V&V Reference Report
L2 ASCDS Version : 8.4.5

Observation 2295 - L2 Version 5
Chandra X-Ray Center

L2 Processing Date : Oct 19 2012

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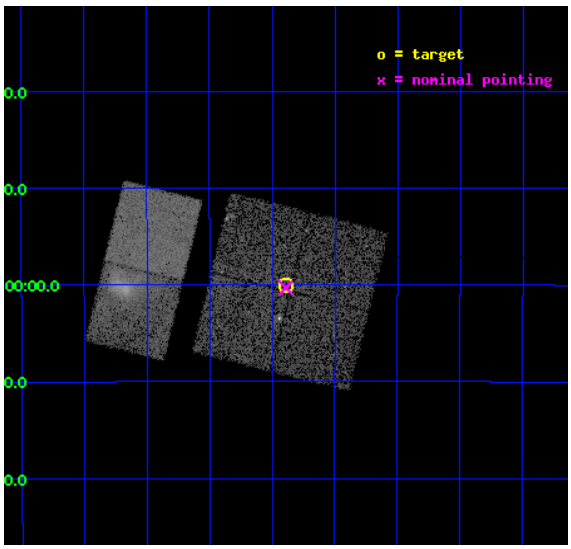
1 Front

seq_num	900122	Sequence number
obs_id	2295	Observation id
title	CHANDRA SURVEY OF THE GALACTIC RIDGE AROUND THE MILKY WAY CENTER	P
observer	Prof. Q. Daniel Wang	Principal investigator
object	GCS 18	Source name
dtycycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	266.0985	Observer's specified target RA [deg]
dec_targ	-29.0007	Observer's specified target Dec [deg]
ra_nom	266.09769303621	Nominal RA [deg]
dec_nom	-29.00540566081	Nominal Dec [deg]
roll_nom	283.80730282688	Nominal Roll [deg]
revision	5	Processing version of data
ontime	11257.60001047	Sum of GTIs [s]
livetime	11115.049500624	Livetime [s]
ontime0	11257.60001047	Sum of GTIs [s]
ontime1	11257.60001047	Sum of GTIs [s]
ontime2	11257.60001047	Sum of GTIs [s]
ontime3	11257.60001047	Sum of GTIs [s]
ontime6	11257.60001047	Sum of GTIs [s]
ontime7	11257.60001047	Sum of GTIs [s]
l2events	66365	Number of level 2 events

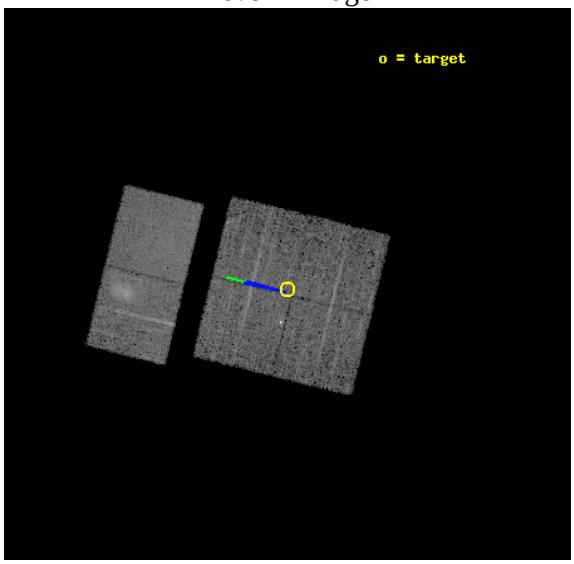


2 OBI

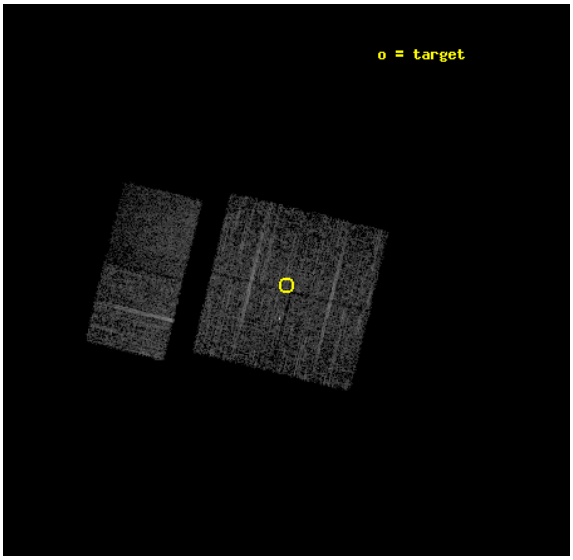
2.1 OBI

2.1.1 Images

Level 1 Image

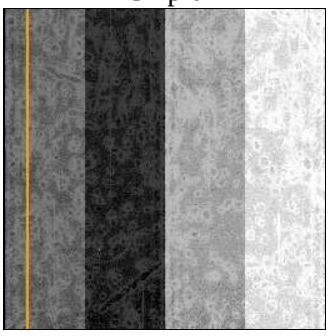


Level 1 Bad Events

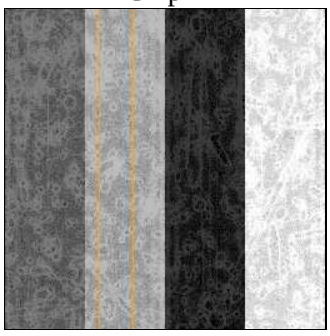


2.1.2 Bias

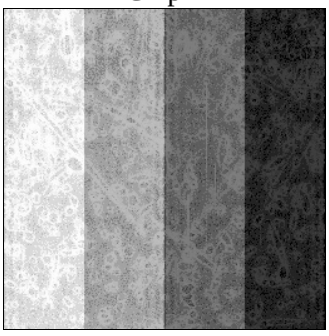
Chip 0



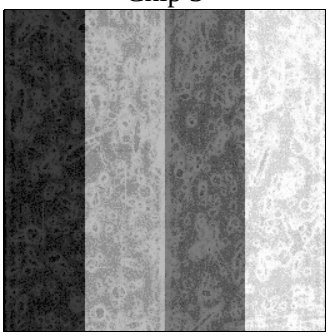
Chip 1



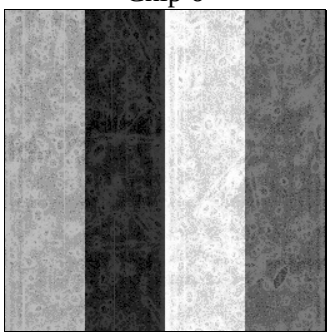
Chip 2



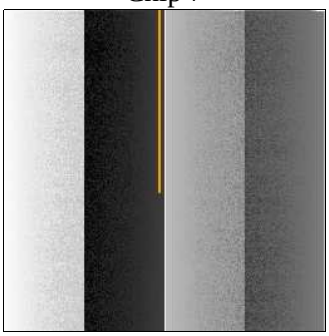
Chip 3



Chip 6



Chip 7



2.1.3 Parameters

obi_num	0	Obi number
ascdsver	8.4.5	Processing system revision
caldbver	4.5.2	
date	2012-10-19T18:24:47	Date and time of file creation
revision	5	Processing version of data

sched_exp_time	11500.000000	[s] Scheduled observation exposure time
ontime	11257.60001047	Sum of GTIs [s]
ontime0	11257.60001047	Sum of GTIs [s]
ontime1	11257.60001047	Sum of GTIs [s]
ontime2	11257.60001047	Sum of GTIs [s]
ontime3	11257.60001047	Sum of GTIs [s]
ontime6	11257.60001047	Sum of GTIs [s]
ontime7	11257.60001047	Sum of GTIs [s]
l1events	207665	Number of level 1 events

2.1.4 Events

	ccd 0	**ccd 1**	**ccd 2**	**ccd 3**	**ccd 6**	**ccd 7**
level 1 events	28640	28209	35033	31242	43098	41443
rejected events	22334	21855	25565	24473	25698	17415
rejected %	77%	77%	72%	78%	59%	42%

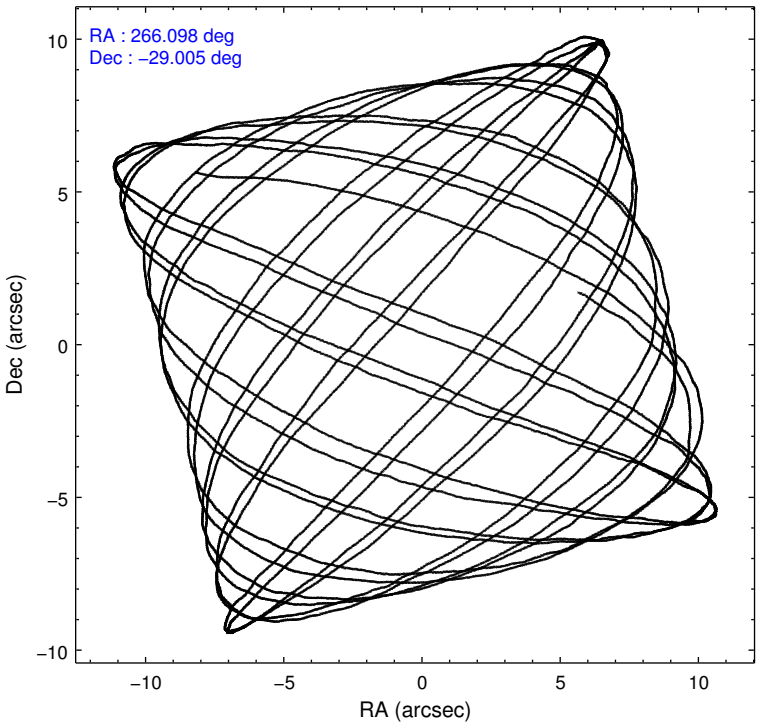
	ccd 0	**ccd 1**	**ccd 2**	**ccd 3**	**ccd 6**	**ccd 7**
grade 0 events	3266	3090	5220	3461	10807	2772
	11%	10%	14%	11%	25%	6%
grade 1 events	31	26	292	31	66	42
	0%	0%	0%	0%	0%	0%
grade 2 events	1123	1229	1713	1266	2753	4972
	3%	4%	4%	4%	6%	11%
grade 3 events	516	511	679	521	983	2262
	1%	1%	1%	1%	2%	5%
grade 4 events	476	543	684	528	1029	2354
	1%	1%	1%	1%	2%	5%
grade 5 events	1139	1290	1348	1257	1448	4163
	3%	4%	3%	4%	3%	10%
grade 6 events	928	982	1174	994	1832	11678
	3%	3%	3%	3%	4%	28%
grade 7 events	21161	20538	23923	23184	24180	13200
	73%	72%	68%	74%	56%	31%

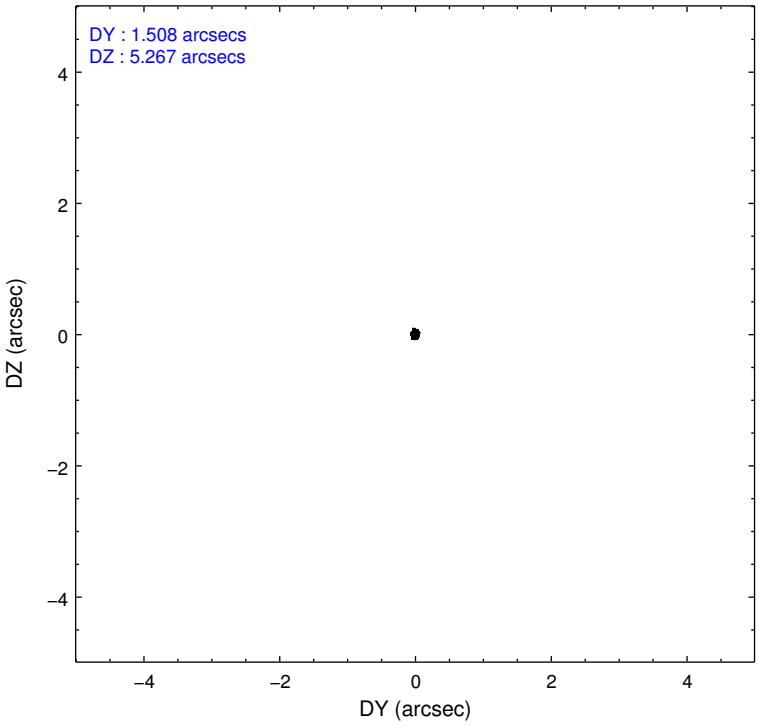
2.2 Compared Parameters

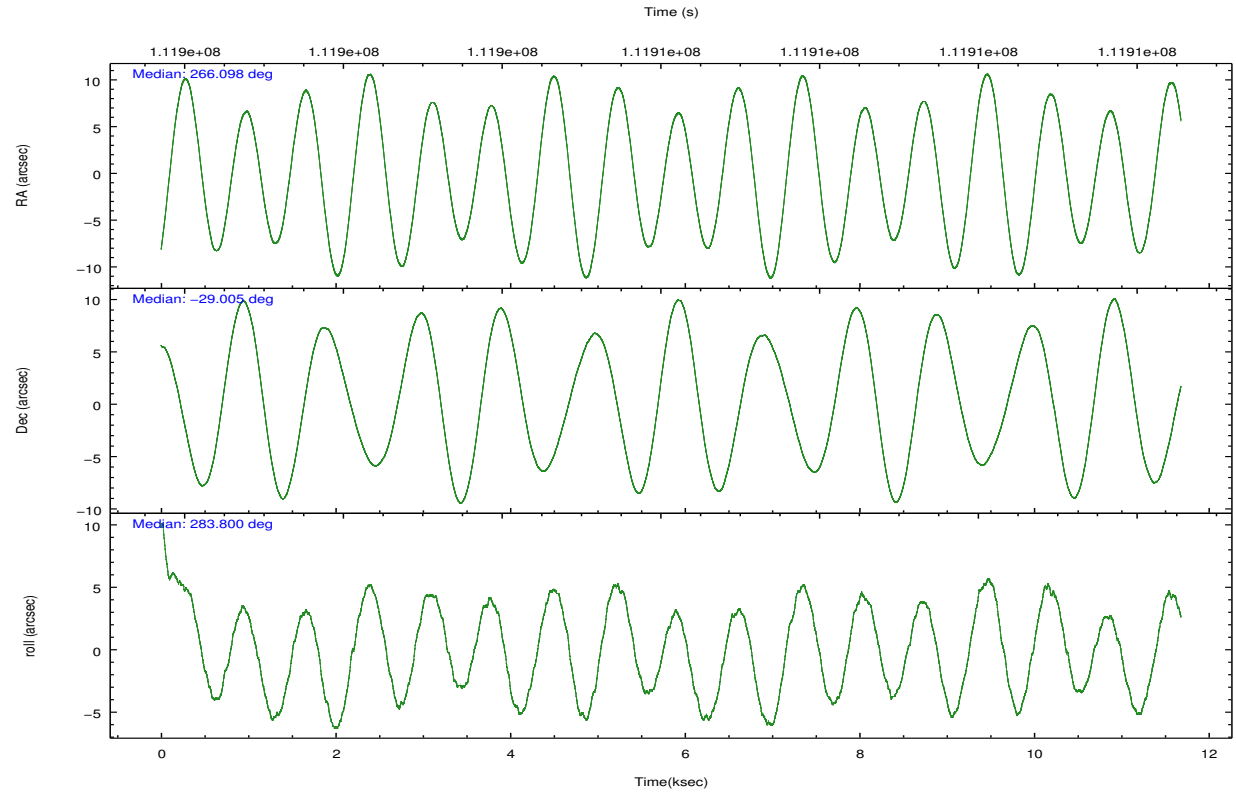
Parameter	Planned	Actual
Instrument	ACIS	ACIS
Detector	ACIS-012367	ACIS-012367
Grating	NONE	NONE
Data mode	FAINT	FAINT
Observation mode	POINTING	POINTING
[deg] Pointing RA	266.075893	266.0976930362054
[deg] Pointing Dec	-28.985598	-29.00540566081022
[deg] Pointing Roll	283.588042	283.8073028268839
[deg] Roll angle	283.600000	283.600000
[deg] Roll tolerance	2.000000	2.000000
Roll constraint allows 180D rotation	N	N
[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)	111900464.184000	111900088.29295
Observation start date	2001-07-19T03:26:40	2001-07-19T03:21:28
[s] Observation end time (MET)	111911964.184000	111912098.21842
Observation end date	2001-07-19T06:38:20	2001-07-19T06:41:38
Read mode	TIMED	TIMED

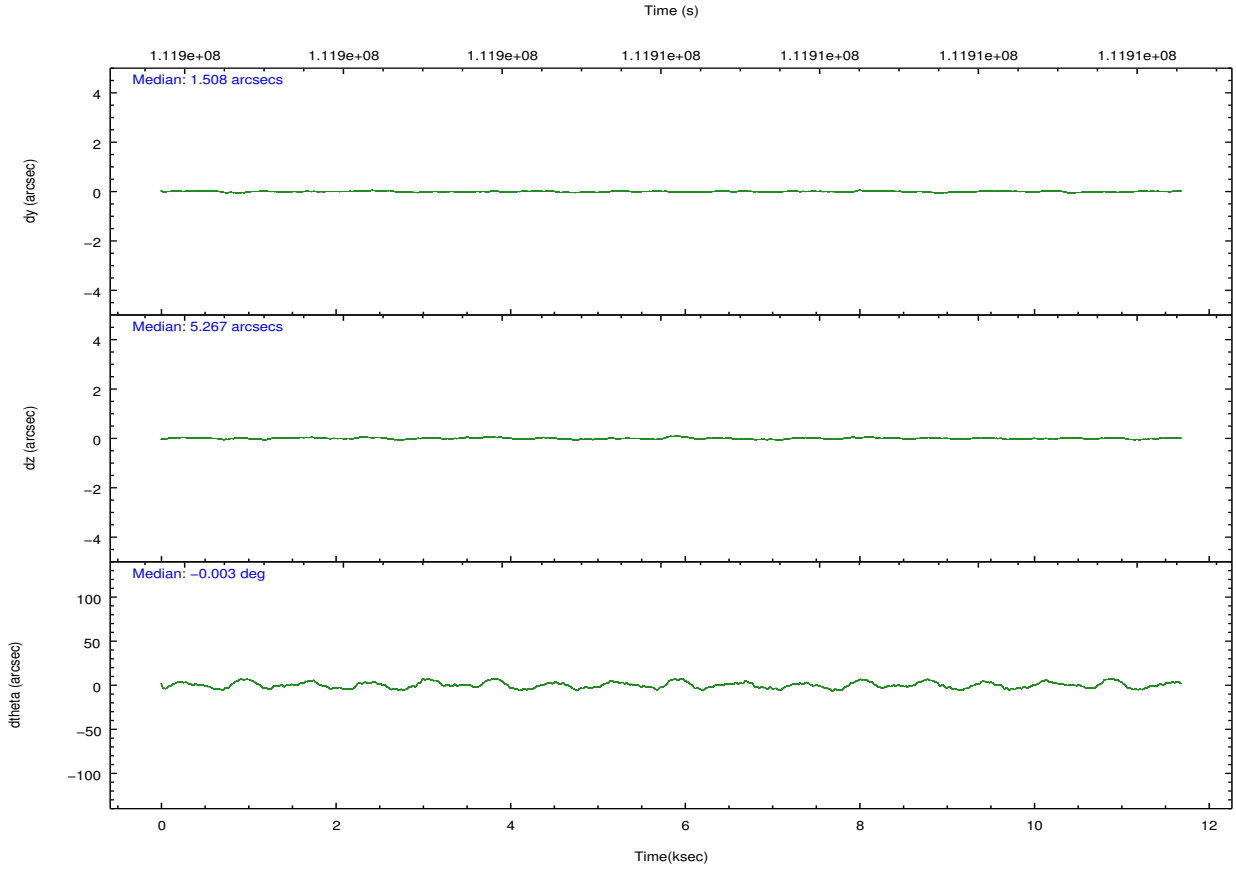
Parameter	Planned	Actual
Obspar format version number	7	7
Obspar file type	PREDICTED	ACTUAL
Obspar update status	NONE	UPDATED
Number of optional ACIS chips dropped	0	0
On-chip summing requested	N	N
Subarray requested	NONE	NONE
Alternating exposures requested	N	N
[s] Primary exposure time	0.000000	3.2

2.3 Aspect


RA : 266.098 deg
Dec : −29.005 deg
Dec (arcsec)
RA (arcsec)
10
5
0
−5
−10
−10
−5
0
5
10


DY : 1.508 arcsecs
DZ : 5.267 arcsecs
DZ (arcsec)
DY (arcsec)
4
2
0
−2
−4
−4
−2
0
2
4


Time (s)
1.119e+08
1.119e+08
1.119e+08
1.1191e+08
1.1191e+08
1.1191e+08
1.1191e+08
Median: 266.098 deg
RA (arcsec)
Median: −29.005 deg
Dec (arcsec)
Median: 283.800 deg
roll (arcsec)
Time(ksec)

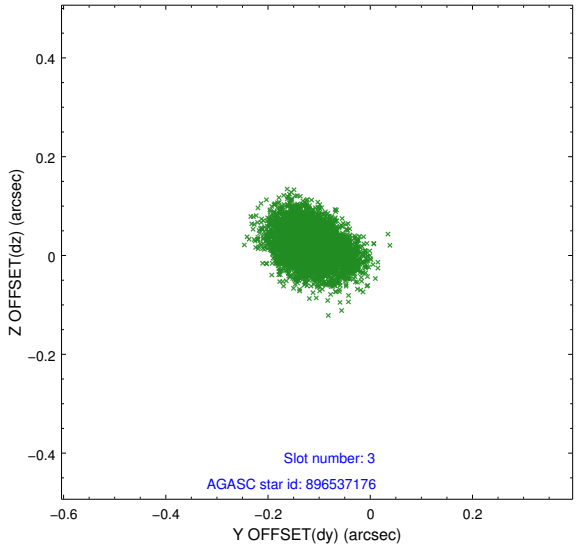

Time (s)
1.119e+08
1.119e+08
1.119e+08
1.1191e+08
1.1191e+08
1.1191e+08
1.1191e+08
Median: 1.508 arcsecs
dy (arcsec)
Median: 5.267 arcsecs
dz (arcsec)
Median: −0.003 deg
dtheta (arcsec)
Time(ksec)

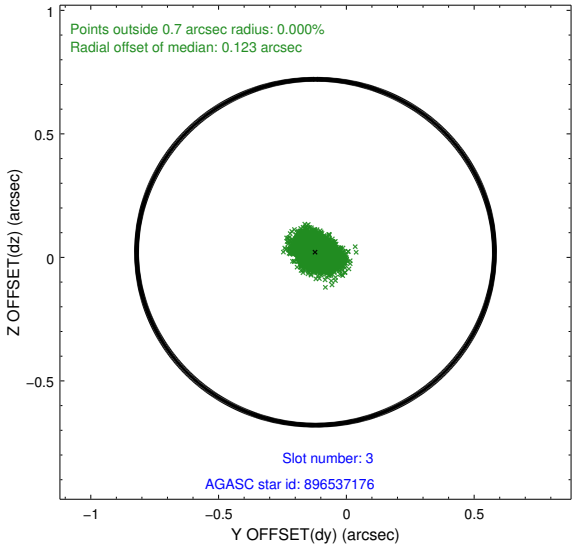
Slot Statistics

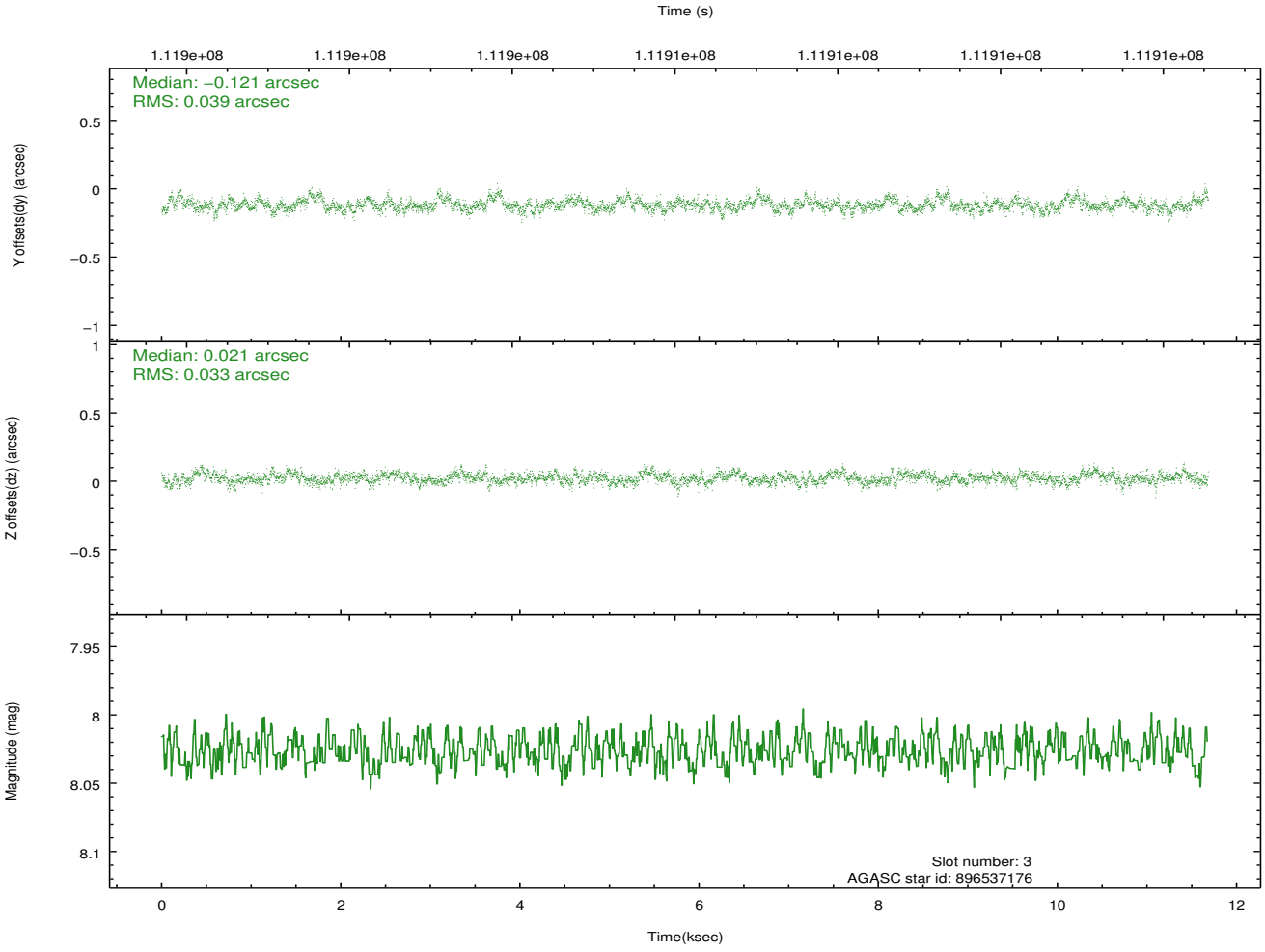
slot	status	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID	ACIS-I-2	7.15	2849	-0.029	-0.051	0.030	0.043	0.000000	0.000000	-755.86	-835.04
1	FID	ACIS-I-4	7.17	2849	-0.049	0.039	0.027	0.048	0.000000	0.000000	2157.96	1071.07
2	FID	ACIS-I-5	7.23	2848	-0.023	0.078	0.021	0.047	0.000000	0.000000	-1809.16	1069.36
3	GUIDE	896537176	8.03	5698	-0.121	0.021	0.053	0.091	266.498272	-28.678259	-759.09	1555.96
4	GUIDE	896540808	7.50	5699	-0.029	0.015	0.042	0.069	265.985401	-29.308604	1064.53	-548.96
5	GUIDE	896536320	8.97	5628	0.080	-0.074	0.063	0.101	266.369048	-29.307026	1343.28	622.30
6	GUIDE	896403224	8.29	5694	0.050	-0.007	0.058	0.094	265.612825	-29.438915	1249.52	-1795.05
7	GUIDE	896534664	8.19	5698	0.016	0.045	0.065	0.105	266.405570	-28.407461	-1775.39	1502.84

2.4 Star Slots

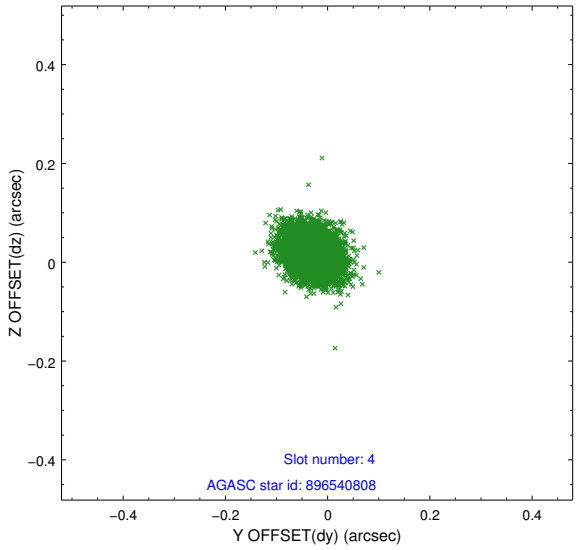
2.4.1 Slot 3

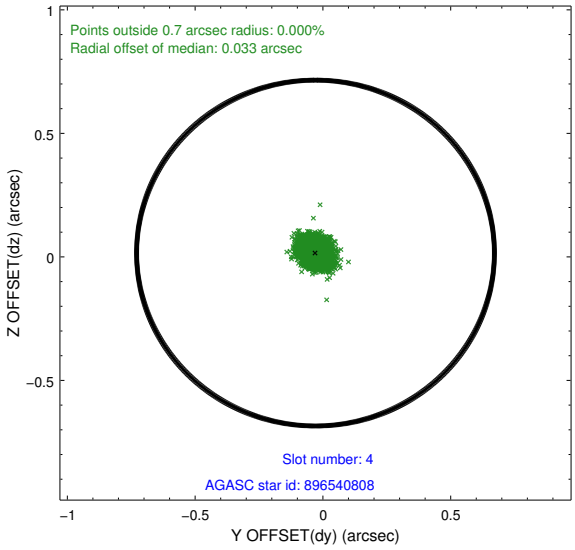


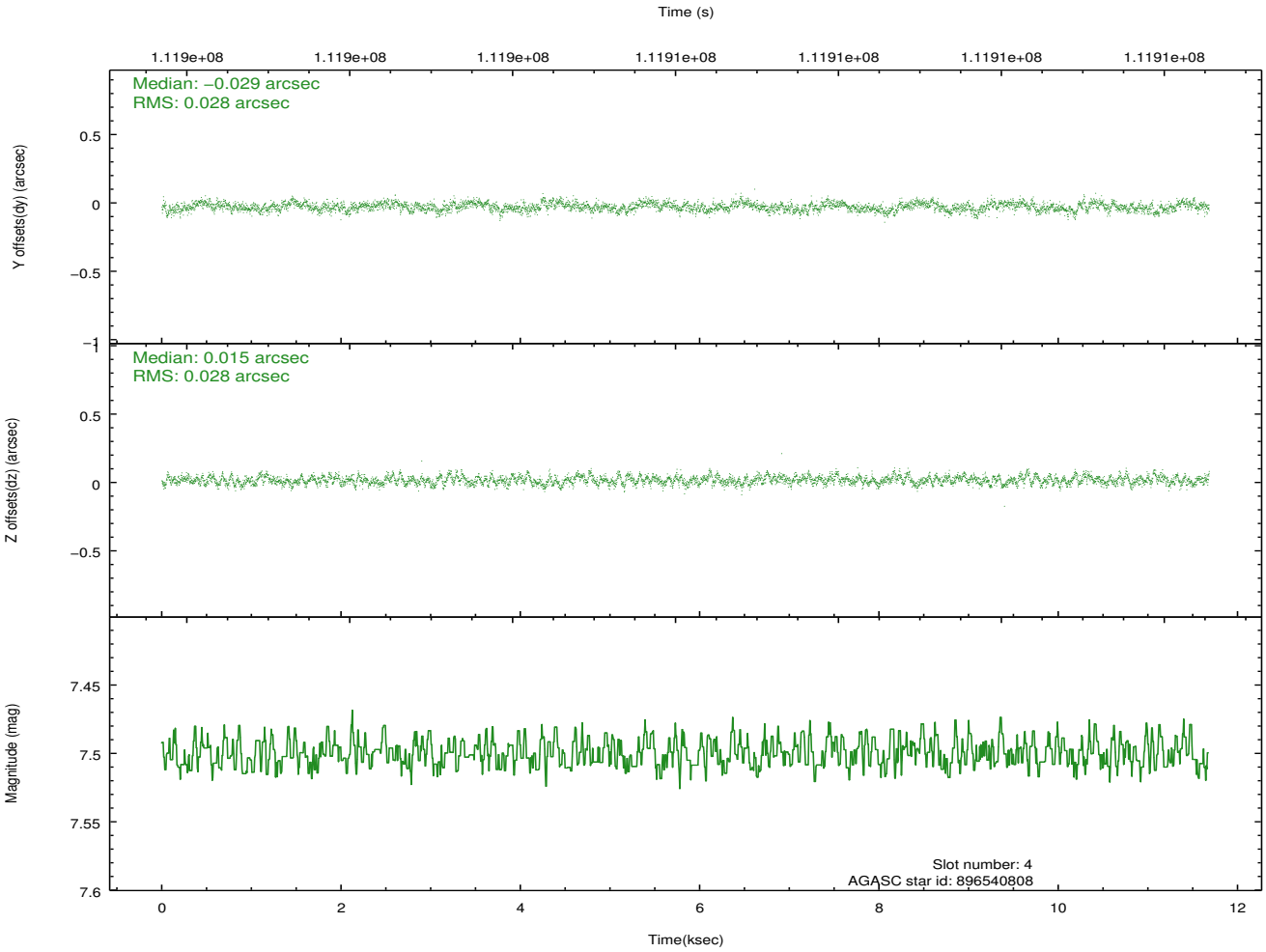




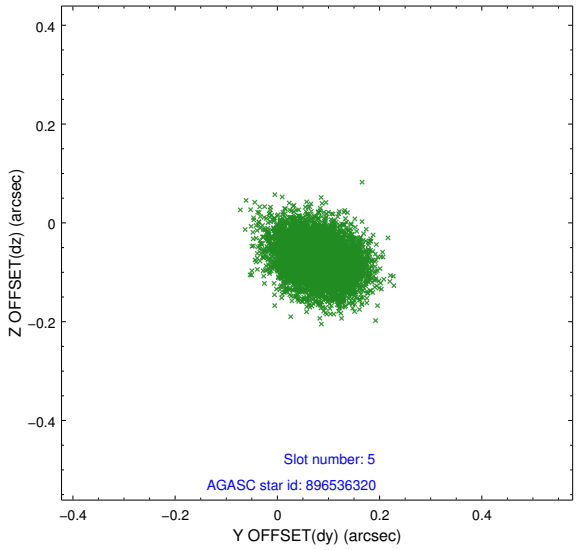
2.4.2 Slot 4

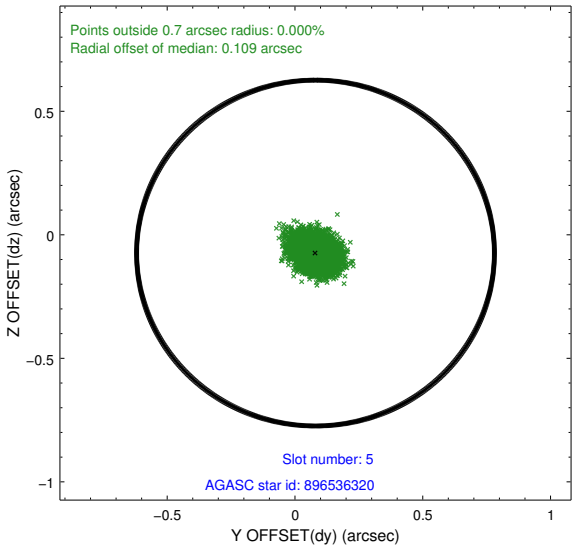

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 4
AGASC star id: 896540808

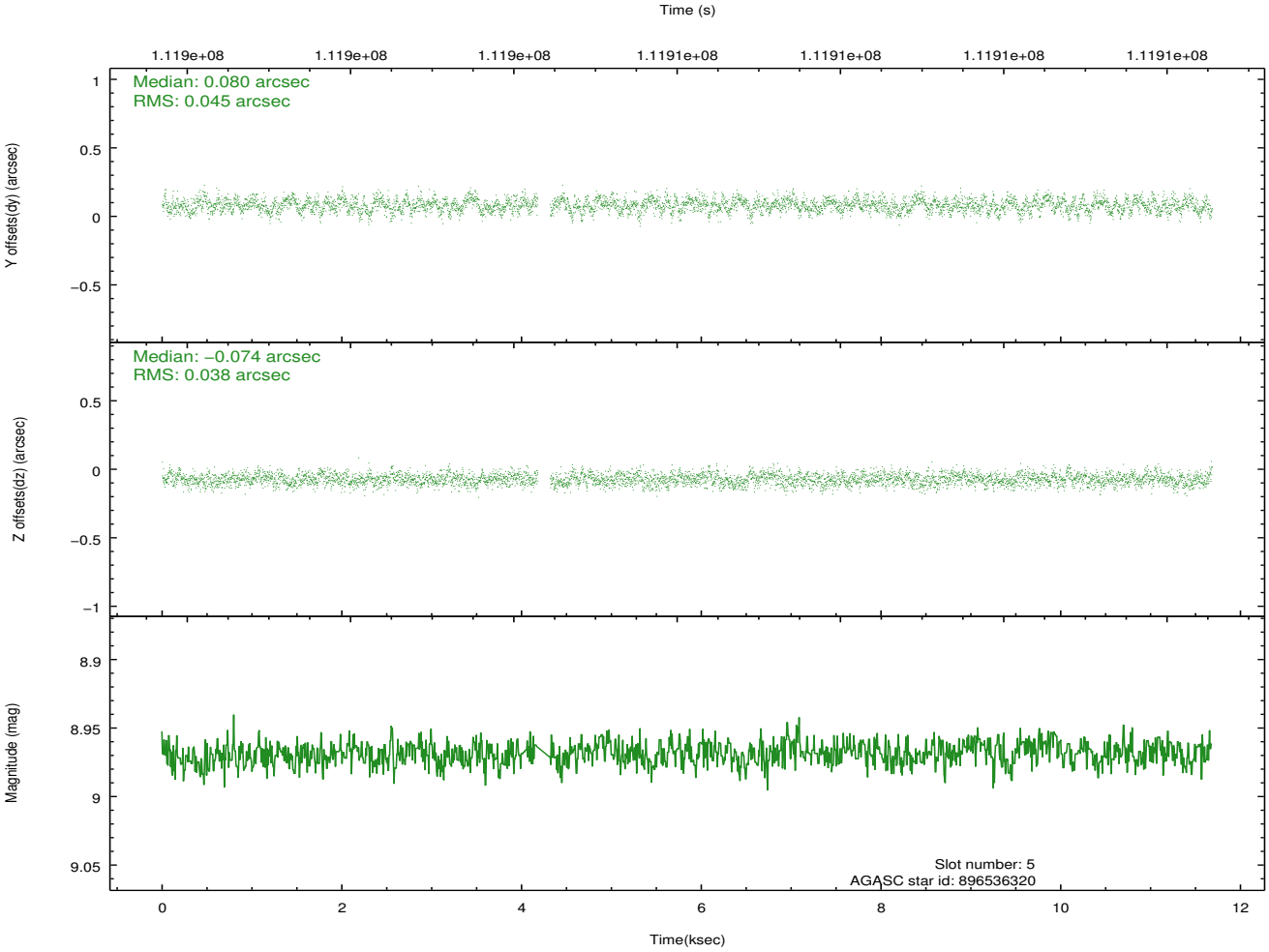

Points outside 0.7 arcsec radius: 0.000%
Radial offset of median: 0.033 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 4
AGASC star id: 896540808


Time (s)
Median: −0.029 arcsec
RMS: 0.028 arcsec
Y offsets(dy) (arcsec)
Median: 0.015 arcsec
RMS: 0.028 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number: 4
AGASC star id: 896540808
Time(ksec)

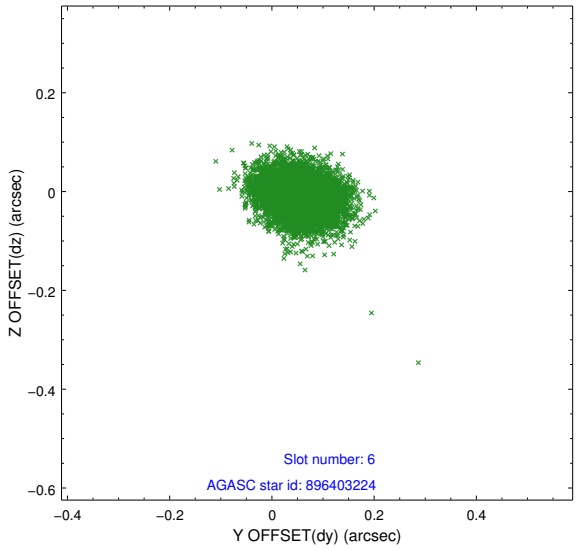
2.4.3 Slot 5

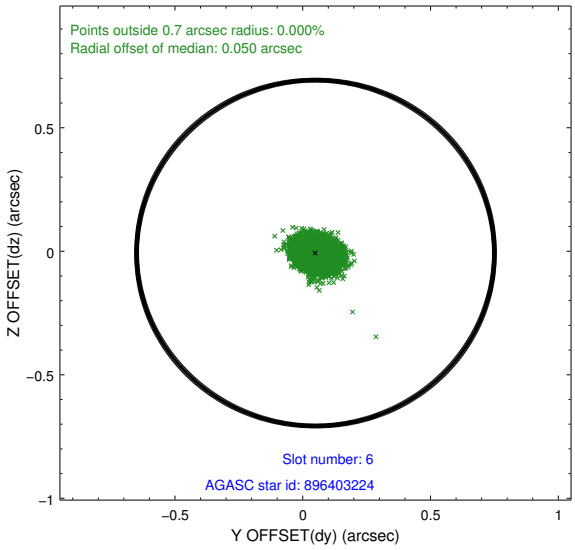

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 5
AGASC star id: 896536320

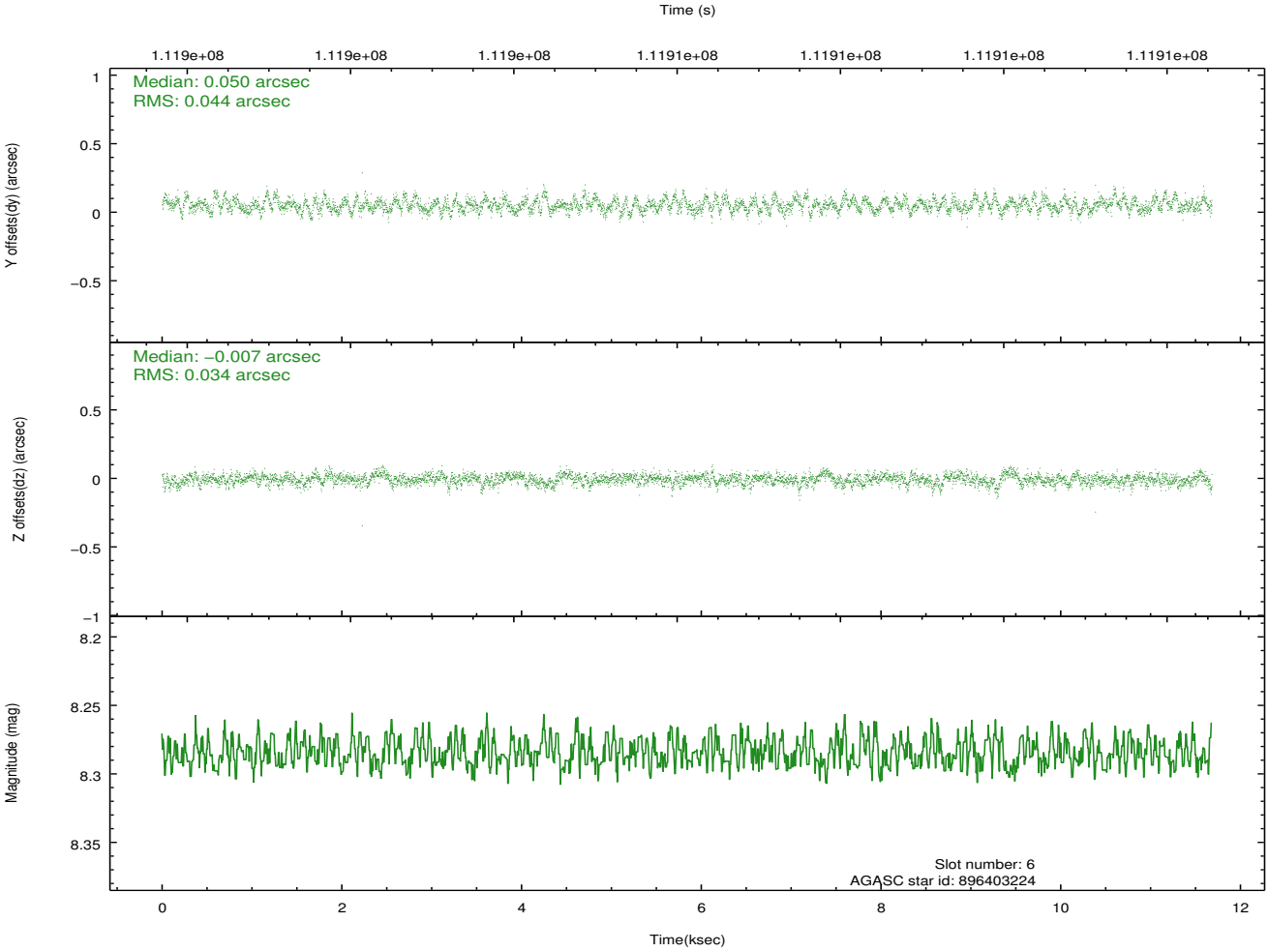

Points outside 0.7 arcsec radius: 0.000%
Radial offset of median: 0.109 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 5
AGASC star id: 896536320


Time (s)
Median: 0.080 arcsec
RMS: 0.045 arcsec
Y offsets(dy) (arcsec)
Median: −0.074 arcsec
RMS: 0.038 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number: 5
AGASC star id: 896536320
Time(ksec)

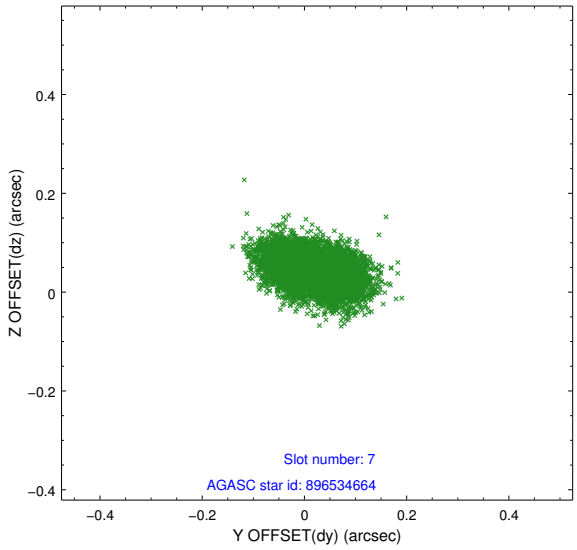
2.4.4 Slot 6

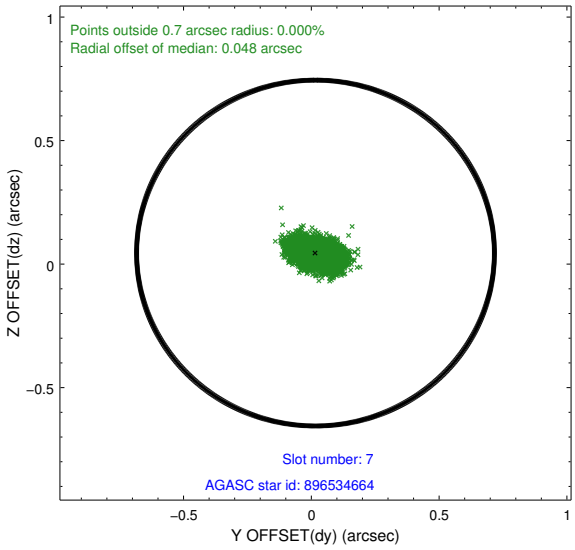

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 6
AGASC star id: 896403224

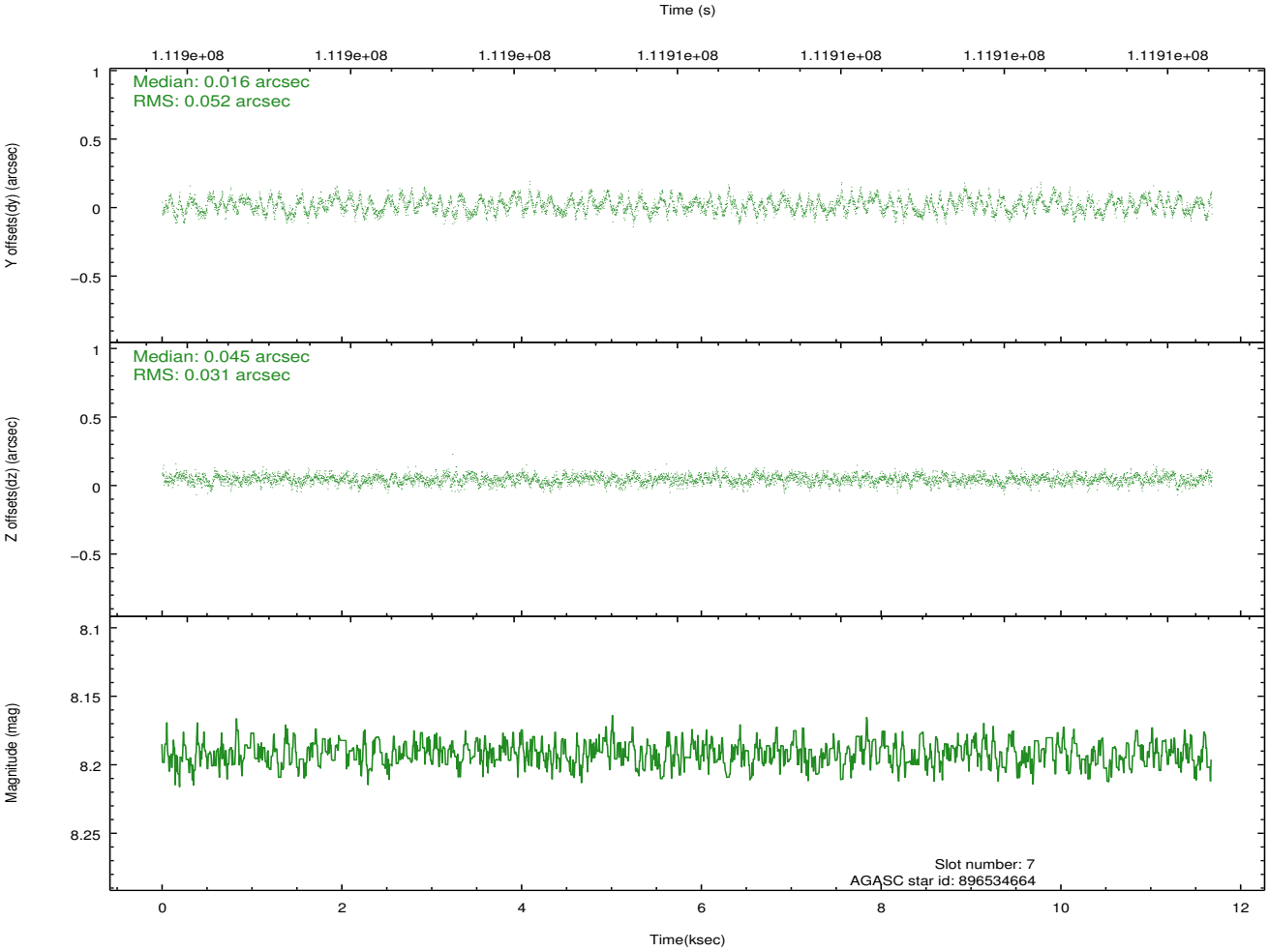

Points outside 0.7 arcsec radius: 0.000%
Radial offset of median: 0.050 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 6
AGASC star id: 896403224


Time (s)
Median: 0.050 arcsec
RMS: 0.044 arcsec
Y offsets(dy) (arcsec)
Median: −0.007 arcsec
RMS: 0.034 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number: 6
AGASC star id: 896403224
Time(ksec)

2.4.5 Slot 7

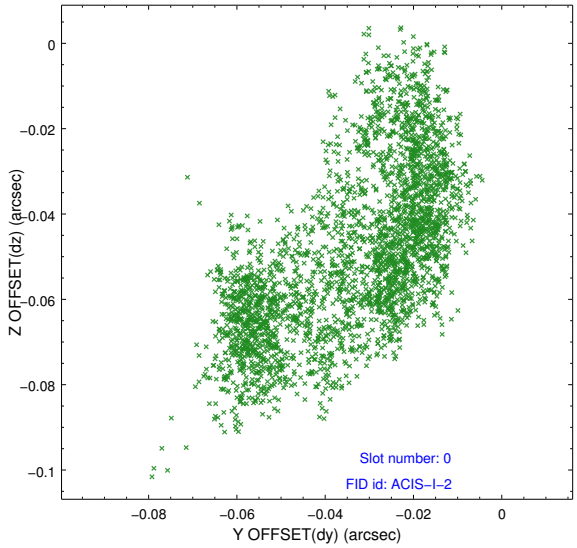

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 7
AGASC star id: 896534664

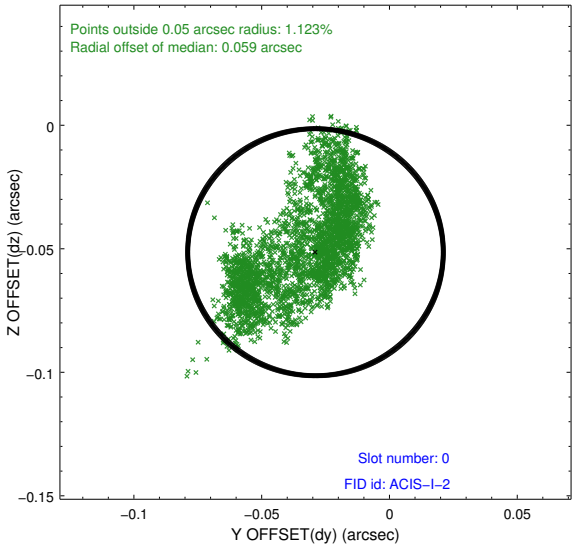

Points outside 0.7 arcsec radius: 0.000%
Radial offset of median: 0.048 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 7
AGASC star id: 896534664

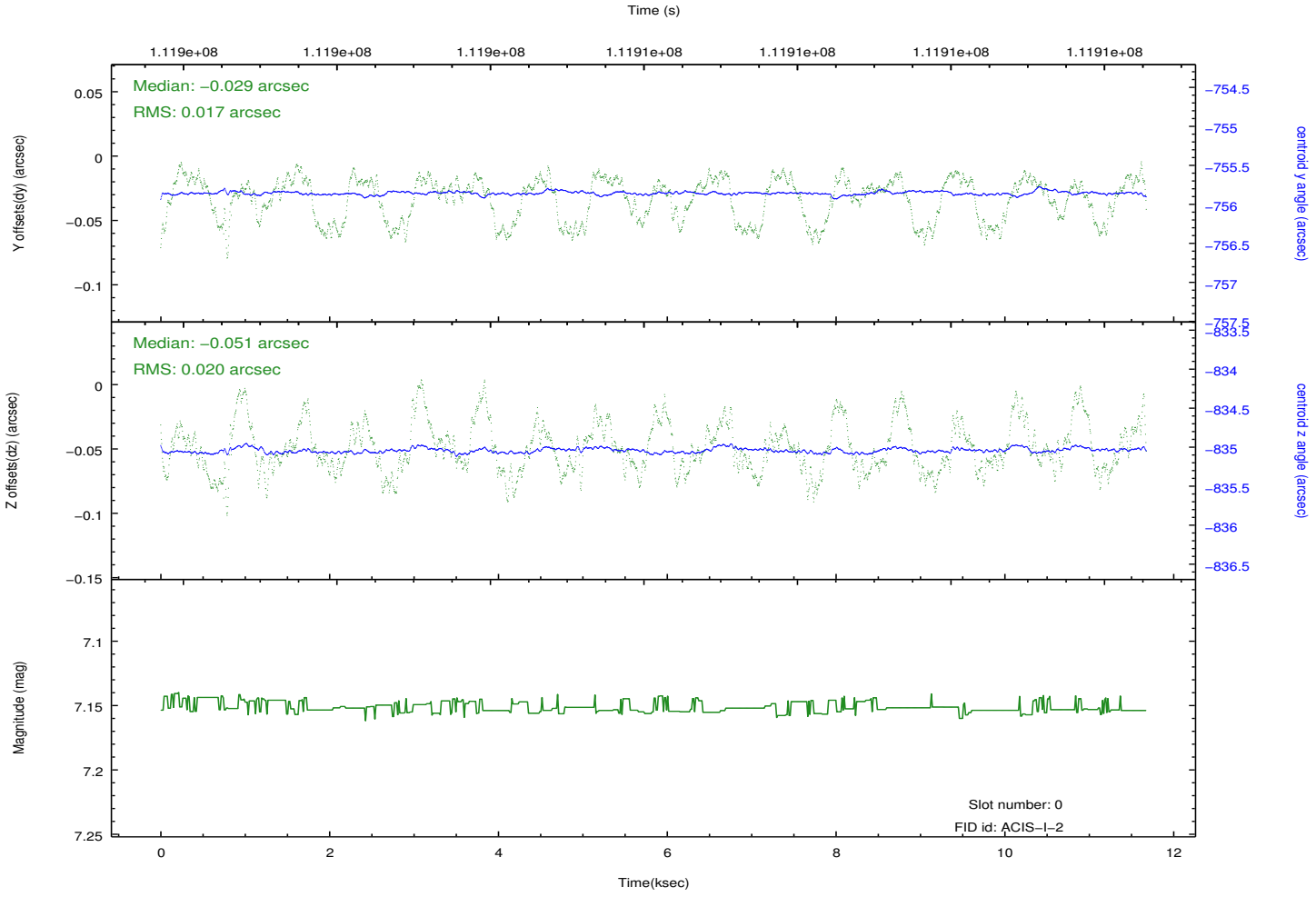

Time (s)
Median: 0.016 arcsec
RMS: 0.052 arcsec
Y offsets(dy) (arcsec)
Median: 0.045 arcsec
RMS: 0.031 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number: 7
AGASC star id: 896534664
Time(ksec)

2.5 FID Slots

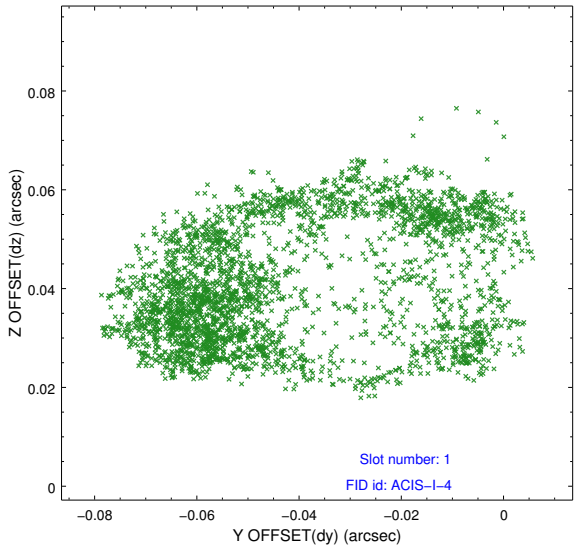
2.5.1 Slot 0

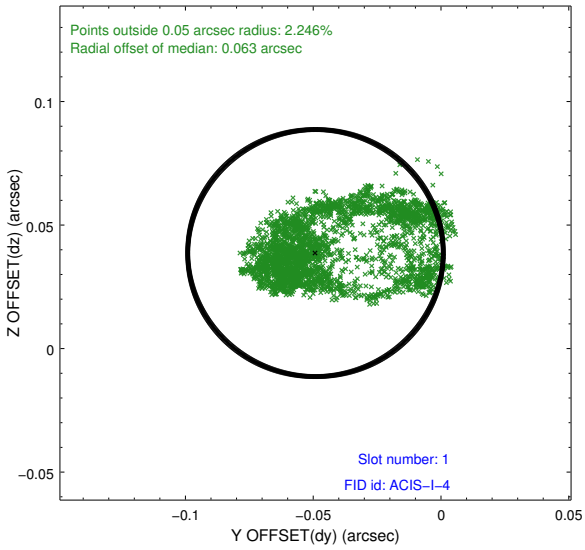


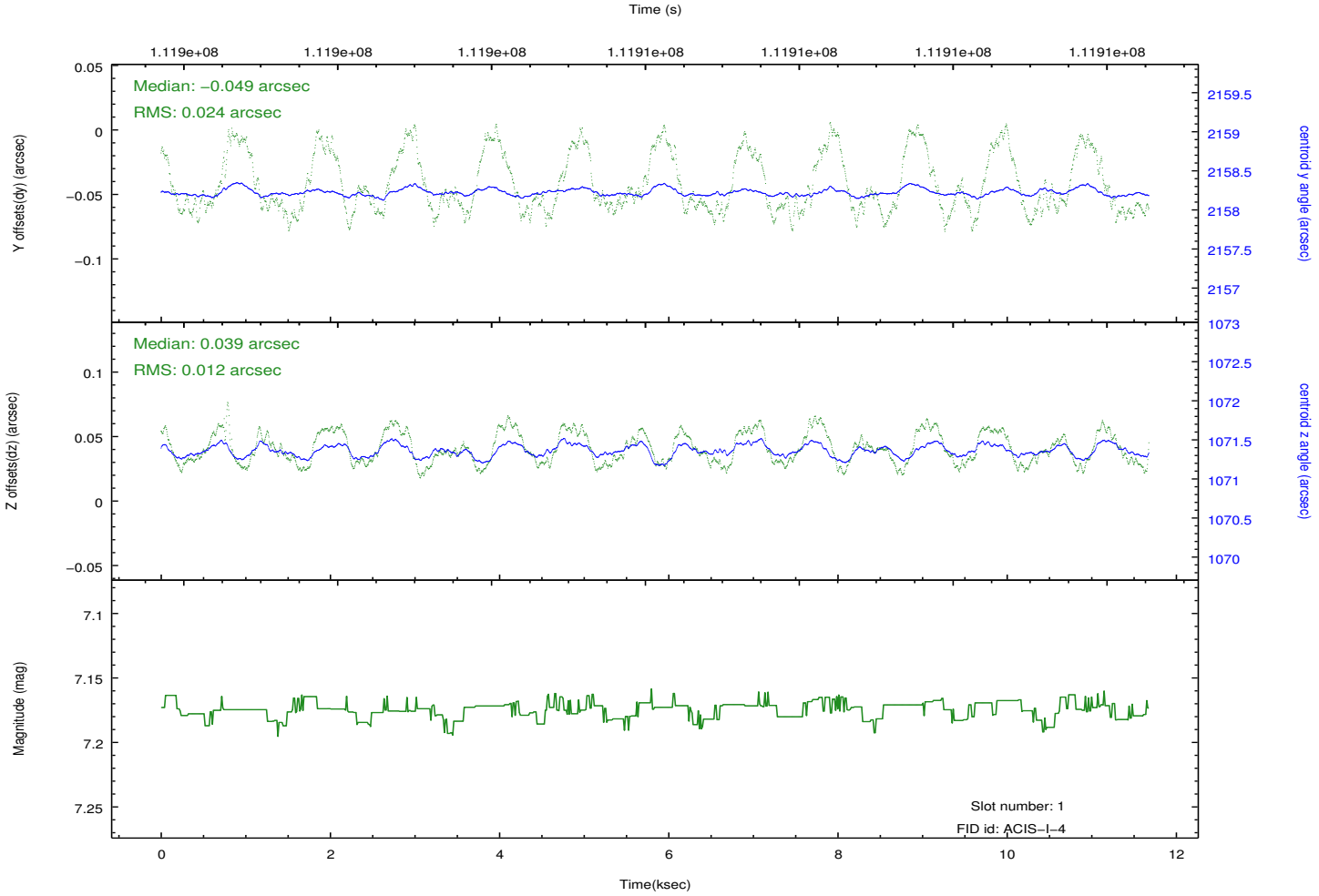




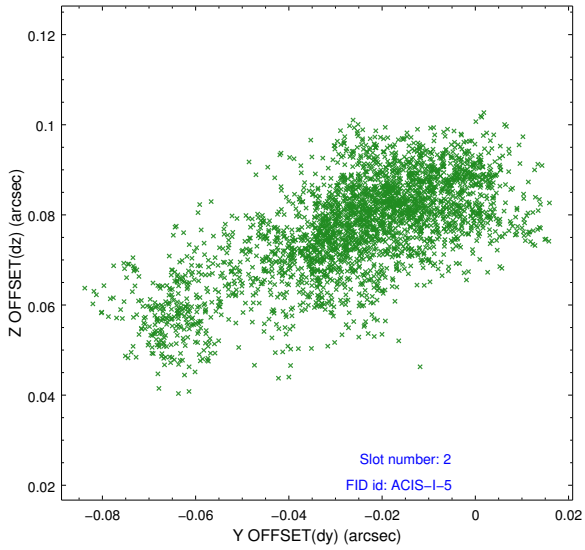
2.5.2 Slot 1

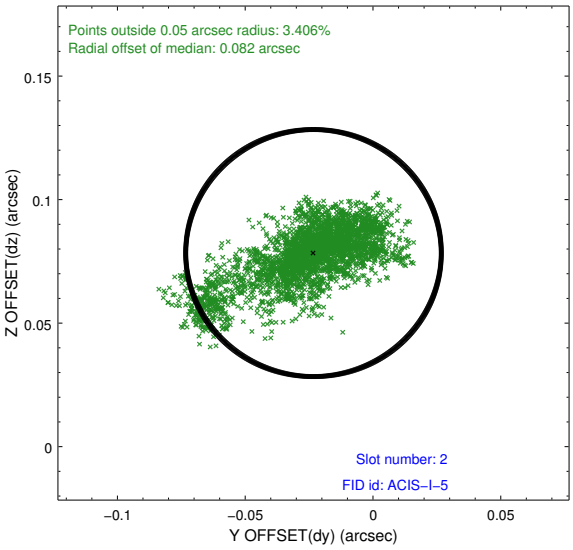

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 1
FID id: ACIS−I−4

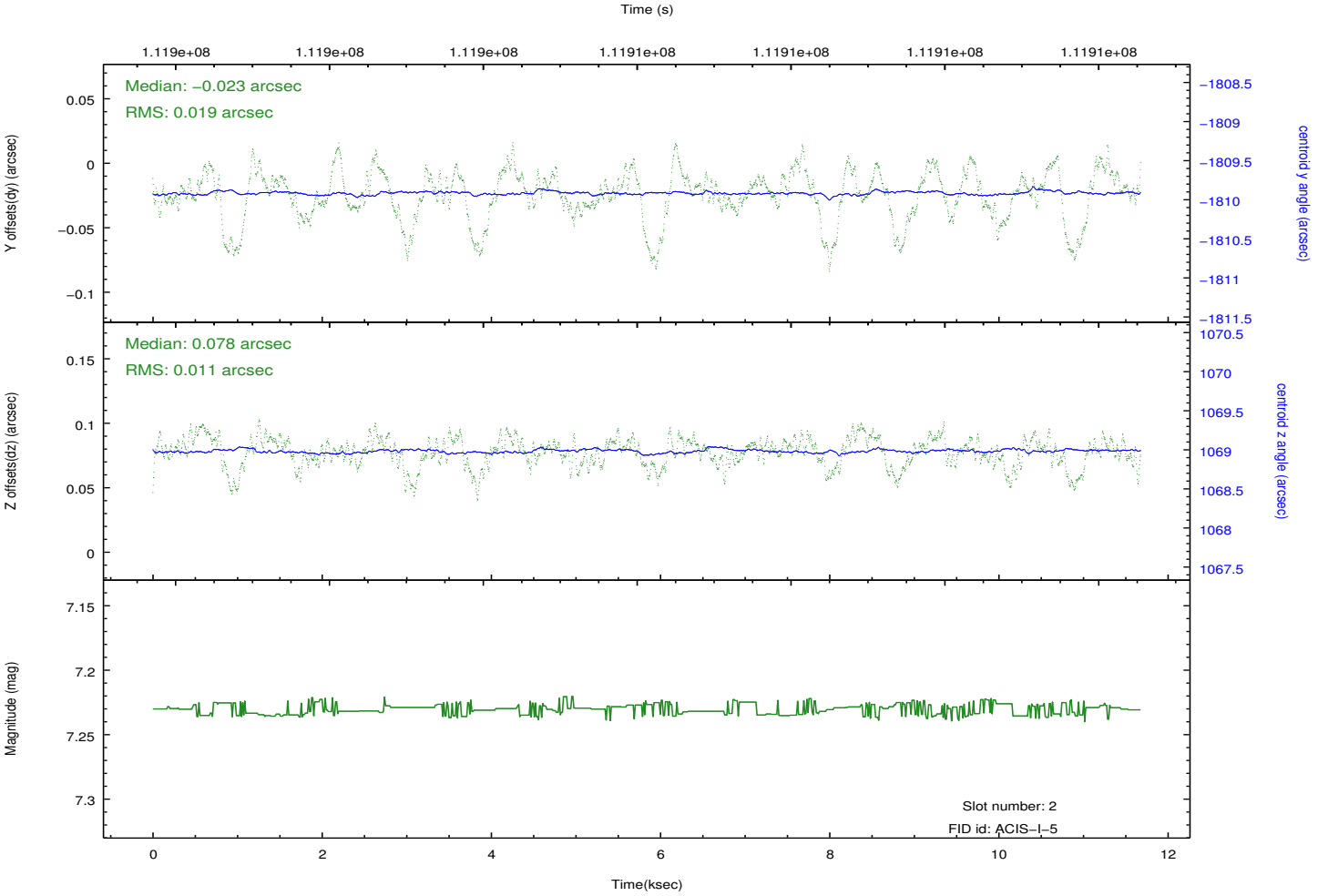

Points outside 0.05 arcsec radius: 2.246%
Radial offset of median: 0.063 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 1
FID id: ACIS−I−4


Time (s)
Median: −0.049 arcsec
RMS: 0.024 arcsec
Y offsets(dy) (arcsec)
centroid y angle (arcsec)
Median: 0.039 arcsec
RMS: 0.012 arcsec
Z offsets(dz) (arcsec)
centroid z angle (arcsec)
Magnitude (mag)
Slot number: 1
FID id: ACIS−I−4
Time(ksec)

2.5.3 Slot 2


Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 2
FID id: ACIS−I−5


Points outside 0.05 arcsec radius: 3.406%
Radial offset of median: 0.082 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 2
FID id: ACIS−I−5


Time (s)
Median: −0.023 arcsec
RMS: 0.019 arcsec
Y offsets(dy) (arcsec)
centroid y angle (arcsec)
Median: 0.078 arcsec
RMS: 0.011 arcsec
Z offsets(dz) (arcsec)
centroid z angle (arcsec)
Magnitude (mag)
Slot number: 2
FID id: ACIS−I−5
Time(ksec)

A Summary

A.1 Status

V&V Scientist	Jen Lauer
V&V Date (YYYY-MM-DD)	2012.10.25
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	11.3

A.2 Comments

```
Charge time for this ObsId remains at previous value of 11.3 ks although
with the current processing the charge time would have been 11.26 ksec.
Roll constraint met.
========
A spatial region of the original bias map for CCD = 1 suffered from
anomalously high data values. Pixels in the event data that were
bias-corrected by one of the original affected bias pixels may have an
apparent energy shift. While the change in energy is expected to be
small (~20 eV), it depends on many parameters that have not yet been
fully explored for this bias anomaly. The bias map for CCD = 1 has been
reconstructed for this processing to remove this anomaly using scaled
data from a comparable bias map from another observation. The pixels
affected by the anomaly are bounded by sky coords:
(265.98705,-28.88932),(265.98281,-28.89023),(265.98722,-28.90599),(265.9
9145,-28.90508)
```