

V&V Reference Report

L2 ASCDS Version : 7.6.9

Observation 2704 - L2 Version 001
Chandra X-Ray Center

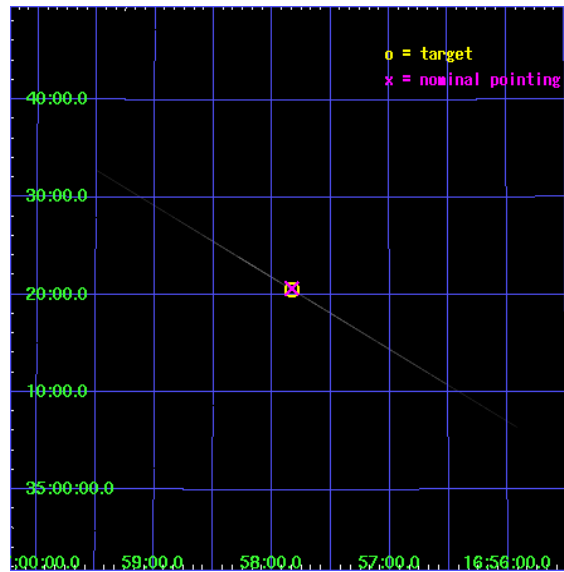
L2 Processing Date : Sep 22 2006

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1 Front

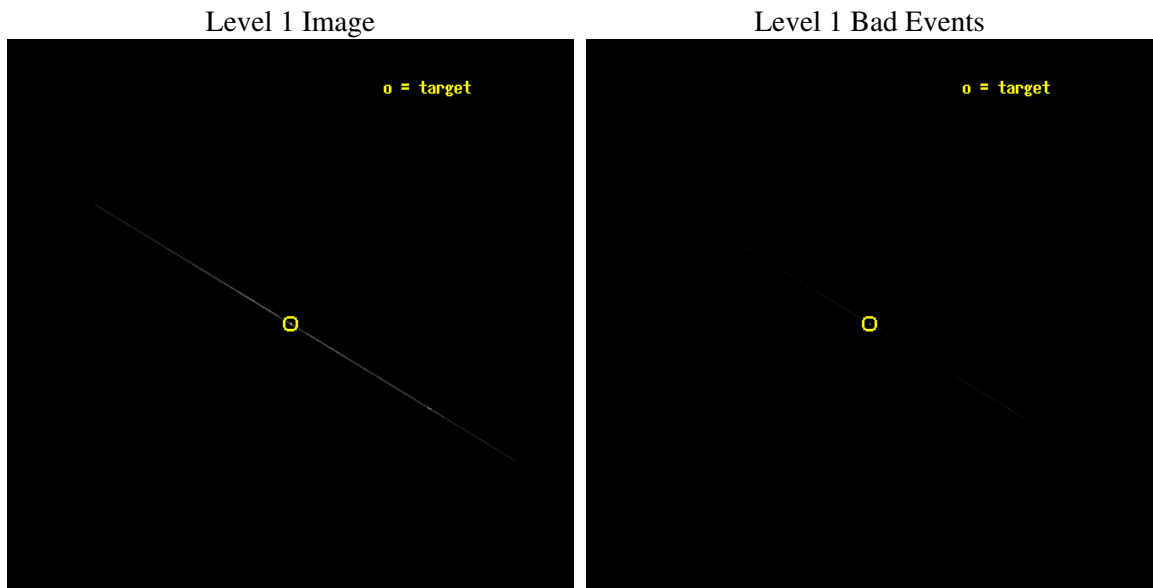
| | |
|----------|--|
| seq_num | 400184 |
| obs_id | 2704 |
| title | HIGH RESOLUTION SPECTROSCOPY OF HERCULES X-1 |
| observer | Dr. Daniel Scott |
| object | HER X-1 MAIN HI LATE |
| ra_targ | 254.4575 |
| dec_targ | 35.342472 |
| ra_nom | 254.45795348668 |
| dec_nom | 35.344670073923 |
| roll_nom | 211.00727080715 |
| revision | 2 |
| ontime | 18723.5 |
| livetime | 18650.361328125 |
| ontime4 | 18723.5 |
| ontime5 | 18723.5 |
| ontime6 | 18723.5 |
| ontime7 | 18723.5 |
| ontime8 | 18723.5 |
| ontime9 | 18723.5 |
| l2events | 1329313 |



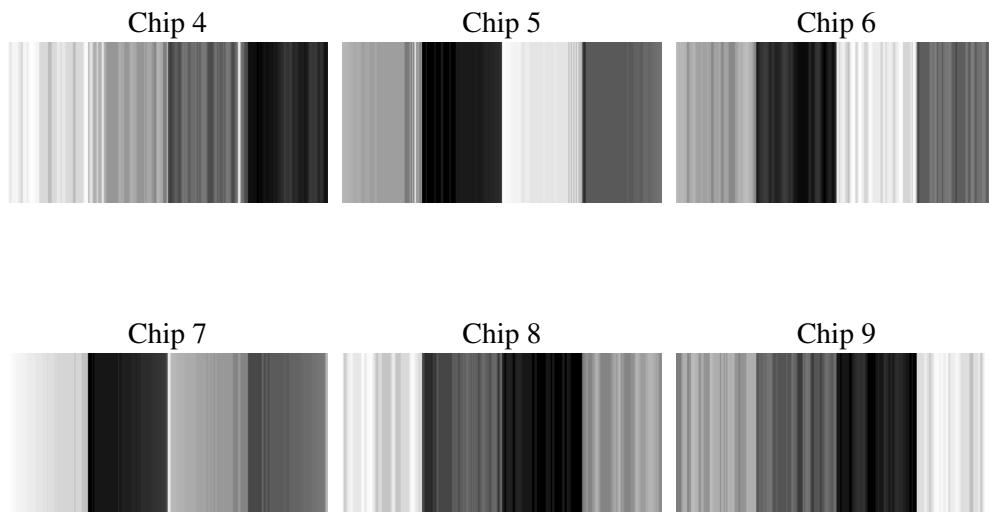
2 OBI

2.1 OBI

2.1.1 Images



2.1.2 Bias



2.1.3 Parameters

| | |
|----------|---------------------|
| obi_num | 2 |
| ascdsver | 7.6.9 |
| caldsver | 3.2.3 |
| date | 2006-09-22T17:26:56 |
| revision | 2 |

| | |
|----------------|-----------------|
| sched_exp_time | 18500.000000 |
| ontime | 19464.024776906 |
| ontime4 | 19310.808611184 |
| ontime5 | 19480.07309854 |
| ontime6 | 19315.186316013 |
| ontime7 | 19464.024776906 |
| ontime8 | 19310.808824778 |
| ontime9 | 19304.972052366 |
| l1events | 1530786 |

2.1.4 Events

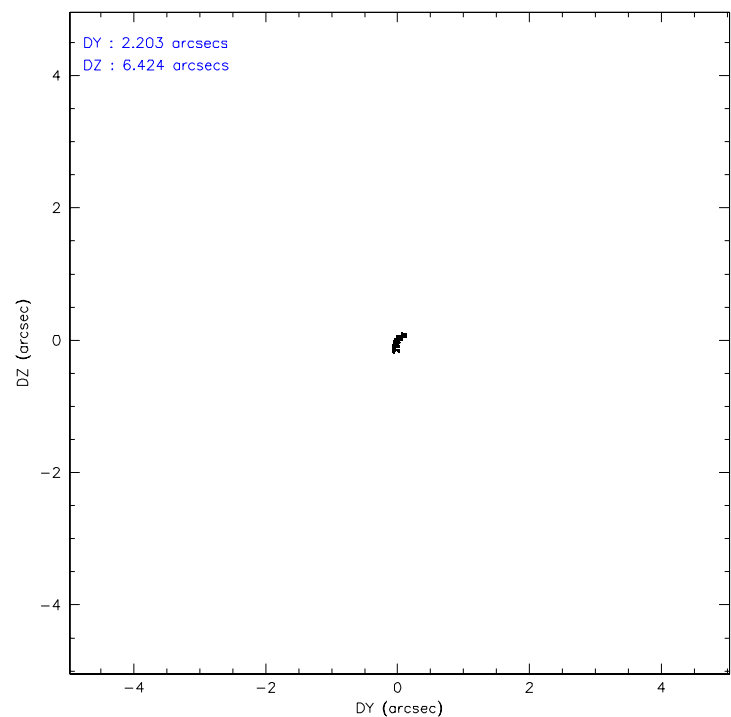
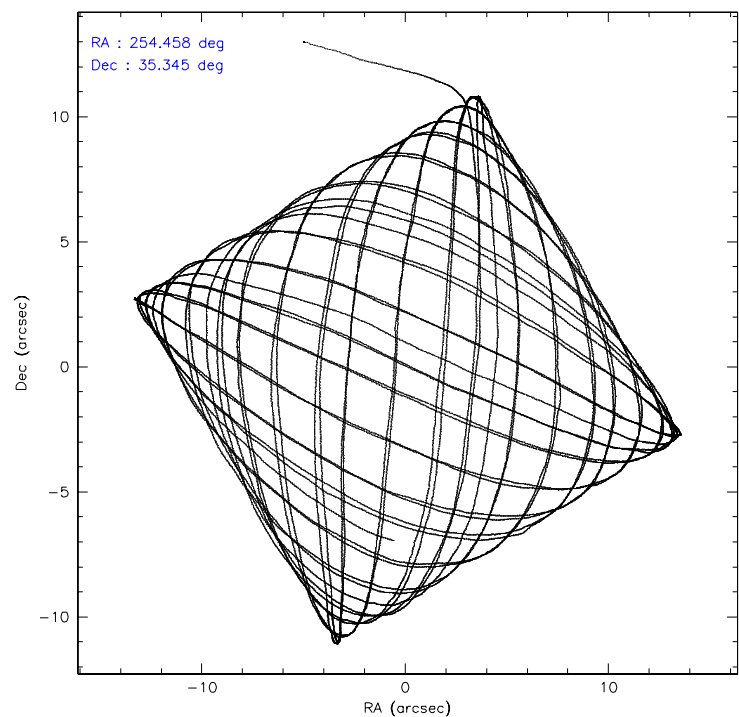
| | ccd 4 | ccd 5 | ccd 6 | ccd 7 | ccd 8 | ccd 9 |
|-----------------|-------|--------|--------|--------|--------|-------|
| level 1 events | 43169 | 205139 | 252007 | 825393 | 154629 | 50449 |
| rejected events | 5359 | 16240 | 7860 | 45176 | 9124 | 6189 |
| rejected % | 12% | 7% | 3% | 5% | 5% | 12% |

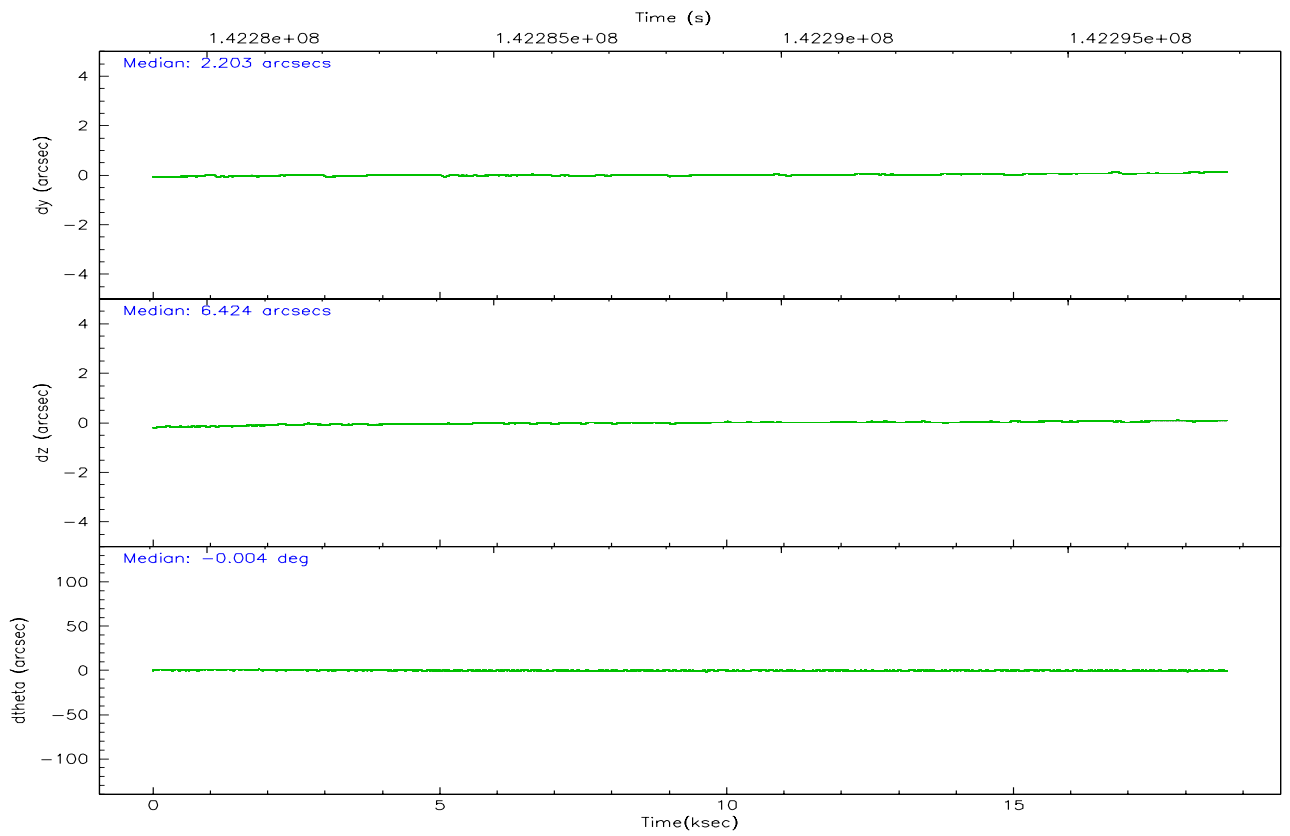
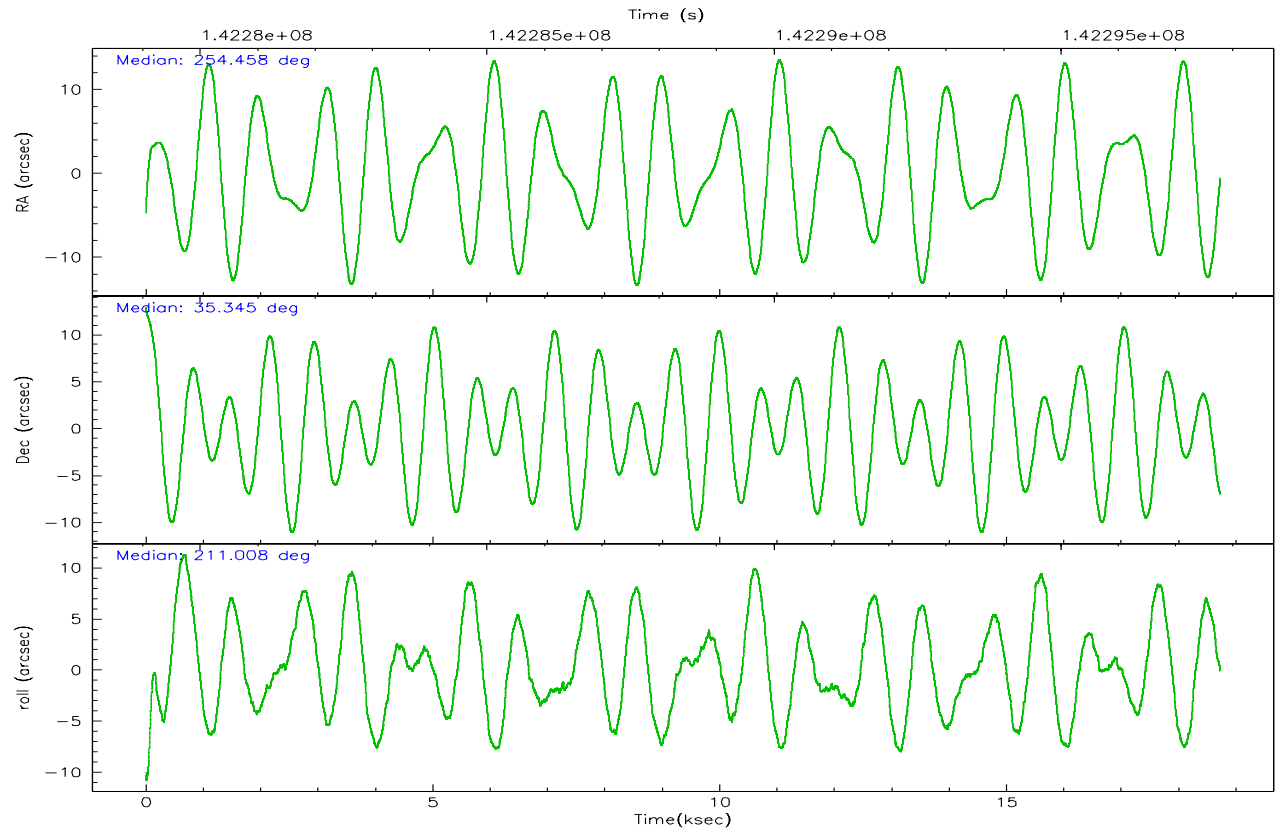
| | ccd 4 | ccd 5 | ccd 6 | ccd 7 | ccd 8 | ccd 9 |
|----------------|-------|-------|--------|--------|-------|-------|
| grade 0 events | 8617 | 53587 | 30786 | 158214 | 52544 | 12765 |
| | 19% | 26% | 12% | 19% | 33% | 25% |
| grade 1 events | 119 | 142 | 115 | 4708 | 205 | 107 |
| | 0% | 0% | 0% | 0% | 0% | 0% |
| grade 2 events | 17748 | 61028 | 180083 | 221998 | 65546 | 19617 |
| | 41% | 29% | 71% | 26% | 42% | 38% |
| grade 3 events | 3387 | 6783 | 3908 | 68839 | 7040 | 3059 |
| | 7% | 3% | 1% | 8% | 4% | 6% |
| grade 4 events | 3508 | 6749 | 3917 | 68462 | 6944 | 3229 |
| | 8% | 3% | 1% | 8% | 4% | 6% |
| grade 5 events | 4461 | 11046 | 6058 | 33513 | 7083 | 5317 |
| | 10% | 5% | 2% | 4% | 4% | 10% |
| grade 6 events | 5329 | 65804 | 27140 | 269659 | 15267 | 6355 |
| | 12% | 32% | 10% | 32% | 9% | 12% |
| grade 7 events | 0 | 0 | 0 | 0 | 0 | 0 |
| | 0% | 0% | 0% | 0% | 0% | 0% |

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 | CC33_FAINT | CC33_FAINT | Number of optional ACIS chips dropped | 0 | 0 |
| Observation mode | POINTING | POINTING | On-chip summing requested | N | N |
| Pointing RA | 254.473795 | 254.45795348668 | Subarray requested | NONE | NONE |
| Pointing Dec | 35.368654 | 35.34467007392291 | Alternating exposures requested | N | N |
| Pointing Roll | 210.841475 | 211.0072708071459 | Primary exposure time | 0.000000 | 0 |
| Window start time | 142260364.184000 | 142260364.184000 | | | |
| Window stop time | 142318024.184000 | 142318024.184000 | | | |
| SIM focus pos (mm) | -0.684267 | -0.6828225247311905 | | | |
| SIM defocus (mm) | 0 | 0.001444936568705701 | | | |
| SIM translation stage pos (mm) | -186.132523 | -186.1423047203915 | | | |
| SIM translation stage offset (mm) | -4 | -3.990217862616333 | | | |
| Phase constraints | Y | Y | | | |
| Phase period | 34.853430 | 34.853430 | | | |
| Phase epoch | 52242.791000 | 52242.791000 | | | |
| Phase start | 0.200000 | 0.200000 | | | |
| Phase end | 0.270000 | 0.270000 | | | |
| Phase start error | 0.001000 | 0.001000 | | | |
| Phase end error | 0.001000 | 0.001000 | | | |
| Observation start time | 142279283.184000 | 142278304.07576 | | | |
| Observation start date | 2002-07-05T18:00:19 | 2002-07-05T17:45:04 | | | |
| Observation end time | 142297783.184000 | 142298561.66409 | | | |
| Observation end date | 2002-07-05T23:08:39 | 2002-07-05T23:22:41 | | | |

2.3 Aspect



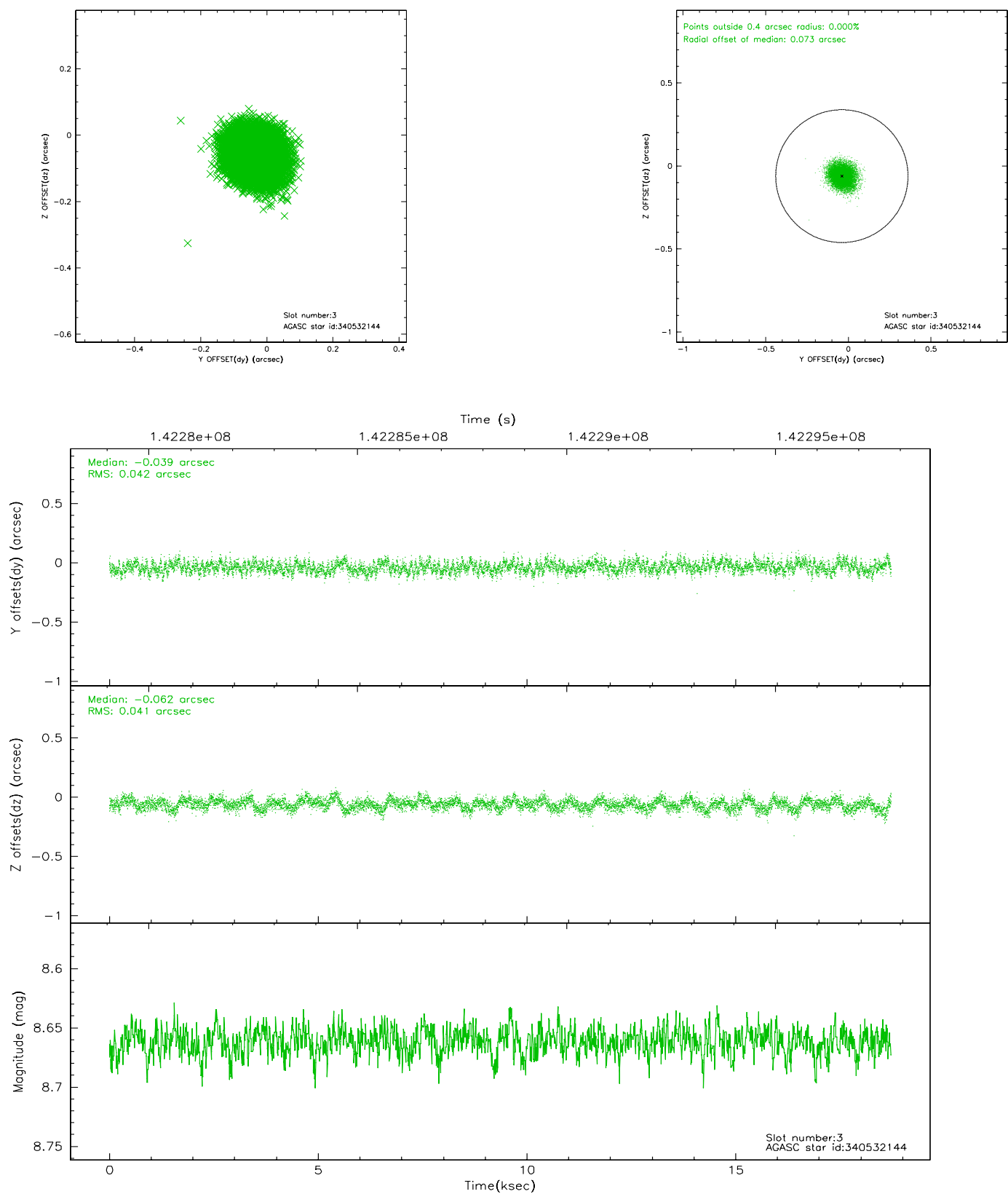


Slot Statistics

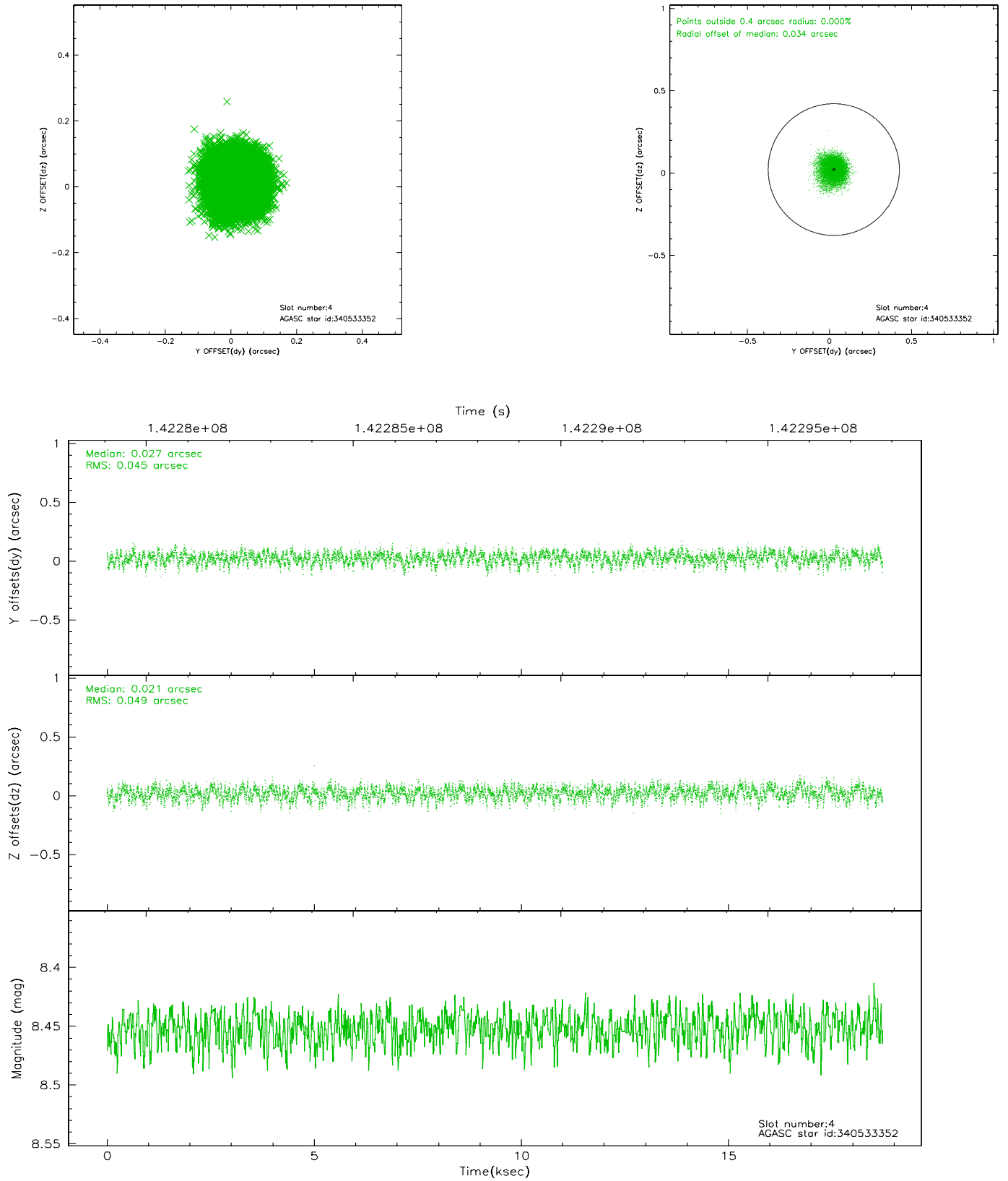
| slot | status | id | mag | n_pts | med_dy | med_dz | dr1 | dr2 | ra | dec | mean_y | mean_z |
|------|--------|-----------|------|-------|--------|--------|-------|-------|------------|-----------|----------|----------|
| 0 | FID | ACIS-S-2 | 7.09 | 4568 | -0.025 | -0.067 | 0.007 | 0.011 | 0.000000 | 0.000000 | -754.57 | -1809.96 |
| 1 | FID | ACIS-S-4 | 7.19 | 4567 | -0.022 | 0.030 | 0.005 | 0.009 | 0.000000 | 0.000000 | 2158.60 | 98.40 |
| 2 | FID | ACIS-S-5 | 7.23 | 4568 | 0.016 | 0.045 | 0.006 | 0.011 | 0.000000 | 0.000000 | -1807.11 | 92.30 |
| 3 | GUIDE | 340532144 | 8.66 | 9135 | -0.039 | -0.062 | 0.063 | 0.101 | 255.164643 | 35.156544 | -1358.38 | 1692.61 |
| 4 | GUIDE | 340533352 | 8.45 | 9133 | 0.027 | 0.021 | 0.071 | 0.115 | 254.563691 | 34.717962 | 972.11 | 2148.39 |
| 5 | GUIDE | 340534080 | 8.82 | 9137 | 0.013 | 0.020 | 0.076 | 0.128 | 255.228954 | 35.471551 | -2095.39 | 810.76 |
| 6 | GUIDE | 340535128 | 8.60 | 9136 | 0.022 | -0.021 | 0.050 | 0.081 | 255.168295 | 35.370645 | -1758.31 | 1033.66 |
| 7 | GUIDE | 341060696 | 9.21 | 9133 | -0.024 | 0.046 | 0.100 | 0.160 | 254.855764 | 35.681180 | -1537.14 | -395.27 |

2.4 Star Slots

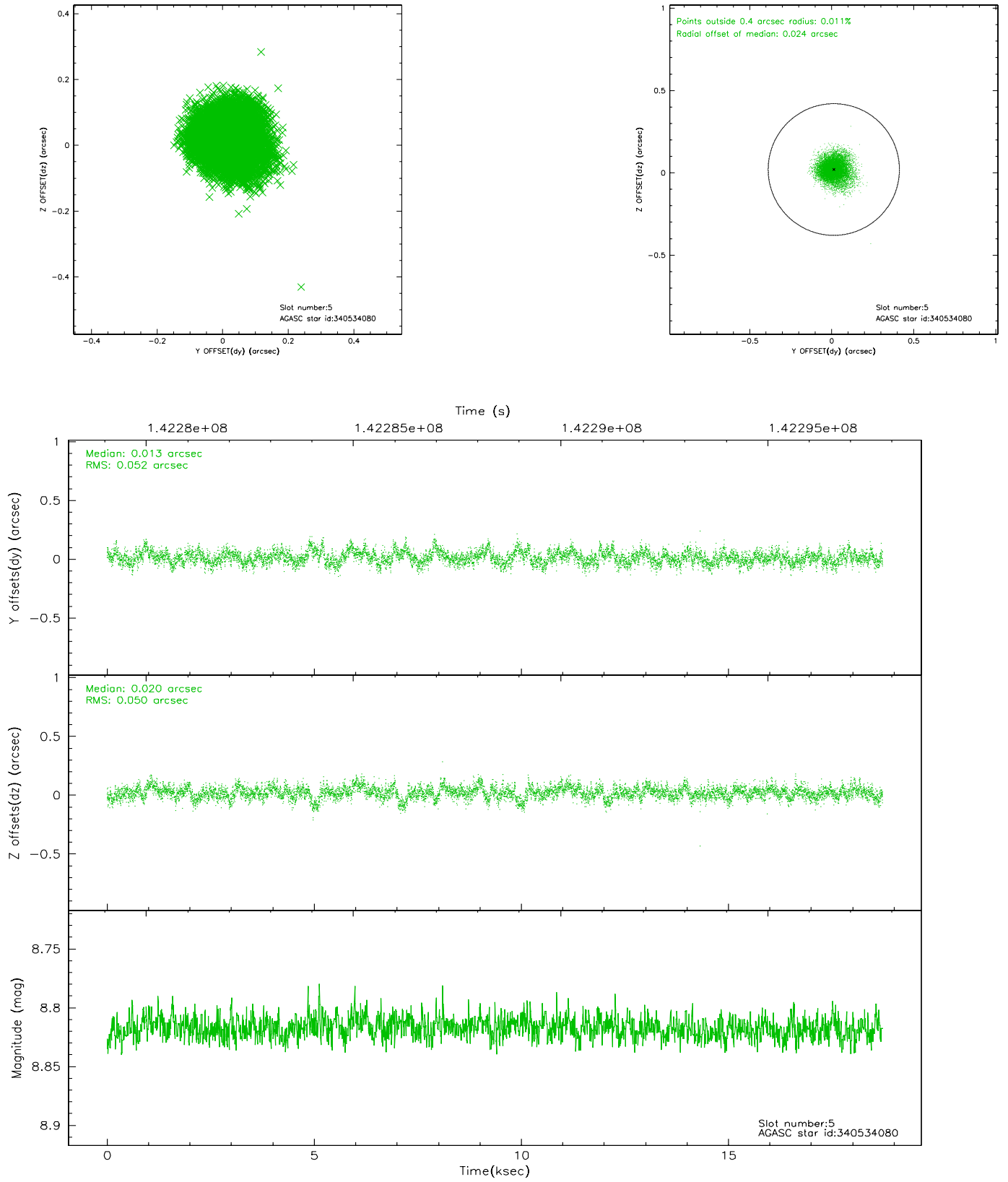
2.4.1 Slot 3



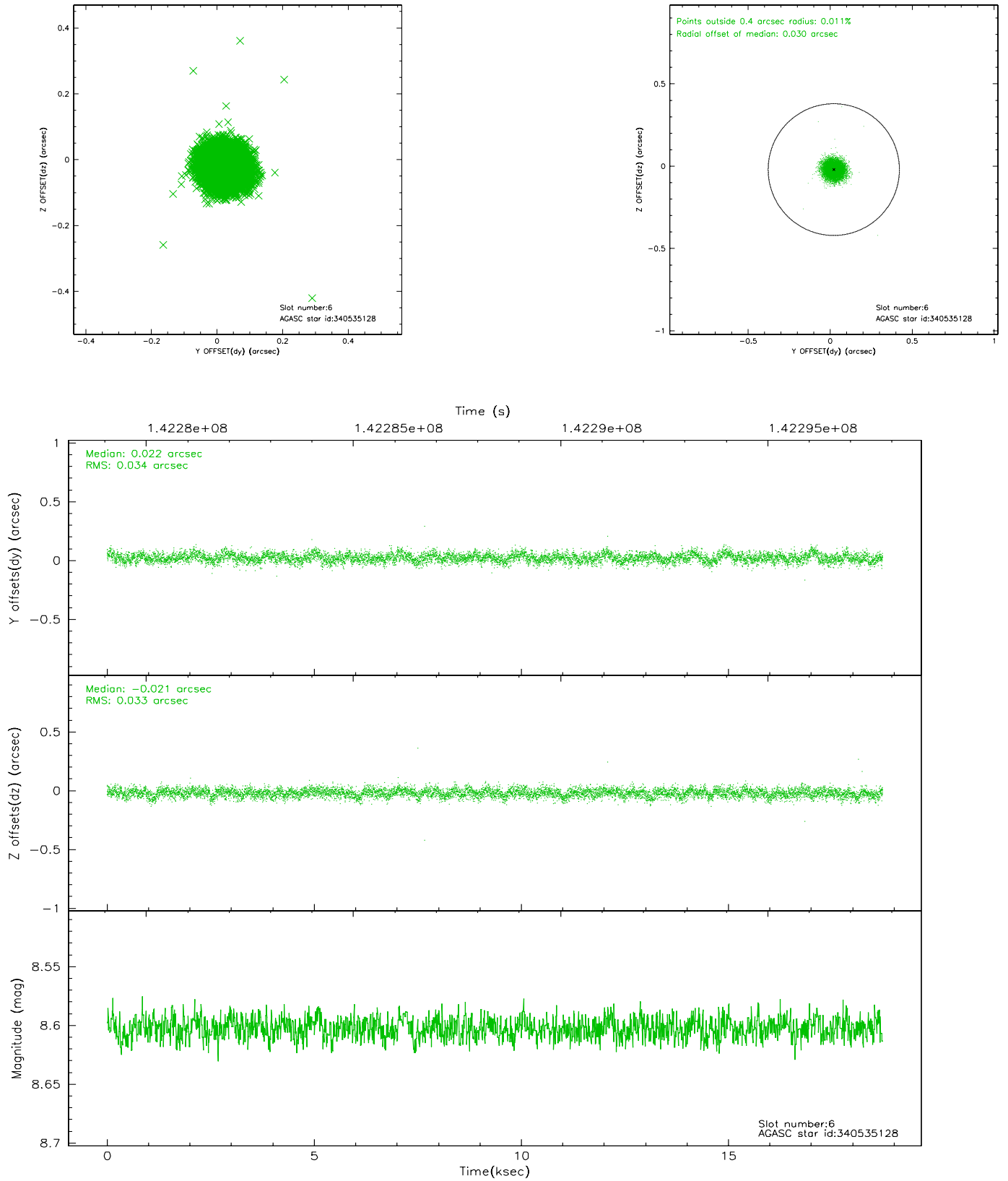
2.4.2 Slot 4



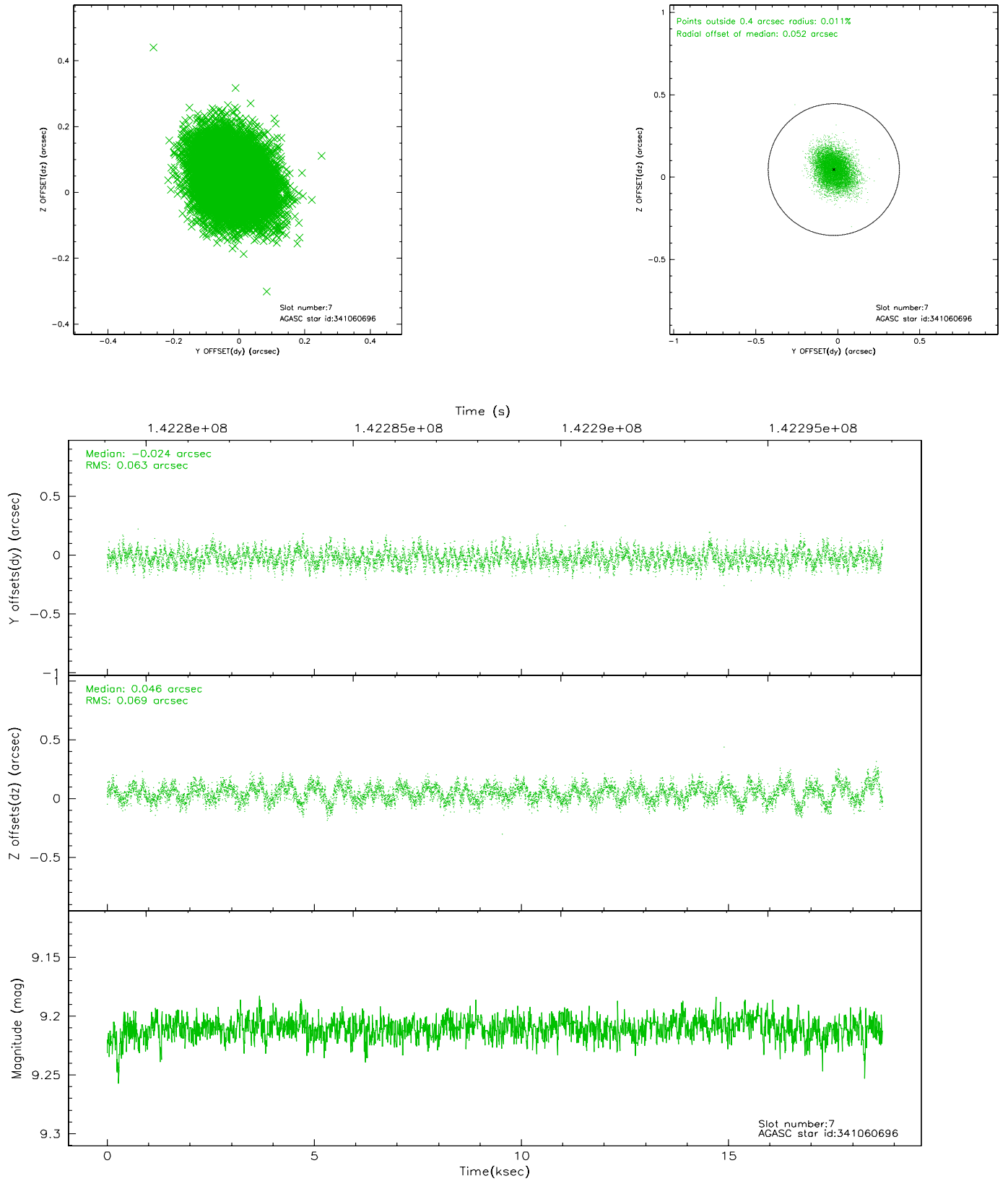
2.4.3 Slot 5



2.4.4 Slot 6

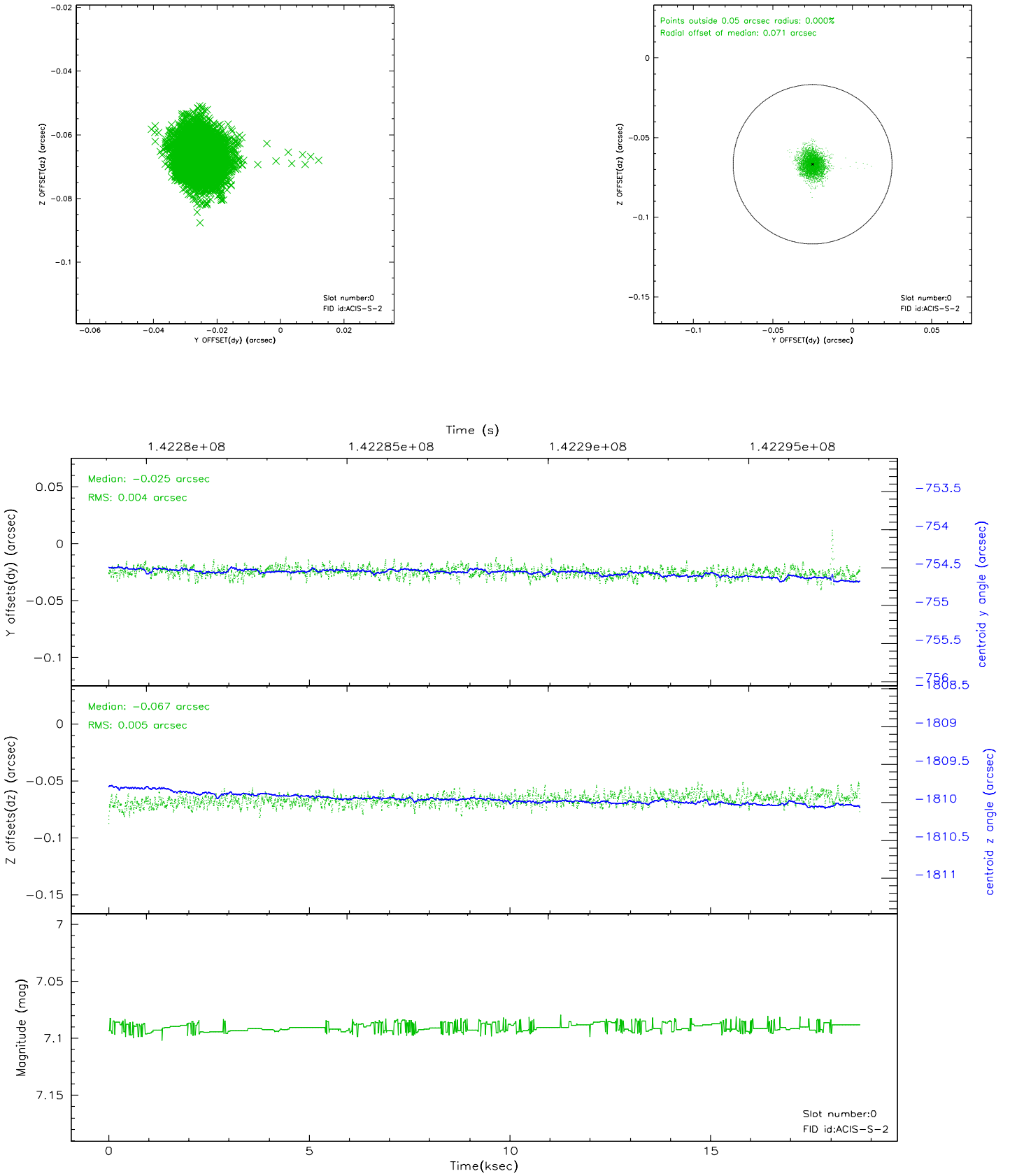


2.4.5 Slot 7

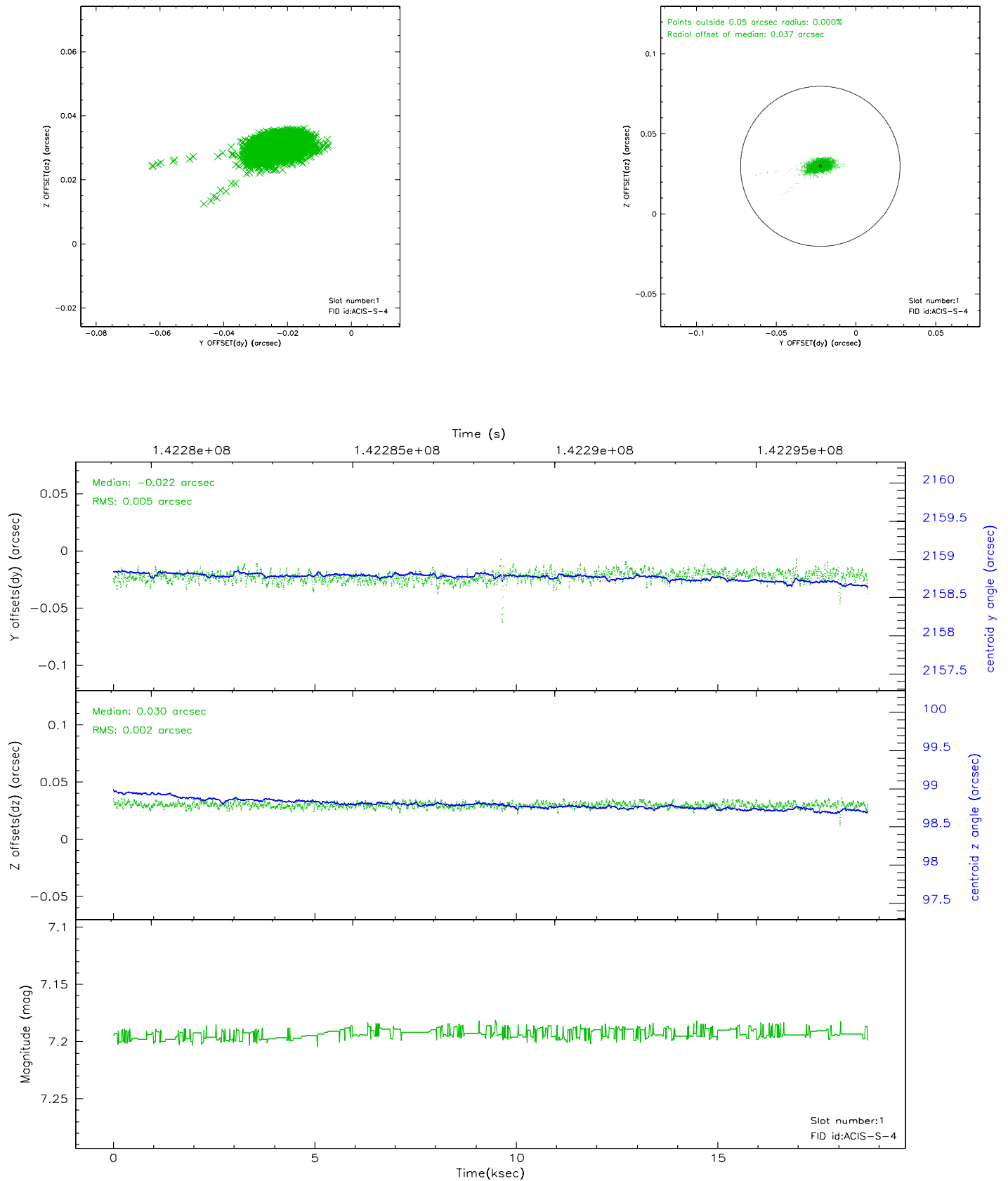


2.5 FID Slots

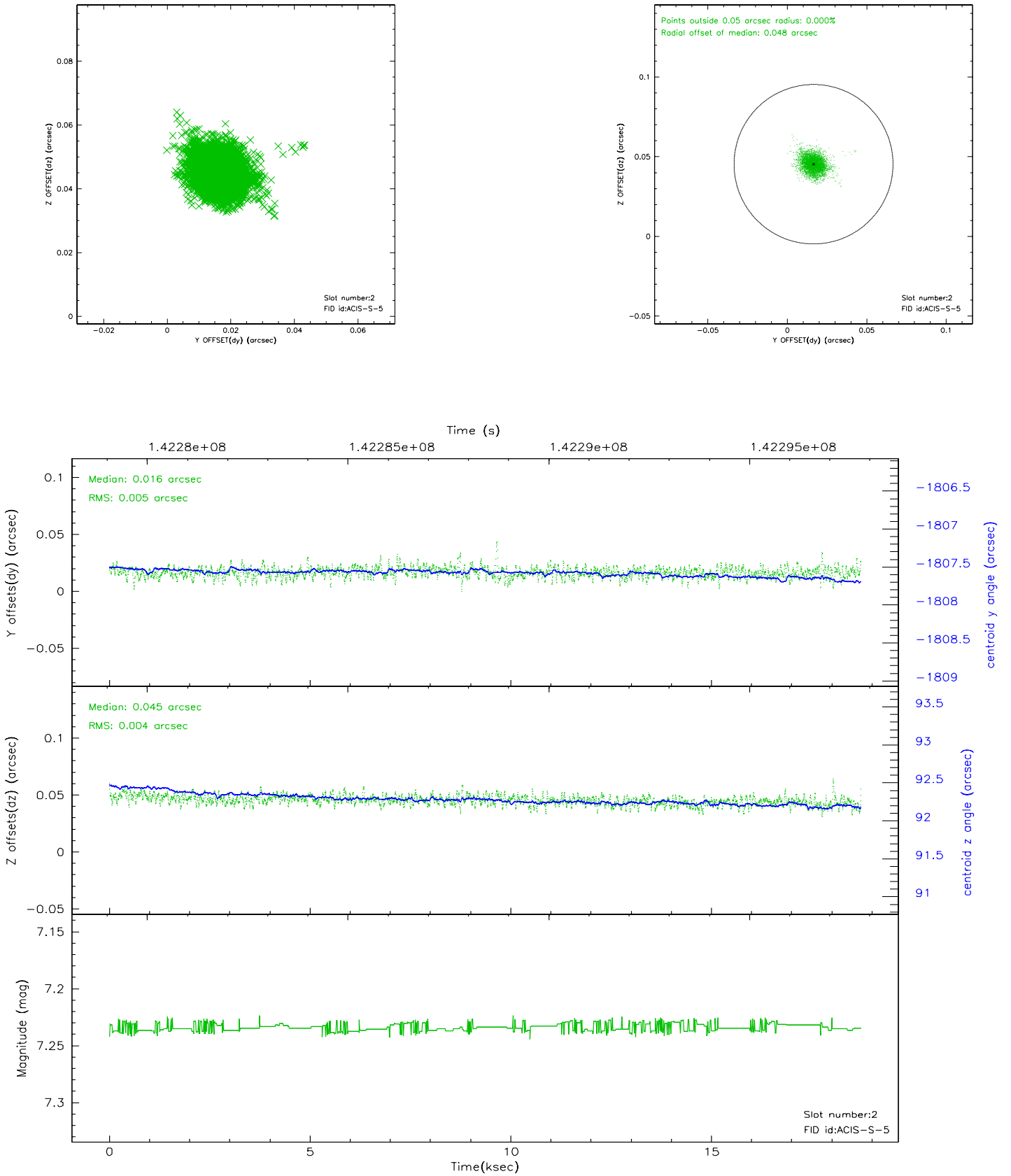
2.5.1 Slot 0



2.5.2 Slot 1

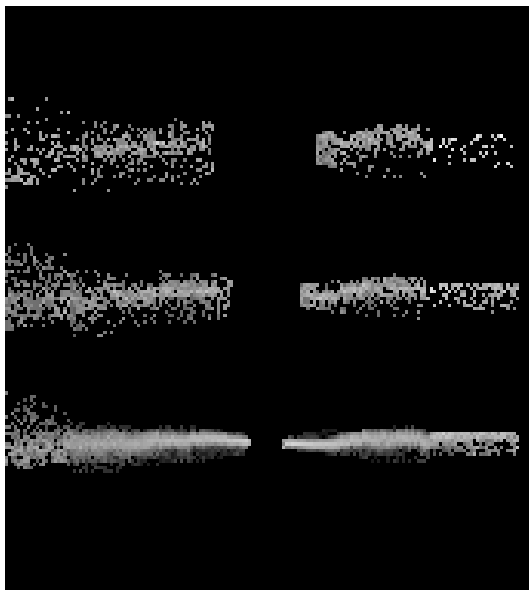


2.5.3 Slot 2

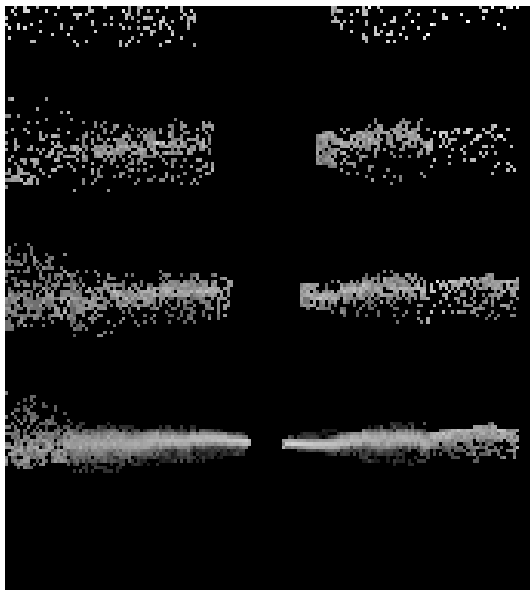


3 Gratings

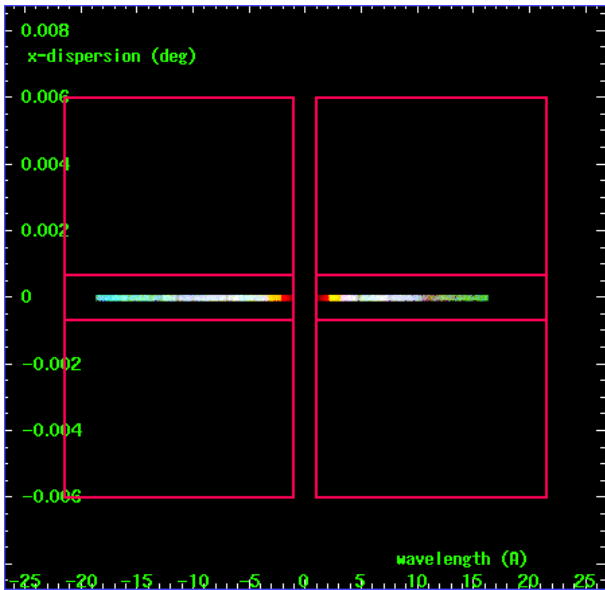
3.1 HEG Arm



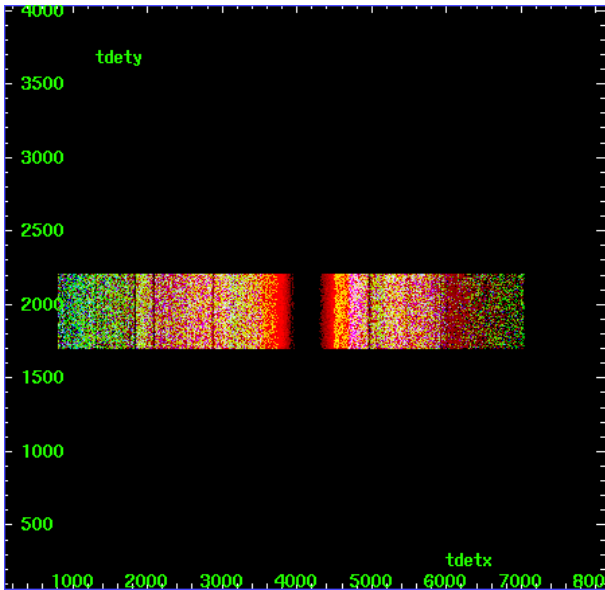
HEG Order Sort 123



HEG Order Sort ALL

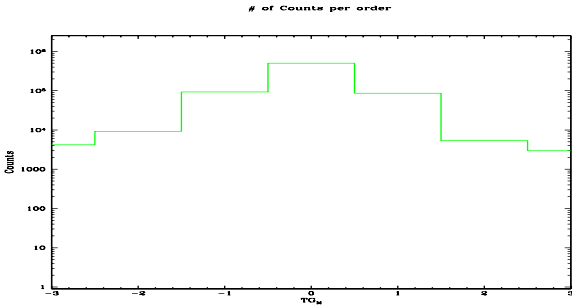


Spot Image HEG

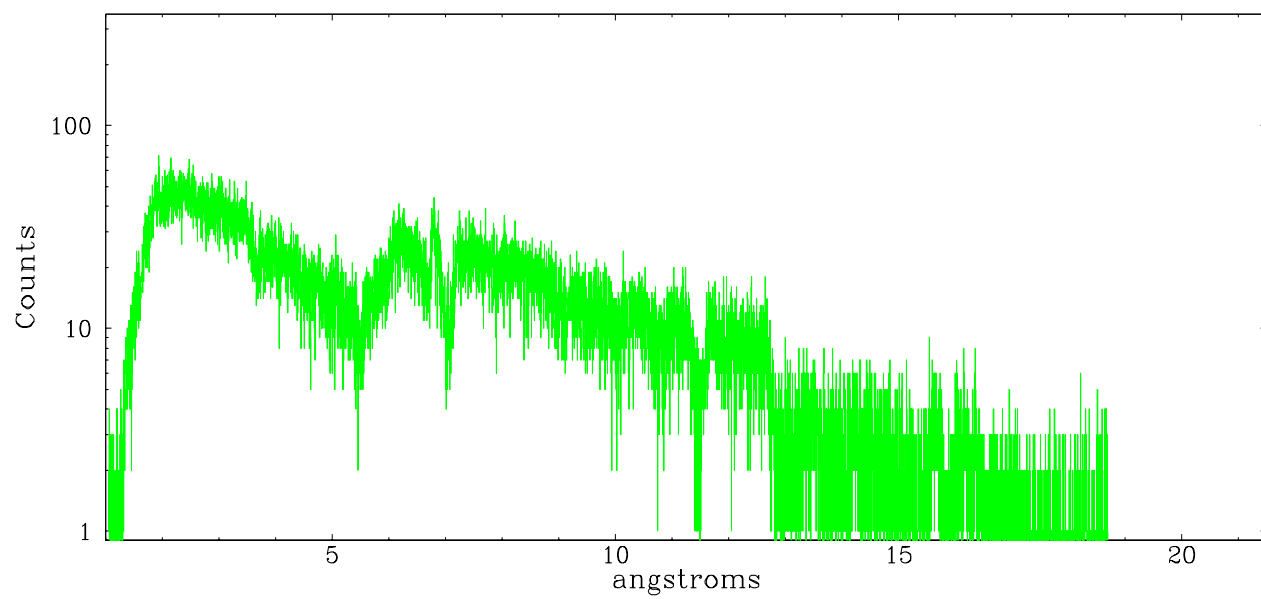


Full Detector HEG

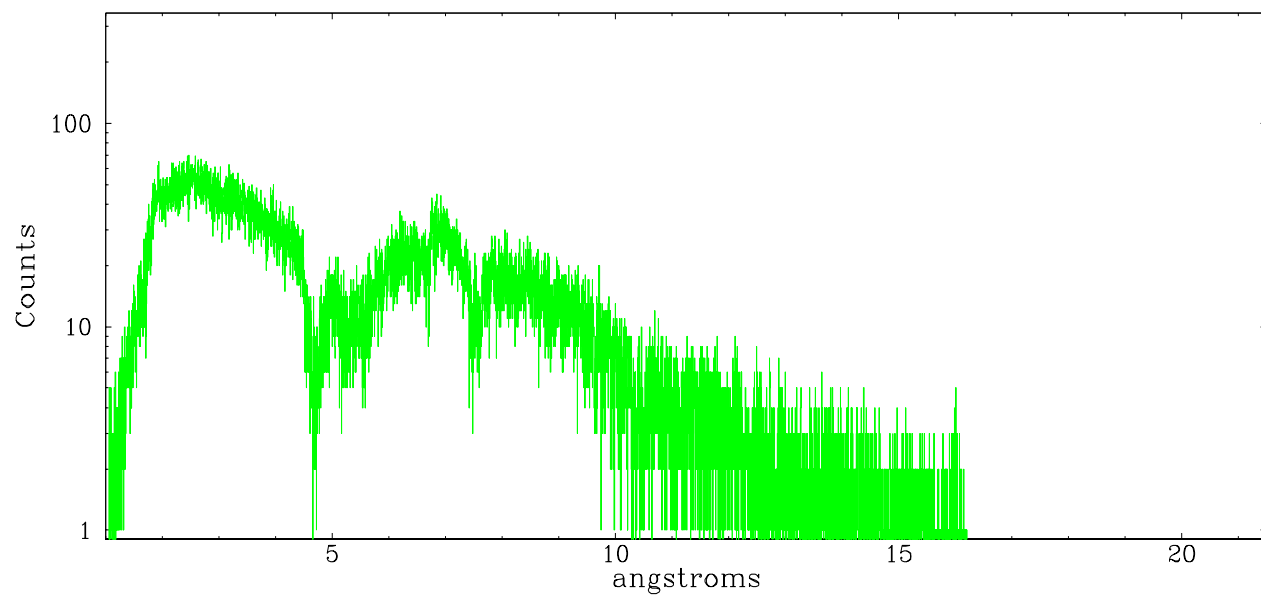
| | order -3 | order -2 | order -1 | order 0 | order 1 | order 2 | order 3 |
|--------|-------------|-------------|-------------|---------|------------|------------|------------|
| Events | 4202 | 9211 | 92640 | 499518 | 86603 | 5329 | 2949 |



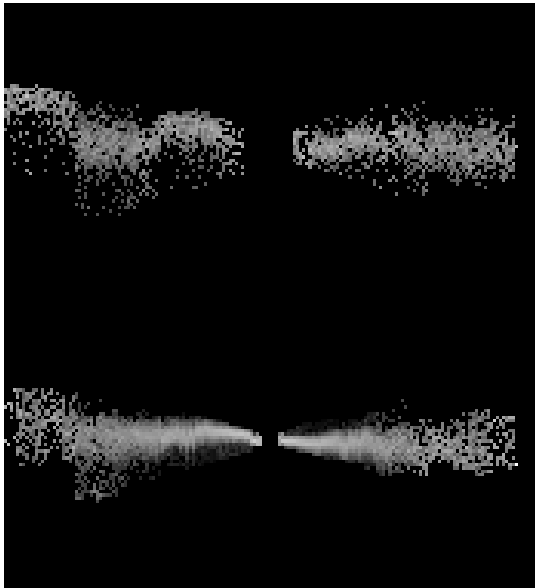
heg order -1



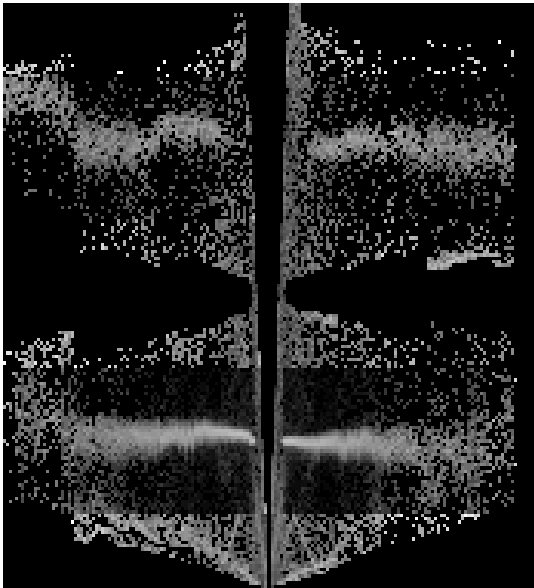
heg order +1



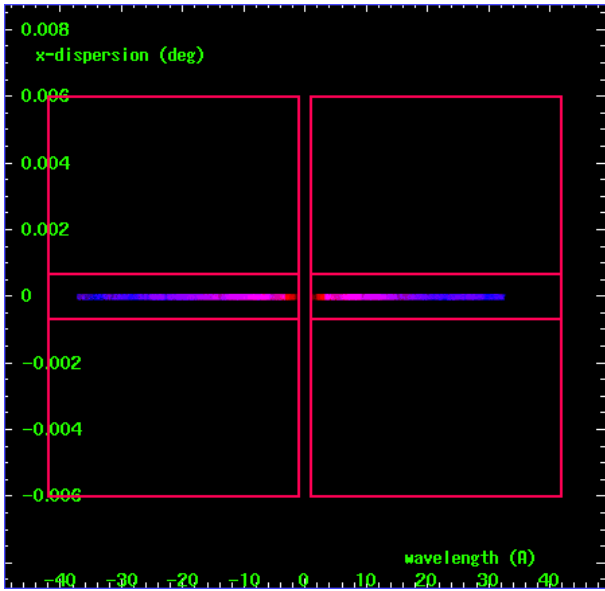
3.2 MEG Arm



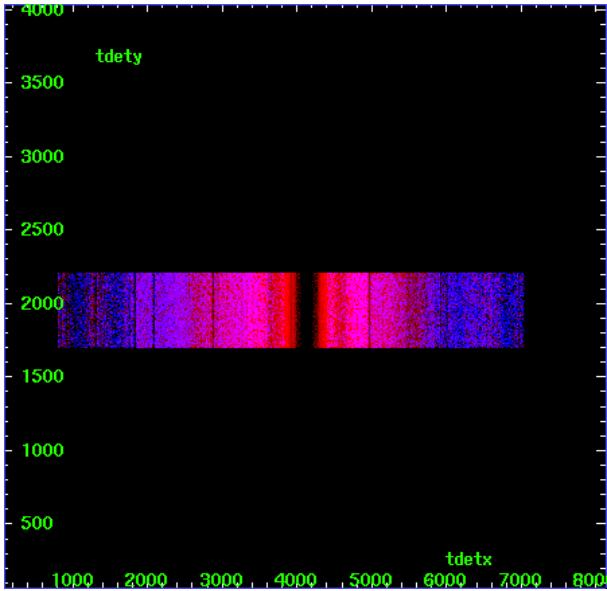
MEG Order Sort 123



MEG Order Sort ALL

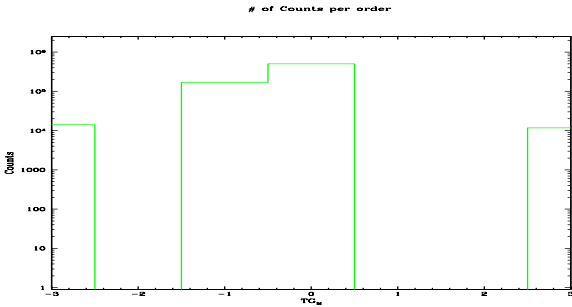


Spot Image MEG

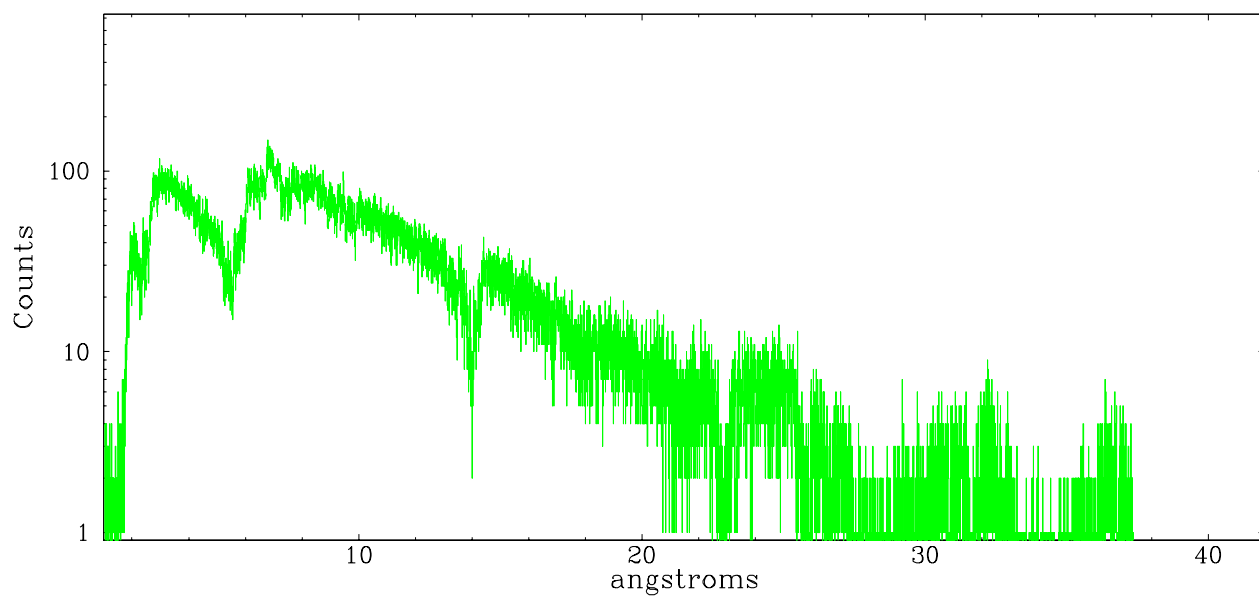


Full Detector MEG

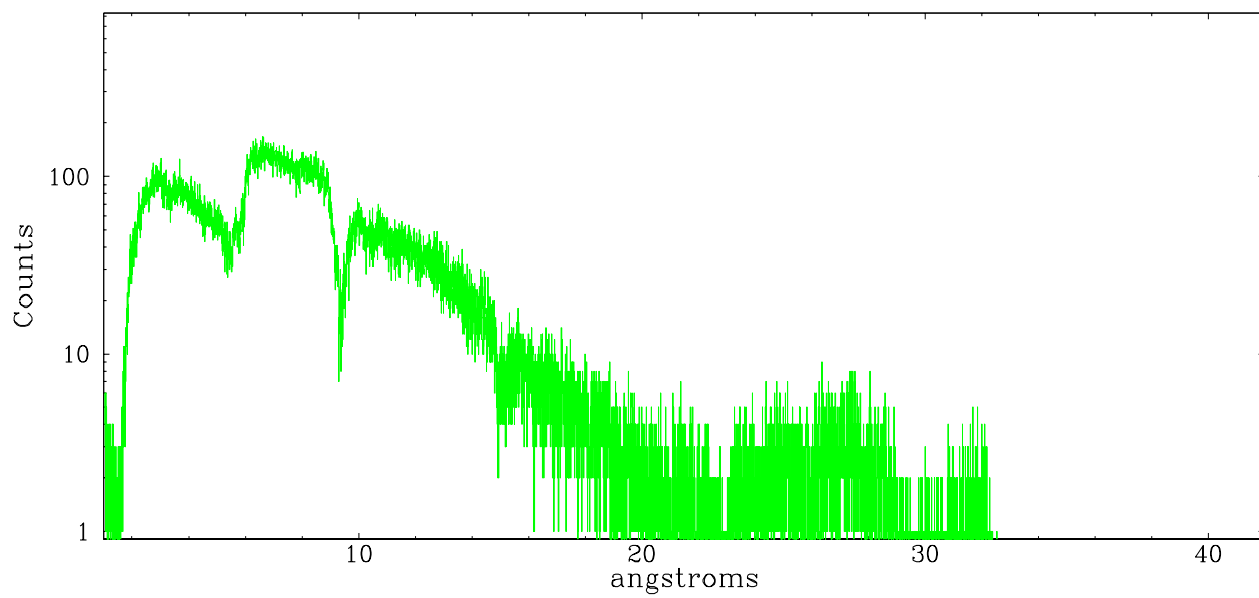
| | order -3 | order -2 | order -1 | order 0 | order 1 | order 2 | order 3 |
|--------|-------------|-------------|-------------|---------|---------|------------|------------|
| Events | 14158 | 0 | 167561 | 499518 | 174662 | 0 | 11745 |



meg order -1



meg order +1



A Summary

A.1 Status

| | |
|----------------------------|--------------------|
| V&V Scientist | David Huenemoerder |
| V&V Date (YYYY-MM-DD) | 2006.09.25 |
| V&V Edition | 1 |
| V&V Disposition and Status | OK |
| V&V Charge Time | 18.726 |

A.2 Comments

phase constraint: OK

start: 0.253

stop: 0.260