V&V Reference Report
L2 ASCDS Version : 8.4.3

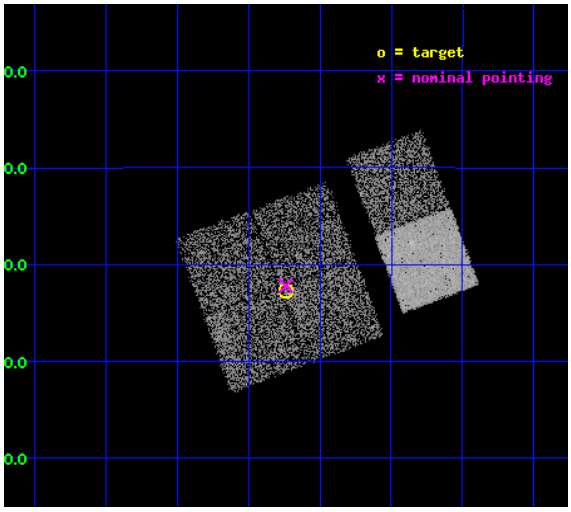
Observation 12836 - L2 Version 2
Chandra X-Ray Center

L2 Processing Date : Feb 5 2012

Contents

1 Front

seq_num	702469	Sequence number
obs_id	12836	Observation id
title	Chandra observations of the faintest hard X-ray sources in the SIX survey	Proposal title
observer	Dr Eugenio Bottacini	Principal investigator
object	SIX-2	Source name
dtycycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	196.059167	Observer's specified target RA [deg]
dec_targ	-5.544889	Observer's specified target Dec [deg]
ra_nom	196.05958999778	Nominal RA [deg]
dec_nom	-5.5368324118019	Nominal Dec [deg]
roll_nom	69.666185435826	Nominal Roll [deg]
revision	2	Processing version of data
ontime	5052.0574390292	Sum of GTIs [s]
livetime	4988.0852457525	Livetime [s]
ontime0	5051.9343190193	Sum of GTIs [s]
ontime1	5051.9753590226	Sum of GTIs [s]
ontime2	5052.0163990259	Sum of GTIs [s]
ontime3	5052.0574390292	Sum of GTIs [s]
ontime6	5052.1395190358	Sum of GTIs [s]
ontime7	5052.0984790325	Sum of GTIs [s]
l2events	36306	Number of level 2 events

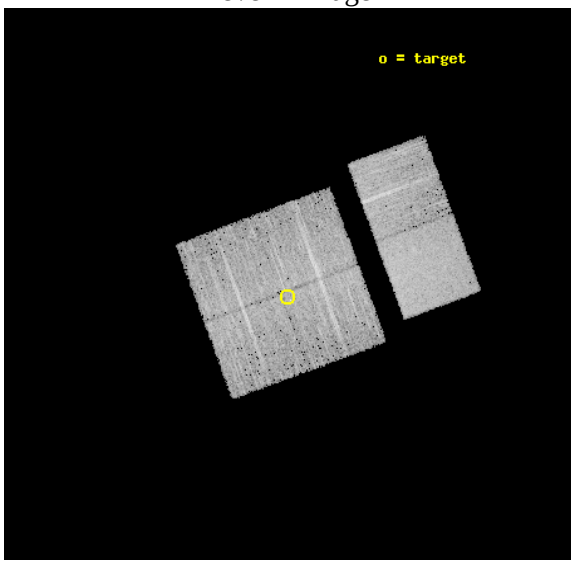


2 OBI

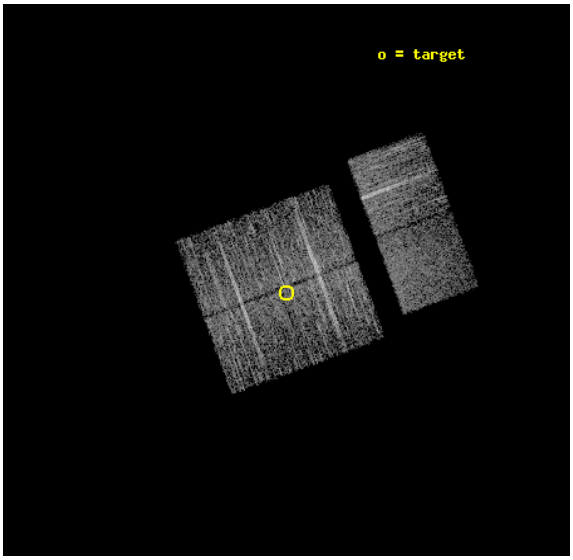
2.1 OBI

2.1.1 Images

Level 1 Image

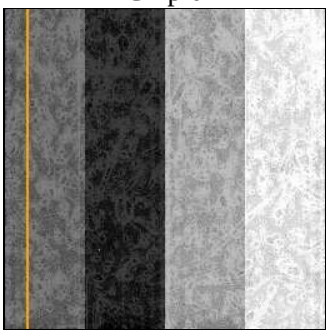


Level 1 Bad Events

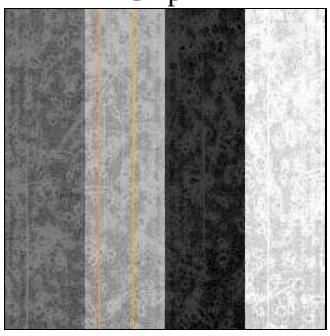


2.1.2 Bias

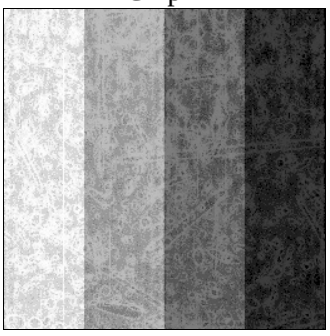
Chip 0



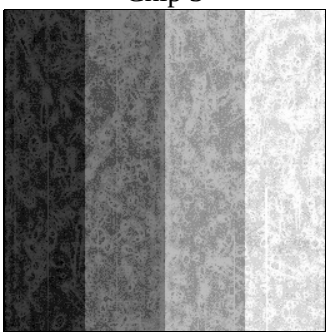
Chip 1



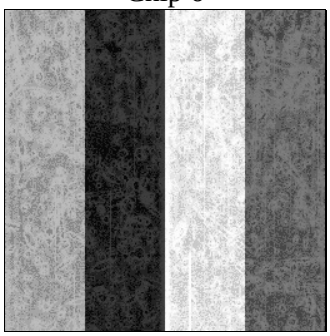
Chip 2



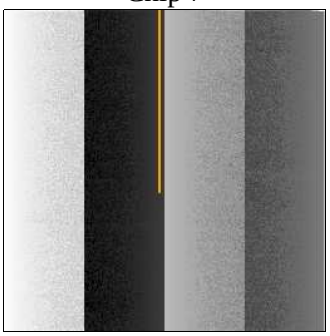
Chip 3



Chip 6



Chip 7



2.1.3 Parameters

obi_num	1	Obi number
ascdsver	8.4.3	Processing system revision
caldbver	4.4.7	
date	2012-02-05T14:23:49	Date and time of file creation
revision	2	Processing version of data

sched_exp_time	5000.000000	[s] Scheduled observation exposure time
ontime	5052.0574390292	Sum of GTIs [s]
ontime0	5051.9343190193	Sum of GTIs [s]
ontime1	5051.9753590226	Sum of GTIs [s]
ontime2	5052.0163990259	Sum of GTIs [s]
ontime3	5052.0574390292	Sum of GTIs [s]
ontime6	5052.1395190358	Sum of GTIs [s]
ontime7	5052.0984790325	Sum of GTIs [s]
l1events	209299	Number of level 1 events

2.1.4 Events

	ccd 0	**ccd 1**	**ccd 2**	**ccd 3**	**ccd 6**	**ccd 7**
level 1 events	31220	31232	34152	33543	35321	43831
rejected events	27276	26749	30342	29642	31138	24163
rejected %	87%	85%	88%	88%	88%	55%

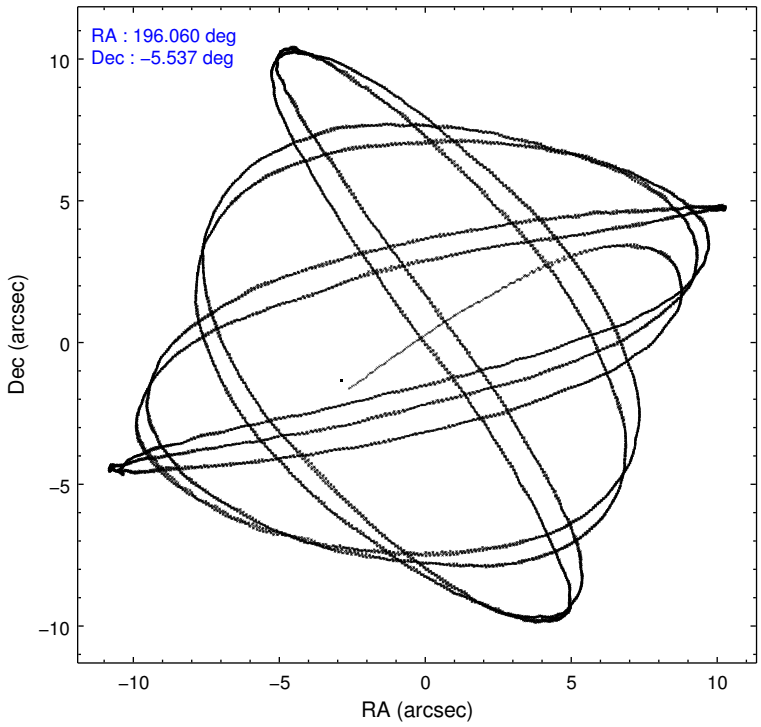
	ccd 0	**ccd 1**	**ccd 2**	**ccd 3**	**ccd 6**	**ccd 7**
grade 0 events	1361	1664	1391	1432	1441	1886
	4%	5%	4%	4%	4%	4%
grade 1 events	22	22	17	24	24	68
	0%	0%	0%	0%	0%	0%
grade 2 events	1020	1061	864	850	945	4152
	3%	3%	2%	2%	2%	9%
grade 3 events	398	421	399	405	443	1732
	1%	1%	1%	1%	1%	3%
grade 4 events	417	412	415	385	397	1699
	1%	1%	1%	1%	1%	3%
grade 5 events	1502	1494	1421	1634	1731	4500
	4%	4%	4%	4%	4%	10%
grade 6 events	751	927	747	833	961	10227
	2%	2%	2%	2%	2%	23%
grade 7 events	25749	25231	28898	27980	29379	19567
	82%	80%	84%	83%	83%	44%

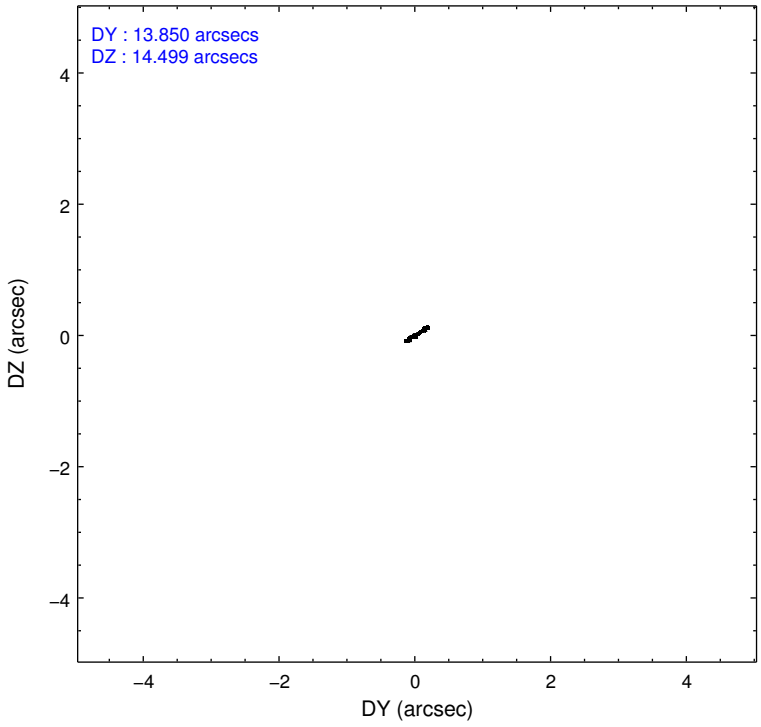
2.2 Compared Parameters

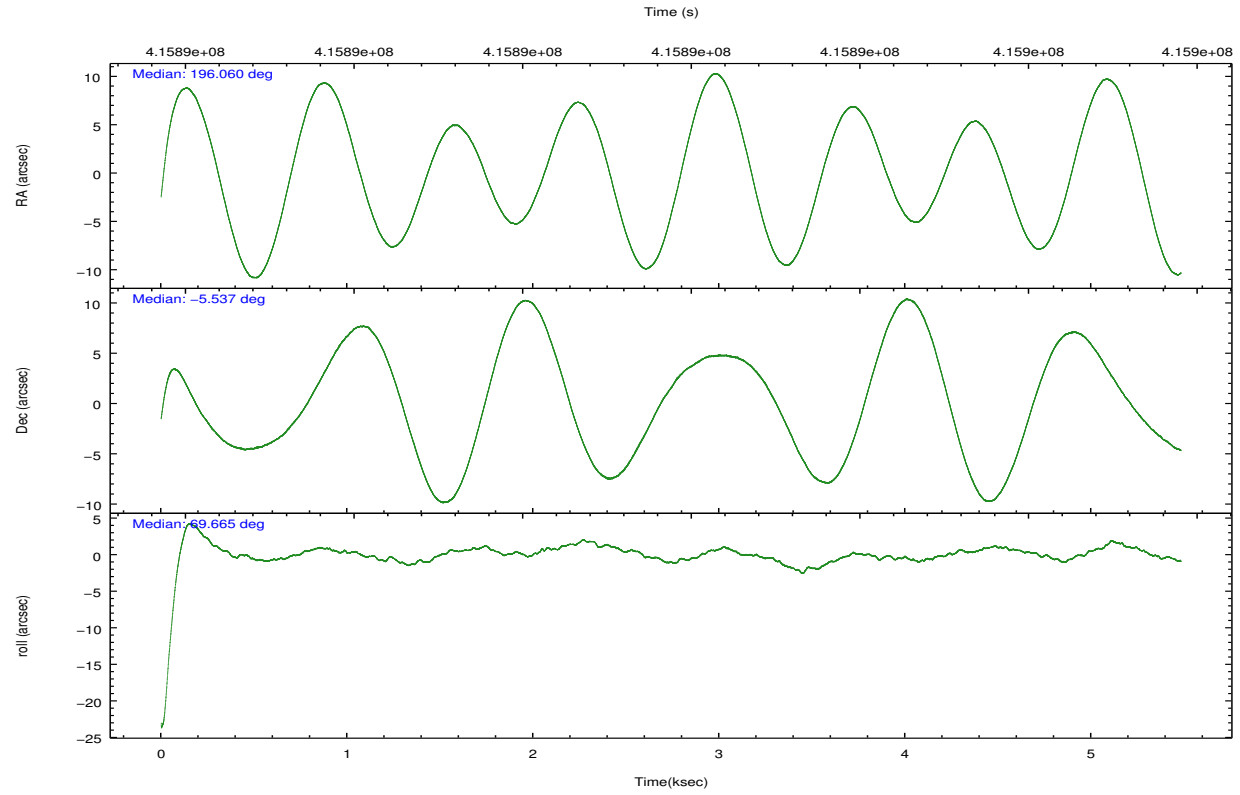
Parameter	Planned	Actual
Instrument	ACIS	ACIS
Detector	ACIS-012367	ACIS-012367
Grating	NONE	NONE
Data mode	VFAINT	VFAINT
Observation mode	POINTING	POINTING
[deg] Pointing RA	196.064346	196.0595899977769
[deg] Pointing Dec	-5.563913	-5.536832411801933
[deg] Pointing Roll	69.458009	69.66618543582609
[mm] SIM focus pos	-0.782348	-0.7809083437167272
[mm] SIM defocus	0	0.001439871863259334
[mm] SIM translation stage pos	-233.592463	-233.5874344608287
[mm] SIM translation stage offset	0	-0.005018542100998502
[s] Observation start time (MET)	415890629.184000	415889475.07799
Observation start date	2011-03-07T13:09:23	2011-03-07T12:51:15
[s] Observation end time (MET)	415895629.184000	415896136.04084
Observation end date	2011-03-07T14:32:43	2011-03-07T14:42:16
Read mode	TIMED	TIMED

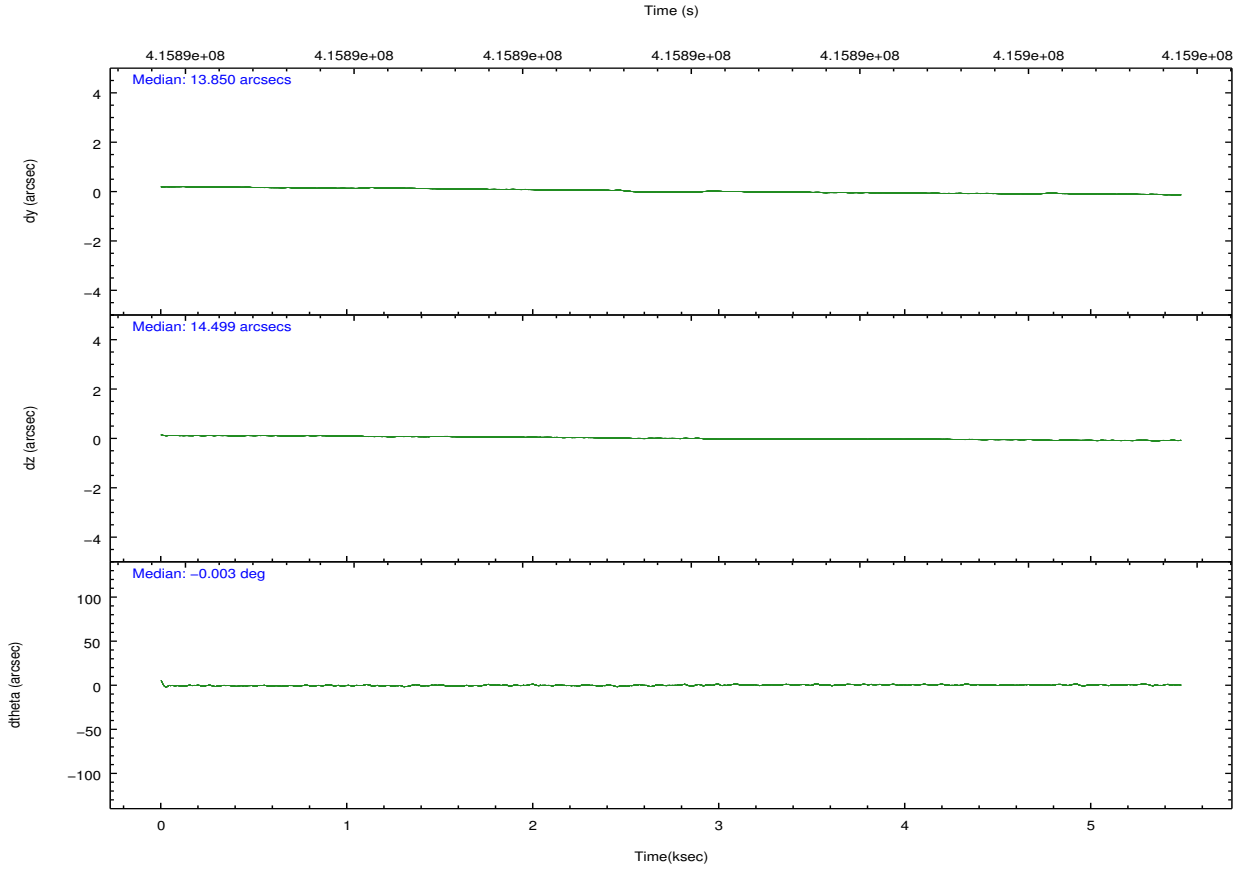
Parameter	Planned	Actual
Obspar format version number	7	7
Obspar file type	PREDICTED	ACTUAL
Obspar update status	NONE	UPDATED
CCD I0 on	Y	Y
CCD I1 on	Y	Y
CCD I2 on	Y	Y
CCD I3 on	Y	Y
CCD S0 on	N	N
CCD S1 on	N	N
CCD S2 on	O1	Y
CCD S3 on	O2	Y
CCD S4 on	N	N
CCD S5 on	N	N
Number of optional ACIS chips dropped	0	0
On-chip summing requested	N	N
Subarray requested	NONE	NONE
Alternating exposures requested	N	N
[s] Primary exposure time	0.000000	3.2

2.3 Aspect


RA : 196.060 deg
Dec : −5.537 deg
Dec (arcsec)
RA (arcsec)
10
5
0
−5
−10


DY : 13.850 arcsecs
DZ : 14.499 arcsecs
DZ (arcsec)
DY (arcsec)
4
2
0
−2
−4


Time (s)
4.1589e+08
4.1589e+08
4.1589e+08
4.1589e+08
4.1589e+08
4.159e+08
4.159e+08
Median: 196.060 deg
RA (arcsec)
Median: −5.537 deg
Dec (arcsec)
Median: 69.665 deg
roll (arcsec)
Time(ksec)

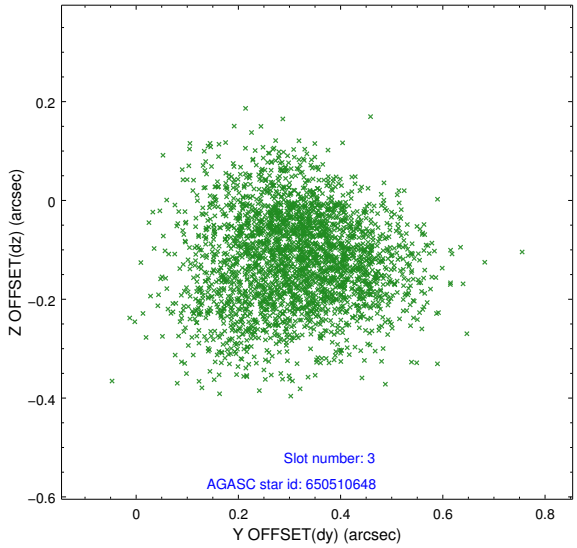

Time (s)
4.1589e+08
4.1589e+08
4.1589e+08
4.1589e+08
4.1589e+08
4.159e+08
4.159e+08
Median: 13.850 arcsecs
dy (arcsec)
Median: 14.499 arcsecs
dz (arcsec)
Median: −0.003 deg
dtheta (arcsec)
Time(ksec)

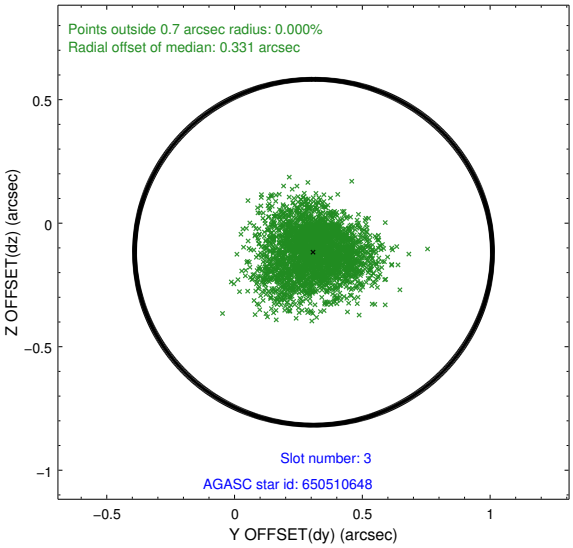
Slot Statistics

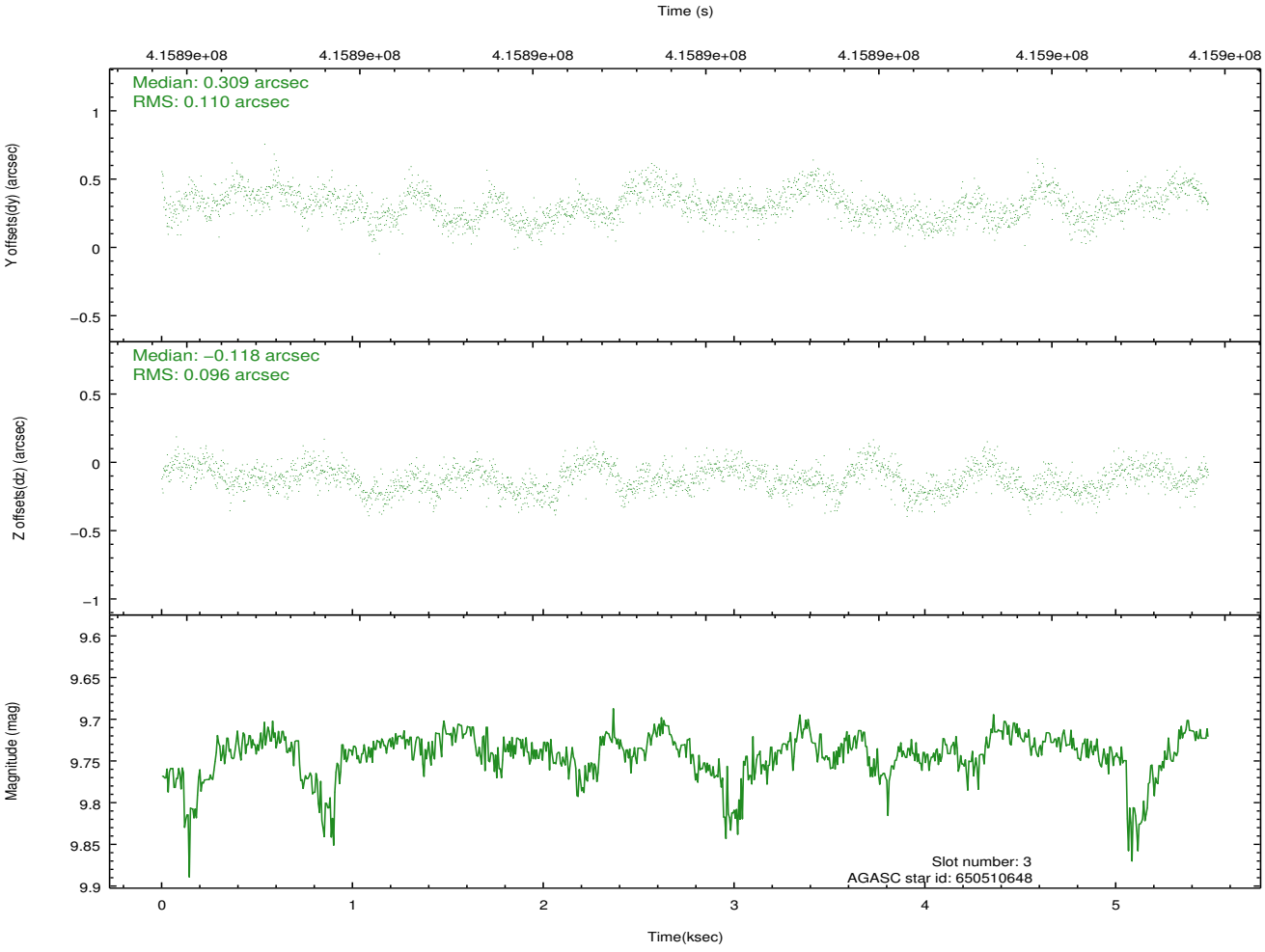
slot	status	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID	ACIS-I-1	7.10	1338	-0.005	-0.005	0.011	0.018	0.000000	0.000000	925.63	-838.09
1	FID	ACIS-I-4	7.00	1338	0.202	0.029	0.009	0.014	0.000000	0.000000	2146.45	1061.22
2	FID	ACIS-I-5	7.08	1338	-0.296	0.046	0.008	0.013	0.000000	0.000000	-1821.29	1060.27
3	GUIDE	650510648	9.74	2675	0.309	-0.118	0.157	0.248	195.798073	-6.121992	-2215.55	188.89
4	GUIDE	650510736	8.35	2676	-0.063	0.081	0.084	0.140	196.516162	-5.135340	2011.40	-975.12
5	GUIDE	650511120	8.72	2672	-0.096	0.124	0.082	0.133	196.383246	-5.191557	1657.14	-600.43
6	GUIDE	650517336	7.89	2676	-0.026	0.136	0.078	0.120	196.358568	-6.223536	-1853.52	-1819.41
7	GUIDE	650520296	7.60	2675	-0.129	-0.215	0.074	0.122	195.956898	-5.161825	1216.65	869.08

2.4 Star Slots

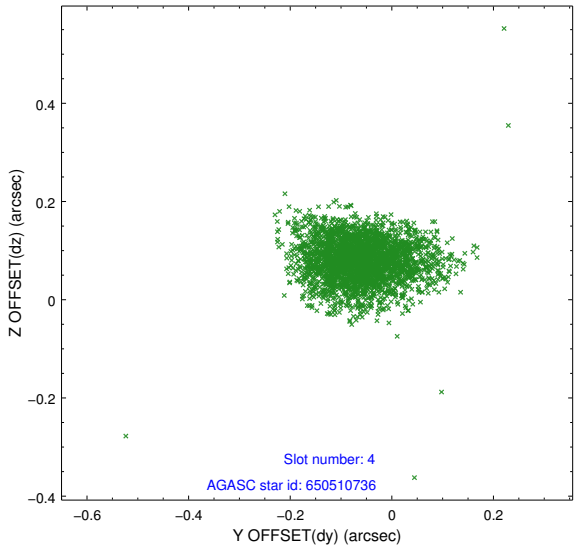
2.4.1 Slot 3

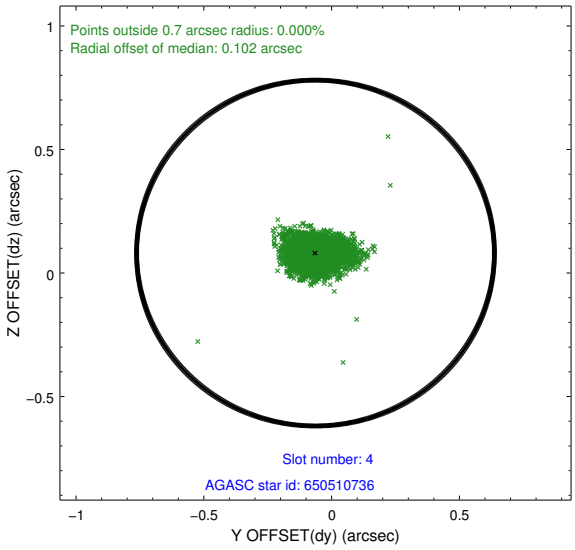


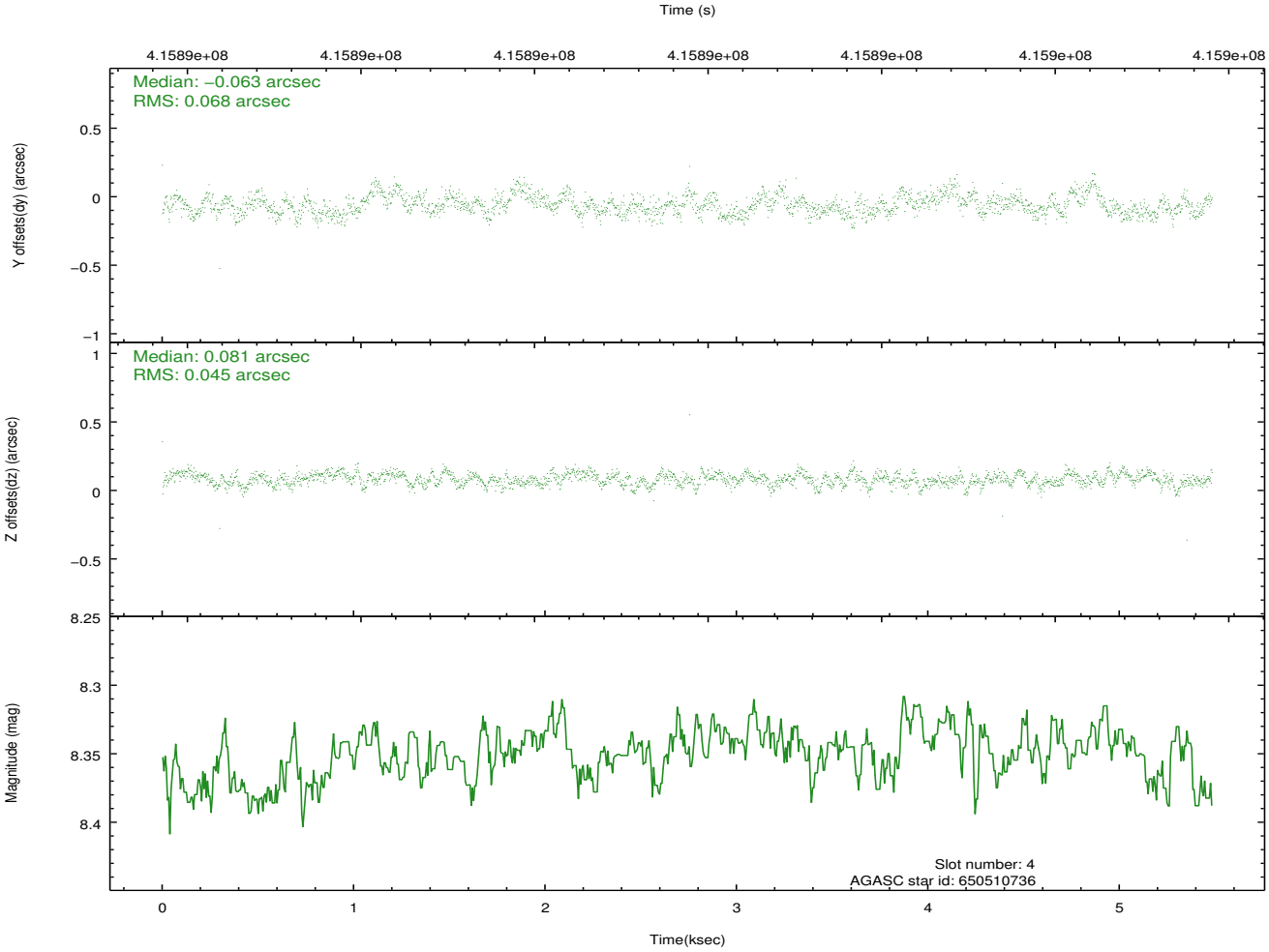




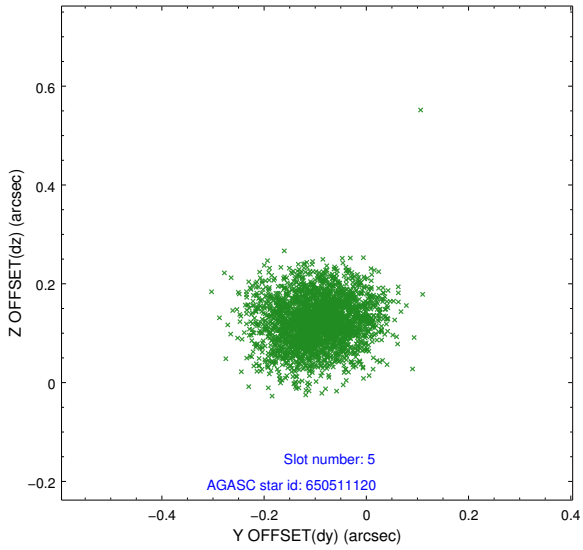
2.4.2 Slot 4

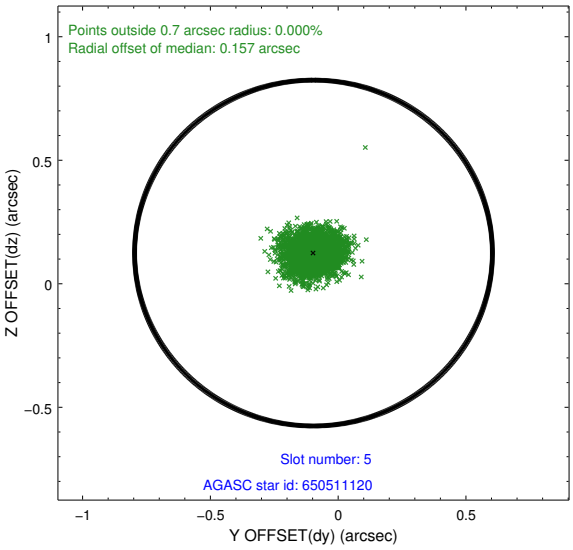

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 4
AGASC star id: 650510736

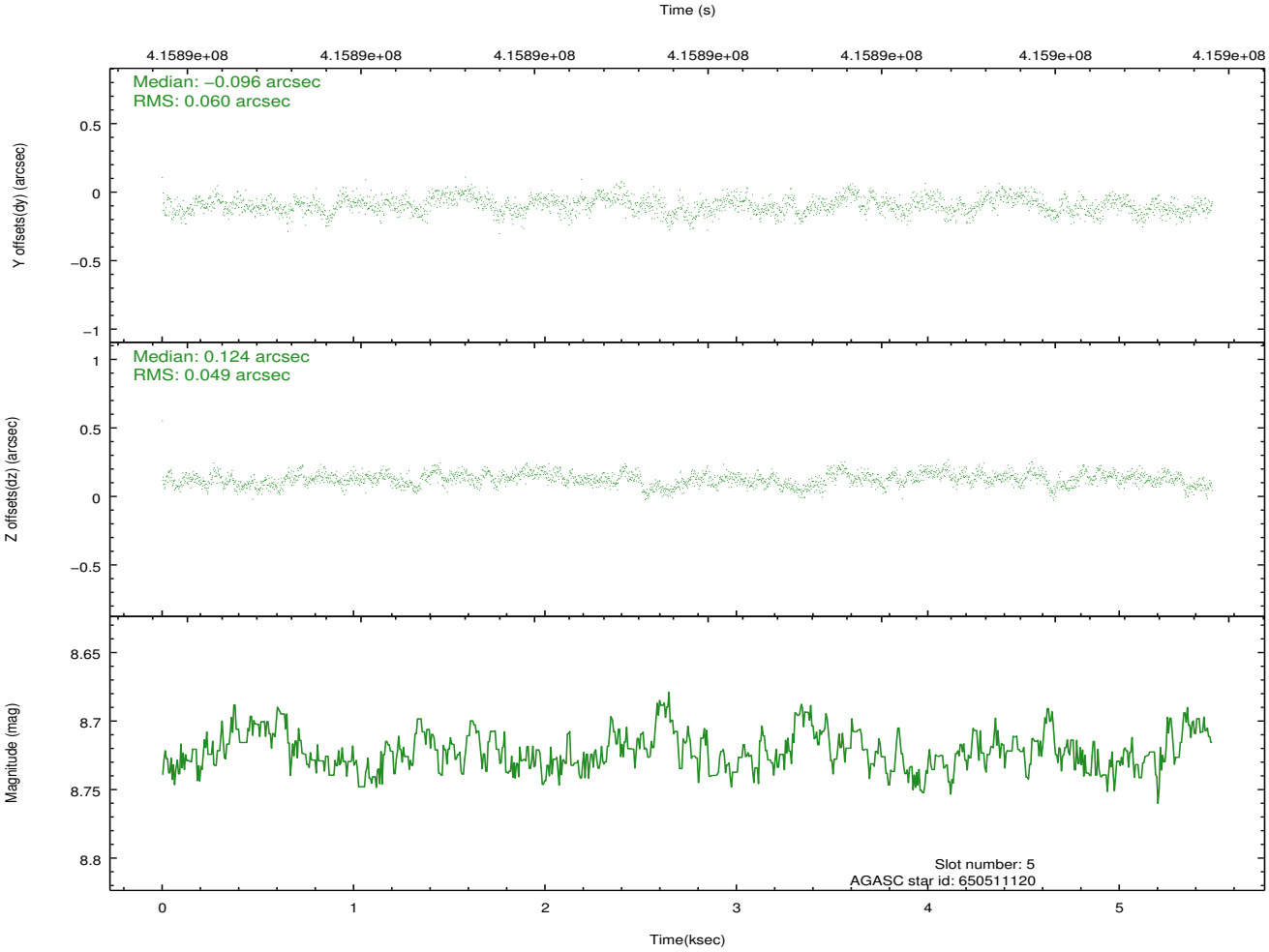

Points outside 0.7 arcsec radius: 0.000%
Radial offset of median: 0.102 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 4
AGASC star id: 650510736


Time (s)
Median: −0.063 arcsec
RMS: 0.068 arcsec
Y offsets(dy) (arcsec)
Median: 0.081 arcsec
RMS: 0.045 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number: 4
AGASC star id: 650510736
Time(ksec)

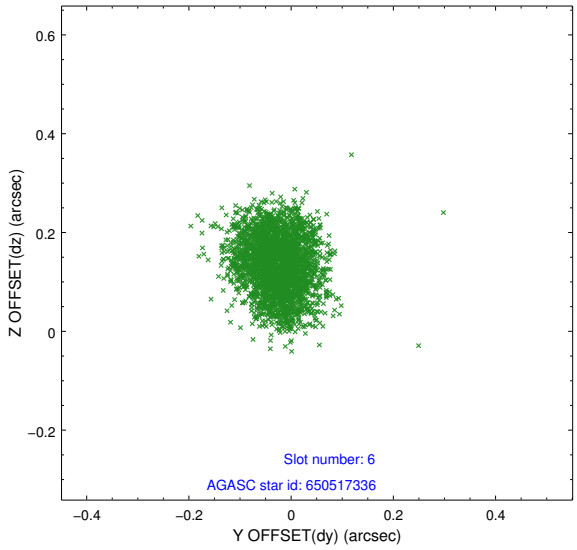
2.4.3 Slot 5

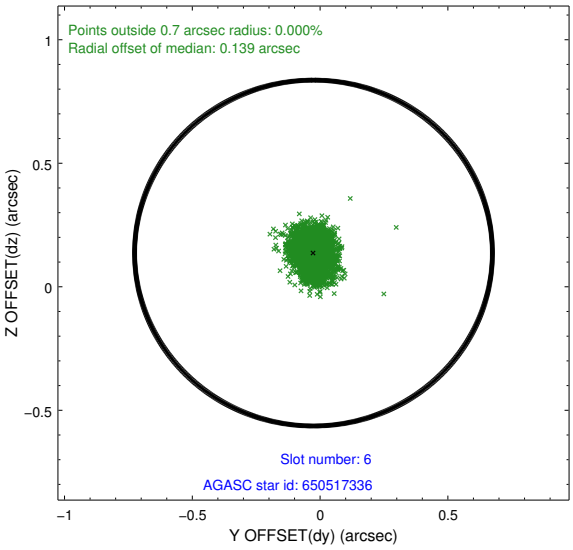

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 5
AGASC star id: 650511120

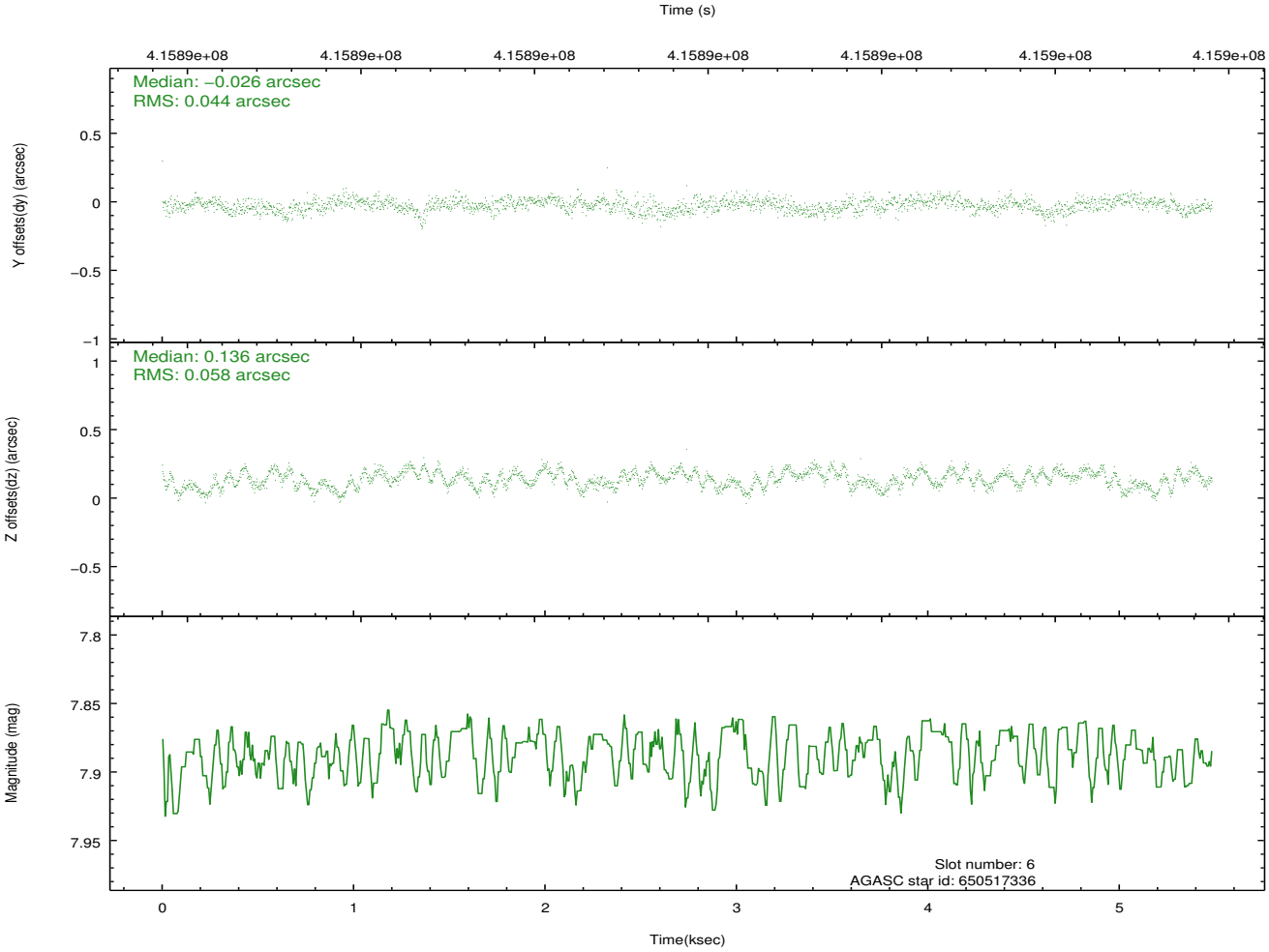

Points outside 0.7 arcsec radius: 0.000%
Radial offset of median: 0.157 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 5
AGASC star id: 650511120


Time (s)
Median: −0.096 arcsec
RMS: 0.060 arcsec
Y offsets(dy) (arcsec)
Median: 0.124 arcsec
RMS: 0.049 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number: 5
AGASC star id: 650511120
Time(ksec)

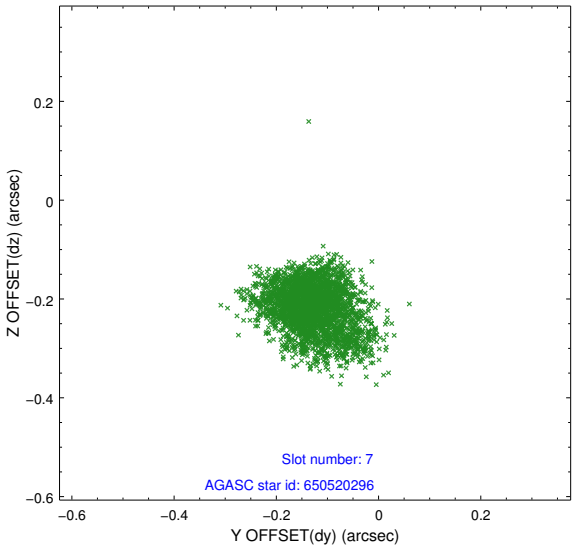
2.4.4 Slot 6

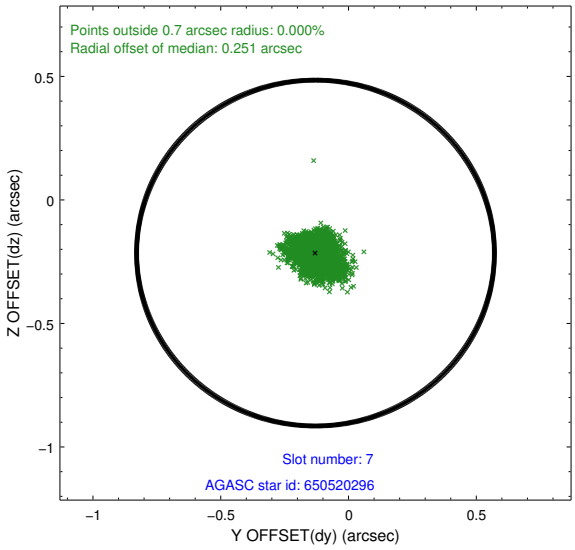

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 6
AGASC star id: 650517336

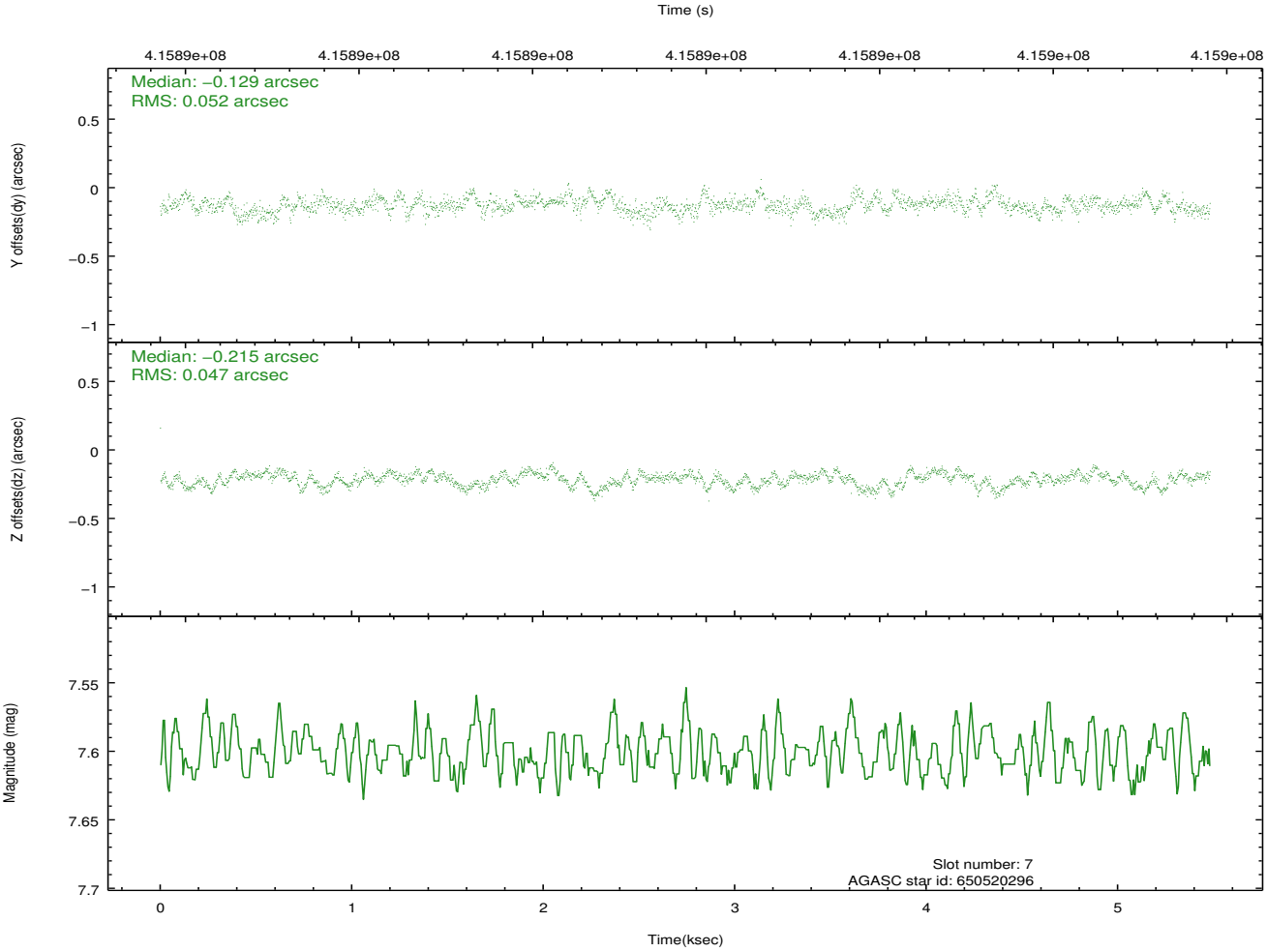

Points outside 0.7 arcsec radius: 0.000%
Radial offset of median: 0.139 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 6
AGASC star id: 650517336


Time (s)
Median: −0.026 arcsec
RMS: 0.044 arcsec
Y offsets(dy) (arcsec)
Median: 0.136 arcsec
RMS: 0.058 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number: 6
AGASC star id: 650517336
Time(ksec)

2.4.5 Slot 7

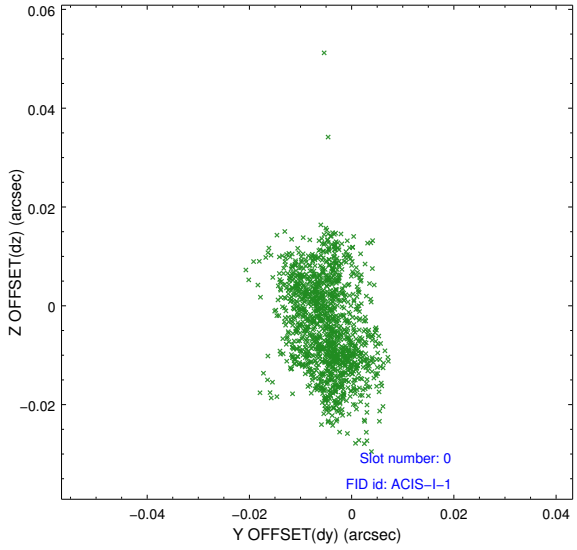

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 7
AGASC star id: 650520296

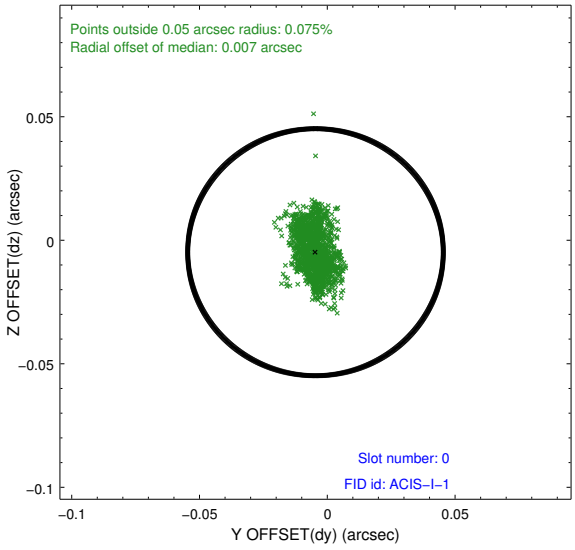

Points outside 0.7 arcsec radius: 0.000%
Radial offset of median: 0.251 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 7
AGASC star id: 650520296

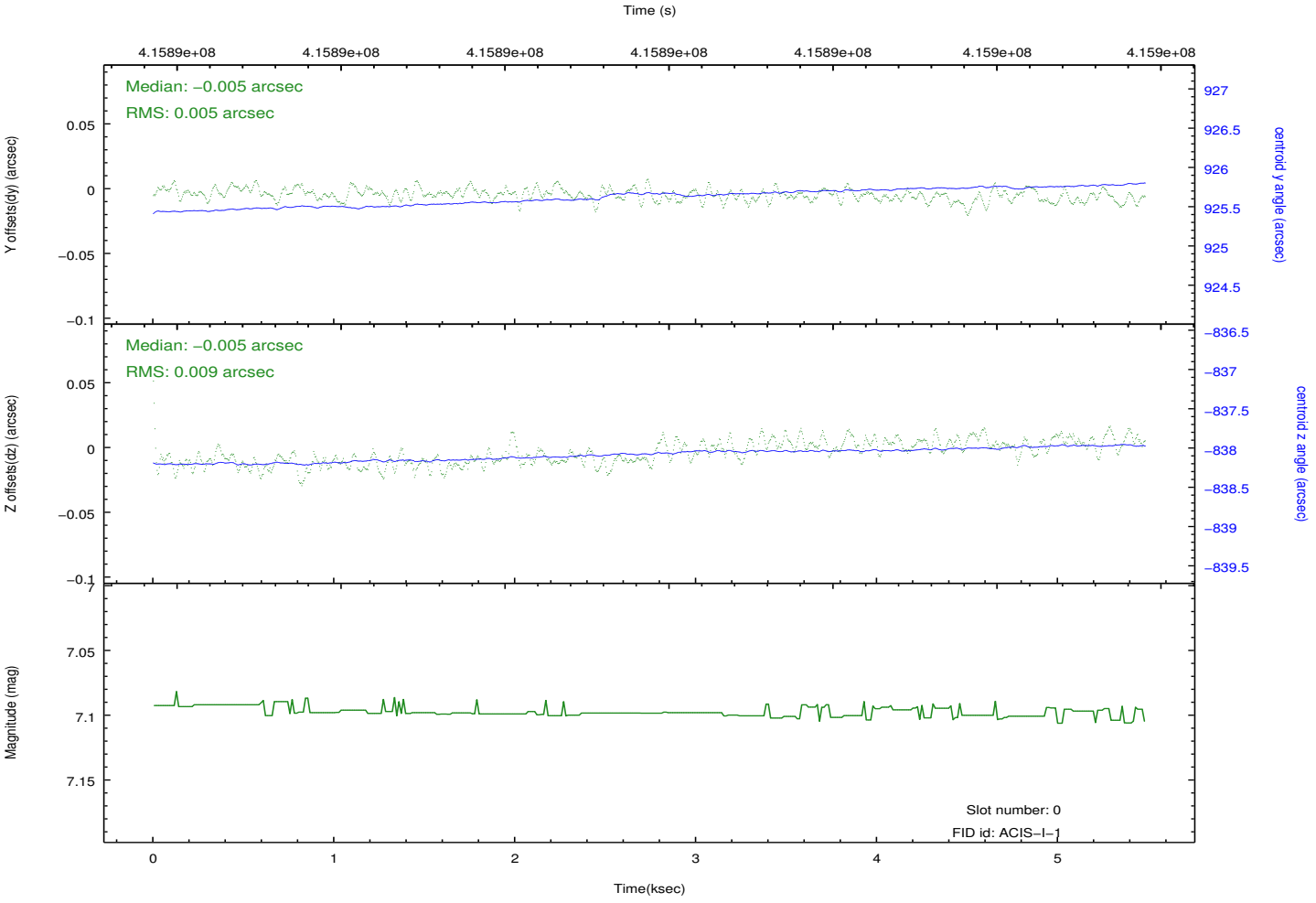

Time (s)
Median: −0.129 arcsec
RMS: 0.052 arcsec
Y offsets(dy) (arcsec)
Median: −0.215 arcsec
RMS: 0.047 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number: 7
AGASC star id: 650520296
Time(ksec)

2.5 FID Slots

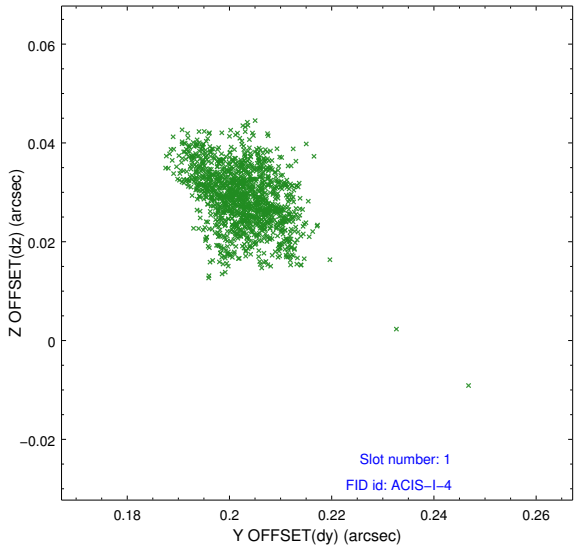
2.5.1 Slot 0

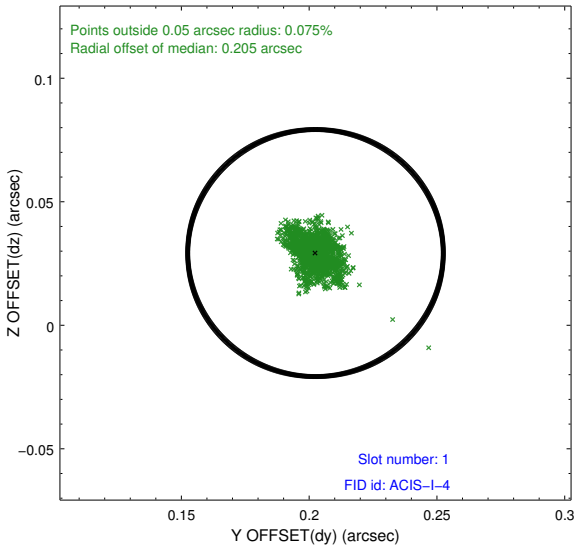


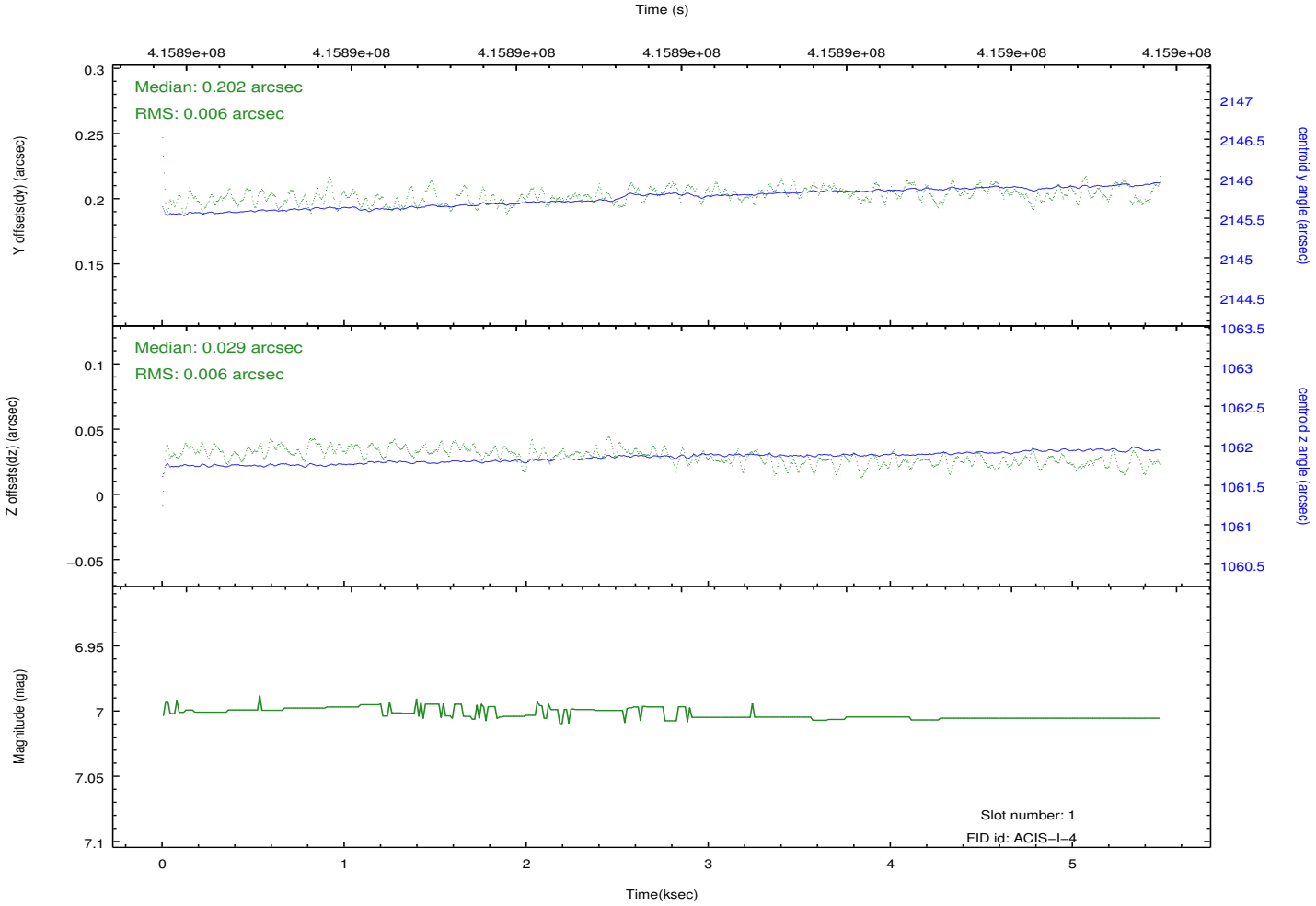




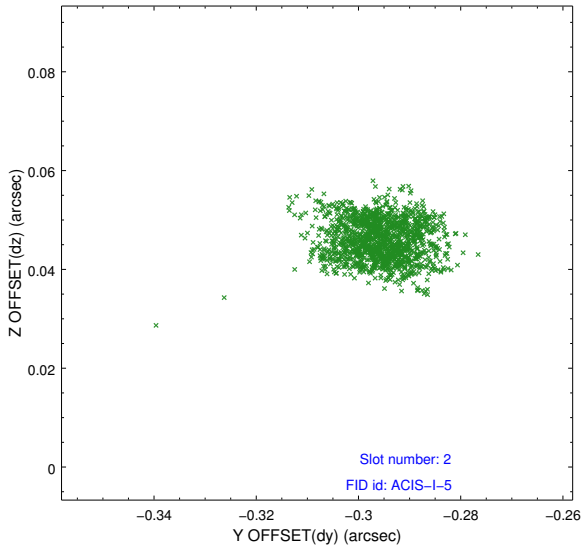
2.5.2 Slot 1

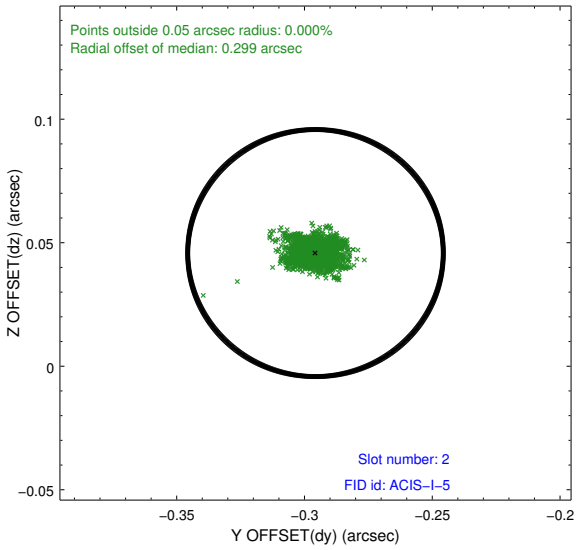

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 1
FID id: ACIS−I−4

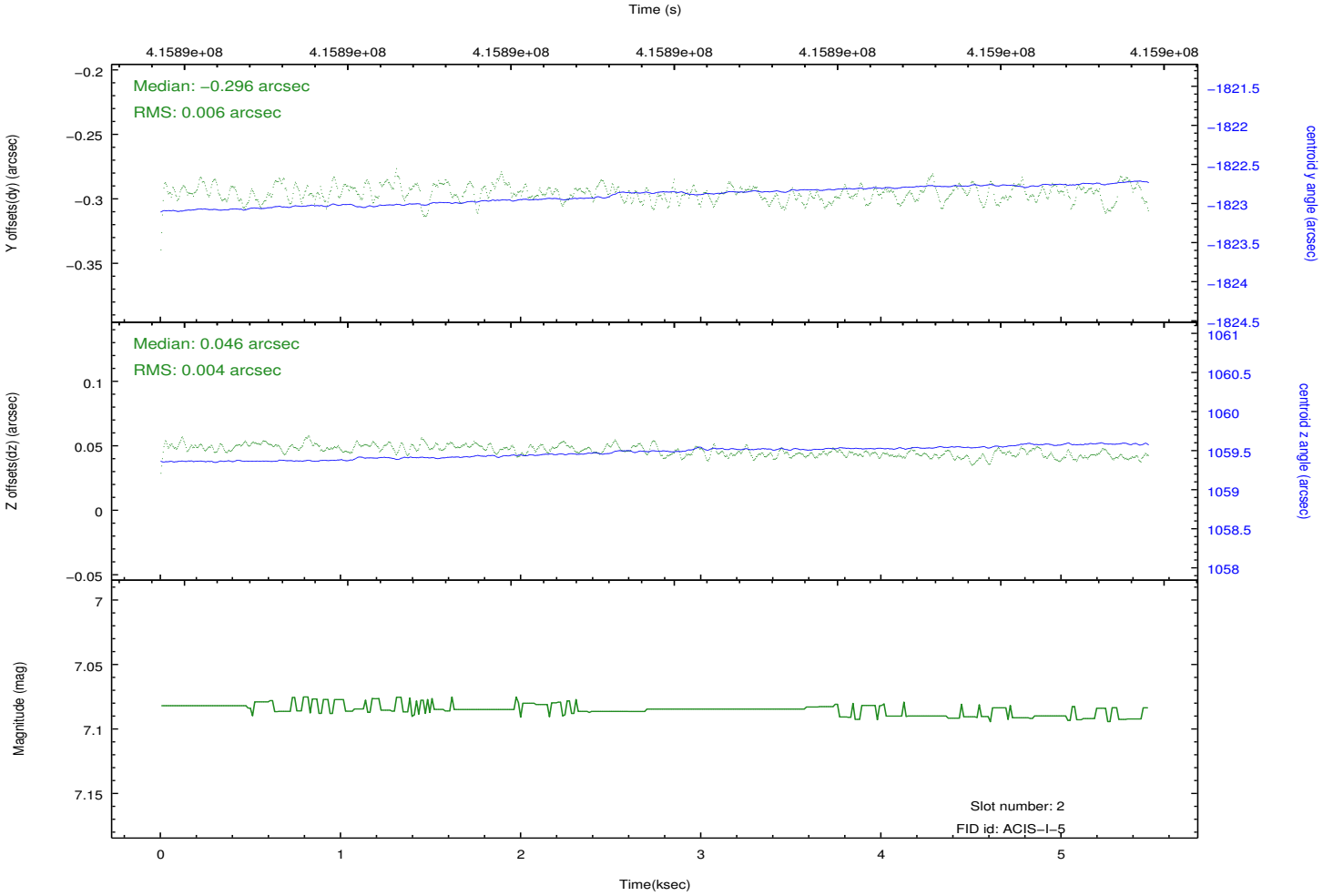

Points outside 0.05 arcsec radius: 0.075%
Radial offset of median: 0.205 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 1
FID id: ACIS−I−4


Time (s)
Median: 0.202 arcsec
RMS: 0.006 arcsec
Y offsets(dy) (arcsec)
centroid y angle (arcsec)
Median: 0.029 arcsec
RMS: 0.006 arcsec
Z offsets(dz) (arcsec)
centroid z angle (arcsec)
Magnitude (mag)
Slot number: 1
FID id: ACIS−I−4
Time(ksec)

2.5.3 Slot 2


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


Points outside 0.05 arcsec radius: 0.000%
Radial offset of median: 0.299 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 2
FID id: ACIS−I−5


Time (s)
Median: −0.296 arcsec
RMS: 0.006 arcsec
Y offsets(dy) (arcsec)
centroid y angle (arcsec)
Median: 0.046 arcsec
RMS: 0.004 arcsec
Z offsets(dz) (arcsec)
centroid z angle (arcsec)
Magnitude (mag)
Slot number: 2
FID id: ACIS−I−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	5.0520574388504

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.