

V&V Reference Report

L2 ASCDS Version : 10.7.1

Observation 22009 - L2 Version 1
Chandra X-Ray Center

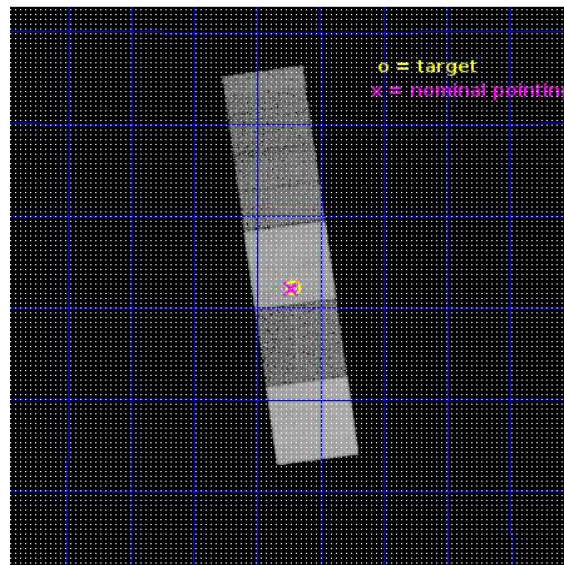
L2 Processing Date : Dec 21 2018

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1 Front

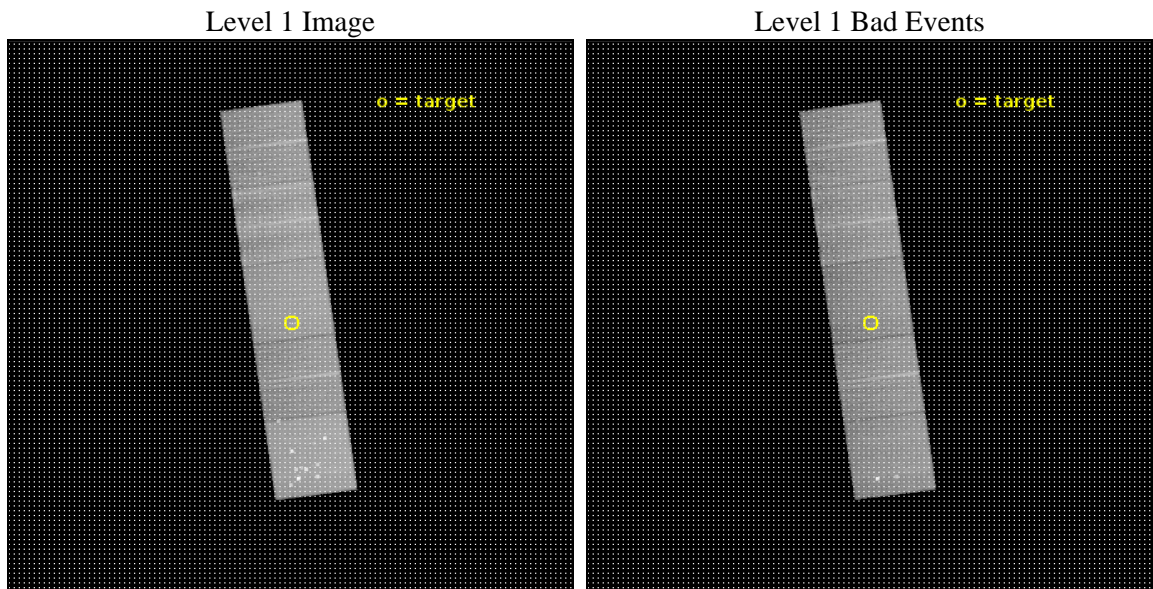
| | | |
|----------|---|---|
| seq_num | 201196 | Sequence number |
| obs_id | 22009 | Observation id |
| title | X-ray Flares from Young Stars and the Sun: Bridging the Gap with Chandra+NuSTAR | Proposal title |
| observer | Dr. Claude Canizares | Principal investigator |
| object | V773 Tau | Source name |
| dtcycle | 0 | |
| cycle | P | events from which exps? Prim/Second/Both |
| ra_targ | 63.55375 | Observer's specified target RA [deg] |
| dec_targ | 28.203417 | Observer's specified target Dec [deg] |
| ra_nom | 63.557328217039 | Nominal RA [deg] |
| dec_nom | 28.201247928561 | Nominal Dec [deg] |
| roll_nom | 262.15493968202 | Nominal Roll [deg] |
| revision | 1 | Processing version of data |
| ontime | 23020.600177169 | Sum of GTIs [s] |
| livetime | 22719.819088335 | Livetime [s] |
| ontime5 | 23020.600177169 | Sum of GTIs [s] |
| ontime6 | 23020.600177169 | Sum of GTIs [s] |
| ontime7 | 23020.600177169 | Sum of GTIs [s] |
| ontime8 | 23020.600177169 | Sum of GTIs [s] |
| ontime9 | 23020.600177169 | Sum of GTIs [s] |
| l2events | 281594 | Number of level 2 events |



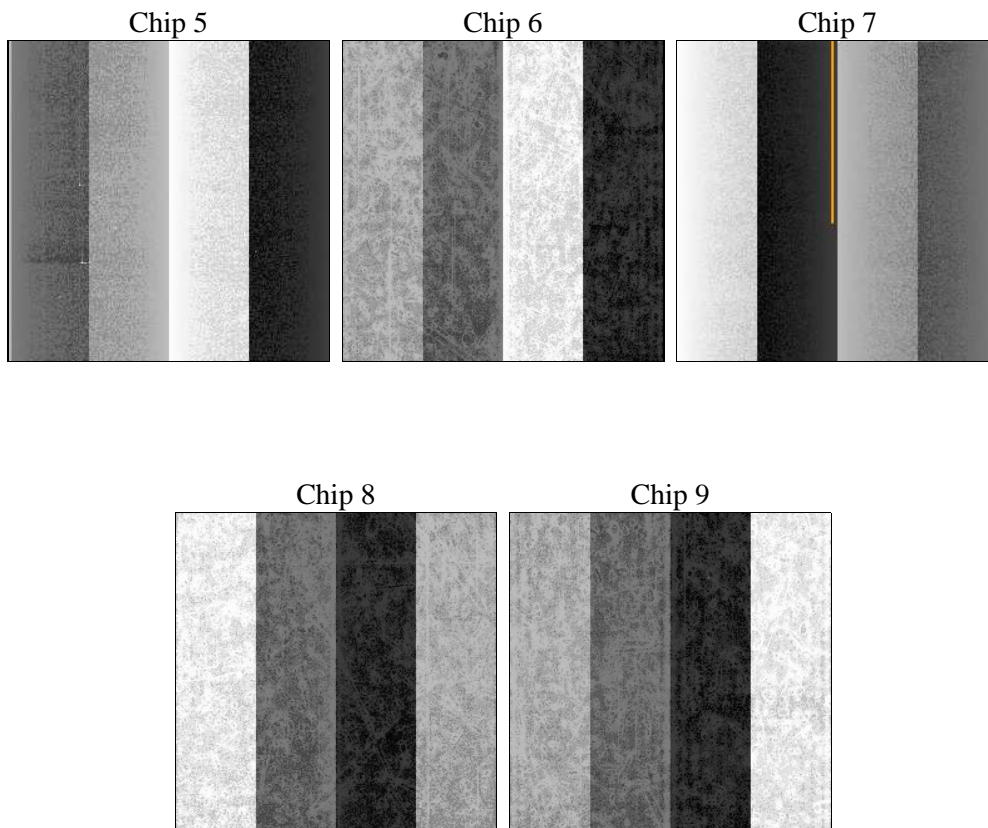
2 OBI

2.1 OBI

2.1.1 Images



2.1.2 Bias



2.1.3 Parameters

| | | | | | |
|----------|---------------------|--------------------------------|----------------|--------------------|---|
| obi_num | 0 | Obi number | sched_exp_time | 23000.000000 | [s] Scheduled observation exposure time |
| ascdsver | 10.7.1 | Processing system revision | ontime | 23020.600177169 | Sum of GTIs [s] |
| caldbver | 4.8.2 | | ontime5 | 23020.600177169 | Sum of GTIs [s] |
| date | 2018-12-21T22:03:47 | Date and time of file creation | ontime6 | 23020.600177169 | Sum of GTIs [s] |
| revision | 1 | Processing version of data | ontime7 | 23020.600177169 | Sum of GTIs [s] |
| | | | ontime8 | 23020.600177169 | Sum of GTIs [s] |
| | | | ontime9 | 23020.600177169 | Sum of GTIs [s] |
| | | | l1events | 1153749 | Number of level 1 events |
| | | | tgmethod | TGDETECT | Method used to create src1a file |
| | | | zo_pos | (4118.56, 4110.89) | src1a sky pixel position |

2.1.4 Events

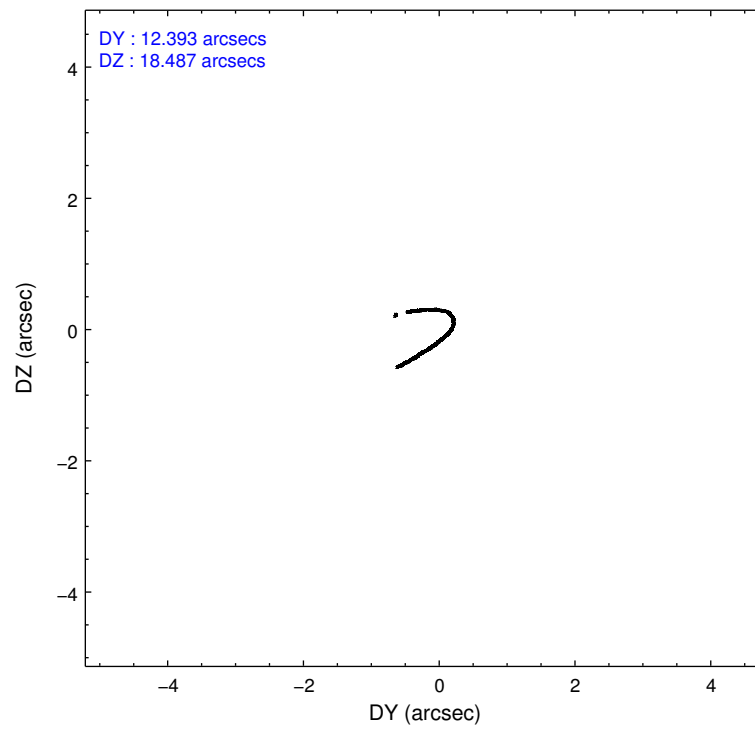
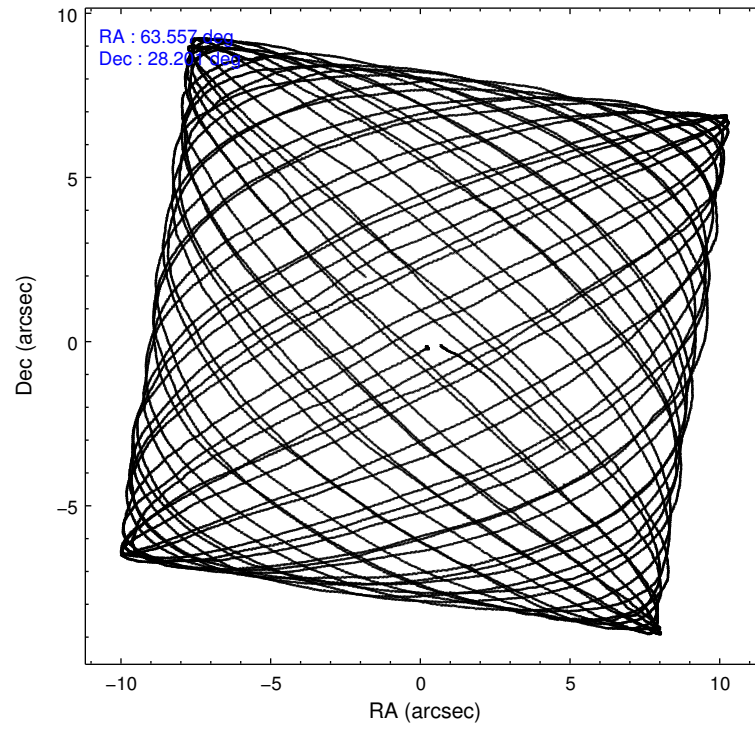
| | ccd 5 | ccd 6 | ccd 7 | ccd 8 | ccd 9 |
|-----------------|--------|--------|--------|--------|--------|
| level 1 events | 324947 | 179775 | 230266 | 239383 | 179378 |
| rejected events | 158537 | 159667 | 131423 | 176748 | 157727 |
| rejected % | 48% | 88% | 57% | 73% | 87% |

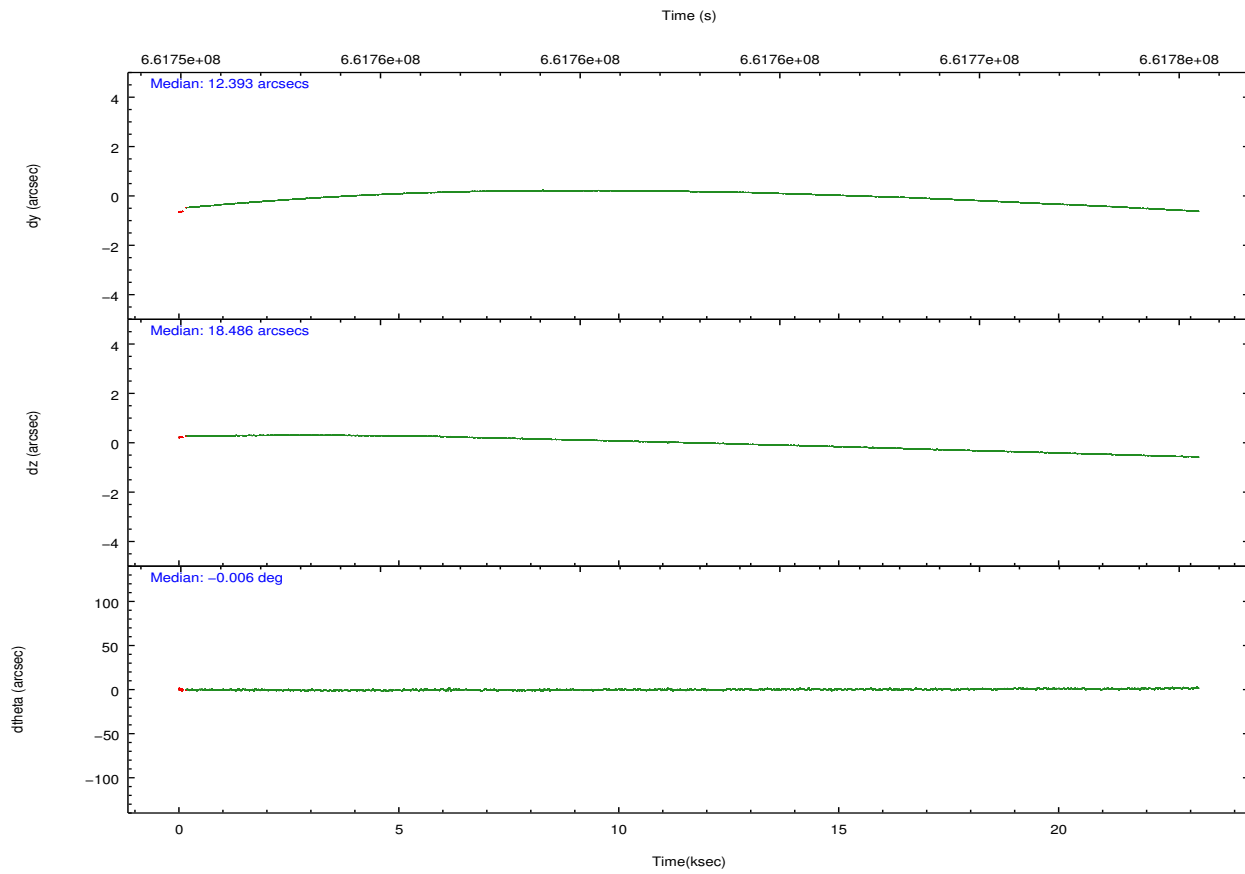
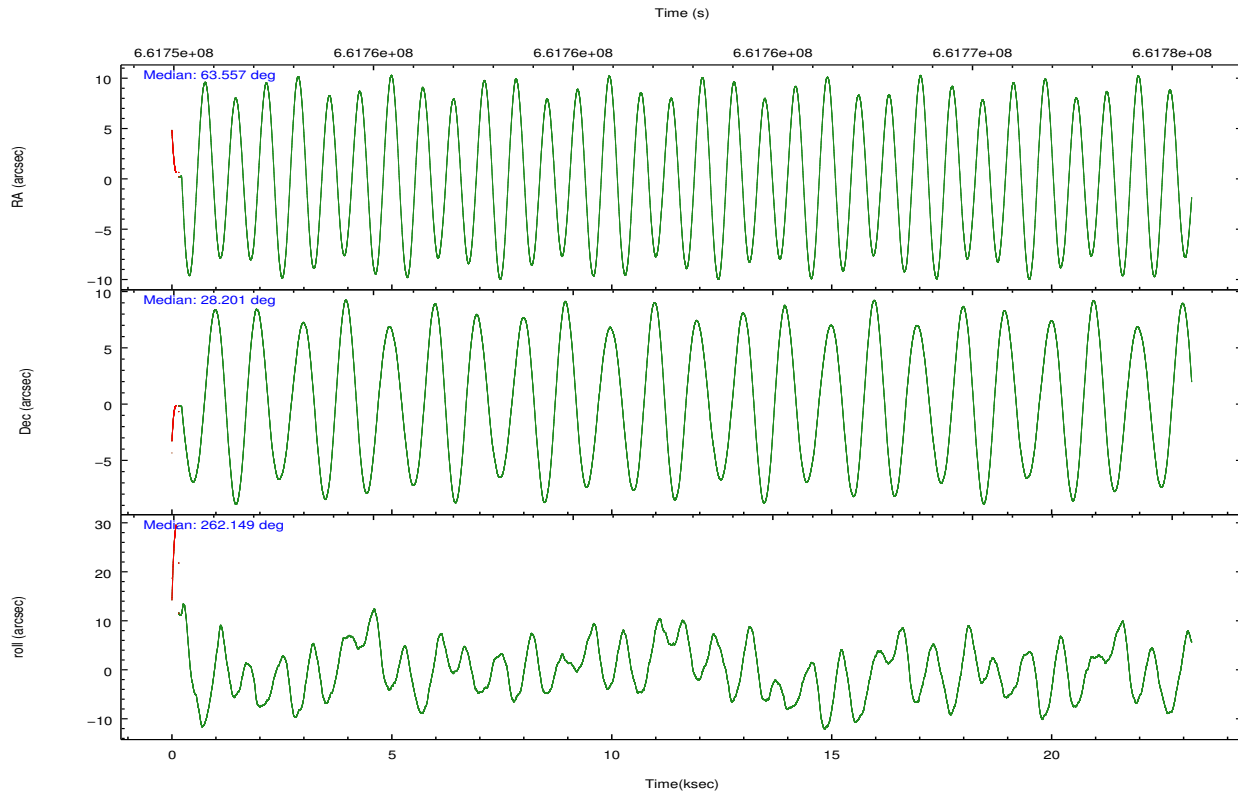
| | ccd 5 | ccd 6 | ccd 7 | ccd 8 | ccd 9 |
|----------------|--------|--------|--------|--------|--------|
| grade 0 events | 33825 | 6637 | 8239 | 17377 | 7664 |
| | 10% | 3% | 3% | 7% | 4% |
| grade 1 events | 802 | 79 | 358 | 190 | 101 |
| | 0% | 0% | 0% | 0% | 0% |
| grade 2 events | 48724 | 4844 | 21036 | 15090 | 4904 |
| | 14% | 2% | 9% | 6% | 2% |
| grade 3 events | 4921 | 1838 | 7695 | 6549 | 2113 |
| | 1% | 1% | 3% | 2% | 1% |
| grade 4 events | 4498 | 1913 | 7576 | 6281 | 2123 |
| | 1% | 1% | 3% | 2% | 1% |
| grade 5 events | 19721 | 7980 | 22313 | 12391 | 9272 |
| | 6% | 4% | 9% | 5% | 5% |
| grade 6 events | 74678 | 4901 | 54463 | 17448 | 4882 |
| | 22% | 2% | 23% | 7% | 2% |
| grade 7 events | 137778 | 151583 | 108586 | 164057 | 148319 |
| | 42% | 84% | 47% | 68% | 82% |

2.2 Compared Parameters

| Parameter | Planned | Actual | Parameter | Planned | Actual |
|-----------------------------------|---------------------|----------------------|---------------------------------------|-----------|---------|
| Instrument | ACIS | ACIS | Obspar format version number | 7 | 7 |
| Detector | ACIS-56789 | ACIS-56789 | 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 | 63.545211 | 63.55732821703907 | CCD I2 on | N | N |
| [deg] Pointing Dec | 28.226527 | 28.20124792856113 | CCD I3 on | N | N |
| [deg] Pointing Roll | 262.004040 | 262.1549396820207 | CCD S0 on | O1 | N |
| [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 | -190.132523 | -190.1425803651734 | CCD S3 on | Y | Y |
| [mm] SIM translation stage offset | 0 | 0.01005778216563158 | CCD S4 on | Y | Y |
| [s] Observation start time (MET) | 661751306.184000 | 661750199.73121 | CCD S5 on | O2 | Y |
| Observation start date | 2018-12-21T03:47:17 | 2018-12-21T03:29:59 | Number of optional ACIS chips dropped | 1 | 1 |
| [s] Observation end time (MET) | 661774306.184000 | 661775605.89522 | On-chip summing requested | N | N |
| Observation end date | 2018-12-21T10:10:37 | 2018-12-21T10:33:25 | Subarray requested | NONE | NONE |
| Read mode | TIMED | TIMED | Alternating exposures requested | N | N |
| | | | [s] Primary exposure time | 0.000000 | 3.1 |

2.3 Aspect





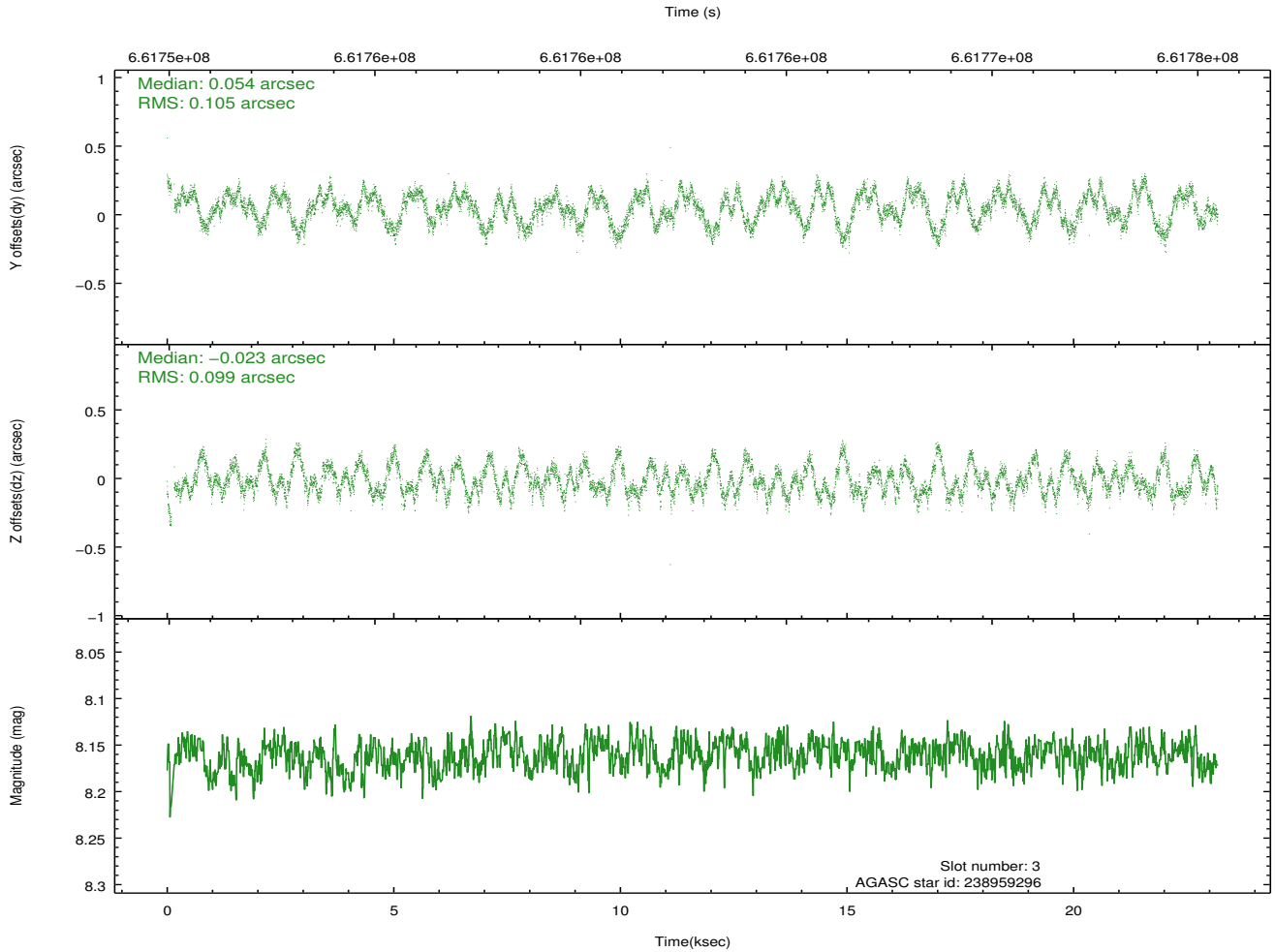
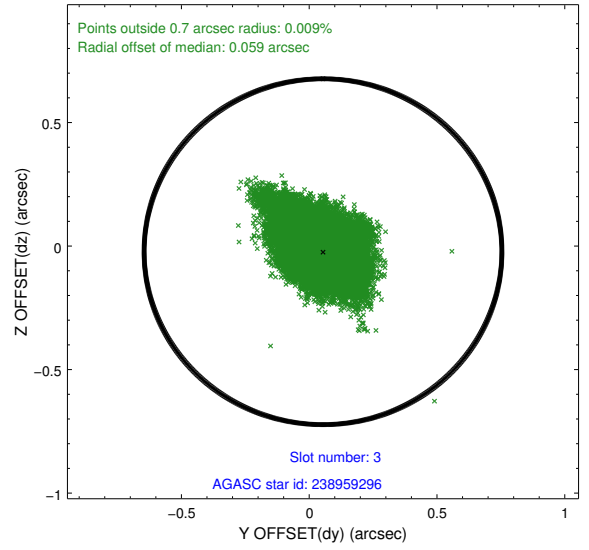
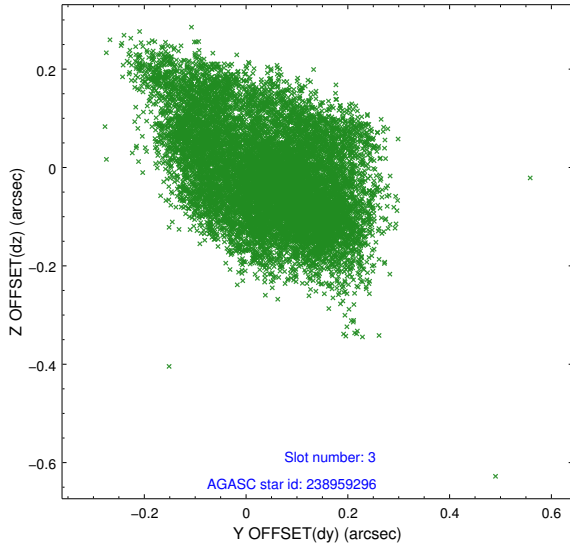
Slot Statistics

| slot | status | used | id | mag | n_pts | frac_pts | med_dy | med_dz | dr1 | dr2 | ra | dec | mean_y | mean_x |
|------|---------|--------|-----------|------|-------|----------|--------|--------|-------|-------|-----------|-----------|----------|--------|
| 0 | FID | | ACIS-S-1 | 7.13 | 5638 | 1.000 | -0.128 | -0.050 | 0.007 | 0.014 | 0.000000 | 0.000000 | 930.71 | -1735 |
| 1 | FID | | ACIS-S-4 | 7.15 | 5639 | 1.000 | 0.296 | 0.088 | 0.008 | 0.013 | 0.000000 | 0.000000 | 2148.58 | 168 |
| 2 | FID | | ACIS-S-6 | 7.28 | 5636 | 1.000 | -0.192 | -0.027 | 0.008 | 0.016 | 0.000000 | 0.000000 | 396.72 | 806 |
| 3 | GUIDE | used | 238959296 | 8.16 | 11277 | 1.000 | 0.054 | -0.023 | 0.154 | 0.248 | 63.264622 | 28.040280 | 787.62 | -789 |
| 4 | GUIDE | used | 238959616 | 8.62 | 11274 | 1.000 | -0.224 | -0.306 | 0.103 | 0.172 | 63.631917 | 27.959756 | 913.18 | 407 |
| 5 | GUIDE | used | 239475552 | 8.65 | 11206 | 1.000 | -0.222 | 0.217 | 0.101 | 0.166 | 63.591874 | 28.708120 | -1736.98 | -95 |
| 6 | GUIDE | used | 239476904 | 9.35 | 11194 | 1.000 | 0.410 | 0.104 | 0.233 | 0.378 | 63.088920 | 28.435074 | -544.36 | -1534 |
| 7 | MONITOR | unused | | 0.00 | 0 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000000 | 0.000000 | 0.00 | 0 |

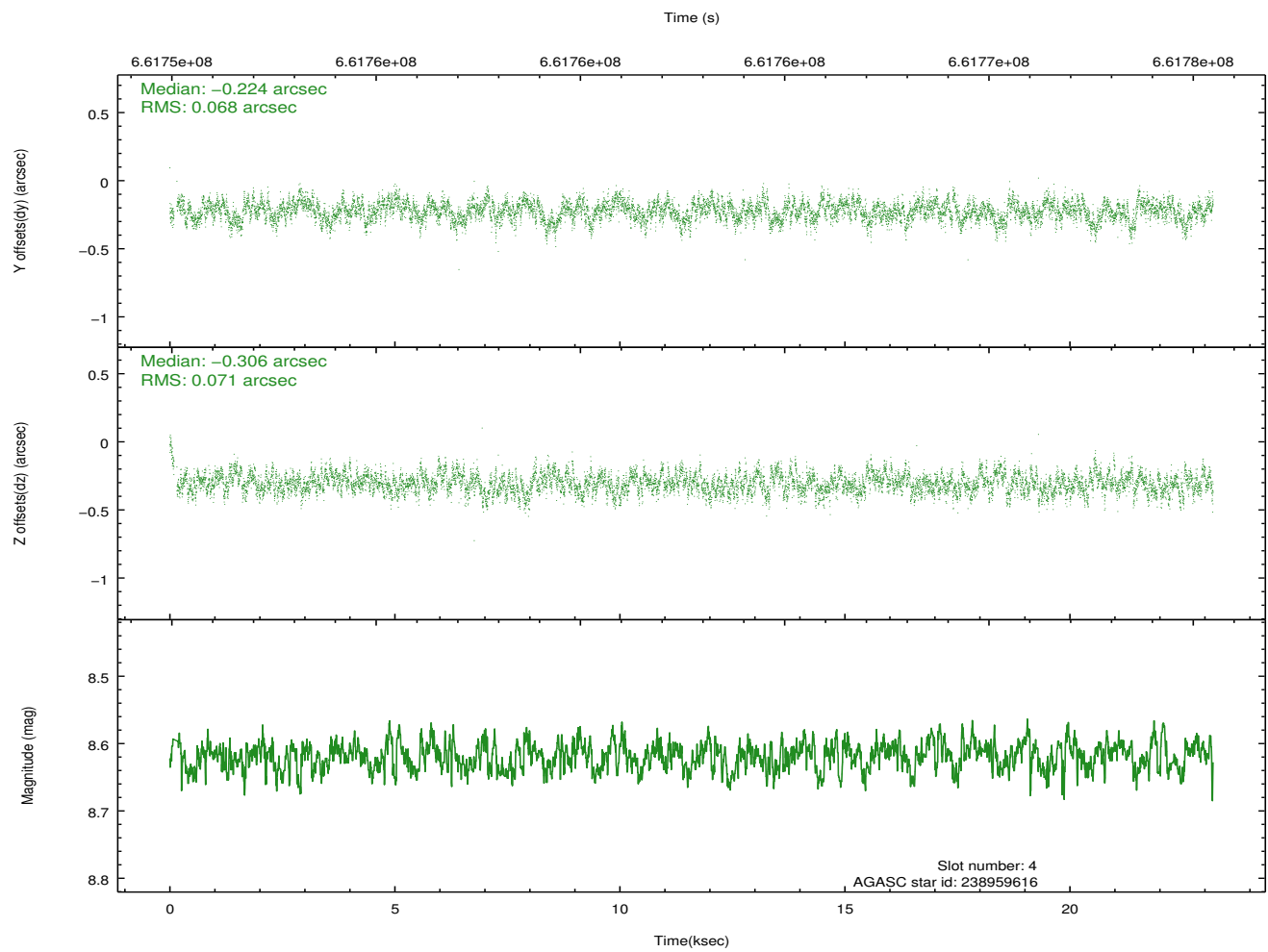
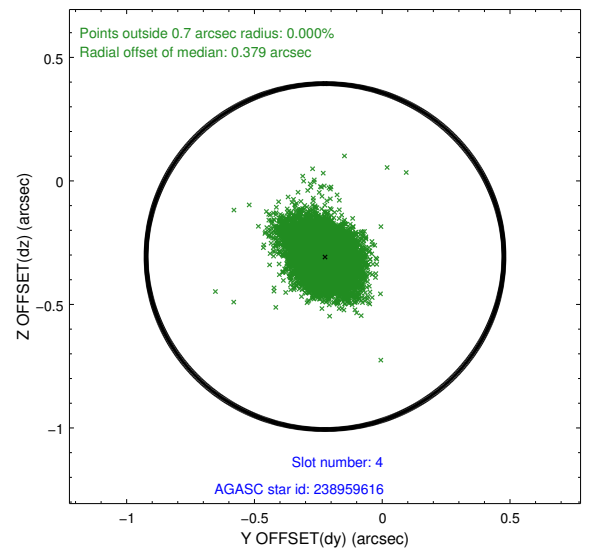
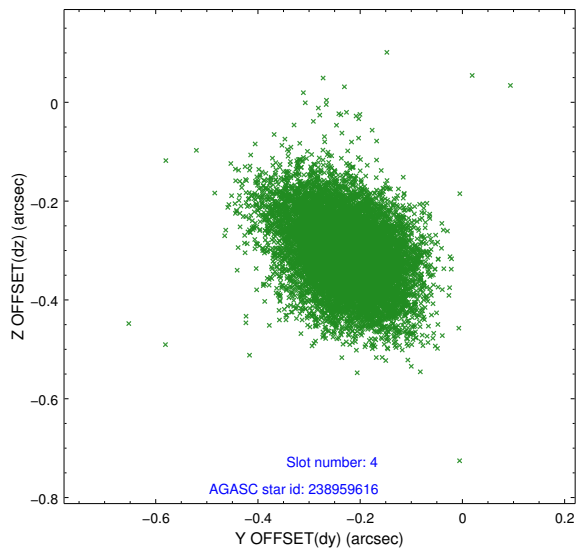
∞

2.4 Star Slots

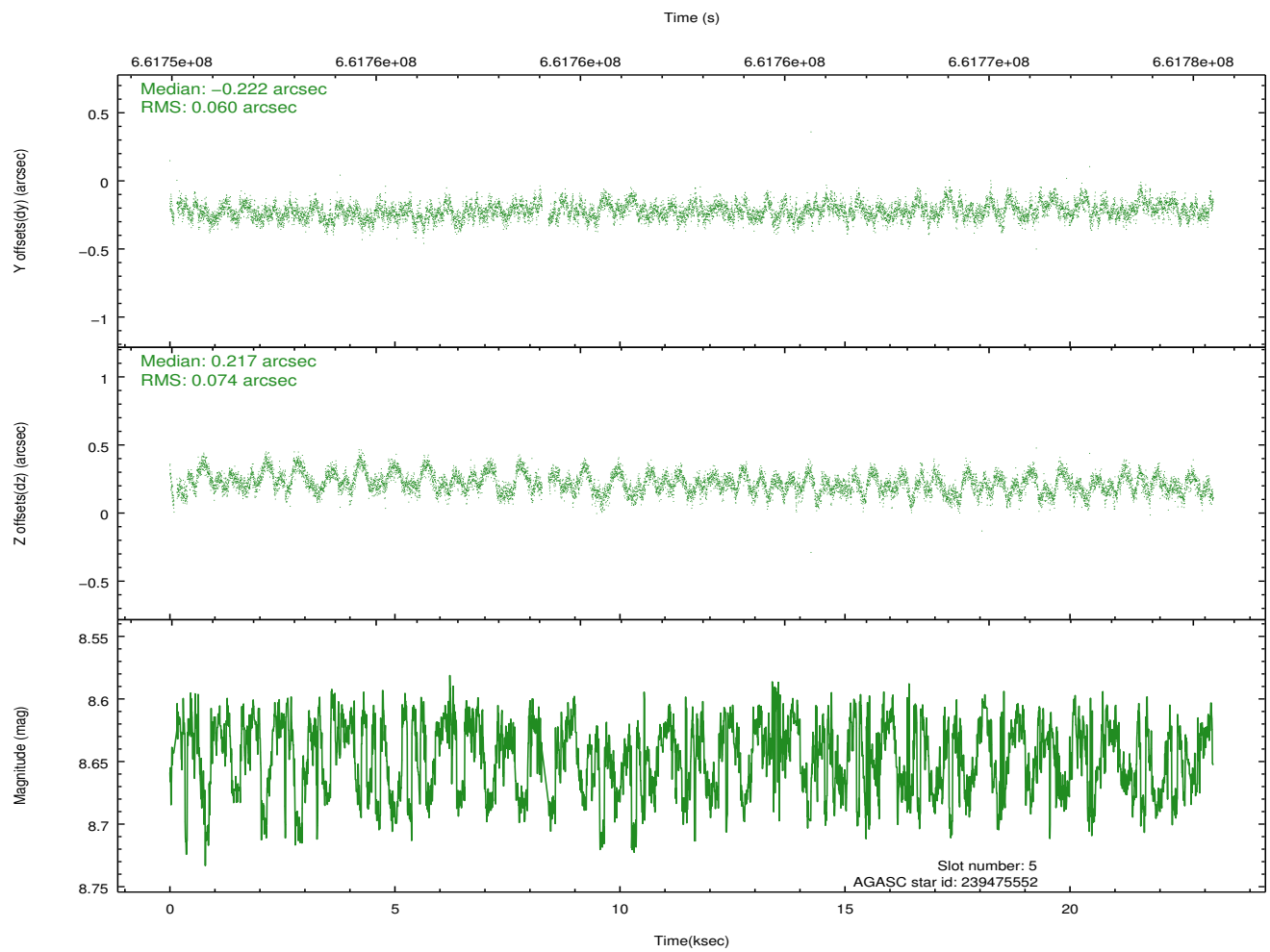
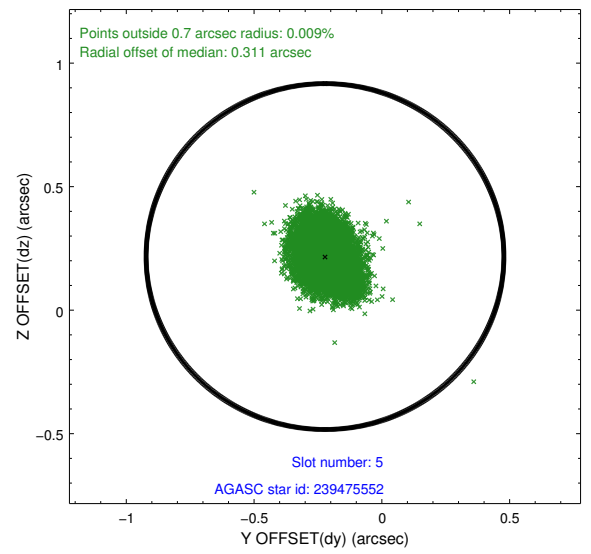
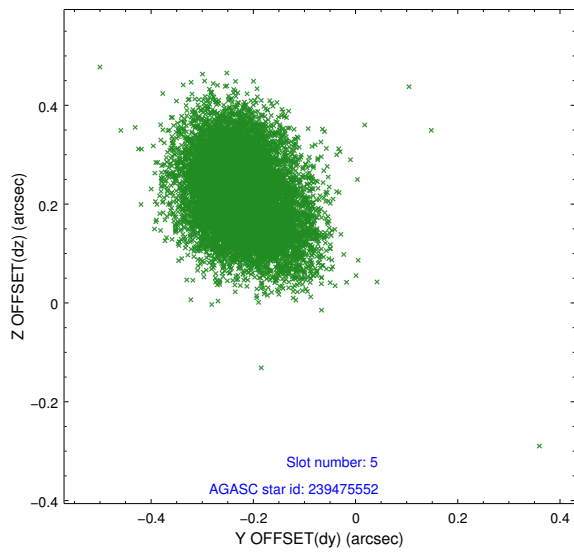
2.4.1 Slot 3



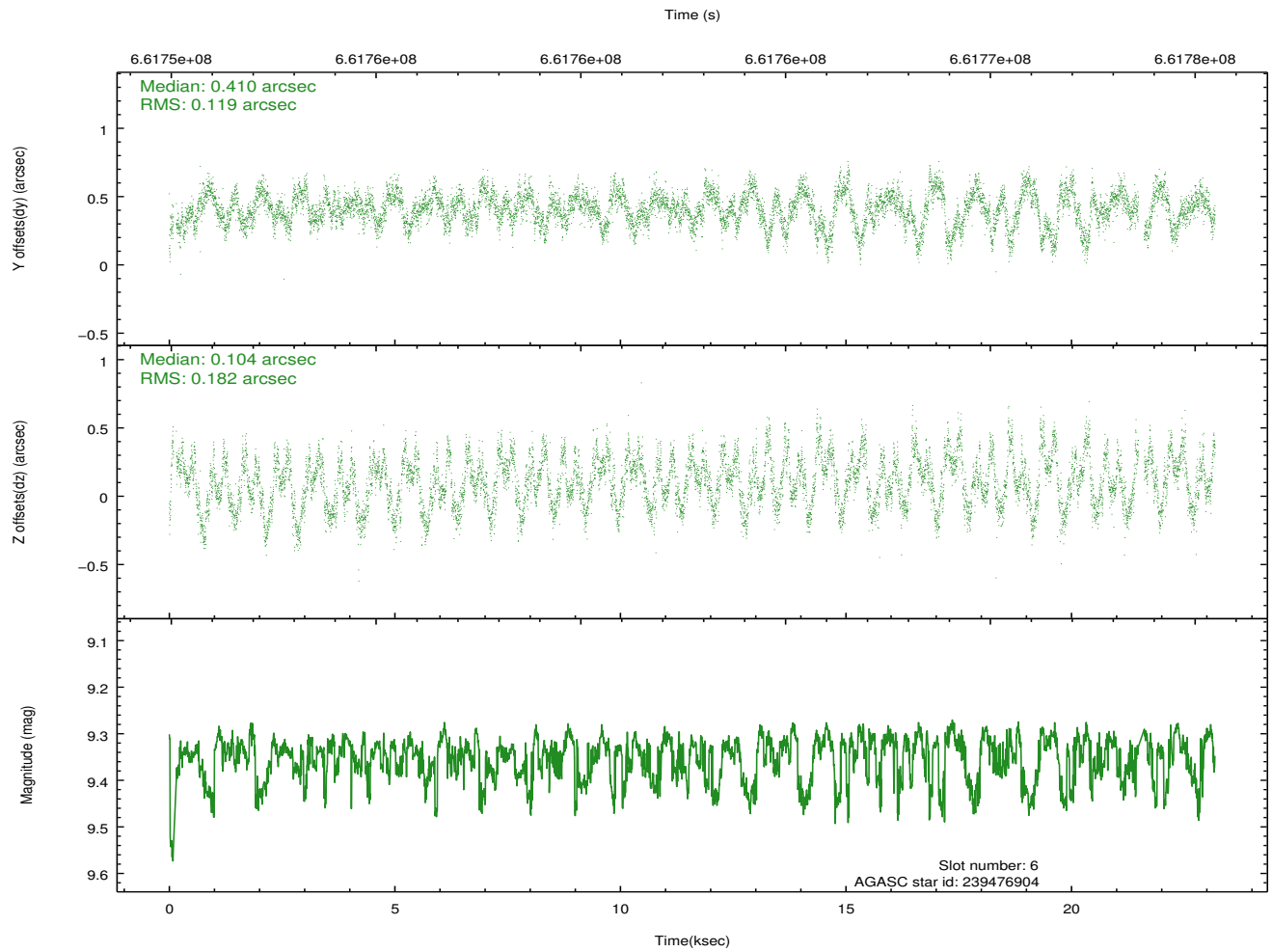
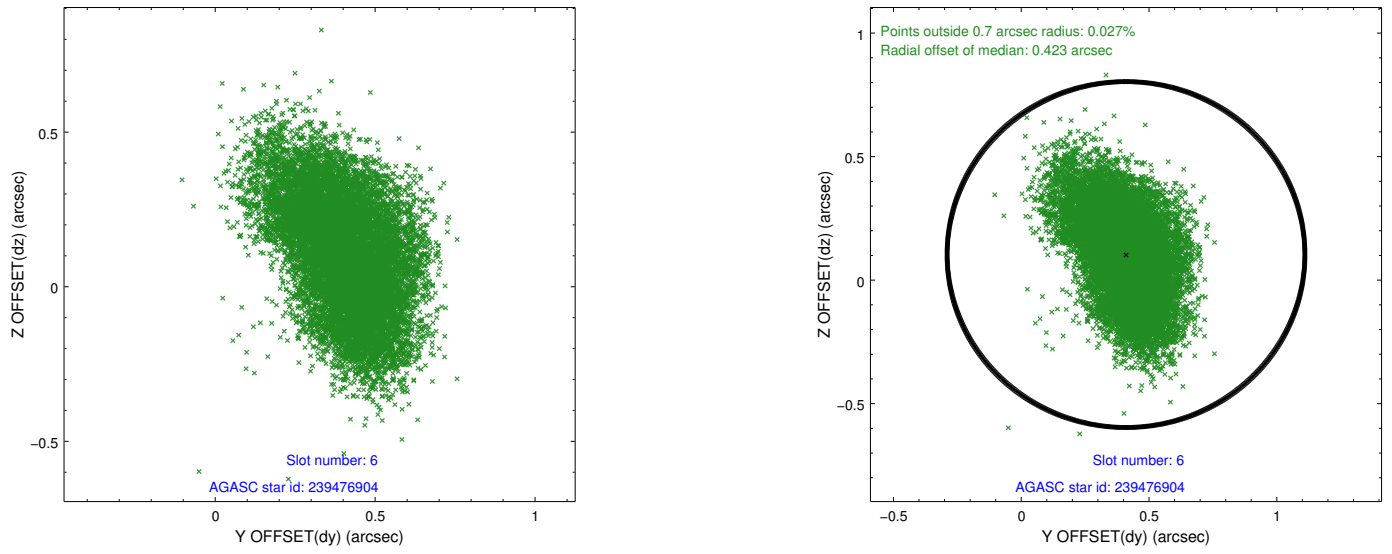
2.4.2 Slot 4



2.4.3 Slot 5

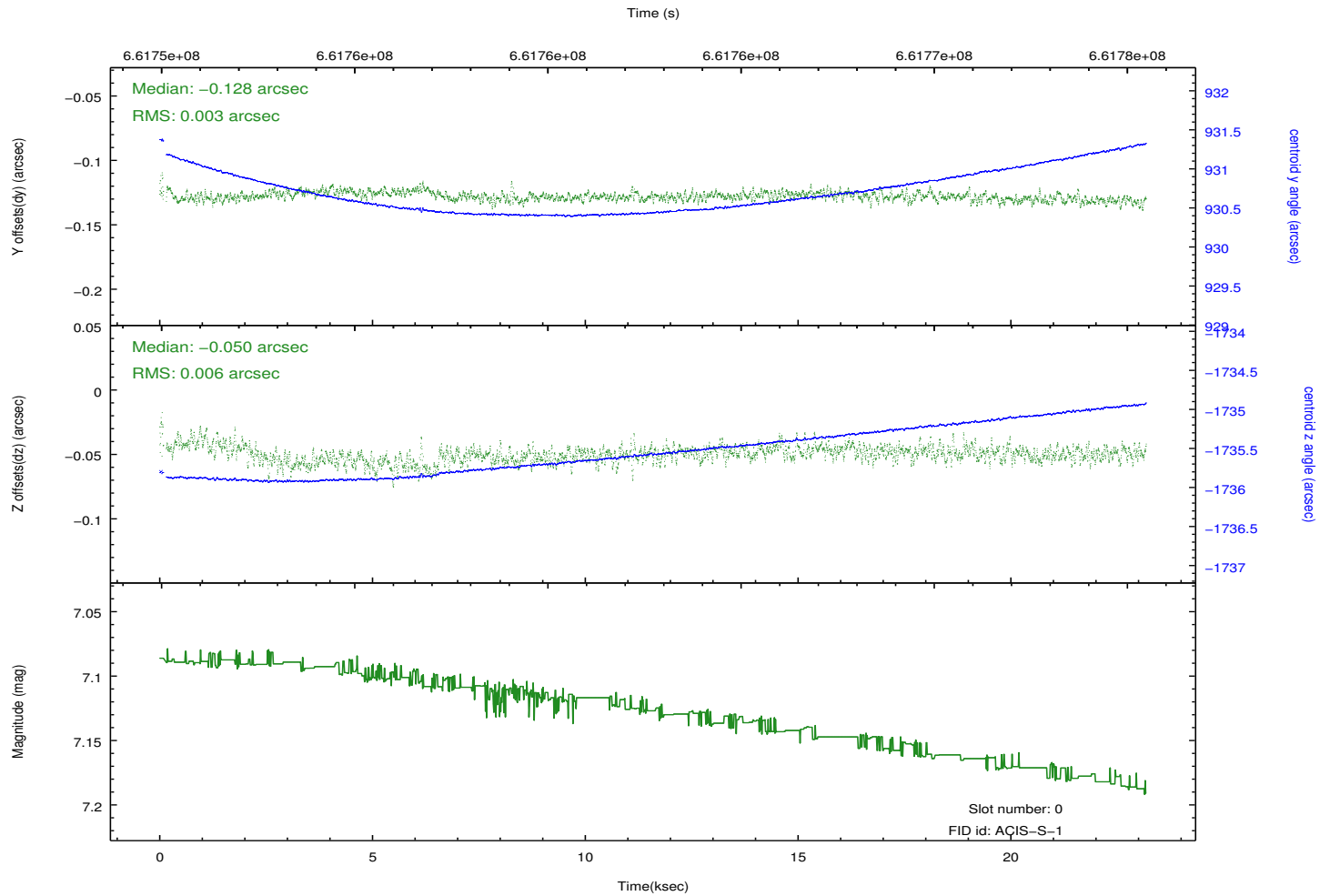
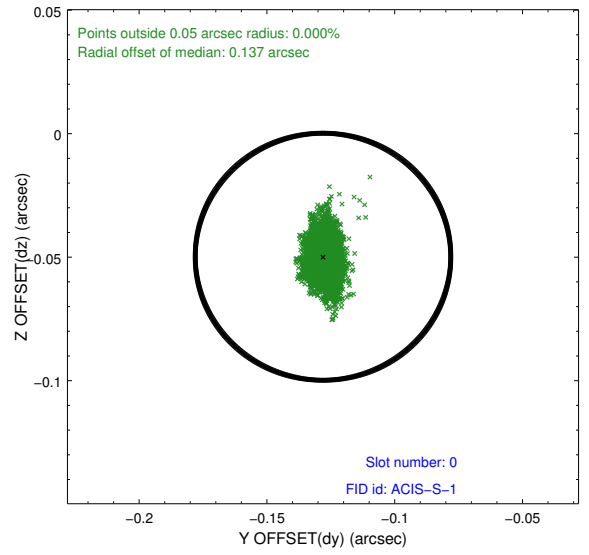
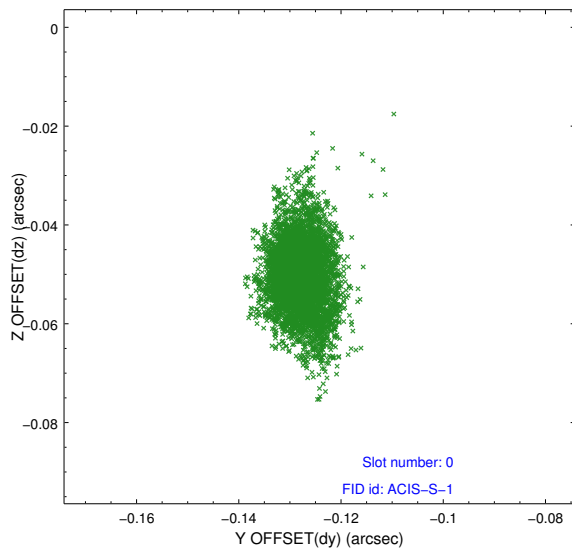


2.4.4 Slot 6

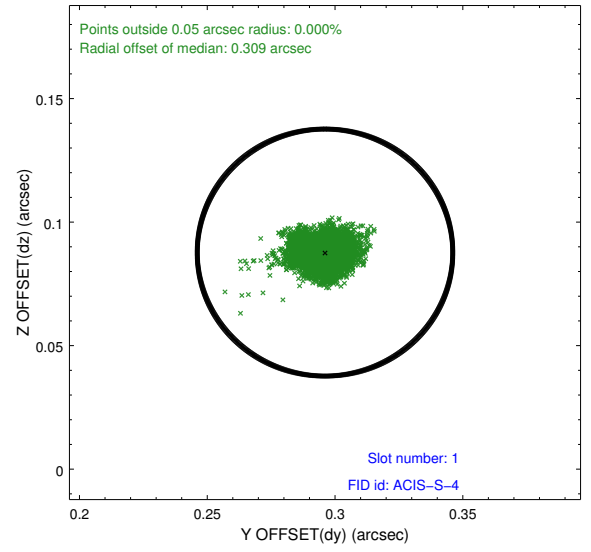
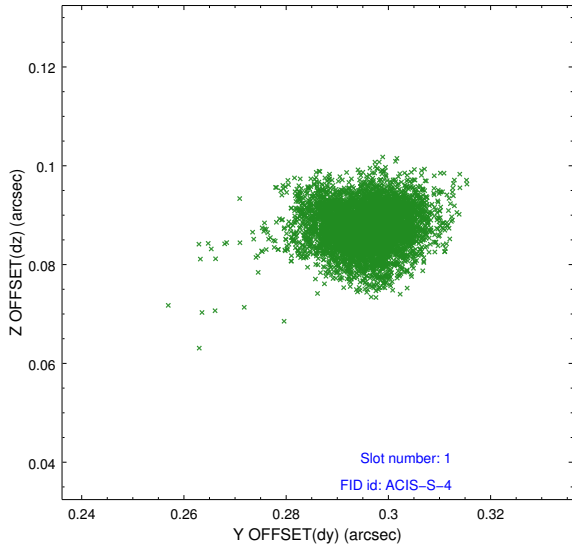


2.5 FID Slots

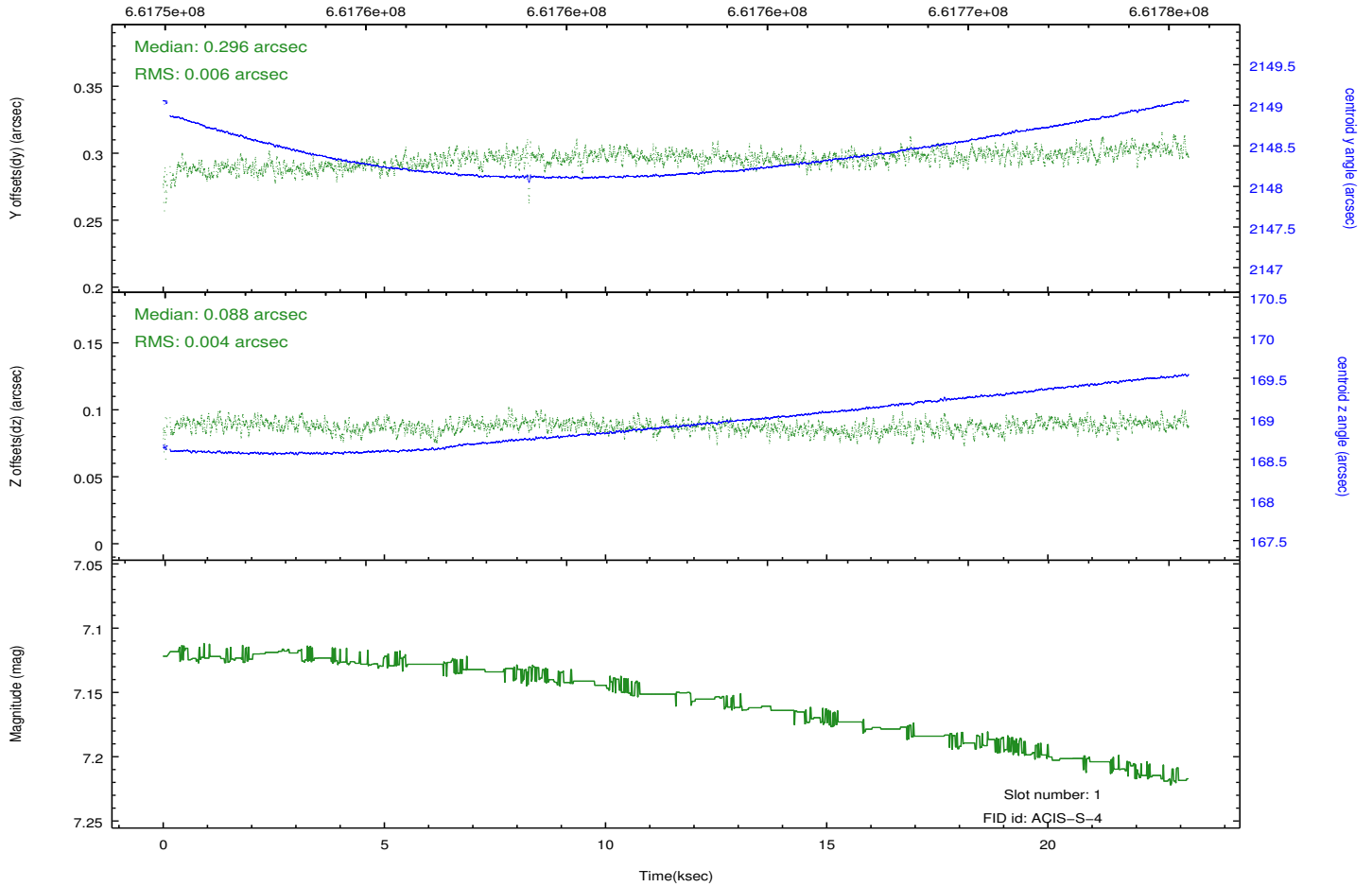
2.5.1 Slot 0



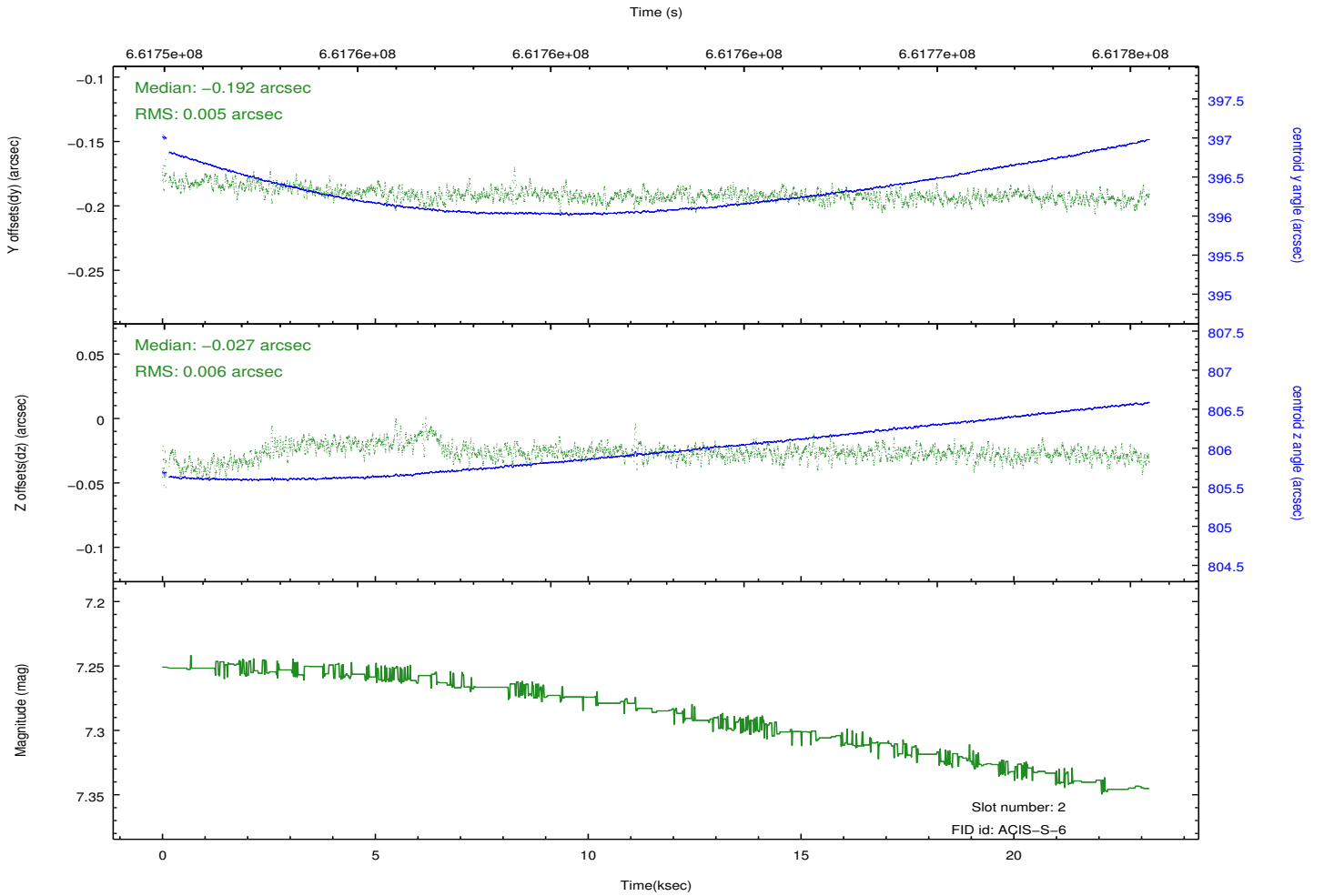
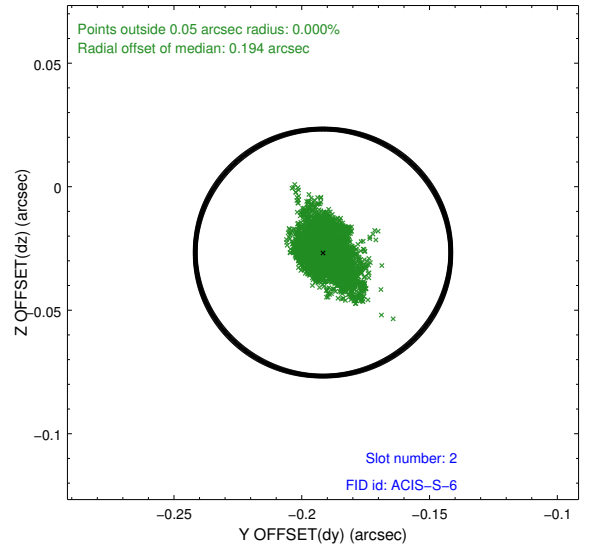
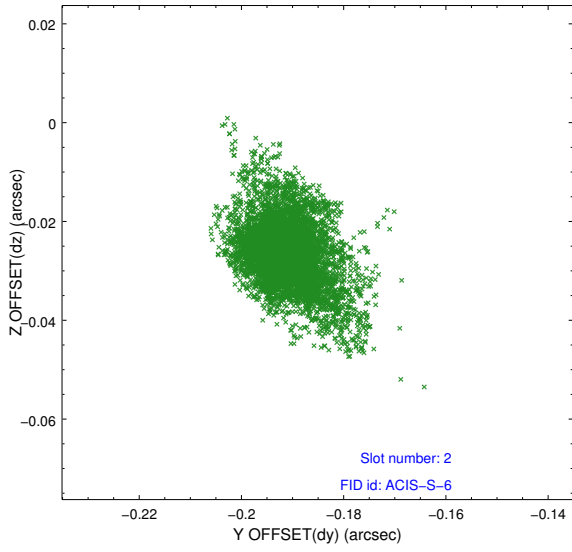
2.5.2 Slot 1



Time (s)

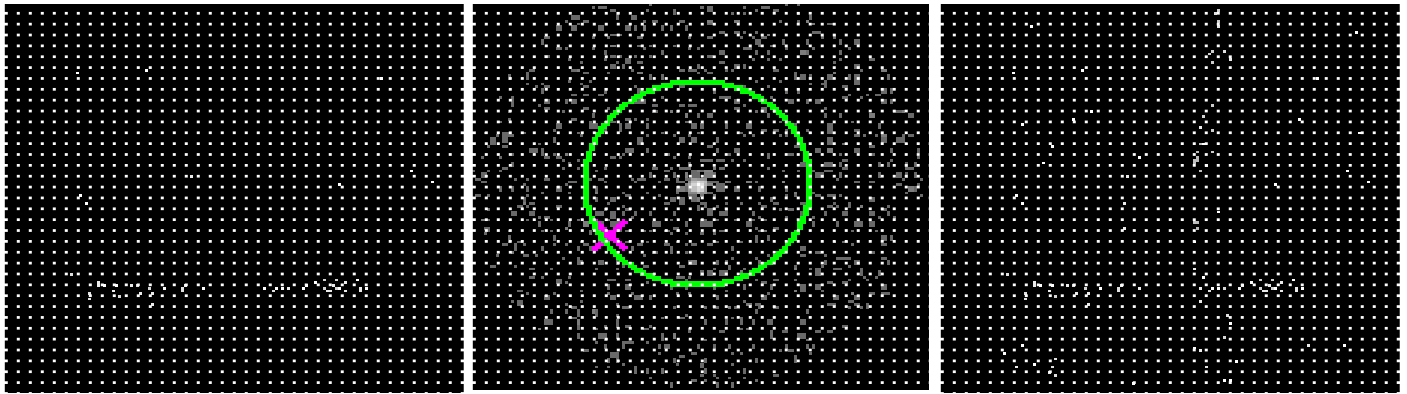


2.5.3 Slot 2



3 Gratings

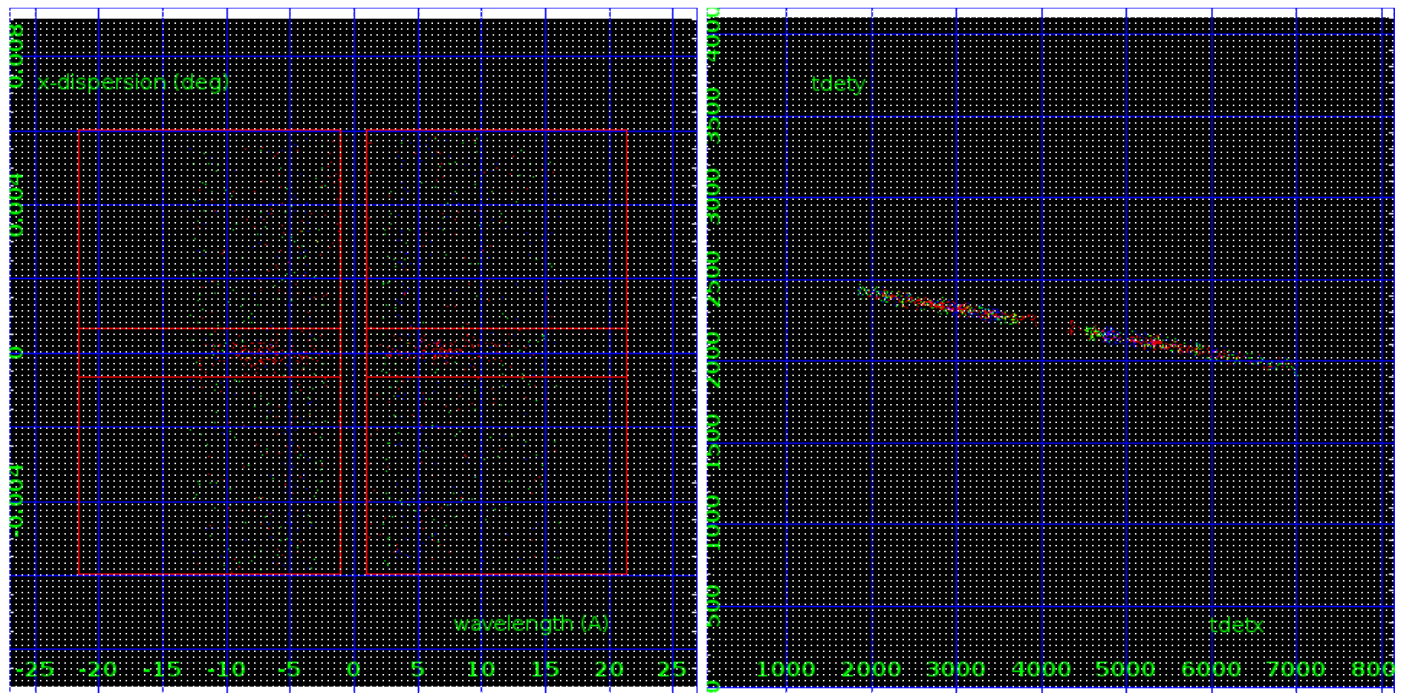
3.1 HEG Arm



HEG Order Sort 123

HEG Zero Order

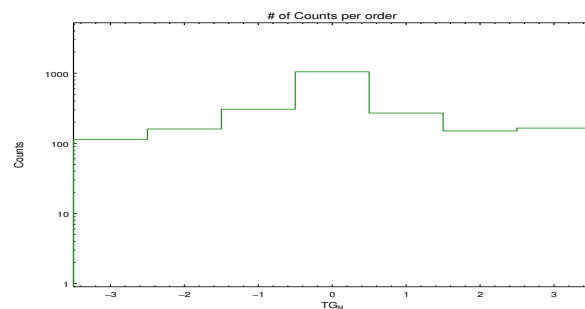
HEG Order Sort ALL

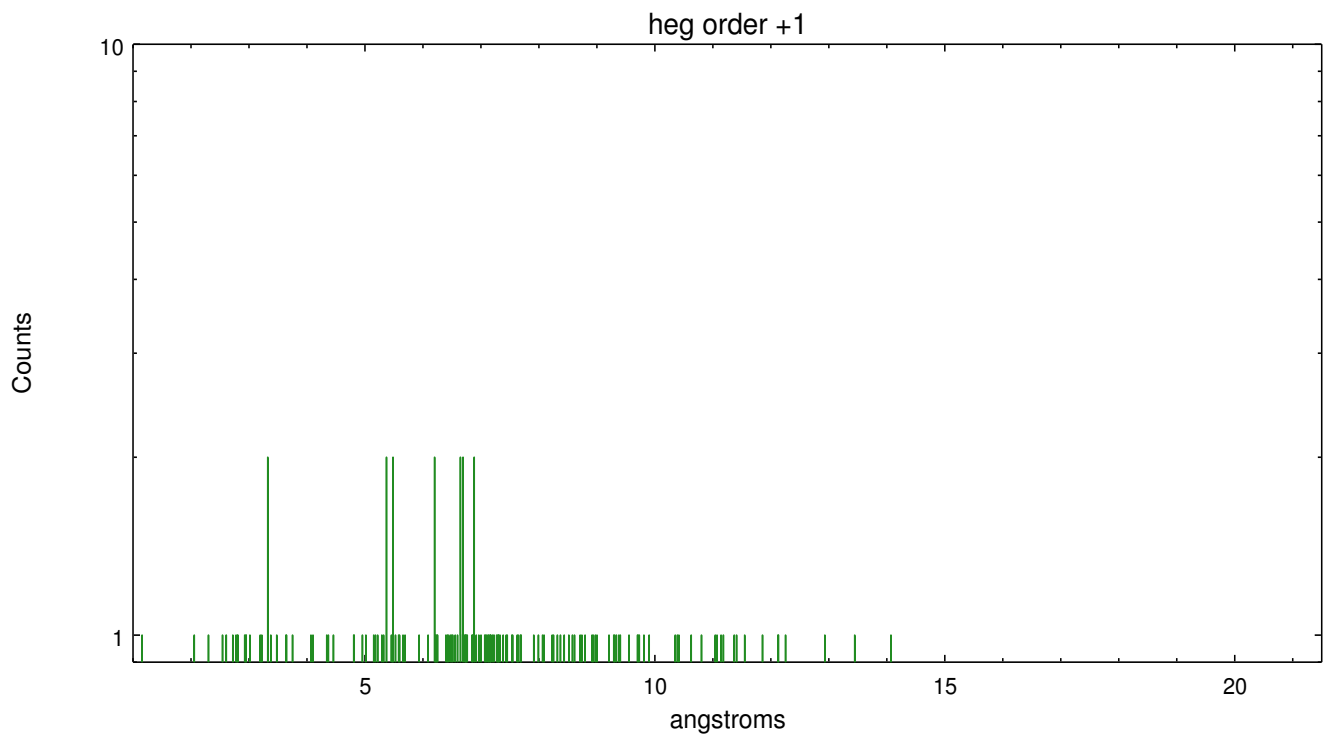
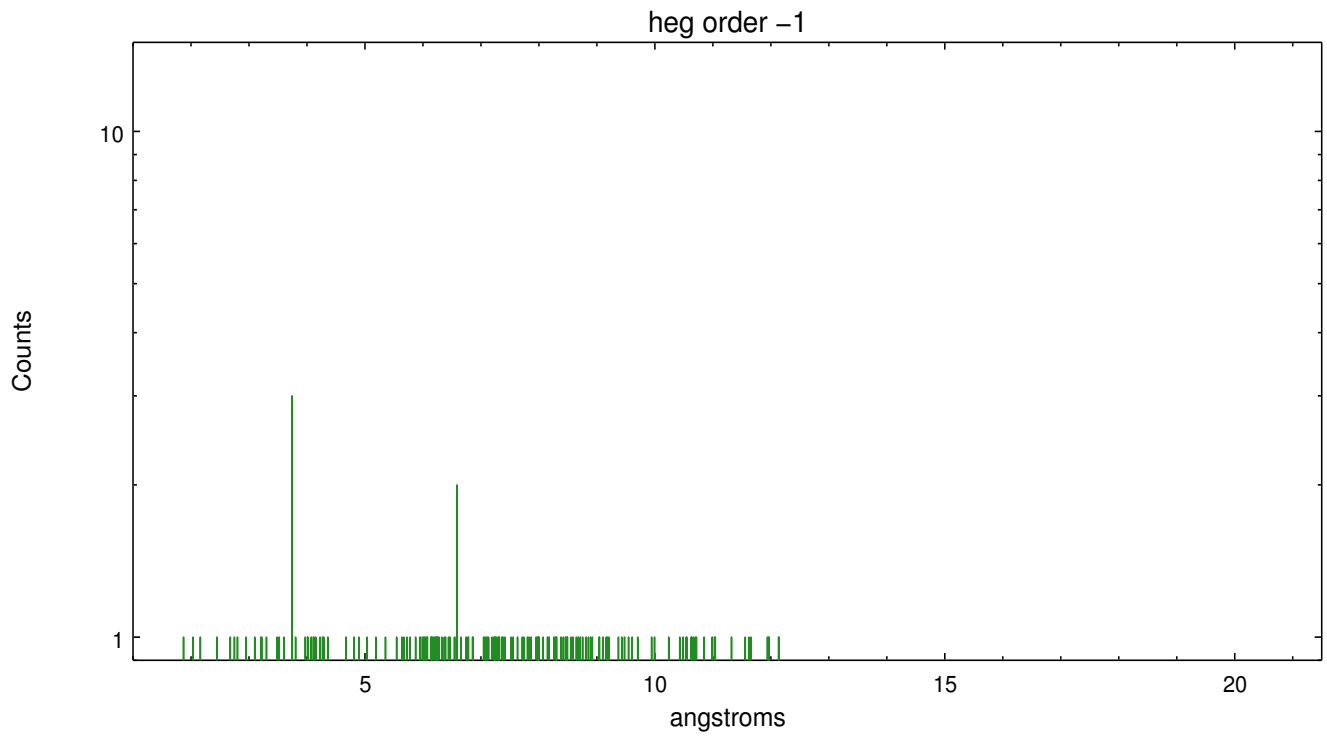


Spot Image HEG

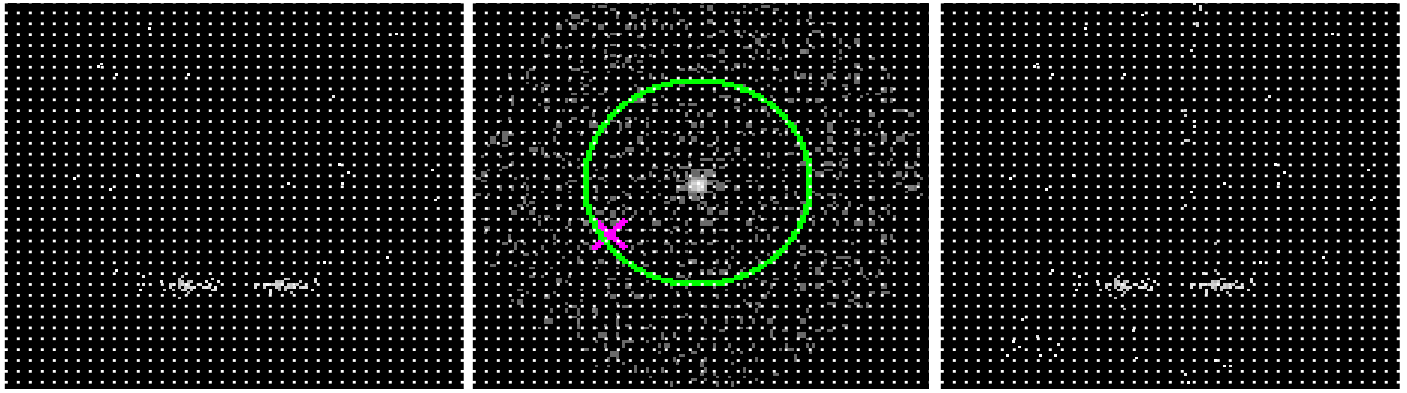
Full Detector HEG

| | order -3 | order -2 | order -1 | order 0 | order 1 | order 2 | order 3 |
|--------|-------------|-------------|-------------|------------|------------|------------|------------|
| Events | 114 | 160 | 307 | 1047 | 270 | 150 | 165 |





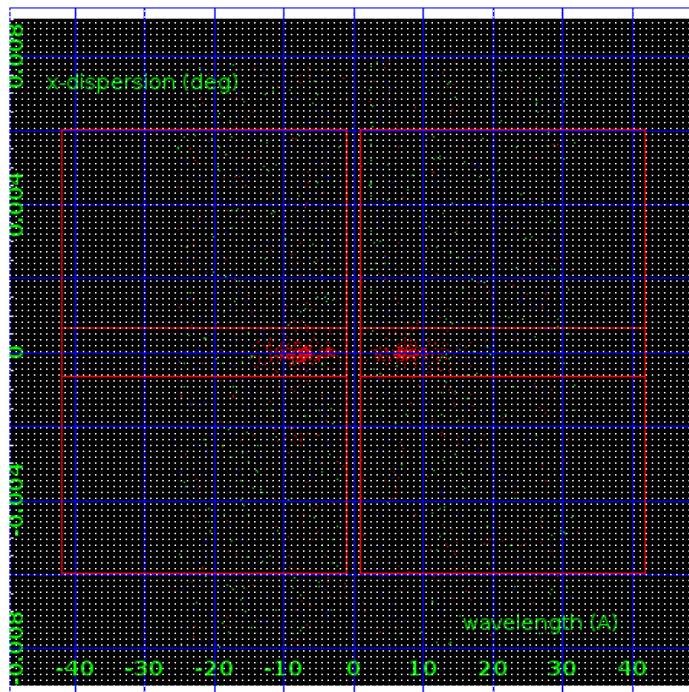
3.2 MEG Arm



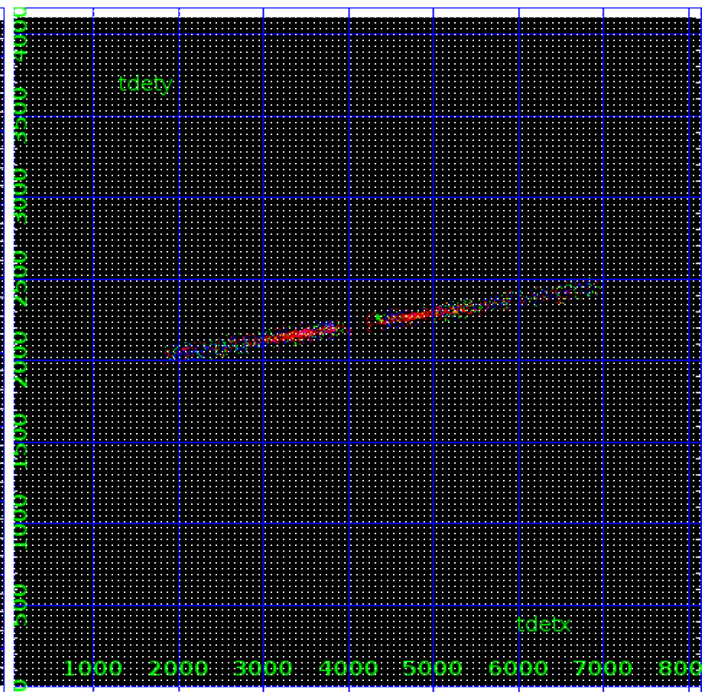
MEG Order Sort 123

MEG Zero Order

MEG Order Sort ALL

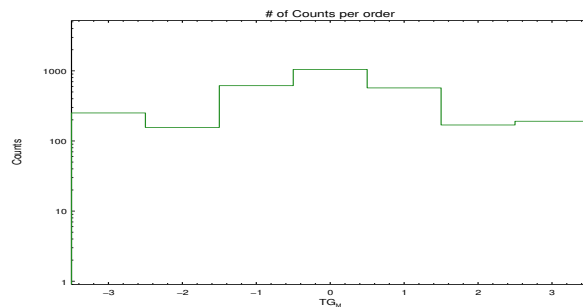


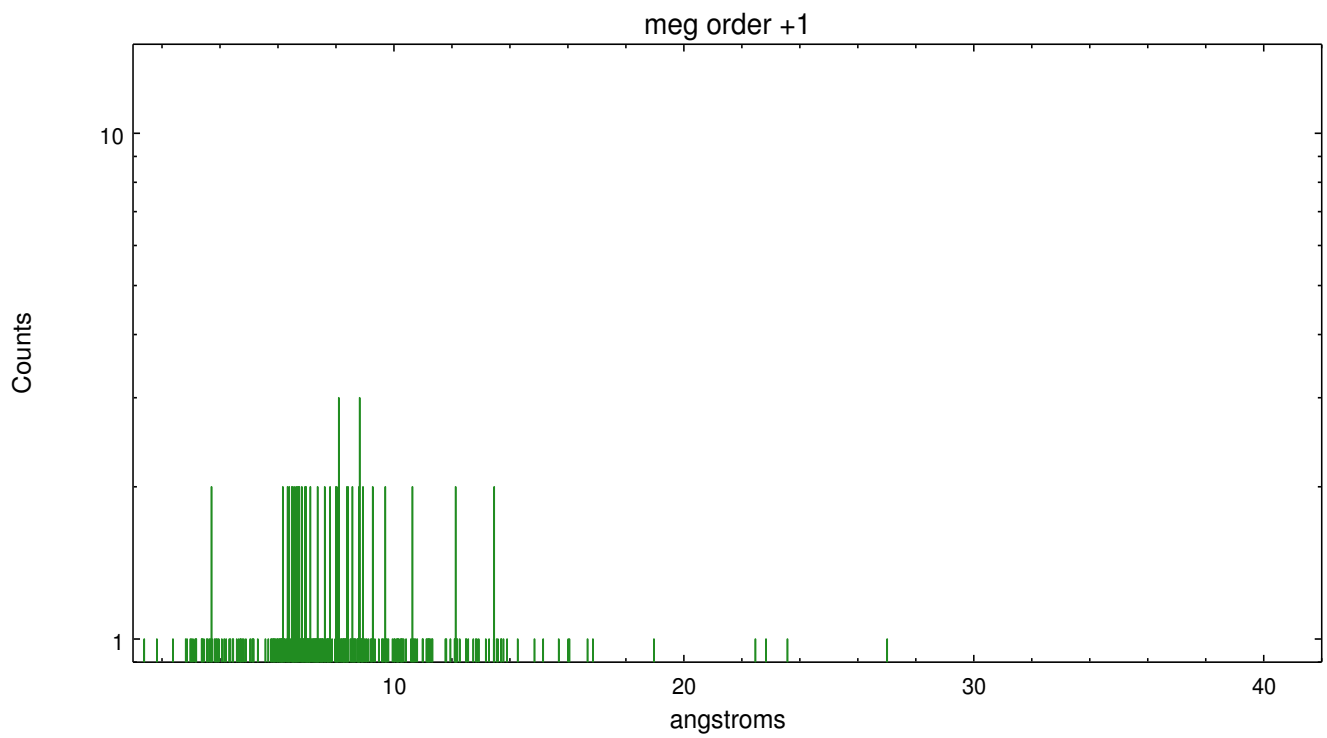
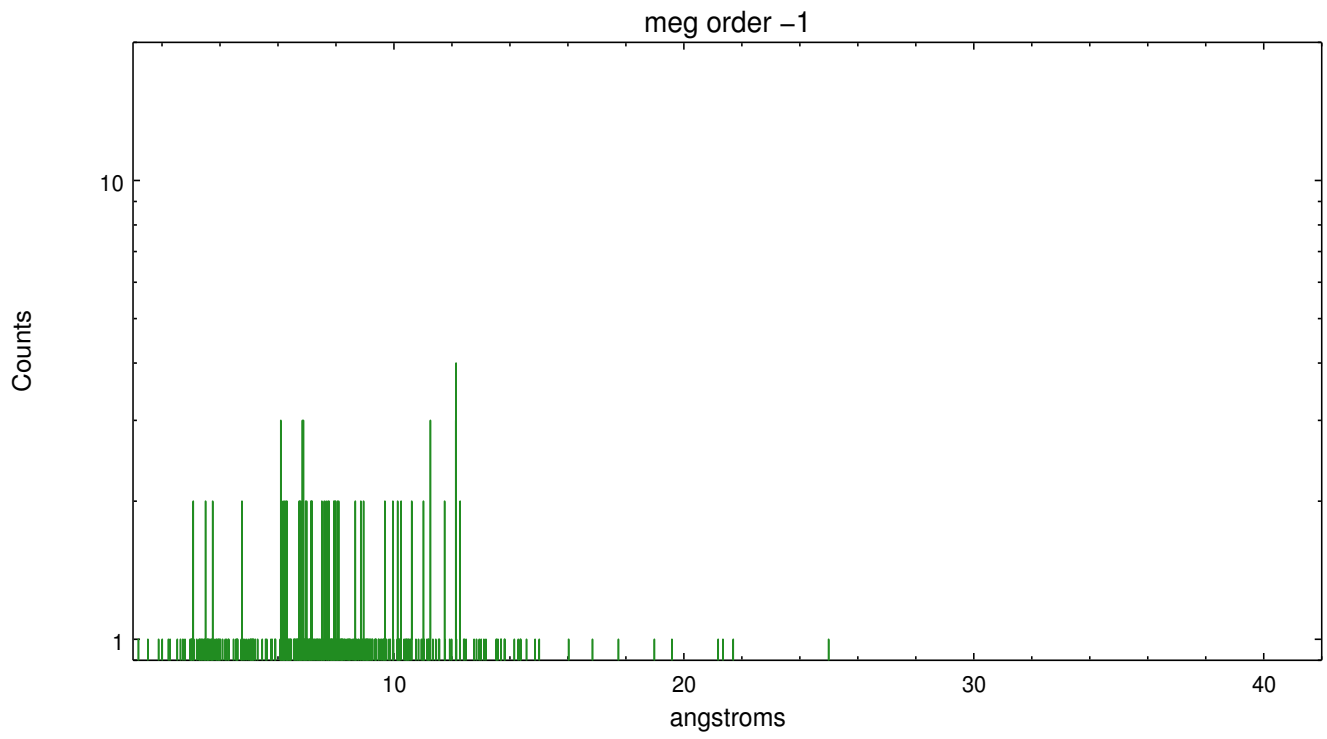
Spot Image MEG



Full Detector MEG

| | order -3 | order -2 | order -1 | order 0 | order 1 | order 2 | order 3 |
|--------|-------------|-------------|-------------|------------|------------|------------|------------|
| Events | 251 | 156 | 615 | 1047 | 571 | 169 | 191 |





A Summary

A.1 Status

| | |
|----------------------------|--------------------|
| V&V Scientist | David Huenemoerder |
| V&V Date (YYYY-MM-DD) | 2018.12.22 |
| V&V Edition | 1 |
| V&V Disposition and Status | OK |
| V&V Charge Time | 23.020600177169 |

A.2 Comments