V&V Reference Report
L2 ASCDS Version : 8.4.3

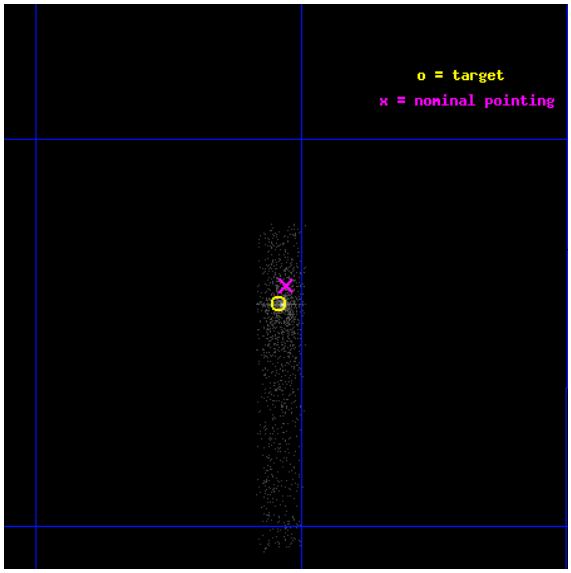
Observation 12449 - L2 Version 2
Chandra X-Ray Center

L2 Processing Date : Feb 5 2012

Contents

1 Front

seq_num	401190	Sequence number
obs_id	12449	Observation id
title	Precise Localization of Transient Low-Mass X-ray Binaries	Proposal
observer	Prof. Deepto Chakrabarty	Principal investigator
object	SAX J1806.5-2215	Source name
dtycycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	271.635625	Observer's specified target RA [deg]
dec_targ	-22.237667	Observer's specified target Dec [deg]
ra_nom	271.63244082831	Nominal RA [deg]
dec_nom	-22.23004711549	Nominal Dec [deg]
roll_nom	90.454870410584	Nominal Roll [deg]
revision	2	Processing version of data
ontime	1009.9631977677	Sum of GTIs [s]
livetime	915.98331014669	Livetime [s]
ontime7	1009.9631977677	Sum of GTIs [s]
l2events	2979	Number of level 2 events

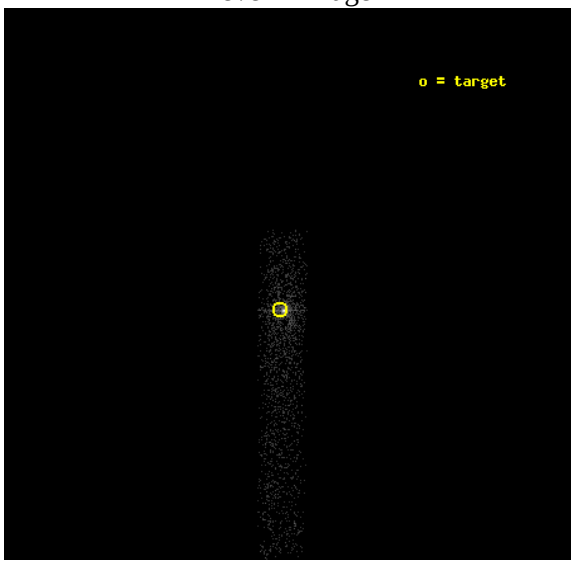


2 OBI

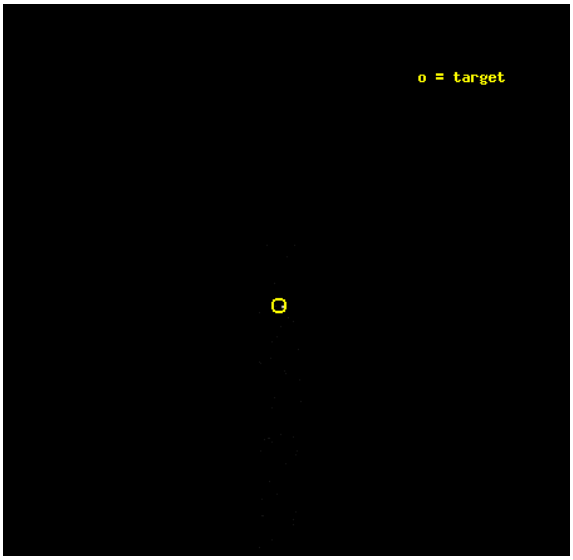
2.1 OBI

2.1.1 Images

Level 1 Image



Level 1 Bad Events



2.1.2 Bias

Chip 7

2.1.3 Parameters

obi_num	0	Obi number
ascdsver	8.4.3	Processing system revision
caldbver	4.4.7	
date	2012-02-05T14:20:30	Date and time of file creation
revision	2	Processing version of data

sched_exp_time	1000.000000	[s] Scheduled observation exposure time
ontime	1009.9631977677	Sum of GTIs [s]
ontime7	1009.9631977677	Sum of GTIs [s]
l1events	4695	Number of level 1 events

2.1.4 Events

	ccd 7
level 1 events	4695
rejected events	1602
rejected %	34%

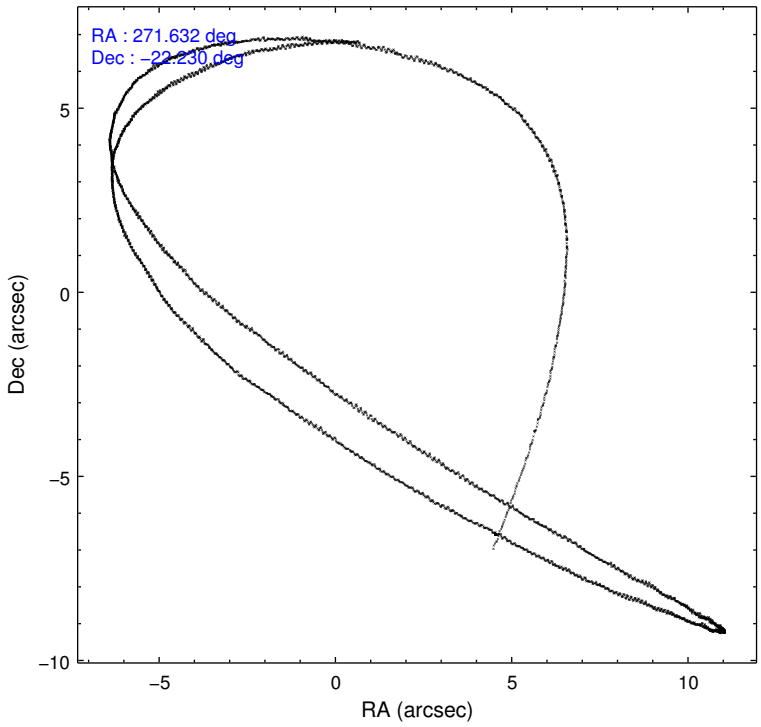
	ccd 7
grade 0 events	431
	9%
grade 1 events	41
	0%
grade 2 events	614
	13%
grade 3 events	323
	6%
grade 4 events	330
	7%
grade 5 events	417
	8%
grade 6 events	1399
	29%
grade 7 events	1140
	24%

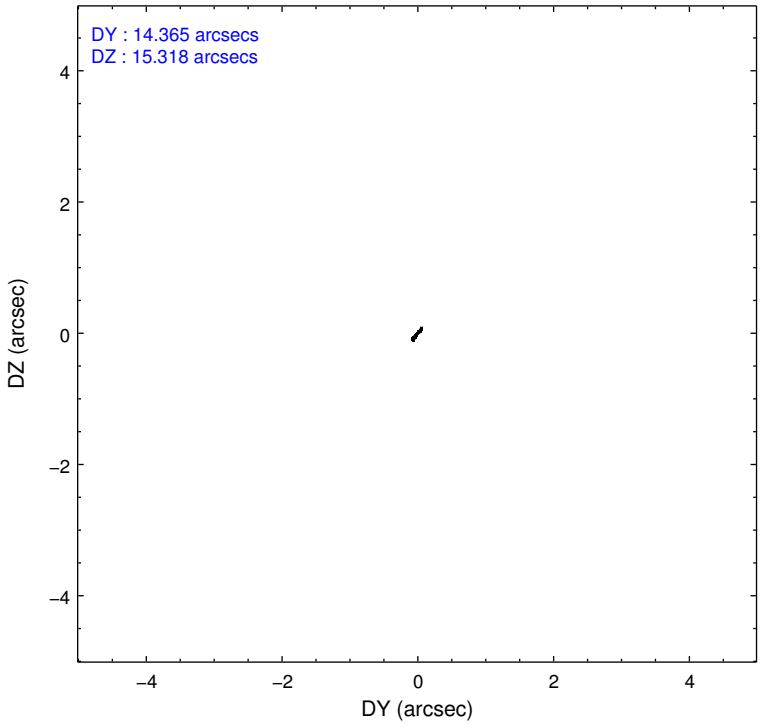
2.2 Compared Parameters

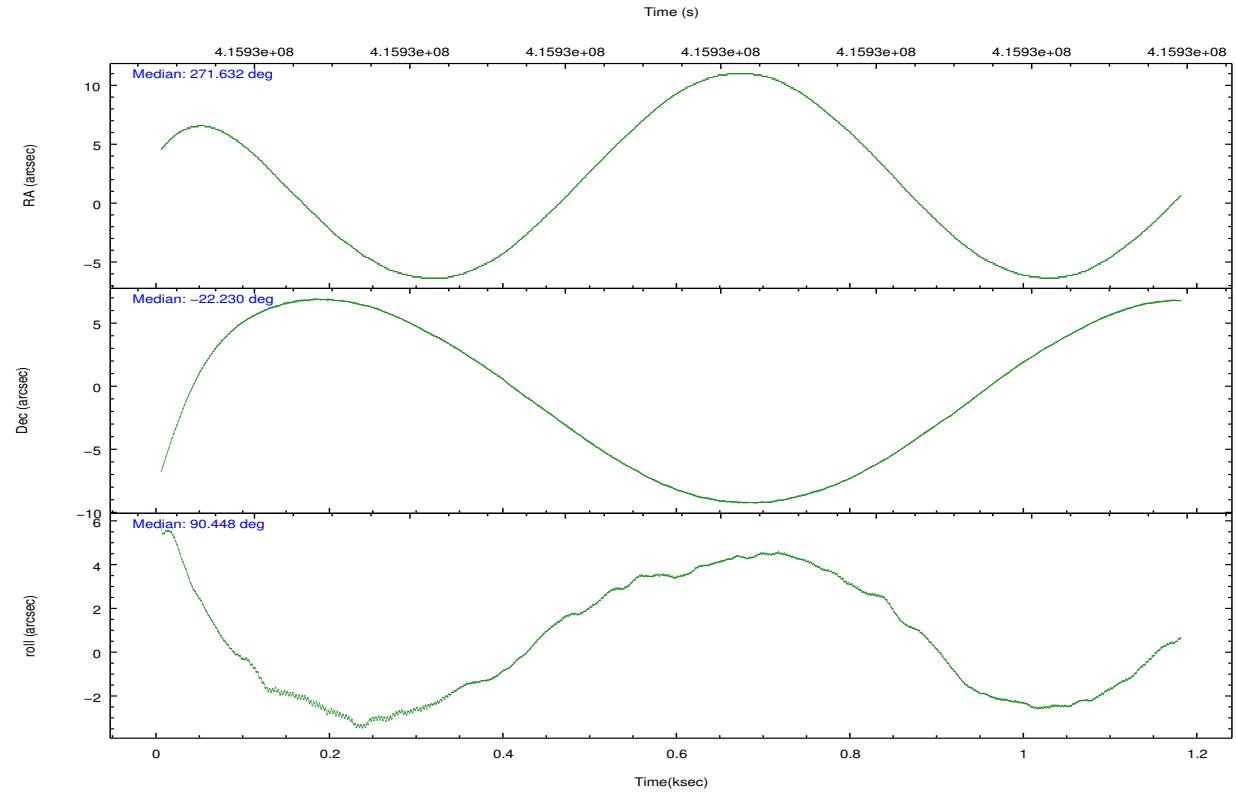
Parameter	Planned	Actual
Instrument	ACIS	ACIS
Detector	ACIS-7	ACIS-7
Grating	NONE	NONE
Data mode	FAINT	FAINT
Observation mode	POINTING	POINTING
[deg] Pointing RA	271.648134	271.632440828314
[deg] Pointing Dec	-22.253604	-22.2300471154895
[deg] Pointing Roll	90.304166	90.45487041058425
[mm] SIM focus pos	-0.684267	-0.6828225247311905
[mm] SIM defocus	0	0.001444936568705701
[mm] SIM translation stage pos	-190.132523	-190.1400660498719
[mm] SIM translation stage offset	0	0.00754346686406393
[s] Observation start time (MET)	415930326.184000	415929559.75507
Observation start date	2011-03-08T00:11:00	2011-03-07T23:59:19
[s] Observation end time (MET)	415931326.184000	415931584.13017
Observation end date	2011-03-08T00:27:40	2011-03-08T00:33:04
Read mode	TIMED	TIMED

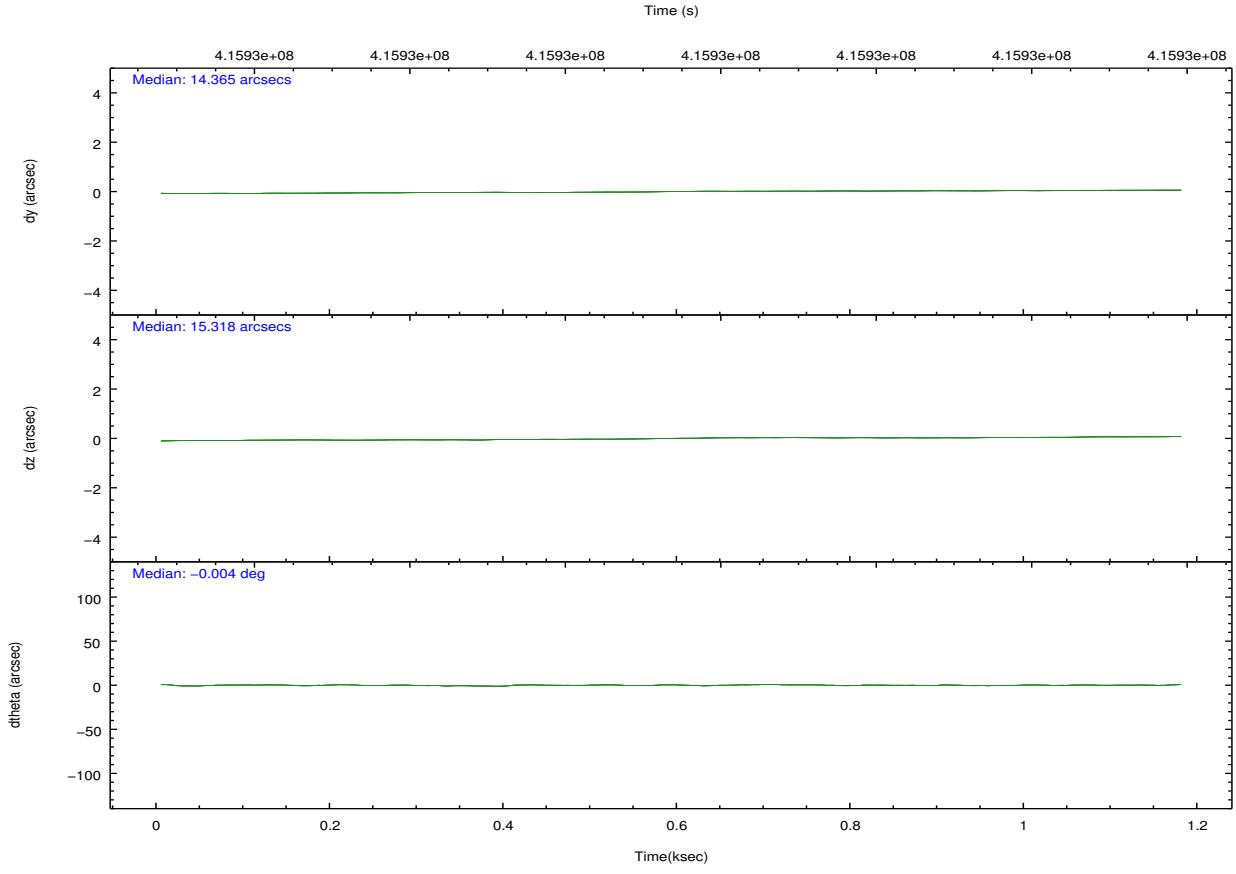
Parameter	Planned	Actual
Obspar format version number	7	7
Obspar file type	PREDICTED	ACTUAL
Obspar update status	NONE	UPDATED
Number of optional ACIS chips dropped	0	0
On-chip summing requested	N	N
Subarray requested	CUSTOM	1/8
Subarray start row	449	449
Subarray row count	128	128
Alternating exposures requested	N	N
[s] Primary exposure time	0.000000	0.4

2.3 Aspect


RA : 271.632 deg
Dec : −22.230 deg
Dec (arcsec)
RA (arcsec)
5
0
−5
−10
−5
0
5
10


DY : 14.365 arcsecs
DZ : 15.318 arcsecs
DZ (arcsec)
DY (arcsec)
4
2
0
−2
−4
−4
−2
0
2
4


Time (s)
4.1593e+08
4.1593e+08
4.1593e+08
4.1593e+08
4.1593e+08
4.1593e+08
4.1593e+08
Median: 271.632 deg
RA (arcsec)
Median: −22.230 deg
Dec (arcsec)
Median: 90.448 deg
roll (arcsec)
Time(ksec)

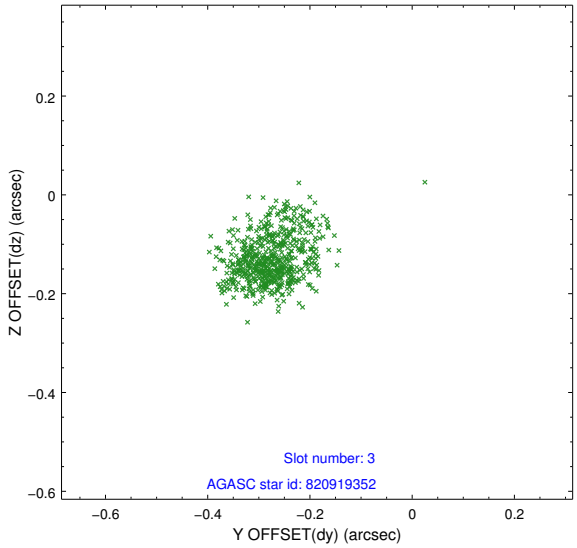

Time (s)
4.1593e+08
4.1593e+08
4.1593e+08
4.1593e+08
4.1593e+08
4.1593e+08
4.1593e+08
Median: 14.365 arcsecs
dy (arcsec)
Median: 15.318 arcsecs
dz (arcsec)
Median: −0.004 deg
dtheta (arcsec)
Time(ksec)

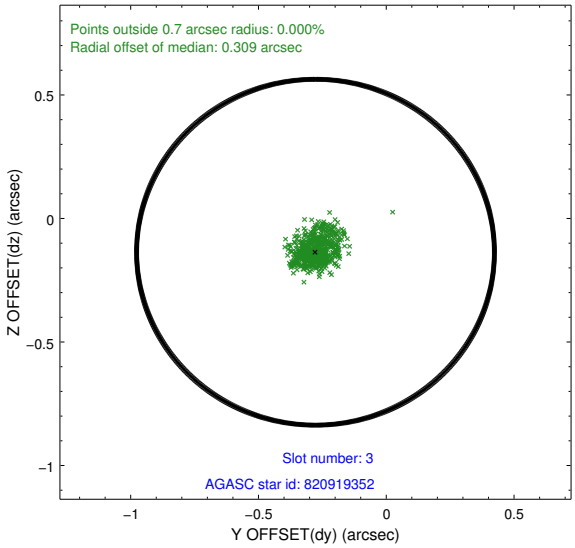
Slot Statistics

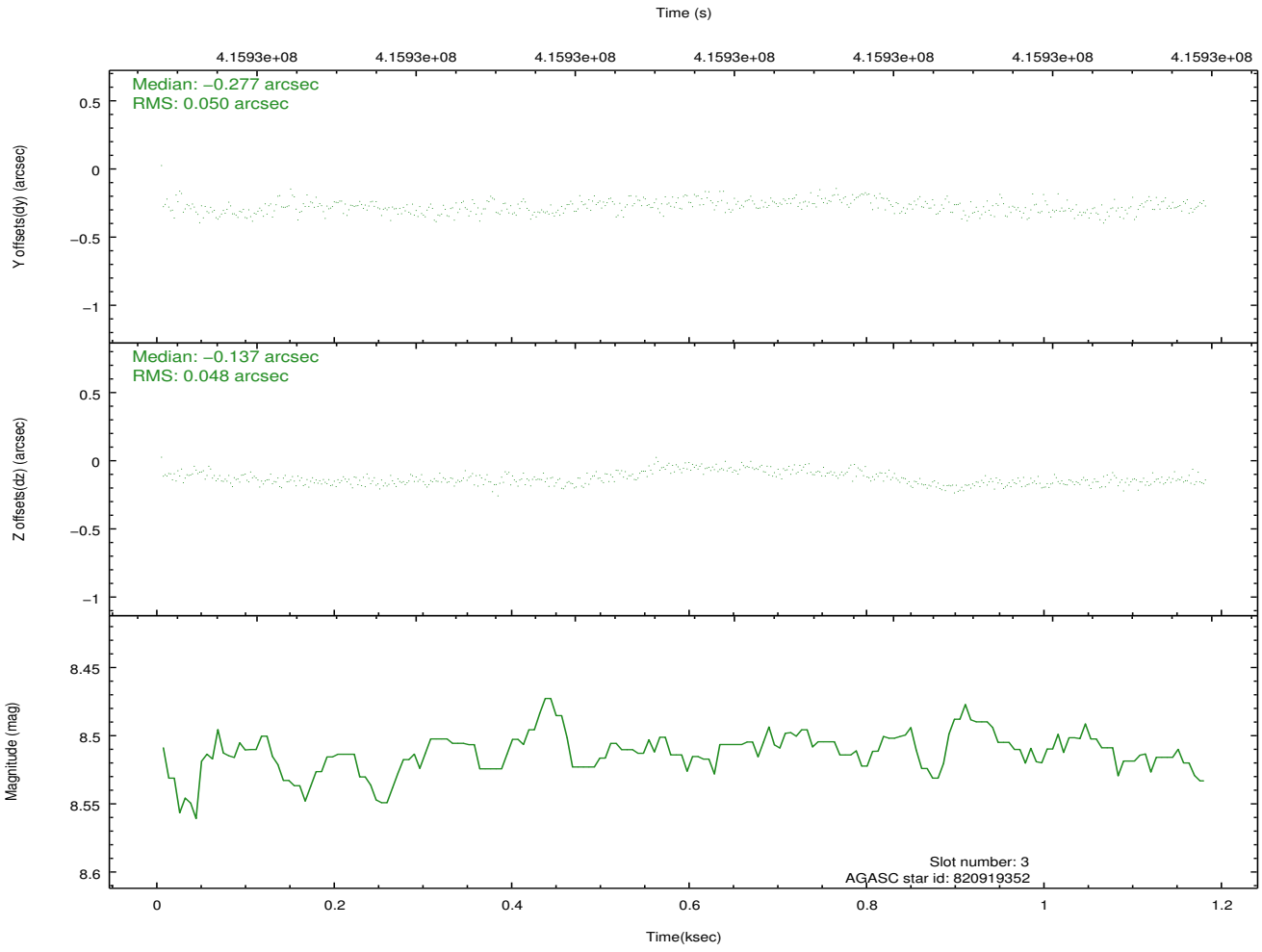
slot	status	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID	ACIS-S-2	6.95	287	-0.082	-0.035	0.007	0.010	0.000000	0.000000	-767.38	-1736.73
1	FID	ACIS-S-4	7.04	287	0.215	0.049	0.004	0.008	0.000000	0.000000	2143.58	165.96
2	FID	ACIS-S-5	7.06	287	-0.164	-0.006	0.006	0.010	0.000000	0.000000	-1813.05	166.00
3	GUIDE	820919352	8.51	575	-0.277	-0.137	0.073	0.119	271.344693	-21.673175	2091.67	1003.78
4	GUIDE	820929544	7.30	575	-0.200	0.008	0.071	0.127	271.928022	-21.860504	1412.44	-941.89
5	GUIDE	896801648	7.56	575	0.239	-0.244	0.103	0.183	270.982903	-22.837451	-2093.10	2215.04
6	GUIDE	822624744	8.38	575	0.014	0.162	0.106	0.181	272.378589	-21.572427	2429.73	-2455.40
7	GUIDE	896805608	8.23	574	0.210	0.211	0.085	0.129	271.958650	-22.879833	-2256.81	-1023.48

2.4 Star Slots

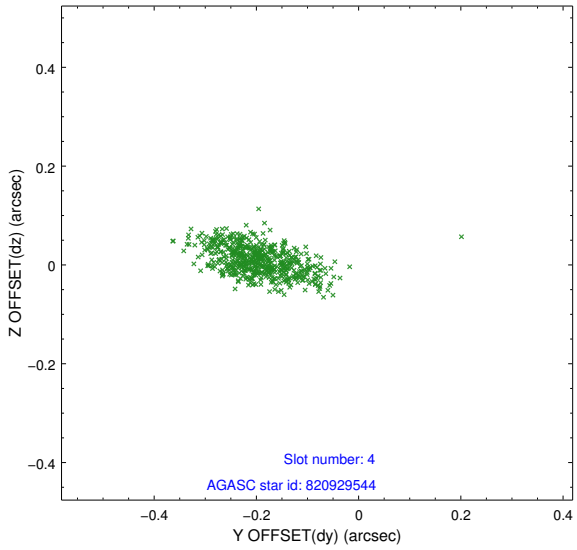
2.4.1 Slot 3

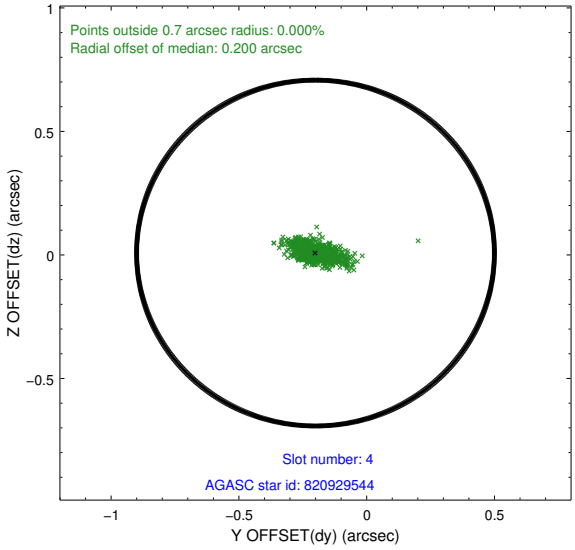


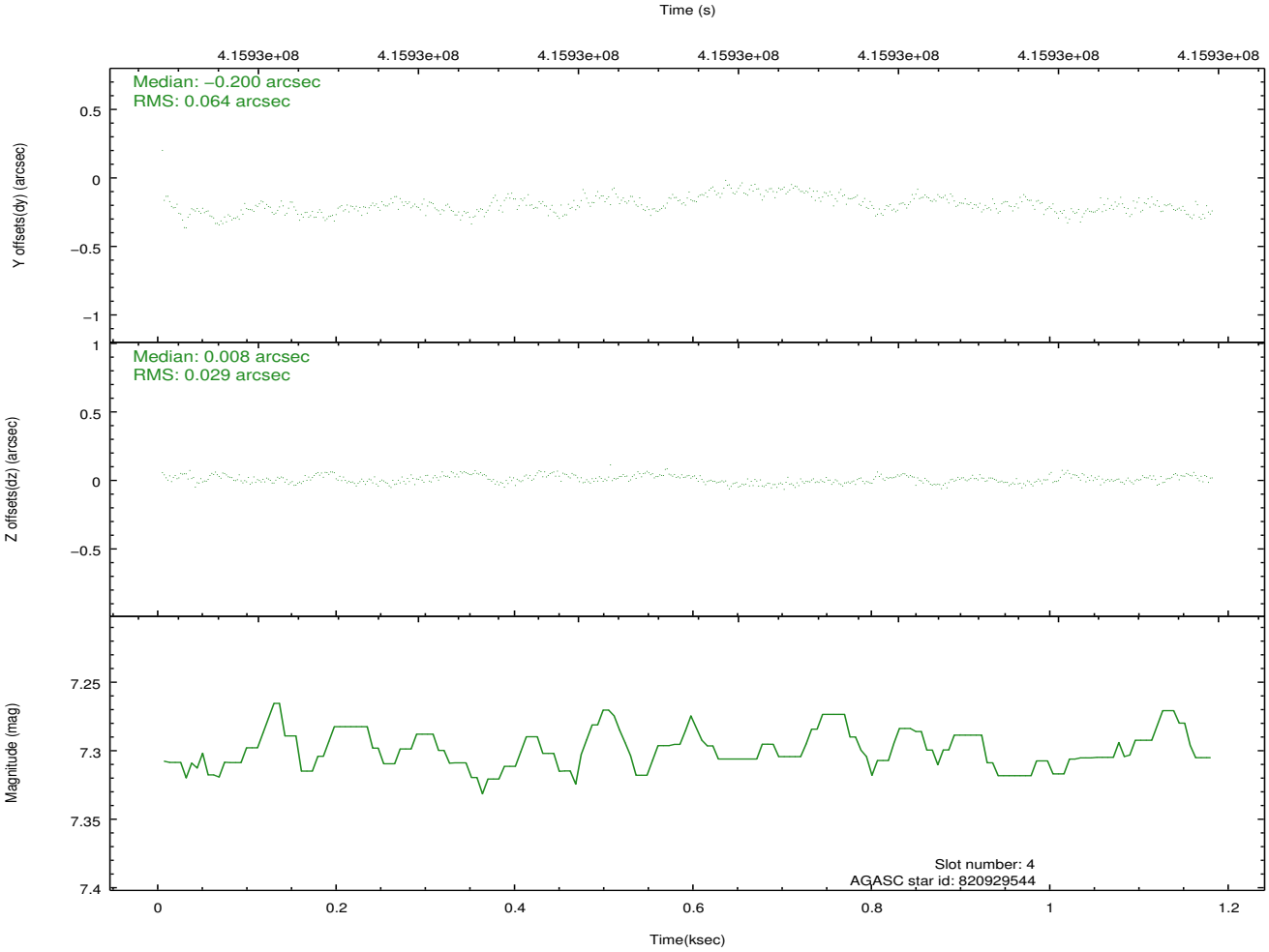




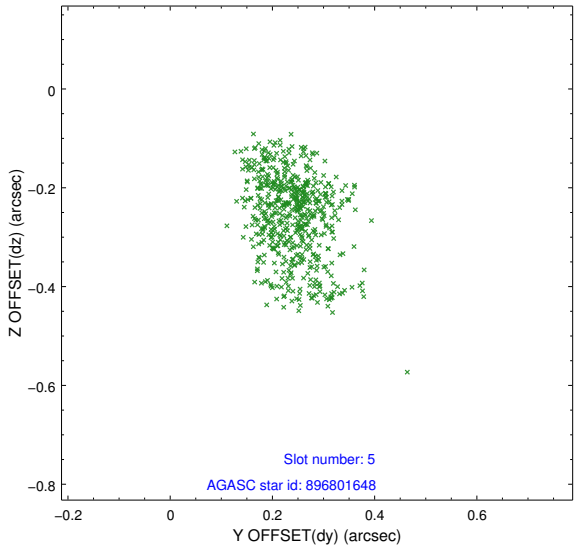
2.4.2 Slot 4

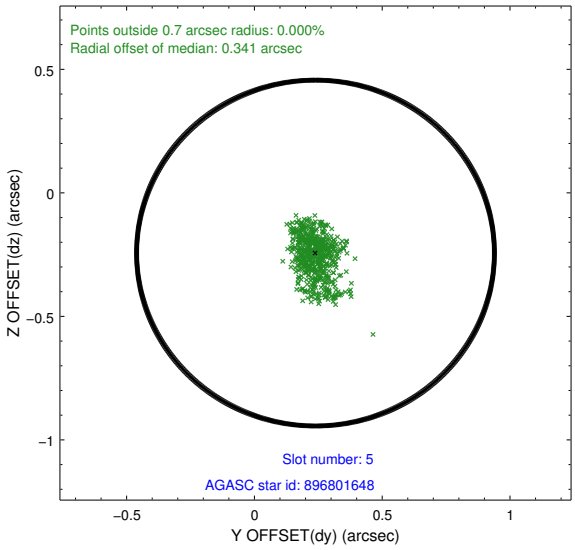

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 4
AGASC star id: 820929544

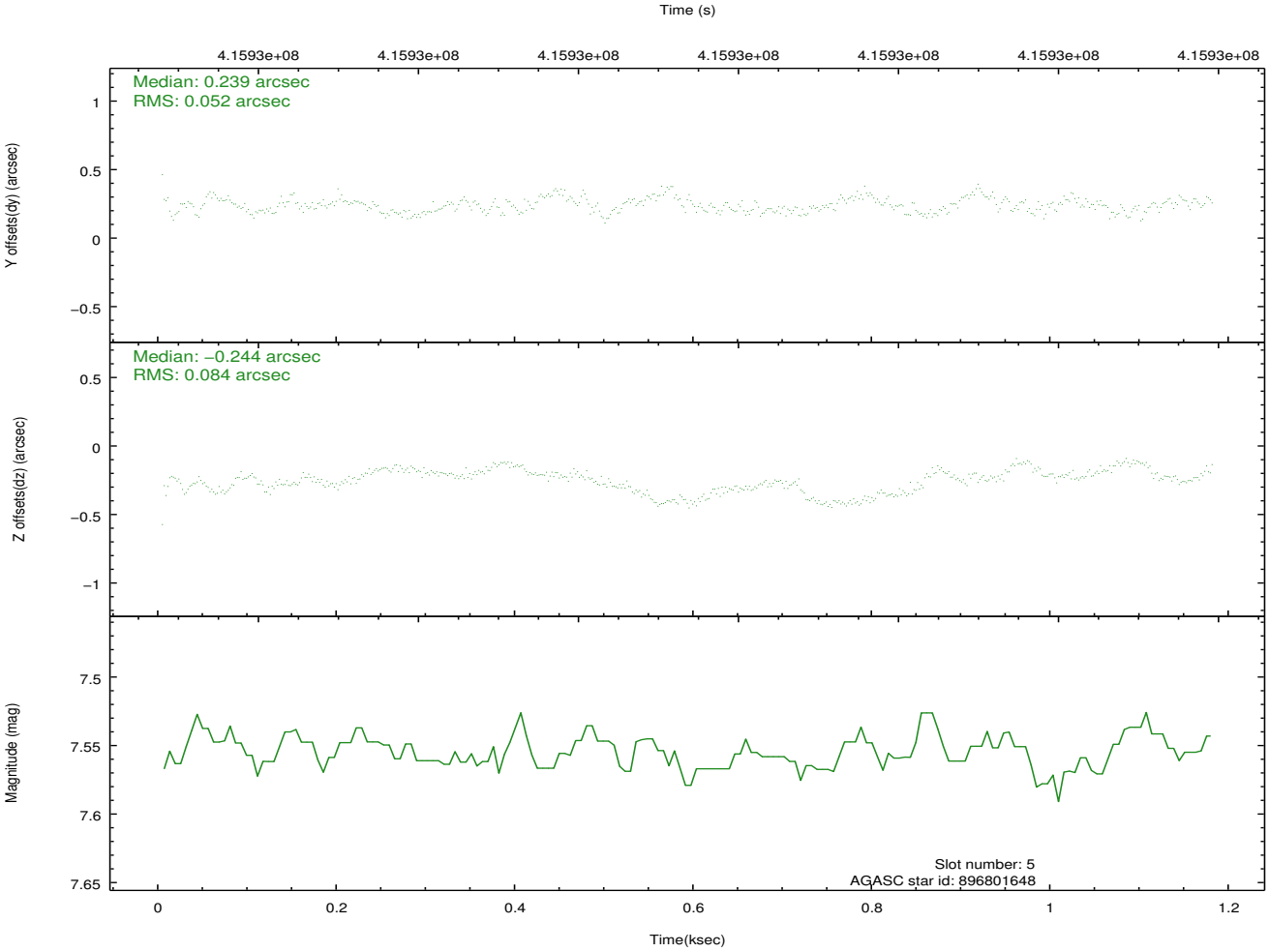

Points outside 0.7 arcsec radius: 0.000%
Radial offset of median: 0.200 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 4
AGASC star id: 820929544


Time (s)
Median: −0.200 arcsec
RMS: 0.064 arcsec
Y offsets(dy) (arcsec)
Median: 0.008 arcsec
RMS: 0.029 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number: 4
AGASC star id: 820929544
Time(ksec)

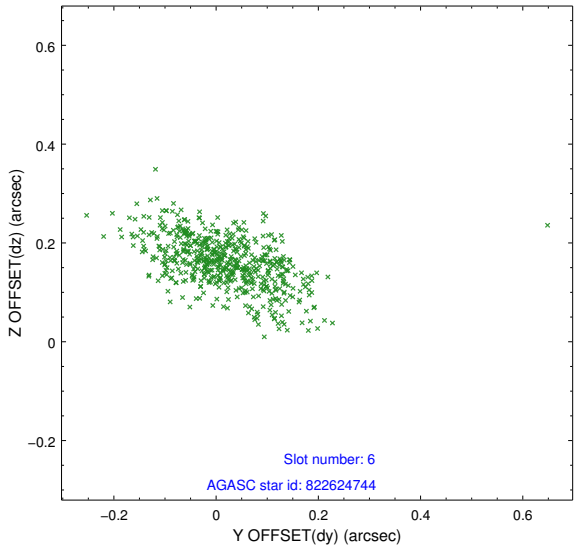
2.4.3 Slot 5

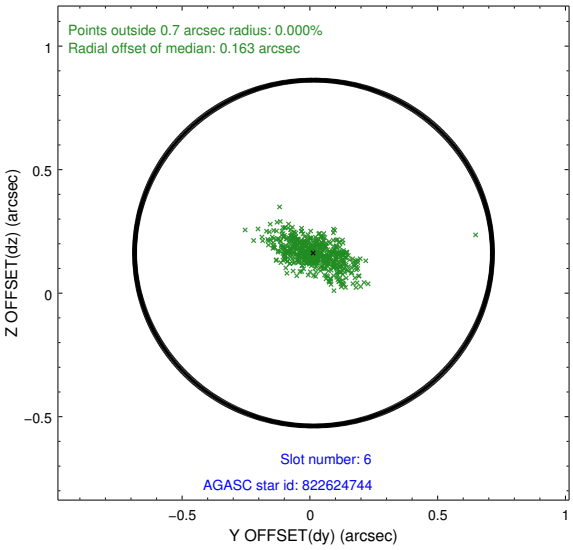

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 5
AGASC star id: 896801648

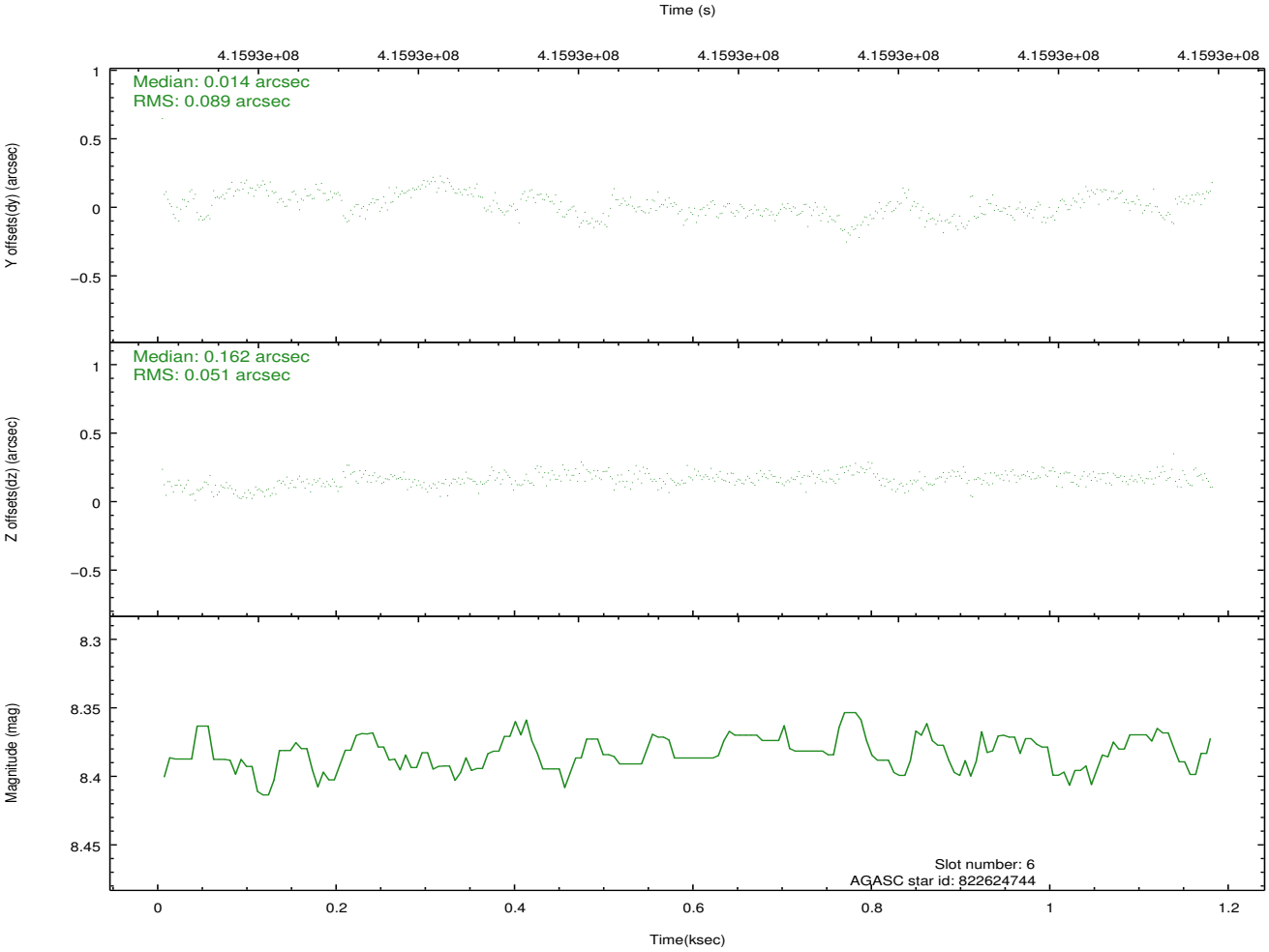

Points outside 0.7 arcsec radius: 0.000%
Radial offset of median: 0.341 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 5
AGASC star id: 896801648


Time (s)
Median: 0.239 arcsec
RMS: 0.052 arcsec
Y offsets(dy) (arcsec)
Median: −0.244 arcsec
RMS: 0.084 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number: 5
AGASC star id: 896801648
Time(ksec)

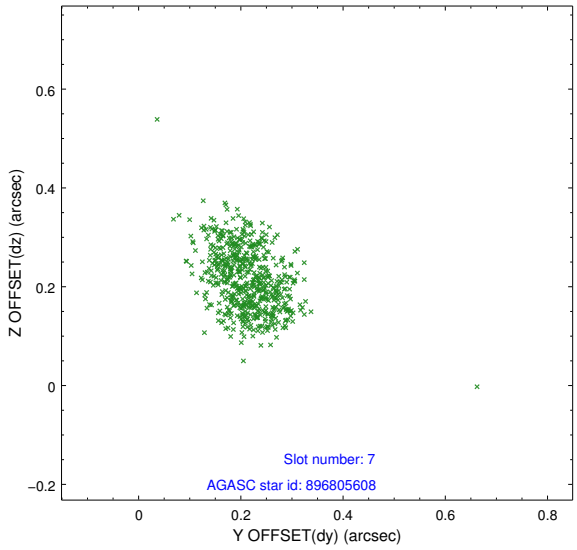
2.4.4 Slot 6

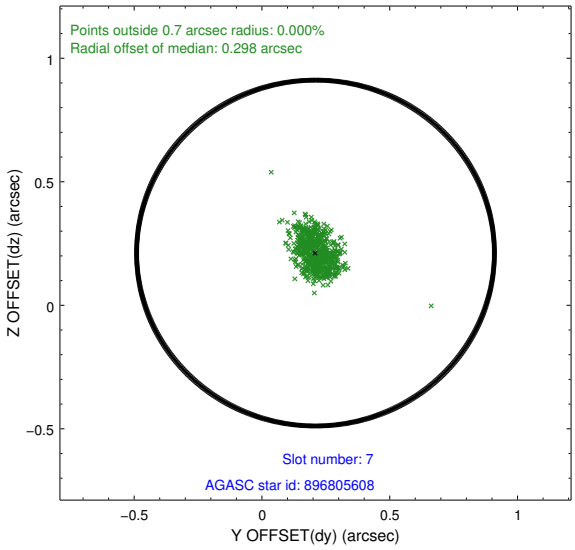

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 6
AGASC star id: 822624744

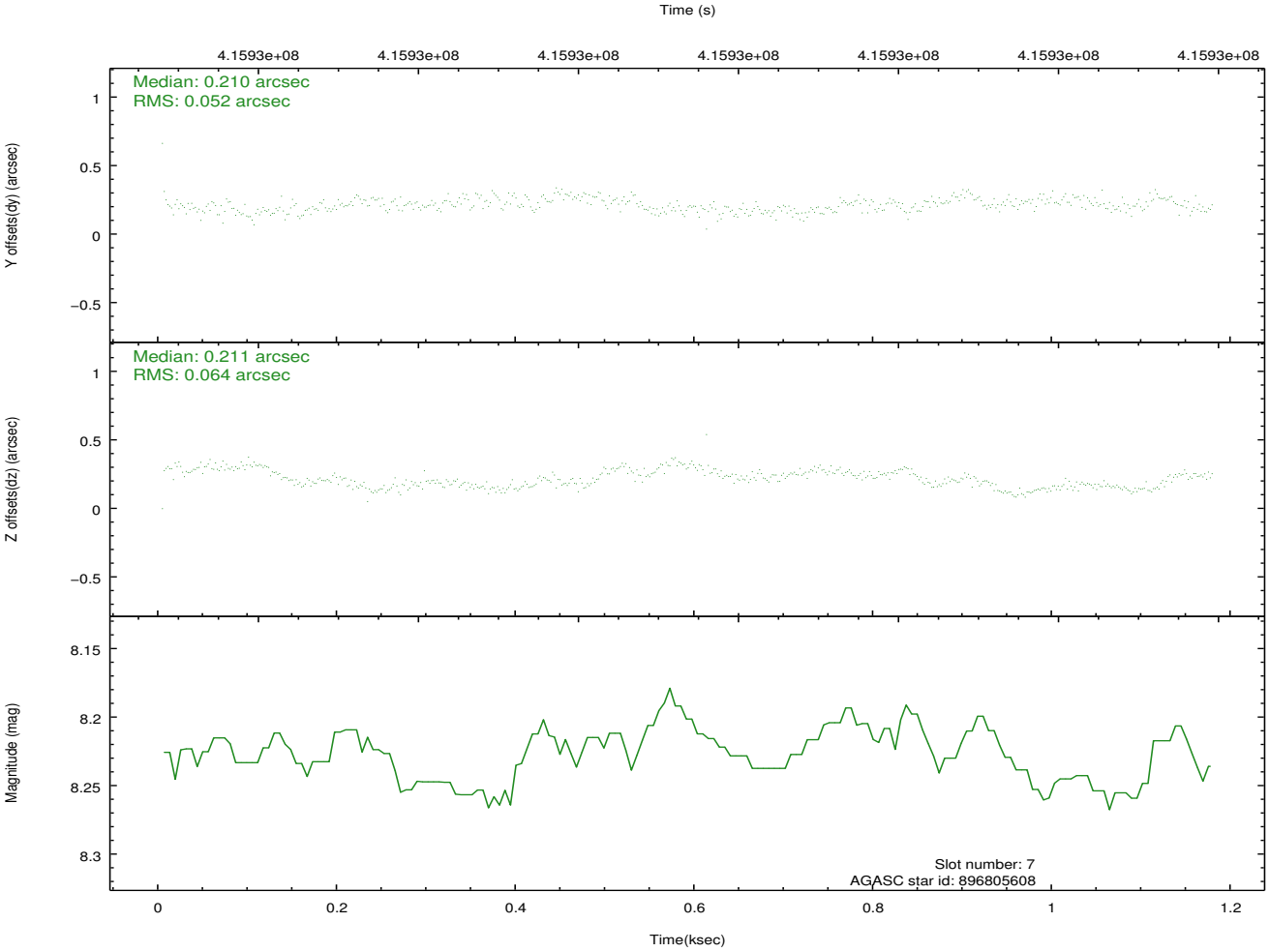

Points outside 0.7 arcsec radius: 0.000%
Radial offset of median: 0.163 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 6
AGASC star id: 822624744


Time (s)
Median: 0.014 arcsec
RMS: 0.089 arcsec
Y offsets(dy) (arcsec)
Median: 0.162 arcsec
RMS: 0.051 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number: 6
AGASC star id: 822624744
Time(ksec)

2.4.5 Slot 7

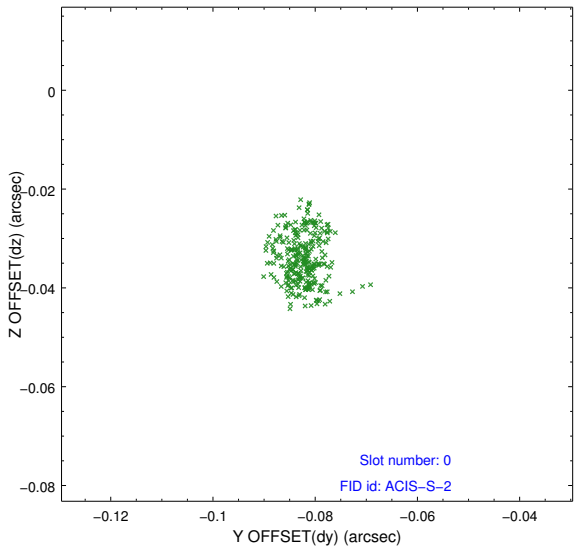

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 7
AGASC star id: 896805608

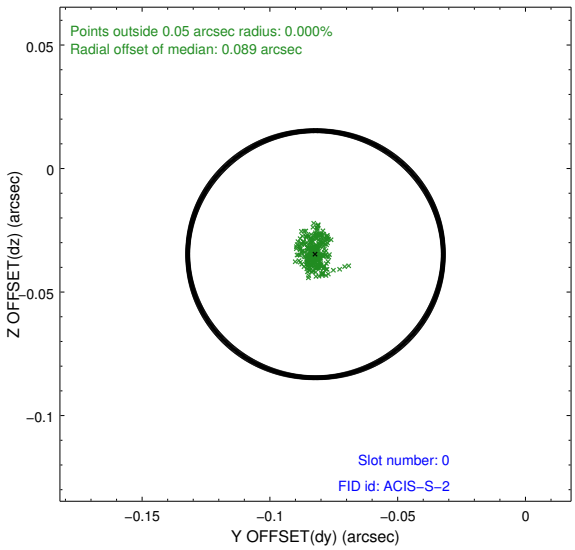

Points outside 0.7 arcsec radius: 0.000%
Radial offset of median: 0.298 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 7
AGASC star id: 896805608

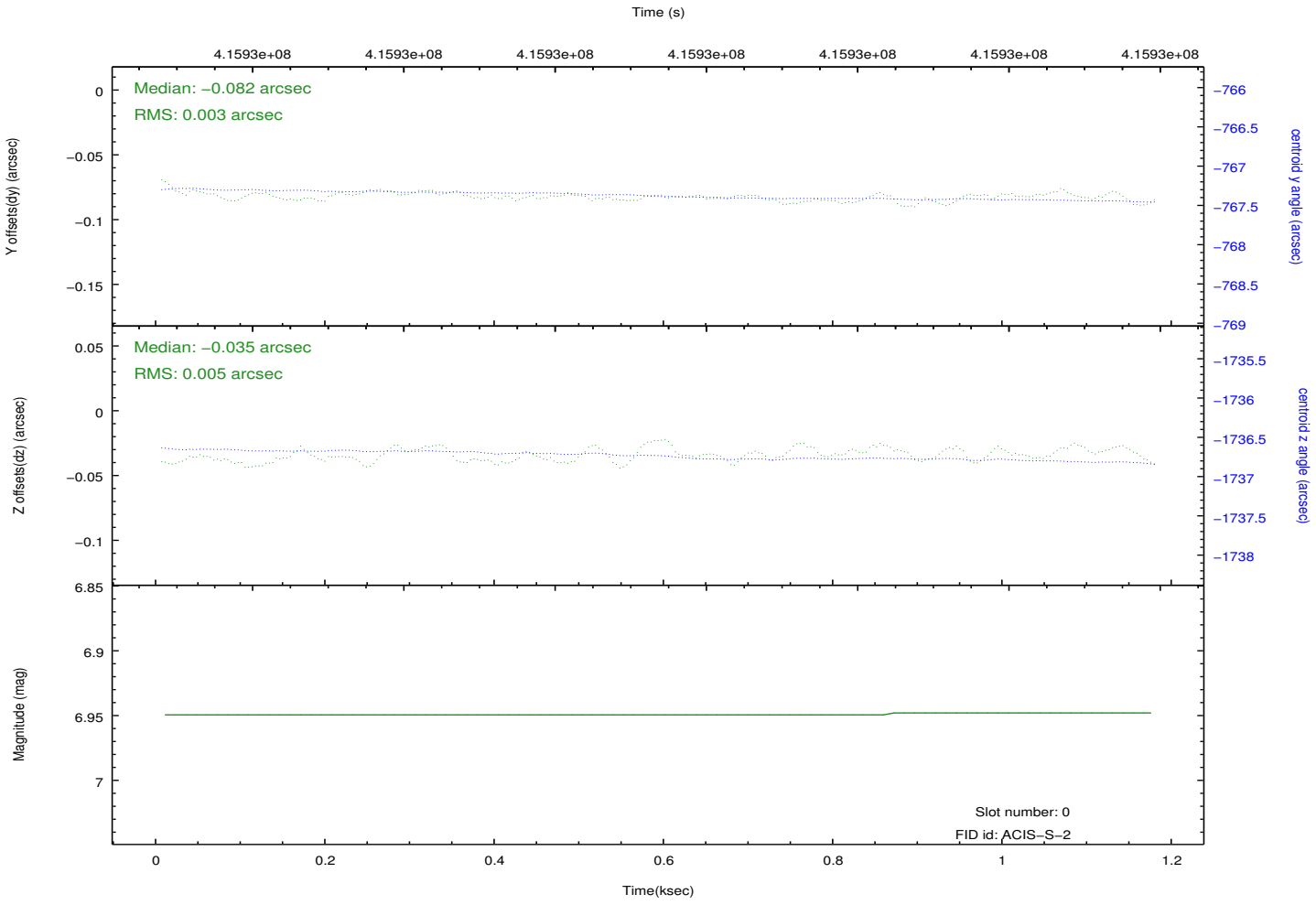

Time (s)
Median: 0.210 arcsec
RMS: 0.052 arcsec
Y offsets(dy) (arcsec)
Median: 0.211 arcsec
RMS: 0.064 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number: 7
AGASC star id: 896805608
Time(ksec)

2.5 FID Slots

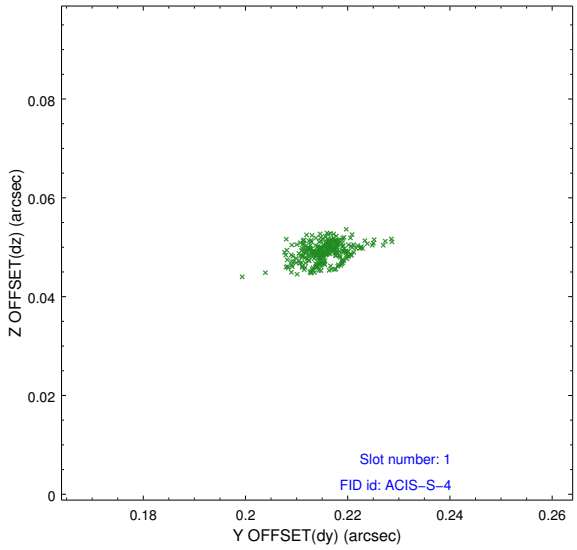
2.5.1 Slot 0

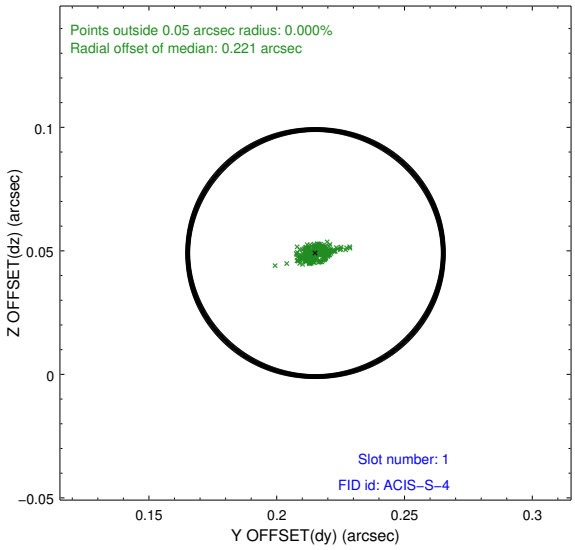


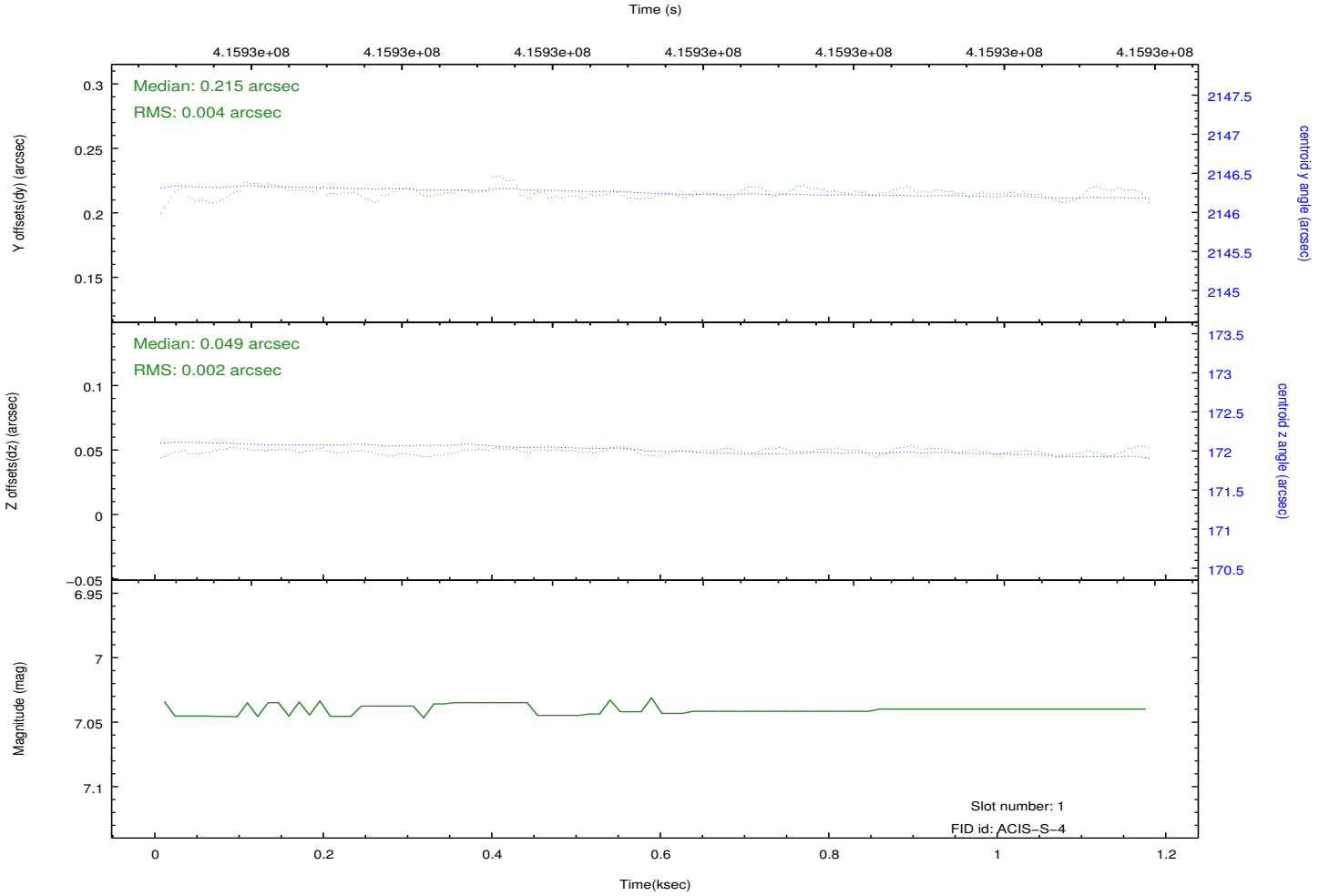




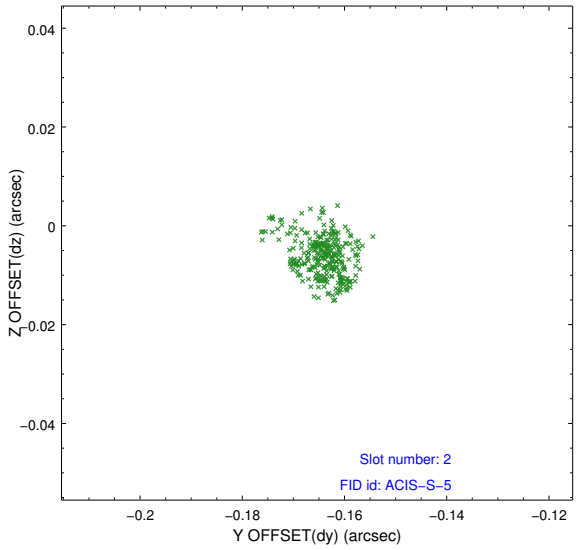
2.5.2 Slot 1

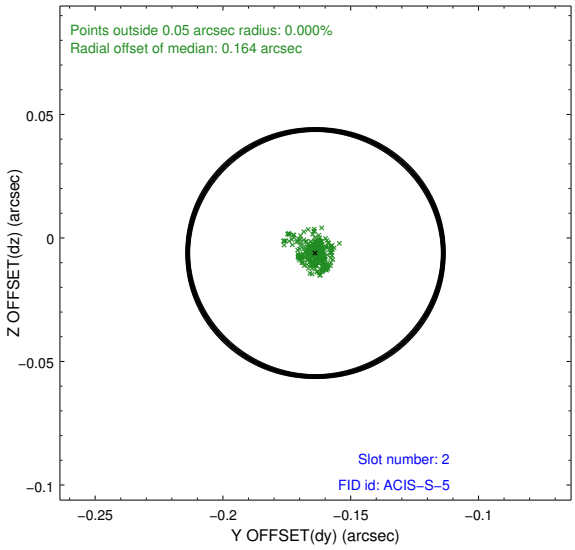

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 1
FID id: ACIS−S−4

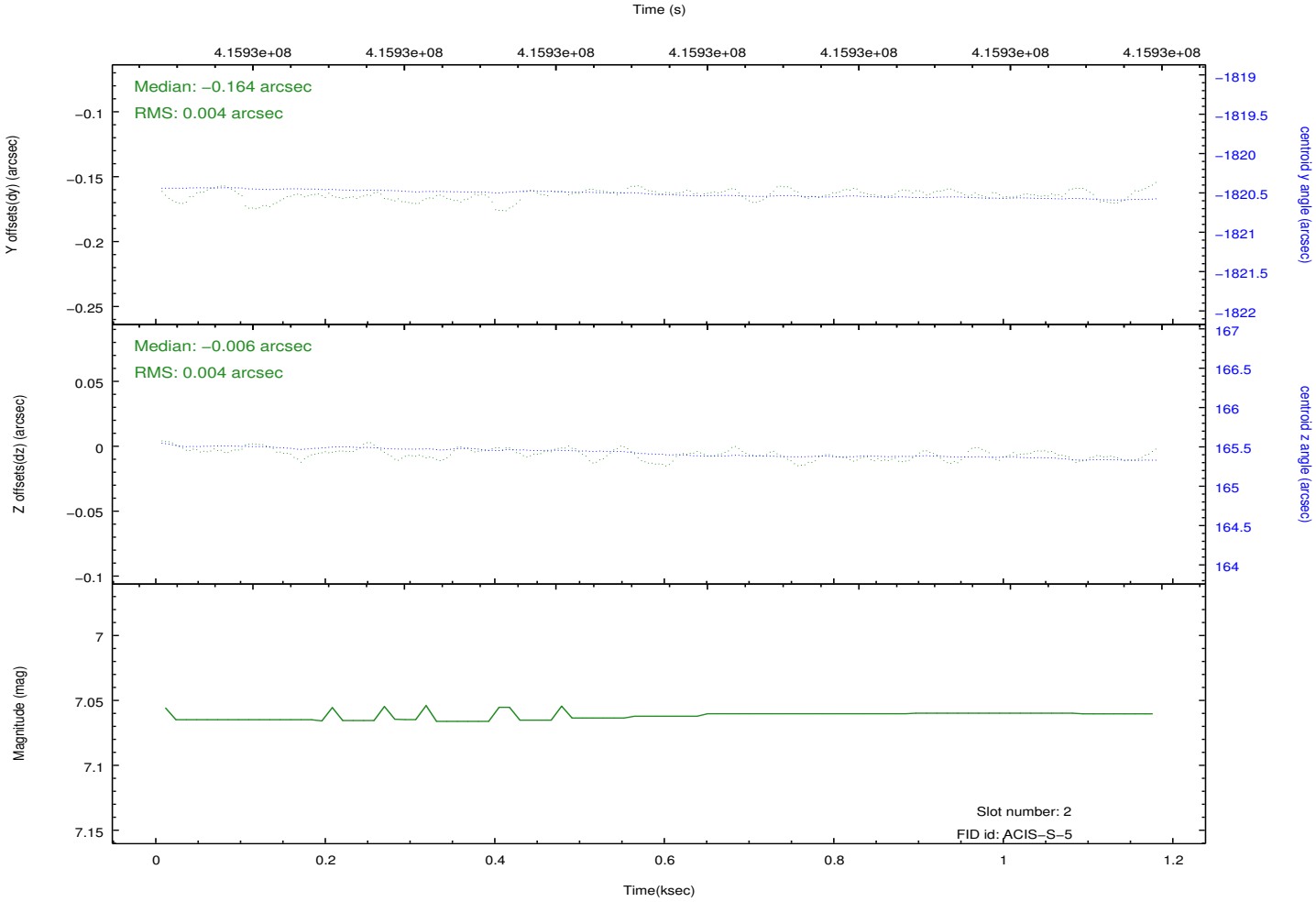

Points outside 0.05 arcsec radius: 0.000%
Radial offset of median: 0.221 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 1
FID id: ACIS−S−4


Time (s)
Median: 0.215 arcsec
RMS: 0.004 arcsec
Y offsets(dy) (arcsec)
centroid y angle (arcsec)
Median: 0.049 arcsec
RMS: 0.002 arcsec
Z offsets(dz) (arcsec)
centroid z angle (arcsec)
Magnitude (mag)
Slot number: 1
FID id: ACIS−S−4
Time(ksec)

2.5.3 Slot 2


Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 2
FID id: ACIS−S−5


Points outside 0.05 arcsec radius: 0.000%
Radial offset of median: 0.164 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 2
FID id: ACIS−S−5


Time (s)
Median: −0.164 arcsec
RMS: 0.004 arcsec
Y offsets(dy) (arcsec)
centroid y angle (arcsec)
Median: −0.006 arcsec
RMS: 0.004 arcsec
Z offsets(dz) (arcsec)
centroid z angle (arcsec)
Magnitude (mag)
Slot number: 2
FID id: ACIS−S−5
Time(ksec)

A Summary

A.1 Status

V&V Scientist	Beth Sundheim
V&V Date (YYYY-MM-DD)	2012.02.08
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	1.0099631957412

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.