

V&V Reference Report

L2 ASCDS Version : 8.4.4

Observation 9708 - L2 Version 2
Chandra X-Ray Center

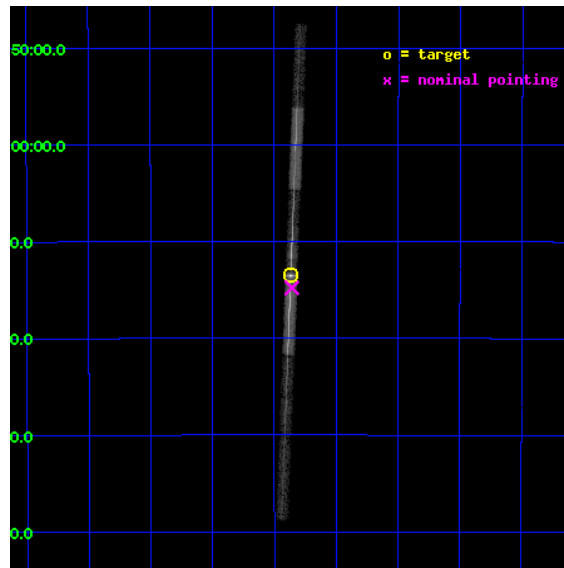
L2 Processing Date : May 17 2012

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1 Front

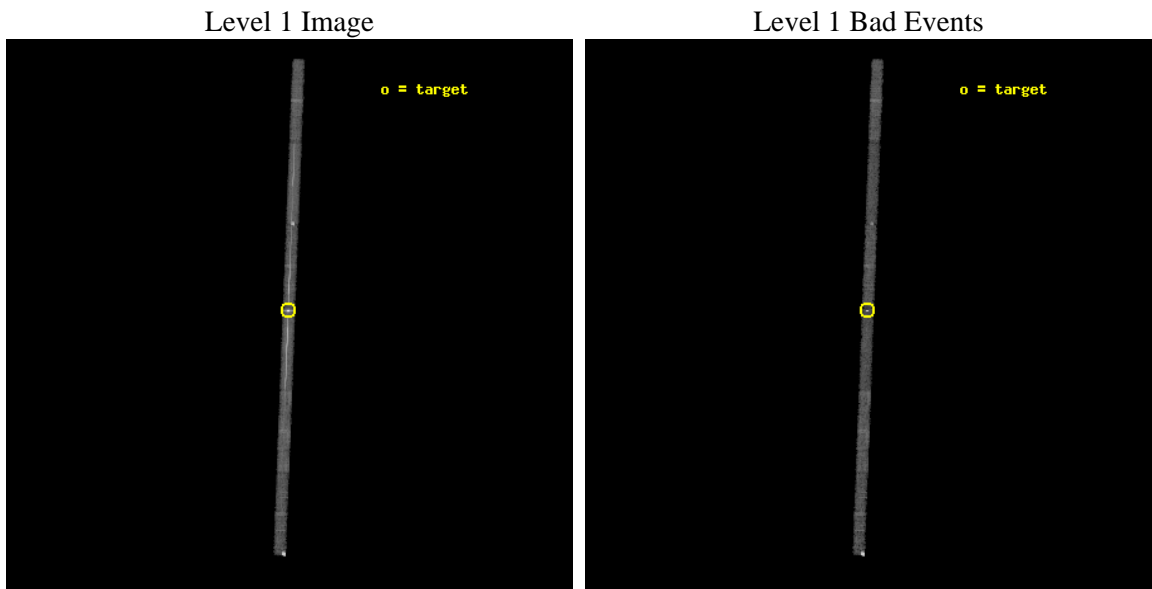
| | | |
|----------|---|---|
| seq_num | 790185 | Sequence number |
| obs_id | 9708 | Observation id |
| title | AO9 Calibration Observations of PKS2155-304 | Proposal title |
| observer | Dr. CXC Calibration | Principal investigator |
| object | PKS2155-304 | Source name |
| dtcycle | 0 | |
| cycle | P | events from which exps? Prim/Second/Both |
| ra_targ | 329.716667 | Observer's specified target RA [deg] |
| dec_targ | -30.225556 | Observer's specified target Dec [deg] |
| ra_nom | 329.71449877868 | Nominal RA [deg] |
| dec_nom | -30.246542095503 | Nominal Dec [deg] |
| roll_nom | 92.189655465978 | Nominal Roll [deg] |
| revision | 2 | Processing version of data |
| ontime | 9764.9998336434 | Sum of GTIs [s] |
| livetime | 9224.1982666933 | Livetime [s] |
| ontime4 | 9764.9998336434 | Sum of GTIs [s] |
| ontime5 | 9764.9998336434 | Sum of GTIs [s] |
| ontime6 | 9764.9723959565 | Sum of GTIs [s] |
| ontime7 | 9764.9998336434 | Sum of GTIs [s] |
| ontime8 | 9764.9313559532 | Sum of GTIs [s] |
| ontime9 | 9764.8903159499 | Sum of GTIs [s] |
| l2events | 77639 | Number of level 2 events |



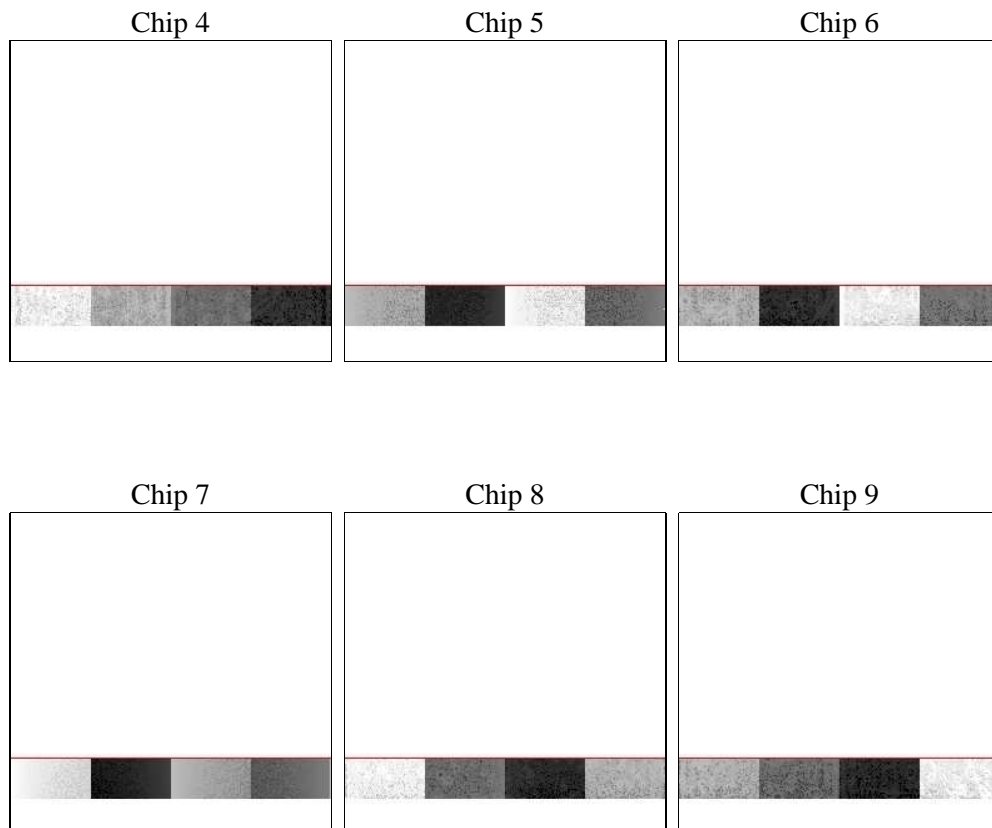
2 OBI

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 | 8.4.4 | Processing system revision | ontime | 9764.9998336434 | Sum of GTIs [s] |
| caldsver | 4.4.9 | | ontime4 | 9764.9998336434 | Sum of GTIs [s] |
| date | 2012-05-17T15:23:34 | Date and time of file creation | ontime5 | 9764.9998336434 | Sum of GTIs [s] |
| revision | 2 | Processing version of data | ontime6 | 9764.9723959565 | Sum of GTIs [s] |
| | | | ontime7 | 9764.9998336434 | Sum of GTIs [s] |
| | | | ontime8 | 9764.9313559532 | Sum of GTIs [s] |
| | | | ontime9 | 9764.8903159499 | Sum of GTIs [s] |
| | | | l1events | 181259 | Number of level 1 events |

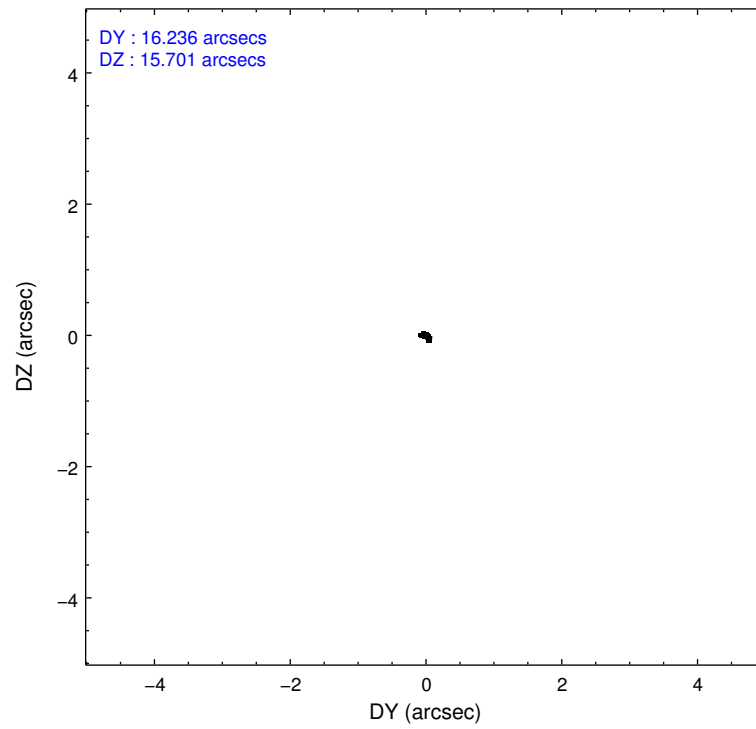
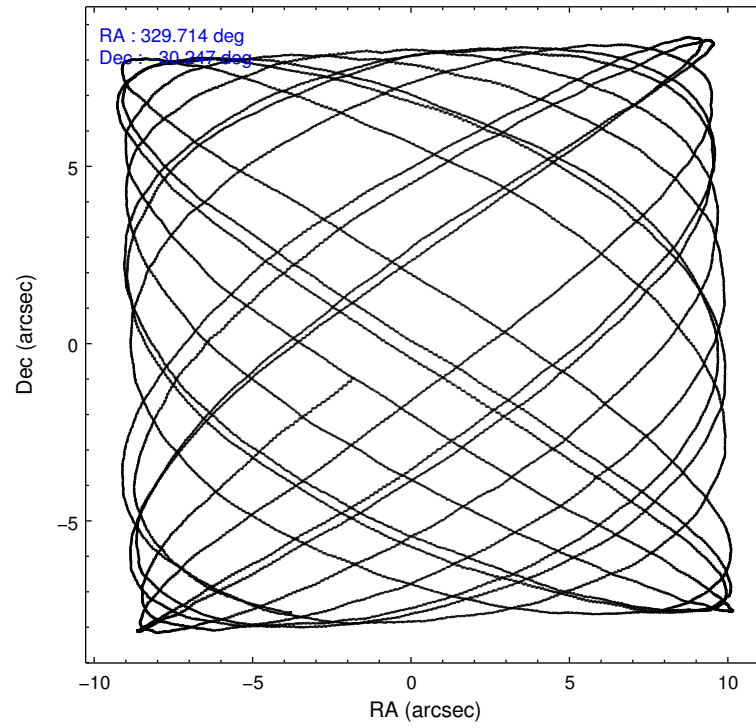
2.1.4 Events

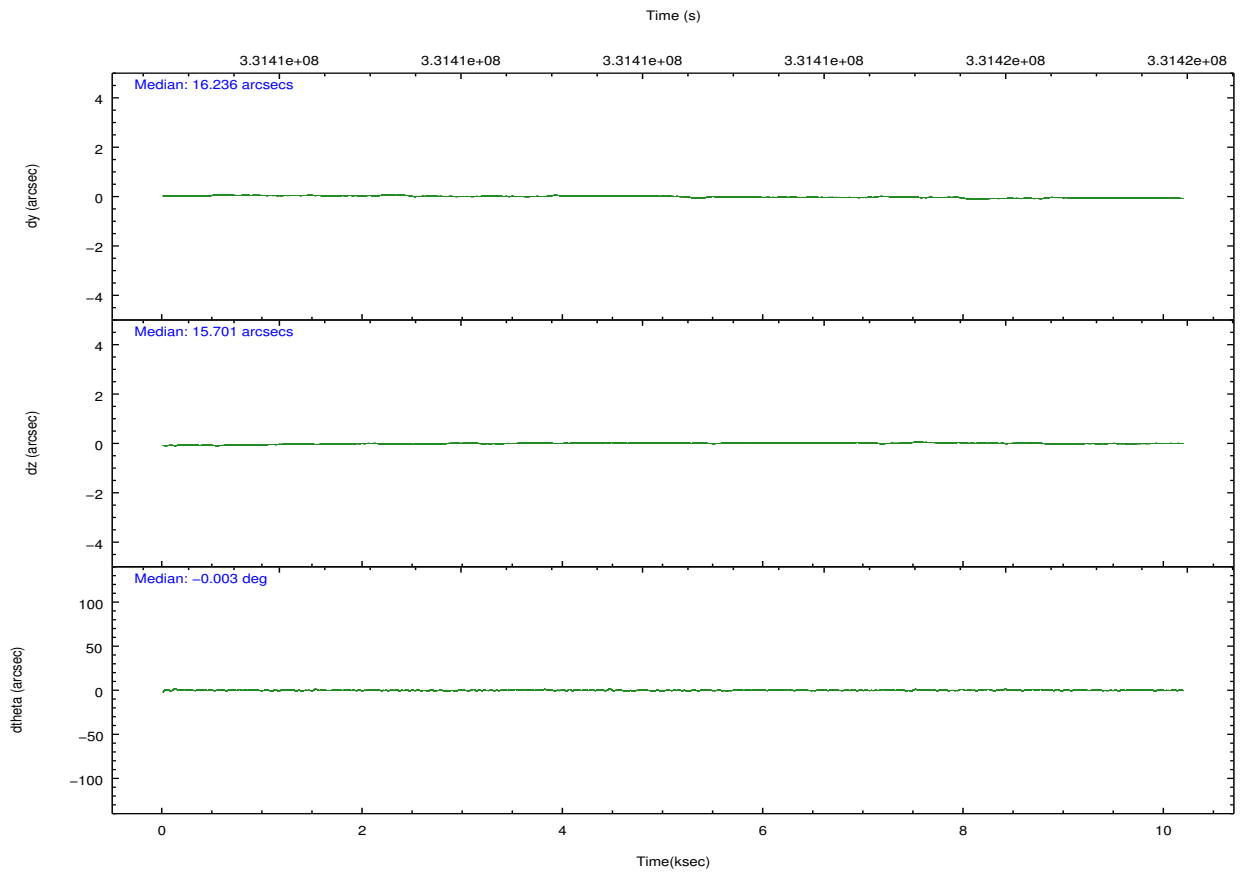
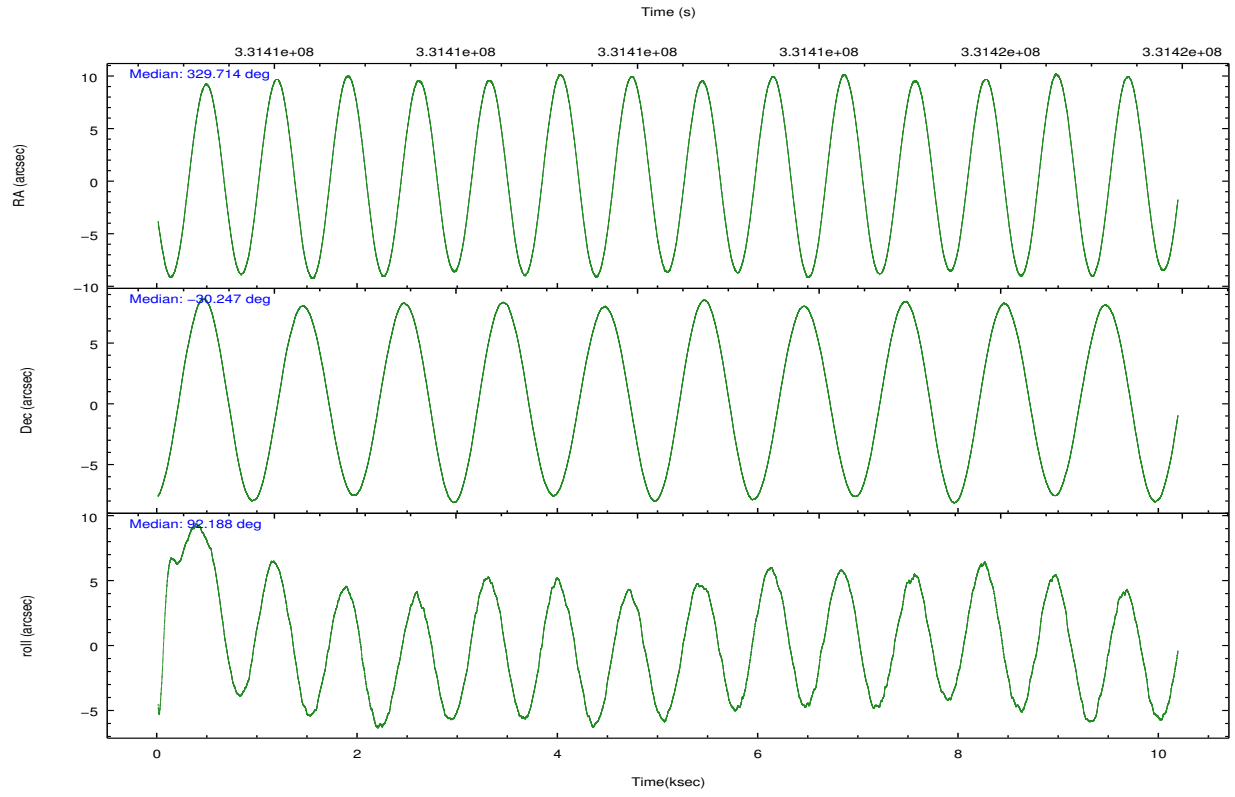
| | ccd 4 | ccd 5 | ccd 6 | ccd 7 | ccd 8 | ccd 9 | | ccd 4 | ccd 5 | ccd 6 | ccd 7 | ccd 8 | ccd 9 |
|-----------------|-------|-------|-------|-------|-------|-------|----------------|-------|-------|-------|-------|-------|-------|
| level 1 events | 17419 | 28061 | 28269 | 59023 | 21553 | 26934 | grade 0 events | 1089 | 6461 | 12006 | 11063 | 2264 | 1054 |
| rejected events | 15019 | 10226 | 12851 | 16214 | 15954 | 24701 | | 6% | 23% | 42% | 18% | 10% | 3% |
| rejected % | 86% | 36% | 45% | 27% | 74% | 91% | grade 1 events | 5 | 385 | 27 | 570 | 5 | 6 |
| | | | | | | | | 0% | 1% | 0% | 0% | 0% | 0% |
| | | | | | | | grade 2 events | 437 | 3478 | 1649 | 10346 | 962 | 330 |
| | | | | | | | | 2% | 12% | 5% | 17% | 4% | 1% |
| | | | | | | | grade 3 events | 270 | 1377 | 637 | 4720 | 529 | 265 |
| | | | | | | | | 1% | 4% | 2% | 7% | 2% | 0% |
| | | | | | | | grade 4 events | 287 | 1623 | 624 | 4499 | 520 | 257 |
| | | | | | | | | 1% | 5% | 2% | 7% | 2% | 0% |
| | | | | | | | grade 5 events | 528 | 1935 | 557 | 3777 | 744 | 13606 |
| | | | | | | | | 3% | 6% | 1% | 6% | 3% | 50% |
| | | | | | | | grade 6 events | 317 | 4897 | 504 | 12183 | 1325 | 327 |
| | | | | | | | | 1% | 17% | 1% | 20% | 6% | 1% |
| | | | | | | | grade 7 events | 14486 | 7905 | 12265 | 11865 | 15204 | 11089 |
| | | | | | | | | 83% | 28% | 43% | 20% | 70% | 41% |

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 | 329.731789 | 329.7144987786796 | CCD I2 on | N | N |
| [deg] Pointing Dec | -30.269453 | -30.24654209550283 | CCD I3 on | N | N |
| [deg] Pointing Roll | 92.041740 | 92.18965546597764 | 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) | 331407427.184000 | 331406922.58789 | CCD S5 on | Y | Y |
| Observation start date | 2008-07-02T17:36:02 | 2008-07-02T17:28:42 | Number of optional ACIS chips dropped | 0 | 0 |
| [s] Observation end time (MET) | 331417427.184000 | 331417651.26341 | On-chip summing requested | N | N |
| Observation end date | 2008-07-02T20:22:42 | 2008-07-02T20:27:31 | 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



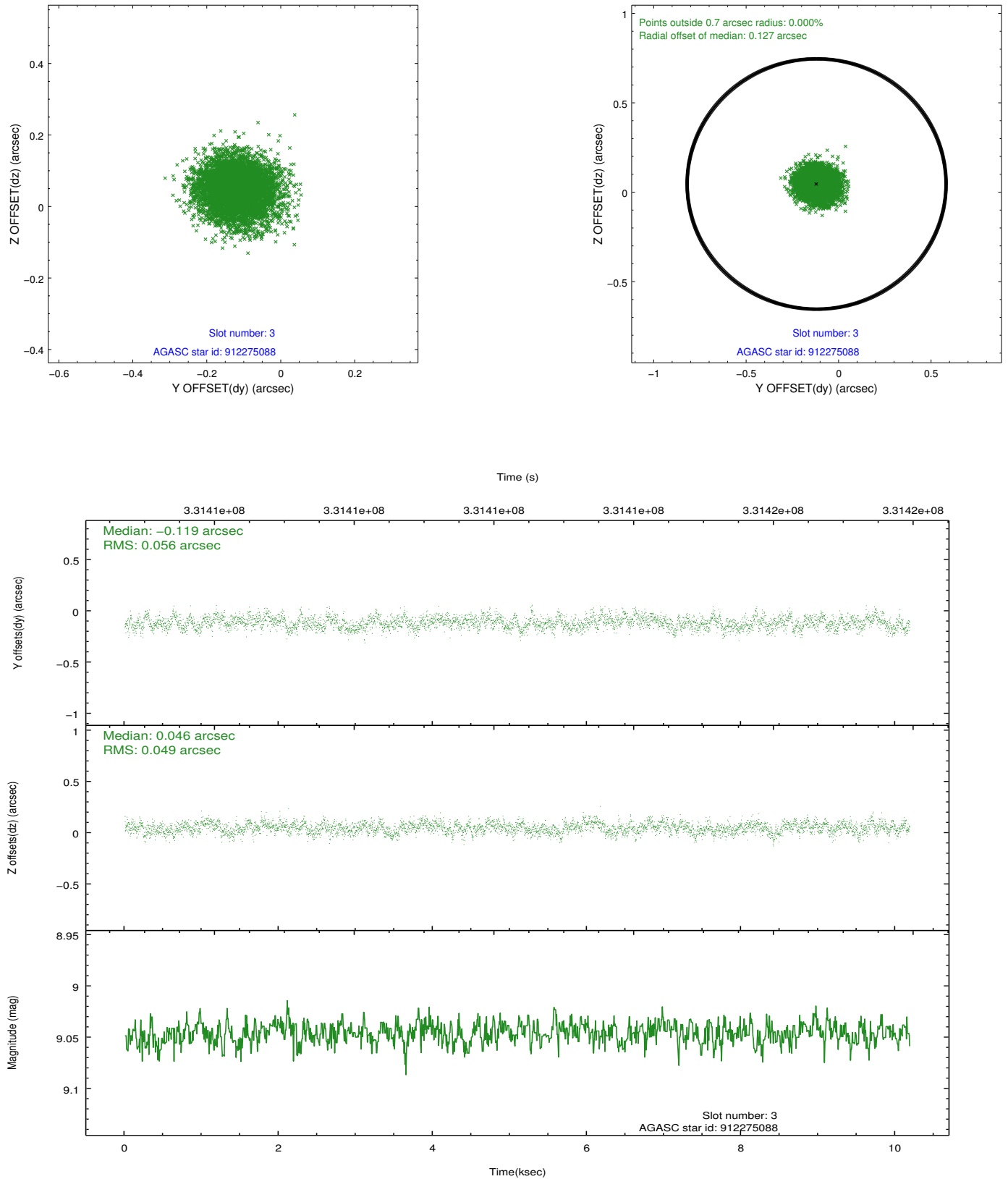


Slot Statistics

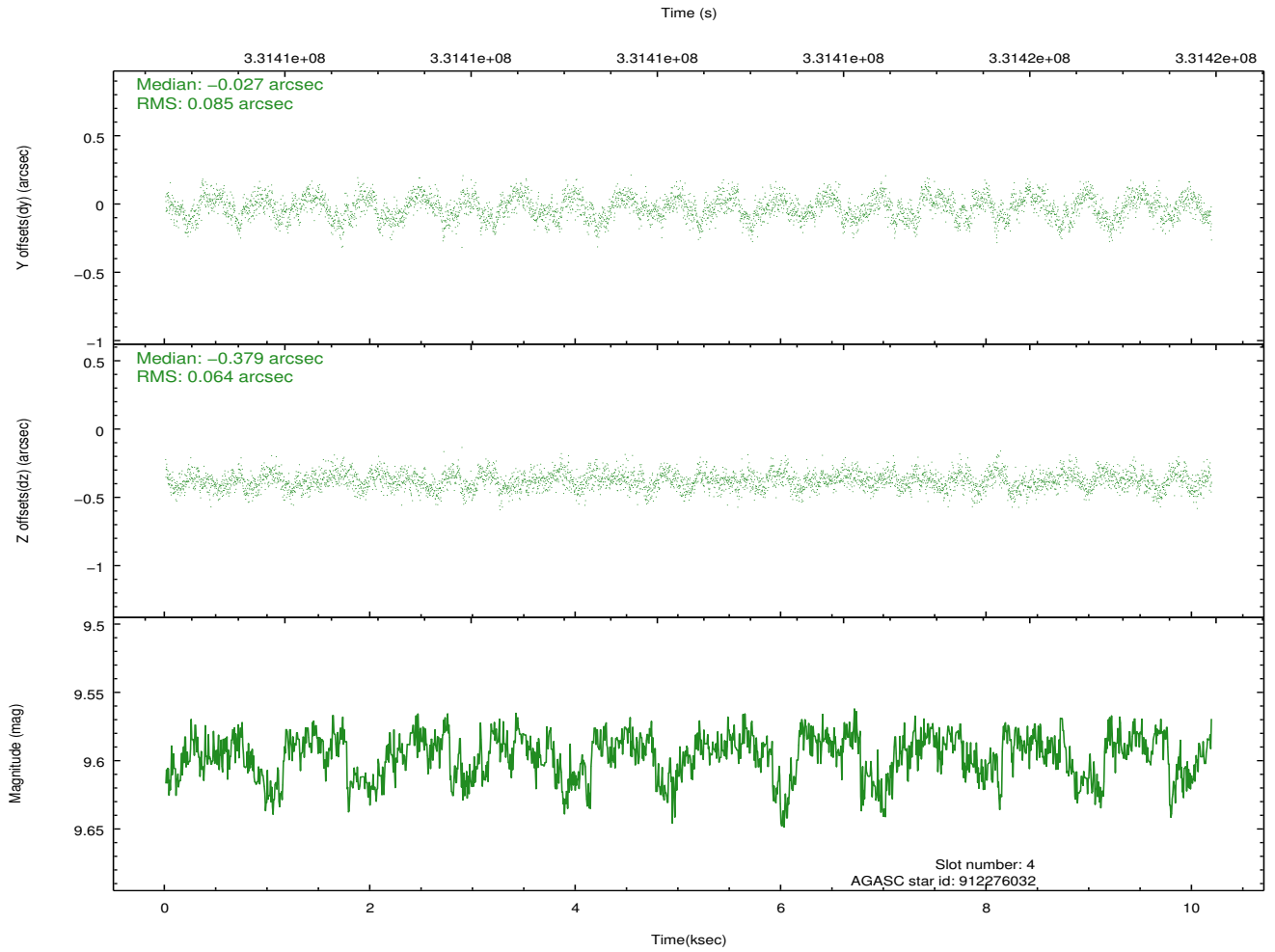
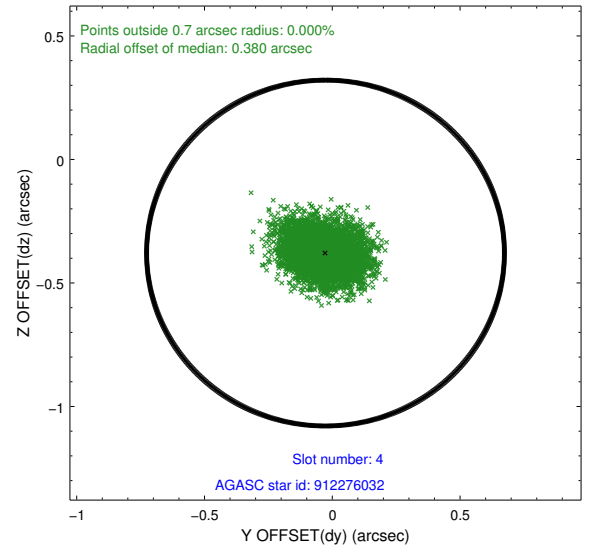
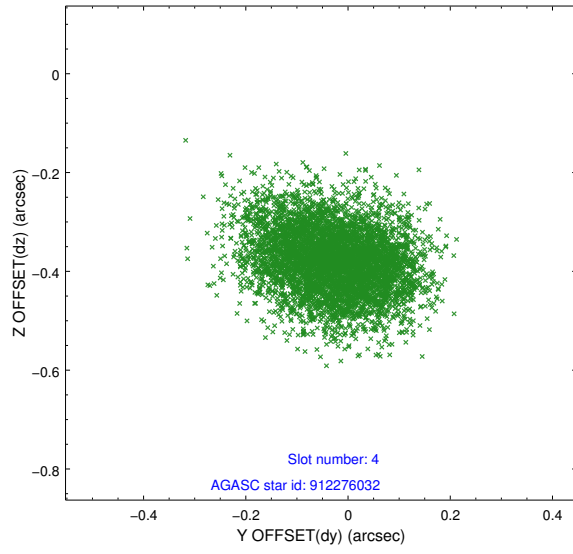
| slot | status | id | mag | n_pts | med_dy | med_dz | dr1 | dr2 | ra | dec | mean_y | mean_z |
|------|--------|-----------|------|-------|--------|--------|-------|-------|------------|------------|----------|----------|
| 0 | FID | ACIS-S-2 | 6.89 | 2484 | -0.142 | -0.099 | 0.005 | 0.010 | 0.000000 | 0.000000 | -768.84 | -1901.94 |
| 1 | FID | ACIS-S-4 | 6.97 | 2484 | 0.092 | 0.096 | 0.006 | 0.009 | 0.000000 | 0.000000 | 2144.47 | 6.06 |
| 2 | FID | ACIS-S-6 | 7.19 | 2484 | 0.023 | 0.010 | 0.006 | 0.011 | 0.000000 | 0.000000 | 394.03 | 644.00 |
| 3 | GUIDE | 912275088 | 9.05 | 4967 | -0.119 | 0.046 | 0.080 | 0.126 | 329.619228 | -29.738698 | 1921.84 | 283.61 |
| 4 | GUIDE | 912276032 | 9.60 | 4962 | -0.027 | -0.379 | 0.114 | 0.183 | 329.395967 | -29.803466 | 1712.76 | 988.37 |
| 5 | GUIDE | 981468128 | 9.34 | 4963 | 0.139 | 0.583 | 0.093 | 0.152 | 329.756350 | -30.158334 | 397.48 | -90.10 |
| 6 | GUIDE | 981471664 | 6.35 | 4968 | -0.048 | -0.256 | 0.068 | 0.110 | 328.981826 | -30.605916 | -1135.56 | 2364.91 |
| 7 | GUIDE | 981475568 | 8.17 | 4966 | 0.052 | 0.009 | 0.084 | 0.144 | 328.999408 | -30.923402 | -2279.44 | 2345.01 |

2.4 Star Slots

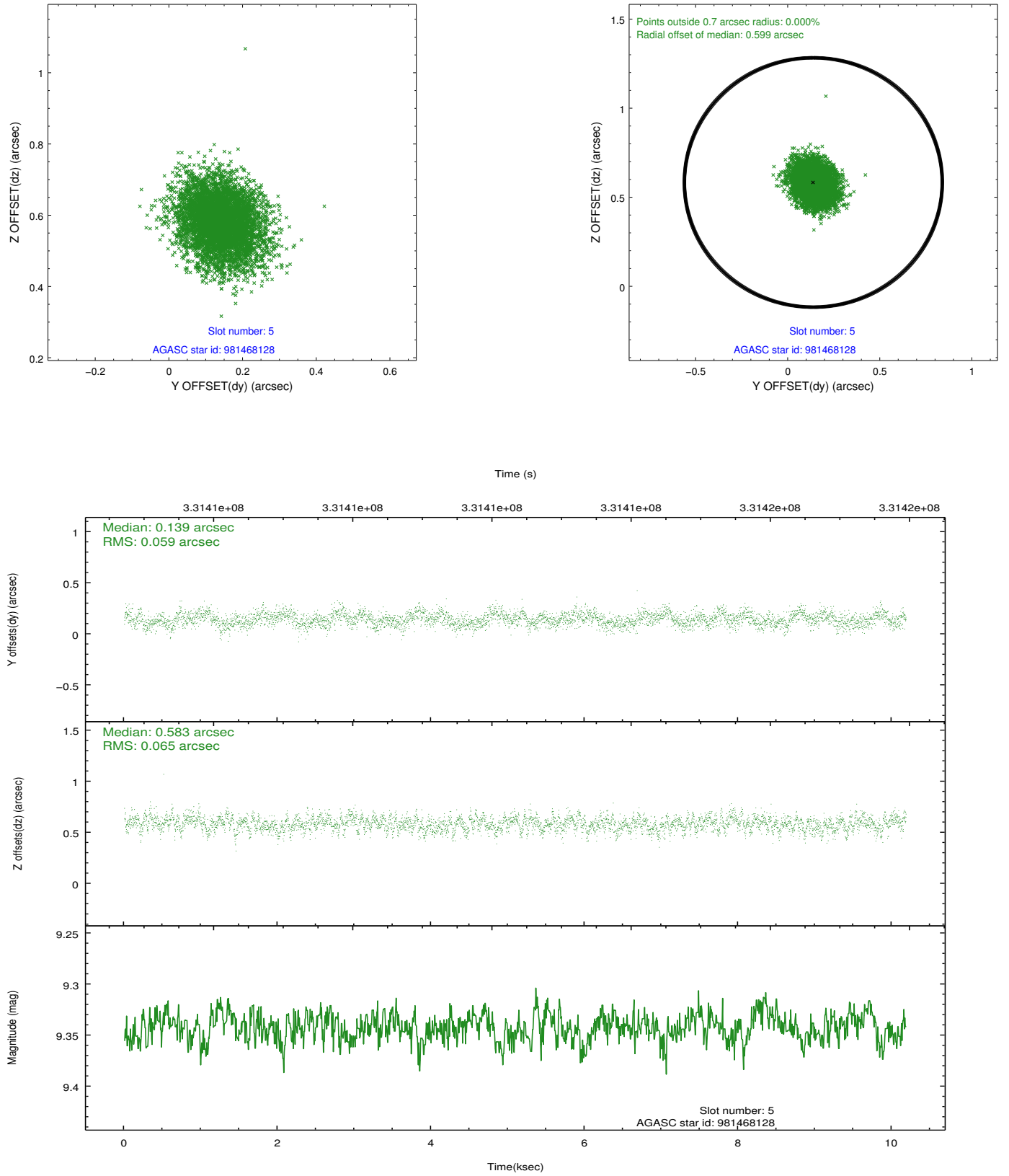
2.4.1 Slot 3



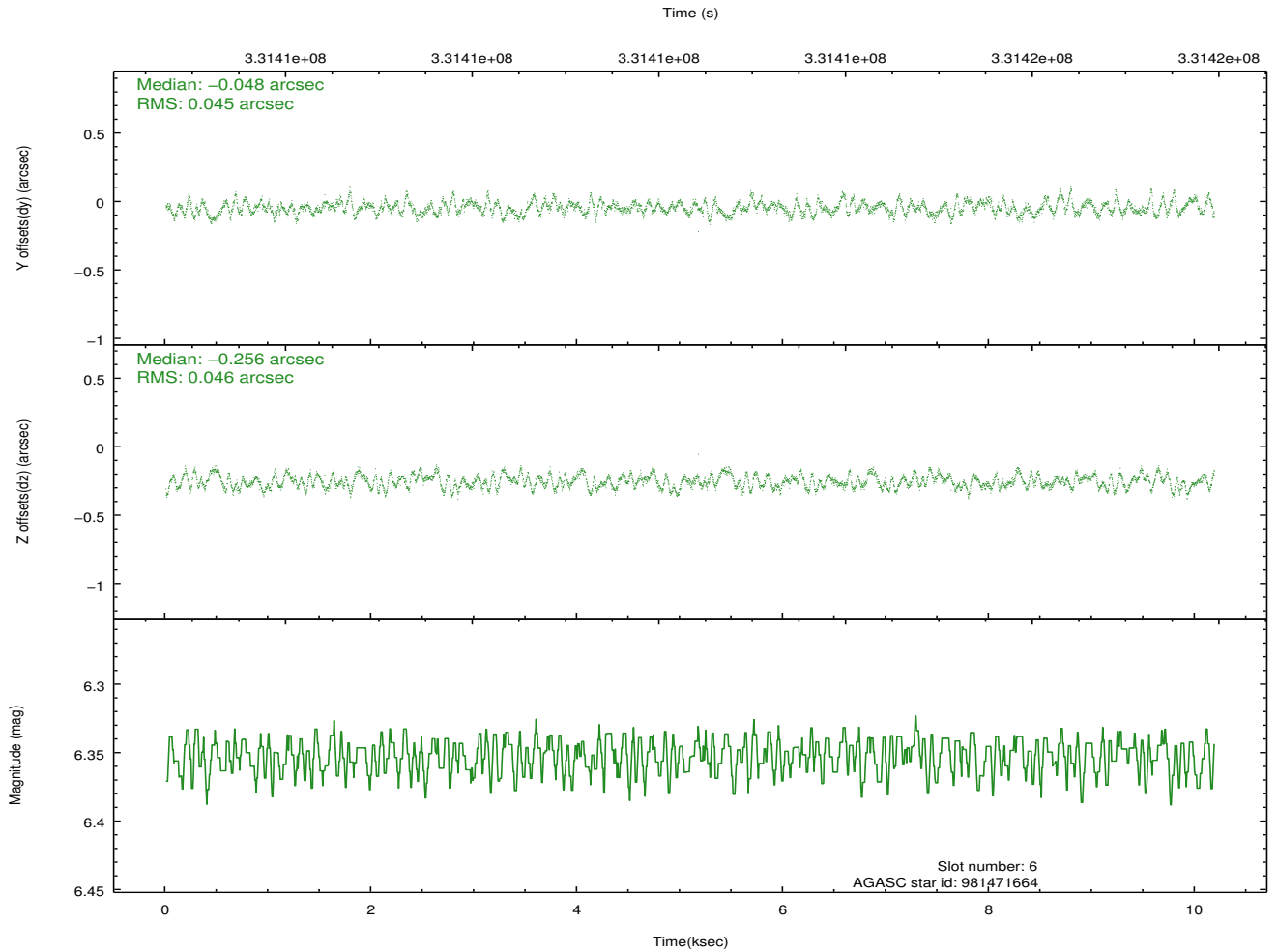
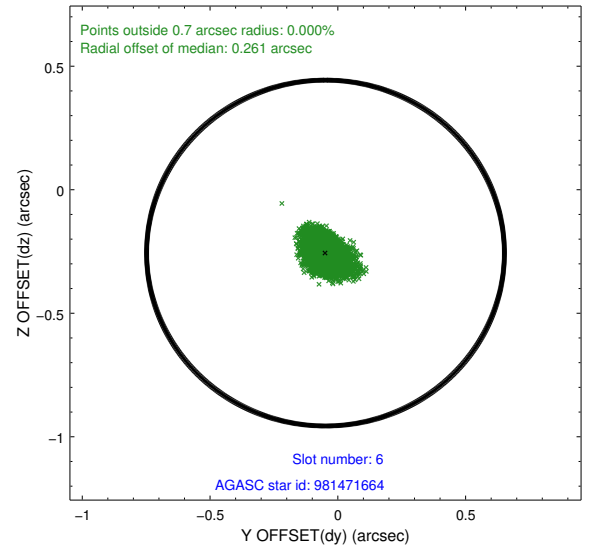
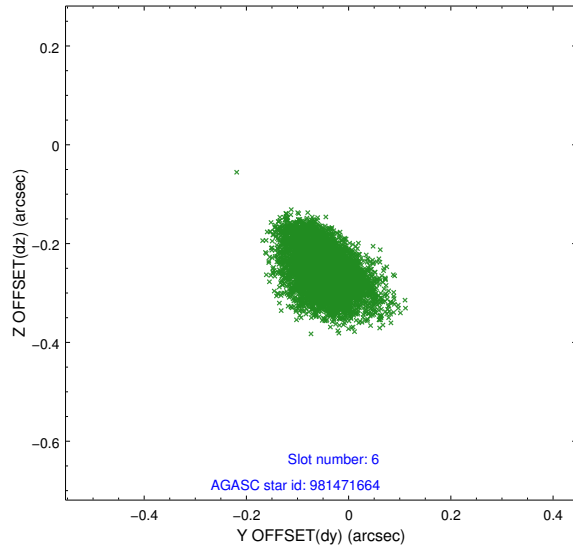
2.4.2 Slot 4



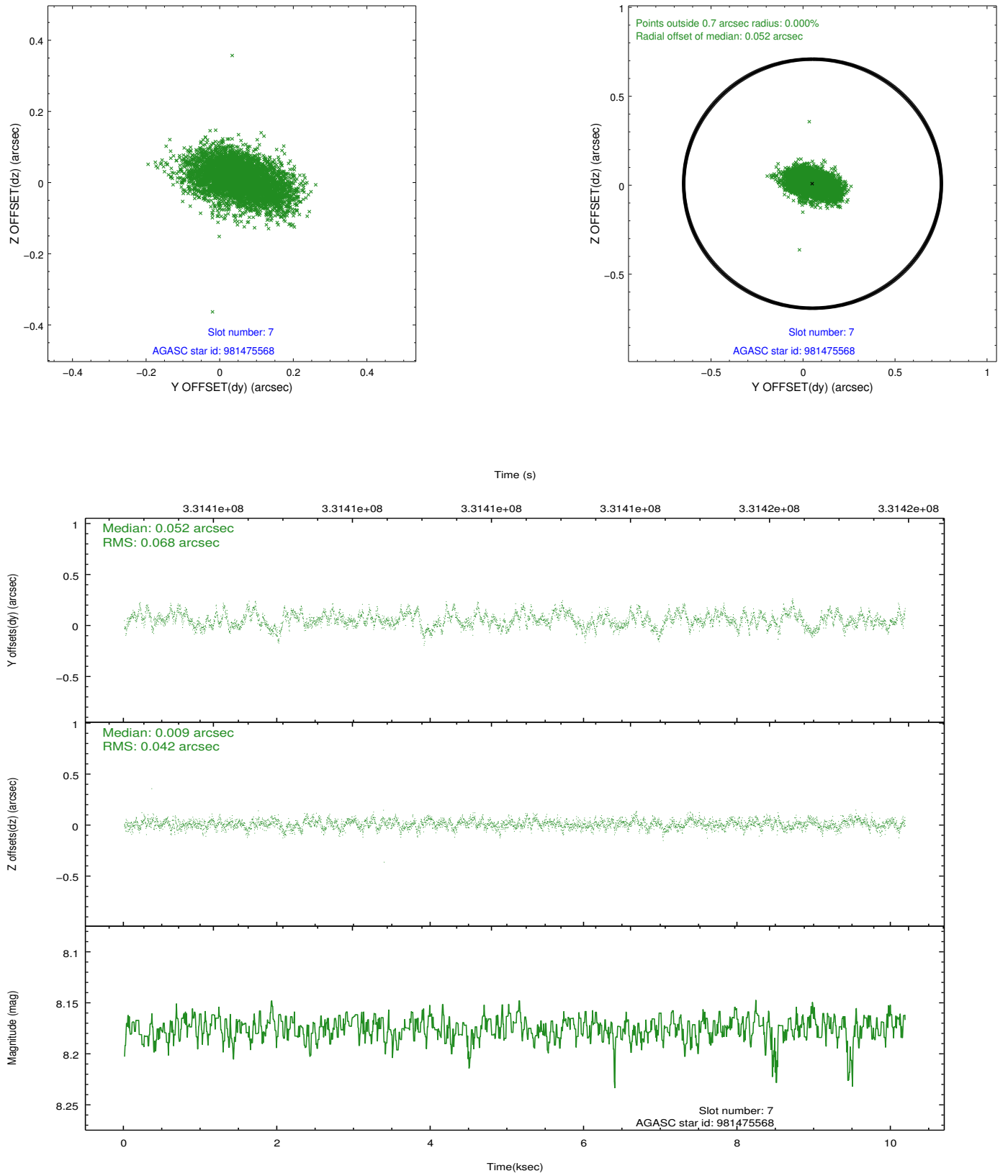
2.4.3 Slot 5



2.4.4 Slot 6

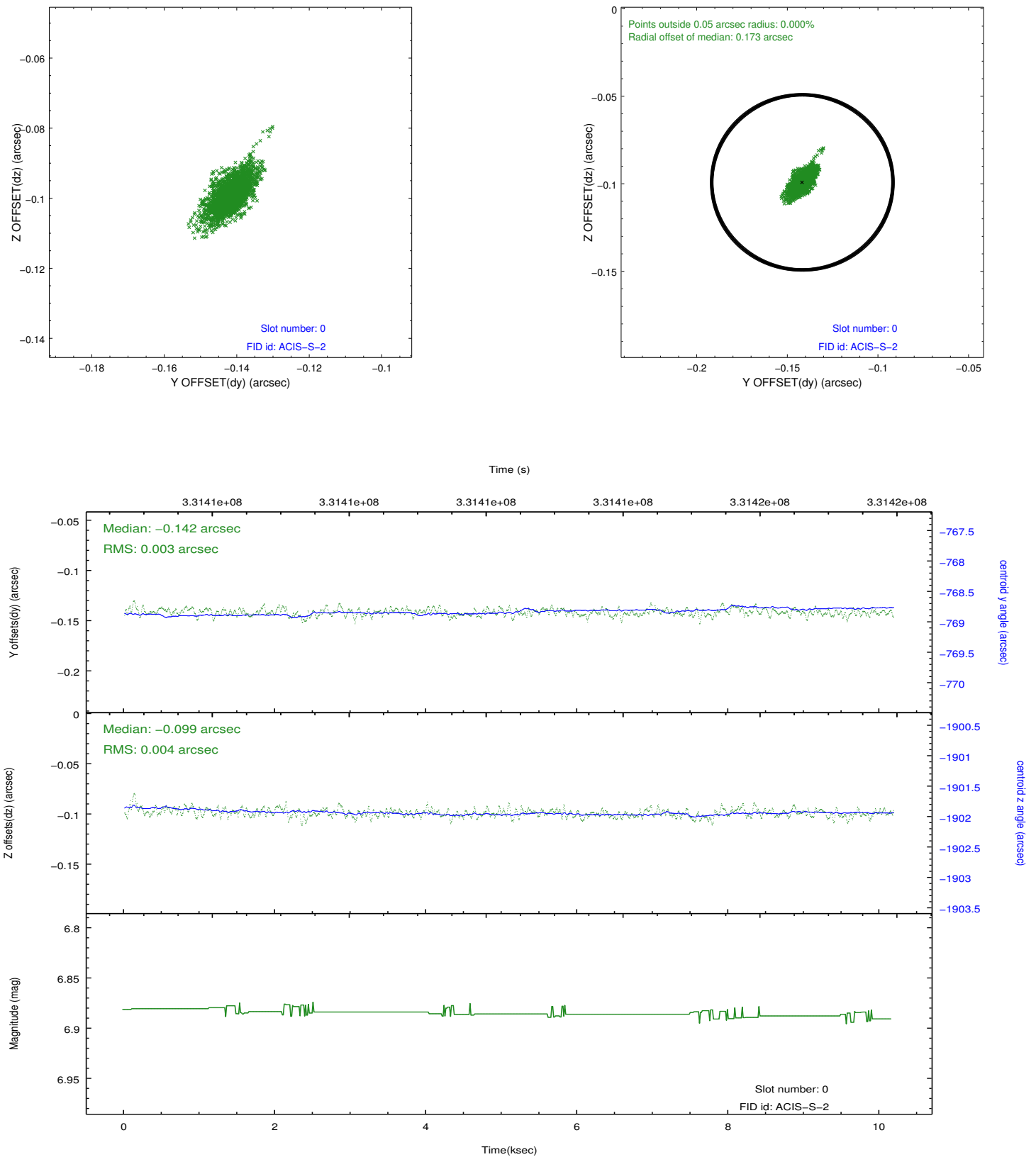


2.4.5 Slot 7

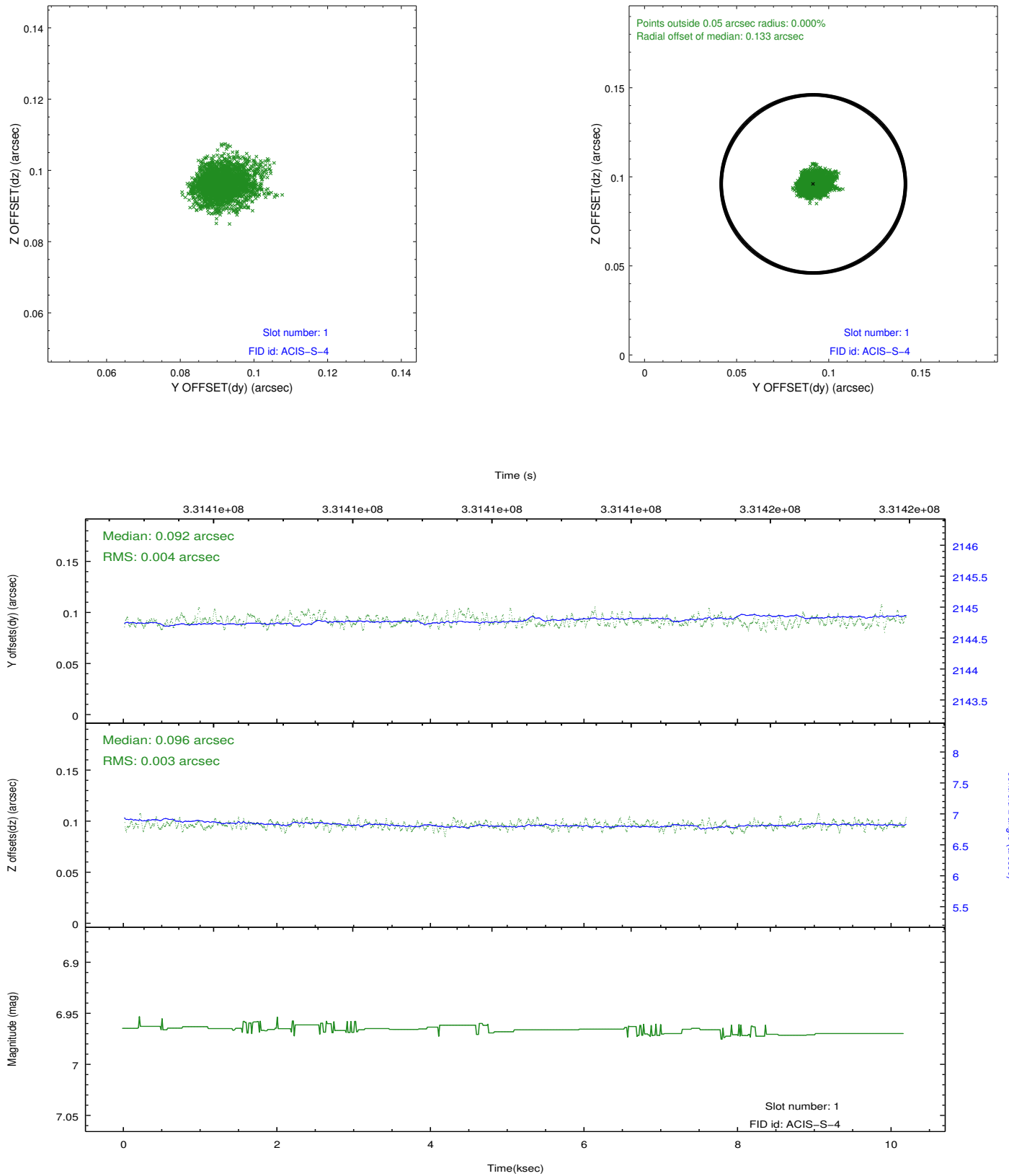


2.5 FID Slots

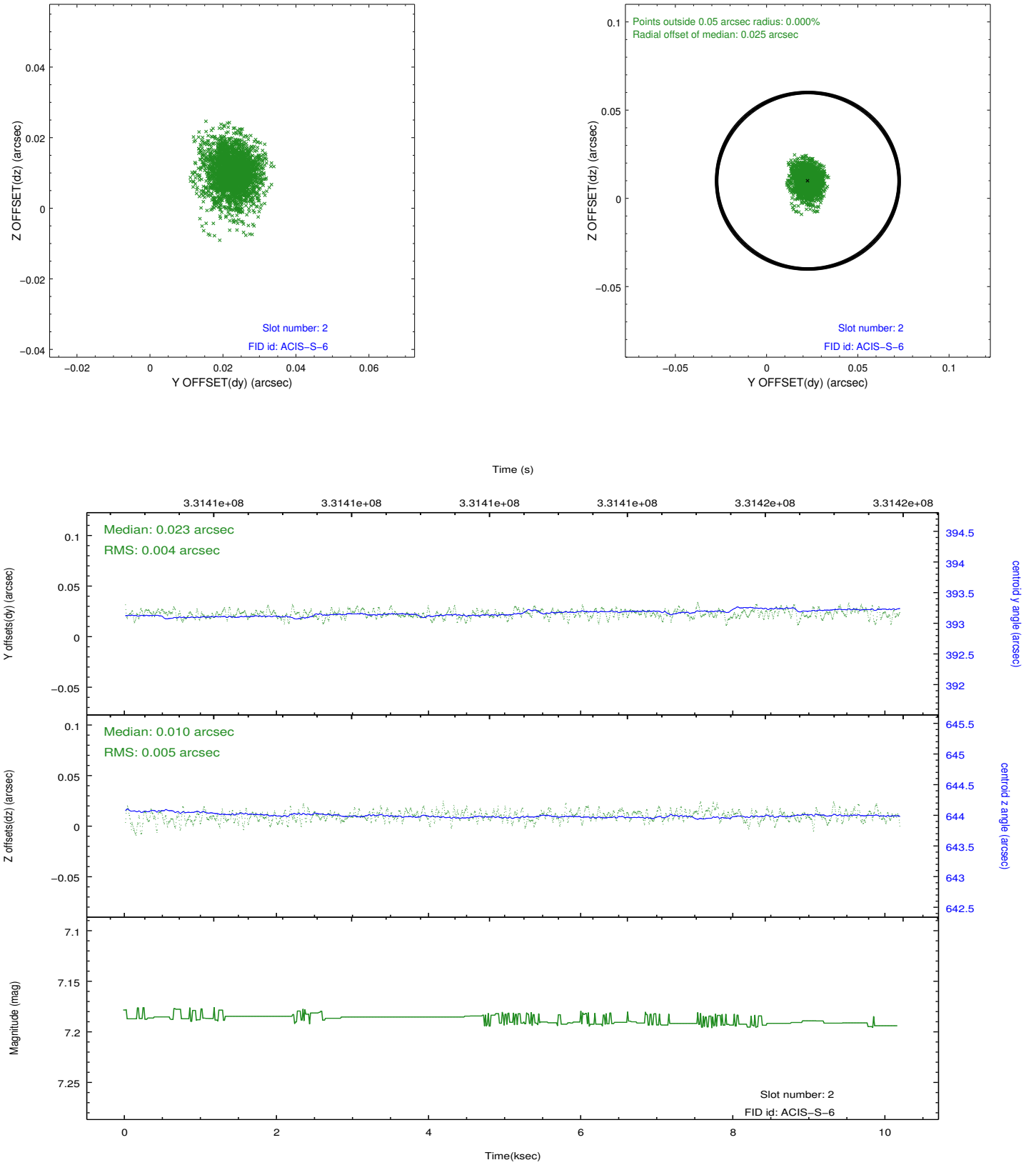
2.5.1 Slot 0



2.5.2 Slot 1

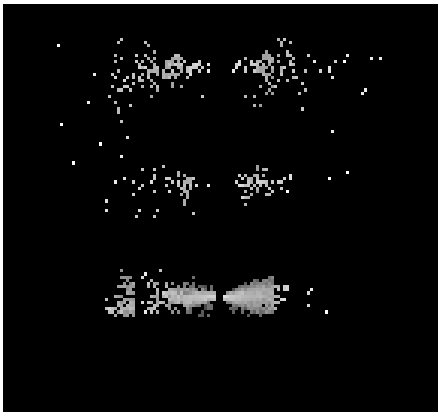


2.5.3 Slot 2

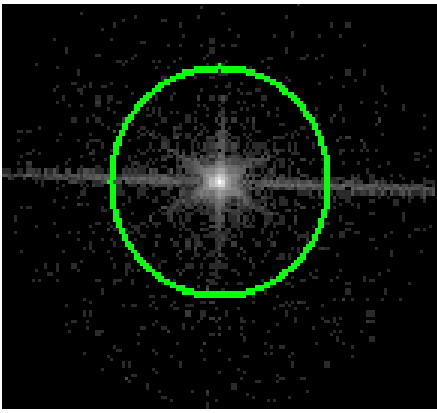


3 Gratings

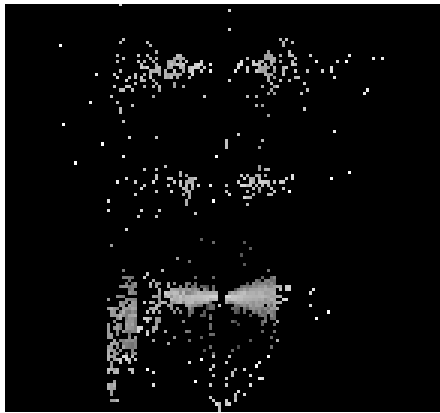
3.1 LETG Arm



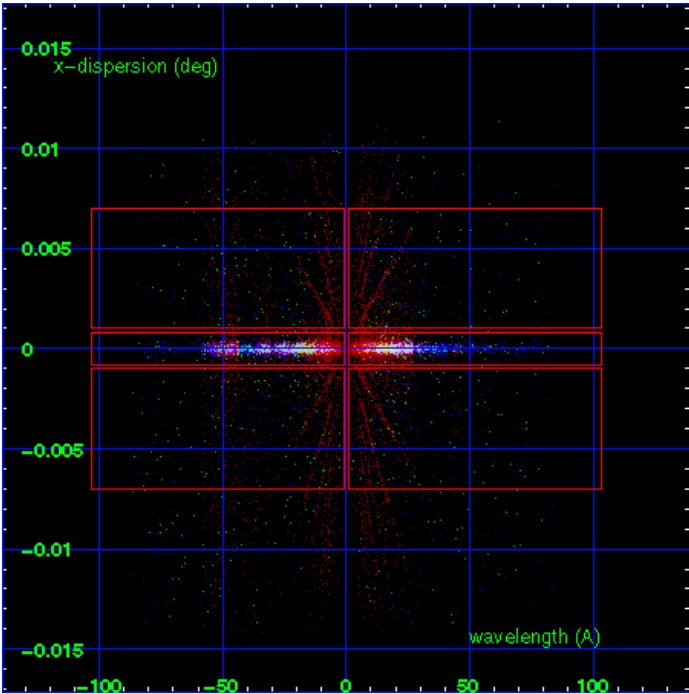
LETG Order Sort 123



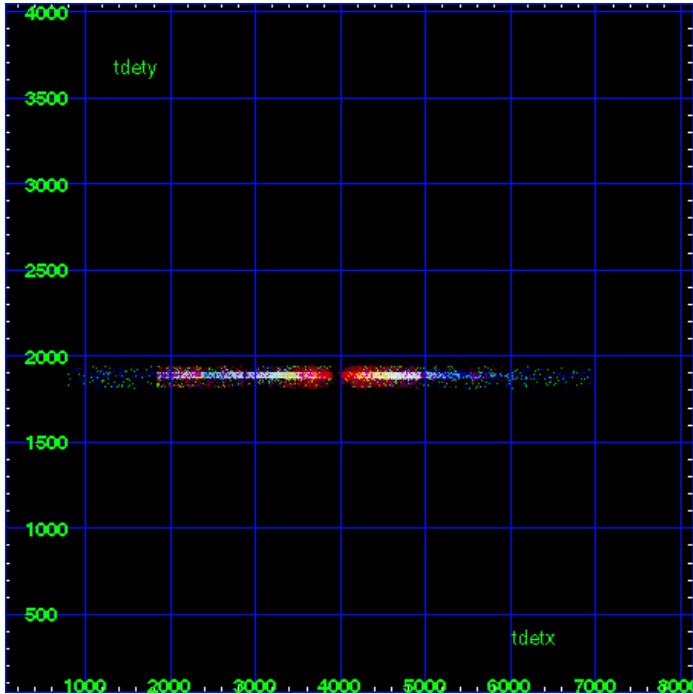
LETG Zero Order



LETG Order Sort ALL

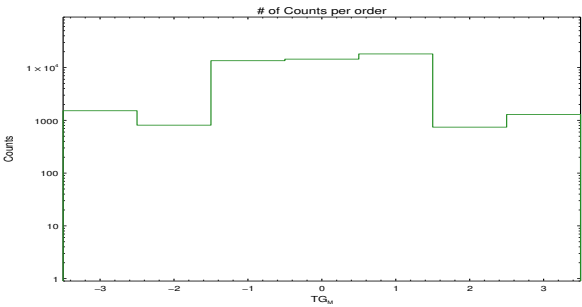


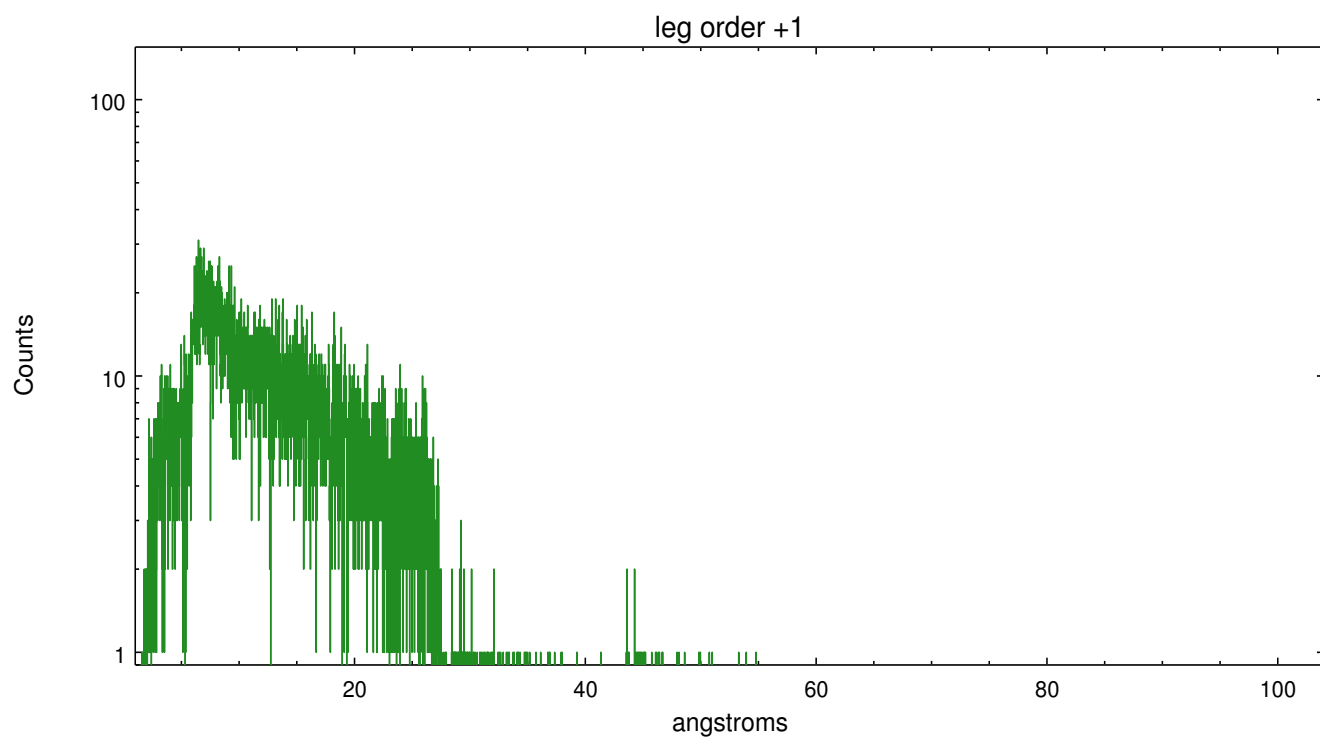
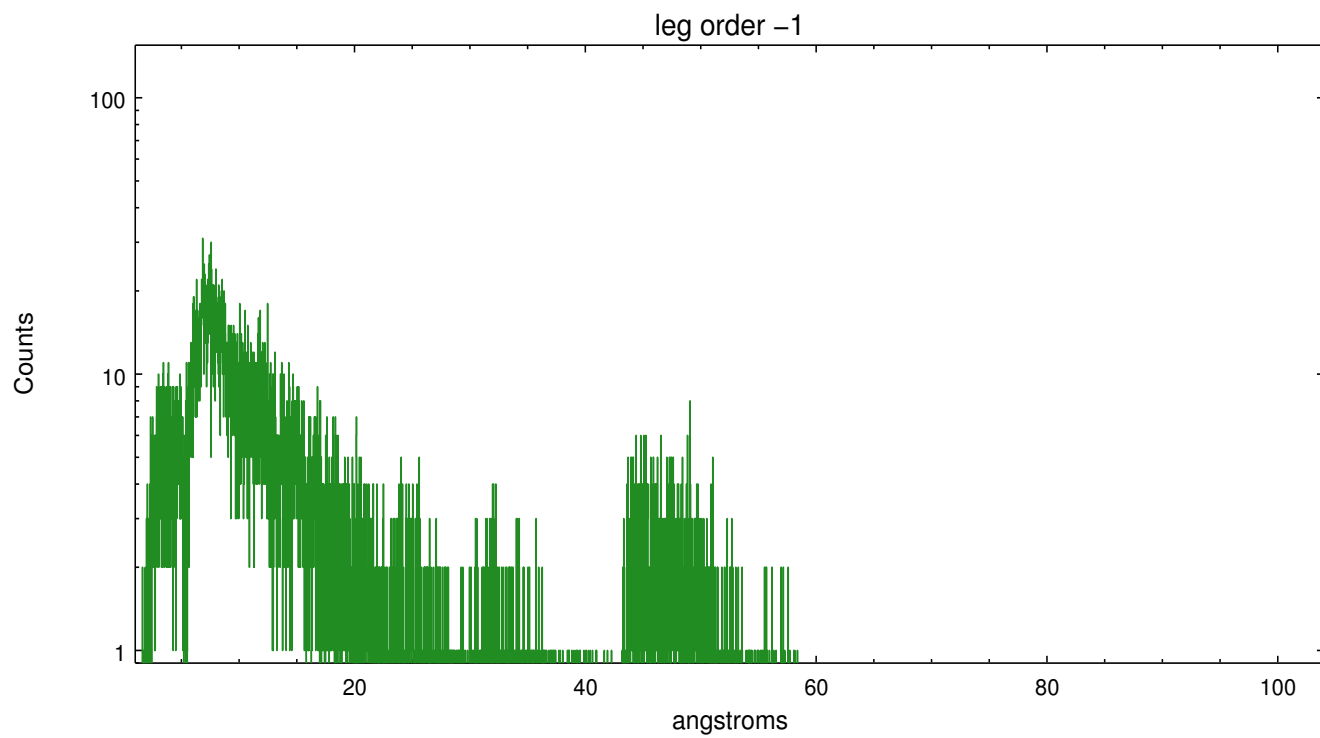
Spot Image LETG



Full Detector LETG

| | order -3 | order -2 | order -1 | order 0 | order 1 | order 2 | order 3 |
|--------|-------------|-------------|-------------|------------|------------|------------|------------|
| Events | 1521 | 810 | 13502 | 14456 | 18145 | 743 | 1289 |





A Summary

A.1 Status

| | |
|----------------------------|-------------|
| V&V Scientist | Joy Nichols |
| V&V Date (YYYY-MM-DD) | 2012.05.18 |
| V&V Edition | 1 |
| V&V Disposition and Status | OK |
| V&V Charge Time | 9.76499983 |

A.2 Comments

Gain and CTI correction are not well calibrated on CCD_ID 5 (ACIS-S1). Default order sorting can clip some regions, particularly longward of 30A (first order). User-specified custom processing parameters may be required in `tg_resolve_events` (`osipfile=None`, `osort_lo`, `osort_hi ~0.5`) though this can allow more zeroth order background at short wavelengths.

===

Zeroth order is piled up.