V&V Reference Report
L2 ASCDS Version : 8.4.5

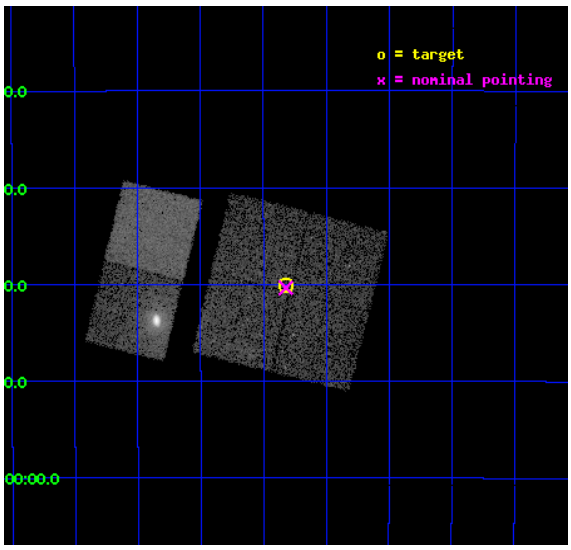
Observation 2279 - L2 Version 4
Chandra X-Ray Center

L2 Processing Date : Oct 18 2012

Contents

1 Front

seq_num	900106	Sequence number
obs_id	2279	Observation id
title	CHANDRA SURVEY OF THE GALACTIC RIDGE AROUND THE MILKY WAY CENTER	P
observer	Prof. Q. Daniel Wang	Principal investigator
object	GCS 12	Source name
dtycycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	266.3311	Observer's specified target RA [deg]
dec_targ	-28.6681	Observer's specified target Dec [deg]
ra_nom	266.33028335011	Nominal RA [deg]
dec_nom	-28.672789295531	Nominal Dec [deg]
roll_nom	283.80730184468	Nominal Roll [deg]
revision	4	Processing version of data
ontime	11756.7590307	Sum of GTIs [s]
livetime	11607.887868783	Livetime [s]
ontime0	11760.000010937	Sum of GTIs [s]
ontime1	11760.000010937	Sum of GTIs [s]
ontime2	11760.000010937	Sum of GTIs [s]
ontime3	11756.7590307	Sum of GTIs [s]
ontime6	11760.000010937	Sum of GTIs [s]
ontime7	11760.000010937	Sum of GTIs [s]
l2events	75874	Number of level 2 events

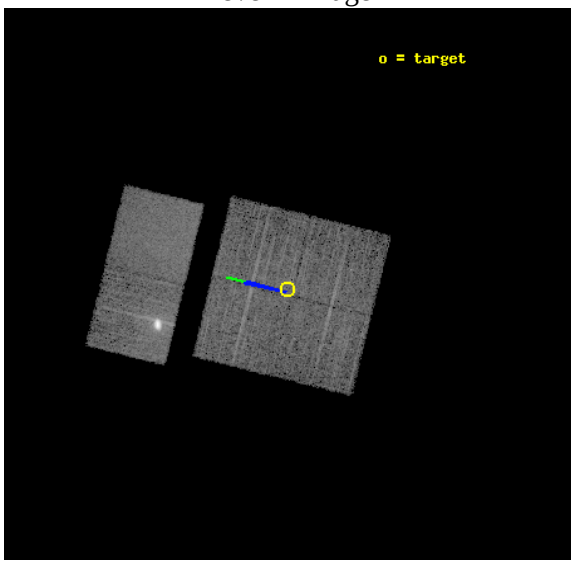


2 OBI

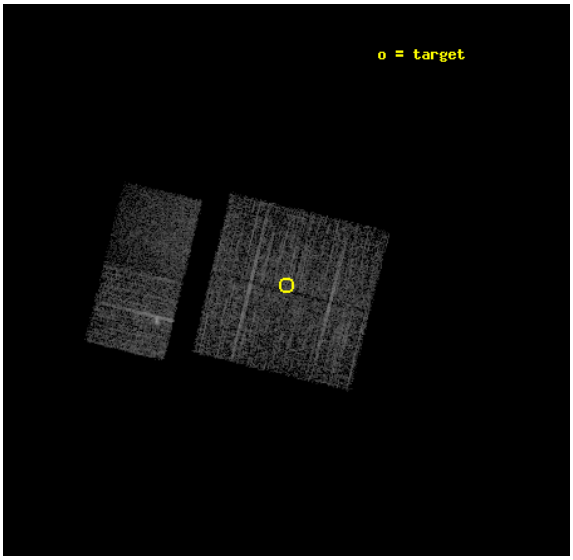
2.1 OBI

2.1.1 Images

Level 1 Image

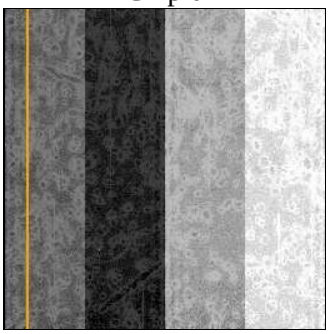


Level 1 Bad Events

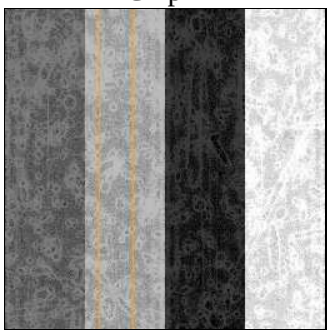


2.1.2 Bias

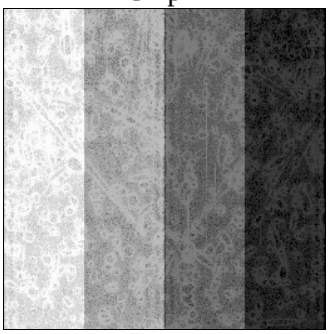
Chip 0



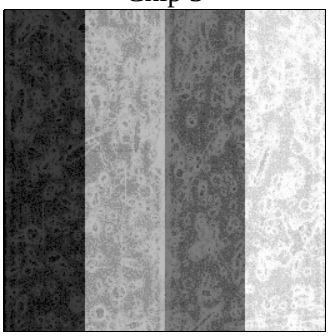
Chip 1



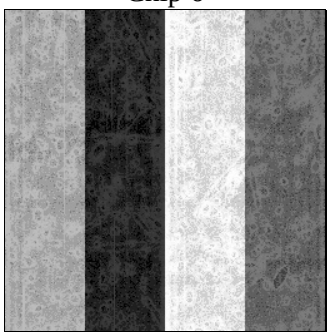
Chip 2



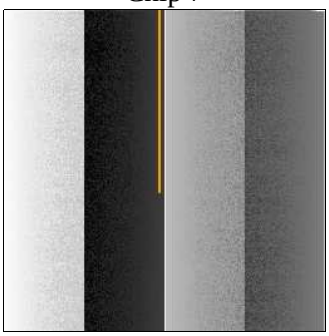
Chip 3



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	2012-10-18T20:28:55	Date and time of file creation
revision	4	Processing version of data

sched_exp_time	12000.000000	[s] Scheduled observation exposure time
ontime	11756.7590307	Sum of GTIs [s]
ontime0	11760.000010937	Sum of GTIs [s]
ontime1	11760.000010937	Sum of GTIs [s]
ontime2	11760.000010937	Sum of GTIs [s]
ontime3	11756.7590307	Sum of GTIs [s]
ontime6	11760.000010937	Sum of GTIs [s]
ontime7	11760.000010937	Sum of GTIs [s]
l1events	227596	Number of level 1 events

2.1.4 Events

	ccd 0	ccd 1	ccd 2	ccd 3	ccd 6	ccd 7
level 1 events	30792	30218	35100	32704	58375	40407
rejected events	24131	23723	26504	25836	28440	18320
rejected %	78%	78%	75%	78%	48%	45%

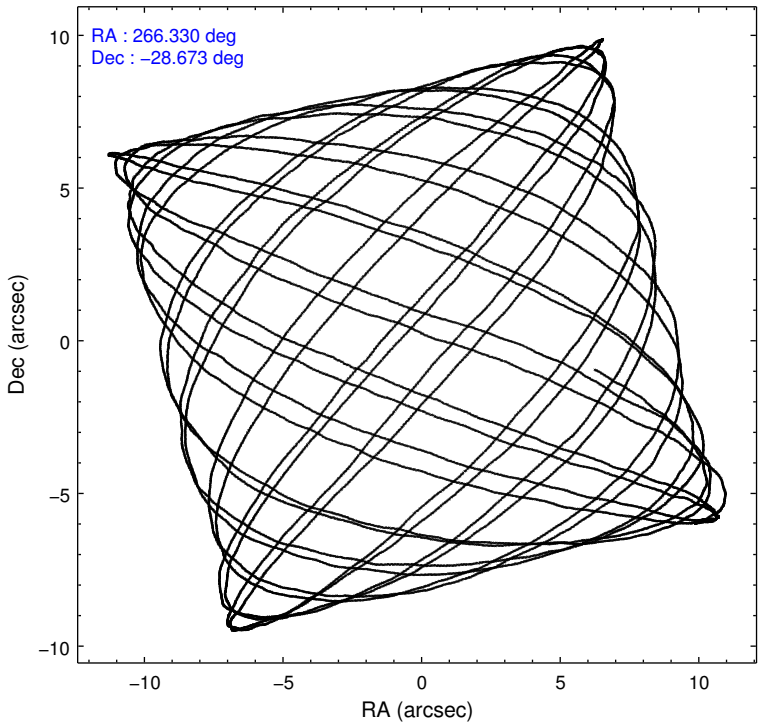
	ccd 0	ccd 1	ccd 2	ccd 3	ccd 6	ccd 7
grade 0 events	3430	3199	4934	3636	17666	2294
	11%	10%	14%	11%	30%	5%
grade 1 events	33	30	44	39	163	50
	0%	0%	0%	0%	0%	0%
grade 2 events	1304	1208	1458	1267	5038	4554
	4%	3%	4%	3%	8%	11%
grade 3 events	523	519	552	485	1802	2057
	1%	1%	1%	1%	3%	5%
grade 4 events	467	586	602	514	1880	2171
	1%	1%	1%	1%	3%	5%
grade 5 events	1220	1338	1126	1382	1657	4371
	3%	4%	3%	4%	2%	10%
grade 6 events	939	984	1053	969	3549	11015
	3%	3%	3%	2%	6%	27%
grade 7 events	22876	22354	25331	24412	26620	13895
	74%	73%	72%	74%	45%	34%

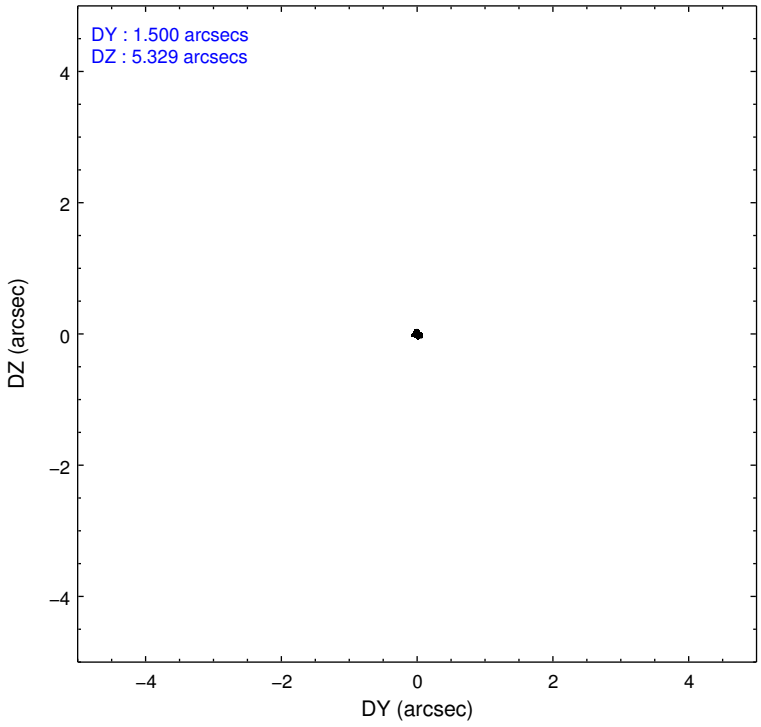
2.2 Compared Parameters

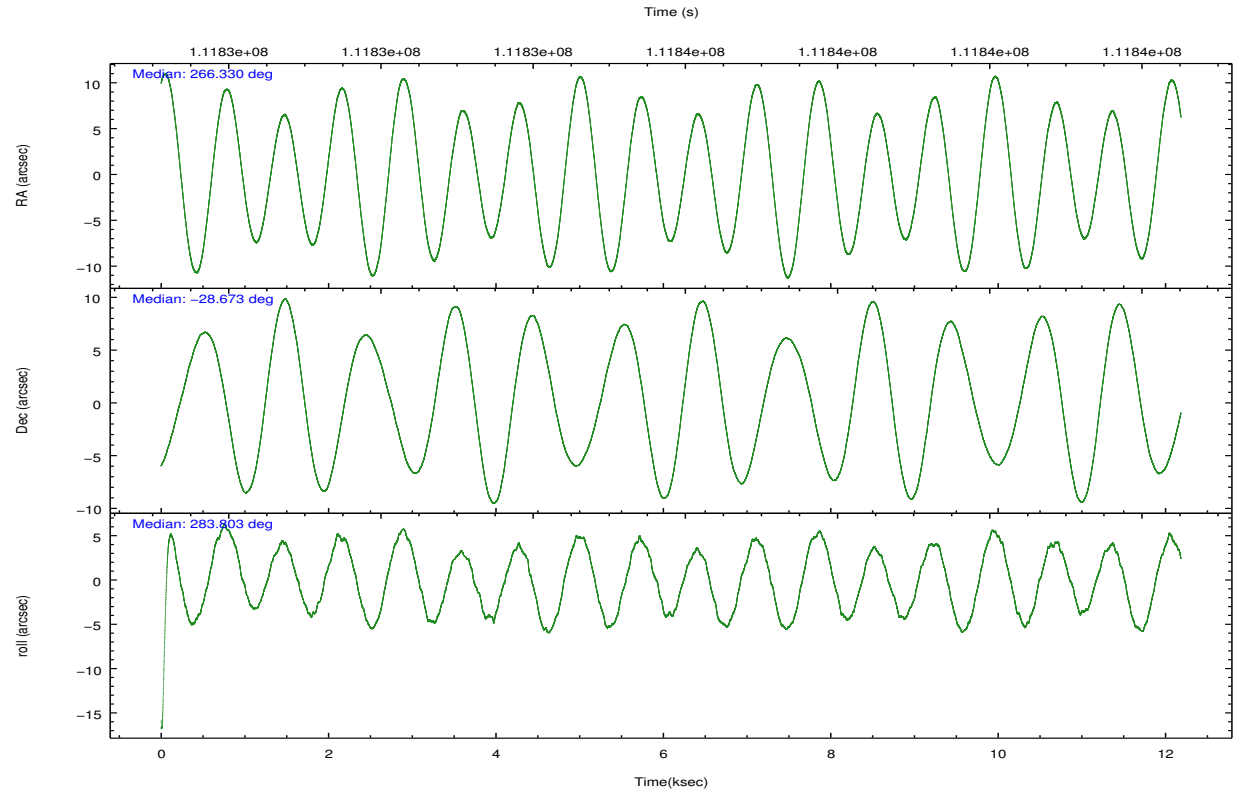
Parameter	Planned	Actual
Instrument	ACIS	ACIS
Detector	ACIS-012367	ACIS-012367
Grating	NONE	NONE
Data mode	FAINT	FAINT
Observation mode	POINTING	POINTING
[deg] Pointing RA	266.308573	266.3302833501133
[deg] Pointing Dec	-28.652986	-28.67278929553116
[deg] Pointing Roll	283.588196	283.8073018446759
[deg] 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)	111829904.184000	111829528.31519
Observation start date	2001-07-18T07:50:40	2001-07-18T07:45:28
[s] Observation end time (MET)	111841904.184000	111842038.44068
Observation end date	2001-07-18T11:10:40	2001-07-18T11:13:58
Read mode	TIMED	TIMED

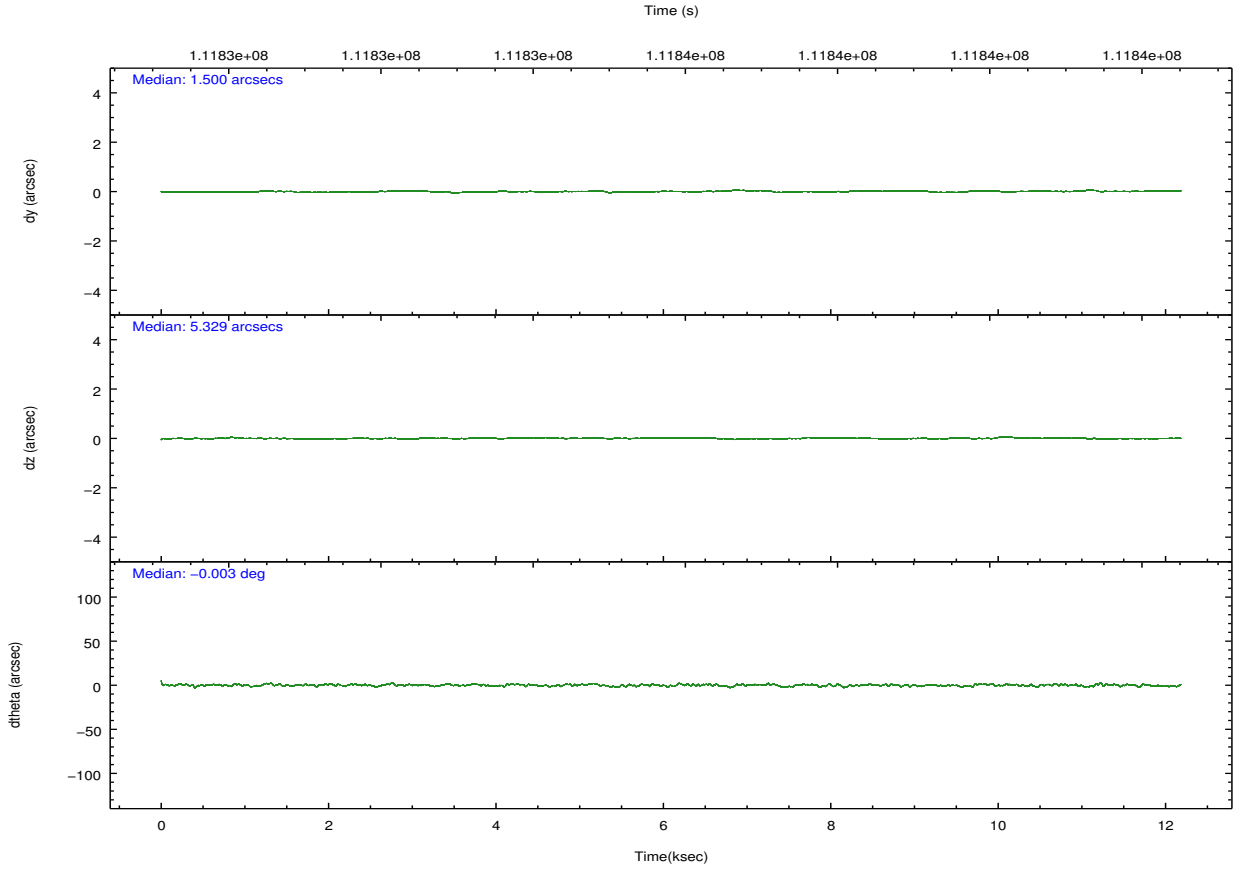
Parameter	Planned	Actual
Obspar format version number	7	7
Obspar file type	PREDICTED	ACTUAL
Obspar update status	NONE	UPDATED
Number of optional ACIS chips dropped	0	0
On-chip summing requested	N	N
Subarray requested	NONE	NONE
Alternating exposures requested	N	N
[s] Primary exposure time	0.000000	3.2

2.3 Aspect


RA : 266.330 deg
Dec : −28.673 deg
Dec (arcsec)
RA (arcsec)
10
5
0
−5
−10
−10
−5
0
5
10


DY : 1.500 arcsecs
DZ : 5.329 arcsecs
DZ (arcsec)
DY (arcsec)
4
2
0
−2
−4
−4
−2
0
2
4


Time (s)
1.1183e+08
1.1183e+08
1.1183e+08
1.1184e+08
1.1184e+08
1.1184e+08
1.1184e+08
Median: 266.330 deg
RA (arcsec)
Median: −28.673 deg
Dec (arcsec)
Median: 283.803 deg
roll (arcsec)
Time(ksec)

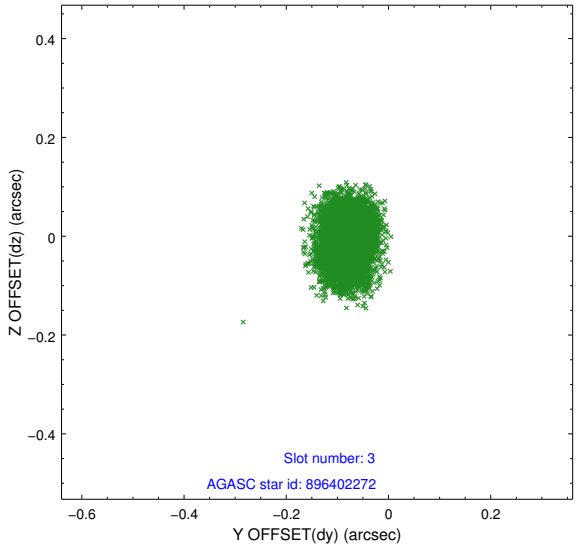

Time (s)
1.1183e+08
1.1183e+08
1.1183e+08
1.1184e+08
1.1184e+08
1.1184e+08
1.1184e+08
Median: 1.500 arcsecs
dy (arcsec)
Median: 5.329 arcsecs
dz (arcsec)
Median: −0.003 deg
dtheta (arcsec)
Time(ksec)

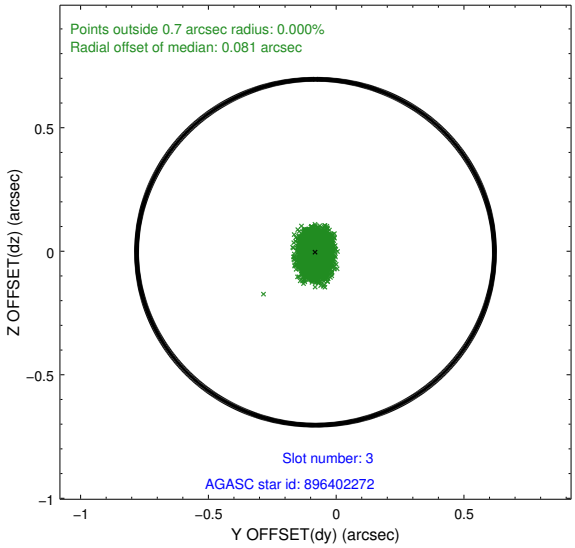
Slot Statistics

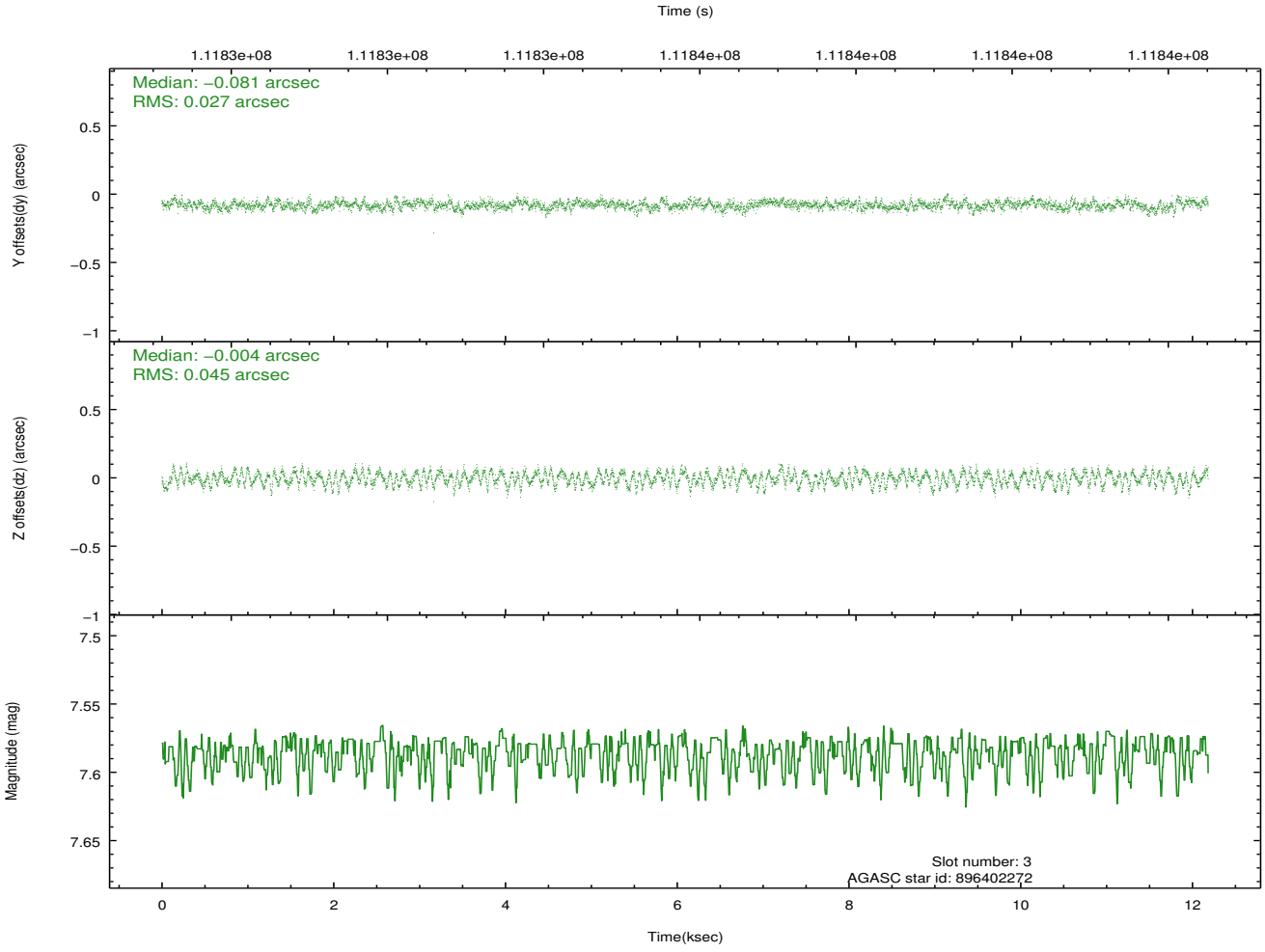
slot	status	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID	ACIS-I-2	7.15	2972	-0.051	-0.017	0.009	0.015	0.000000	0.000000	-755.87	-835.08
1	FID	ACIS-I-4	7.19	2972	-0.028	0.019	0.011	0.016	0.000000	0.000000	2157.99	1070.99
2	FID	ACIS-I-6	7.27	2972	-0.021	0.062	0.011	0.018	0.000000	0.000000	404.71	1713.65
3	GUIDE	896402272	7.58	5944	-0.081	-0.004	0.056	0.090	265.637294	-28.313189	-1682.80	-1781.72
4	GUIDE	896537176	8.01	5945	-0.021	-0.081	0.051	0.082	266.498272	-28.678259	229.58	560.93
5	GUIDE	896540808	7.52	5945	-0.028	0.043	0.049	0.084	265.985401	-29.308604	2057.58	-1540.31
6	GUIDE	896536320	8.99	5945	0.099	0.056	0.082	0.131	266.369048	-29.307026	2334.03	-368.28
7	GUIDE	896541576	8.18	5943	0.036	-0.010	0.071	0.115	267.051055	-28.762912	942.79	2183.28

2.4 Star Slots

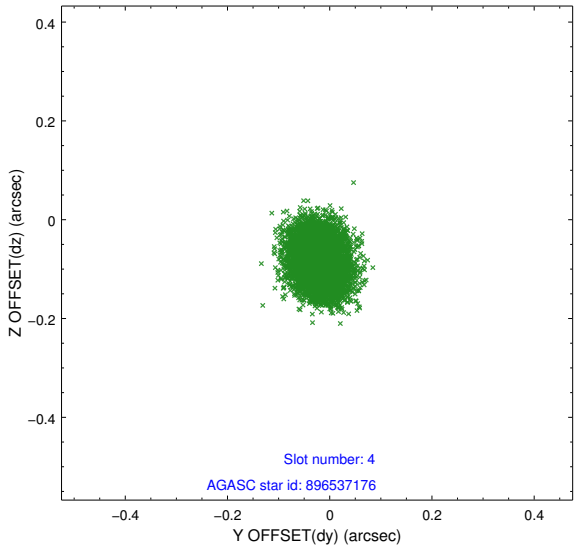
2.4.1 Slot 3

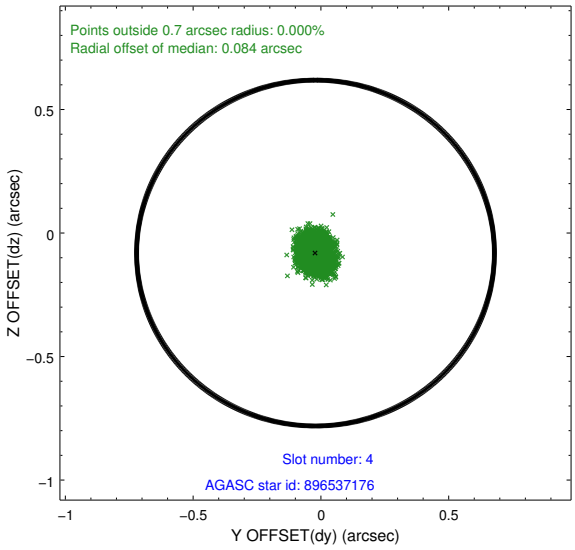


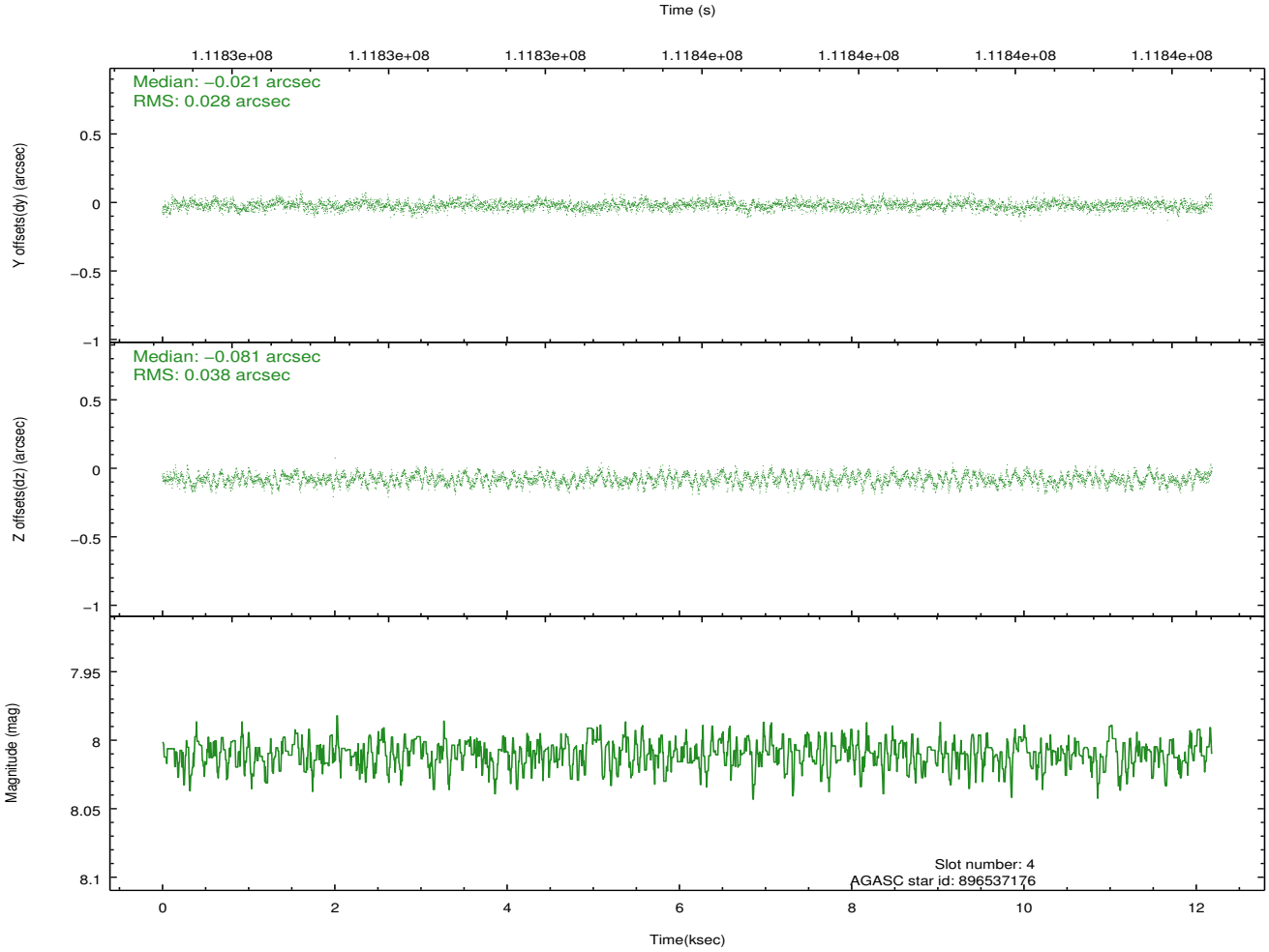




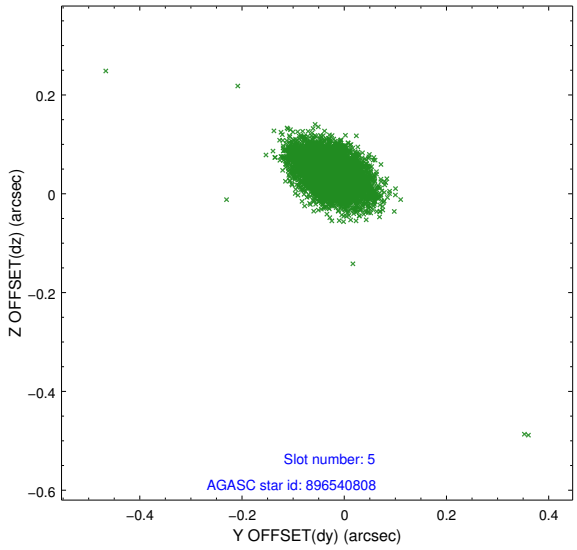
2.4.2 Slot 4

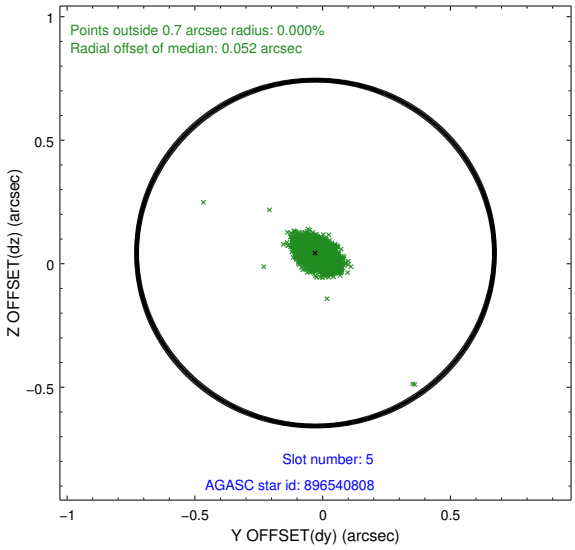

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 4
AGASC star id: 896537176

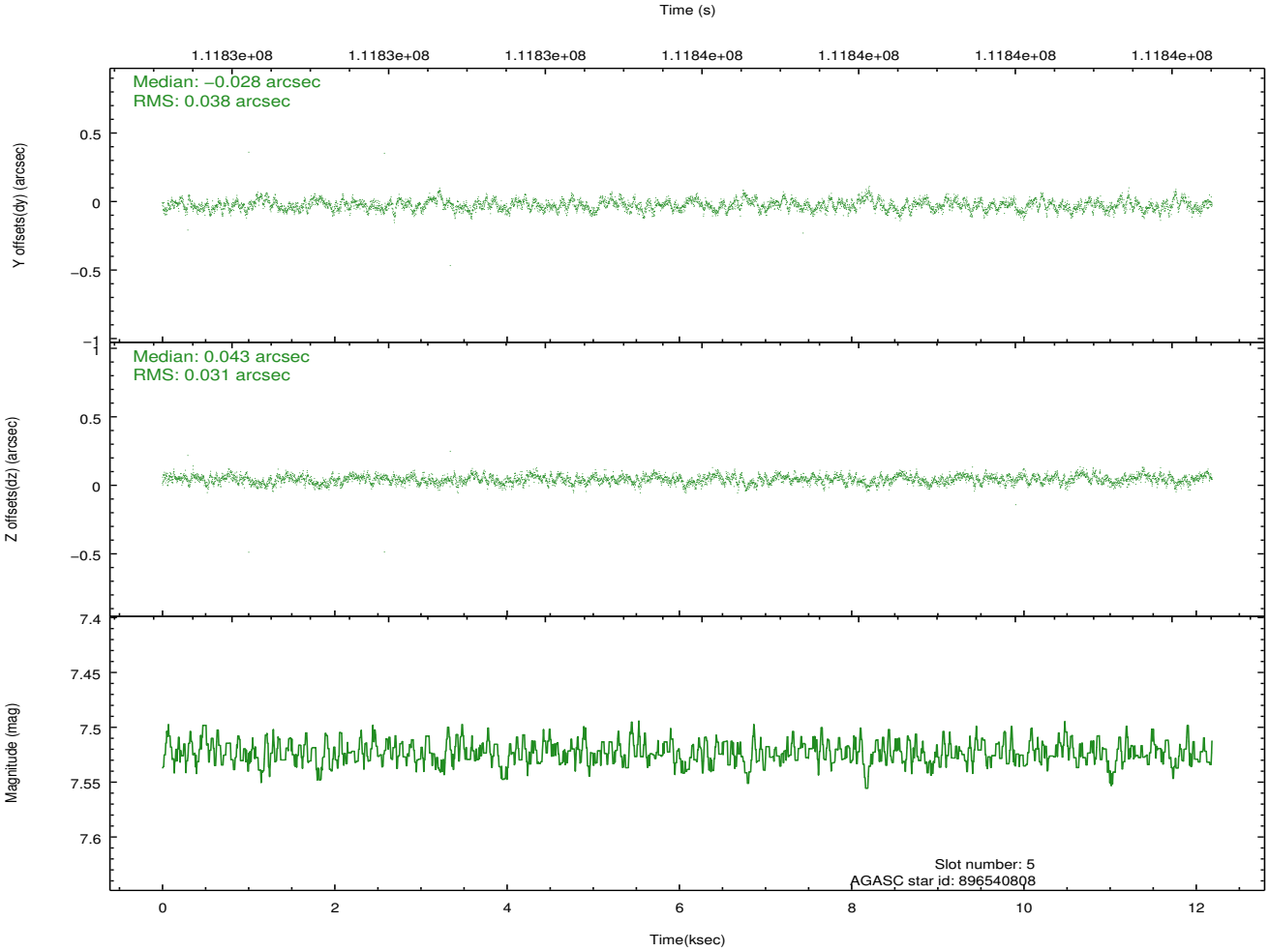

Points outside 0.7 arcsec radius: 0.000%
Radial offset of median: 0.084 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 4
AGASC star id: 896537176


Time (s)
Median: −0.021 arcsec
RMS: 0.028 arcsec
Y offsets(dy) (arcsec)
Median: −0.081 arcsec
RMS: 0.038 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number: 4
AGASC star id: 896537176
Time(ksec)

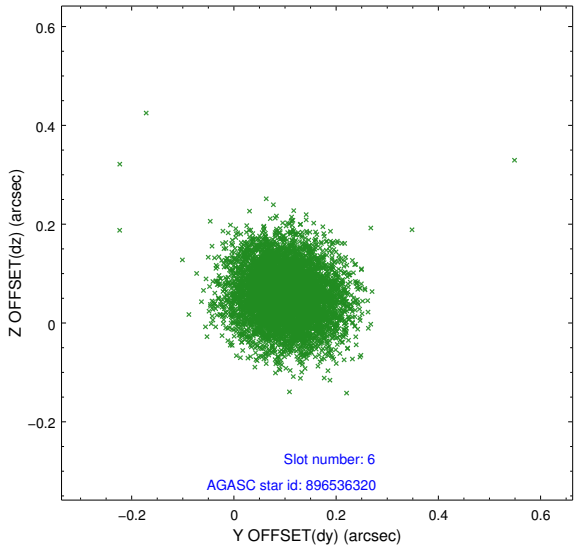
2.4.3 Slot 5

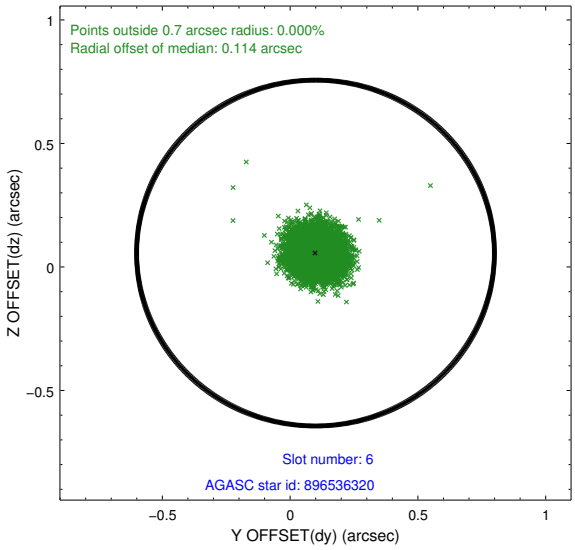

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 5
AGASC star id: 896540808

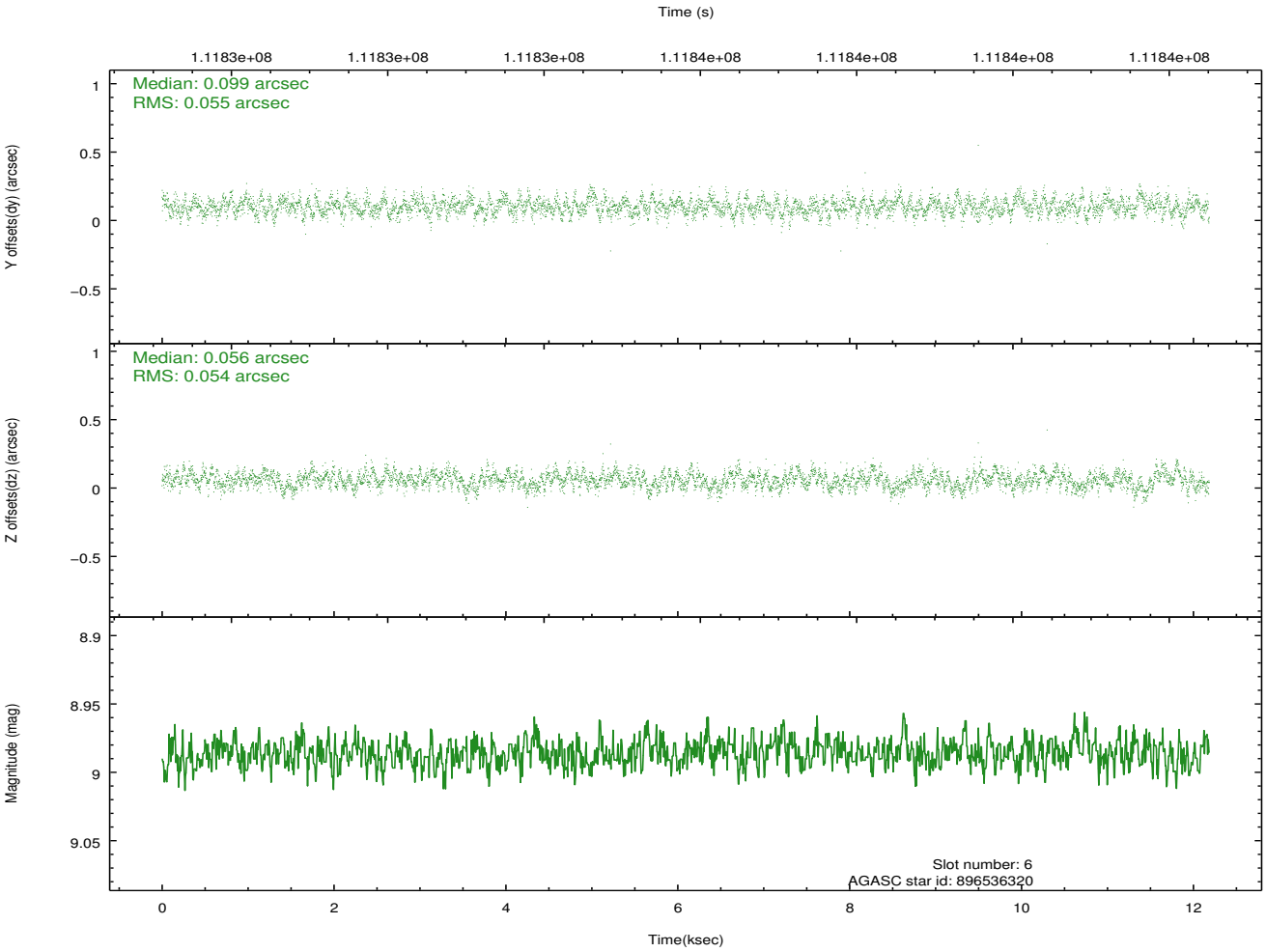

Points outside 0.7 arcsec radius: 0.000%
Radial offset of median: 0.052 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 5
AGASC star id: 896540808


Time (s)
Median: −0.028 arcsec
RMS: 0.038 arcsec
Y offsets(dy) (arcsec)
Median: 0.043 arcsec
RMS: 0.031 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number: 5
AGASC star id: 896540808
Time(ksec)

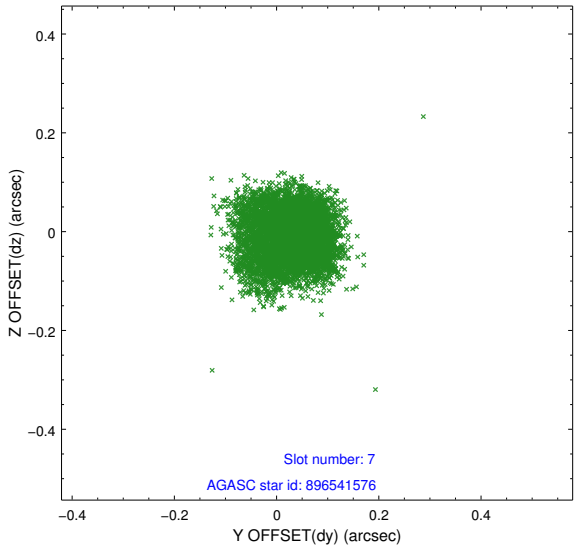
2.4.4 Slot 6

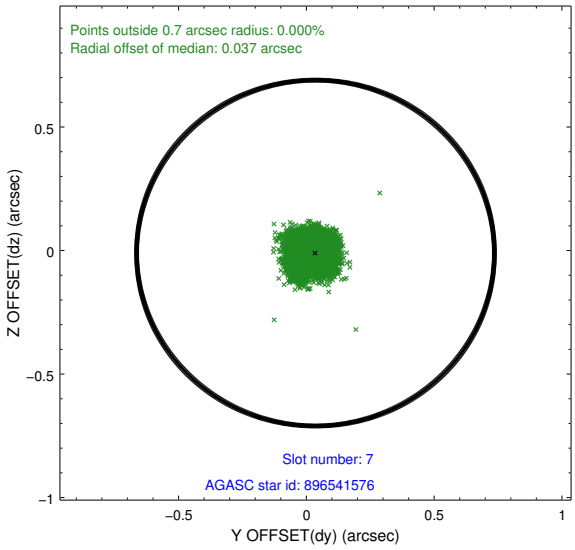

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 6
AGASC star id: 896536320

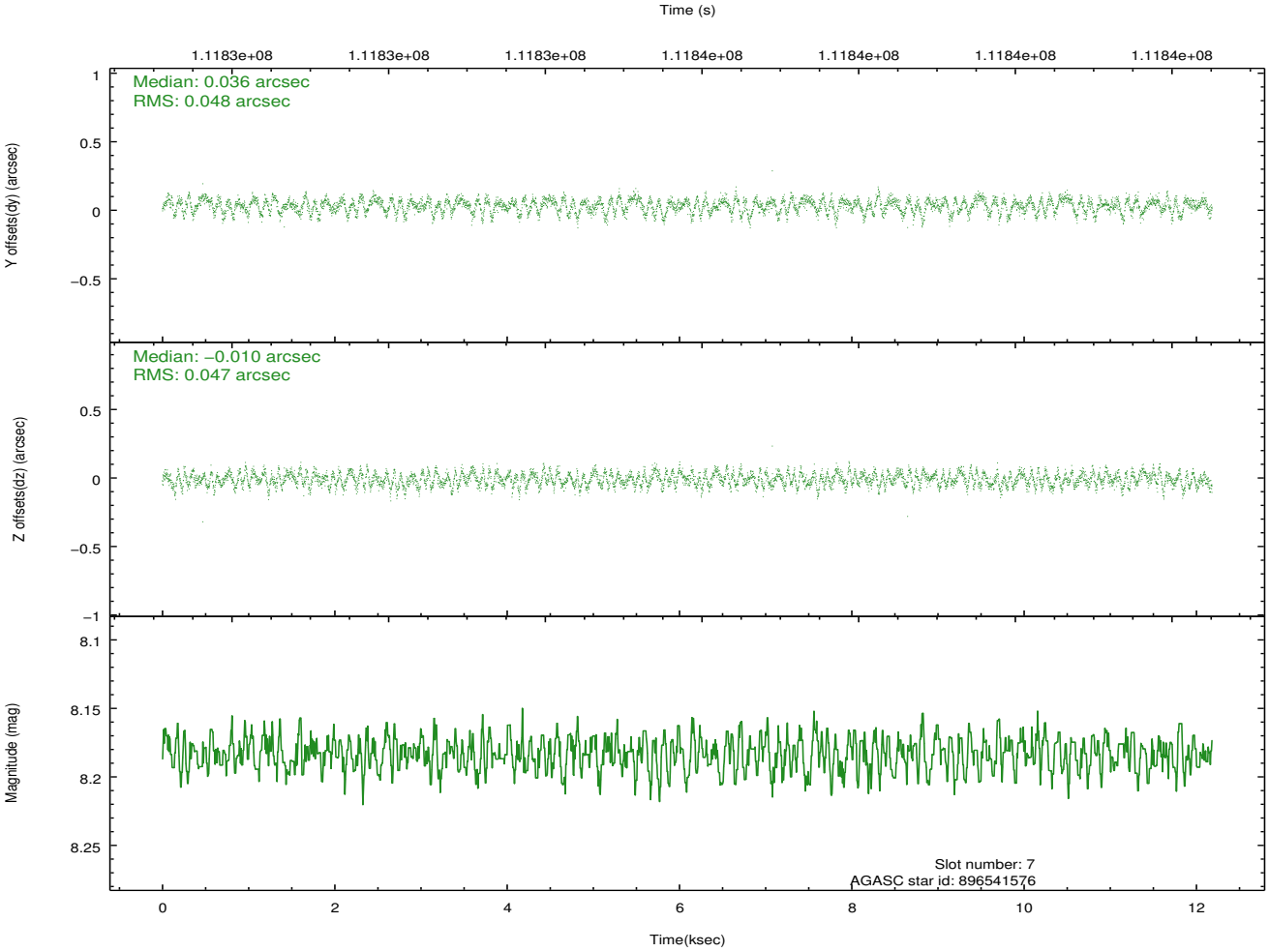

Points outside 0.7 arcsec radius: 0.000%
Radial offset of median: 0.114 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 6
AGASC star id: 896536320


Time (s)
Median: 0.099 arcsec
RMS: 0.055 arcsec
Y offsets(dy) (arcsec)
Median: 0.056 arcsec
RMS: 0.054 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number: 6
AGASC star id: 896536320
Time(ksec)

2.4.5 Slot 7

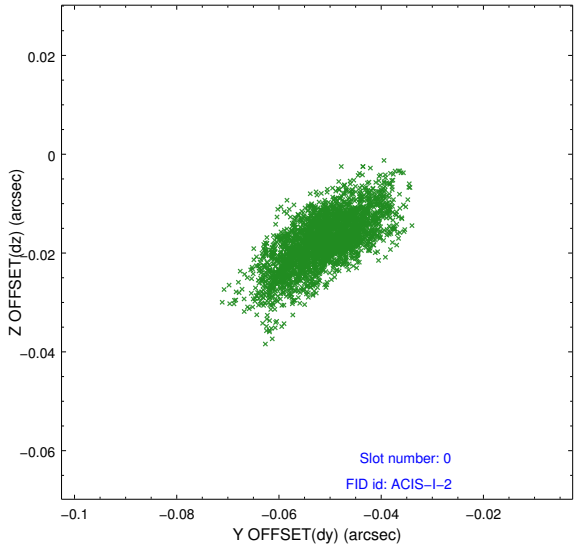

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 7
AGASC star id: 896541576

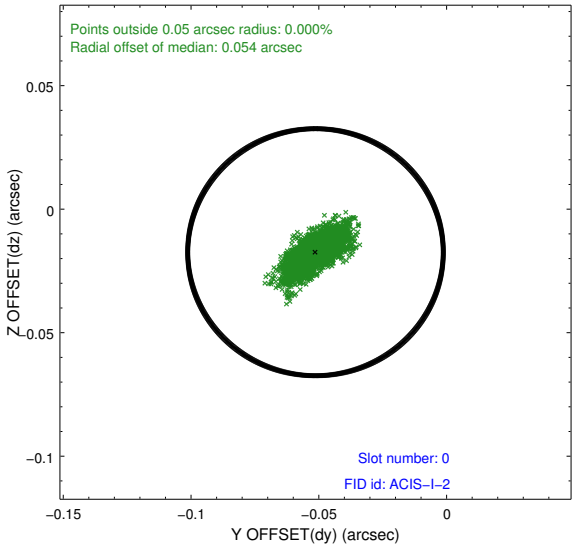

Points outside 0.7 arcsec radius: 0.000%
Radial offset of median: 0.037 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 7
AGASC star id: 896541576

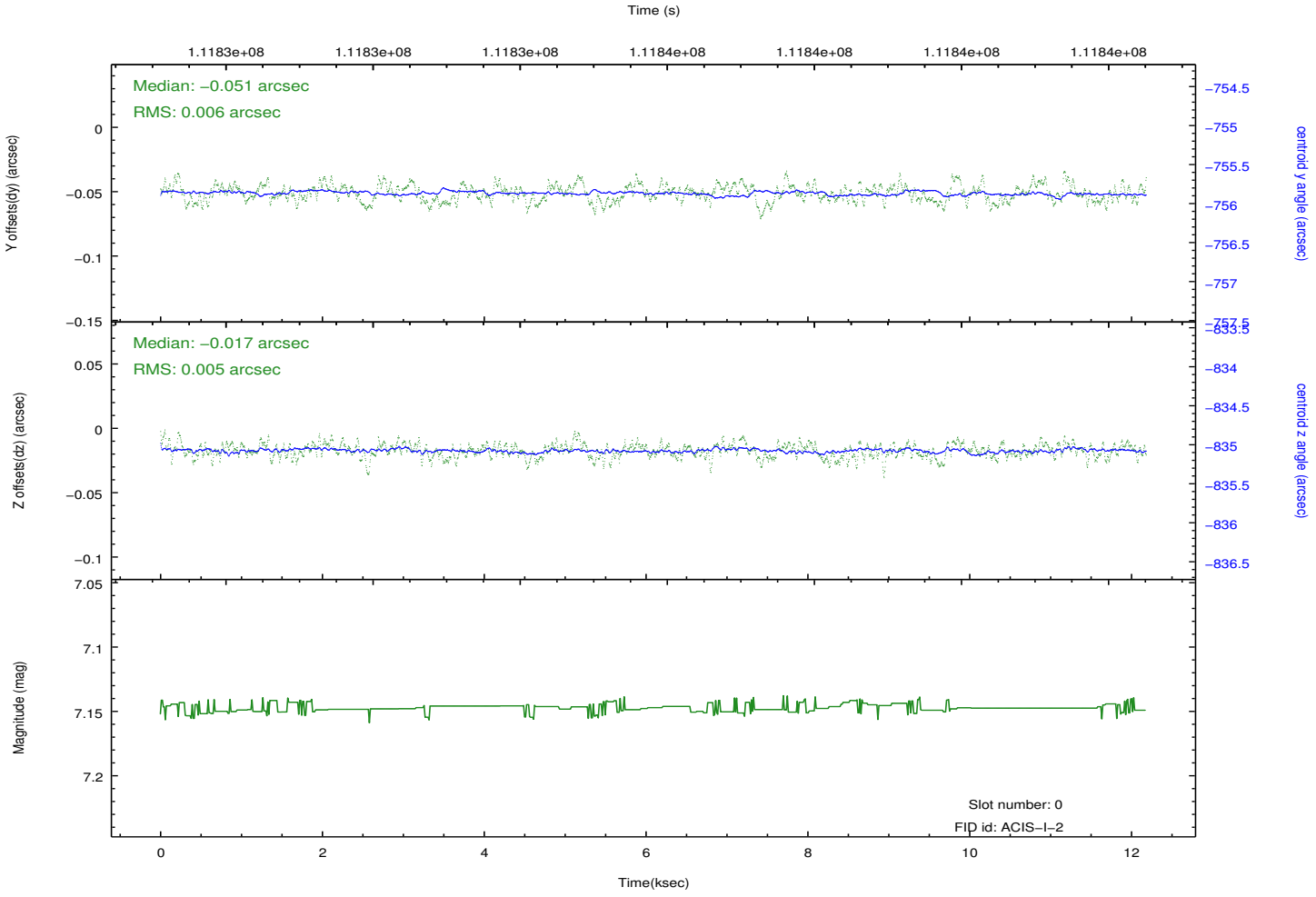

Time (s)
Median: 0.036 arcsec
RMS: 0.048 arcsec
Y offsets(dy) (arcsec)
Median: −0.010 arcsec
RMS: 0.047 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number: 7
AGASC star id: 896541576
Time(ksec)

2.5 FID Slots

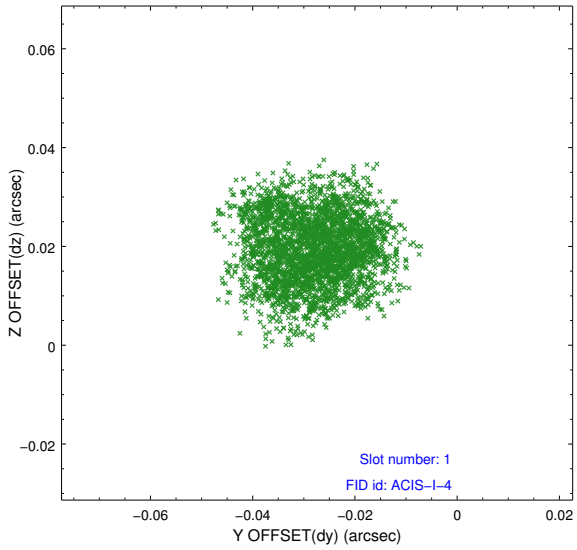
2.5.1 Slot 0

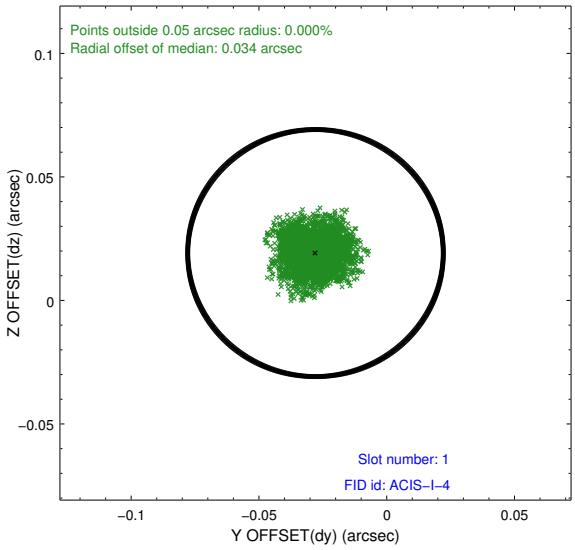


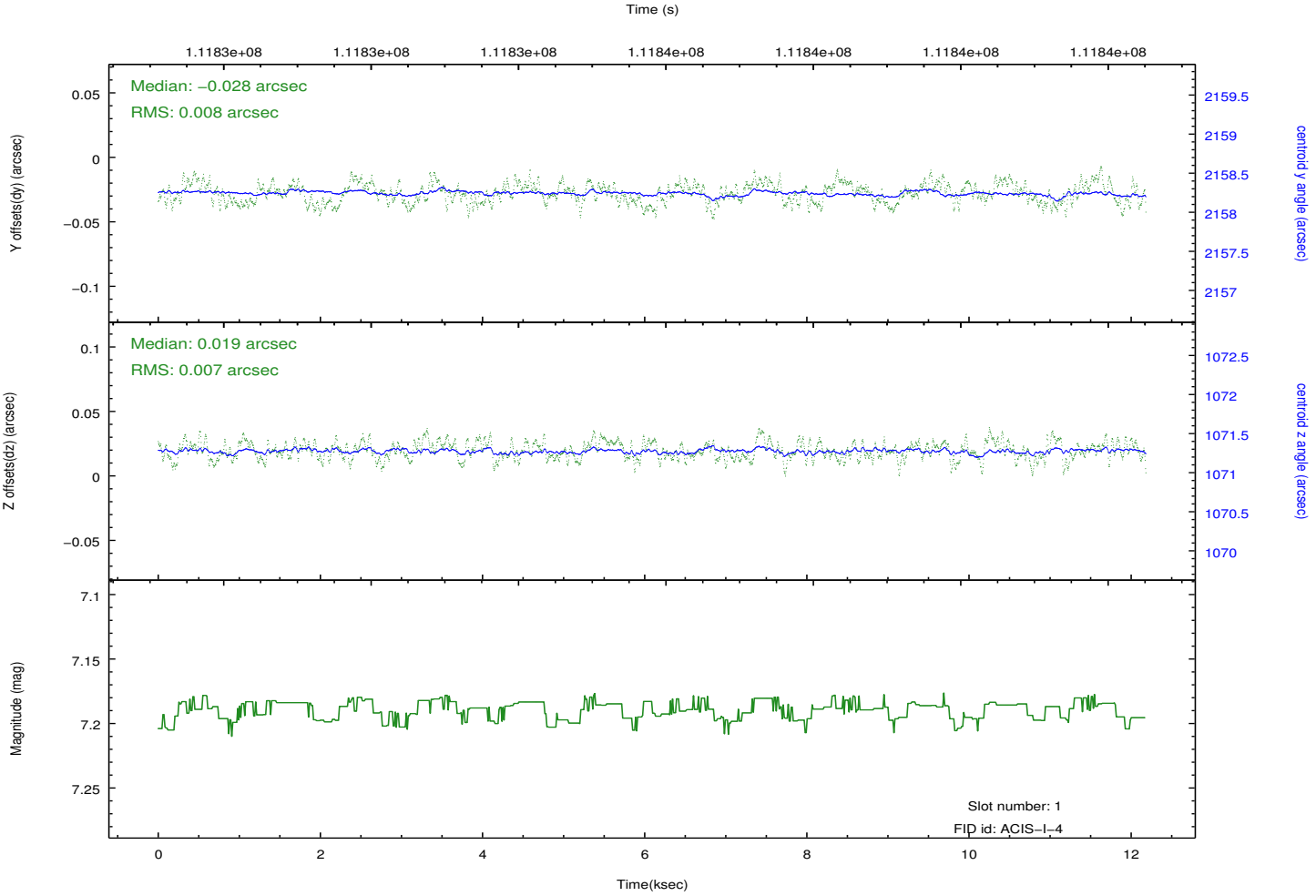




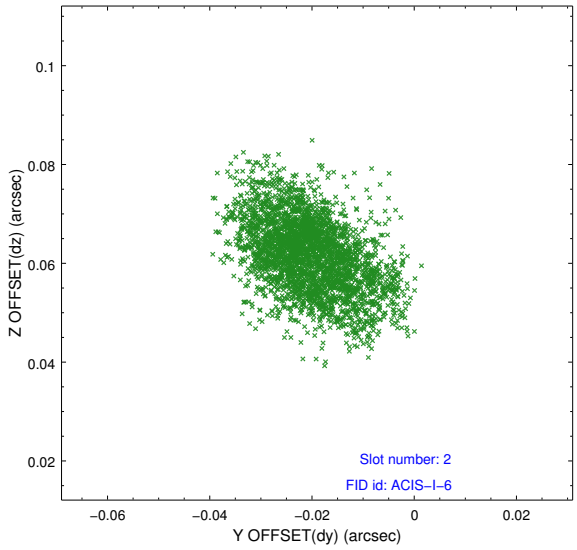
2.5.2 Slot 1

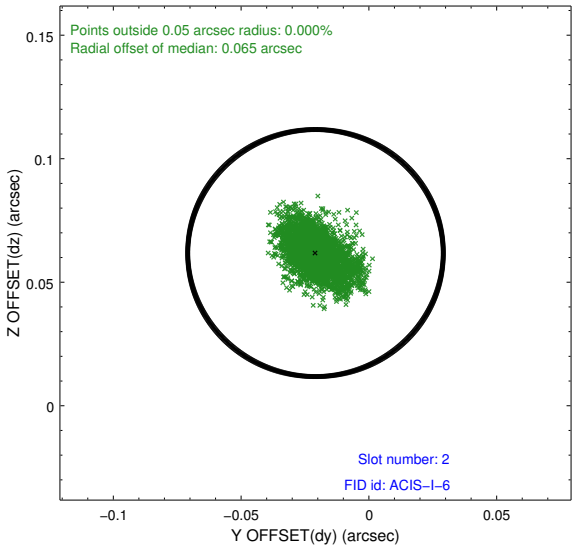

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 1
FID id: ACIS−I−4

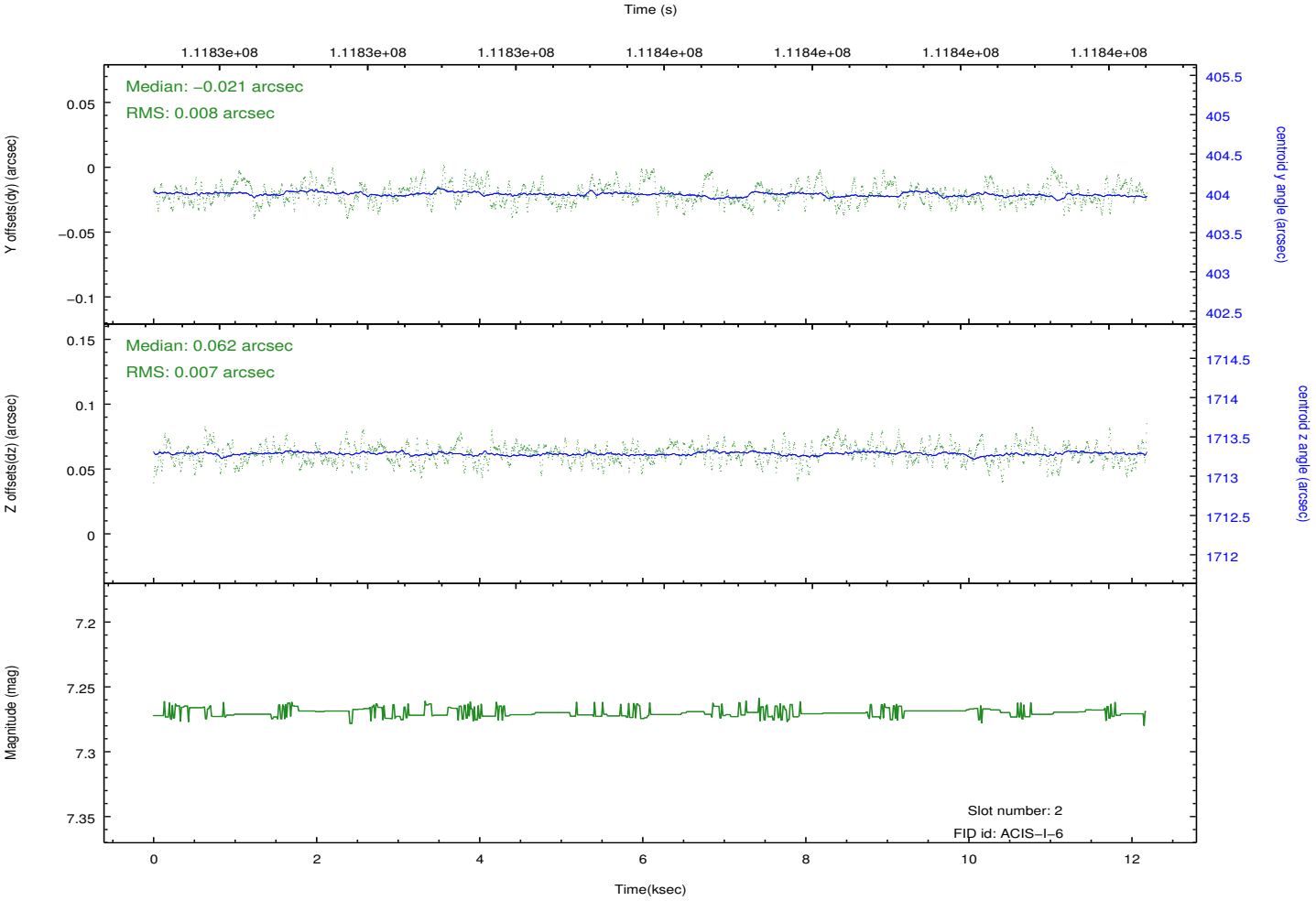

Points outside 0.05 arcsec radius: 0.000%
Radial offset of median: 0.034 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 1
FID id: ACIS−I−4


Time (s)
Median: −0.028 arcsec
RMS: 0.008 arcsec
Y offsets(dy) (arcsec)
centroid y angle (arcsec)
Median: 0.019 arcsec
RMS: 0.007 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−6


Points outside 0.05 arcsec radius: 0.000%
Radial offset of median: 0.065 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 2
FID id: ACIS−I−6


Time (s)
Median: −0.021 arcsec
RMS: 0.008 arcsec
Y offsets(dy) (arcsec)
centroid y angle (arcsec)
Median: 0.062 arcsec
RMS: 0.007 arcsec
Z offsets(dz) (arcsec)
centroid z angle (arcsec)
Magnitude (mag)
Slot number: 2
FID id: ACIS−I−6
Time(ksec)

A Summary

A.1 Status

V&V Scientist	Jen Lauer
V&V Date (YYYY-MM-DD)	2012.10.23
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	11.759

A.2 Comments

```
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:
(266.21997,-28.55671),(266.21575,-28.55762),(266.22014,-28.57338),(266.2
2436,-28.57247)
```