

V&V Reference Report

L2 ASCDS Version : 8.4.5

Observation 5169 - L2 Version 3
Chandra X-Ray Center

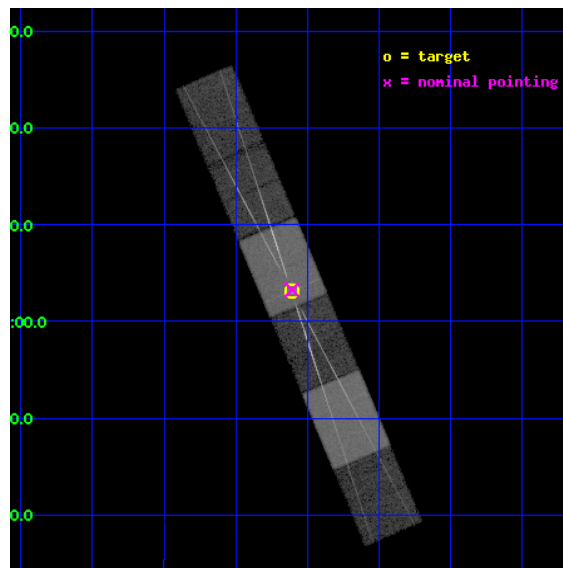
L2 Processing Date : Dec 3 2012

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1 Front

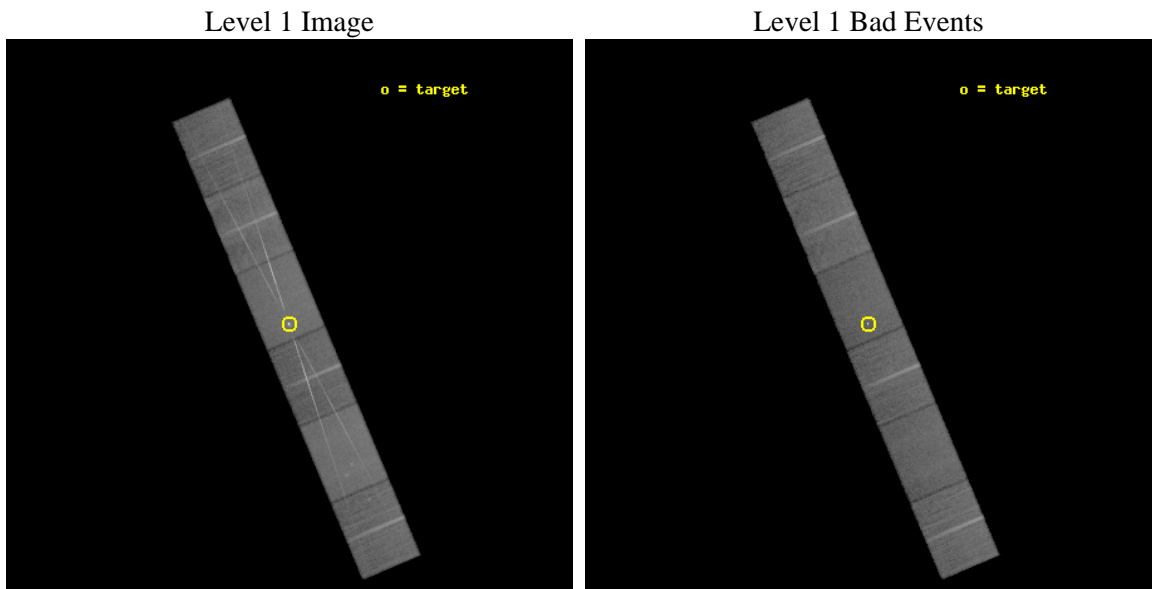
| | | |
|-----------|---------------------------------------|---|
| seq_num | 790089 | Sequence number |
| obs_id | 5169 | Observation id |
| title | AO5 Calibration Observations of 3C273 | Proposal title |
| observer | Dr. CXC Calibration | Principal investigator |
| object | 3C273 | Source name |
| dtcycle | 0 | |
| cycle | P | events from which exps? Prim/Second/Both |
| ra_targ | 187.277917 | Observer's specified target RA [deg] |
| dec_targ | 2.052389 | Observer's specified target Dec [deg] |
| ra_nom | 187.27695729387 | Nominal RA [deg] |
| dec_nom | 2.0543776510714 | Nominal Dec [deg] |
| roll_nom | 247.1067598549 | Nominal Roll [deg] |
| revision | 3 | Processing version of data |
| ontime | 30167.5 | Sum of GTIs [s] |
| liveltime | 29680.268708875 | Livetime [s] |
| ontime4 | 30167.5 | Sum of GTIs [s] |
| ontime5 | 30167.5 | Sum of GTIs [s] |
| ontime6 | 30164.959009826 | Sum of GTIs [s] |
| ontime7 | 30167.5 | Sum of GTIs [s] |
| ontime8 | 30167.5 | Sum of GTIs [s] |
| ontime9 | 30167.5 | Sum of GTIs [s] |
| l2events | 355646 | Number of level 2 events |



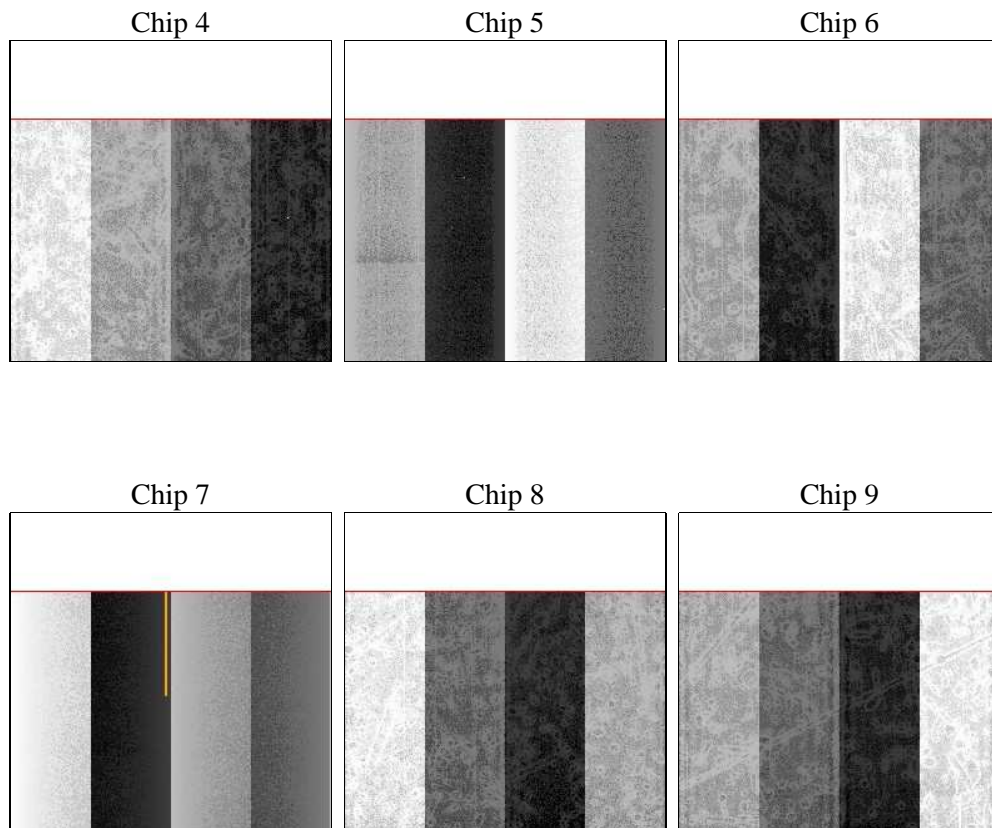
2 OBI

2.1 OBI

2.1.1 Images



2.1.2 Bias



2.1.3 Parameters

| | | | | | |
|----------|---------------------|--------------------------------|----------------|-----------------|---|
| obi_num | 1 | Obi number | sched_exp_time | 30000.000000 | [s] Scheduled observation exposure time |
| ascdsver | 8.4.5 | Processing system revision | ontime | 30167.5 | Sum of GTIs [s] |
| caldbver | 4.5.2 | | ontime4 | 30167.5 | Sum of GTIs [s] |
| date | 2012-12-03T19:34:56 | Date and time of file creation | ontime5 | 30167.5 | Sum of GTIs [s] |
| revision | 3 | Processing version of data | ontime6 | 30164.959009826 | Sum of GTIs [s] |
| | | | ontime7 | 30167.5 | Sum of GTIs [s] |
| | | | ontime8 | 30167.5 | Sum of GTIs [s] |
| | | | ontime9 | 30167.5 | Sum of GTIs [s] |
| | | | l1events | 1331788 | Number of level 1 events |

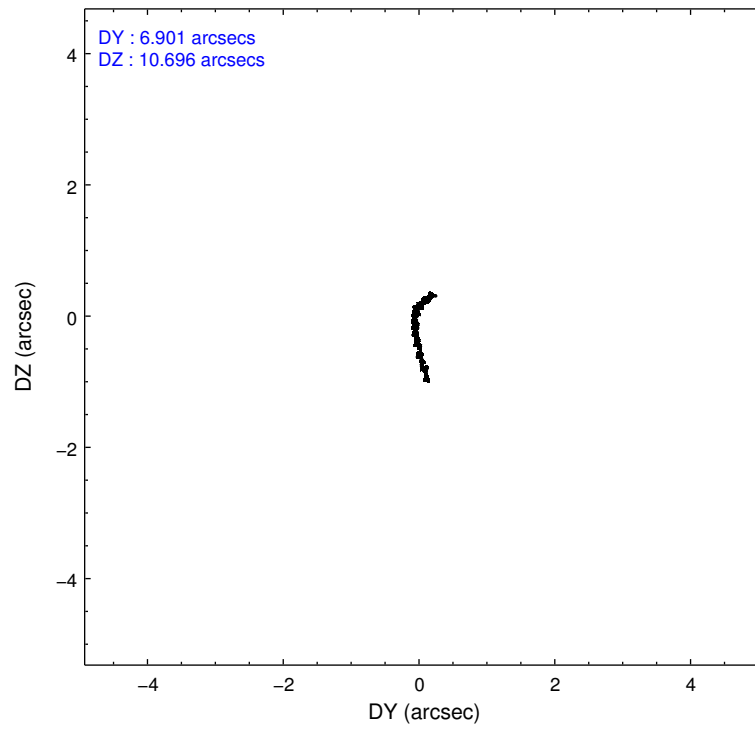
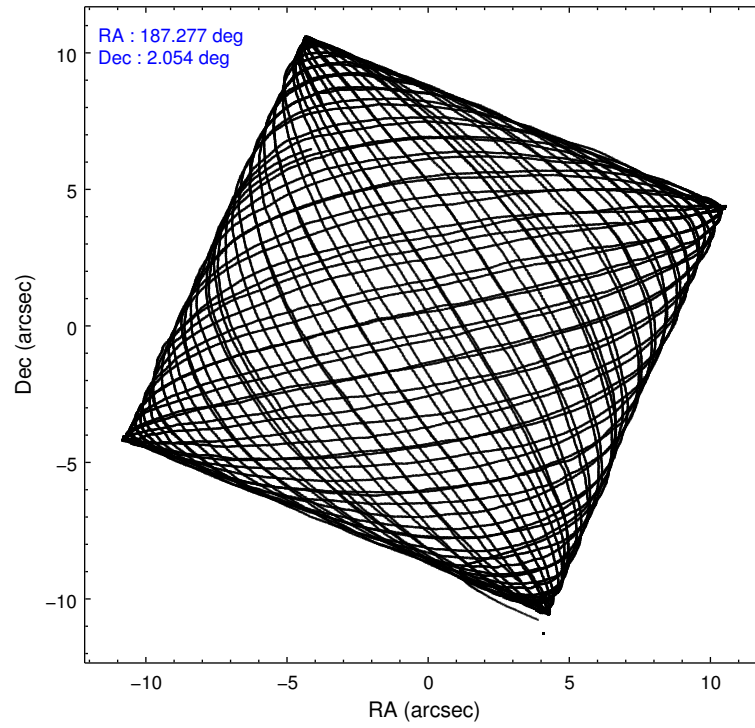
2.1.4 Events

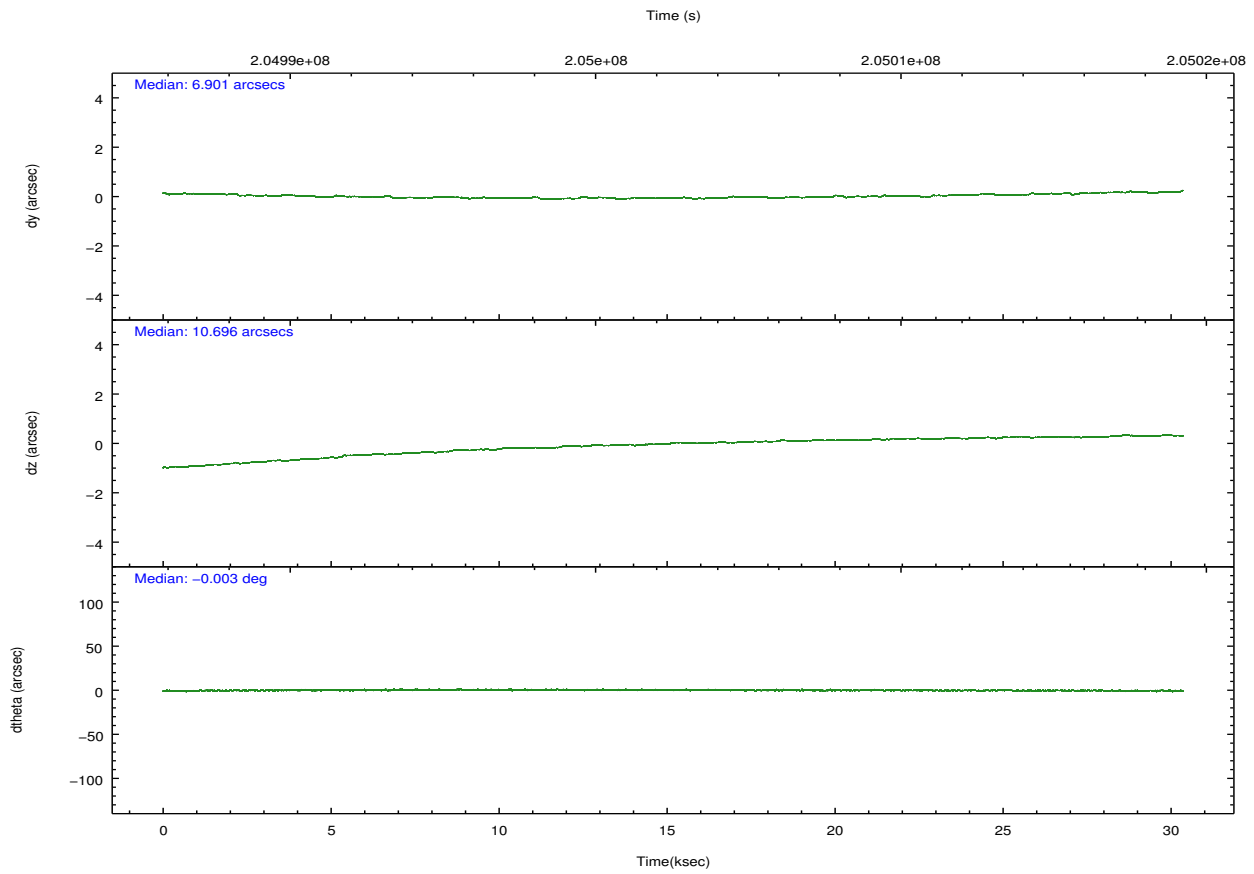
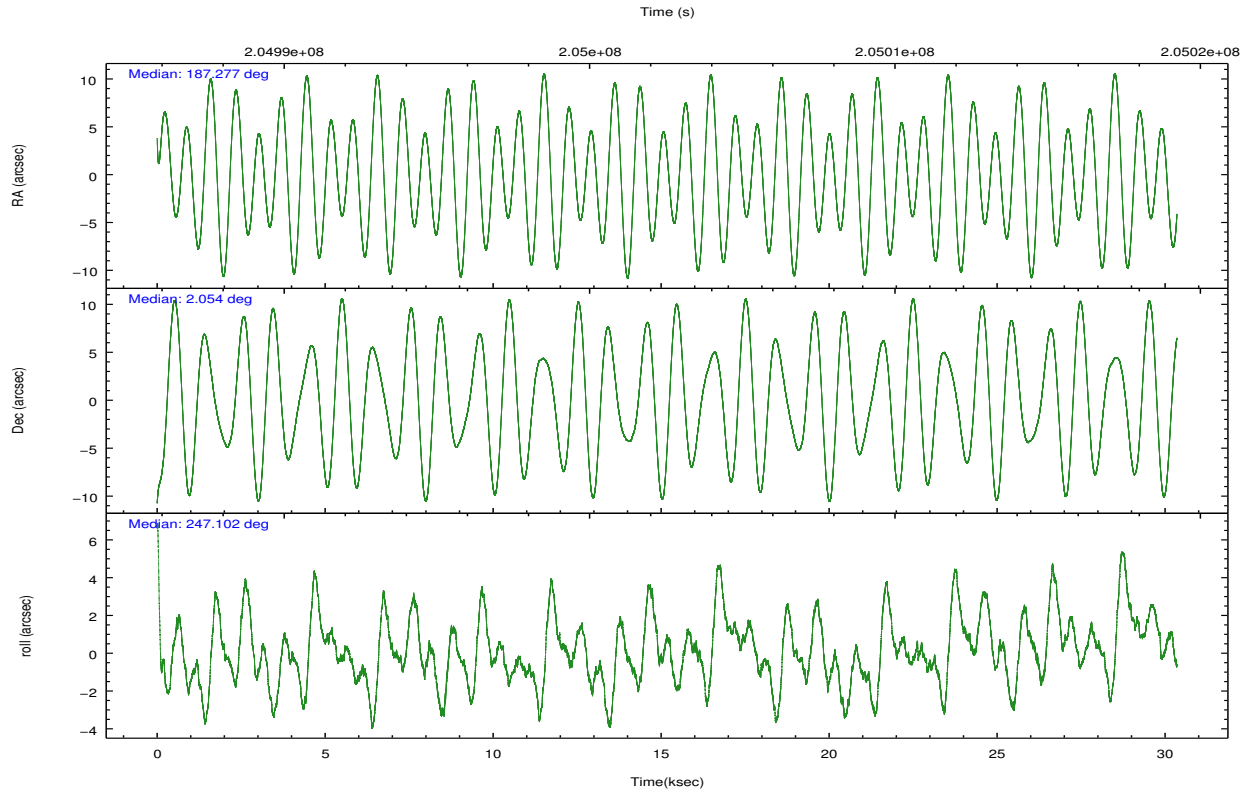
| | ccd 4 | ccd 5 | ccd 6 | ccd 7 | ccd 8 | ccd 9 | | ccd 4 | ccd 5 | ccd 6 | ccd 7 | ccd 8 | ccd 9 |
|-----------------|--------|--------|--------|--------|--------|--------|----------------|--------|--------|--------|--------|--------|--------|
| level 1 events | 196950 | 258486 | 202203 | 267959 | 231687 | 174503 | grade 0 events | 11140 | 12227 | 29080 | 15419 | 25259 | 10745 |
| rejected events | 173255 | 138518 | 155170 | 140997 | 172075 | 150786 | | 5% | 4% | 14% | 5% | 10% | 6% |
| rejected % | 87% | 53% | 76% | 52% | 74% | 86% | grade 1 events | 139 | 445 | 162 | 482 | 176 | 90 |
| | | | | | | | | 0% | 0% | 0% | 0% | 0% | 0% |
| | | | | | | | grade 2 events | 4694 | 35468 | 7105 | 26405 | 11480 | 4364 |
| | | | | | | | | 2% | 13% | 3% | 9% | 4% | 2% |
| | | | | | | | grade 3 events | 2434 | 6006 | 3145 | 12258 | 5440 | 2341 |
| | | | | | | | | 1% | 2% | 1% | 4% | 2% | 1% |
| | | | | | | | grade 4 events | 2185 | 5880 | 3070 | 11923 | 5271 | 2284 |
| | | | | | | | | 1% | 2% | 1% | 4% | 2% | 1% |
| | | | | | | | grade 5 events | 7287 | 19416 | 7872 | 23342 | 10065 | 7958 |
| | | | | | | | | 3% | 7% | 3% | 8% | 4% | 4% |
| | | | | | | | grade 6 events | 3453 | 61277 | 4898 | 61690 | 12502 | 4128 |
| | | | | | | | | 1% | 23% | 2% | 23% | 5% | 2% |
| | | | | | | | grade 7 events | 165618 | 117767 | 146871 | 116440 | 161494 | 142593 |
| | | | | | | | | 84% | 45% | 72% | 43% | 69% | 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 | Number of optional ACIS chips dropped | 0 | 0 |
| Observation mode | POINTING | POINTING | On-chip summing requested | N | N |
| [deg] Pointing RA | 187.273217 | 187.2769572938732 | Subarray requested | CUSTOM | CUSTOM |
| [deg] Pointing Dec | 2.081375 | 2.05437765107137 | Subarray start row | 1 | 1 |
| [deg] Pointing Roll | 246.950265 | 247.1067598548983 | Subarray row count | 774 | 774 |
| [s] Window start time (MET) | 202435264.184000 | 202435264.184000 | Alternating exposures requested | N | N |
| [s] Window stop time (MET) | 207619264.184000 | 207619264.184000 | [s] Primary exposure time | 0.000000 | 2.5 |
| [mm] SIM focus pos | -0.684267 | -0.6828225247311905 | | | |
| [mm] SIM defocus | 0 | 0.001444936568705701 | | | |
| [mm] SIM translation stage pos | -187.132523 | -187.1228876879999 | | | |
| [mm] SIM translation stage offset | -3 | -3.009634895007935 | | | |
| [s] Observation start time (MET) | 204987533.184000 | 204986422.48714 | | | |
| Observation start date | 2004-06-30T12:57:49 | 2004-06-30T12:40:22 | | | |
| [s] Observation end time (MET) | 205017533.184000 | 205017714.20103 | | | |
| Observation end date | 2004-06-30T21:17:49 | 2004-06-30T21:21:54 | | | |
| Read mode | TIMED | TIMED | | | |

2.3 Aspect



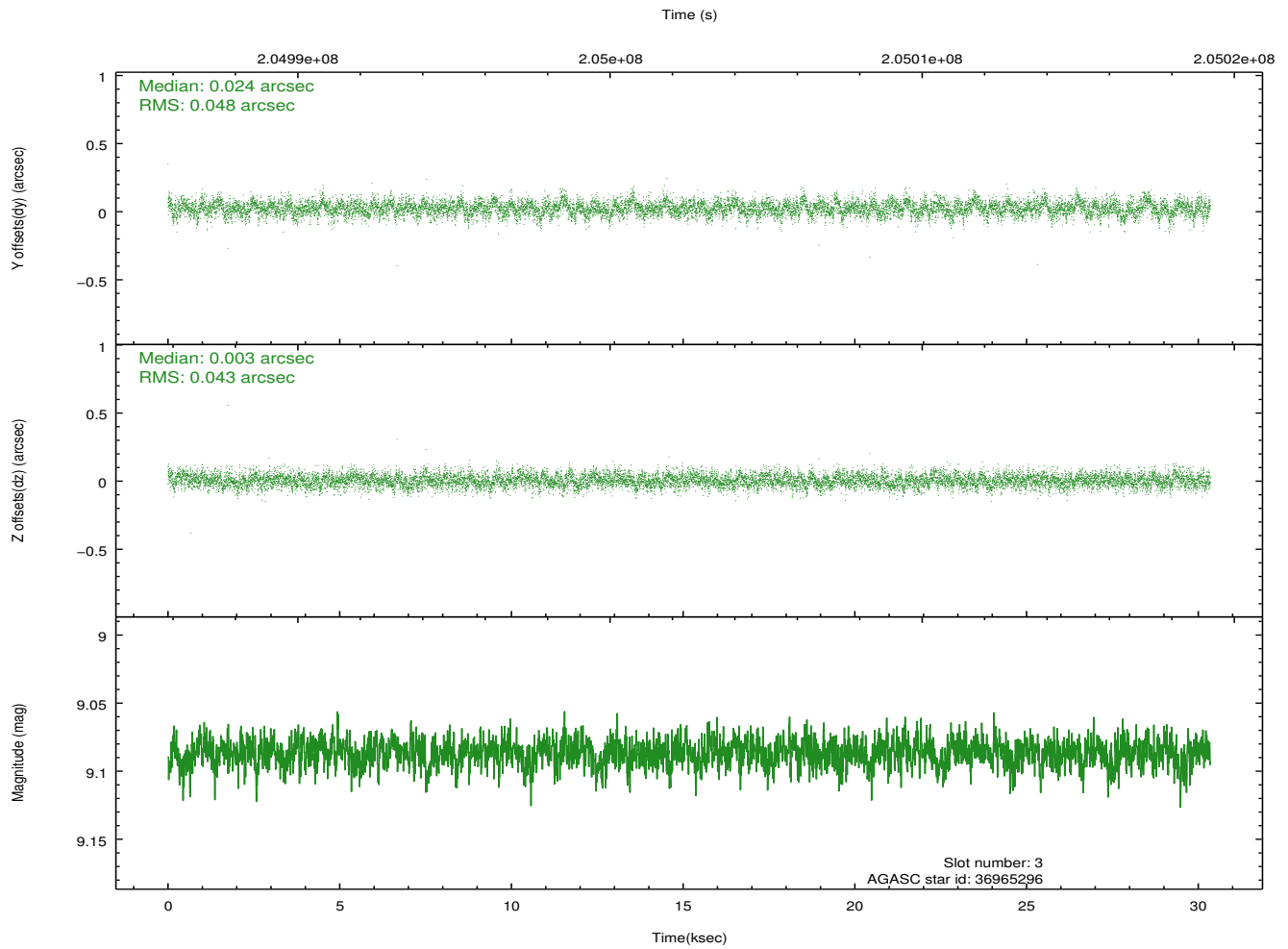
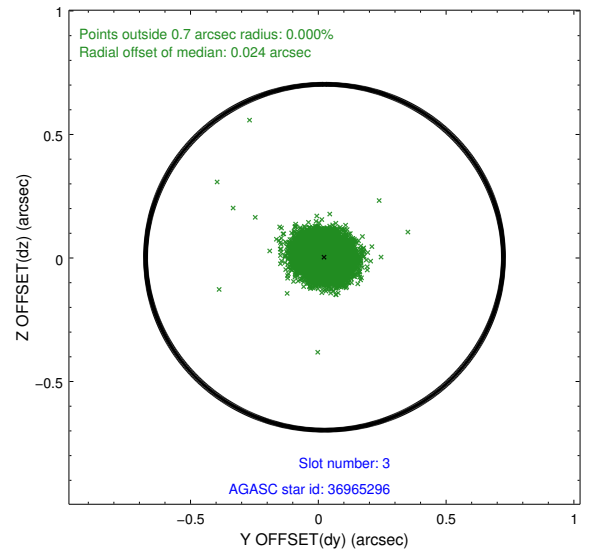
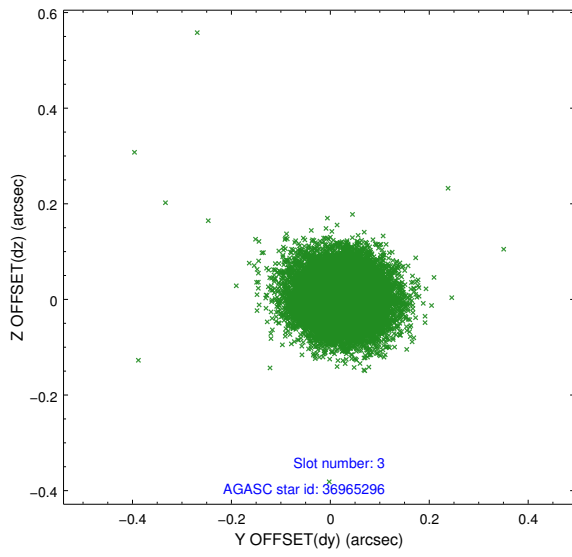


Slot Statistics

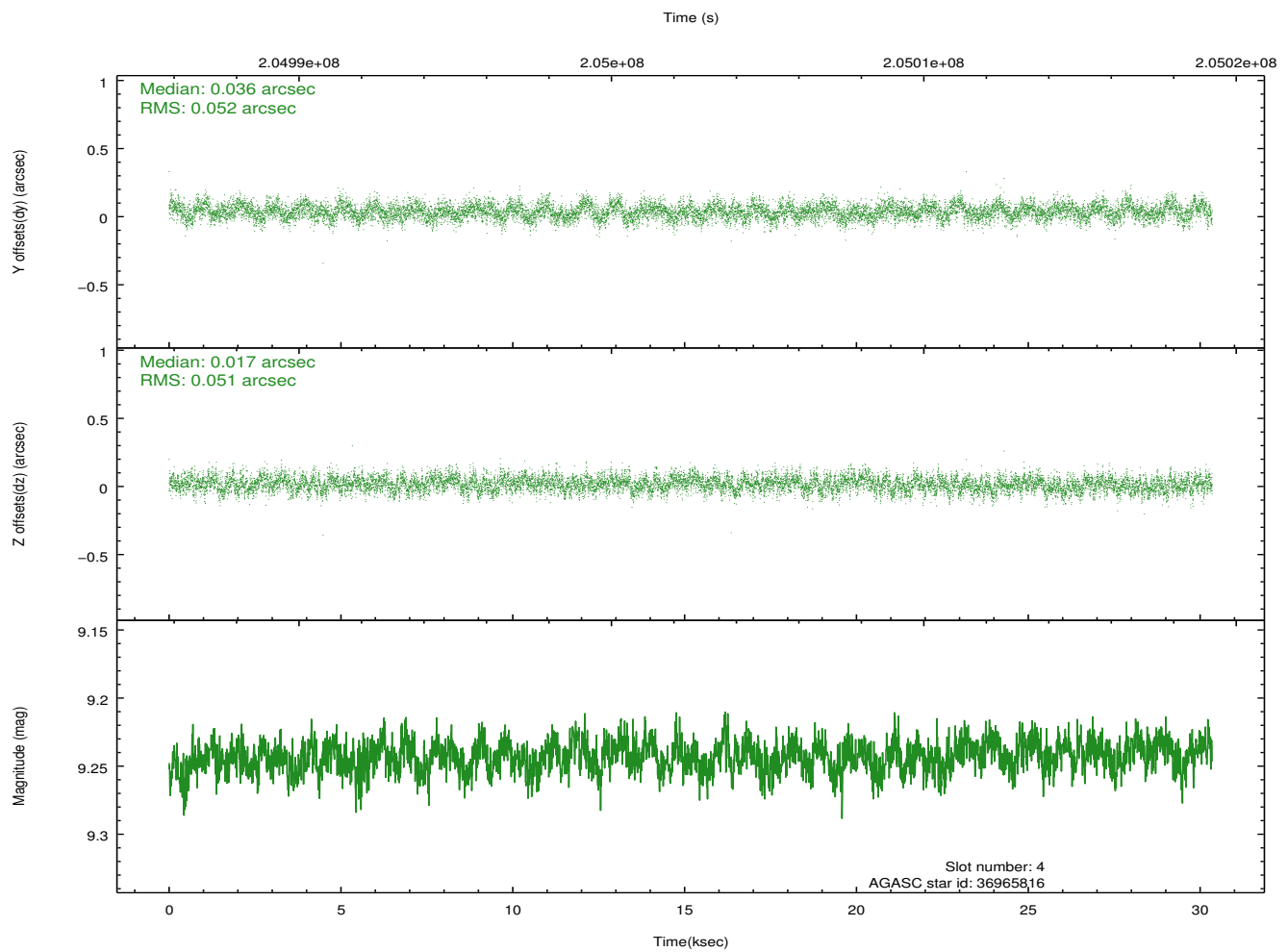
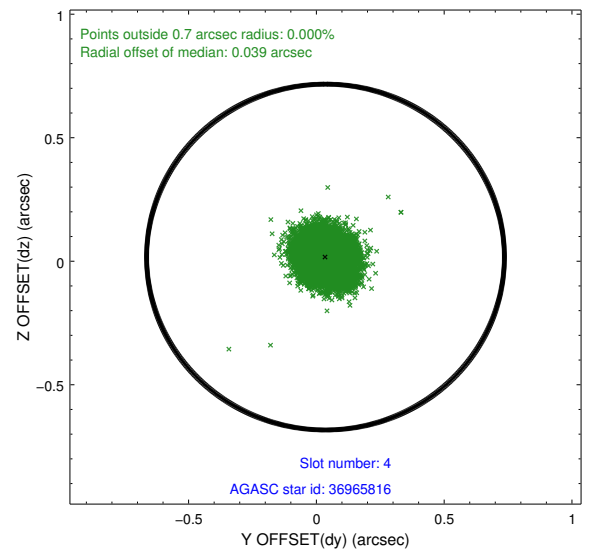
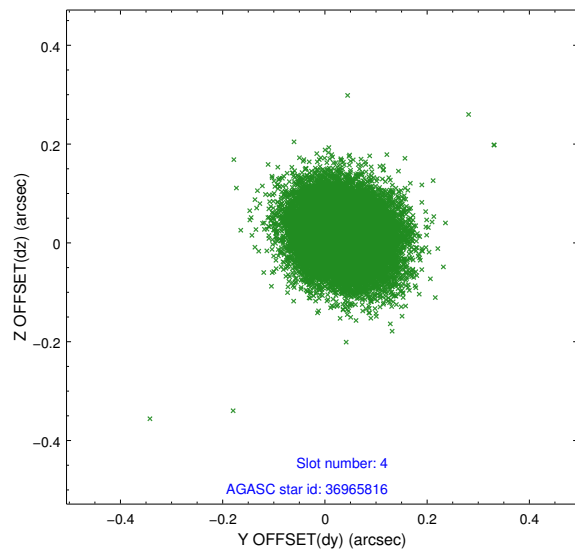
| slot | status | id | mag | n_pts | med_dy | med_dz | dr1 | dr2 | ra | dec | mean_y | mean_z |
|------|--------|----------|------|-------|--------|--------|-------|-------|------------|----------|----------|----------|
| 0 | FID | ACIS-S-2 | 7.09 | 7403 | -0.049 | -0.087 | 0.009 | 0.022 | 0.000000 | 0.000000 | -759.54 | -1794.05 |
| 1 | FID | ACIS-S-4 | 7.19 | 7402 | 0.083 | 0.046 | 0.007 | 0.013 | 0.000000 | 0.000000 | 2153.87 | 114.44 |
| 2 | FID | ACIS-S-5 | 7.23 | 7402 | -0.065 | 0.049 | 0.010 | 0.020 | 0.000000 | 0.000000 | -1812.28 | 108.25 |
| 3 | GUIDE | 36965296 | 9.09 | 14799 | 0.024 | 0.003 | 0.068 | 0.111 | 186.926292 | 1.837429 | 1297.16 | -804.76 |
| 4 | GUIDE | 36965816 | 9.24 | 14794 | 0.036 | 0.017 | 0.078 | 0.124 | 186.823353 | 1.771455 | 1660.79 | -1052.59 |
| 5 | GUIDE | 36965896 | 9.72 | 14795 | 0.045 | -0.095 | 0.099 | 0.163 | 187.153754 | 1.617178 | 1706.49 | 258.78 |
| 6 | GUIDE | 37356352 | 7.66 | 14806 | -0.350 | -0.121 | 0.058 | 0.094 | 187.433784 | 2.618460 | -2005.13 | -225.87 |
| 7 | GUIDE | 37883040 | 9.98 | 14789 | 0.244 | 0.189 | 0.135 | 0.221 | 187.575516 | 1.280402 | 2227.68 | 2130.66 |

2.4 Star Slots

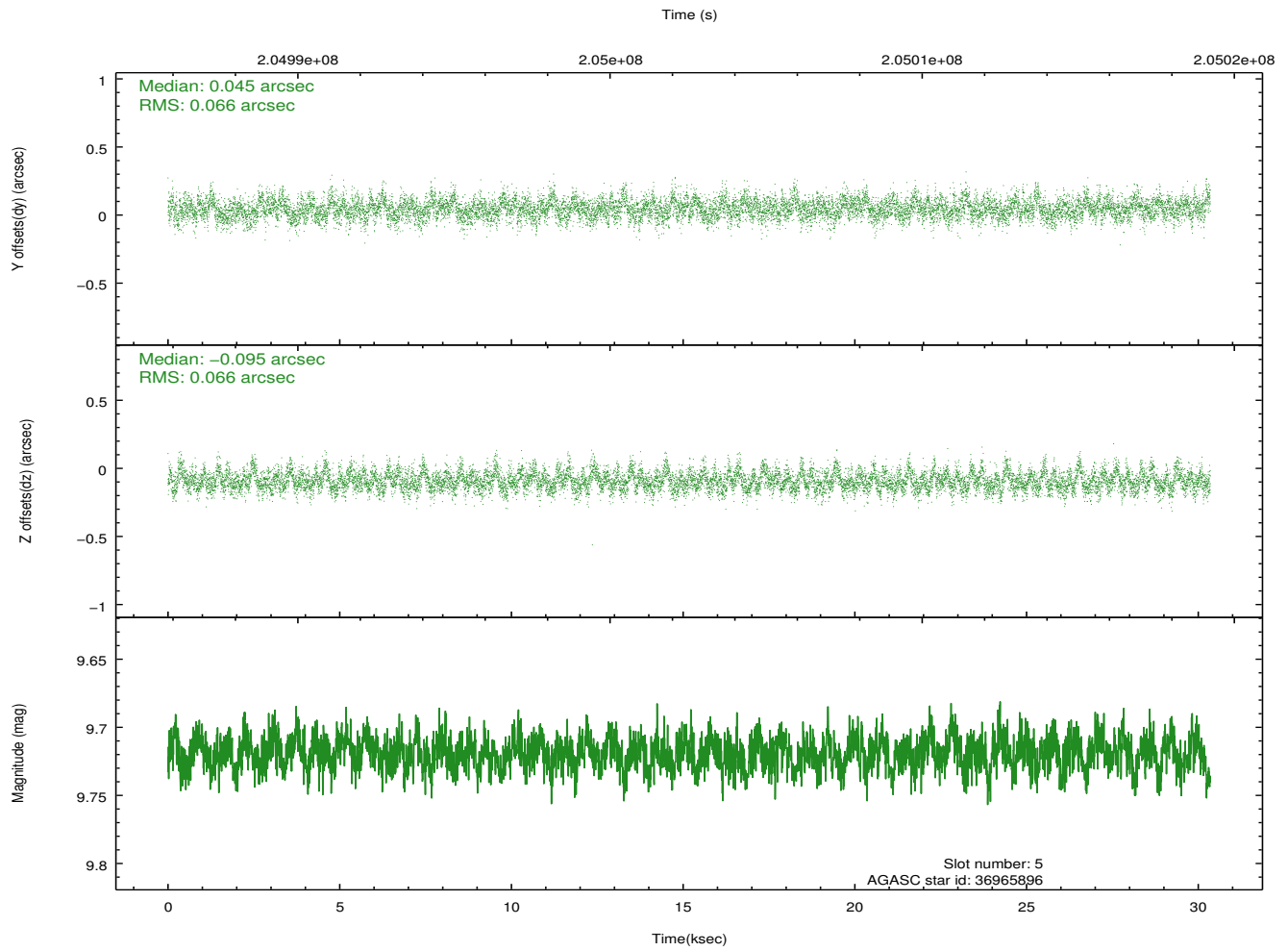
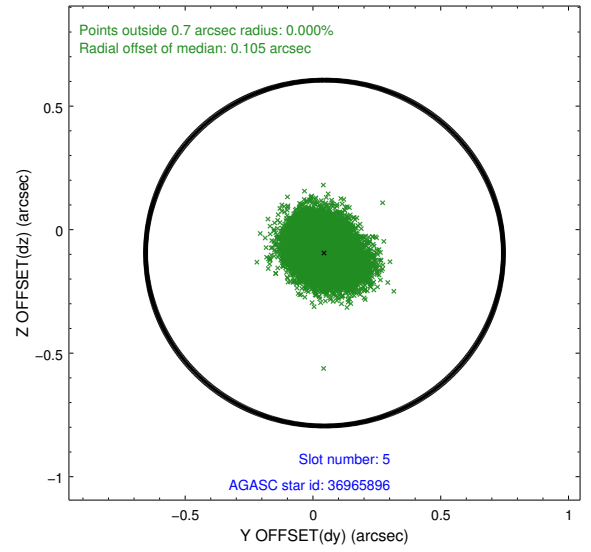
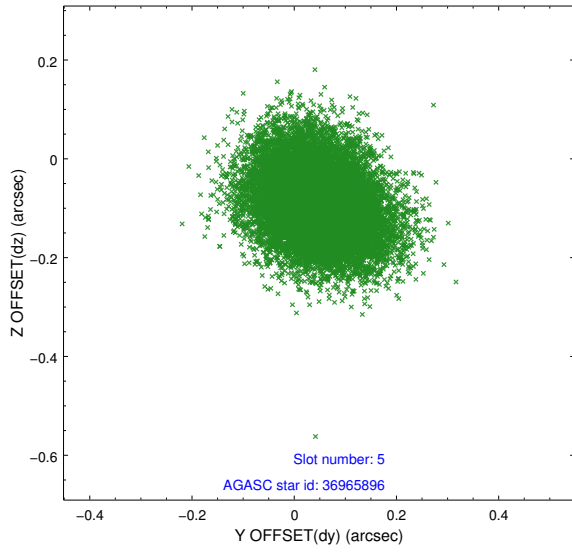
2.4.1 Slot 3



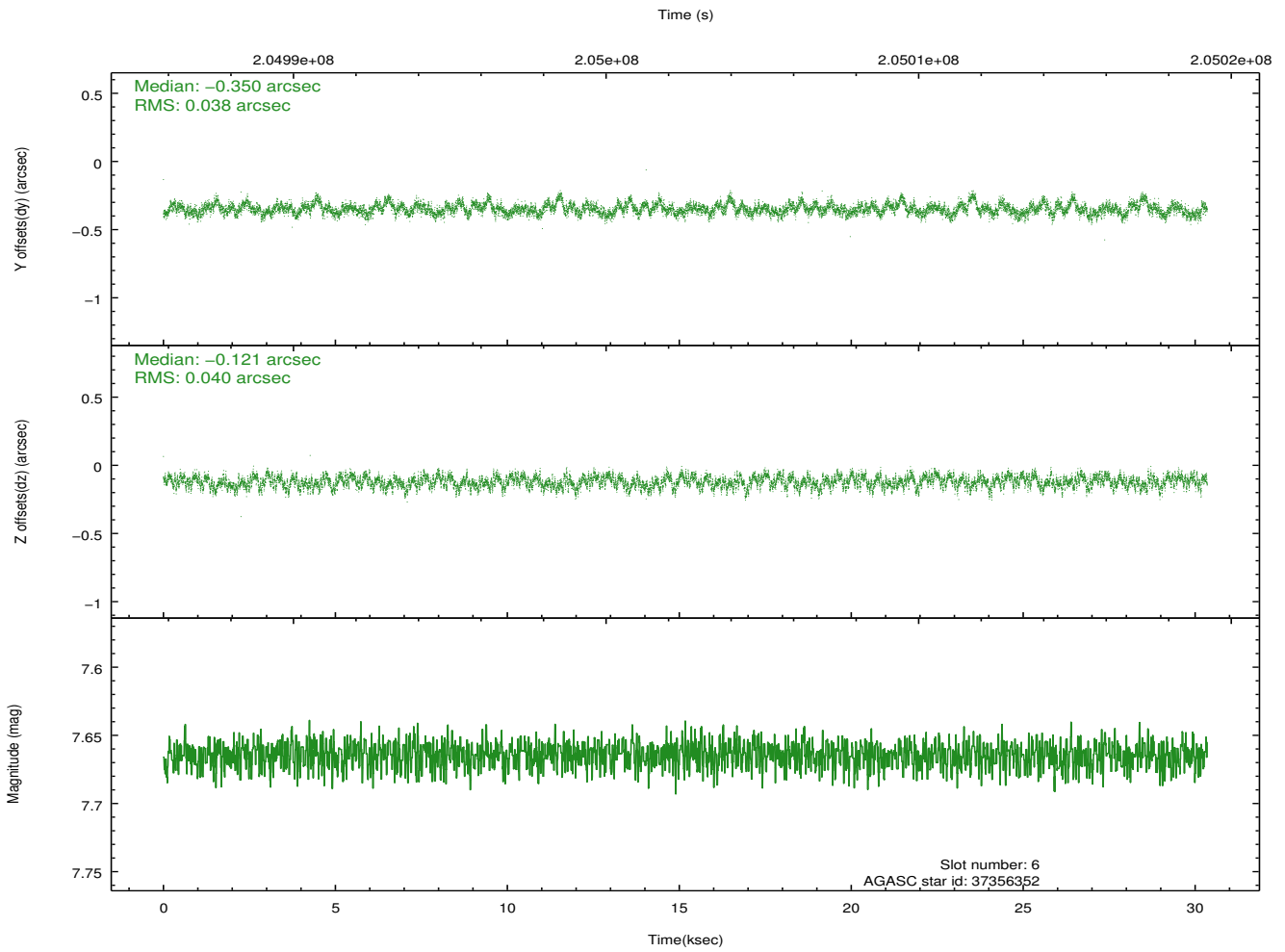
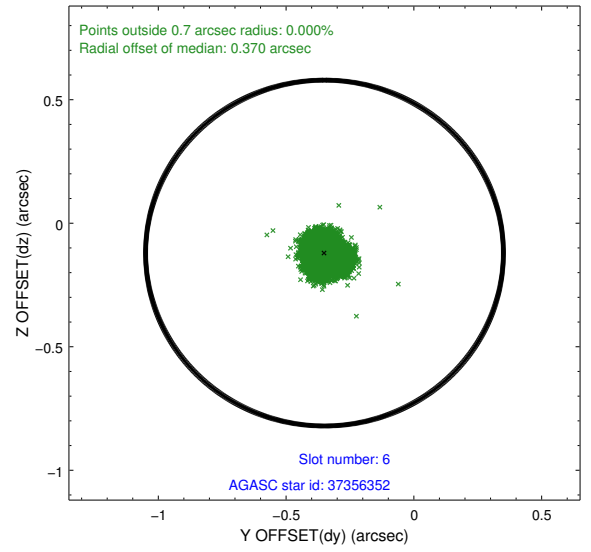
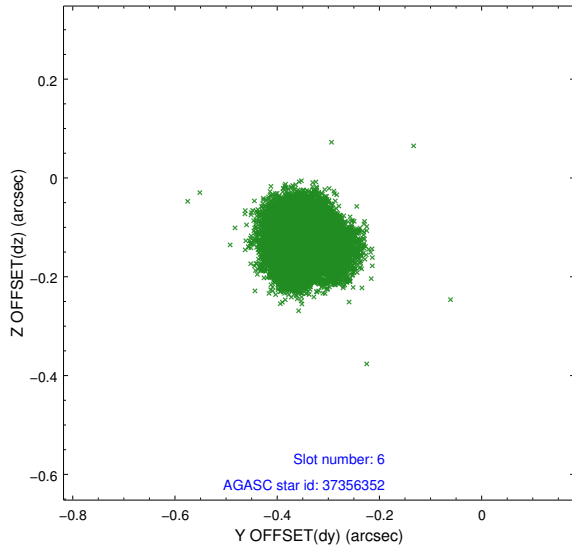
2.4.2 Slot 4



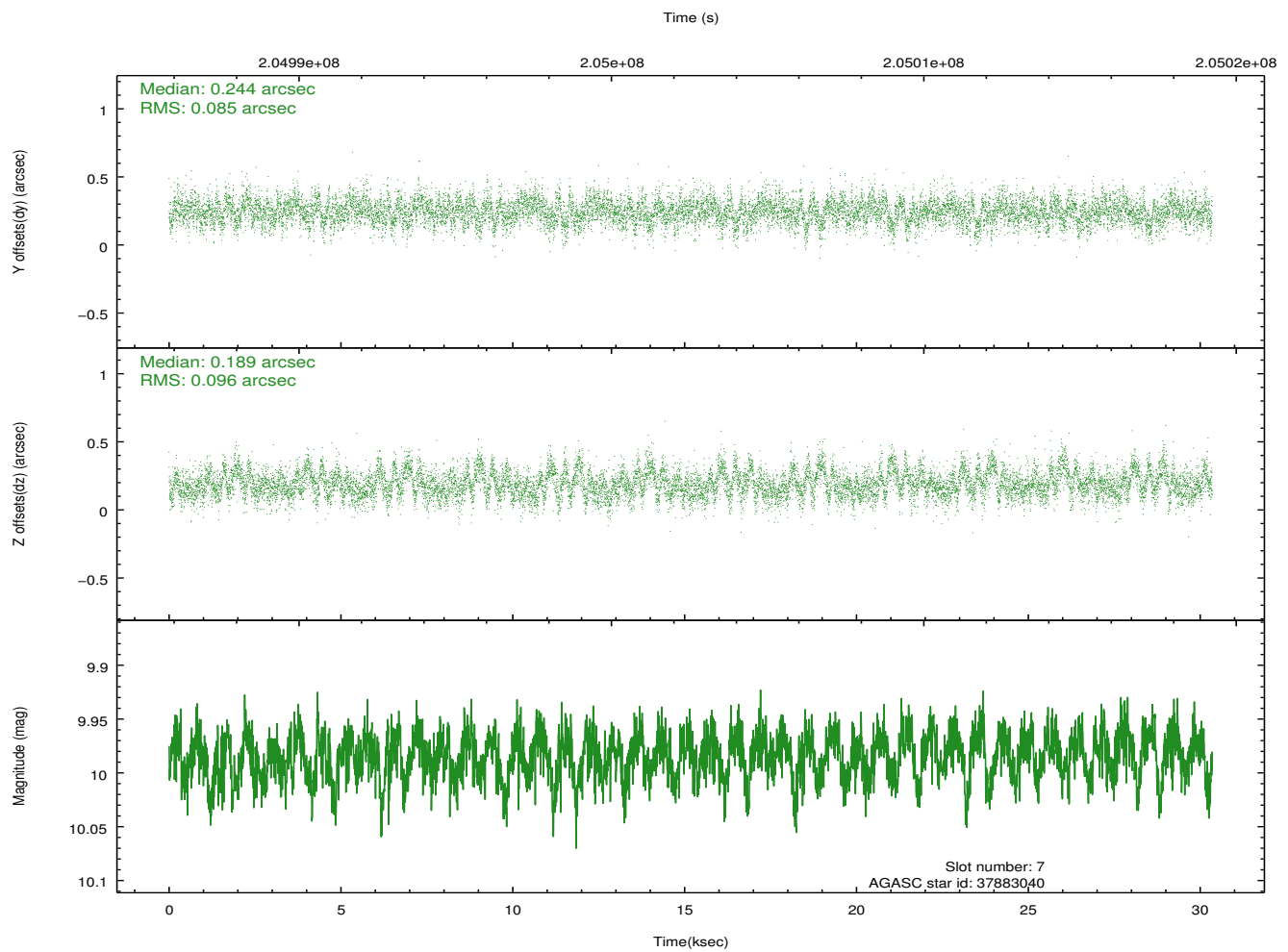
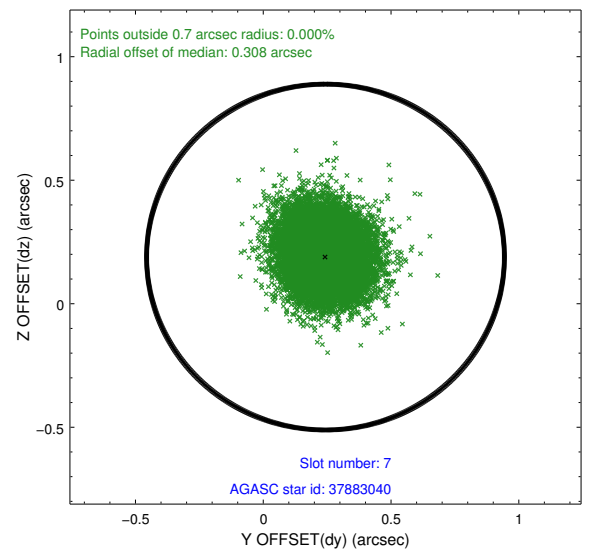
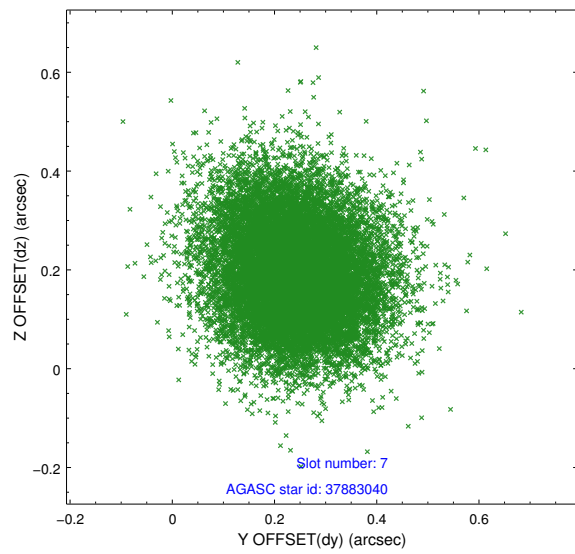
2.4.3 Slot 5



2.4.4 Slot 6

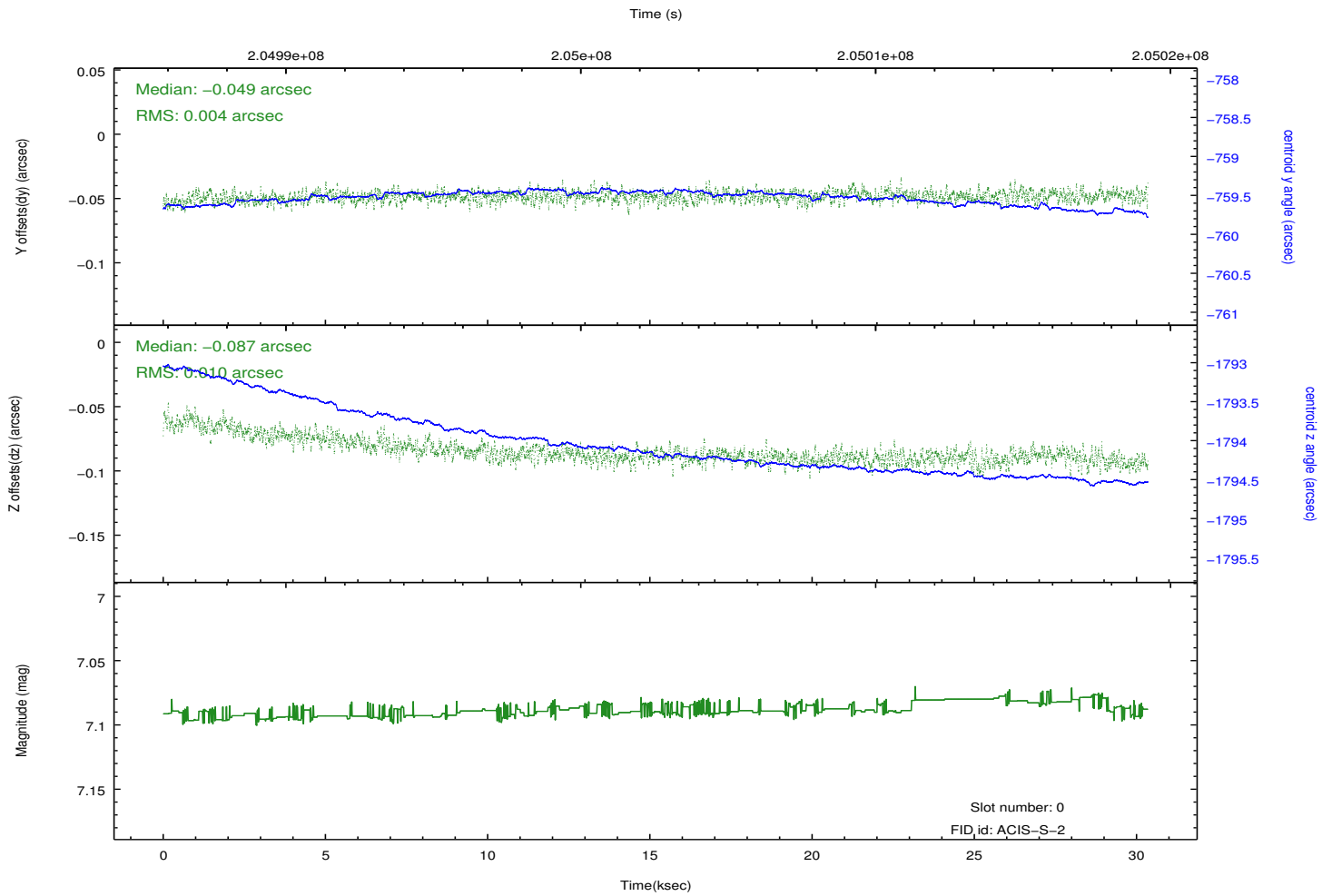
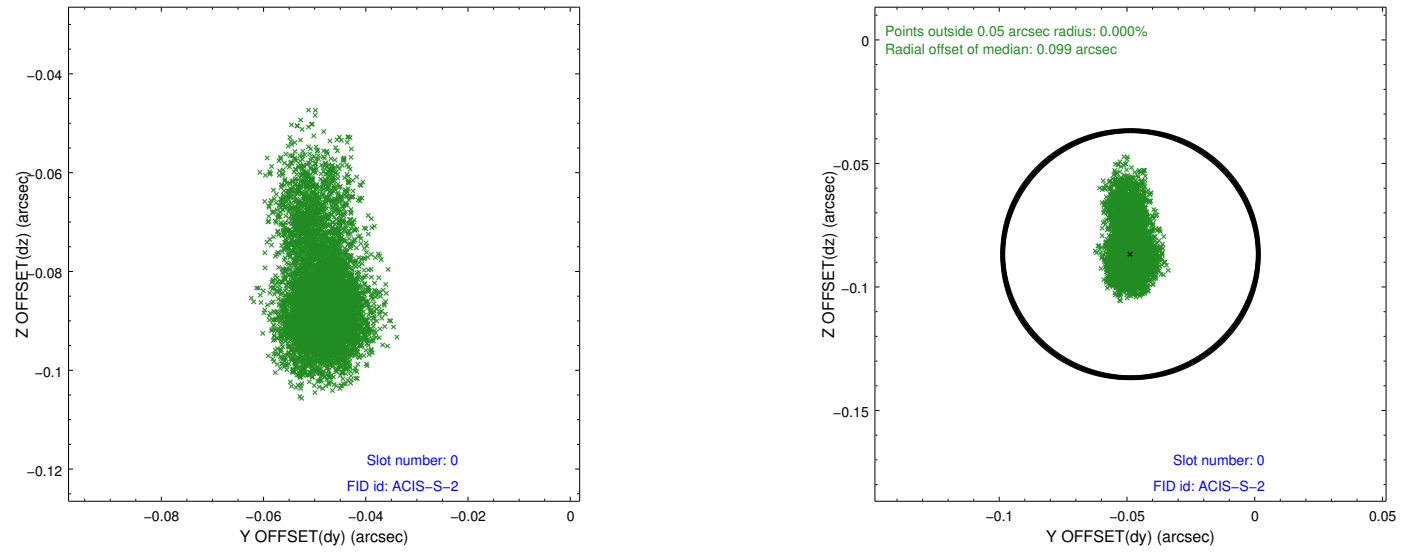


2.4.5 Slot 7

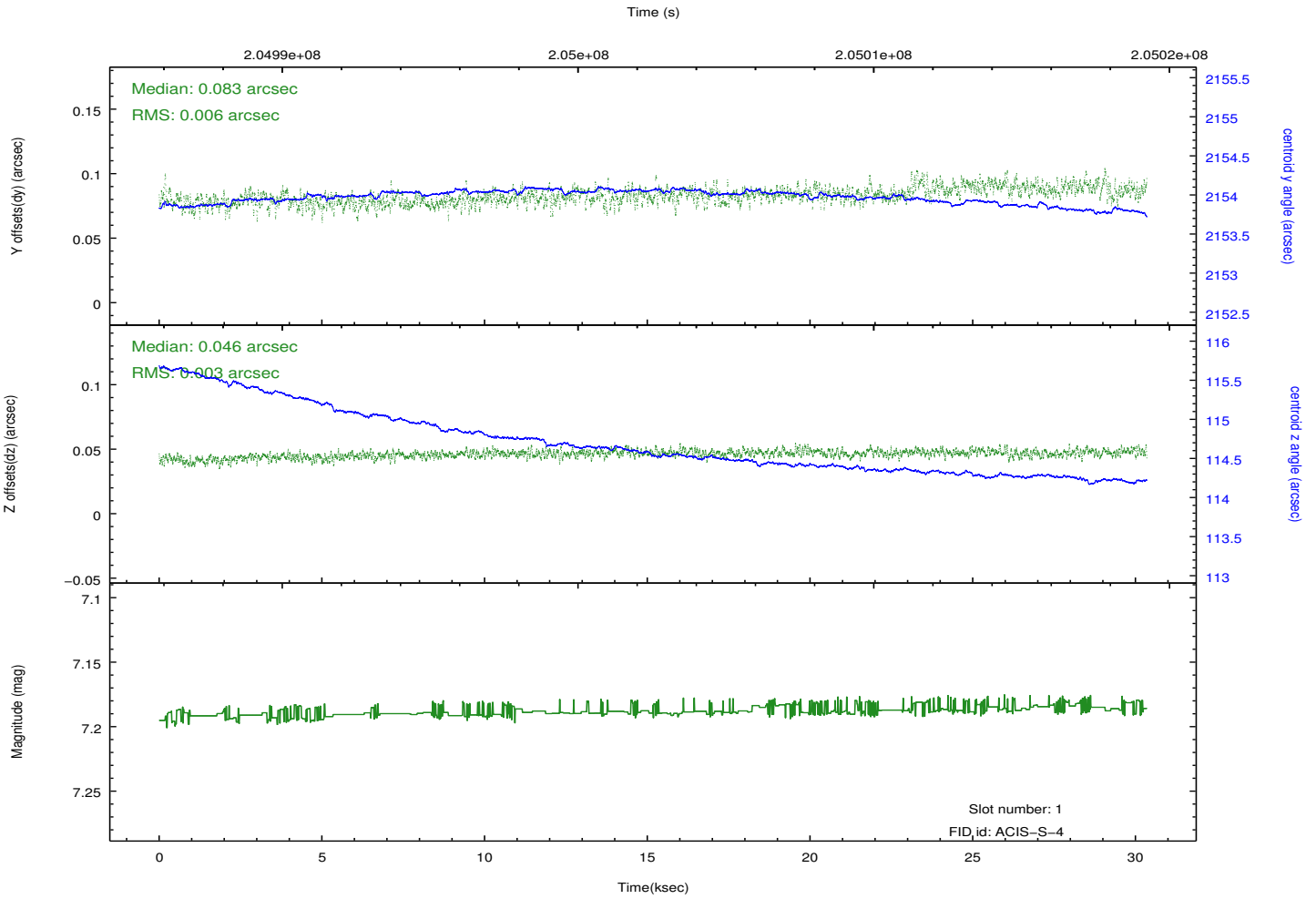
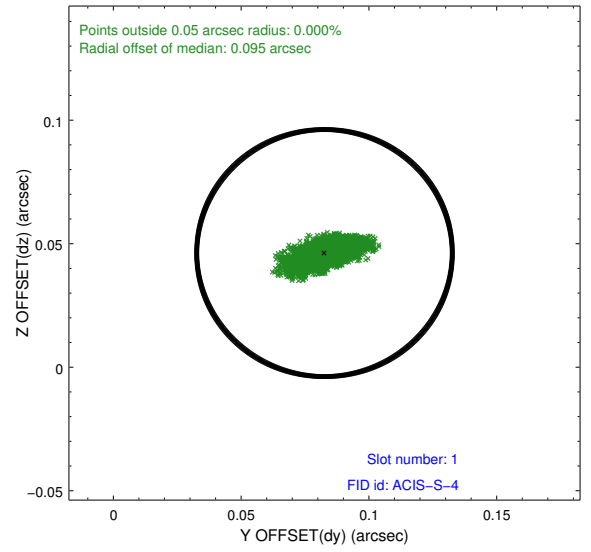
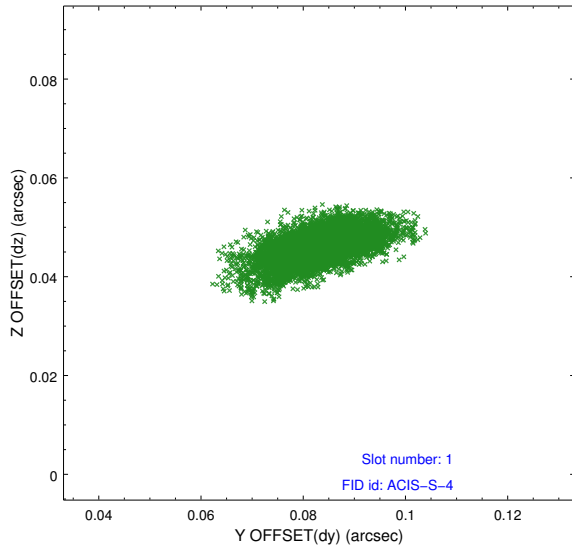


2.5 FID Slots

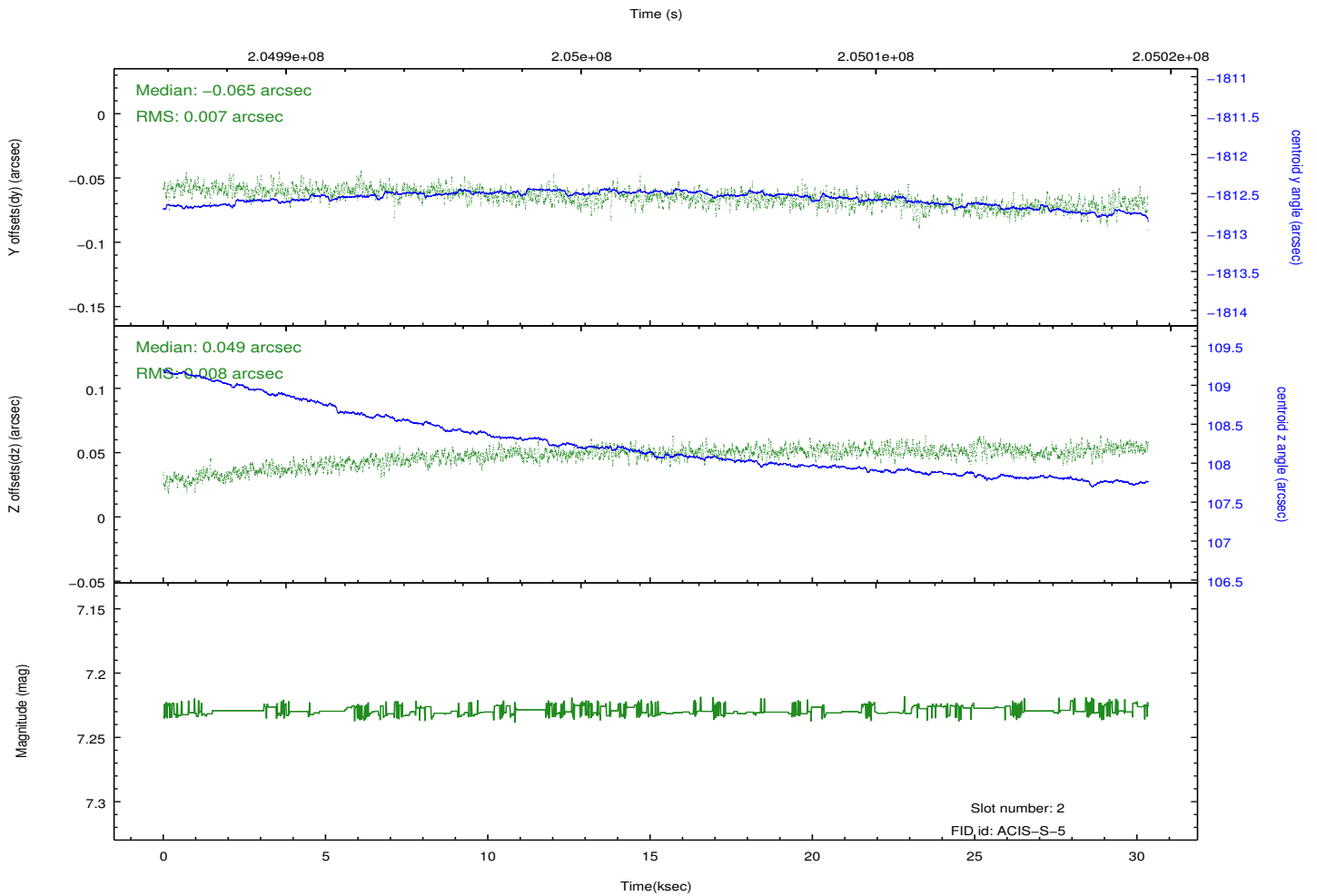
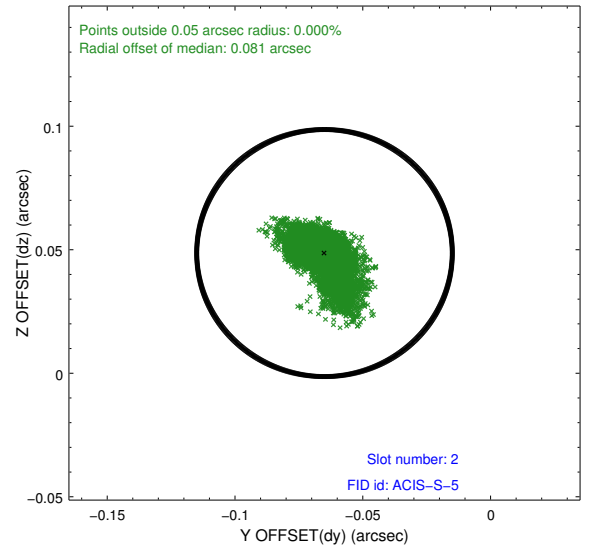
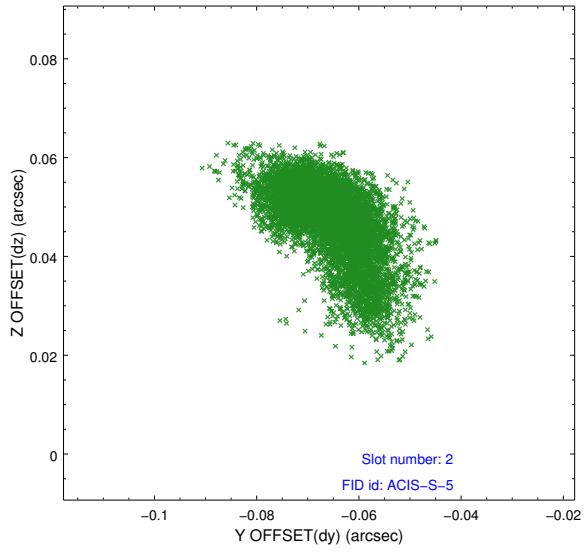
2.5.1 Slot 0



2.5.2 Slot 1

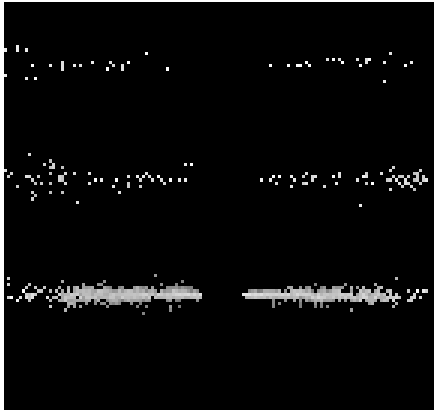


2.5.3 Slot 2

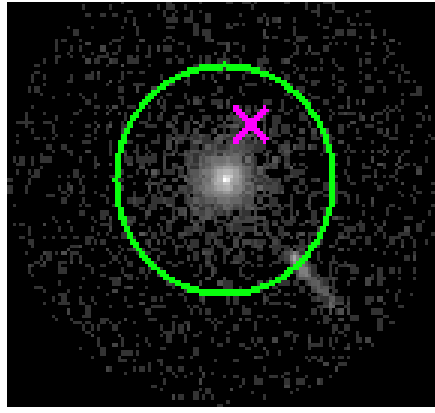


3 Gratings

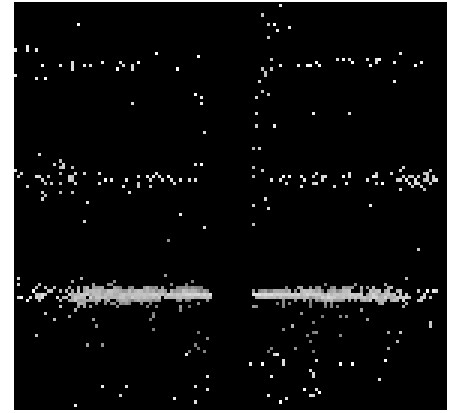
3.1 HEG Arm



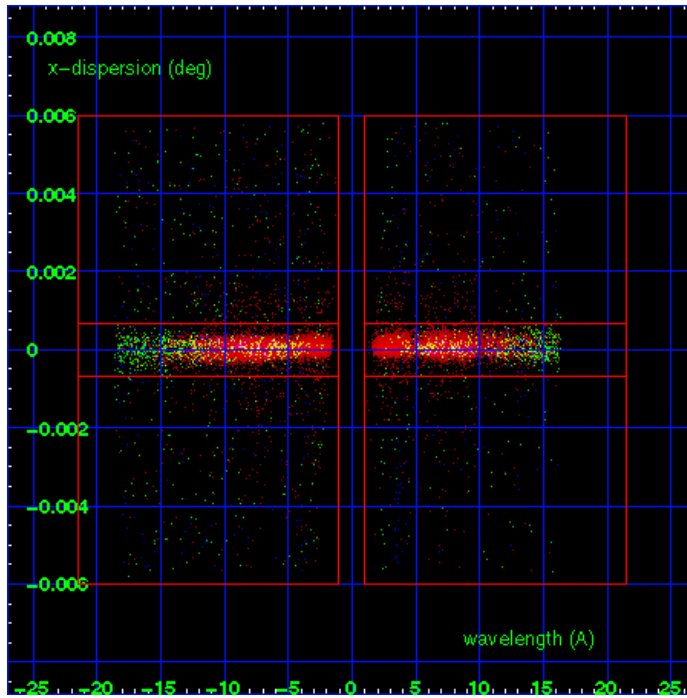
HEG Order Sort 123



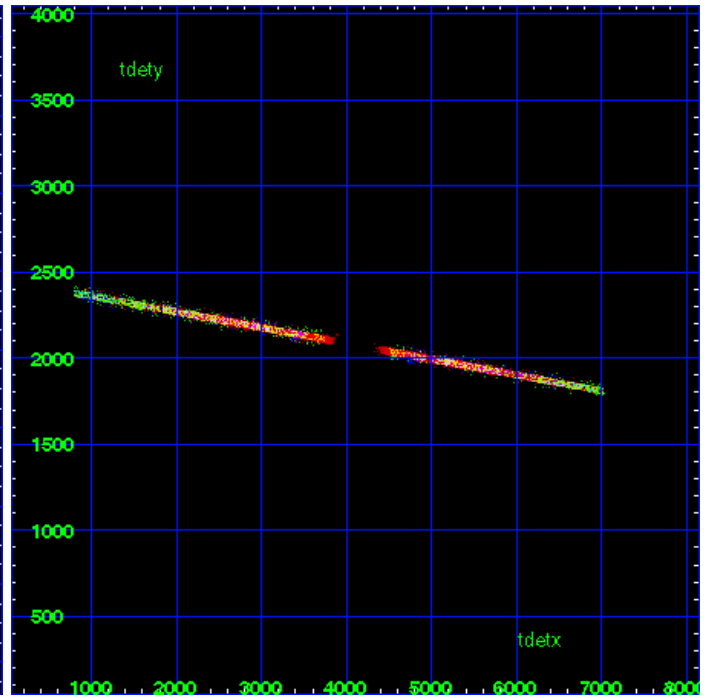
HEG Zero Order



HEG Order Sort ALL

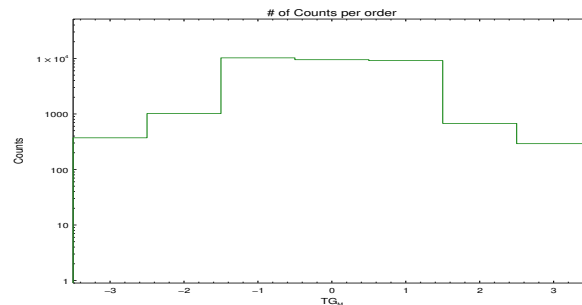


Spot Image HEG

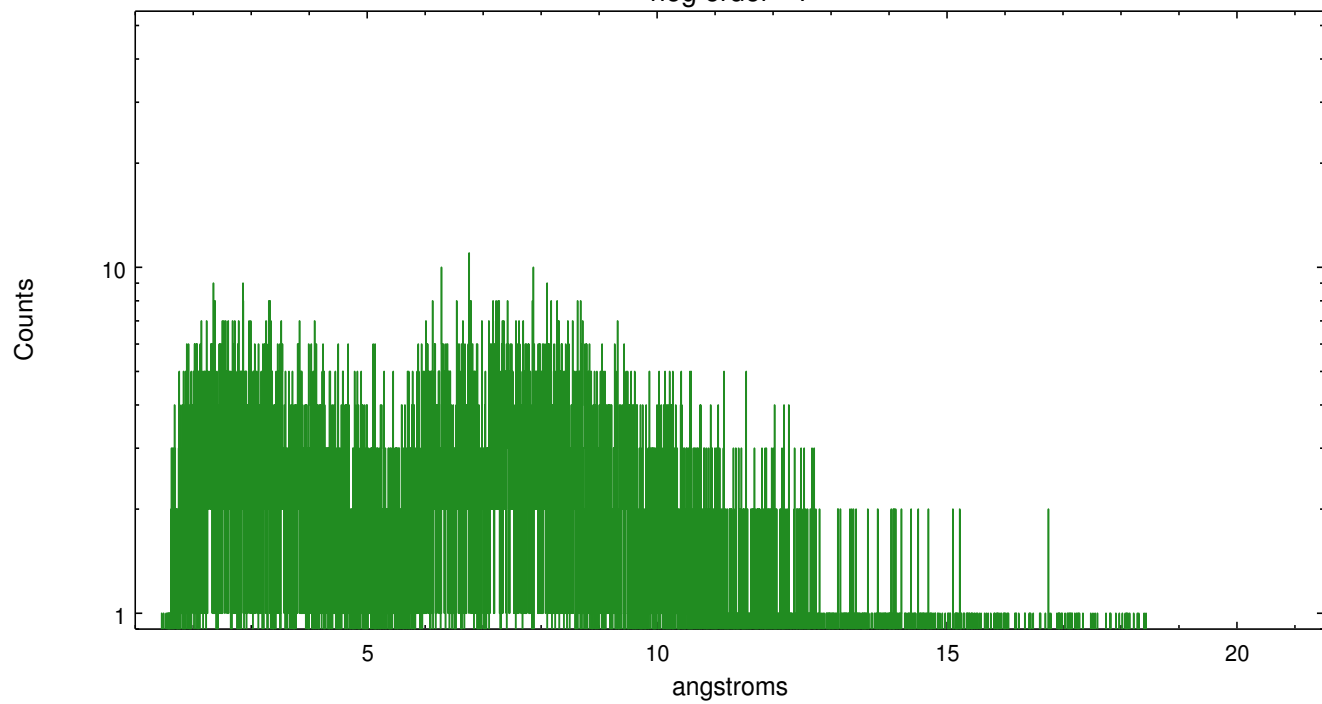


Full Detector HEG

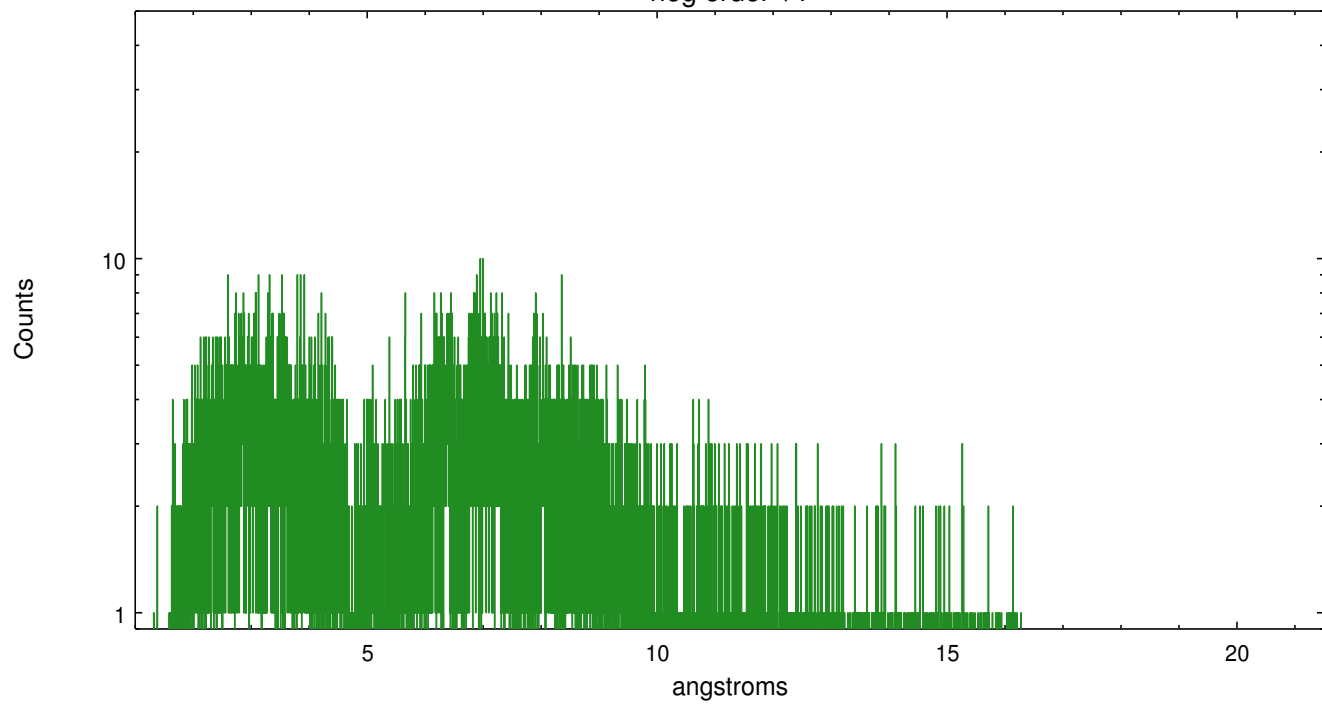
| | order -3 | order -2 | order -1 | order 0 | order 1 | order 2 | order 3 |
|--------|----------|----------|----------|---------|---------|---------|---------|
| Events | 372 | 1017 | 10251 | 9502 | 9146 | 676 | 292 |



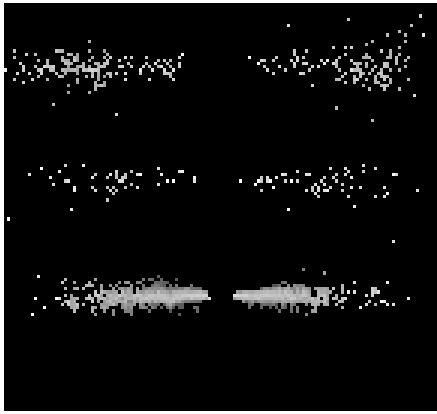
heg order -1



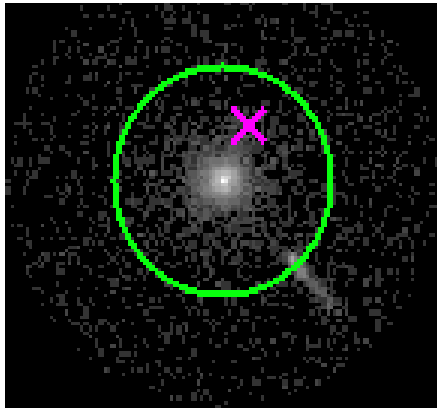
heg order +1



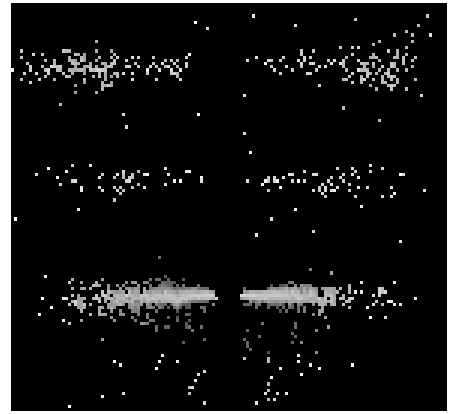
3.2 MEG Arm



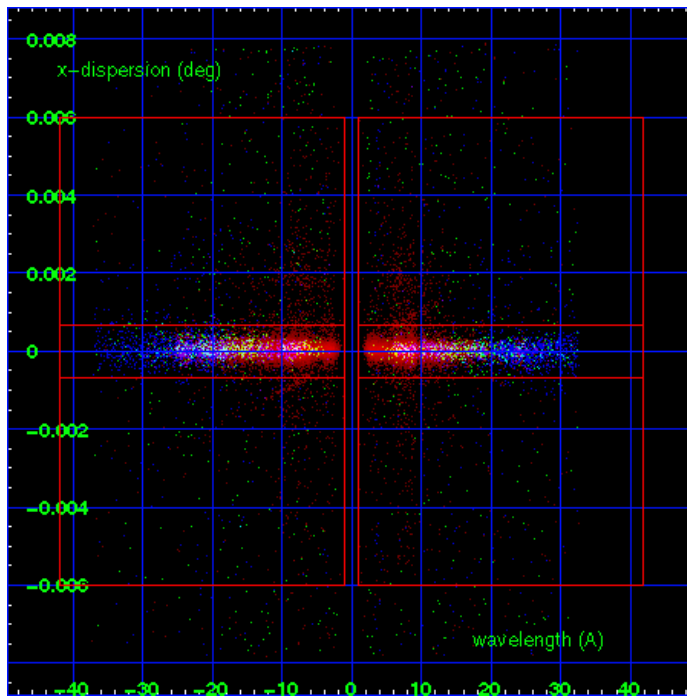
MEG Order Sort 123



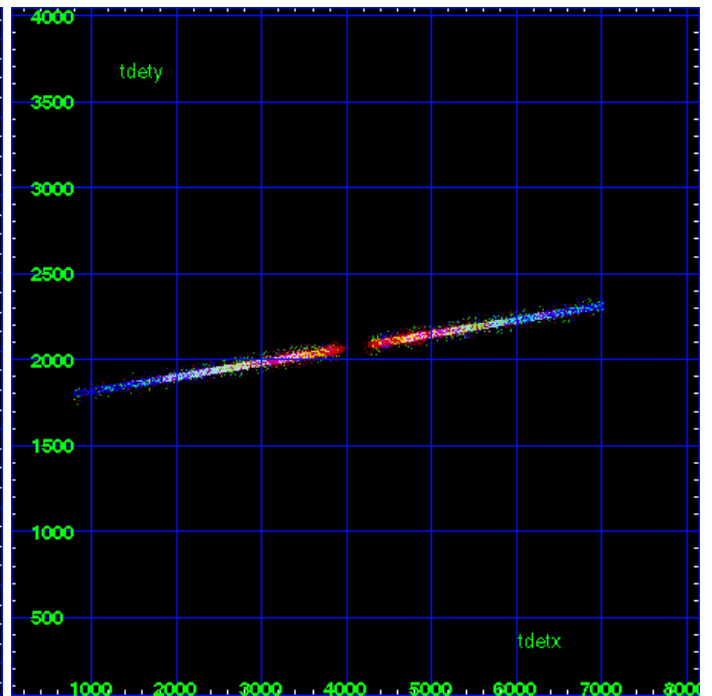
MEG Zero Order



MEG Order Sort ALL

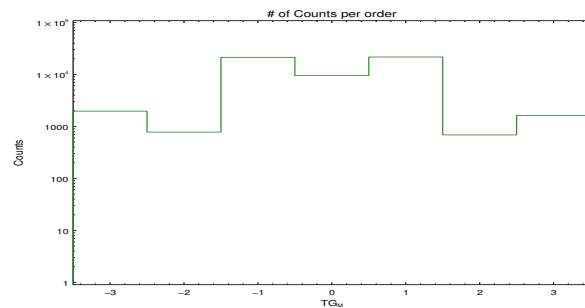


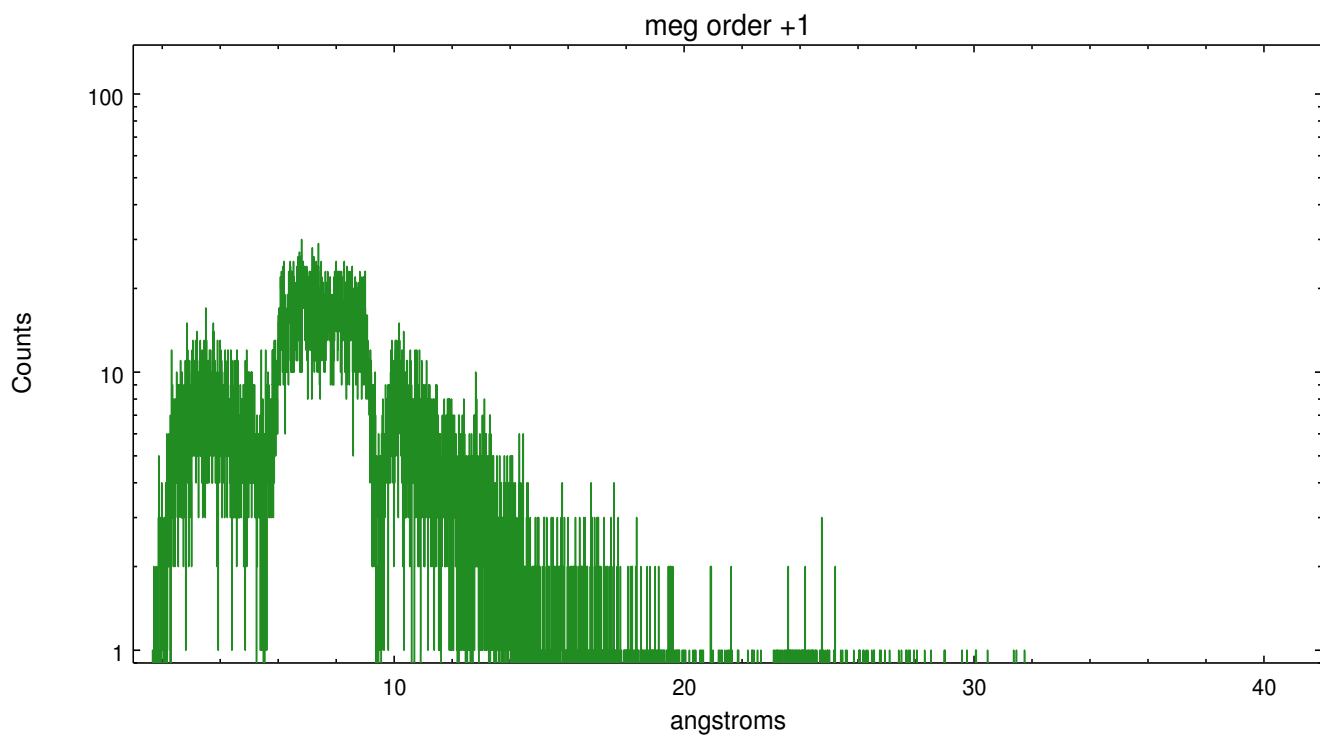
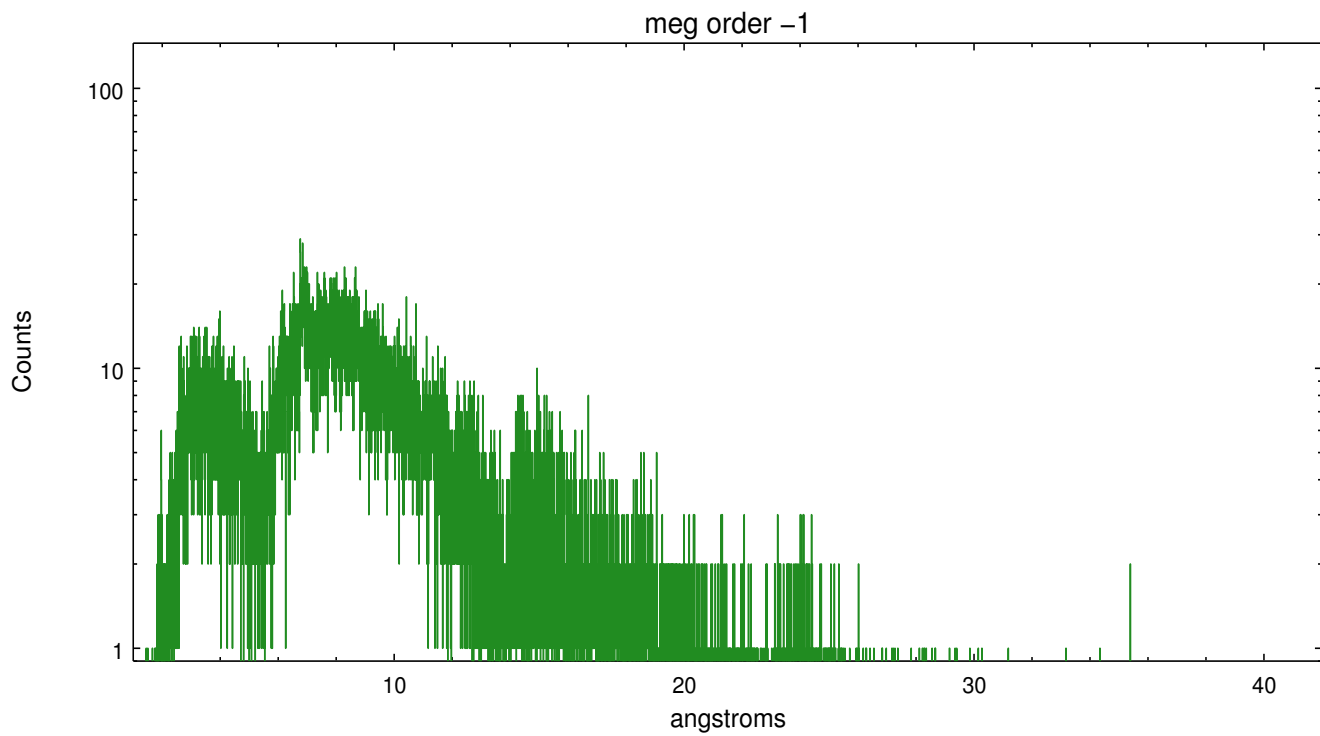
Spot Image MEG



Full Detector MEG

| | order -3 | order -2 | order -1 | order 0 | order 1 | order 2 | order 3 |
|--------|-------------|-------------|-------------|------------|------------|------------|------------|
| Events | 1966 | 776 | 21336 | 9502 | 21648 | 686 | 1625 |





A Summary

A.1 Status

| | |
|----------------------------|-------------|
| V&V Scientist | Joy Nichols |
| V&V Date (YYYY-MM-DD) | 2013.01.10 |
| V&V Edition | 1 |
| V&V Disposition and Status | OK |
| V&V Charge Time | 30.167 |

A.2 Comments