V&V Reference Report
L2 ASCDS Version : 10.4.3.1

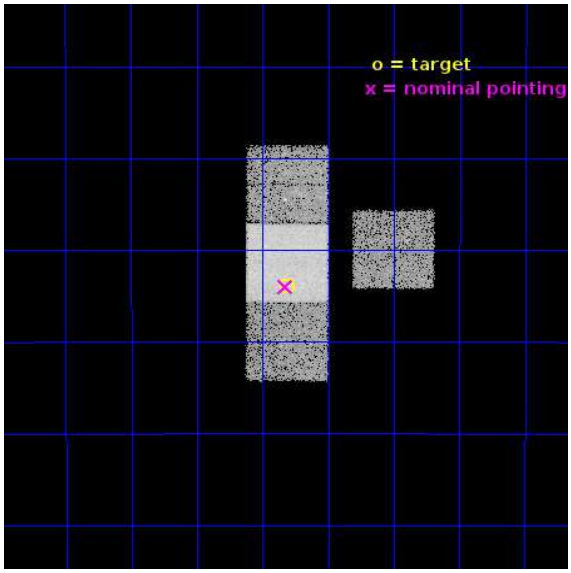
Observation 18845 - L2 Version 2
Chandra X-Ray Center

L2 Processing Date : May 17 2016

Contents

1 Front

seq_num	601164	Sequence number
obs_id	18845	Observation id
title	Searching for Accreting Black Holes in Lyman Continuum Emitters	Pr
observer	Philip Kaaret	Principal investigator
object	Tol 1247-232	Source name
dtycycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	192.57875	Observer's specified target RA [deg]
dec_targ	-23.566	Observer's specified target Dec [deg]
ra_nom	192.58145373587	Nominal RA [deg]
dec_nom	-23.566749878375	Nominal Dec [deg]
roll_nom	270.15769675108	Nominal Roll [deg]
revision	2	Processing version of data
ontime	15055.358256578	Sum of GTIs [s]
livetime	14858.648917363	Livetime [s]
ontime3	15055.276176572	Sum of GTIs [s]
ontime6	15055.317216635	Sum of GTIs [s]
ontime7	15055.358256578	Sum of GTIs [s]
ontime8	15055.235136628	Sum of GTIs [s]
l2events	81932	Number of level 2 events

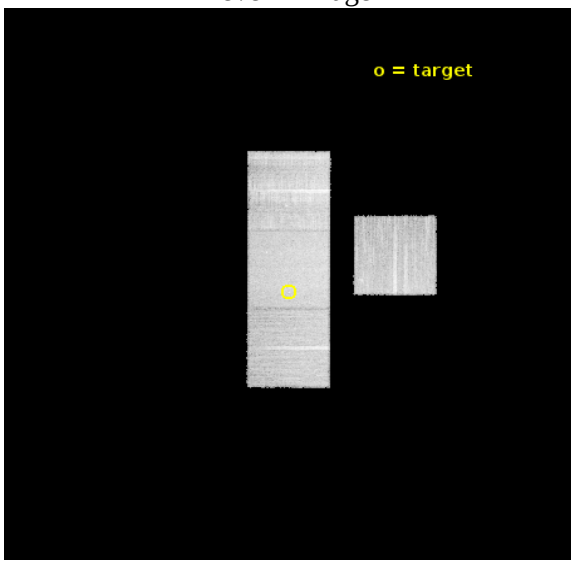


2 OBI

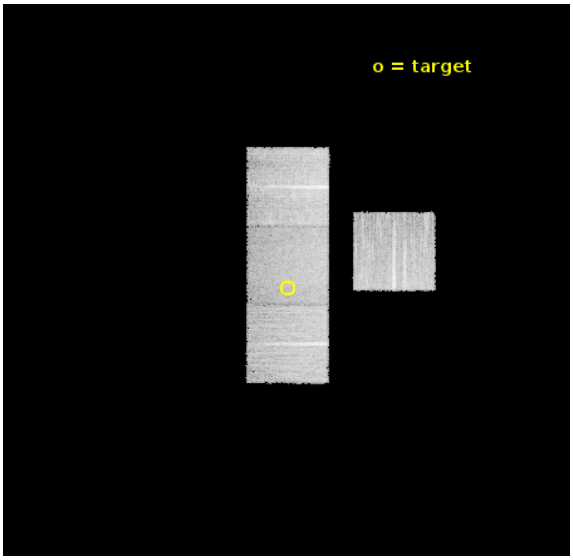
2.1 OBI

2.1.1 Images

Level 1 Image

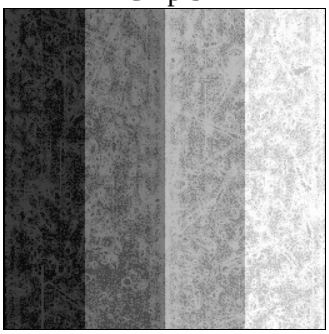


Level 1 Bad Events

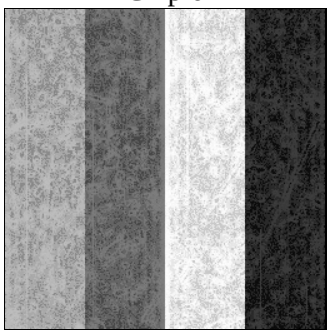


2.1.2 Bias

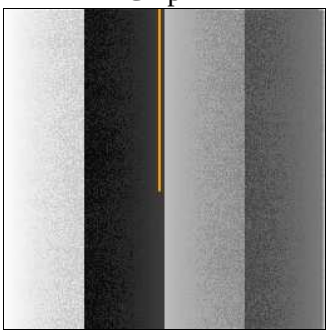
Chip 3



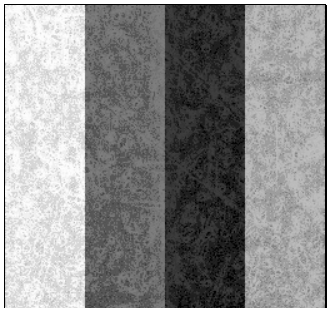
Chip 6



Chip 7



Chip 8



2.1.3 Parameters

obi_num	0	Obi number
ascdsver	10.4.3.1	Processing system revision
caldbver	4.7.1	
date	2016-05-17T21:09:37	Date and time of file creation
revision	2	Processing version of data

sched_exp_time	15000.000000	[s] Scheduled observation exposure time
ontime	15055.358256578	Sum of GTIs [s]
ontime3	15055.276176572	Sum of GTIs [s]
ontime6	15055.317216635	Sum of GTIs [s]
ontime7	15055.358256578	Sum of GTIs [s]
ontime8	15055.235136628	Sum of GTIs [s]
l1events	449694	Number of level 1 events

2.1.4 Events

	ccd 3	**ccd 6**	**ccd 7**	**ccd 8**
level 1 events	94199	99591	125749	130155
rejected events	84249	88611	71963	97218
rejected %	89%	88%	57%	74%

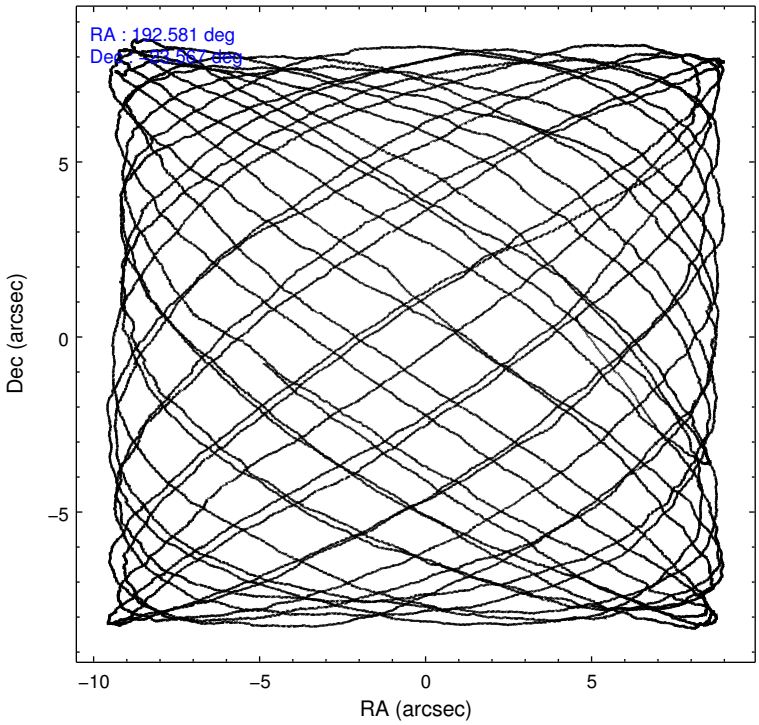
	ccd 3	**ccd 6**	**ccd 7**	**ccd 8**
grade 0 events	3480	3403	4367	9016
	3%	3%	3%	6%
grade 1 events	73	49	145	102
	0%	0%	0%	0%
grade 2 events	2127	2752	11365	8168
	2%	2%	9%	6%
grade 3 events	1090	1060	4199	3244
	1%	1%	3%	2%
grade 4 events	1057	1052	4105	3118
	1%	1%	3%	2%
grade 5 events	4566	4584	12088	6884
	4%	4%	9%	5%
grade 6 events	2203	2714	29771	9406
	2%	2%	23%	7%
grade 7 events	79603	83977	59709	90217
	84%	84%	47%	69%

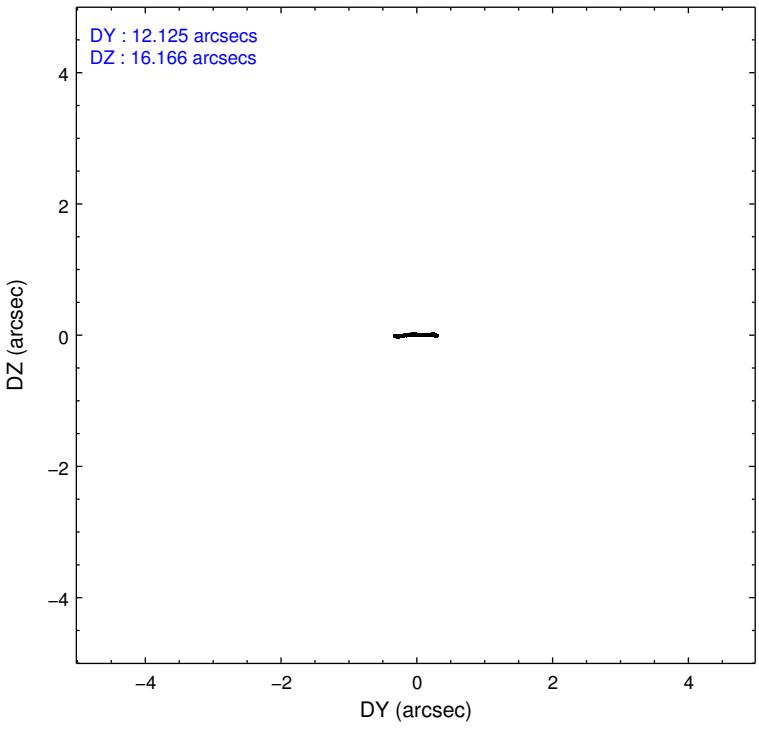
2.2 Compared Parameters

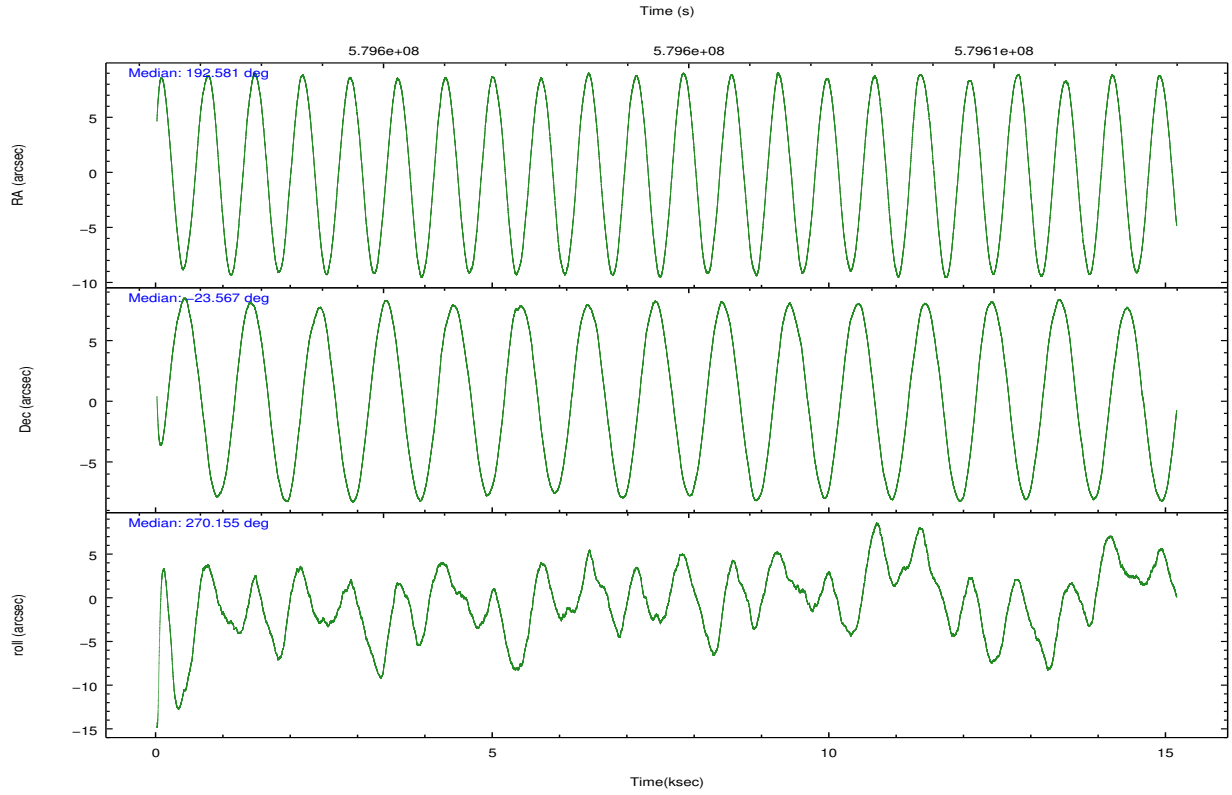
Parameter	Planned	Actual
Instrument	ACIS	ACIS
Detector	ACIS-3678	ACIS-3678
Grating	NONE	NONE
Data mode	VFAINT	VFAINT
Observation mode	POINTING	POINTING
[deg] Pointing RA	192.566046	192.5814537358747
[deg] Pointing Dec	-23.543193	-23.56674987837504
[deg] Pointing Roll	269.994921	270.1576967510836
[mm] 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)	579597223.184000	579595952.33666
Observation start date	2016-05-14T07:12:35	2016-05-14T06:52:32
[s] Observation end time (MET)	579612223.184000	579613256.38765
Observation end date	2016-05-14T11:22:35	2016-05-14T11:40:56
Read mode	TIMED	TIMED

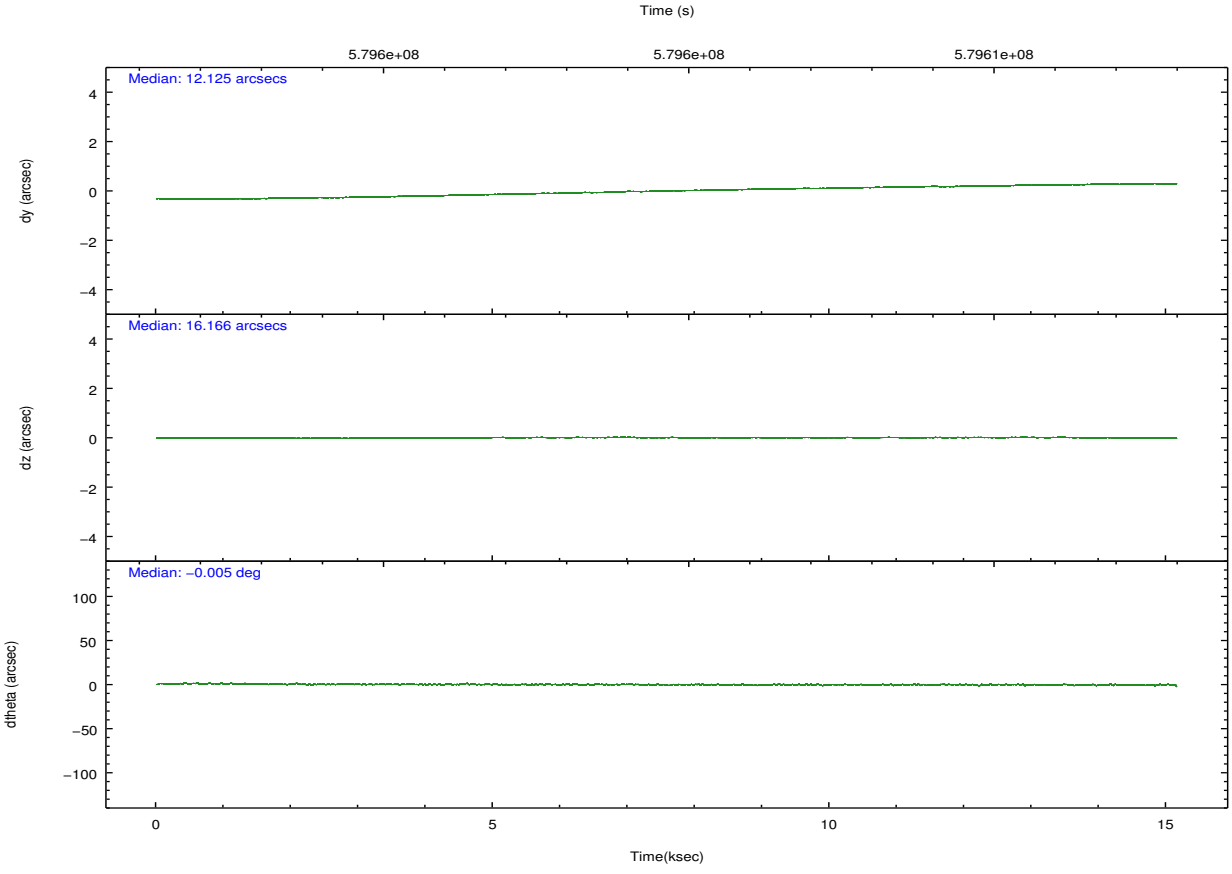
Parameter	Planned	Actual
Obspar format version number	7	7
Obspar file type	PREDICTED	ACTUAL
Obspar update status	NONE	UPDATED
CCD I0 on	N	N
CCD I1 on	N	N
CCD I2 on	N	N
CCD I3 on	O1	Y
CCD S0 on	N	N
CCD S1 on	N	N
CCD S2 on	O2	Y
CCD S3 on	Y	Y
CCD S4 on	O3	Y
CCD S5 on	N	N
Number of optional ACIS chips dropped	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 : 192.581 deg
Dec : 27.467 deg
Dec (arcsec)
RA (arcsec)
5
0
−5
−10
−5
0
5


DY : 12.125 arcsecs
DZ : 16.166 arcsecs
DZ (arcsec)
DY (arcsec)
4
2
0
−2
−4
−4
−2
0
2
4


Time (s)
5.796e+08
5.796e+08
5.7961e+08
Median: 192.581 deg
RA (arcsec)
Median: −23.567 deg
Dec (arcsec)
Median: 270.155 deg
roll (arcsec)
Time(ksec)

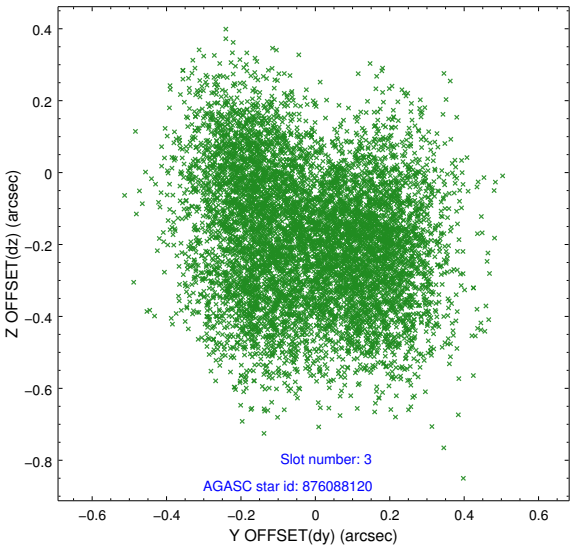

Time (s)
5.796e+08
5.796e+08
5.7961e+08
Median: 12.125 arcsecs
dy (arcsec)
Median: 16.166 arcsecs
dz (arcsec)
Median: −0.005 deg
dtheta (arcsec)
Time(ksec)

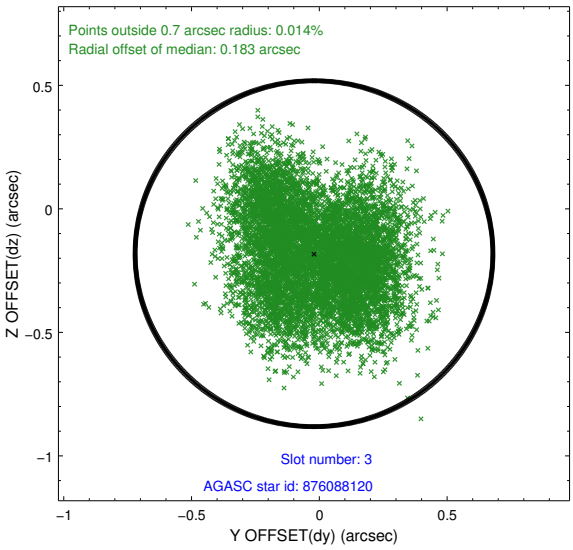
Slot Statistics

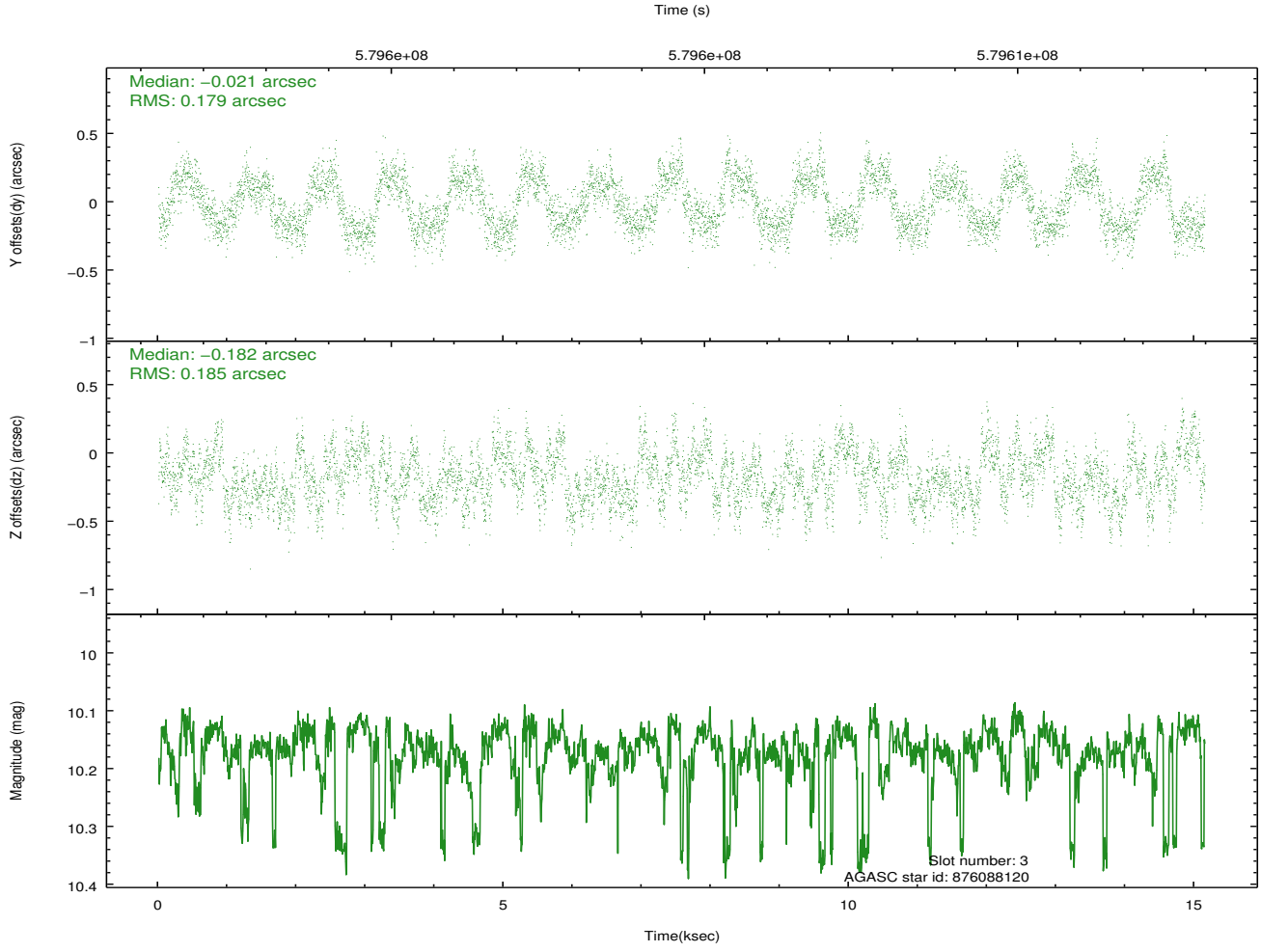
slot	status	used	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID		ACIS-S-2	7.12	3695	-0.135	-0.052	0.009	0.013	0.000000	0.000000	-765.09	-1737.59
1	FID		ACIS-S-4	7.23	3695	0.359	0.079	0.006	0.011	0.000000	0.000000	2148.50	170.78
2	FID		ACIS-S-5	7.24	3695	-0.255	-0.019	0.009	0.015	0.000000	0.000000	-1817.72	164.60
3	GUIDE	used	876088120	10.17	7375	-0.021	-0.182	0.281	0.422	192.252757	-23.590194	170.81	-1033.79
4	GUIDE	used	876092248	7.70	7388	0.067	0.334	0.112	0.166	192.257365	-23.238513	-1095.45	-1021.47
5	GUIDE	used	877789872	9.63	7387	0.224	0.153	0.157	0.250	193.073554	-22.992905	-1977.93	1681.65
6	GUIDE	used	877795824	7.45	7389	-0.152	-0.379	0.102	0.171	193.141552	-23.136220	-1461.67	1904.85
7	GUIDE	used	877796720	10.02	7371	-0.118	0.070	0.202	0.337	192.966258	-23.620489	279.96	1320.38

2.4 Star Slots

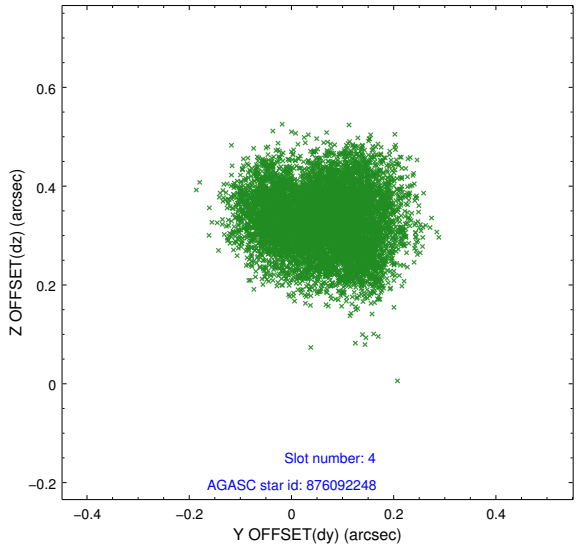
2.4.1 Slot 3

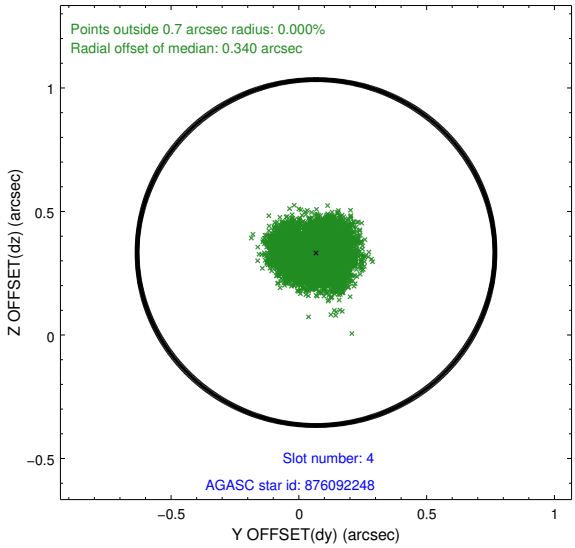


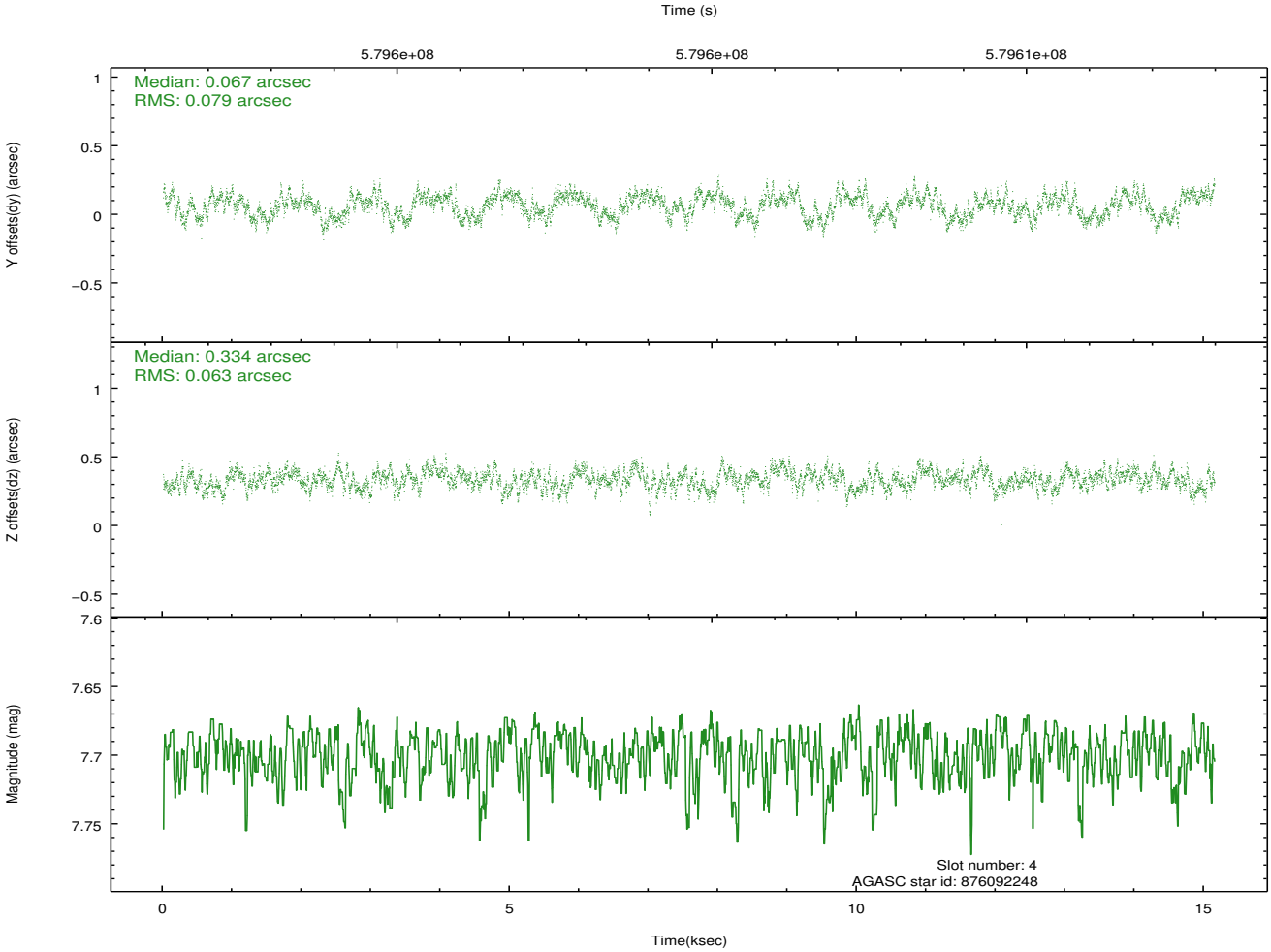




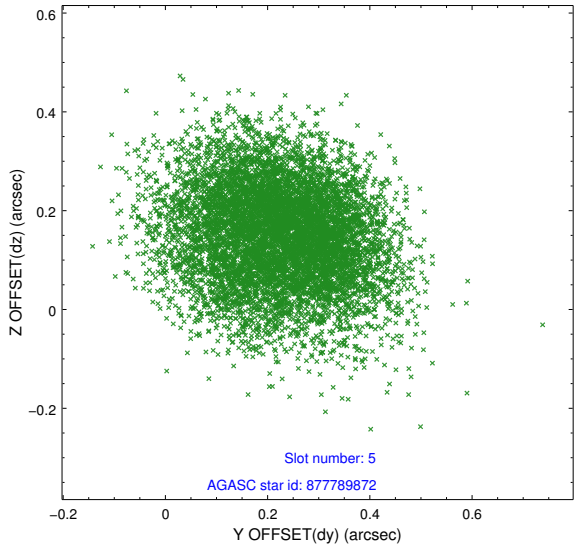
2.4.2 Slot 4

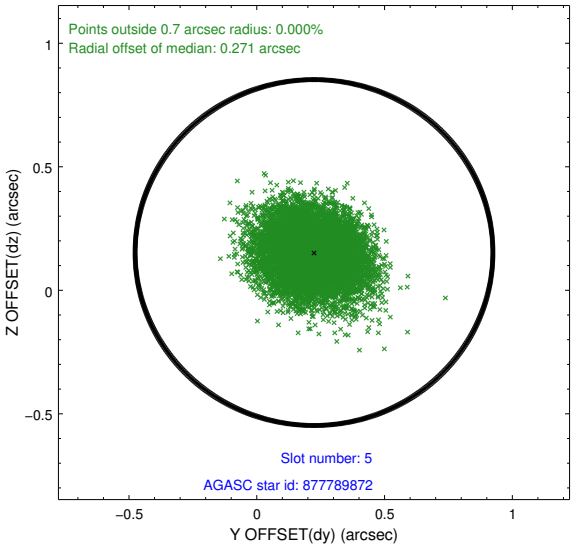

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 4
AGASC star id: 876092248

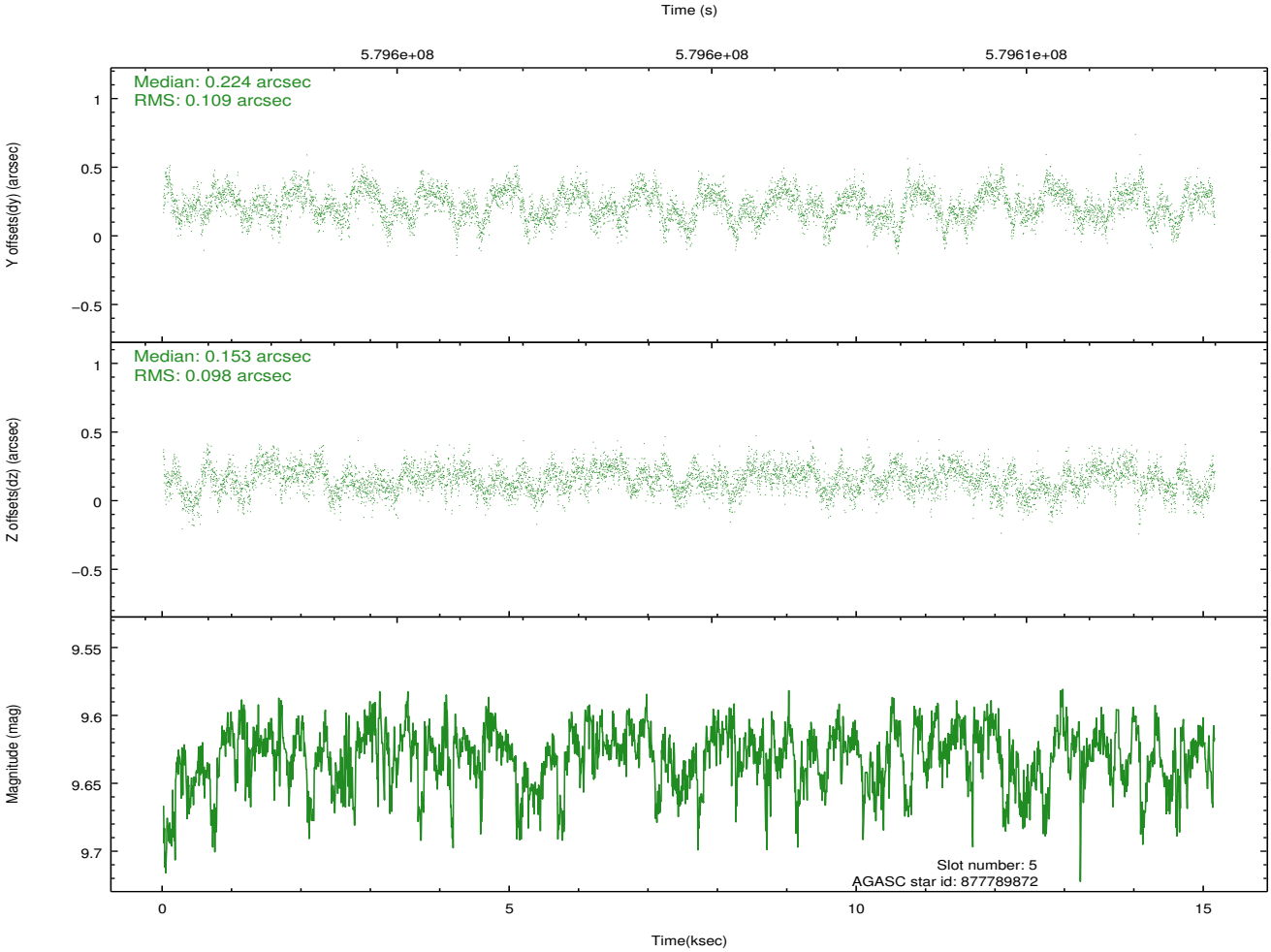

Points outside 0.7 arcsec radius: 0.000%
Radial offset of median: 0.340 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 4
AGASC star id: 876092248


Time (s)
5.796e+08
5.796e+08
5.7961e+08
Median: 0.067 arcsec
RMS: 0.079 arcsec
Y offsets(dy) (arcsec)
Median: 0.334 arcsec
RMS: 0.063 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number: 4
AGASC star id: 876092248
Time(ksec)

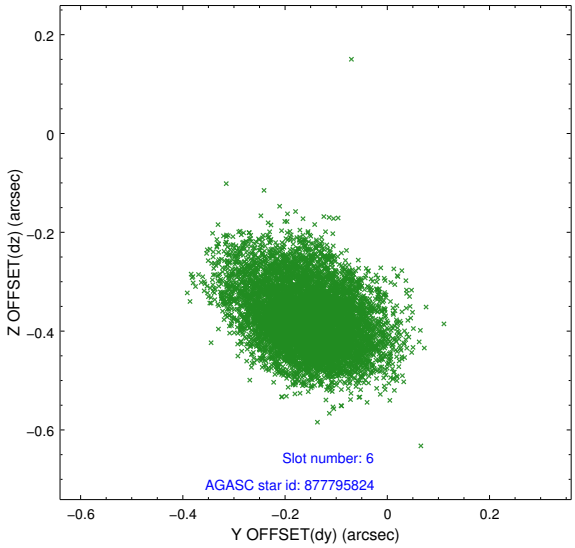
2.4.3 Slot 5

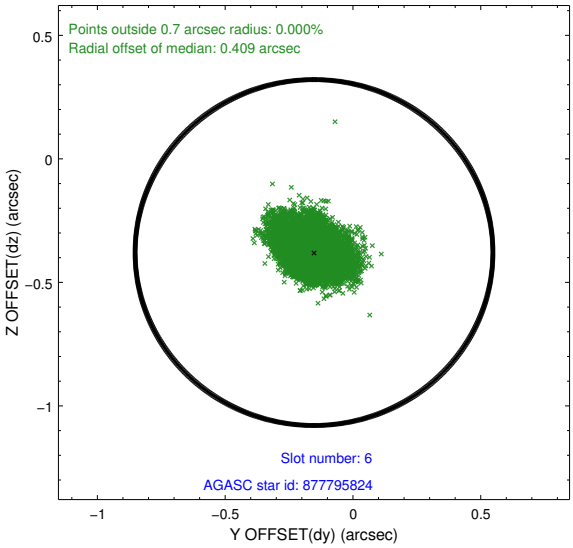

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 5
AGASC star id: 877789872

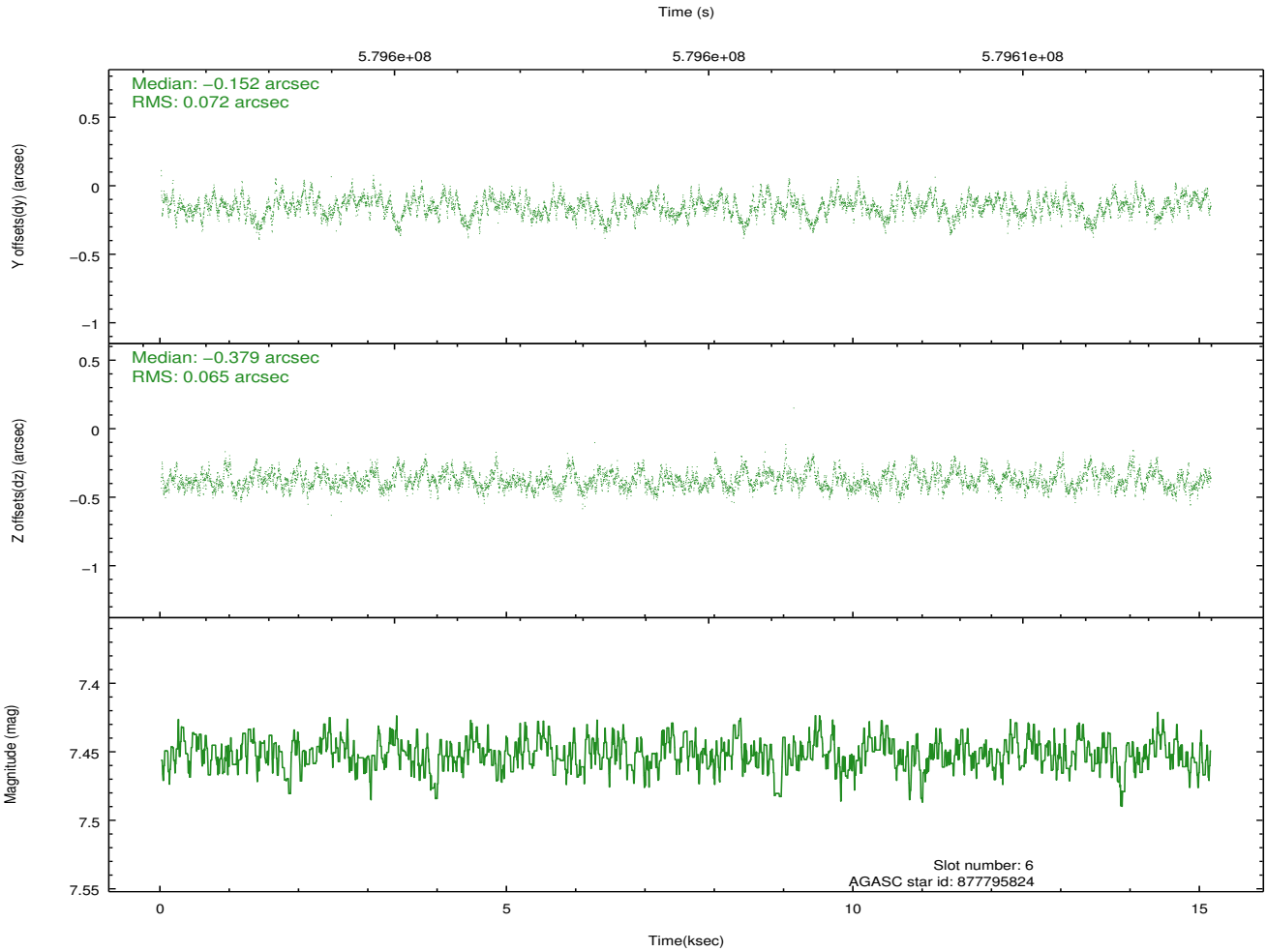

Points outside 0.7 arcsec radius: 0.000%
Radial offset of median: 0.271 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 5
AGASC star id: 877789872


Time (s)
5.796e+08
5.796e+08
5.7961e+08
Median: 0.224 arcsec
RMS: 0.109 arcsec
Y offsets(dy) (arcsec)
Median: 0.153 arcsec
RMS: 0.098 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number: 5
AGASC star id: 877789872
Time(ksec)

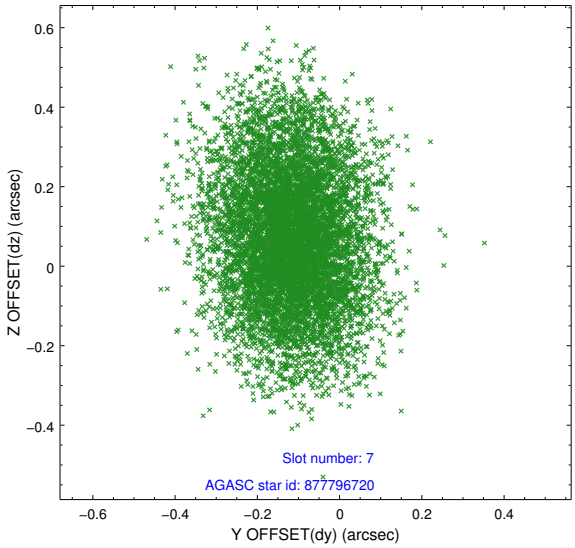
2.4.4 Slot 6

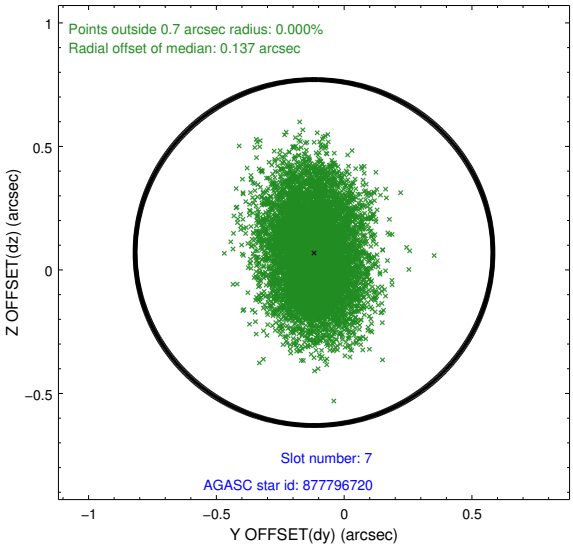

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 6
AGASC star id: 877795824

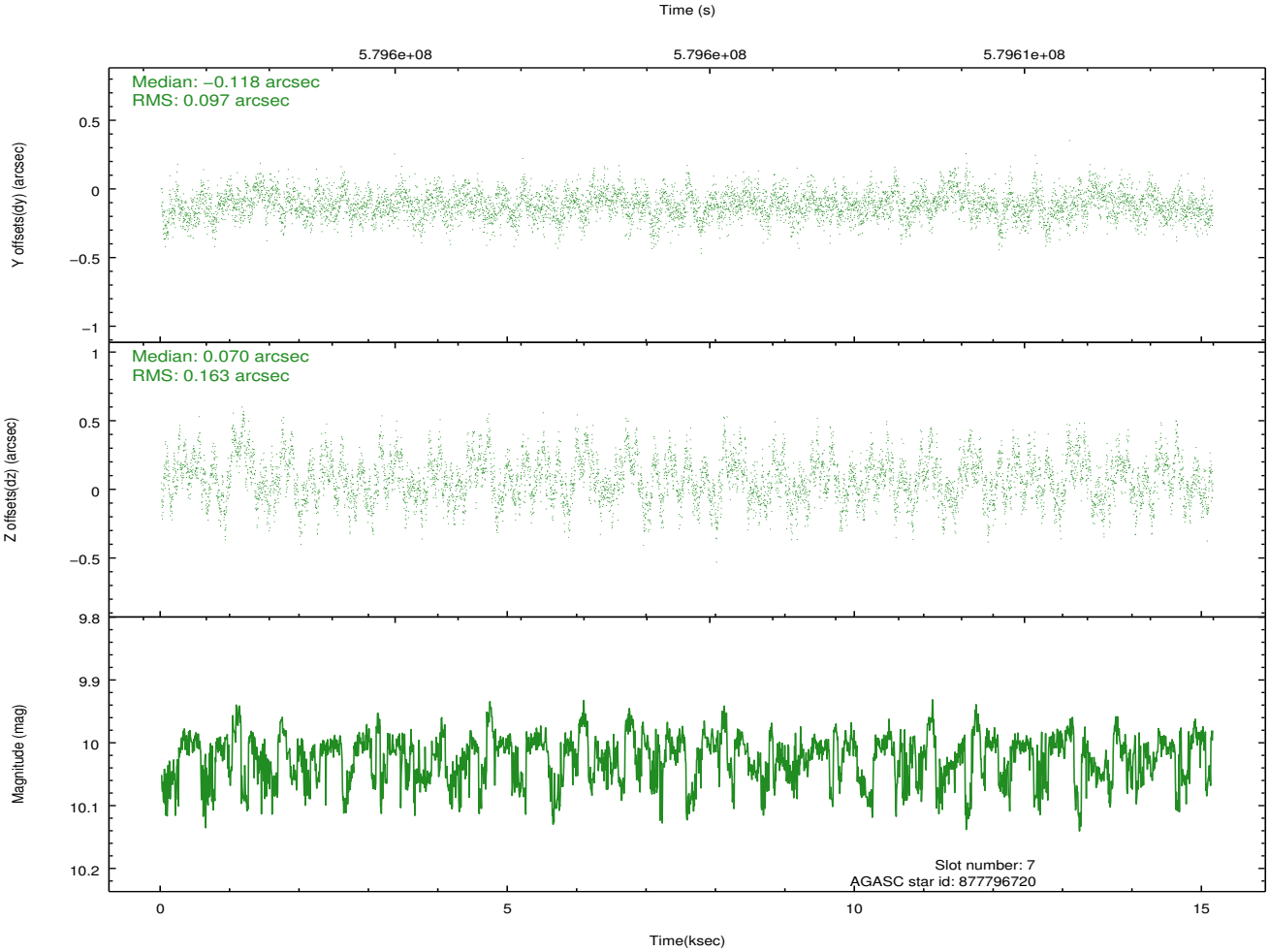

Points outside 0.7 arcsec radius: 0.000%
Radial offset of median: 0.409 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 6
AGASC star id: 877795824


Time (s)
5.796e+08
5.796e+08
5.7961e+08
Median: −0.152 arcsec
RMS: 0.072 arcsec
Y offsets(dy) (arcsec)
Median: −0.379 arcsec
RMS: 0.065 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number: 6
AGASC star id: 877795824
Time(ksec)

2.4.5 Slot 7

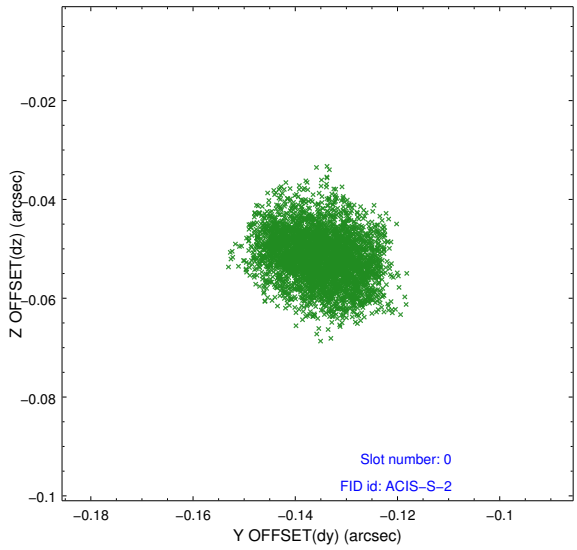

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 7
AGASC star id: 877796720

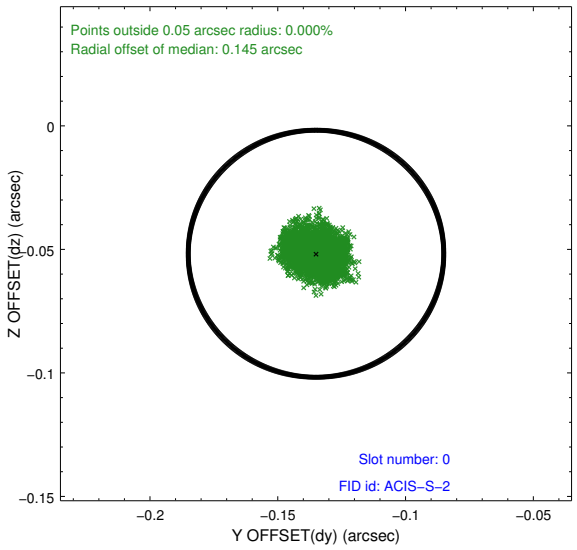

Points outside 0.7 arcsec radius: 0.000%
Radial offset of median: 0.137 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 7
AGASC star id: 877796720

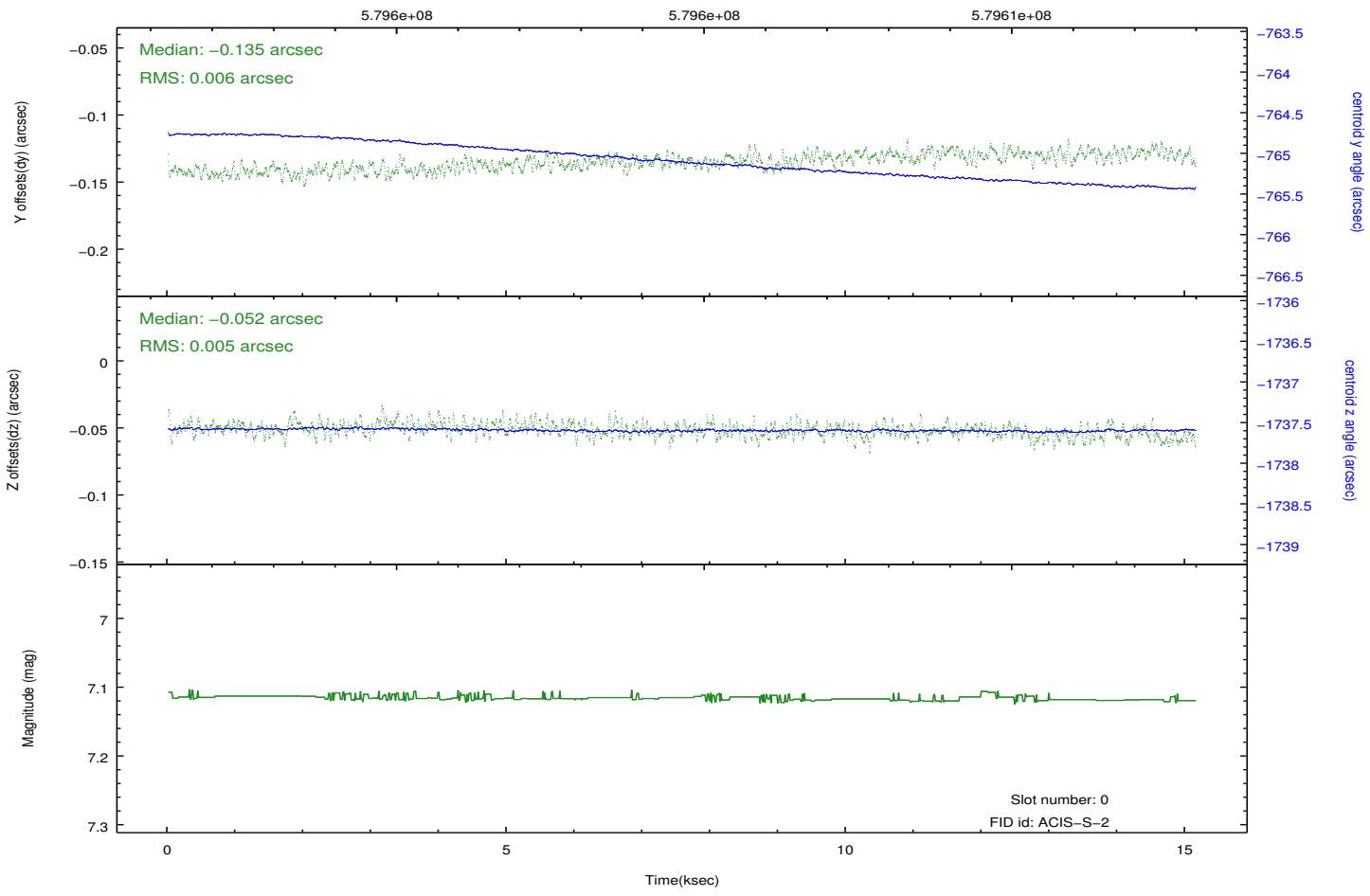

Time (s)
5.796e+08
5.796e+08
5.7961e+08
Median: −0.118 arcsec
RMS: 0.097 arcsec
Y offsets(dy) (arcsec)
Median: 0.070 arcsec
RMS: 0.163 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number: 7
AGASC star id: 877796720
Time(ksec)

2.5 FID Slots

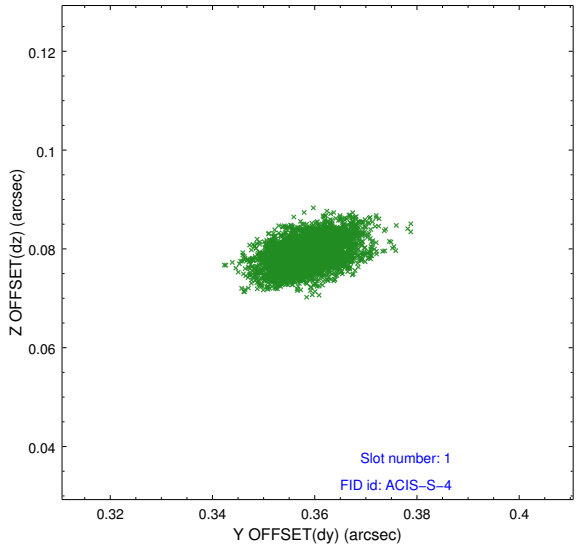
2.5.1 Slot 0

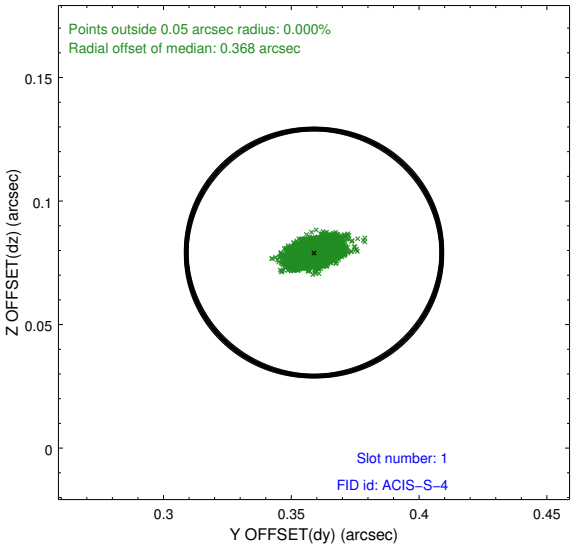


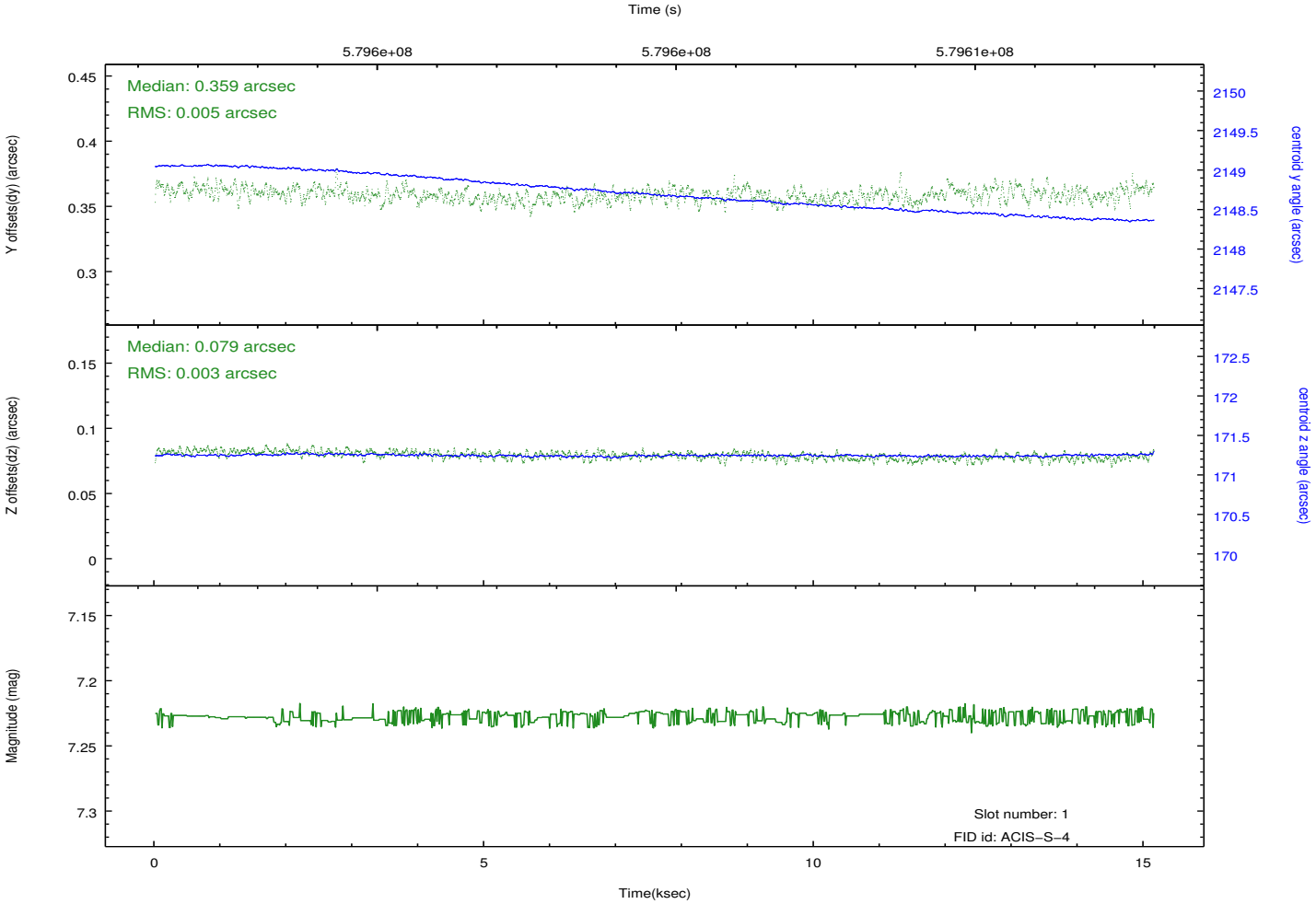




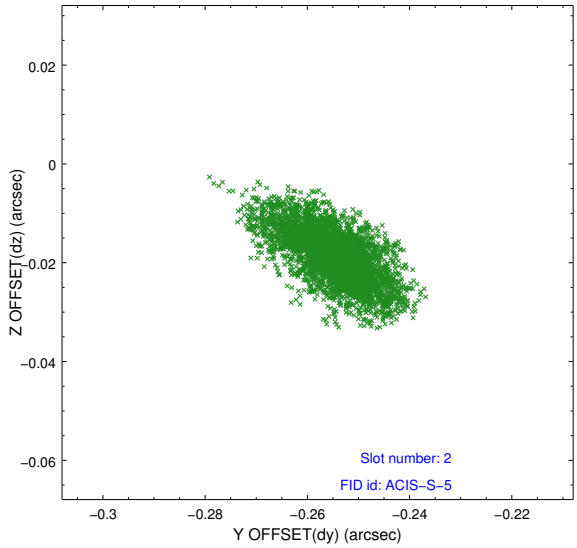
2.5.2 Slot 1

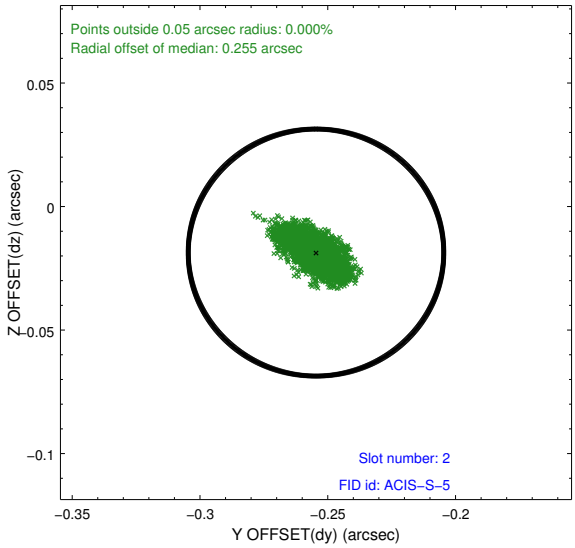

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 1
FID id: ACIS−S−4

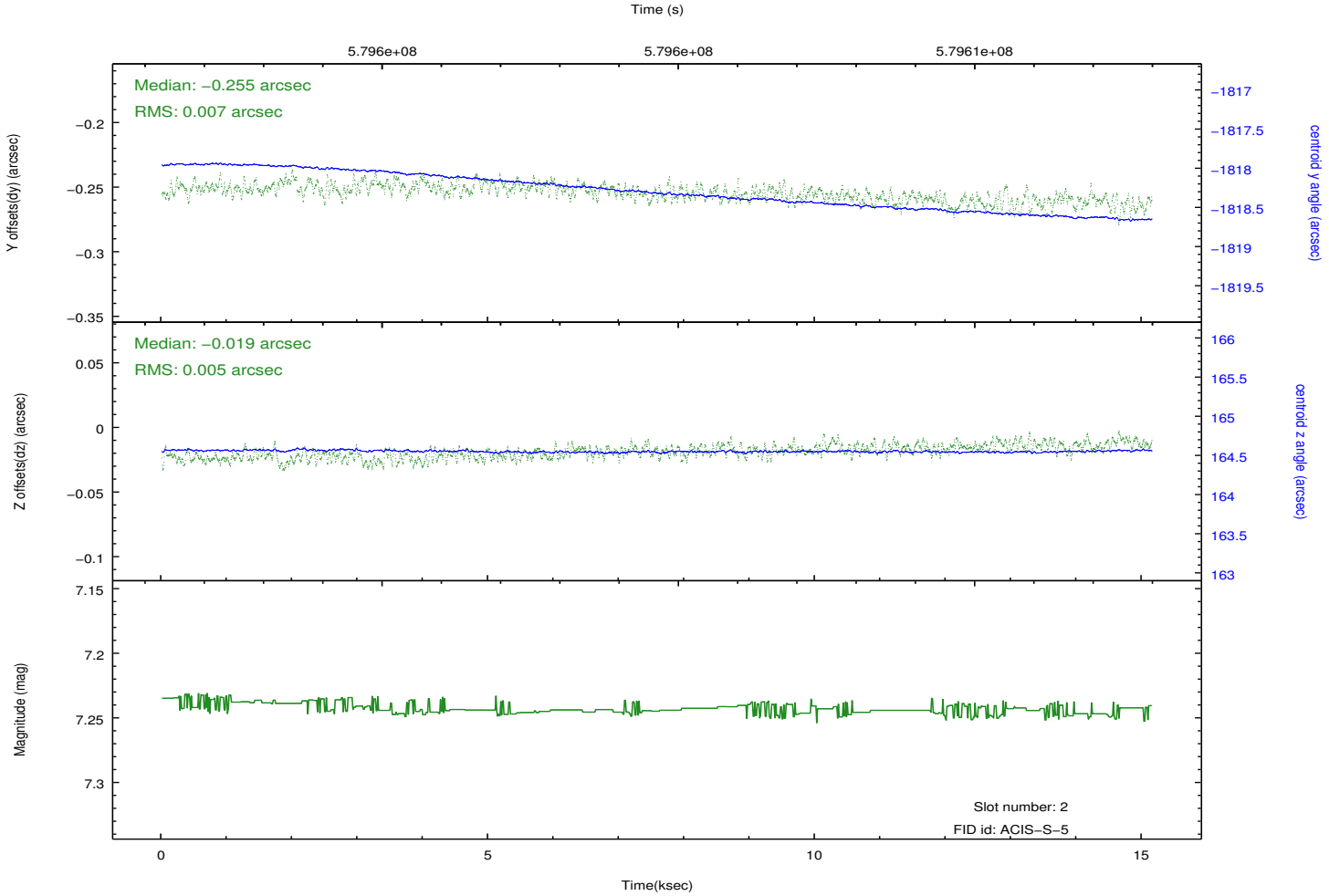

Points outside 0.05 arcsec radius: 0.000%
Radial offset of median: 0.368 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 1
FID id: ACIS−S−4


Time (s)
Median: 0.359 arcsec
RMS: 0.005 arcsec
Y offsets(dy) (arcsec)
centroid y angle (arcsec)
Median: 0.079 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: 0.255 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 2
FID id: ACIS−S−5


Time (s)
5.796e+08
5.796e+08
5.7961e+08
Median: −0.255 arcsec
RMS: 0.007 arcsec
Y offsets(dy) (arcsec)
centroid y angle (arcsec)
Median: −0.019 arcsec
RMS: 0.005 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)	2016.05.18
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	15.055358256578

A.2 Comments

A spatial region of the original bias map for CCD = 6 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 = 6 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:
(192.65618, -23.71469), (192.65616, -23.70950), (192.50367, -23.71002),
(192.50369, -23.71520).