

V&V Reference Report

L2 ASCDS Version : 10.4.3.1

Observation 17207 - L2 Version 2
Chandra X-Ray Center

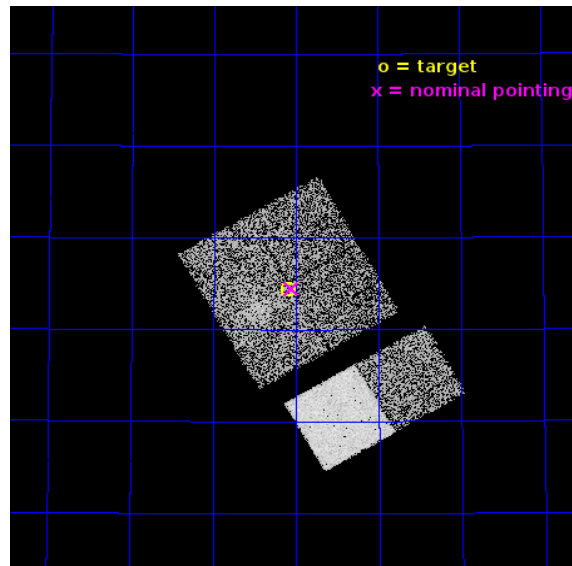
L2 Processing Date : Feb 12 2016

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1 Front

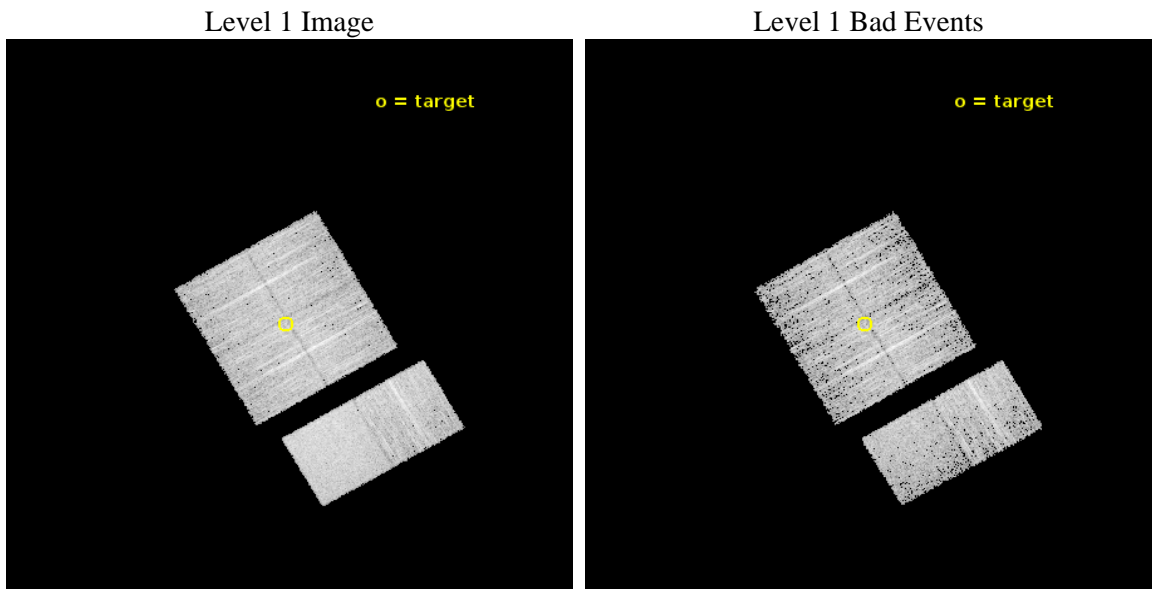
| | | |
|----------|--|---|
| seq_num | 801487 | Sequence number |
| obs_id | 17207 | Observation id |
| title | Exciting Shock Physics in Faint Galaxy Cluster Outskirts | Proposal |
| observer | Dr Reinout van Weeren | Principal investigator |
| object | RXC J1053.7+5452 WEST | Source name |
| dtcycle | 0 | |
| cycle | P | events from which exps? Prim/Second/Both |
| ra_targ | 163.27542 | Observer's specified target RA [deg] |
| dec_targ | 54.906799 | Observer's specified target Dec [deg] |
| ra_nom | 163.26424706037 | Nominal RA [deg] |
| dec_nom | 54.907707179456 | Nominal Dec [deg] |
| roll_nom | 149.90025412987 | Nominal Roll [deg] |
| revision | 2 | Processing version of data |
| ontime | 6371.2000949383 | Sum of GTIs [s] |
| livetime | 6290.52412306 | Livetime [s] |
| ontime0 | 6371.2000949383 | Sum of GTIs [s] |
| ontime1 | 6371.2000949383 | Sum of GTIs [s] |
| ontime2 | 6371.2000949383 | Sum of GTIs [s] |
| ontime3 | 6371.2000949383 | Sum of GTIs [s] |
| ontime6 | 6371.2000949383 | Sum of GTIs [s] |
| ontime7 | 6371.2000949383 | Sum of GTIs [s] |
| l2events | 39655 | Number of level 2 events |



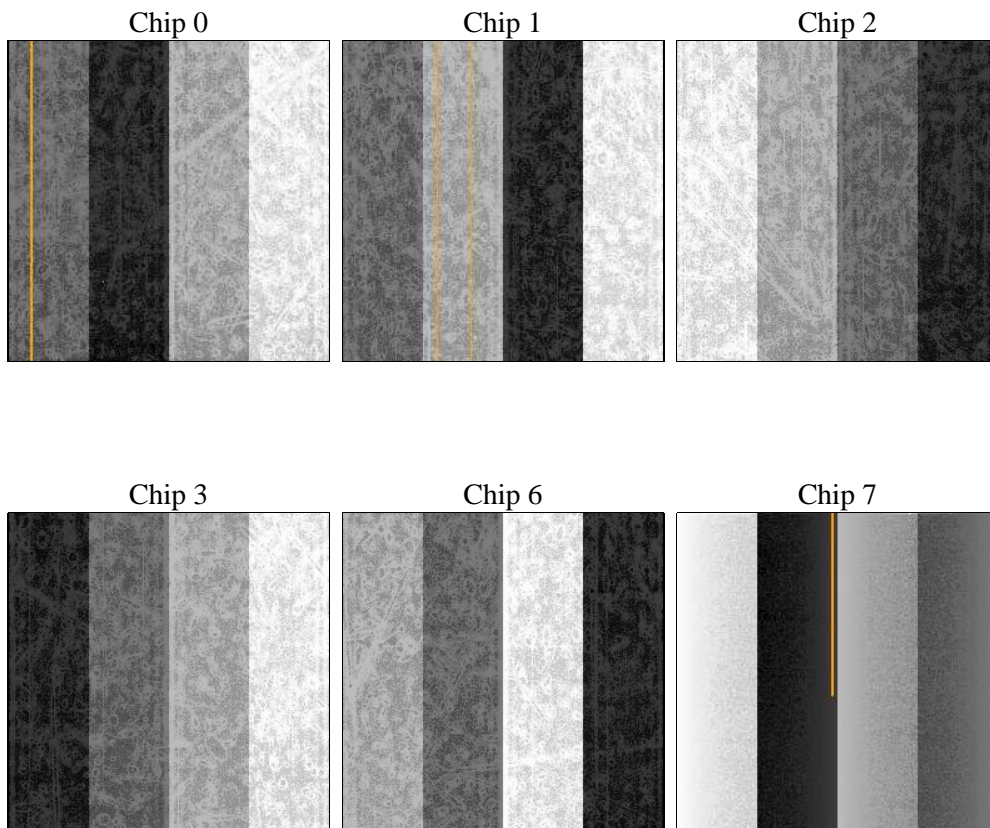
2 OBI

2.1 OBI

2.1.1 Images



2.1.2 Bias



2.1.3 Parameters

| | | | | | |
|----------|---------------------|--------------------------------|----------------|-----------------|---|
| obi_num | 0 | Obi number | sched_exp_time | 6415.063000 | [s] Scheduled observation exposure time |
| ascdsver | 10.4.3.1 | Processing system revision | ontime | 6371.2000949383 | Sum of GTIs [s] |
| caldsver | 4.7.0 | | ontime0 | 6371.2000949383 | Sum of GTIs [s] |
| date | 2016-02-12T18:56:56 | Date and time of file creation | ontime1 | 6371.2000949383 | Sum of GTIs [s] |
| revision | 2 | Processing version of data | ontime2 | 6371.2000949383 | Sum of GTIs [s] |
| | | | ontime3 | 6371.2000949383 | Sum of GTIs [s] |
| | | | ontime6 | 6371.2000949383 | Sum of GTIs [s] |
| | | | ontime7 | 6371.2000949383 | Sum of GTIs [s] |
| | | | l1events | 236013 | Number of level 1 events |

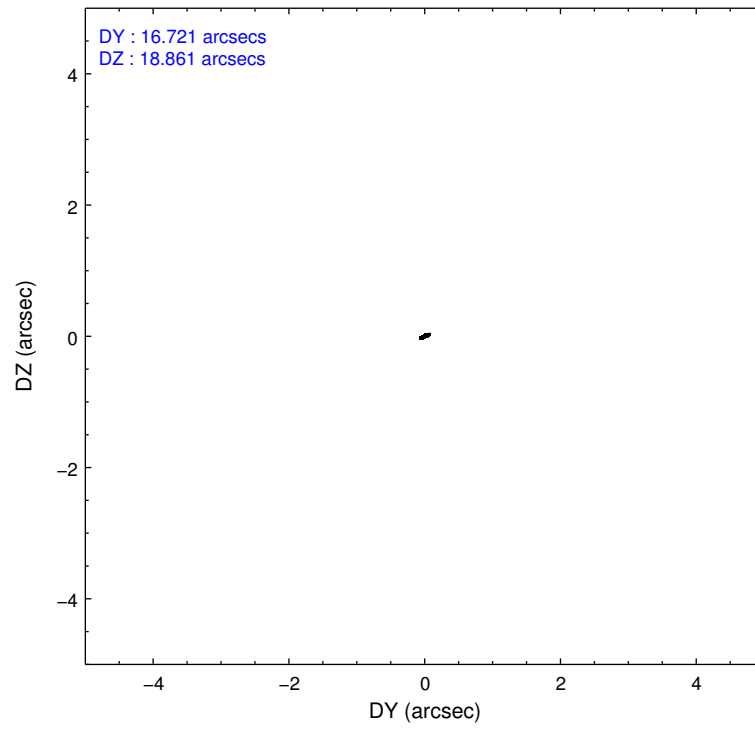
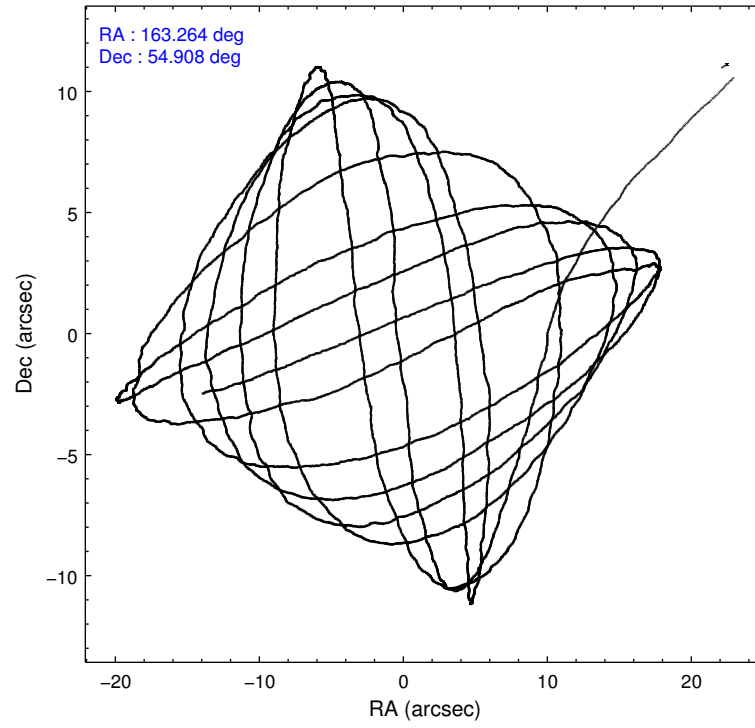
2.1.4 Events

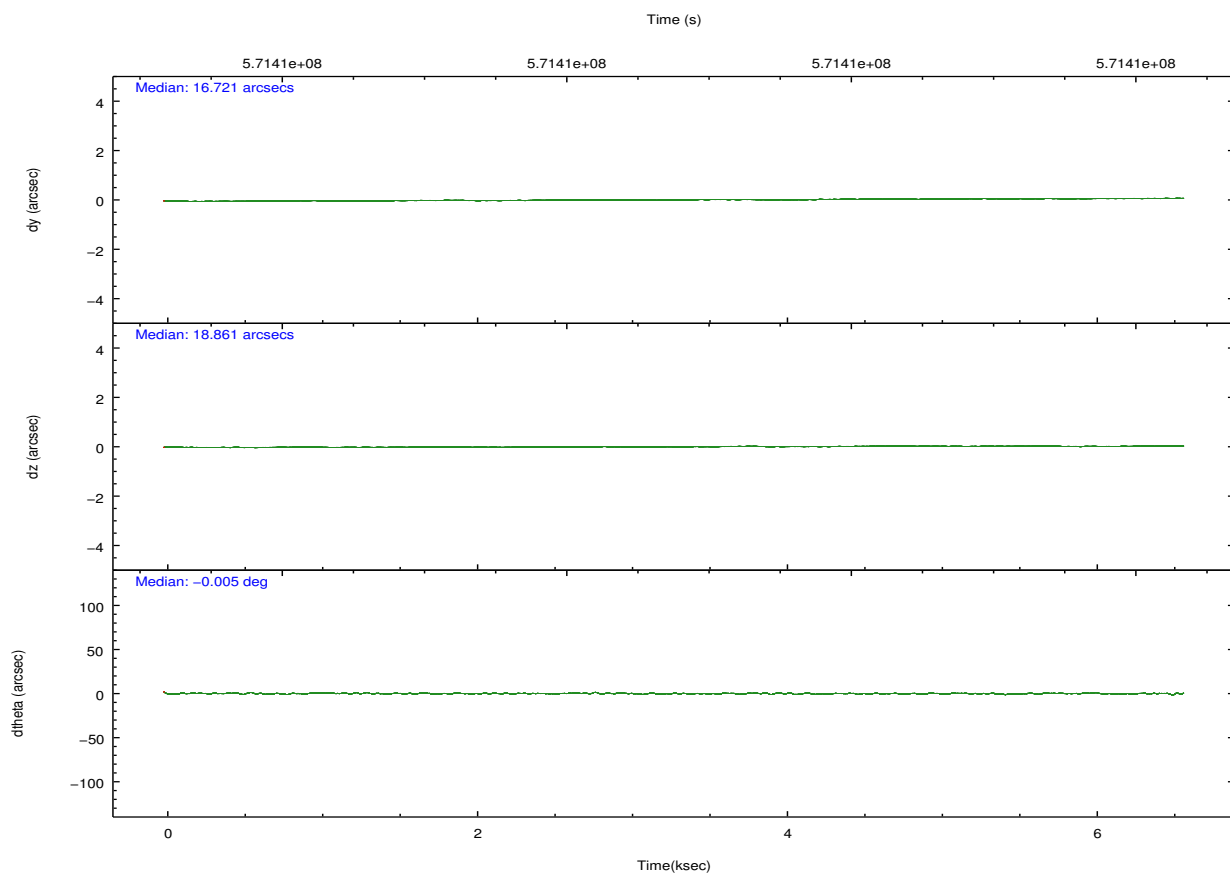
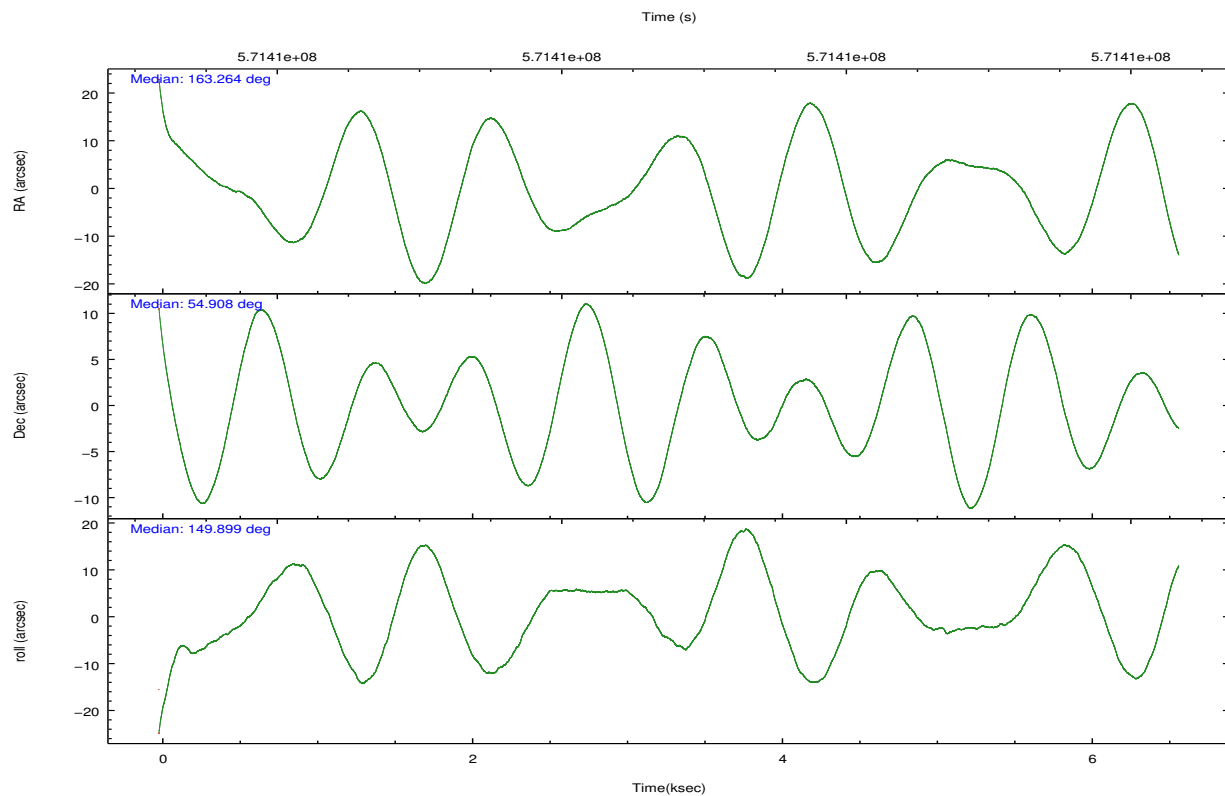
| | ccd 0 | ccd 1 | ccd 2 | ccd 3 | ccd 6 | ccd 7 | | ccd 0 | ccd 1 | ccd 2 | ccd 3 | ccd 6 | ccd 7 |
|-----------------|-------|-------|-------|-------|-------|-------|----------------|-------|-------|-------|-------|-------|-------|
| level 1 events | 35307 | 34694 | 38649 | 37486 | 40109 | 49768 | grade 0 events | 1410 | 1920 | 1391 | 2114 | 1384 | 1775 |
| rejected events | 31103 | 29654 | 34714 | 32620 | 35732 | 28733 | | 3% | 5% | 3% | 5% | 3% | 3% |
| rejected % | 88% | 85% | 89% | 87% | 89% | 57% | grade 1 events | 12 | 17 | 8 | 21 | 27 | 63 |
| | | | | | | | | 0% | 0% | 0% | 0% | 0% | 0% |
| | | | | | | | grade 2 events | 1021 | 1169 | 892 | 979 | 1085 | 4423 |
| | | | | | | | | 2% | 3% | 2% | 2% | 2% | 8% |
| | | | | | | | grade 3 events | 425 | 429 | 405 | 447 | 380 | 1538 |
| | | | | | | | | 1% | 1% | 1% | 1% | 0% | 3% |
| | | | | | | | grade 4 events | 403 | 447 | 419 | 440 | 388 | 1583 |
| | | | | | | | | 1% | 1% | 1% | 1% | 0% | 3% |
| | | | | | | | grade 5 events | 1601 | 1654 | 1439 | 1737 | 1779 | 4778 |
| | | | | | | | | 4% | 4% | 3% | 4% | 4% | 9% |
| | | | | | | | grade 6 events | 952 | 1082 | 831 | 891 | 1145 | 11738 |
| | | | | | | | | 2% | 3% | 2% | 2% | 2% | 23% |
| | | | | | | | grade 7 events | 29483 | 27976 | 33264 | 30857 | 33921 | 23870 |
| | | | | | | | | 83% | 80% | 86% | 82% | 84% | 47% |

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 | VFAINT | VFAINT | CCD I0 on | Y | Y |
| Observation mode | POINTING | POINTING | CCD I1 on | Y | Y |
| [deg] Pointing RA | 163.312100 | 163.2642470603656 | CCD I2 on | Y | Y |
| [deg] Pointing Dec | 54.907807 | 54.90770717945649 | CCD I3 on | Y | Y |
| [deg] Pointing Roll | 149.652413 | 149.9002541298701 | 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 | O2 | Y |
| [mm] SIM translation stage pos | -233.592463 | -233.5874344608287 | CCD S3 on | O1 | Y |
| [mm] SIM translation stage offset | 0 | -0.005018542100998502 | CCD S4 on | N | N |
| [s] Observation start time (MET) | 571407631.184000 | 571406606.29618 | CCD S5 on | N | N |
| Observation start date | 2016-02-09T12:19:23 | 2016-02-09T12:03:26 | Number of optional ACIS chips dropped | 0 | 0 |
| [s] Observation end time (MET) | 571414046.184000 | 571414283.54662 | On-chip summing requested | N | N |
| Observation end date | 2016-02-09T14:06:18 | 2016-02-09T14:11:23 | Subarray requested | NONE | NONE |
| Read mode | TIMED | TIMED | Alternating exposures requested | N | N |
| | | | [s] Primary exposure time | 0.000000 | 3.2 |

2.3 Aspect



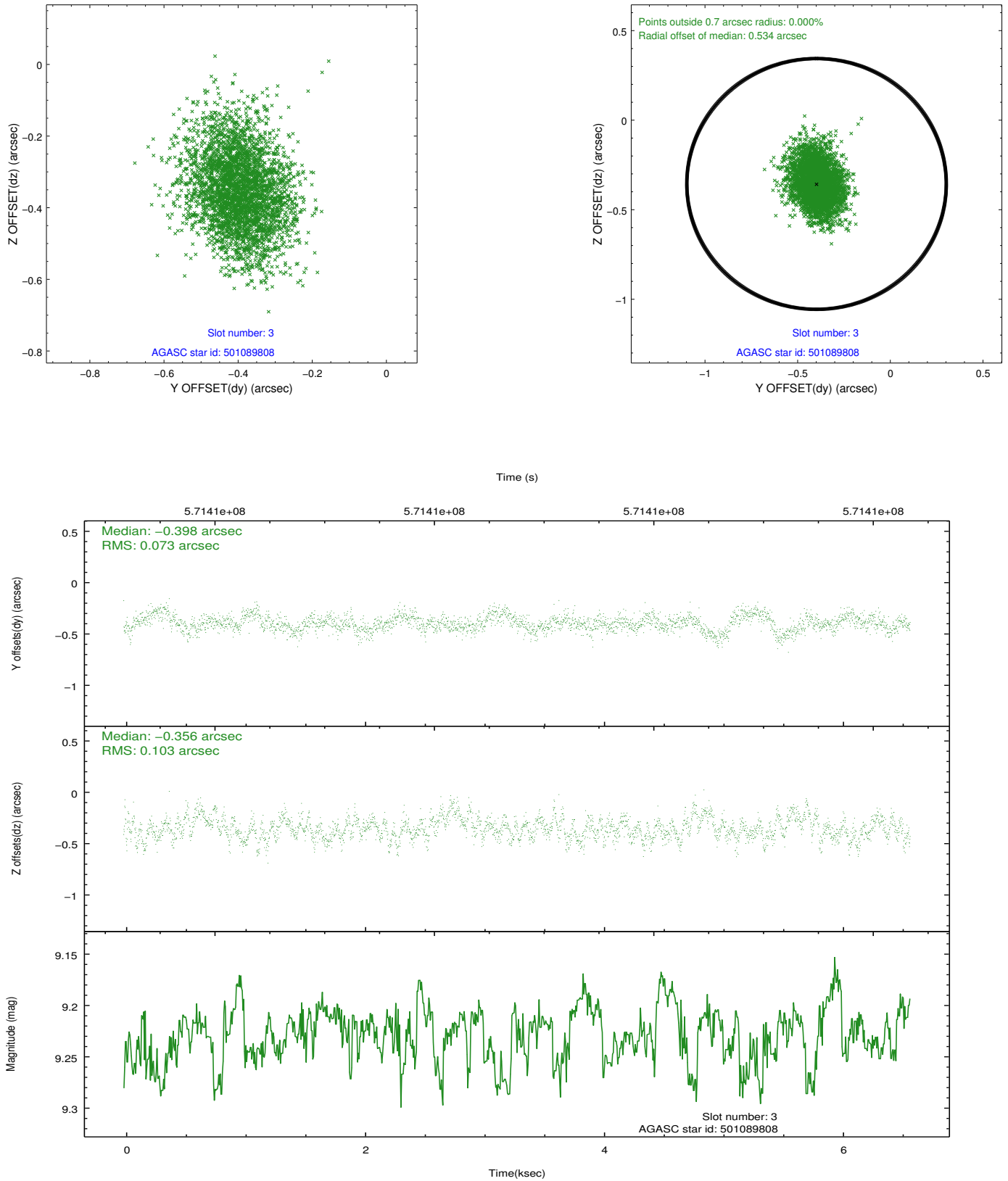


Slot Statistics

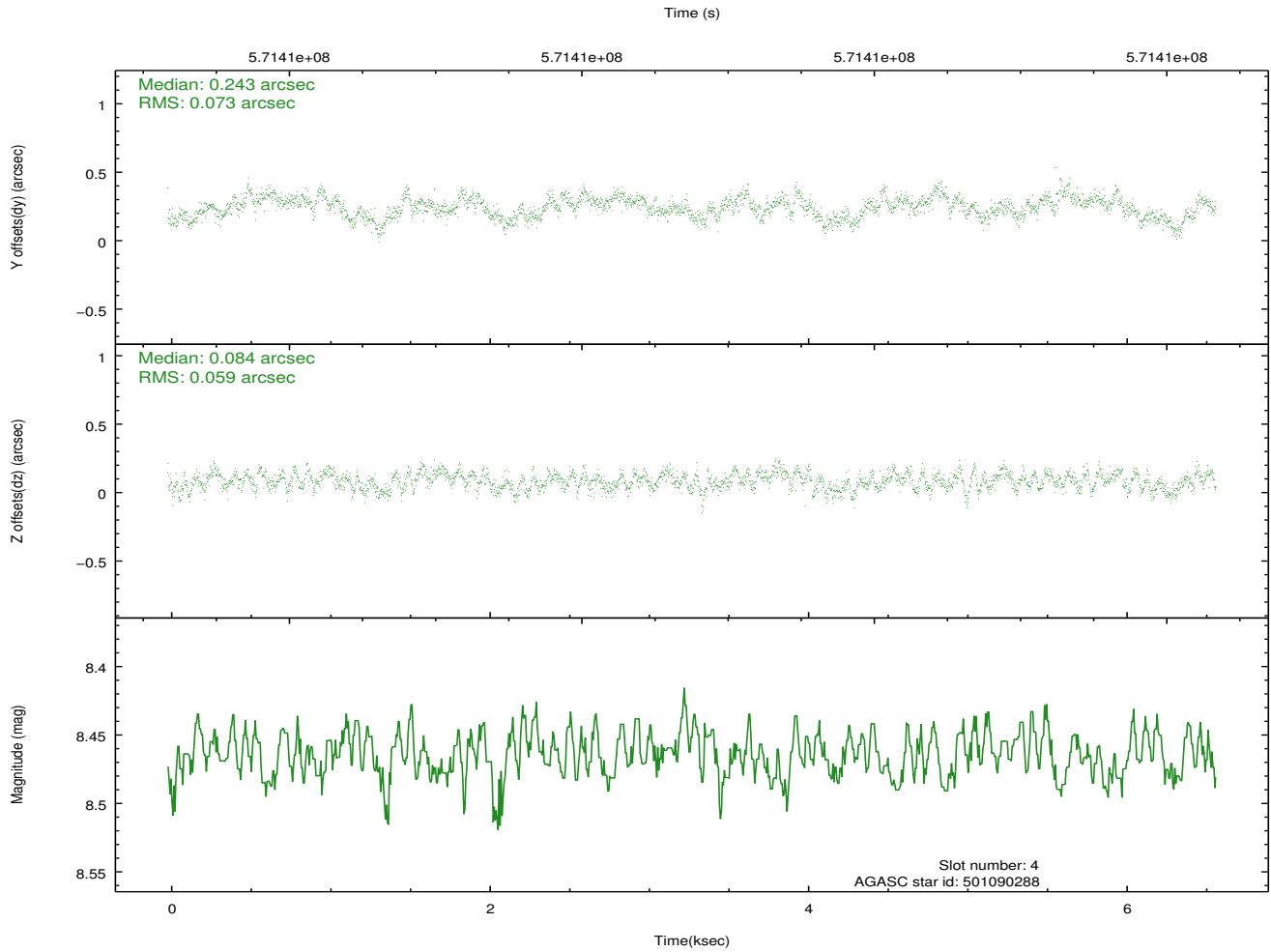
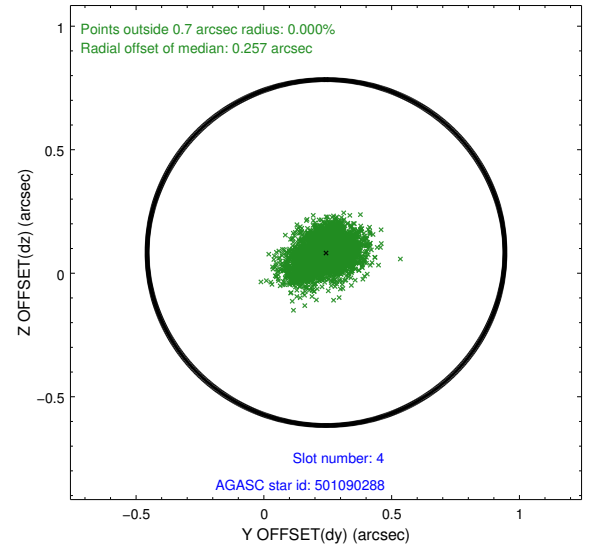
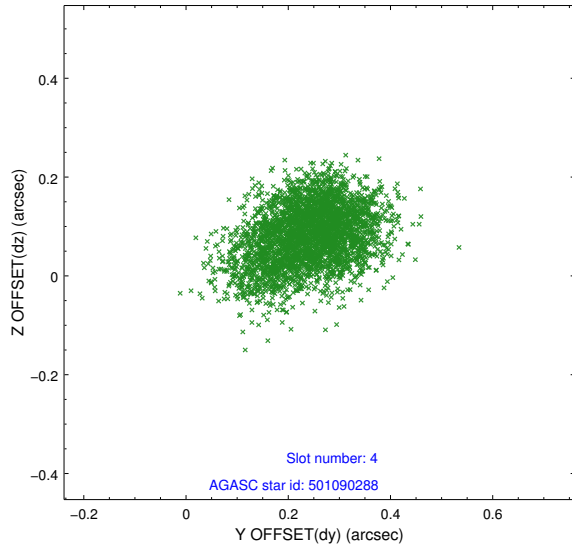
| slot | status | used | id | mag | n_pts | med_dy | med_dz | dr1 | dr2 | ra | dec | mean_y | mean_z |
|------|--------|------|-----------|------|-------|--------|--------|-------|-------|------------|-----------|----------|----------|
| 0 | FID | | ACIS-I-1 | 7.27 | 1606 | 0.064 | -0.006 | 0.006 | 0.011 | 0.000000 | 0.000000 | 922.79 | -842.53 |
| 1 | FID | | ACIS-I-5 | 7.26 | 1606 | -0.359 | 0.030 | 0.006 | 0.011 | 0.000000 | 0.000000 | -1825.34 | 1054.42 |
| 2 | FID | | ACIS-I-6 | 7.28 | 1606 | 0.203 | 0.047 | 0.007 | 0.011 | 0.000000 | 0.000000 | 387.39 | 1700.05 |
| 3 | GUIDE | used | 501089808 | 9.23 | 3210 | -0.398 | -0.356 | 0.133 | 0.221 | 162.694918 | 54.491102 | 358.64 | 1941.69 |
| 4 | GUIDE | used | 501090288 | 8.46 | 3212 | 0.243 | 0.084 | 0.099 | 0.163 | 164.443929 | 54.810119 | -2193.43 | -898.51 |
| 5 | GUIDE | used | 501090840 | 8.38 | 3204 | -0.017 | -0.088 | 0.130 | 0.200 | 162.716236 | 54.745640 | 776.15 | 1124.76 |
| 6 | GUIDE | used | 501482792 | 8.37 | 3212 | 0.068 | -0.009 | 0.102 | 0.166 | 163.004997 | 55.355149 | 1357.90 | -1072.83 |
| 7 | GUIDE | used | 501616848 | 7.80 | 3211 | 0.097 | 0.363 | 0.077 | 0.124 | 164.751608 | 55.011626 | -2358.79 | -1849.95 |

2.4 Star Slots

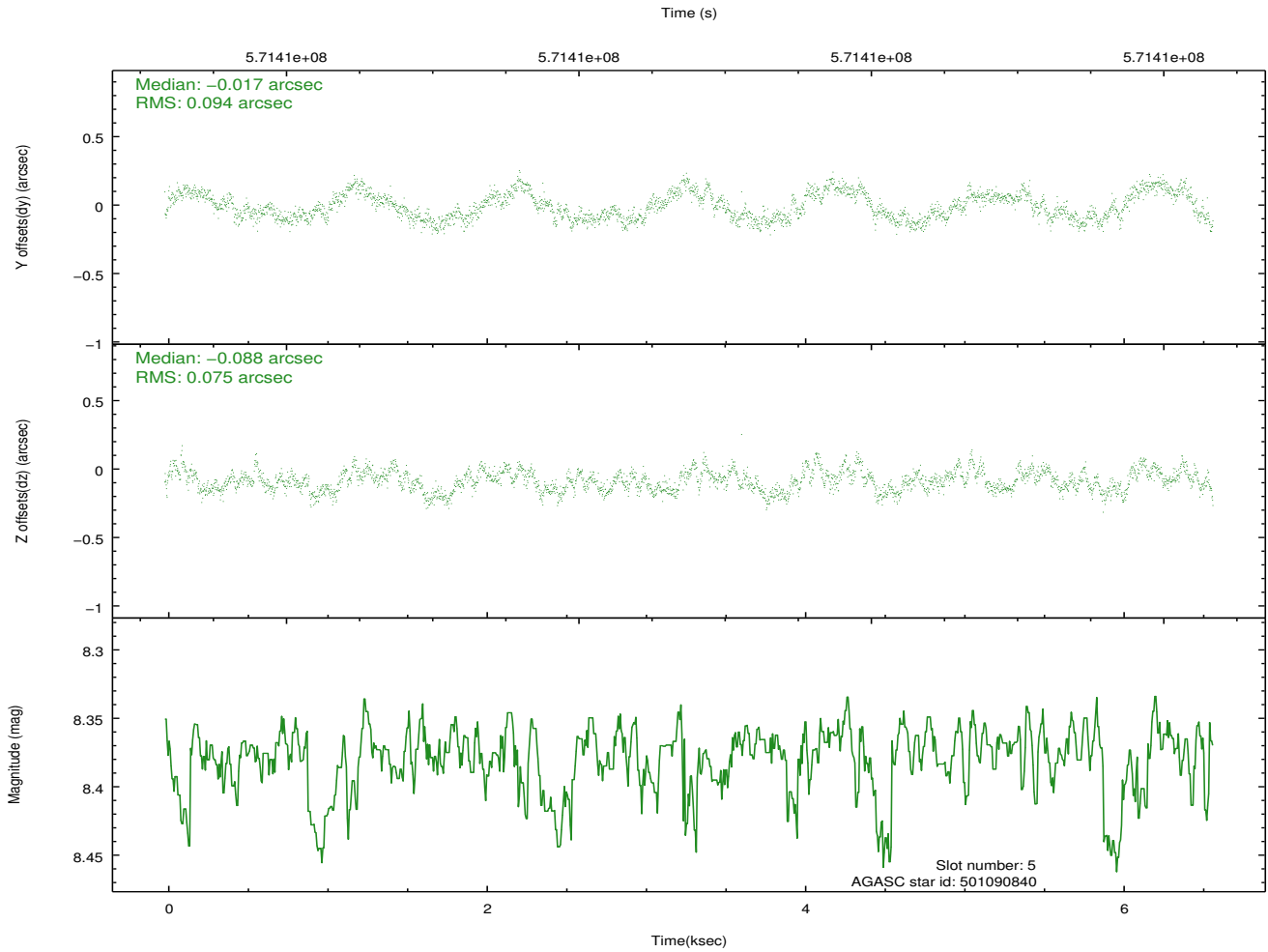
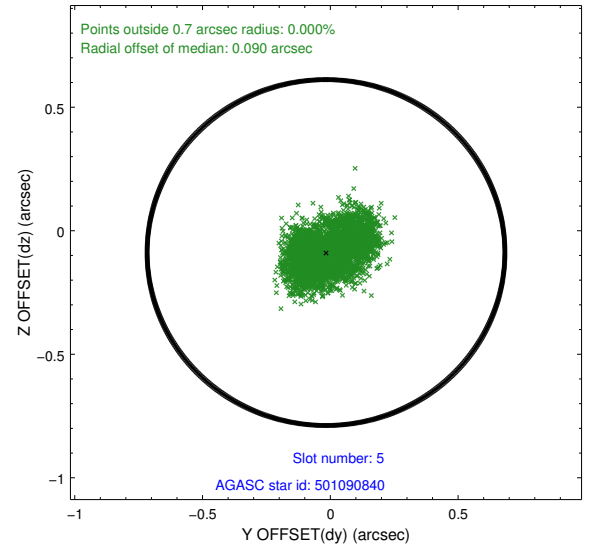
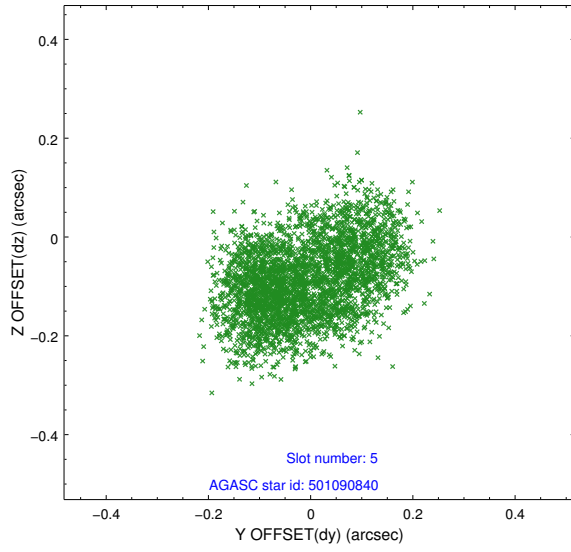
2.4.1 Slot 3



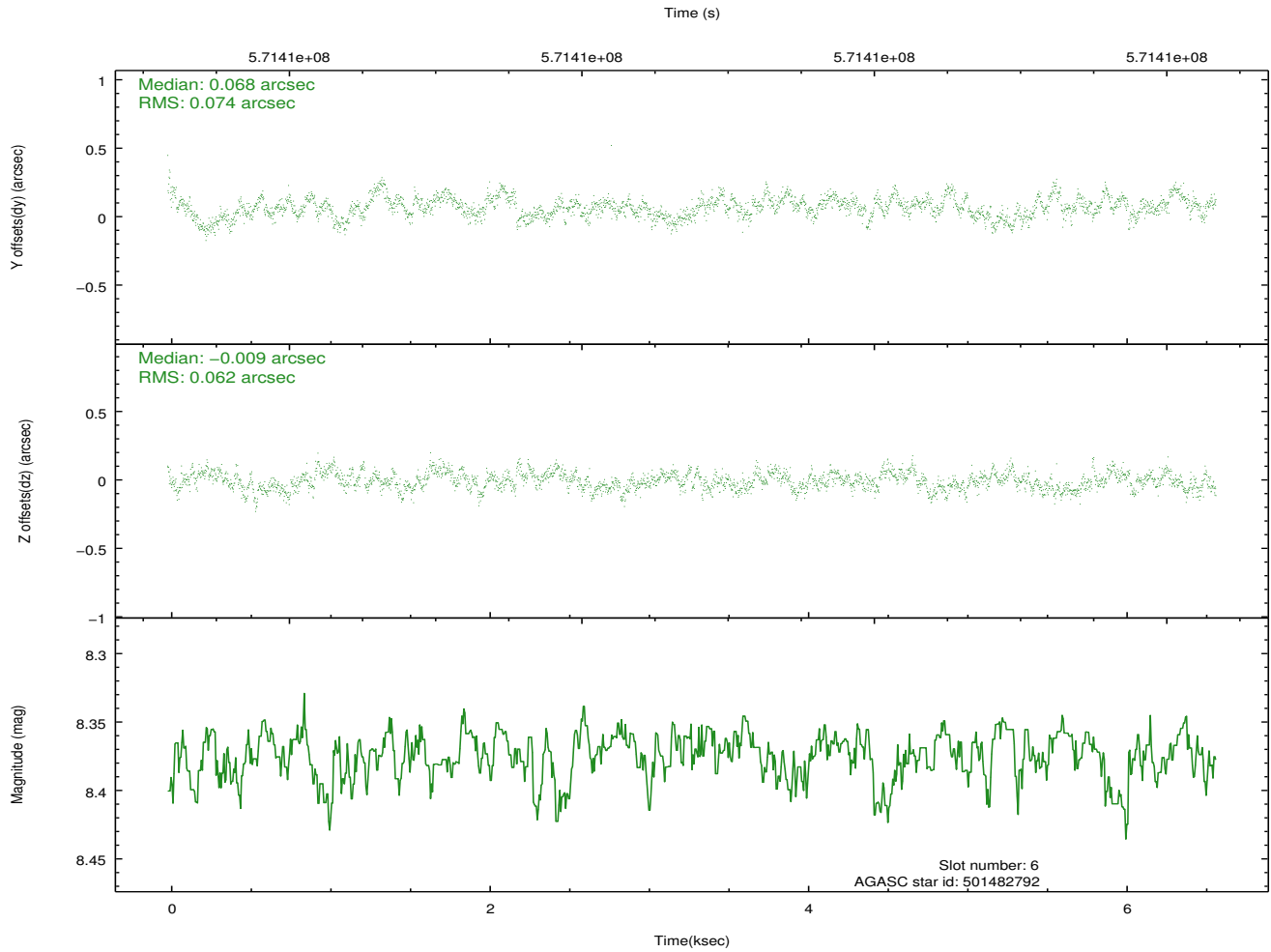
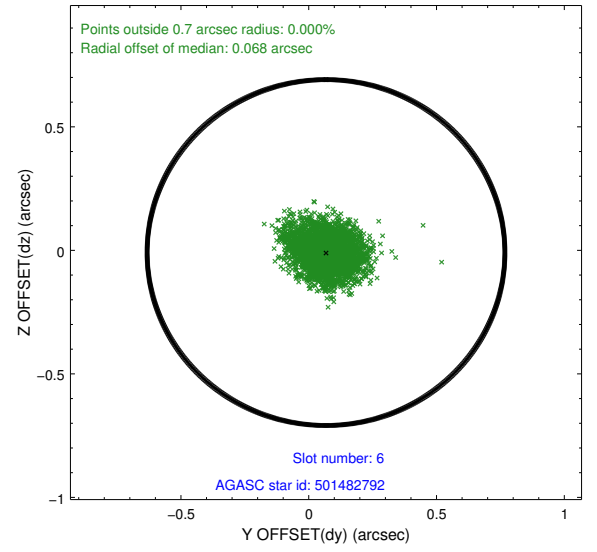
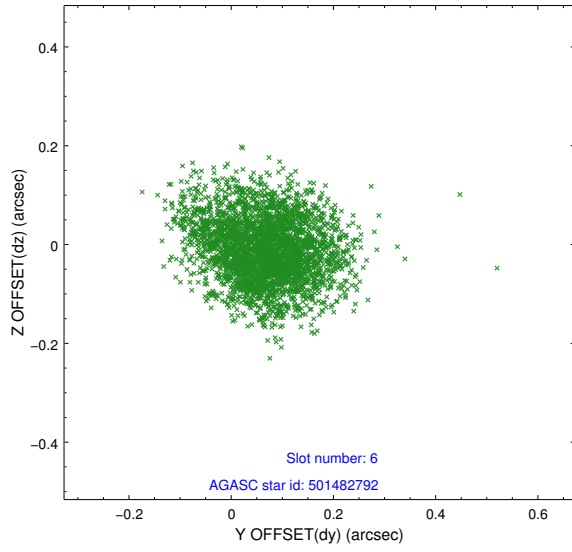
2.4.2 Slot 4



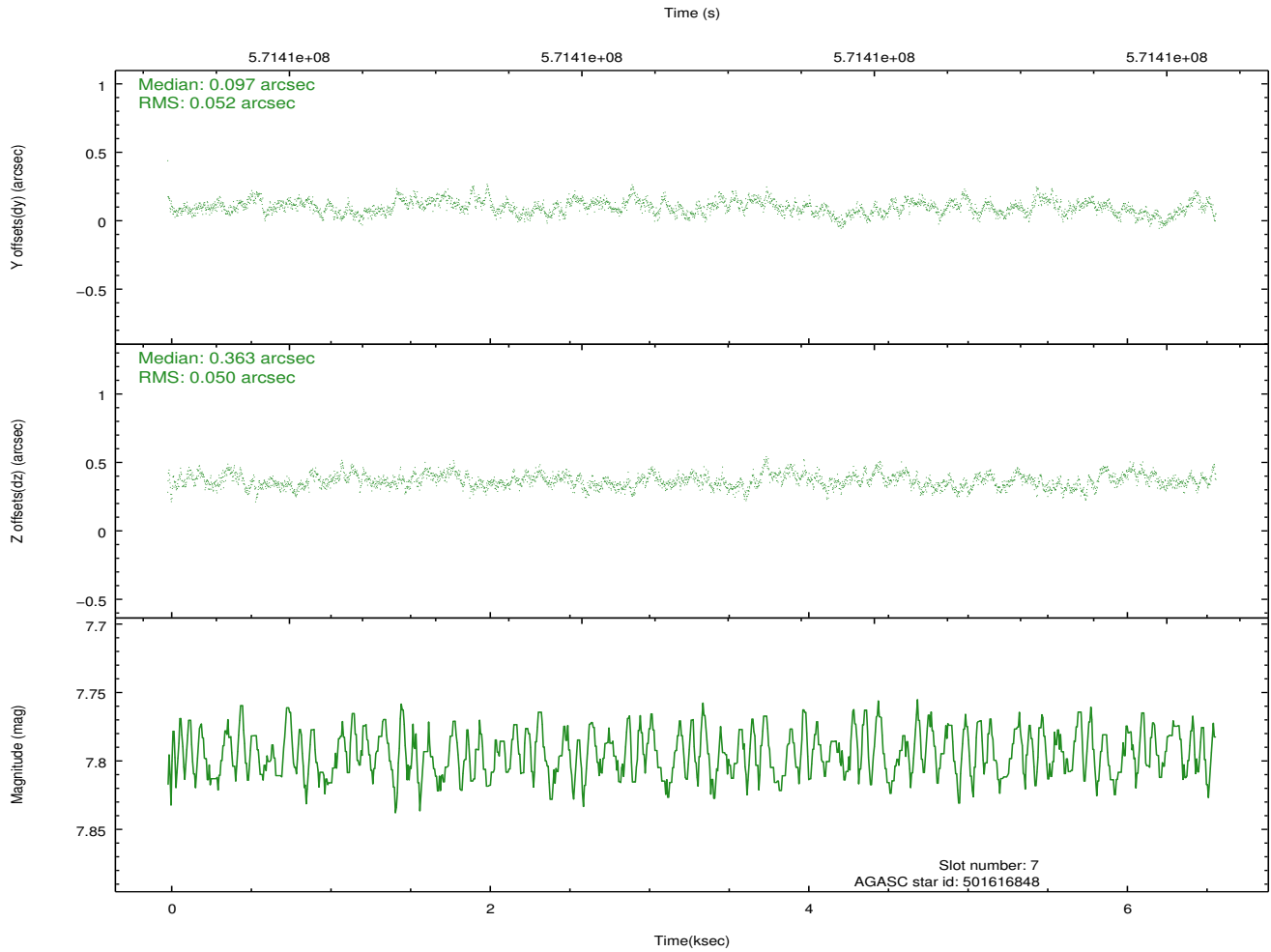
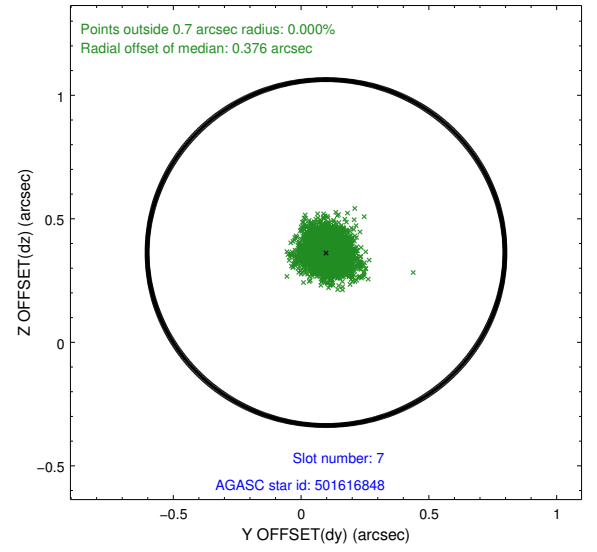
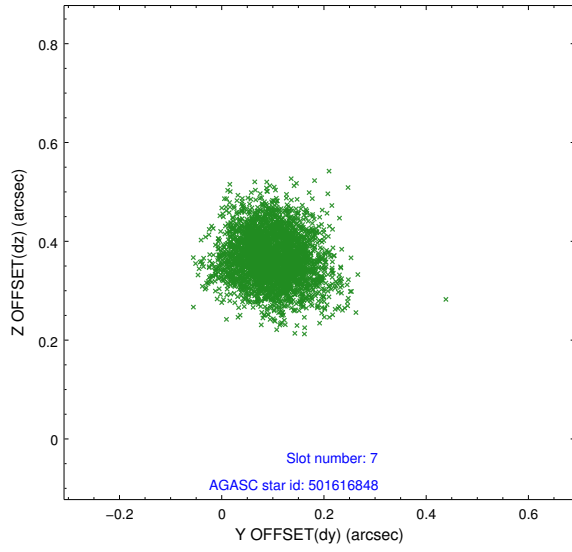
2.4.3 Slot 5



2.4.4 Slot 6

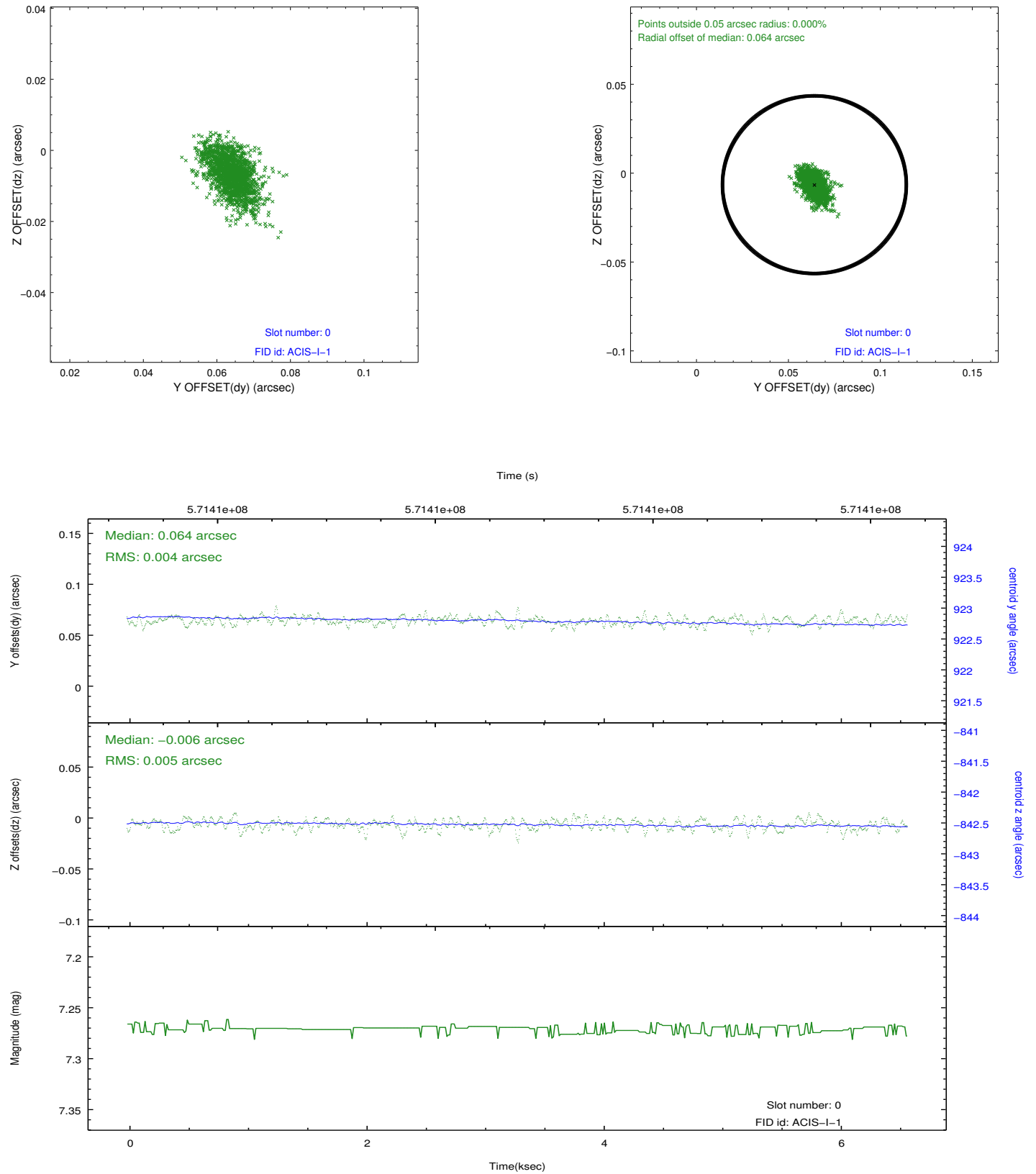


2.4.5 Slot 7

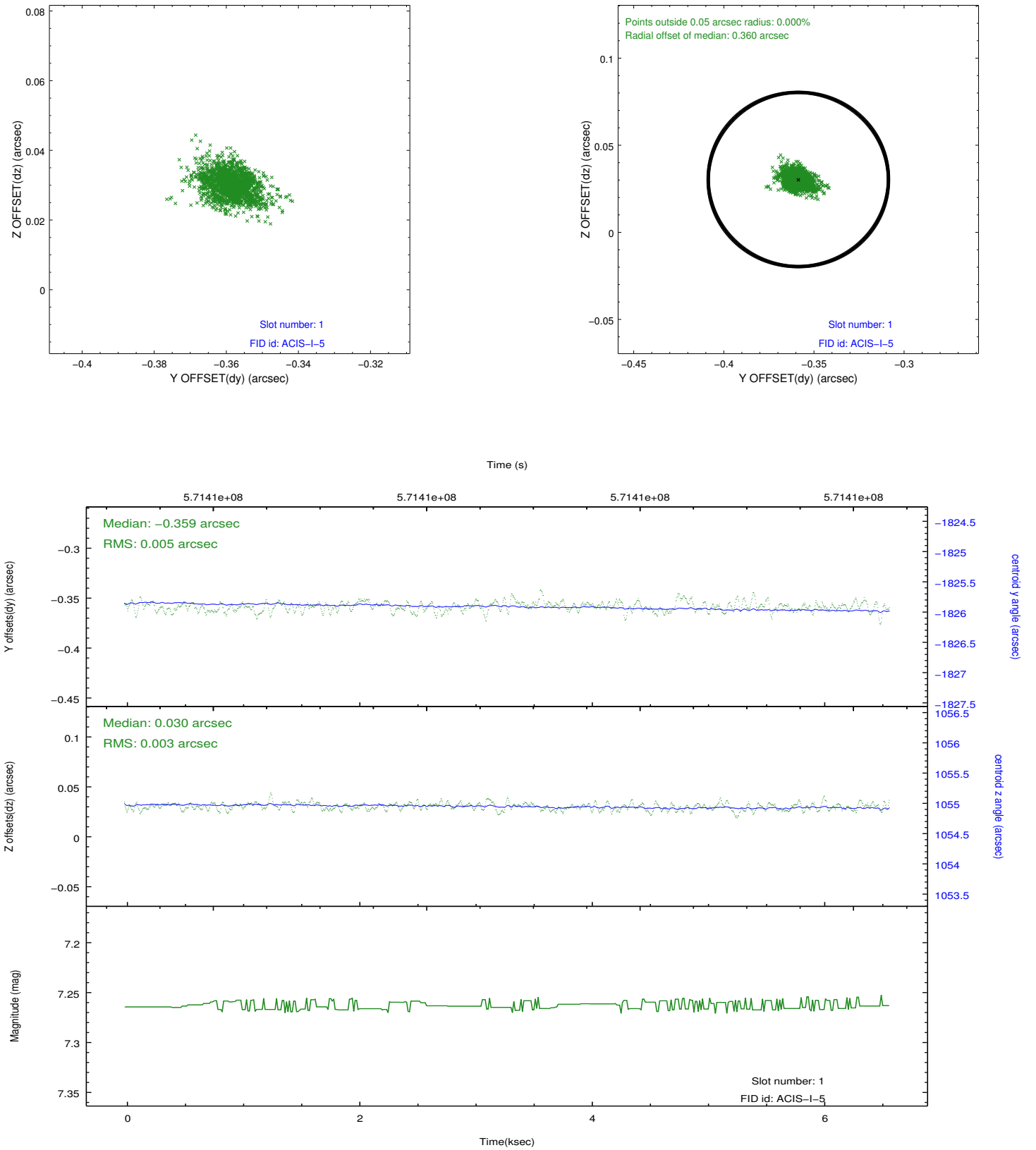


2.5 FID Slots

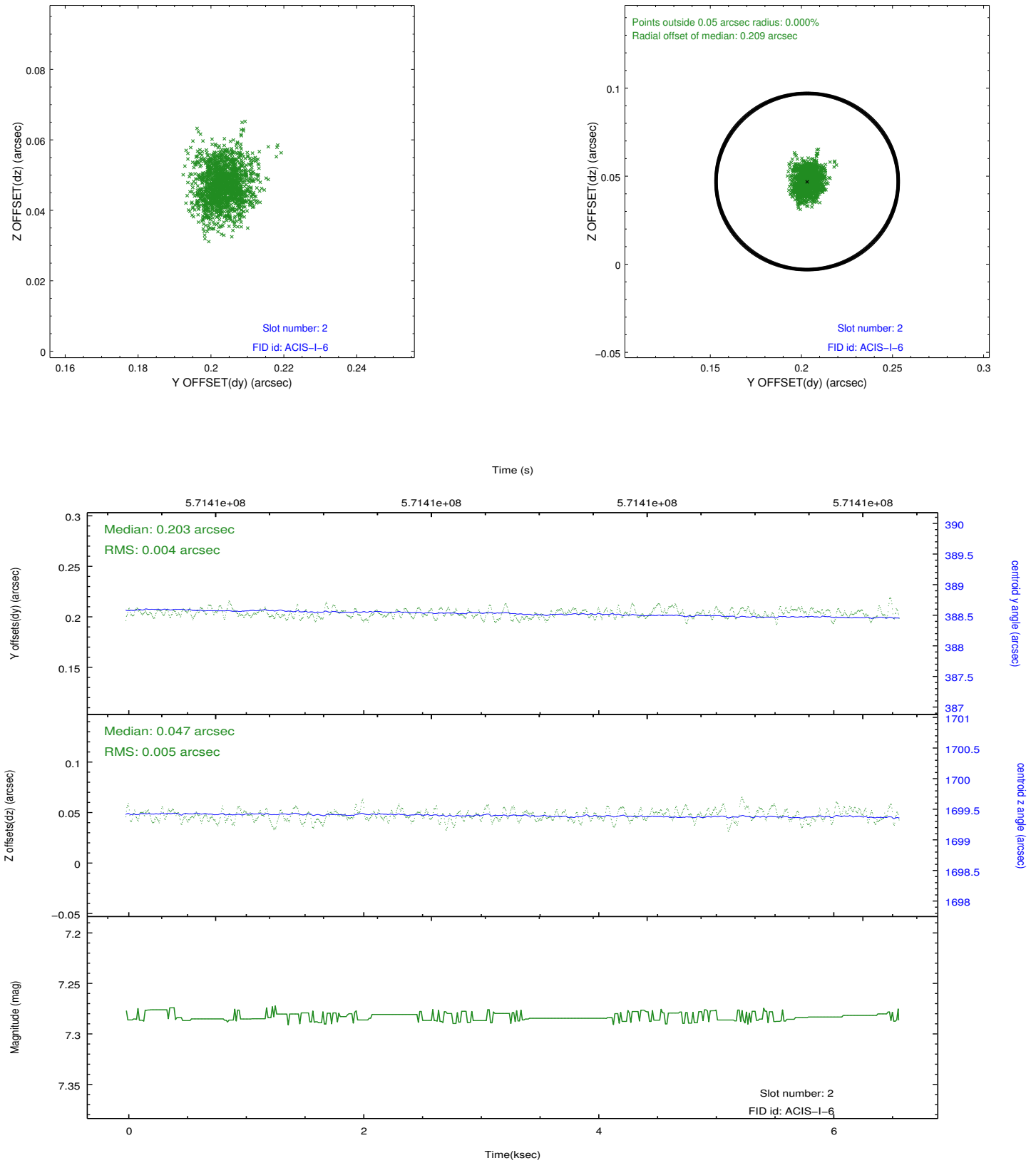
2.5.1 Slot 0



2.5.2 Slot 1



2.5.3 Slot 2



A Summary

A.1 Status

| | |
|----------------------------|-----------------|
| V&V Scientist | Beth Sundheim |
| V&V Date (YYYY-MM-DD) | 2016.02.12 |
| V&V Edition | 1 |
| V&V Disposition and Status | OK |
| V&V Charge Time | 6.3712000949383 |

A.2 Comments

A spatial region of the original bias map for CCD = 0 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 bias anomaly. The bias map for CCD = 0 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: (163.16807, 55.09523), (163.16580, 55.09299), (163.37646, 55.02303), (163.37874, 55.02526).