V&V Reference Report
L2 ASCDS Version : 8.5.1

Observation 15354 - L2 Version 2
Chandra X-Ray Center

L2 Processing Date : Nov 30 2014

Contents

1 Front

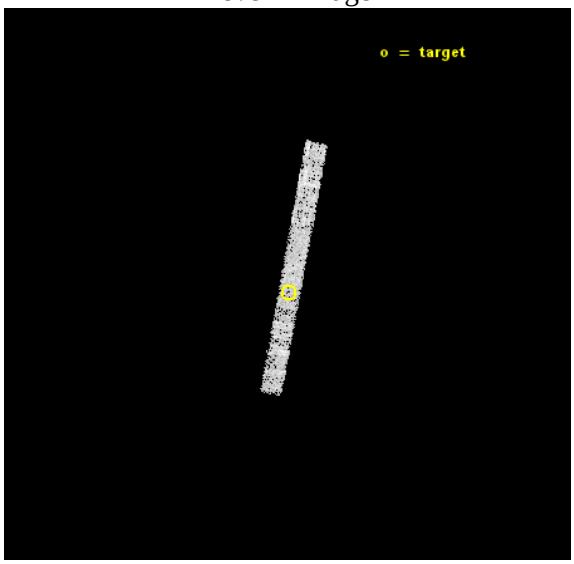
seq_num	702914	Sequence number
obs_id	15354	Observation id
title	Clarifying the Nature of Weak-Line Quasars with Chandra Spectroscopy and Snapshots	Proposal title
observer	Professor Gordon Garmire	Principal investigator
object	2QZ J2154-3056	Source name
dtycycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	328.726667	Observer's specified target RA [deg]
dec_targ	-30.948417	Observer's specified target Dec [deg]
ra_nom	328.72980169028	Nominal RA [deg]
dec_nom	-30.949322814531	Nominal Dec [deg]
roll_nom	280.82989612862	Nominal Roll [deg]
revision	2	Processing version of data
ontime	2592.4483924508	Sum of GTIs [s]
livetime	2479.3882865826	Livetime [s]
ontime6	2592.7256637216	Sum of GTIs [s]
ontime7	2592.4483924508	Sum of GTIs [s]
ontime8	2592.6846237183	Sum of GTIs [s]
l2events	2618	Number of level 2 events

2 OBI

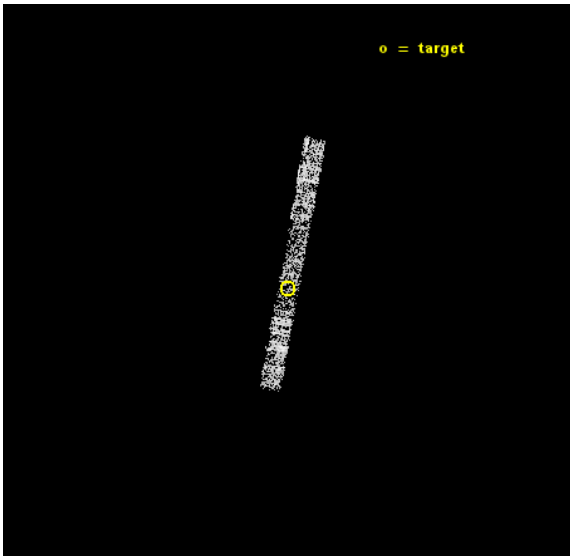
2.1 OBI

2.1.1 Images

Level 1 Image

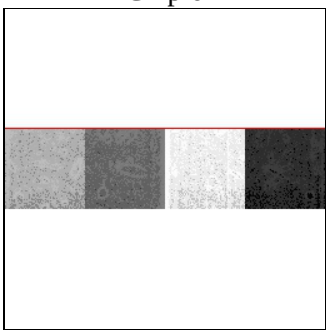


Level 1 Bad Events

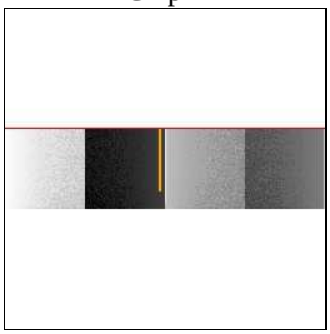


2.1.2 Bias

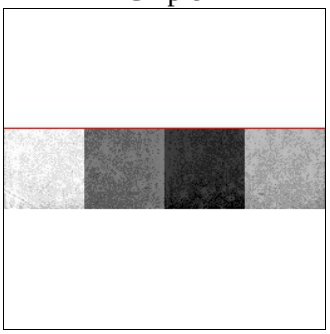
Chip 6



Chip 7



Chip 8



2.1.3 Parameters

obi_num	0	Obi number
ascdsver	10.3	Processing system revision
caldbver	4.6.4	
date	2014-11-30T05:12:40	Date and time of file creation
revision	2	Processing version of data

sched_exp_time	2500.000000	[s] Scheduled observation exposure time
ontime	2592.4483924508	Sum of GTIs [s]
ontime6	2592.7256637216	Sum of GTIs [s]
ontime7	2592.4483924508	Sum of GTIs [s]
ontime8	2592.6846237183	Sum of GTIs [s]
l1events	12984	Number of level 1 events

2.1.4 Events

	ccd 6	**ccd 7**	**ccd 8**
level 1 events	3908	3971	5105
rejected events	3492	1980	3791
rejected %	89%	49%	74%

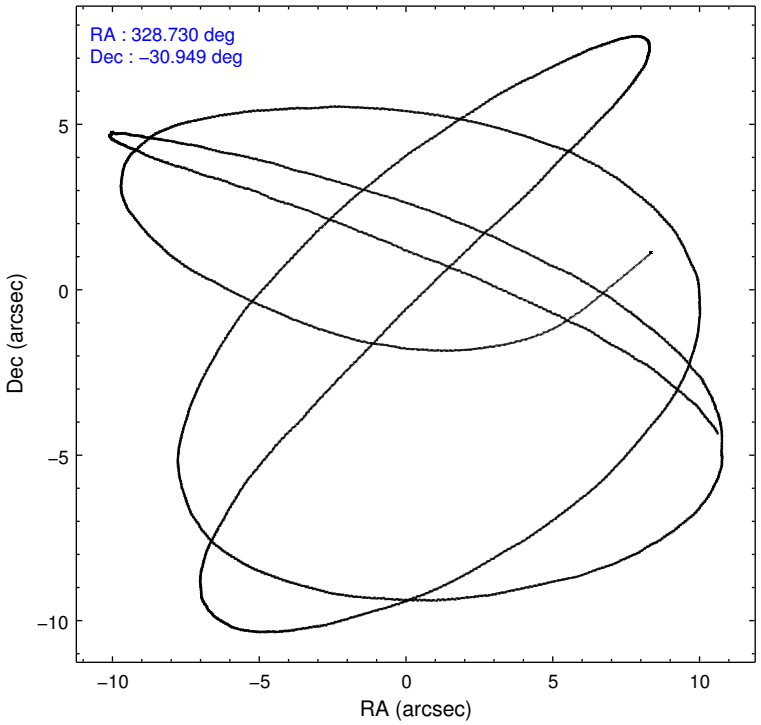
	ccd 6	**ccd 7**	**ccd 8**
grade 0 events	121	207	310
	3%	5%	6%
grade 1 events	2	5	2
	0%	0%	0%
grade 2 events	85	428	282
	2%	10%	5%
grade 3 events	64	208	154
	1%	5%	3%
grade 4 events	69	211	147
	1%	5%	2%
grade 5 events	130	419	206
	3%	10%	4%
grade 6 events	77	937	423
	1%	23%	8%
grade 7 events	3360	1556	3581
	85%	39%	70%

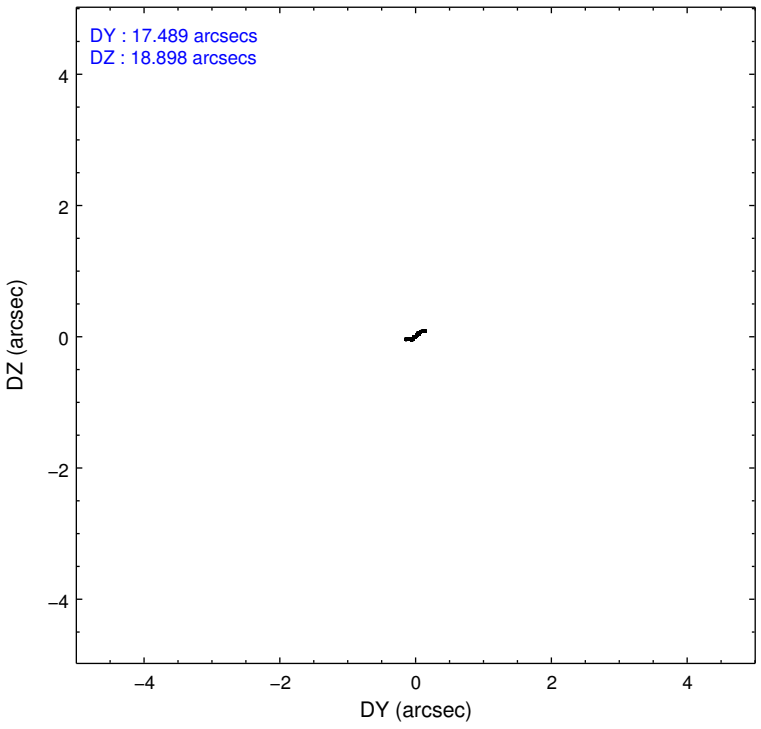
2.2 Compared Parameters

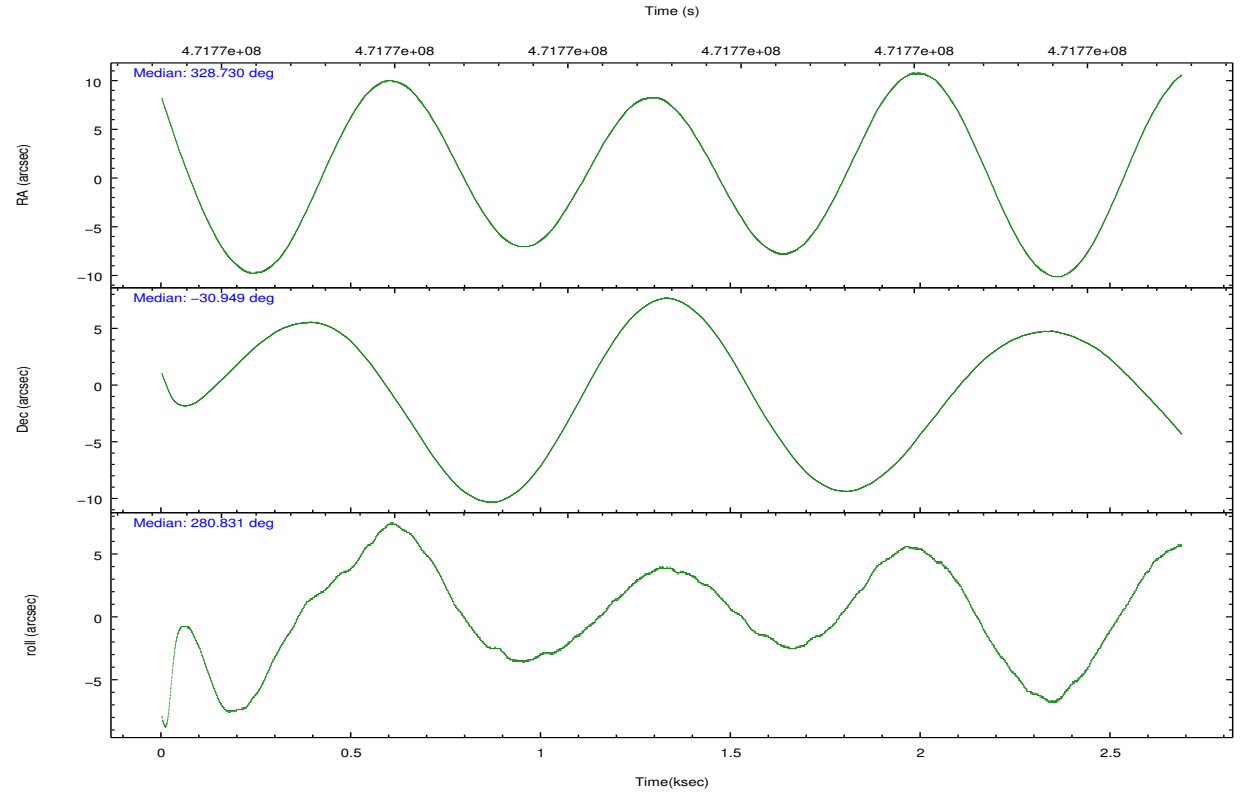
Parameter	Planned	Actual
Instrument	ACIS	ACIS
Detector	ACIS-678	ACIS-678
Grating	NONE	NONE
Data mode	VFAINT	VFAINT
Observation mode	POINTING	POINTING
[deg] Pointing RA	328.708785	328.729801690281
[deg] Pointing Dec	-30.929087	-30.9493228145313
[deg] Pointing Roll	280.662547	280.8298961286214
[mm] SIM 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)	471771646.184000	471770422.31678
Observation start date	2012-12-13T07:39:39	2012-12-13T07:20:22
[s] Observation end time (MET)	471774146.184000	471774936.41702
Observation end date	2012-12-13T08:21:19	2012-12-13T08:35:36
Read mode	TIMED	TIMED

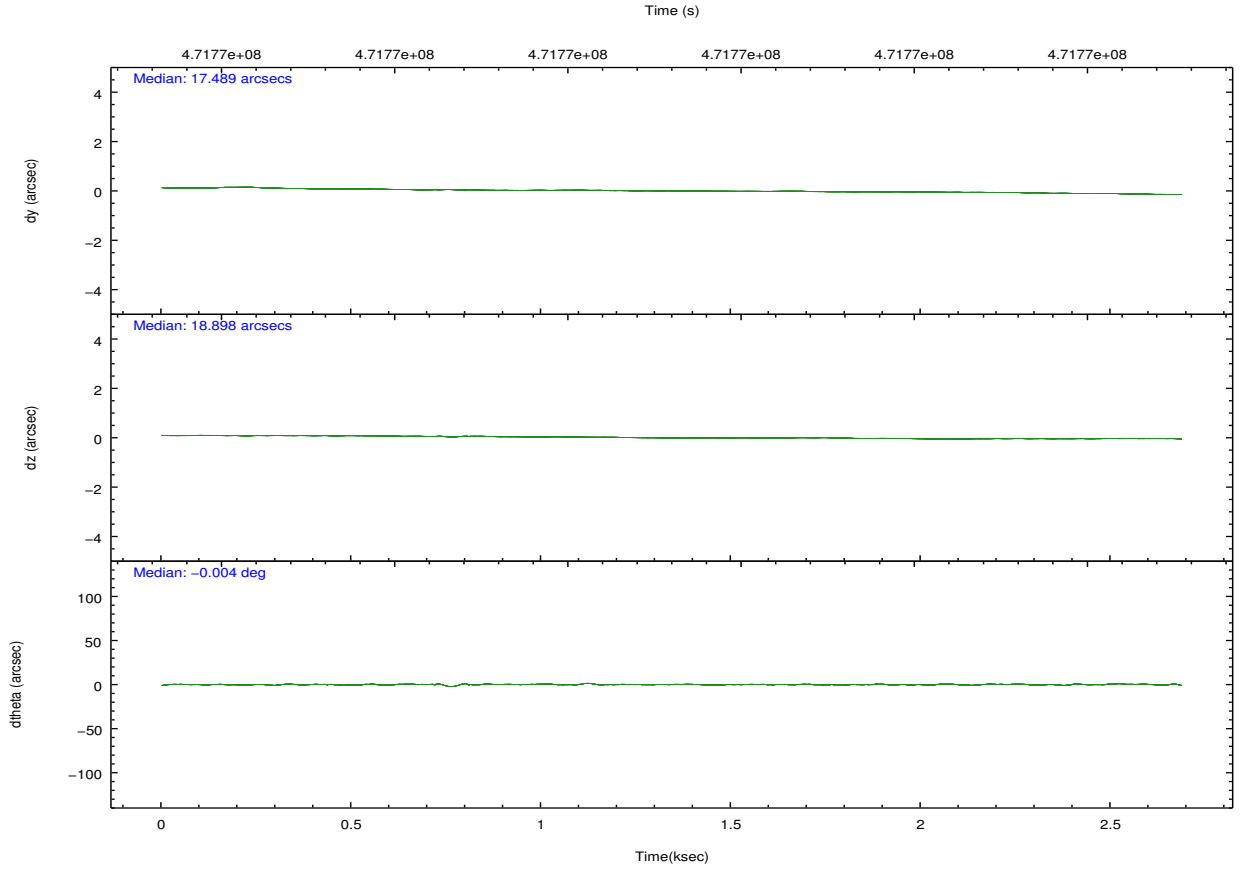
Parameter	Planned	Actual
Obspar format version number	7	7
Obspar file type	PREDICTED	ACTUAL
Obspar update status	NONE	UPDATED
Number of optional ACIS chips dropped	0	0
On-chip summing requested	N	N
Subarray requested	CUSTOM	1/4
Subarray start row	385	385
Subarray row count	256	256
Alternating exposures requested	N	N
[s] Primary exposure time	0.000000	0.9

2.3 Aspect


RA : 328.730 deg
Dec : −30.949 deg
Dec (arcsec)
RA (arcsec)
5
0
−5
−10
−10
−5
0
5
10


DY : 17.489 arcsecs
DZ : 18.898 arcsecs
DZ (arcsec)
DY (arcsec)
4
2
0
−2
−4
−4
−2
0
2
4


Time (s)
4.7177e+08
4.7177e+08
4.7177e+08
4.7177e+08
4.7177e+08
4.7177e+08
Median: 328.730 deg
RA (arcsec)
Median: −30.949 deg
Dec (arcsec)
Median: 280.831 deg
roll (arcsec)
Time(ksec)

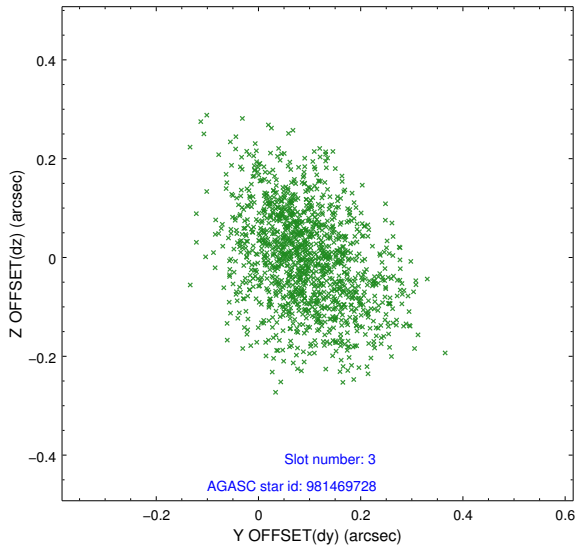

Time (s)
4.7177e+08
4.7177e+08
4.7177e+08
4.7177e+08
4.7177e+08
4.7177e+08
Median: 17.489 arcsecs
dy (arcsec)
Median: 18.898 arcsecs
dz (arcsec)
Median: −0.004 deg
dtheta (arcsec)
Time(ksec)

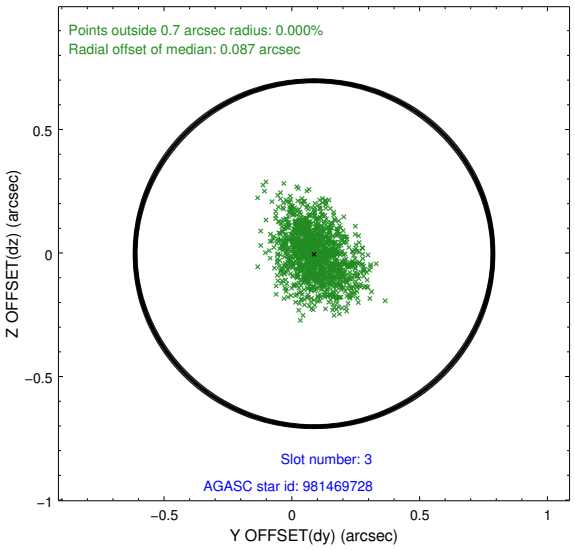
Slot Statistics

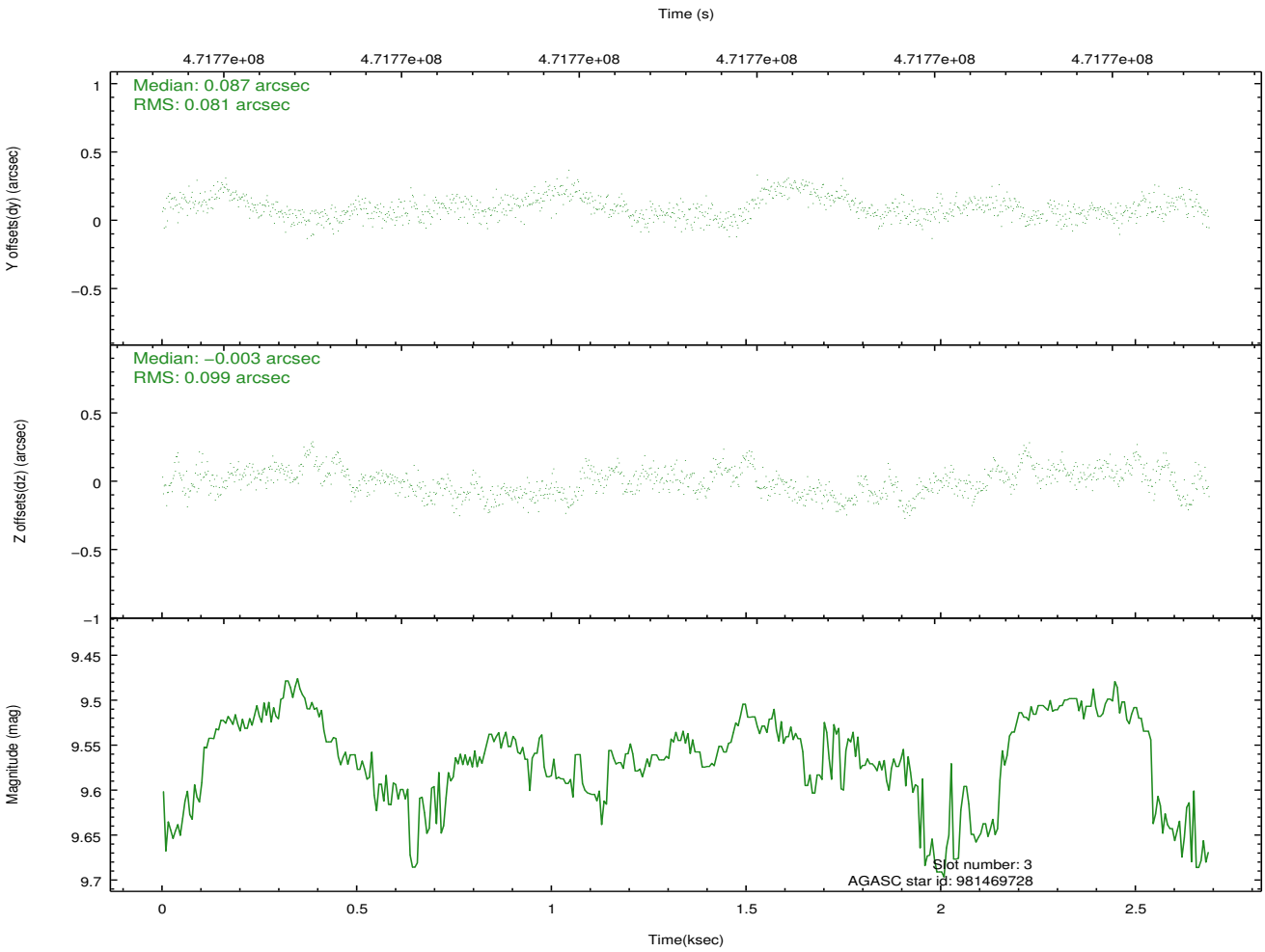
slot	status	used	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID		ACIS-S-2	6.91	656	-0.091	-0.031	0.007	0.012	0.000000	0.000000	-770.63	-1740.42
1	FID		ACIS-S-4	7.00	656	0.206	0.053	0.007	0.012	0.000000	0.000000	2141.85	165.63
2	FID		ACIS-S-5	7.03	656	-0.145	-0.013	0.009	0.015	0.000000	0.000000	-1820.45	161.99
3	GUIDE	used	981469728	9.56	1308	0.087	-0.003	0.138	0.222	328.766049	-30.709787	-741.64	320.71
4	GUIDE	used	981471664	6.34	1312	-0.223	-0.108	0.071	0.120	328.981826	-30.605916	-985.22	1047.60
5	GUIDE	used	981475568	8.17	1311	-0.051	-0.053	0.078	0.128	328.999408	-30.923402	146.86	886.70
6	GUIDE	used	981476800	8.21	1312	0.144	0.042	0.073	0.123	329.162630	-31.389809	1892.85	1064.53
7	GUIDE	used	981475232	9.71	1310	0.040	0.124	0.118	0.196	328.383260	-30.313564	-2360.61	-583.49

2.4 Star Slots

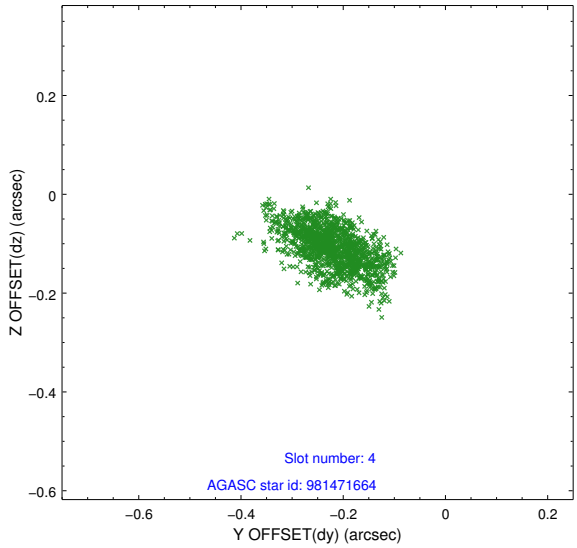
2.4.1 Slot 3

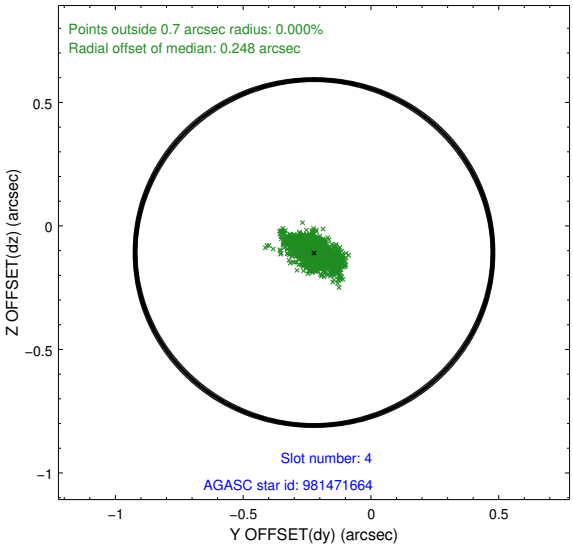


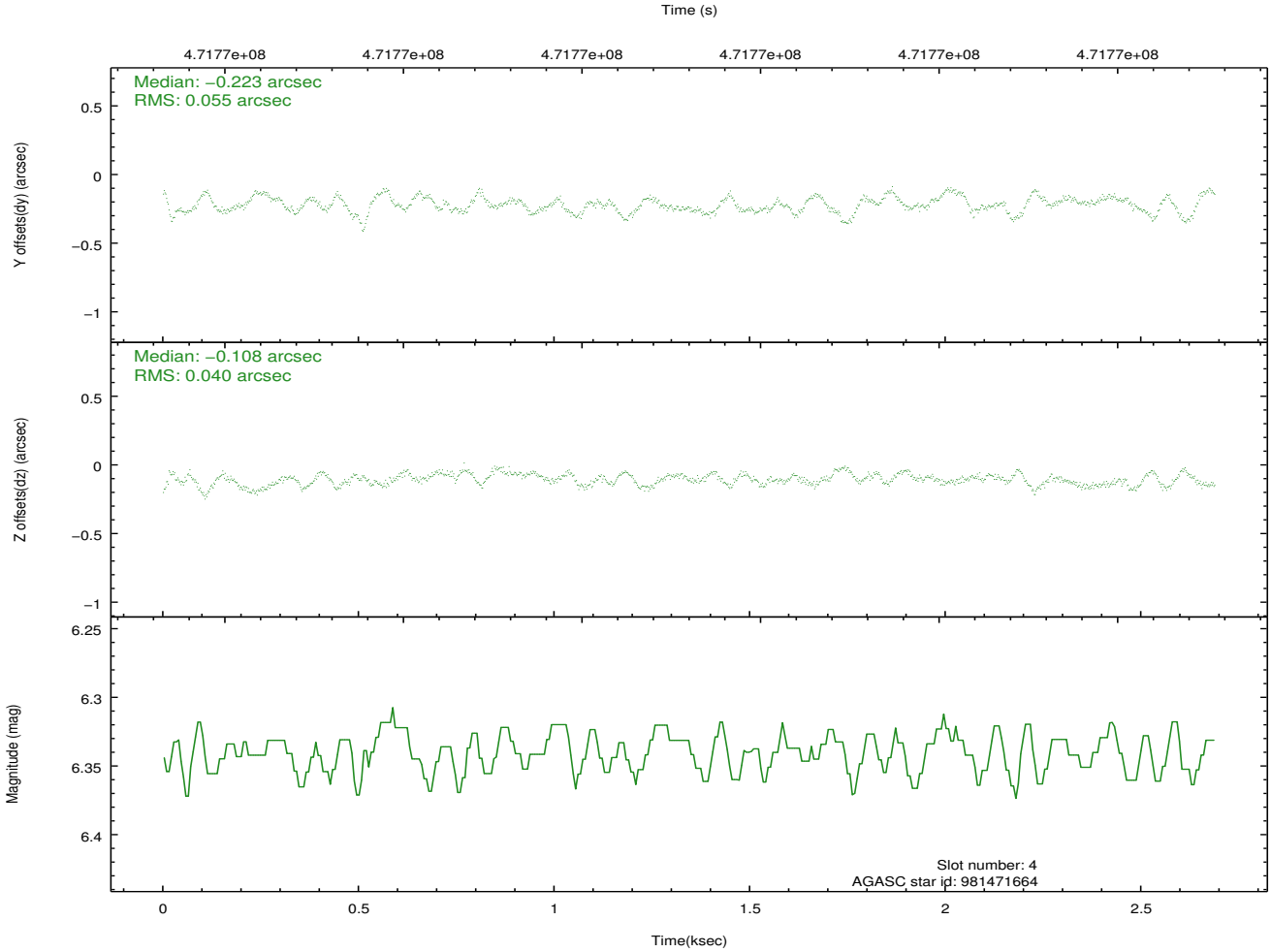




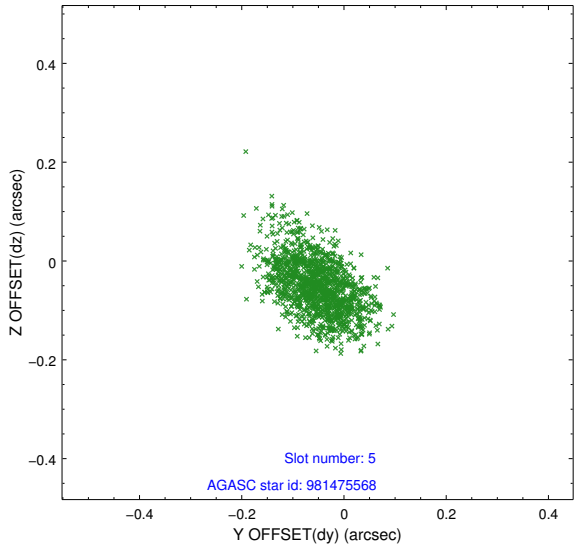
2.4.2 Slot 4

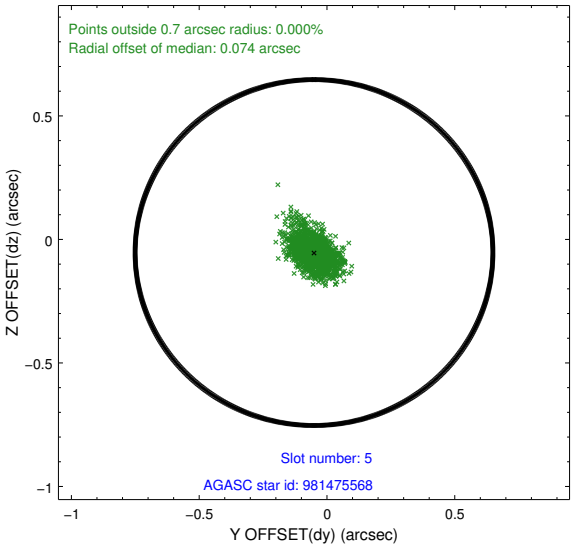

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 4
AGASC star id: 981471664

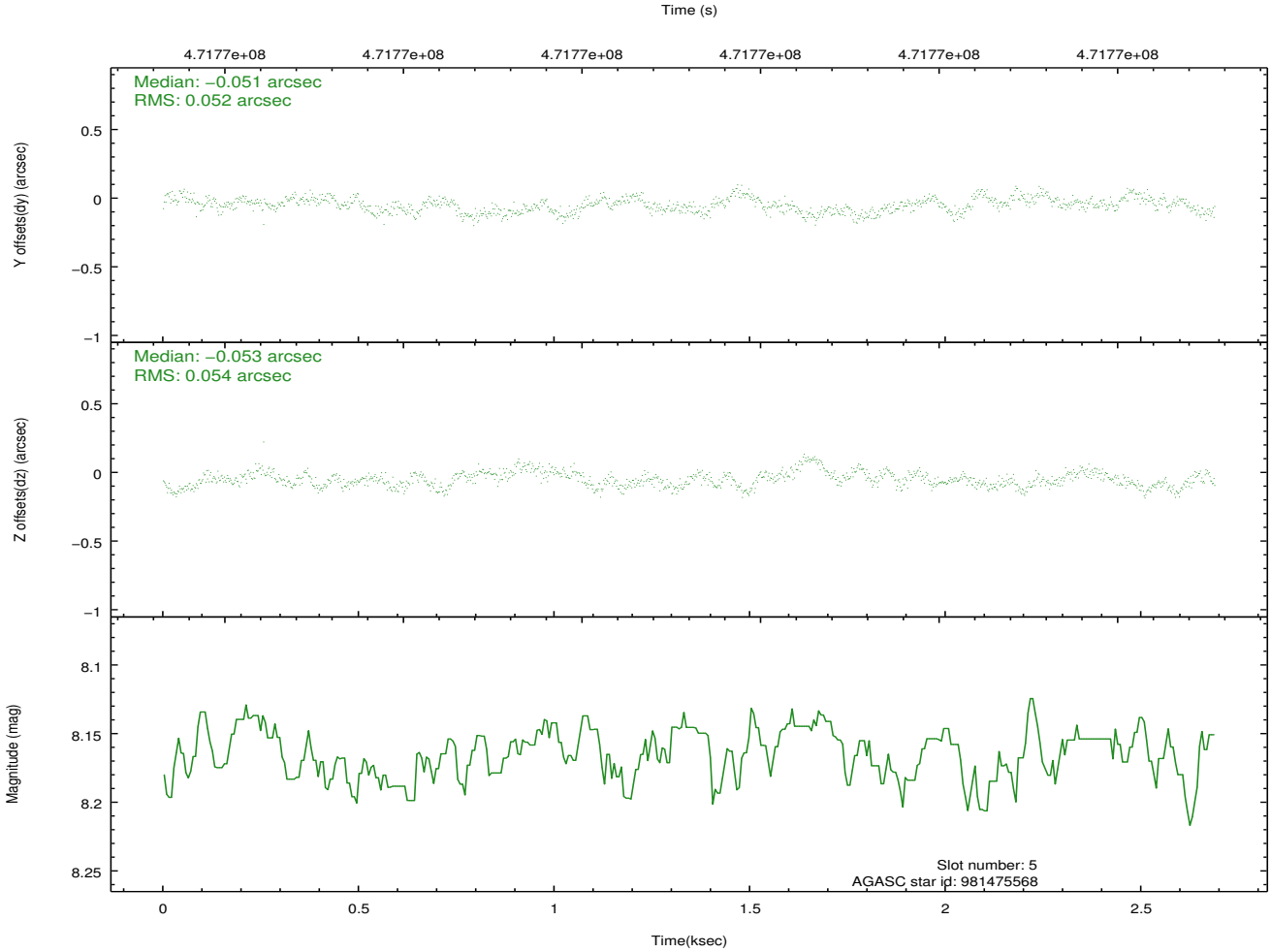

Points outside 0.7 arcsec radius: 0.000%
Radial offset of median: 0.248 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 4
AGASC star id: 981471664


Time (s)
Median: −0.223 arcsec
RMS: 0.055 arcsec
Y offsets(dy) (arcsec)
Median: −0.108 arcsec
RMS: 0.040 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number: 4
AGASC star id: 981471664
Time(ksec)

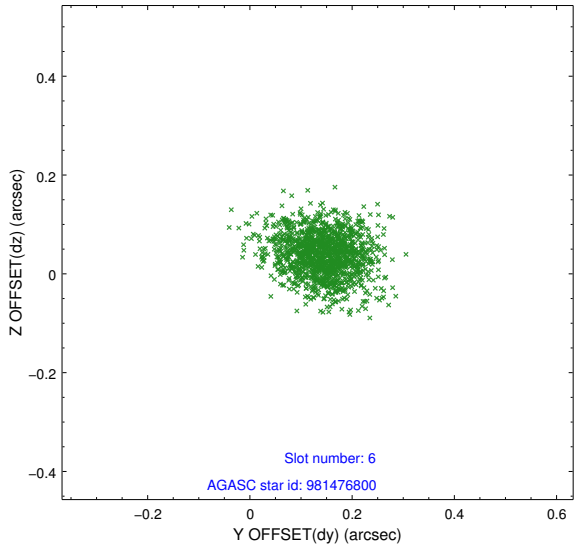
2.4.3 Slot 5

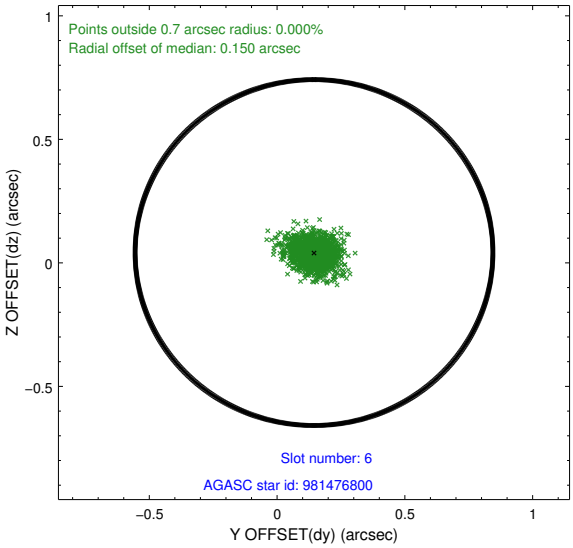

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 5
AGASC star id: 981475568

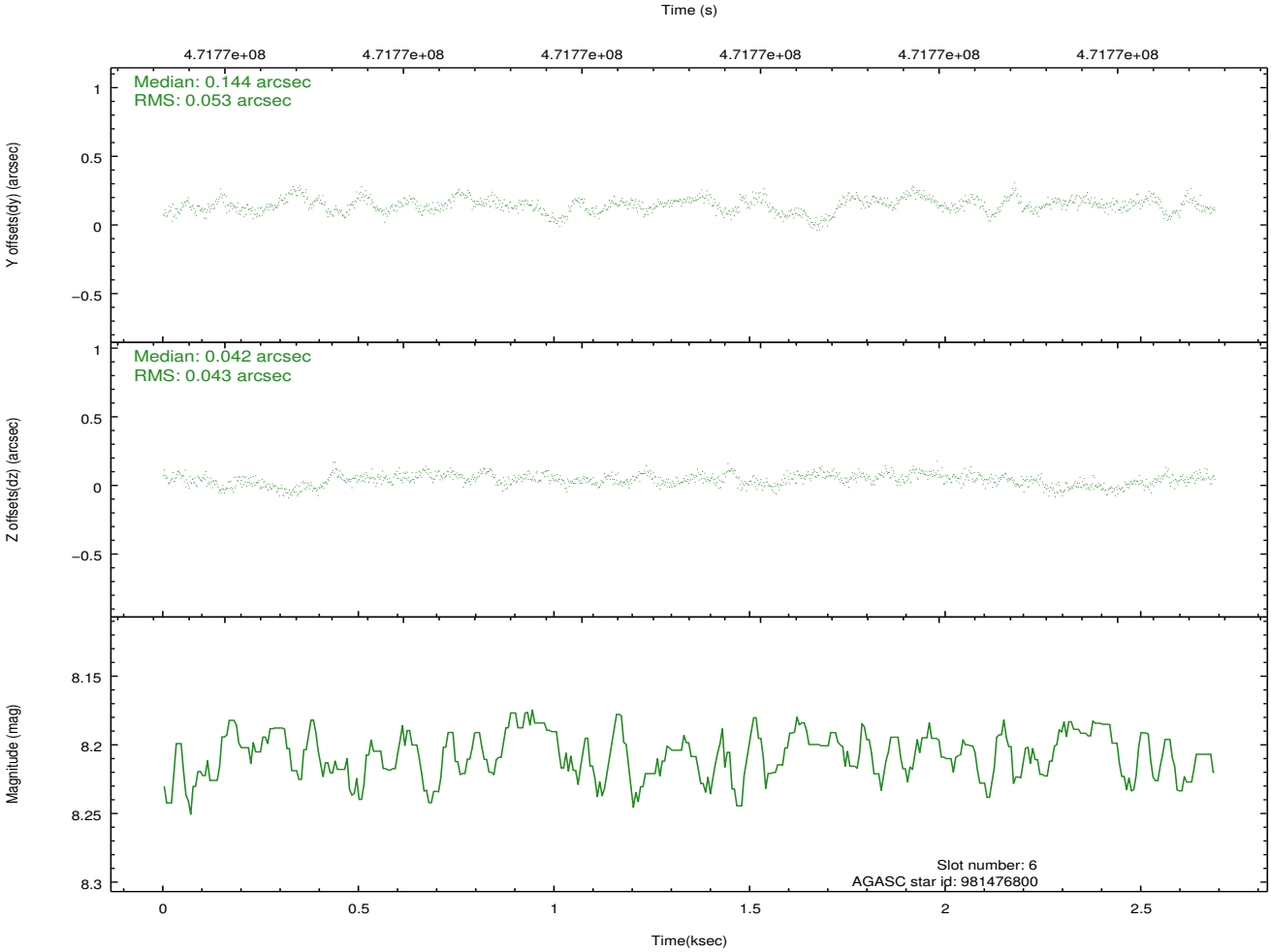

Points outside 0.7 arcsec radius: 0.000%
Radial offset of median: 0.074 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 5
AGASC star id: 981475568


Time (s)
4.7177e+08
Median: −0.051 arcsec
RMS: 0.052 arcsec
Y offsets(dy) (arcsec)
Median: −0.053 arcsec
RMS: 0.054 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number: 5
AGASC star id: 981475568
Time(ksec)

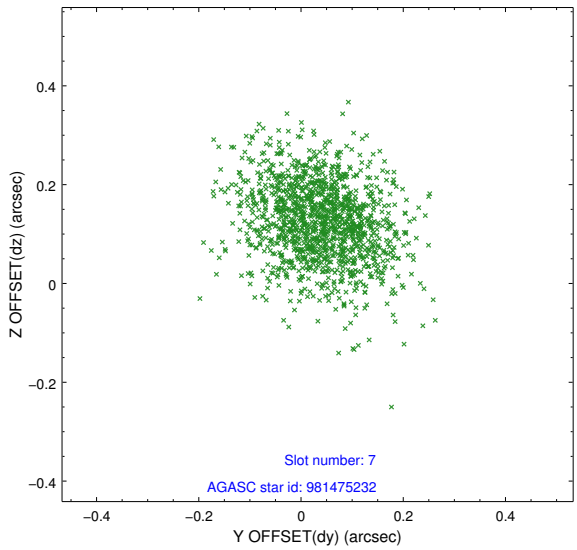
2.4.4 Slot 6

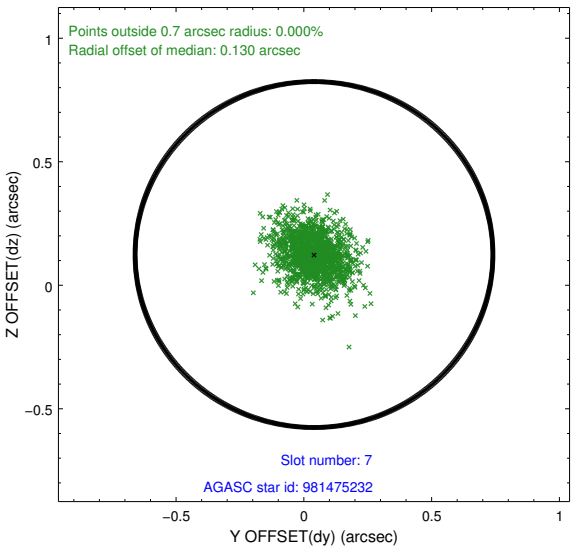

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 6
AGASC star id: 981476800

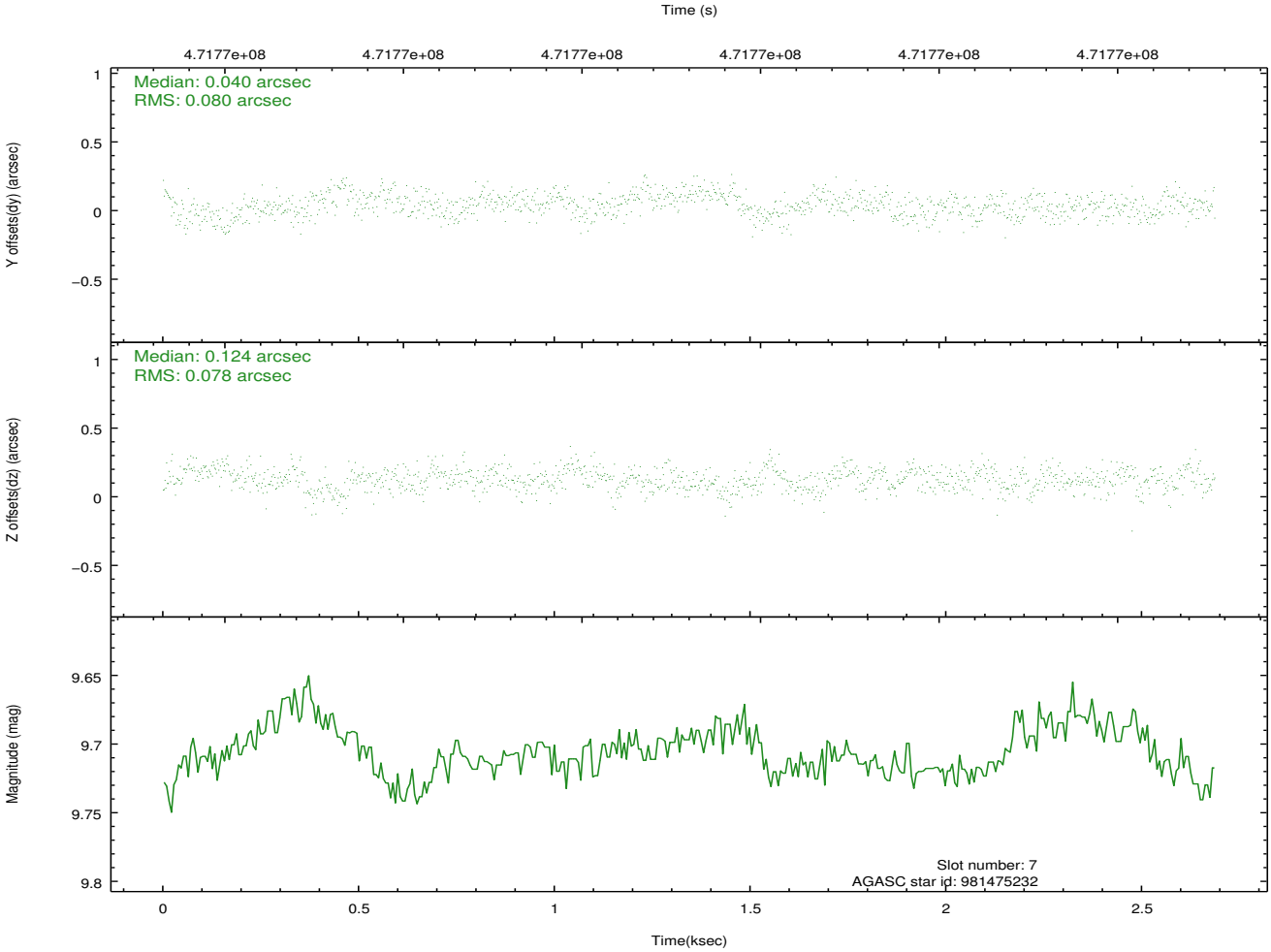

Points outside 0.7 arcsec radius: 0.000%
Radial offset of median: 0.150 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 6
AGASC star id: 981476800


Time (s)
Median: 0.144 arcsec
RMS: 0.053 arcsec
Y offsets(dy) (arcsec)
Median: 0.042 arcsec
RMS: 0.043 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number: 6
AGASC star id: 981476800
Time(ksec)

2.4.5 Slot 7

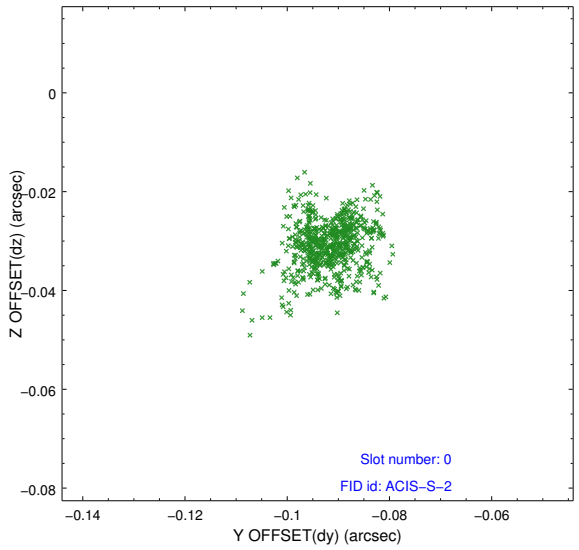

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 7
AGASC star id: 981475232

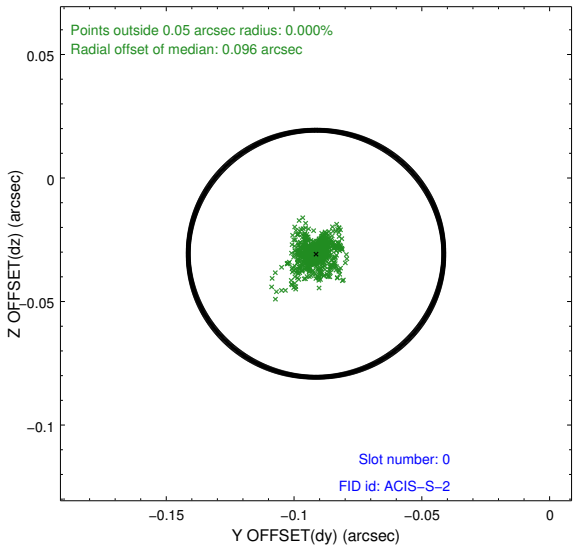

Points outside 0.7 arcsec radius: 0.000%
Radial offset of median: 0.130 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 7
AGASC star id: 981475232

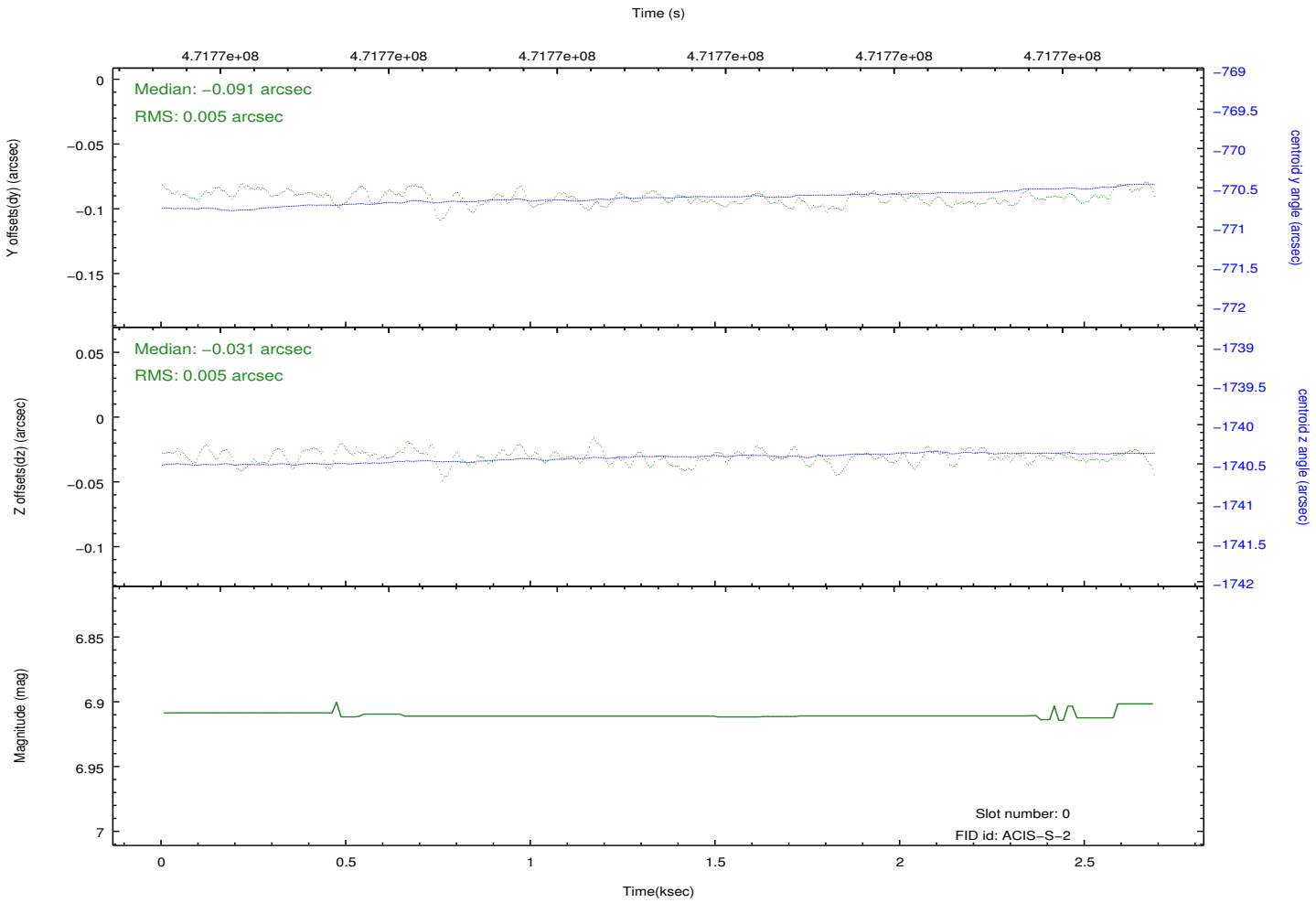

Time (s)
Median: 0.040 arcsec
RMS: 0.080 arcsec
Y offsets(dy) (arcsec)
Median: 0.124 arcsec
RMS: 0.078 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number: 7
AGASC star id: 981475232
Time(ksec)

2.5 FID Slots

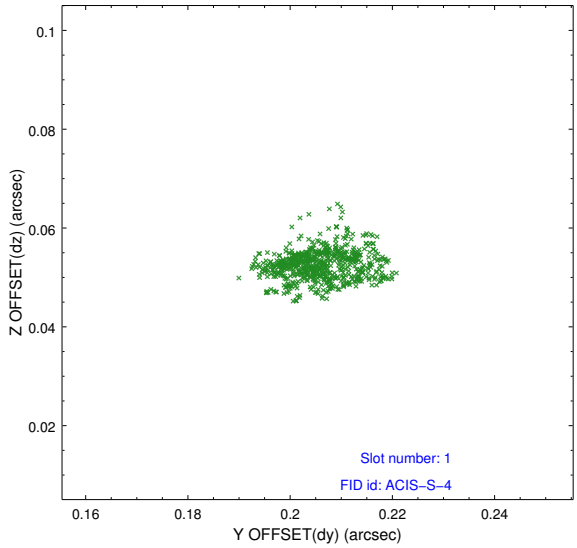
2.5.1 Slot 0

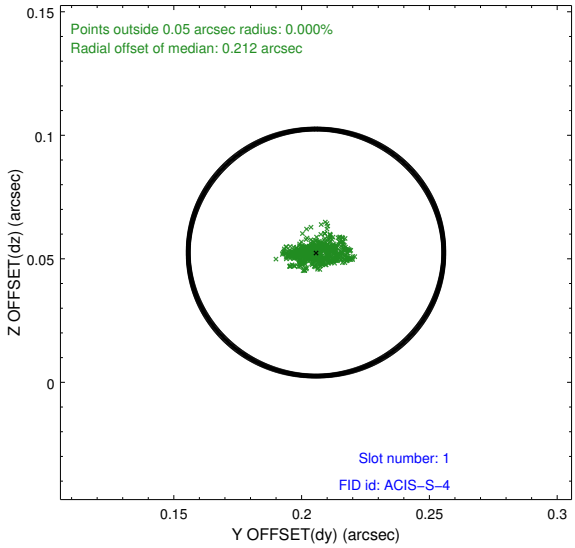


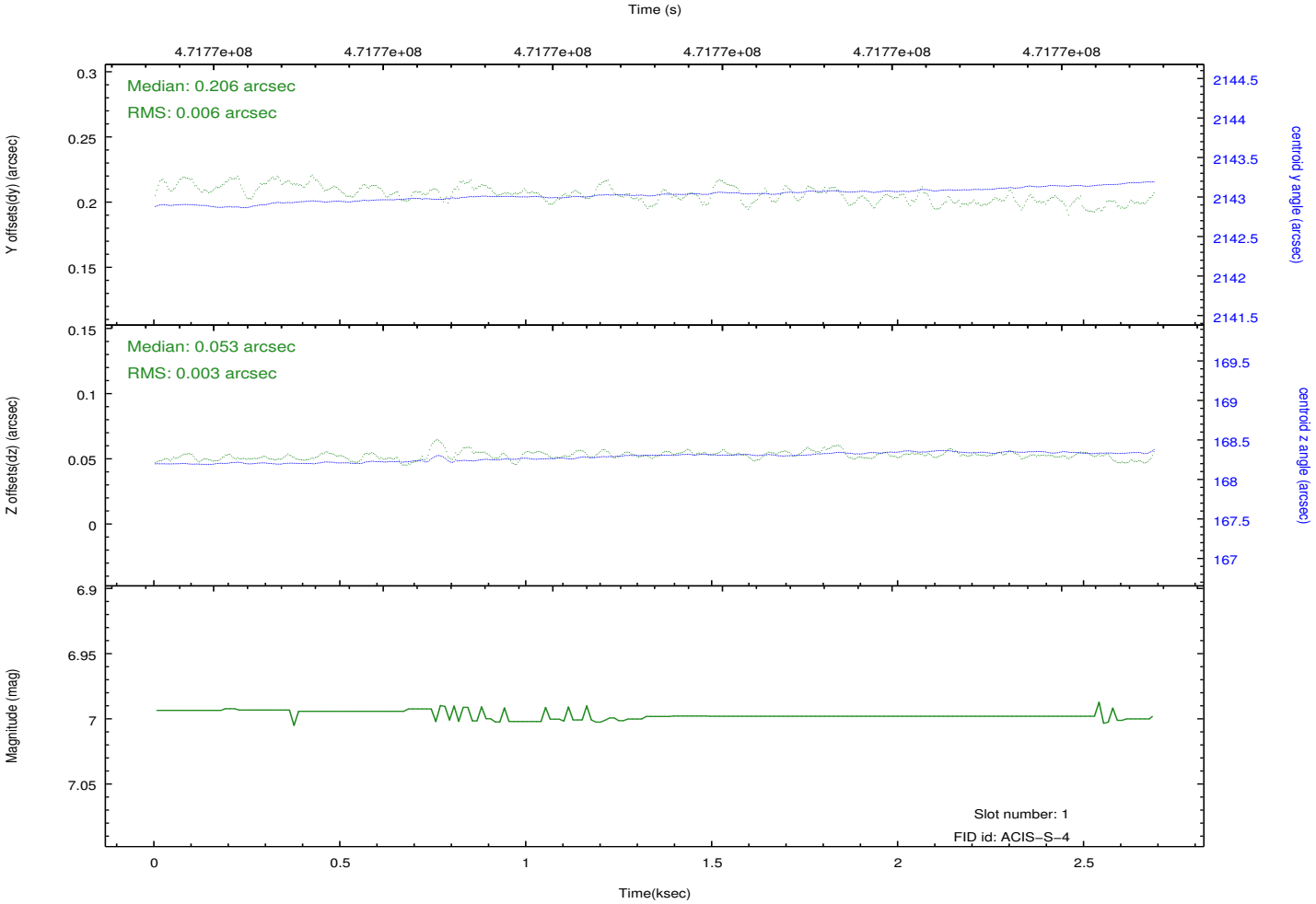




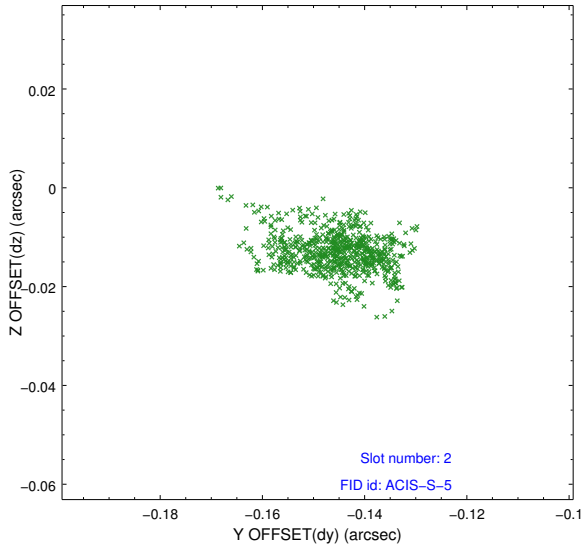
2.5.2 Slot 1

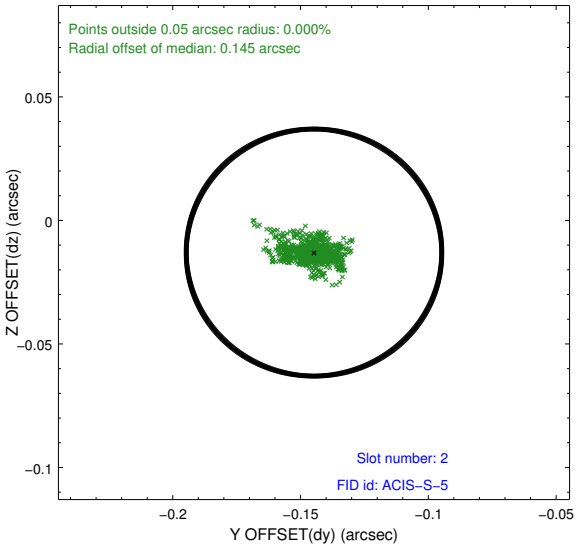

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 1
FID id: ACIS−S−4

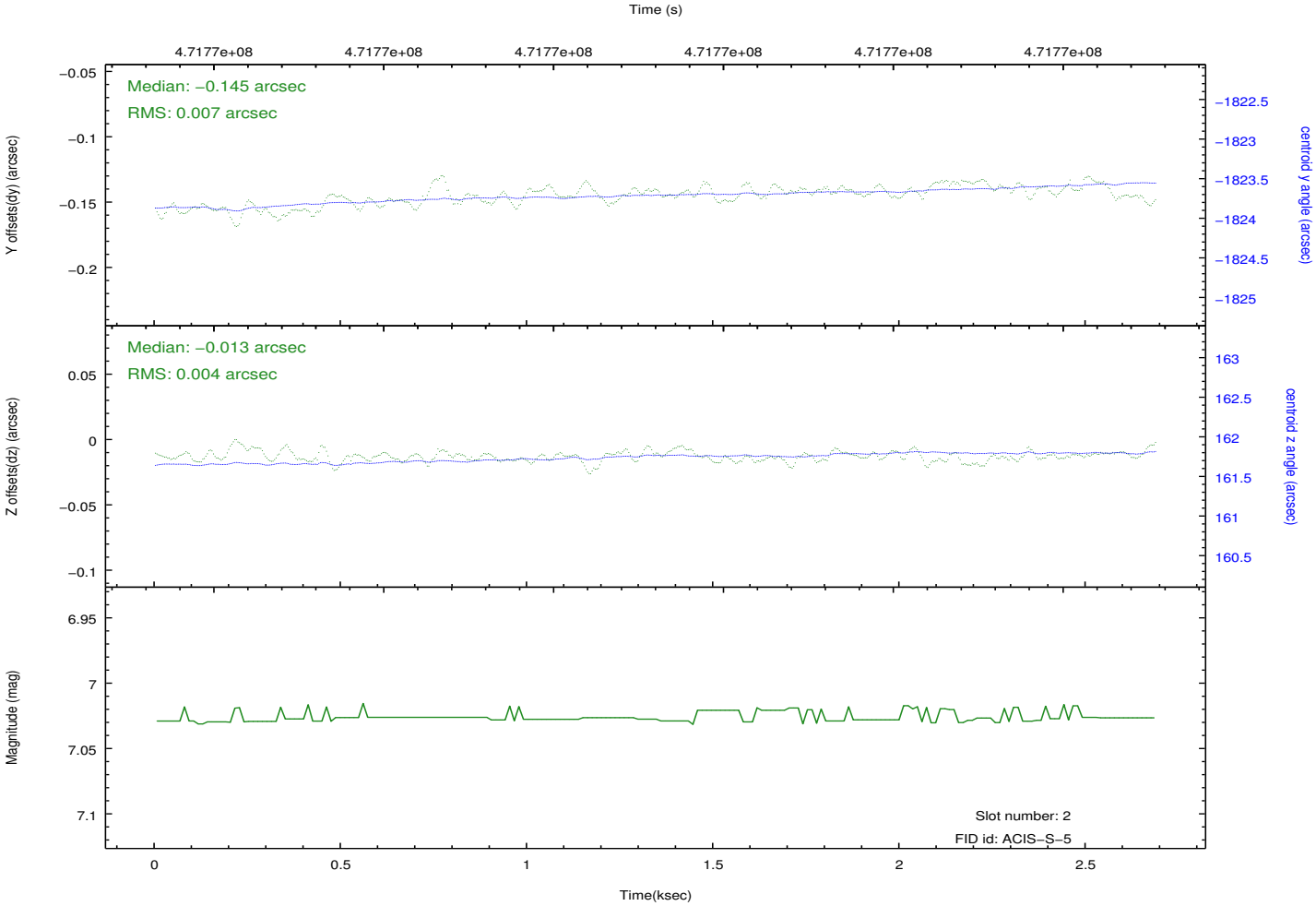

Points outside 0.05 arcsec radius: 0.000%
Radial offset of median: 0.212 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 1
FID id: ACIS−S−4


Time (s)
Median: 0.206 arcsec
RMS: 0.006 arcsec
Y offsets(dy) (arcsec)
centroid y angle (arcsec)
Median: 0.053 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: 0.145 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 2
FID id: ACIS−S−5


Time (s)
Median: −0.145 arcsec
RMS: 0.007 arcsec
Y offsets(dy) (arcsec)
centroid y angle (arcsec)
Median: −0.013 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)	2014.12.03
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	2.5924483924508

A.2 Comments

```
These data have been reprocessed with new aspect alignment calibration
files that correct small mean offsets (up to 0.4 arcsecs) and improve
overall astrometric accuracy. The new calibration was determined using
data from the time period being reprocessed and was performed using
cross-correlation of X-ray sources with radio and optical counterparts.
```