V&V Reference Report
L2 ASCDS Version : 8.4.3

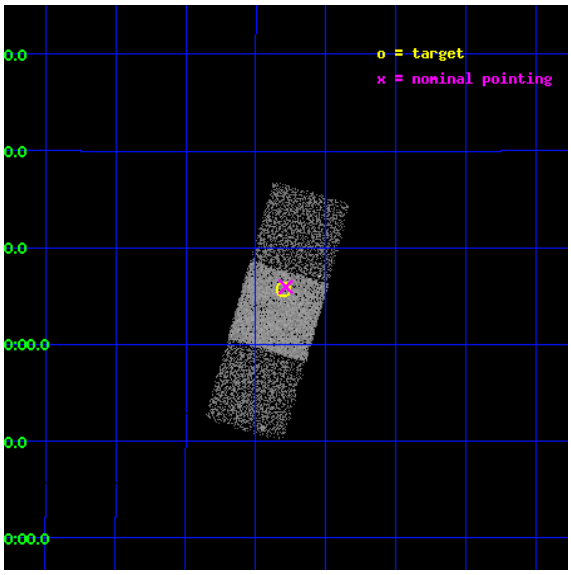
Observation 12168 - L2 Version 2
Chandra X-Ray Center

L2 Processing Date : Feb 6 2012

Contents

1 Front

seq_num	702332	Sequence number
obs_id	12168	Observation id
title	Remarkable High-Redshift Quasars from the Sloan Digital Sky Survey	
observer	Prof. Gordon Garmire	Principal investigator
object	SDSS J1420+1205	Source name
dtycycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	215.2	Observer's specified target RA [deg]
dec_targ	12.096083	Observer's specified target Dec [deg]
ra_nom	215.19631522418	Nominal RA [deg]
dec_nom	12.099521564285	Nominal Dec [deg]
roll_nom	106.14541524946	Nominal Roll [deg]
revision	2	Processing version of data
ontime	4057.900031209	Sum of GTIs [s]
livetime	4004.8805799187	Livetime [s]
ontime6	4057.900031209	Sum of GTIs [s]
ontime7	4057.900031209	Sum of GTIs [s]
ontime8	4057.900031209	Sum of GTIs [s]
l2events	18865	Number of level 2 events

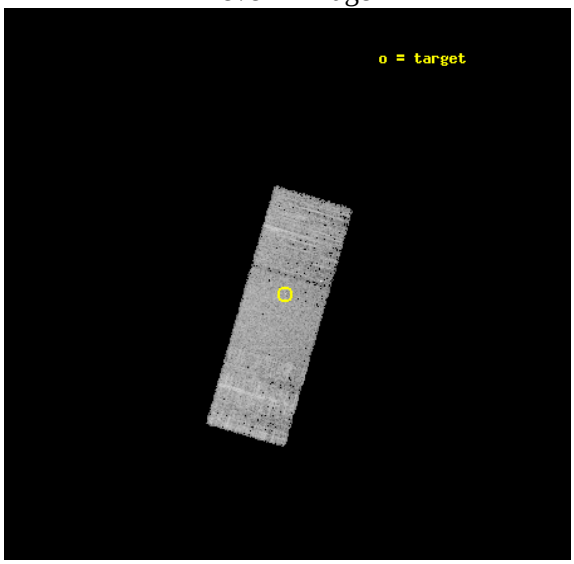


2 OBI

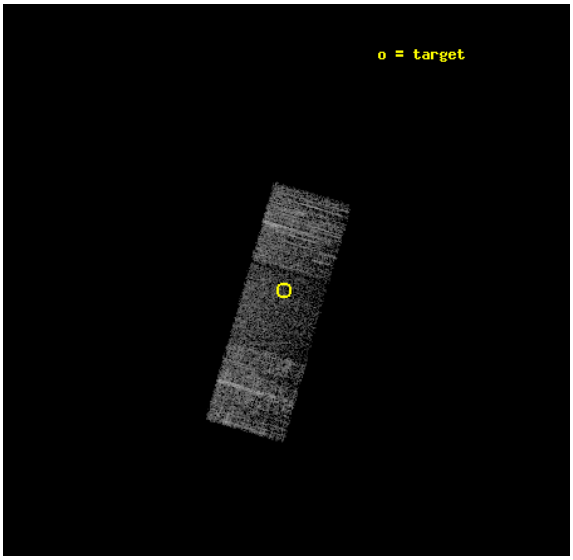
2.1 OBI

2.1.1 Images

Level 1 Image

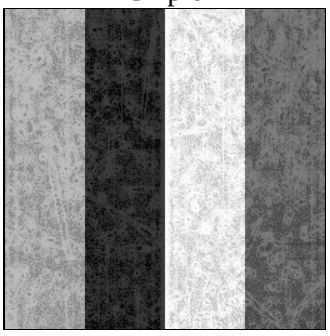


Level 1 Bad Events

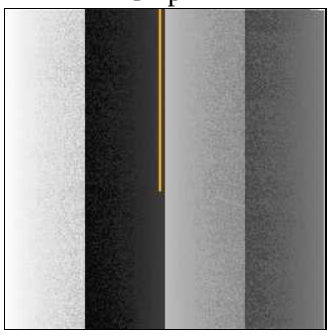


2.1.2 Bias

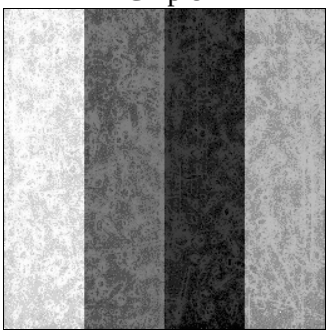
Chip 6



Chip 7



Chip 8



2.1.3 Parameters

obi_num	0	Obi number
ascdsver	8.4.3	Processing system revision
caldbver	4.4.7	
date	2012-02-06T09:50:28	Date and time of file creation
revision	2	Processing version of data

sched_exp_time	4000.000000	[s] Scheduled observation exposure time
ontime	4057.900031209	Sum of GTIs [s]
ontime6	4057.900031209	Sum of GTIs [s]
ontime7	4057.900031209	Sum of GTIs [s]
ontime8	4057.900031209	Sum of GTIs [s]
l1events	89286	Number of level 1 events

2.1.4 Events

	ccd 6	**ccd 7**	**ccd 8**
level 1 events	27209	27894	34183
rejected events	23832	14345	25037
rejected %	87%	51%	73%

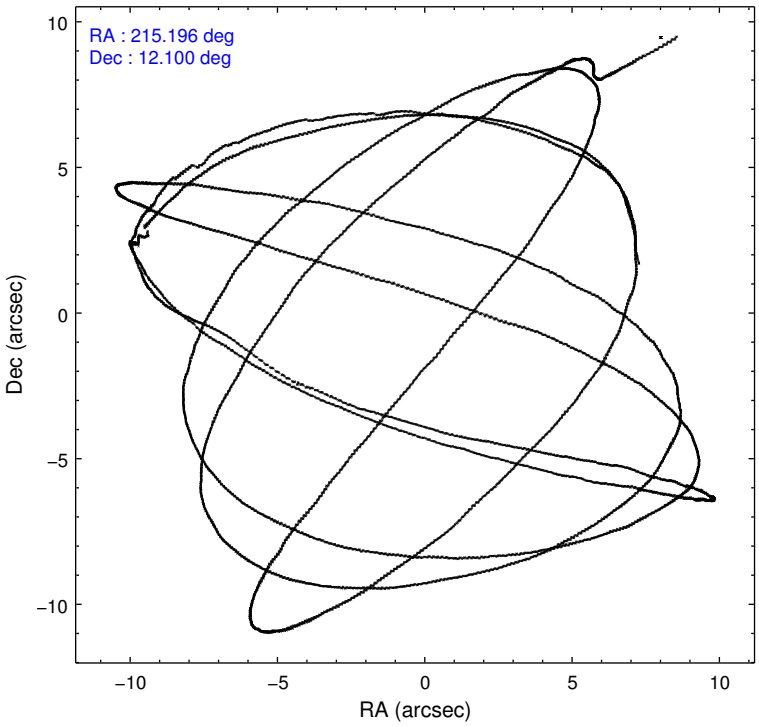
	ccd 6	**ccd 7**	**ccd 8**
grade 0 events	1359	1480	2634
	4%	5%	7%
grade 1 events	15	44	26
	0%	0%	0%
grade 2 events	708	2926	2102
	2%	10%	6%
grade 3 events	337	1277	1041
	1%	4%	3%
grade 4 events	326	1252	1003
	1%	4%	2%
grade 5 events	1005	2953	1590
	3%	10%	4%
grade 6 events	649	6647	2372
	2%	23%	6%
grade 7 events	22810	11315	23415
	83%	40%	68%

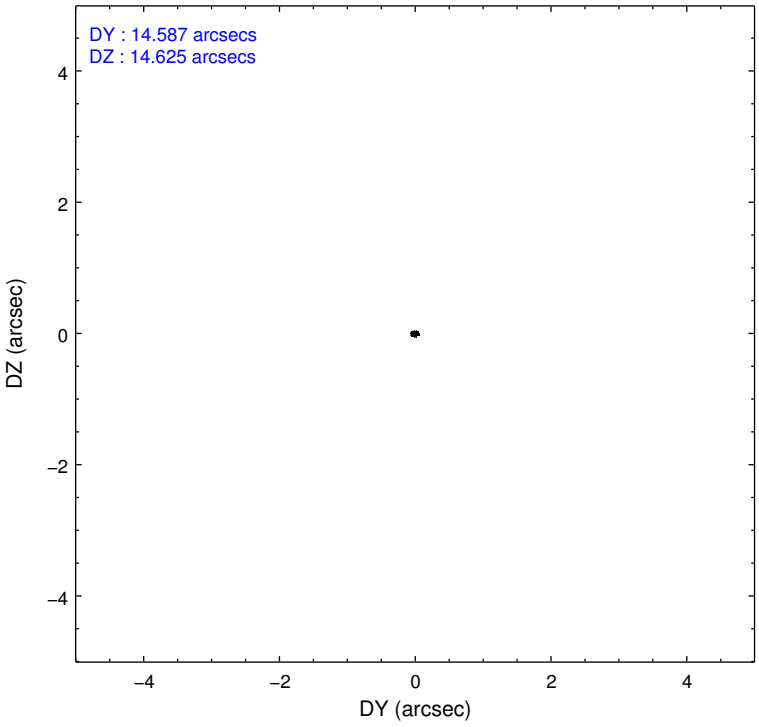
2.2 Compared Parameters

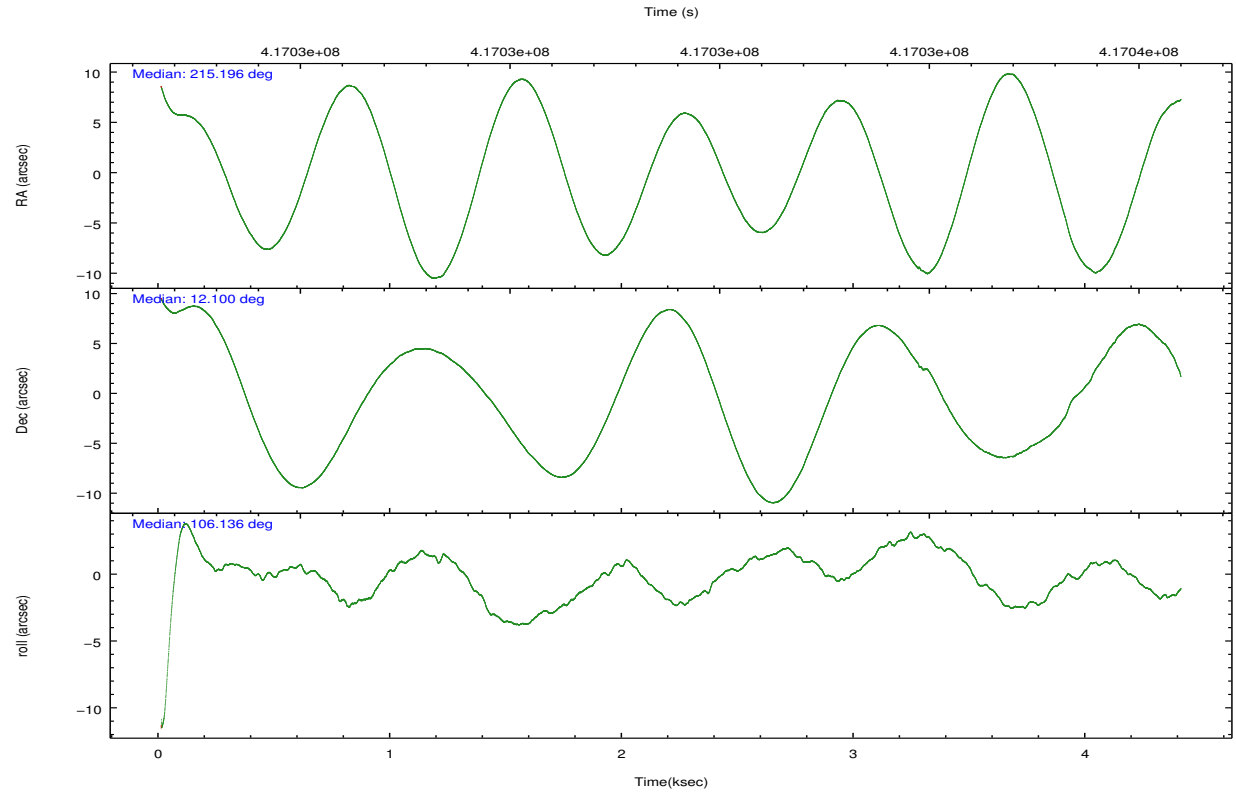
Parameter	Planned	Actual
Instrument	ACIS	ACIS
Detector	ACIS-678	ACIS-678
Grating	NONE	NONE
Data mode	VFAINT	VFAINT
Observation mode	POINTING	POINTING
[deg] Pointing RA	215.216750	215.196315224181
[deg] Pointing Dec	12.080666	12.09952156428545
[deg] Pointing Roll	105.984544	106.1454152494588
[mm] SIM focus pos	-0.684267	-0.6828225247311905
[mm] SIM defocus	0	0.001444936568705701
[mm] SIM translation stage pos	-190.132523	-190.1400660498719
[mm] SIM translation stage offset	0	0.00754346686406393
[s] Observation start time (MET)	417030976.184000	417030058.23708
Observation start date	2011-03-20T17:55:10	2011-03-20T17:40:58
[s] Observation end time (MET)	417034976.184000	417036443.98741
Observation end date	2011-03-20T19:01:50	2011-03-20T19:27:23
Read mode	TIMED	TIMED

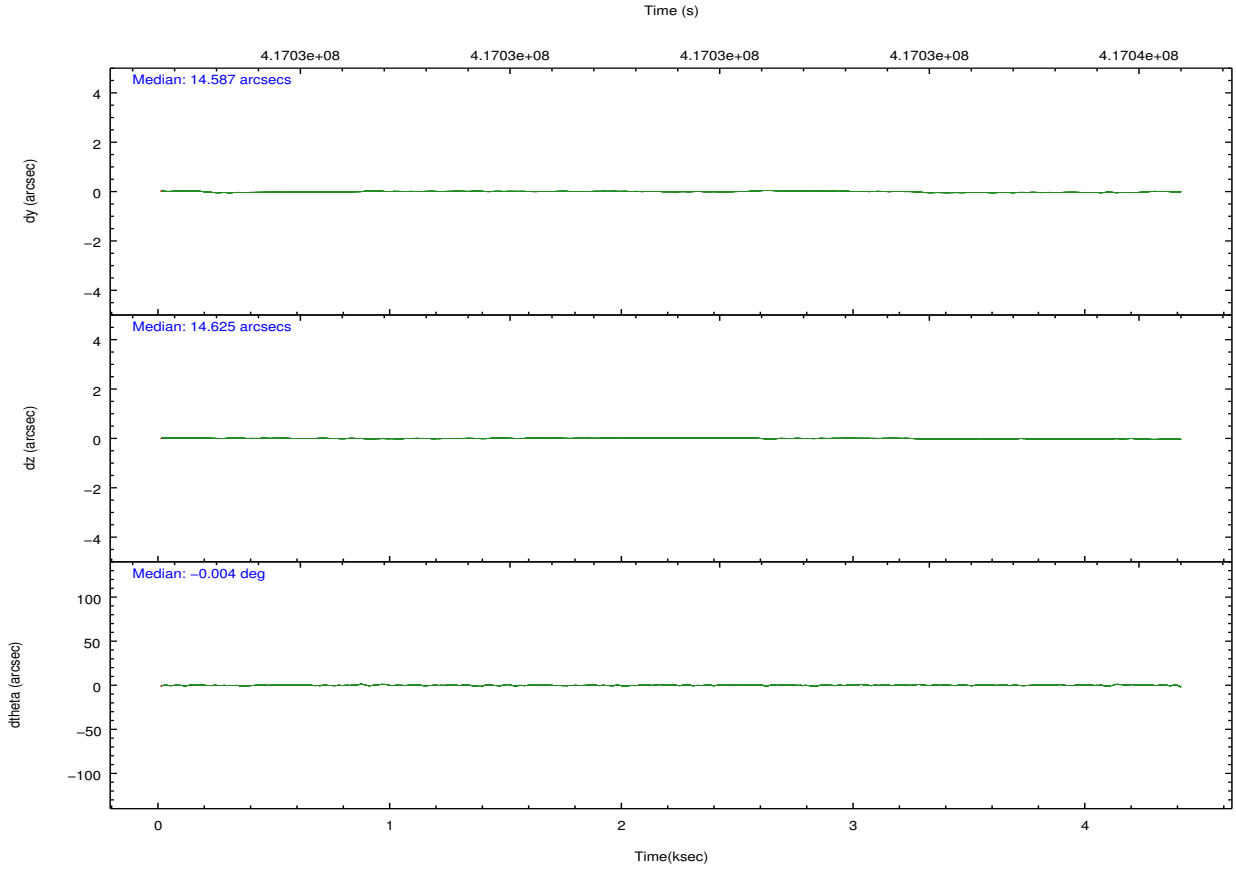
Parameter	Planned	Actual
Obspar format version number	7	7
Obspar file type	PREDICTED	ACTUAL
Obspar update status	NONE	UPDATED
Number of optional ACIS chips dropped	0	0
On-chip summing requested	N	N
Subarray requested	NONE	NONE
Alternating exposures requested	N	N
[s] Primary exposure time	0.000000	3.1

2.3 Aspect


RA : 215.196 deg
Dec : 12.100 deg
Dec (arcsec)
RA (arcsec)
10
5
0
−5
−10
−10
−5
0
5
10


DY : 14.587 arcsecs
DZ : 14.625 arcsecs
DZ (arcsec)
DY (arcsec)
4
2
0
−2
−4
−4
−2
0
2
4


Time (s)
4.1703e+08
4.1703e+08
4.1703e+08
4.1703e+08
4.1704e+08
Median: 215.196 deg
RA (arcsec)
Median: 12.100 deg
Dec (arcsec)
Median: 106.136 deg
roll (arcsec)
Time(ksec)

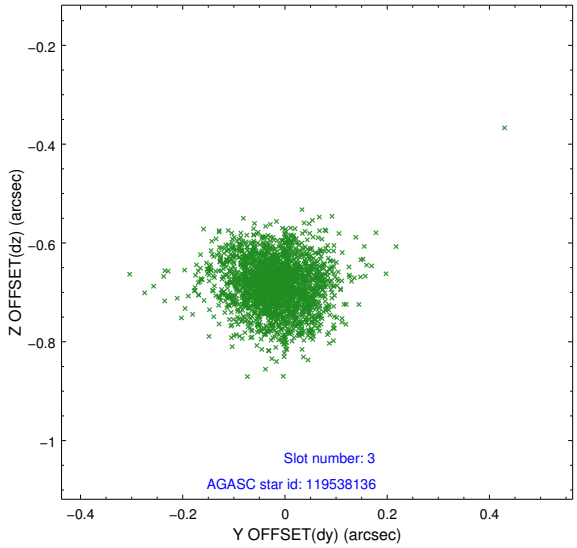

Time (s)
4.1703e+08
4.1703e+08
4.1703e+08
4.1703e+08
4.1704e+08
Median: 14.587 arcsecs
dy (arcsec)
Median: 14.625 arcsecs
dz (arcsec)
Median: −0.004 deg
dtheta (arcsec)
Time(ksec)

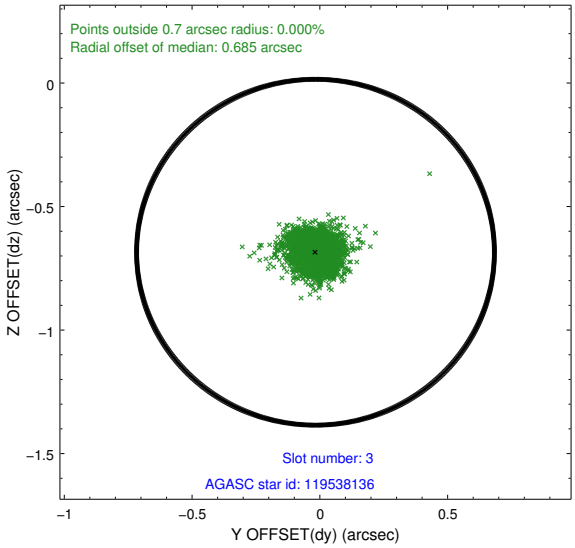
Slot Statistics

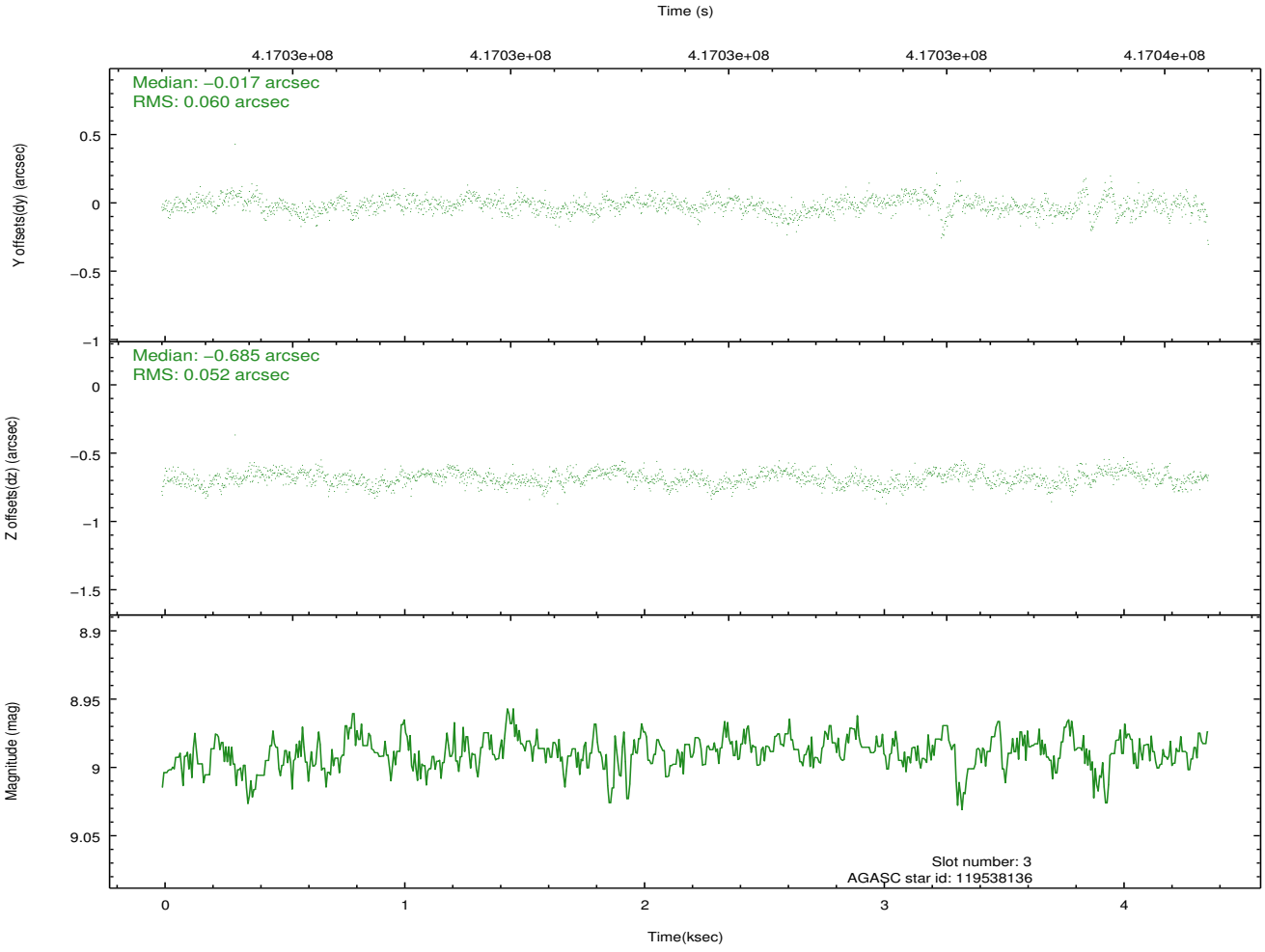
slot	status	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID	ACIS-S-2	6.99	1074	-0.093	-0.051	0.007	0.010	0.000000	0.000000	-767.62	-1736.05
1	FID	ACIS-S-4	7.07	1074	0.225	0.058	0.006	0.011	0.000000	0.000000	2145.32	171.11
2	FID	ACIS-S-5	7.10	1074	-0.164	0.001	0.007	0.012	0.000000	0.000000	-1818.75	166.30
3	GUIDE	119538136	8.99	2128	-0.017	-0.685	0.082	0.135	214.655076	12.436543	1776.64	1544.95
4	GUIDE	119541520	8.09	2148	-0.678	0.306	0.074	0.126	215.367118	11.642152	-1663.84	-73.75
5	GUIDE	119542512	8.93	2145	-0.008	-0.291	0.106	0.164	215.483914	12.490324	1158.13	-1308.81
6	GUIDE	119939552	8.65	2147	0.327	0.619	0.085	0.147	215.384632	12.765487	2208.47	-1244.78
7	GUIDE	119540432	9.42	2146	0.381	0.049	0.120	0.196	215.665477	11.635477	-1974.20	-1080.27

2.4 Star Slots

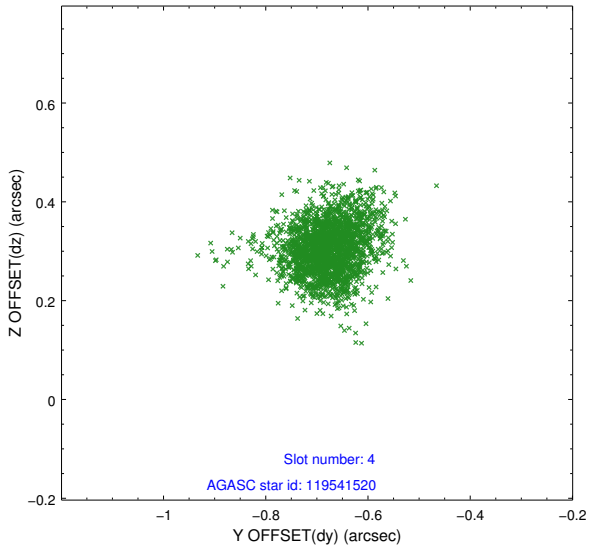
2.4.1 Slot 3

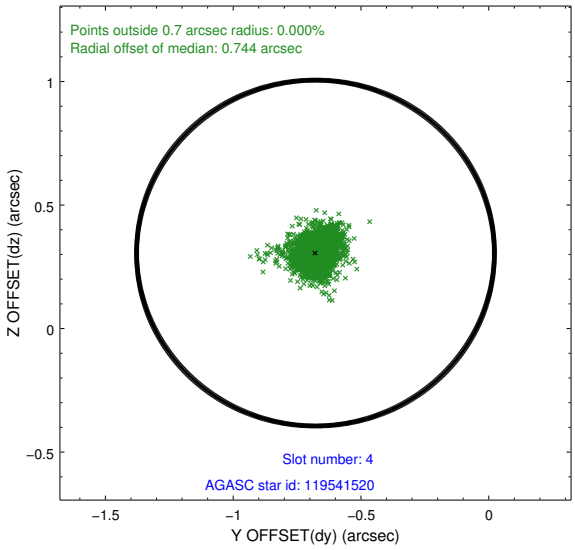


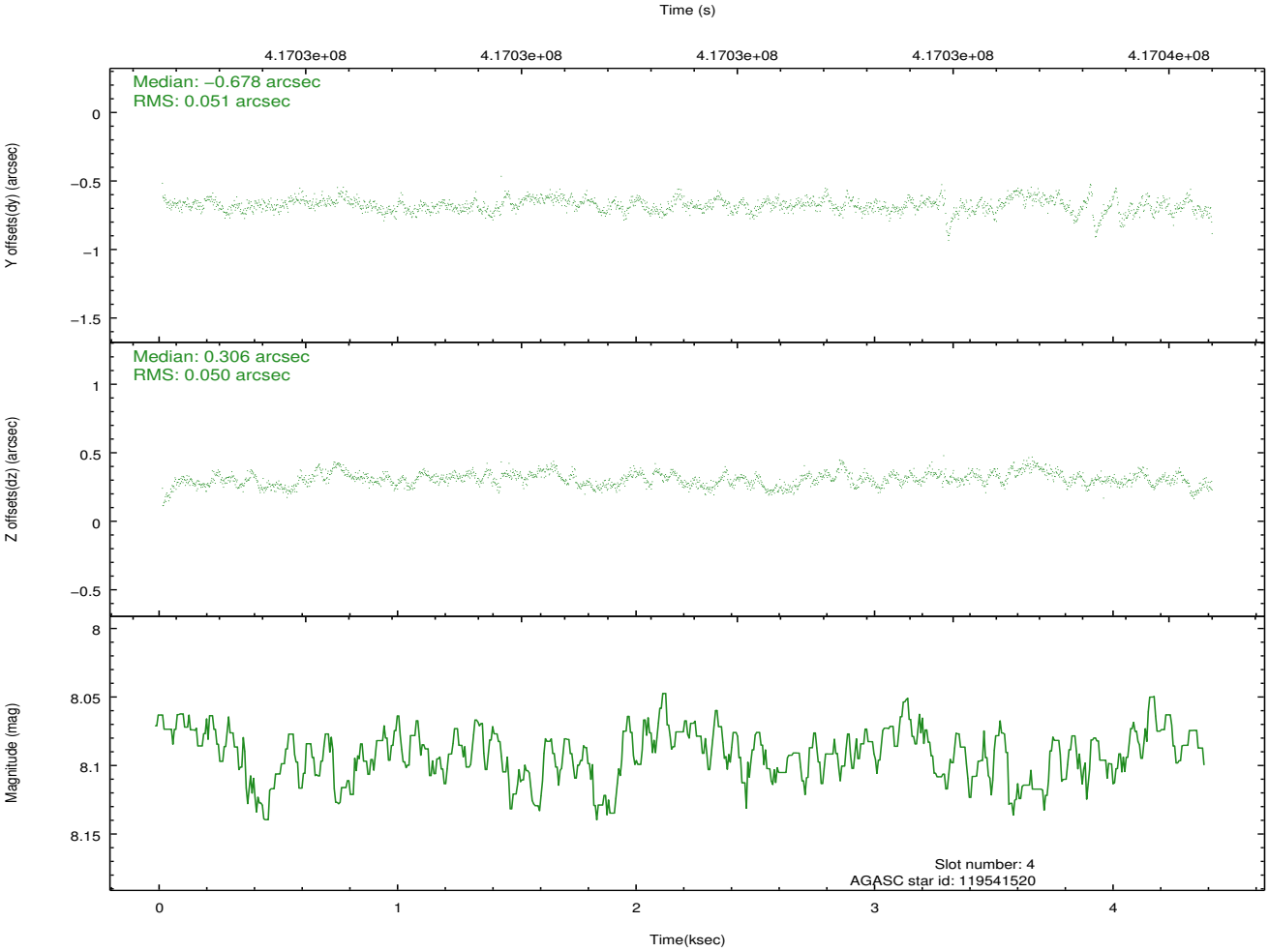




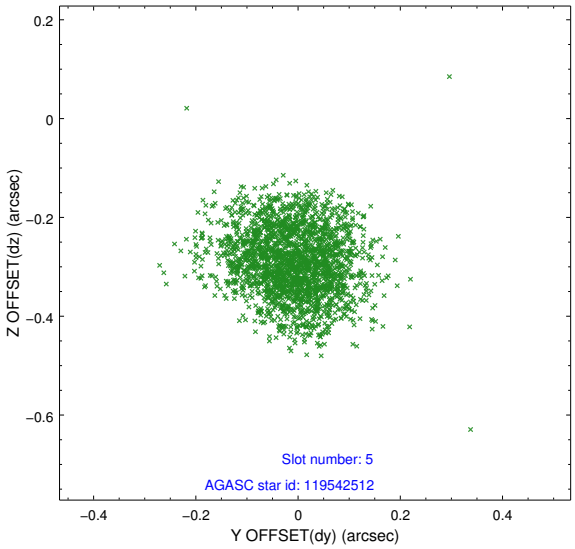
2.4.2 Slot 4

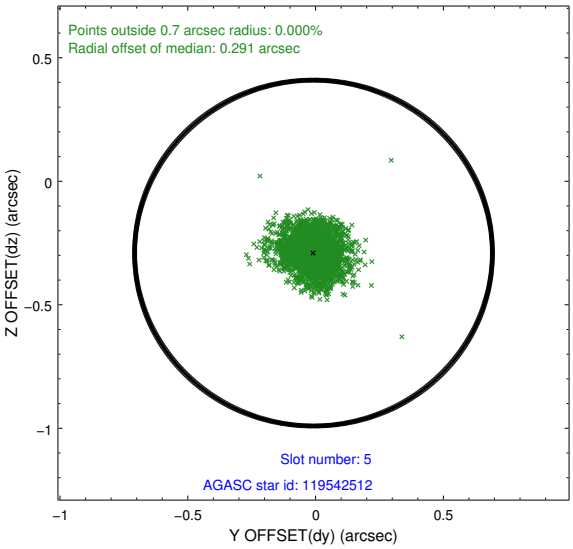

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 4
AGASC star id: 119541520

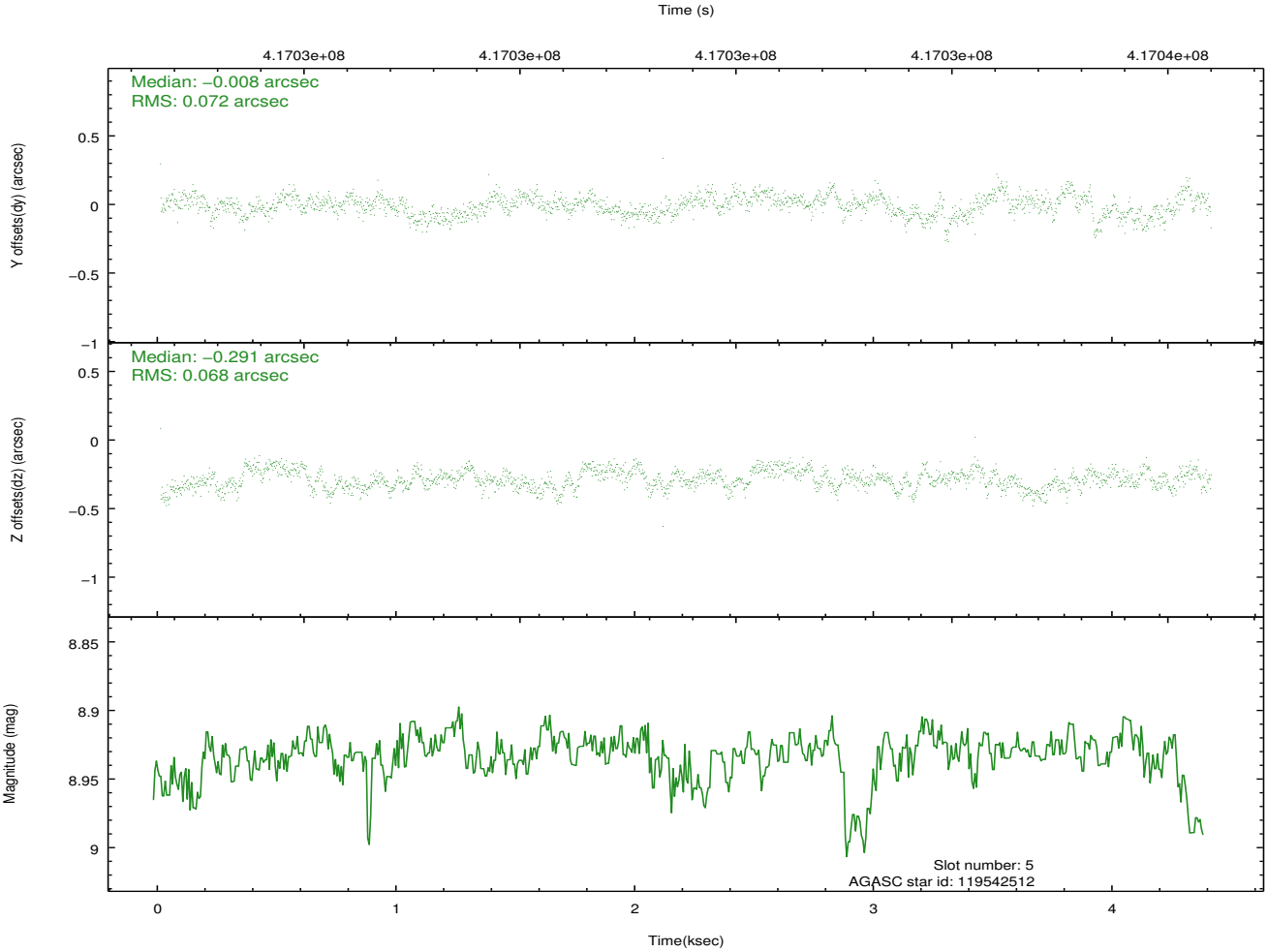

Points outside 0.7 arcsec radius: 0.000%
Radial offset of median: 0.744 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 4
AGASC star id: 119541520


Time (s)
Median: −0.678 arcsec
RMS: 0.051 arcsec
Y offsets(dy) (arcsec)
Median: 0.306 arcsec
RMS: 0.050 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number: 4
AGASC star id: 119541520
Time(ksec)

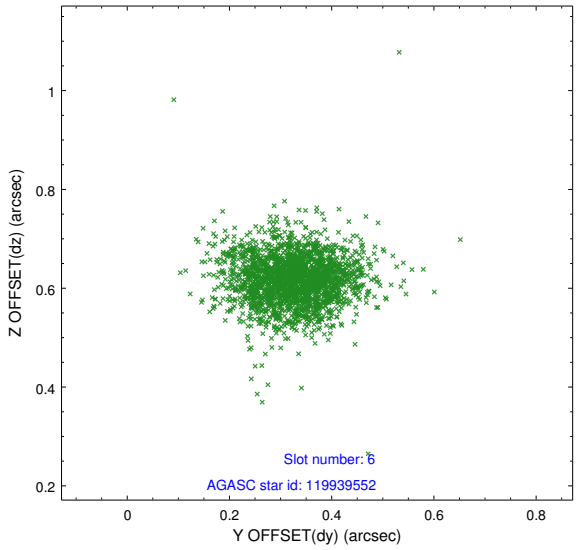
2.4.3 Slot 5

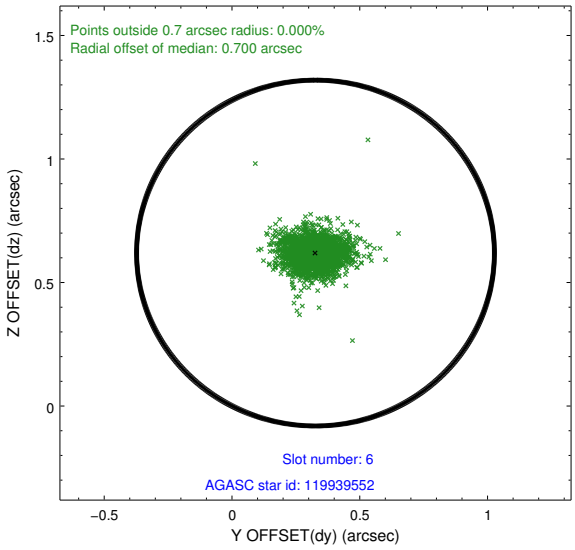

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 5
AGASC star id: 119542512

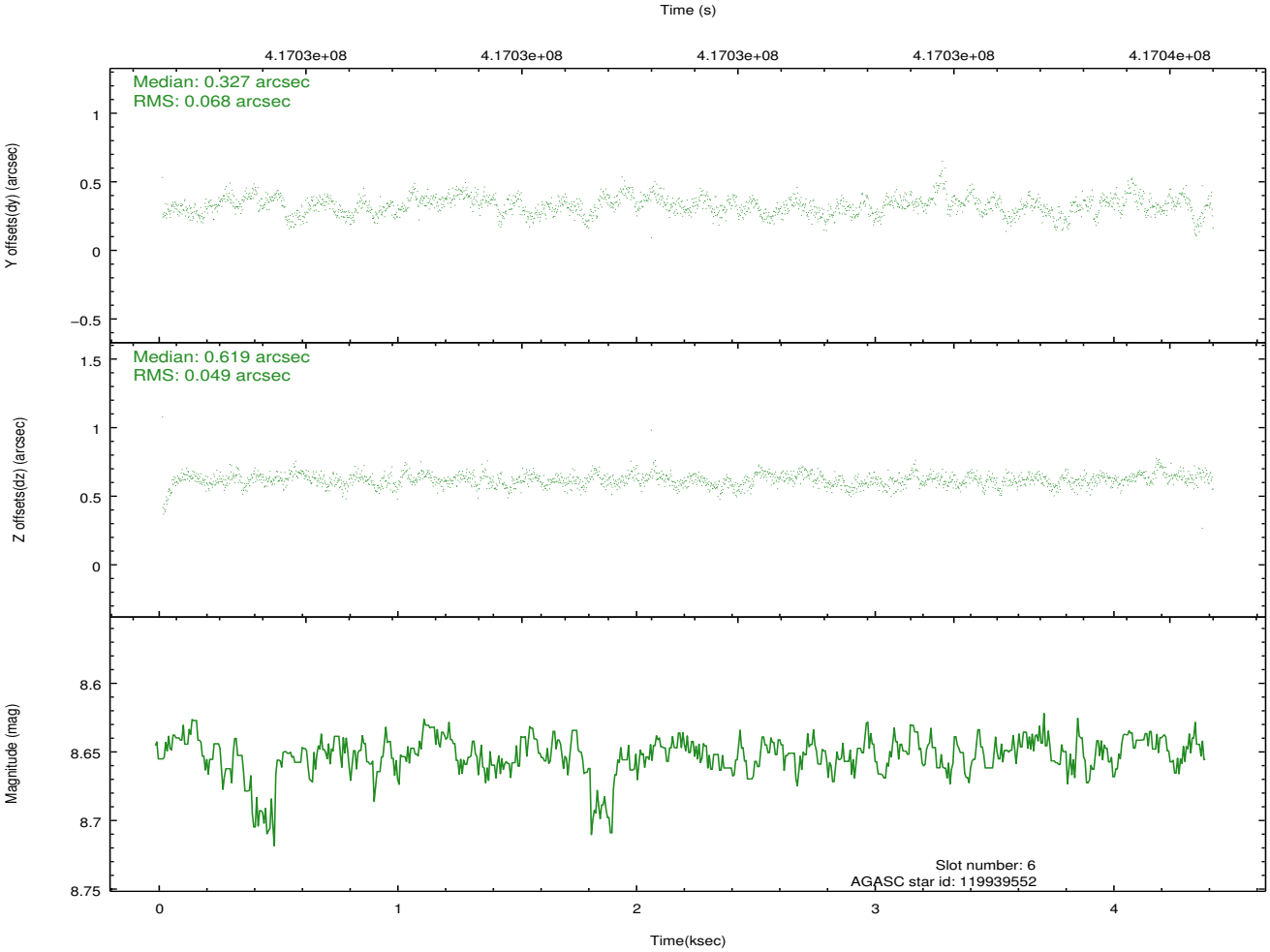

Points outside 0.7 arcsec radius: 0.000%
Radial offset of median: 0.291 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 5
AGASC star id: 119542512


Time (s)
Median: −0.008 arcsec
RMS: 0.072 arcsec
Y offsets(dy) (arcsec)
Median: −0.291 arcsec
RMS: 0.068 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number: 5
AGASC star id: 119542512
Time(ksec)

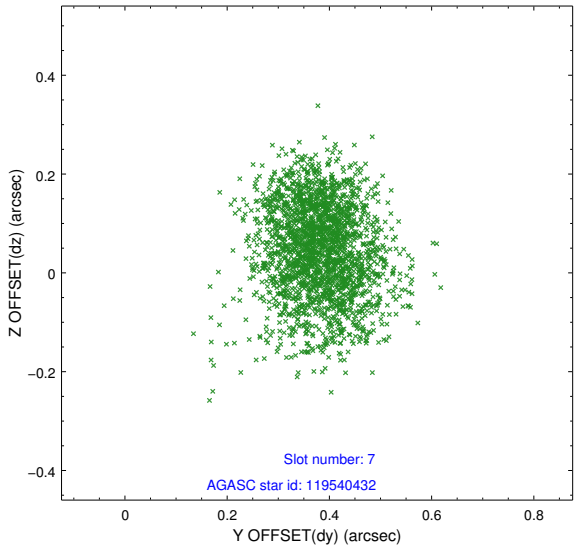
2.4.4 Slot 6

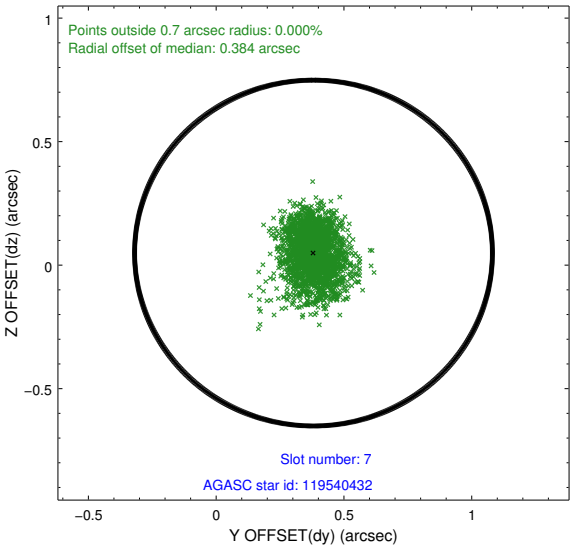

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 6
AGASC star id: 119939552

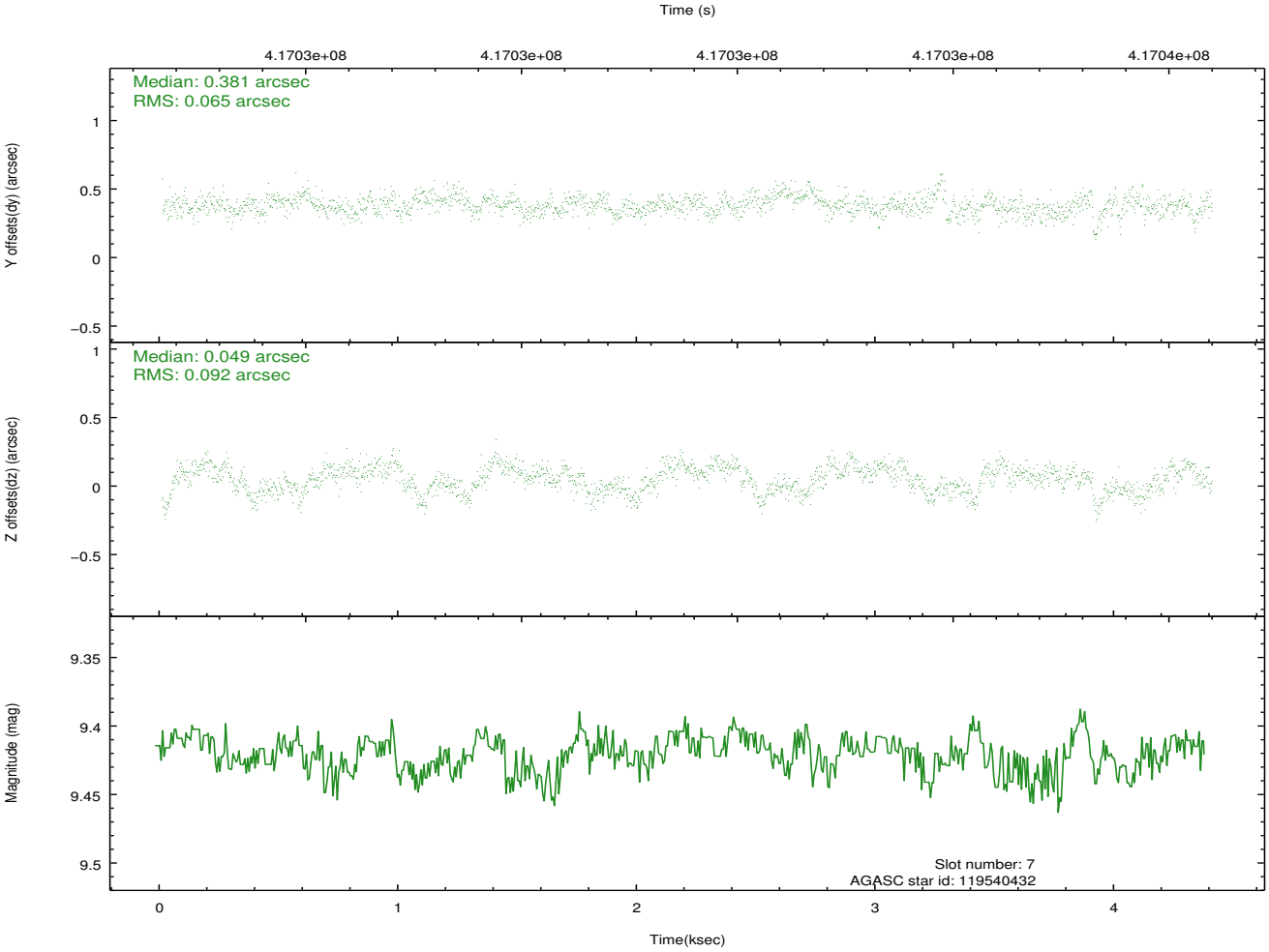

Points outside 0.7 arcsec radius: 0.000%
Radial offset of median: 0.700 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 6
AGASC star id: 119939552


Time (s)
Median: 0.327 arcsec
RMS: 0.068 arcsec
Y offsets(dy) (arcsec)
Median: 0.619 arcsec
RMS: 0.049 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number: 6
AGASC star id: 119939552
Time(ksec)

2.4.5 Slot 7

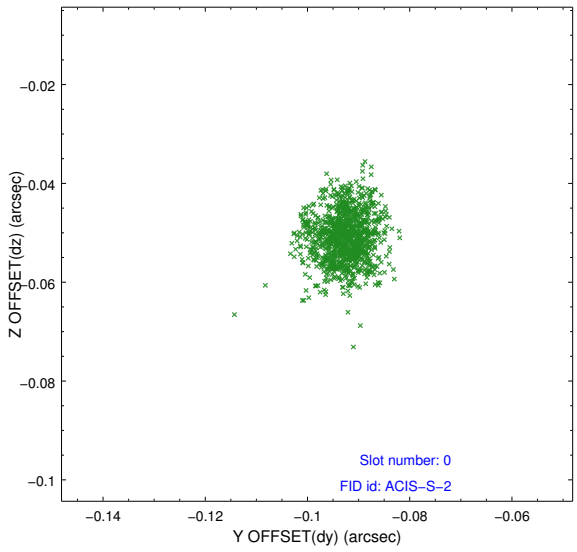

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 7
AGASC star id: 119540432

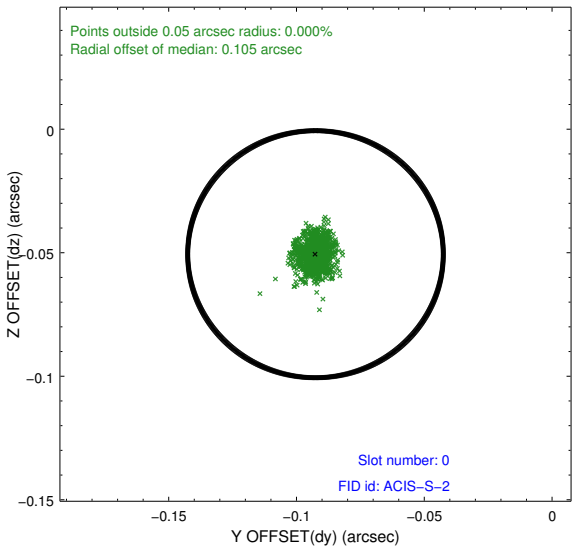

Points outside 0.7 arcsec radius: 0.000%
Radial offset of median: 0.384 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 7
AGASC star id: 119540432

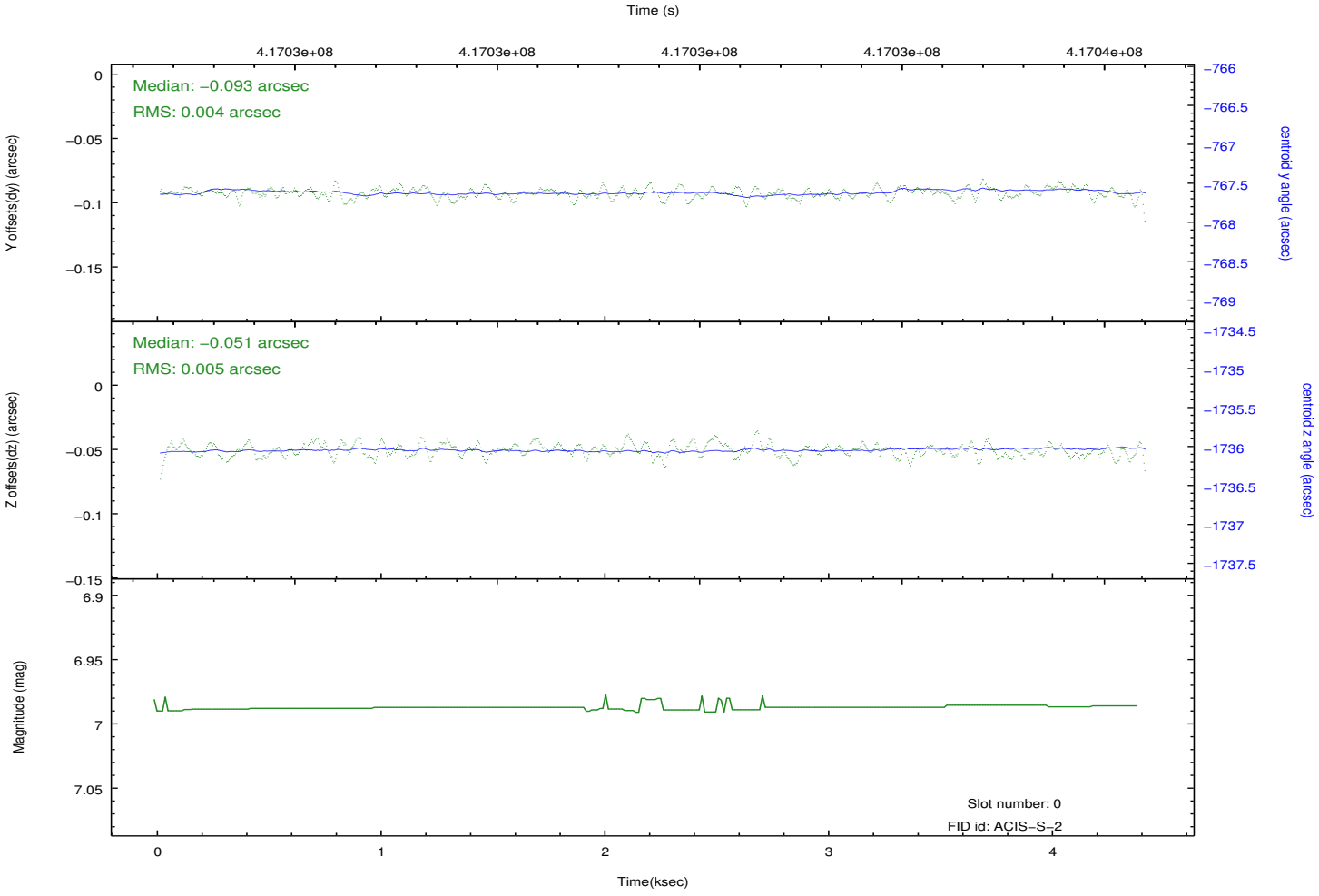

Time (s)
Median: 0.381 arcsec
RMS: 0.065 arcsec
Y offsets(dy) (arcsec)
Median: 0.049 arcsec
RMS: 0.092 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number: 7
AGASC star id: 119540432
Time(ksec)

2.5 FID Slots

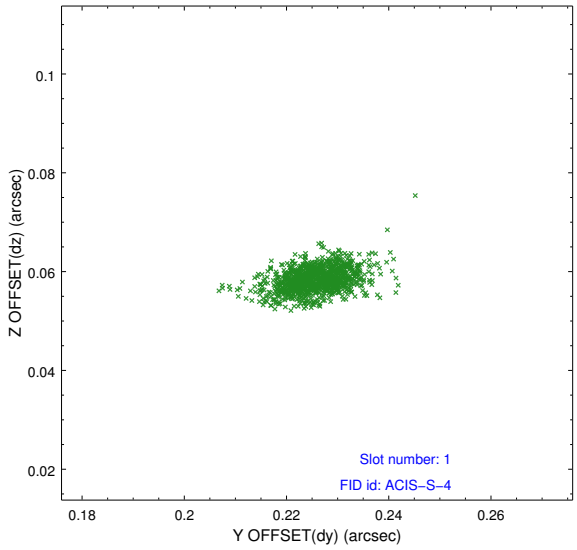
2.5.1 Slot 0

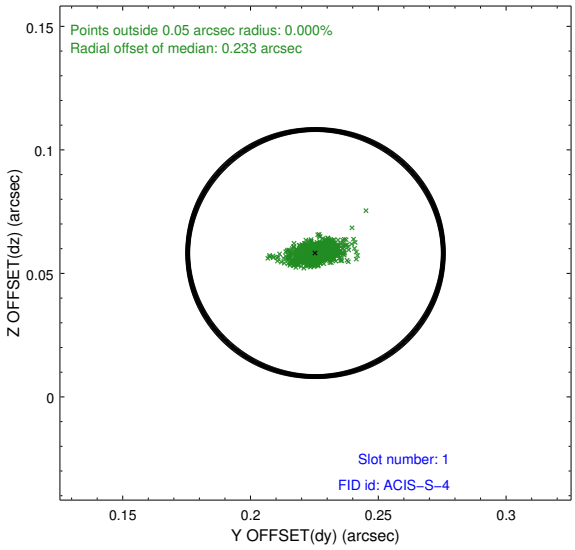


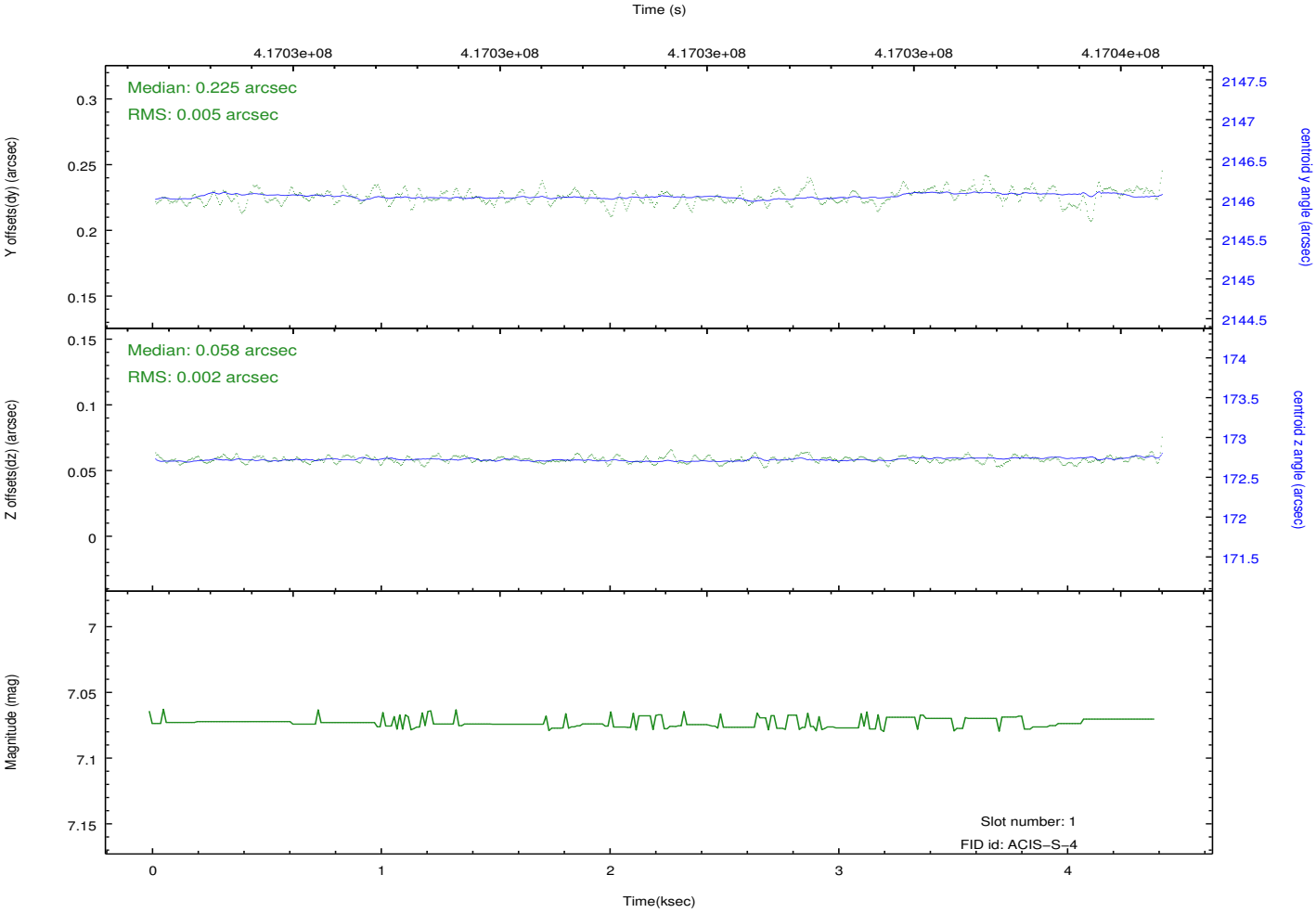




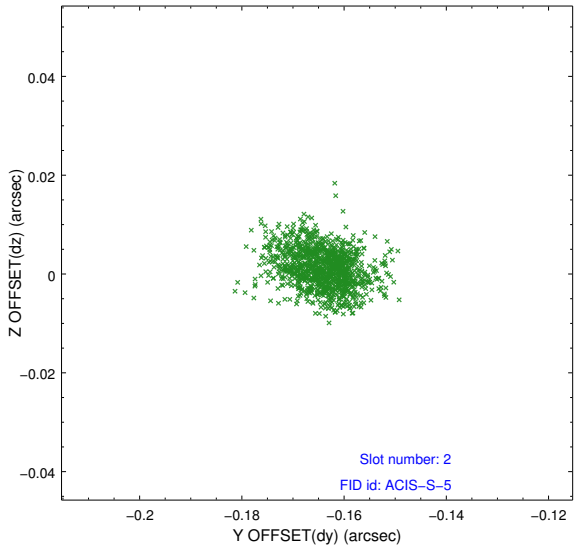
2.5.2 Slot 1

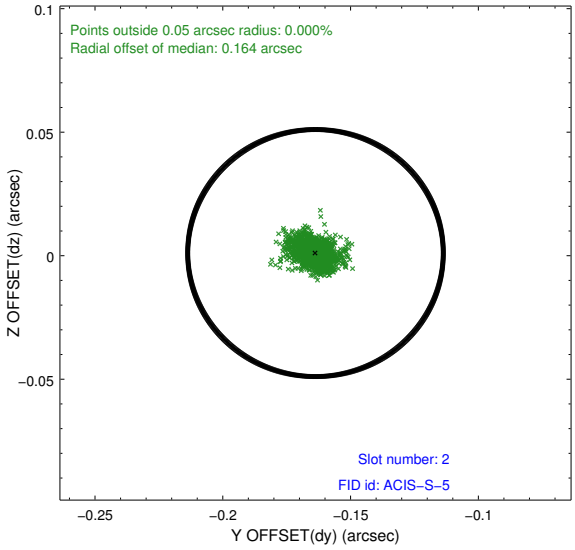

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 1
FID id: ACIS−S−4

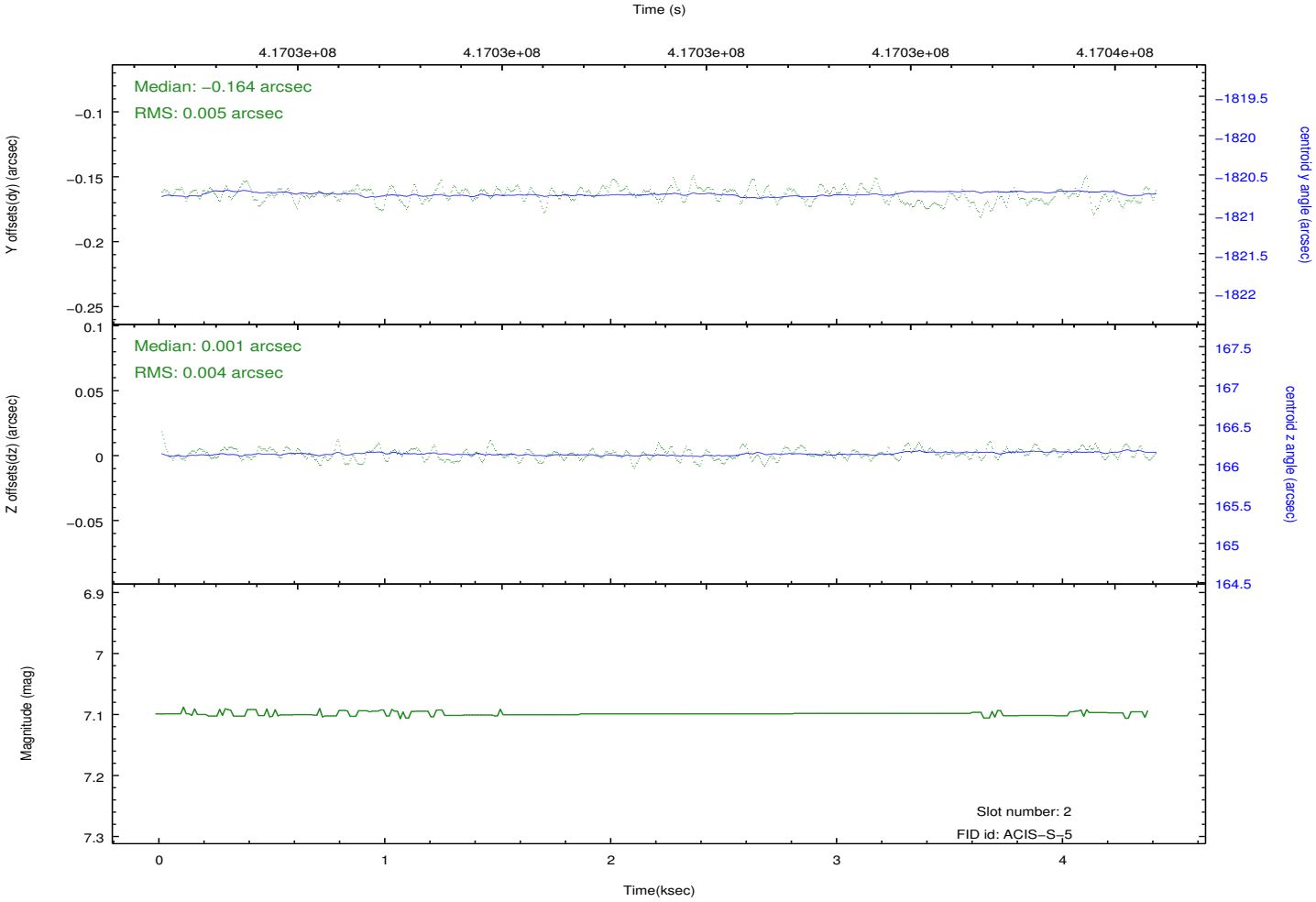

Points outside 0.05 arcsec radius: 0.000%
Radial offset of median: 0.233 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 1
FID id: ACIS−S−4


Time (s)
Median: 0.225 arcsec
RMS: 0.005 arcsec
Y offsets(dy) (arcsec)
centroid y angle (arcsec)
Median: 0.058 arcsec
RMS: 0.002 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: 0.164 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 2
FID id: ACIS−S−5


Time (s)
Median: −0.164 arcsec
RMS: 0.005 arcsec
Y offsets(dy) (arcsec)
centroid y angle (arcsec)
Median: 0.001 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	Joy Nichols
V&V Date (YYYY-MM-DD)	2012.02.09
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	4.057900031209

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.