

V&V Reference Report

L2 ASCDS Version : 10

Observation 15481 - L2 Version 2
Chandra X-Ray Center

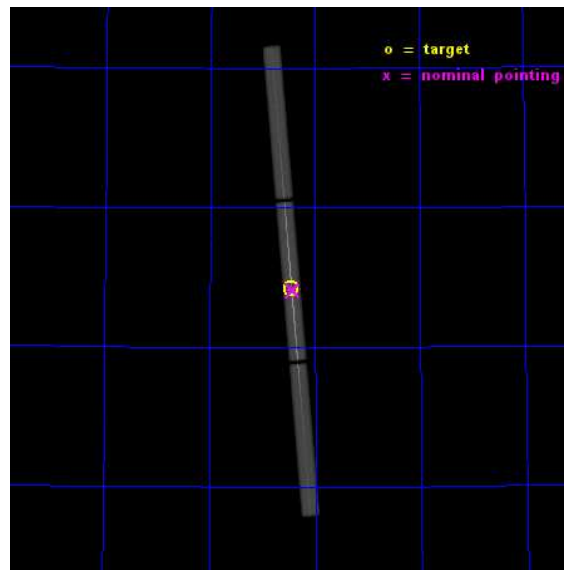
L2 Processing Date : Dec 3 2014

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1 Front

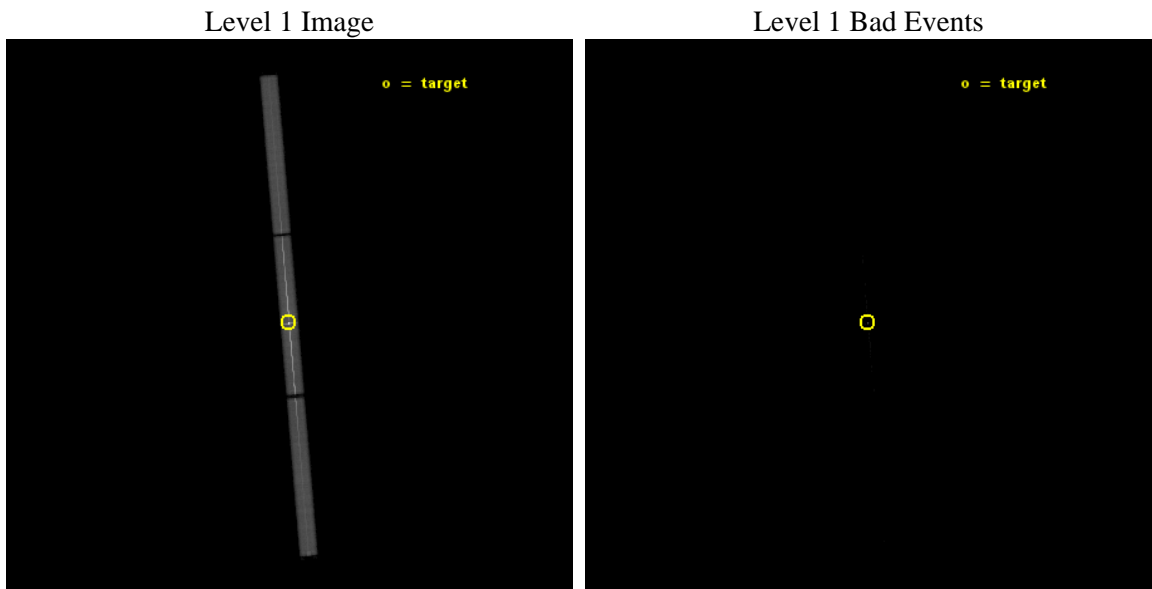
| | | |
|----------|--|---------------------------------------|
| seq_num | 790257 | Sequence number |
| obs_id | 15481 | Observation id |
| title | AO-14 Calibration Observations of Mkn421 | Proposal title |
| observer | Dr. CXC Calibration | Principal investigator |
| object | MKN421 | Source name |
| ra_targ | 166.113333 | Observer's specified target RA [deg] |
| dec_targ | 38.208806 | Observer's specified target Dec [deg] |
| ra_nom | 166.11283426969 | Nominal RA [deg] |
| dec_nom | 38.204027612413 | Nominal Dec [deg] |
| roll_nom | 264.94872118725 | Nominal Roll [deg] |
| revision | 2 | Processing version of data |
| ontime | 10185.681803703 | [s] |
| livetime | 10093.820438016 | Ontime multiplied by DTCOR |
| l2events | 898292 | Number of level 2 events |



2 OBI

2.1 OBI

2.1.1 Images



2.1.2 Parameters

| | | | | | |
|----------|---------------------|--------------------------------|----------------|----------------------|---|
| obi_num | 0 | Obi number | sched_exp_time | 10000.000000 | [s] Scheduled observation exposure time |
| ascdsver | 10.3 | Processing system revision | ontime | 10185.681803703 | [s] |
| caldsver | 4.6.4 | | l1events | 1117642 | Number of level 1 events |
| date | 2014-12-04T01:04:55 | Date and time of file creation | tgmethod | TGDETECT | Method used to create src1a file |
| revision | 2 | Processing version of data | zo_pos | (32746.45, 32899.75) | src1a sky pixel position |

2.1.3 Events

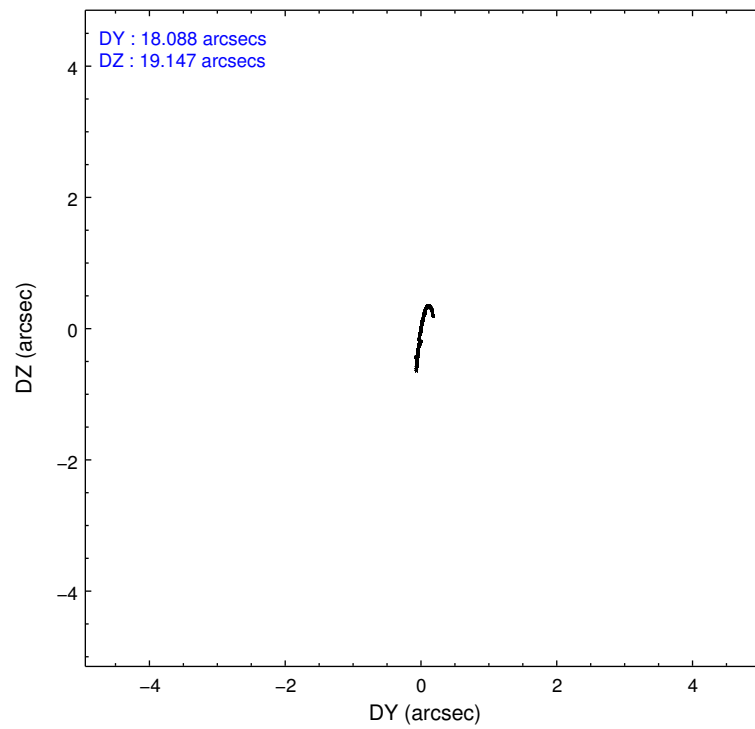
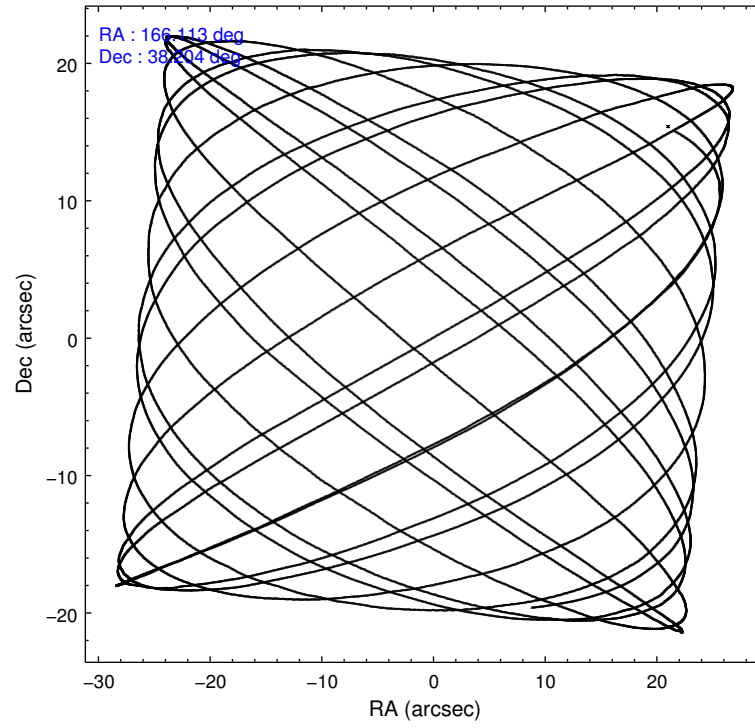
Level 1 Events

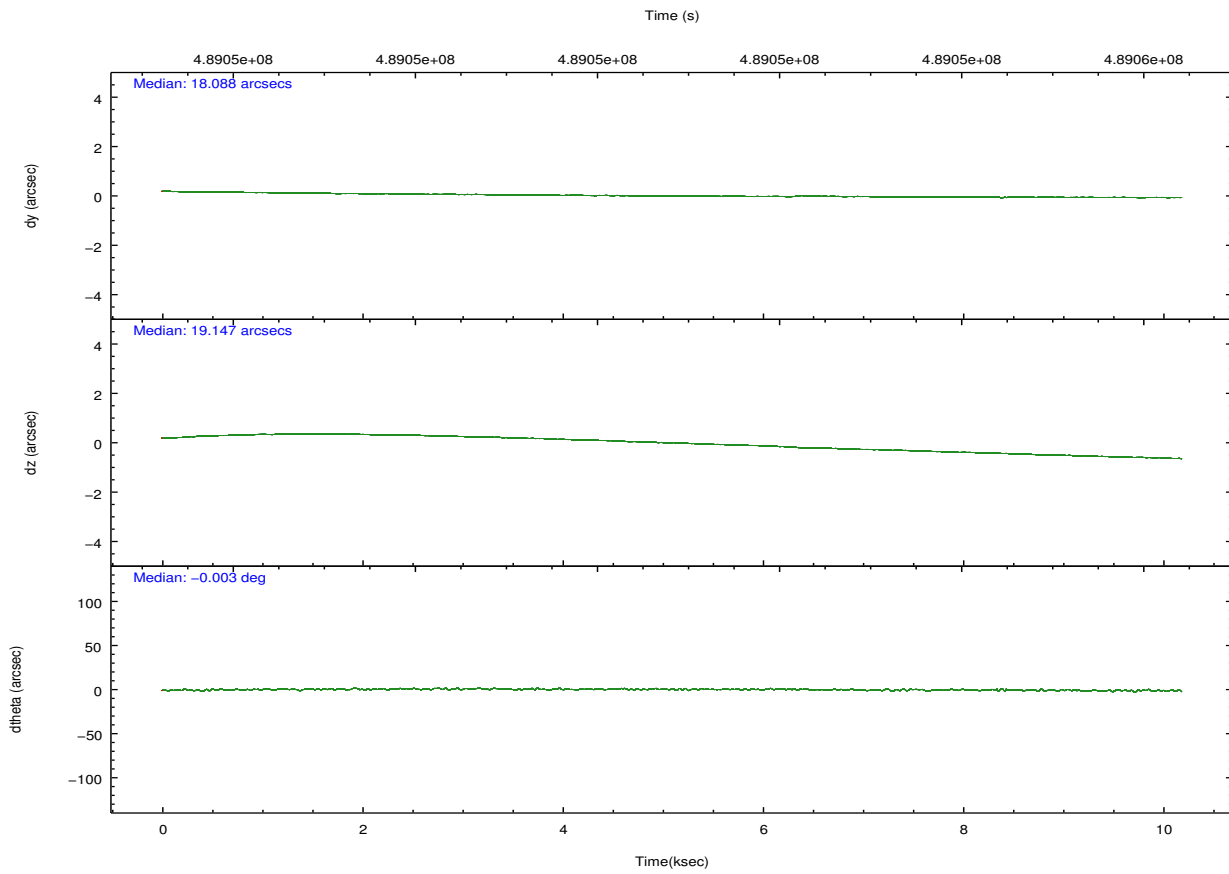
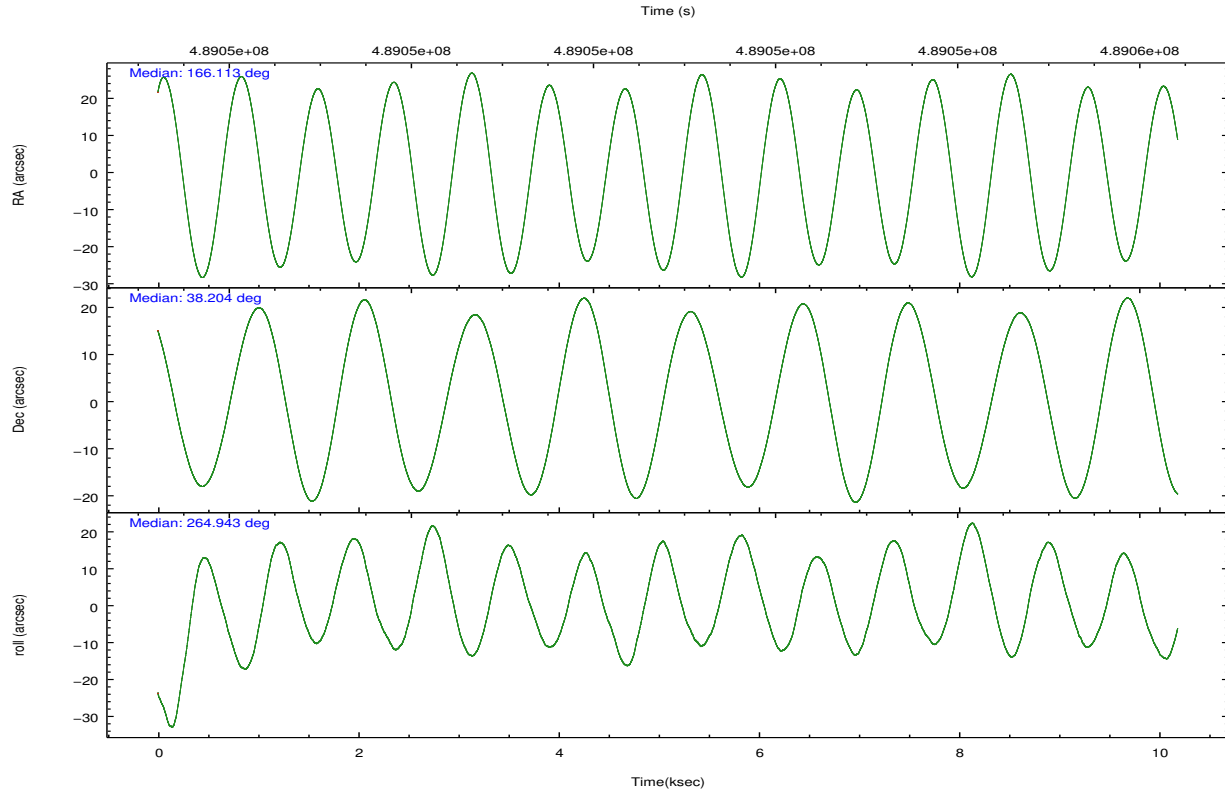
| | segment 1 | segment 2 | segment 3 |
|-----------------|----------------------|----------------------|----------------------|
| level 1 events | 263951 | 581662 | 272029 |
| rejected events | 7302 | 12957 | 7494 |
| rejected % | 2% | 2% | 2% |

2.2 Compared Parameters

| Parameter | Planned | Actual | Parameter | Planned | Actual |
|-----------------------------------|---------------------|----------------------|------------------------------|-----------|---------|
| Instrument | HRC | HRC | Obspar format version number | 7 | 7 |
| Detector | HRC-S | HRC-S | Obspar file type | PREDICTED | ACTUAL |
| Grating | LETG | LETG | Obspar update status | NONE | UPDATED |
| Data mode | OBSERVING | OBSERVING | | | |
| Observation mode | POINTING | POINTING | | | |
| [deg] Pointing RA | 166.095665 | 166.1128342696859 | | | |
| [deg] Pointing Dec | 38.229467 | 38.20402761241279 | | | |
| [deg] Pointing Roll | 264.892015 | 264.9487211872532 | | | |
| [mm] SIM focus pos | -1.429586 | -1.428180813131781 | | | |
| [mm] SIM defocus | 0.1037507710433287 | 0.1051558262725154 | | | |
| [mm] SIM translation stage pos | 250.455976 | 250.466033080201 | | | |
| [mm] SIM translation stage offset | 0 | -0.01005468664627074 | | | |
| [s] Observation start time (MET) | 489045905.184000 | 489045440.12628 | | | |
| Observation start date | 2013-07-01T06:03:58 | 2013-07-01T05:57:20 | | | |
| [s] Observation end time (MET) | 489055905.184000 | 489056167.77687 | | | |
| Observation end date | 2013-07-01T08:50:38 | 2013-07-01T08:56:07 | | | |

2.3 Aspect





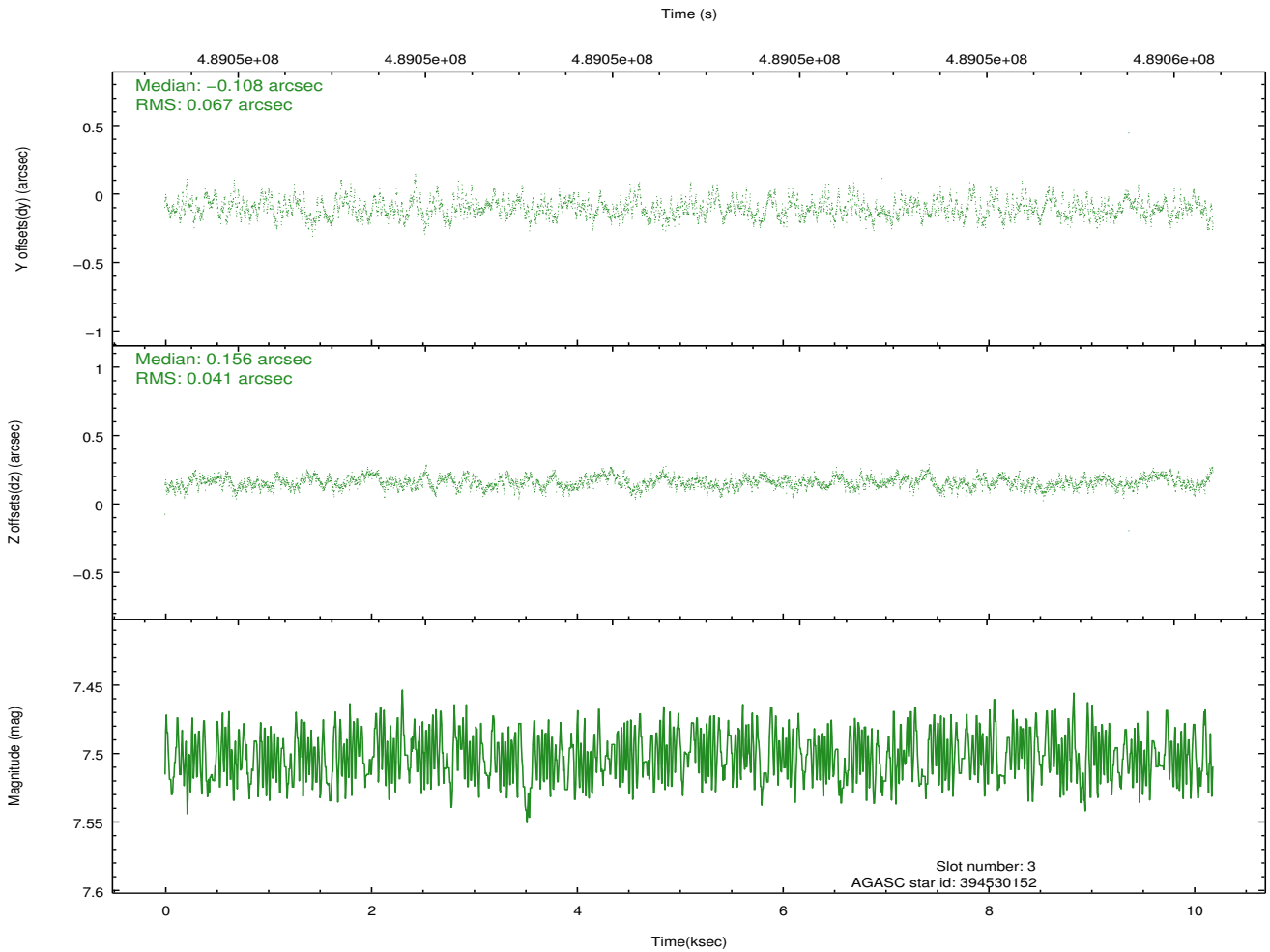
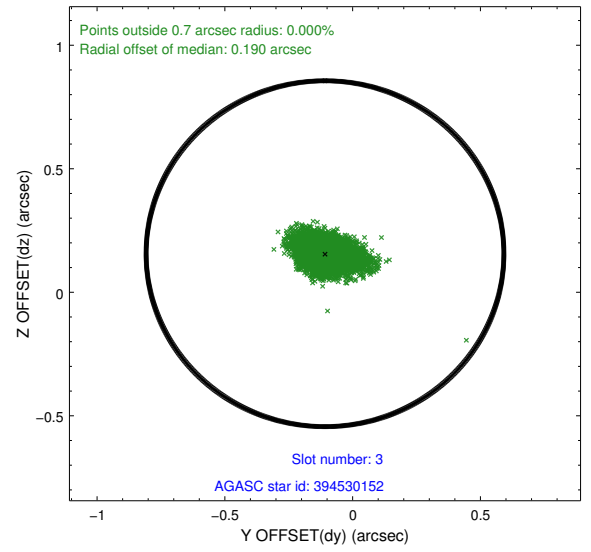
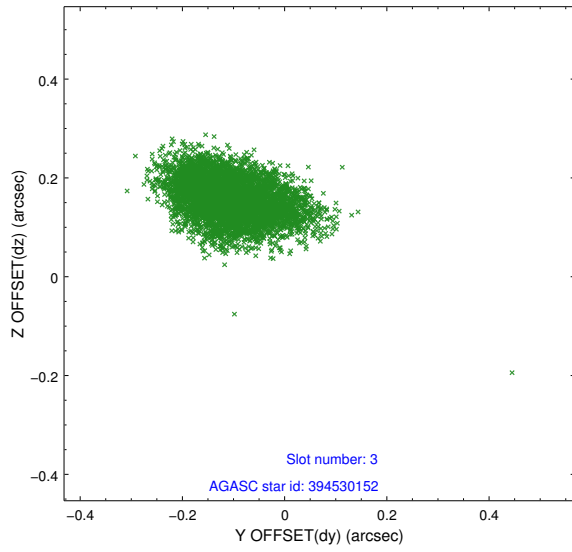
Slot Statistics

| slot | status | used | id | mag | n_pts | med_dy | med_dz | dr1 | dr2 | ra | dec | mean_y | mean_z |
|------|--------|------|-----------|------|-------|--------|--------|-------|-------|------------|-----------|----------|---------|
| 0 | FID | | HRC-S-1 | 7.04 | 2485 | 0.065 | -0.214 | 0.013 | 0.027 | 0.000000 | 0.000000 | -1172.60 | -468.13 |
| 1 | FID | | HRC-S-2 | 7.00 | 2485 | 0.234 | -0.117 | 0.005 | 0.010 | 0.000000 | 0.000000 | 1226.78 | -460.87 |
| 2 | FID | | HRC-S-3 | 7.03 | 2485 | 0.091 | 0.030 | 0.013 | 0.029 | 0.000000 | 0.000000 | -1174.80 | 561.46 |
| 3 | GUIDE | used | 394530152 | 7.50 | 4970 | -0.108 | 0.156 | 0.083 | 0.138 | 166.075805 | 38.868252 | -2285.47 | -260.39 |
| 4 | GUIDE | used | 394533848 | 8.73 | 4966 | 0.090 | 0.334 | 0.085 | 0.138 | 166.382906 | 38.276007 | -241.12 | 789.05 |
| 5 | GUIDE | used | 394543960 | 9.78 | 4952 | 0.173 | 0.224 | 0.196 | 0.320 | 165.802757 | 37.787371 | 1658.45 | -688.06 |
| 6 | GUIDE | used | 394546712 | 6.61 | 4970 | -0.203 | 0.272 | 0.076 | 0.128 | 166.451462 | 38.394357 | -682.03 | 945.81 |
| 7 | GUIDE | used | 394546720 | 6.43 | 4968 | 0.041 | -0.984 | 0.111 | 0.187 | 166.130115 | 38.241361 | -51.28 | 92.27 |

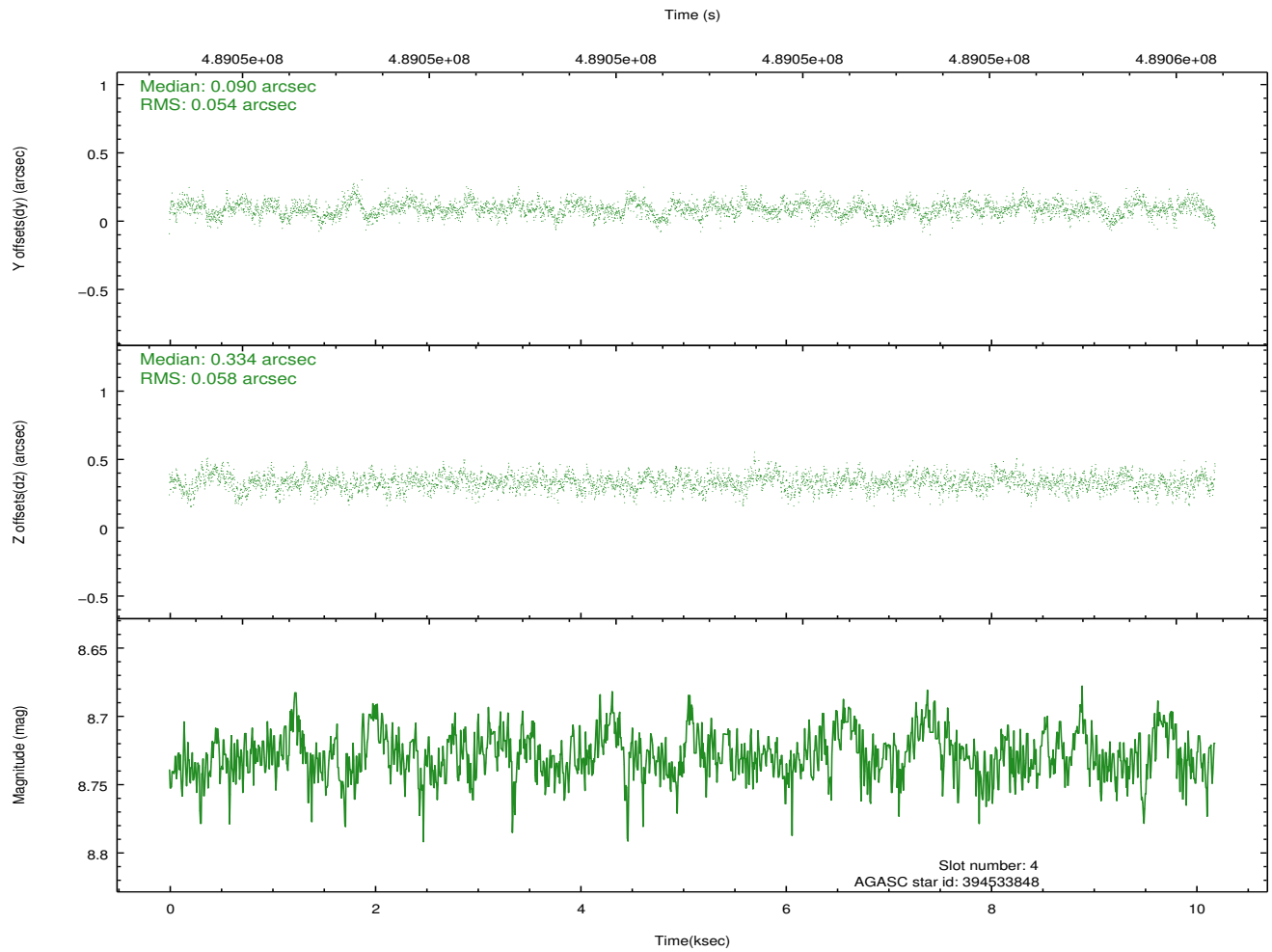
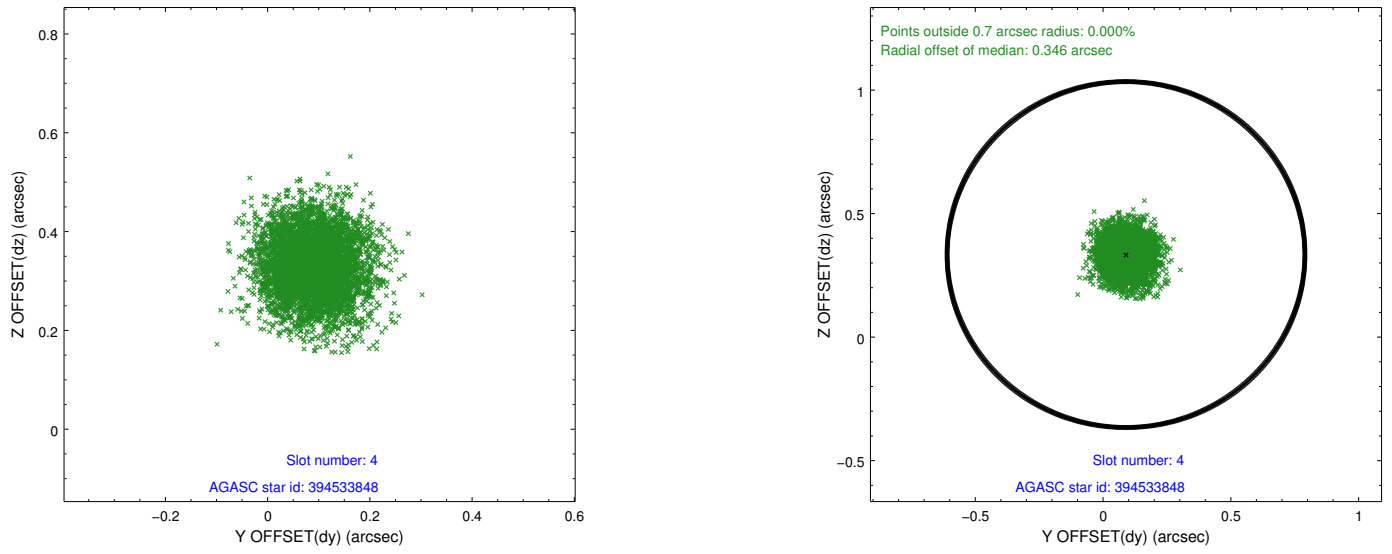
∞

2.4 Star Slots

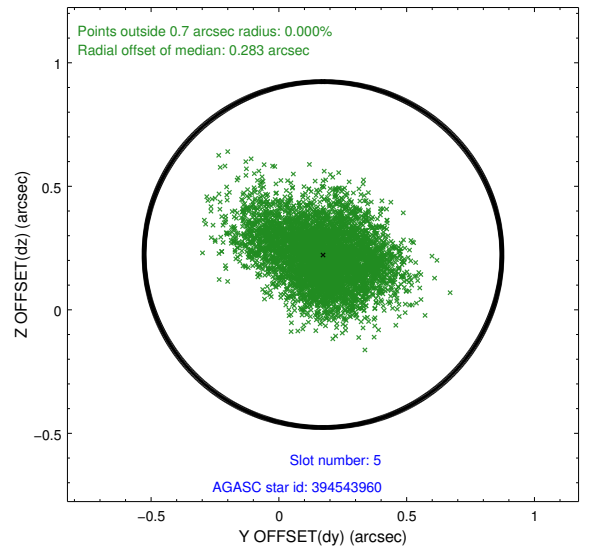
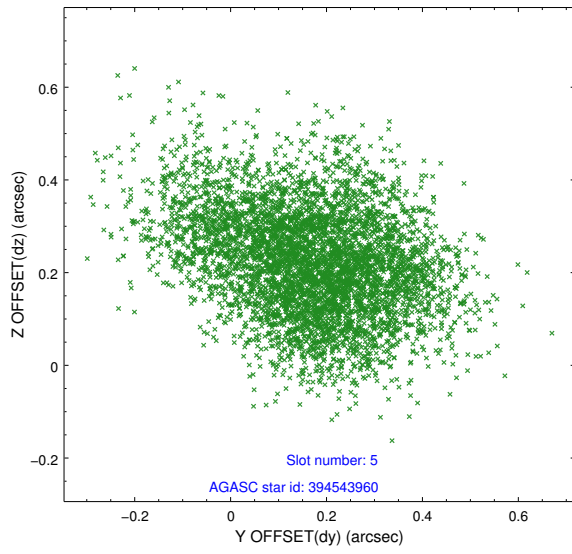
2.4.1 Slot 3



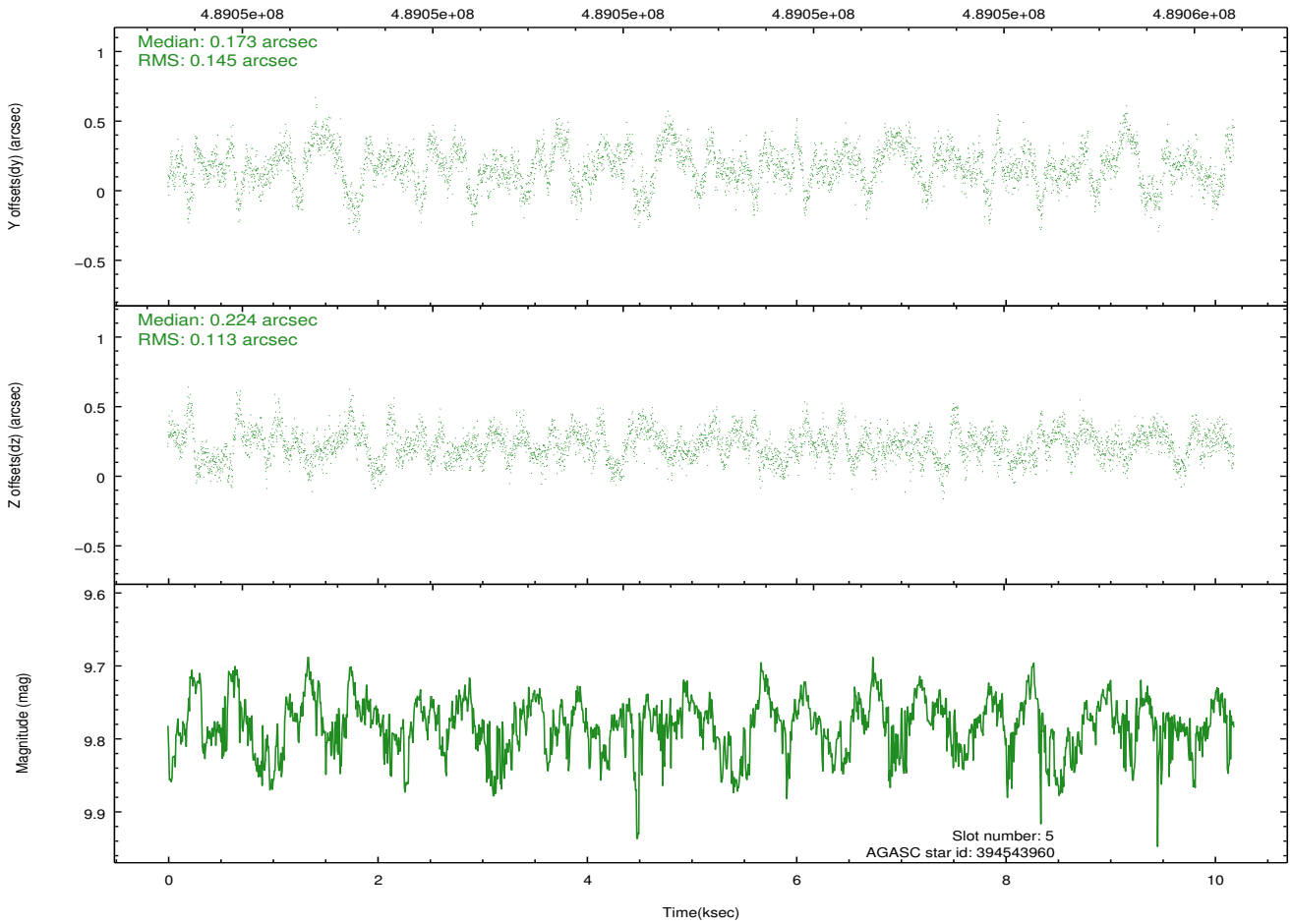
2.4.2 Slot 4



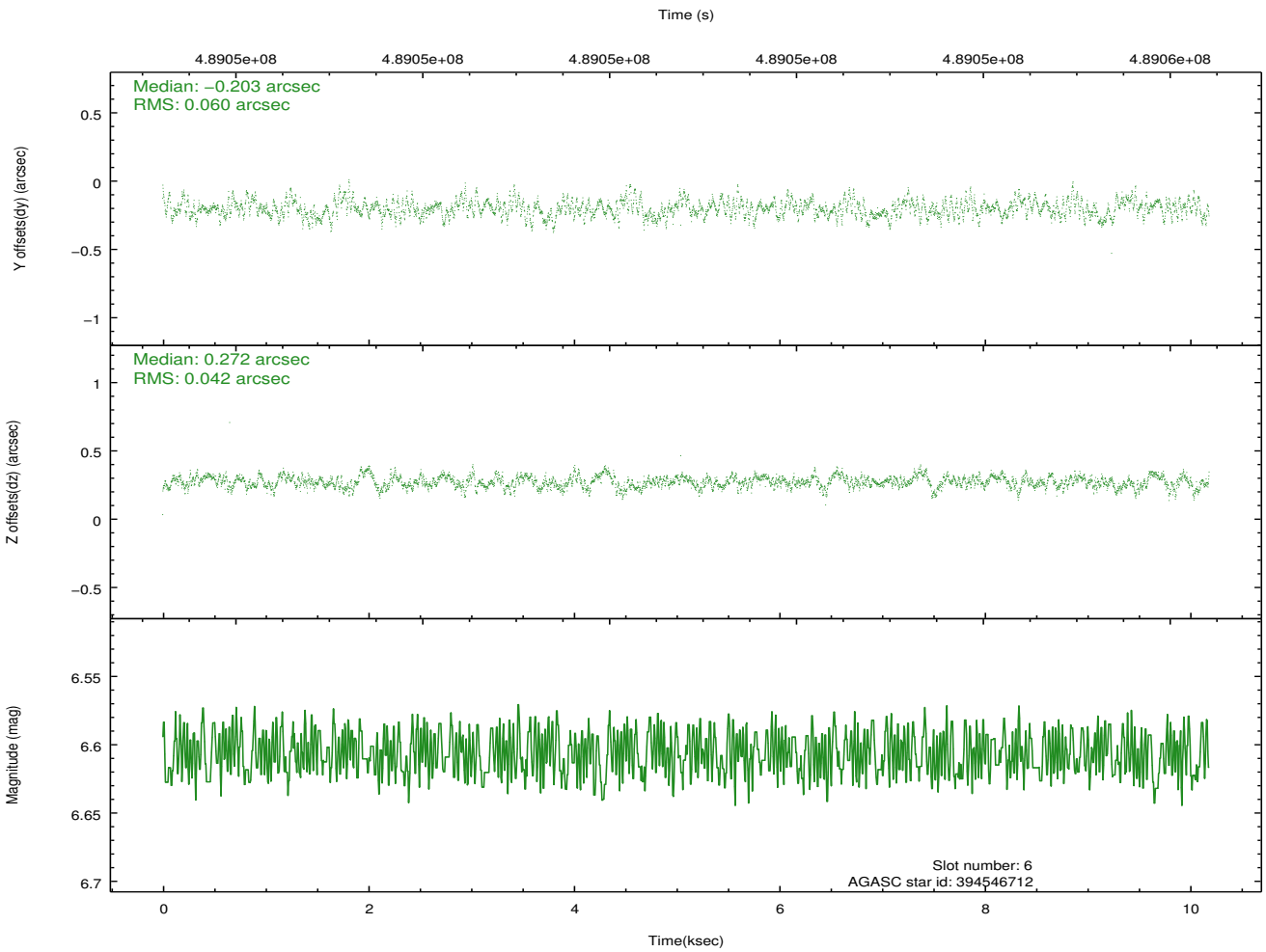
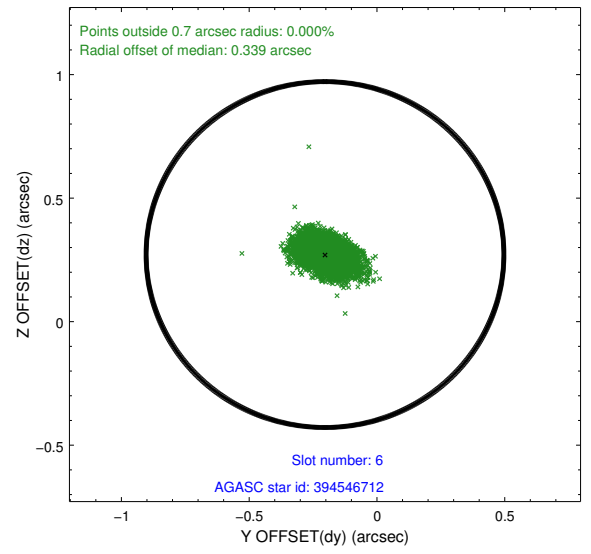
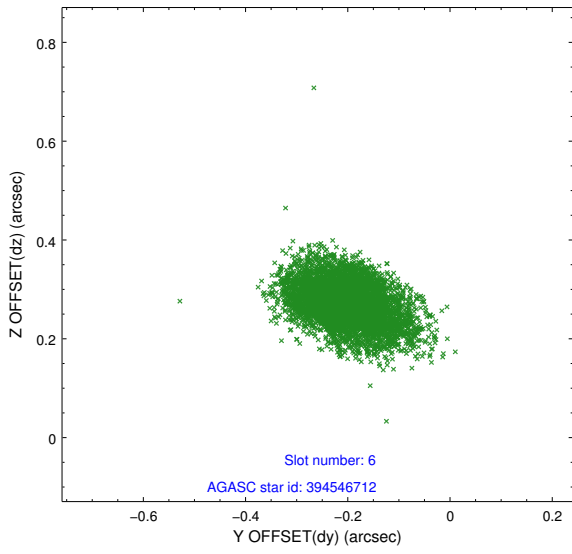
2.4.3 Slot 5



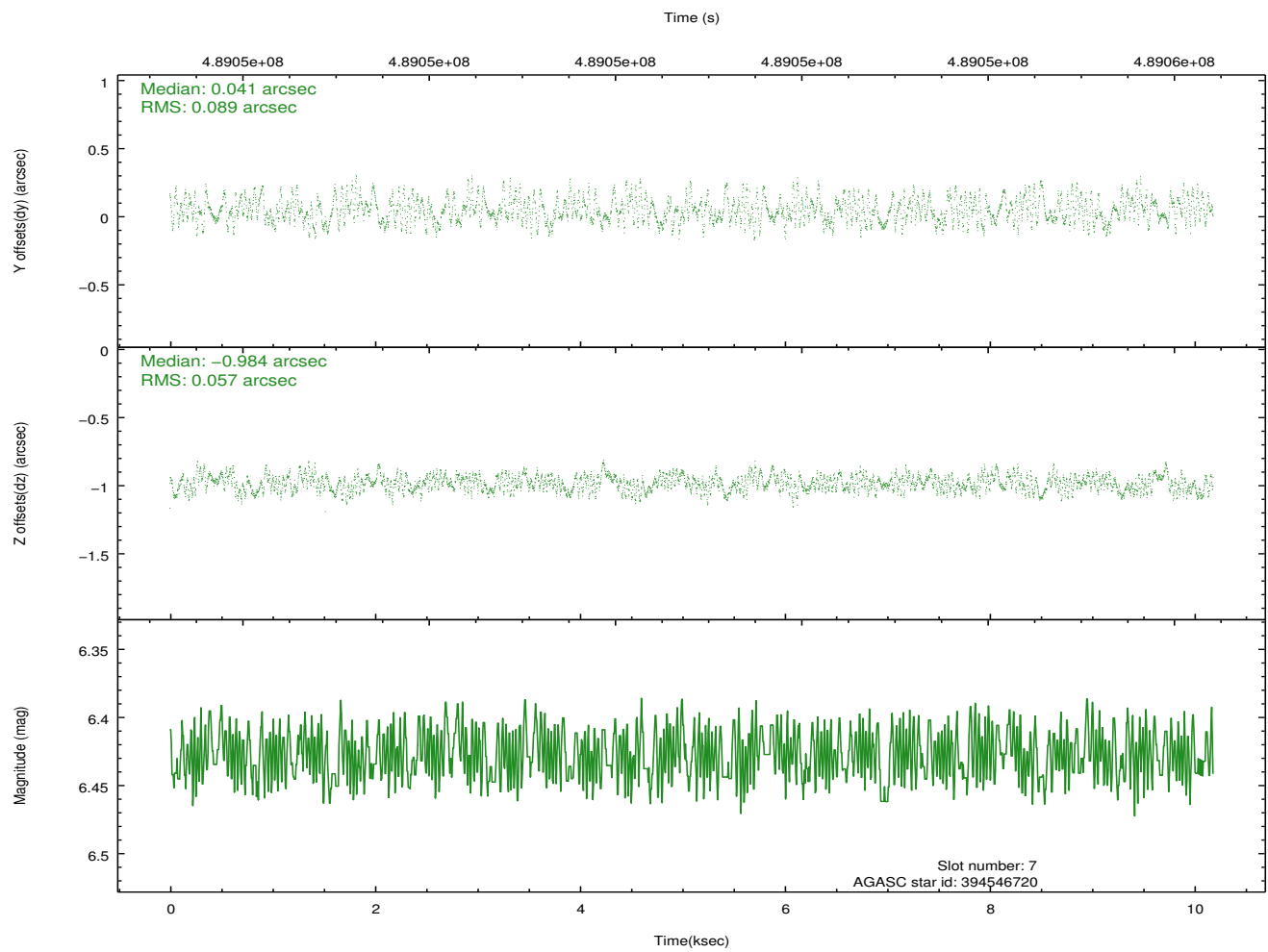
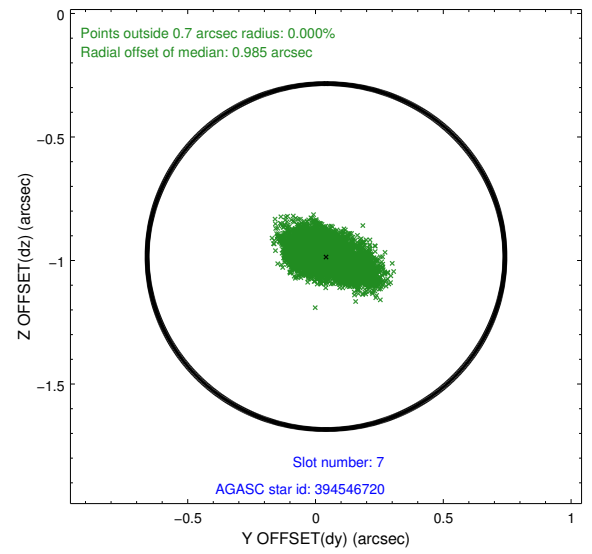
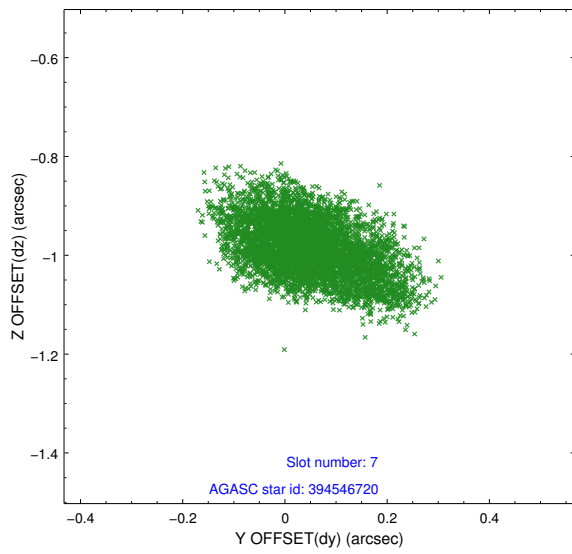
Time (s)



2.4.4 Slot 6

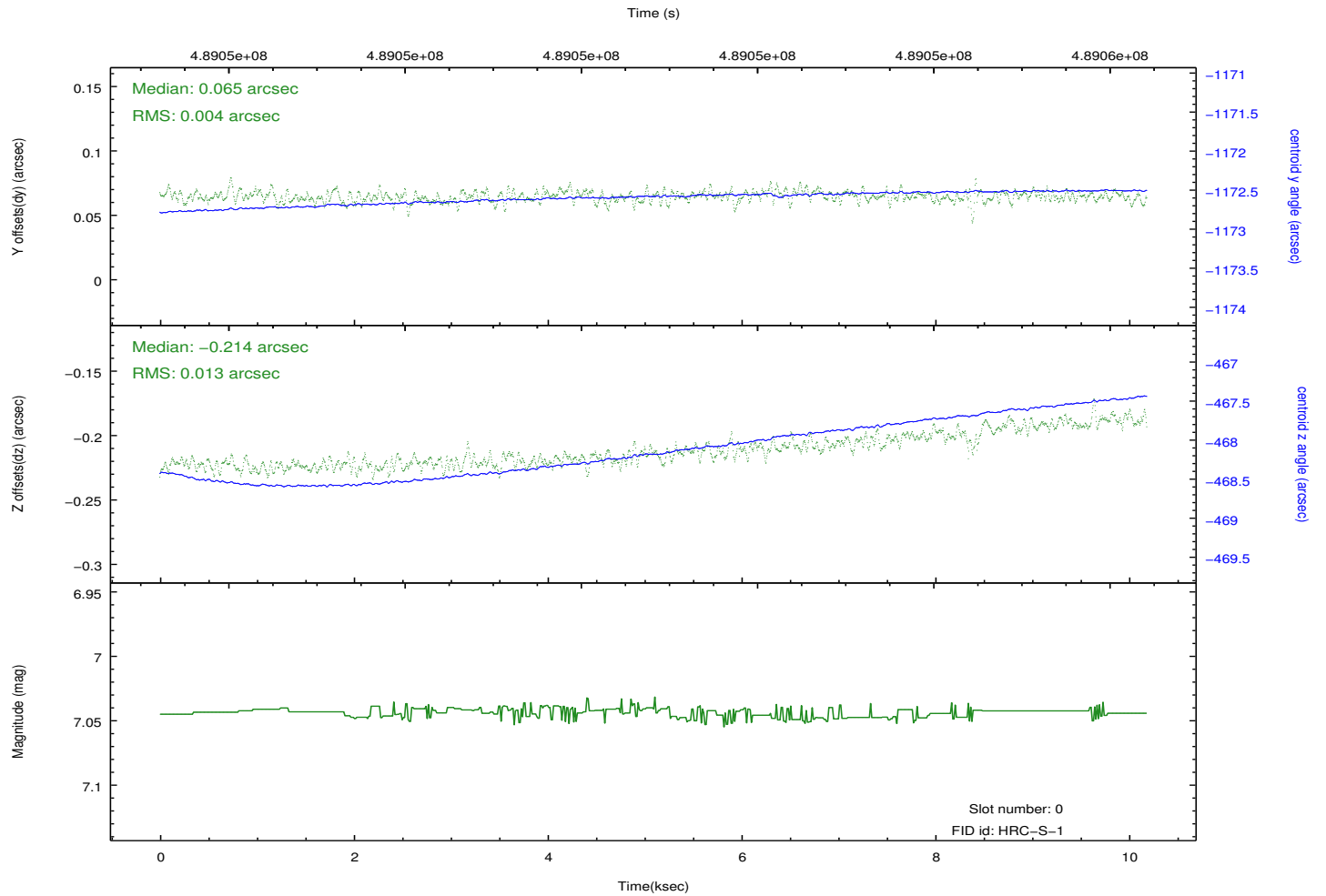
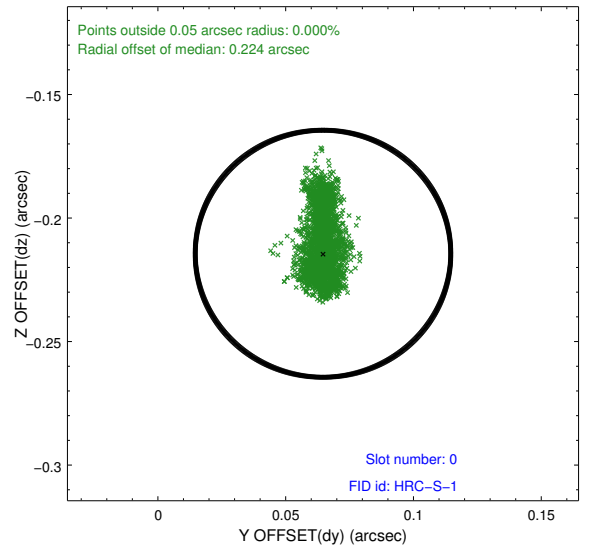
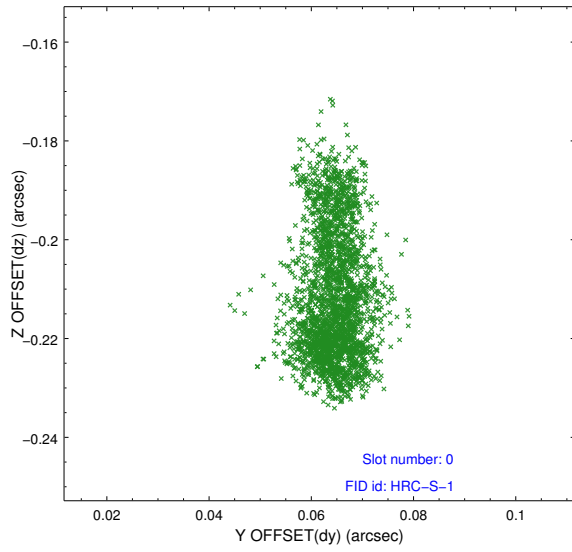


2.4.5 Slot 7

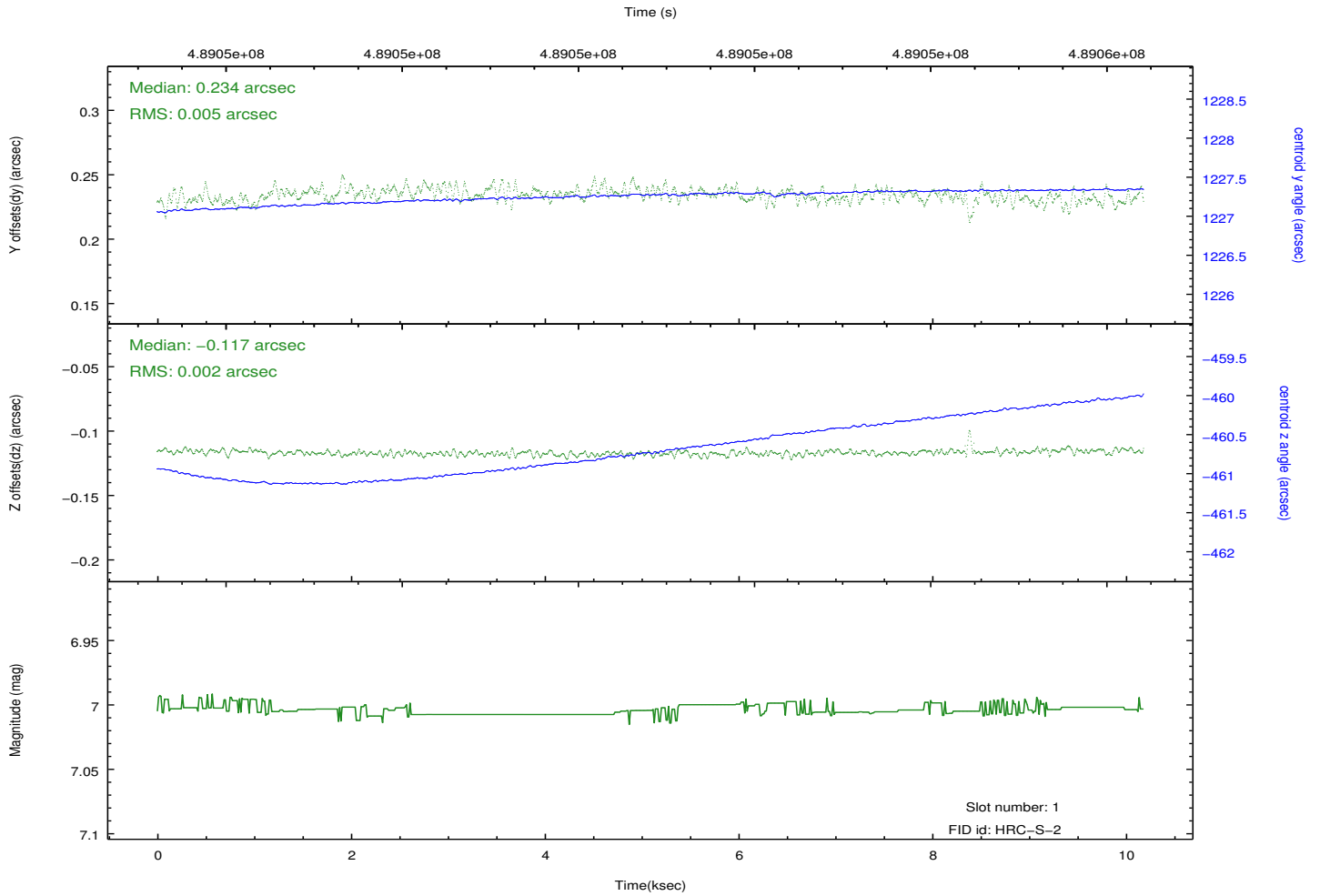
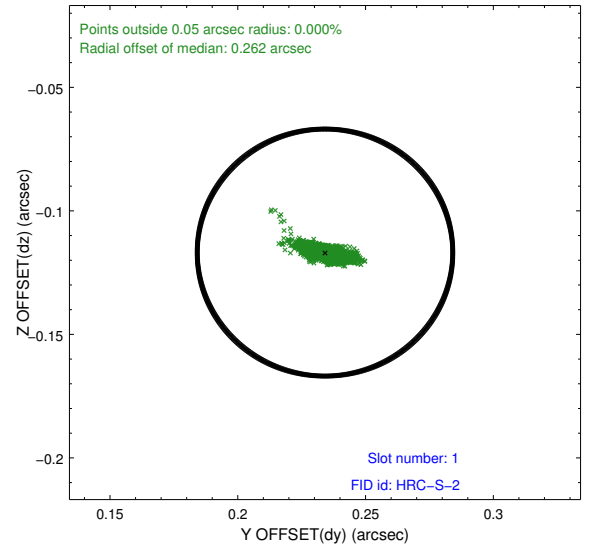
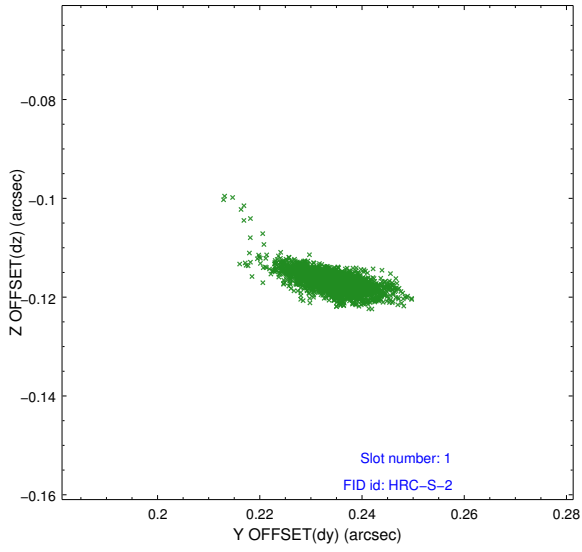


2.5 FID Slots

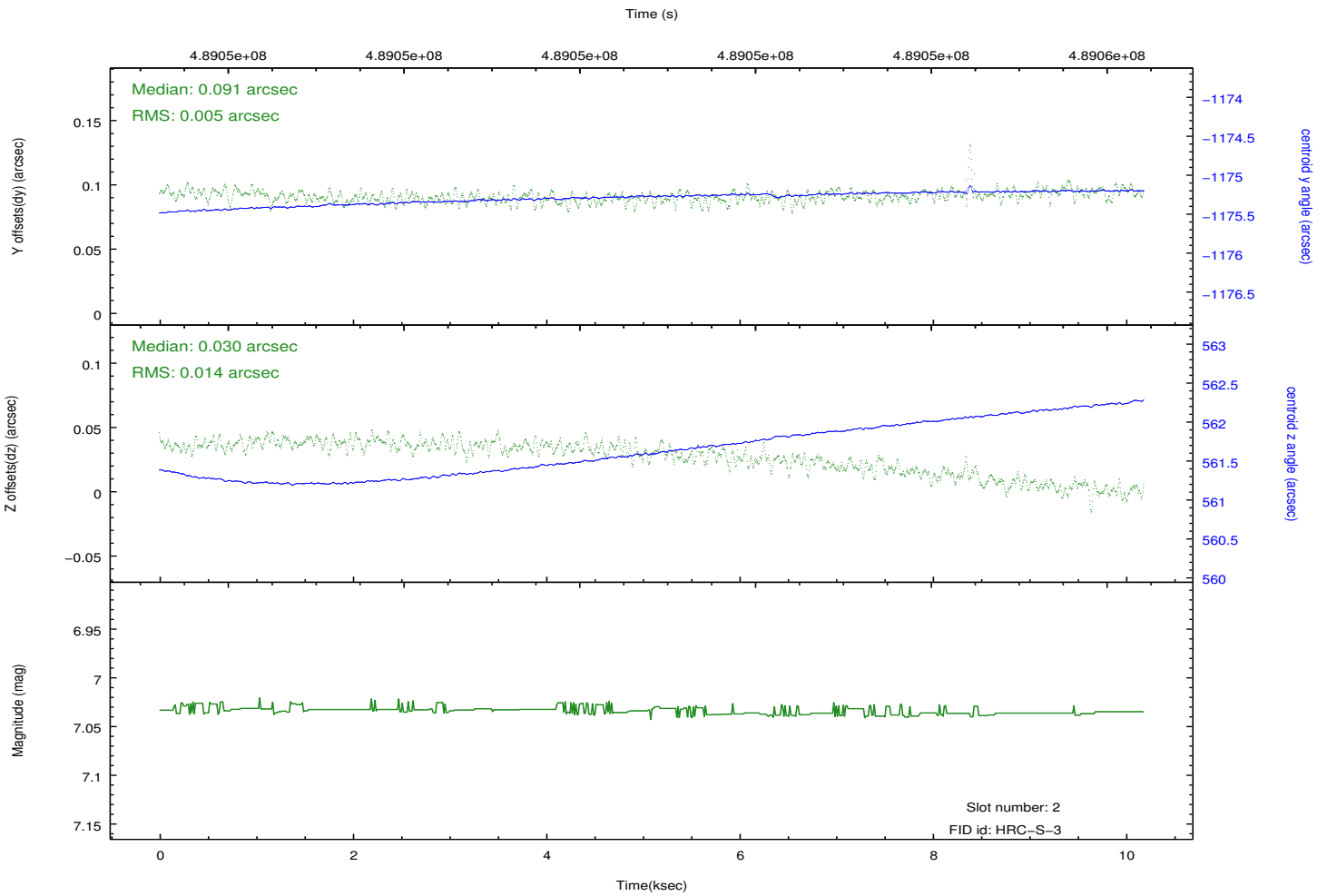
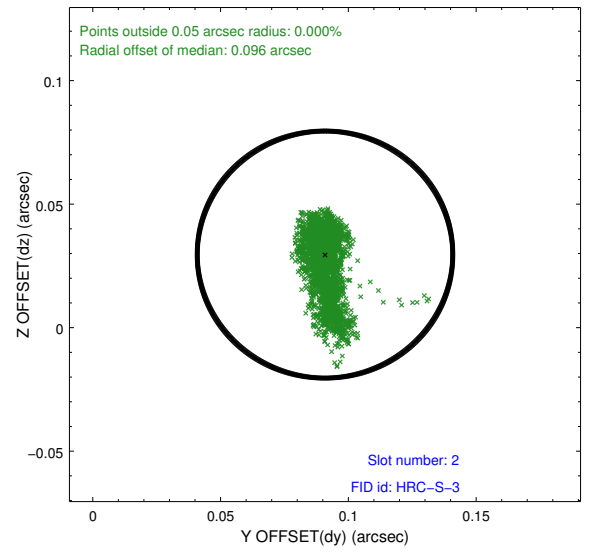
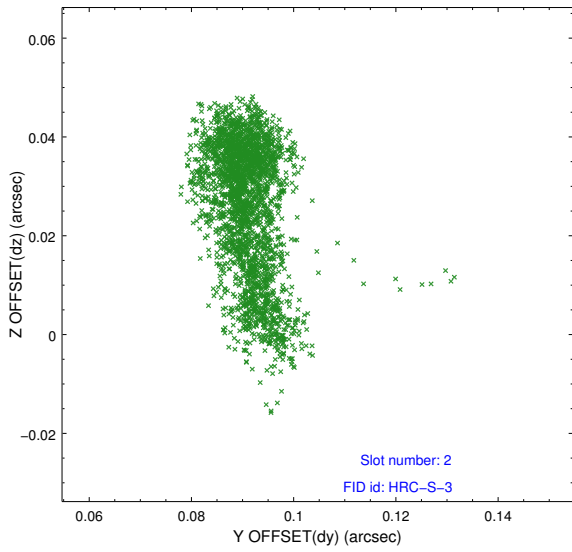
2.5.1 Slot 0



2.5.2 Slot 1

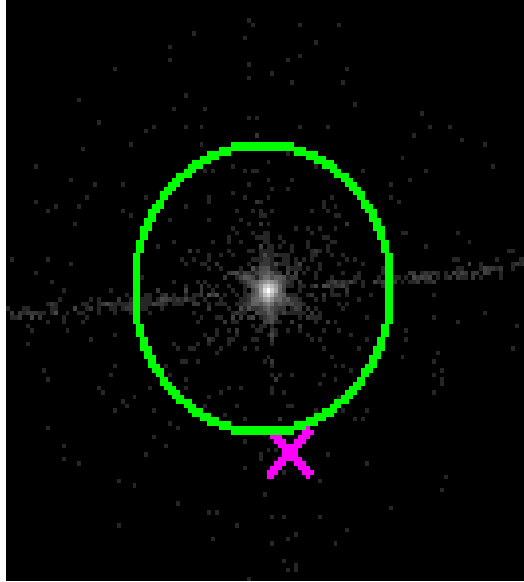


2.5.3 Slot 2

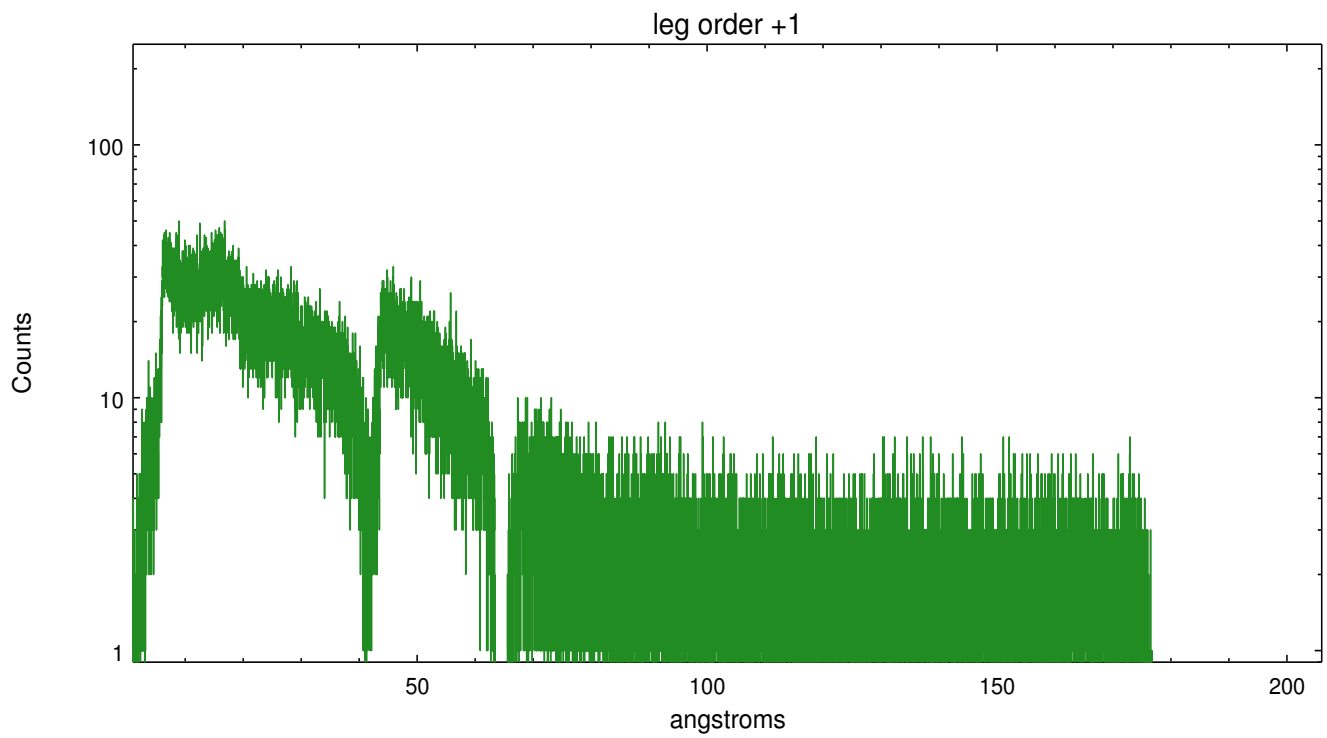
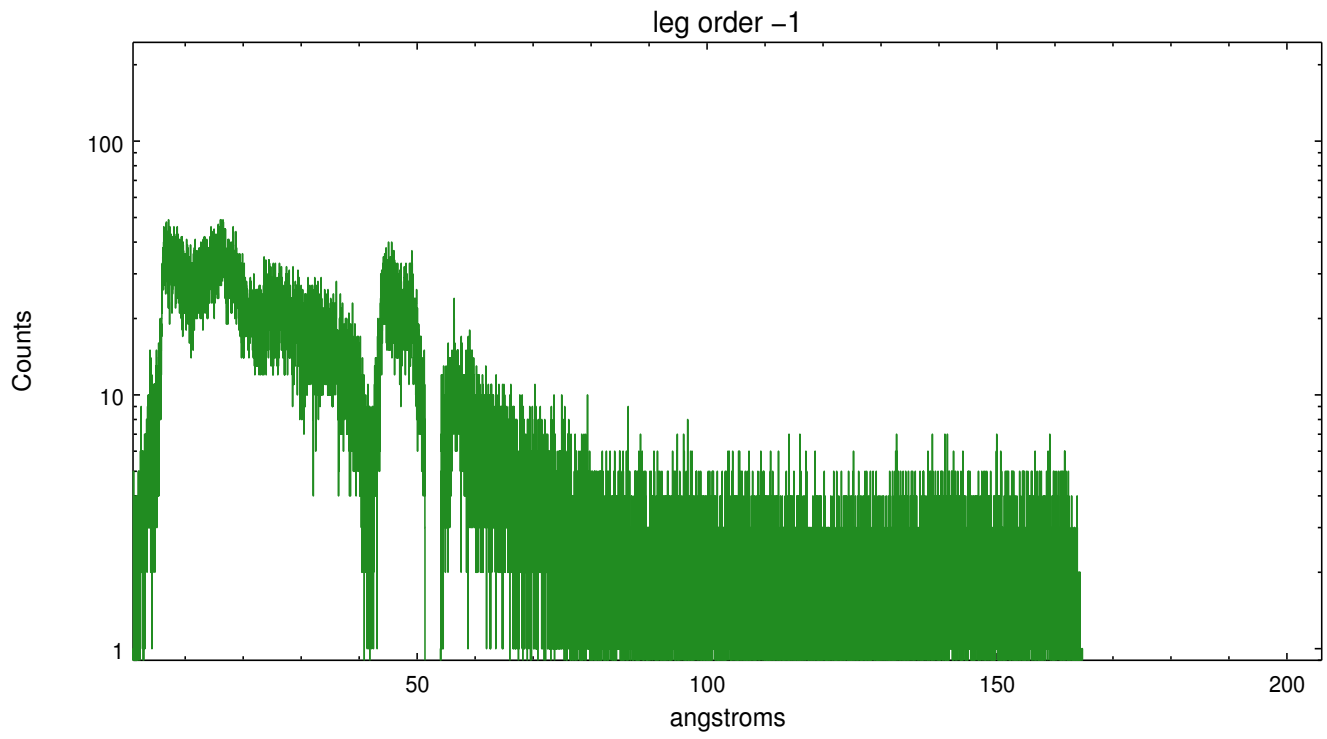


3 Gratings

3.1 LETG Arm



LETG Zero Order



A Summary

A.1 Status

| | |
|----------------------------|-----------------|
| V&V Scientist | Joy Nichols |
| V&V Date (YYYY-MM-DD) | 2015.11.13 |
| V&V Edition | 1 |
| V&V Disposition and Status | OK |
| V&V Charge Time | 10.185681803703 |

A.2 Comments

These data have been reprocessed with new aspect alignment calibration files that correct small mean offsets (up to 0.4 arcsecs) and improve overall astrometric accuracy. The new calibration was determined using data from the time period being reprocessed and was performed using cross-correlation of X-ray sources with radio and optical counterparts.