V&V Reference Report
L2 ASCDS Version : 10.9.1

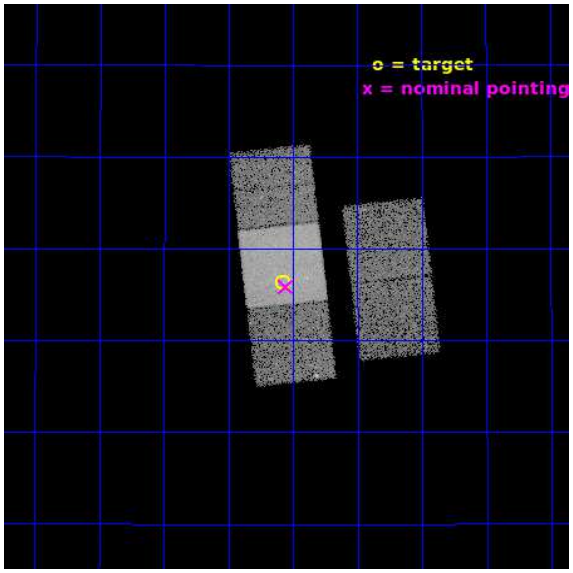
Observation 6409 - L2 Version 4
Chandra X-Ray Center

L2 Processing Date : Oct 12 2020

Contents

1 Front

seq_num	200384	Sequence number
obs_id	6409	Observation id
title	DG Tauri: A T Tauri Star with an X-Ray Jet?	Proposal title
observer	Prof. Manuel Guedel	Principal investigator
object	DG Tau	Source name
dtycycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	66.77	Observer's specified target RA [deg]
dec_targ	26.104694	Observer's specified target Dec [deg]
ra_nom	66.763695017661	Nominal RA [deg]
dec_nom	26.09781100557	Nominal Dec [deg]
roll_nom	263.7593935651	Nominal Roll [deg]
revision	4	Processing version of data
ontime	16467.199968308	Sum of GTIs [s]
livetime	16252.043877746	Livetime [s]
ontime2	16464.058978051	Sum of GTIs [s]
ontime3	16467.199968308	Sum of GTIs [s]
ontime6	16467.199968308	Sum of GTIs [s]
ontime7	16467.199968308	Sum of GTIs [s]
ontime8	16460.918137312	Sum of GTIs [s]
l2events	92208	Number of level 2 events

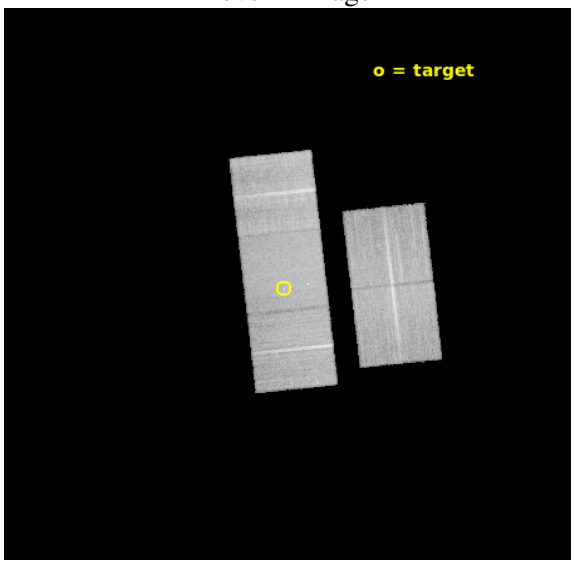


2 OBI

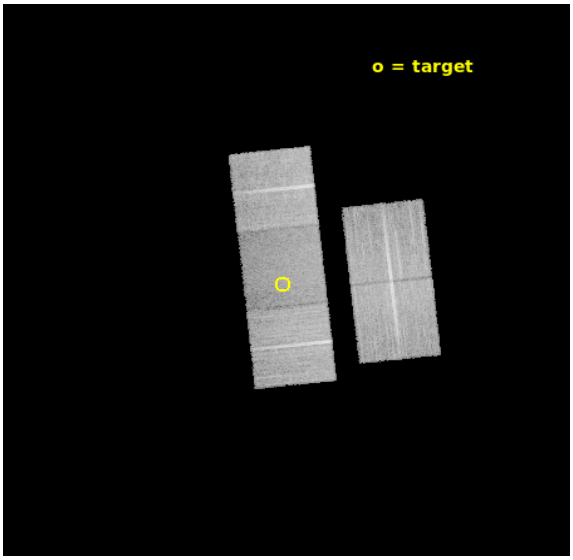
2.1 OBI

2.1.1 Images

Level 1 Image

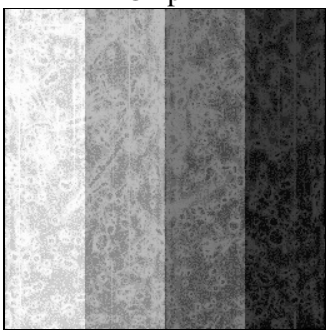


Level 1 Bad Events

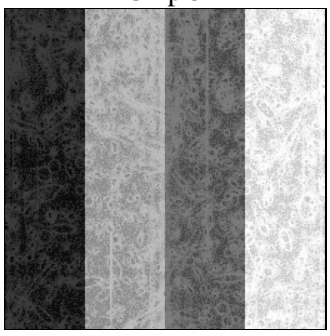


2.1.2 Bias

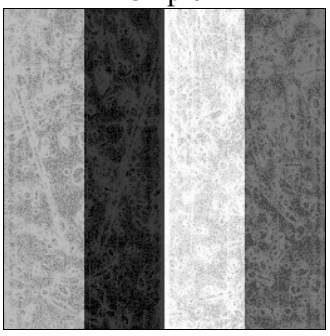
Chip 2



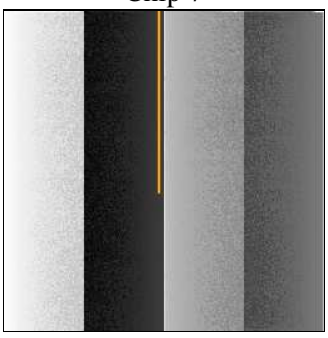
Chip 3



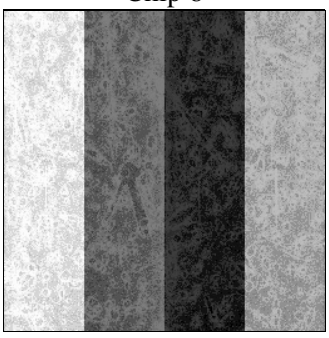
Chip 6



Chip 7



Chip 8



2.1.3 Parameters

obi_num	0	Obi number
ascdsver	10.9.1	Processing system revision
caldbver	4.9.2	
date	2020-10-12T05:09:06	Date and time of file creation
revision	4	Processing version of data

sched_exp_time	16300.000000	[s] Scheduled observation exposure time
ontime	16467.199968308	Sum of GTIs [s]
ontime2	16464.058978051	Sum of GTIs [s]
ontime3	16467.199968308	Sum of GTIs [s]
ontime6	16467.199968308	Sum of GTIs [s]
ontime7	16467.199968308	Sum of GTIs [s]
ontime8	16460.918137312	Sum of GTIs [s]
l1events	623517	Number of level 1 events

2.1.4 Events

	ccd 2	ccd 3	ccd 6	ccd 7	ccd 8
level 1 events	119968	113303	119489	125988	144769
rejected events	109508	103192	107834	70885	112958
rejected %	91%	91%	90%	56%	78%

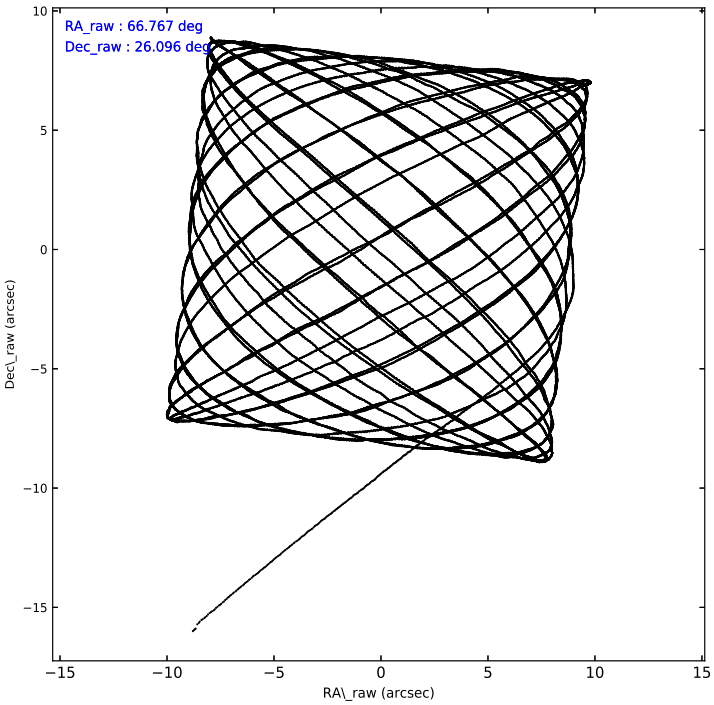
	ccd 2	ccd 3	ccd 6	ccd 7	ccd 8
grade 0 events	3801	3585	4246	5062	9829
	3%	3%	3%	4%	6%
grade 1 events	47	62	45	94	107
	0%	0%	0%	0%	0%
grade 2 events	2577	2328	2715	11583	7523
	2%	2%	2%	9%	5%
grade 3 events	1214	1248	1349	5486	3673
	1%	1%	1%	4%	2%
grade 4 events	1234	1229	1310	5457	3486
	1%	1%	1%	4%	2%
grade 5 events	3534	4487	4673	13527	6783
	2%	3%	3%	10%	4%
grade 6 events	2019	2124	2498	29698	8649
	1%	1%	2%	23%	5%
grade 7 events	105542	98240	102653	55081	104719
	87%	86%	85%	43%	72%

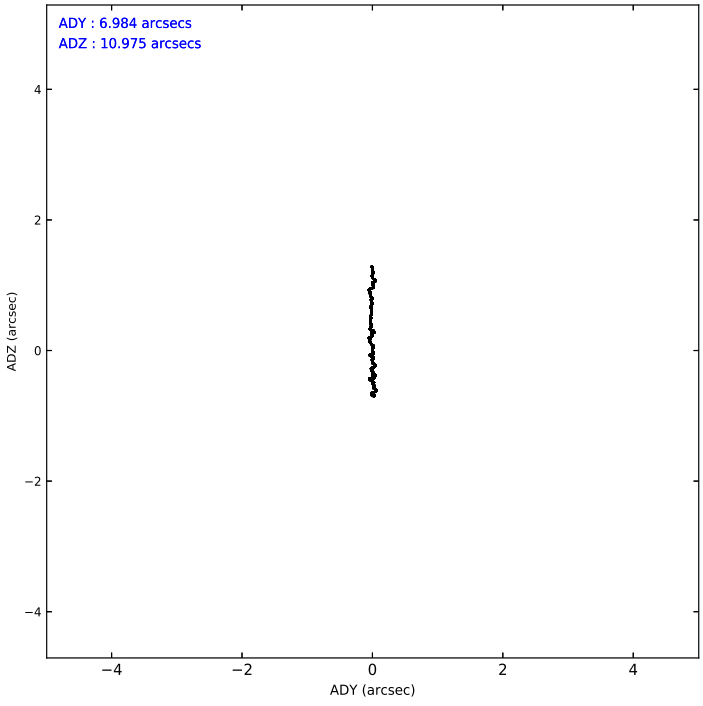
2.2 Compared Parameters

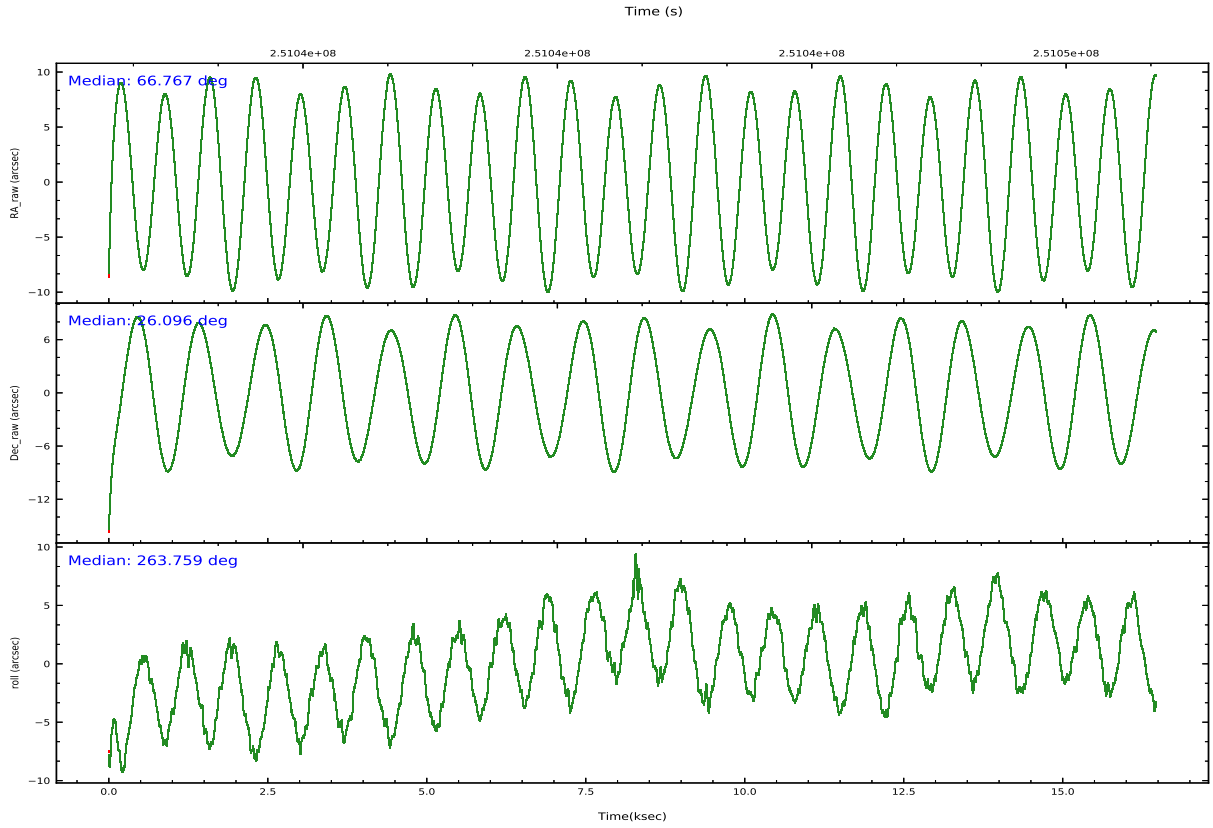
Parameter	Planned	Actual
Instrument	ACIS	ACIS
Detector	ACIS-23678	ACIS-23678
Grating	NONE	NONE
Data mode	VFAINT	VFAINT
Observation mode	POINTING	POINTING
[deg] Pointing RA	66.754376	66.76369501766099
[deg] Pointing Dec	26.120185	26.09781100557
[deg] Pointing Roll	263.606880	263.7593935651
[mm] SIM focus 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)	251033117.184000	251031794.3748
Observation start date	2005-12-15T11:24:13	2005-12-15T11:03:14
[s] Observation end time (MET)	251049417.184000	251050621.06317
Observation end date	2005-12-15T15:55:53	2005-12-15T16:17:01
Read mode	TIMED	TIMED

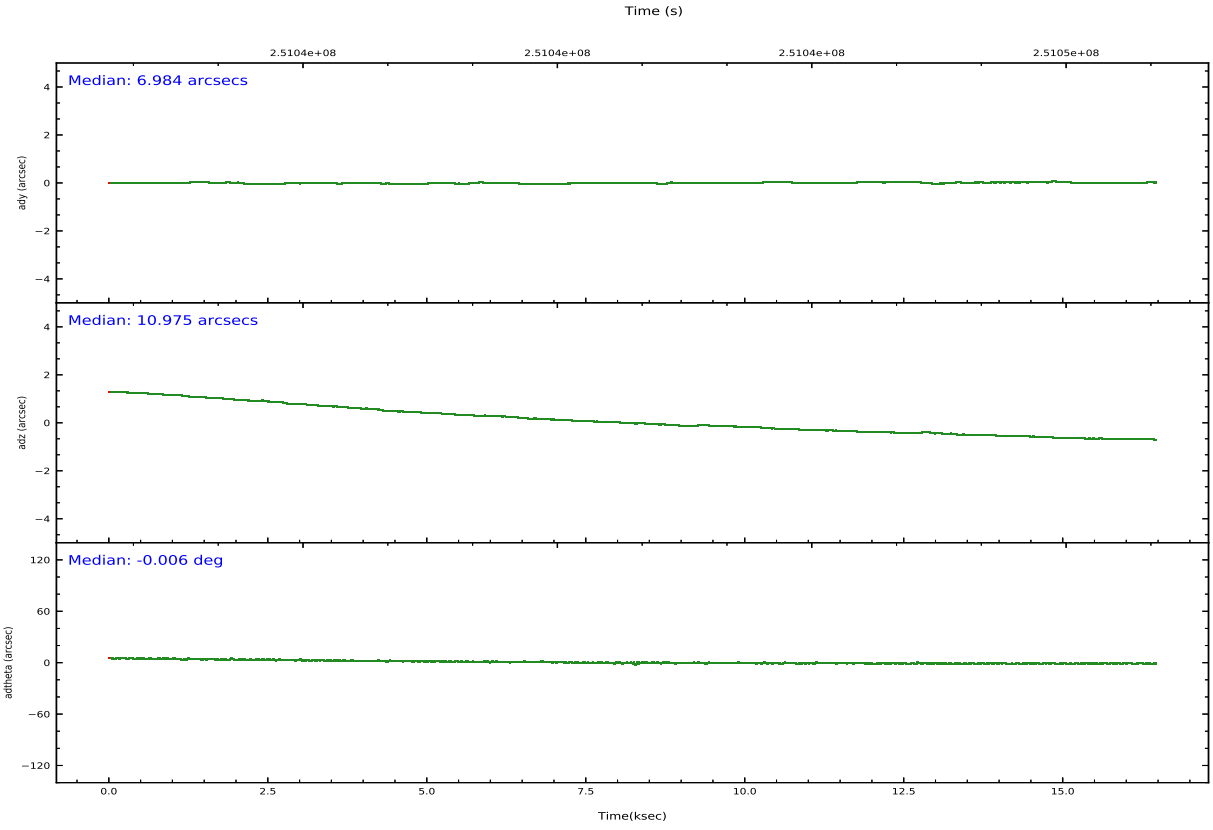
Parameter	Planned	Actual
Obspar version number	8	8
Obspar file type	PREDICTED	ACTUAL
Obspar update status	NONE	UPDATED
Number of optional ACIS chips dropped	0	0
On-chip summing requested	N	N
Subarray requested	NONE	NONE
Alternating exposures requested	N	N
[s] Primary exposure time	0.000000	3.1

2.3 Aspect


RA_raw : 66.767 deg
Dec_raw : 26.096 deg
Dec_raw (arcsec)
RA_raw (arcsec)
10
5
0
−5
−10
−15
−15
−10
−5
0
5
10
15


ADY : 6.984 arcsecs
ADZ : 10.975 arcsecs
ADZ (arcsec)
ADY (arcsec)
4
2
0
−2
−4
−4
−2
0
2
4


Time (s)
2.5104e+08
2.5104e+08
2.5104e+08
2.5105e+08
Median: 66.767 deg
RA_raw (arcsec)
Median: 26.096 deg
Dec_raw (arcsec)
Median: 263.759 deg
roll (arcsec)
Time(ksec)

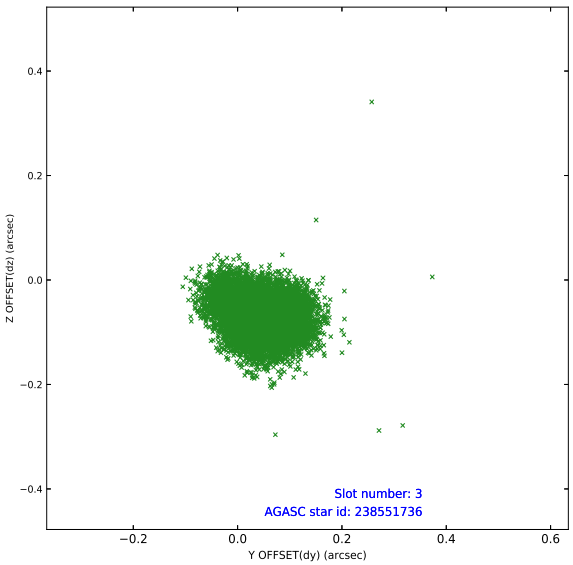

Time (s)
2.5104e+08
2.5104e+08
2.5104e+08
2.5105e+08
Median: 6.984 arcsecs
ady (arcsec)
Median: 10.975 arcsecs
adz (arcsec)
Median: -0.006 deg
adtheta (arcsec)
Time(ksec)

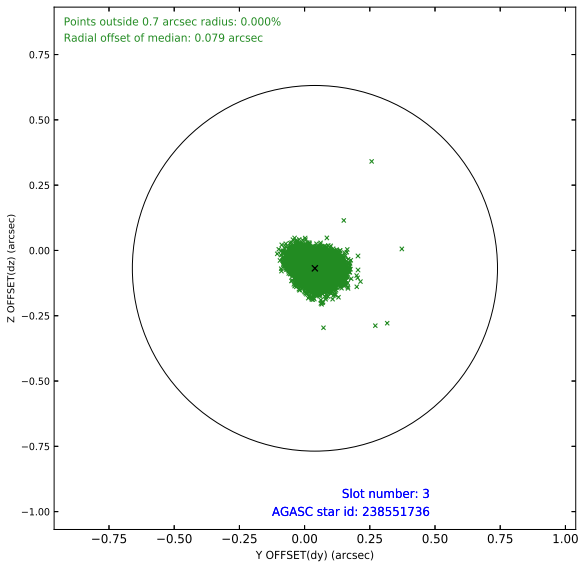
Slot Statistics

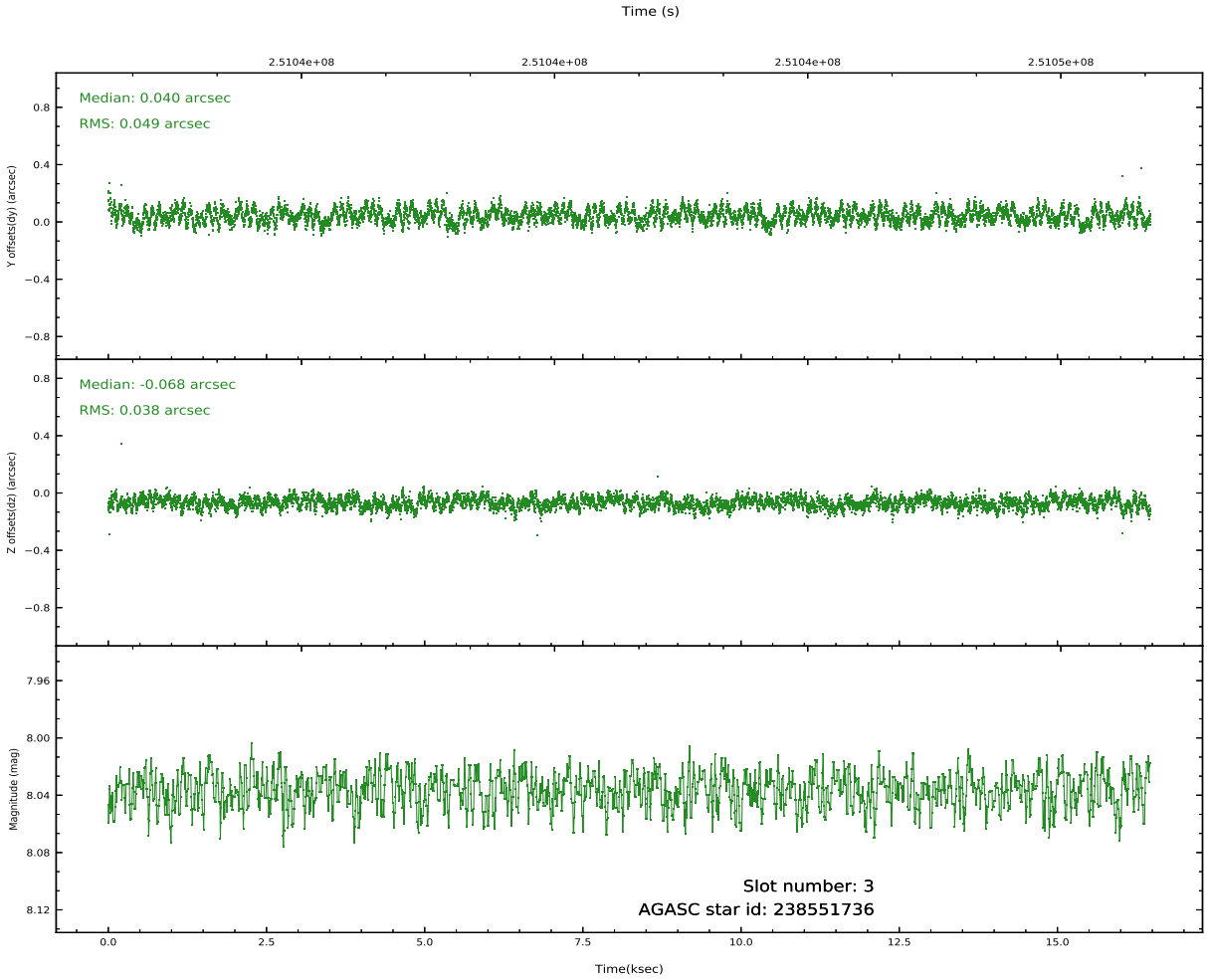
ot	status	used	id	mag	n_pts	frac_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mea
0	FID		ACIS-S-2	7.10	4017	1.000	-0.085	-0.065	0.012	0.027	0.000000	0.000000	-759.76	-1732
1	FID		ACIS-S-4	7.21	4018	1.000	0.157	0.058	0.011	0.019	0.000000	0.000000	2153.58	176
2	FID		ACIS-S-5	7.23	4017	1.000	-0.105	0.015	0.009	0.022	0.000000	0.000000	-1812.35	169
3	GUIDE	used	238551736	8.04	8035	1.000	0.040	-0.068	0.067	0.103	66.295103	25.749175	1491.15	-1331
4	GUIDE	used	238552952	8.63	8031	1.000	-0.002	-0.004	0.076	0.128	66.435210	25.897396	911.56	-938
5	GUIDE	used	238560976	7.90	8031	1.000	-0.028	0.018	0.058	0.100	66.476513	25.572013	2061.16	-676
6	GUIDE	used	240257560	8.71	8031	1.000	0.000	0.038	0.066	0.108	66.998185	25.718771	1347.87	946
7	GUIDE	used	240781424	9.17	8029	1.000	-0.004	0.011	0.092	0.151	67.378197	26.671551	-2200.32	1773

2.4 Star Slots

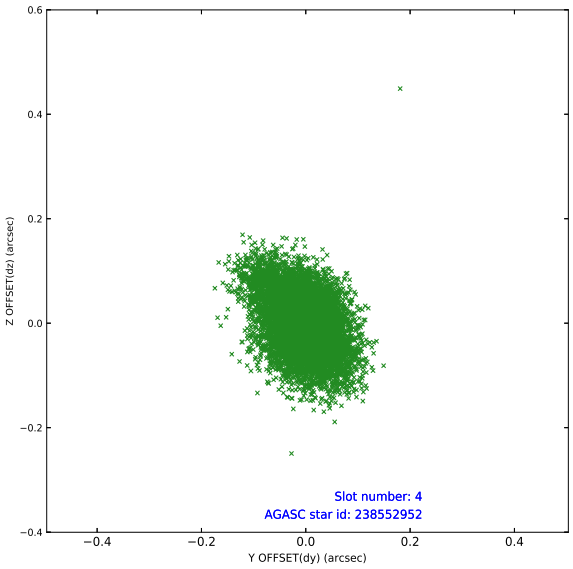
2.4.1 Slot 3

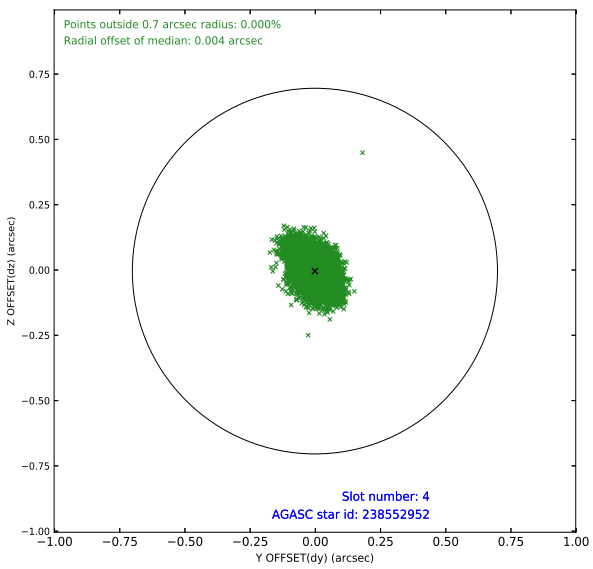


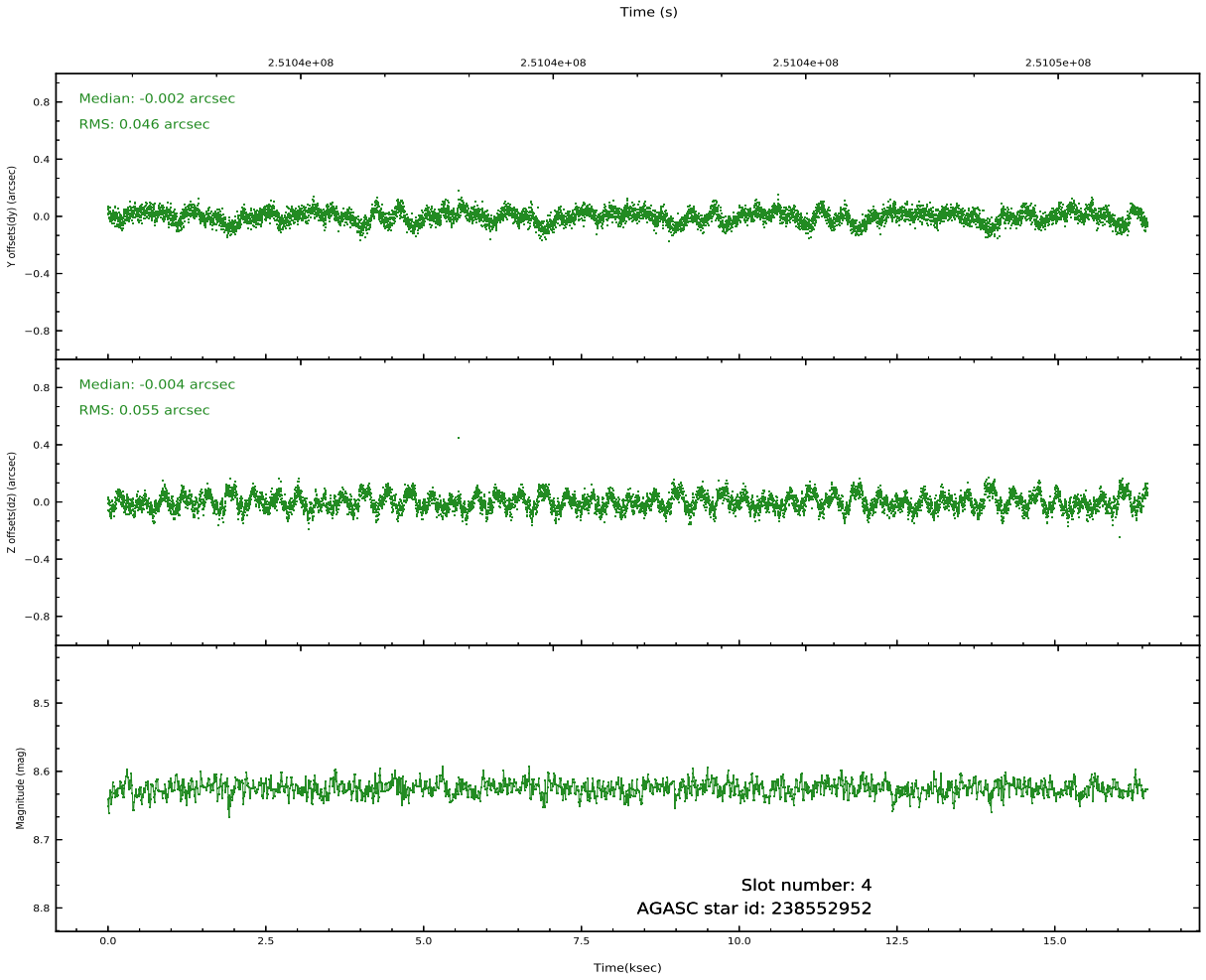




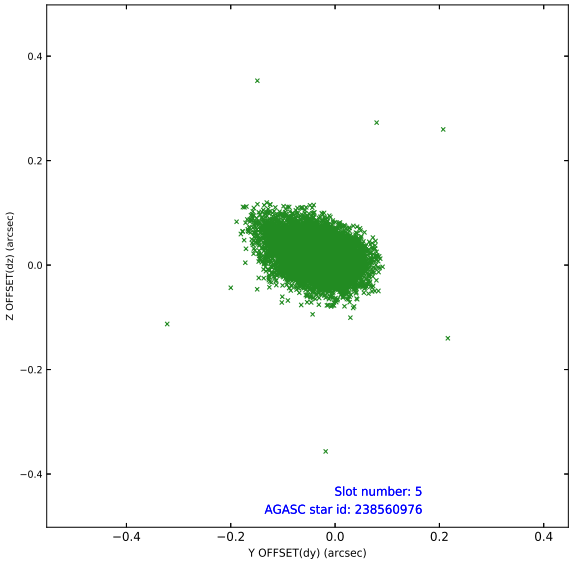
2.4.2 Slot 4

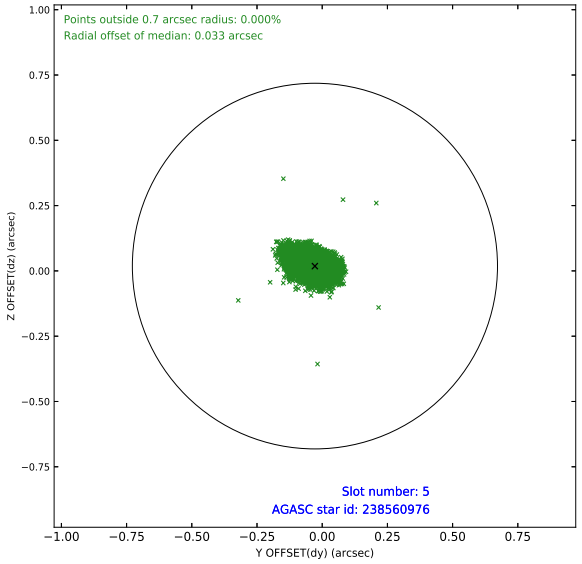

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 4
AGASC star id: 238552952

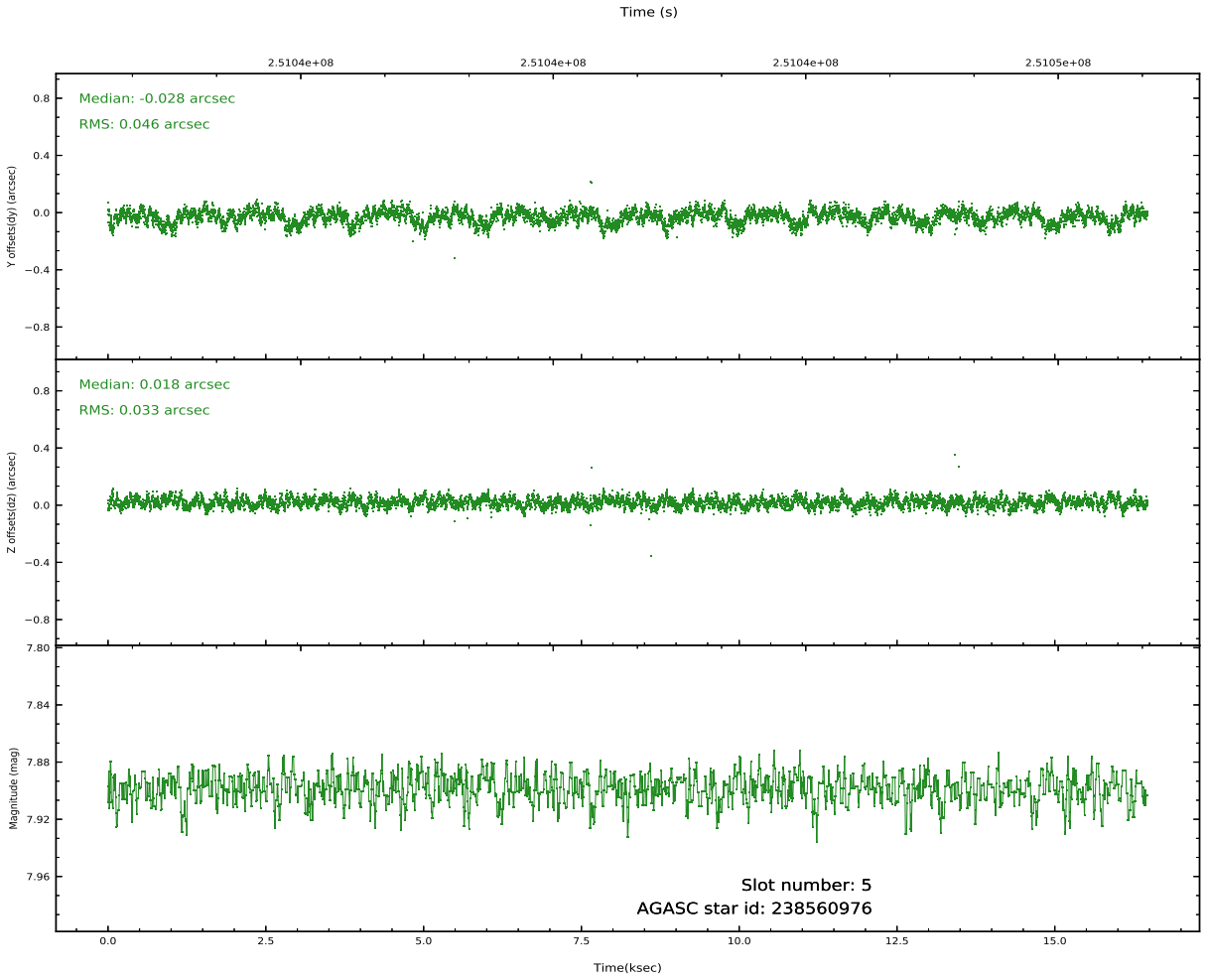

Points outside 0.7 arcsec radius: 0.000%
Radial offset of median: 0.004 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 4
AGASC star id: 238552952


Time (s)
Median: -0.002 arcsec
RMS: 0.046 arcsec
Y offsets(dy) (arcsec)
Median: -0.004 arcsec
RMS: 0.055 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number: 4
AGASC star id: 238552952
Time(ksec)

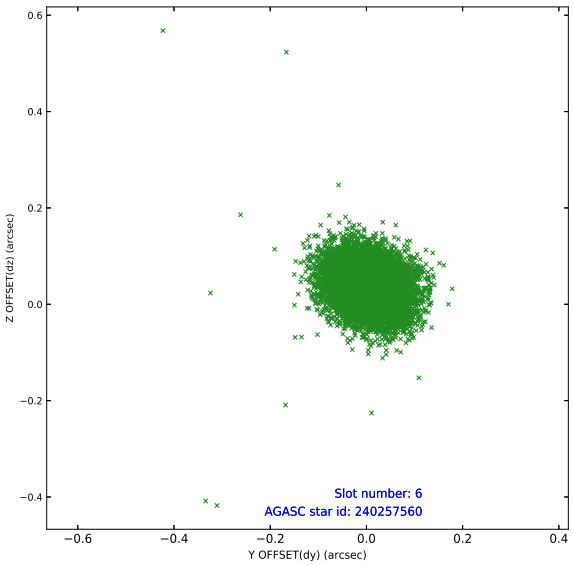
2.4.3 Slot 5

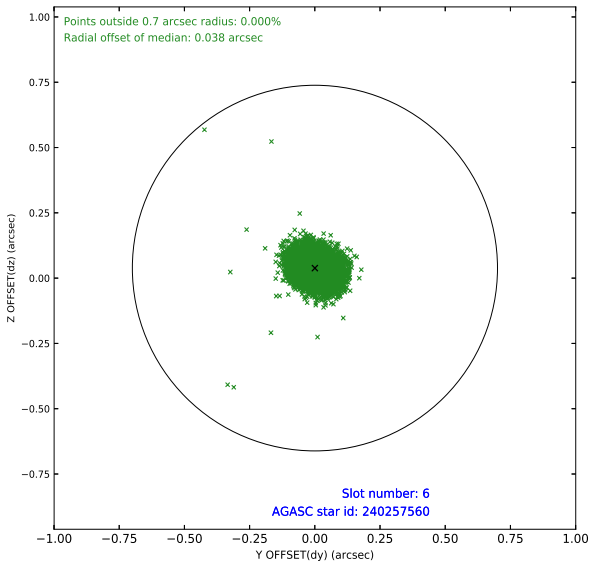

Slot number: 5
AGASC star id: 238560976
Y OFFSET(dy) (arcsec)
Z OFFSET(dz) (arcsec)

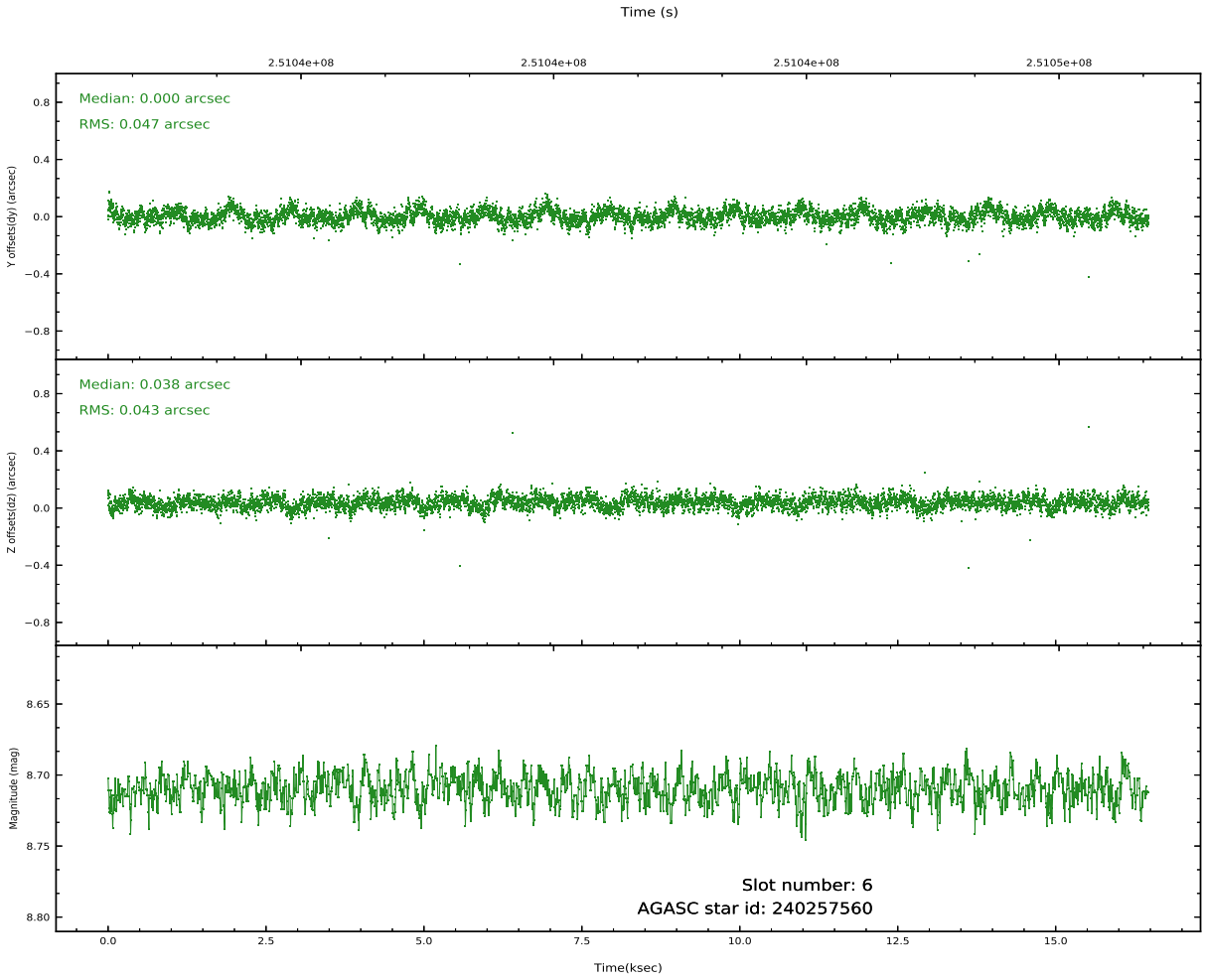

Points outside 0.7 arcsec radius: 0.000%
Radial offset of median: 0.033 arcsec
Slot number: 5
AGASC star id: 238560976
Y OFFSET(dy) (arcsec)
Z OFFSET(dz) (arcsec)


Time (s)
2.5104e+08
2.5104e+08
2.5104e+08
2.5105e+08
Median: -0.028 arcsec
RMS: 0.046 arcsec
Y offsets(dy) (arcsec)
Median: 0.018 arcsec
RMS: 0.033 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number: 5
AGASC star id: 238560976
Time(ksec)

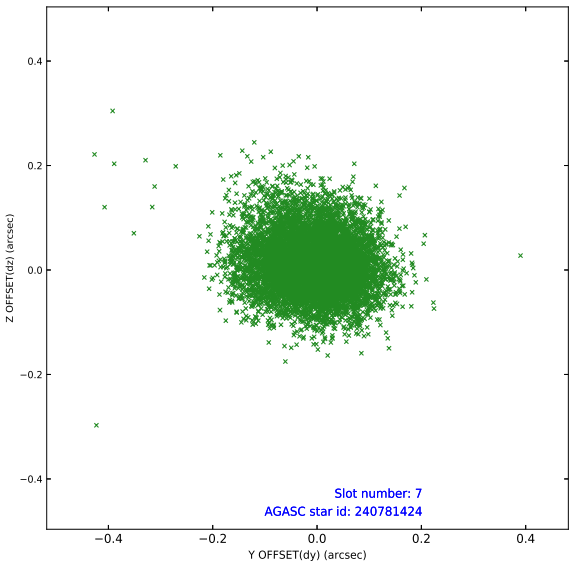
2.4.4 Slot 6

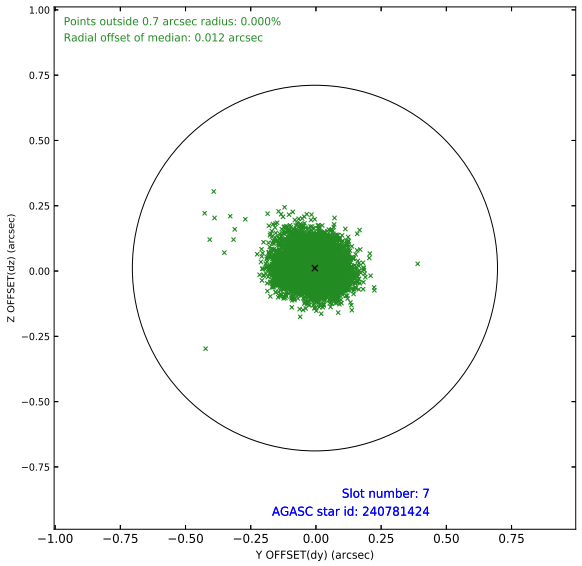

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 6
AGASC star id: 240257560

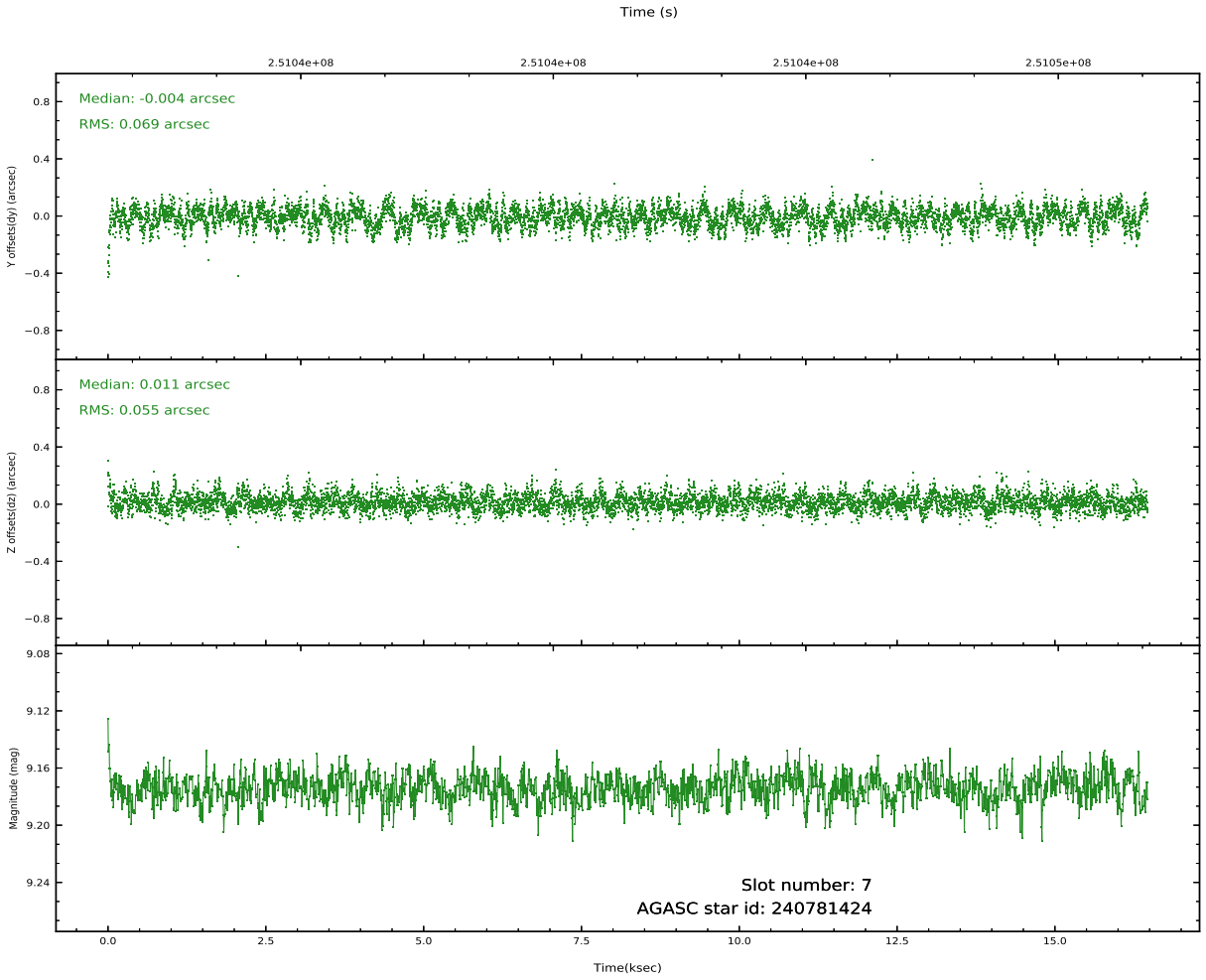

Points outside 0.7 arcsec radius: 0.000%
Radial offset of median: 0.038 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 6
AGASC star id: 240257560


Time (s)
2.5104e+08
2.5104e+08
2.5104e+08
2.5105e+08
Median: 0.000 arcsec
RMS: 0.047 arcsec
Y offsets(dy) (arcsec)
Median: 0.038 arcsec
RMS: 0.043 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number: 6
AGASC star id: 240257560
Time(ksec)

2.4.5 Slot 7

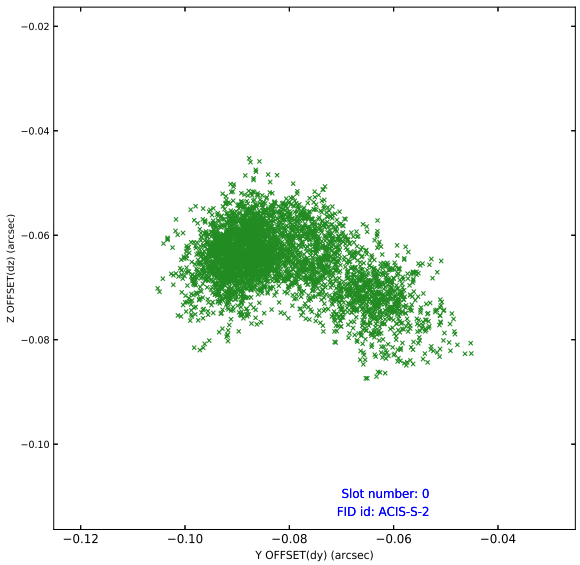

Slot number: 7
AGASC star id: 240781424
Y OFFSET(dy) (arcsec)
Z OFFSET(dz) (arcsec)

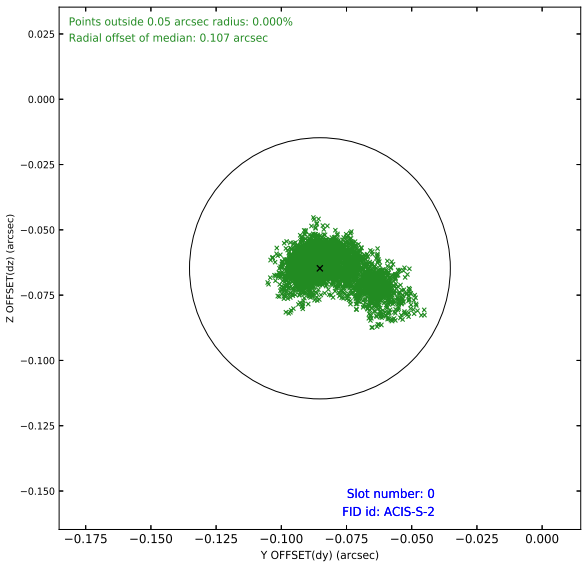

Points outside 0.7 arcsec radius: 0.000%
Radial offset of median: 0.012 arcsec
Slot number: 7
AGASC star id: 240781424
Y OFFSET(dy) (arcsec)
Z OFFSET(dz) (arcsec)

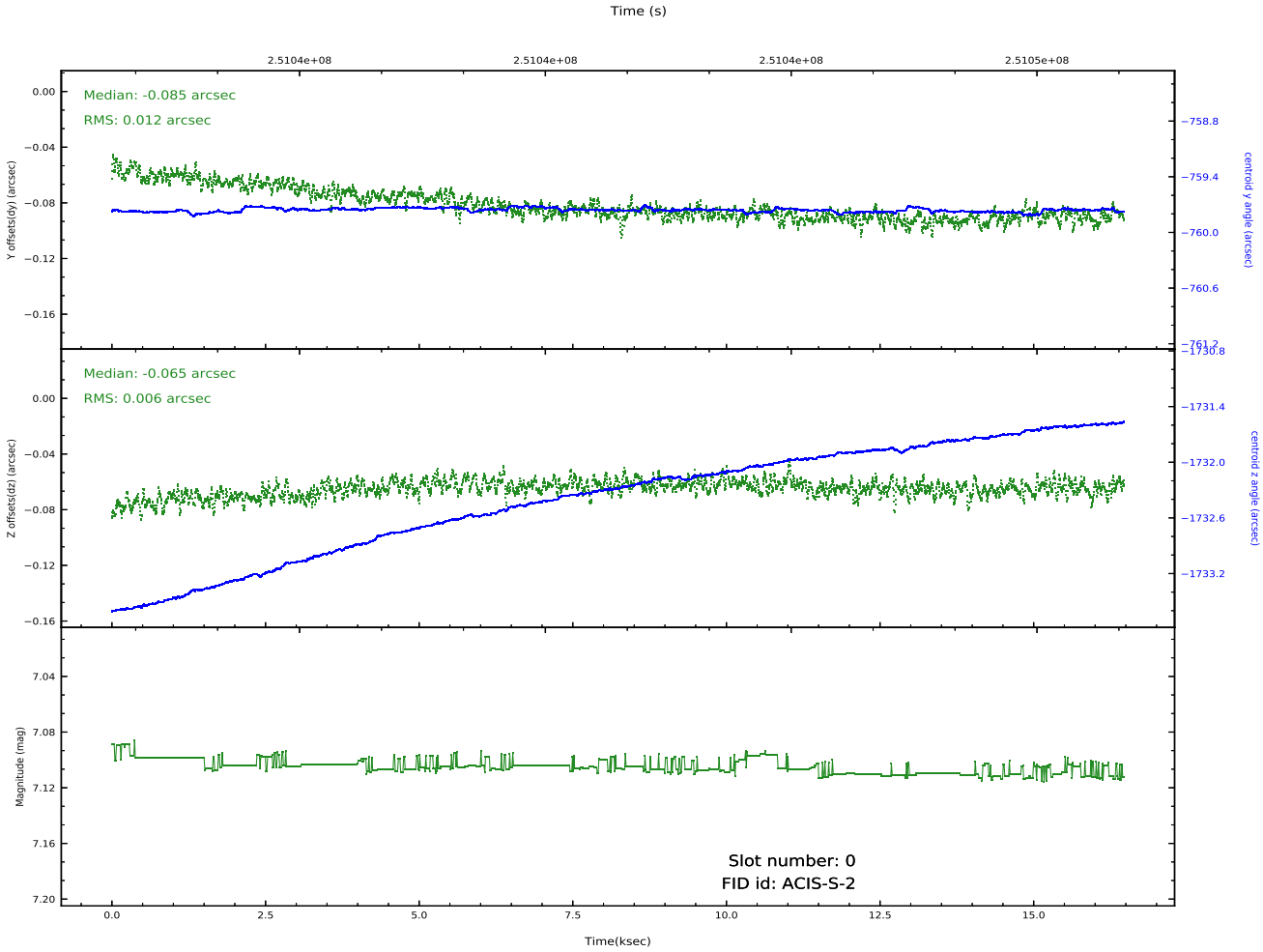

Time (s)
2.5104e+08
2.5104e+08
2.5104e+08
2.5105e+08
Median: -0.004 arcsec
RMS: 0.069 arcsec
Y offsets(dy) (arcsec)
Median: 0.011 arcsec
RMS: 0.055 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number: 7
AGASC star id: 240781424
Time(ksec)

2.5 FID Slots

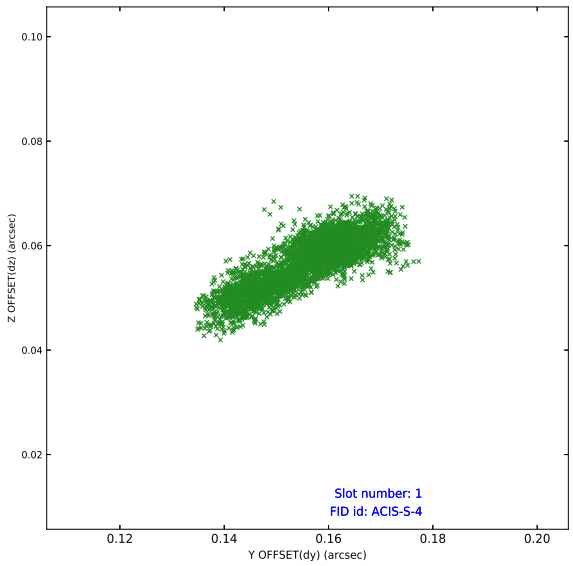
2.5.1 Slot 0

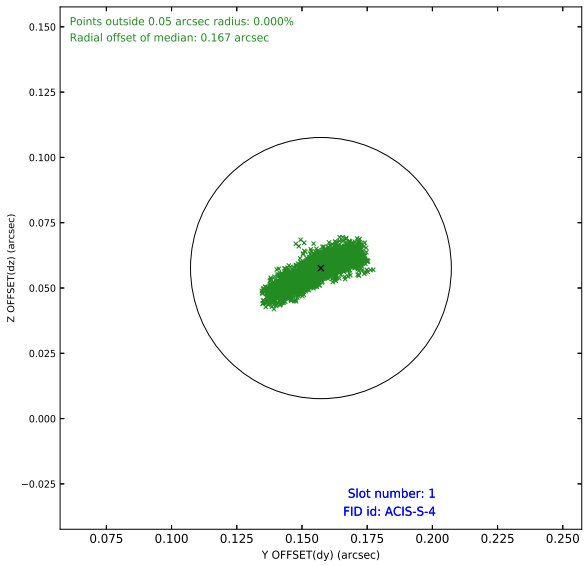


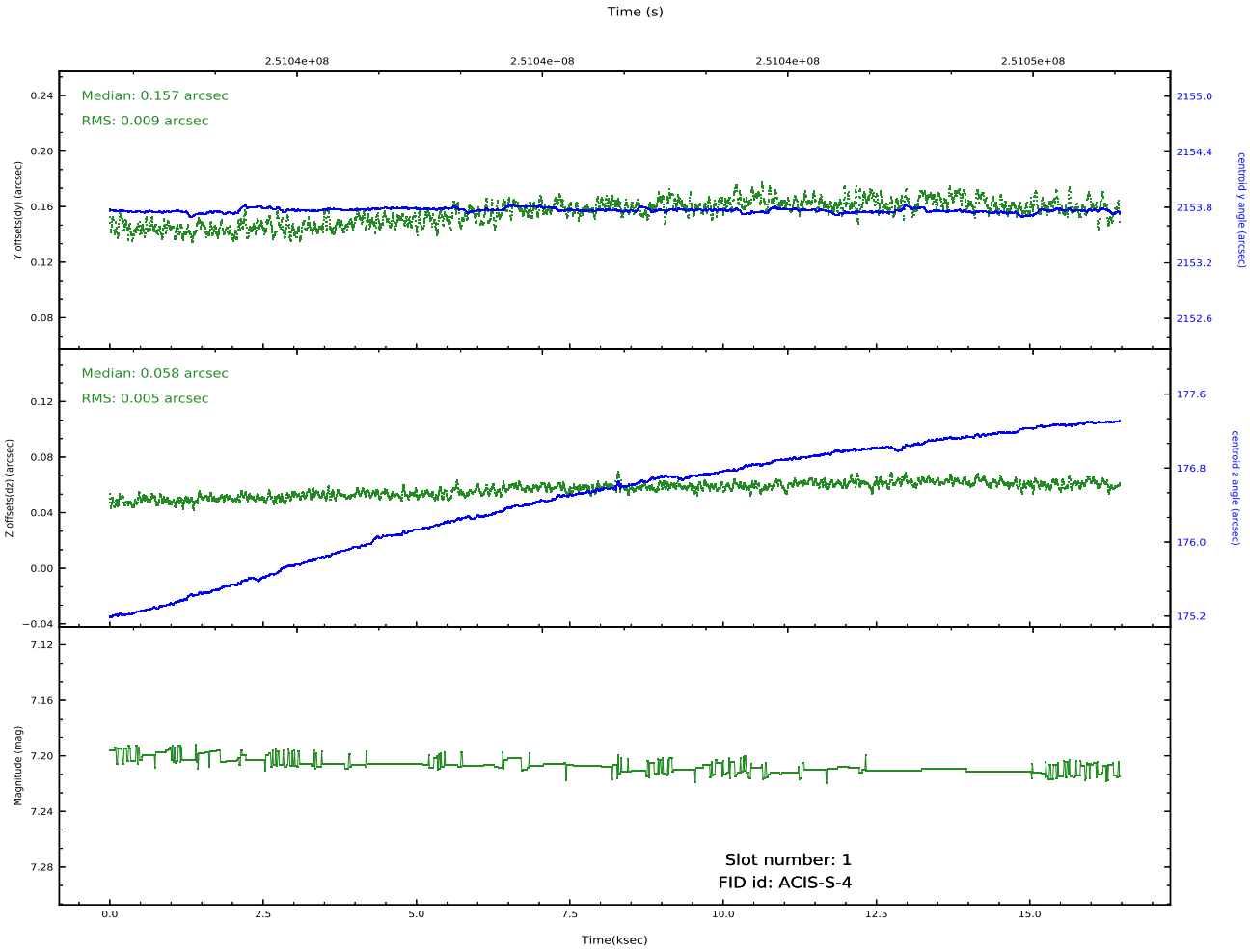




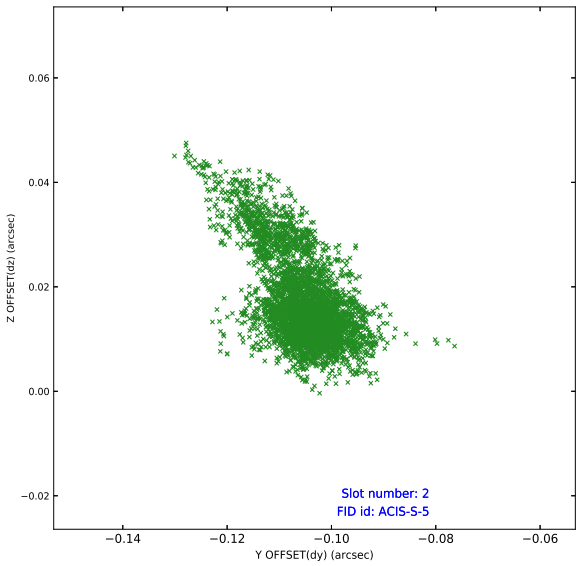
2.5.2 Slot 1

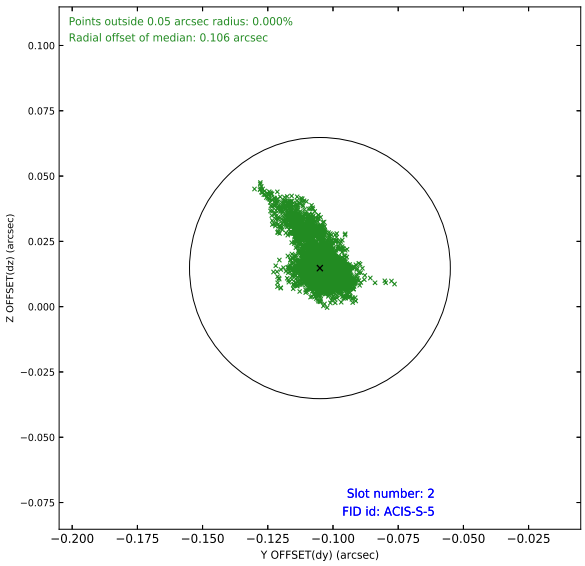

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 1
FID id: ACIS-S-4

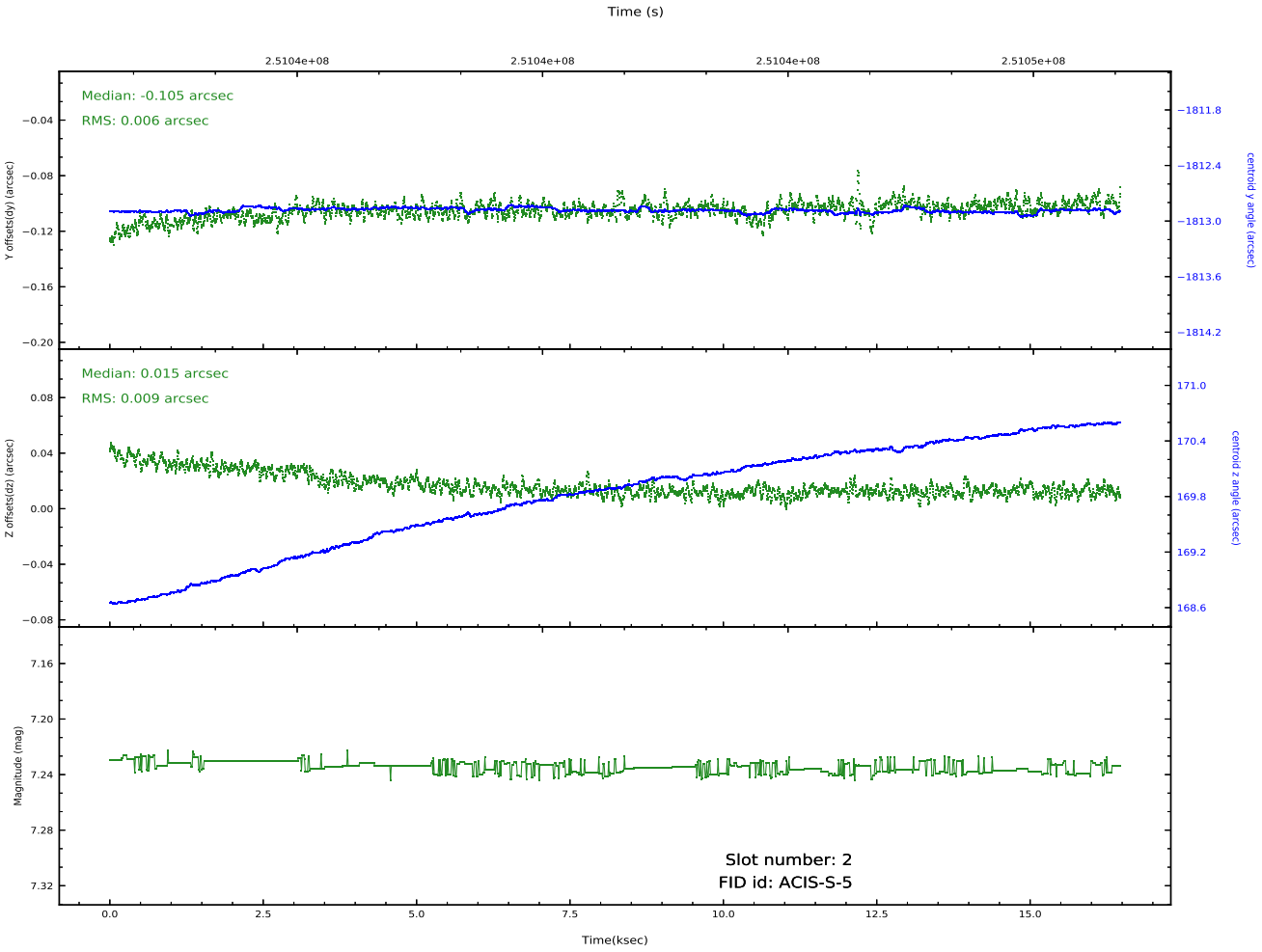

Points outside 0.05 arcsec radius: 0.000%
Radial offset of median: 0.167 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 1
FID id: ACIS-S-4


Time (s)
Median: 0.157 arcsec
RMS: 0.009 arcsec
Y offsets(dy) (arcsec)
centroid y angle (arcsec)
Median: 0.058 arcsec
RMS: 0.005 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: 0.106 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 2
FID id: ACIS-S-5


Time (s)
Median: -0.105 arcsec
RMS: 0.006 arcsec
Y offsets(dy) (arcsec)
centroid y angle (arcsec)
Median: 0.015 arcsec
RMS: 0.009 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	Beth Sundheim
V&V Date (YYYY-MM-DD)	2020.10.13
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	16.46719

A.2 Comments

A spatial region of the original bias map for CCD = 2 suffered from anomalously high data values. Pixels in the event data that were bias-corrected by one of the original affected bias pixels may have an apparent energy shift. While the change in energy is expected to be small (~20 eV), it depends on many parameters that have not yet been fully explored for this bias anomaly. The bias map for CCD = 2 has been reconstructed for this processing to remove this anomaly using scaled data from a comparable bias map from another observation. The pixels affected by the anomaly are bounded by sky coords: (66.55102,26.06247),(66.56475,26.06117),(66.56962,26.10170),(66.55624,26.10597).