

V&V Reference Report

L2 ASCDS Version : 7.6.8.1

Observation 5460 - L2 Version 003
Chandra X-Ray Center

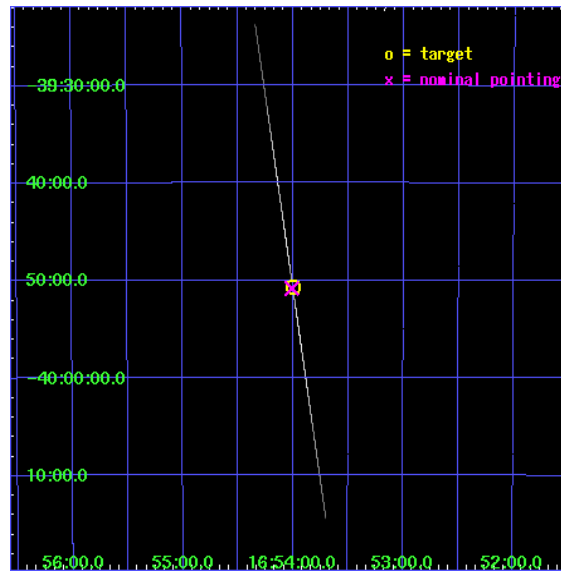
L2 Processing Date : Aug 17 2006

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1 Front

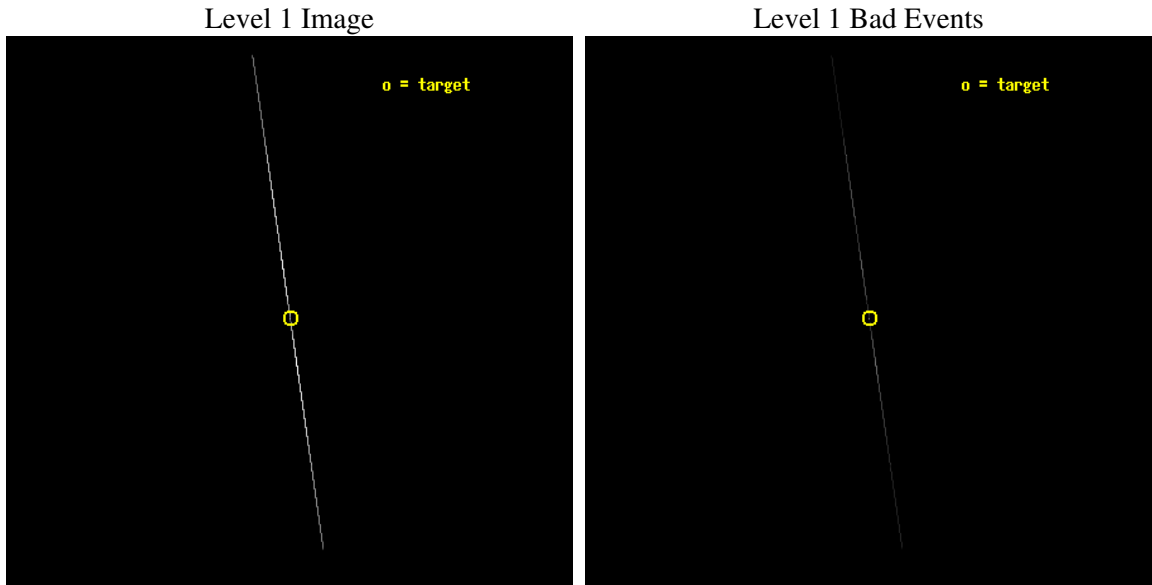
| | |
|----------|---|
| seq_num | 400390 |
| obs_id | 5460 |
| title | Relativistic Effects and Outflows in a Black Hole Transient |
| observer | Dr Jon Miller |
| object | GRO J1655-40 |
| ra_targ | 253.500583 |
| dec_targ | -39.845806 |
| ra_nom | 253.50245095663 |
| dec_nom | -39.847518108888 |
| roll_nom | 81.700891324064 |
| revision | 3 |
| ontime | 14301.70996955 |
| livetime | 14245.843914982 |
| ontime4 | 29659.035857528 |
| ontime5 | 33566.75 |
| ontime6 | 14288.573541403 |
| ontime7 | 14301.70996955 |
| ontime8 | 22929.161350518 |
| ontime9 | 33025.319131613 |
| l2events | 11606386 |



2 OBI

2.1 OBI

2.1.1 Images



2.1.2 Parameters

| | |
|----------|---------------------|
| obi_num | 0 |
| ascdsver | 7.6.8.1 |
| caldsver | 3.2.3 |
| date | 2006-08-15T03:10:04 |
| revision | 3 |

| | |
|----------------|-----------------|
| sched_exp_time | 33423.002000 |
| ontime | 14958.232239902 |
| ontime4 | 30352.51715818 |
| ontime5 | 34263.149577081 |
| ontime6 | 14945.095973223 |
| ontime7 | 14958.232239902 |
| ontime8 | 23603.785323441 |
| ontime9 | 33723.177399397 |
| l1events | 12647183 |

2.1.3 Events

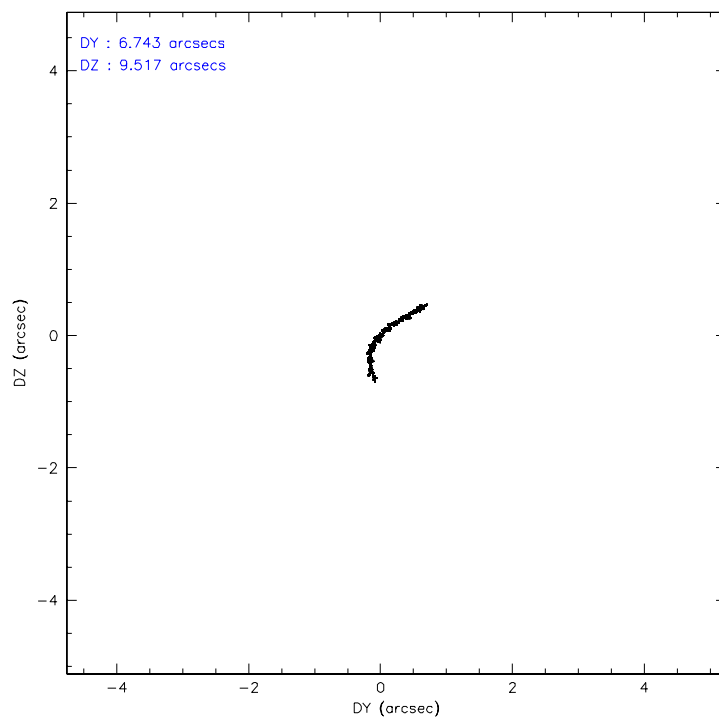
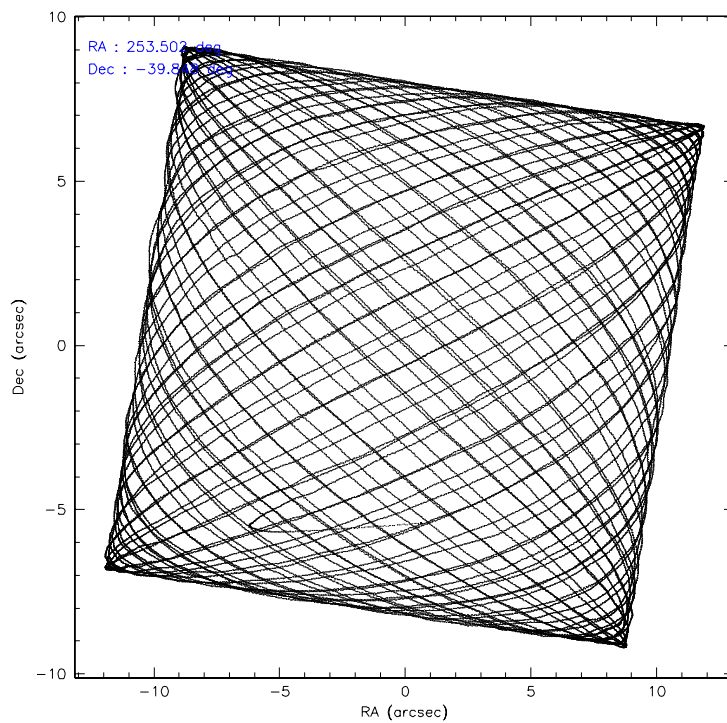
| | ccd 4 | ccd 5 | ccd 6 | ccd 7 | ccd 8 | ccd 9 |
|-----------------|--------|---------|---------|---------|---------|--------|
| level 1 events | 274705 | 2077675 | 3657153 | 3835318 | 2315554 | 486778 |
| rejected events | 11649 | 58716 | 67703 | 87983 | 39264 | 17013 |
| rejected % | 4% | 2% | 1% | 2% | 1% | 3% |

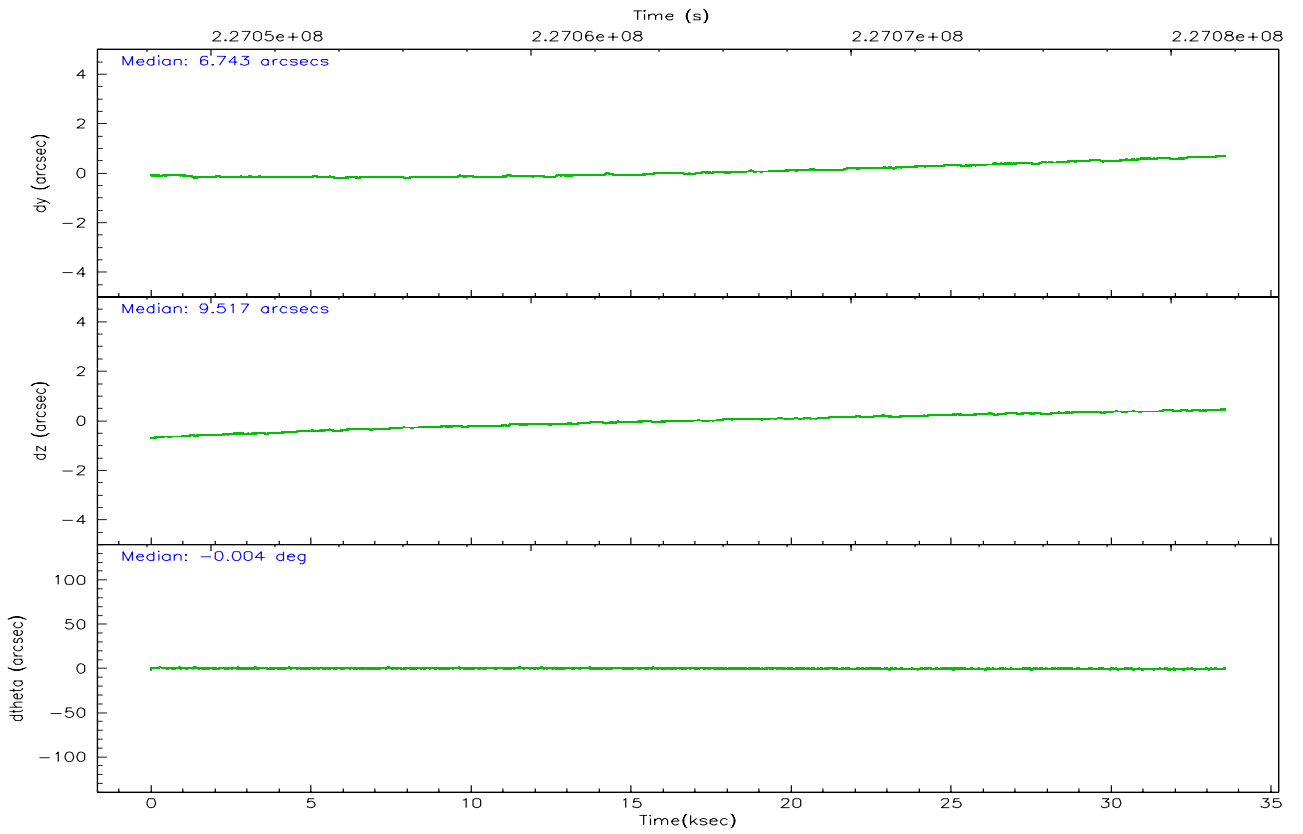
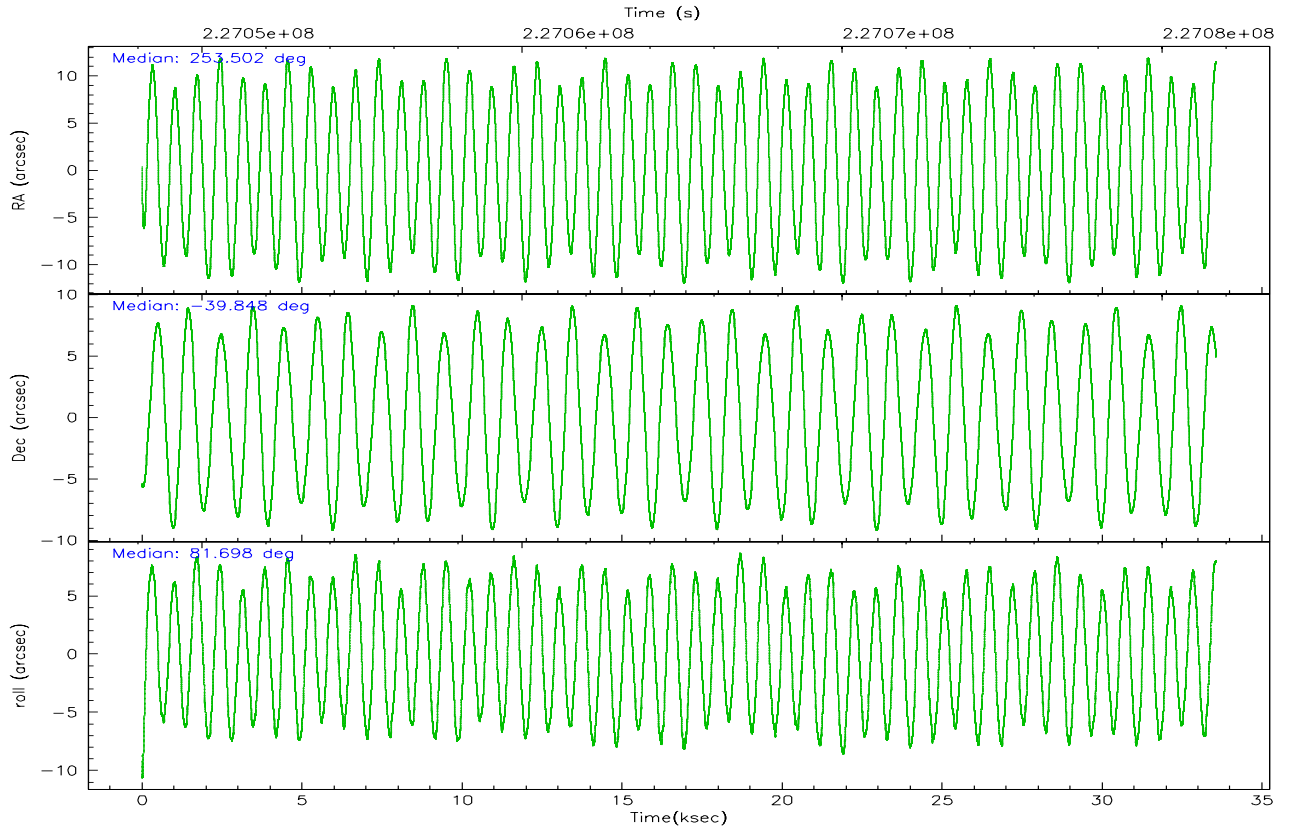
| | ccd 4 | ccd 5 | ccd 6 | ccd 7 | ccd 8 | ccd 9 |
|----------------|--------|--------|---------|---------|---------|--------|
| grade 0 events | 14809 | 345817 | 1203016 | 748875 | 1498873 | 67261 |
| | 5% | 16% | 32% | 19% | 64% | 13% |
| grade 1 events | 192 | 691 | 5367 | 4766 | 4886 | 379 |
| | 0% | 0% | 0% | 0% | 0% | 0% |
| grade 2 events | 214686 | 922805 | 2063400 | 1106313 | 591098 | 351169 |
| | 78% | 44% | 56% | 28% | 25% | 72% |
| grade 3 events | 5359 | 102633 | 55930 | 378046 | 64174 | 7990 |
| | 1% | 4% | 1% | 9% | 2% | 1% |
| grade 4 events | 5585 | 100770 | 55925 | 375981 | 63162 | 8441 |
| | 2% | 4% | 1% | 9% | 2% | 1% |
| grade 5 events | 9133 | 43819 | 26414 | 45429 | 17734 | 13269 |
| | 3% | 2% | 0% | 1% | 0% | 2% |
| grade 6 events | 24941 | 561140 | 247101 | 1175908 | 75627 | 38269 |
| | 9% | 27% | 6% | 30% | 3% | 7% |
| grade 7 events | 0 | 0 | 0 | 0 | 0 | 0 |
| | 0% | 0% | 0% | 0% | 0% | 0% |

2.2 Compared Parameters

| Parameter | Planned | Actual | Parameter | Planned | Actual |
|-----------------------------------|---------------------|----------------------|---------------------------------|-----------|---------|
| Instrument | ACIS | ACIS | Obspar format version number | 6 | 6 |
| Detector | ACIS-456789 | ACIS-456789 | Obspar file type | PREDICTED | ACTUAL |
| Grating | HETG | HETG | Obspar update status | NONE | UPDATED |
| Data mode | CC33_GRADED | CC33_GRADED | On-chip summing requested | N | N |
| Observation mode | POINTING | POINTING | Subarray requested | NONE | NONE |
| Pointing RA | 253.516021 | 253.5024509566284 | Alternating exposures requested | N | N |
| Pointing Dec | -39.872673 | -39.8475181088877 | Primary exposure time | 0.000000 | 0 |
| Pointing Roll | 81.552967 | 81.70089132406382 | | | |
| SIM focus pos (mm) | -0.684267 | -0.6828225247311905 | | | |
| SIM defocus (mm) | 0 | 0.001444936568705701 | | | |
| SIM translation stage pos (mm) | -182.632523 | -182.64237782062 | | | |
| SIM translation stage offset (mm) | -7.5 | -7.490144762387843 | | | |
| Observation start time | 227048277.184000 | 227047437.48876 | | | |
| Observation start date | 2005-03-12T20:56:53 | 2005-03-12T20:43:57 | | | |
| Observation end time | 227081700.184000 | 227081913.87782 | | | |
| Observation end date | 2005-03-13T06:13:56 | 2005-03-13T06:18:33 | | | |
| Read mode | CONTINUOUS | CONTINUOUS | | | |

2.3 Aspect



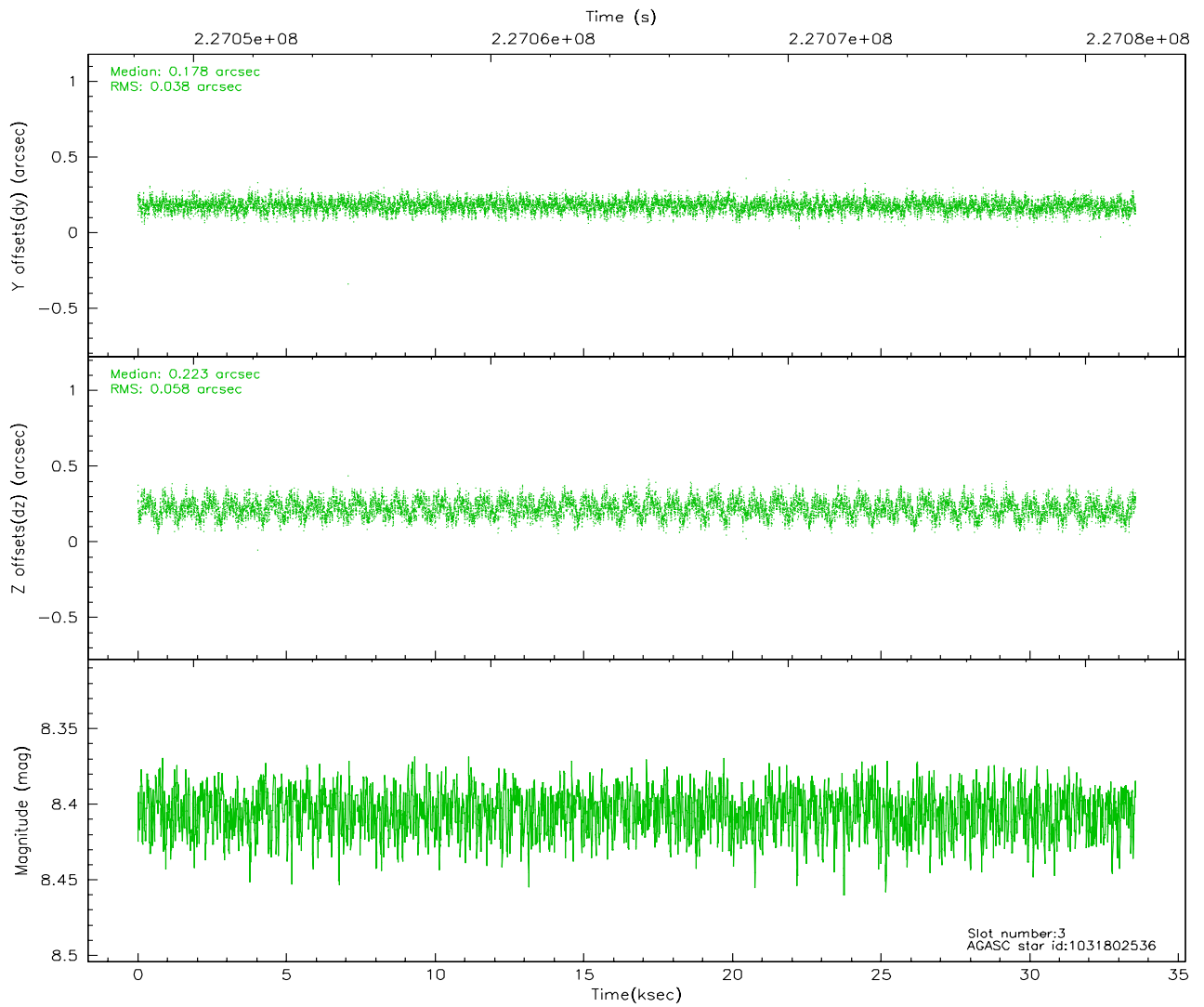
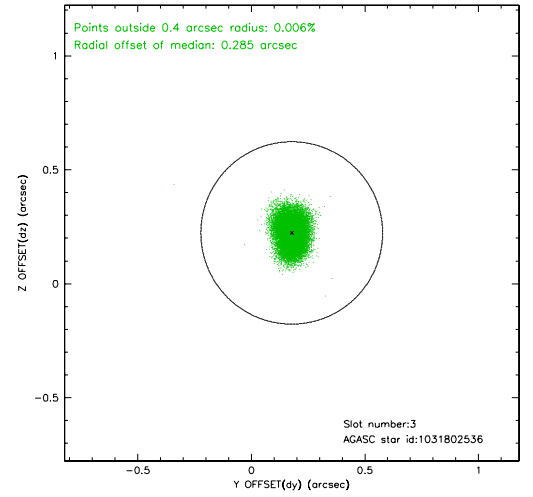
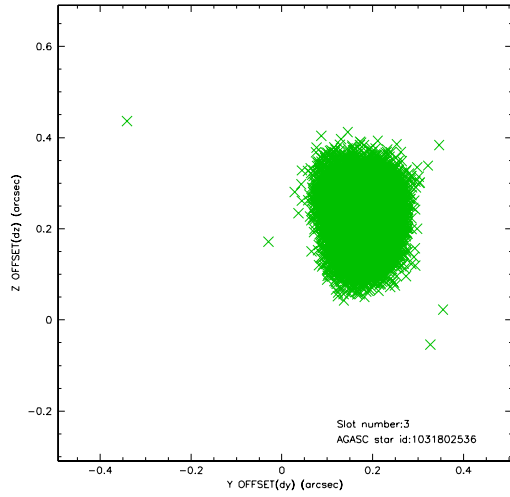


Slot Statistics

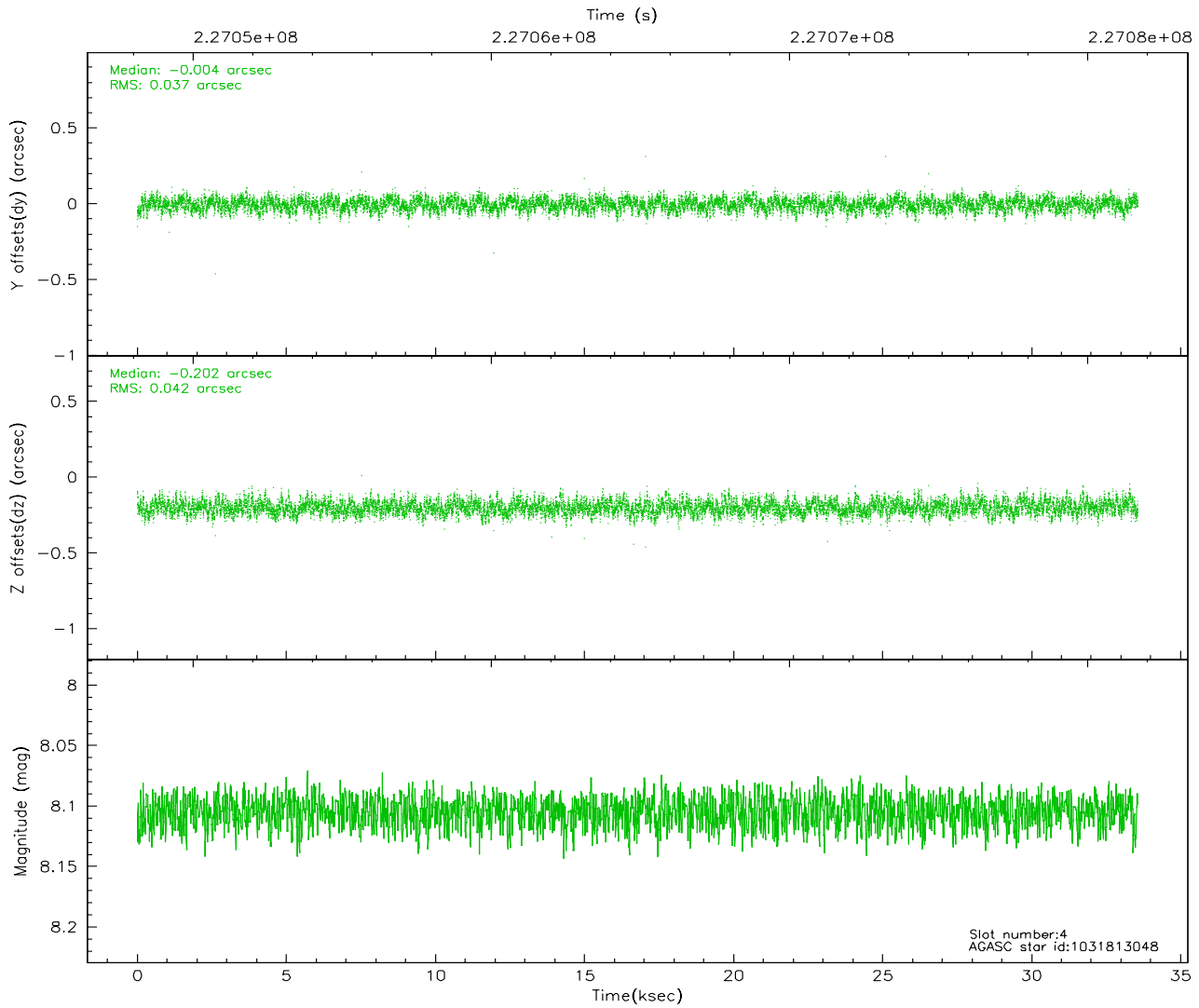
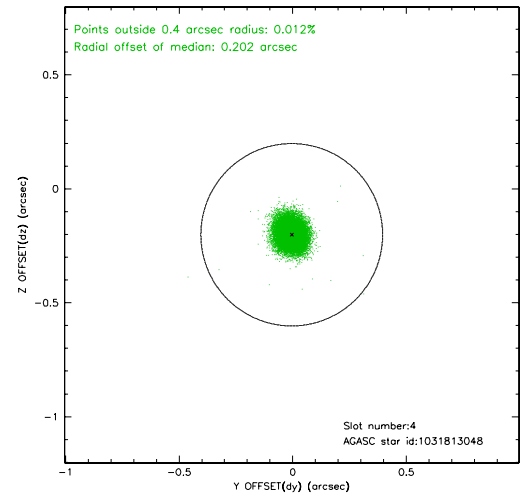
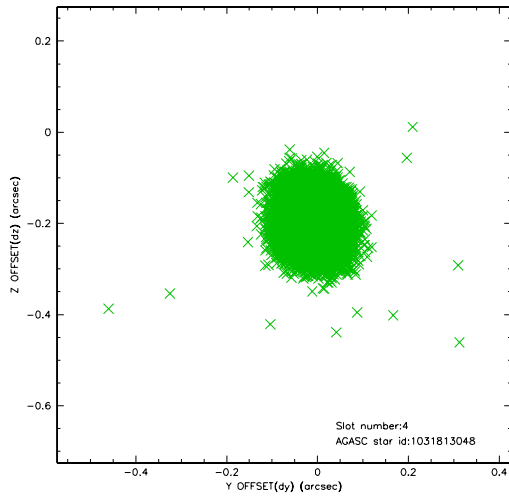
| slot | status | id | mag | n_pts | med_dy | med_dz | dr1 | dr2 | ra | dec | mean_y | mean_z |
|------|--------|------------|------|-------|--------|--------|-------|-------|------------|------------|----------|----------|
| 0 | FID | ACIS-S-1 | 7.18 | 8188 | 0.037 | 0.174 | 0.028 | 0.041 | 0.000000 | 0.000000 | 936.98 | -1880.51 |
| 1 | FID | ACIS-S-2 | 7.09 | 8190 | -0.133 | -0.128 | 0.016 | 0.022 | 0.000000 | 0.000000 | -759.06 | -1885.40 |
| 2 | FID | ACIS-S-4 | 7.18 | 8189 | 0.070 | -0.042 | 0.015 | 0.022 | 0.000000 | 0.000000 | 2154.27 | 23.32 |
| 3 | GUIDE | 1031802536 | 8.40 | 16372 | 0.178 | 0.223 | 0.074 | 0.118 | 254.071271 | -40.495693 | -1999.73 | -1833.63 |
| 4 | GUIDE | 1031813048 | 8.10 | 16375 | -0.004 | -0.202 | 0.060 | 0.095 | 252.819336 | -39.835864 | -159.48 | 1923.10 |
| 5 | GUIDE | 1031279512 | 8.07 | 16377 | -0.276 | -0.094 | 0.049 | 0.080 | 253.011652 | -39.245400 | 2022.89 | 1722.32 |
| 6 | GUIDE | 1031807512 | 8.25 | 16371 | -0.087 | -0.148 | 0.070 | 0.106 | 252.886468 | -39.697545 | 361.35 | 1816.64 |
| 7 | GUIDE | 1031807240 | 7.53 | 16375 | 0.191 | 0.226 | 0.056 | 0.093 | 253.730711 | -40.524826 | -2236.44 | -925.85 |

2.4 Star Slots

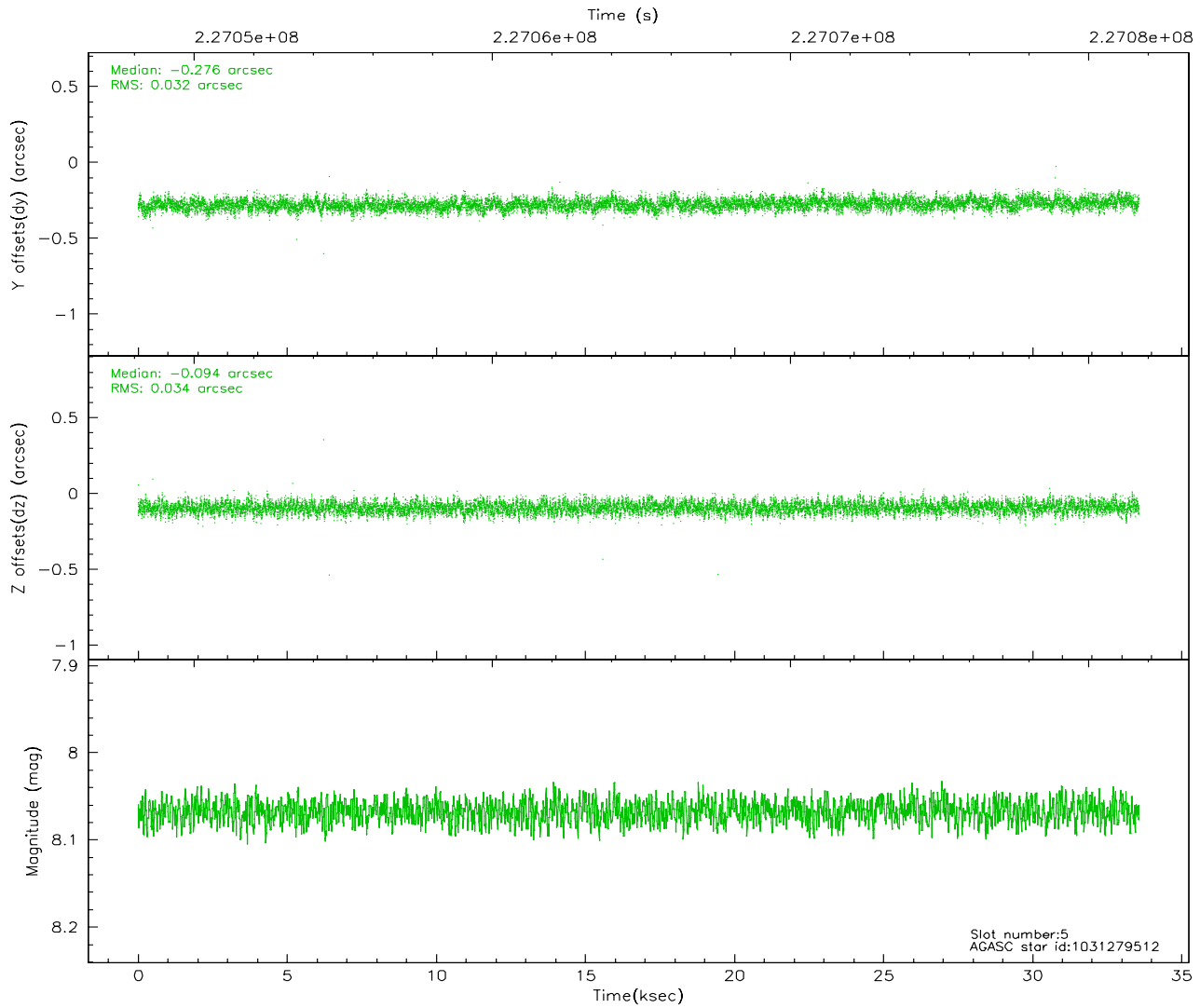
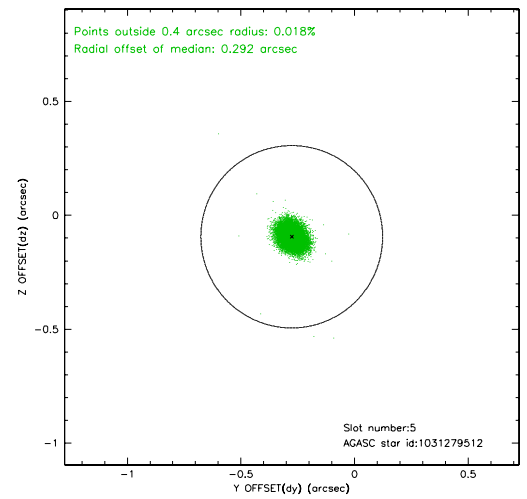
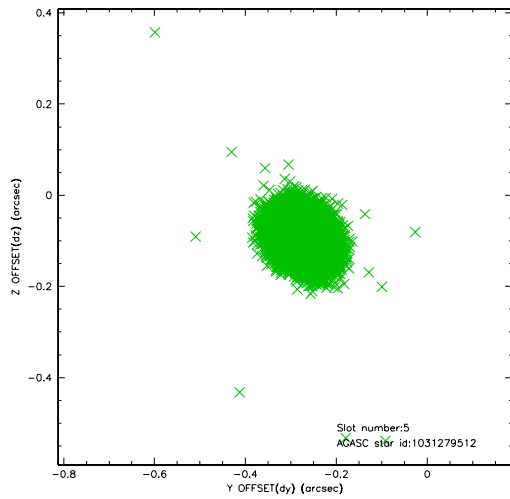
2.4.1 Slot 3



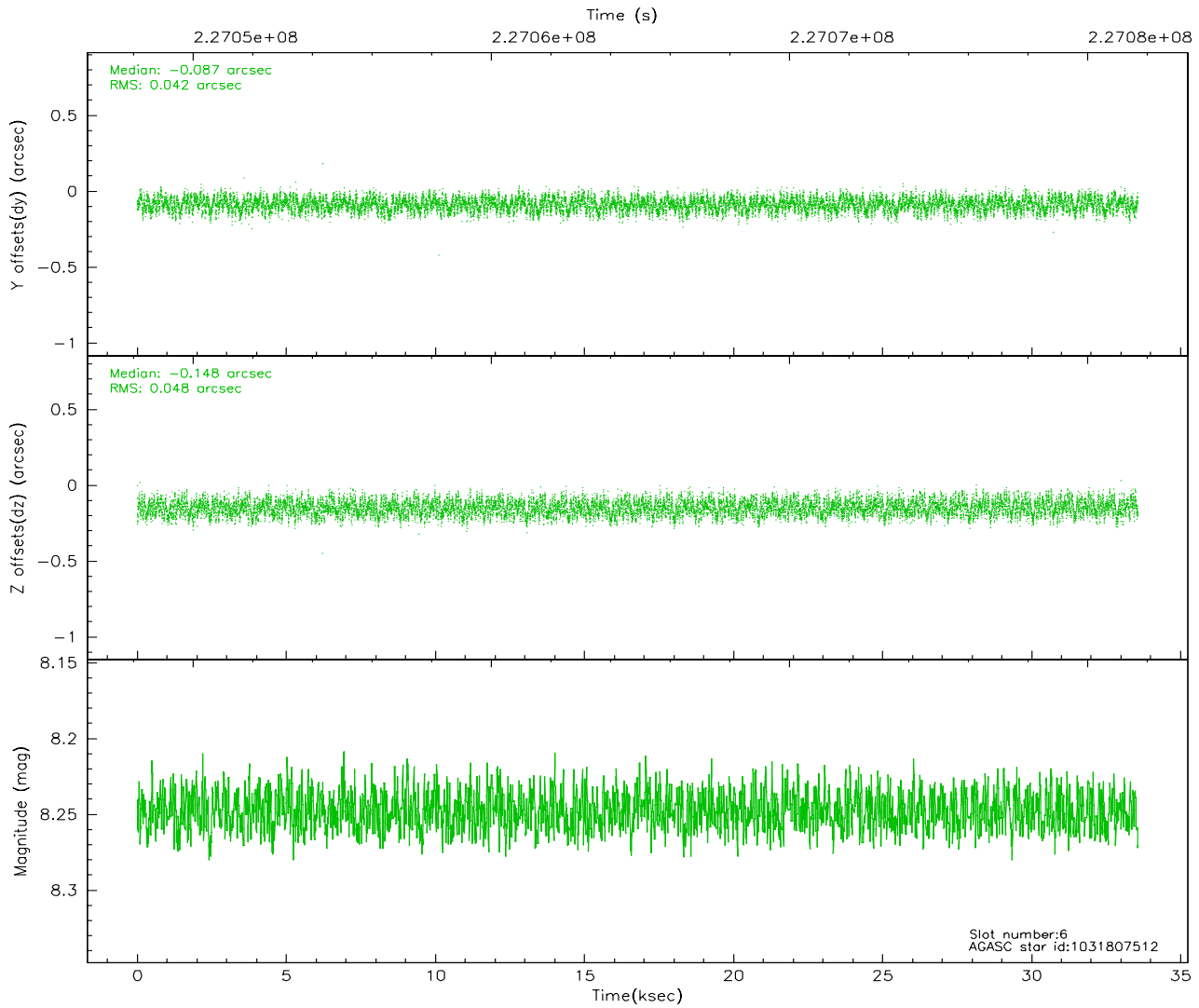
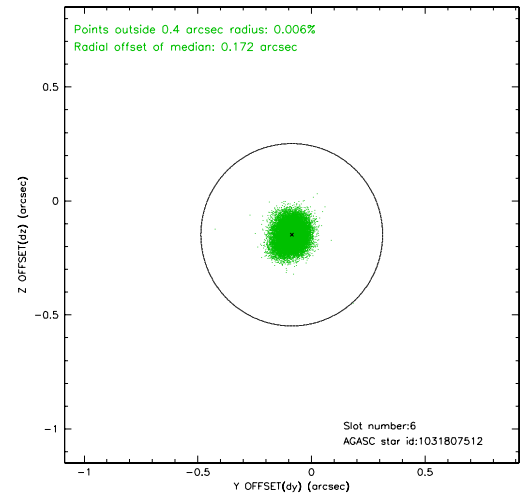
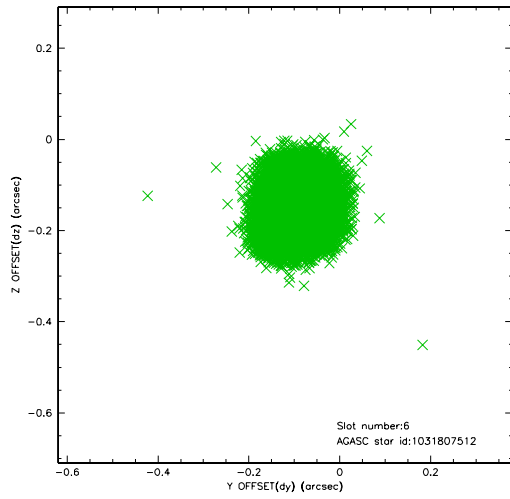
2.4.2 Slot 4



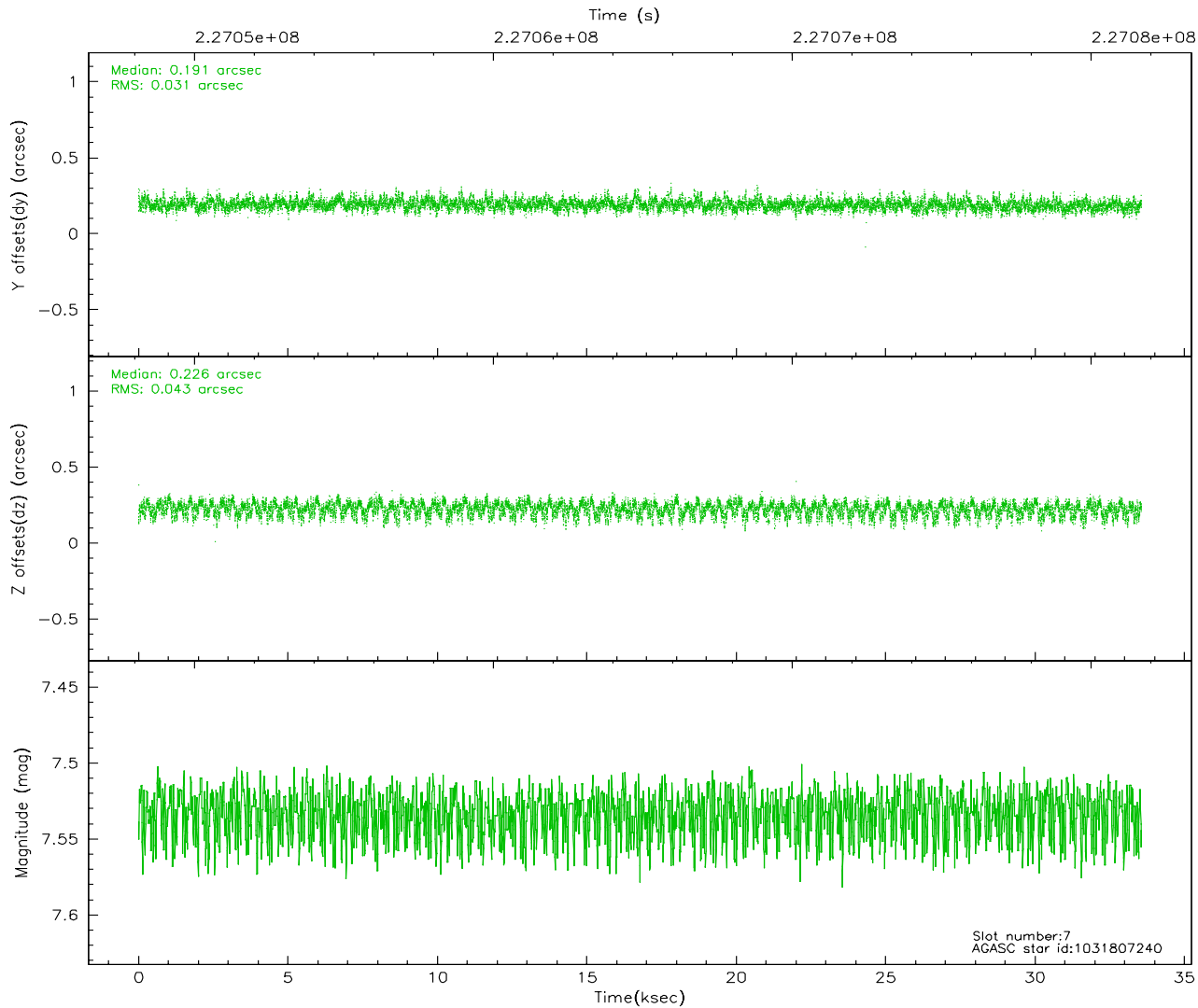
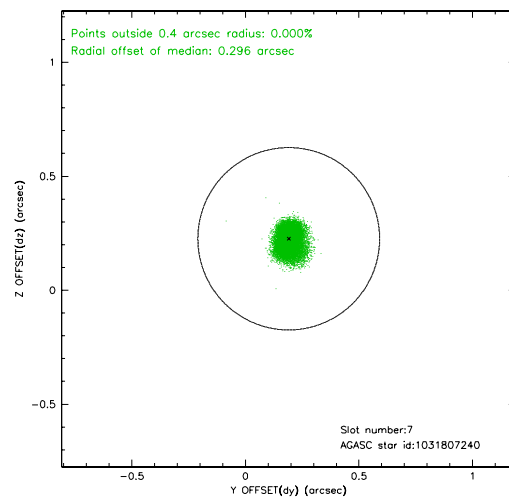
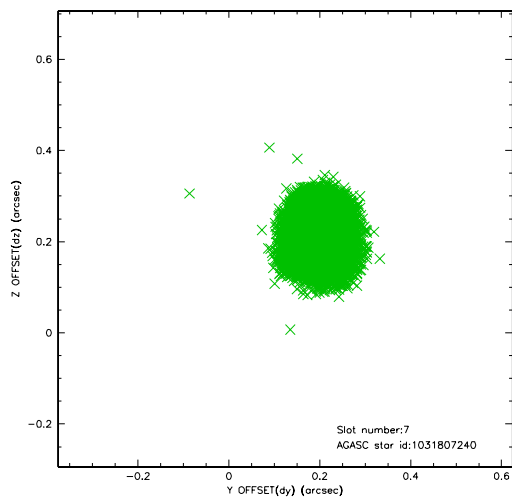
2.4.3 Slot 5



2.4.4 Slot 6

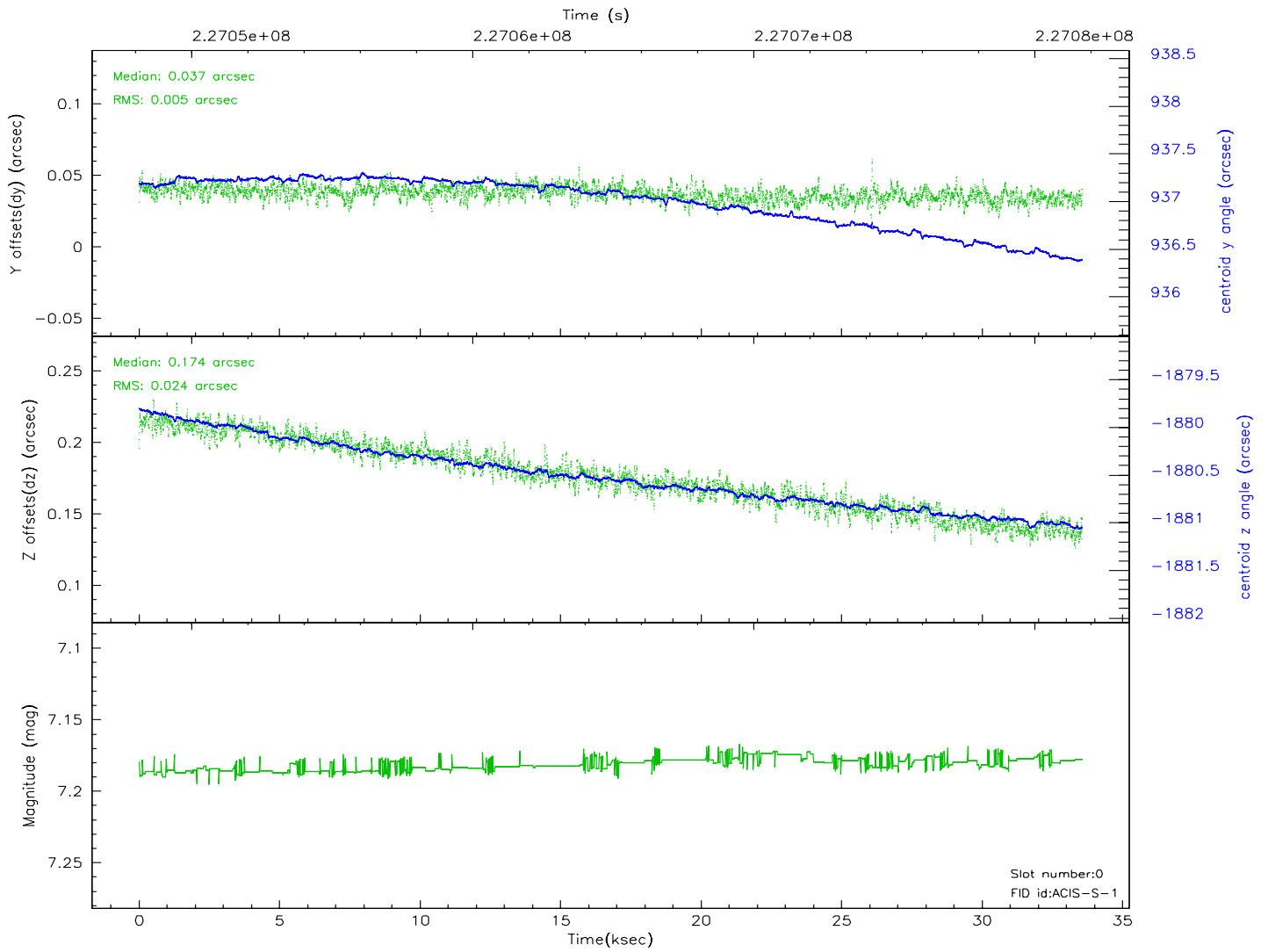
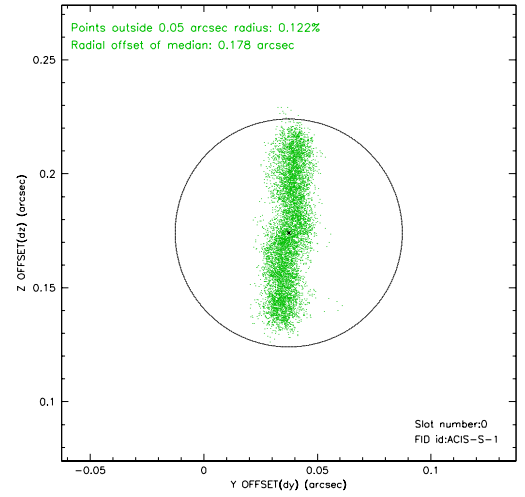
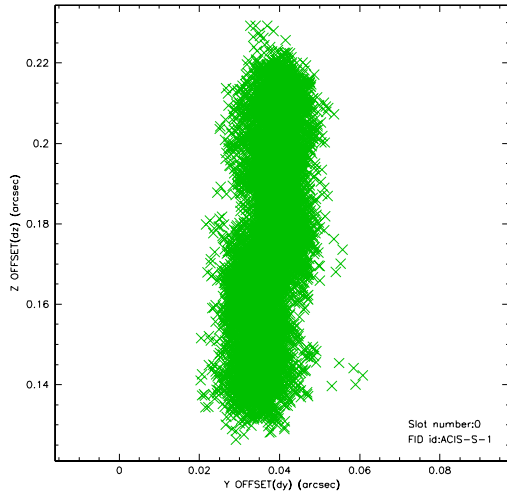


2.4.5 Slot 7

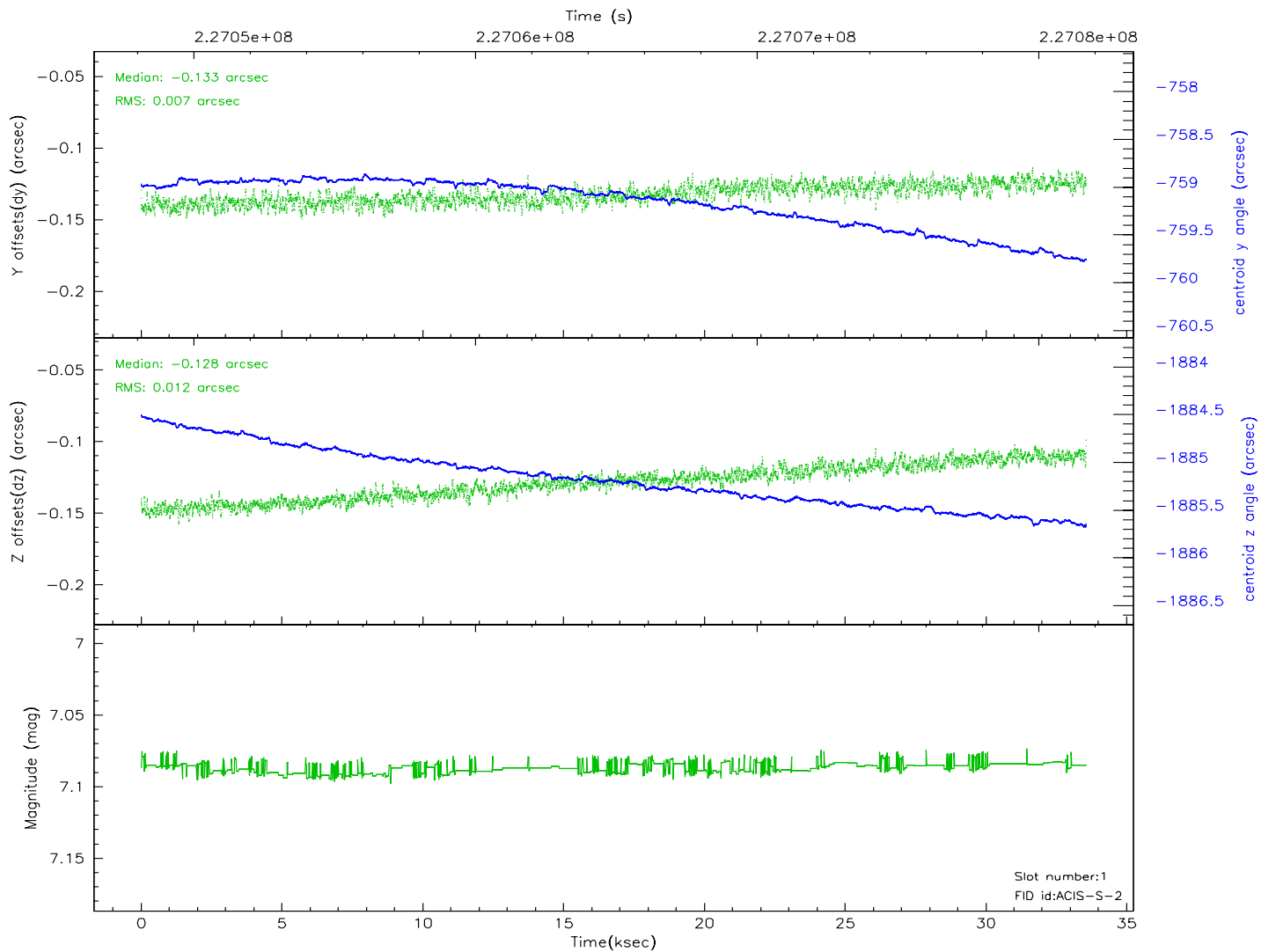
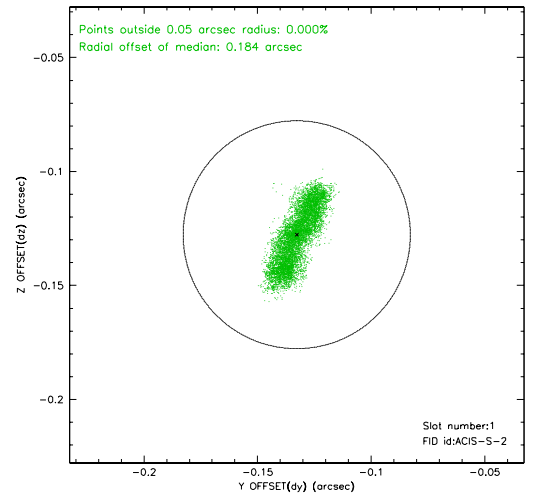
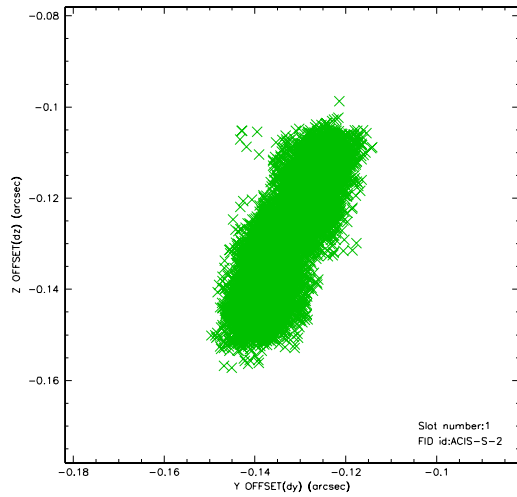


2.5 FID Slots

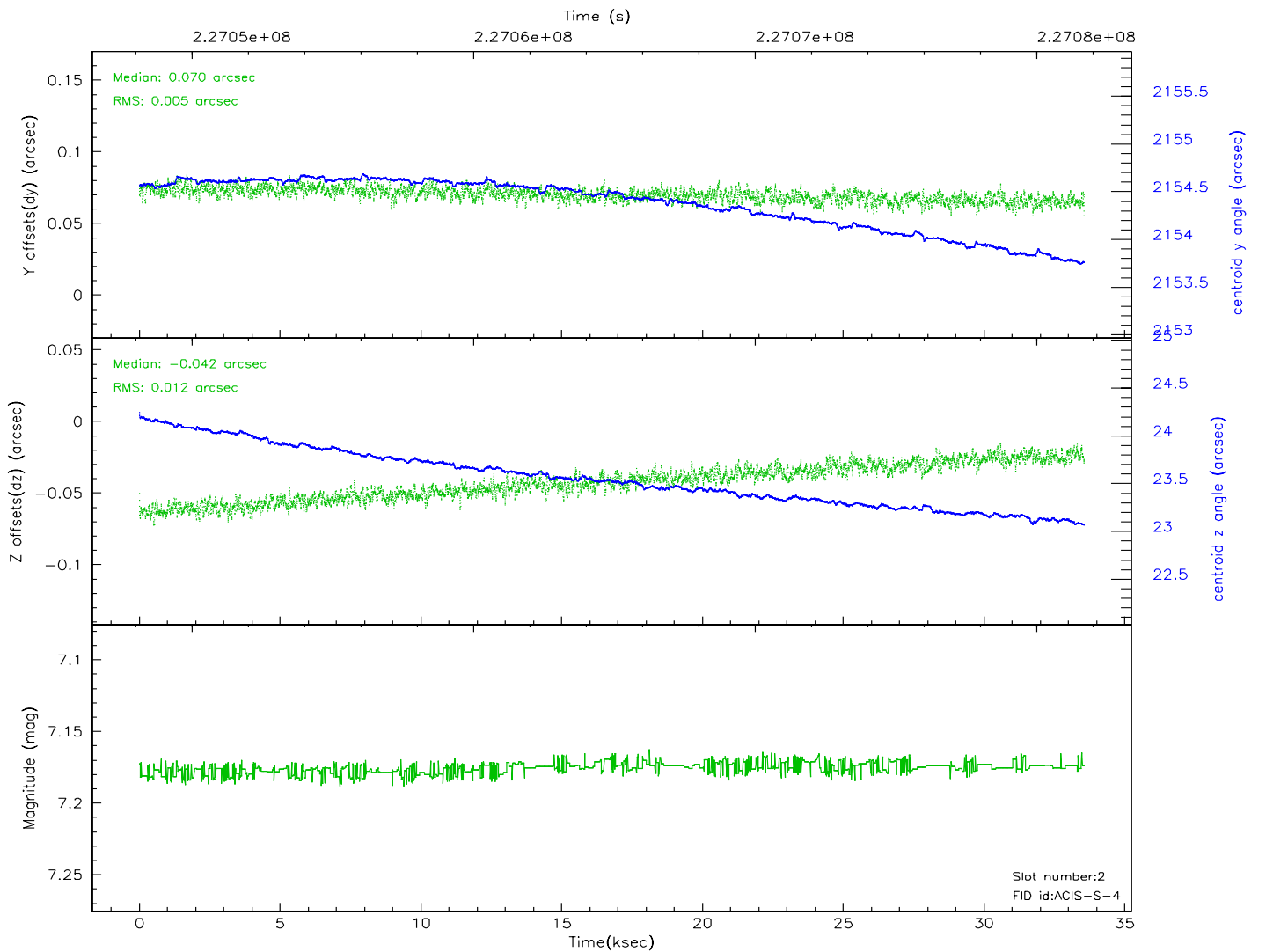
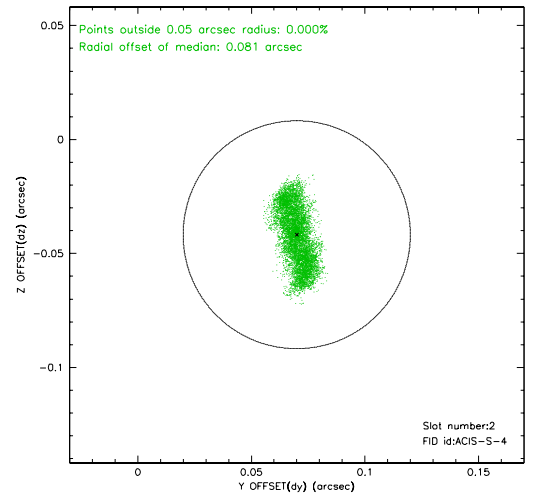
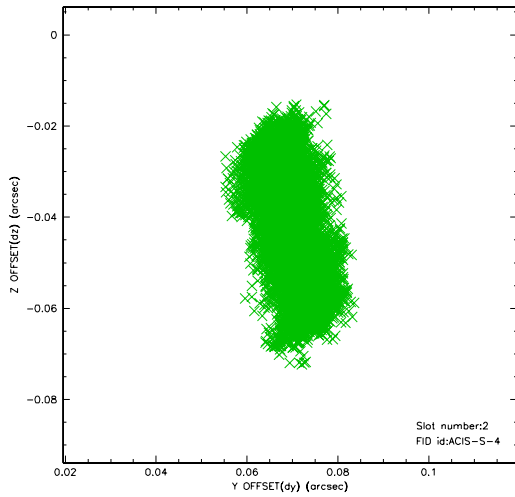
2.5.1 Slot 0



2.5.2 Slot 1

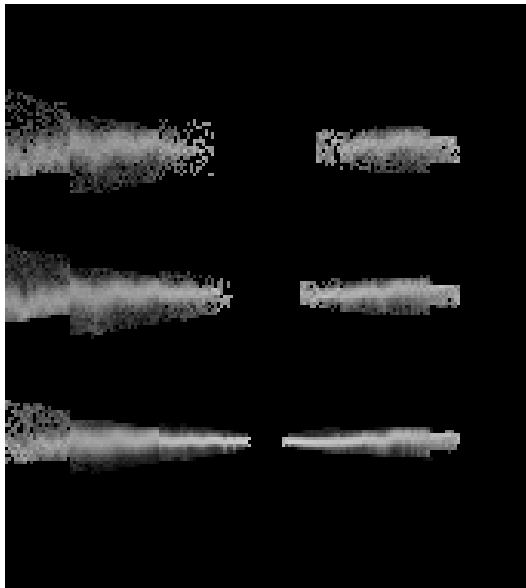


2.5.3 Slot 2



3 Gratings

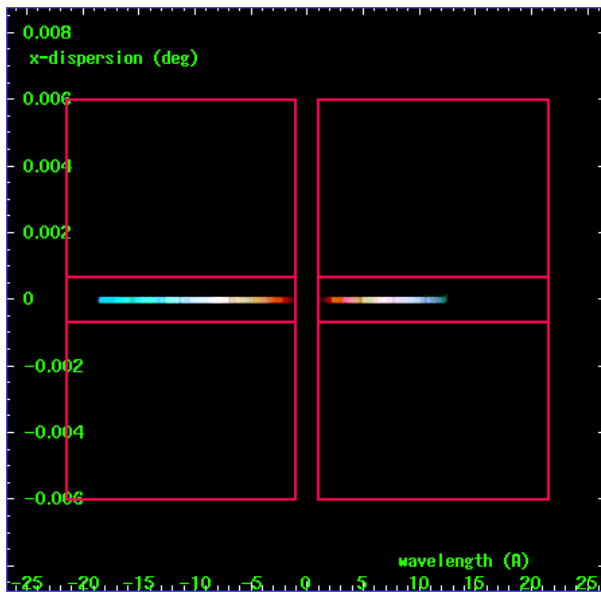
3.1 HEG Arm



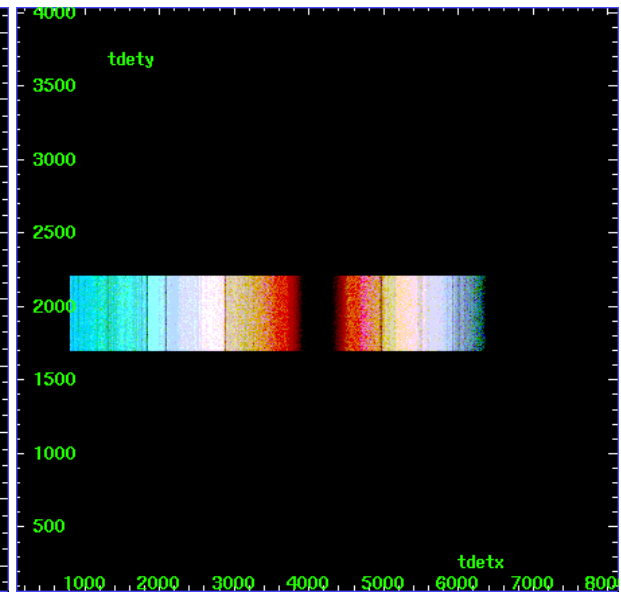
HEG Order Sort 123



HEG Order Sort ALL

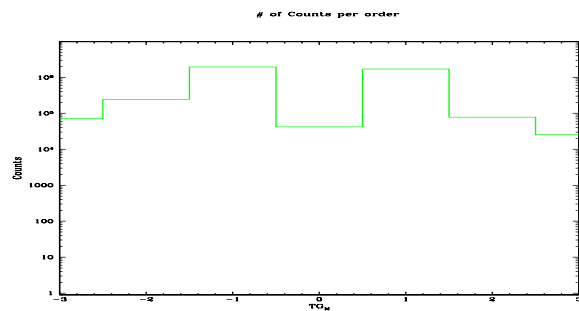


Spot Image HEG

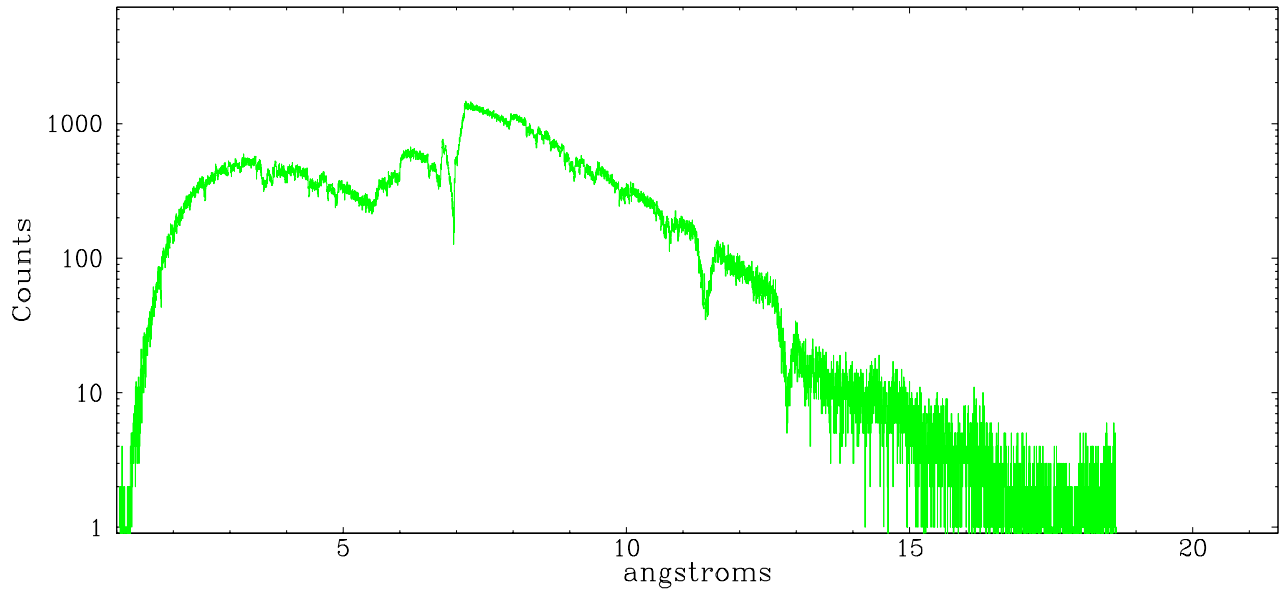


Full Detector HEG

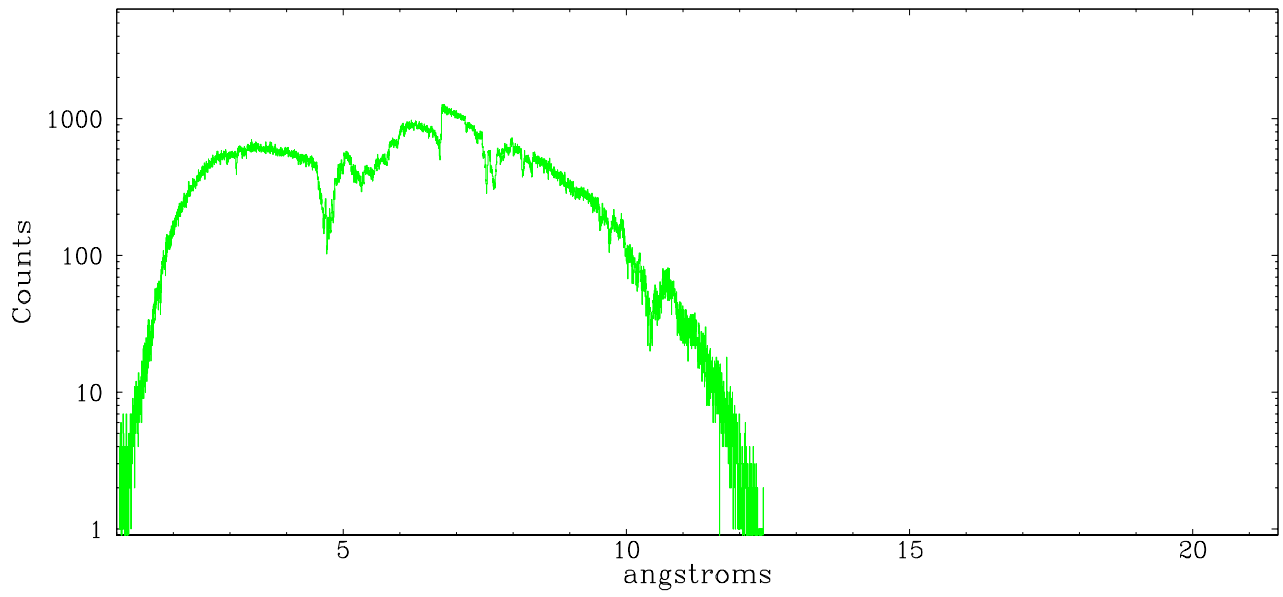
| | order -3 | order -2 | order -1 | order 0 | order 1 | order 2 | order 3 |
|--------|----------|----------|----------|---------|---------|---------|---------|
| Events | 71026 | 242089 | 1939044 | 41756 | 1708199 | 77998 | 25373 |



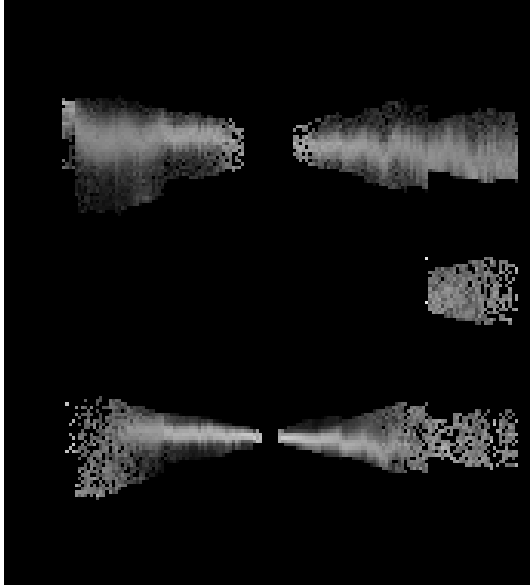
heg order -1



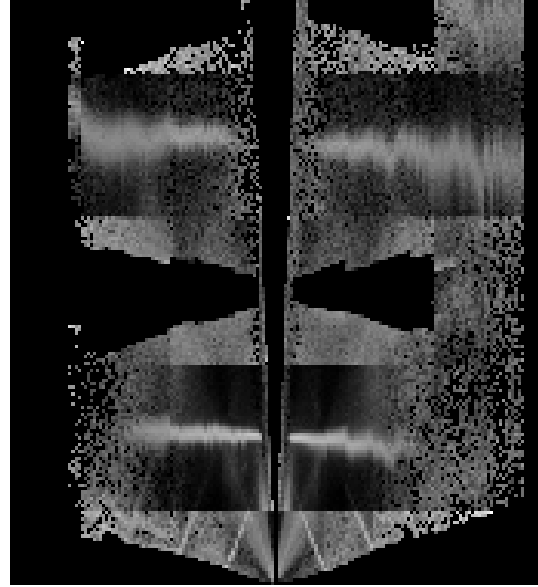
heg order +1



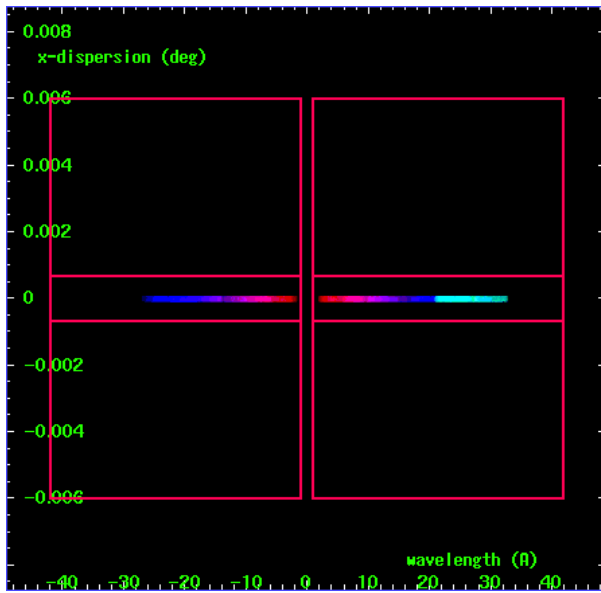
3.2 MEG Arm



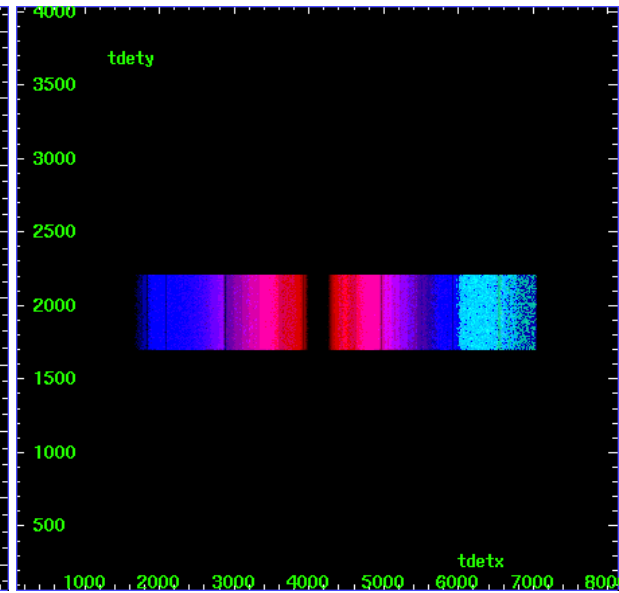
MEG Order Sort 123



MEG Order Sort ALL

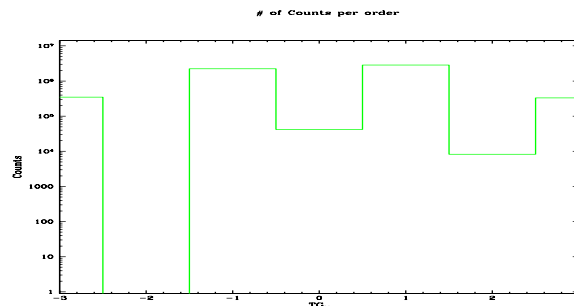


Spot Image MEG

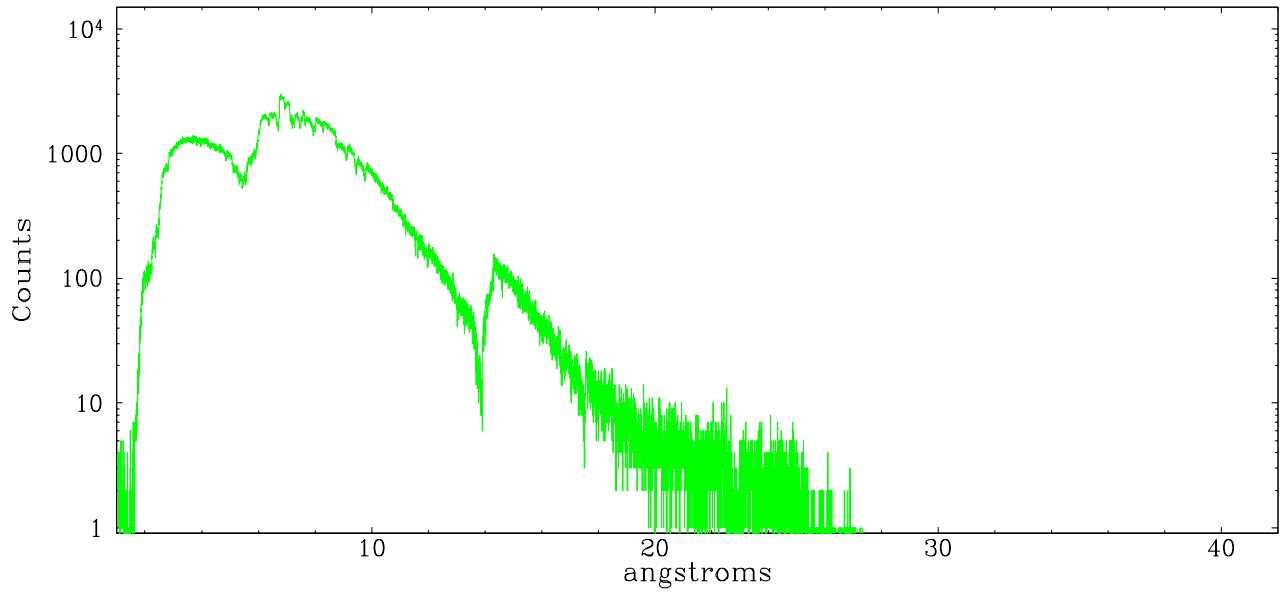


Full Detector MEG

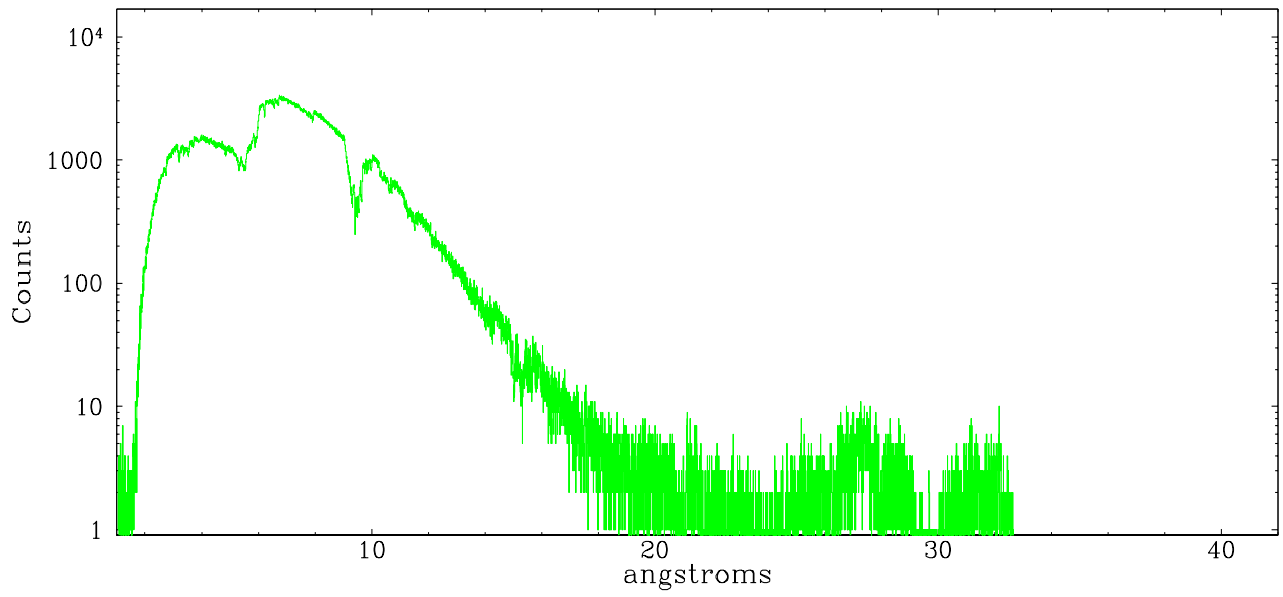
| | order -3 | order -2 | order -1 | order 0 | order 1 | order 2 | order 3 |
|--------|----------|----------|----------|---------|---------|---------|---------|
| Events | 349832 | 0 | 2234960 | 41756 | 2849133 | 8201 | 329298 |



meg order -1



meg order +1



A Summary

A.1 Status

| | |
|----------------------------|--------------------|
| V&V Scientist | David Huenemoerder |
| V&V Date (YYYY-MM-DD) | 2006.08.21 |
| V&V Edition | 1 |
| V&V Disposition and Status | OK |
| V&V Charge Time | 34.3 |

A.2 Comments

Charge time:

CC mode, with saturation. Relevant time is given by outer chips, e.g. ccdid=5

Chips 6-7 charge time is less than existing charge time used in previously distributed version

NEW CHARGE TIME = 14.301710 ks, 1 Obis

EXISTING CHARGE TIME = 33.570000 ks, 1 Obis.

Variation in Chips > 15% threshold.

Low Chip 6, ONTIME=14288.573541 seconds

High Chip 5, ONTIME=33566.750000 seconds

Chip 8, ONTIME=22929.161351 seconds is less than 80% of scheduled time=33423.002000 seconds

Chip 7, ONTIME=14301.709970 seconds is less than 80% of scheduled time=33423.002000 seconds

Chip 6, ONTIME=14288.573541 seconds is less than 80% of scheduled time=33423.002000 seconds

ONTIME of 14301.70996955 seconds is less than 85% of expected scheduled time of 33423.002 seconds