V&V Reference Report
L2 ASCDS Version : 8.1.2

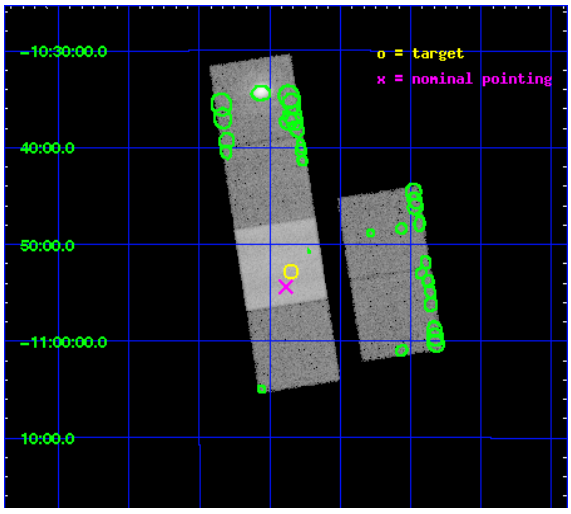
Observation 1267 - L2 Version 4
Chandra X-Ray Center

L2 Processing Date : Dec 14 2009

Contents

1 Front

seq_num	580217	Sequence number
obs_id	1267	Observation id
title	ACIS CHIP RESPONSE TO A CONTINUUM SOURCE	Proposal title
observer	Dr. CXC Calibration	Principal investigator
object	G21.5-0.9 [Chip S5, T=100, Offsets=-19,0,0]	Source name
dtycycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	278.336589	Observer's specified target RA
dec_targ	-10.880885	Observer's specified target Dec
ra_nom	278.346252766	Nominal RA
dec_nom	-10.906816532391	Nominal Dec
roll_nom	261.22214449966	Nominal Roll
revision	4	Processing version of data
ontime	13003.712174363	Sum of GTIs [s]
livetime	12839.051340916	Livetime [s]
ontime2	12997.189164095	Sum of GTIs [s]
ontime3	12997.148173951	Sum of GTIs [s]
ontime6	13003.506974362	Sum of GTIs [s]
ontime7	13003.712174363	Sum of GTIs [s]
ontime8	13000.348064229	Sum of GTIs [s]
ontime9	13000.307024233	Sum of GTIs [s]
l2events	246269	Number of level 2 events

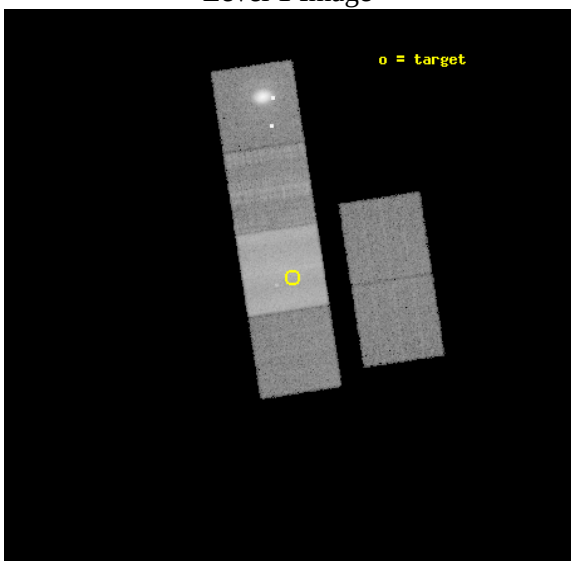


2 OBI

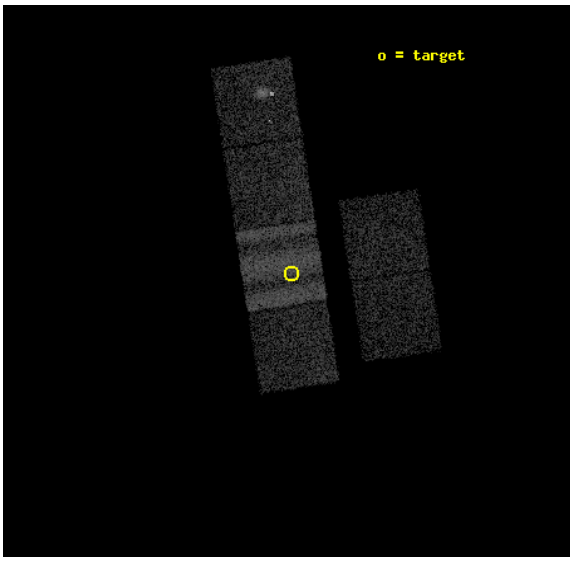
2.1 OBI

2.1.1 Images

Level 1 Image

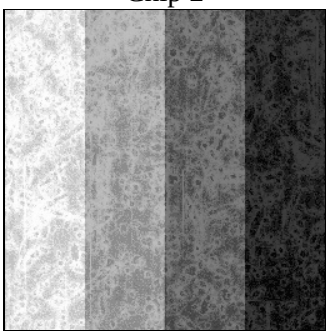


Level 1 Bad Events

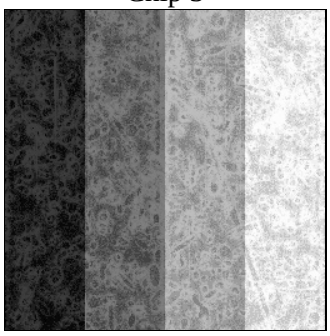


2.1.2 Bias

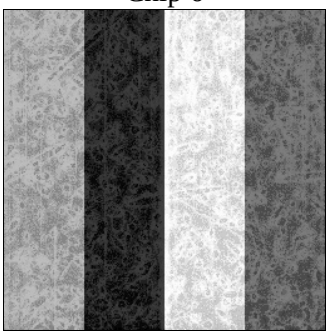
Chip 2



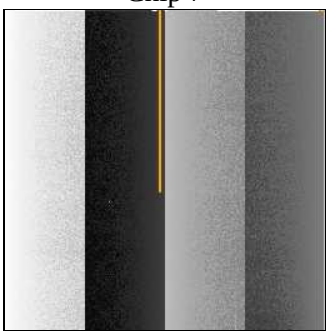
Chip 3



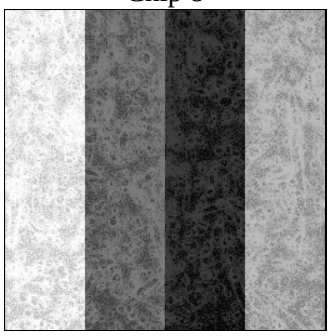
Chip 6



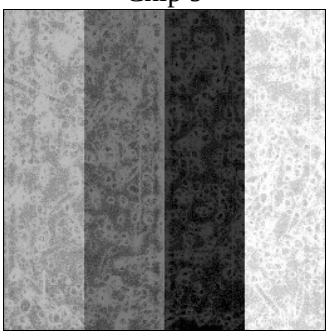
Chip 7



Chip 8



Chip 9



2.1.3 Parameters

obi_num	0	Obi number
ascdsver	8.1.2	ASCDS version number
caldbver	4.1.4	
date	2009-12-14T06:34:41	Date and time of file creation
revision	4	Processing version of data

sched_exp_time	18000.000000	Scheduled observation exposure time
ontime	13003.712174363	Sum of GTIs [s]
ontime2	12997.189164095	Sum of GTIs [s]
ontime3	12997.148173951	Sum of GTIs [s]
ontime6	13003.506974362	Sum of GTIs [s]
ontime7	13003.712174363	Sum of GTIs [s]
ontime8	13000.348064229	Sum of GTIs [s]
ontime9	13000.307024233	Sum of GTIs [s]
l1events	353406	Number of level 1 events

2.1.4 Events

	ccd 2	**ccd 3**	**ccd 6**	**ccd 7**	**ccd 8**	**ccd 9**
level 1 events	33520	33761	37703	129153	50420	68849
rejected events	9883	10560	11898	22451	12619	13108
rejected %	29%	31%	31%	17%	25%	19%

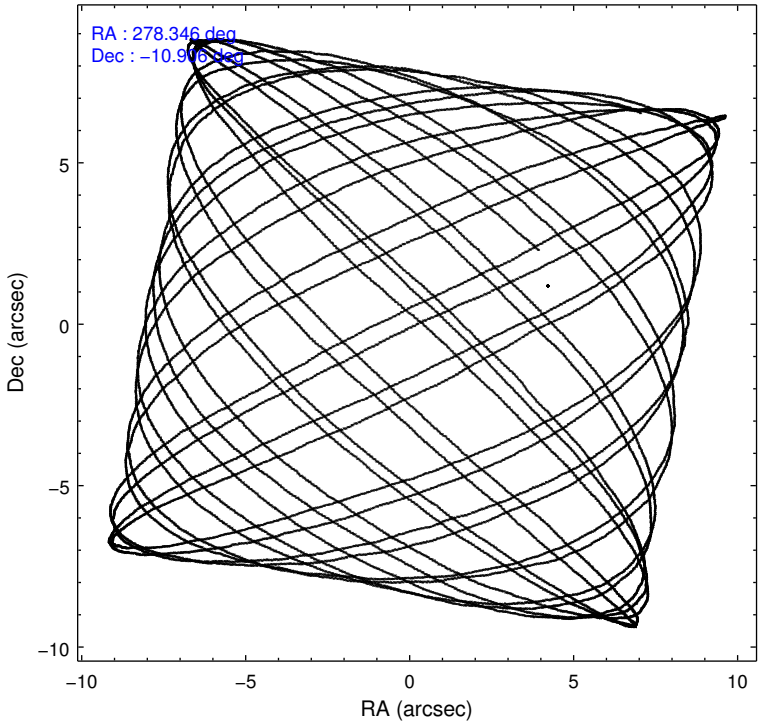
	ccd 2	**ccd 3**	**ccd 6**	**ccd 7**	**ccd 8**	**ccd 9**
grade 0 events	6628	6432	6919	5886	9997	30202
	19%	19%	18%	4%	19%	43%
grade 1 events	74	43	52	83	116	422
	0%	0%	0%	0%	0%	0%
grade 2 events	4895	4952	5263	13680	9423	8635
	14%	14%	13%	10%	18%	12%
grade 3 events	2339	2325	2575	8142	3598	3561
	6%	6%	6%	6%	7%	5%
grade 4 events	2191	2145	2368	6801	3212	4609
	6%	6%	6%	5%	6%	6%
grade 5 events	8772	9449	10694	17785	10930	10627
	26%	27%	28%	13%	21%	15%
grade 6 events	8621	8415	9832	76776	13144	10793
	25%	24%	26%	59%	26%	15%
grade 7 events	0	0	0	0	0	0
	0%	0%	0%	0%	0%	0%

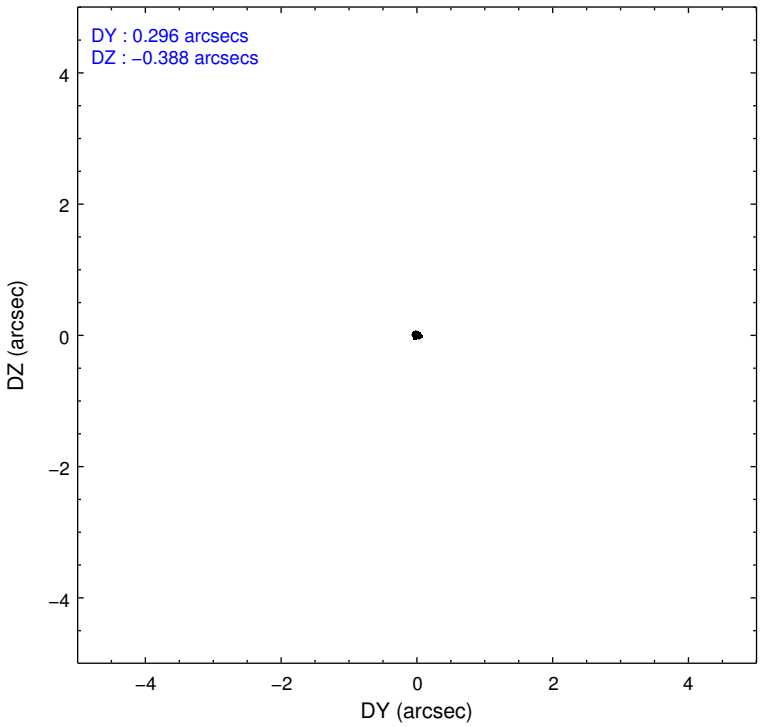
2.2 Compared Parameters

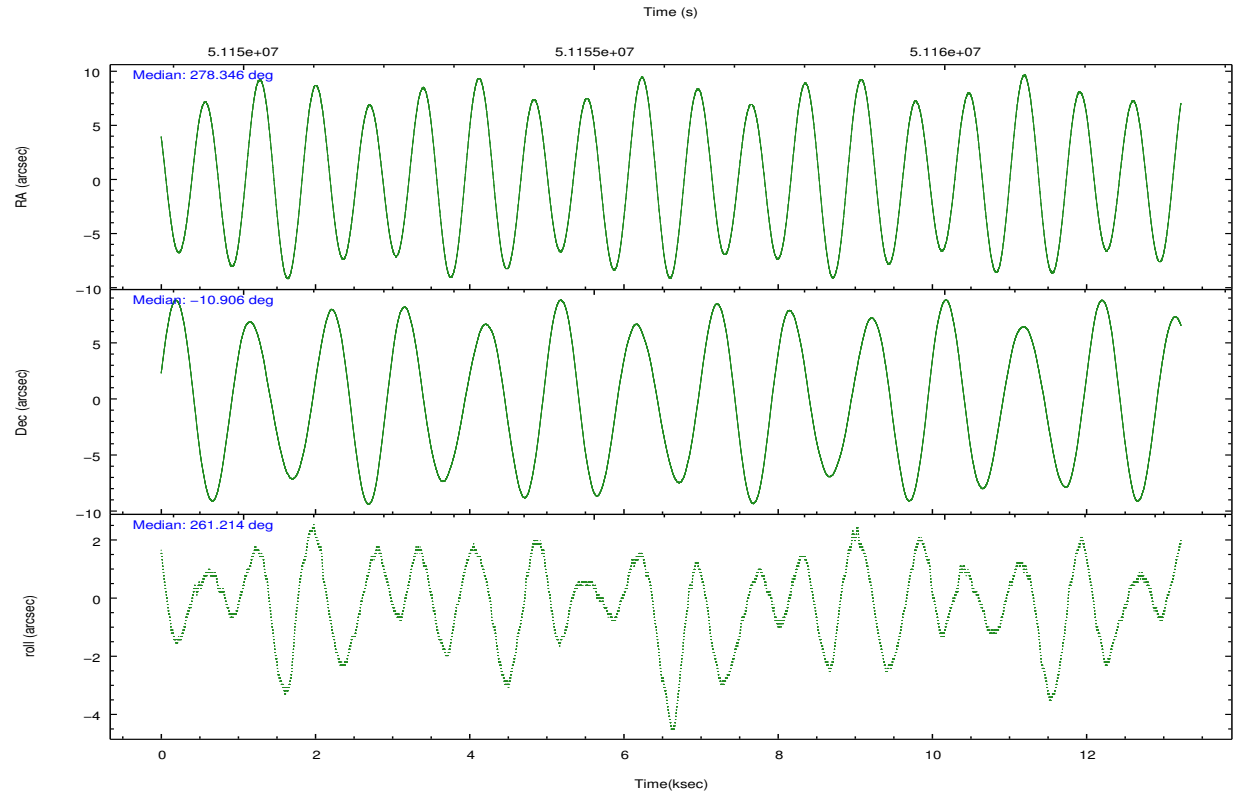
Parameter	Planned	Actual
Instrument	ACIS	ACIS
Detector	ACIS-236789	ACIS-236789
Grating	NONE	NONE
Data mode	FAINT	FAINT
Observation mode	POINTING	POINTING
Pointing RA	278.336586	278.3462527660018
Pointing Dec	-10.880889	-10.90681653239086
Pointing Roll	261.063688	261.2221444996568
SIM focus pos (mm)	-0.684267	0.255451383487682
SIM defocus (mm)	0	0.9397188447875782
SIM translation stage pos (mm)	-190.132523	-190.1325231039672
SIM translation stage offset (mm)	0	5.209593894051068e-07
Observation start time	51149413.184000	51149480.941641
Observation start date	1999-08-16T00:09:09	1999-08-16T00:11:20
Observation end time	51167413.184000	51163293.329628
Observation end date	1999-08-16T05:09:09	1999-08-16T04:01:33
Read mode	TIMED	TIMED

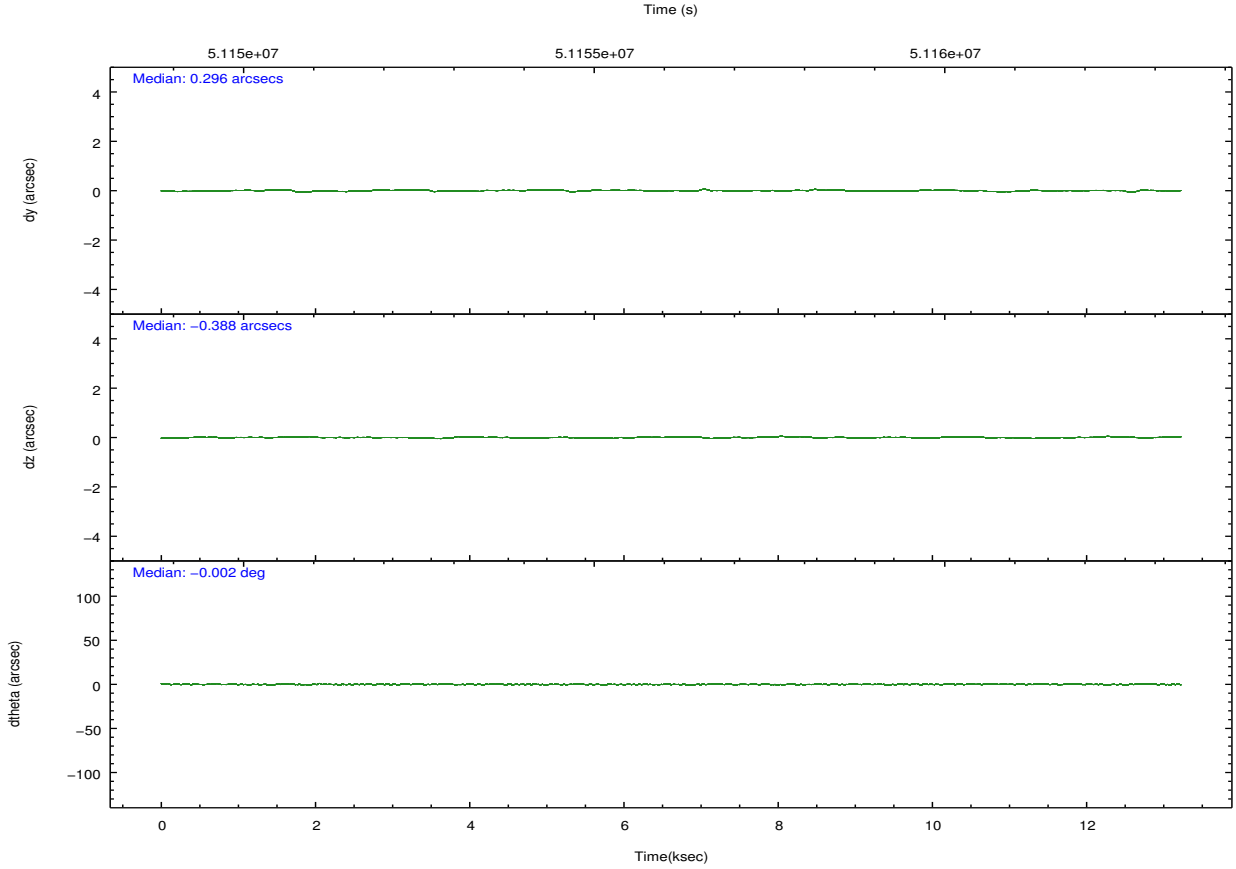
Parameter	Planned	Actual
Obspar format version number	6	6
Obspar file type	PREDICTED	ACTUAL
Obspar update status	NONE	UPDATED
Number of optional ACIS chips dropped	0	0
On-chip summing requested	N	N
Subarray requested	NONE	NONE
Alternating exposures requested	N	N
Primary exposure time	0.000000	3.2

2.3 Aspect


RA : 278.346 deg
Dec : −10.906 deg
Dec (arcsec)
RA (arcsec)
5
0
−5
−10
−10
−5
0
5
10


DY : 0.296 arcsecs
DZ : −0.388 arcsecs
DZ (arcsec)
DY (arcsec)
4
2
0
−2
−4
−4
−2
0
2
4


Time (s)
5.115e+07
5.1155e+07
5.116e+07
Median: 278.346 deg
RA (arcsec)
Median: −10.906 deg
Dec (arcsec)
Median: 261.214 deg
roll (arcsec)
Time(ksec)

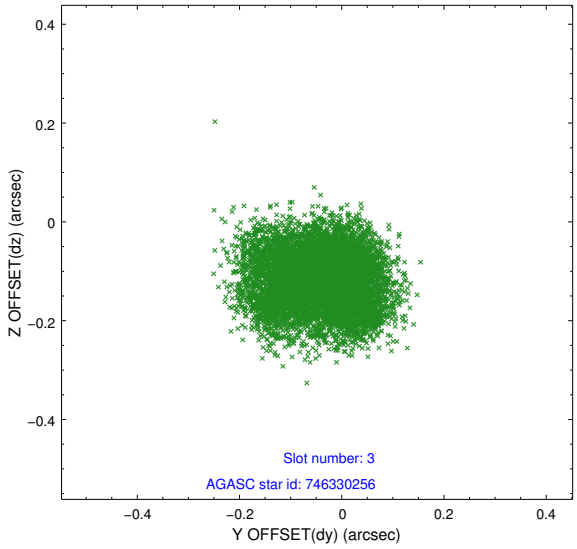

Time (s)
5.115e+07
5.1155e+07
5.116e+07
Median: 0.296 arcsecs
dy (arcsec)
Median: −0.388 arcsecs
dz (arcsec)
Median: −0.002 deg
dtheta (arcsec)
Time(ksec)

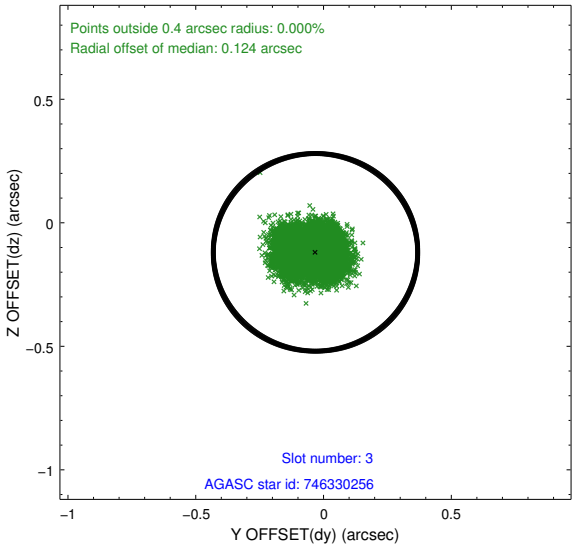
Slot Statistics

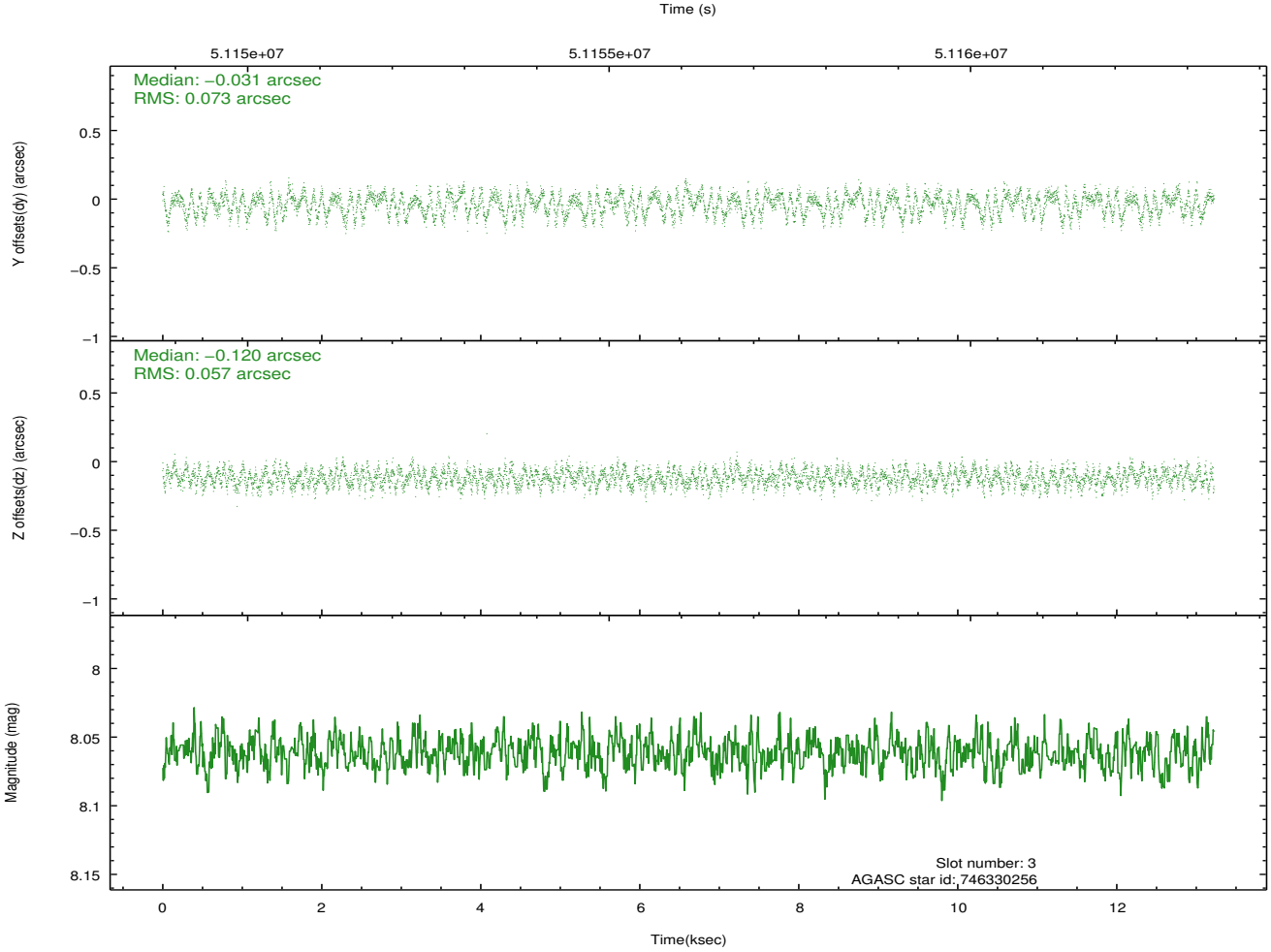
slot	status	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID	ACIS-S-4	7.23	6452	0.082	-0.054	0.005	0.008	0.000000	0.000000	2160.77	187.81
1	FID	ACIS-S-5	7.27	6451	-0.071	-0.031	0.004	0.008	0.000000	0.000000	-1805.81	181.46
2	FID	ACIS-S-6	7.37	6452	-0.040	0.099	0.006	0.010	0.000000	0.000000	408.66	825.32
3	GUIDE	746330256	8.06	6451	-0.031	-0.120	0.101	0.153	277.634401	-10.863955	329.91	-2461.11
4	GUIDE	746462456	8.37	6452	-0.107	0.072	0.092	0.145	278.652171	-10.530173	-1419.08	907.29
5	GUIDE	746995400	9.58	6368	0.143	0.002	0.139	0.224	278.078957	-11.289885	1597.60	-669.02
6	GUIDE	746461728	9.80	6443	-0.123	0.064	0.187	0.298	278.986921	-10.530755	-1599.18	2078.62
7	GUIDE	746456864	9.68	6447	0.116	-0.017	0.132	0.216	278.447021	-11.192395	1048.43	560.35

2.4 Star Slots

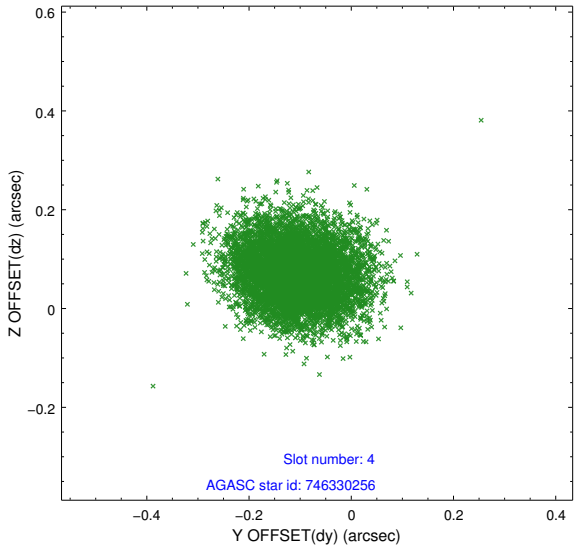
2.4.1 Slot 3

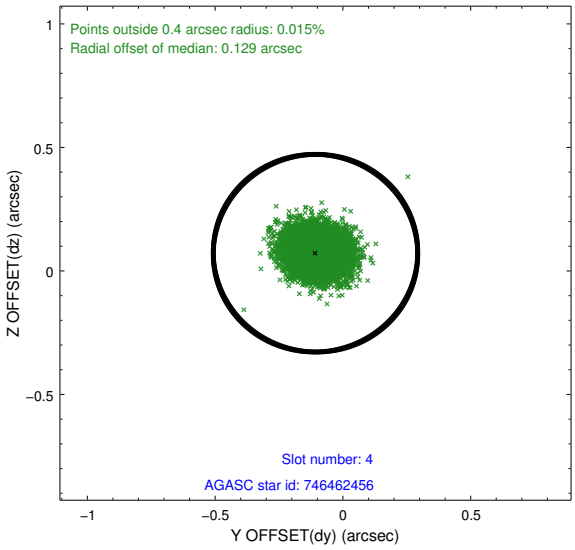


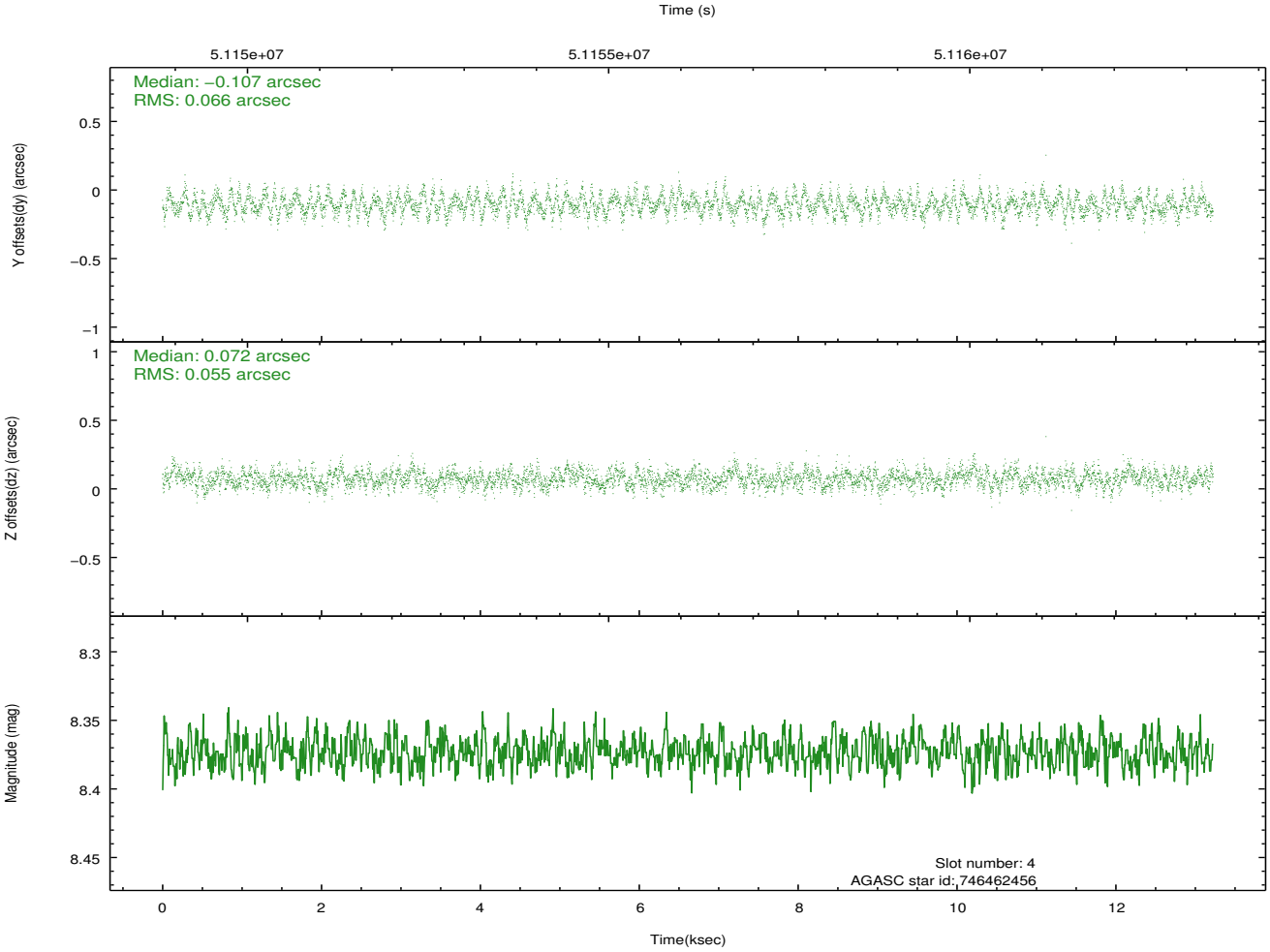




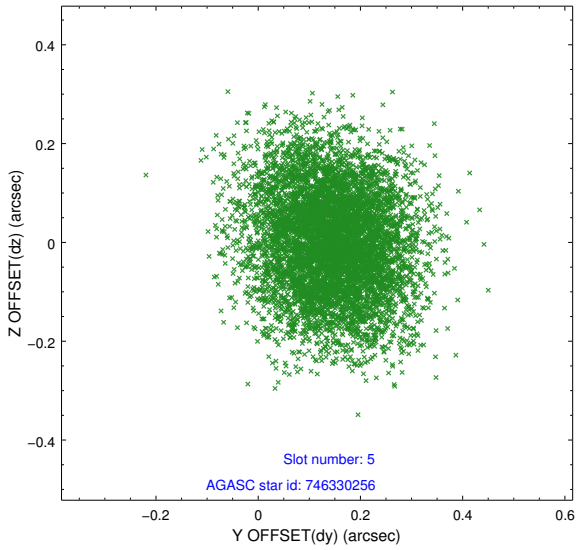
2.4.2 Slot 4

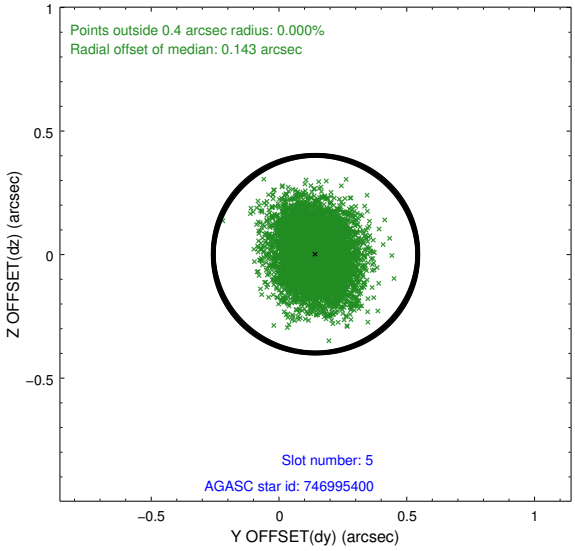

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 4
AGASC star id: 746330256

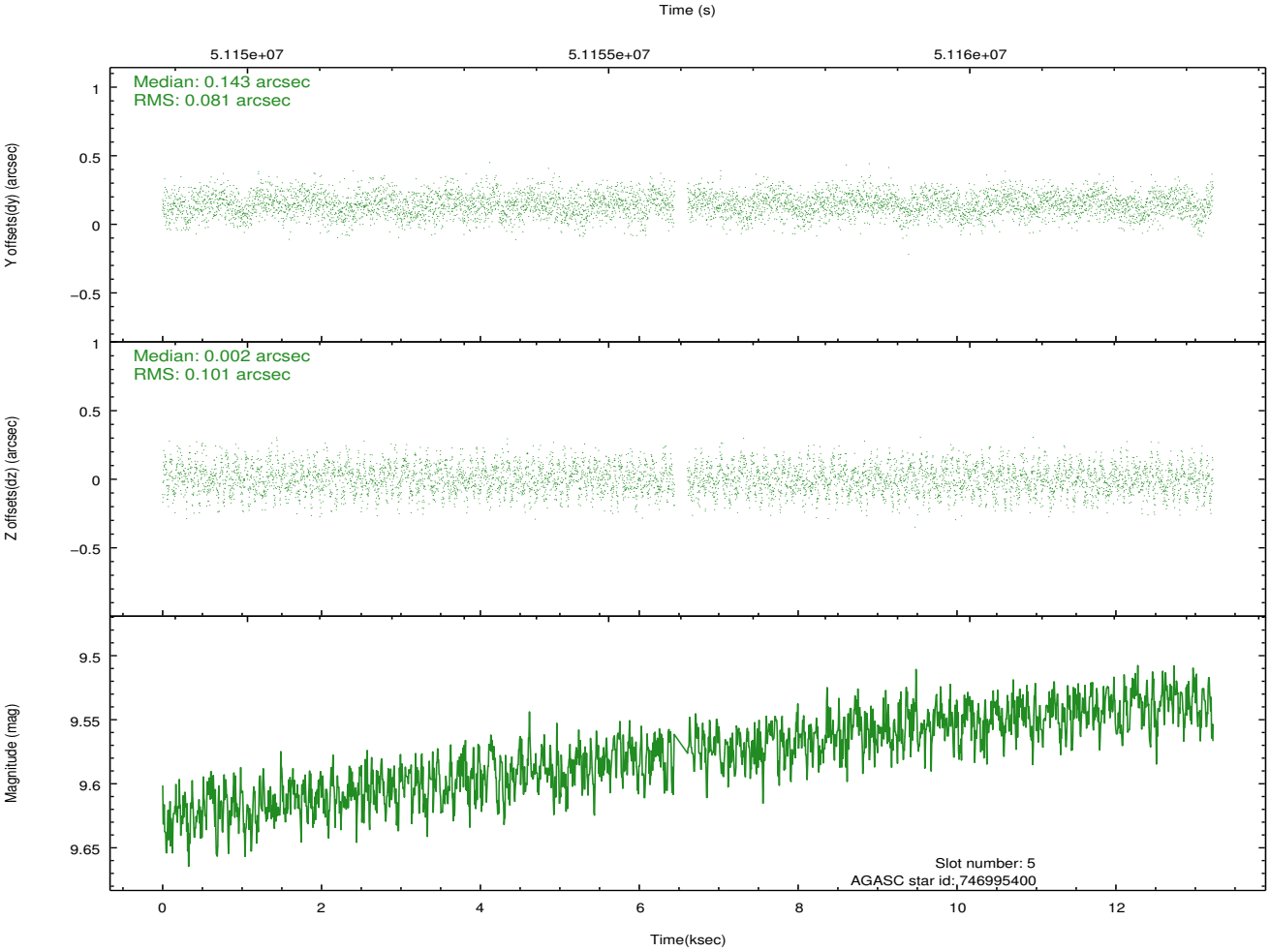

Points outside 0.4 arcsec radius: 0.015%
Radial offset of median: 0.129 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 4
AGASC star id: 746462456


Time (s)
Median: −0.107 arcsec
RMS: 0.066 arcsec
Y offsets(dy) (arcsec)
Median: 0.072 arcsec
RMS: 0.055 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number: 4
AGASC star id: 746462456
Time(ksec)

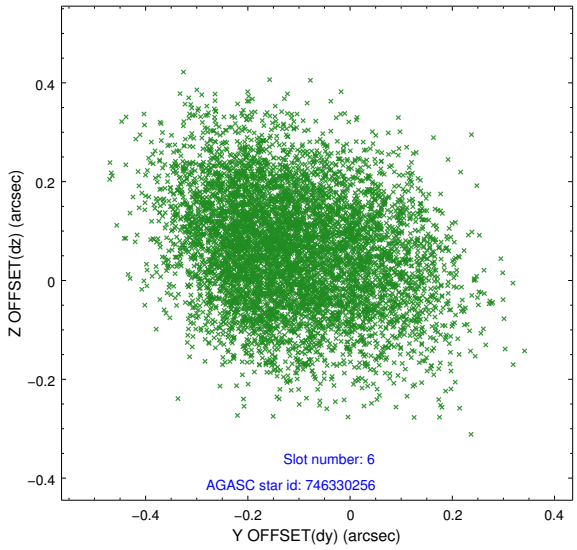
2.4.3 Slot 5

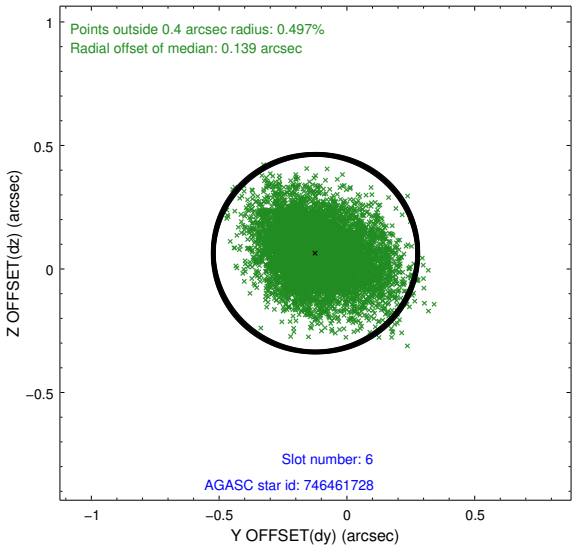

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 5
AGASC star id: 746330256

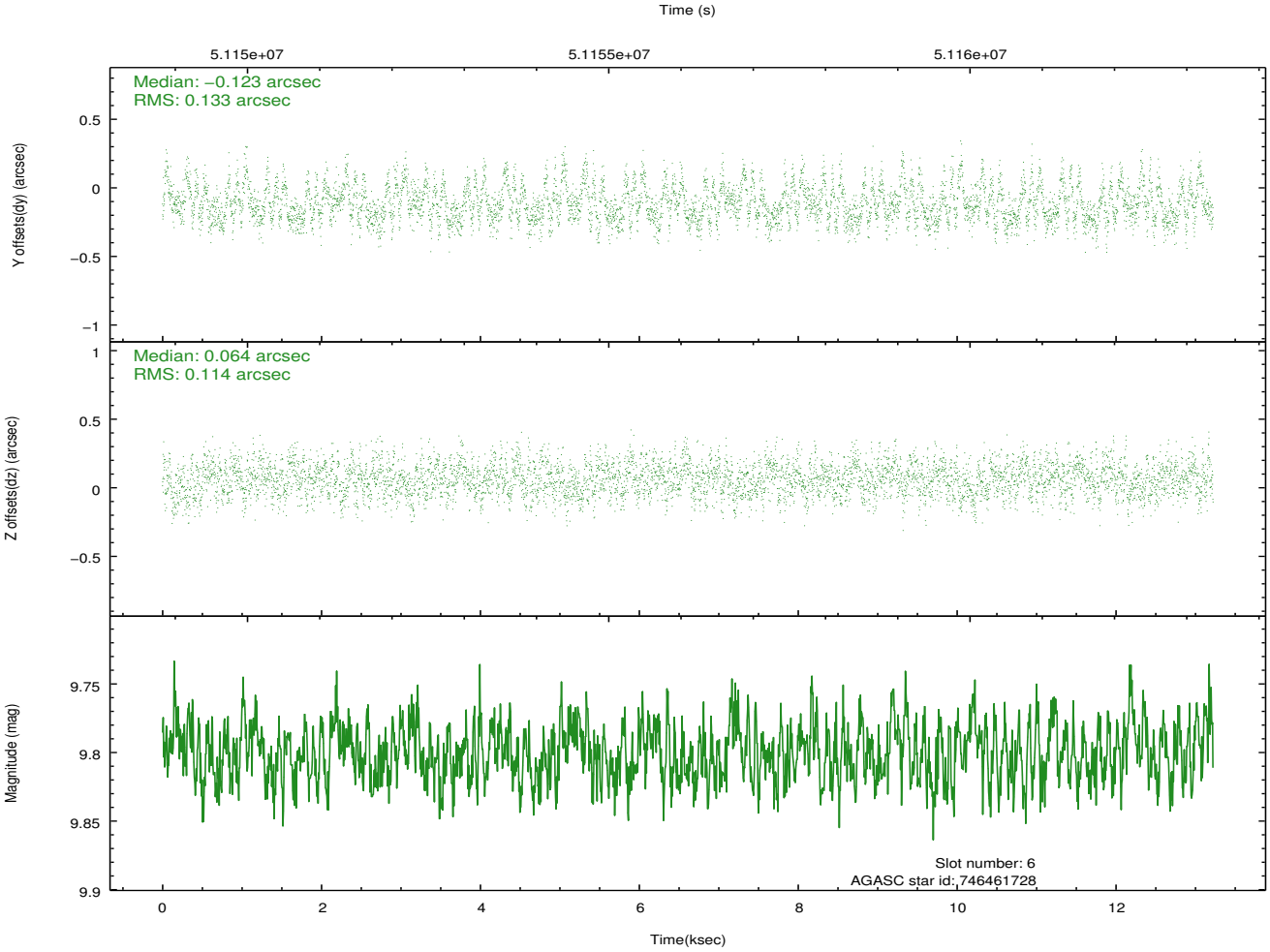

Points outside 0.4 arcsec radius: 0.000%
Radial offset of median: 0.143 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 5
AGASC star id: 746995400


Time (s)
5.115e+07
5.1155e+07
5.116e+07
Median: 0.143 arcsec
RMS: 0.081 arcsec
Y offsets(dy) (arcsec)
Median: 0.002 arcsec
RMS: 0.101 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number: 5
AGASC star id: 746995400
Time(ksec)

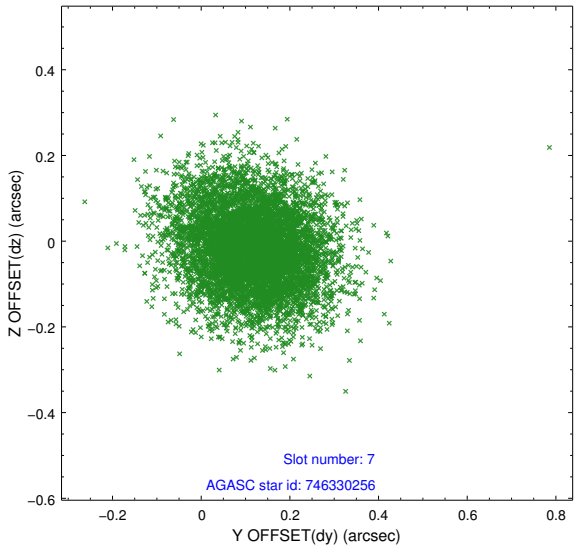
2.4.4 Slot 6

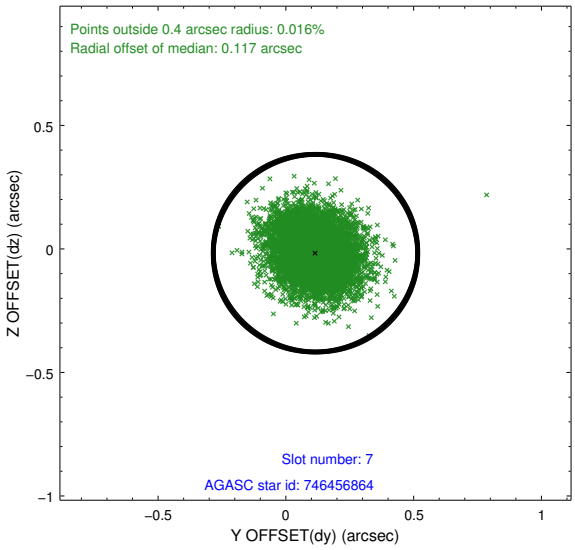

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 6
AGASC star id: 746330256

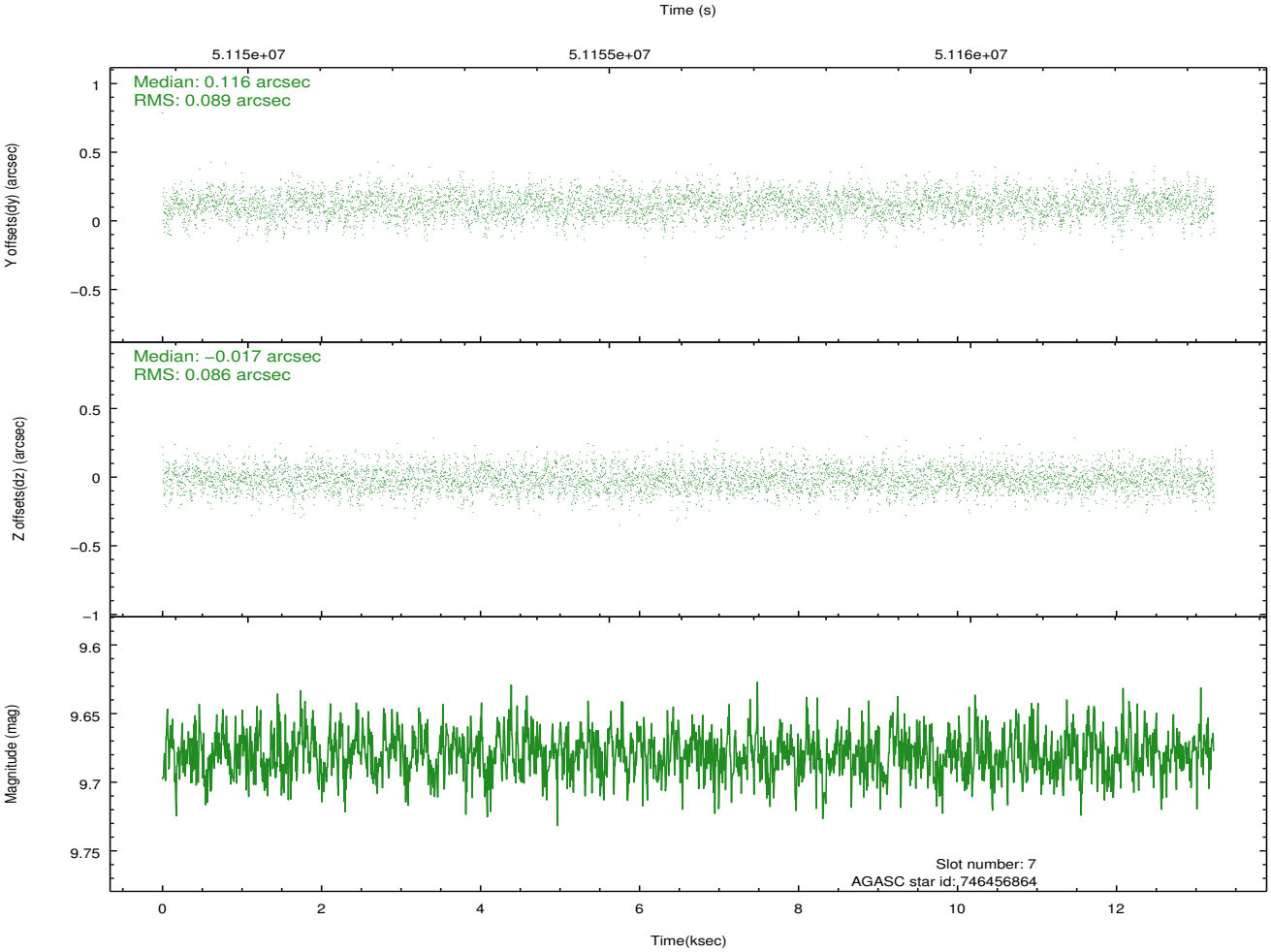

Points outside 0.4 arcsec radius: 0.497%
Radial offset of median: 0.139 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 6
AGASC star id: 746461728


Time (s)
Median: −0.123 arcsec
RMS: 0.133 arcsec
Y offsets(dy) (arcsec)
Median: 0.064 arcsec
RMS: 0.114 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number: 6
AGASC star id: 746461728
Time(ksec)

2.4.5 Slot 7

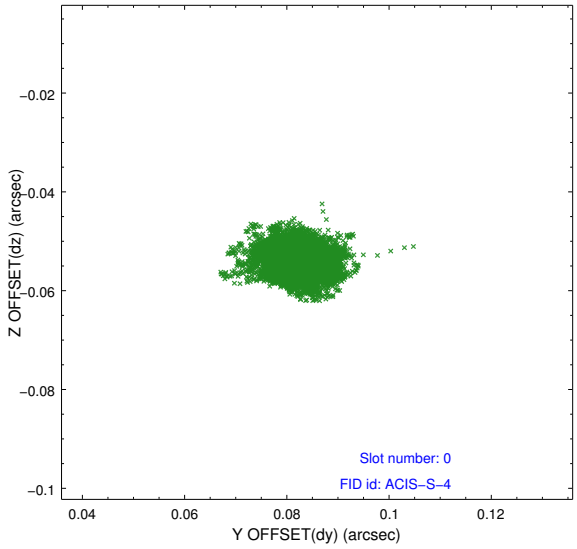

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 7
AGASC star id: 746330256

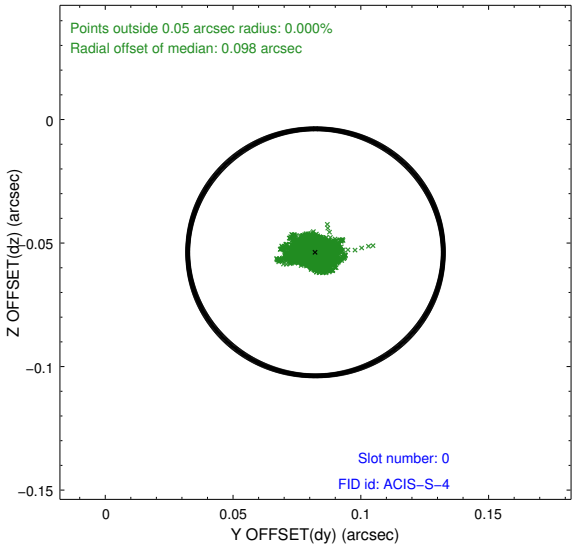

Points outside 0.4 arcsec radius: 0.016%
Radial offset of median: 0.117 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 7
AGASC star id: 746456864

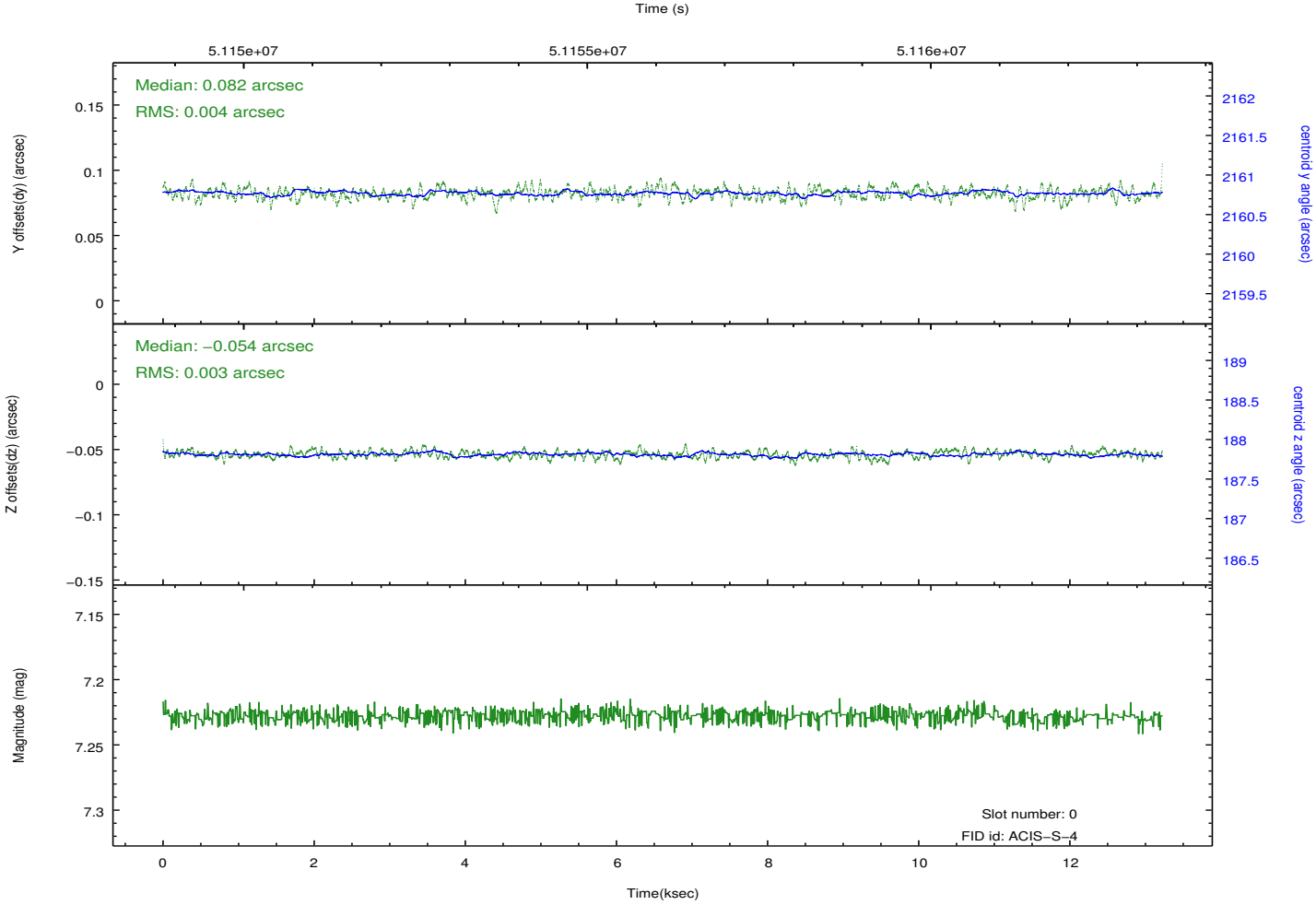

Time (s)
5.115e+07
5.1155e+07
5.116e+07
Median: 0.116 arcsec
RMS: 0.089 arcsec
Y offsets(dy) (arcsec)
Median: −0.017 arcsec
RMS: 0.086 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number: 7
AGASC star id: 746456864
Time(ksec)

2.5 FID Slots

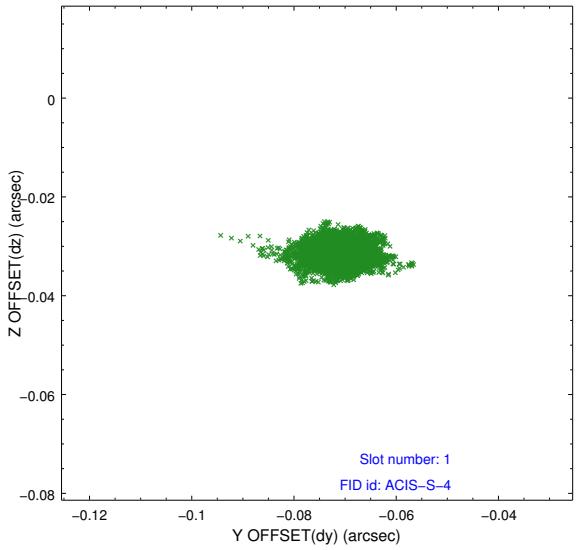
2.5.1 Slot 0

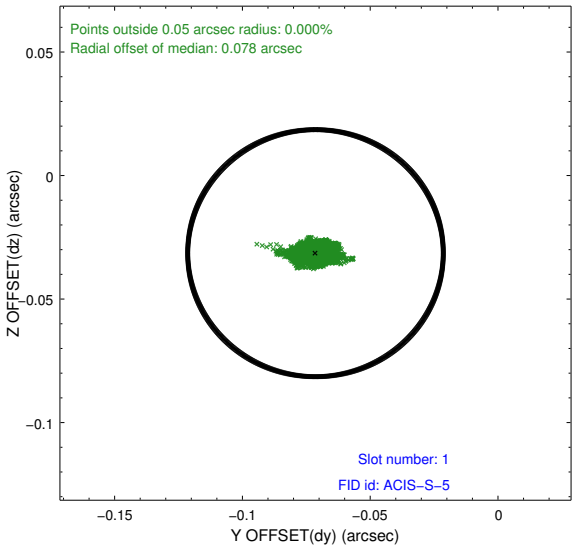


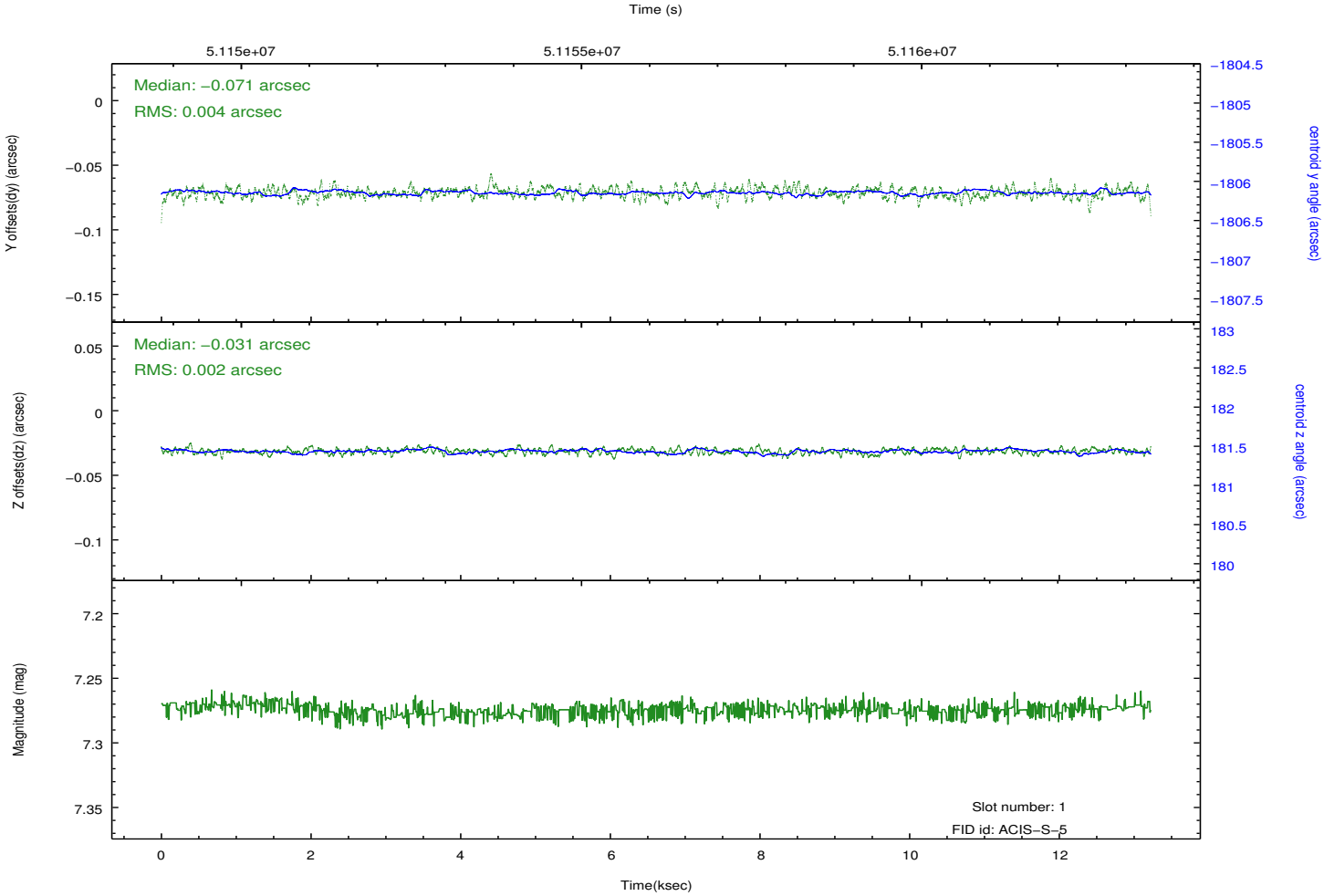




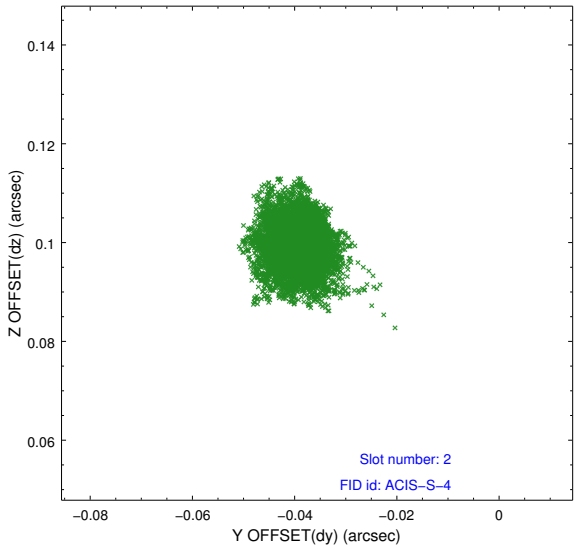
2.5.2 Slot 1

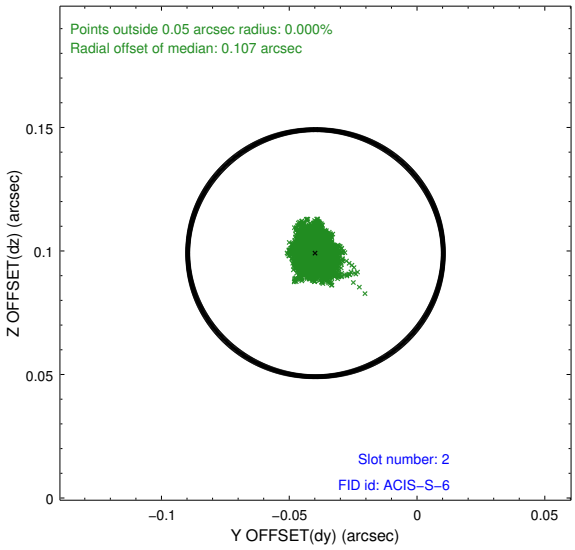

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 1
FID id: ACIS−S−4

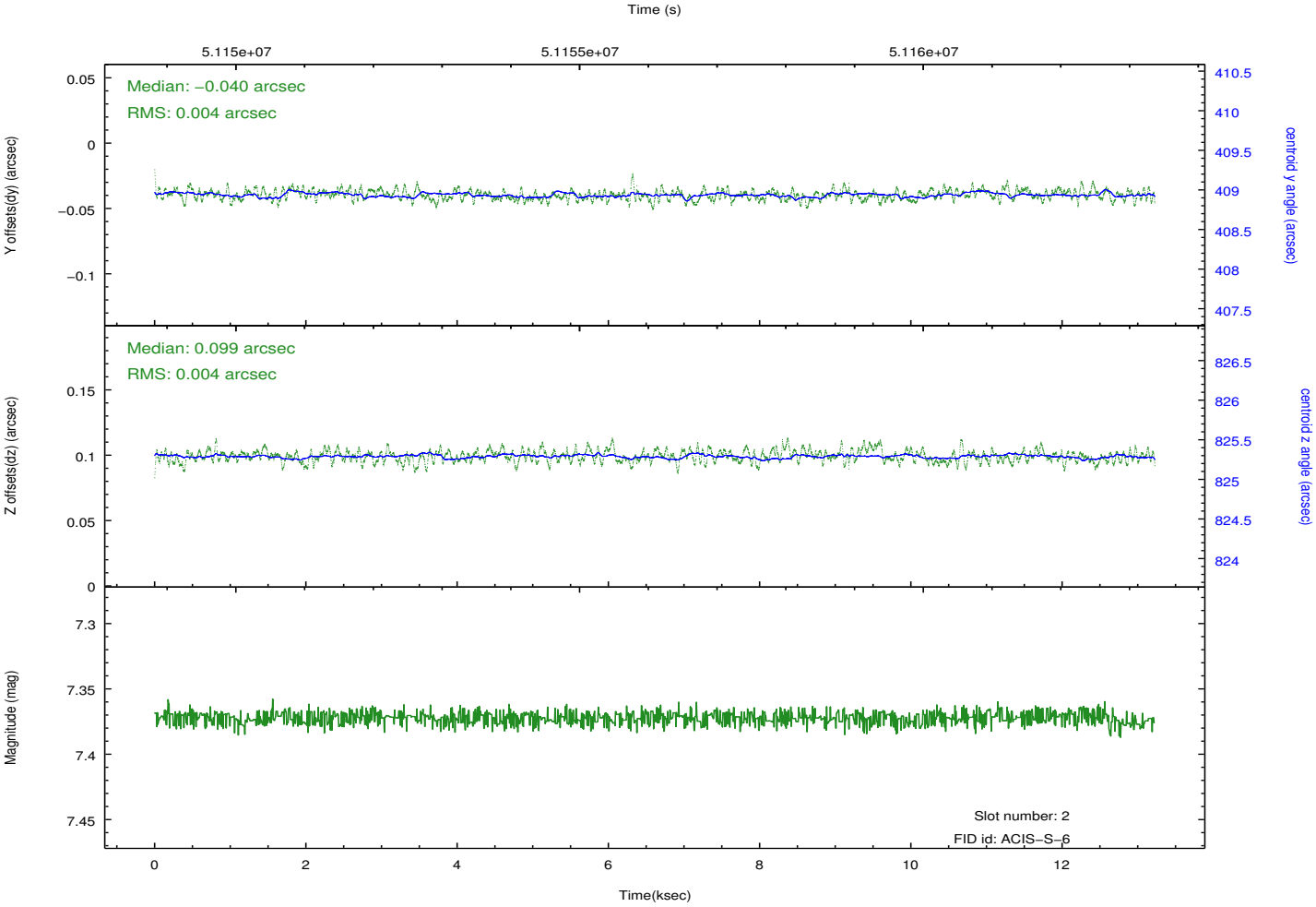

Points outside 0.05 arcsec radius: 0.000%
Radial offset of median: 0.078 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 1
FID id: ACIS−S−5


Time (s)
Median: −0.071 arcsec
RMS: 0.004 arcsec
Y offsets(dy) (arcsec)
Median: −0.031 arcsec
RMS: 0.002 arcsec
Z offsets(dz) (arcsec)
centroid y angle (arcsec)
centroid z angle (arcsec)
Magnitude (mag)
Slot number: 1
FID id: ACIS−S−5
Time(ksec)

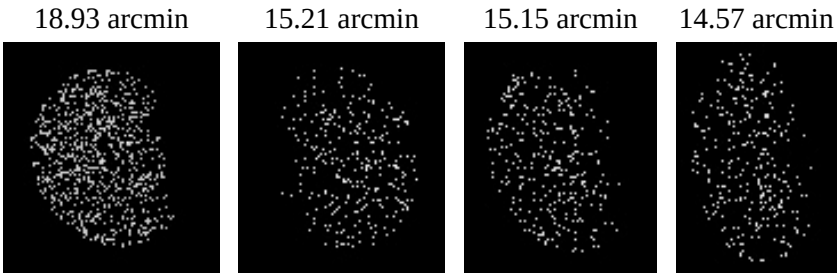
2.5.3 Slot 2


Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 2
FID id: ACIS−S−4


Points outside 0.05 arcsec radius: 0.000%
Radial offset of median: 0.107 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 2
FID id: ACIS−S−6


Time (s)
5.115e+07
5.1155e+07
5.116e+07
Median: −0.040 arcsec
RMS: 0.004 arcsec
Y offsets(dy) (arcsec)
centroid y angle (arcsec)
Median: 0.099 arcsec
RMS: 0.004 arcsec
Z offsets(dz) (arcsec)
centroid z angle (arcsec)
Magnitude (mag)
Slot number: 2
FID id: ACIS−S−6
Time(ksec)

3 Point Sources



A Summary

A.1 Status

V&V Scientist	Joy Nichols
V&V Date (YYYY-MM-DD)	2010.03.29
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	18

A.2 Comments

```
Off-axis effective area measurement on chip S5. Repeat of obsid 167.
===
Charge time remains at previous value of 18 ksec, although with the
current processing the charge time would have been 13 ksec.
==
Elevated count rate during last 6 ksec of observation due to a high
radiation environment.
===
The focal plane temperature is approximately -100 C during this
observation. This reprocessing of the data applies no CTI correction
because none is available for this temperature at present.

The ACIS CTI correction has not been calibrated at this temperature,
because it was early in the mission, and ACIS had not yet been lowered
to the standard -119.7 C. Both front and back illuminated chips are
affected. However a T_GAIN correction has been applied to the BI chips
(ACIS-5 and ACIS-7) data included here.

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.
```