

V&V Reference Report

L2 ASCDS Version : 10.1.1

Observation 16499 - L2 Version 3
Chandra X-Ray Center

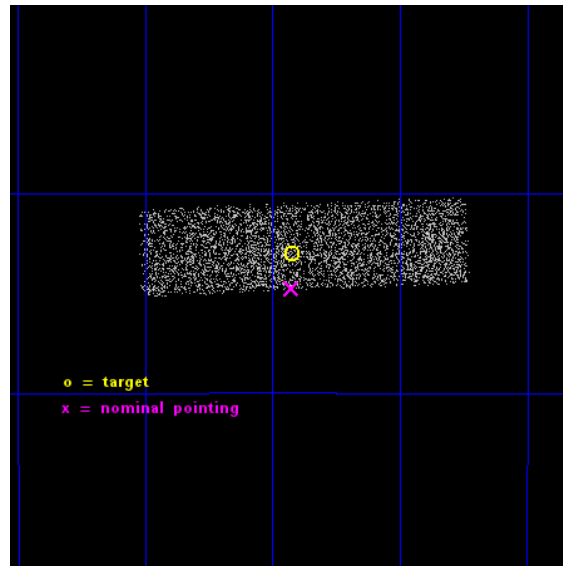
L2 Processing Date : Dec 7 2014

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1 Front

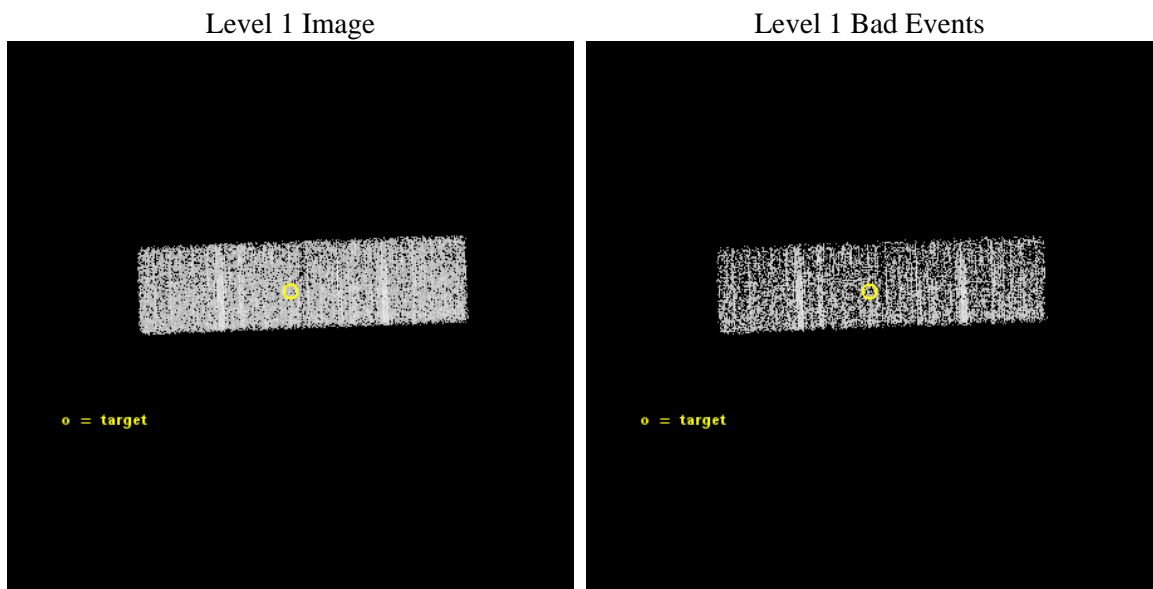
| | | |
|----------|------------------------|--|
| seq_num | 100092 | Sequence number |
| obs_id | 16499 | Observation id |
| title | Venus at Solar Maximum | Proposal title |
| observer | Dr. Peter Predehl | Principal investigator |
| object | Venus | Source name |
| dtcycle | 0 | |
| cycle | P | events from which exps? Prim/Second/Both |
| ra_targ | 272.98034 | Observer's specified target RA [deg] |
| dec_targ | -27.21672 | Observer's specified target Dec [deg] |
| ra_nom | 272.98146961725 | Nominal RA [deg] |
| dec_nom | -27.245873763794 | Nominal Dec [deg] |
| roll_nom | 267.87523313827 | Nominal Roll [deg] |
| revision | 3 | Processing version of data |
| ontime | 9084.8001353741 | Sum of GTIs [s] |
| livetime | 8857.6026279667 | Livetime [s] |
| ontime1 | 9084.8001353741 | Sum of GTIs [s] |
| ontime3 | 9084.8001353741 | Sum of GTIs [s] |
| l2events | 5757 | Number of level 2 events |



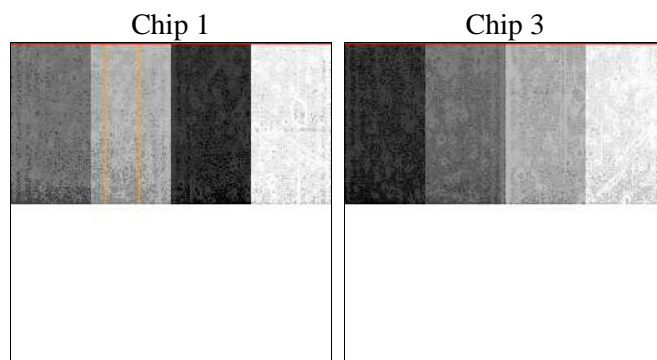
2 OBI

2.1 OBI

2.1.1 Images



2.1.2 Bias



2.1.3 Parameters

| | | | | | |
|----------|---------------------|--------------------------------|----------------|-----------------|---|
| obi_num | 0 | Obi number | sched_exp_time | 8900.000000 | [s] Scheduled observation exposure time |
| ascdsver | 10.3.1 | Processing system revision | ontime | 9084.8001353741 | Sum of GTIs [s] |
| caldsver | 4.6.4 | | ontime1 | 9084.8001353741 | Sum of GTIs [s] |
| date | 2014-12-07T21:04:04 | Date and time of file creation | ontime3 | 9084.8001353741 | Sum of GTIs [s] |
| revision | 3 | Processing version of data | l1events | 48968 | Number of level 1 events |

2.1.4 Events

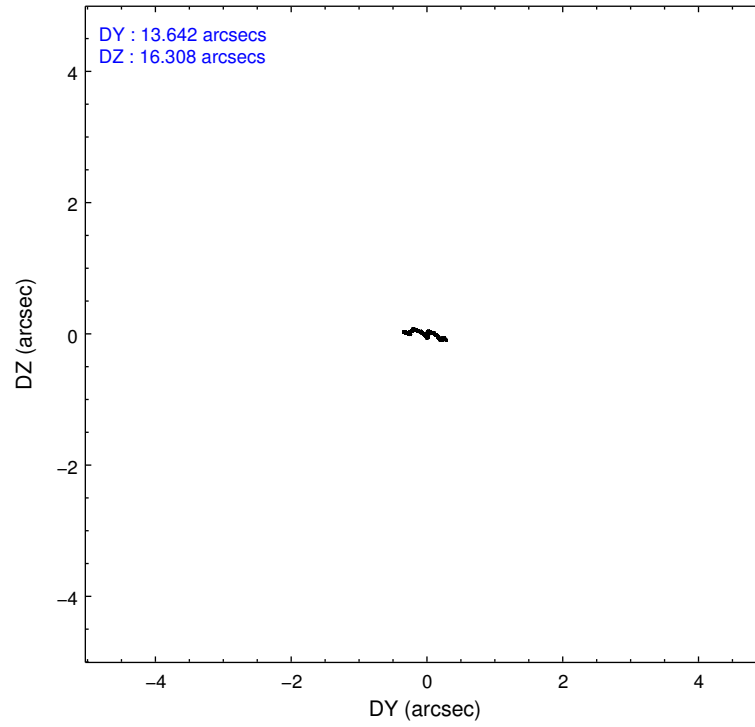
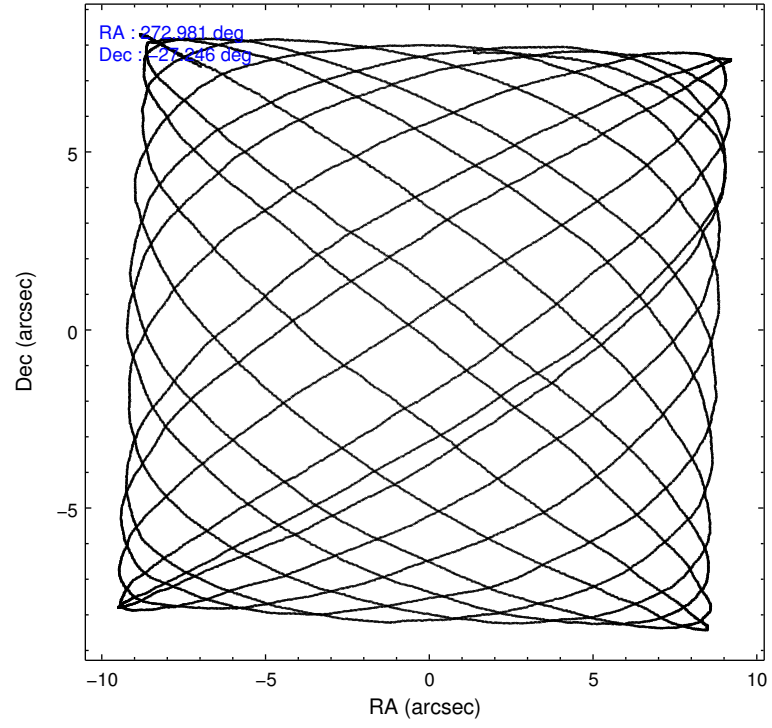
| | ccd 1 | ccd 3 |
|-----------------|--------------|--------------|
| level 1 events | 24668 | 24300 |
| rejected events | 21061 | 21184 |
| rejected % | 85% | 87% |

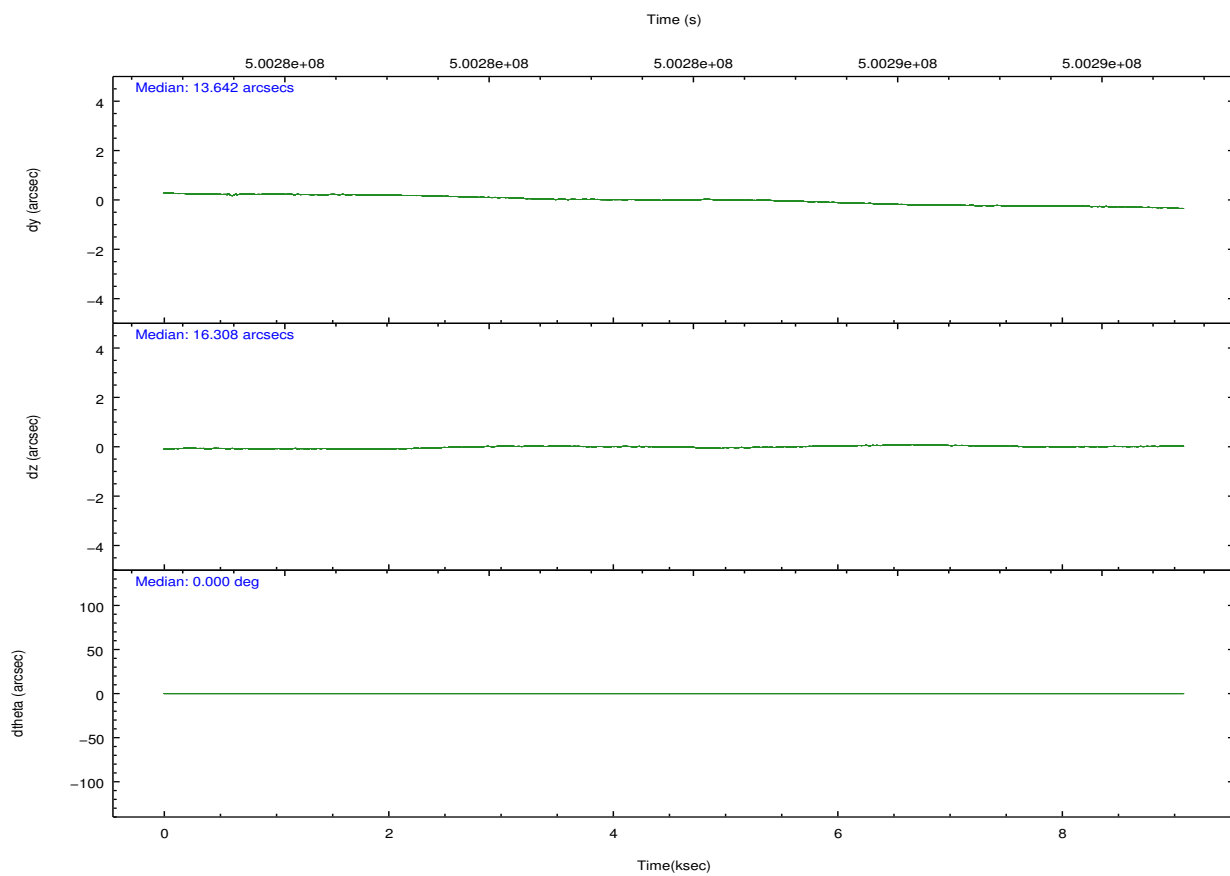
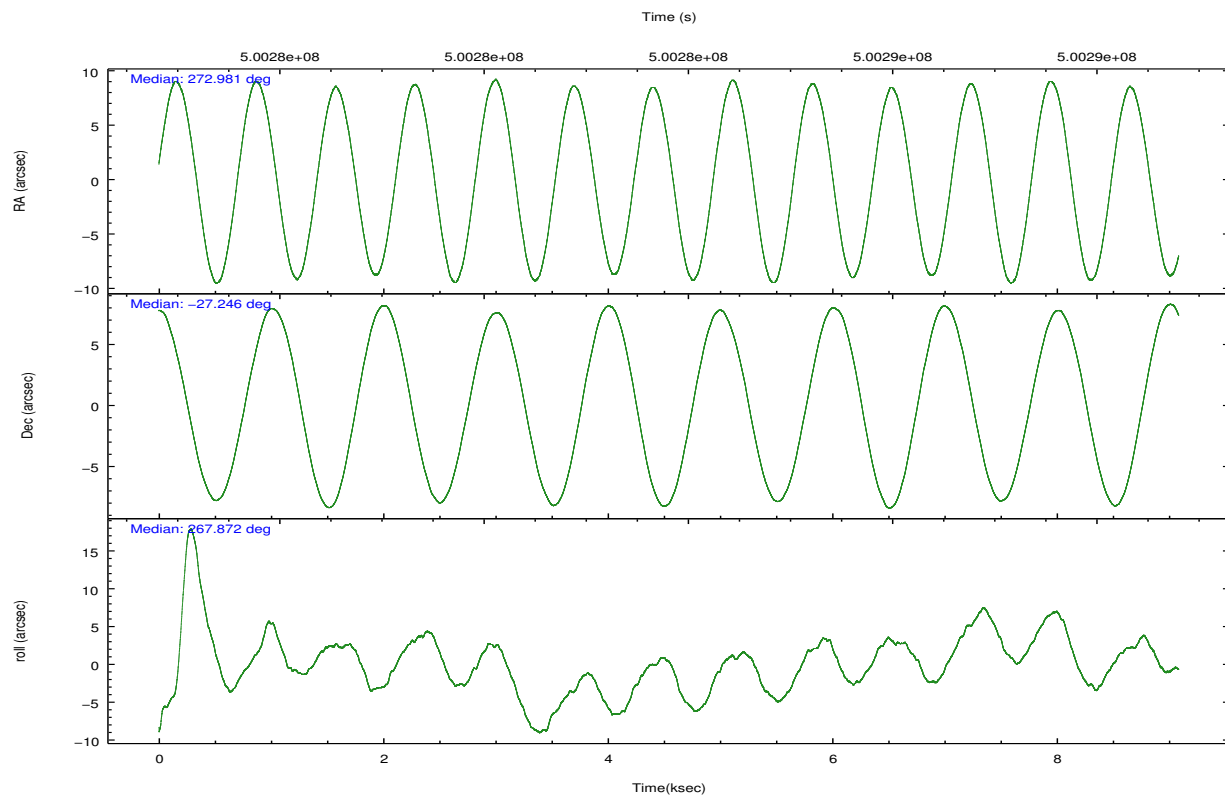
| | ccd 1 | ccd 3 |
|----------------|--------------|--------------|
| grade 0 events | 1456 | 1425 |
| | 5% | 5% |
| grade 1 events | 7 | 13 |
| | 0% | 0% |
| grade 2 events | 756 | 547 |
| | 3% | 2% |
| grade 3 events | 425 | 343 |
| | 1% | 1% |
| grade 4 events | 409 | 362 |
| | 1% | 1% |
| grade 5 events | 1281 | 1289 |
| | 5% | 5% |
| grade 6 events | 681 | 542 |
| | 2% | 2% |
| grade 7 events | 19653 | 19779 |
| | 79% | 81% |

2.2 Compared Parameters

| Parameter | Planned | Actual | Parameter | Planned | Actual |
|-----------------------------------|---------------------|-----------------------|---------------------------------------|-----------|---------|
| Instrument | ACIS | ACIS | Obspar format version number | 7 | 7 |
| Detector | ACIS-13 | ACIS-13 | Obspar file type | PREDICTED | ACTUAL |
| Grating | NONE | NONE | Obspar update status | NONE | UPDATED |
| Data mode | VFAINT | VFAINT | Number of optional ACIS chips dropped | 0 | 0 |
| Observation mode | POINTING | POINTING | On-chip summing requested | N | N |
| [deg] Pointing RA | 272.966887 | 272.9814696172481 | Subarray requested | CUSTOM | 1/2 |
| [deg] Pointing Dec | -27.221640 | -27.24587376379418 | Subarray start row | 512 | 512 |
| [deg] Pointing Roll | 267.659877 | 267.8752331382672 | Subarray row count | 512 | 512 |
| [s] Window start time (MET) | 498009667.184000 | 498009667.184000 | Alternating exposures requested | N | N |
| [s] Window stop time (MET) | 501120067.184000 | 501120067.184000 | [s] Primary exposure time | 0.000000 | 1.6 |
| [mm] SIM focus pos | -0.782348 | -0.7809083437167272 | | | |
| [mm] SIM defocus | 0 | 0.001439871863259334 | | | |
| [mm] SIM translation stage pos | -233.592463 | -233.5874344608287 | | | |
| [mm] SIM translation stage offset | 0 | -0.005018542100998502 | | | |
| [s] Observation start time (MET) | 500279446.184000 | 500279070.20188 | | | |
| Observation start date | 2013-11-08T06:29:39 | 2013-11-08T06:24:30 | | | |
| [s] Observation end time (MET) | 500288346.184000 | 500288479.7024 | | | |
| Observation end date | 2013-11-08T08:57:59 | 2013-11-08T09:01:19 | | | |
| Read mode | TIMED | TIMED | | | |

2.3 Aspect



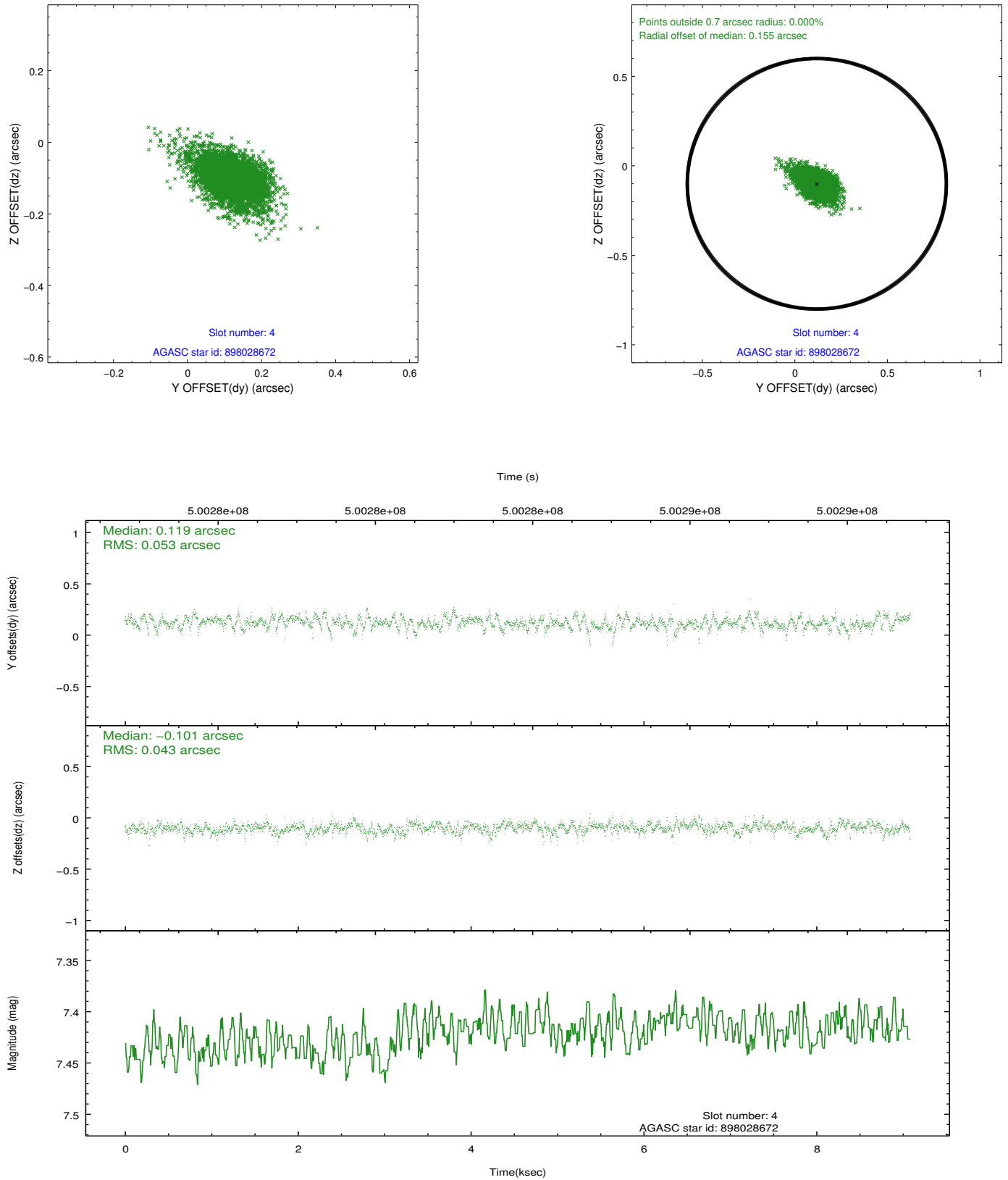


Slot Statistics

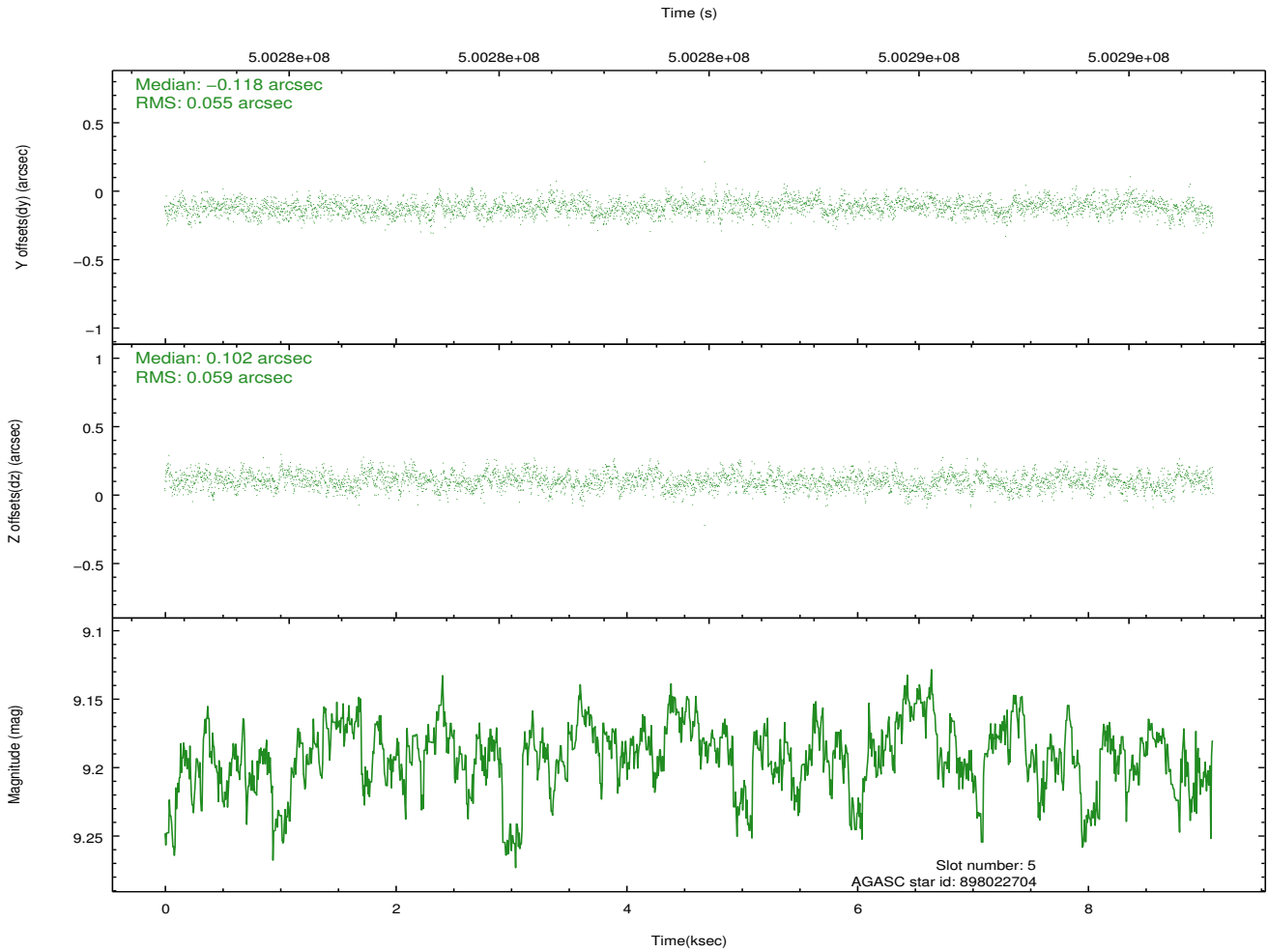
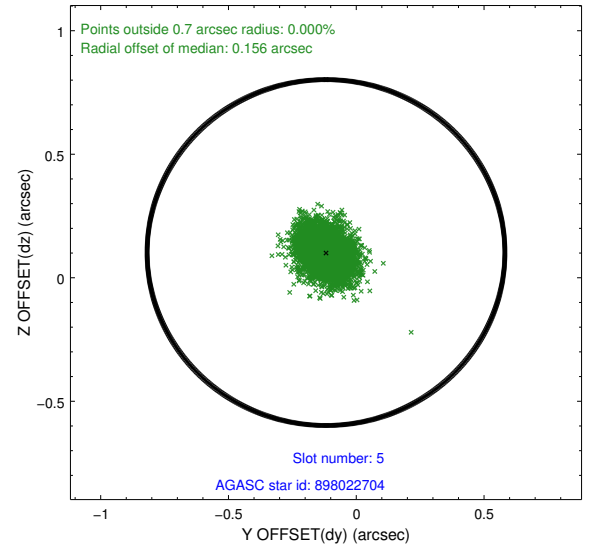
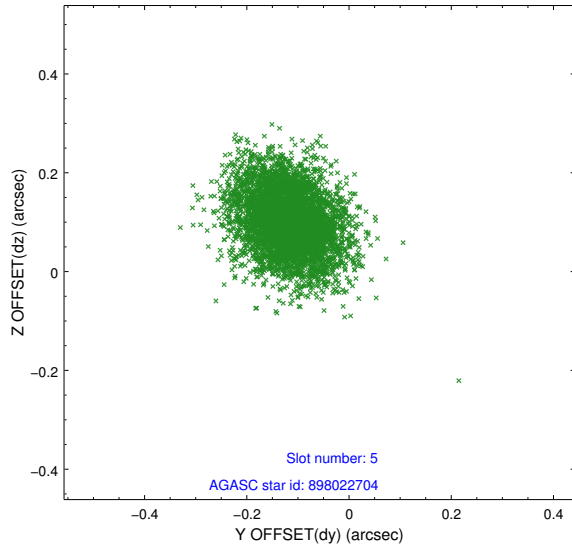
| slot | status | used | id | mag | n_pts | med_dy | med_dz | dr1 | dr2 | ra | dec | mean_y | mean_z |
|------|--------|------|-----------|------|-------|--------|--------|-------|-------|------------|------------|---------|----------|
| 0 | FID | | ACIS-I-1 | 7.13 | 2216 | -0.029 | 0.024 | 0.000 | 0.000 | 0.000000 | 0.000000 | 925.81 | -839.94 |
| 1 | UNUSED | | | 0.00 | 0 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000000 | 0.000000 | 0.00 | 0.00 |
| 2 | UNUSED | | | 0.00 | 0 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000000 | 0.000000 | 0.00 | 0.00 |
| 3 | UNUSED | | | 0.00 | 0 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000000 | 0.000000 | 0.00 | 0.00 |
| 4 | GUIDE | used | 898028672 | 7.42 | 4432 | 0.119 | -0.101 | 0.068 | 0.123 | 272.225727 | -27.783637 | 2125.89 | -2275.41 |
| 5 | GUIDE | used | 898022704 | 9.19 | 4430 | -0.118 | 0.102 | 0.085 | 0.140 | 272.620512 | -27.413417 | 737.75 | -1077.90 |
| 6 | UNUSED | | | 0.00 | 0 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000000 | 0.000000 | 0.00 | 0.00 |
| 7 | UNUSED | | | 0.00 | 0 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000000 | 0.000000 | 0.00 | 0.00 |

2.4 Star Slots

2.4.1 Slot 4

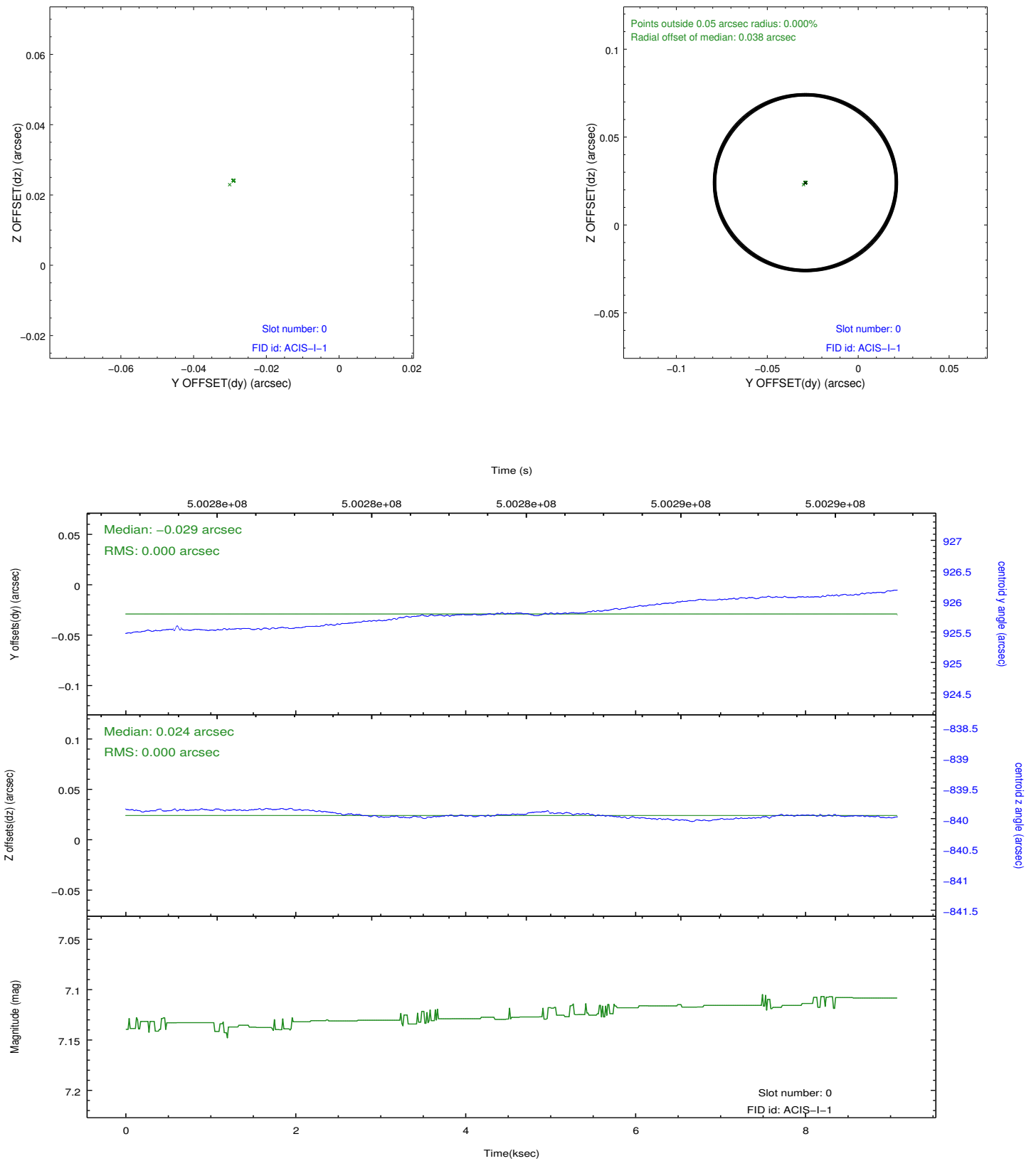


2.4.2 Slot 5



2.5 FID Slots

2.5.1 Slot 0



A Summary

A.1 Status

| | |
|----------------------------|-----------------|
| V&V Scientist | Jen Lauer |
| V&V Date (YYYY-MM-DD) | 2014.12.15 |
| V&V Edition | 1 |
| V&V Disposition and Status | OK |
| V&V Charge Time | 9.0848001353741 |

A.2 Comments

Window constraint met.

=====

This is a moving target. Users will need to run sso_freeze or similar software to position the events in the reference frame of the target.

=====

The presence of the optically bright Venus on the aspect camera CCD significantly degraded the star tracking and fiducial light registration capabilities of the system. As only one fiducial light was successfully tracked, the aspect solution may have an uncompensated offset in roll. As a reduced number of stars were available for tracking, the image reconstruction is degraded and the astrometric accuracy may be reduced.

=====

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.