

V&V Reference Report

L2 ASCDS Version : 10.5.2

Observation 19785 - L2 Version 2
Chandra X-Ray Center

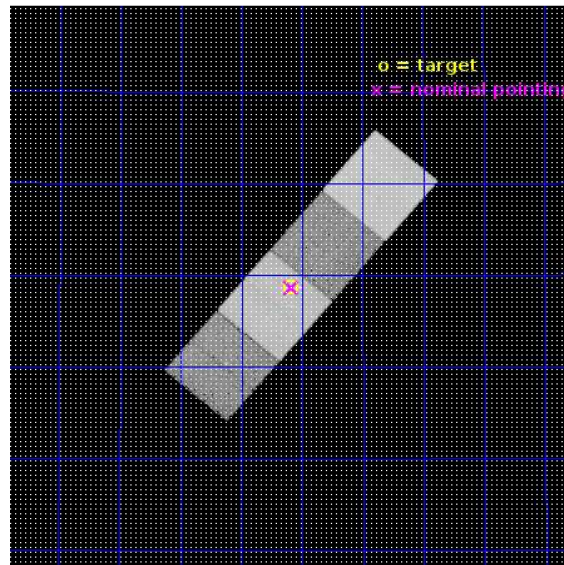
L2 Processing Date : Oct 28 2016

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

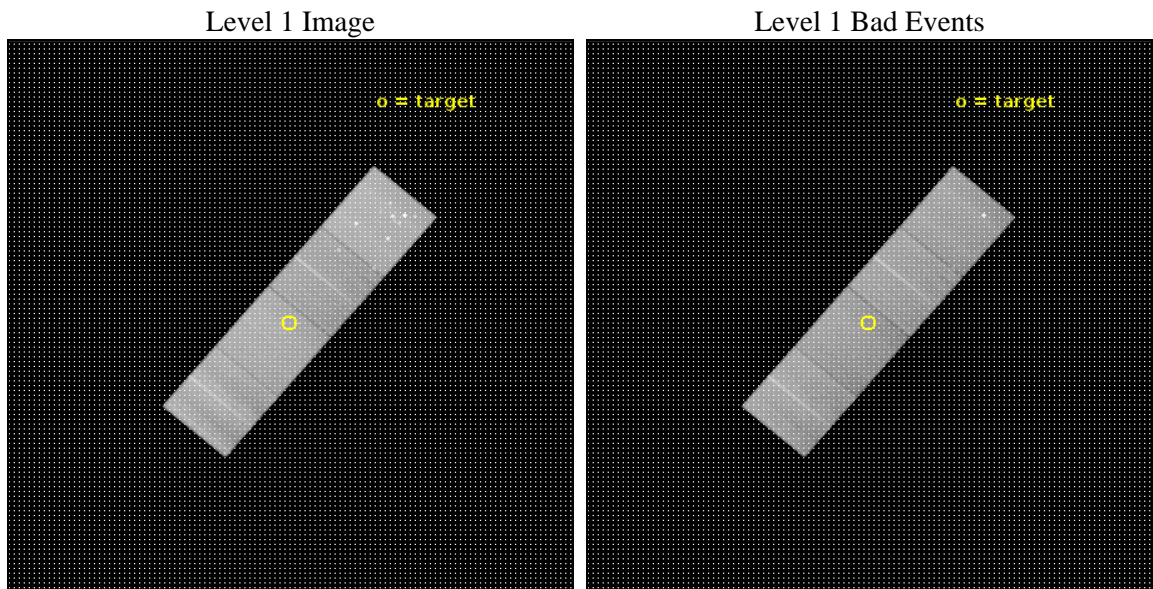
| | | |
|----------|--|---|
| seq_num | 201048 | Sequence number |
| obs_id | 19785 | Observation id |
| title | Using high resolution x-ray spectra to probe accretion, abundances, and coronal activity in the young cluster IC 348 | Proposal title |
| observer | Dr. David Huenemoerder | Principal investigator |
| object | IC 348 | Source name |
| dtcycle | 0 | |
| cycle | P | events from which exps? Prim/Second/Both |
| ra_targ | 56.149167 | Observer's specified target RA [deg] |
| dec_targ | 32.145306 | Observer's specified target Dec [deg] |
| ra_nom | 56.146933540206 | Nominal RA [deg] |
| dec_nom | 32.144041122198 | Nominal Dec [deg] |
| roll_nom | 130.1578132931 | Nominal Roll [deg] |
| revision | 2 | Processing version of data |
| ontime | 44056.969149232 | Sum of GTIs [s] |
| livetime | 43481.332413028 | Livetime [s] |
| ontime5 | 44056.928109288 | Sum of GTIs [s] |
| ontime6 | 44056.887069225 | Sum of GTIs [s] |
| ontime7 | 44056.969149232 | Sum of GTIs [s] |
| ontime8 | 44053.704949021 | Sum of GTIs [s] |
| l2events | 438686 | Number of level 2 events |



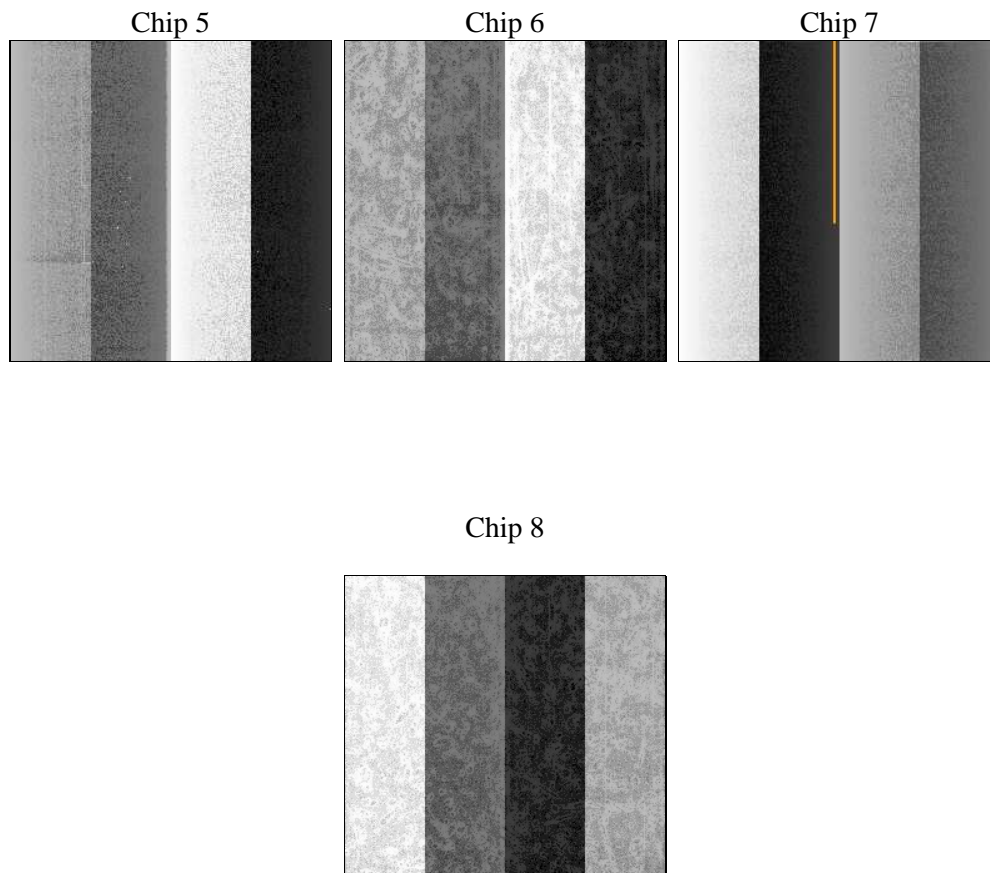
2 OBI

2.1 OBI

2.1.1 Images



2.1.2 Bias



2.1.3 Parameters

| | | | | | |
|----------|---------------------|--------------------------------|----------------|--------------------|---|
| obi_num | 0 | Obi number | sched_exp_time | 44000.000000 | [s] Scheduled observation exposure time |
| ascdsver | 10.5.2 | Processing system revision | ontime | 44056.969149232 | Sum of GTIs [s] |
| caldbver | 4.7.2 | | ontime5 | 44056.928109288 | Sum of GTIs [s] |
| date | 2016-10-28T04:43:43 | Date and time of file creation | ontime6 | 44056.887069225 | Sum of GTIs [s] |
| revision | 1 | Processing version of data | ontime7 | 44056.969149232 | Sum of GTIs [s] |
| | | | ontime8 | 44053.704949021 | Sum of GTIs [s] |
| | | | l1events | 1565723 | Number of level 1 events |
| | | | tgmethod | USER | Method used to create src1a file |
| | | | zo_pos | (4161.77, 4093.99) | src1a sky pixel position |

2.1.4 Events

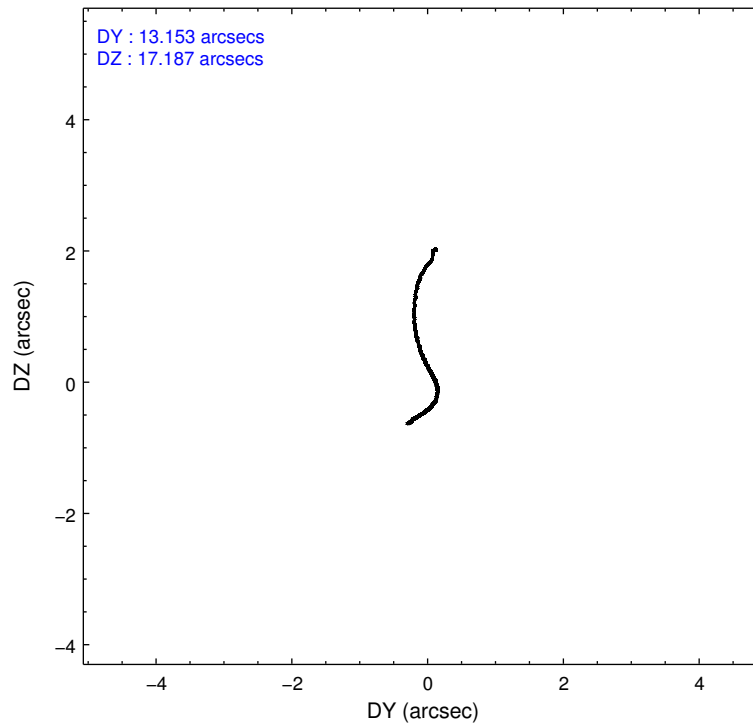
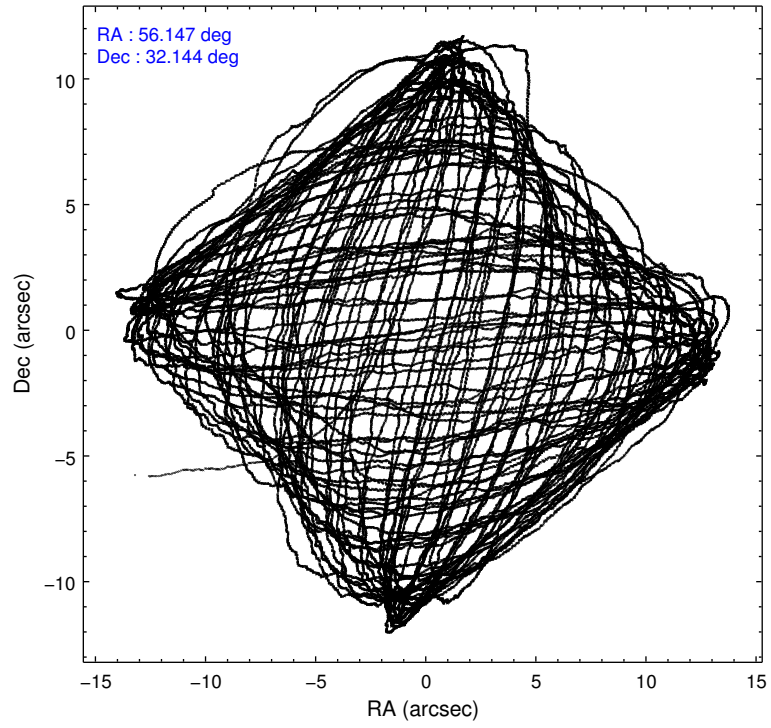
| | ccd 5 | ccd 6 | ccd 7 | ccd 8 |
|-----------------|--------|--------|--------|--------|
| level 1 events | 498334 | 303604 | 382662 | 381123 |
| rejected events | 250791 | 266354 | 214238 | 279776 |
| rejected % | 50% | 87% | 55% | 73% |

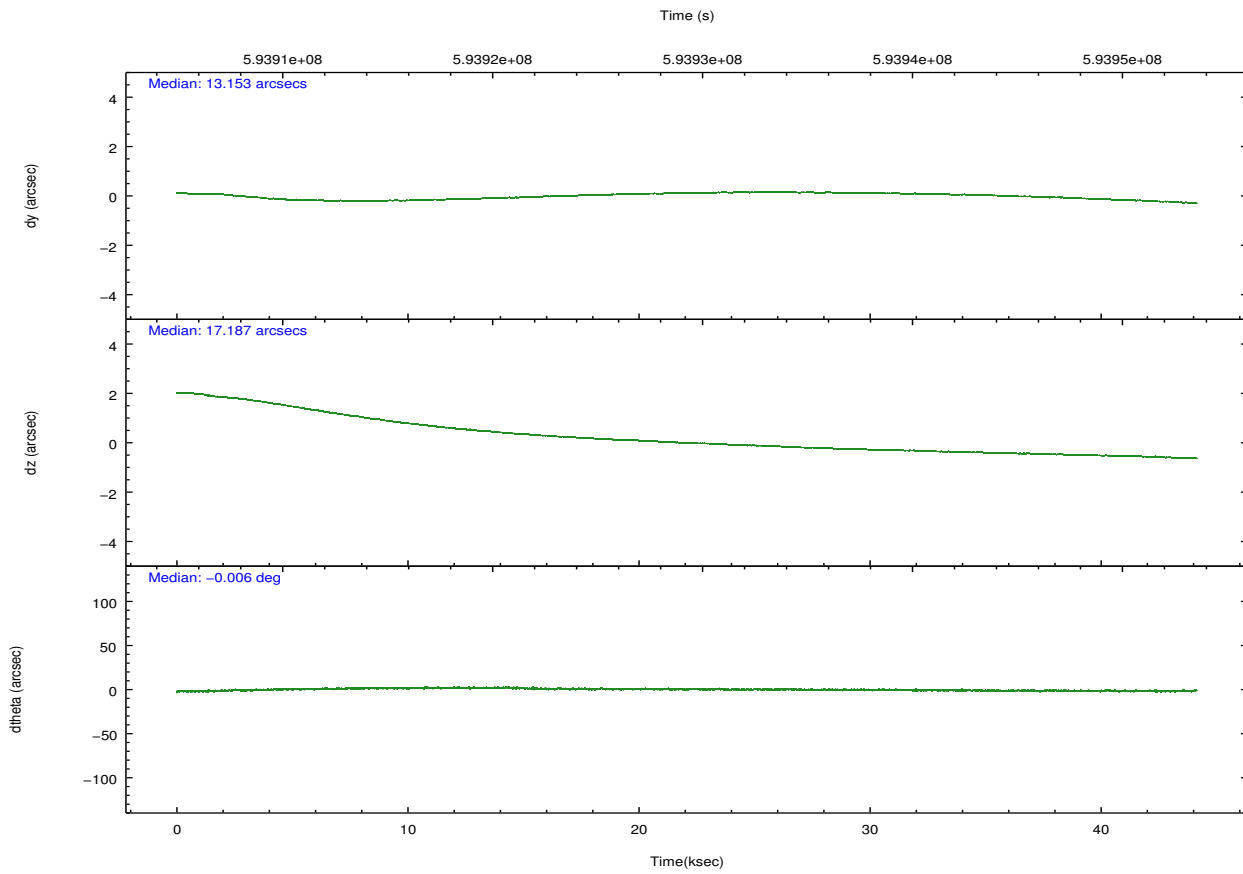
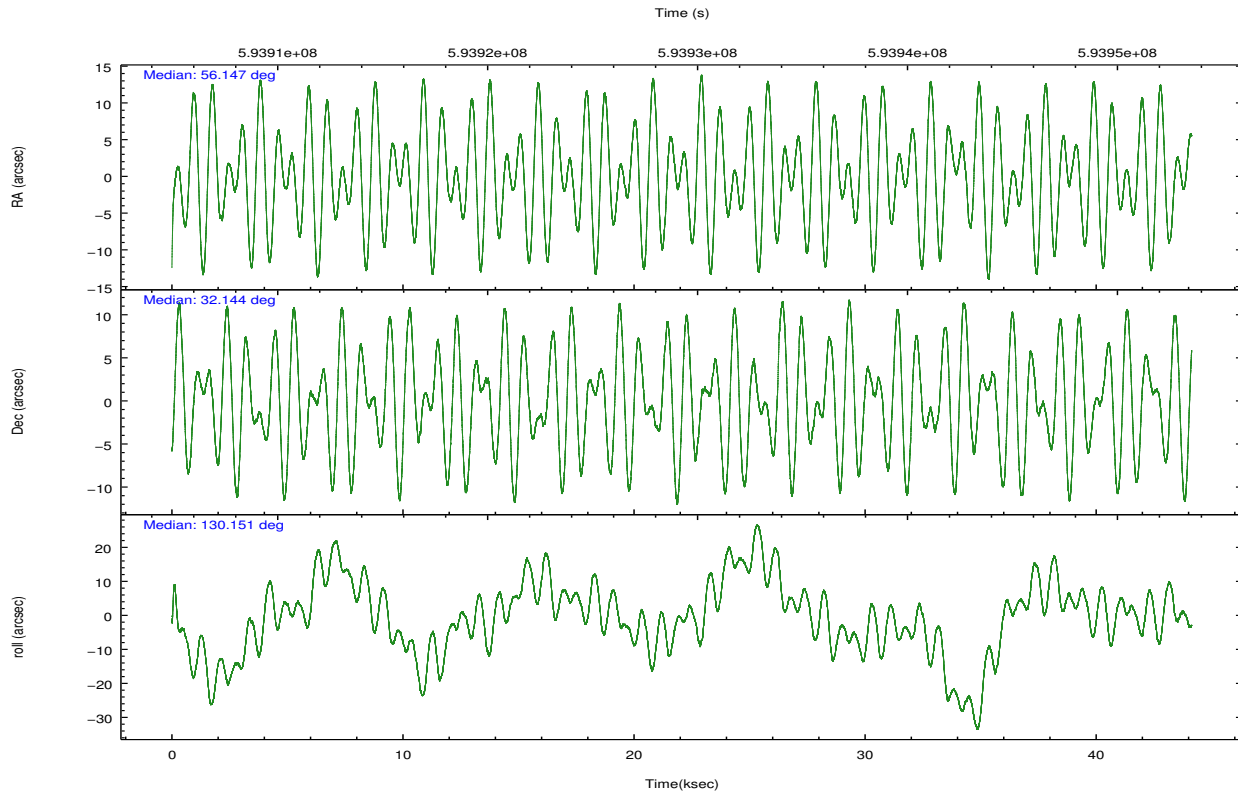
| | ccd 5 | ccd 6 | ccd 7 | ccd 8 |
|----------------|--------|--------|--------|--------|
| grade 0 events | 37057 | 14316 | 14561 | 28819 |
| | 7% | 4% | 3% | 7% |
| grade 1 events | 1176 | 191 | 484 | 282 |
| | 0% | 0% | 0% | 0% |
| grade 2 events | 72755 | 8139 | 35742 | 24485 |
| | 14% | 2% | 9% | 6% |
| grade 3 events | 7259 | 3352 | 13530 | 10501 |
| | 1% | 1% | 3% | 2% |
| grade 4 events | 6710 | 3356 | 13420 | 10011 |
| | 1% | 1% | 3% | 2% |
| grade 5 events | 31998 | 13874 | 37674 | 20955 |
| | 6% | 4% | 9% | 5% |
| grade 6 events | 123812 | 8092 | 91192 | 27542 |
| | 24% | 2% | 23% | 7% |
| grade 7 events | 217567 | 252284 | 176059 | 258528 |
| | 43% | 83% | 46% | 67% |

2.2 Compared Parameters

| Parameter | Planned | Actual | Parameter | Planned | Actual |
|-----------------------------------|---------------------|----------------------|---------------------------------------|-----------|---------|
| Instrument | ACIS | ACIS | Obspar format version number | 7 | 7 |
| Detector | ACIS-5678 | ACIS-5678 | 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 | 56.177573 | 56.14693354020613 | CCD I2 on | N | N |
| [deg] Pointing Dec | 32.135066 | 32.14404112219769 | CCD I3 on | N | N |
| [deg] Pointing Roll | 129.984887 | 130.1578132931038 | 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) | 593907318.184000 | 593905987.38359 | CCD S5 on | O2 | N |
| Observation start date | 2016-10-26T22:14:10 | 2016-10-26T21:53:07 | Number of optional ACIS chips dropped | 2 | 2 |
| [s] Observation end time (MET) | 593951318.184000 | 593952408.09876 | On-chip summing requested | N | N |
| Observation end date | 2016-10-27T10:27:30 | 2016-10-27T10:46:48 | Subarray requested | NONE | NONE |
| Read mode | TIMED | TIMED | Alternating exposures requested | N | N |
| | | | [s] Primary exposure time | 0.000000 | 3.1 |

2.3 Aspect





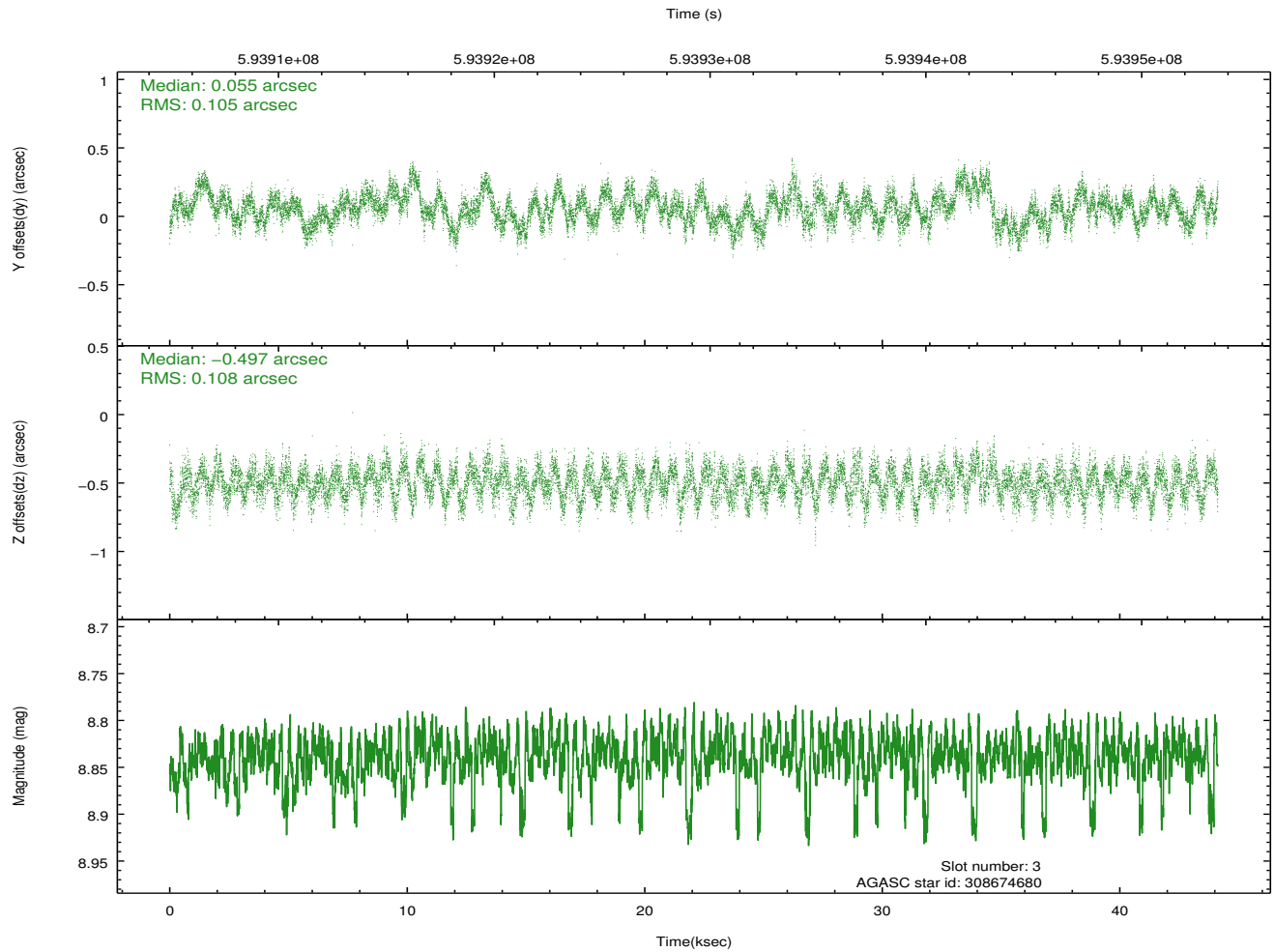
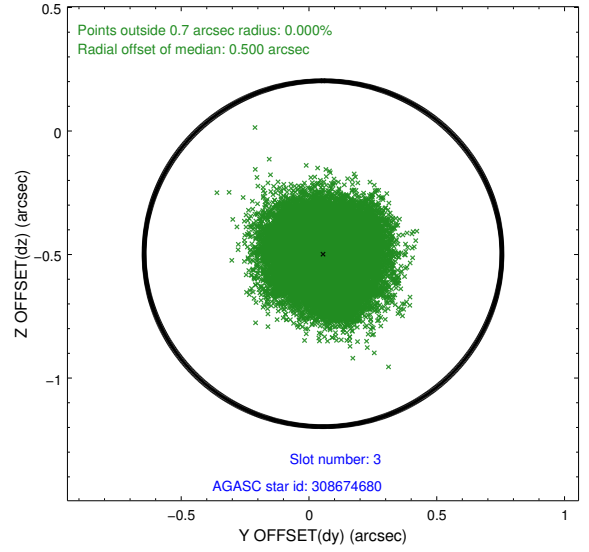
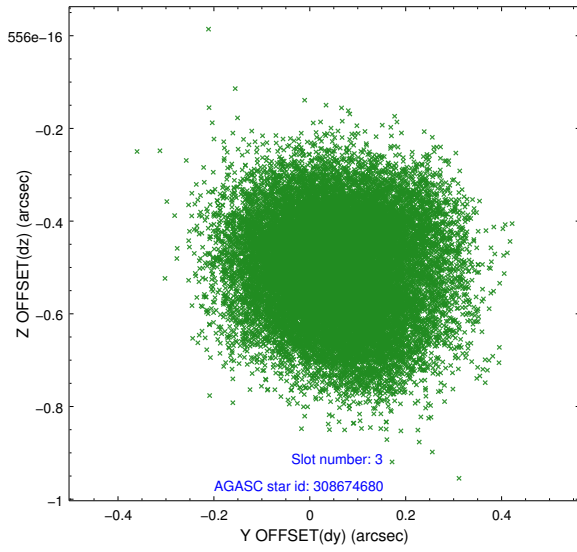
Slot Statistics

| slot | status | used | id | mag | n_pts | med_dy | med_dz | dr1 | dr2 | ra | dec | mean_y | mean_z |
|------|--------|------|-----------|------|-------|--------|--------|-------|-------|-----------|-----------|----------|----------|
| 0 | FID | | ACIS-S-1 | 7.16 | 10764 | 0.081 | -0.065 | 0.025 | 0.039 | 0.000000 | 0.000000 | 930.09 | -1734.50 |
| 1 | FID | | ACIS-S-4 | 7.18 | 10765 | 0.304 | 0.009 | 0.021 | 0.029 | 0.000000 | 0.000000 | 2147.68 | 169.75 |
| 2 | FID | | ACIS-S-5 | 7.18 | 10765 | -0.410 | 0.067 | 0.010 | 0.020 | 0.000000 | 0.000000 | -1819.31 | 163.31 |
| 3 | GUIDE | used | 308674680 | 8.84 | 21513 | 0.055 | -0.497 | 0.164 | 0.256 | 55.747345 | 31.652644 | -481.26 | 2122.85 |
| 4 | GUIDE | used | 309336160 | 7.09 | 21467 | 0.073 | 0.102 | 0.154 | 0.256 | 56.670296 | 32.290187 | -532.54 | -1509.67 |
| 5 | GUIDE | used | 309205288 | 9.17 | 21506 | 0.054 | 0.022 | 0.150 | 0.238 | 55.920876 | 32.625581 | 1853.89 | -538.32 |
| 6 | GUIDE | used | 309201336 | 9.39 | 21500 | -0.022 | 0.015 | 0.168 | 0.262 | 55.980135 | 32.629910 | 1750.30 | -686.13 |
| 7 | GUIDE | used | 309330608 | 9.28 | 21497 | -0.163 | 0.358 | 0.144 | 0.242 | 56.696267 | 32.605248 | 289.89 | -2294.45 |

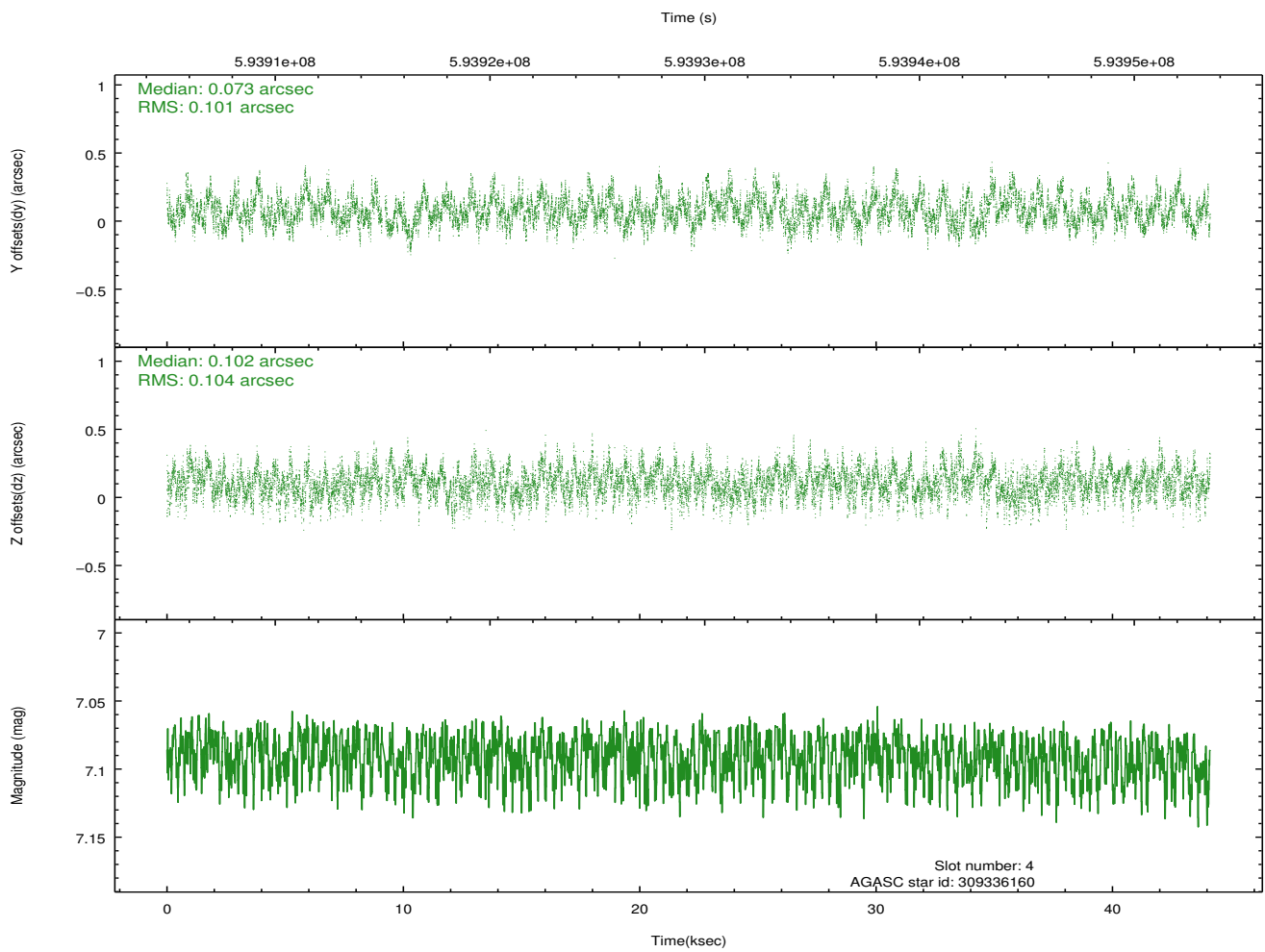
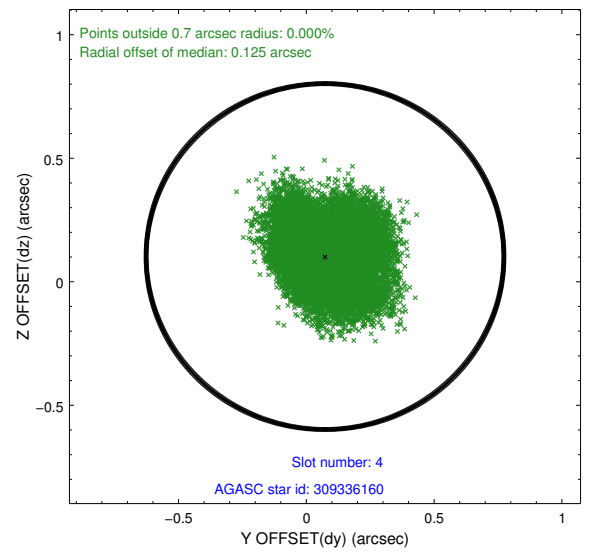
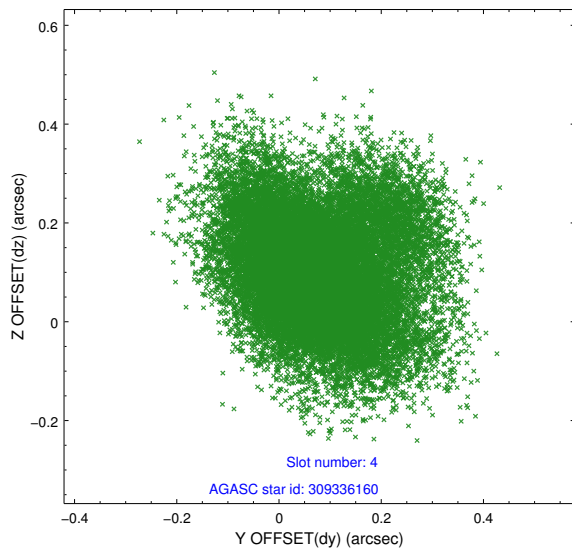
∞

2.4 Star Slots

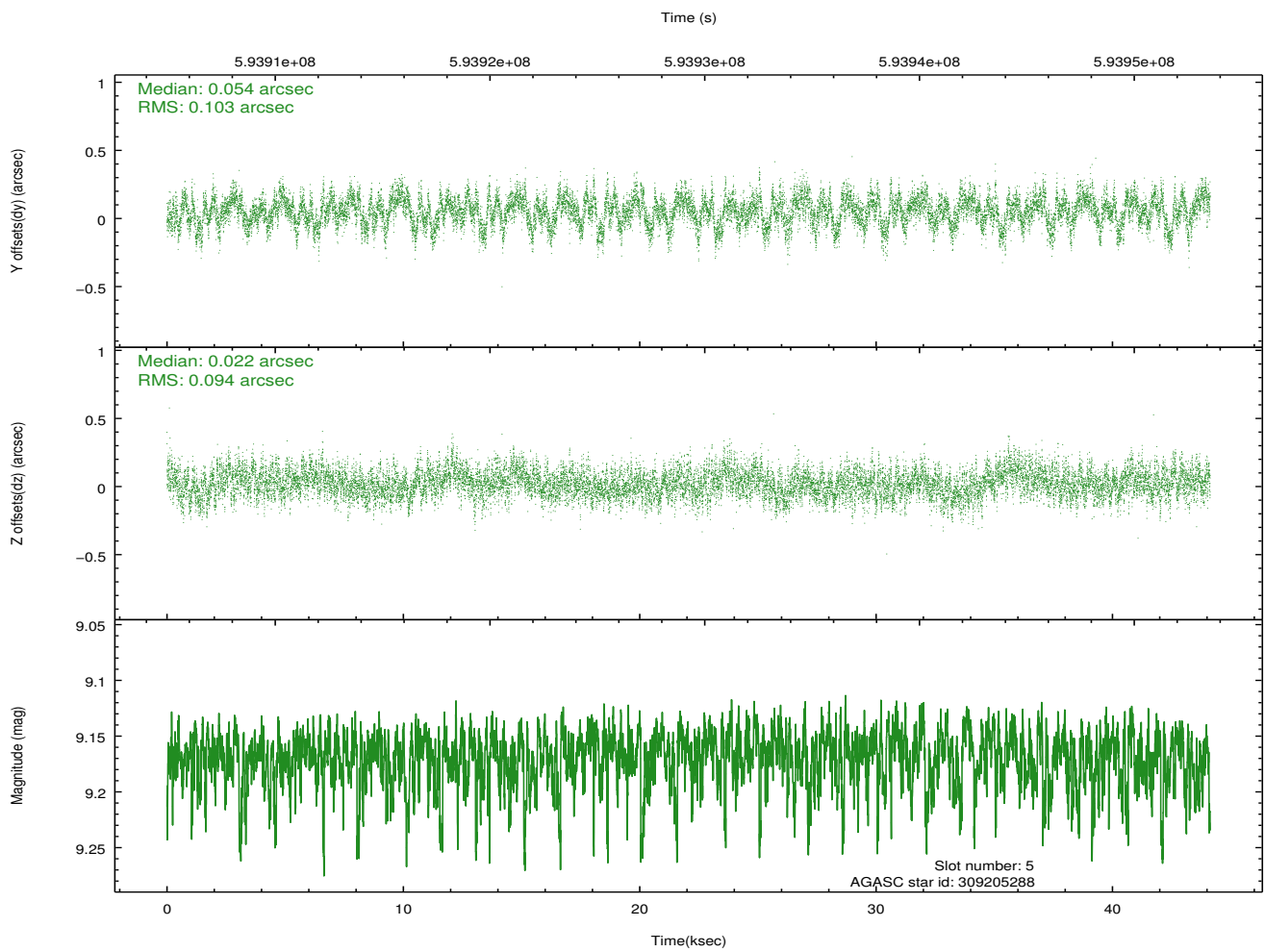
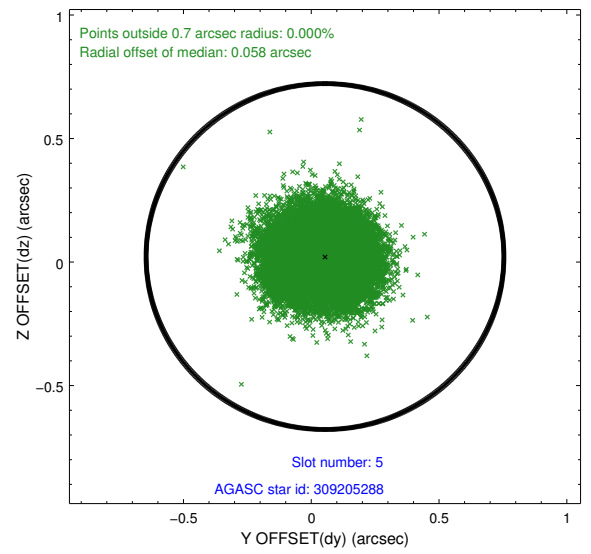
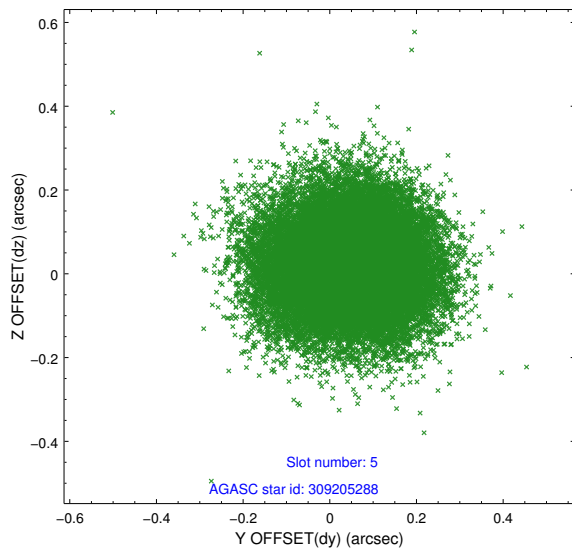
2.4.1 Slot 3



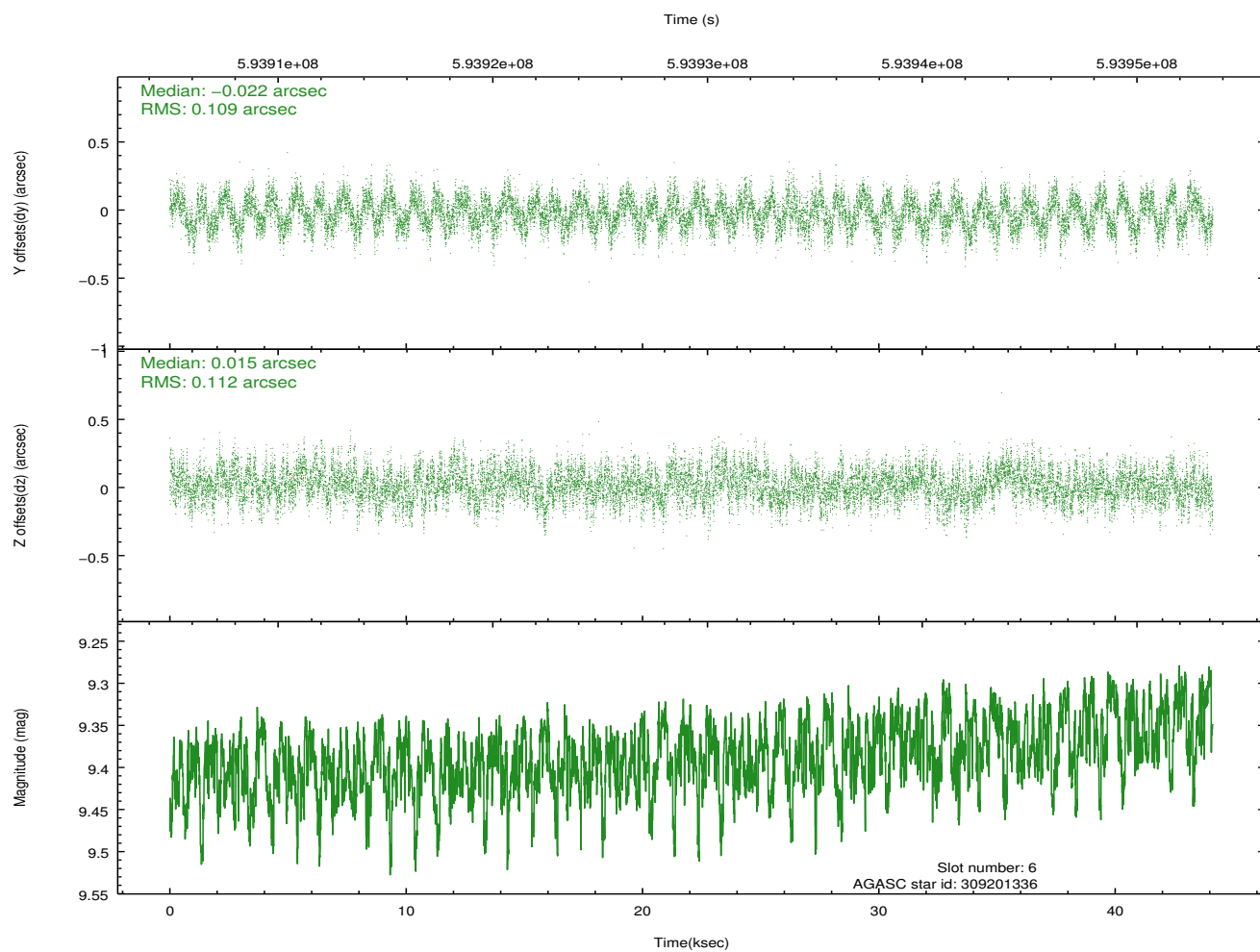
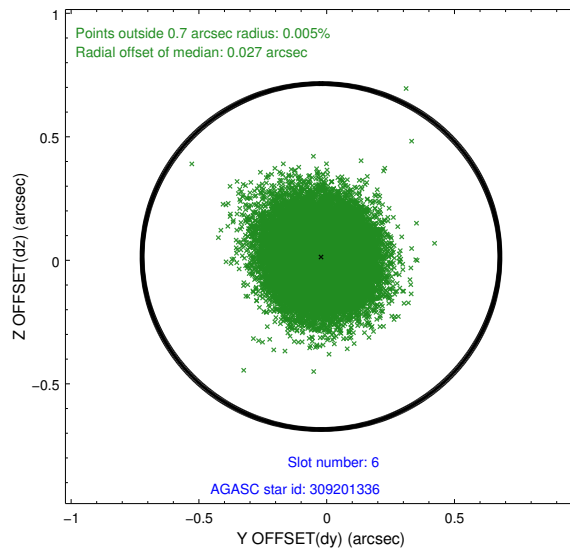
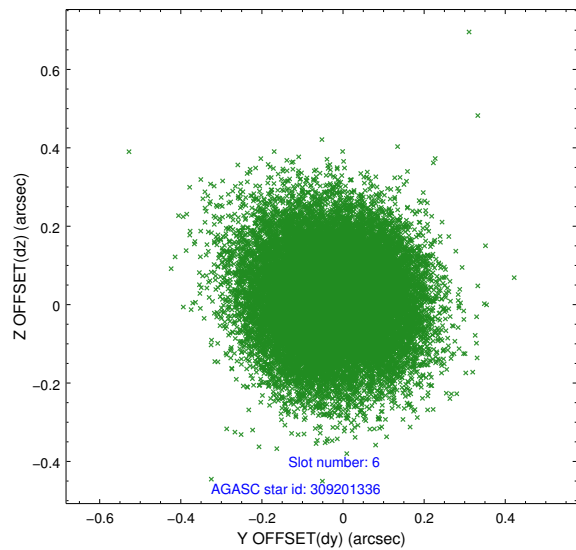
2.4.2 Slot 4



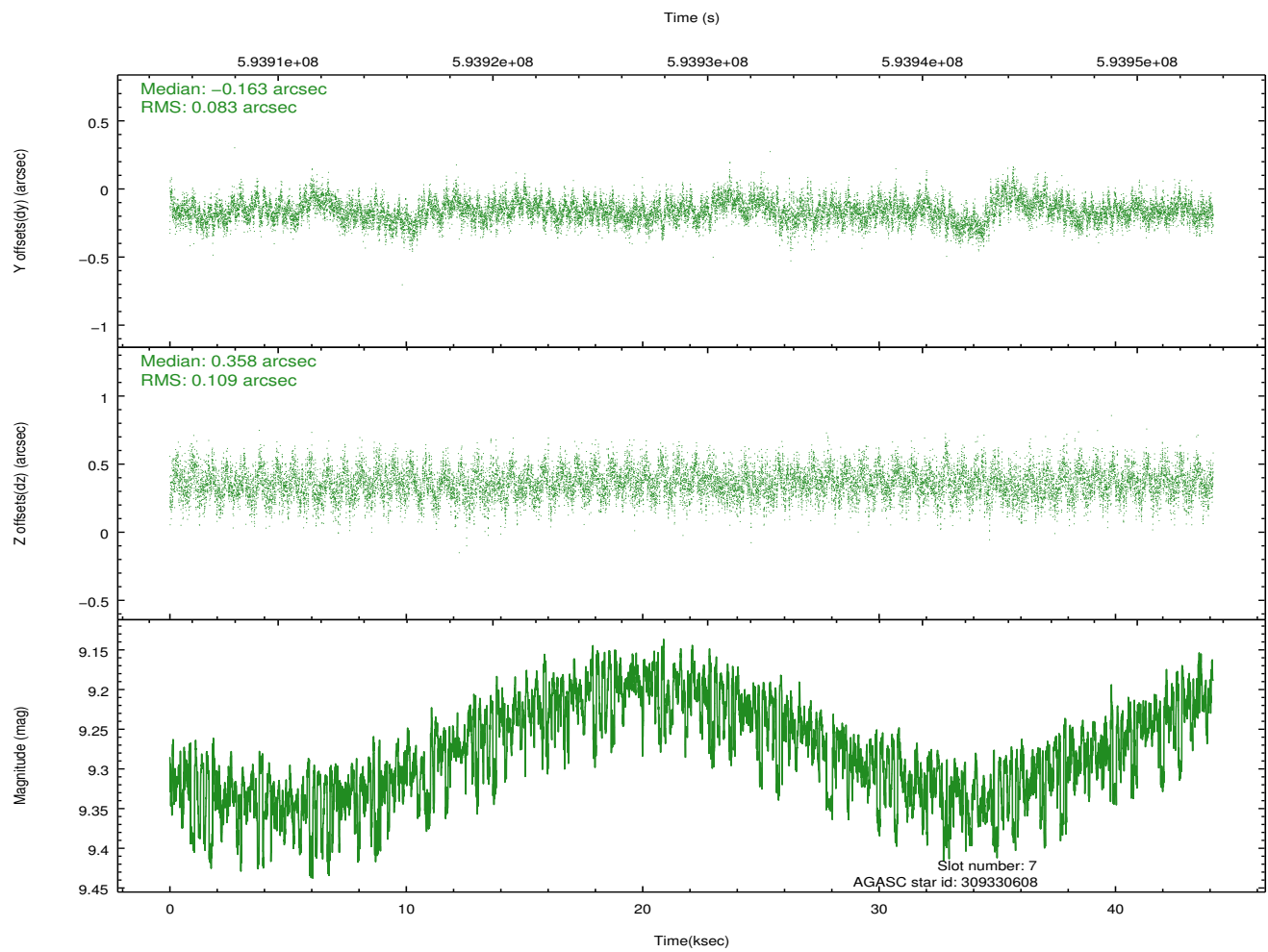
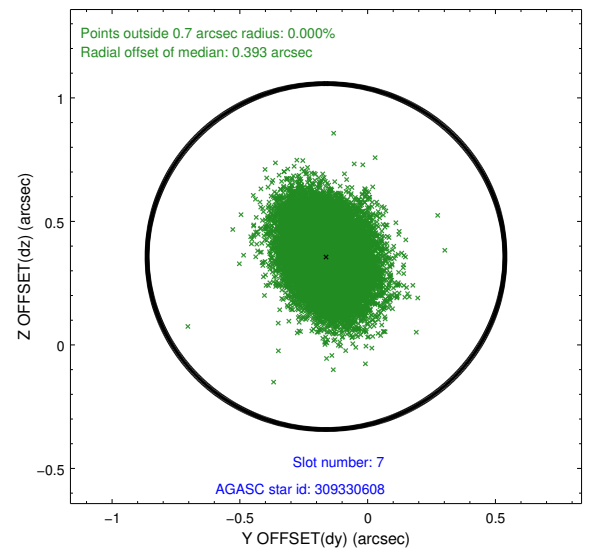
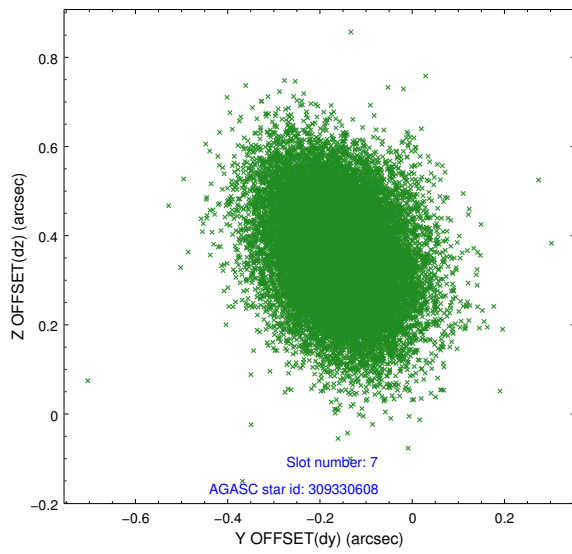
2.4.3 Slot 5



2.4.4 Slot 6

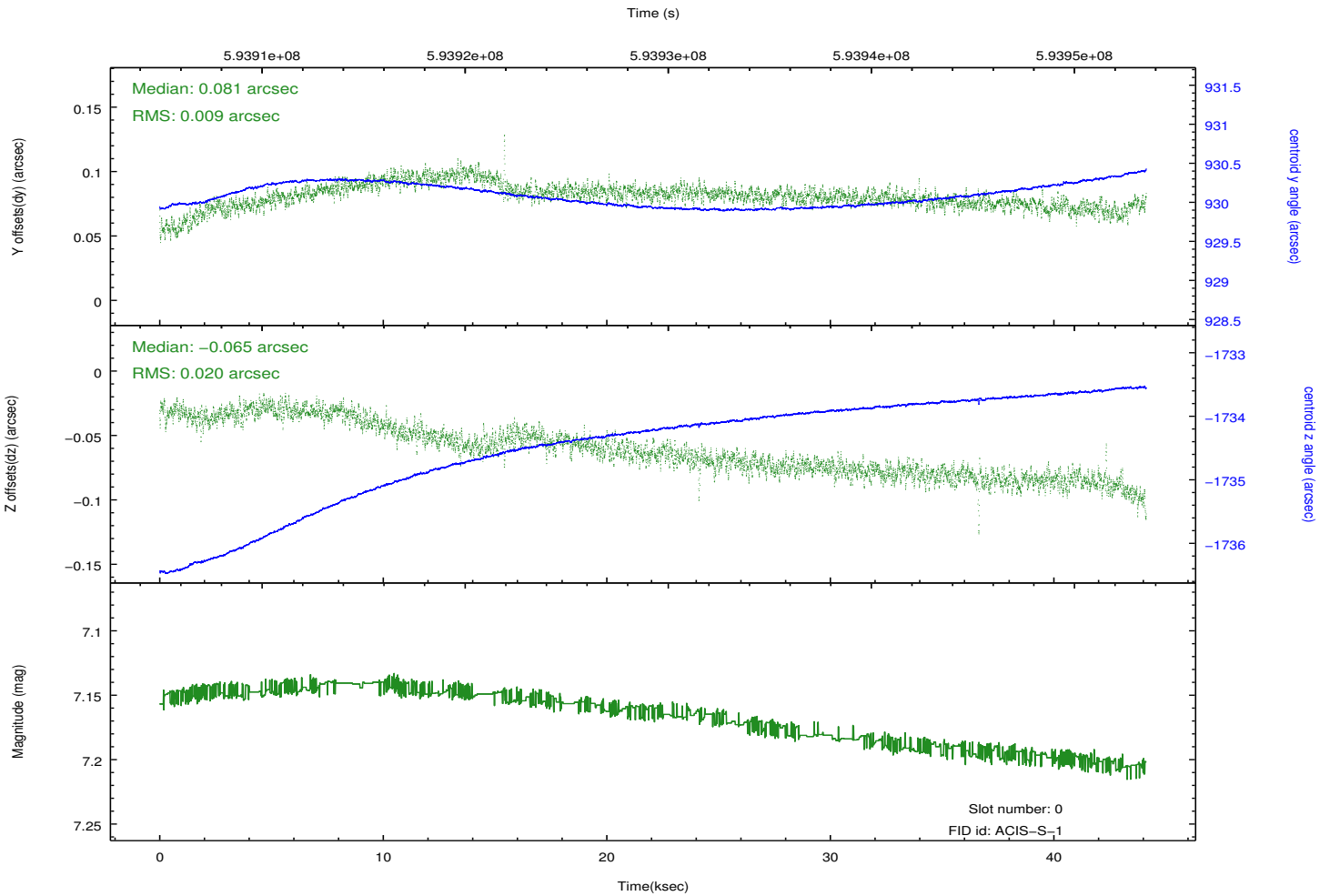
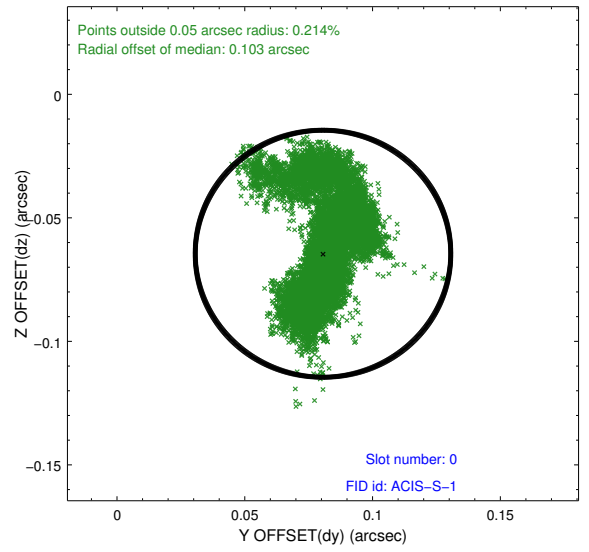
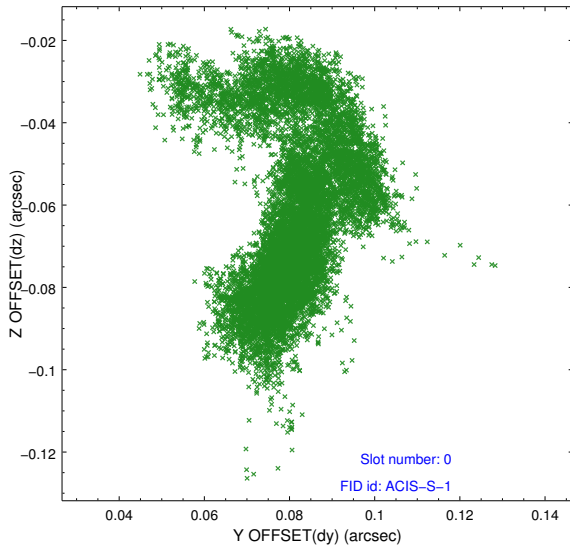


2.4.5 Slot 7

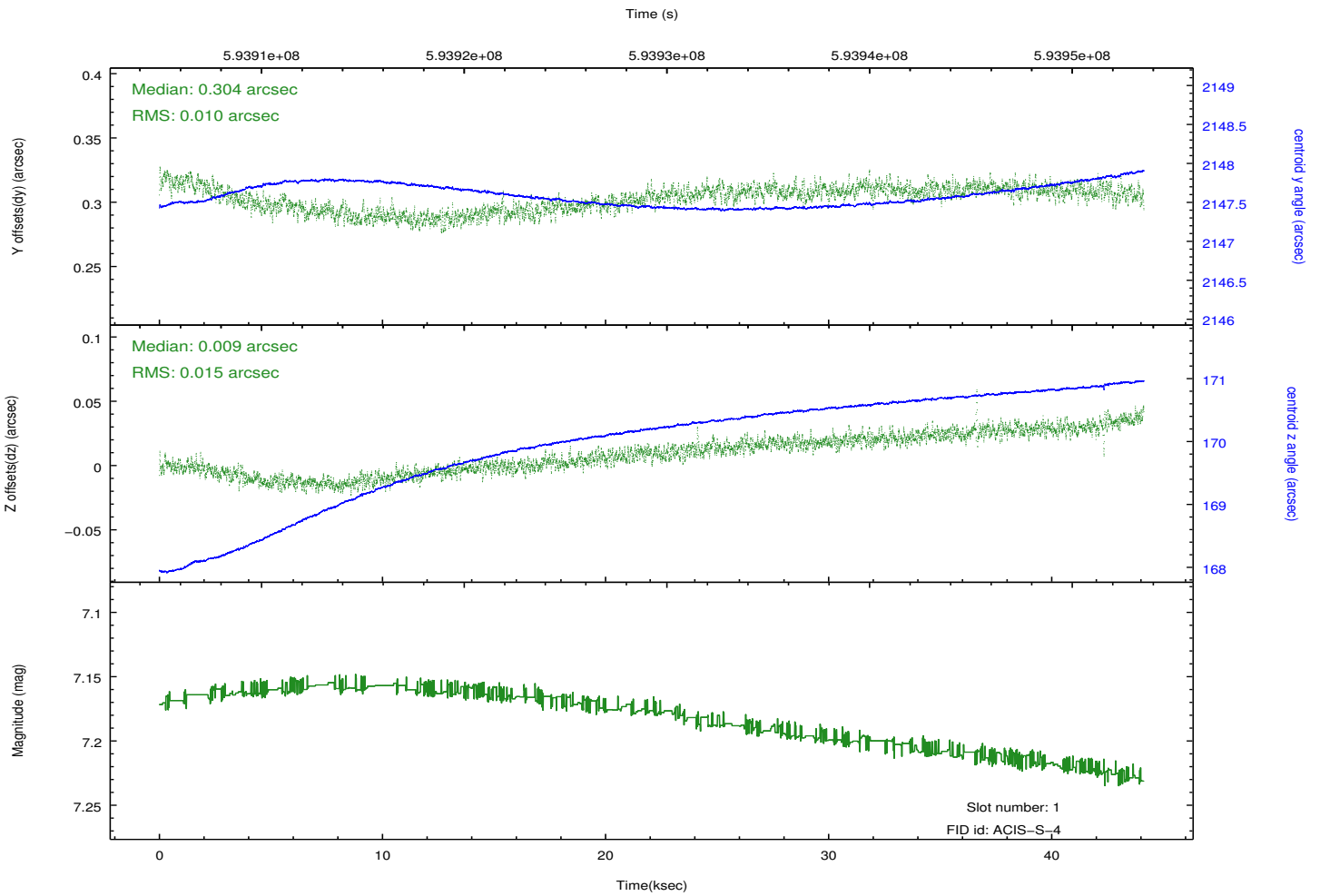
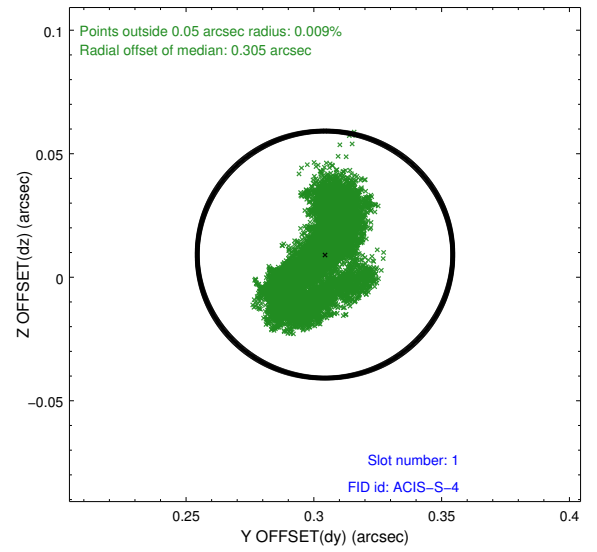
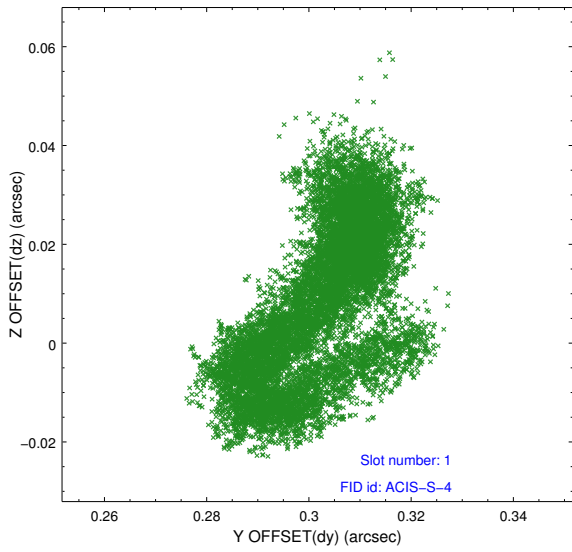


2.5 FID Slots

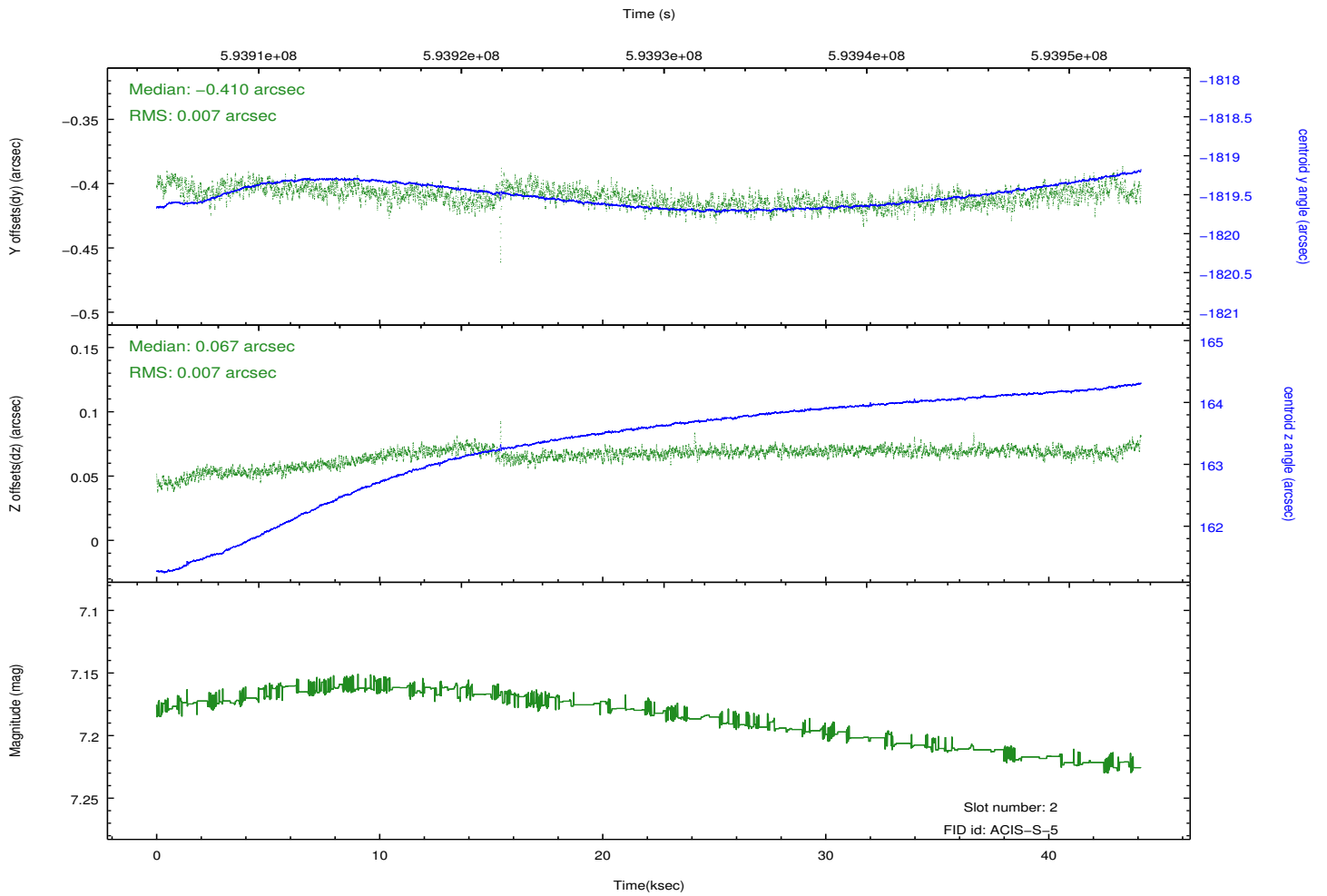
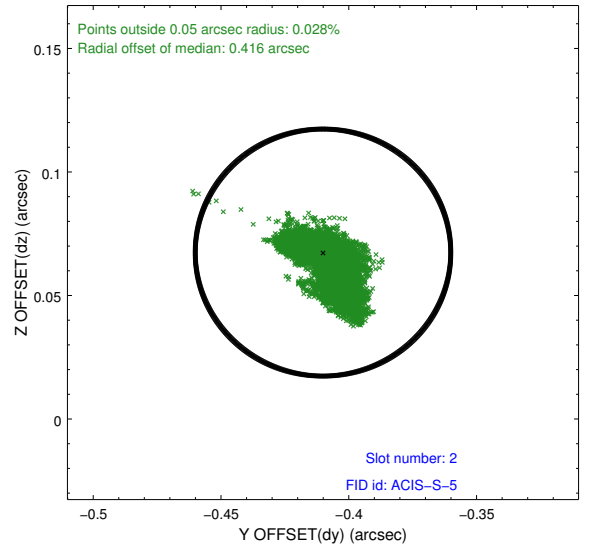
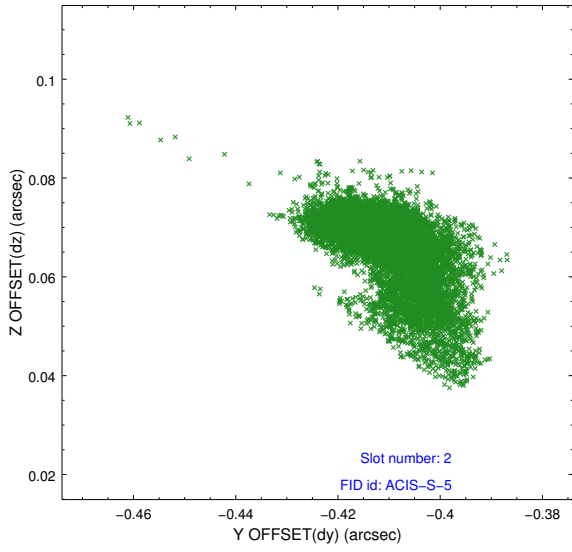
2.5.1 Slot 0



2.5.2 Slot 1

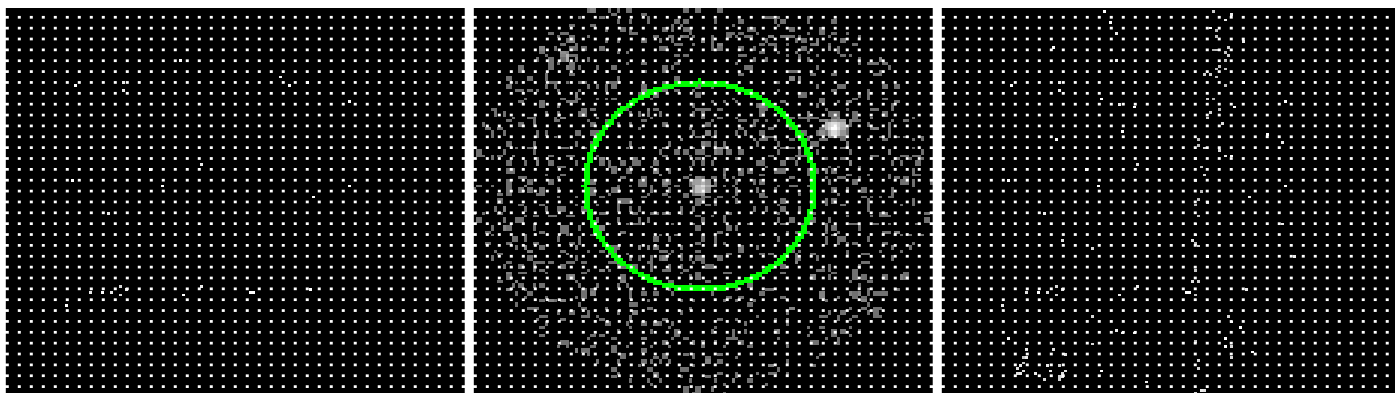


2.5.3 Slot 2



3 Gratings

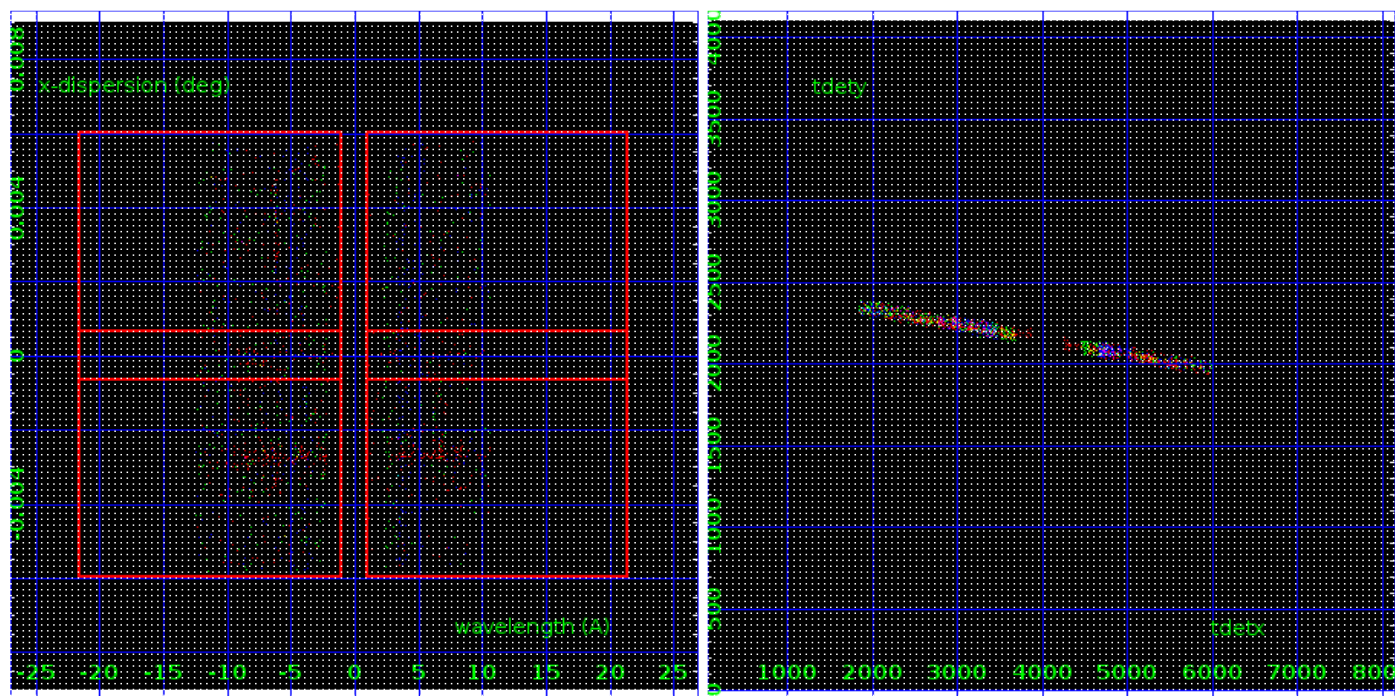
3.1 HEG Arm



HEG Order Sort 123

HEG Zero Order

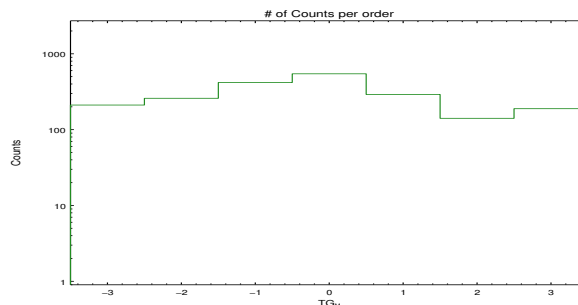
HEG Order Sort ALL

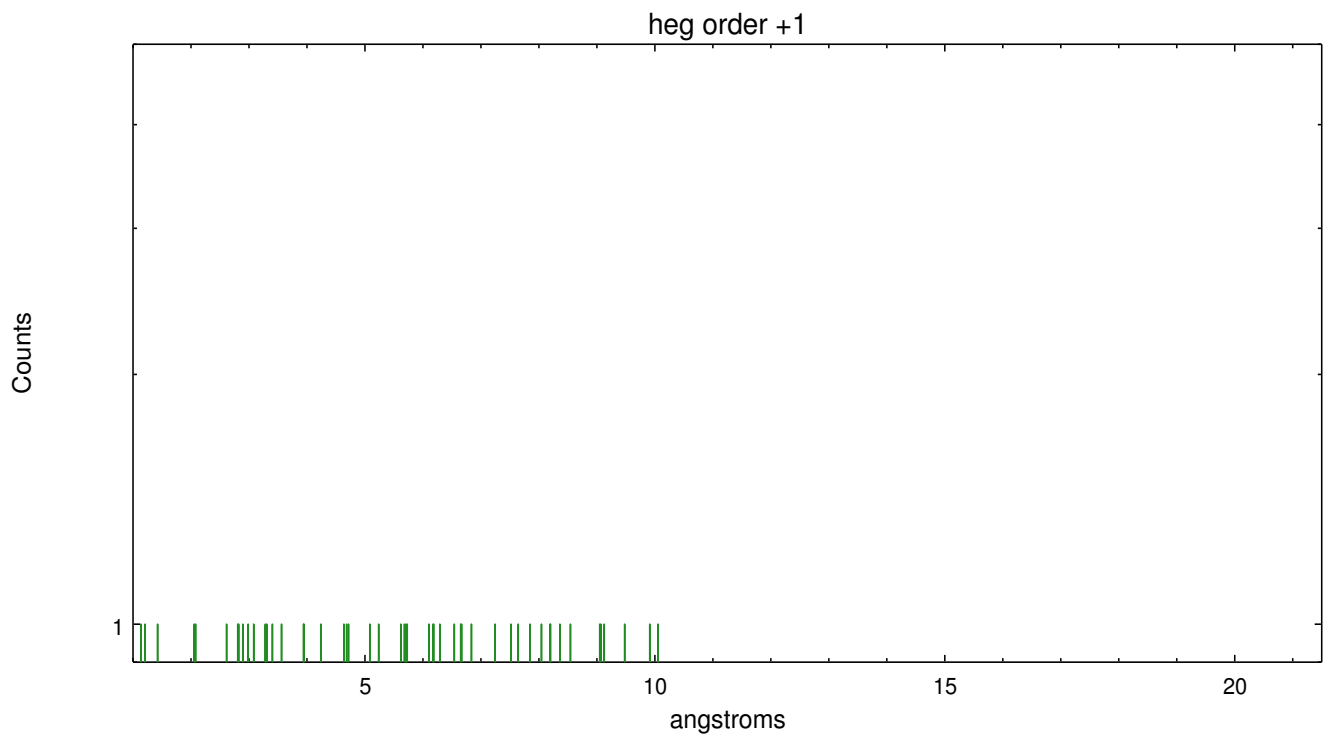
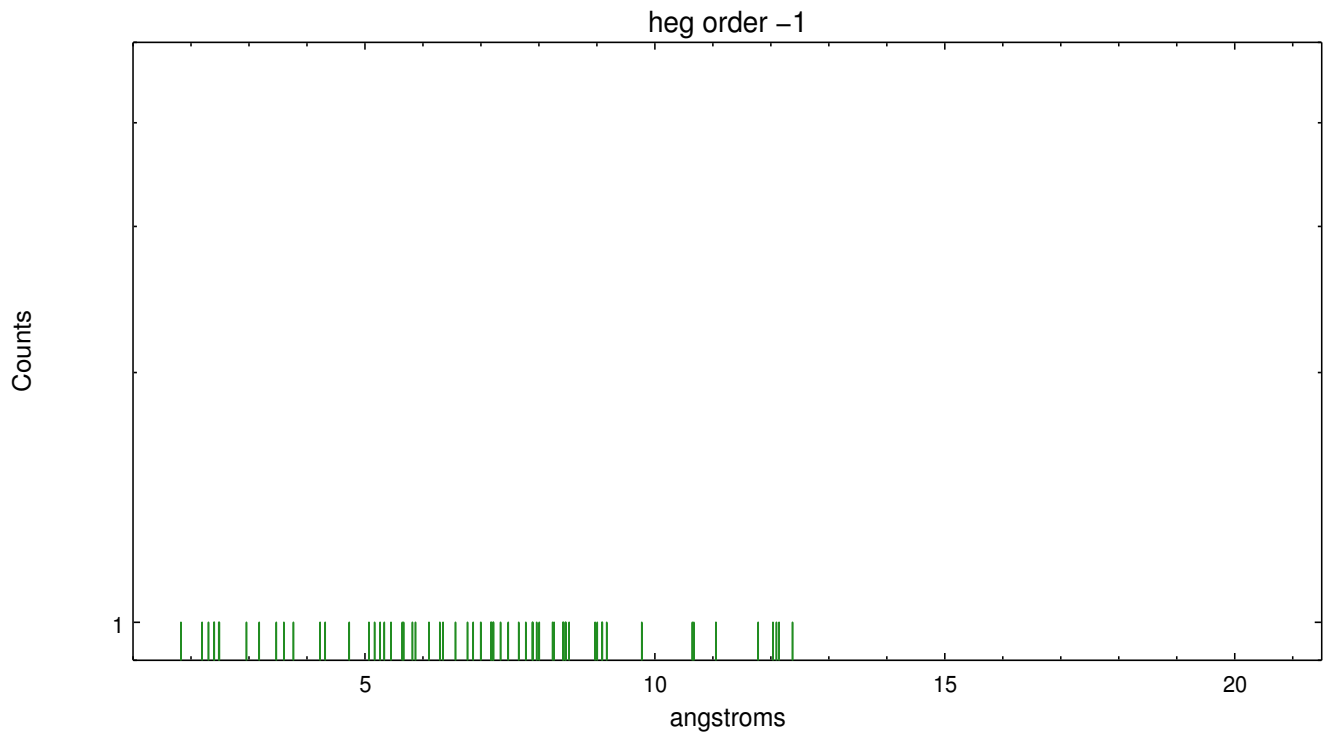


Spot Image HEG

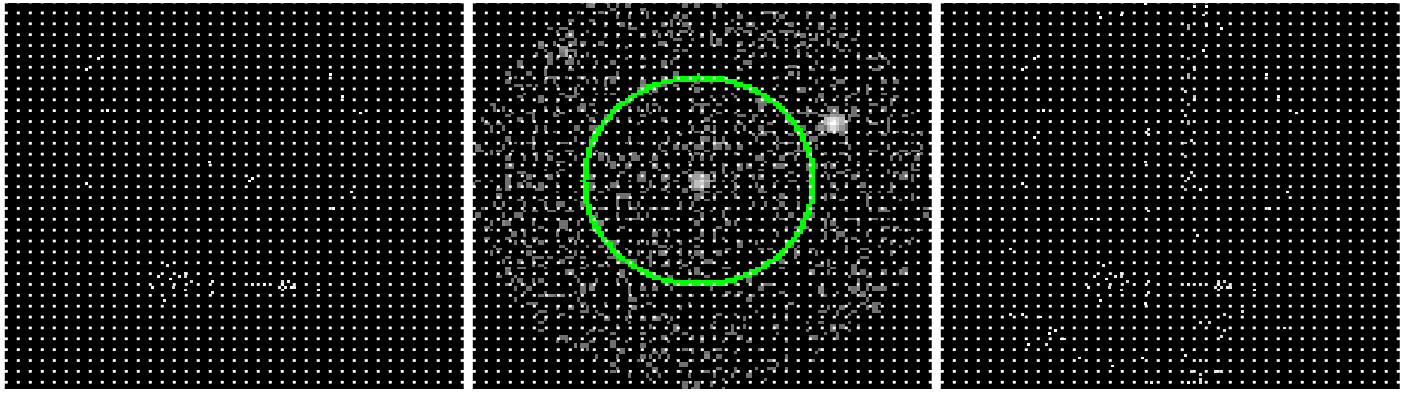
Full Detector HEG

| | order -3 | order -2 | order -1 | order 0 | order 1 | order 2 | order 3 |
|--------|-------------|-------------|-------------|------------|------------|------------|------------|
| Events | 211 | 259 | 418 | 545 | 291 | 141 | 189 |





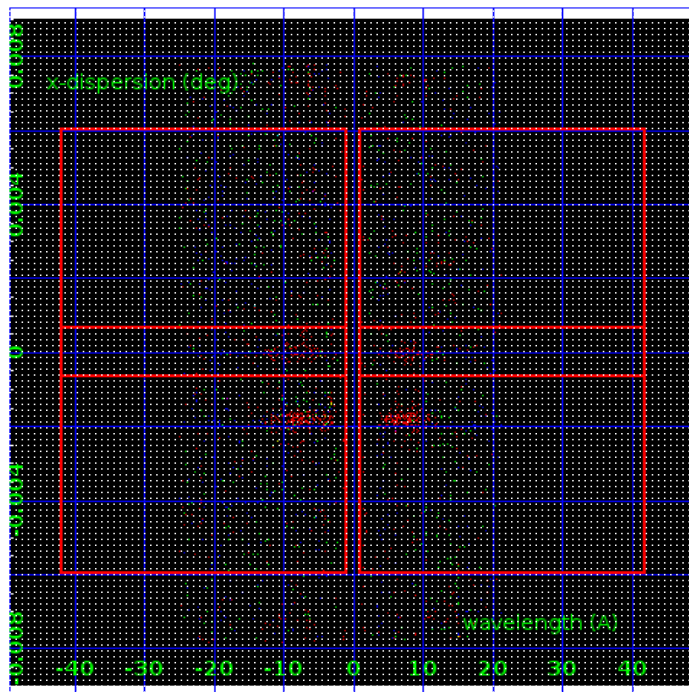
3.2 MEG Arm



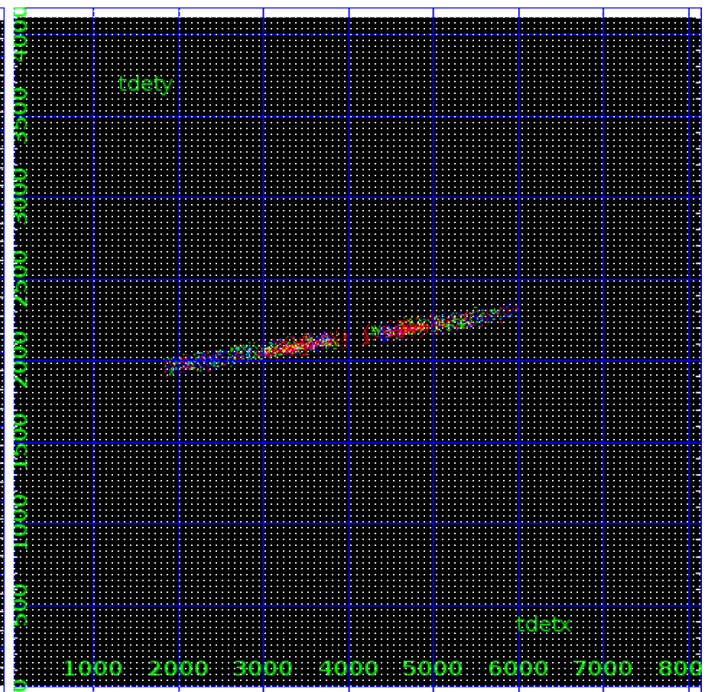
MEG Order Sort 123

MEG Zero Order

MEG Order Sort ALL

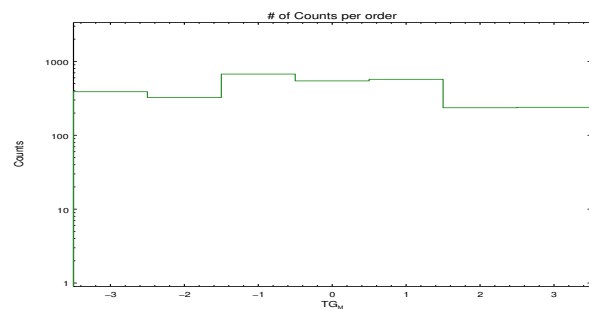


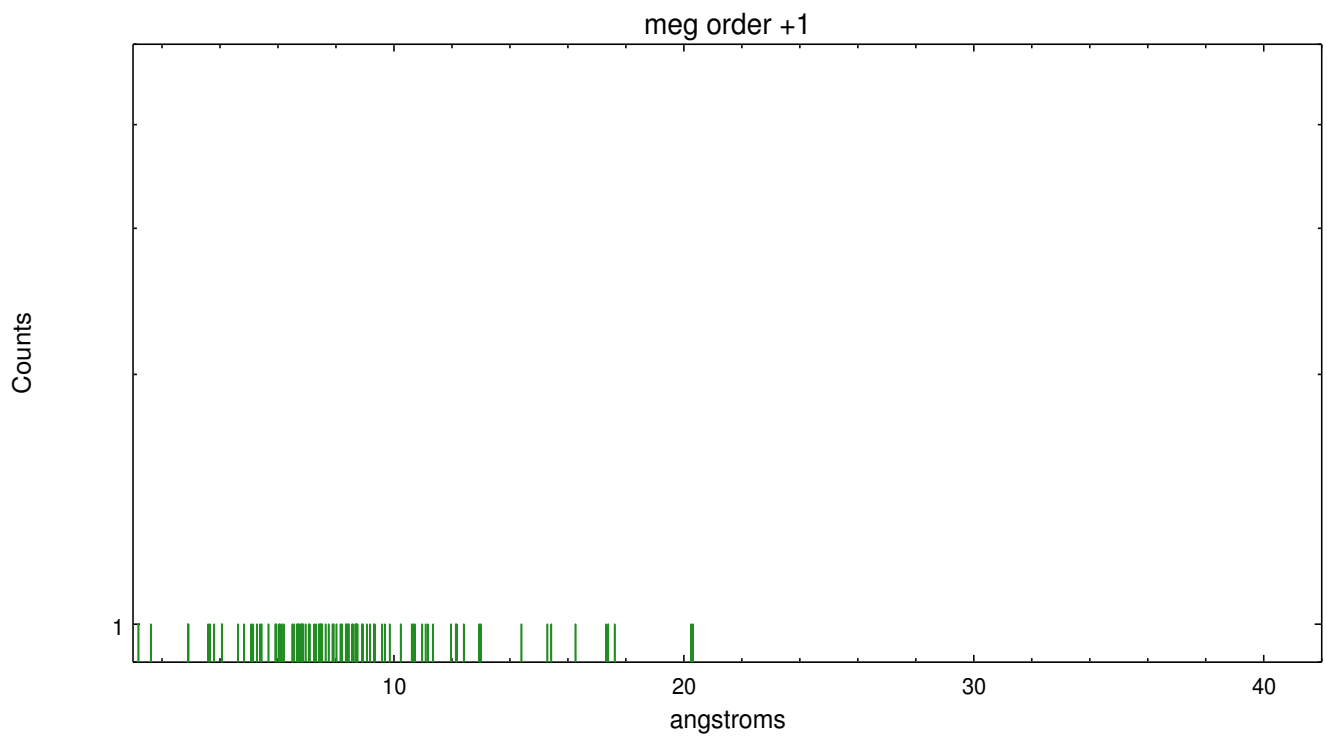
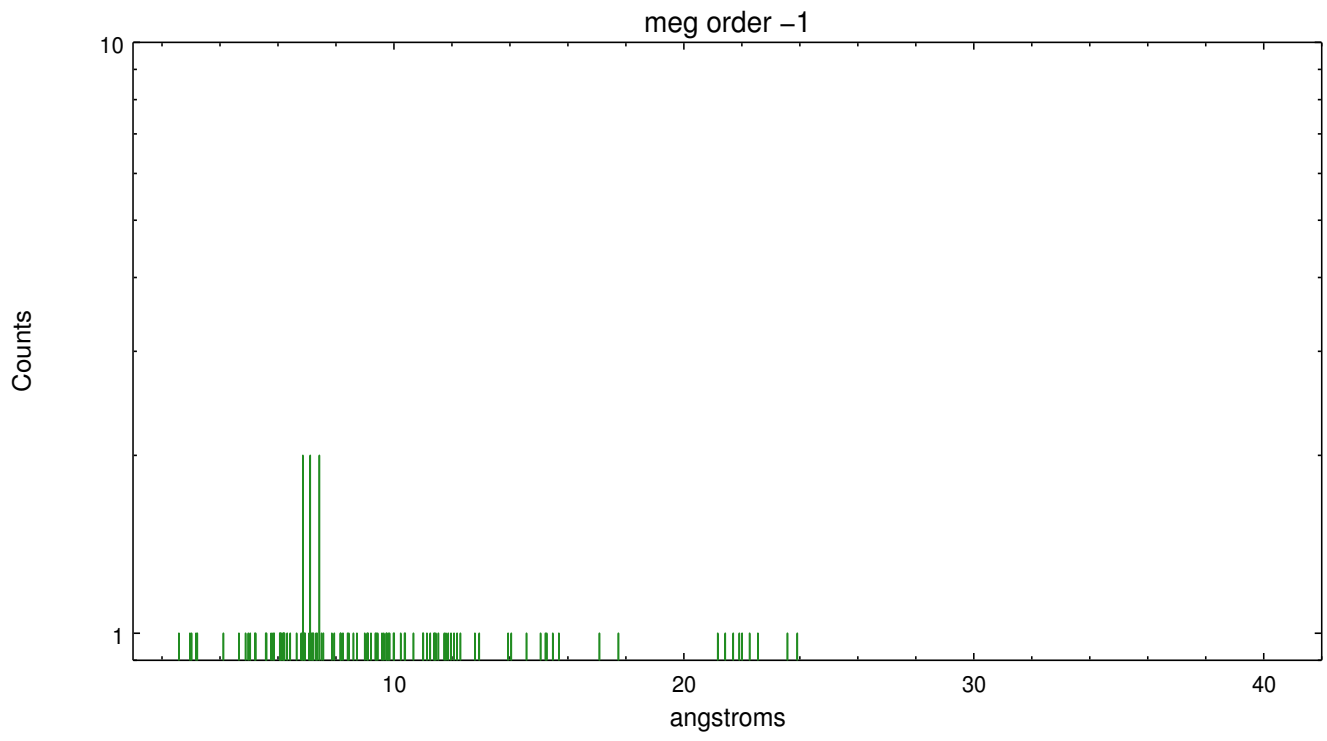
Spot Image MEG



Full Detector MEG

| | order -3 | order -2 | order -1 | order 0 | order 1 | order 2 | order 3 |
|--------|-------------|-------------|-------------|------------|------------|------------|------------|
| Events | 389 | 324 | 674 | 545 | 572 | 236 | 239 |





A Summary

A.1 Status

| | |
|----------------------------|--------------------|
| V&V Scientist | David Huenemoerder |
| V&V Date (YYYY-MM-DD) | 2016.10.31 |
| V&V Edition | 1 |
| V&V Disposition and Status | OK |
| V&V Charge Time | 44.056969149232 |

A.2 Comments

Note: for consistency with other observations in the sequence, the spectrum was extracted for a zeroth order location of (ra,dec) = (56.1364, 32.1437)[deg] (which is: V914 Per).

Note: crowded field; will require confusions assessment.