V&V Reference Report
L2 ASCDS Version : 7.6.10

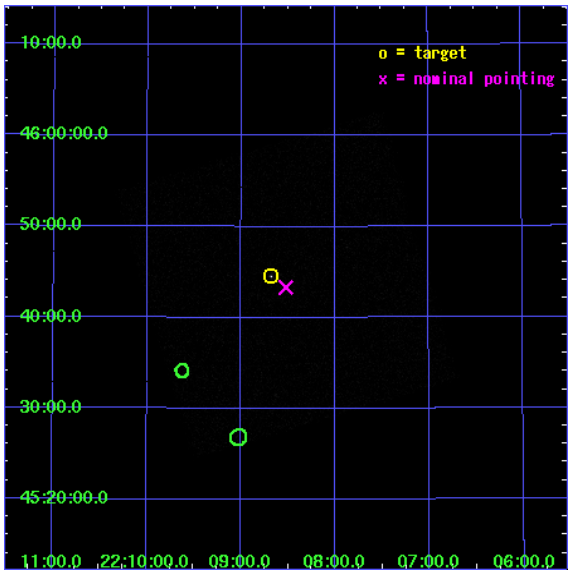
Observation 2351 - L2 Version 4
Chandra X-Ray Center

L2 Processing Date : Nov 21 2007

Contents

1 Front

seq_num	290098
obs_id	2351
title	HRC-I CALIBRATION OBSERVATIONS OF ARLAC
observer	Dr. CXC Calibration
object	ARLAC,HRC-I,AO2A
ra_targ	332.17
dec_targ	45.742306
ra_nom	332.13051340767
dec_nom	45.722100412198
roll_nom	298.69851262472
revision	4
ontime	1194.3812956661
livetime	1188.5089285857
l2events	34108

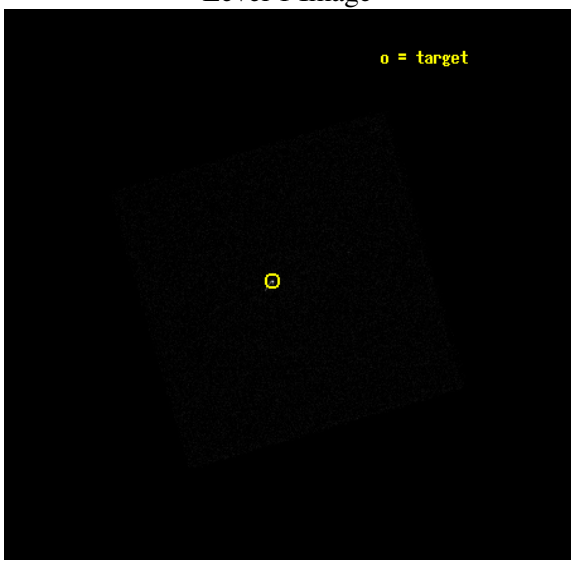


2 OBI

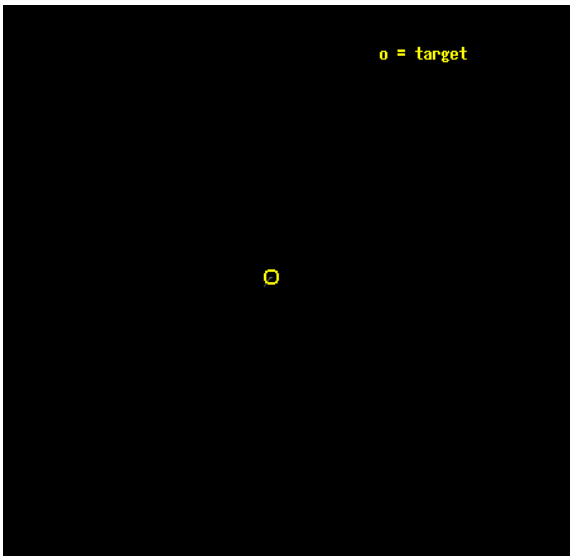
2.1 OBI

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	2007-11-21T04:46:47
revision	4

sched_exp_time	1000.000000
ontime	1194.3812956661
l1events	60693

2.1.3 Events

Level 1 Events

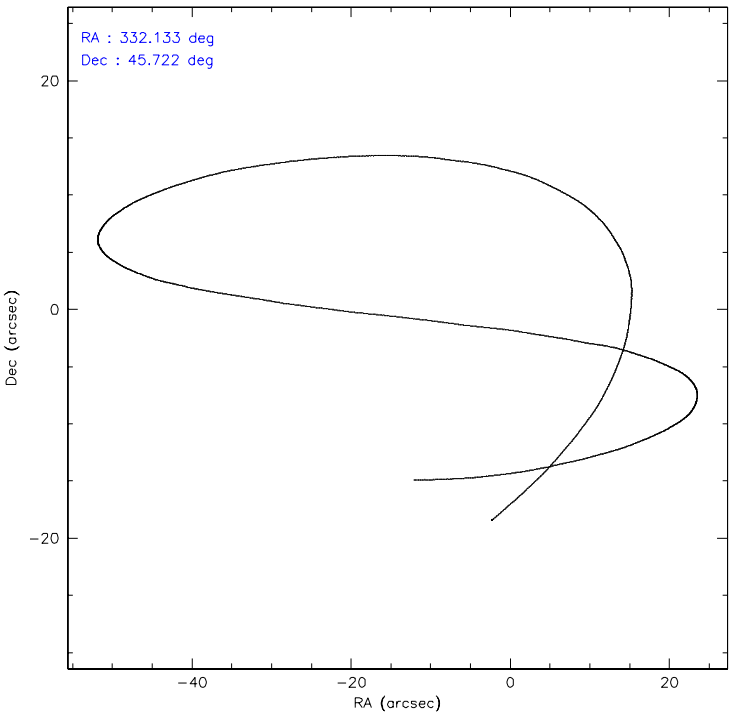
	segment 0
level 1 events	60693
rejected events	12918
rejected %	21%

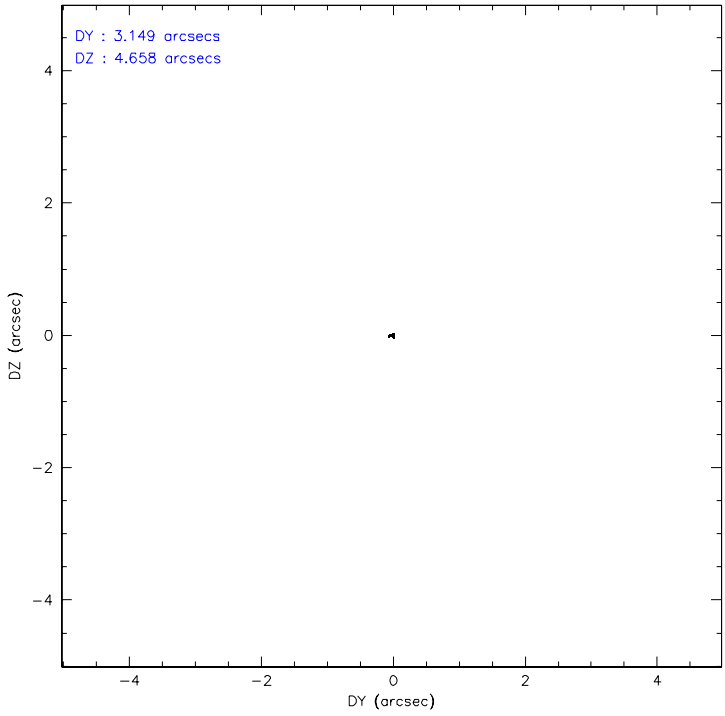
2.2 Compared Parameters

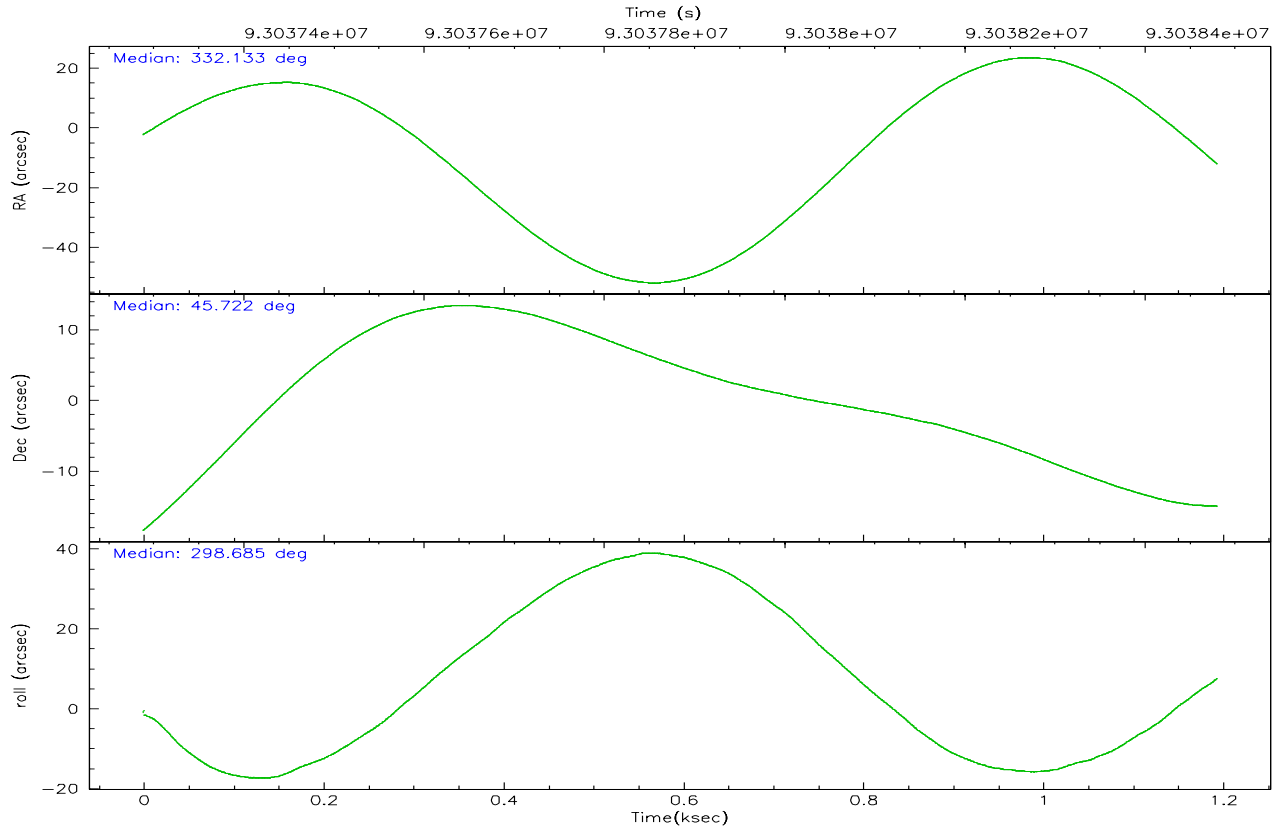
Parameter	Planned	Actual
Instrument	HRC	HRC
Detector	HRC-I	HRC-I
Grating	NONE	NONE
Data mode	OBSERVING	OBSERVING
Observation mode	POINTING	POINTING
Pointing RA	332.095130	332.1305134076748
Pointing Dec	45.735650	45.72210041219822
Pointing Roll	298.819319	298.6985126247183
SIM focus pos (mm)	-1.040293	-1.038866356238299
SIM defocus (mm)	0	0.00142626442057514 1
SIM translation stage pos (mm)	126.985494	126.9854943052878
SIM translation stage offset (mm)	0	-5.413686238853188e-06
Observation start time	93037481.184000	93037104.812858
Observation start date	2000-12-12T19:43:37	2000-12-12T19:38:24
Observation end time	93038481.184000	93038614.637915
Observation end date	2000-12-12T20:00:17	2000-12-12T20:03:34

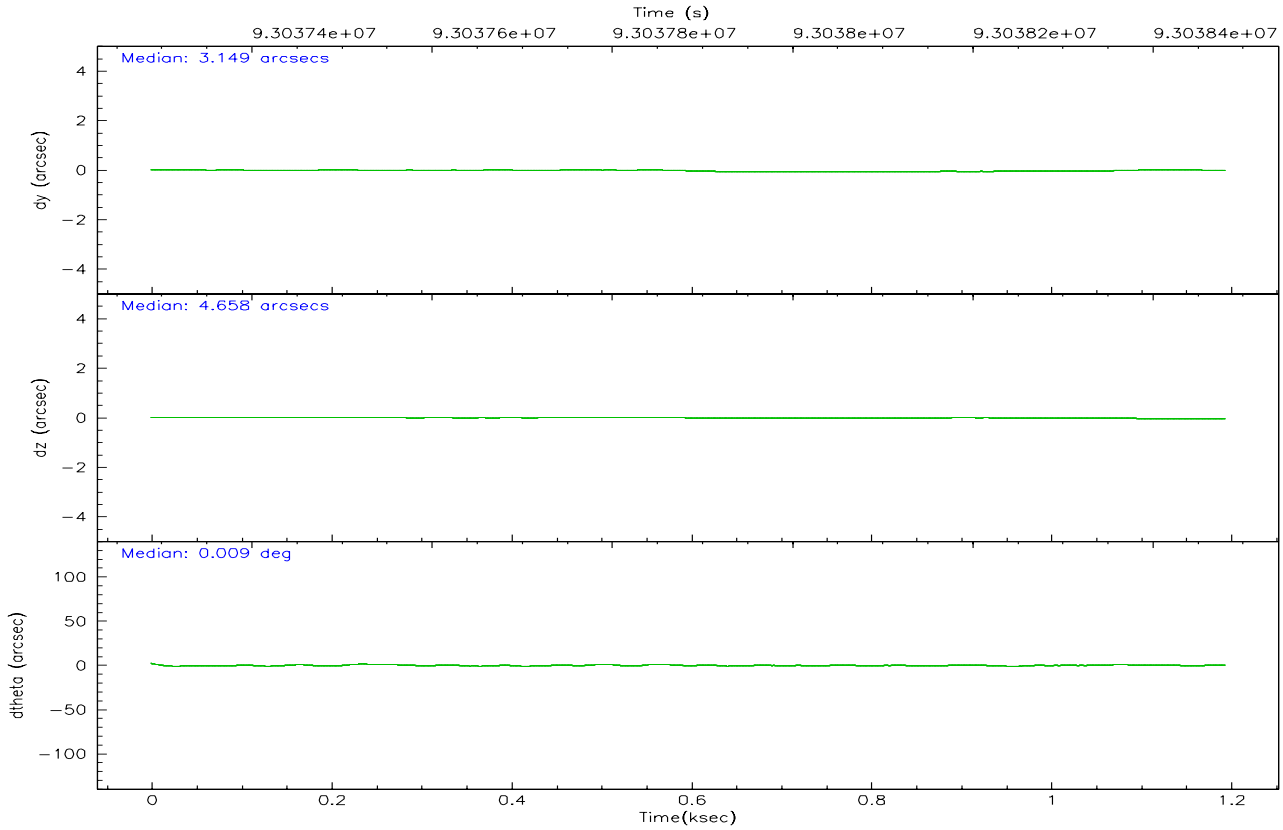
Parameter	Planned	Actual
Obspar format version number	6	6
Obspar file type	PREDICTED	ACTUAL
Obspar update status	NONE	UPDATED

2.3 Aspect


RA : 332.133 deg
Dec : 45.722 deg
20
0
−20
Dec (arcsec)
−40
−20
0
20
RA (arcsec)


DY : 3.149 arcsecs
DZ : 4.658 arcsecs
4
2
0
−2
−4
DZ (arcsec)
−4
−2
0
2
4
DY (arcsec)


Time (s)
9.30374e+07
9.30376e+07
9.30378e+07
9.3038e+07
9.30382e+07
9.30384e+07
Median: 332.133 deg
RA (arcsec)
Median: 45.722 deg
Dec (arcsec)
Median: 298.685 deg
roll (arcsec)
Time(ksec)

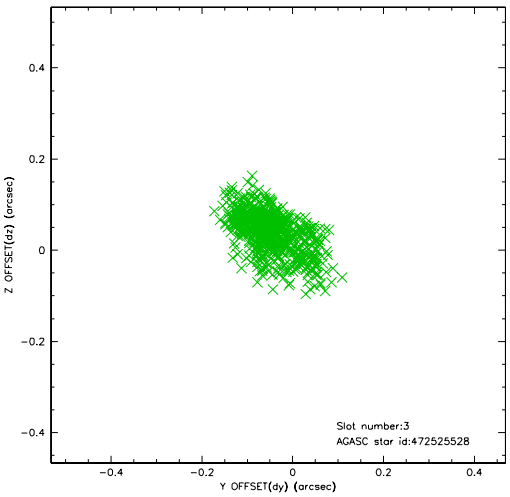

Time (s)
9.30374e+07
9.30376e+07
9.30378e+07
9.3038e+07
9.30382e+07
9.30384e+07
Median: 3.149 arcsecs
dy (arcsec)
Median: 4.658 arcsecs
dz (arcsec)
Median: 0.009 deg
dtheta (arcsec)
Time(ksec)

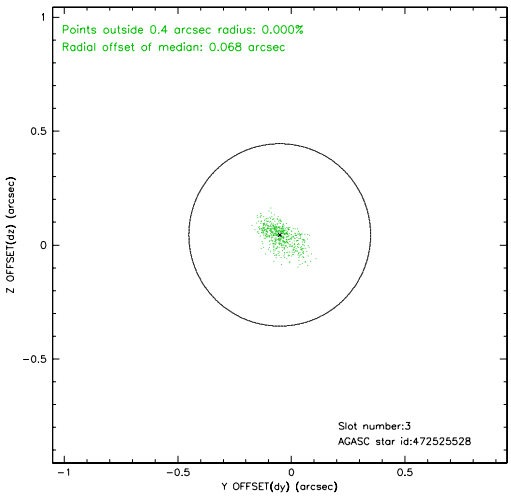
Slot Statistics

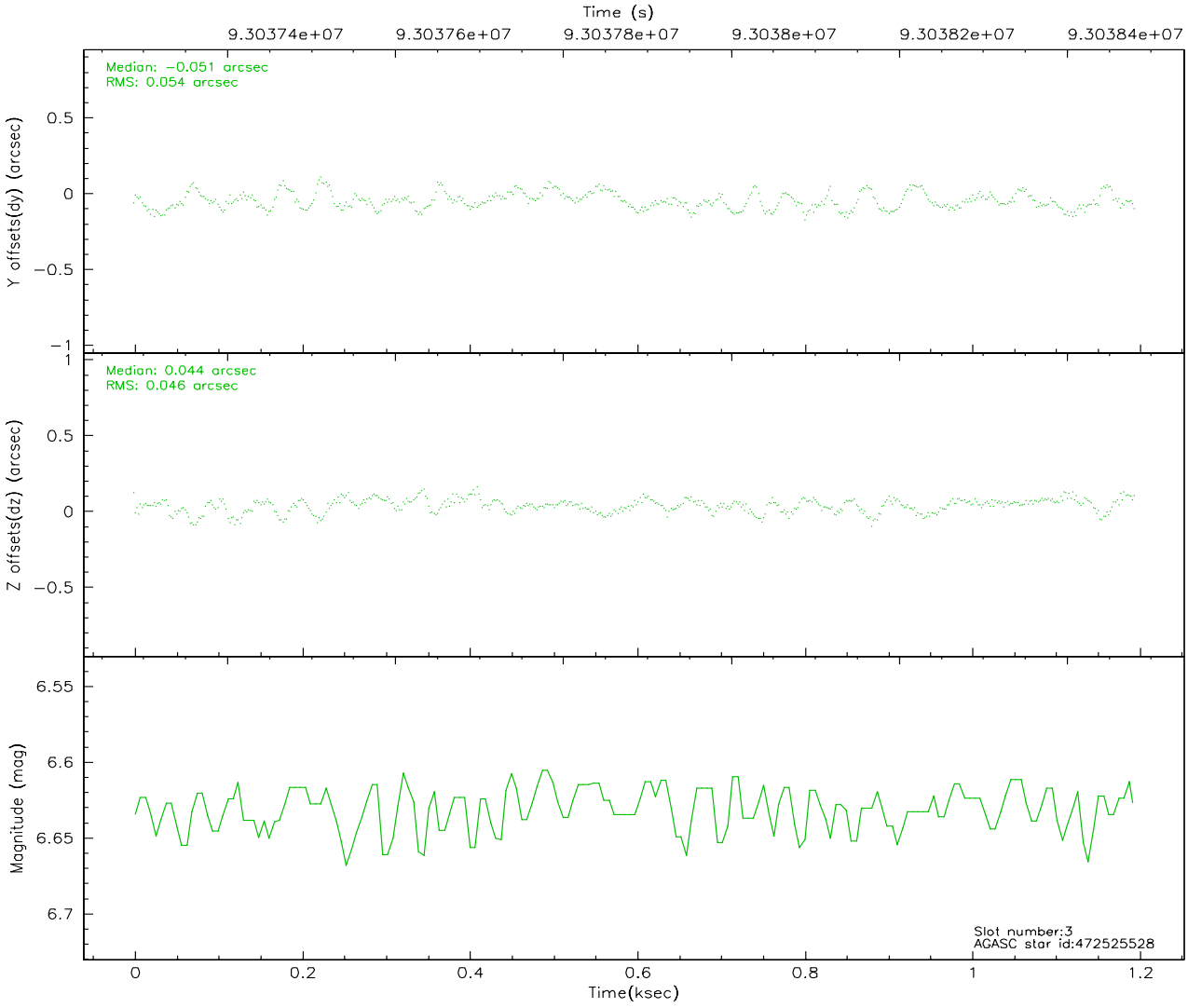
slot	status	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID	HRC-I-1	6.97	292	0.048	0.066	0.006	0.009	0.000000	0.000000	-758.57	-1292.41
1	FID	HRC-I-3	7.05	292	0.032	-0.098	0.006	0.010	0.000000	0.000000	-1189.66	1007.56
2	FID	HRC-I-4	6.99	292	0.033	-0.057	0.005	0.008	0.000000	0.000000	1280.15	1013.07
3	GUIDE	472525528	6.63	584	-0.051	0.044	0.076	0.127	331.551102	45.248694	865.97	-2055.75
4	GUIDE	472523760	8.23	584	-0.048	-0.083	0.054	0.084	331.645363	45.403260	497.78	-1579.91
5	GUIDE	472665256	9.02	584	-0.062	-0.090	0.076	0.116	332.808125	46.195041	-600.76	2349.73
6	GUIDE	472659832	9.47	580	0.072	0.098	0.099	0.154	332.780399	46.098139	-328.17	2130.44
7	GUIDE	472654568	9.44	583	0.083	0.038	0.115	0.178	332.194449	45.063576	2239.57	-945.94

2.4 Star Slots

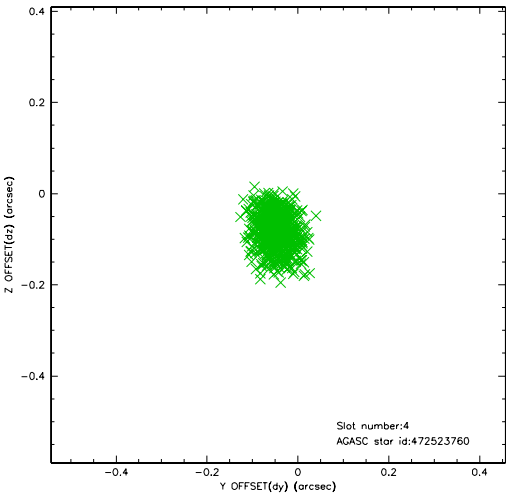
2.4.1 Slot 3

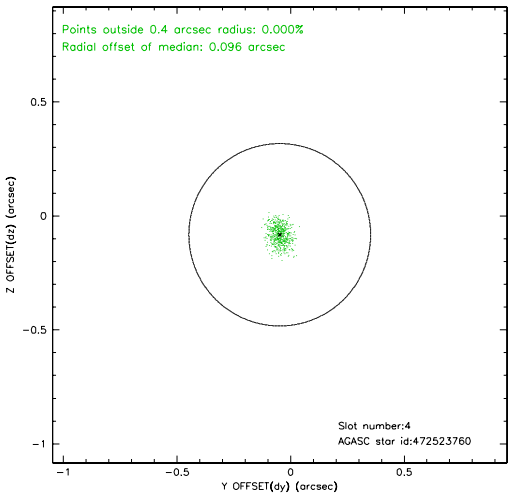


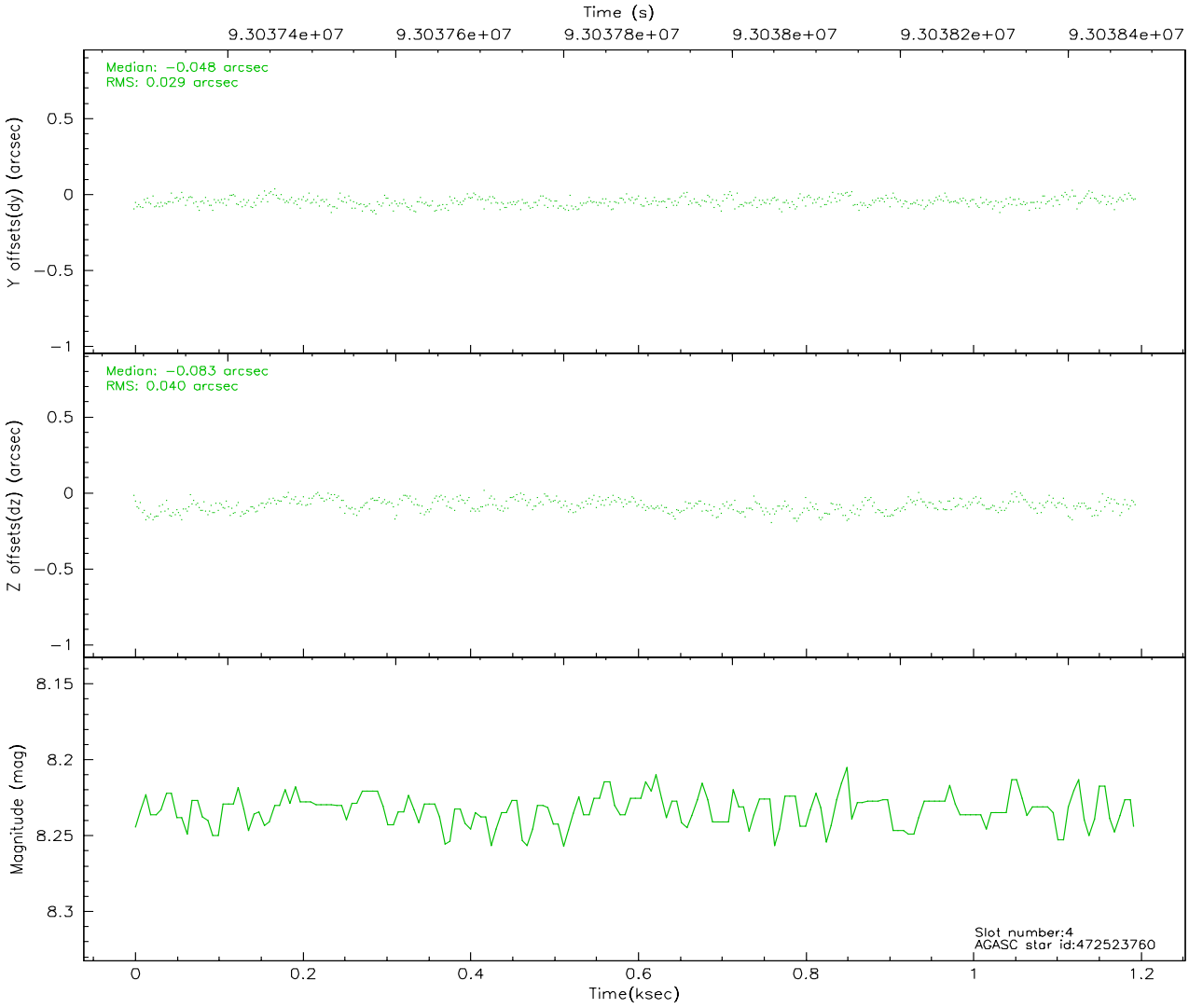




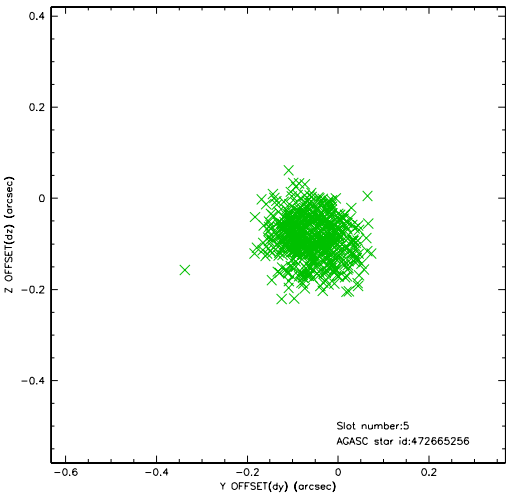
2.4.2 Slot 4

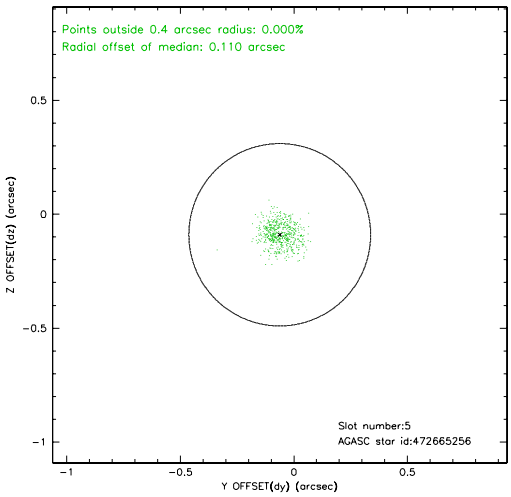

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number:4
AGASC star id:472523760

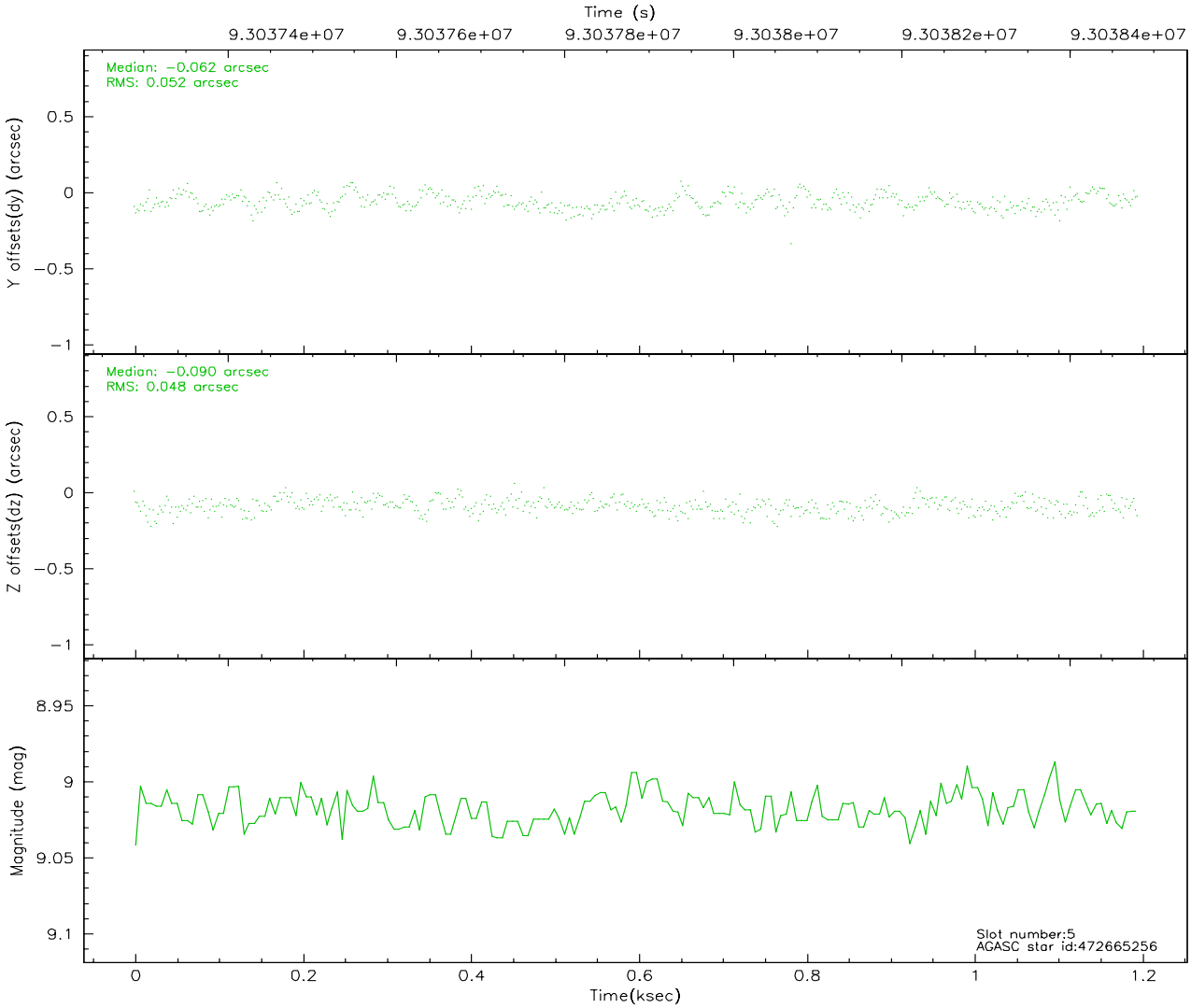

Points outside 0.4 arcsec radius: 0.000%
Radial offset of median: 0.096 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number:4
AGASC star id:472523760


Time (s)
9.30374e+07
9.30376e+07
9.30378e+07
9.3038e+07
9.30382e+07
9.30384e+07
Median: −0.048 arcsec
RMS: 0.029 arcsec
Y offsets(dy) (arcsec)
Median: −0.083 arcsec
RMS: 0.040 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number:4
AGASC star id:472523760
Time(ksec)

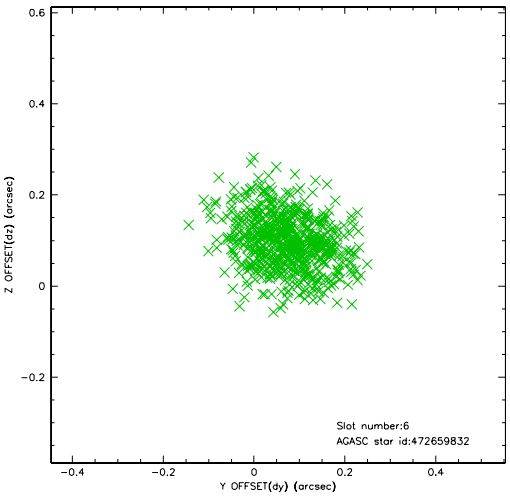
2.4.3 Slot 5

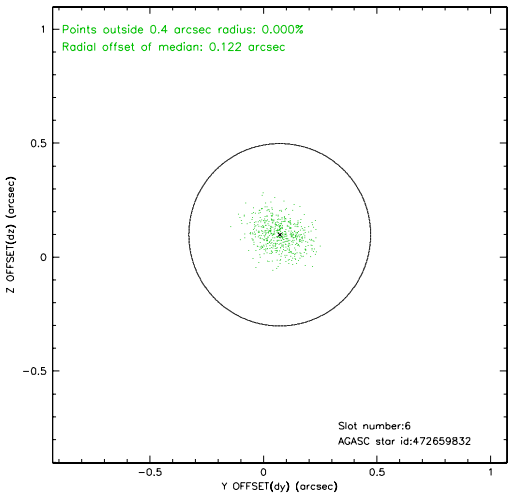

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number:5
AGASC star id:472665256

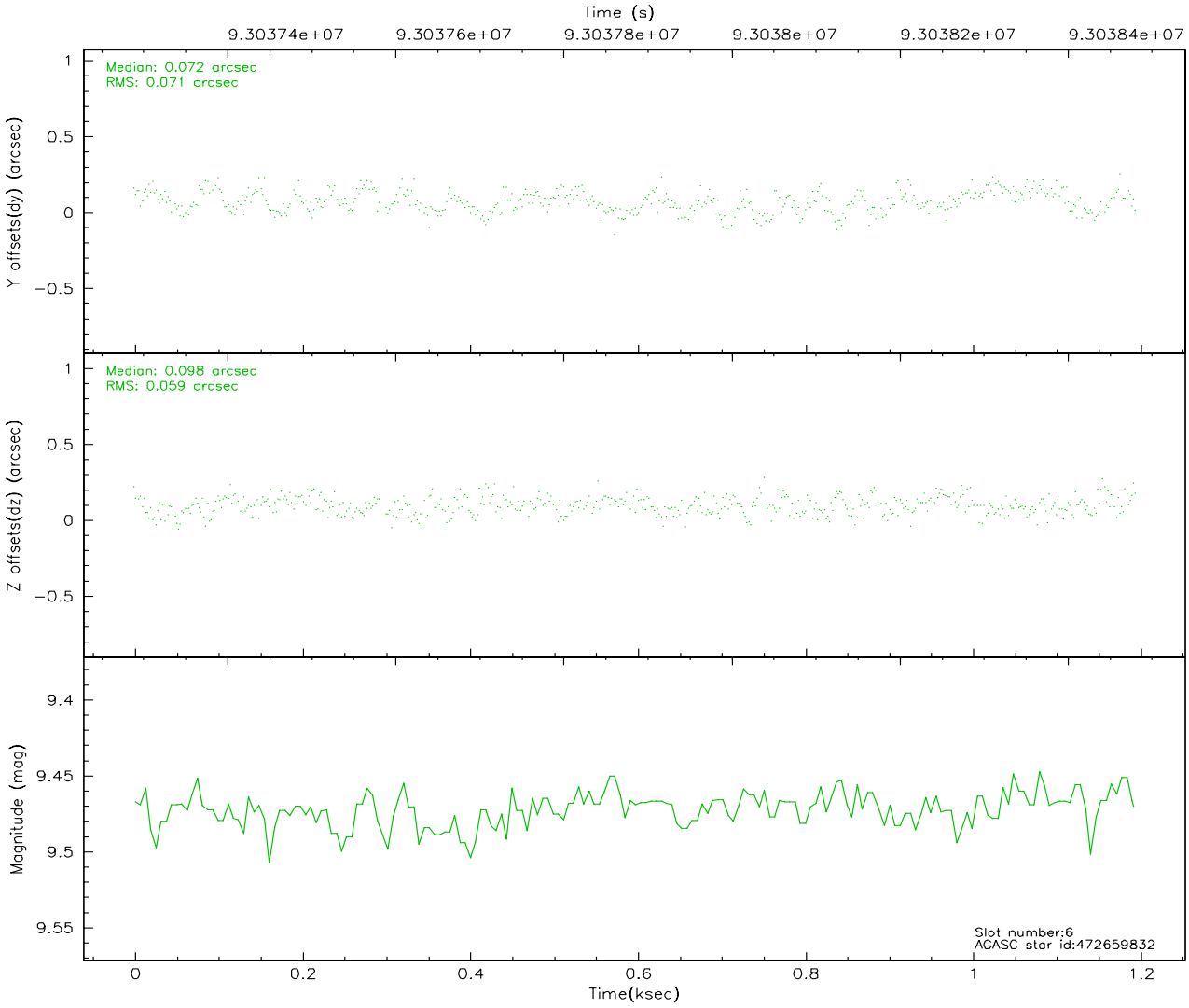

Points outside 0.4 arcsec radius: 0.000%
Radial offset of median: 0.110 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number:5
AGASC star id:472665256


Time (s)
9.30374e+07
9.30376e+07
9.30378e+07
9.3038e+07
9.30382e+07
9.30384e+07
Median: −0.062 arcsec
RMS: 0.052 arcsec
Y offsets(dy) (arcsec)
Median: −0.090 arcsec
RMS: 0.048 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number:5
AGASC star id:472665256
Time(ksec)

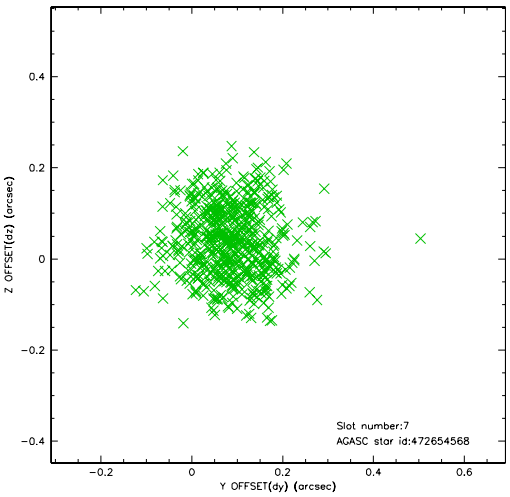
2.4.4 Slot 6

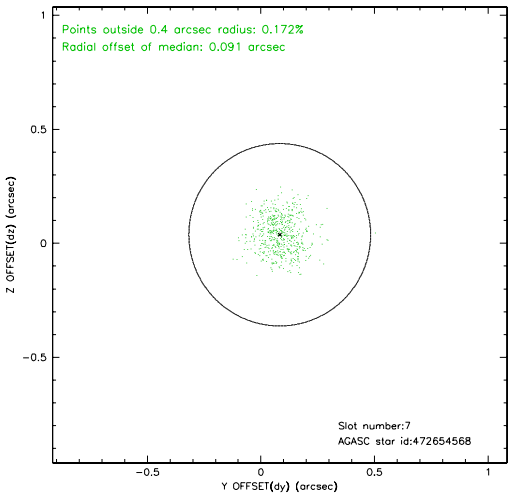

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number:6
AGASC star id:472659832

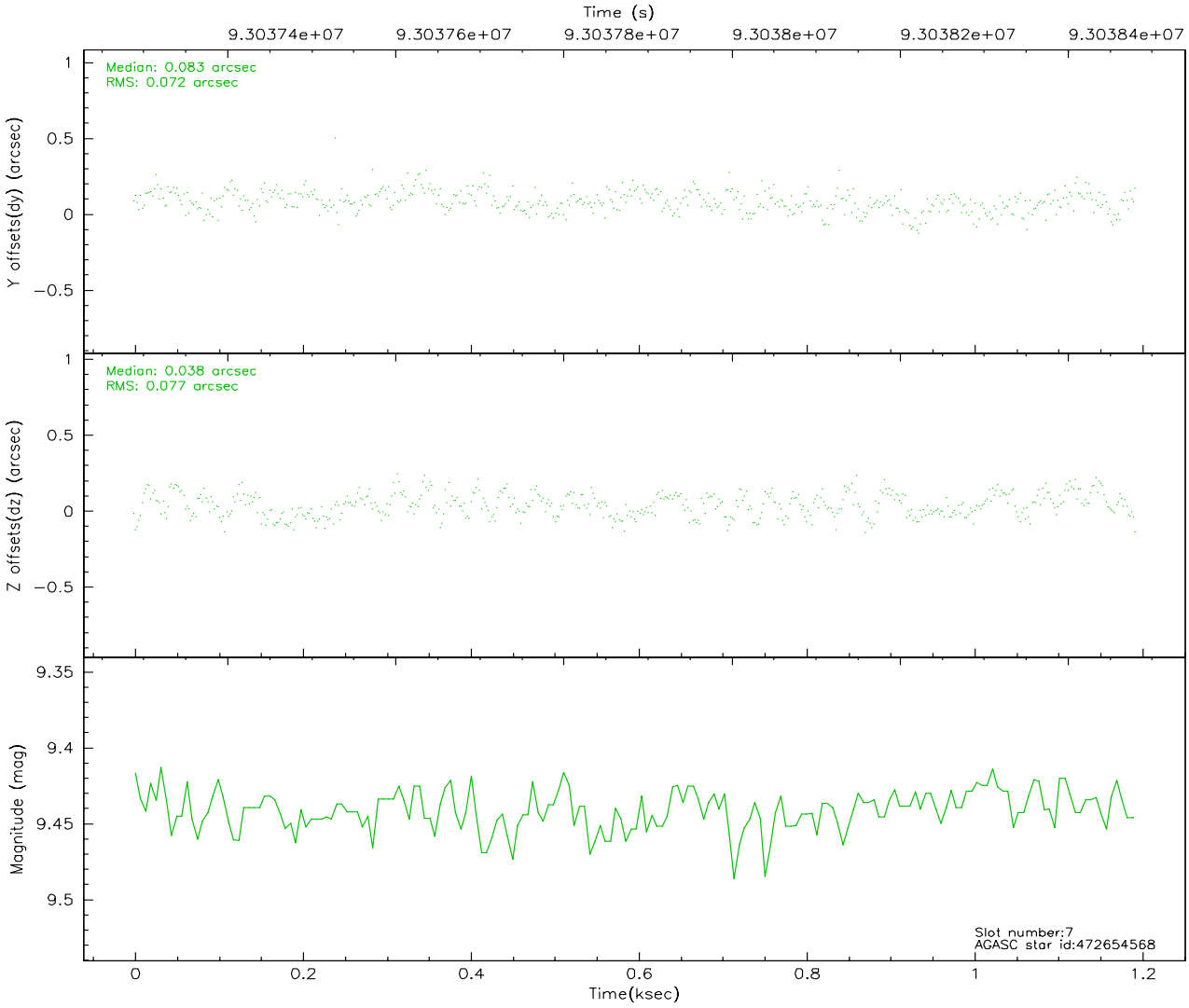

Points outside 0.4 arcsec radius: 0.000%
Radial offset of median: 0.122 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number:6
AGASC star id:472659832


Time (s)
9.30374e+07
9.30376e+07
9.30378e+07
9.3038e+07
9.30382e+07
9.30384e+07
Median: 0.072 arcsec
RMS: 0.071 arcsec
Y offsets(dy) (arcsec)
Median: 0.098 arcsec
RMS: 0.059 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number:6
AGASC star id:472659832
Time(ksec)

2.4.5 Slot 7

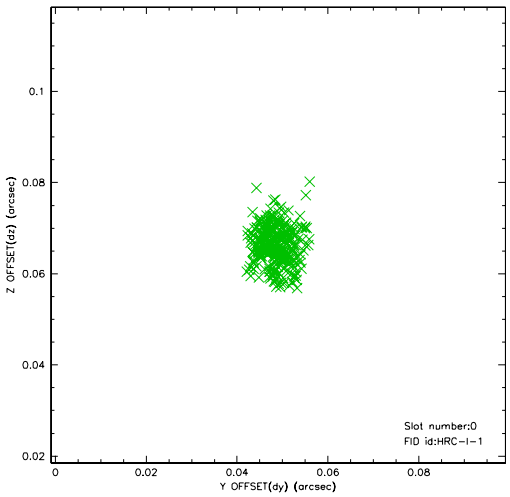

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number:7
AGASC star id:472654568

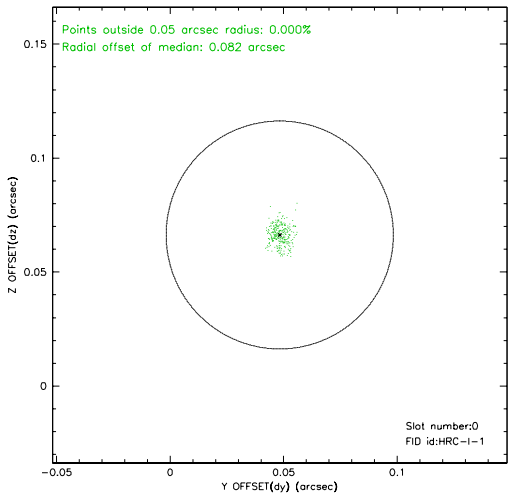

Points outside 0.4 arcsec radius: 0.172%
Radial offset of median: 0.091 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number:7
AGASC star id:472654568

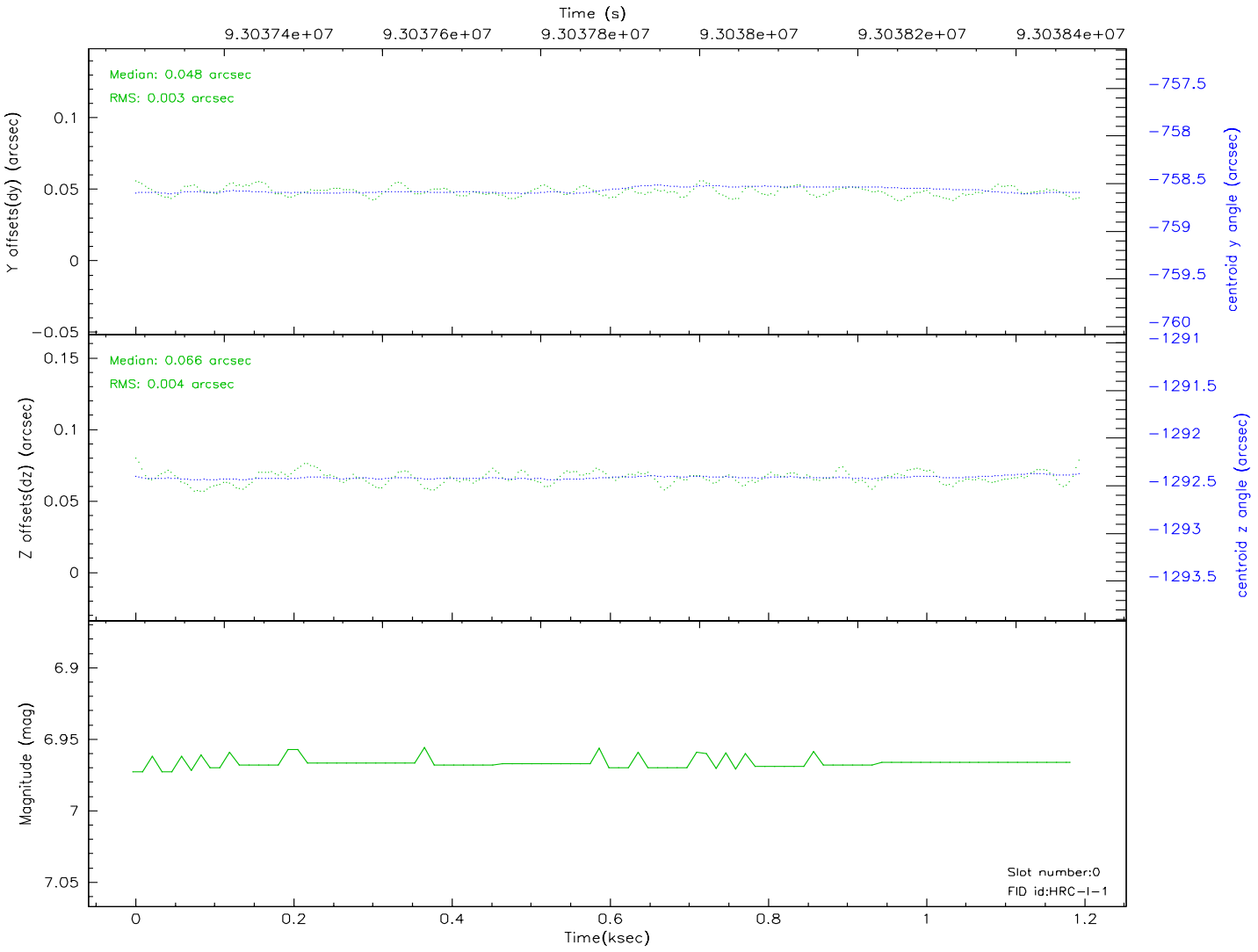

Time (s)
9.30374e+07
9.30376e+07
9.30378e+07
9.3038e+07
9.30382e+07
9.30384e+07
Median: 0.083 arcsec
RMS: 0.072 arcsec
Y offsets(dy) (arcsec)
Median: 0.038 arcsec
RMS: 0.077 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number:7
AGASC star id:472654568
Time(ksec)

2.5 FID Slots

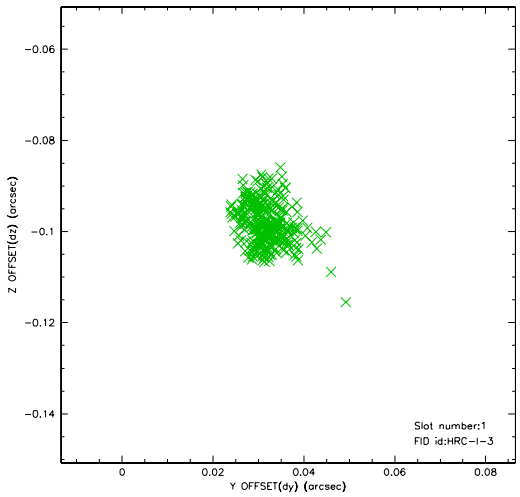
2.5.1 Slot 0

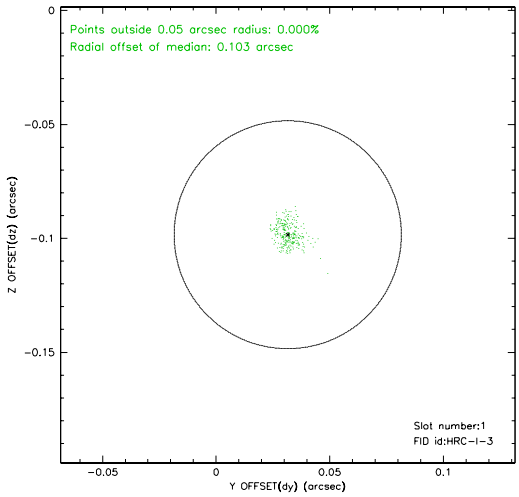


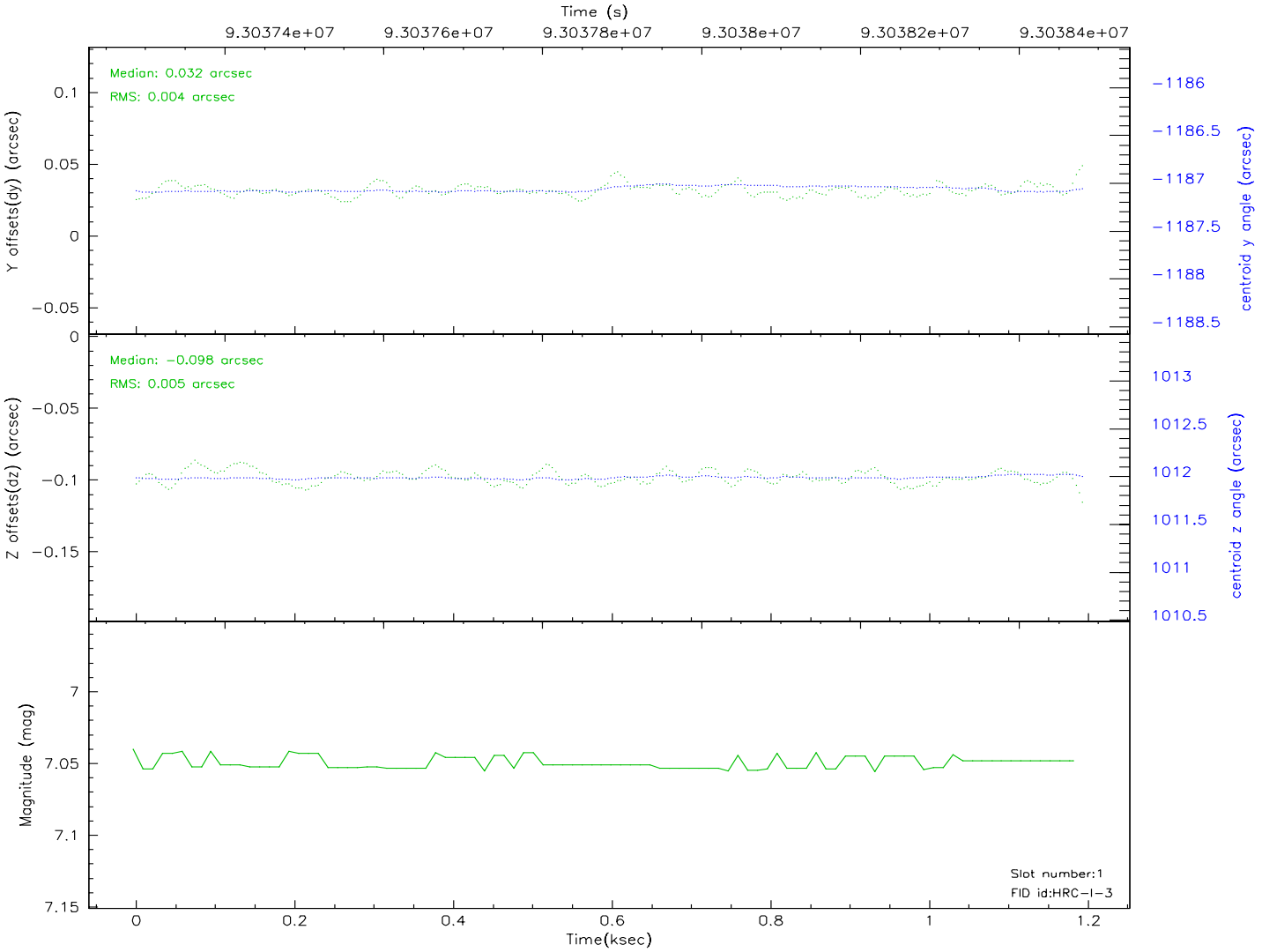




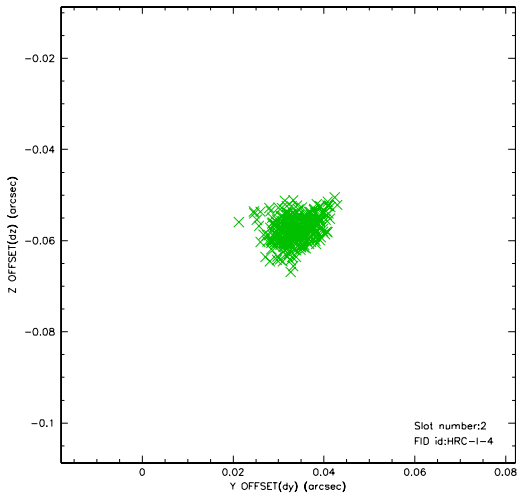
2.5.2 Slot 1

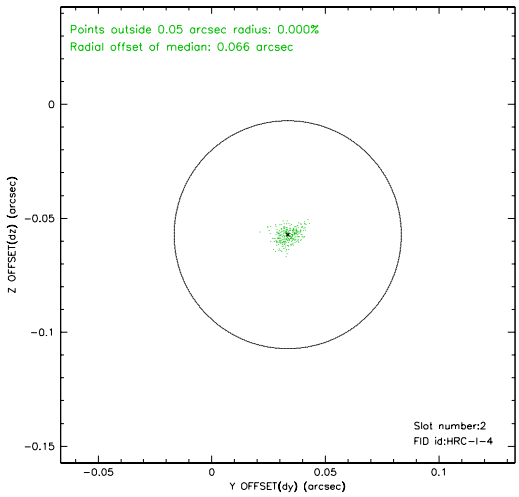

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number:1
FID id:HRC-I-3

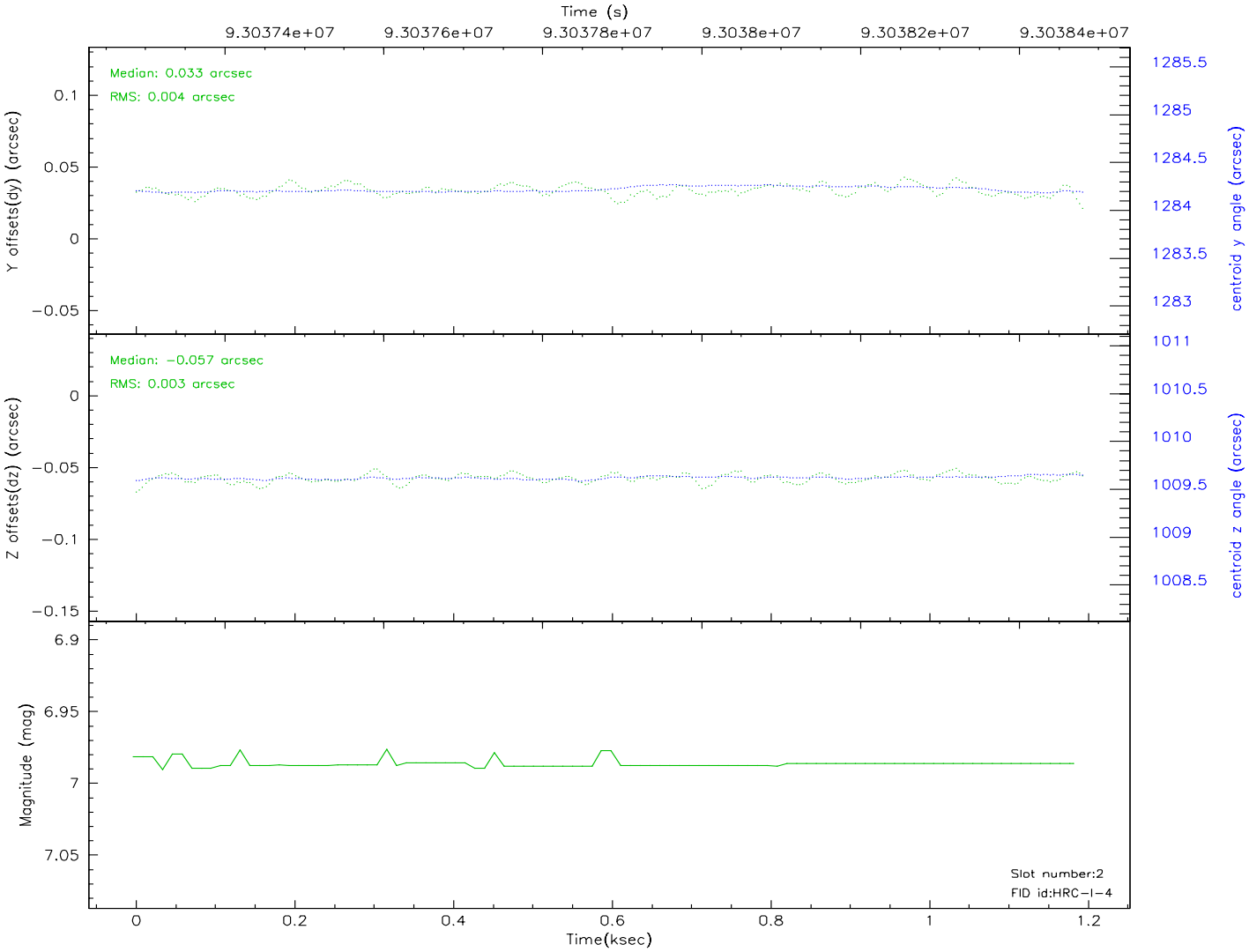

Points outside 0.05 arcsec radius: 0.000%
Radial offset of median: 0.103 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number:1
FID id:HRC-I-3


Time (s)
9.30374e+07
9.30376e+07
9.30378e+07
9.3038e+07
9.30382e+07
9.30384e+07
Median: 0.032 arcsec
RMS: 0.004 arcsec
Y offsets(dy) (arcsec)
centroid y angle (arcsec)
Median: −0.098 arcsec
RMS: 0.005 arcsec
Z offsets(dz) (arcsec)
centroid z angle (arcsec)
Magnitude (mag)
Slot number:1
FID id:HRC-I-3
Time(ksec)

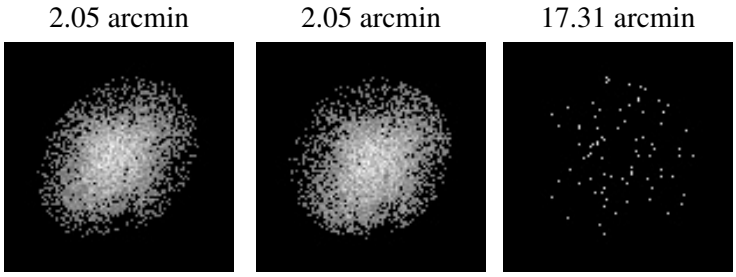
2.5.3 Slot 2


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


Time (s)
9.30374e+07
9.30376e+07
9.30378e+07
9.3038e+07
9.30382e+07
9.30384e+07
Median: 0.033 arcsec
RMS: 0.004 arcsec
Y offsets(dy) (arcsec)
centroid y angle (arcsec)
Median: −0.057 arcsec
RMS: 0.003 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	1.194

A.2 Comments

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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.
```