

V&V Reference Report

L2 ASCDS Version : 8.4.5

Observation 11864 - L2 Version 4
Chandra X-Ray Center

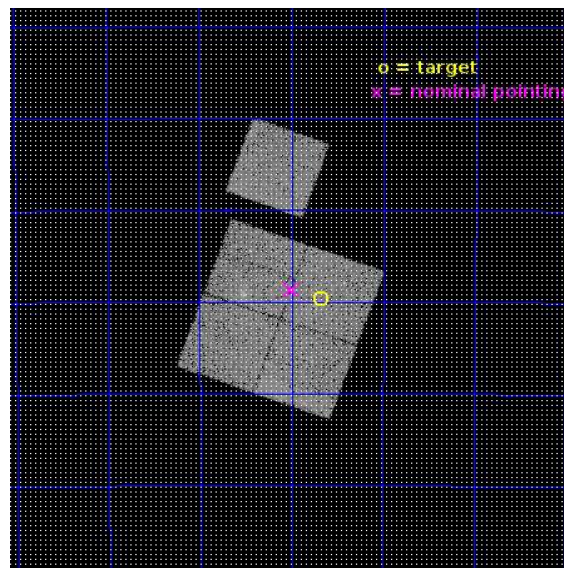
L2 Processing Date : Oct 2 2017

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1 Front

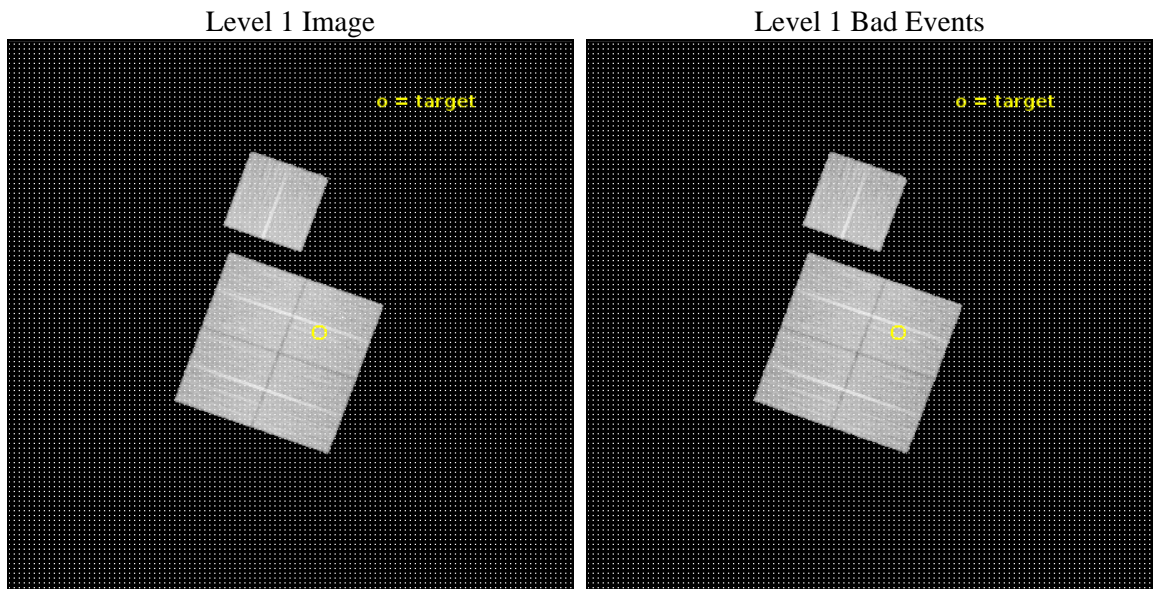
| | | |
|----------|--|---|
| seq_num | 800918 | Sequence number |
| obs_id | 11864 | Observation id |
| title | Chandra Observations of SZ-selected Galaxy Clusters Detected by the South Pole Telescope | Proposal title |
| observer | Professor Gordon Garmire | Principal investigator |
| object | SPT-CL0000-5010 | Source name |
| dtcycle | 0 | |
| cycle | P | events from which exps? Prim/Second/Both |
| ra_targ | 359.919167 | Observer's specified target RA [deg] |
| dec_targ | -50.161 | Observer's specified target Dec [deg] |
| ra_nom | 0.00010042627574514 | Nominal RA [deg] |
| dec_nom | -50.144513659894 | Nominal Dec [deg] |
| roll_nom | 19.687412941303 | Nominal Roll [deg] |
| revision | 4 | Processing version of data |
| ontime | 19998.059173465 | Sum of GTIs [s] |
| livetime | 19736.769808006 | Livetime [s] |
| ontime0 | 19991.777242601 | Sum of GTIs [s] |
| ontime1 | 19985.495252132 | Sum of GTIs [s] |
| ontime2 | 19998.059173465 | Sum of GTIs [s] |
| ontime3 | 19998.059173465 | Sum of GTIs [s] |
| ontime6 | 19998.059193432 | Sum of GTIs [s] |
| l2events | 77087 | Number of level 2 events |



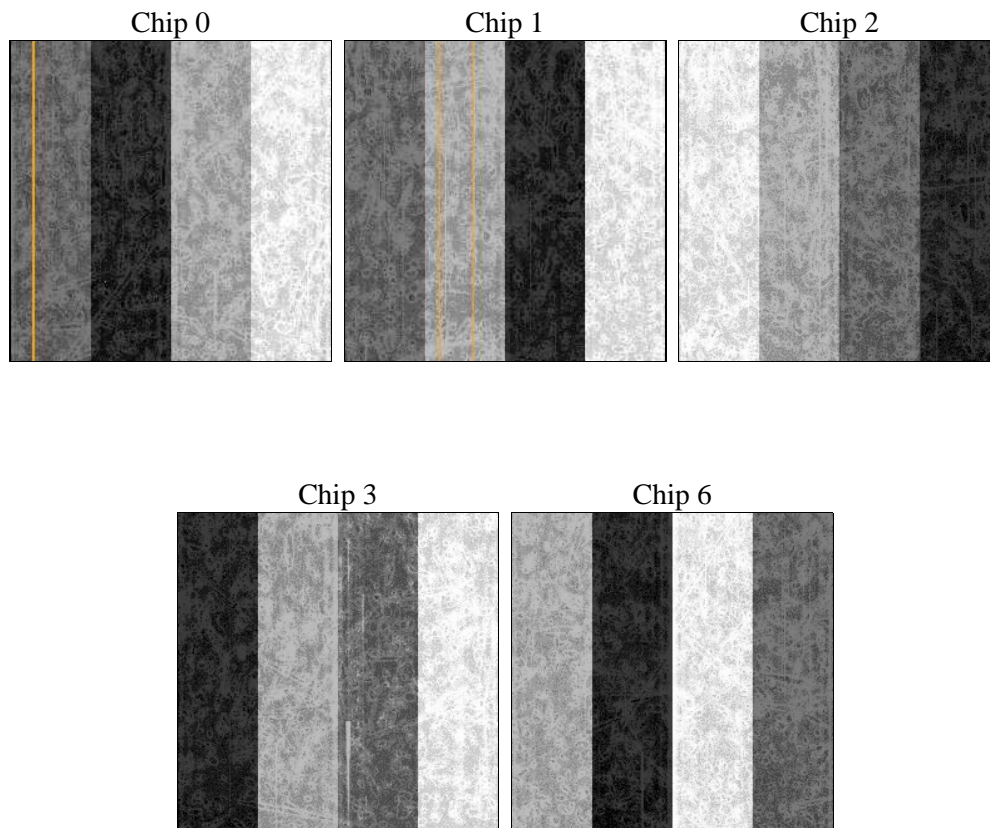
2 OBI

2.1 OBI

2.1.1 Images



2.1.2 Bias



2.1.3 Parameters

| | | | | | |
|----------|---------------------|--------------------------------|----------------|-----------------|---|
| obi_num | 0 | Obi number | sched_exp_time | 19957.863000 | [s] Scheduled observation exposure time |
| ascdsver | 10.6 | Processing system revision | ontime | 19998.059173465 | Sum of GTIs [s] |
| caldbver | 4.7.6 | | ontime0 | 19991.777242601 | Sum of GTIs [s] |
| date | 2017-09-27T16:03:29 | Date and time of file creation | ontime1 | 19985.495252132 | Sum of GTIs [s] |
| revision | 4 | Processing version of data | ontime2 | 19998.059173465 | Sum of GTIs [s] |
| | | | ontime3 | 19998.059173465 | Sum of GTIs [s] |
| | | | ontime6 | 19998.059193432 | Sum of GTIs [s] |
| | | | l1events | 861169 | Number of level 1 events |

2.1.4 Events

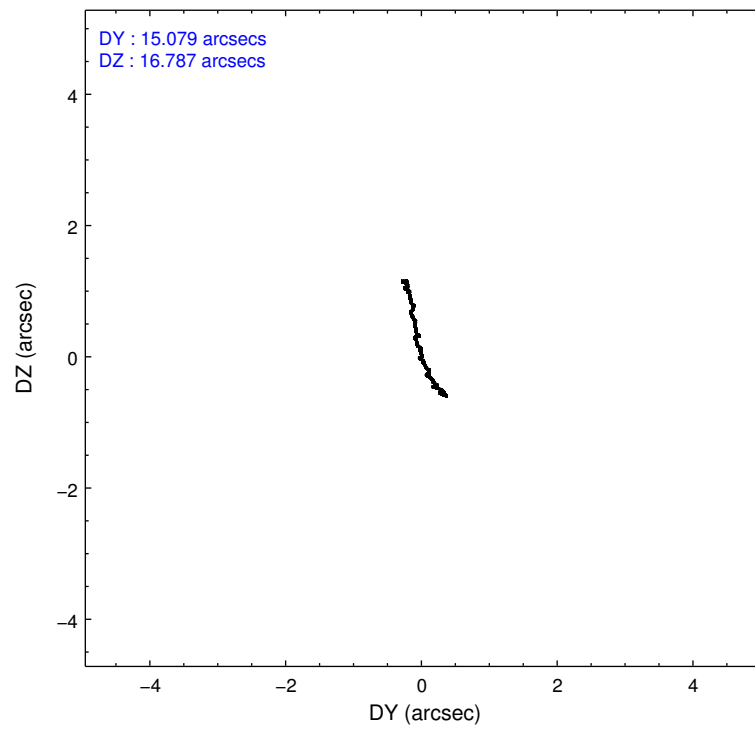
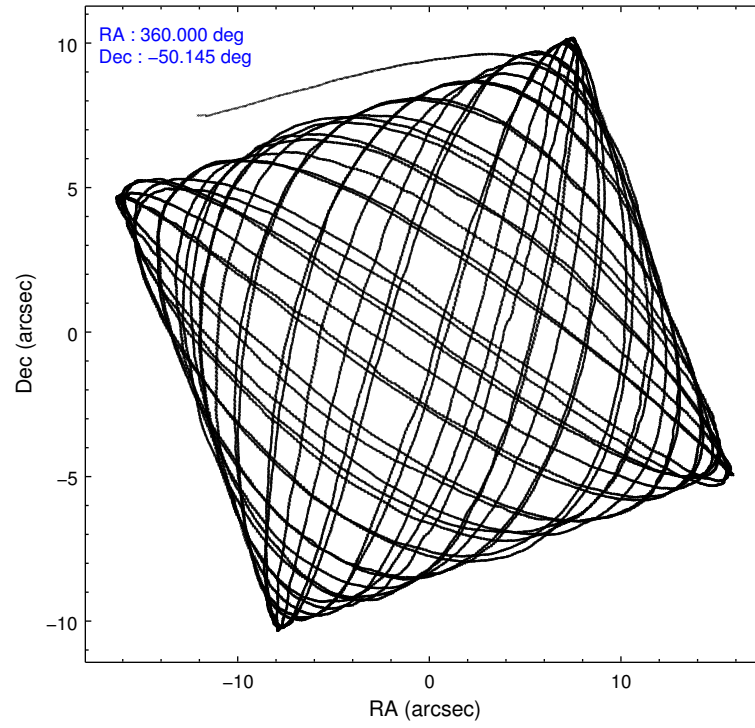
| | ccd 0 | ccd 1 | ccd 2 | ccd 3 | ccd 6 |
|-----------------|--------|--------|--------|--------|--------|
| level 1 events | 165106 | 160768 | 184424 | 174728 | 176143 |
| rejected events | 147070 | 140790 | 165675 | 157140 | 157790 |
| rejected % | 89% | 87% | 89% | 89% | 89% |

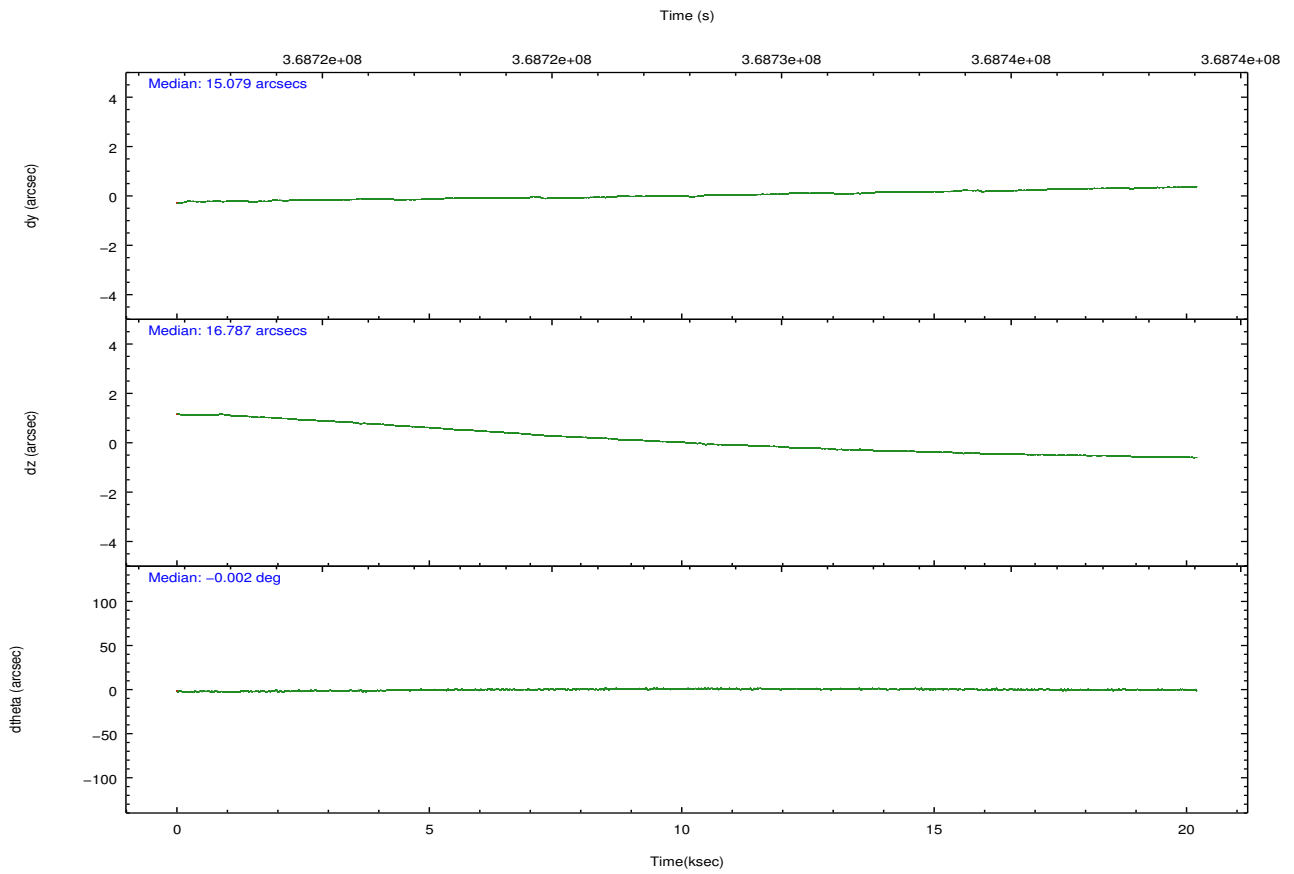
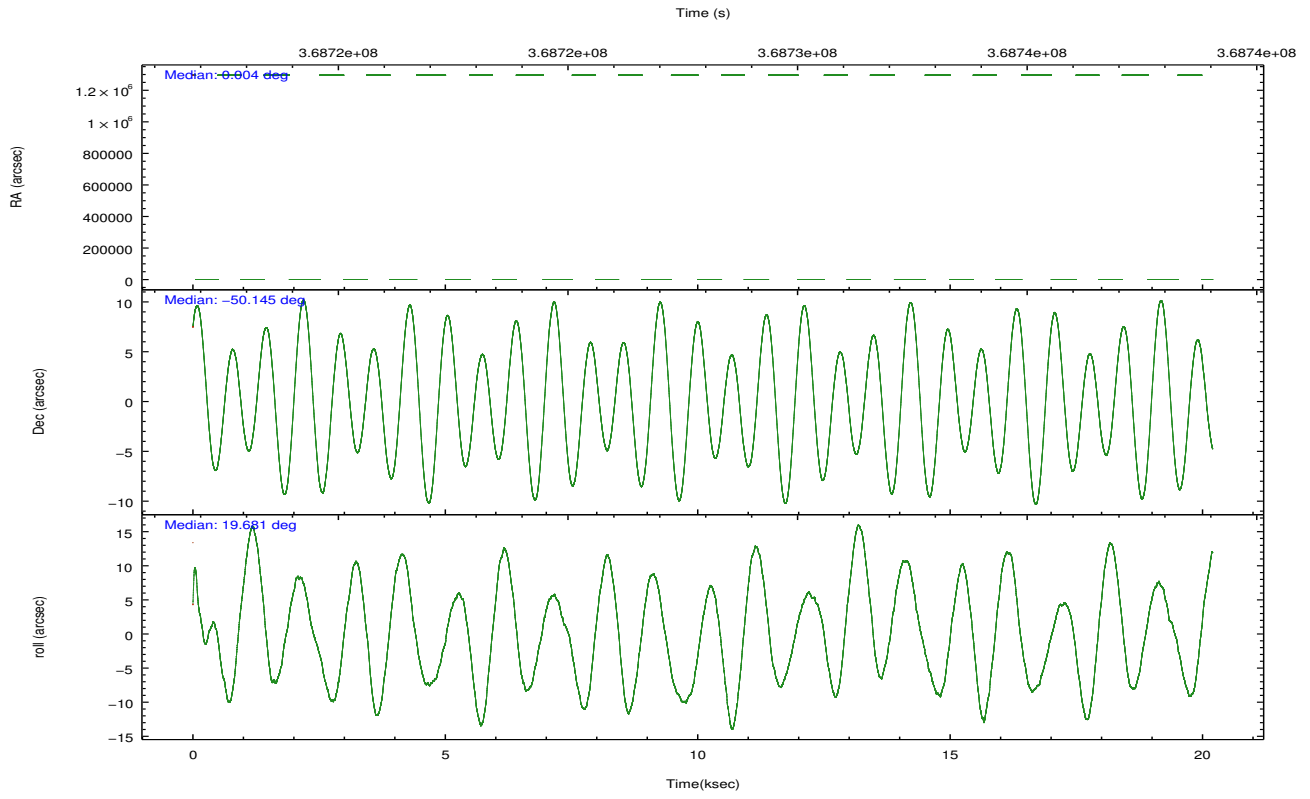
| | ccd 0 | ccd 1 | ccd 2 | ccd 3 | ccd 6 |
|----------------|--------|--------|--------|--------|--------|
| grade 0 events | 6341 | 7264 | 7380 | 6421 | 6392 |
| | 3% | 4% | 4% | 3% | 3% |
| grade 1 events | 89 | 121 | 112 | 113 | 101 |
| | 0% | 0% | 0% | 0% | 0% |
| grade 2 events | 4407 | 4568 | 4460 | 3771 | 4135 |
| | 2% | 2% | 2% | 2% | 2% |
| grade 3 events | 1979 | 2091 | 1835 | 1962 | 1942 |
| | 1% | 1% | 0% | 1% | 1% |
| grade 4 events | 1796 | 2053 | 1837 | 1896 | 1876 |
| | 1% | 1% | 0% | 1% | 1% |
| grade 5 events | 6464 | 6899 | 5886 | 7260 | 7291 |
| | 3% | 4% | 3% | 4% | 4% |
| grade 6 events | 3514 | 4005 | 3243 | 3542 | 4009 |
| | 2% | 2% | 1% | 2% | 2% |
| grade 7 events | 140516 | 133767 | 159671 | 149763 | 150397 |
| | 85% | 83% | 86% | 85% | 85% |

2.2 Compared Parameters

| Parameter | Planned | Actual | Parameter | Planned | Actual |
|-----------------------------------|---------------------|-----------------------|---------------------------------------|-----------|---------|
| Instrument | ACIS | ACIS | Obspar format version number | 7 | 7 |
| Detector | ACIS-01236 | ACIS-01236 | Obspar file type | PREDICTED | ACTUAL |
| Grating | NONE | NONE | Obspar update status | NONE | UPDATED |
| Data mode | VFAINT | VFAINT | Number of optional ACIS chips dropped | 0 | 0 |
| Observation mode | POINTING | POINTING | On-chip summing requested | N | N |
| [deg] Pointing RA | 359.972447 | 0.0001004262757451357 | Subarray requested | NONE | NONE |
| [deg] Pointing Dec | -50.165566 | -50.1445136598936 | Alternating exposures requested | N | N |
| [deg] Pointing Roll | 19.457487 | 19.68741294130269 | [s] Primary exposure time | 0.000000 | 3.1 |
| [mm] SIM focus pos | -0.782348 | -0.7809083437167272 | | | |
| [mm] SIM defocus | 0 | 0.001439871863259334 | | | |
| [mm] SIM translation stage pos | -225.840463 | -225.8433433320239 | | | |
| [mm] SIM translation stage offset | -7.752 | -7.749109670905796 | | | |
| [s] Observation start time (MET) | 368718070.184000 | 368716967.77175 | | | |
| Observation start date | 2009-09-07T13:40:04 | 2009-09-07T13:22:47 | | | |
| [s] Observation end time (MET) | 368738028.184000 | 368738257.53532 | | | |
| Observation end date | 2009-09-07T19:12:42 | 2009-09-07T19:17:37 | | | |
| Read mode | TIMED | TIMED | | | |

2.3 Aspect





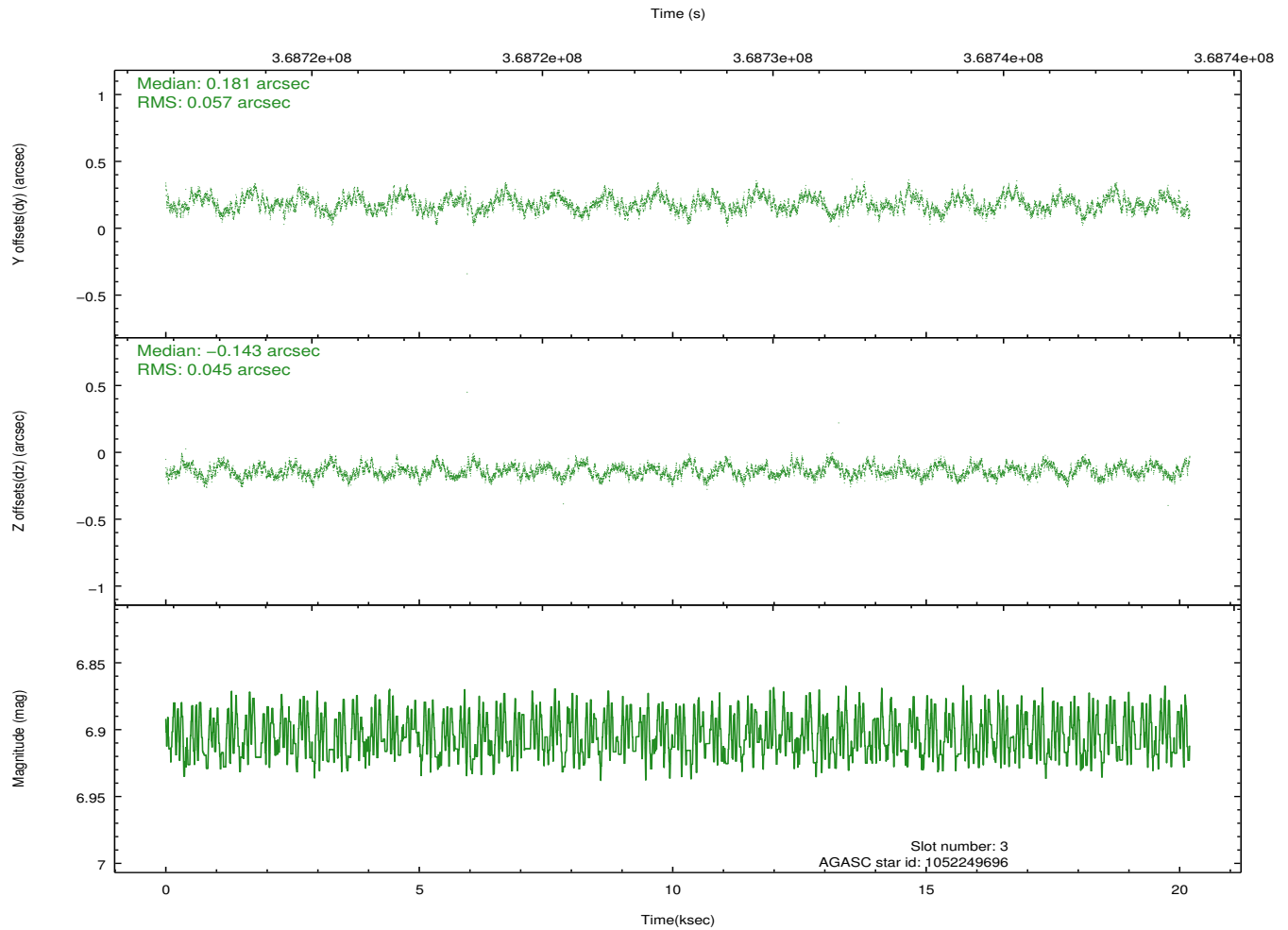
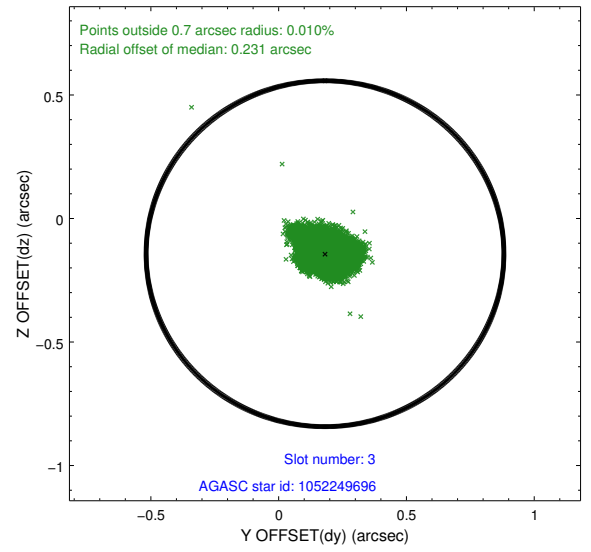
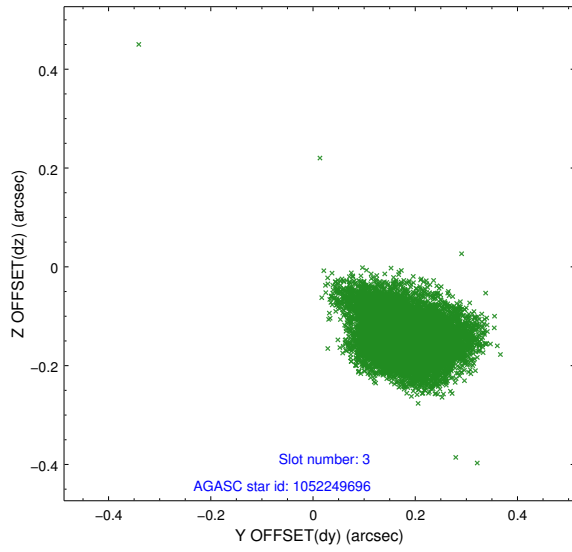
Slot Statistics

| slot | status | used | id | mag | n_pts | med_dy | med_dz | dr1 | dr2 | ra | dec | mean_y | mean_z |
|------|--------|------|------------|------|-------|--------|--------|-------|-------|------------|------------|----------|----------|
| 0 | FID | | ACIS-I-1 | 7.00 | 4928 | 0.151 | -0.098 | 0.018 | 0.030 | 0.000000 | 0.000000 | 924.35 | -999.73 |
| 1 | FID | | ACIS-I-5 | 6.98 | 4927 | -0.296 | 0.126 | 0.008 | 0.015 | 0.000000 | 0.000000 | -1824.10 | 897.86 |
| 2 | FID | | ACIS-I-6 | 7.01 | 4926 | 0.053 | 0.041 | 0.017 | 0.024 | 0.000000 | 0.000000 | 389.60 | 1542.49 |
| 3 | GUIDE | used | 1052249696 | 6.91 | 9849 | 0.181 | -0.143 | 0.077 | 0.122 | 0.223276 | -50.446456 | 205.49 | -1145.74 |
| 4 | GUIDE | used | 1108871768 | 9.30 | 9811 | -0.142 | -0.045 | 0.101 | 0.162 | 359.910349 | -49.832519 | 262.89 | 1178.55 |
| 5 | GUIDE | used | 1109269560 | 8.97 | 9847 | -0.045 | 0.210 | 0.098 | 0.154 | 359.604150 | -50.909062 | -1679.75 | -2247.30 |
| 6 | GUIDE | used | 1109269904 | 8.42 | 9850 | -0.021 | -0.118 | 0.072 | 0.114 | 359.567113 | -50.130971 | -840.60 | 425.89 |
| 7 | GUIDE | used | 1052247432 | 8.75 | 9853 | 0.027 | 0.096 | 0.086 | 0.138 | 0.036415 | -50.866976 | -703.24 | -2428.76 |

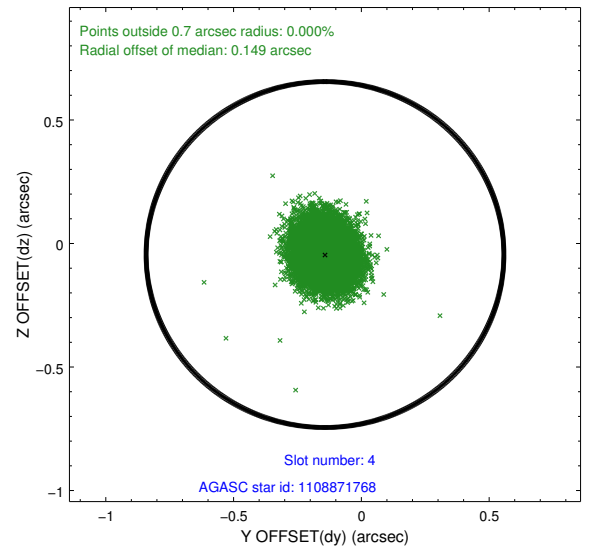
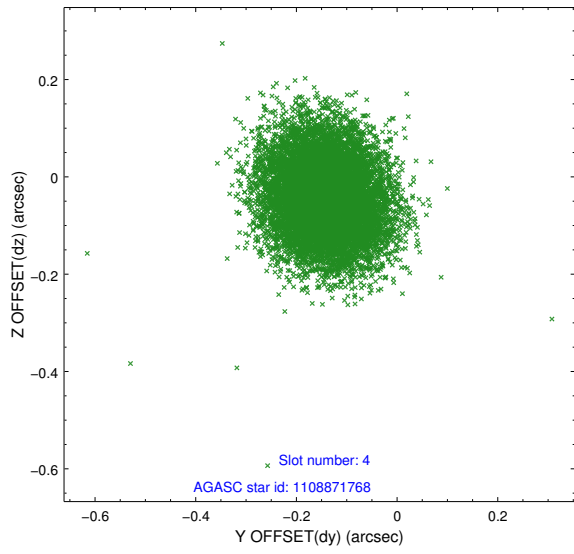
∞

2.4 Star Slots

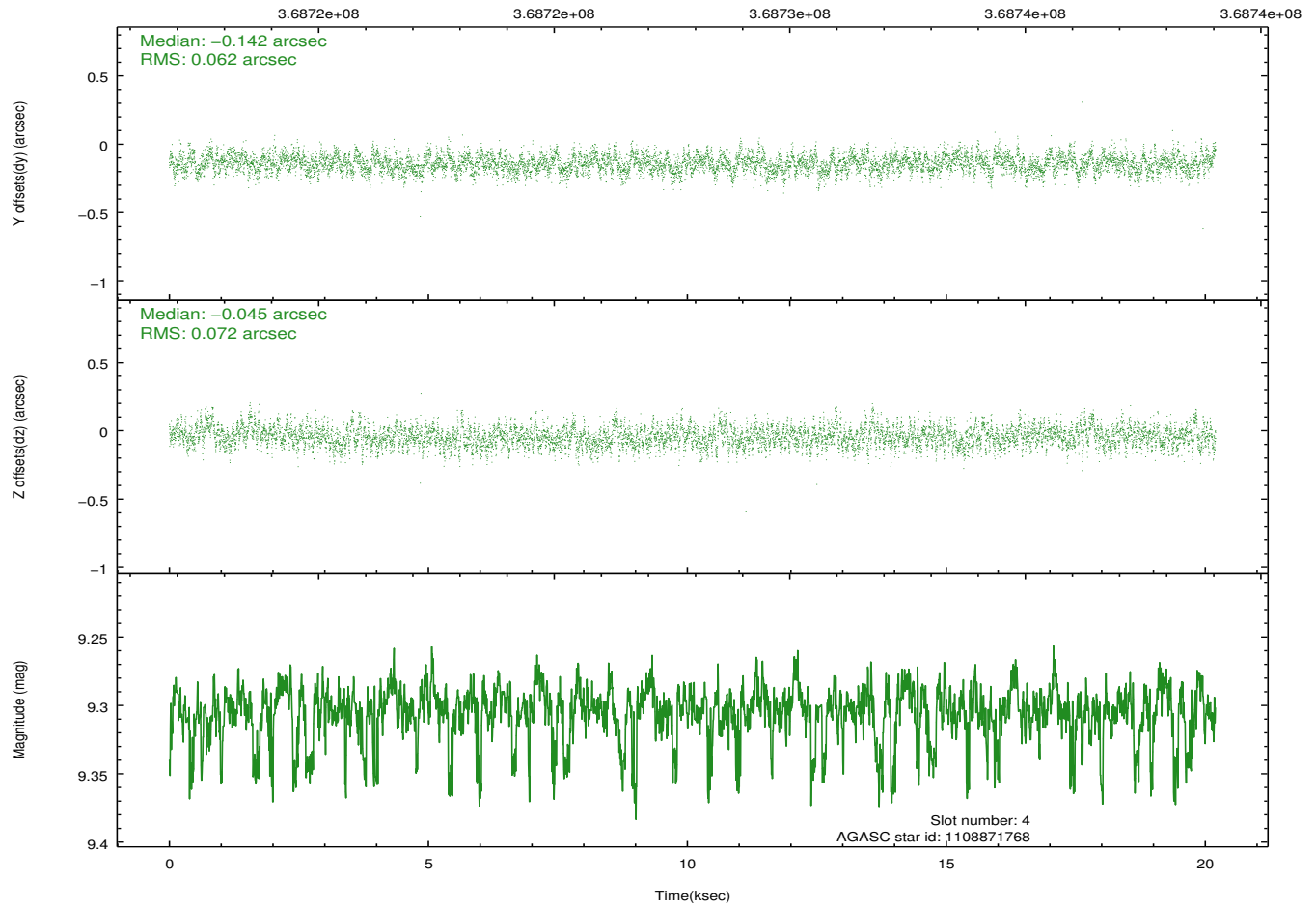
2.4.1 Slot 3



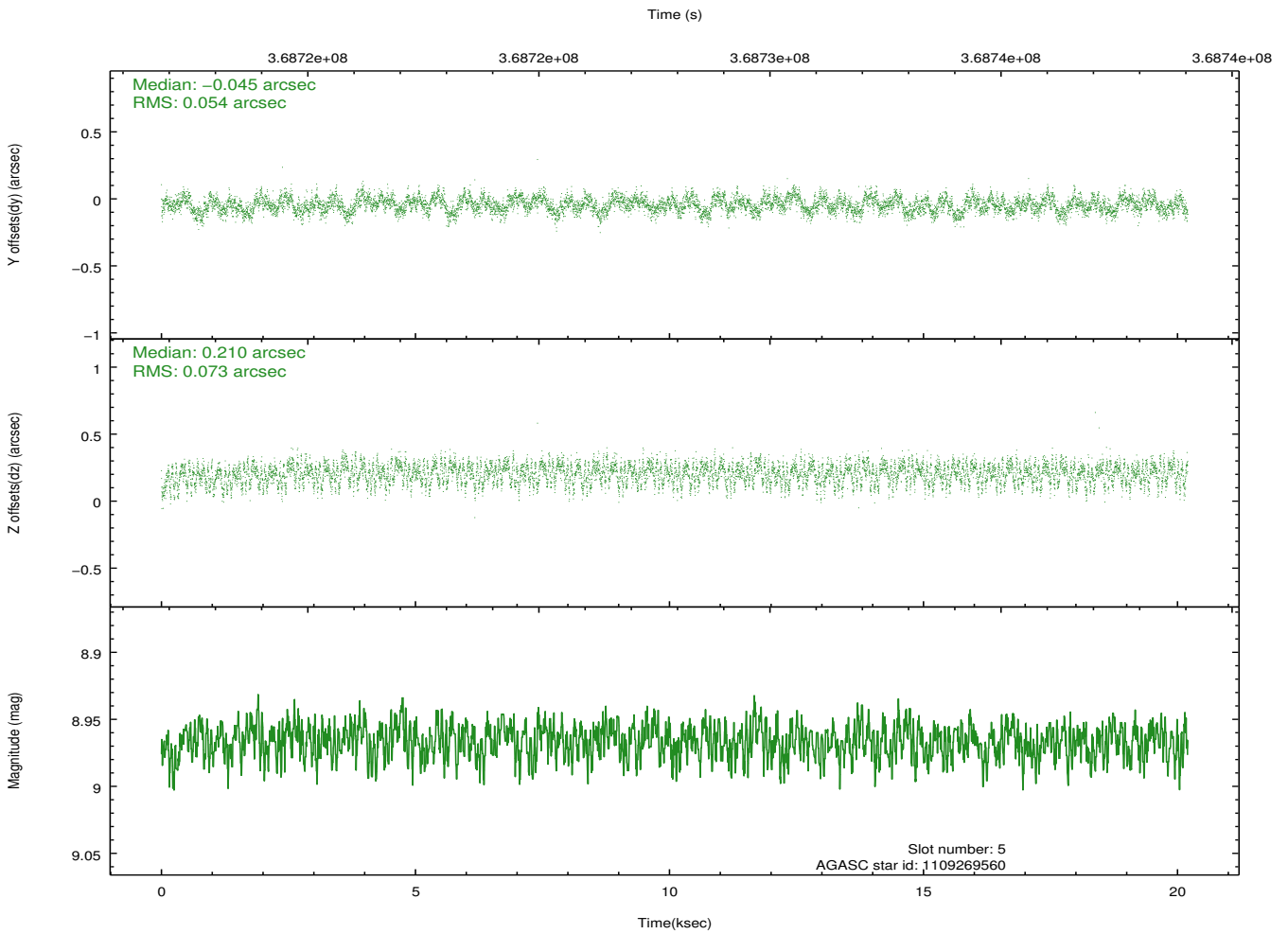
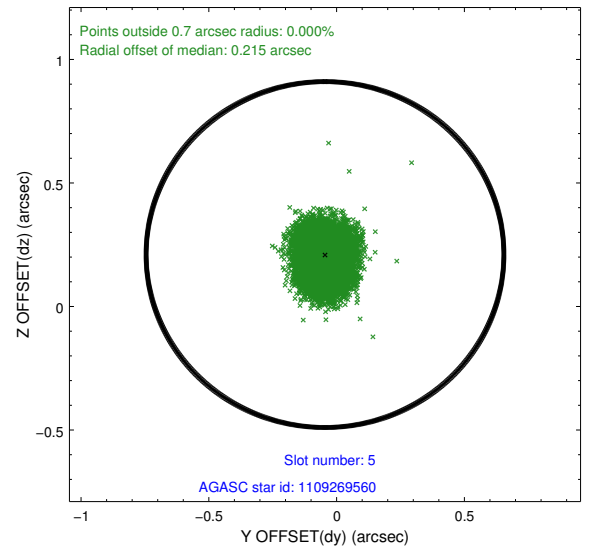
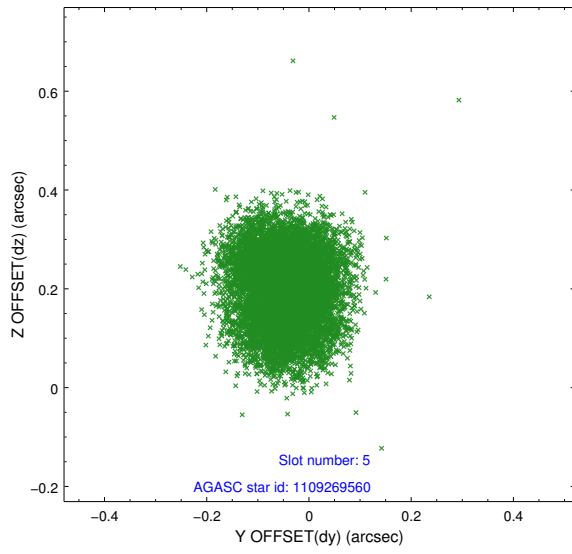
2.4.2 Slot 4



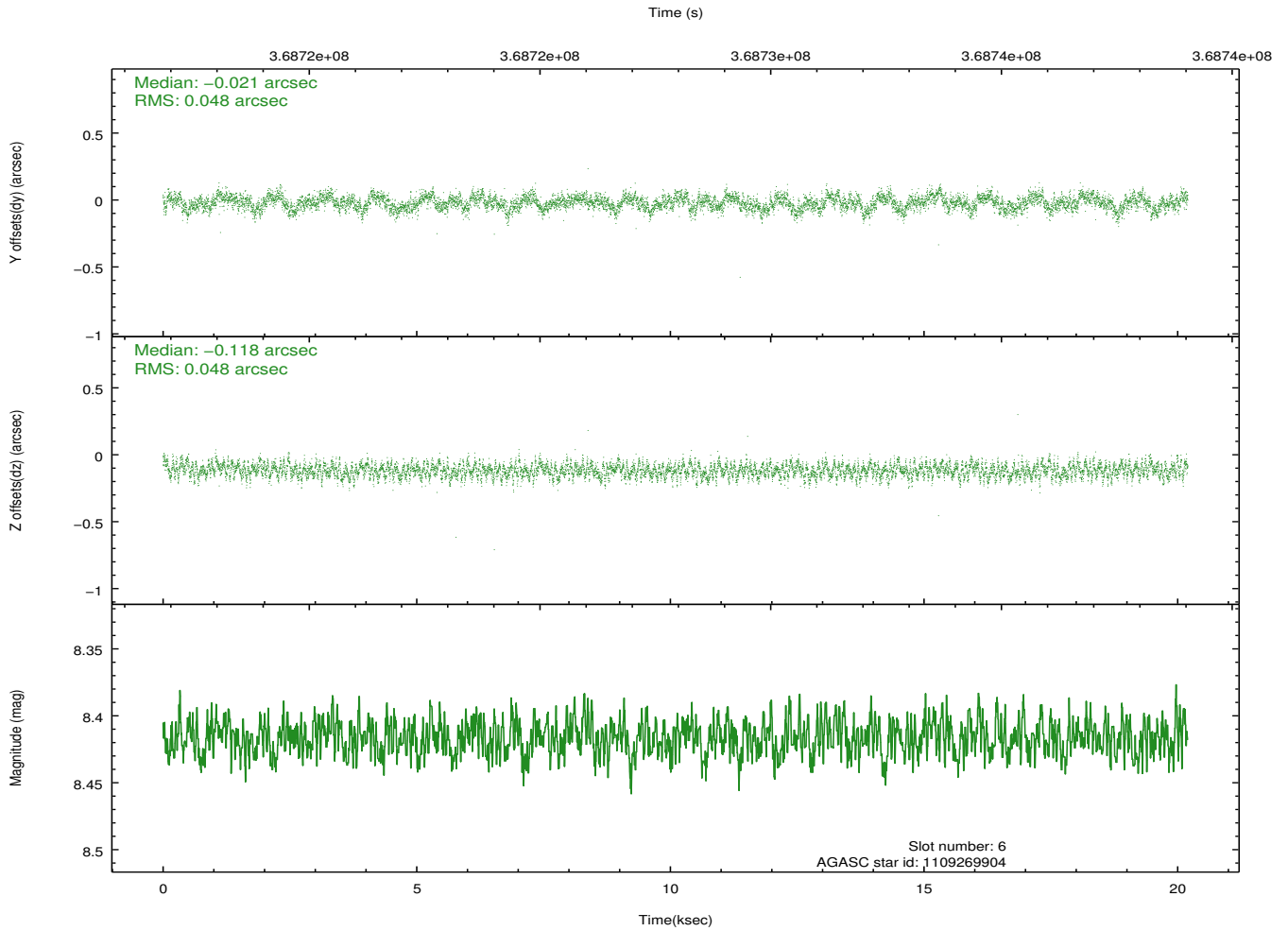
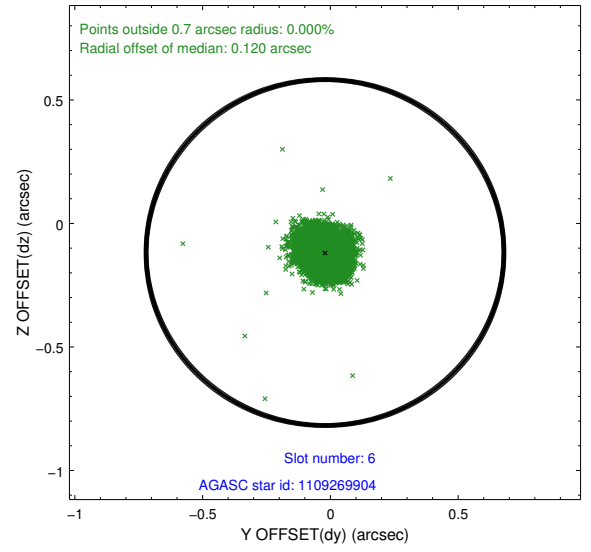
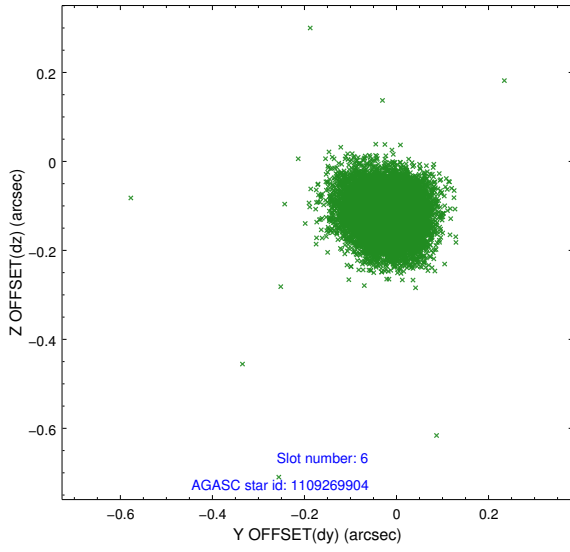
Time (s)



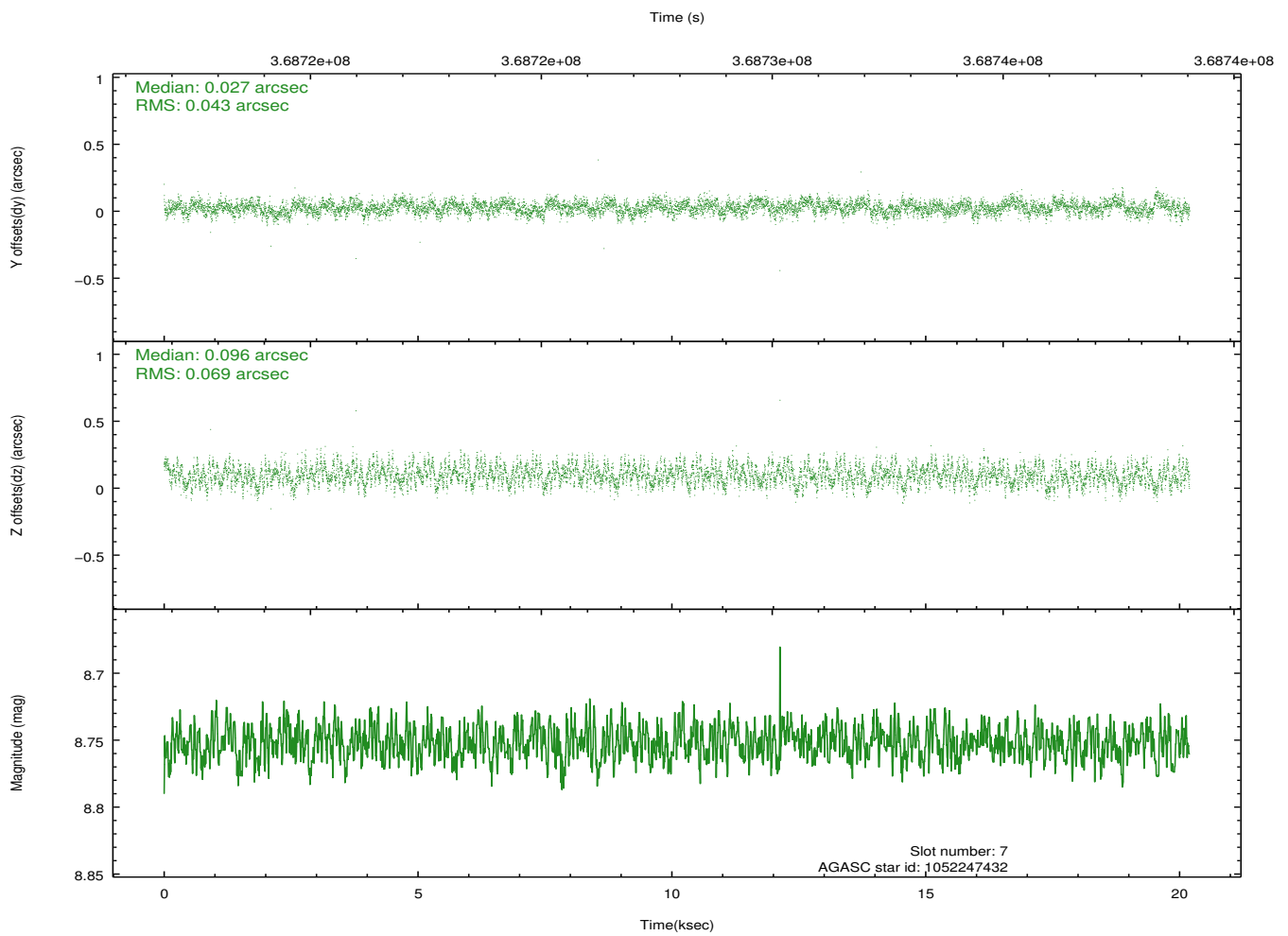
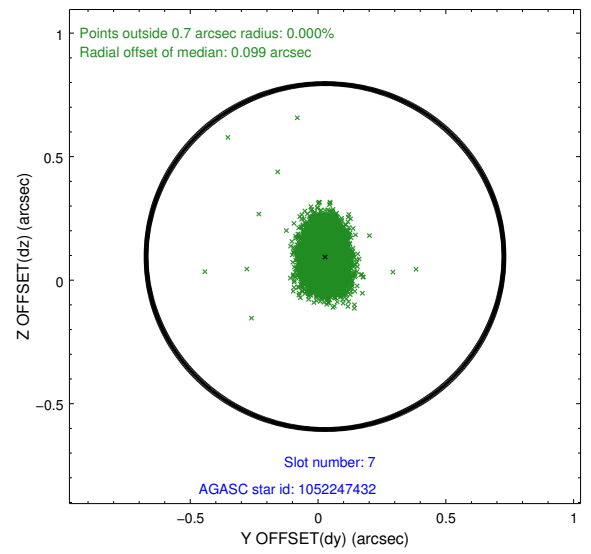
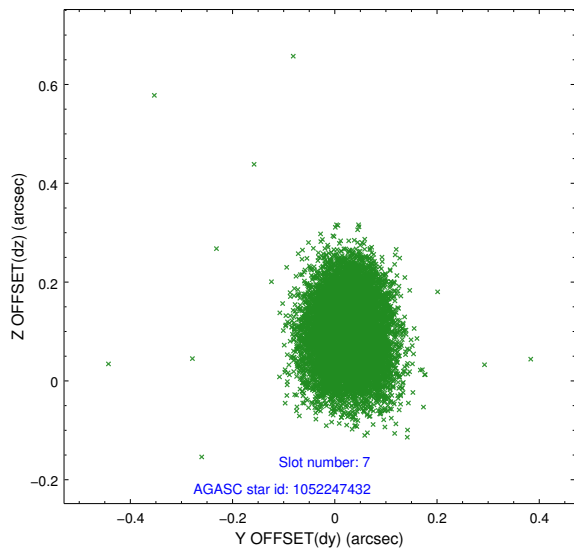
2.4.3 Slot 5



2.4.4 Slot 6

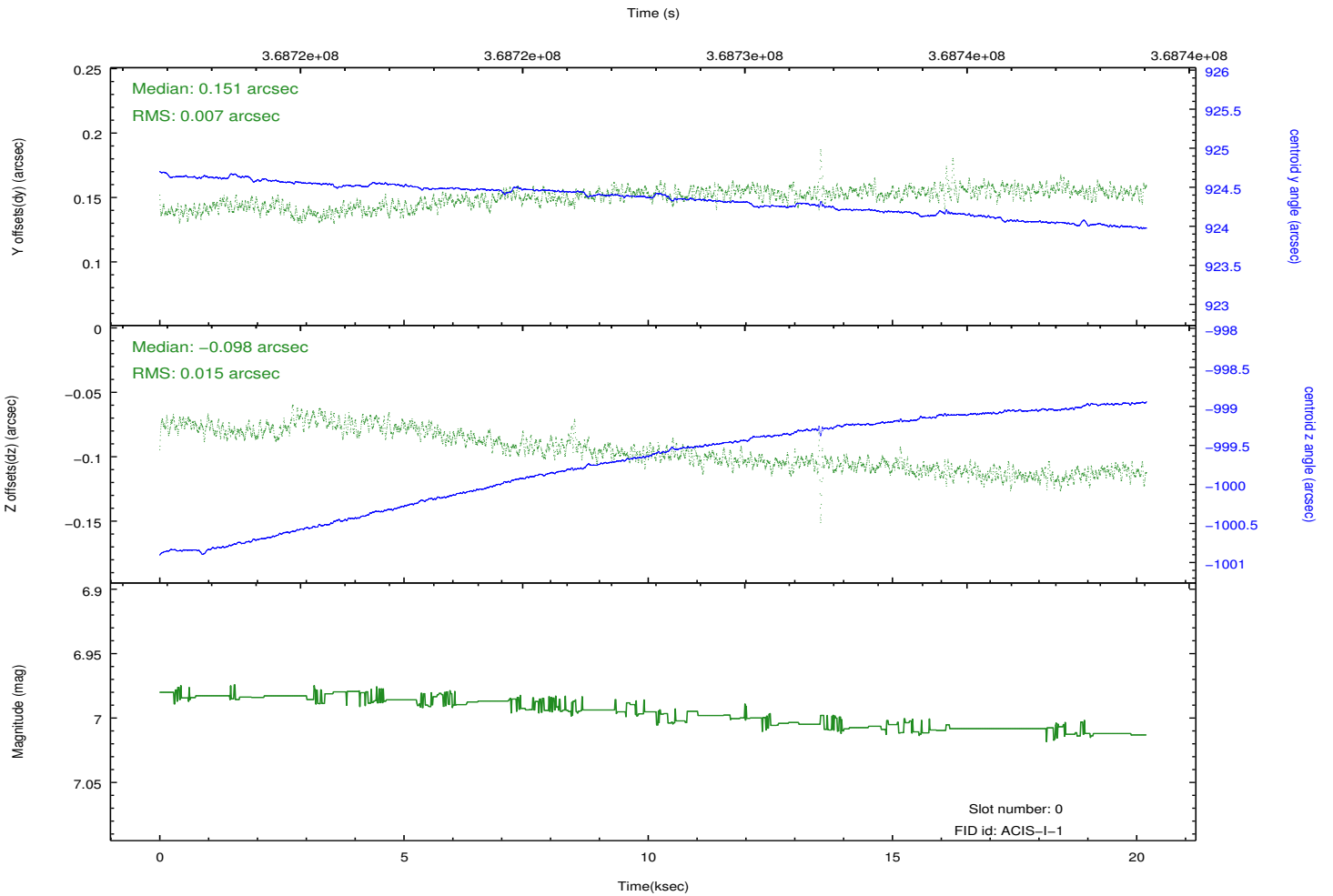
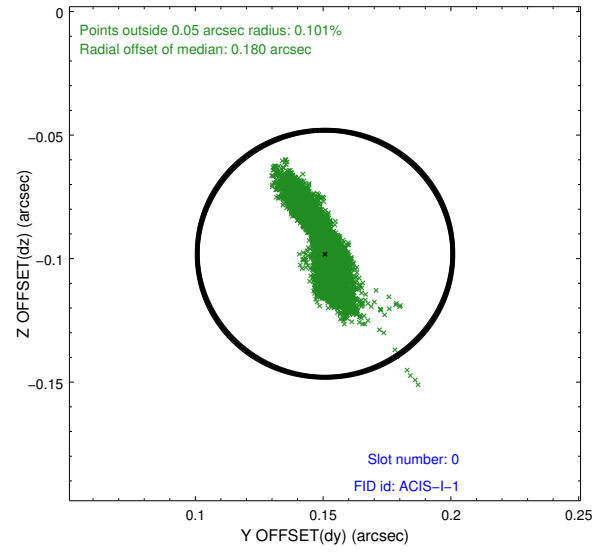
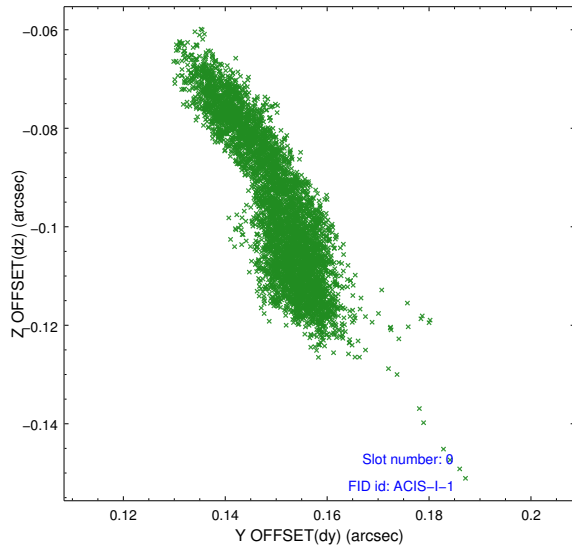


2.4.5 Slot 7

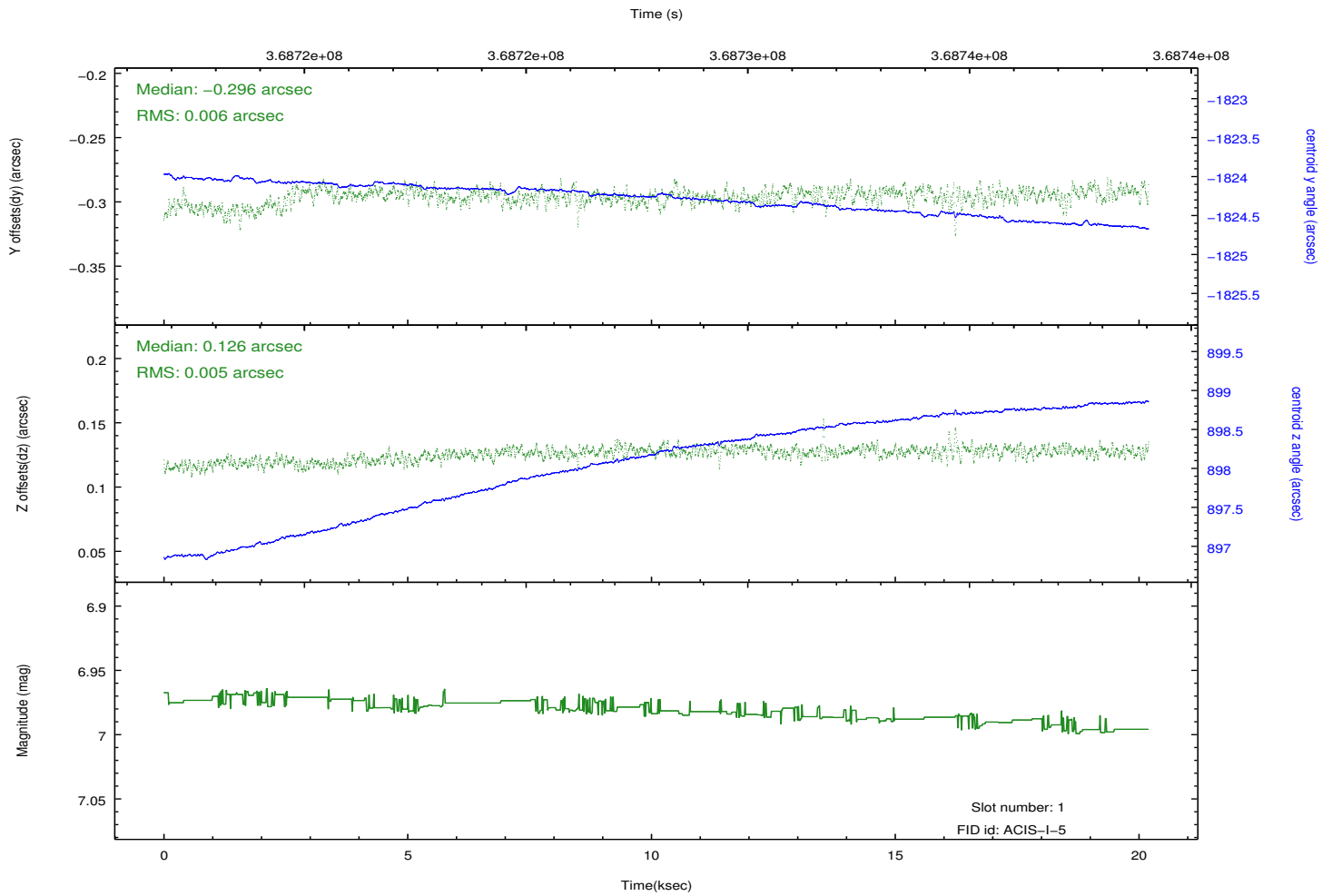
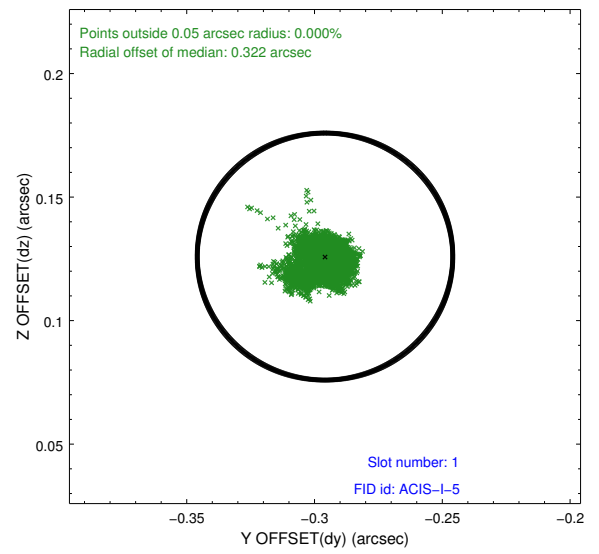
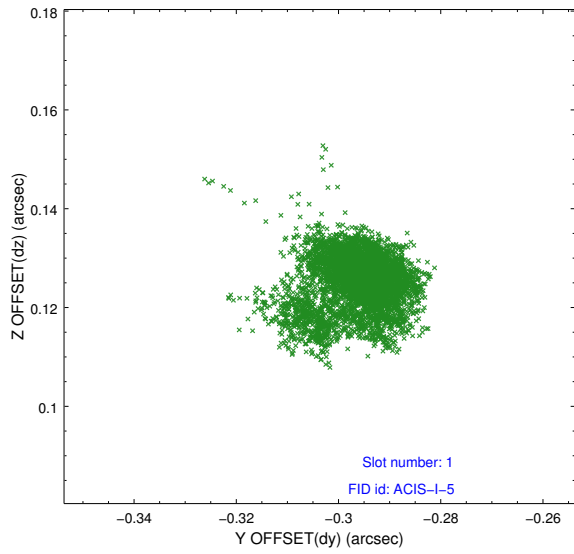


2.5 FID Slots

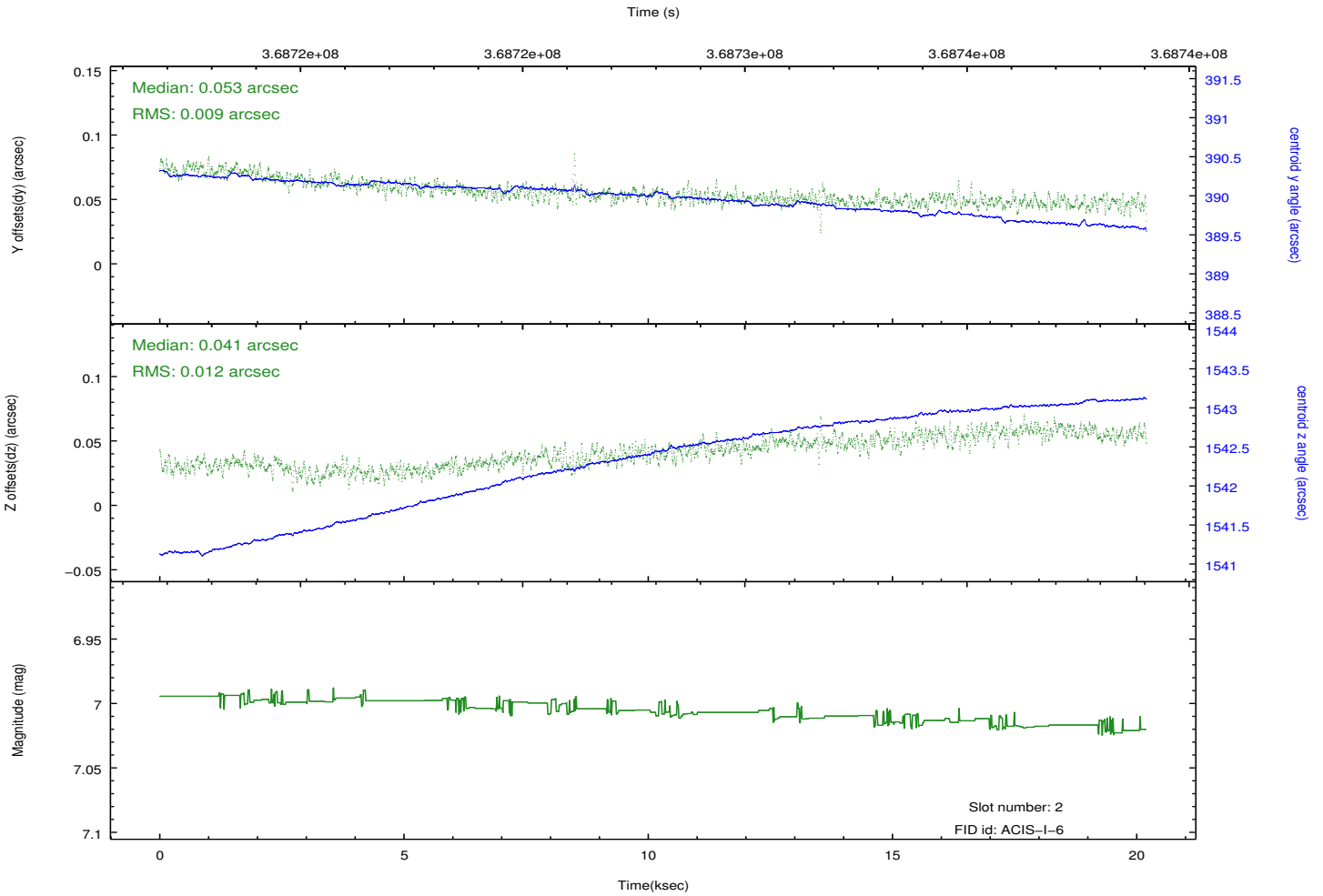
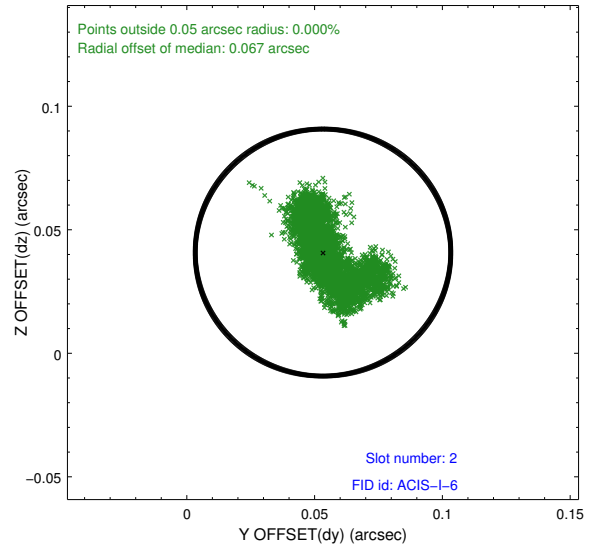
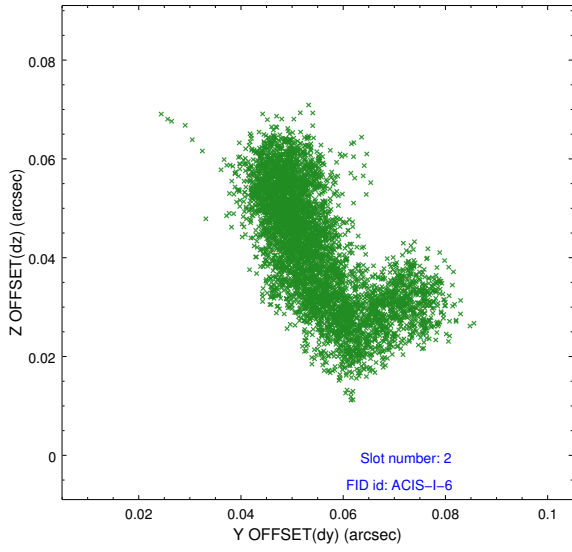
2.5.1 Slot 0



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) | 2017.10.03 |
| V&V Edition | 1 |
| V&V Disposition and Status | OK |
| V&V Charge Time | 19.998059173465 |

A.2 Comments

A spatial region of the original bias map for CCD = 1 suffered from anomalously high data values. Pixels in the event data that were bias-corrected by one of the original affected bias pixels may have an apparent energy shift. While the change in energy is expected to be small (~ 20 eV), it depends on many parameters that have not yet been fully explored for this anomaly. The bias map for CCD = 1 has been reconstructed for this processing to remove this anomaly using scaled data from a comparable bias map from another observation. The pixels affected by the anomaly are bounded by sky coords: (359.89445, -50.37021), (359.89756, -50.37573), (359.96057, -50.36138), (359.95746, -50.35586)