# V&V Reference Report
# L2 ASCDS Version : 7.6.9

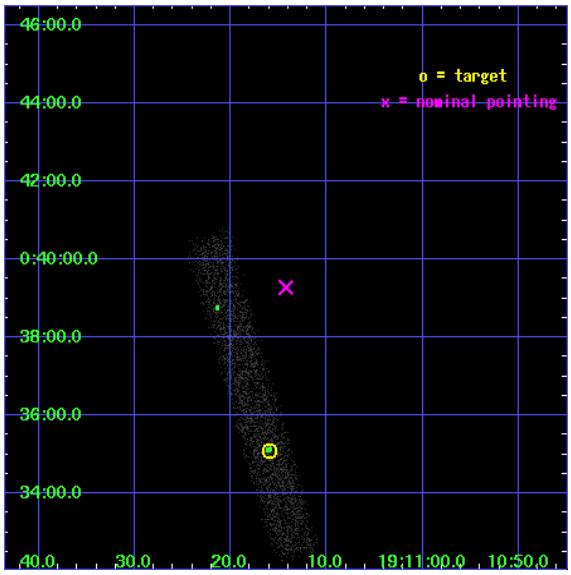
Observation 709 - L2 Version 001
Chandra X-Ray Center

L2 Processing Date : Nov 8 2006

## Contents

# 1 Front

| | |
|---|---|
| seq_num | 400076 |
| obs_id | 709 |
| title | TEMPORAL EVOLUTION OF TRANSIENT TYPE I BURSTERS IN QUIESCENCE |
| observer | PROF. LARS BILDSTEN |
| object | AQL X-1 |
| dtycycle | 0 |
| cycle | P |
| ra_targ | 287.816667 |
| dec_targ | 0.585111 |
| ra_nom | 287.80945571535 |
| dec_nom | 0.65461628178255 |
| roll_nom | 73.995369659143 |
| revision | 2 |
| ontime | 8586.8001279533 |
| livetime | 7787.7744675796 |
| ontime7 | 8586.8001279533 |
| l2events | 4583 |

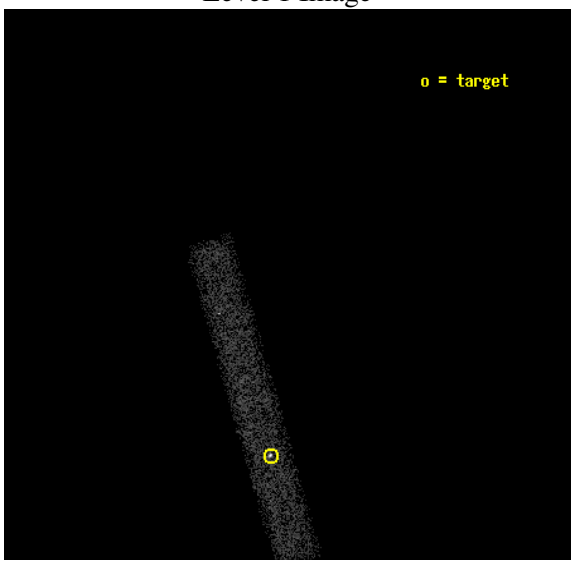


# 2 OBI

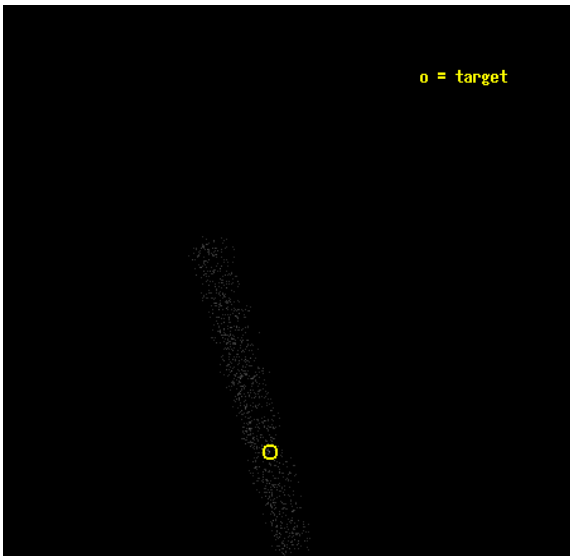
## 2.1 OBI

### 2.1.1 Images

Level 1 Image




Level 1 Bad Events




### 2.1.2 Bias

Chip 7

### 2.1.3 Parameters

| | |
|---|---|
| obi_num | 0 |
| ascdsver | 7.6.9 |
| caldbver | 3.2.3 |
| date | 2006-11-08T20:53:31 |
| revision | 2 |

| | |
|---|---|
| sched_exp_time | 8000.000000 |
| ontime | 8818.0347696841 |
| ontime7 | 8818.0347696841 |
| l1events | 10070 |

### 2.1.4 Events

| | **ccd 7** |
|---|---|
| level 1 events | 10070 |
| rejected events | 5303 |
| rejected % | 52% |

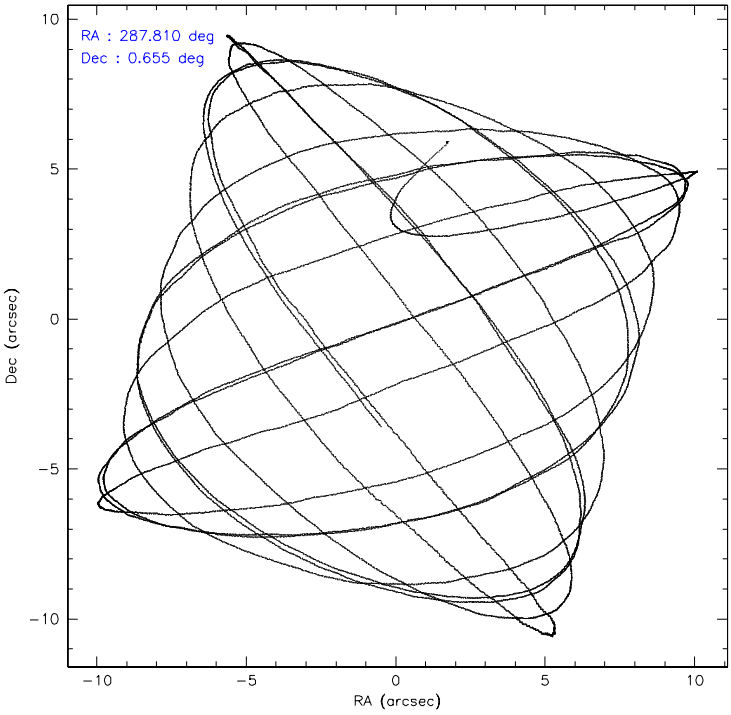
| | **ccd 7** |
|---|---|
| grade 0 events | 600 |
| | 5% |
| grade 1 events | 8 |
| | 0% |
| grade 2 events | 1150 |
| | 11% |
| grade 3 events | 521 |
| | 5% |
| grade 4 events | 505 |
| | 5% |
| grade 5 events | 595 |
| | 5% |
| grade 6 events | 2117 |
| | 21% |
| grade 7 events | 4574 |
| | 45% |

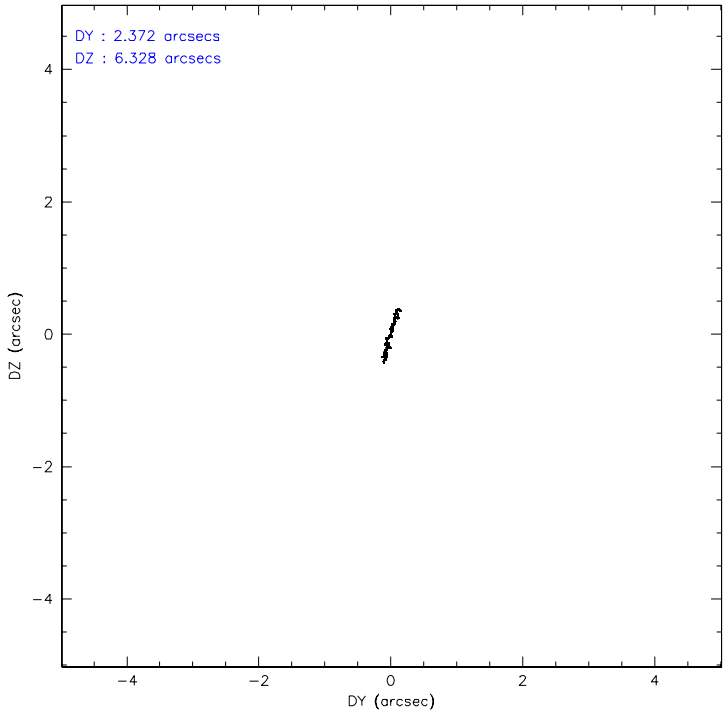
## 2.2 Compared Parameters

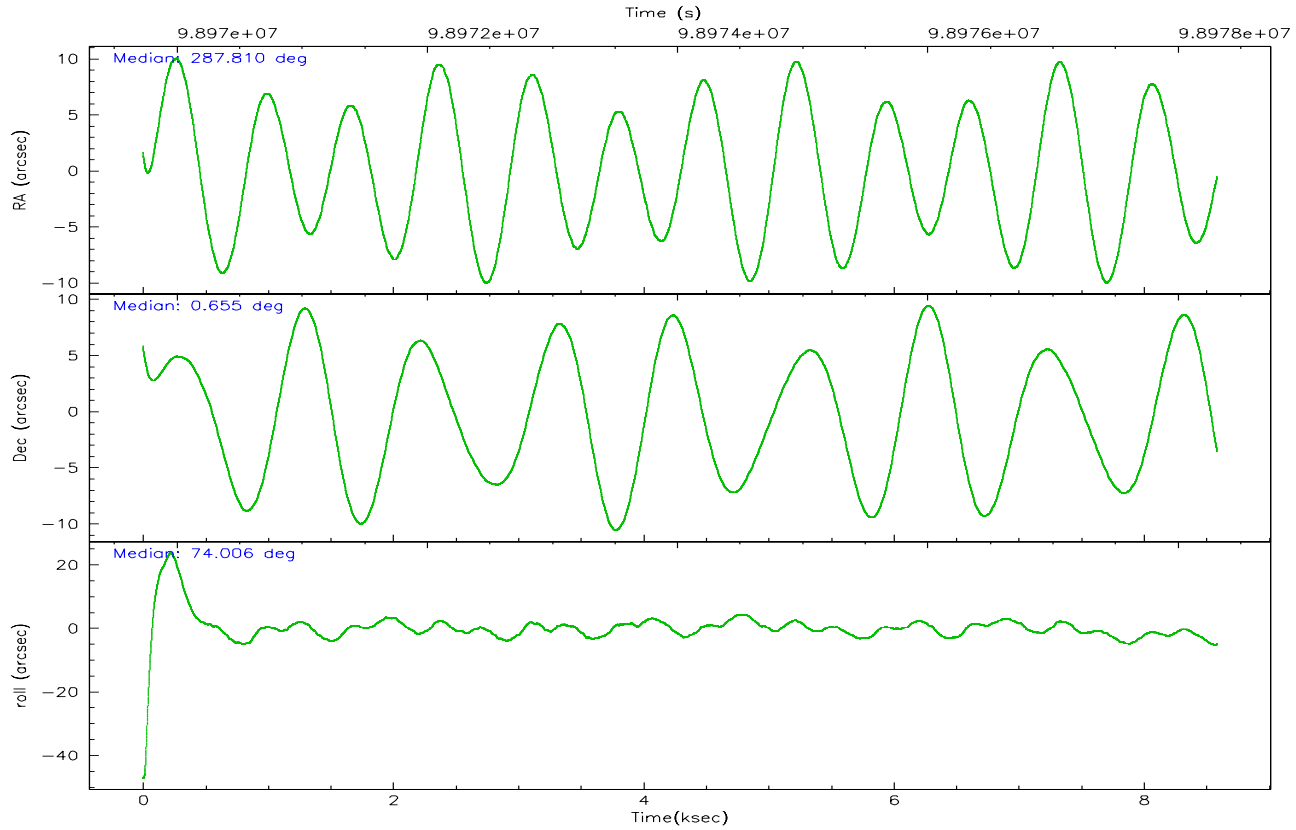
| Parameter | Planned | Actual |
|---|---|---|
| Instrument | ACIS | ACIS |
| Detector | ACIS-7 | ACIS-7 |
| Grating | NONE | NONE |
| Data mode | VFAINT | VFAINT |
| Observation mode | POINTING | POINTING |
| Pointing RA | 287.816284 | 287.8094557153482 |
| Pointing Dec | 0.628086 | 0.6546162817825527 |
| Pointing Roll | 73.838769 | 73.99536965914251 |
| SIM focus pos (mm) | -0.684267 | -0.6828225247311905 |
| SIM defocus (mm) | 0 | 0.001444936568705701 |
| SIM translation stage pos (mm) | -190.132523 | -190.1400660498719 |
| SIM translation stage offset (mm) | 0 | 0.00754346686406393 |
| Observation start time | 98970312.184000 | 98969152.62816299 |
| Observation start date | 2001-02-19T11:44:08 | 2001-02-19T11:25:52 |
| Observation end time | 98978312.184000 | 98979898.728578 |
| Observation end date | 2001-02-19T13:57:28 | 2001-02-19T14:24:58 |
| Read mode | TIMED | TIMED |

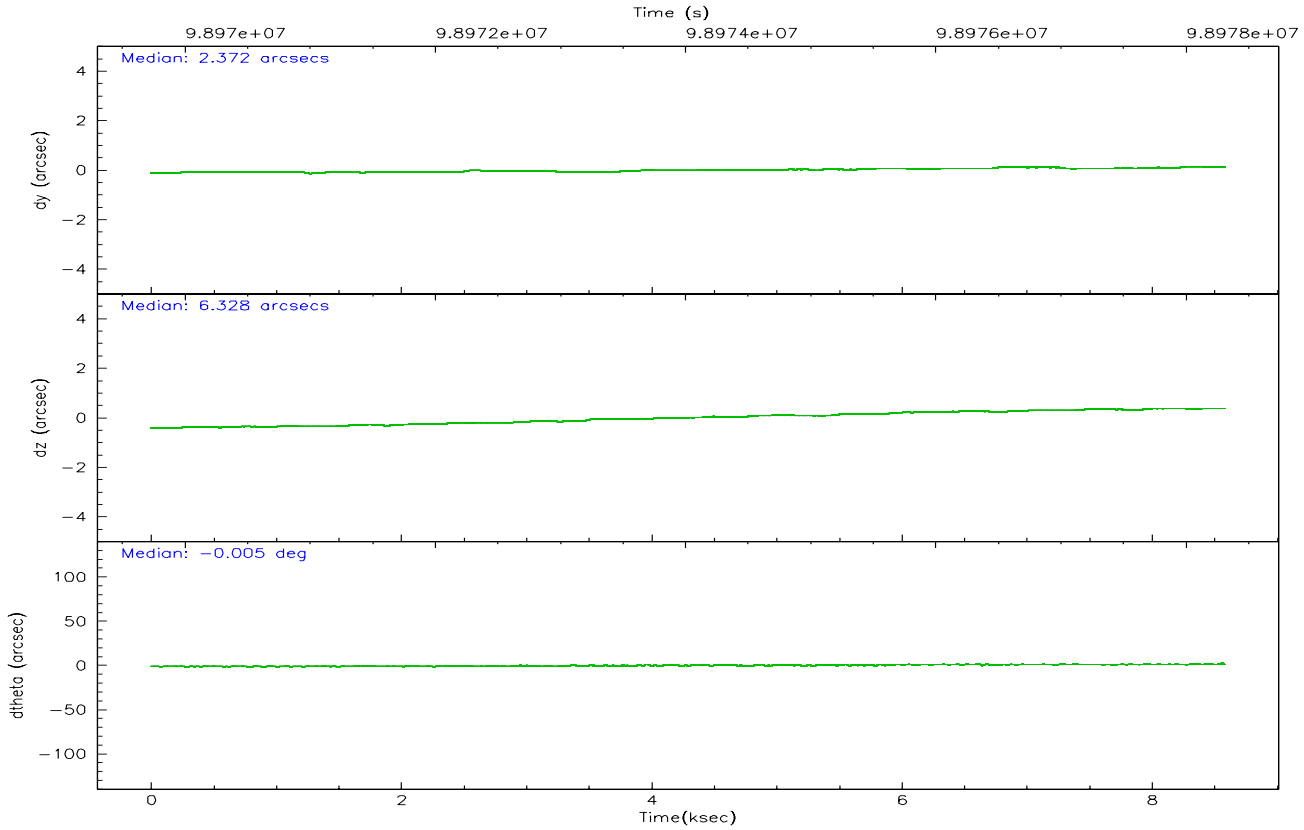
| Parameter | Planned | Actual |
|---|---|---|
| Obspar format version number | 6 | 6 |
| Obspar file type | PREDICTED | ACTUAL |
| Obspar update status | NONE | UPDATED |
| Number of optional ACIS chips dropped | 0 | 0 |
| On-chip summing requested | N | N |
| Subarray requested | CUSTOM | 1/8 |
| Subarray start row | 650 | 650 |
| Subarray row count | 128 | 128 |
| Alternating exposures requested | N | N |
| Primary exposure time | 0.400000 | 0.4 |

## 2.3 Aspect


RA : 287.810 deg
Dec : 0.655 deg
Dec (arcsec)
RA (arcsec)
10
5
0
−5
−10
−10
−5
0
5
10


DY : 2.372 arcsecs
DZ : 6.328 arcsecs
DZ (arcsec)
DY (arcsec)
4
2
0
−2
−4
−4
−2
0
2
4


Time (s)
9.897e+07
9.8972e+07
9.8974e+07
9.8976e+07
9.8978e+07
Median: 287.810 deg
RA (arcsec)
Median: 0.655 deg
Dec (arcsec)
Median: 74.006 deg
roll (arcsec)
Time(ksec)

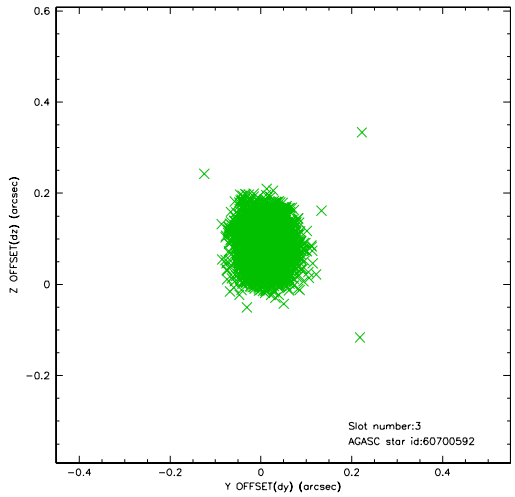

Time (s)
9.897e+07
9.8972e+07
9.8974e+07
9.8976e+07
9.8978e+07
Median: 2.372 arcsecs
dy (arcsec)
Median: 6.328 arcsecs
dz (arcsec)
Median: −0.005 deg
dtheta (arcsec)
Time(ksec)

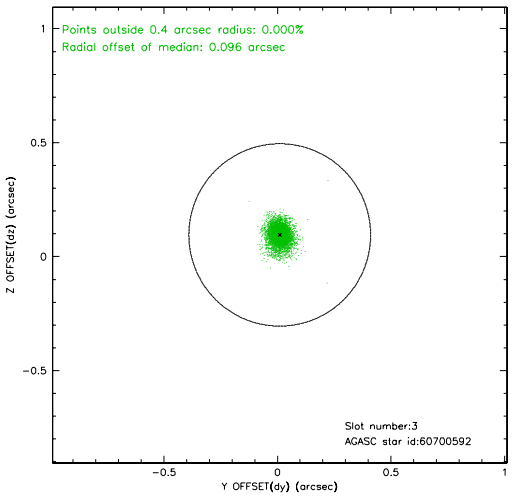
Slot Statistics

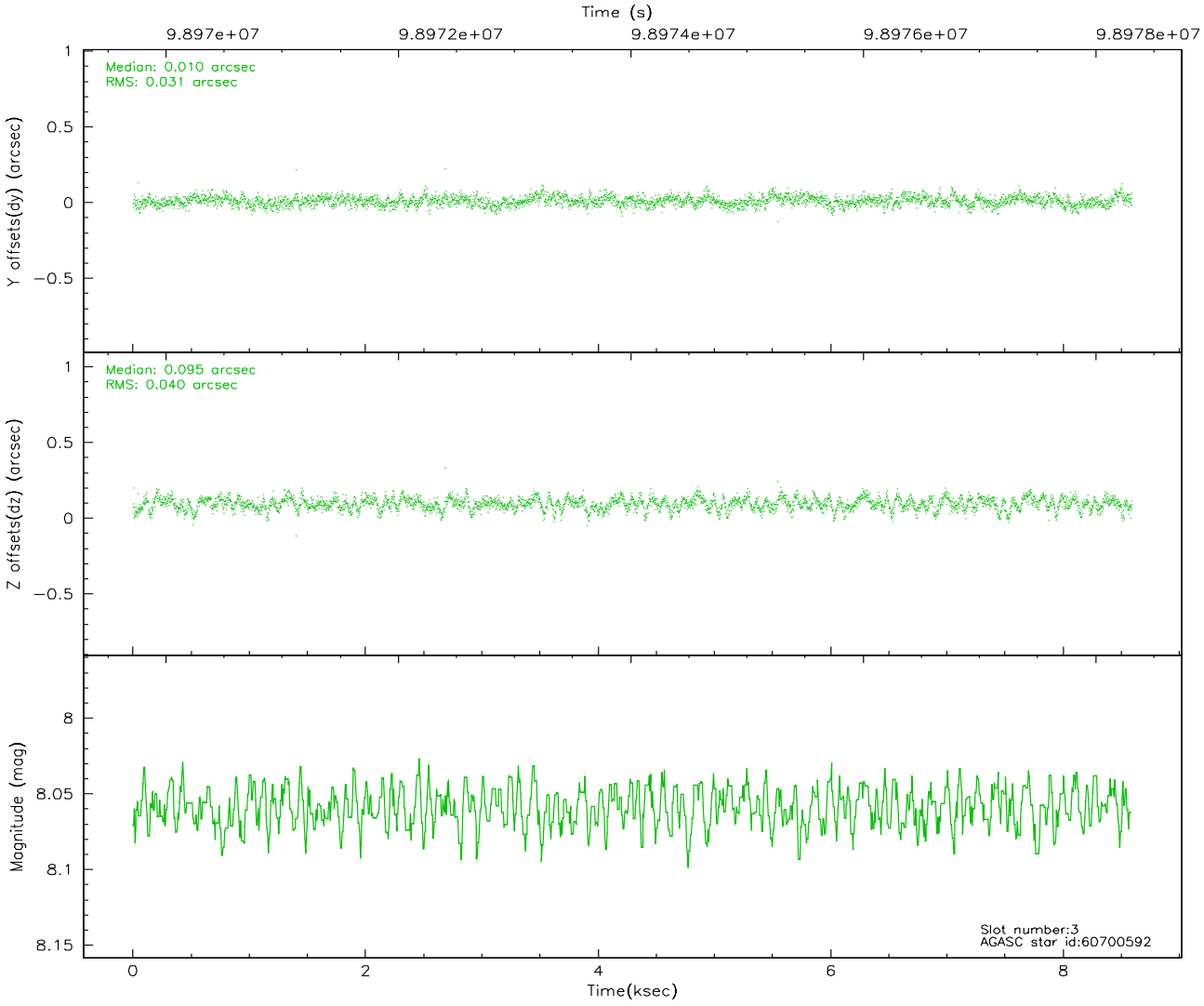
| slot | status | id | mag | n_pts | med_dy | med_dz | dr1 | dr2 | ra | dec | mean_y | mean_z |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | FID | ACIS-S-2 | 7.11 | 2095 | -0.016 | 0.026 | 0.009 | 0.014 | 0.000000 | 0.000000 | -754.99 | -1727.45 |
| 1 | FID | ACIS-S-4 | 7.20 | 2095 | -0.082 | 0.001 | 0.007 | 0.012 | 0.000000 | 0.000000 | 2157.91 | 180.38 |
| 2 | FID | ACIS-S-5 | 7.23 | 2094 | 0.067 | -0.018 | 0.008 | 0.012 | 0.000000 | 0.000000 | -1806.94 | 174.71 |
| 3 | GUIDE | 60700592 | 8.06 | 4190 | 0.010 | 0.095 | 0.052 | 0.088 | 287.530354 | 0.932002 | 764.47 | 1293.68 |
| 4 | GUIDE | 60699528 | 8.92 | 4190 | -0.095 | -0.074 | 0.073 | 0.118 | 287.344521 | 1.231468 | 1614.18 | 2236.13 |
| 5 | GUIDE | 60698176 | 8.87 | 4189 | -0.018 | -0.046 | 0.081 | 0.130 | 287.425571 | 1.234708 | 1706.61 | 1959.40 |
| 6 | GUIDE | 60708936 | 9.10 | 4189 | -0.055 | 0.082 | 0.112 | 0.183 | 287.407925 | 0.924863 | 617.60 | 1710.28 |
| 7 | GUIDE | 60710592 | 9.41 | 4187 | 0.155 | -0.058 | 0.124 | 0.202 | 287.035703 | 0.265770 | -2034.35 | 2337.42 |

## 2.4 Star Slots

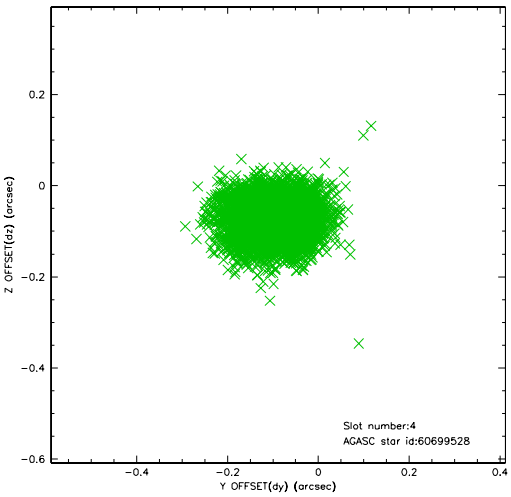
### 2.4.1 Slot 3

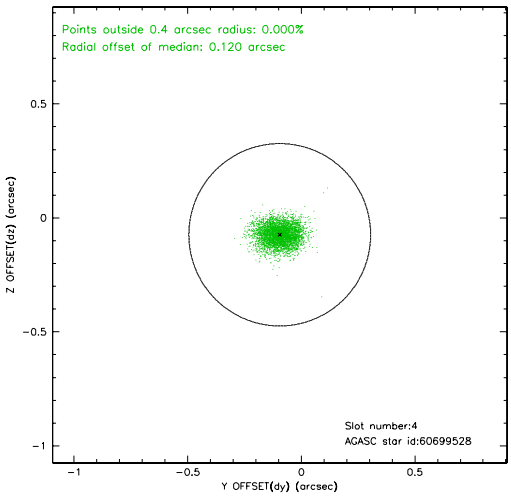


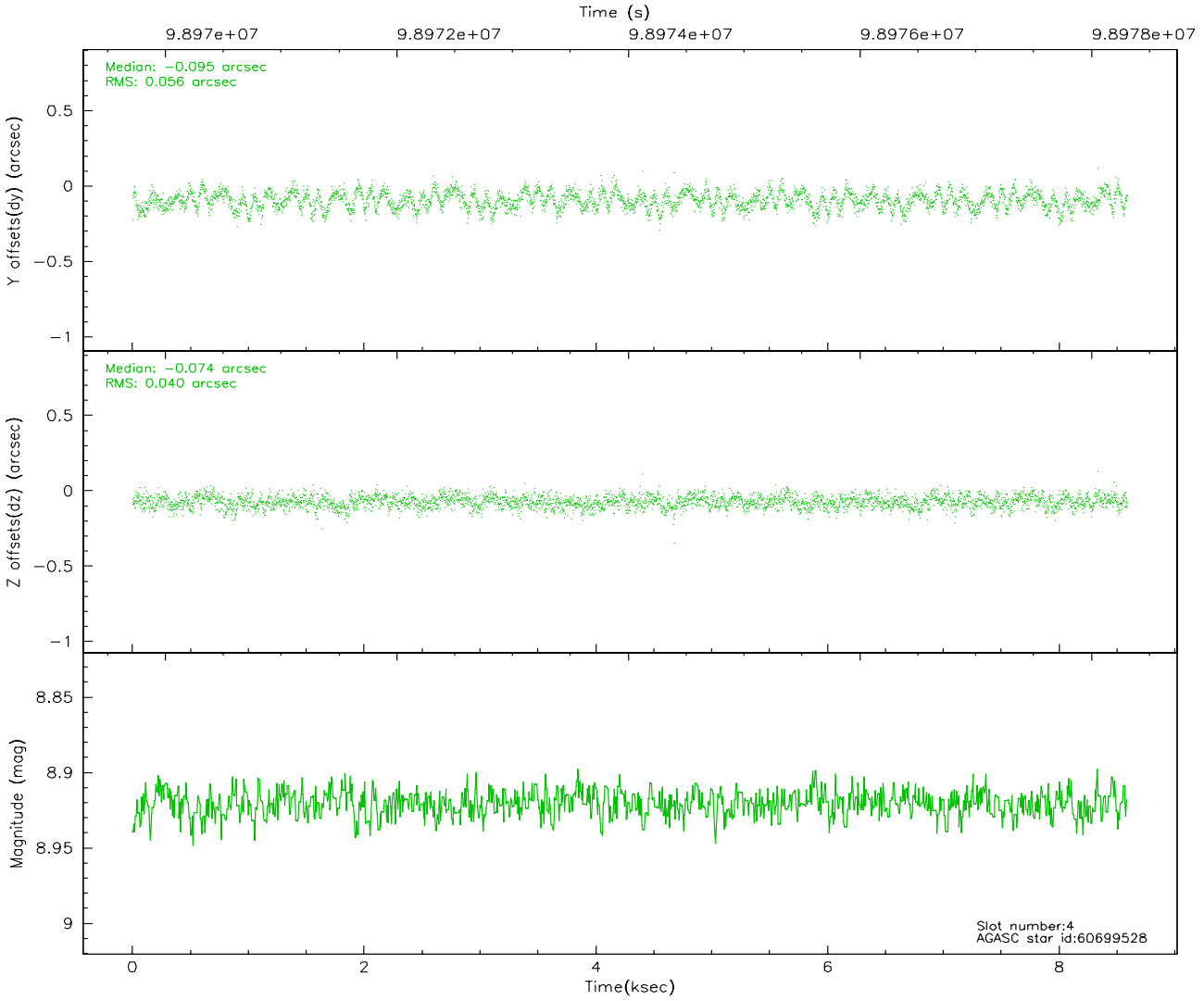



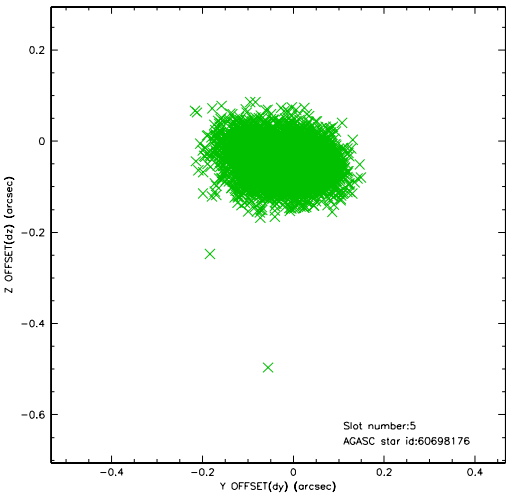
### 2.4.2 Slot 4

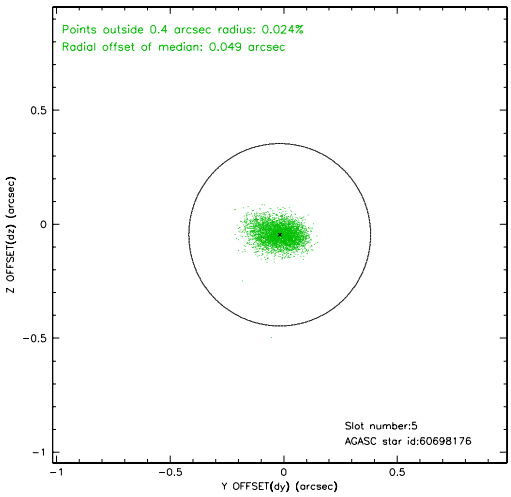

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number:4
AGASC star id:60699528

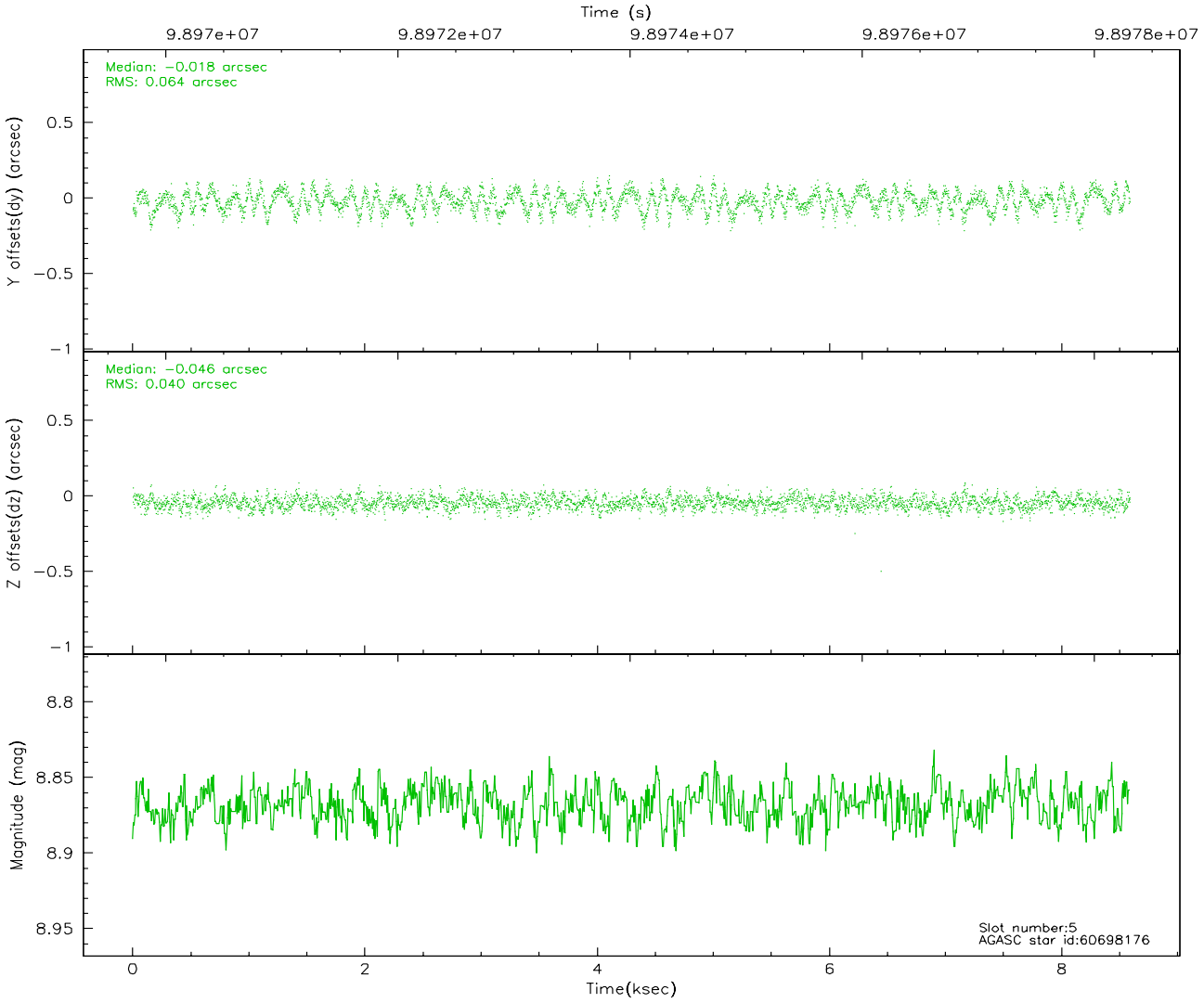

Points outside 0.4 arcsec radius: 0.000%
Radial offset of median: 0.120 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number:4
AGASC star id:60699528


Time (s)
9.897e+07
9.8972e+07
9.8974e+07
9.8976e+07
9.8978e+07
Median: −0.095 arcsec
RMS: 0.056 arcsec
Y offsets(dy) (arcsec)
Median: −0.074 arcsec
RMS: 0.040 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number:4
AGASC star id:60699528
Time(ksec)

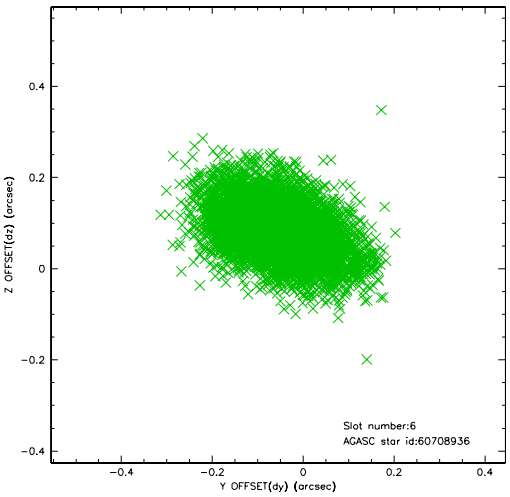
### 2.4.3 Slot 5

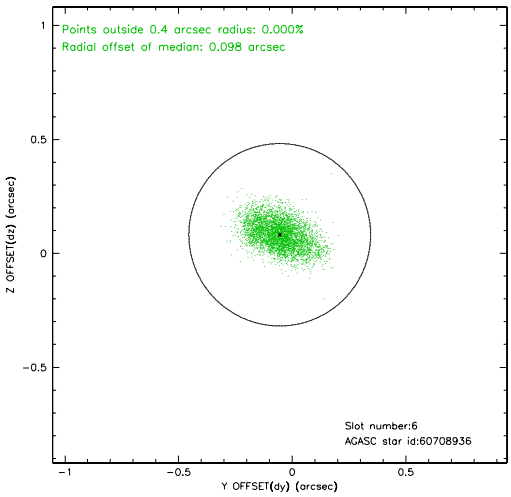

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number:5
AGASC star id:60698176

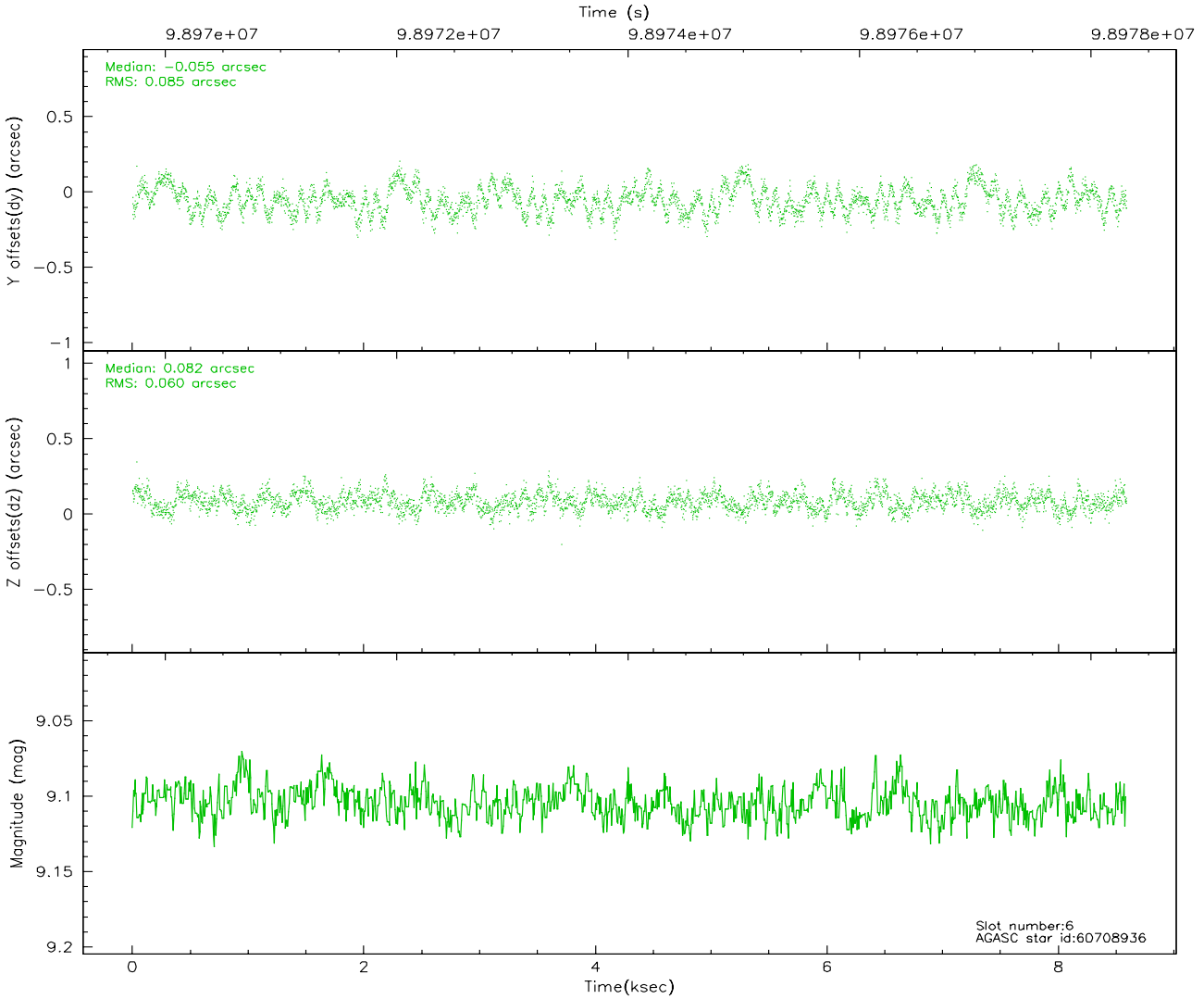

Points outside 0.4 arcsec radius: 0.024%
Radial offset of median: 0.049 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number:5
AGASC star id:60698176


Time (s)
9.897e+07
9.8972e+07
9.8974e+07
9.8976e+07
9.8978e+07
Median: −0.018 arcsec
RMS: 0.064 arcsec
Y offsets(dy) (arcsec)
Median: −0.046 arcsec
RMS: 0.040 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number:5
AGASC star id:60698176
Time(ksec)

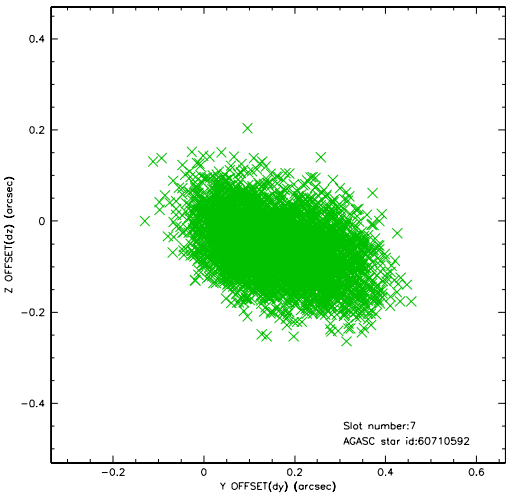
### 2.4.4 Slot 6

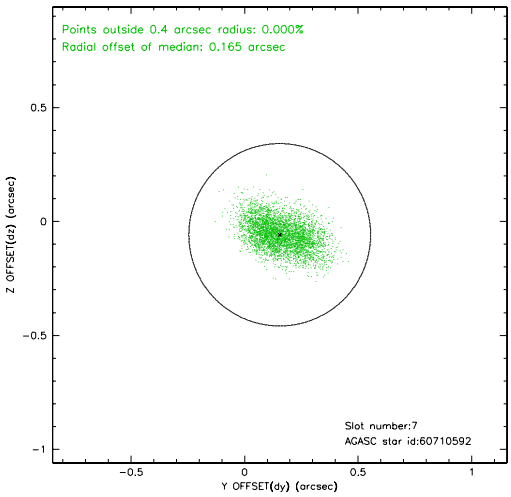

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number:6
AGASC star id:60708936

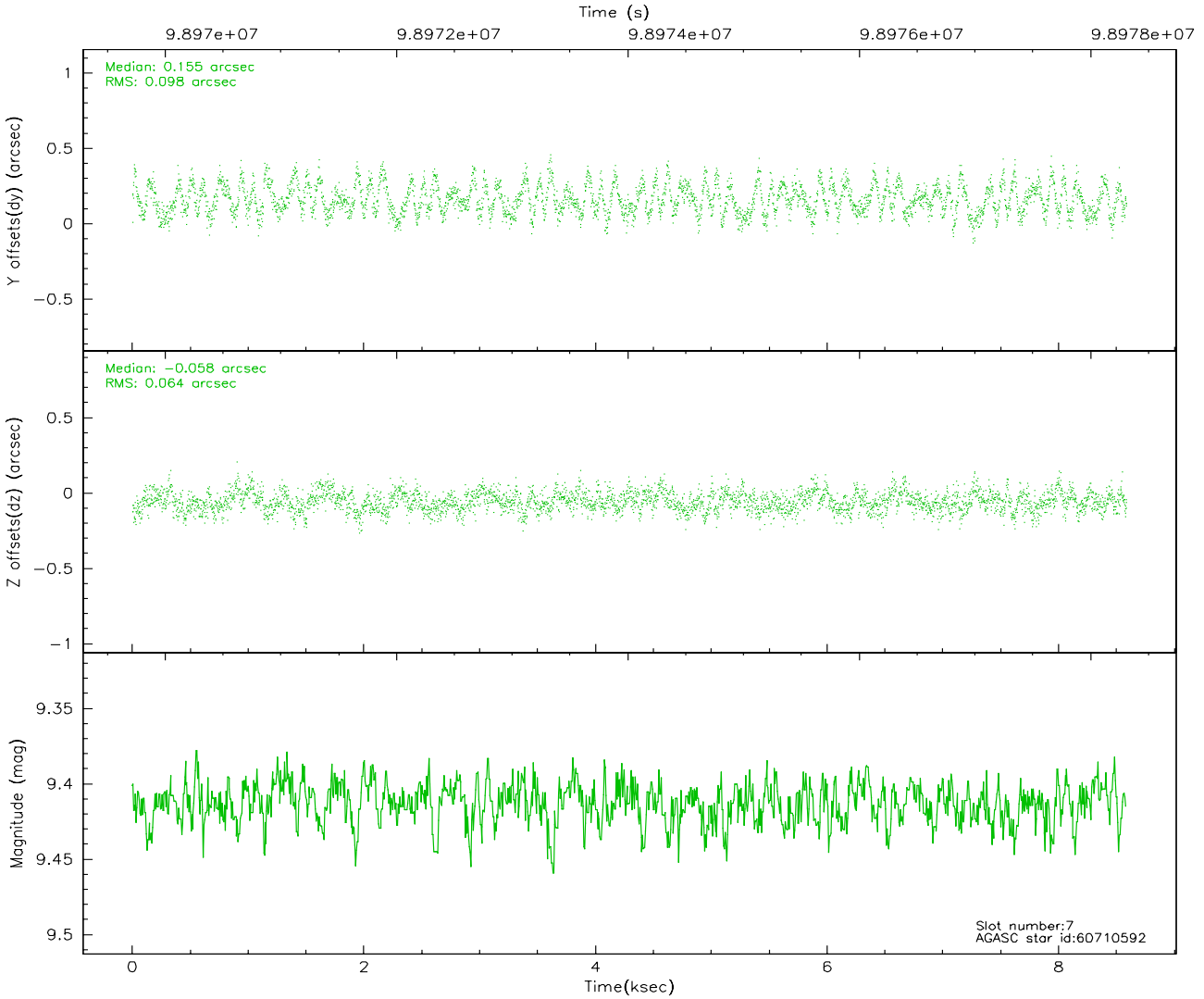

Points outside 0.4 arcsec radius: 0.000%
Radial offset of median: 0.098 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number:6
AGASC star id:60708936


Time (s)
9.897e+07
9.8972e+07
9.8974e+07
9.8976e+07
9.8978e+07
Median: −0.055 arcsec
RMS: 0.085 arcsec
Y offsets(dy) (arcsec)
Median: 0.082 arcsec
RMS: 0.060 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number:6
AGASC star id:60708936
Time(ksec)

### 2.4.5 Slot 7

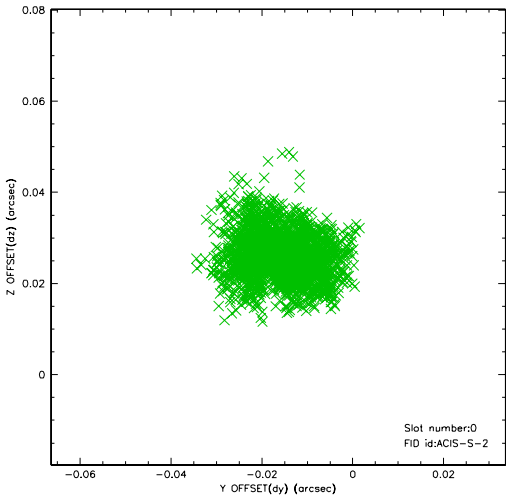

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number:7
AGASC star id:60710592

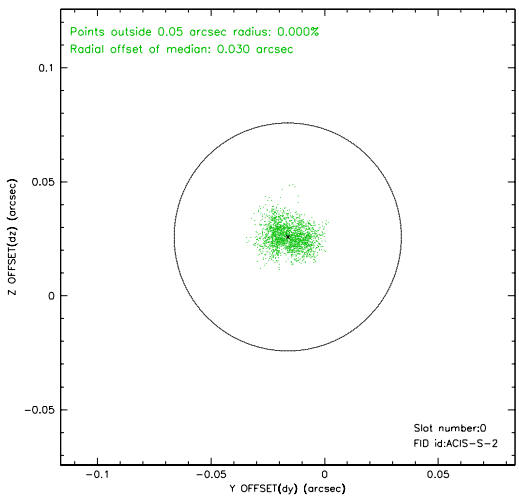

Points outside 0.4 arcsec radius: 0.000%
Radial offset of median: 0.165 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number:7
AGASC star id:60710592

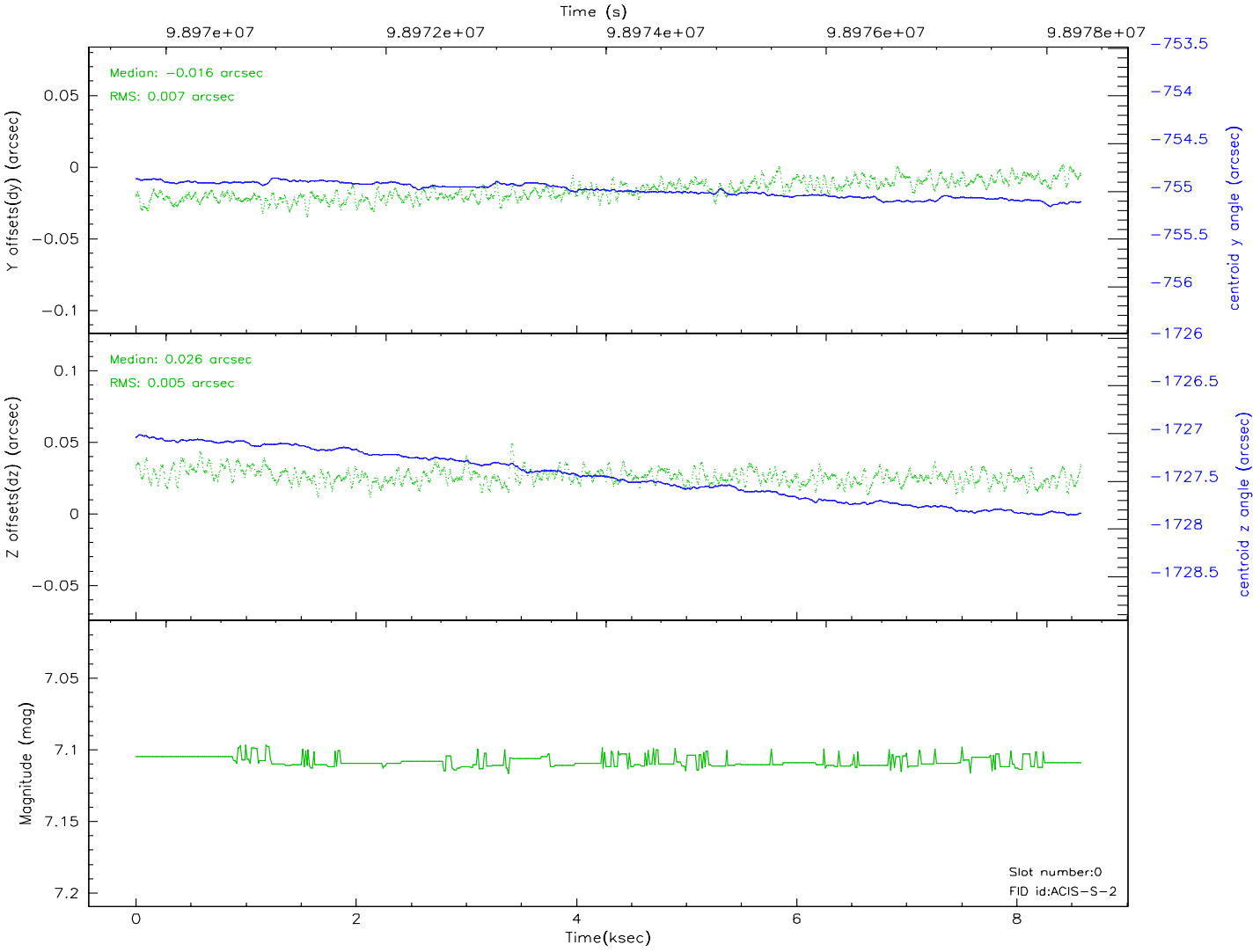

Time (s)
9.897e+07
9.8972e+07
9.8974e+07
9.8976e+07
9.8978e+07
Median: 0.155 arcsec
RMS: 0.098 arcsec
Y offsets(dy) (arcsec)
Median: −0.058 arcsec
RMS: 0.064 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number:7
AGASC star id:60710592
Time(ksec)

## 2.5 FID Slots

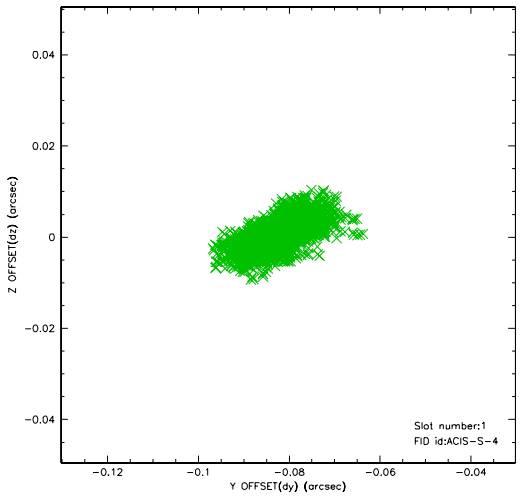
### 2.5.1 Slot 0

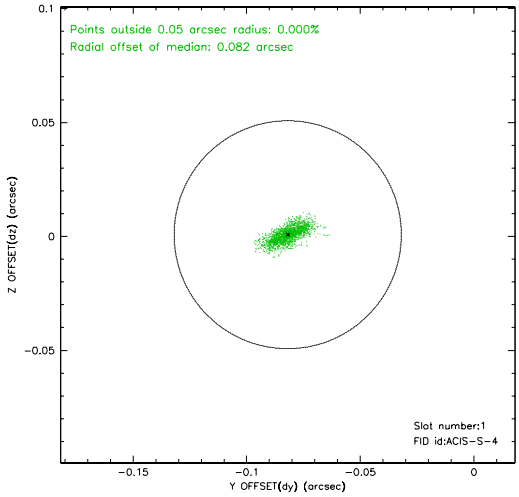


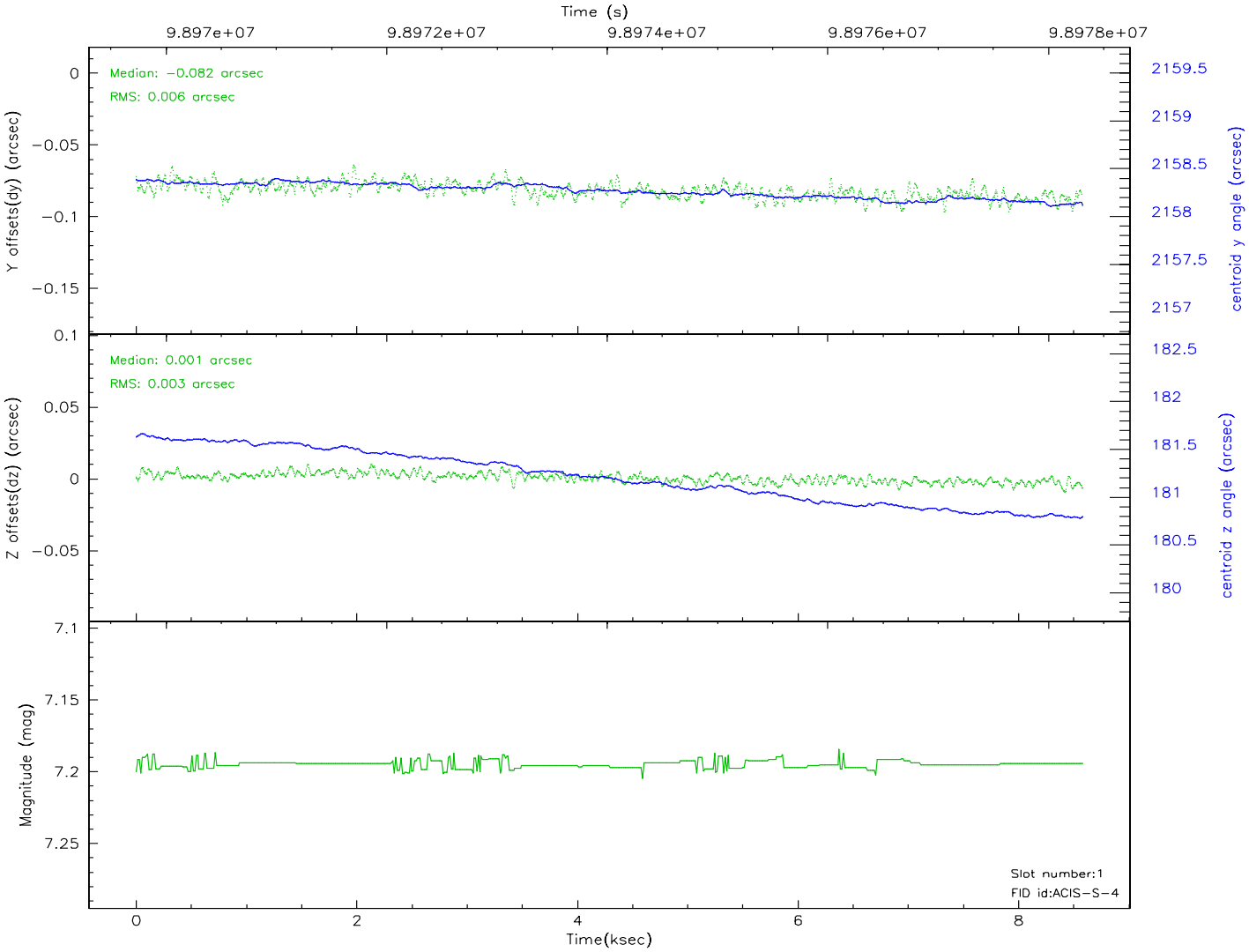



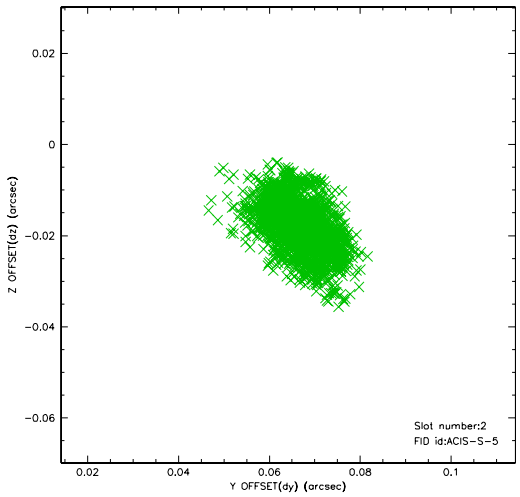
### 2.5.2 Slot 1

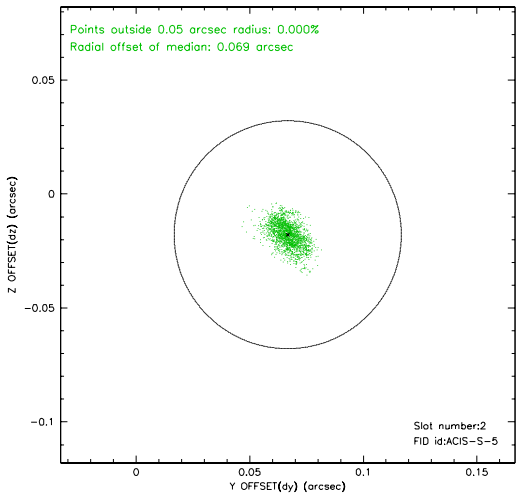

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number:1
FID id:ACIS-S-4

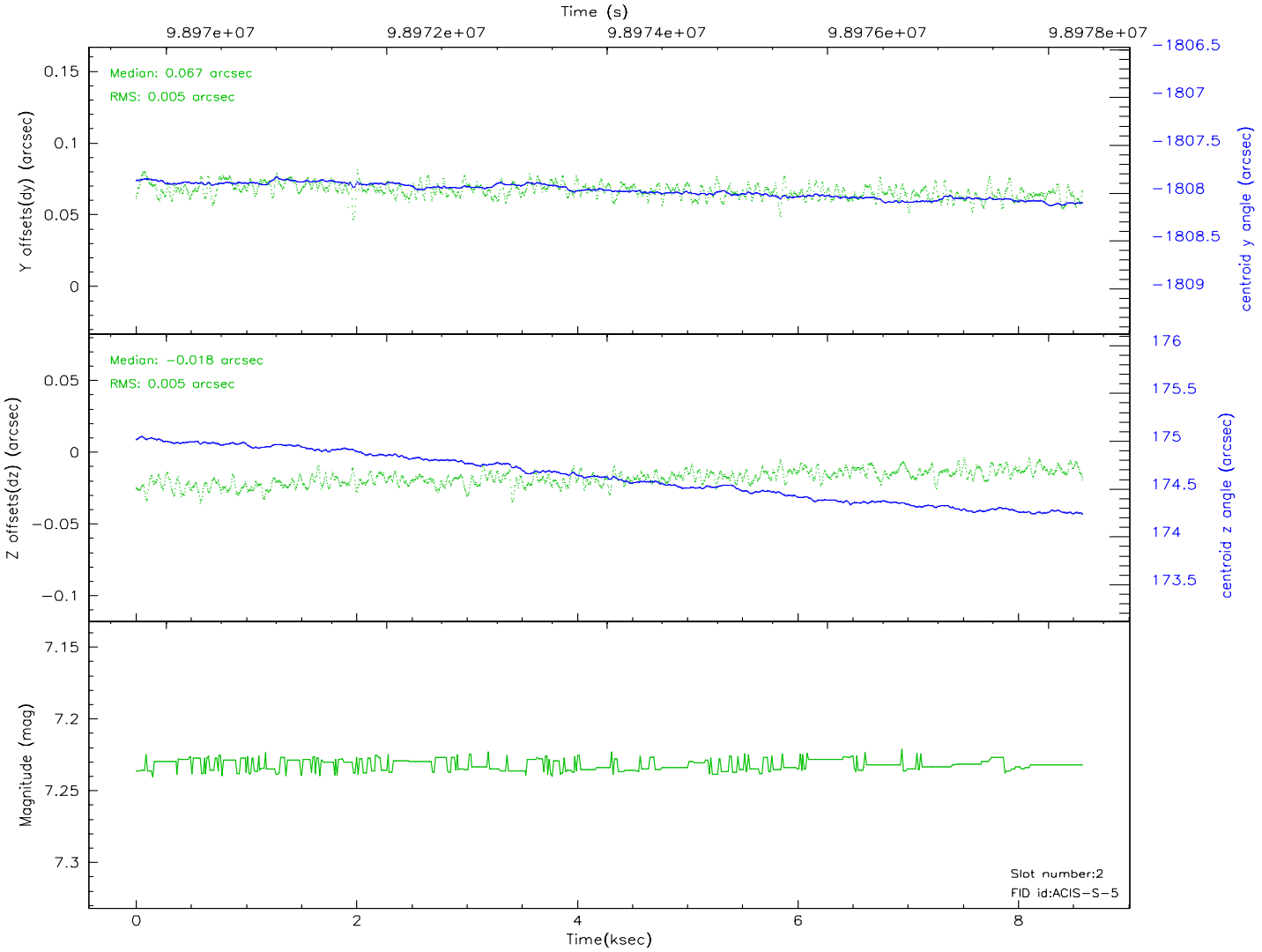

Points outside 0.05 arcsec radius: 0.000%
Radial offset of median: 0.082 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number:1
FID id:ACIS-S-4


Time (s)
Median: −0.082 arcsec
RMS: 0.006 arcsec
Y offsets(dy) (arcsec)
centroid y angle (arcsec)
Median: 0.001 arcsec
RMS: 0.003 arcsec
Z offsets(dz) (arcsec)
centroid z angle (arcsec)
Magnitude (mag)
Slot number:1
FID id:ACIS-S-4
Time(ksec)

### 2.5.3 Slot 2


Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number:2
FID id:ACIS-S-5


Points outside 0.05 arcsec radius: 0.000%
Radial offset of median: 0.069 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number:2
FID id:ACIS-S-5


Time (s)
9.897e+07
9.8972e+07
9.8974e+07
9.8976e+07
9.8978e+07
Median: 0.067 arcsec
RMS: 0.005 arcsec
Y offsets(dy) (arcsec)
centroid y angle (arcsec)
Median: −0.018 arcsec
RMS: 0.005 arcsec
Z offsets(dz) (arcsec)
centroid z angle (arcsec)
Magnitude (mag)
Slot number:2
FID id:ACIS-S-5
Time(ksec)

# 3 Point Sources

# A Summary

## A.1 Status

| | |
|---|---|
| V&V Scientist | Jen Lauer |
| V&V Date (YYYY-MM-DD) | 2006.11.09 |
| V&V Edition | 1 |
| V&V Disposition and Status | OK |
| V&V Charge Time | 8.586 |

## A.2 Comments

```
Monitor constraint not met, follows obs708 by 83 days instead of 25 - 35
days as requested.
```