

V&V Reference Report

L2 ASCDS Version : 10.8.1

Observation 23111 - L2 Version 2
Chandra X-Ray Center

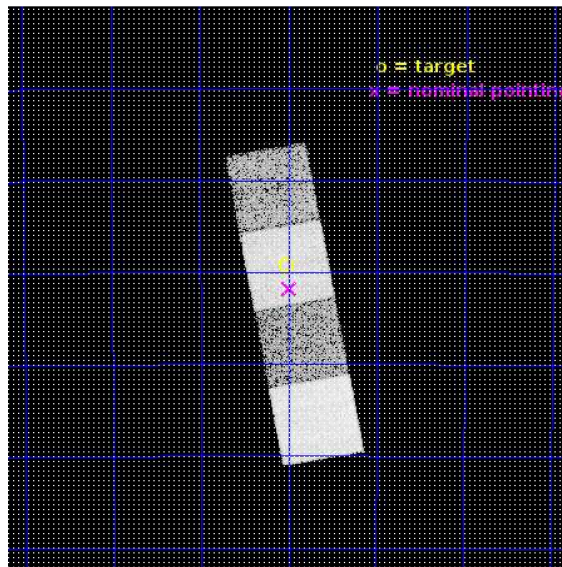
L2 Processing Date : Jan 10 2020

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1 Front

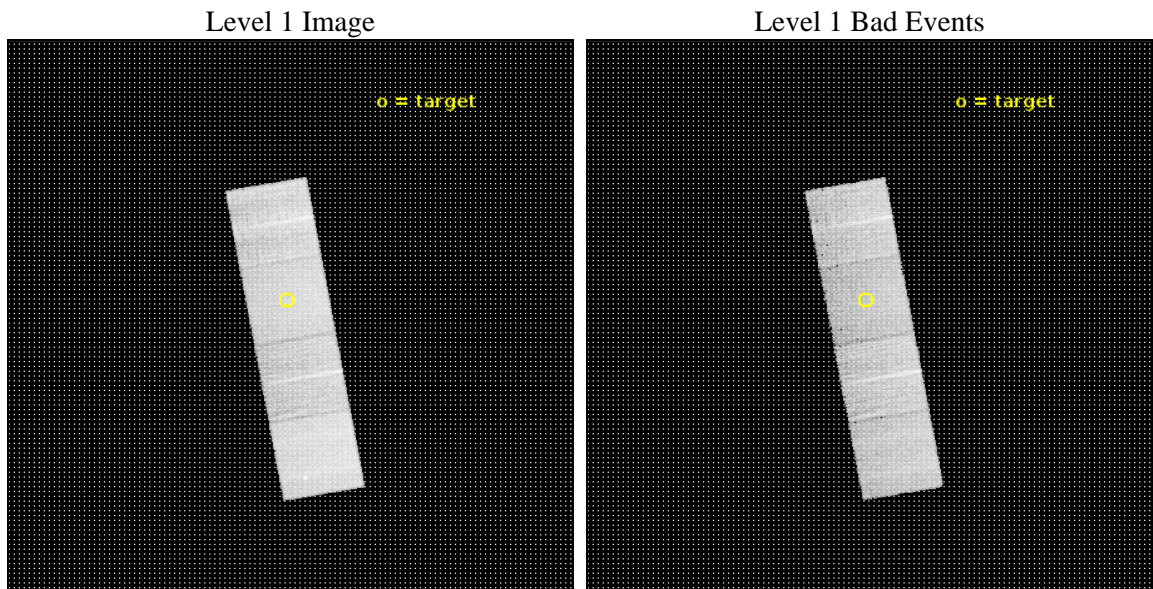
| | | |
|----------|--|---|
| seq_num | 801902 | Sequence number |
| obs_id | 23111 | Observation id |
| title | Enabling Dark Energy Constraints from Optically Selected Galaxy Clusters | Proposal title |
| observer | Adam Mantz | Principal investigator |
| object | CLJ224301.1-515911 | Source name |
| dtycycle | 0 | |
| cycle | P | events from which exps? Prim/Second/Both |
| ra_targ | 340.754547 | Observer's specified target RA [deg] |
| dec_targ | -51.986462 | Observer's specified target Dec [deg] |
| ra_nom | 340.74748580044 | Nominal RA [deg] |
| dec_nom | -52.029820447672 | Nominal Dec [deg] |
| roll_nom | 259.71080160293 | Nominal Roll [deg] |
| revision | 2 | Processing version of data |
| ontime | 10059.500077486 | Sum of GTIs [s] |
| livetime | 9928.0653032775 | Livetime [s] |
| ontime5 | 10059.500077486 | Sum of GTIs [s] |
| ontime6 | 10059.500077486 | Sum of GTIs [s] |
| ontime7 | 10059.500077486 | Sum of GTIs [s] |
| ontime8 | 10059.500077486 | Sum of GTIs [s] |
| l2events | 114503 | Number of level 2 events |



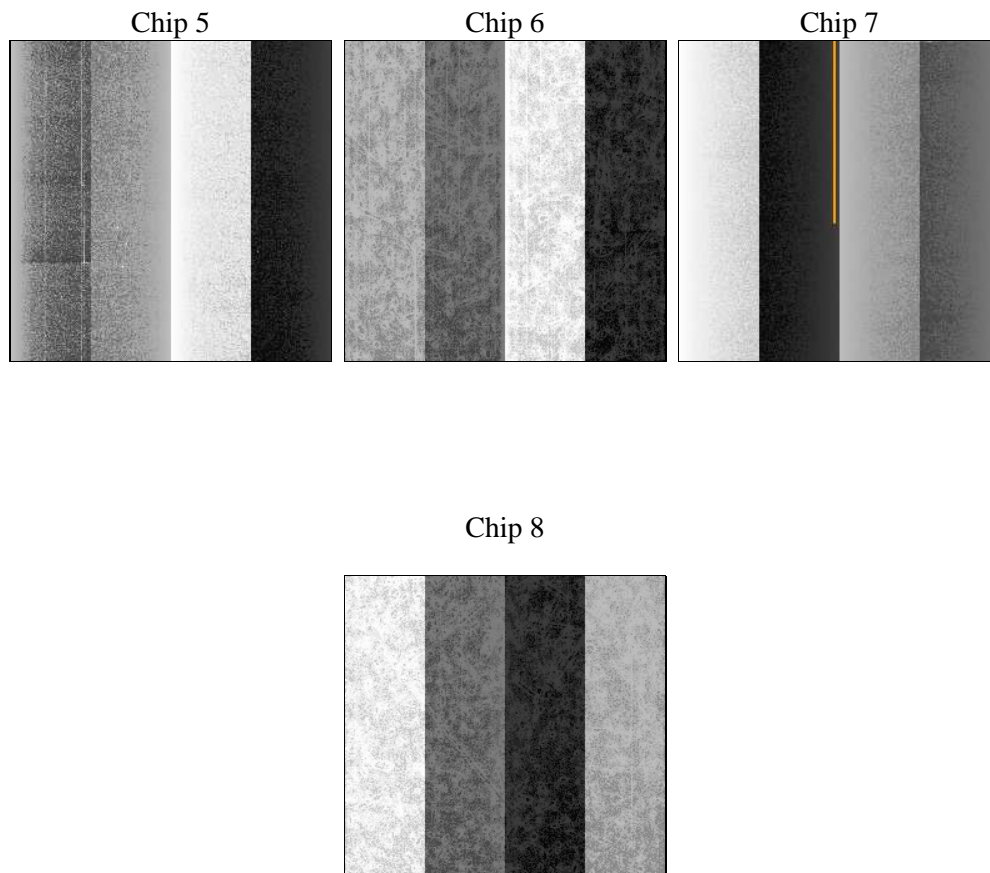
2 OBI

2.1 OBI

2.1.1 Images



2.1.2 Bias



2.1.3 Parameters

| | | | | | |
|----------|---------------------|--------------------------------|----------------|-----------------|---|
| obi_num | 0 | Obi number | sched_exp_time | 10000.000000 | [s] Scheduled observation exposure time |
| ascdsver | 10.8.1 | Processing system revision | ontime | 10059.500077486 | Sum of GTIs [s] |
| caldsver | 4.8.4.2 | | ontime5 | 10059.500077486 | Sum of GTIs [s] |
| date | 2020-01-11T00:39:39 | Date and time of file creation | ontime6 | 10059.500077486 | Sum of GTIs [s] |
| revision | 2 | Processing version of data | ontime7 | 10059.500077486 | Sum of GTIs [s] |
| | | | ontime8 | 10059.500077486 | Sum of GTIs [s] |
| | | | l1events | 404566 | Number of level 1 events |

2.1.4 Events

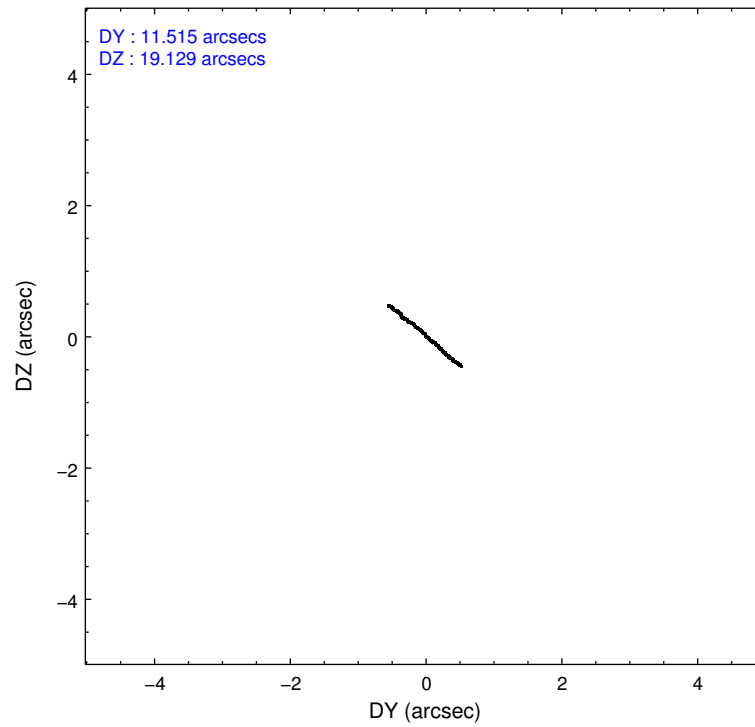
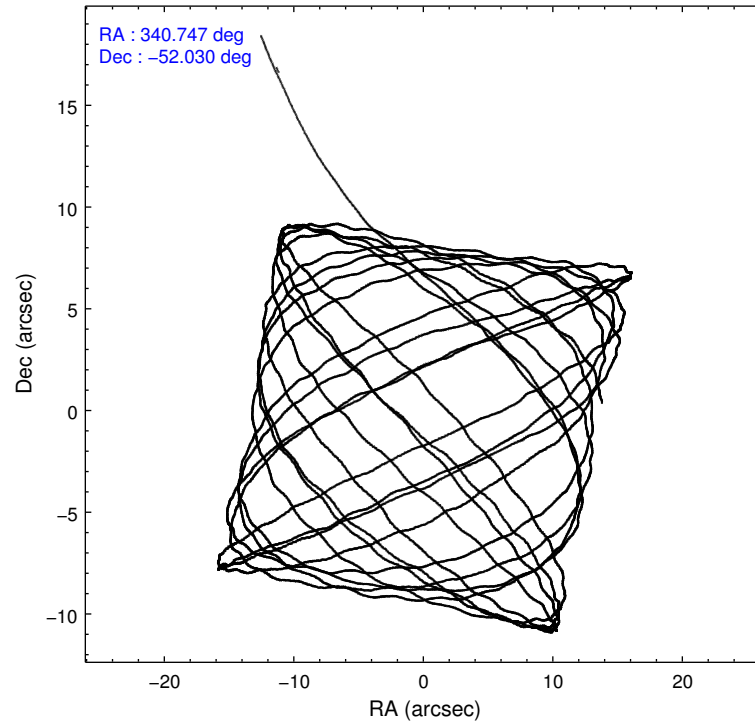
| | ccd 5 | ccd 6 | ccd 7 | ccd 8 |
|-----------------|--------|-------|-------|--------|
| level 1 events | 123124 | 82676 | 98510 | 100256 |
| rejected events | 65112 | 74108 | 55925 | 74096 |
| rejected % | 52% | 89% | 56% | 73% |

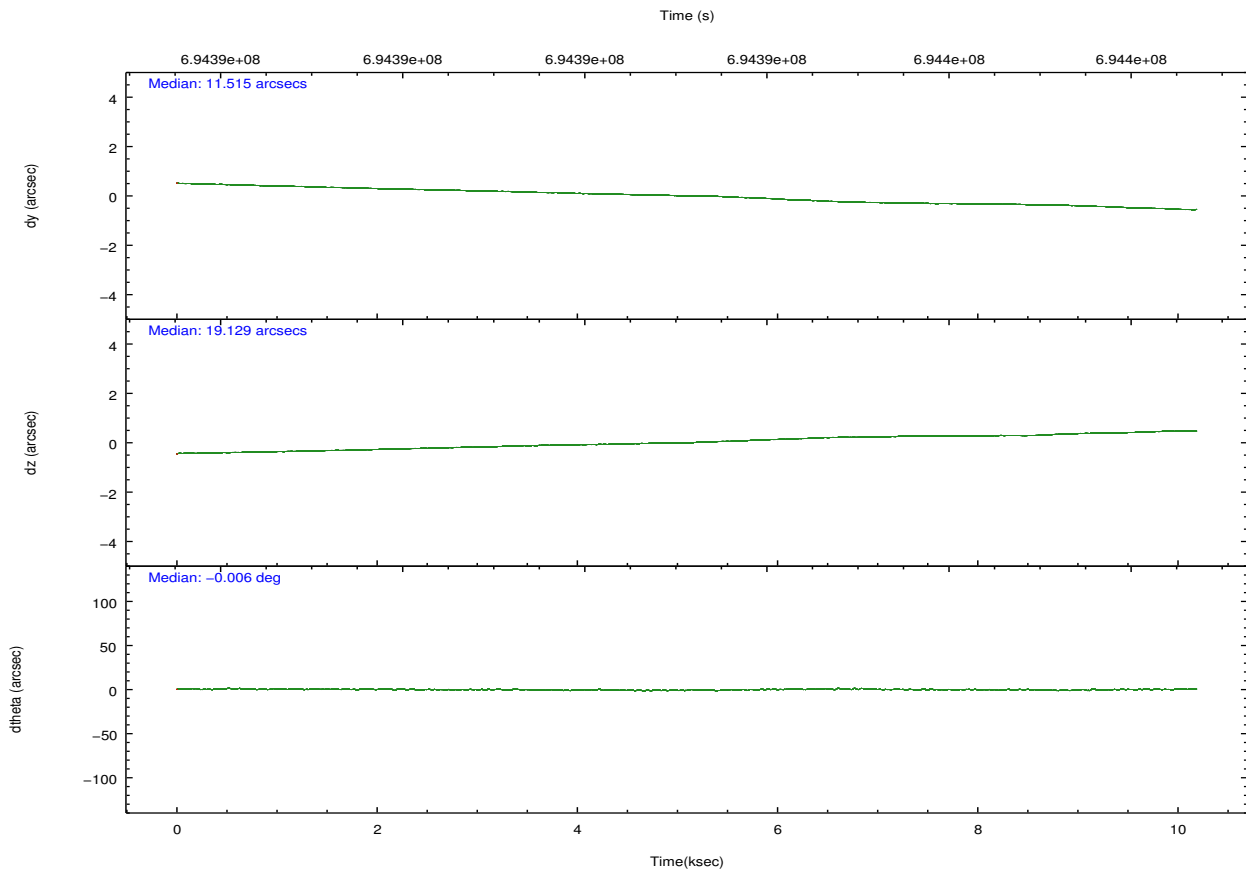
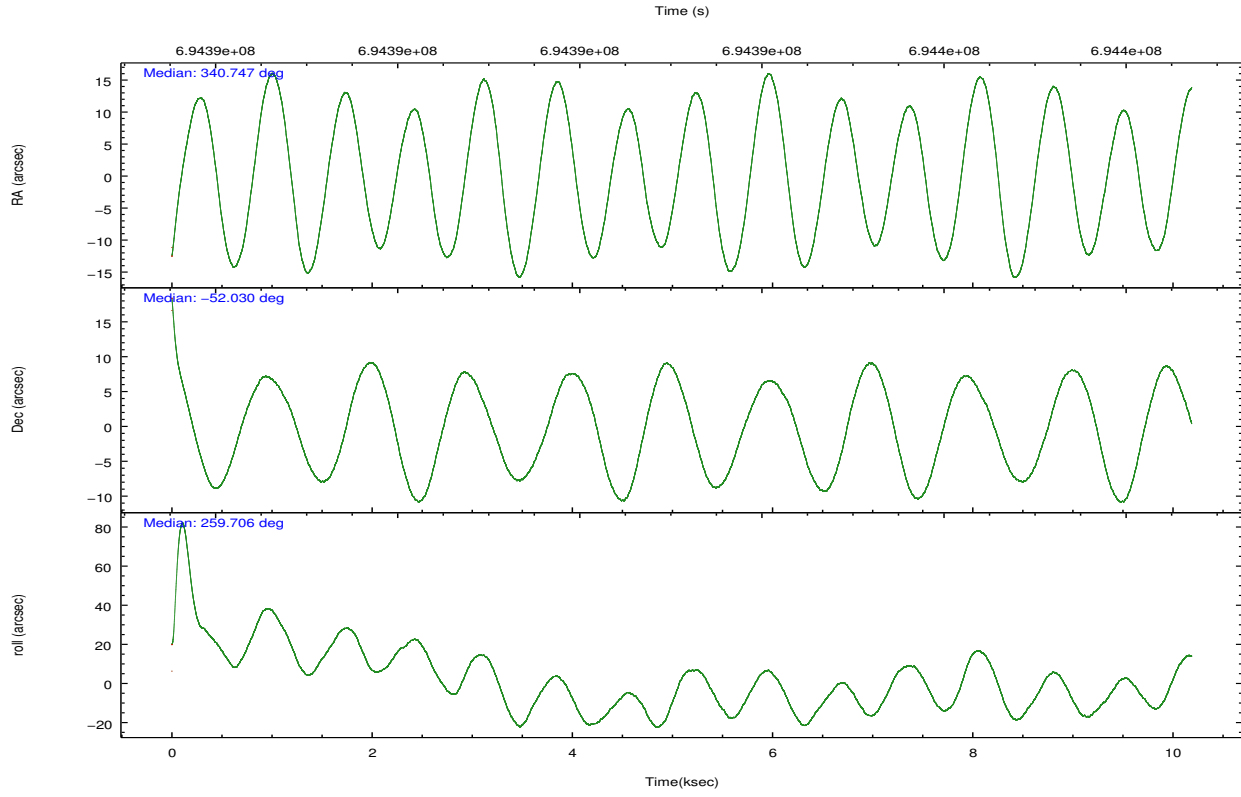
| | ccd 5 | ccd 6 | ccd 7 | ccd 8 |
|----------------|-------|-------|-------|-------|
| grade 0 events | 2984 | 2428 | 3638 | 7730 |
| | 2% | 2% | 3% | 7% |
| grade 1 events | 332 | 34 | 171 | 80 |
| | 0% | 0% | 0% | 0% |
| grade 2 events | 18120 | 2391 | 9120 | 6465 |
| | 14% | 2% | 9% | 6% |
| grade 3 events | 1800 | 691 | 3328 | 2593 |
| | 1% | 0% | 3% | 2% |
| grade 4 events | 1675 | 699 | 3090 | 2506 |
| | 1% | 0% | 3% | 2% |
| grade 5 events | 7749 | 3219 | 9535 | 5173 |
| | 6% | 3% | 9% | 5% |
| grade 6 events | 33474 | 2366 | 23431 | 6879 |
| | 27% | 2% | 23% | 6% |
| grade 7 events | 56990 | 70848 | 46197 | 68830 |
| | 46% | 85% | 46% | 68% |

2.2 Compared Parameters

| Parameter | Planned | Actual | Parameter | Planned | Actual |
|-----------------------------------|---------------------|----------------------|---------------------------------------|-----------|---------|
| Instrument | ACIS | ACIS | Obspar format version number | 7 | 7 |
| Detector | ACIS-5678 | ACIS-5678 | Obspar file type | PREDICTED | ACTUAL |
| Grating | NONE | NONE | Obspar update status | NONE | UPDATED |
| Data mode | VFAINT | VFAINT | CCD I0 on | N | N |
| Observation mode | POINTING | POINTING | CCD I1 on | N | N |
| [deg] Pointing RA | 340.731884 | 340.747485800442 | CCD I2 on | N | N |
| [deg] Pointing Dec | -52.004153 | -52.02982044767202 | CCD I3 on | N | N |
| [deg] Pointing Roll | 259.541964 | 259.7108016029261 | CCD S0 on | N | N |
| [mm] SIM focus pos | -0.684267 | -0.6828225247311905 | CCD S1 on | Y | Y |
| [mm] SIM defocus | 0 | 0.001444936568705701 | CCD S2 on | Y | Y |
| [mm] SIM translation stage pos | -190.132523 | -190.1400660498719 | CCD S3 on | Y | Y |
| [mm] SIM translation stage offset | 0 | 0.00754346686406393 | CCD S4 on | O1 | Y |
| [s] Observation start time (MET) | 694388196.184000 | 694386662.94038 | CCD S5 on | N | N |
| Observation start date | 2020-01-02T21:35:27 | 2020-01-02T21:11:02 | Number of optional ACIS chips dropped | 0 | 0 |
| [s] Observation end time (MET) | 694398196.184000 | 694399165.89114 | On-chip summing requested | N | N |
| Observation end date | 2020-01-03T00:22:07 | 2020-01-03T00:39:25 | Subarray requested | NONE | NONE |
| Read mode | TIMED | TIMED | Alternating exposures requested | N | N |
| | | | [s] Primary exposure time | 0.000000 | 3.1 |

2.3 Aspect





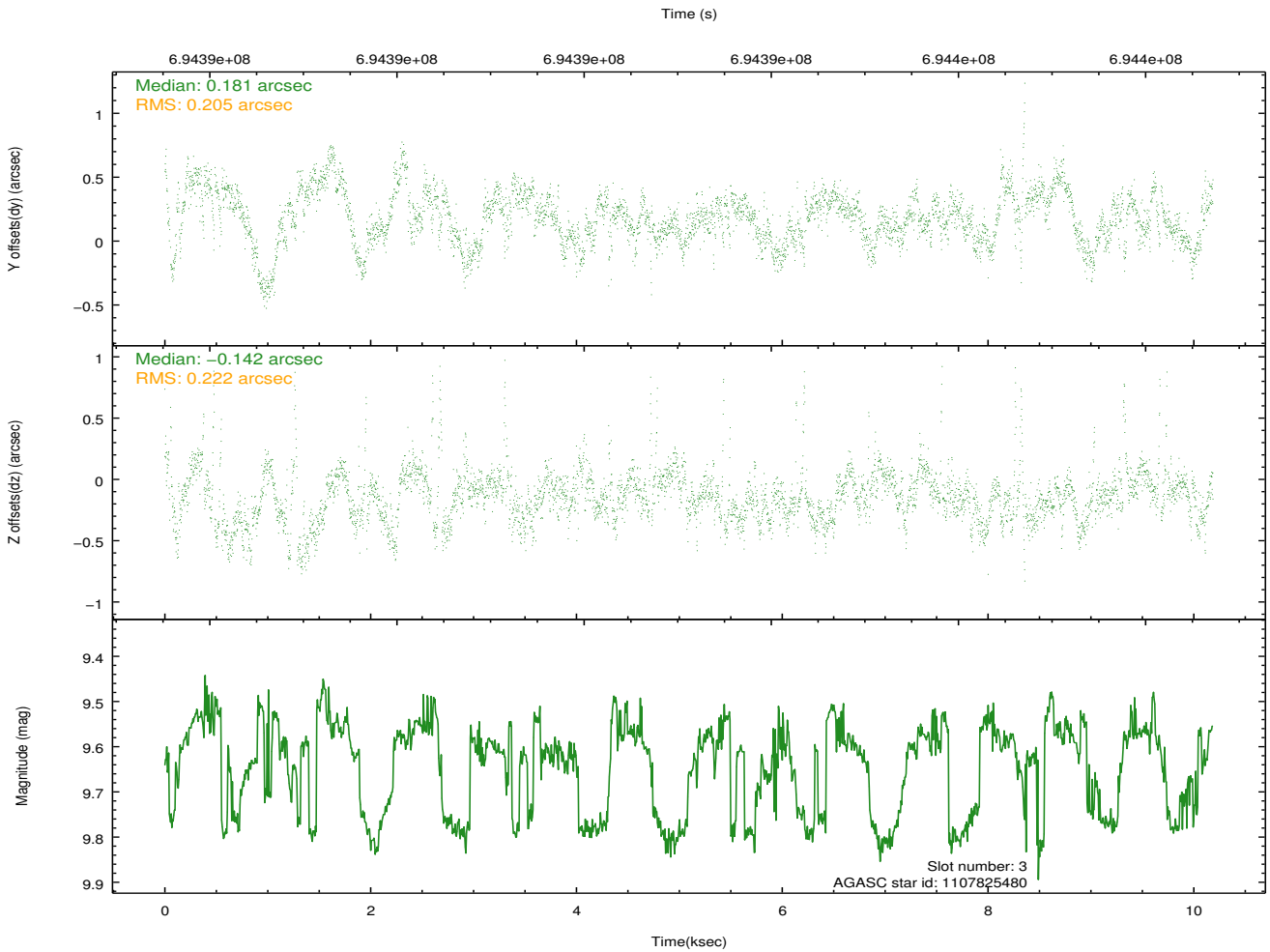
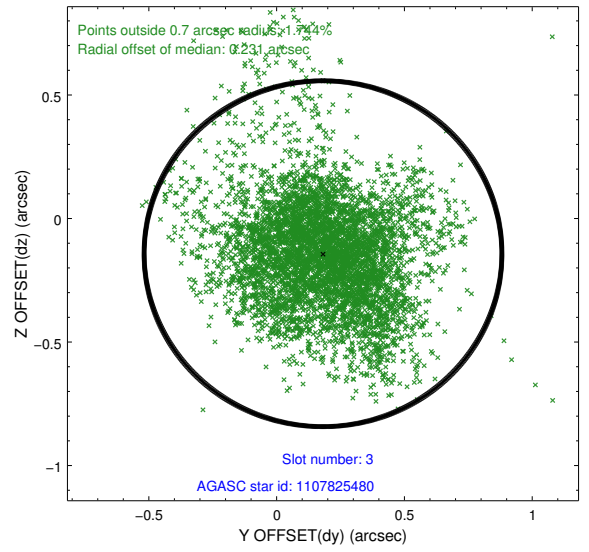
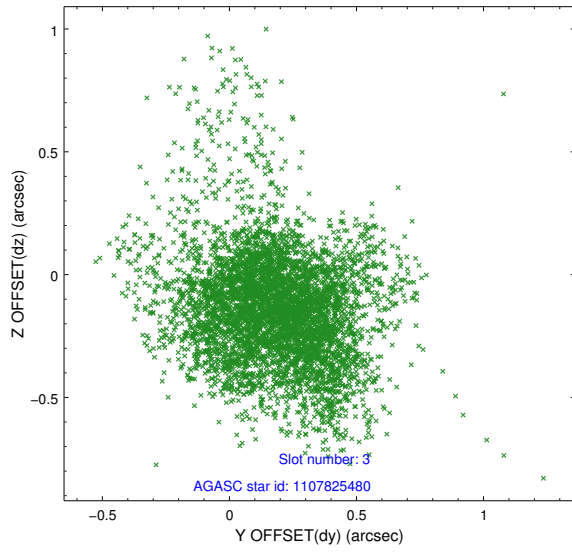
Slot Statistics

| slot | status | used | id | mag | n_pts | frac_pts | med_dy | med_dz | dr1 | dr2 | ra | dec | mean_y | mean_x |
|------|---------|------|------------|------|-------|----------|--------|--------|-------|-------|------------|------------|----------|--------|
| 0 | FID | | ACIS-S-2 | 7.06 | 2485 | 1.000 | -0.268 | -0.148 | 0.028 | 0.044 | 0.000000 | 0.000000 | -764.58 | -1740 |
| 1 | FID | | ACIS-S-4 | 7.20 | 2485 | 1.000 | 0.676 | 0.169 | 0.010 | 0.016 | 0.000000 | 0.000000 | 2149.34 | 167 |
| 2 | FID | | ACIS-S-5 | 7.17 | 2485 | 1.000 | -0.440 | -0.012 | 0.033 | 0.049 | 0.000000 | 0.000000 | -1816.99 | 161 |
| 3 | GUIDE | used | 1107825480 | 9.62 | 4931 | 1.000 | 0.181 | -0.142 | 0.300 | 0.545 | 340.380529 | -51.902985 | -213.08 | -831 |
| 4 | OMITTED | | | 0.00 | 0 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000000 | 0.000000 | 0.00 | 0 |
| 5 | GUIDE | used | 1107829968 | 6.78 | 4970 | 1.000 | -0.064 | 0.228 | 0.202 | 0.288 | 340.262697 | -51.458840 | -1735.06 | -1390 |
| 6 | OMITTED | | | 0.00 | 0 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000000 | 0.000000 | 0.00 | 0 |
| 7 | GUIDE | used | 1107956344 | 9.70 | 4965 | 1.000 | -0.115 | -0.106 | 0.224 | 0.365 | 341.577827 | -51.819518 | -984.50 | 1733 |

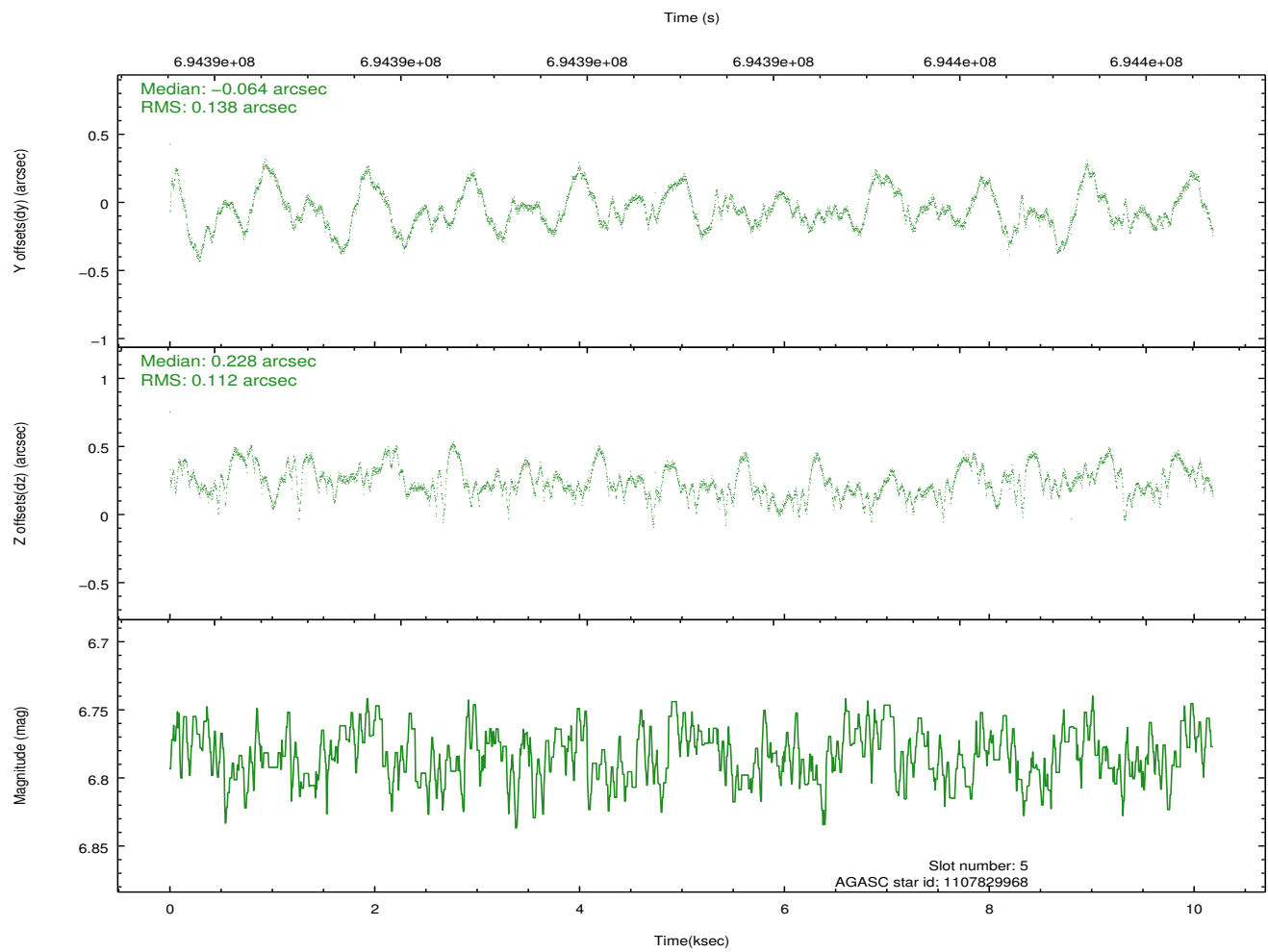
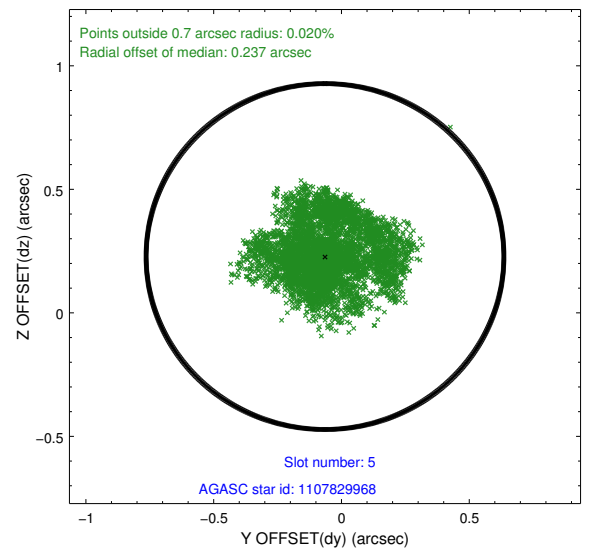
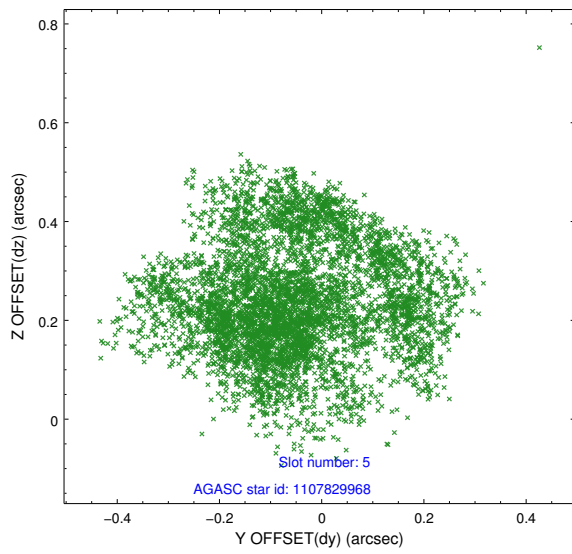
∞

2.4 Star Slots

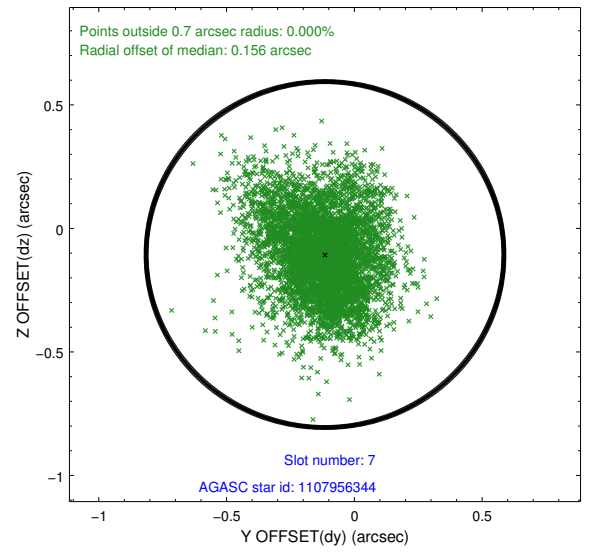
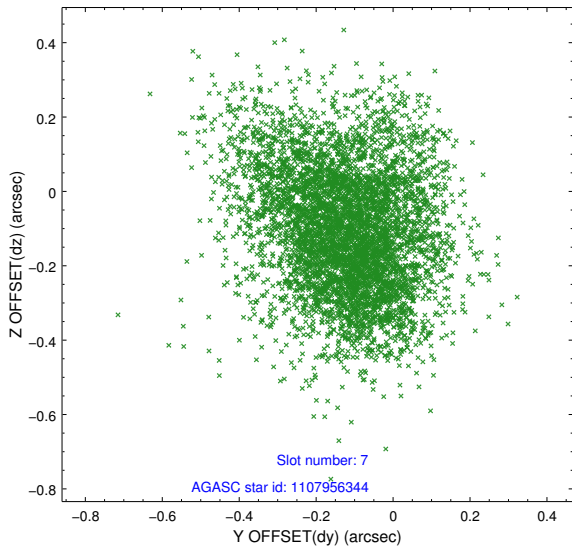
2.4.1 Slot 3



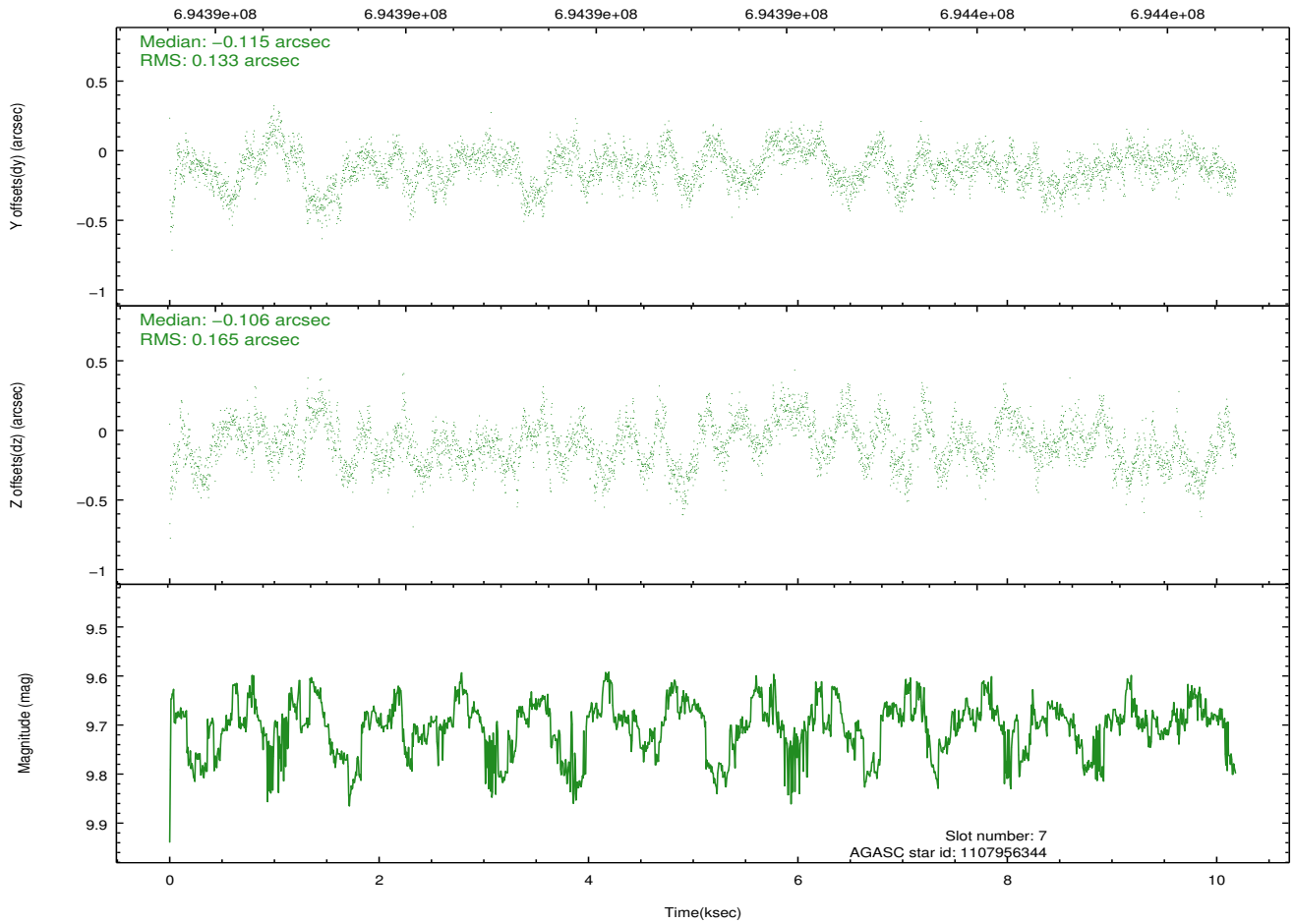
2.4.2 Slot 5



2.4.3 Slot 7

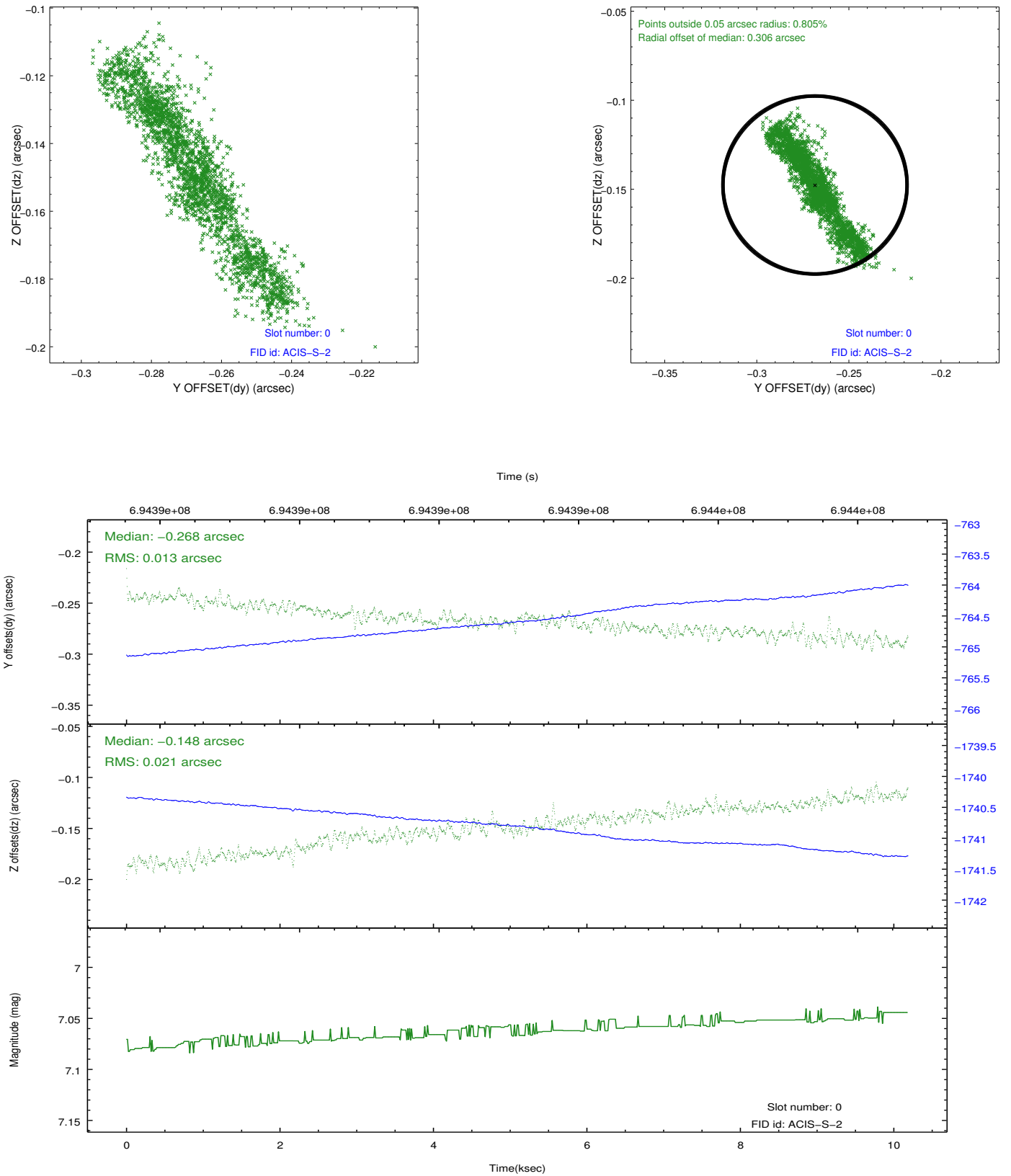


Time (s)

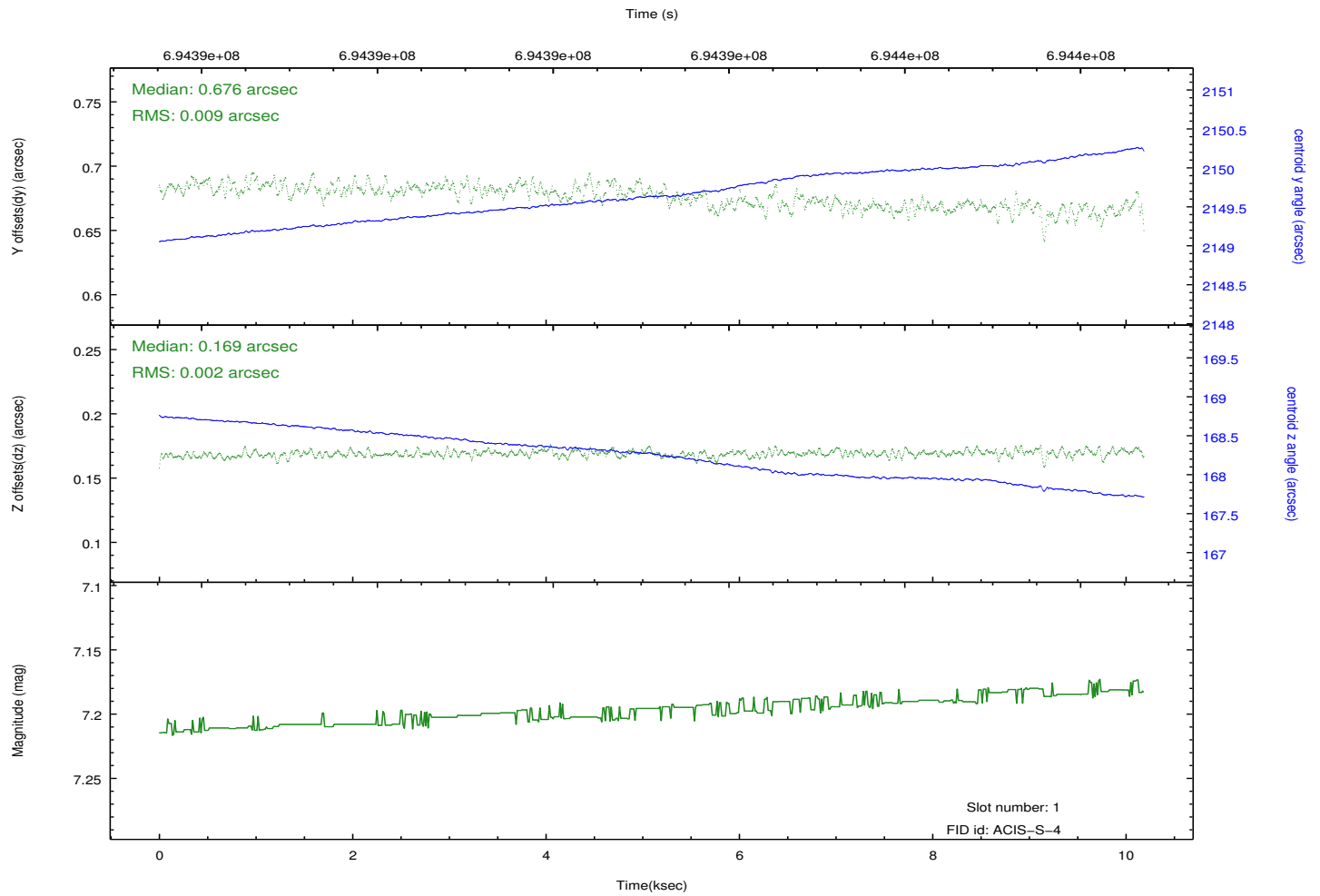
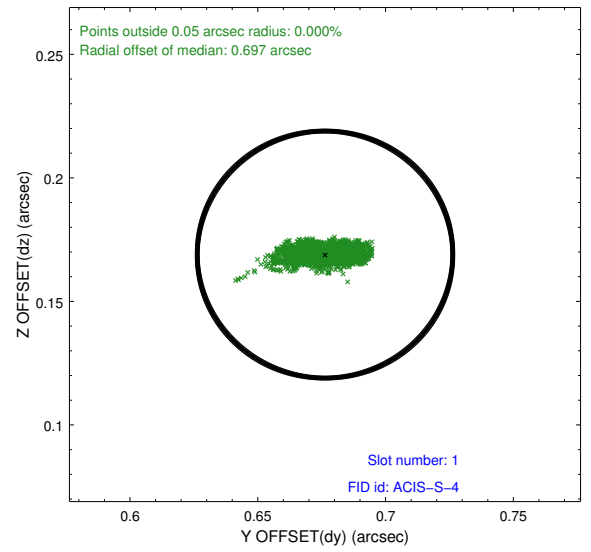
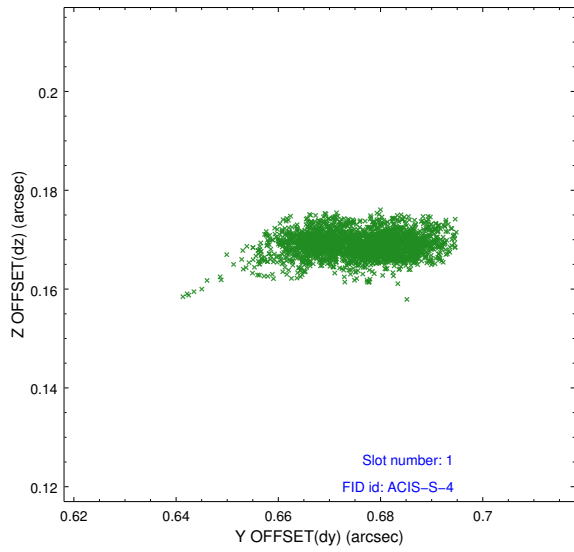


2.5 FID Slots

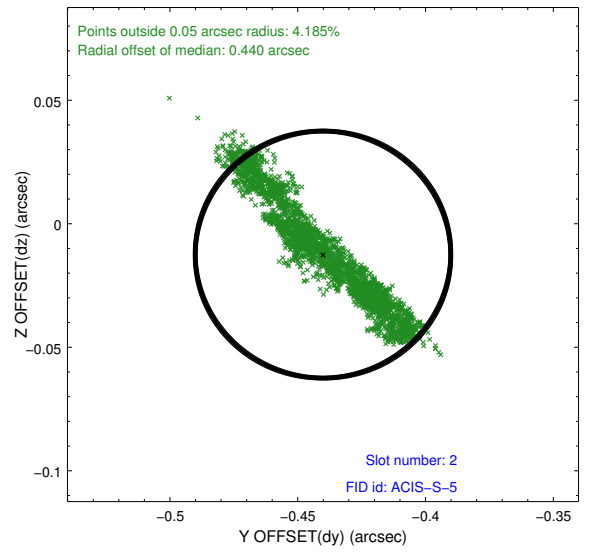
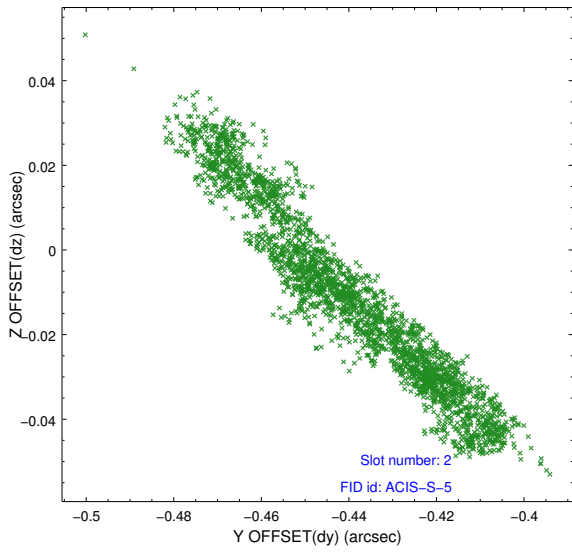
2.5.1 Slot 0



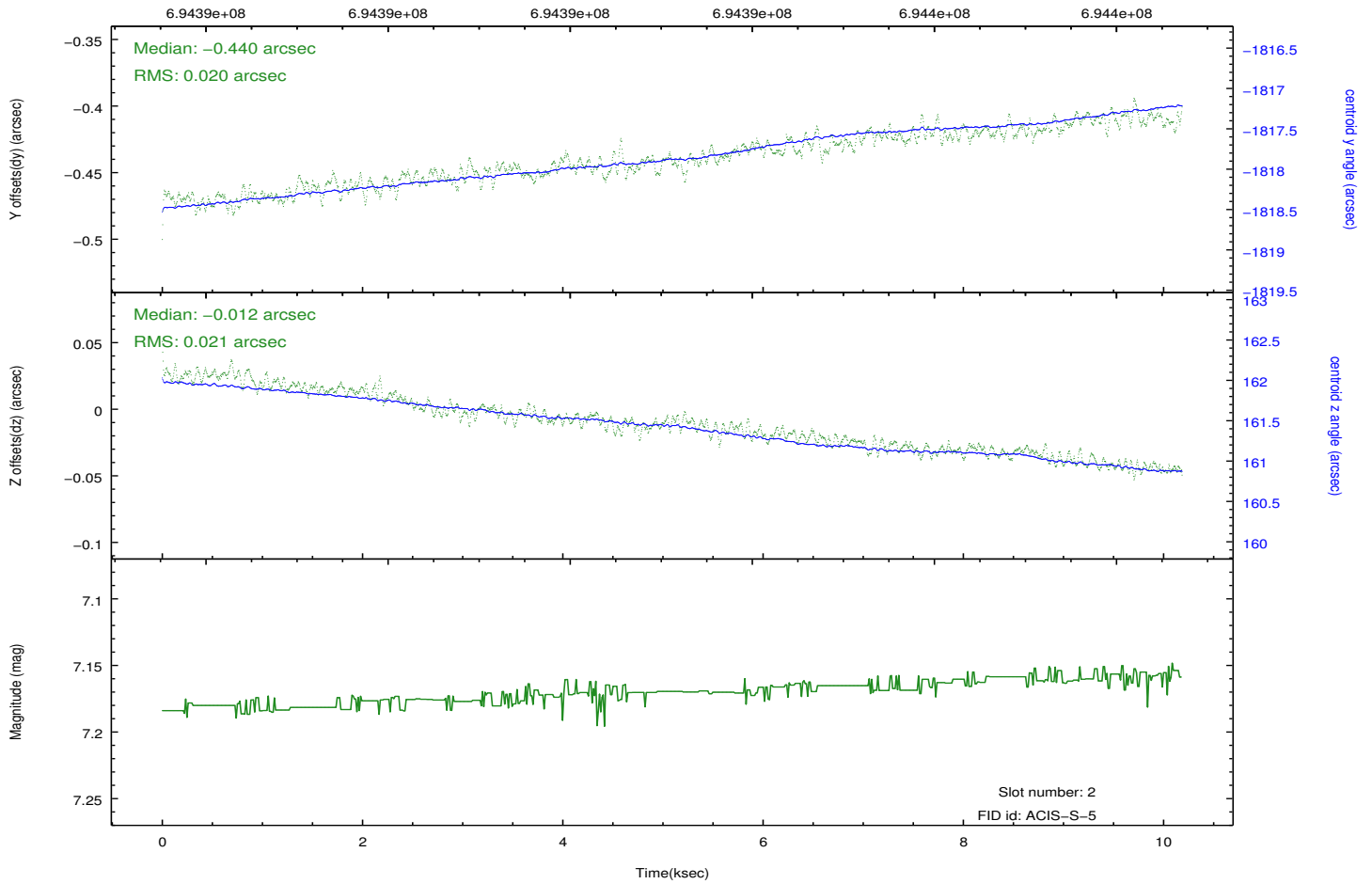
2.5.2 Slot 1



2.5.3 Slot 2



Time (s)



A Summary

A.1 Status

| | |
|----------------------------|-----------------|
| V&V Scientist | Beth Sundheim |
| V&V Date (YYYY-MM-DD) | 2020.01.12 |
| V&V Edition | 1 |
| V&V Disposition and Status | OK |
| V&V Charge Time | 10.059500077486 |

A.2 Comments

The guide stars in slots 4 and 6 were removed from the aspect solution due to poor data quality. The aspect solution is improved by the removal of these slots from the solution.