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

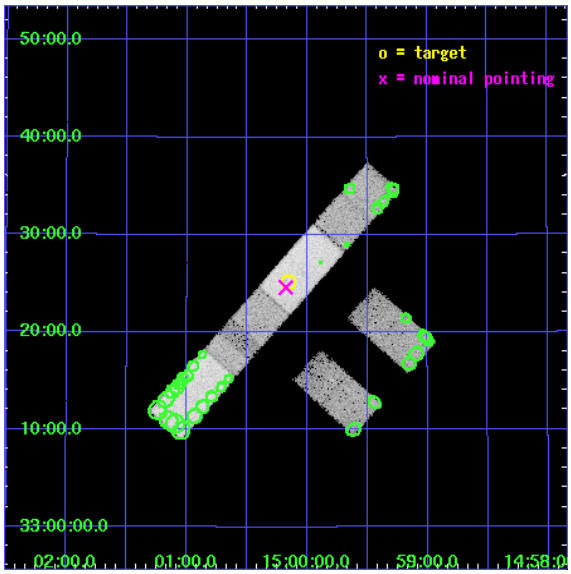
Observation 3331 - L2 Version 001
Chandra X-Ray Center

L2 Processing Date : Oct 5 2006

## Contents

# 1 Front

| | |
|---|---|
| seq_num | 900170 |
| obs_id | 3331 |
| title | THE SHEEP SURVEY: WHAT KIND OF OBJECTS MAKE THE X-RAY BACKGROUND? |
| observer | Professor Kirpal Nandra |
| object | AX J1500.1+3325 |
| dtycycle | 0 |
| cycle | P |
| ra_targ | 225.038333 |
| dec_targ | 33.418333 |
| ra_nom | 225.04440675067 |
| dec_nom | 33.409966752947 |
| roll_nom | 311.50648491911 |
| revision | 2 |
| ontime | 5405.4000357985 |
| livetime | 5284.9042195919 |
| ontime2 | 5405.4000357985 |
| ontime3 | 5405.4000357985 |
| ontime5 | 5405.4000357985 |
| ontime6 | 5405.4000357985 |
| ontime7 | 5405.4000357985 |
| ontime8 | 5405.4000357985 |
| l2events | 103231 |

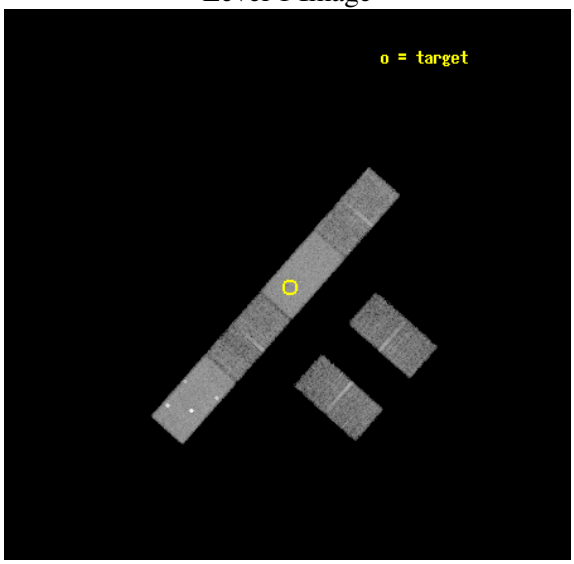


# 2 OBI

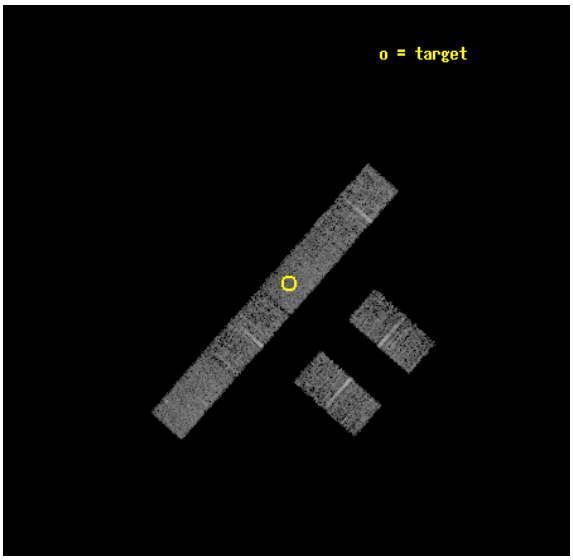
## 2.1 OBI

### 2.1.1 Images

Level 1 Image

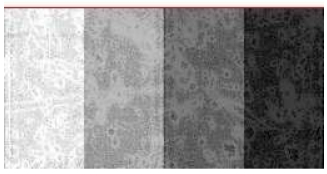



Level 1 Bad Events

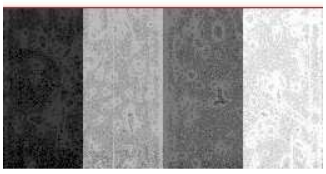



### 2.1.2 Bias

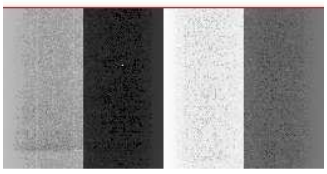
Chip 2



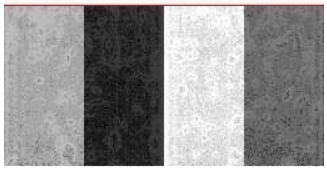
Chip 3



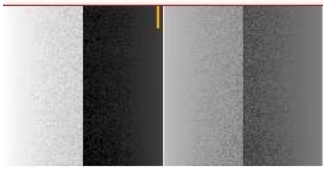
Chip 5



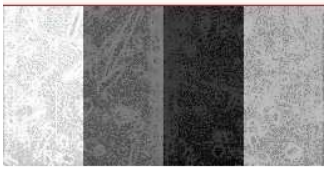
Chip 6



Chip 7



Chip 8



### 2.1.3 Parameters

| | |
|---|---|
| obi_num | 0 |
| ascdsver | 7.6.9 |
| caldbver | 3.2.3 |
| date | 2006-10-05T18:46:30 |
| revision | 2 |

| | |
|---|---|
| sched_exp_time | 5000.000000 |
| ontime | 5407.0669340491 |
| ontime2 | 5407.0669340491 |
| ontime3 | 5407.0669340491 |
| ontime5 | 5407.0669340491 |
| ontime6 | 5407.0669340491 |
| ontime7 | 5407.0669340491 |
| ontime8 | 5407.0669340491 |
| l1events | 217659 |

### 2.1.4 Events

| | ccd 2 | ccd 3 | ccd 5 | ccd 6 | ccd 7 | ccd 8 |
|---|---|---|---|---|---|---|
| level 1 events | 25698 | 24606 | 56148 | 28676 | 49386 | 33145 |
| rejected events | 16991 | 15816 | 18307 | 16815 | 16779 | 18307 |
| rejected % | 66% | 64% | 32% | 58% | 33% | 55% |

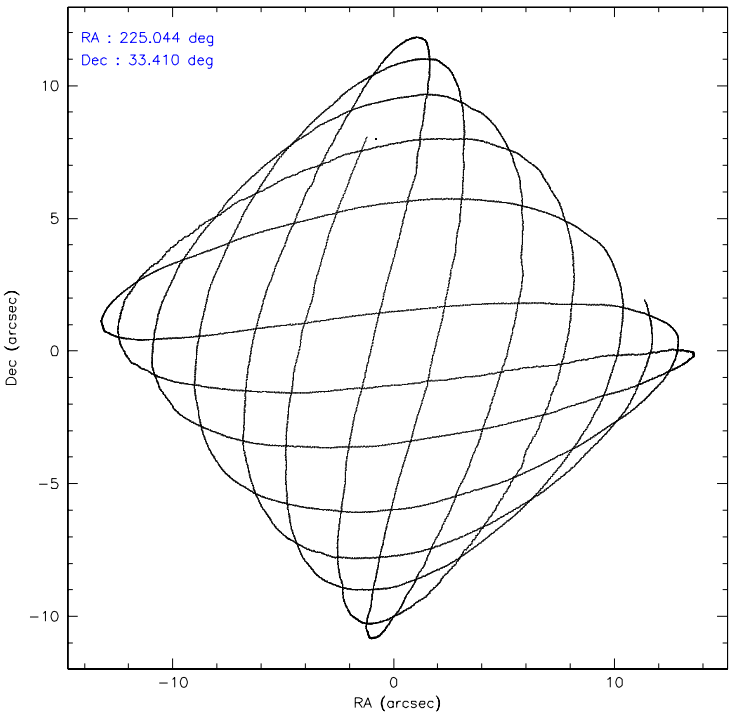
| | ccd 2 | ccd 3 | ccd 5 | ccd 6 | ccd 7 | ccd 8 |
|---|---|---|---|---|---|---|
| grade 0 events | 5860 | 5818 | 7472 | 7672 | 2855 | 9287 |
| | 22% | 23% | 13% | 26% | 5% | 28% |
| grade 1 events | 18 | 16 | 31 | 14 | 12 | 40 |
| | 0% | 0% | 0% | 0% | 0% | 0% |
| grade 2 events | 1473 | 1661 | 11165 | 2628 | 6706 | 2834 |
| | 5% | 6% | 19% | 9% | 13% | 8% |
| grade 3 events | 299 | 359 | 1304 | 402 | 1901 | 638 |
| | 1% | 1% | 2% | 1% | 3% | 1% |
| grade 4 events | 344 | 343 | 1175 | 402 | 1877 | 596 |
| | 1% | 1% | 2% | 1% | 3% | 1% |
| grade 5 events | 706 | 706 | 1681 | 769 | 1807 | 934 |
| | 2% | 2% | 2% | 2% | 3% | 2% |
| grade 6 events | 737 | 612 | 16734 | 765 | 19275 | 1487 |
| | 2% | 2% | 29% | 2% | 39% | 4% |
| grade 7 events | 16261 | 15091 | 16586 | 16024 | 14953 | 17329 |
| | 63% | 61% | 29% | 55% | 30% | 52% |

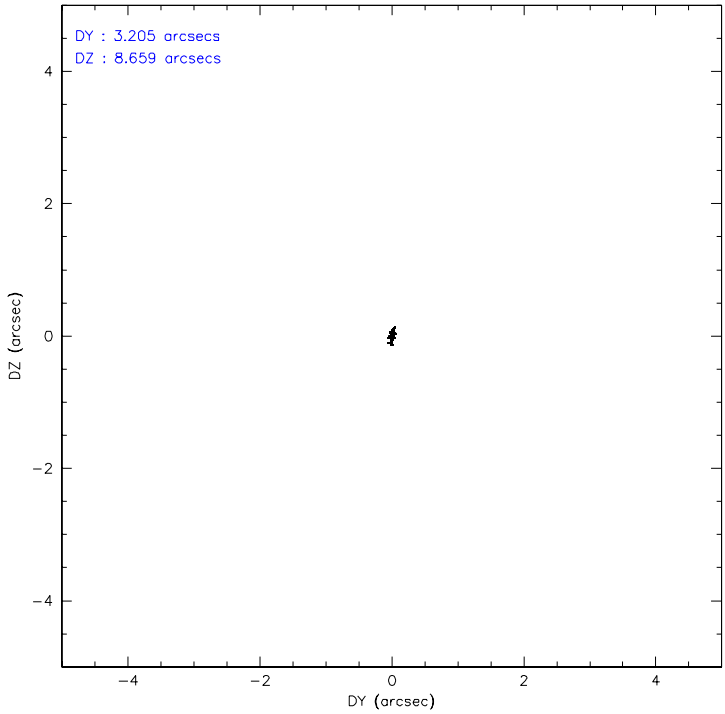
## 2.2 Compared Parameters

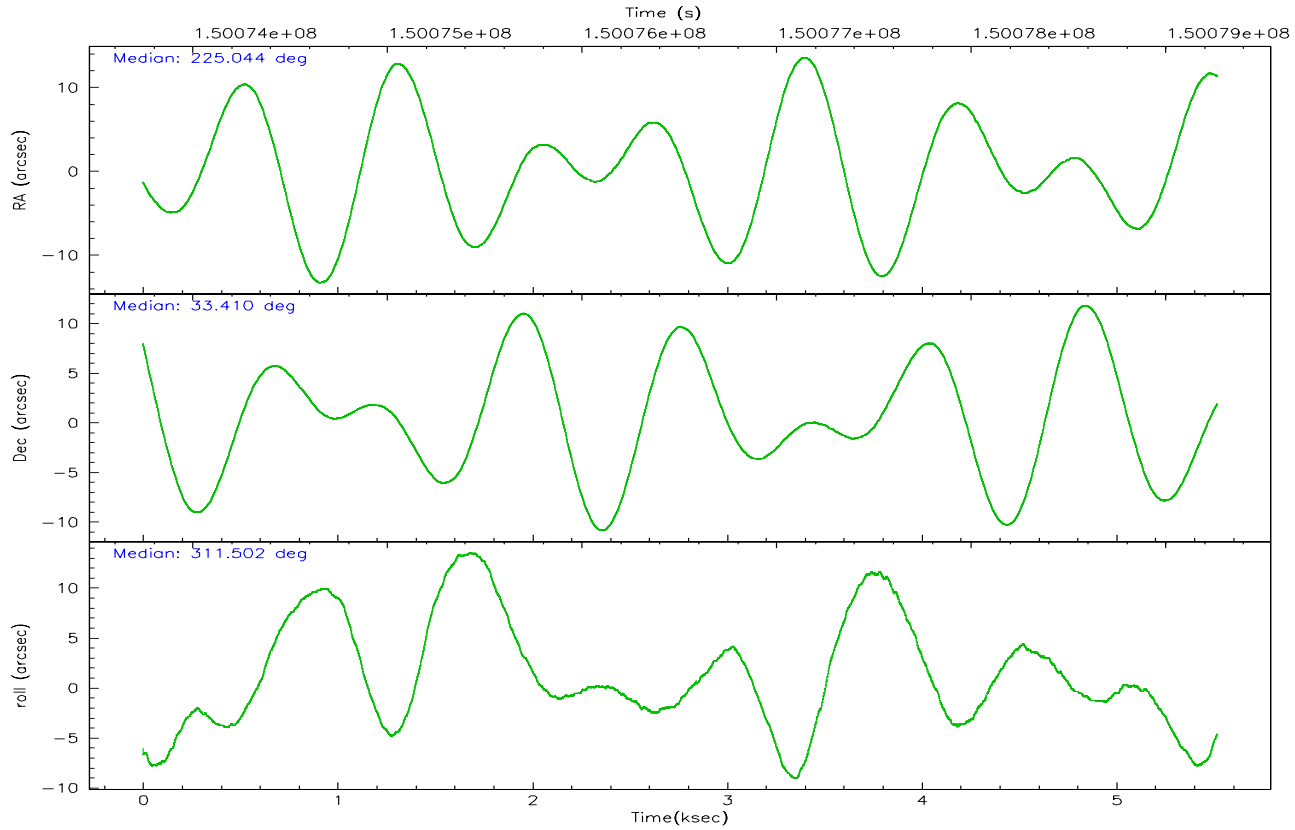
| Parameter | Planned | Actual |
|---|---|---|
| Instrument | ACIS | ACIS |
| Detector | ACIS-235678 | ACIS-235678 |
| Grating | NONE | NONE |
| Data mode | FAINT | FAINT |
| Observation mode | POINTING | POINTING |
| Pointing RA | 225.013289 | 225.0444067506663 |
| Pointing Dec | 33.418364 | 33.40996675294704 |
| Pointing Roll | 311.367010 | 311.5064849191076 |
| SIM focus pos (mm) | -0.684267 | -0.6828225247311905 |
| SIM defocus (mm) | 0 | 0.001444936568705701 |
| SIM translation stage pos (mm) | -190.132523 | -190.1425803651734 |
| SIM translation stage offset (mm) | 0 | 0.01005778216563158 |
| Observation start time | 150074260.184000 | 150073133.68459 |
| Observation start date | 2002-10-03T23:16:36 | 2002-10-03T22:58:53 |
| Observation end time | 150079260.184000 | 150079741.34736 |
| Observation end date | 2002-10-04T00:39:56 | 2002-10-04T00:49:01 |
| Read mode | TIMED | TIMED |

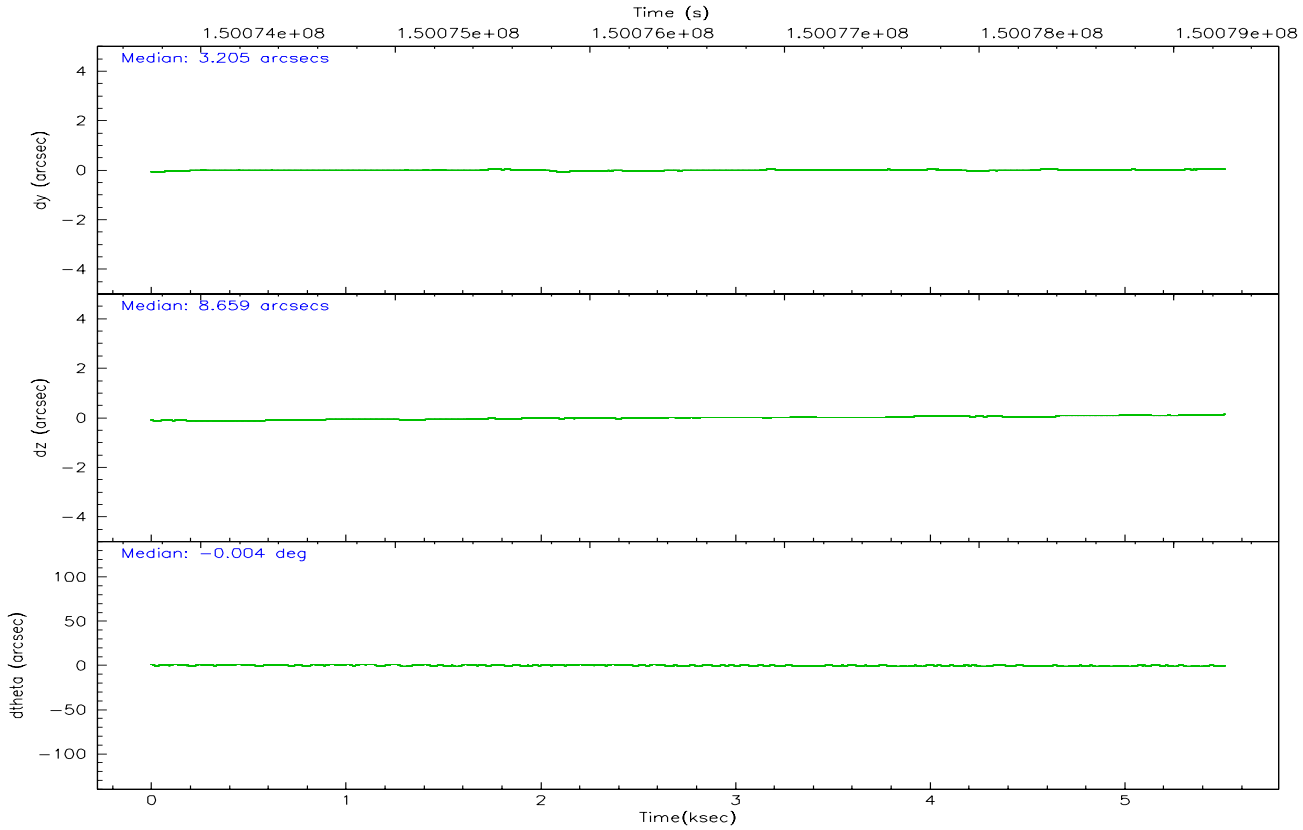
| Parameter | Planned | Actual |
|---|---|---|
| Obspar format version number | 6 | 6 |
| Obspar file type | PREDICTED | ACTUAL |
| Obspar update status | NONE | UPDATED |
| Number of optional ACIS chips dropped | 0 | 0 |
| On-chip summing requested | N | N |
| Subarray requested | 1/2 | 1/2 |
| Subarray start row | 0 | 257 |
| Subarray row count | 1024 | 512 |
| Alternating exposures requested | N | N |
| Primary exposure time | 0.000000 | 1.8 |

## 2.3 Aspect


RA : 225.044 deg
Dec : 33.410 deg
10
5
0
−5
−10
Dec (arcsec)
−10
0
10
RA (arcsec)


DY : 3.205 arcsecs
DZ : 8.659 arcsecs
4
2
0
−2
−4
DZ (arcsec)
−4
−2
0
2
4
DY (arcsec)


Time (s)
1.50074e+08
1.50075e+08
1.50076e+08
1.50077e+08
1.50078e+08
1.50079e+08
Median: 225.044 deg
RA (arcsec)
Median: 33.410 deg
Dec (arcsec)
Median: 311.502 deg
roll (arcsec)
Time(ksec)

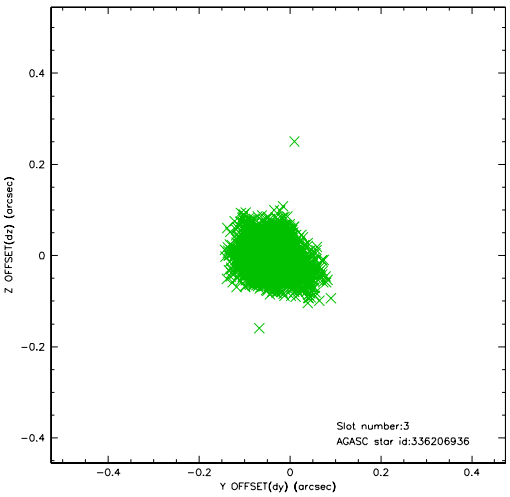

Time (s)
1.50074e+08
1.50075e+08
1.50076e+08
1.50077e+08
1.50078e+08
1.50079e+08
Median: 3.205 arcsecs
dy (arcsec)
Median: 8.659 arcsecs
dz (arcsec)
Median: −0.004 deg
dtheta (arcsec)
Time(ksec)

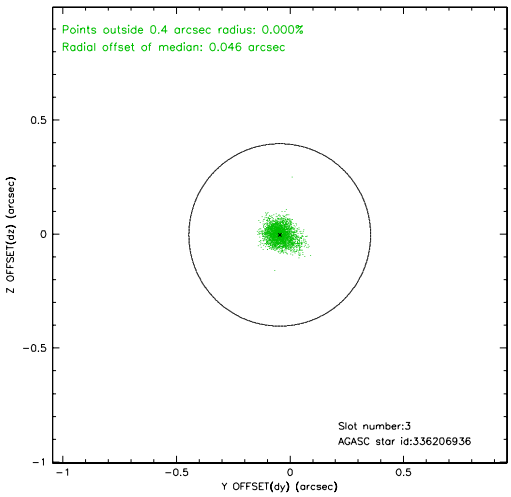
Slot Statistics

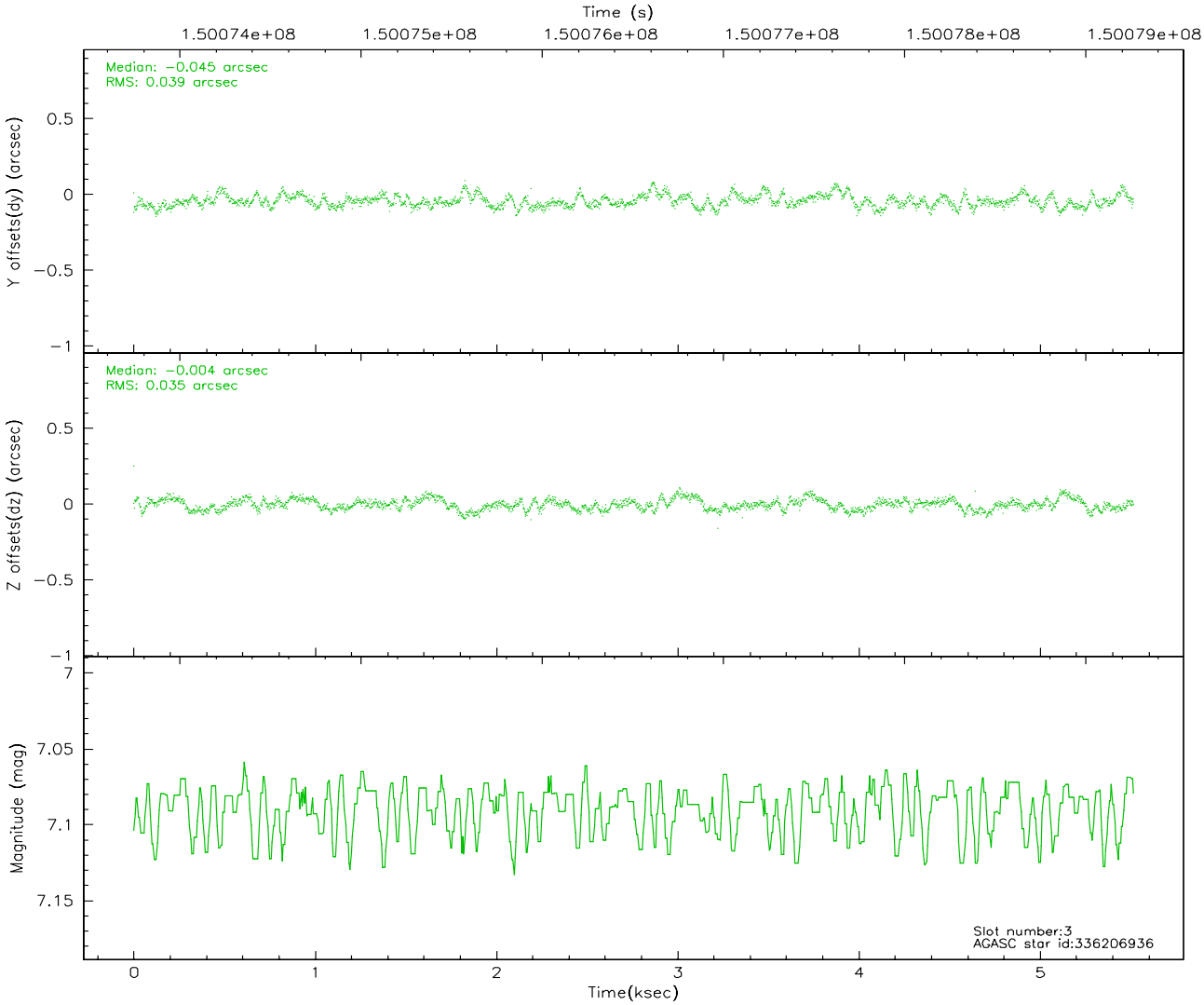
| slot | status | id | mag | n_pts | med_dy | med_dz | dr1 | dr2 | ra | dec | mean_y | mean_z |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | FID | ACIS-S-2 | 7.11 | 1346 | -0.004 | 0.012 | 0.007 | 0.011 | 0.000000 | 0.000000 | -755.86 | -1729.80 |
| 1 | FID | ACIS-S-4 | 7.20 | 1346 | -0.036 | -0.002 | 0.005 | 0.008 | 0.000000 | 0.000000 | 2156.90 | 177.54 |
| 2 | FID | ACIS-S-5 | 7.24 | 1346 | 0.009 | -0.002 | 0.006 | 0.010 | 0.000000 | 0.000000 | -1807.28 | 172.46 |
| 3 | GUIDE | 336206936 | 7.09 | 2693 | -0.045 | -0.004 | 0.055 | 0.092 | 225.621927 | 33.274357 | 1595.51 | 1035.83 |
| 4 | GUIDE | 336205600 | 8.43 | 2693 | 0.008 | -0.000 | 0.050 | 0.083 | 225.139973 | 32.959246 | 1493.71 | -804.52 |
| 5 | GUIDE | 335287112 | 9.22 | 2692 | 0.044 | -0.023 | 0.080 | 0.129 | 224.732411 | 33.106430 | 282.78 | -1377.39 |
| 6 | GUIDE | 335285640 | 9.12 | 2690 | 0.019 | 0.010 | 0.078 | 0.131 | 224.854294 | 34.122720 | -2216.54 | 1319.74 |
| 7 | GUIDE | 335289016 | 9.42 | 2691 | -0.031 | 0.014 | 0.087 | 0.142 | 224.628646 | 32.968085 | 446.33 | -1941.37 |

## 2.4 Star Slots

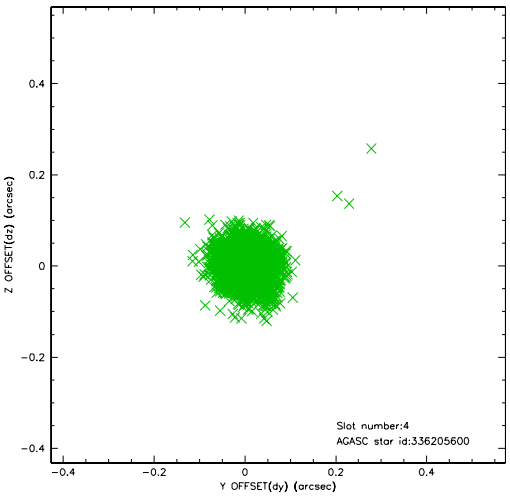
### 2.4.1 Slot 3

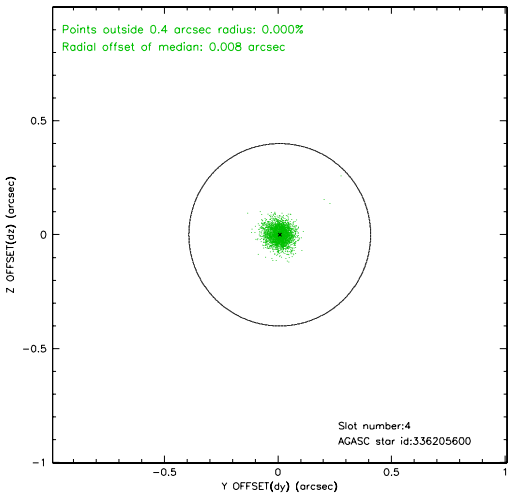


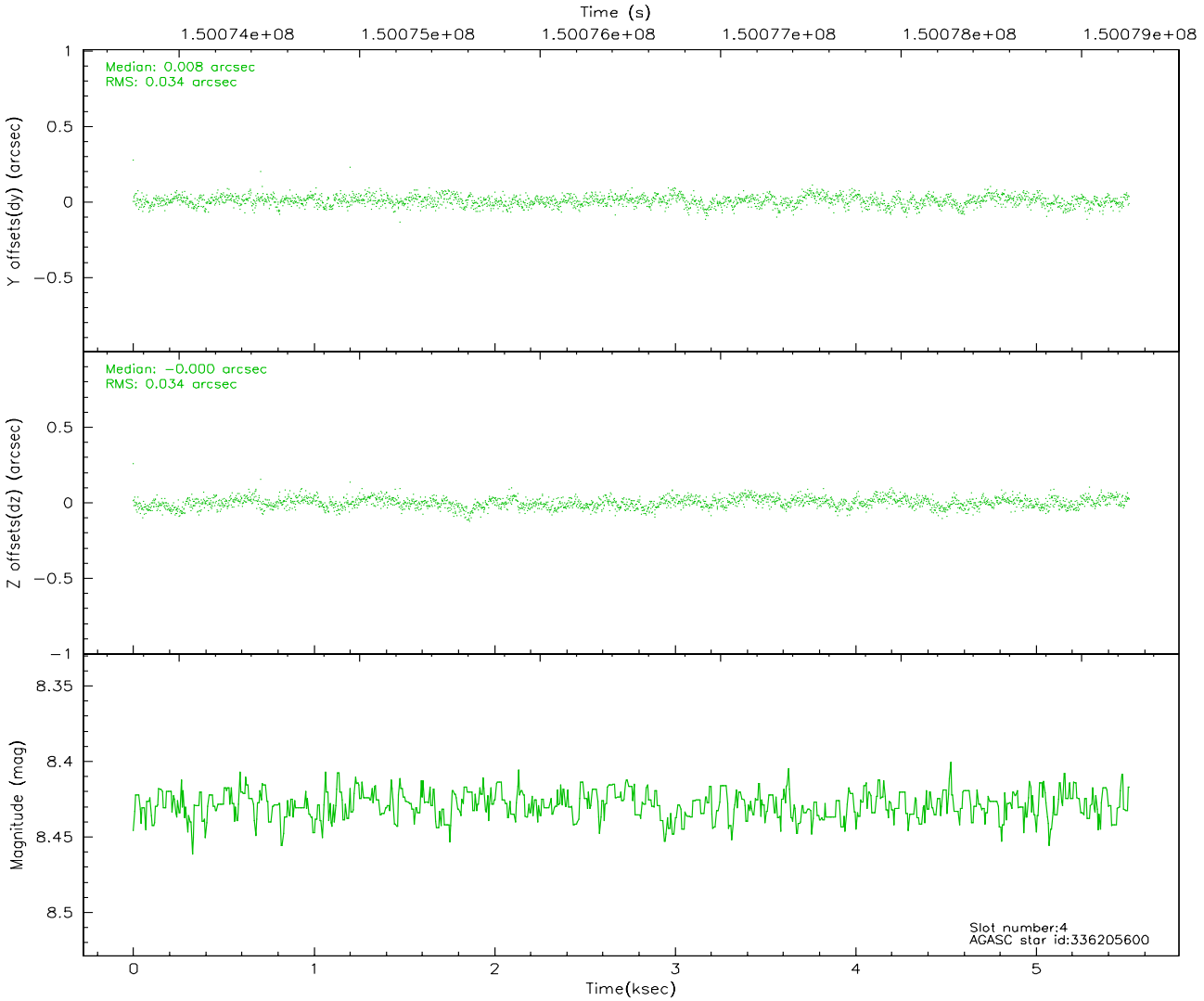



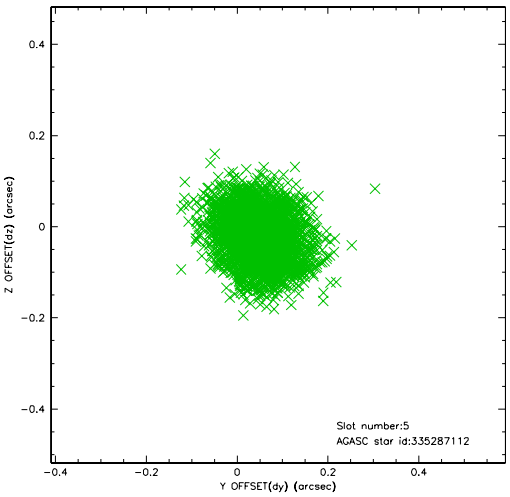
### 2.4.2 Slot 4

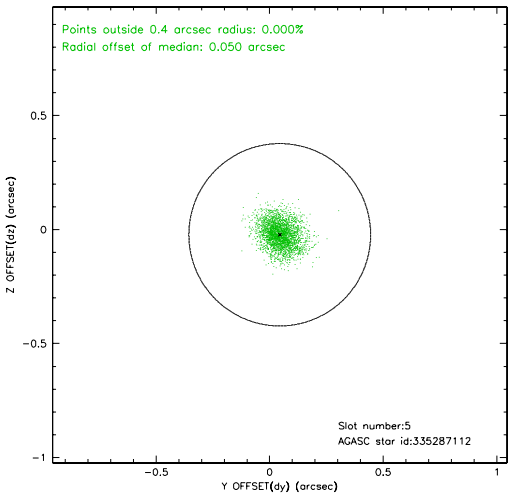

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number:4
AGASC star id:336205600

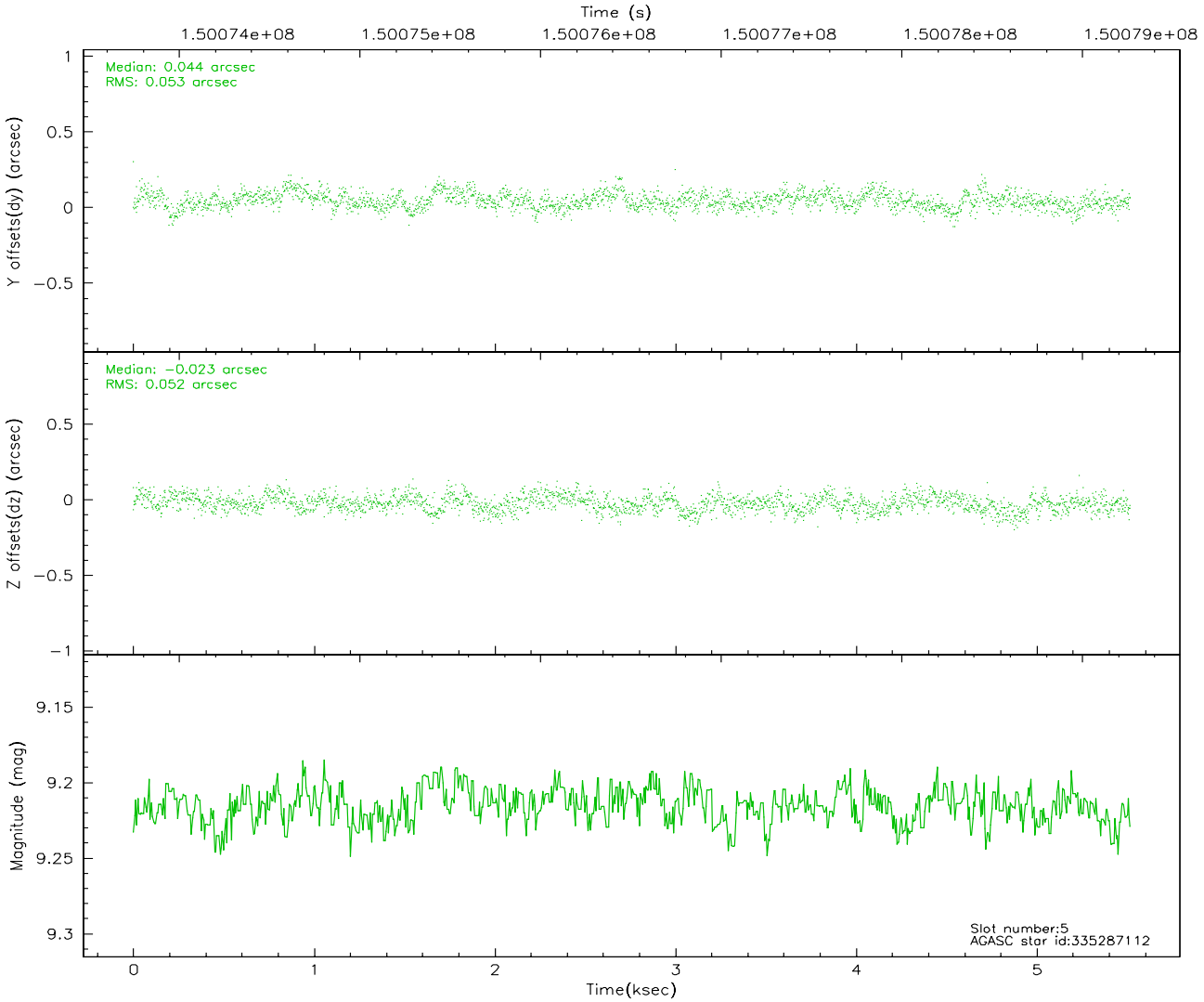

Points outside 0.4 arcsec radius: 0.000%
Radial offset of median: 0.008 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number:4
AGASC star id:336205600


Time (s)
1.50074e+08
1.50075e+08
1.50076e+08
1.50077e+08
1.50078e+08
1.50079e+08
Median: 0.008 arcsec
RMS: 0.034 arcsec
Y offsets(dy) (arcsec)
Median: −0.000 arcsec
RMS: 0.034 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number:4
AGASC star id:336205600
Time(ksec)

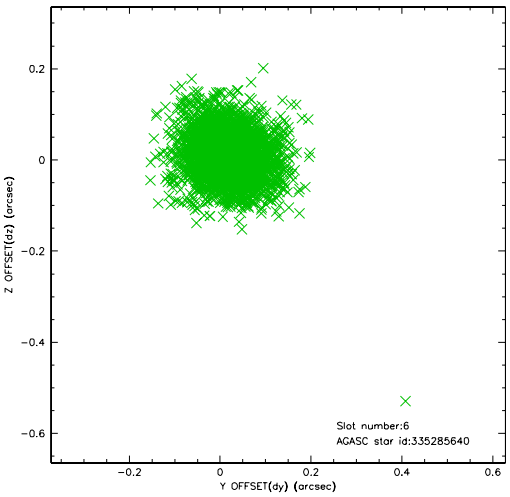
### 2.4.3 Slot 5

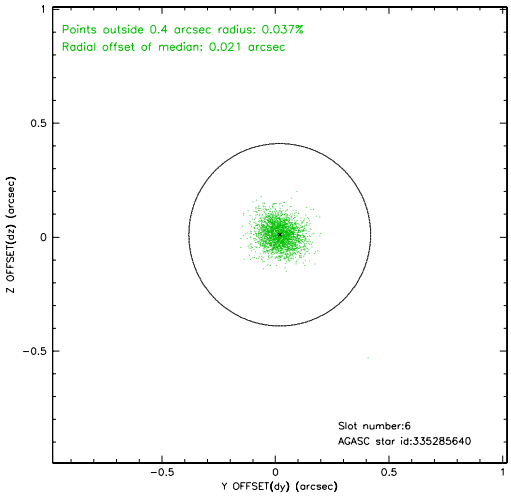

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number:5
AGASC star id:335287112

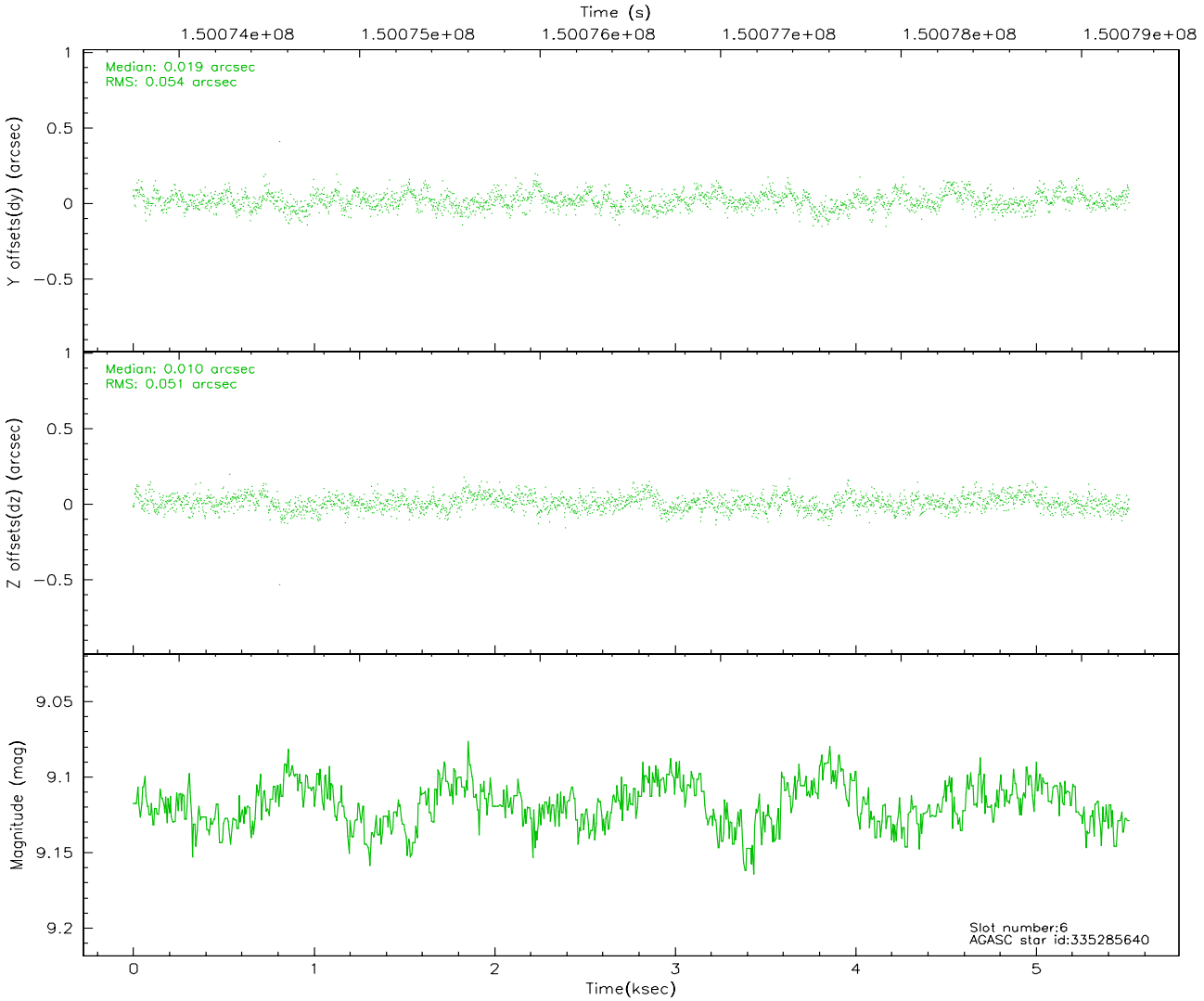

Points outside 0.4 arcsec radius: 0.000%
Radial offset of median: 0.050 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number:5
AGASC star id:335287112


Time (s)
1.50074e+08
1.50075e+08
1.50076e+08
1.50077e+08
1.50078e+08
1.50079e+08
Median: 0.044 arcsec
RMS: 0.053 arcsec
Y offsets(dy) (arcsec)
Median: −0.023 arcsec
RMS: 0.052 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number:5
AGASC star id:335287112
Time(ksec)

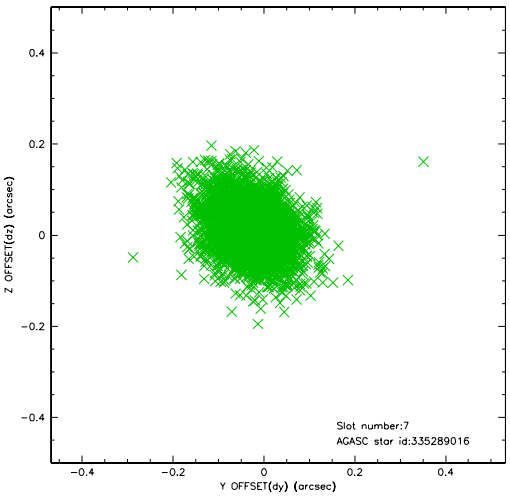
### 2.4.4 Slot 6

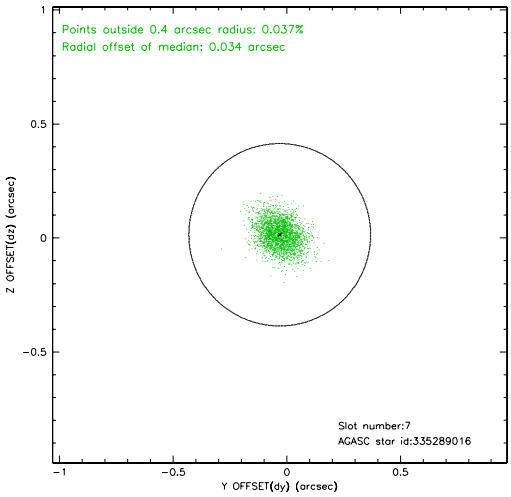

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number:6
AGASC star id:335285640

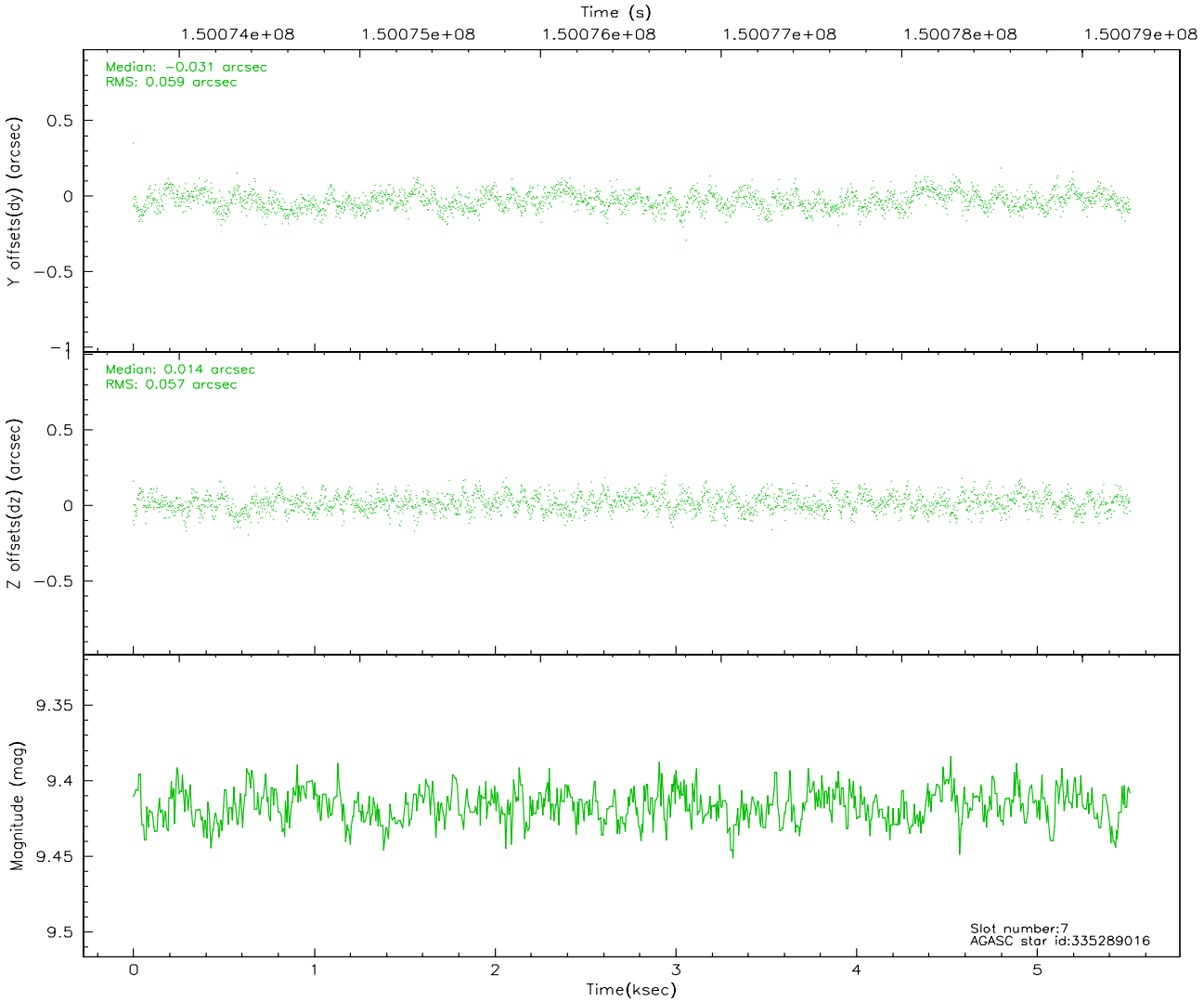

Points outside 0.4 arcsec radius: 0.037%
Radial offset of median: 0.021 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number:6
AGASC star id:335285640


Time (s)
Median: 0.019 arcsec
RMS: 0.054 arcsec
Y offsets(dy) (arcsec)
Median: 0.010 arcsec
RMS: 0.051 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number:6
AGASC star id:335285640
Time(ksec)

### 2.4.5 Slot 7

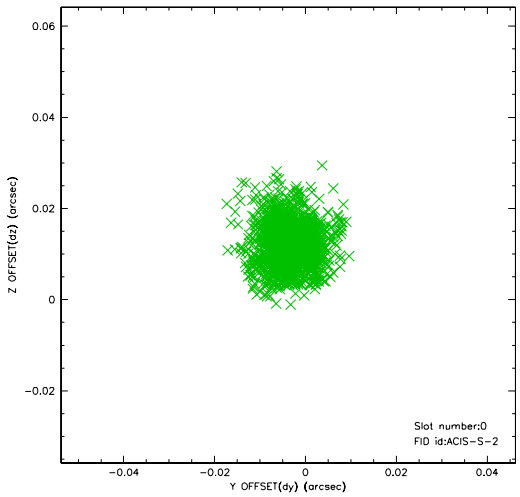

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number:7
AGASC star id:335289016

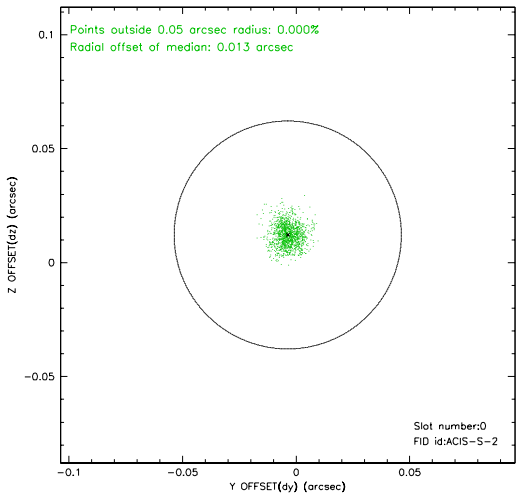

Points outside 0.4 arcsec radius: 0.037%
Radial offset of median: 0.034 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number:7
AGASC star id:335289016

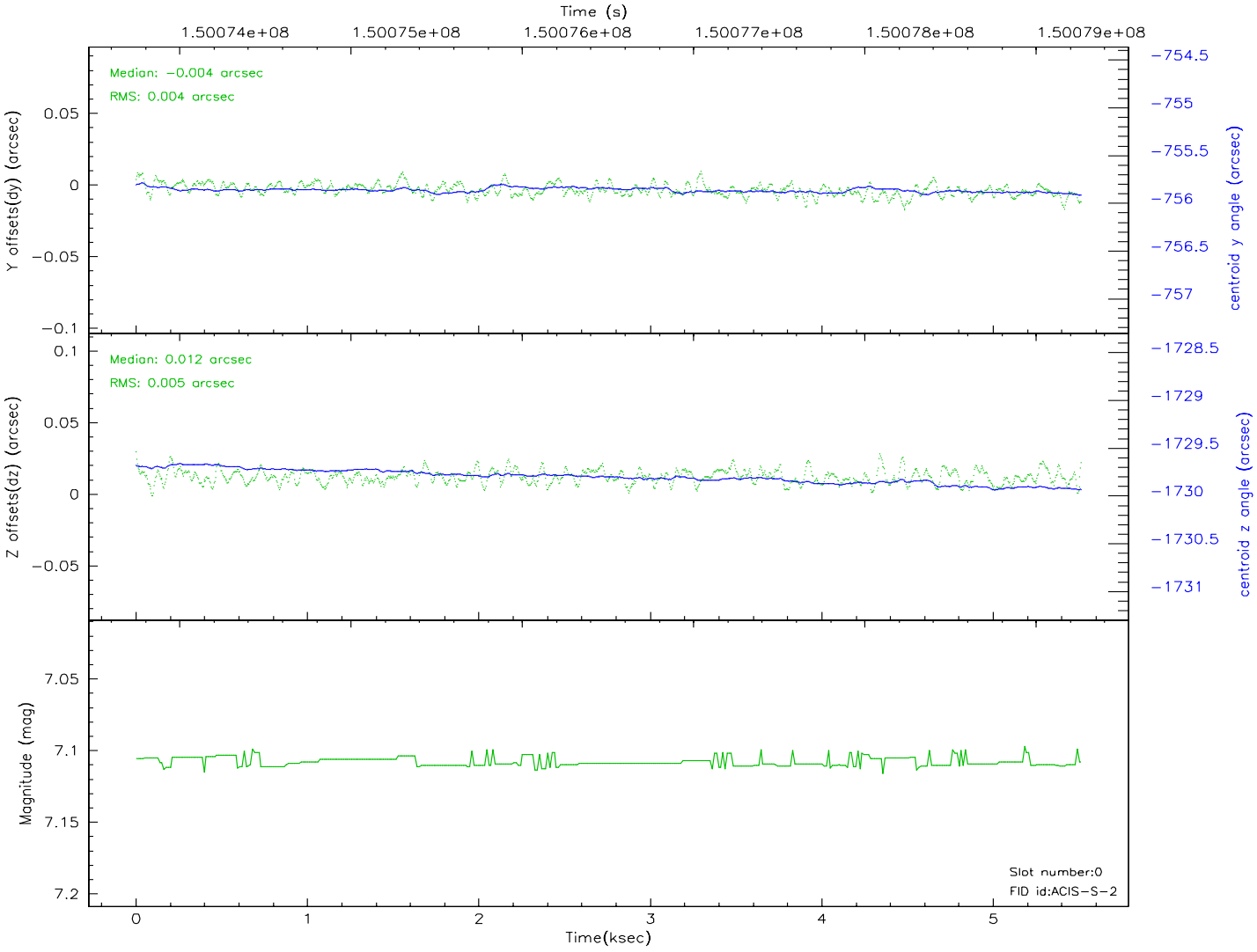

Time (s)
Median: −0.031 arcsec
RMS: 0.059 arcsec
Y offsets(dy) (arcsec)
Median: 0.014 arcsec
RMS: 0.057 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number:7
AGASC star id:335289016
Time(ksec)

## 2.5 FID Slots

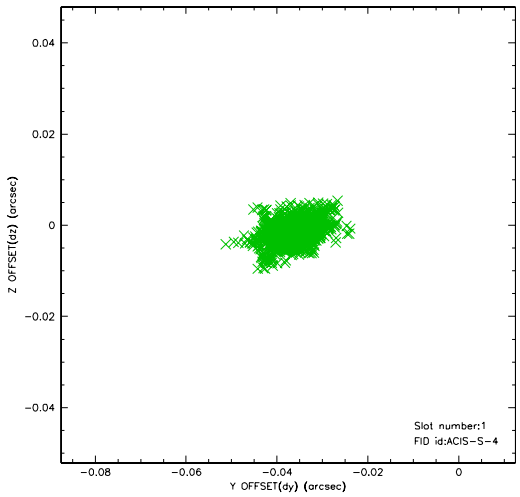
### 2.5.1 Slot 0

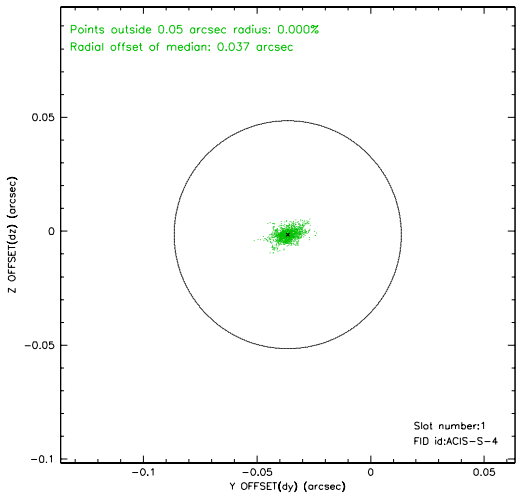


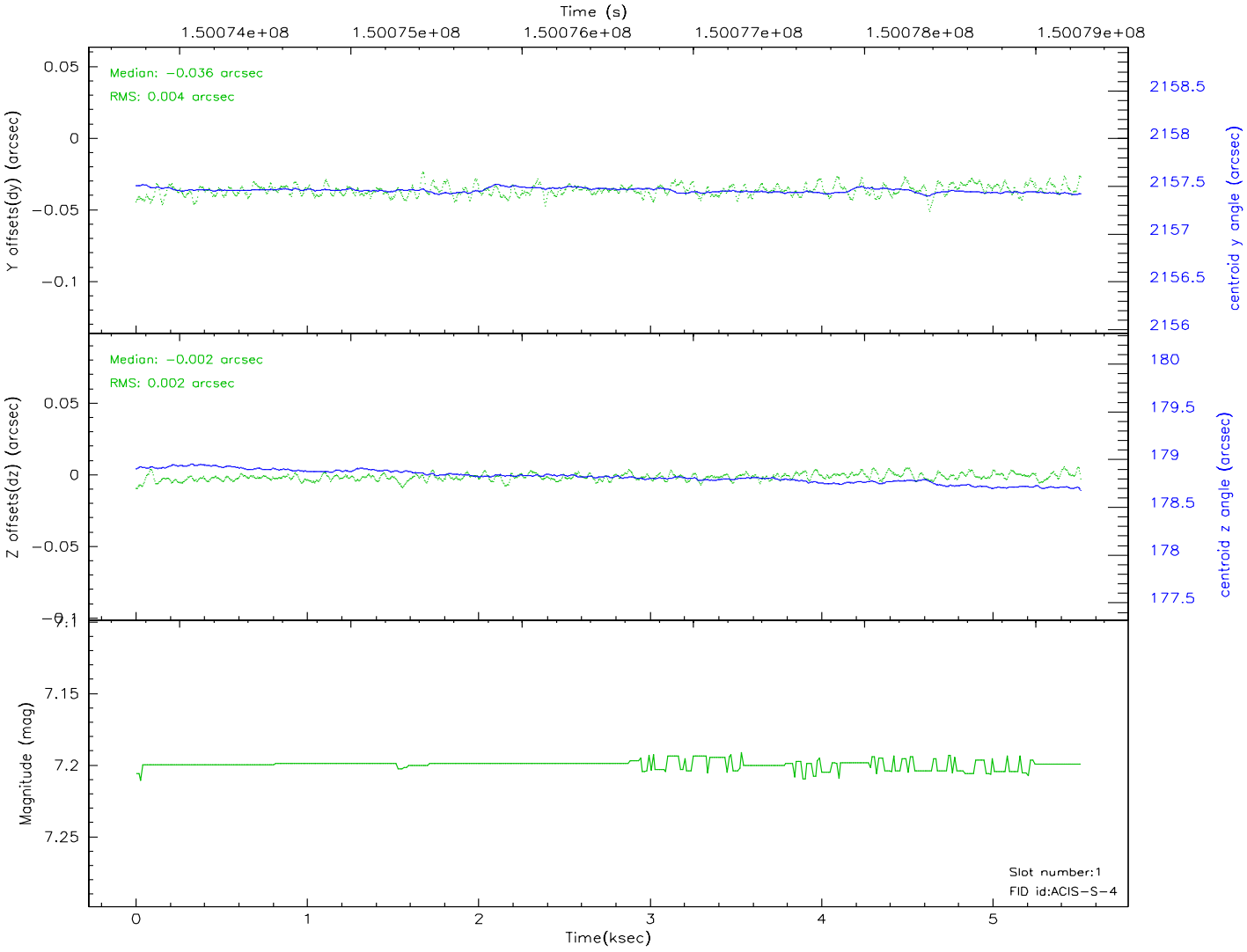



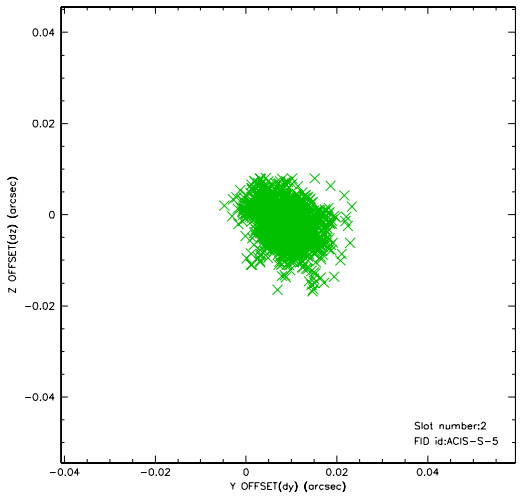
### 2.5.2 Slot 1

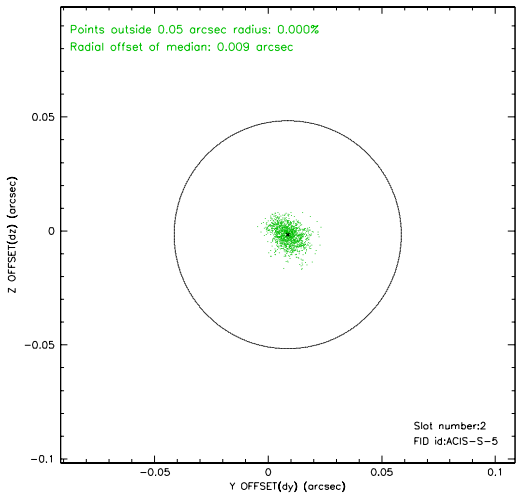

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number:1
FID id:ACIS-S-4

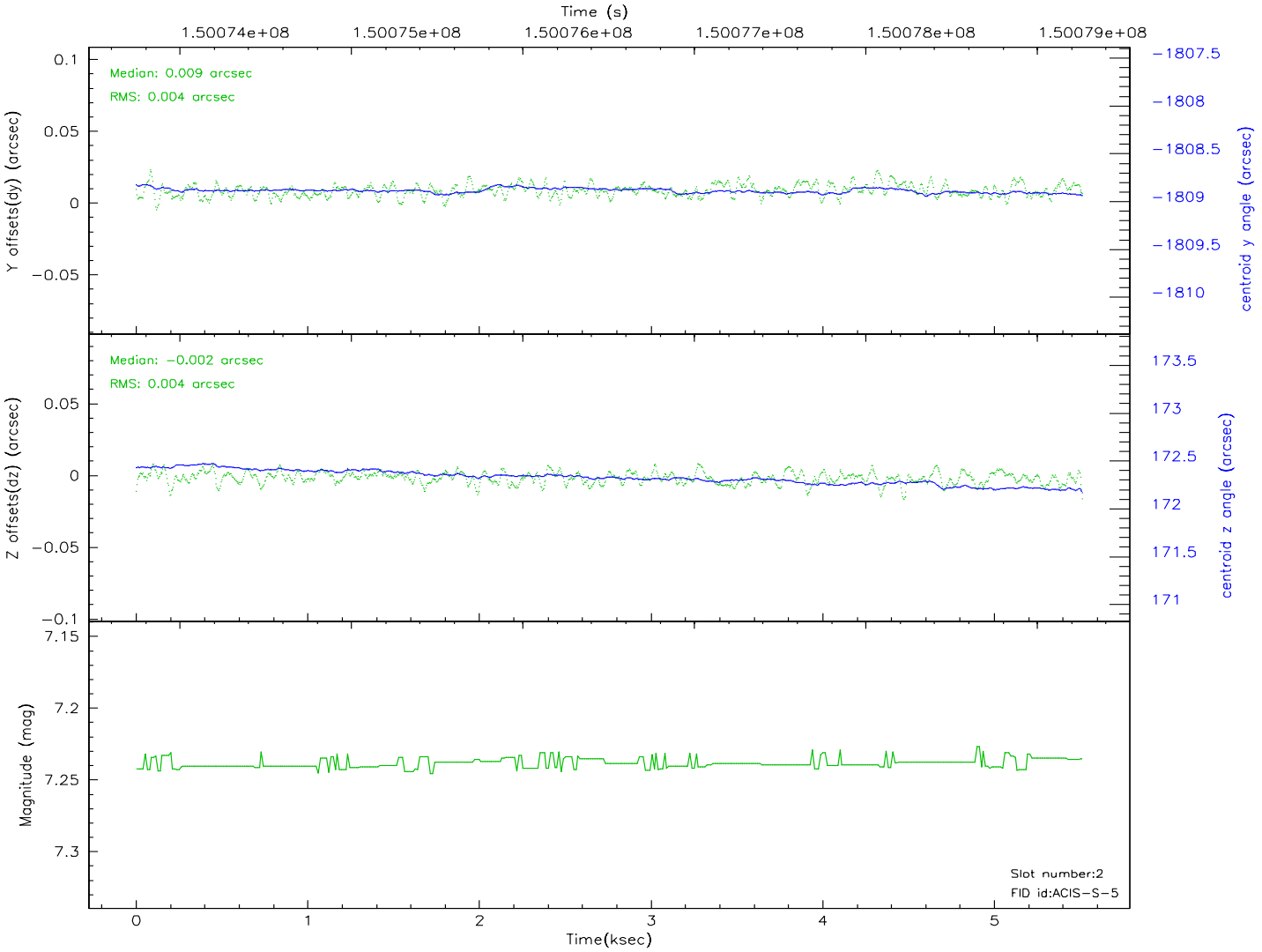

Points outside 0.05 arcsec radius: 0.000%
Radial offset of median: 0.037 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number:1
FID id:ACIS-S-4


Time (s)
Median: −0.036 arcsec
RMS: 0.004 arcsec
Y offsets(dy) (arcsec)
centroid y angle (arcsec)
Median: −0.002 arcsec
RMS: 0.002 arcsec
Z offsets(dz) (arcsec)
centroid z angle (arcsec)
Magnitude (mag)
Slot number:1
FID id:ACIS-S-4
Time(ksec)

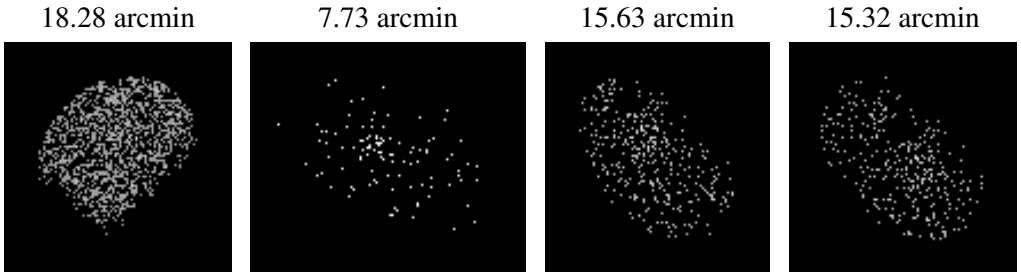
### 2.5.3 Slot 2


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


Time (s)
Median: 0.009 arcsec
RMS: 0.004 arcsec
Y offsets(dy) (arcsec)
centroid y angle (arcsec)
Median: −0.002 arcsec
RMS: 0.004 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) | 2006.10.06 |
| V&V Edition | 1 |
| V&V Disposition and Status | OK |
| V&V Charge Time | 5.405 |

## A.2 Comments