

V&V Reference Report

L2 ASCDS Version : 8.4.3.1

Observation 8486 - L2 Version 3
Chandra X-Ray Center

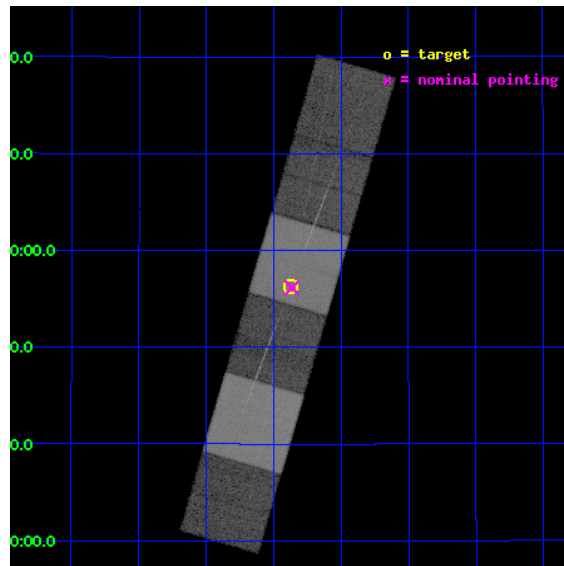
L2 Processing Date : Apr 25 2012

Contents

| | | |
|----------|-------------------------------|-----------|
| 1 | Front | 2 |
| 2 | OBI | 3 |
| 2.1 | OBI | 3 |
| 2.1.1 | Images | 3 |
| 2.1.2 | Bias | 3 |
| 2.1.3 | Parameters | 4 |
| 2.1.4 | Events | 4 |
| 2.2 | Compared Parameters | 5 |
| 2.3 | Aspect | 6 |
| 2.4 | Star Slots | 9 |
| 2.4.1 | Slot 3 | 9 |
| 2.4.2 | Slot 4 | 10 |
| 2.4.3 | Slot 5 | 11 |
| 2.4.4 | Slot 6 | 12 |
| 2.4.5 | Slot 7 | 13 |
| 2.5 | FID Slots | 14 |
| 2.5.1 | Slot 0 | 14 |
| 2.5.2 | Slot 1 | 15 |
| 2.5.3 | Slot 2 | 16 |
| 3 | Gratings | 17 |
| 3.1 | HEG Arm | 17 |
| 3.2 | MEG Arm | 19 |
| A | Summary | 21 |
| A.1 | Status | 21 |
| A.2 | Comments | 21 |

1 Front

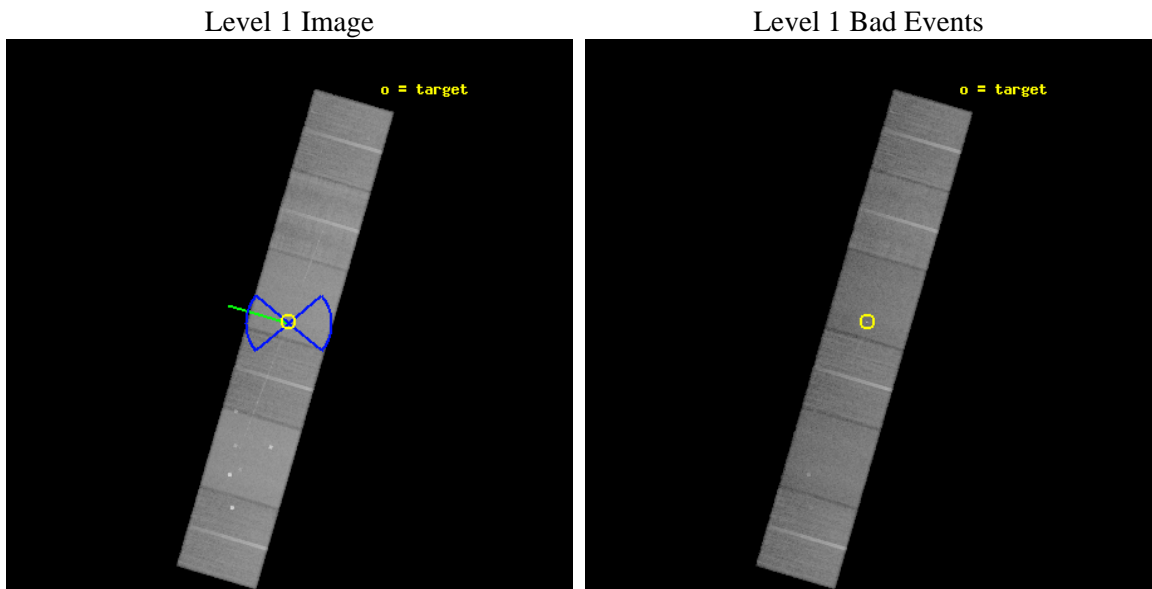
| | | |
|----------|--|---|
| seq_num | 200381 | Sequence number |
| obs_id | 8486 | Observation id |
| title | Probing spectral changes in variable active M dwarfs | Proposal titl |
| observer | Dr. Jan-Uwe Ness | Principal investigator |
| object | EQ Peg | Source name |
| dtycycle | 0 | |
| cycle | P | events from which exps? Prim/Second/Both |
| ra_targ | 352.9675 | Observer's specified target RA [deg] |
| dec_targ | 19.93725 | Observer's specified target Dec [deg] |
| ra_nom | 352.96615515842 | Nominal RA [deg] |
| dec_nom | 19.935582205047 | Nominal Dec [deg] |
| roll_nom | 286.26708063229 | Nominal Roll [deg] |
| revision | 3 | Processing version of data |
| ontime | 27947.830864549 | Sum of GTIs [s] |
| livetime | 27593.938601978 | Livetime [s] |
| ontime4 | 27947.871904552 | Sum of GTIs [s] |
| ontime5 | 27947.789824545 | Sum of GTIs [s] |
| ontime6 | 27947.748784542 | Sum of GTIs [s] |
| ontime7 | 27947.830864549 | Sum of GTIs [s] |
| ontime8 | 27944.466744363 | Sum of GTIs [s] |
| ontime9 | 27947.666704535 | Sum of GTIs [s] |
| l2events | 433910 | Number of level 2 events |



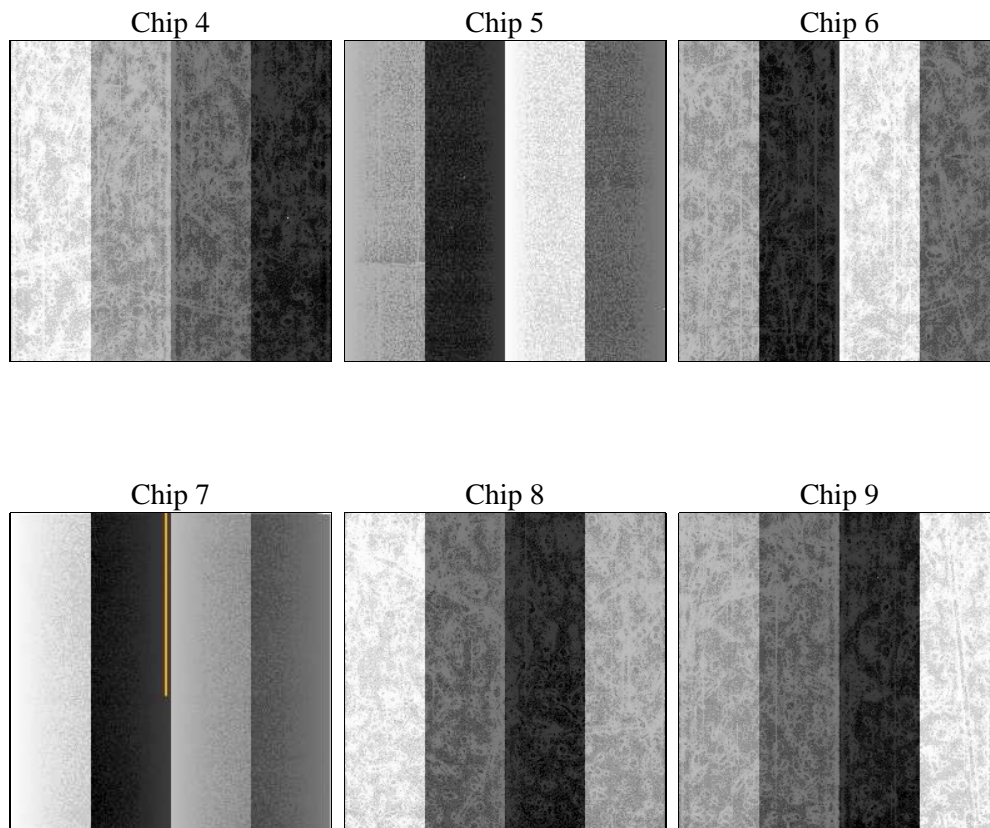
2 OBI

2.1 OBI

2.1.1 Images



2.1.2 Bias



2.1.3 Parameters

| | | | | | |
|----------|---------------------|--------------------------------|----------------|-----------------|---|
| obi_num | 0 | Obi number | sched_exp_time | 28000.000000 | [s] Scheduled observation exposure time |
| ascdsver | 8.4.3.1 | Processing system revision | ontime | 27947.830864549 | Sum of GTIs [s] |
| caldbver | 4.4.9 | | ontime4 | 27947.871904552 | Sum of GTIs [s] |
| date | 2012-04-14T17:36:34 | Date and time of file creation | ontime5 | 27947.789824545 | Sum of GTIs [s] |
| revision | 2 | Processing version of data | ontime6 | 27947.748784542 | Sum of GTIs [s] |
| | | | ontime7 | 27947.830864549 | Sum of GTIs [s] |
| | | | ontime8 | 27944.466744363 | Sum of GTIs [s] |
| | | | ontime9 | 27947.666704535 | Sum of GTIs [s] |
| | | | l1events | 1905390 | Number of level 1 events |

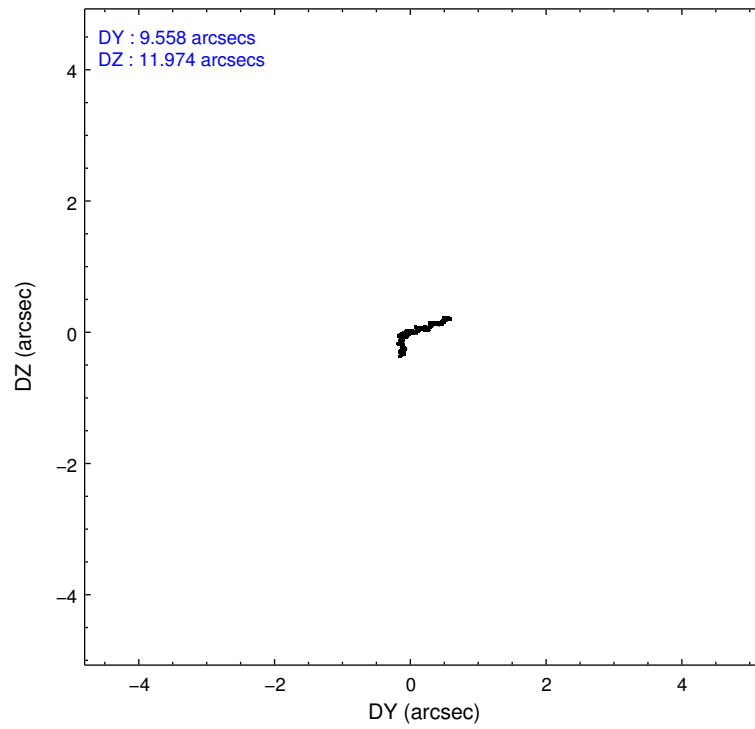
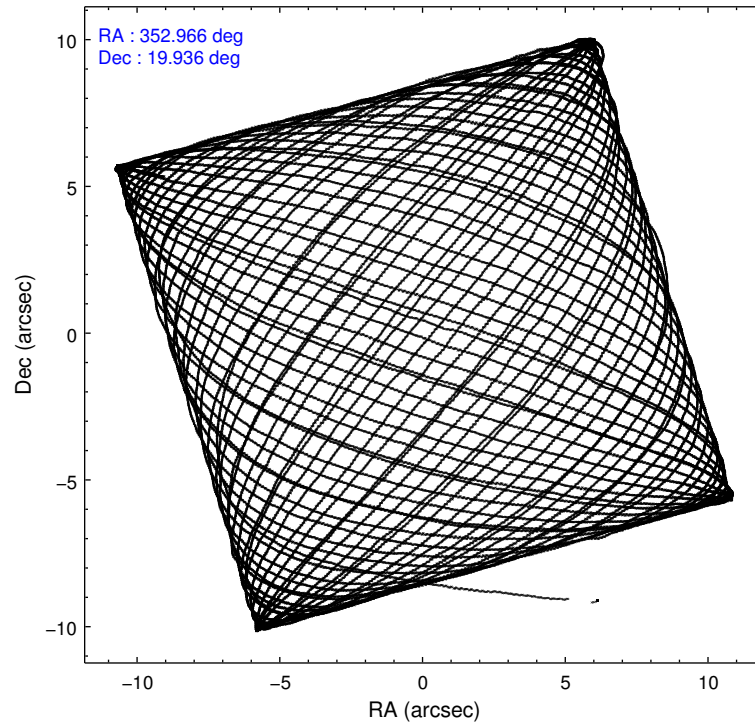
2.1.4 Events

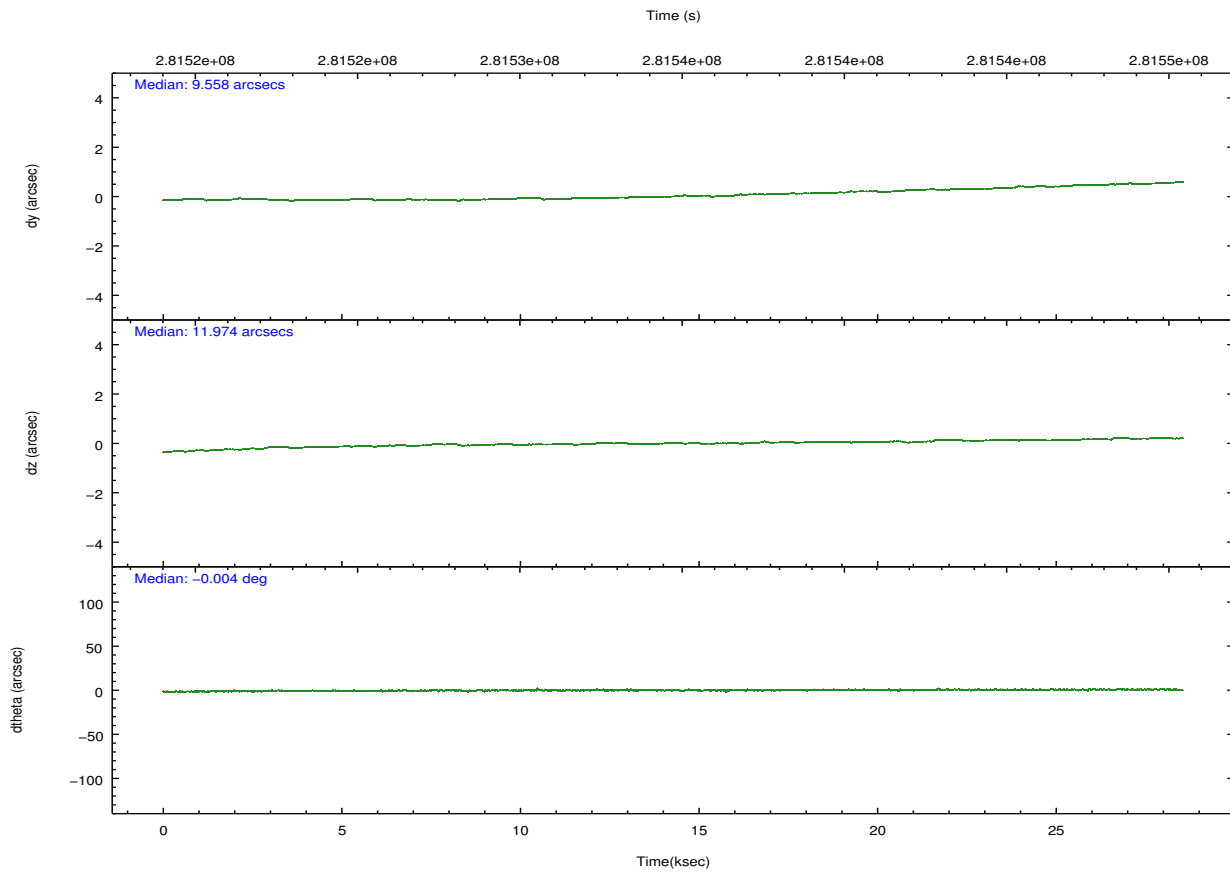
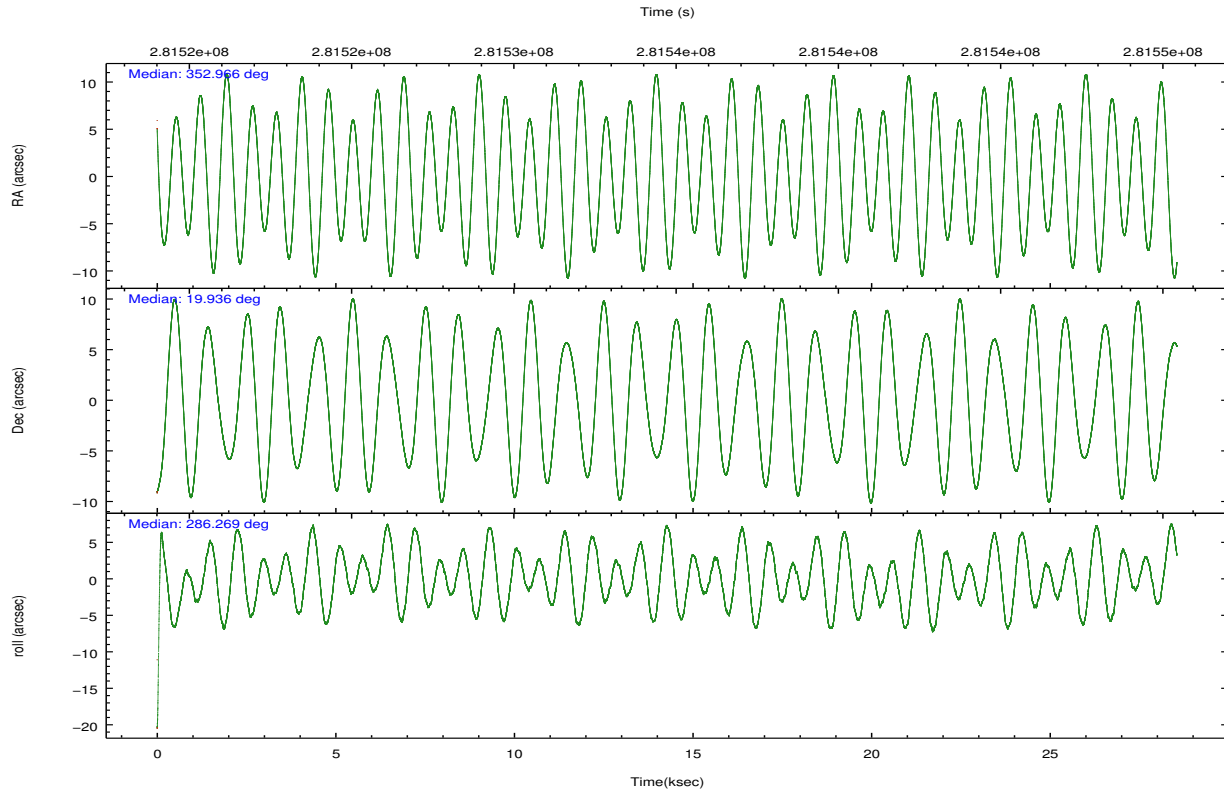
| | ccd 4 | ccd 5 | ccd 6 | ccd 7 | ccd 8 | ccd 9 | | ccd 4 | ccd 5 | ccd 6 | ccd 7 | ccd 8 | ccd 9 |
|-----------------|--------|--------|--------|--------|--------|--------|----------------|--------|--------|--------|--------|--------|--------|
| level 1 events | 295335 | 397619 | 263286 | 360484 | 330746 | 257920 | grade 0 events | 21054 | 19071 | 13422 | 14215 | 23873 | 13442 |
| rejected events | 255976 | 212073 | 230693 | 206944 | 256167 | 225950 | | 7% | 4% | 5% | 3% | 7% | 5% |
| rejected % | 86% | 53% | 87% | 57% | 77% | 87% | grade 1 events | 324 | 1169 | 152 | 420 | 263 | 195 |
| | | | | | | | | 0% | 0% | 0% | 0% | 0% | 0% |
| | | | | | | | grade 2 events | 6785 | 58295 | 6875 | 31520 | 16527 | 6199 |
| | | | | | | | | 2% | 14% | 2% | 8% | 4% | 2% |
| | | | | | | | grade 3 events | 3241 | 6680 | 3043 | 13474 | 7688 | 3126 |
| | | | | | | | | 1% | 1% | 1% | 3% | 2% | 1% |
| | | | | | | | grade 4 events | 3150 | 6533 | 2968 | 13323 | 7057 | 3092 |
| | | | | | | | | 1% | 1% | 1% | 3% | 2% | 1% |
| | | | | | | | grade 5 events | 11655 | 28018 | 12130 | 34016 | 15985 | 12798 |
| | | | | | | | | 3% | 7% | 4% | 9% | 4% | 4% |
| | | | | | | | grade 6 events | 5139 | 95009 | 6291 | 81062 | 19440 | 6125 |
| | | | | | | | | 1% | 23% | 2% | 22% | 5% | 2% |
| | | | | | | | grade 7 events | 243987 | 182844 | 218405 | 172454 | 239913 | 212943 |
| | | | | | | | | 82% | 45% | 82% | 47% | 72% | 82% |

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 | 352.944961 | 352.9661551584242 | Subarray requested | NONE | NONE |
| [deg] Pointing Dec | 19.954148 | 19.93558220504672 | Alternating exposures requested | N | N |
| [deg] Pointing Roll | 286.117688 | 286.2670806322874 | [s] Primary exposure time | 0.000000 | 3.2 |
| [deg] Roll angle | 90.000000 | 90.000000 | | | |
| [deg] Roll tolerance | 40.000000 | 40.000000 | | | |
| Roll constraint allows 180D rotation | Y | Y | | | |
| [mm] SIM focus pos | -0.684267 | -0.6828225247311905 | | | |
| [mm] SIM defocus | 0 | 0.001444936568705701 | | | |
| [mm] SIM translation stage pos | -190.132523 | -190.1400660498719 | | | |
| [mm] SIM translation stage offset | 0 | 0.00754346686406393 | | | |
| [s] Observation start time (MET) | 281520995.184000 | 281519798.11288 | | | |
| Observation start date | 2006-12-03T08:15:30 | 2006-12-03T07:56:38 | | | |
| [s] Observation end time (MET) | 281548995.184000 | 281549597.42679 | | | |
| Observation end date | 2006-12-03T16:02:10 | 2006-12-03T16:13:17 | | | |
| Read mode | TIMED | TIMED | | | |

2.3 Aspect



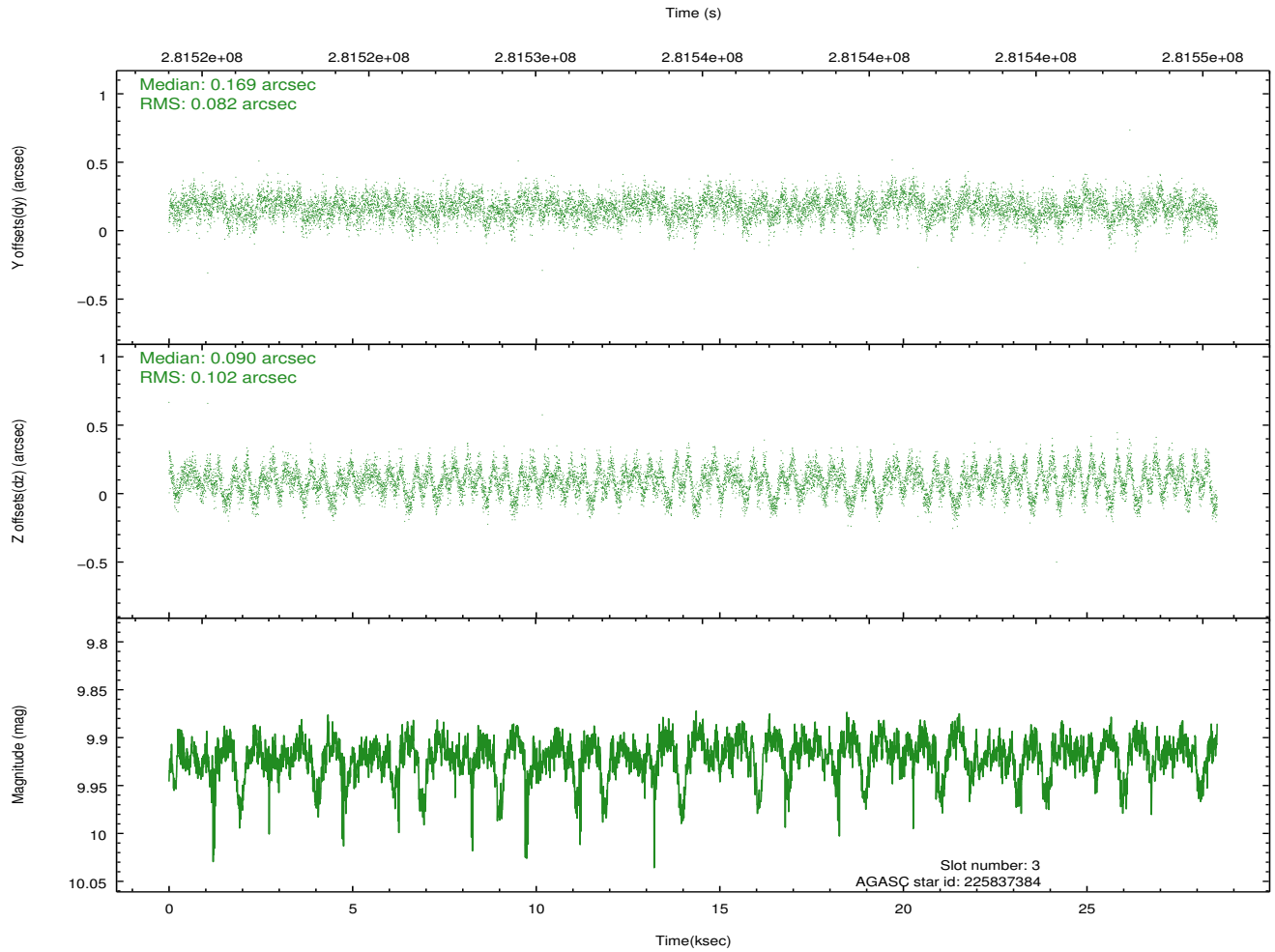
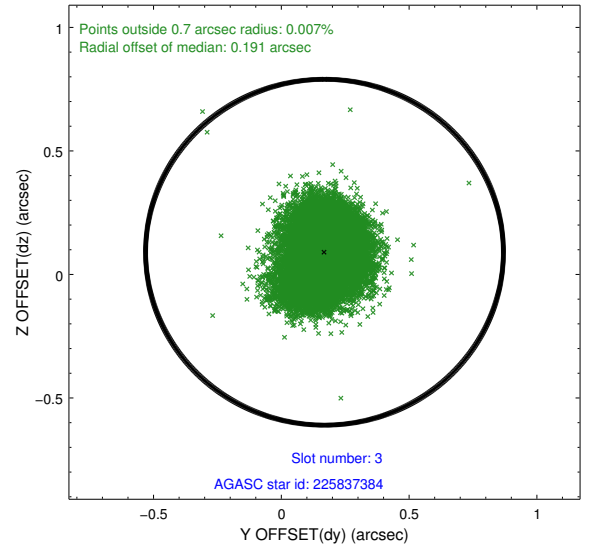
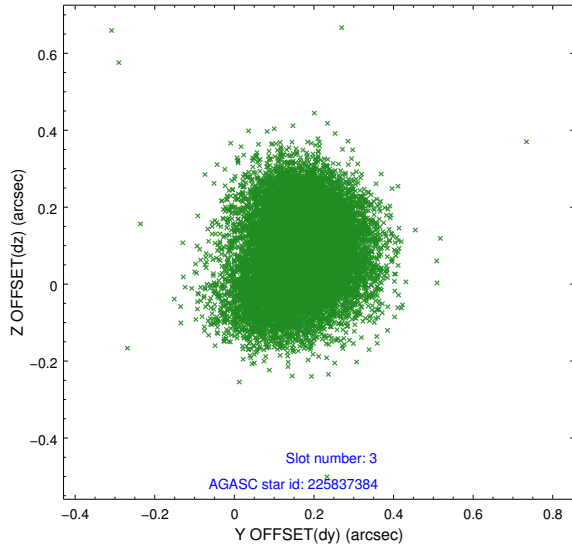


Slot Statistics

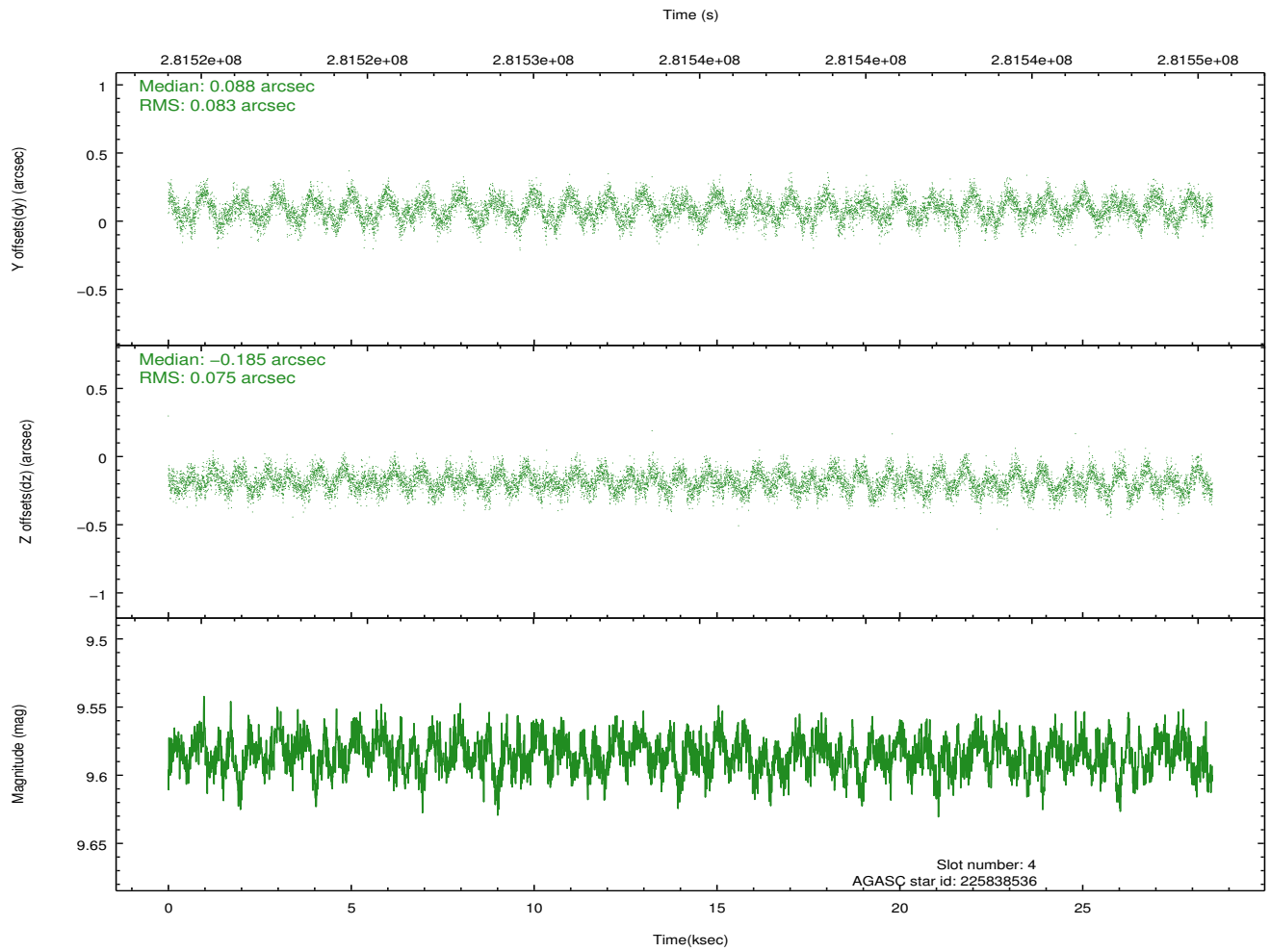
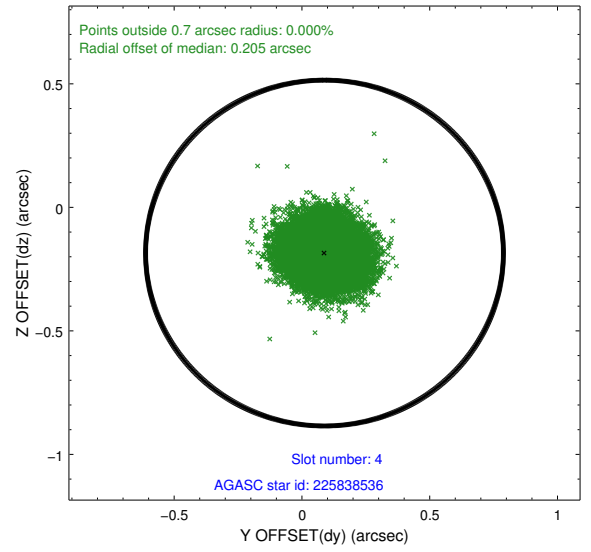
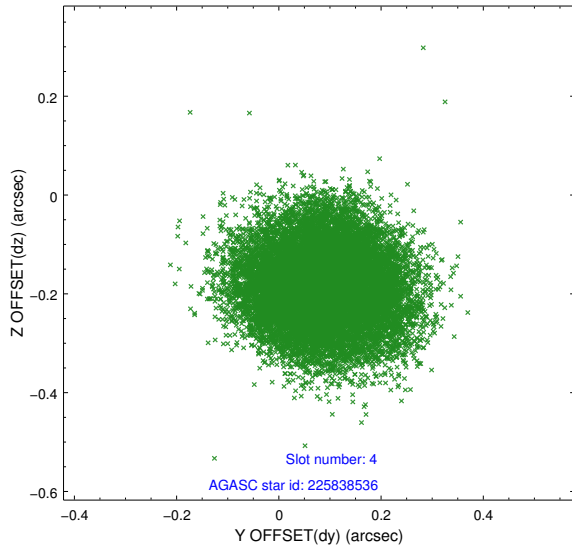
| slot | status | id | mag | n_pts | med_dy | med_dz | dr1 | dr2 | ra | dec | mean_y | mean_z |
|------|--------|-----------|------|-------|--------|--------|-------|-------|------------|-----------|----------|----------|
| 0 | FID | ACIS-S-2 | 7.11 | 6963 | -0.033 | -0.036 | 0.010 | 0.018 | 0.000000 | 0.000000 | -762.51 | -1733.30 |
| 1 | FID | ACIS-S-4 | 7.21 | 6963 | 0.154 | 0.025 | 0.007 | 0.012 | 0.000000 | 0.000000 | 2150.93 | 175.14 |
| 2 | FID | ACIS-S-5 | 7.23 | 6964 | -0.153 | 0.020 | 0.008 | 0.014 | 0.000000 | 0.000000 | -1815.35 | 168.93 |
| 3 | GUIDE | 225837384 | 9.92 | 13908 | 0.169 | 0.090 | 0.141 | 0.225 | 352.987146 | 19.537840 | 1479.85 | -278.45 |
| 4 | GUIDE | 225838536 | 9.58 | 13907 | 0.088 | -0.185 | 0.121 | 0.186 | 353.052122 | 19.704878 | 963.18 | 99.67 |
| 5 | GUIDE | 225843792 | 9.27 | 13917 | -0.029 | 0.028 | 0.110 | 0.174 | 353.581433 | 19.686286 | 1521.95 | 1806.13 |
| 6 | GUIDE | 226240768 | 8.89 | 13922 | -0.078 | 0.063 | 0.101 | 0.152 | 353.030892 | 20.523748 | -1889.37 | 847.99 |
| 7 | GUIDE | 226240232 | 8.83 | 13924 | -0.147 | 0.005 | 0.070 | 0.113 | 352.730108 | 20.581655 | -2372.02 | -67.96 |

2.4 Star Slots

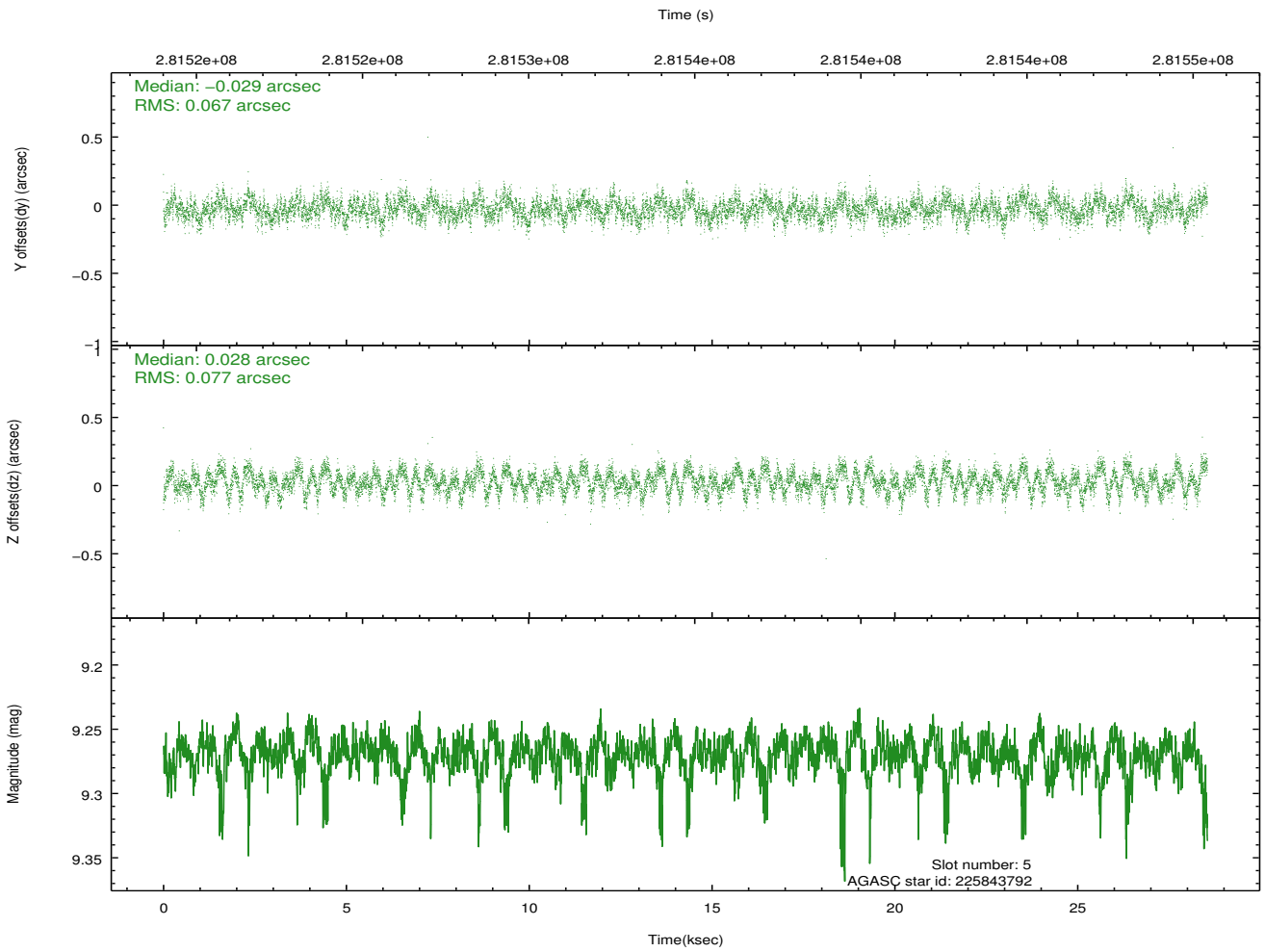
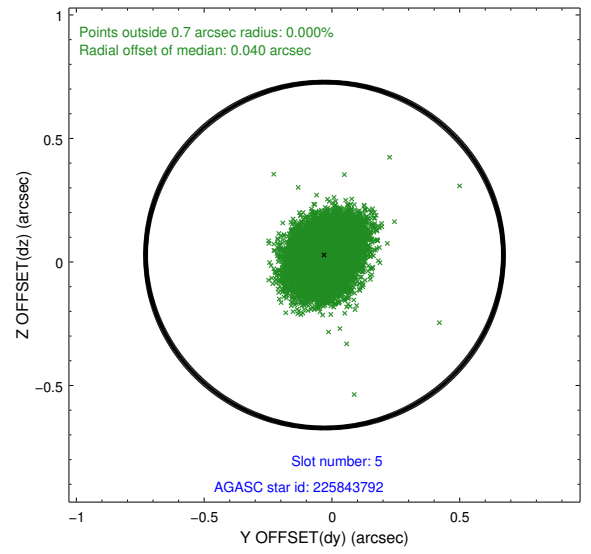
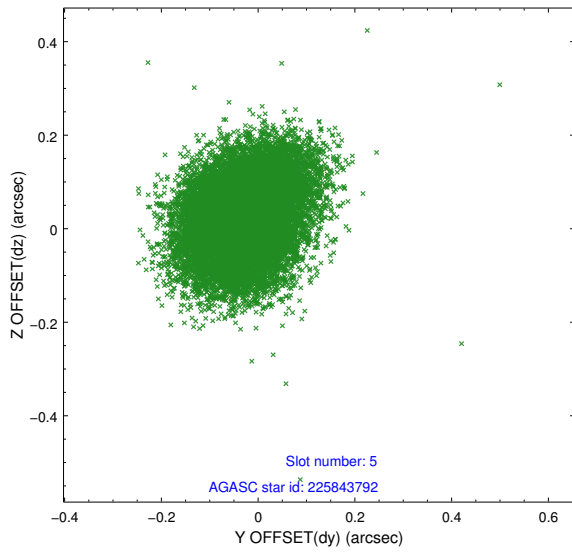
2.4.1 Slot 3



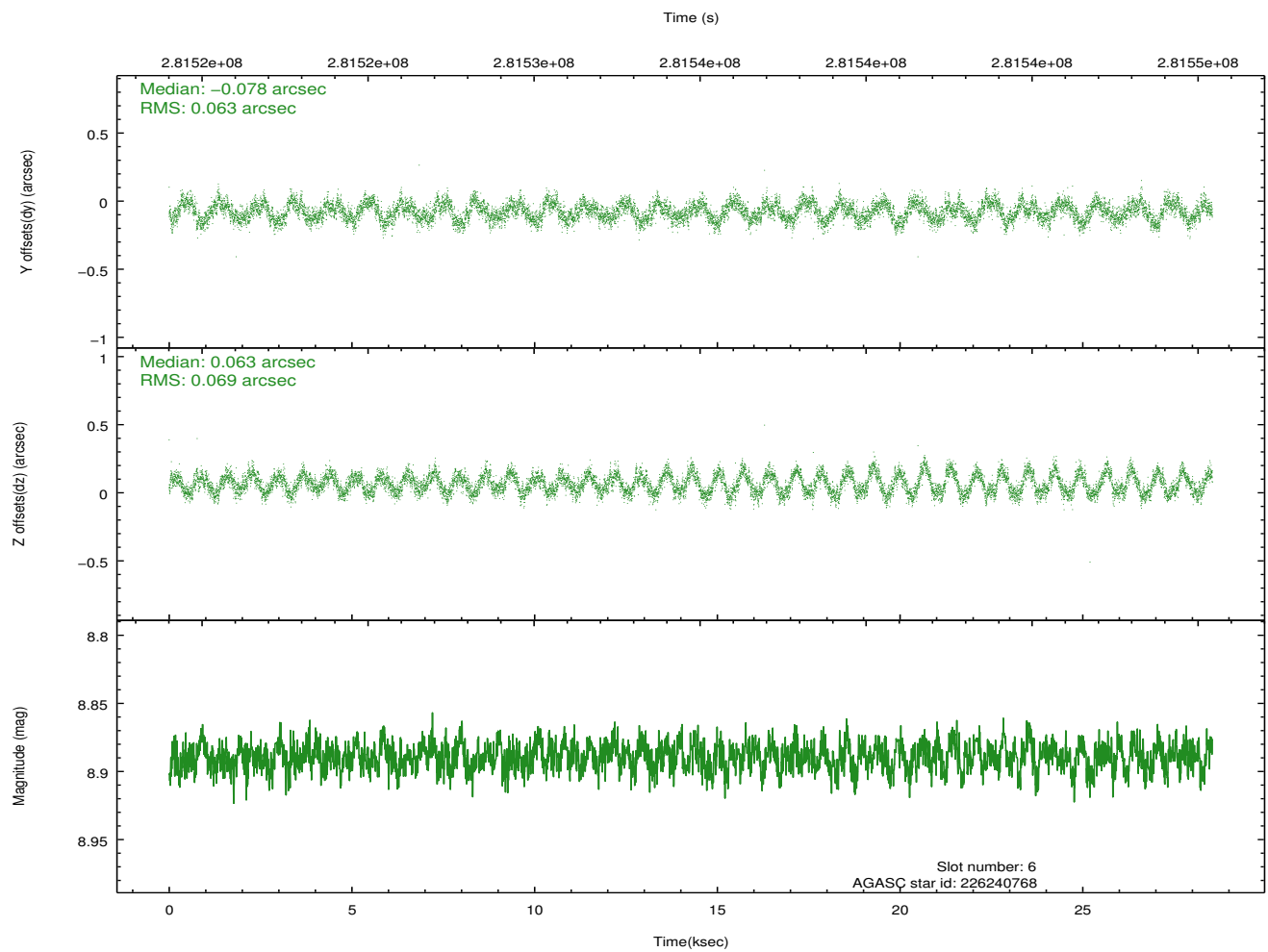
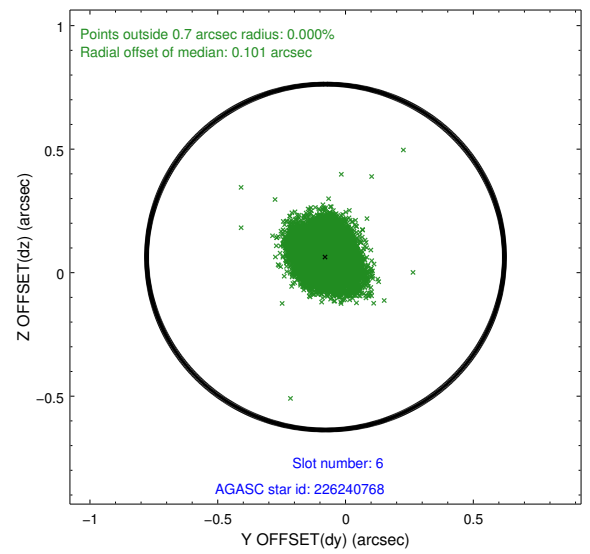
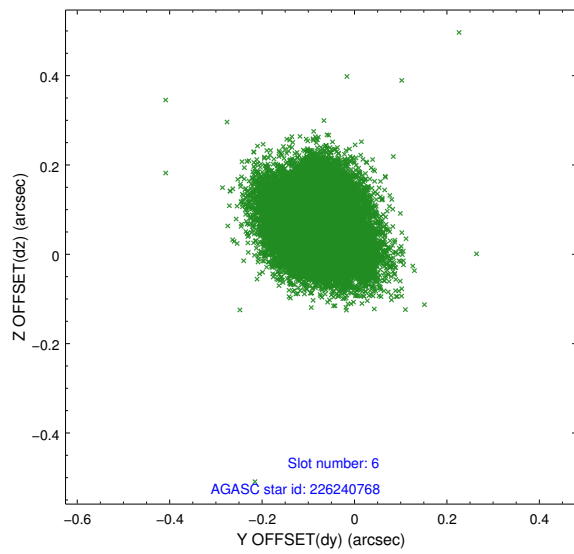
2.4.2 Slot 4



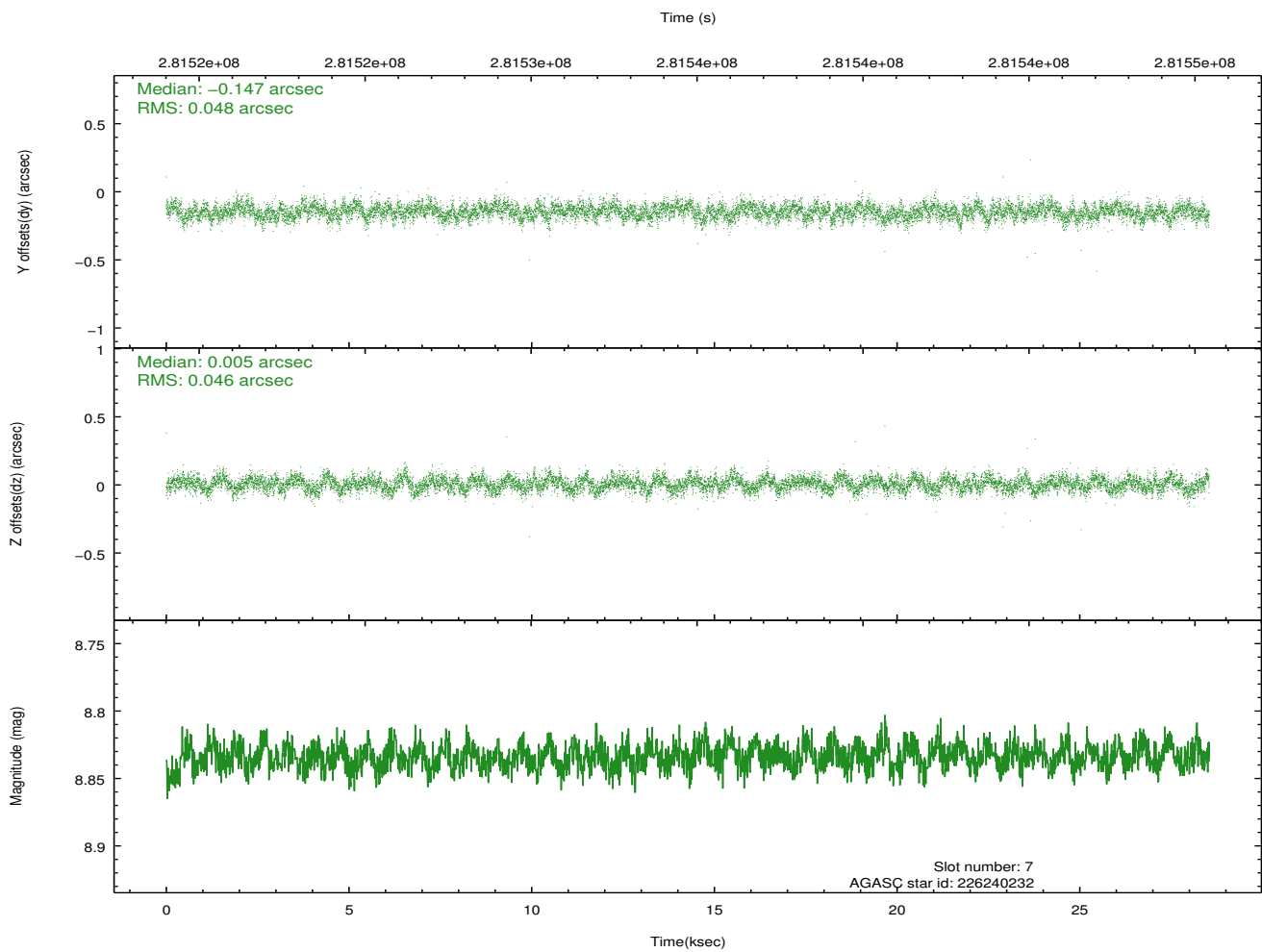
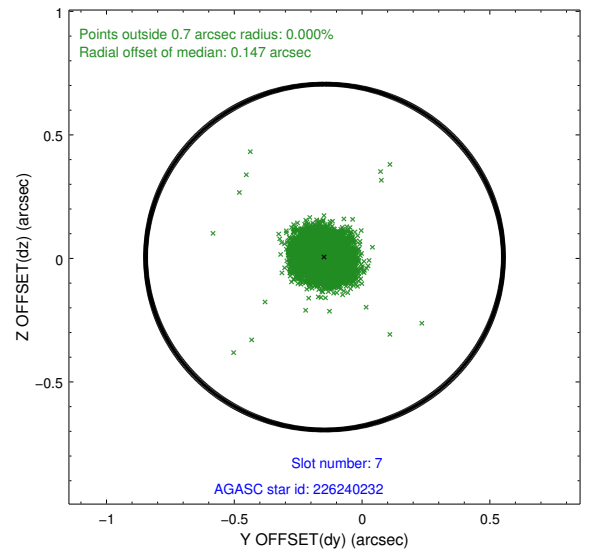
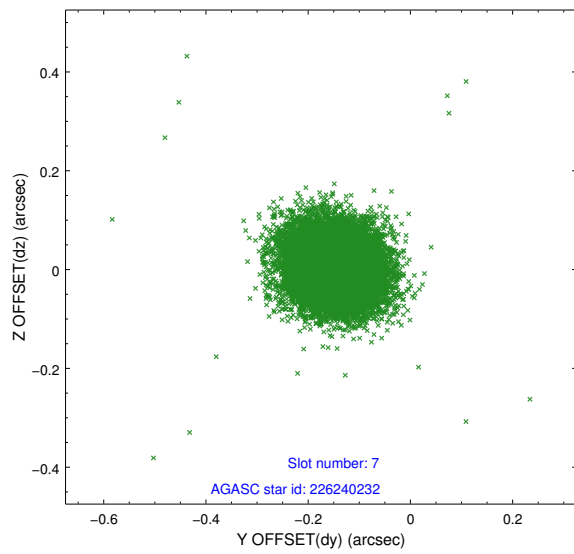
2.4.3 Slot 5



2.4.4 Slot 6

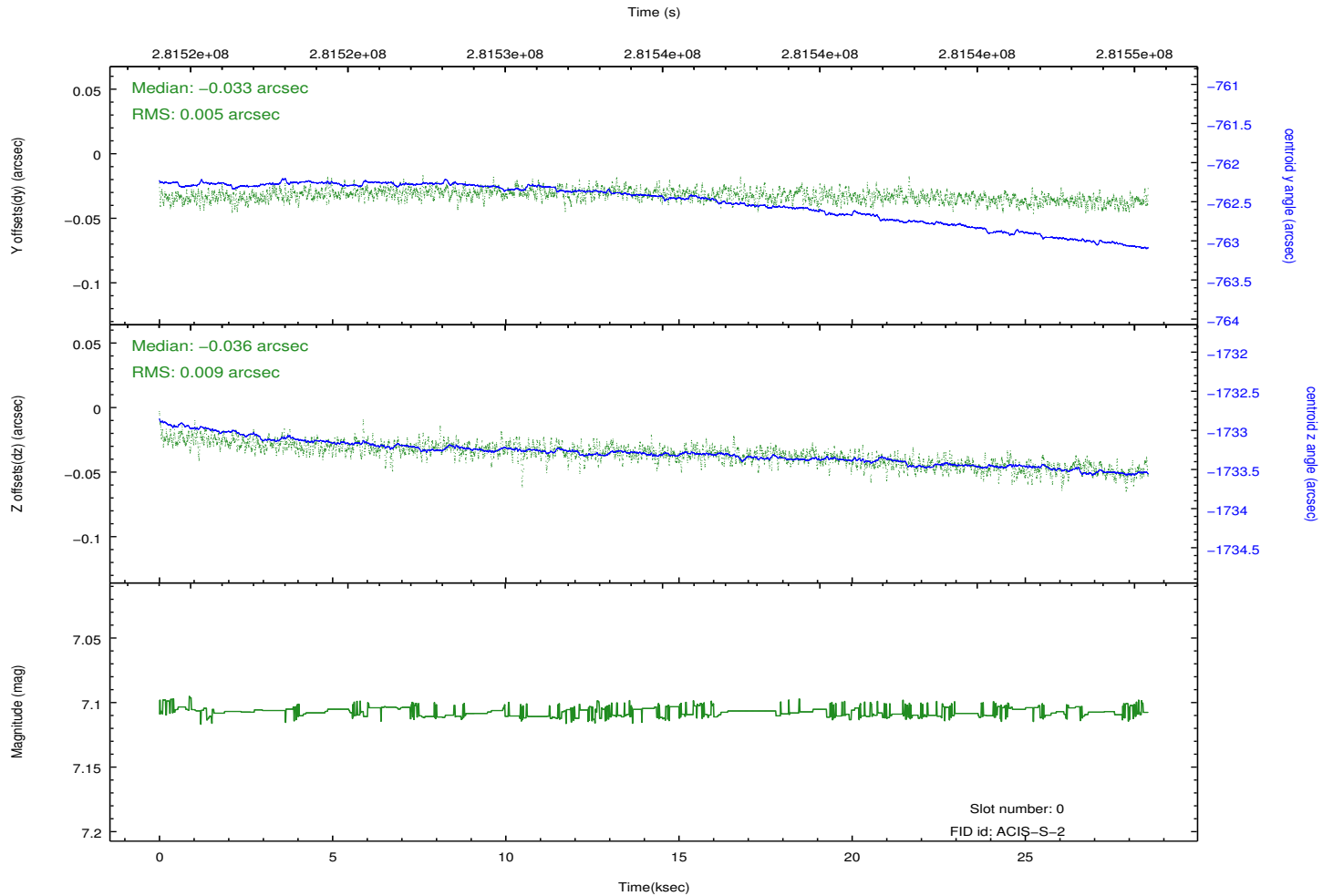
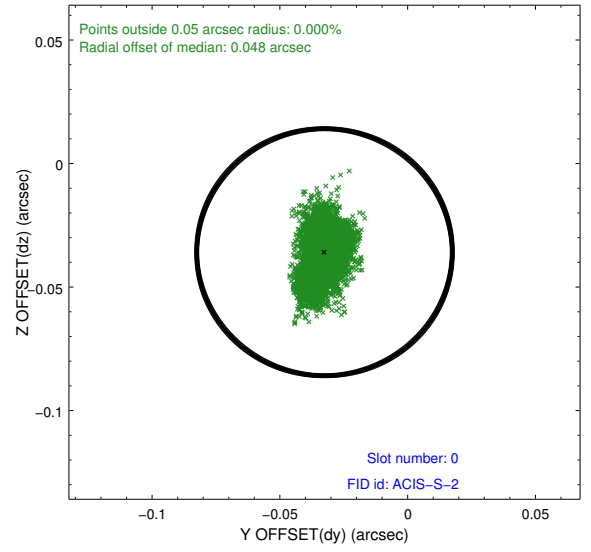
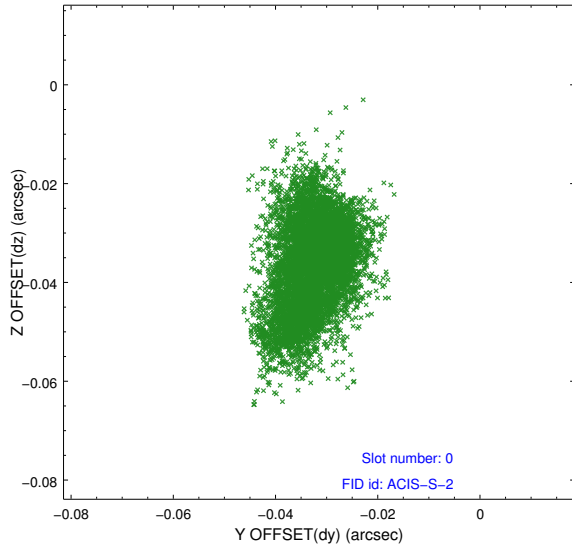


2.4.5 Slot 7

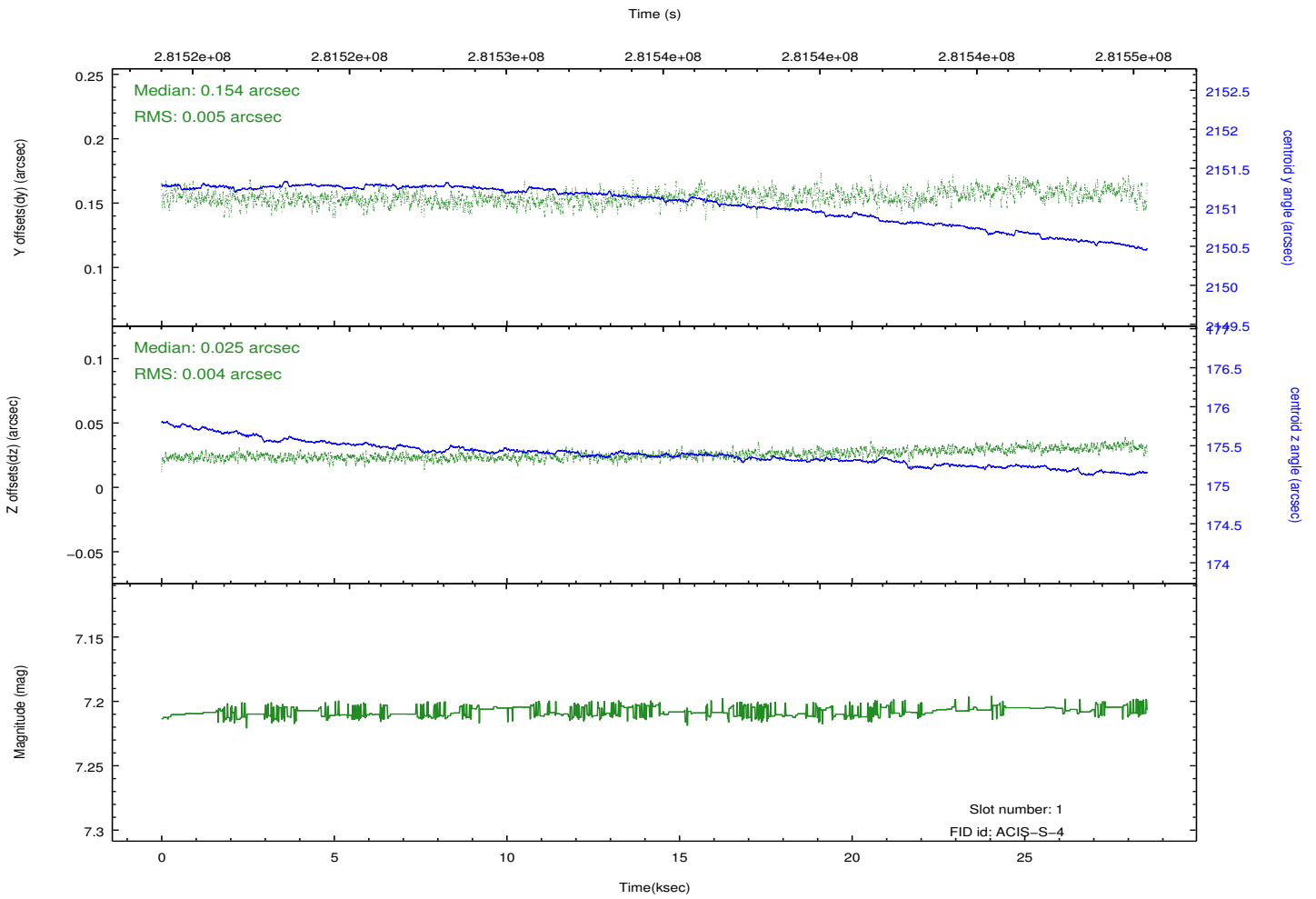
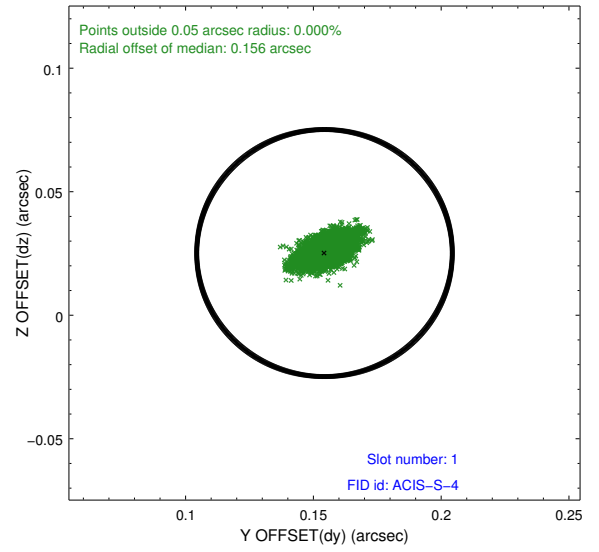
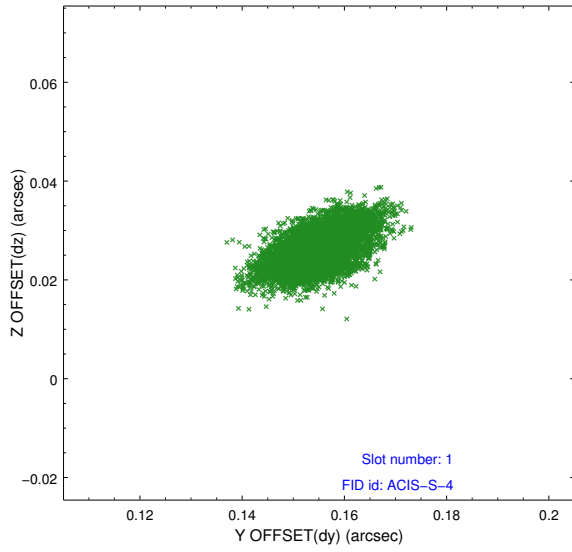


2.5 FID Slots

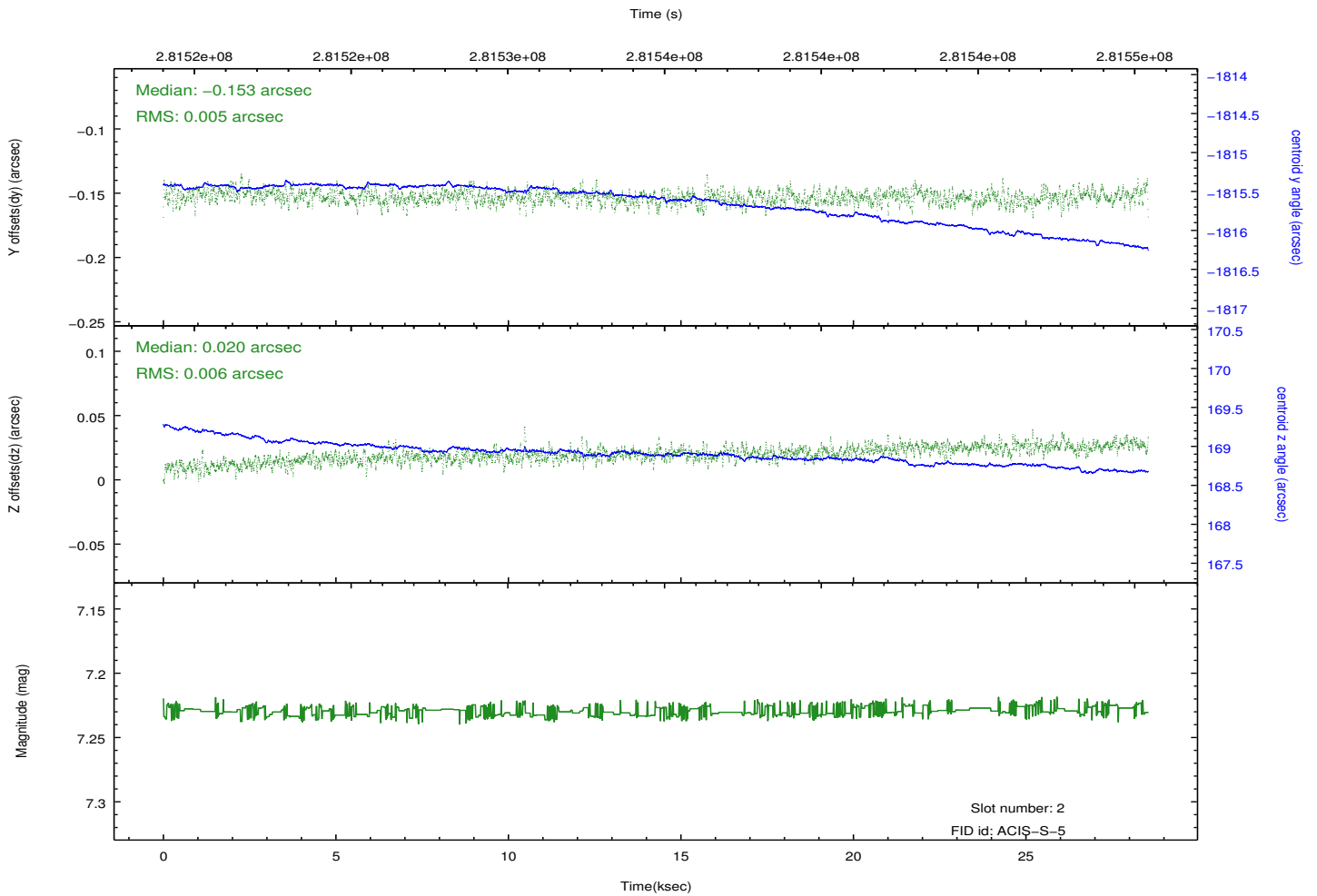
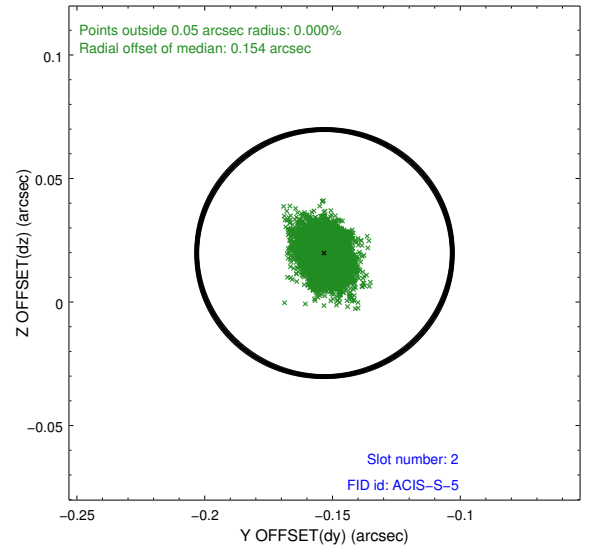
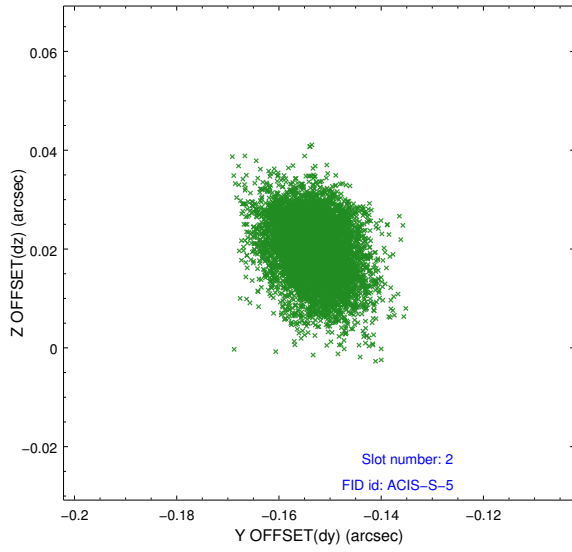
2.5.1 Slot 0



2.5.2 Slot 1



2.5.3 Slot 2

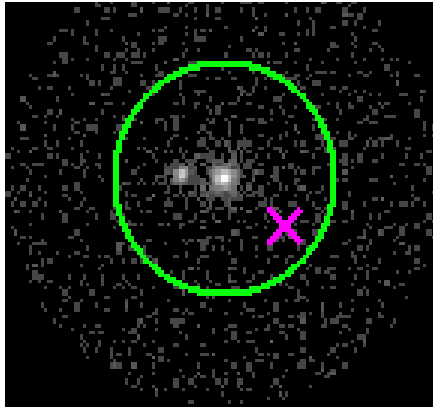


3 Gratings

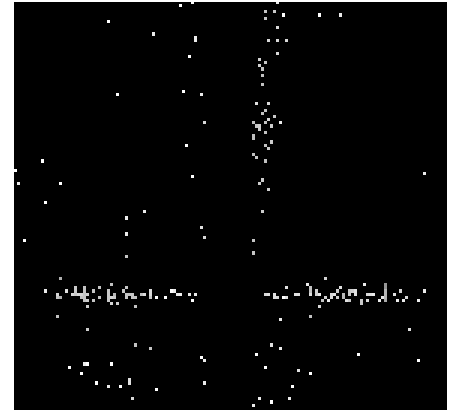
3.1 HEG Arm



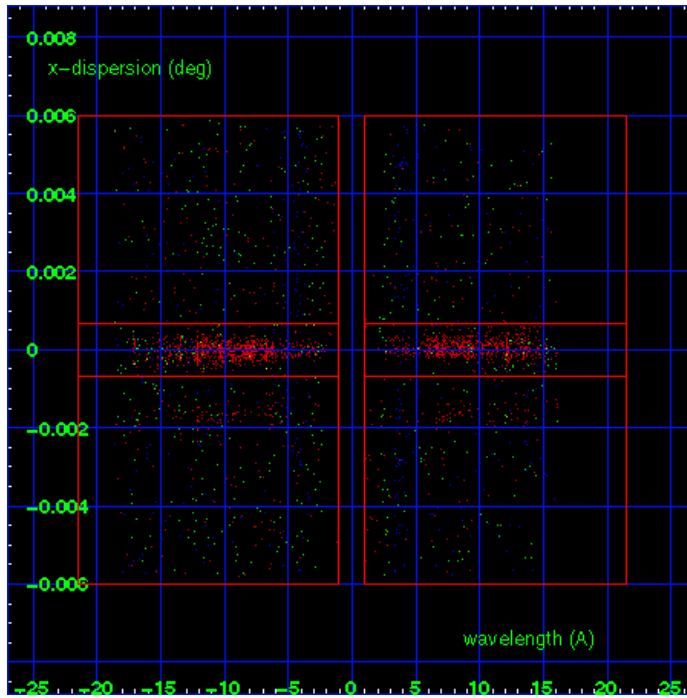
HEG Order Sort 123



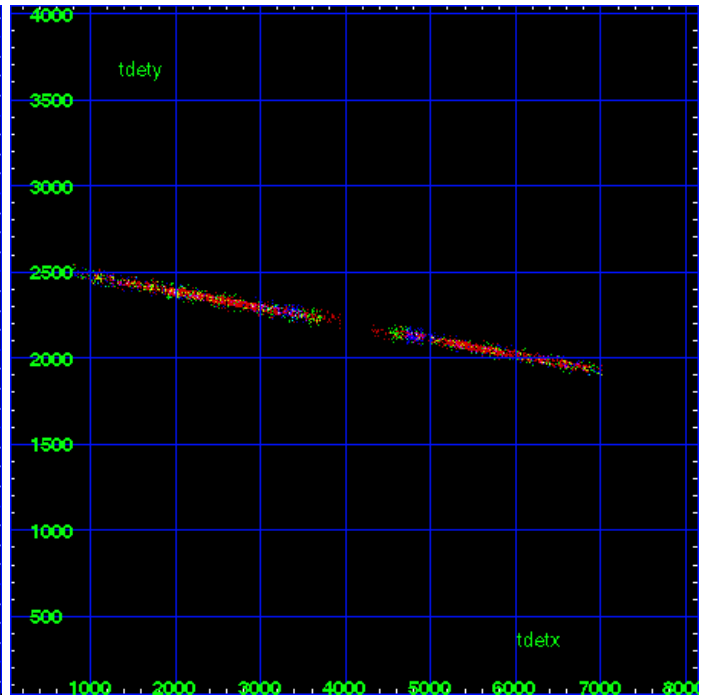
HEG Zero Order



HEG Order Sort ALL

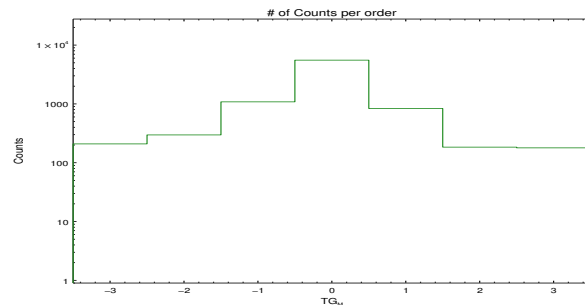


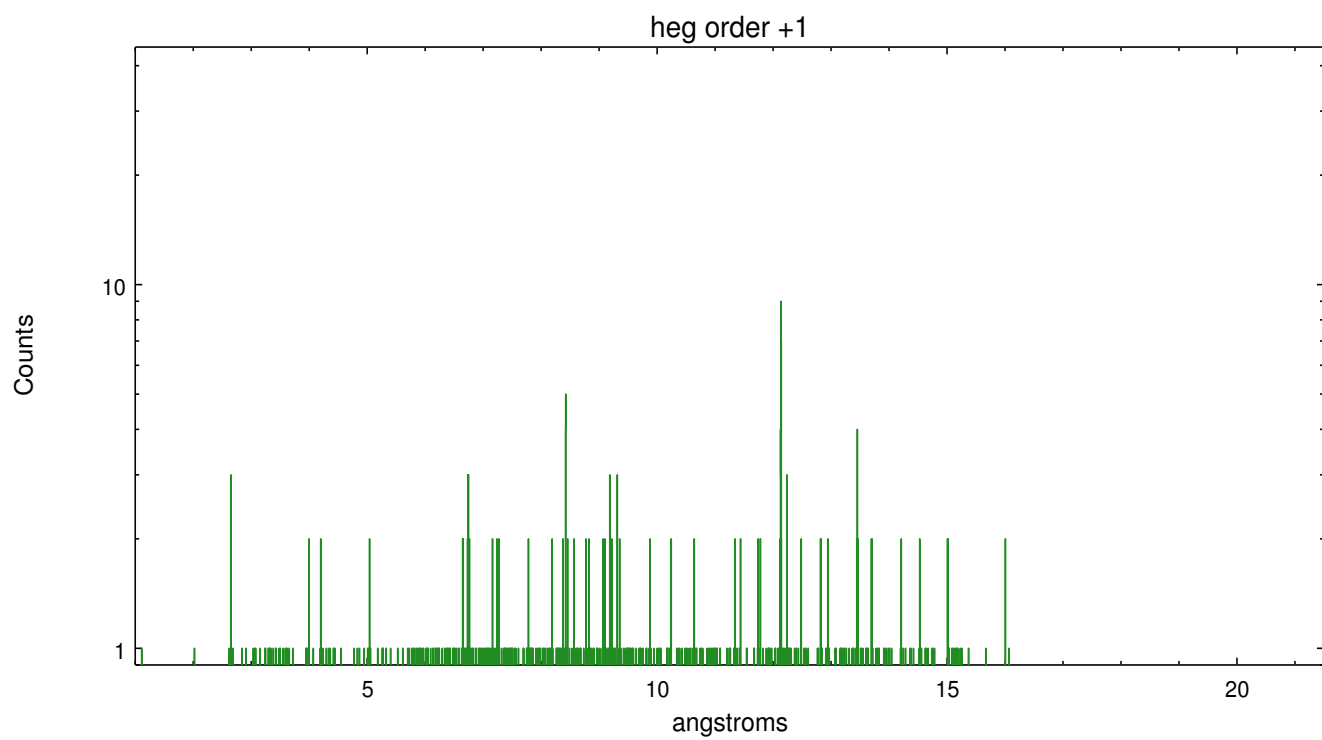
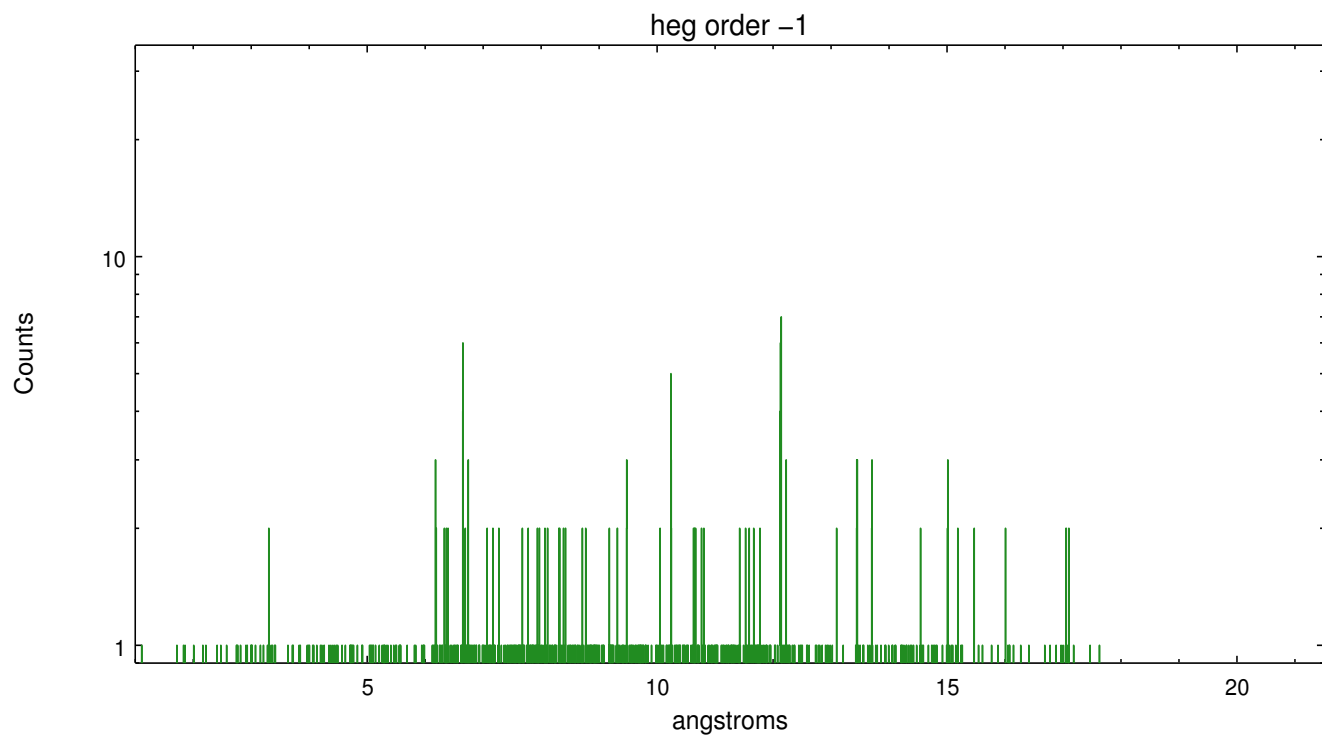
Spot Image HEG



Full Detector HEG

| | order -3 | order -2 | order -1 | order 0 | order 1 | order 2 | order 3 |
|--------|-------------|-------------|-------------|------------|------------|------------|------------|
| Events | 209 | 297 | 1084 | 5544 | 835 | 184 | 179 |

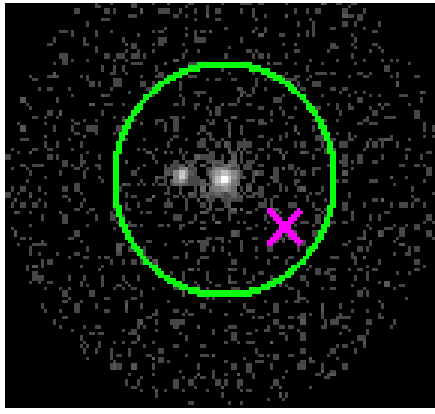




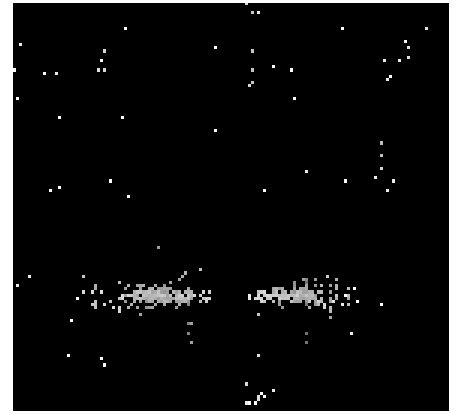
3.2 MEG Arm



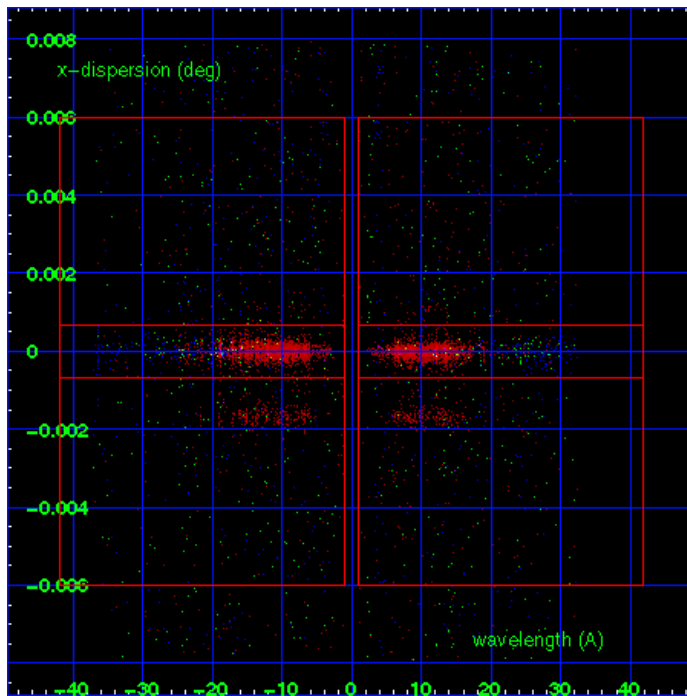
MEG Order Sort 123



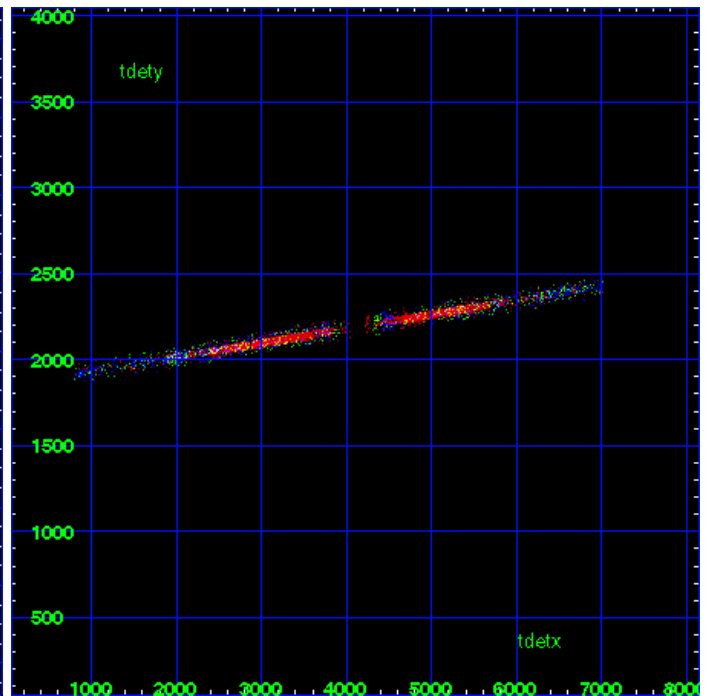
MEG Zero Order



MEG Order Sort ALL

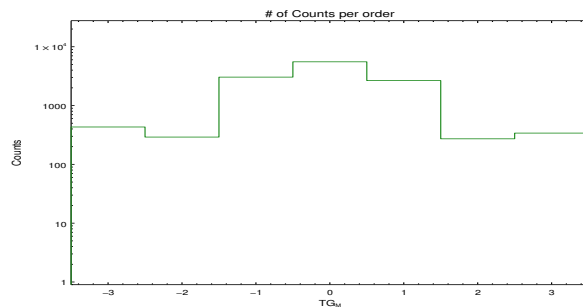


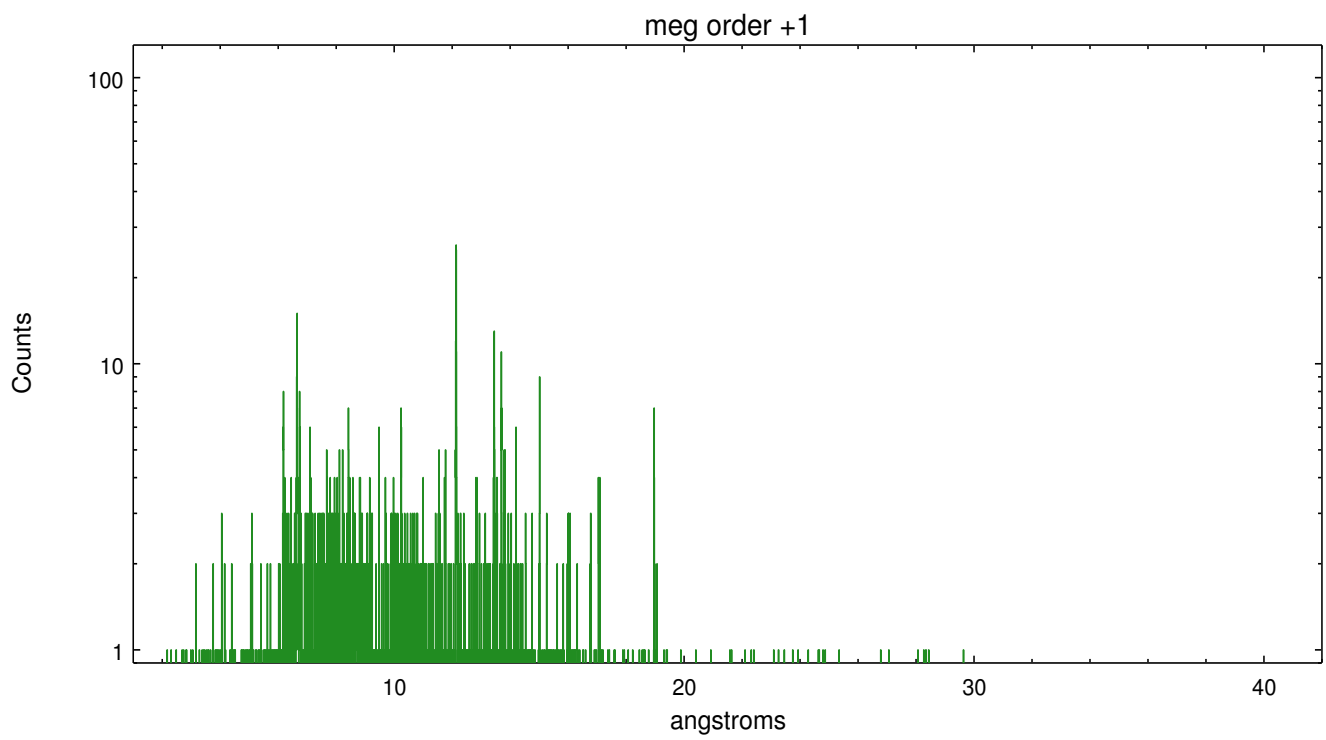
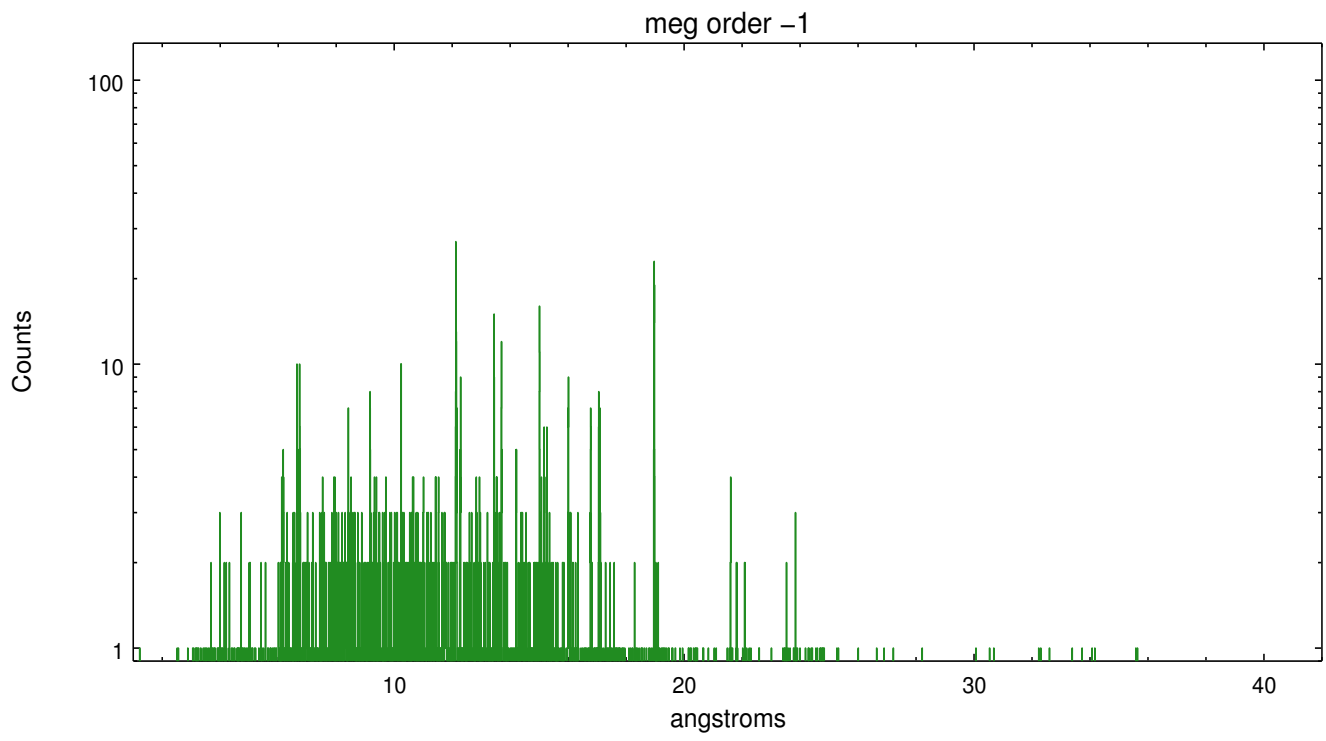
Spot Image MEG



Full Detector MEG

| | order -3 | order -2 | order -1 | order 0 | order 1 | order 2 | order 3 |
|--------|-------------|-------------|-------------|------------|------------|------------|------------|
| Events | 432 | 291 | 3042 | 5544 | 2656 | 272 | 340 |





A Summary

A.1 Status

| | |
|----------------------------|-------------|
| V&V Scientist | Joy Nichols |
| V&V Date (YYYY-MM-DD) | 2012.04.27 |
| V&V Edition | 1 |
| V&V Disposition and Status | OK |
| V&V Charge Time | 27.9487998 |

A.2 Comments

This is a binary source with the components separated by 5 arcsec.

The

separation is in the cross-dispersion direction and the individual dispersed spectra are separated sufficiently to be extracted separately.

The investigator

will need to use narrow extraction widths and avoid background contamination

from the nearby spectrum. The zeroth orders will need to be determined separately for each spectrum. CIAO tools are available for these tasks.

===

The spectral extraction in this processing is based on the position of the brighter X-ray source (the western source). Manual intervention was used to input the correct sky coordinates (x=4080.375, y=4107.875) into the *srcla.fits file table. Note that these corrected coordinates of the zeroth order cannot be reproduced by running tgdetect on the data.