

V&V Reference Report

L2 ASCDS Version : 8.3.2.1

Observation 106 - L2 Version 4

Chandra X-Ray Center

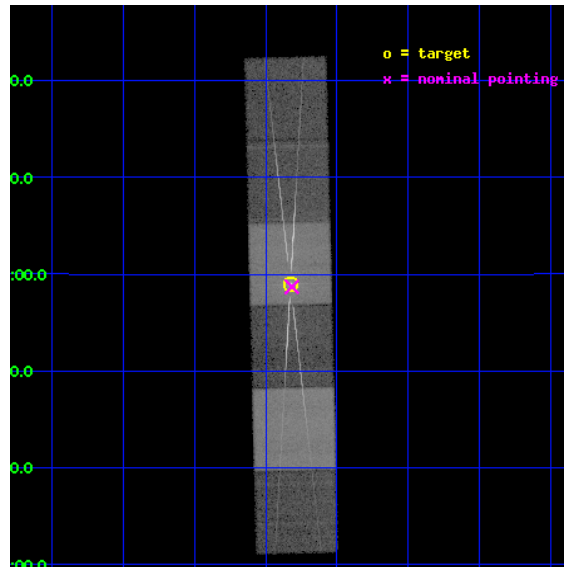
L2 Processing Date : Sep 28 2010

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1 Front

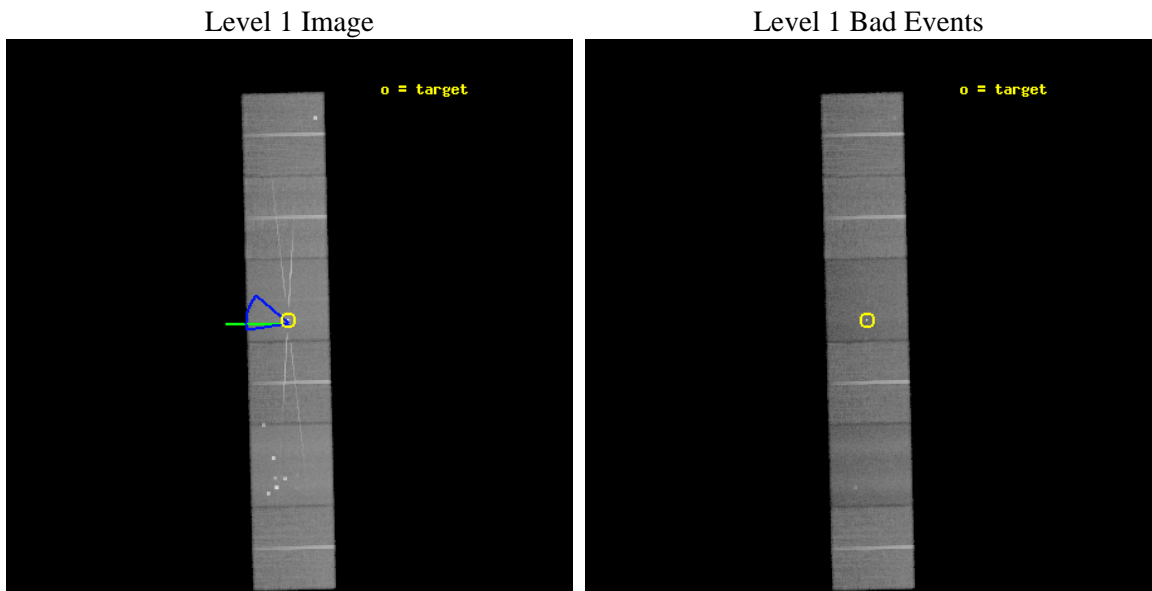
| | | |
|----------|-------------------------------------|---|
| seq_num | 400019 | Sequence number |
| obs_id | 106 | Observation id |
| title | HETG OBSERVATIONS OF X-RAY BINARIES | Proposal title |
| observer | Prof. Claude Canizares | Principal investigator |
| object | SS 433 | Source name |
| dtcycle | 0 | |
| cycle | P | events from which exps? Prim/Second/Both |
| ra_targ | 287.95625 | Observer's specified target RA |
| dec_targ | 4.982778 | Observer's specified target Dec |
| ra_nom | 287.95401295576 | Nominal RA |
| dec_nom | 4.9781774181846 | Nominal Dec |
| roll_nom | 268.57854953718 | Nominal Roll |
| revision | 4 | Processing version of data |
| ontime | 29033.400267184 | Sum of GTIs [s] |
| livetime | 28665.761871186 | Livetime [s] |
| ontime4 | 29033.318187192 | Sum of GTIs [s] |
| ontime5 | 29036.600187398 | Sum of GTIs [s] |
| ontime6 | 29036.4360274 | Sum of GTIs [s] |
| ontime7 | 29033.400267184 | Sum of GTIs [s] |
| ontime8 | 29033.27717711 | Sum of GTIs [s] |
| ontime9 | 29036.477067403 | Sum of GTIs [s] |
| l2events | 409180 | Number of level 2 events |



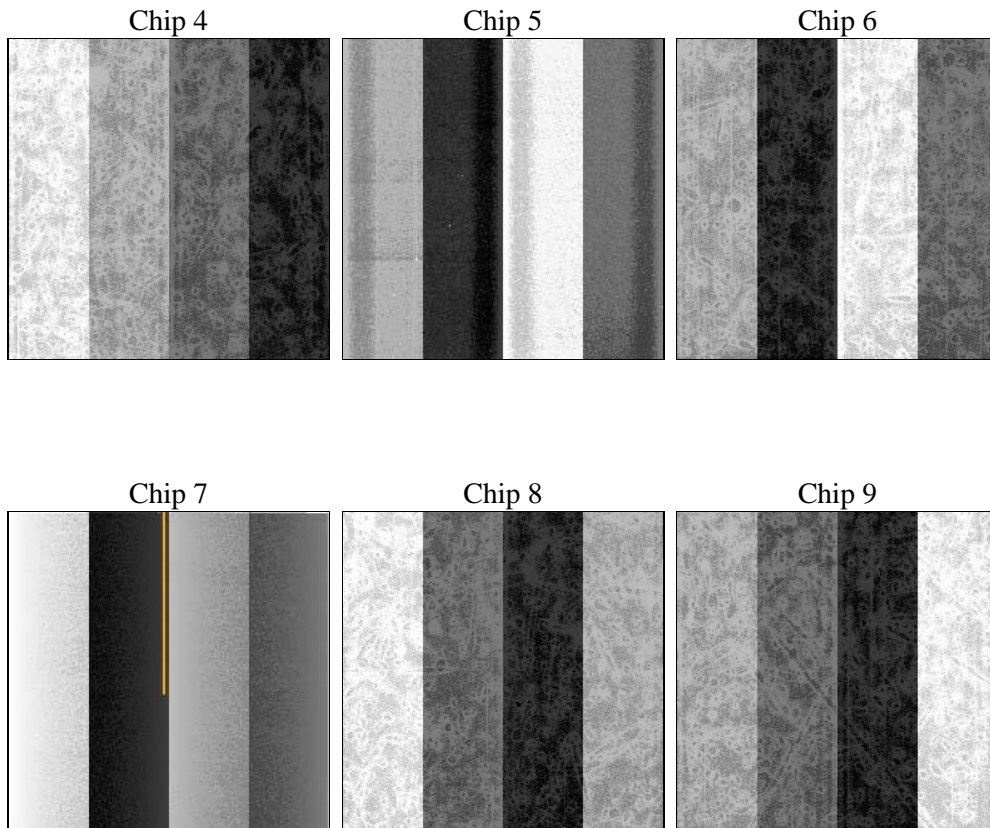
2 OBI

2.1 OBI

2.1.1 Images



2.1.2 Bias



2.1.3 Parameters

| | | | | | |
|----------|---------------------|--------------------------------|----------------|-----------------|-------------------------------------|
| obi_num | 0 | Obi number | sched_exp_time | 30000.000000 | Scheduled observation exposure time |
| ascdsver | 8.3.2.1 | ASCDS version number | ontime | 29033.400267184 | Sum of GTIs [s] |
| caldsver | 4.3.1 | | ontime4 | 29033.318187192 | Sum of GTIs [s] |
| date | 2010-09-28T09:56:28 | Date and time of file creation | ontime5 | 29036.600187398 | Sum of GTIs [s] |
| revision | 3 | Processing version of data | ontime6 | 29036.4360274 | Sum of GTIs [s] |
| | | | ontime7 | 29033.400267184 | Sum of GTIs [s] |
| | | | ontime8 | 29033.27717711 | Sum of GTIs [s] |
| | | | ontime9 | 29036.477067403 | Sum of GTIs [s] |
| | | | l1events | 1978620 | Number of level 1 events |

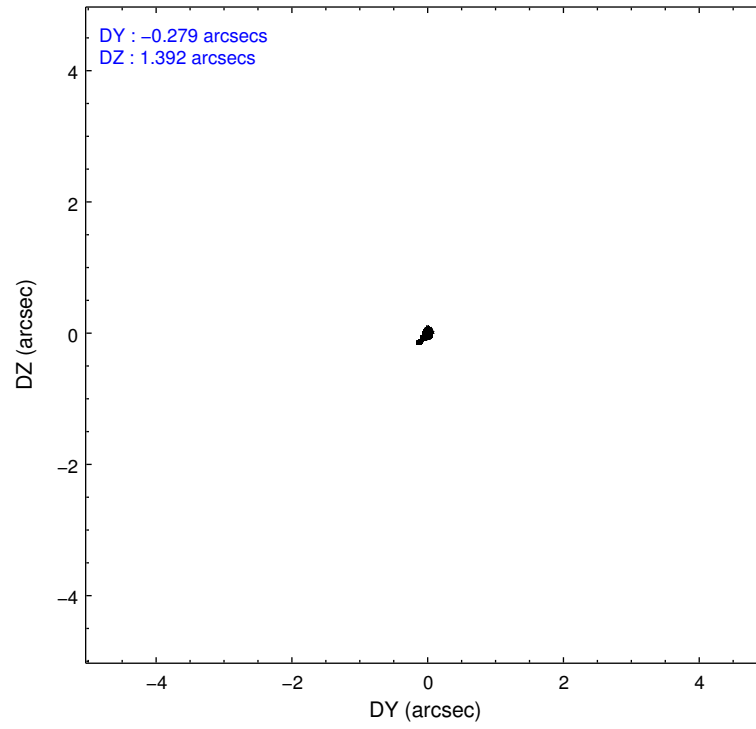
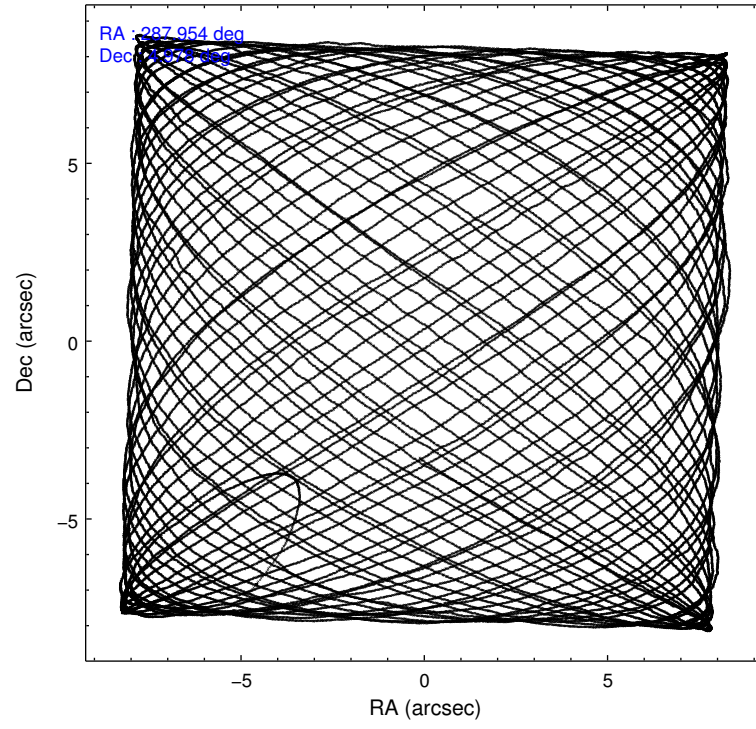
2.1.4 Events

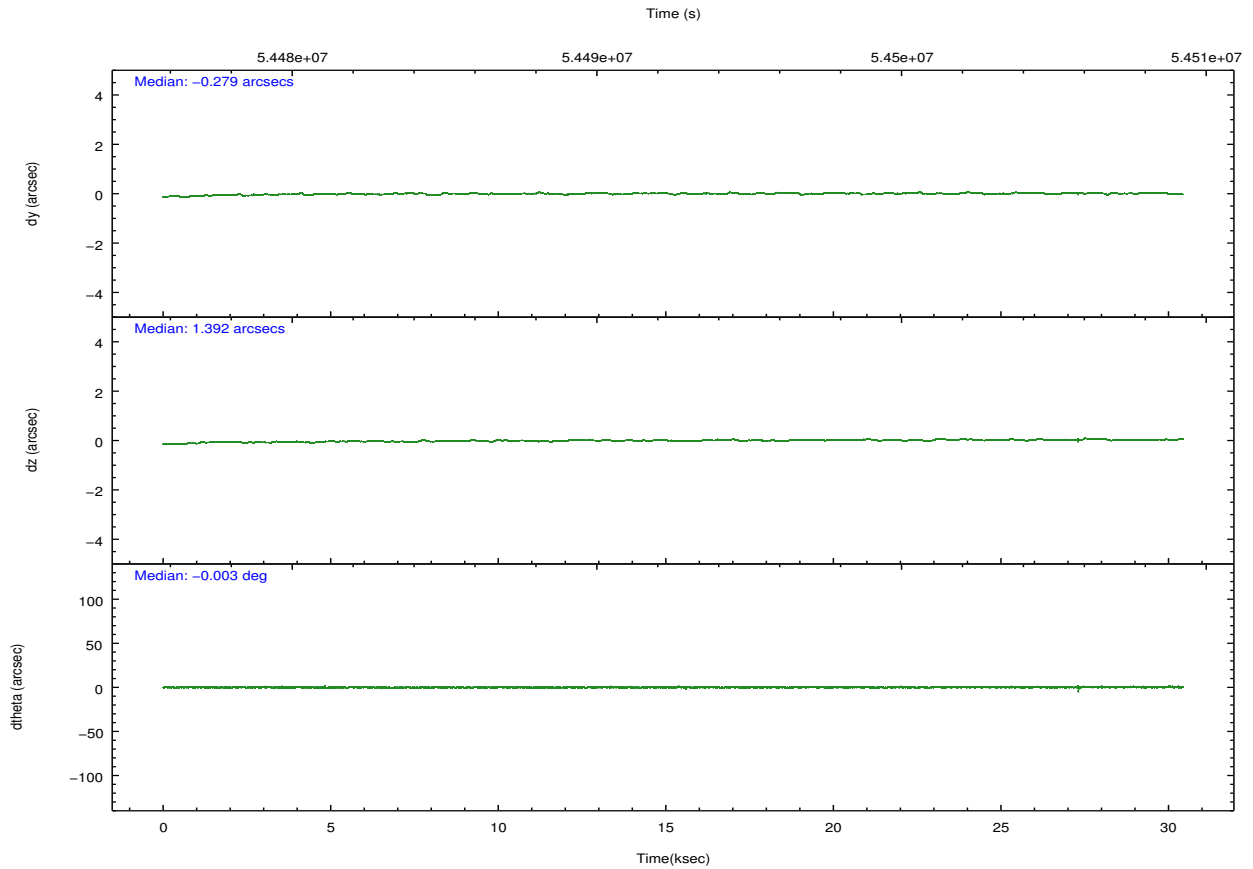
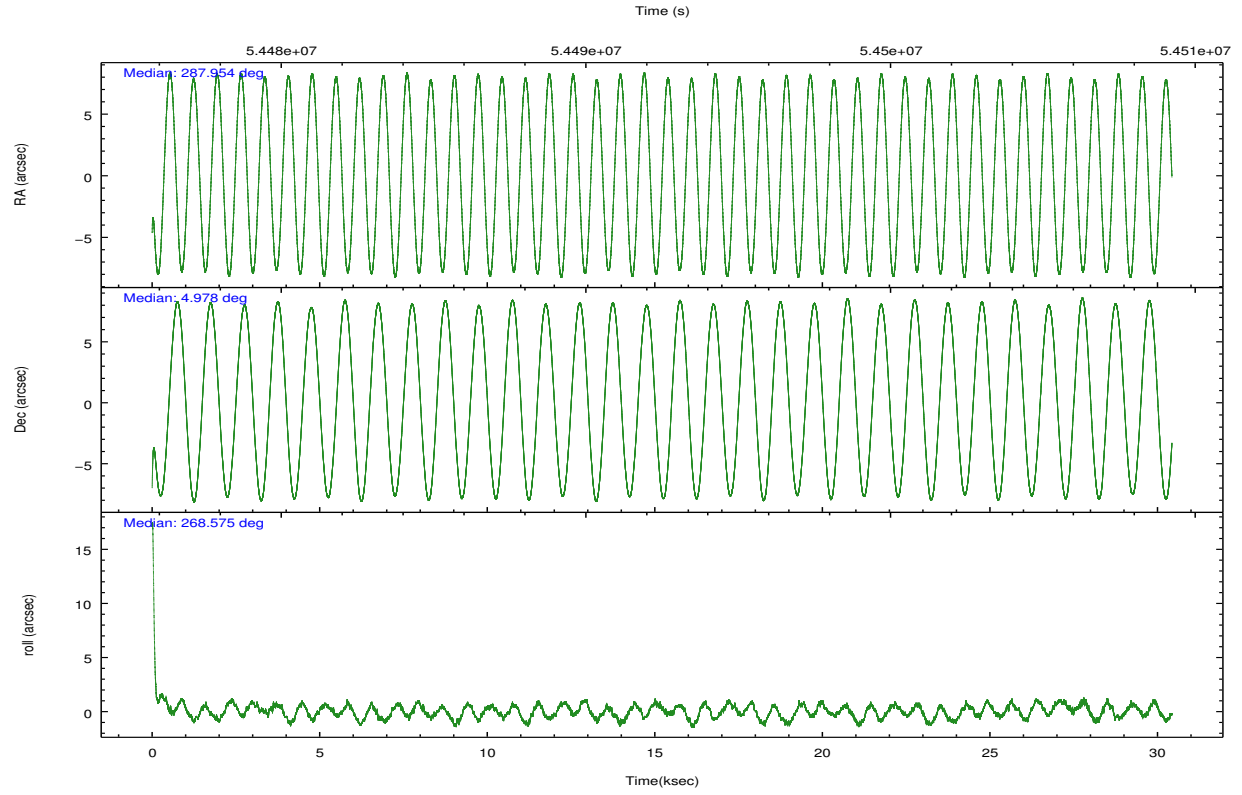
| | ccd 4 | ccd 5 | ccd 6 | ccd 7 | ccd 8 | ccd 9 | | ccd 4 | ccd 5 | ccd 6 | ccd 7 | ccd 8 | ccd 9 |
|-----------------|--------|--------|--------|--------|--------|--------|----------------|--------|--------|--------|--------|--------|--------|
| level 1 events | 320716 | 371850 | 308309 | 333440 | 349206 | 295099 | grade 0 events | 5077 | 34619 | 17153 | 11672 | 19224 | 14433 |
| rejected events | 292963 | 200063 | 258449 | 187681 | 285329 | 258321 | | 1% | 9% | 5% | 3% | 5% | 4% |
| rejected % | 91% | 53% | 83% | 56% | 81% | 87% | grade 1 events | 51 | 649 | 91 | 271 | 130 | 161 |
| | | | | | | | | 0% | 0% | 0% | 0% | 0% | 0% |
| | | | | | | | grade 2 events | 12697 | 38338 | 19304 | 32905 | 19296 | 11292 |
| | | | | | | | | 3% | 10% | 6% | 9% | 5% | 3% |
| | | | | | | | grade 3 events | 1639 | 5274 | 2400 | 9972 | 4700 | 1836 |
| | | | | | | | | 0% | 1% | 0% | 2% | 1% | 0% |
| | | | | | | | grade 4 events | 1664 | 4567 | 2289 | 8980 | 4256 | 1853 |
| | | | | | | | | 0% | 1% | 0% | 2% | 1% | 0% |
| | | | | | | | grade 5 events | 4471 | 13319 | 5846 | 18594 | 7678 | 6117 |
| | | | | | | | | 1% | 3% | 1% | 5% | 2% | 2% |
| | | | | | | | grade 6 events | 6680 | 89032 | 8722 | 82261 | 16418 | 7370 |
| | | | | | | | | 2% | 23% | 2% | 24% | 4% | 2% |
| | | | | | | | grade 7 events | 288437 | 186052 | 252504 | 168785 | 277504 | 252037 |
| | | | | | | | | 89% | 50% | 81% | 50% | 79% | 85% |

2.2 Compared Parameters

| Parameter | Planned | Actual | Parameter | Planned | Actual |
|--------------------------------------|---------------------|----------------------|---------------------------------------|-----------|---------|
| Instrument | ACIS | ACIS | Obspar format version number | 6 | 6 |
| Detector | ACIS-456789 | ACIS-456789 | Obspar file type | PREDICTED | ACTUAL |
| Grating | HETG | HETG | Obspar update status | NONE | UPDATED |
| Data mode | FAINT | FAINT | Number of optional ACIS chips dropped | 0 | 0 |
| Observation mode | POINTING | POINTING | On-chip summing requested | N | N |
| Pointing RA | 287.941065 | 287.95401295576 | Subarray requested | NONE | NONE |
| Pointing Dec | 5.002530 | 4.978177418184593 | Alternating exposures requested | N | N |
| Pointing Roll | 268.423041 | 268.5785495371802 | Primary exposure time | 0.000000 | 3.2 |
| Roll angle | 285.000000 | 285.000000 | | | |
| Roll tolerance | 25.000000 | 25.000000 | | | |
| Roll constraint allows 180D rotation | N | N | | | |
| SIM focus pos (mm) | -0.684267 | -0.6828225247311905 | | | |
| SIM defocus (mm) | 0 | 0.001444936568705701 | | | |
| SIM translation stage pos (mm) | -190.132523 | -190.145094680475 | | | |
| SIM translation stage offset (mm) | 0 | 0.01257209746719923 | | | |
| Phase constraints | Y | Y | | | |
| Phase period | 13.082000 | 13.082000 | | | |
| Phase epoch | 49595.750000 | 49595.750000 | | | |
| Phase start | 0.150000 | 0.150000 | | | |
| Phase end | 0.850000 | 0.850000 | | | |
| Phase start error | 0.050000 | 0.050000 | | | |
| Phase end error | 0.050000 | 0.050000 | | | |
| Observation start time | 54477714.184000 | 54476393.719645 | | | |
| Observation start date | 1999-09-23T12:40:50 | 1999-09-23T12:19:53 | | | |
| Observation end | 54507714.184000 | 54508418.820794 | | | |

2.3 Aspect



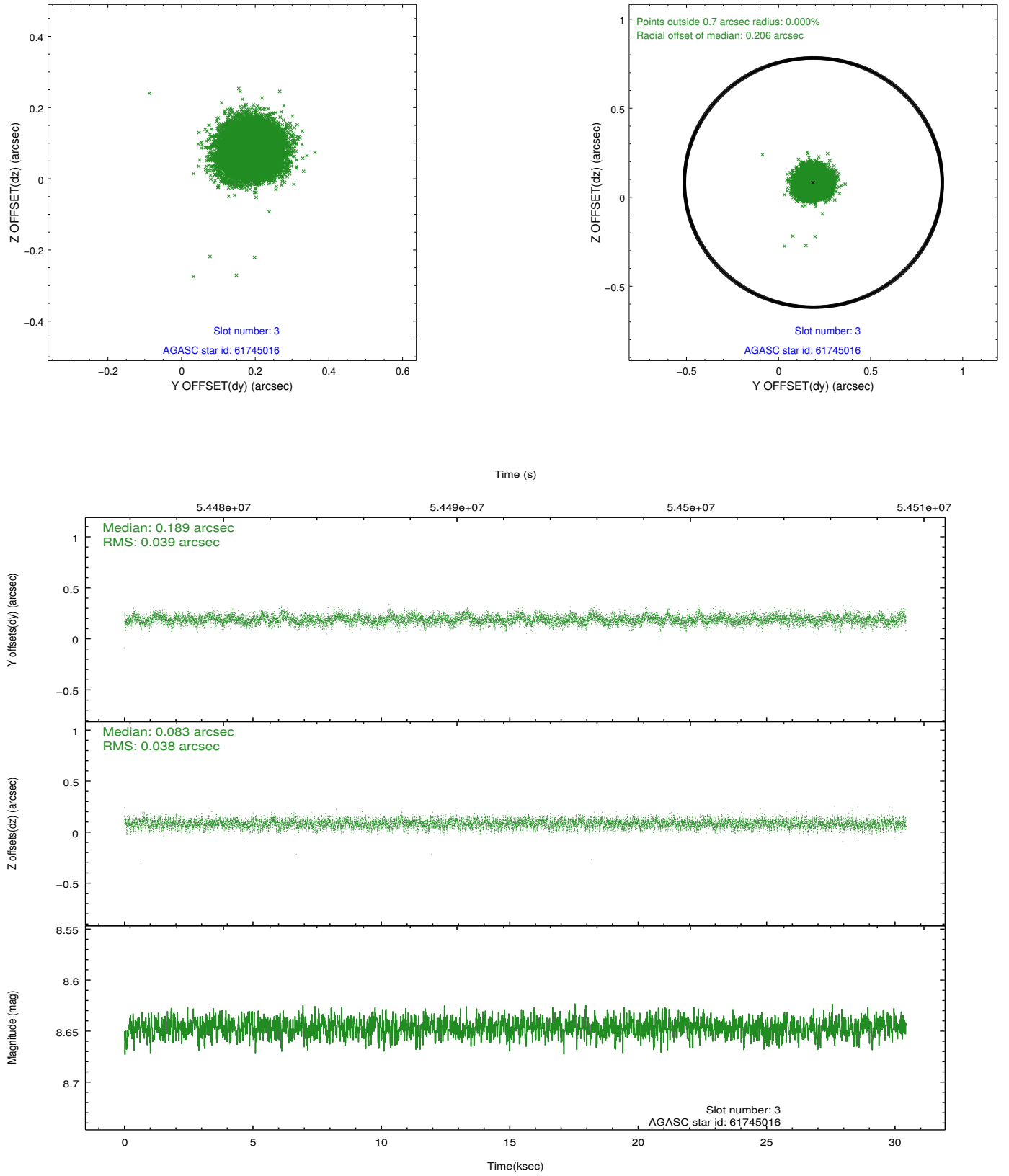


Slot Statistics

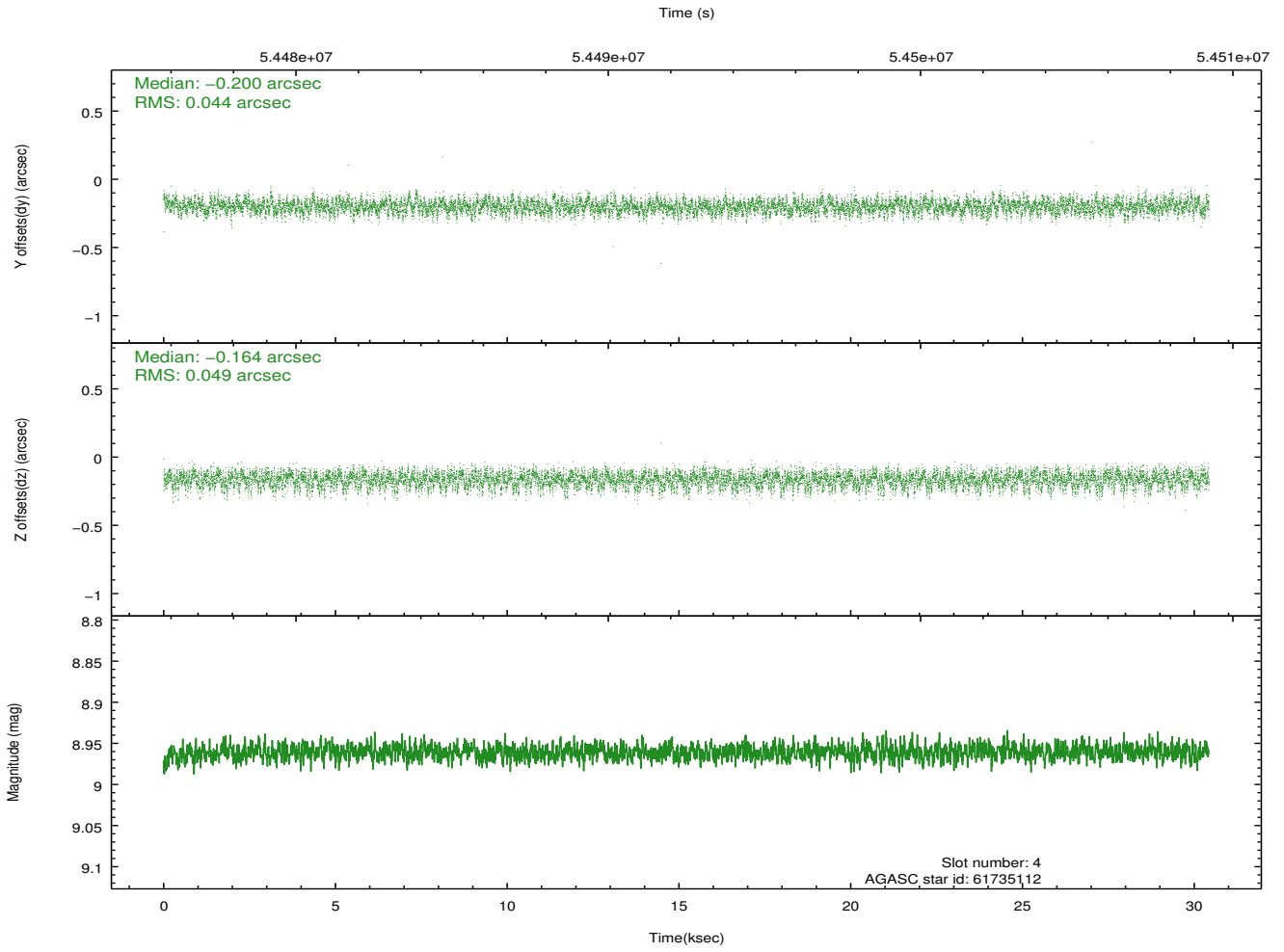
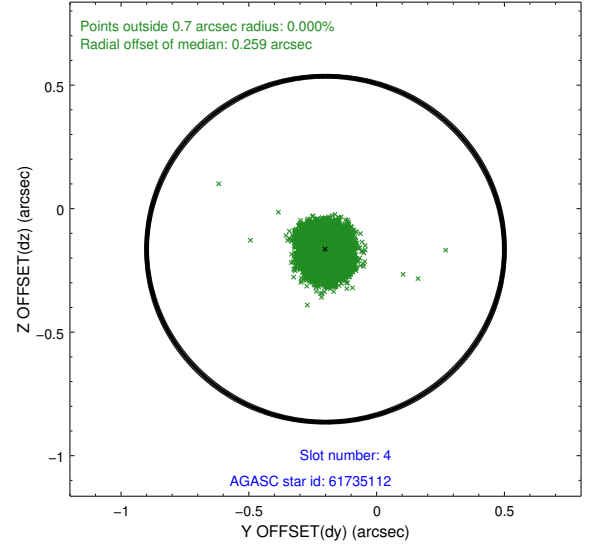
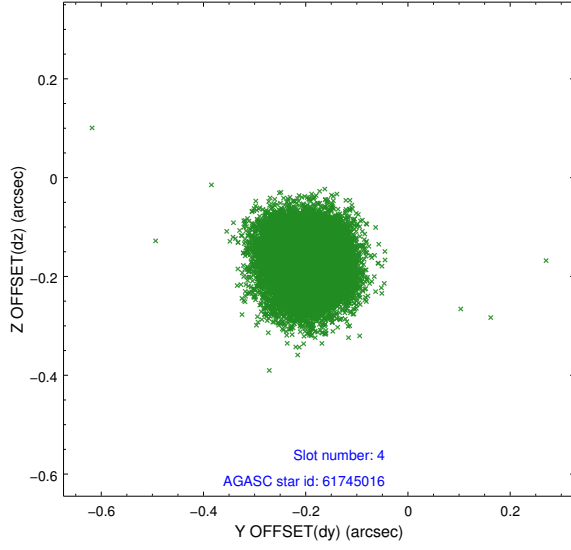
| slot | status | id | mag | n_pts | med_dy | med_dz | dr1 | dr2 | ra | dec | mean_y | mean_z |
|------|--------|----------|------|-------|--------|--------|-------|-------|------------|----------|----------|----------|
| 0 | FID | ACIS-S-3 | 7.36 | 14807 | -0.040 | -0.034 | 0.008 | 0.014 | 0.000000 | 0.000000 | 60.86 | -1851.39 |
| 1 | FID | ACIS-S-4 | 7.22 | 14837 | 0.112 | 0.038 | 0.007 | 0.013 | 0.000000 | 0.000000 | 2161.20 | 186.23 |
| 2 | FID | ACIS-S-5 | 7.24 | 14839 | -0.100 | 0.006 | 0.007 | 0.013 | 0.000000 | 0.000000 | -1805.26 | 179.90 |
| 3 | GUIDE | 61745016 | 8.65 | 14825 | 0.189 | 0.083 | 0.058 | 0.094 | 288.113628 | 4.368816 | 2263.68 | 682.85 |
| 4 | GUIDE | 61735112 | 8.96 | 14830 | -0.200 | -0.164 | 0.071 | 0.112 | 287.407547 | 5.552633 | -1927.64 | -1965.16 |
| 5 | GUIDE | 61751960 | 9.30 | 14823 | 0.275 | 0.054 | 0.088 | 0.142 | 288.050052 | 4.394893 | 2176.14 | 451.97 |
| 6 | GUIDE | 61742984 | 9.11 | 14834 | -0.122 | -0.047 | 0.074 | 0.118 | 287.386211 | 5.323009 | -1099.14 | -2019.38 |
| 7 | GUIDE | 61740296 | 9.30 | 14832 | -0.150 | 0.077 | 0.092 | 0.154 | 288.529954 | 5.269705 | -1020.77 | 2084.27 |

2.4 Star Slots

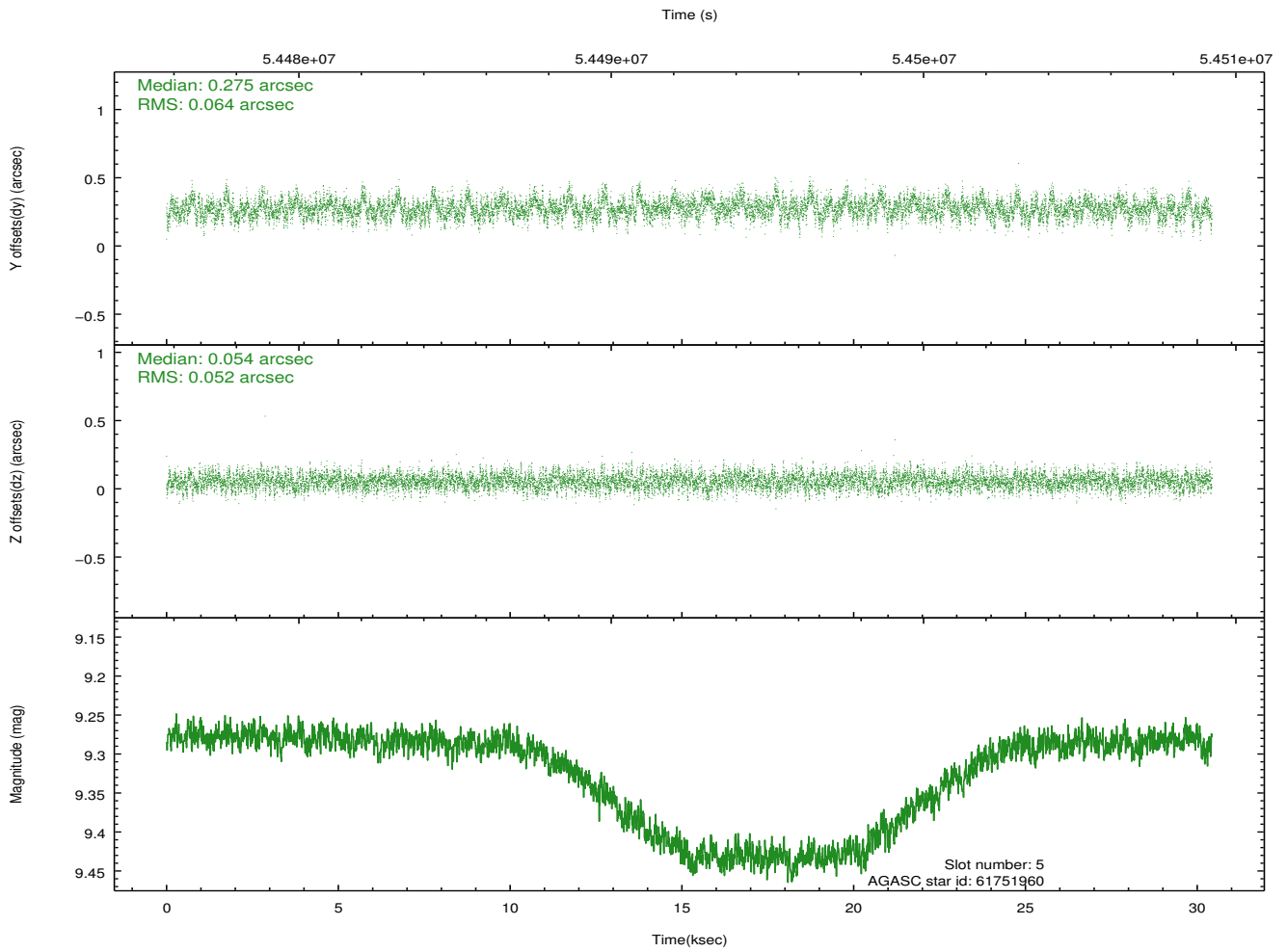
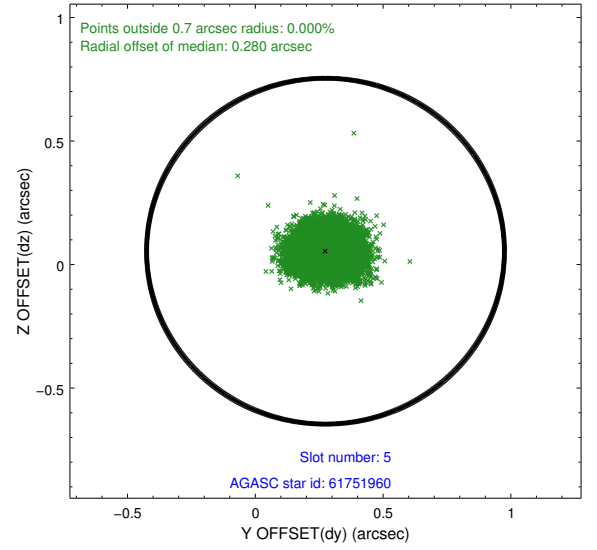
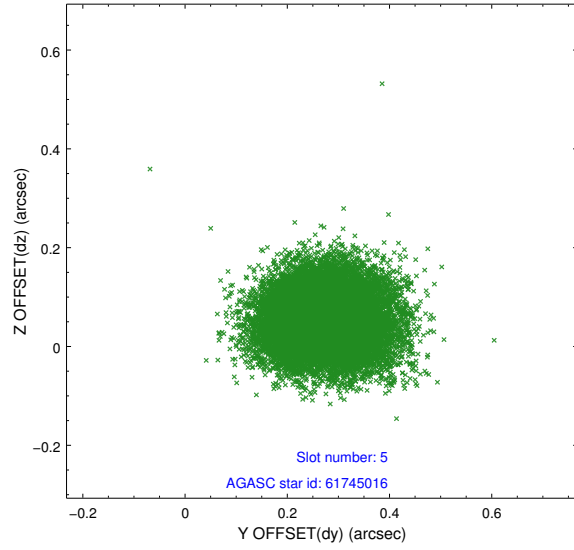
2.4.1 Slot 3



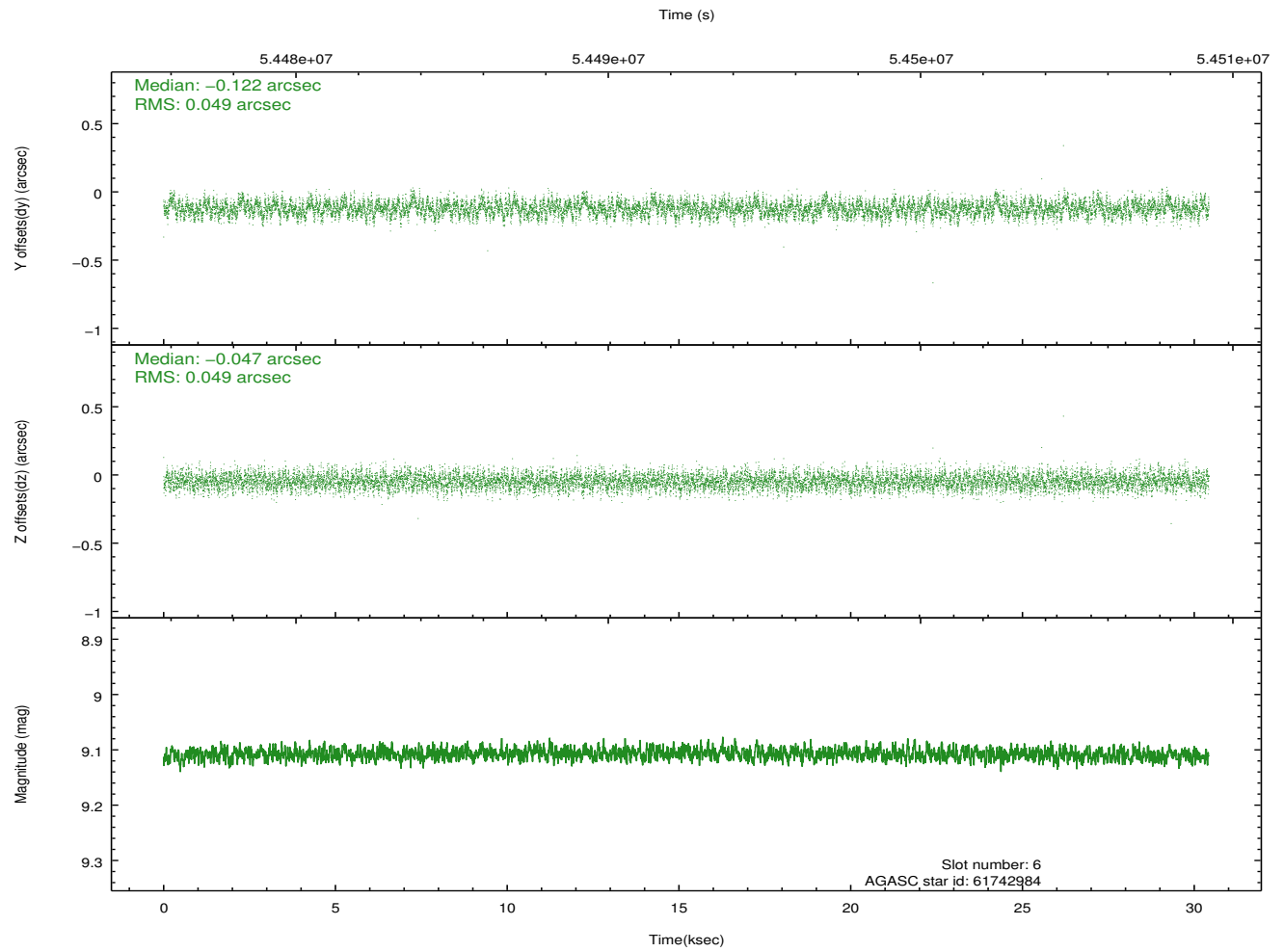
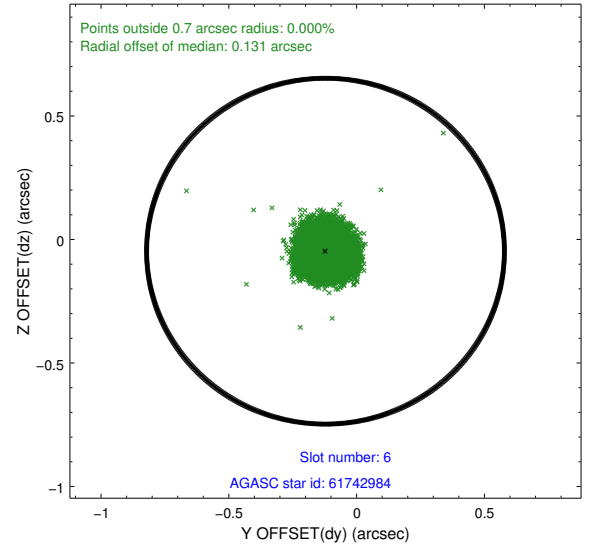
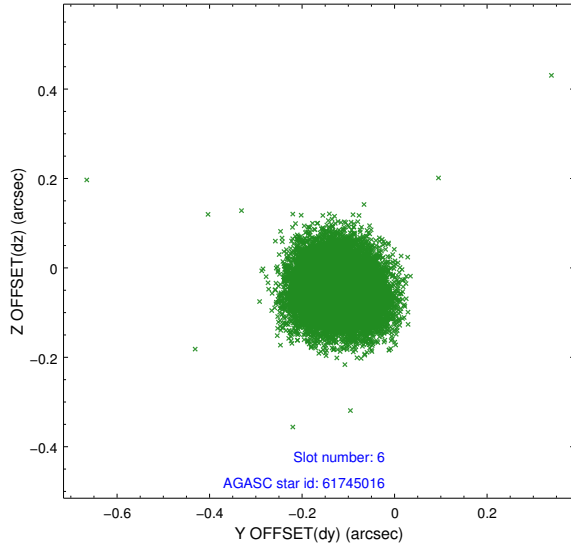
2.4.2 Slot 4



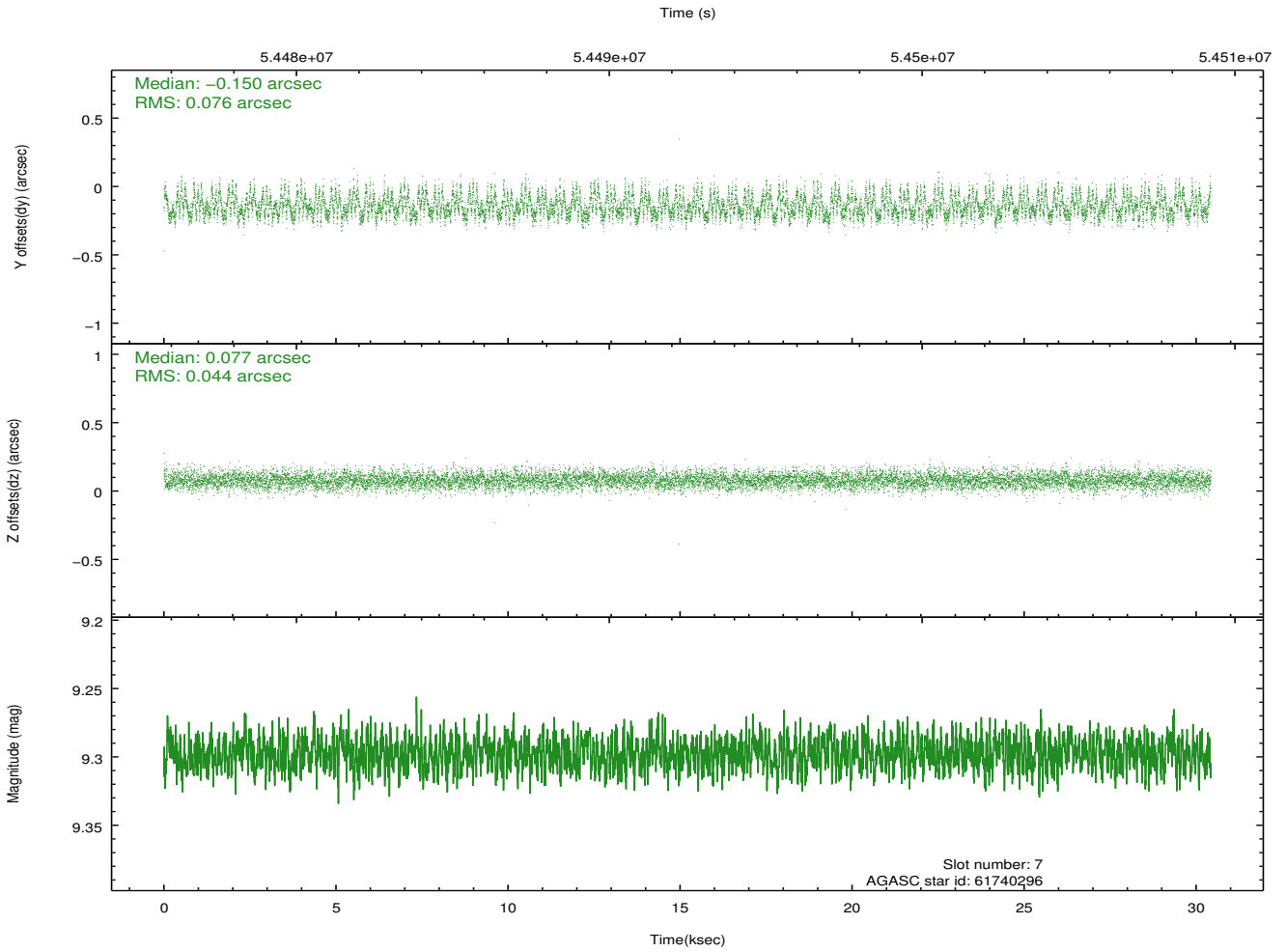
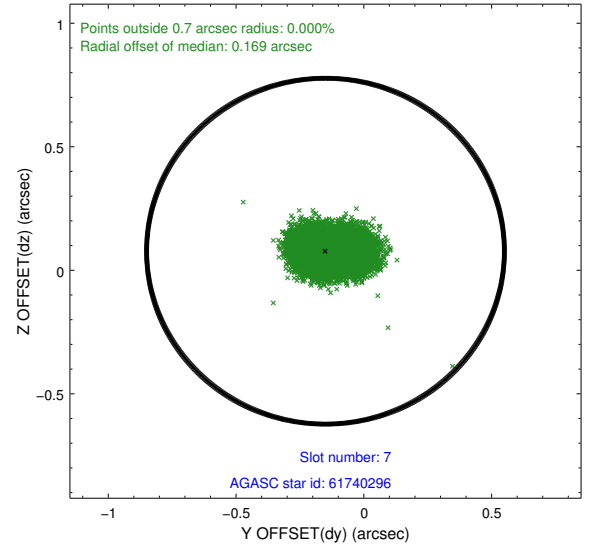
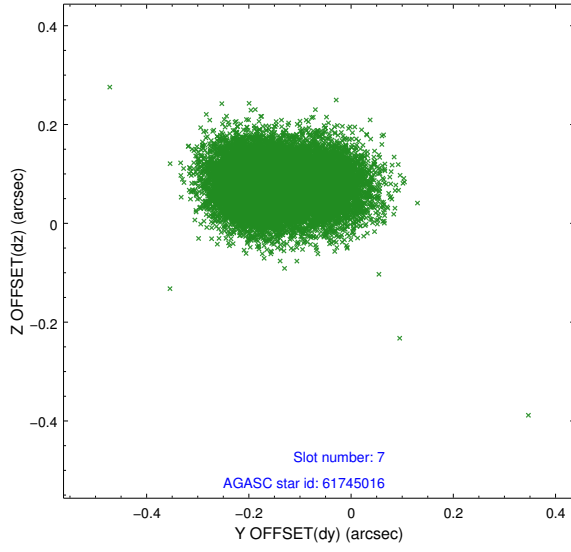
2.4.3 Slot 5



2.4.4 Slot 6

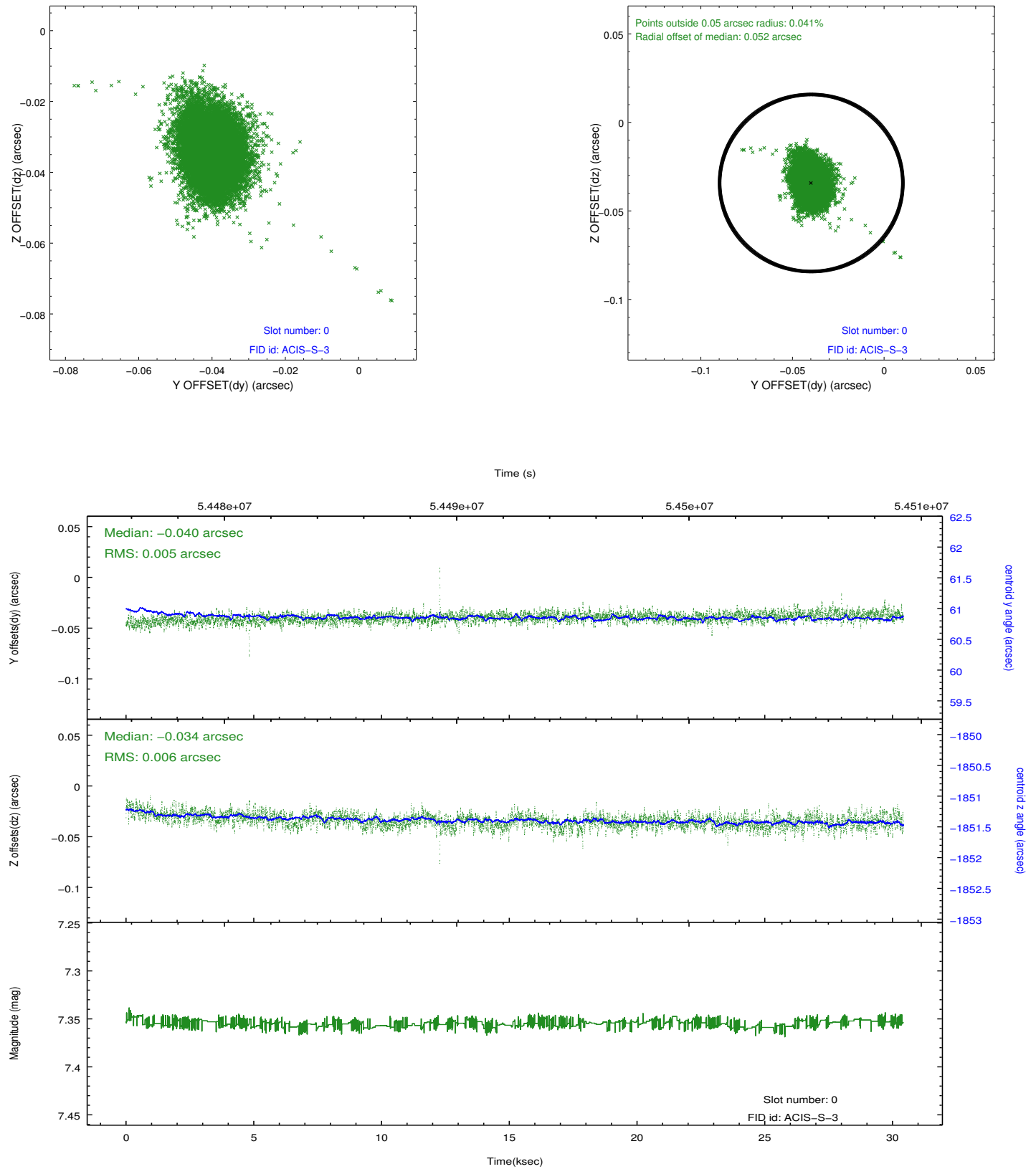


2.4.5 Slot 7

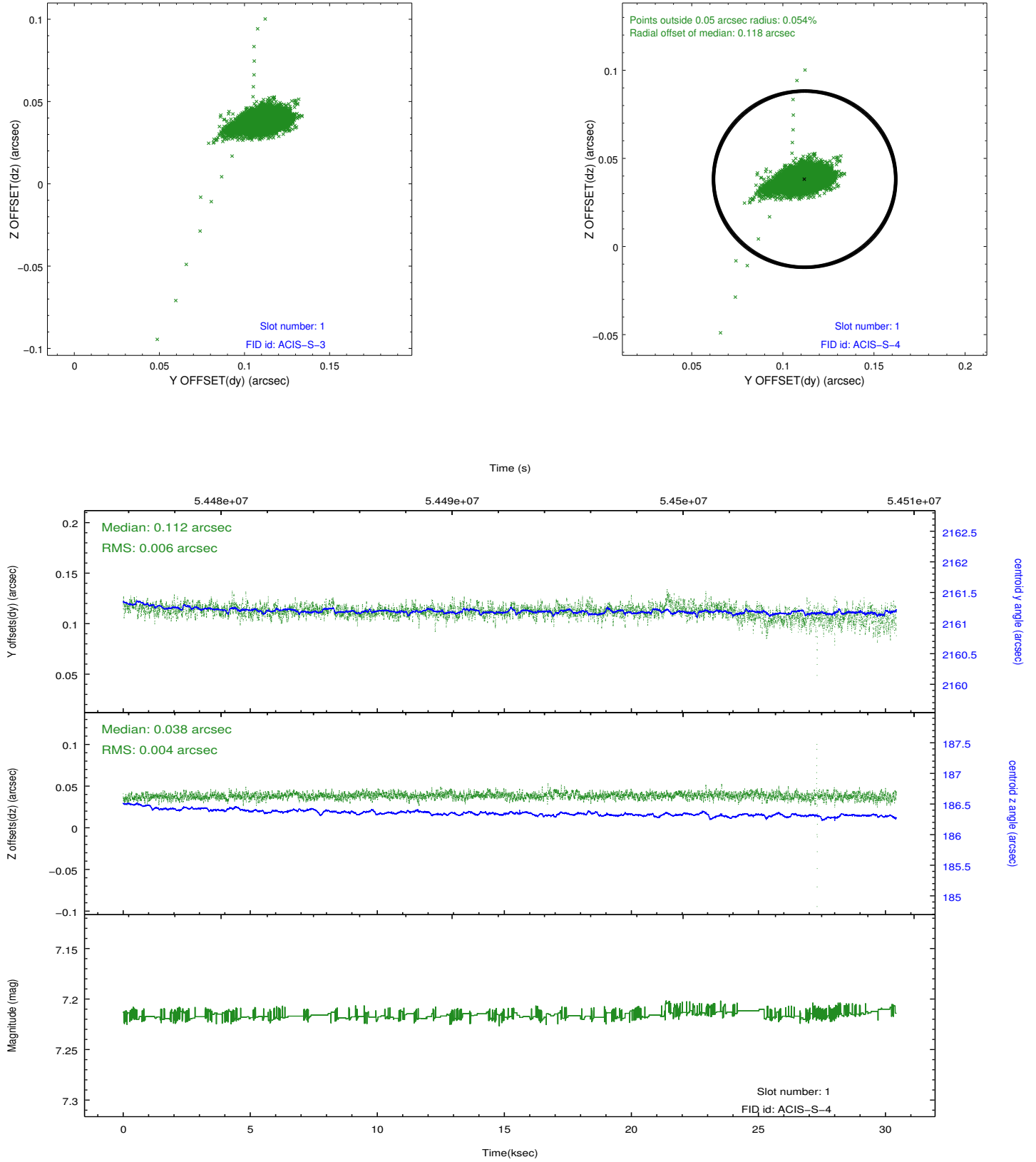


2.5 FID Slots

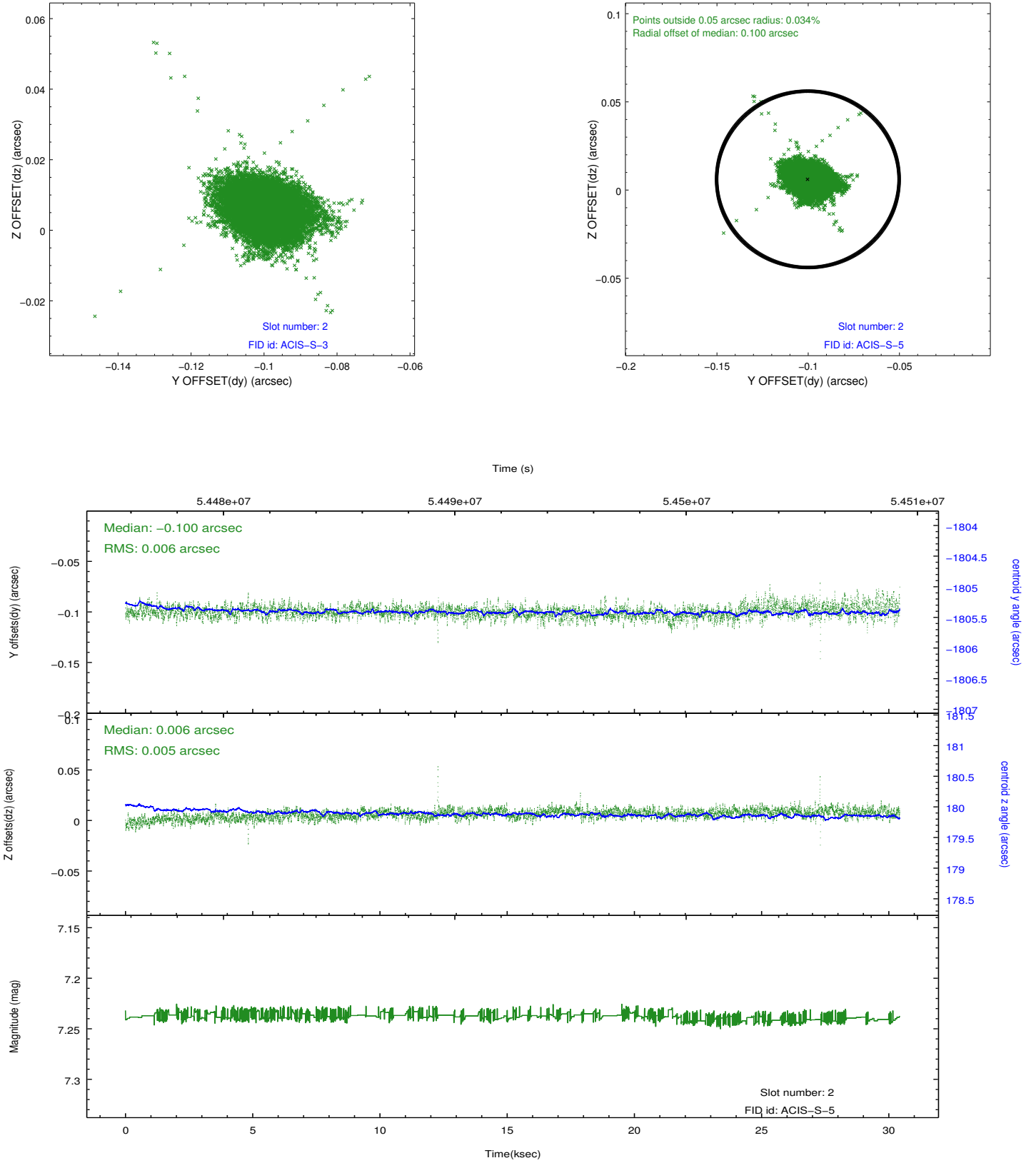
2.5.1 Slot 0



2.5.2 Slot 1

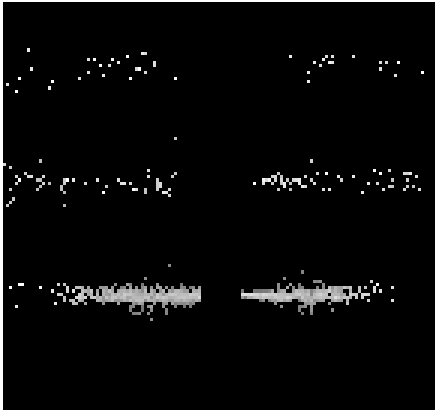


2.5.3 Slot 2

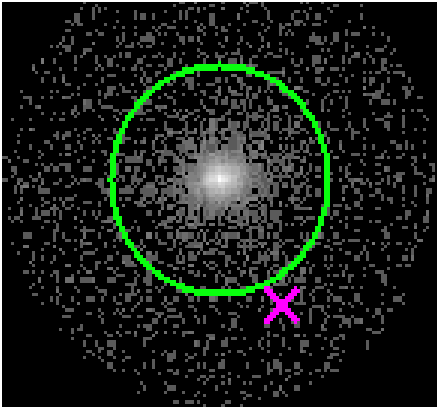


3 Gratings

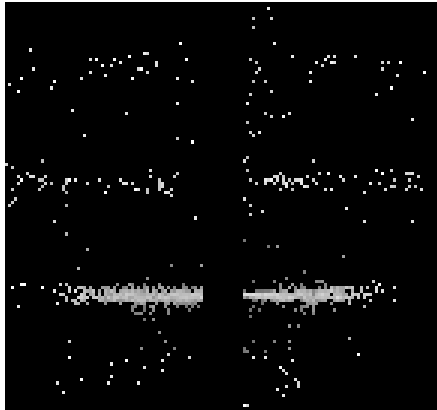
3.1 HEG Arm



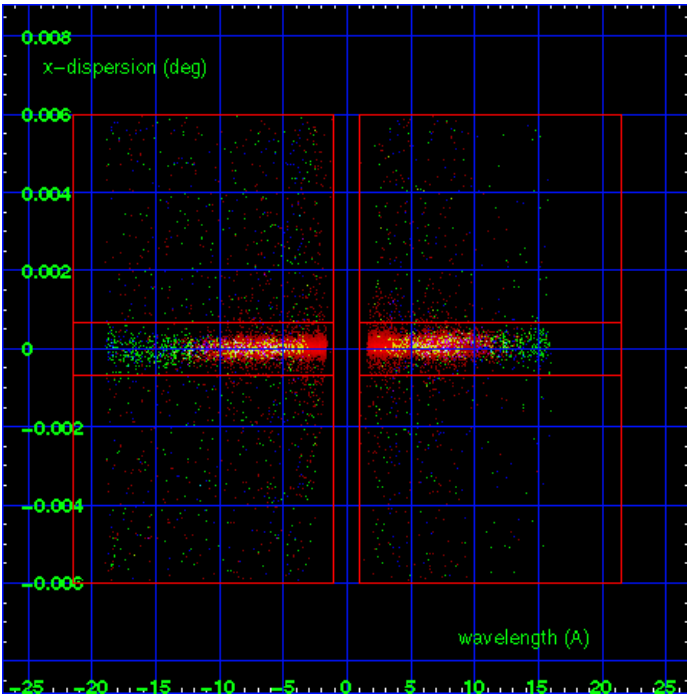
HEG Order Sort 123



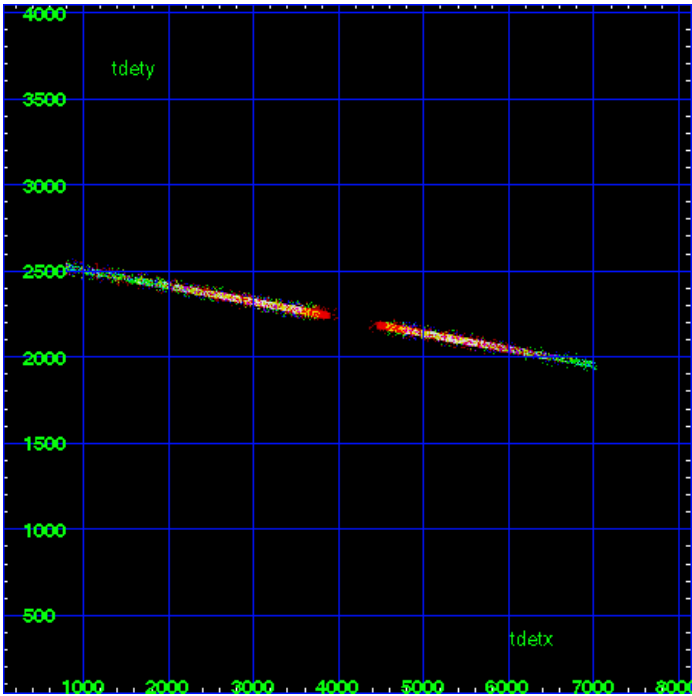
HEG Zero Order



HEG Order Sort ALL

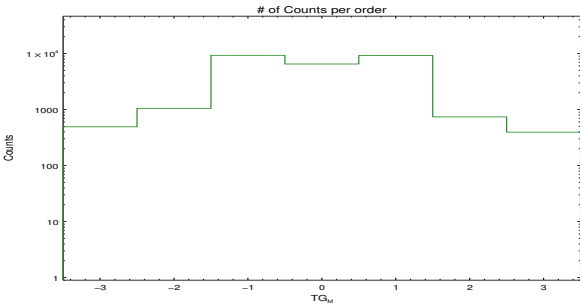


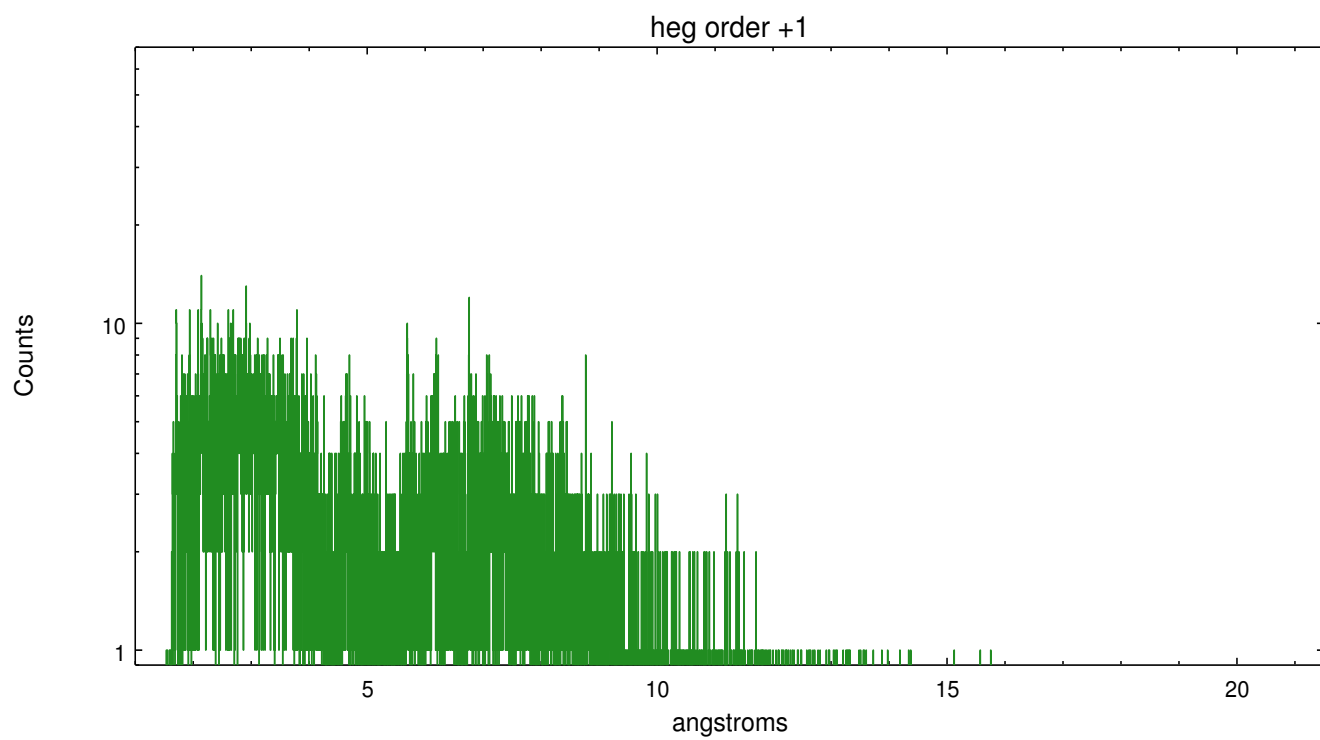
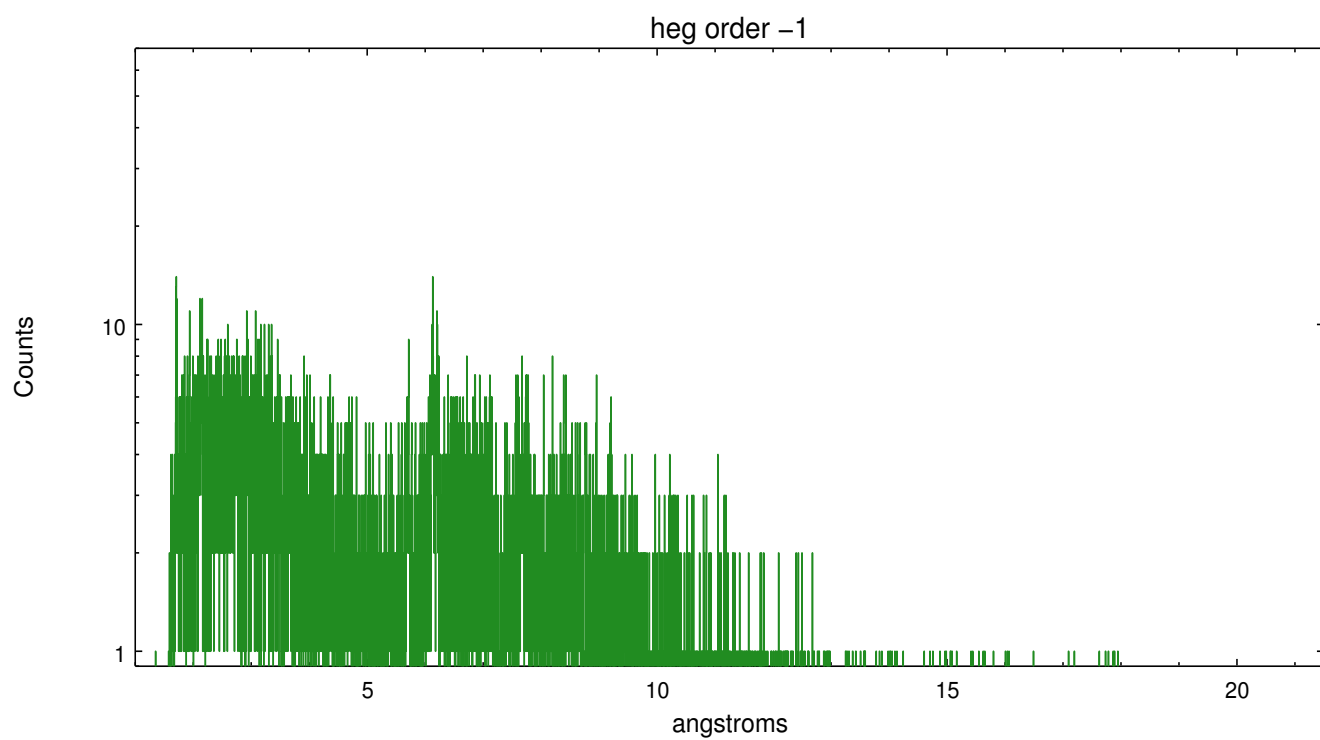
Spot Image HEG



Full Detector HEG

| | order -3 | order -2 | order -1 | order 0 | order 1 | order 2 | order 3 |
|--------|-------------|-------------|-------------|------------|------------|------------|------------|
| Events | 492 | 1051 | 9298 | 6506 | 9209 | 739 | 395 |

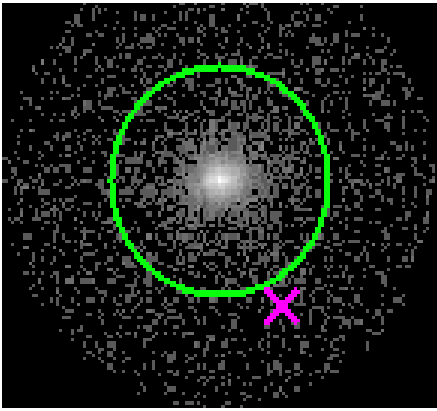




3.2 MEG Arm



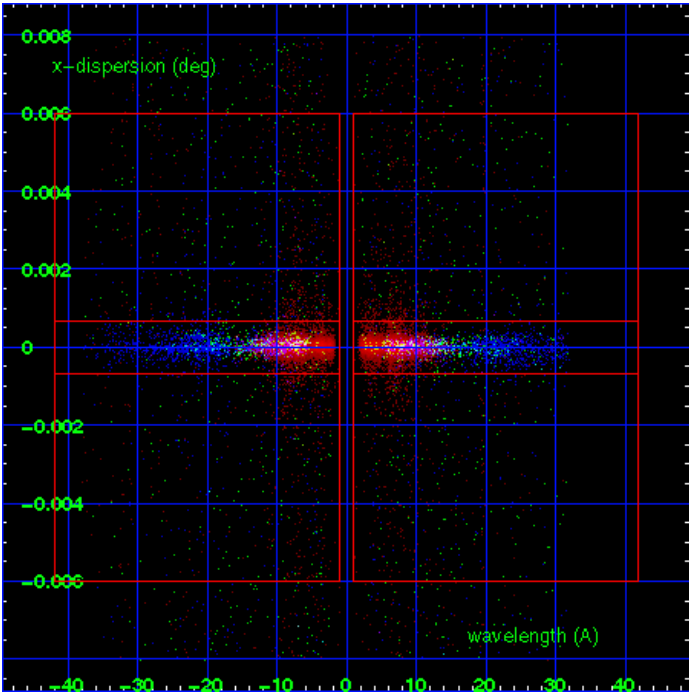
MEG Order Sort 123



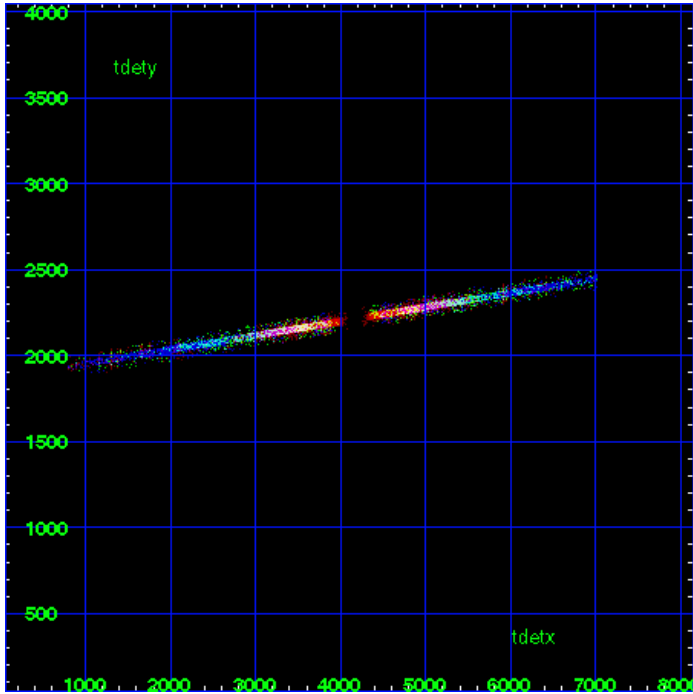
MEG Zero Order



MEG Order Sort ALL

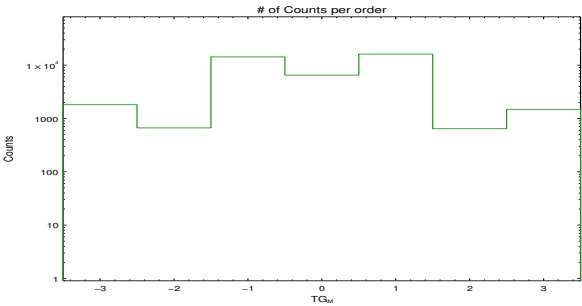


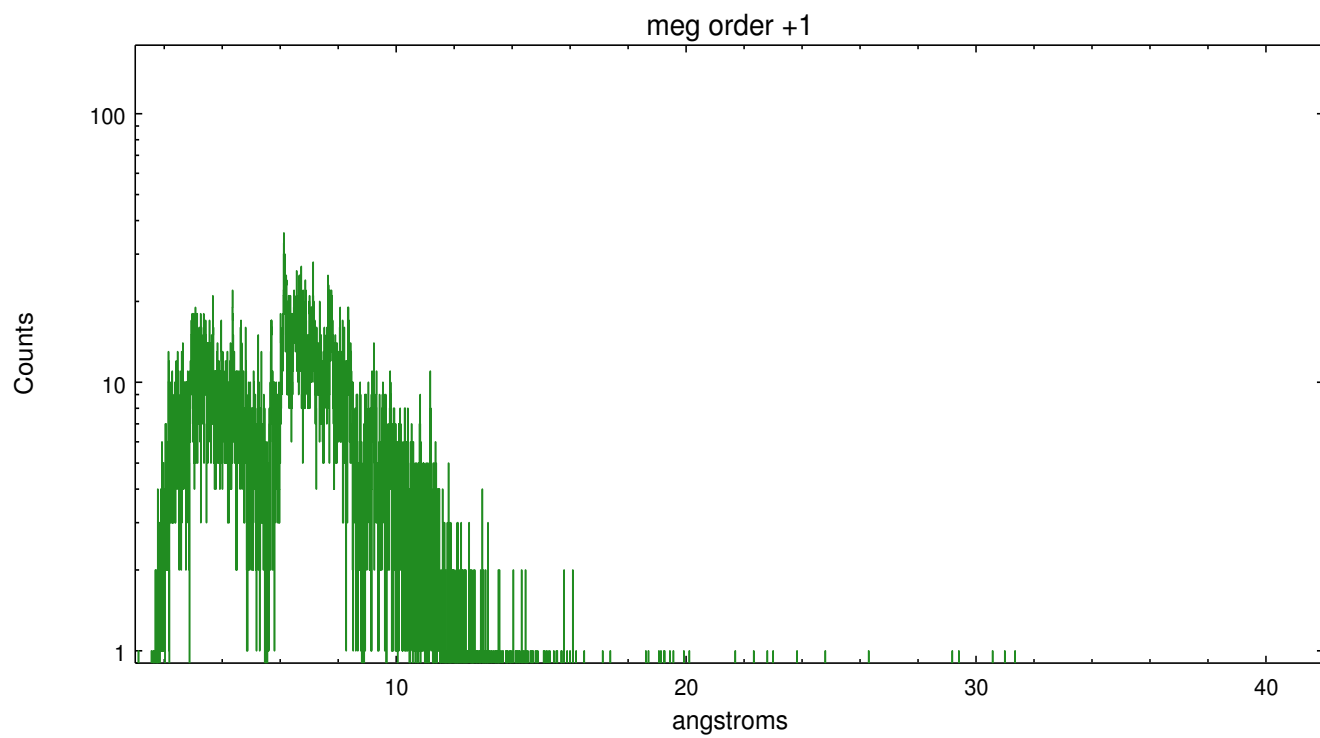
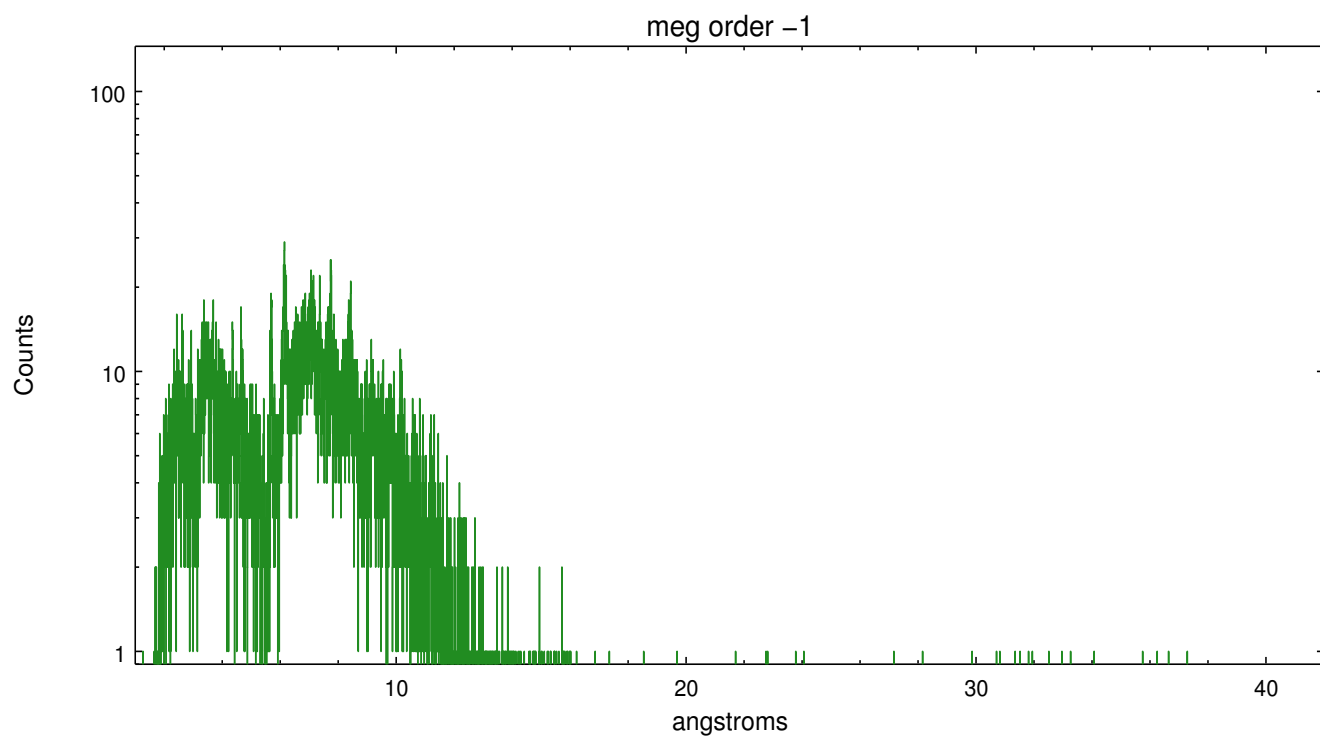
Spot Image MEG



Full Detector MEG

| | order -3 | order -2 | order -1 | order 0 | order 1 | order 2 | order 3 |
|--------|-------------|-------------|-------------|------------|------------|------------|------------|
| Events | 1809 | 665 | 14295 | 6506 | 16155 | 642 | 1487 |





A Summary

A.1 Status

| | |
|----------------------------|--------------------|
| V&V Scientist | David Huenemoerder |
| V&V Date (YYYY-MM-DD) | 2010.10.04 |
| V&V Edition | 1 |
| V&V Disposition and Status | OK |
| V&V Charge Time | 28.931 |

A.2 Comments

Comments for ObsId 0

The ACIS focal plane temperature is warmer than -118.7 C degrees during the interval 54478670.52 - 54507704.12 (MET s) of this observation. This temperature is the upper limit of the verified ACIS calibration for the front-illuminated chips. The focal plane temperature is warmer than -116.7 C during the interval 54478670.52 - 54507704.12 (MET s) of this observation. This temperature is the upper limit of the verified ACIS calibration for the back-illuminated chips. The ACIS spectral response calibration is less accurate at these warmer temperatures than it is at -119.7 C. Users whose science objectives depend on the most accurate spectral response (e.g., fitting line-rich spectra) may notice an effect. Users whose science objectives do not depend on the most accurate spectral response should not notice an effect.

Charge time:

Charge time for this ObsId remains at previous value of 28.931 ks.