

V&V Reference Report

L2 ASCDS Version : 10.2.4

Observation 15810 - L2 Version 1
Chandra X-Ray Center

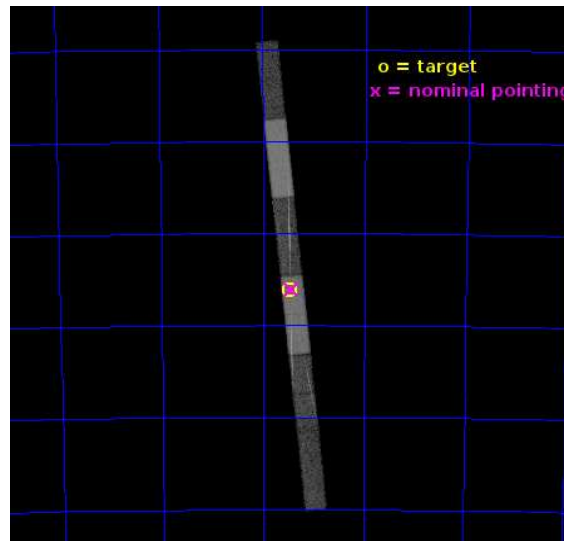
L2 Processing Date : Sep 21 2014

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1 Front

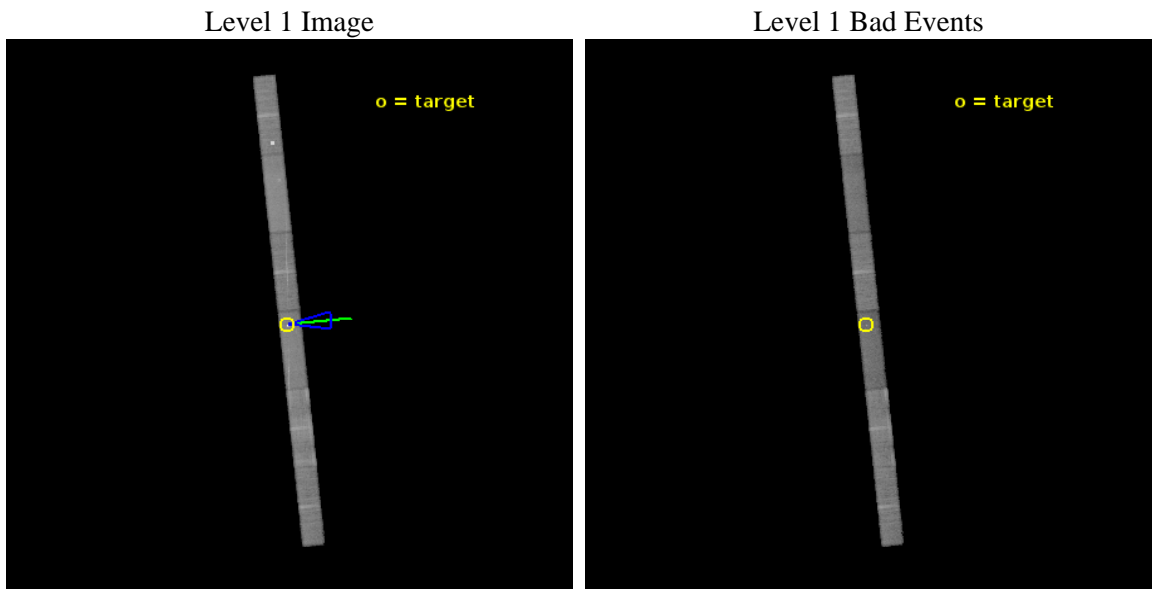
| | | |
|----------|--|---|
| seq_num | 502043 | Sequence number |
| obs_id | 15810 | Observation id |
| title | CHANDRA CYCLE 15 SPATIAL AND SPECTRAL MONITORING OF SN 1987A | Propo |
| observer | Prof. David Burrows | Principal investigator |
| object | SN 1987A | Source name |
| dtcycle | 0 | |
| cycle | P | events from which exps? Prim/Second/Both |
| ra_targ | 83.866667 | Observer's specified target RA [deg] |
| dec_targ | -69.26975 | Observer's specified target Dec [deg] |
| ra_nom | 83.859895901568 | Nominal RA [deg] |
| dec_nom | -69.267764530359 | Nominal Dec [deg] |
| roll_nom | 84.150296505584 | Nominal Roll [deg] |
| revision | 1 | Processing version of data |
| ontime | 50091.801085711 | Sum of GTIs [s] |
| livetime | 48290.139867385 | Livetime [s] |
| ontime4 | 50091.801085711 | Sum of GTIs [s] |
| ontime5 | 50091.801085711 | Sum of GTIs [s] |
| ontime6 | 50091.801085711 | Sum of GTIs [s] |
| ontime7 | 50091.801085711 | Sum of GTIs [s] |
| ontime8 | 50091.801085711 | Sum of GTIs [s] |
| ontime9 | 50091.801085711 | Sum of GTIs [s] |
| l2events | 134510 | Number of level 2 events |



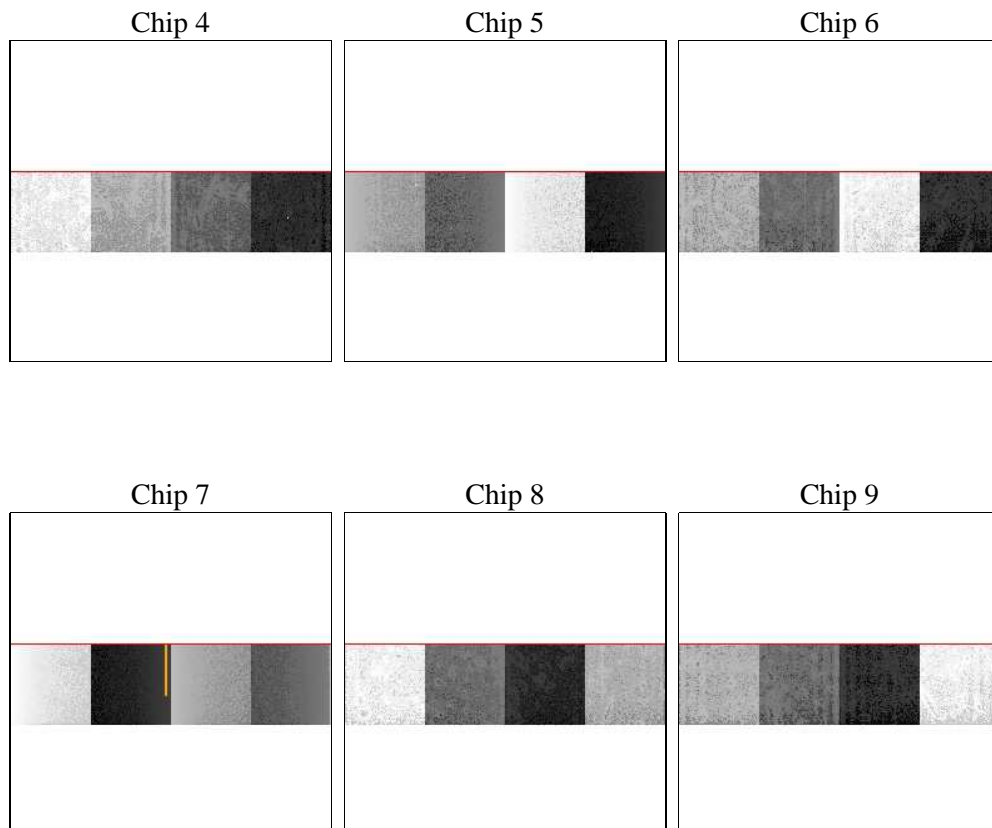
2 OBI

2.1 OBI

2.1.1 Images



2.1.2 Bias



2.1.3 Parameters

| | | | | | |
|----------|---------------------|--------------------------------|----------------|--------------------|---|
| obi_num | 0 | Obi number | sched_exp_time | 50000.000000 | [s] Scheduled observation exposure time |
| ascdsver | 10.2.4 | Processing system revision | ontime | 50091.801085711 | Sum of GTIs [s] |
| caldsver | 4.6.3 | | ontime4 | 50091.801085711 | Sum of GTIs [s] |
| date | 2014-09-21T12:58:26 | Date and time of file creation | ontime5 | 50091.801085711 | Sum of GTIs [s] |
| revision | 1 | Processing version of data | ontime6 | 50091.801085711 | Sum of GTIs [s] |
| | | | ontime7 | 50091.801085711 | Sum of GTIs [s] |
| | | | ontime8 | 50091.801085711 | Sum of GTIs [s] |
| | | | ontime9 | 50091.801085711 | Sum of GTIs [s] |
| | | | l1events | 529644 | Number of level 1 events |
| | | | tgmethod | TGDETECT | Method used to create src1a file |
| | | | grade0_pos | (4078.76, 4081.00) | grade 0 sky pixel position |

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 | 95410 | 97712 | 76814 | 90056 | 102010 | 67642 | grade 0 events | 16514 | 5038 | 7184 | 7302 | 8215 | 2539 |
| rejected events | 72667 | 46522 | 62842 | 39317 | 73626 | 59497 | | 17% | 5% | 9% | 8% | 8% | 3% |
| rejected % | 76% | 47% | 81% | 43% | 72% | 87% | grade 1 events | 81 | 223 | 48 | 149 | 53 | 28 |
| | | | | | | | | 0% | 0% | 0% | 0% | 0% | 0% |
| | | | | | | | grade 2 events | 2203 | 15338 | 2242 | 11564 | 6230 | 1617 |
| | | | | | | | | 2% | 15% | 2% | 12% | 6% | 2% |
| | | | | | | | grade 3 events | 1292 | 3021 | 1379 | 5753 | 3019 | 1253 |
| | | | | | | | | 1% | 3% | 1% | 6% | 2% | 1% |
| | | | | | | | grade 4 events | 1199 | 3029 | 1345 | 5438 | 2807 | 1154 |
| | | | | | | | | 1% | 3% | 1% | 6% | 2% | 1% |
| | | | | | | | grade 5 events | 2858 | 8707 | 2808 | 8529 | 4208 | 2958 |
| | | | | | | | | 2% | 8% | 3% | 9% | 4% | 4% |
| | | | | | | | grade 6 events | 1535 | 24765 | 1822 | 20685 | 8113 | 1582 |
| | | | | | | | | 1% | 25% | 2% | 22% | 7% | 2% |
| | | | | | | | grade 7 events | 69728 | 37591 | 59986 | 30636 | 69365 | 56511 |
| | | | | | | | | 73% | 38% | 78% | 34% | 67% | 83% |

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 | HETG | HETG | 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 | 83.892544 | 83.85989590156822 | CCD I2 on | N | N |
| [deg] Pointing Dec | -69.292668 | -69.26776453035896 | CCD I3 on | N | N |
| [deg] Pointing Roll | 84.024204 | 84.15029650558351 | CCD S0 on | O1 | Y |
| [deg] Roll angle | 84.000000 | 84.000000 | CCD S1 on | Y | Y |
| [deg] Roll tolerance | 12.000000 | 12.000000 | CCD S2 on | Y | Y |
| Roll constraint allows 180D rotation | N | N | CCD S3 on | Y | Y |
| [s] Window start time (MET) | 526780867.184000 | 526780867.184000 | CCD S4 on | Y | Y |
| [s] Window stop time (MET) | 528940807.184000 | 528940807.184000 | CCD S5 on | Y | Y |
| [mm] SIM focus pos | -0.684267 | -0.6828225247311905 | Number of optional ACIS chips dropped | 0 | 0 |
| [mm] SIM defocus | 0 | 0.001444936568705701 | On-chip summing requested | N | N |
| [mm] SIM translation stage pos | -190.132523 | -190.1400660498719 | Subarray requested | CUSTOM | 1/4 |
| [mm] SIM translation stage offset | 0 | 0.00754346686406393 | Subarray start row | 351 | 351 |
| [s] Observation start time (MET) | 527590651.184000 | 527589343.90848 | Subarray row count | 256 | 256 |
| Observation start date | 2014-09-20T08:56:24 | 2014-09-20T08:35:43 | Alternating exposures requested | N | N |
| [s] Observation end time (MET) | 527640651.184000 | 527641457.98637 | [s] Primary exposure time | 0.000000 | 1.1 |
| Observation end date | 2014-09-20T22:49:44 | 2014-09-20T23:04:17 | | | |
| Read mode | TIMED | TIMED | | | |

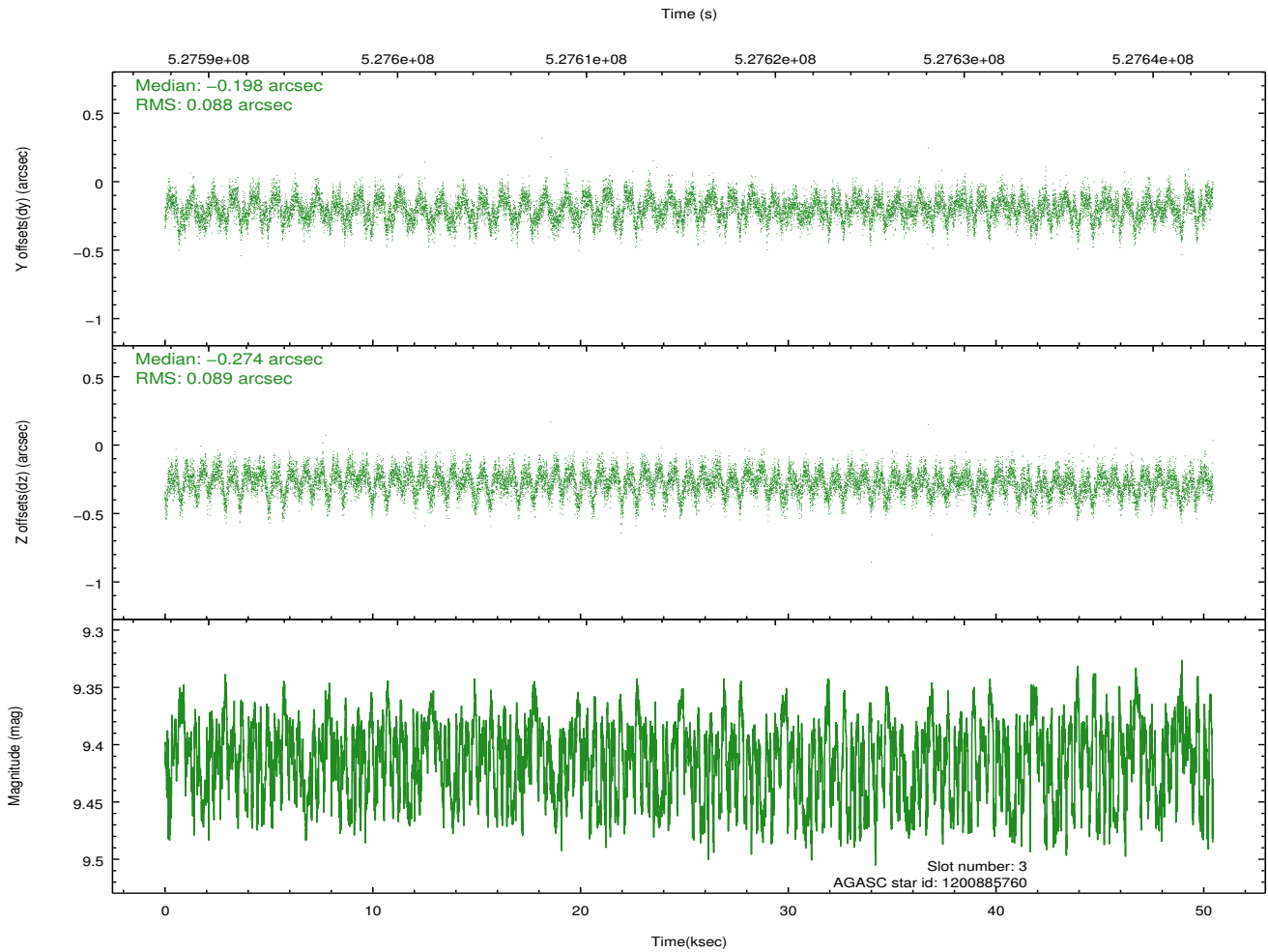
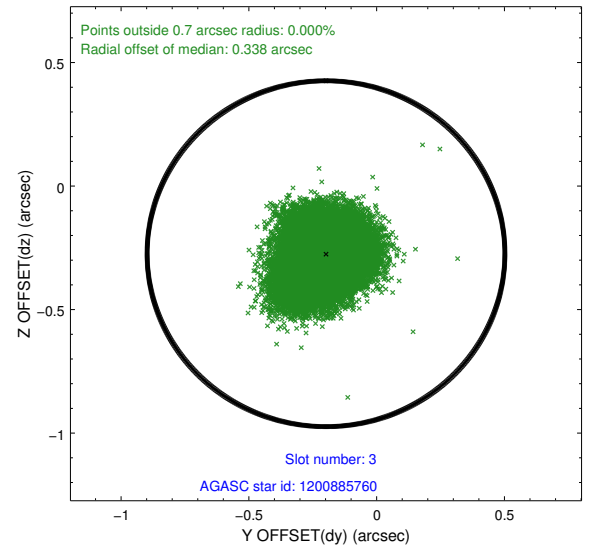
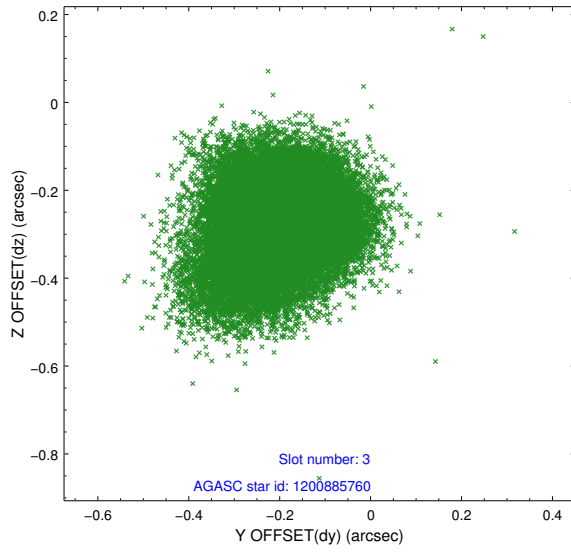
2.3 Aspect

Slot Statistics

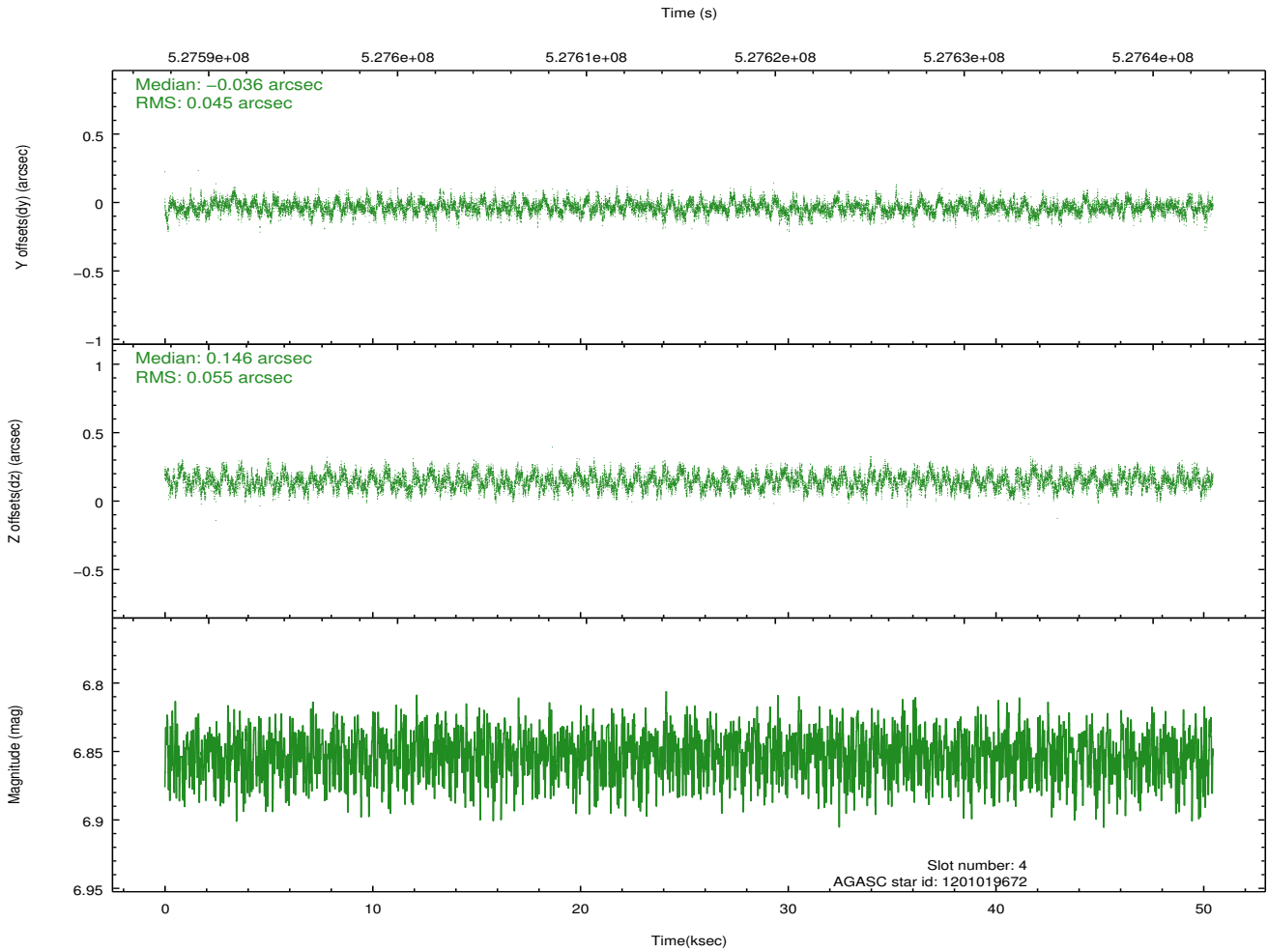
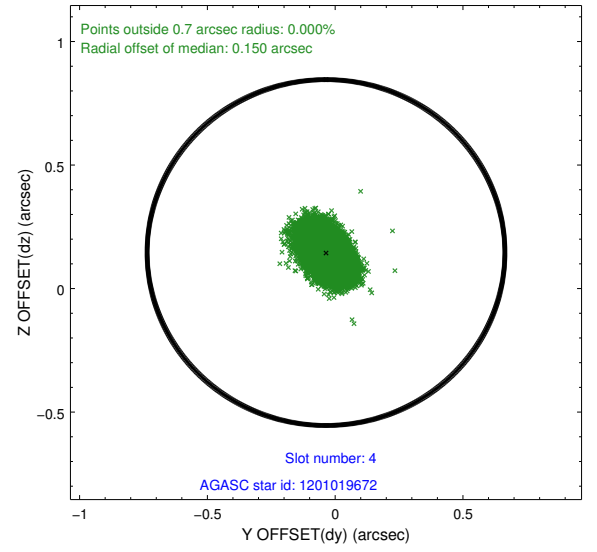
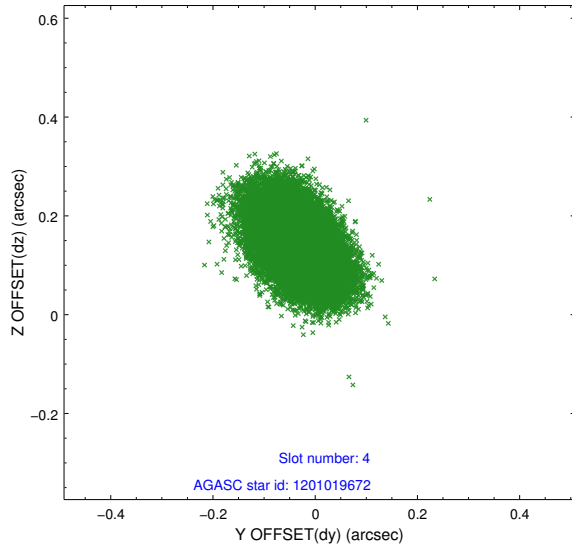
| slot | status | id | mag | n_pts | med_dy | med_dz | dr1 | dr2 | ra | dec | mean_y | mean_z |
|------|--------|------------|------|-------|--------|--------|-------|-------|-----------|------------|----------|----------|
| 0 | FID | ACIS-S-4 | 7.08 | 12306 | 0.217 | -0.005 | 0.019 | 0.050 | 0.000000 | 0.000000 | 2138.77 | 167.12 |
| 1 | FID | ACIS-S-5 | 7.11 | 12306 | -0.229 | -0.001 | 0.021 | 0.091 | 0.000000 | 0.000000 | -1827.92 | 160.50 |
| 2 | FID | ACIS-S-6 | 7.21 | 12306 | -0.013 | 0.021 | 0.029 | 0.041 | 0.000000 | 0.000000 | 386.80 | 804.31 |
| 3 | GUIDE | 1200885760 | 9.41 | 24592 | -0.198 | -0.274 | 0.133 | 0.214 | 83.723637 | -68.777667 | 1820.65 | 411.80 |
| 4 | GUIDE | 1201019672 | 6.85 | 24611 | -0.036 | 0.146 | 0.075 | 0.124 | 85.312192 | -68.770187 | 2042.42 | -1646.43 |
| 5 | GUIDE | 1201020040 | 8.60 | 24605 | -0.092 | 0.200 | 0.106 | 0.166 | 85.379163 | -68.879396 | 1657.49 | -1764.91 |
| 6 | GUIDE | 1201410616 | 9.31 | 24592 | 0.146 | -0.258 | 0.112 | 0.180 | 82.516808 | -69.784406 | -1957.43 | 1515.77 |
| 7 | GUIDE | 1201542672 | 8.18 | 24607 | 0.183 | 0.189 | 0.091 | 0.145 | 84.492488 | -69.957531 | -2304.12 | -985.72 |

2.4 Star Slots

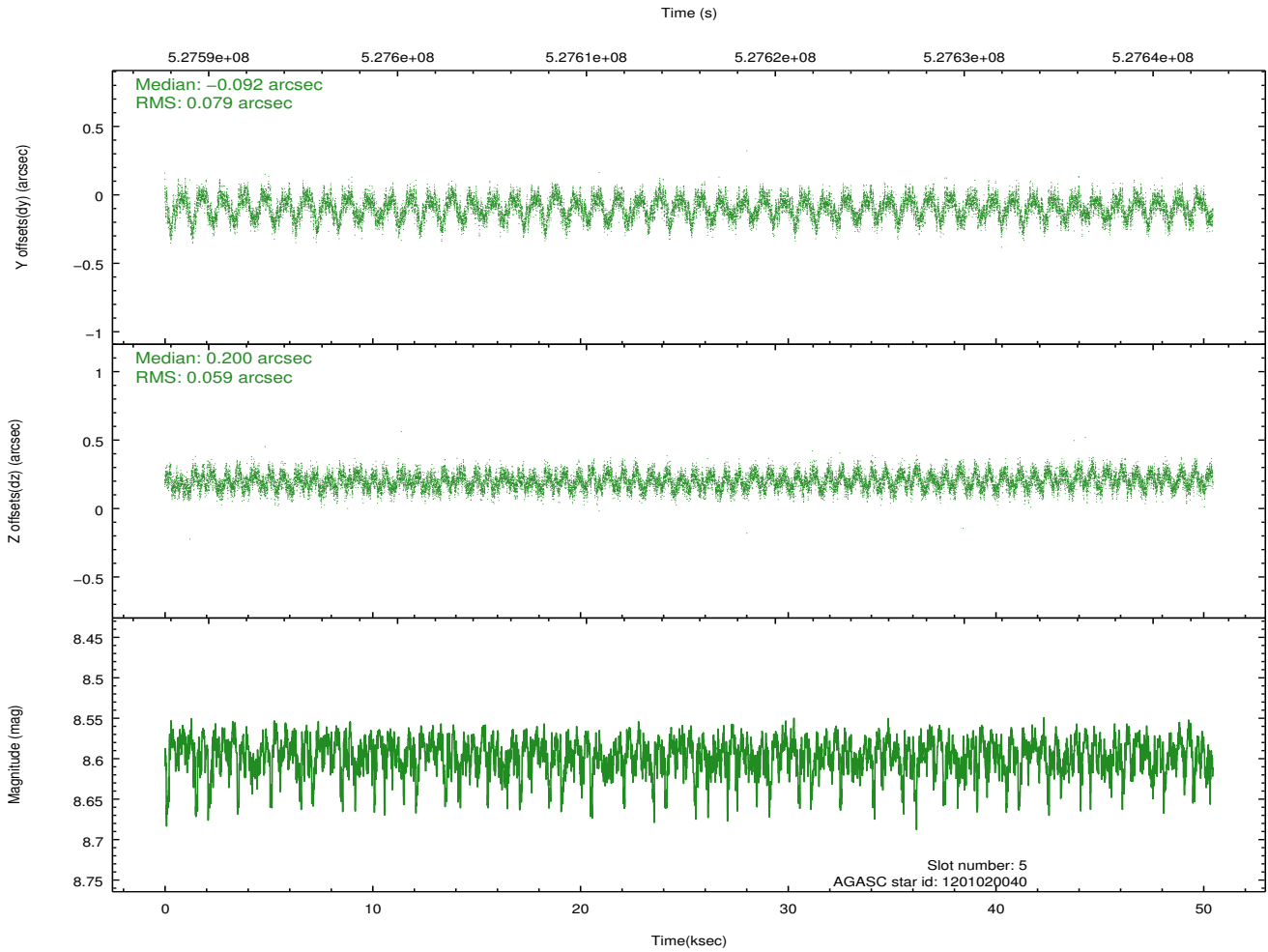
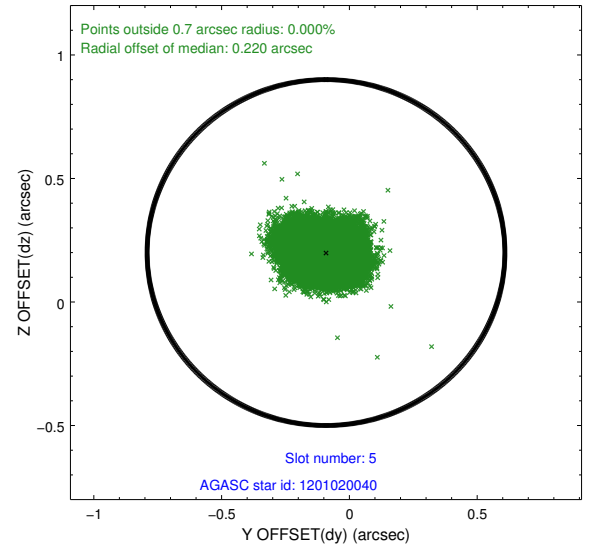
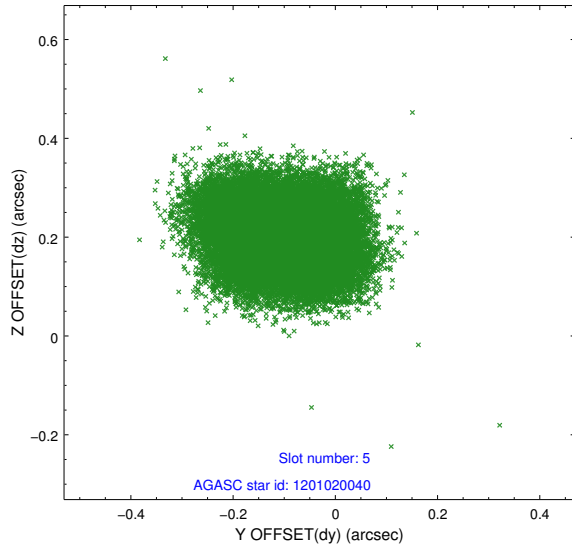
2.4.1 Slot 3



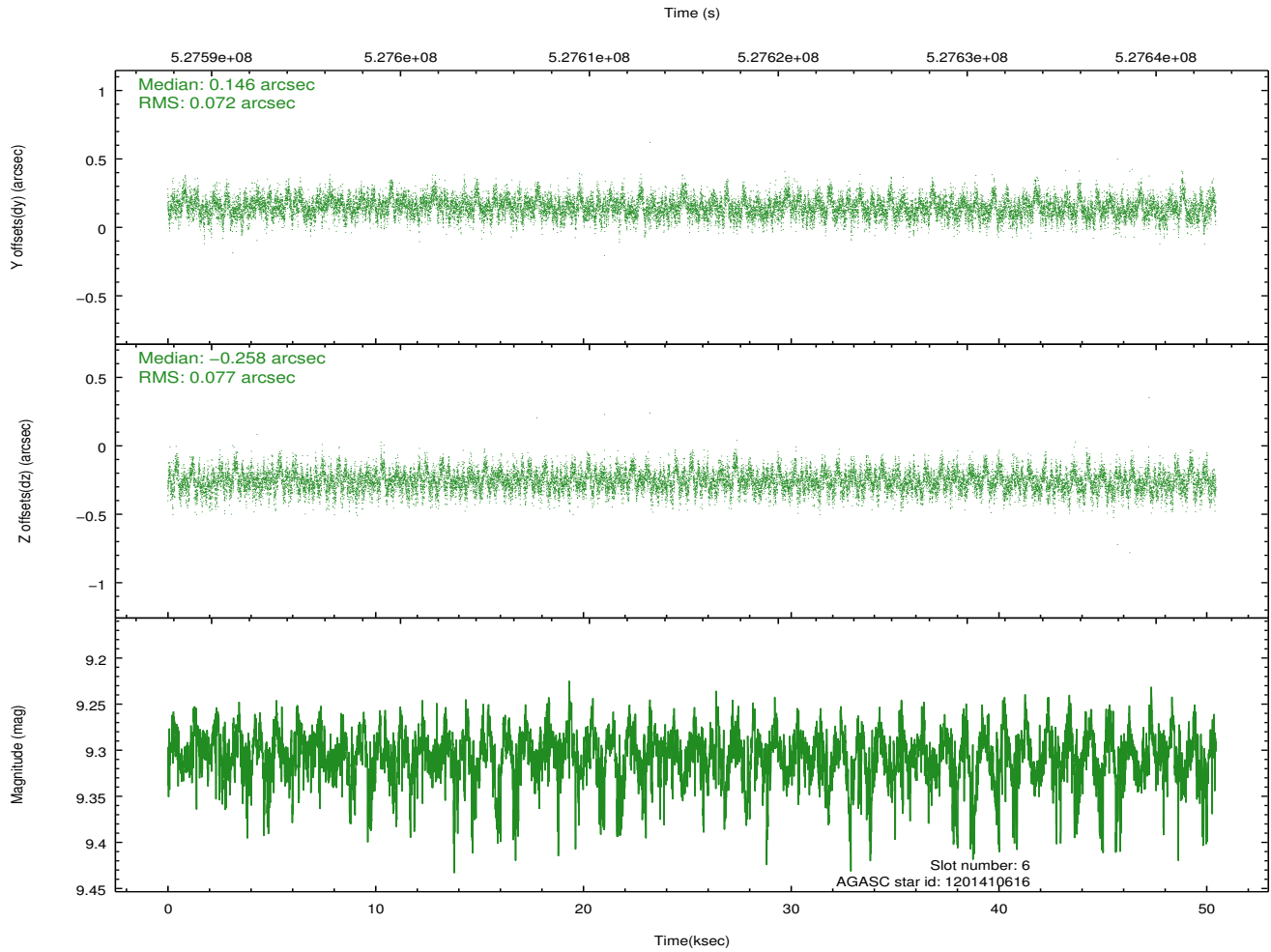
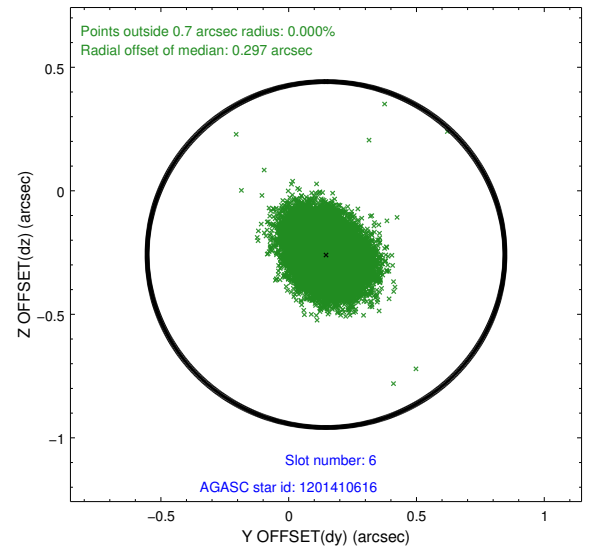
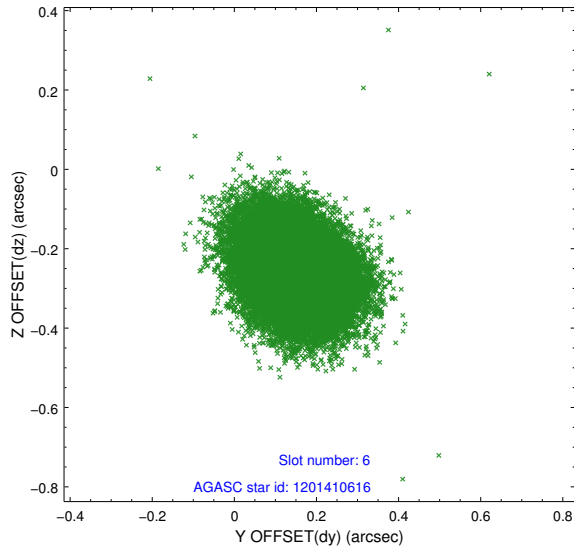
2.4.2 Slot 4



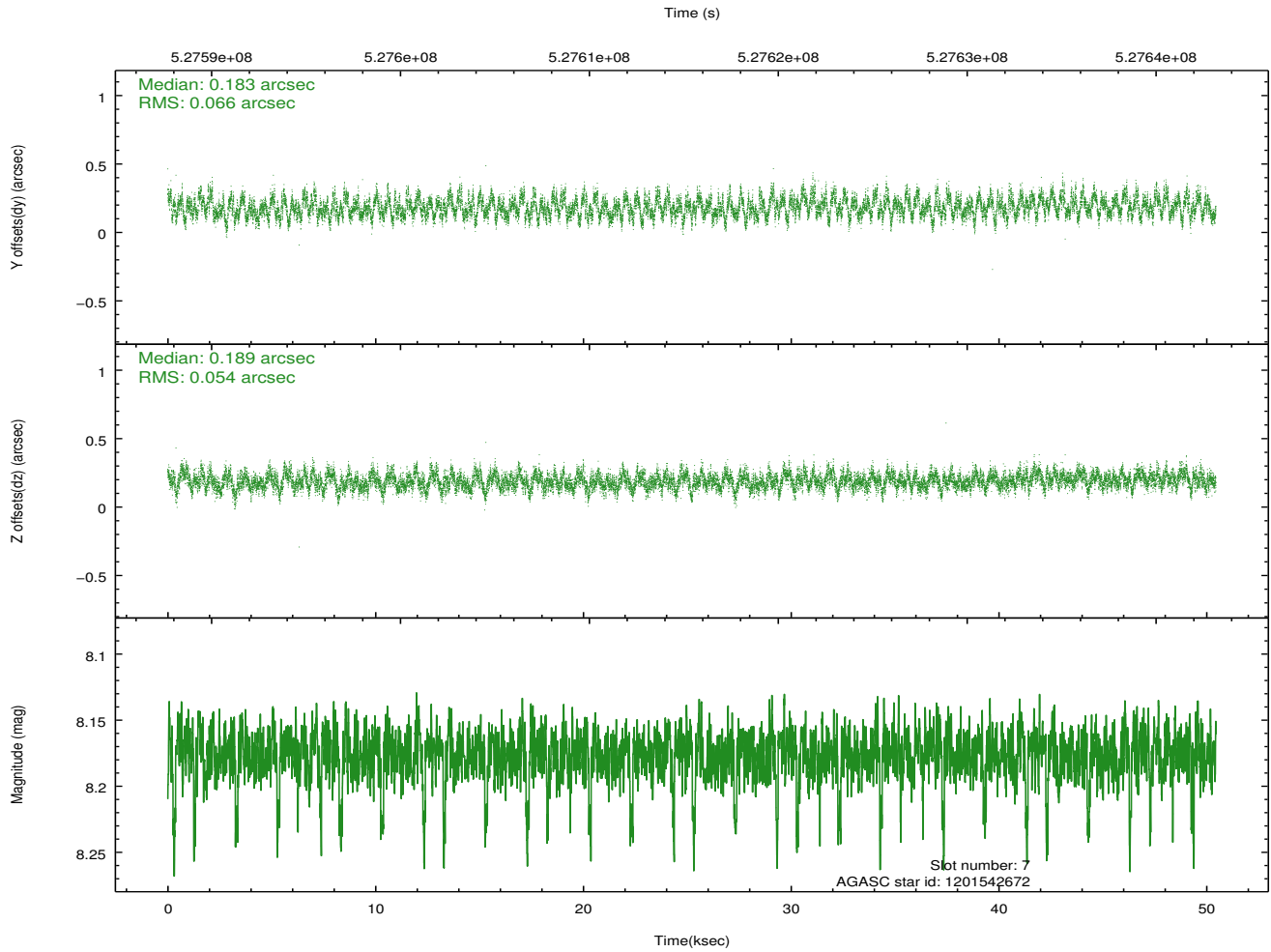
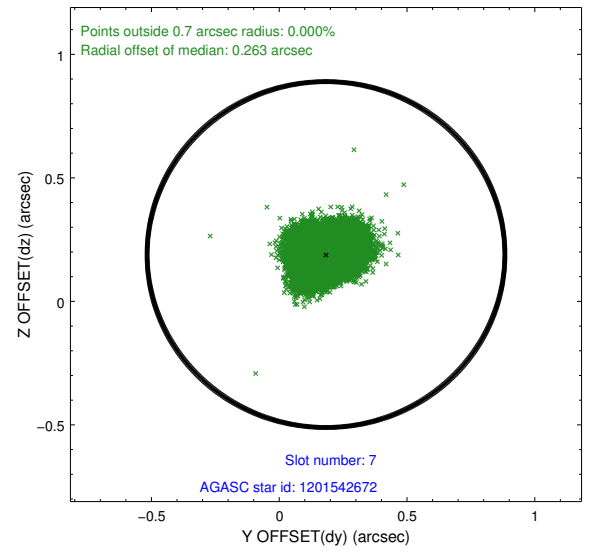
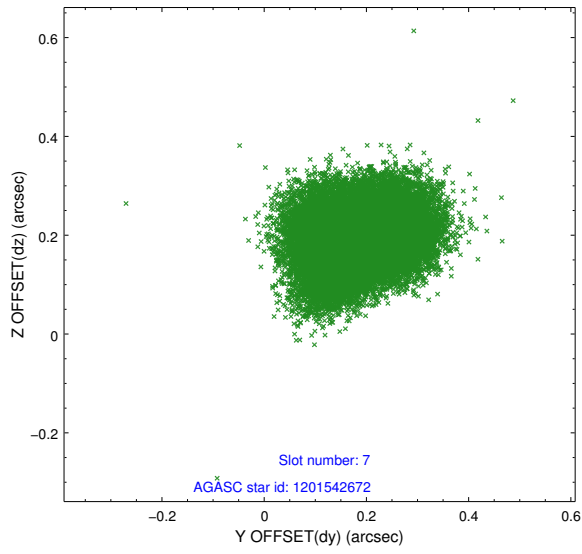
2.4.3 Slot 5



2.4.4 Slot 6

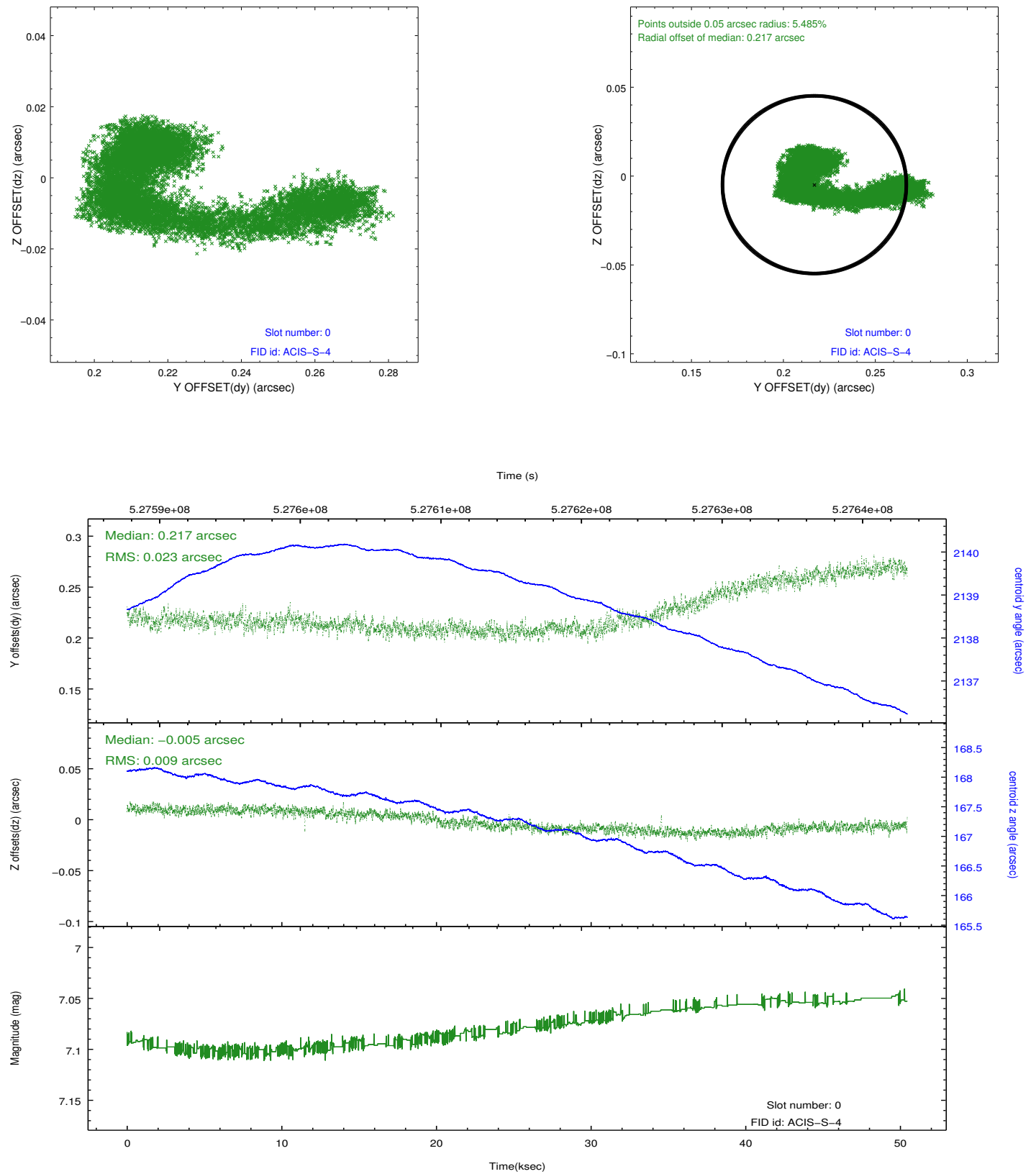


2.4.5 Slot 7

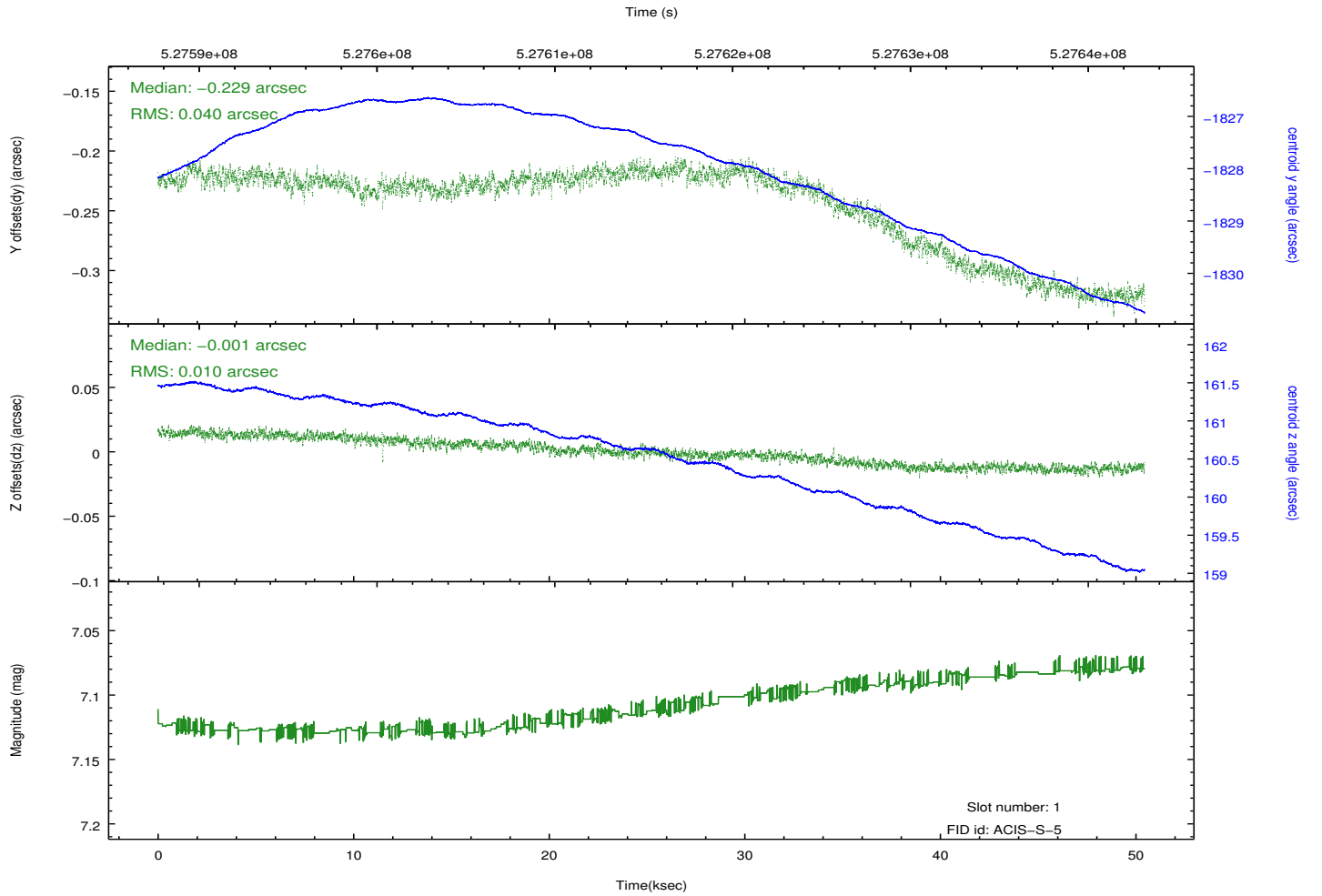
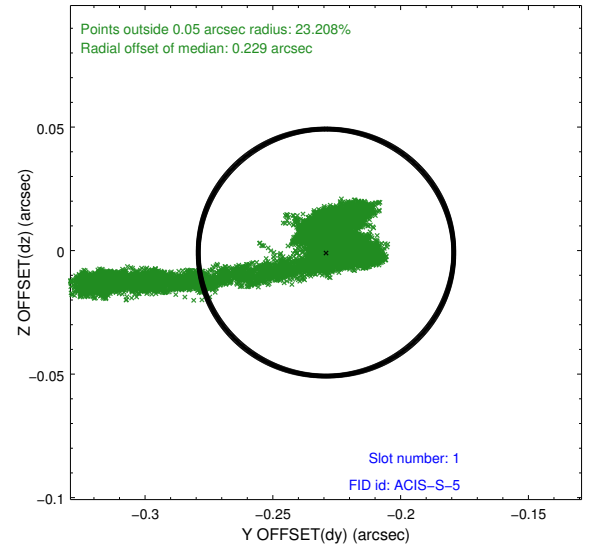
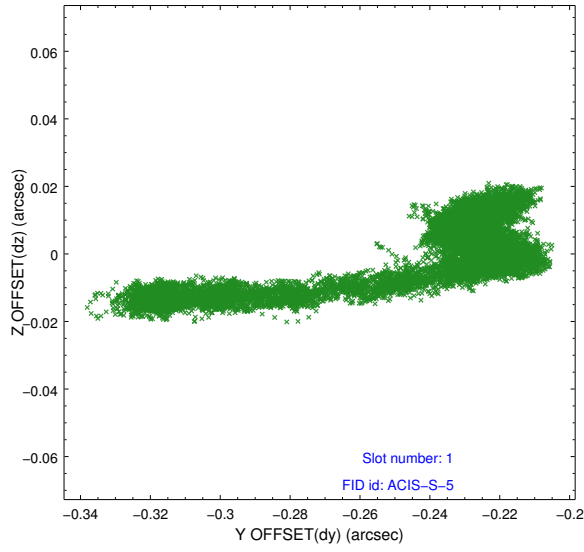


2.5 FID Slots

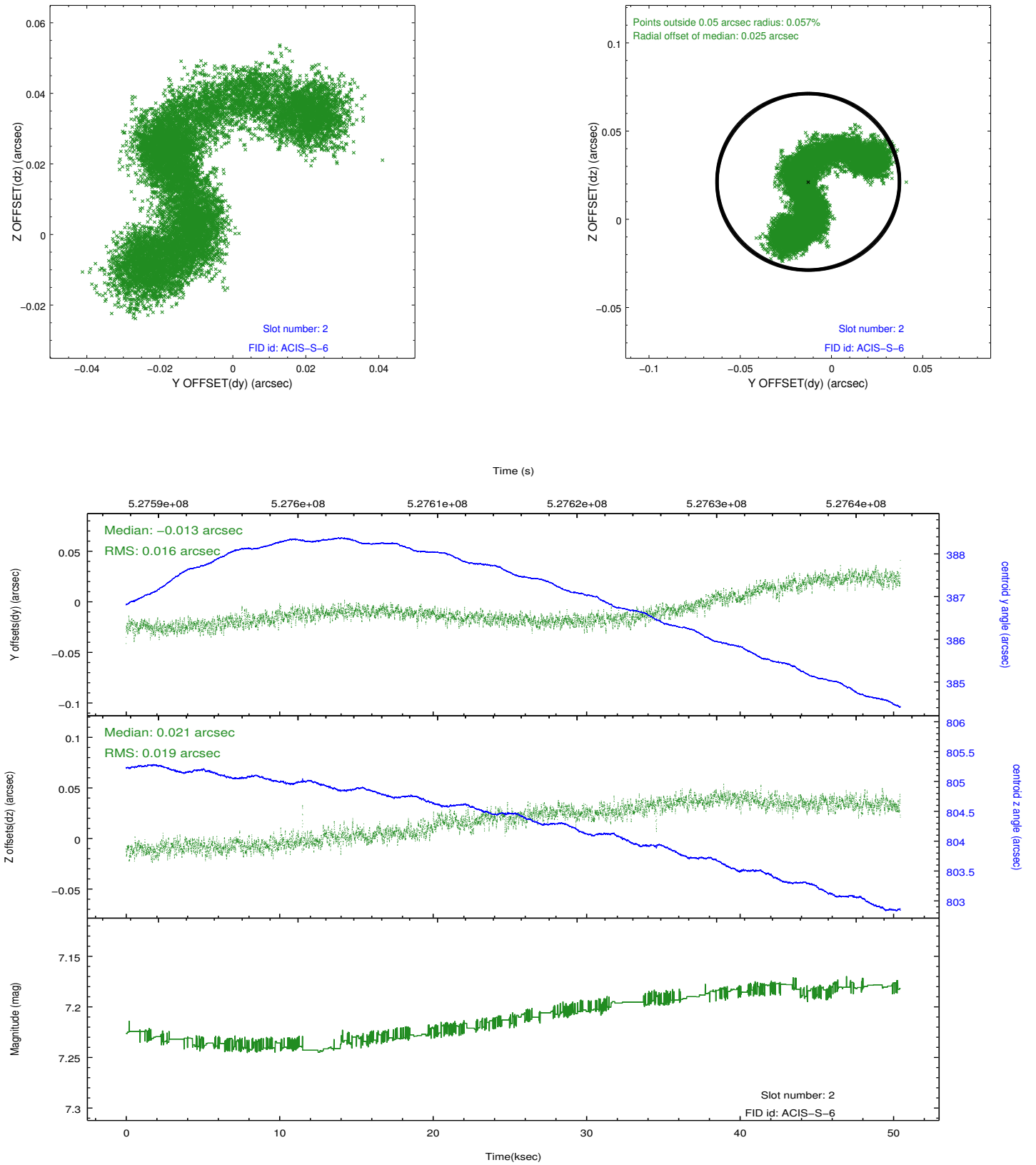
2.5.1 Slot 0



2.5.2 Slot 1



2.5.3 Slot 2

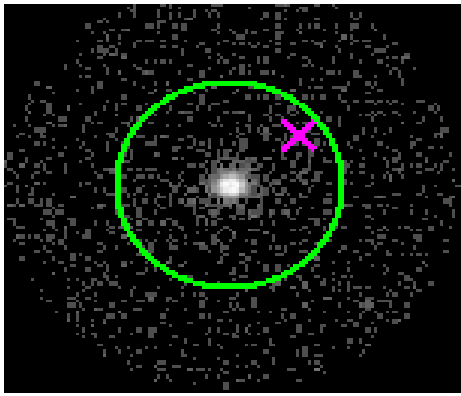


3 Gratings

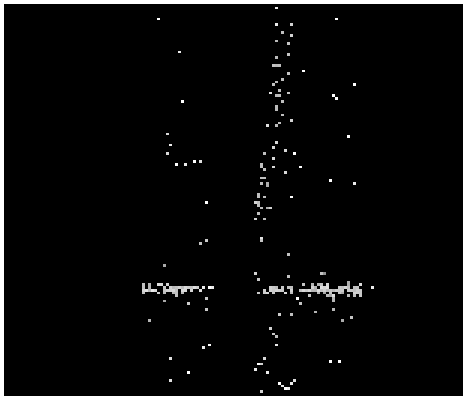
3.1 HEG Arm



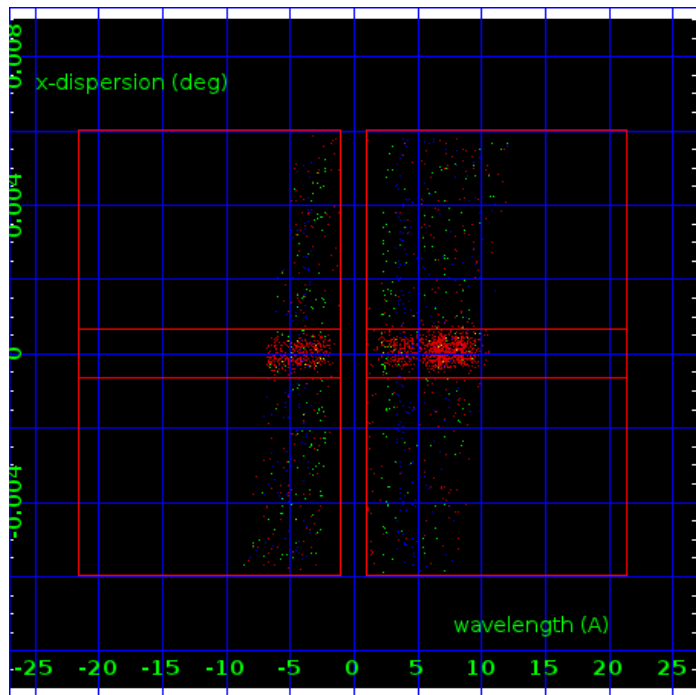
HEG Order Sort 123



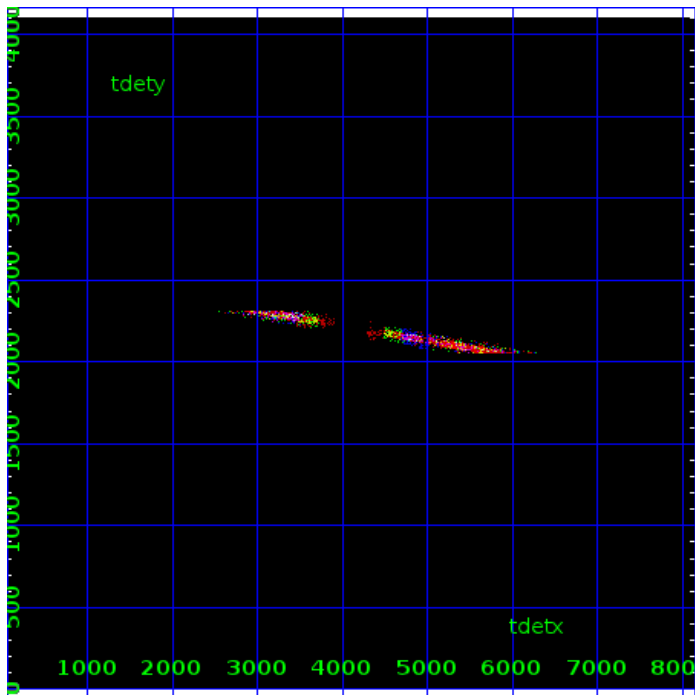
HEG Zero Order



HEG Order Sort ALL

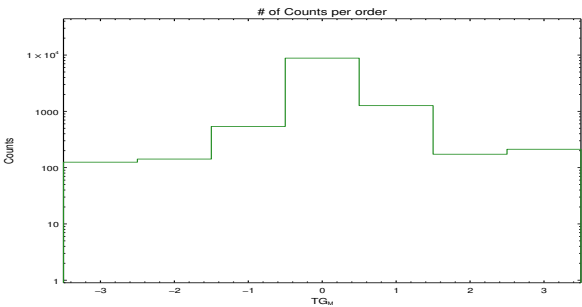


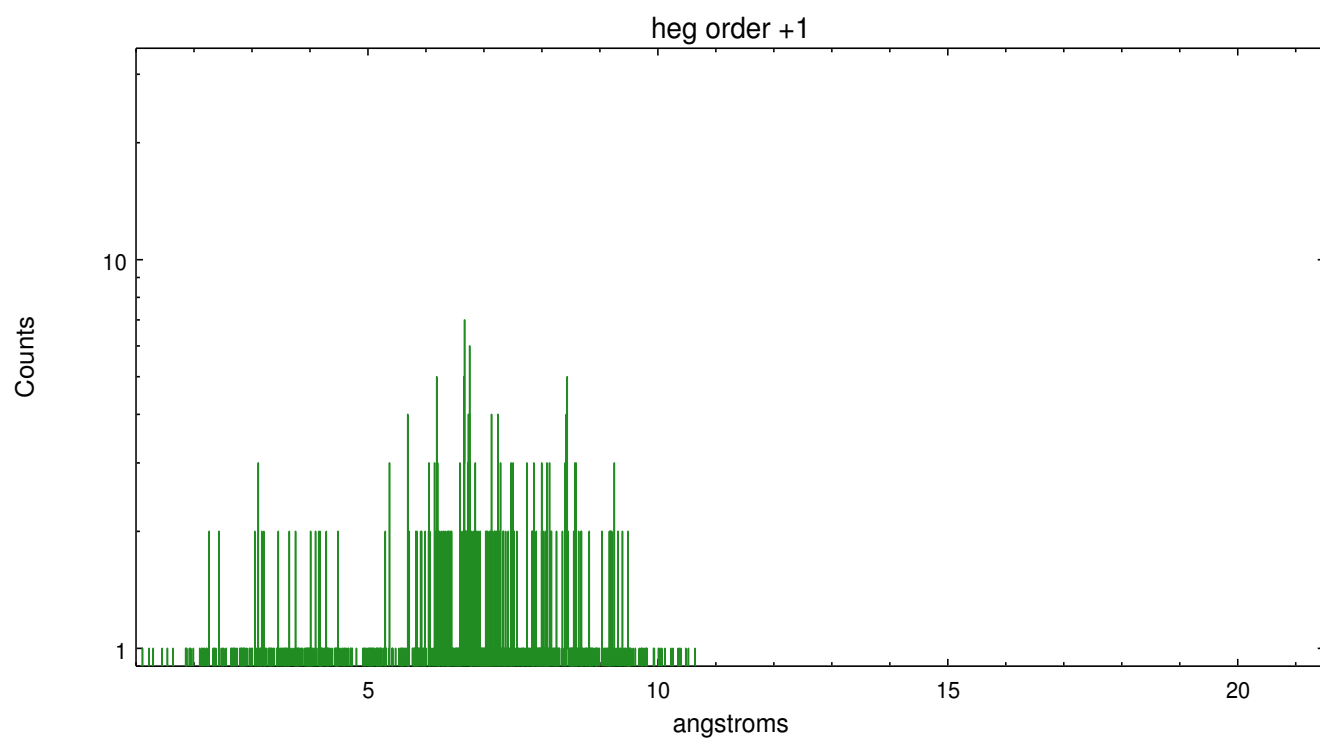
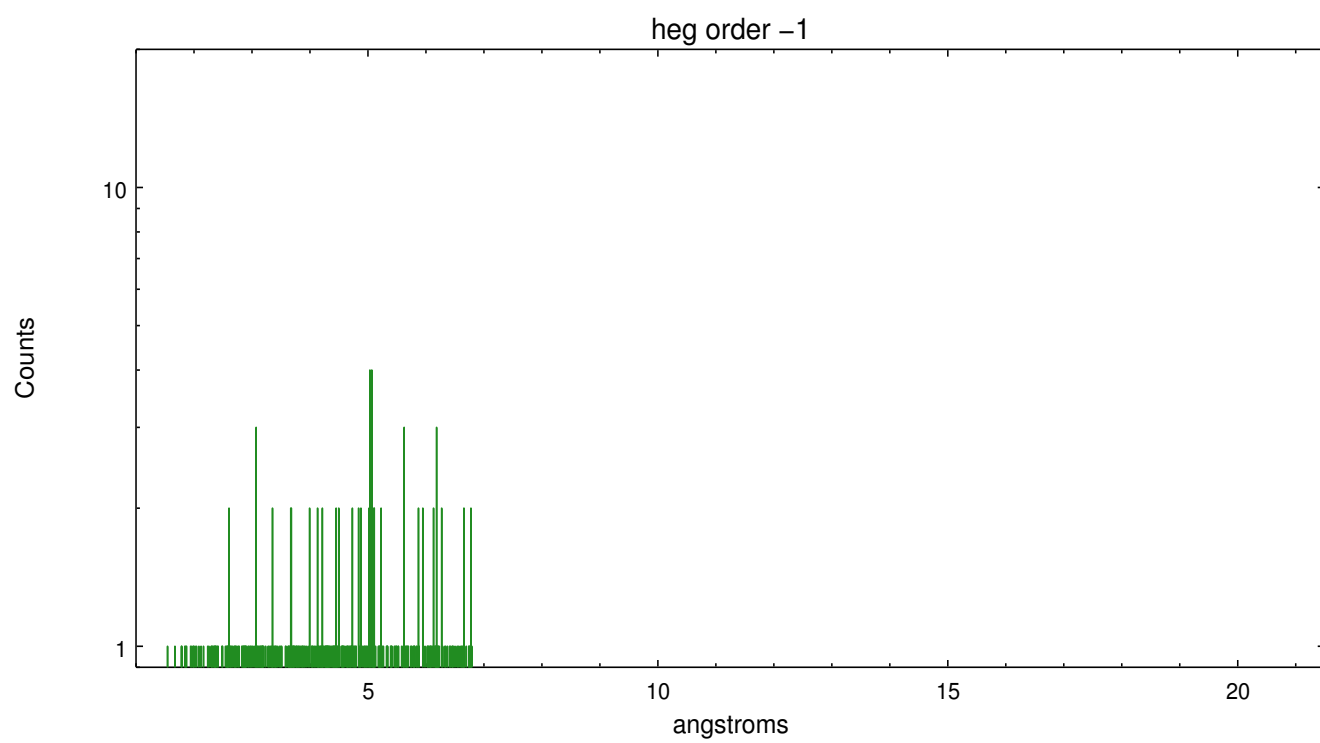
Spot Image HEG



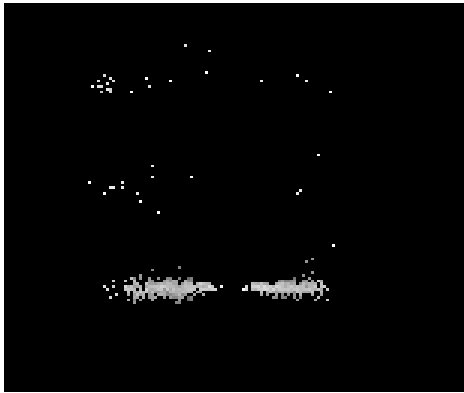
Full Detector HEG

| | order -3 | order -2 | order -1 | order 0 | order 1 | order 2 | order 3 |
|--------|-------------|-------------|-------------|------------|------------|------------|------------|
| Events | 125 | 142 | 539 | 8820 | 1264 | 173 | 212 |

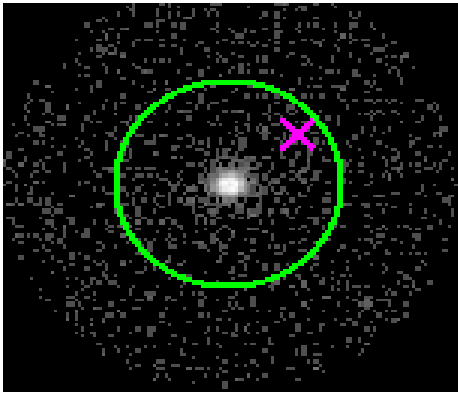




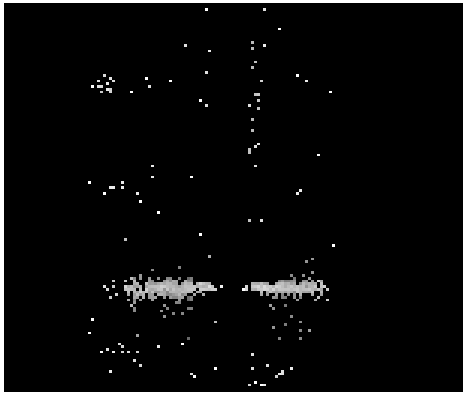
3.2 MEG Arm



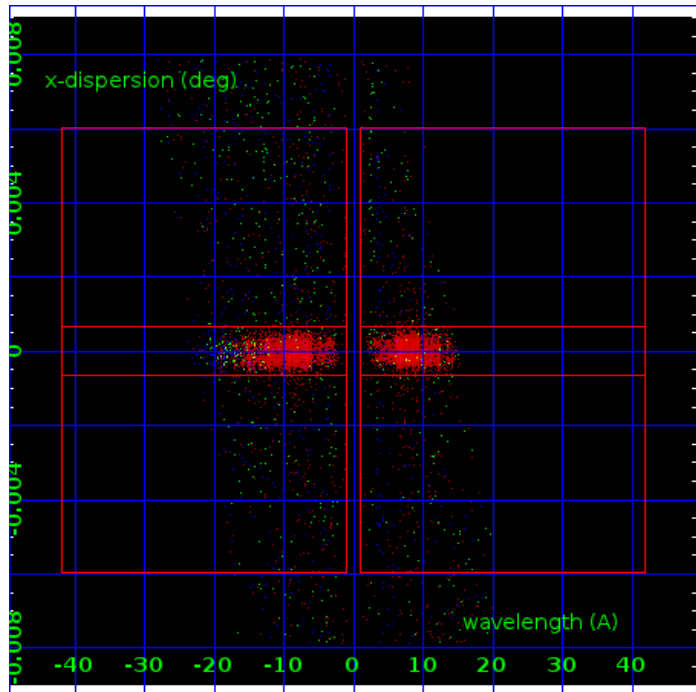
MEG Order Sort 123



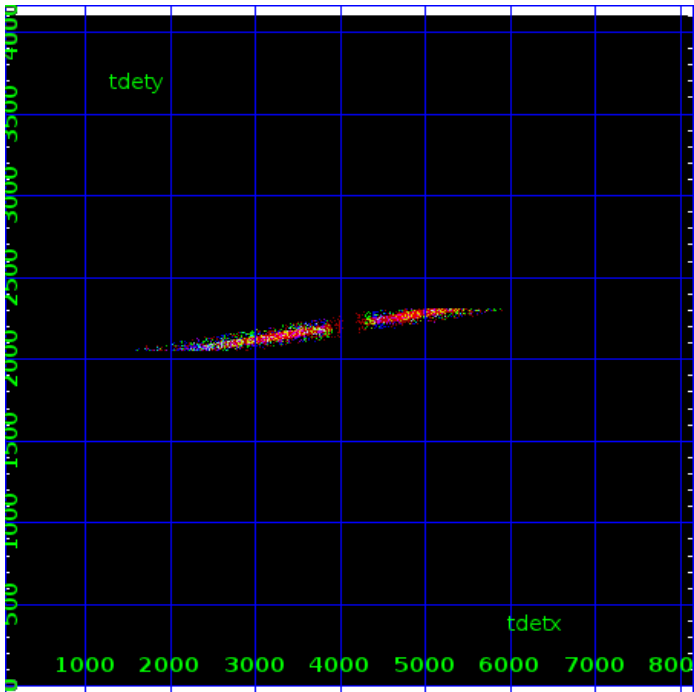
MEG Zero Order



MEG Order Sort ALL

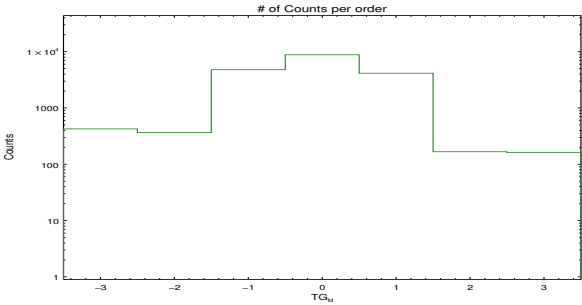


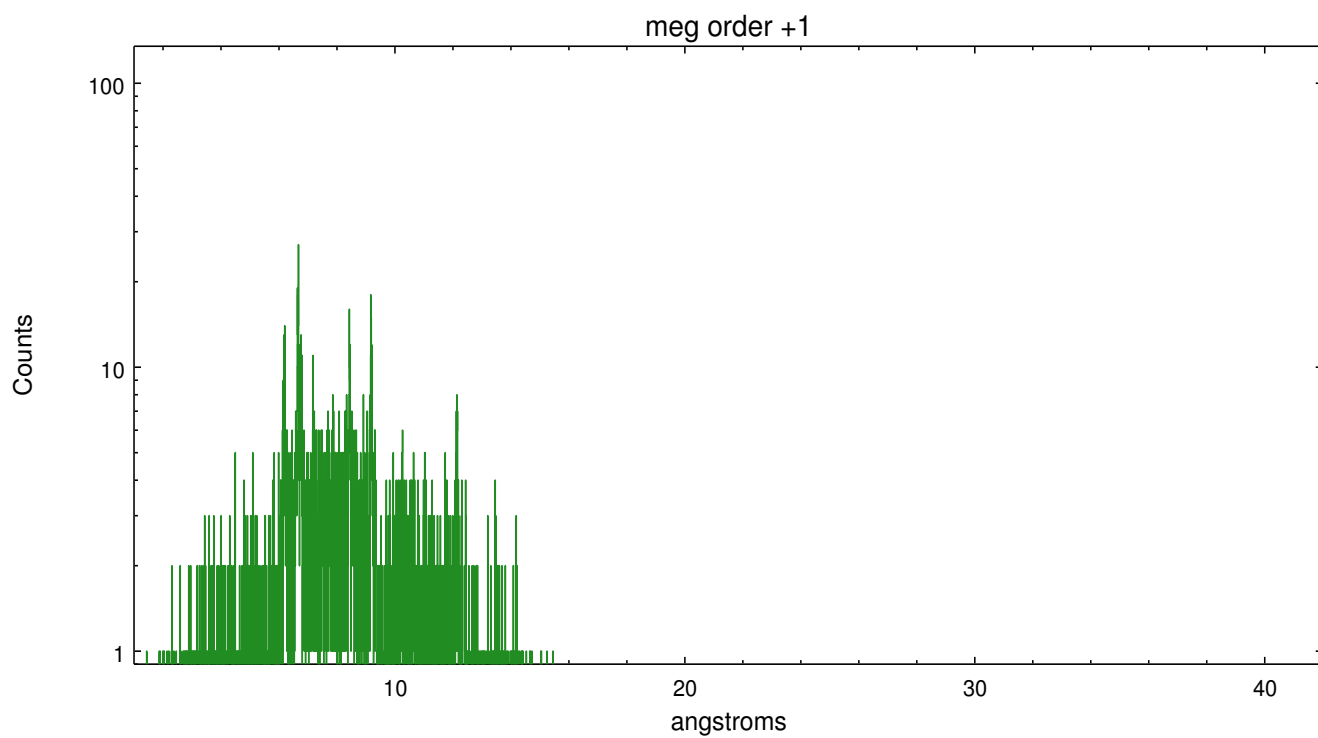
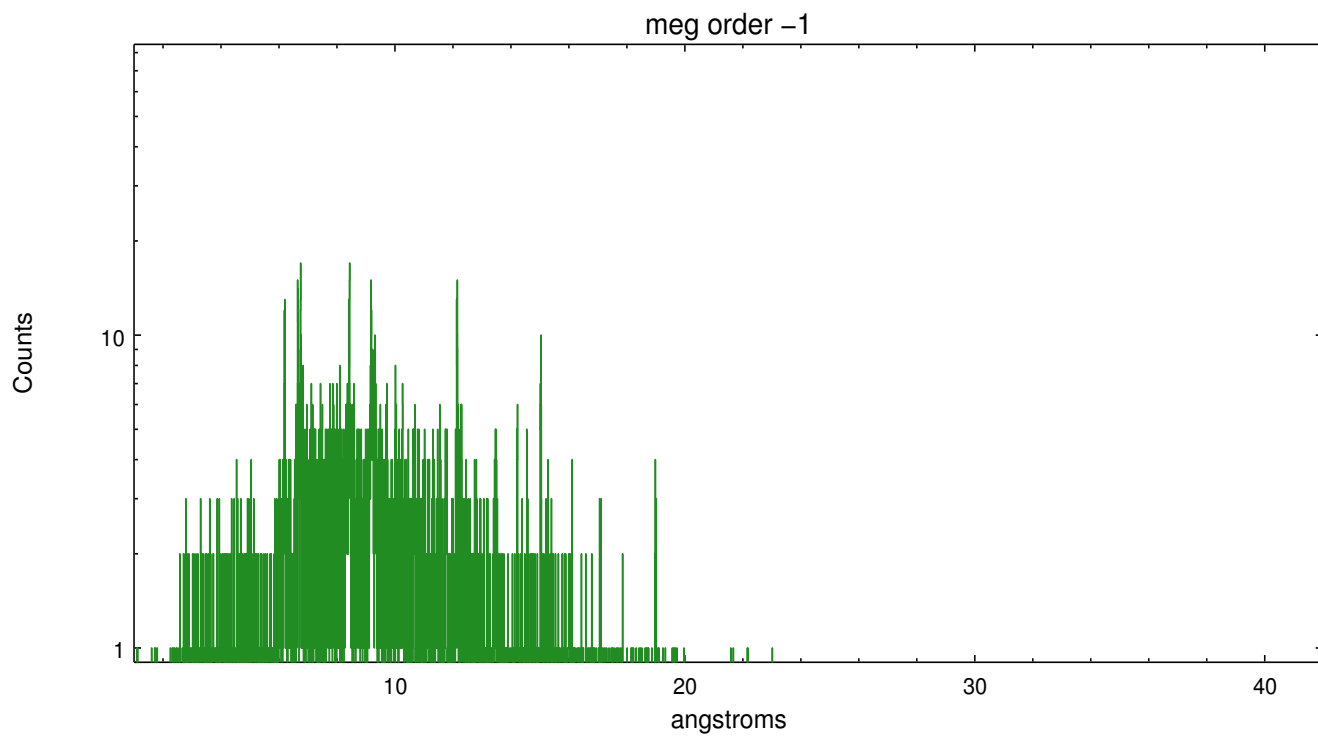
Spot Image MEG



Full Detector MEG

| | order -3 | order -2 | order -1 | order 0 | order 1 | order 2 | order 3 |
|--------|-------------|-------------|-------------|------------|------------|------------|------------|
| Events | 425 | 366 | 4793 | 8820 | 4147 | 167 | 161 |





A Summary

A.1 Status

| | |
|----------------------------|--------------------|
| V&V Scientist | David Huenemoerder |
| V&V Date (YYYY-MM-DD) | 2014.09.22 |
| V&V Edition | 1 |
| V&V Disposition and Status | OK |
| V&V Charge Time | 50.091801085711 |

A.2 Comments

Note: the small subarray clips the MEG positive and HEG negative orders.