V&V Reference Report
L2 ASCDS Version : 7.6.7.1

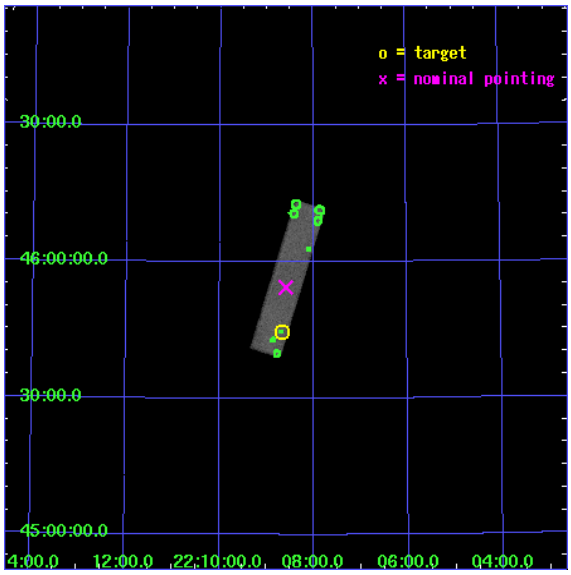
Observation 5120 - L2 Version 002
Chandra X-Ray Center

L2 Processing Date : Apr 11 2006

Contents

1 Front

seq_num	290393
obs_id	5120
title	AO5B Calibration Observations to Monitor the Spatial Variations in the HRC-S Gain
observer	Dr. CXC Calibration
object	ArLac
ra_targ	332.17
dec_targ	45.742306
ra_nom	332.14677494572
dec_nom	45.906780456808
roll_nom	287.0816464442
revision	2
ontime	1054.9812974334
livetime	1044.0059984637
l2events	59504

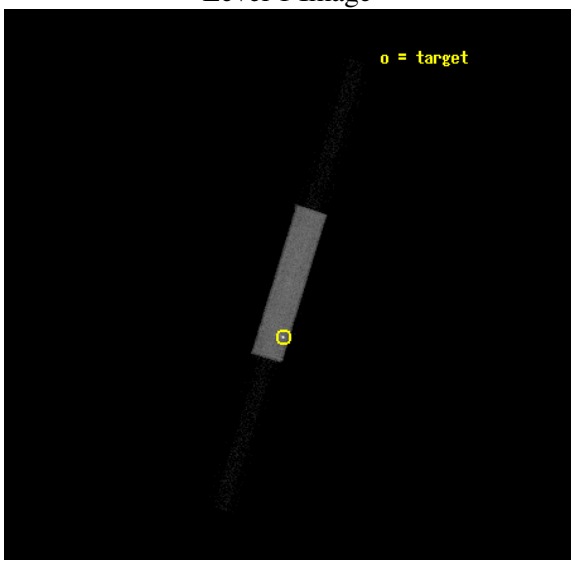


2 OBI

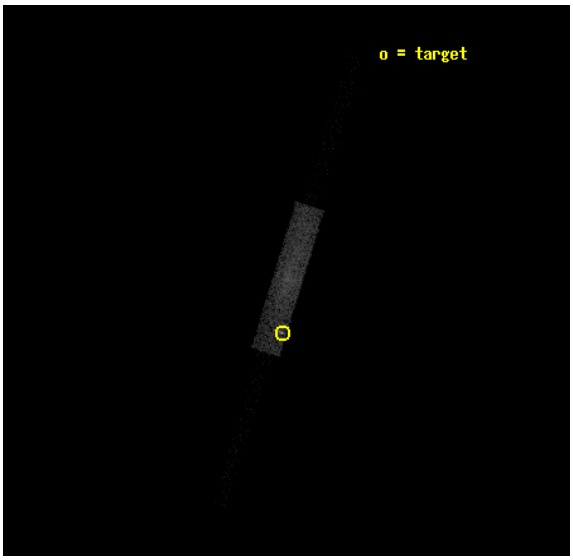
2.1 OBI

2.1.1 Images

Level 1 Image



Level 1 Bad Events



2.1.2 Parameters

obi_num	1
ascdsver	7.6.7.1
caldbver	3.2.1
date	2006-04-11T16:10:44
revision	2

sched_exp_time	900.000000
ontime	1084.7062987983
l1events	93545

2.1.3 Events

Level 1 Events

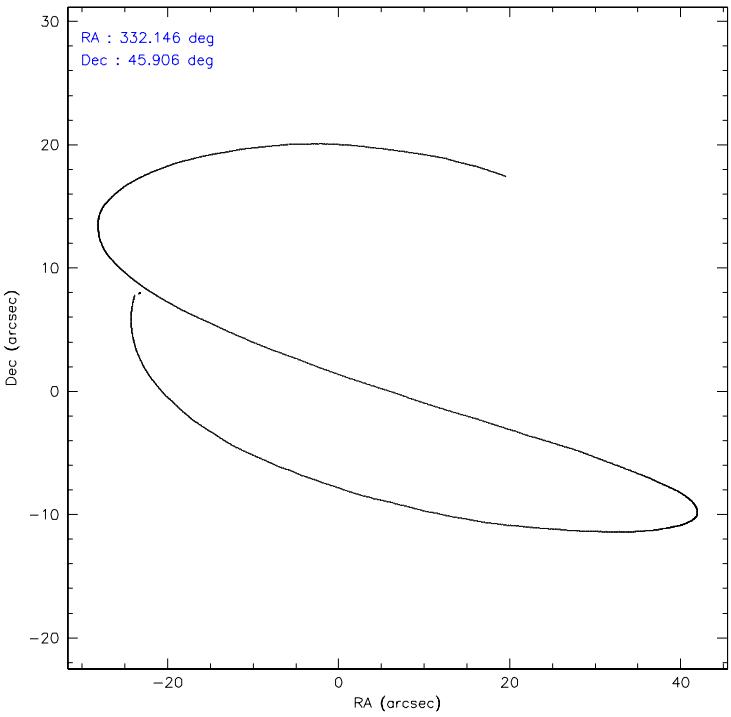
	segment 1	**segment 2**	**segment 3**
level 1 events	780	92008	757
rejected events	780	29060	757
rejected %	100%	31%	100%

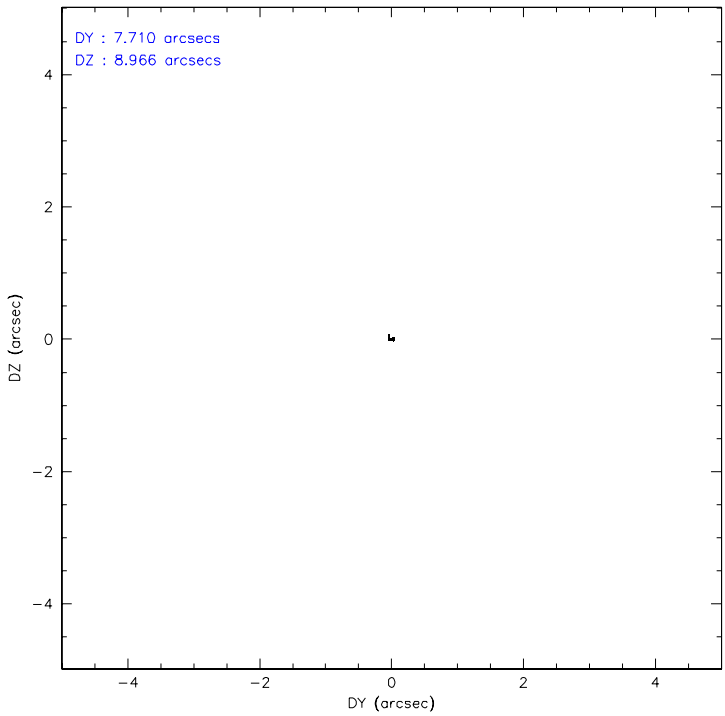
2.2 Compared Parameters

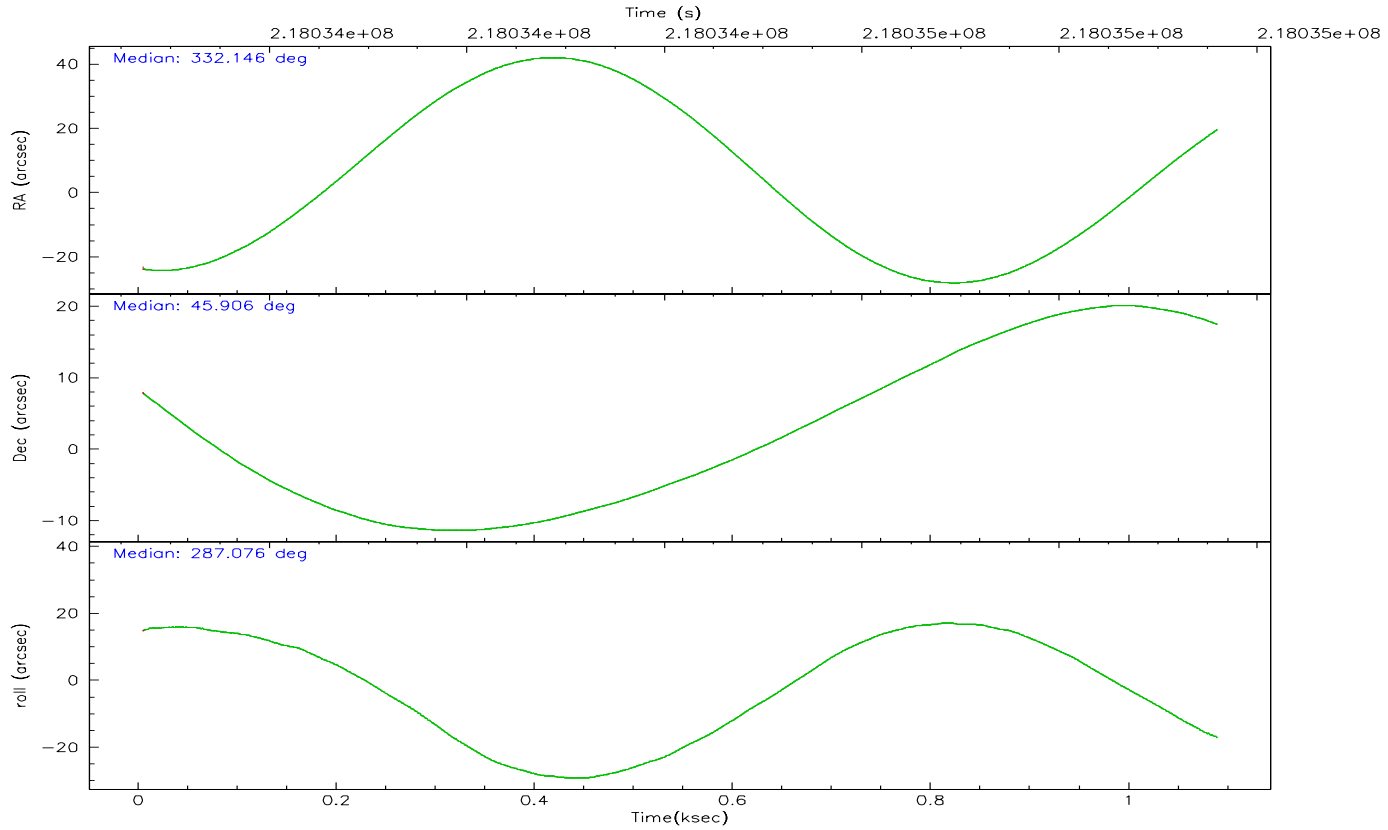
Parameter	Planned	Actual
Instrument	HRC	HRC
Detector	HRC-S	HRC-S
Grating	NONE	NONE
Data mode	OBSERVING	OBSERVING
Observation mode	POINTING	POINTING
Pointing RA	332.116126	332.1467749457198
Pointing Dec	45.925334	45.90678045680797
Pointing Roll	287.036342	287.0816464441977
SIM focus pos (mm)	-1.429586	-1.428180813131781
SIM defocus (mm)	0.1037507710433287	0.1051558262725154
SIM translation stage pos (mm)	250.455976	250.466033080201
SIM translation stage offset (mm)	0	-0.01005468664627074
Observation start time	218034063.184000	218033687.01937
Observation start date	2004-11-28T12:59:59	2004-11-28T12:54:47
Observation end time	218034963.184000	218035096.90693
Observation end date	2004-11-28T13:14:59	2004-11-28T13:18:16

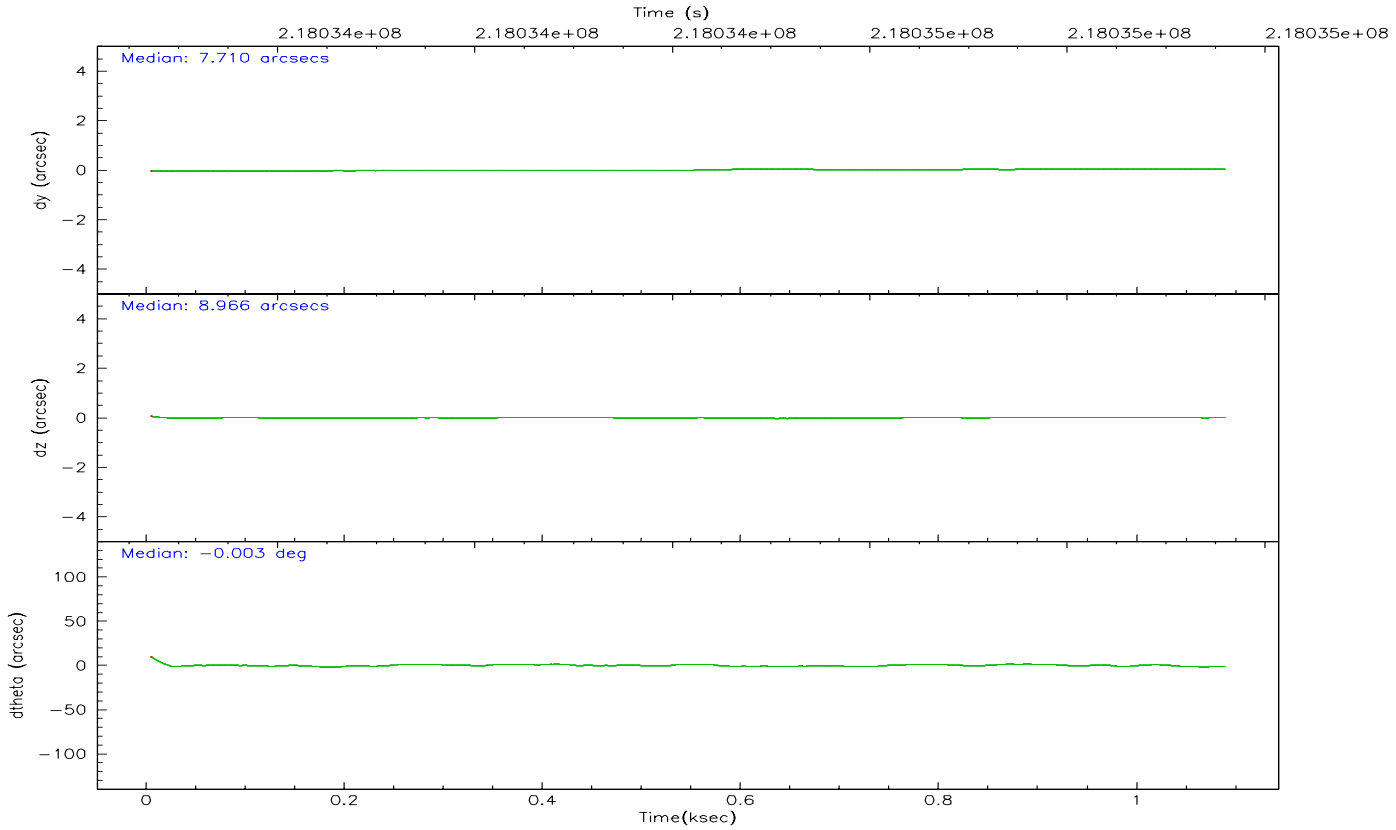
Parameter	Planned	Actual
Obspar format version number	6	6
Obspar file type	PREDICTED	ACTUAL
Obspar update status	NONE	UPDATED

2.3 Aspect


RA : 332.146 deg
Dec : 45.906 deg
Dec (arcsec)
RA (arcsec)
30
20
10
0
−10
−20
−20
0
20
40


DY : 7.710 arcsecs
DZ : 8.966 arcsecs
DZ (arcsec)
DY (arcsec)
4
2
0
−2
−4
−4
−2
0
2
4


Time (s)
2.18034e+08
2.18034e+08
2.18034e+08
2.18035e+08
2.18035e+08
2.18035e+08
Median: 332.146 deg
RA (arcsec)
Median: 45.906 deg
Dec (arcsec)
Median: 287.076 deg
roll (arcsec)
Time(ksec)

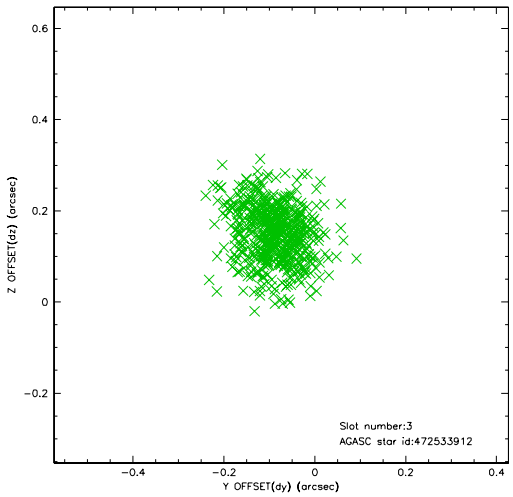

Time (s)
2.18034e+08
2.18034e+08
2.18034e+08
2.18035e+08
2.18035e+08
2.18035e+08
Median: 7.710 arcsecs
dy (arcsec)
Median: 8.966 arcsecs
dz (arcsec)
Median: −0.003 deg
dtheta (arcsec)
Time(ksec)

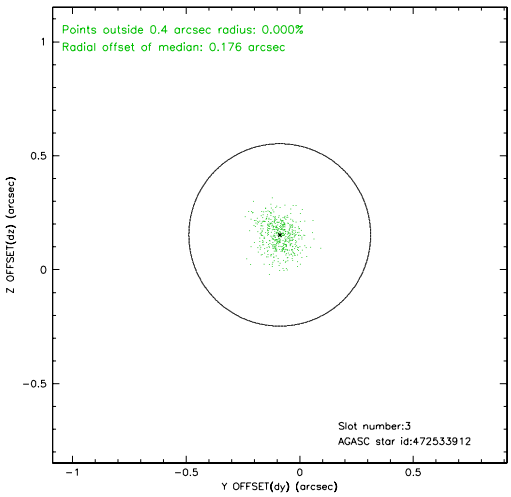
Slot Statistics

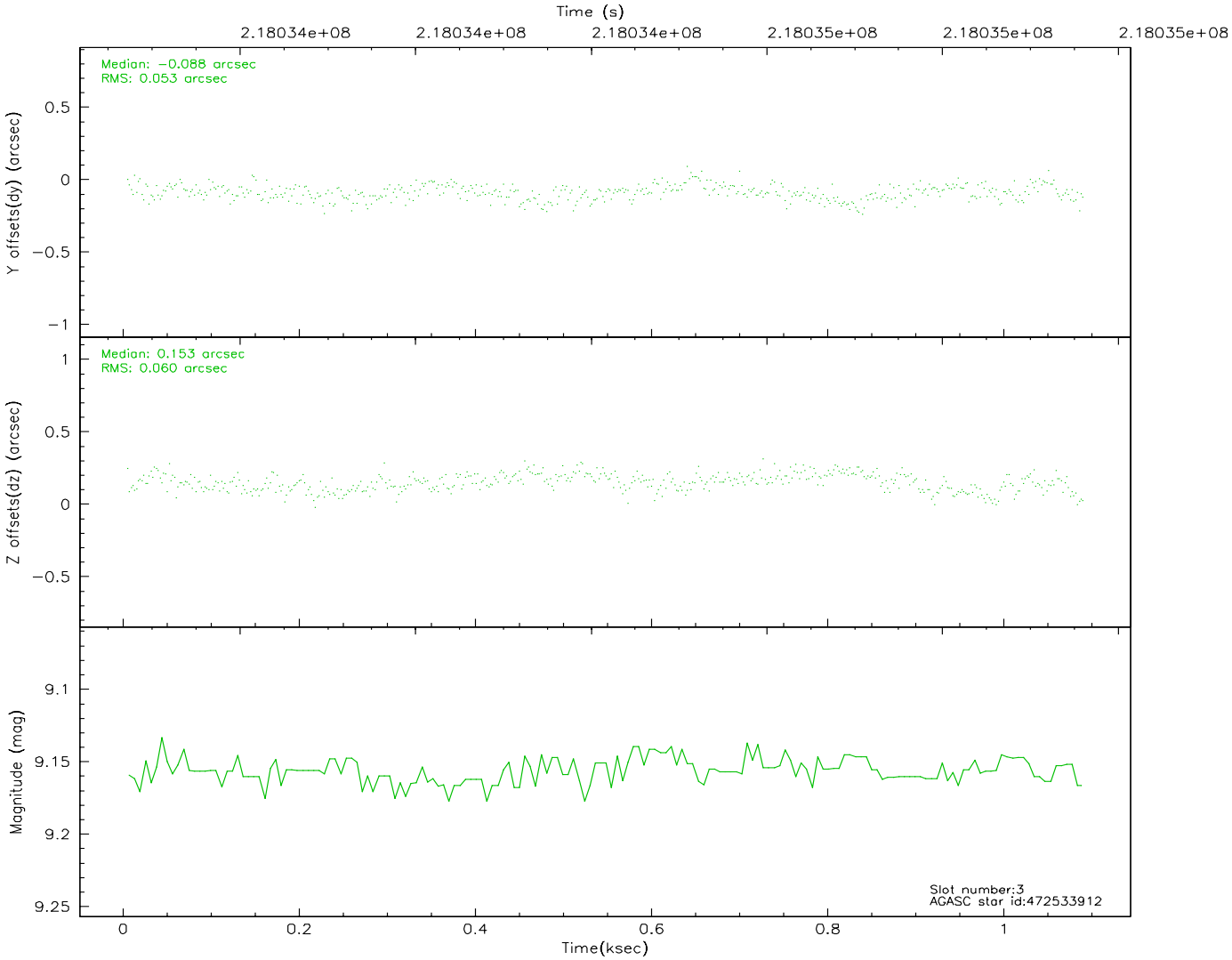
slot	status	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID	HRC-S-1	7.03	265	0.106	-0.172	0.007	0.012	0.000000	0.000000	-1161.91	-457.64
1	FID	HRC-S-3	7.04	265	0.057	-0.034	0.008	0.018	0.000000	0.000000	-1169.06	570.30
2	FID	HRC-S-4	7.00	265	0.224	-0.090	0.004	0.007	0.000000	0.000000	1232.06	576.69
3	GUIDE	472533912	9.16	530	-0.088	0.153	0.086	0.144	331.791136	46.368695	-1763.91	-301.47
4	GUIDE	472535400	8.78	530	-0.279	-0.158	0.077	0.130	331.047001	46.353888	-2273.52	-2081.26
5	GUIDE	472655152	9.43	530	0.012	0.055	0.113	0.197	332.504239	45.862991	493.38	863.78
6	GUIDE	472659832	9.47	530	-0.001	0.095	0.101	0.174	332.780399	46.098139	-114.55	1773.82
7	GUIDE	472527720	7.05	529	0.352	-0.158	0.105	0.173	331.460205	45.112509	2303.82	-2442.90

2.4 Star Slots

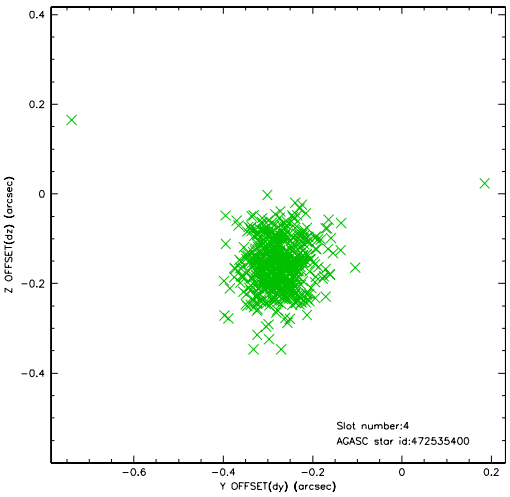
2.4.1 Slot 3

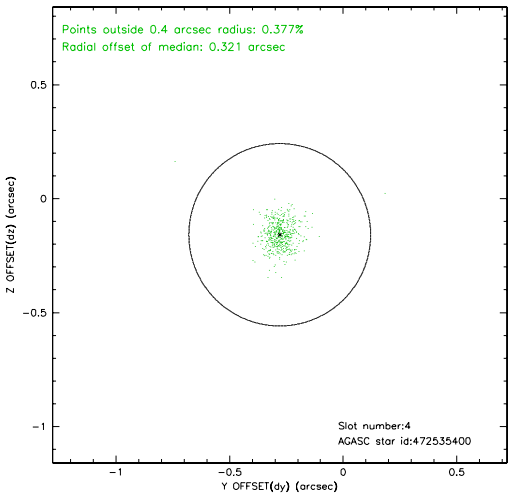


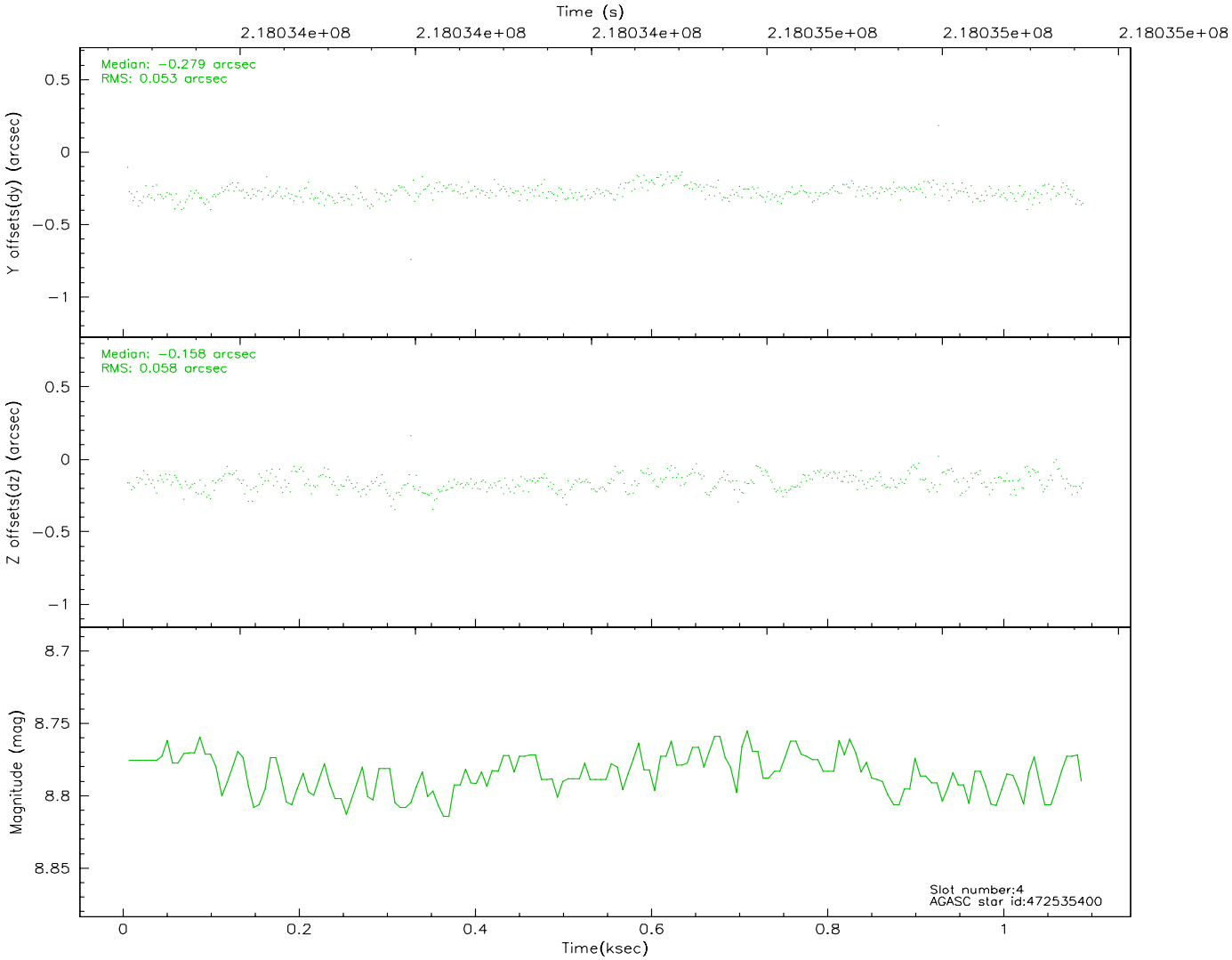




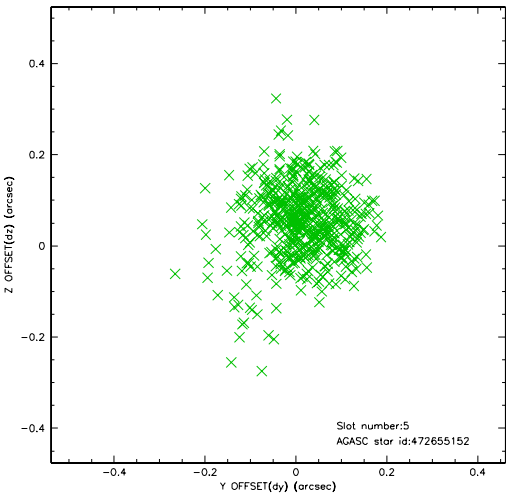
2.4.2 Slot 4

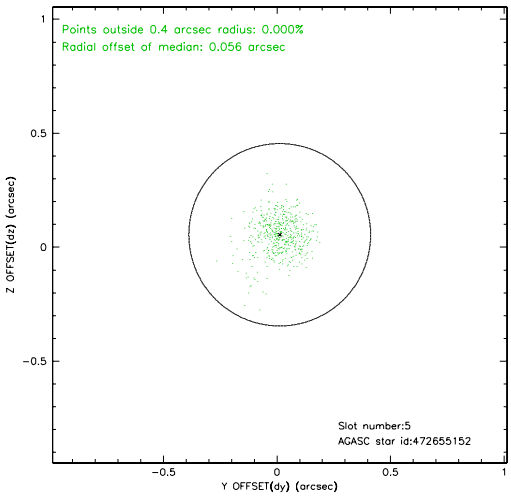

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number:4
AGASC star id:472535400

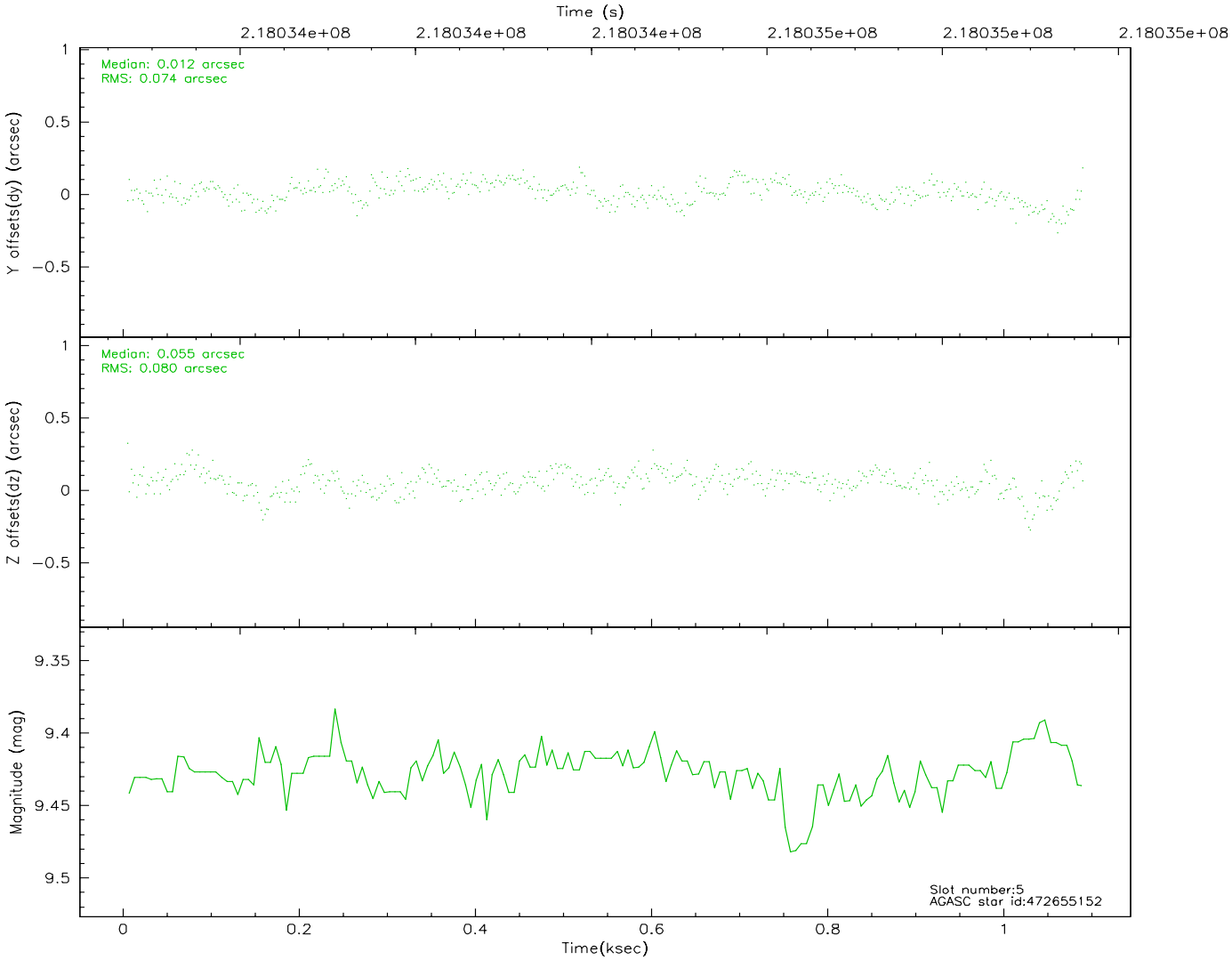

Points outside 0.4 arcsec radius: 0.377%
Radial offset of median: 0.321 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number:4
AGASC star id:472535400


Time (s)
Median: −0.279 arcsec
RMS: 0.053 arcsec
Y offsets(dy) (arcsec)
Median: −0.158 arcsec
RMS: 0.058 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number:4
AGASC star id:472535400
Time(ksec)

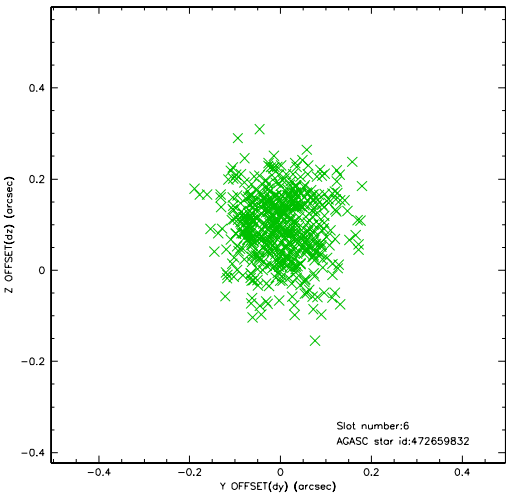
2.4.3 Slot 5

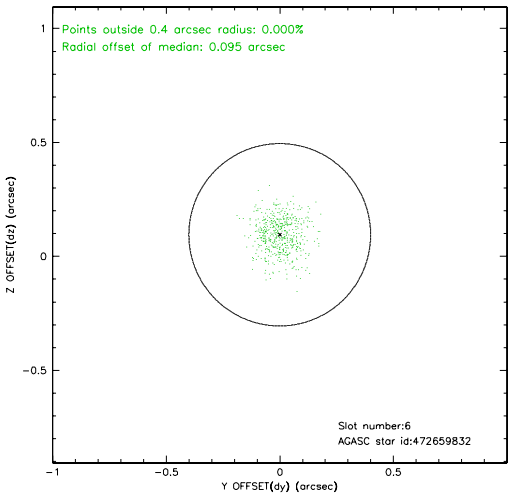

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number:5
AGASC star id:472655152

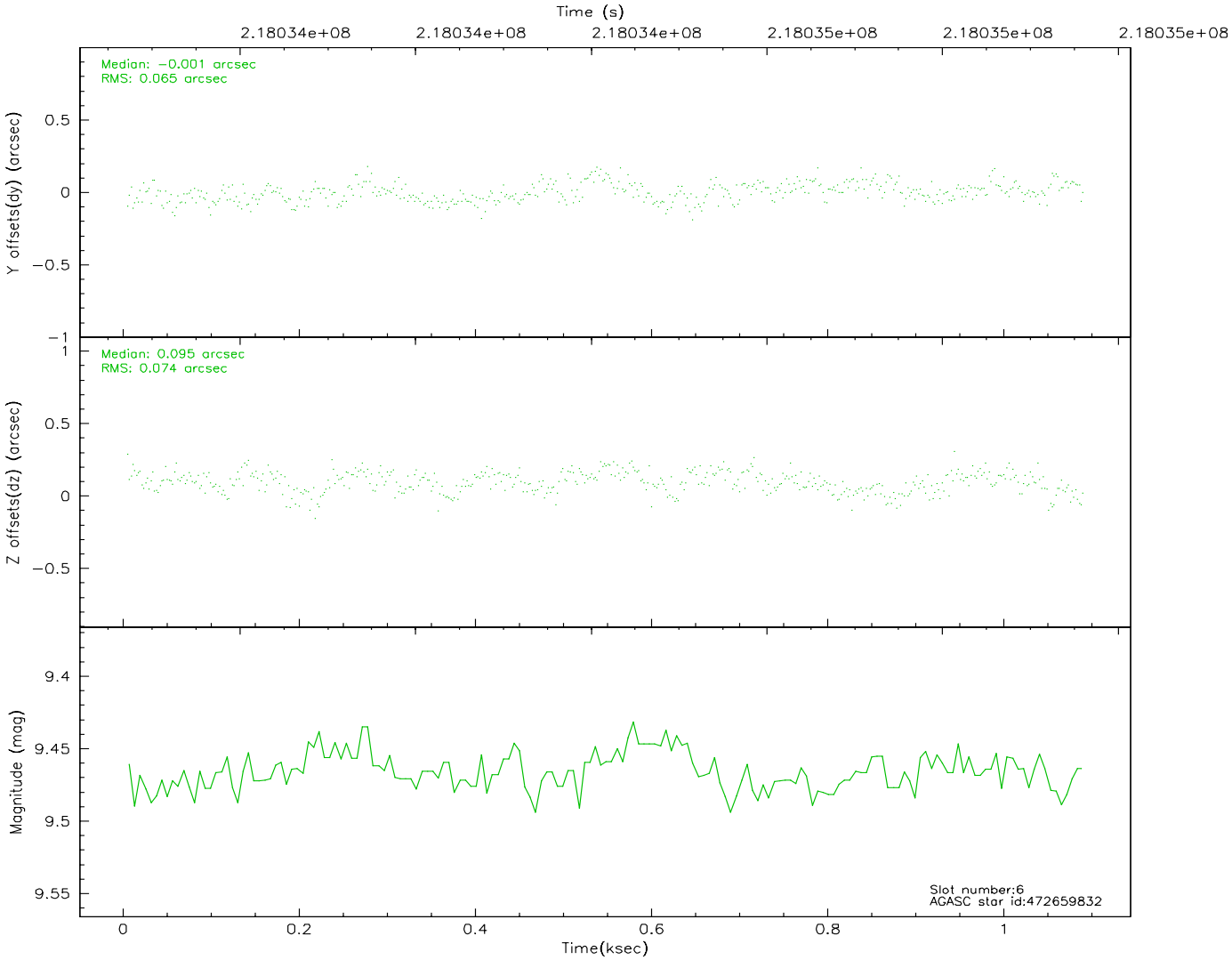

Points outside 0.4 arcsec radius: 0.000%
Radial offset of median: 0.056 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number:5
AGASC star id:472655152


Time (s)
2.18034e+08
2.18034e+08
2.18034e+08
2.18035e+08
2.18035e+08
2.18035e+08
Median: 0.012 arcsec
RMS: 0.074 arcsec
Y offsets(dy) (arcsec)
Median: 0.055 arcsec
RMS: 0.080 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number:5
AGASC star id:472655152
Time(ksec)

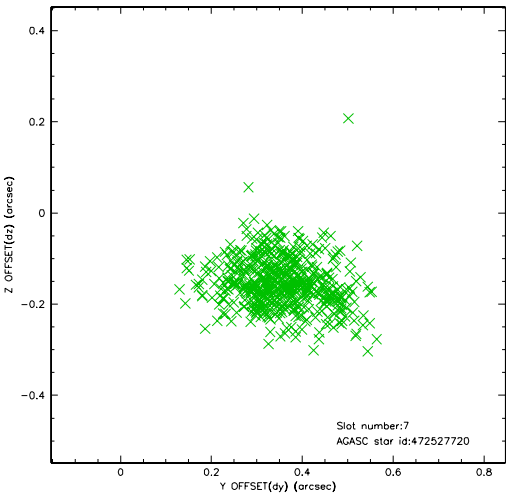
2.4.4 Slot 6

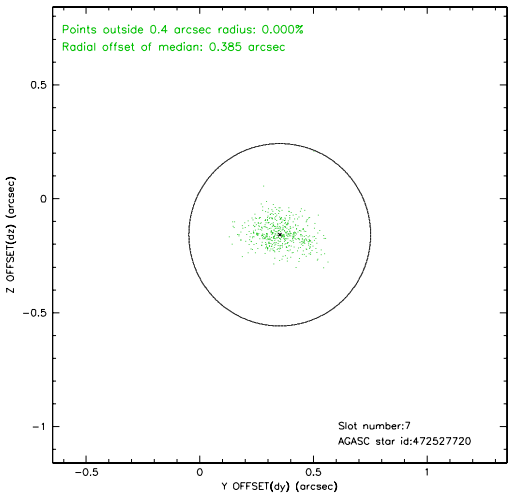

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number:6
AGASC star id:472659832

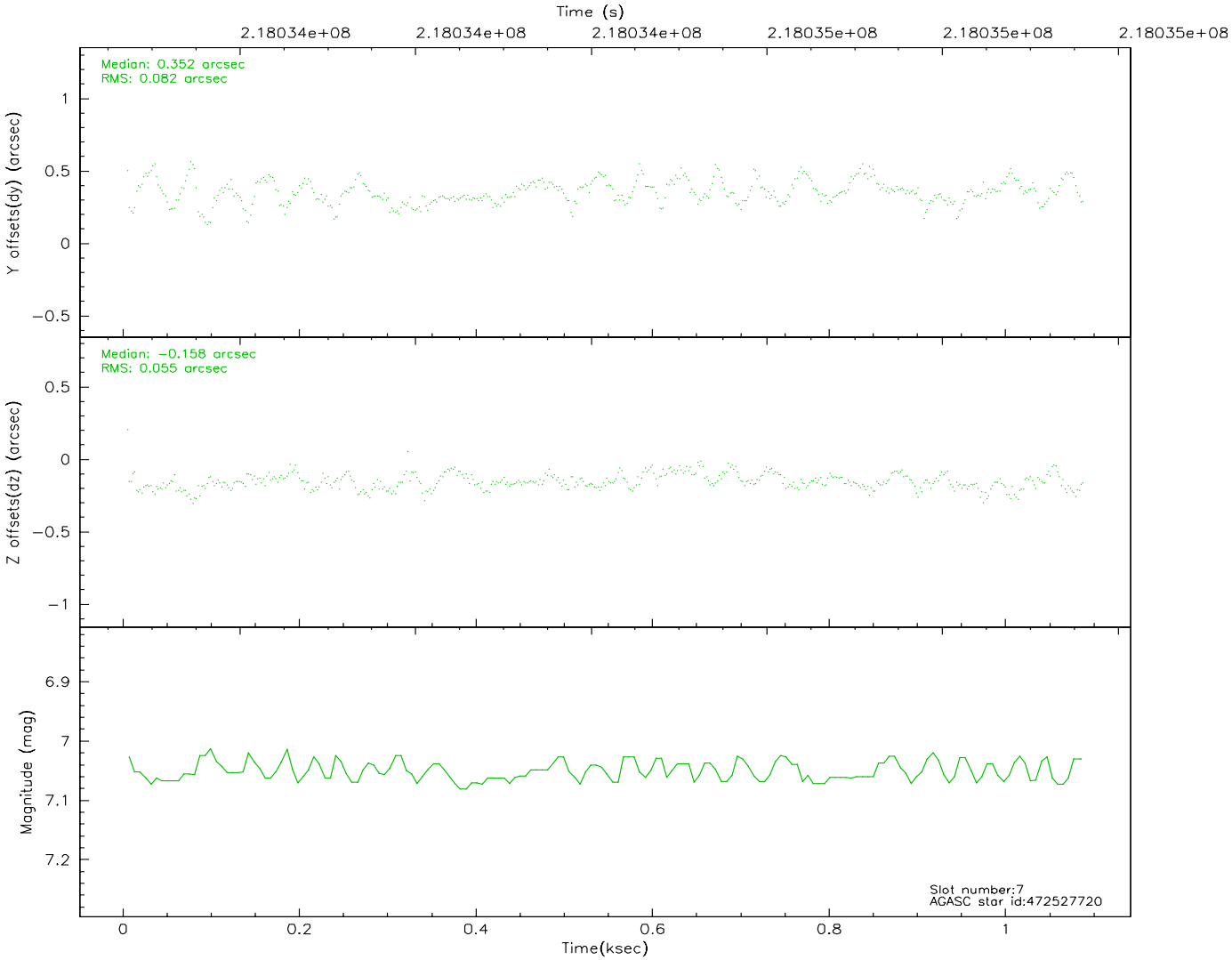

Points outside 0.4 arcsec radius: 0.000%
Radial offset of median: 0.095 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number:6
AGASC star id:472659832


Time (s)
Median: −0.001 arcsec
RMS: 0.065 arcsec
Y offsets(dy) (arcsec)
Median: 0.095 arcsec
RMS: 0.074 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number:6
AGASC star id:472659832
Time(ksec)

2.4.5 Slot 7

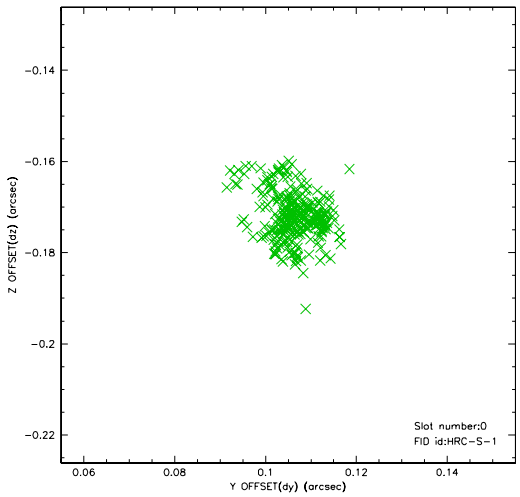

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number:7
AGASC star id:472527720

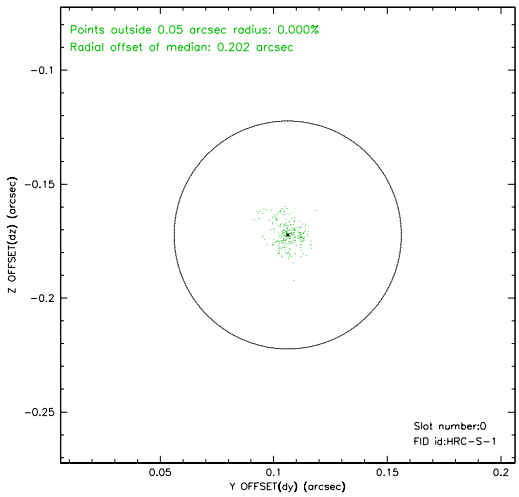

Points outside 0.4 arcsec radius: 0.000%
Radial offset of median: 0.385 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number:7
AGASC star id:472527720

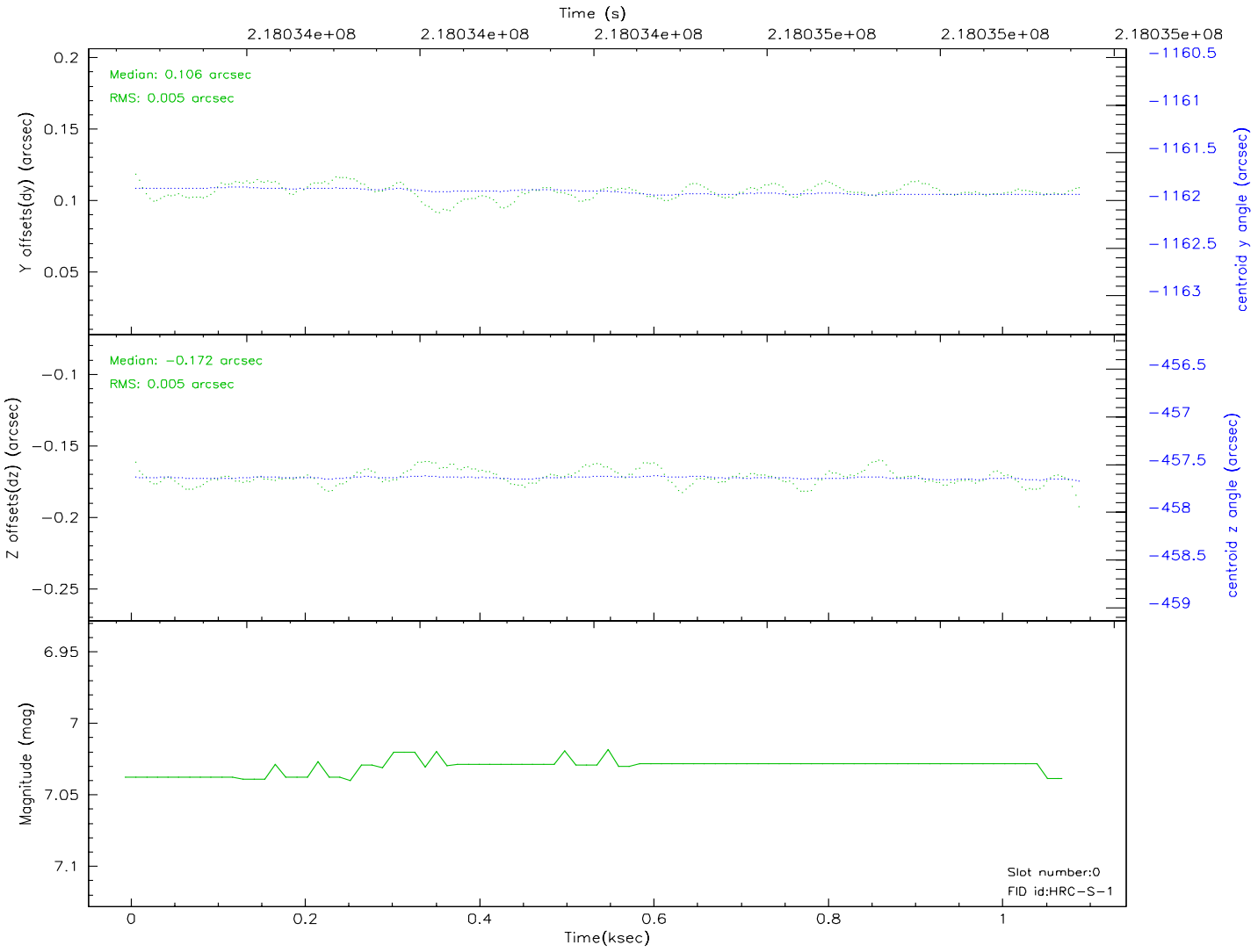

Time (s)
Median: 0.352 arcsec
RMS: 0.082 arcsec
Y offsets(dy) (arcsec)
Median: −0.158 arcsec
RMS: 0.055 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number:7
AGASC star id:472527720
Time(ksec)

2.5 FID Slots

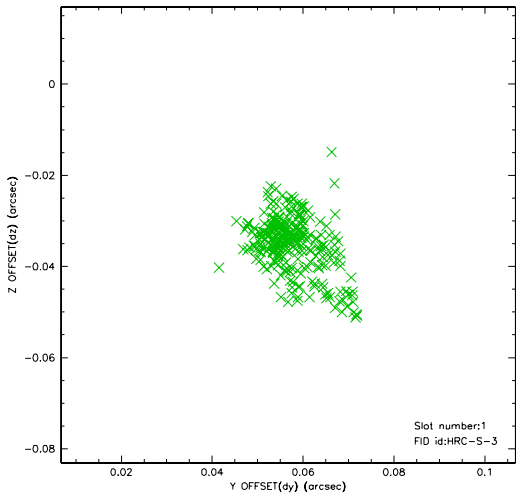
2.5.1 Slot 0

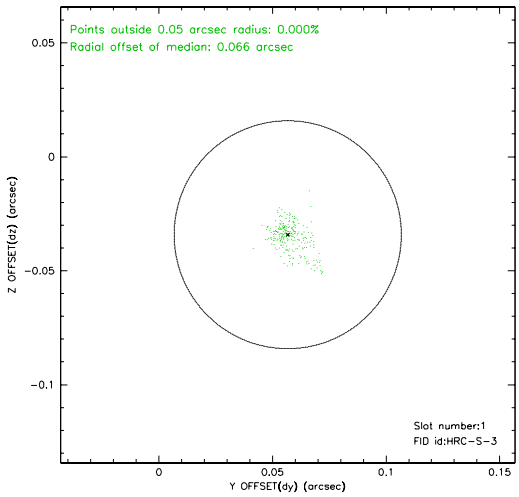


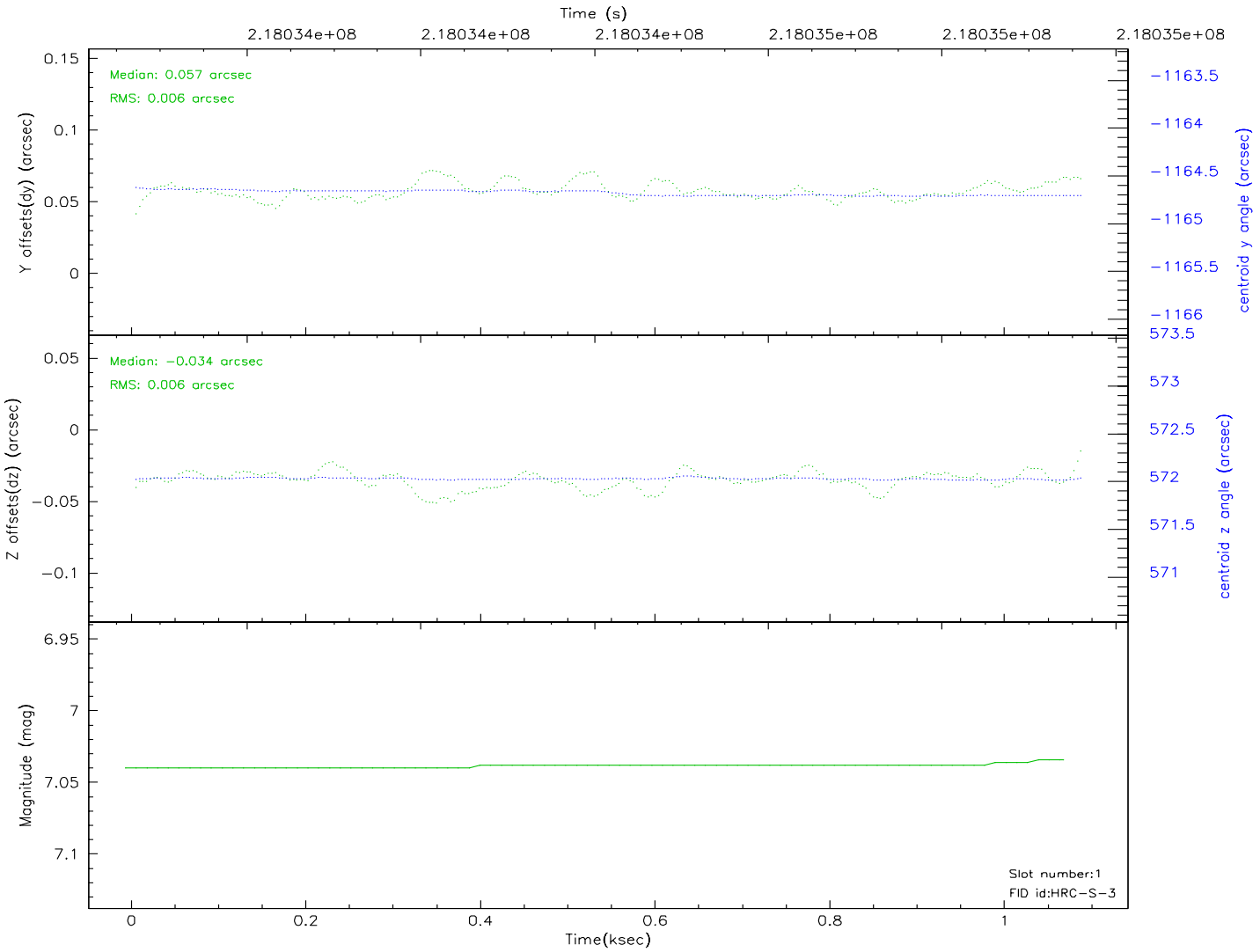




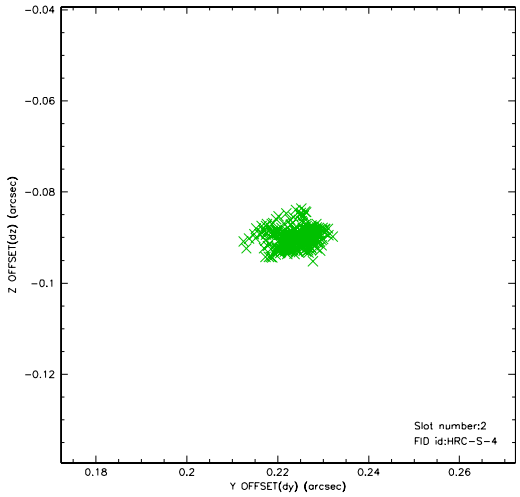
2.5.2 Slot 1

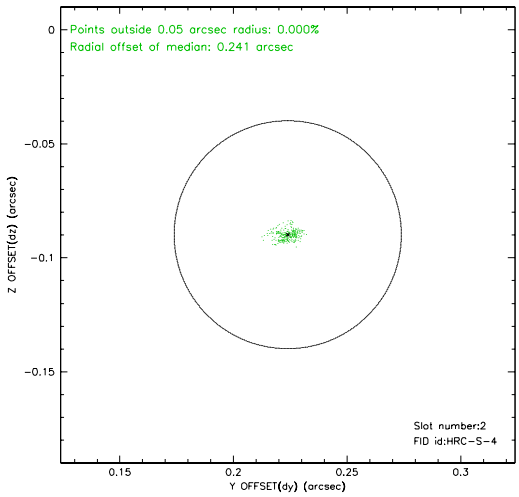

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number:1
FID id:HRC-S-3

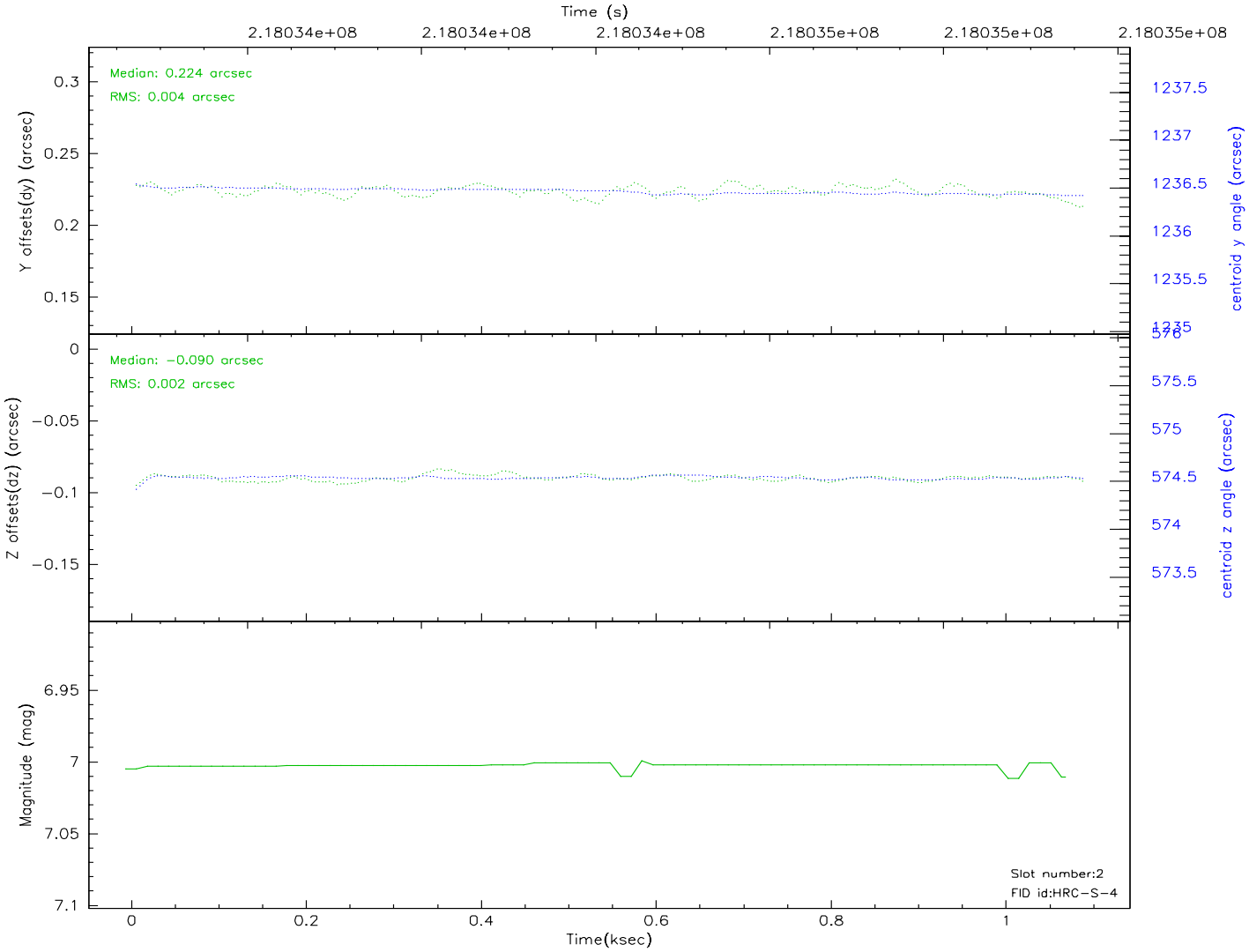

Points outside 0.05 arcsec radius: 0.000%
Radial offset of median: 0.066 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number:1
FID id:HRC-S-3


Time (s)
Median: 0.057 arcsec
RMS: 0.006 arcsec
Y offsets(dy) (arcsec)
centroid y angle (arcsec)
Median: −0.034 arcsec
RMS: 0.006 arcsec
Z offsets(dz) (arcsec)
centroid z angle (arcsec)
Magnitude (mag)
Slot number:1
FID id:HRC-S-3
Time(ksec)

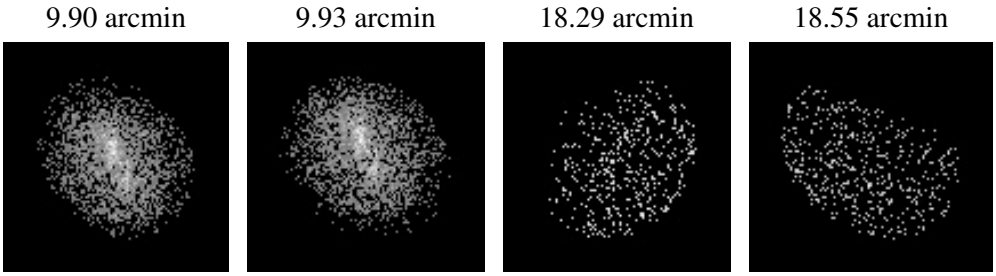
2.5.3 Slot 2


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


Points outside 0.05 arcsec radius: 0.000%
Radial offset of median: 0.241 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number:2
FID id:HRC-S-4


Time (s)
Median: 0.224 arcsec
RMS: 0.004 arcsec
Y offsets(dy) (arcsec)
centroid y angle (arcsec)
Median: −0.090 arcsec
RMS: 0.002 arcsec
Z offsets(dz) (arcsec)
centroid z angle (arcsec)
Magnitude (mag)
Slot number:2
FID id:HRC-S-4
Time(ksec)

3 Point Sources



A Summary

A.1 Status

V&V Scientist	Beth Sundheim
V&V Date (YYYY-MM-DD)	2006.04.11
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	1.05498129

A.2 Comments

The keywords DTCOR, EXPOSURE, and LIVETIME in the Level 2 event file and the
keyword DTCOR in the Level 1 event file have been incorrectly
determined due to a software bug. The correct value of DTCOR can
be found in the file DTFSTATS file that can be obtained by downloading
the secondary data products. In most cases, the difference between
the correct DTCOR value and the incorrect DTCOR value in the Level 2
event file is very small and does not affect the data analysis.
However, there are cases of significant differences and the user is
advised to use the DTCOR in the DTFSTATS file for analysis. Corrected
data products will be made available in the archive as soon as feasible.