V&V Reference Report
L2 ASCDS Version : 8.4.3

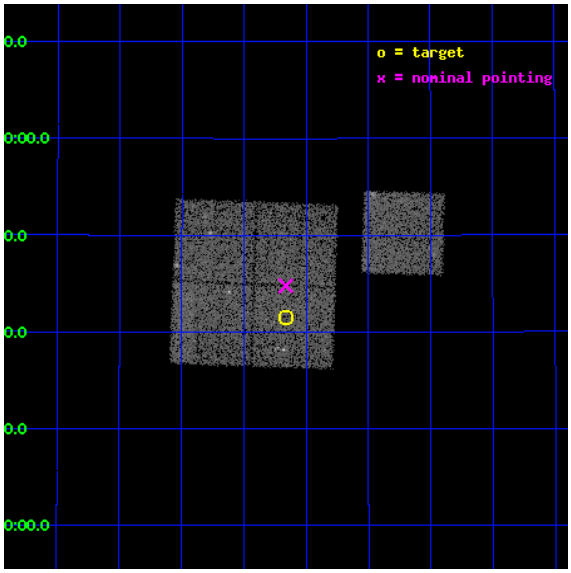
Observation 12188 - L2 Version 2
Chandra X-Ray Center

L2 Processing Date : Feb 1 2012

Contents

1 Front

seq_num	800954	Sequence number
obs_id	12188	Observation id
title	Confronting Shear Lensing Mass Measurements with Chandra	Proposal
observer	Dr Stephen Murray	Principal investigator
object	L4	Source name
dtycycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	140.415833	Observer's specified target RA [deg]
dec_targ	29.692	Observer's specified target Dec [deg]
ra_nom	140.41573601858	Nominal RA [deg]
dec_nom	29.746381388423	Nominal Dec [deg]
roll_nom	92.077841790289	Nominal Roll [deg]
revision	2	Processing version of data
ontime	10056.400077343	Sum of GTIs [s]
livetime	9925.0058069185	Livetime [s]
ontime0	10056.400077343	Sum of GTIs [s]
ontime1	10056.400077343	Sum of GTIs [s]
ontime2	10053.25909698	Sum of GTIs [s]
ontime3	10056.400077343	Sum of GTIs [s]
ontime6	10056.400077343	Sum of GTIs [s]
l2events	41354	Number of level 2 events

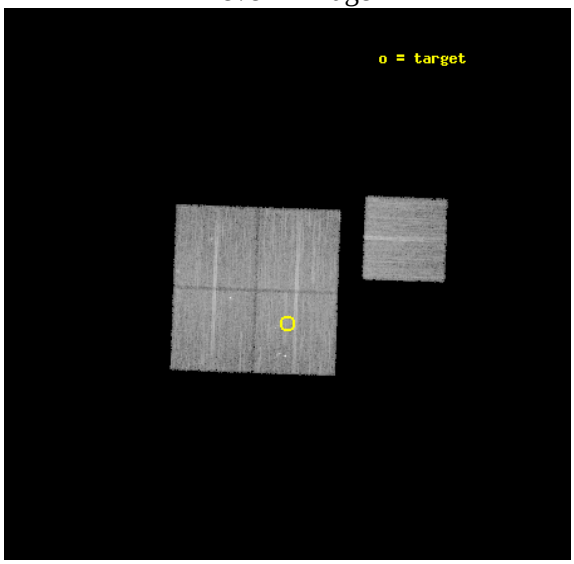


2 OBI

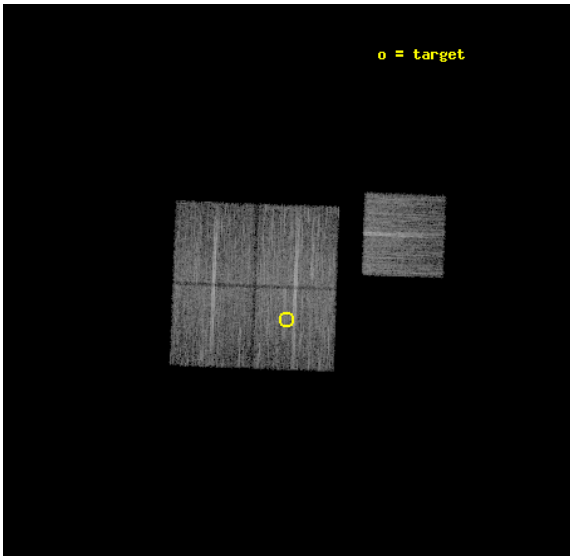
2.1 OBI

2.1.1 Images

Level 1 Image

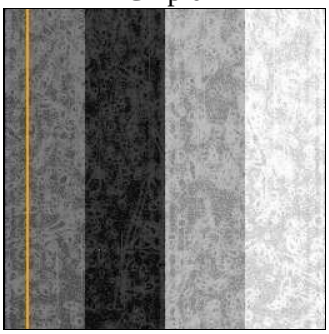


Level 1 Bad Events

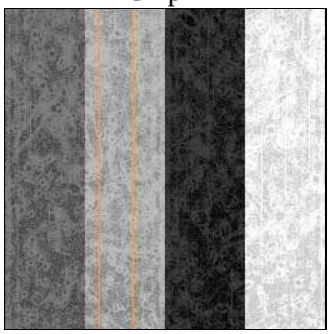


2.1.2 Bias

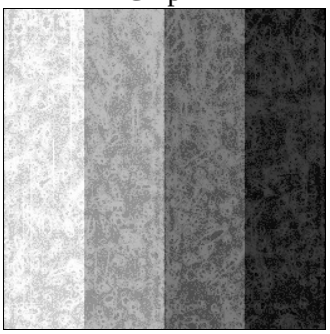
Chip 0



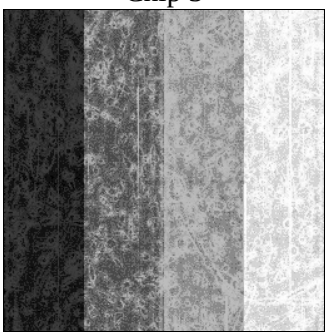
Chip 1



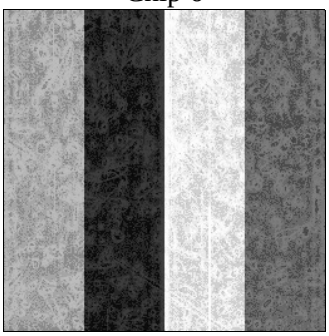
Chip 2



Chip 3



Chip 6



2.1.3 Parameters

obi_num	0	Obi number
ascdsver	8.4.3	Processing system revision
caldbver	4.4.7	
date	2012-02-01T08:10:45	Date and time of file creation
revision	2	Processing version of data

sched_exp_time	10000.613000	[s] Scheduled observation exposure time
ontime	10056.400077343	Sum of GTIs [s]
ontime0	10056.400077343	Sum of GTIs [s]
ontime1	10056.400077343	Sum of GTIs [s]
ontime2	10053.25909698	Sum of GTIs [s]
ontime3	10056.400077343	Sum of GTIs [s]
ontime6	10056.400077343	Sum of GTIs [s]
l1events	364745	Number of level 1 events

2.1.4 Events

	ccd 0	**ccd 1**	**ccd 2**	**ccd 3**	**ccd 6**
level 1 events	68381	68175	79299	75243	73647
rejected events	59072	57624	70419	65268	64162
rejected %	86%	84%	88%	86%	87%

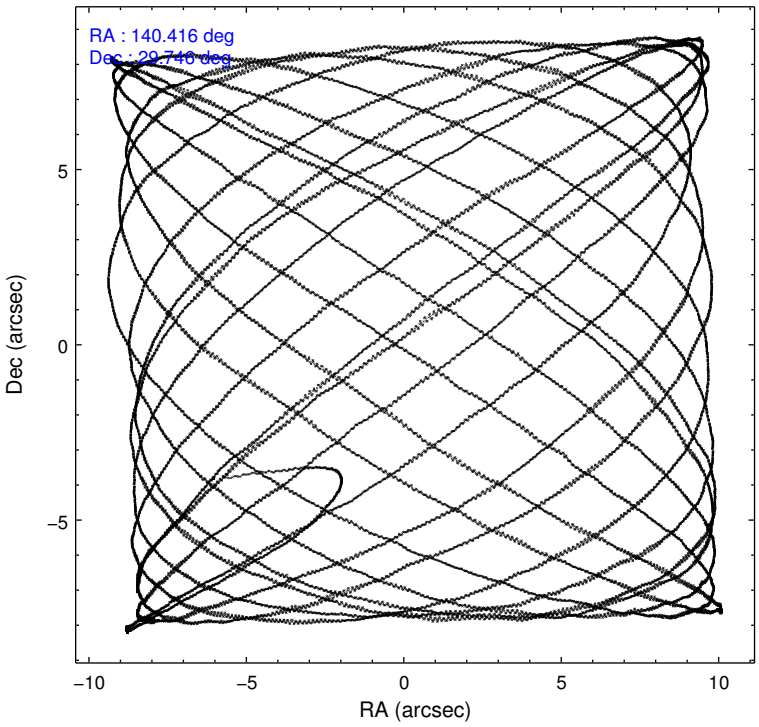
	ccd 0	**ccd 1**	**ccd 2**	**ccd 3**	**ccd 6**
grade 0 events	3691	4299	3496	4360	3771
	5%	6%	4%	5%	5%
grade 1 events	52	38	44	63	36
	0%	0%	0%	0%	0%
grade 2 events	2052	2353	2046	2115	1946
	3%	3%	2%	2%	2%
grade 3 events	913	981	870	906	878
	1%	1%	1%	1%	1%
grade 4 events	835	925	851	866	896
	1%	1%	1%	1%	1%
grade 5 events	2969	3258	2868	3469	3326
	4%	4%	3%	4%	4%
grade 6 events	1821	1995	1618	1733	2000
	2%	2%	2%	2%	2%
grade 7 events	56048	54326	67506	61731	60794
	81%	79%	85%	82%	82%

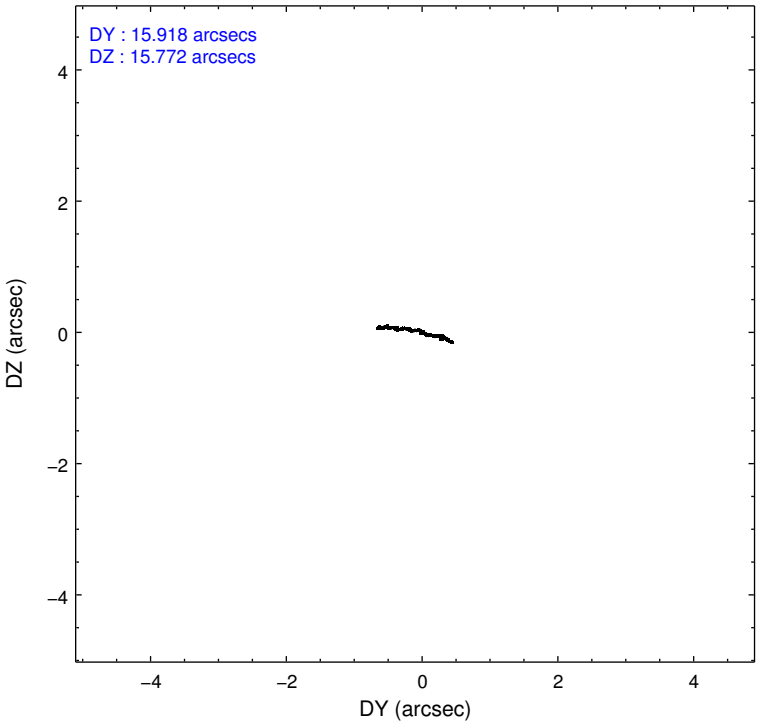
2.2 Compared Parameters

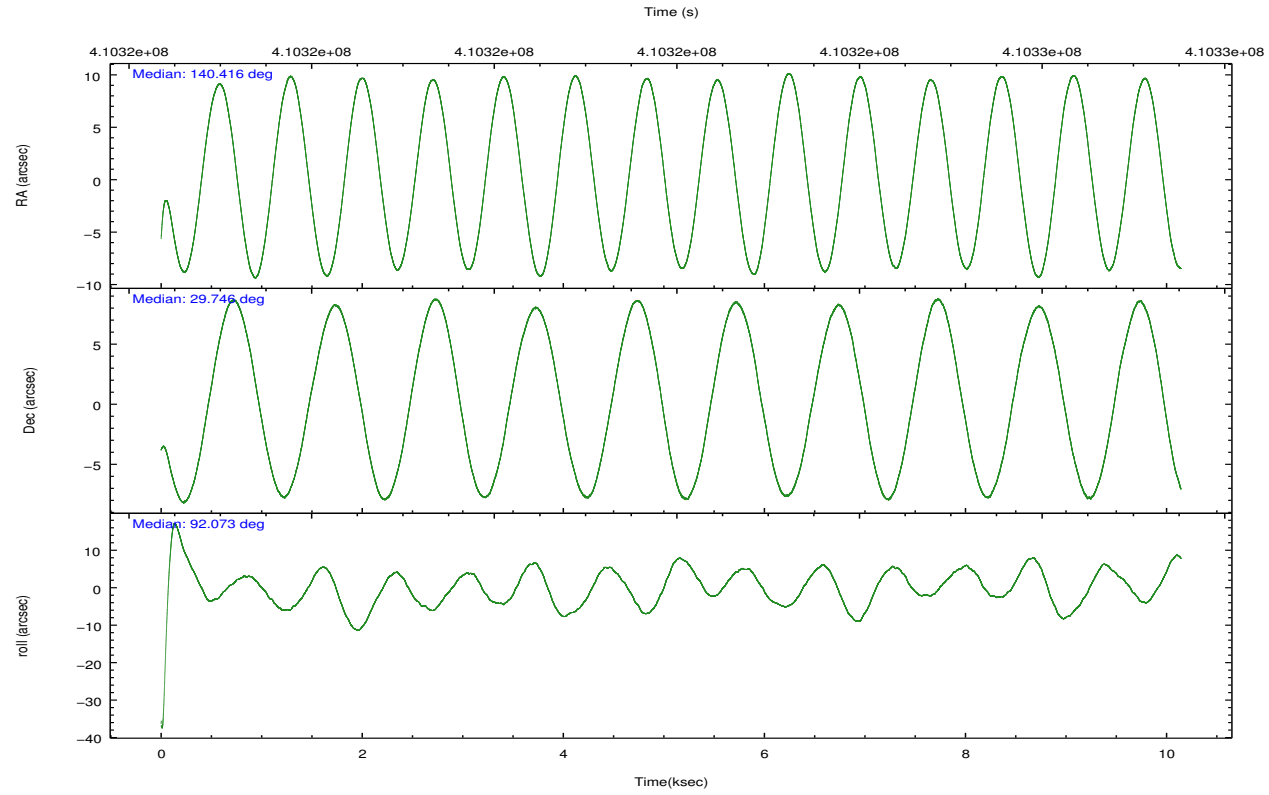
Parameter	Planned	Actual
Instrument	ACIS	ACIS
Detector	ACIS-01236	ACIS-01236
Grating	NONE	NONE
Data mode	VFAINT	VFAINT
Observation mode	POINTING	POINTING
[deg] Pointing RA	140.432713	140.4157360185815
[deg] Pointing Dec	29.723159	29.74638138842343
[deg] Pointing Roll	91.860806	92.07784179028909
[mm] SIM focus pos	-0.782348	-0.7809083437167272
[mm] SIM defocus	0	0.001439871863259334
[mm] SIM translation stage pos	-225.840463	-225.8458576473255
[mm] SIM translation stage offset	-7.752	-7.746595355604228
[s] Observation start time (MET)	410317007.184000	410315866.62716
Observation start date	2011-01-02T00:55:41	2011-01-02T00:37:46
[s] Observation end time (MET)	410327008.184000	410327242.59025
Observation end date	2011-01-02T03:42:22	2011-01-02T03:47:22
Read mode	TIMED	TIMED

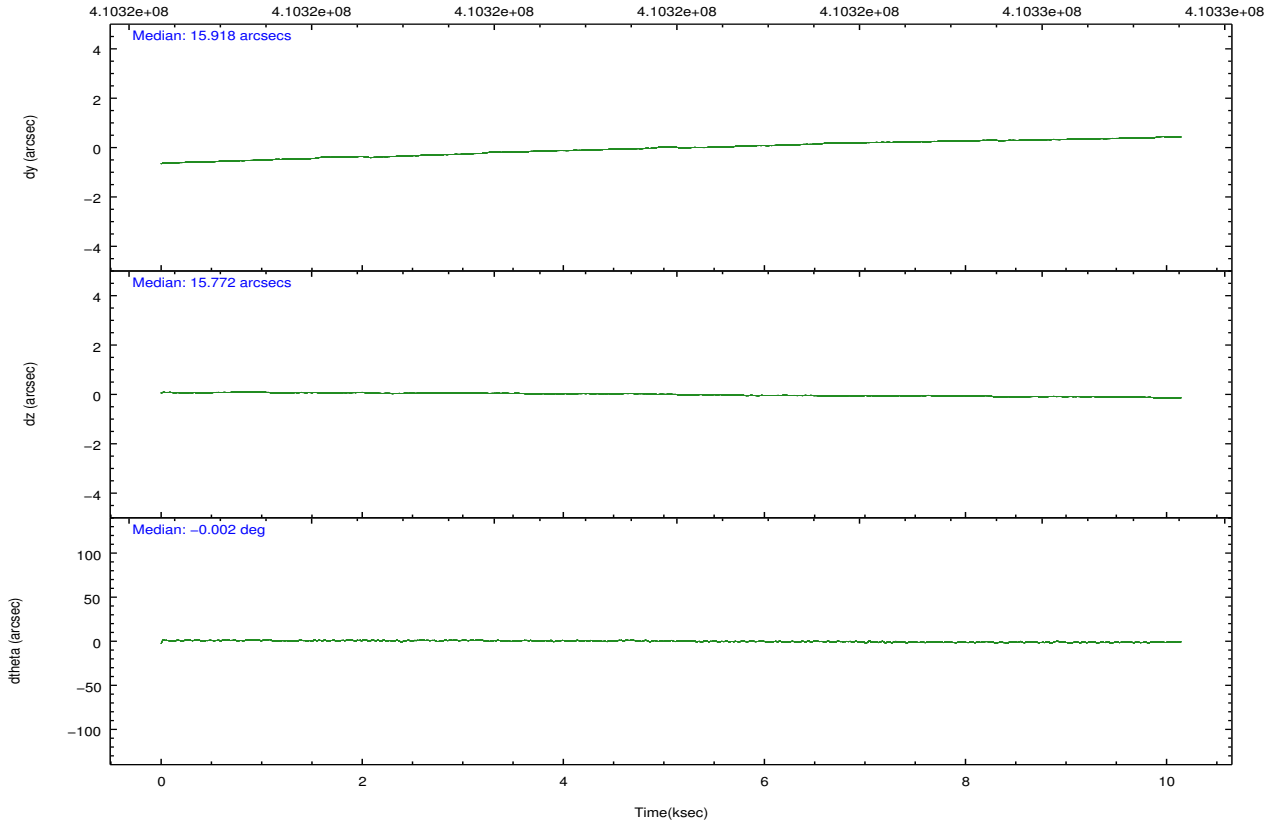
Parameter	Planned	Actual
Obspar format version number	7	7
Obspar file type	PREDICTED	ACTUAL
Obspar update status	NONE	UPDATED
CCD I0 on	Y	Y
CCD I1 on	Y	Y
CCD I2 on	Y	Y
CCD I3 on	Y	Y
CCD S0 on	N	N
CCD S1 on	N	N
CCD S2 on	O1	Y
CCD S3 on	N	N
CCD S4 on	N	N
CCD S5 on	N	N
Number of optional ACIS chips dropped	0	0
On-chip summing requested	N	N
Subarray requested	NONE	NONE
Alternating exposures requested	N	N
[s] Primary exposure time	0.000000	3.1

2.3 Aspect


RA : 140.416 deg
Dec : 29.746 deg
Dec (arcsec)
RA (arcsec)
−10
−5
0
5
10
−5
0
5


DY : 15.918 arcsecs
DZ : 15.772 arcsecs
DZ (arcsec)
DY (arcsec)
−4
−2
0
2
4
−4
−2
0
2
4


Time (s)
4.1032e+08
4.1032e+08
4.1032e+08
4.1032e+08
4.1032e+08
4.1033e+08
4.1033e+08
Median: 140.416 deg
RA (arcsec)
Median: 29.746 deg
Dec (arcsec)
Median: 92.073 deg
roll (arcsec)
Time(ksec)

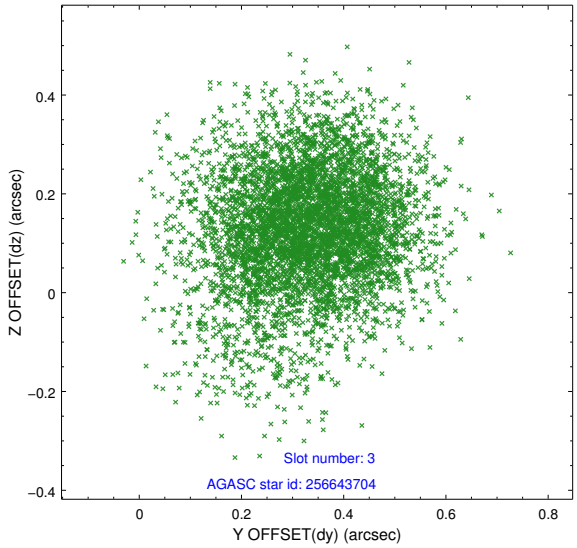

Time (s)
4.1032e+08
4.1032e+08
4.1032e+08
4.1032e+08
4.1032e+08
4.1033e+08
4.1033e+08
Median: 15.918 arcsecs
dy (arcsec)
Median: 15.772 arcsecs
dz (arcsec)
Median: −0.002 deg
dtheta (arcsec)
Time(ksec)

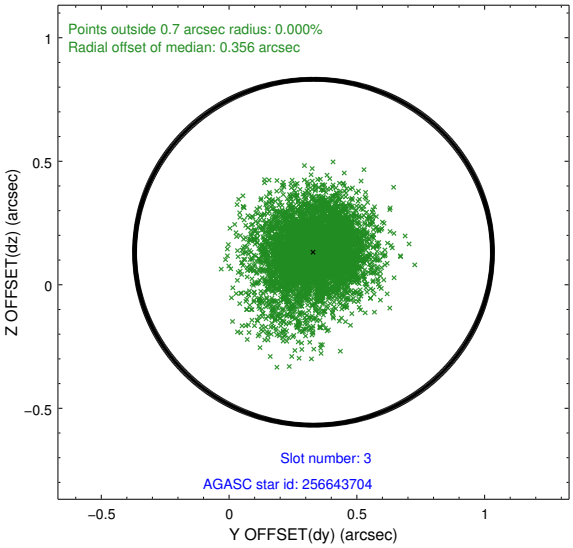
Slot Statistics

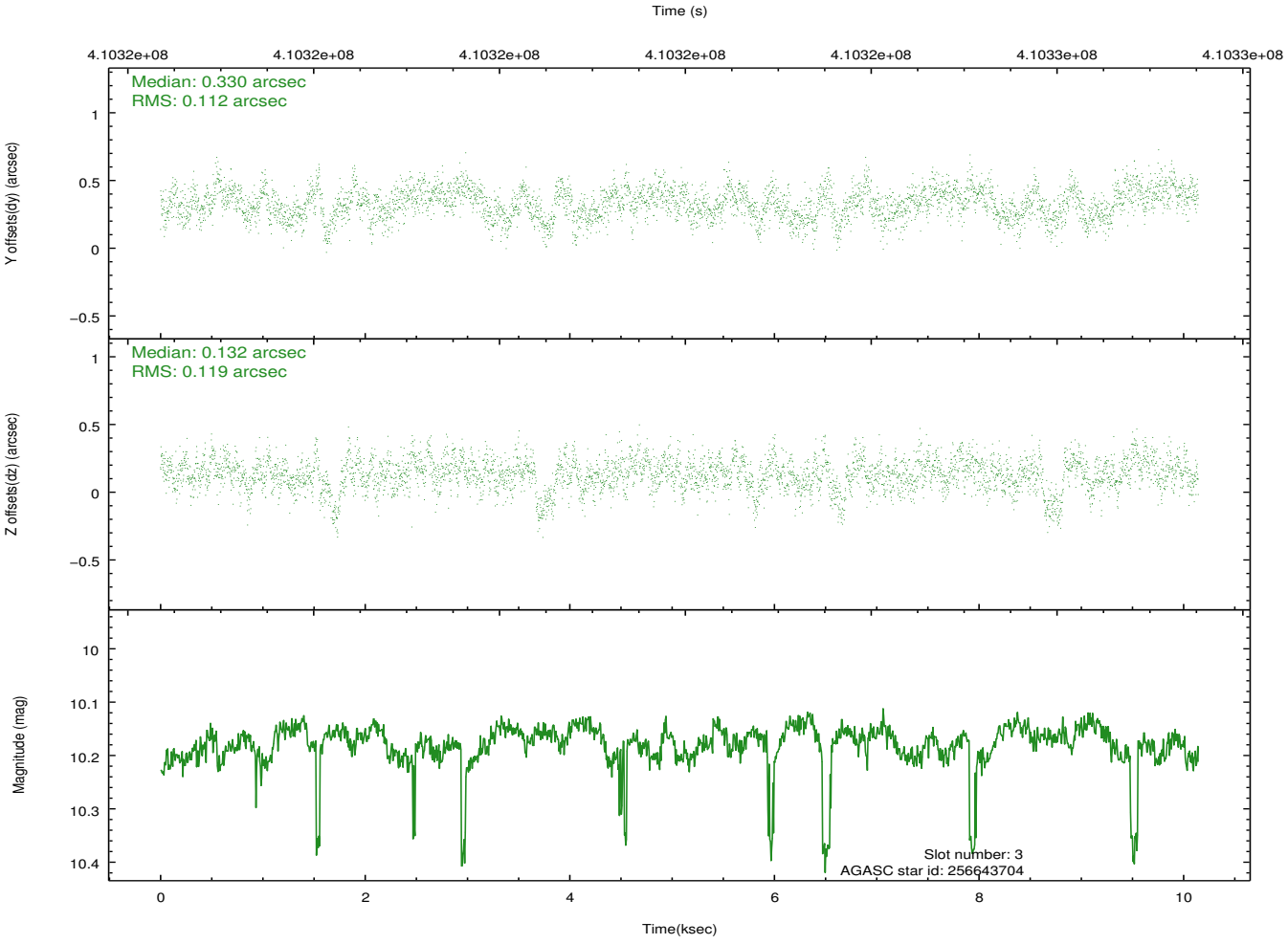
slot	status	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID	ACIS-I-1	7.06	2474	0.127	-0.089	0.009	0.015	0.000000	0.000000	923.55	-998.49
1	FID	ACIS-I-5	7.04	2474	-0.256	0.113	0.011	0.019	0.000000	0.000000	-1824.66	898.85
2	FID	ACIS-I-6	7.06	2474	0.035	0.048	0.009	0.015	0.000000	0.000000	388.42	1543.90
3	GUIDE	256643704	10.17	4918	0.330	0.132	0.171	0.290	139.979375	29.572285	-493.51	1436.28
4	GUIDE	256645296	9.40	4947	0.125	-0.064	0.119	0.187	139.853345	29.315976	-1401.39	1865.21
5	GUIDE	326772344	7.99	4946	-0.169	0.168	0.115	0.175	140.750494	30.197118	1674.54	-1043.06
6	GUIDE	326904496	9.64	4868	0.046	0.223	0.163	0.262	141.156023	30.122423	1371.32	-2297.46
7	GUIDE	326774376	10.29	4935	-0.349	-0.440	0.334	0.496	139.714240	30.060439	1293.31	2196.97

2.4 Star Slots

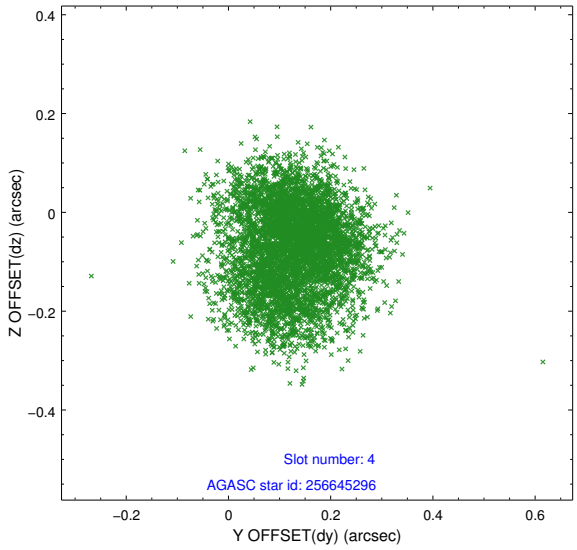
2.4.1 Slot 3

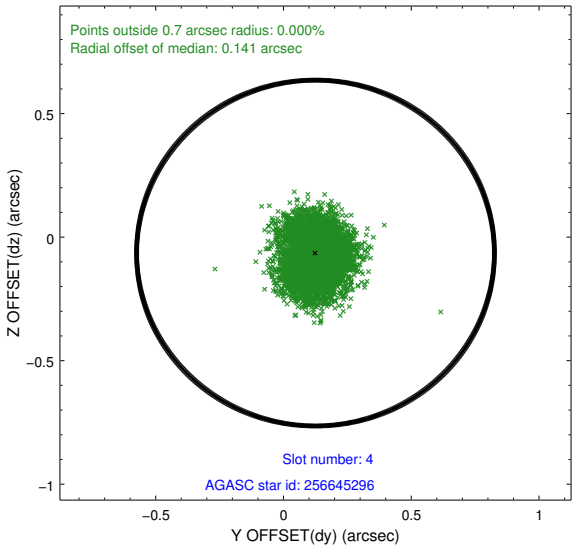


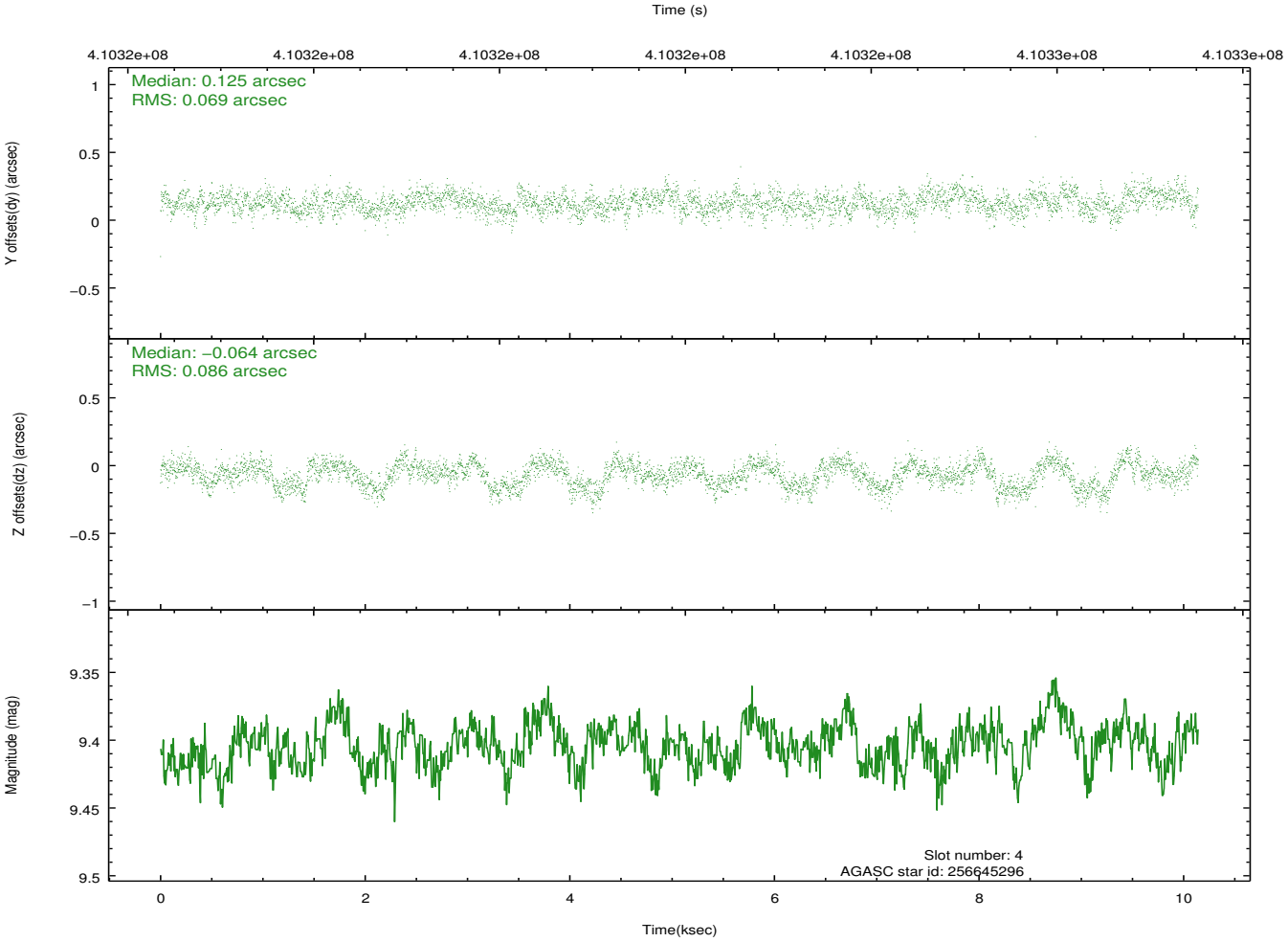




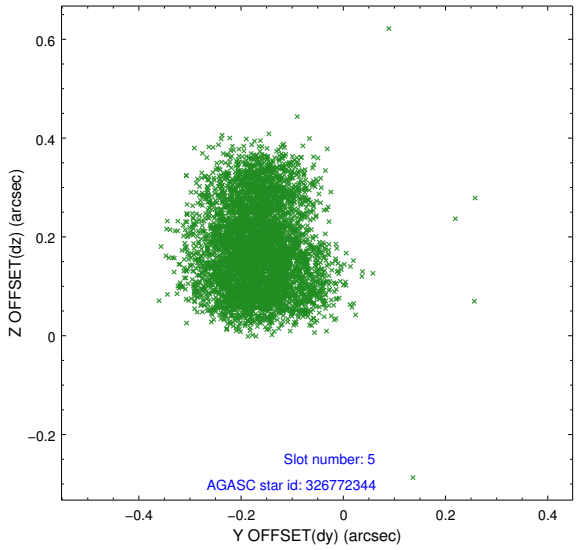
2.4.2 Slot 4

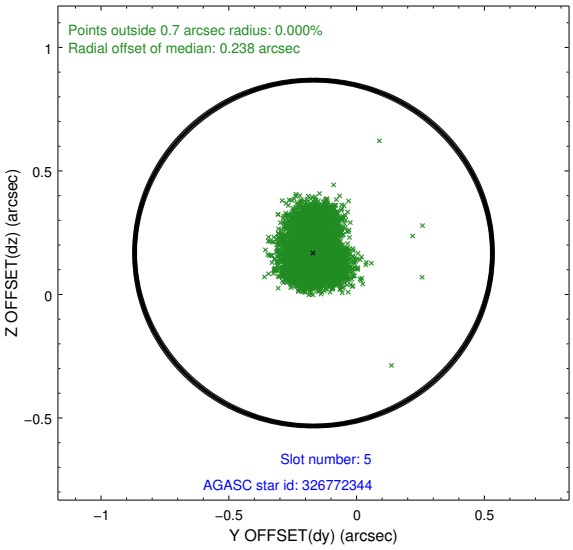

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 4
AGASC star id: 256645296

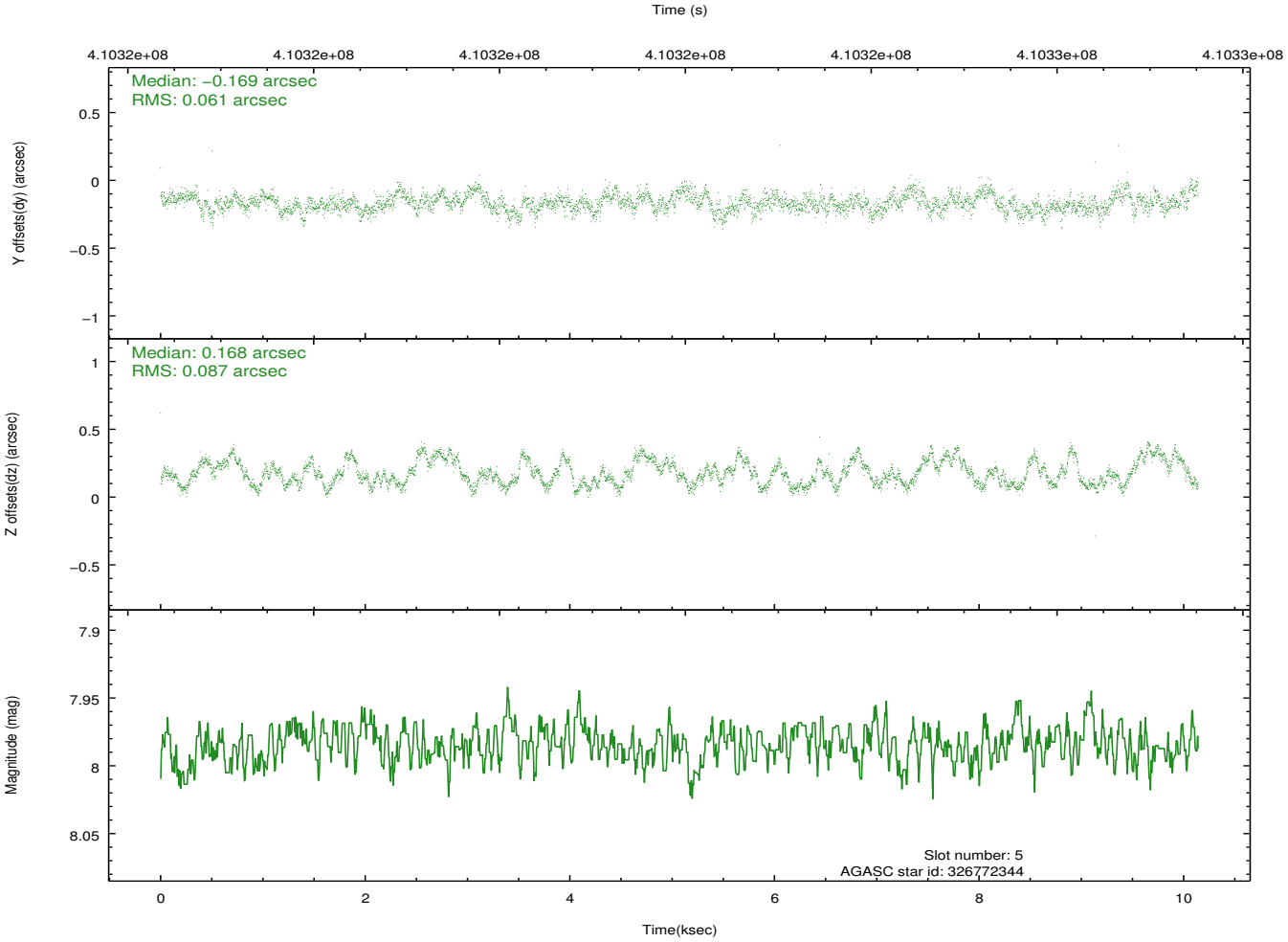

Points outside 0.7 arcsec radius: 0.000%
Radial offset of median: 0.141 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 4
AGASC star id: 256645296


Time (s)
Median: 0.125 arcsec
RMS: 0.069 arcsec
Y offsets(dy) (arcsec)
Median: −0.064 arcsec
RMS: 0.086 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number: 4
AGASC star id: 256645296
Time(ksec)

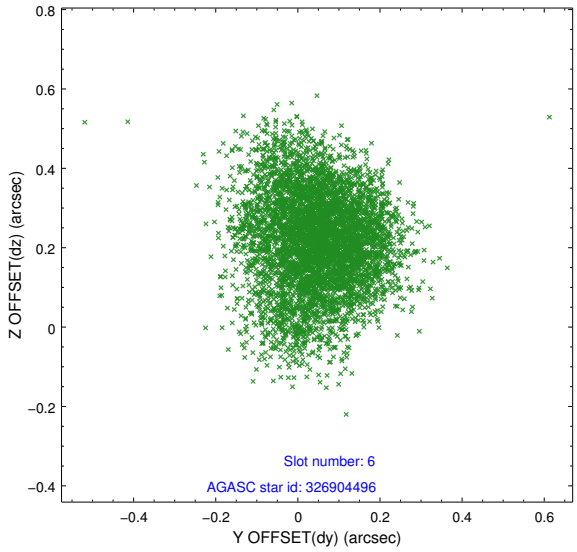
2.4.3 Slot 5

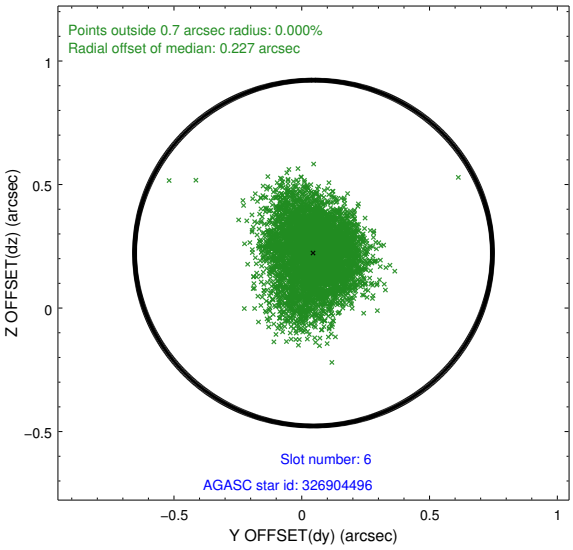

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 5
AGASC star id: 326772344

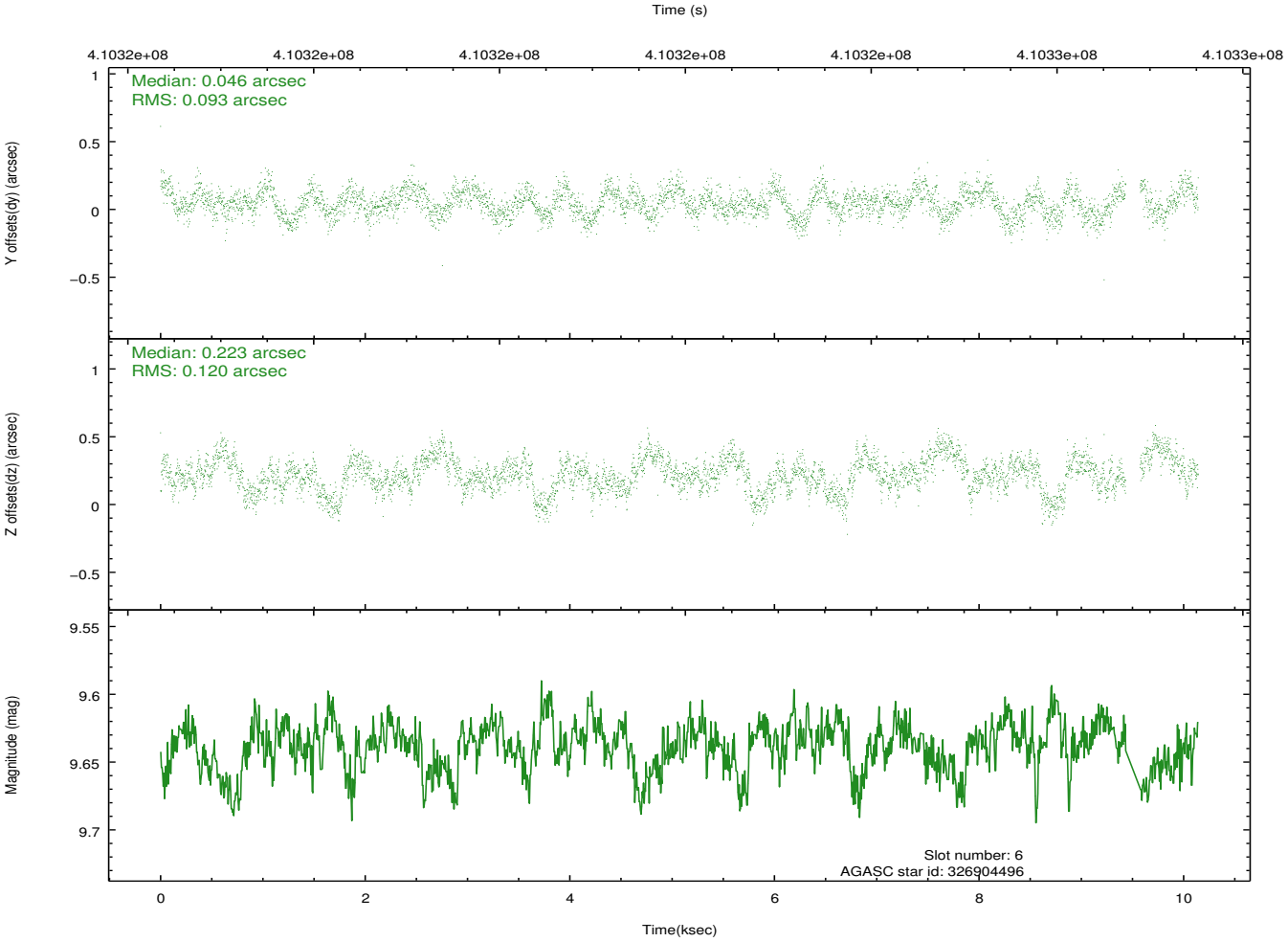

Points outside 0.7 arcsec radius: 0.000%
Radial offset of median: 0.238 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 5
AGASC star id: 326772344


Time (s)
Median: −0.169 arcsec
RMS: 0.061 arcsec
Y offsets(dy) (arcsec)
Median: 0.168 arcsec
RMS: 0.087 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number: 5
AGASC star id: 326772344
Time(ksec)

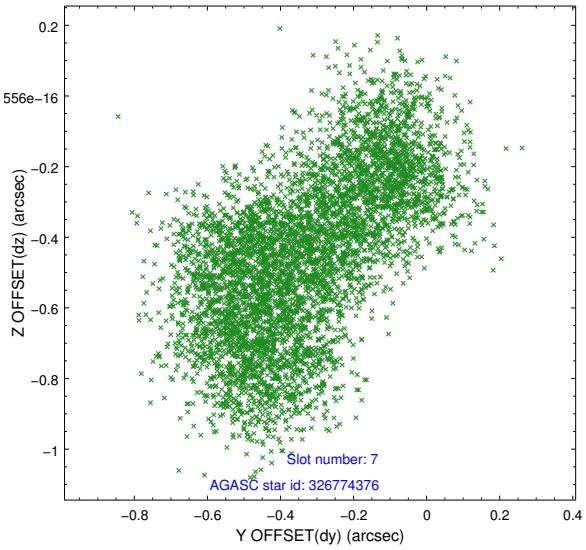
2.4.4 Slot 6

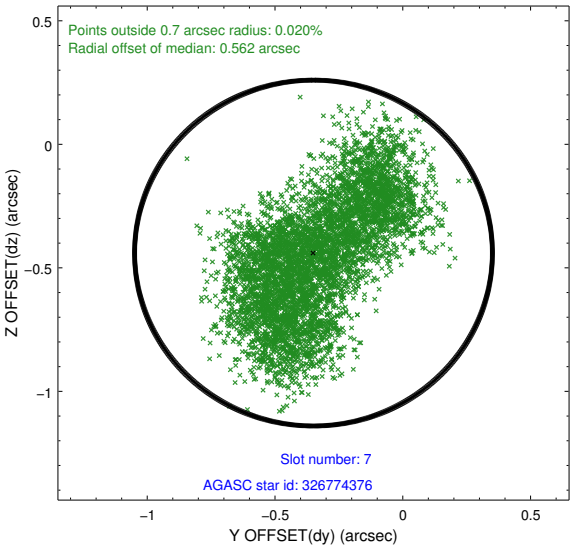

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 6
AGASC star id: 326904496

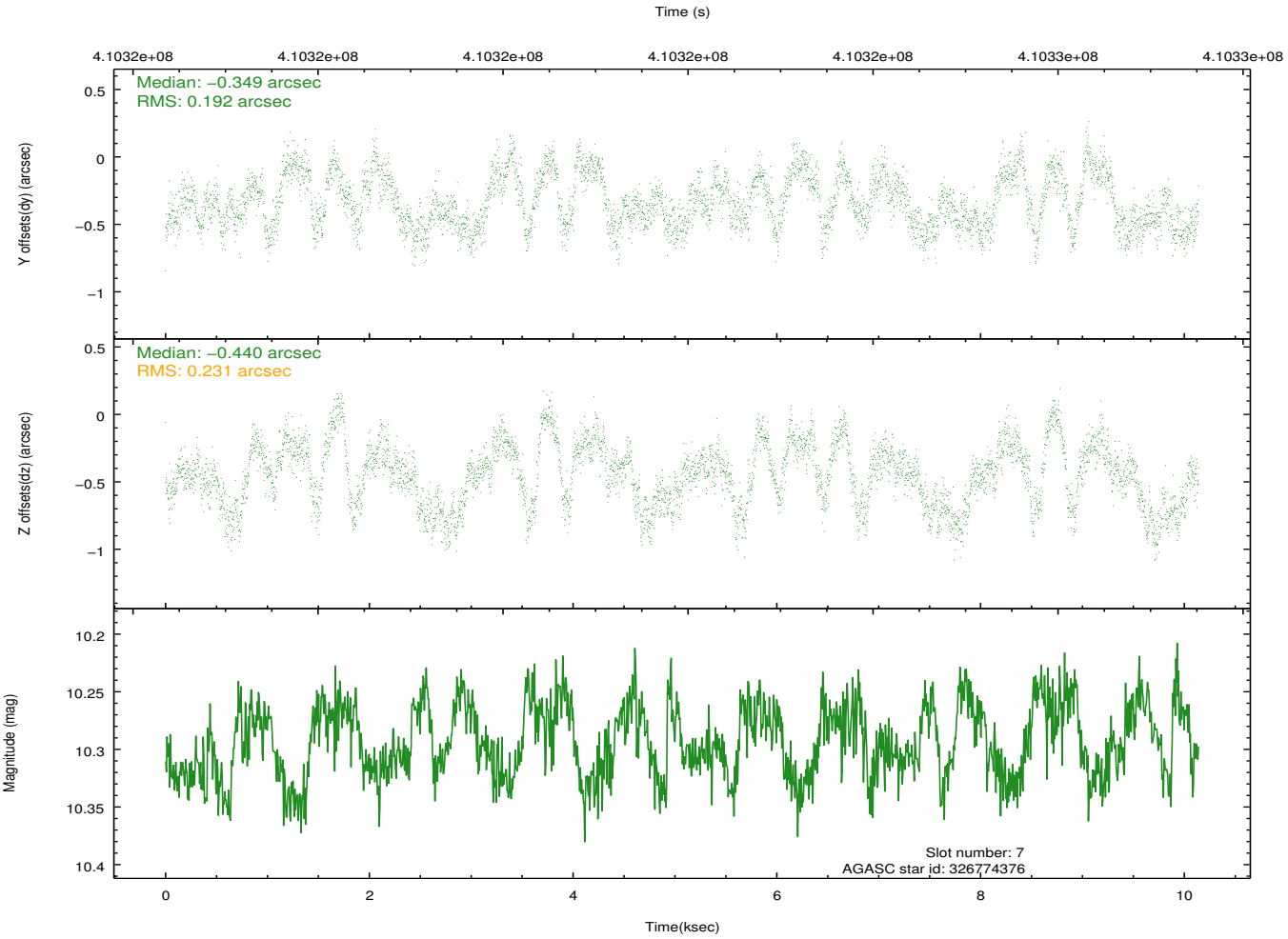

Points outside 0.7 arcsec radius: 0.000%
Radial offset of median: 0.227 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 6
AGASC star id: 326904496


Time (s)
Median: 0.046 arcsec
RMS: 0.093 arcsec
Y offsets(dy) (arcsec)
Median: 0.223 arcsec
RMS: 0.120 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number: 6
AGASC star id: 326904496
Time(ksec)

2.4.5 Slot 7

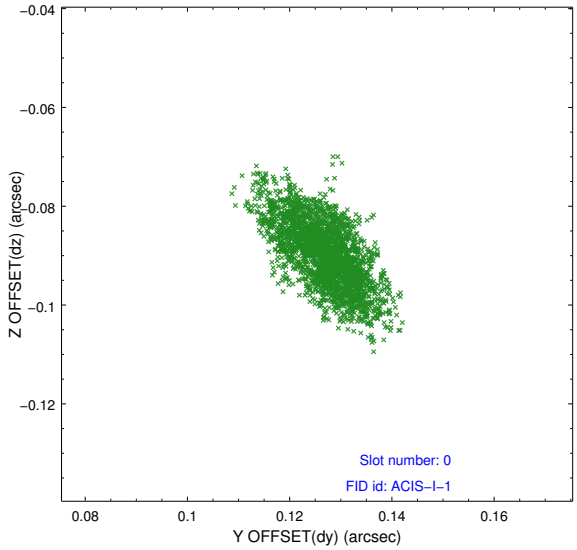

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 7
AGASC star id: 326774376

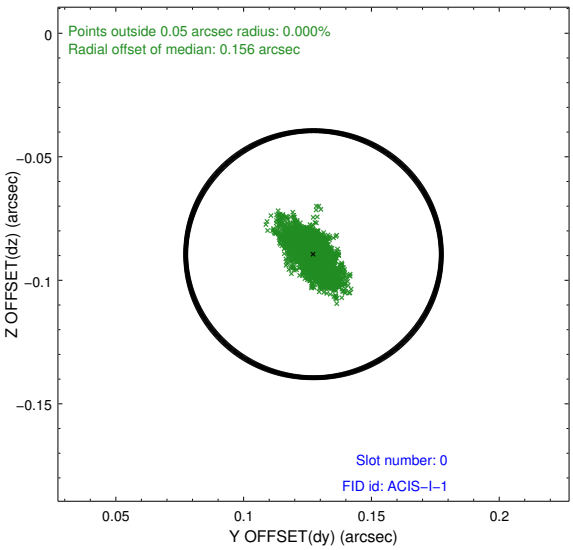

Points outside 0.7 arcsec radius: 0.020%
Radial offset of median: 0.562 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 7
AGASC star id: 326774376

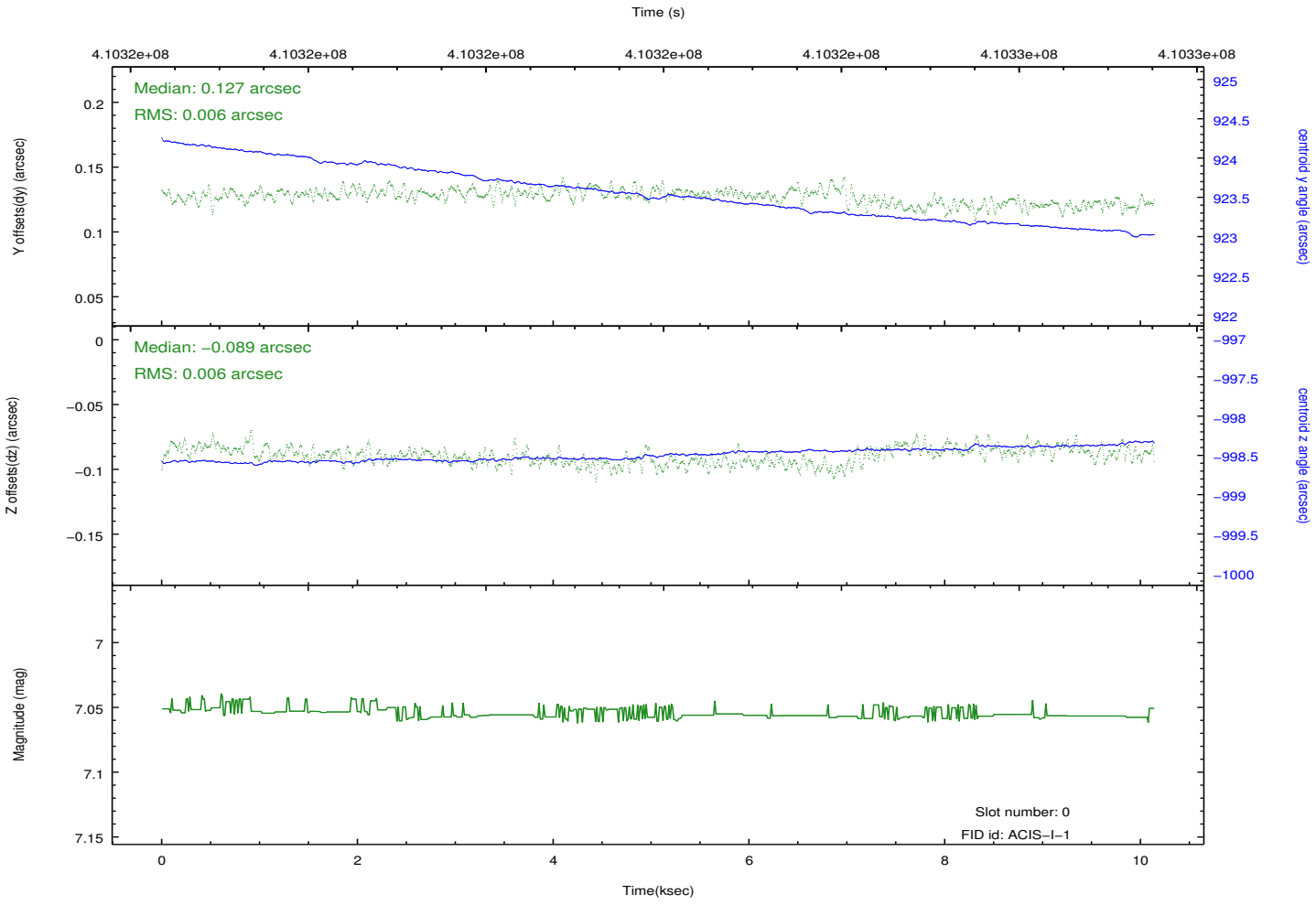

Time (s)
Median: −0.349 arcsec
RMS: 0.192 arcsec
Y offsets(dy) (arcsec)
Median: −0.440 arcsec
RMS: 0.231 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number: 7
AGASC star id: 326774376
Time(ksec)

2.5 FID Slots

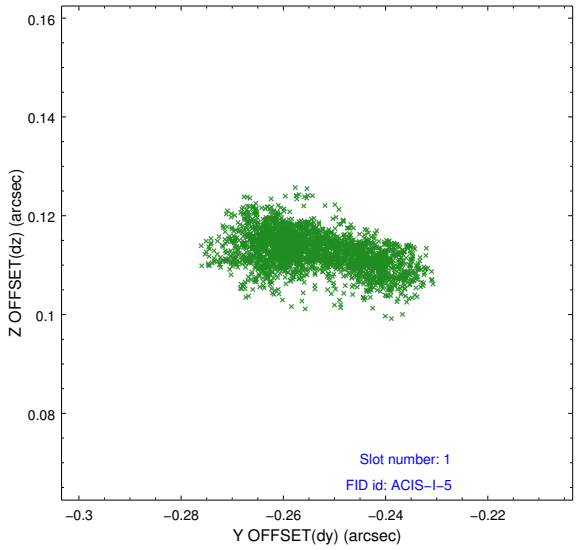
2.5.1 Slot 0

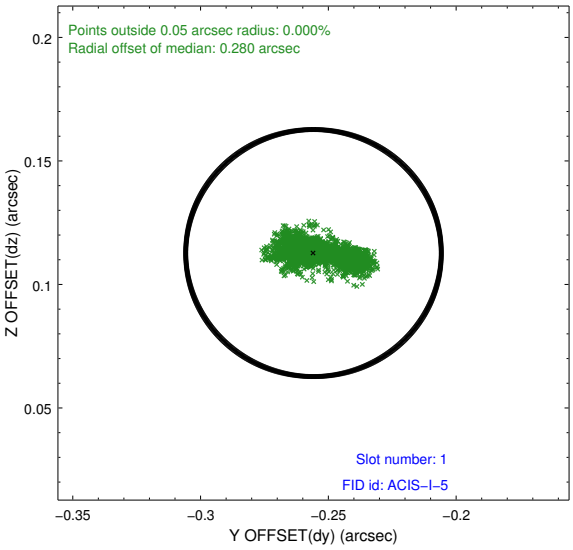


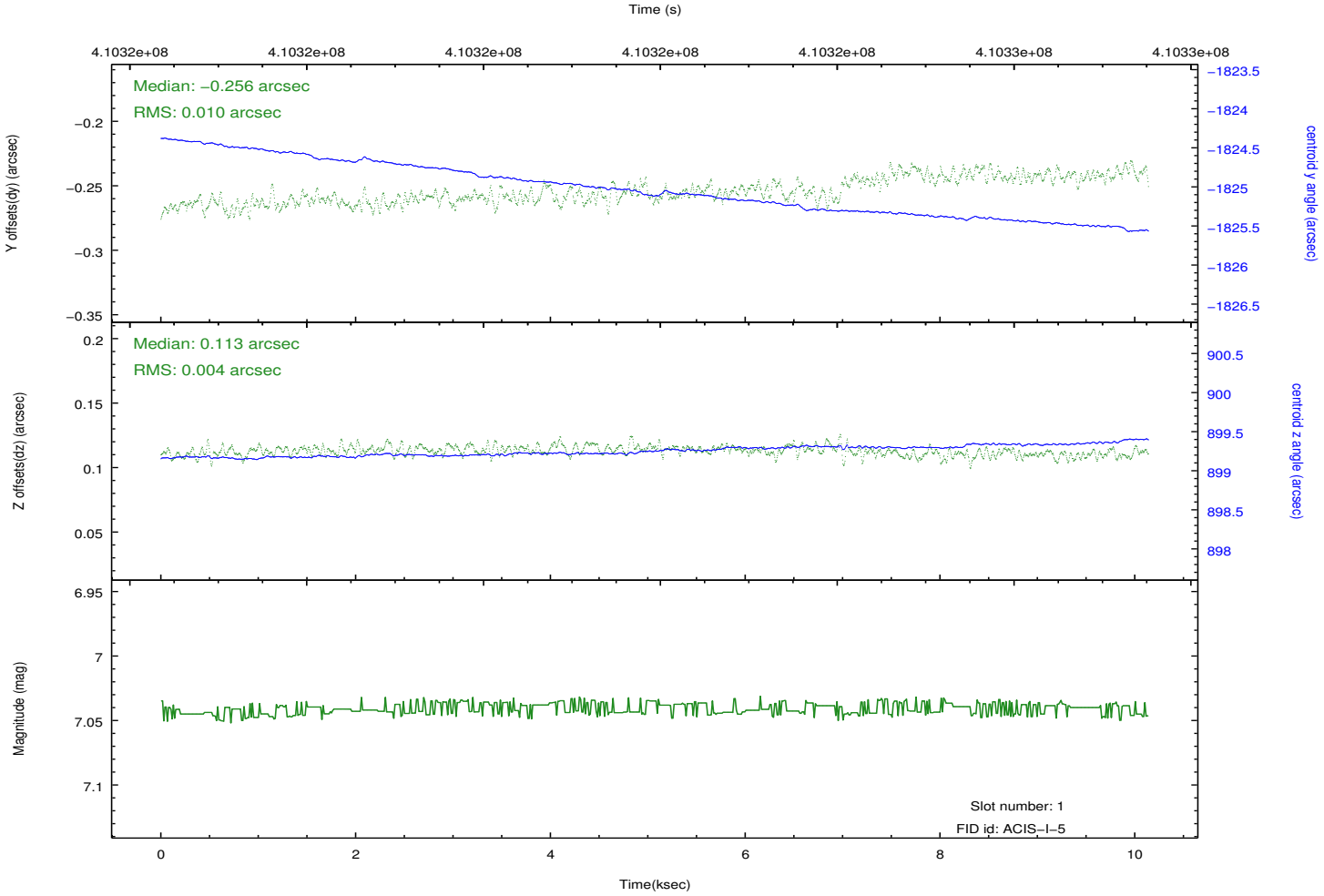




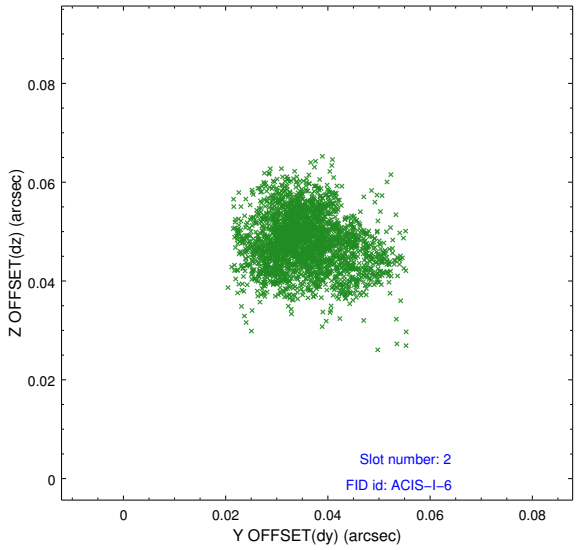
2.5.2 Slot 1

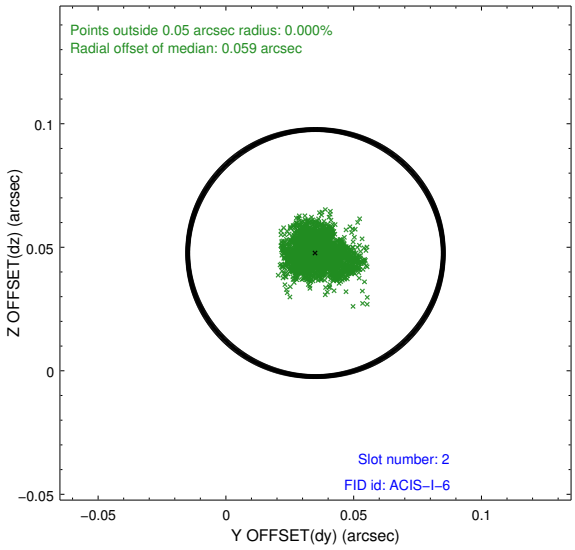

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 1
FID id: ACIS−I−5

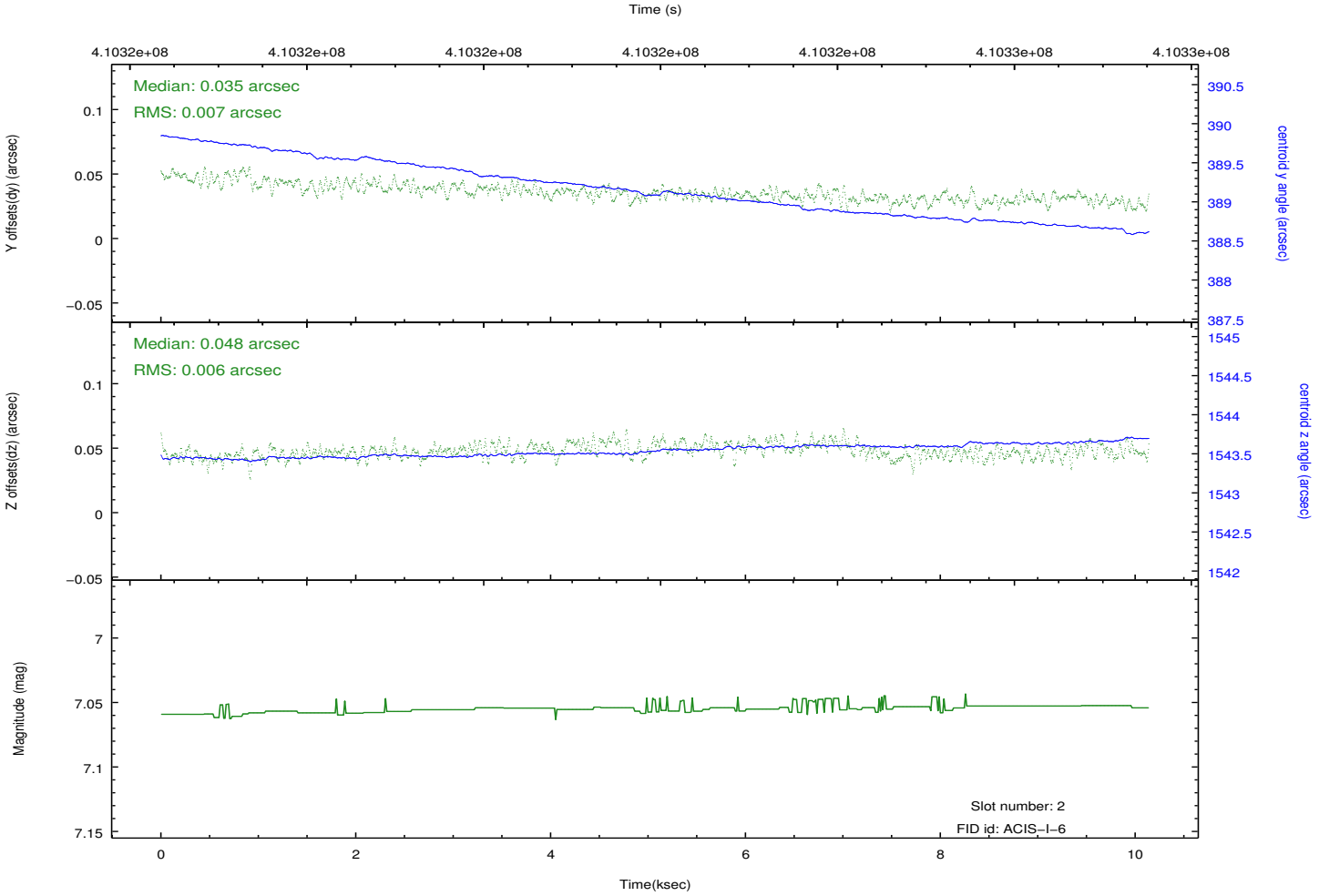

Points outside 0.05 arcsec radius: 0.000%
Radial offset of median: 0.280 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 1
FID id: ACIS−I−5


Time (s)
Median: −0.256 arcsec
RMS: 0.010 arcsec
Y offsets(dy) (arcsec)
centroid y angle (arcsec)
Median: 0.113 arcsec
RMS: 0.004 arcsec
Z offsets(dz) (arcsec)
centroid z angle (arcsec)
Magnitude (mag)
Slot number: 1
FID id: ACIS−I−5
Time(ksec)

2.5.3 Slot 2


Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 2
FID id: ACIS−I−6


Points outside 0.05 arcsec radius: 0.000%
Radial offset of median: 0.059 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 2
FID id: ACIS−I−6


Time (s)
Median: 0.035 arcsec
RMS: 0.007 arcsec
Y offsets(dy) (arcsec)
centroid y angle (arcsec)
Median: 0.048 arcsec
RMS: 0.006 arcsec
Z offsets(dz) (arcsec)
centroid z angle (arcsec)
Magnitude (mag)
Slot number: 2
FID id: ACIS−I−6
Time(ksec)

A Summary

A.1 Status

V&V Scientist	Beth Sundheim
V&V Date (YYYY-MM-DD)	2012.02.01
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	10.056400077343

A.2 Comments

The data for this observation have been processed using the 'EDSER' sub-pixel event-repositioning algorithm of Li et al. (2004, ApJ, 610, 1204). Small-scale features should become sharper for sources near the aim point. The improvement will be less noticeable for off-axis sources where the size of the point-spread function is comparable to or larger than the size of an ACIS pixel. To take full advantage of the improvement, images should be binned on spatial scales smaller than the size of an ACIS pixel. Note that, at present, the point-spread function has not been calibrated for data to which the EDSER algorithm has been applied. If dither was disabled for the observation, then the algorithm can introduce artificial aliasing effects on spatial scales smaller than a pixel. If you would prefer to use no sub-pixel adjustment or to apply a coordinate randomization, then use acis_process_events to reprocess the data with the parameter pix_adj=NONE or RANDOMIZE, respectively.