V&V Reference Report
L2 ASCDS Version : 8.4.3

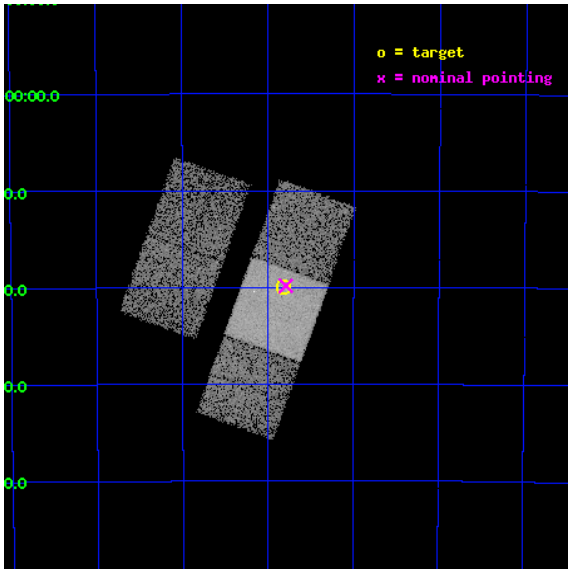
Observation 12535 - L2 Version 2
Chandra X-Ray Center

L2 Processing Date : Feb 2 2012

Contents

1 Front

seq_num	401276	Sequence number
obs_id	12535	Observation id
title	Searching New Millisecond Pulsar Fields for X-ray Counterparts	Pro
observer	Dr. Michael Wolff	Principal investigator
object	PSRJ1658-53	Source name
dtycycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	254.704112	Observer's specified target RA [deg]
dec_targ	-53.333702	Observer's specified target Dec [deg]
ra_nom	254.69771658433	Nominal RA [deg]
dec_nom	-53.330722397456	Nominal Dec [deg]
roll_nom	109.84806183542	Nominal Roll [deg]
revision	2	Processing version of data
ontime	10037.8000772	Sum of GTIs [s]
livetime	9906.6488294704	Livetime [s]
ontime2	10037.8000772	Sum of GTIs [s]
ontime3	10037.8000772	Sum of GTIs [s]
ontime6	10028.377016664	Sum of GTIs [s]
ontime7	10037.8000772	Sum of GTIs [s]
ontime8	10037.8000772	Sum of GTIs [s]
l2events	62605	Number of level 2 events

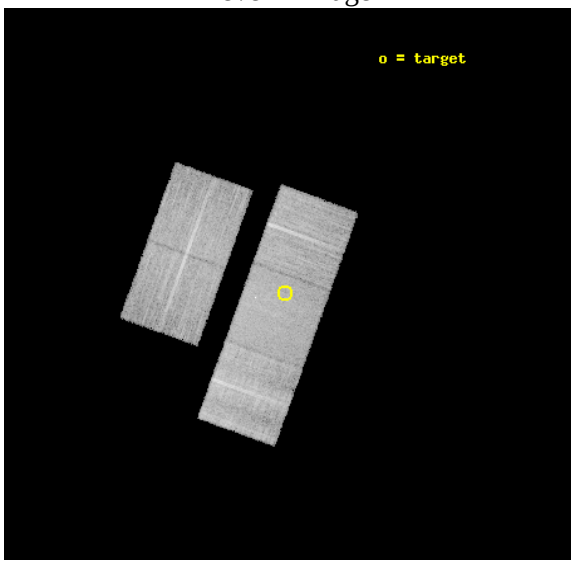


2 OBI

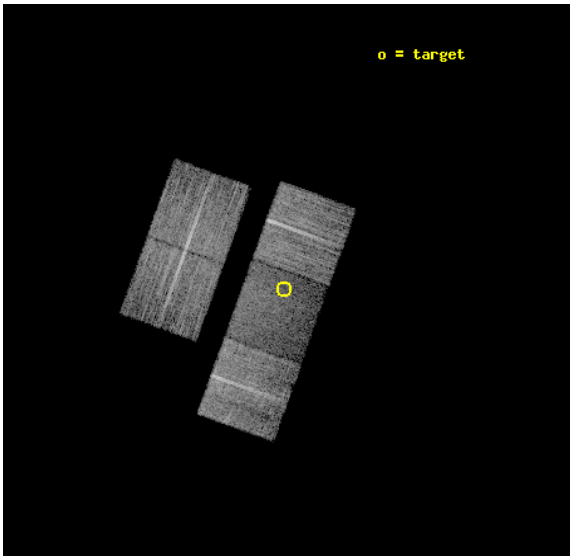
2.1 OBI

2.1.1 Images

Level 1 Image

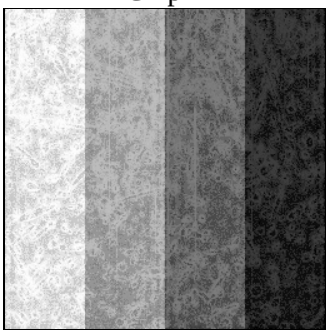


Level 1 Bad Events

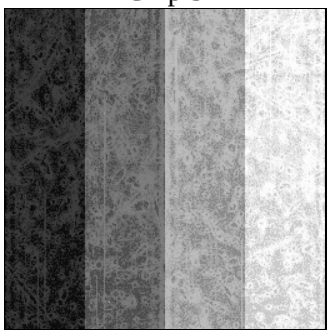


2.1.2 Bias

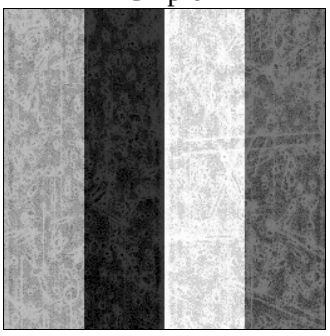
Chip 2



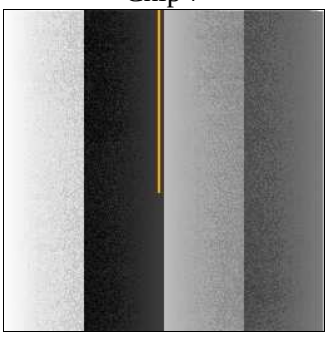
Chip 3



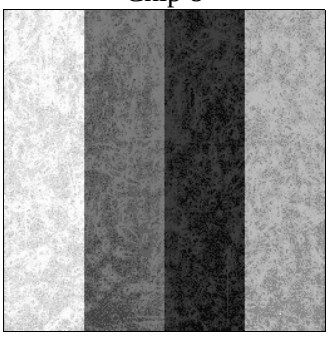
Chip 6



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	2012-02-02T22:40:15	Date and time of file creation
revision	2	Processing version of data

sched_exp_time	10000.000000	[s] Scheduled observation exposure time
ontime	10037.8000772	Sum of GTIs [s]
ontime2	10037.8000772	Sum of GTIs [s]
ontime3	10037.8000772	Sum of GTIs [s]
ontime6	10028.377016664	Sum of GTIs [s]
ontime7	10037.8000772	Sum of GTIs [s]
ontime8	10037.8000772	Sum of GTIs [s]
l1events	365031	Number of level 1 events

2.1.4 Events

	ccd 2	**ccd 3**	**ccd 6**	**ccd 7**	**ccd 8**
level 1 events	67692	64118	71212	73877	88132
rejected events	60300	57011	63038	37314	63818
rejected %	89%	88%	88%	50%	72%

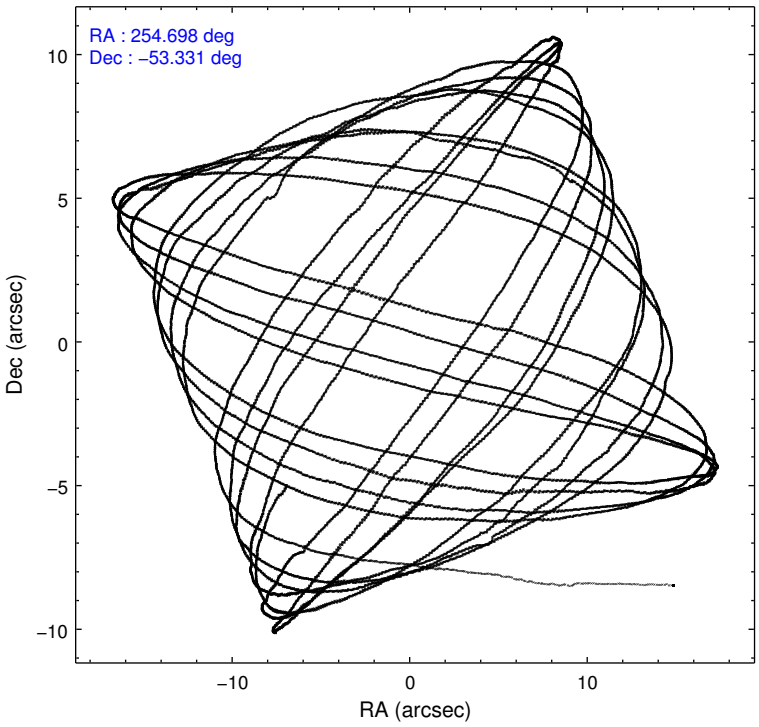
	ccd 2	**ccd 3**	**ccd 6**	**ccd 7**	**ccd 8**
grade 0 events	2936	2849	3294	3980	6970
	4%	4%	4%	5%	7%
grade 1 events	40	32	38	121	86
	0%	0%	0%	0%	0%
grade 2 events	1739	1421	1792	7843	5855
	2%	2%	2%	10%	6%
grade 3 events	715	776	820	3450	2551
	1%	1%	1%	4%	2%
grade 4 events	736	771	788	3410	2456
	1%	1%	1%	4%	2%
grade 5 events	2221	2659	2732	7728	4084
	3%	4%	3%	10%	4%
grade 6 events	1271	1291	1482	17893	6484
	1%	2%	2%	24%	7%
grade 7 events	58034	54319	60266	29452	59646
	85%	84%	84%	39%	67%

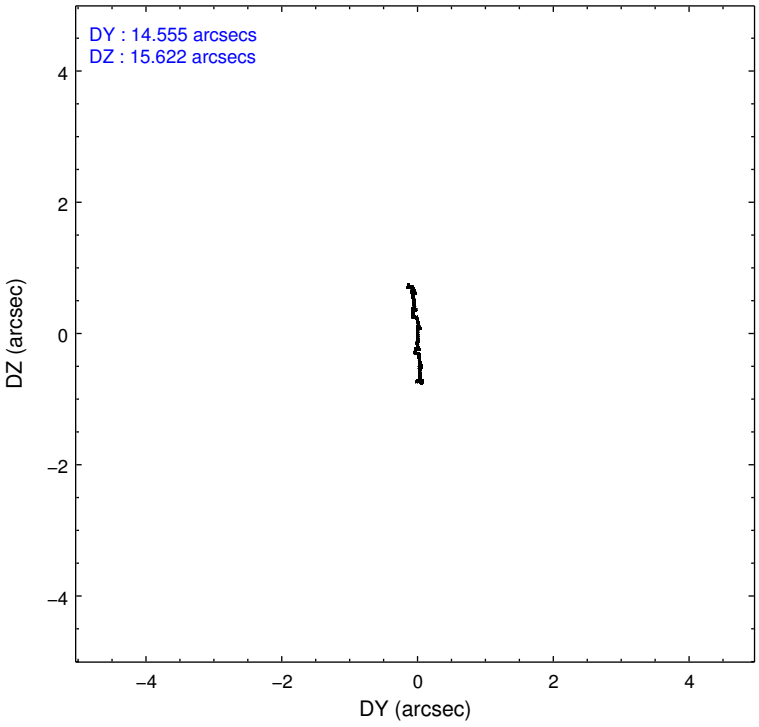
2.2 Compared Parameters

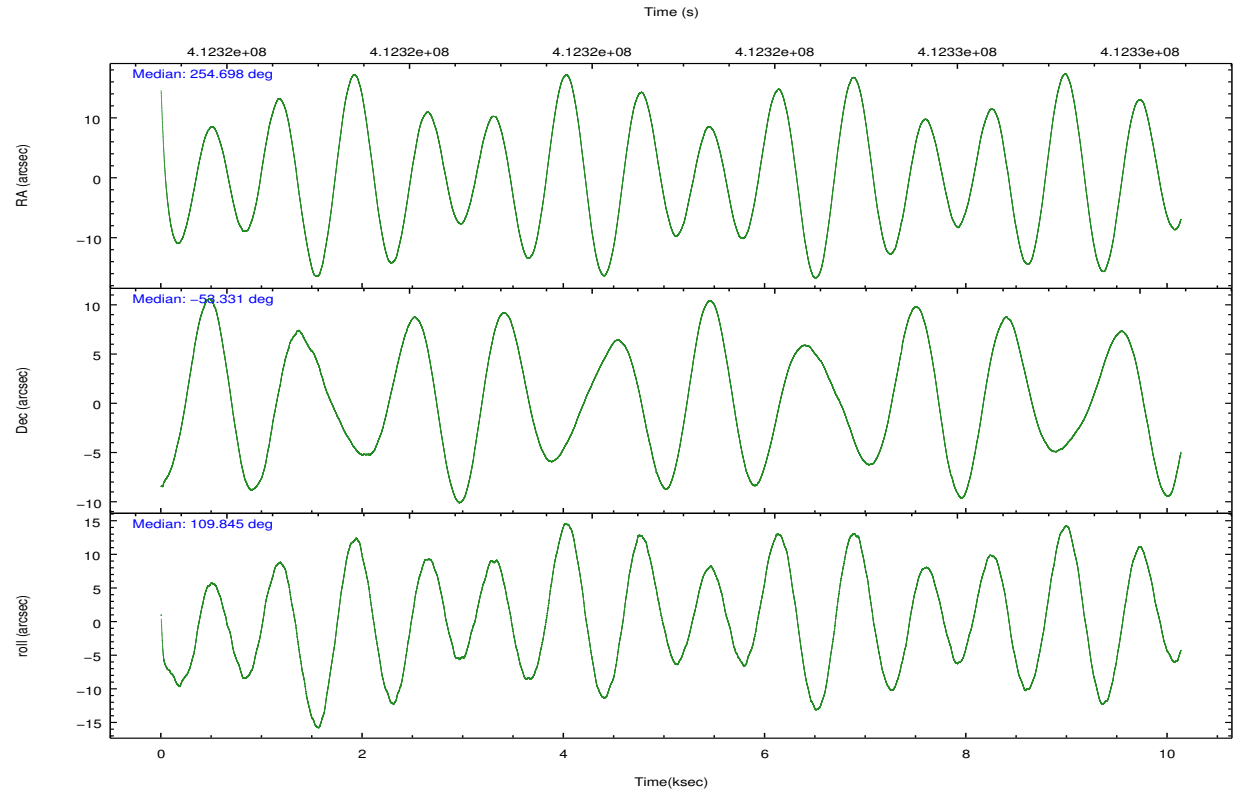
Parameter	Planned	Actual
Instrument	ACIS	ACIS
Detector	ACIS-23678	ACIS-23678
Grating	NONE	NONE
Data mode	VFAINT	VFAINT
Observation mode	POINTING	POINTING
[deg] Pointing RA	254.733168	254.6977165843295
[deg] Pointing Dec	-53.348022	-53.33072239745638
[deg] Pointing Roll	109.719889	109.8480618354228
[mm] 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)	412317929.184000	412316673.39306
Observation start date	2011-01-25T04:44:23	2011-01-25T04:24:33
[s] Observation end time (MET)	412327929.184000	412328959.04369
Observation end date	2011-01-25T07:31:03	2011-01-25T07:49:19
Read mode	TIMED	TIMED

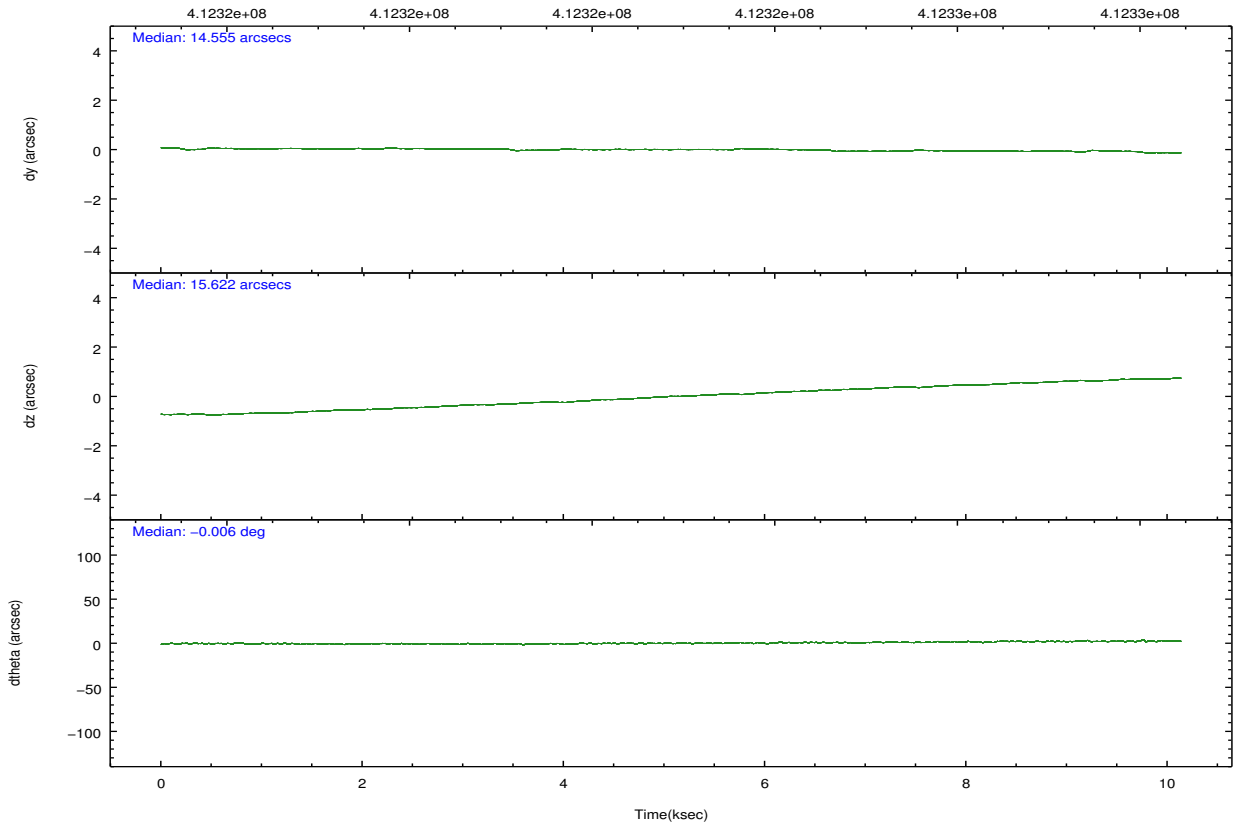
Parameter	Planned	Actual
Obspar format version number	7	7
Obspar file type	PREDICTED	ACTUAL
Obspar update status	NONE	UPDATED
CCD I0 on	N	N
CCD I1 on	N	N
CCD I2 on	O2	Y
CCD I3 on	Y	Y
CCD S0 on	N	N
CCD S1 on	N	N
CCD S2 on	Y	Y
CCD S3 on	Y	Y
CCD S4 on	O1	Y
CCD S5 on	N	N
Number of optional ACIS chips dropped	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 : 254.698 deg
Dec : –53.331 deg
10
5
0
–5
–10
Dec (arcsec)
–10
0
10
RA (arcsec)


DY : 14.555 arcsecs
DZ : 15.622 arcsecs
4
2
0
–2
–4
DZ (arcsec)
–4
–2
0
2
4
DY (arcsec)


Time (s)
4.1232e+08
4.1232e+08
4.1232e+08
4.1232e+08
4.1233e+08
4.1233e+08
Median: 254.698 deg
RA (arcsec)
Median: −58.331 deg
Dec (arcsec)
Median: 109.845 deg
roll (arcsec)
Time(ksec)

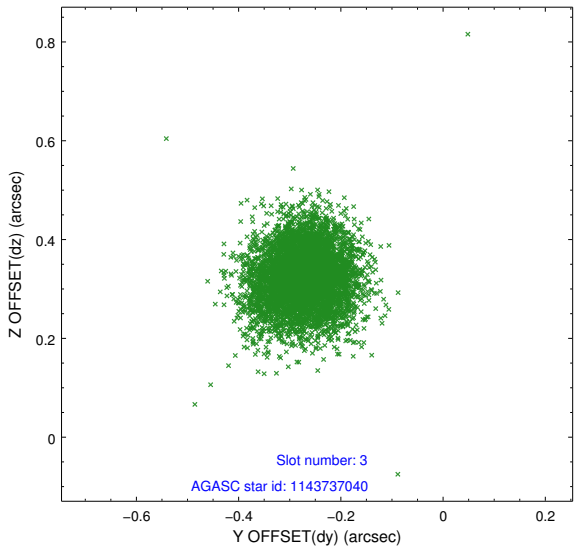

Time (s)
4.1232e+08
4.1232e+08
4.1232e+08
4.1232e+08
4.1233e+08
4.1233e+08
Median: 14.555 arcsecs
dy (arcsec)
Median: 15.622 arcsecs
dz (arcsec)
Median: −0.006 deg
dtheta (arcsec)
Time(ksec)

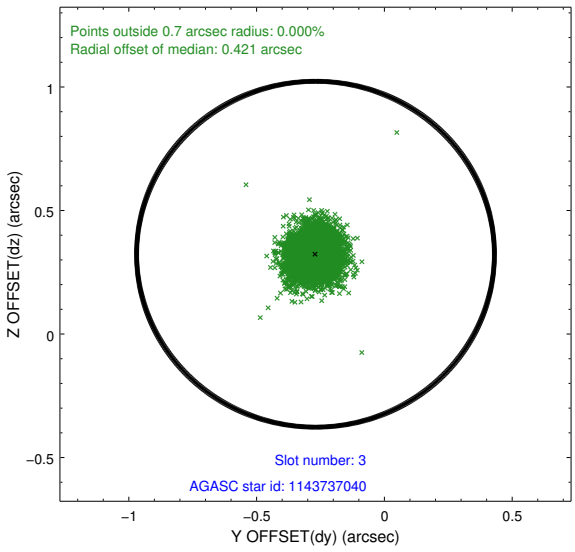
Slot Statistics

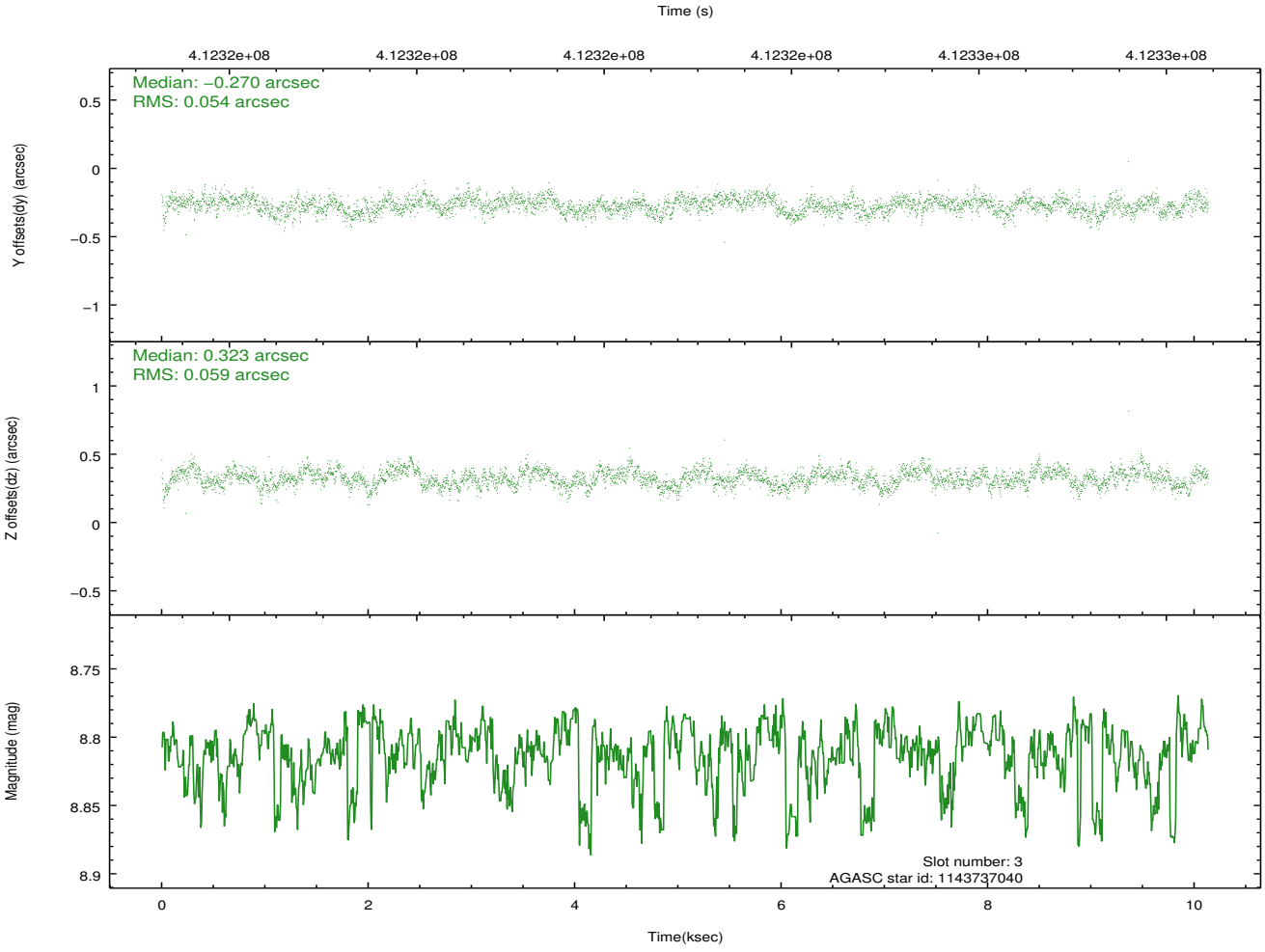
slot	status	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID	ACIS-S-1	7.01	2472	0.025	-0.041	0.025	0.036	0.000000	0.000000	928.57	-1732.66
1	FID	ACIS-S-4	7.02	2472	0.139	0.021	0.015	0.023	0.000000	0.000000	2146.36	171.03
2	FID	ACIS-S-5	7.05	2472	-0.193	0.032	0.013	0.019	0.000000	0.000000	-1819.87	165.19
3	GUIDE	1143737040	8.81	4935	-0.270	0.323	0.084	0.135	255.120058	-53.123265	477.52	-1058.68
4	GUIDE	1143746896	8.56	4942	0.176	-0.169	0.076	0.123	254.568961	-53.920697	-1823.20	1023.07
5	GUIDE	1143747024	8.19	4944	-0.023	-0.184	0.061	0.100	254.407207	-53.281737	459.55	580.71
6	GUIDE	1143751608	8.77	4943	0.182	0.103	0.073	0.120	255.341616	-53.466369	-845.72	-1081.62
7	GUIDE	1143740232	8.99	4928	-0.063	-0.072	0.076	0.124	253.445146	-52.935073	2318.69	2137.53

2.4 Star Slots

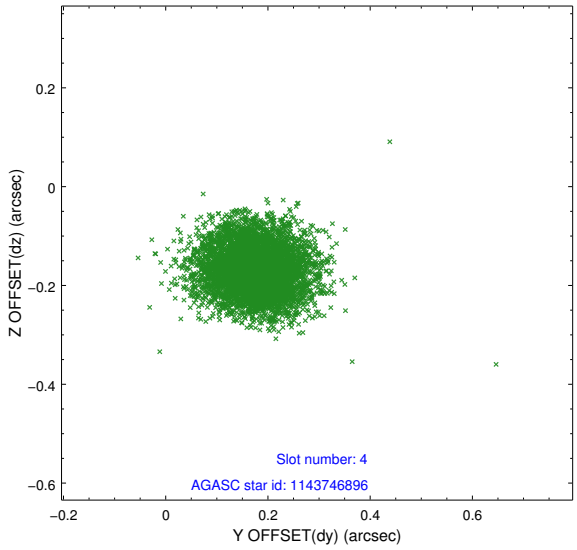
2.4.1 Slot 3

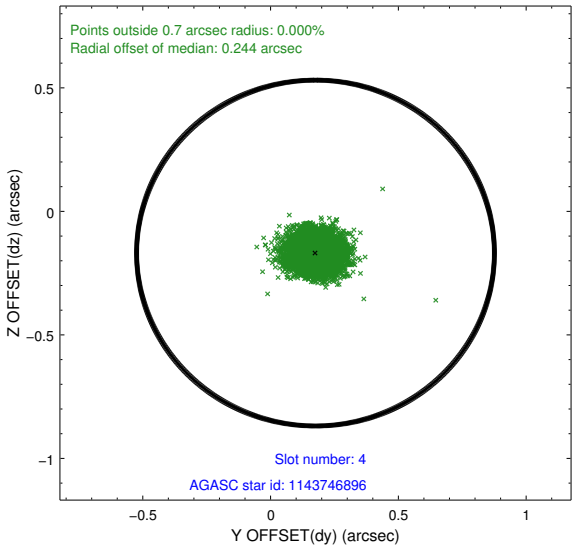


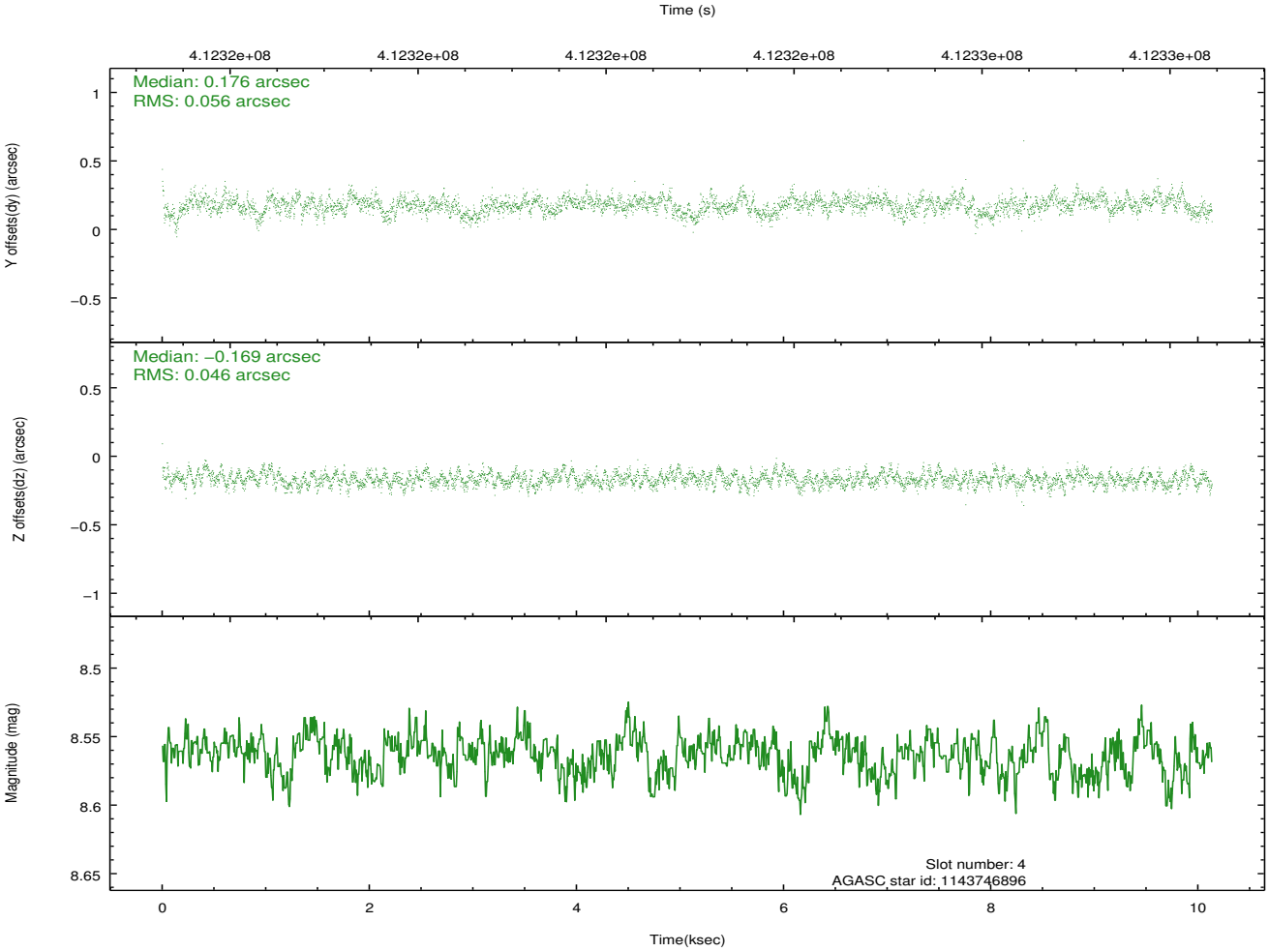




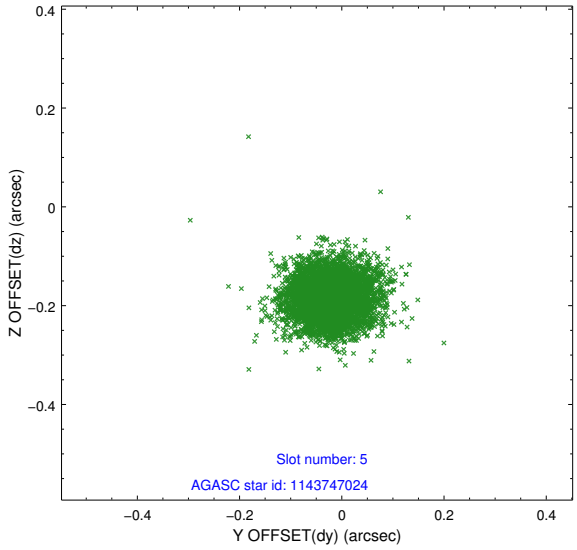
2.4.2 Slot 4

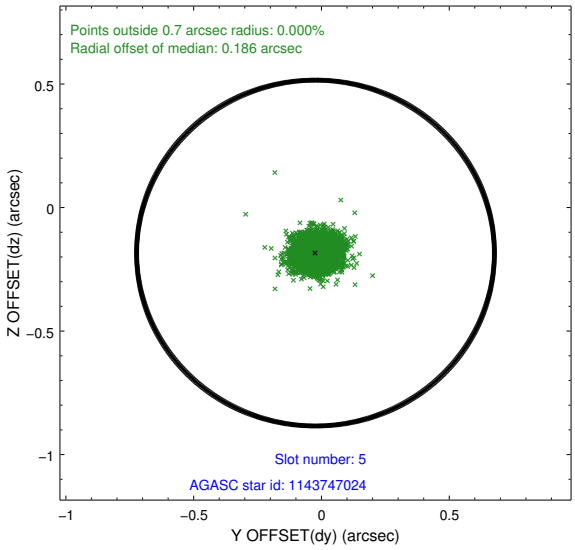

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 4
AGASC star id: 1143746896

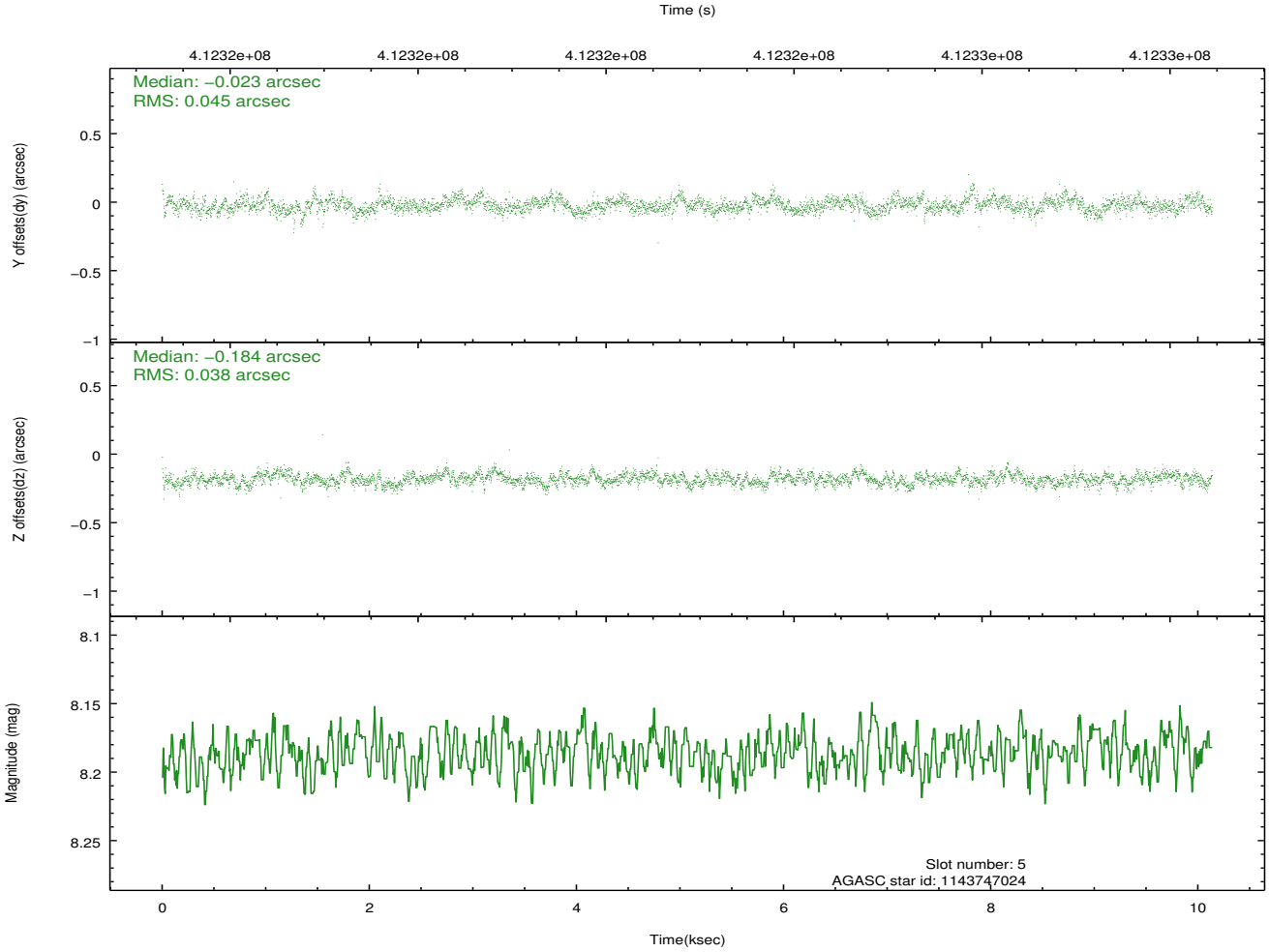

Points outside 0.7 arcsec radius: 0.000%
Radial offset of median: 0.244 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 4
AGASC star id: 1143746896


Time (s)
Median: 0.176 arcsec
RMS: 0.056 arcsec
Y offsets(dy) (arcsec)
Median: −0.169 arcsec
RMS: 0.046 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number: 4
AGASC star id: 1143746896
Time(ksec)

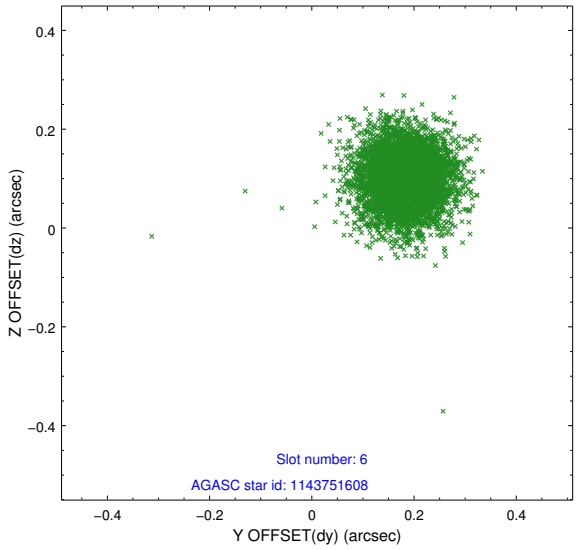
2.4.3 Slot 5

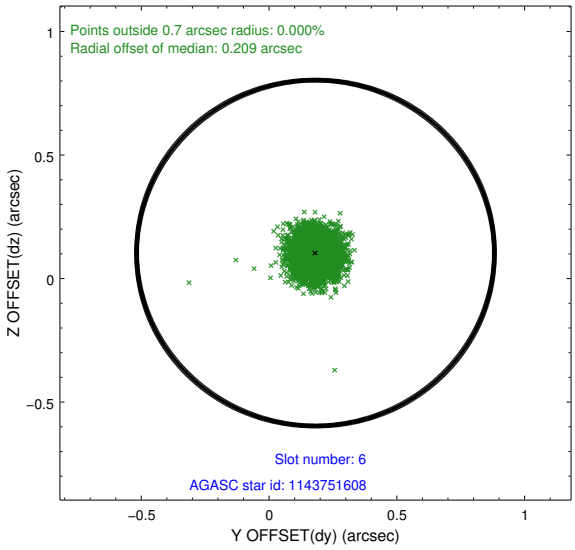

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 5
AGASC star id: 1143747024

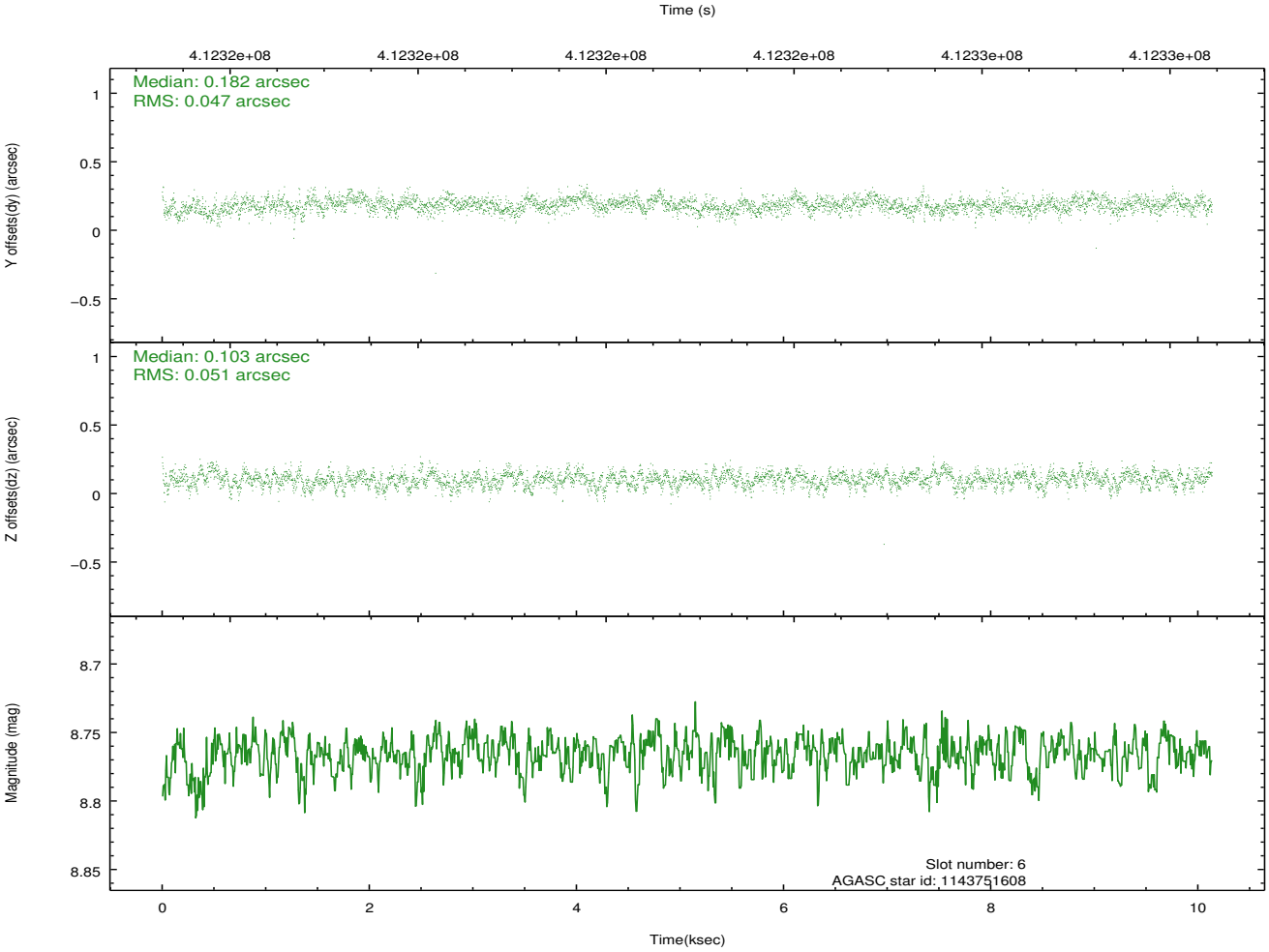

Points outside 0.7 arcsec radius: 0.000%
Radial offset of median: 0.186 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 5
AGASC star id: 1143747024


Time (s)
Median: −0.023 arcsec
RMS: 0.045 arcsec
Y offsets(dy) (arcsec)
Median: −0.184 arcsec
RMS: 0.038 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number: 5
AGASC star id: 1143747024
Time(ksec)

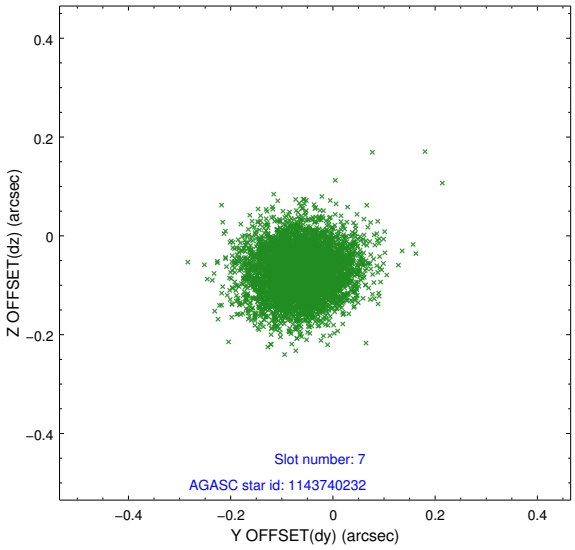
2.4.4 Slot 6

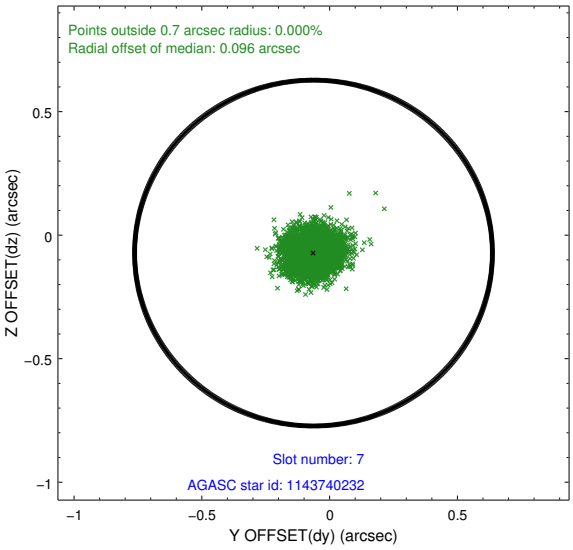

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 6
AGASC star id: 1143751608

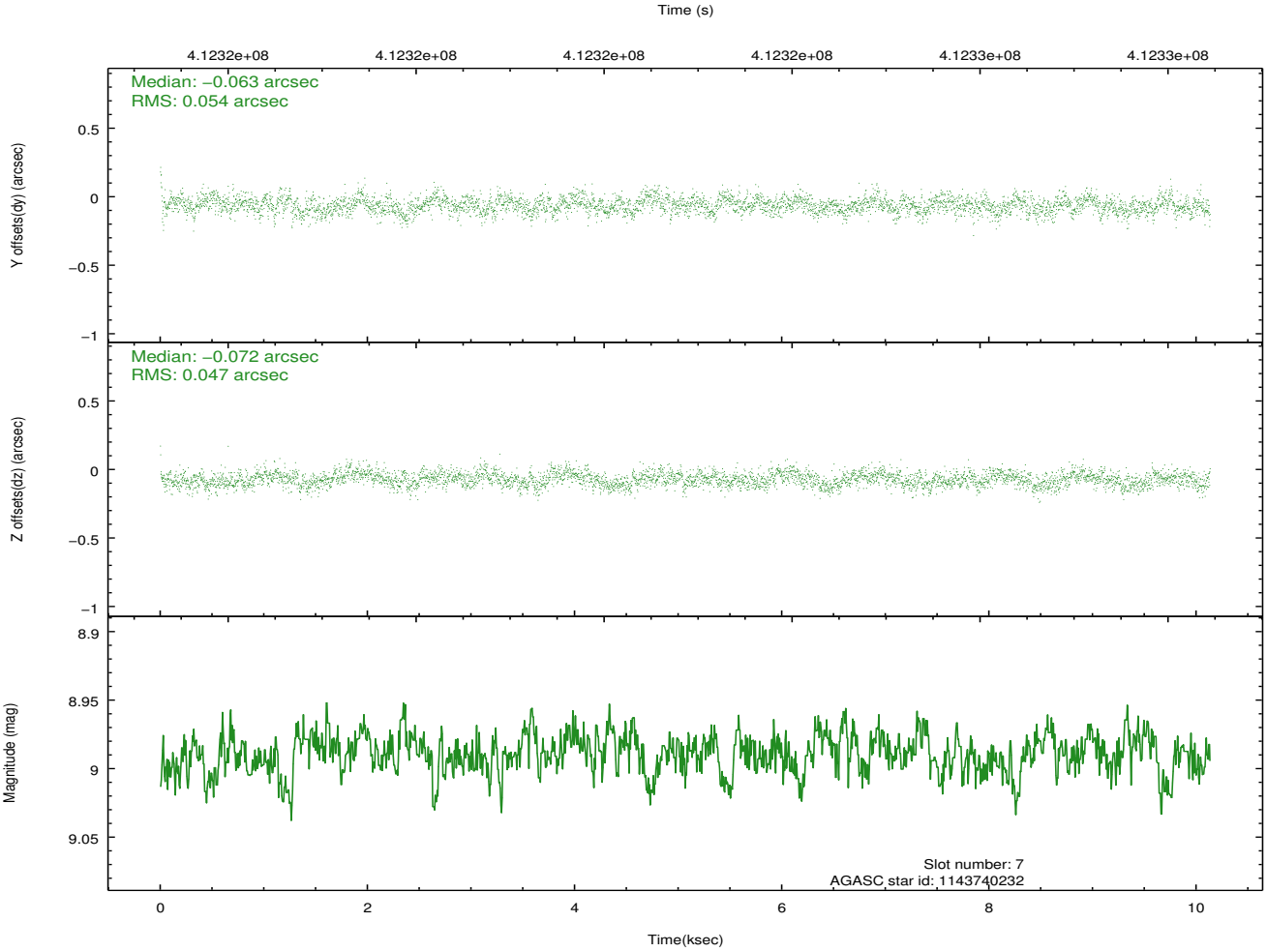

Points outside 0.7 arcsec radius: 0.000%
Radial offset of median: 0.209 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 6
AGASC star id: 1143751608


Time (s)
Median: 0.182 arcsec
RMS: 0.047 arcsec
Y offsets(dy) (arcsec)
Median: 0.103 arcsec
RMS: 0.051 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number: 6
AGASC star id: 1143751608
Time(ksec)

2.4.5 Slot 7

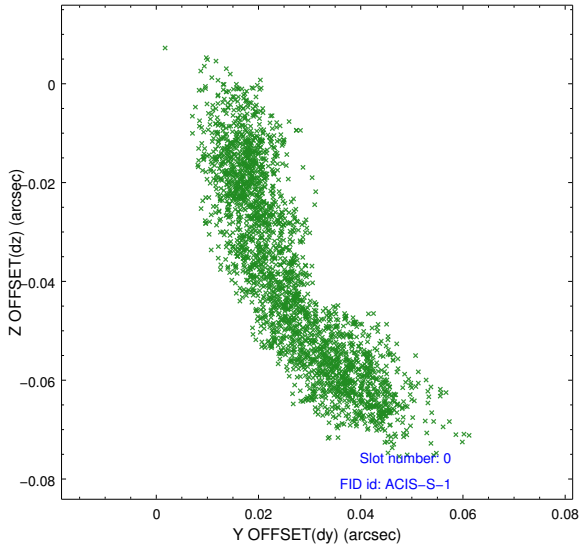

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 7
AGASC star id: 1143740232

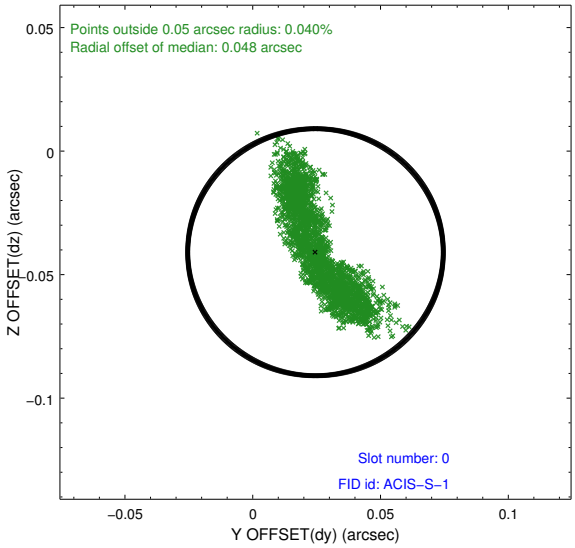

Points outside 0.7 arcsec radius: 0.000%
Radial offset of median: 0.096 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 7
AGASC star id: 1143740232

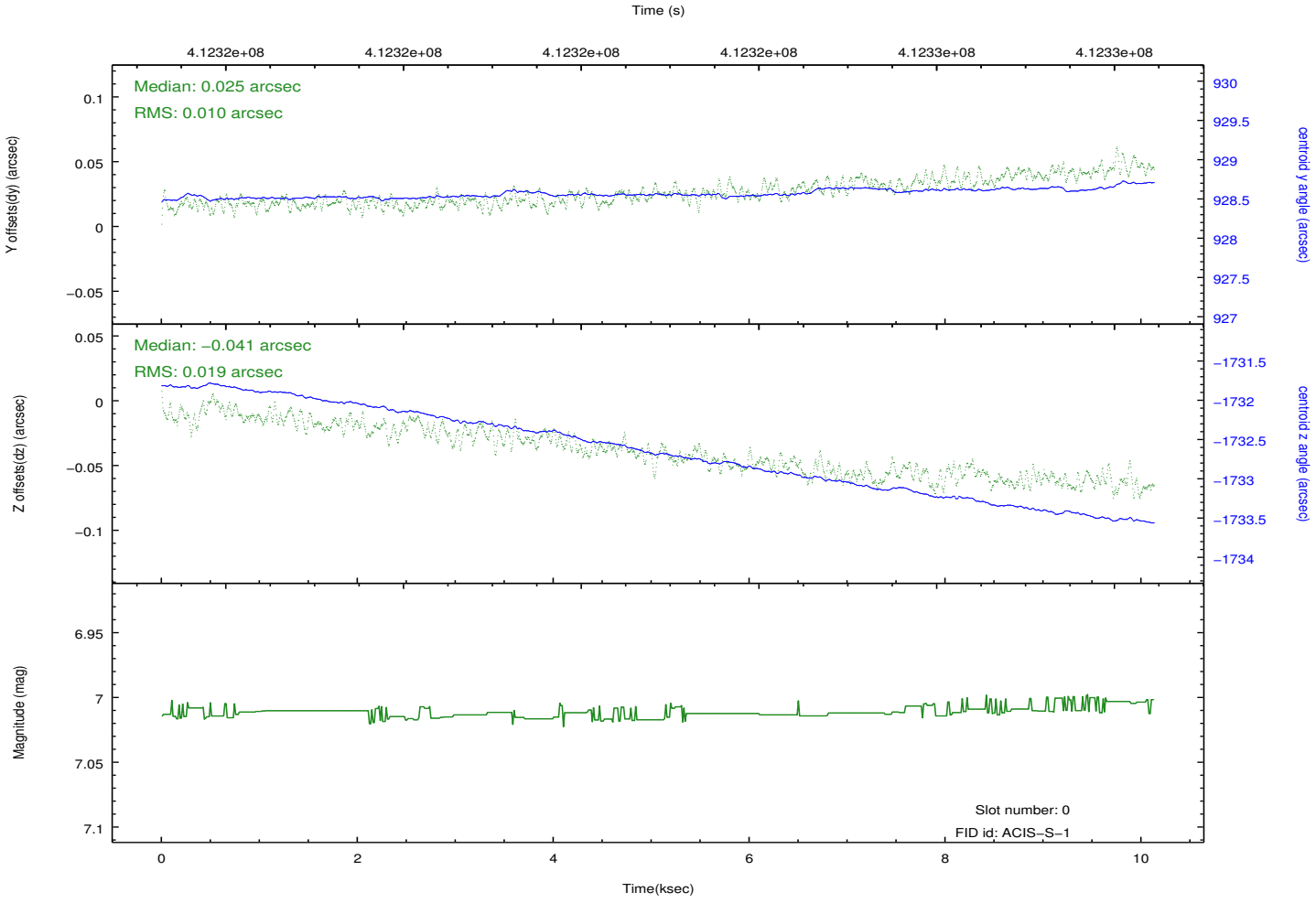

Time (s)
Median: −0.063 arcsec
RMS: 0.054 arcsec
Y offsets(dy) (arcsec)
Median: −0.072 arcsec
RMS: 0.047 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number: 7
AGASC star id: 1143740232
Time(ksec)

2.5 FID Slots

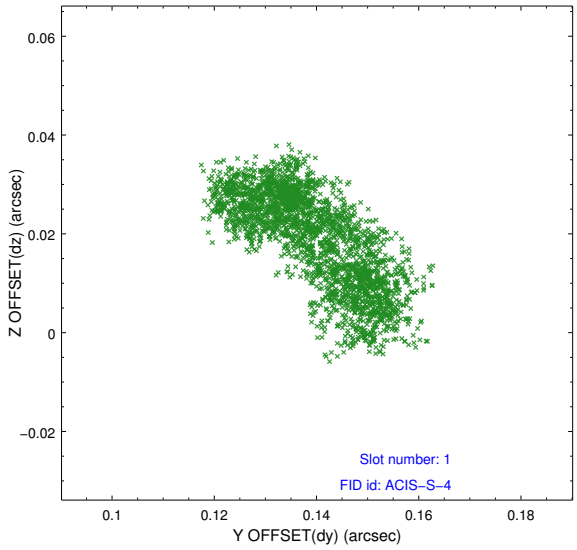
2.5.1 Slot 0

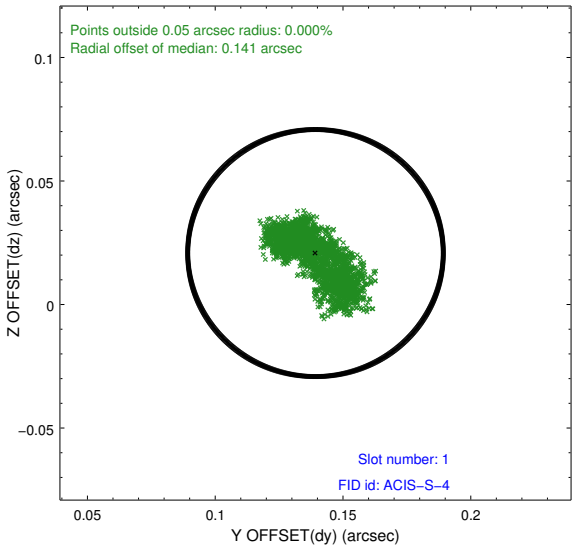


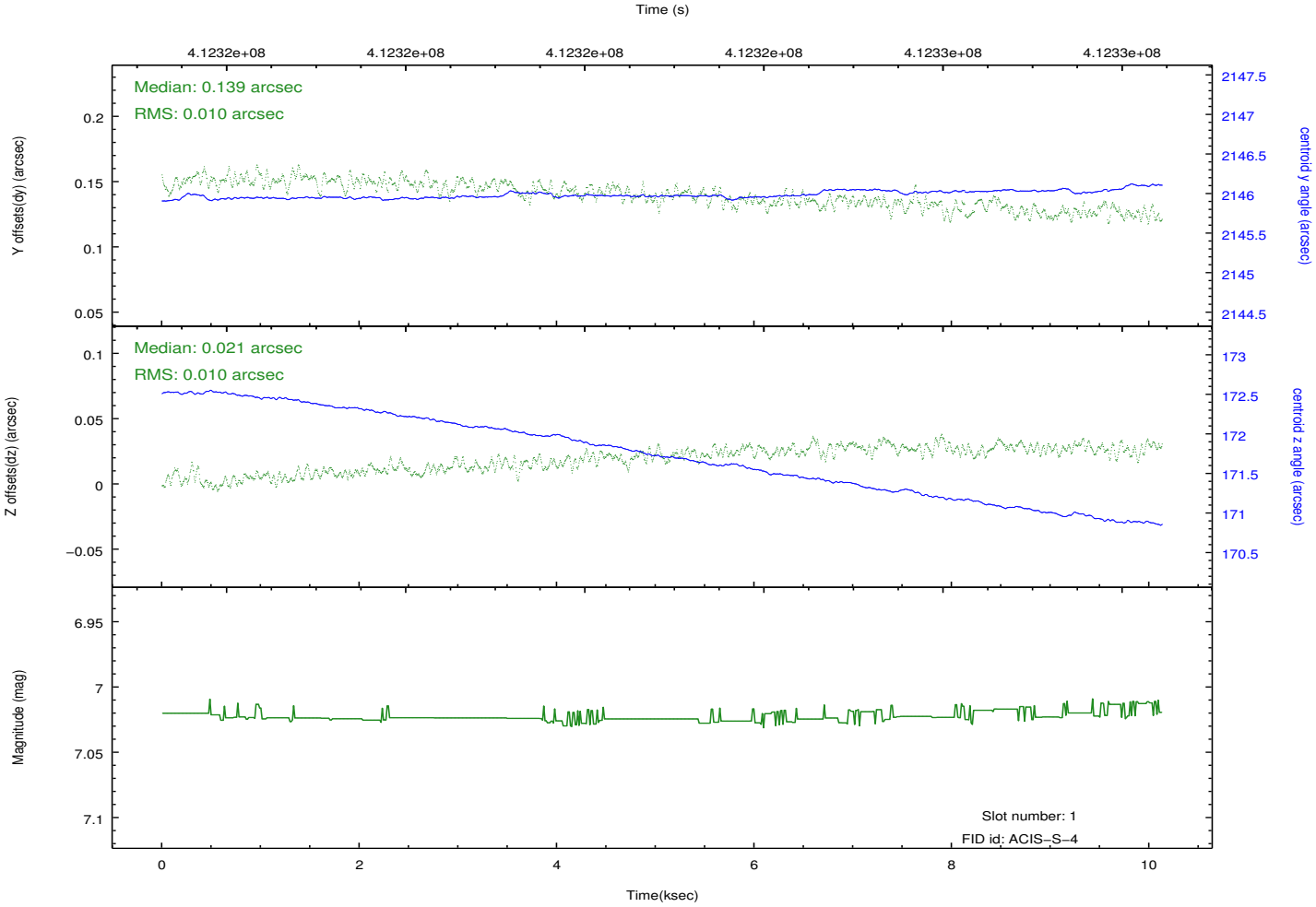




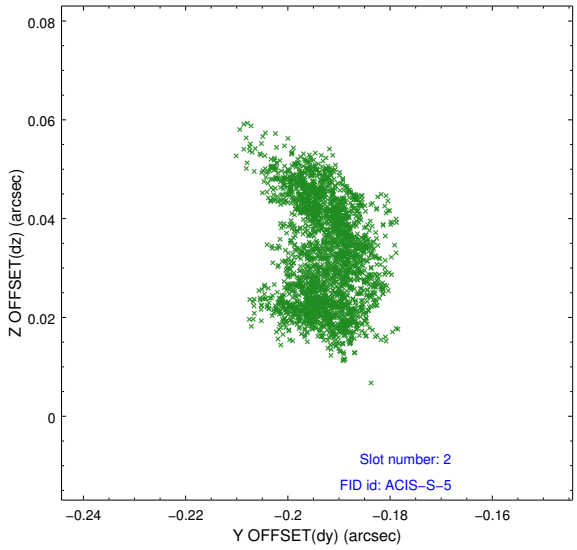
2.5.2 Slot 1

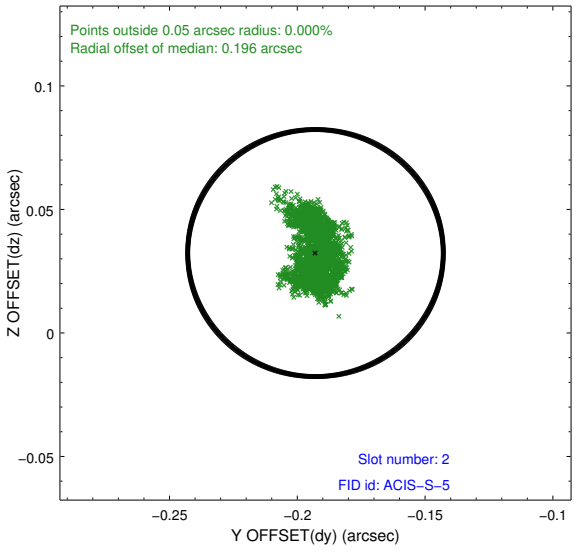

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 1
FID id: ACIS−S−4

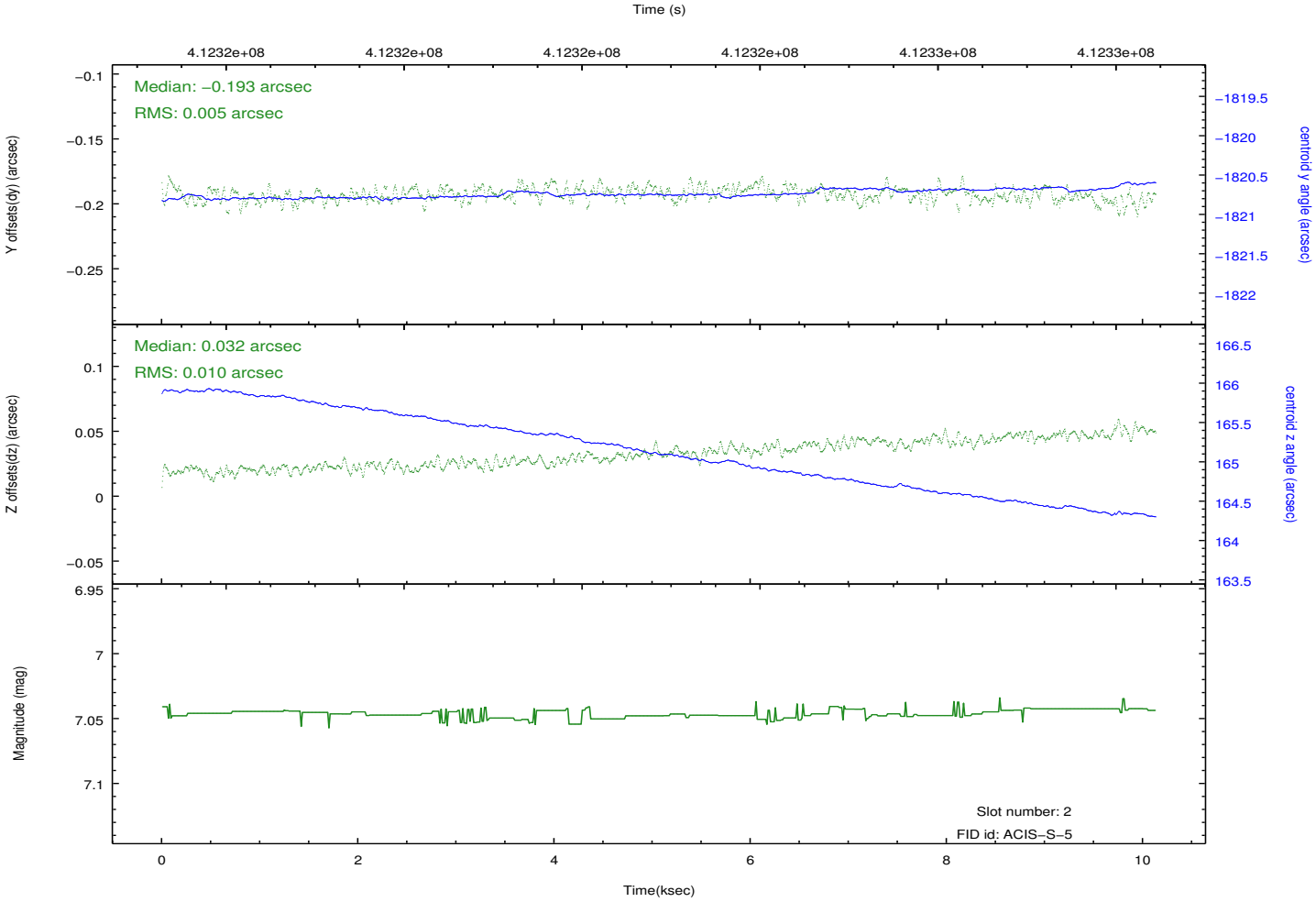

Points outside 0.05 arcsec radius: 0.000%
Radial offset of median: 0.141 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 1
FID id: ACIS−S−4


Time (s)
Median: 0.139 arcsec
RMS: 0.010 arcsec
Y offsets(dy) (arcsec)
centroid y angle (arcsec)
Median: 0.021 arcsec
RMS: 0.010 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: 0.196 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 2
FID id: ACIS−S−5


Time (s)
Median: −0.193 arcsec
RMS: 0.005 arcsec
Y offsets(dy) (arcsec)
centroid y angle (arcsec)
Median: 0.032 arcsec
RMS: 0.010 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)	2012.02.03
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	10.0378000772

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.