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

Observation 4286 - L2 Version 4
Chandra X-Ray Center

L2 Processing Date : Nov 21 2007

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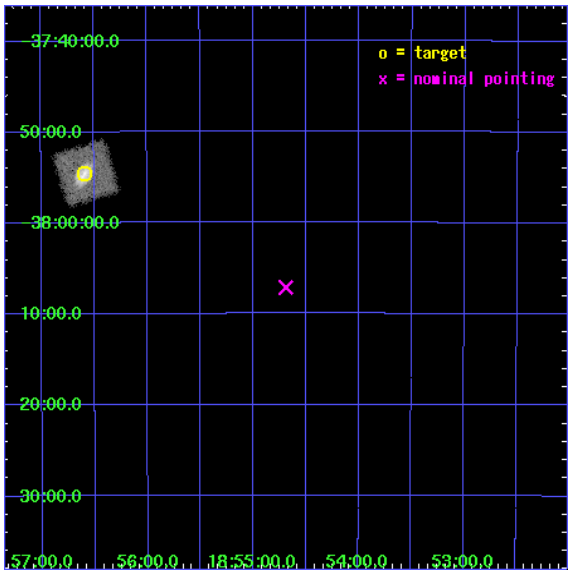
# 1 Front

| | |
|---|---|
| seq_num | 490018 |
| obs_id | 4286 |
| title | CALIBRATION OF ACIS PARTICLE BACKGROUND AND HRC QUANTUM EFFICIENCY |
| observer | DR. MAXIM MARKEVITCH |
| object | RXJ1856.5-3754 |
| ra_targ | 284.147083 |
| dec_targ | -37.909611 |
| ra_nom | 283.672274 |
| dec_nom | -38.118828 |
| roll_nom | 298.458655 |
| revision | 4 |
| ontime | 9856.656655699 |
| livetime | 9829.2127195366 |
| l2events | 18122 |



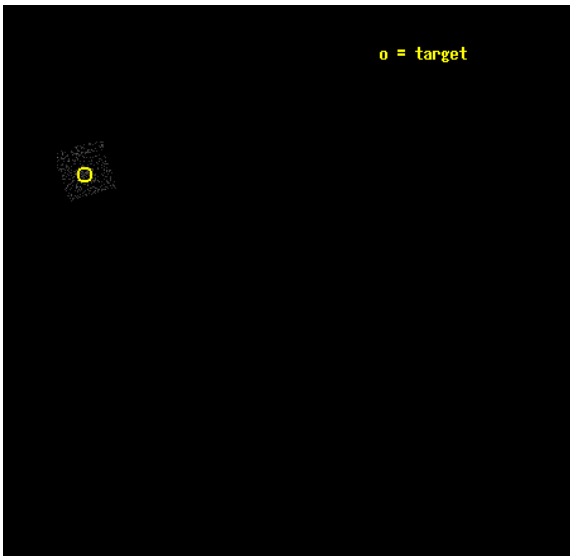
# 2 OBI

## 2.1 OBI

### 2.1.1 Images

Level 1 Image

Level 1 Bad Events



### 2.1.2 Parameters

| | |
|---|---|
| obi_num | 0 |
| ascdsver | 7.6.11.2 |
| caldbver | 3.4.1 |
| date | 2007-11-21T23:33:13 |
| revision | 4 |

| | |
|---|---|
| sched_exp_time | 10000.000000 |
| ontime | 9856.656655699 |
| l1events | 24437 |

### 2.1.3 Events

Level 1 Events

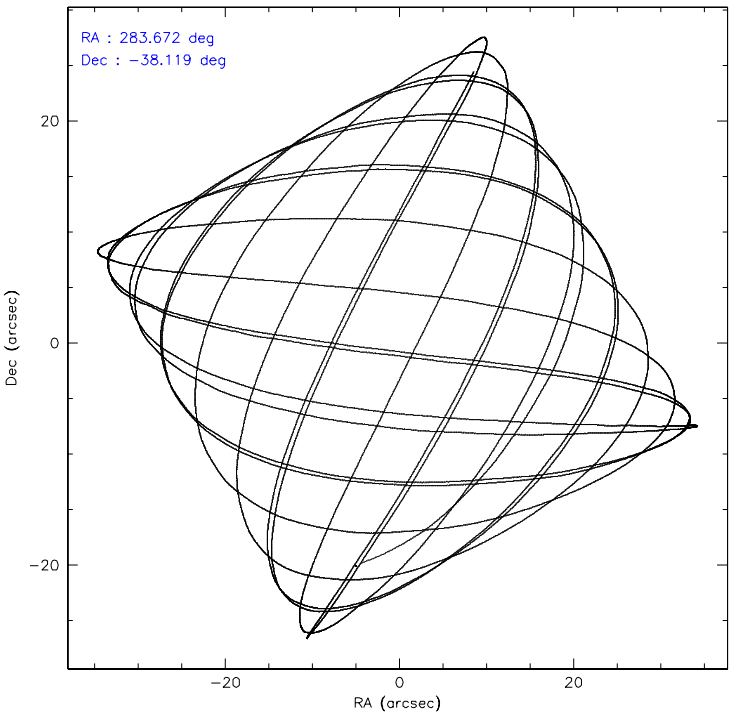
| | **segment 0** |
|---|---|
| level 1 events | 24437 |
| rejected events | 1458 |
| rejected % | 5% |

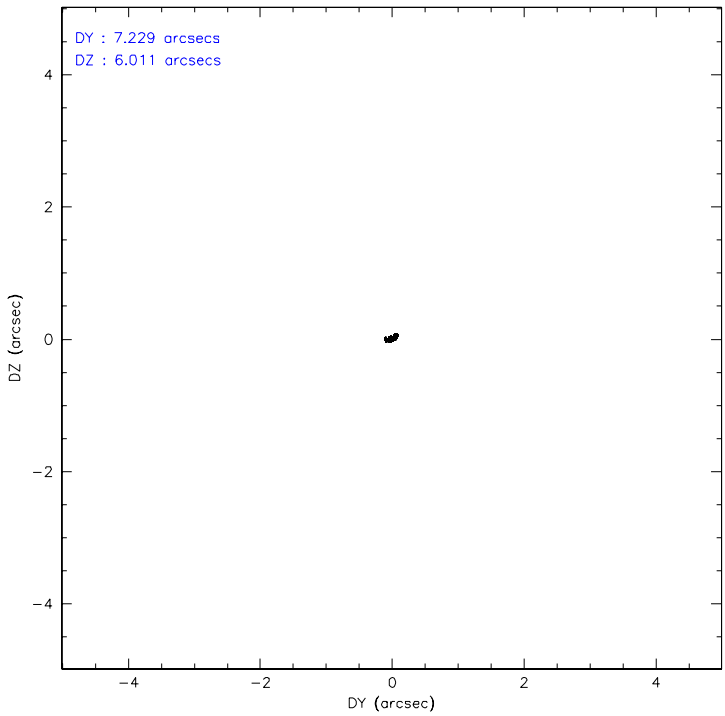
## 2.2 Compared Parameters

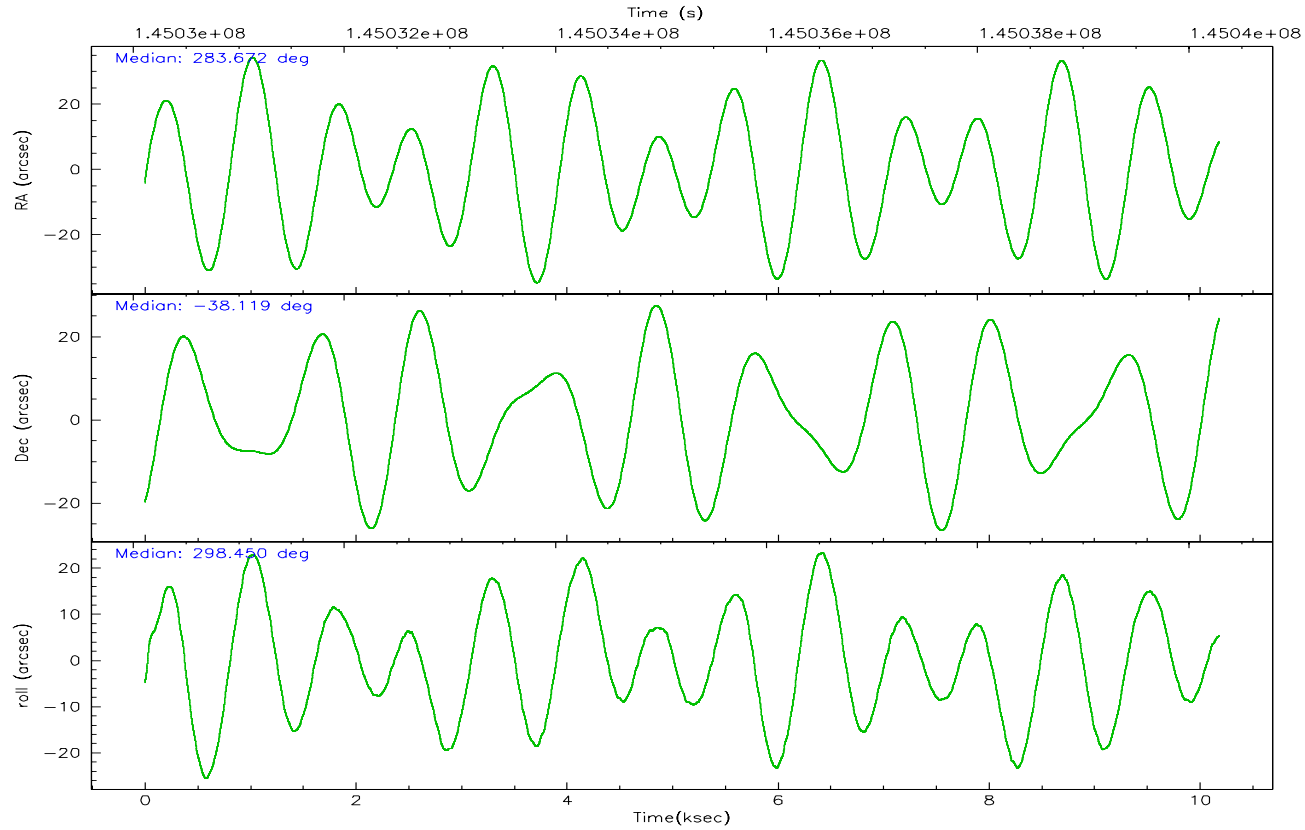
| Parameter | Planned | Actual |
|---|---|---|
| Instrument | HRC | HRC |
| Detector | HRC-I | HRC-I |
| Grating | NONE | NONE |
| Data mode | NEXT_IN_LINE | NEXT_IN_LINE |
| Observation mode | POINTING | POINTING |
| Pointing RA | 284.147083 | 283.6722748681833 |
| Pointing Dec | -37.909611 | -38.118828205482 |
| Pointing Roll | 298.535750 | 298.4586554990342 |
| SIM focus pos (mm) | -1.040293 | -1.038866356238299 |
| SIM defocus (mm) | 0 | 0.001426264420575141 |
| SIM translation stage pos (mm) | 51.985494 | 51.99352612095925 |
| SIM translation stage offset (mm) | 75 | 74.99196277064232 |
| Observation start time | 145030294.184000 | 145029524.62633 |
| Observation start date | 2002-08-06T14:10:30 | 2002-08-06T13:58:44 |
| Observation end time | 145040294.184000 | 145041271.12681 |
| Observation end date | 2002-08-06T16:57:10 | 2002-08-06T17:14:31 |

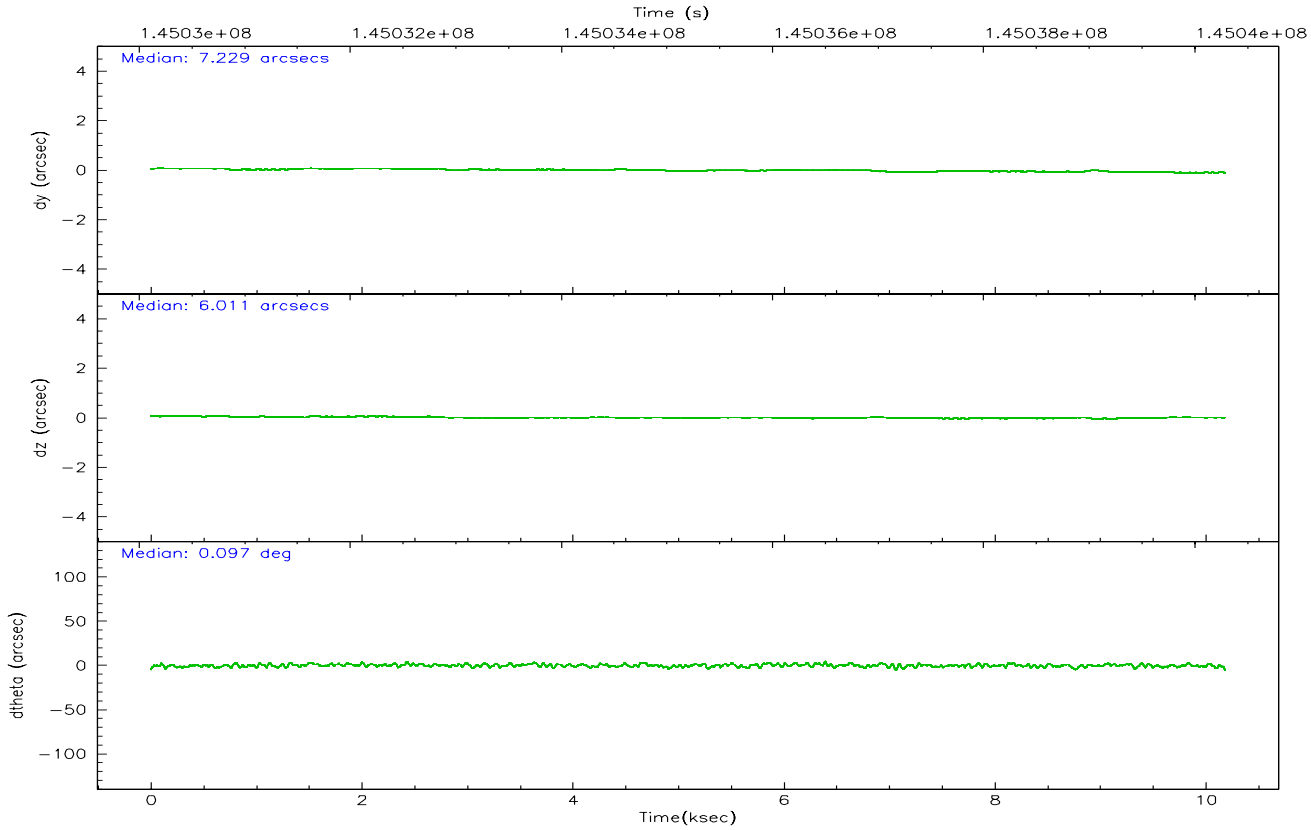
| Parameter | Planned | Actual |
|---|---|---|
| Obspar format version number | 6 | 6 |
| Obspar file type | PREDICTED | ACTUAL |
| Obspar update status | NONE | UPDATED |

## 2.3 Aspect


RA : 283.672 deg
Dec : −38.119 deg
20
0
−20
Dec (arcsec)
−20
0
20
RA (arcsec)


DY : 7.229 arcsecs
DZ : 6.011 arcsecs
4
2
0
−2
−4
DZ (arcsec)
−4
−2
0
2
4
DY (arcsec)


Time (s)
1.4503e+08
1.45032e+08
1.45034e+08
1.45036e+08
1.45038e+08
1.4504e+08
Median: 283.672 deg
RA (arcsec)
Median: −38.119 deg
Dec (arcsec)
Median: 298.450 deg
roll (arcsec)
Time(ksec)

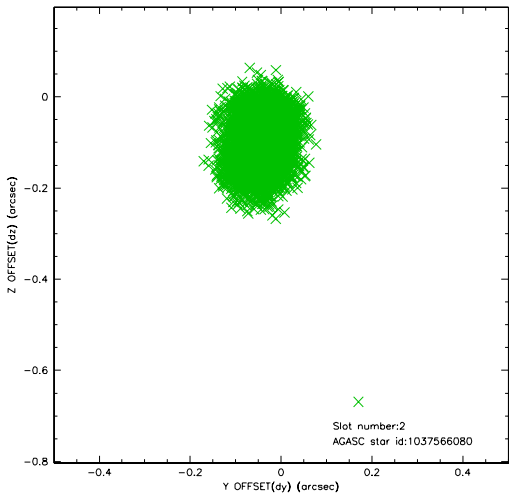

Time (s)
1.4503e+08
1.45032e+08
1.45034e+08
1.45036e+08
1.45038e+08
1.4504e+08
Median: 7.229 arcsecs
dy (arcsec)
Median: 6.011 arcsecs
dz (arcsec)
Median: 0.097 deg
dtheta (arcsec)
Time(ksec)

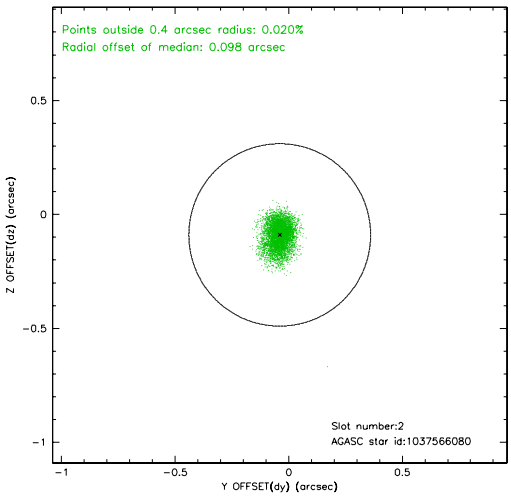
Slot Statistics

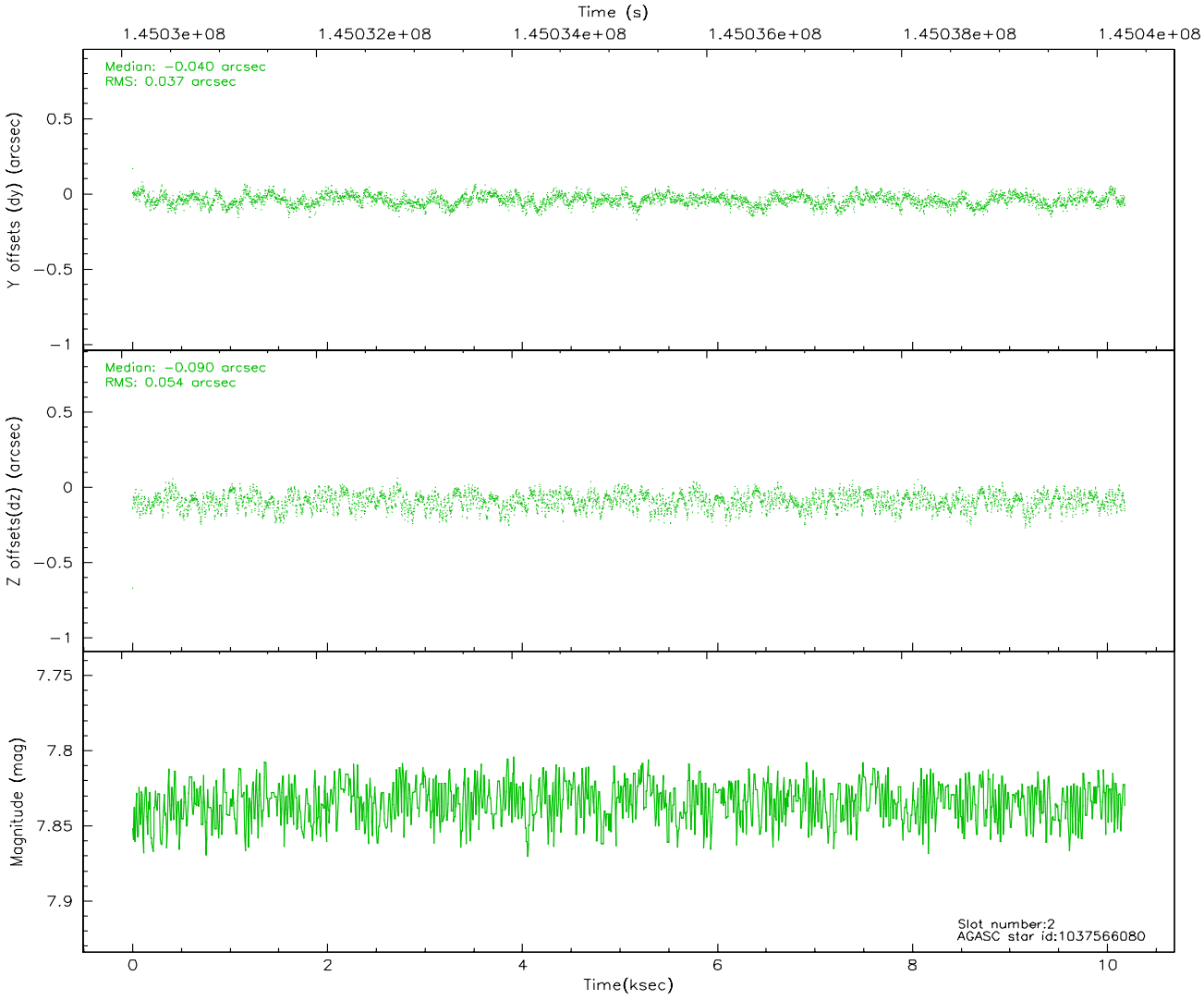
| slot | status | id | mag | n_pts | med_dy | med_dz | dr1 | dr2 | ra | dec | mean_y | mean_z |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | FID | HRC-I-1 | 6.78 | 2484 | -0.602 | -0.028 | 0.004 | 0.008 | 0.000000 | 0.000000 | -761.48 | 244.04 |
| 1 | FID | HRC-I-2 | 6.91 | 2484 | 0.681 | -0.026 | 0.004 | 0.008 | 0.000000 | 0.000000 | 849.05 | 245.22 |
| 2 | GUIDE | 1037566080 | 7.83 | 4969 | -0.040 | -0.090 | 0.070 | 0.112 | 283.069097 | -37.947159 | -1271.83 | -1160.99 |
| 3 | GUIDE | 1037582688 | 8.23 | 4969 | 0.071 | -0.014 | 0.058 | 0.096 | 284.131110 | -38.409051 | 1623.50 | 686.60 |
| 4 | GUIDE | 1037567328 | 8.85 | 4968 | -0.026 | -0.032 | 0.070 | 0.116 | 284.052016 | -37.647288 | -887.17 | 1811.74 |
| 5 | GUIDE | 1037566152 | 9.54 | 4968 | -0.039 | -0.026 | 0.134 | 0.217 | 282.755263 | -38.085809 | -1250.30 | -2180.86 |
| 6 | GUIDE | 1037567312 | 8.47 | 4968 | -0.004 | 0.081 | 0.063 | 0.099 | 283.456056 | -37.976515 | -658.34 | -244.23 |
| 7 | GUIDE | 1037578168 | 8.11 | 4968 | 0.038 | 0.083 | 0.071 | 0.112 | 284.493659 | -38.169059 | 1363.69 | 2001.18 |

## 2.4 Star Slots

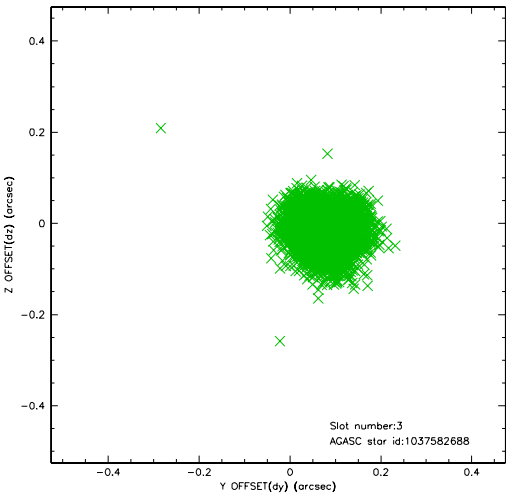
### 2.4.1 Slot 2

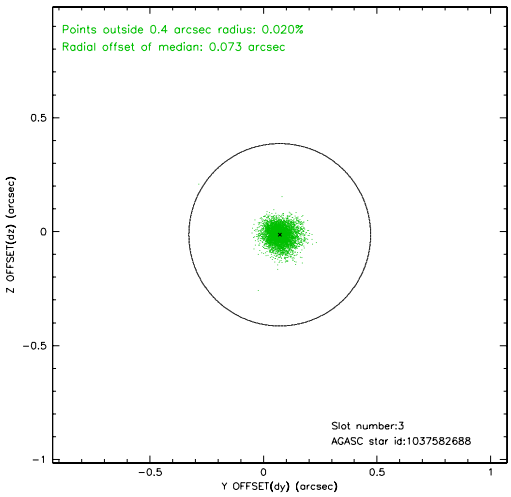


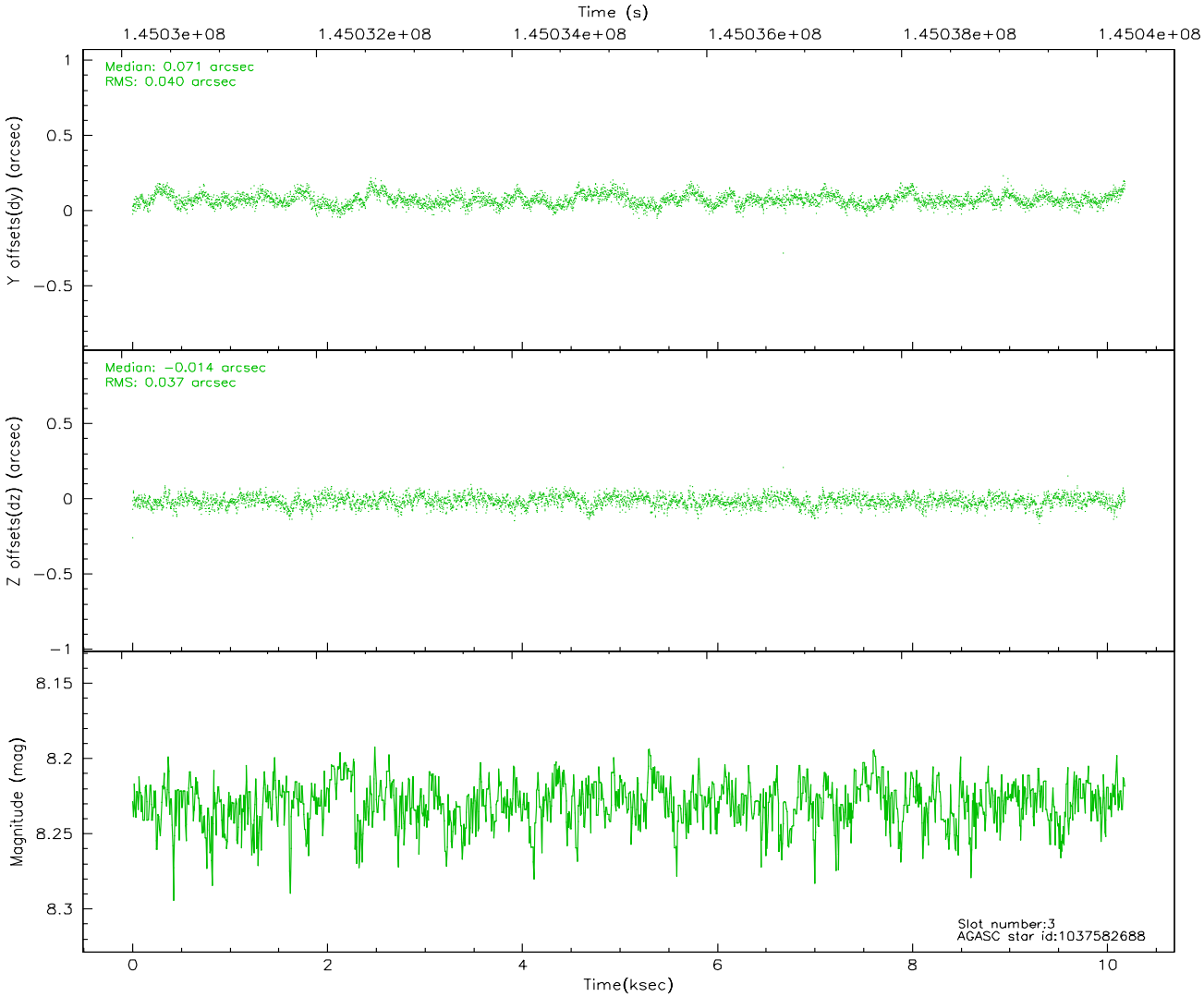



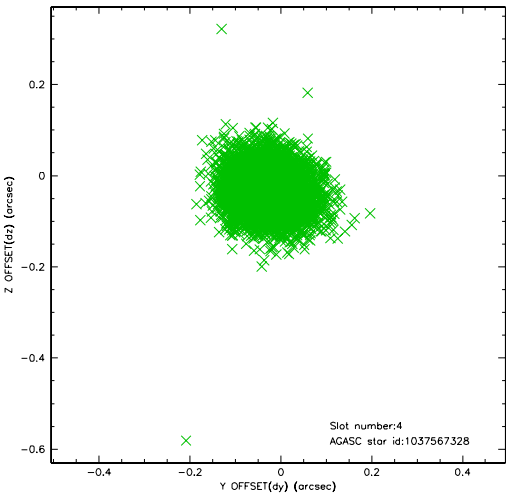
### 2.4.2 Slot 3

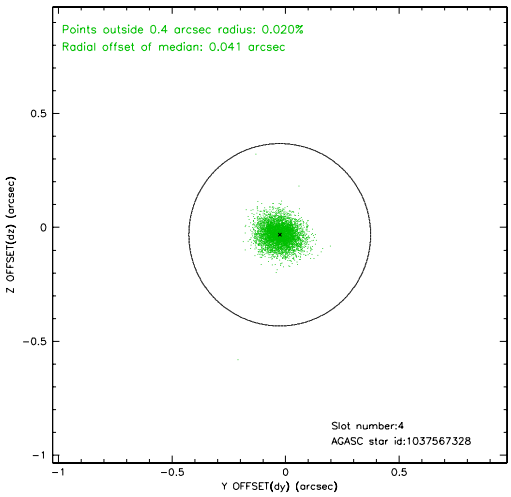

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number:3
AGASC star id:1037582688

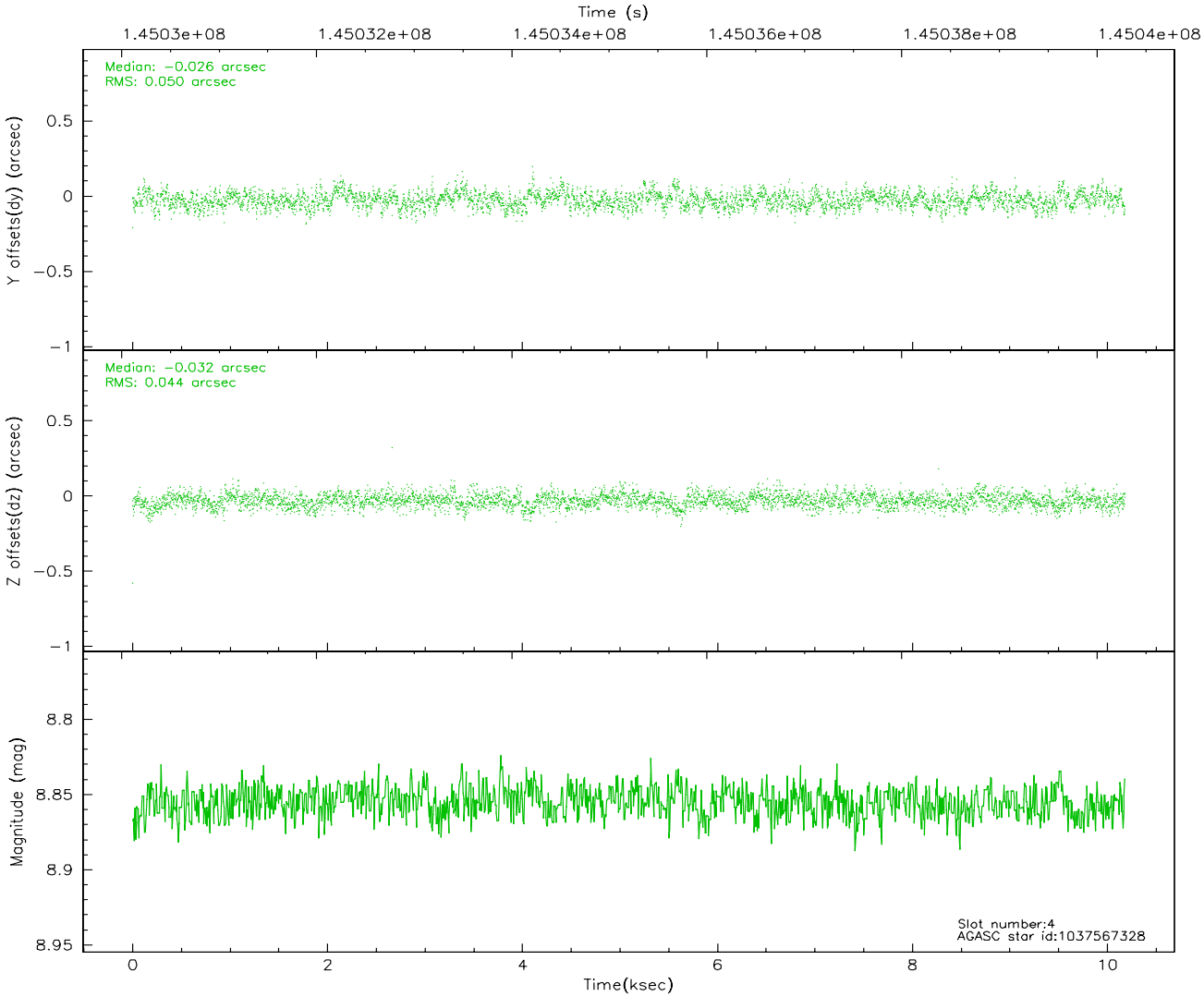

Points outside 0.4 arcsec radius: 0.020%
Radial offset of median: 0.073 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number:3
AGASC star id:1037582688


Time (s)
1.4503e+08
1.45032e+08
1.45034e+08
1.45036e+08
1.45038e+08
1.4504e+08
Median: 0.071 arcsec
RMS: 0.040 arcsec
Y offsets(dy) (arcsec)
Median: −0.014 arcsec
RMS: 0.037 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number:3
AGASC star id:1037582688
Time(ksec)

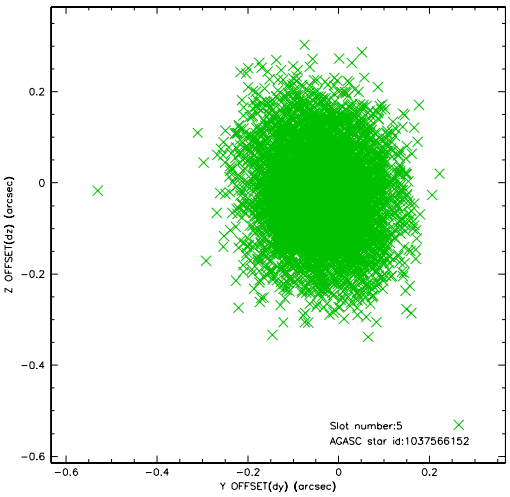
### 2.4.3 Slot 4

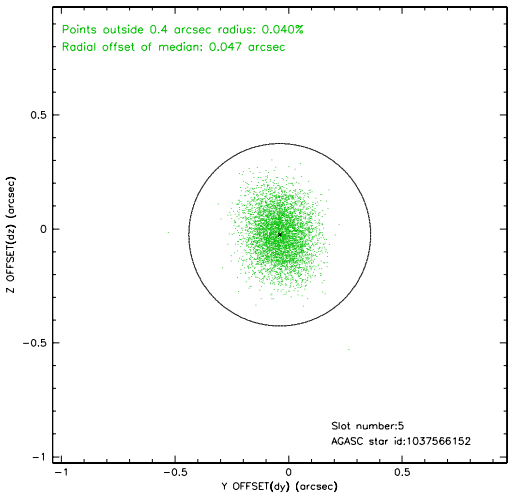

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number:4
AGASC star id:1037567328

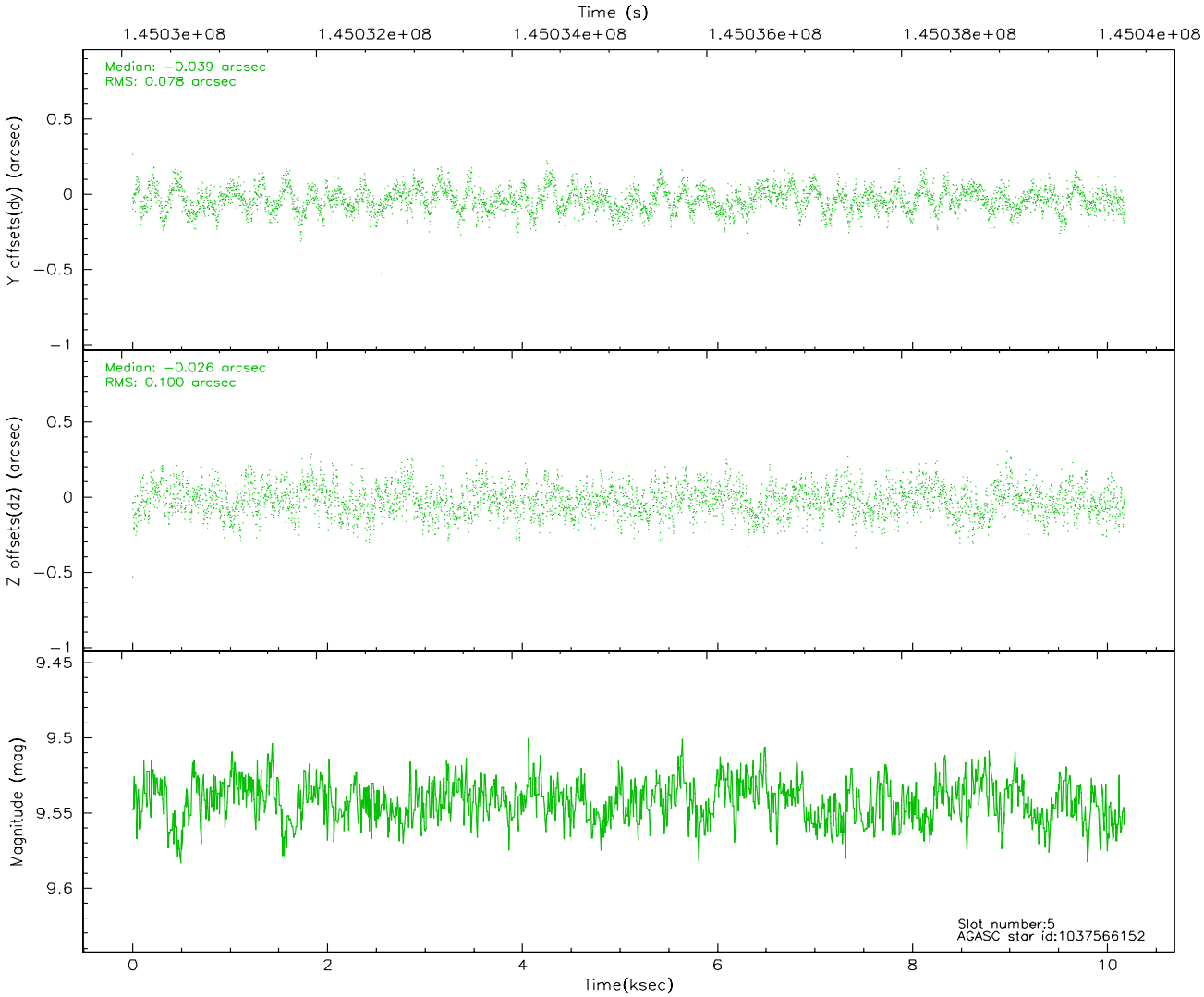

Points outside 0.4 arcsec radius: 0.020%
Radial offset of median: 0.041 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number:4
AGASC star id:1037567328


Time (s)
1.4503e+08
1.45032e+08
1.45034e+08
1.45036e+08
1.45038e+08
1.4504e+08
Median: −0.026 arcsec
RMS: 0.050 arcsec
Y offsets(dy) (arcsec)
Median: −0.032 arcsec
RMS: 0.044 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number:4
AGASC star id:1037567328
Time(ksec)

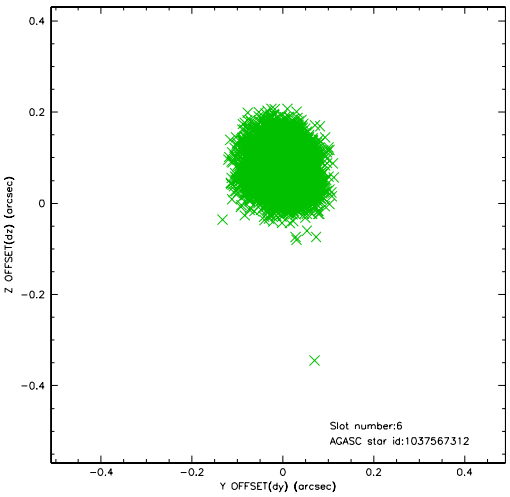
### 2.4.4 Slot 5

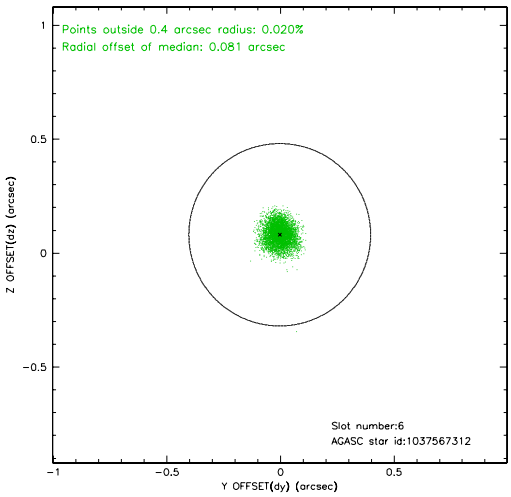

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number:5
AGASC star id:1037566152

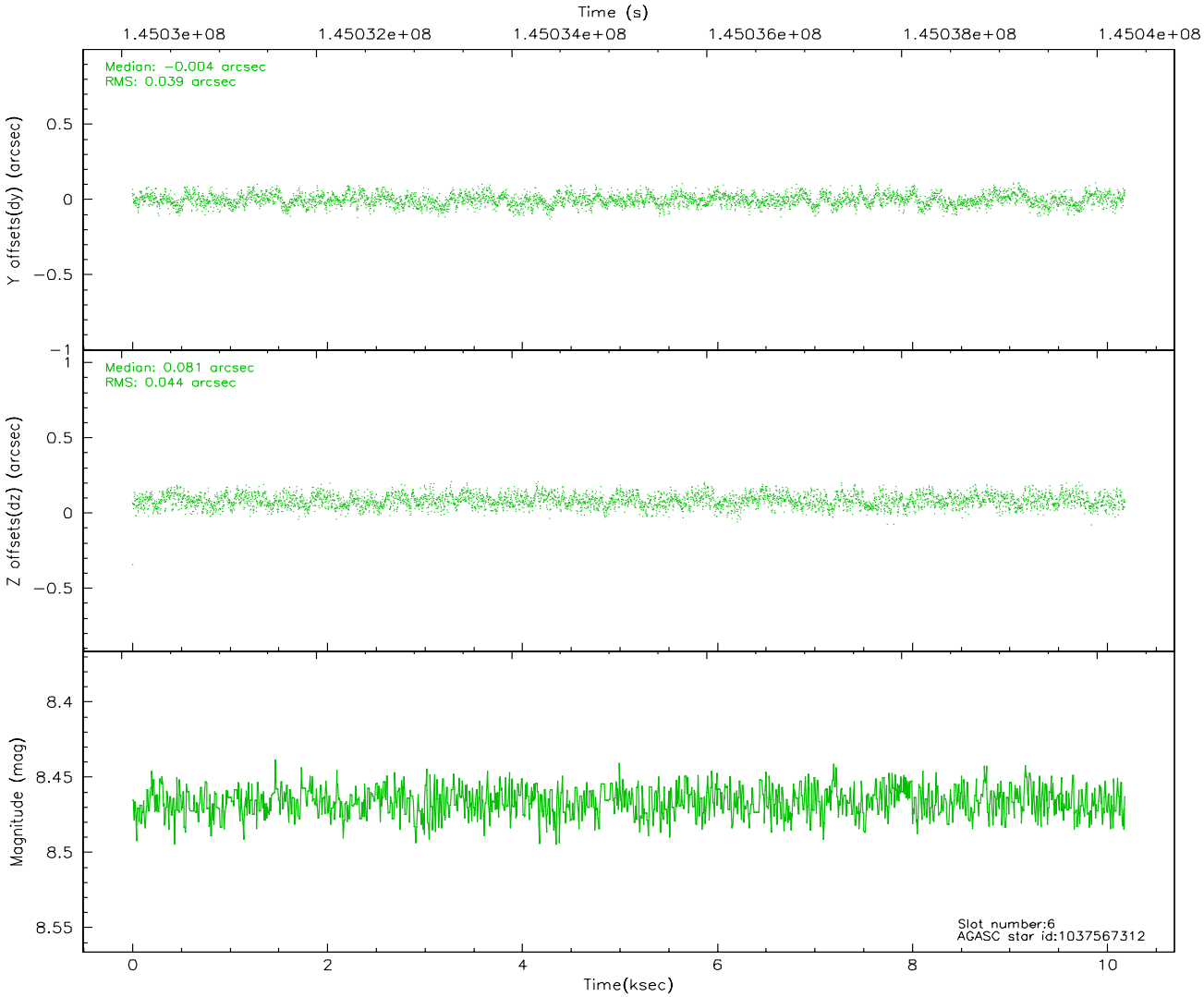

Points outside 0.4 arcsec radius: 0.040%
Radial offset of median: 0.047 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number:5
AGASC star id:1037566152


Time (s)
1.4503e+08
1.45032e+08
1.45034e+08
1.45036e+08
1.45038e+08
1.4504e+08
Median: −0.039 arcsec
RMS: 0.078 arcsec
Y offsets(dy) (arcsec)
Median: −0.026 arcsec
RMS: 0.100 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number:5
AGASC star id:1037566152
Time(ksec)

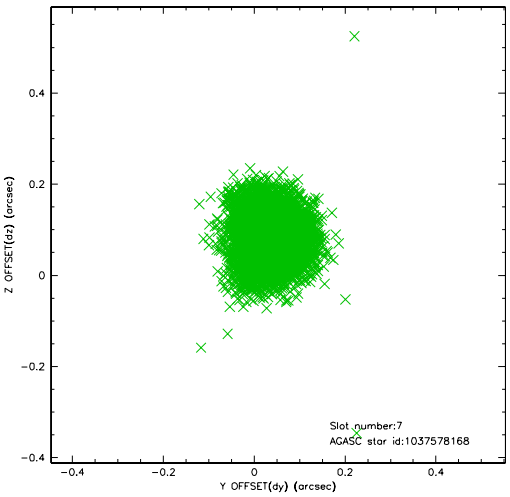
### 2.4.5 Slot 6

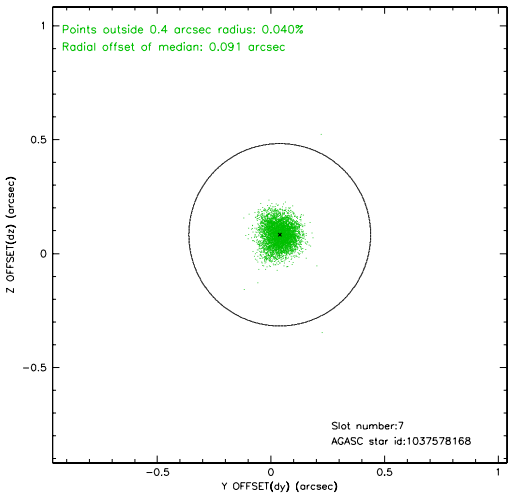

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number:6
AGASC star id:1037567312

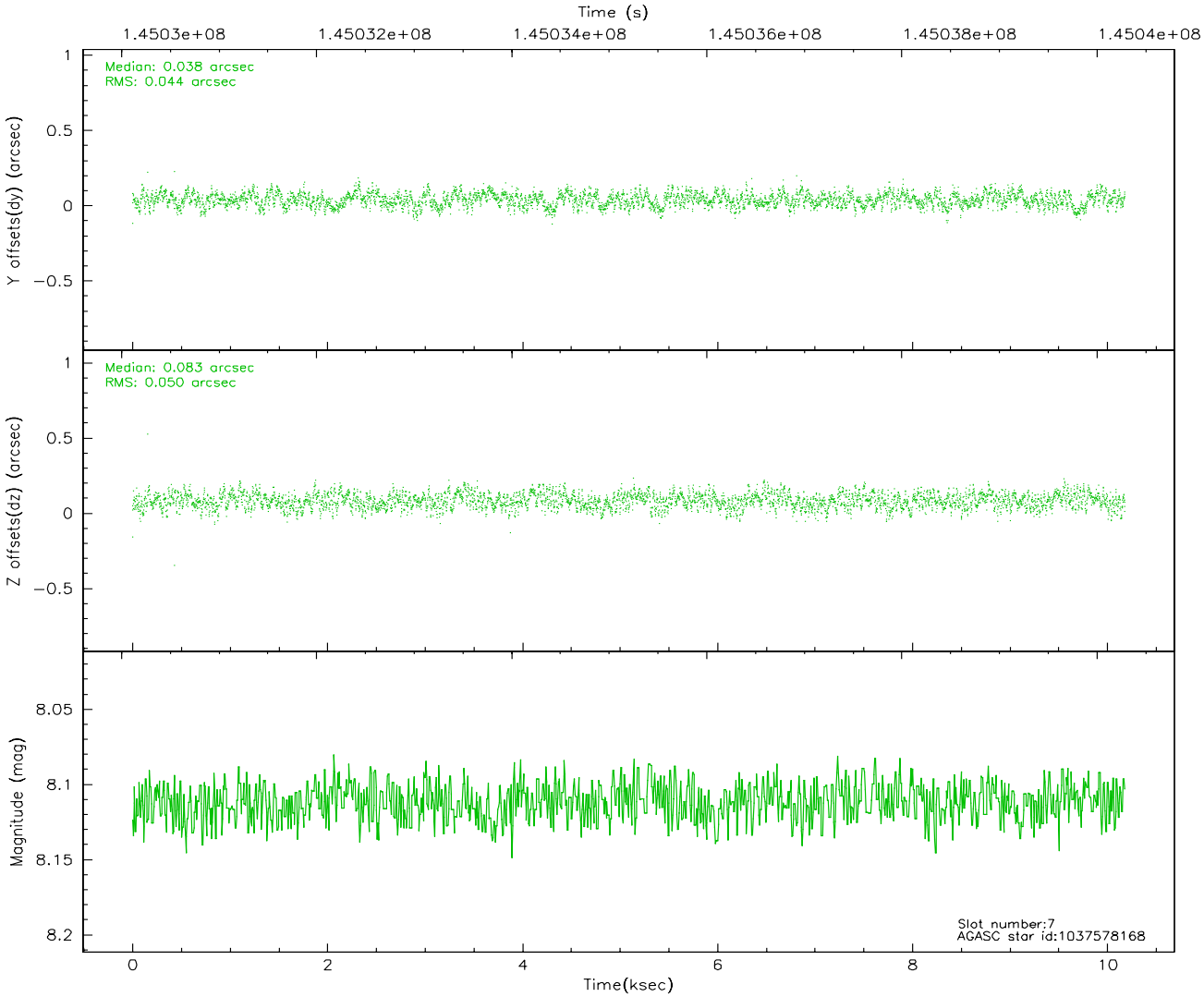

Points outside 0.4 arcsec radius: 0.020%
Radial offset of median: 0.081 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number:6
AGASC star id:1037567312


Time (s)
1.4503e+08
1.45032e+08
1.45034e+08
1.45036e+08
1.45038e+08
1.4504e+08
Median: −0.004 arcsec
RMS: 0.039 arcsec
Y offsets(dy) (arcsec)
Median: 0.081 arcsec
RMS: 0.044 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number:6
AGASC star id:1037567312
Time(ksec)

### 2.4.6 Slot 7

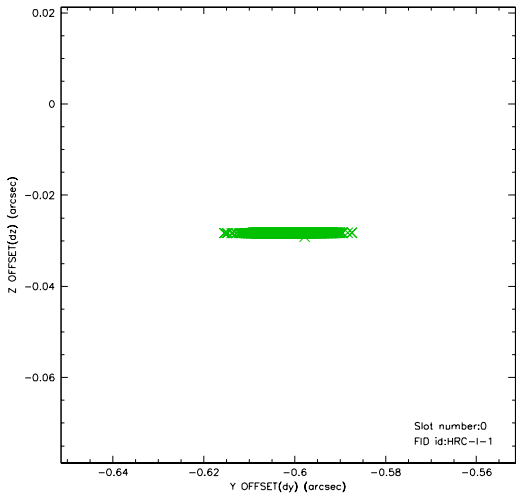

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number:7
AGASC star id:1037578168

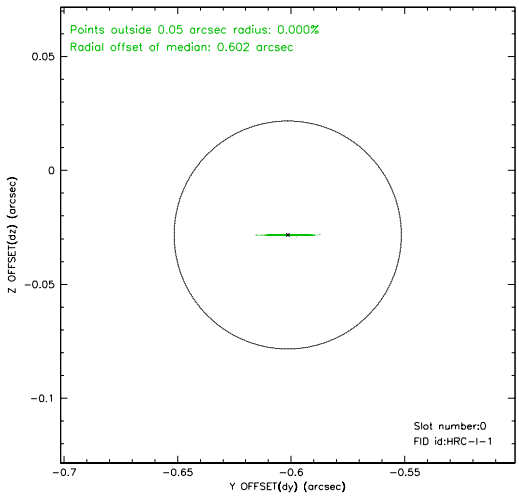

Points outside 0.4 arcsec radius: 0.040%
Radial offset of median: 0.091 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number:7
AGASC star id:1037578168

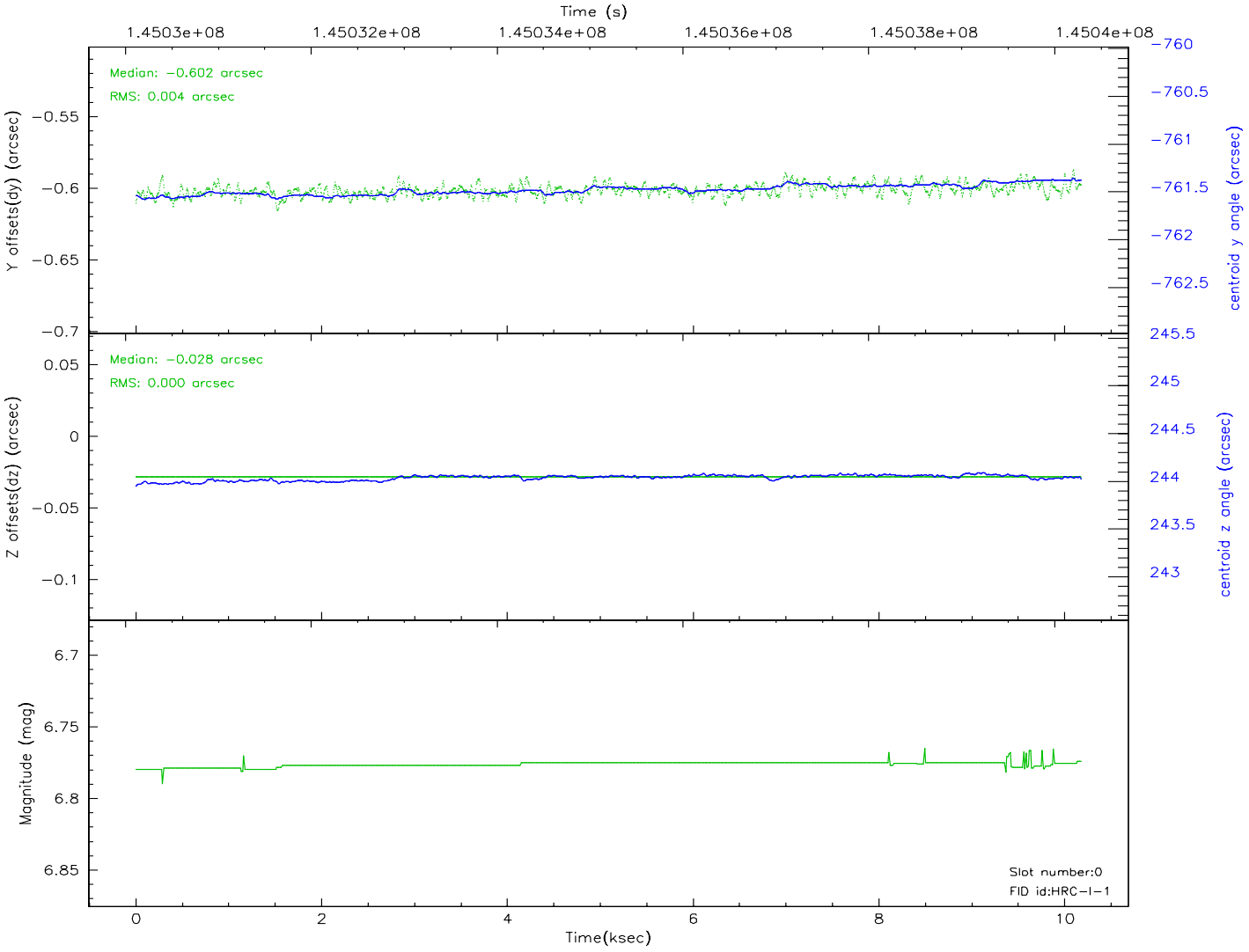

Time (s)
1.4503e+08
1.45032e+08
1.45034e+08
1.45036e+08
1.45038e+08
1.4504e+08
Median: 0.038 arcsec
RMS: 0.044 arcsec
Y offsets(dy) (arcsec)
Median: 0.083 arcsec
RMS: 0.050 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number:7
AGASC star id:1037578168
Time(ksec)

## 2.5 FID Slots

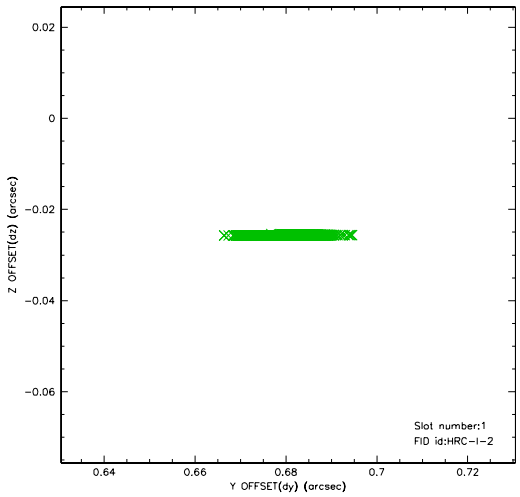
### 2.5.1 Slot 0

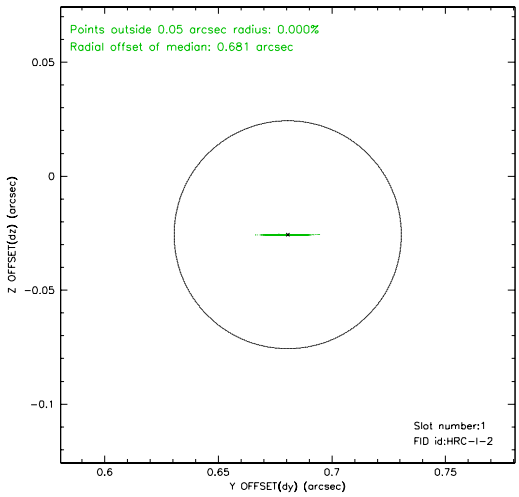


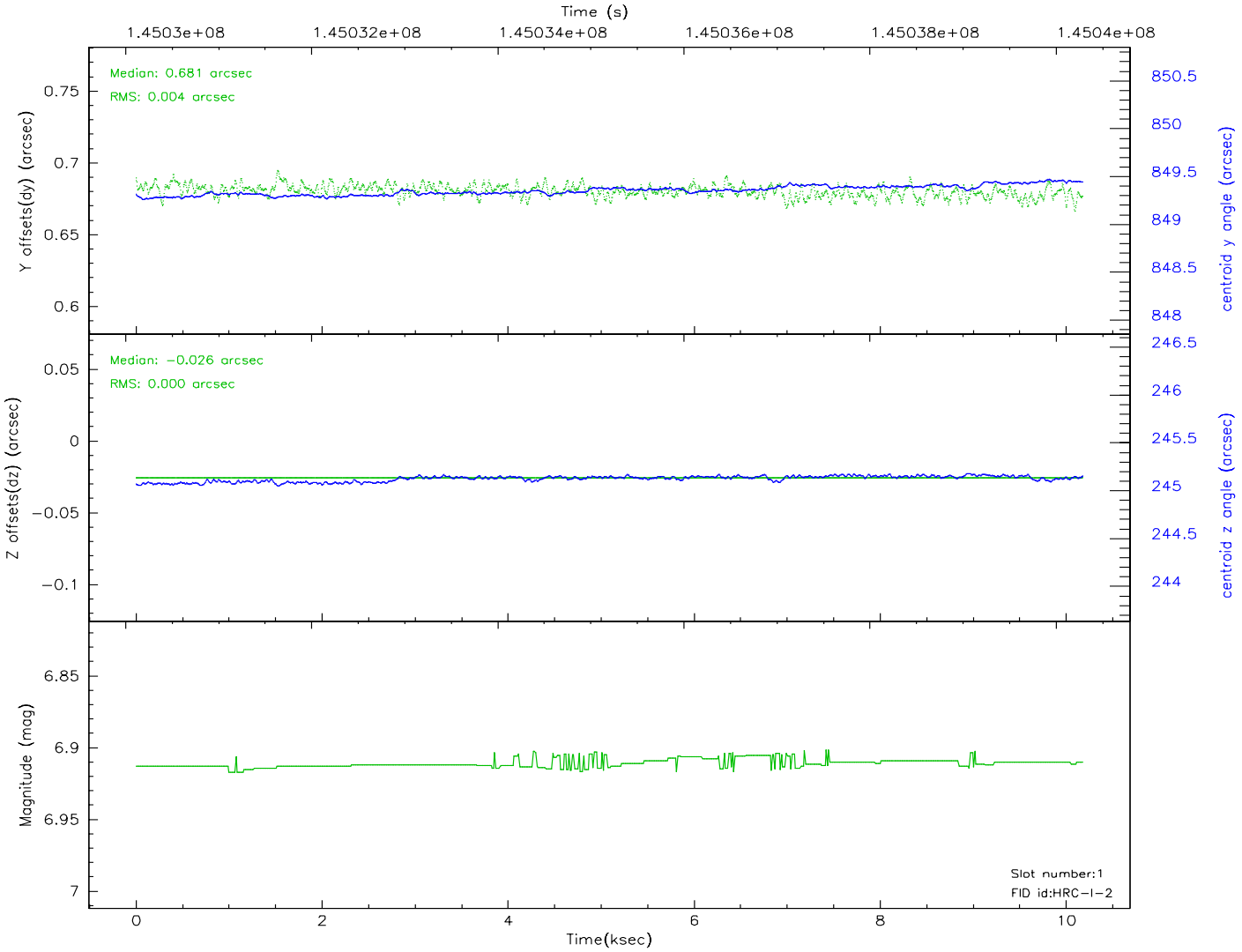



### 2.5.2 Slot 1


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


Time (s)
Median: 0.681 arcsec
RMS: 0.004 arcsec
Y offsets(dy) (arcsec)
centroid y angle (arcsec)
Median: −0.026 arcsec
RMS: 0.000 arcsec
Z offsets(dz) (arcsec)
centroid z angle (arcsec)
Magnitude (mag)
Slot number:1
FID id:HRC-I-2
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 | 9.856 |

## A.2 Comments

```
Only 2 fid lights are used for this observation. The radial offsets of
the fid lights are greater than 0.4 arcsec due to the large off-axis
position of the source.
Fid in slot 0 radial offset > 0.400000 arcsec
Fid in slot 1 radial offset > 0.400000 arcsec

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.
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