V&V Reference Report
L2 ASCDS Version : 8.1.1

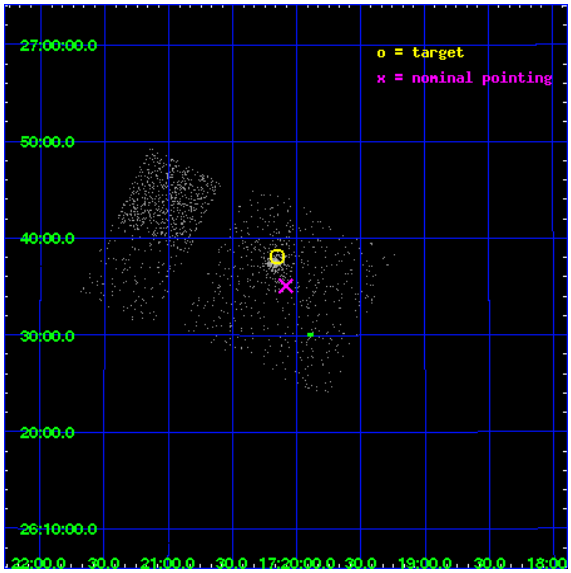
Observation 549 - L2 Version 3
Chandra X-Ray Center

L2 Processing Date : Nov 20 2009

Contents

1 Front

seq_num	800057	Sequence number
obs_id	549	Observation id
title	DETERMINATION OF H0/Q0	Proposal title
observer	DR. LEON VANSPEYBROECK	Principal investigator
object	RX J1720.1+2638	Source name
dtycycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	260.037083	Observer's specified target RA
dec_targ	26.635	Observer's specified target Dec
ra_nom	260.02111867034	Nominal RA
dec_nom	26.585267233252	Nominal Dec
roll_nom	296.12017191938	Nominal Roll
revision	3	Processing version of data
ontime	160.00000014901	Sum of GTIs [s]
livetime	157.97398380669	Livetime [s]
ontime0	160.00000014901	Sum of GTIs [s]
ontime1	160.00000014901	Sum of GTIs [s]
ontime2	160.00000014901	Sum of GTIs [s]
ontime3	160.00000014901	Sum of GTIs [s]
ontime6	160.00000014901	Sum of GTIs [s]
ontime7	160.00000014901	Sum of GTIs [s]
l2events	1740	Number of level 2 events

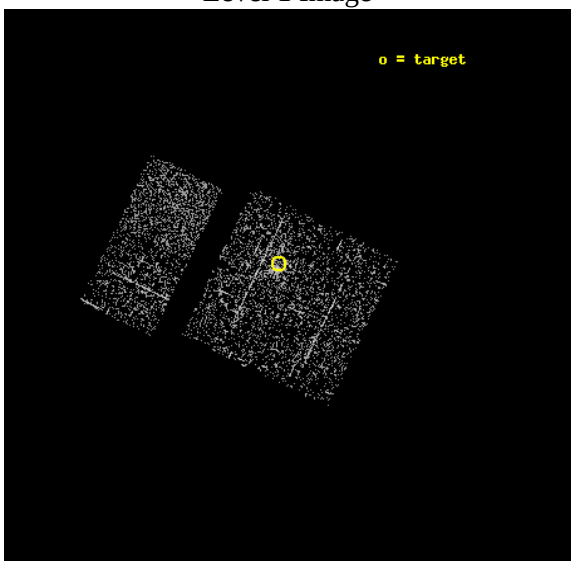


2 OBI

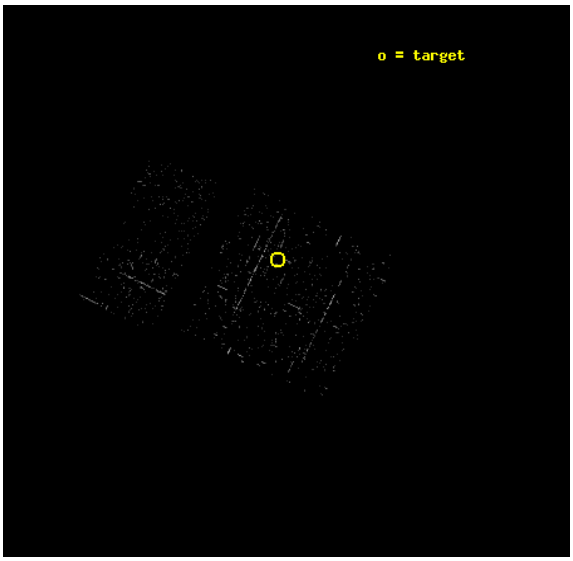
2.1 OBI

2.1.1 Images

Level 1 Image

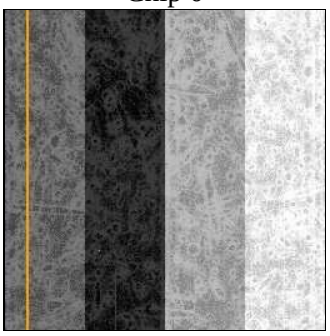


Level 1 Bad Events

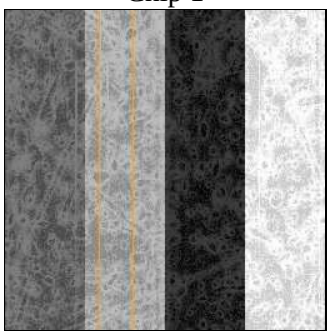


2.1.2 Bias

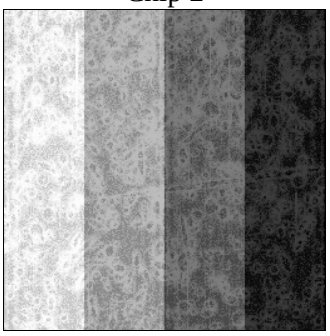
Chip 0



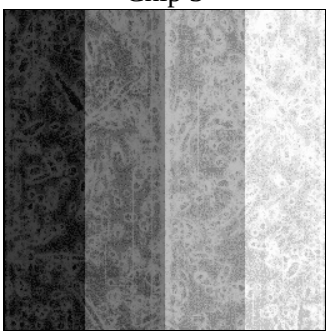
Chip 1



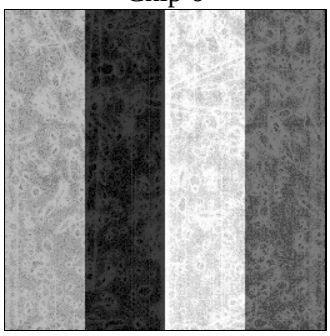
Chip 2



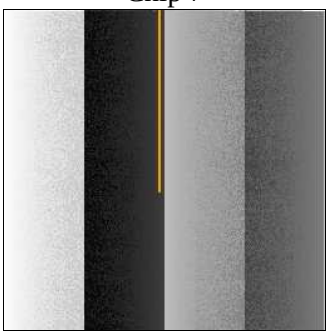
Chip 3



Chip 6



Chip 7



2.1.3 Parameters

obi_num	1	Obi number
ascdsver	8.1.1	ASCDS version number
caldbver	4.1.4	
date	2009-11-20T11:02:53	Date and time of file creation
revision	3	Processing version of data

sched_exp_time	520.000000	Scheduled observation exposure time
ontime	160.00000014901	Sum of GTIs [s]
ontime0	160.00000014901	Sum of GTIs [s]
ontime1	160.00000014901	Sum of GTIs [s]
ontime2	160.00000014901	Sum of GTIs [s]
ontime3	160.00000014901	Sum of GTIs [s]
ontime6	160.00000014901	Sum of GTIs [s]
ontime7	160.00000014901	Sum of GTIs [s]
l1events	9043	Number of level 1 events

2.1.4 Events

	ccd 0	**ccd 1**	**ccd 2**	**ccd 3**	**ccd 6**	**ccd 7**
level 1 events	1368	1206	1449	1869	1467	1684
rejected events	1153	1067	1300	1403	1320	974
rejected %	84%	88%	89%	75%	89%	57%

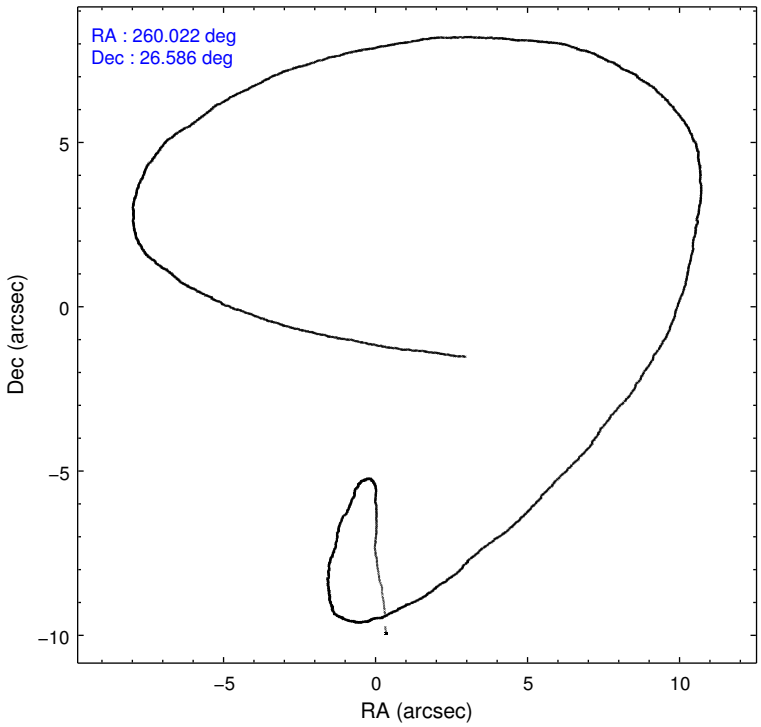
	ccd 0	**ccd 1**	**ccd 2**	**ccd 3**	**ccd 6**	**ccd 7**
grade 0 events	104	44	37	230	31	68
	7%	3%	2%	12%	2%	4%
grade 1 events	0	0	0	0	1	1
	0%	0%	0%	0%	0%	0%
grade 2 events	54	48	62	183	60	159
	3%	3%	4%	9%	4%	9%
grade 3 events	11	7	9	15	9	42
	0%	0%	0%	0%	0%	2%
grade 4 events	16	10	15	11	7	36
	1%	0%	1%	0%	0%	2%
grade 5 events	26	31	28	34	37	90
	1%	2%	1%	1%	2%	5%
grade 6 events	30	30	28	39	40	416
	2%	2%	1%	2%	2%	24%
grade 7 events	1127	1036	1270	1357	1282	872
	82%	85%	87%	72%	87%	51%

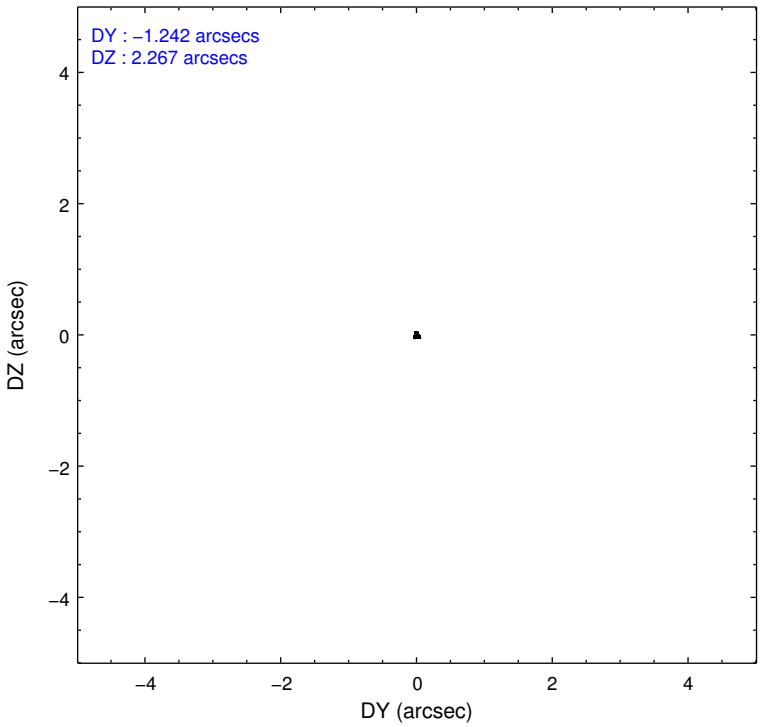
2.2 Compared Parameters

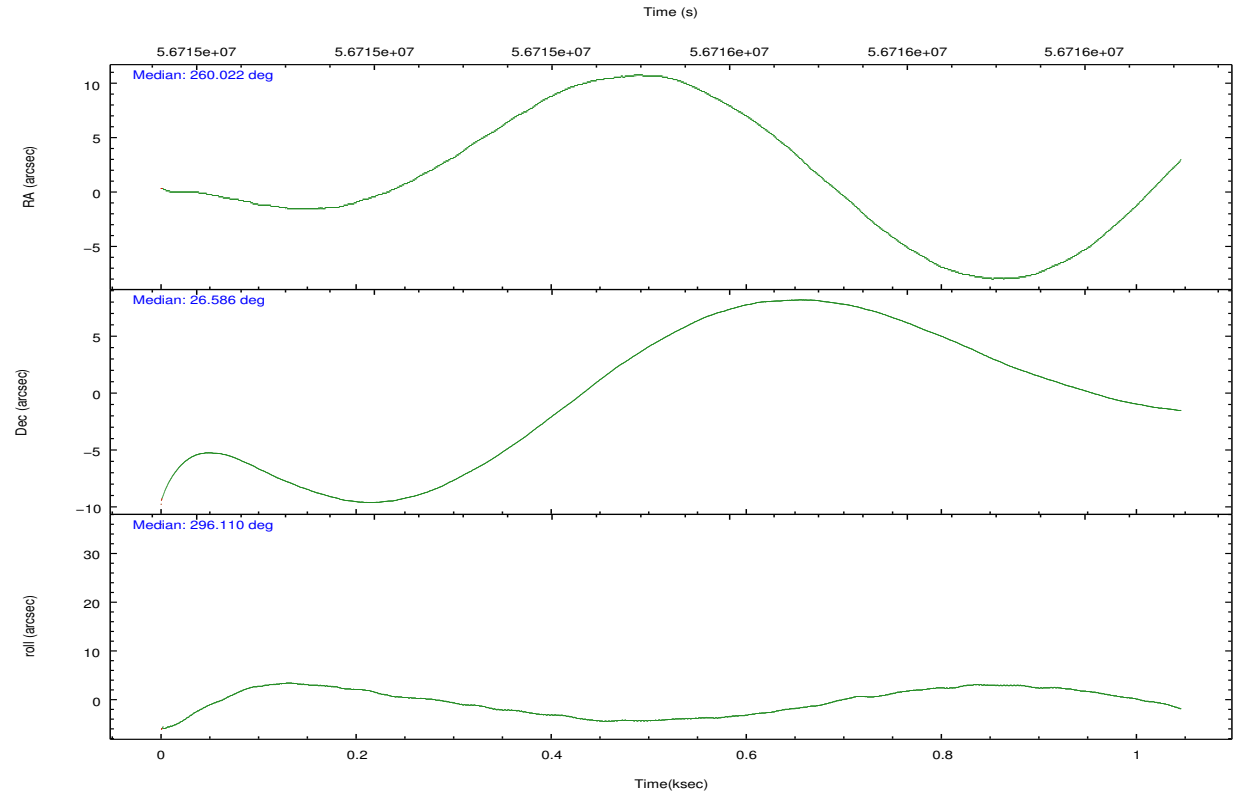
Parameter	Planned	Actual
Instrument	ACIS	ACIS
Detector	ACIS-012367	ACIS-012367
Grating	NONE	NONE
Data mode	VFAINT	VFAINT
Observation mode	POINTING	POINTING
Pointing RA	259.994631	260.0211186703356
Pointing Dec	26.600990	26.5852672332522
Pointing Roll	295.923603	296.1201719193818
SIM focus pos (mm)	-0.782348	-0.7809083437167272
SIM defocus (mm)	0	0.001439871863259334
SIM translation stage pos (mm)	-233.592463	-233.5874344608287
SIM translation stage offset (mm)	0	-0.005018542100998502
Observation start time	56715454.184000	56714061.055553
Observation start date	1999-10-19T10:16:30	1999-10-19T09:54:21
Observation end time	56715974.184000	56716058.780625
Observation end date	1999-10-19T10:25:10	1999-10-19T10:27:38
Read mode	TIMED	TIMED

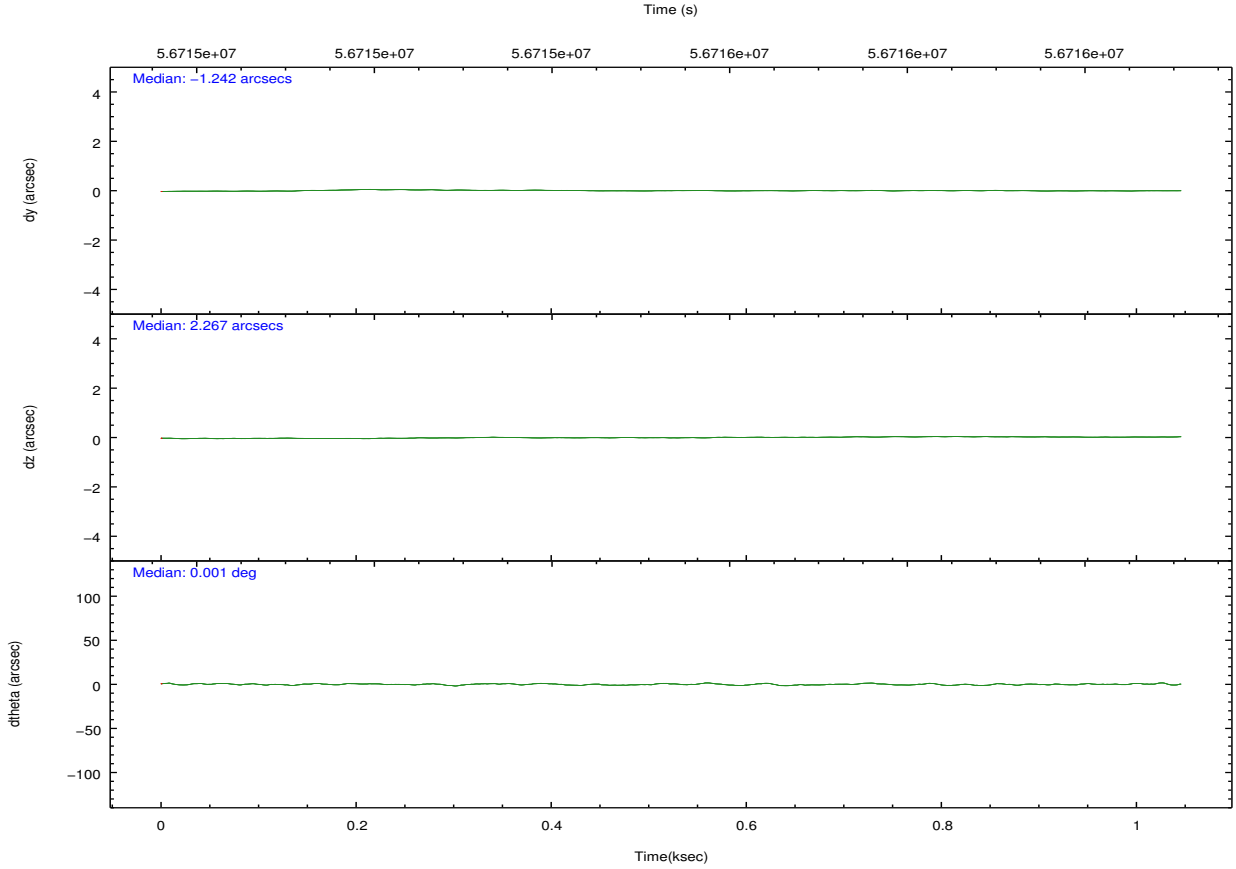
Parameter	Planned	Actual
Obspar format version number	6	6
Obspar file type	PREDICTED	ACTUAL
Obspar update status	NONE	UPDATED
Number of optional ACIS chips dropped	0	0
On-chip summing requested	N	N
Subarray requested	NONE	NONE
Alternating exposures requested	N	N
Primary exposure time	0.000000	3.2

2.3 Aspect


RA : 260.022 deg
Dec : 26.586 deg
Dec (arcsec)
RA (arcsec)
5
0
−5
−10
−5
0
5
10


DY : −1.242 arcsecs
DZ : 2.267 arcsecs
DZ (arcsec)
DY (arcsec)
4
2
0
−2
−4
−4
−2
0
2
4


Time (s)
5.6715e+07
5.6715e+07
5.6715e+07
5.6716e+07
5.6716e+07
5.6716e+07
Median: 260.022 deg
RA (arcsec)
Median: 26.586 deg
Dec (arcsec)
Median: 296.110 deg
roll (arcsec)
Time(ksec)

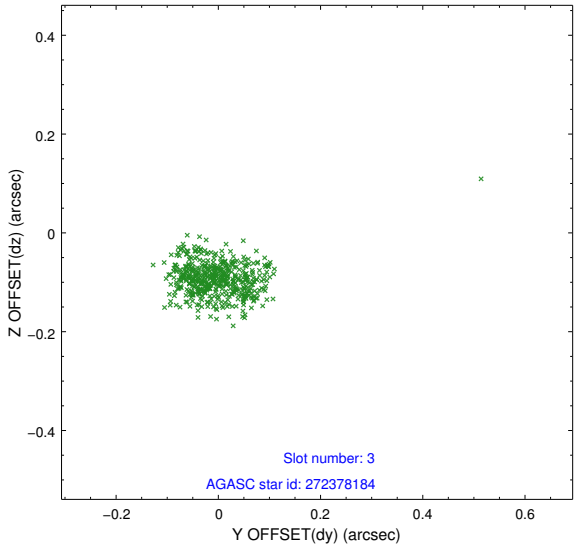

Time (s)
5.6715e+07
5.6715e+07
5.6715e+07
5.6716e+07
5.6716e+07
5.6716e+07
Median: −1.242 arcsecs
dy (arcsec)
Median: 2.267 arcsecs
dz (arcsec)
Median: 0.001 deg
dtheta (arcsec)
Time(ksec)

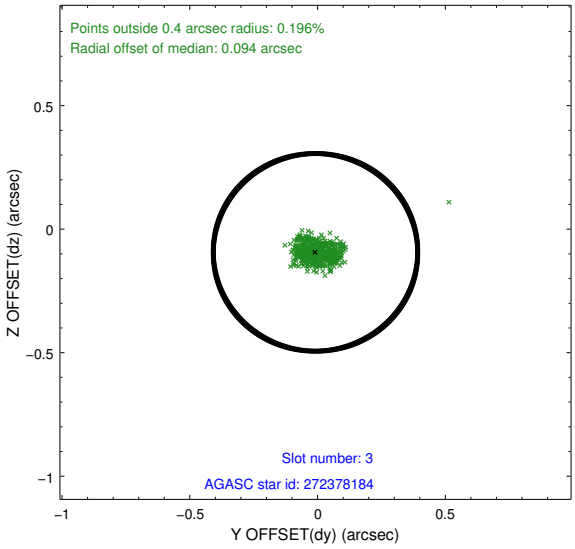
Slot Statistics

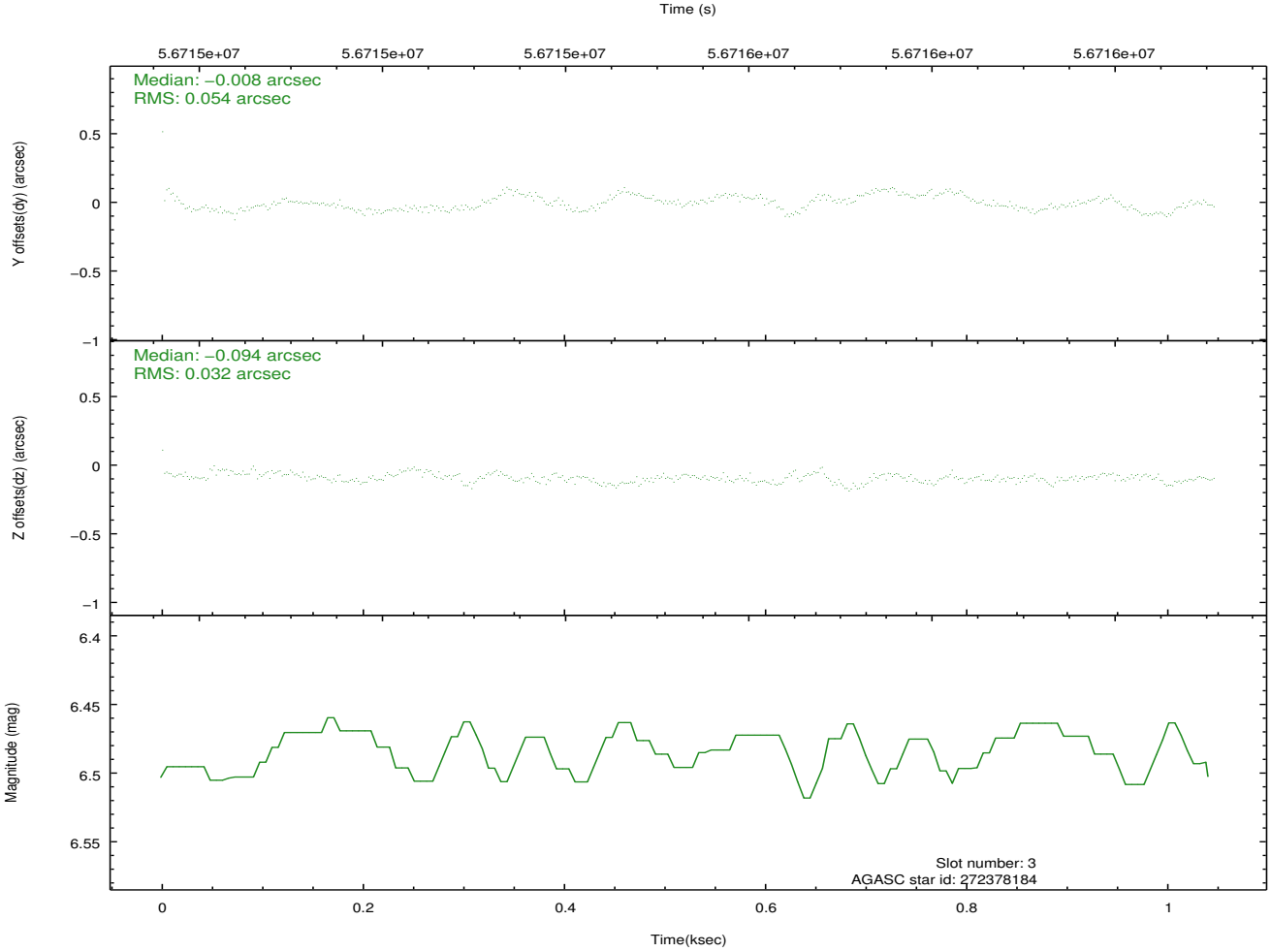
slot	status	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID	ACIS-I-2	7.20	511	-0.057	0.027	0.010	0.018	0.000000	0.000000	-753.13	-831.82
1	FID	ACIS-I-4	7.22	511	0.131	0.032	0.006	0.010	0.000000	0.000000	2159.83	1072.62
2	FID	ACIS-I-5	7.23	511	-0.173	0.009	0.009	0.017	0.000000	0.000000	-1802.93	1074.25
3	GUIDE	272378184	6.49	511	-0.008	-0.094	0.064	0.100	259.624547	25.808001	2040.61	-2332.59
4	GUIDE	272911104	8.60	511	-0.060	-0.031	0.071	0.104	260.699049	26.523786	1238.44	1910.80
5	GUIDE	272905040	9.13	511	-0.092	0.052	0.069	0.107	260.363769	26.943354	-591.58	1601.99
6	GUIDE	272907776	9.24	511	0.052	0.111	0.080	0.125	260.539378	26.537075	967.76	1475.66
7	GUIDE	272370688	9.38	509	0.109	-0.040	0.078	0.127	260.078386	26.214743	1369.34	-368.21

2.4 Star Slots

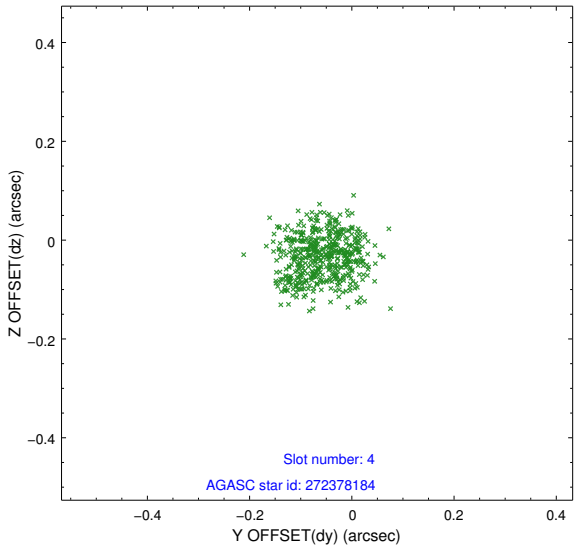
2.4.1 Slot 3

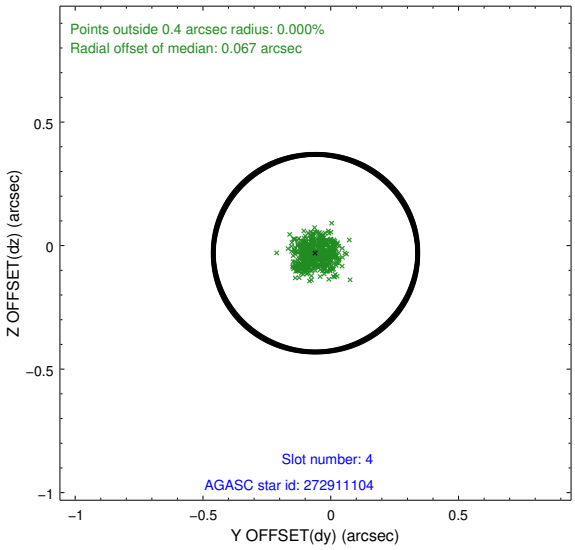


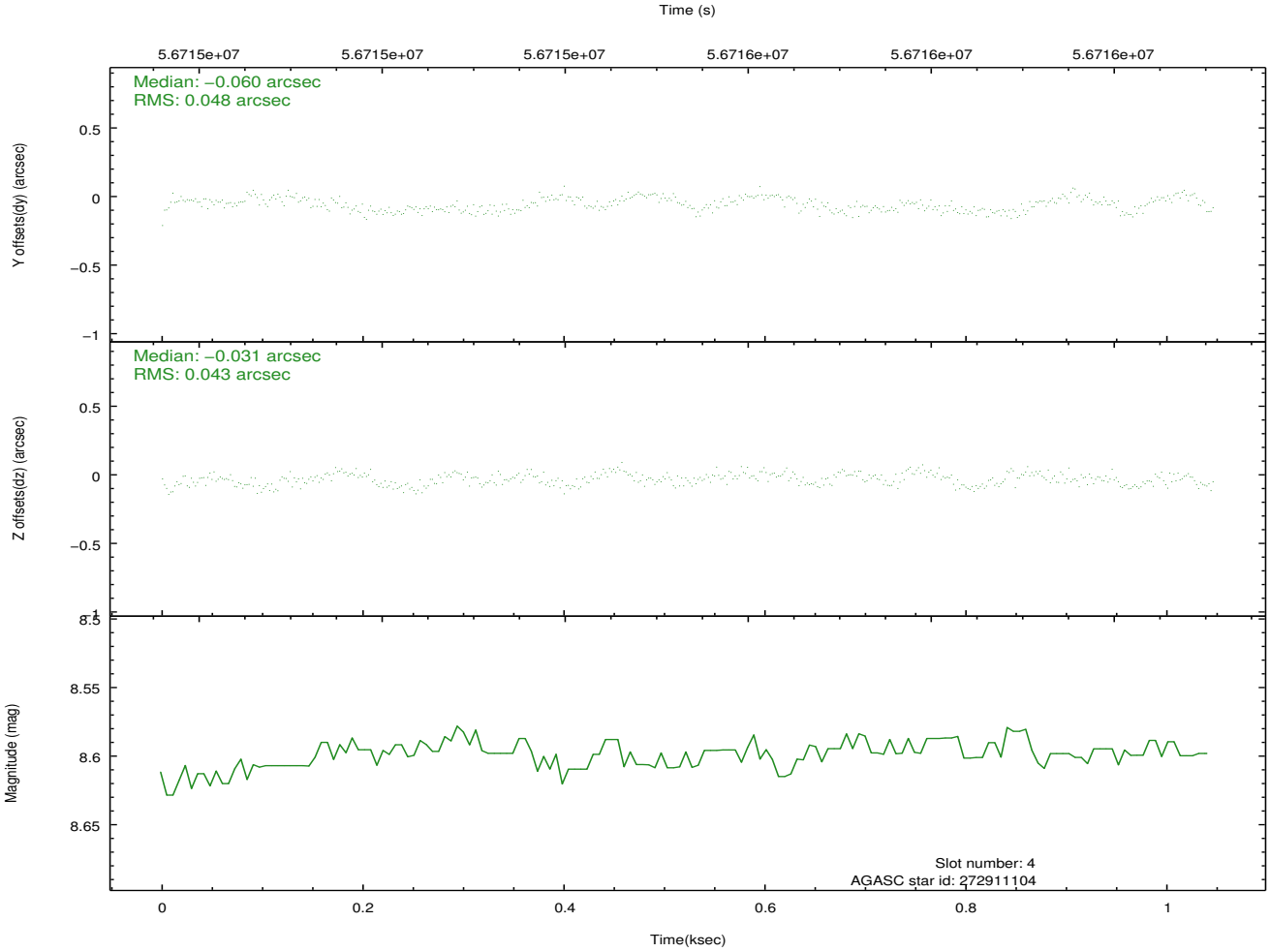




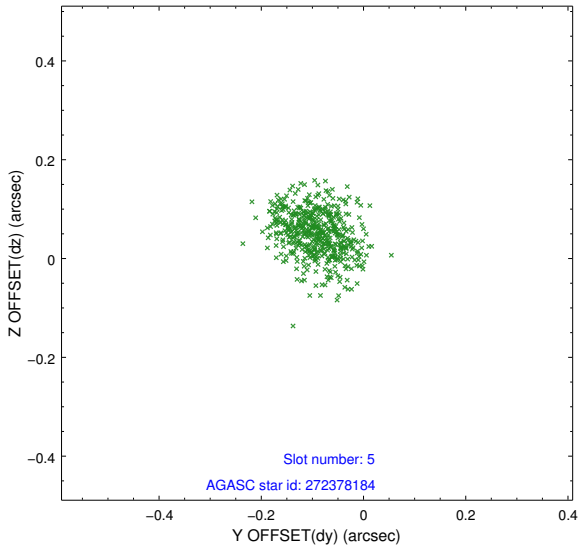
2.4.2 Slot 4

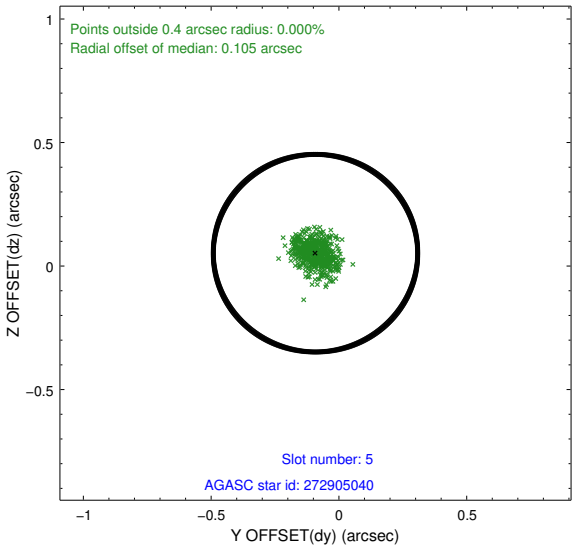

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 4
AGASC star id: 272378184

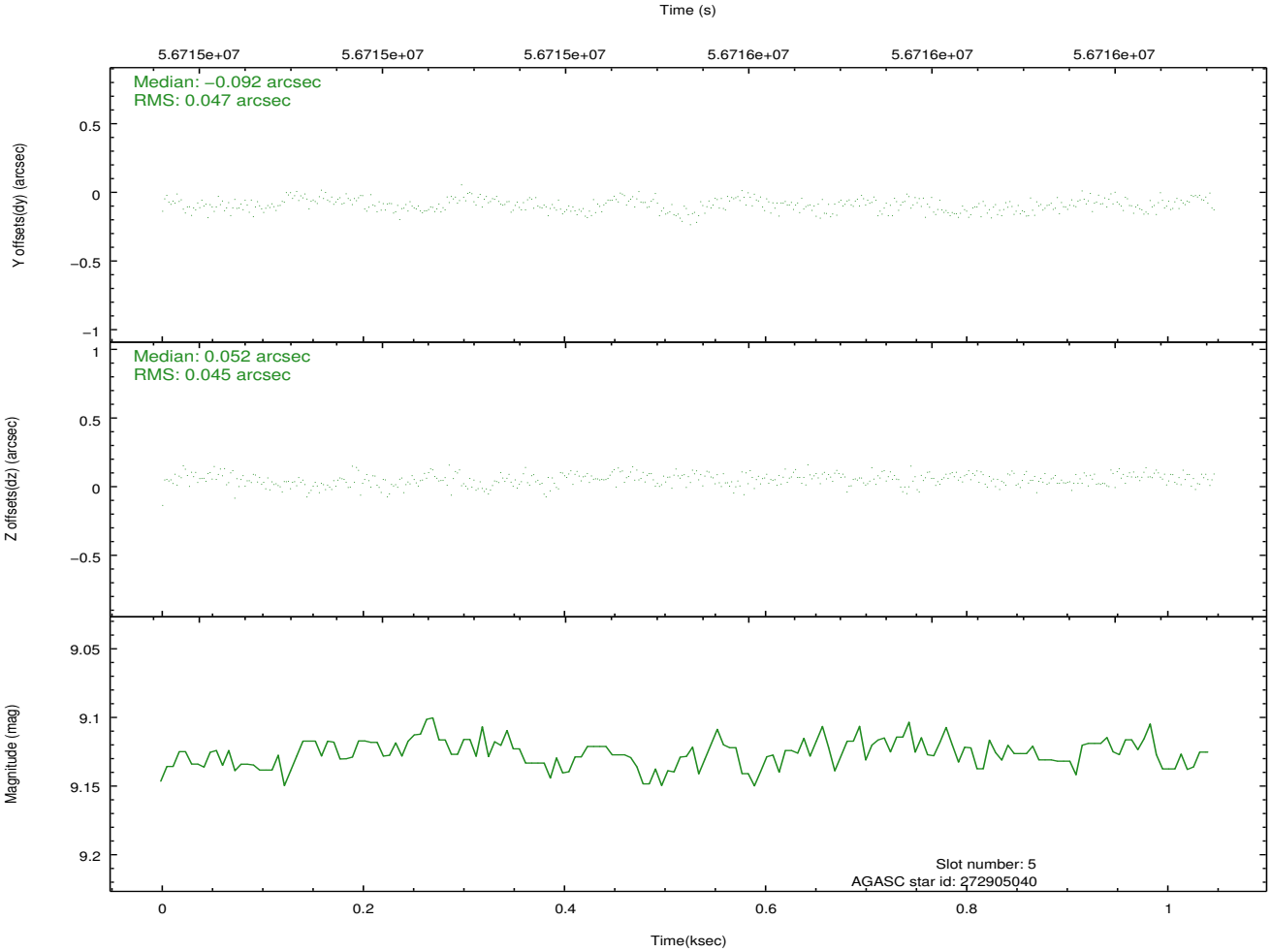

Points outside 0.4 arcsec radius: 0.000%
Radial offset of median: 0.067 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 4
AGASC star id: 272911104


Time (s)
Median: −0.060 arcsec
RMS: 0.048 arcsec
Y offsets(dy) (arcsec)
Median: −0.031 arcsec
RMS: 0.043 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number: 4
AGASC star id: 272911104
Time(ksec)

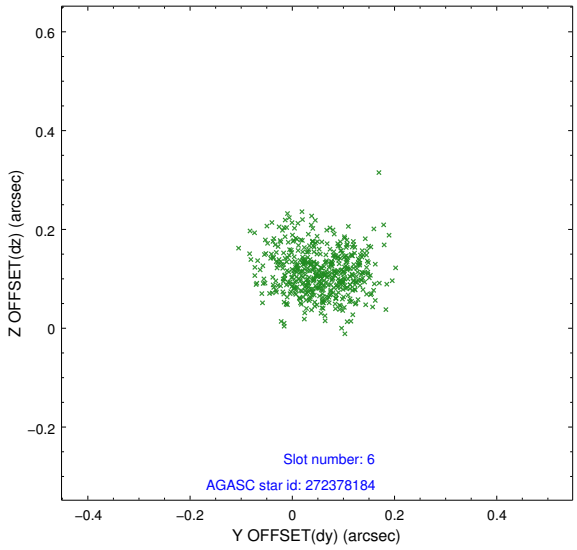
2.4.3 Slot 5

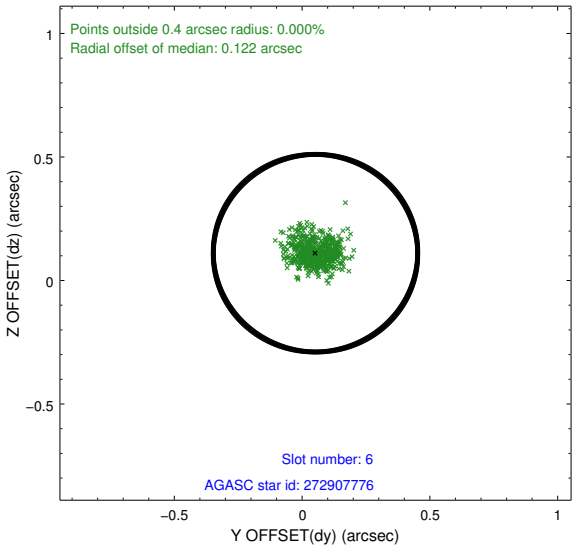

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 5
AGASC star id: 272378184

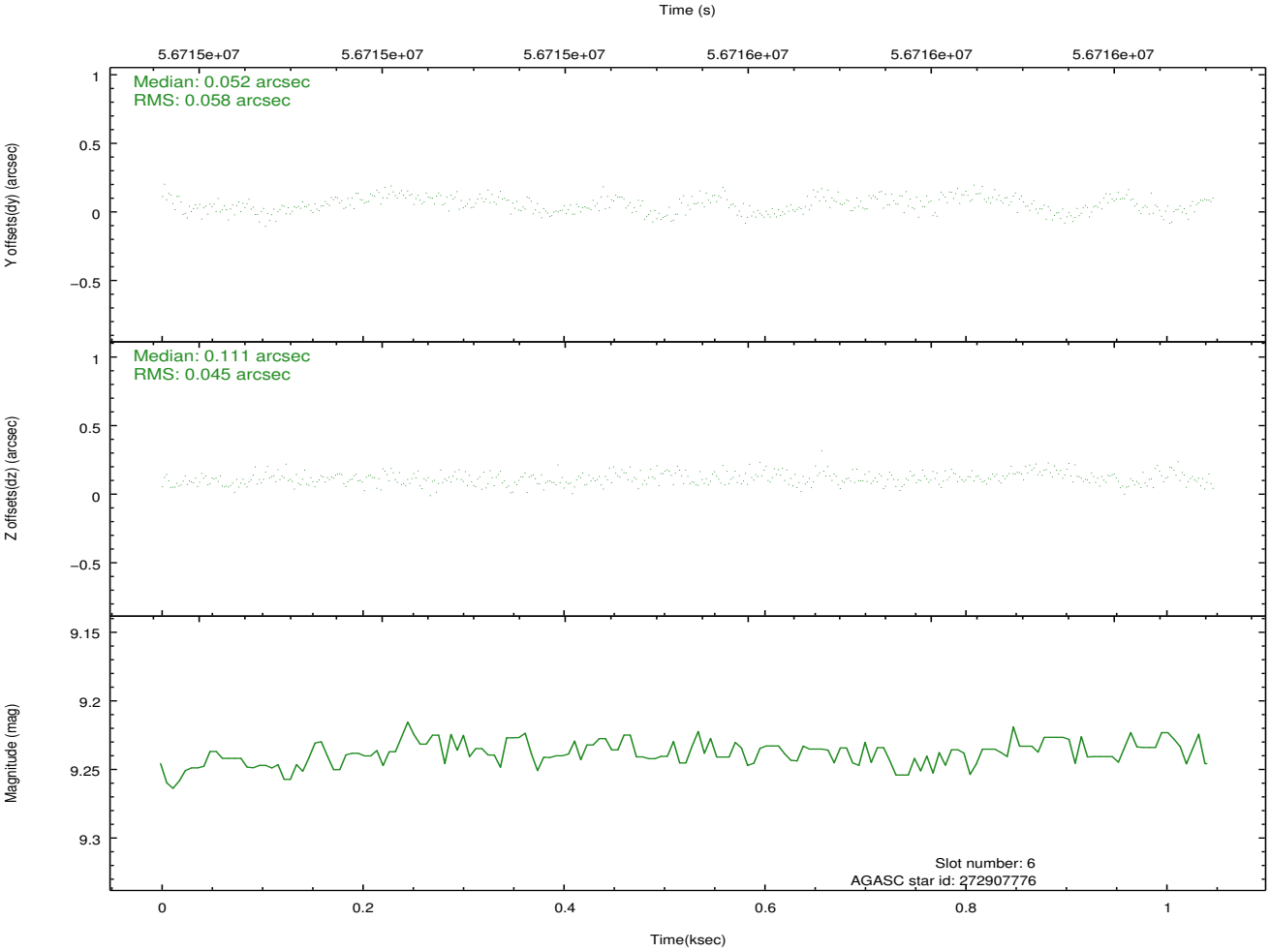

Points outside 0.4 arcsec radius: 0.000%
Radial offset of median: 0.105 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 5
AGASC star id: 272905040


Time (s)
Median: −0.092 arcsec
RMS: 0.047 arcsec
Y offsets(dy) (arcsec)
Median: 0.052 arcsec
RMS: 0.045 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number: 5
AGASC star id: 272905040
Time(ksec)

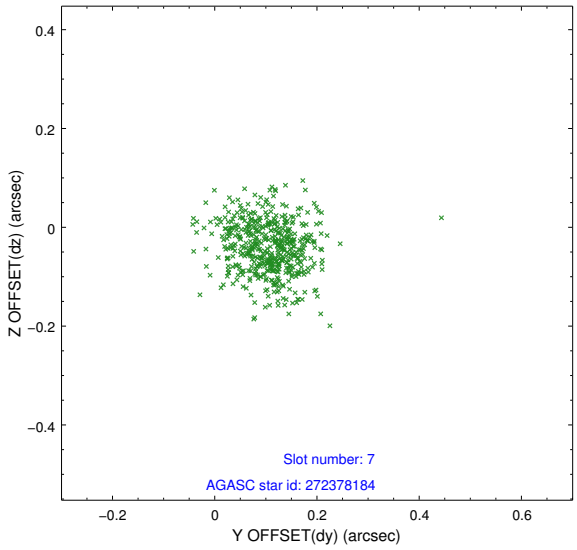
2.4.4 Slot 6

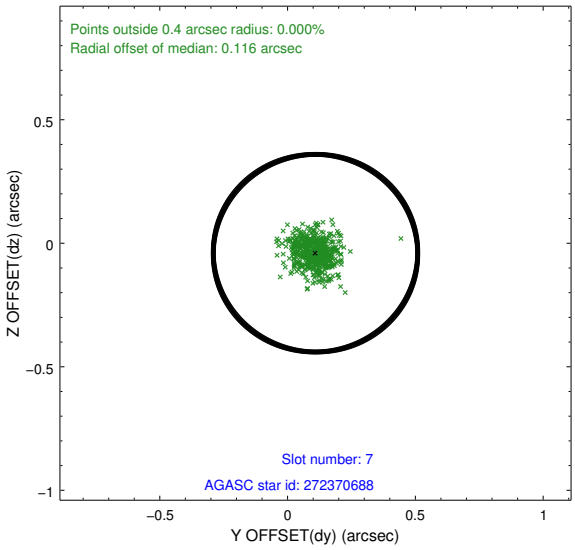

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 6
AGASC star id: 272378184

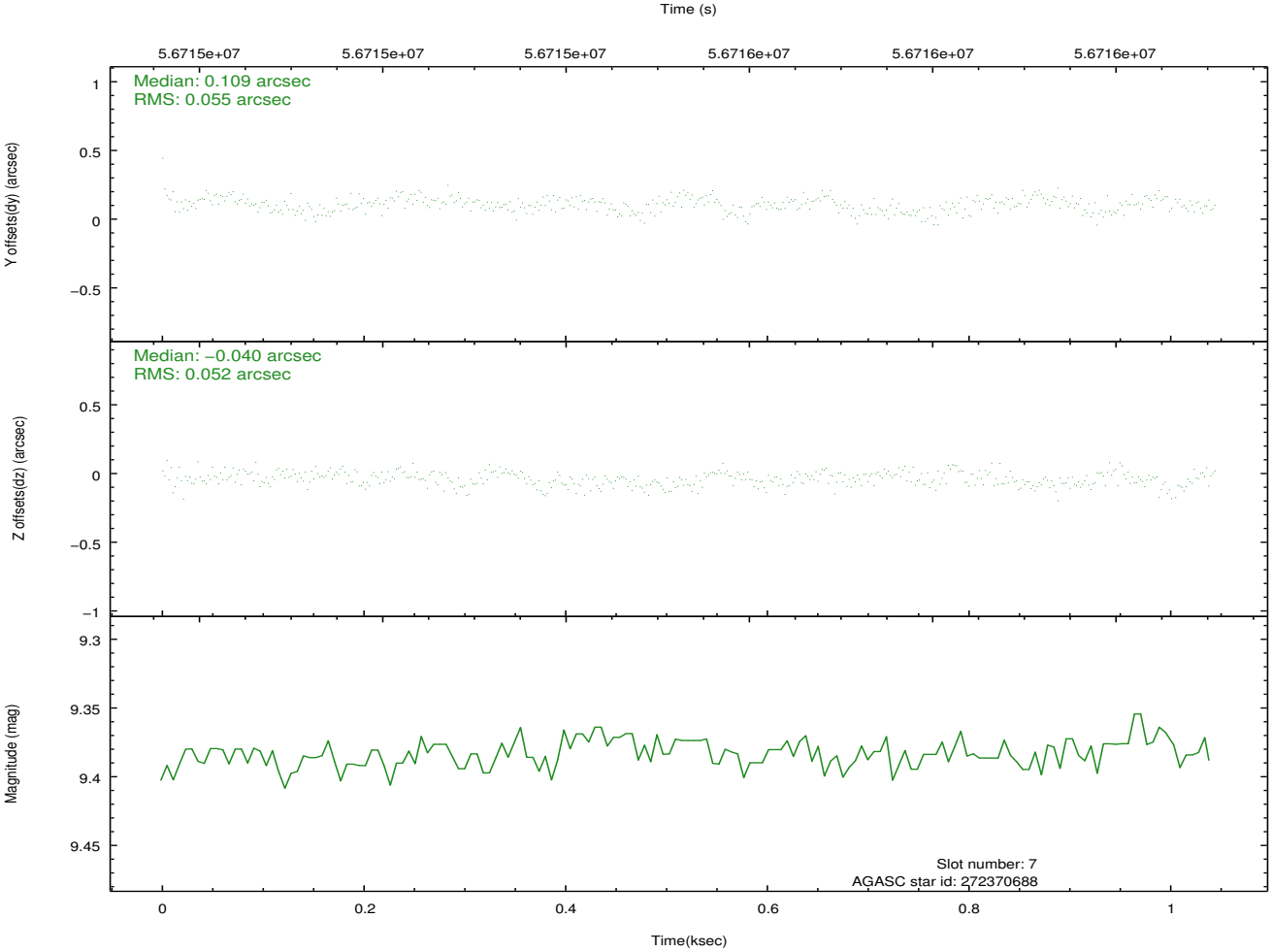

Points outside 0.4 arcsec radius: 0.000%
Radial offset of median: 0.122 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 6
AGASC star id: 272907776


Time (s)
Median: 0.052 arcsec
RMS: 0.058 arcsec
Y offsets(dy) (arcsec)
Median: 0.111 arcsec
RMS: 0.045 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number: 6
AGASC star id: 272907776
Time(ksec)

2.4.5 Slot 7

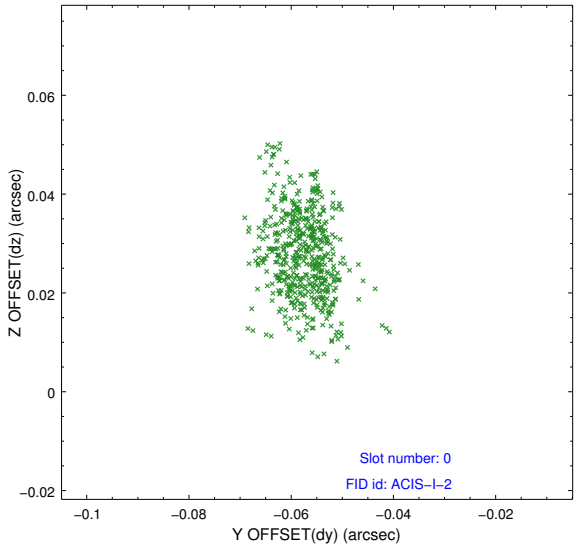

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 7
AGASC star id: 272378184

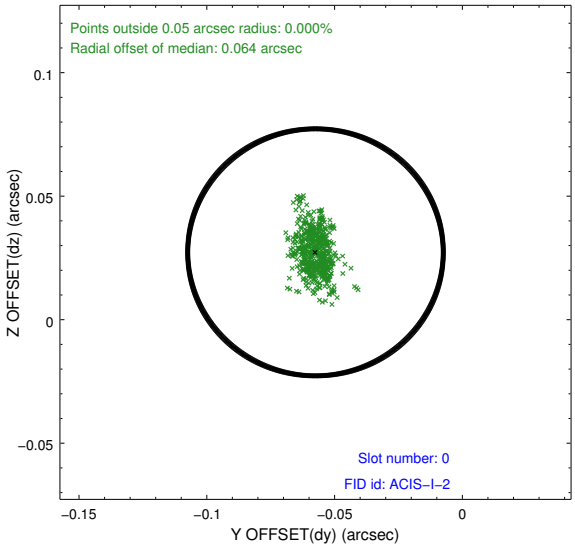

Points outside 0.4 arcsec radius: 0.000%
Radial offset of median: 0.116 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 7
AGASC star id: 272370688

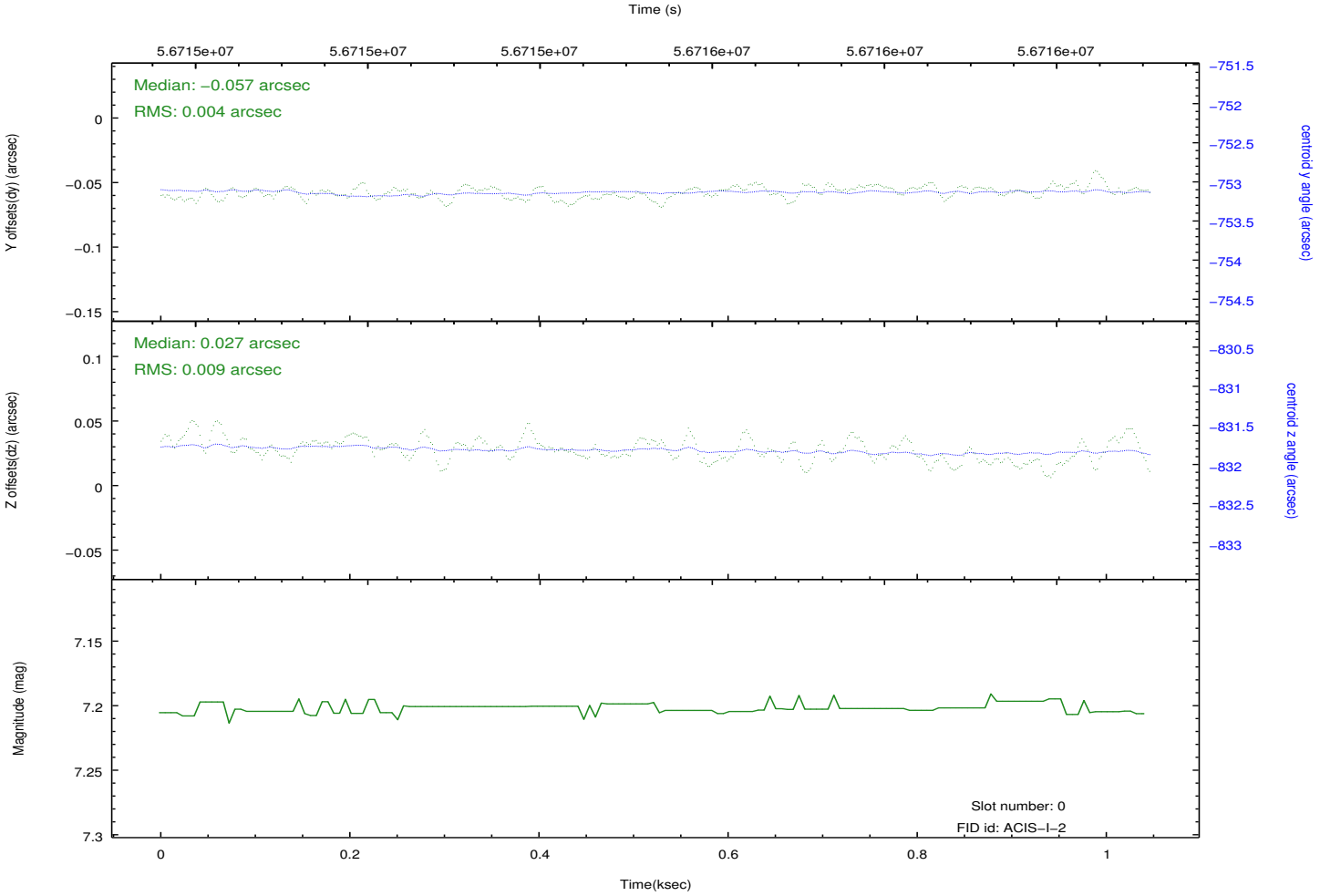

Time (s)
Median: 0.109 arcsec
RMS: 0.055 arcsec
Y offsets(dy) (arcsec)
Median: −0.040 arcsec
RMS: 0.052 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number: 7
AGASC star id: 272370688
Time(ksec)

2.5 FID Slots

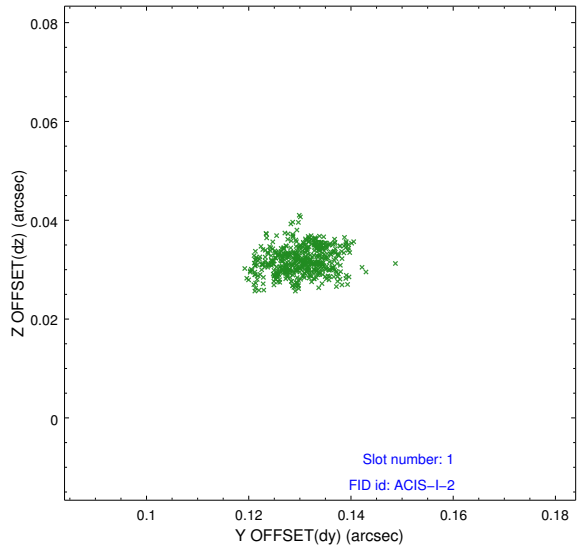
2.5.1 Slot 0

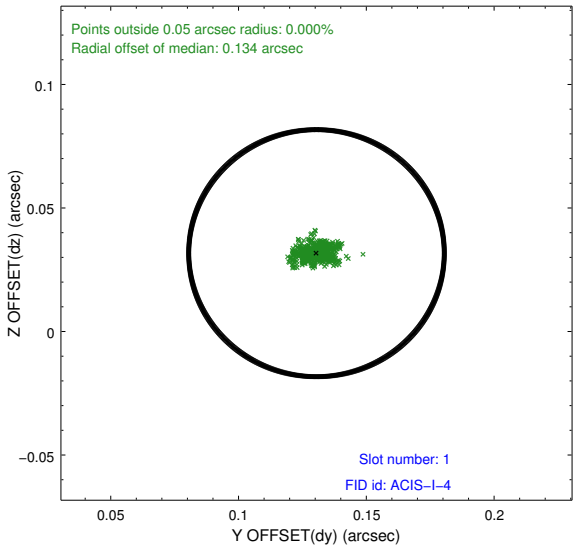


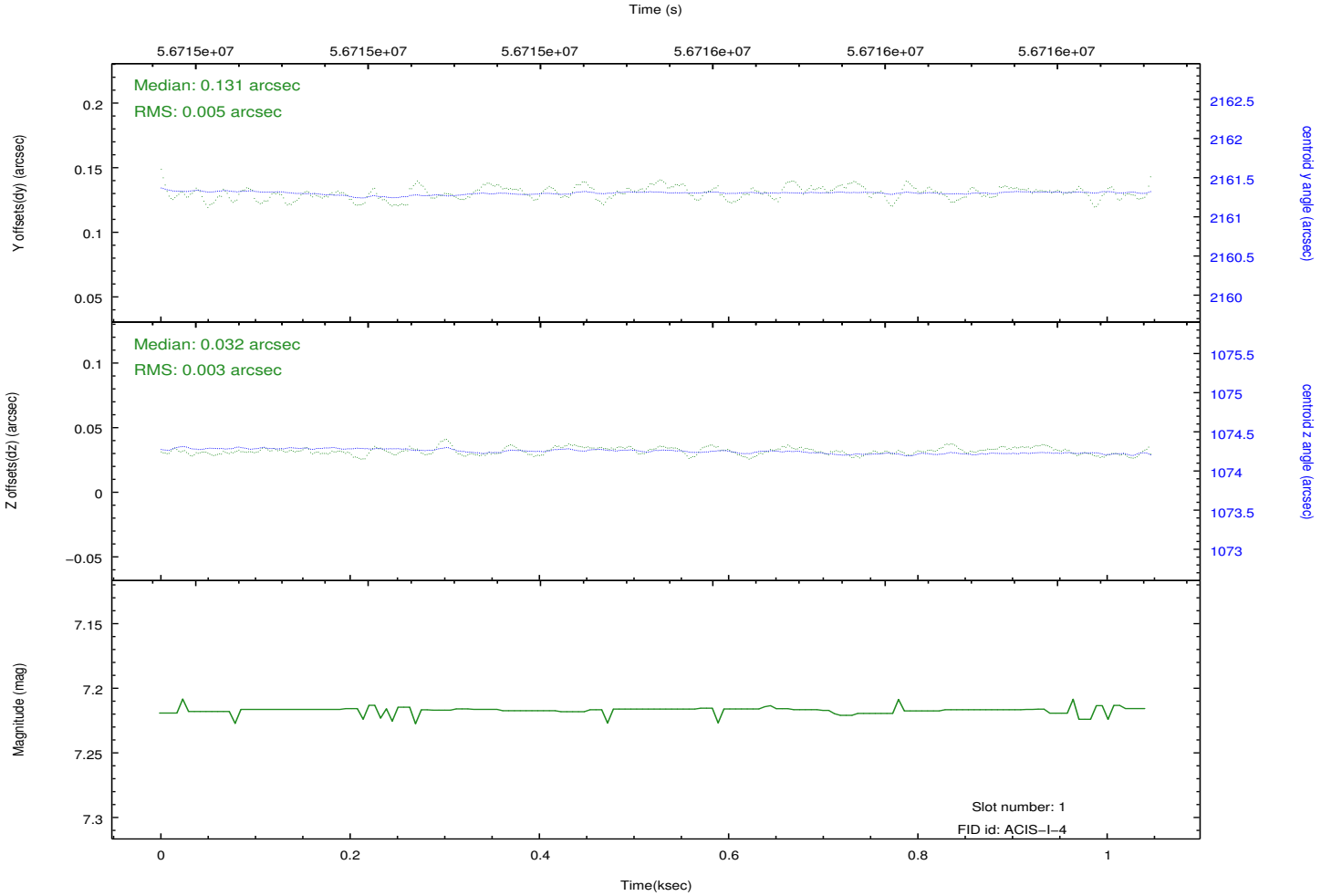




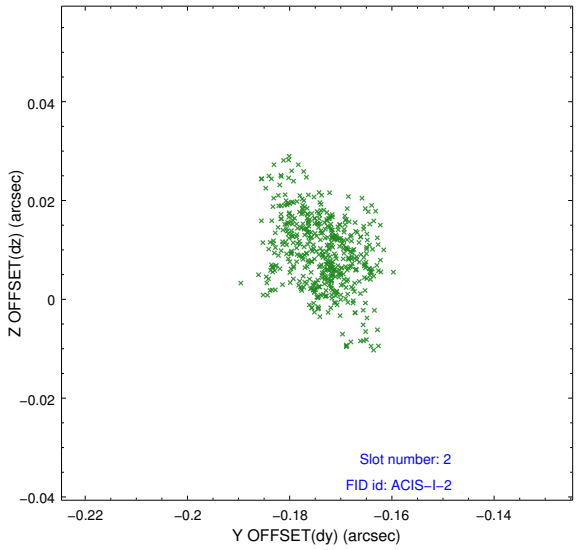
2.5.2 Slot 1

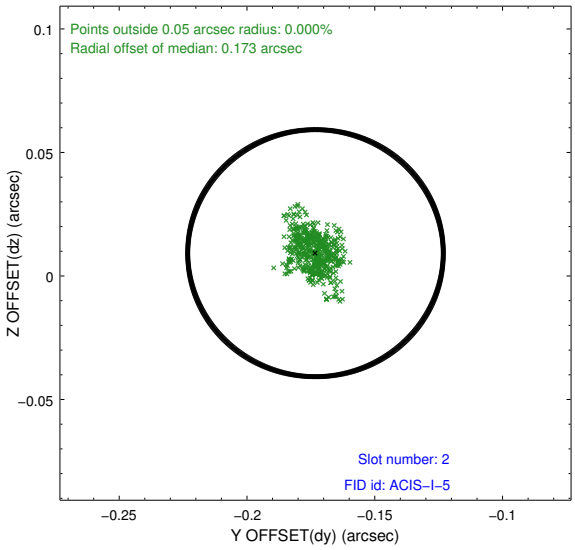

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 1
FID id: ACIS−I−2

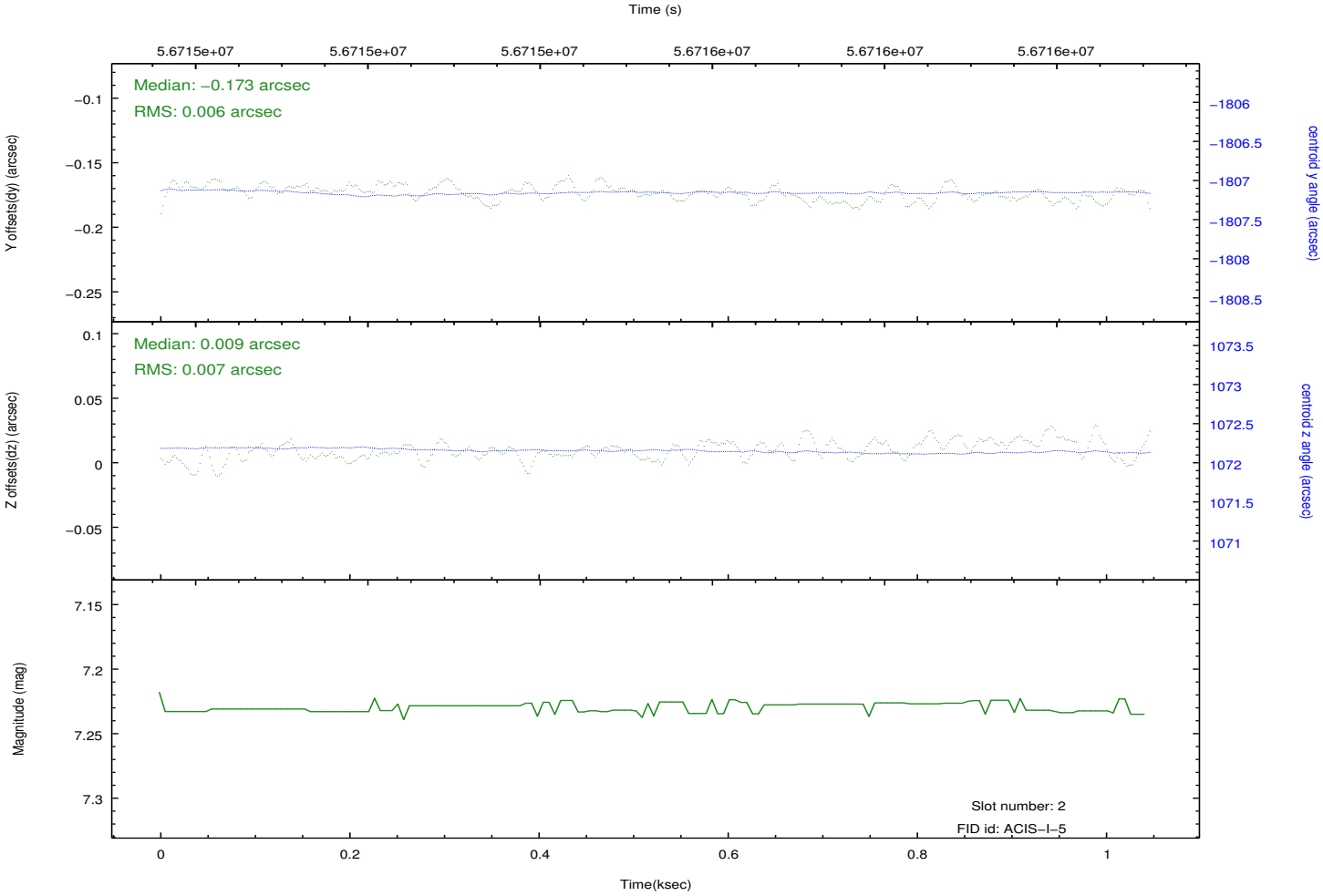

Points outside 0.05 arcsec radius: 0.000%
Radial offset of median: 0.134 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 1
FID id: ACIS−I−4


Time (s)
Median: 0.131 arcsec
RMS: 0.005 arcsec
Y offsets(dy) (arcsec)
centroid y angle (arcsec)
Median: 0.032 arcsec
RMS: 0.003 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

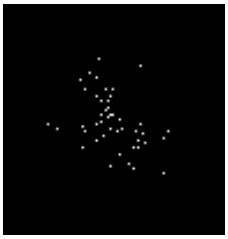

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 2
FID id: ACIS−I−2


Points outside 0.05 arcsec radius: 0.000%
Radial offset of median: 0.173 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 2
FID id: ACIS−I−5

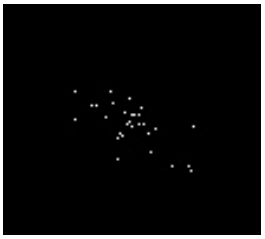

Time (s)
Median: −0.173 arcsec
RMS: 0.006 arcsec
Y offsets(dy) (arcsec)
centroid y angle (arcsec)
Median: 0.009 arcsec
RMS: 0.007 arcsec
Z offsets(dz) (arcsec)
centroid z angle (arcsec)
Magnitude (mag)
Slot number: 2
FID id: ACIS−I−5
Time(ksec)

3 Point Sources

5.62 arcmin



5.74 arcmin



A Summary

A.1 Status

V&V Scientist	Joy Nichols
V&V Date (YYYY-MM-DD)	2010.02.17
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	0.163

A.2 Comments

```
This observation was terminated early in order to send up new ACIS
parameter
block that did not use FEP 0. The observation was repeated at a later
time.
===
Charge time for this ObsId remains at previous value of 0.163 ksec,
although with the current processing the charge time would have been
0.160 ksec.
==
The focal plane temperature is approximately -110 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.
```