V&V Reference Report
L2 ASCDS Version : 8.4.3

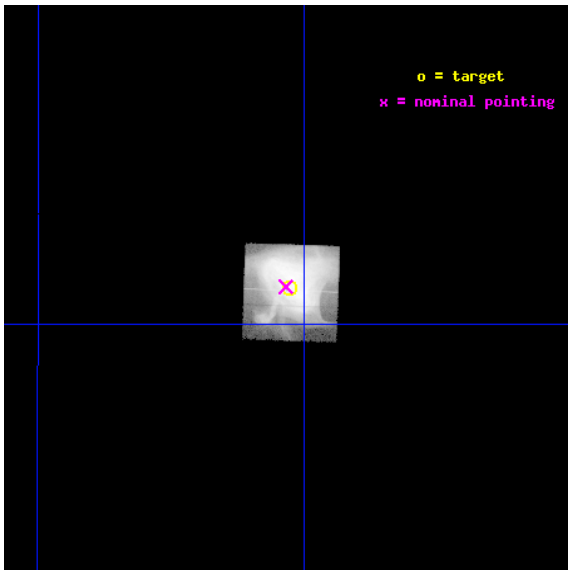
Observation 13210 - L2 Version 2
Chandra X-Ray Center

L2 Processing Date : Feb 25 2012

Contents

1 Front

seq_num	501548	Sequence number
obs_id	13210	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	83.633380203074	Nominal RA [deg]
dec_nom	22.015990594132	Nominal Dec [deg]
roll_nom	91.994056331924	Nominal Roll [deg]
revision	2	Processing version of data
ontime	3386.8154825568	Sum of GTIs [s]
livetime	589.77039712966	Livetime [s]
ontime7	3386.8154825568	Sum of GTIs [s]
l2events	1705224	Number of level 2 events

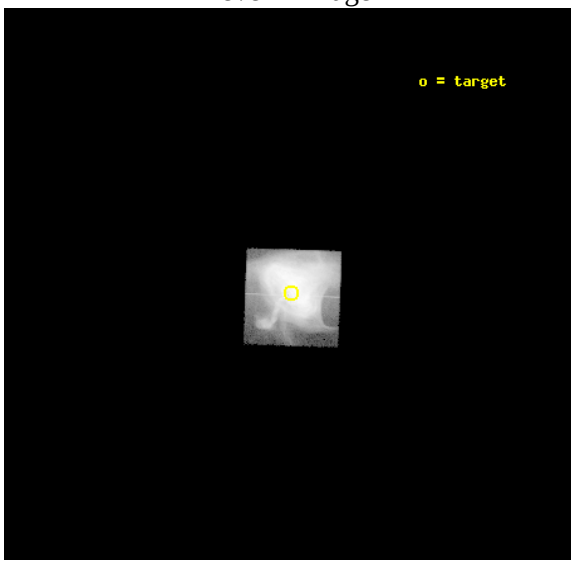


2 OBI

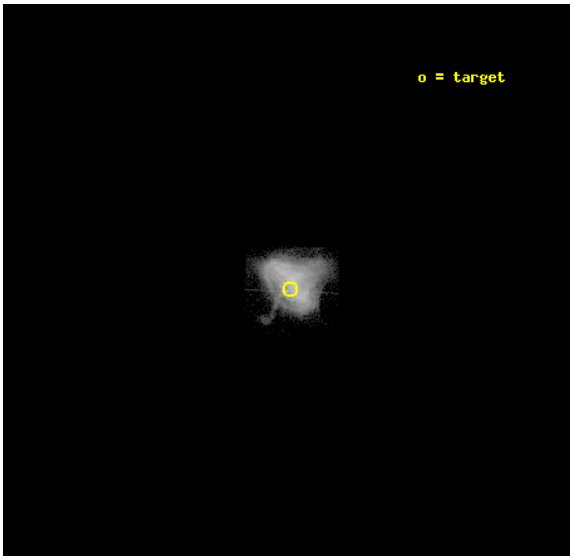
2.1 OBI

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	2012-02-25T03:25:26	Date and time of file creation
revision	2	Processing version of data

sched_exp_time	5000.000000	[s] Scheduled observation exposure time
ontime	3386.8154825568	Sum of GTIs [s]
ontime7	3386.8154825568	Sum of GTIs [s]
l1events	1886891	Number of level 1 events

2.1.3 Events

	ccd 7
level 1 events	1886891
rejected events	171079
rejected %	9%

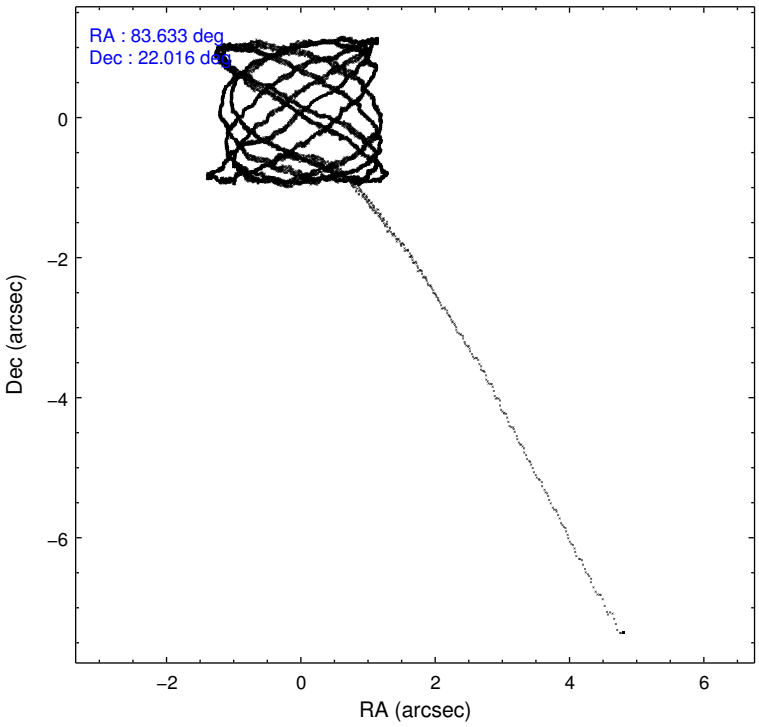
	ccd 7
grade 0 events	365894
	19%
grade 1 events	20827
	1%
grade 2 events	470127
	24%
grade 3 events	188807
	10%
grade 4 events	189051
	10%
grade 5 events	61779
	3%
grade 6 events	502463
	26%
grade 7 events	87943
	4%

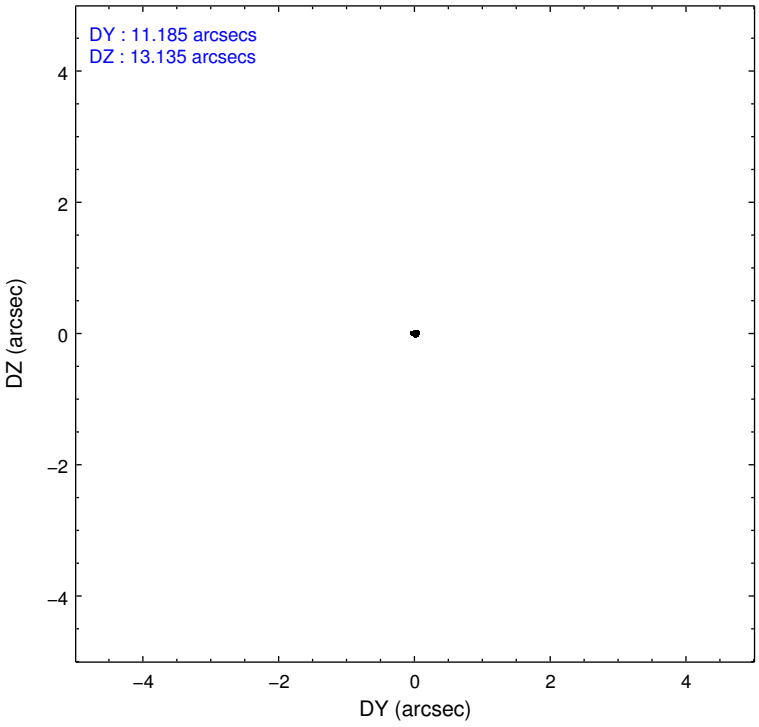
2.2 Compared Parameters

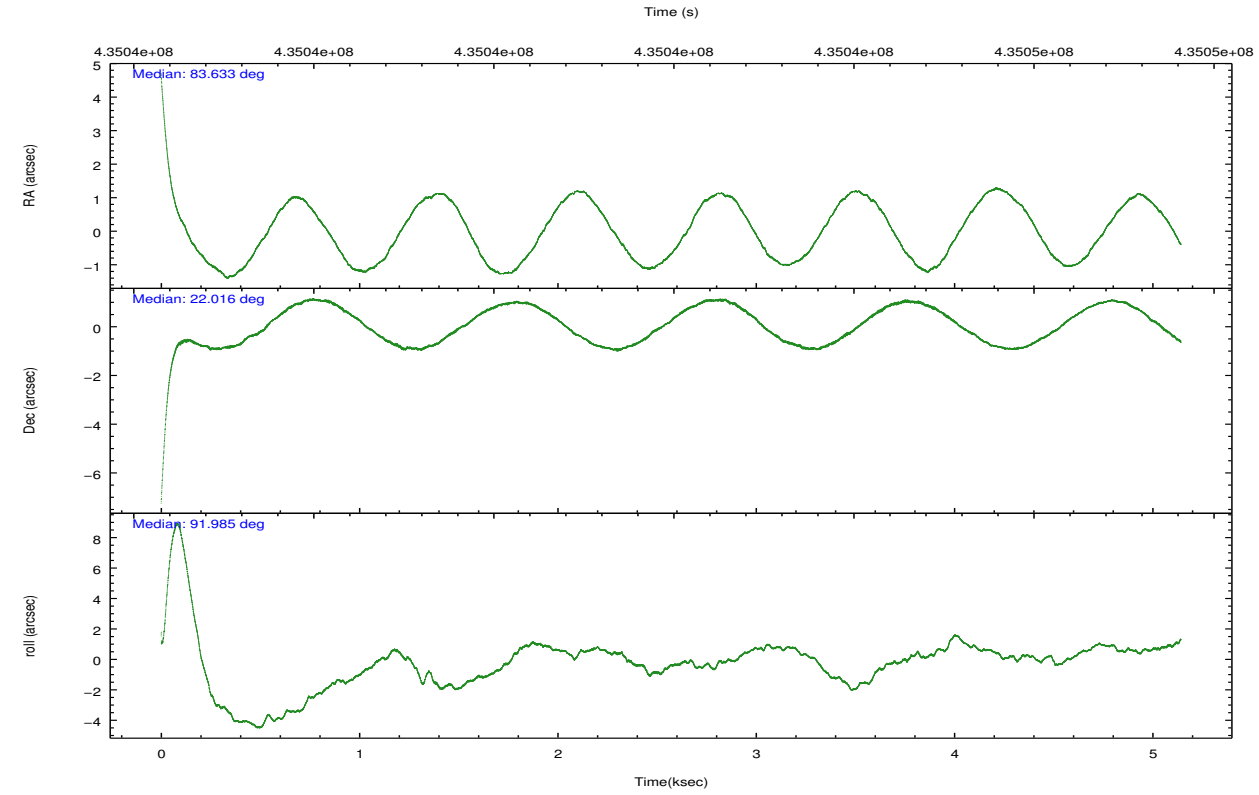
Parameter	Planned	Actual
Instrument	ACIS	ACIS
Detector	ACIS-7	ACIS-7
Grating	NONE	NONE
Data mode	GRADED	GRADED
Observation mode	POINTING	POINTING
[deg] Pointing RA	83.649358	83.63338020307381
[deg] Pointing Dec	21.993017	22.01599059413241
[deg] Pointing Roll	91.831464	91.9940563319245
[mm] SIM focus pos	-0.684267	-0.6828225247311905
[mm] SIM defocus	0	0.001444936568705701
[mm] SIM translation stage pos	-185.756523	-185.7551001639513
[mm] SIM translation stage offset	-4.376	-4.377422419056558
[s] Observation start time (MET)	435041549.184000	435040473.71682
Observation start date	2011-10-15T04:51:23	2011-10-15T04:34:33
[s] Observation end time (MET)	435046549.184000	435047071.12967
Observation end date	2011-10-15T06:14:43	2011-10-15T06:24:31
Read mode	TIMED	TIMED

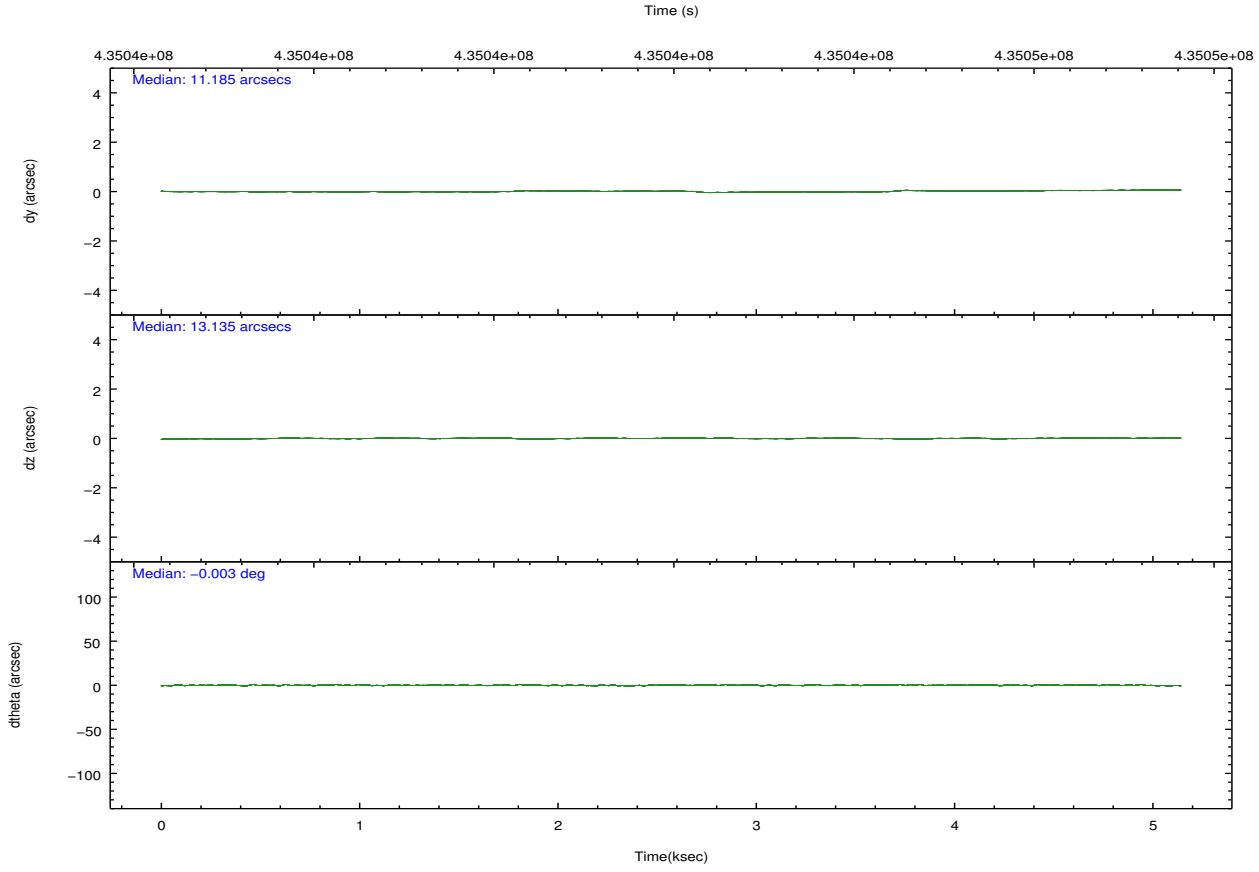
Parameter	Planned	Actual
Obspar format version number	7	7
Obspar file type	PREDICTED	ACTUAL
Obspar update status	NONE	UPDATED
Number of optional ACIS chips dropped	0	0
On-chip summing requested	N	N
Subarray requested	CUSTOM	CUSTOM
Subarray start row	155	155
Subarray row count	300	300
Alternating exposures 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)
0
−2
−4
−6
−2
0
2
4
6


DY : 11.185 arcsecs
DZ : 13.135 arcsecs
DZ (arcsec)
DY (arcsec)
4
2
0
−2
−4
−4
−2
0
2
4


Time (s)
4.3504e+08
4.3504e+08
4.3504e+08
4.3504e+08
4.3504e+08
4.3505e+08
4.3505e+08
Median: 83.633 deg
RA (arcsec)
Median: 22.016 deg
Dec (arcsec)
Median: 91.985 deg
roll (arcsec)
Time(ksec)

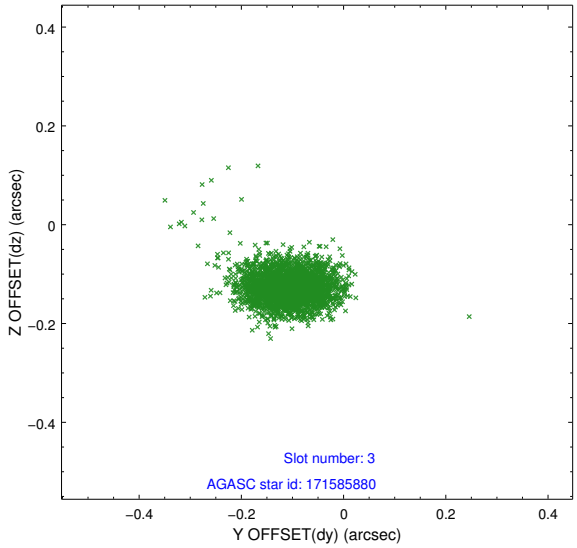

Time (s)
4.3504e+08
4.3504e+08
4.3504e+08
4.3504e+08
4.3504e+08
4.3505e+08
4.3505e+08
Median: 11.185 arcsecs
dy (arcsec)
Median: 13.135 arcsecs
dz (arcsec)
Median: −0.003 deg
dtheta (arcsec)
Time(ksec)

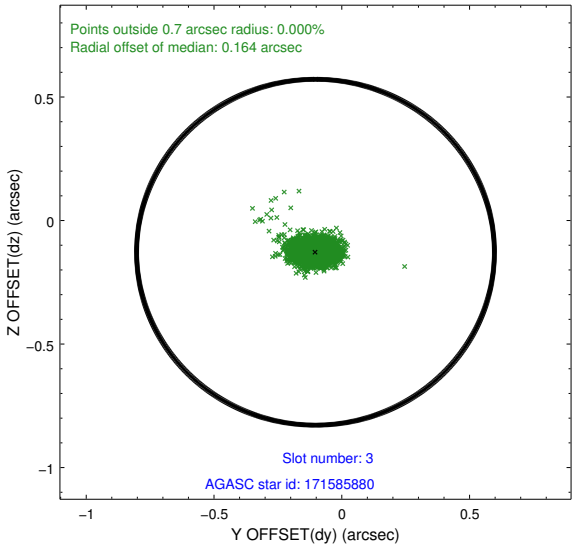
Slot Statistics

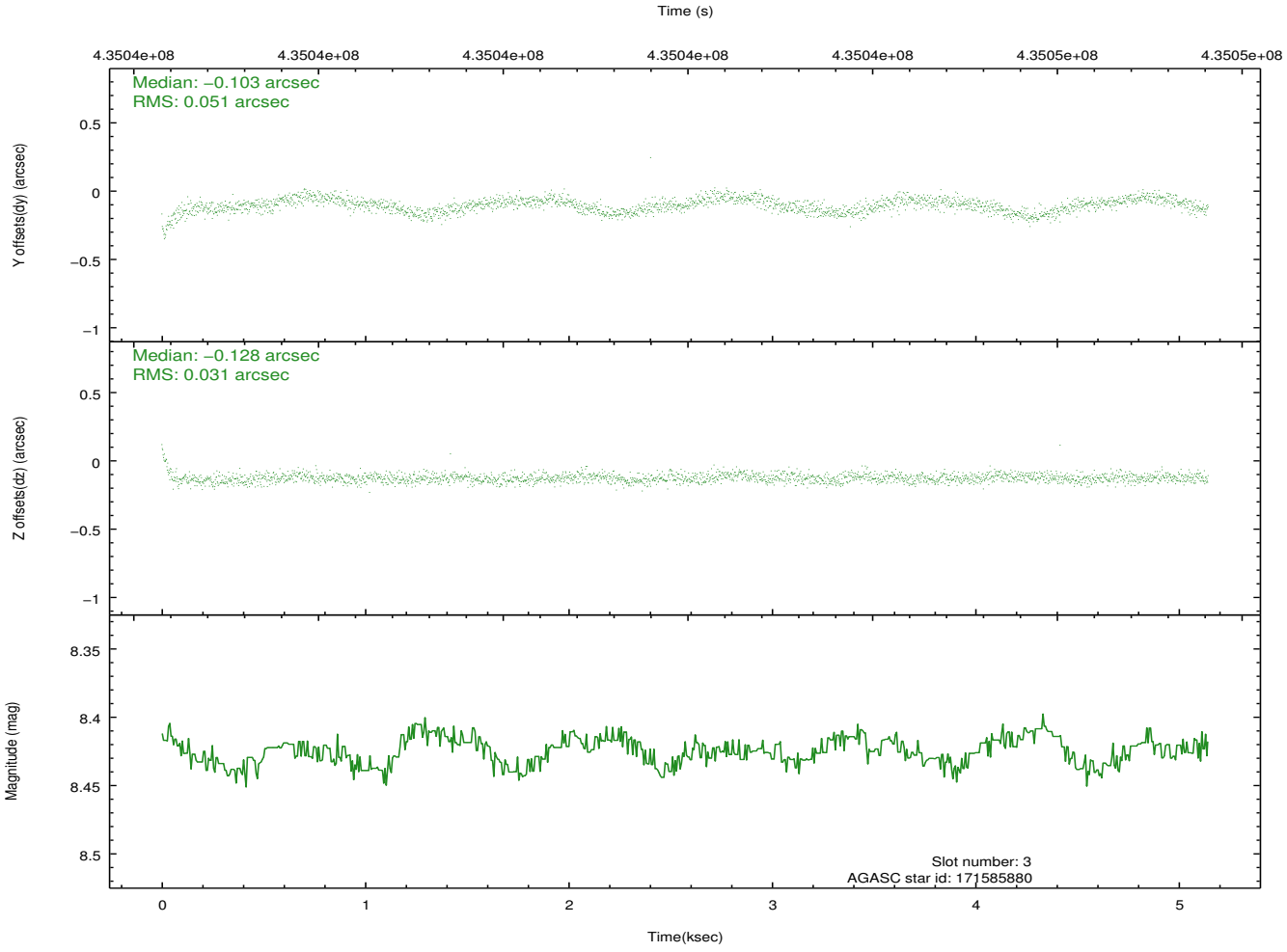
slot	status	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID	ACIS-S-2	6.94	1255	-0.092	-0.112	0.007	0.011	0.000000	0.000000	-763.88	-1824.85
1	FID	ACIS-S-4	7.03	1255	0.241	0.074	0.005	0.009	0.000000	0.000000	2149.23	82.47
2	FID	ACIS-S-5	7.08	1255	-0.181	0.046	0.006	0.010	0.000000	0.000000	-1815.26	77.52
3	GUIDE	171585880	8.43	2510	-0.103	-0.128	0.060	0.101	83.676260	22.176319	656.99	-110.71
4	GUIDE	171586032	8.91	2508	-0.121	0.260	0.067	0.107	83.950197	22.083225	294.18	-1013.17
5	GUIDE	171597832	9.20	2507	0.376	-0.305	0.075	0.126	83.183230	21.366702	-2200.70	1632.98
6	GUIDE	171721904	9.17	2507	-0.048	0.081	0.087	0.134	84.272676	22.116922	383.43	-2091.33
7	GUIDE	243941560	8.31	2509	-0.104	0.092	0.060	0.099	83.733264	22.568598	2062.49	-345.25

2.4 Star Slots

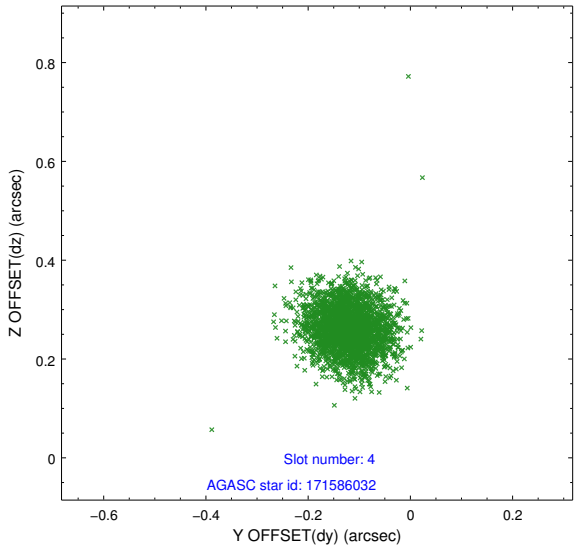
2.4.1 Slot 3

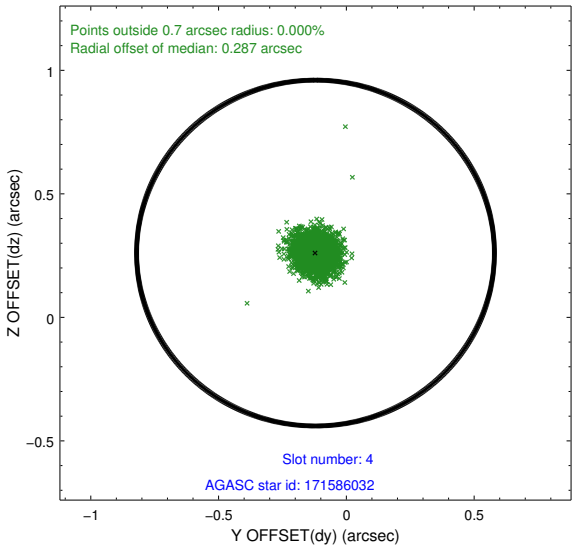


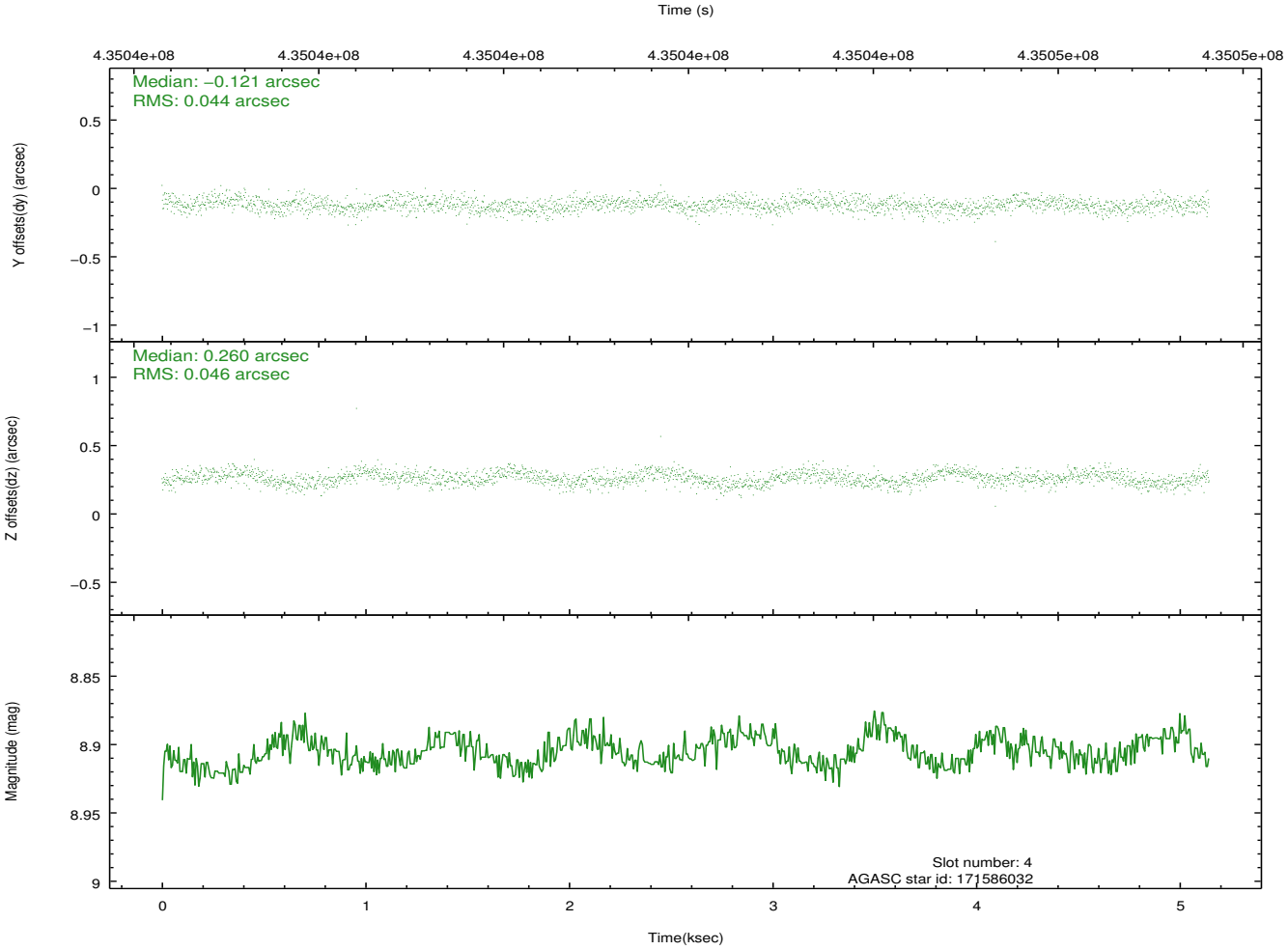




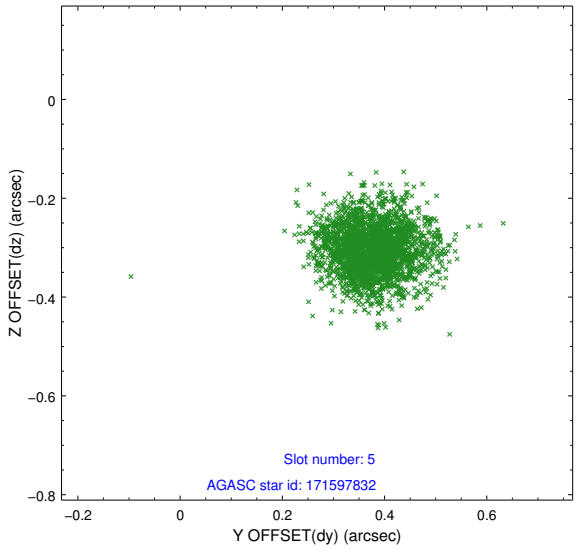
2.4.2 Slot 4

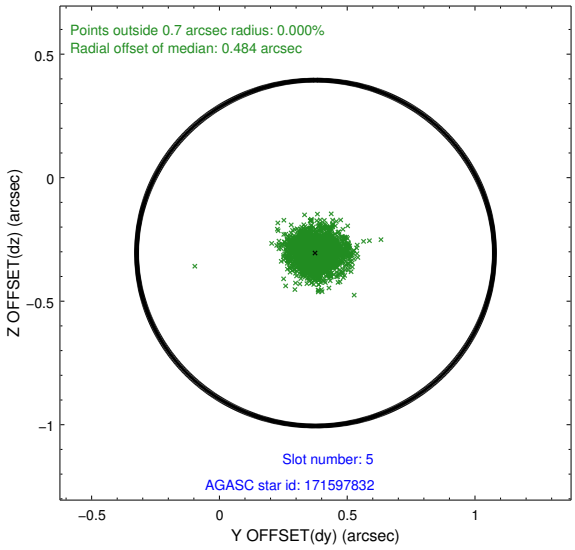

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 4
AGASC star id: 171586032

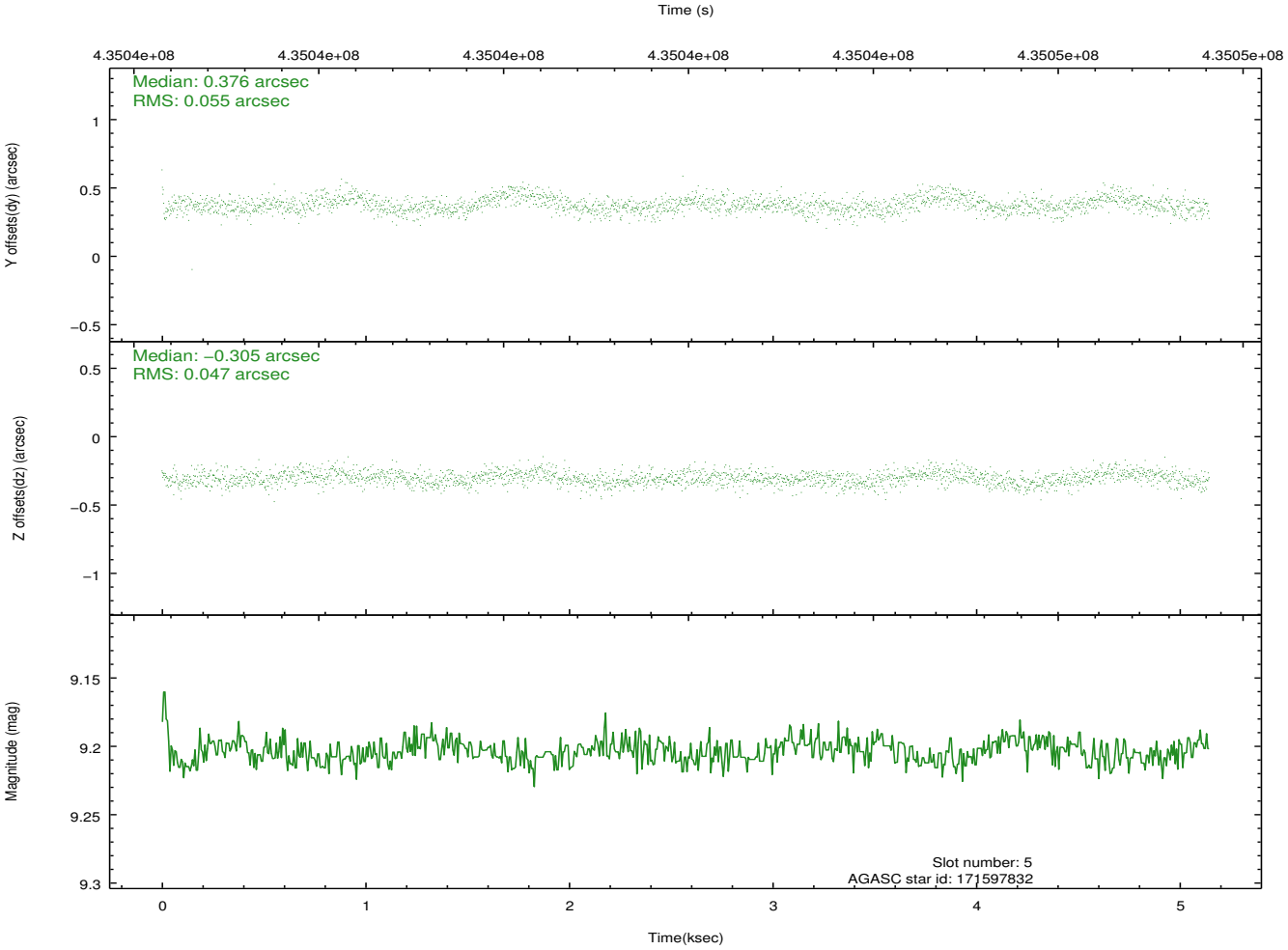

Points outside 0.7 arcsec radius: 0.000%
Radial offset of median: 0.287 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 4
AGASC star id: 171586032


Time (s)
Median: −0.121 arcsec
RMS: 0.044 arcsec
Y offsets(dy) (arcsec)
Median: 0.260 arcsec
RMS: 0.046 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number: 4
AGASC star id: 171586032
Time(ksec)

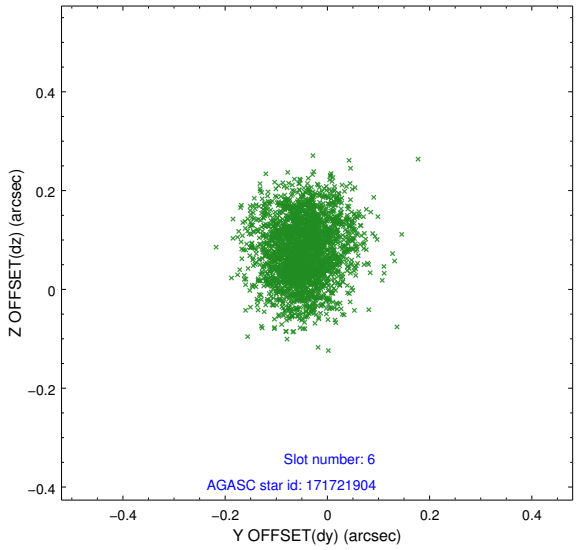
2.4.3 Slot 5

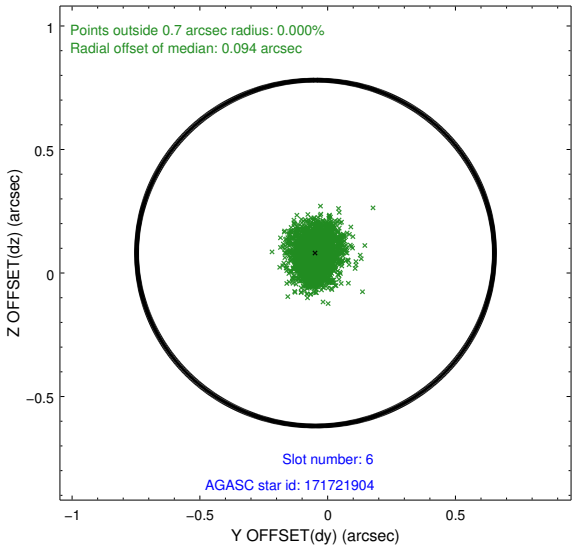

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 5
AGASC star id: 171597832

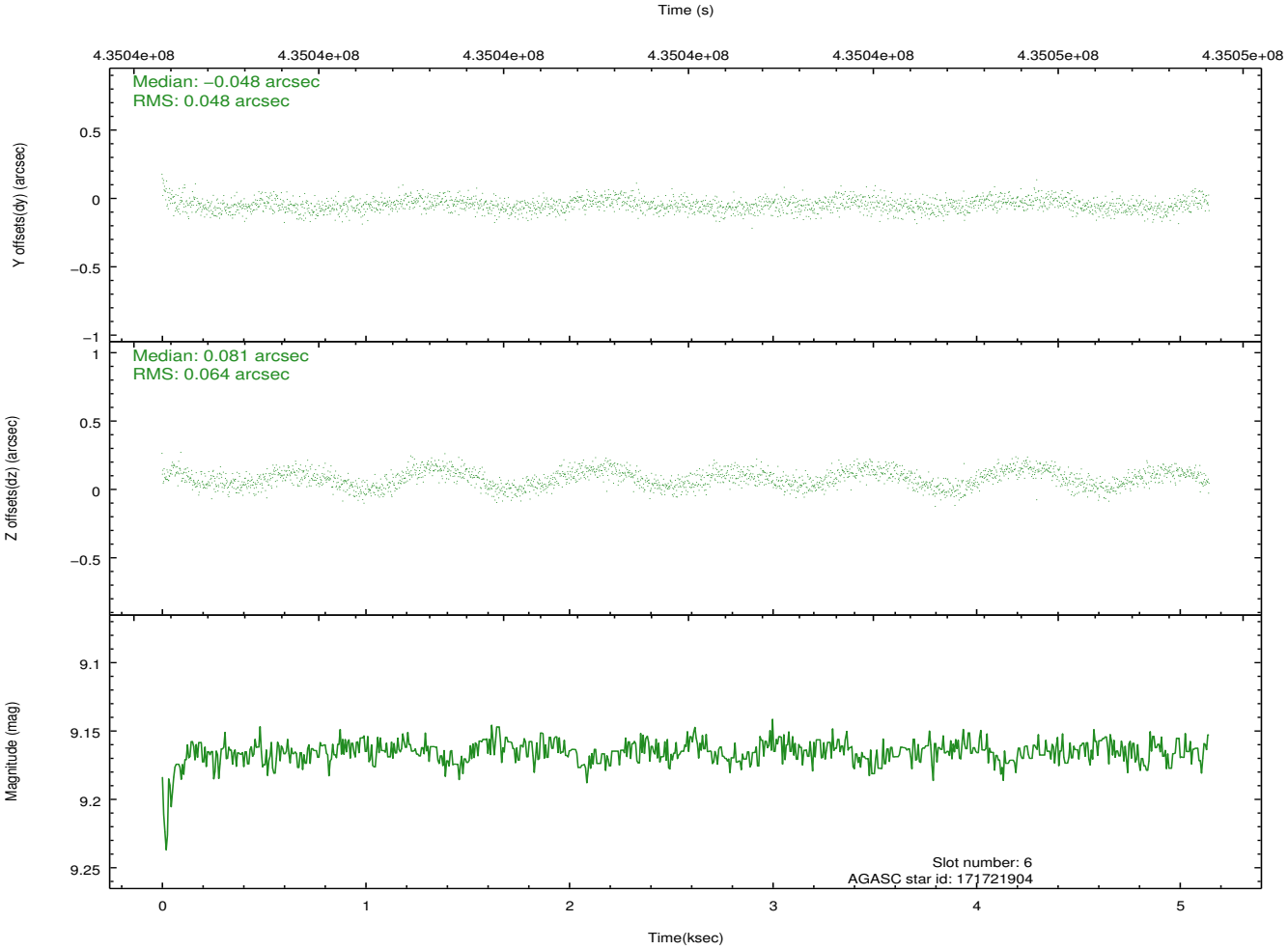

Points outside 0.7 arcsec radius: 0.000%
Radial offset of median: 0.484 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 5
AGASC star id: 171597832


Time (s)
Median: 0.376 arcsec
RMS: 0.055 arcsec
Y offsets(dy) (arcsec)
Median: −0.305 arcsec
RMS: 0.047 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number: 5
AGASC star id: 171597832
Time(ksec)

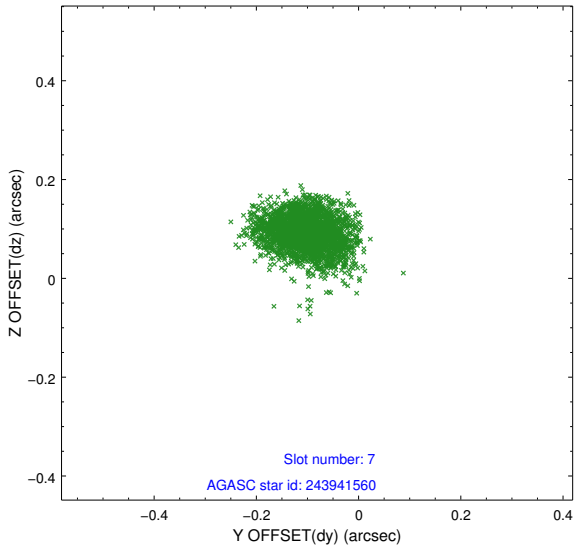
2.4.4 Slot 6

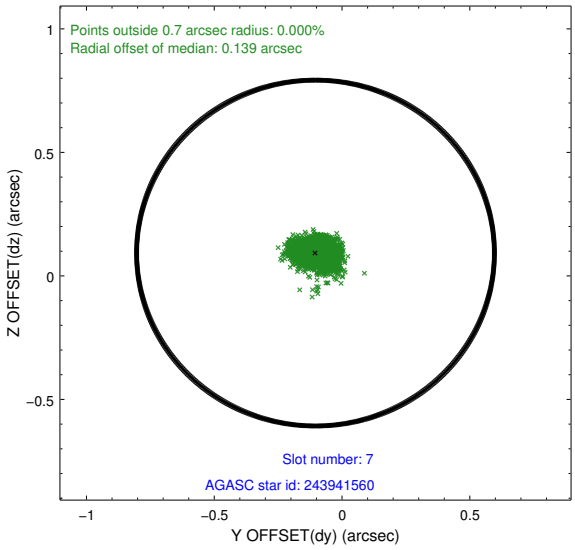

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 6
AGASC star id: 171721904

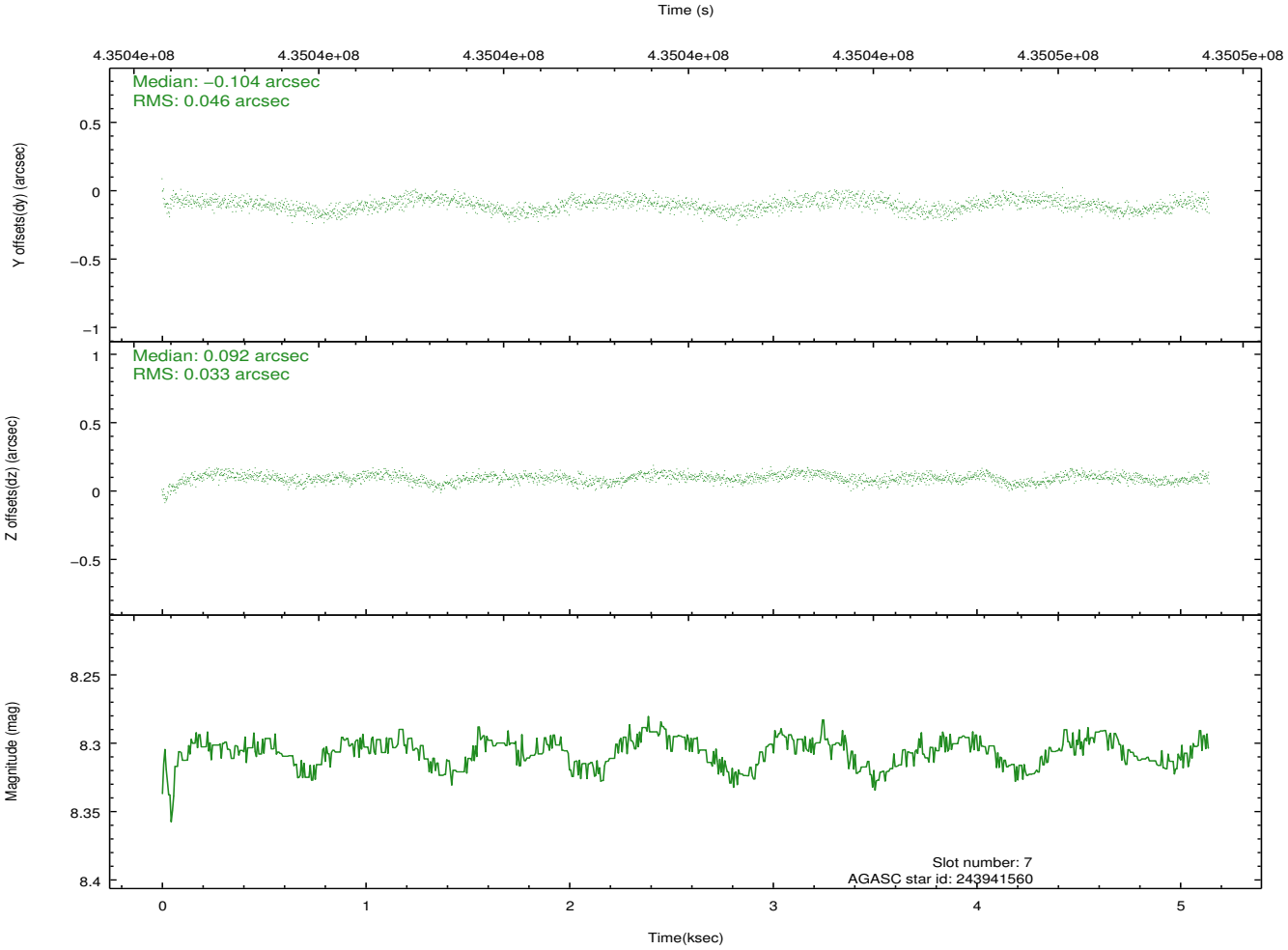

Points outside 0.7 arcsec radius: 0.000%
Radial offset of median: 0.094 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 6
AGASC star id: 171721904


Time (s)
Median: −0.048 arcsec
RMS: 0.048 arcsec
Y offsets(dy) (arcsec)
Median: 0.081 arcsec
RMS: 0.064 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number: 6
AGASC star id: 171721904
Time(ksec)

2.4.5 Slot 7

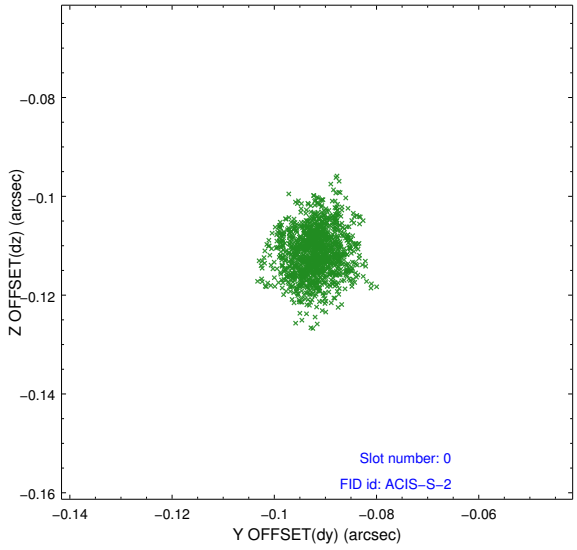

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 7
AGASC star id: 243941560

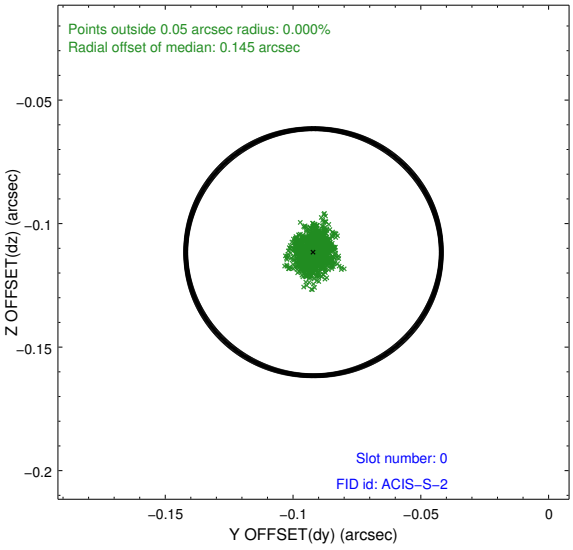

Points outside 0.7 arcsec radius: 0.000%
Radial offset of median: 0.139 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 7
AGASC star id: 243941560

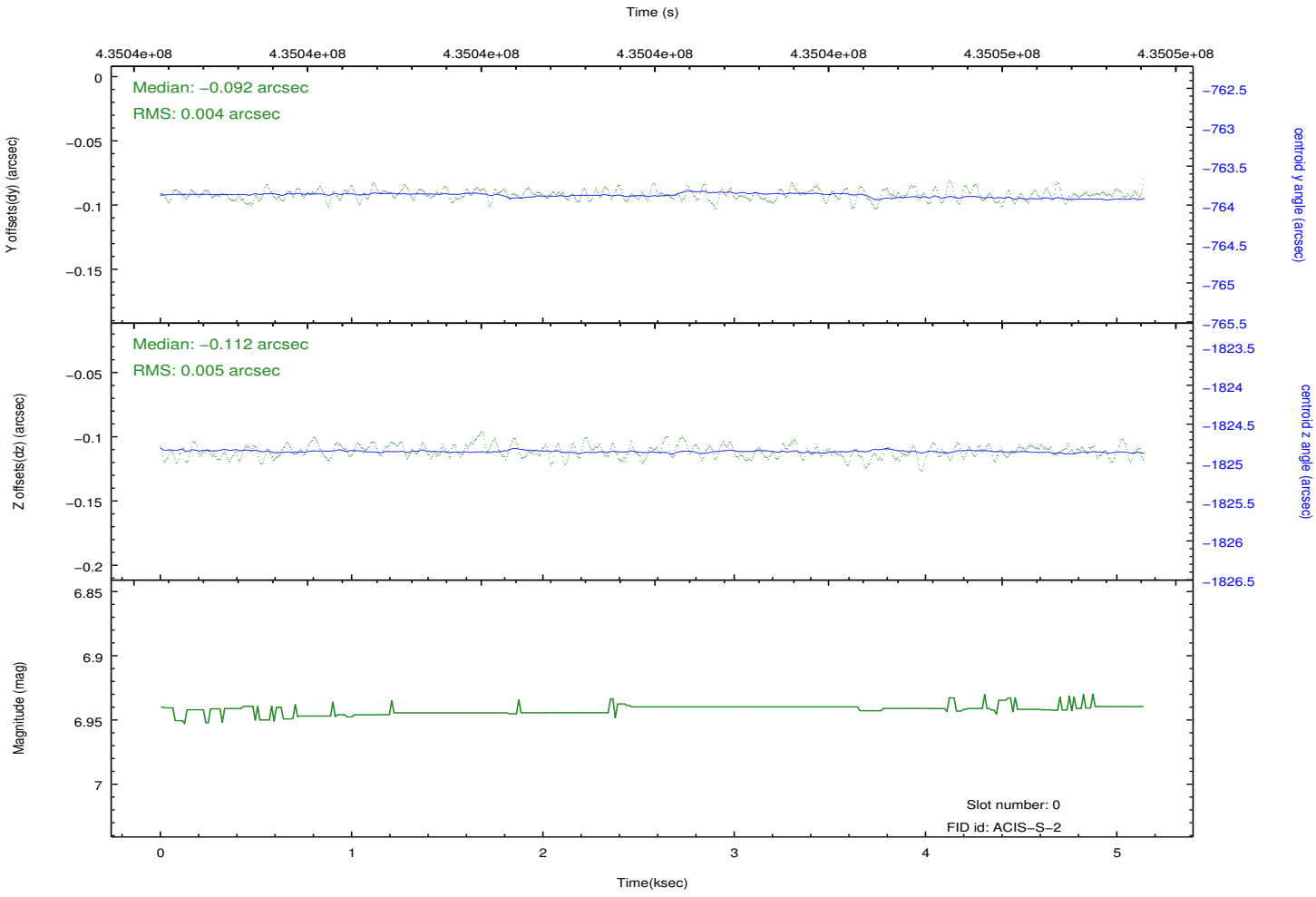

Time (s)
Median: −0.104 arcsec
RMS: 0.046 arcsec
Y offsets(dy) (arcsec)
Median: 0.092 arcsec
RMS: 0.033 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number: 7
AGASC star id: 243941560
Time(ksec)

2.5 FID Slots

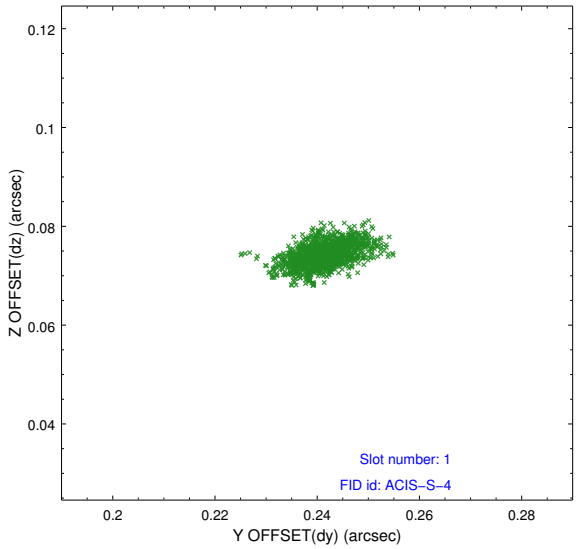
2.5.1 Slot 0

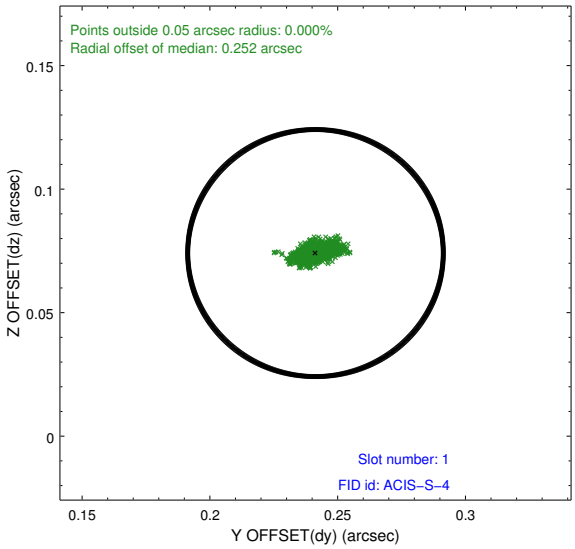


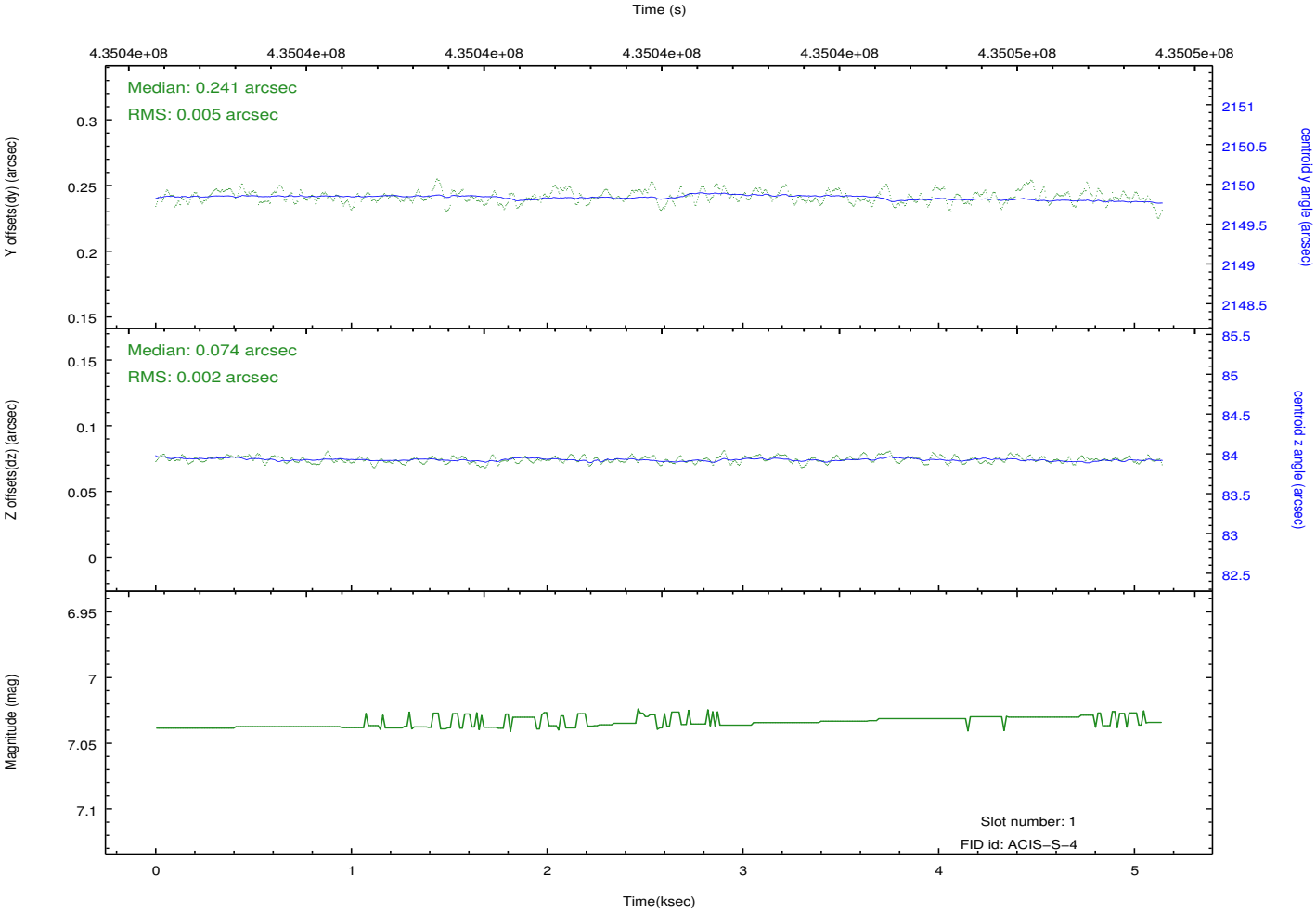




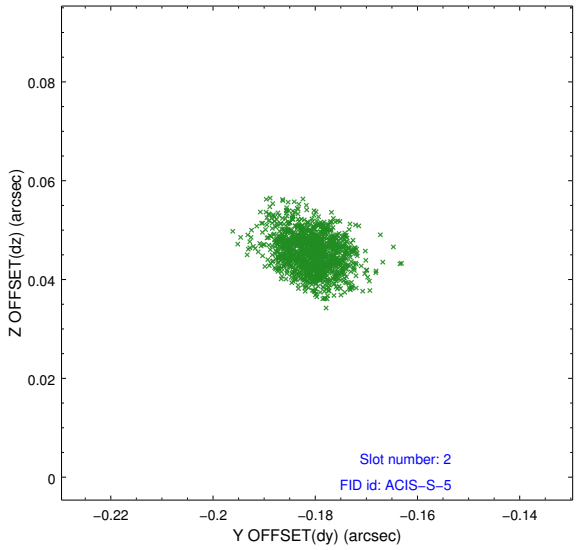
2.5.2 Slot 1

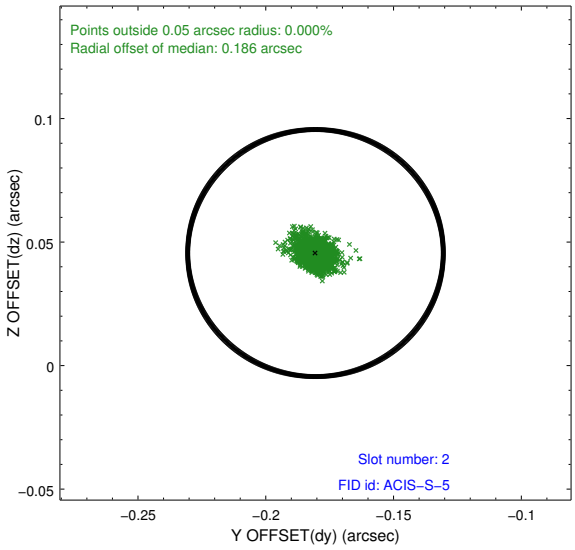

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 1
FID id: ACIS−S−4

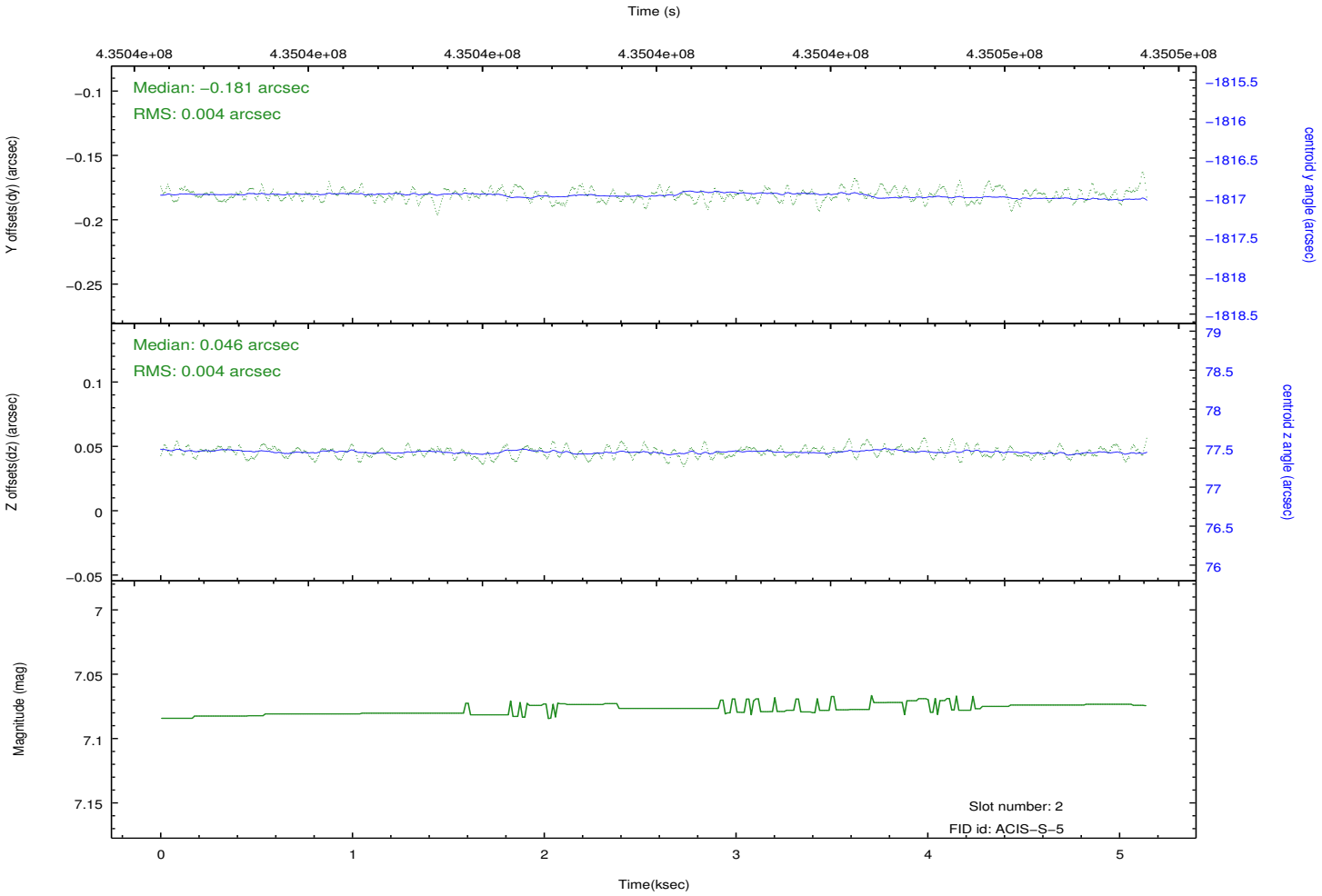

Points outside 0.05 arcsec radius: 0.000%
Radial offset of median: 0.252 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 1
FID id: ACIS−S−4


Time (s)
Median: 0.241 arcsec
RMS: 0.005 arcsec
Y offsets(dy) (arcsec)
centroid y angle (arcsec)
Median: 0.074 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: 0.186 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 2
FID id: ACIS−S−5


Time (s)
Median: −0.181 arcsec
RMS: 0.004 arcsec
Y offsets(dy) (arcsec)
centroid y angle (arcsec)
Median: 0.046 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	Jen Lauer
V&V Date (YYYY-MM-DD)	2012.02.27
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 is about 3387 s, which is significantly less due to telemetry saturation. In addition,livetime of the detector is about 590 s.
Non-standard spacecraft dither of 1 arcsec in y and z was used.