V&V Reference Report
L2 ASCDS Version : 8.4.3

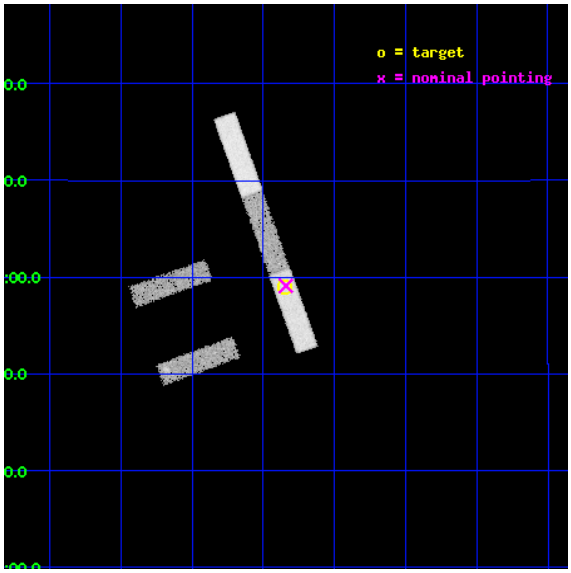
Observation 12749 - L2 Version 2
Chandra X-Ray Center

L2 Processing Date : Feb 4 2012

Contents

1 Front

seq_num	702385	Sequence number
obs_id	12749	Observation id
title	X-ray and HST Imaging of Kpc-Scale Binary AGNs	Proposal title
observer	Dr Yue Shen	Principal investigator
object	SDSSJ1108+0659	Source name
dtycycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	167.2125	Observer's specified target RA [deg]
dec_targ	6.983722	Observer's specified target Dec [deg]
ra_nom	167.21035493908	Nominal RA [deg]
dec_nom	6.9853150177569	Nominal Dec [deg]
roll_nom	70.244893862943	Nominal Roll [deg]
revision	2	Processing version of data
ontime	20064.0	Sum of GTIs [s]
livetime	19273.03465765	Livetime [s]
ontime2	20062.958969891	Sum of GTIs [s]
ontime3	20064.0	Sum of GTIs [s]
ontime5	20064.0	Sum of GTIs [s]
ontime6	20064.0	Sum of GTIs [s]
ontime7	20064.0	Sum of GTIs [s]
l2events	62267	Number of level 2 events

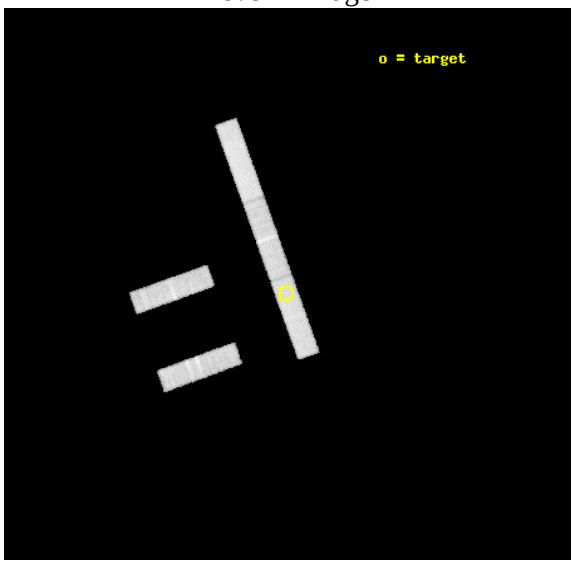


2 OBI

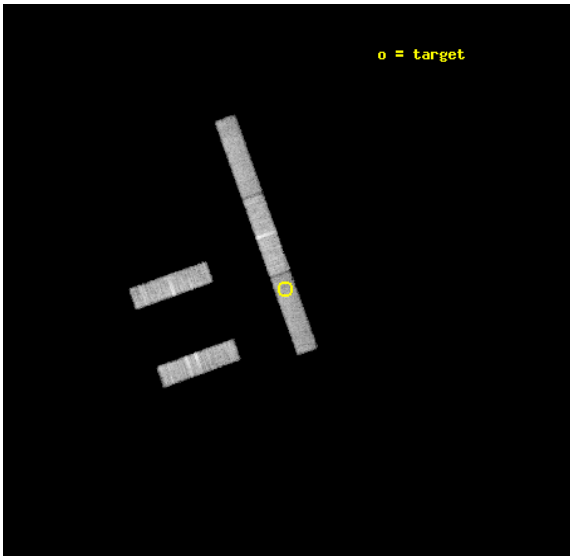
2.1 OBI

2.1.1 Images

Level 1 Image

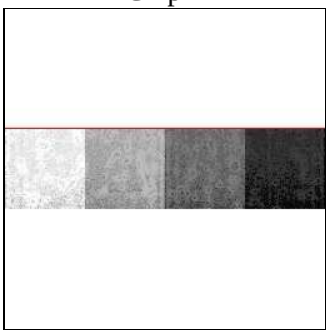


Level 1 Bad Events

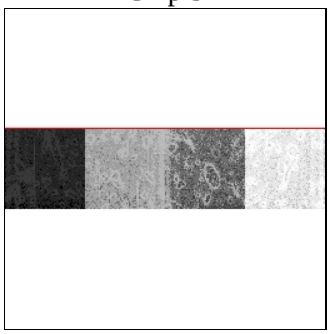


2.1.2 Bias

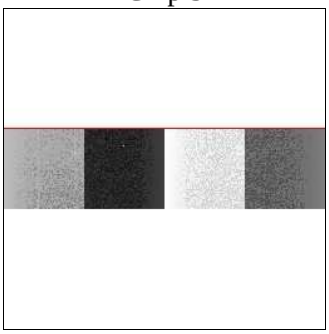
Chip 2



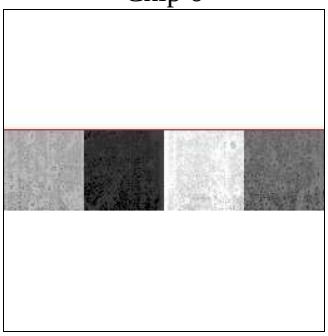
Chip 3



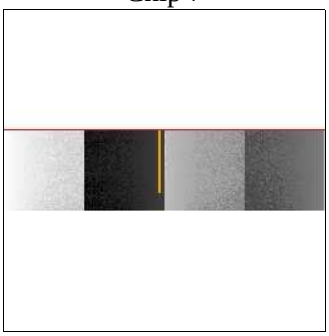
Chip 5



Chip 6



Chip 7



2.1.3 Parameters

obi_num	0	Obi number
ascdsver	8.4.3	Processing system revision
caldbver	4.4.7	
date	2012-02-04T06:07:20	Date and time of file creation
revision	2	Processing version of data

sched_exp_time	20000.000000	[s] Scheduled observation exposure time
ontime	20064.0	Sum of GTIs [s]
ontime2	20062.958969891	Sum of GTIs [s]
ontime3	20064.0	Sum of GTIs [s]
ontime5	20064.0	Sum of GTIs [s]
ontime6	20064.0	Sum of GTIs [s]
ontime7	20064.0	Sum of GTIs [s]
l1events	238481	Number of level 1 events

2.1.4 Events

	ccd 2	**ccd 3**	**ccd 5**	**ccd 6**	**ccd 7**
level 1 events	41889	42248	59908	44546	49890
rejected events	37221	37603	30729	39470	26834
rejected %	88%	89%	51%	88%	53%

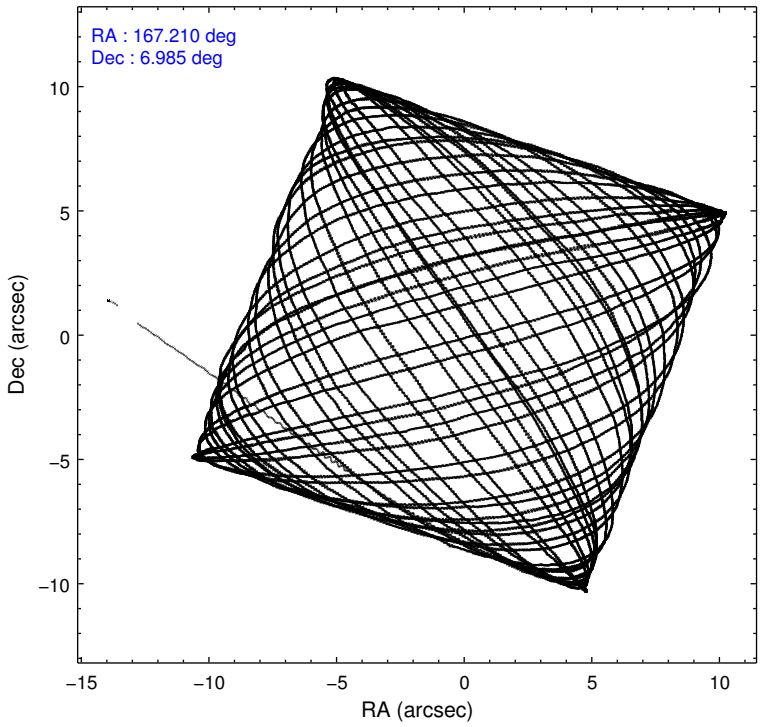
	ccd 2	**ccd 3**	**ccd 5**	**ccd 6**	**ccd 7**
grade 0 events	1463	1453	2473	1520	2322
	3%	3%	4%	3%	4%
grade 1 events	19	12	141	16	66
	0%	0%	0%	0%	0%
grade 2 events	949	887	8665	1058	4828
	2%	2%	14%	2%	9%
grade 3 events	744	738	1834	727	2529
	1%	1%	3%	1%	5%
grade 4 events	717	668	1747	748	2499
	1%	1%	2%	1%	5%
grade 5 events	1472	1796	5295	1770	5203
	3%	4%	8%	3%	10%
grade 6 events	796	902	14469	1023	10879
	1%	2%	24%	2%	21%
grade 7 events	35729	35792	25284	37684	21564
	85%	84%	42%	84%	43%

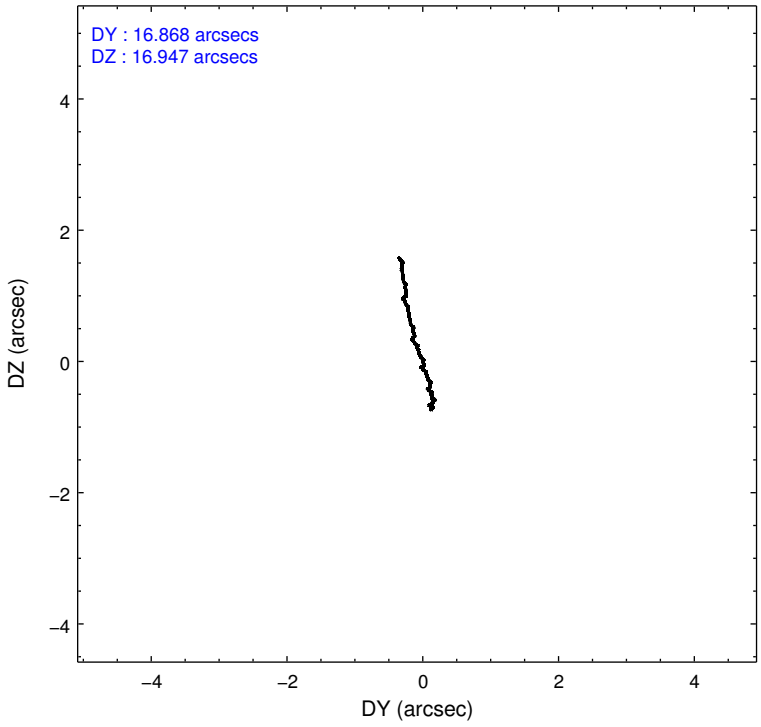
2.2 Compared Parameters

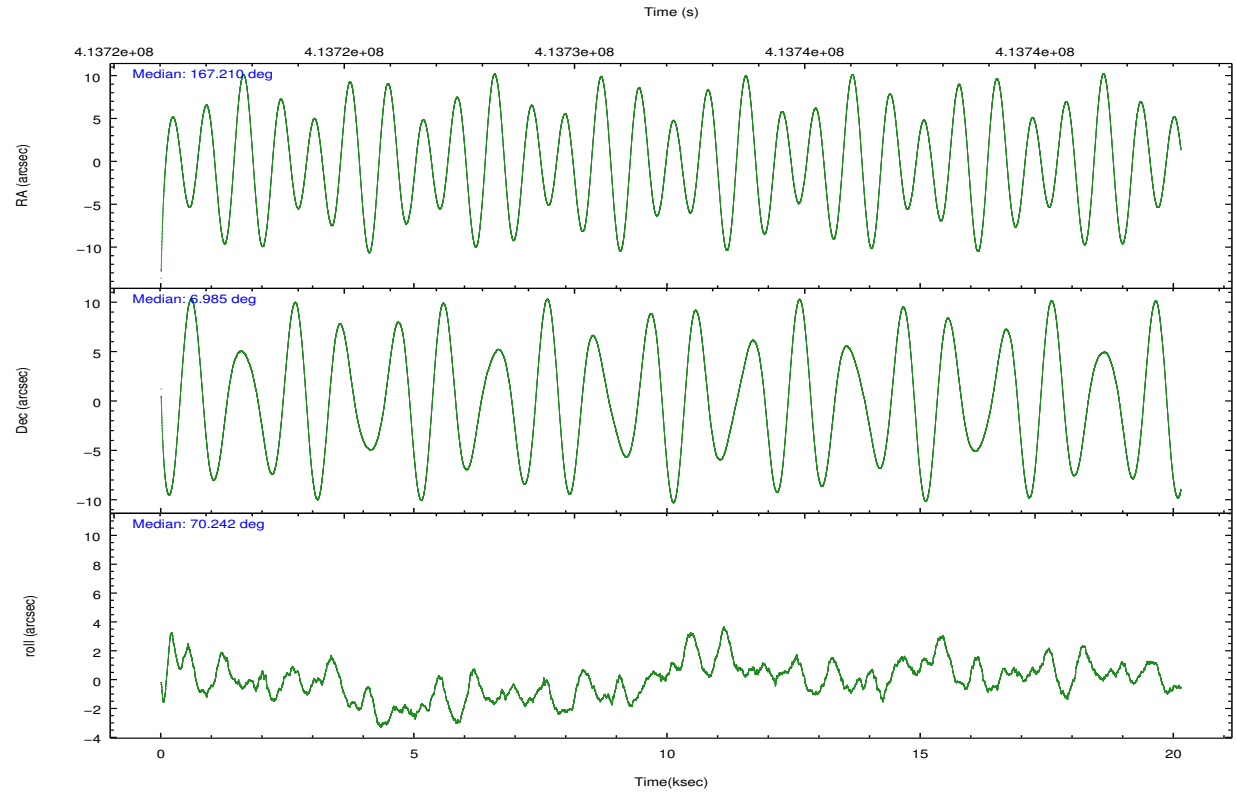
Parameter	Planned	Actual
Instrument	ACIS	ACIS
Detector	ACIS-23567	ACIS-23567
Grating	NONE	NONE
Data mode	FAINT	FAINT
Observation mode	POINTING	POINTING
[deg] Pointing RA	167.215618	167.2103549390778
[deg] Pointing Dec	6.958492	6.985315017756864
[deg] Pointing Roll	70.087626	70.24489386294255
[mm] SIM 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)	413722167.184000	413721119.24074
Observation start date	2011-02-10T10:48:21	2011-02-10T10:31:59
[s] Observation end time (MET)	413742167.184000	413742850.77936
Observation end date	2011-02-10T16:21:41	2011-02-10T16:34:10
Read mode	TIMED	TIMED

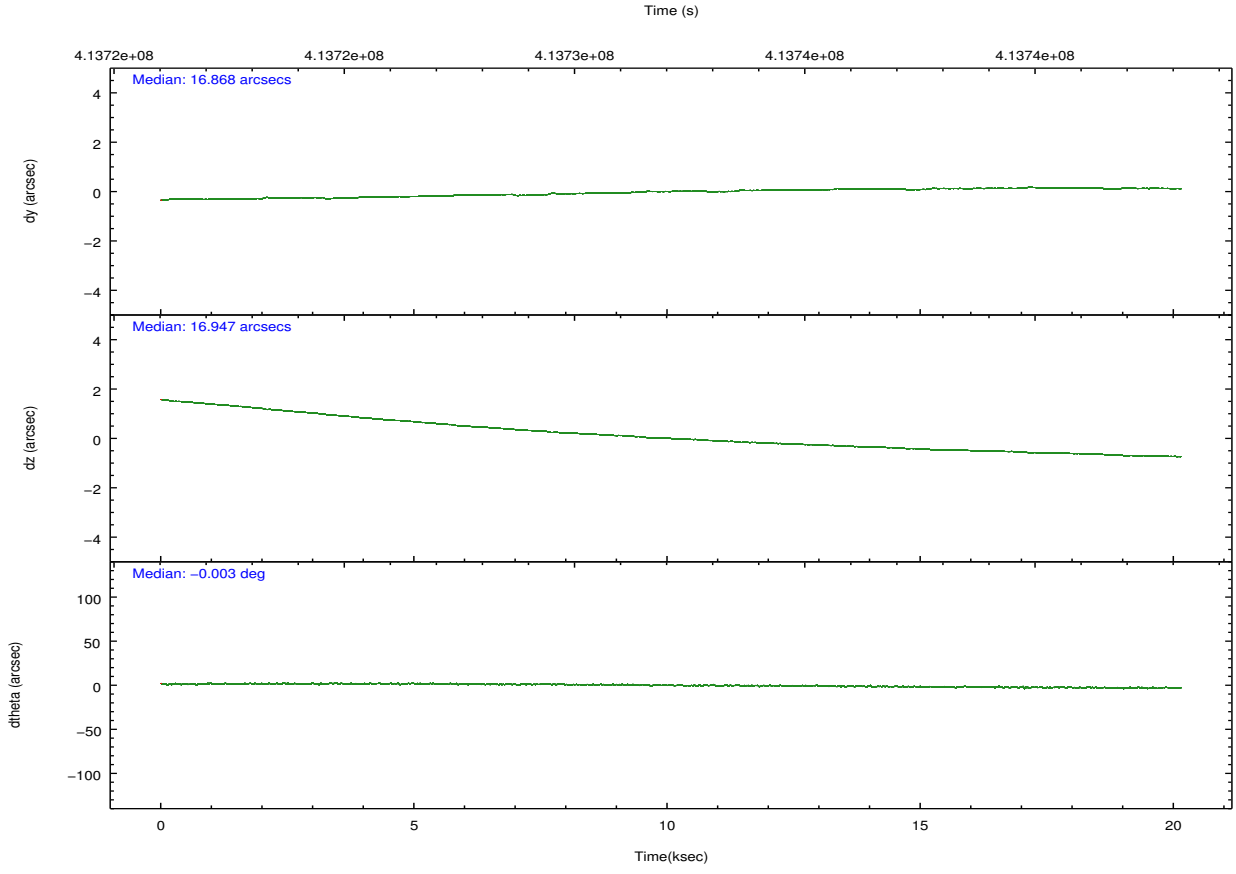
Parameter	Planned	Actual
Obspar format version number	7	7
Obspar file type	PREDICTED	ACTUAL
Obspar update status	NONE	UPDATED
CCD I0 on	N	N
CCD I1 on	N	N
CCD I2 on	Y	Y
CCD I3 on	Y	Y
CCD S0 on	N	N
CCD S1 on	O1	Y
CCD S2 on	Y	Y
CCD S3 on	Y	Y
CCD S4 on	N	N
CCD S5 on	N	N
Number of optional ACIS chips dropped	0	0
On-chip summing requested	N	N
Subarray requested	CUSTOM	1/4
Subarray start row	385	385
Subarray row count	256	256
Alternating exposures requested	N	N
[s] Primary exposure time	0.000000	1

2.3 Aspect


RA : 167.210 deg
Dec : 6.985 deg
Dec (arcsec)
RA (arcsec)
10
5
0
−5
−10
−15
−10
−5
0
5
10


DY : 16.868 arcsecs
DZ : 16.947 arcsecs
DZ (arcsec)
DY (arcsec)
4
2
0
−2
−4
−4
−2
0
2
4


Time (s)
4.1372e+08
4.1372e+08
4.1373e+08
4.1374e+08
4.1374e+08
Median: 167.210 deg
RA (arcsec)
Median: 6.985 deg
Dec (arcsec)
Median: 70.242 deg
roll (arcsec)
Time(ksec)

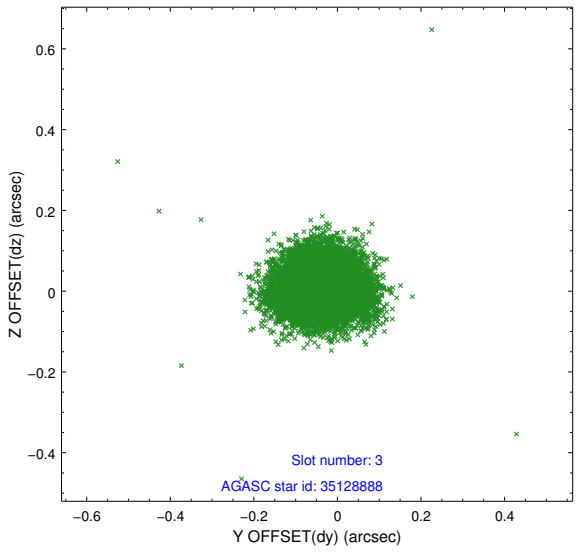

Time (s)
4.1372e+08
4.1372e+08
4.1373e+08
4.1374e+08
4.1374e+08
Median: 16.868 arcsecs
dy (arcsec)
Median: 16.947 arcsecs
dz (arcsec)
Median: −0.003 deg
dtheta (arcsec)
Time(ksec)

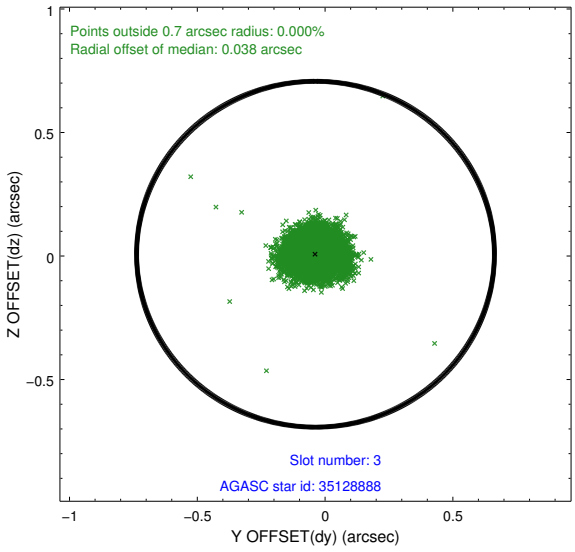
Slot Statistics

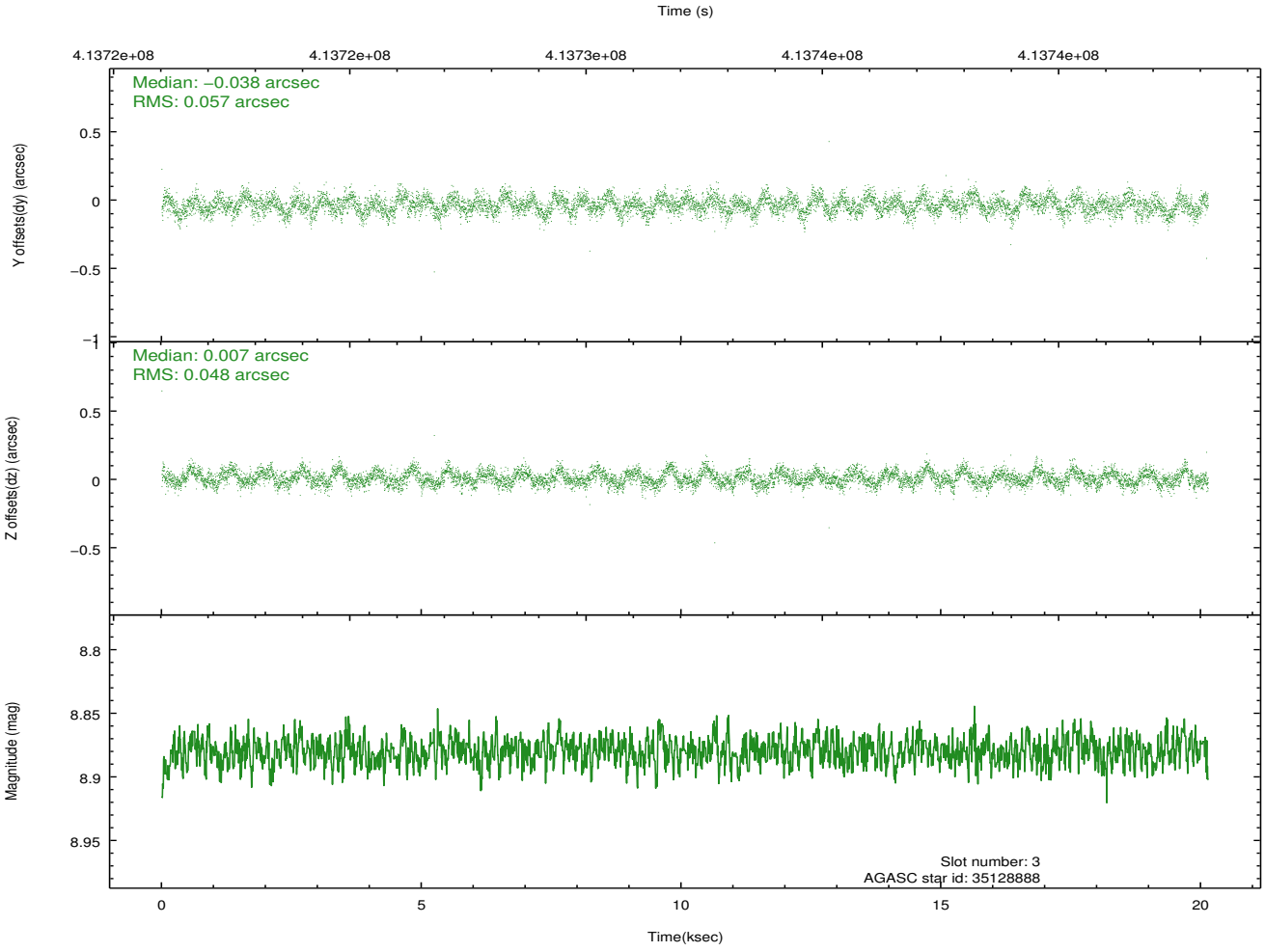
slot	status	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID	ACIS-S-2	6.91	4911	-0.068	-0.022	0.016	0.025	0.000000	0.000000	-769.94	-1738.49
1	FID	ACIS-S-4	6.99	4913	0.159	0.039	0.009	0.015	0.000000	0.000000	2143.51	169.82
2	FID	ACIS-S-5	7.02	4913	-0.124	-0.007	0.014	0.024	0.000000	0.000000	-1822.57	163.71
3	GUIDE	35128888	8.88	9814	-0.038	0.007	0.079	0.125	167.435755	7.497384	2091.24	-78.64
4	GUIDE	35260640	9.06	9793	0.157	0.158	0.107	0.167	167.546632	6.305790	-1805.03	-1913.25
5	GUIDE	111149568	8.02	9824	-0.291	-0.029	0.062	0.098	167.114175	7.630670	2151.72	1164.65
6	GUIDE	111150824	9.08	9815	-0.071	-0.328	0.091	0.147	166.841315	7.513076	1422.25	1936.55
7	GUIDE	35129704	9.39	9816	0.243	0.187	0.110	0.177	167.497145	6.165570	-2339.82	-1919.26

2.4 Star Slots

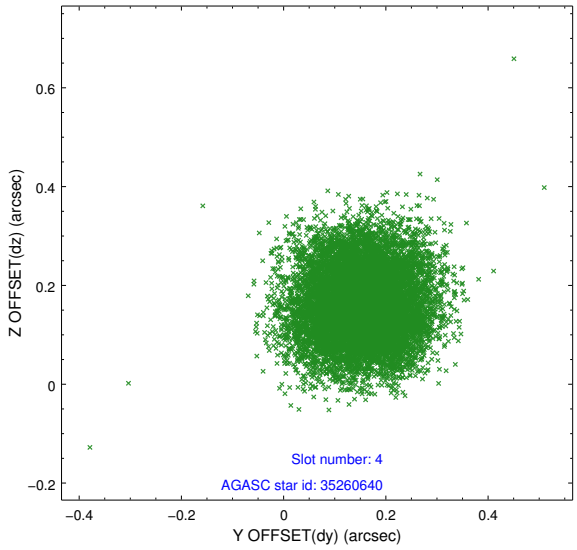
2.4.1 Slot 3

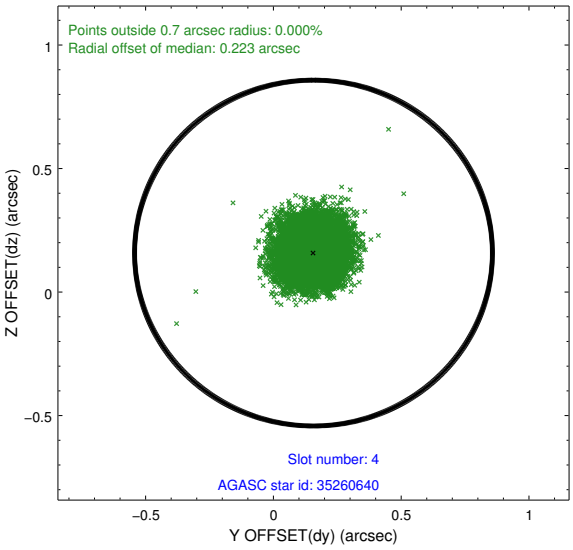


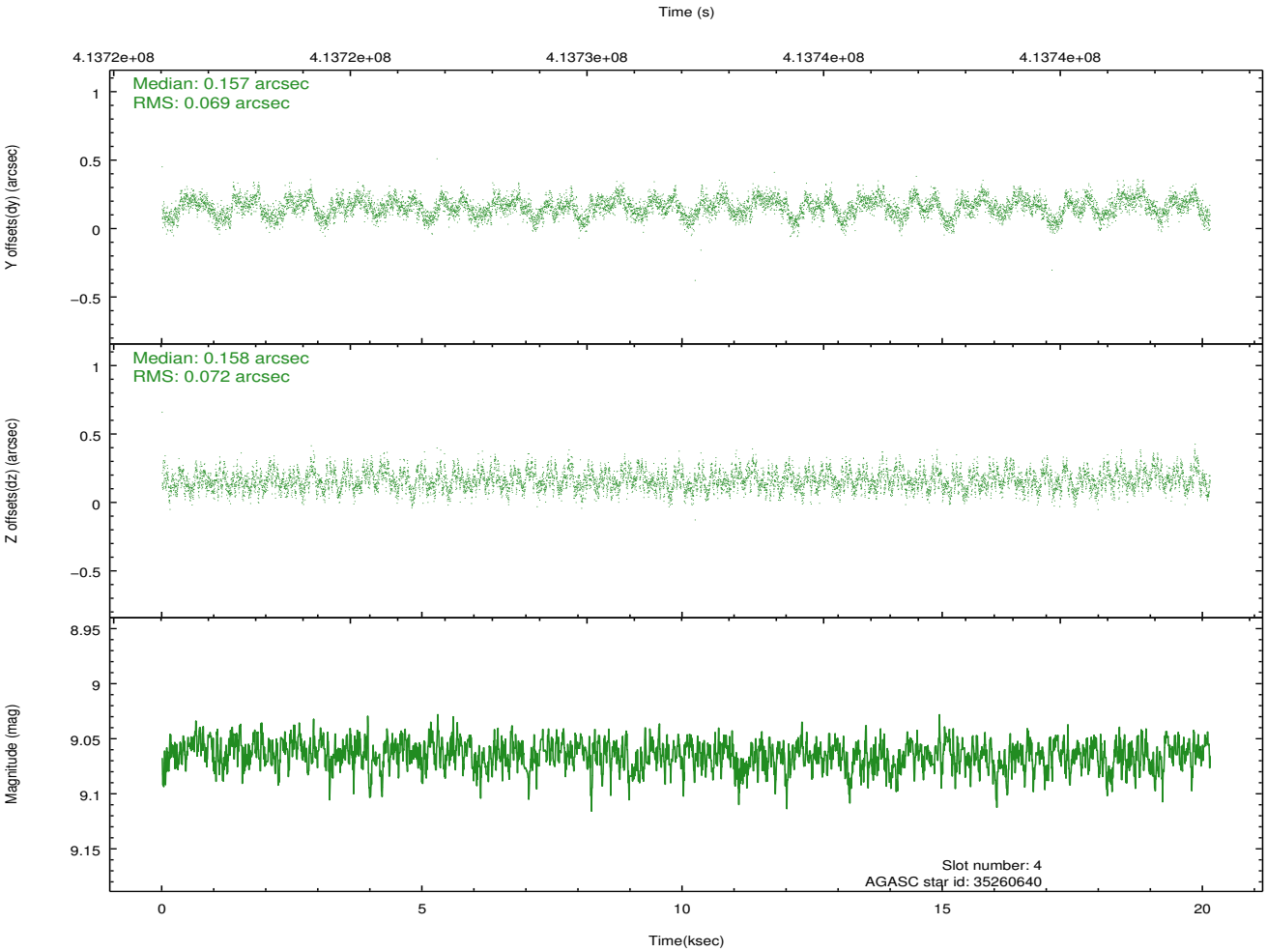




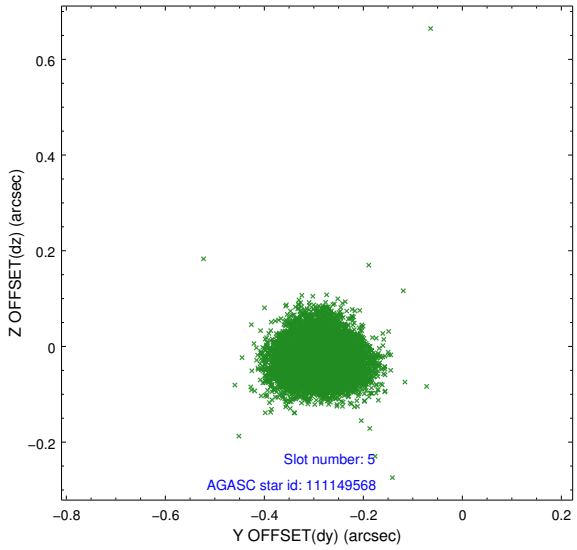
2.4.2 Slot 4

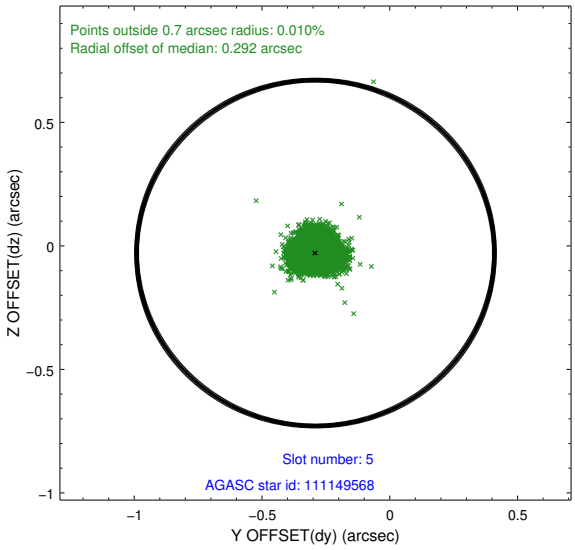

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 4
AGASC star id: 35260640

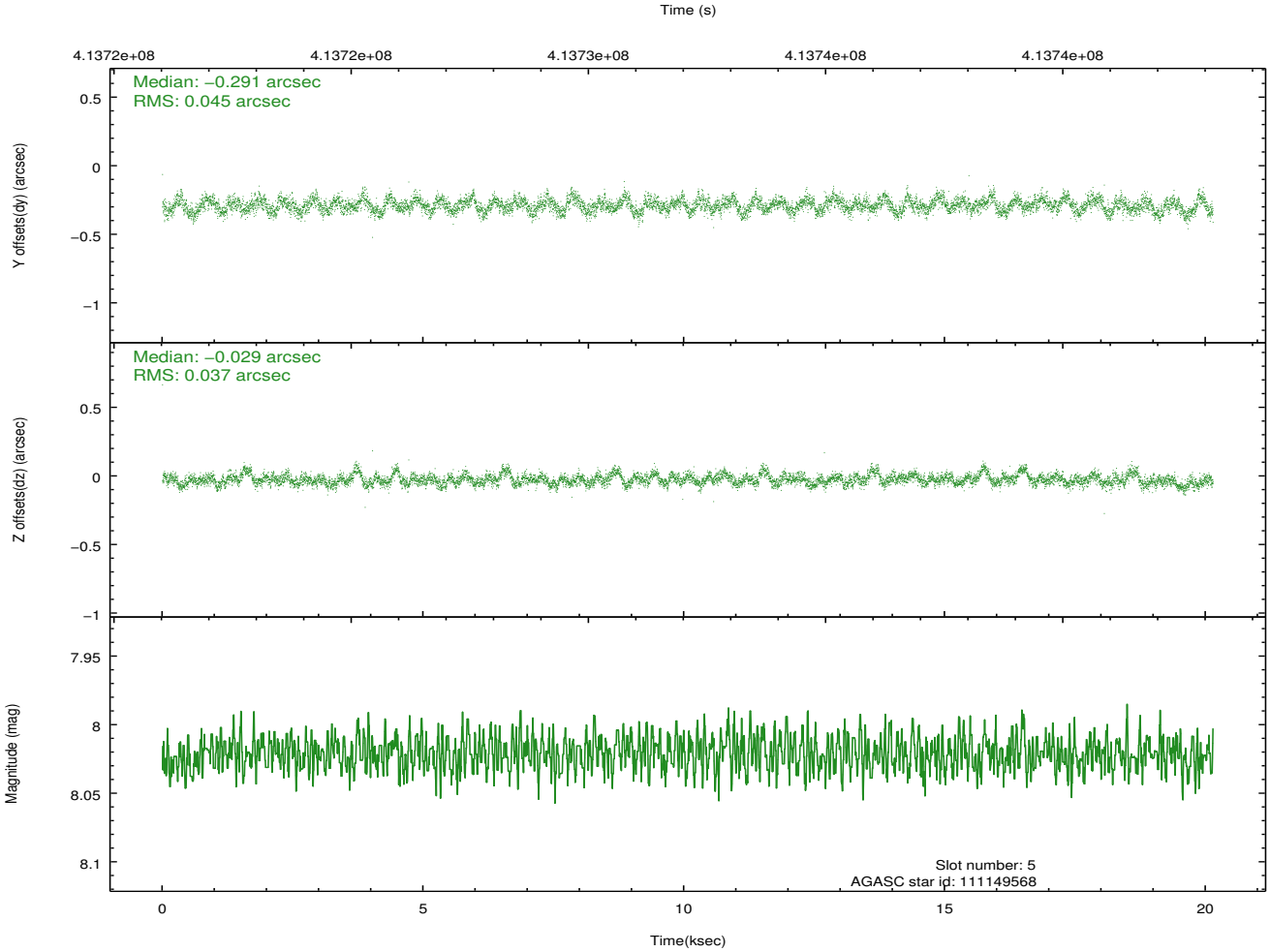

Points outside 0.7 arcsec radius: 0.000%
Radial offset of median: 0.223 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 4
AGASC star id: 35260640


Time (s)
Median: 0.157 arcsec
RMS: 0.069 arcsec
Y offsets(dy) (arcsec)
Median: 0.158 arcsec
RMS: 0.072 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number: 4
AGASC star id: 35260640
Time(ksec)

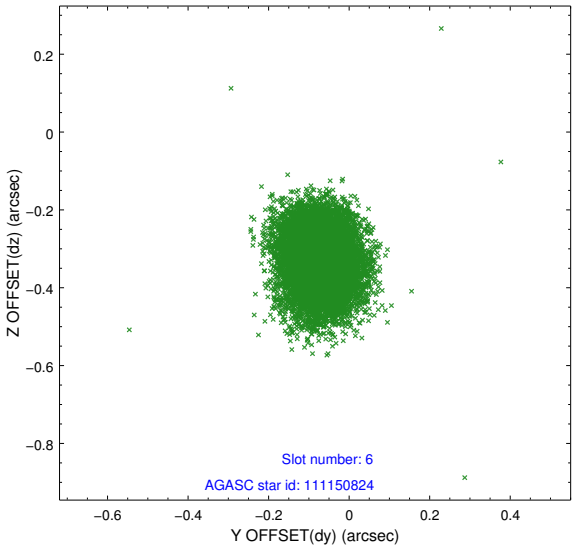
2.4.3 Slot 5

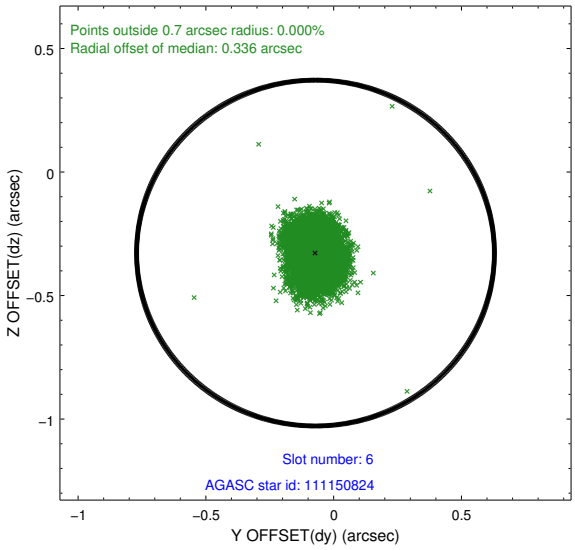

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 5
AGASC star id: 111149568

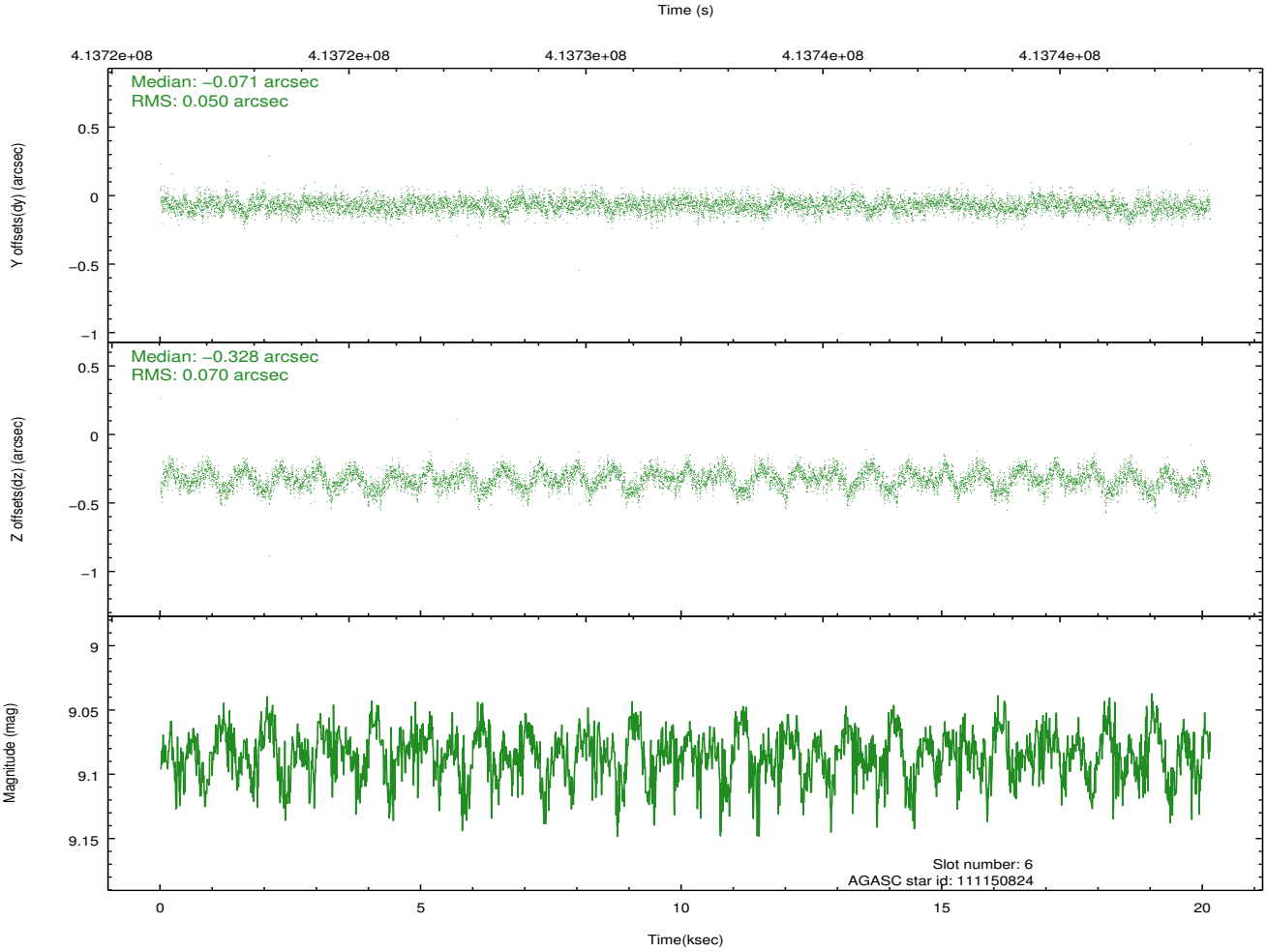

Points outside 0.7 arcsec radius: 0.010%
Radial offset of median: 0.292 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 5
AGASC star id: 111149568


Time (s)
Median: −0.291 arcsec
RMS: 0.045 arcsec
Y offsets(dy) (arcsec)
Median: −0.029 arcsec
RMS: 0.037 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number: 5
AGASC star id: 111149568
Time(ksec)

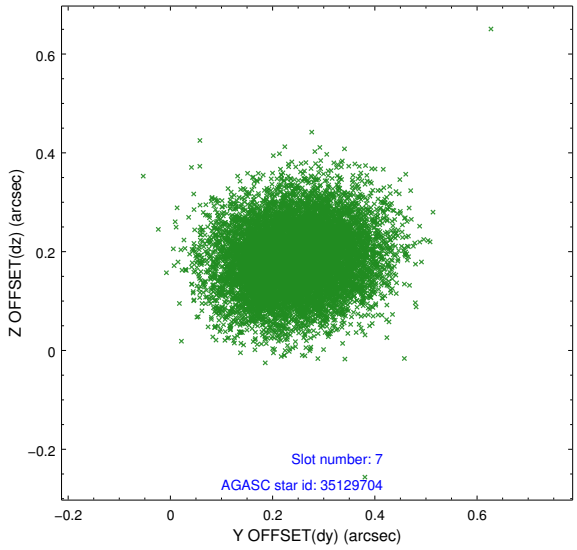
2.4.4 Slot 6

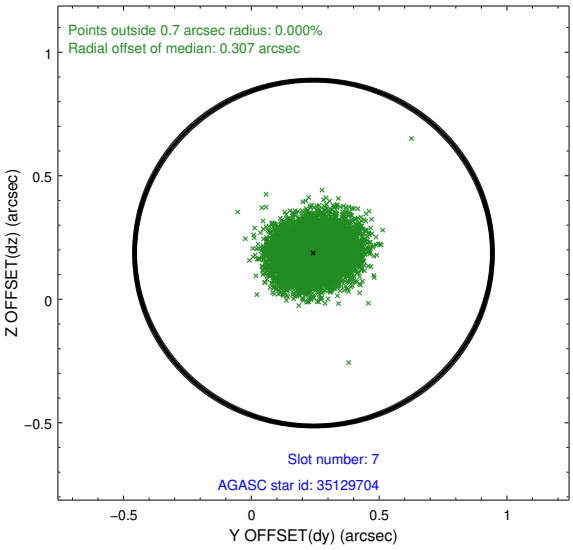

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 6
AGASC star id: 111150824

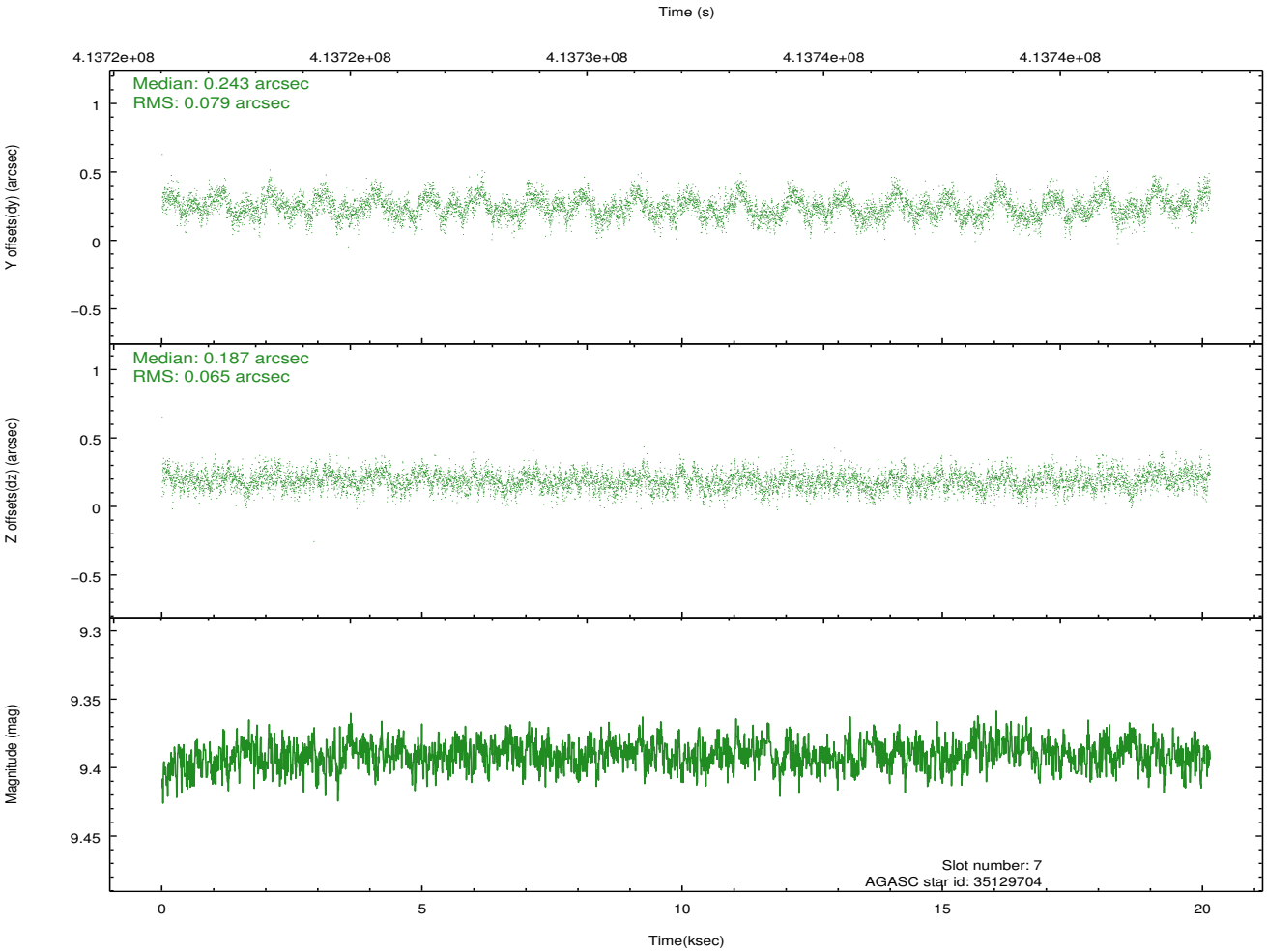

Points outside 0.7 arcsec radius: 0.000%
Radial offset of median: 0.336 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 6
AGASC star id: 111150824


Time (s)
Median: −0.071 arcsec
RMS: 0.050 arcsec
Y offsets(dy) (arcsec)
Median: −0.328 arcsec
RMS: 0.070 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number: 6
AGASC star id: 111150824
Time(ksec)

2.4.5 Slot 7

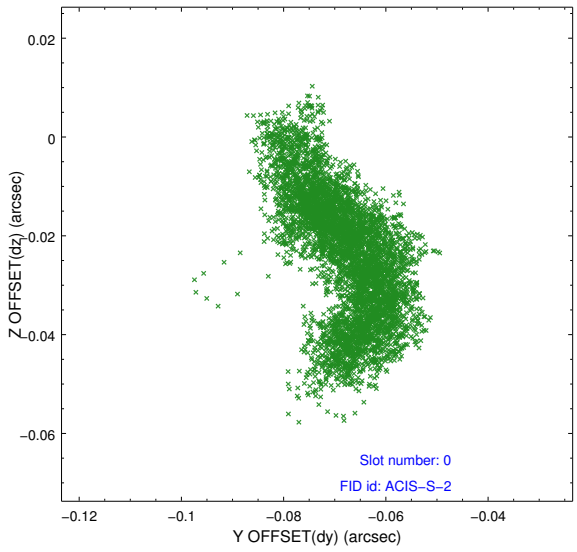

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 7
AGASC star id: 35129704

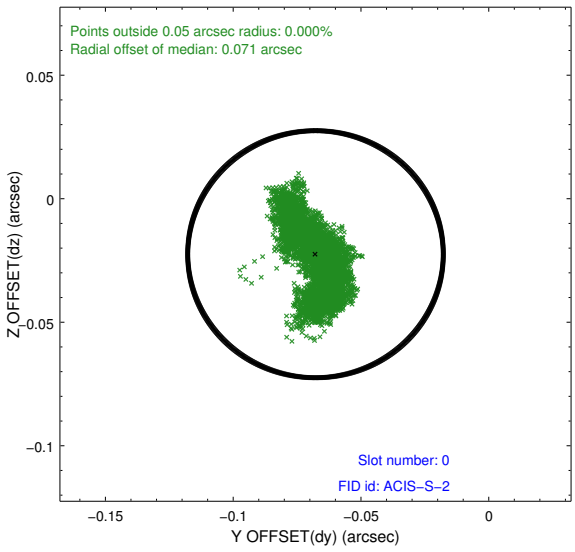

Points outside 0.7 arcsec radius: 0.000%
Radial offset of median: 0.307 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 7
AGASC star id: 35129704

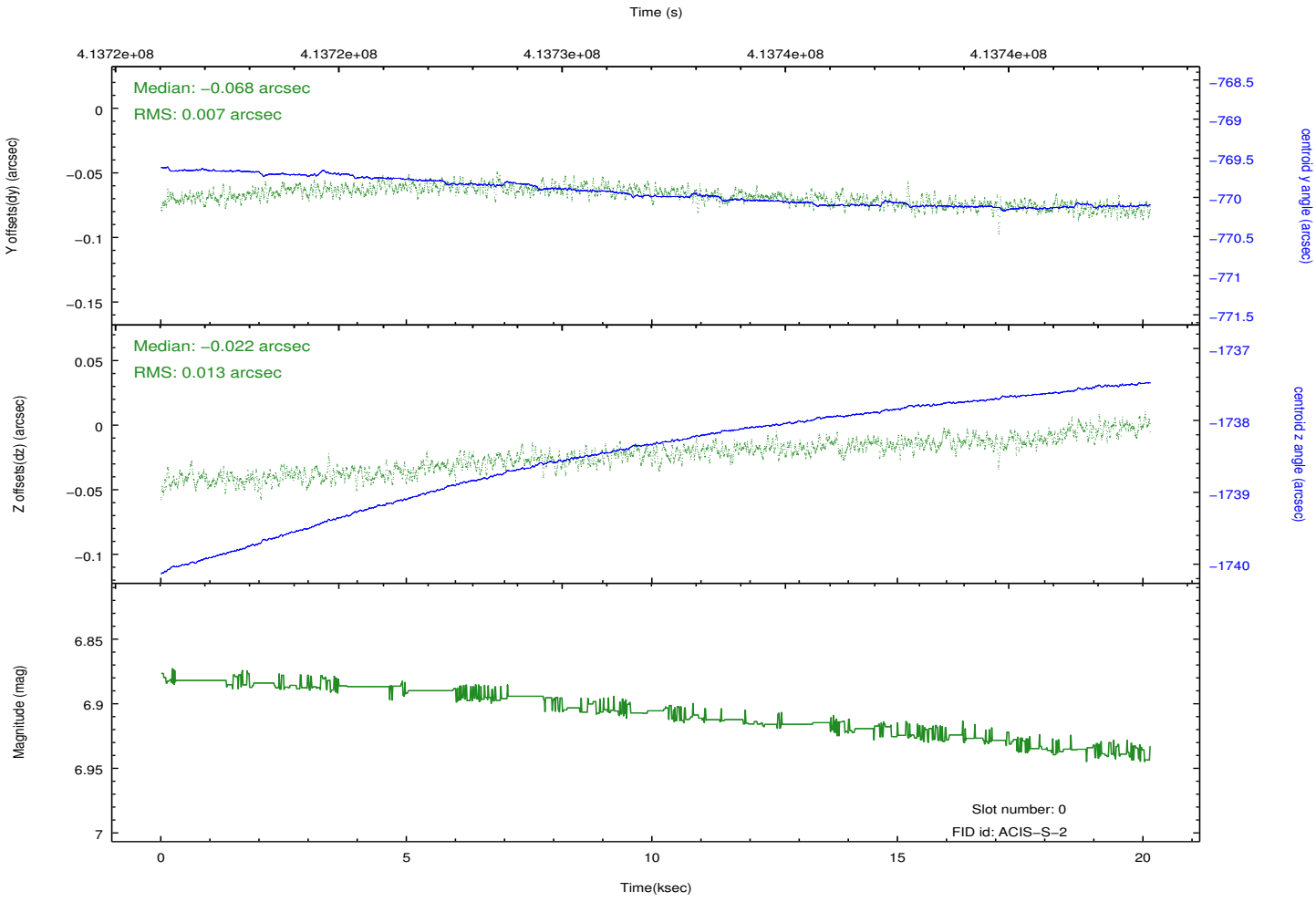

Time (s)
Median: 0.243 arcsec
RMS: 0.079 arcsec
Y offsets(dy) (arcsec)
Median: 0.187 arcsec
RMS: 0.065 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number: 7
AGASC star id: 35129704
Time(ksec)

2.5 FID Slots

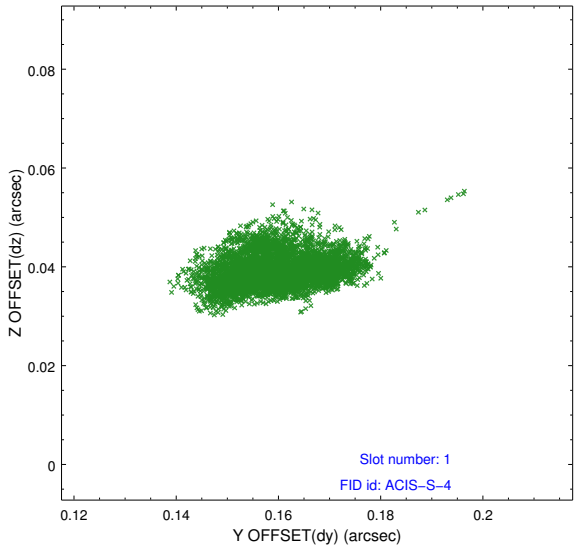
2.5.1 Slot 0

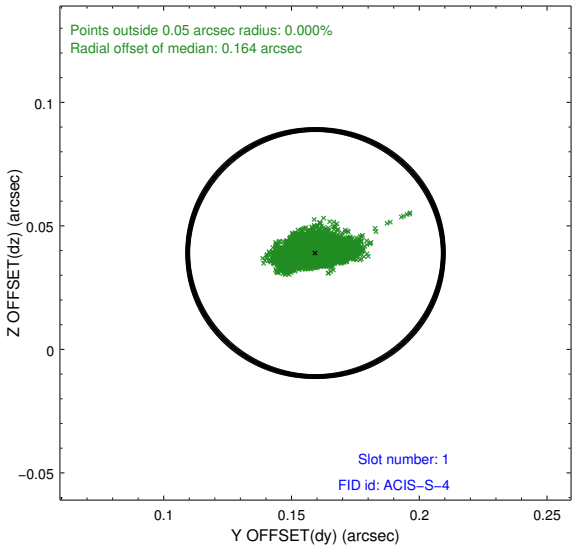


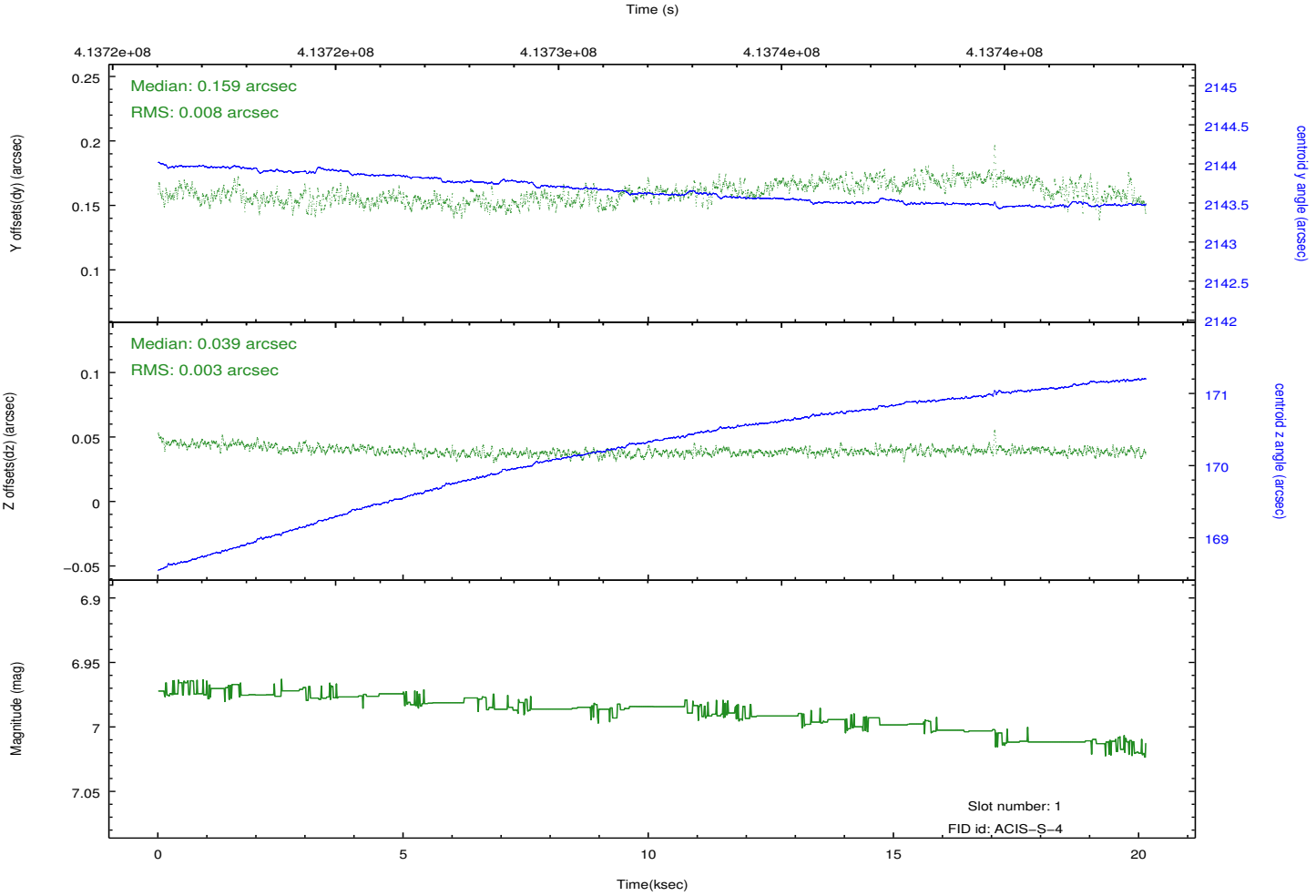




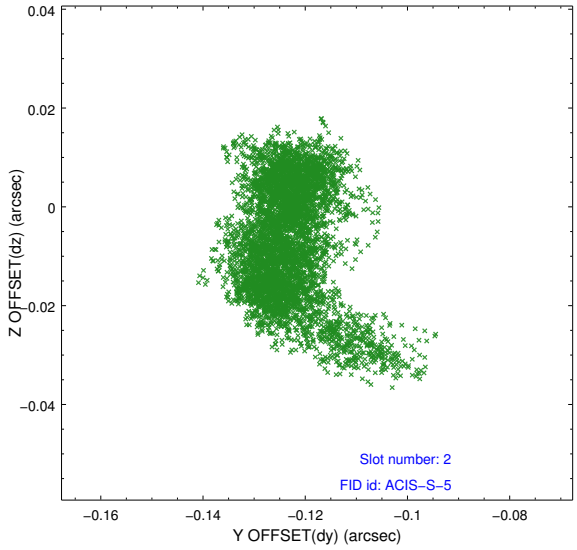
2.5.2 Slot 1

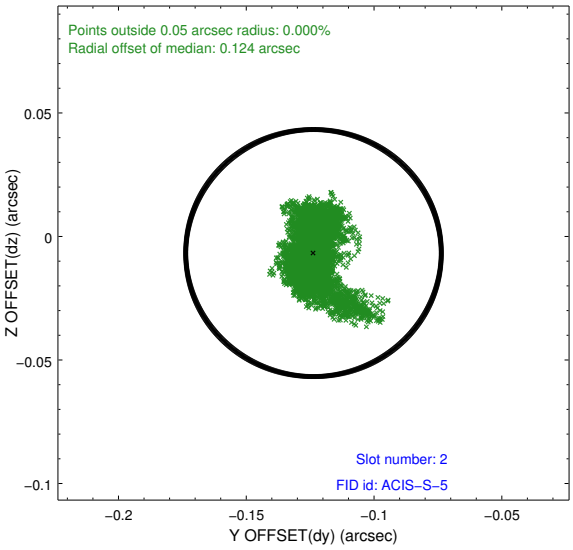

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 1
FID id: ACIS−S−4

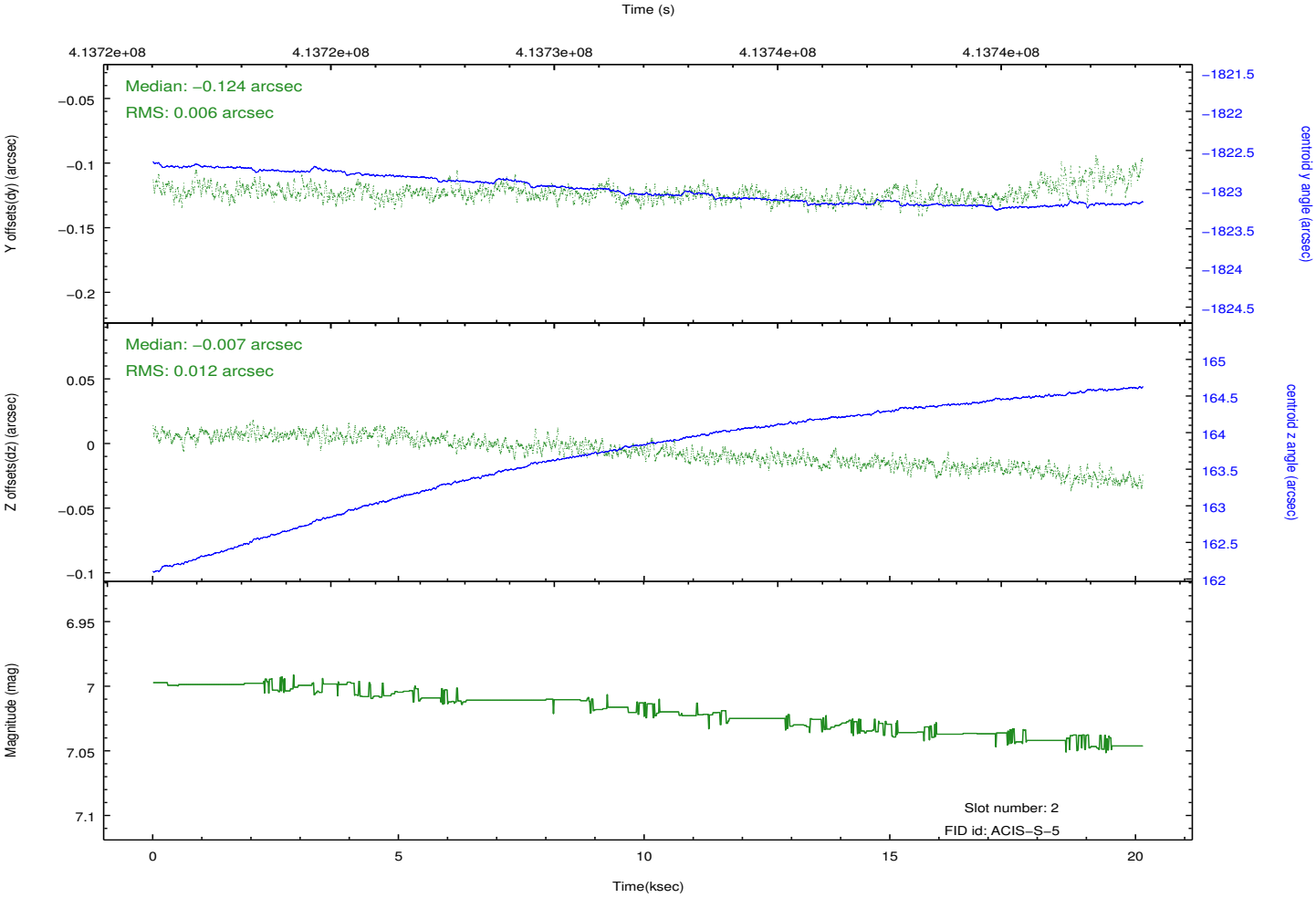

Points outside 0.05 arcsec radius: 0.000%
Radial offset of median: 0.164 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 1
FID id: ACIS−S−4


Time (s)
Median: 0.159 arcsec
RMS: 0.008 arcsec
Y offsets(dy) (arcsec)
centroid y angle (arcsec)
Median: 0.039 arcsec
RMS: 0.003 arcsec
Z offsets(dz) (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: 0.124 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 2
FID id: ACIS−S−5


Time (s)
Median: −0.124 arcsec
RMS: 0.006 arcsec
Y offsets(dy) (arcsec)
centroid y angle (arcsec)
Median: −0.007 arcsec
RMS: 0.012 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	Jen Lauer
V&V Date (YYYY-MM-DD)	2012.02.07
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	20.064

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.
======

Joint proposal with HST.
```