V&V Reference Report
L2 ASCDS Version : 8.4.3

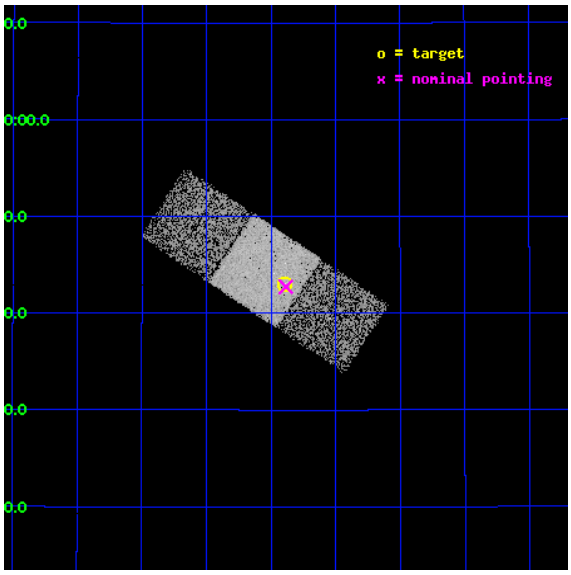
Observation 12167 - L2 Version 2
Chandra X-Ray Center

L2 Processing Date : Feb 5 2012

Contents

1 Front

seq_num	702331	Sequence number
obs_id	12167	Observation id
title	Remarkable High-Redshift Quasars from the Sloan Digital Sky Survey	
observer	Prof. Gordon Garmire	Principal investigator
object	SDSS J1026+2542	Source name
dtycycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	156.598333	Observer's specified target RA [deg]
dec_targ	25.716528	Observer's specified target Dec [deg]
ra_nom	156.59613040385	Nominal RA [deg]
dec_nom	25.712112496181	Nominal Dec [deg]
roll_nom	213.50866483224	Nominal Roll [deg]
revision	2	Processing version of data
ontime	5059.2000389099	Sum of GTIs [s]
livetime	4993.0978658727	Livetime [s]
ontime6	5059.2000389099	Sum of GTIs [s]
ontime7	5059.2000389099	Sum of GTIs [s]
ontime8	5059.2000389099	Sum of GTIs [s]
l2events	27523	Number of level 2 events

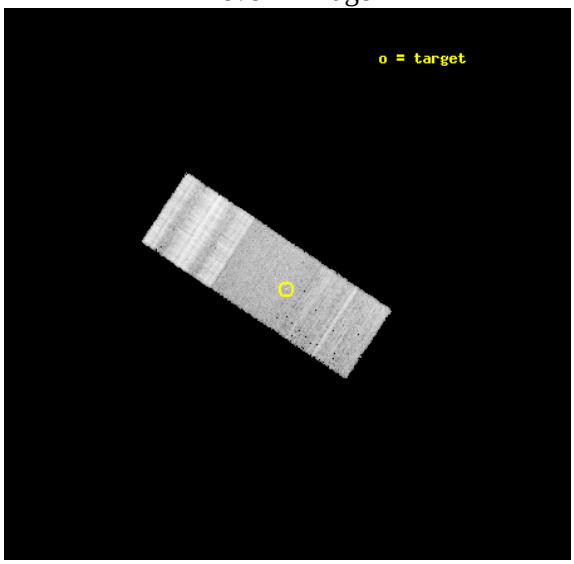


2 OBI

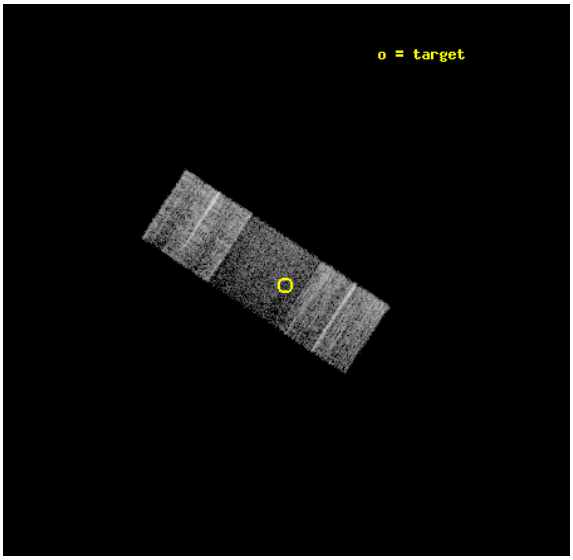
2.1 OBI

2.1.1 Images

Level 1 Image

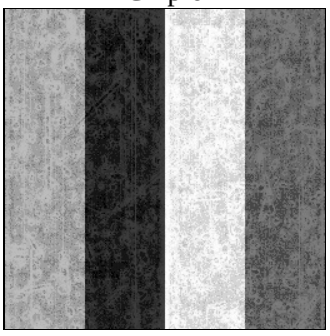


Level 1 Bad Events

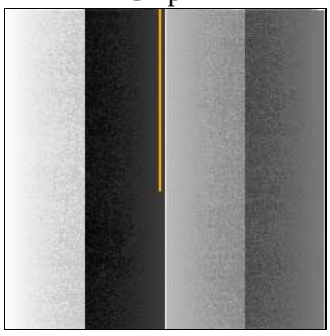


2.1.2 Bias

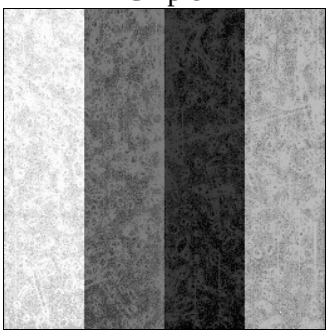
Chip 6



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	2012-02-05T16:13:45	Date and time of file creation
revision	2	Processing version of data

sched_exp_time	5000.000000	[s] Scheduled observation exposure time
ontime	5059.2000389099	Sum of GTIs [s]
ontime6	5059.2000389099	Sum of GTIs [s]
ontime7	5059.2000389099	Sum of GTIs [s]
ontime8	5059.2000389099	Sum of GTIs [s]
l1events	190420	Number of level 1 events

2.1.4 Events

	ccd 6	**ccd 7**	**ccd 8**
level 1 events	45232	38576	106612
rejected events	39558	18728	43576
rejected %	87%	48%	40%

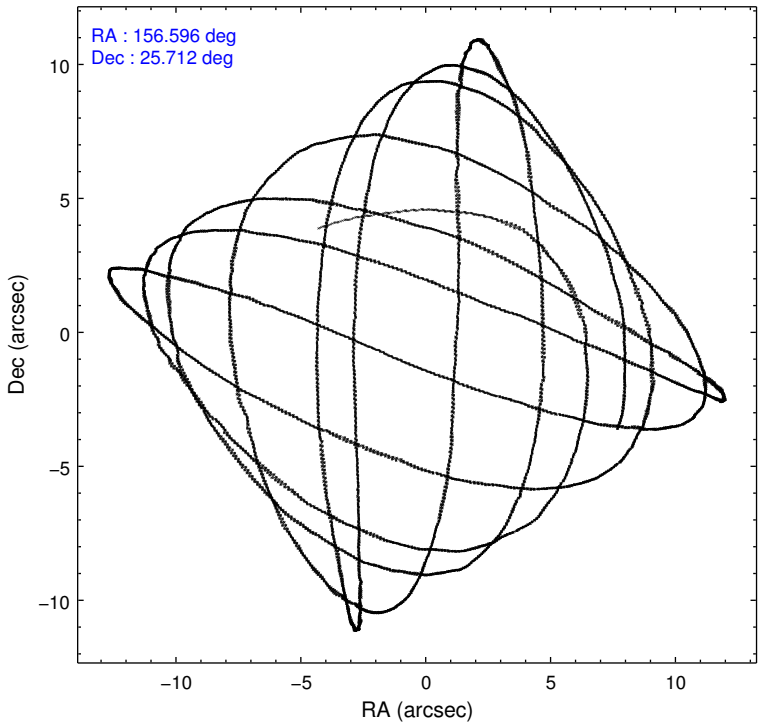
	ccd 6	**ccd 7**	**ccd 8**
grade 0 events	2534	2065	20532
	5%	5%	19%
grade 1 events	33	71	214
	0%	0%	0%
grade 2 events	1460	4754	8098
	3%	12%	7%
grade 3 events	404	1867	11834
	0%	4%	11%
grade 4 events	444	1763	10671
	0%	4%	10%
grade 5 events	1237	3864	2591
	2%	10%	2%
grade 6 events	834	9411	11917
	1%	24%	11%
grade 7 events	38286	14781	40755
	84%	38%	38%

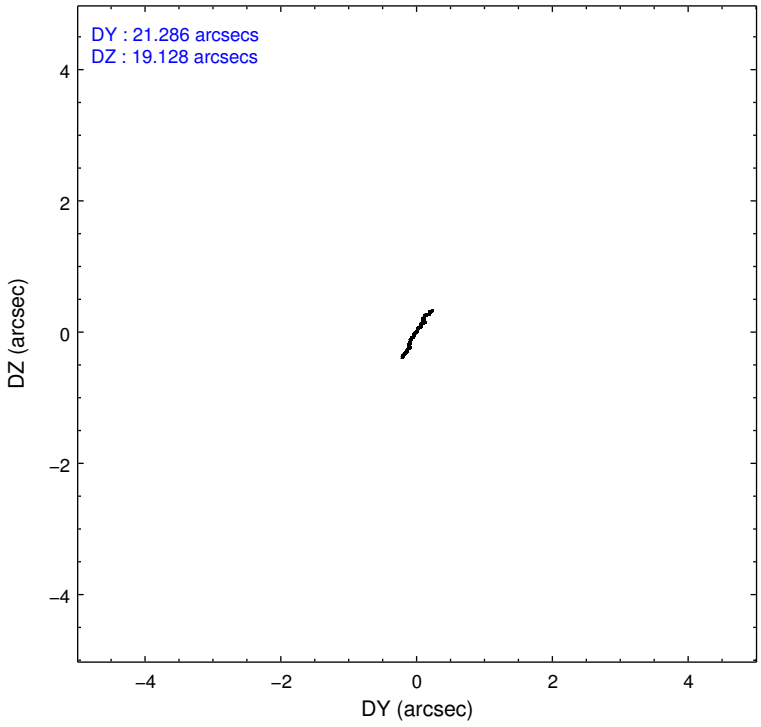
2.2 Compared Parameters

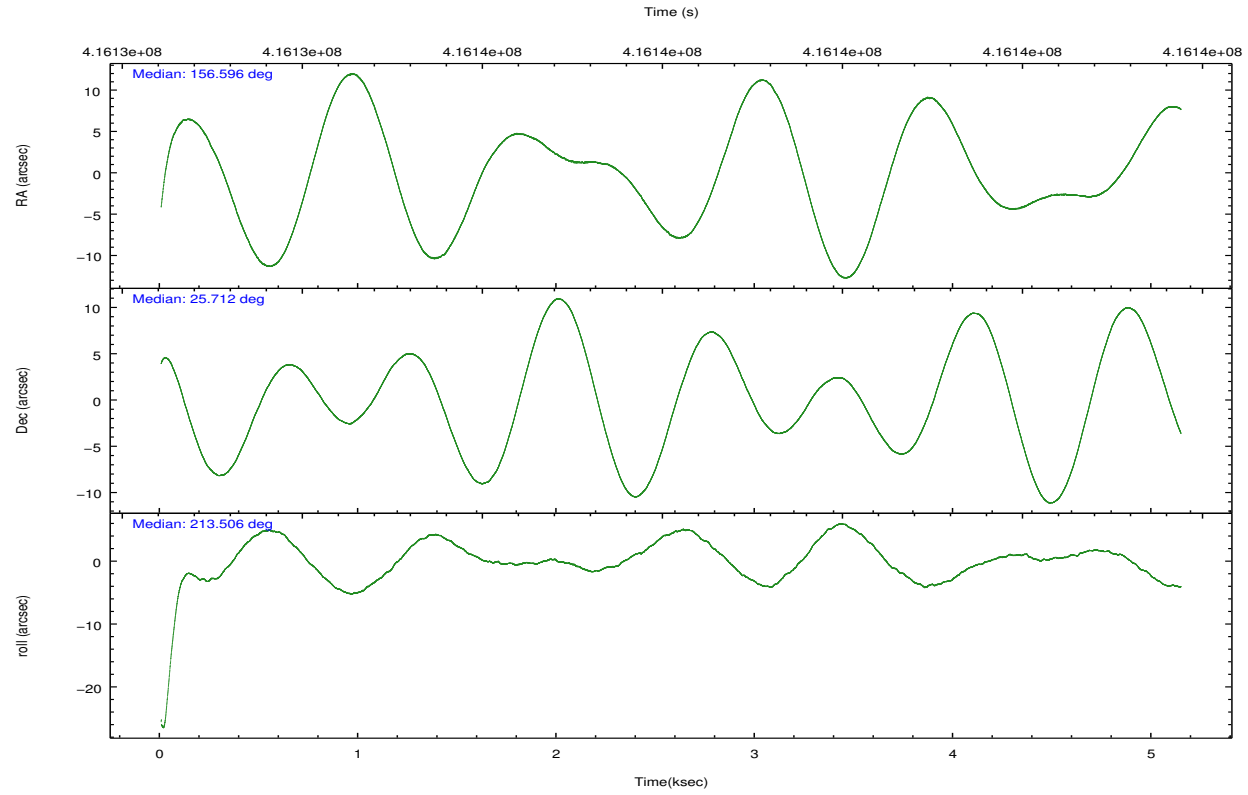
Parameter	Planned	Actual
Instrument	ACIS	ACIS
Detector	ACIS-678	ACIS-678
Grating	NONE	NONE
Data mode	VFAINT	VFAINT
Observation mode	POINTING	POINTING
[deg] Pointing RA	156.609237	156.5961304038518
[deg] Pointing Dec	25.736765	25.71211249618079
[deg] Pointing Roll	213.346408	213.5086648322437
[mm] SIM 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)	416133623.184000	416132330.90307
Observation start date	2011-03-10T08:39:17	2011-03-10T08:18:50
[s] Observation end time (MET)	416138623.184000	416139189.17843
Observation end date	2011-03-10T10:02:37	2011-03-10T10:13:09
Read mode	TIMED	TIMED

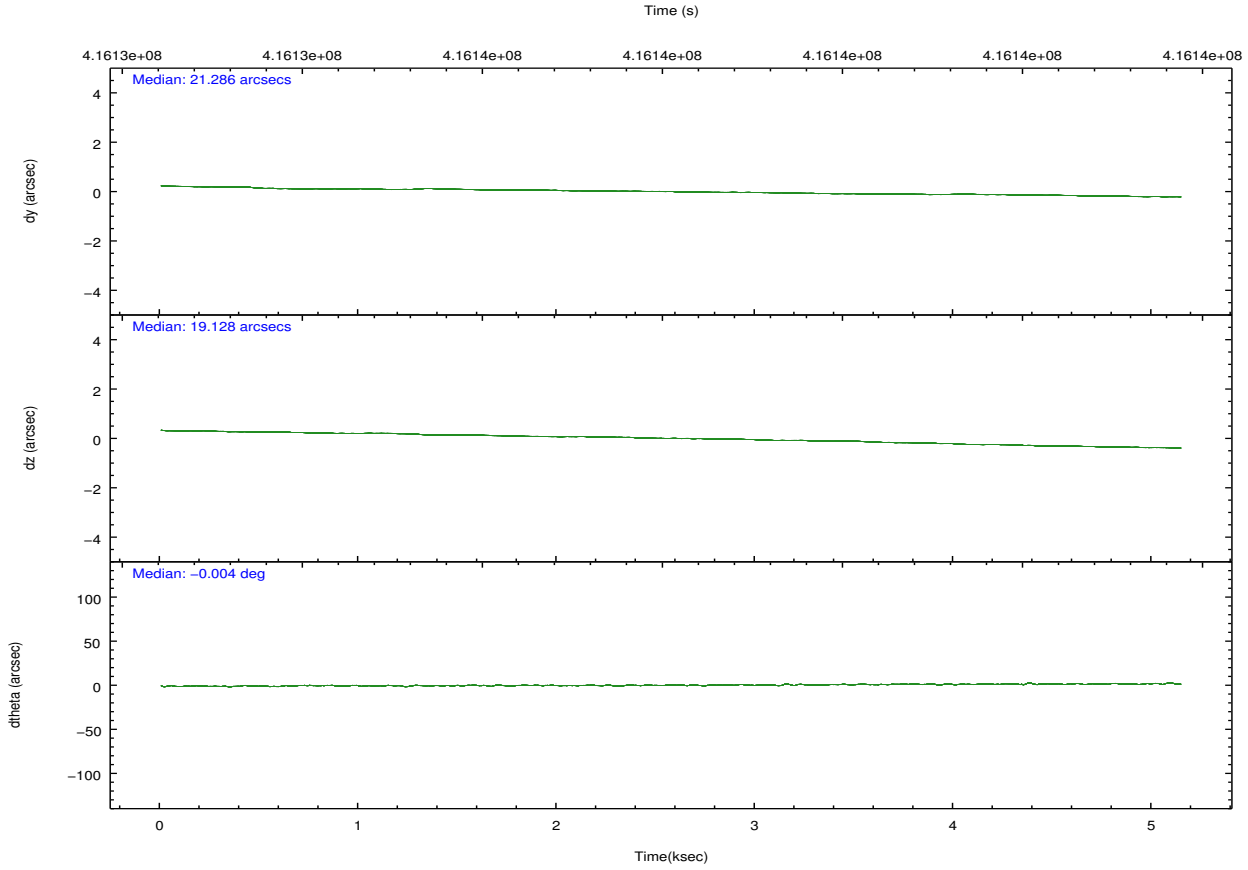
Parameter	Planned	Actual
Obspar format version number	7	7
Obspar file type	PREDICTED	ACTUAL
Obspar update status	NONE	UPDATED
Number of optional ACIS chips dropped	0	0
On-chip summing requested	N	N
Subarray requested	NONE	NONE
Alternating exposures requested	N	N
[s] Primary exposure time	0.000000	3.1

2.3 Aspect


RA : 156.596 deg
Dec : 25.712 deg
Dec (arcsec)
RA (arcsec)
10
5
0
−5
−10
−10
−5
0
5
10


DY : 21.286 arcsecs
DZ : 19.128 arcsecs
DZ (arcsec)
DY (arcsec)
4
2
0
−2
−4
−4
−2
0
2
4


Time (s)
4.1613e+08
4.1613e+08
4.1614e+08
4.1614e+08
4.1614e+08
4.1614e+08
4.1614e+08
Median: 156.596 deg
RA (arcsec)
Median: 25.712 deg
Dec (arcsec)
Median: 213.506 deg
roll (arcsec)
Time(ksec)

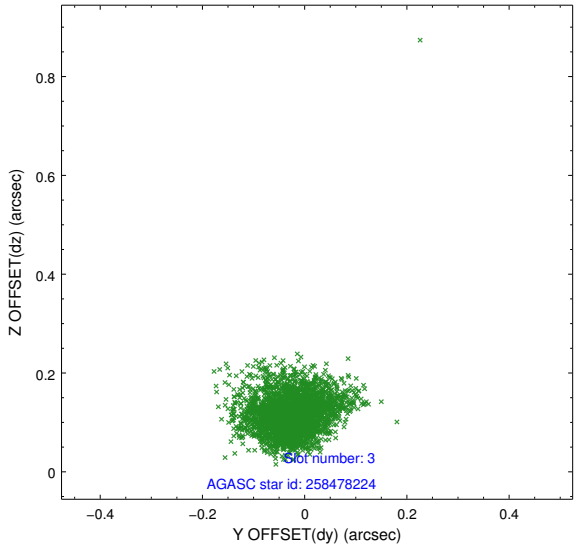

Time (s)
4.1613e+08
4.1613e+08
4.1614e+08
4.1614e+08
4.1614e+08
4.1614e+08
4.1614e+08
Median: 21.286 arcsecs
dy (arcsec)
Median: 19.128 arcsecs
dz (arcsec)
Median: −0.004 deg
dtheta (arcsec)
Time(ksec)

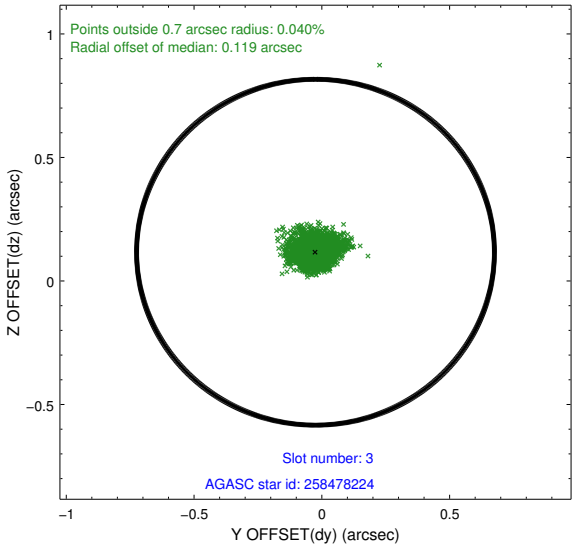
Slot Statistics

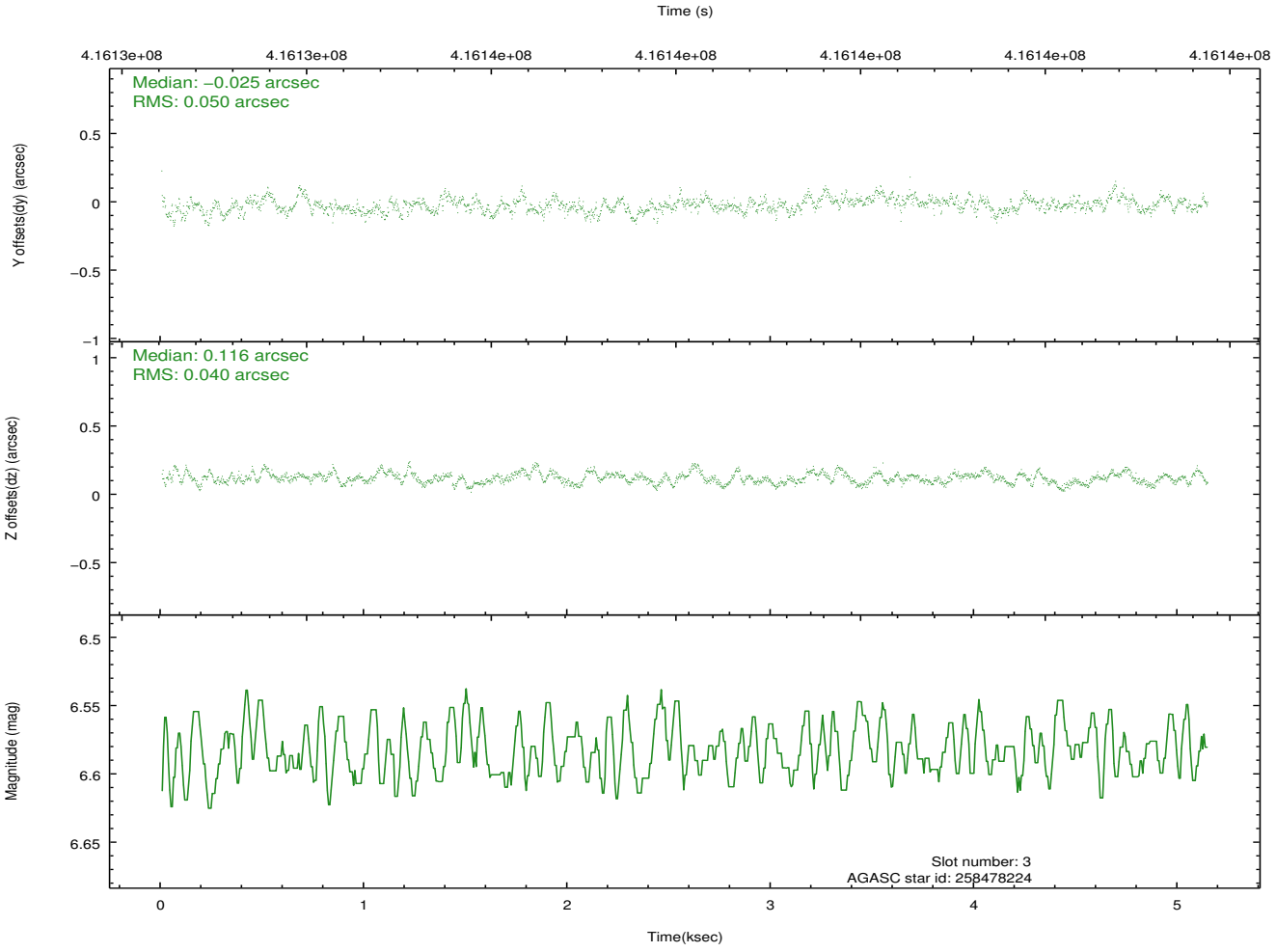
slot	status	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID	ACIS-S-2	6.85	1255	-0.090	-0.019	0.013	0.020	0.000000	0.000000	-774.52	-1740.62
1	FID	ACIS-S-4	6.93	1254	0.181	0.049	0.005	0.011	0.000000	0.000000	2138.49	166.69
2	FID	ACIS-S-5	6.96	1255	-0.122	-0.022	0.012	0.019	0.000000	0.000000	-1825.88	161.65
3	GUIDE	258478224	6.58	2510	-0.025	0.116	0.064	0.109	155.956313	25.568176	2102.85	-662.25
4	GUIDE	258610048	8.78	2509	0.063	0.199	0.090	0.145	156.663515	26.525697	-1705.23	-2277.52
5	GUIDE	258611760	8.52	2504	0.070	-0.040	0.078	0.127	157.276234	25.898069	-2126.93	696.96
6	GUIDE	258614328	9.24	2509	-0.065	-0.158	0.135	0.213	156.730496	25.088195	952.49	2167.87
7	GUIDE	258614888	9.79	2498	-0.031	-0.117	0.147	0.247	156.625205	25.064199	1288.53	2052.18

2.4 Star Slots

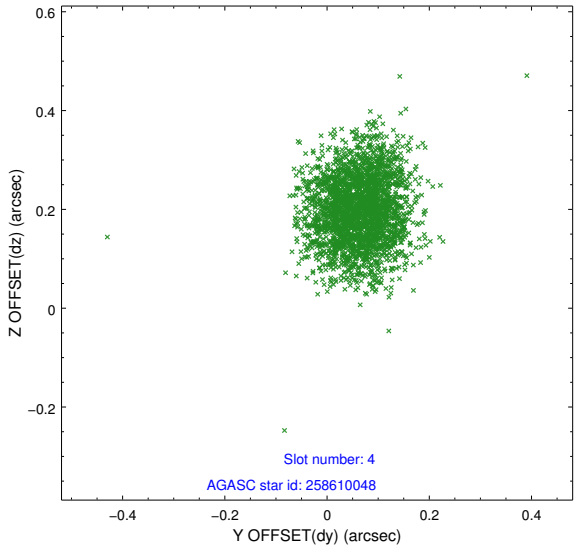
2.4.1 Slot 3

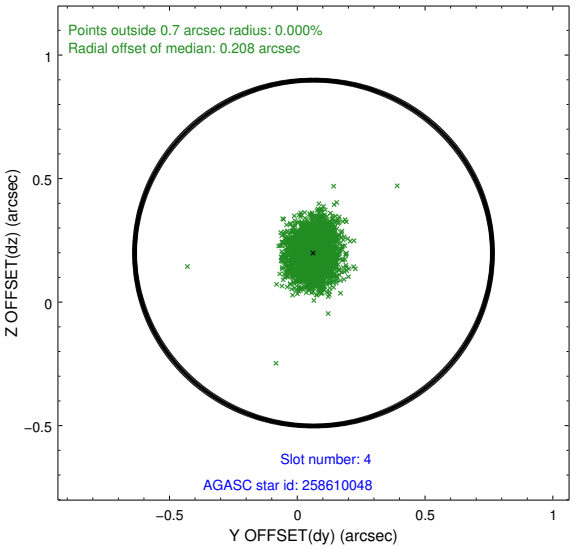


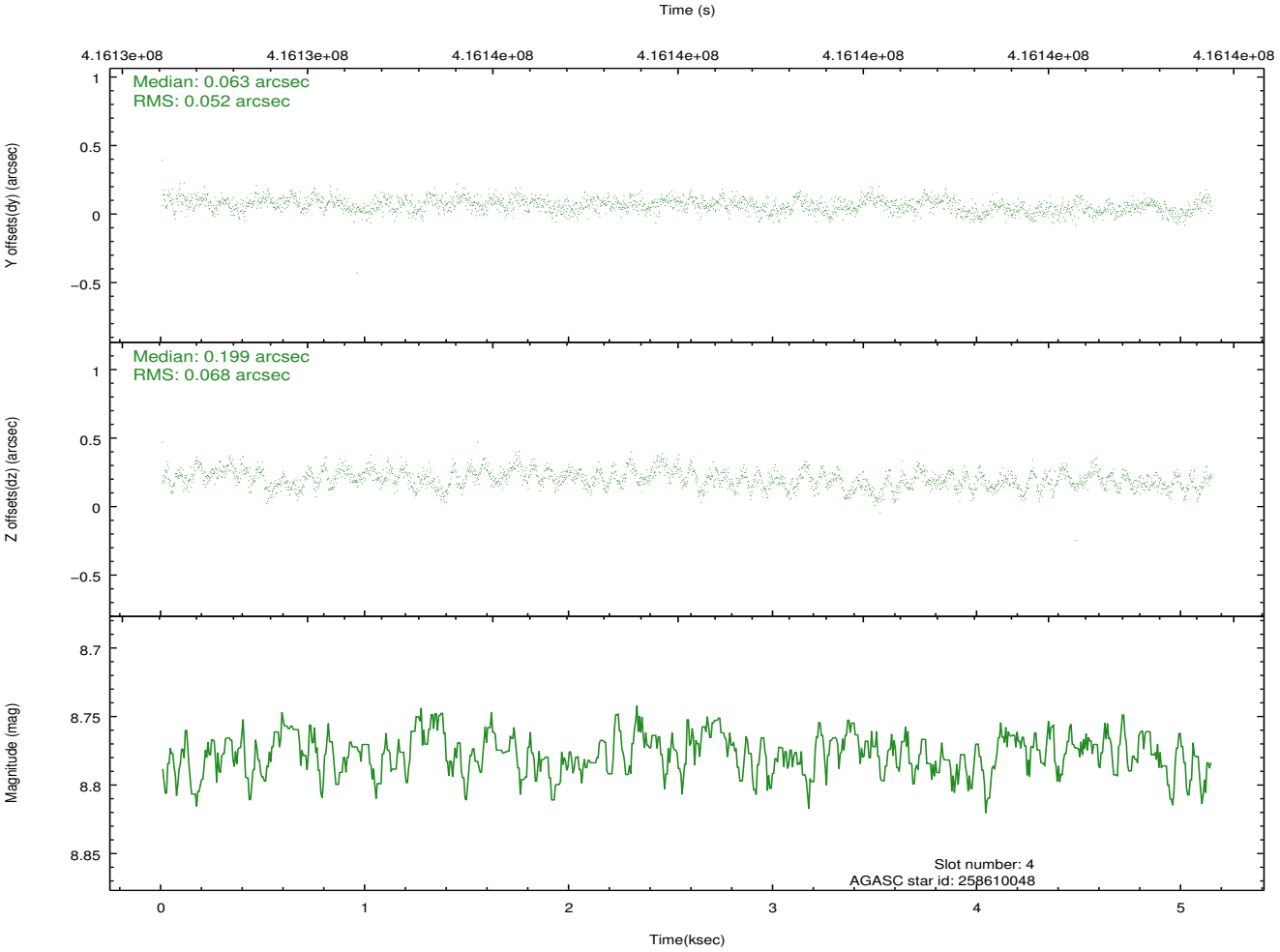




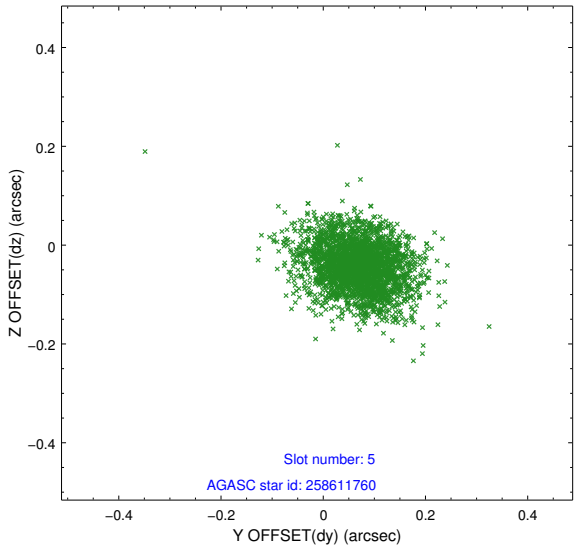
2.4.2 Slot 4

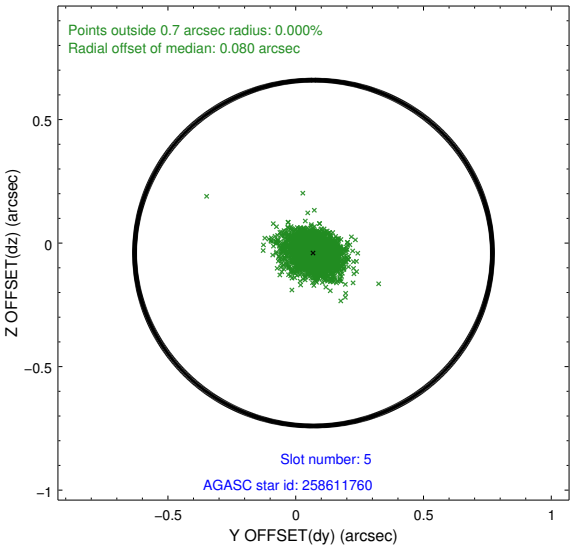

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 4
AGASC star id: 258610048

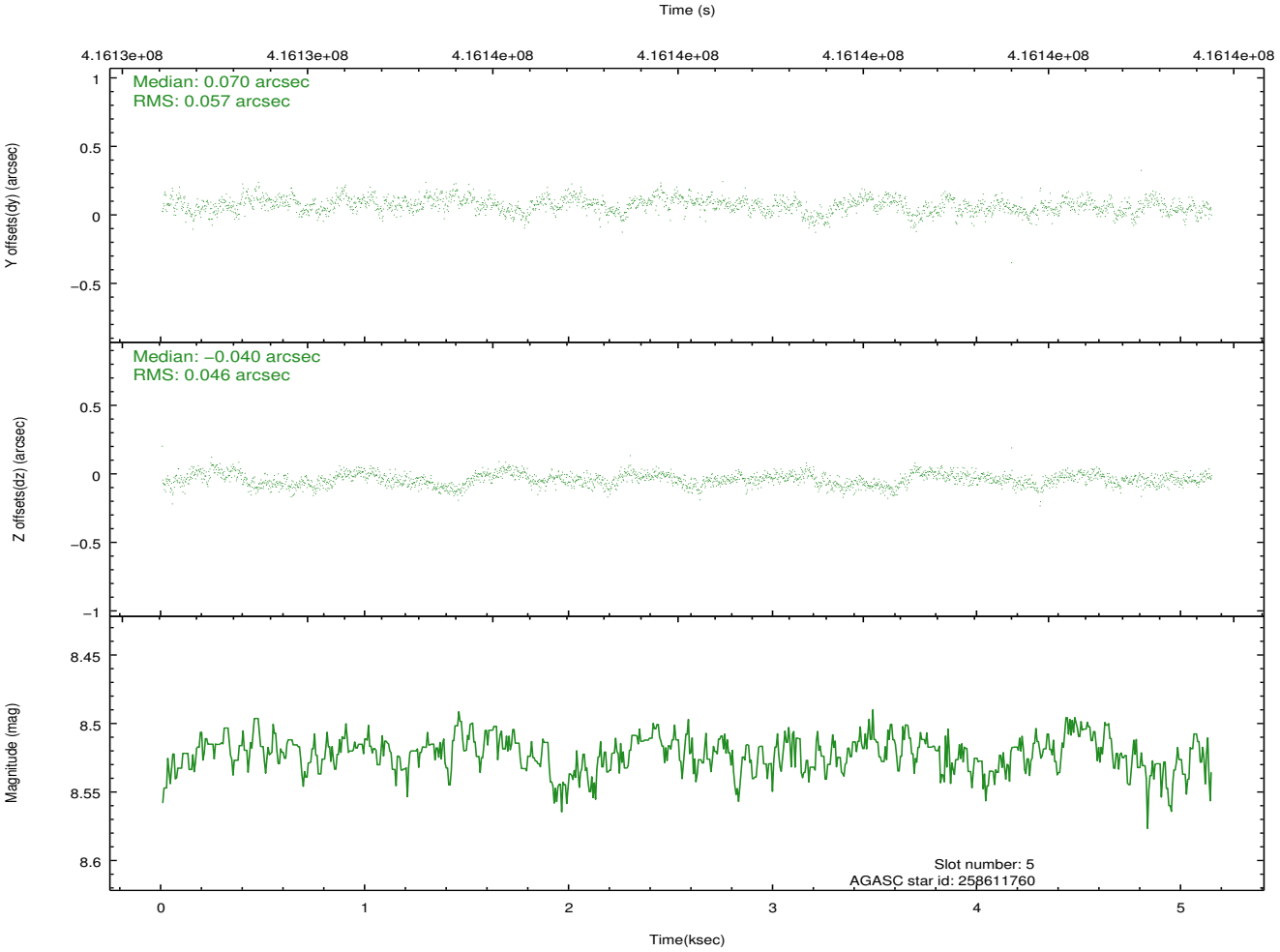

Points outside 0.7 arcsec radius: 0.000%
Radial offset of median: 0.208 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 4
AGASC star id: 258610048


Time (s)
Median: 0.063 arcsec
RMS: 0.052 arcsec
Y offsets(dy) (arcsec)
Median: 0.199 arcsec
RMS: 0.068 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number: 4
AGASC star id: 258610048
Time(ksec)

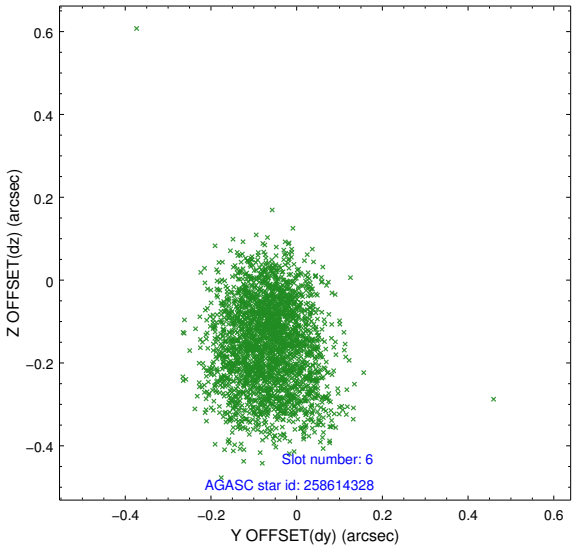
2.4.3 Slot 5

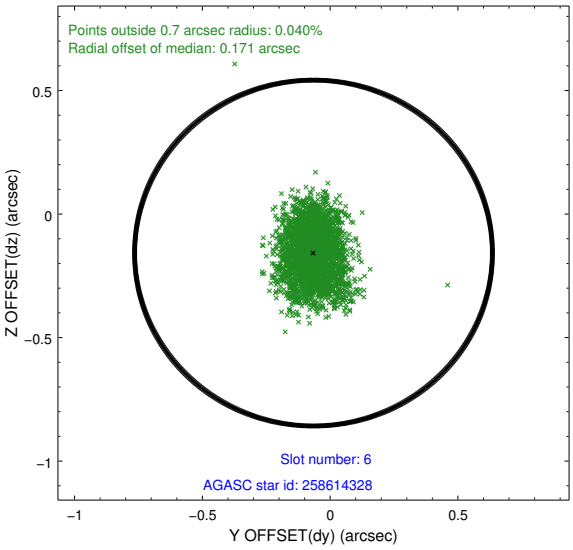

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 5
AGASC star id: 258611760

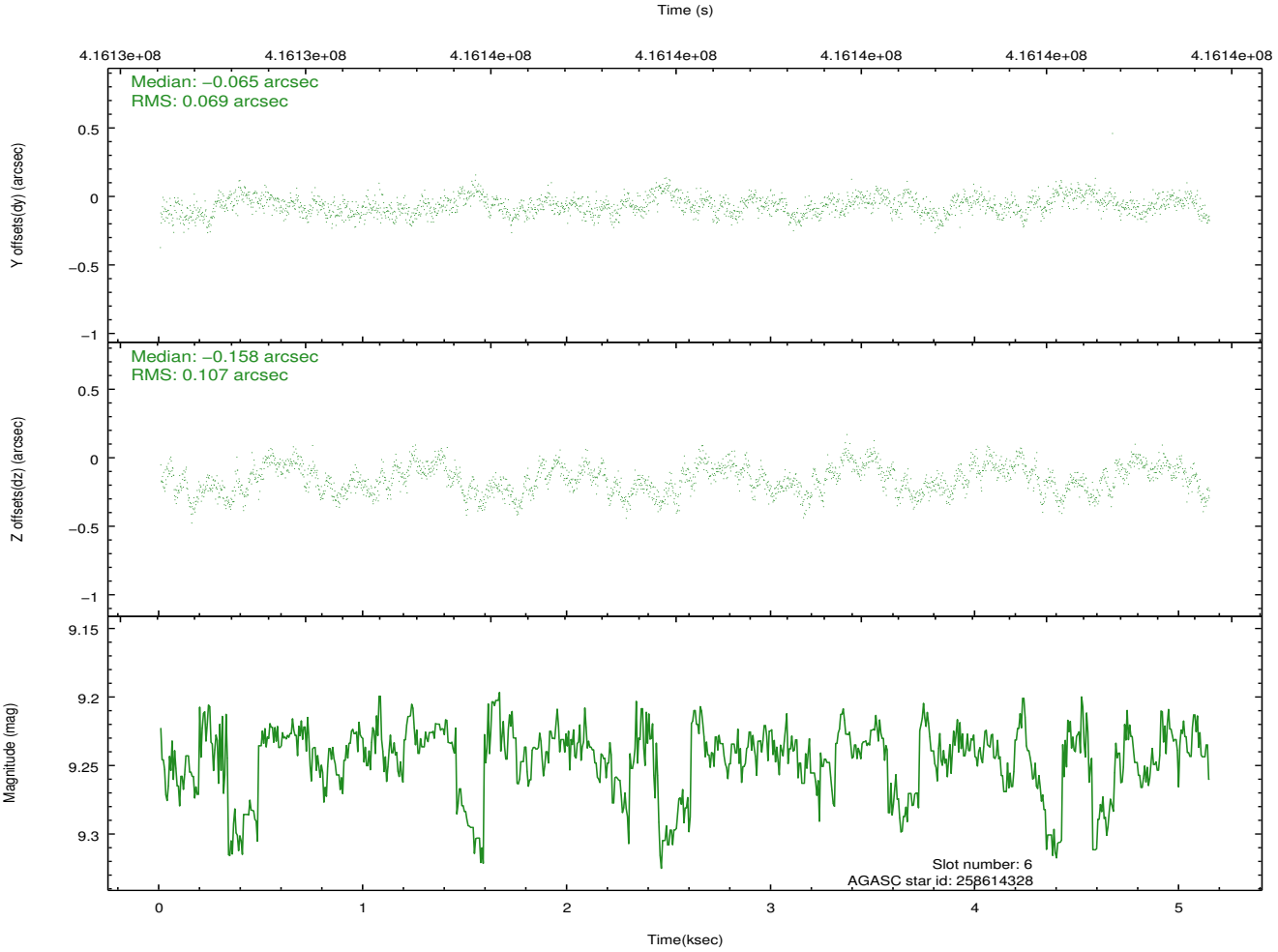

Points outside 0.7 arcsec radius: 0.000%
Radial offset of median: 0.080 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 5
AGASC star id: 258611760


Time (s)
Median: 0.070 arcsec
RMS: 0.057 arcsec
Y offsets(dy) (arcsec)
Median: −0.040 arcsec
RMS: 0.046 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number: 5
AGASC star id: 258611760
Time(ksec)

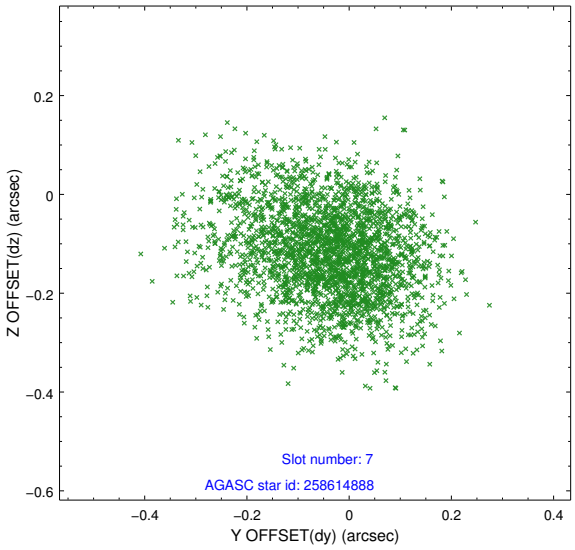
2.4.4 Slot 6

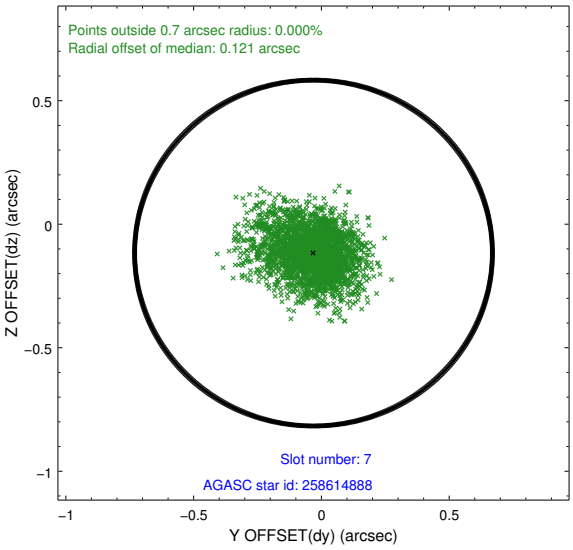

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 6
AGASC star id: 258614328

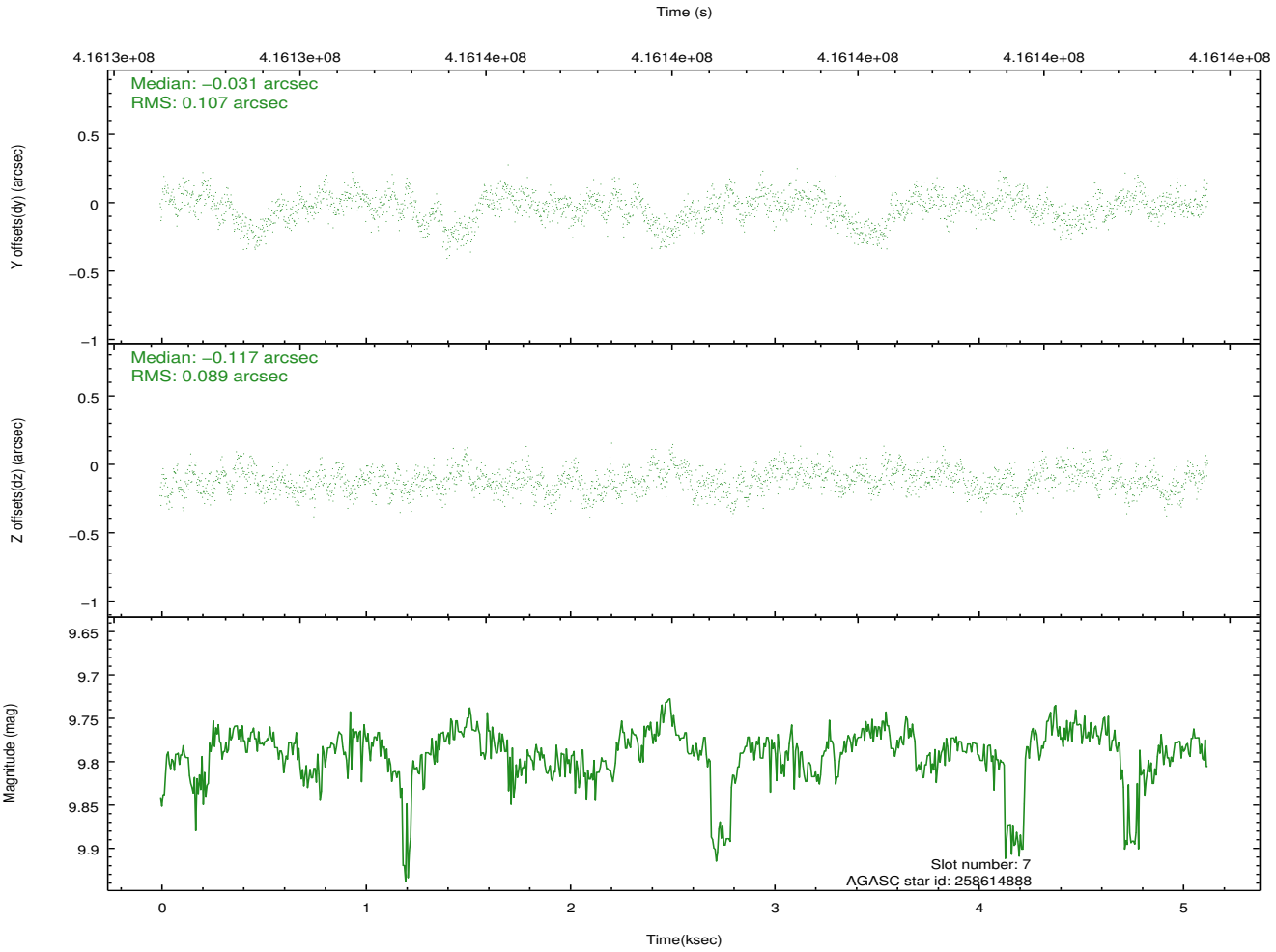

Points outside 0.7 arcsec radius: 0.040%
Radial offset of median: 0.171 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 6
AGASC star id: 258614328


Time (s)
Median: −0.065 arcsec
RMS: 0.069 arcsec
Y offsets(dy) (arcsec)
Median: −0.158 arcsec
RMS: 0.107 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number: 6
AGASC star id: 258614328
Time(ksec)

2.4.5 Slot 7

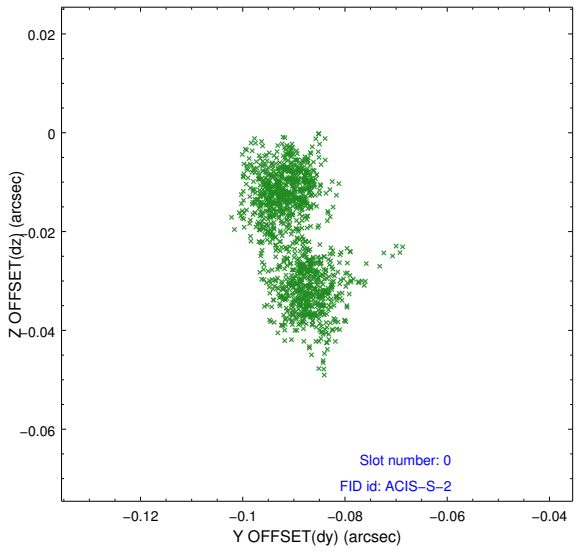

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 7
AGASC star id: 258614888

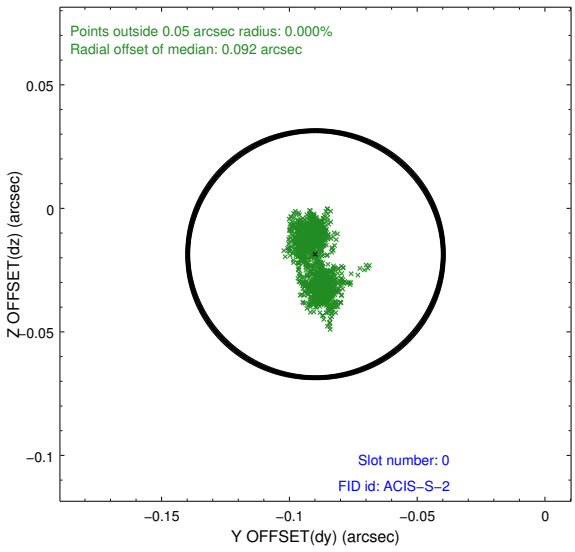

Points outside 0.7 arcsec radius: 0.000%
Radial offset of median: 0.121 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 7
AGASC star id: 258614888

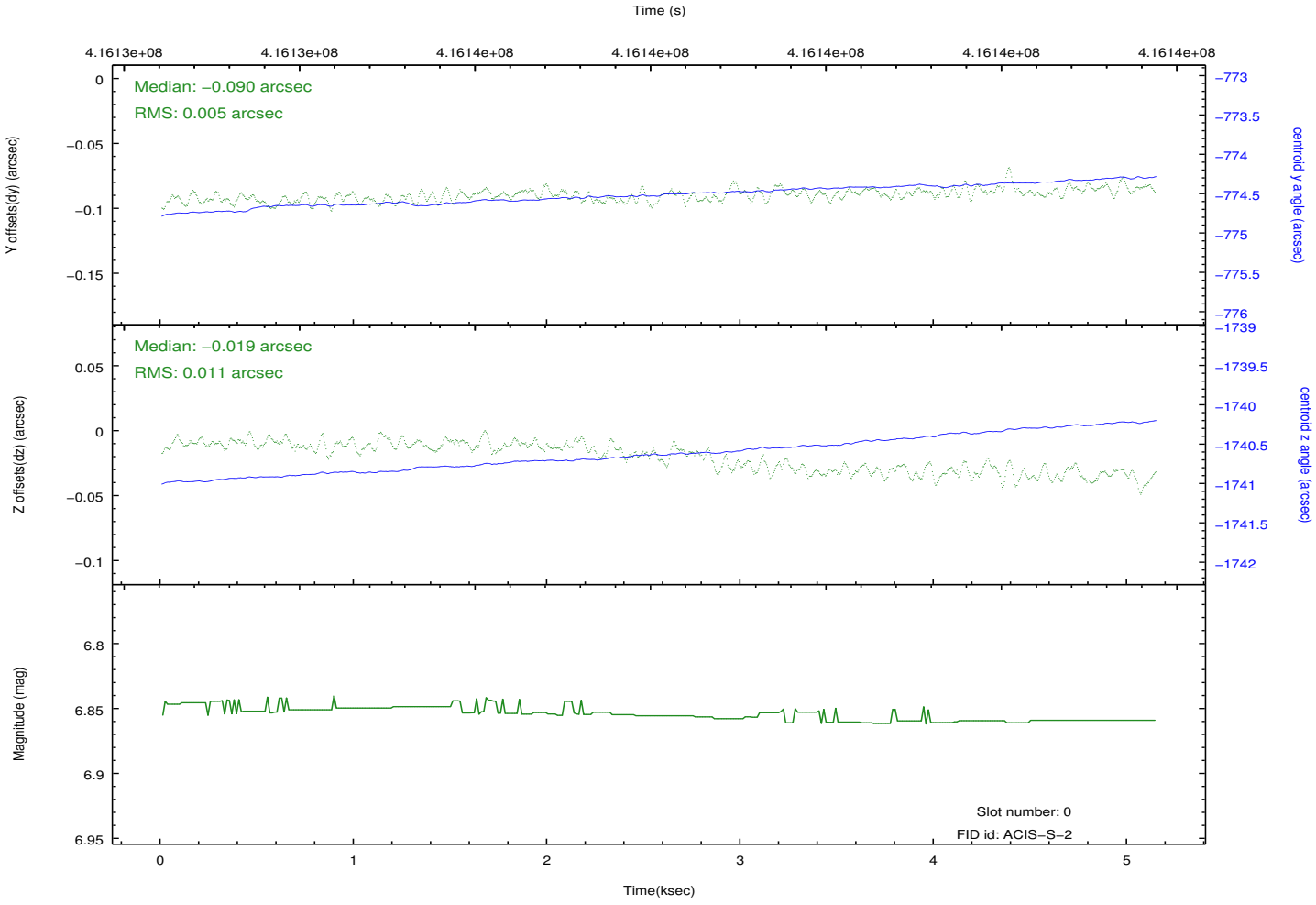

Time (s)
Median: −0.031 arcsec
RMS: 0.107 arcsec
Y offsets(dy) (arcsec)
Median: −0.117 arcsec
RMS: 0.089 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number: 7
AGASC star id: 258614888
Time(ksec)

2.5 FID Slots

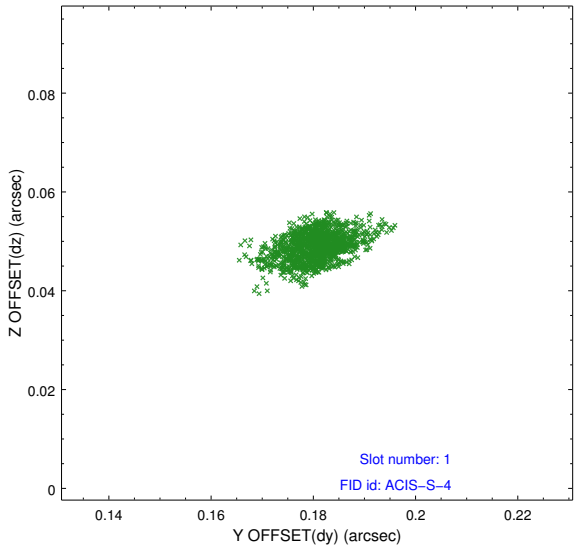
2.5.1 Slot 0

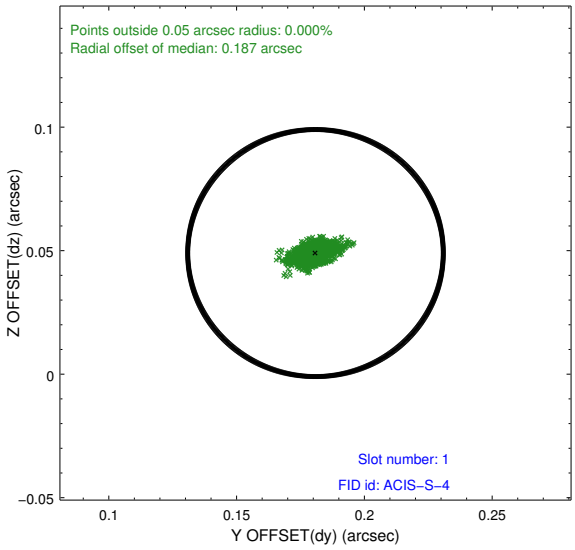


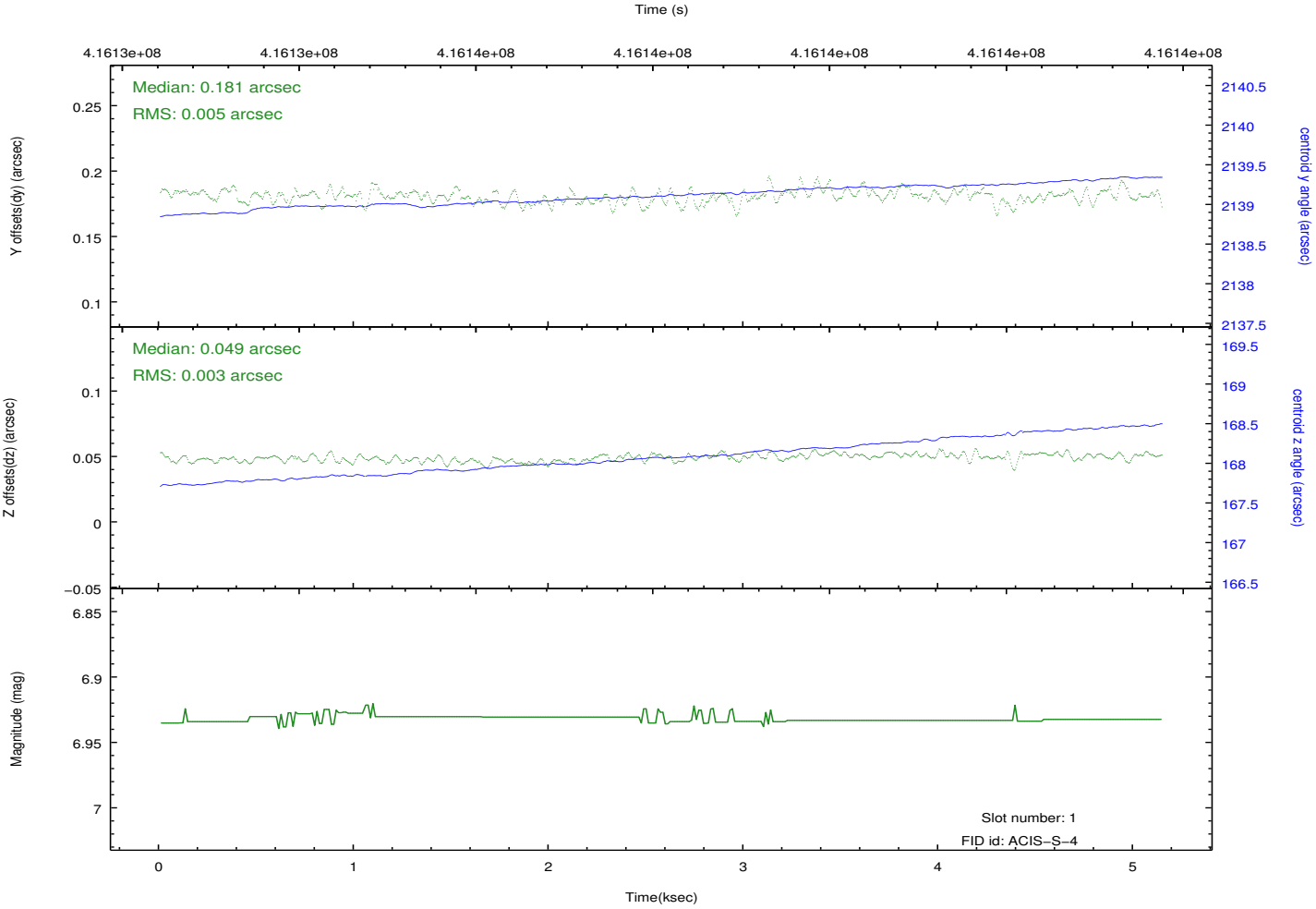




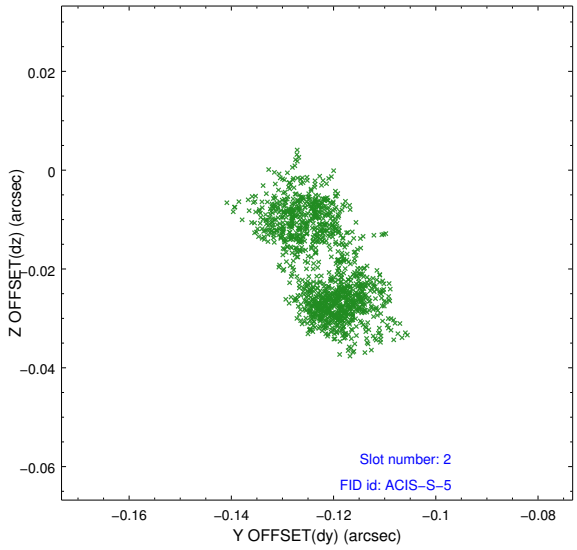
2.5.2 Slot 1

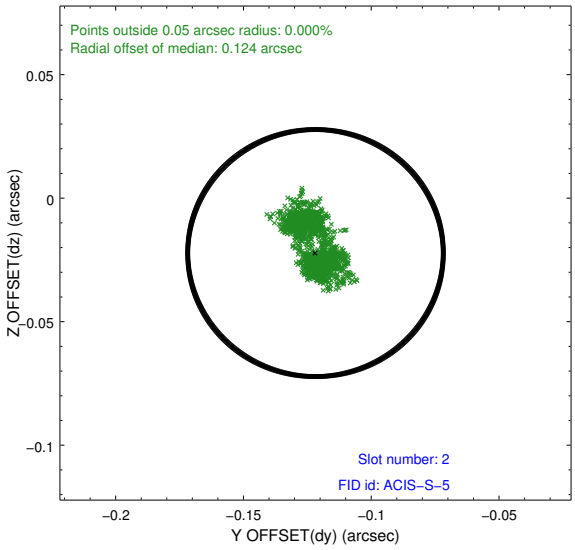

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 1
FID id: ACIS−S−4

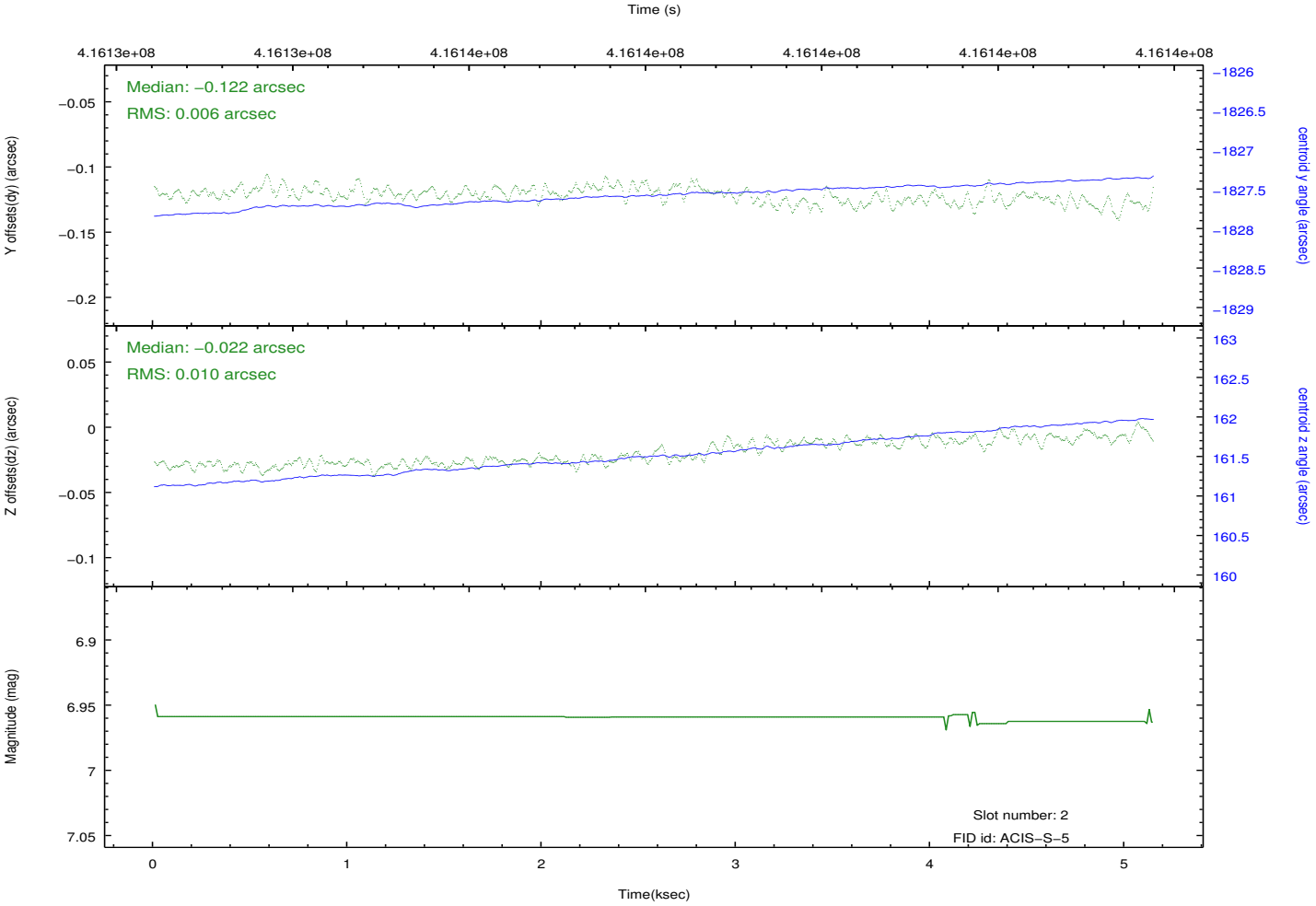

Points outside 0.05 arcsec radius: 0.000%
Radial offset of median: 0.187 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 1
FID id: ACIS−S−4


Time (s)
Median: 0.181 arcsec
RMS: 0.005 arcsec
Y offsets(dy) (arcsec)
centroid y angle (arcsec)
Median: 0.049 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: −0.122 arcsec
RMS: 0.006 arcsec
Y offsets(dy) (arcsec)
Median: −0.022 arcsec
RMS: 0.010 arcsec
Z offsets(dz) (arcsec)
centroid y angle (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)	2012.02.08
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	5.0592000389099

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.