V&V Reference Report
L2 ASCDS Version : 7.6.8

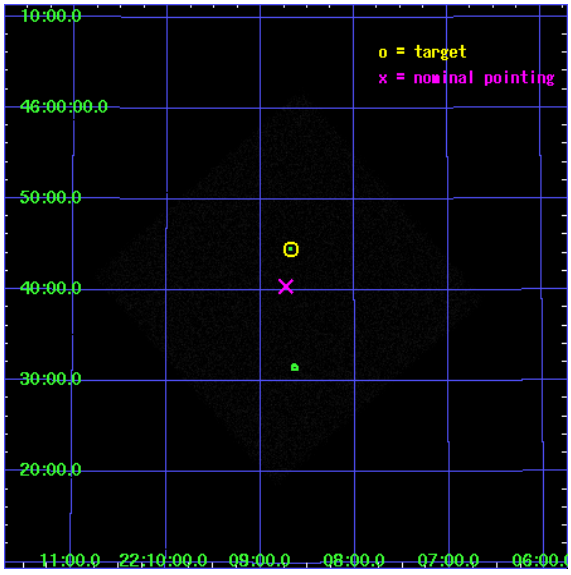
Observation 4293 - L2 Version 3
Chandra X-Ray Center

L2 Processing Date : Nov 21 2007

Contents

1 Front

seq_num	290253
obs_id	4293
title	AO4 CALIBRATION OBSERVATIONS TO MONITOR SPATIAL VARIATIONS IN THE HRC-I GAIN
observer	Dr. CXC Calibration
object	ARLAC
ra_targ	332.17
dec_targ	45.742306
ra_nom	332.18255456598
dec_nom	45.674003544987
roll_nom	3.6291683550224
revision	3
ontime	1190.2813000381
livetime	1182.8866585195
l2events	47160

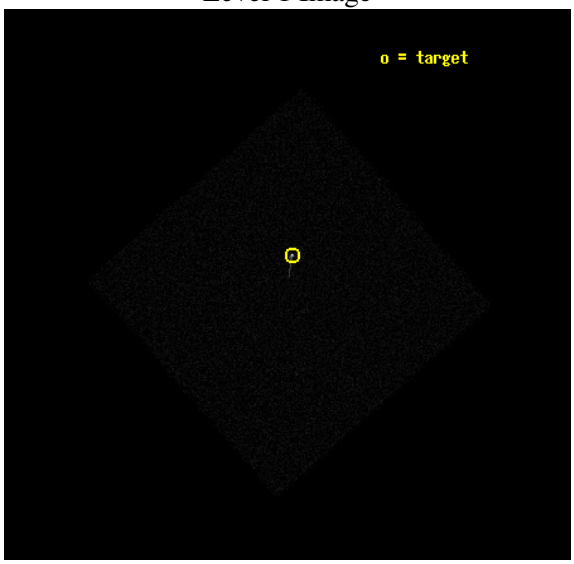


2 OBI

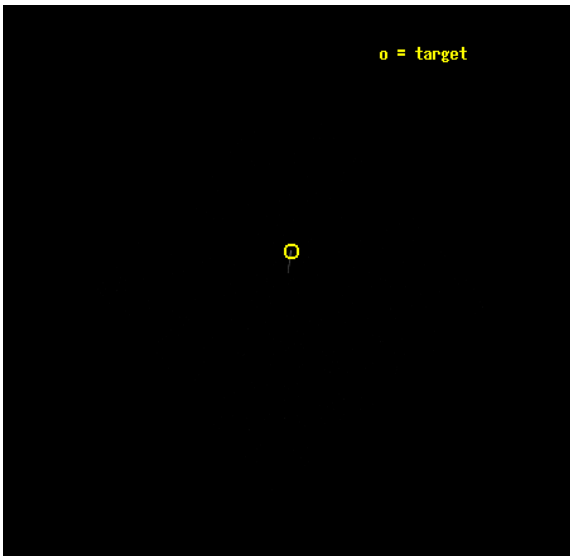
2.1 OBI

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	2007-11-22T02:26:01
revision	3

sched_exp_time	1000.000000
ontime	1190.2813000381
l1events	86109

2.1.3 Events

Level 1 Events

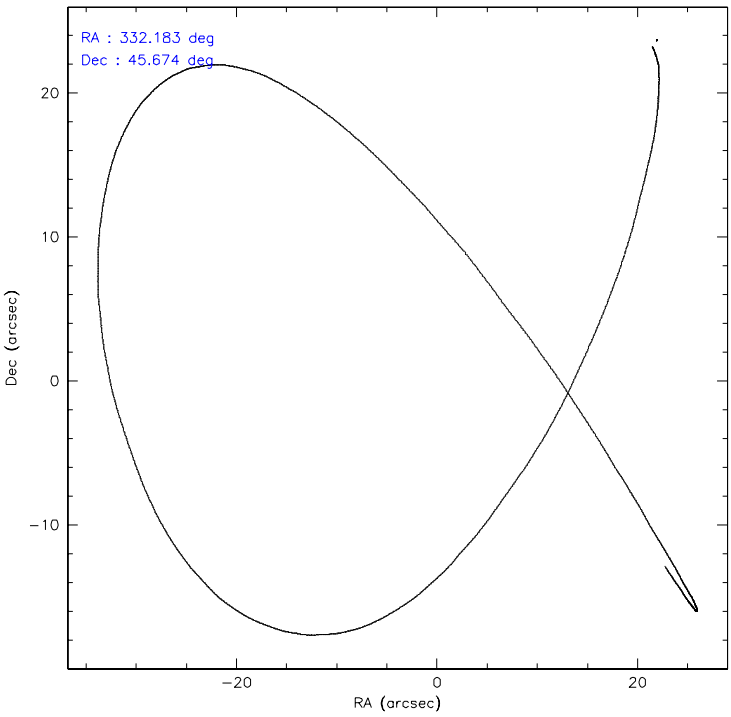
	segment 0
level 1 events	86109
rejected events	20120
rejected %	23%

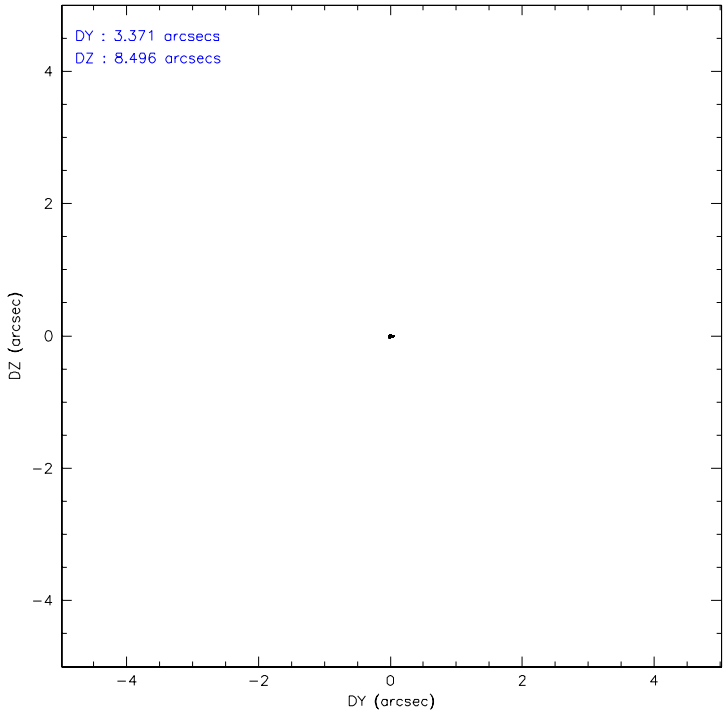
2.2 Compared Parameters

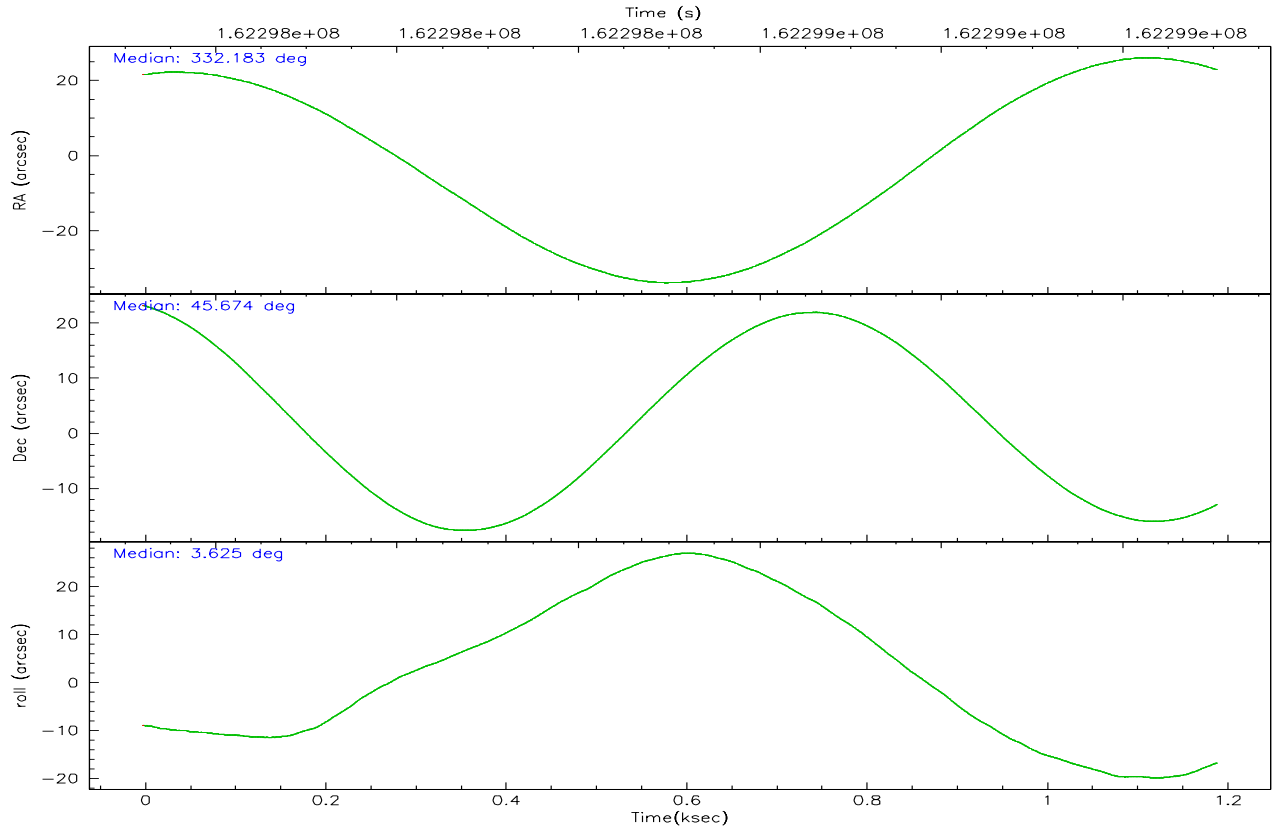
Parameter	Planned	Actual
Instrument	HRC	HRC
Detector	HRC-I	HRC-I
Grating	NONE	NONE
Data mode	OBSERVING	OBSERVING
Observation mode	POINTING	POINTING
Pointing RA	332.150071	332.1825545659826
Pointing Dec	45.658890	45.67400354498723
Pointing Roll	3.747872	3.629168355022356
Window start time	161697664.184000	161697664.184000
Window stop time	165412864.184000	165412864.184000
SIM focus pos (mm)	-1.040293	-1.038866356238299
SIM defocus (mm)	0	0.001426264420575141
SIM translation stage pos (mm)	126.985494	126.9854943052878
SIM translation stage offset (mm)	0	-5.413686238853188e-06
Observation start time	162298108.184000	162297732.11973
Observation start date	2003-02-22T10:47:24	2003-02-22T10:42:12
Observation end time	162299108.184000	162299241.94479
Observation end date	2003-02-22T11:04:04	2003-02-22T11:07:21

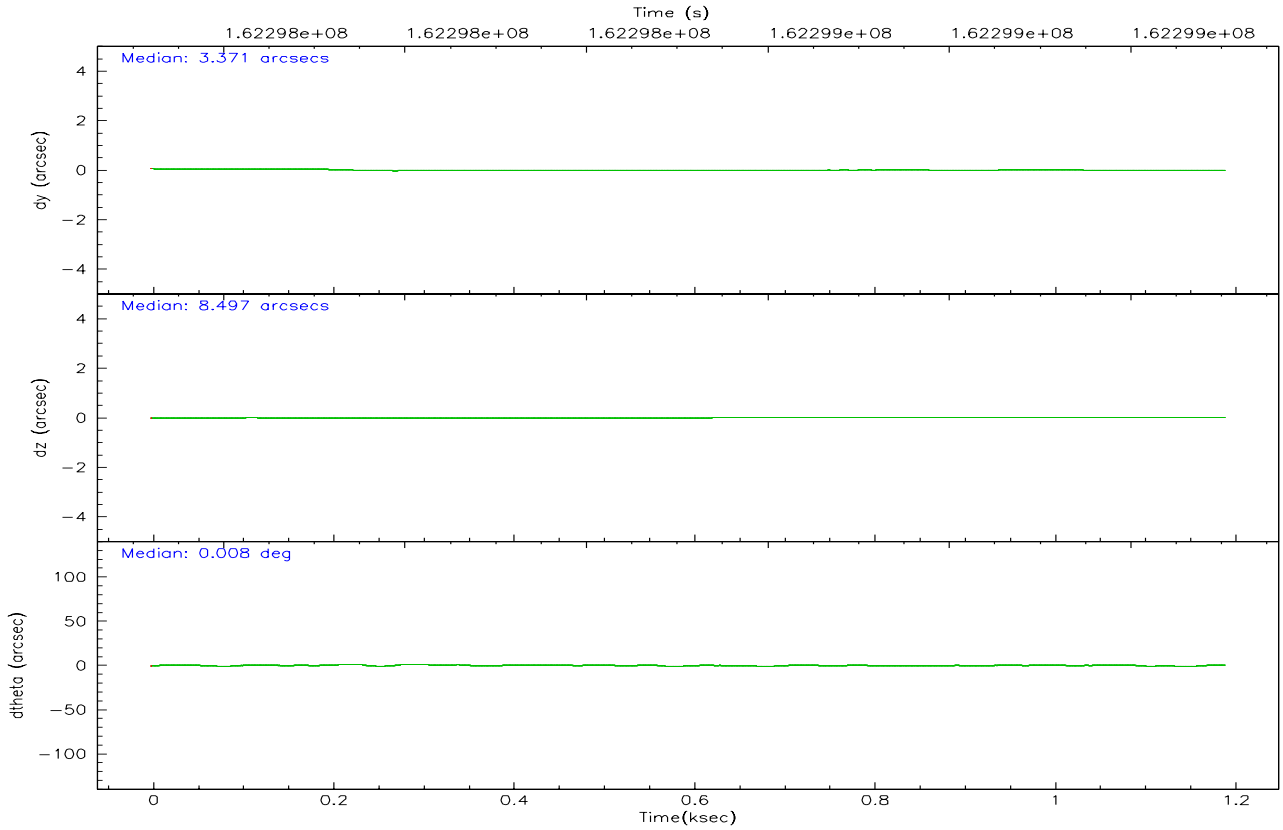
Parameter	Planned	Actual
Obspar format version number	6	6
Obspar file type	PREDICTED	ACTUAL
Obspar update status	NONE	UPDATED

2.3 Aspect


RA : 332.183 deg
Dec : 45.674 deg
20
10
0
−10
Dec (arcsec)
−20
0
20
RA (arcsec)


DY : 3.371 arcsecs
DZ : 8.496 arcsecs
4
2
0
−2
−4
DZ (arcsec)
−4
−2
0
2
4
DY (arcsec)


Time (s)
1.62298e+08
1.62298e+08
1.62298e+08
1.62299e+08
1.62299e+08
1.62299e+08
Median: 332.183 deg
RA (arcsec)
Median: 45.674 deg
Dec (arcsec)
Median: 3.625 deg
roll (arcsec)
Time(ksec)

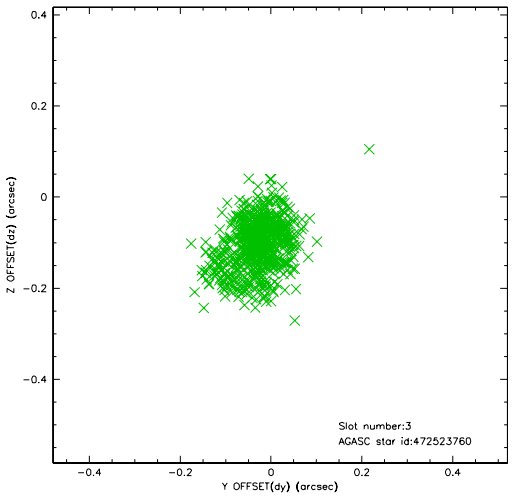

Time (s)
1.62298e+08
1.62298e+08
1.62298e+08
1.62299e+08
1.62299e+08
1.62299e+08
Median: 3.371 arcsecs
dy (arcsec)
Median: 8.497 arcsecs
dz (arcsec)
Median: 0.008 deg
dtheta (arcsec)
Time(ksec)

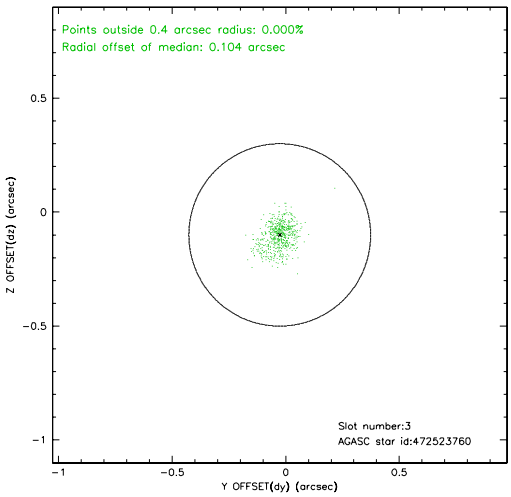
Slot Statistics

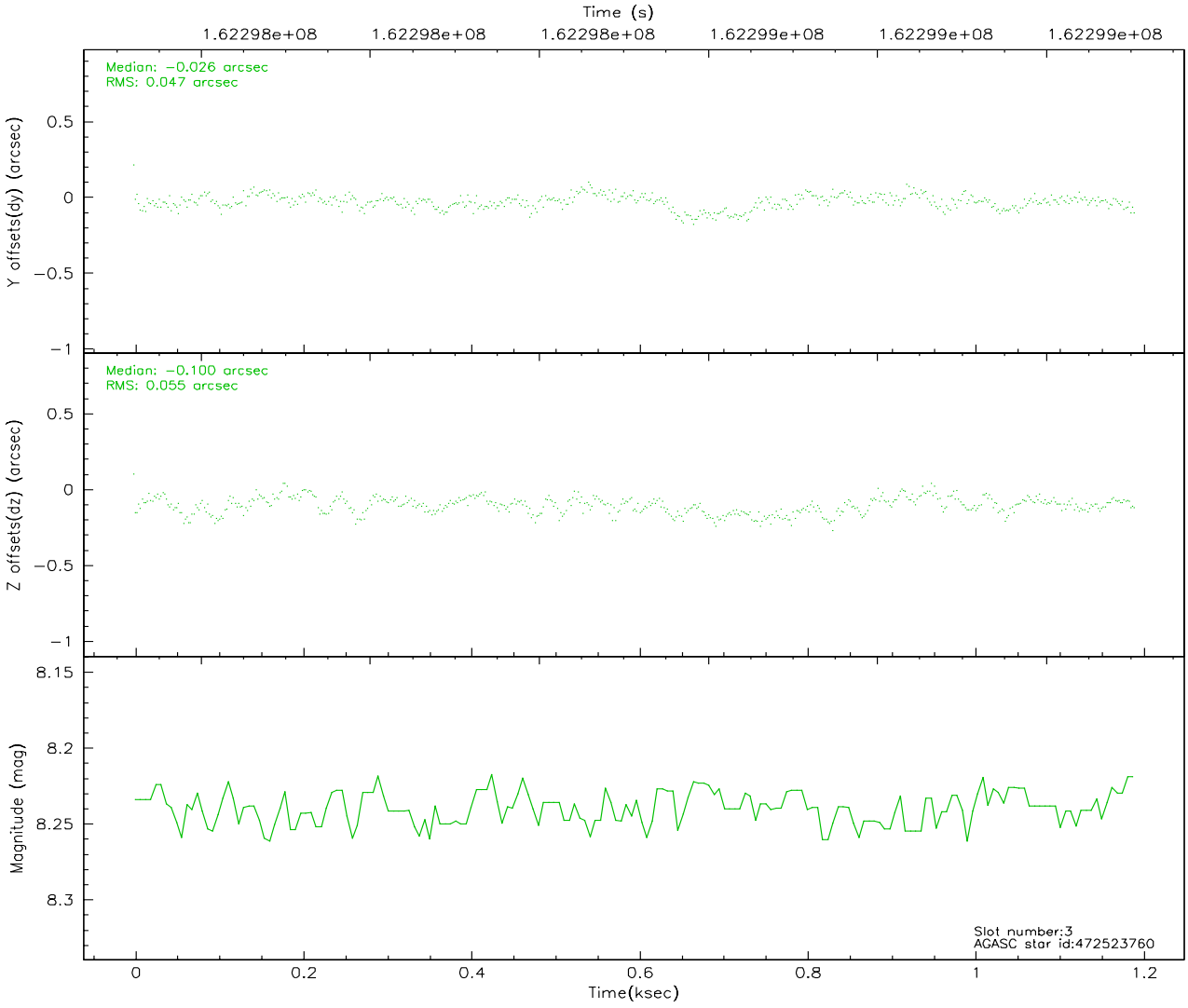
slot	status	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID	HRC-I-2	7.01	291	0.082	-0.034	0.006	0.009	0.000000	0.000000	853.86	-1298.03
1	FID	HRC-I-3	7.06	291	-0.012	0.011	0.006	0.009	0.000000	0.000000	-1184.43	1003.68
2	FID	HRC-I-4	7.01	291	0.049	-0.064	0.006	0.010	0.000000	0.000000	1279.91	1009.12
3	GUIDE	472523760	8.24	582	-0.026	-0.100	0.076	0.124	331.645363	45.403260	-1334.35	-829.38
4	GUIDE	472527720	6.98	582	-0.030	-0.125	0.068	0.114	331.460205	45.112509	-1880.73	-1840.67
5	GUIDE	472655152	9.43	582	0.136	0.028	0.093	0.147	332.504239	45.862991	929.56	675.76
6	GUIDE	472659832	9.46	582	0.046	0.044	0.102	0.163	332.780399	46.098139	1674.01	1484.34
7	GUIDE	472652872	10.11	581	-0.118	0.167	0.145	0.247	332.255928	45.019274	119.72	-2310.69

2.4 Star Slots

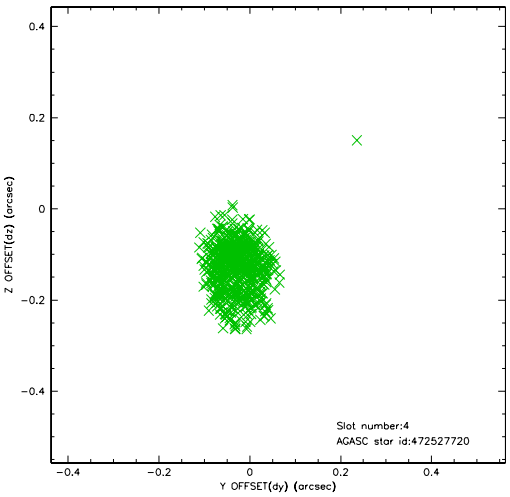
2.4.1 Slot 3

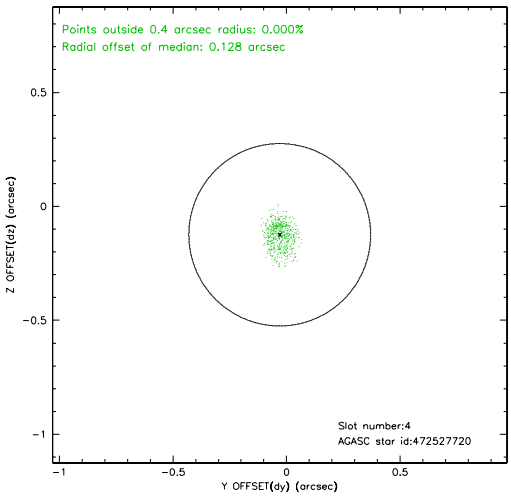


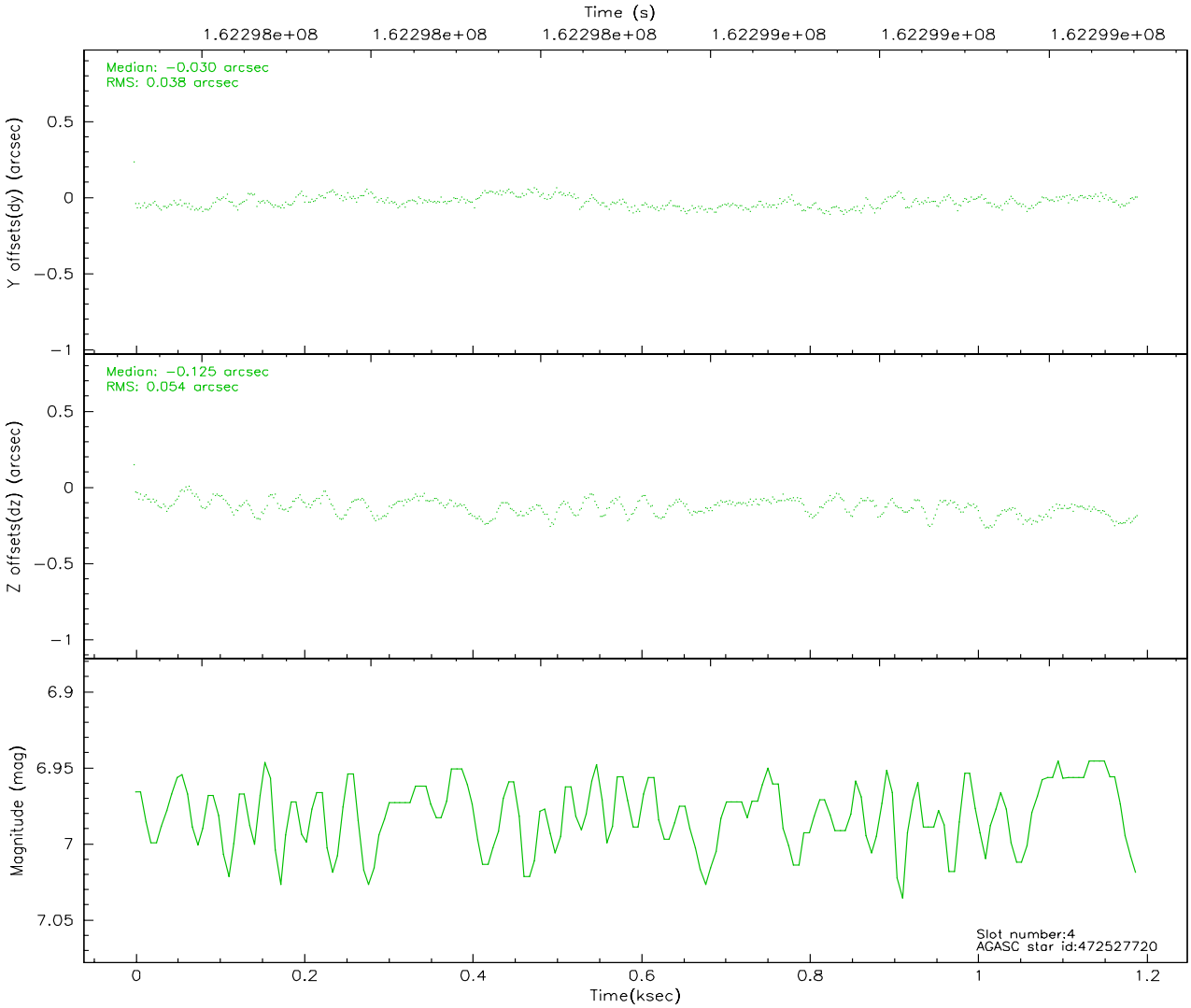




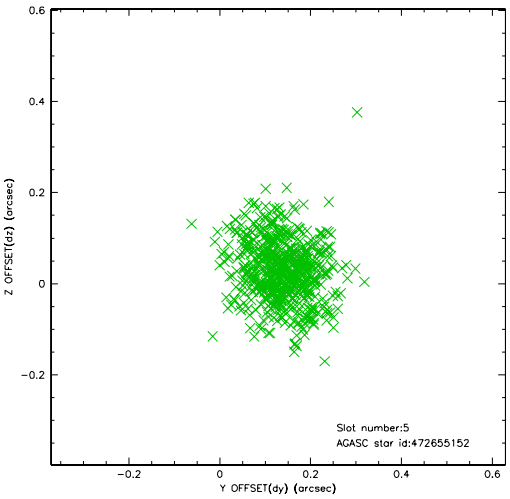
2.4.2 Slot 4

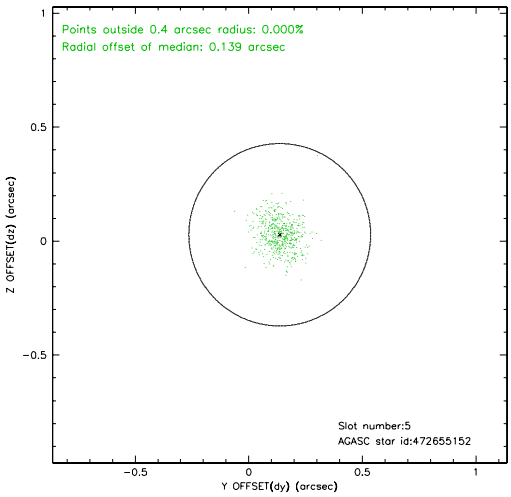

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number:4
AGASC star id:472527720

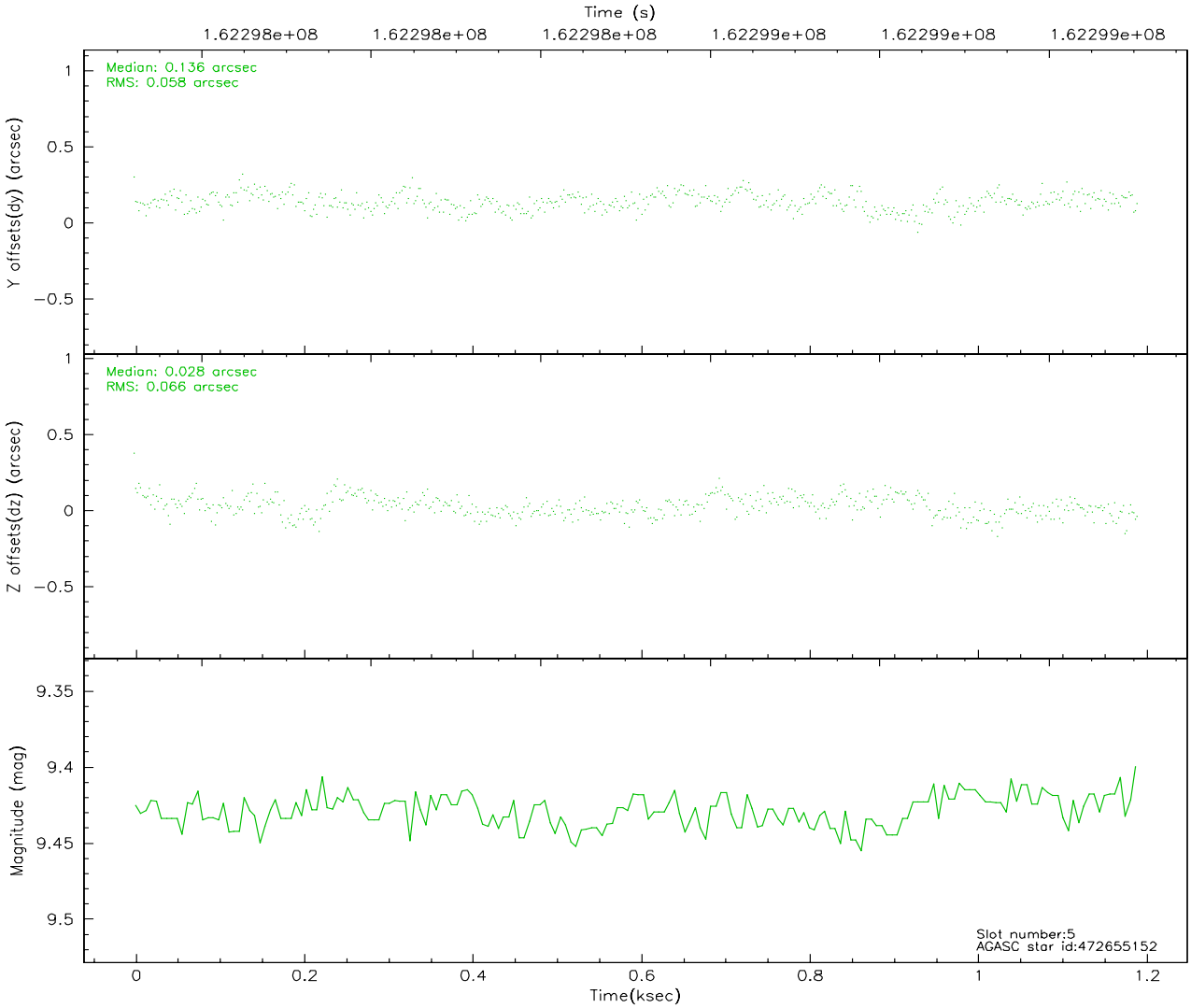

Points outside 0.4 arcsec radius: 0.000%
Radial offset of median: 0.128 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number:4
AGASC star id:472527720


Time (s)
1.62298e+08
1.62298e+08
1.62298e+08
1.62299e+08
1.62299e+08
1.62299e+08
Median: −0.030 arcsec
RMS: 0.038 arcsec
Y offsets(dy) (arcsec)
Median: −0.125 arcsec
RMS: 0.054 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number:4
AGASC star id:472527720
Time(ksec)

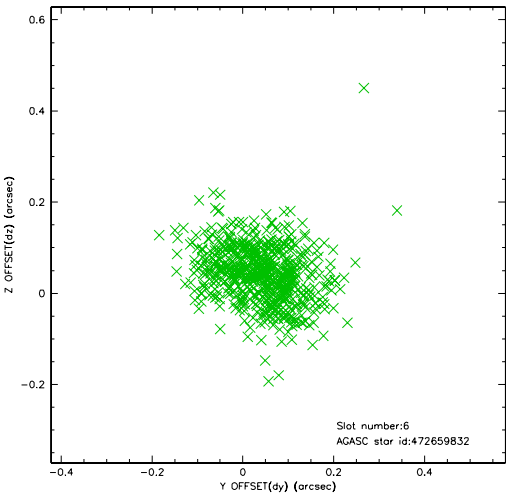
2.4.3 Slot 5

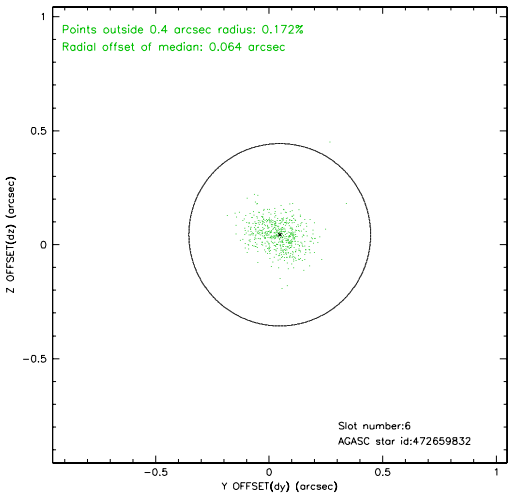

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number:5
AGASC star id:472655152

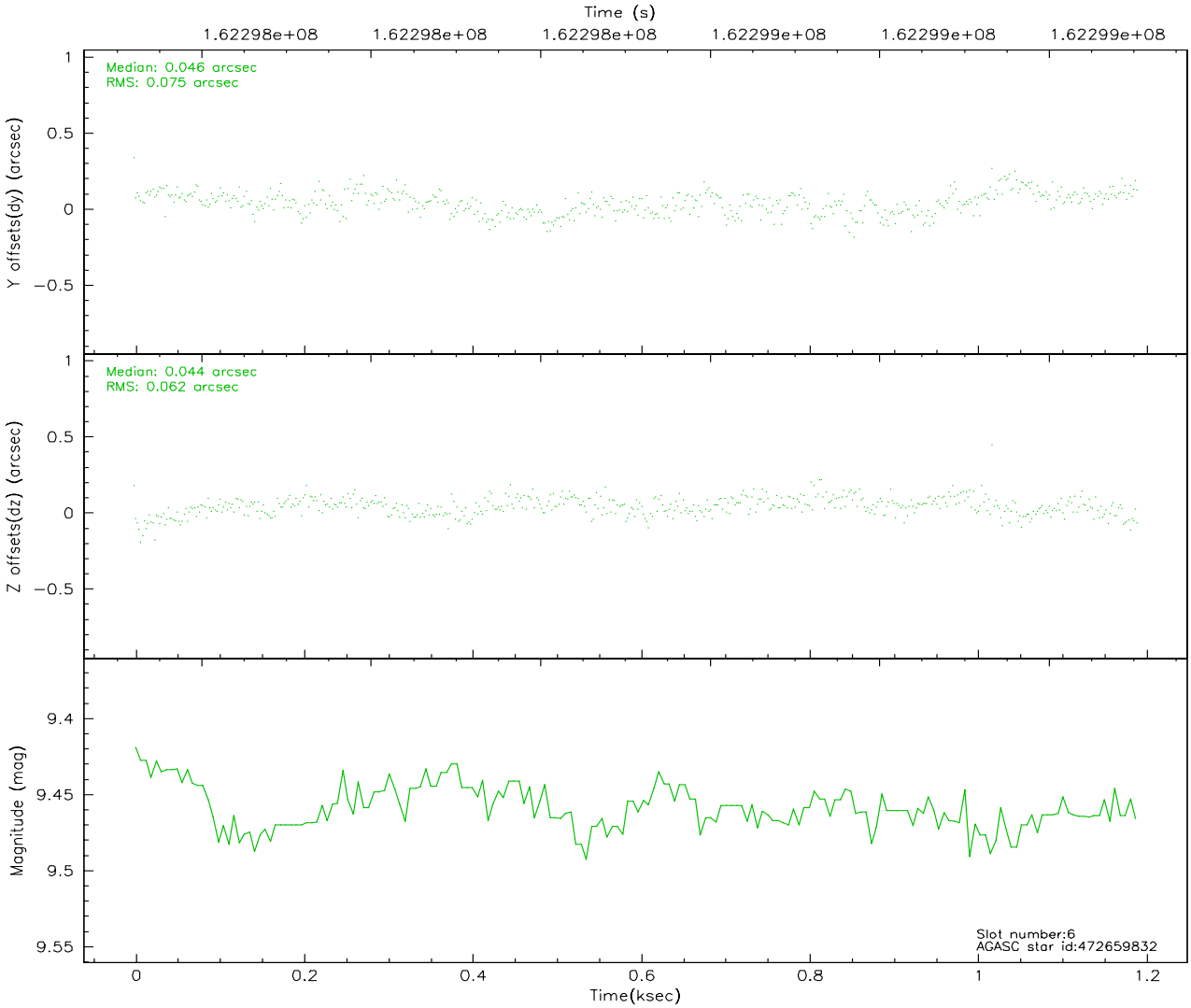

Points outside 0.4 arcsec radius: 0.000%
Radial offset of median: 0.139 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number:5
AGASC star id:472655152


Time (s)
1.62298e+08
1.62298e+08
1.62298e+08
1.62299e+08
1.62299e+08
1.62299e+08
Median: 0.136 arcsec
RMS: 0.058 arcsec
Y offsets(dy) (arcsec)
Median: 0.028 arcsec
RMS: 0.066 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number:5
AGASC star id:472655152
Time(ksec)

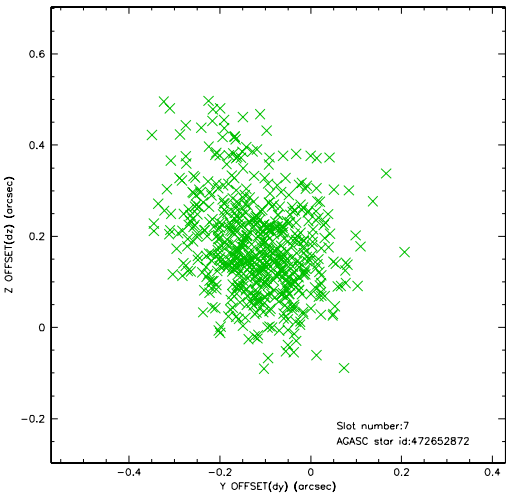
2.4.4 Slot 6

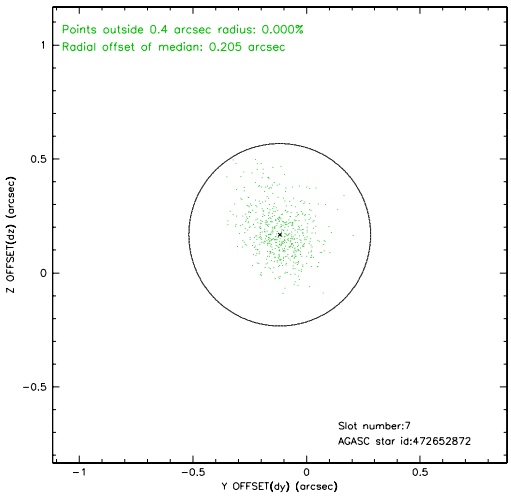

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number:6
AGASC star id:472659832

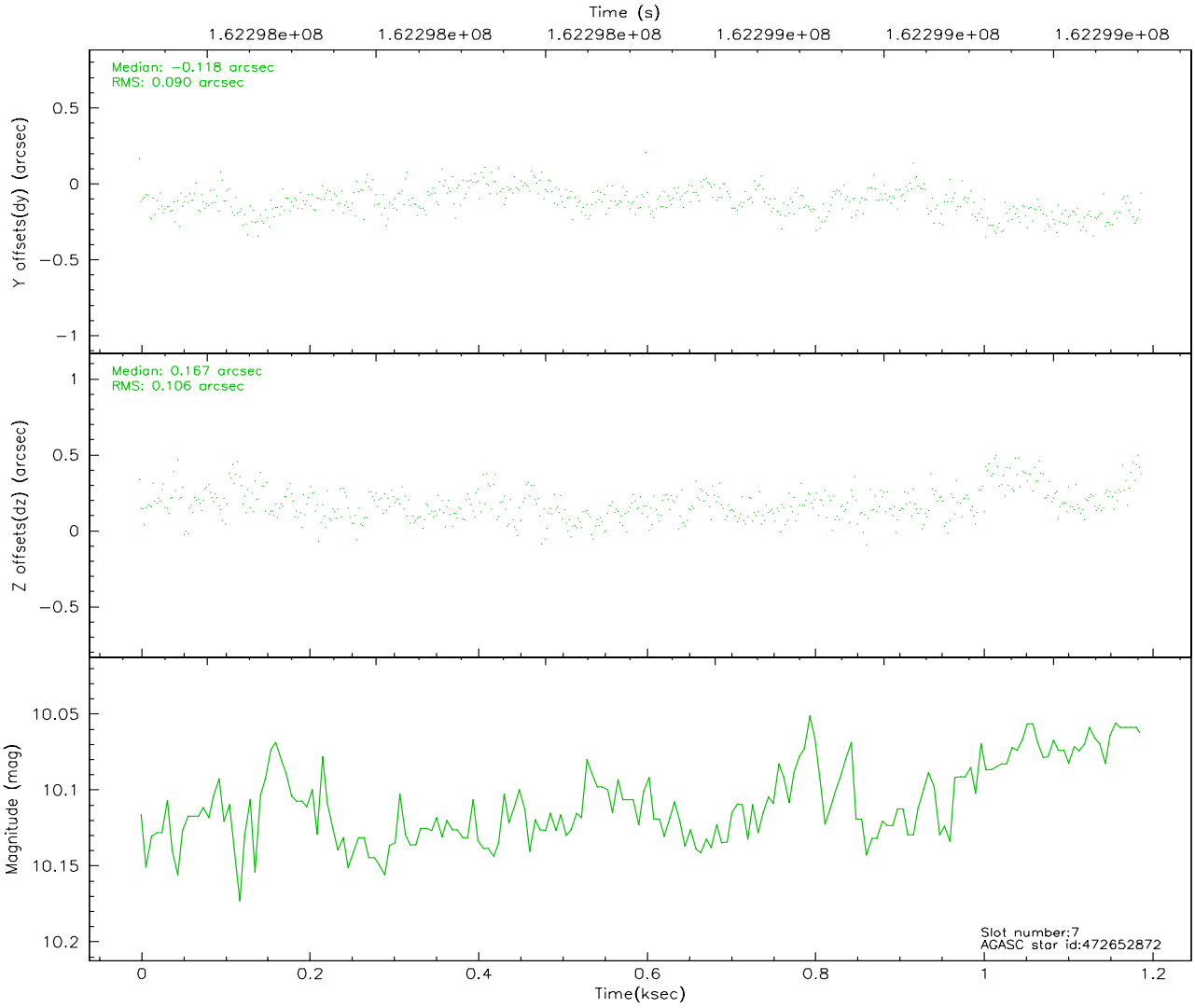

Points outside 0.4 arcsec radius: 0.172%
Radial offset of median: 0.064 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number:6
AGASC star id:472659832


Time (s)
1.62298e+08
1.62298e+08
1.62298e+08
1.62299e+08
1.62299e+08
1.62299e+08
Median: 0.046 arcsec
RMS: 0.075 arcsec
Y offsets(dy) (arcsec)
Median: 0.044 arcsec
RMS: 0.062 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number:6
AGASC star id:472659832
Time(ksec)

2.4.5 Slot 7

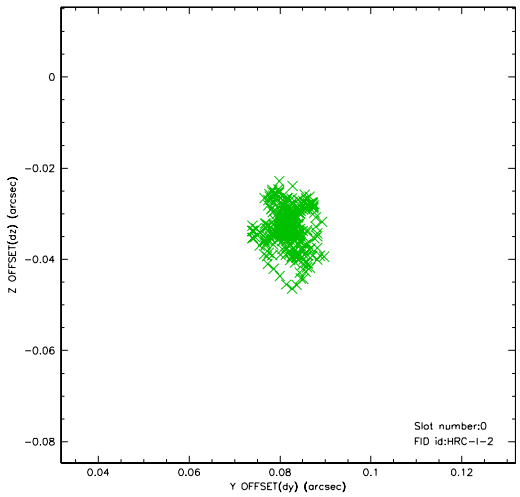

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number:7
AGASC star id:472652872

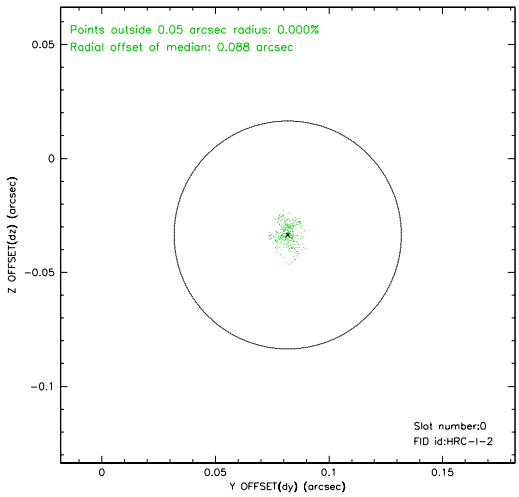

Points outside 0.4 arcsec radius: 0.000%
Radial offset of median: 0.205 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number:7
AGASC star id:472652872

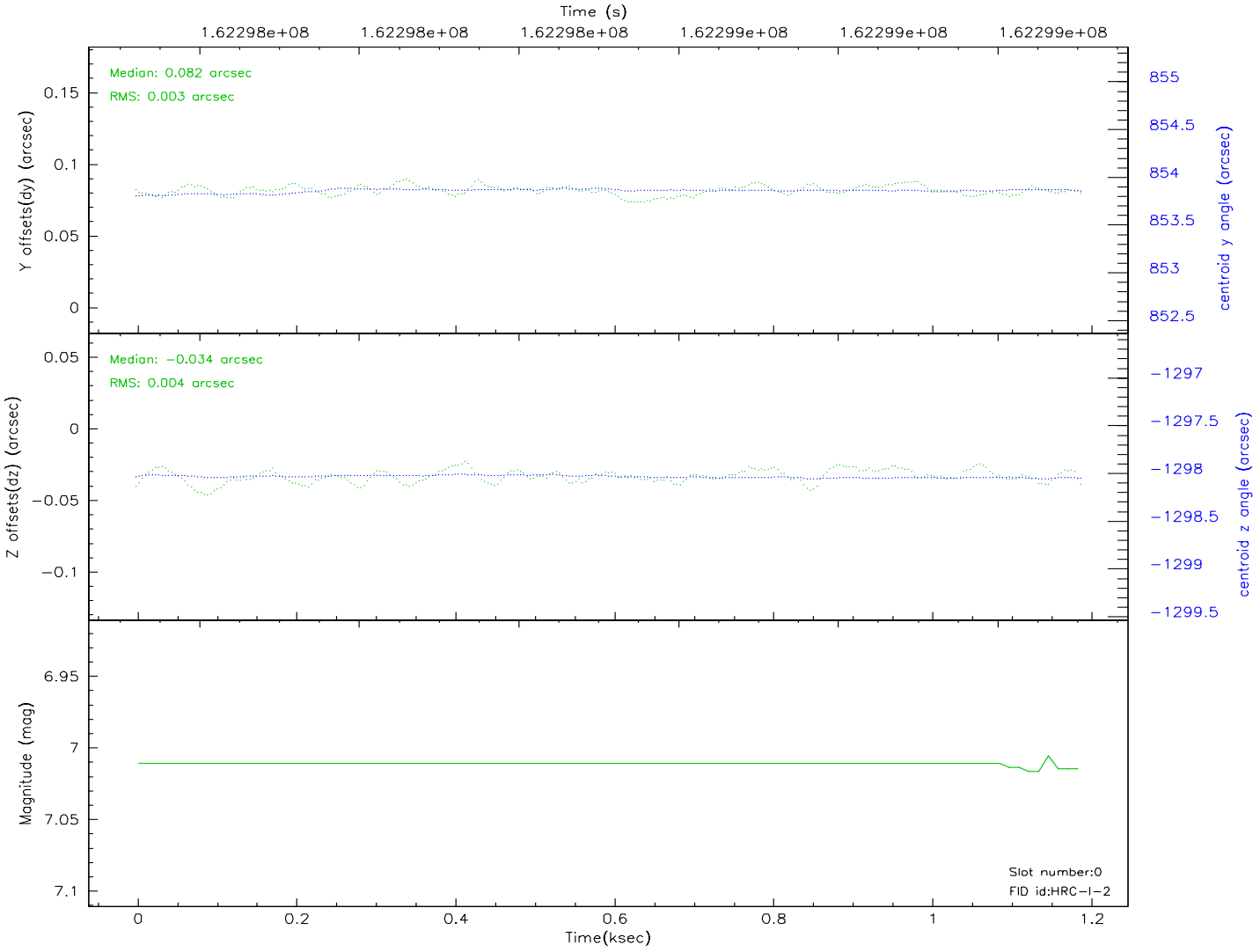

Time (s)
1.62298e+08
1.62298e+08
1.62298e+08
1.62299e+08
1.62299e+08
1.62299e+08
Median: −0.118 arcsec
RMS: 0.090 arcsec
Y offsets(dy) (arcsec)
Median: 0.167 arcsec
RMS: 0.106 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number:7
AGASC star id:472652872
Time(ksec)

2.5 FID Slots

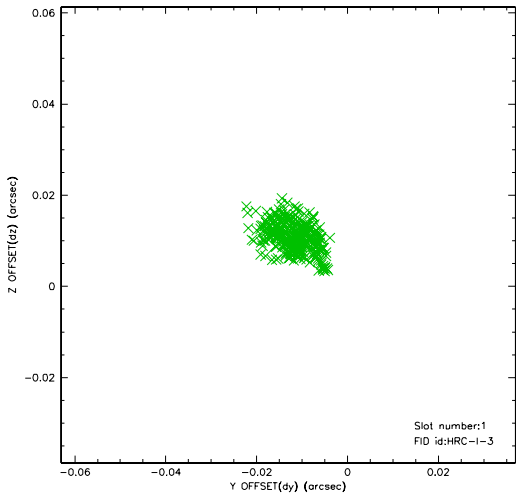
2.5.1 Slot 0

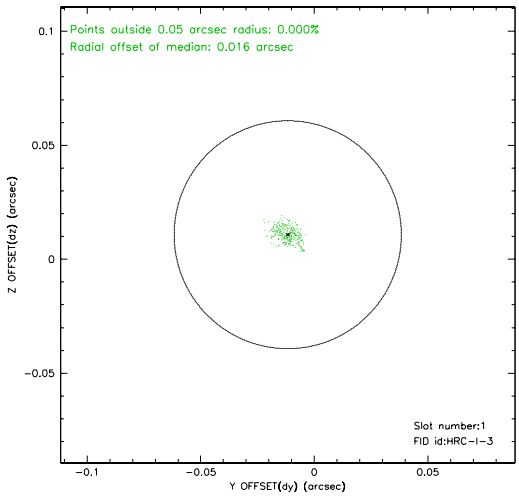


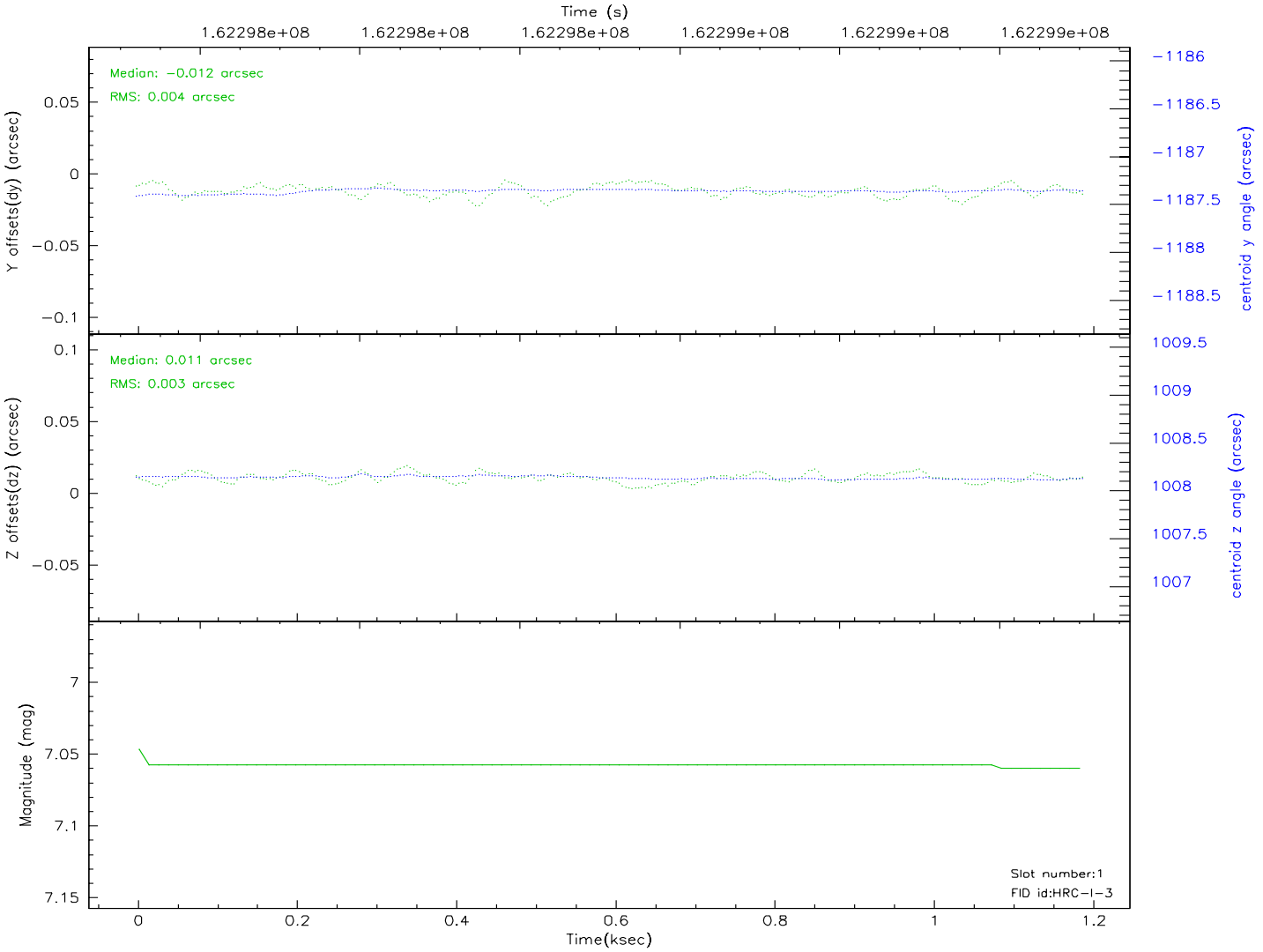




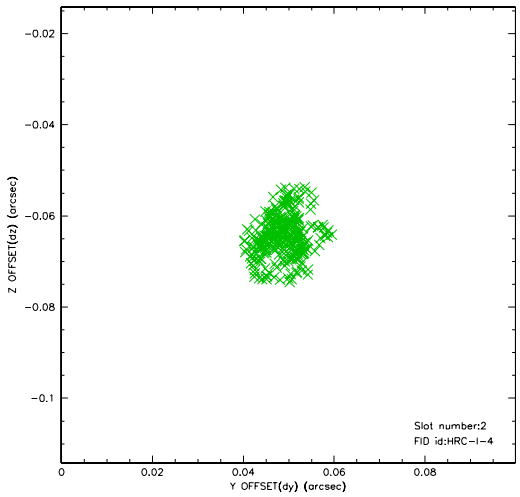
2.5.2 Slot 1

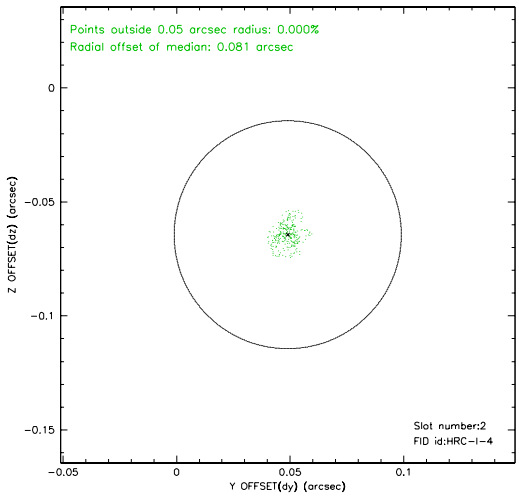

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number:1
FID id:HRC-I-3

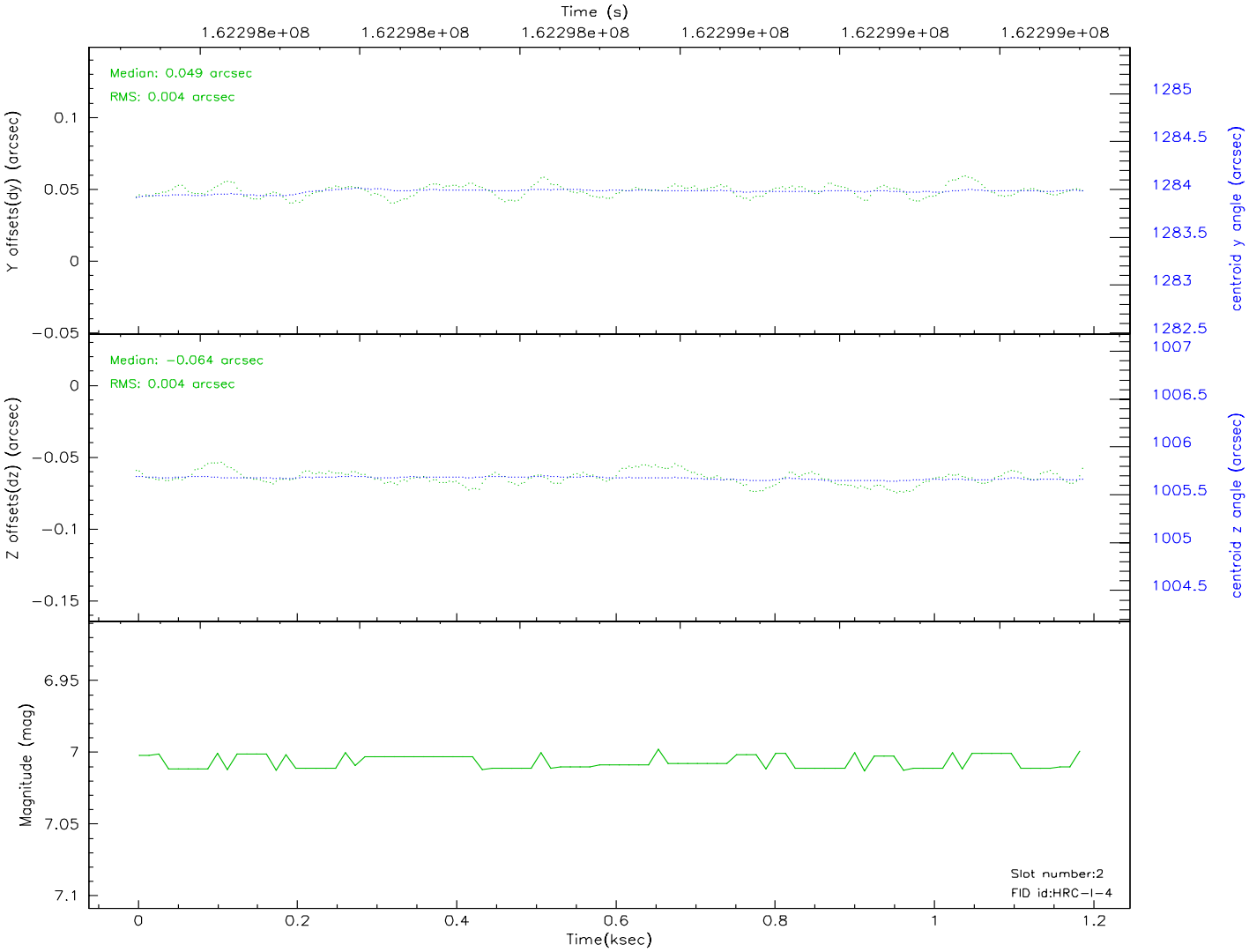

Points outside 0.05 arcsec radius: 0.000%
Radial offset of median: 0.016 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number:1
FID id:HRC-I-3


Time (s)
Median: −0.012 arcsec
RMS: 0.004 arcsec
Y offsets(dy) (arcsec)
Median: 0.011 arcsec
RMS: 0.003 arcsec
Z offsets(dz) (arcsec)
centroid y angle (arcsec)
centroid z angle (arcsec)
Magnitude (mag)
Slot number:1
FID id:HRC-I-3
Time(ksec)

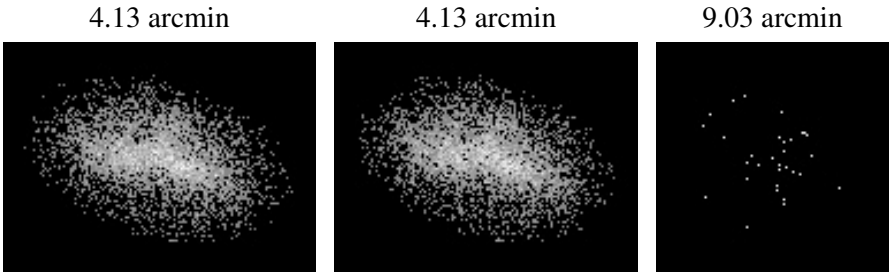
2.5.3 Slot 2


Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number:2
FID id:HRC-I-4


Points outside 0.05 arcsec radius: 0.000%
Radial offset of median: 0.081 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number:2
FID id:HRC-I-4


Time (s)
Median: 0.049 arcsec
RMS: 0.004 arcsec
Y offsets(dy) (arcsec)
centroid y angle (arcsec)
Median: −0.064 arcsec
RMS: 0.004 arcsec
Z offsets(dz) (arcsec)
centroid z angle (arcsec)
Magnitude (mag)
Slot number:2
FID id:HRC-I-4
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	1.19

A.2 Comments

```
Window constraint met.

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.
```