

V&V Reference Report

L2 ASCDS Version : 8.4.4

Observation 13298 - L2 Version 1
Chandra X-Ray Center

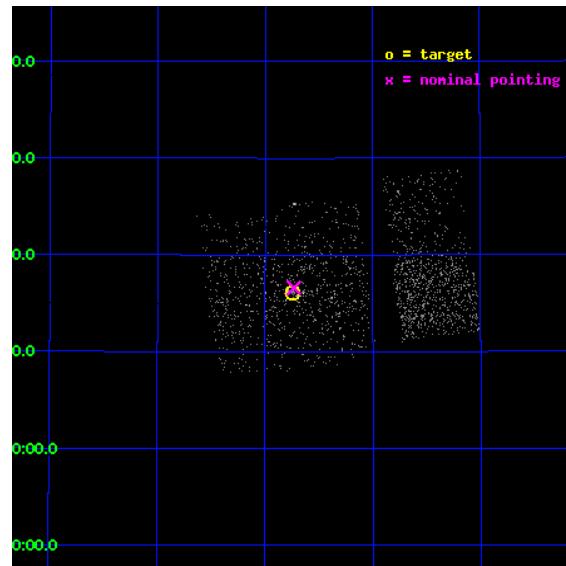
L2 Processing Date : May 27 2012

Contents

| | | |
|----------|-------------------------------|-----------|
| 1 | Front | 2 |
| 2 | OBI Primary | 3 |
| 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 |
| 3 | OBI Secondary | 17 |
| 3.1 | OBI | 17 |
| 3.1.1 | Images | 17 |
| 3.1.2 | Bias | 17 |
| 3.1.3 | Parameters | 18 |
| 3.1.4 | Events | 18 |
| A | Summary | 19 |
| A.1 | Status | 19 |
| A.2 | Comments | 19 |

1 Front

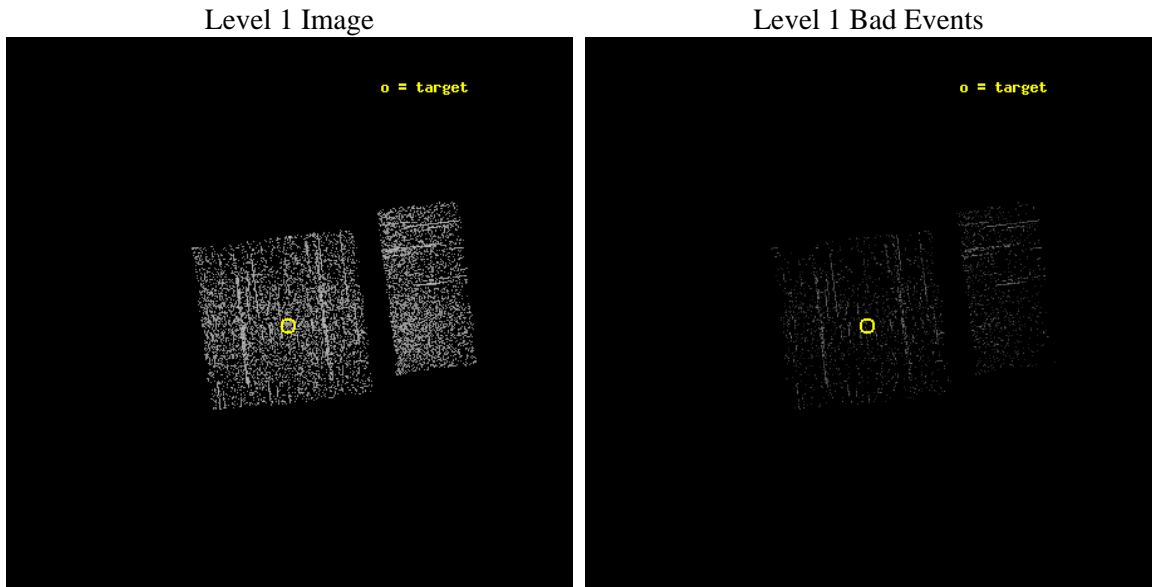
| | | |
|----------|-------------------------------|---|
| seq_num | 600986 | Sequence number |
| obs_id | 13298 | Observation id |
| title | Black Hole X-ray Novae in M31 | Proposal title |
| observer | Dr. Stephen Murray | Principal investigator |
| object | M31 | Source name |
| dtcycle | 0 | |
| cycle | P | events are from which exps? P[primary] S[econdar |
| ra_targ | 10.685 | Observer's specified target RA [deg] |
| dec_targ | 41.268972 | Observer's specified target Dec [deg] |
| ra_nom | 10.68312709455 | Nominal RA [deg] |
| dec_nom | 41.276905040447 | Nominal Dec [deg] |
| roll_nom | 83.072950979883 | Nominal Roll [deg] |
| revision | 1 | Processing version of data |
| ontime | 922.19509530067 | Sum of GTIs [s] |
| livetime | 145.17575279701 | Livetime [s] |
| ontime0 | 922.19509530067 | Sum of GTIs [s] |
| ontime1 | 922.19509530067 | Sum of GTIs [s] |
| ontime2 | 922.19509530067 | Sum of GTIs [s] |
| ontime3 | 922.19509530067 | Sum of GTIs [s] |
| ontime6 | 922.19509530067 | Sum of GTIs [s] |
| ontime7 | 922.19509530067 | Sum of GTIs [s] |
| l2events | 2143 | Number of level 2 events |



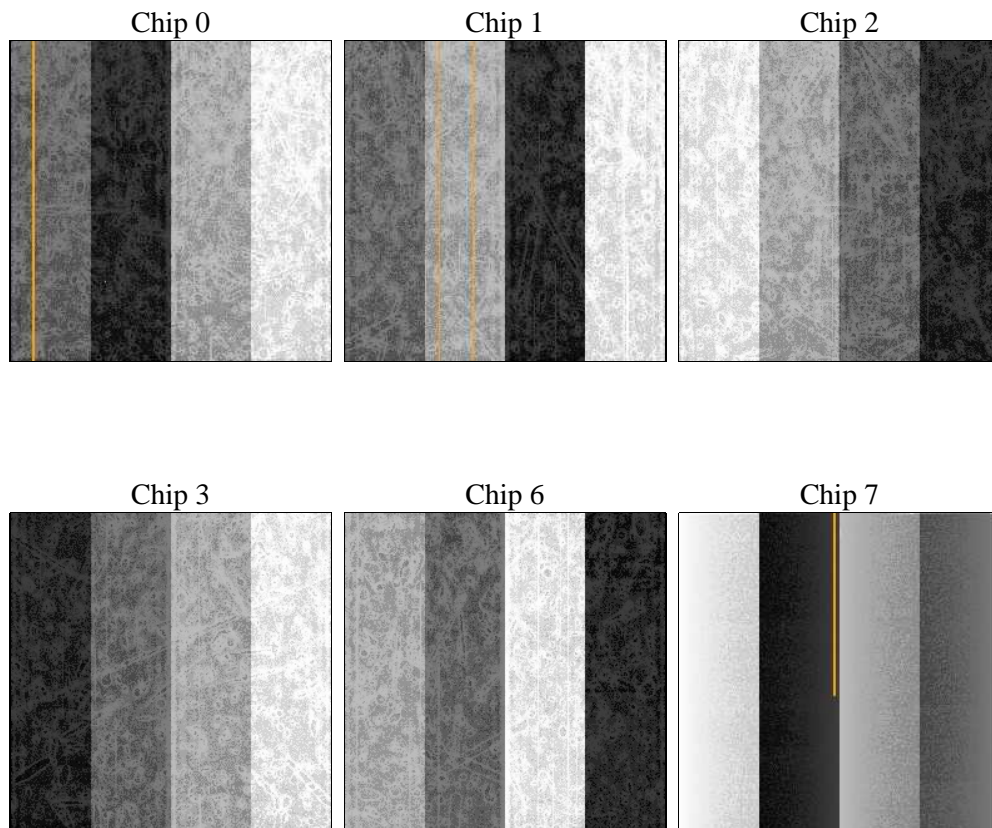
2 OBI Primary

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 | 8.4.4 | Processing system revision | ontime | 922.19509530067 | Sum of GTIs [s] |
| caldsver | 4.4.9 | | ontime0 | 922.19509530067 | Sum of GTIs [s] |
| date | 2012-05-27T12:13:13 | Date and time of file creation | ontime1 | 922.19509530067 | Sum of GTIs [s] |
| revision | 1 | Processing version of data | ontime2 | 922.19509530067 | Sum of GTIs [s] |
| | | | ontime3 | 922.19509530067 | Sum of GTIs [s] |
| | | | ontime6 | 922.19509530067 | Sum of GTIs [s] |
| | | | ontime7 | 922.19509530067 | Sum of GTIs [s] |
| | | | l1events | 16312 | Number of level 1 events |

2.1.4 Events

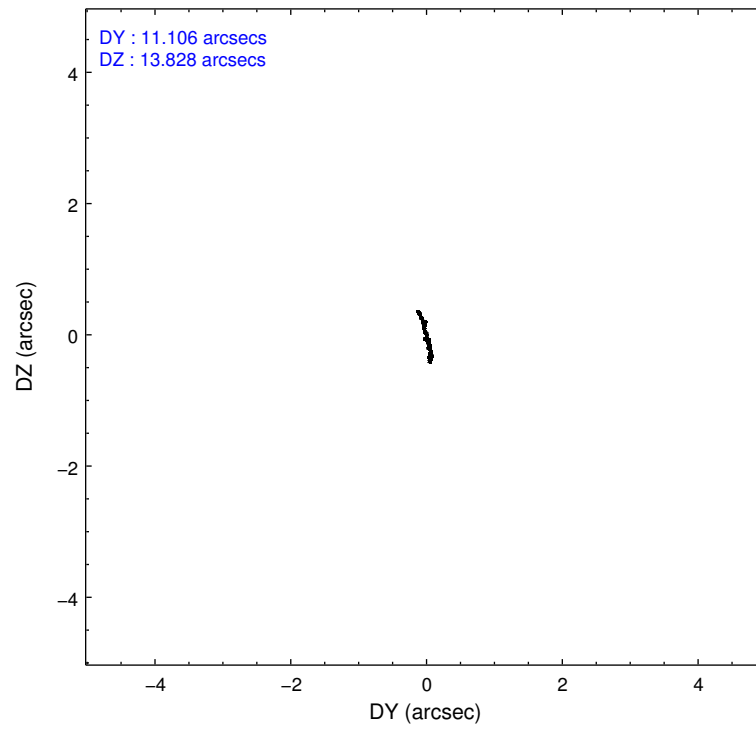
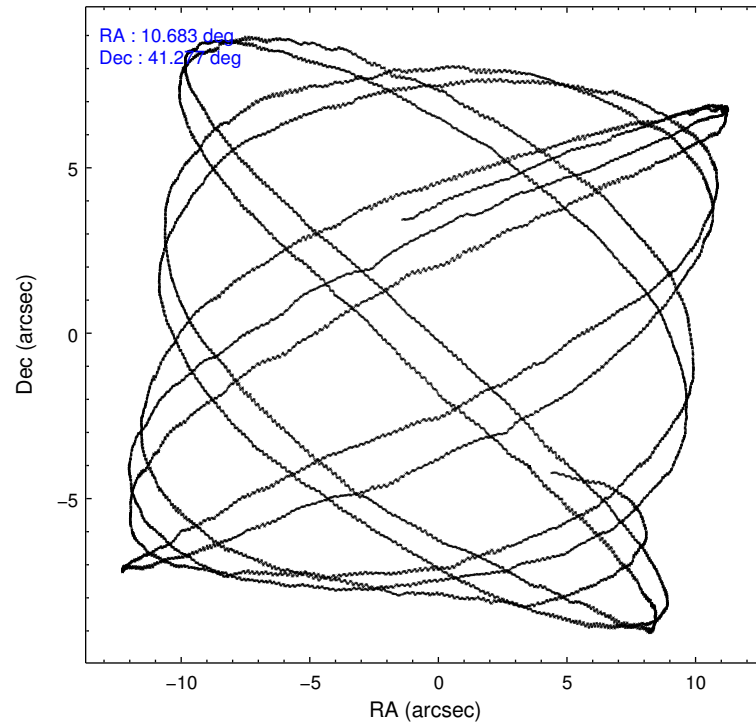
| | ccd 0 | ccd 1 | ccd 2 | ccd 3 | ccd 6 | ccd 7 |
|-----------------|-------|-------|-------|-------|-------|-------|
| level 1 events | 2610 | 2567 | 2649 | 2771 | 3008 | 2707 |
| rejected events | 2331 | 2185 | 2350 | 2285 | 2759 | 1925 |
| rejected % | 89% | 85% | 88% | 82% | 91% | 71% |

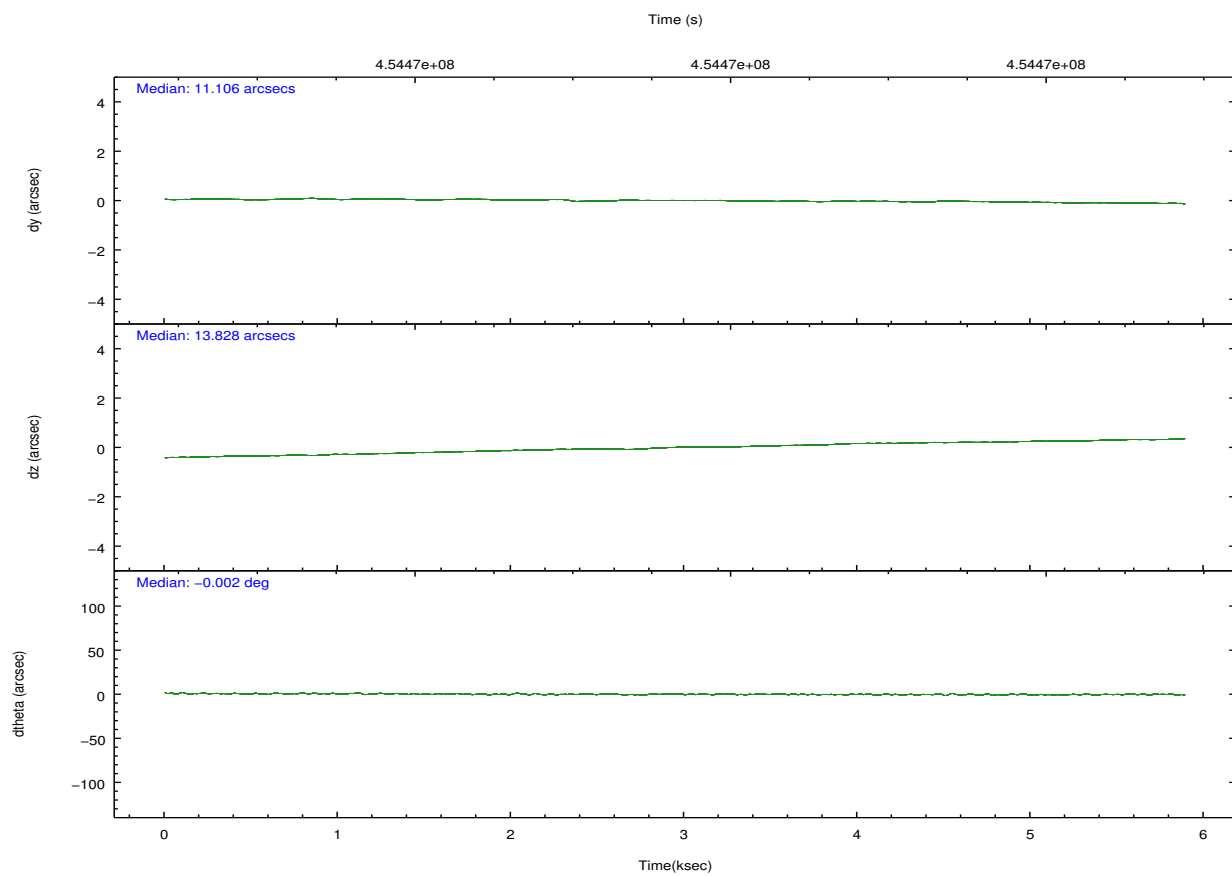
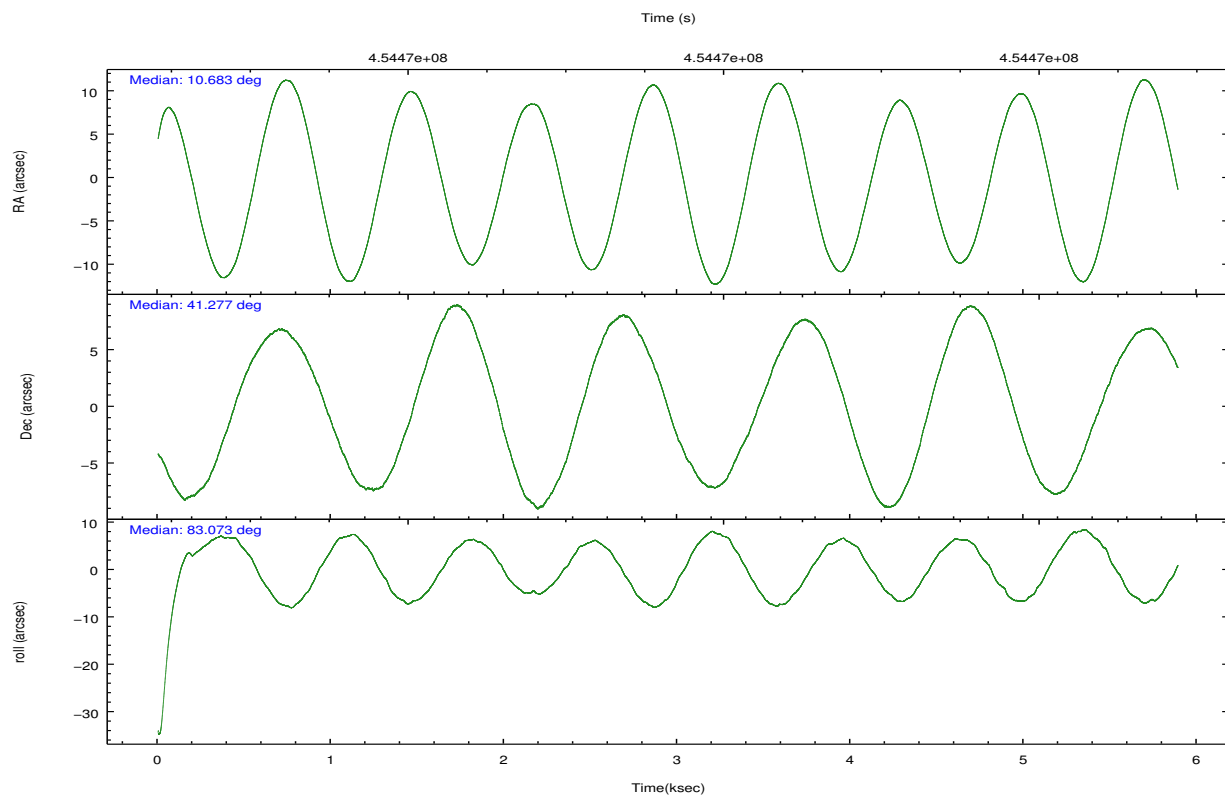
| | ccd 0 | ccd 1 | ccd 2 | ccd 3 | ccd 6 | ccd 7 |
|----------------|-------|-------|-------|-------|-------|-------|
| grade 0 events | 85 | 154 | 121 | 269 | 67 | 82 |
| | 3% | 5% | 4% | 9% | 2% | 3% |
| grade 1 events | 1 | 3 | 0 | 2 | 1 | 1 |
| | 0% | 0% | 0% | 0% | 0% | 0% |
| grade 2 events | 87 | 85 | 78 | 80 | 59 | 172 |
| | 3% | 3% | 2% | 2% | 1% | 6% |
| grade 3 events | 37 | 29 | 28 | 41 | 35 | 65 |
| | 1% | 1% | 1% | 1% | 1% | 2% |
| grade 4 events | 32 | 52 | 35 | 34 | 34 | 64 |
| | 1% | 2% | 1% | 1% | 1% | 2% |
| grade 5 events | 105 | 116 | 104 | 116 | 115 | 261 |
| | 4% | 4% | 3% | 4% | 3% | 9% |
| grade 6 events | 42 | 69 | 42 | 64 | 57 | 407 |
| | 1% | 2% | 1% | 2% | 1% | 15% |
| grade 7 events | 2221 | 2059 | 2241 | 2165 | 2640 | 1655 |
| | 85% | 80% | 84% | 78% | 87% | 61% |

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 | 10.697541 | 10.68312709455014 | CCD I2 on | Y | Y |
| [deg] Pointing Dec | 41.251664 | 41.27690504044719 | CCD I3 on | Y | Y |
| [deg] Pointing Roll | 82.854837 | 83.07295097988333 | 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) | 454465601.184000 | 454463253.85638 | CCD S5 on | N | N |
| Observation start date | 2012-05-27T00:25:35 | 2012-05-26T23:47:33 | Number of optional ACIS chips dropped | 0 | 0 |
| [s] Observation end time (MET) | 454470601.184000 | 454471581.46932 | On-chip summing requested | N | N |
| Observation end date | 2012-05-27T01:48:55 | 2012-05-27T02:06:21 | 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



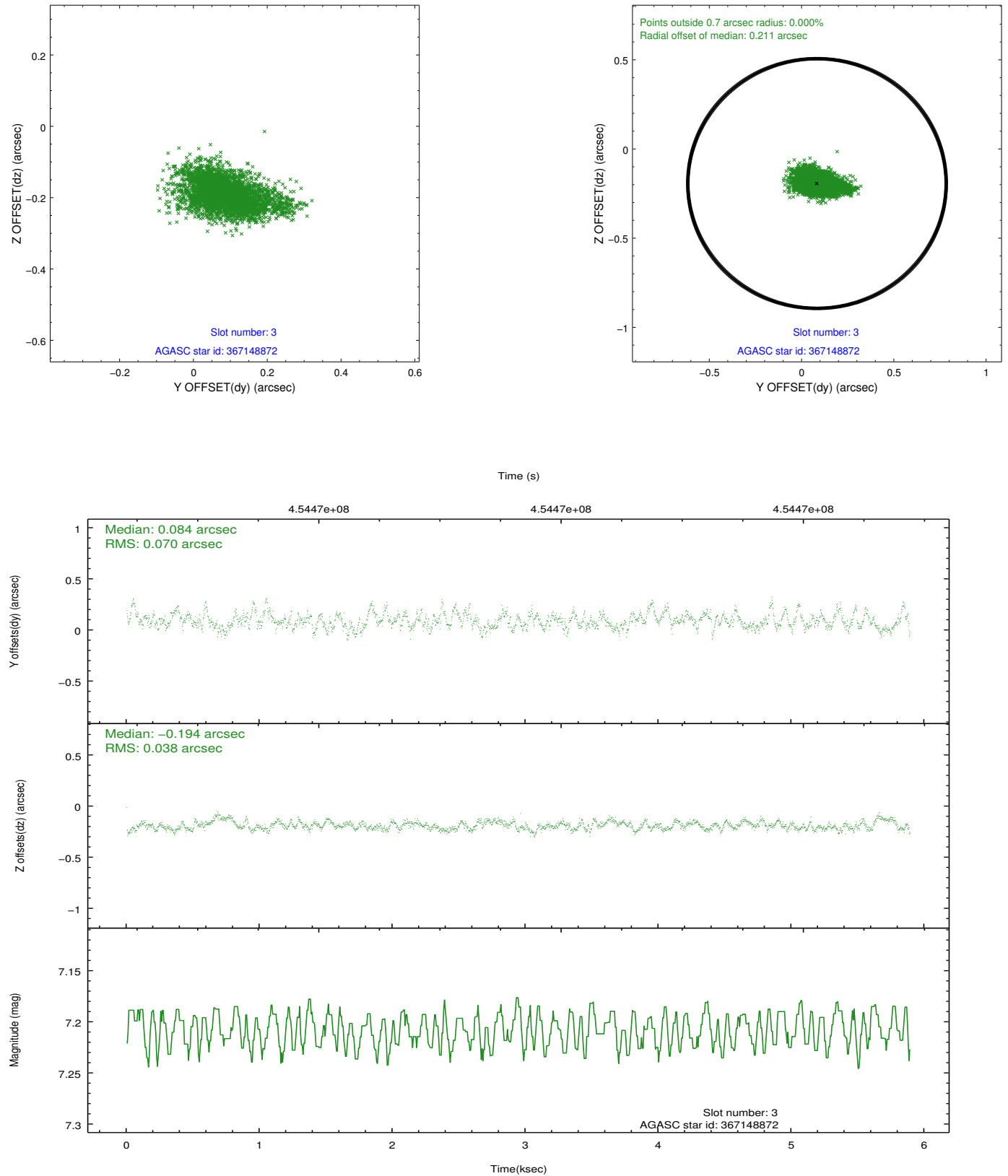


Slot Statistics

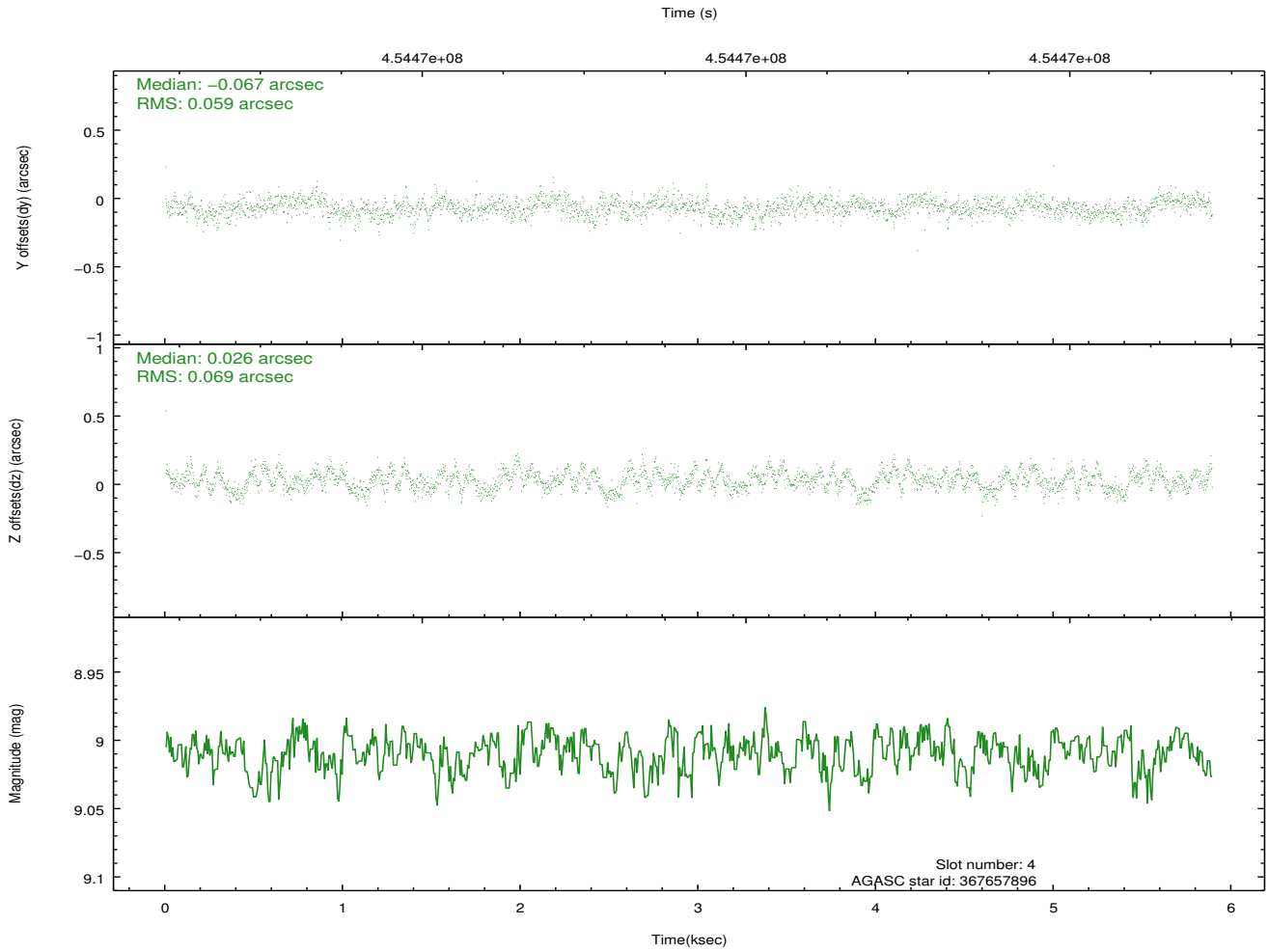
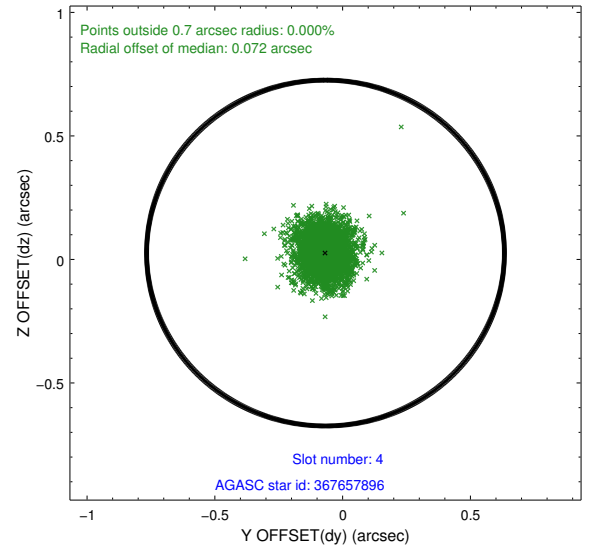
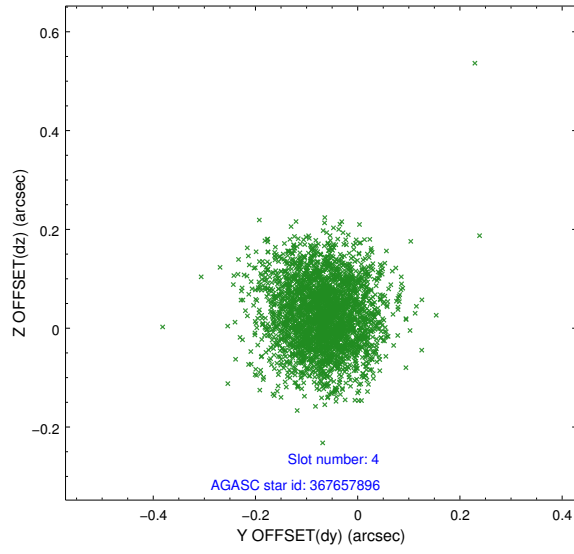
| slot | status | id | mag | n_pts | med_dy | med_dz | dr1 | dr2 | ra | dec | mean_y | mean_z |
|------|--------|-----------|------|-------|--------|--------|-------|-------|-----------|-----------|----------|----------|
| 0 | FID | ACIS-I-1 | 7.07 | 1437 | 0.037 | 0.026 | 0.007 | 0.012 | 0.000000 | 0.000000 | 928.51 | -837.35 |
| 1 | FID | ACIS-I-5 | 7.06 | 1437 | -0.177 | 0.060 | 0.007 | 0.011 | 0.000000 | 0.000000 | -1819.27 | 1059.65 |
| 2 | FID | ACIS-I-6 | 7.07 | 1437 | 0.049 | -0.016 | 0.007 | 0.012 | 0.000000 | 0.000000 | 392.95 | 1705.24 |
| 3 | GUIDE | 367148872 | 7.21 | 2873 | 0.084 | -0.194 | 0.081 | 0.151 | 10.505940 | 40.688258 | -2077.21 | 267.01 |
| 4 | GUIDE | 367657896 | 9.01 | 2874 | -0.067 | 0.026 | 0.096 | 0.154 | 11.197765 | 41.313576 | 392.95 | -1313.40 |
| 5 | GUIDE | 367663272 | 9.26 | 2874 | -0.038 | -0.193 | 0.099 | 0.162 | 10.656279 | 41.699429 | 1585.65 | 311.21 |
| 6 | GUIDE | 367674552 | 8.84 | 2873 | -0.076 | 0.113 | 0.082 | 0.134 | 11.016238 | 41.570845 | 1249.32 | -708.15 |
| 7 | GUIDE | 367138920 | 7.72 | 2873 | 0.095 | 0.243 | 0.076 | 0.115 | 11.513485 | 40.808909 | -1294.31 | -2403.83 |

2.4 Star Slots

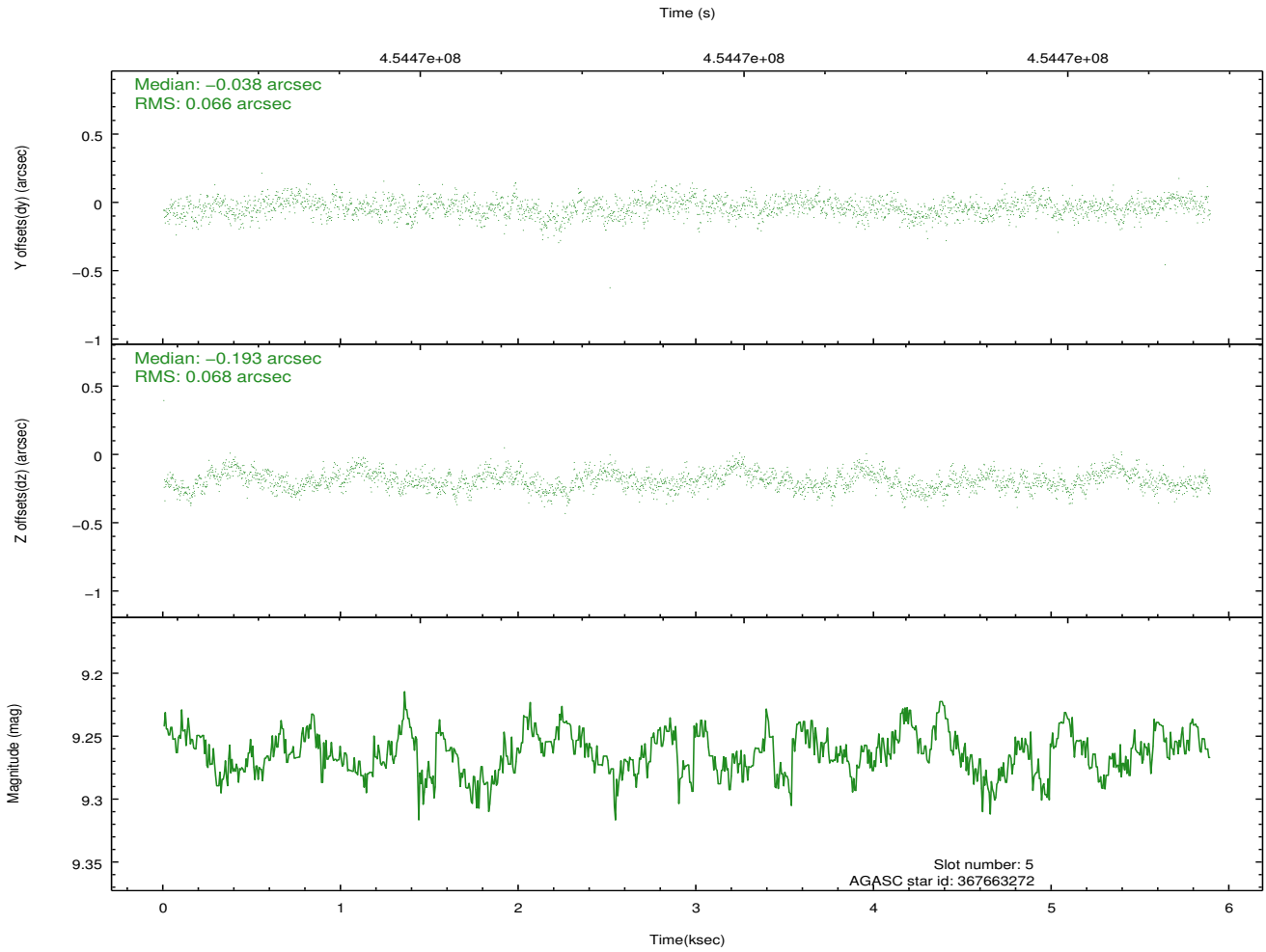
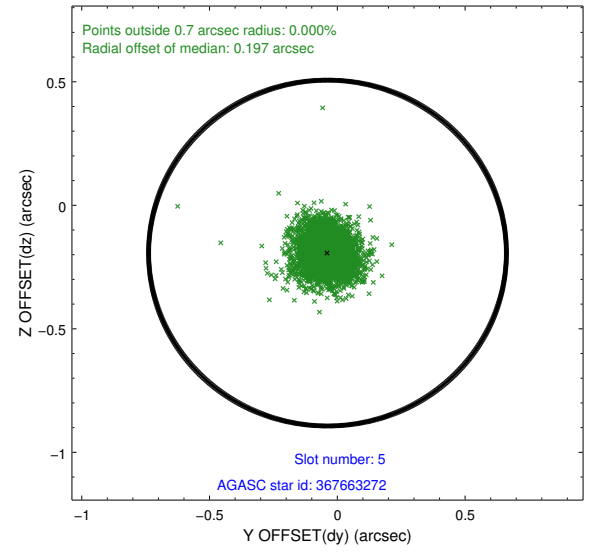
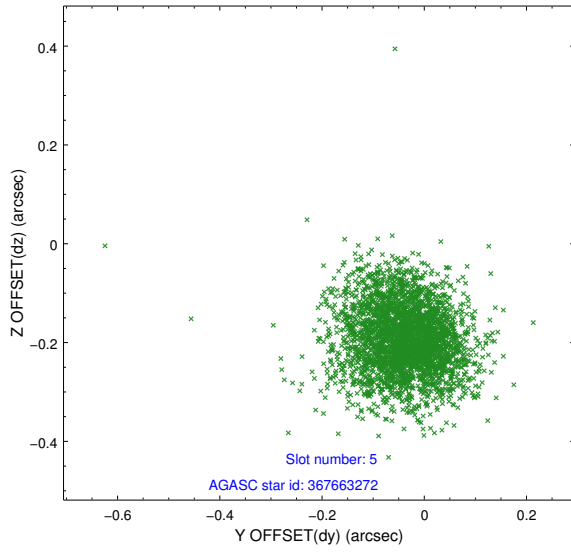
2.4.1 Slot 3



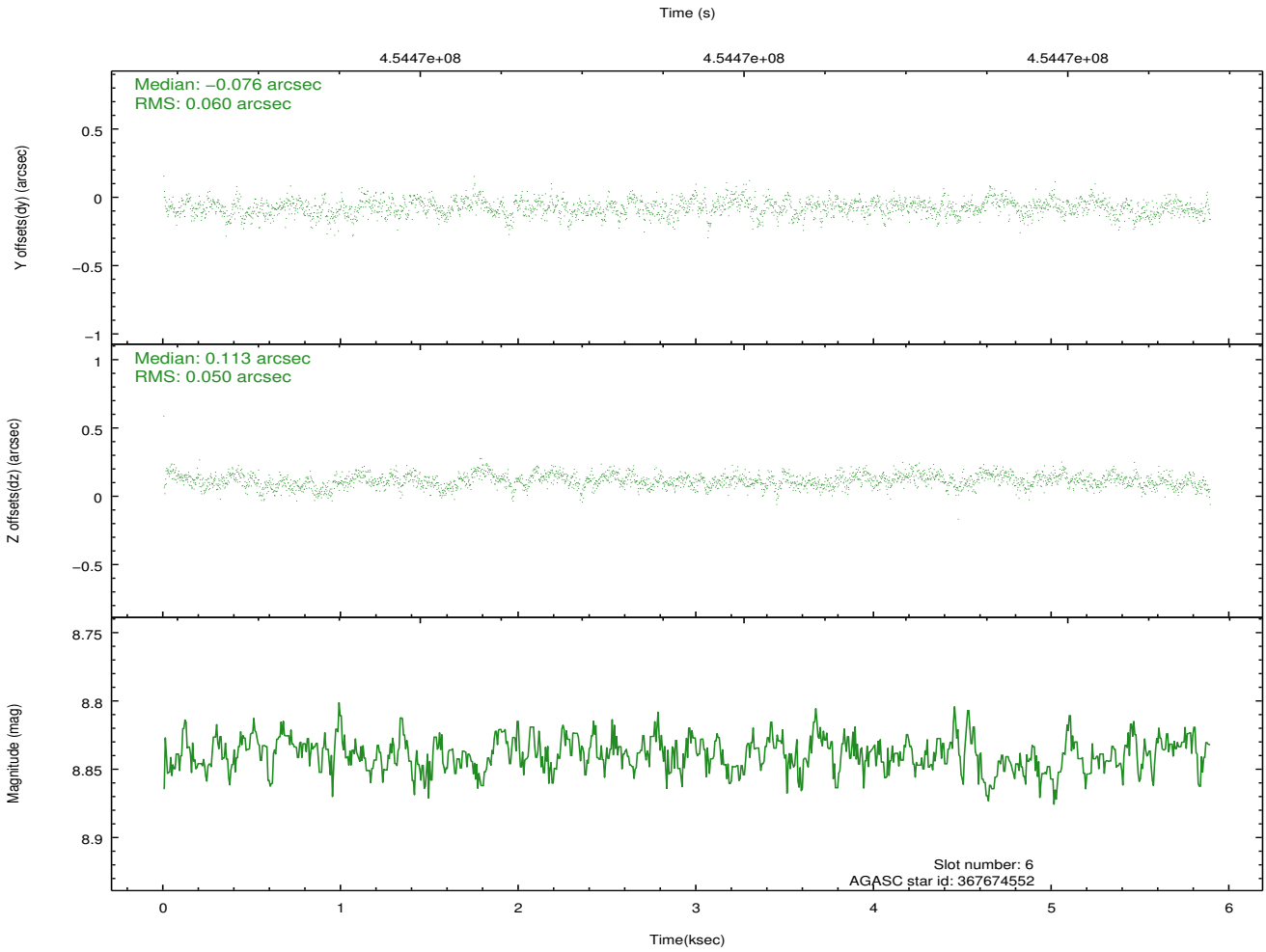
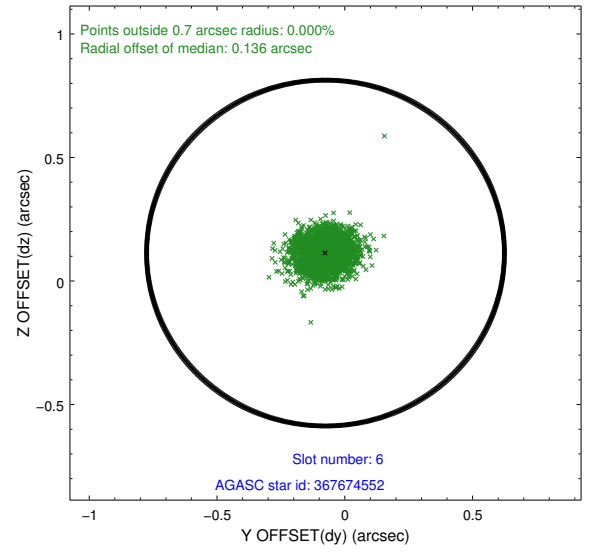
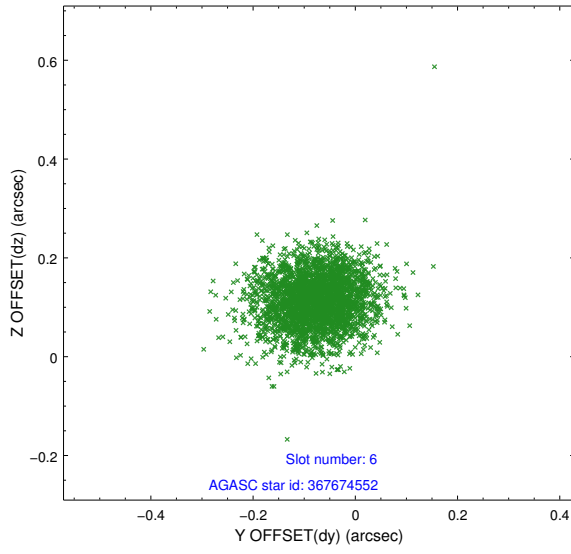
2.4.2 Slot 4



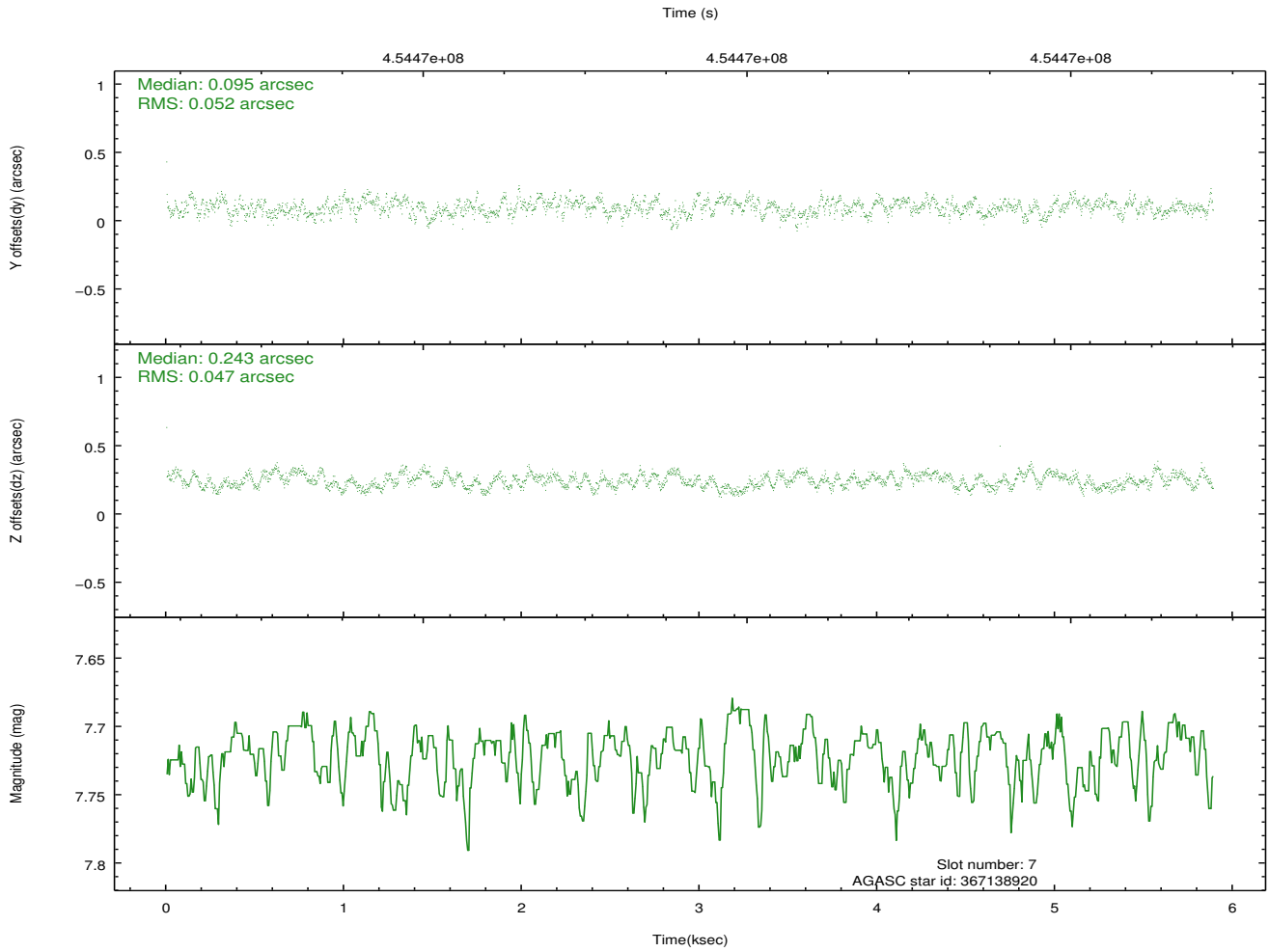
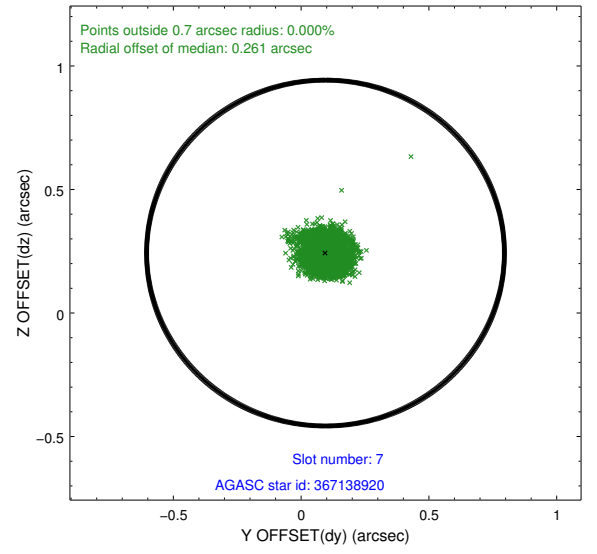
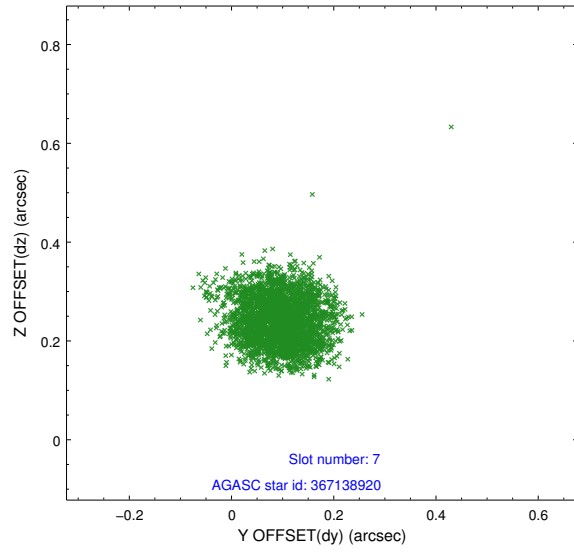
2.4.3 Slot 5



2.4.4 Slot 6

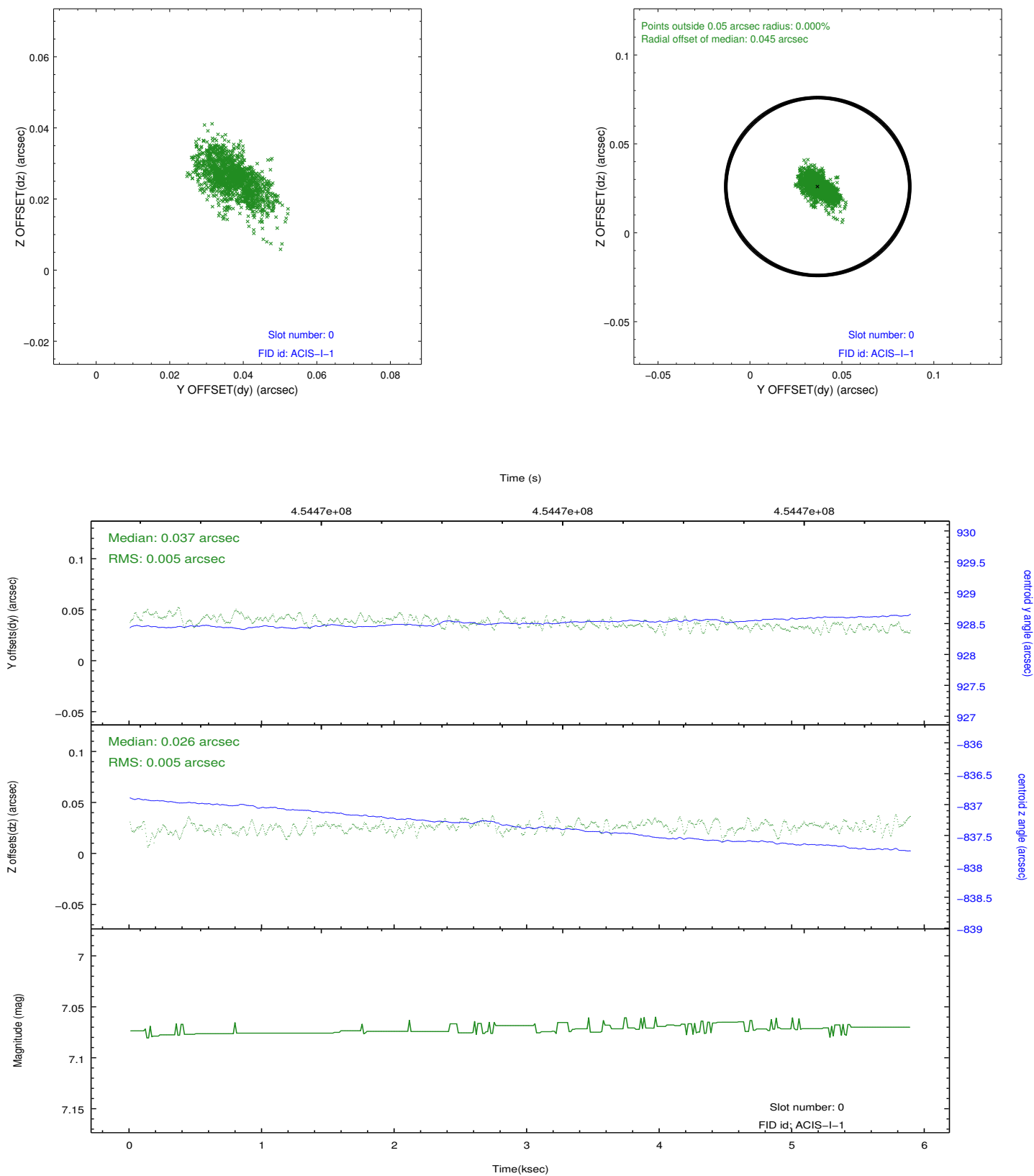


2.4.5 Slot 7

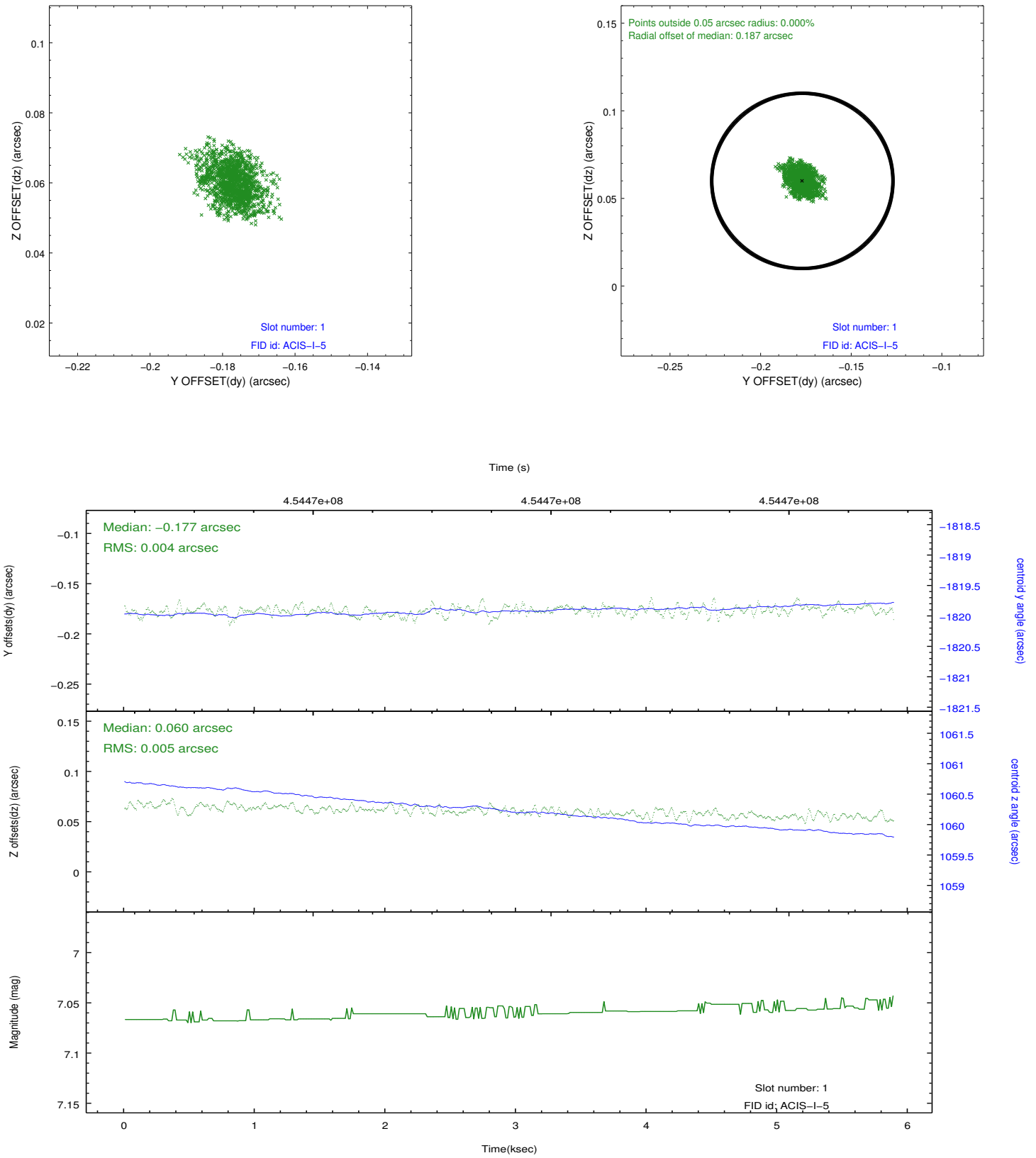


2.5 FID Slots

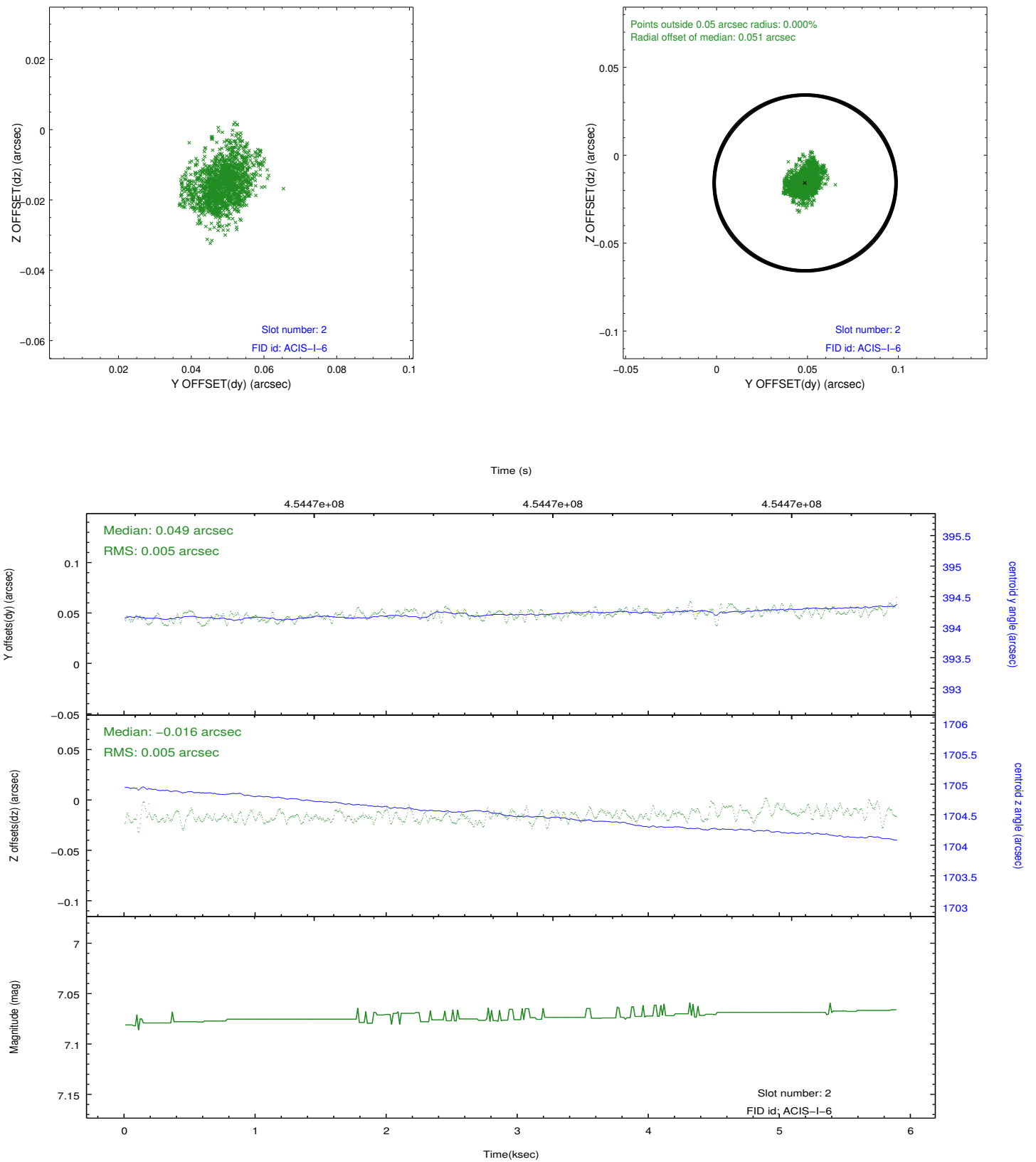
2.5.1 Slot 0



2.5.2 Slot 1



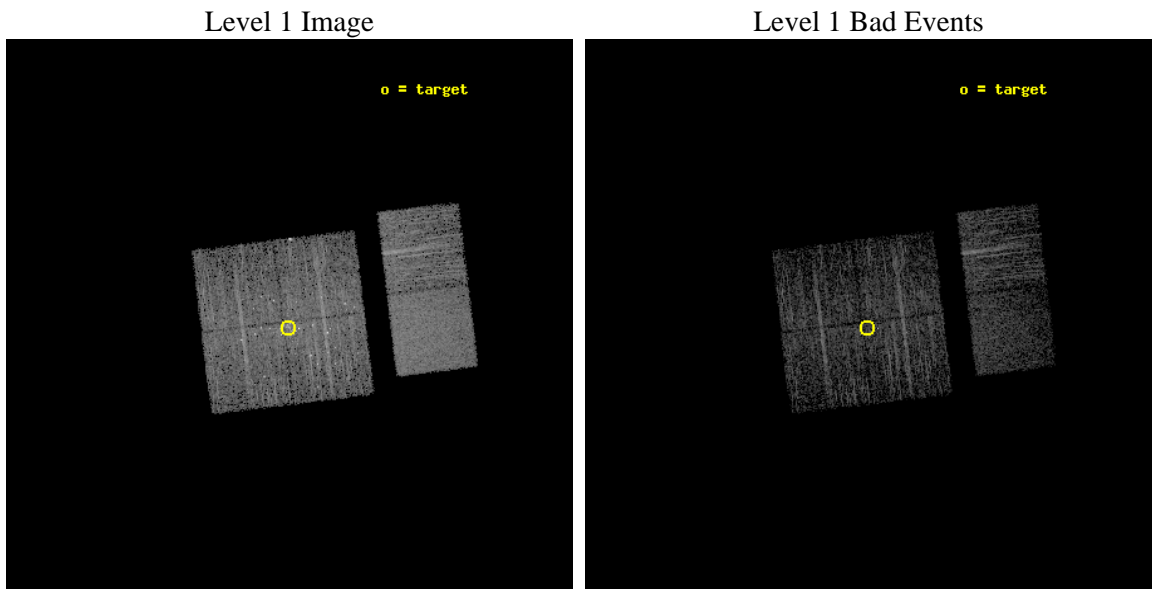
2.5.3 Slot 2



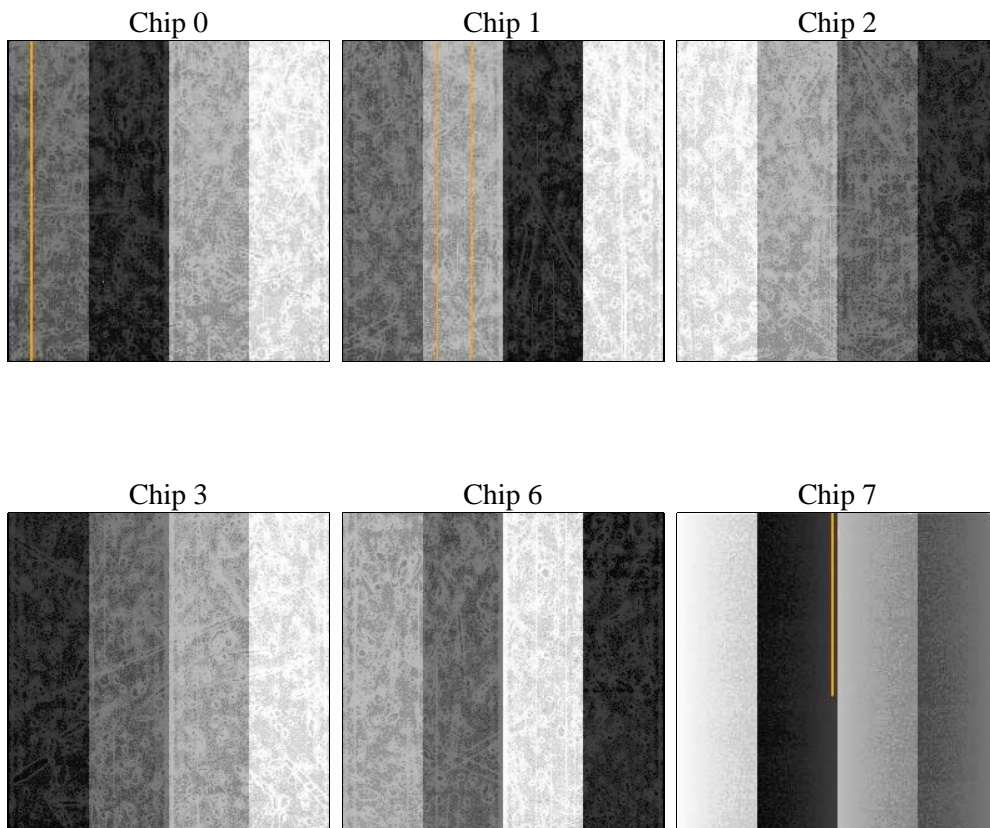
3 OBI Secondary

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 | 8.4.4 | Processing system revision | ontime | 3954.0471807122 | Sum of GTIs [s] |
| caldsver | 4.4.9 | | ontime0 | 3954.0475390553 | Sum of GTIs [s] |
| date | 2012-05-27T12:13:33 | Date and time of file creation | ontime1 | 3954.0472513437 | Sum of GTIs [s] |
| revision | 1 | Processing version of data | ontime2 | 3954.0473008156 | Sum of GTIs [s] |
| | | | ontime3 | 3954.0471807122 | Sum of GTIs [s] |
| | | | ontime6 | 3954.0472612381 | Sum of GTIs [s] |
| | | | ontime7 | 3954.0473604202 | Sum of GTIs [s] |
| | | | l1events | 157582 | 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 | 22563 | 24944 | 24781 | 29608 | 24774 | 30912 | grade 0 events | 2181 | 2930 | 2372 | 5046 | 952 | 1241 |
| rejected events | 18403 | 19632 | 20323 | 21716 | 21999 | 17381 | | 9% | 11% | 9% | 17% | 3% | 4% |
| rejected % | 81% | 78% | 82% | 73% | 88% | 56% | grade 1 events | 26 | 35 | 26 | 149 | 9 | 37 |
| | | | | | | | | 0% | 0% | 0% | 0% | 0% | 0% |
| | | | | | | | grade 2 events | 827 | 980 | 826 | 1152 | 638 | 2659 |
| | | | | | | | | 3% | 3% | 3% | 3% | 2% | 8% |
| | | | | | | | grade 3 events | 298 | 336 | 352 | 480 | 274 | 1231 |
| | | | | | | | | 1% | 1% | 1% | 1% | 1% | 3% |
| | | | | | | | grade 4 events | 321 | 340 | 329 | 496 | 258 | 1163 |
| | | | | | | | | 1% | 1% | 1% | 1% | 1% | 3% |
| | | | | | | | grade 5 events | 1015 | 1151 | 1023 | 1304 | 1123 | 3198 |
| | | | | | | | | 4% | 4% | 4% | 4% | 4% | 10% |
| | | | | | | | grade 6 events | 540 | 736 | 585 | 731 | 655 | 7256 |
| | | | | | | | | 2% | 2% | 2% | 2% | 2% | 23% |
| | | | | | | | grade 7 events | 17355 | 18436 | 19268 | 20250 | 20865 | 14127 |
| | | | | | | | | 76% | 73% | 77% | 68% | 84% | 45% |

A Summary

A.1 Status

| | |
|----------------------------|------------------|
| V&V Scientist | Beth Sundheim |
| V&V Date (YYYY-MM-DD) | 2012.05.27 |
| V&V Edition | 1 |
| V&V Disposition and Status | OK |
| V&V Charge Time | 4.87624227601287 |

A.2 Comments