V&V Reference Report
L2 ASCDS Version : 10

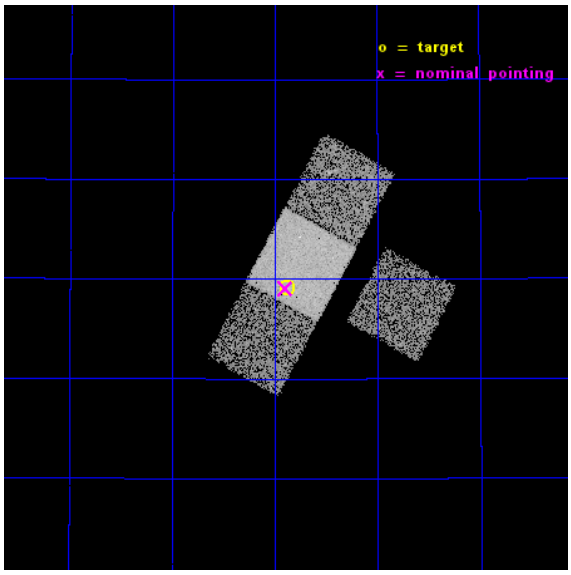
Observation 15009 - L2 Version 2
Chandra X-Ray Center

L2 Processing Date : Dec 6 2014

Contents

1 Front

seq_num	702817	Sequence number
obs_id	15009	Observation id
title	The Herschel Legacy of powerful 3C radio galaxies and quasars II: observing Proposal.	Proposal title
observer	Dr Joanna Kuraszkiewicz	Principal investigator
object	3C337	Source name
dtycycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	247.22	Observer's specified target RA [deg]
dec_targ	44.318056	Observer's specified target Dec [deg]
ra_nom	247.22425572786	Nominal RA [deg]
dec_nom	44.317850351156	Nominal Dec [deg]
roll_nom	298.55732418805	Nominal Roll [deg]
revision	2	Processing version of data
ontime	10078.10007751	Sum of GTIs [s]
livetime	9946.4222806079	Livetime [s]
ontime3	10078.10007751	Sum of GTIs [s]
ontime6	10078.10007751	Sum of GTIs [s]
ontime7	10078.10007751	Sum of GTIs [s]
ontime8	10078.10007751	Sum of GTIs [s]
l2events	44804	Number of level 2 events

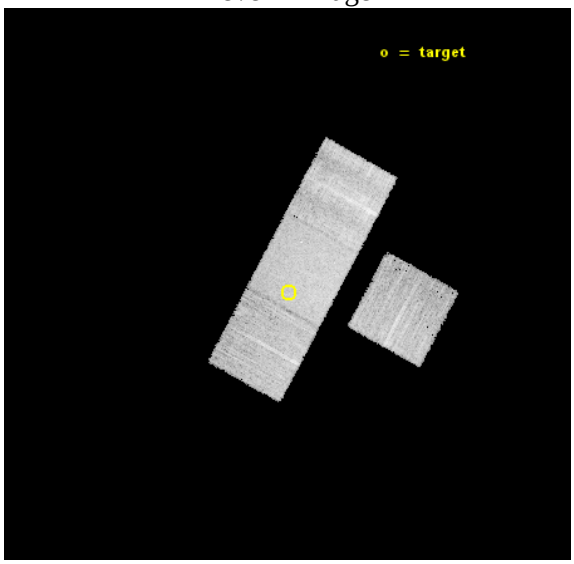


2 OBI

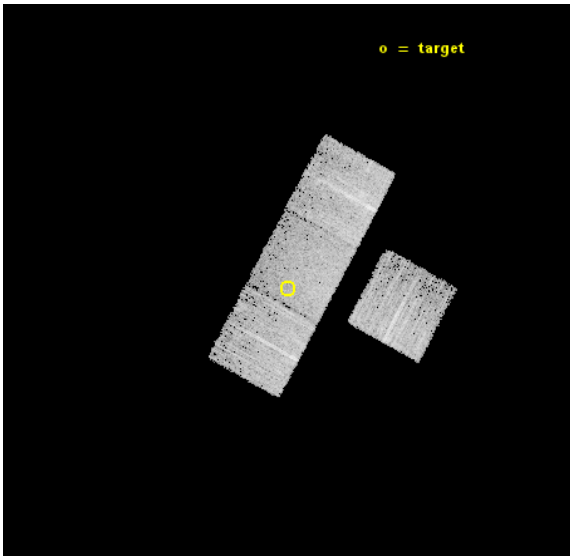
2.1 OBI

2.1.1 Images

Level 1 Image

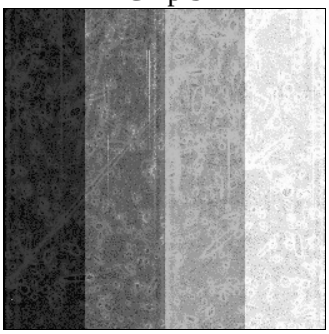


Level 1 Bad Events

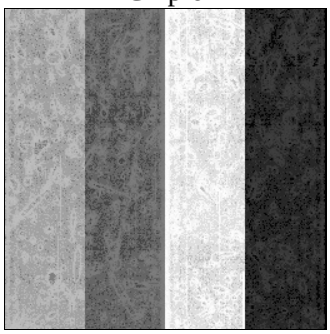


2.1.2 Bias

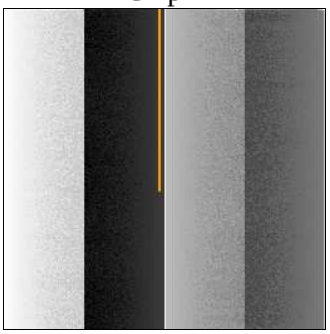
Chip 3



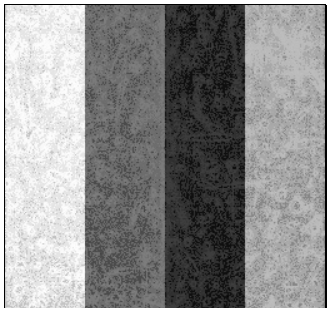
Chip 6



Chip 7



Chip 8



2.1.3 Parameters

obi_num	1	Obi number
ascdsver	10.3.1	Processing system revision
caldbver	4.6.4	
date	2014-12-07T00:01:11	Date and time of file creation
revision	2	Processing version of data

sched_exp_time	10000.000000	[s] Scheduled observation exposure time
ontime	10078.10007751	Sum of GTIs [s]
ontime3	10078.10007751	Sum of GTIs [s]
ontime6	10078.10007751	Sum of GTIs [s]
ontime7	10078.10007751	Sum of GTIs [s]
ontime8	10078.10007751	Sum of GTIs [s]
l1events	229506	Number of level 1 events

2.1.4 Events

	ccd 3	**ccd 6**	**ccd 7**	**ccd 8**
level 1 events	46208	49827	66122	67349
rejected events	40683	43834	37231	47425
rejected %	88%	87%	56%	70%

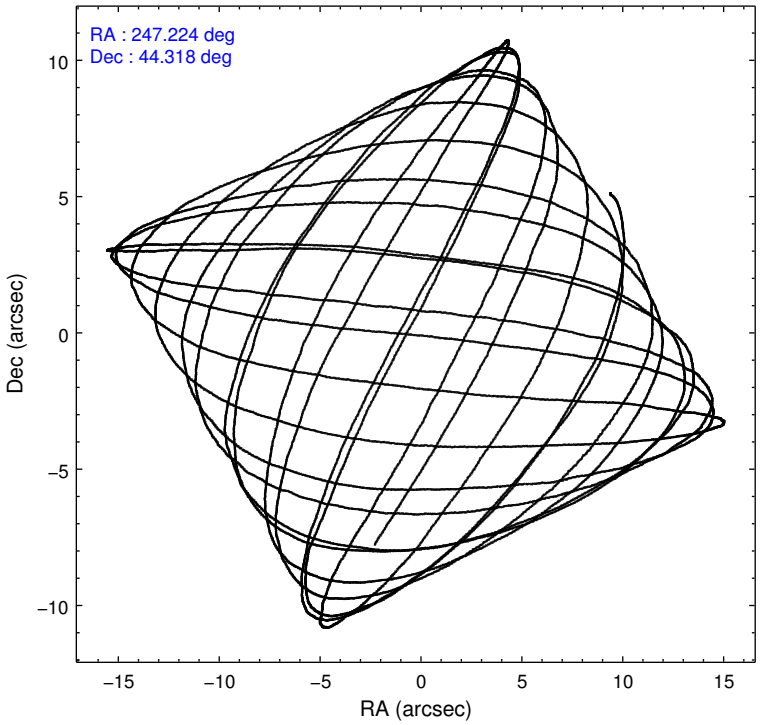
	ccd 3	**ccd 6**	**ccd 7**	**ccd 8**
grade 0 events	1961	1966	2577	5950
	4%	3%	3%	8%
grade 1 events	31	17	69	68
	0%	0%	0%	0%
grade 2 events	1231	1384	5898	4326
	2%	2%	8%	6%
grade 3 events	591	587	2490	2194
	1%	1%	3%	3%
grade 4 events	576	589	2386	2126
	1%	1%	3%	3%
grade 5 events	2514	2539	6845	3758
	5%	5%	10%	5%
grade 6 events	1168	1468	15554	5331
	2%	2%	23%	7%
grade 7 events	38136	41277	30303	43596
	82%	82%	45%	64%

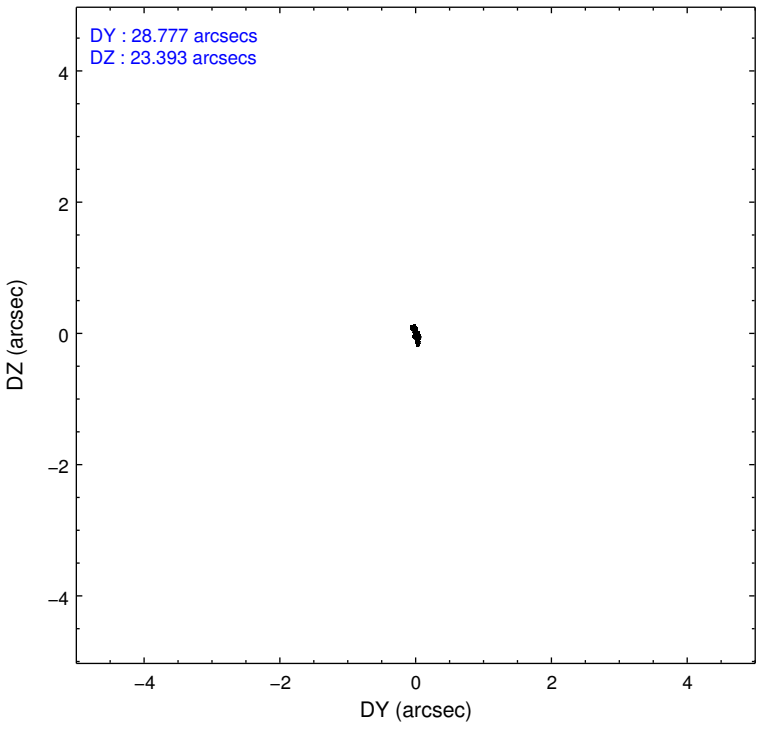
2.2 Compared Parameters

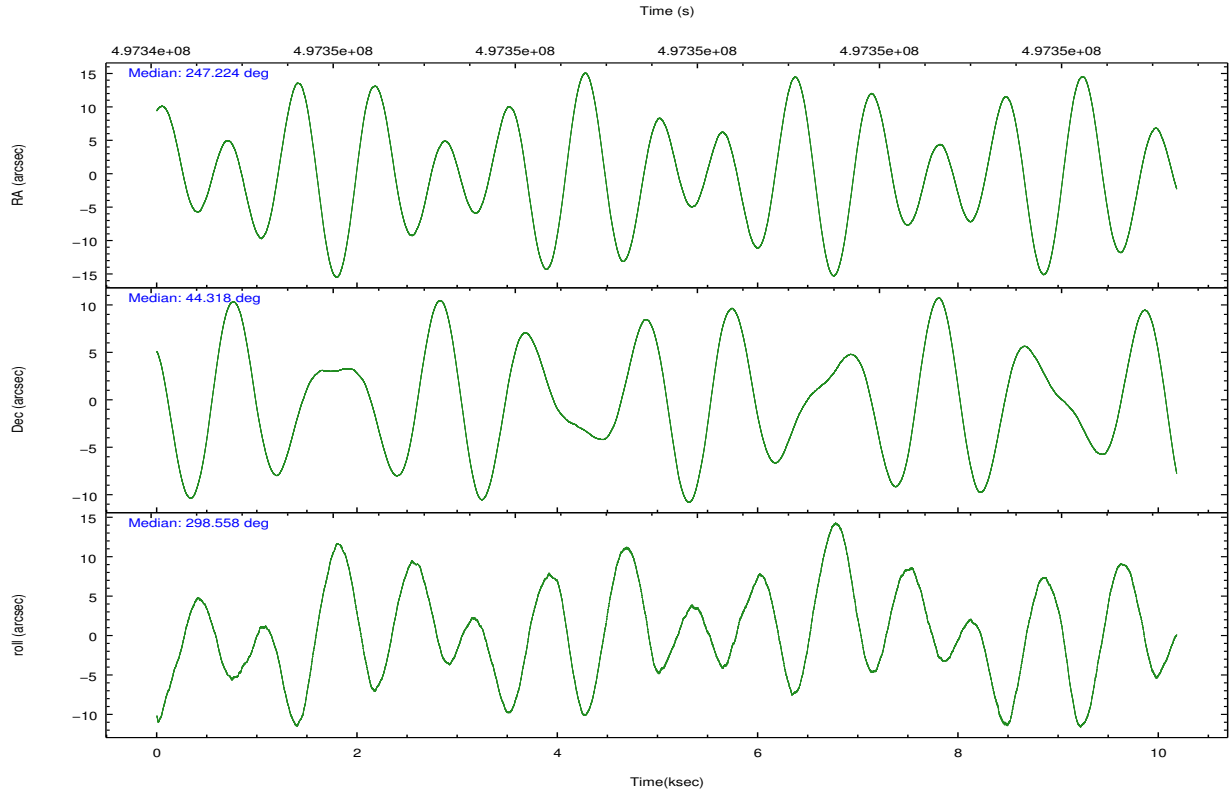
Parameter	Planned	Actual
Instrument	ACIS	ACIS
Detector	ACIS-3678	ACIS-3678
Grating	NONE	NONE
Data mode	FAINT	FAINT
Observation mode	POINTING	POINTING
[deg] Pointing RA	247.191340	247.2242557278587
[deg] Pointing Dec	44.331789	44.31785035115569
[deg] Pointing Roll	298.423699	298.5573241880482
[mm] SIM focus pos	-0.684267	-0.6828225247311905
[mm] SIM defocus	0	0.001444936568705701
[mm] SIM translation stage pos	-190.132523	-190.1425803651734
[mm] SIM translation stage offset	0	0.01005778216563158
[s] Observation start time (MET)	497344761.184000	497343663.7662
Observation start date	2013-10-05T07:18:14	2013-10-05T07:01:03
[s] Observation end time (MET)	497354761.184000	497355600.91685
Observation end date	2013-10-05T10:04:54	2013-10-05T10:20:00
Read mode	TIMED	TIMED

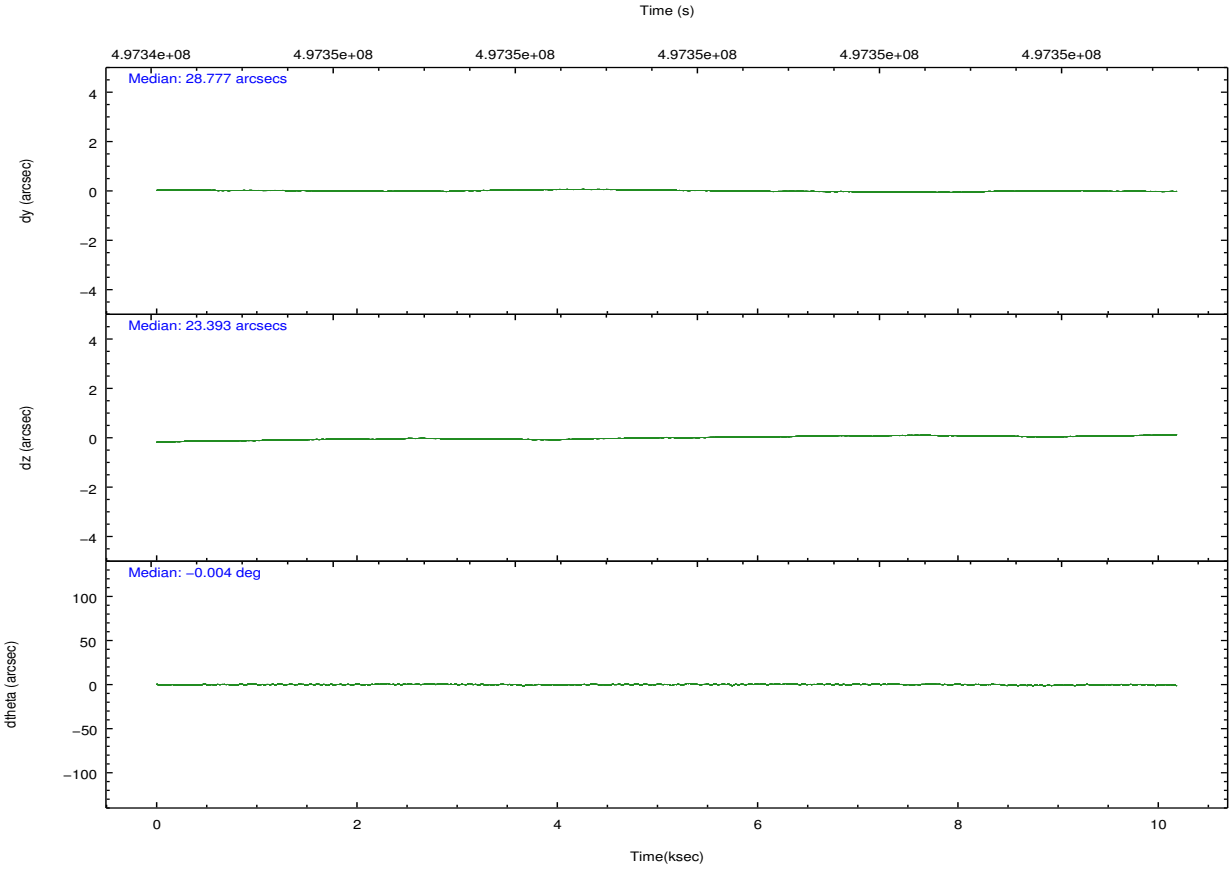
Parameter	Planned	Actual
Obspar format version number	7	7
Obspar file type	PREDICTED	ACTUAL
Obspar update status	NONE	UPDATED
CCD I0 on	N	N
CCD I1 on	N	N
CCD I2 on	N	N
CCD I3 on	O1	Y
CCD S0 on	N	N
CCD S1 on	N	N
CCD S2 on	O3	Y
CCD S3 on	Y	Y
CCD S4 on	O2	Y
CCD S5 on	N	N
Number of optional ACIS chips dropped	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 : 247.224 deg
Dec : 44.318 deg
Dec (arcsec)
RA (arcsec)
10
5
0
−5
−10
−15
−10
−5
0
5
10
15


DY : 28.777 arcsecs
DZ : 23.393 arcsecs
DZ (arcsec)
DY (arcsec)
4
2
0
−2
−4
−4
−2
0
2
4


Time (s)
4.9734e+08
4.9735e+08
4.9735e+08
4.9735e+08
4.9735e+08
4.9735e+08
Median: 247.224 deg
RA (arcsec)
Median: 44.318 deg
Dec (arcsec)
Median: 298.558 deg
roll (arcsec)
Time(ksec)

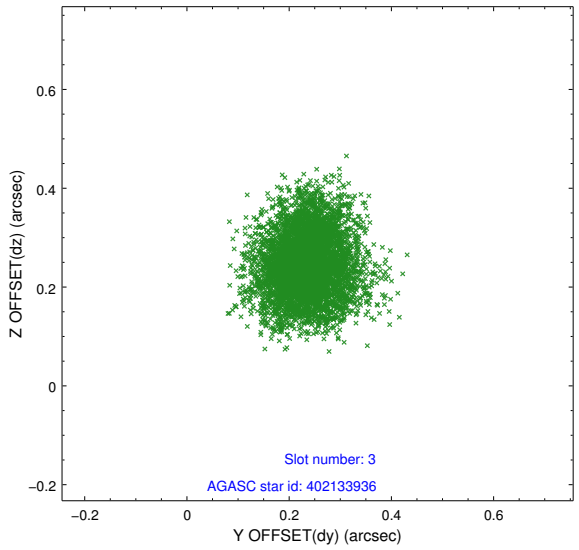

Time (s)
4.9734e+08
4.9735e+08
4.9735e+08
4.9735e+08
4.9735e+08
4.9735e+08
Median: 28.777 arcsecs
dy (arcsec)
Median: 23.393 arcsecs
dz (arcsec)
Median: −0.004 deg
dtheta (arcsec)
Time(ksec)

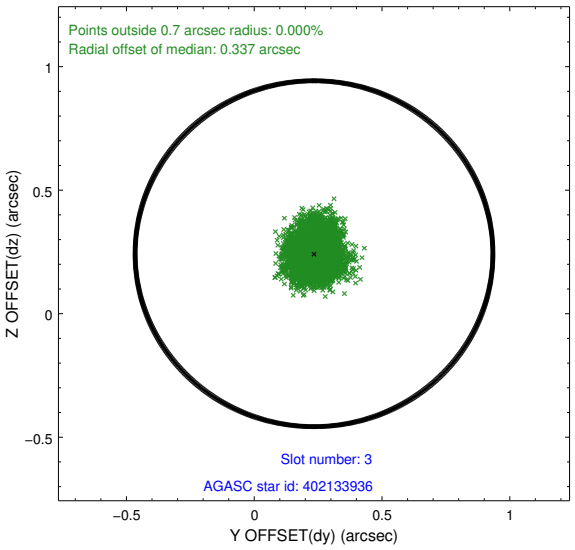
Slot Statistics

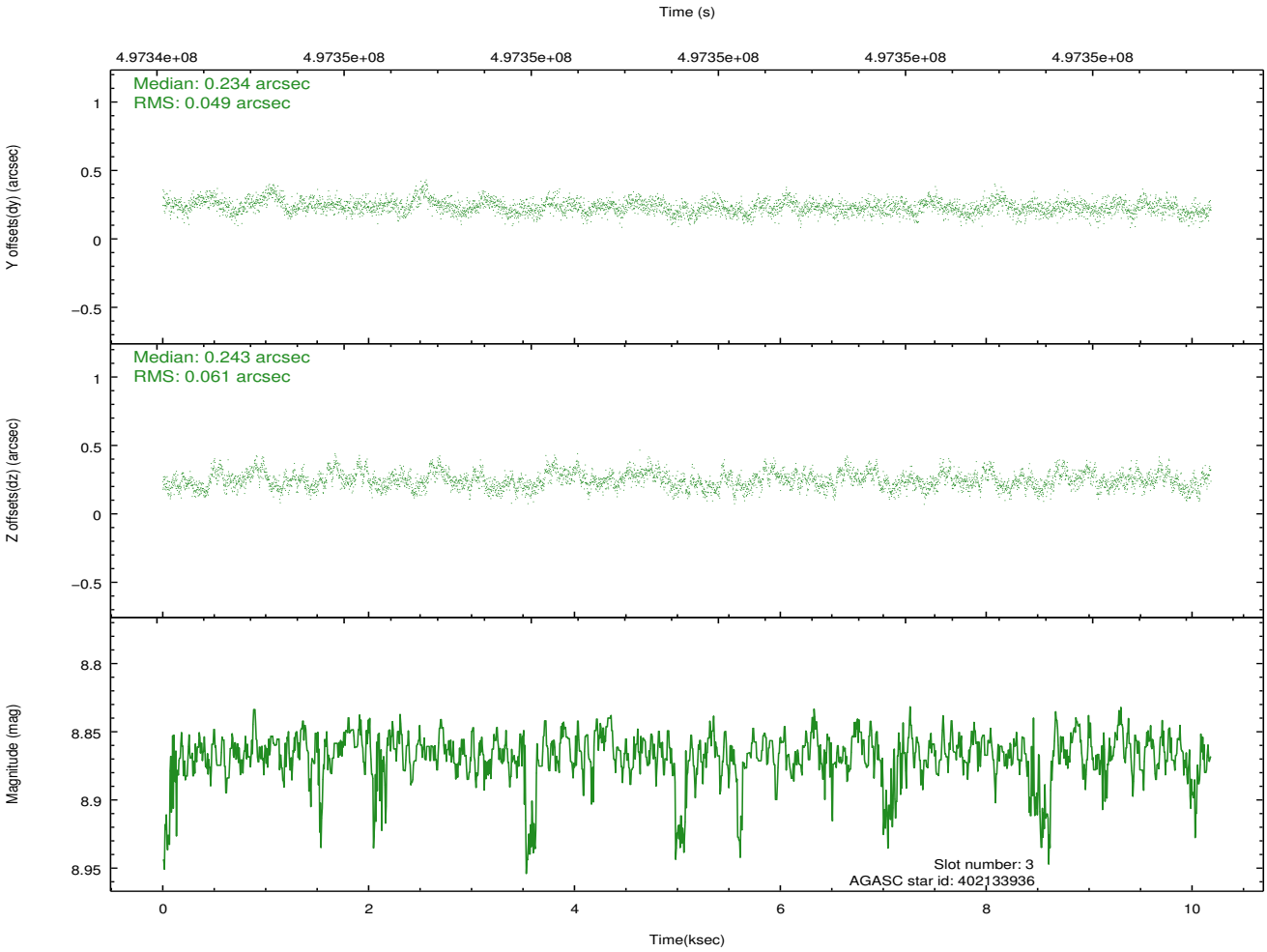
slot	status	used	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID		ACIS-S-2	6.92	2484	-0.190	-0.045	0.007	0.011	0.000000	0.000000	-782.32	-1744.98
1	FID		ACIS-S-4	7.00	2484	0.391	0.104	0.006	0.012	0.000000	0.000000	2131.30	163.09
2	FID		ACIS-S-5	7.03	2484	-0.232	-0.050	0.006	0.011	0.000000	0.000000	-1834.54	157.22
3	GUIDE	used	402133936	8.87	4951	0.234	0.243	0.085	0.137	246.549499	44.711945	-1990.44	-789.30
4	GUIDE	used	402261296	7.95	4968	-0.310	-0.226	0.097	0.153	247.983664	44.264198	1176.91	1684.76
5	GUIDE	used	402270432	9.14	4936	0.066	-0.289	0.138	0.214	247.927707	44.013709	1907.54	1135.79
6	GUIDE	used	402270712	8.91	4935	0.215	0.171	0.128	0.208	247.422908	43.751154	2124.98	-464.51
7	GUIDE	used	402274936	9.27	4957	-0.196	0.098	0.140	0.218	247.532672	44.871021	-1293.87	1690.86

2.4 Star Slots

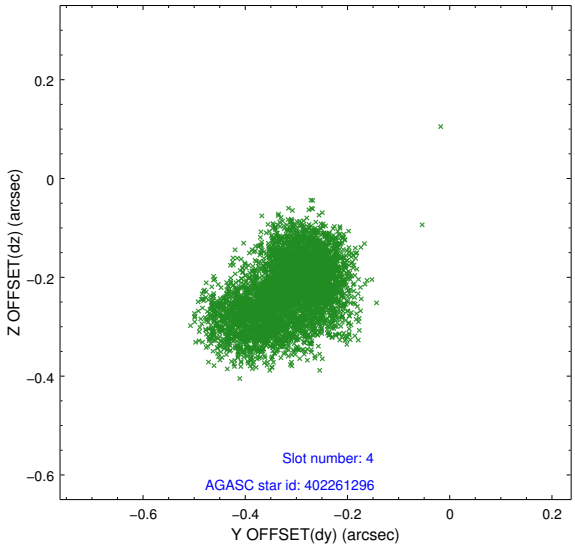
2.4.1 Slot 3

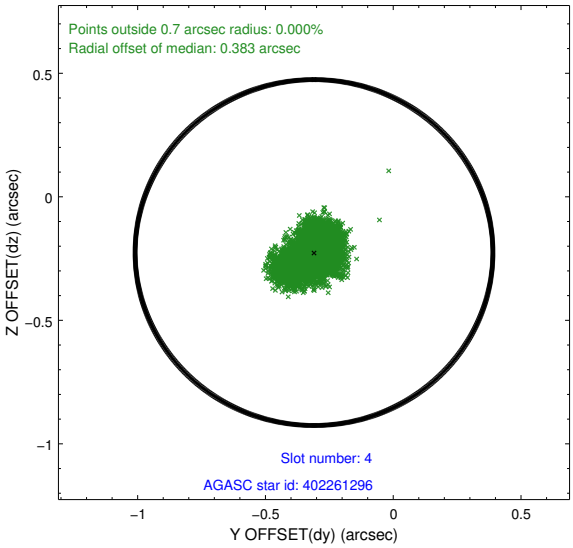


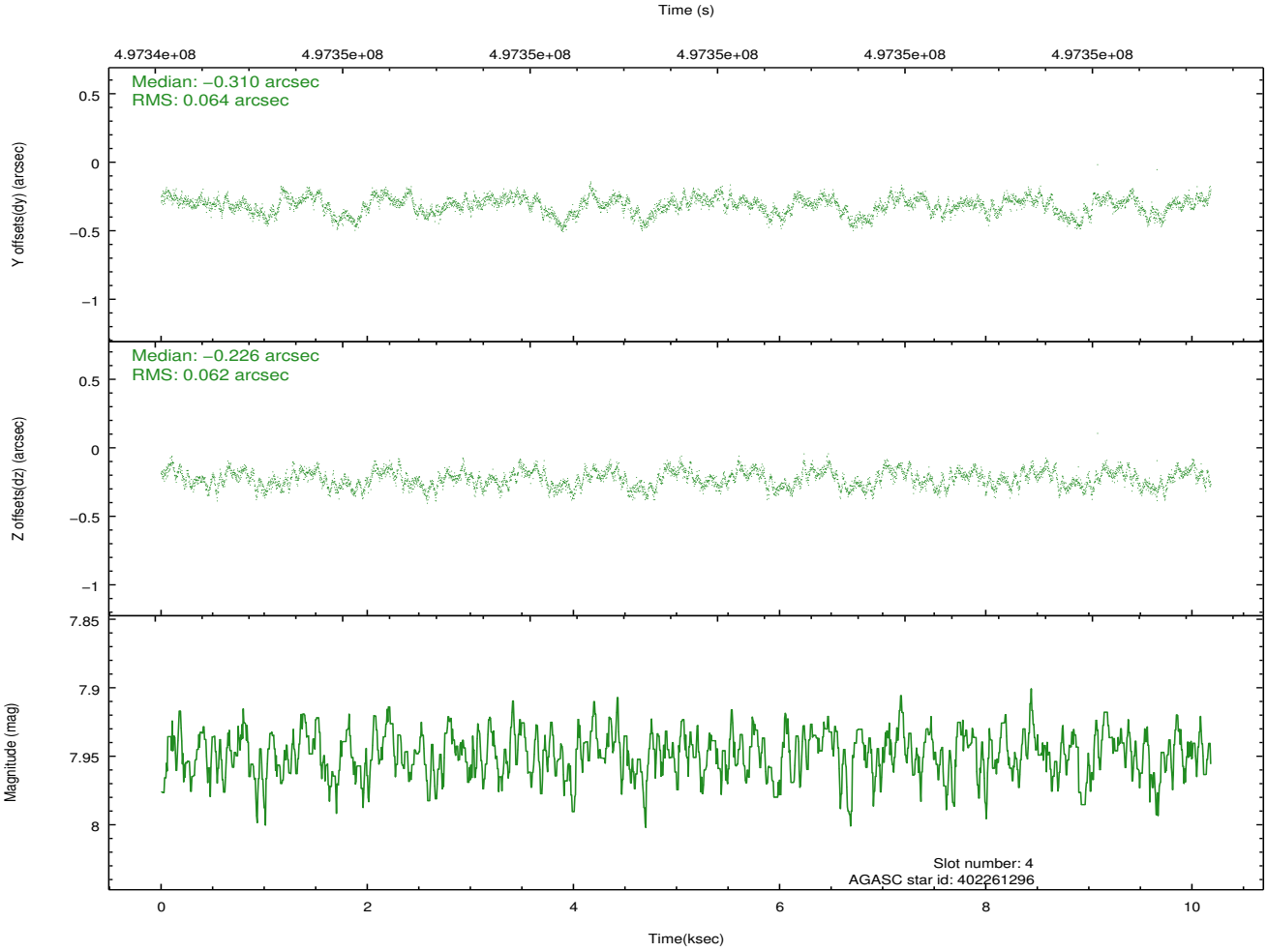




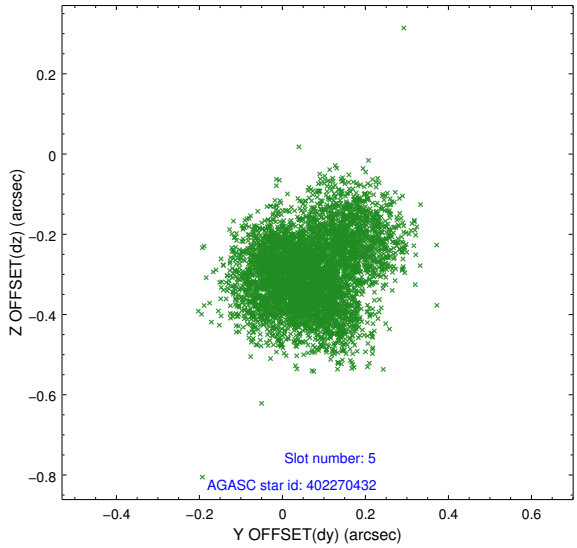
2.4.2 Slot 4

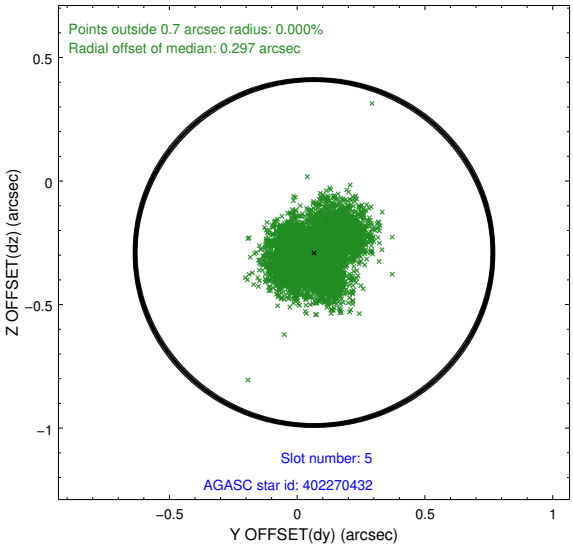

Slot number: 4
AGASC star id: 402261296
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)

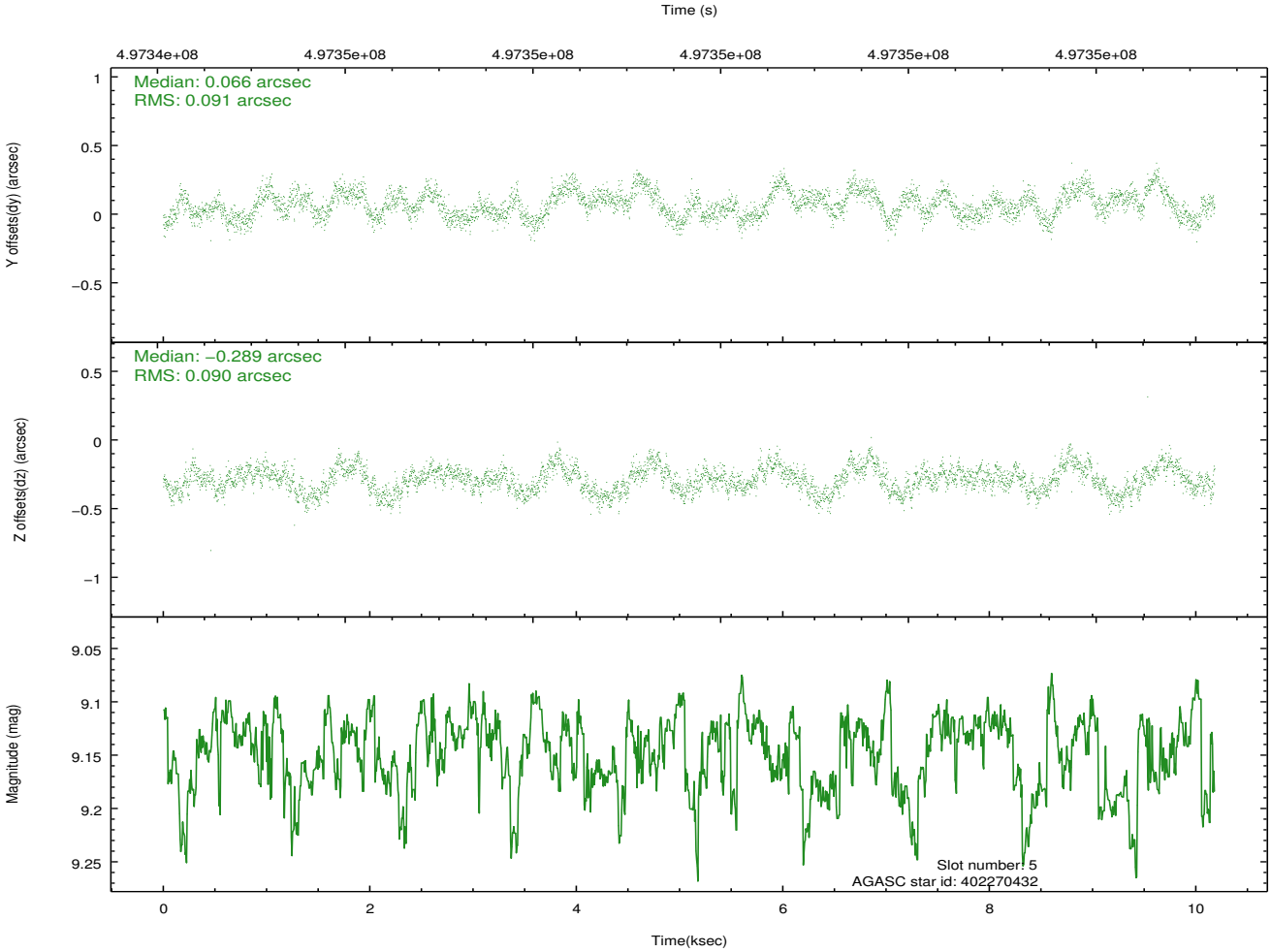

Points outside 0.7 arcsec radius: 0.000%
Radial offset of median: 0.383 arcsec
Slot number: 4
AGASC star id: 402261296
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)


Time (s)
Median: −0.310 arcsec
RMS: 0.064 arcsec
Y offsets(dy) (arcsec)
Median: −0.226 arcsec
RMS: 0.062 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number: 4
AGASC star id: 402261296
Time(ksec)

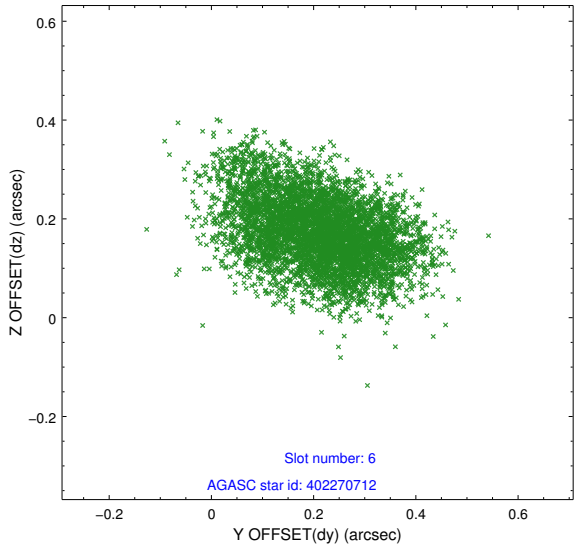
2.4.3 Slot 5

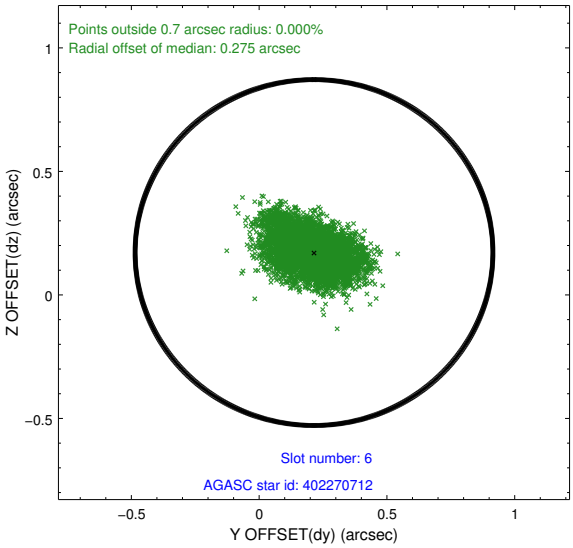

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 5
AGASC star id: 402270432

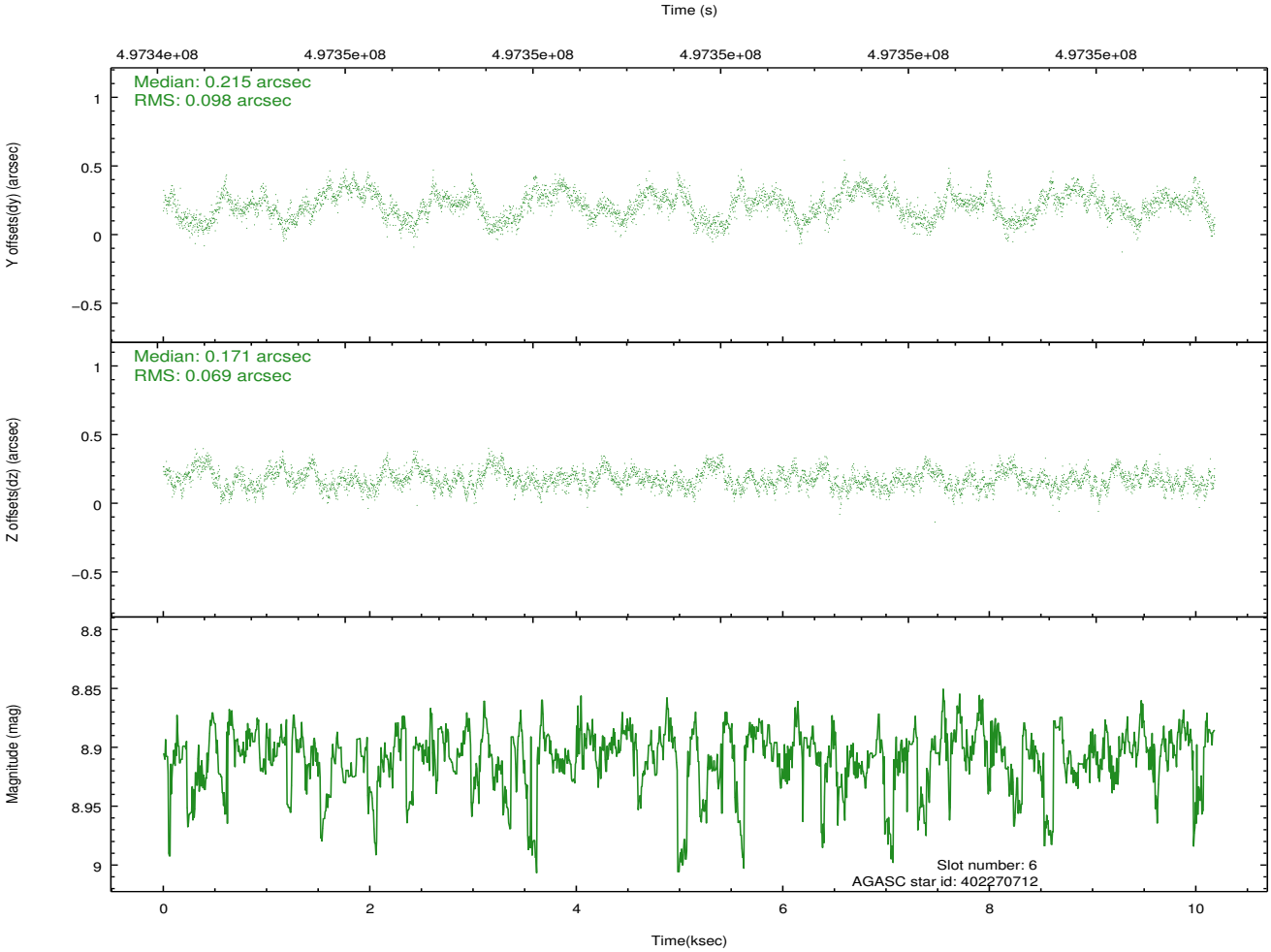

Points outside 0.7 arcsec radius: 0.000%
Radial offset of median: 0.297 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 5
AGASC star id: 402270432


Time (s)
Median: 0.066 arcsec
RMS: 0.091 arcsec
Y offsets(dy) (arcsec)
Median: −0.289 arcsec
RMS: 0.090 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number: 5
AGASC star id: 402270432
Time(ksec)

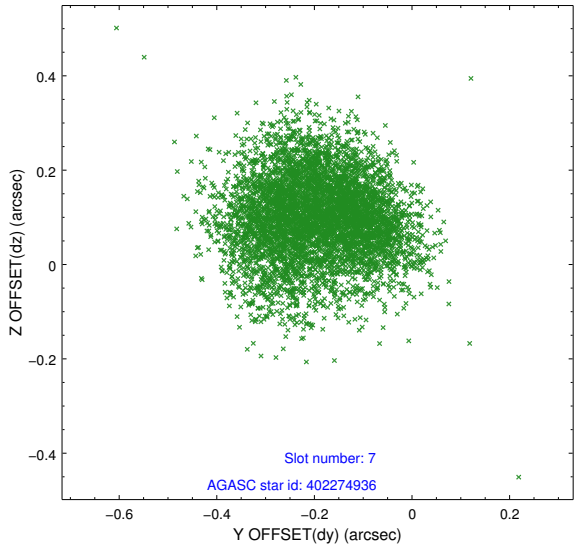
2.4.4 Slot 6

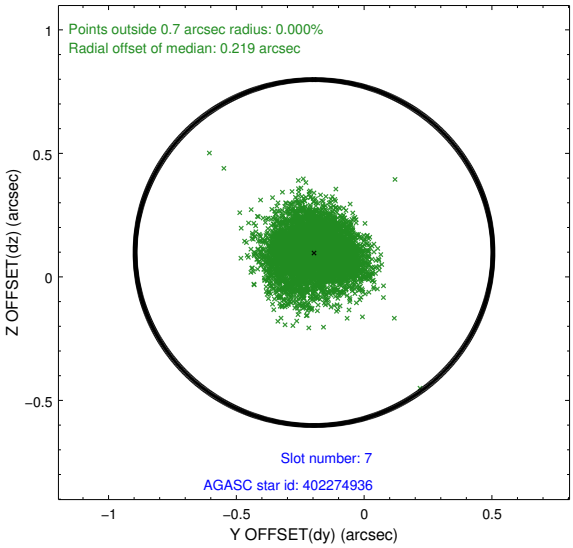

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 6
AGASC star id: 402270712

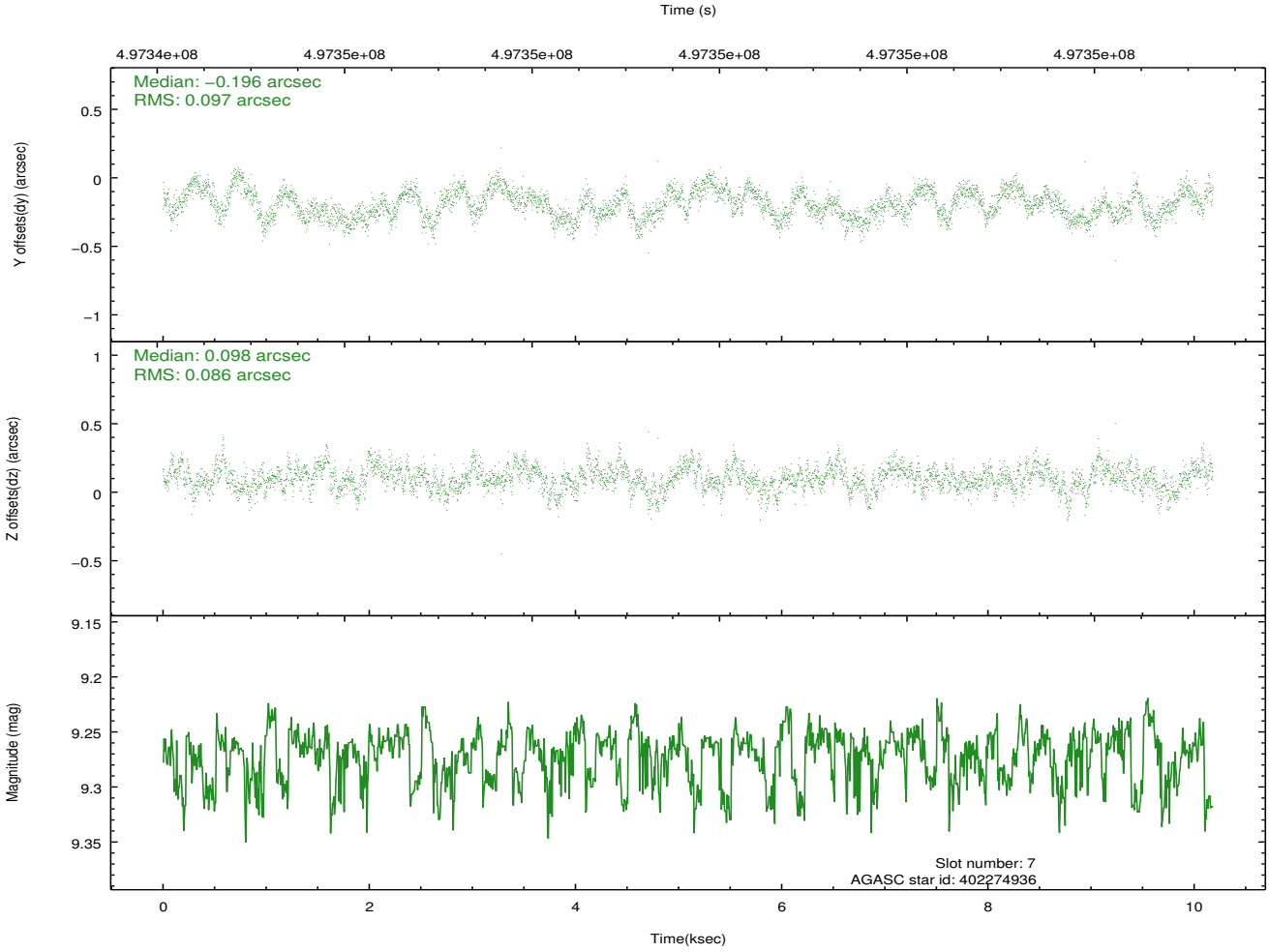

Points outside 0.7 arcsec radius: 0.000%
Radial offset of median: 0.275 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 6
AGASC star id: 402270712


Time (s)
4.9734e+08
4.9735e+08
Median: 0.215 arcsec
RMS: 0.098 arcsec
Y offsets(dy) (arcsec)
Median: 0.171 arcsec
RMS: 0.069 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number: 6
AGASC star id: 402270712
Time(ksec)

2.4.5 Slot 7

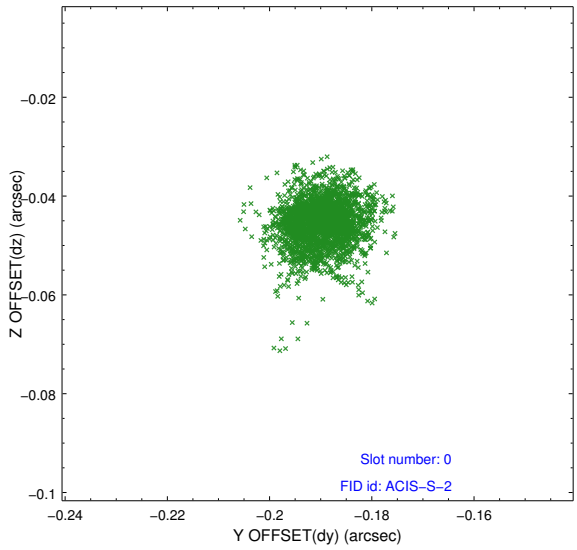

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 7
AGASC star id: 402274936

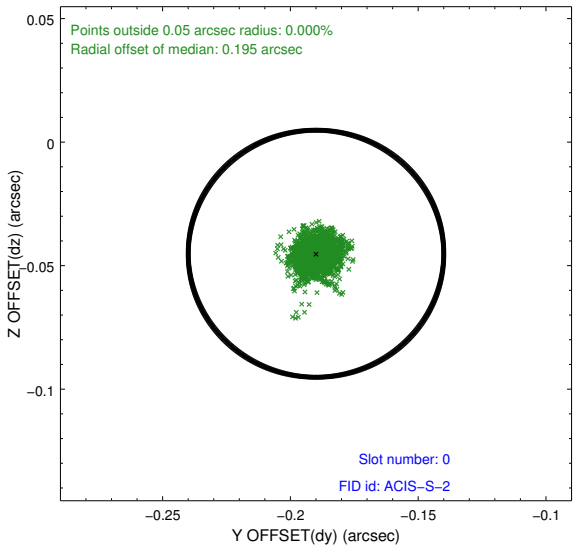

Points outside 0.7 arcsec radius: 0.000%
Radial offset of median: 0.219 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 7
AGASC star id: 402274936

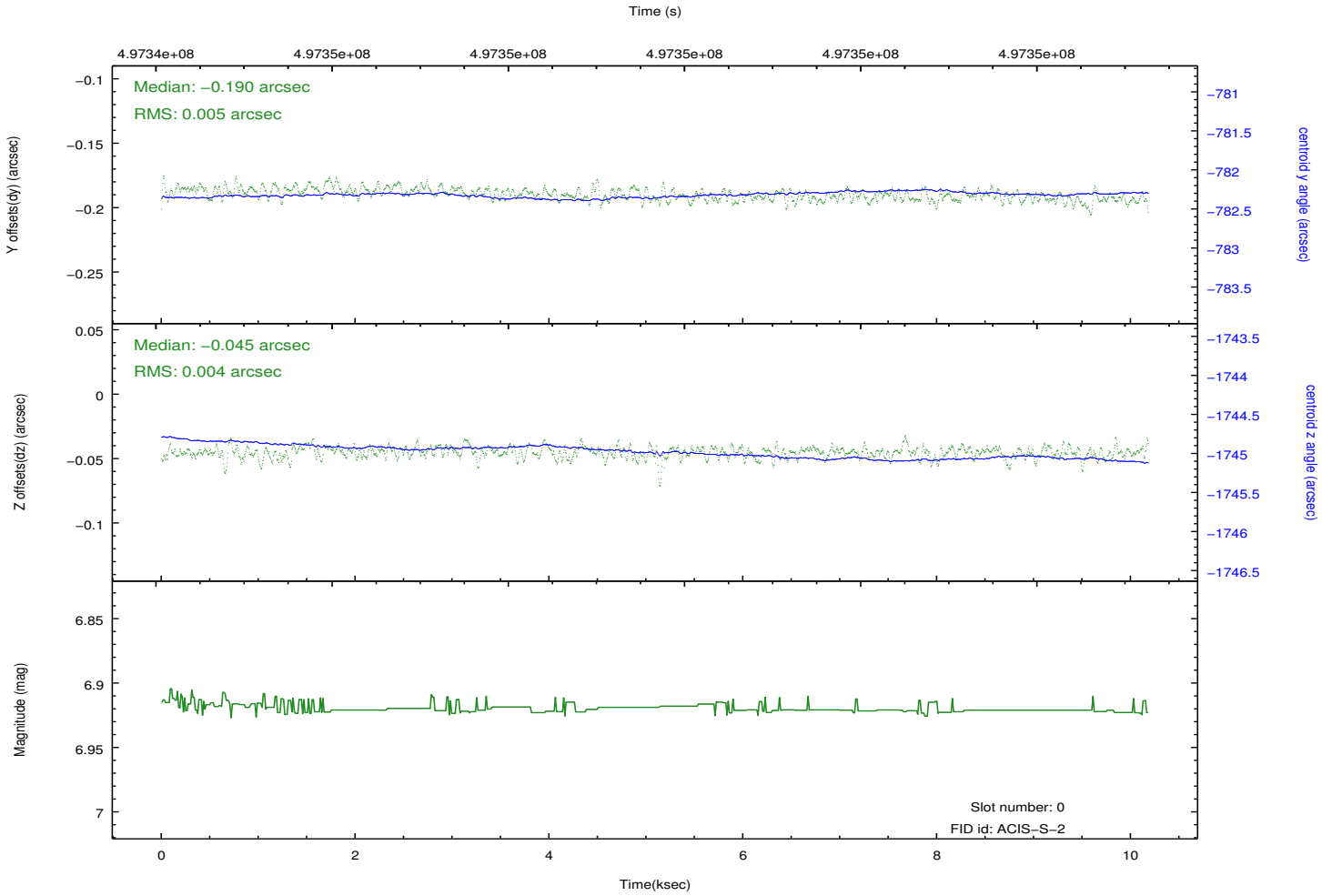

Time (s)
Median: −0.196 arcsec
RMS: 0.097 arcsec
Y offsets(dy) (arcsec)
Median: 0.098 arcsec
RMS: 0.086 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number: 7
AGASC star id: 402274936
Time(ksec)

2.5 FID Slots

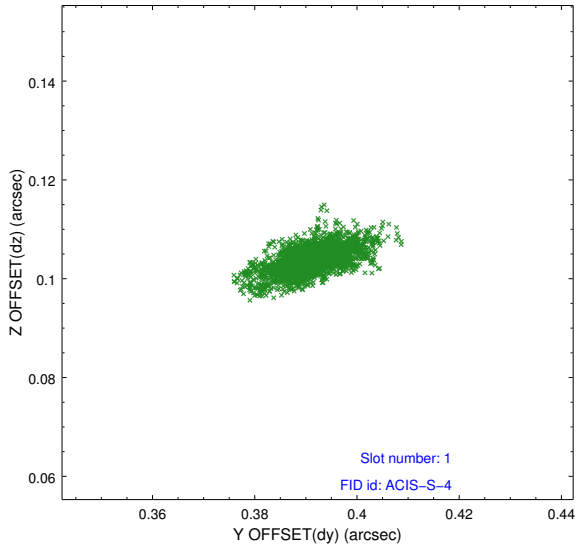
2.5.1 Slot 0

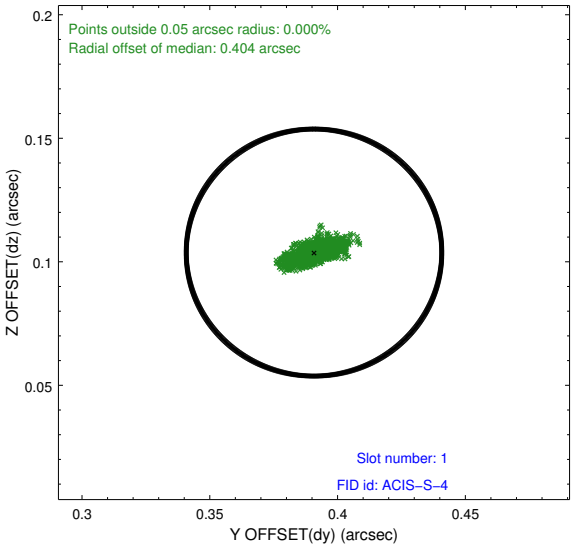


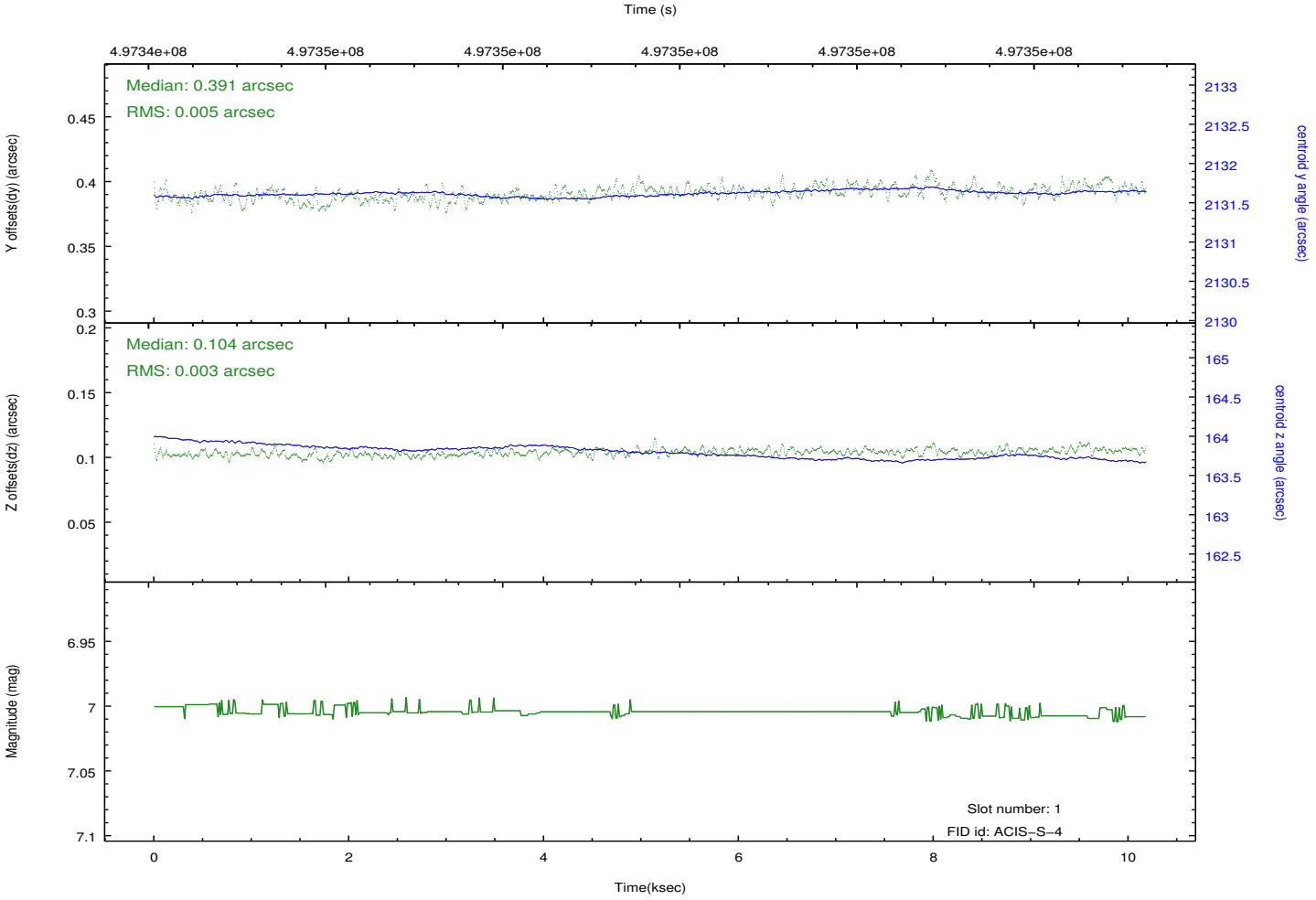




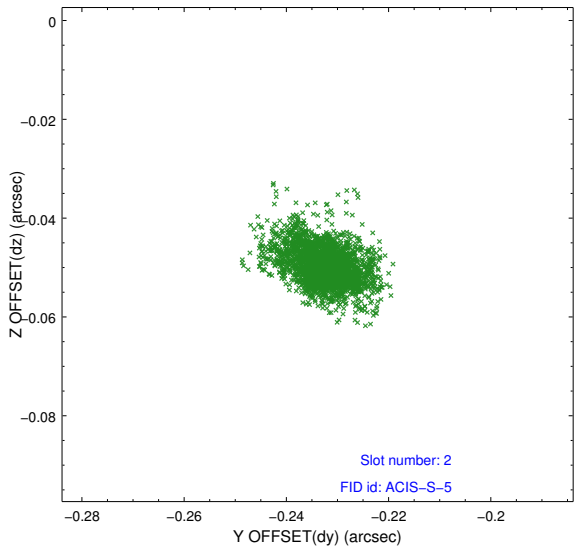
2.5.2 Slot 1

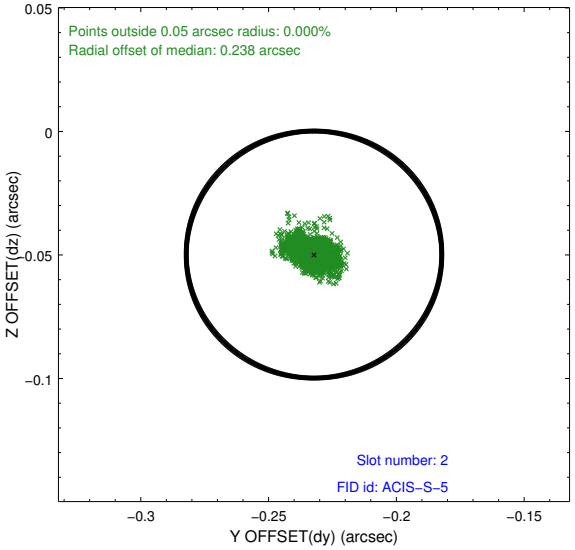

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 1
FID id: ACIS–S–4

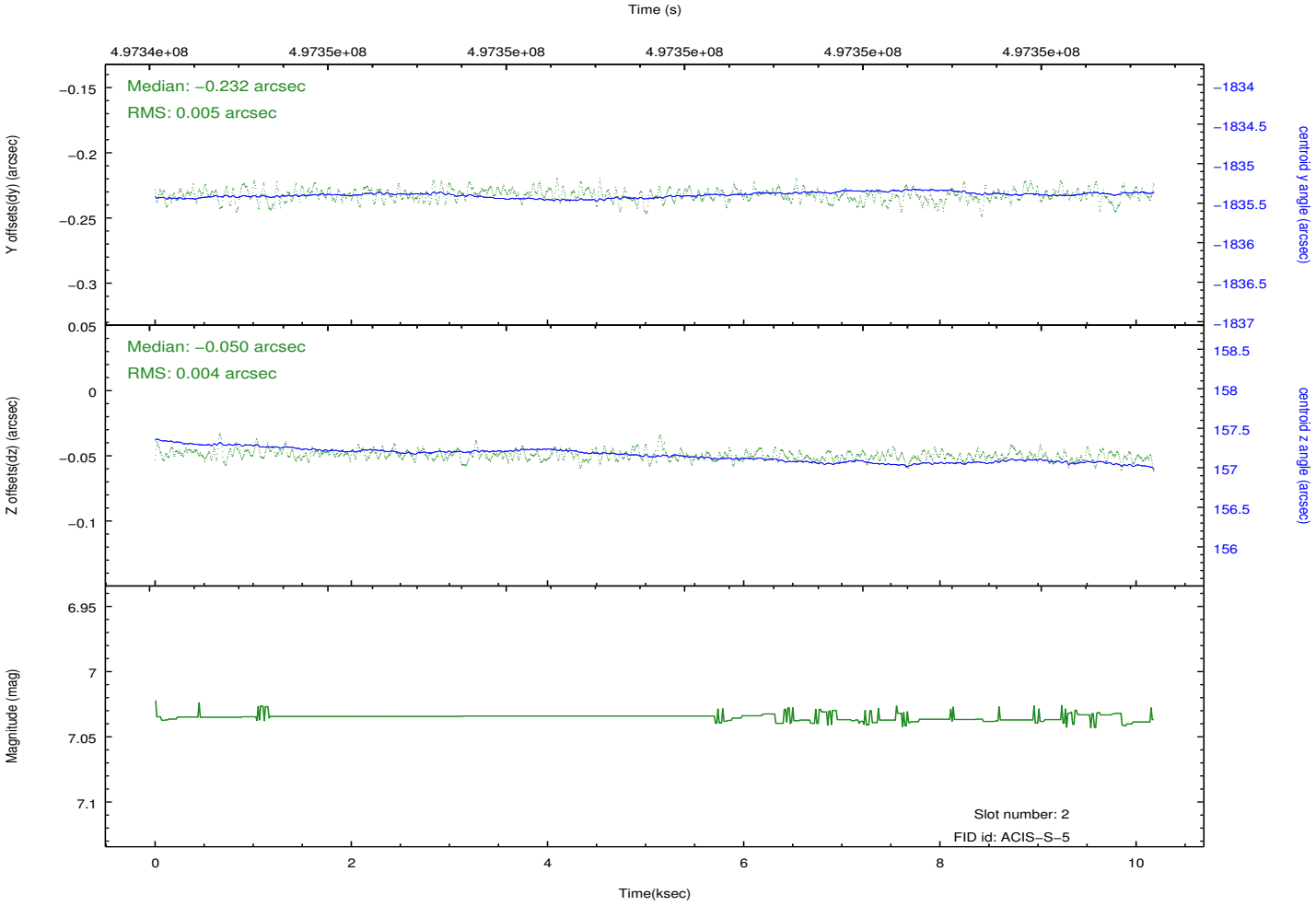

Points outside 0.05 arcsec radius: 0.000%
Radial offset of median: 0.404 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 1
FID id: ACIS–S–4


Time (s)
Median: 0.391 arcsec
RMS: 0.005 arcsec
Y offsets(dy) (arcsec)
Median: 0.104 arcsec
RMS: 0.003 arcsec
Z offsets(dz) (arcsec)
centroid y angle (arcsec)
centroid z angle (arcsec)
Magnitude (mag)
Slot number: 1
FID id: ACIS–S–4
Time(ksec)

2.5.3 Slot 2


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


Points outside 0.05 arcsec radius: 0.000%
Radial offset of median: 0.238 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 2
FID id: ACIS−S−5


Time (s)
Median: −0.232 arcsec
RMS: 0.005 arcsec
Y offsets(dy) (arcsec)
centroid y angle (arcsec)
Median: −0.050 arcsec
RMS: 0.004 arcsec
Z offsets(dz) (arcsec)
centroid z angle (arcsec)
Magnitude (mag)
Slot number: 2
FID id: ACIS−S−5
Time(ksec)

A Summary

A.1 Status

V&V Scientist	Beth Sundheim
V&V Date (YYYY-MM-DD)	2014.12.12
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	10.07810007751

A.2 Comments

These data have been reprocessed with new aspect alignment calibration files that correct small mean offsets (up to 0.4 arcsecs) and improve overall astrometric accuracy. The new calibration was determined using data from the time period being reprocessed and was performed using cross-correlation of X-ray sources with radio and optical counterparts.