V&V Reference Report
L2 ASCDS Version : 8.5.1.1

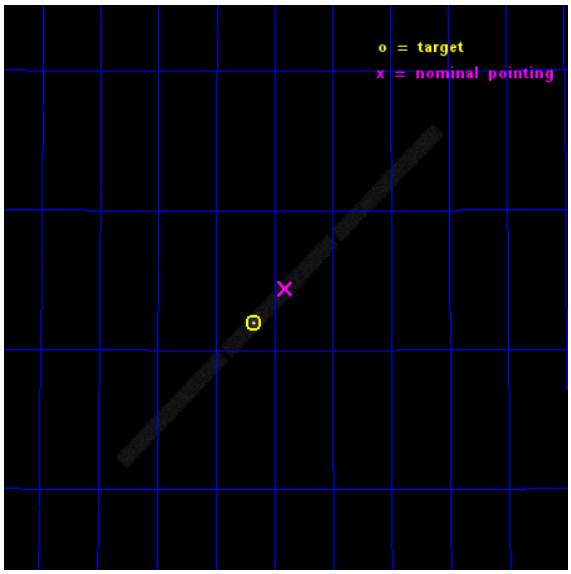
Observation 15458 - L2 Version 2
Chandra X-Ray Center

L2 Processing Date : Dec 1 2014

Contents

1 Front

seq_num	291137	Sequence number
obs_id	15458	Observation id
title	AO-14 Calibration Observations of HZ43 to measure the gain accross the HRC-S plate gaps	Proposal title
observer	Dr. CXC Calibration	Principal investigator
object	HZ43	Source name
ra_targ	199.090417	Observer's specified target RA [deg]
dec_targ	29.098306	Observer's specified target Dec [deg]
ra_nom	198.95272301423	Nominal RA [deg]
dec_nom	29.22151184363	Nominal Dec [deg]
roll_nom	134.694600185	Nominal Roll [deg]
revision	2	Processing version of data
ontime	1288.681319654	[s]
livetime	820.79305219607	Ontime multiplied by DTCOR
l2events	218743	Number of level 2 events

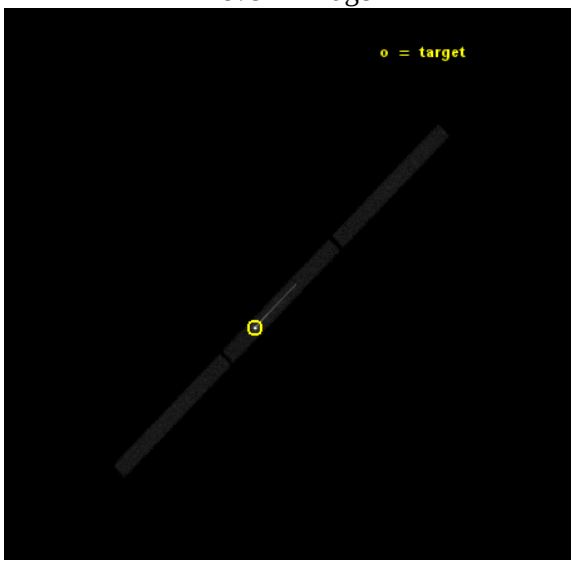


2 OBI

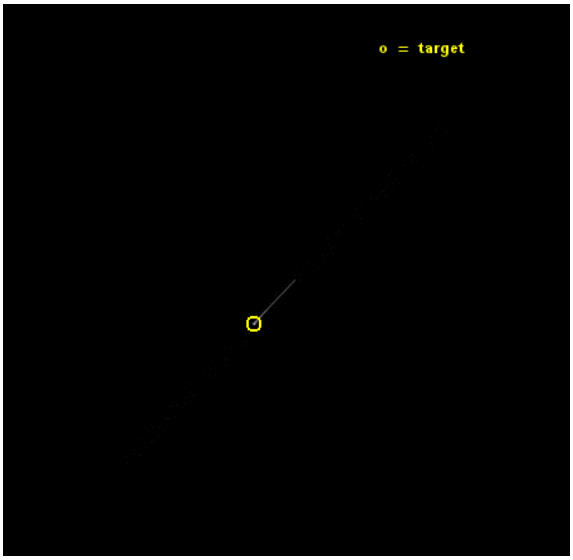
2.1 OBI

2.1.1 Images

Level 1 Image



Level 1 Bad Events



2.1.2 Parameters

obi_num	0	Obi number
ascdsver	10.3	Processing system revision
caldbver	4.6.4	
date	2014-12-02T02:18:32	Date and time of file creation
revision	2	Processing version of data

sched_exp_time	1100.000000	[s] Scheduled observation exposure time
ontime	1288.681319654	[s]
l1events	295282	Number of level 1 events

2.1.3 Events

Level 1 Events

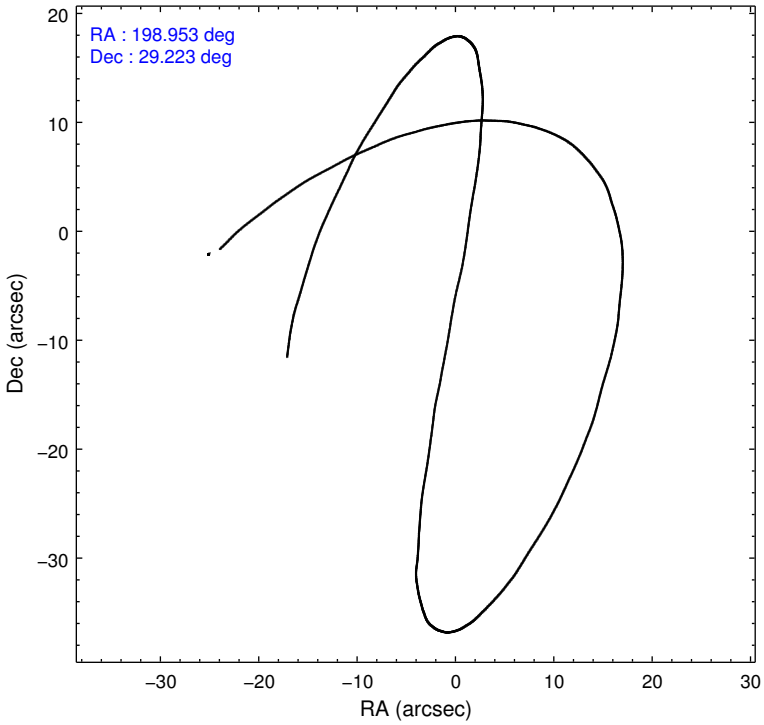
	segment 1	**segment 2**	**segment 3**
level 1 events	29308	236954	29020
rejected events	6167	45476	6019
rejected %	21%	19%	20%

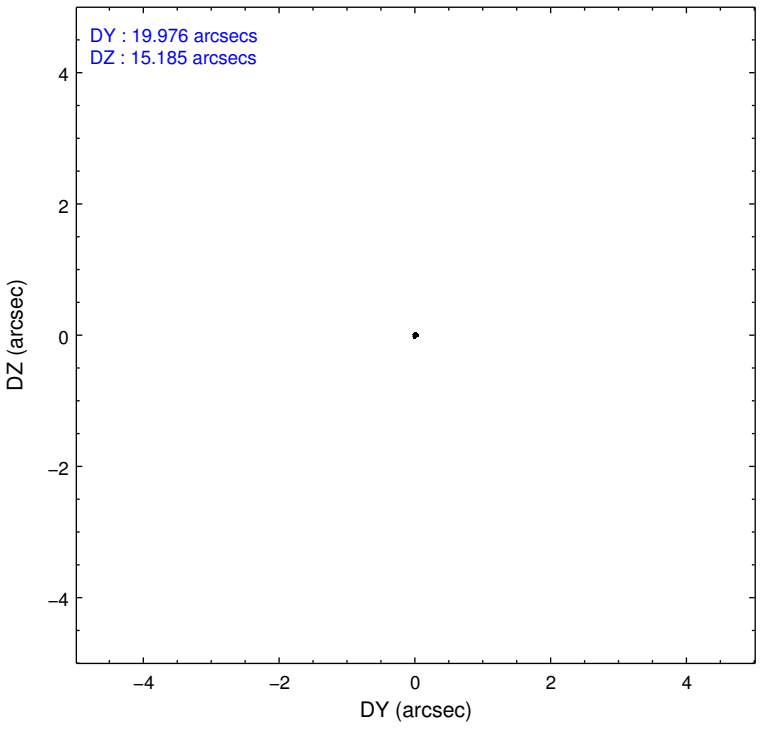
2.2 Compared Parameters

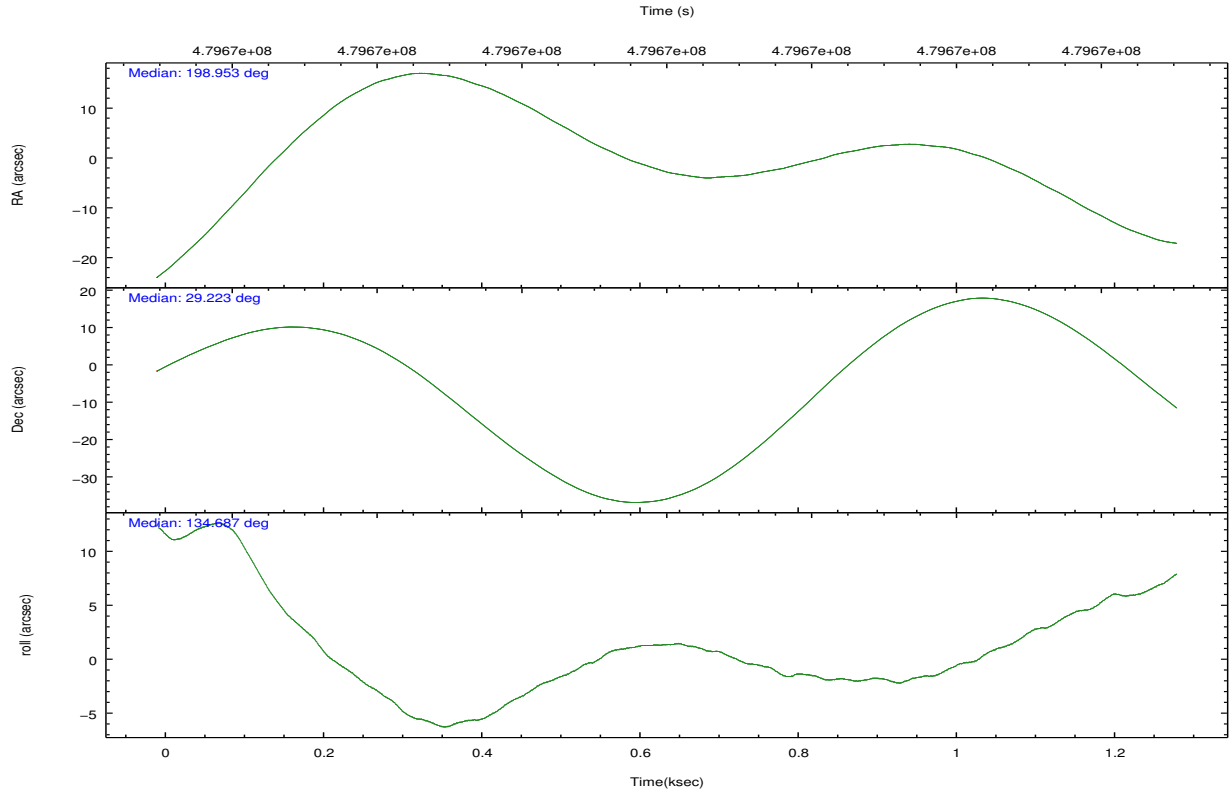
Parameter	Planned	Actual
Instrument	HRC	HRC
Detector	HRC-S	HRC-S
Grating	NONE	NONE
Data mode	OBSERVING	OBSERVING
Observation mode	POINTING	POINTING
[deg] Pointing RA	198.984760	198.9527230142305
[deg] Pointing Dec	29.214239	29.22151184362993
[deg] Pointing Roll	134.611603	134.6946001849983
[mm] SIM focus pos	-1.533336	-1.526339935833849
[mm] SIM defocus	7.710433287538843e-07	0.006996703570447904
[mm] SIM translation stage pos	250.455976	250.466033080201
[mm] SIM translation stage offset	0	-0.01005468664627074
[s] Observation start time (MET)	479668339.184000	479667963.69301
Observation start date	2013-03-14T17:11:12	2013-03-14T17:06:03
[s] Observation end time (MET)	479669439.184000	479669573.4556
Observation end date	2013-03-14T17:29:32	2013-03-14T17:32:53

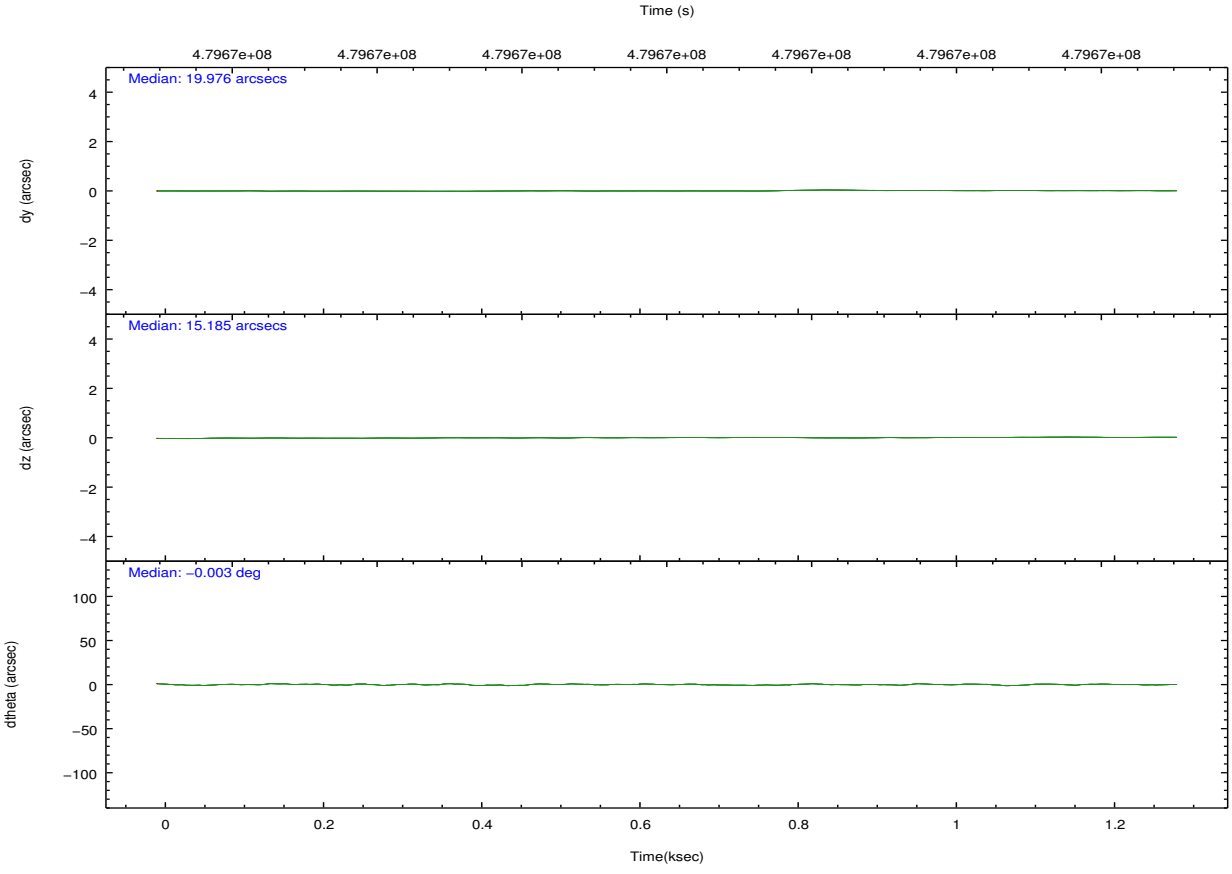
Parameter	Planned	Actual
Obspar format version number	7	7
Obspar file type	PREDICTED	ACTUAL
Obspar update status	NONE	UPDATED

2.3 Aspect


RA : 198.953 deg
Dec : 29.223 deg
Dec (arcsec)
RA (arcsec)
20
10
0
−10
−20
−30
−30
−20
−10
0
10
20
30


DY : 19.976 arcsecs
DZ : 15.185 arcsecs
DZ (arcsec)
DY (arcsec)
4
2
0
−2
−4
−4
−2
0
2
4


Time (s)
4.7967e+08
4.7967e+08
4.7967e+08
4.7967e+08
4.7967e+08
4.7967e+08
4.7967e+08
Median: 198.953 deg
RA (arcsec)
Median: 29.223 deg
Dec (arcsec)
Median: 134.687 deg
roll (arcsec)
Time(ksec)

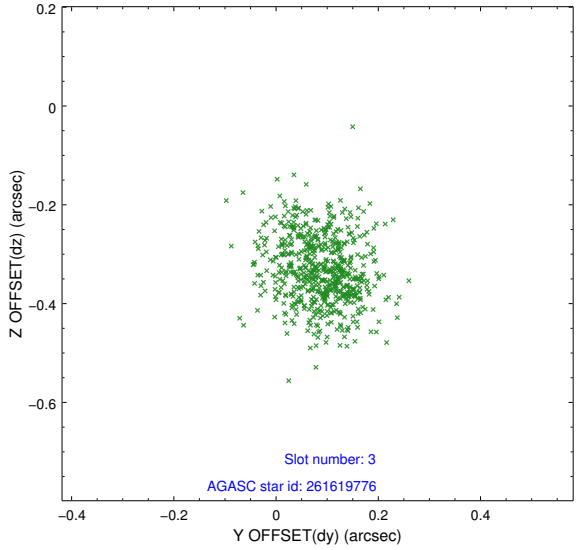

Time (s)
4.7967e+08
4.7967e+08
4.7967e+08
4.7967e+08
4.7967e+08
4.7967e+08
4.7967e+08
Median: 19.976 arcsecs
dy (arcsec)
Median: 15.185 arcsecs
dz (arcsec)
Median: −0.003 deg
dtheta (arcsec)
Time(ksec)

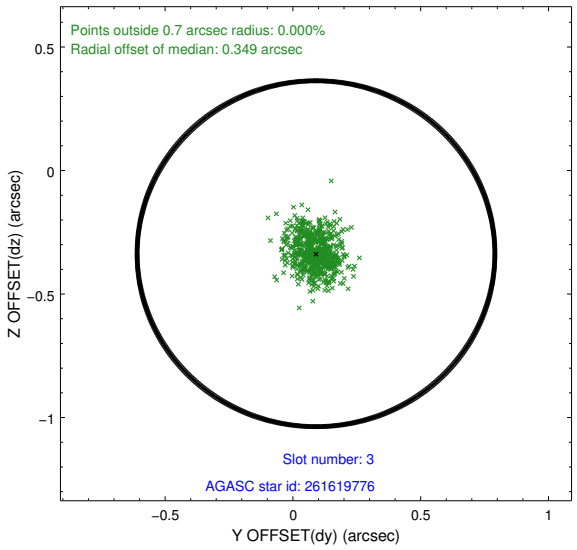
Slot Statistics

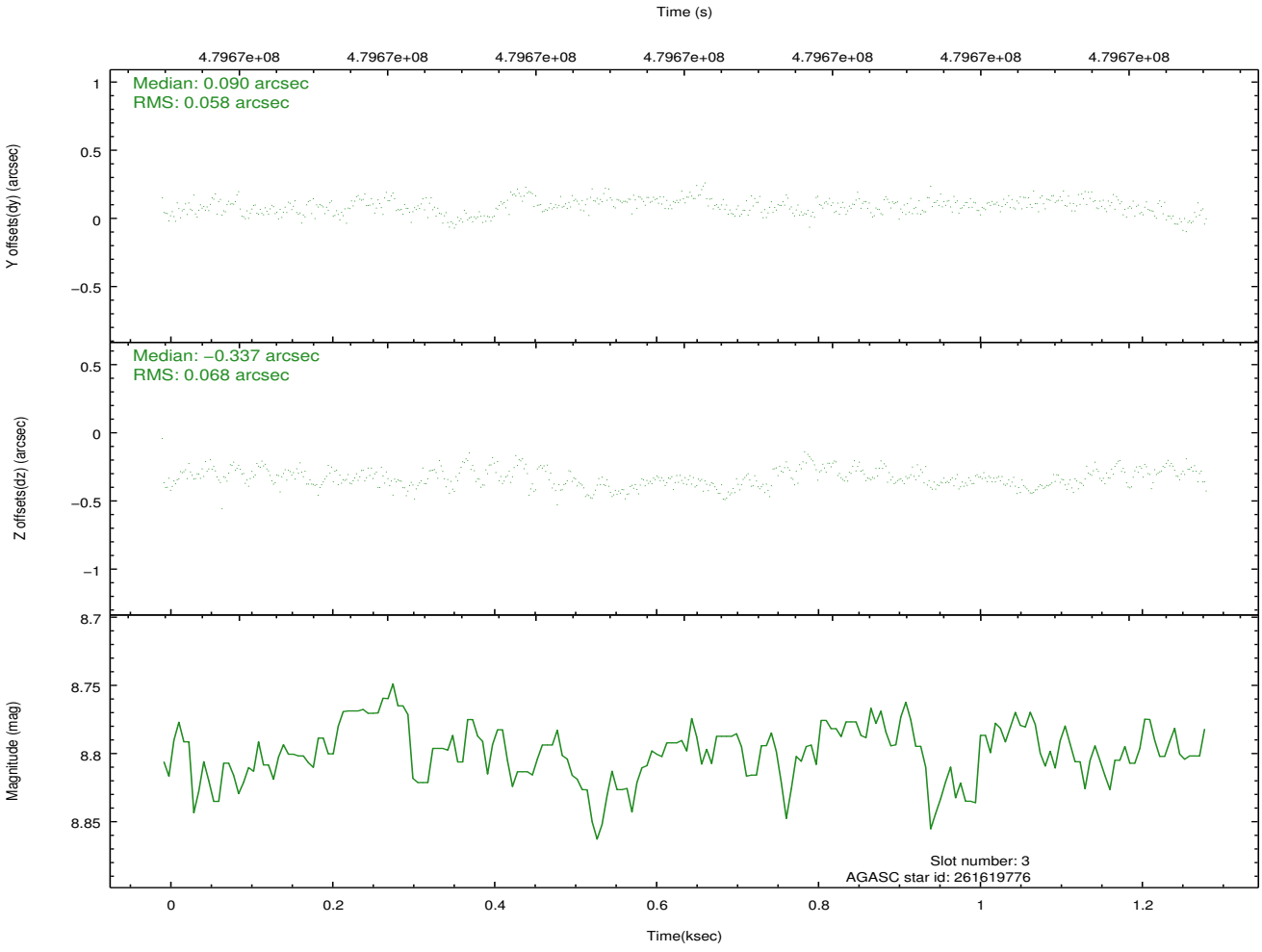
slot	status	used	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID		HRC-S-1	6.98	315	0.015	-0.207	0.006	0.011	0.000000	0.000000	-1174.58	-464.09
1	FID		HRC-S-2	6.96	315	0.269	-0.111	0.005	0.008	0.000000	0.000000	1221.60	-458.14
2	FID		HRC-S-3	7.00	315	0.105	0.015	0.006	0.010	0.000000	0.000000	-1173.32	564.20
3	GUIDE	used	261619776	8.80	630	0.090	-0.337	0.093	0.152	198.654383	29.401174	1204.75	266.88
4	GUIDE	used	261621400	6.98	630	-0.133	-0.262	0.074	0.125	198.901600	28.741982	-1026.16	1384.28
5	GUIDE	used	261623040	9.13	630	-0.156	0.196	0.120	0.203	198.792686	29.757643	1810.66	-941.09
6	GUIDE	used	261626376	9.70	630	0.028	0.099	0.165	0.266	198.947288	29.347445	425.09	-251.00
7	GUIDE	used	261629720	8.12	629	0.171	0.301	0.088	0.132	199.236176	29.044452	-991.60	-131.64

2.4 Star Slots

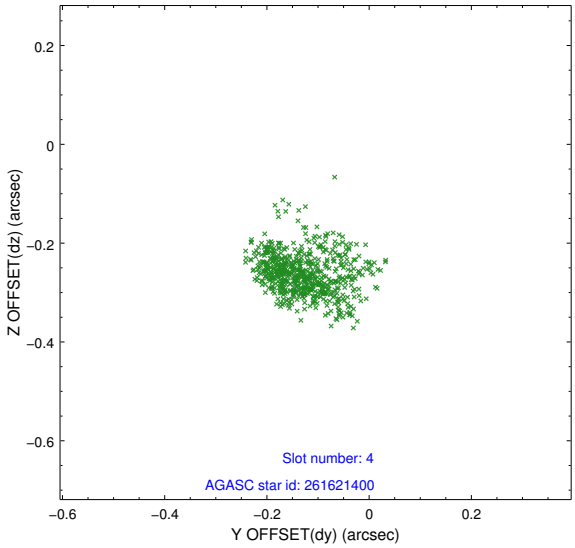
2.4.1 Slot 3

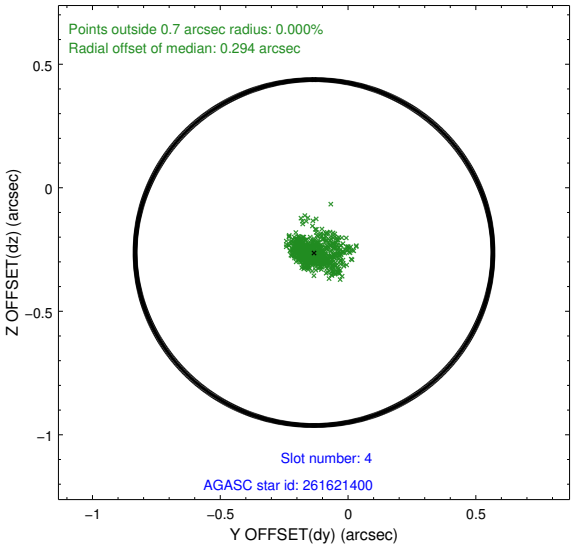


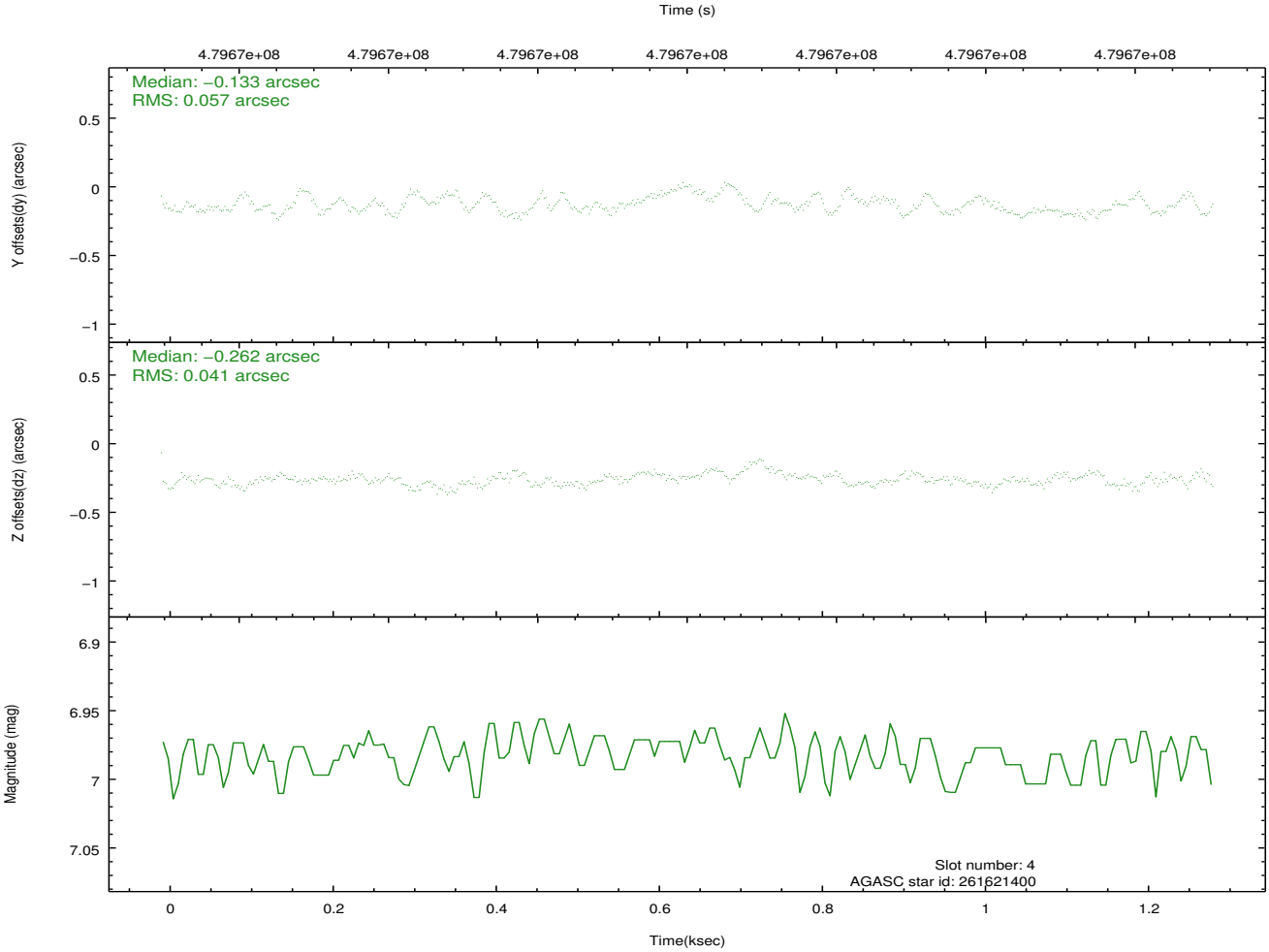




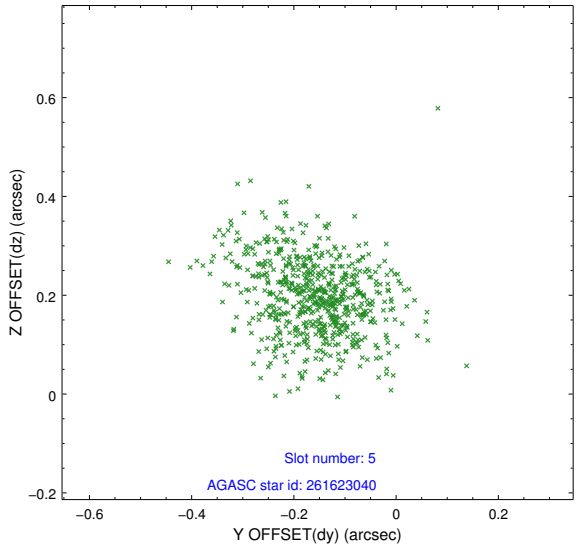
2.4.2 Slot 4

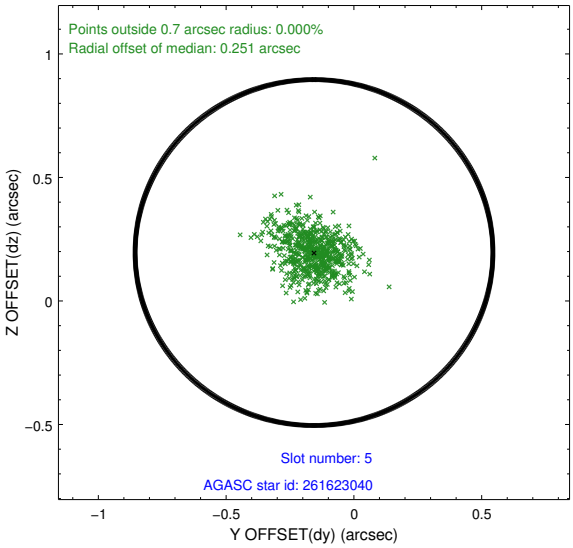

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 4
AGASC star id: 261621400

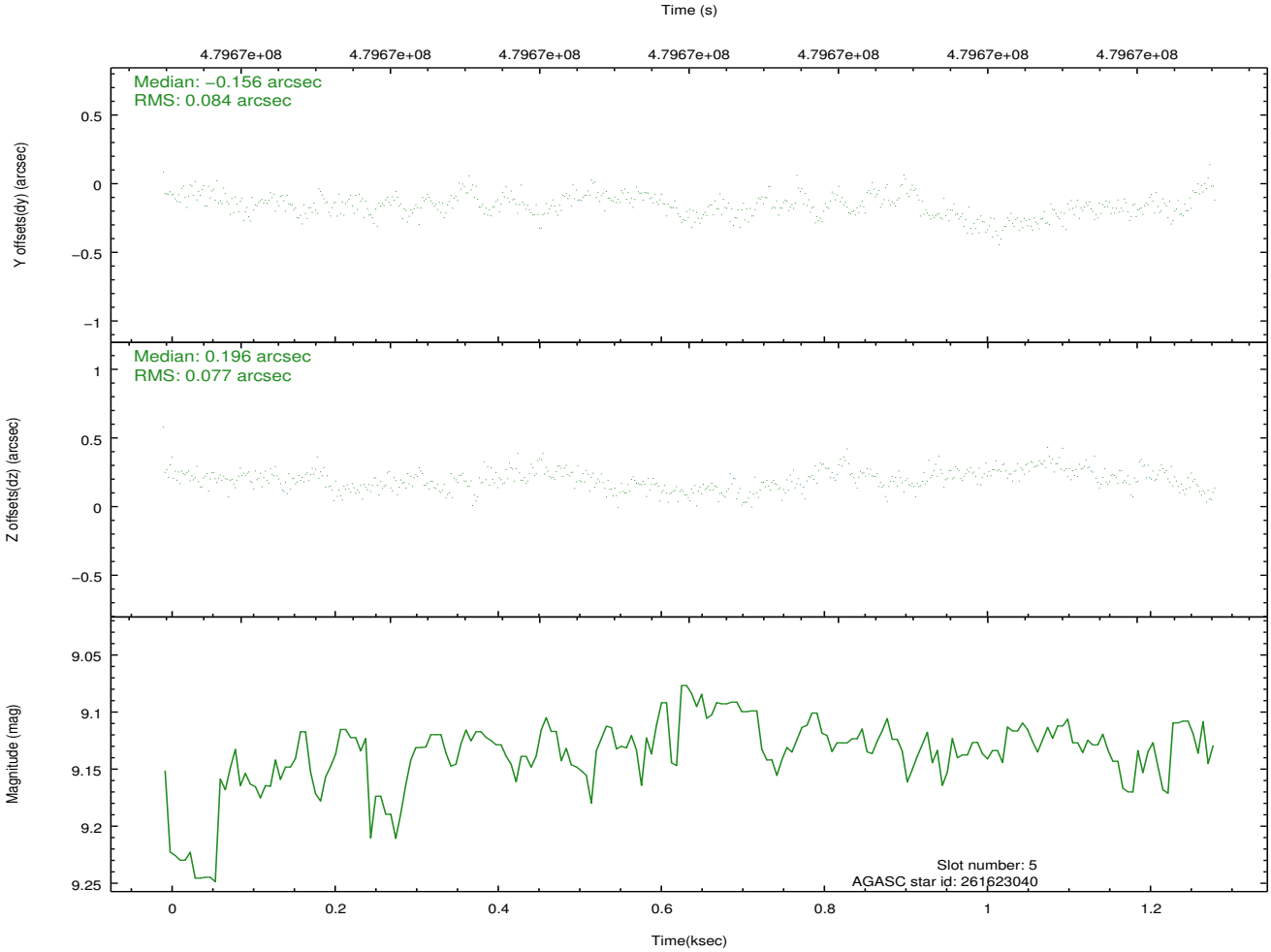

Points outside 0.7 arcsec radius: 0.000%
Radial offset of median: 0.294 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 4
AGASC star id: 261621400


Time (s)
Median: −0.133 arcsec
RMS: 0.057 arcsec
Y offsets(dy) (arcsec)
Median: −0.262 arcsec
RMS: 0.041 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number: 4
AGASC star id: 261621400
Time(ksec)

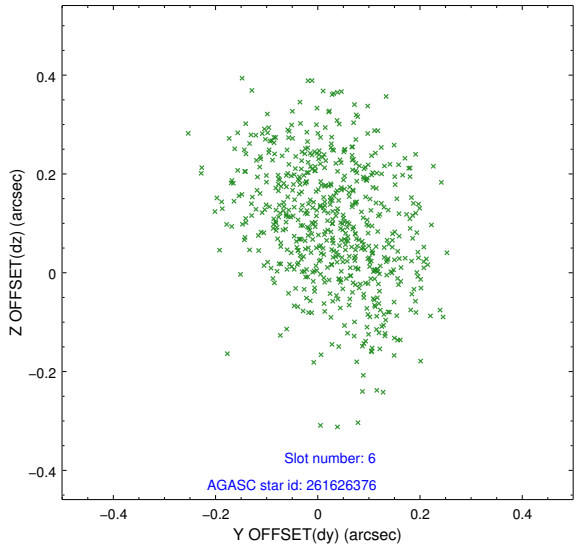
2.4.3 Slot 5

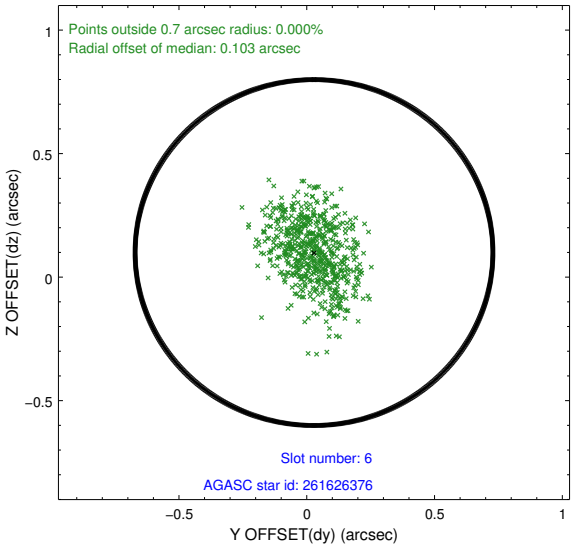

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 5
AGASC star id: 261623040

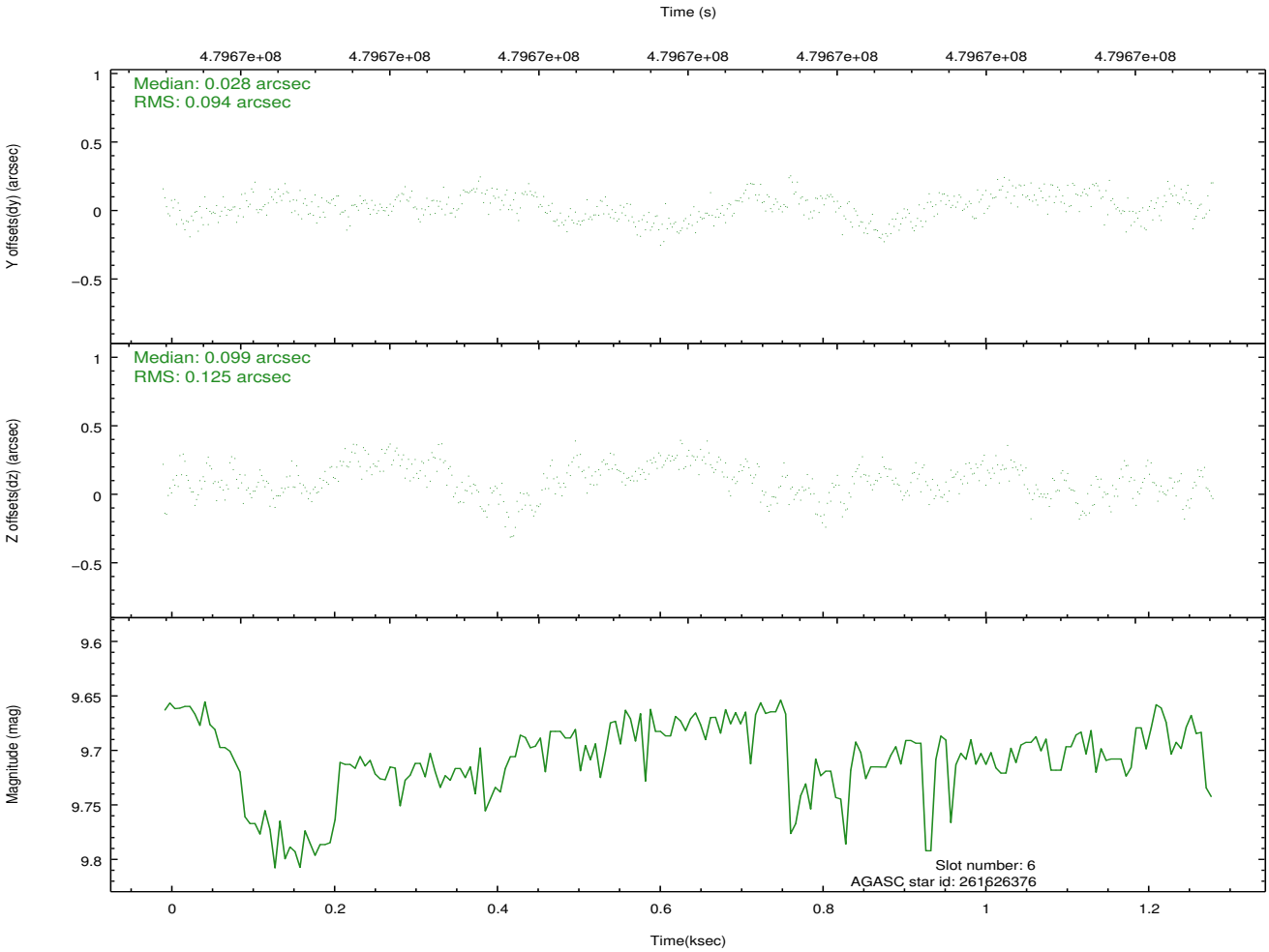

Points outside 0.7 arcsec radius: 0.000%
Radial offset of median: 0.251 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 5
AGASC star id: 261623040


Time (s)
Median: −0.156 arcsec
RMS: 0.084 arcsec
Y offsets(dy) (arcsec)
Median: 0.196 arcsec
RMS: 0.077 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number: 5
AGASC star id: 261623040
Time(ksec)

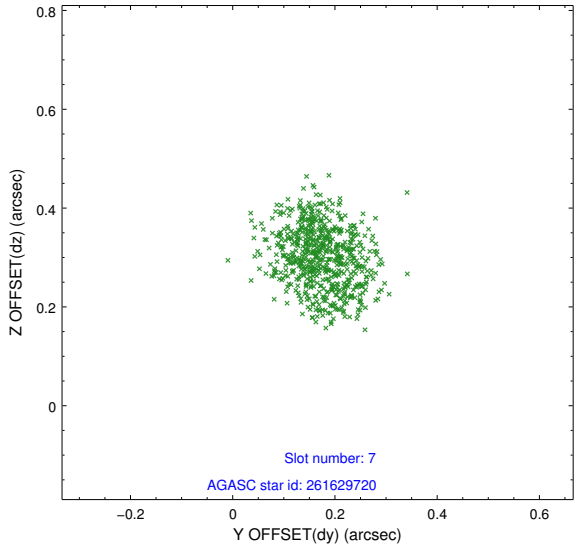
2.4.4 Slot 6

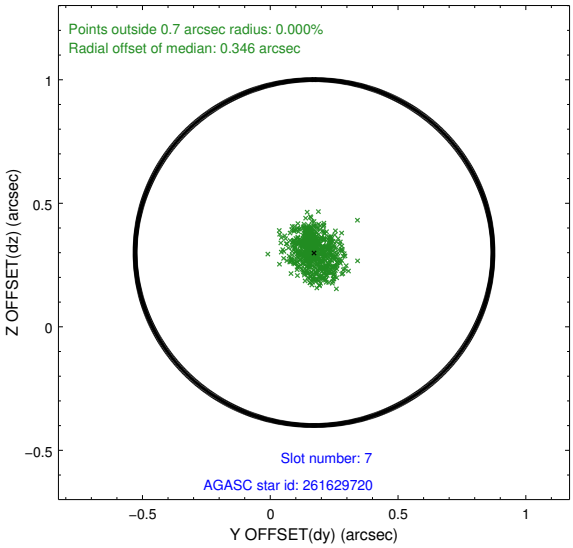

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 6
AGASC star id: 261626376

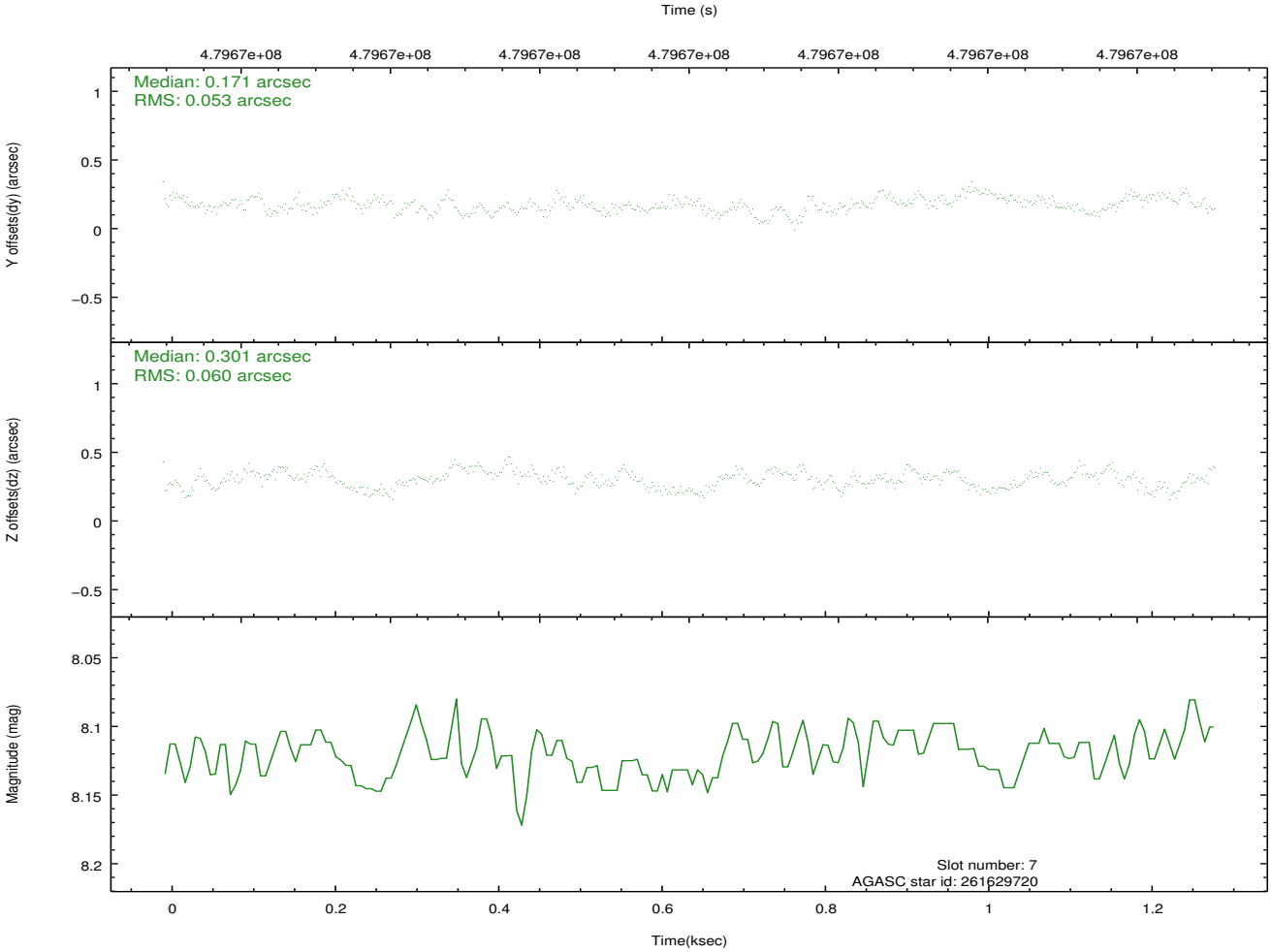

Points outside 0.7 arcsec radius: 0.000%
Radial offset of median: 0.103 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 6
AGASC star id: 261626376


Time (s)
Median: 0.028 arcsec
RMS: 0.094 arcsec
Y offsets(dy) (arcsec)
Median: 0.099 arcsec
RMS: 0.125 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number: 6
AGASC star id: 261626376
Time(ksec)

2.4.5 Slot 7

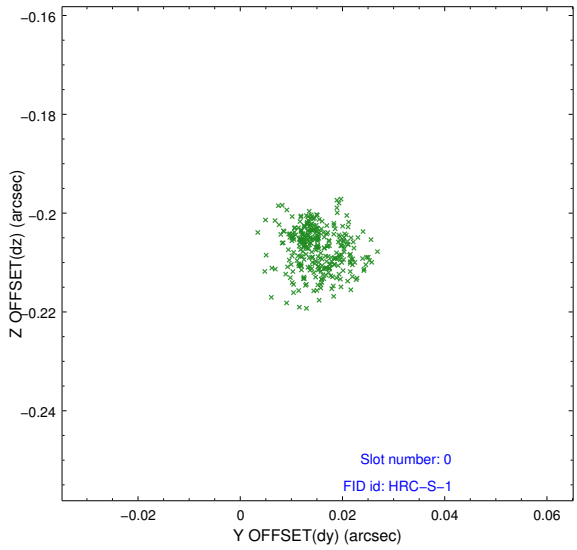

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 7
AGASC star id: 261629720

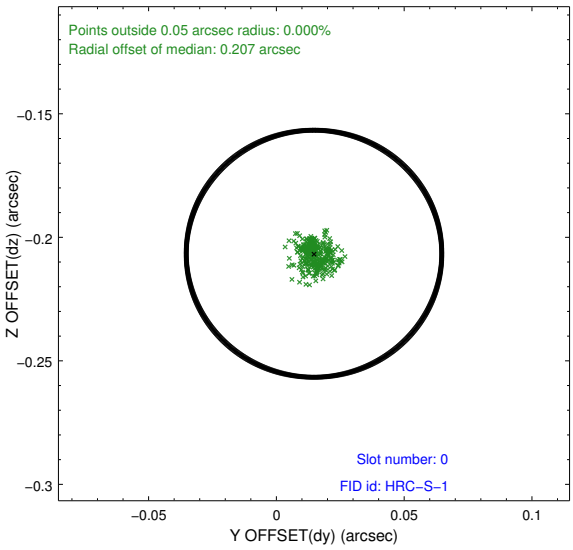

Points outside 0.7 arcsec radius: 0.000%
Radial offset of median: 0.346 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 7
AGASC star id: 261629720

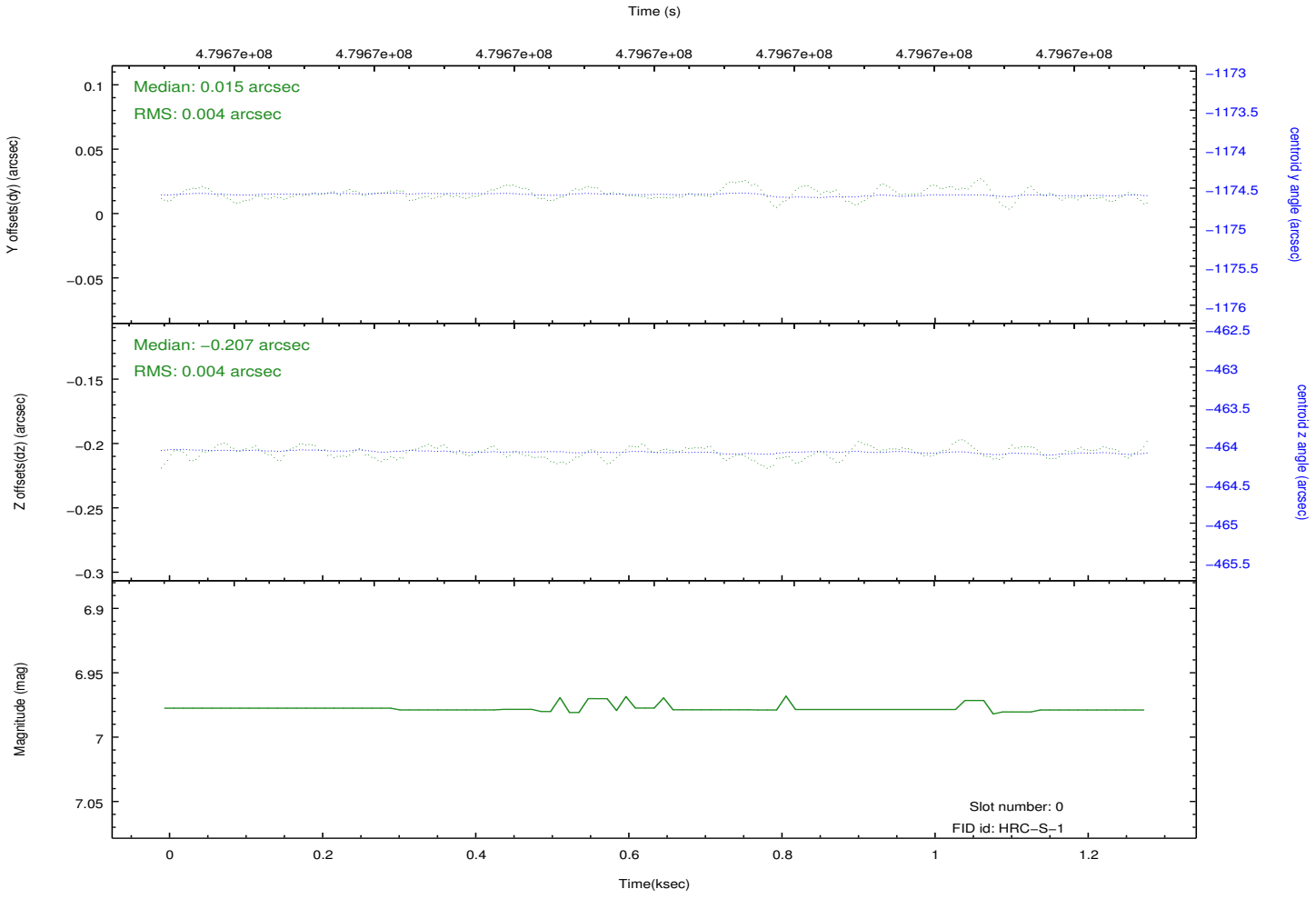

Time (s)
Median: 0.171 arcsec
RMS: 0.053 arcsec
Y offsets(dy) (arcsec)
Median: 0.301 arcsec
RMS: 0.060 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number: 7
AGASC star id: 261629720
Time(ksec)

2.5 FID Slots

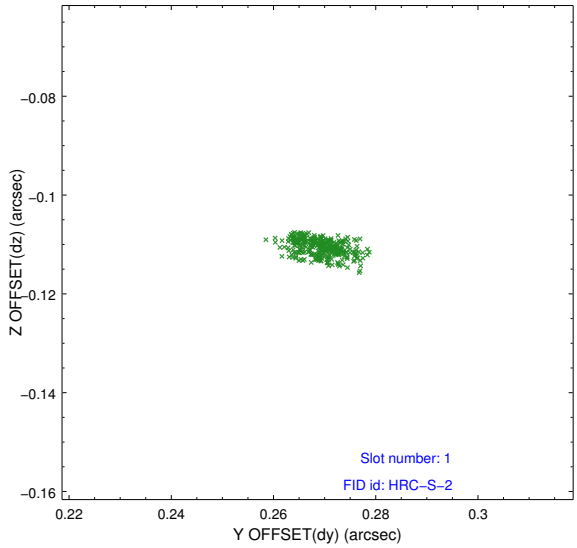
2.5.1 Slot 0

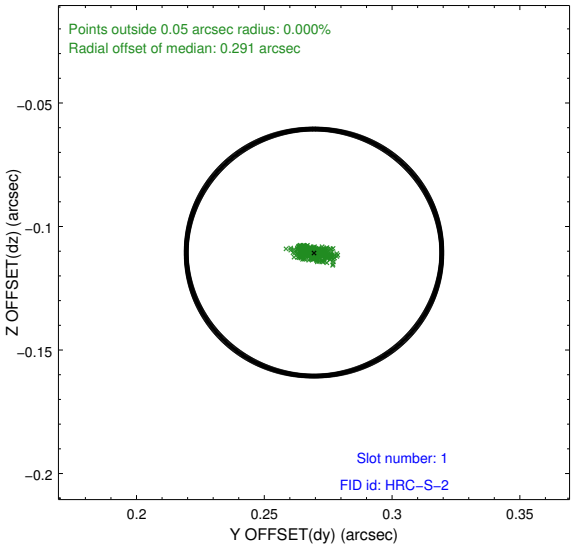


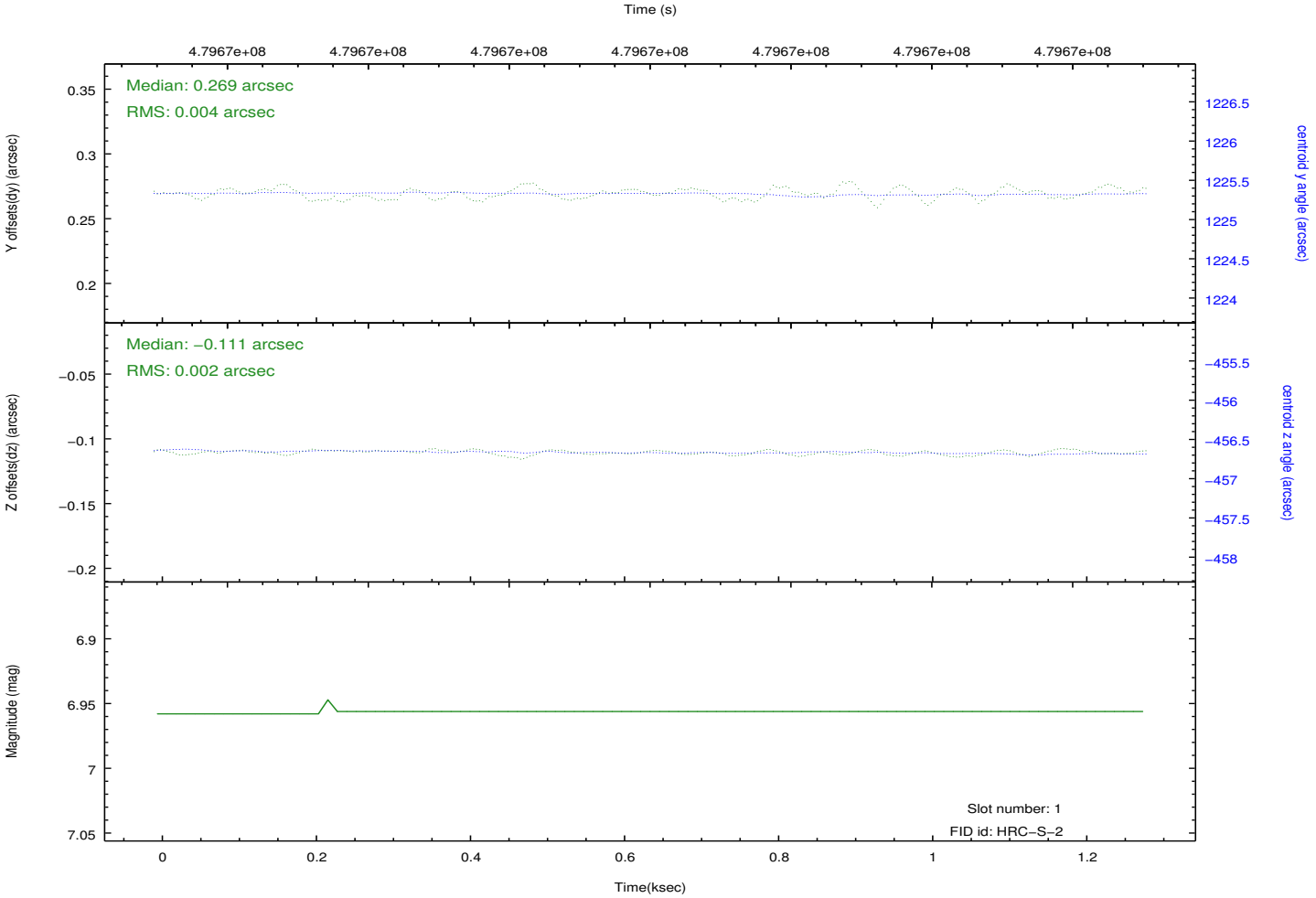




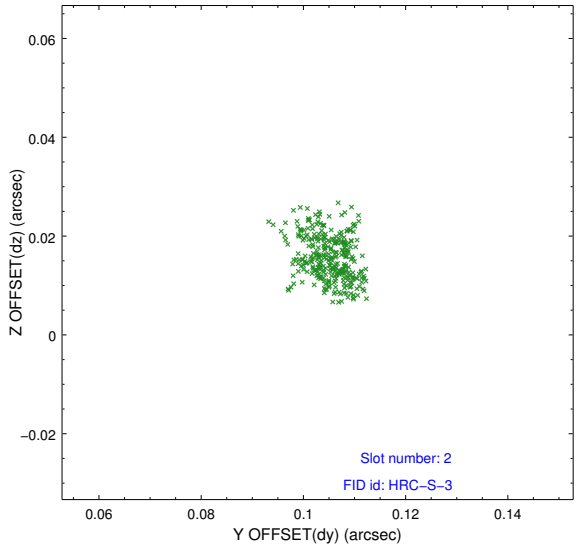
2.5.2 Slot 1

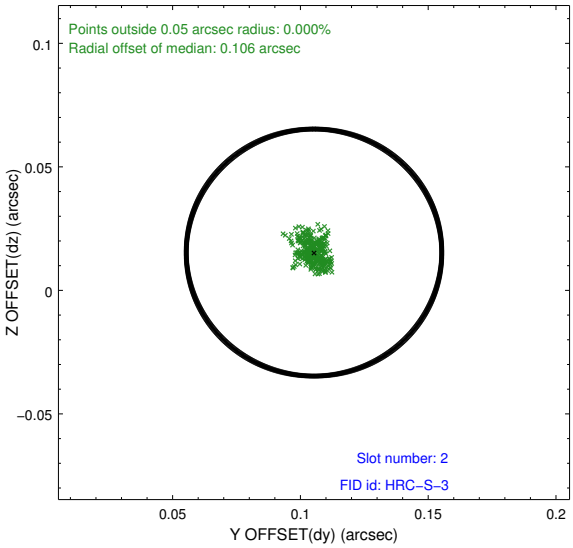

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 1
FID id: HRC−S−2

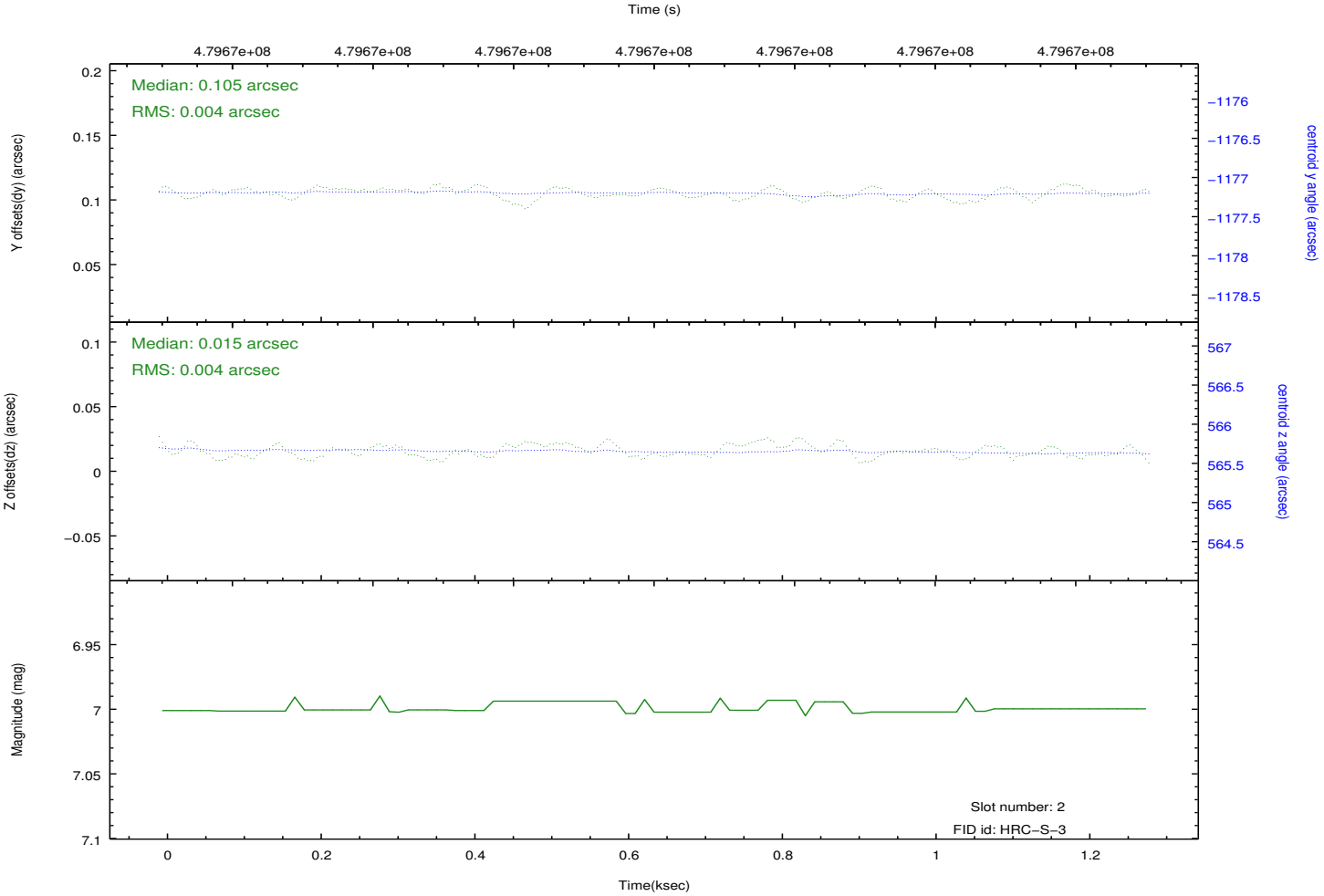

Points outside 0.05 arcsec radius: 0.000%
Radial offset of median: 0.291 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 1
FID id: HRC−S−2


Time (s)
Median: 0.269 arcsec
RMS: 0.004 arcsec
Y offsets(dy) (arcsec)
centroid y angle (arcsec)
Median: −0.111 arcsec
RMS: 0.002 arcsec
Z offsets(dz) (arcsec)
centroid z angle (arcsec)
Magnitude (mag)
Slot number: 1
FID id: HRC−S−2
Time(ksec)

2.5.3 Slot 2


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


Points outside 0.05 arcsec radius: 0.000%
Radial offset of median: 0.106 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 2
FID id: HRC−S−3


Time (s)
Median: 0.105 arcsec
RMS: 0.004 arcsec
Y offsets(dy) (arcsec)
centroid y angle (arcsec)
Median: 0.015 arcsec
RMS: 0.004 arcsec
Z offsets(dz) (arcsec)
centroid z angle (arcsec)
Magnitude (mag)
Slot number: 2
FID id: HRC−S−3
Time(ksec)

A Summary

A.1 Status

V&V Scientist	Beth Sundheim
V&V Date (YYYY-MM-DD)	2014.12.09
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	1.288681319654

A.2 Comments

These data have been reprocessed with new aspect alignment calibration files that correct small mean offsets (up to 0.4 arcsecs) and improve overall astrometric accuracy. The new calibration was determined using data from the time period being reprocessed and was performed using cross-correlation of X-ray sources with radio and optical counterparts.