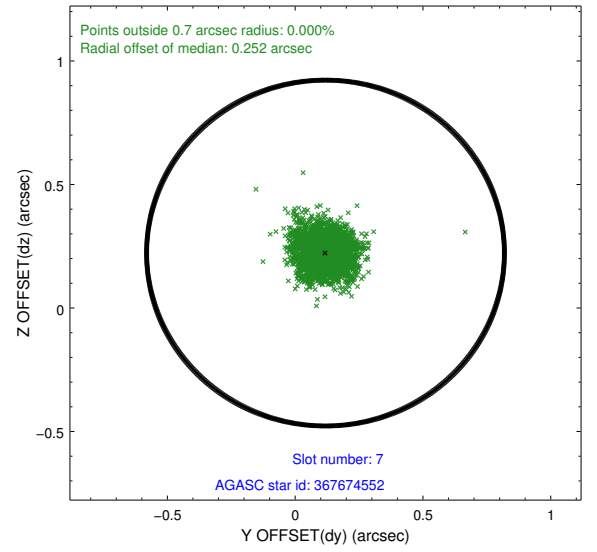
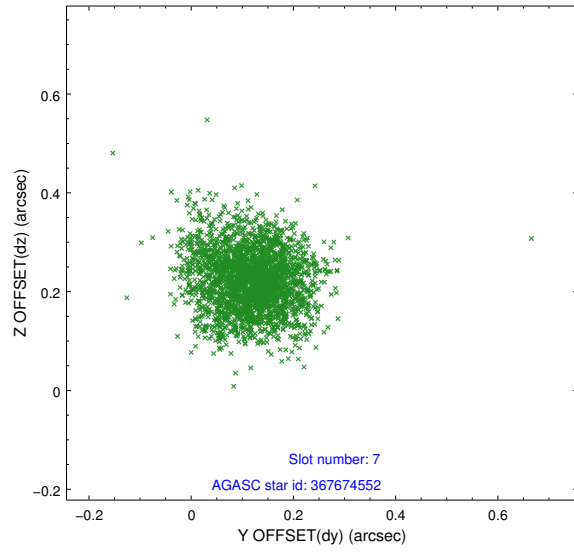
2.4.3 Slot 5



2.4.4 Slot 6

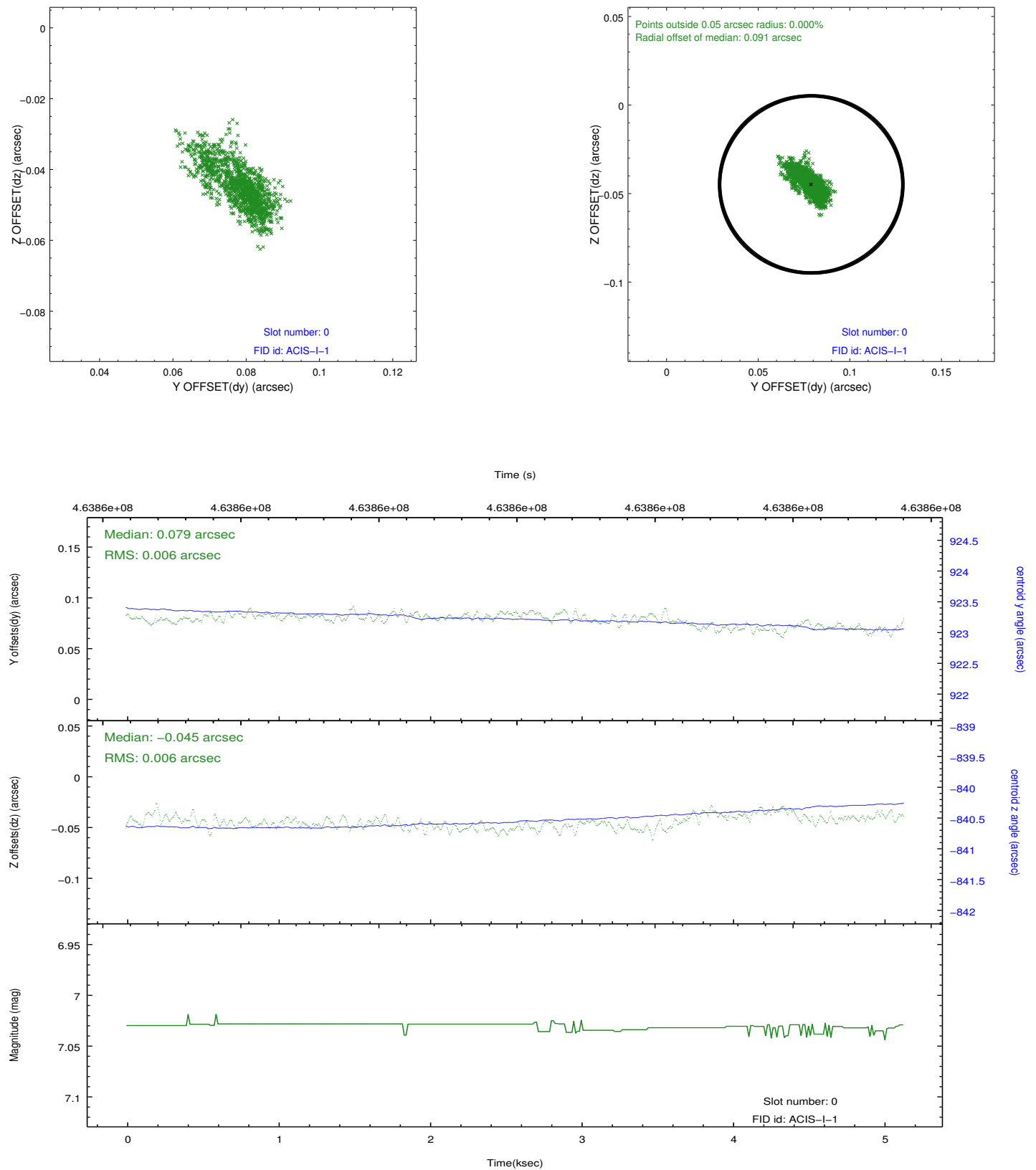


2.4.5 Slot 7

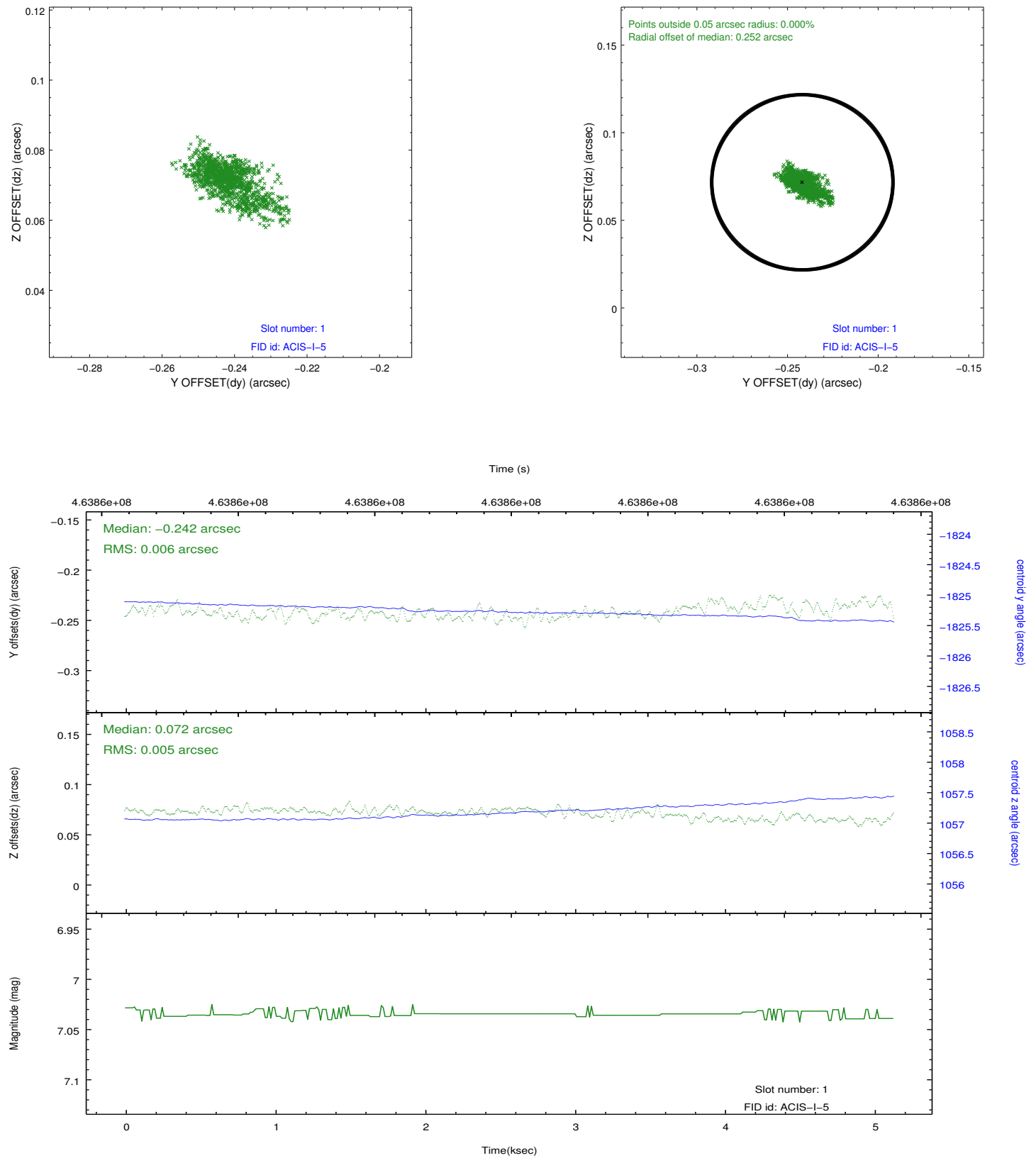


2.5 FID Slots

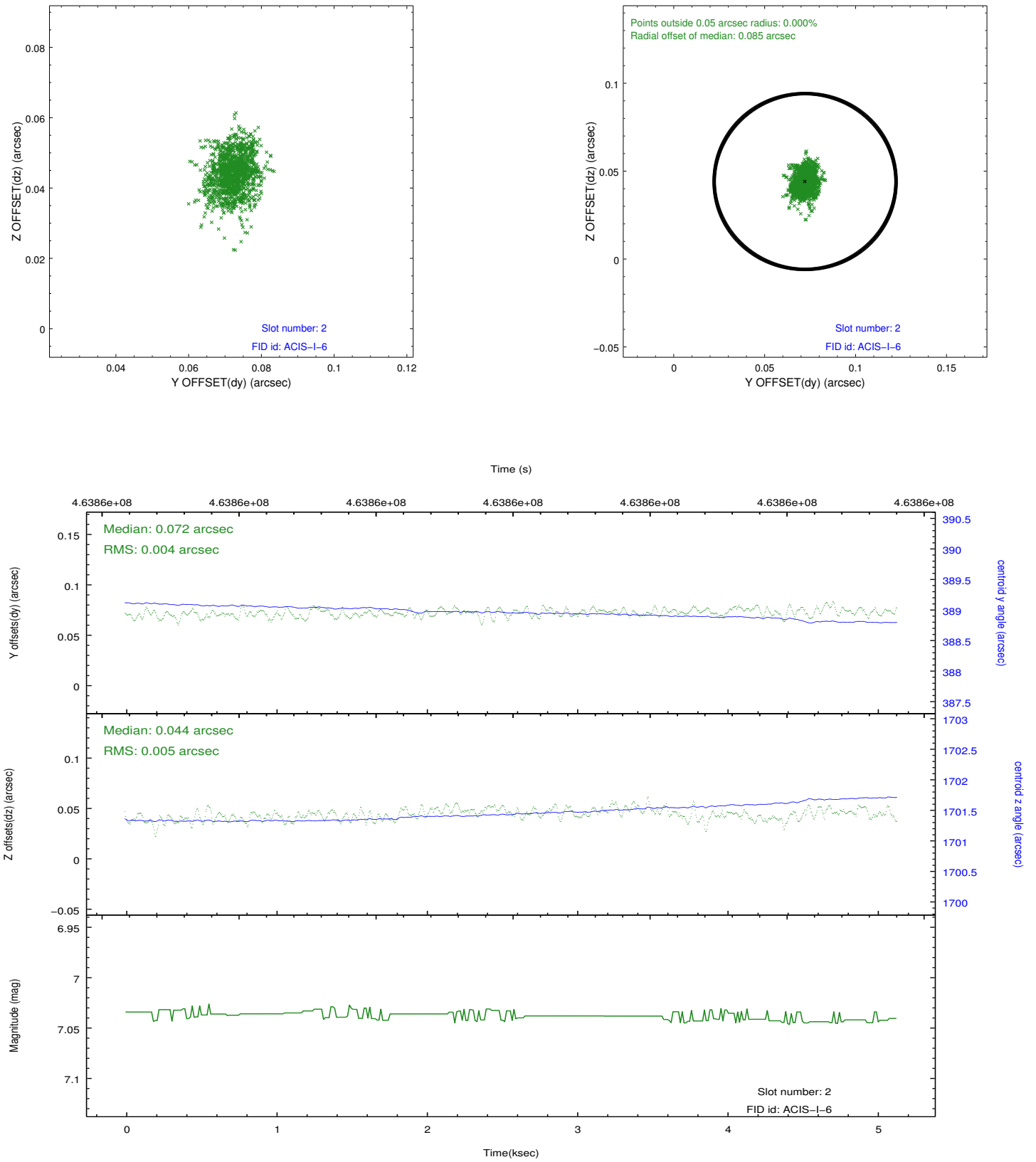
2.5.1 Slot 0



2.5.2 Slot 1



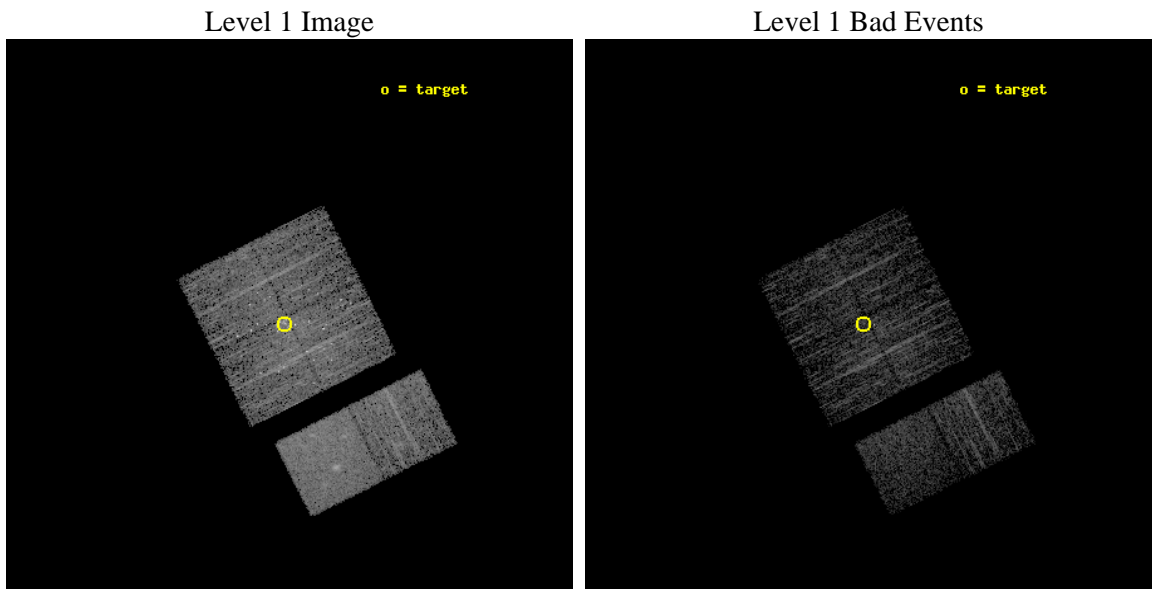
2.5.3 Slot 2



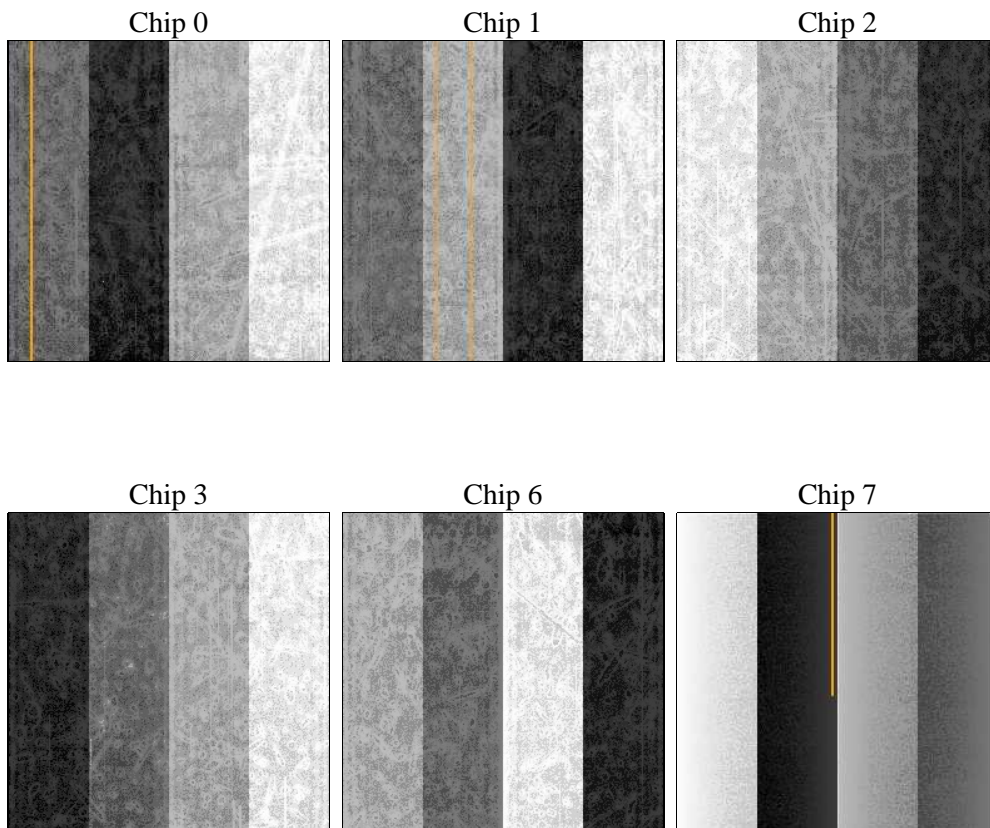
3 OBI Secondary

3.1 OBI

3.1.1 Images



3.1.2 Bias



3.1.3 Parameters

| | | | | | |
|----------|---------------------|--------------------------------|----------------|-----------------|---|
| obi_num | 0 | Obi number | sched_exp_time | 5000.000000 | [s] Scheduled observation exposure time |
| ascdsver | 8.4.5 | Processing system revision | ontime | 3957.0433689356 | Sum of GTIs [s] |
| caldsver | 4.5.1.1 | | ontime0 | 3957.0434099436 | Sum of GTIs [s] |
| date | 2012-09-13T03:35:19 | Date and time of file creation | ontime1 | 3957.0431604385 | Sum of GTIs [s] |
| revision | 1 | Processing version of data | ontime2 | 3957.0435188413 | Sum of GTIs [s] |
| | | | ontime3 | 3957.0433689356 | Sum of GTIs [s] |
| | | | ontime6 | 3957.0431708097 | Sum of GTIs [s] |
| | | | ontime7 | 3957.0435083508 | Sum of GTIs [s] |
| | | | l1events | 139555 | Number of level 1 events |

3.1.4 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 | 18347 | 21824 | 25178 | 23705 | 21182 | 29319 | grade 0 events | 1442 | 3165 | 3839 | 3664 | 1169 | 1453 |
| rejected events | 15105 | 16276 | 18858 | 17980 | 18264 | 15634 | | 7% | 14% | 15% | 15% | 5% | 4% |
| rejected % | 82% | 74% | 74% | 75% | 86% | 53% | grade 1 events | 18 | 31 | 142 | 44 | 10 | 35 |
| | | | | | | | | 0% | 0% | 0% | 0% | 0% | 0% |
| | | | | | | | grade 2 events | 697 | 969 | 1044 | 791 | 647 | 2874 |
| | | | | | | | | 3% | 4% | 4% | 3% | 3% | 9% |
| | | | | | | | grade 3 events | 287 | 360 | 416 | 341 | 269 | 1220 |
| | | | | | | | | 1% | 1% | 1% | 1% | 1% | 4% |
| | | | | | | | grade 4 events | 257 | 361 | 421 | 336 | 262 | 1192 |
| | | | | | | | | 1% | 1% | 1% | 1% | 1% | 4% |
| | | | | | | | grade 5 events | 885 | 995 | 1000 | 1114 | 1107 | 2946 |
| | | | | | | | | 4% | 4% | 3% | 4% | 5% | 10% |
| | | | | | | | grade 6 events | 565 | 699 | 617 | 611 | 576 | 6998 |
| | | | | | | | | 3% | 3% | 2% | 2% | 2% | 23% |
| | | | | | | | grade 7 events | 14196 | 15244 | 17699 | 16804 | 17142 | 12601 |
| | | | | | | | | 77% | 69% | 70% | 70% | 80% | 42% |

A Summary

A.1 Status

| | |
|----------------------------|------------------|
| V&V Scientist | Joy Nichols |
| V&V Date (YYYY-MM-DD) | 2012.09.13 |
| V&V Edition | 1 |
| V&V Disposition and Status | OK |
| V&V Charge Time | 4.87982778227331 |

A.2 Comments