V&V Reference Report
L2 ASCDS Version : 10.6.4

Observation 21724 - L2 Version 1
Chandra X-Ray Center

L2 Processing Date : Sep 1 2018

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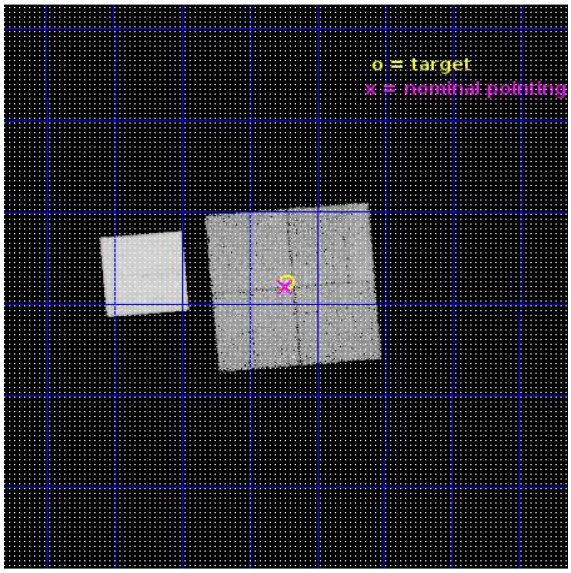
1 Front

seq_num	503024	Sequence number
obs_id	21724	Observation id
title	The wagging jet and the X-ray plerion of PSR J1809-1917	Proposal t
observer	George Pavlov	Principal investigator
object	PSR J1809-1917	Source name
dtycycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	272.429583	Observer's specified target RA [deg]
dec_targ	-19.293917	Observer's specified target Dec [deg]
ra_nom	272.43339729797	Nominal RA [deg]
dec_nom	-19.302622171878	Nominal Dec [deg]
roll_nom	265.20994309248	Nominal Roll [deg]
revision	1	Processing version of data
ontime	26048.102268338	Sum of GTIs [s]
livetime	25707.764635868	Livetime [s]
ontime0	26054.261139035	Sum of GTIs [s]
ontime1	26051.161158919	Sum of GTIs [s]
ontime2	26054.343219042	Sum of GTIs [s]
ontime3	26048.102268338	Sum of GTIs [s]
ontime7	26057.566299319	Sum of GTIs [s]
l2events	196031	Number of level 2 events

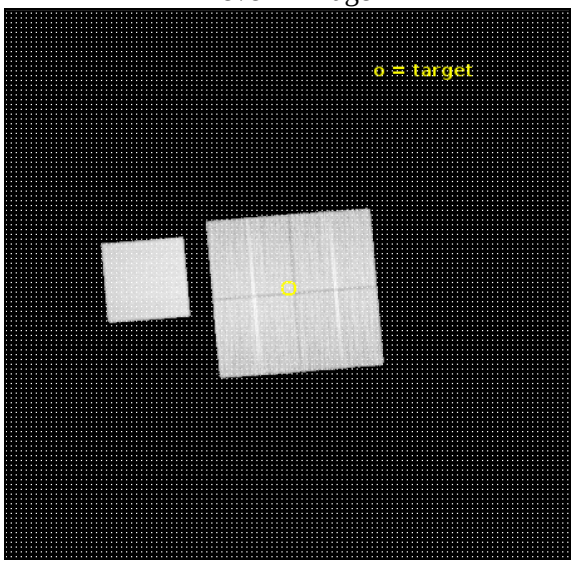


2 OBI

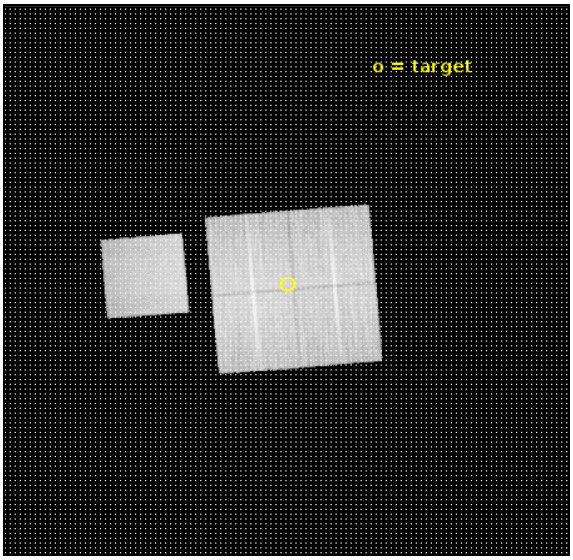
2.1 OBI

2.1.1 Images

Level 1 Image

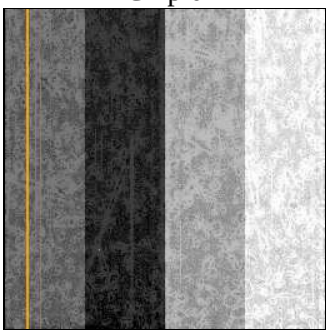


Level 1 Bad Events

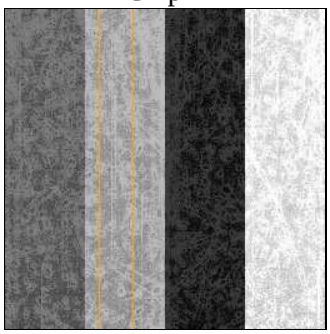


2.1.2 Bias

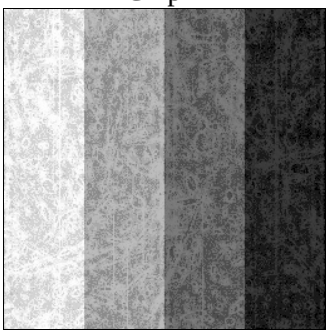
Chip 0



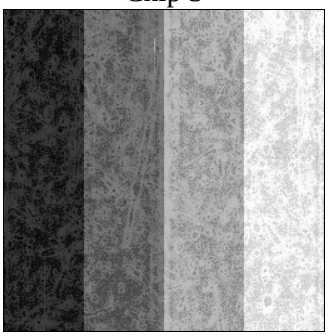
Chip 1



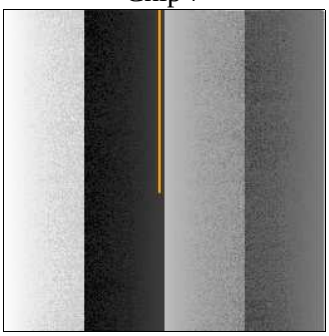
Chip 2



Chip 3



Chip 7



2.1.3 Parameters

obi_num	0	Obi number
ascdsver	10.6.4	Processing system revision
caldbver	4.7.8	
date	2018-09-01T14:31:30	Date and time of file creation
revision	1	Processing version of data

sched_exp_time	26000.000000	[s] Scheduled observation exposure time
ontime	26048.102268338	Sum of GTIs [s]
ontime0	26054.261139035	Sum of GTIs [s]
ontime1	26051.161158919	Sum of GTIs [s]
ontime2	26054.343219042	Sum of GTIs [s]
ontime3	26048.102268338	Sum of GTIs [s]
ontime7	26057.566299319	Sum of GTIs [s]
l1events	1009682	Number of level 1 events

2.1.4 Events

	ccd 0	**ccd 1**	**ccd 2**	**ccd 3**	**ccd 7**
level 1 events	178526	184401	200992	188153	257610
rejected events	153566	157608	175005	164167	144719
rejected %	86%	85%	87%	87%	56%

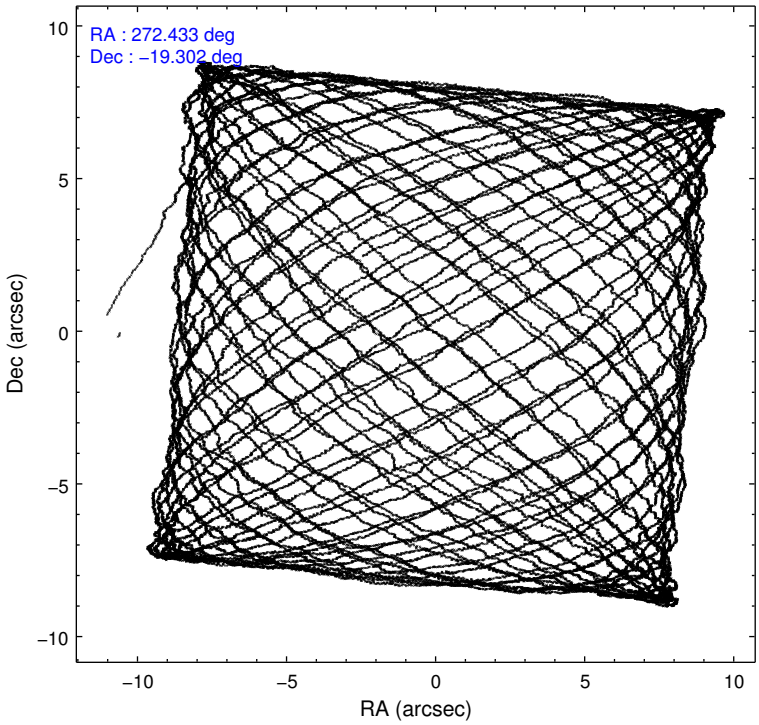
	ccd 0	**ccd 1**	**ccd 2**	**ccd 3**	**ccd 7**
grade 0 events	9616	9923	10797	9914	9877
	5%	5%	5%	5%	3%
grade 1 events	132	125	154	121	414
	0%	0%	0%	0%	0%
grade 2 events	6082	6409	5938	4958	24690
	3%	3%	2%	2%	9%
grade 3 events	2357	2519	2316	2355	8973
	1%	1%	1%	1%	3%
grade 4 events	2214	2368	2425	2240	8897
	1%	1%	1%	1%	3%
grade 5 events	8742	9066	8245	9486	25407
	4%	4%	4%	5%	9%
grade 6 events	4696	5581	4513	4520	60469
	2%	3%	2%	2%	23%
grade 7 events	144687	148410	166604	154559	118883
	81%	80%	82%	82%	46%

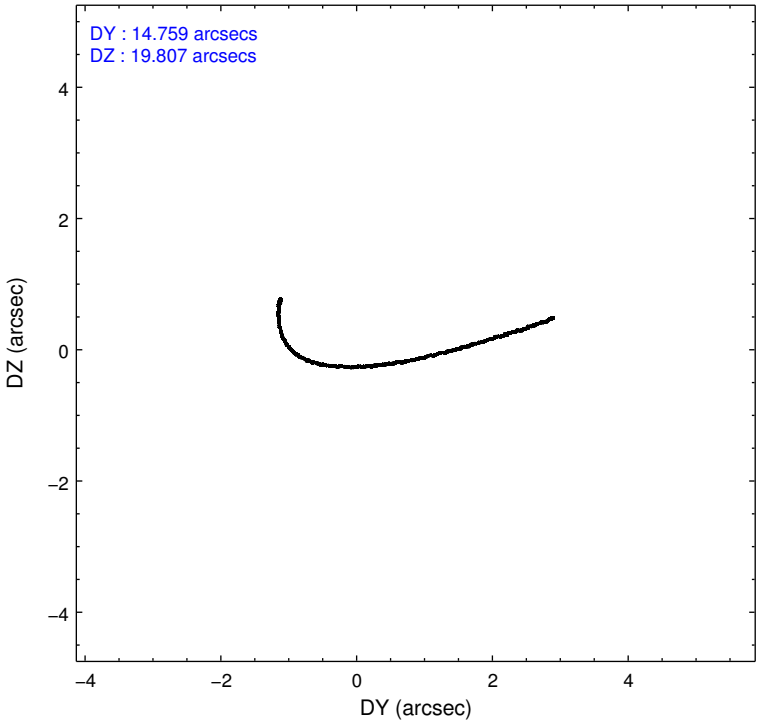
2.2 Compared Parameters

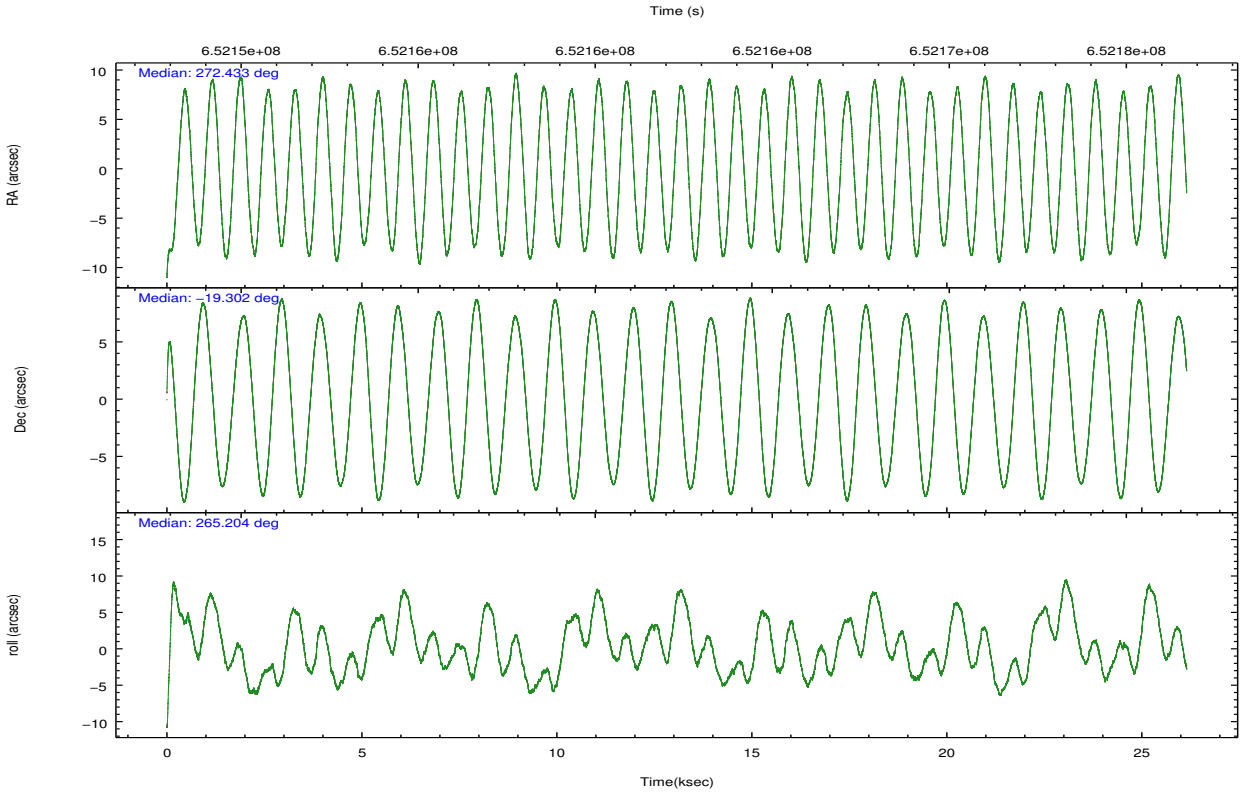
Parameter	Planned	Actual
Instrument	ACIS	ACIS
Detector	ACIS-01237	ACIS-01237
Grating	NONE	NONE
Data mode	VFAINT	VFAINT
Observation mode	POINTING	POINTING
[deg] Pointing RA	272.420836	272.433397297973
[deg] Pointing Dec	-19.277699	-19.30262217187815
[deg] Pointing Roll	264.997110	265.2099430924814
[mm] SIM focus pos	-0.782348	-0.7809083437167272
[mm] SIM defocus	0	0.001439871863259334
[mm] SIM translation stage pos	-233.592463	-233.5874344608287
[mm] SIM translation stage offset	0	-0.005018542100998502
[s] Observation start time (MET)	652149387.184000	652148378.84252
Observation start date	2018-09-01T00:35:18	2018-09-01T00:19:38
[s] Observation end time (MET)	652175387.184000	652176135.84417
Observation end date	2018-09-01T07:48:38	2018-09-01T08:02:15
Read mode	TIMED	TIMED

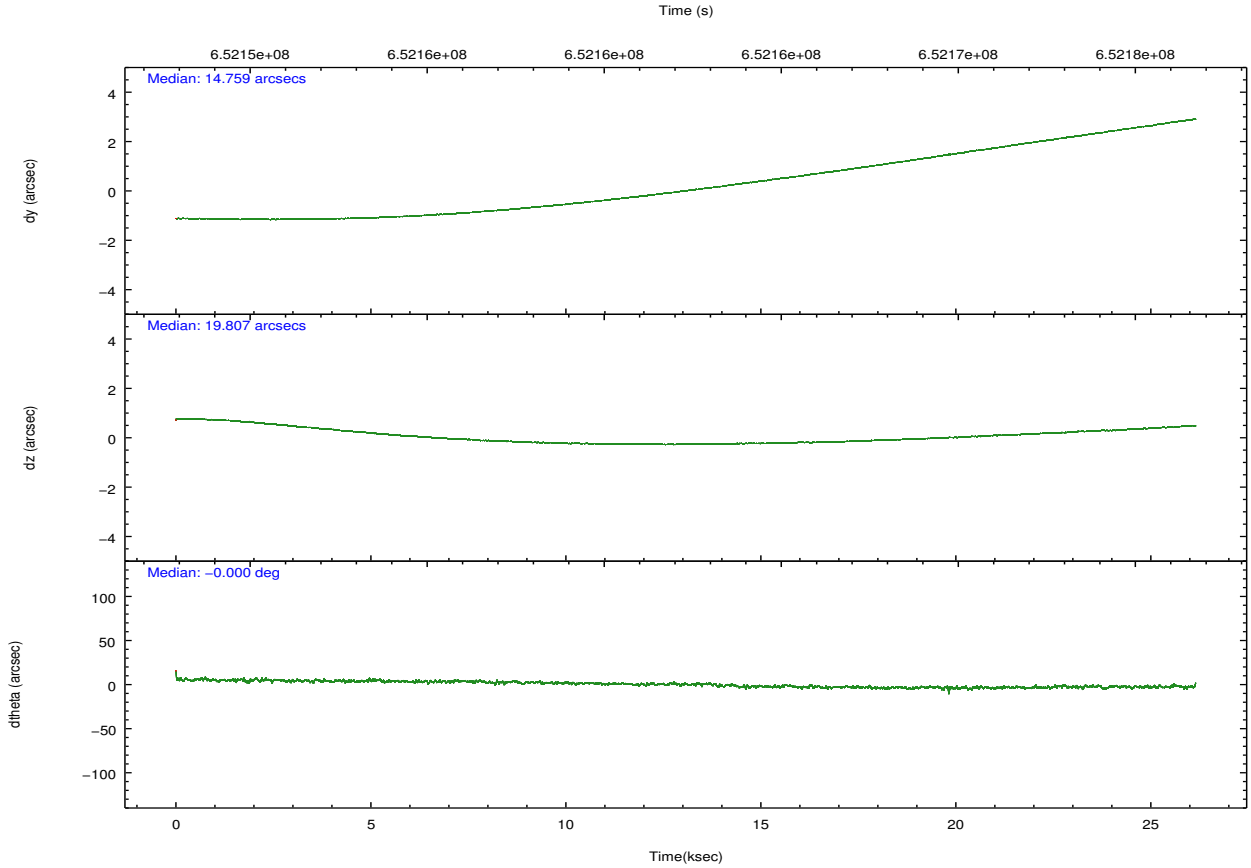
Parameter	Planned	Actual
Obspar format version number	7	7
Obspar file type	PREDICTED	ACTUAL
Obspar update status	NONE	UPDATED
CCD I0 on	Y	Y
CCD I1 on	Y	Y
CCD I2 on	Y	Y
CCD I3 on	Y	Y
CCD S0 on	N	N
CCD S1 on	N	N
CCD S2 on	N	N
CCD S3 on	O1	Y
CCD S4 on	N	N
CCD S5 on	N	N
Number of optional ACIS chips dropped	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 : 272.433 deg
Dec : −19.302 deg
Dec (arcsec)
RA (arcsec)
10
5
0
−5
−10
−10
−5
0
5
10


DY : 14.759 arcsecs
DZ : 19.807 arcsecs
DZ (arcsec)
DY (arcsec)
4
2
0
−2
−4
−4
−2
0
2
4


Time (s)
6.5215e+08
6.5216e+08
6.5216e+08
6.5216e+08
6.5217e+08
6.5218e+08
Median: 272.433 deg
RA (arcsec)
Median: −19.302 deg
Dec (arcsec)
Median: 265.204 deg
roll (arcsec)
Time(ksec)

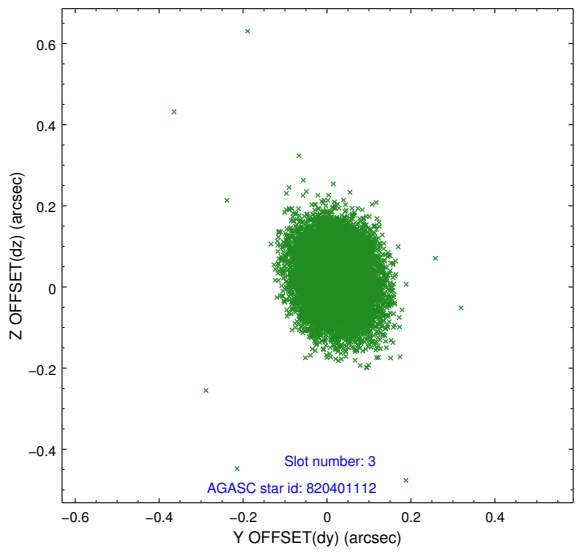

Time (s)
6.5215e+08
6.5216e+08
6.5216e+08
6.5216e+08
6.5217e+08
6.5218e+08
Median: 14.759 arcsecs
dy (arcsec)
Median: 19.807 arcsecs
dz (arcsec)
Median: −0.000 deg
dtheta (arcsec)
Time(ksec)

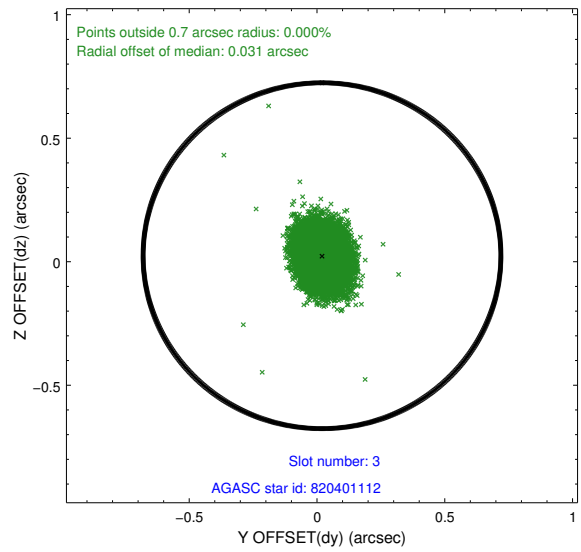
Slot Statistics

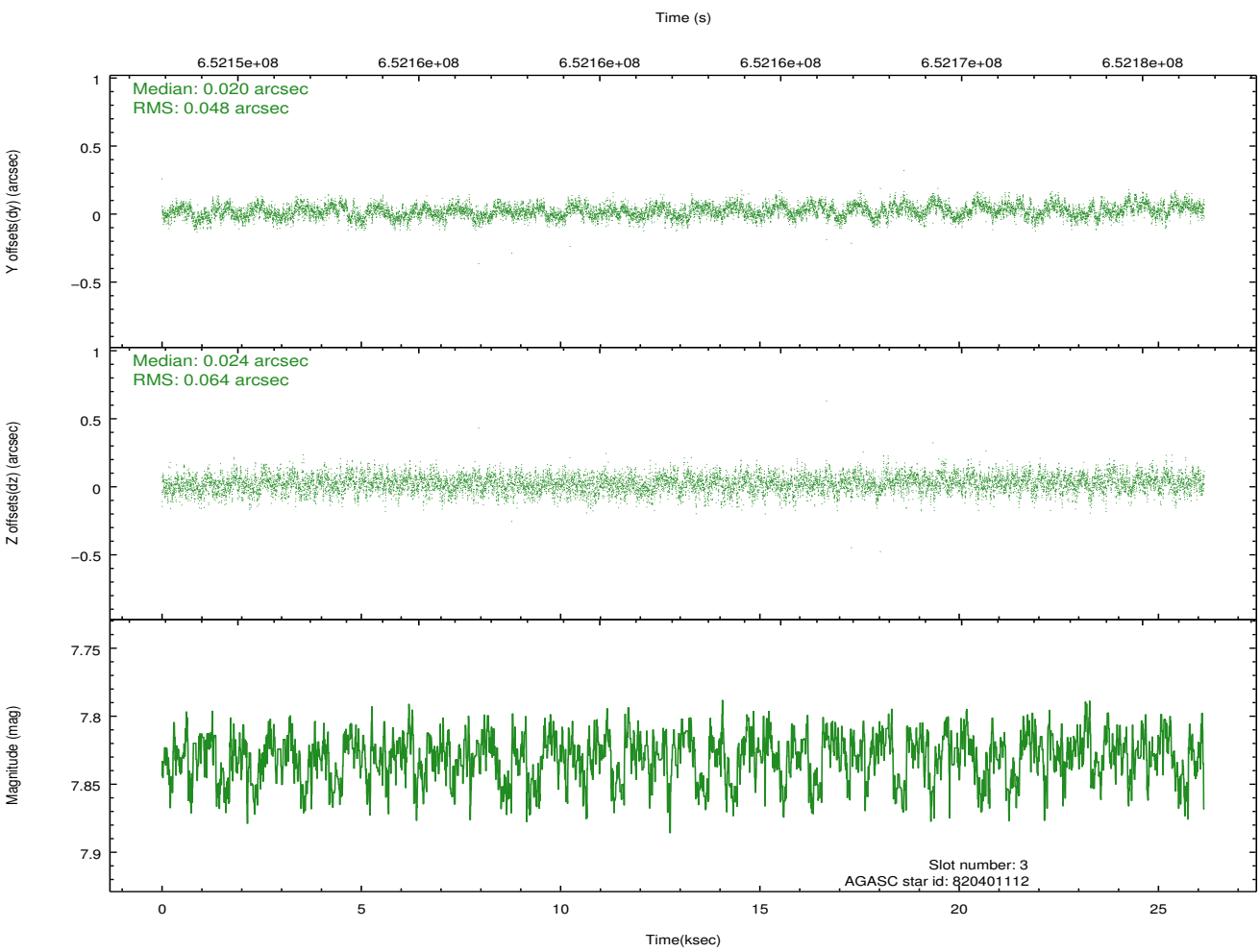
ɔt	status	used	id	mag	n_pts	frac_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mea
0	FID		ACIS-I-1	7.09	6376	1.000	-0.020	-0.017	0.036	0.067	0.000000	0.000000	924.33	-843
1	FID		ACIS-I-2	7.01	6379	1.000	-0.302	-0.138	0.018	0.035	0.000000	0.000000	-769.96	-850
2	FID		ACIS-I-4	7.04	6376	1.000	0.225	0.217	0.022	0.089	0.000000	0.000000	2144.50	1056
3	GUIDE	used	820401112	7.83	12749	1.000	0.020	0.024	0.084	0.138	271.884761	-19.293988	220.67	-1808
4	GUIDE	used	822091704	8.07	12752	1.000	0.160	0.184	0.088	0.145	272.220028	-18.943658	-1137.30	-785
5	GUIDE	used	822096760	8.02	12749	1.000	-0.325	-0.250	0.122	0.218	272.830526	-19.438690	457.56	1436
6	GUIDE	used	822100176	8.58	12750	1.000	0.287	-0.146	0.126	0.203	272.112888	-19.868886	2212.84	-852
7	GUIDE	used	821559528	9.06	12743	1.000	-0.139	0.200	0.154	0.241	272.980625	-18.673858	-2328.41	1712

2.4 Star Slots

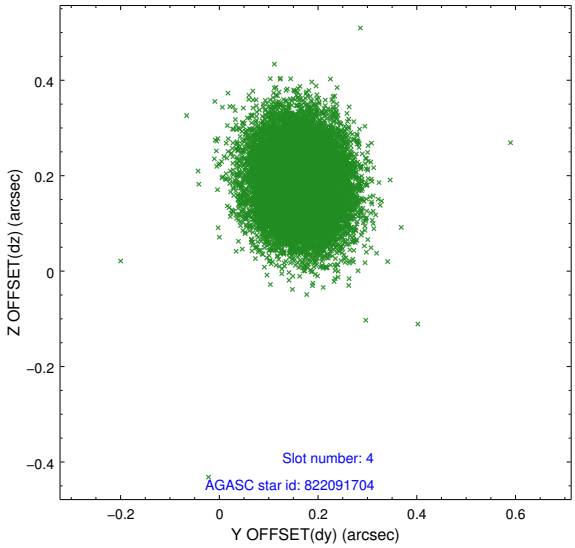
2.4.1 Slot 3

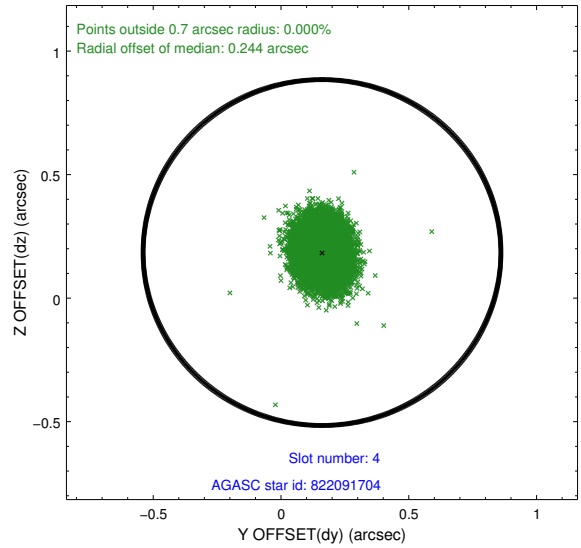


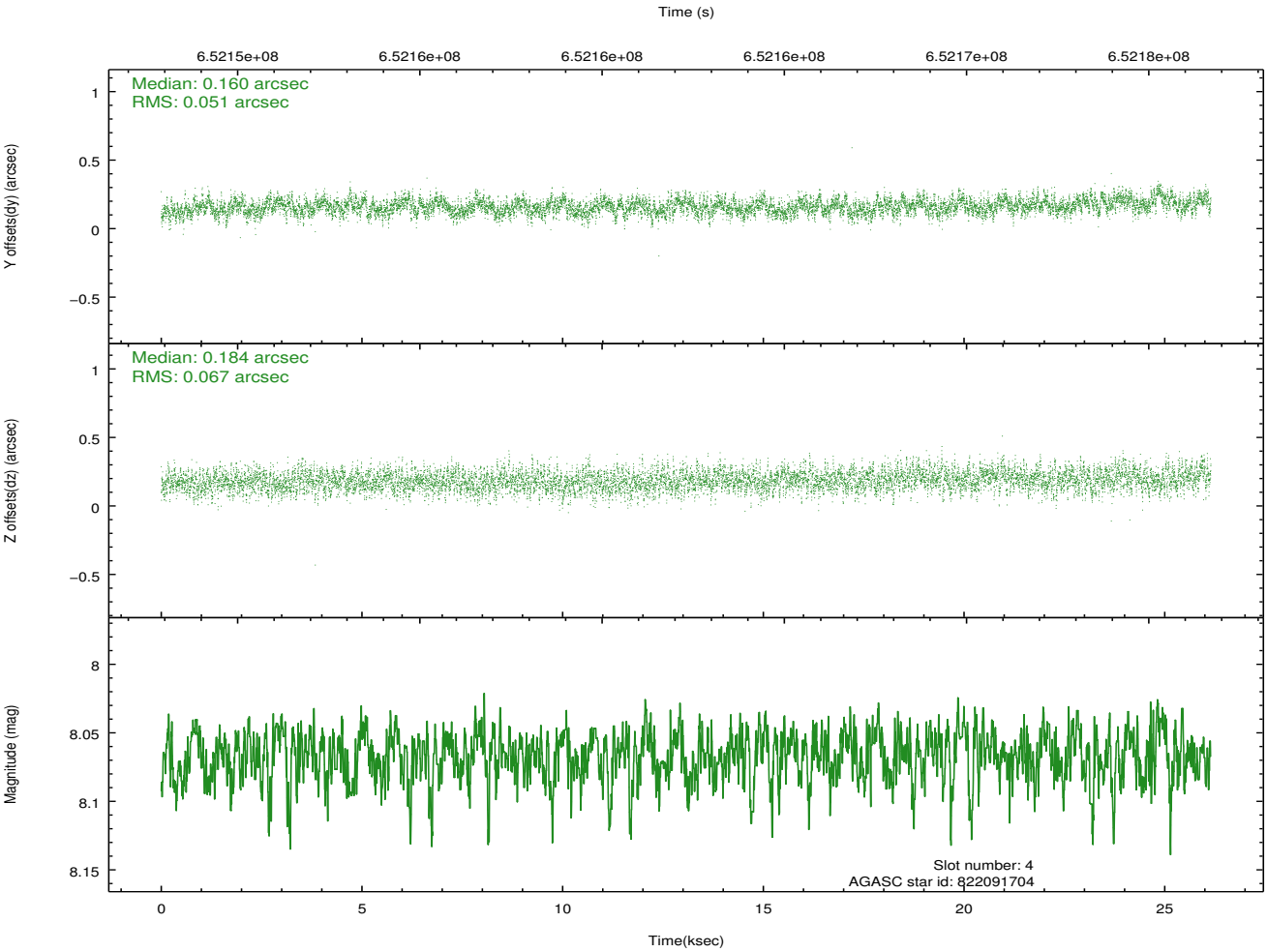




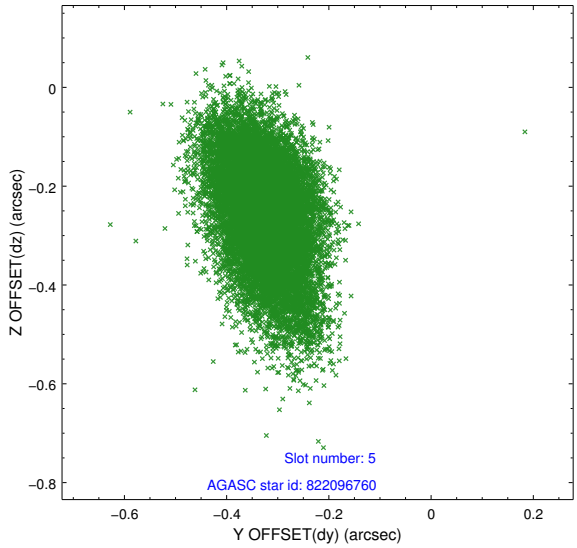
2.4.2 Slot 4

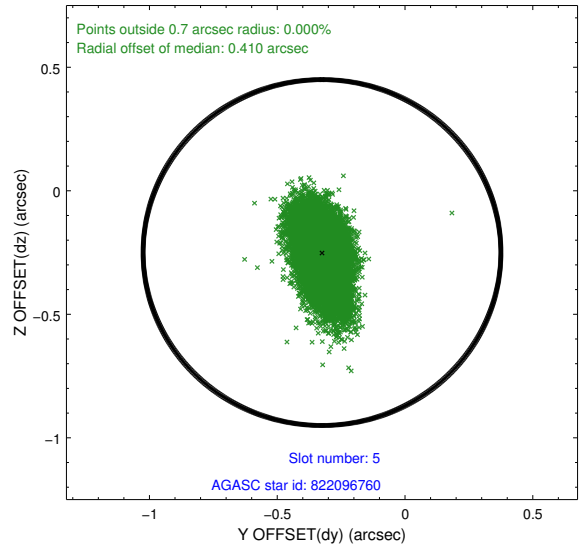

Slot number: 4
AGASC star id: 822091704
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)

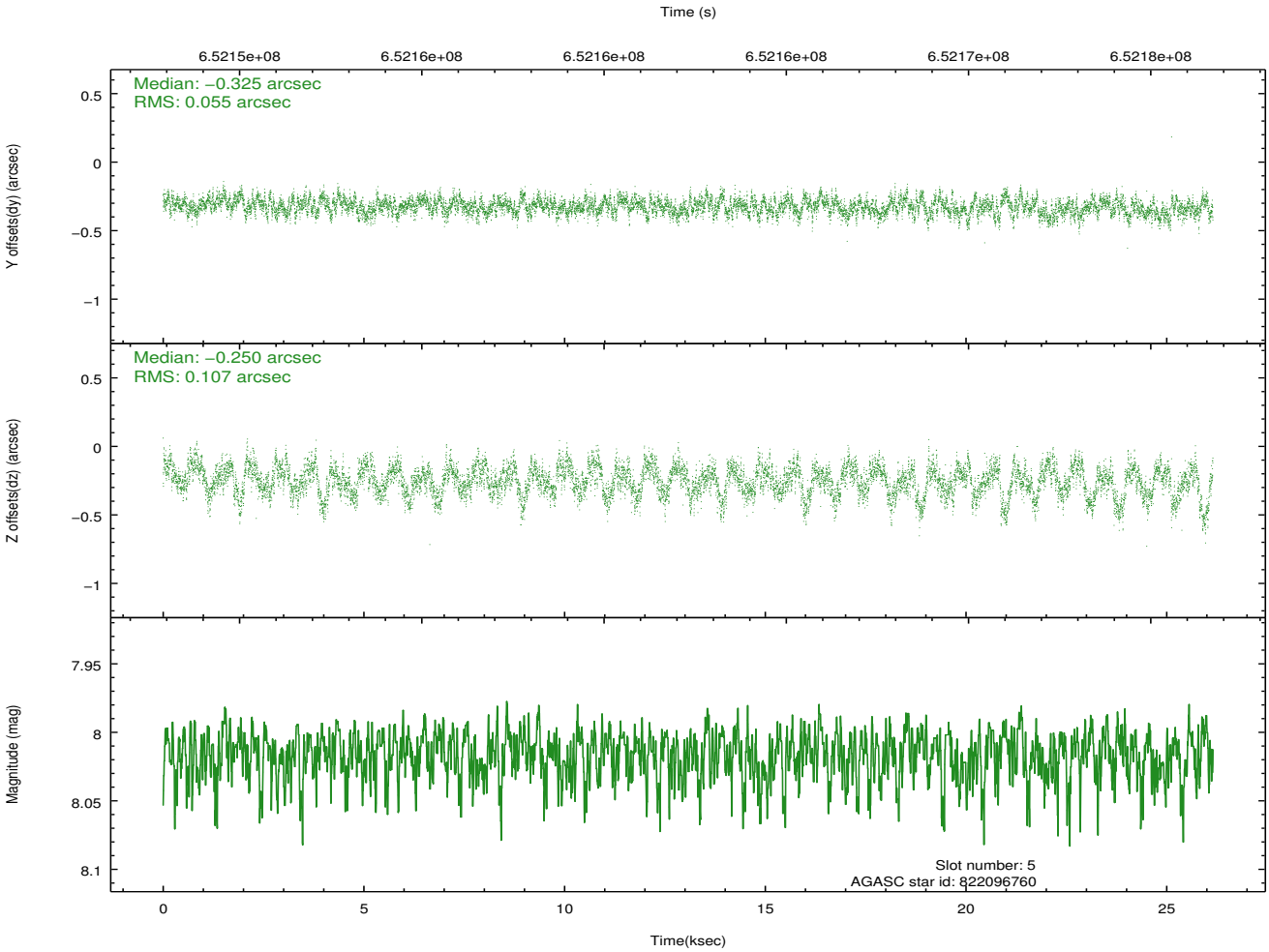

Points outside 0.7 arcsec radius: 0.000%
Radial offset of median: 0.244 arcsec
Slot number: 4
AGASC star id: 822091704
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)


Time (s)
Median: 0.160 arcsec
RMS: 0.051 arcsec
Y offsets(dy) (arcsec)
Median: 0.184 arcsec
RMS: 0.067 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number: 4
AGASC star id: 822091704
Time(ksec)

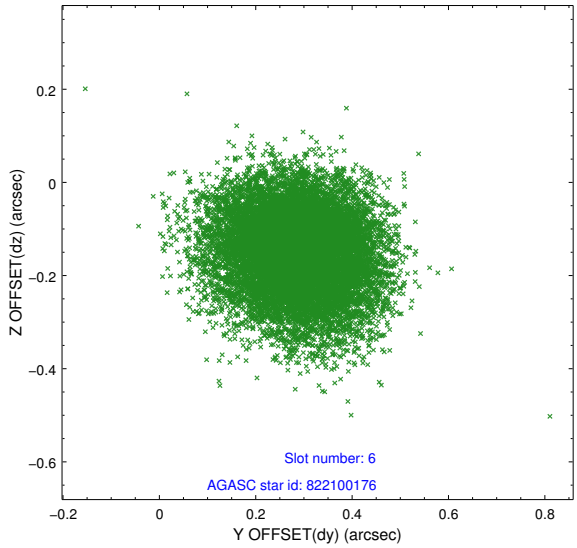
2.4.3 Slot 5

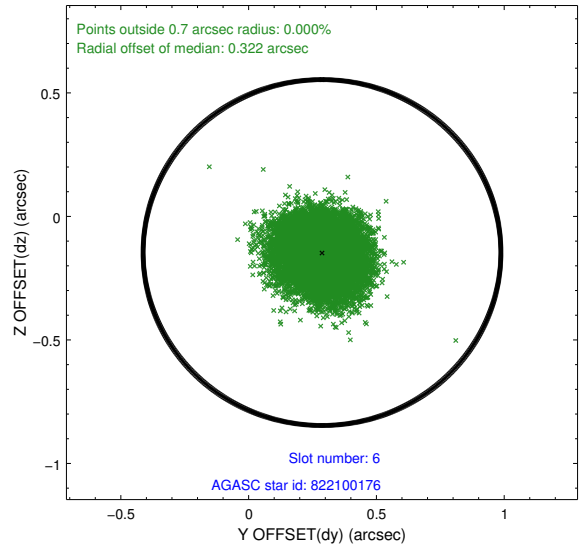

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 5
AGASC star id: 822096760

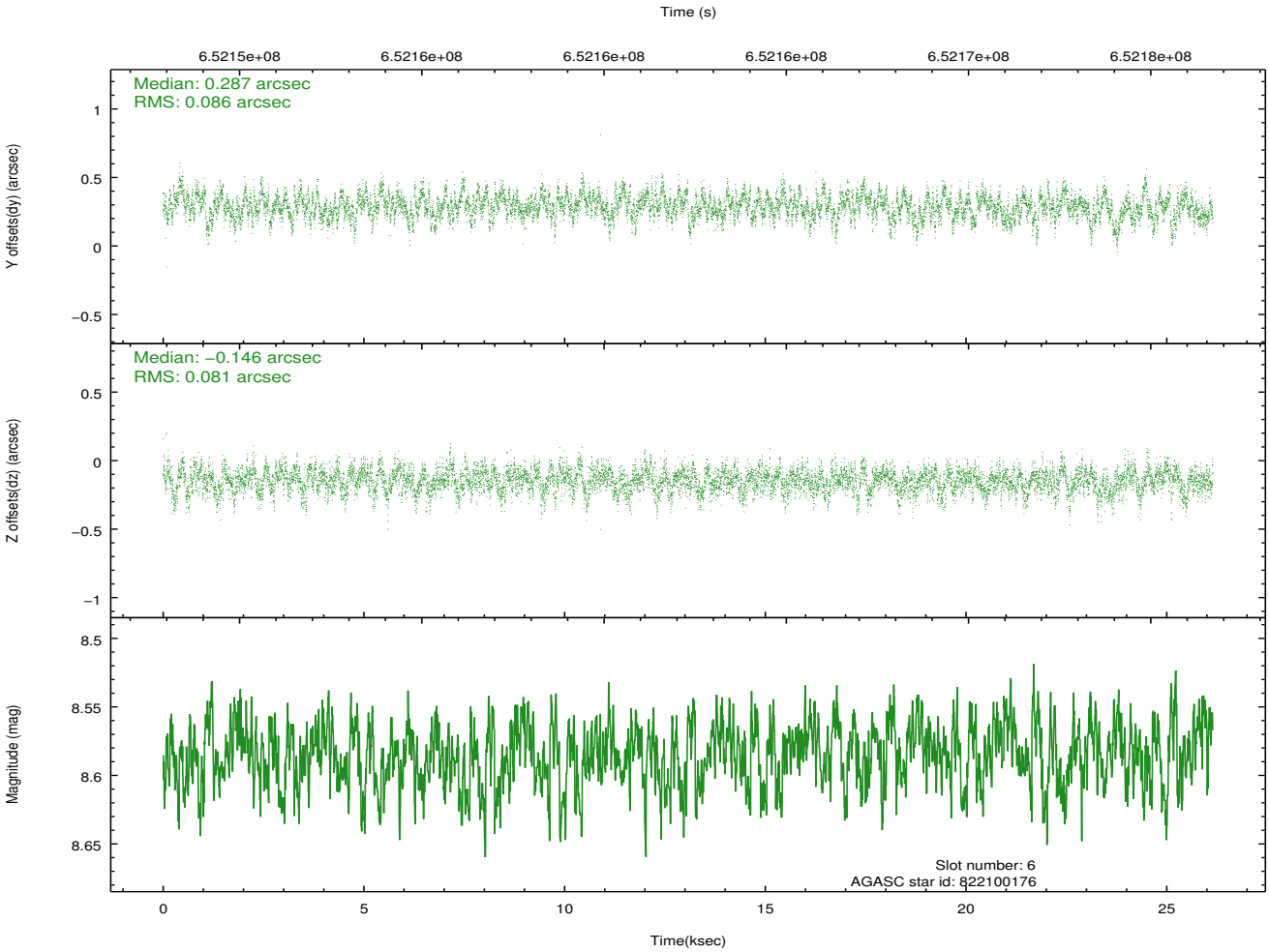

Points outside 0.7 arcsec radius: 0.000%
Radial offset of median: 0.410 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 5
AGASC star id: 822096760


Time (s)
Median: −0.325 arcsec
RMS: 0.055 arcsec
Y offsets(dy) (arcsec)
Median: −0.250 arcsec
RMS: 0.107 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number: 5
AGASC star id: 822096760
Time(ksec)

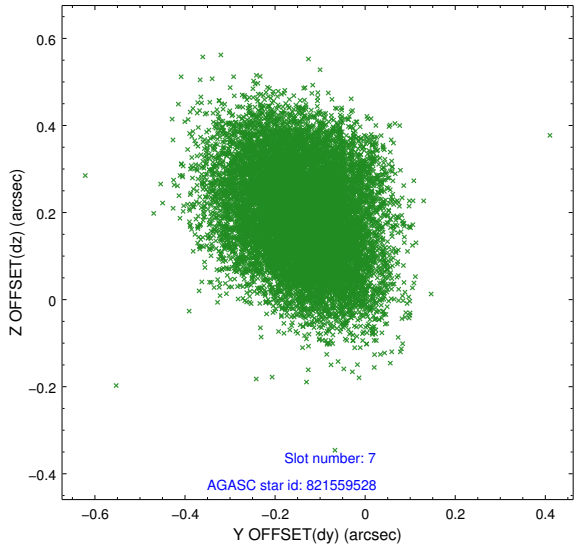
2.4.4 Slot 6

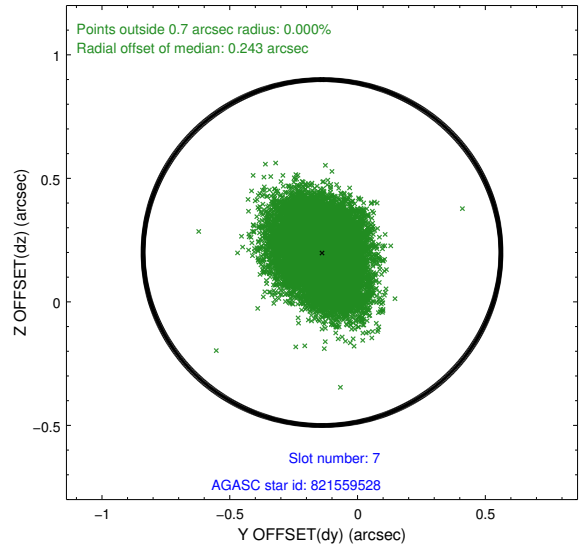

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 6
AGASC star id: 822100176

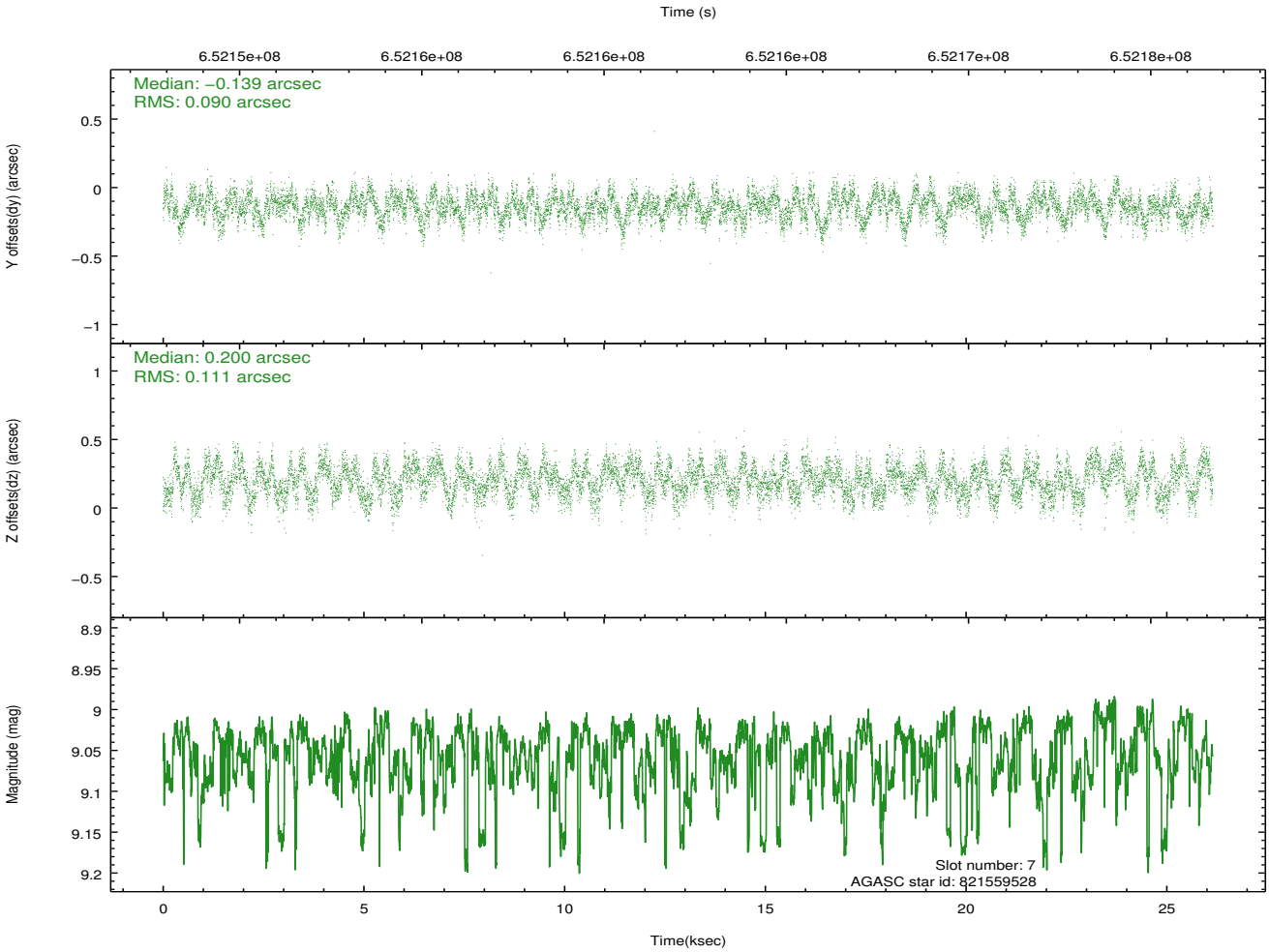

Points outside 0.7 arcsec radius: 0.000%
Radial offset of median: 0.322 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 6
AGASC star id: 822100176


Time (s)
Median: 0.287 arcsec
RMS: 0.086 arcsec
Y offsets(dy) (arcsec)
Median: −0.146 arcsec
RMS: 0.081 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number: 6
AGASC star id: 822100176
Time(ksec)

2.4.5 Slot 7

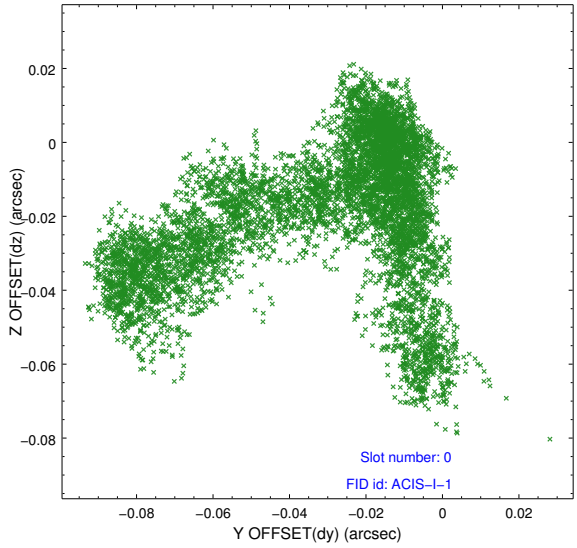

Slot number: 7
AGASC star id: 821559528
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)

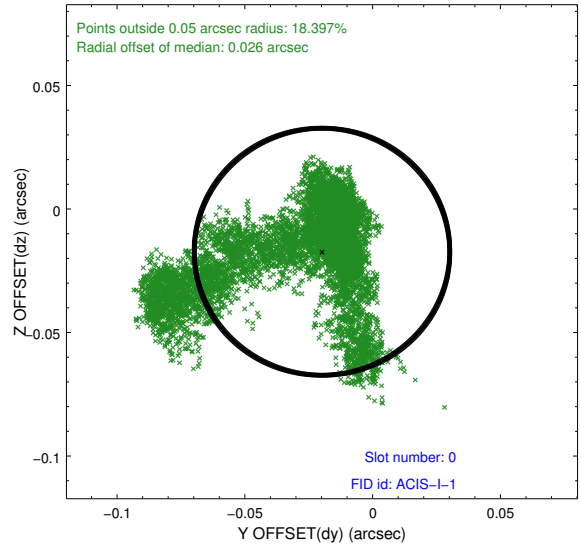

Points outside 0.7 arcsec radius: 0.000%
Radial offset of median: 0.243 arcsec
Slot number: 7
AGASC star id: 821559528
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)

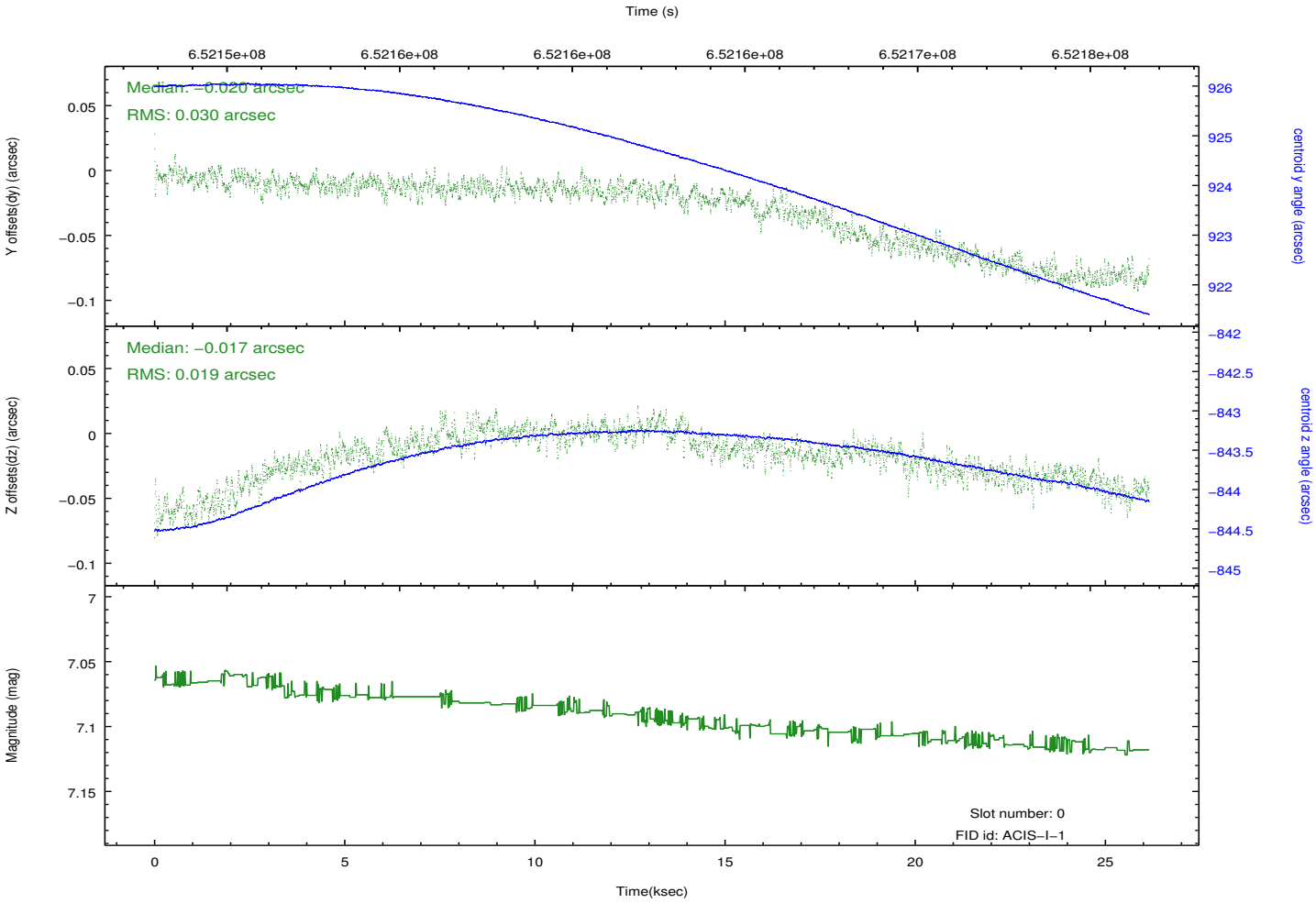

Time (s)
Median: −0.139 arcsec
RMS: 0.090 arcsec
Y offsets(dy) (arcsec)
Median: 0.200 arcsec
RMS: 0.111 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number: 7
AGASC star id: 821559528
Time(ksec)

2.5 FID Slots

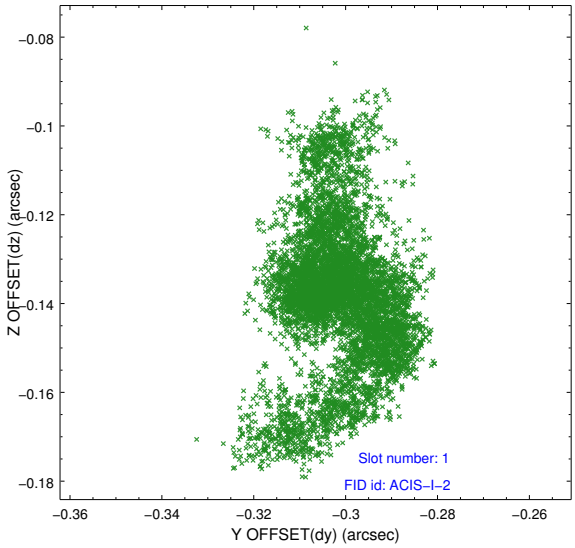
2.5.1 Slot 0

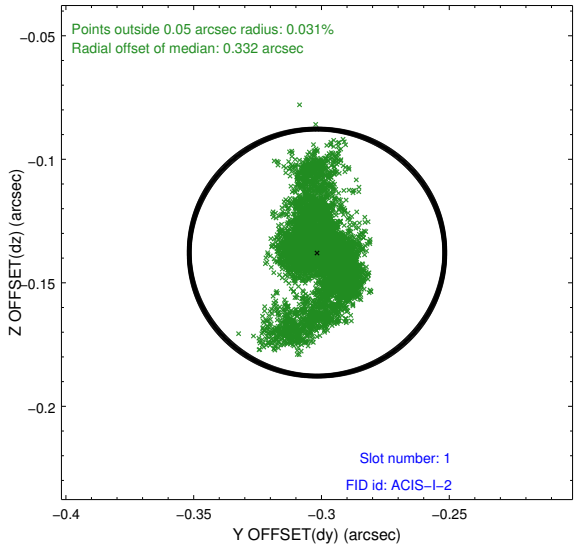


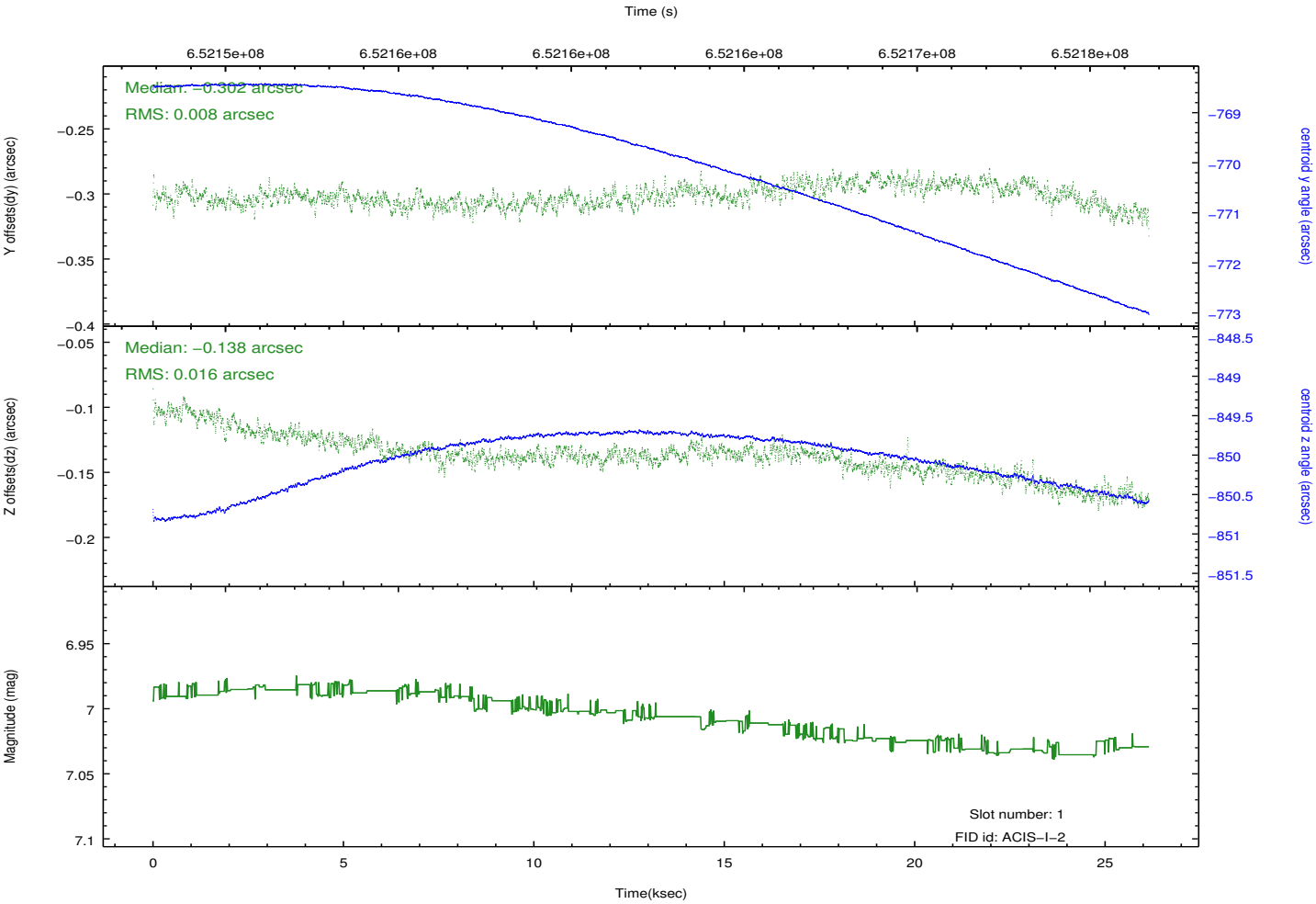




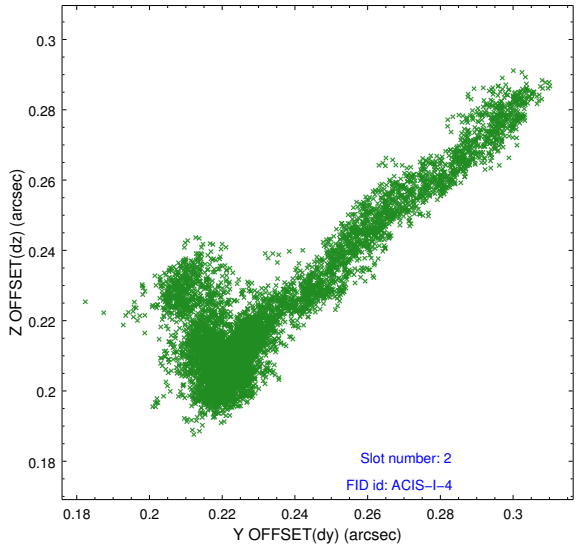
2.5.2 Slot 1

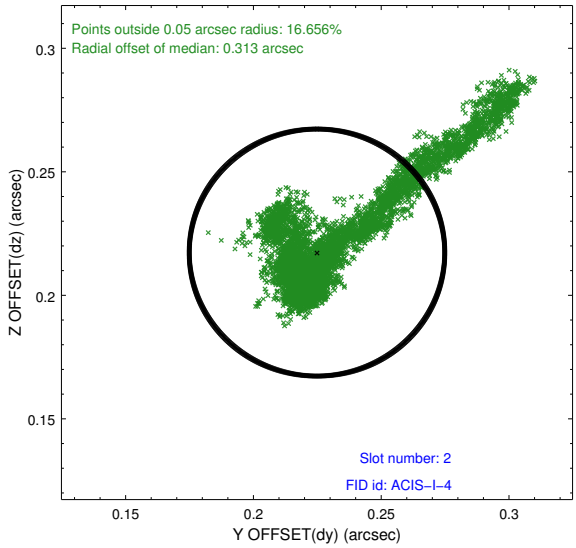

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 1
FID id: ACIS−I−2

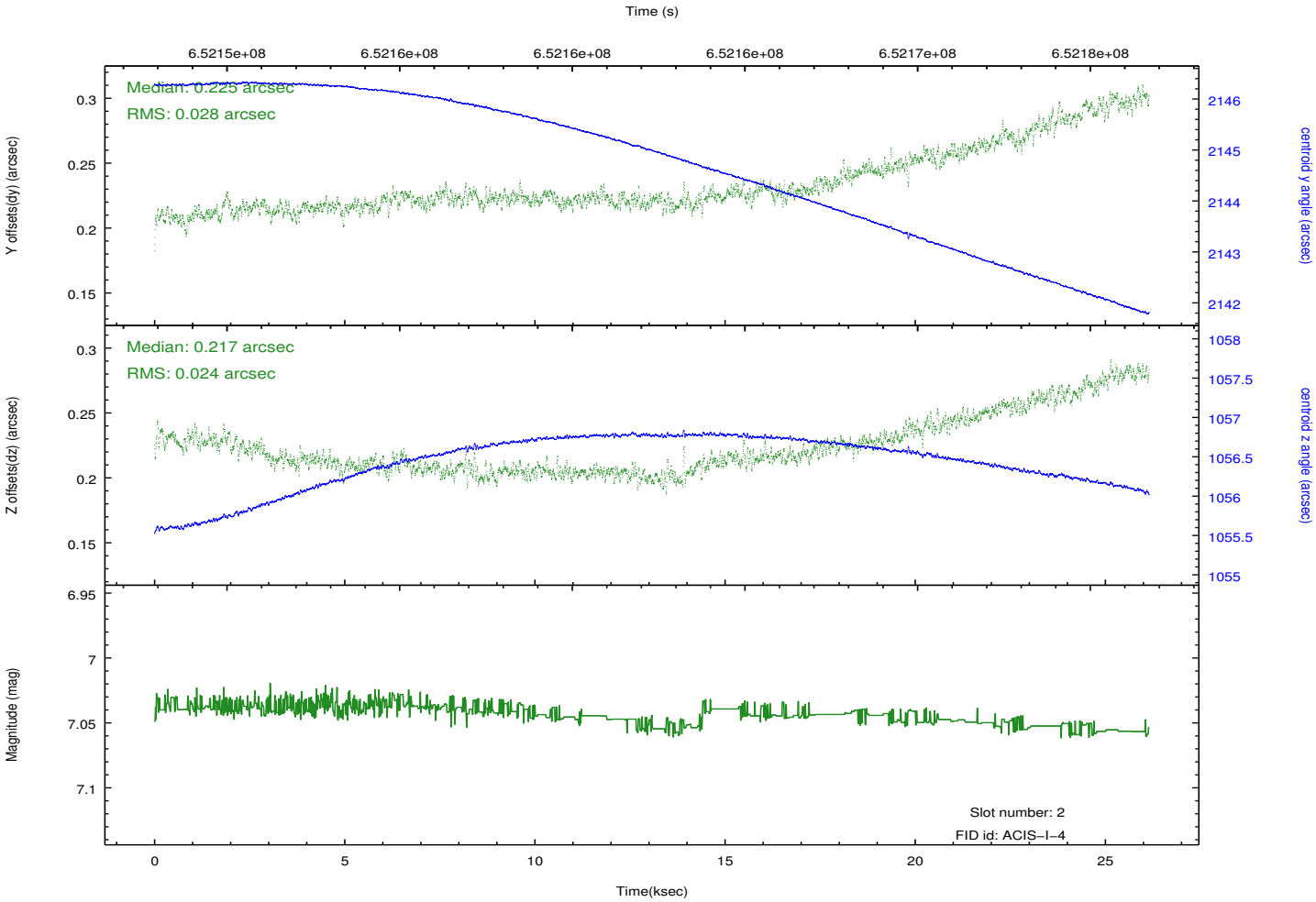

Points outside 0.05 arcsec radius: 0.031%
Radial offset of median: 0.332 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 1
FID id: ACIS−I−2


Time (s)
Median: −0.302 arcsec
RMS: 0.008 arcsec
Y offsets(dy) (arcsec)
centroid y angle (arcsec)
Median: −0.138 arcsec
RMS: 0.016 arcsec
Z offsets(dz) (arcsec)
centroid z angle (arcsec)
Magnitude (mag)
Slot number: 1
FID id: ACIS−I−2
Time(ksec)

2.5.3 Slot 2


Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 2
FID id: ACIS−I−4


Points outside 0.05 arcsec radius: 16.656%
Radial offset of median: 0.313 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 2
FID id: ACIS−I−4


Time (s)
Median: 0.225 arcsec
RMS: 0.028 arcsec
Y offsets(dy) (arcsec)
centroid y angle (arcsec)
Median: 0.217 arcsec
RMS: 0.024 arcsec
Z offsets(dz) (arcsec)
centroid z angle (arcsec)
Magnitude (mag)
Slot number: 2
FID id: ACIS−I−4
Time(ksec)

A Summary

A.1 Status

V&V Scientist	Beth Sundheim
V&V Date (YYYY-MM-DD)	2018.09.02
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	26.048102268338

A.2 Comments