V&V Reference Report
L2 ASCDS Version : 8.4.3

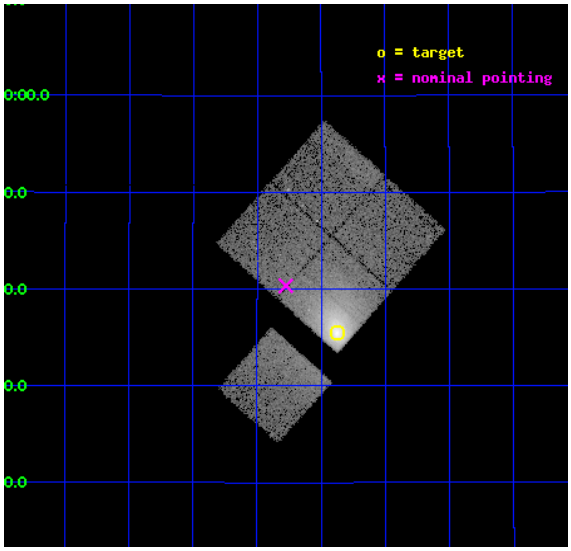
Observation 13413 - L2 Version 2
Chandra X-Ray Center

L2 Processing Date : Feb 10 2012

Contents

1 Front

seq_num	890058	Sequence number
obs_id	13413	Observation id
title	Mapping the Spatial Distribution of the ACIS Contaminant	Proposal
observer	Dr. CXC Calibration	Principal investigator
object	Abell 1795	Source name
dtycycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	207.219	Observer's specified target RA [deg]
dec_targ	26.591	Observer's specified target Dec [deg]
ra_nom	207.31881983756	Nominal RA [deg]
dec_nom	26.67221564704	Nominal Dec [deg]
roll_nom	221.67634273296	Nominal Roll [deg]
revision	2	Processing version of data
ontime	15050.418184876	Sum of GTIs [s]
livetime	14853.773391334	Livetime [s]
ontime0	15053.559115589	Sum of GTIs [s]
ontime1	15056.7001158	Sum of GTIs [s]
ontime2	15050.418184876	Sum of GTIs [s]
ontime3	15056.7001158	Sum of GTIs [s]
ontime6	15050.384488404	Sum of GTIs [s]
l2events	122603	Number of level 2 events

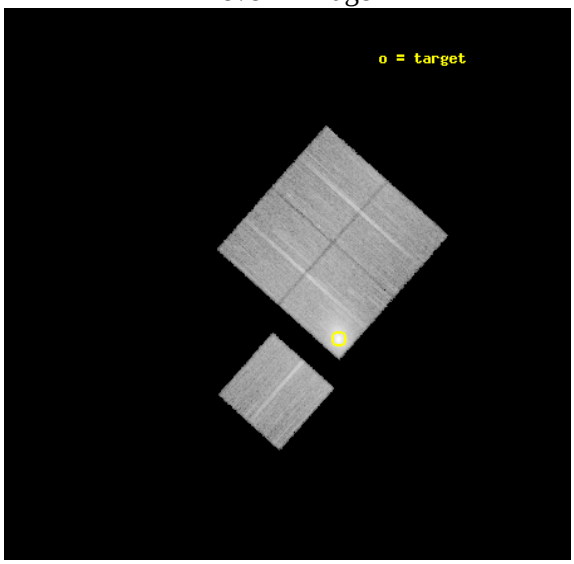


2 OBI

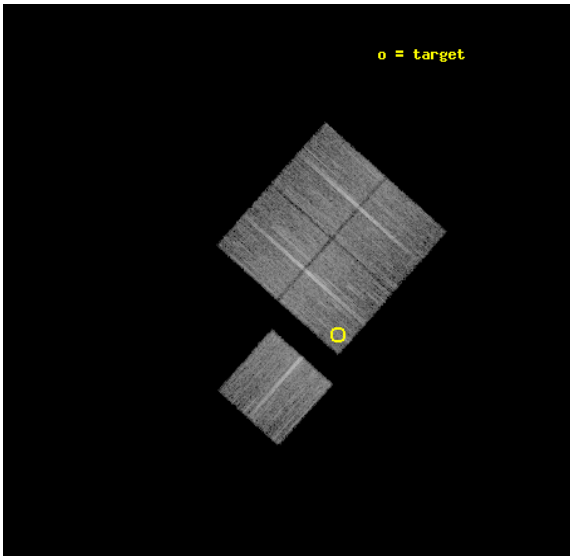
2.1 OBI

2.1.1 Images

Level 1 Image

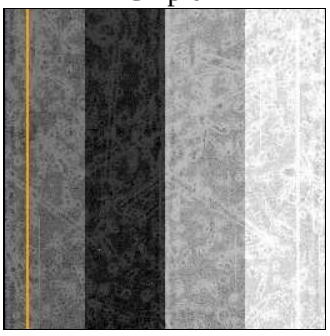


Level 1 Bad Events

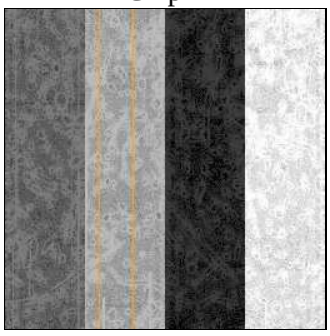


2.1.2 Bias

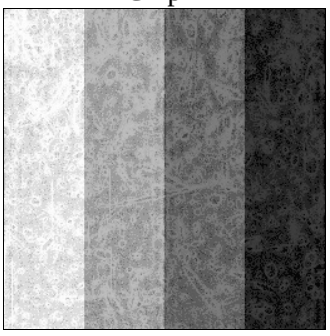
Chip 0



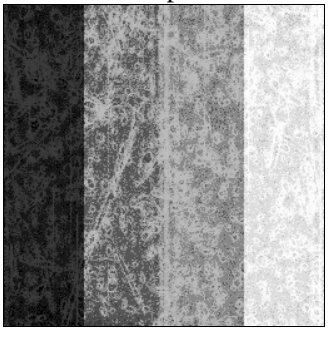
Chip 1



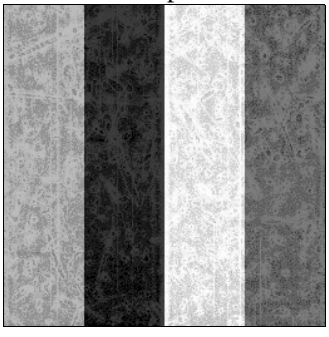
Chip 2



Chip 3



Chip 6



2.1.3 Parameters

obi_num	0	Obi number
ascdsver	8.4.3	Processing system revision
caldbver	4.4.7	
date	2012-02-11T00:53:26	Date and time of file creation
revision	2	Processing version of data

sched_exp_time	15000.000000	[s] Scheduled observation exposure time
ontime	15050.418184876	Sum of GTIs [s]
ontime0	15053.559115589	Sum of GTIs [s]
ontime1	15056.7001158	Sum of GTIs [s]
ontime2	15050.418184876	Sum of GTIs [s]
ontime3	15056.7001158	Sum of GTIs [s]
ontime6	15050.384488404	Sum of GTIs [s]
l1events	543371	Number of level 1 events

2.1.4 Events

	ccd 0	**ccd 1**	**ccd 2**	**ccd 3**	**ccd 6**
level 1 events	85917	91297	174103	93430	98624
rejected events	73555	78724	88926	81759	83780
rejected %	85%	86%	51%	87%	84%

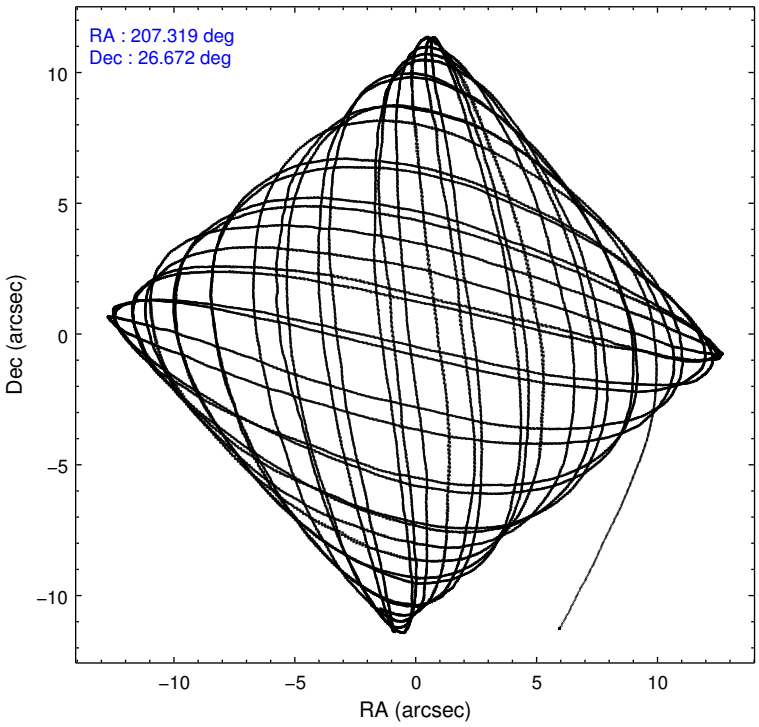
	ccd 0	**ccd 1**	**ccd 2**	**ccd 3**	**ccd 6**
grade 0 events	5048	4740	63323	4844	6937
	5%	5%	36%	5%	7%
grade 1 events	49	53	331	76	65
	0%	0%	0%	0%	0%
grade 2 events	2754	2916	10487	2466	2883
	3%	3%	6%	2%	2%
grade 3 events	1238	1170	3605	1145	1254
	1%	1%	2%	1%	1%
grade 4 events	1108	1270	3657	1098	1328
	1%	1%	2%	1%	1%
grade 5 events	4050	4417	4041	4580	4407
	4%	4%	2%	4%	4%
grade 6 events	2215	2479	4125	2118	2444
	2%	2%	2%	2%	2%
grade 7 events	69455	74252	84534	77103	79306
	80%	81%	48%	82%	80%

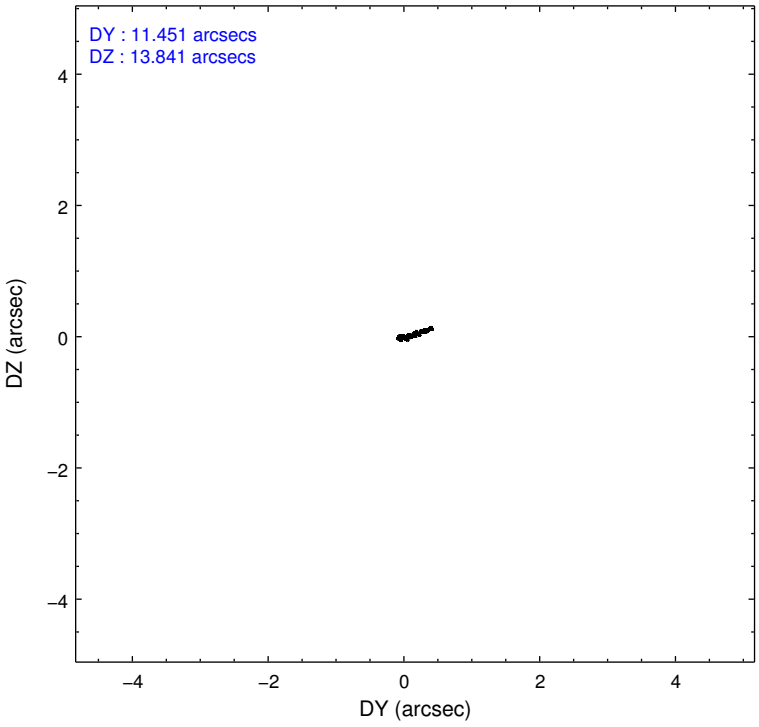
2.2 Compared Parameters

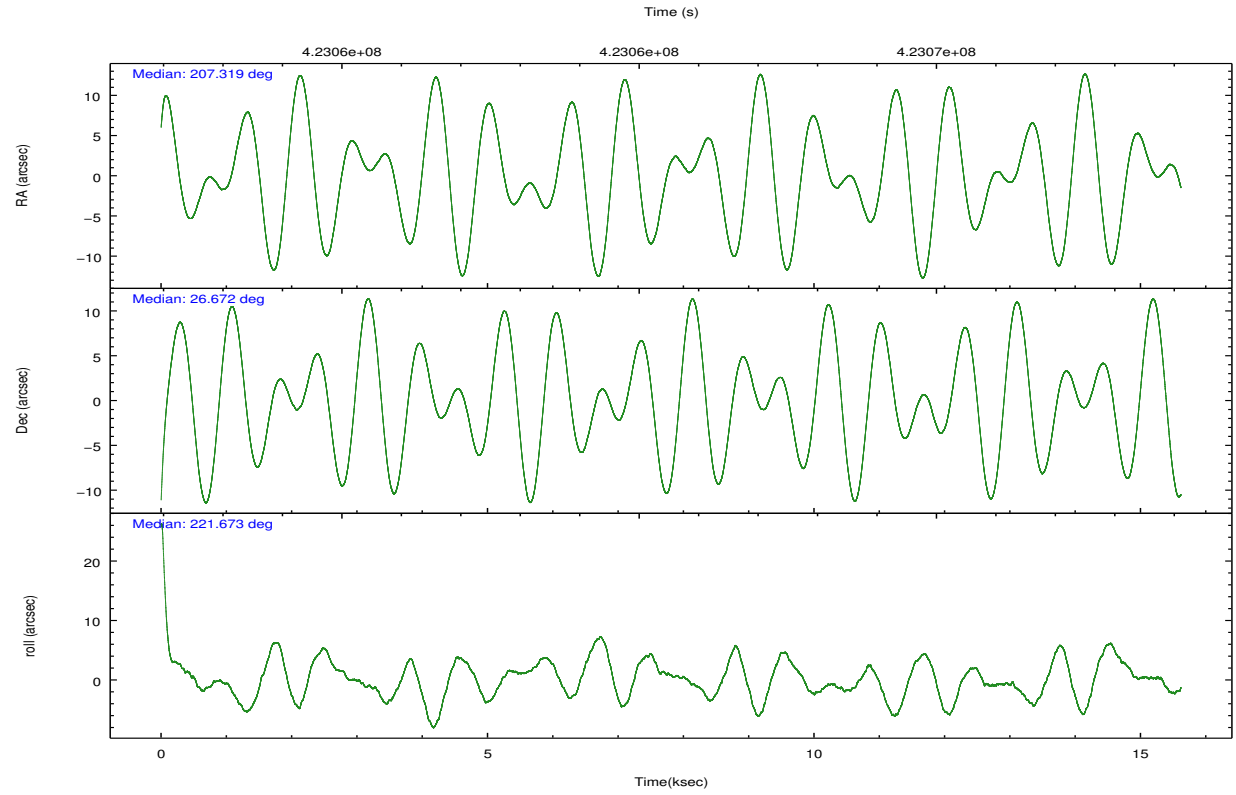
Parameter	Planned	Actual
Instrument	ACIS	ACIS
Detector	ACIS-01236	ACIS-01236
Grating	NONE	NONE
Data mode	VFAINT	VFAINT
Observation mode	POINTING	POINTING
[deg] Pointing RA	207.328353	207.3188198375647
[deg] Pointing Dec	26.698348	26.67221564703988
[deg] Pointing Roll	221.463361	221.676342732959
[mm] SIM focus pos	-0.782348	-0.7809083437167272
[mm] SIM defocus	0	0.001439871863259334
[mm] SIM translation stage pos	-215.164963	-215.162531930997
[mm] SIM translation stage offset	-18.4275	-18.42992107193268
[s] Observation start time (MET)	423058348.184000	423057201.02486
Observation start date	2011-05-29T12:11:22	2011-05-29T11:53:21
[s] Observation end time (MET)	423073348.184000	423073481.6132
Observation end date	2011-05-29T16:21:22	2011-05-29T16:24:41
Read mode	TIMED	TIMED

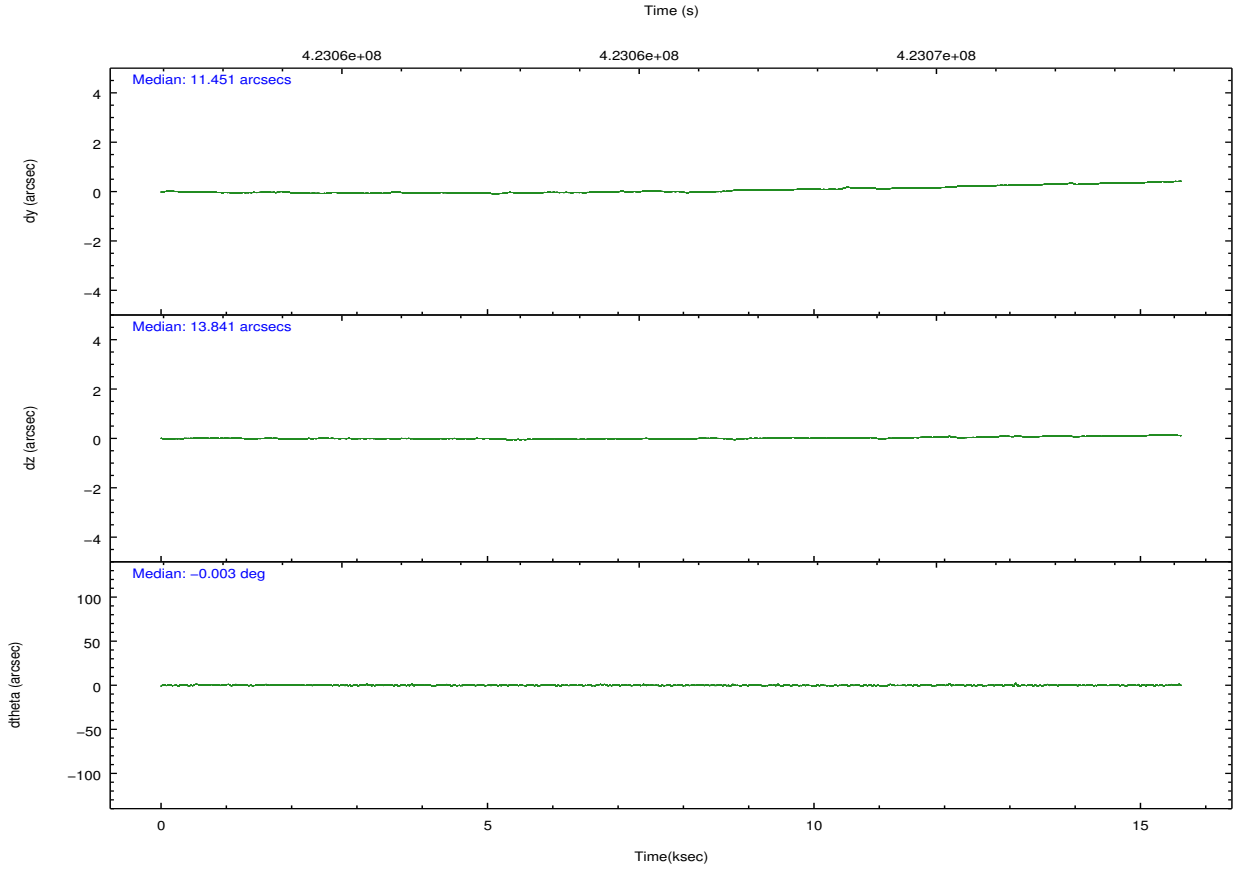
Parameter	Planned	Actual
Obspar format version number	7	7
Obspar file type	PREDICTED	ACTUAL
Obspar update status	NONE	UPDATED
Number of optional ACIS chips dropped	0	0
On-chip summing requested	N	N
Subarray requested	NONE	NONE
Alternating exposures requested	N	N
[s] Primary exposure time	0.000000	3.1

2.3 Aspect


RA : 207.319 deg
Dec : 26.672 deg
Dec (arcsec)
RA (arcsec)
10
5
0
−5
−10
−10
−5
0
5
10


DY : 11.451 arcsecs
DZ : 13.841 arcsecs
DZ (arcsec)
DY (arcsec)
4
2
0
−2
−4
−4
−2
0
2
4


Time (s)
4.2306e+08
4.2306e+08
4.2307e+08
Median: 207.319 deg
RA (arcsec)
Median: 26.672 deg
Dec (arcsec)
Median: 221.673 deg
roll (arcsec)
Time(ksec)

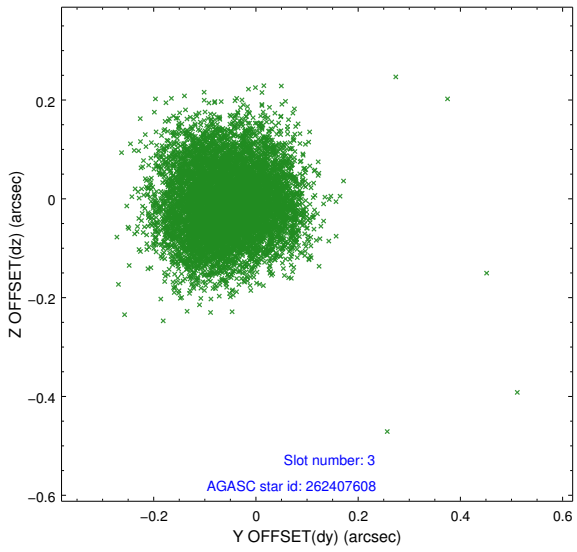

Time (s)
4.2306e+08
4.2306e+08
4.2307e+08
Median: 11.451 arcsecs
dy (arcsec)
Median: 13.841 arcsecs
dz (arcsec)
Median: −0.003 deg
dtheta (arcsec)
Time(ksec)

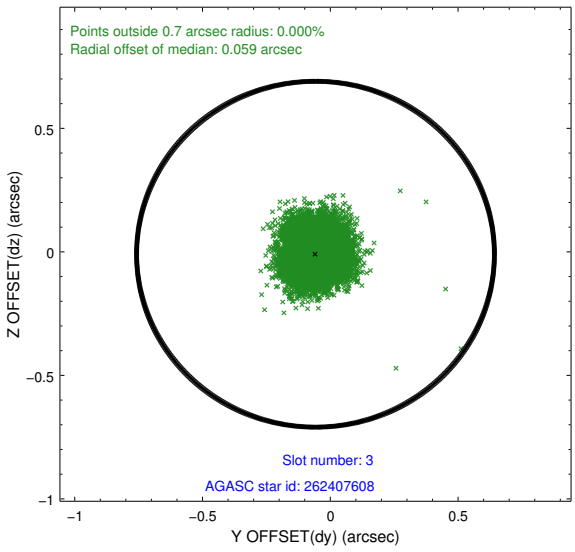
Slot Statistics

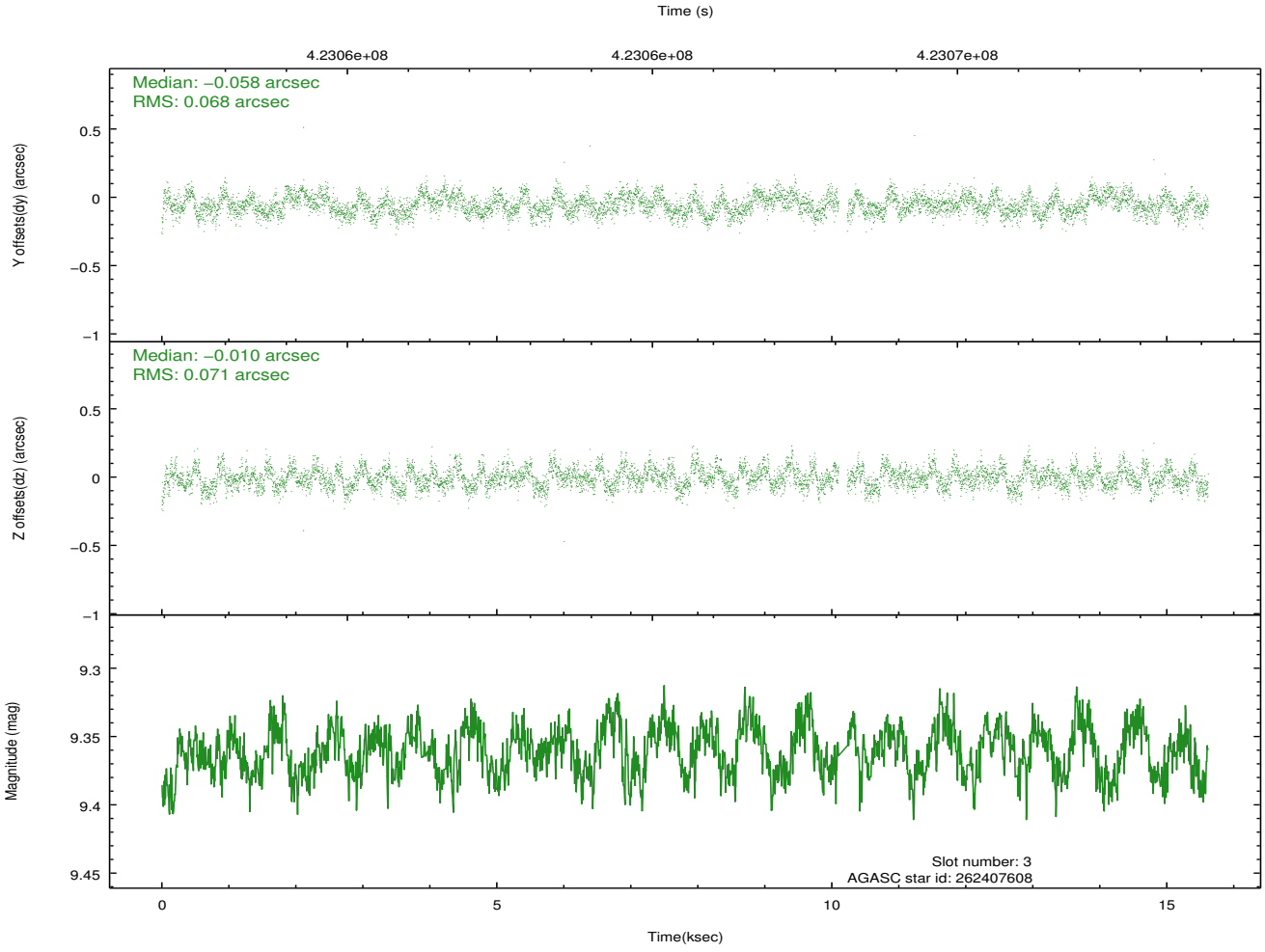
slot	status	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID	ACIS-I-1	7.01	3810	0.281	-0.261	0.007	0.013	0.000000	0.000000	927.99	-1216.16
1	FID	ACIS-I-5	7.03	3810	-0.405	0.204	0.006	0.011	0.000000	0.000000	-1820.67	681.51
2	FID	ACIS-I-6	7.07	3810	0.033	0.128	0.007	0.012	0.000000	0.000000	392.94	1326.30
3	GUIDE	262407608	9.36	7555	-0.058	-0.010	0.106	0.163	207.378401	26.435507	505.71	816.17
4	GUIDE	262408096	9.35	7608	0.218	0.097	0.114	0.182	207.011678	26.515421	1200.48	-182.87
5	GUIDE	262408512	8.00	7618	-0.170	0.037	0.062	0.097	207.800210	27.128796	-2160.52	-162.29
6	GUIDE	262411960	9.66	7602	0.142	0.052	0.113	0.186	207.327895	25.881727	1947.84	2202.44
7	GUIDE	262800360	8.56	7613	-0.132	-0.175	0.090	0.144	207.437814	27.569136	-2337.10	-2118.08

2.4 Star Slots

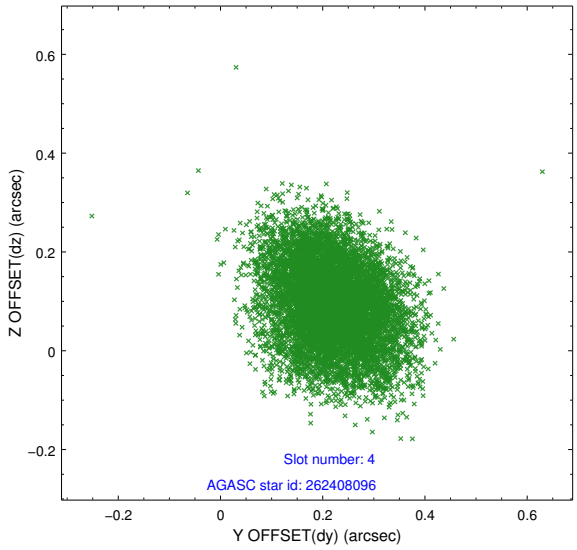
2.4.1 Slot 3

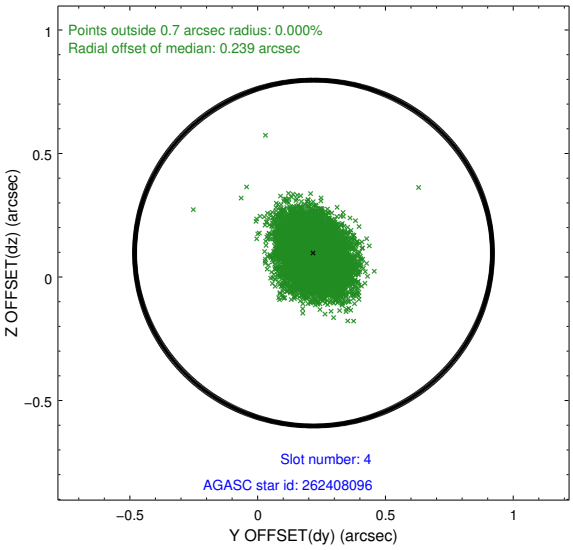


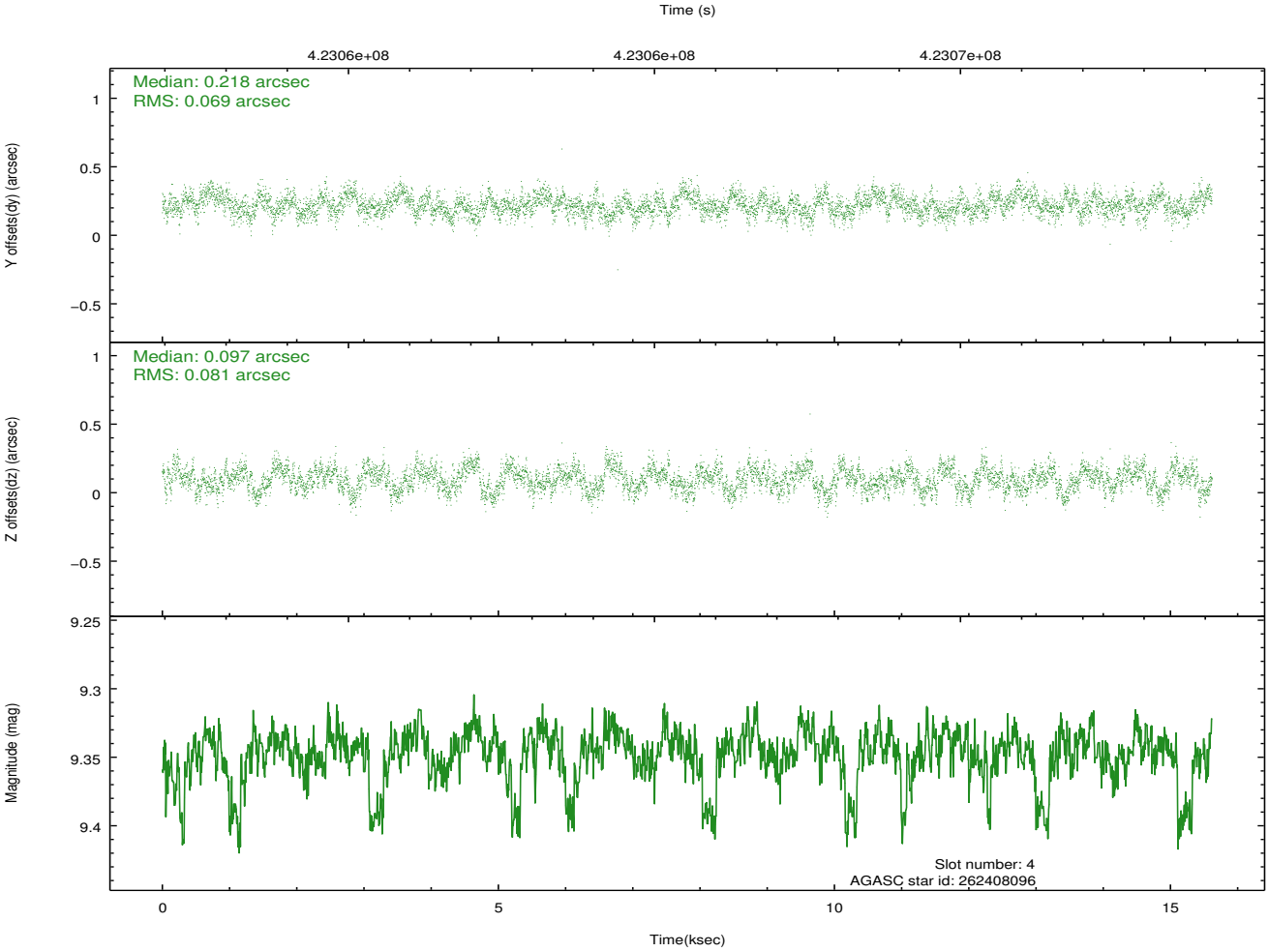




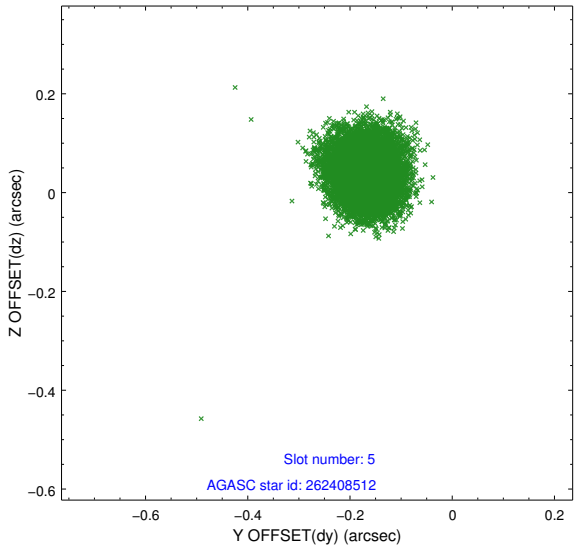
2.4.2 Slot 4

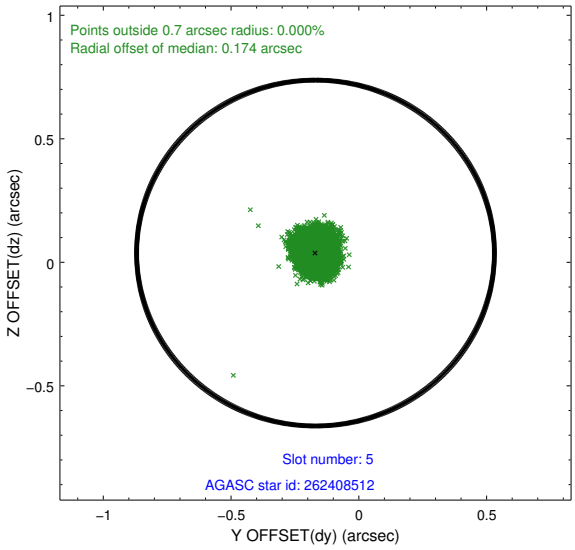

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 4
AGASC star id: 262408096

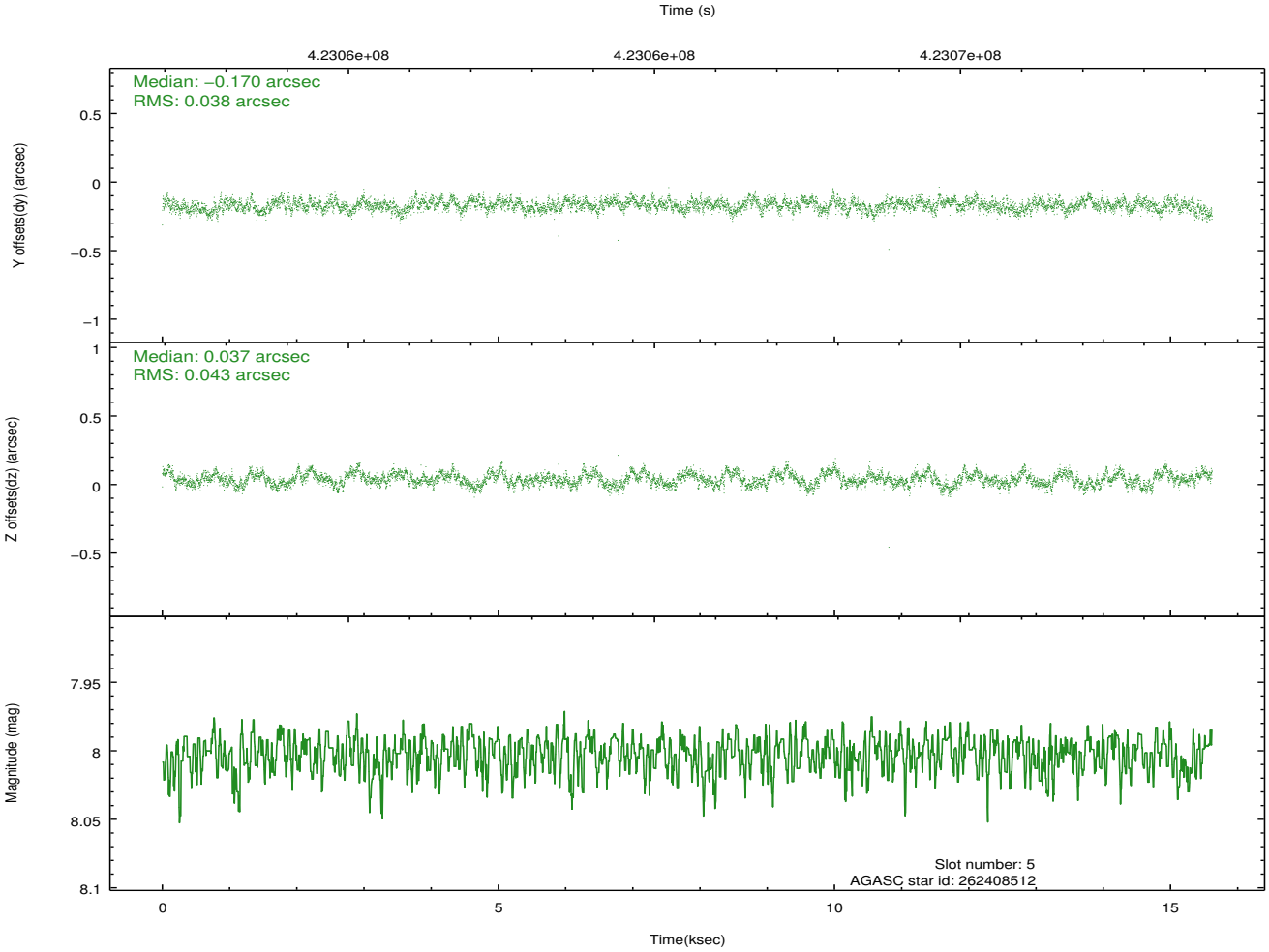

Points outside 0.7 arcsec radius: 0.000%
Radial offset of median: 0.239 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 4
AGASC star id: 262408096


Time (s)
4.2306e+08
4.2306e+08
4.2307e+08
Median: 0.218 arcsec
RMS: 0.069 arcsec
Y offsets(dy) (arcsec)
Median: 0.097 arcsec
RMS: 0.081 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number: 4
AGASC star id: 262408096
Time(ksec)

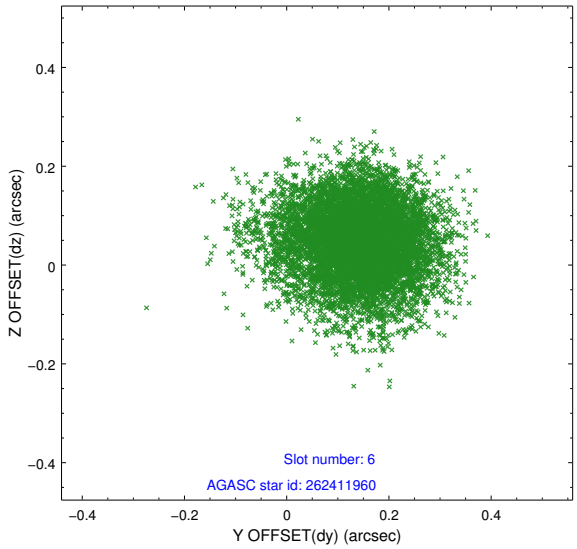
2.4.3 Slot 5

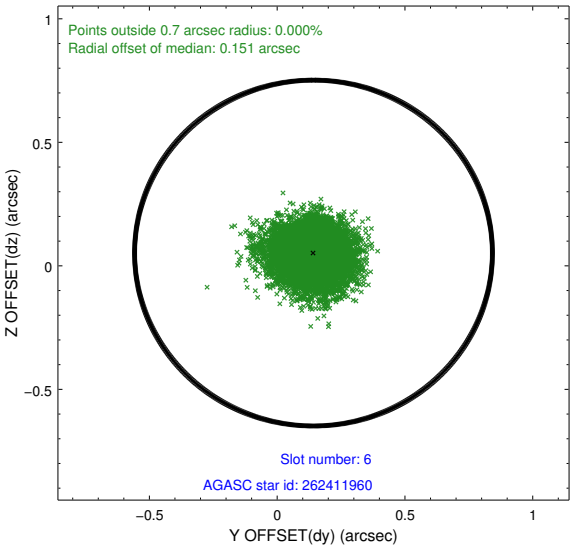

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 5
AGASC star id: 262408512

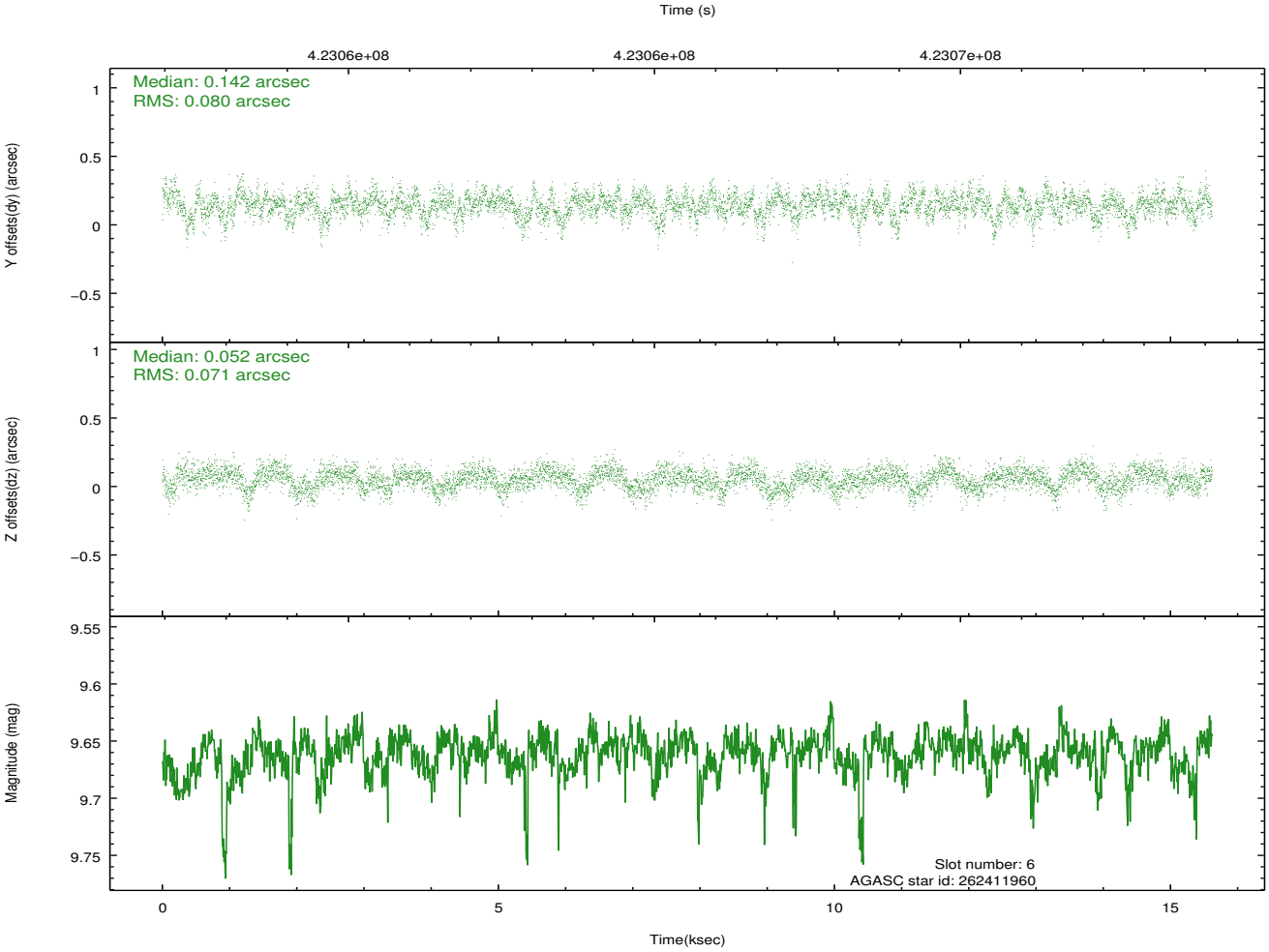

Points outside 0.7 arcsec radius: 0.000%
Radial offset of median: 0.174 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 5
AGASC star id: 262408512


Time (s)
4.2306e+08
4.2306e+08
4.2307e+08
Median: –0.170 arcsec
RMS: 0.038 arcsec
Y offsets(dy) (arcsec)
Median: 0.037 arcsec
RMS: 0.043 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number: 5
AGASC star id: 262408512
Time(ksec)

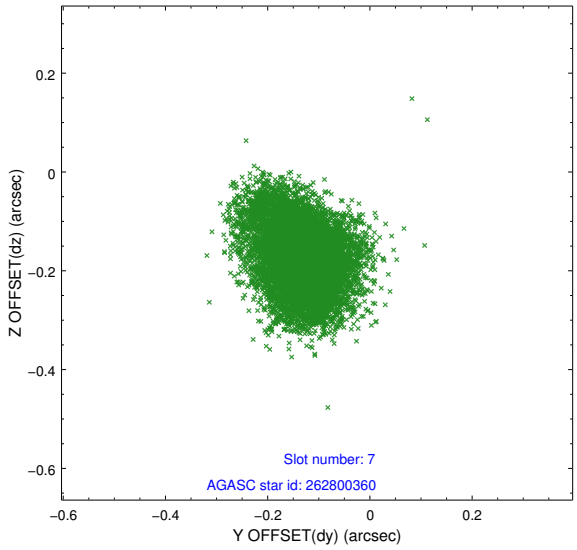
2.4.4 Slot 6

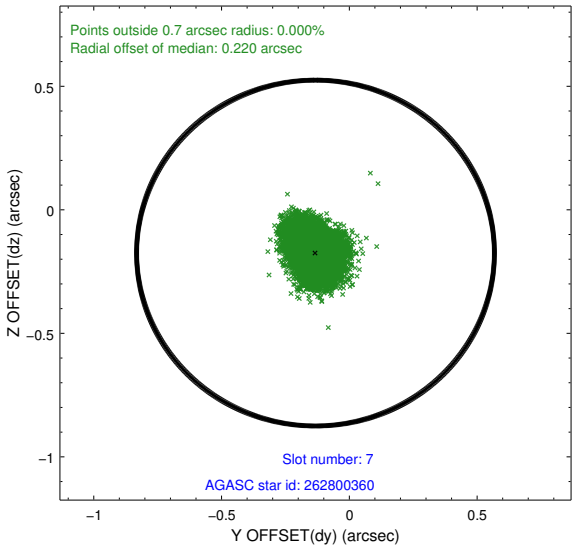

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 6
AGASC star id: 262411960

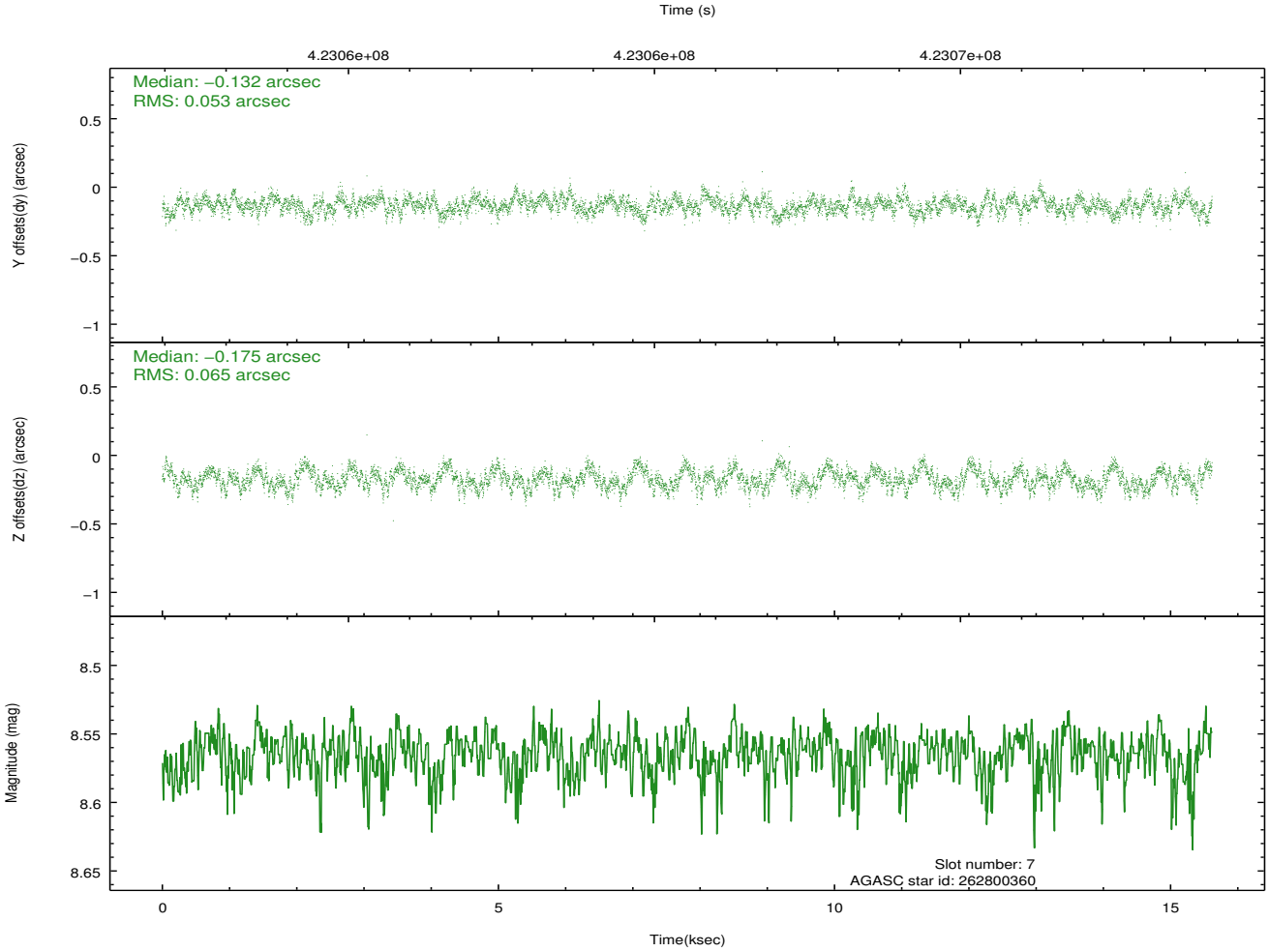

Points outside 0.7 arcsec radius: 0.000%
Radial offset of median: 0.151 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 6
AGASC star id: 262411960


Time (s)
4.2306e+08
4.2306e+08
4.2307e+08
Median: 0.142 arcsec
RMS: 0.080 arcsec
Y offsets(dy) (arcsec)
Median: 0.052 arcsec
RMS: 0.071 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number: 6
AGASC star id: 262411960
Time(ksec)

2.4.5 Slot 7

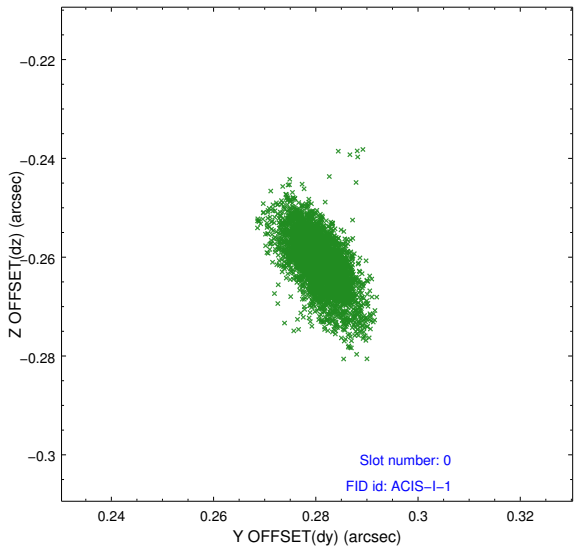

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 7
AGASC star id: 262800360

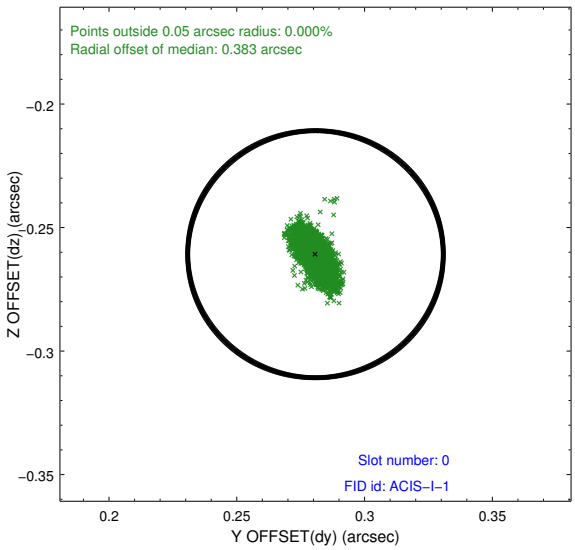

Points outside 0.7 arcsec radius: 0.000%
Radial offset of median: 0.220 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 7
AGASC star id: 262800360

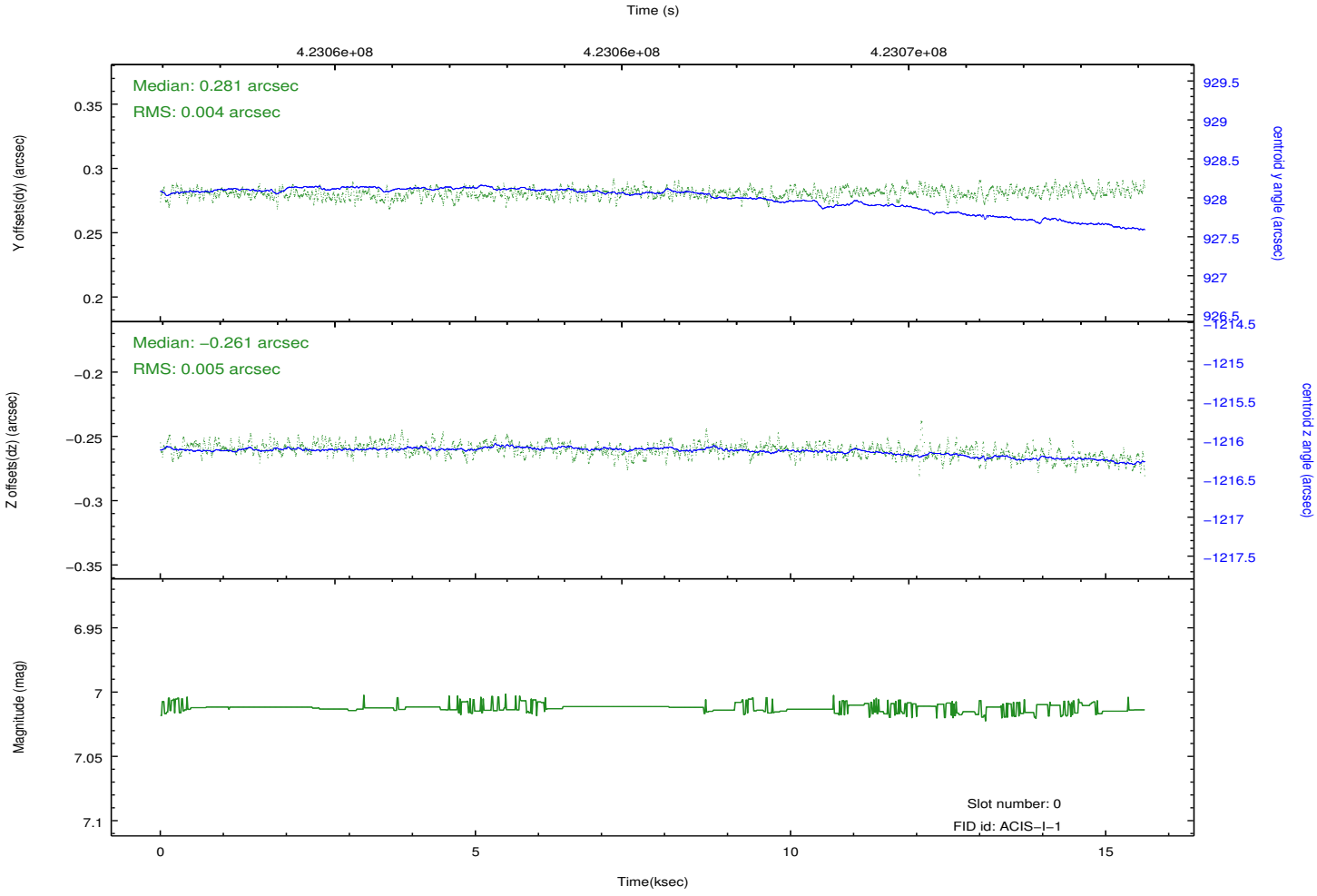

Time (s)
4.2306e+08
4.2306e+08
4.2307e+08
Median: –0.132 arcsec
RMS: 0.053 arcsec
Y offsets(dy) (arcsec)
Median: –0.175 arcsec
RMS: 0.065 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number: 7
AGASC star id: 262800360
Time(ksec)

2.5 FID Slots

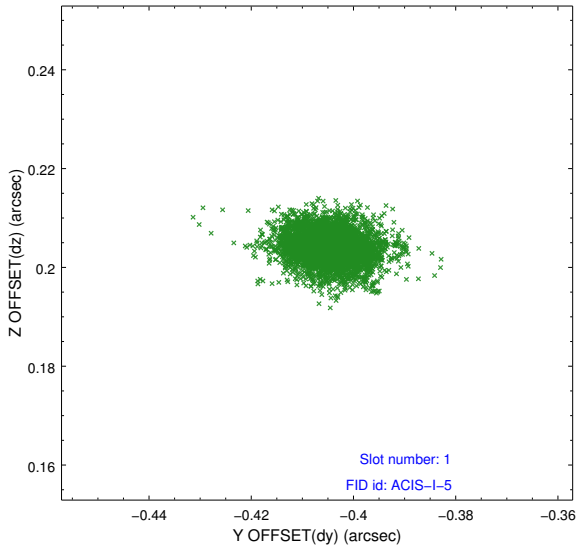
2.5.1 Slot 0

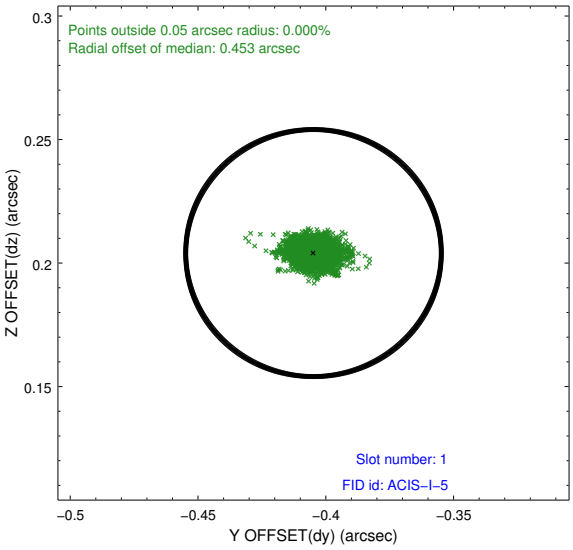


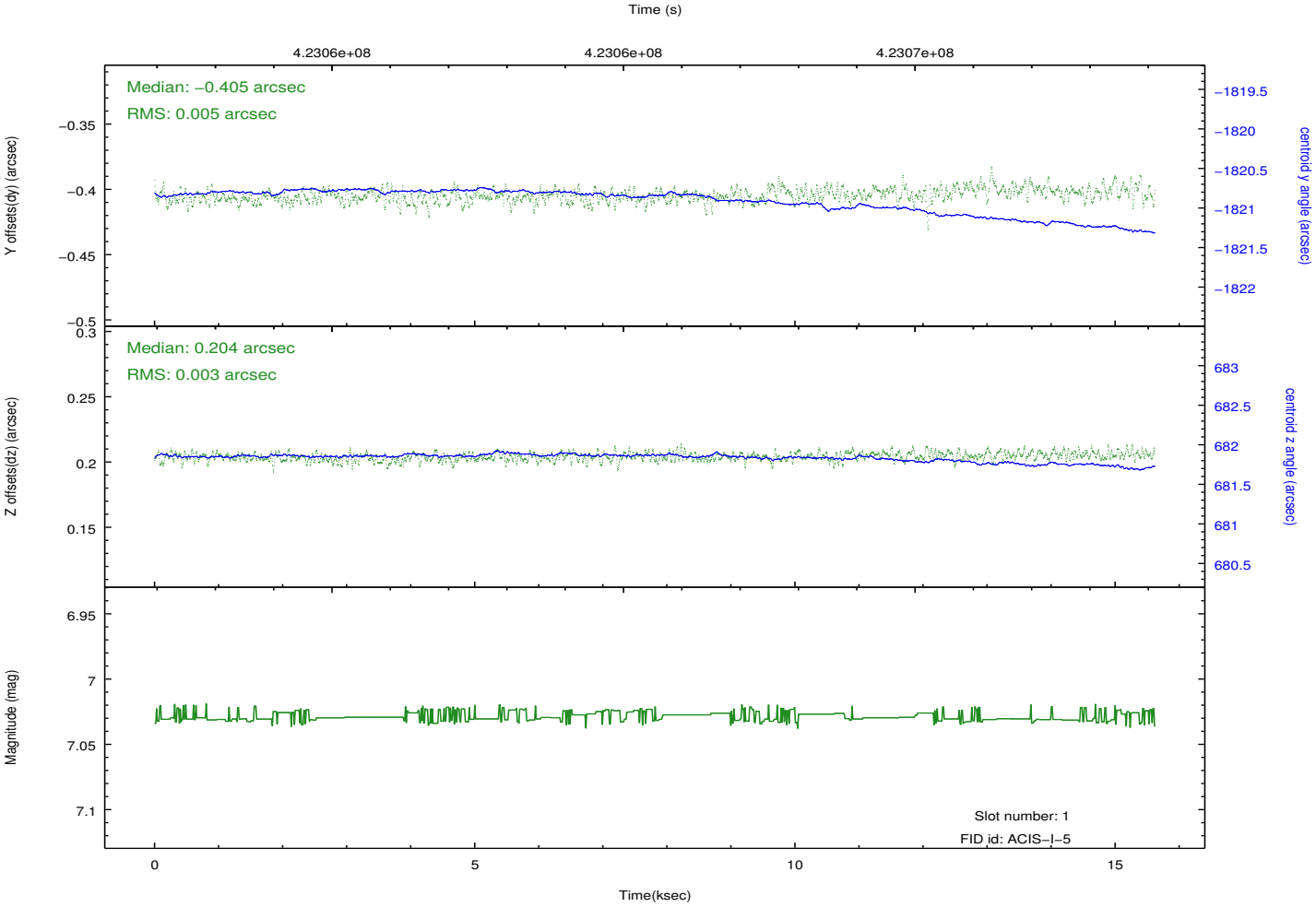




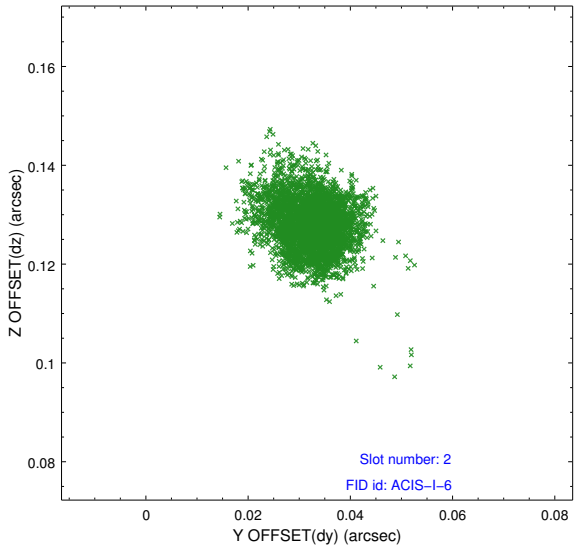
2.5.2 Slot 1

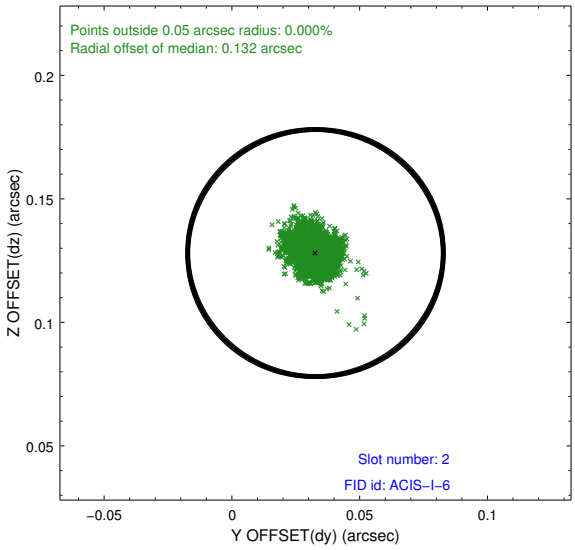

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 1
FID id: ACIS−I−5

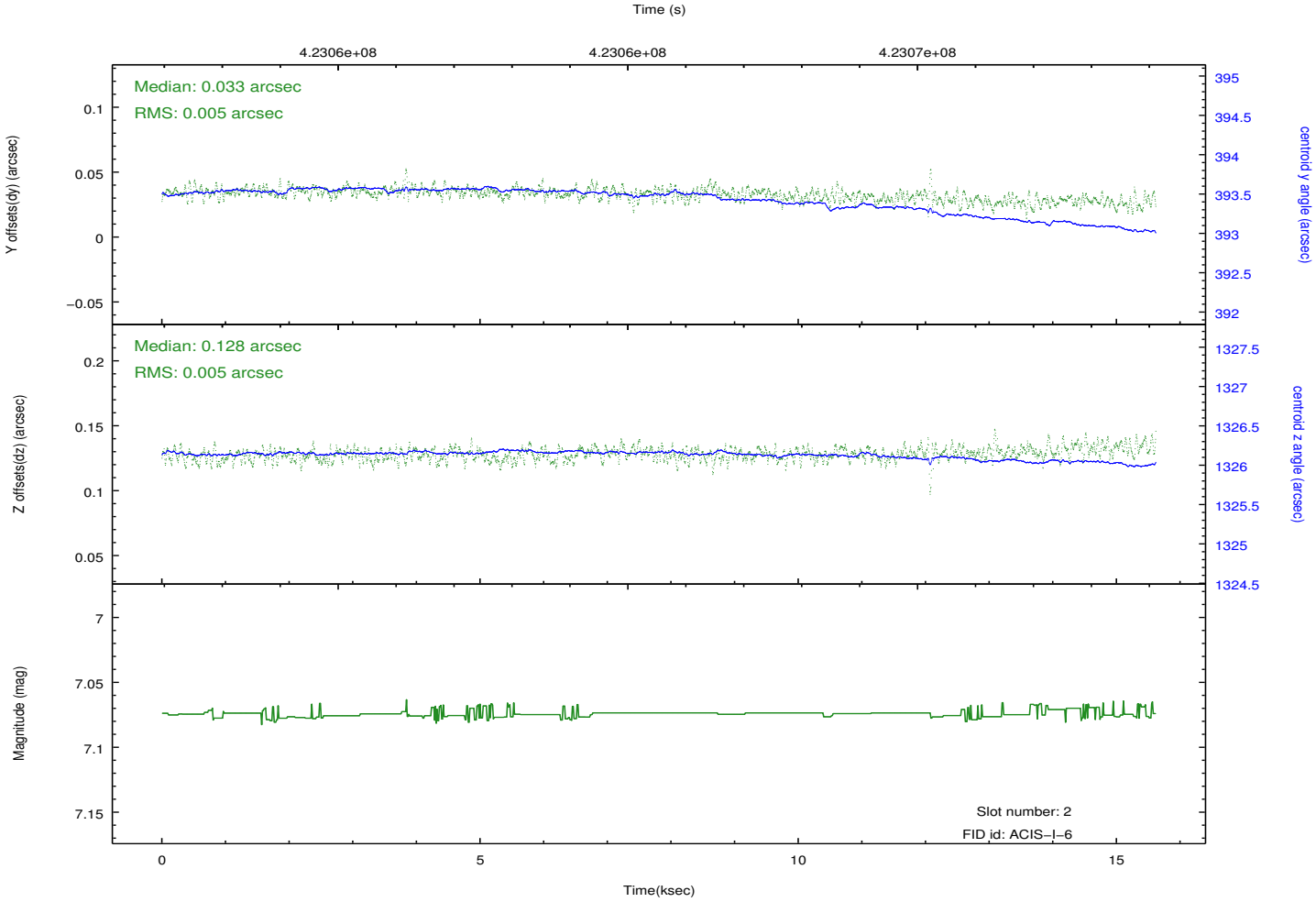

Points outside 0.05 arcsec radius: 0.000%
Radial offset of median: 0.453 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 1
FID id: ACIS−I−5


Time (s)
Median: −0.405 arcsec
RMS: 0.005 arcsec
Y offsets(dy) (arcsec)
centroid y angle (arcsec)
Median: 0.204 arcsec
RMS: 0.003 arcsec
Z offsets(dz) (arcsec)
centroid z angle (arcsec)
Magnitude (mag)
Slot number: 1
FID id: ACIS−I−5
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: 0.132 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 2
FID id: ACIS−I−6


Time (s)
4.2306e+08
4.2306e+08
4.2307e+08
Median: 0.033 arcsec
RMS: 0.005 arcsec
Y offsets(dy) (arcsec)
centroid y angle (arcsec)
Median: 0.128 arcsec
RMS: 0.005 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	Beth Sundheim
V&V Date (YYYY-MM-DD)	2012.02.13
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	15.050418184876

A.2 Comments

```
The data for this observation have been processed using the 'EDSER'
sub-pixel event-repositioning algorithm of Li et al. (2004, ApJ, 610,
1204). Small-scale features should become sharper for sources near the
aim point. The improvement will be less noticeable for off-axis sources
where the size of the point-spread function is comparable to or larger
than the size of an ACIS pixel. To take full advantage of the
improvement, images should be binned on spatial scales smaller than the
size of an ACIS pixel. Note that, at present, the point-spread function
has not been calibrated for data to which the EDSER algorithm has been
applied. If dither was disabled for the observation, then the algorithm
can introduce artificial aliasing effects on spatial scales smaller than
a pixel. If you would prefer to use no sub-pixel adjustment or to apply
a coordinate randomization, then use acis_process_events to reprocess
the data with the parameter pix_adj=NONE or RANDOMIZE, respectively.
==
This observation was performed with a large SIM offset. As a result, the
fid light positions are beyond normally expected ranges, but the fid
light position correction has compensated for this offset.
```