

V&V Reference Report

L2 ASCDS Version : 8.4.5

Observation 14447 - L2 Version 1
Chandra X-Ray Center

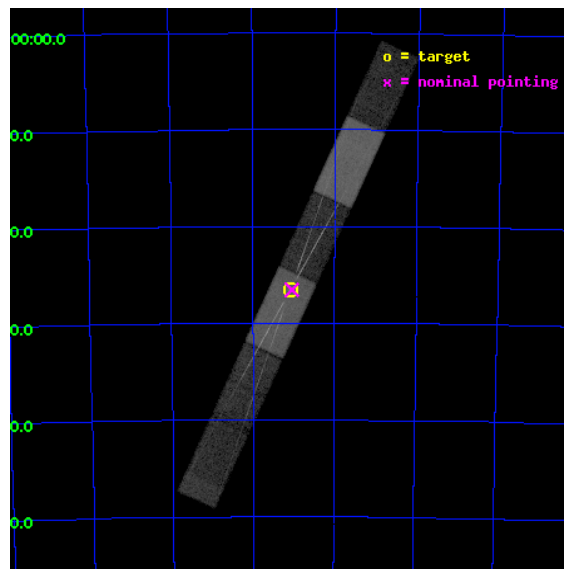
L2 Processing Date : Jun 21 2012

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1 Front

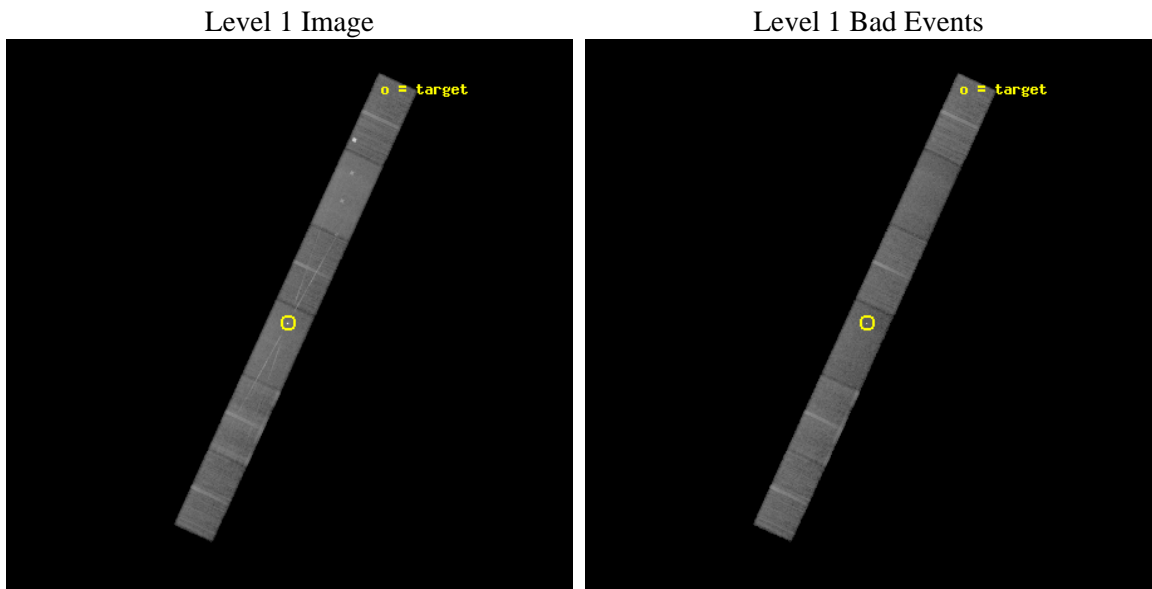
| | | |
|----------|------------------------------|--|
| seq_num | 401302 | Sequence number |
| obs_id | 14447 | Observation id |
| title | The Wind and Warp of SMC X-1 | Proposal title |
| observer | Prof Claude Canizares | Principal investigator |
| object | SMC X-1 | Source name |
| dtcycle | 0 | |
| cycle | P | events from which exps? Prim/Second/Both |
| ra_targ | 19.271667 | Observer's specified target RA [deg] |
| dec_targ | -73.442944 | Observer's specified target Dec [deg] |
| ra_nom | 19.261185969334 | Nominal RA [deg] |
| dec_nom | -73.442537615958 | Nominal Dec [deg] |
| roll_nom | 114.64657628832 | Nominal Roll [deg] |
| revision | 1 | Processing version of data |
| ontime | 39048.999726236 | Sum of GTIs [s] |
| livetime | 38128.532104145 | Livetime [s] |
| ontime4 | 39048.999726236 | Sum of GTIs [s] |
| ontime5 | 39048.999726236 | Sum of GTIs [s] |
| ontime6 | 39048.99816519 | Sum of GTIs [s] |
| ontime7 | 39048.999726236 | Sum of GTIs [s] |
| ontime8 | 39048.957125187 | Sum of GTIs [s] |
| ontime9 | 39048.916085184 | Sum of GTIs [s] |
| l2events | 232255 | Number of level 2 events |



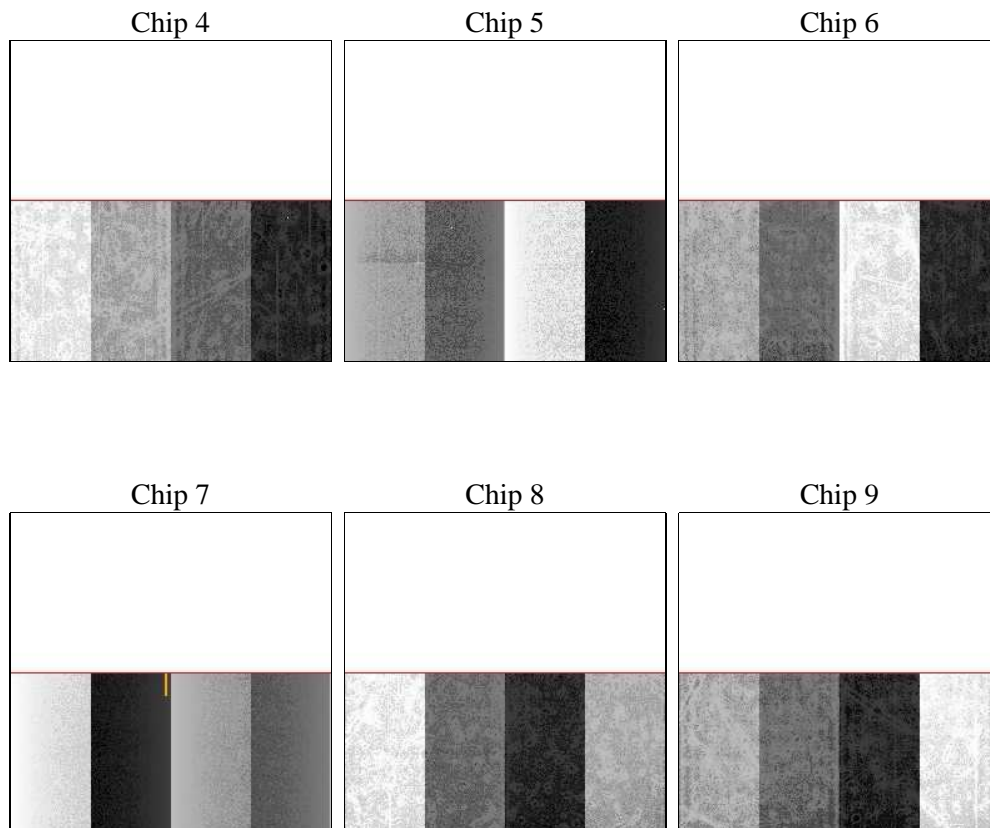
2 OBI

2.1 OBI

2.1.1 Images



2.1.2 Bias



2.1.3 Parameters

| | | | | | |
|----------|---------------------|--------------------------------|----------------|-----------------|---|
| obi_num | 0 | Obi number | sched_exp_time | 39000.000000 | [s] Scheduled observation exposure time |
| ascdsver | 8.4.5 | Processing system revision | ontime | 39048.999726236 | Sum of GTIs [s] |
| caldsver | 4.4.10 | | ontime4 | 39048.999726236 | Sum of GTIs [s] |
| date | 2012-06-21T17:24:44 | Date and time of file creation | ontime5 | 39048.999726236 | Sum of GTIs [s] |
| revision | 1 | Processing version of data | ontime6 | 39048.99816519 | Sum of GTIs [s] |
| | | | ontime7 | 39048.999726236 | Sum of GTIs [s] |
| | | | ontime8 | 39048.957125187 | Sum of GTIs [s] |
| | | | ontime9 | 39048.916085184 | Sum of GTIs [s] |
| | | | l1events | 903511 | Number of level 1 events |

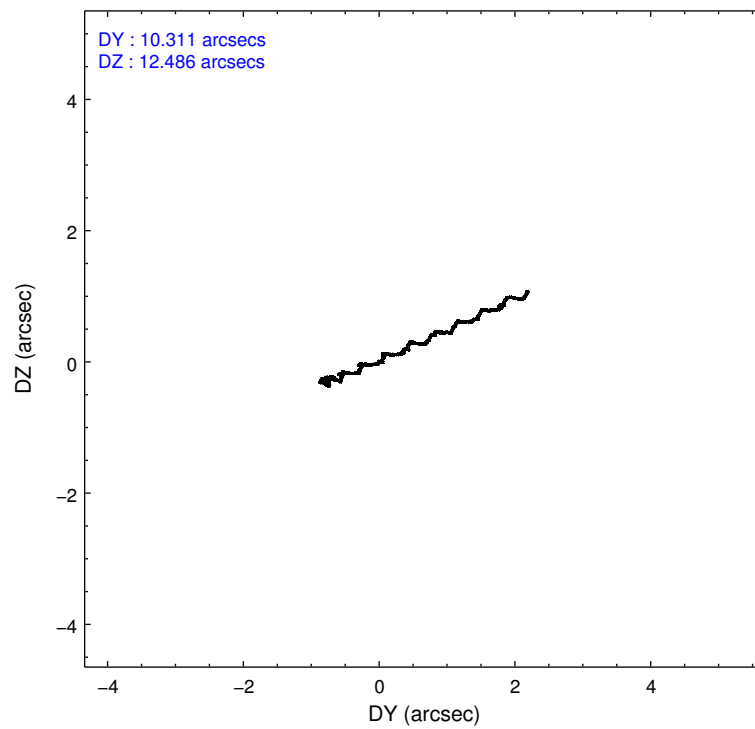
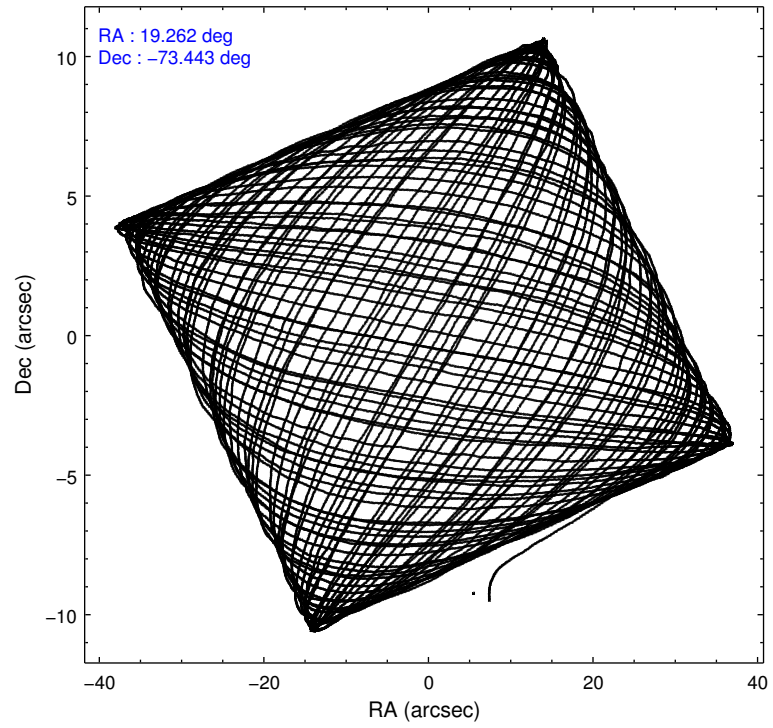
2.1.4 Events

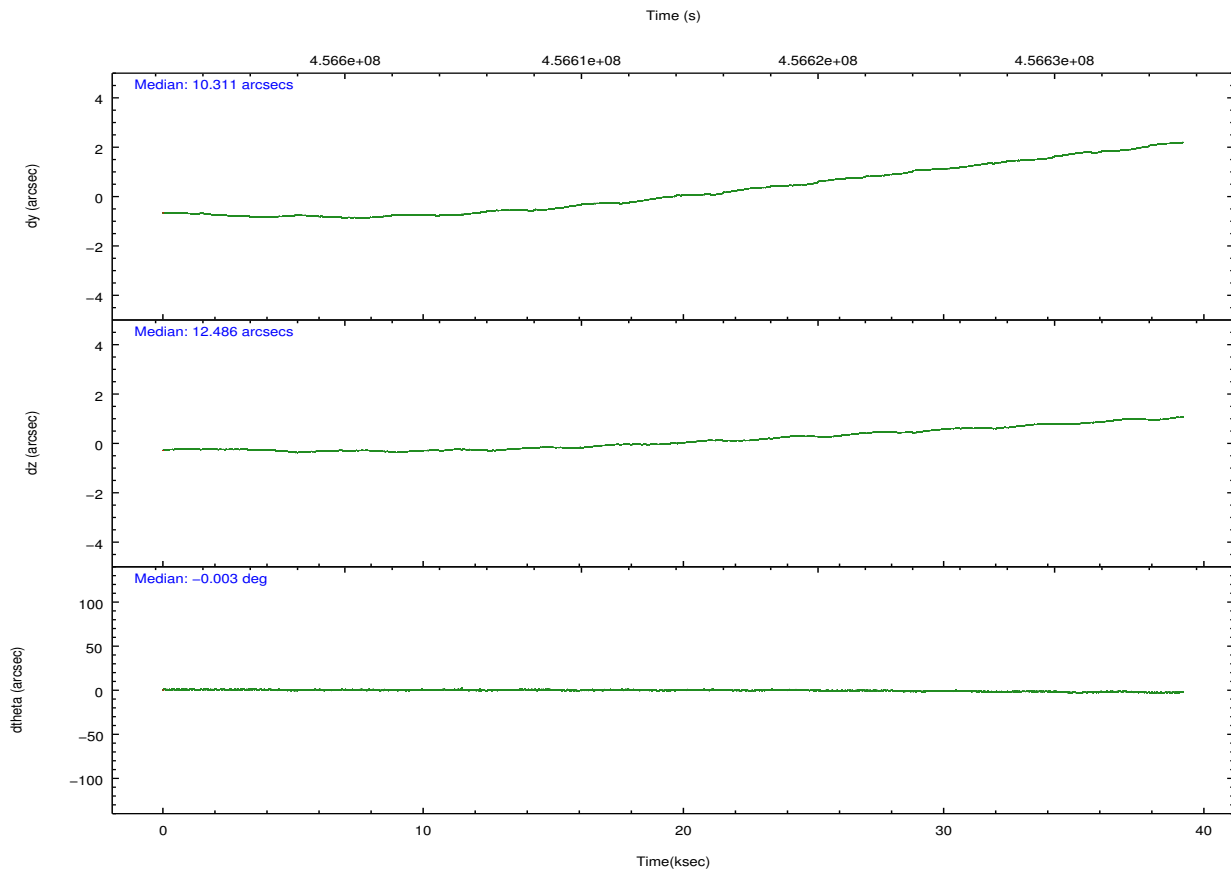
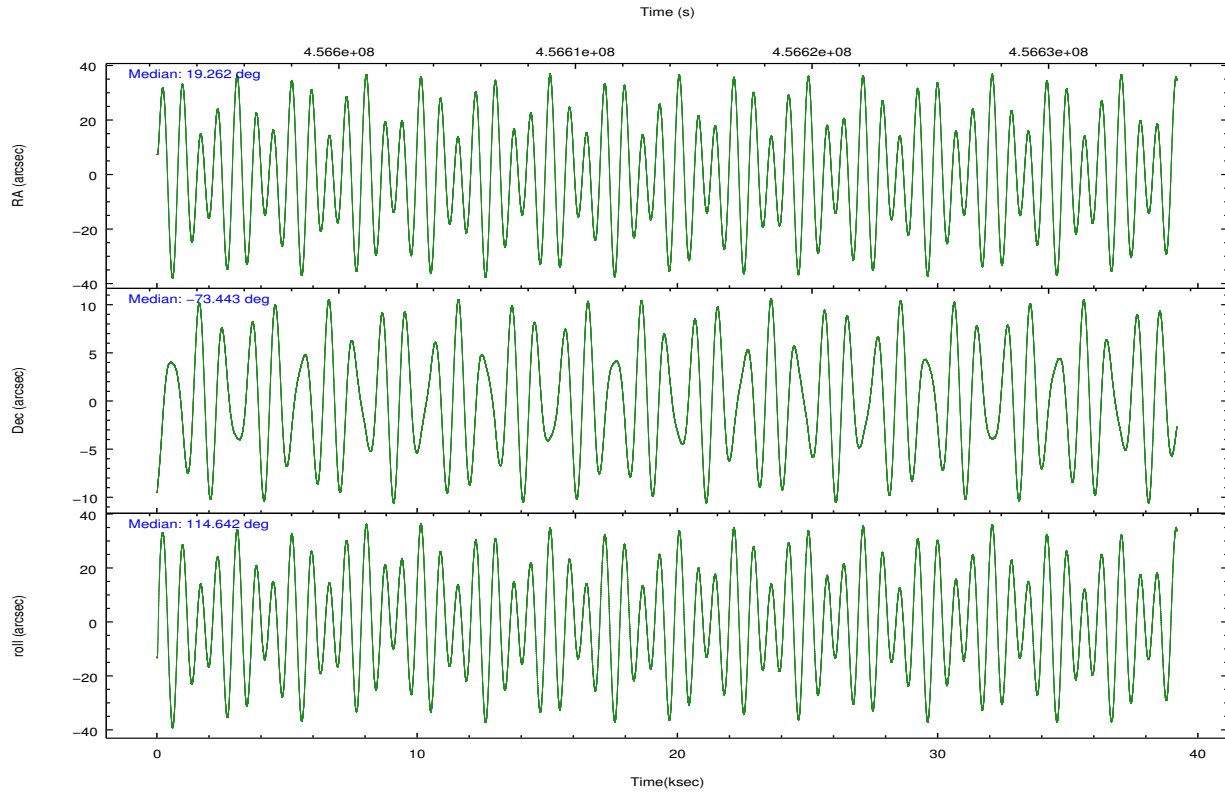
| | ccd 4 | ccd 5 | ccd 6 | ccd 7 | ccd 8 | ccd 9 | | ccd 4 | ccd 5 | ccd 6 | ccd 7 | ccd 8 | ccd 9 |
|-----------------|--------|--------|--------|--------|--------|--------|----------------|--------|-------|--------|-------|--------|-------|
| level 1 events | 147253 | 183982 | 128669 | 169340 | 158279 | 115988 | grade 0 events | 21662 | 10361 | 10108 | 10036 | 13923 | 5534 |
| rejected events | 115646 | 91573 | 106714 | 82645 | 113455 | 100629 | | 14% | 5% | 7% | 5% | 8% | 4% |
| rejected % | 78% | 49% | 82% | 48% | 71% | 86% | grade 1 events | 139 | 366 | 60 | 329 | 101 | 50 |
| | | | | | | | | 0% | 0% | 0% | 0% | 0% | 0% |
| | | | | | | | grade 2 events | 3713 | 25396 | 4249 | 18271 | 9932 | 3153 |
| | | | | | | | | 2% | 13% | 3% | 10% | 6% | 2% |
| | | | | | | | grade 3 events | 1815 | 5070 | 2080 | 8573 | 4766 | 1795 |
| | | | | | | | | 1% | 2% | 1% | 5% | 3% | 1% |
| | | | | | | | grade 4 events | 1717 | 4876 | 2003 | 8297 | 4457 | 1747 |
| | | | | | | | | 1% | 2% | 1% | 4% | 2% | 1% |
| | | | | | | | grade 5 events | 5376 | 15449 | 5422 | 16027 | 7643 | 5946 |
| | | | | | | | | 3% | 8% | 4% | 9% | 4% | 5% |
| | | | | | | | grade 6 events | 2701 | 46709 | 3516 | 41519 | 11746 | 3130 |
| | | | | | | | | 1% | 25% | 2% | 24% | 7% | 2% |
| | | | | | | | grade 7 events | 110130 | 75755 | 101231 | 66288 | 105711 | 94633 |
| | | | | | | | | 74% | 41% | 78% | 39% | 66% | 81% |

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 | 19.340236 | 19.26118596933441 | CCD I2 on | N | N |
| [deg] Pointing Dec | -73.458017 | -73.44253761595829 | CCD I3 on | N | N |
| [deg] Pointing Roll | 114.565731 | 114.6465762883221 | 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 | -183.992523 | -183.9900508222561 | CCD S3 on | Y | Y |
| [mm] SIM translation stage offset | -6.14 | -6.142471760751675 | CCD S4 on | Y | Y |
| [s] Observation start time (MET) | 456594467.184000 | 456593519.15361 | CCD S5 on | Y | Y |
| Observation start date | 2012-06-20T15:46:41 | 2012-06-20T15:31:59 | Number of optional ACIS chips dropped | 0 | 0 |
| [s] Observation end time (MET) | 456633467.184000 | 456634493.53079 | On-chip summing requested | N | N |
| Observation end date | 2012-06-21T02:36:41 | 2012-06-21T02:54:53 | Subarray requested | CUSTOM | 1/2 |
| Read mode | TIMED | TIMED | Subarray start row | 1 | 1 |
| | | | Subarray row count | 512 | 512 |
| | | | Alternating exposures requested | N | N |
| | | | [s] Primary exposure time | 0.000000 | 1.7 |

2.3 Aspect



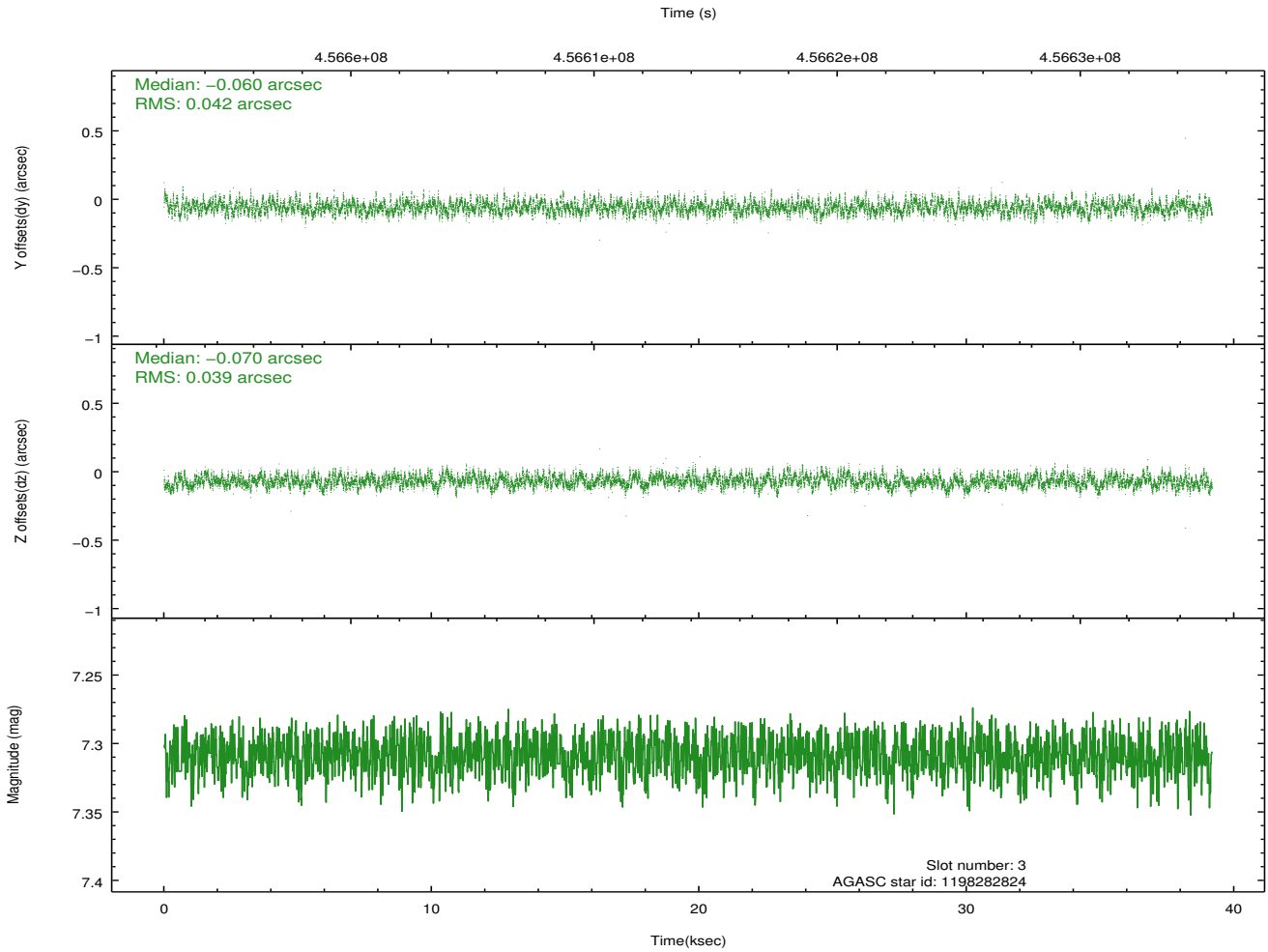
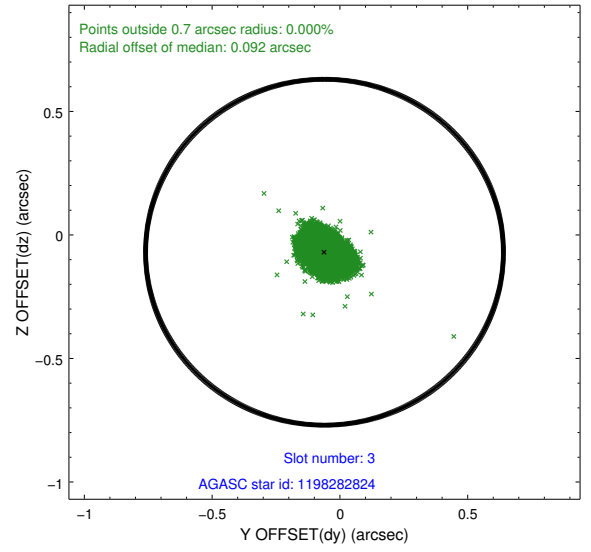
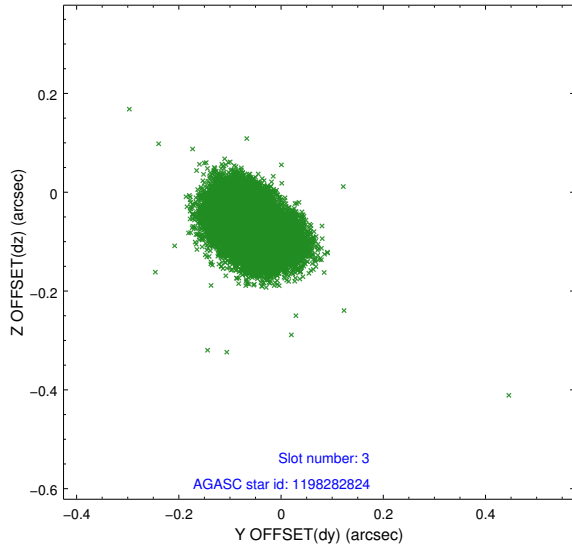


Slot Statistics

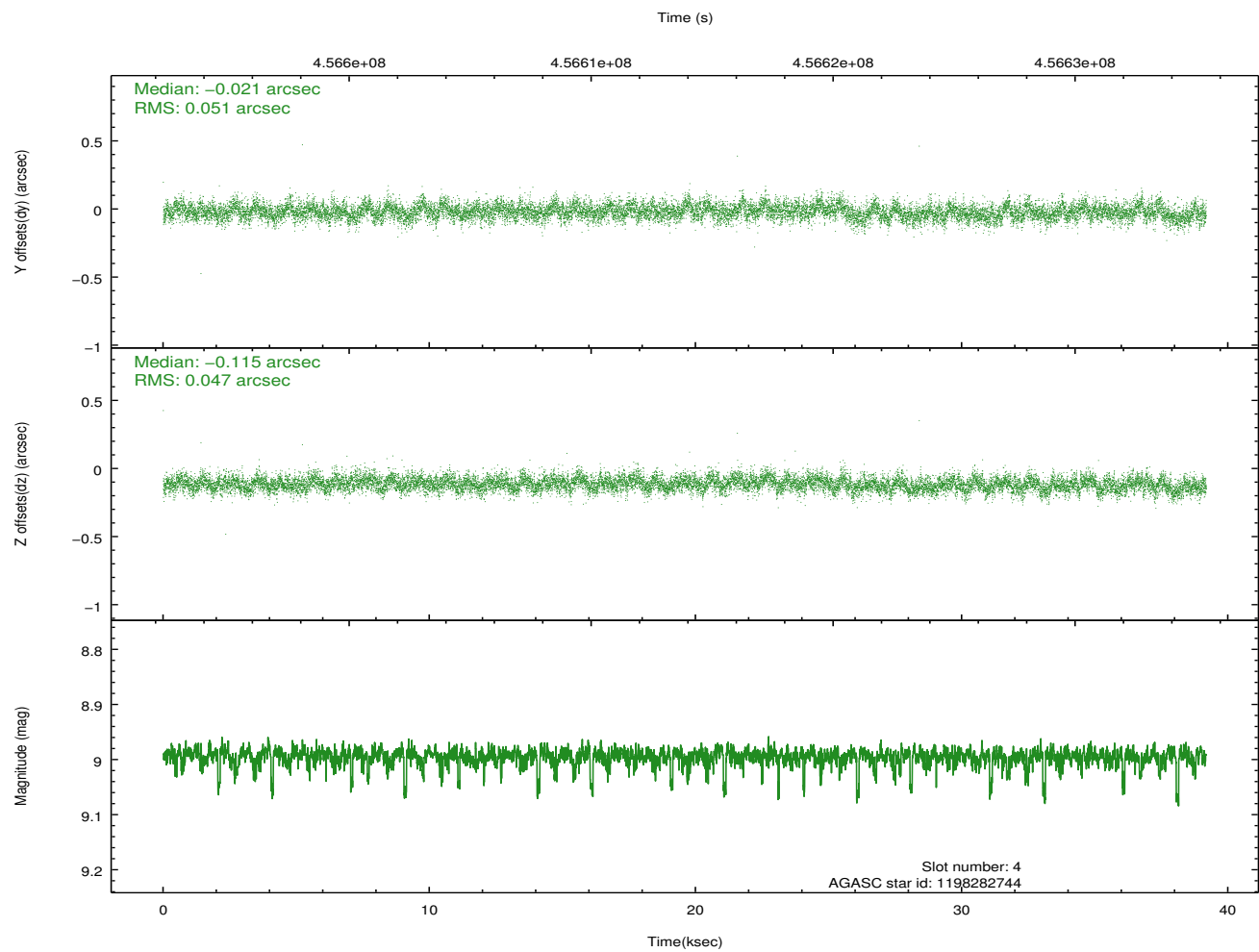
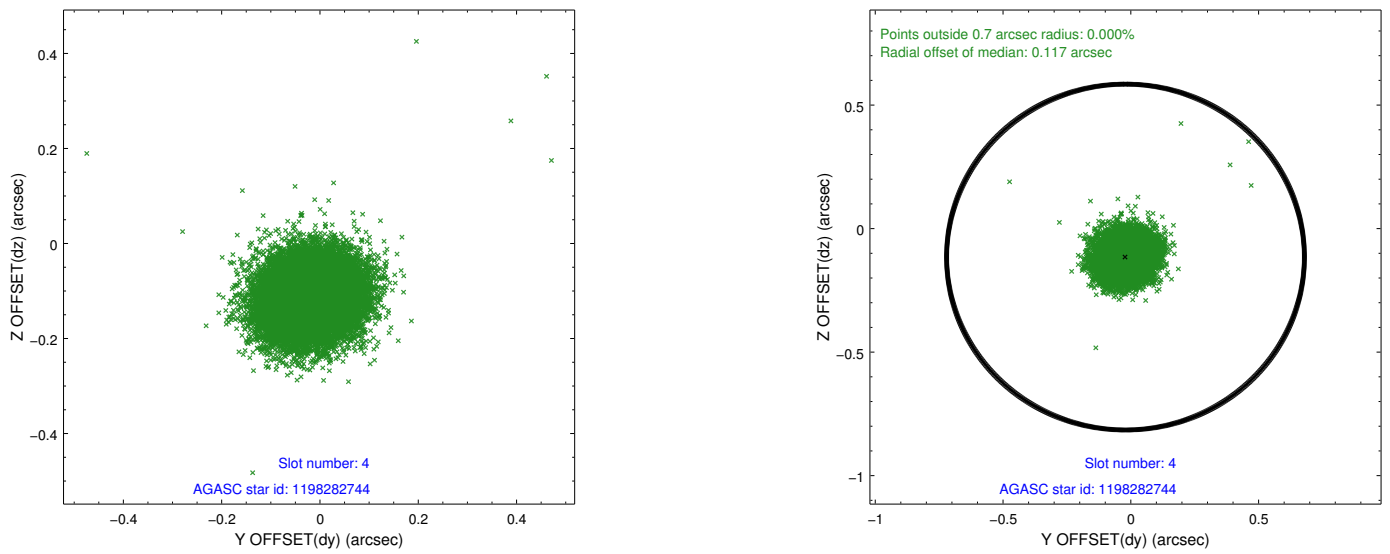
| slot | status | id | mag | n_pts | med_dy | med_dz | dr1 | dr2 | ra | dec | mean_y | mean_z |
|------|--------|------------|------|-------|--------|--------|-------|-------|-----------|------------|----------|----------|
| 0 | FID | ACIS-S-2 | 6.95 | 9558 | -0.114 | -0.111 | 0.019 | 0.029 | 0.000000 | 0.000000 | -763.10 | -1860.65 |
| 1 | FID | ACIS-S-4 | 7.03 | 9558 | 0.272 | 0.083 | 0.021 | 0.035 | 0.000000 | 0.000000 | 2150.59 | 47.93 |
| 2 | FID | ACIS-S-5 | 7.07 | 9556 | -0.197 | 0.032 | 0.032 | 0.047 | 0.000000 | 0.000000 | -1815.95 | 41.64 |
| 3 | GUIDE | 1198282824 | 7.31 | 19108 | -0.060 | -0.070 | 0.061 | 0.098 | 18.044095 | -73.907062 | -945.36 | 1853.16 |
| 4 | GUIDE | 1198282744 | 8.99 | 19059 | -0.021 | -0.115 | 0.072 | 0.118 | 17.028326 | -73.013356 | 2423.72 | 1565.58 |
| 5 | GUIDE | 1198276744 | 8.59 | 19103 | 0.031 | -0.050 | 0.073 | 0.123 | 19.489008 | -74.153493 | -2337.67 | 908.24 |
| 6 | GUIDE | 1198269920 | 8.27 | 19100 | -0.061 | 0.117 | 0.095 | 0.143 | 20.316466 | -73.033728 | 955.44 | -1563.91 |
| 7 | GUIDE | 1198272400 | 9.17 | 19103 | 0.105 | 0.118 | 0.087 | 0.142 | 20.411923 | -73.620598 | -992.94 | -741.69 |

2.4 Star Slots

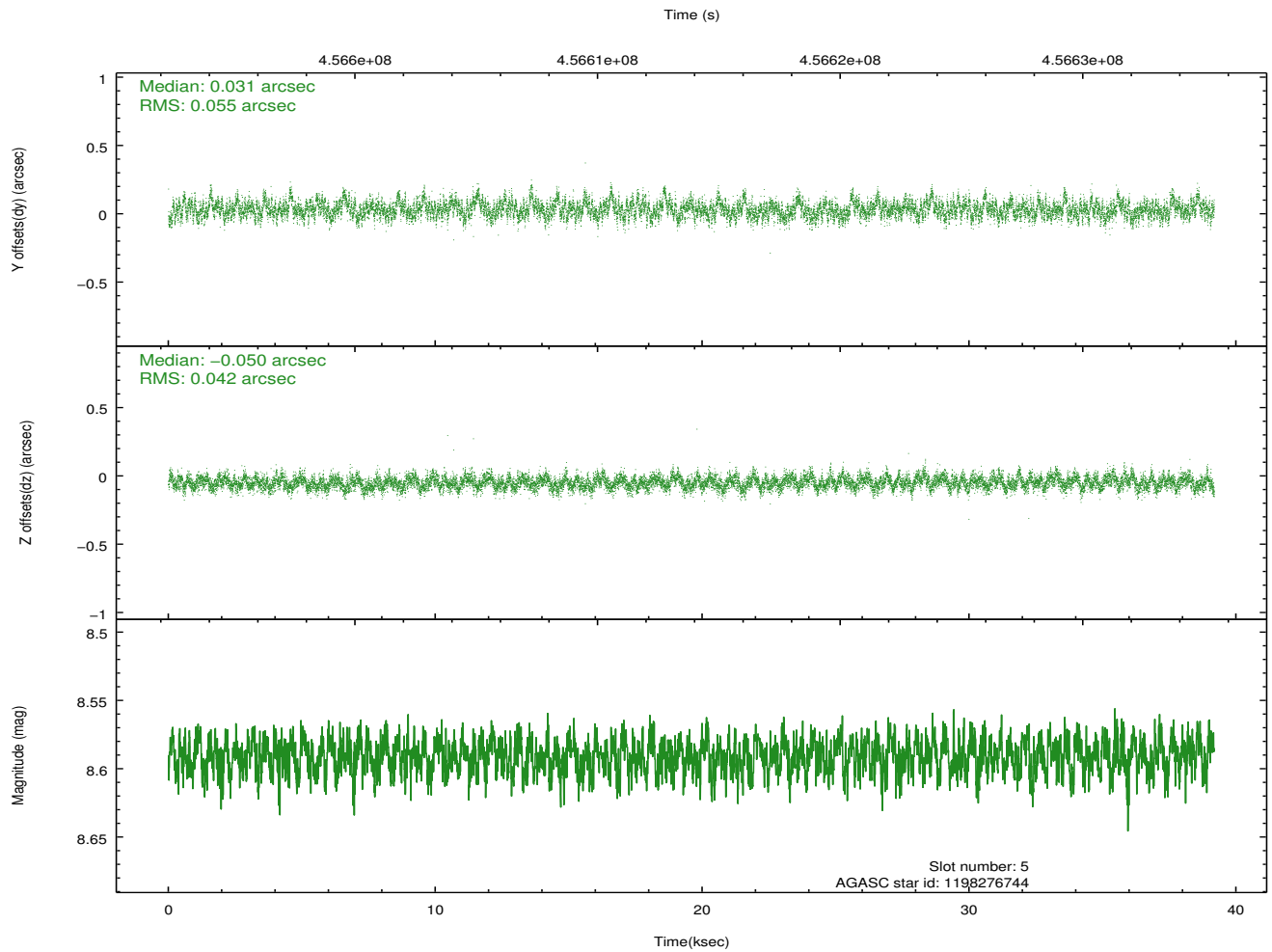
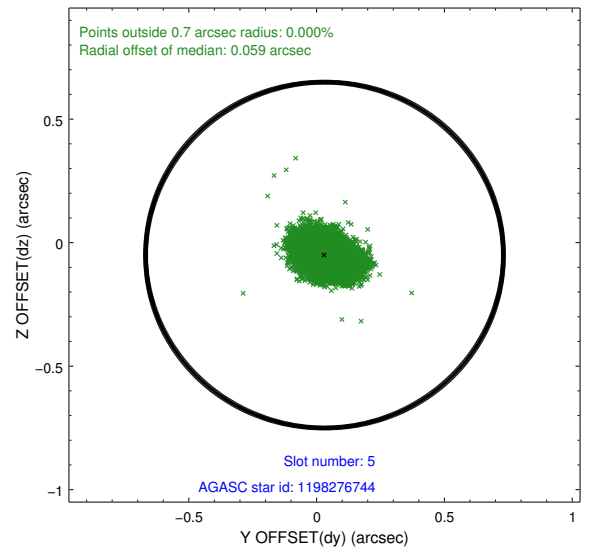
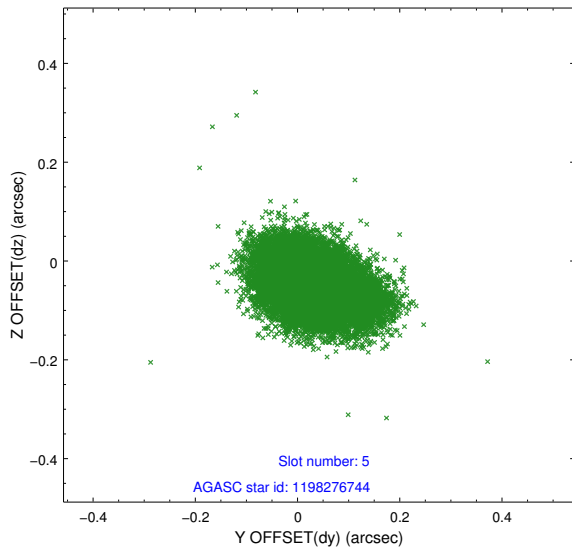
2.4.1 Slot 3



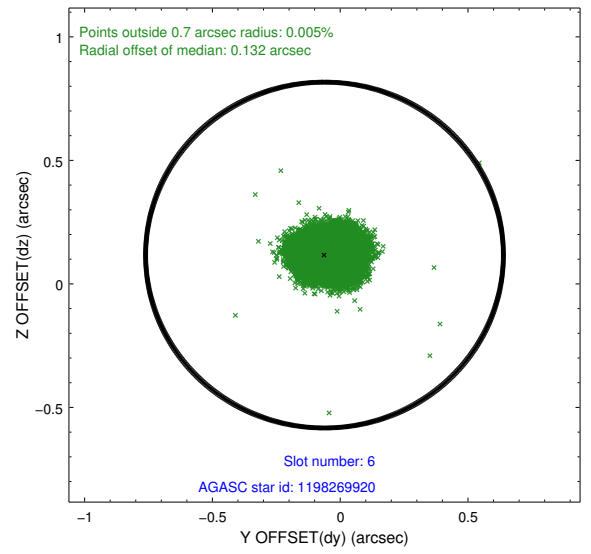
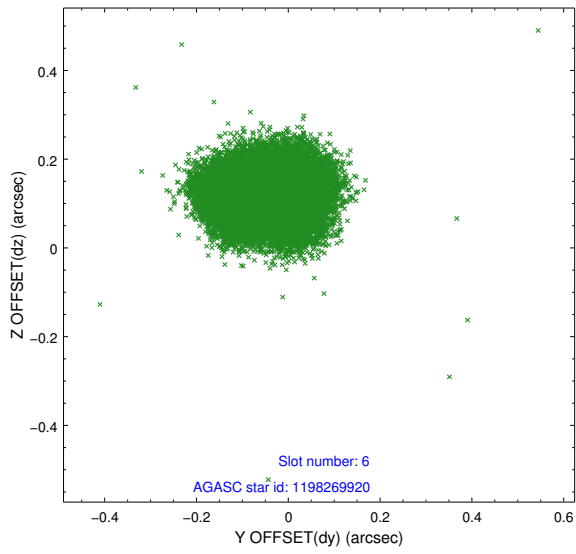
2.4.2 Slot 4



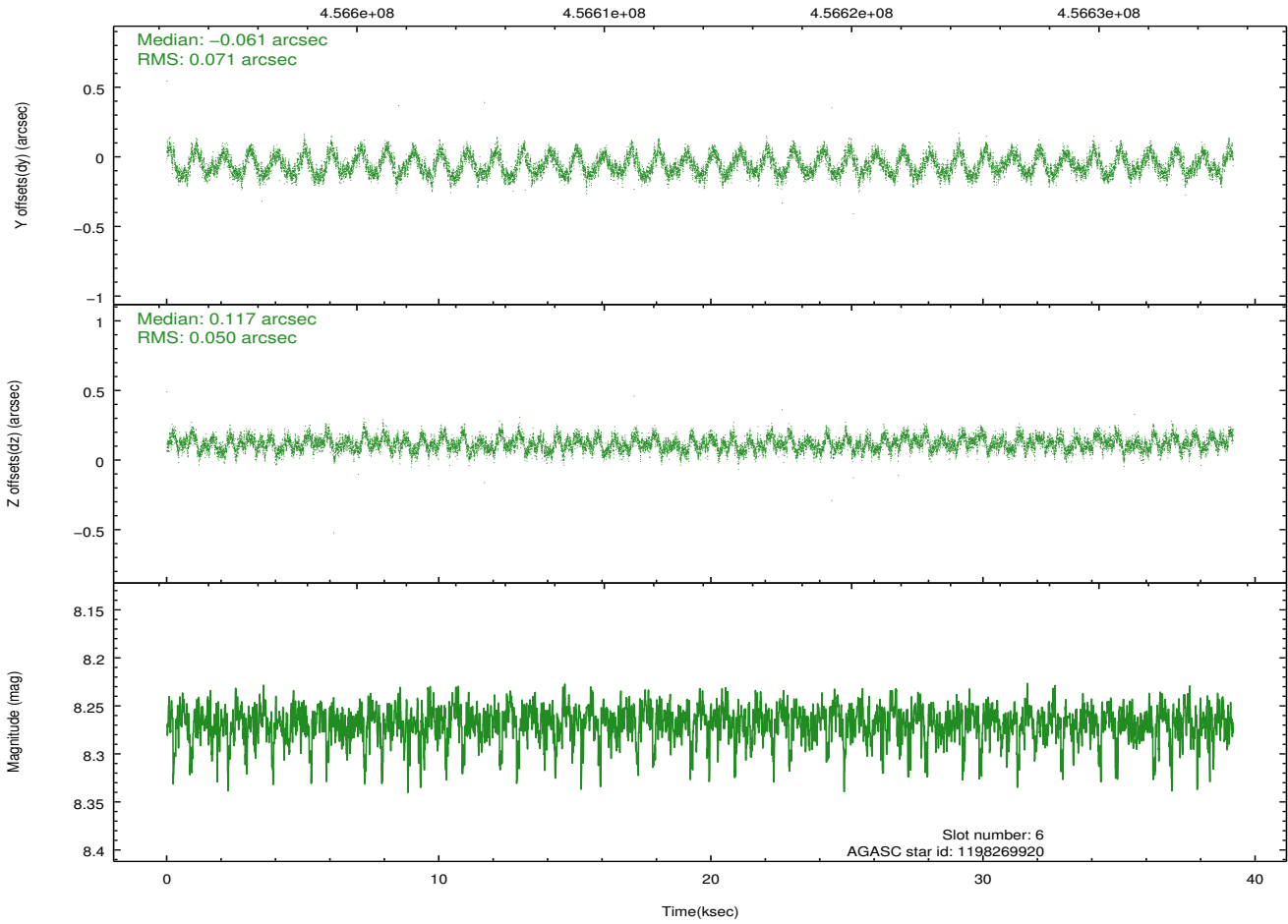
2.4.3 Slot 5



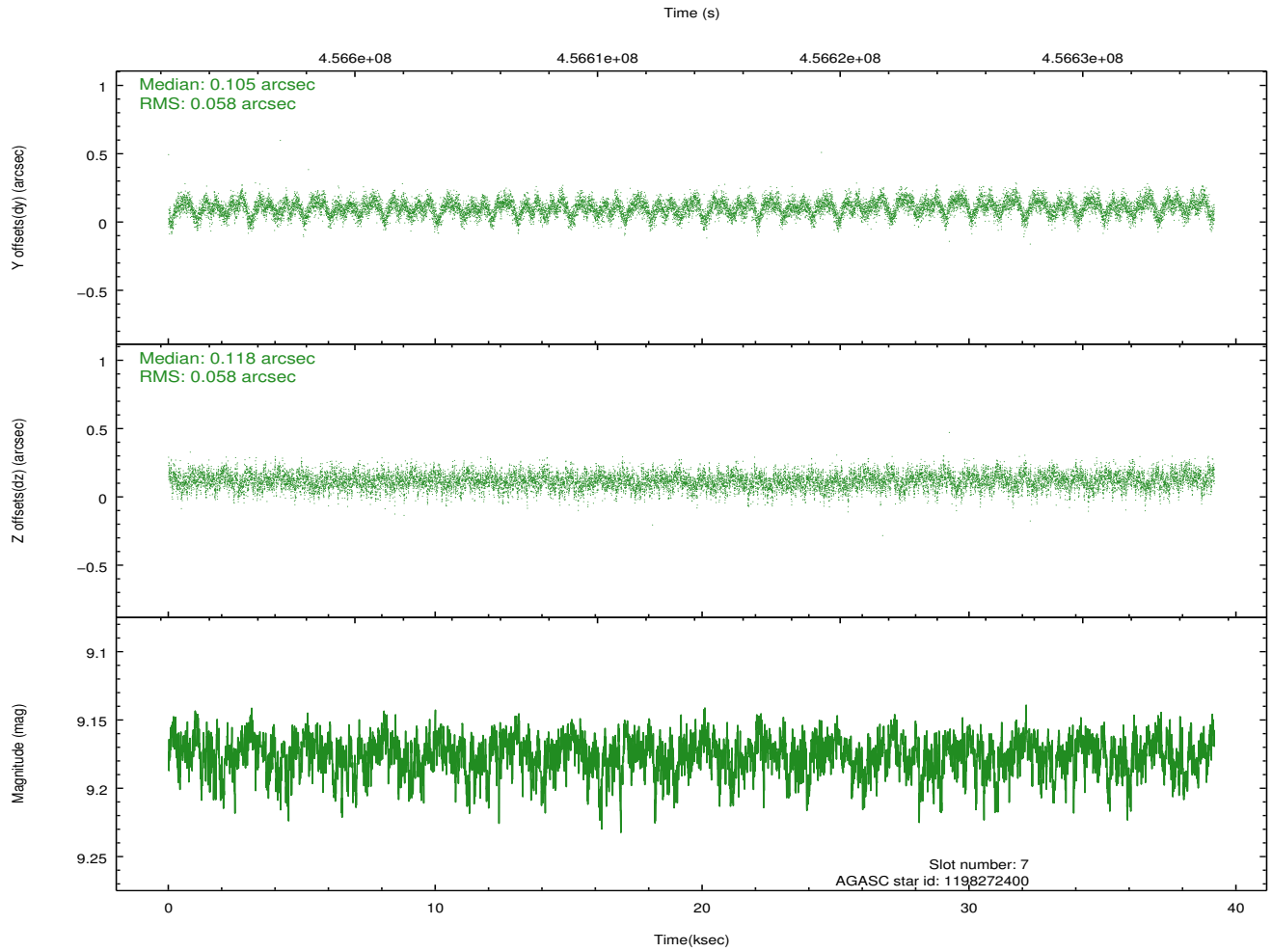
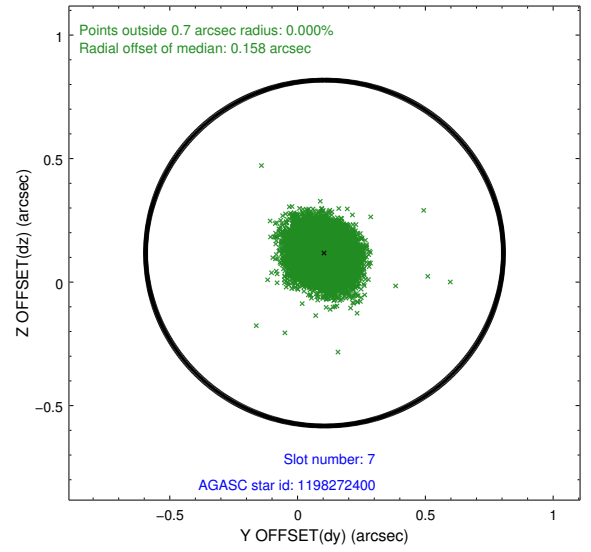
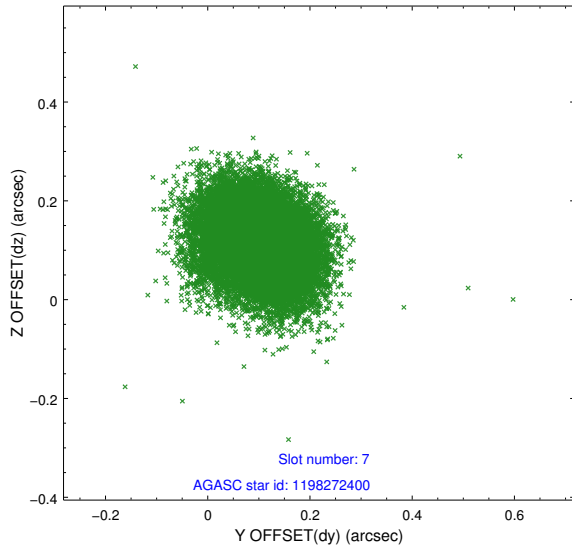
2.4.4 Slot 6



Time (s)

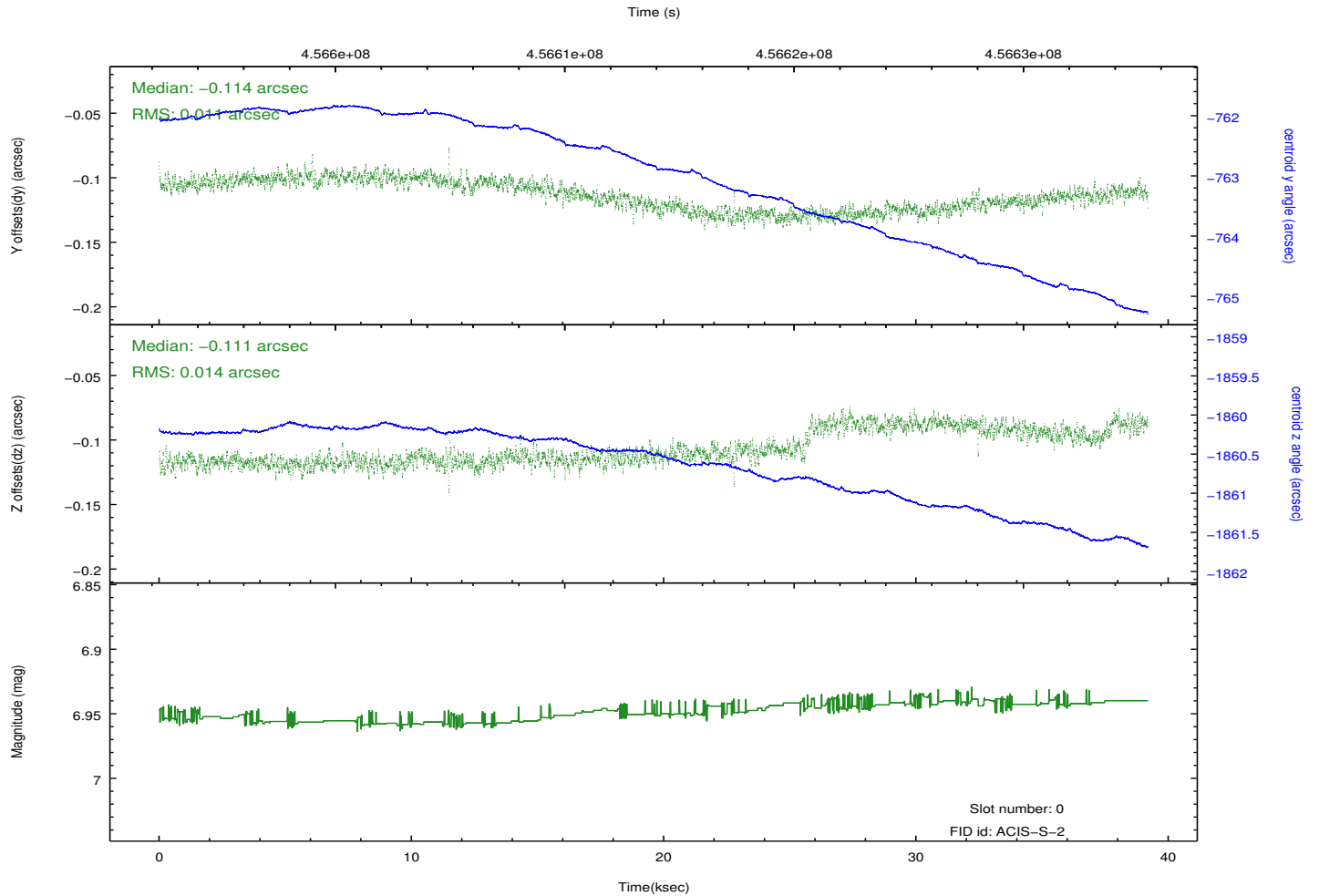
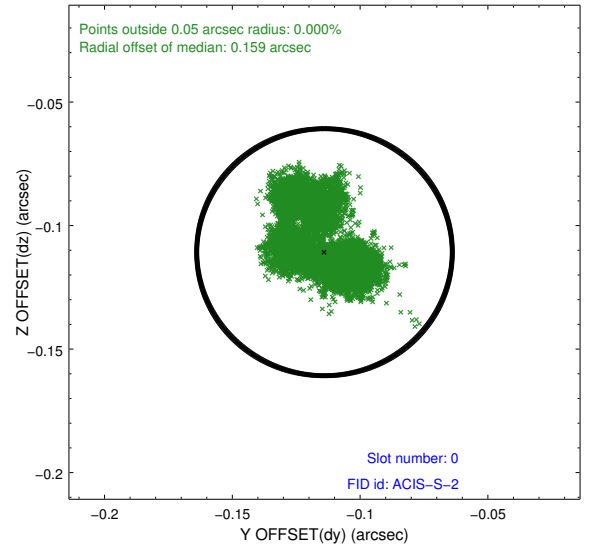
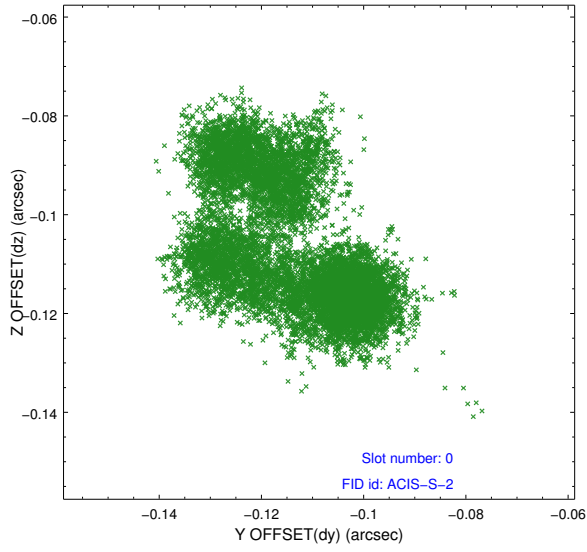


2.4.5 Slot 7

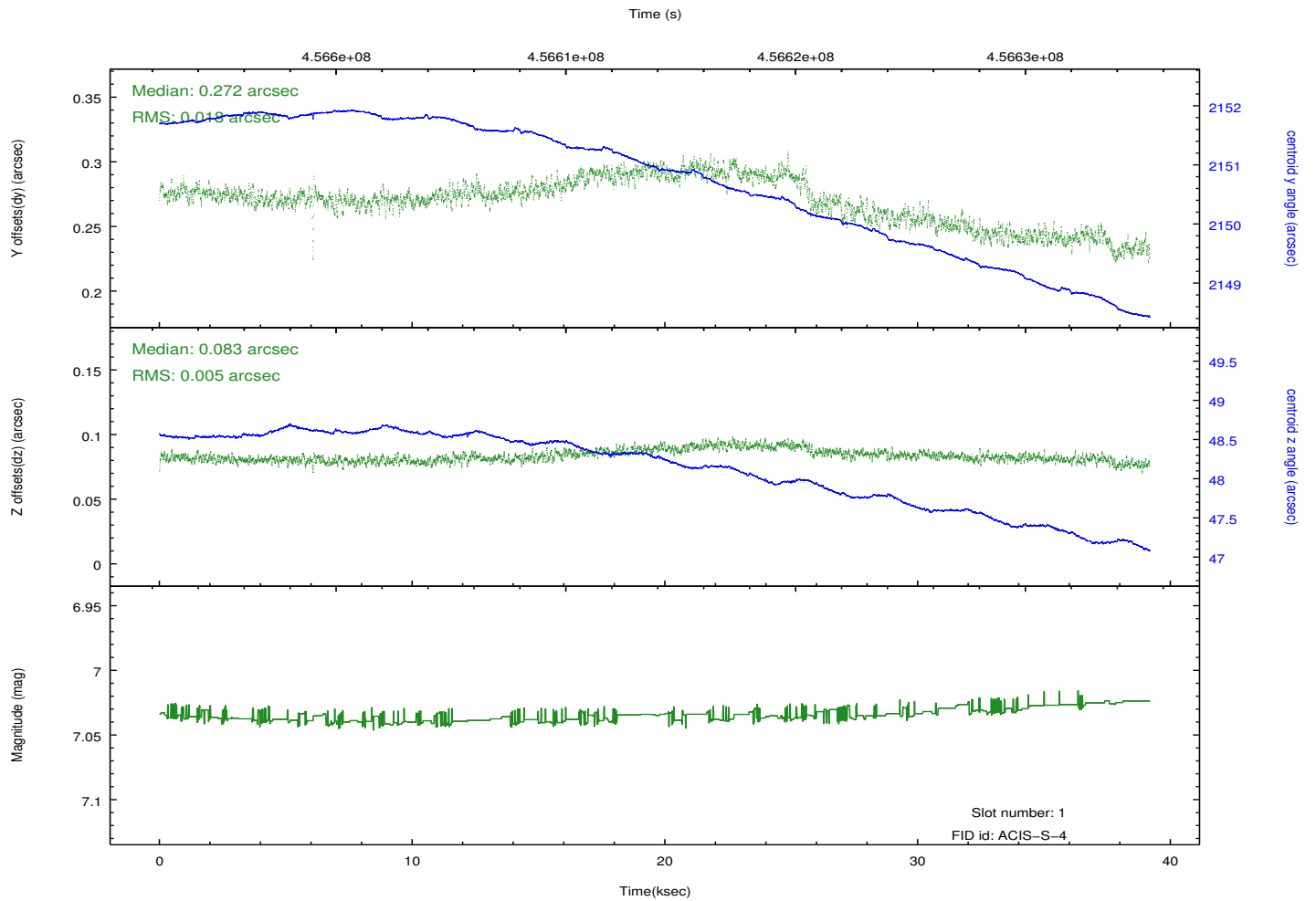
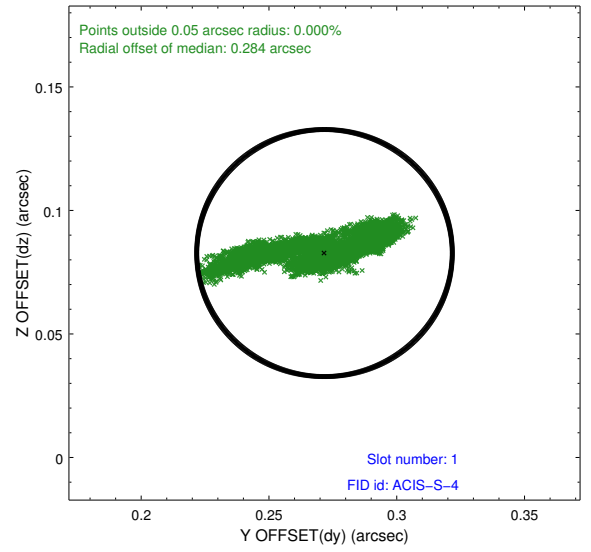
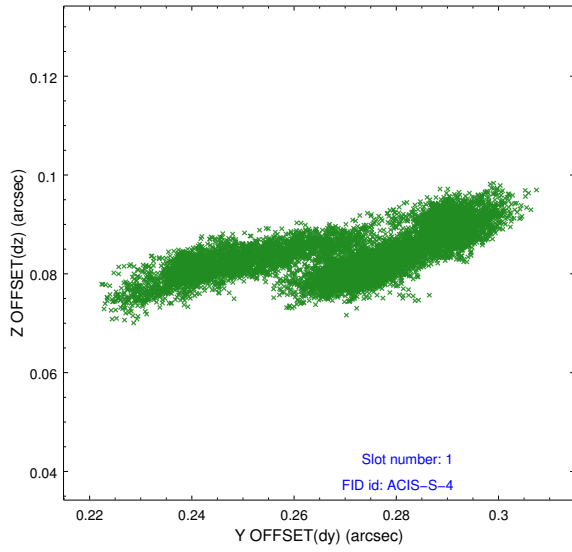


2.5 FID Slots

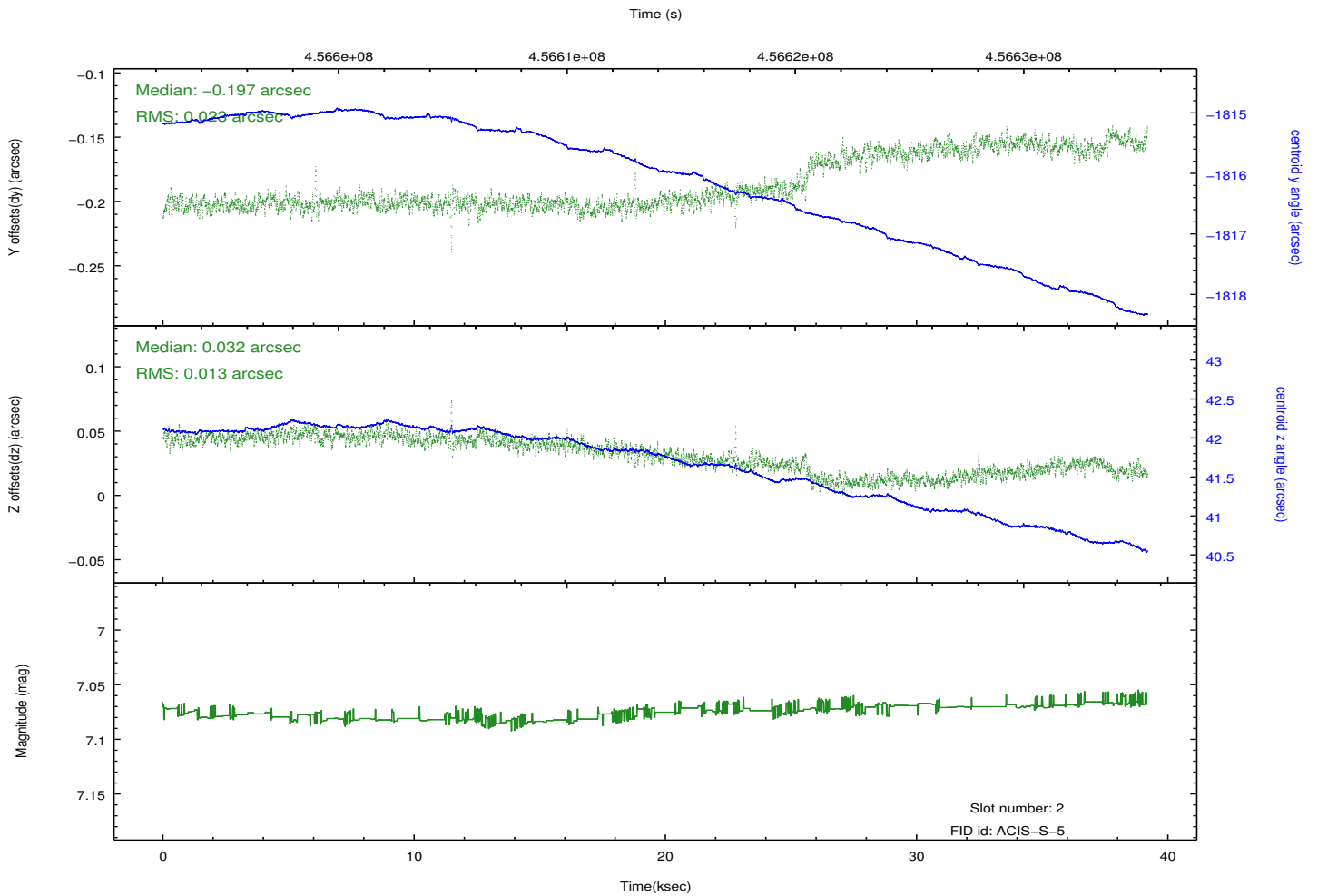
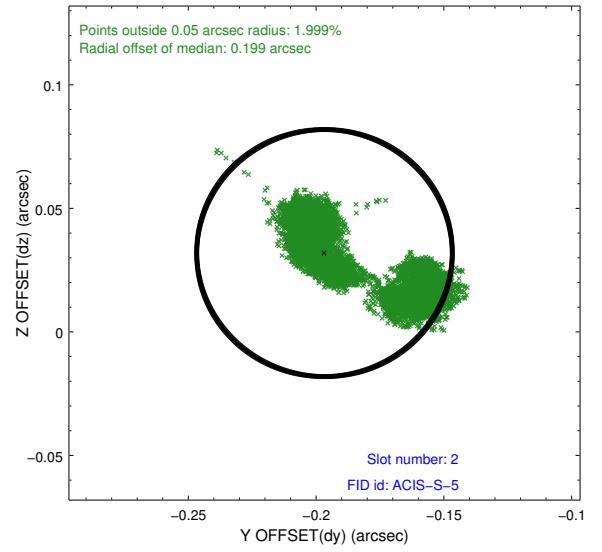
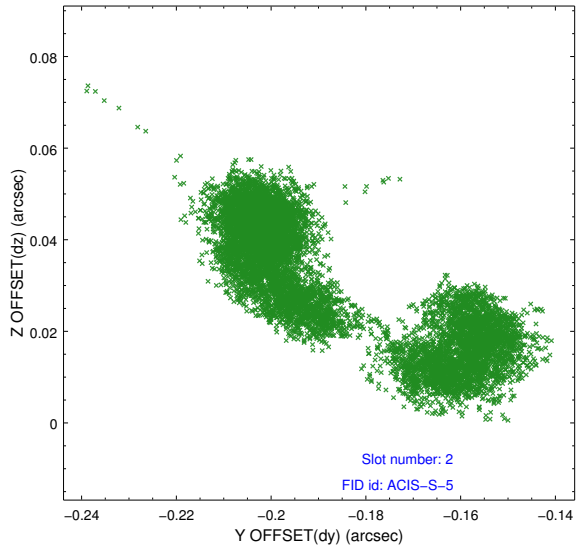
2.5.1 Slot 0



2.5.2 Slot 1



2.5.3 Slot 2

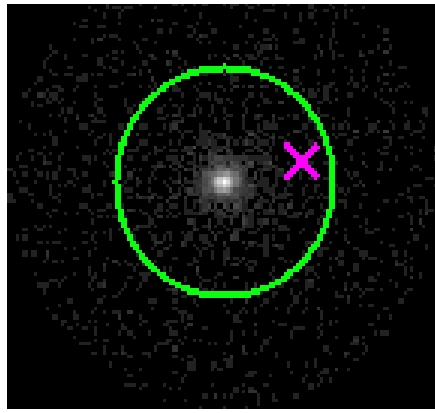


3 Gratings

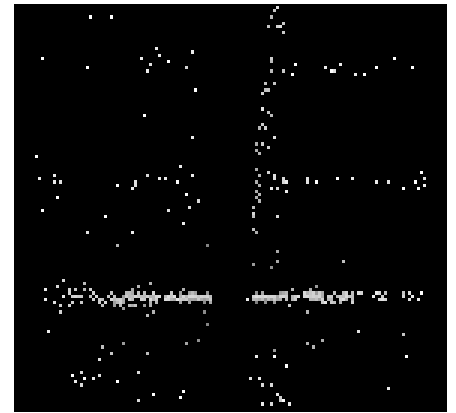
3.1 HEG Arm



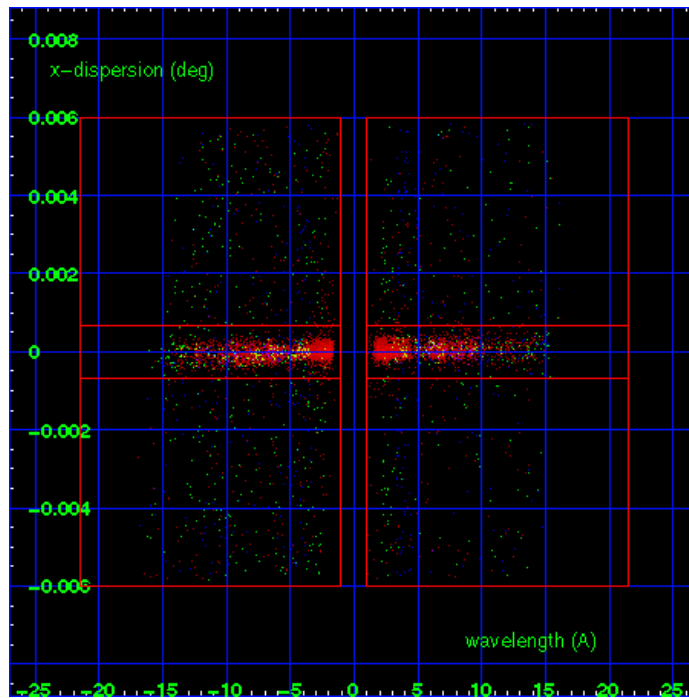
HEG Order Sort 123



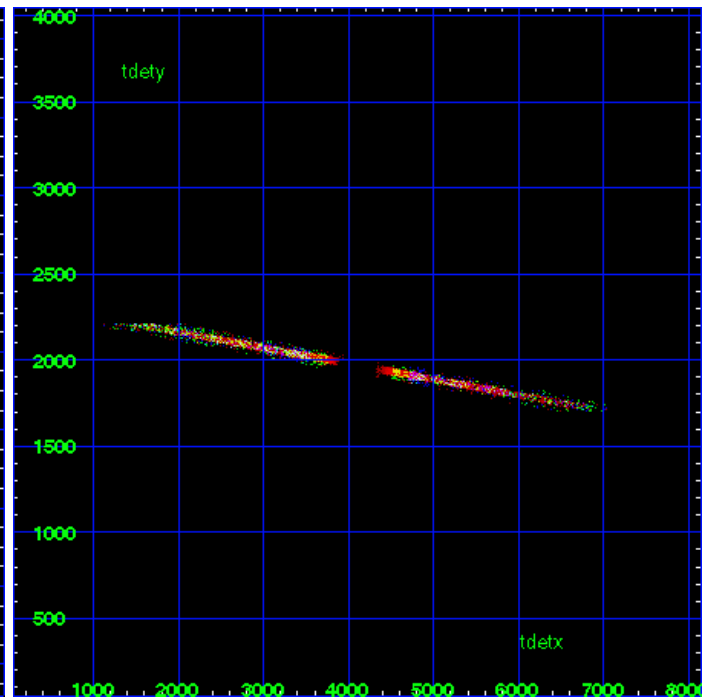
HEG Zero Order



HEG Order Sort ALL

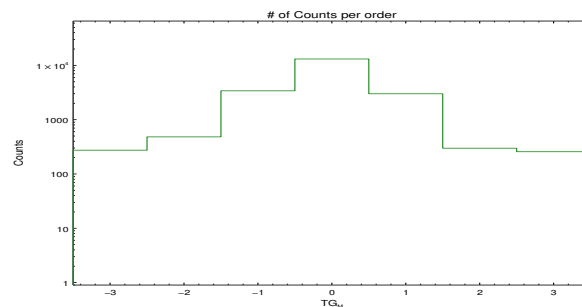


Spot Image HEG

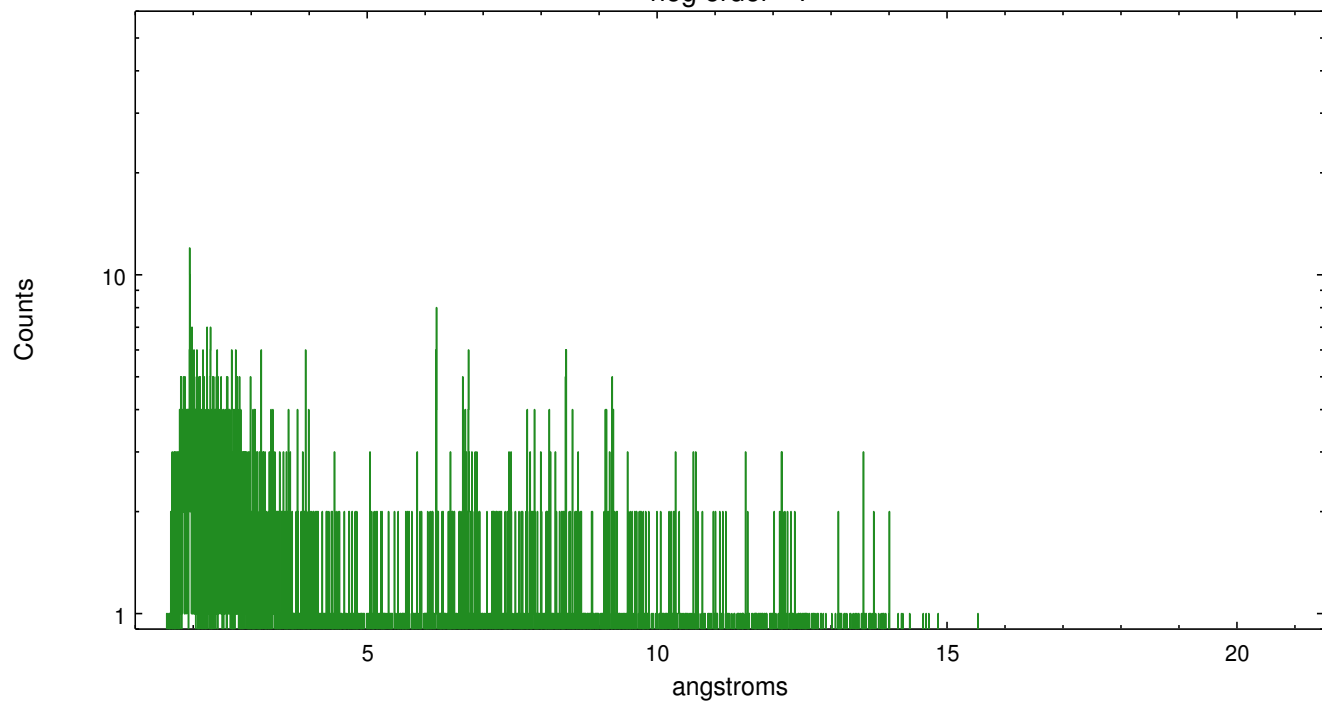


Full Detector HEG

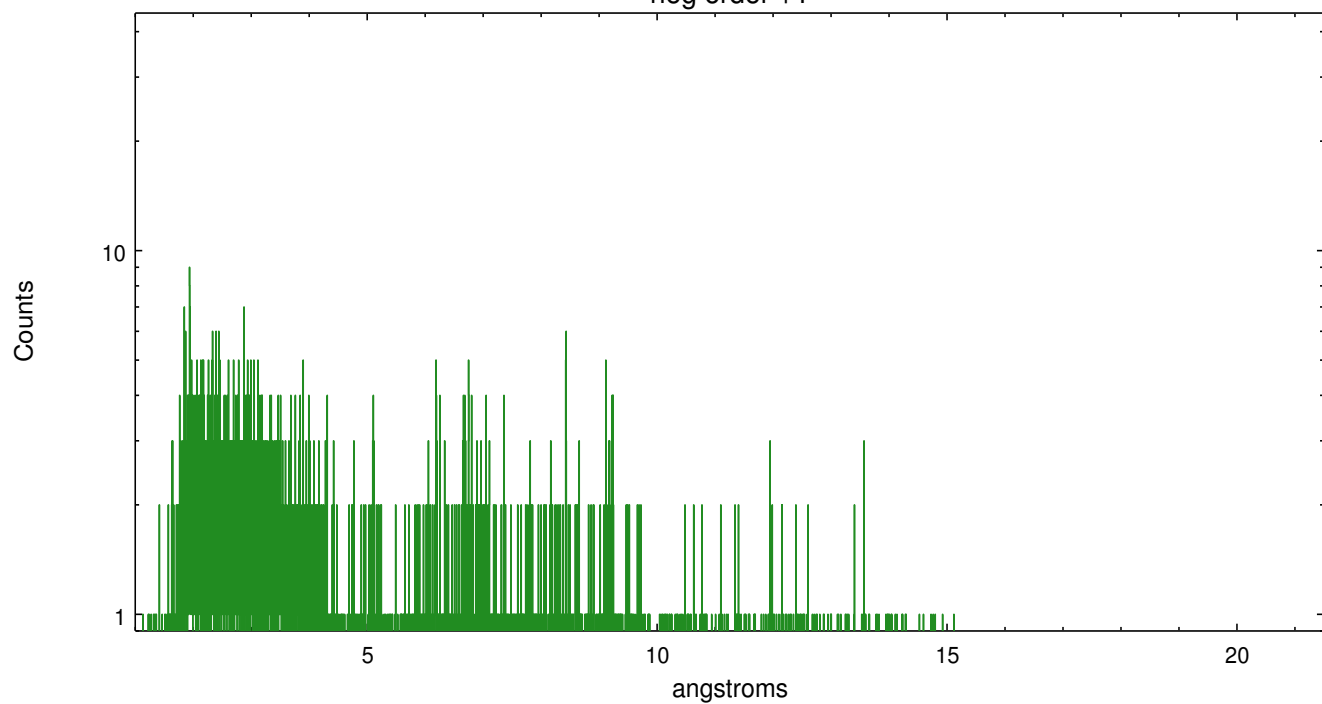
| | order -3 | order -2 | order -1 | order 0 | order 1 | order 2 | order 3 |
|--------|----------|----------|----------|---------|---------|---------|---------|
| Events | 274 | 482 | 3402 | 13102 | 3000 | 298 | 257 |



heg order -1



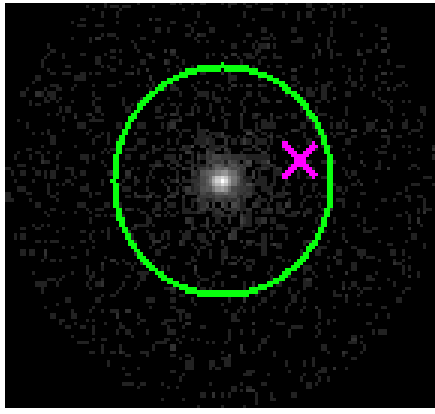
heg order +1



3.2 MEG Arm



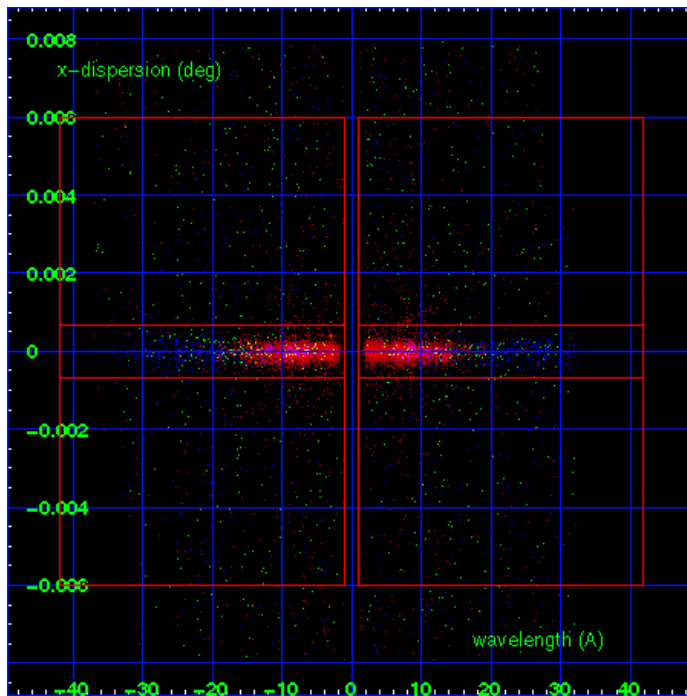
MEG Order Sort 123



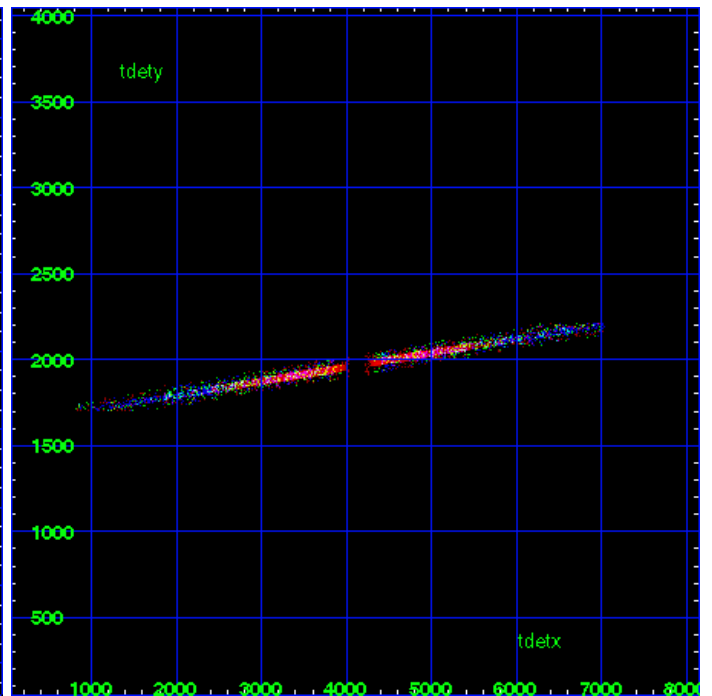
MEG Zero Order



MEG Order Sort ALL

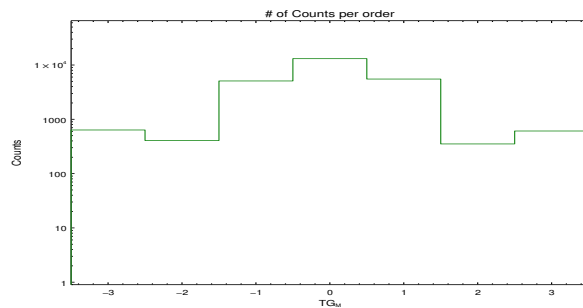


Spot Image MEG

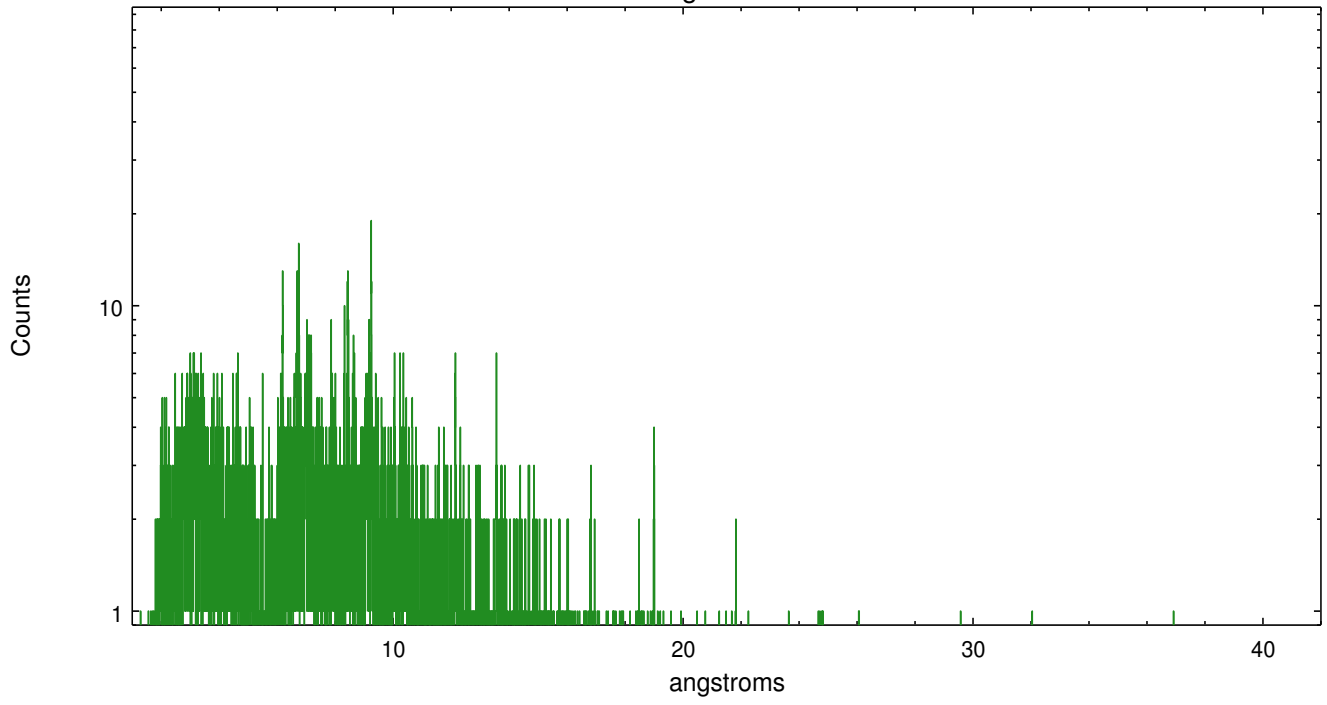


Full Detector MEG

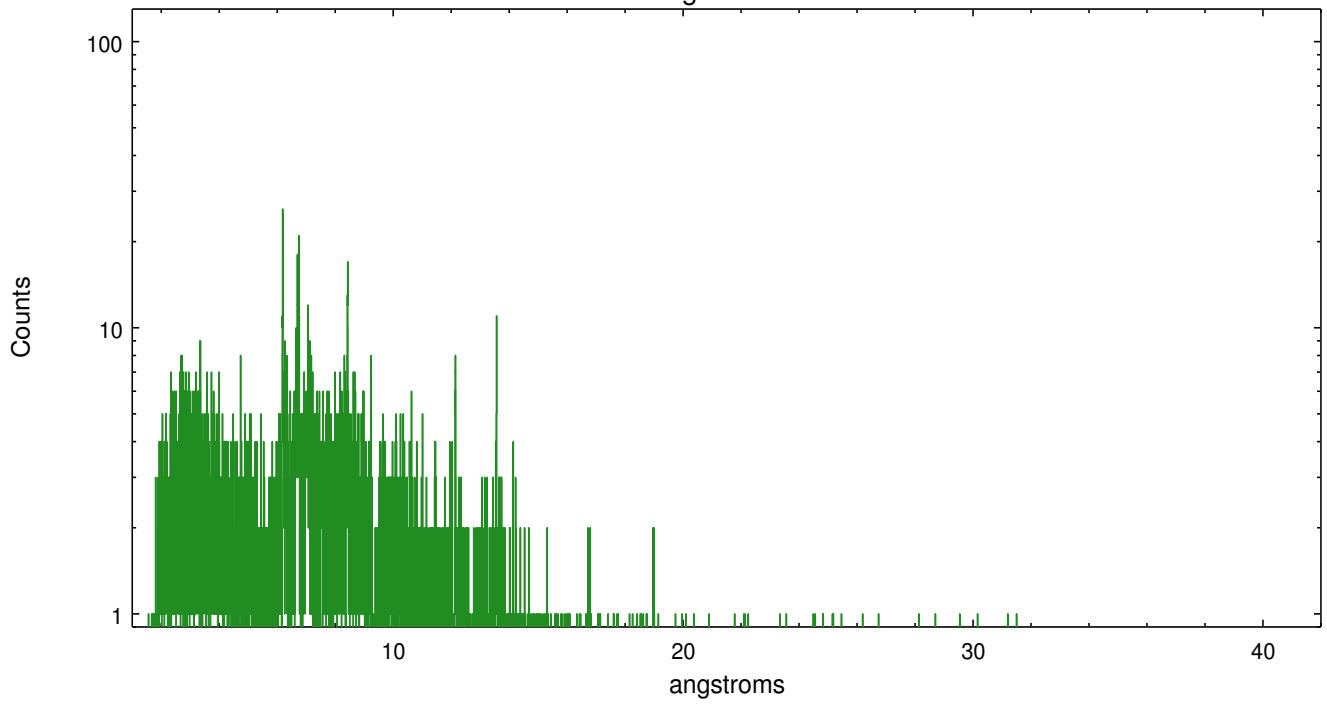
| | order -3 | order -2 | order -1 | order 0 | order 1 | order 2 | order 3 |
|--------|-------------|-------------|-------------|------------|------------|------------|------------|
| Events | 636 | 407 | 5086 | 13102 | 5512 | 352 | 609 |



meg order -1



meg order +1



A Summary

A.1 Status

| | |
|----------------------------|-----------------|
| V&V Scientist | Joy Nichols |
| V&V Date (YYYY-MM-DD) | 2012.06.22 |
| V&V Edition | 1 |
| V&V Disposition and Status | OK |
| V&V Charge Time | 39.048999726236 |

A.2 Comments