

V&V Reference Report

L2 ASCDS Version : 8.4.5

Observation 15546 - L2 Version 2
Chandra X-Ray Center

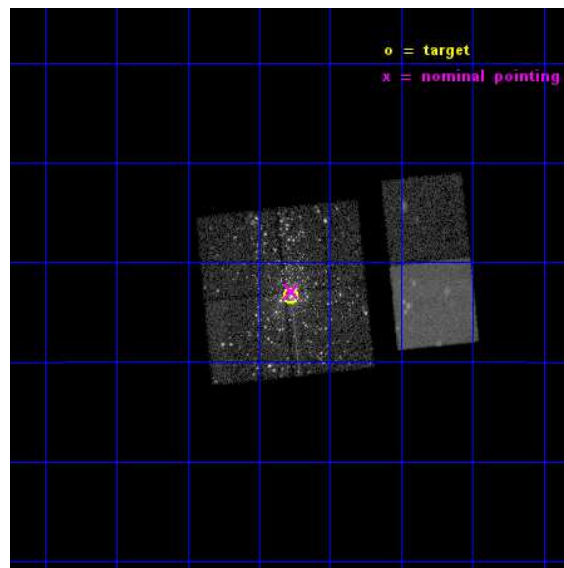
L2 Processing Date : Nov 27 2014

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1 Front

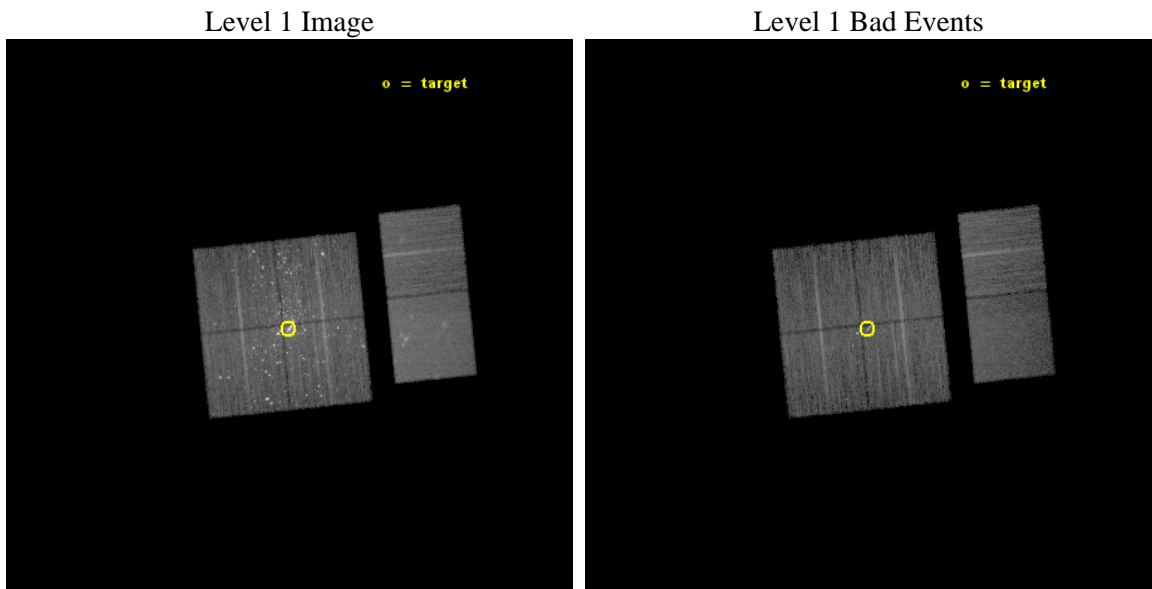
| | | |
|----------|---|---|
| seq_num | 200827 | Sequence number |
| obs_id | 15546 | Observation id |
| title | Simultaneous X-ray and radio flaring of Young Stellar Objects in the Orion Nebula Cluster | Proposal title |
| observer | Dr Jan Forbrich | Principal investigator |
| object | Orion Nebula Cluster | Source name |
| dtcycle | 0 | |
| cycle | P | events from which exps? Prim/Second/Both |
| ra_targ | 83.819583 | Observer's specified target RA [deg] |
| dec_targ | -5.39 | Observer's specified target Dec [deg] |
| ra_nom | 83.817981189904 | Nominal RA [deg] |
| dec_nom | -5.3820553092626 | Nominal Dec [deg] |
| roll_nom | 84.108531793268 | Nominal Roll [deg] |
| revision | 2 | Processing version of data |
| ontime | 18060.799932778 | Sum of GTIs [s] |
| livetime | 17832.103209121 | Livetime [s] |
| ontime0 | 18060.799932778 | Sum of GTIs [s] |
| ontime1 | 18060.799932778 | Sum of GTIs [s] |
| ontime2 | 18060.799932778 | Sum of GTIs [s] |
| ontime3 | 18060.799932778 | Sum of GTIs [s] |
| ontime6 | 18057.558932424 | Sum of GTIs [s] |
| ontime7 | 18060.799932778 | Sum of GTIs [s] |
| l2events | 233374 | Number of level 2 events |



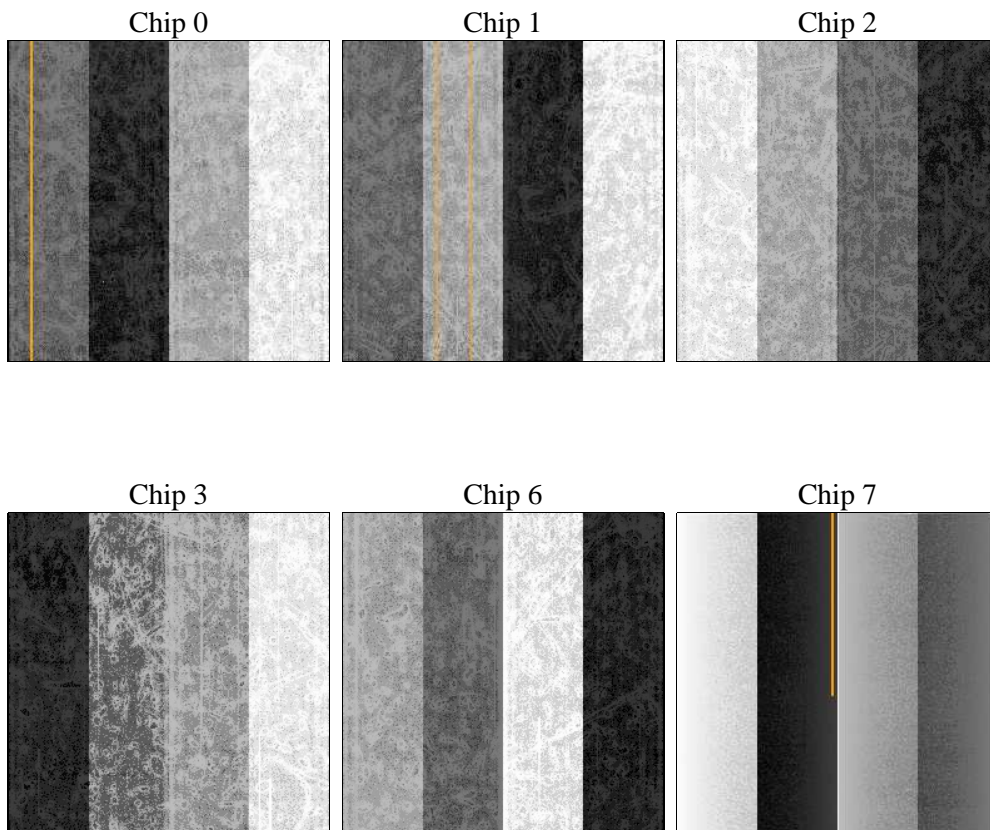
2 OBI

2.1 OBI

2.1.1 Images



2.1.2 Bias



2.1.3 Parameters

| | | | | | |
|----------|---------------------|--------------------------------|----------------|-----------------|---|
| obi_num | 0 | Obi number | sched_exp_time | 18092.000000 | [s] Scheduled observation exposure time |
| ascdsver | 10.3 | Processing system revision | ontime | 18060.799932778 | Sum of GTIs [s] |
| caldbver | 4.6.4 | | ontime0 | 18060.799932778 | Sum of GTIs [s] |
| date | 2014-11-27T23:15:47 | Date and time of file creation | ontime1 | 18060.799932778 | Sum of GTIs [s] |
| revision | 2 | Processing version of data | ontime2 | 18060.799932778 | Sum of GTIs [s] |
| | | | ontime3 | 18060.799932778 | Sum of GTIs [s] |
| | | | ontime6 | 18057.558932424 | Sum of GTIs [s] |
| | | | ontime7 | 18060.799932778 | Sum of GTIs [s] |
| | | | l1events | 747618 | Number of level 1 events |

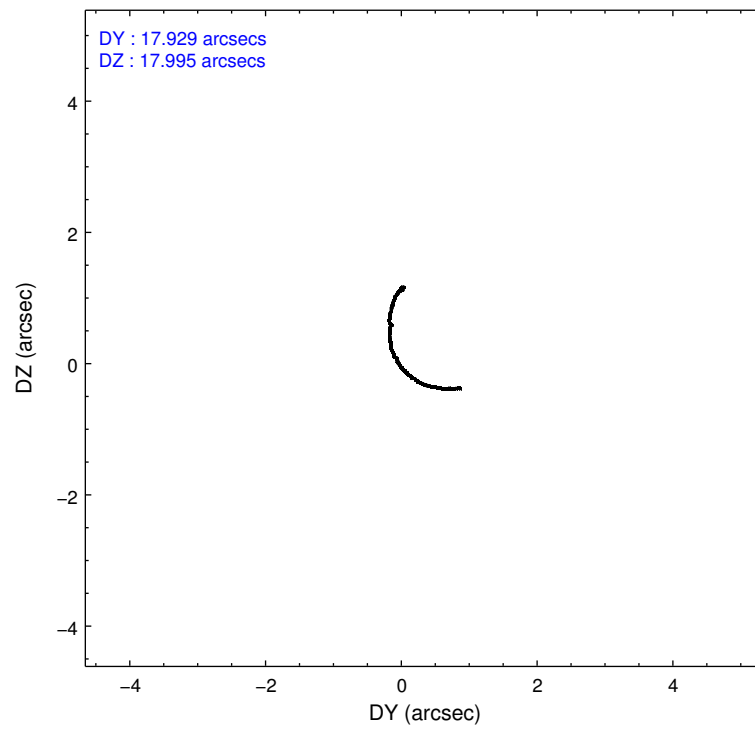
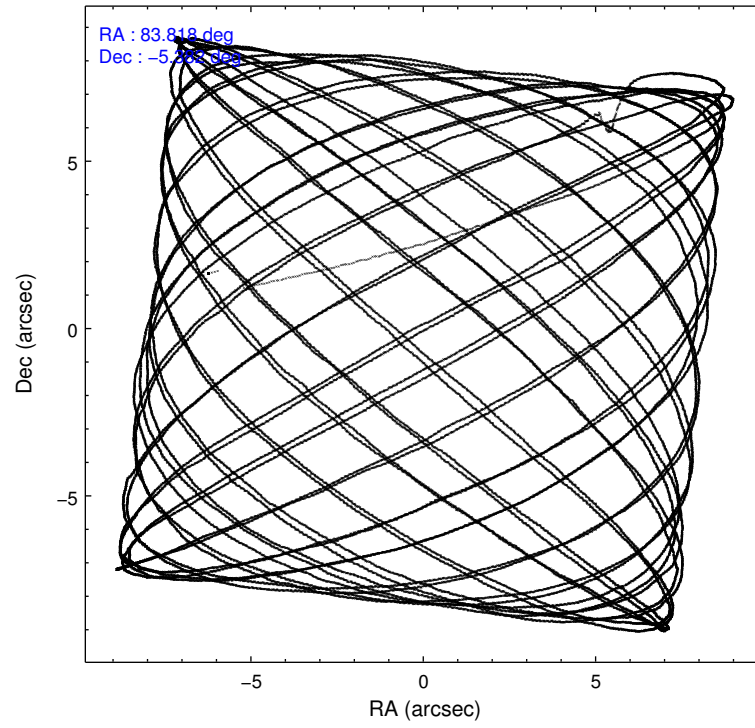
2.1.4 Events

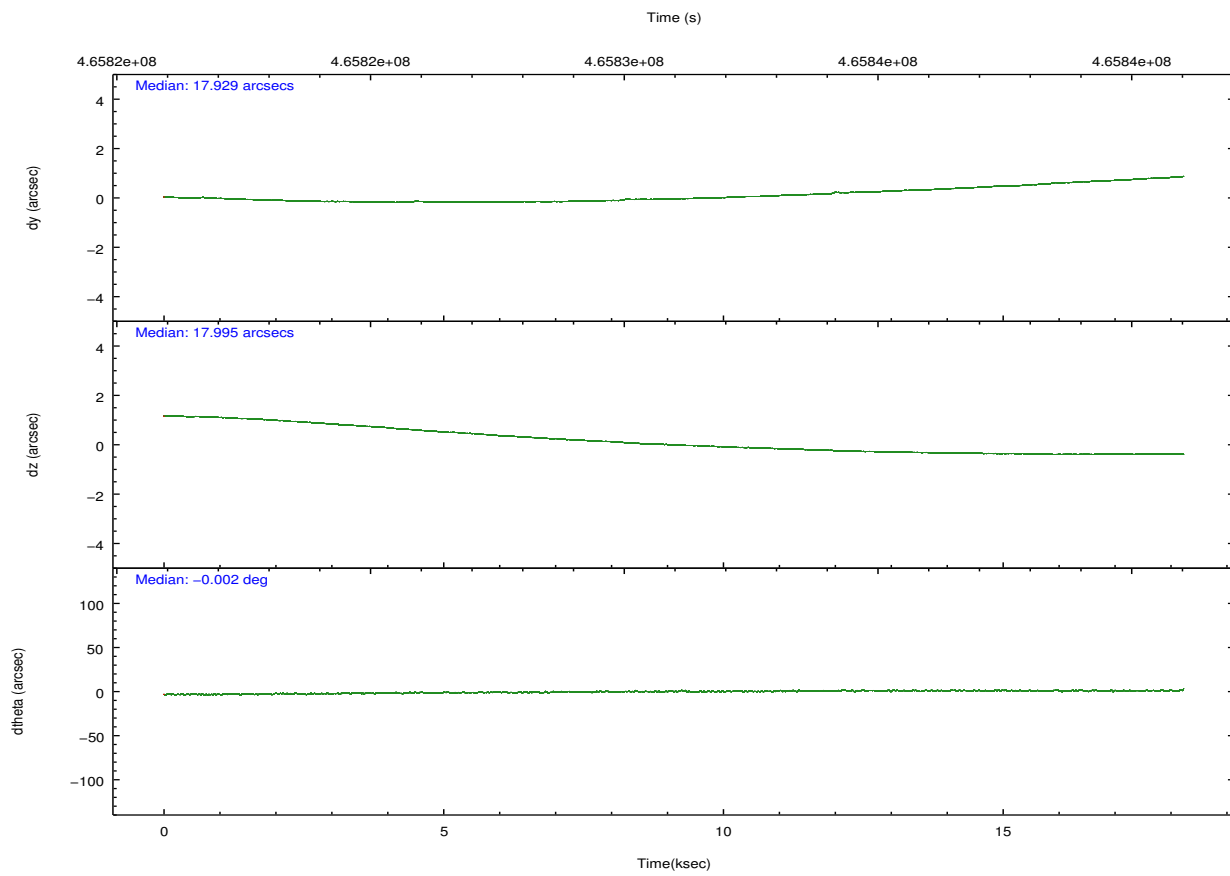
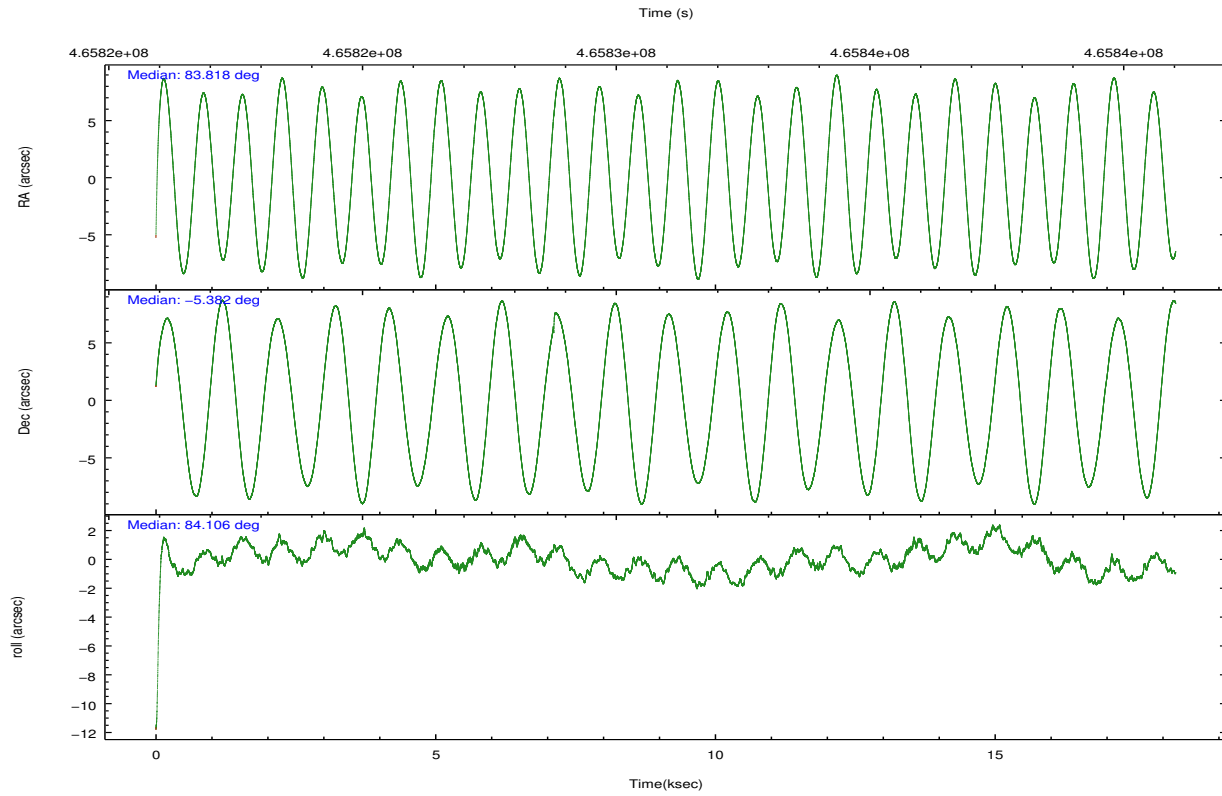
| | ccd 0 | ccd 1 | ccd 2 | ccd 3 | ccd 6 | ccd 7 | | ccd 0 | ccd 1 | ccd 2 | ccd 3 | ccd 6 | ccd 7 |
|-----------------|-------|--------|--------|--------|--------|--------|----------------|-------|-------|-------|-------|-------|-------|
| level 1 events | 97451 | 134457 | 128798 | 150792 | 101442 | 134678 | grade 0 events | 12974 | 33569 | 28220 | 41488 | 4607 | 6676 |
| rejected events | 74866 | 82601 | 86864 | 91628 | 88859 | 72786 | | 13% | 24% | 21% | 27% | 4% | 4% |
| rejected % | 76% | 61% | 67% | 60% | 87% | 54% | grade 1 events | 112 | 1406 | 555 | 1783 | 56 | 157 |
| | | | | | | | | 0% | 1% | 0% | 1% | 0% | 0% |
| | | | | | | | grade 2 events | 3988 | 8006 | 6144 | 7741 | 2791 | 13010 |
| | | | | | | | | 4% | 5% | 4% | 5% | 2% | 9% |
| | | | | | | | grade 3 events | 1542 | 2882 | 2285 | 3042 | 1253 | 5429 |
| | | | | | | | | 1% | 2% | 1% | 2% | 1% | 4% |
| | | | | | | | grade 4 events | 1358 | 2915 | 2194 | 2916 | 1228 | 5385 |
| | | | | | | | | 1% | 2% | 1% | 1% | 1% | 3% |
| | | | | | | | grade 5 events | 4413 | 5893 | 4360 | 6302 | 5060 | 13543 |
| | | | | | | | | 4% | 4% | 3% | 4% | 4% | 10% |
| | | | | | | | grade 6 events | 2724 | 4499 | 3107 | 4001 | 2709 | 31409 |
| | | | | | | | | 2% | 3% | 2% | 2% | 2% | 23% |
| | | | | | | | grade 7 events | 70340 | 75287 | 81933 | 83519 | 83738 | 59069 |
| | | | | | | | | 72% | 55% | 63% | 55% | 82% | 43% |

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 | 83.829357 | 83.81798118990443 | CCD I2 on | Y | Y |
| [deg] Pointing Dec | -5.407136 | -5.382055309262642 | CCD I3 on | Y | Y |
| [deg] Pointing Roll | 83.900924 | 84.108531793268 | 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) | 465821991.184000 | 465820926.85952 | CCD S5 on | N | N |
| Observation start date | 2012-10-05T10:58:44 | 2012-10-05T10:42:06 | Number of optional ACIS chips dropped | 0 | 0 |
| [s] Observation end time (MET) | 465840083.184000 | 465841045.0481 | On-chip summing requested | N | N |
| Observation end date | 2012-10-05T16:00:16 | 2012-10-05T16:17:25 | Subarray requested | NONE | NONE |
| Read mode | TIMED | TIMED | Alternating exposures requested | N | N |
| | | | [s] Primary exposure time | 0.000000 | 3.2 |

2.3 Aspect





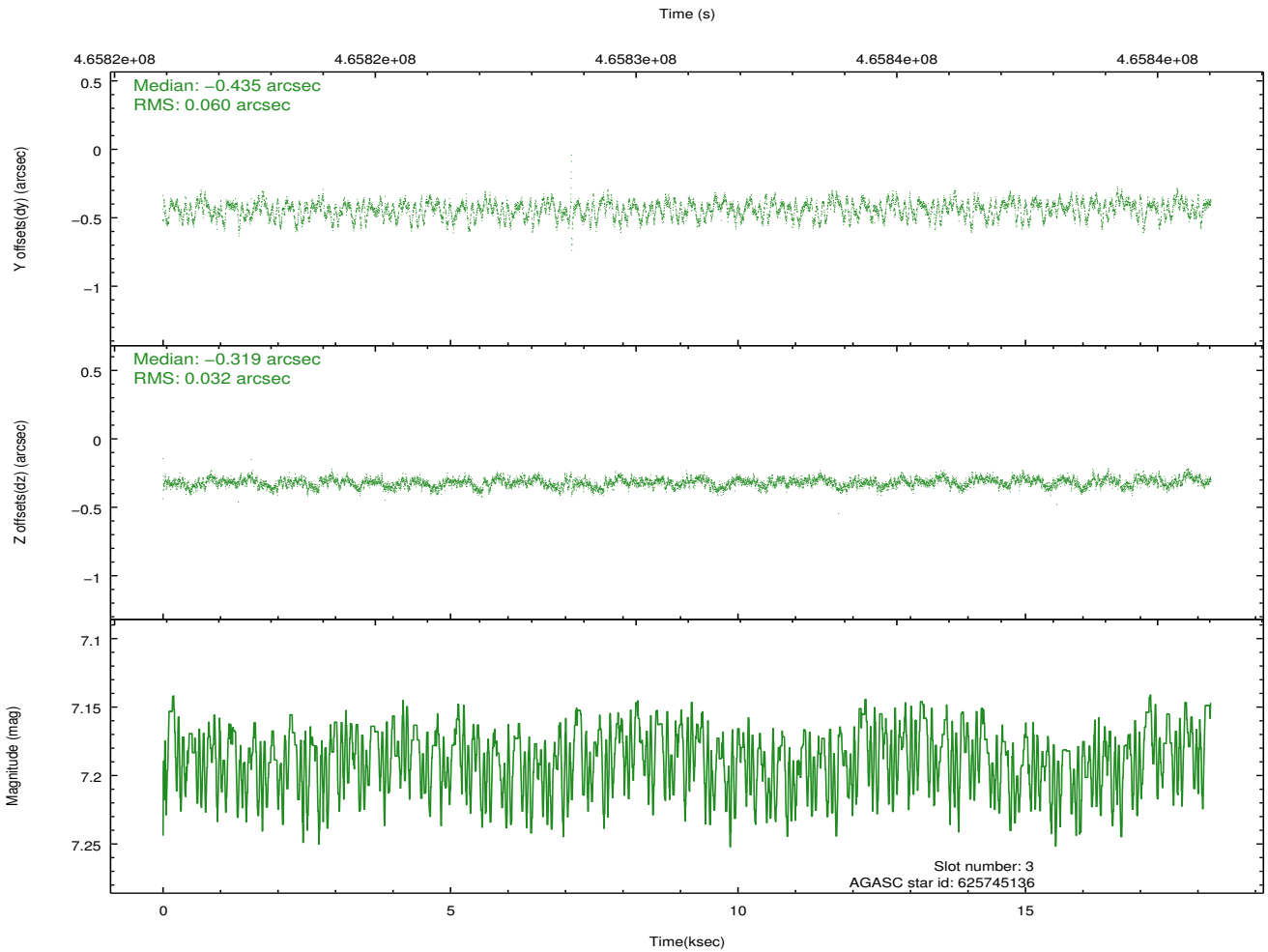
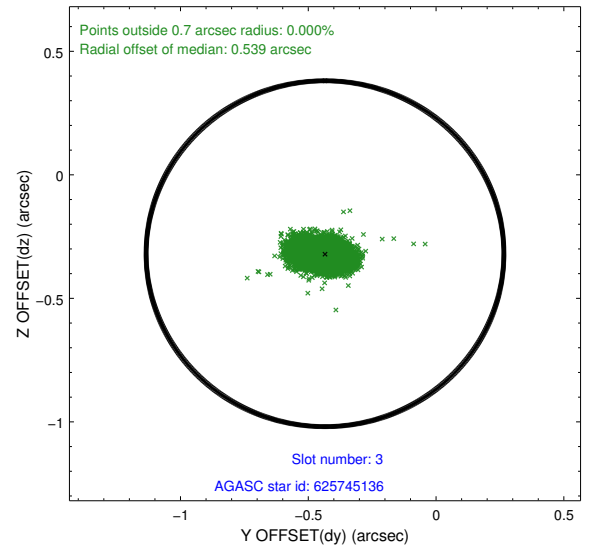
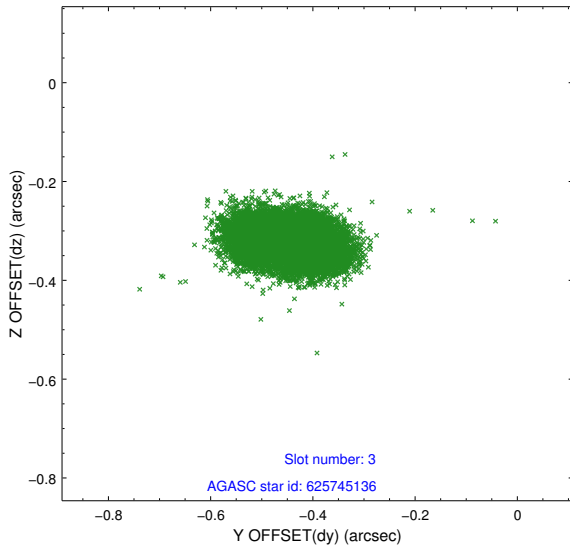
Slot Statistics

| slot | status | used | id | mag | n_pts | med_dy | med_dz | dr1 | dr2 | ra | dec | mean_y | mean_z |
|------|--------|------|-----------|------|-------|--------|--------|-------|-------|-----------|-----------|----------|----------|
| 0 | FID | | ACIS-I-1 | 7.04 | 4447 | 0.044 | 0.027 | 0.029 | 0.039 | 0.000000 | 0.000000 | 921.36 | -841.81 |
| 1 | FID | | ACIS-I-5 | 7.04 | 4447 | -0.233 | 0.051 | 0.020 | 0.028 | 0.000000 | 0.000000 | -1826.91 | 1055.58 |
| 2 | FID | | ACIS-I-6 | 7.05 | 4447 | 0.101 | -0.005 | 0.012 | 0.019 | 0.000000 | 0.000000 | 386.72 | 1700.29 |
| 3 | GUIDE | used | 625745136 | 7.19 | 8892 | -0.435 | -0.319 | 0.071 | 0.120 | 83.600341 | -4.804339 | 2070.11 | 1047.38 |
| 4 | GUIDE | used | 626272760 | 6.61 | 8893 | 0.067 | 0.089 | 0.094 | 0.175 | 84.363987 | -5.938389 | -1698.67 | -2106.50 |
| 5 | GUIDE | used | 626272976 | 7.95 | 8893 | 0.103 | 0.022 | 0.072 | 0.116 | 83.795875 | -5.926912 | -1873.30 | -79.66 |
| 6 | GUIDE | used | 625874664 | 6.72 | 8892 | 0.051 | 0.111 | 0.067 | 0.116 | 84.472438 | -4.814037 | 2367.16 | -2066.80 |
| 7 | GUIDE | used | 626272880 | 7.66 | 8890 | 0.183 | 0.098 | 0.081 | 0.140 | 83.815609 | -6.032748 | -2244.10 | -190.36 |

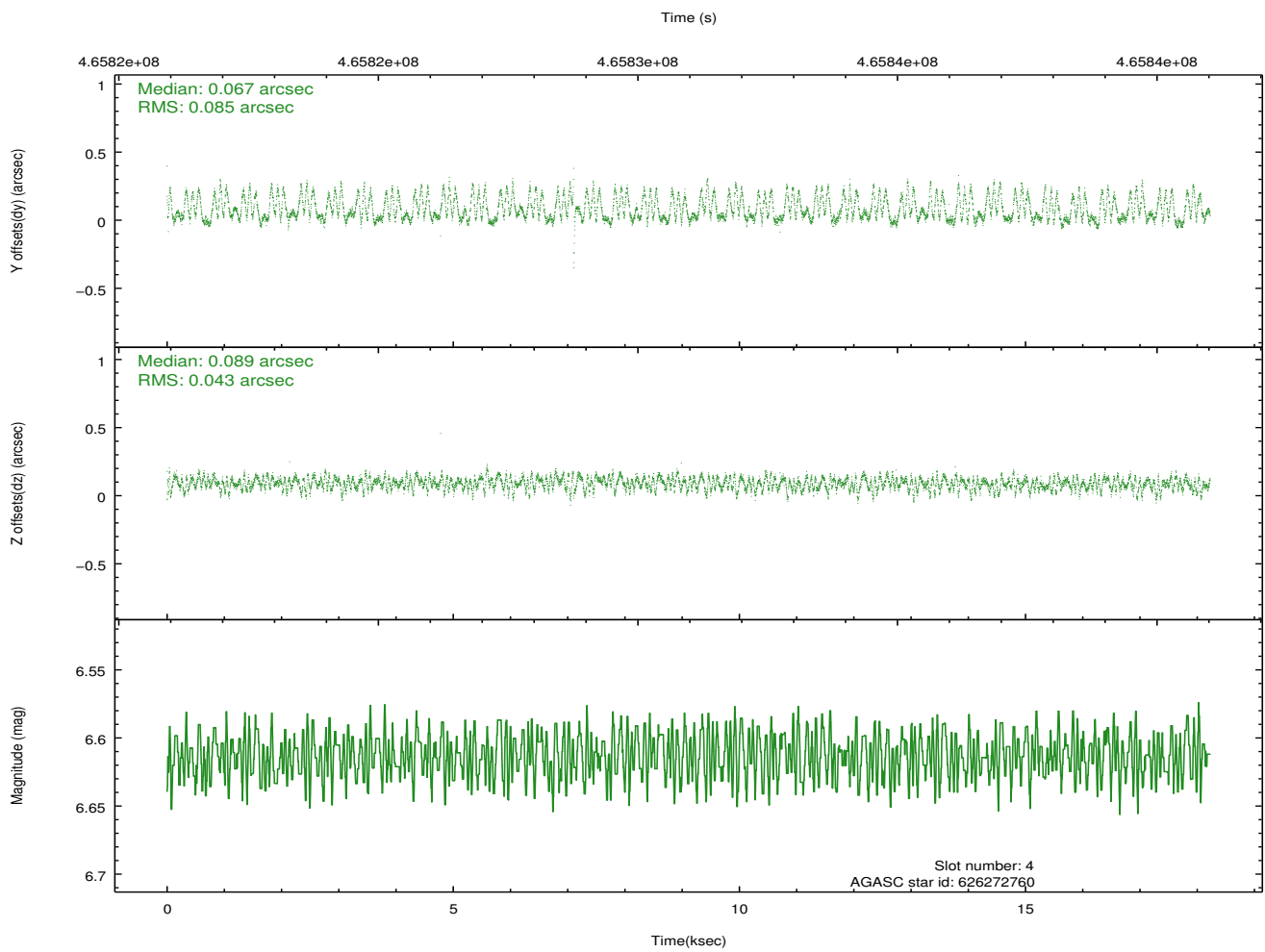
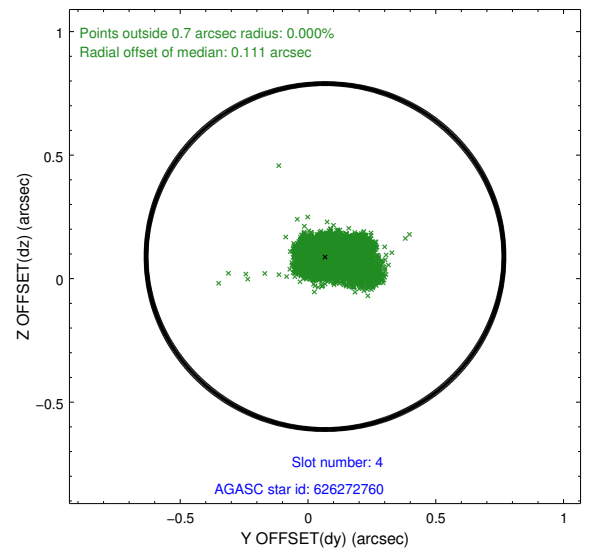
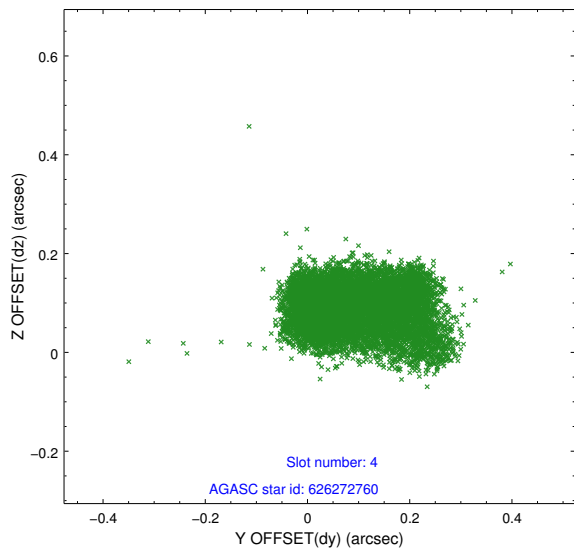
∞

2.4 Star Slots

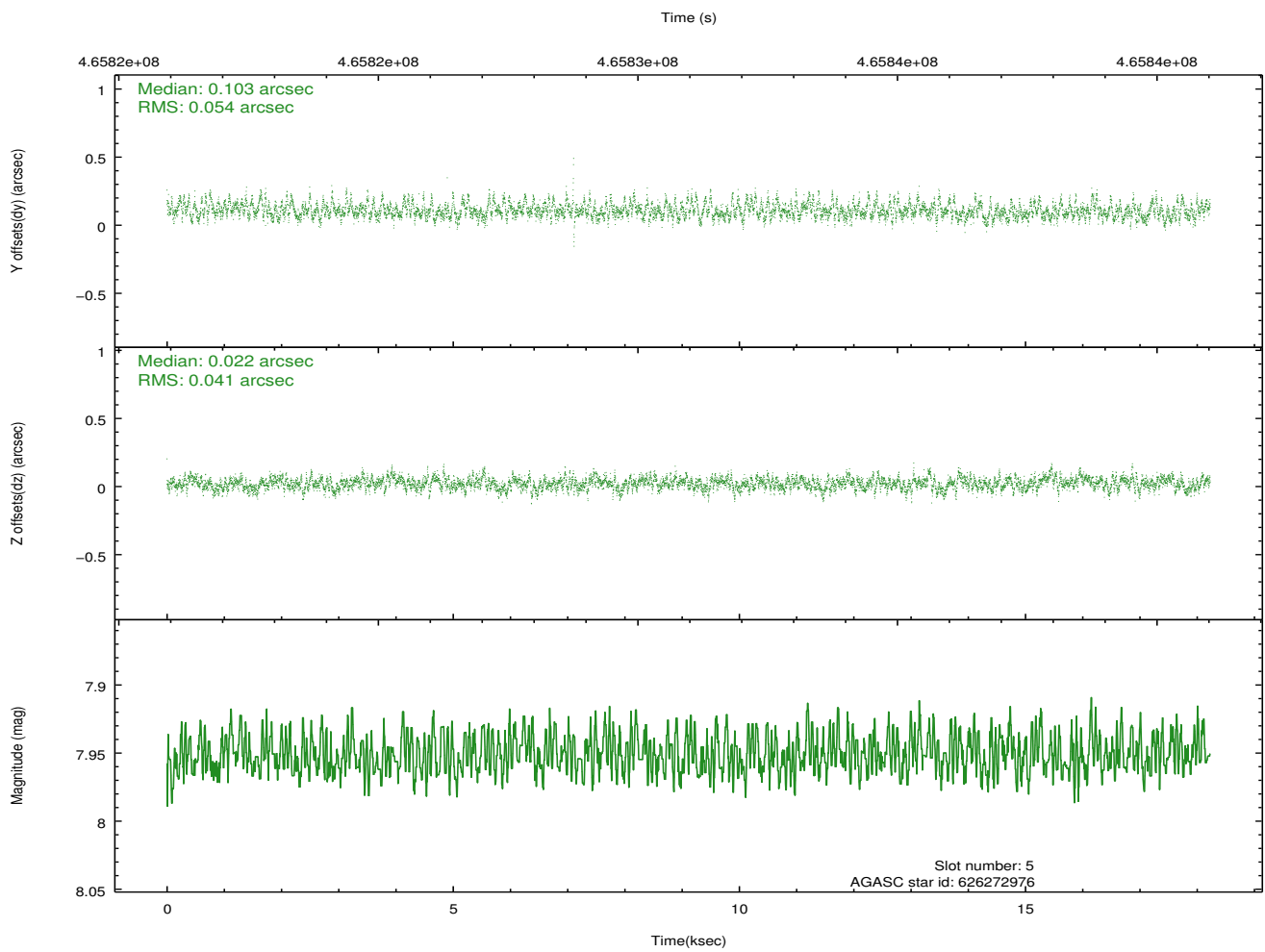
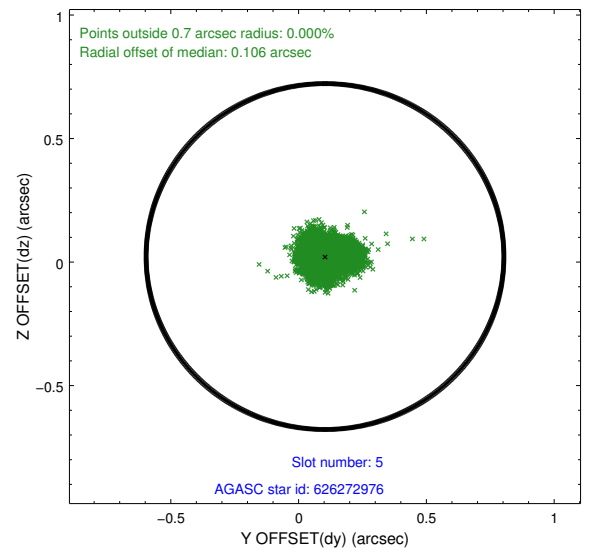
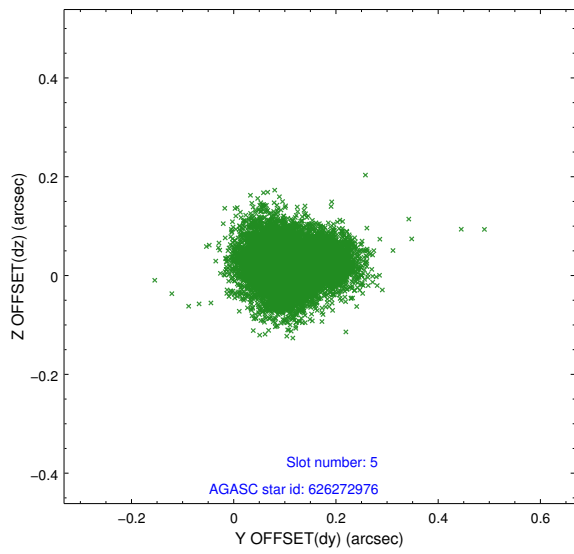
2.4.1 Slot 3



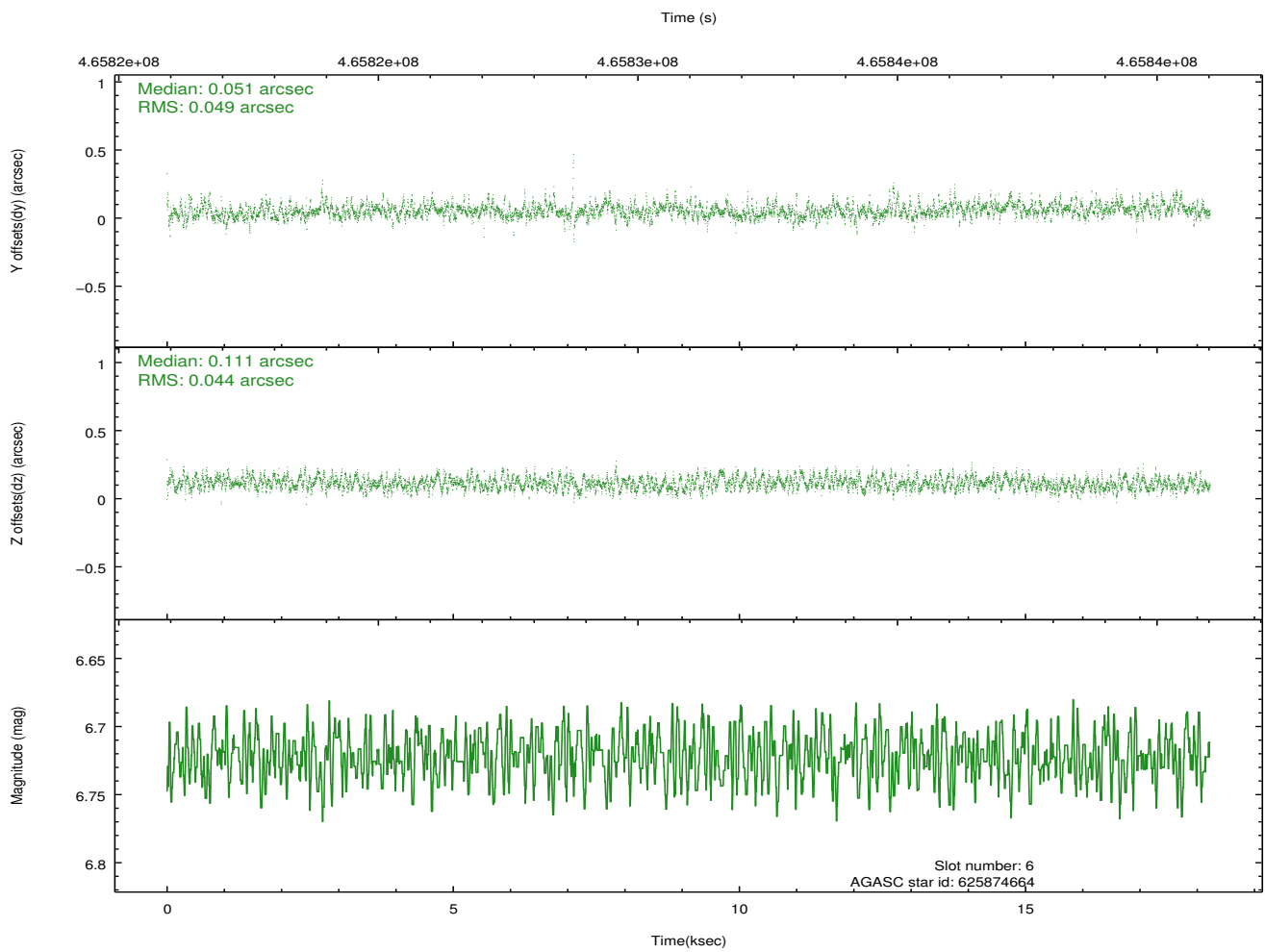
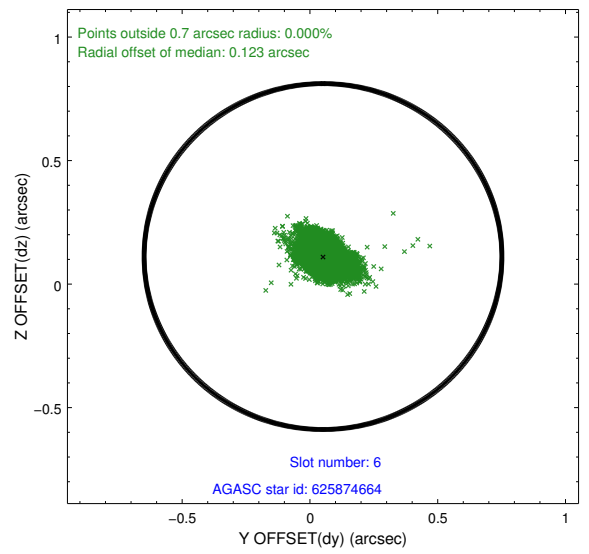
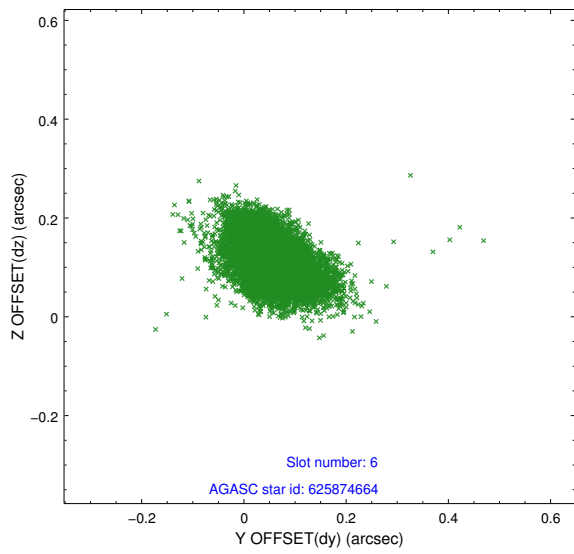
2.4.2 Slot 4



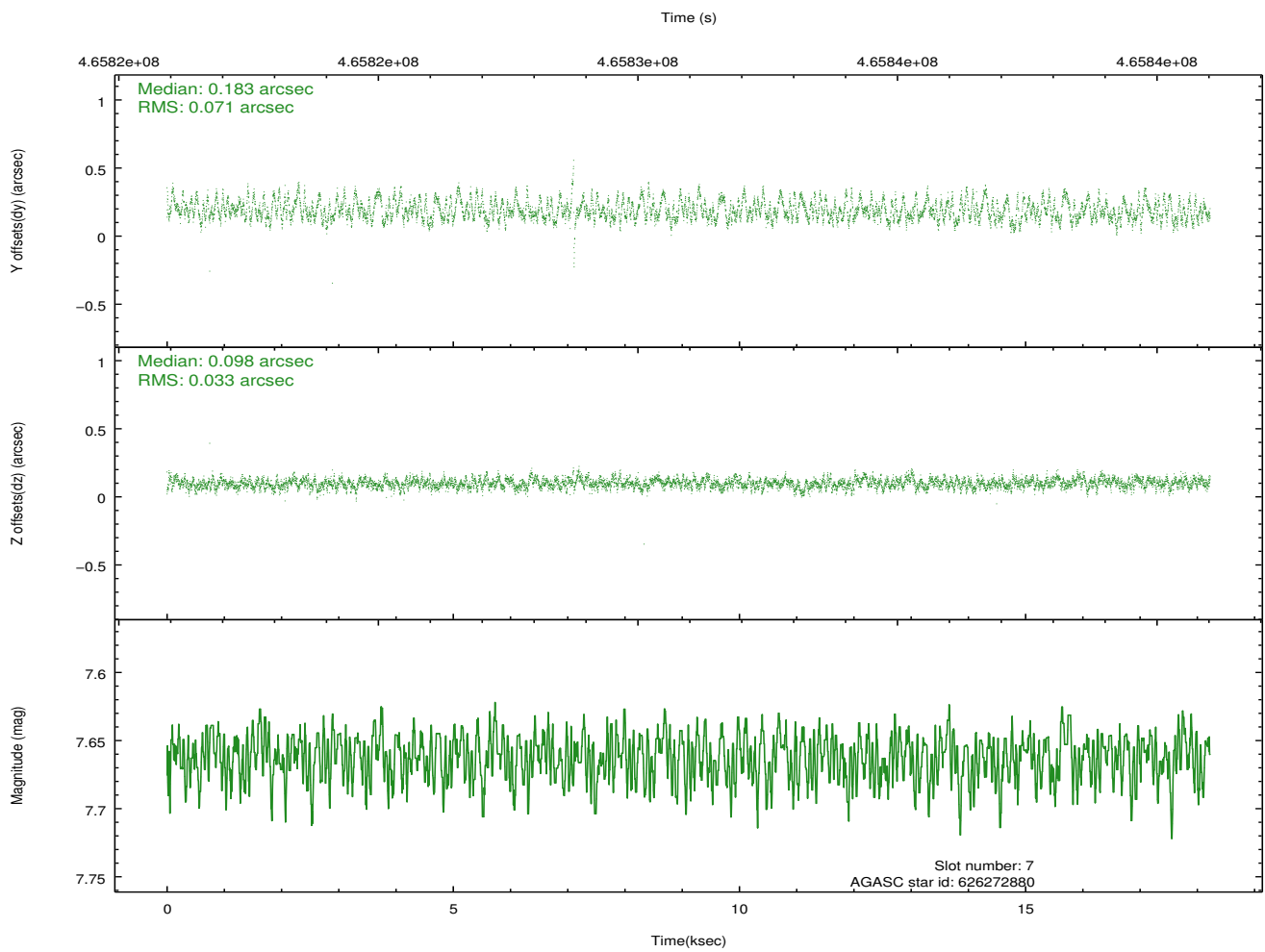
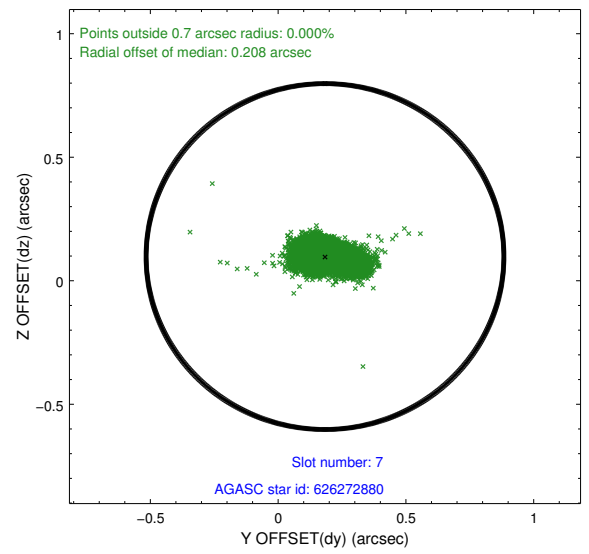
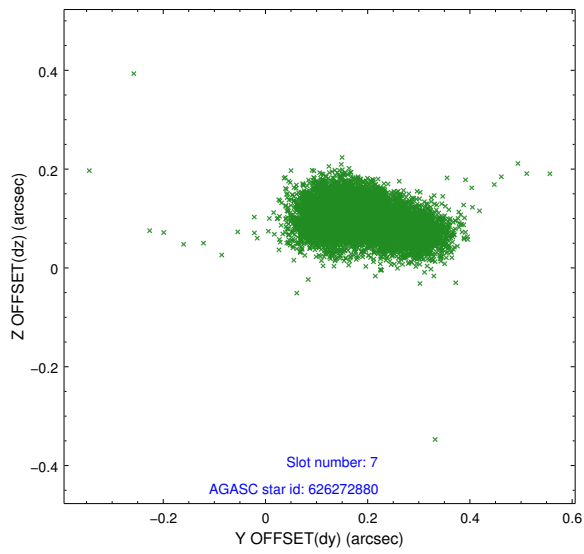
2.4.3 Slot 5



2.4.4 Slot 6

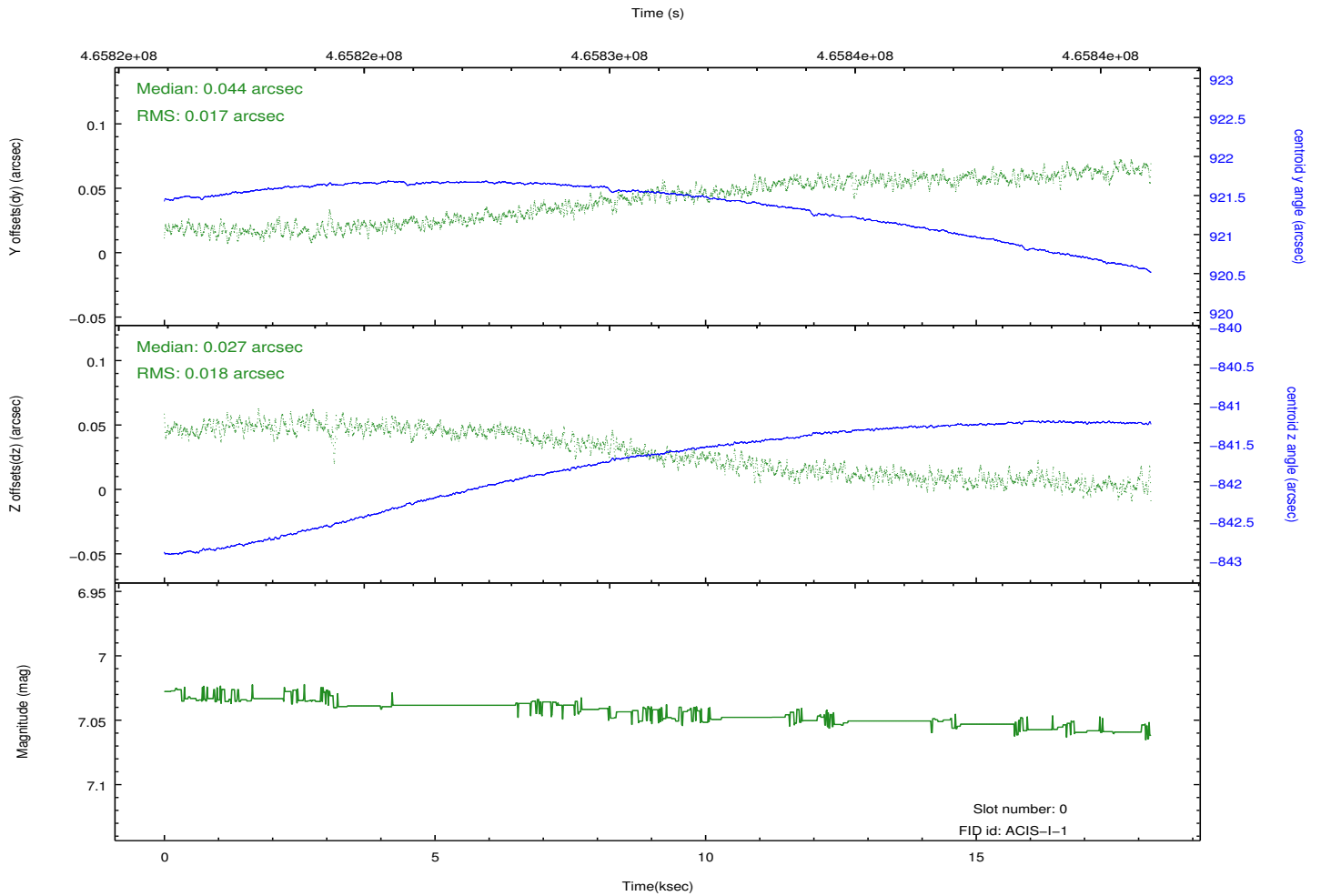
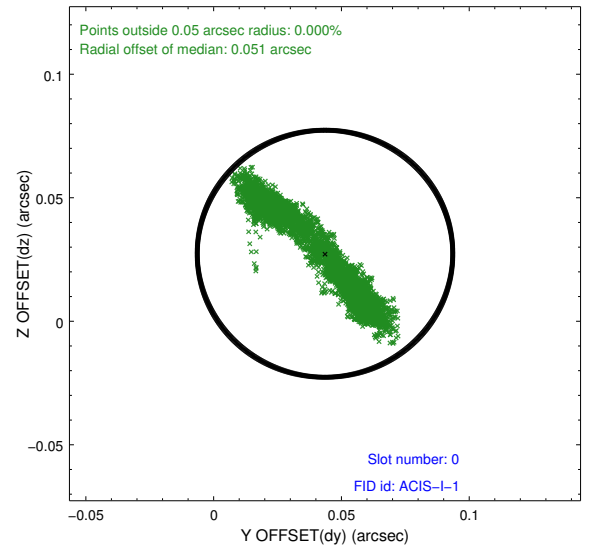
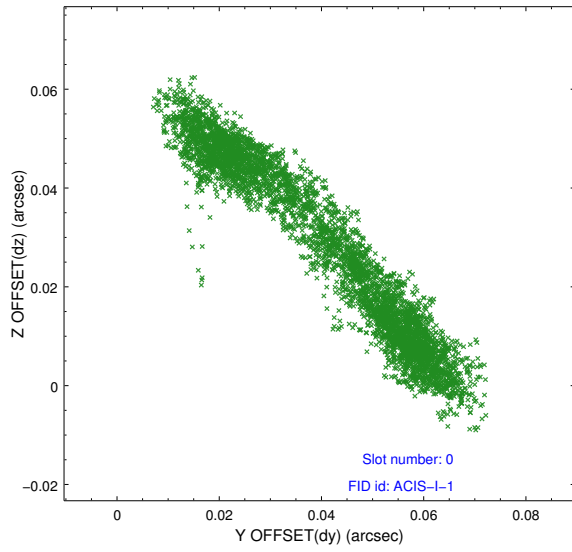


2.4.5 Slot 7

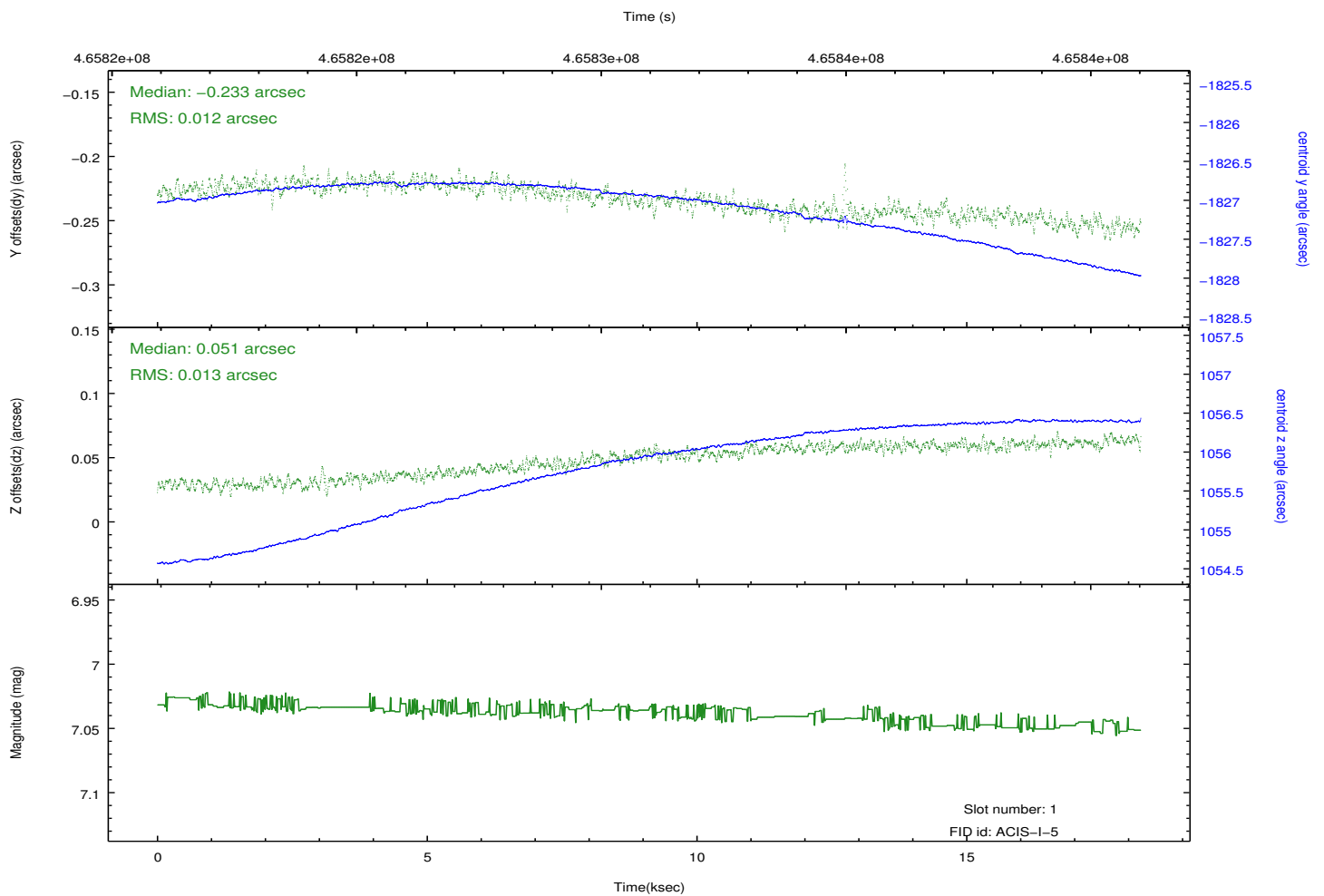
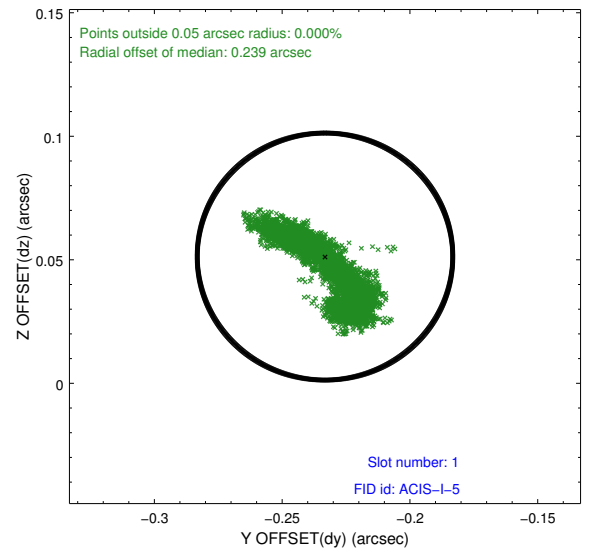
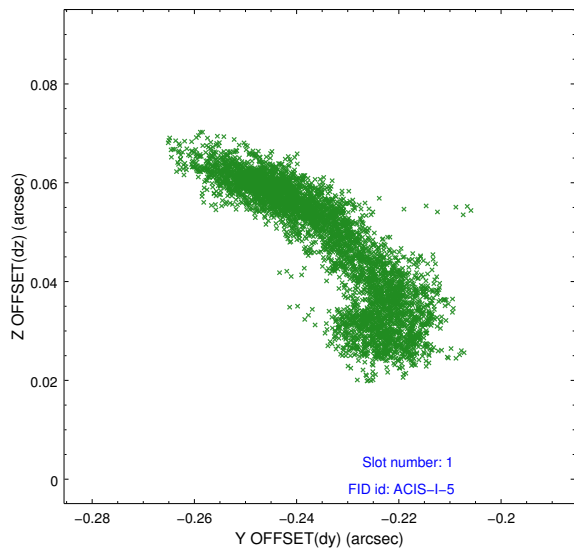


2.5 FID Slots

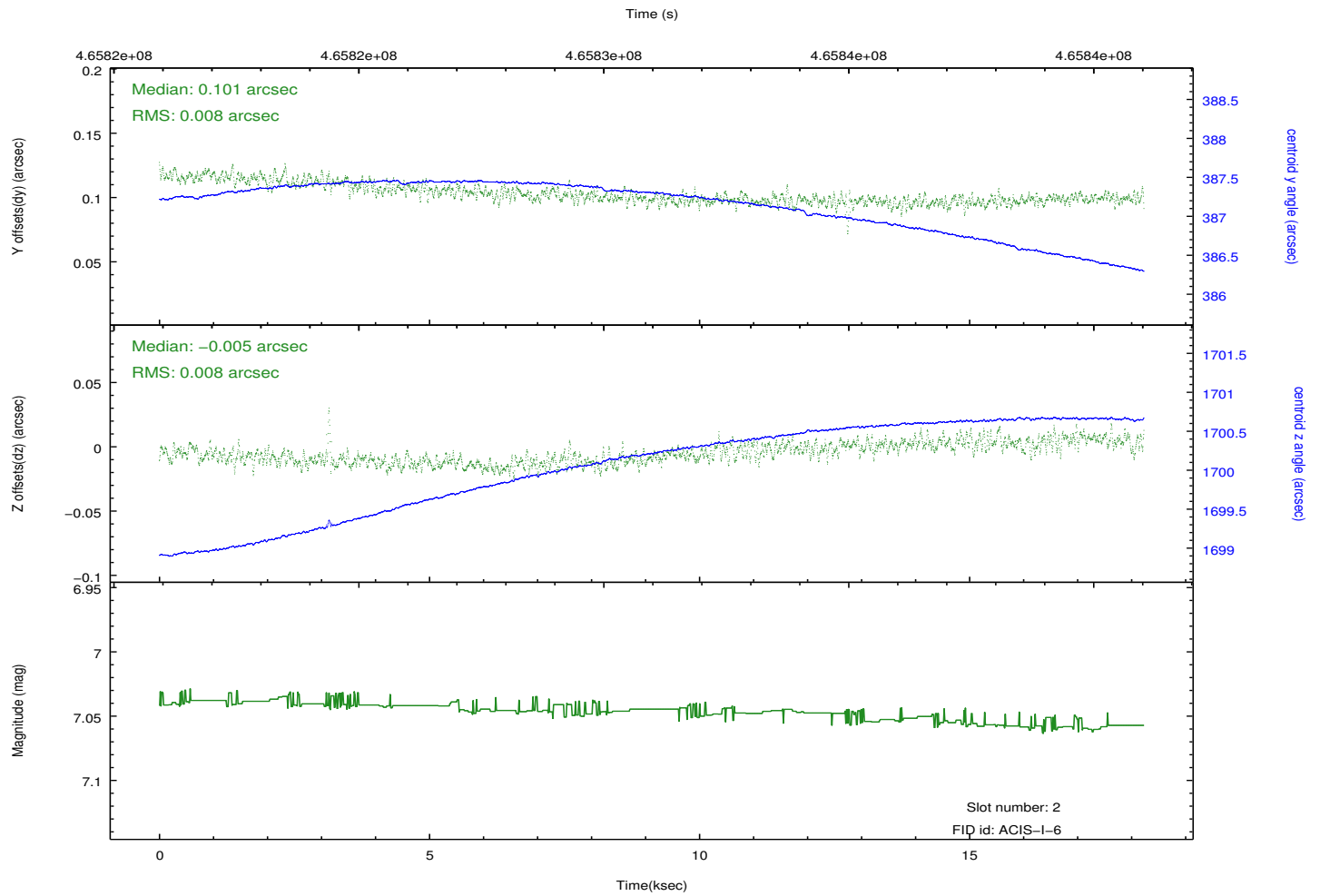
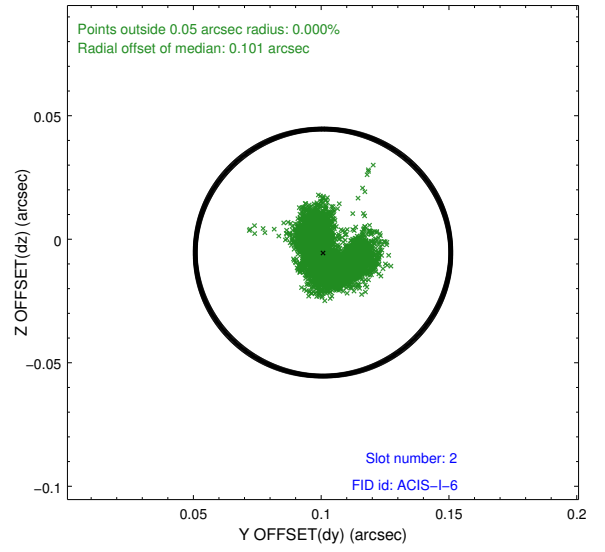
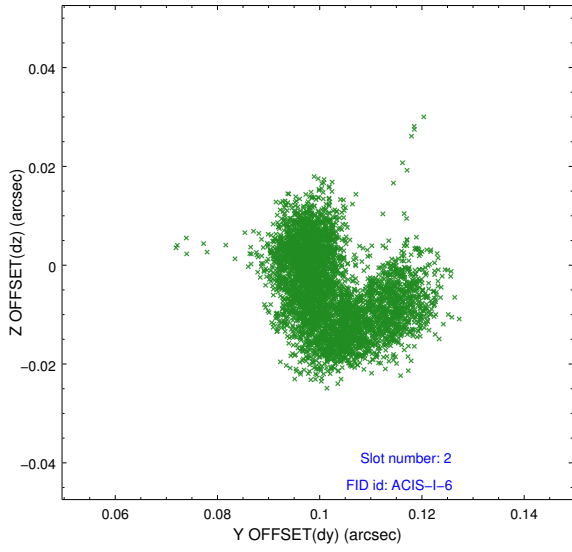
2.5.1 Slot 0



2.5.2 Slot 1



2.5.3 Slot 2



A Summary

A.1 Status

| | |
|----------------------------|-----------------|
| V&V Scientist | Jen Lauer |
| V&V Date (YYYY-MM-DD) | 2014.12.02 |
| V&V Edition | 1 |
| V&V Disposition and Status | OK |
| V&V Charge Time | 18.060799932778 |

A.2 Comments

Joint proposal with NRAO. A few sources are piled up sufficiently to produce a readout streak on the detector, which may contaminate other sources on the chip. Care should be taken to remove events from the readout streak from another source when extracting source data. Some of the numerous x-ray point sources fall on the gap between CCD chips and have been dithered over this gap. Dithering over the chip gap, which has lower sensitivity, can give a false indication of variability.

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These data have been reprocessed with new aspect alignment calibration files that correct small mean offsets (up to 0.4 arcsecs) and improve overall astrometric accuracy. The new calibration was determined using data from the time period being reprocessed and was performed using cross-correlation of X-ray sources with radio and optical counterparts.