# V&V Reference Report
# L2 ASCDS Version : 7.6.8.1

Observation 2867 - L2 Version 3
Chandra X-Ray Center

L2 Processing Date : Nov 21 2007

## Contents


**1 Front** **2**

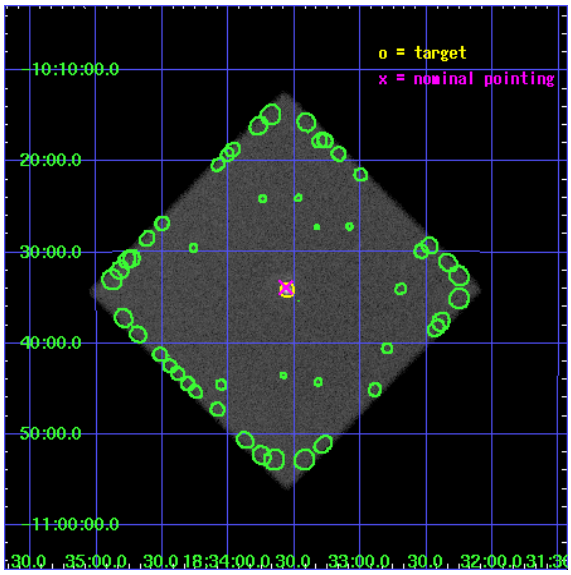
**2 OBI** **3**
2.1 OBI . . . 3
2.1.1 Images . . . 3
2.1.2 Parameters . . . 4
2.1.3 Events . . . 4
2.2 Compared Parameters . . . 5
2.3 Aspect . . . 6
2.4 Star Slots . . . 9
2.4.1 Slot 3 . . . 9
2.4.2 Slot 4 . . . 10
2.4.3 Slot 5 . . . 11
2.4.4 Slot 6 . . . 12
2.4.5 Slot 7 . . . 13
2.5 FID Slots . . . 14
2.5.1 Slot 0 . . . 14
2.5.2 Slot 1 . . . 15
2.5.3 Slot 2 . . . 16

**3 Point Sources** **17**

**A Summary** **18**
A.1 Status . . . 18
A.2 Comments . . . 18

# 1 Front

| | |
|---|---|
| seq_num | 590256 |
| obs_id | 2867 |
| title | AO3A CALIBRATION OBSERVATIONS THE STANDARD CANDLES CAS A AND G21.5-09 |
| observer | Dr. CXC Calibration |
| object | G21.5-0.9 [HRC-I, Offsets=0,0,0] |
| ra_targ | 278.389583 |
| dec_targ | -10.568528 |
| ra_nom | 278.3913143988 |
| dec_nom | -10.564659580493 |
| roll_nom | 89.626034927377 |
| revision | 3 |
| ontime | 19182.107026696 |
| livetime | 19076.25059157 |
| l2events | 552445 |

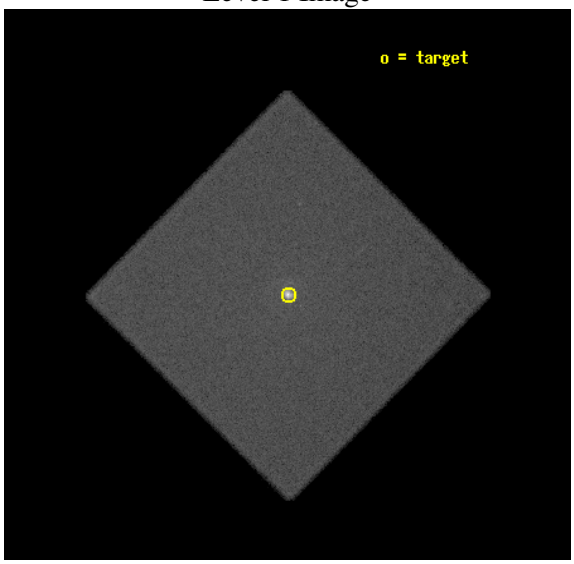


# 2 OBI

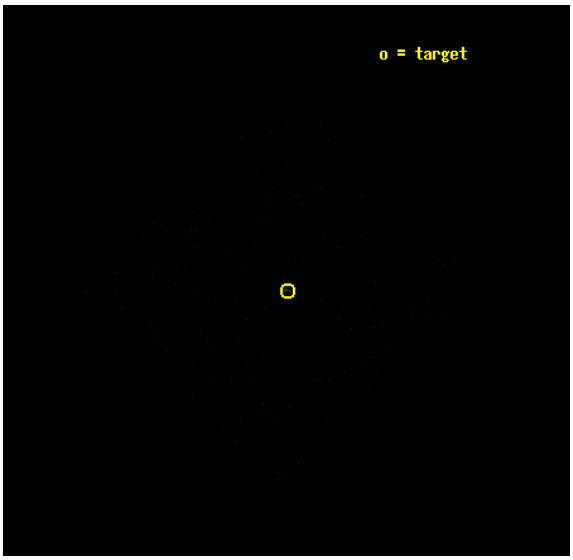
## 2.1 OBI

### 2.1.1 Images

Level 1 Image




Level 1 Bad Events



### 2.1.2 Parameters

| | |
|---|---|
| obi_num | 1 |
| ascdsver | 7.6.11.2 |
| caldbver | 3.4.1 |
| date | 2007-11-21T21:05:46 |
| revision | 3 |

| | |
|---|---|
| sched_exp_time | 19200.000000 |
| ontime | 19182.107026696 |
| l1events | 831376 |

### 2.1.3 Events

Level 1 Events

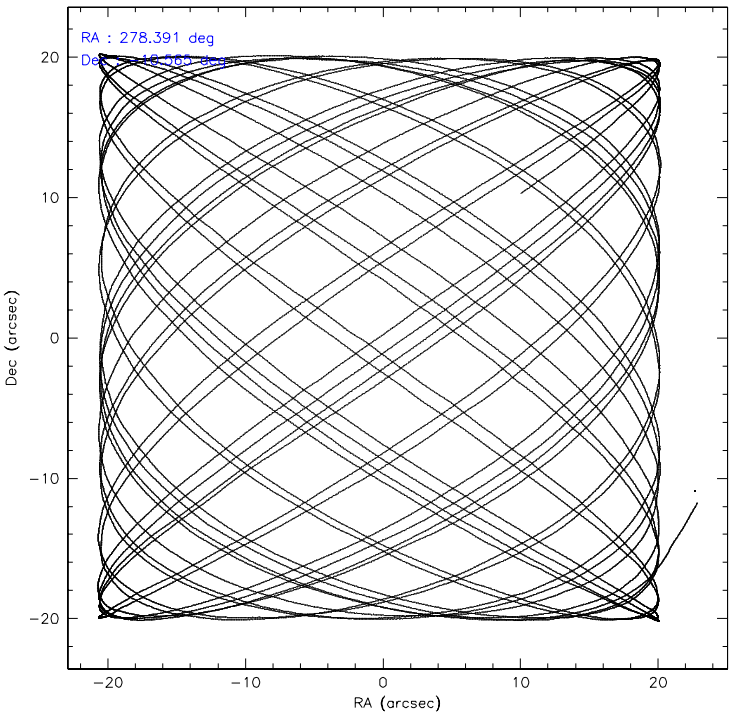
| | **segment 0** |
|---|---|
| level 1 events | 831376 |
| rejected events | 8432 |
| rejected % | 1% |

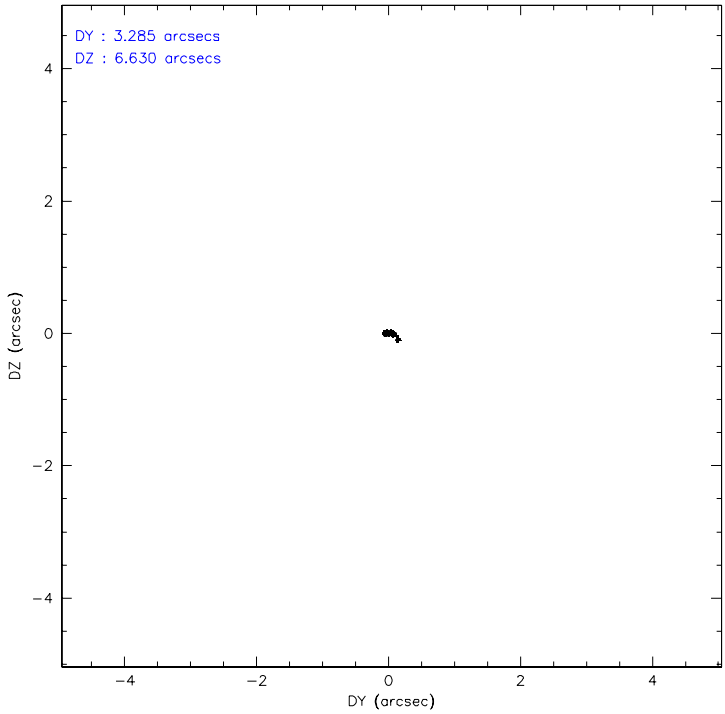
## 2.2 Compared Parameters

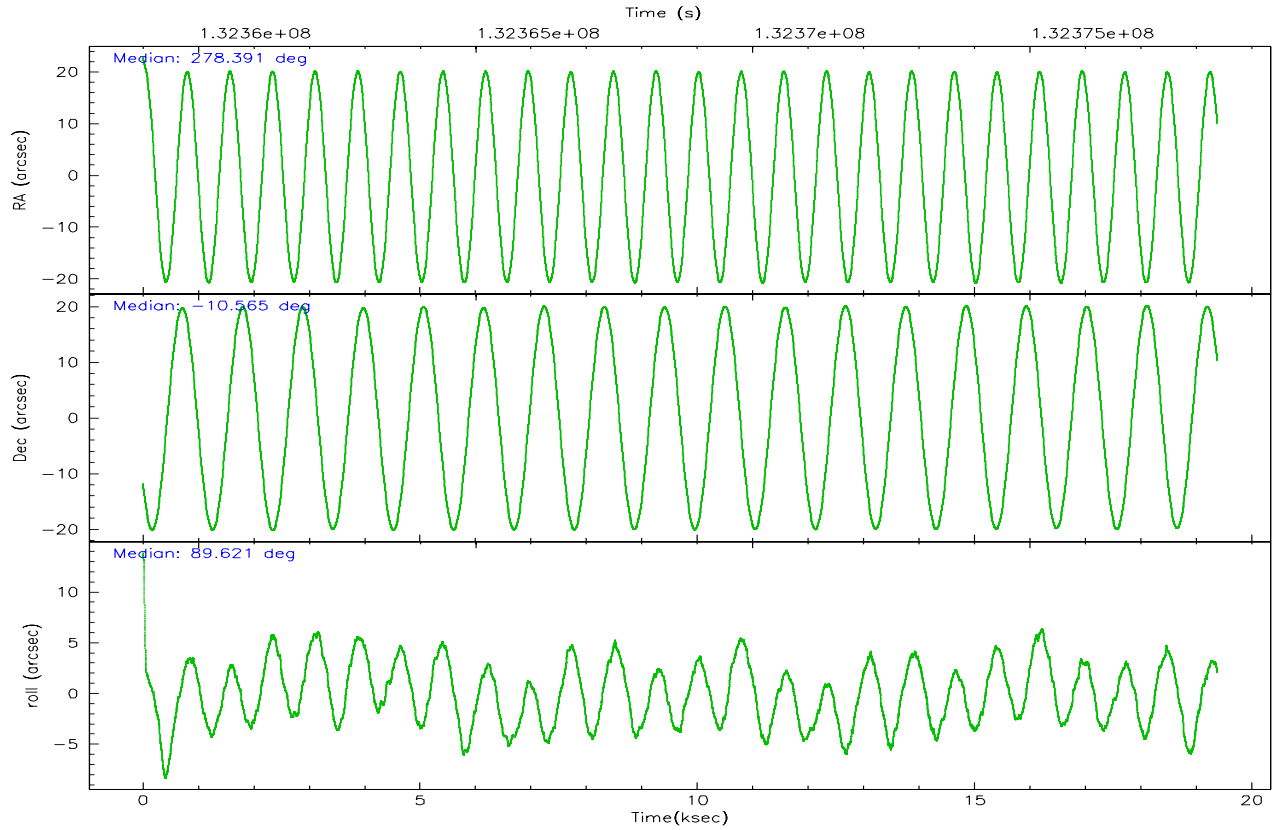
| Parameter | Planned | Actual |
|---|---|---|
| Instrument | HRC | HRC |
| Detector | HRC-I | HRC-I |
| Grating | NONE | NONE |
| Data mode | OBSERVING | OBSERVING |
| Observation mode | POINTING | POINTING |
| Pointing RA | 278.405427 | 278.3913143987962 |
| Pointing Dec | -10.587930 | -10.56465958049269 |
| Pointing Roll | 89.724114 | 89.62603492737696 |
| Window start time | 131328064.184000 | 131328064.184000 |
| Window stop time | 133920064.184000 | 133920064.184000 |
| SIM focus pos (mm) | -1.040293 | -1.038866356238299 |
| SIM defocus (mm) | 0 | 0.001426264420575141 |
| SIM translation stage pos (mm) | 126.985494 | 126.9829799899862 |
| SIM translation stage offset (mm) | 0 | 0.002508901615314585 |
| Observation start time | 132359178.184000 | 132358768.79648 |
| Observation start date | 2002-03-12T22:25:14 | 2002-03-12T22:19:28 |
| Observation end time | 132378378.184000 | 132378518.49728 |
| Observation end date | 2002-03-13T03:45:14 | 2002-03-13T03:48:38 |

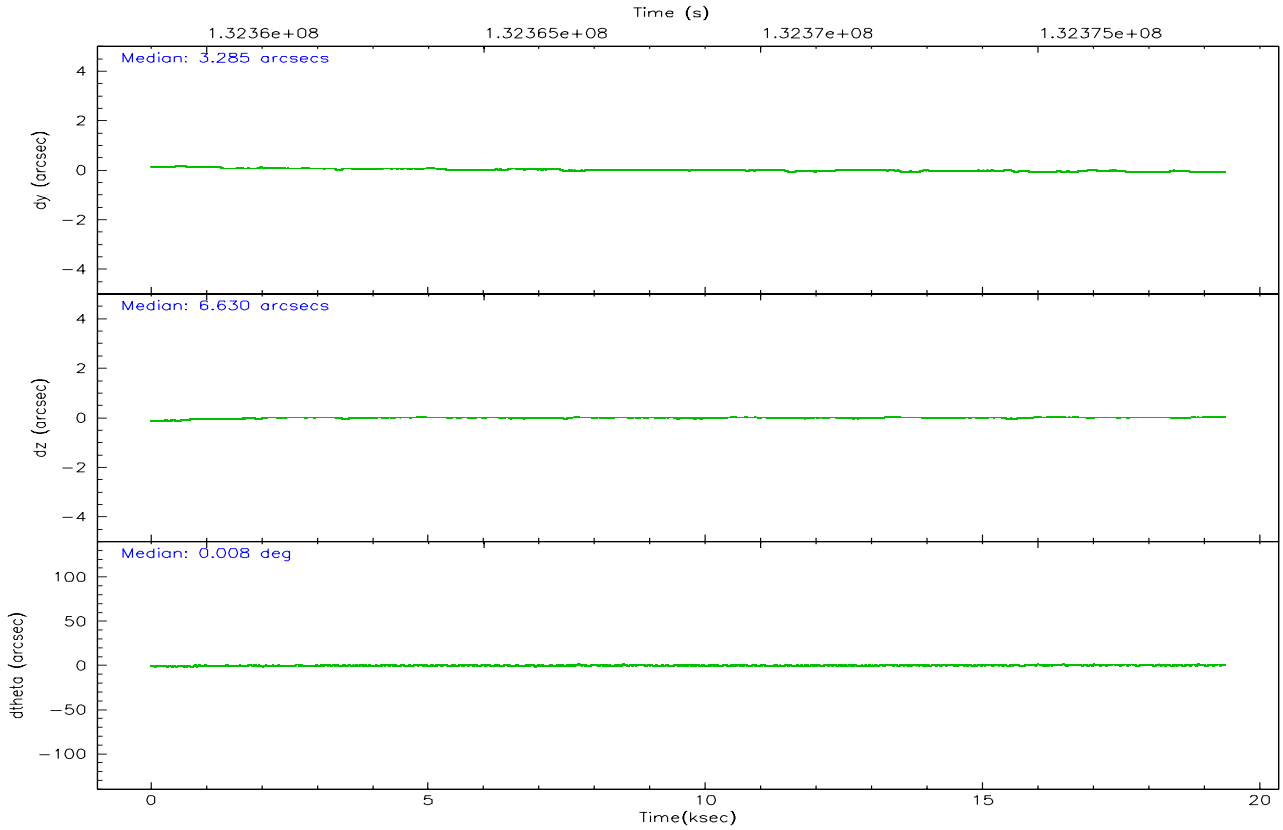
| Parameter | Planned | Actual |
|---|---|---|
| Obspar format version number | 6 | 6 |
| Obspar file type | PREDICTED | ACTUAL |
| Obspar update status | NONE | UPDATED |

## 2.3 Aspect


RA : 278.391 deg
Dec : -16.569 deg
Dec (arcsec)
RA (arcsec)
20
10
0
−10
−20
−20
−10
0
10
20


DY : 3.285 arcsecs
DZ : 6.630 arcsecs
DZ (arcsec)
DY (arcsec)
4
2
0
−2
−4
−4
−2
0
2
4


Time (s)
1.3236e+08
1.32365e+08
1.3237e+08
1.32375e+08
Median: 278.391 deg
RA (arcsec)
Median: −10.565 deg
Dec (arcsec)
Median: 89.621 deg
roll (arcsec)
Time(ksec)

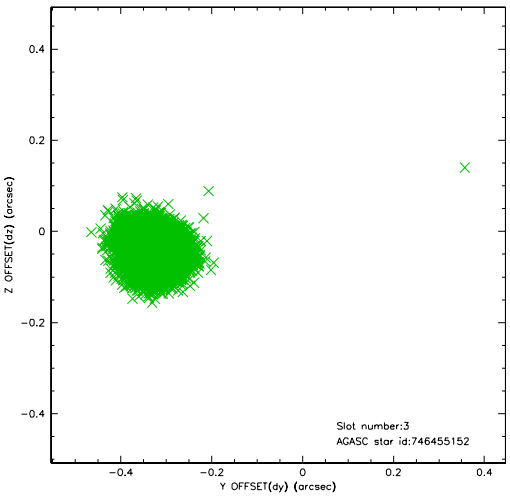

Time (s)
1.3236e+08
1.32365e+08
1.3237e+08
1.32375e+08
Median: 3.285 arcsecs
dy (arcsec)
Median: 6.630 arcsecs
dz (arcsec)
Median: 0.008 deg
dtheta (arcsec)
Time(ksec)

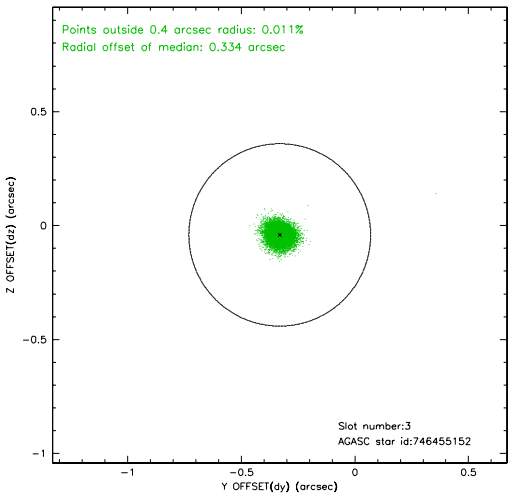
Slot Statistics

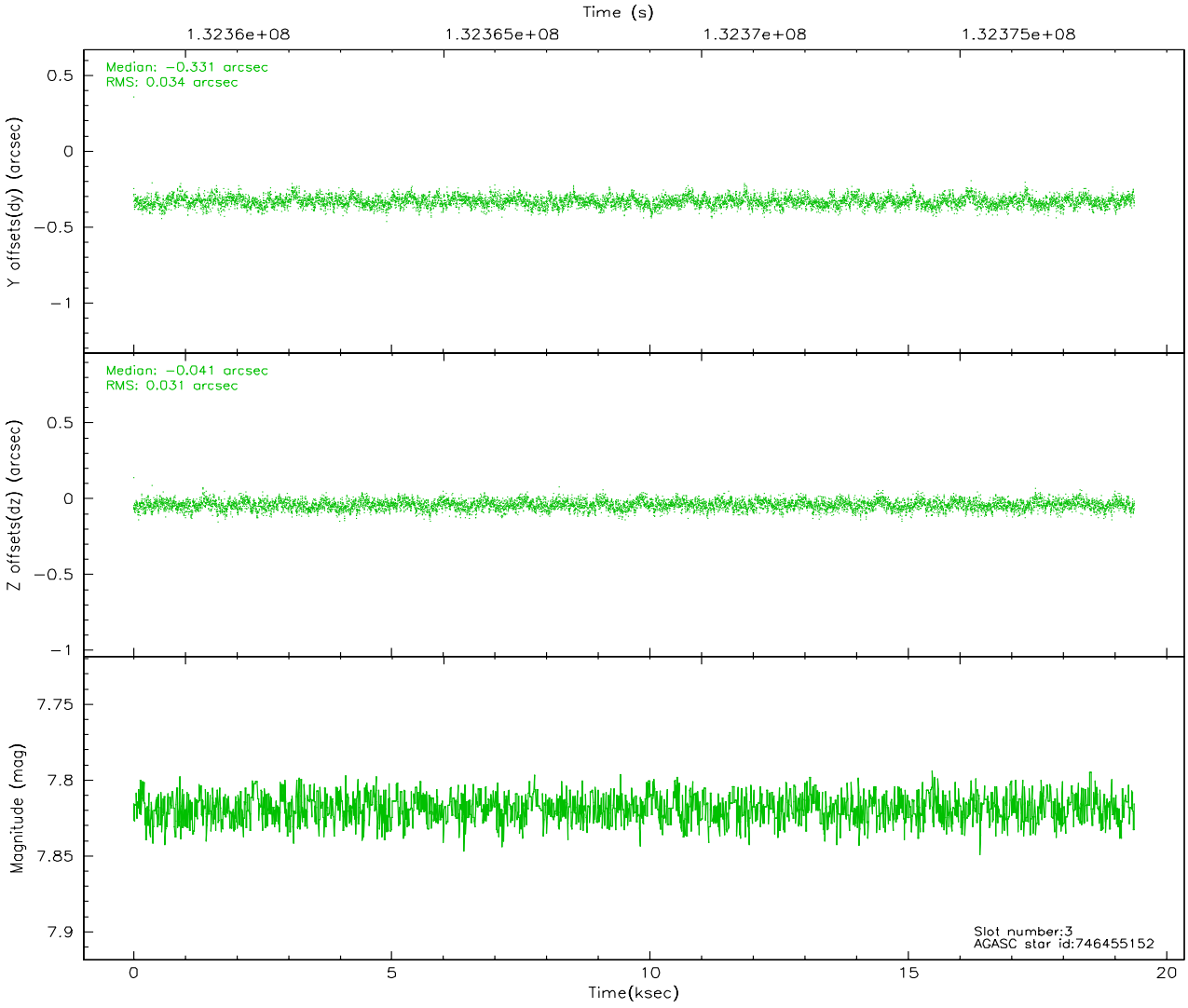
| slot | status | id | mag | n_pts | med_dy | med_dz | dr1 | dr2 | ra | dec | mean_y | mean_z |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | FID | HRC-I-1 | 6.97 | 4726 | 0.024 | 0.009 | 0.007 | 0.012 | 0.000000 | 0.000000 | -758.73 | -1294.46 |
| 1 | FID | HRC-I-2 | 7.01 | 4725 | 0.064 | -0.049 | 0.006 | 0.011 | 0.000000 | 0.000000 | 853.78 | -1296.34 |
| 2 | FID | HRC-I-3 | 7.05 | 4726 | 0.031 | -0.050 | 0.006 | 0.011 | 0.000000 | 0.000000 | -1187.07 | 1009.76 |
| 3 | GUIDE | 746455152 | 7.82 | 9453 | -0.331 | -0.041 | 0.049 | 0.079 | 278.447893 | -9.976732 | 2201.46 | -139.92 |
| 4 | GUIDE | 746462456 | 8.38 | 9449 | 0.158 | -0.125 | 0.067 | 0.108 | 278.652171 | -10.530173 | 212.73 | -872.60 |
| 5 | GUIDE | 746462392 | 8.54 | 9448 | 0.177 | 0.131 | 0.085 | 0.132 | 279.038421 | -10.890715 | -1080.82 | -2243.44 |
| 6 | GUIDE | 746455112 | 8.94 | 9371 | 0.148 | -0.012 | 0.080 | 0.131 | 278.266531 | -10.703234 | -416.84 | 488.90 |
| 7 | GUIDE | 746460272 | 8.92 | 9451 | -0.151 | 0.051 | 0.074 | 0.122 | 278.847488 | -10.152127 | 1576.08 | -1558.84 |

## 2.4 Star Slots

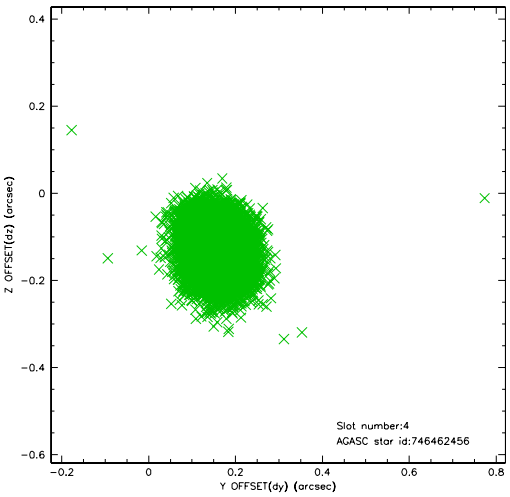
### 2.4.1 Slot 3

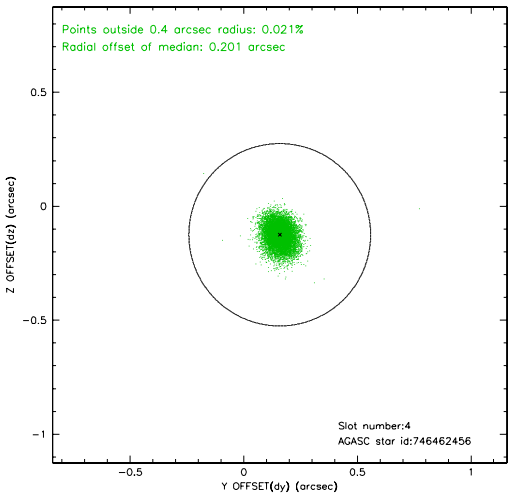


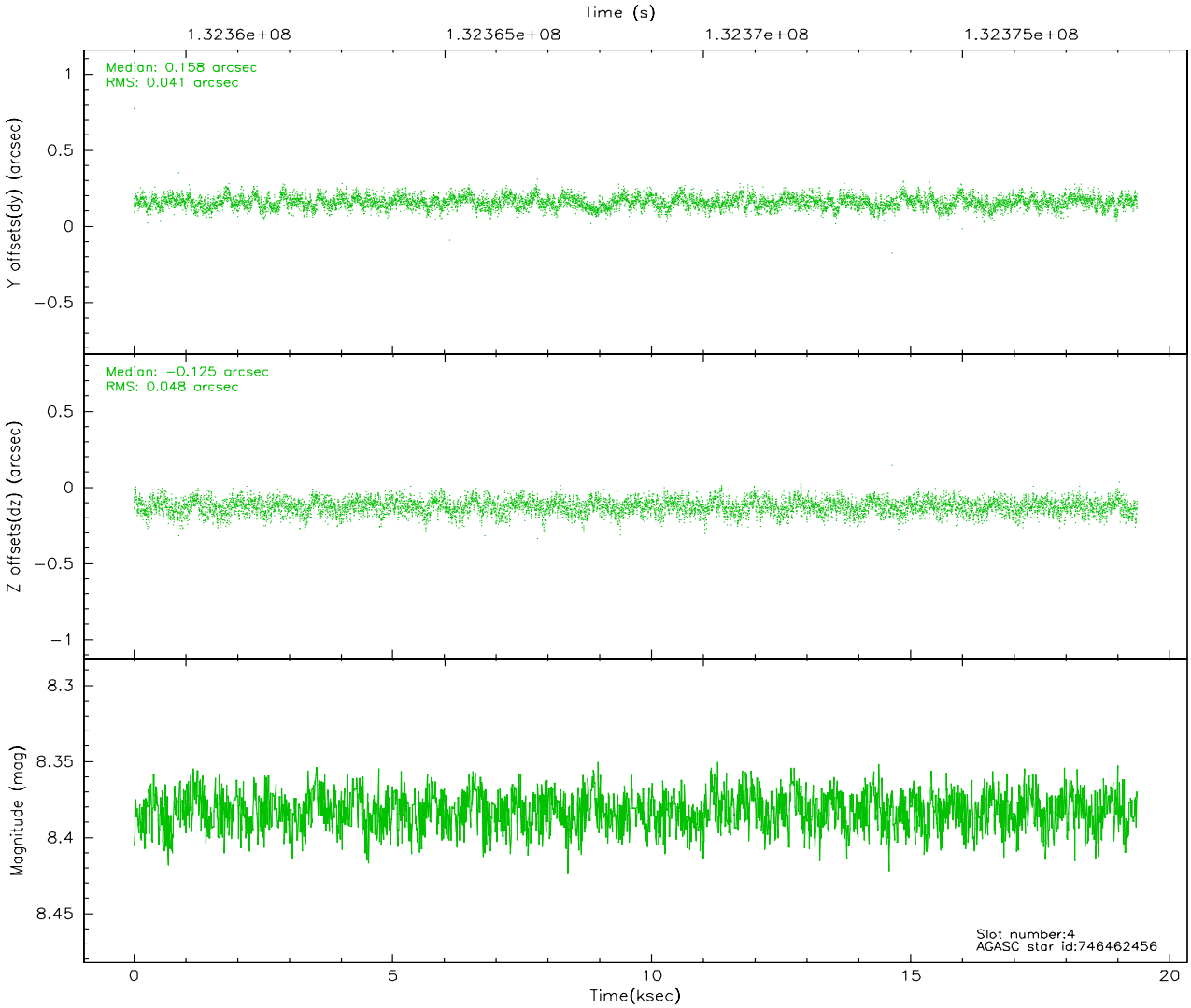



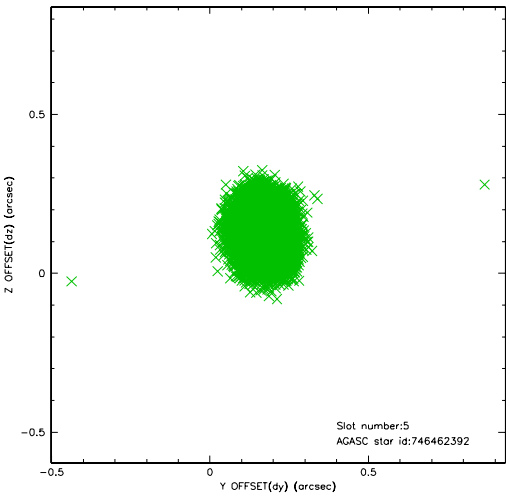
### 2.4.2 Slot 4

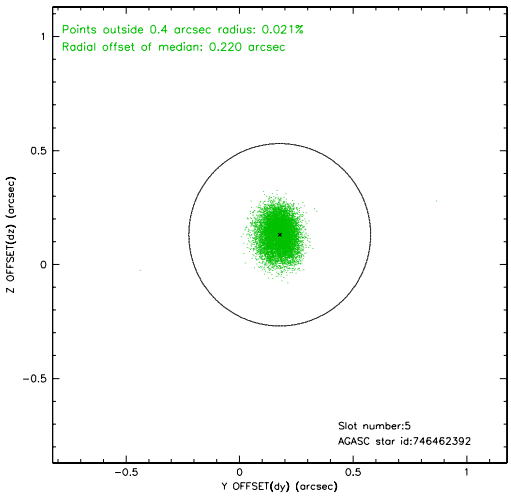

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number:4
AGASC star id:746462456

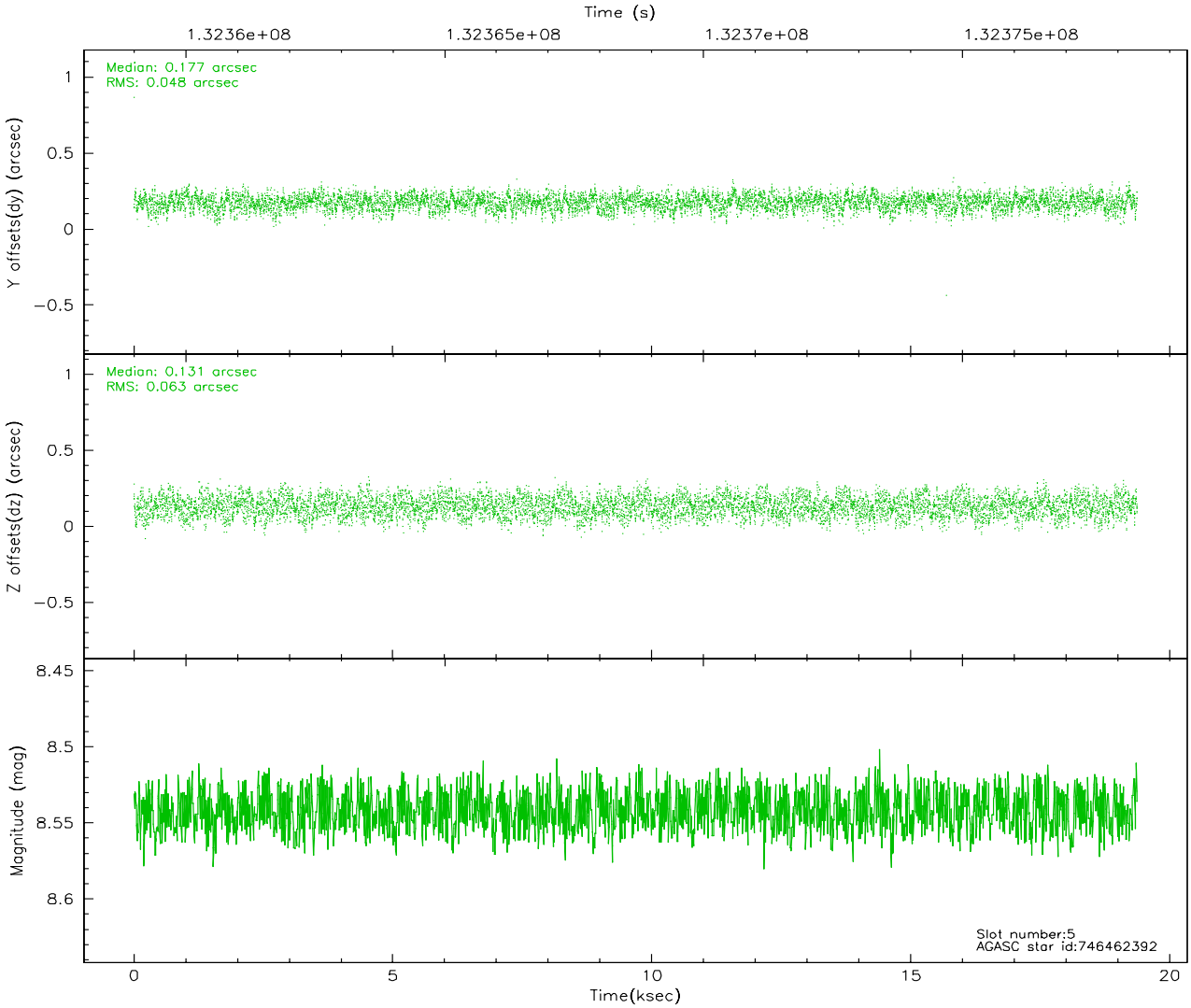

Points outside 0.4 arcsec radius: 0.021%
Radial offset of median: 0.201 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number:4
AGASC star id:746462456


Time (s)
1.3236e+08
1.32365e+08
1.3237e+08
1.32375e+08
Median: 0.158 arcsec
RMS: 0.041 arcsec
Y offsets(dy) (arcsec)
Median: −0.125 arcsec
RMS: 0.048 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number:4
AGASC star id:746462456
Time(ksec)

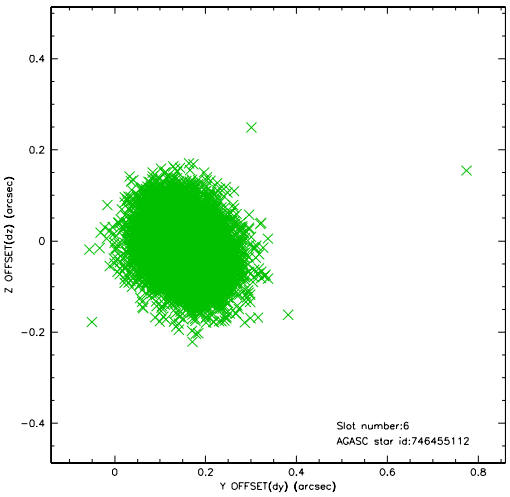
### 2.4.3 Slot 5

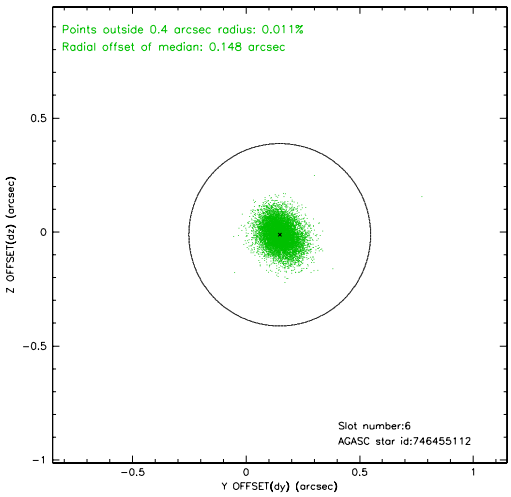

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number:5
AGASC star id:746462392

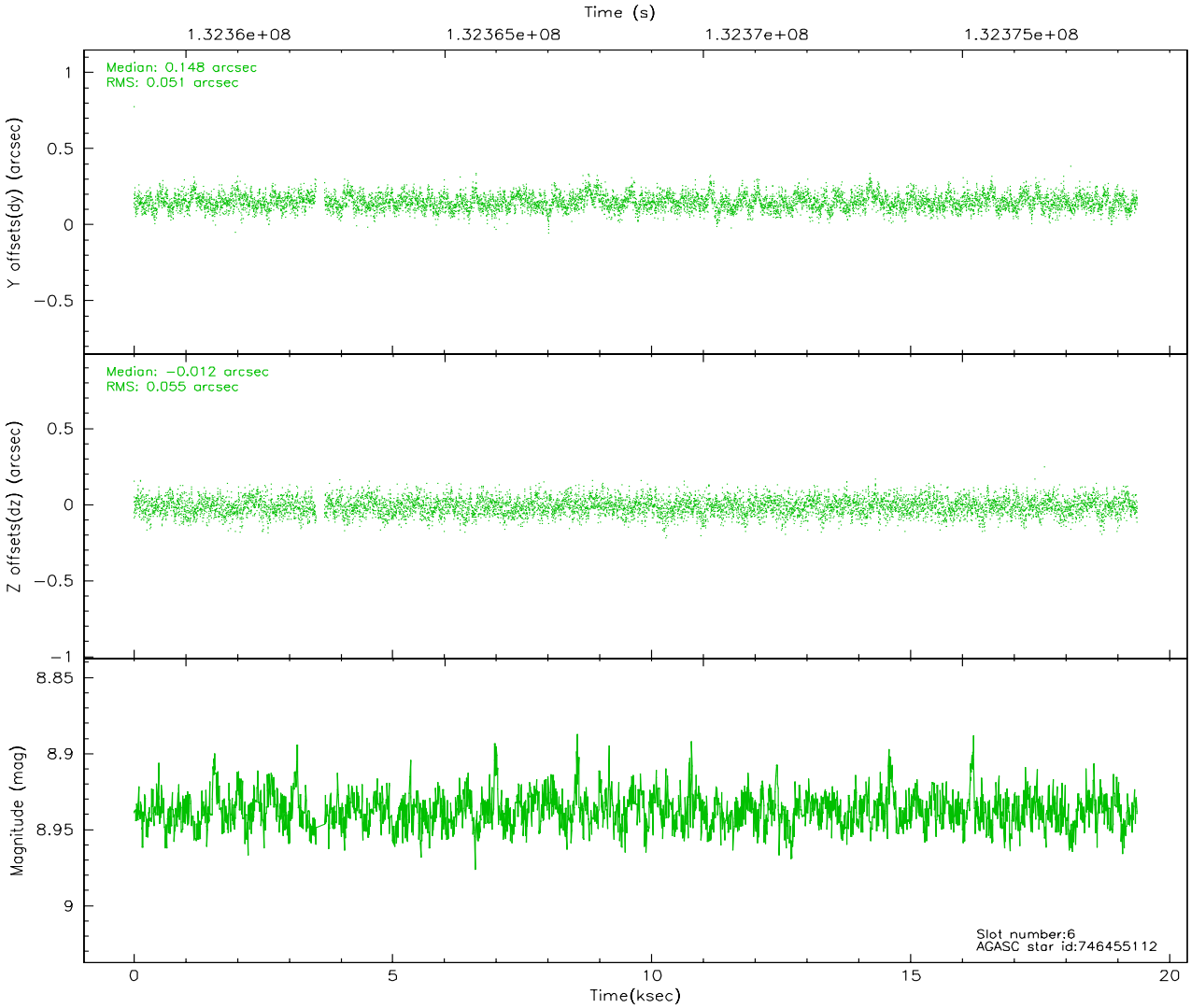

Points outside 0.4 arcsec radius: 0.021%
Radial offset of median: 0.220 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number:5
AGASC star id:746462392


Time (s)
1.3236e+08
1.32365e+08
1.3237e+08
1.32375e+08
Median: 0.177 arcsec
RMS: 0.048 arcsec
Y offsets(dy) (arcsec)
Median: 0.131 arcsec
RMS: 0.063 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number:5
AGASC star id:746462392
Time(ksec)

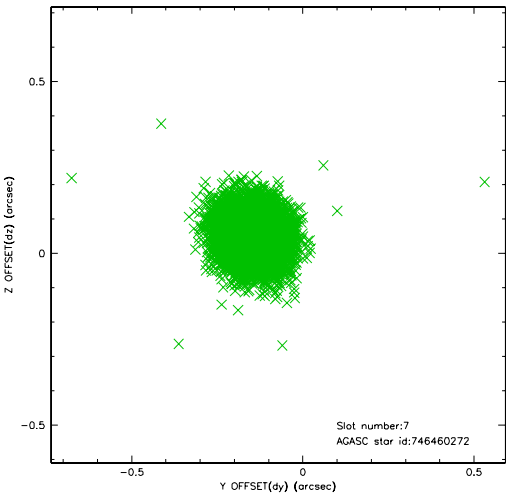
### 2.4.4 Slot 6

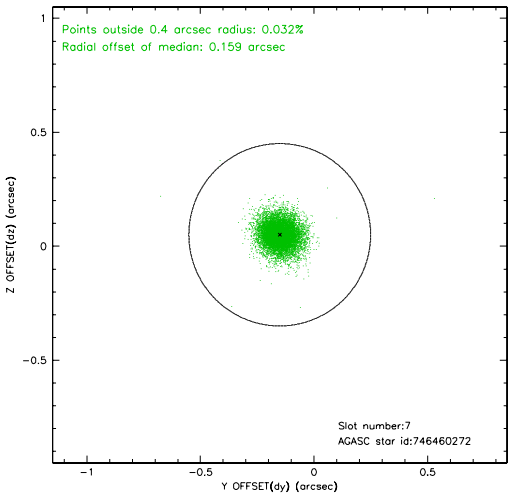

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number:6
AGASC star id:746455112

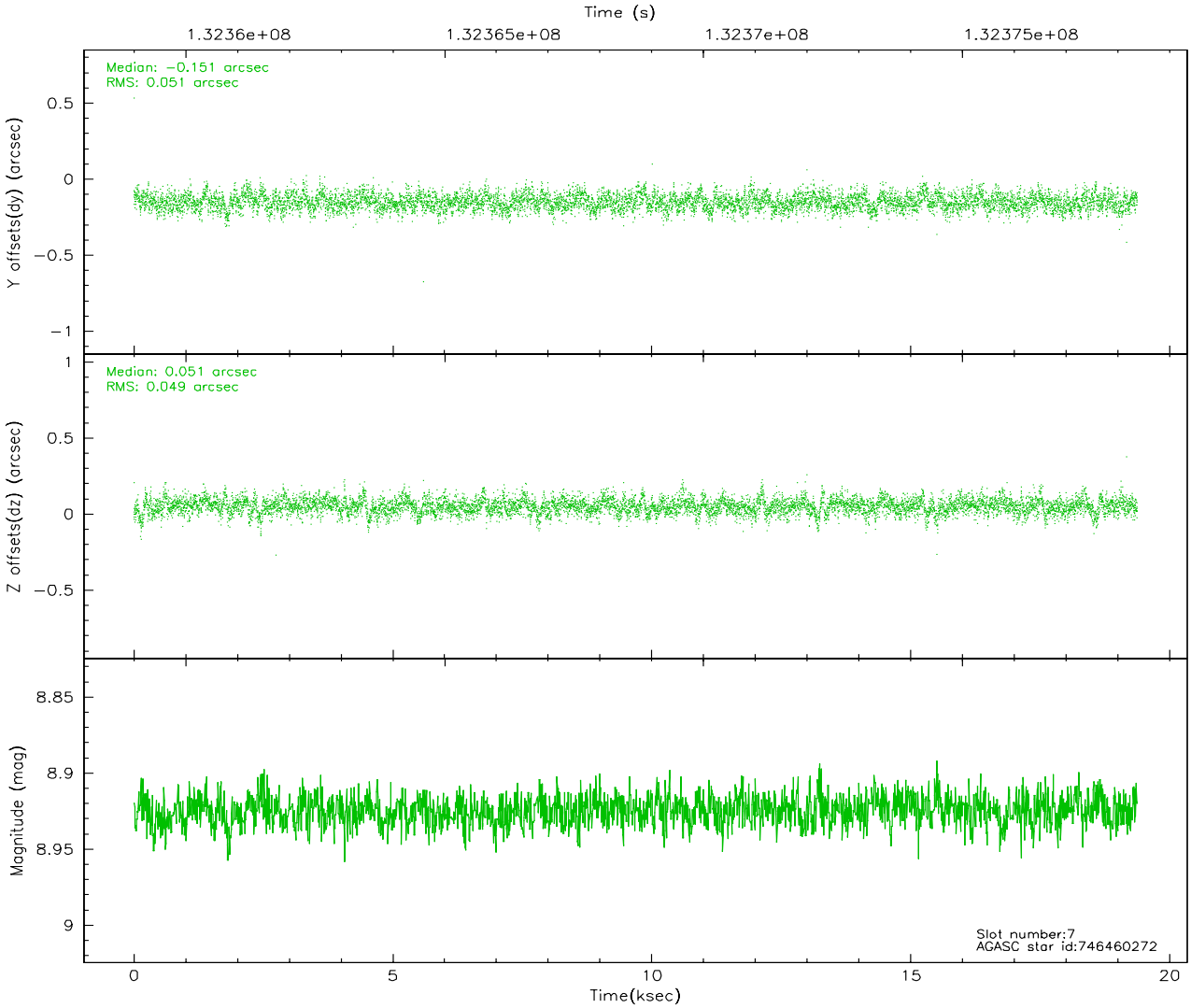

Points outside 0.4 arcsec radius: 0.011%
Radial offset of median: 0.148 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number:6
AGASC star id:746455112


Time (s)
1.3236e+08
1.32365e+08
1.3237e+08
1.32375e+08
Median: 0.148 arcsec
RMS: 0.051 arcsec
Y offsets(dy) (arcsec)
Median: −0.012 arcsec
RMS: 0.055 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number:6
AGASC star id:746455112
Time(ksec)

### 2.4.5 Slot 7

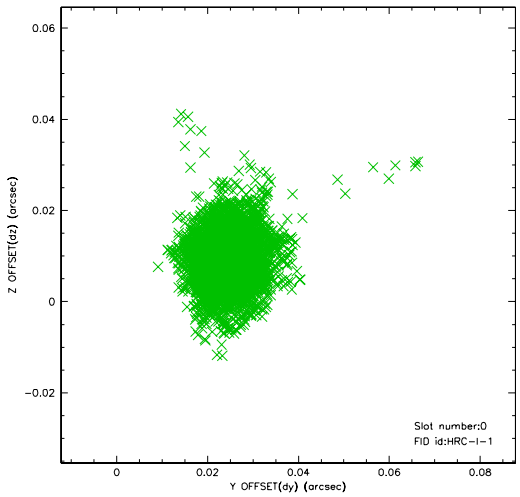

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number:7
AGASC star id:746460272

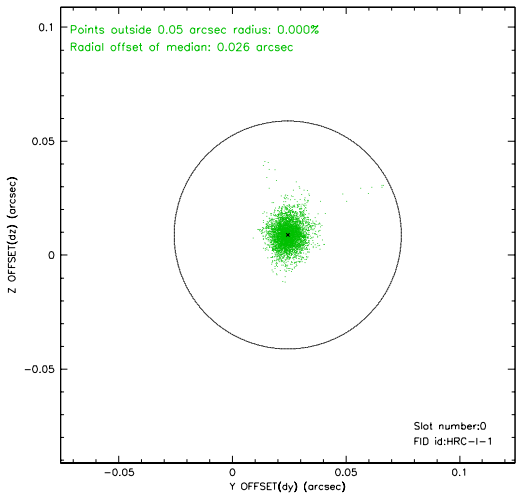

Points outside 0.4 arcsec radius: 0.032%
Radial offset of median: 0.159 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number:7
AGASC star id:746460272

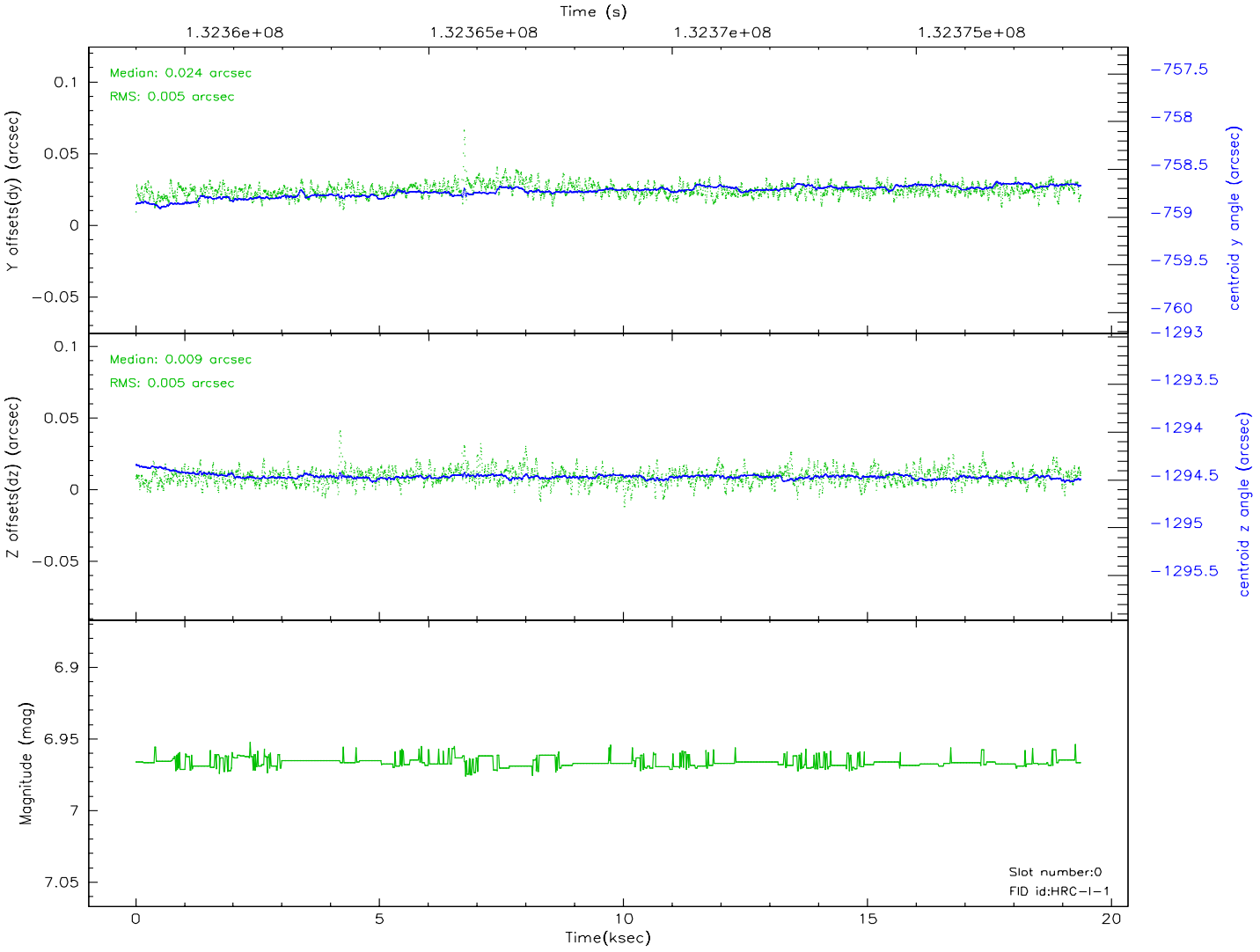

Time (s)
1.3236e+08
1.32365e+08
1.3237e+08
1.32375e+08
Median: −0.151 arcsec
RMS: 0.051 arcsec
Y offsets(dy) (arcsec)
Median: 0.051 arcsec
RMS: 0.049 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number:7
AGASC star id:746460272
Time(ksec)

## 2.5 FID Slots

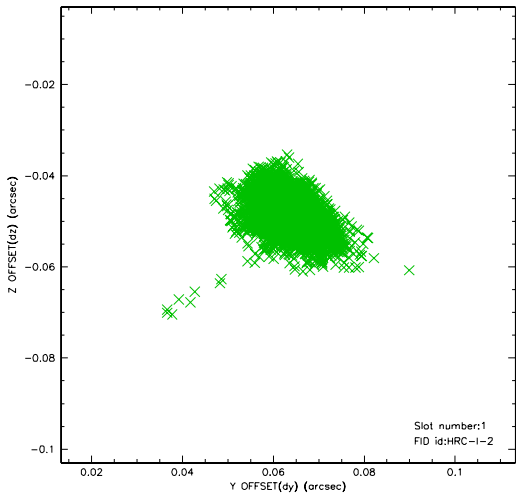
### 2.5.1 Slot 0

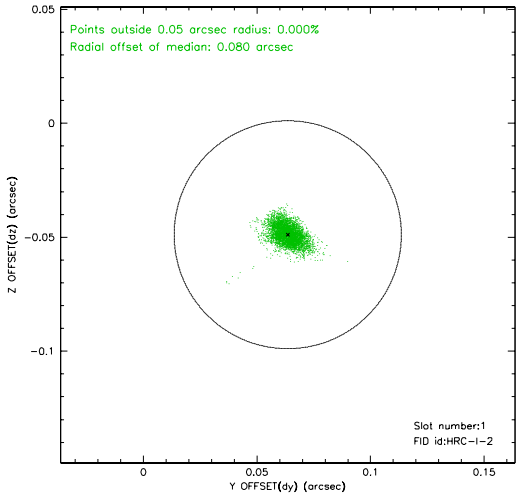


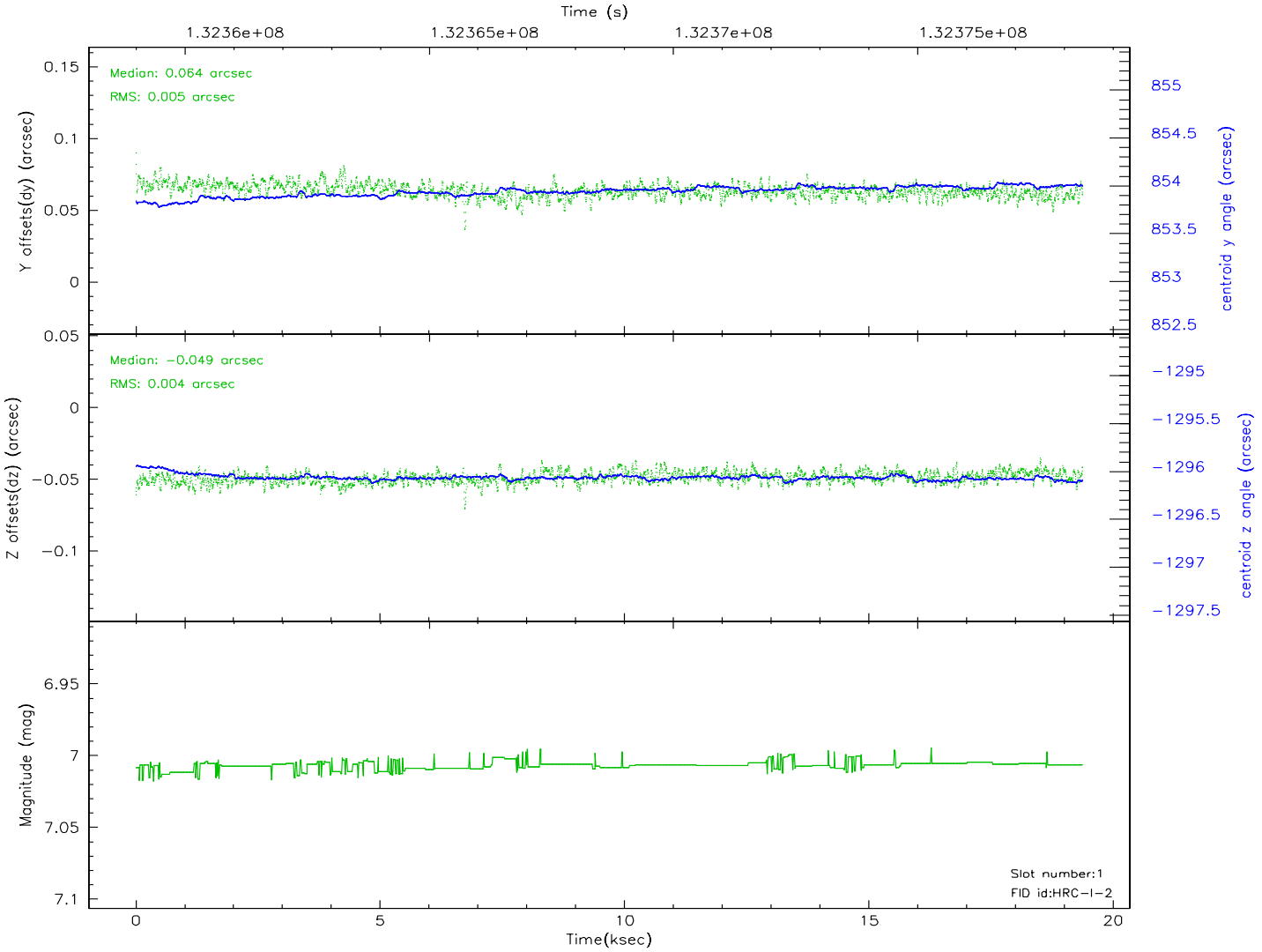



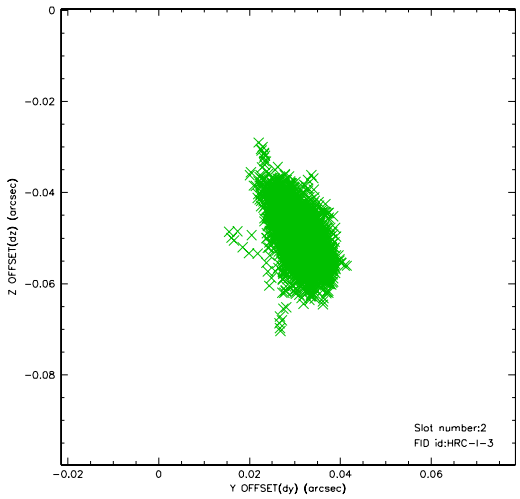
### 2.5.2 Slot 1

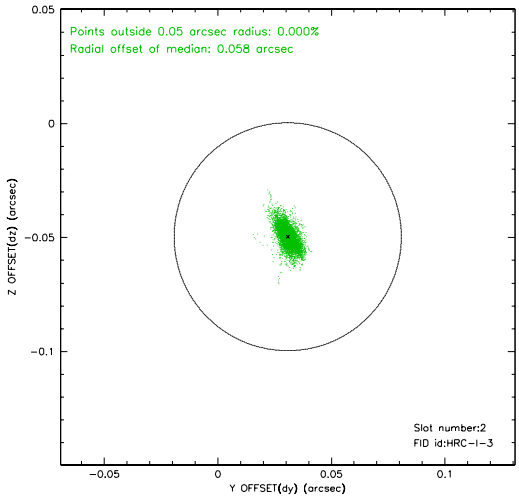

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number:1
FID id:HRC-I-2

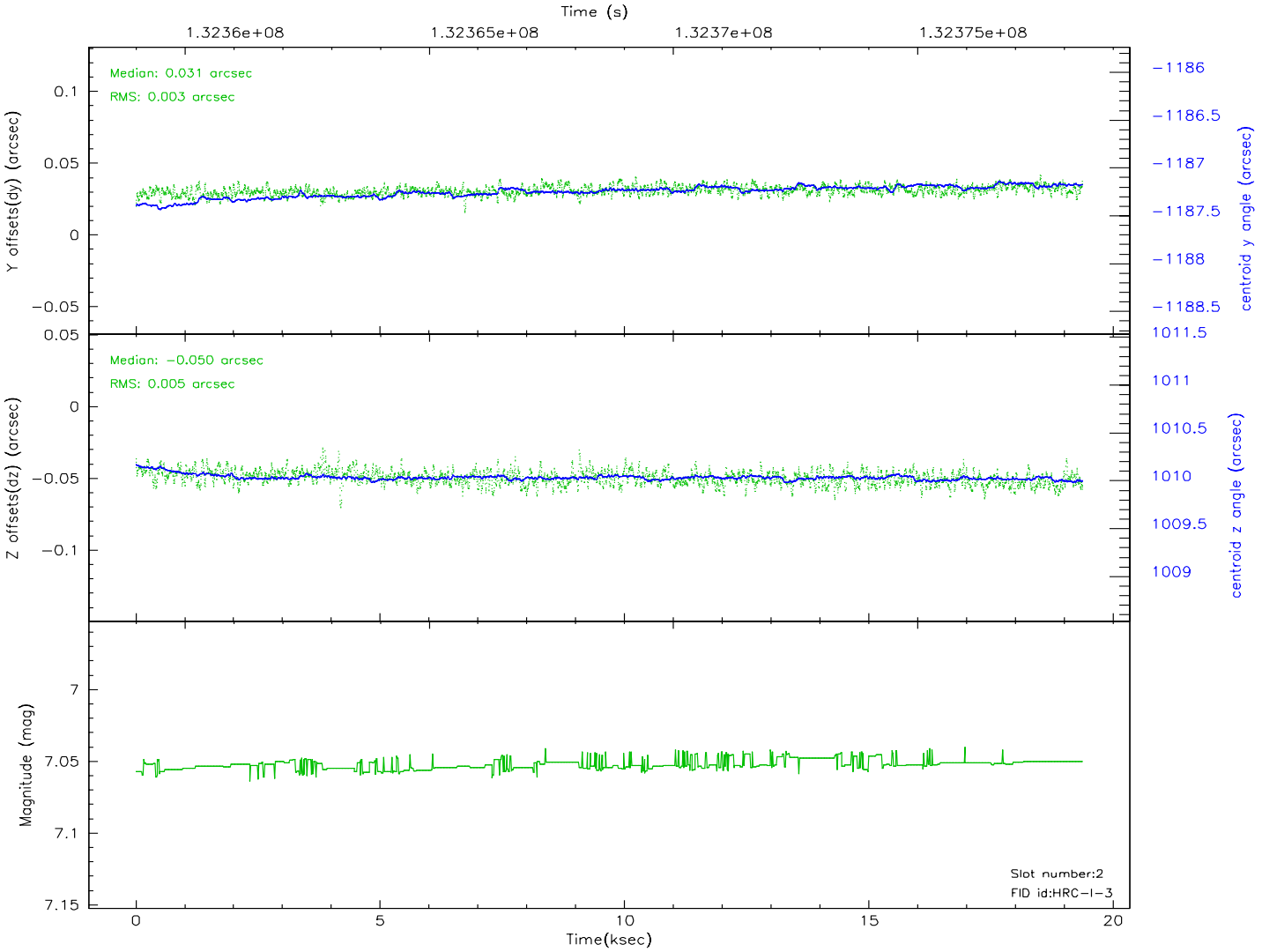

Points outside 0.05 arcsec radius: 0.000%
Radial offset of median: 0.080 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number:1
FID id:HRC-I-2


Time (s)
1.3236e+08
1.32365e+08
1.3237e+08
1.32375e+08
Median: 0.064 arcsec
RMS: 0.005 arcsec
Y offsets(dy) (arcsec)
centroid y angle (arcsec)
Median: −0.049 arcsec
RMS: 0.004 arcsec
Z offsets(dz) (arcsec)
centroid z angle (arcsec)
Magnitude (mag)
Slot number:1
FID id:HRC-I-2
Time(ksec)

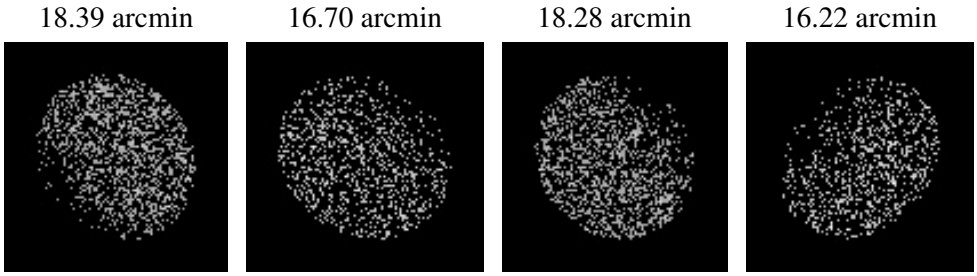
### 2.5.3 Slot 2


Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number:2
FID id:HRC-I-3


Points outside 0.05 arcsec radius: 0.000%
Radial offset of median: 0.058 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number:2
FID id:HRC-I-3


Time (s)
1.3236e+08
1.32365e+08
1.3237e+08
1.32375e+08
Median: 0.031 arcsec
RMS: 0.003 arcsec
Y offsets(dy) (arcsec)
centroid y angle (arcsec)
Median: −0.050 arcsec
RMS: 0.005 arcsec
Z offsets(dz) (arcsec)
centroid z angle (arcsec)
Magnitude (mag)
Slot number:2
FID id:HRC-I-3
Time(ksec)

# 3 Point Sources



# A Summary

## A.1 Status

| | |
|---|---|
| V&V Scientist | Jen Lauer |
| V&V Date (YYYY-MM-DD) | 2007.12.04 |
| V&V Edition | 1 |
| V&V Disposition and Status | OK |
| V&V Charge Time | 19.182 |

## A.2 Comments

```
Window constraint satisfied. There is a small spike in the count rate at
~10 ksec.

The current observation has been reprocessed as part of Repro III ('C'
supplement) the purpose of which is to update all HRC-I ObsIDs since Jan
2000 to the latest calibrations available for that configuration.
Specifically, we are updating the DEGAP solution and the Gain Maps
applied. For more information see the Repro IIIC web page at

http://asc.harvard.edu/cda/repro3.html#IIIc

and the associated links.
```