

V&V Reference Report

L2 ASCDS Version : 8.4.4

Observation 9589 - L2 Version 2
Chandra X-Ray Center

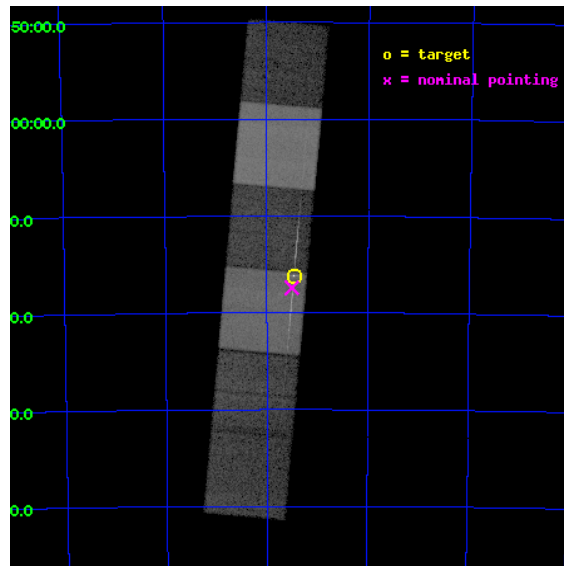
L2 Processing Date : May 1 2012

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1 Front

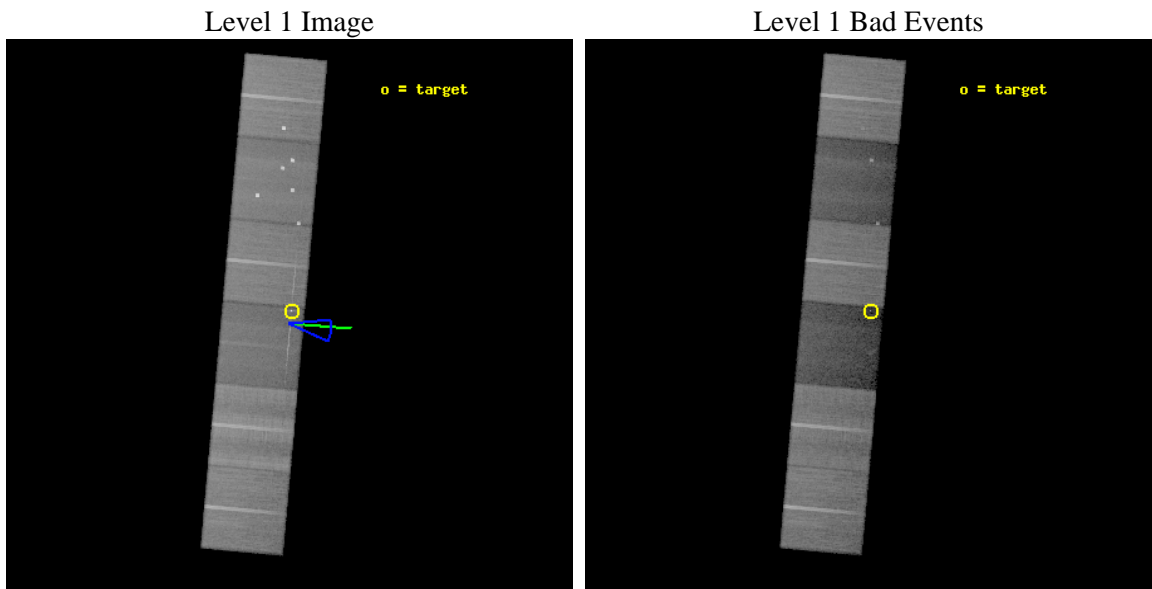
| | | |
|----------|--|---|
| seq_num | 500750 | Sequence number |
| obs_id | 9589 | Observation id |
| title | SPATIALLY RESOLVED LETG SPECTROMETRY OF SNR1987A | Proposal title |
| observer | Dr. Richard McCray | Principal investigator |
| object | SNR1987A | Source name |
| dtycycle | 0 | |
| cycle | P | events from which exps? Prim/Second/Both |
| ra_targ | 83.866667 | Observer's specified target RA [deg] |
| dec_targ | -69.26975 | Observer's specified target Dec [deg] |
| ra_nom | 83.876355842241 | Nominal RA [deg] |
| dec_nom | -69.290427714914 | Nominal Dec [deg] |
| roll_nom | 95.165694217014 | Nominal Roll [deg] |
| revision | 2 | Processing version of data |
| ontime | 40038.274341583 | Sum of GTIs [s] |
| livetime | 39531.285603716 | Livetime [s] |
| ontime4 | 40035.074401319 | Sum of GTIs [s] |
| ontime5 | 40038.23330158 | Sum of GTIs [s] |
| ontime6 | 40028.469280899 | Sum of GTIs [s] |
| ontime7 | 40038.274341583 | Sum of GTIs [s] |
| ontime8 | 40034.910231411 | Sum of GTIs [s] |
| ontime9 | 40034.869201243 | Sum of GTIs [s] |
| l2events | 329089 | Number of level 2 events |



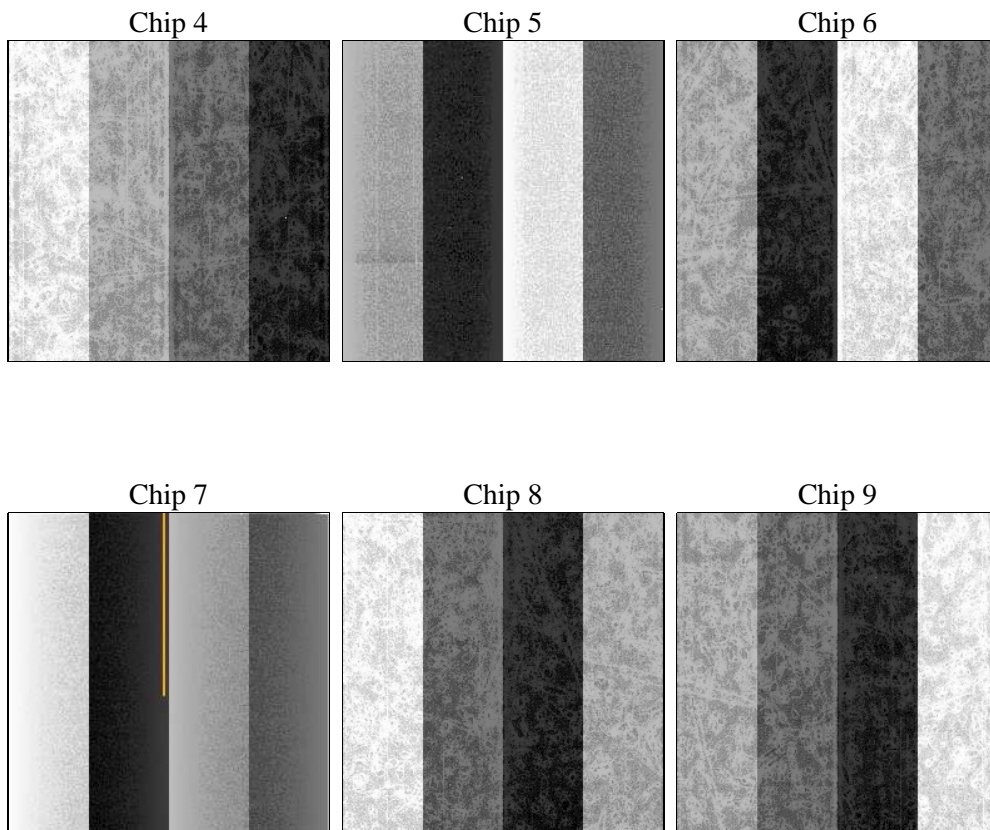
2 OBI

2.1 OBI

2.1.1 Images



2.1.2 Bias



2.1.3 Parameters

| | | | | | |
|----------|---------------------|--------------------------------|----------------|-----------------|---|
| obi_num | 0 | Obi number | sched_exp_time | 40000.000000 | [s] Scheduled observation exposure time |
| ascdsver | 8.4.4 | Processing system revision | ontime | 40038.274341583 | Sum of GTIs [s] |
| caldbver | 4.4.9 | | ontime4 | 40035.074401319 | Sum of GTIs [s] |
| date | 2012-05-01T06:36:58 | Date and time of file creation | ontime5 | 40038.23330158 | Sum of GTIs [s] |
| revision | 2 | Processing version of data | ontime6 | 40028.469280899 | Sum of GTIs [s] |
| | | | ontime7 | 40038.274341583 | Sum of GTIs [s] |
| | | | ontime8 | 40034.910231411 | Sum of GTIs [s] |
| | | | ontime9 | 40034.869201243 | Sum of GTIs [s] |
| | | | l1events | 1665122 | Number of level 1 events |

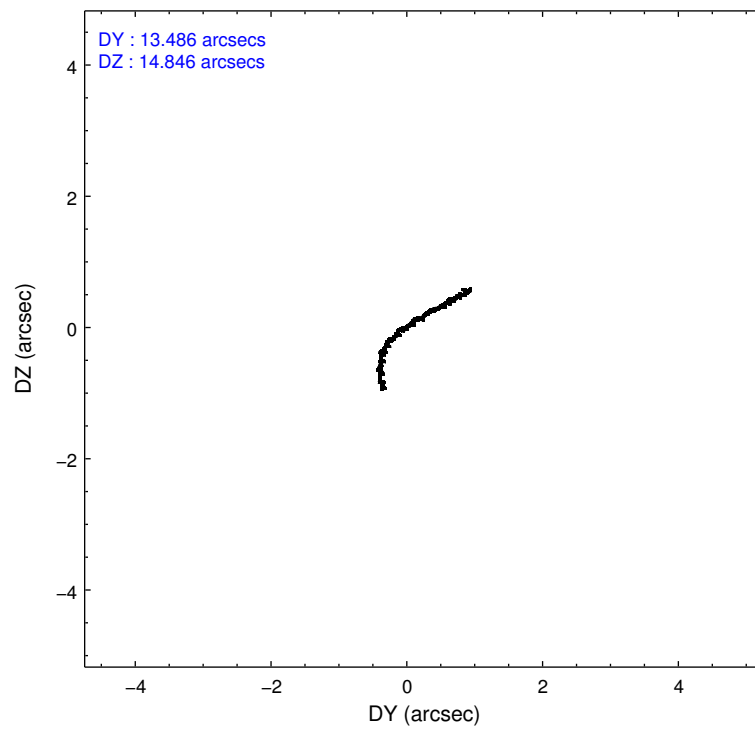
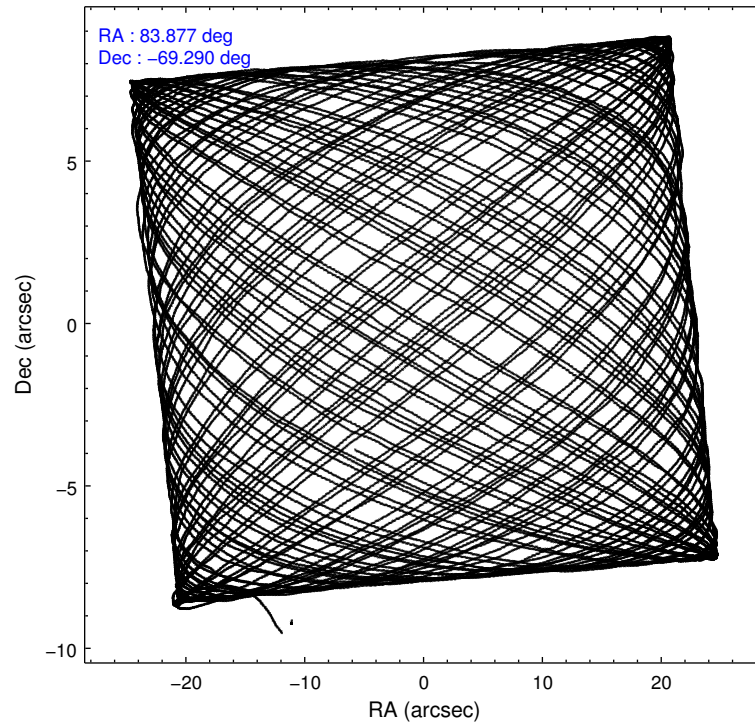
2.1.4 Events

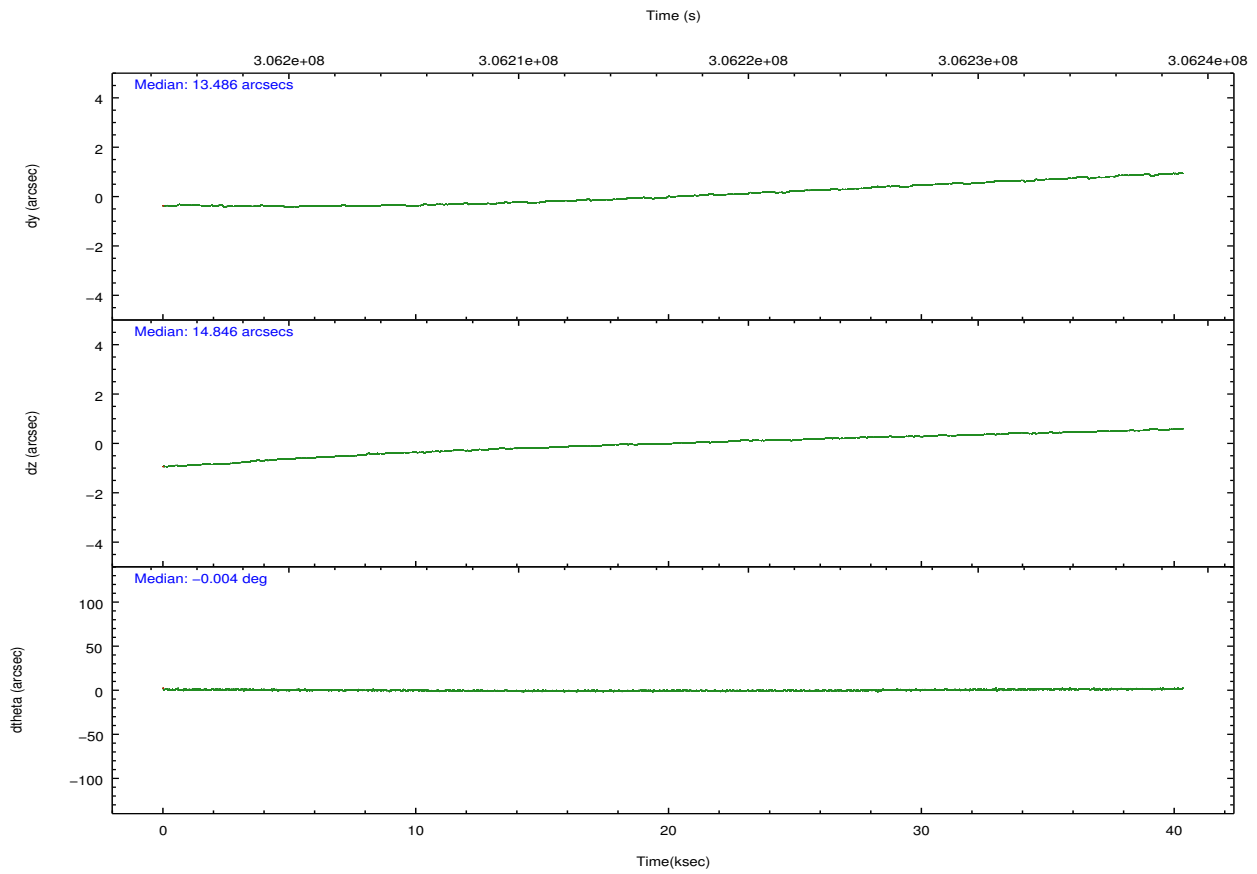
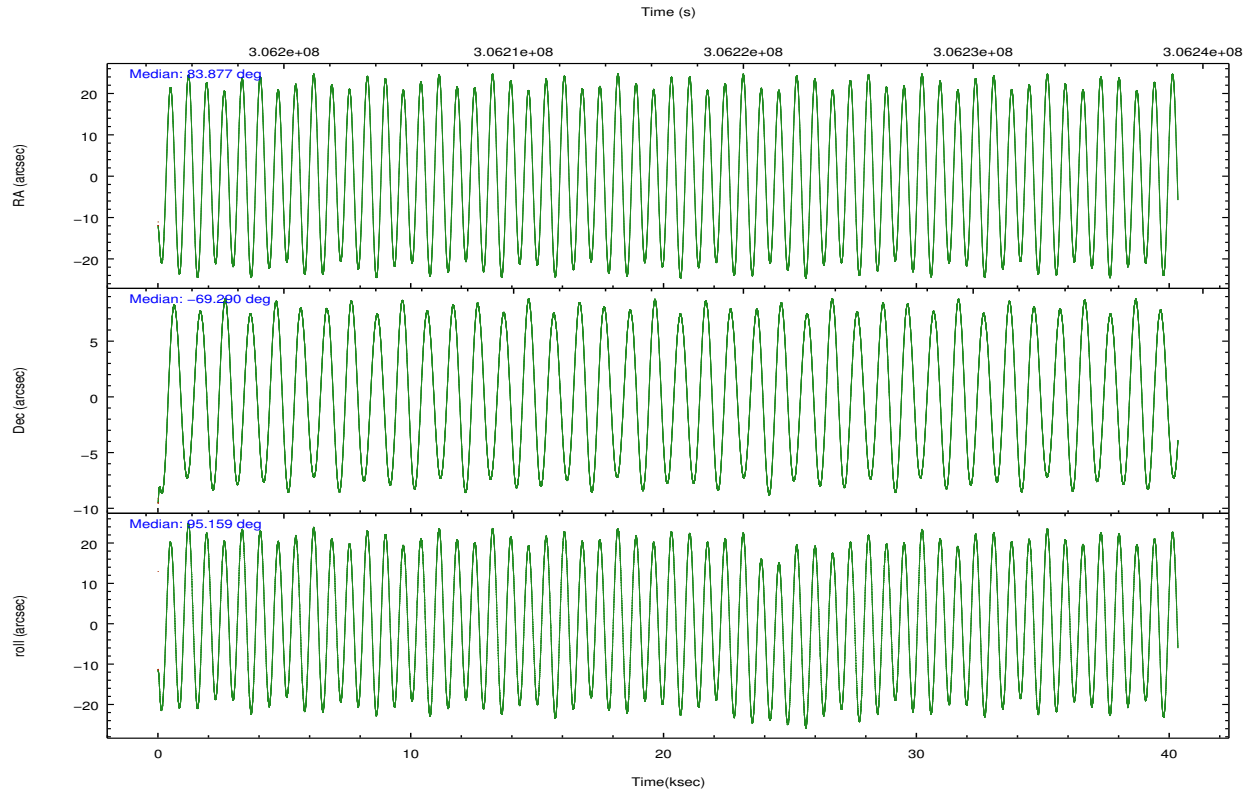
| | ccd 4 | ccd 5 | ccd 6 | ccd 7 | ccd 8 | ccd 9 | | ccd 4 | ccd 5 | ccd 6 | ccd 7 | ccd 8 | ccd 9 |
|-----------------|--------|--------|--------|--------|--------|--------|----------------|--------|-------|--------|-------|--------|--------|
| level 1 events | 339474 | 268000 | 283031 | 175107 | 334349 | 265161 | grade 0 events | 20871 | 41523 | 15253 | 16304 | 25161 | 9733 |
| rejected events | 302874 | 96978 | 252157 | 68386 | 246790 | 240883 | | 6% | 15% | 5% | 9% | 7% | 3% |
| rejected % | 89% | 36% | 89% | 39% | 73% | 90% | grade 1 events | 359 | 2338 | 151 | 506 | 318 | 153 |
| | | | | | | | | 0% | 0% | 0% | 0% | 0% | 0% |
| | | | | | | | grade 2 events | 6732 | 48836 | 6017 | 25942 | 20608 | 4933 |
| | | | | | | | | 1% | 18% | 2% | 14% | 6% | 1% |
| | | | | | | | grade 3 events | 2785 | 7898 | 2793 | 11245 | 9368 | 2758 |
| | | | | | | | | 0% | 2% | 0% | 6% | 2% | 1% |
| | | | | | | | grade 4 events | 2651 | 7346 | 2666 | 11005 | 8862 | 2710 |
| | | | | | | | | 0% | 2% | 0% | 6% | 2% | 1% |
| | | | | | | | grade 5 events | 5772 | 19637 | 5520 | 16985 | 9491 | 6246 |
| | | | | | | | | 1% | 7% | 1% | 9% | 2% | 2% |
| | | | | | | | grade 6 events | 3562 | 65431 | 4148 | 42230 | 23565 | 4146 |
| | | | | | | | | 1% | 24% | 1% | 24% | 7% | 1% |
| | | | | | | | grade 7 events | 296742 | 74991 | 246483 | 50890 | 236976 | 234482 |
| | | | | | | | | 87% | 27% | 87% | 29% | 70% | 88% |

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 | LETG | LETG | Obspar update status | NONE | UPDATED |
| Data mode | VFAINT | VFAINT | CCD I0 on | N | N |
| Observation mode | POINTING | POINTING | CCD I1 on | N | N |
| [deg] Pointing RA | 83.921796 | 83.87635584224114 | CCD I2 on | N | N |
| [deg] Pointing Dec | -69.312539 | -69.29042771491372 | CCD I3 on | N | N |
| [deg] Pointing Roll | 95.051577 | 95.16569421701391 | CCD S0 on | O1 | Y |
| [deg] Roll angle | 100.000000 | 100.000000 | CCD S1 on | Y | Y |
| [deg] Roll tolerance | 15.000000 | 15.000000 | CCD S2 on | Y | Y |
| Roll constraint allows 180D rotation | N | N | CCD S3 on | Y | Y |
| [mm] SIM focus pos | -0.684267 | -0.6828225247311905 | CCD S4 on | Y | Y |
| [mm] SIM defocus | 0 | 0.001444936568705701 | CCD S5 on | O2 | Y |
| [mm] SIM translation stage pos | -182.132523 | -182.1344861297048 | Number of optional ACIS chips dropped | 0 | 0 |
| [mm] SIM translation stage offset | -8 | -7.998036453302973 | On-chip summing requested | N | N |
| [s] Observation start time (MET) | 306196890.184000 | 306195752.81469 | Subarray requested | NONE | NONE |
| Observation start date | 2007-09-14T22:40:25 | 2007-09-14T22:22:32 | Alternating exposures requested | N | N |
| [s] Observation end time (MET) | 306236890.184000 | 306237433.4167 | [s] Primary exposure time | 0.000000 | 3.2 |
| Observation end date | 2007-09-15T09:47:05 | 2007-09-15T09:57:13 | | | |
| Read mode | TIMED | TIMED | | | |

2.3 Aspect



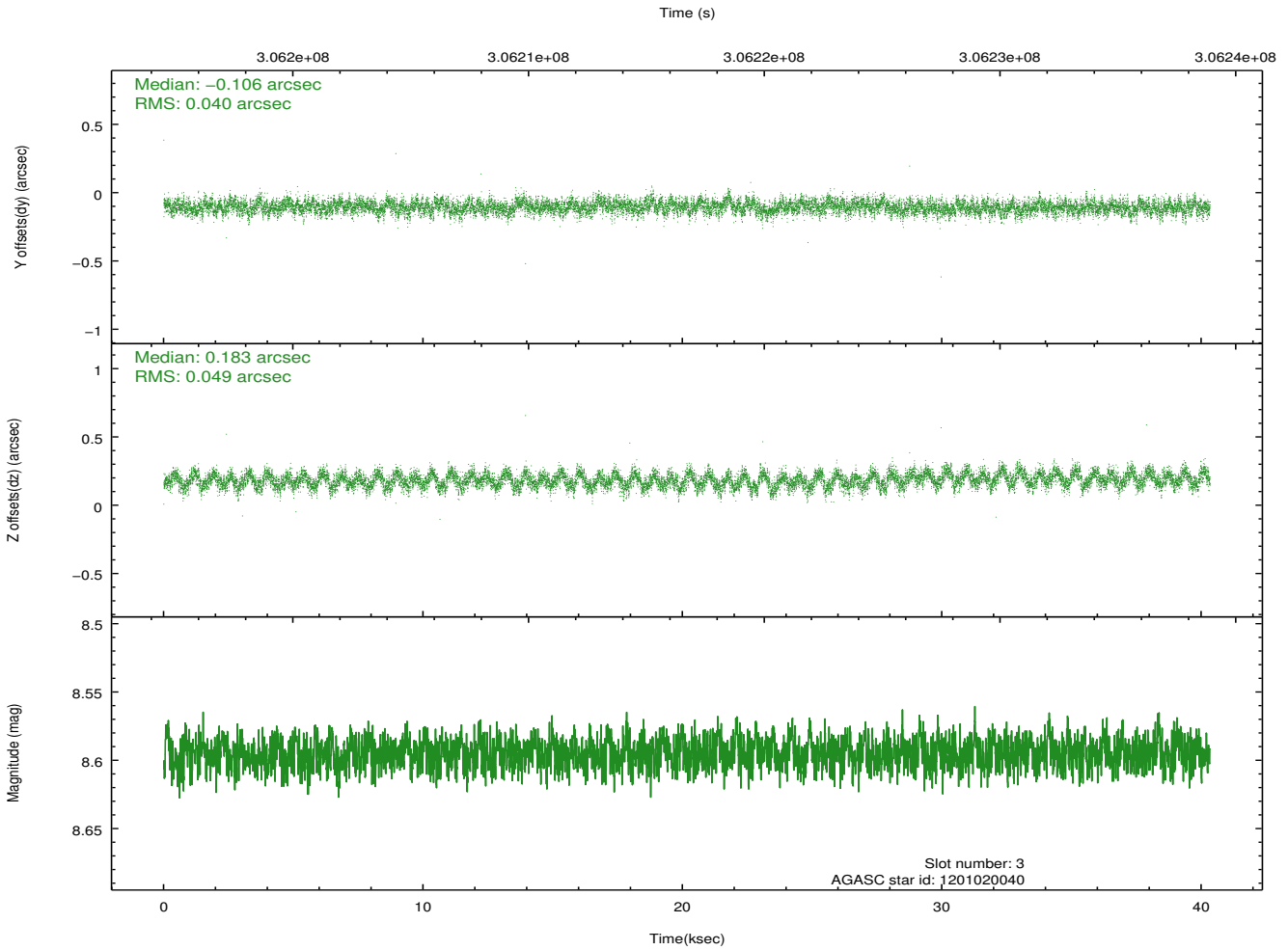
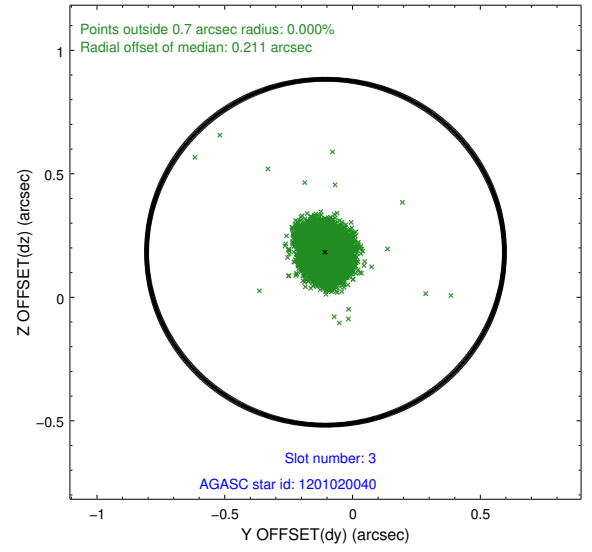
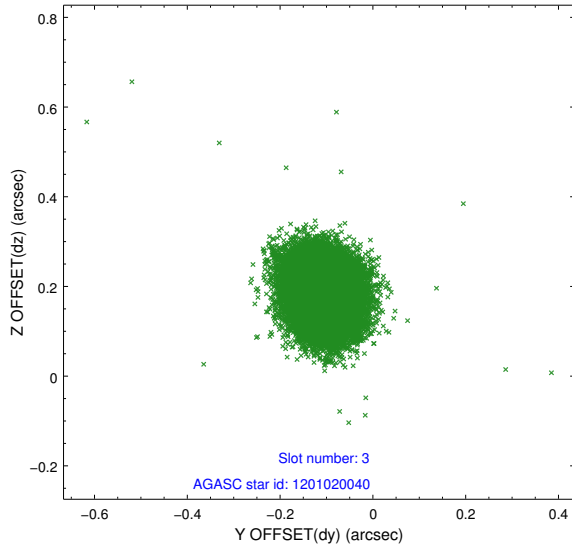


Slot Statistics

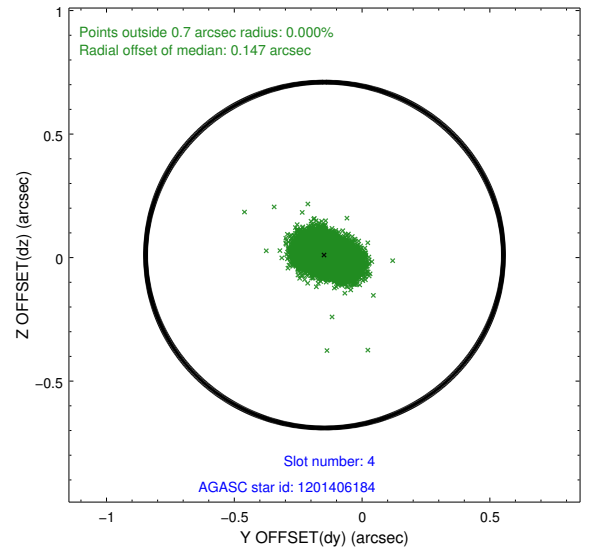
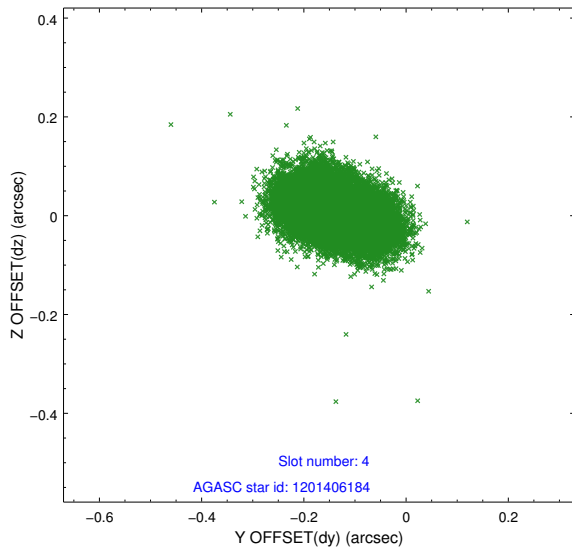
| slot | status | id | mag | n_pts | med_dy | med_dz | dr1 | dr2 | ra | dec | mean_y | mean_z |
|------|--------|------------|------|-------|--------|--------|-------|-------|-----------|------------|----------|----------|
| 0 | FID | ACIS-S-2 | 7.08 | 9838 | -0.150 | -0.109 | 0.017 | 0.030 | 0.000000 | 0.000000 | -766.07 | -1901.05 |
| 1 | FID | ACIS-S-4 | 7.16 | 9839 | 0.127 | 0.088 | 0.010 | 0.017 | 0.000000 | 0.000000 | 2147.47 | 7.60 |
| 2 | FID | ACIS-S-6 | 7.39 | 9837 | -0.006 | 0.028 | 0.012 | 0.019 | 0.000000 | 0.000000 | 396.06 | 644.95 |
| 3 | GUIDE | 1201020040 | 8.60 | 19669 | -0.106 | 0.183 | 0.067 | 0.108 | 85.379163 | -68.879396 | 1364.83 | -2017.76 |
| 4 | GUIDE | 1201406184 | 7.92 | 19671 | -0.147 | 0.010 | 0.072 | 0.119 | 82.503234 | -69.975517 | -2243.72 | 1953.60 |
| 5 | GUIDE | 1201410616 | 9.32 | 19659 | 0.219 | -0.152 | 0.111 | 0.173 | 82.516808 | -69.784406 | -1558.15 | 1892.26 |
| 6 | GUIDE | 1200885760 | 9.44 | 19661 | 0.037 | -0.164 | 0.092 | 0.155 | 83.723637 | -68.777667 | 1940.45 | 88.06 |
| 7 | GUIDE | 1201019672 | 6.86 | 19676 | -0.004 | 0.123 | 0.064 | 0.100 | 85.312192 | -68.770187 | 1765.44 | -1974.93 |

2.4 Star Slots

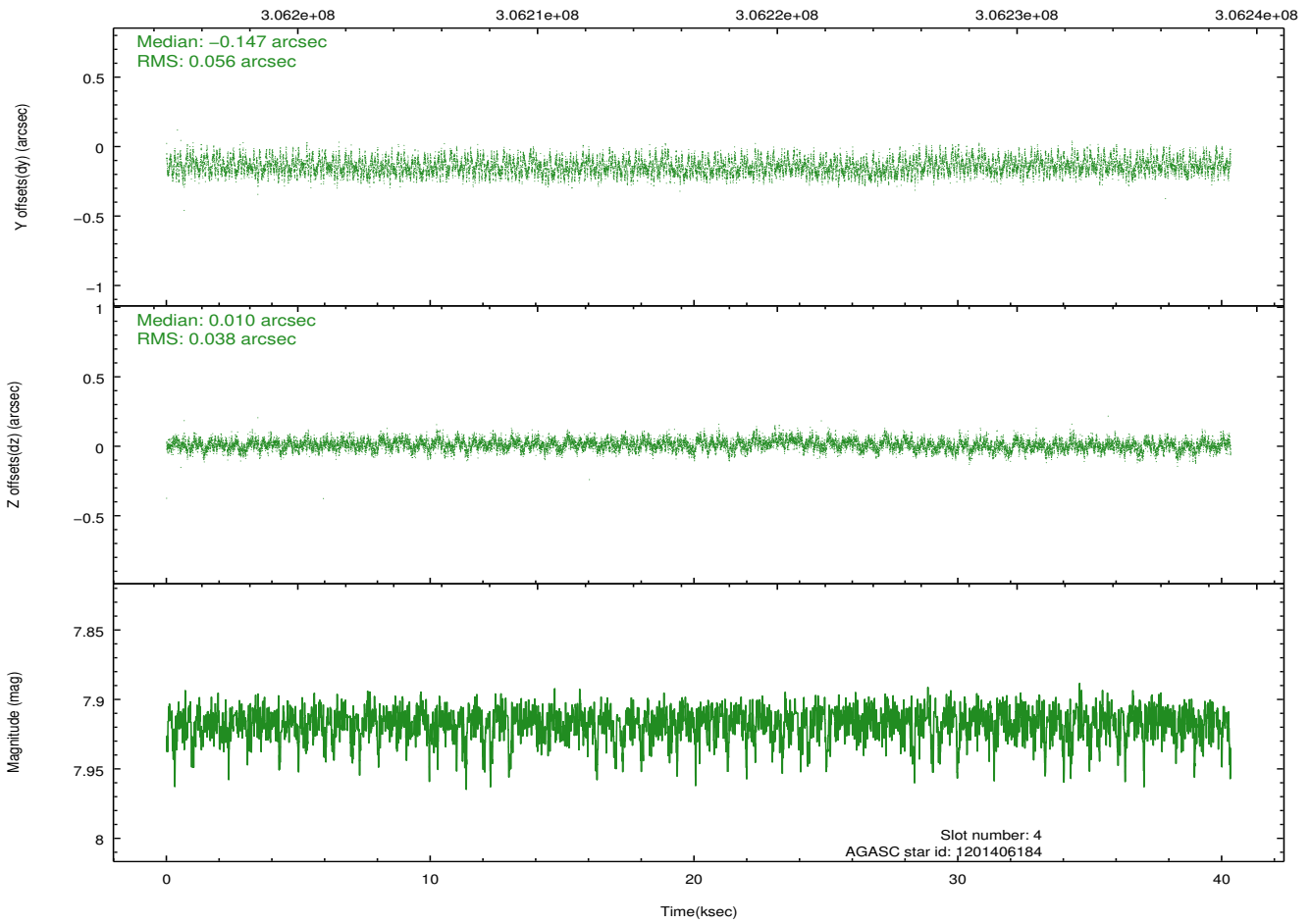
2.4.1 Slot 3



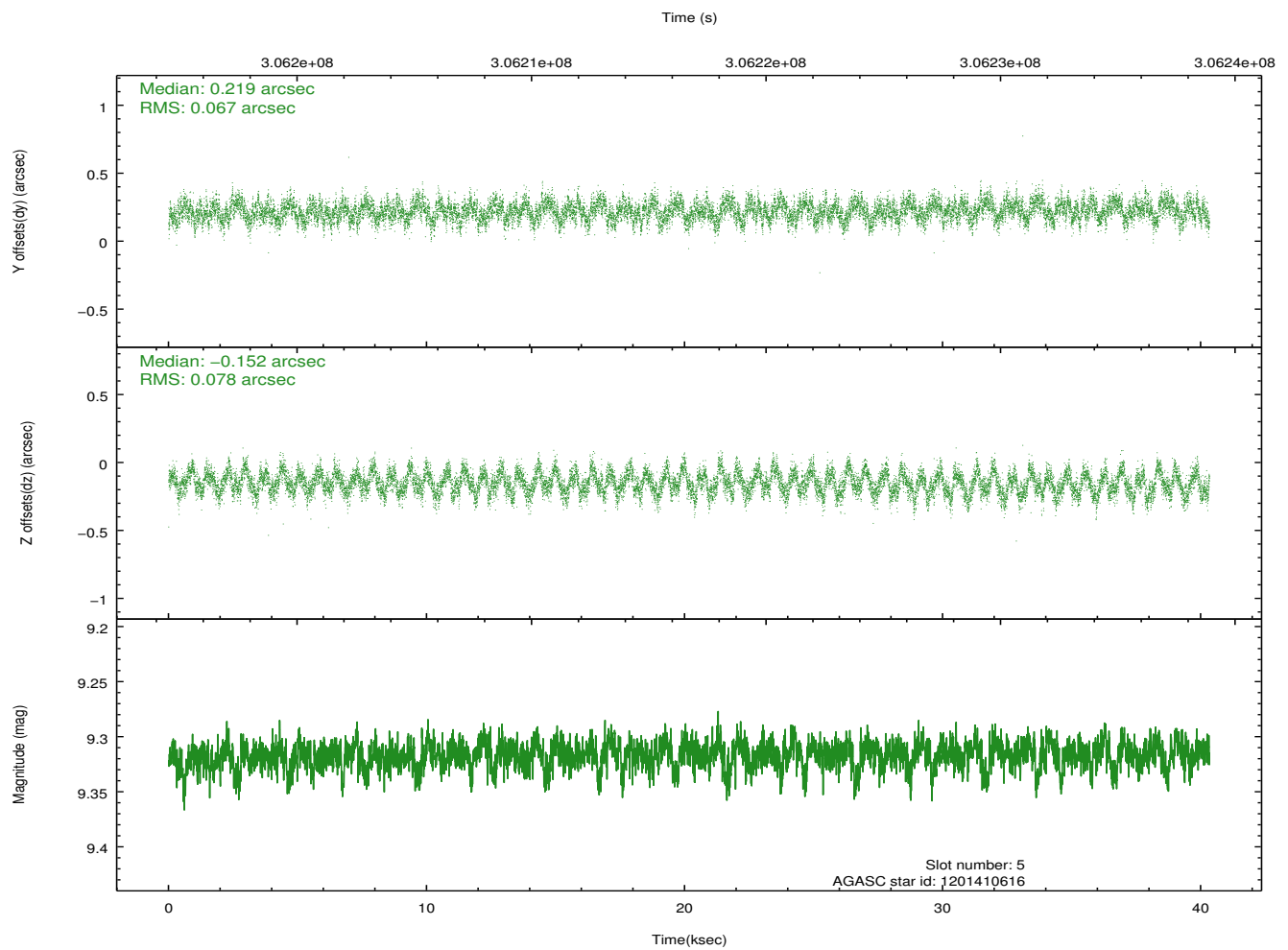
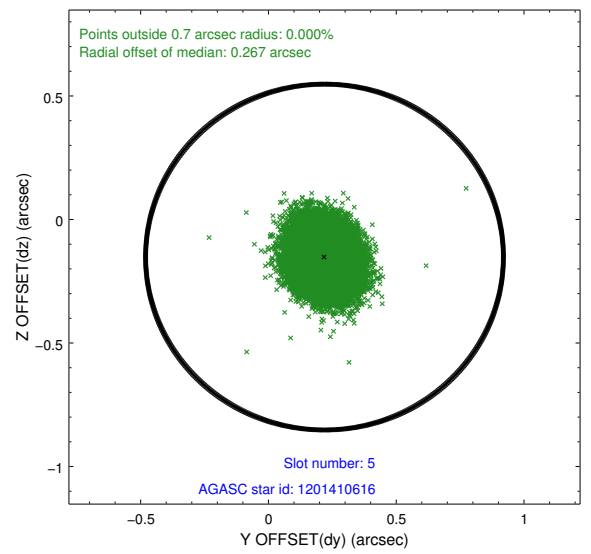
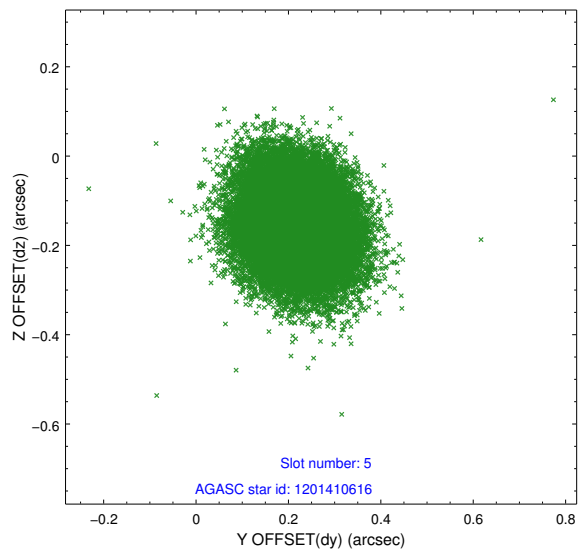
2.4.2 Slot 4



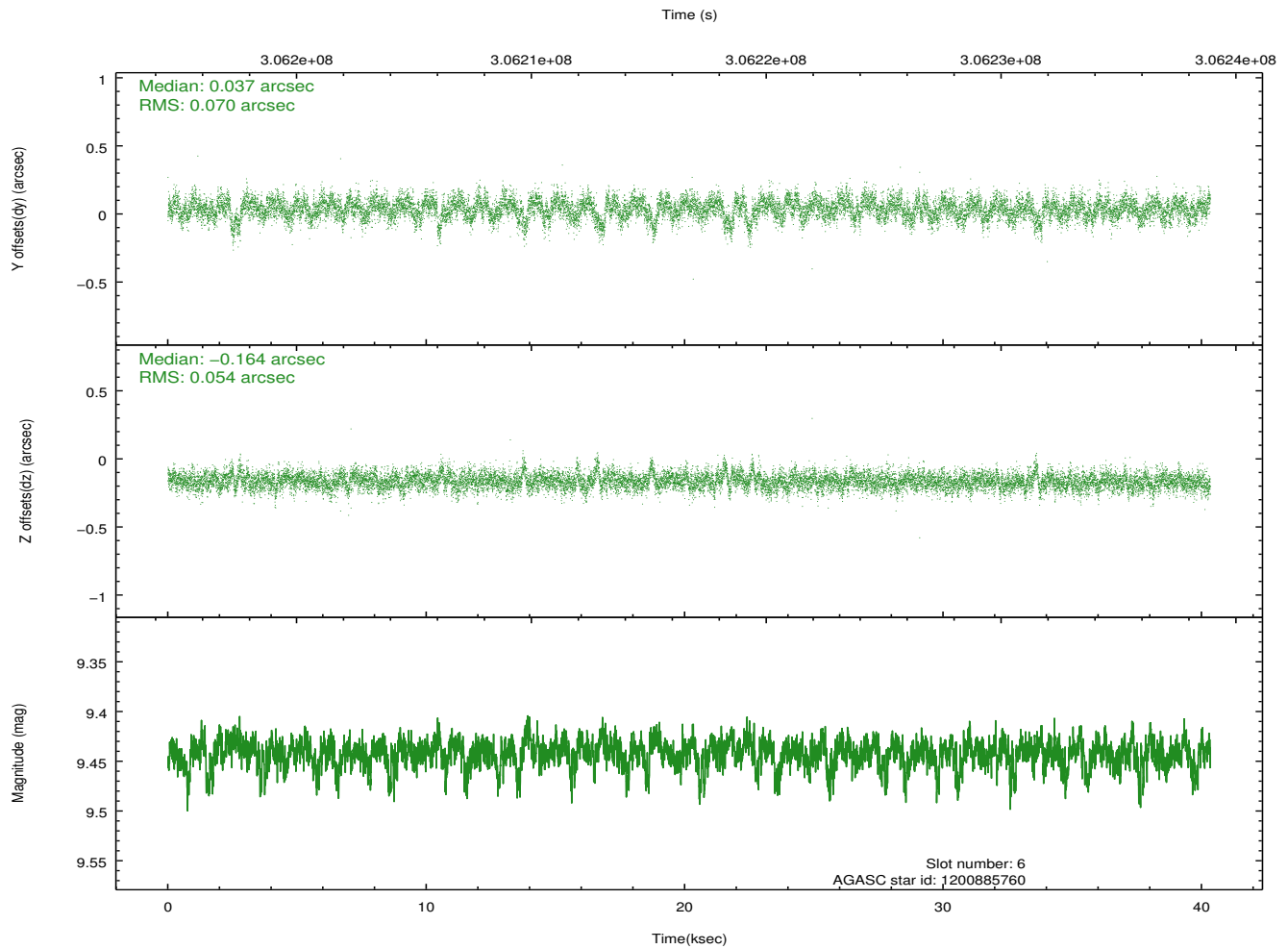
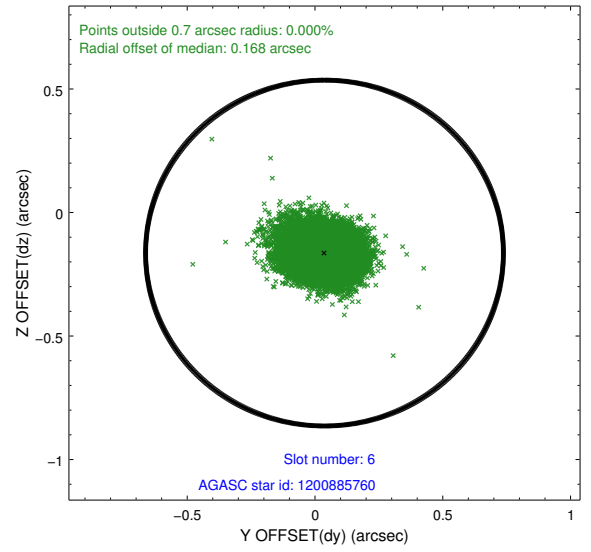
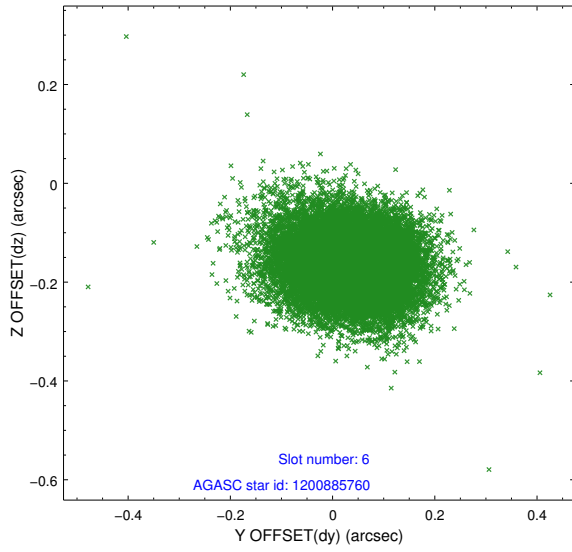
Time (s)



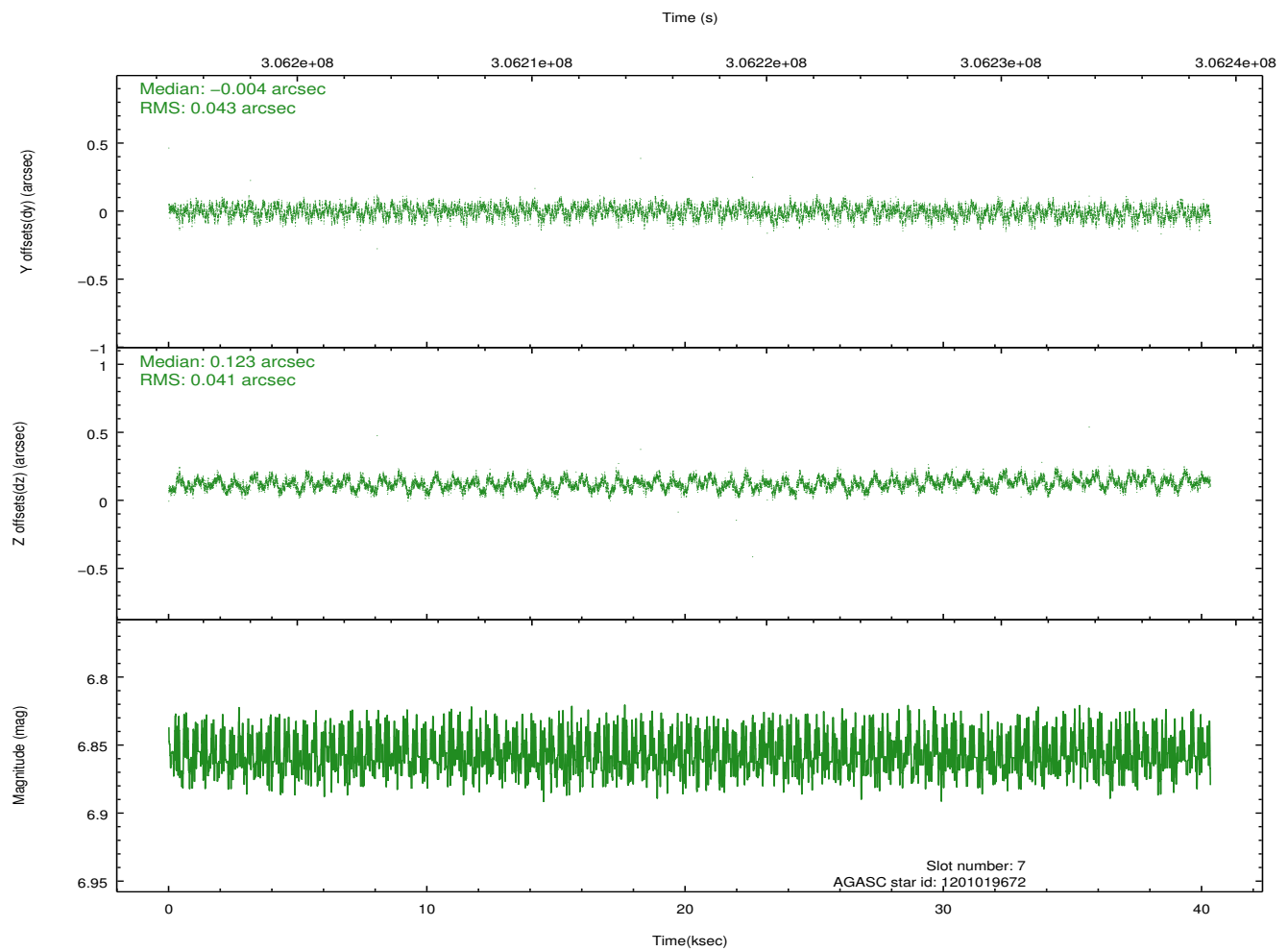
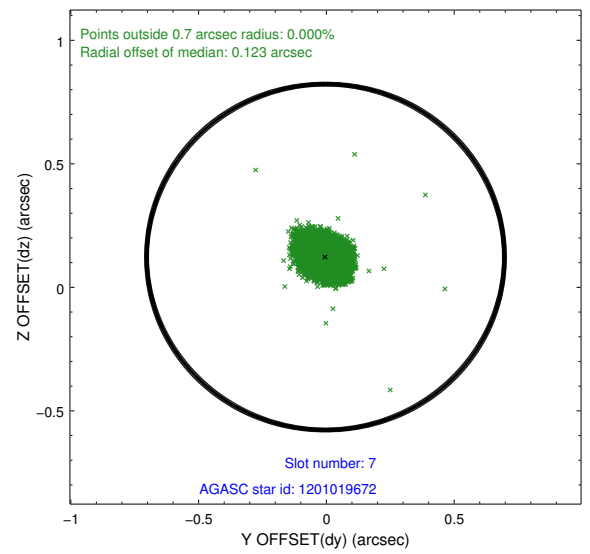
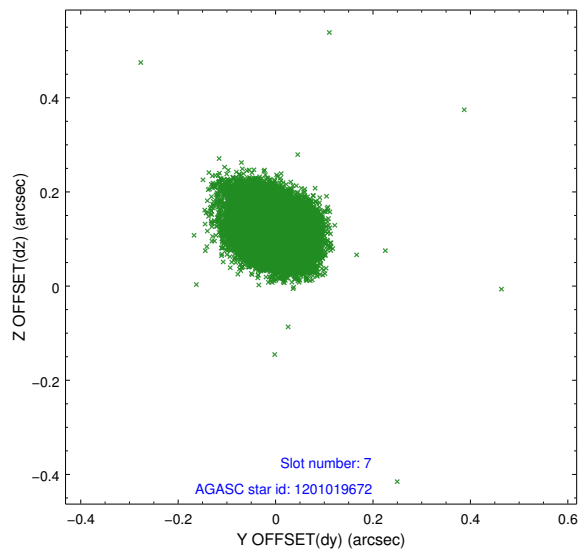
2.4.3 Slot 5



2.4.4 Slot 6

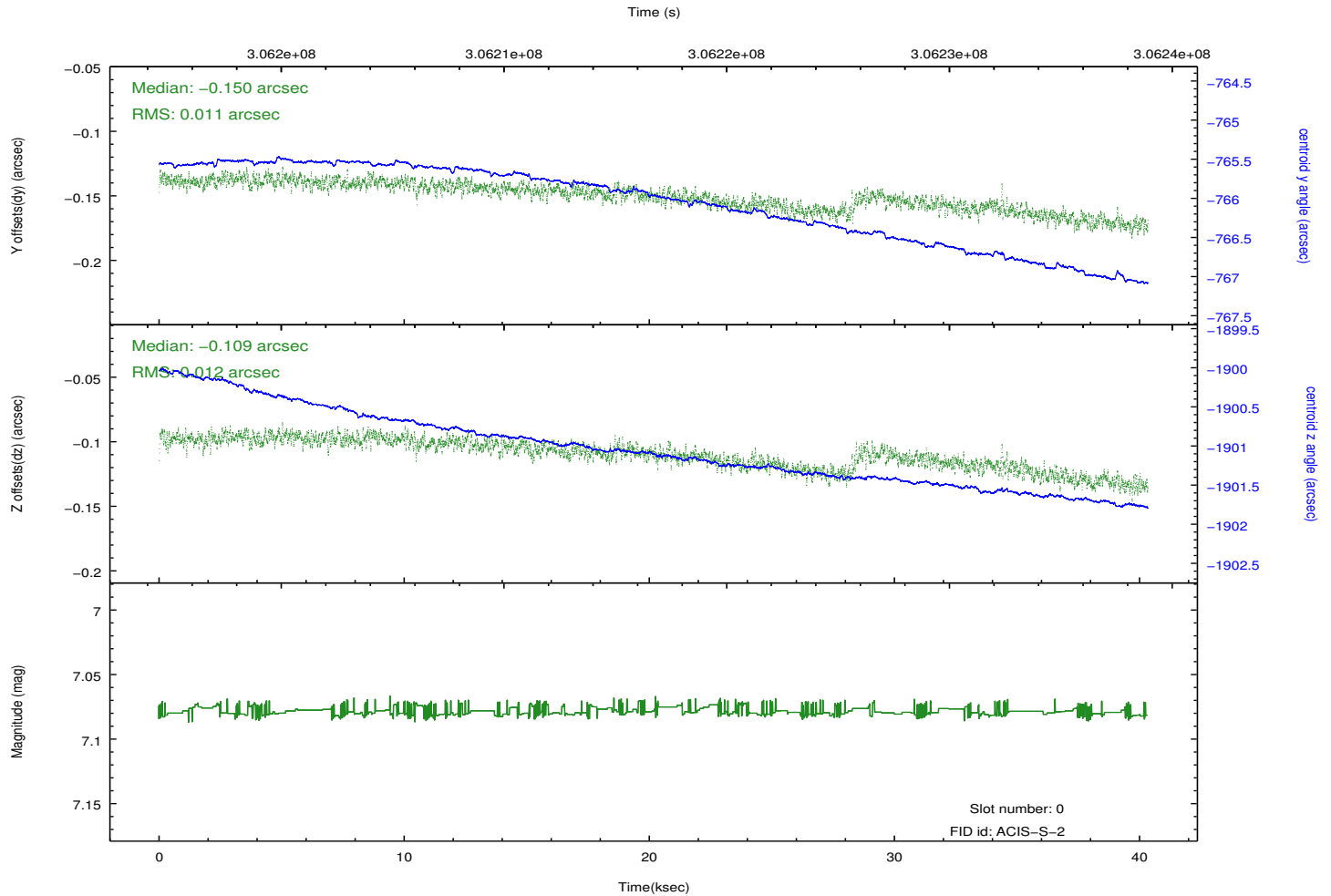
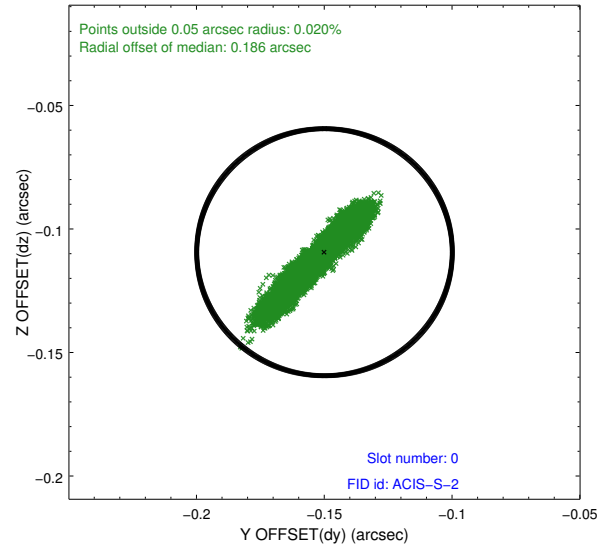
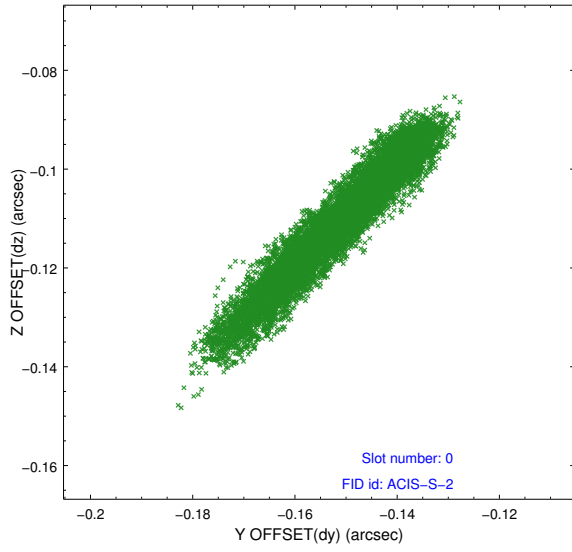


2.4.5 Slot 7

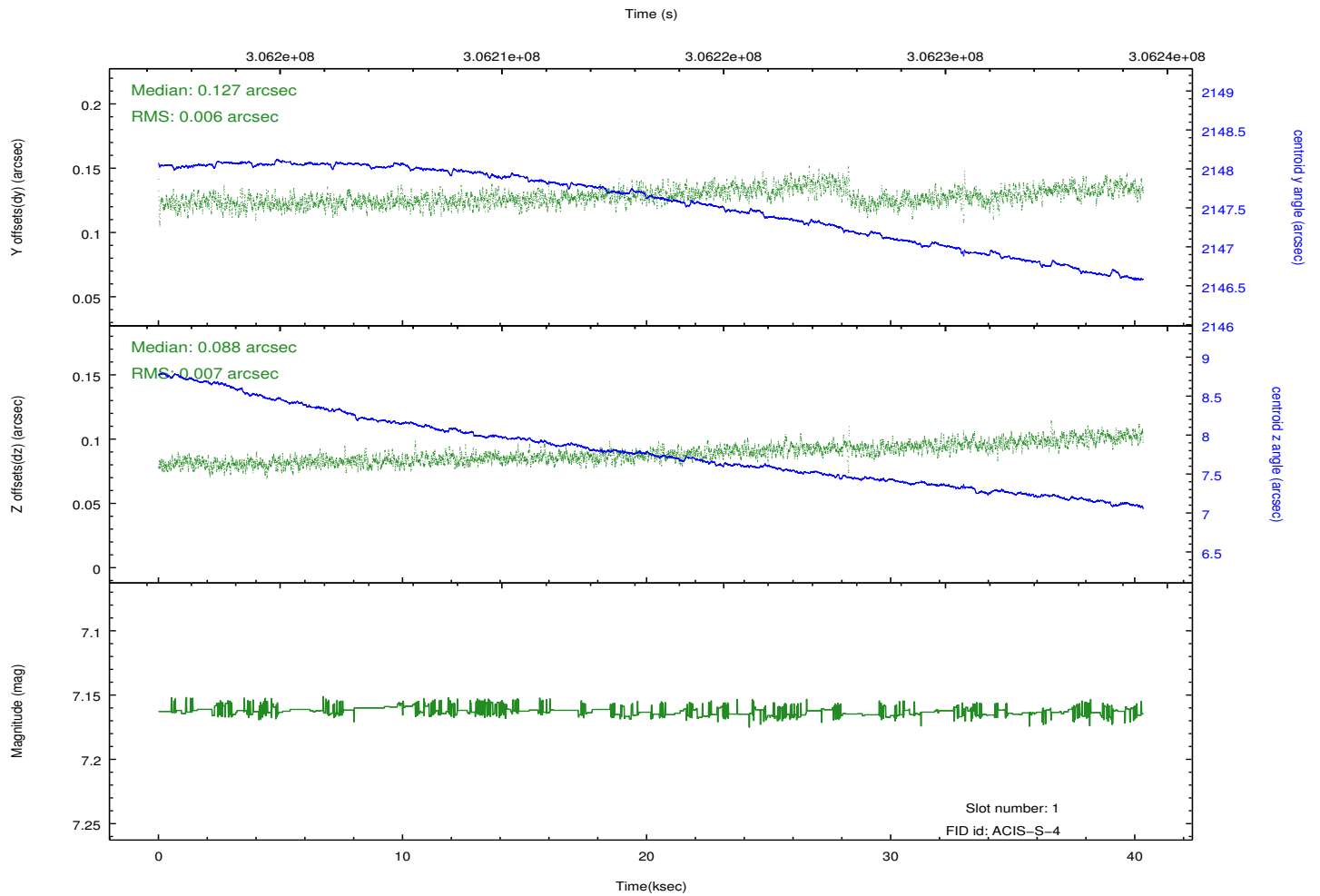
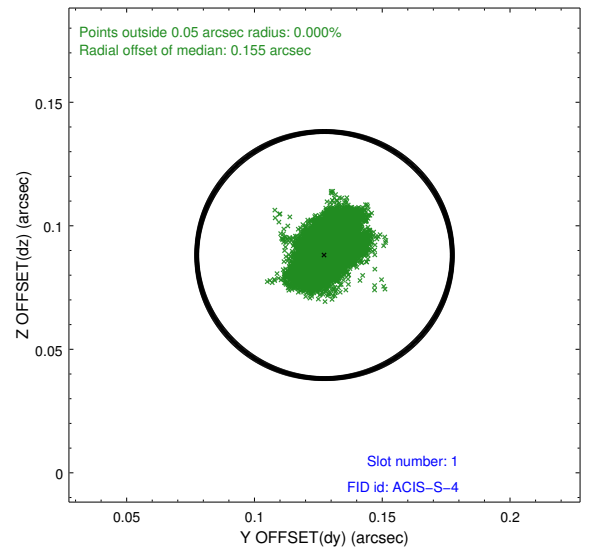
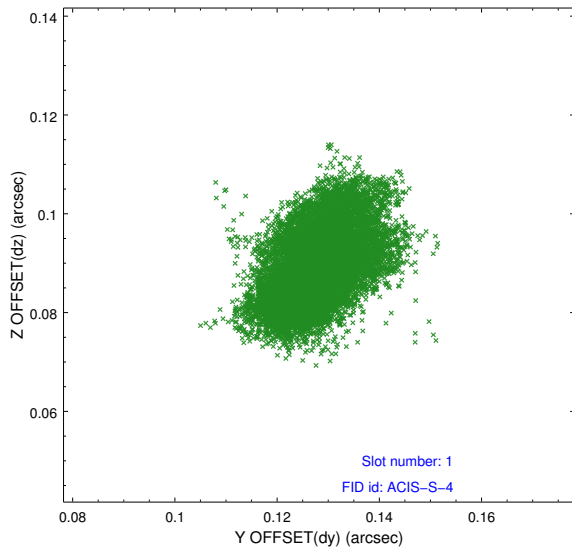


2.5 FID Slots

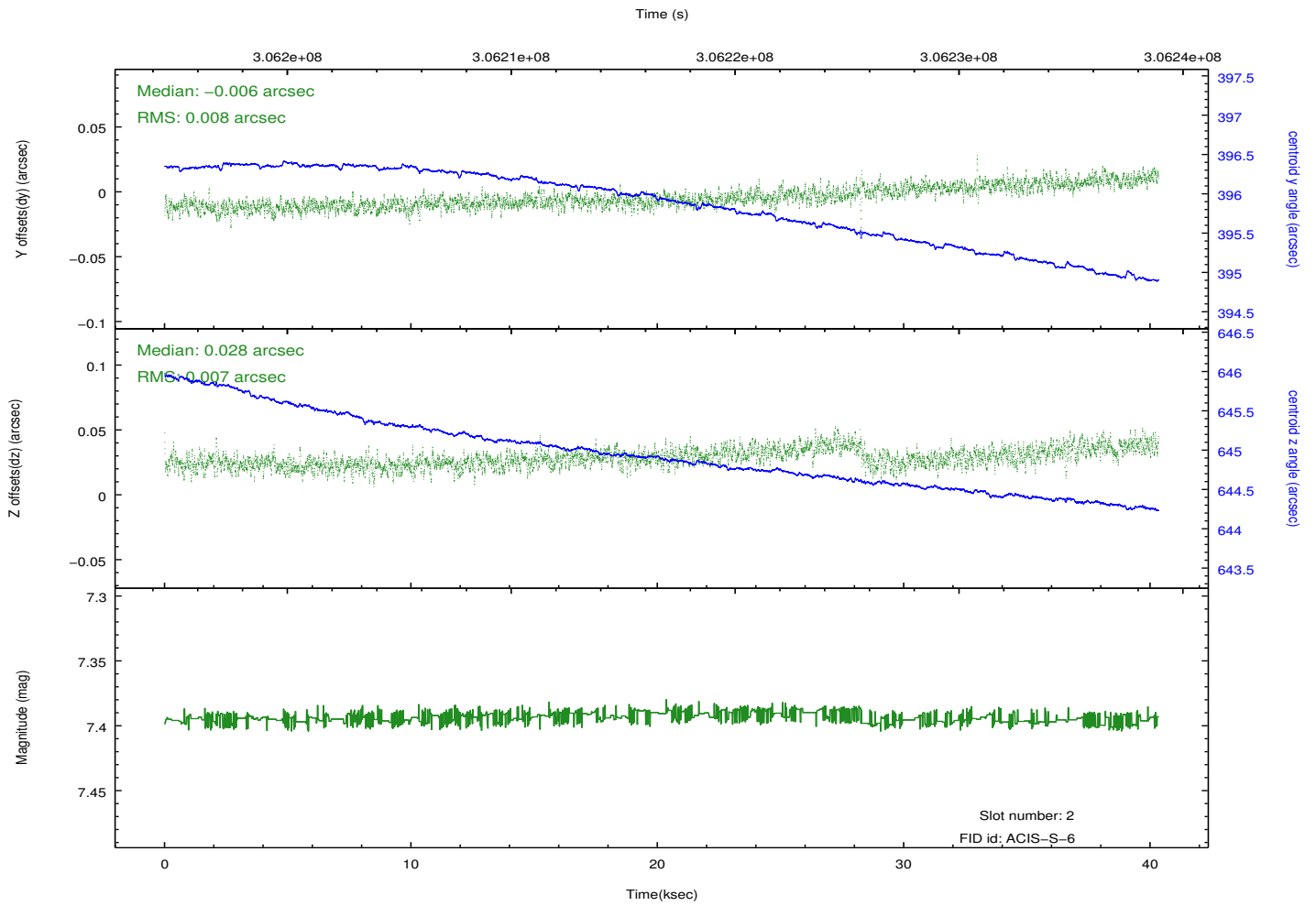
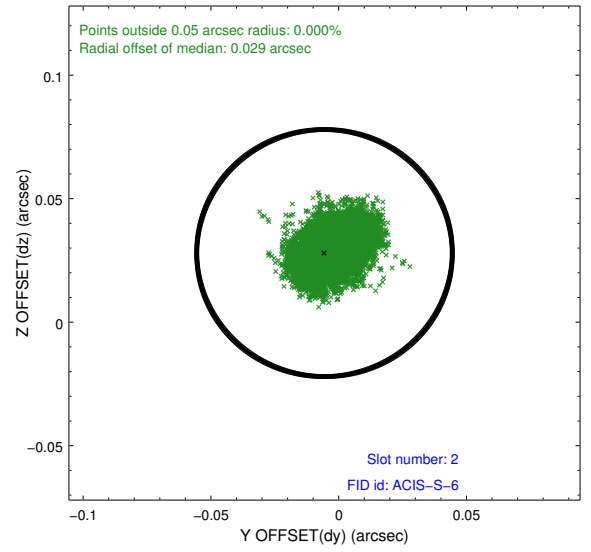
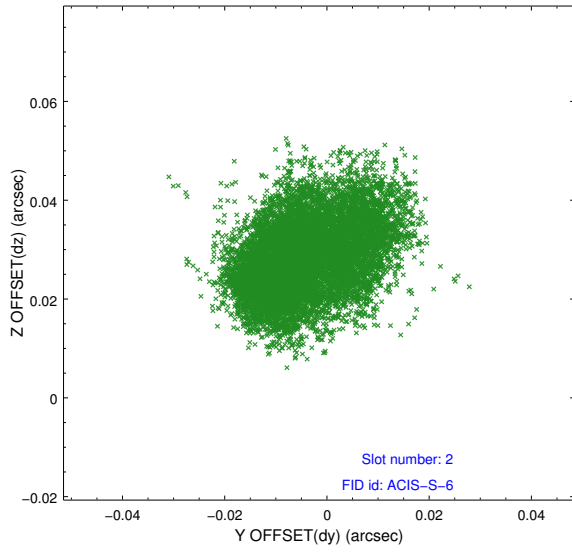
2.5.1 Slot 0



2.5.2 Slot 1



2.5.3 Slot 2

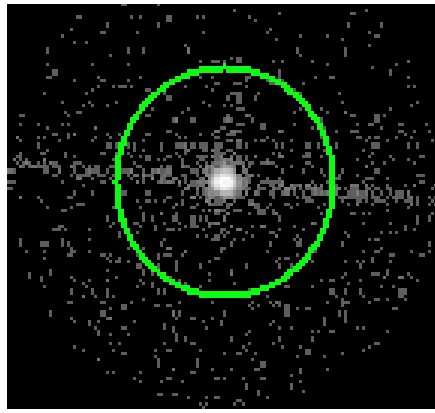


3 Gratings

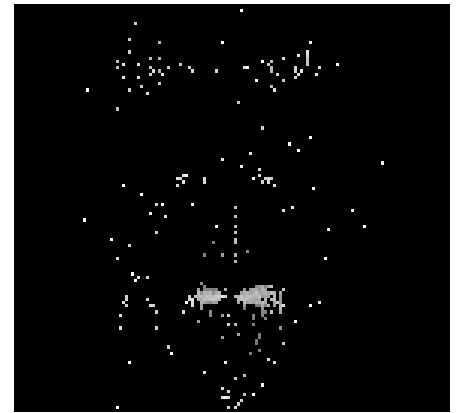
3.1 LETG Arm



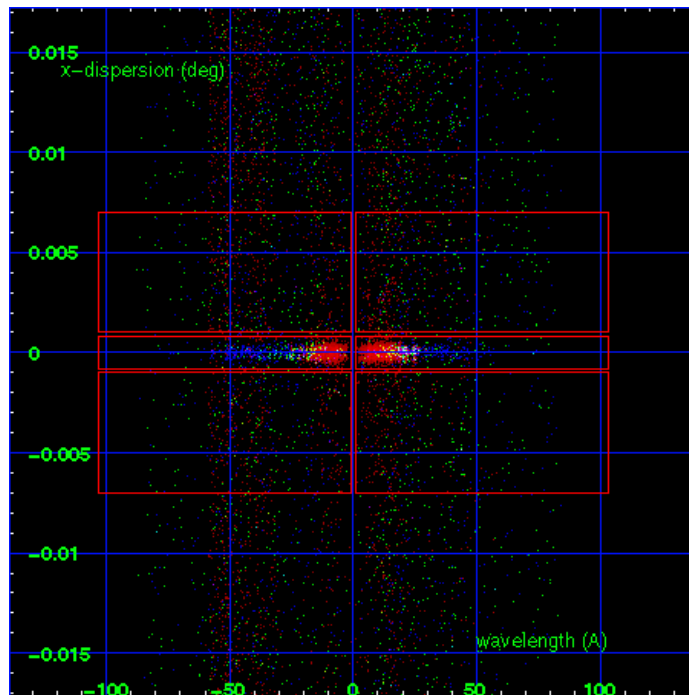
LETG Order Sort 123



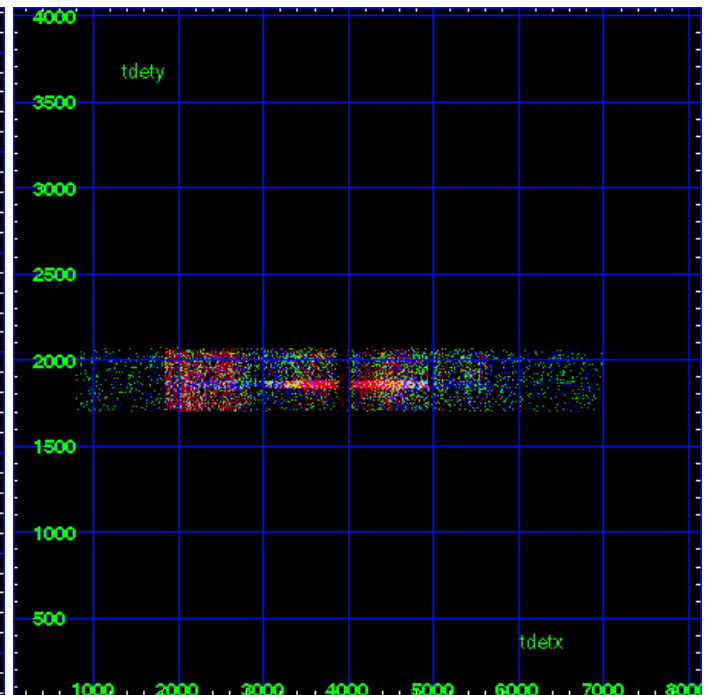
LETG Zero Order



LETG Order Sort ALL

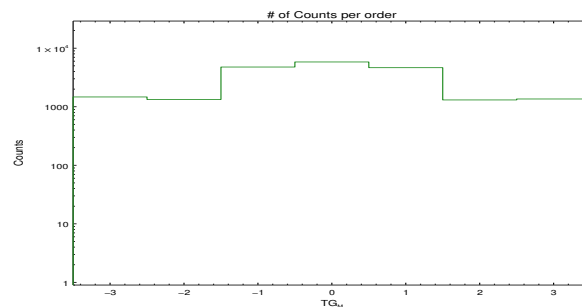


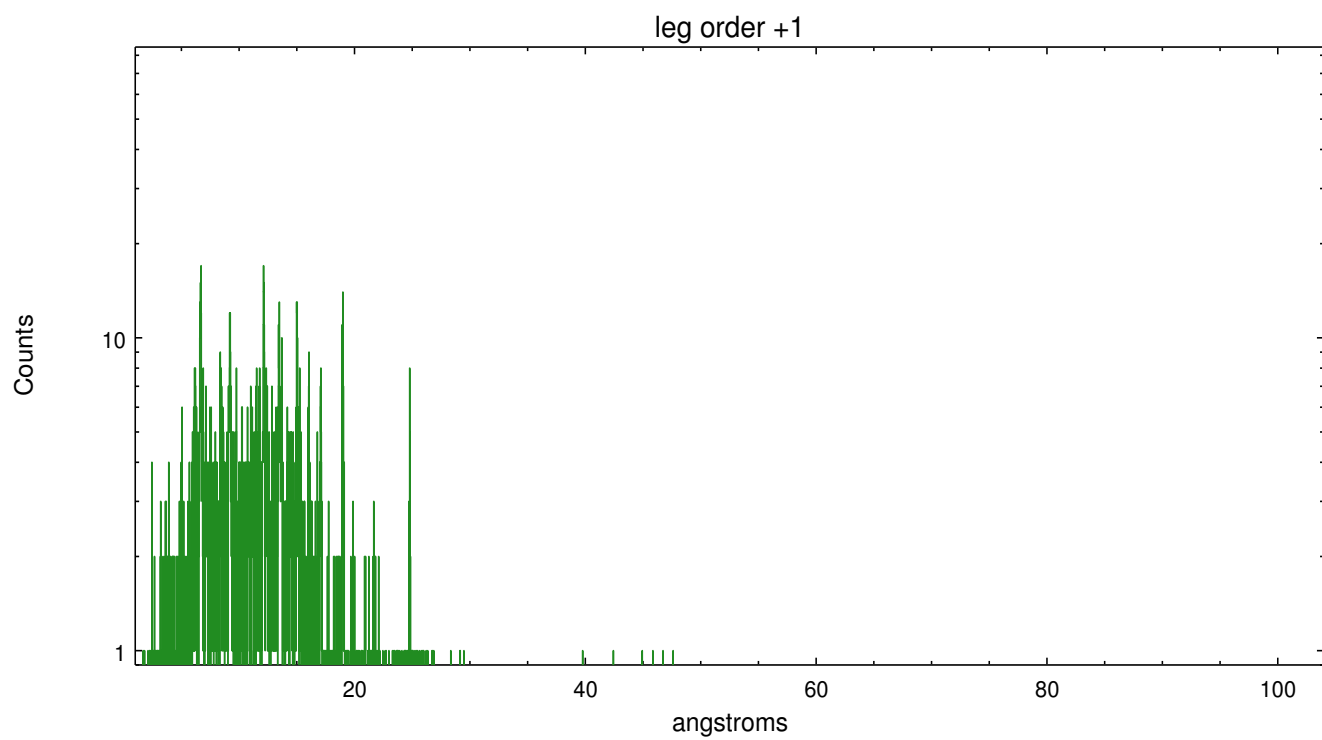
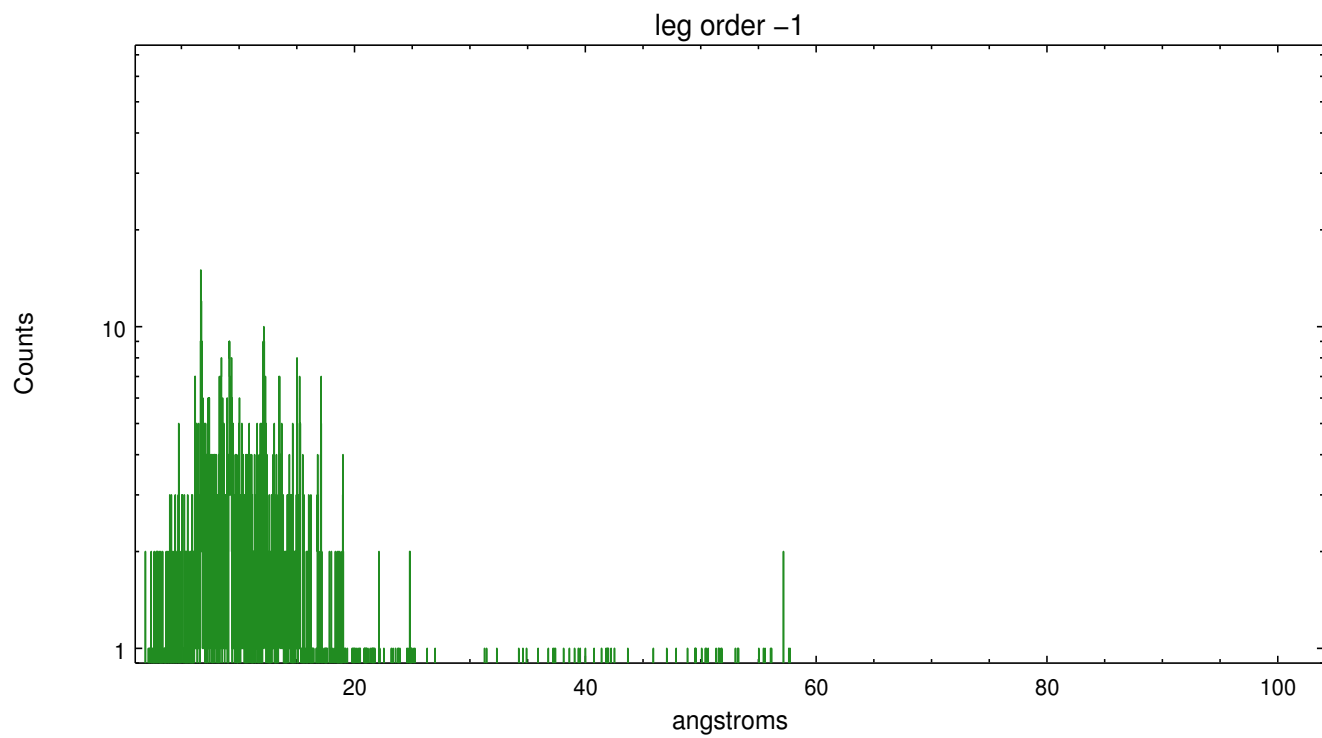
Spot Image LETG



Full Detector LETG

| | order -3 | order -2 | order -1 | order 0 | order 1 | order 2 | order 3 |
|--------|-------------|-------------|-------------|------------|------------|------------|------------|
| Events | 1470 | 1331 | 4769 | 5820 | 4650 | 1307 | 1357 |





A Summary

A.1 Status

| | |
|----------------------------|-------------|
| V&V Scientist | Joy Nichols |
| V&V Date (YYYY-MM-DD) | 2012.05.09 |
| V&V Edition | 1 |
| V&V Disposition and Status | OK |
| V&V Charge Time | 40.0383998 |

A.2 Comments

Warning: Extended source, dia ~ 3 arc seconds; nominal extraction includes whole source and could be narrowed to reduce background. Background events dominate below 30A. Extraction is centered in supernova remnant, but is not positioned at the brightest region.

===

Gain and CTI correction are not well calibrated on CCD_ID 5 (ACIS-S1). Default order sorting can clip some regions, particularly longward of 30A (first order). User-specified custom processing parameters may be required in `tg_resolve_events` (`osipfile=None`, `osort_lo`, `osort_hi ~0.5`) though this can allow more zeroth order background at short wavelengths.