

V&V Reference Report

L2 ASCDS Version : 8.4.5

Observation 14325 - L2 Version 2
Chandra X-Ray Center

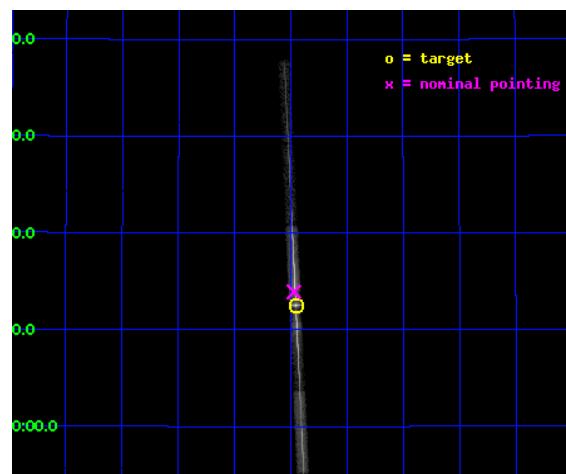
L2 Processing Date : Jul 9 2012

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1 Front

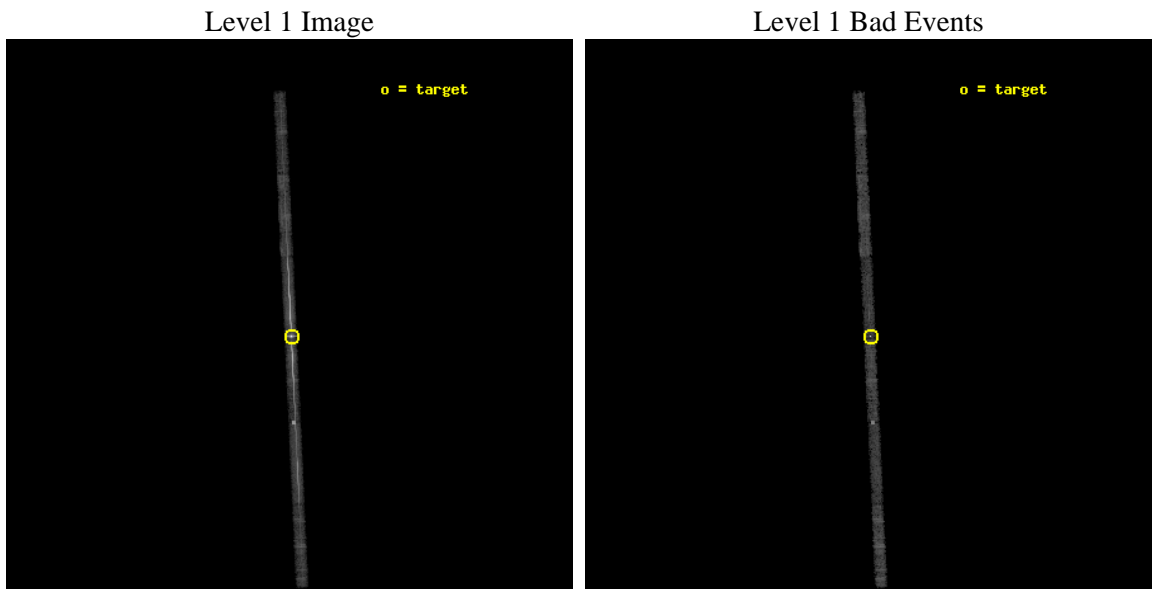
| | | |
|----------|--|---|
| seq_num | 790244 | Sequence number |
| obs_id | 14325 | Observation id |
| title | AO-13 Calibration Observations of Mkn421 to Calibrate the New HRC-S HV Setting | Proposal title |
| observer | Dr. CXC Calibration | Principal investigator |
| object | MKN421 | Source name |
| dtcycle | 0 | |
| cycle | P | events from which exps? Prim/Second/Both |
| ra_targ | 166.113333 | Observer's specified target RA [deg] |
| dec_targ | 38.208806 | Observer's specified target Dec [deg] |
| ra_nom | 166.11807523594 | Nominal RA [deg] |
| dec_nom | 38.2320440924 | Nominal Dec [deg] |
| roll_nom | 267.29829844785 | Nominal Roll [deg] |
| revision | 2 | Processing version of data |
| ontime | 10054.799828708 | Sum of GTIs [s] |
| livetime | 9497.9486668678 | Livetime [s] |
| ontime4 | 10054.799828708 | Sum of GTIs [s] |
| ontime5 | 10054.799828708 | Sum of GTIs [s] |
| ontime6 | 10054.799828708 | Sum of GTIs [s] |
| ontime7 | 10054.799828708 | Sum of GTIs [s] |
| ontime8 | 10054.799828708 | Sum of GTIs [s] |
| ontime9 | 10054.799828708 | Sum of GTIs [s] |
| l2events | 123990 | Number of level 2 events |



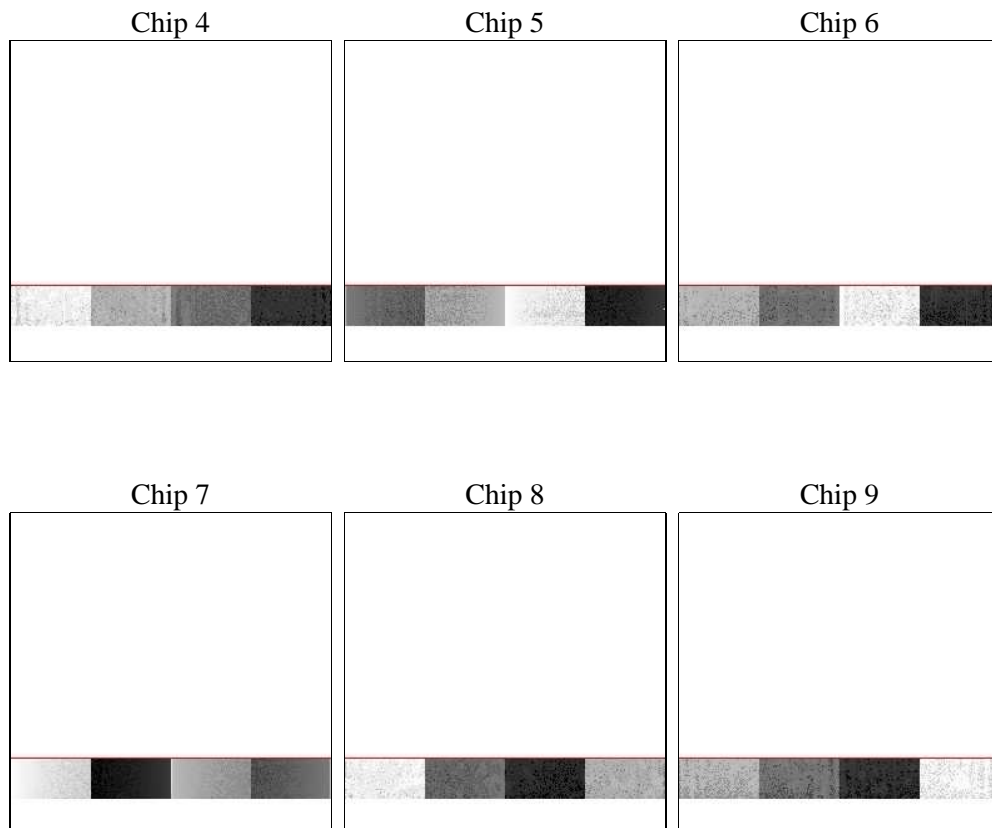
2 OBI

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 | 8.4.5 | Processing system revision | ontime | 10054.799828708 | Sum of GTIs [s] |
| caldsver | 4.5.0 | | ontime4 | 10054.799828708 | Sum of GTIs [s] |
| date | 2012-07-05T18:29:31 | Date and time of file creation | ontime5 | 10054.799828708 | Sum of GTIs [s] |
| revision | 1 | Processing version of data | ontime6 | 10054.799828708 | Sum of GTIs [s] |
| | | | ontime7 | 10054.799828708 | Sum of GTIs [s] |
| | | | ontime8 | 10054.799828708 | Sum of GTIs [s] |
| | | | ontime9 | 10054.799828708 | Sum of GTIs [s] |
| | | | l1events | 192086 | Number of level 1 events |

2.1.4 Events

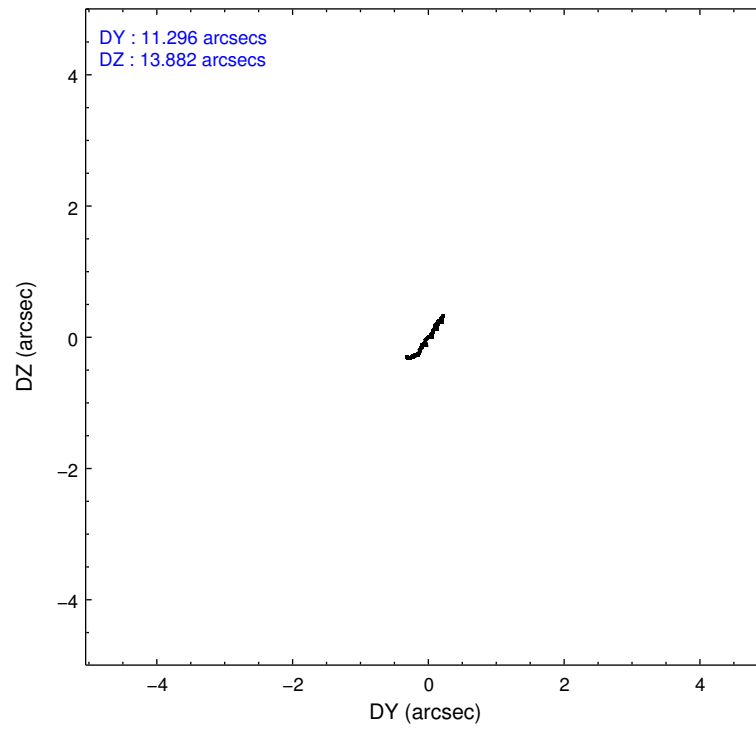
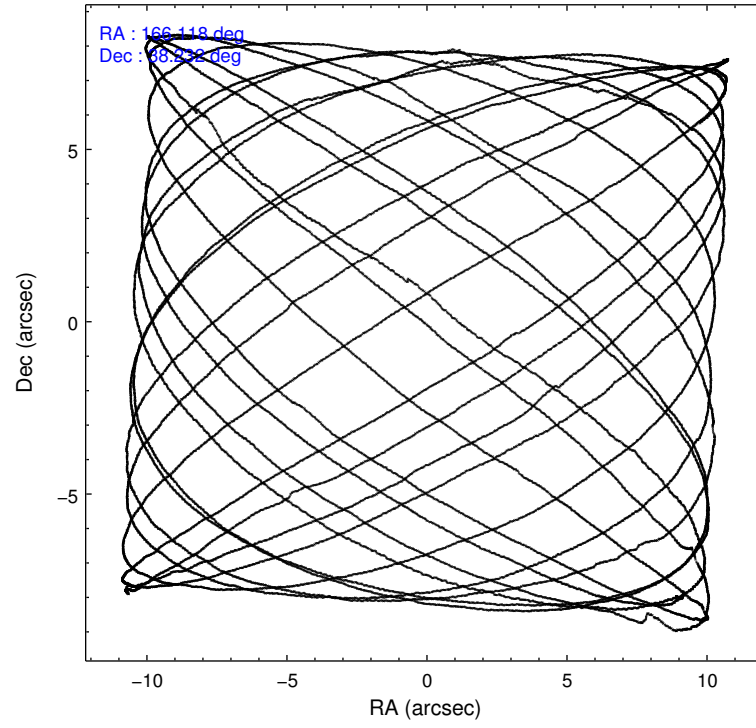
| | ccd 4 | ccd 5 | ccd 6 | ccd 7 | ccd 8 | ccd 9 |
|-----------------|-------|-------|-------|-------|-------|-------|
| level 1 events | 10950 | 25817 | 42947 | 86999 | 16042 | 9331 |
| rejected events | 8694 | 7077 | 7733 | 18183 | 9708 | 7151 |
| rejected % | 79% | 27% | 18% | 20% | 60% | 76% |

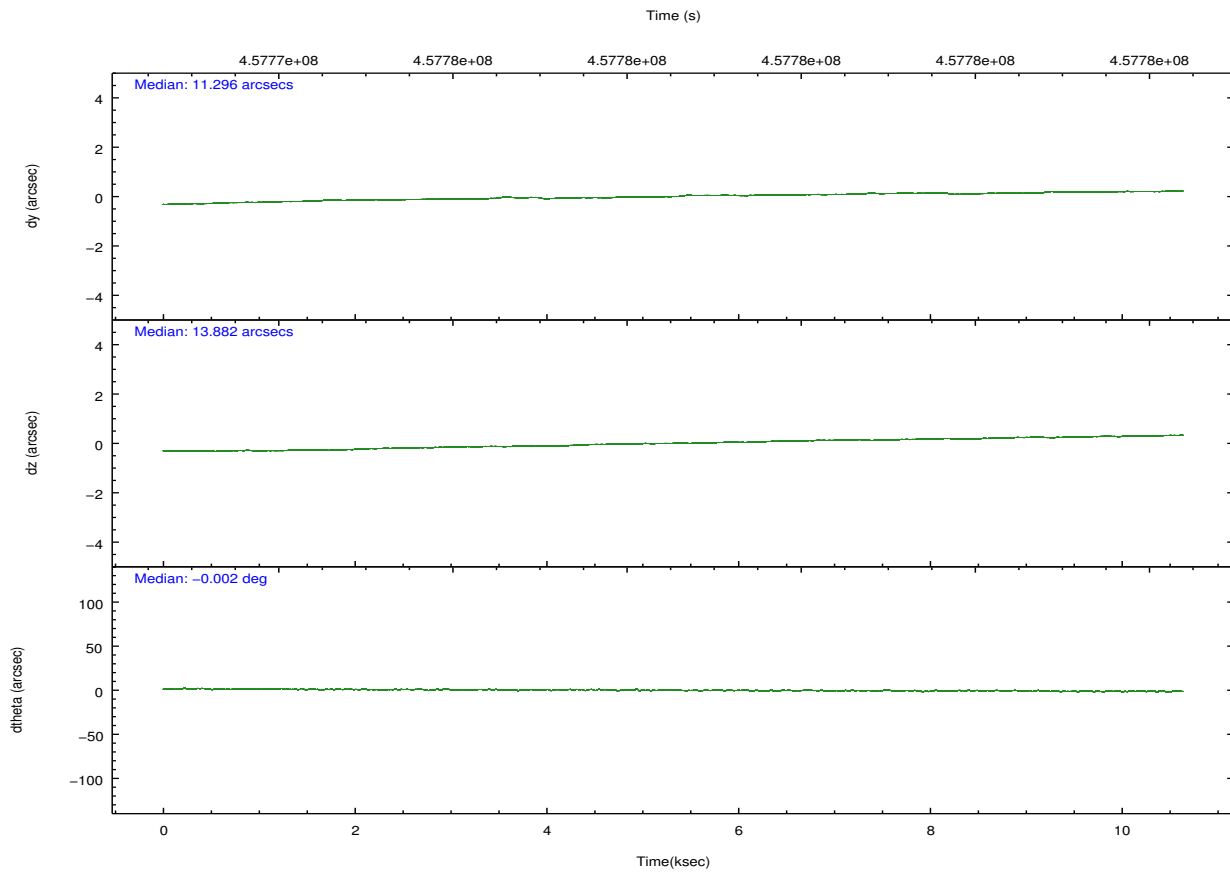
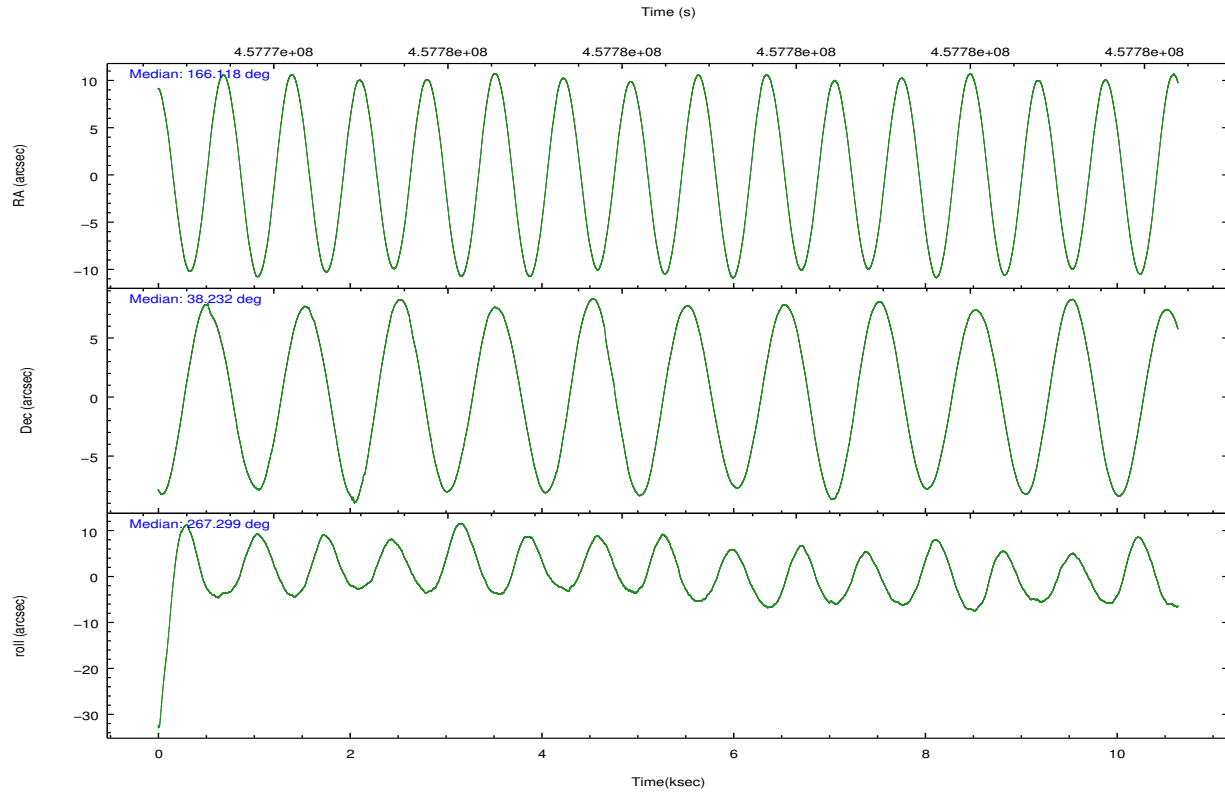
| | ccd 4 | ccd 5 | ccd 6 | ccd 7 | ccd 8 | ccd 9 |
|----------------|-------|-------|-------|-------|-------|-------|
| grade 0 events | 1272 | 9255 | 28359 | 18800 | 3332 | 1285 |
| | 11% | 35% | 66% | 21% | 20% | 13% |
| grade 1 events | 6 | 1057 | 82 | 681 | 7 | 2 |
| | 0% | 4% | 0% | 0% | 0% | 0% |
| grade 2 events | 395 | 3468 | 3554 | 17161 | 1014 | 282 |
| | 3% | 13% | 8% | 19% | 6% | 3% |
| grade 3 events | 184 | 1490 | 1204 | 7690 | 426 | 208 |
| | 1% | 5% | 2% | 8% | 2% | 2% |
| grade 4 events | 197 | 1175 | 1200 | 7700 | 422 | 188 |
| | 1% | 4% | 2% | 8% | 2% | 2% |
| grade 5 events | 309 | 1552 | 378 | 3703 | 510 | 370 |
| | 2% | 6% | 0% | 4% | 3% | 3% |
| grade 6 events | 208 | 3354 | 899 | 17468 | 1140 | 217 |
| | 1% | 12% | 2% | 20% | 7% | 2% |
| grade 7 events | 8379 | 4466 | 7271 | 13796 | 9191 | 6779 |
| | 76% | 17% | 16% | 15% | 57% | 72% |

2.2 Compared Parameters

| Parameter | Planned | Actual | Parameter | Planned | Actual |
|-----------------------------------|---------------------|----------------------|---------------------------------------|-----------|---------|
| Instrument | ACIS | ACIS | Obspar format version number | 7 | 7 |
| Detector | ACIS-456789 | ACIS-456789 | Obspar file type | PREDICTED | ACTUAL |
| Grating | LETG | LETG | Obspar update status | NONE | UPDATED |
| Data mode | FAINT | FAINT | CCD I0 on | N | N |
| Observation mode | POINTING | POINTING | CCD I1 on | N | N |
| [deg] Pointing RA | 166.101678 | 166.1180752359435 | CCD I2 on | N | N |
| [deg] Pointing Dec | 38.256147 | 38.23204409240009 | CCD I3 on | N | N |
| [deg] Pointing Roll | 267.151820 | 267.2982984478513 | CCD S0 on | O1 | Y |
| [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 | -182.132523 | -182.1344861297048 | CCD S3 on | Y | Y |
| [mm] SIM translation stage offset | -8 | -7.998036453302973 | CCD S4 on | Y | Y |
| [s] Observation start time (MET) | 457773851.184000 | 457772890.36654 | CCD S5 on | Y | Y |
| Observation start date | 2012-07-04T07:23:04 | 2012-07-04T07:08:10 | Number of optional ACIS chips dropped | 0 | 0 |
| [s] Observation end time (MET) | 457783851.184000 | 457784073.11714 | On-chip summing requested | N | N |
| Observation end date | 2012-07-04T10:09:44 | 2012-07-04T10:14:33 | Subarray requested | CUSTOM | 1/8 |
| Read mode | TIMED | TIMED | Subarray start row | 113 | 113 |
| | | | Subarray row count | 128 | 128 |
| | | | Alternating exposures requested | N | N |
| | | | [s] Primary exposure time | 0.000000 | 0.7 |

2.3 Aspect



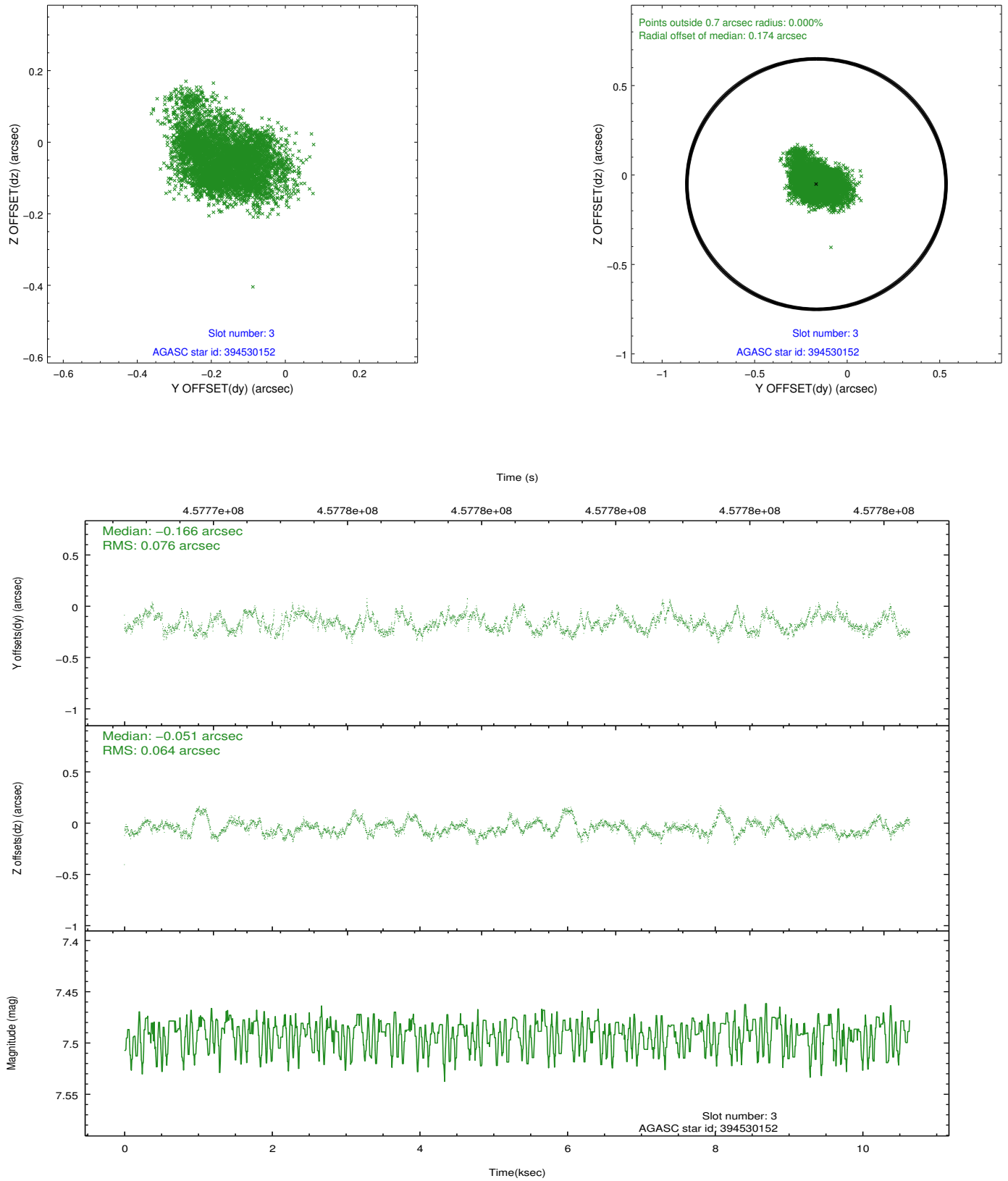


Slot Statistics

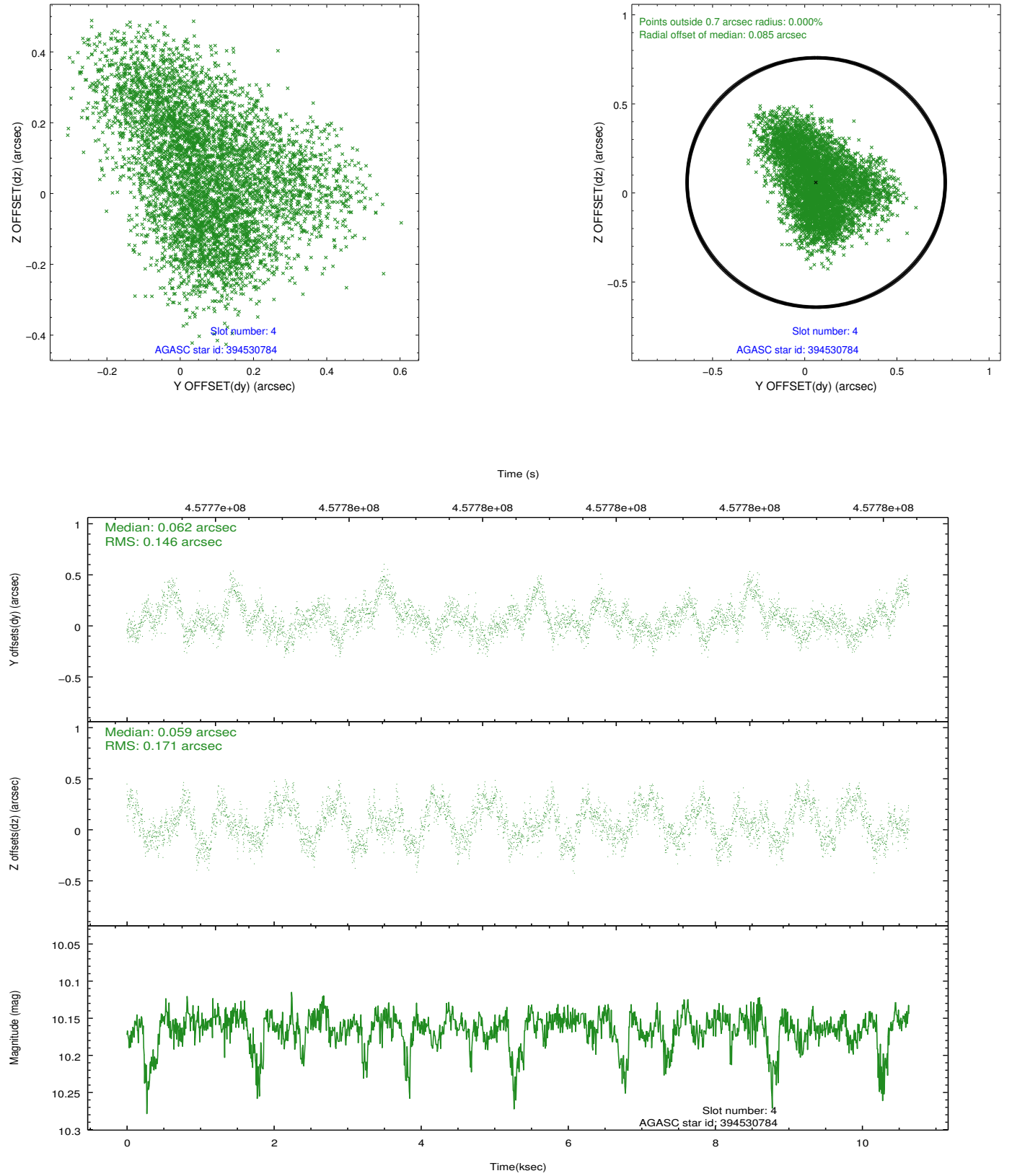
| slot | status | id | mag | n_pts | med_dy | med_dz | dr1 | dr2 | ra | dec | mean_y | mean_z |
|------|--------|-----------|-------|-------|--------|--------|-------|-------|------------|-----------|----------|----------|
| 0 | FID | ACIS-S-2 | 6.82 | 2595 | -0.158 | -0.113 | 0.007 | 0.012 | 0.000000 | 0.000000 | -763.80 | -1900.08 |
| 1 | FID | ACIS-S-4 | 6.89 | 2595 | 0.152 | 0.089 | 0.006 | 0.010 | 0.000000 | 0.000000 | 2149.62 | 7.94 |
| 2 | FID | ACIS-S-6 | 7.12 | 2595 | -0.021 | 0.031 | 0.008 | 0.013 | 0.000000 | 0.000000 | 399.02 | 645.88 |
| 3 | GUIDE | 394530152 | 7.49 | 5190 | -0.166 | -0.051 | 0.106 | 0.178 | 166.075805 | 38.868252 | -2197.14 | -181.75 |
| 4 | GUIDE | 394530784 | 10.16 | 5183 | 0.062 | 0.059 | 0.248 | 0.378 | 165.569172 | 38.418674 | -514.15 | -1529.15 |
| 5 | GUIDE | 394533848 | 8.72 | 5188 | 0.171 | 0.033 | 0.099 | 0.168 | 166.382906 | 38.276007 | -112.30 | 785.90 |
| 6 | GUIDE | 394543960 | 9.79 | 5181 | 0.077 | -0.099 | 0.199 | 0.296 | 165.802757 | 37.787371 | 1726.74 | -765.39 |
| 7 | GUIDE | 394546712 | 6.60 | 5189 | -0.141 | 0.057 | 0.095 | 0.141 | 166.451462 | 38.394357 | -547.10 | 960.08 |

2.4 Star Slots

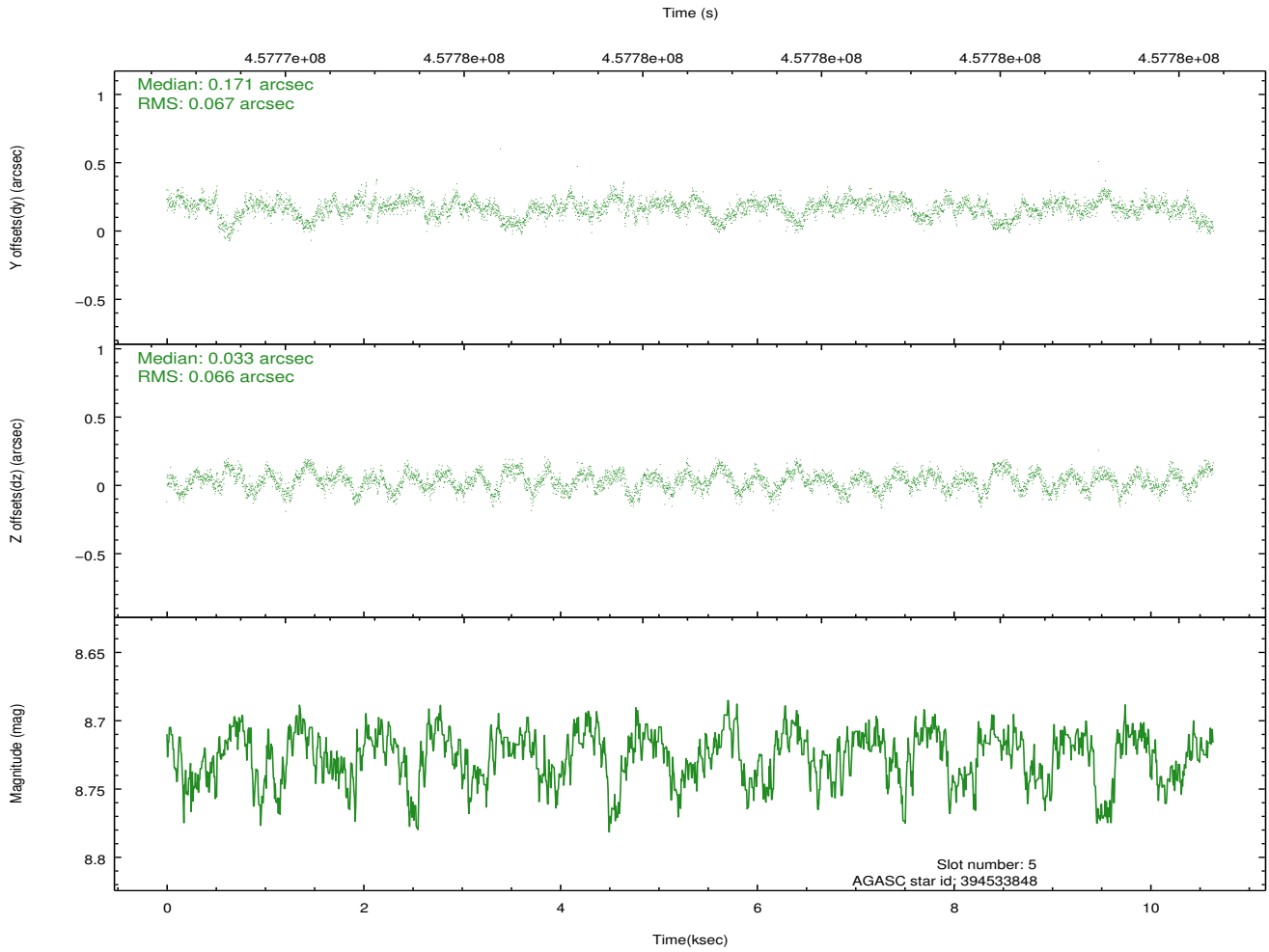
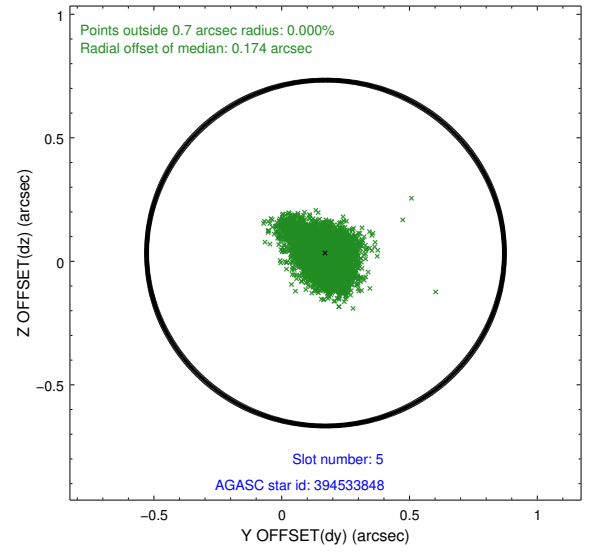
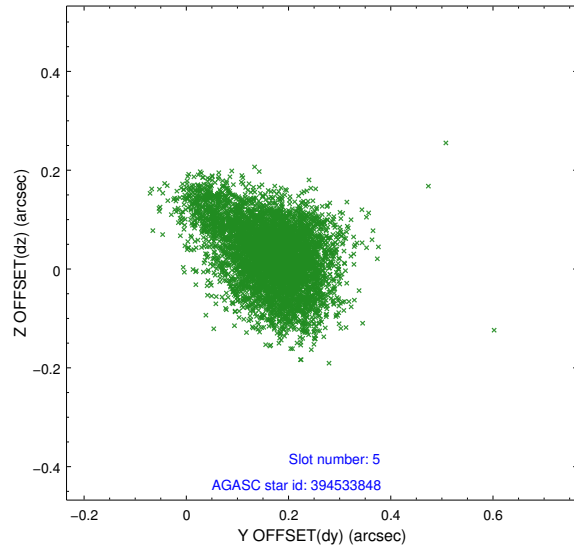
2.4.1 Slot 3



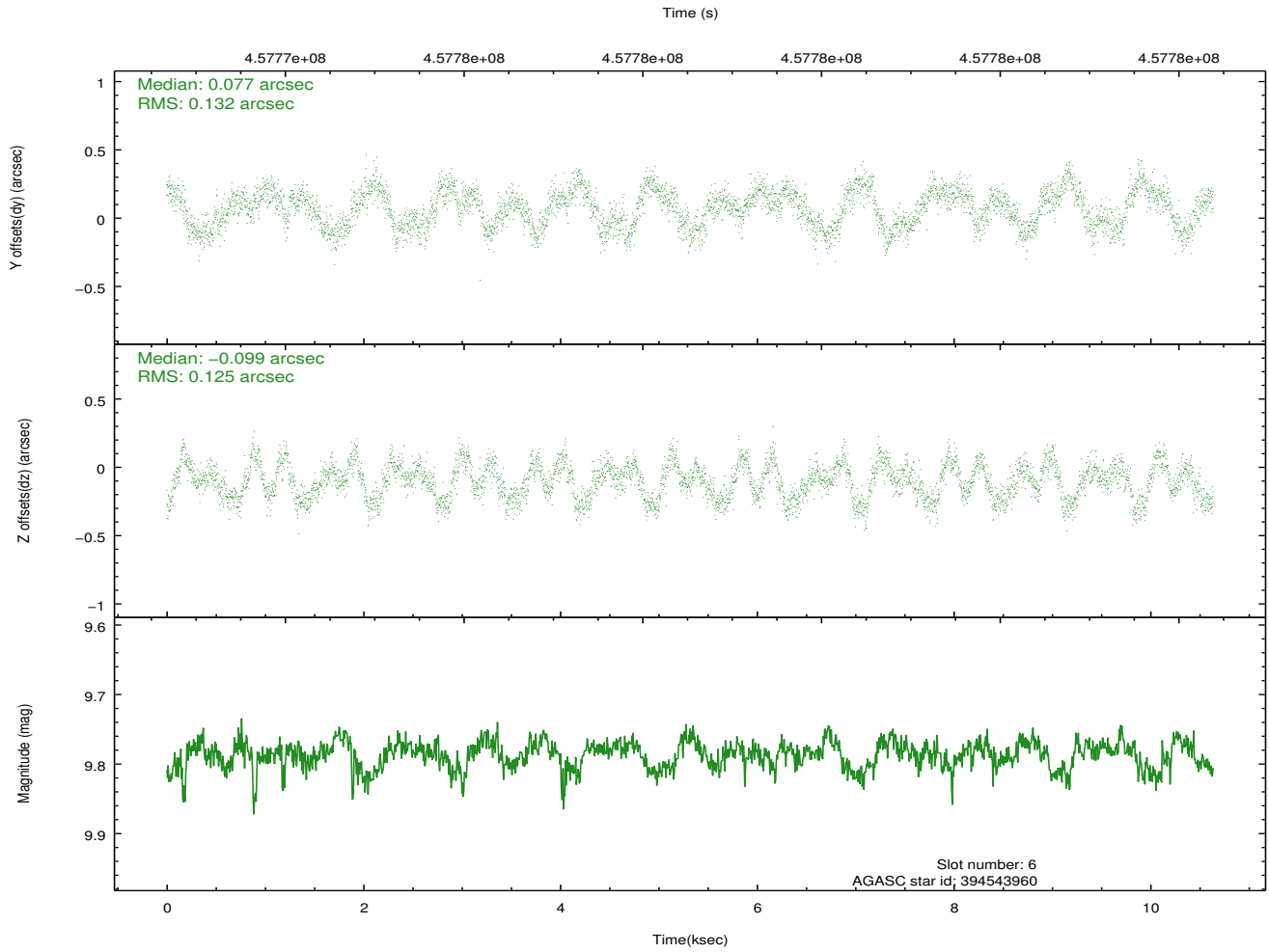
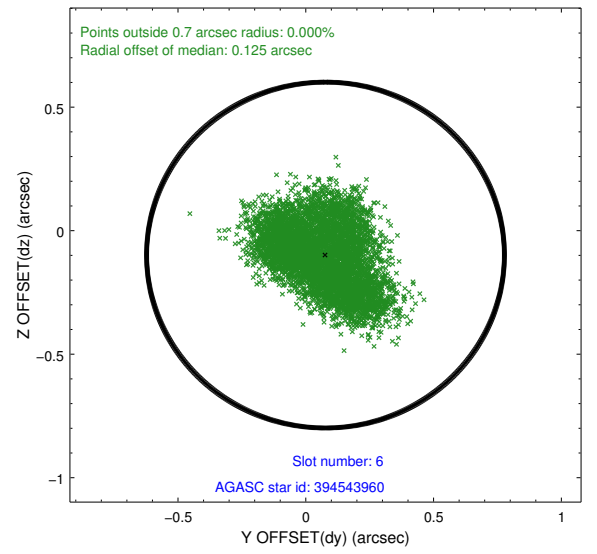
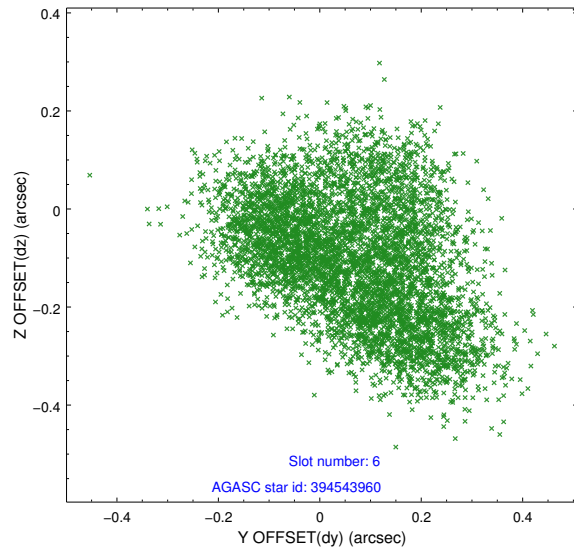
2.4.2 Slot 4



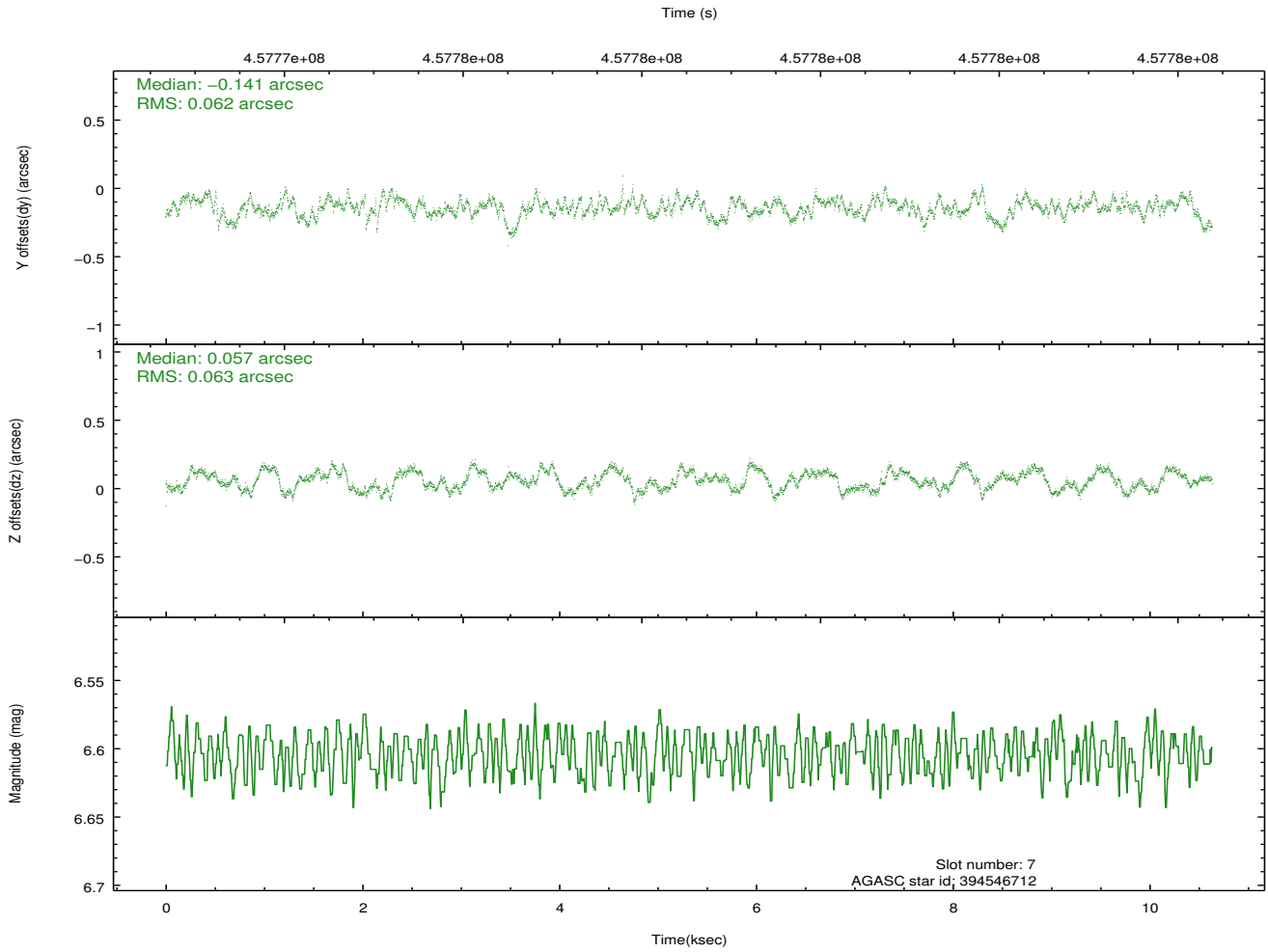
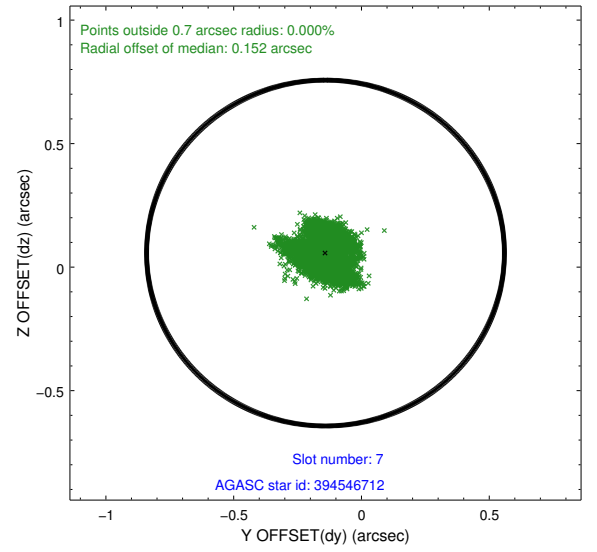
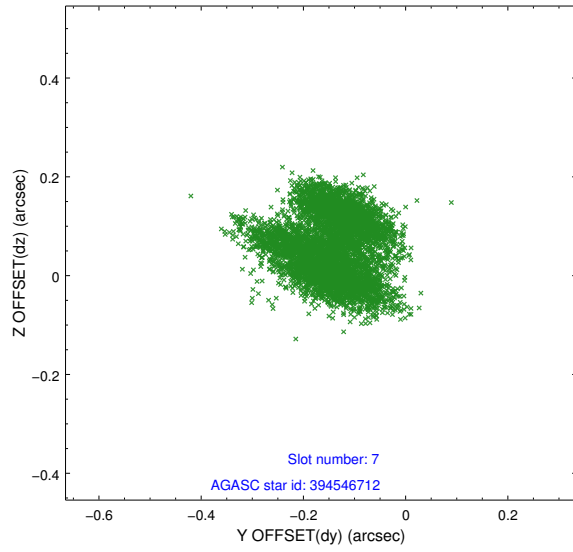
2.4.3 Slot 5



2.4.4 Slot 6

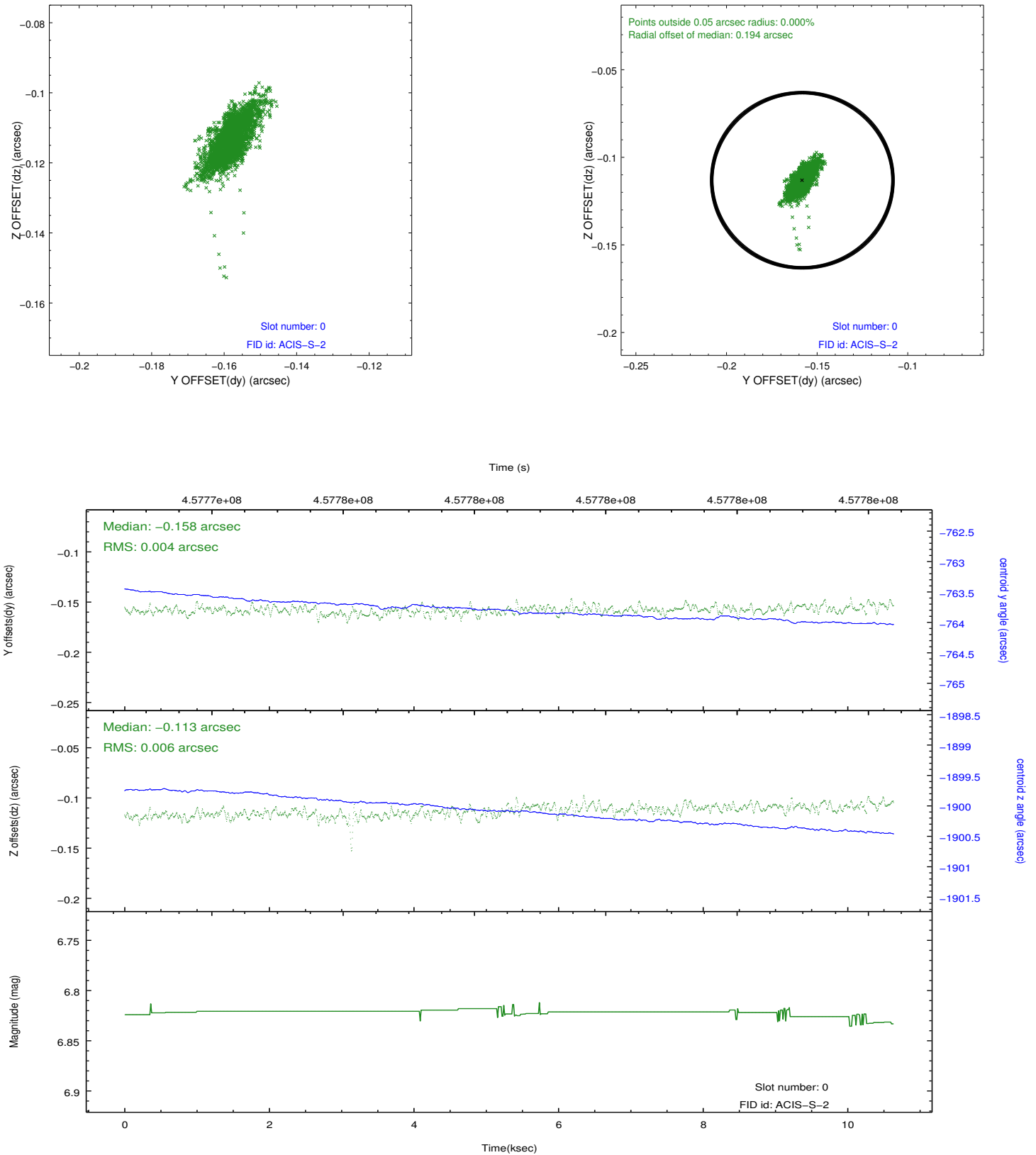


2.4.5 Slot 7

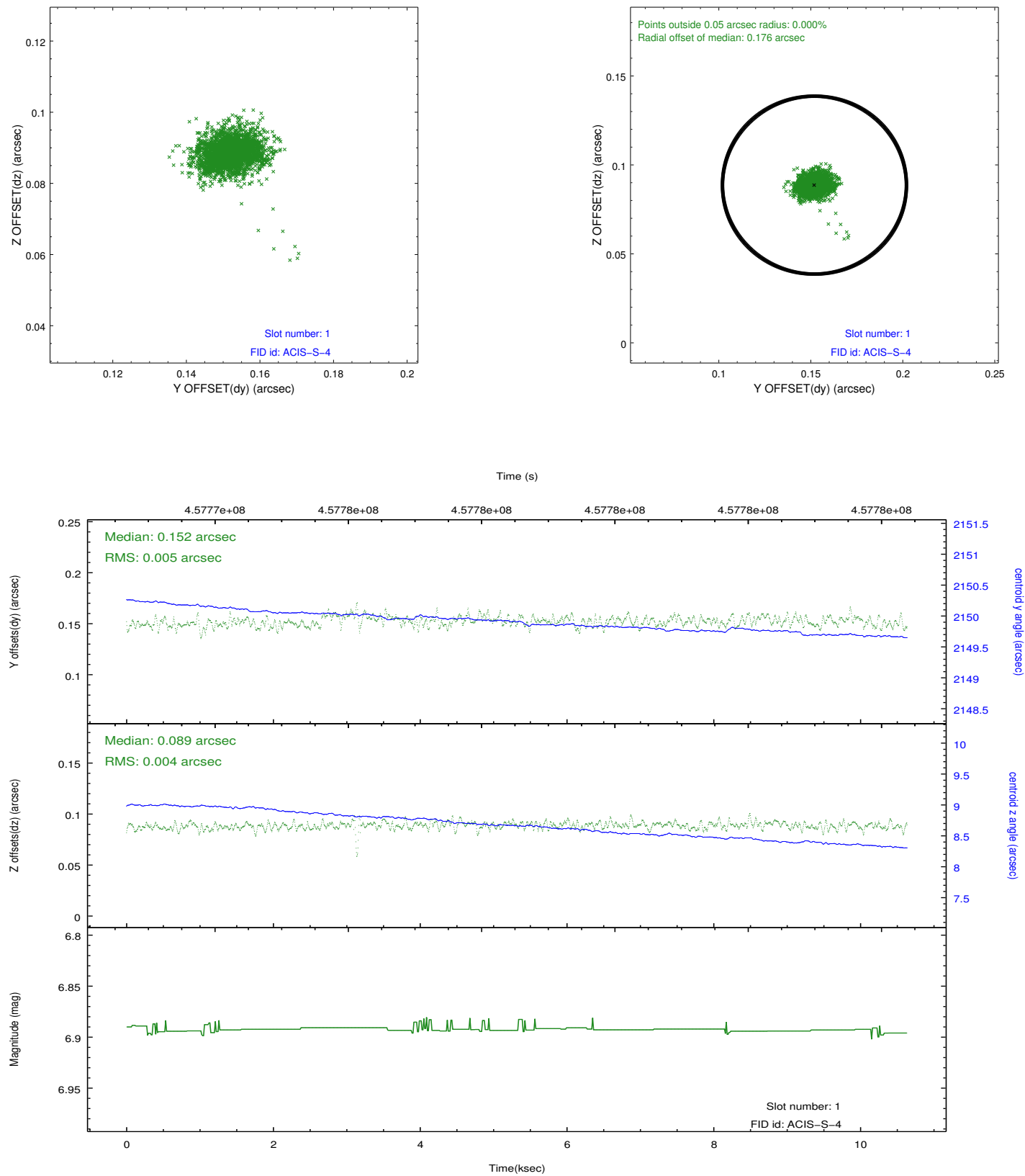


2.5 FID Slots

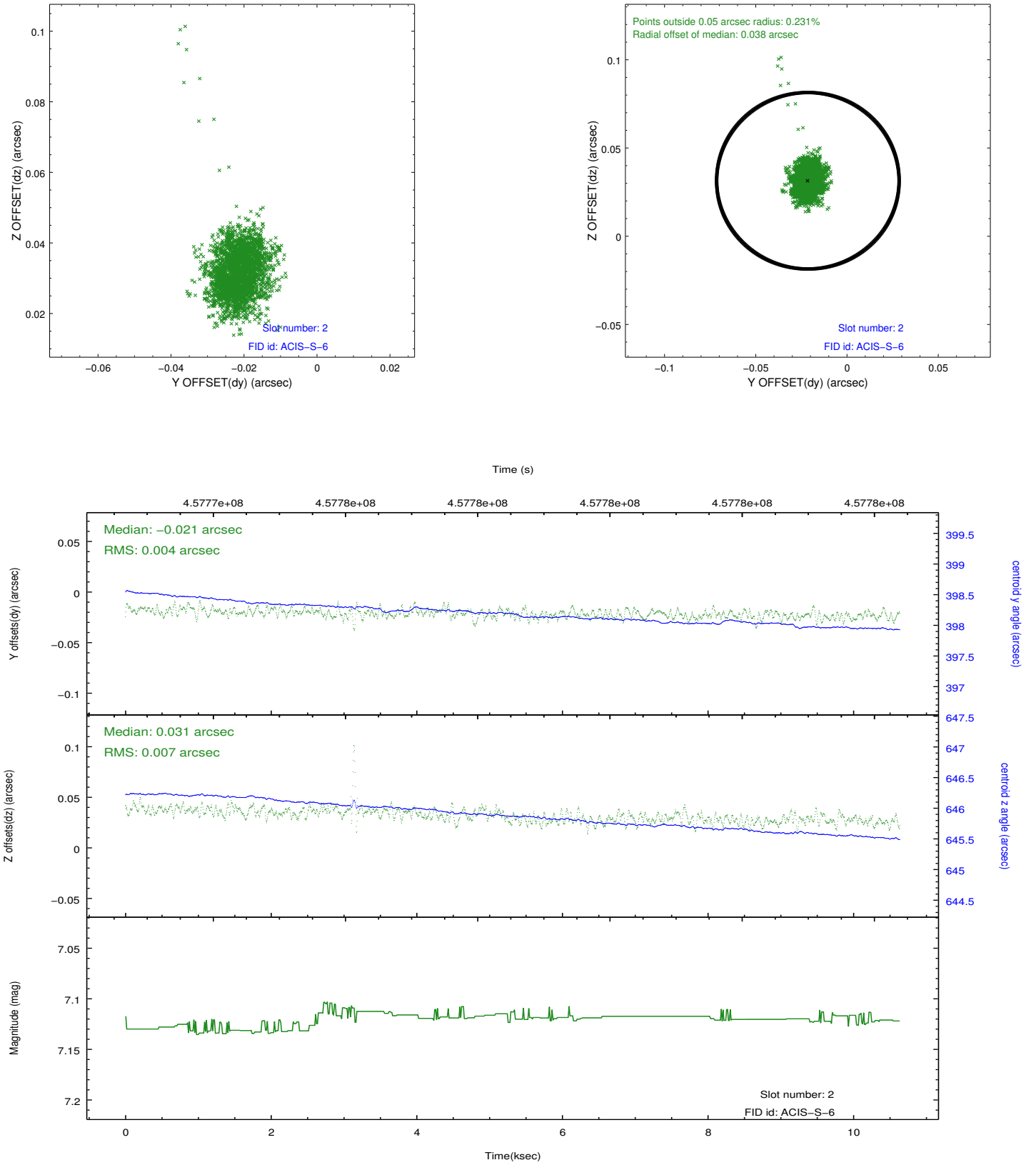
2.5.1 Slot 0



2.5.2 Slot 1



2.5.3 Slot 2

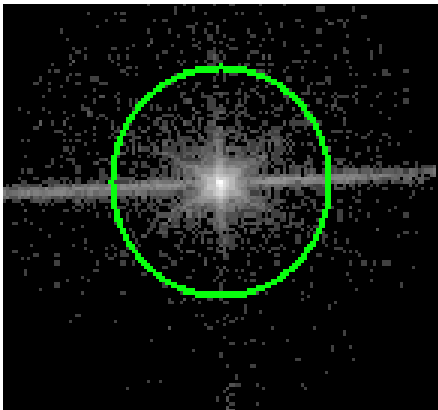


3 Gratings

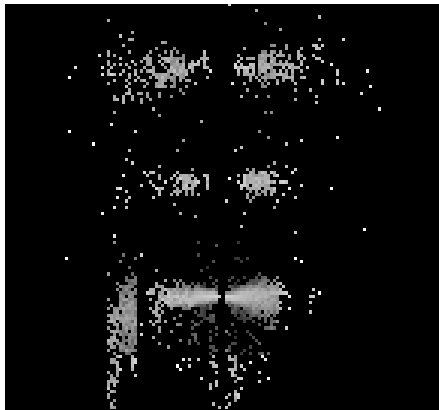
3.1 LETG Arm



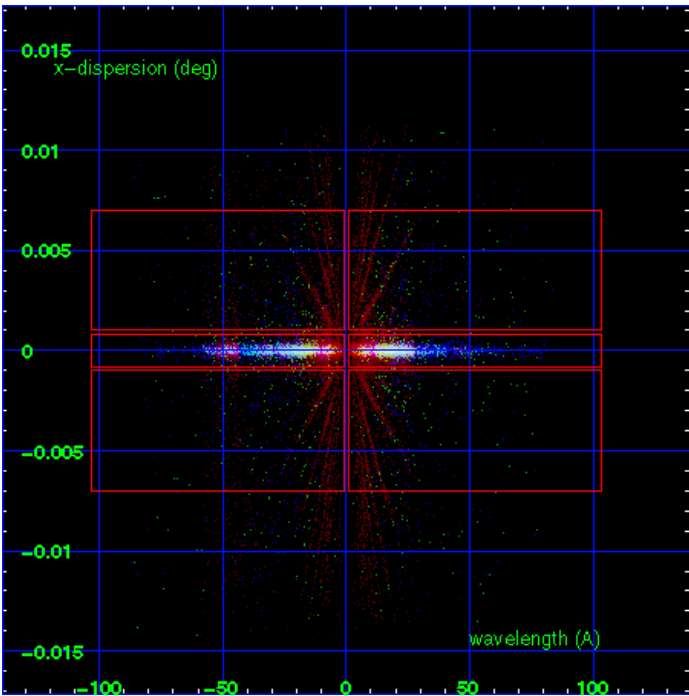
LETG Order Sort 123



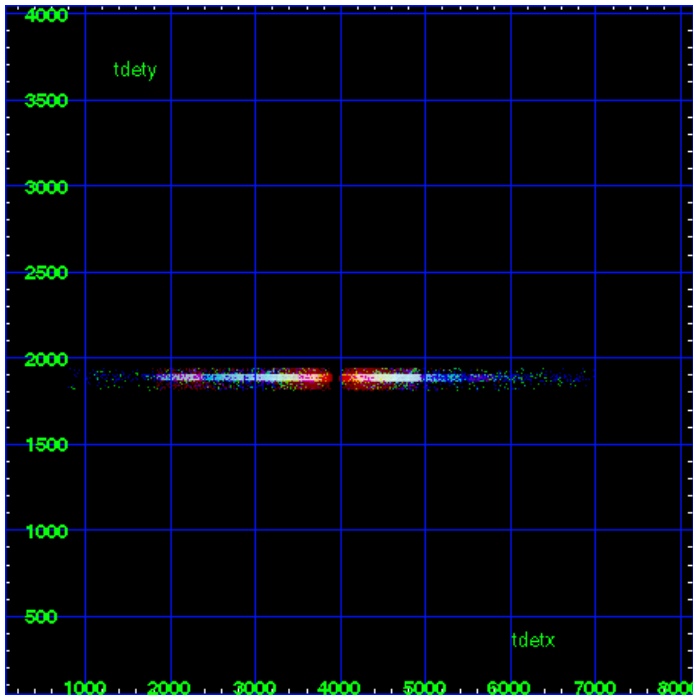
LETG Zero Order



LETG Order Sort ALL

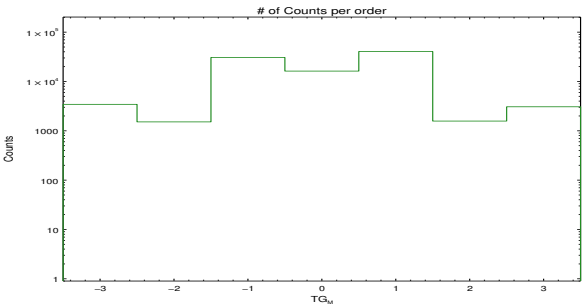


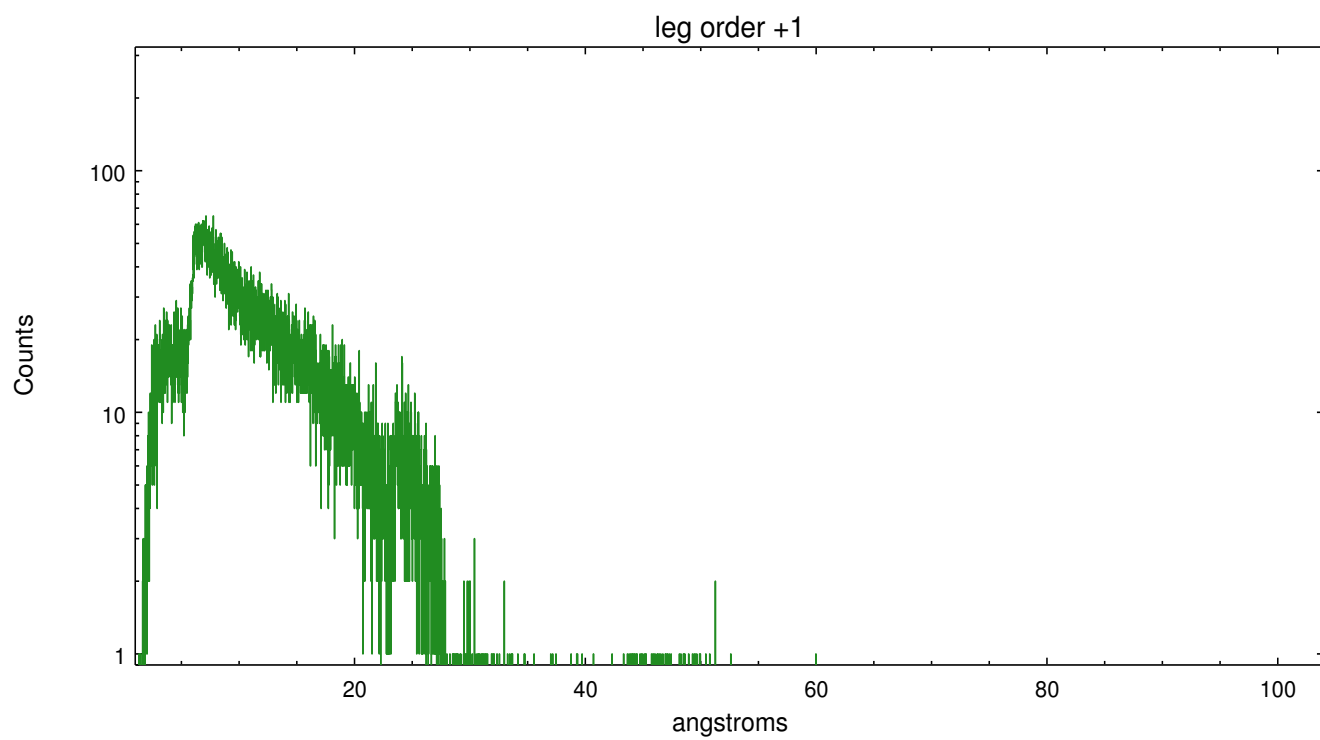
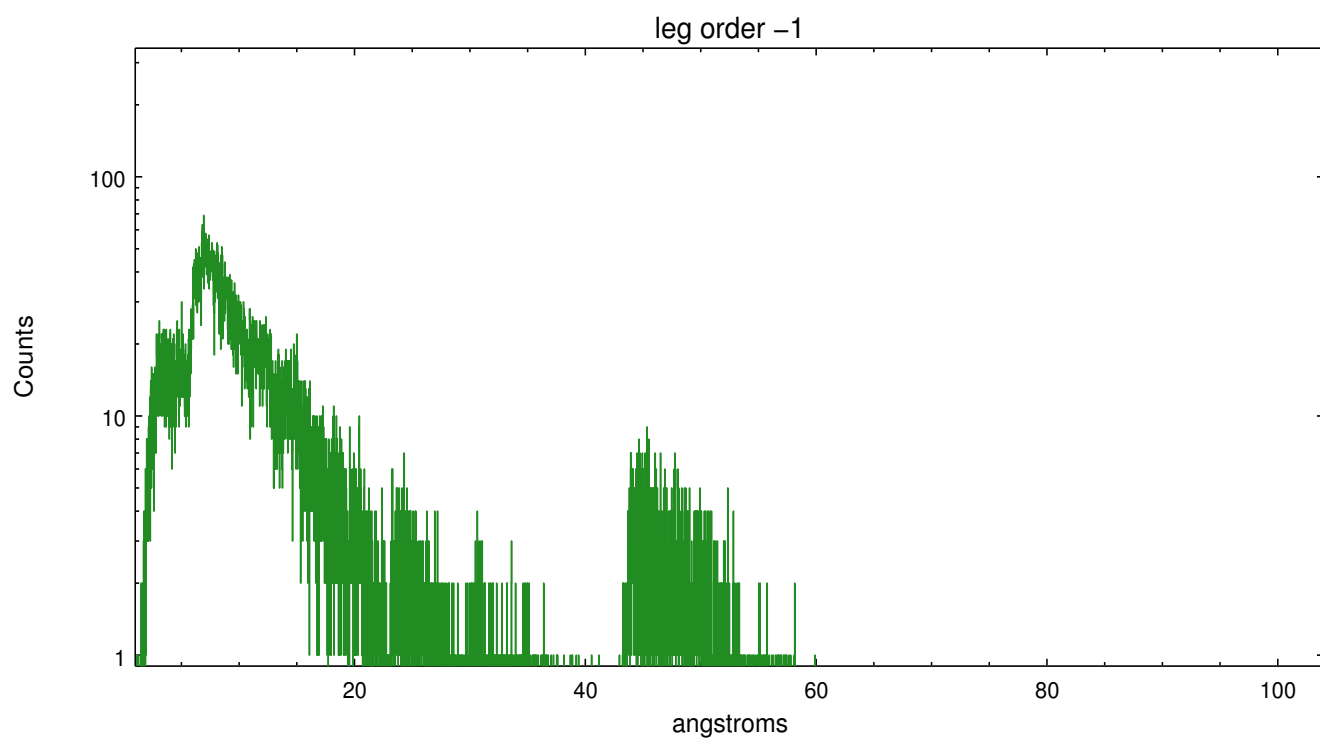
Spot Image LETG



Full Detector LETG

| | order -3 | order -2 | order -1 | order 0 | order 1 | order 2 | order 3 |
|--------|-------------|-------------|-------------|------------|------------|------------|------------|
| Events | 3438 | 1517 | 30691 | 16239 | 40500 | 1575 | 3072 |





A Summary

A.1 Status

| | |
|----------------------------|--------------------|
| V&V Scientist | David Huenemoerder |
| V&V Date (YYYY-MM-DD) | 2012.07.10 |
| V&V Edition | 1 |
| V&V Disposition and Status | OK |
| V&V Charge Time | 10.054799828708 |

A.2 Comments