V&V Reference Report
L2 ASCDS Version : 8.4.3

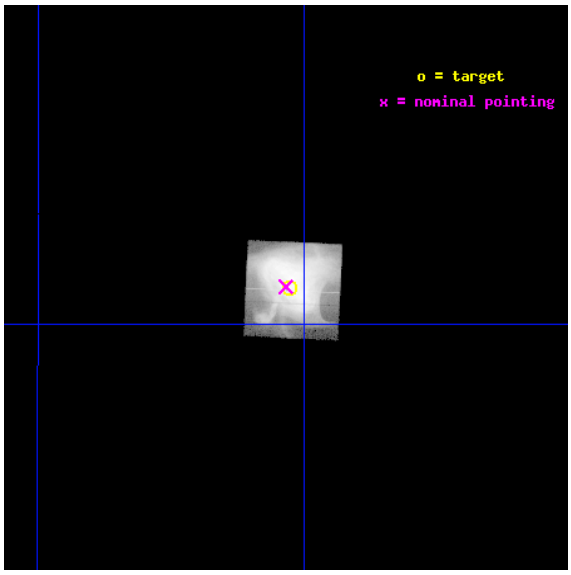
Observation 13209 - L2 Version 2
Chandra X-Ray Center

L2 Processing Date : Feb 22 2012

Contents

1 Front

seq_num	501547	Sequence number
obs_id	13209	Observation id
title	Monitoring of the Crab Nebula	Proposal title
observer	Dr. Martin Weisskopf	Principal investigator
object	Crab	Source name
dtycycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	83.631667	Observer's specified target RA [deg]
dec_targ	22.015667	Observer's specified target Dec [deg]
ra_nom	83.633390145774	Nominal RA [deg]
dec_nom	22.016030920274	Nominal Dec [deg]
roll_nom	92.699671417318	Nominal Roll [deg]
revision	2	Processing version of data
ontime	3374.5860815048	Sum of GTIs [s]
livetime	587.84553557205	Livetime [s]
ontime7	3374.5860815048	Sum of GTIs [s]
l2events	1704646	Number of level 2 events

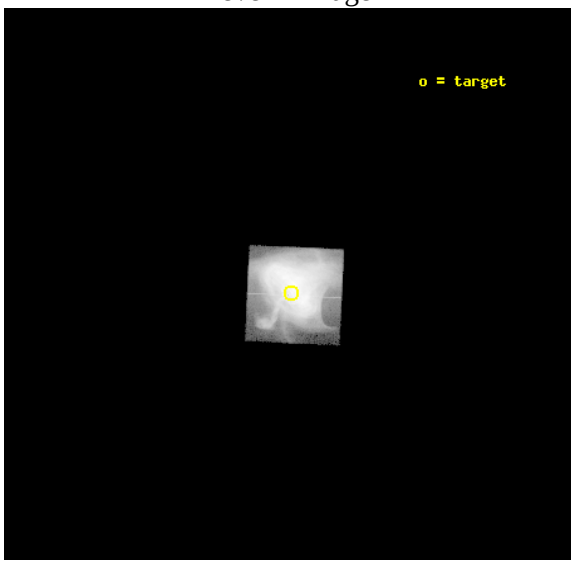


2 OBI

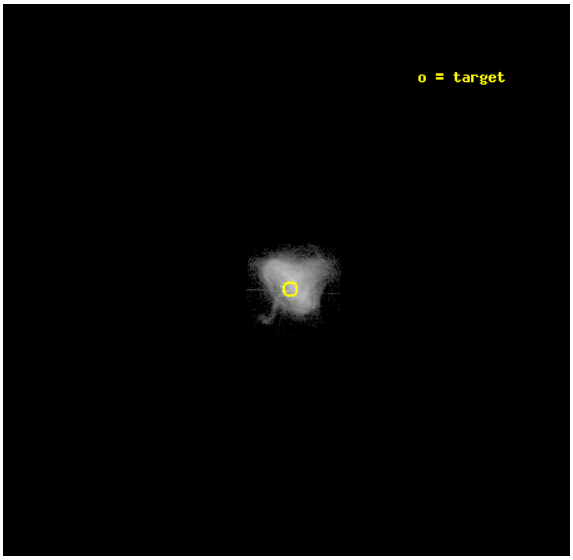
2.1 OBI

2.1.1 Images

Level 1 Image



Level 1 Bad Events



2.1.2 Parameters

obi_num	0	Obi number
ascdsver	8.4.3	Processing system revision
caldbver	4.4.8	
date	2012-02-23T00:46:45	Date and time of file creation
revision	2	Processing version of data

sched_exp_time	5000.000000	[s] Scheduled observation exposure time
ontime	3374.5860815048	Sum of GTIs [s]
ontime7	3374.5860815048	Sum of GTIs [s]
l1events	1887739	Number of level 1 events

2.1.3 Events

	ccd 7
level 1 events	1887739
rejected events	171266
rejected %	9%

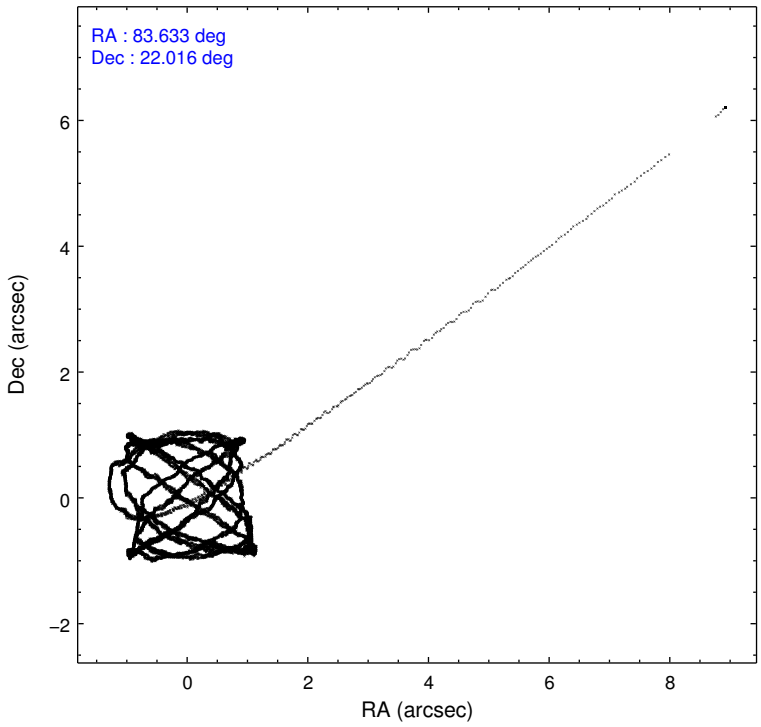
	ccd 7
grade 0 events	367408
	19%
grade 1 events	20997
	1%
grade 2 events	470931
	24%
grade 3 events	190365
	10%
grade 4 events	190101
	10%
grade 5 events	61872
	3%
grade 6 events	498271
	26%
grade 7 events	87794
	4%

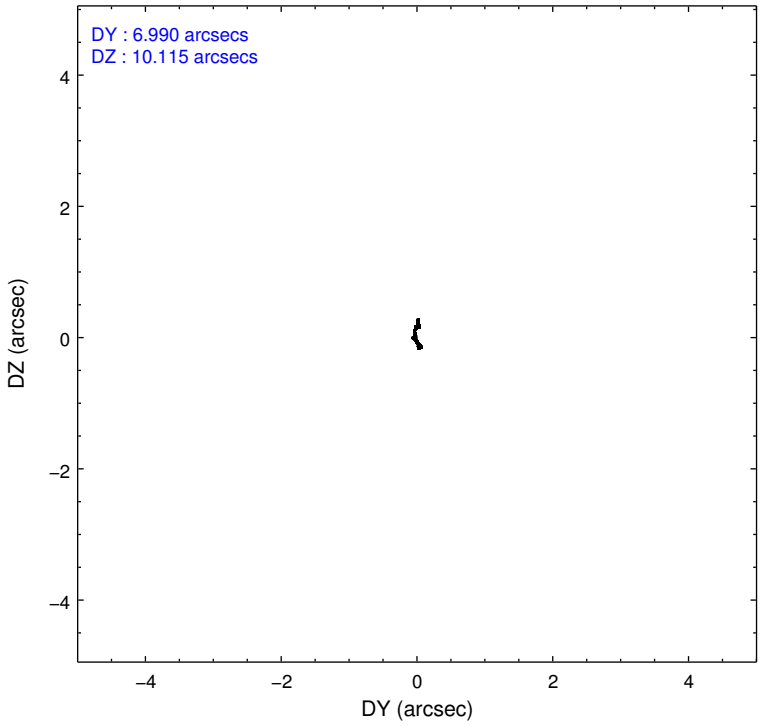
2.2 Compared Parameters

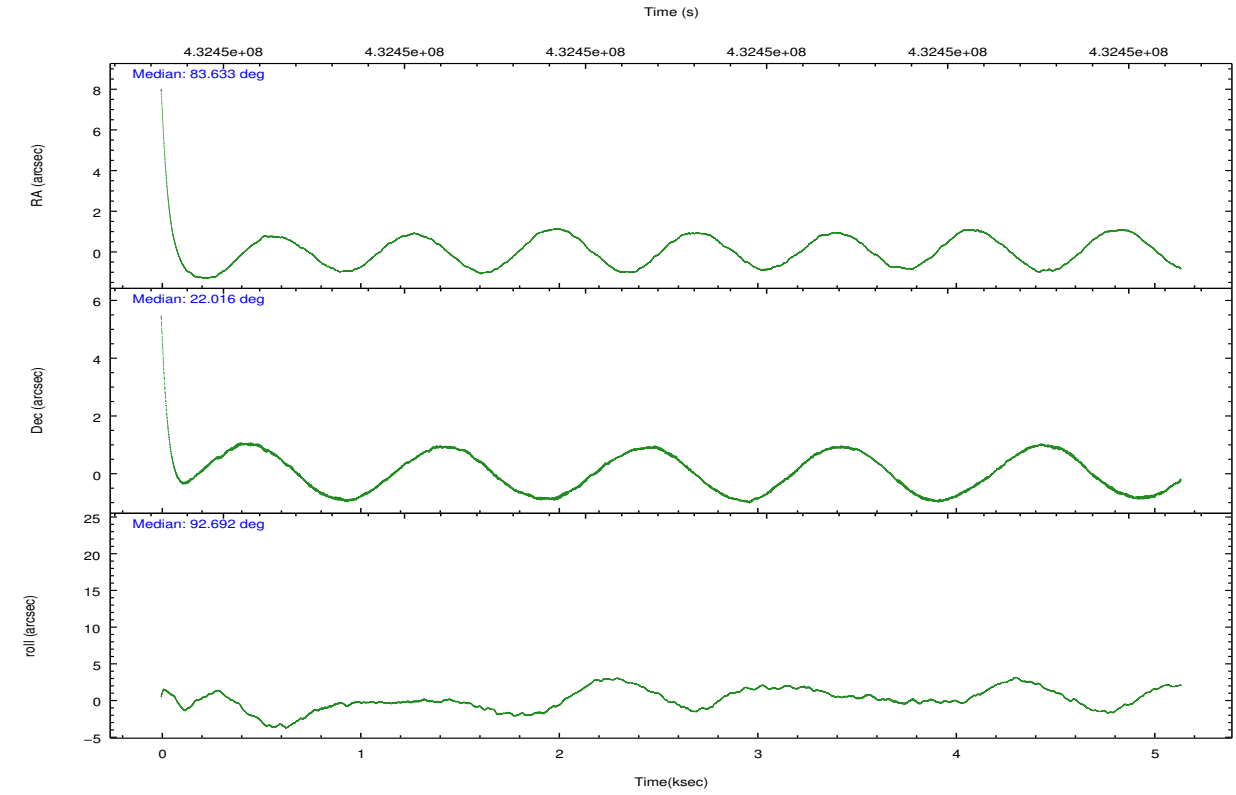
Parameter	Planned	Actual
Instrument	ACIS	ACIS
Detector	ACIS-7	ACIS-7
Grating	NONE	NONE
Data mode	GRADED	GRADED
Observation mode	POINTING	POINTING
[deg] Pointing RA	83.649654	83.63339014577359
[deg] Pointing Dec	21.993213	22.01603092027354
[deg] Pointing Roll	92.536945	92.69967141731816
[mm] SIM focus pos	-0.684267	-0.6828225247311905
[mm] SIM defocus	0	0.001444936568705701
[mm] SIM translation stage pos	-185.516523	-185.516240210303
[mm] SIM translation stage offset	-4.616	-4.616282372704774
[s] Observation start time (MET)	432447044.184000	432445887.49319
Observation start date	2011-09-15T04:09:38	2011-09-15T03:51:27
[s] Observation end time (MET)	432452044.184000	432453459.68109
Observation end date	2011-09-15T05:32:58	2011-09-15T05:57:39
Read mode	TIMED	TIMED

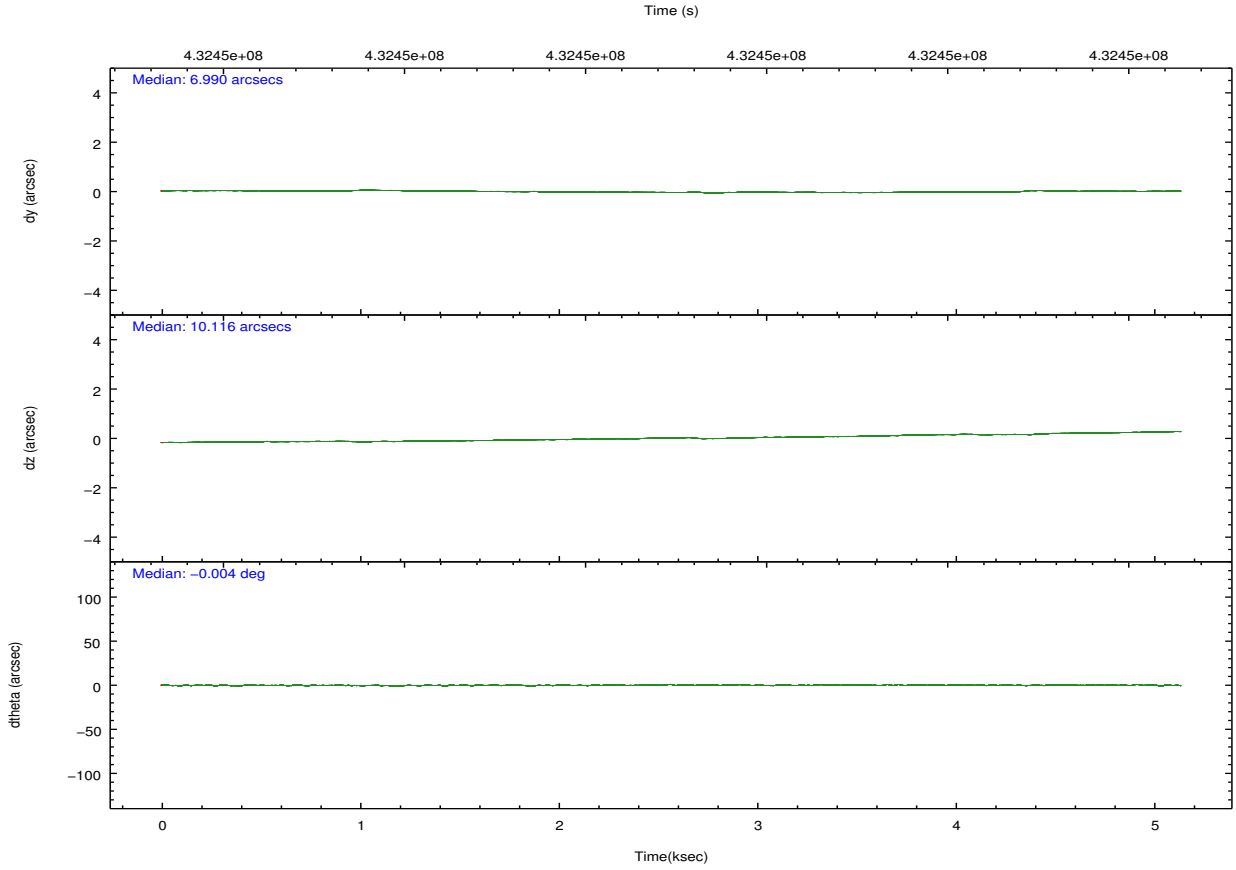
Parameter	Planned	Actual
Obspar format version number	7	7
Obspar file type	PREDICTED	ACTUAL
Obspar update status	NONE	UPDATED
Number of optional ACIS chips dropped	0	0
On-chip summing requested	N	N
Subarray requested	CUSTOM	CUSTOM
Subarray start row	145	145
Subarray row count	300	300
Alternating exposures requested	N	N
[s] Primary exposure time	0.000000	0.2

2.3 Aspect


RA : 83.633 deg
Dec : 22.016 deg
Dec (arcsec)
RA (arcsec)
6
4
2
0
−2
0
2
4
6
8


DY : 6.990 arcsecs
DZ : 10.115 arcsecs
DZ (arcsec)
DY (arcsec)
4
2
0
−2
−4
−4
−2
0
2
4


Time (s)
4.3245e+08
4.3245e+08
4.3245e+08
4.3245e+08
4.3245e+08
4.3245e+08
Median: 83.633 deg
RA (arcsec)
Median: 22.016 deg
Dec (arcsec)
Median: 92.692 deg
roll (arcsec)
Time(ksec)

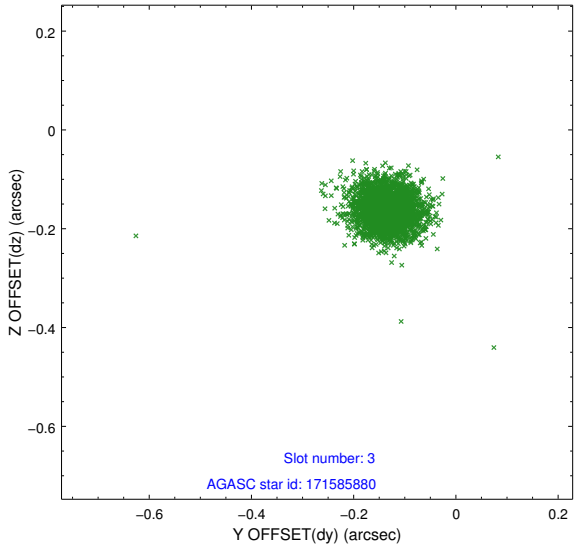

Time (s)
4.3245e+08
4.3245e+08
4.3245e+08
4.3245e+08
4.3245e+08
4.3245e+08
Median: 6.990 arcsecs
dy (arcsec)
Median: 10.116 arcsecs
dz (arcsec)
Median: −0.004 deg
dtheta (arcsec)
Time(ksec)

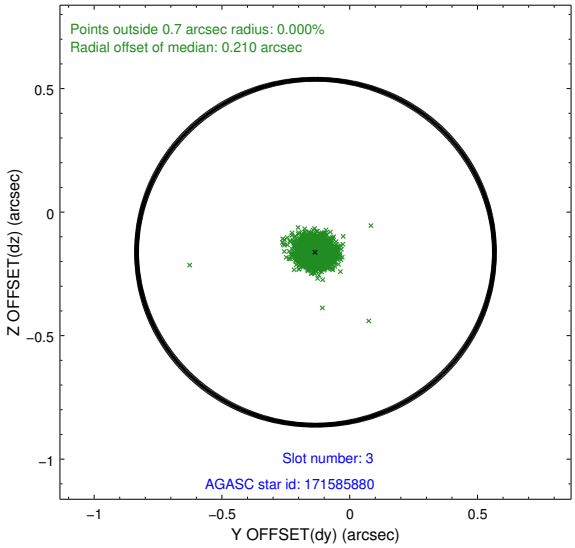
Slot Statistics

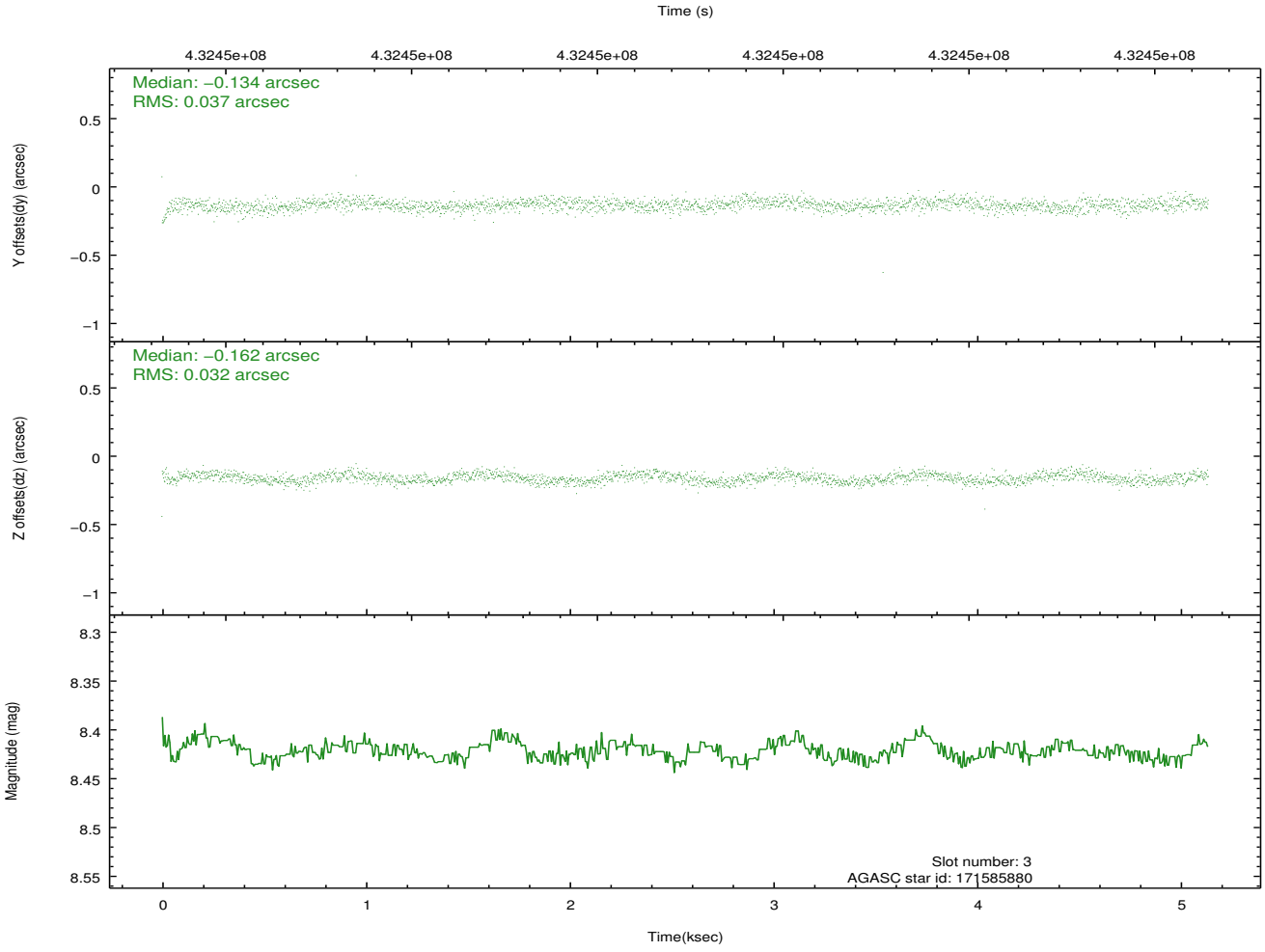
slot	status	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID	ACIS-S-2	6.99	1254	-0.096	-0.071	0.008	0.015	0.000000	0.000000	-759.52	-1826.65
1	FID	ACIS-S-4	7.08	1252	0.182	0.065	0.008	0.016	0.000000	0.000000	2153.50	80.64
2	FID	ACIS-S-5	7.13	1254	-0.117	0.014	0.008	0.014	0.000000	0.000000	-1810.86	75.63
3	GUIDE	171585880	8.42	2503	-0.134	-0.162	0.050	0.081	83.676260	22.176319	654.75	-117.64
4	GUIDE	171586032	9.00	2506	-0.074	0.250	0.060	0.097	83.950197	22.083225	280.90	-1015.52
5	GUIDE	171597832	9.19	2506	0.369	-0.335	0.088	0.148	83.183230	21.366702	-2181.18	1661.21
6	GUIDE	171721904	9.22	2505	-0.064	0.197	0.079	0.129	84.272676	22.116922	356.77	-2094.57
7	GUIDE	243941560	8.32	2506	-0.093	0.048	0.063	0.105	83.733264	22.568598	2057.28	-369.52

2.4 Star Slots

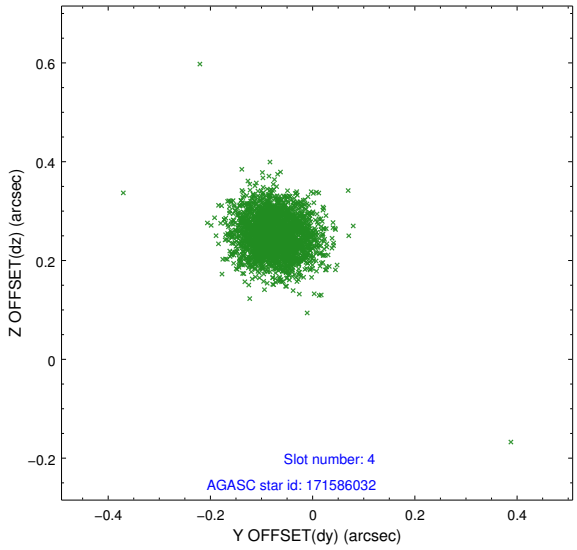
2.4.1 Slot 3

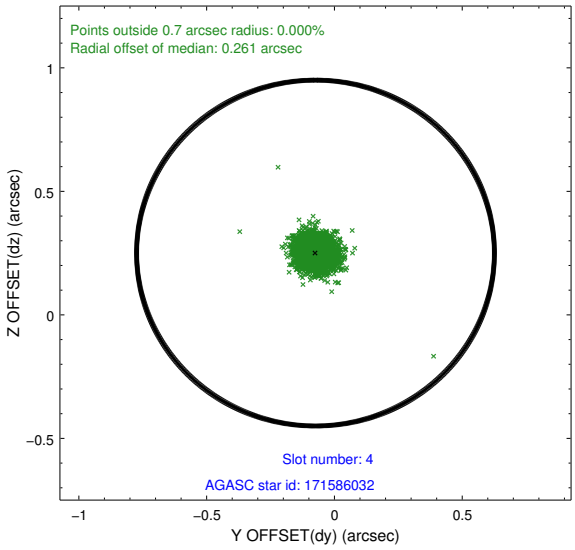


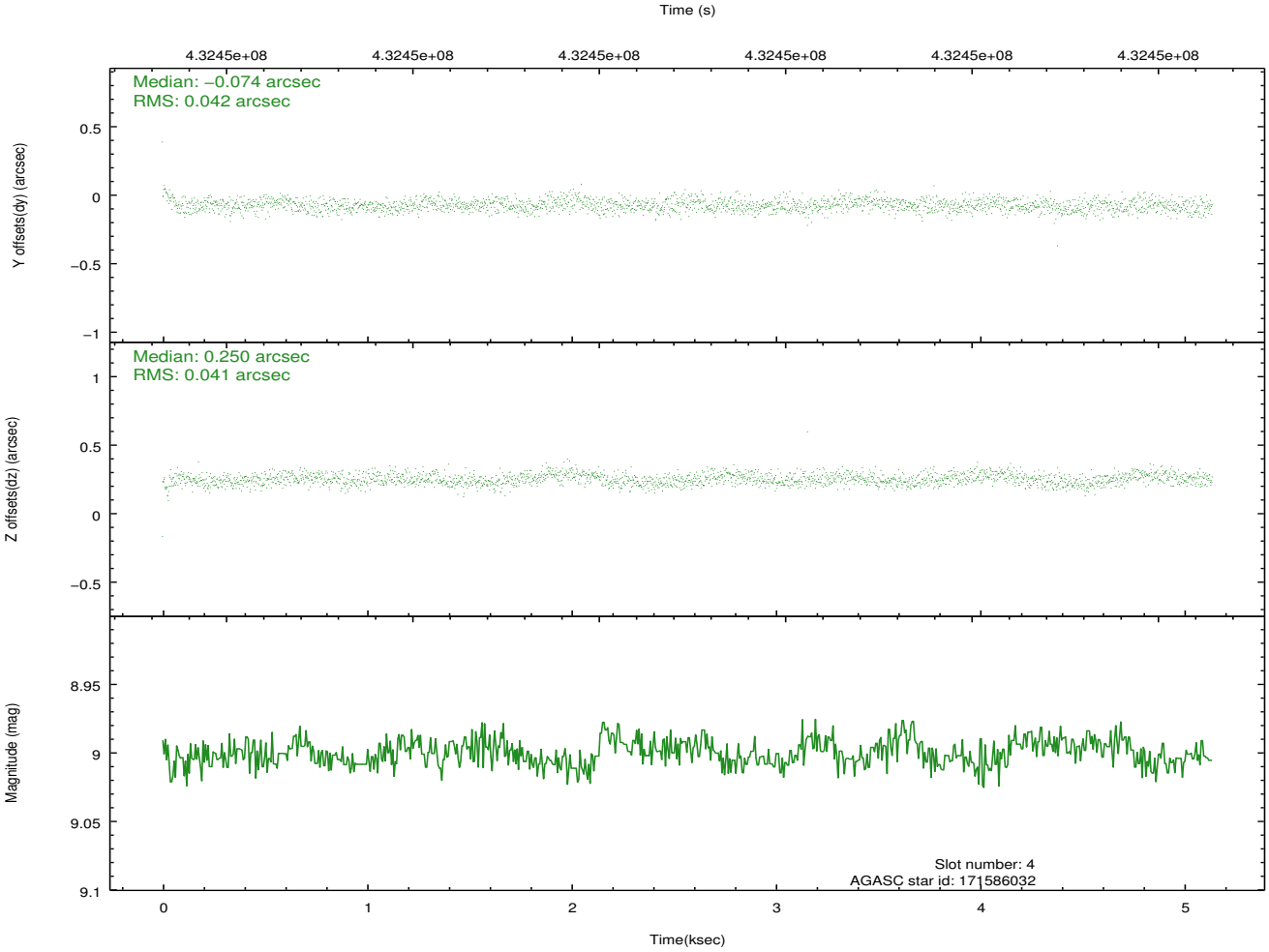




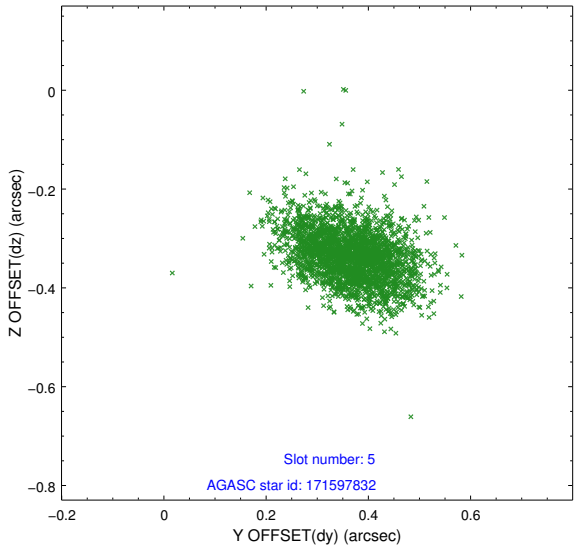
2.4.2 Slot 4

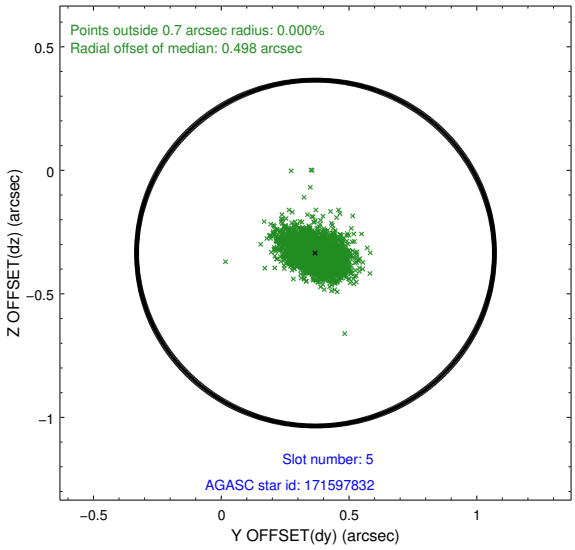

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 4
AGASC star id: 171586032

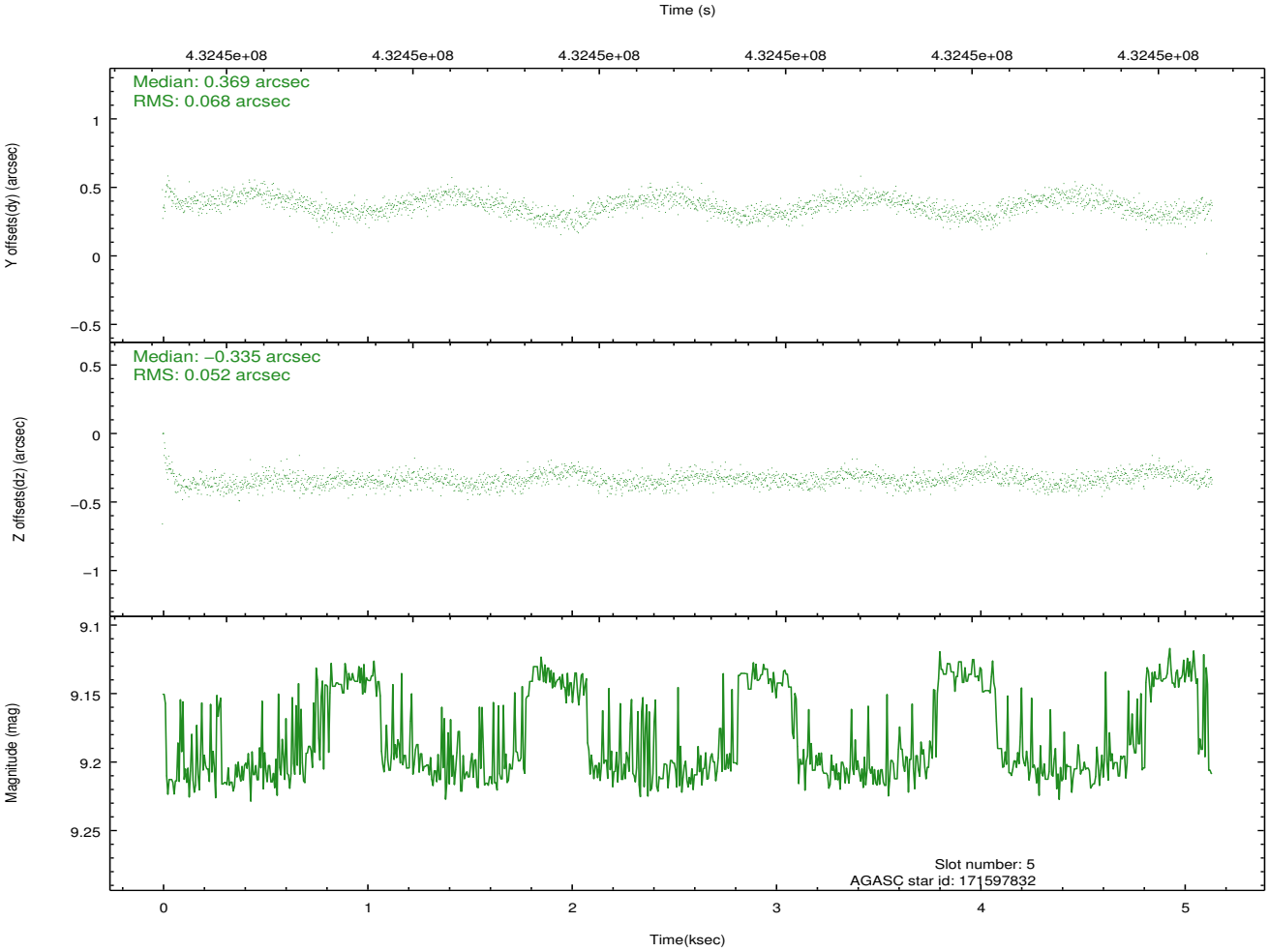

Points outside 0.7 arcsec radius: 0.000%
Radial offset of median: 0.261 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 4
AGASC star id: 171586032


Time (s)
Median: −0.074 arcsec
RMS: 0.042 arcsec
Y offsets(dy) (arcsec)
Median: 0.250 arcsec
RMS: 0.041 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number: 4
AGASC star id: 171586032
Time(ksec)

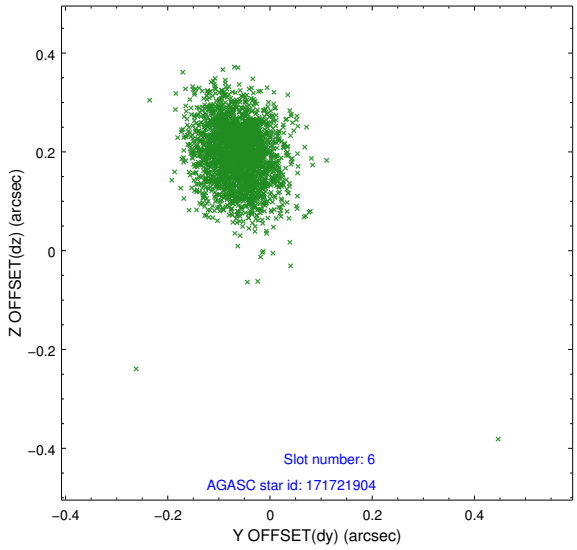
2.4.3 Slot 5

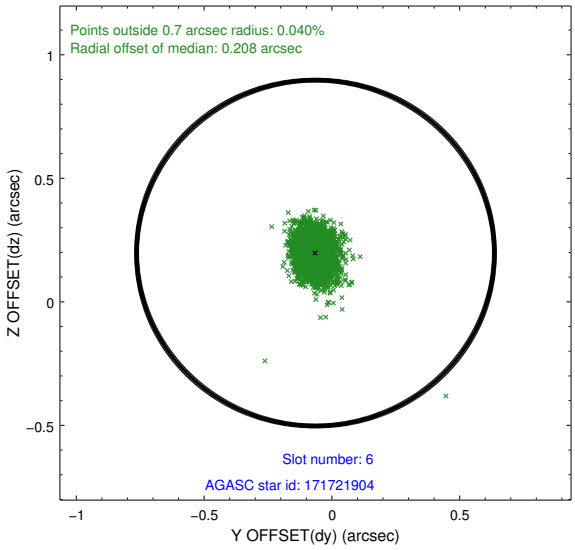

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 5
AGASC star id: 171597832

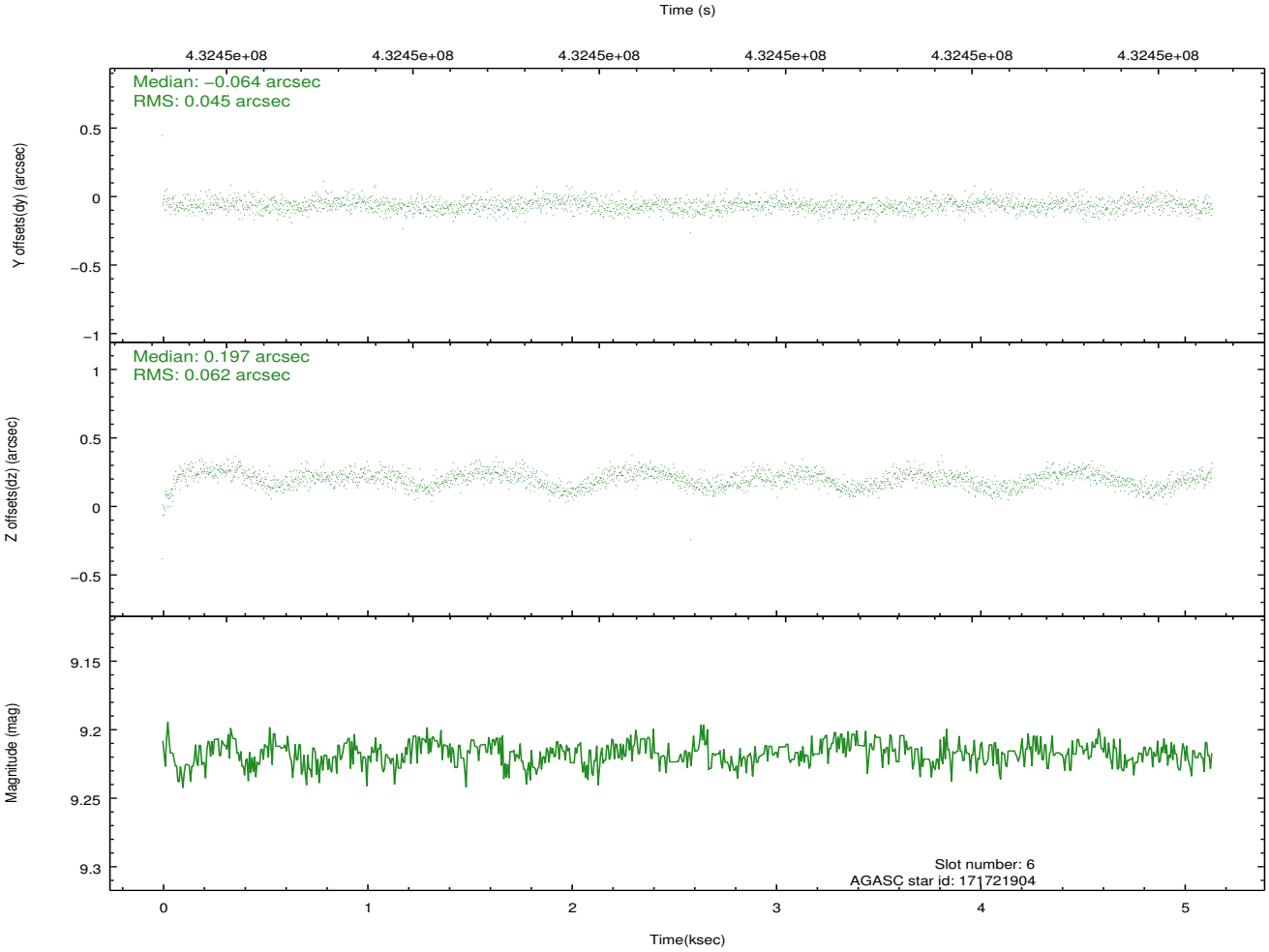

Points outside 0.7 arcsec radius: 0.000%
Radial offset of median: 0.498 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 5
AGASC star id: 171597832


Time (s)
4.3245e+08
Median: 0.369 arcsec
RMS: 0.068 arcsec
Y offsets(dy) (arcsec)
Median: −0.335 arcsec
RMS: 0.052 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number: 5
AGASC star id: 171597832
Time(ksec)

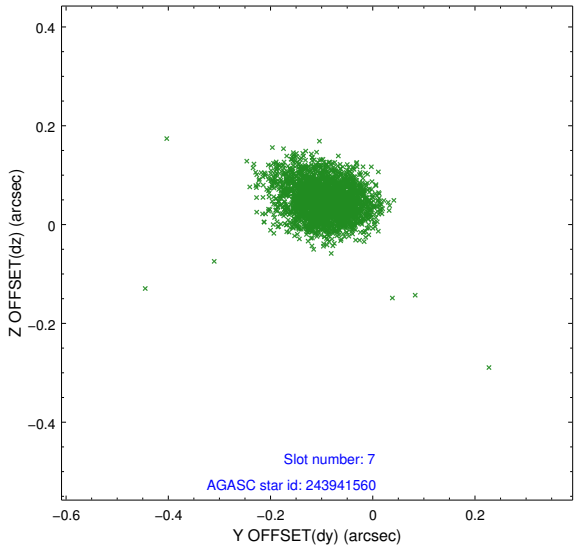
2.4.4 Slot 6

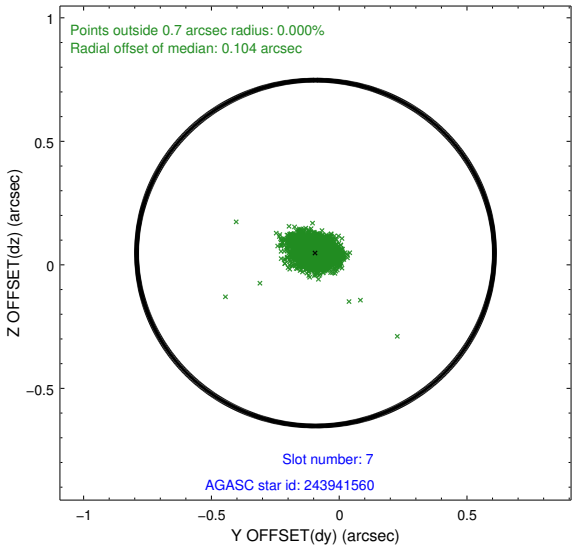

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 6
AGASC star id: 171721904

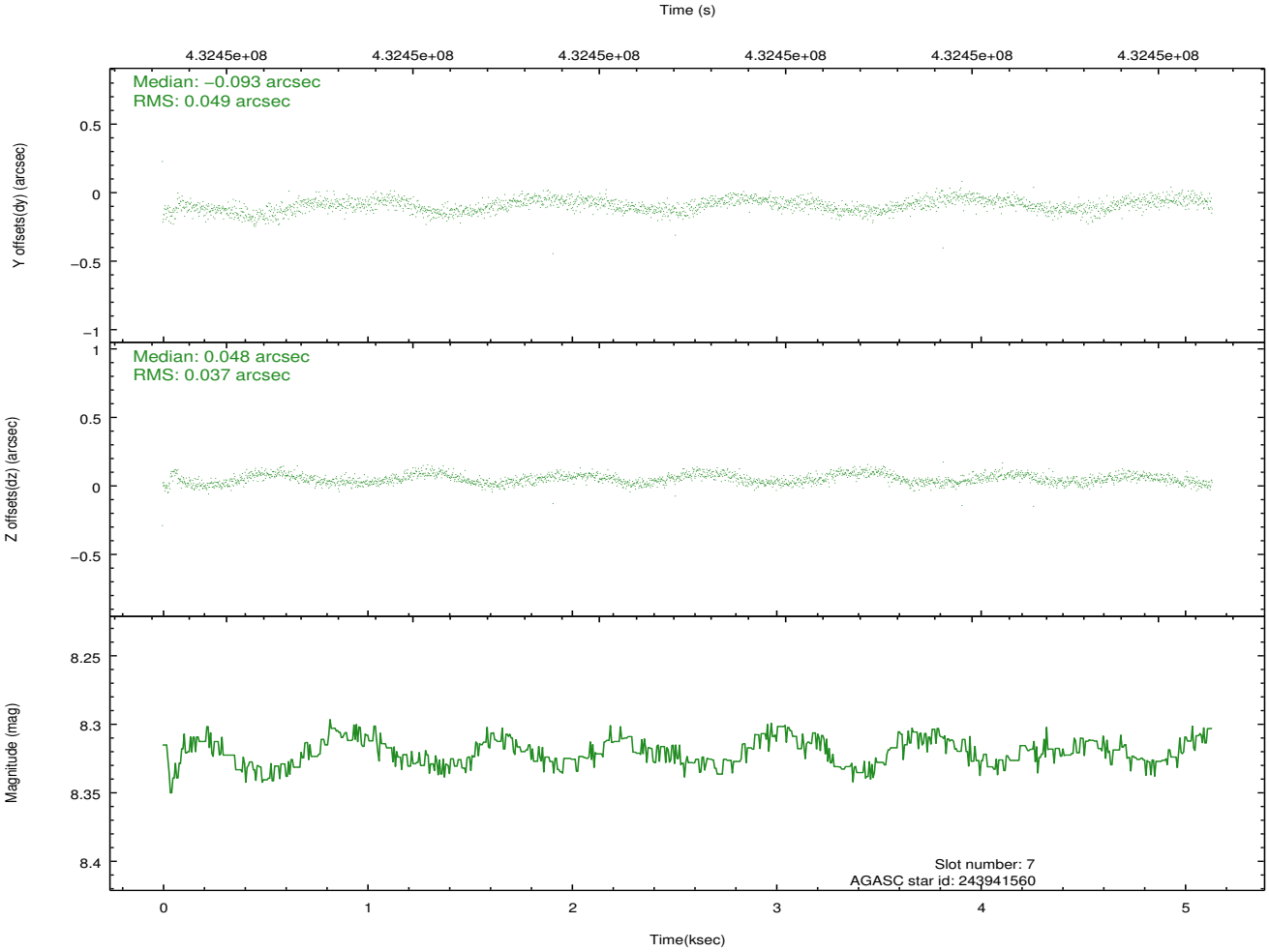

Points outside 0.7 arcsec radius: 0.040%
Radial offset of median: 0.208 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 6
AGASC star id: 171721904


Time (s)
Median: −0.064 arcsec
RMS: 0.045 arcsec
Y offsets(dy) (arcsec)
Median: 0.197 arcsec
RMS: 0.062 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number: 6
AGASC star id: 171721904
Time(ksec)

2.4.5 Slot 7

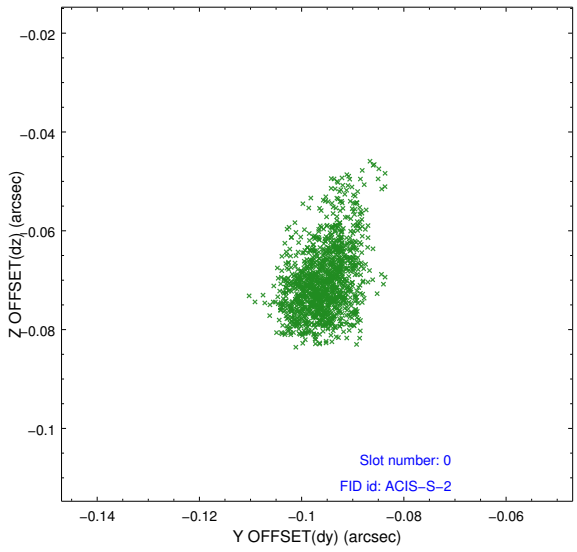

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 7
AGASC star id: 243941560

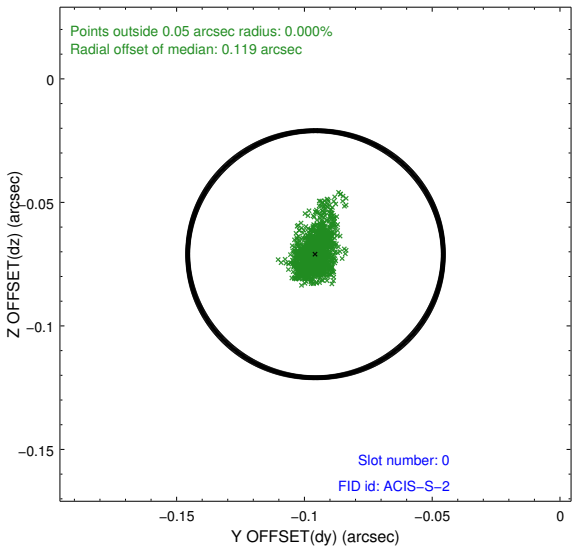

Points outside 0.7 arcsec radius: 0.000%
Radial offset of median: 0.104 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 7
AGASC star id: 243941560

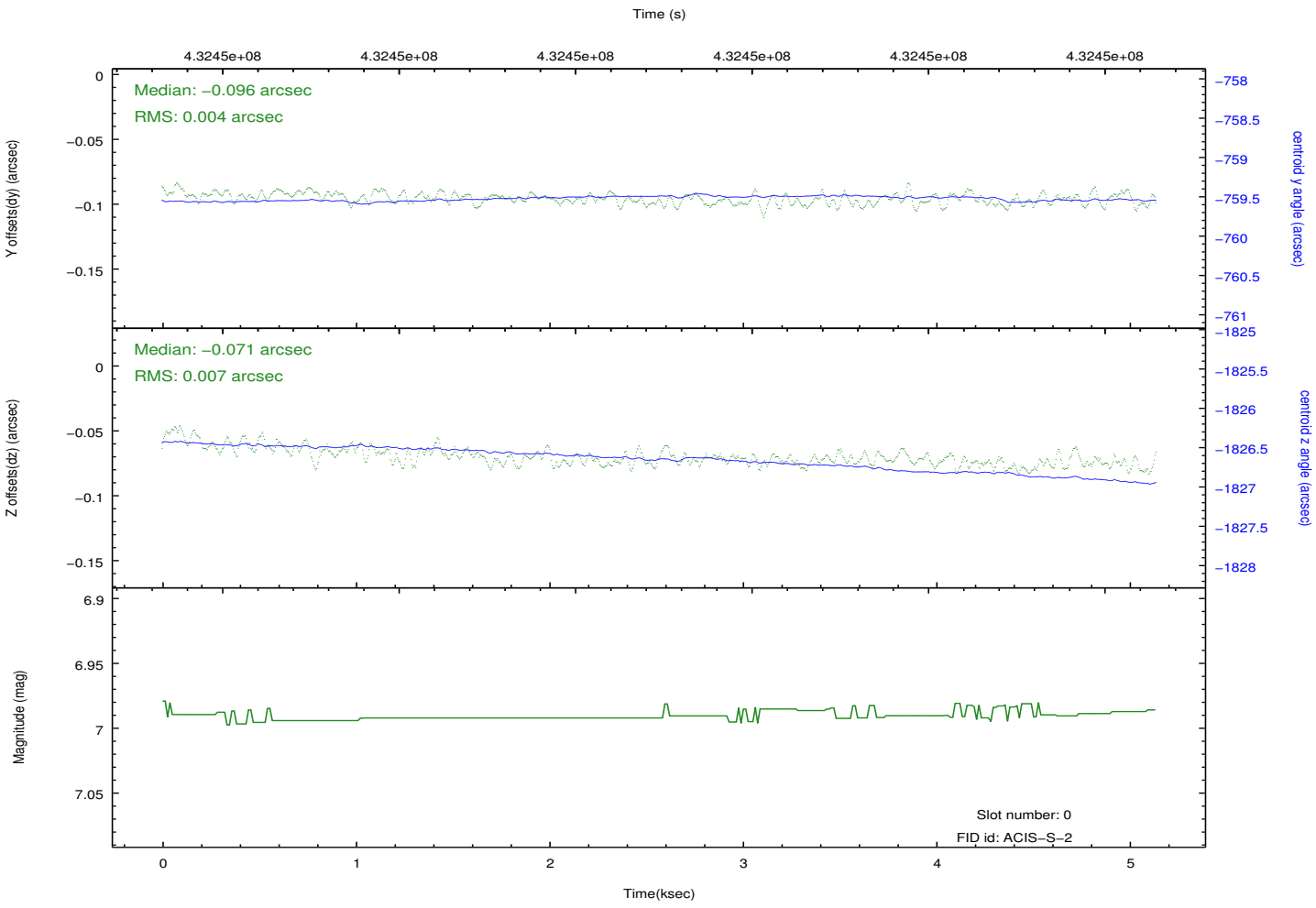

Time (s)
Median: −0.093 arcsec
RMS: 0.049 arcsec
Y offsets(dy) (arcsec)
Median: 0.048 arcsec
RMS: 0.037 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number: 7
AGASC star id: 243941560
Time(ksec)

2.5 FID Slots

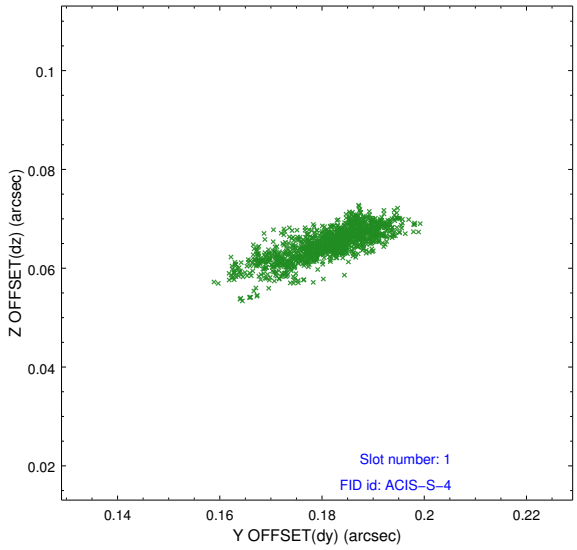
2.5.1 Slot 0

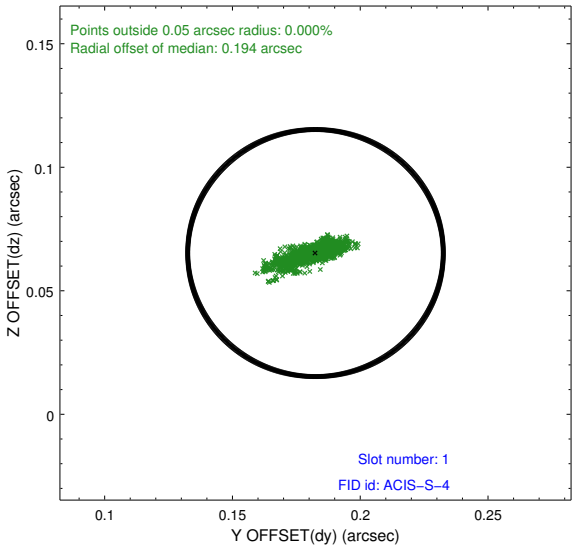


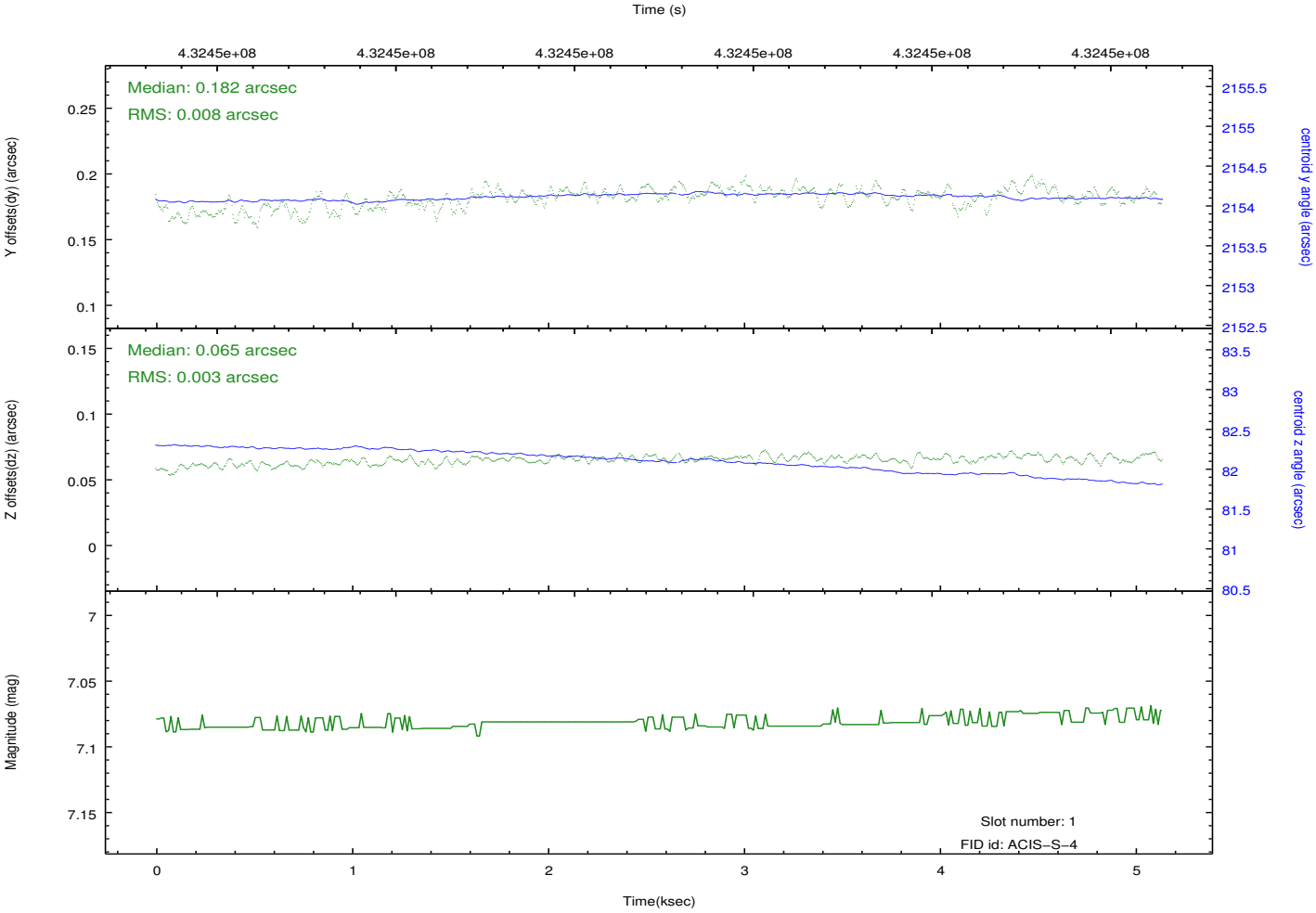




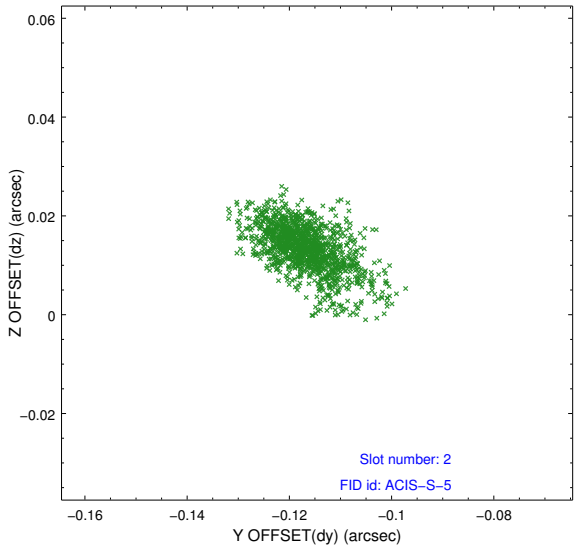
2.5.2 Slot 1

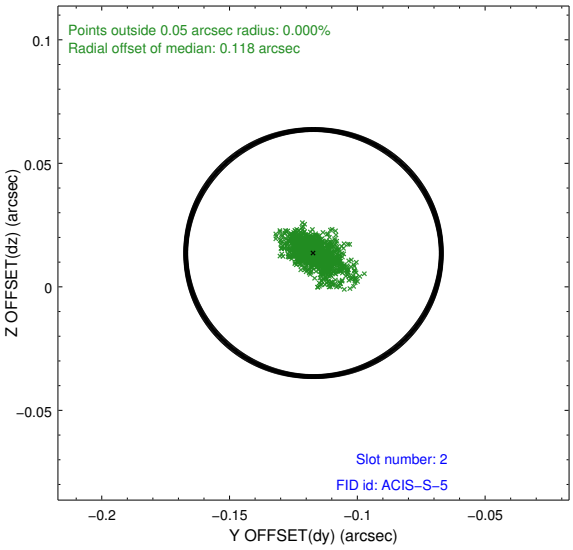

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 1
FID id: ACIS−S−4

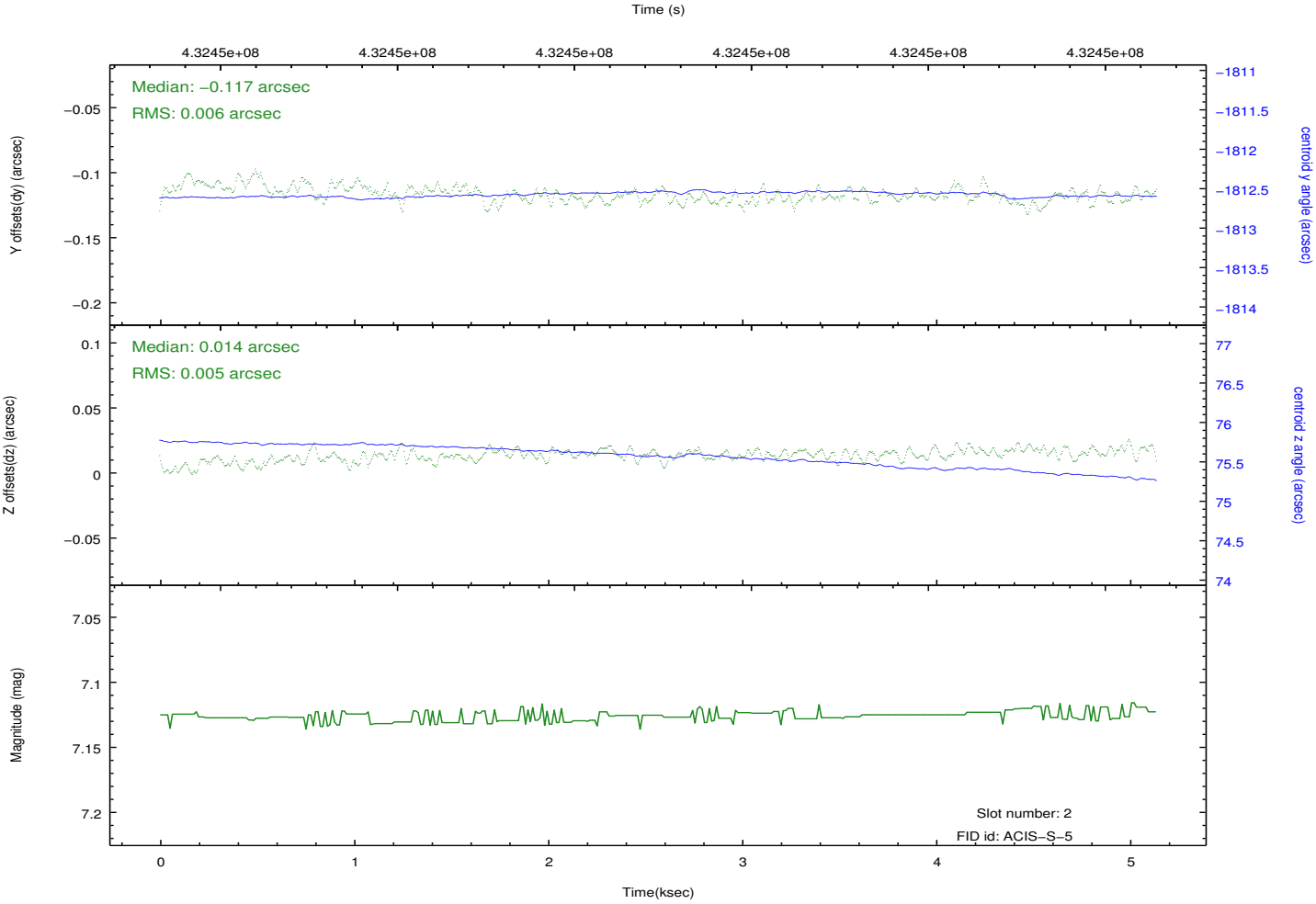

Points outside 0.05 arcsec radius: 0.000%
Radial offset of median: 0.194 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 1
FID id: ACIS−S−4


Time (s)
Median: 0.182 arcsec
RMS: 0.008 arcsec
Y offsets(dy) (arcsec)
centroid y angle (arcsec)
Median: 0.065 arcsec
RMS: 0.003 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: 0.118 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 2
FID id: ACIS−S−5


Time (s)
Median: −0.117 arcsec
RMS: 0.006 arcsec
Y offsets(dy) (arcsec)
Median: 0.014 arcsec
RMS: 0.005 arcsec
Z offsets(dz) (arcsec)
centroid y angle (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	Jen Lauer
V&V Date (YYYY-MM-DD)	2012.02.23
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	5

A.2 Comments

Charge time is set to the scheduled time for this observation, although the ontime about 3375 s, which is significantly less due to telemetry saturation. In addition,livetime of the detector is about 588 s. Spacecraft dither is not enabled.