V&V Reference Report
L2 ASCDS Version : 8.1.2

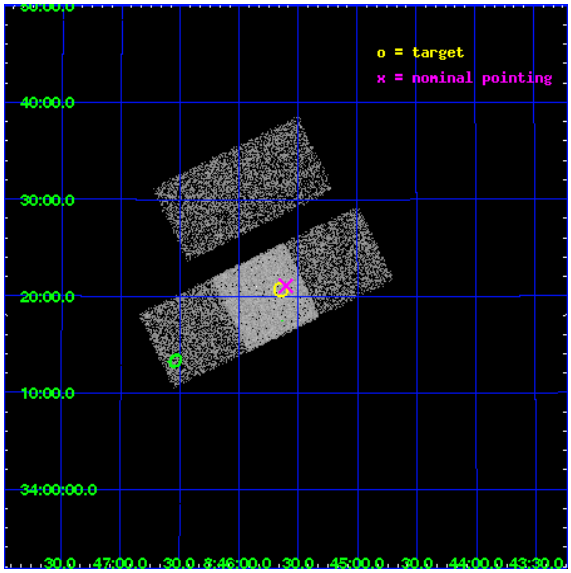
Observation 818 - L2 Version 3
Chandra X-Ray Center

L2 Processing Date : Dec 5 2009

Contents

1 Front

seq_num	700123	Sequence number
obs_id	818	Observation id
title	LIFTING THE SHROUD AROUND BROAD ABSORPTION LINE QSOS: AN AXAF SURVEY	
observer	Dr. Paul Green	Principal investigator
object	Q0842+3431	Source name
dtycycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	131.4111	Observer's specified target RA
dec_targ	34.3455	Observer's specified target Dec
ra_nom	131.40120727263	Nominal RA
dec_nom	34.351653607556	Nominal Dec
roll_nom	154.10652607304	Nominal Roll
revision	3	Processing version of data
ontime	4214.400003925	Sum of GTIs [s]
livetime	4161.0347334682	Livetime [s]
ontime2	4214.400003925	Sum of GTIs [s]
ontime3	4214.400003925	Sum of GTIs [s]
ontime6	4214.400003925	Sum of GTIs [s]
ontime7	4214.400003925	Sum of GTIs [s]
ontime8	4214.400003925	Sum of GTIs [s]
l2events	28458	Number of level 2 events

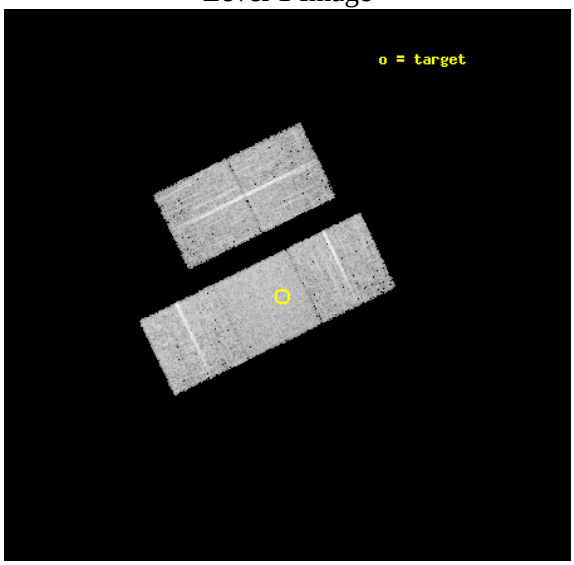


2 OBI

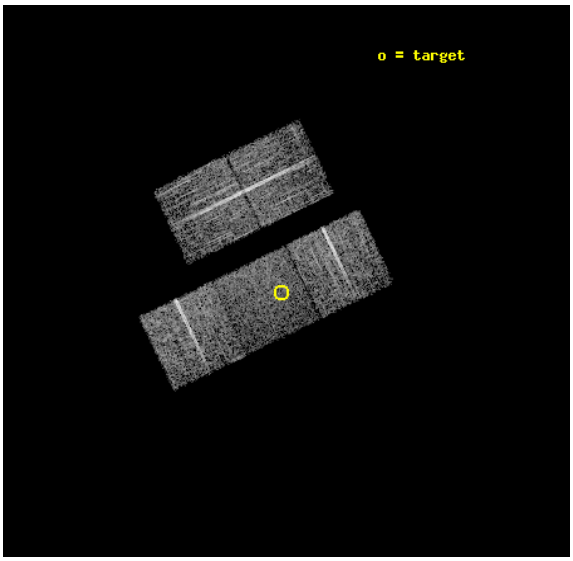
2.1 OBI

2.1.1 Images

Level 1 Image

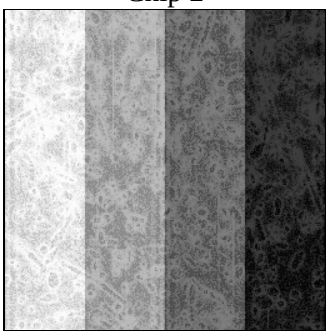


Level 1 Bad Events

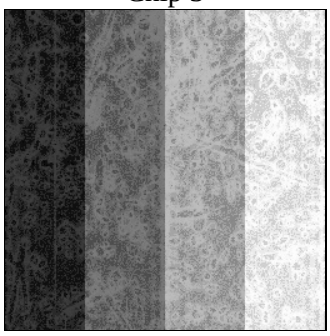


2.1.2 Bias

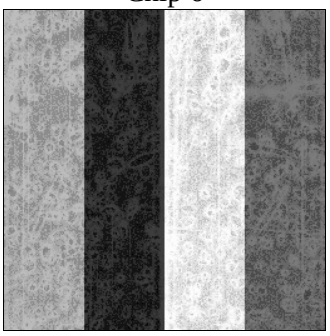
Chip 2



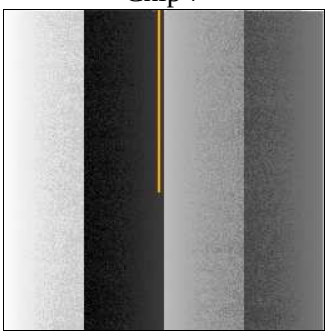
Chip 3



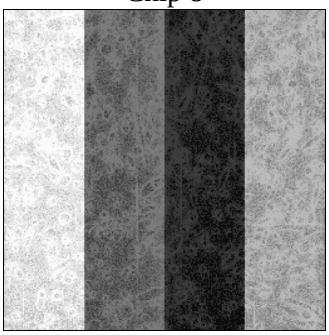
Chip 6



Chip 7



Chip 8



2.1.3 Parameters

obi_num	1	Obi number
ascdsver	8.1.2	ASCDS version number
caldbver	4.1.4	
date	2009-12-05T05:44:01	Date and time of file creation
revision	3	Processing version of data

sched_exp_time	4800.000000	Scheduled observation exposure time
ontime	4214.400003925	Sum of GTIs [s]
ontime2	4214.400003925	Sum of GTIs [s]
ontime3	4214.400003925	Sum of GTIs [s]
ontime6	4214.400003925	Sum of GTIs [s]
ontime7	4214.400003925	Sum of GTIs [s]
ontime8	4214.400003925	Sum of GTIs [s]
l1events	188509	Number of level 1 events

2.1.4 Events

	ccd 2	**ccd 3**	**ccd 6**	**ccd 7**	**ccd 8**
level 1 events	35109	35339	36859	39063	42139
rejected events	31776	31838	33053	23731	34691
rejected %	90%	90%	89%	60%	82%

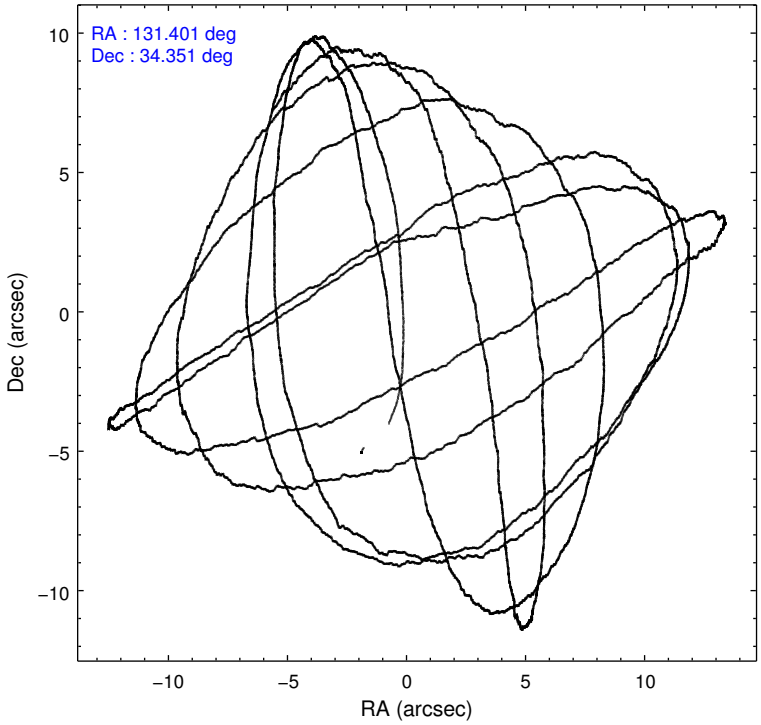
	ccd 2	**ccd 3**	**ccd 6**	**ccd 7**	**ccd 8**
grade 0 events	721	719	717	1067	1719
	2%	2%	1%	2%	4%
grade 1 events	8	6	8	23	30
	0%	0%	0%	0%	0%
grade 2 events	1407	1552	1632	3204	2481
	4%	4%	4%	8%	5%
grade 3 events	191	212	233	972	599
	0%	0%	0%	2%	1%
grade 4 events	200	206	222	875	572
	0%	0%	0%	2%	1%
grade 5 events	585	644	710	2300	1015
	1%	1%	1%	5%	2%
grade 6 events	817	818	1008	9246	2089
	2%	2%	2%	23%	4%
grade 7 events	31180	31182	32329	21376	33634
	88%	88%	87%	54%	79%

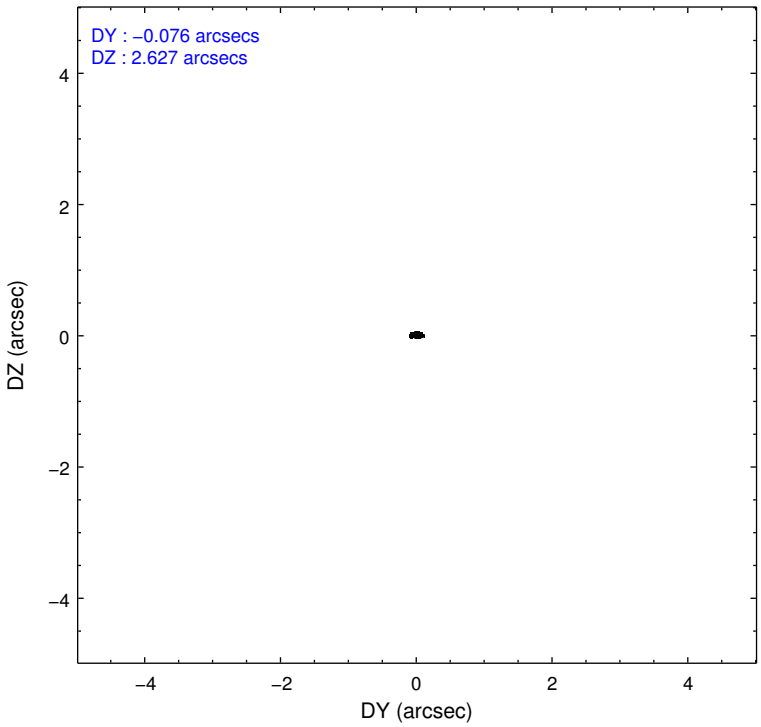
2.2 Compared Parameters

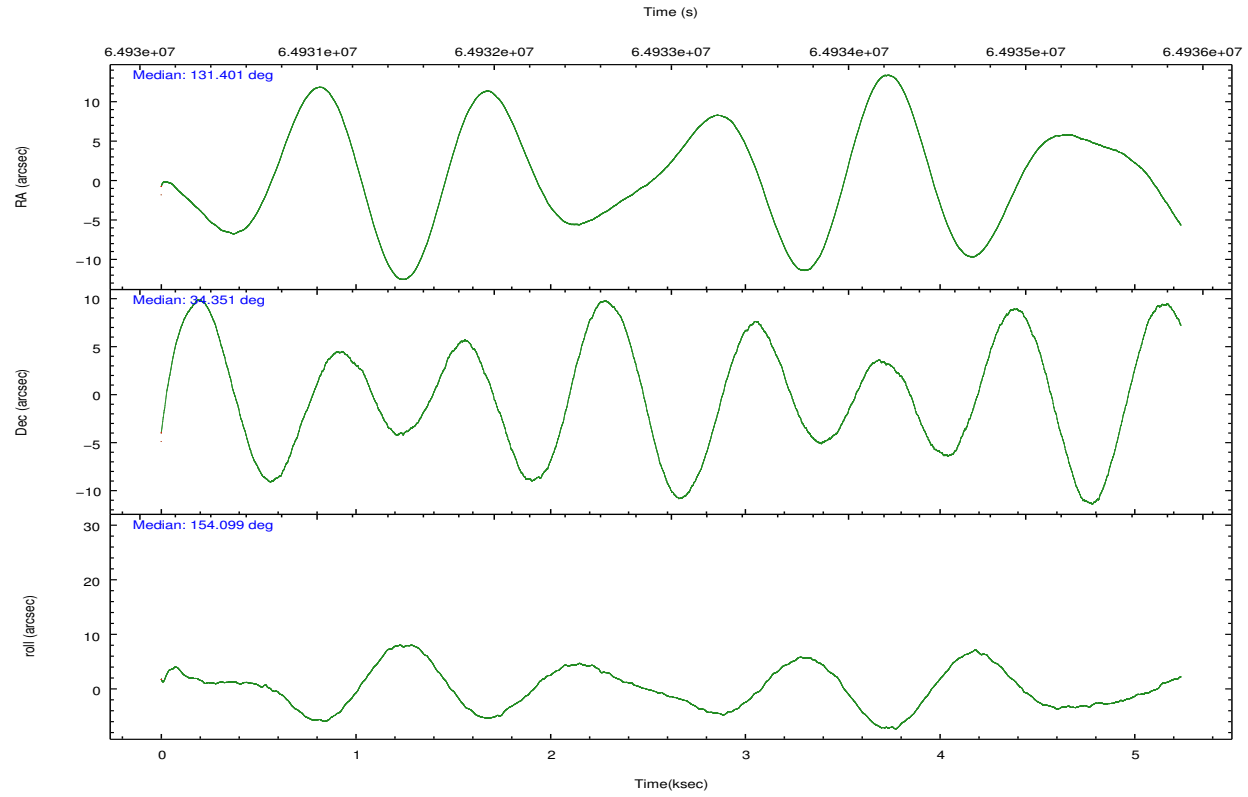
Parameter	Planned	Actual
Instrument	ACIS	ACIS
Detector	ACIS-23678	ACIS-23678
Grating	NONE	NONE
Data mode	FAINT	FAINT
Observation mode	POINTING	POINTING
Pointing RA	131.434483	131.4012072726261
Pointing Dec	34.353492	34.35165360755566
Pointing Roll	153.931117	154.1065260730405
SIM focus pos (mm)	-0.684267	-0.6828225247311905
SIM defocus (mm)	0	0.001444936568705701
SIM translation stage pos (mm)	-190.132523	-190.1400660498719
SIM translation stage offset (mm)	0	0.00754346686406393
Observation start time	64930817.184000	64930116.952849
Observation start date	2000-01-22T12:19:13	2000-01-22T12:08:36
Observation end time	64935617.184000	64937135.640604
Observation end date	2000-01-22T13:39:13	2000-01-22T14:05:35
Read mode	TIMED	TIMED

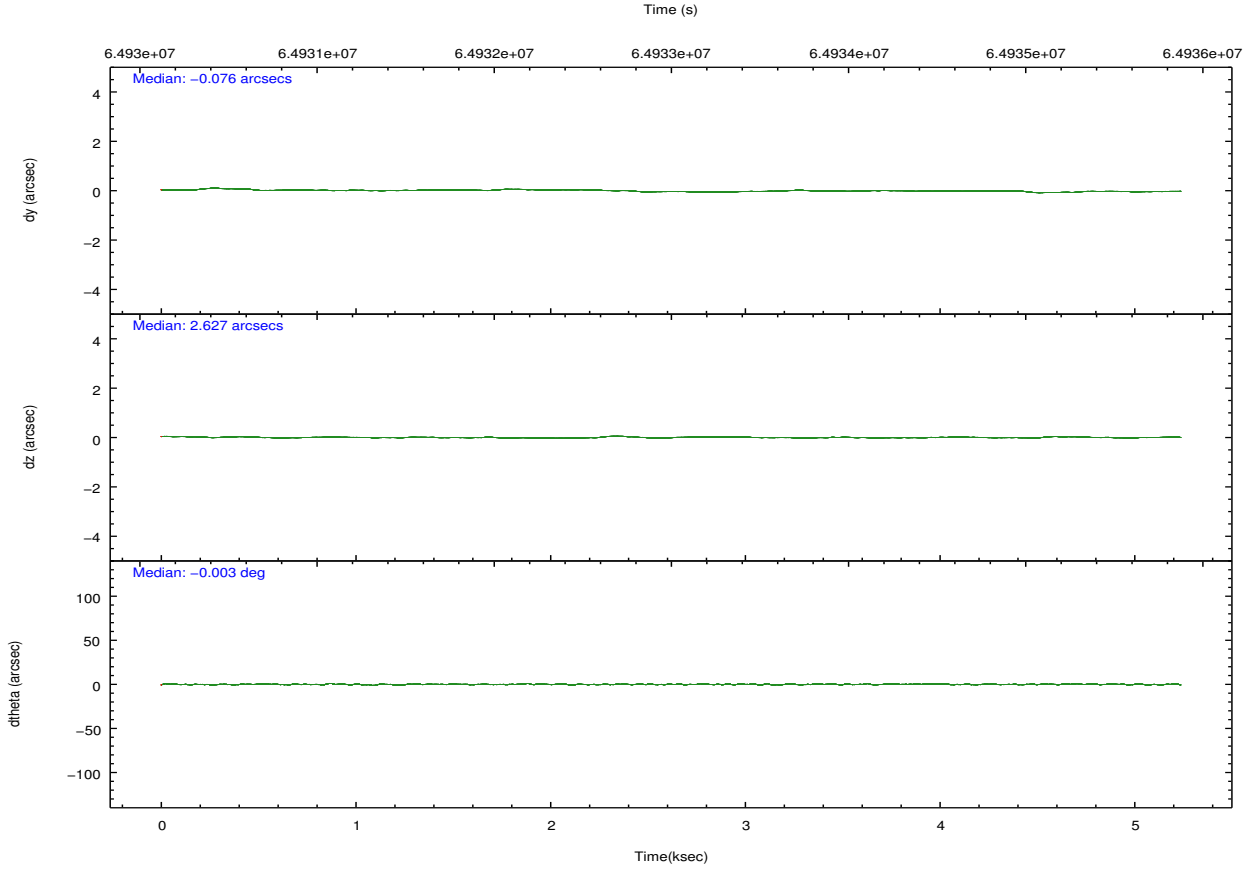
Parameter	Planned	Actual
Obspar format version number	6	6
Obspar file type	PREDICTED	ACTUAL
Obspar update status	NONE	UPDATED
Number of optional ACIS chips dropped	0	0
On-chip summing requested	N	N
Subarray requested	NONE	NONE
Alternating exposures requested	N	N
Primary exposure time	0.000000	3.2

2.3 Aspect


RA : 131.401 deg
Dec : 34.351 deg
Dec (arcsec)
RA (arcsec)
10
5
0
−5
−10
−10
−5
0
5
10


DY : −0.076 arcsecs
DZ : 2.627 arcsecs
DZ (arcsec)
DY (arcsec)
4
2
0
−2
−4
−4
−2
0
2
4


Time (s)
6.493e+07
6.4931e+07
6.4932e+07
6.4933e+07
6.4934e+07
6.4935e+07
6.4936e+07
Median: 131.401 deg
RA (arcsec)
Median: 34.351 deg
Dec (arcsec)
Median: 154.099 deg
roll (arcsec)
Time(ksec)

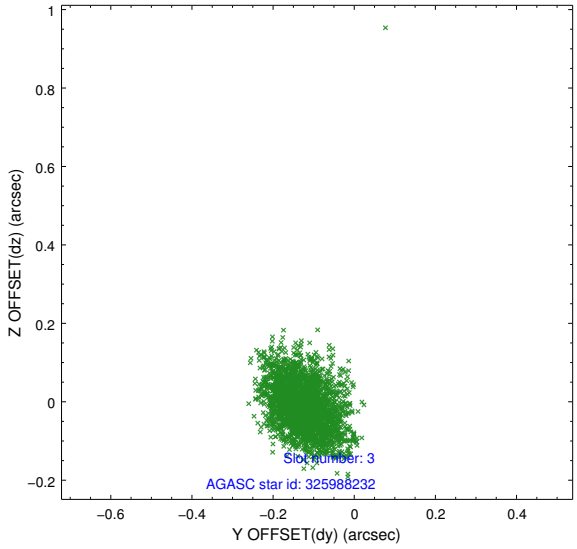

Time (s)
6.493e+07
6.4931e+07
6.4932e+07
6.4933e+07
6.4934e+07
6.4935e+07
6.4936e+07
Median: −0.076 arcsecs
dy (arcsec)
Median: 2.627 arcsecs
dz (arcsec)
Median: −0.003 deg
dtheta (arcsec)
Time(ksec)

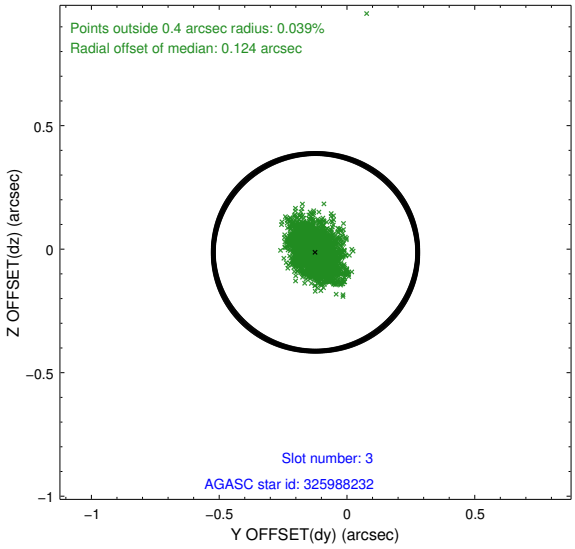
Slot Statistics

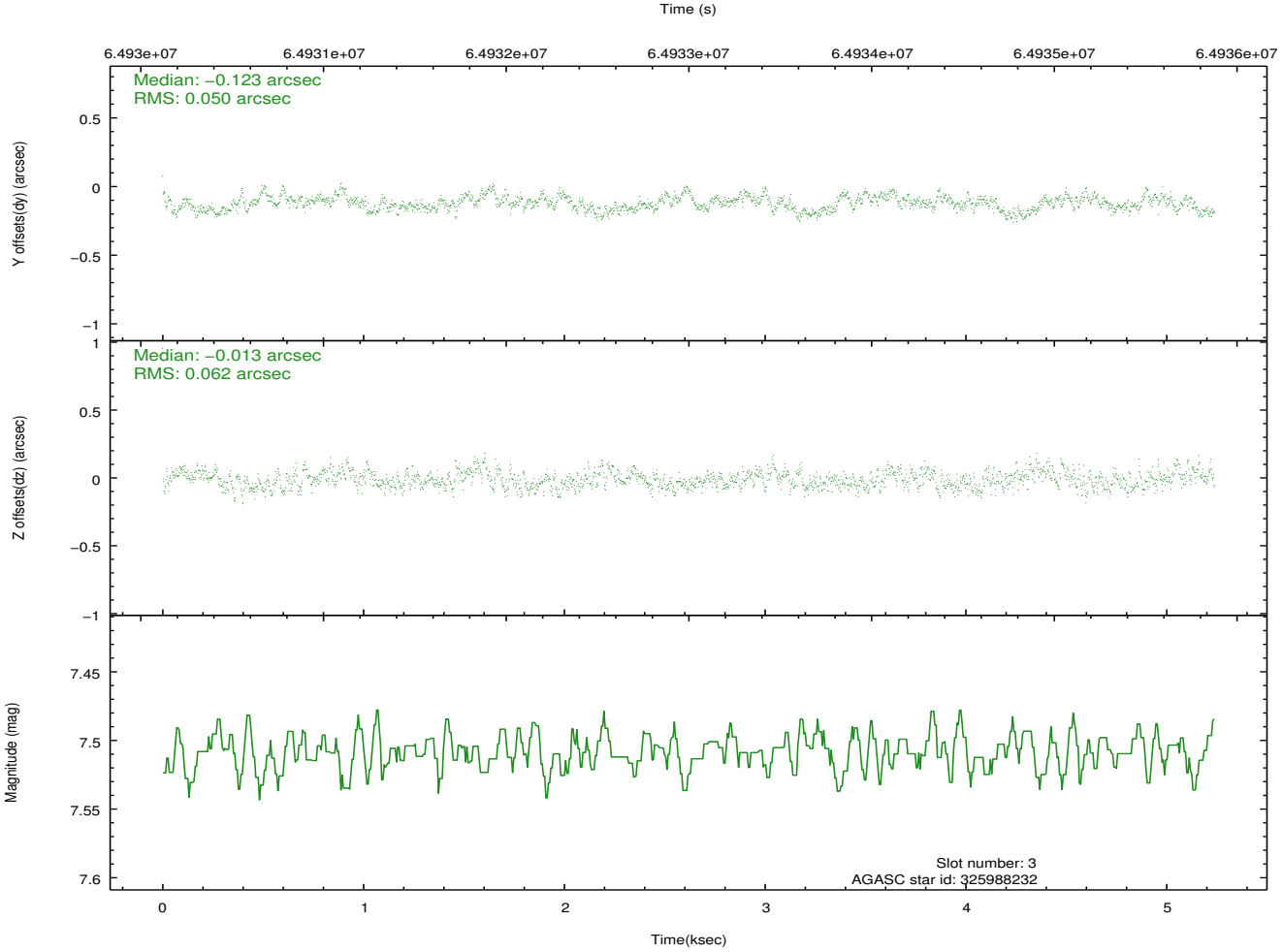
slot	status	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID	ACIS-S-2	7.12	1278	-0.001	-0.014	0.006	0.011	0.000000	0.000000	-752.53	-1723.67
1	FID	ACIS-S-4	7.21	1278	0.042	0.005	0.005	0.009	0.000000	0.000000	2160.32	183.57
2	FID	ACIS-S-5	7.24	1278	-0.072	0.019	0.006	0.011	0.000000	0.000000	-1803.90	178.67
3	GUIDE	325988232	7.51	2556	-0.123	-0.013	0.082	0.135	130.628414	34.187713	1897.72	1581.66
4	GUIDE	326384976	8.66	2555	0.009	-0.007	0.100	0.160	131.001434	35.037509	2230.90	-1653.65
5	GUIDE	325977352	9.51	2555	-0.006	-0.024	0.099	0.164	131.822479	34.584783	-665.14	-1257.07
6	GUIDE	325978032	9.68	2554	-0.017	-0.035	0.112	0.191	131.625644	34.756593	129.93	-1554.02
7	GUIDE	325984960	9.90	2553	0.146	0.079	0.124	0.203	130.398201	34.074901	2341.77	2243.53

2.4 Star Slots

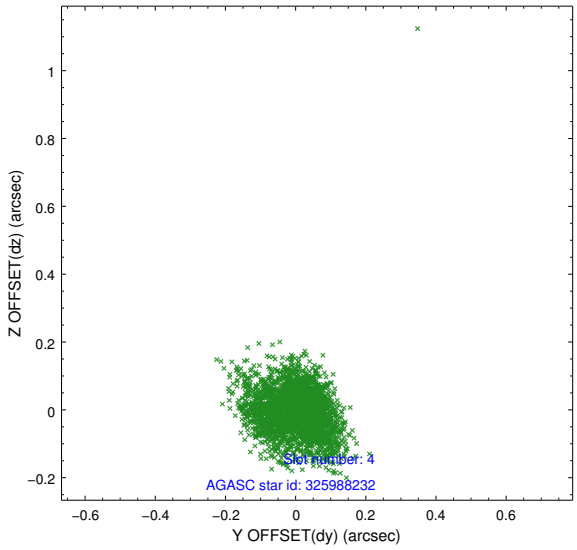
2.4.1 Slot 3

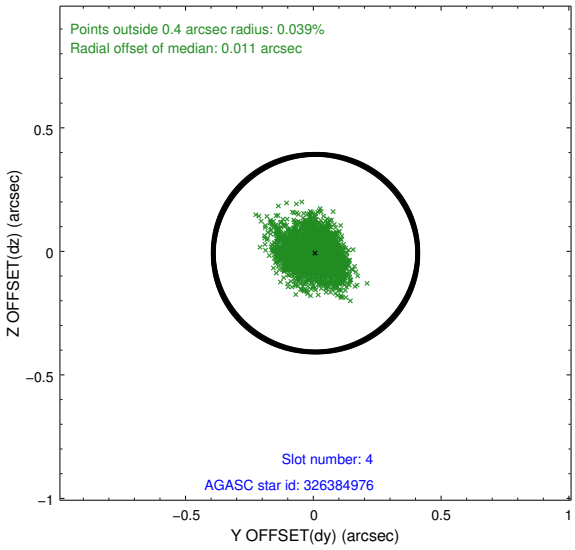


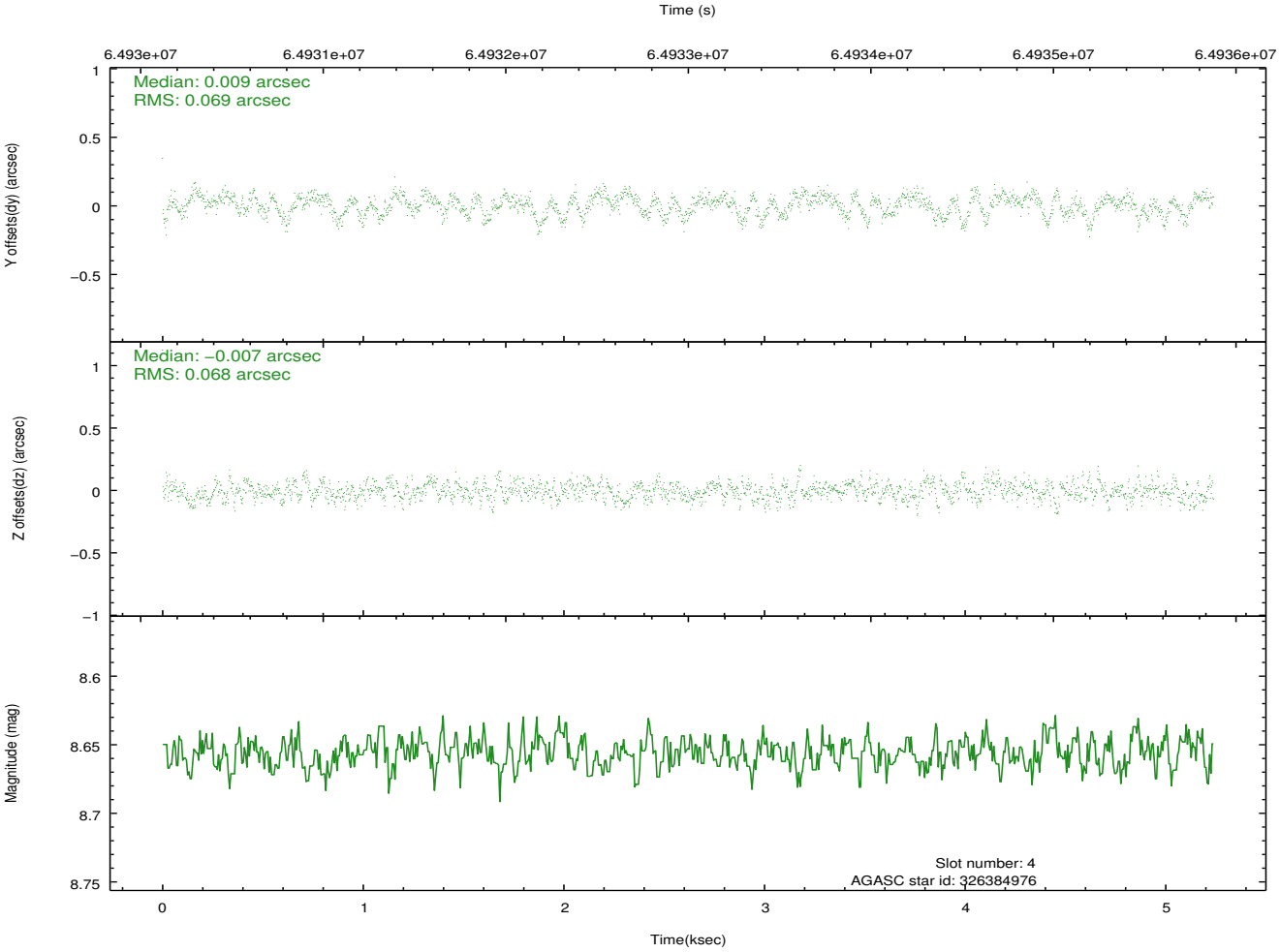




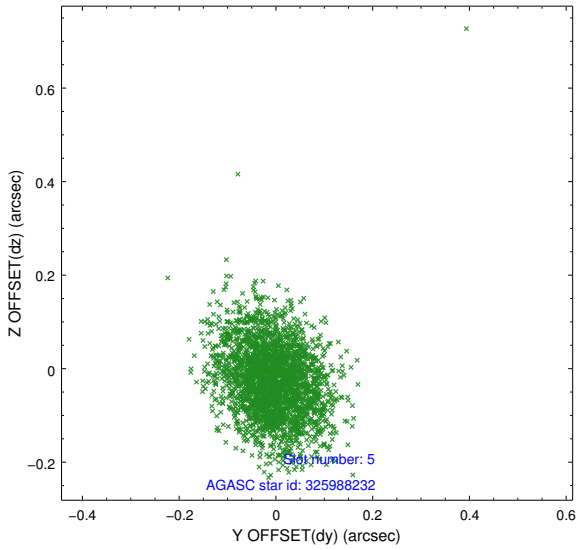
2.4.2 Slot 4

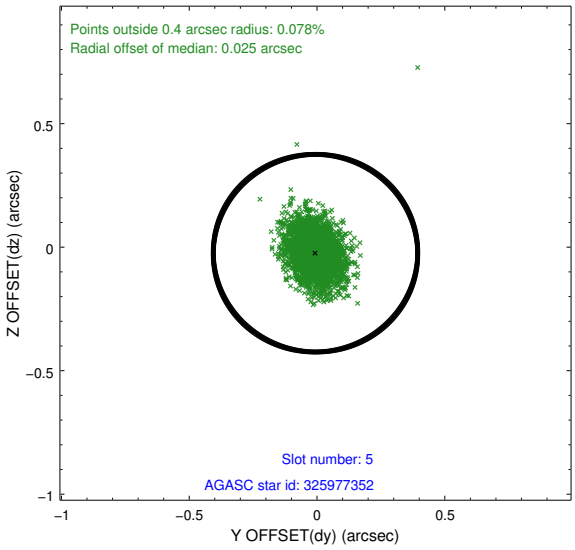

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 4
AGASC star id: 325988232

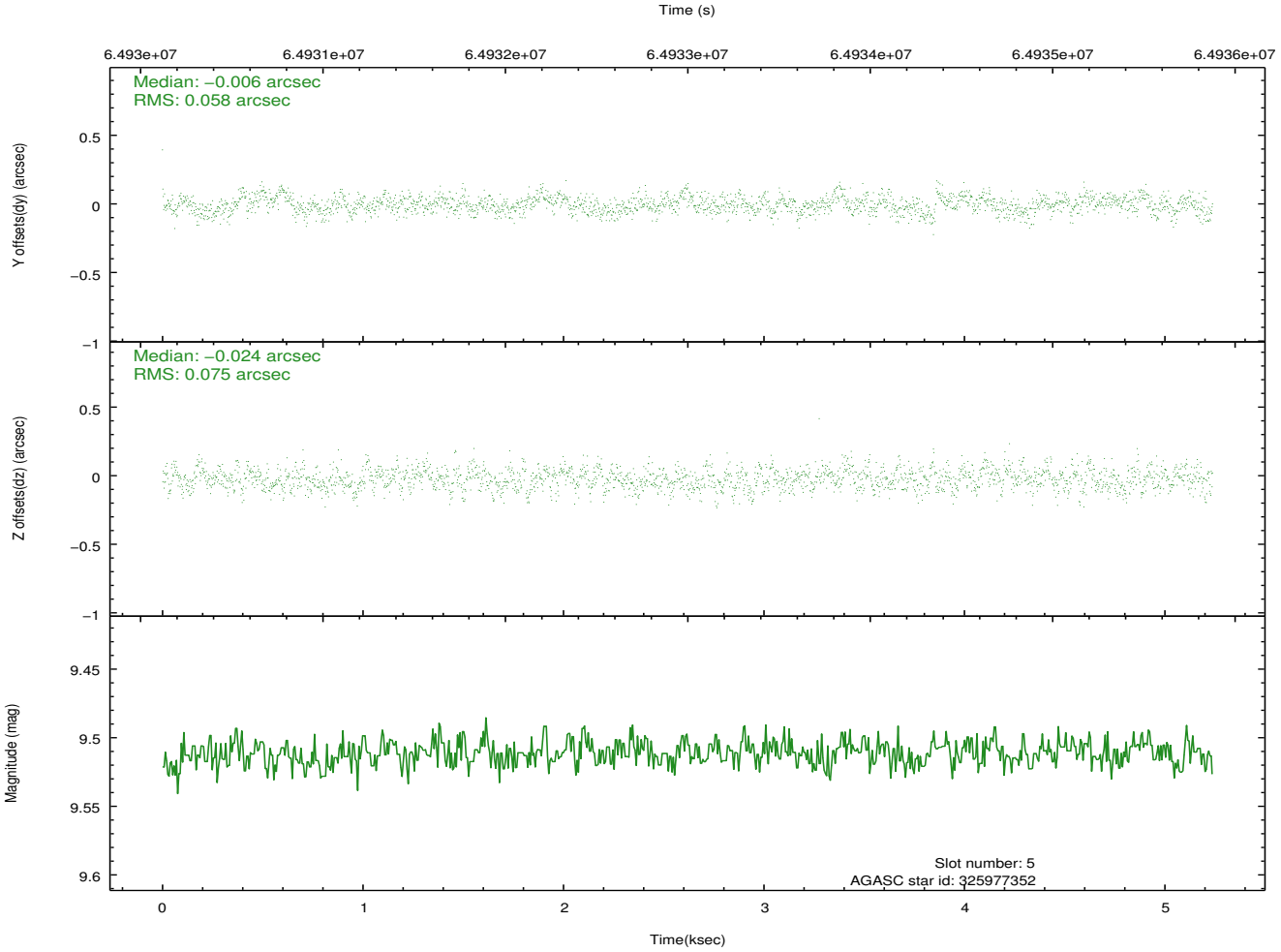

Points outside 0.4 arcsec radius: 0.039%
Radial offset of median: 0.011 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 4
AGASC star id: 326384976


Time (s)
Median: 0.009 arcsec
RMS: 0.069 arcsec
Y offsets(dy) (arcsec)
Median: −0.007 arcsec
RMS: 0.068 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number: 4
AGASC star id: 326384976
Time(ksec)

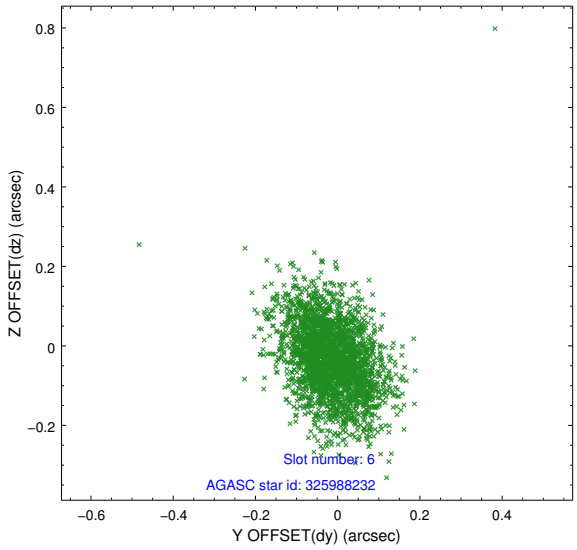
2.4.3 Slot 5

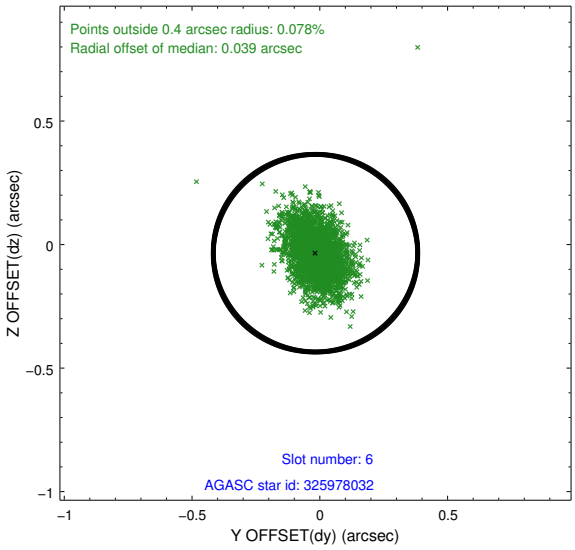

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 5
AGASC star id: 325988232

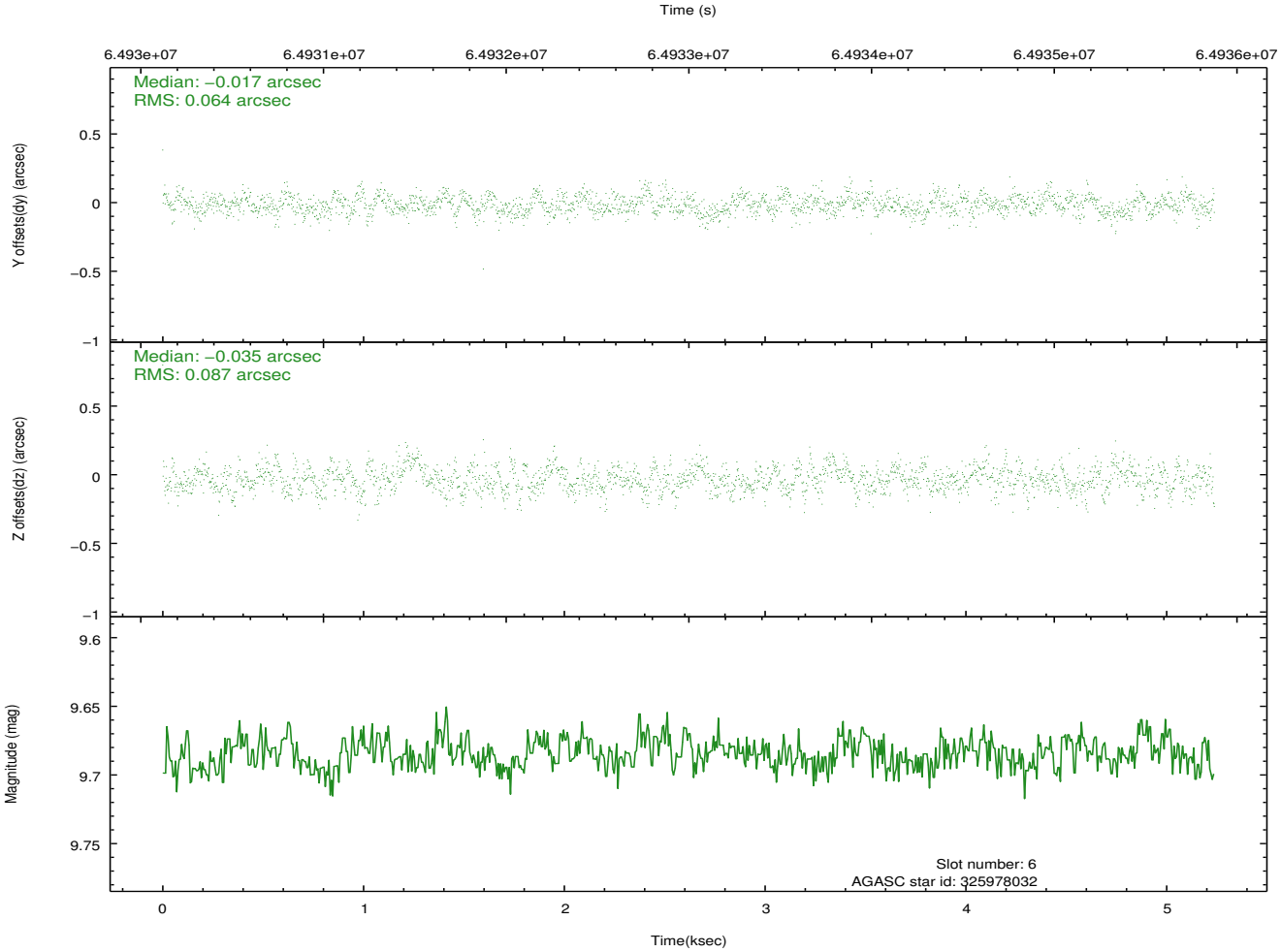

Points outside 0.4 arcsec radius: 0.078%
Radial offset of median: 0.025 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 5
AGASC star id: 325977352


Time (s)
Median: −0.006 arcsec
RMS: 0.058 arcsec
Y offsets(dy) (arcsec)
Median: −0.024 arcsec
RMS: 0.075 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number: 5
AGASC star id: 325977352
Time(ksec)

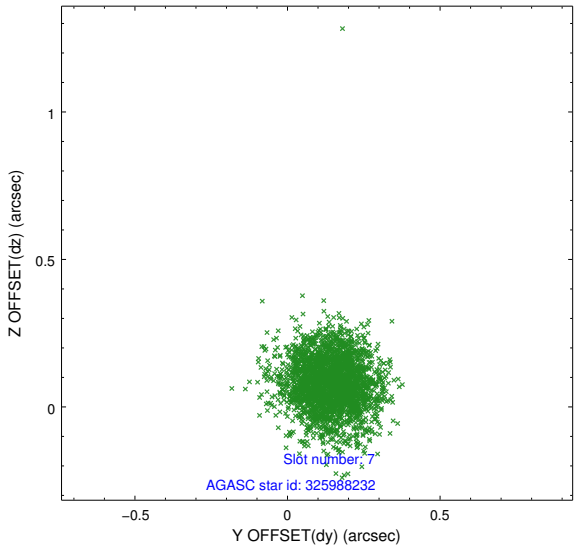
2.4.4 Slot 6

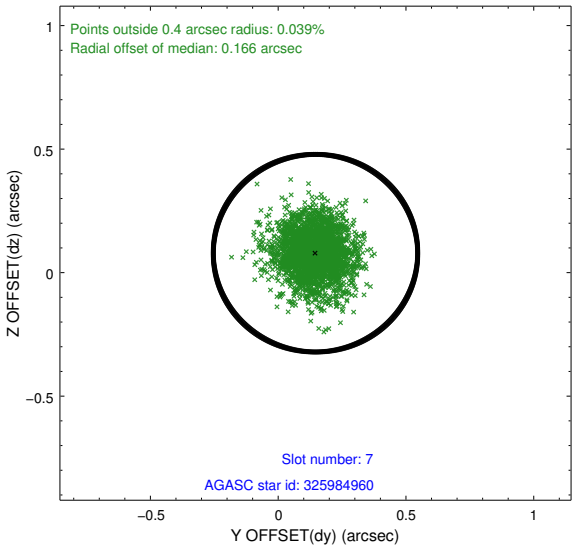

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 6
AGASC star id: 325988232

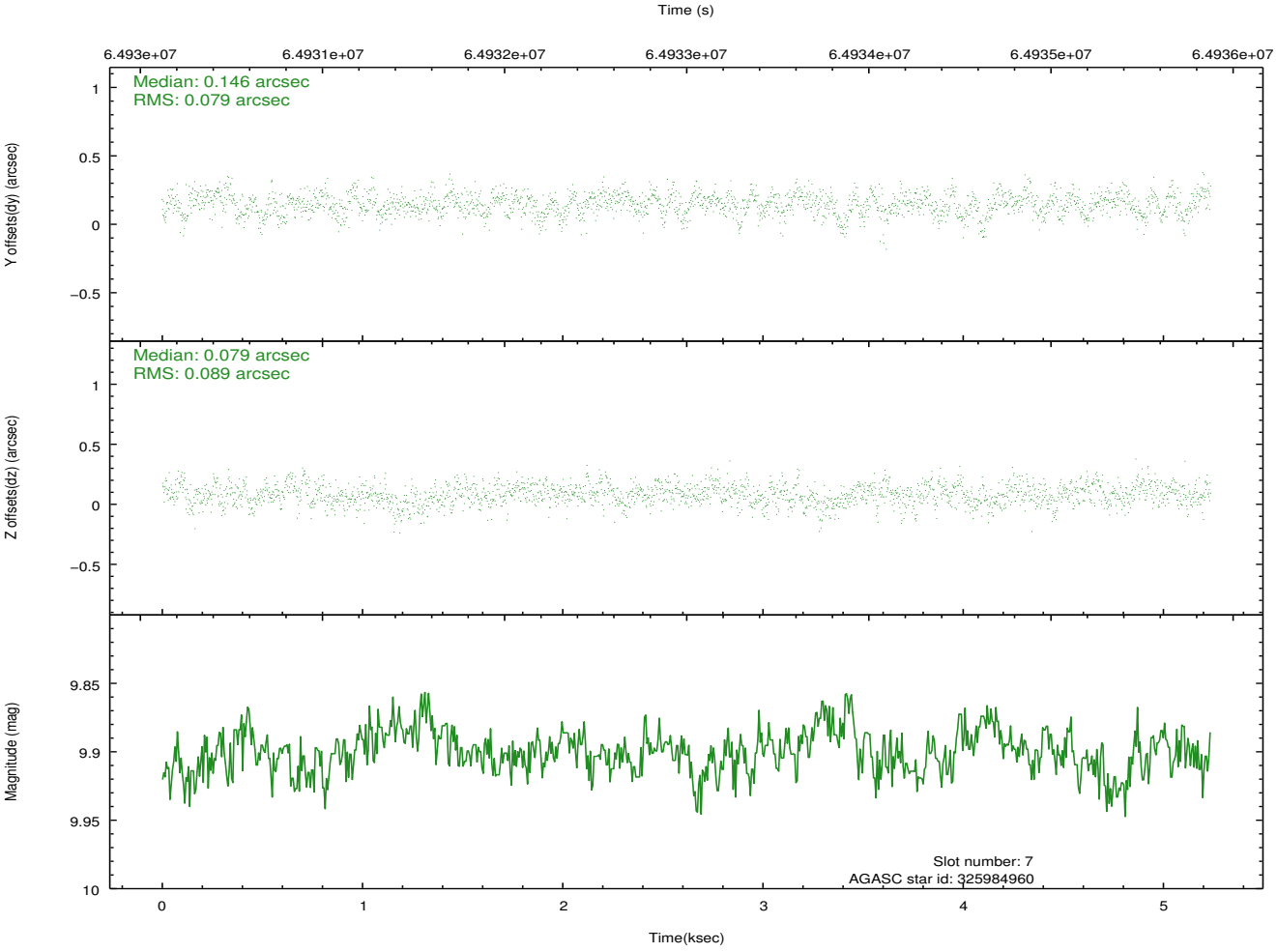

Points outside 0.4 arcsec radius: 0.078%
Radial offset of median: 0.039 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 6
AGASC star id: 325978032


Time (s)
Median: −0.017 arcsec
RMS: 0.064 arcsec
Y offsets(dy) (arcsec)
Median: −0.035 arcsec
RMS: 0.087 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number: 6
AGASC star id: 325978032
Time(ksec)

2.4.5 Slot 7

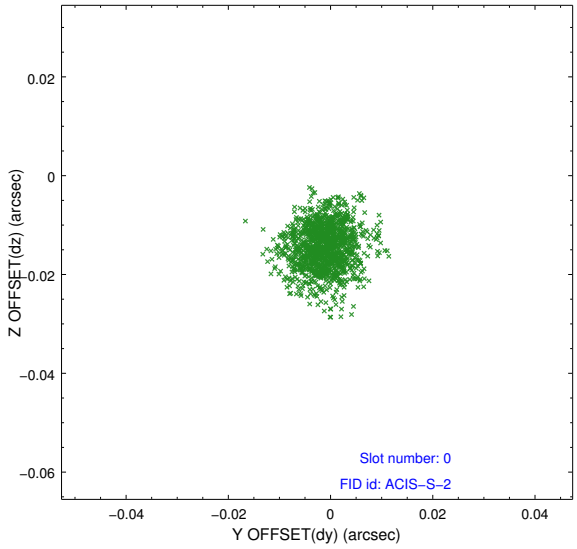

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 7
AGASC star id: 325988232

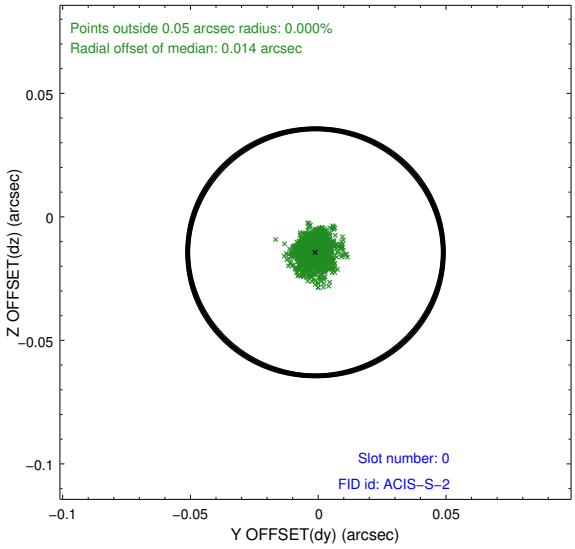

Points outside 0.4 arcsec radius: 0.039%
Radial offset of median: 0.166 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 7
AGASC star id: 325984960

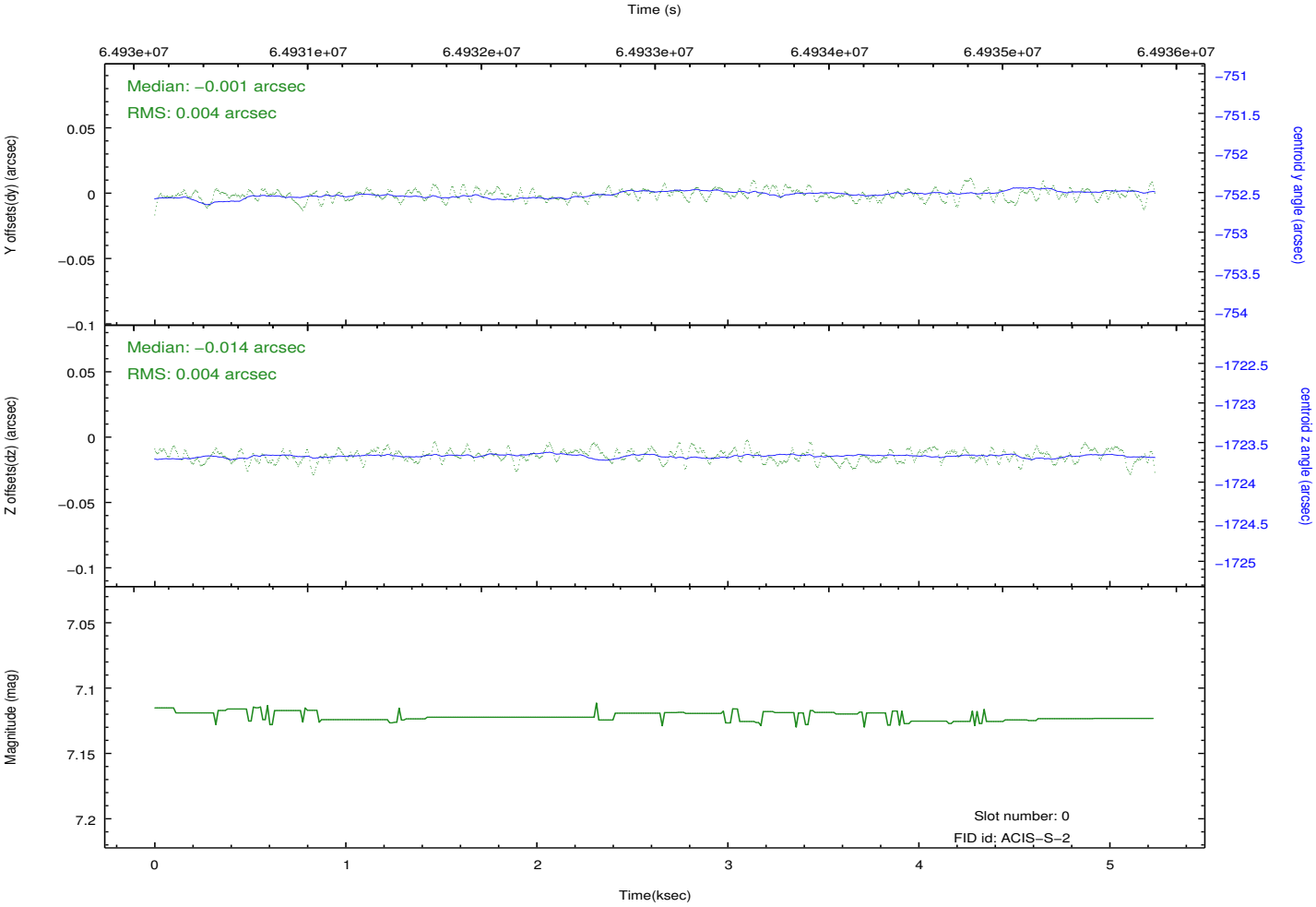

Time (s)
Median: 0.146 arcsec
RMS: 0.079 arcsec
Y offsets(dy) (arcsec)
Median: 0.079 arcsec
RMS: 0.089 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number: 7
AGASC star id: 325984960
Time(ksec)

2.5 FID Slots

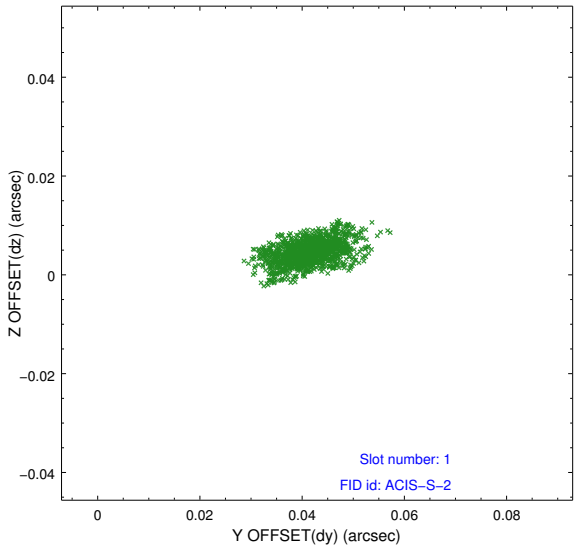
2.5.1 Slot 0

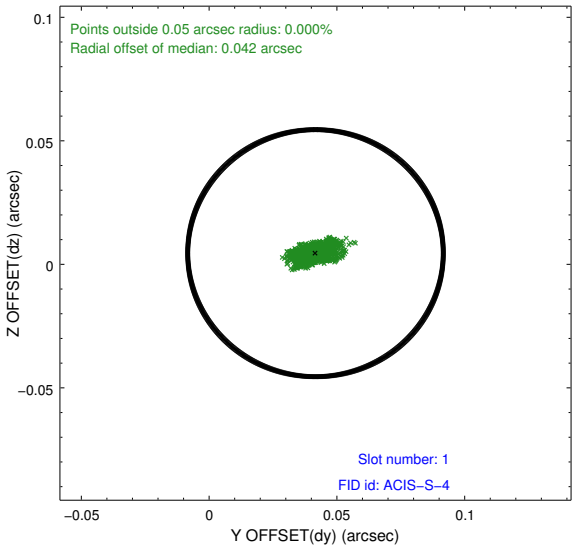


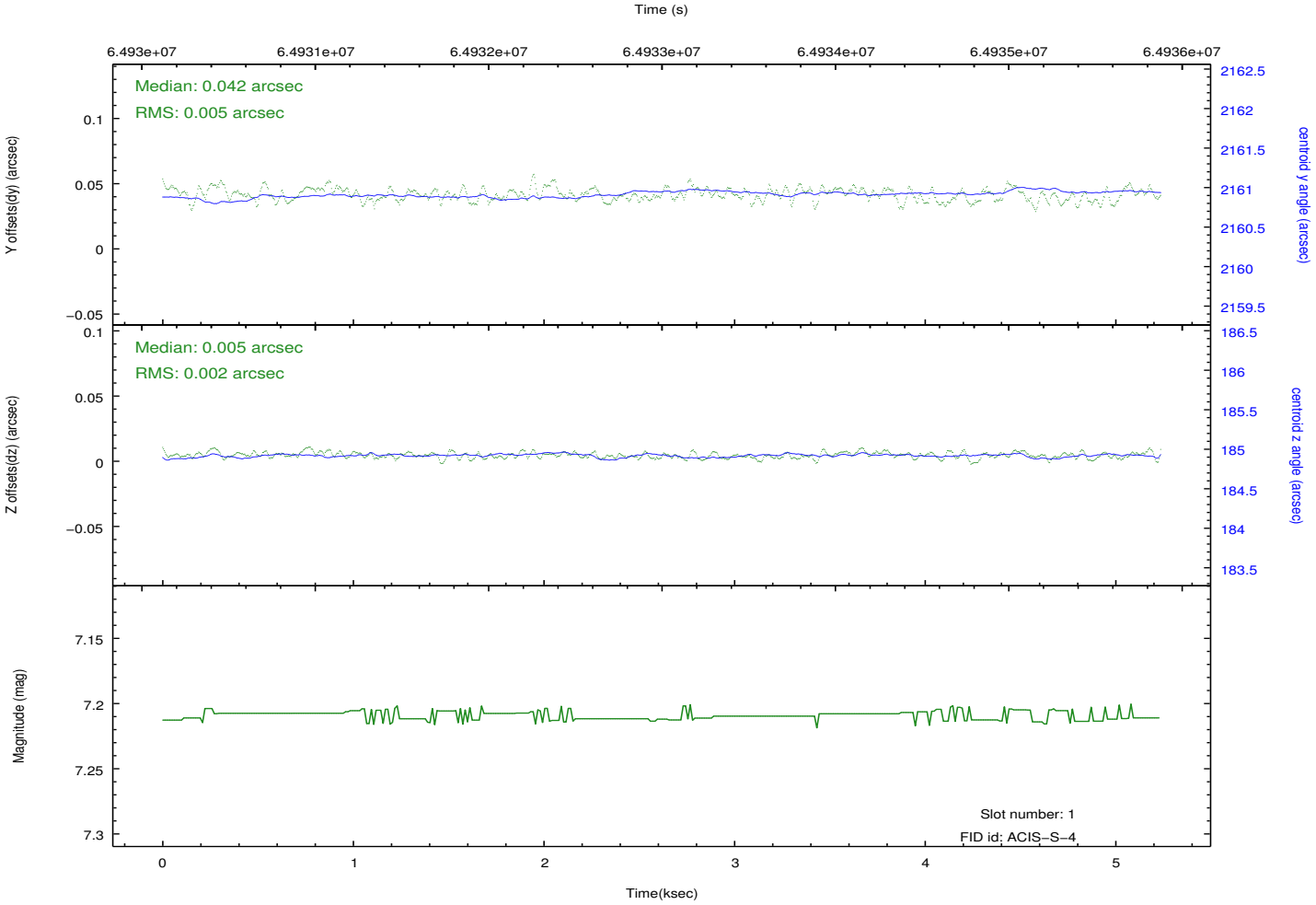




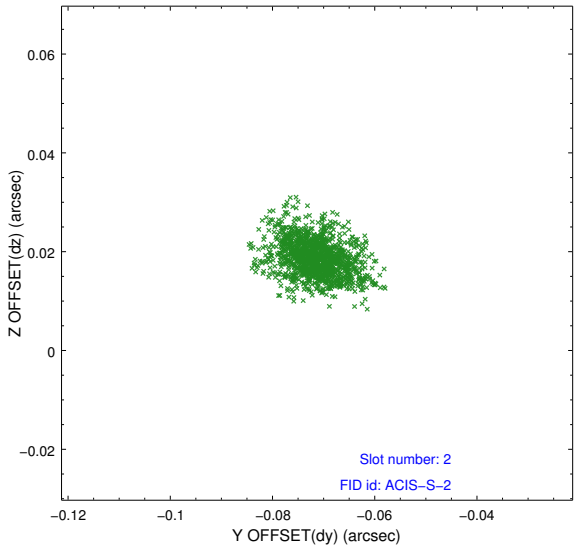
2.5.2 Slot 1

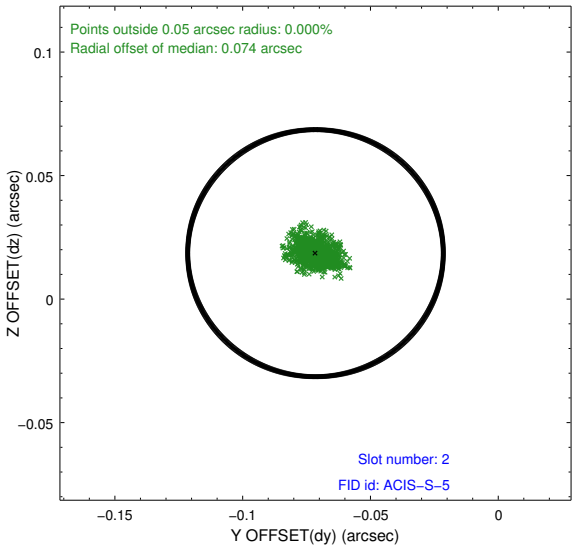

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 1
FID id: ACIS−S−2

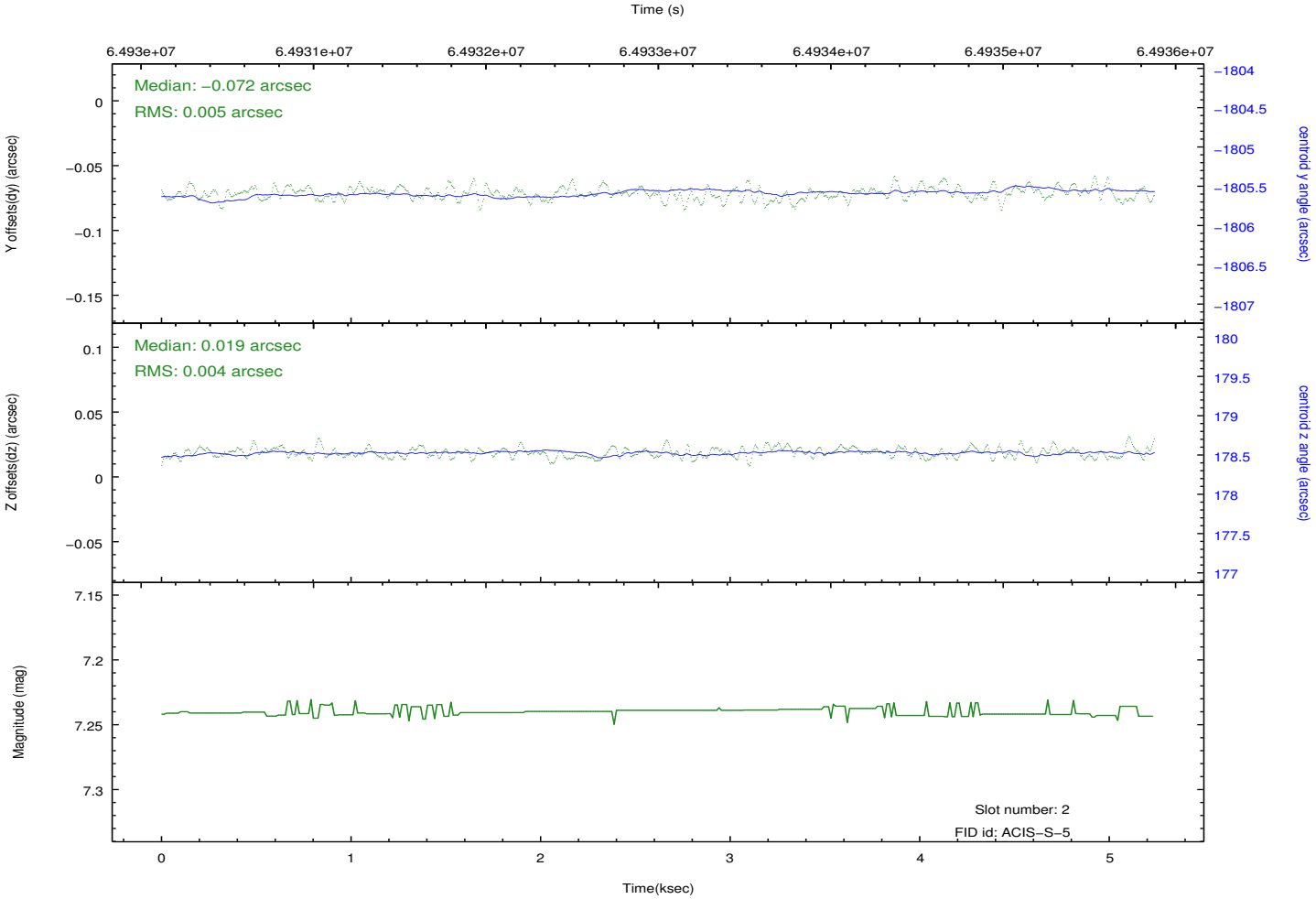

Points outside 0.05 arcsec radius: 0.000%
Radial offset of median: 0.042 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 1
FID id: ACIS−S−4


Time (s)
Median: 0.042 arcsec
RMS: 0.005 arcsec
Y offsets(dy) (arcsec)
centroid y angle (arcsec)
Median: 0.005 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−2


Points outside 0.05 arcsec radius: 0.000%
Radial offset of median: 0.074 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 2
FID id: ACIS−S−5


Time (s)
Median: −0.072 arcsec
RMS: 0.005 arcsec
Y offsets(dy) (arcsec)
centroid y angle (arcsec)
Median: 0.019 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)

3 Point Sources

3.66 arcmin

A Summary

A.1 Status

V&V Scientist	Beth Sundheim
V&V Date (YYYY-MM-DD)	2009.12.10
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	4.217

A.2 Comments

```
Focal plane temperature is warmer than -118.7 C degrees during the
entire observation. This temperature is the upper limit of the verified
ACIS calibration for the front-illuminated chips. The focal plane
temperature is also warmer than -116.7 degrees C for the entire
observation. This temperature is the upper limit of the verified ACIS
calibration for the back-illuminated chips. The ACIS spectral response
calibration is less accurate at these warmer temperatures than it is at
-119.7 C. Users whose science objectives depend on the most accurate
spectral response (ie: fitting line-rich spectra) may notice an effect.
Users whose science objectives do not depend on the most accurate
spectral response should not notice an effect.
```