

V&V Reference Report

L2 ASCDS Version : 10.4.2.1

Observation 17097 - L2 Version 2
Chandra X-Ray Center

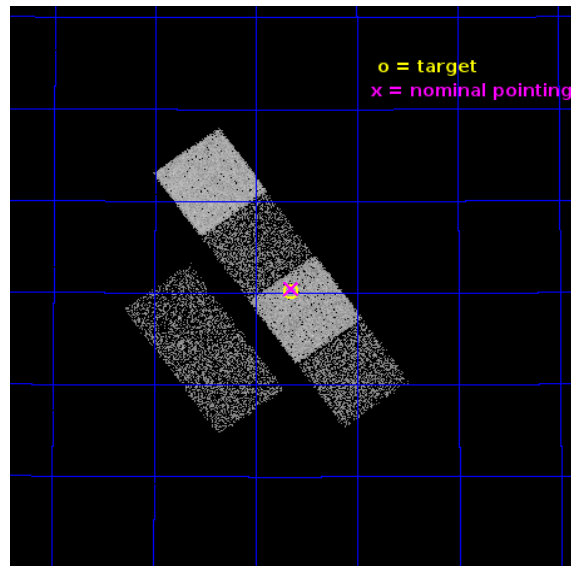
L2 Processing Date : Oct 26 2015

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1 Front

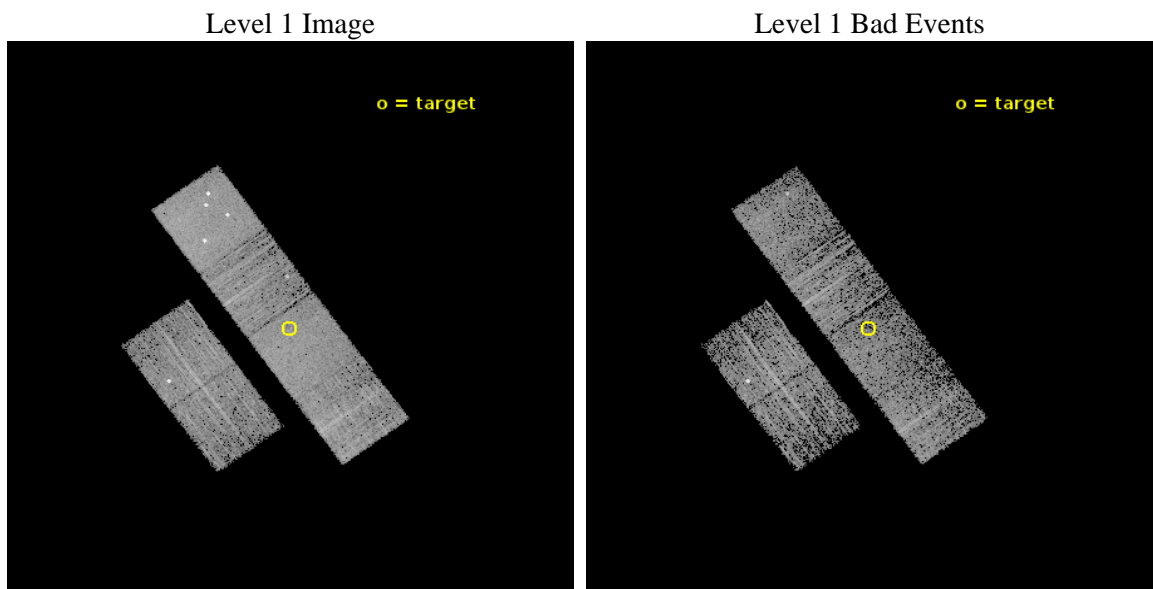
| | | |
|----------|--|---|
| seq_num | 703101 | Sequence number |
| obs_id | 17097 | Observation id |
| title | Probing the Physics of Quasar Outflows using Mini-LoBALs | Proposal |
| observer | Professor Karen Leighly | Principal investigator |
| object | SDSS J102839.11+450009.4 | Source name |
| dtcycle | 0 | |
| cycle | P | events from which exps? Prim/Second/Both |
| ra_targ | 157.162917 | Observer's specified target RA [deg] |
| dec_targ | 45.0025 | Observer's specified target Dec [deg] |
| ra_nom | 157.16233034686 | Nominal RA [deg] |
| dec_nom | 45.007887364831 | Nominal Dec [deg] |
| roll_nom | 54.157021315348 | Nominal Roll [deg] |
| revision | 2 | Processing version of data |
| ontime | 4435.2000660896 | Sum of GTIs [s] |
| livetime | 4379.0388922959 | Livetime [s] |
| ontime2 | 4435.2000660896 | Sum of GTIs [s] |
| ontime3 | 4435.2000660896 | Sum of GTIs [s] |
| ontime5 | 4435.2000660896 | Sum of GTIs [s] |
| ontime6 | 4435.2000660896 | Sum of GTIs [s] |
| ontime7 | 4435.2000660896 | Sum of GTIs [s] |
| ontime8 | 4435.2000660896 | Sum of GTIs [s] |
| l2events | 40113 | Number of level 2 events |



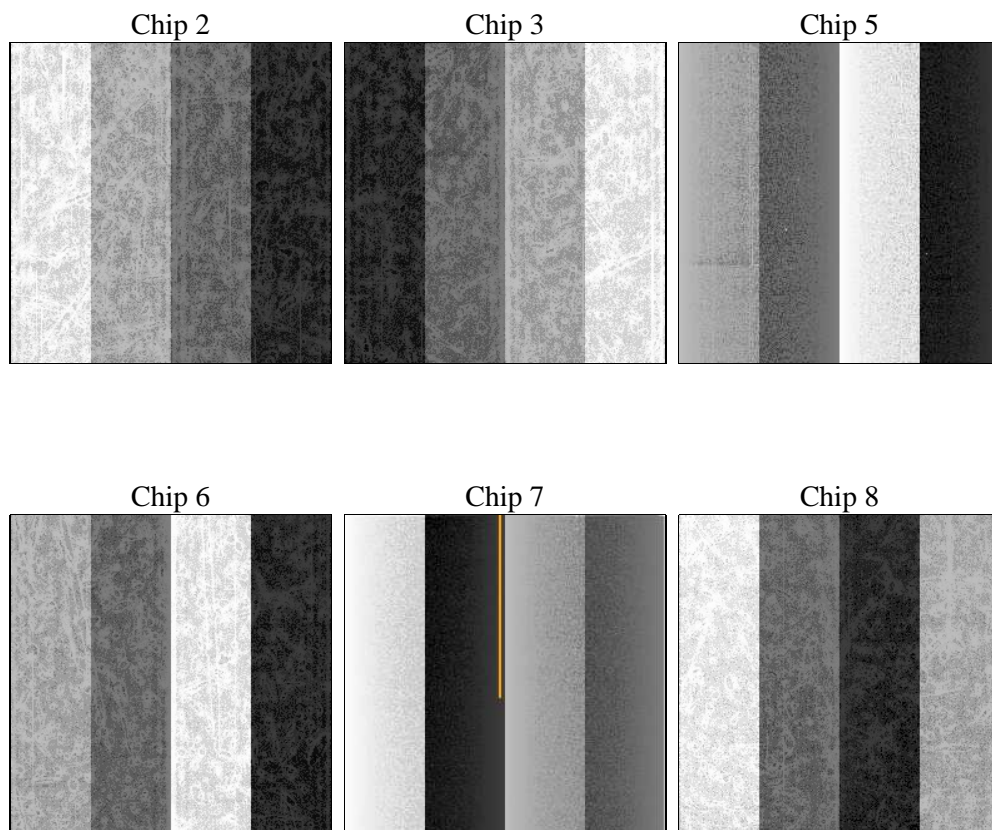
2 OBI

2.1 OBI

2.1.1 Images



2.1.2 Bias



2.1.3 Parameters

| | | | | | |
|----------|---------------------|--------------------------------|----------------|-----------------|---|
| obi_num | 1 | Obi number | sched_exp_time | 4500.000000 | [s] Scheduled observation exposure time |
| ascdsver | 10.4.2.1 | Processing system revision | ontime | 4435.2000660896 | Sum of GTIs [s] |
| caldsver | 4.6.10a | | ontime2 | 4435.2000660896 | Sum of GTIs [s] |
| date | 2015-10-26T15:53:46 | Date and time of file creation | ontime3 | 4435.2000660896 | Sum of GTIs [s] |
| revision | 2 | Processing version of data | ontime5 | 4435.2000660896 | Sum of GTIs [s] |
| | | | ontime6 | 4435.2000660896 | Sum of GTIs [s] |
| | | | ontime7 | 4435.2000660896 | Sum of GTIs [s] |
| | | | ontime8 | 4435.2000660896 | Sum of GTIs [s] |
| | | | l1events | 183224 | Number of level 1 events |

2.1.4 Events

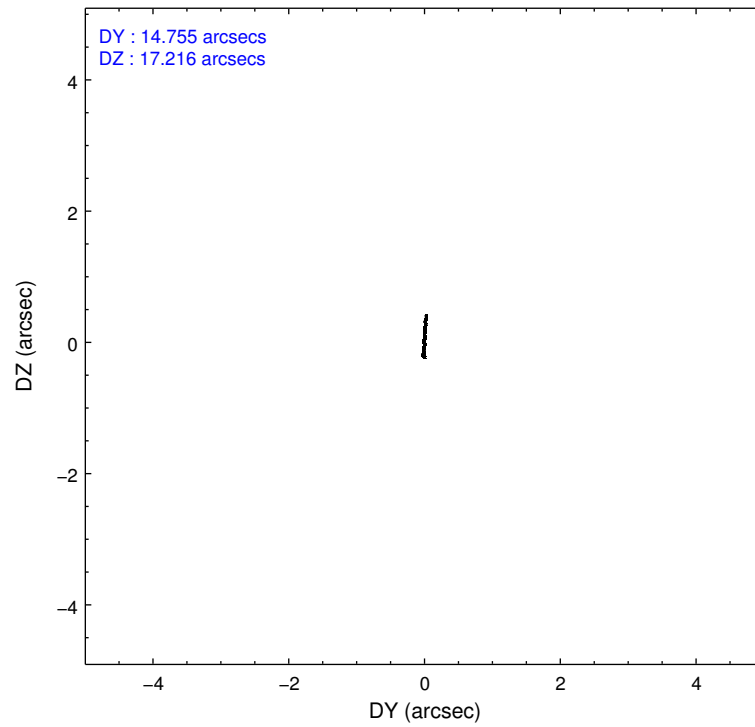
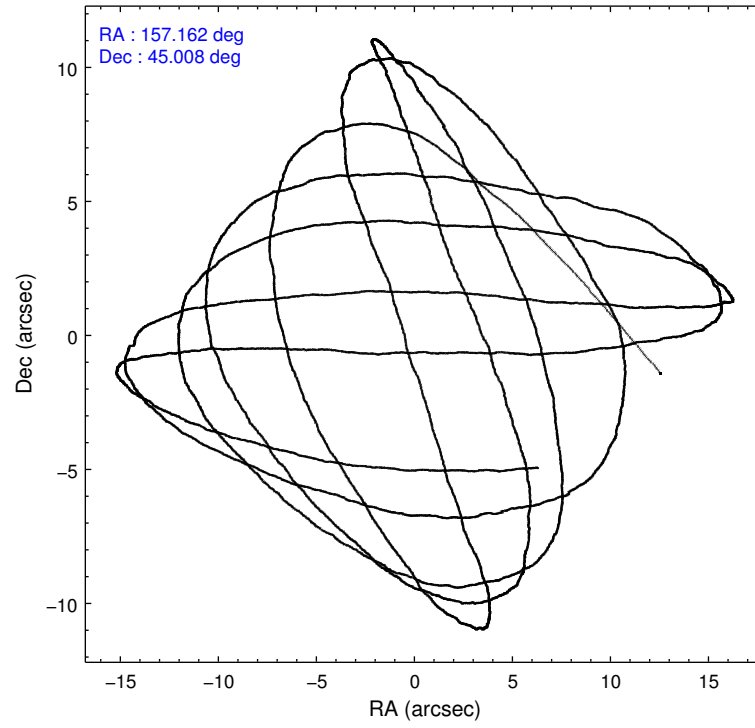
| | ccd 2 | ccd 3 | ccd 5 | ccd 6 | ccd 7 | ccd 8 | | ccd 2 | ccd 3 | ccd 5 | ccd 6 | ccd 7 | ccd 8 |
|-----------------|-------|-------|-------|-------|-------|-------|----------------|-------|-------|-------|-------|-------|-------|
| level 1 events | 27069 | 22294 | 43687 | 26696 | 32163 | 31315 | grade 0 events | 894 | 904 | 4985 | 1215 | 1111 | 2216 |
| rejected events | 24602 | 19763 | 20613 | 23649 | 18528 | 23053 | | 3% | 4% | 11% | 4% | 3% | 7% |
| rejected % | 90% | 88% | 47% | 88% | 57% | 73% | grade 1 events | 1331 | 12 | 306 | 10 | 27 | 26 |
| | | | | | | | | 4% | 0% | 0% | 0% | 0% | 0% |
| | | | | | | | grade 2 events | 601 | 552 | 6376 | 641 | 2927 | 2039 |
| | | | | | | | | 2% | 2% | 14% | 2% | 9% | 6% |
| | | | | | | | grade 3 events | 249 | 260 | 598 | 238 | 1064 | 857 |
| | | | | | | | | 0% | 1% | 1% | 0% | 3% | 2% |
| | | | | | | | grade 4 events | 240 | 245 | 638 | 264 | 982 | 823 |
| | | | | | | | | 0% | 1% | 1% | 0% | 3% | 2% |
| | | | | | | | grade 5 events | 1053 | 1107 | 2601 | 1124 | 3071 | 1746 |
| | | | | | | | | 3% | 4% | 5% | 4% | 9% | 5% |
| | | | | | | | grade 6 events | 483 | 573 | 10494 | 692 | 7565 | 2332 |
| | | | | | | | | 1% | 2% | 24% | 2% | 23% | 7% |
| | | | | | | | grade 7 events | 22218 | 18641 | 17689 | 22512 | 15416 | 21276 |
| | | | | | | | | 82% | 83% | 40% | 84% | 47% | 67% |

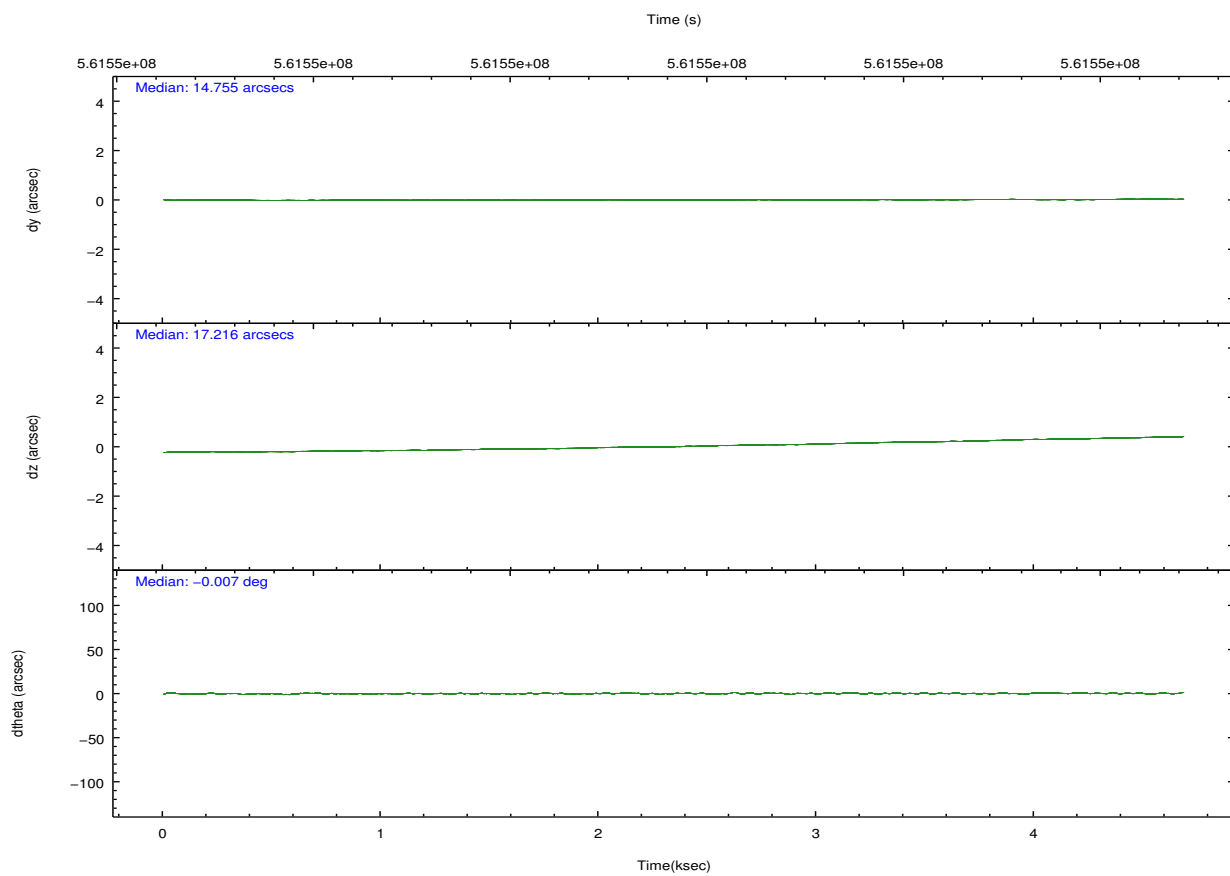
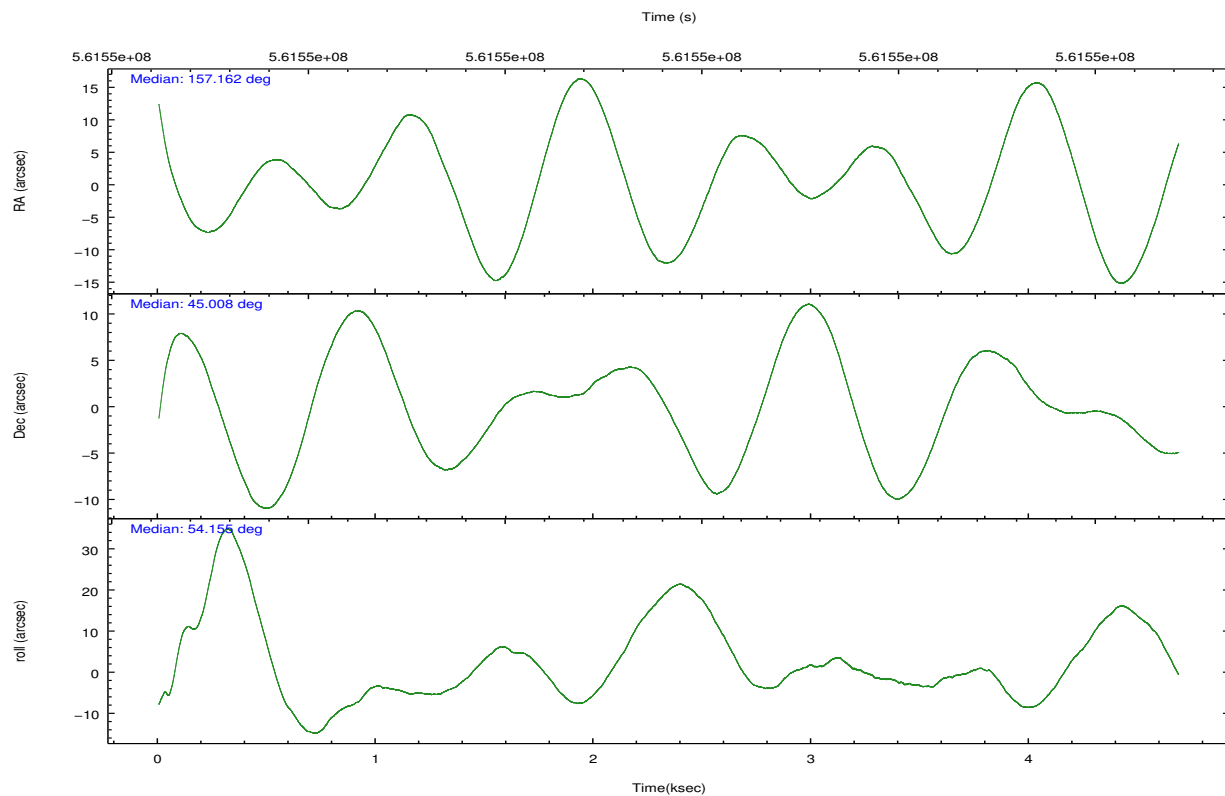
2.2 Compared Parameters

| Parameter | Planned | Actual |
|-----------------------------------|---------------------|----------------------|
| Instrument | ACIS | ACIS |
| Detector | ACIS-235678 | ACIS-235678 |
| Grating | NONE | NONE |
| Data mode | VFAINT | VFAINT |
| Observation mode | POINTING | POINTING |
| [deg] Pointing RA | 157.159052 | 157.1623303468636 |
| [deg] Pointing Dec | 44.980585 | 45.00788736483067 |
| [deg] Pointing Roll | 54.002737 | 54.15702131534761 |
| [mm] SIM focus pos | -0.684267 | -0.6828225247311905 |
| [mm] SIM defocus | 0 | 0.001444936568705701 |
| [mm] SIM translation stage pos | -190.132523 | -190.145094680475 |
| [mm] SIM translation stage offset | 0 | 0.01257209746719923 |
| [s] Observation start time (MET) | 561546687.184000 | 561545510.7245899 |
| Observation start date | 2015-10-18T09:10:19 | 2015-10-18T08:51:50 |
| [s] Observation end time (MET) | 561551187.184000 | 561551640.73744 |
| Observation end date | 2015-10-18T10:25:19 | 2015-10-18T10:34:00 |
| Read mode | TIMED | TIMED |

| Parameter | Planned | Actual |
|---------------------------------------|-----------|---------|
| Obspar format version number | 7 | 7 |
| Obspar file type | PREDICTED | ACTUAL |
| Obspar update status | NONE | UPDATED |
| CCD I0 on | N | N |
| CCD I1 on | N | N |
| CCD I2 on | O1 | Y |
| CCD I3 on | O2 | Y |
| CCD S0 on | N | N |
| CCD S1 on | Y | Y |
| CCD S2 on | Y | Y |
| CCD S3 on | Y | Y |
| CCD S4 on | Y | Y |
| CCD S5 on | N | N |
| Number of optional ACIS chips dropped | 0 | 0 |
| On-chip summing requested | N | N |
| Subarray requested | NONE | NONE |
| Alternating exposures requested | N | N |
| [s] Primary exposure time | 0.000000 | 3.2 |

2.3 Aspect



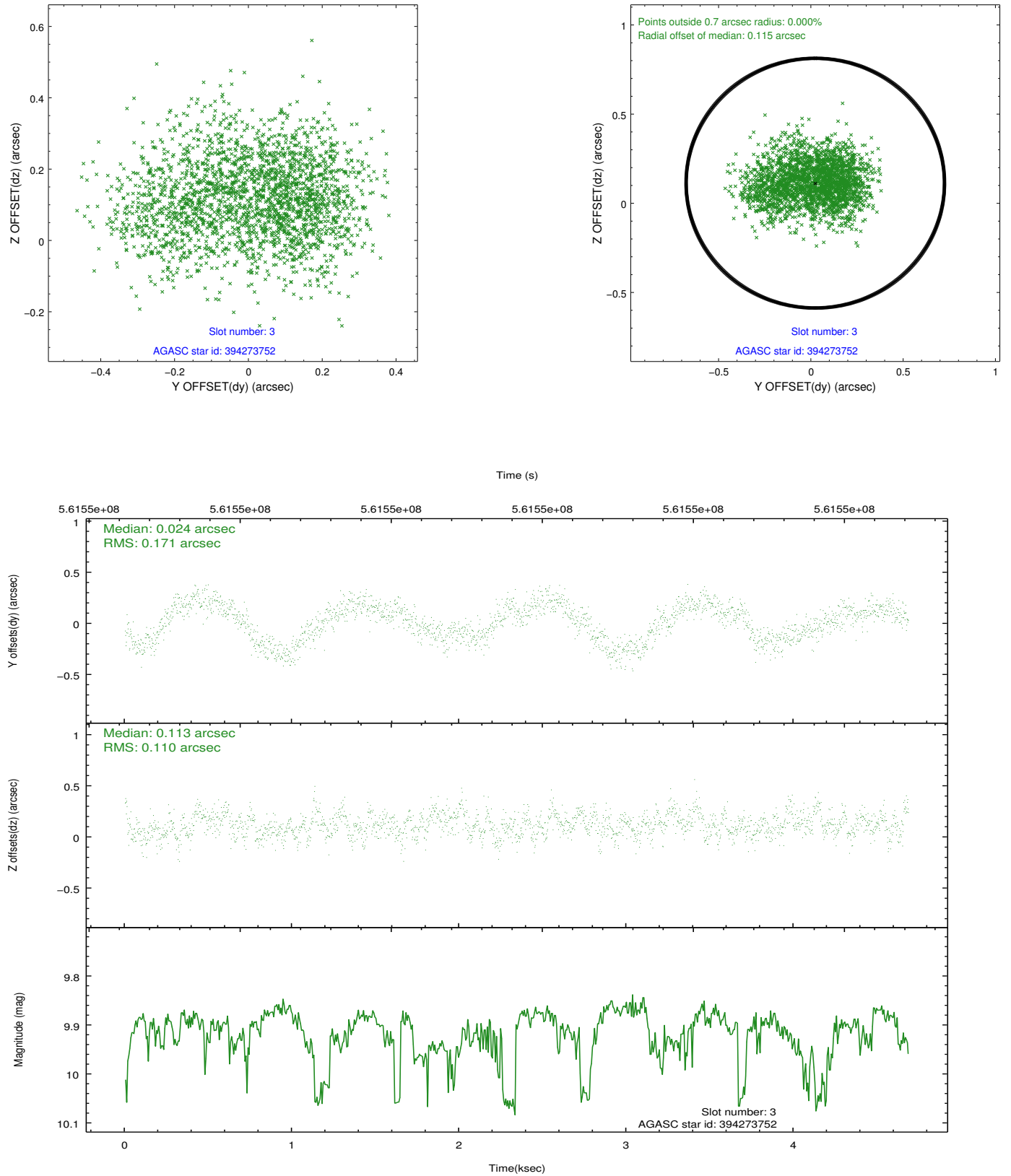


Slot Statistics

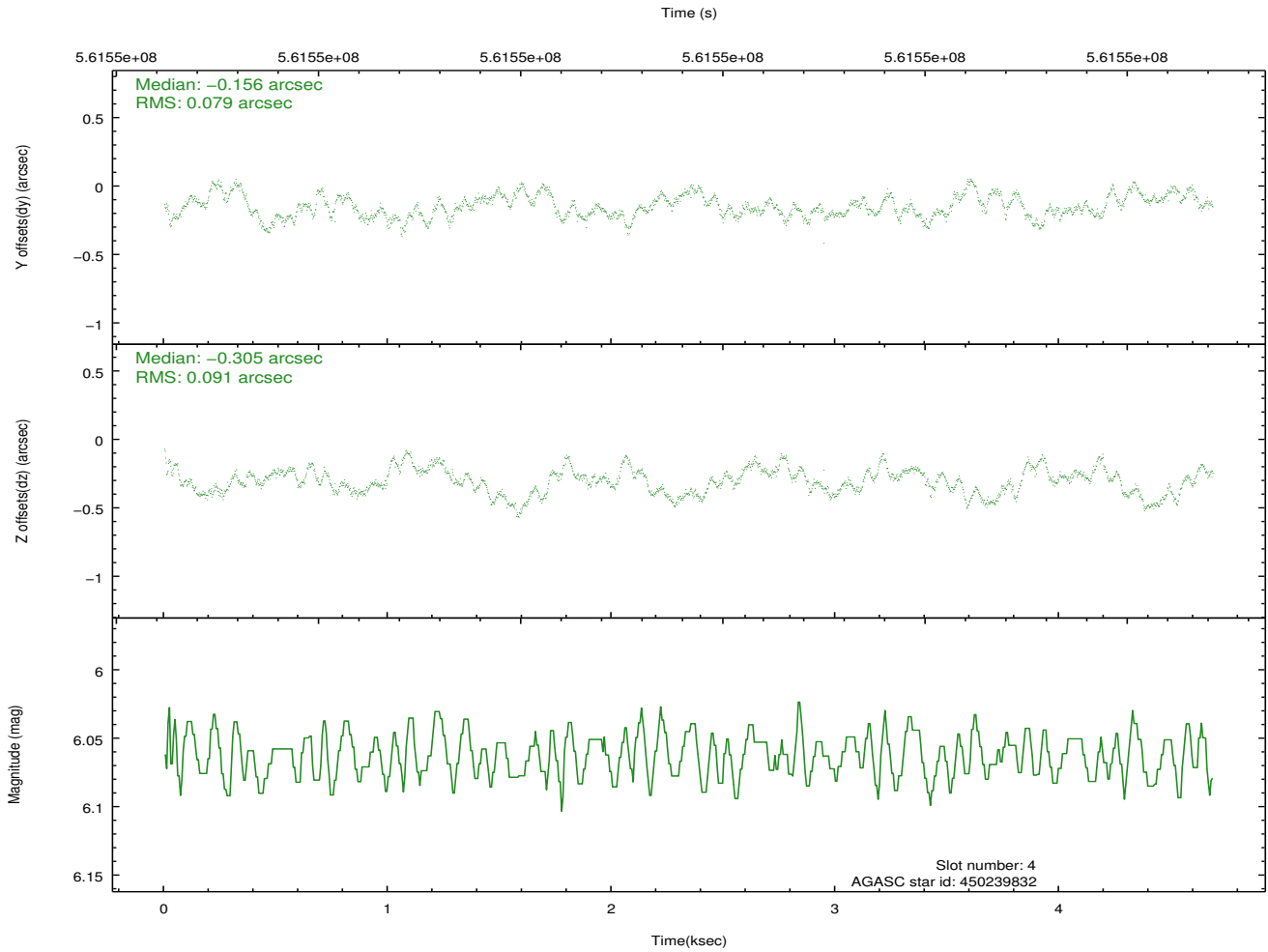
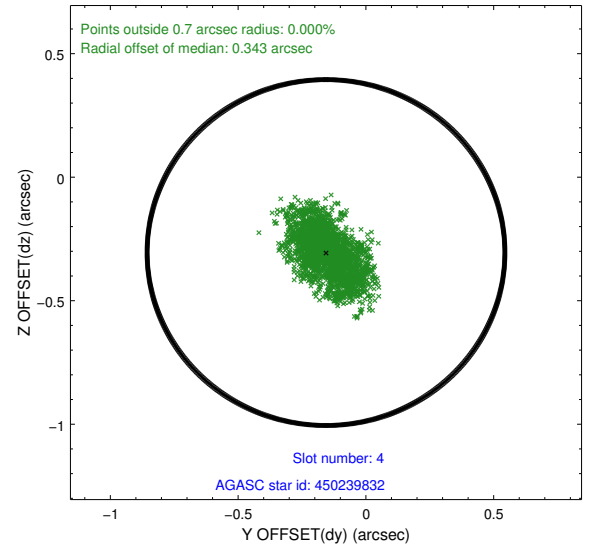
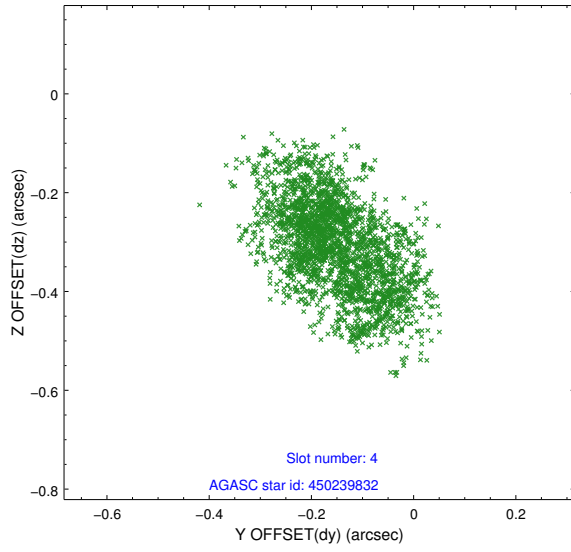
| slot | status | used | id | mag | n_pts | med_dy | med_dz | dr1 | dr2 | ra | dec | mean_y | mean_z |
|------|---------|------|-----------|-------|-------|--------|--------|-------|-------|------------|-----------|----------|----------|
| 0 | FID | | ACIS-S-1 | 7.22 | 1142 | 0.151 | -0.092 | 0.012 | 0.021 | 0.000000 | 0.000000 | 928.50 | -1734.29 |
| 1 | FID | | ACIS-S-5 | 7.24 | 1143 | -0.289 | 0.081 | 0.006 | 0.010 | 0.000000 | 0.000000 | -1820.24 | 162.02 |
| 2 | FID | | ACIS-S-6 | 7.36 | 1143 | 0.117 | 0.023 | 0.015 | 0.023 | 0.000000 | 0.000000 | 392.55 | 807.45 |
| 3 | GUIDE | used | 394273752 | 9.91 | 2276 | 0.024 | 0.113 | 0.220 | 0.342 | 156.958541 | 44.983714 | -289.79 | 420.36 |
| 4 | GUIDE | used | 450239832 | 6.06 | 2286 | -0.156 | -0.305 | 0.132 | 0.202 | 157.152163 | 45.212217 | 664.33 | 504.43 |
| 5 | GUIDE | used | 451158104 | 10.06 | 2282 | 0.045 | -0.033 | 0.307 | 0.481 | 157.558769 | 45.538905 | 2221.58 | 367.81 |
| 6 | OMITTED | | | 0.00 | 0 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000000 | 0.000000 | 0.00 | 0.00 |
| 7 | GUIDE | used | 450238584 | 9.87 | 2279 | 0.094 | 0.218 | 0.158 | 0.247 | 157.474388 | 45.129406 | 906.22 | -330.70 |

2.4 Star Slots

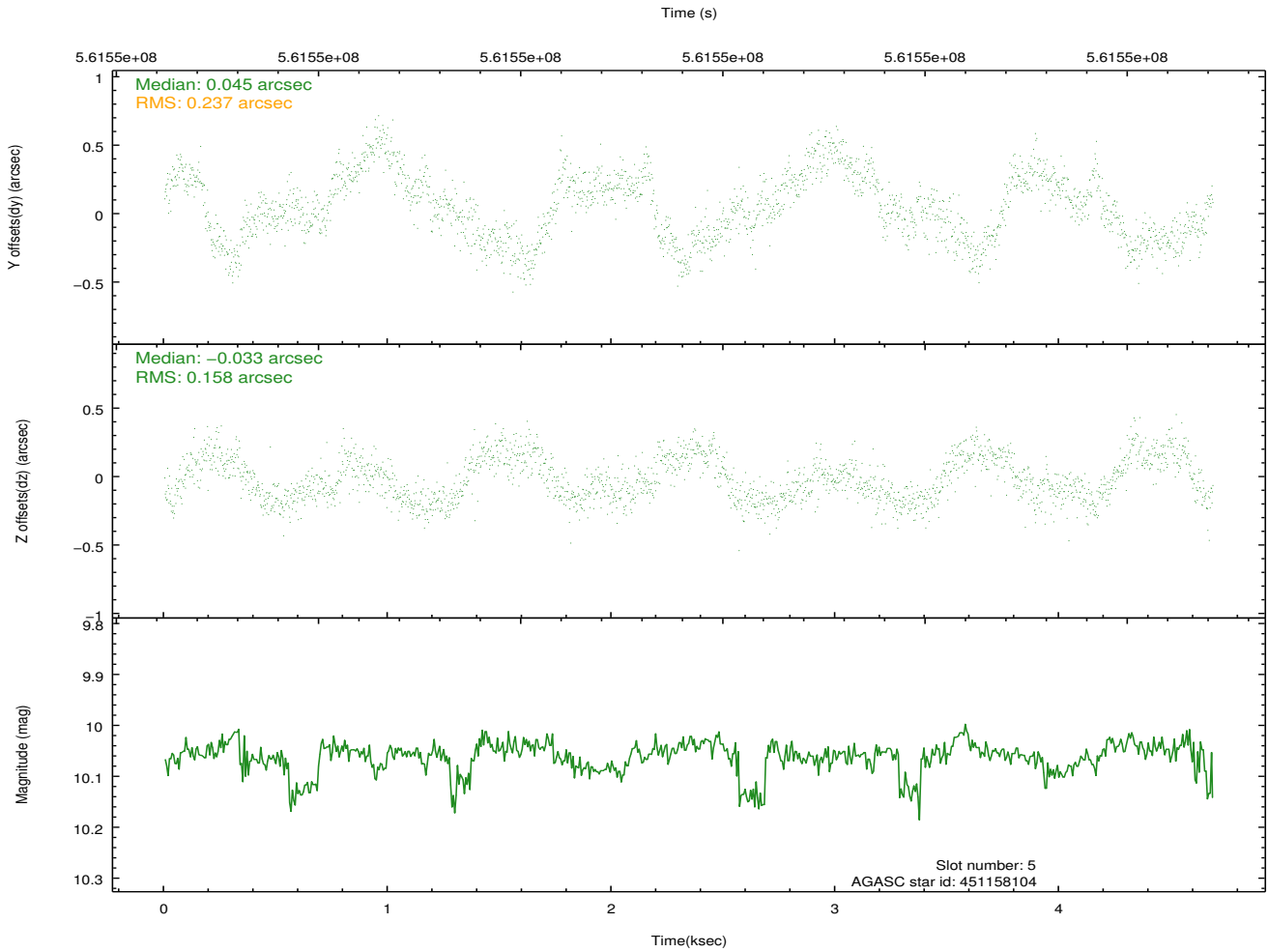
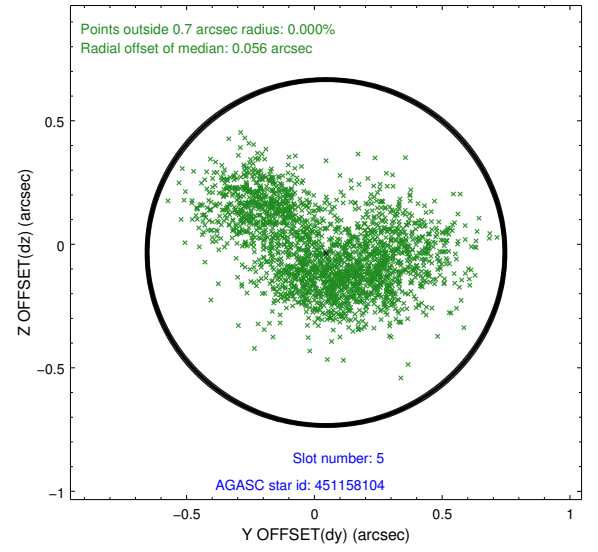
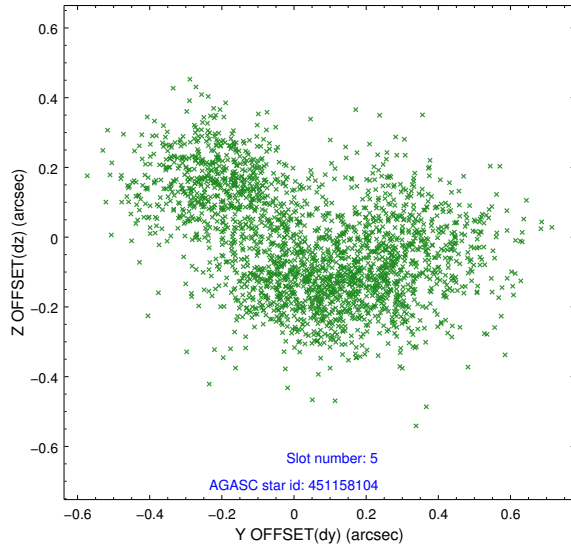
2.4.1 Slot 3



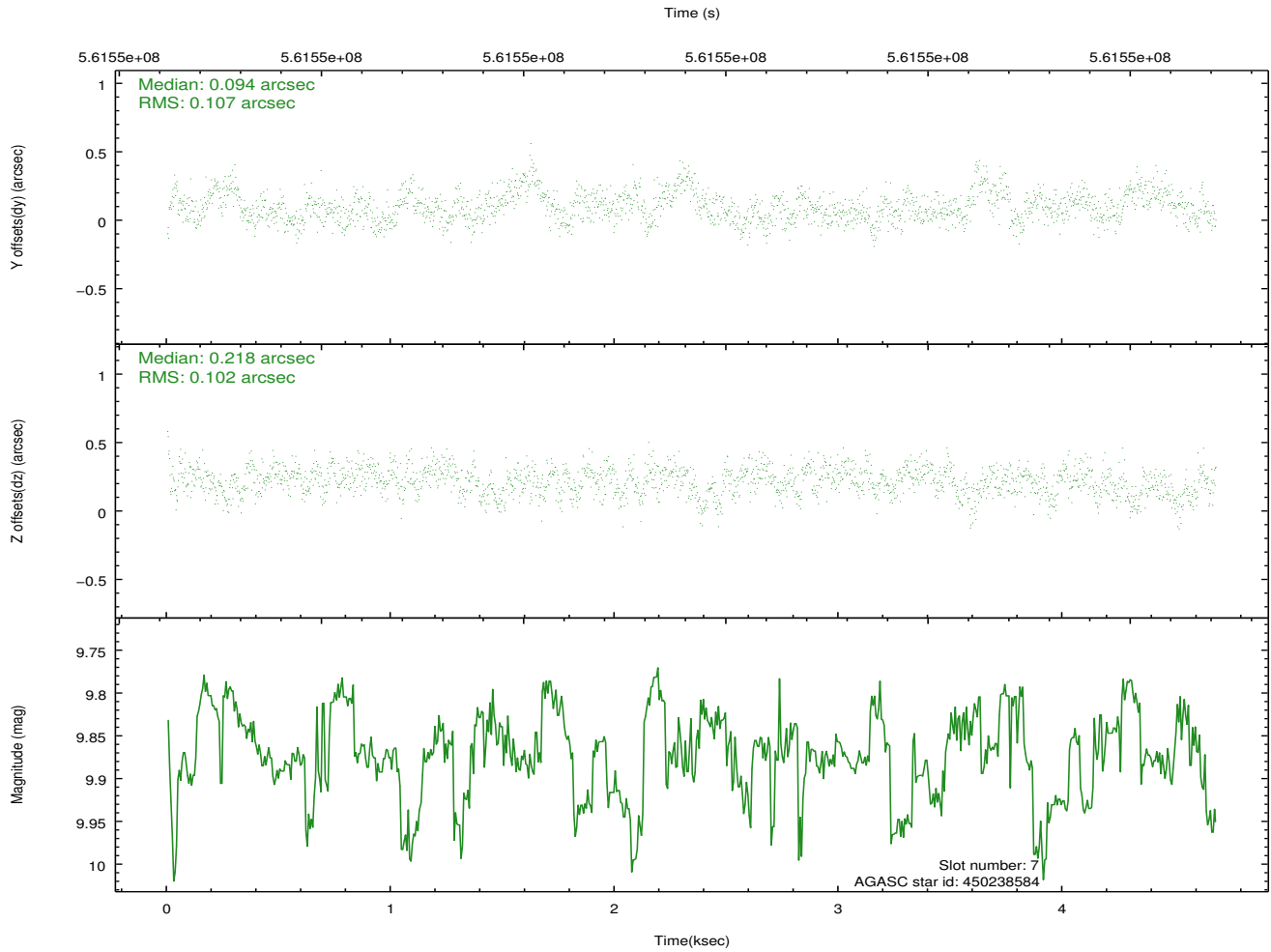
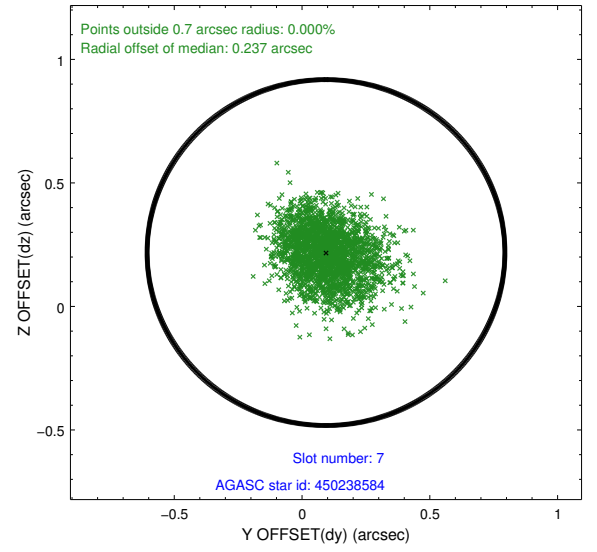
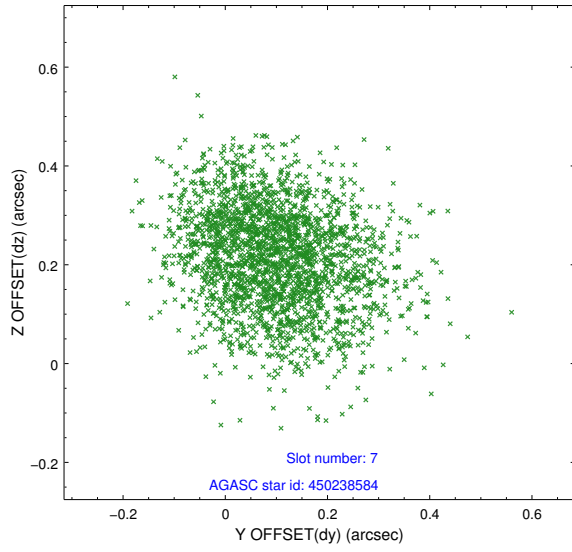
2.4.2 Slot 4



2.4.3 Slot 5

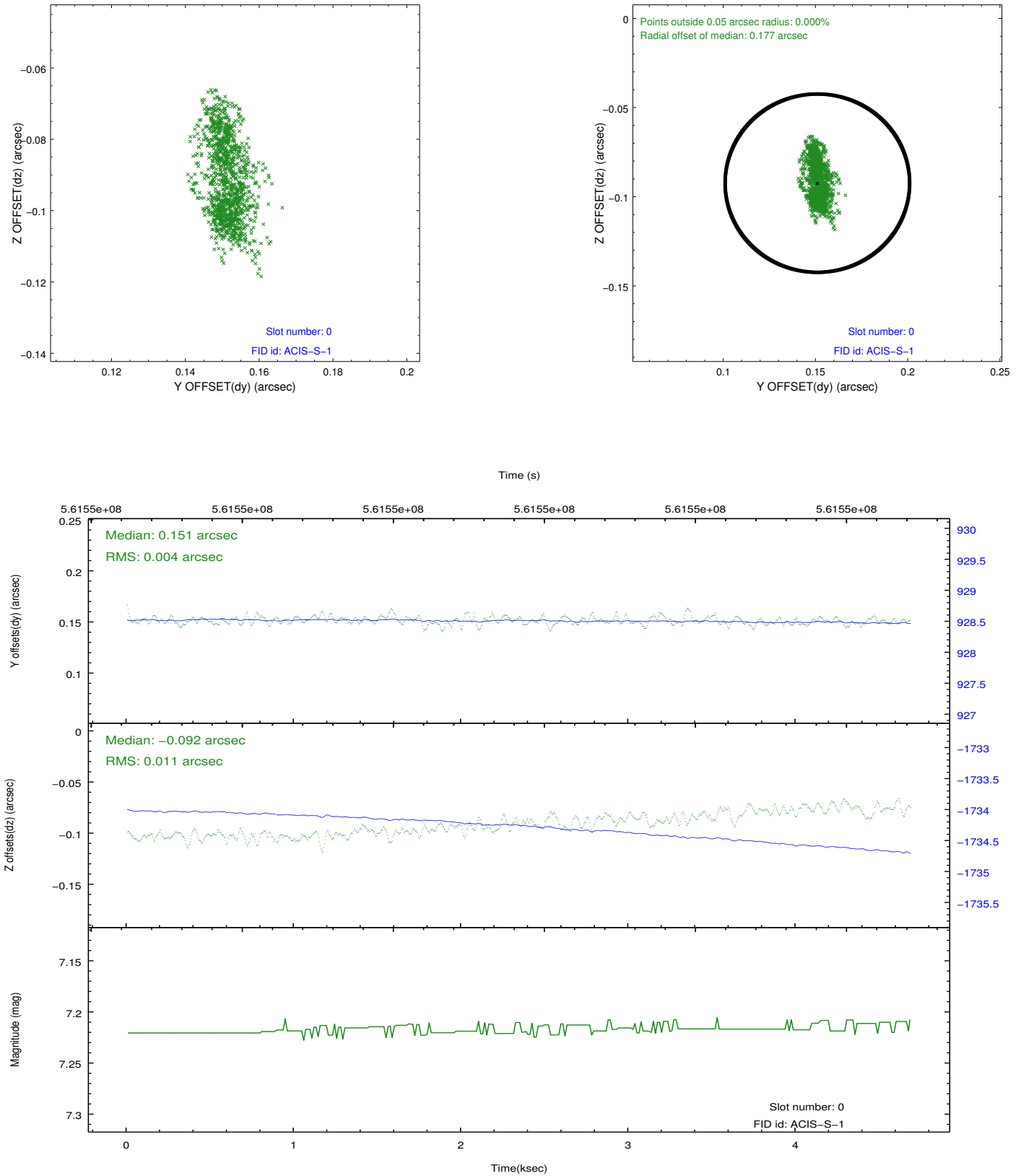


2.4.4 Slot 7

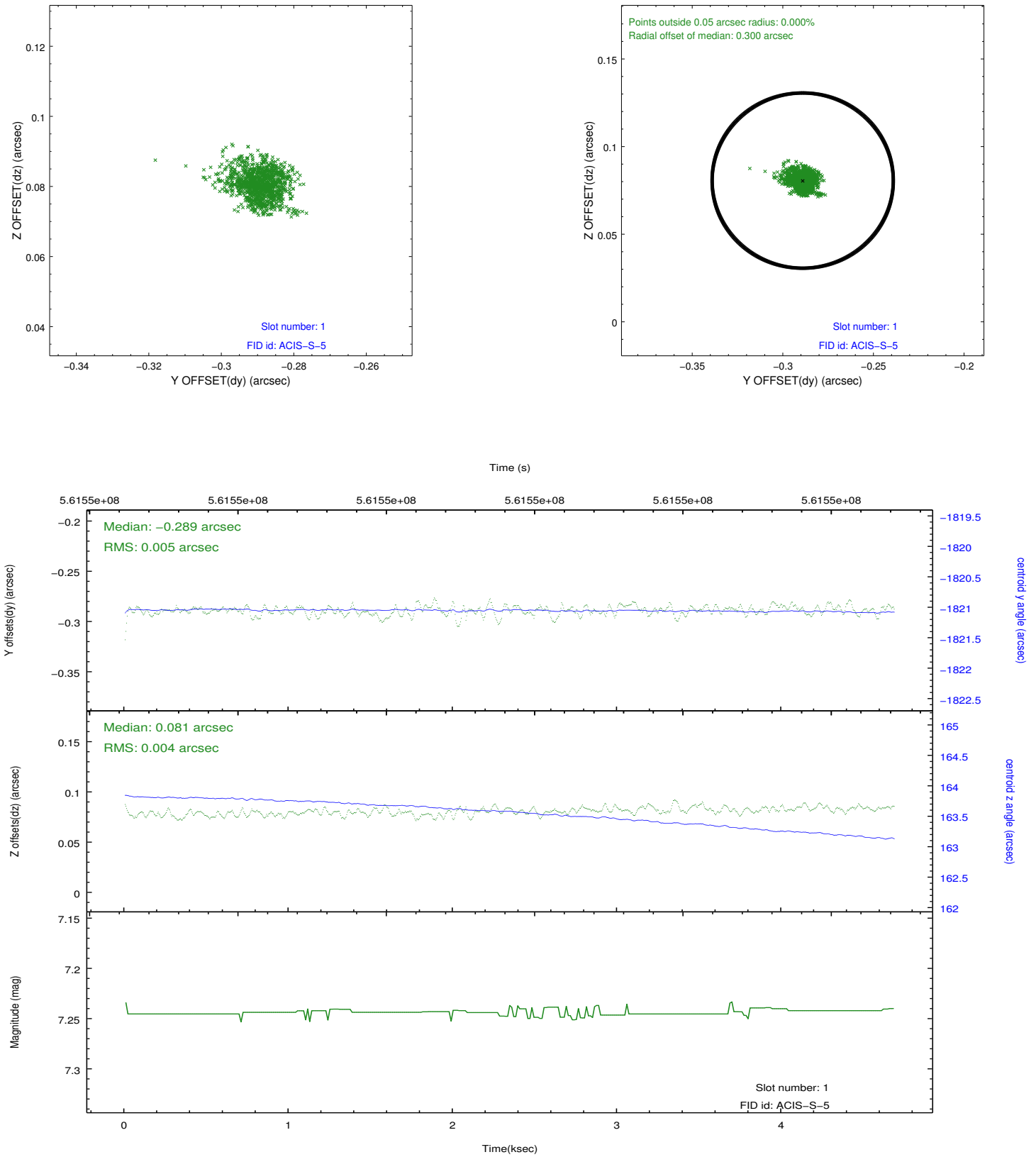


2.5 FID Slots

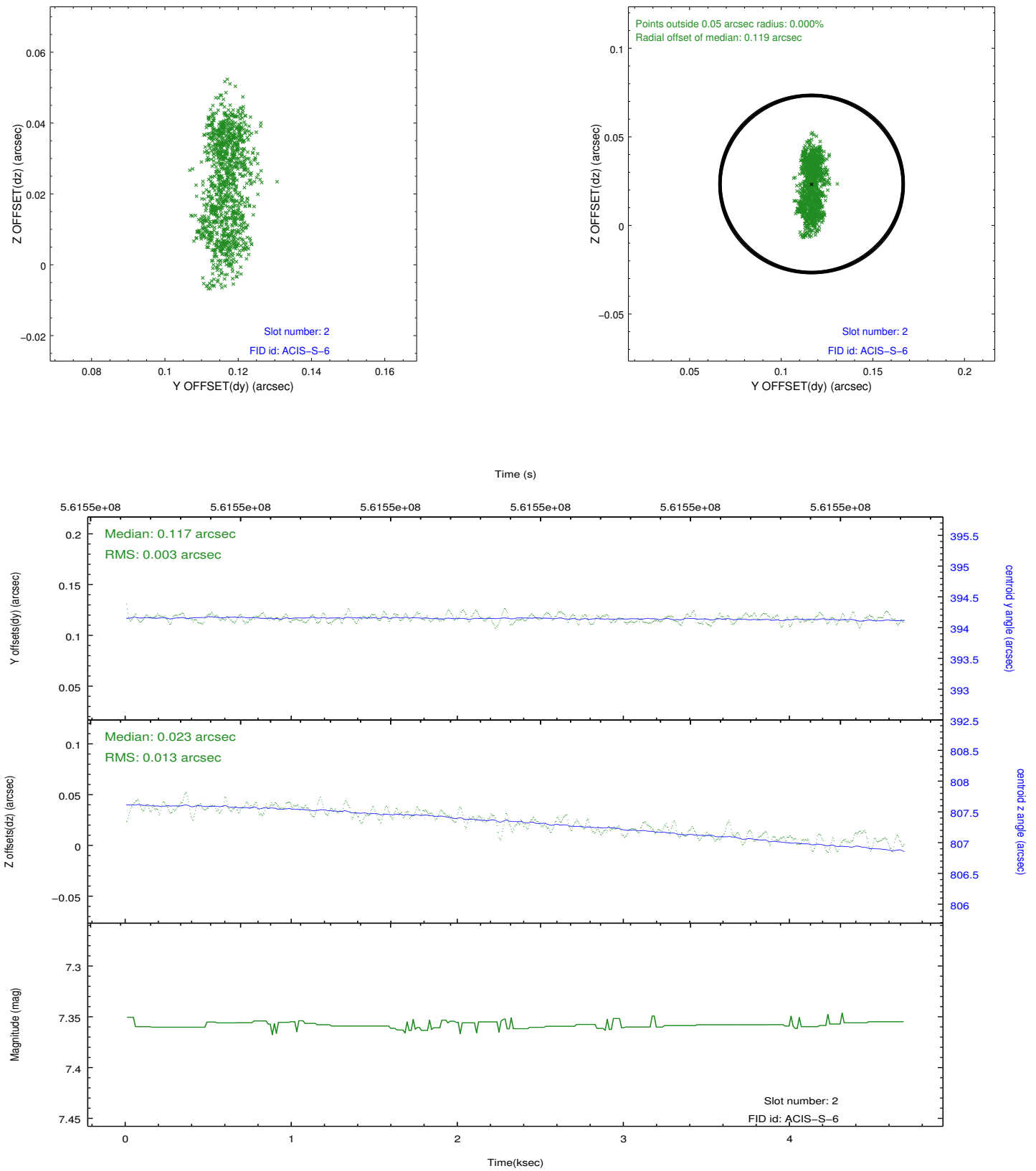
2.5.1 Slot 0



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) | 2015.10.26 |
| V&V Edition | 1 |
| V&V Disposition and Status | OK |
| V&V Charge Time | 4.4352000660896 |

A.2 Comments

The guide star in slot 6 was removed from the aspect solution due to poor data quality. The aspect solution is improved by the removal of this star from the solution.