V&V Reference Report
L2 ASCDS Version : 8.5.1.1

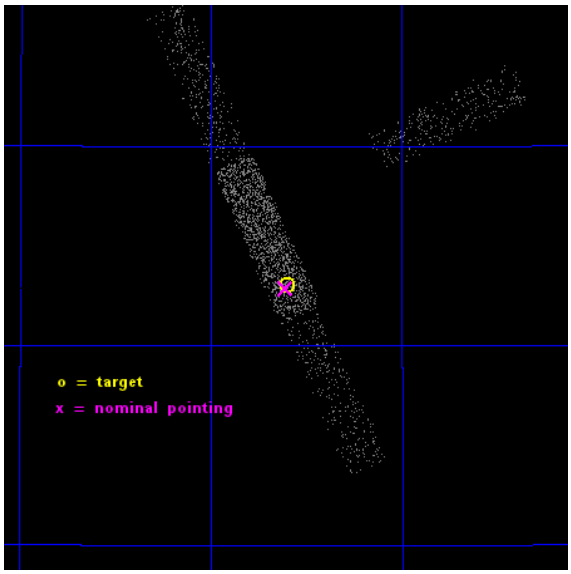
Observation 15001 - L2 Version 2
Chandra X-Ray Center

L2 Processing Date : Dec 2 2014

Contents

1 Front

seq_num	702809	Sequence number
obs_id	15001	Observation id
title	The Herschel Legacy of powerful 3C radio galaxies and quasars II: observing Proposal.	Proposal title
observer	Dr Joanna Kuraszkiewicz	Principal investigator
object	3C196	Source name
dtycycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	123.4	Observer's specified target RA [deg]
dec_targ	48.217361	Observer's specified target Dec [deg]
ra_nom	123.40234933294	Nominal RA [deg]
dec_nom	48.21469808727	Nominal Dec [deg]
roll_nom	245.36407104392	Nominal Roll [deg]
revision	2	Processing version of data
ontime	2084.0	Sum of GTIs [s]
livetime	2001.8443095366	Livetime [s]
ontime3	2084.0	Sum of GTIs [s]
ontime6	2084.0	Sum of GTIs [s]
ontime7	2084.0	Sum of GTIs [s]
ontime8	2084.0	Sum of GTIs [s]
l2events	2680	Number of level 2 events

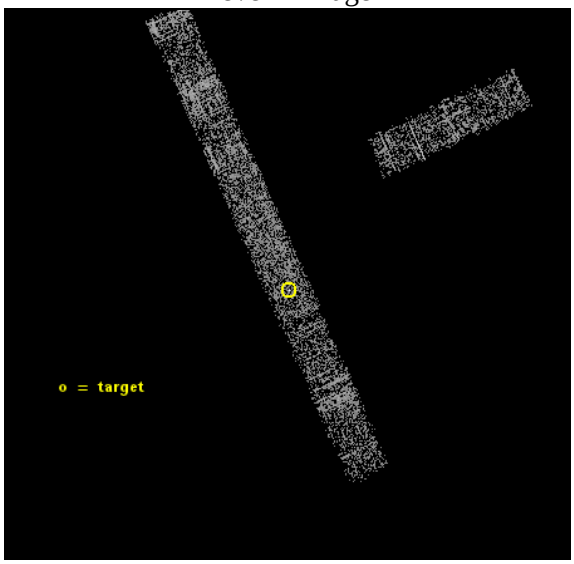


2 OBI

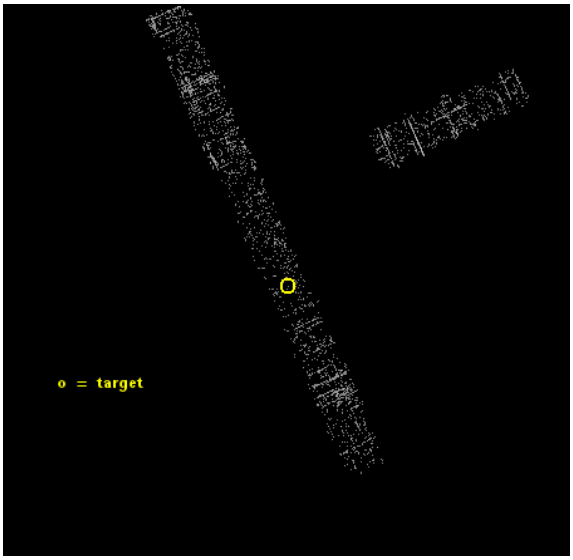
2.1 OBI

2.1.1 Images

Level 1 Image

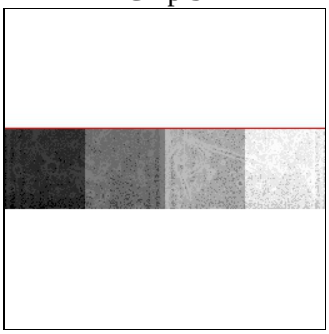


Level 1 Bad Events

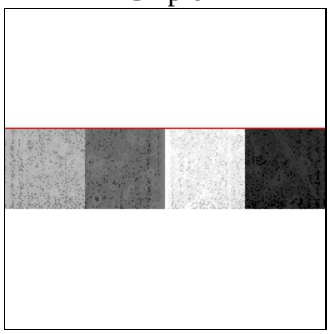


2.1.2 Bias

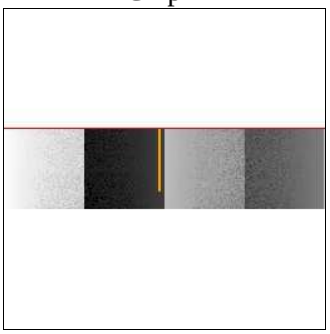
Chip 3



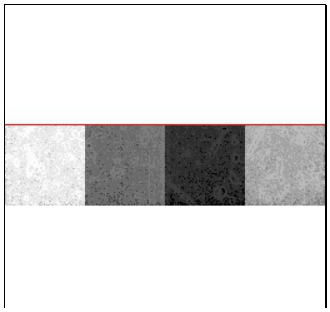
Chip 6



Chip 7



Chip 8



2.1.3 Parameters

obi_num	1	Obi number
ascdsver	10.3	Processing system revision
caldbver	4.6.4	
date	2014-12-02T07:46:40	Date and time of file creation
revision	2	Processing version of data

sched_exp_time	2000.000000	[s] Scheduled observation exposure time
ontime	2084.0	Sum of GTIs [s]
ontime3	2084.0	Sum of GTIs [s]
ontime6	2084.0	Sum of GTIs [s]
ontime7	2084.0	Sum of GTIs [s]
ontime8	2084.0	Sum of GTIs [s]
l1events	14968	Number of level 1 events

2.1.4 Events

	ccd 3	**ccd 6**	**ccd 7**	**ccd 8**
level 1 events	3282	3125	3919	4642
rejected events	2930	2774	2123	3560
rejected %	89%	88%	54%	76%

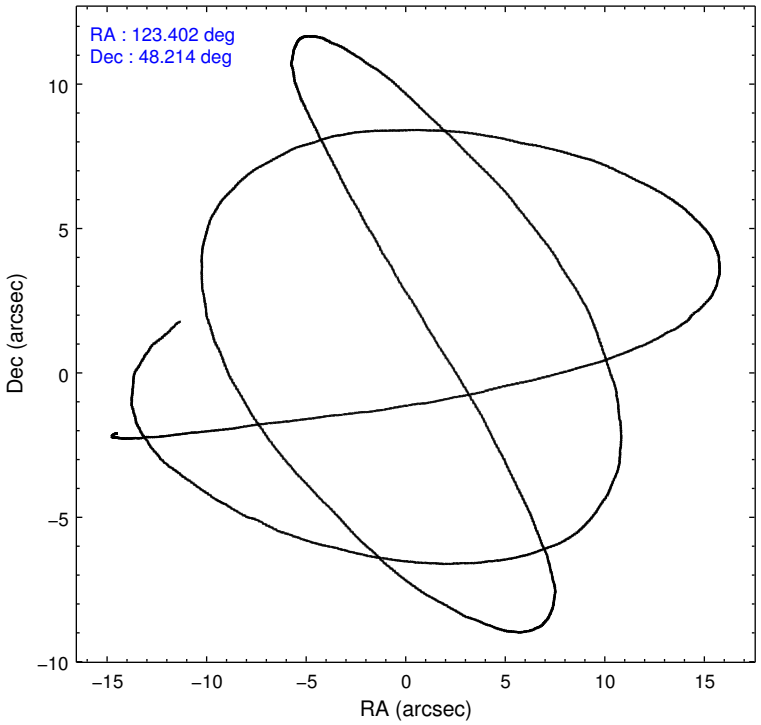
	ccd 3	**ccd 6**	**ccd 7**	**ccd 8**
grade 0 events	104	102	184	264
	3%	3%	4%	5%
grade 1 events	0	3	6	8
	0%	0%	0%	0%
grade 2 events	66	66	375	235
	2%	2%	9%	5%
grade 3 events	48	59	165	121
	1%	1%	4%	2%
grade 4 events	61	45	165	111
	1%	1%	4%	2%
grade 5 events	154	143	381	195
	4%	4%	9%	4%
grade 6 events	74	79	909	353
	2%	2%	23%	7%
grade 7 events	2775	2628	1734	3355
	84%	84%	44%	72%

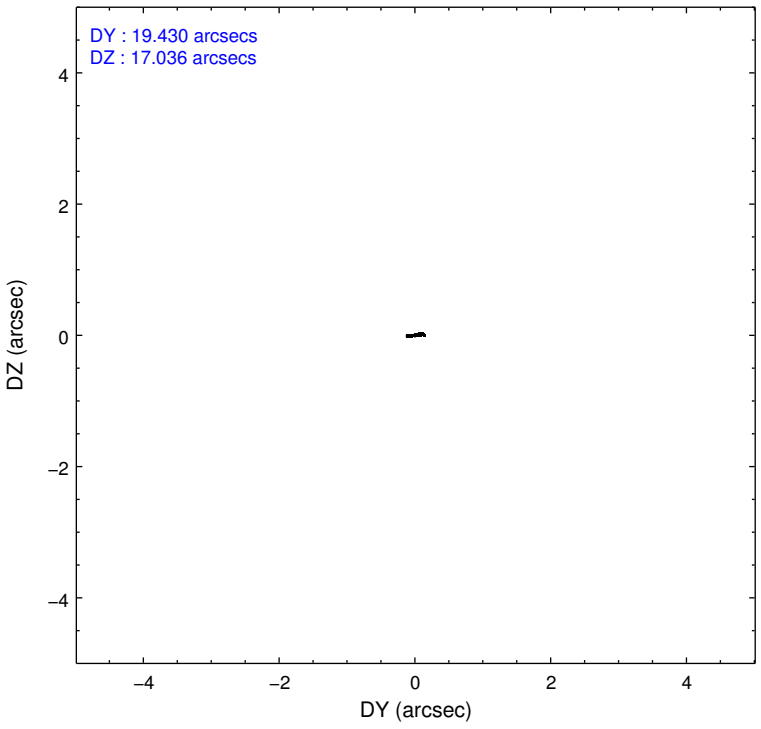
2.2 Compared Parameters

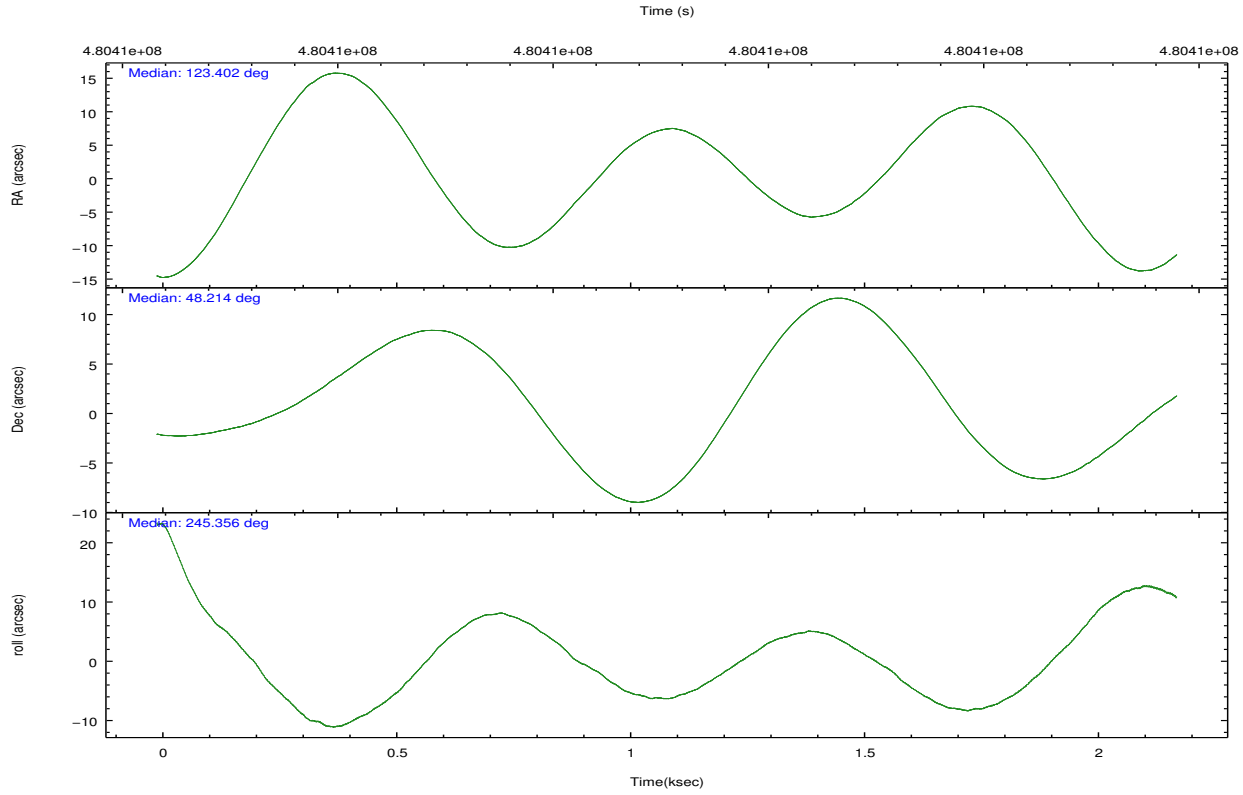
Parameter	Planned	Actual
Instrument	ACIS	ACIS
Detector	ACIS-3678	ACIS-3678
Grating	NONE	NONE
Data mode	FAINT	FAINT
Observation mode	POINTING	POINTING
[deg] Pointing RA	123.398064	123.4023493329365
[deg] Pointing Dec	48.242009	48.21469808726997
[deg] Pointing Roll	245.210632	245.3640710439173
[mm] SIM 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)	480410344.184000	480409358.53311
Observation start date	2013-03-23T07:17:57	2013-03-23T07:02:38
[s] Observation end time (MET)	480412344.184000	480413869.55836
Observation end date	2013-03-23T07:51:17	2013-03-23T08:17:49
Read mode	TIMED	TIMED

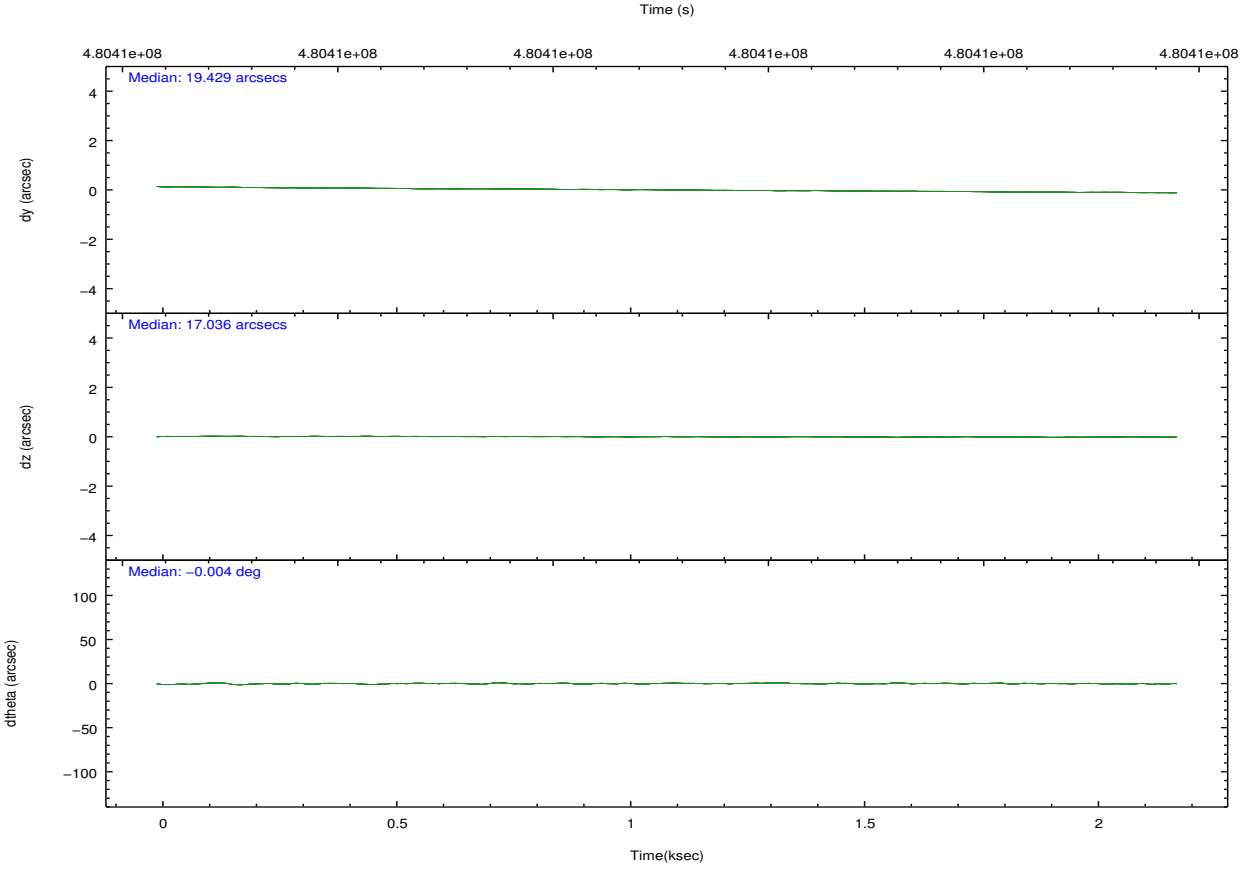
Parameter	Planned	Actual
Obspar format version number	7	7
Obspar file type	PREDICTED	ACTUAL
Obspar update status	NONE	UPDATED
CCD I0 on	N	N
CCD I1 on	N	N
CCD I2 on	N	N
CCD I3 on	O1	Y
CCD S0 on	N	N
CCD S1 on	N	N
CCD S2 on	O3	Y
CCD S3 on	Y	Y
CCD S4 on	O2	Y
CCD S5 on	N	N
Number of optional ACIS chips dropped	0	0
On-chip summing requested	N	N
Subarray requested	CUSTOM	1/4
Subarray start row	385	385
Subarray row count	256	256
Alternating exposures requested	N	N
[s] Primary exposure time	0.000000	1

2.3 Aspect


RA : 123.402 deg
Dec : 48.214 deg
Dec (arcsec)
RA (arcsec)
10
5
0
−5
−10
−15
−10
−5
0
5
10
15


DY : 19.430 arcsecs
DZ : 17.036 arcsecs
DZ (arcsec)
DY (arcsec)
4
2
0
−2
−4
−4
−2
0
2
4


Time (s)
4.8041e+08
4.8041e+08
4.8041e+08
4.8041e+08
4.8041e+08
4.8041e+08
Median: 123.402 deg
RA (arcsec)
Median: 48.214 deg
Dec (arcsec)
Median: 245.356 deg
roll (arcsec)
0
0.5
1
1.5
2
Time(ksec)

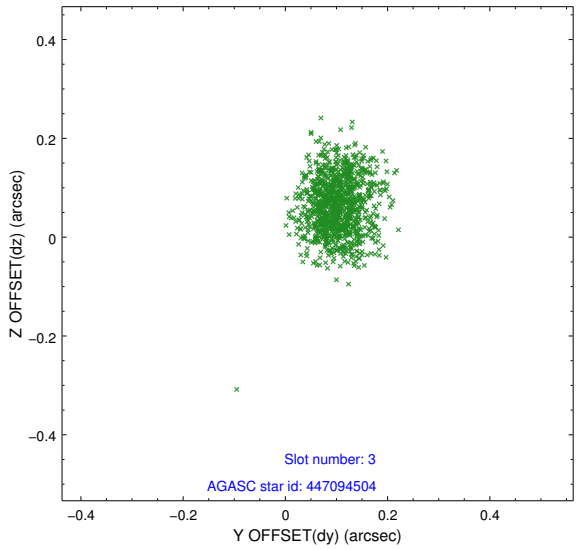

Time (s)
4.8041e+08
4.8041e+08
4.8041e+08
4.8041e+08
4.8041e+08
4.8041e+08
Median: 19.429 arcsecs
dy (arcsec)
Median: 17.036 arcsecs
dz (arcsec)
Median: −0.004 deg
dtheta (arcsec)
0
0.5
1
1.5
2
Time(ksec)

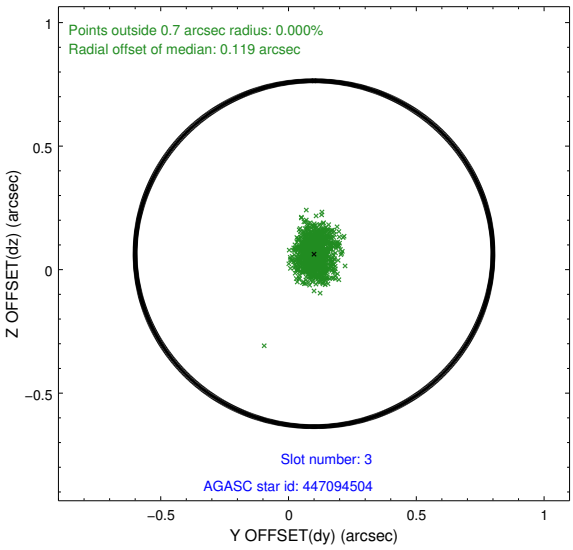
Slot Statistics

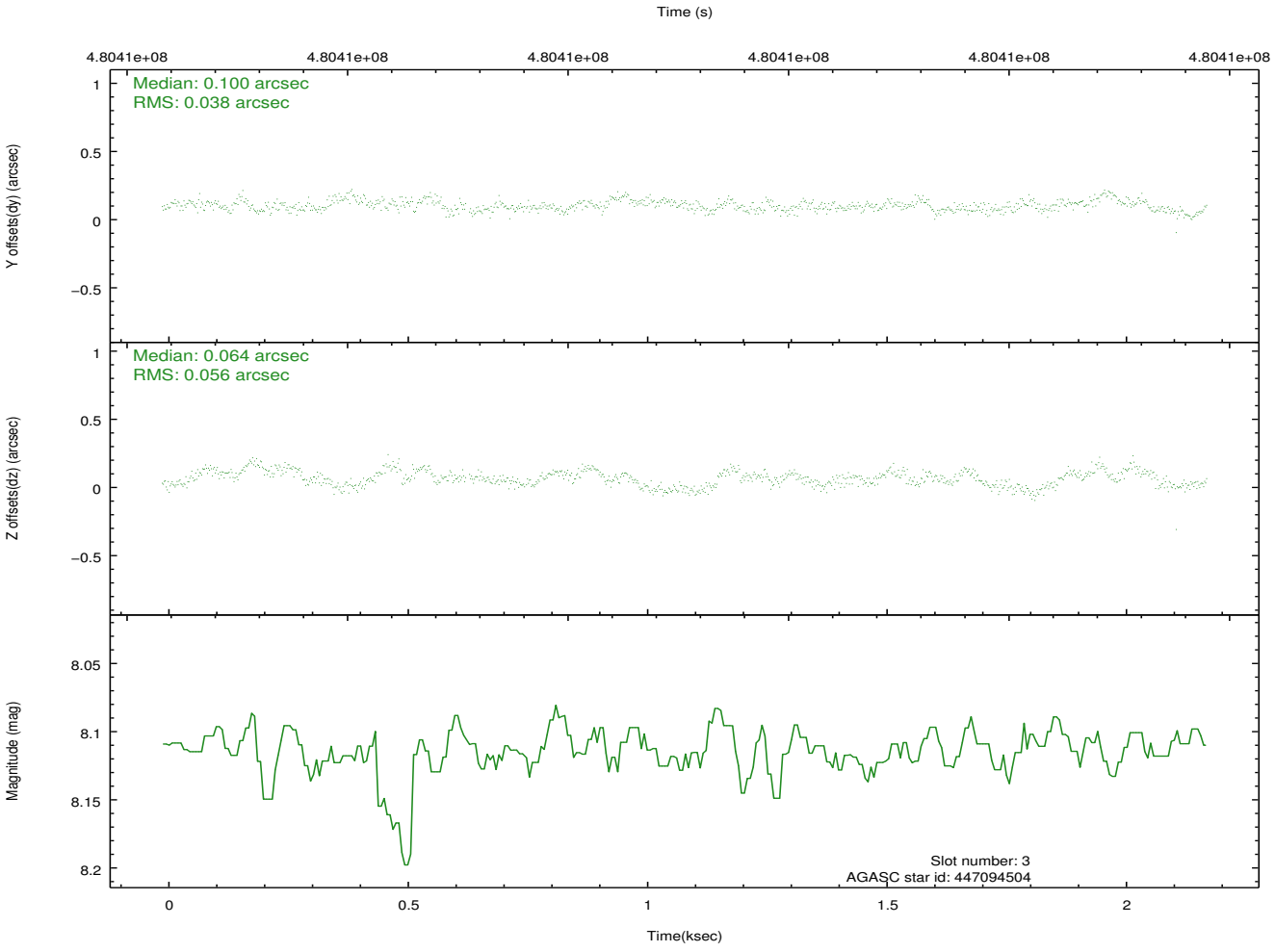
slot	status	used	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID		ACIS-S-1	7.09	532	0.048	-0.055	0.008	0.018	0.000000	0.000000	923.53	-1734.12
1	FID		ACIS-S-4	7.10	532	0.199	0.020	0.006	0.010	0.000000	0.000000	2142.76	167.00
2	FID		ACIS-S-5	7.13	532	-0.273	0.048	0.009	0.018	0.000000	0.000000	-1821.81	164.07
3	GUIDE	used	447094504	8.11	1061	0.100	0.064	0.073	0.116	122.766452	48.477234	-142.34	-1725.61
4	GUIDE	used	447097168	8.71	1065	-0.020	0.081	0.103	0.163	122.441234	48.374585	514.19	-2284.94
5	GUIDE	used	447099336	7.84	1065	-0.118	-0.139	0.082	0.130	123.619219	48.437866	-862.12	182.04
6	GUIDE	used	448006160	8.32	1062	-0.079	0.042	0.074	0.120	124.237130	48.566527	-1909.95	1320.75
7	GUIDE	used	448010192	9.11	1061	0.107	-0.055	0.094	0.158	124.010339	47.559733	1599.37	2379.64

2.4 Star Slots

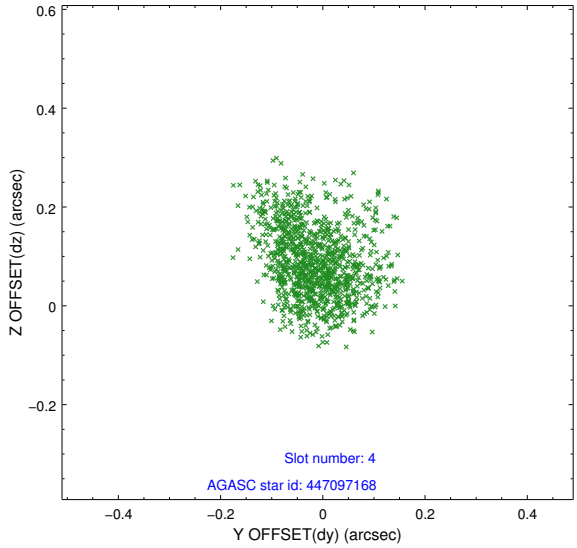
2.4.1 Slot 3

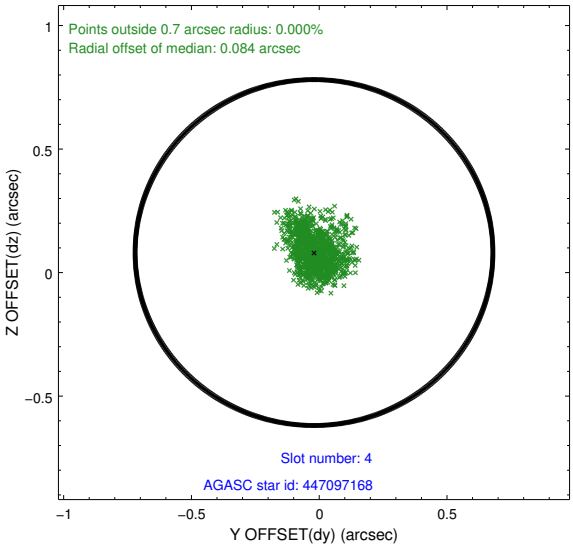


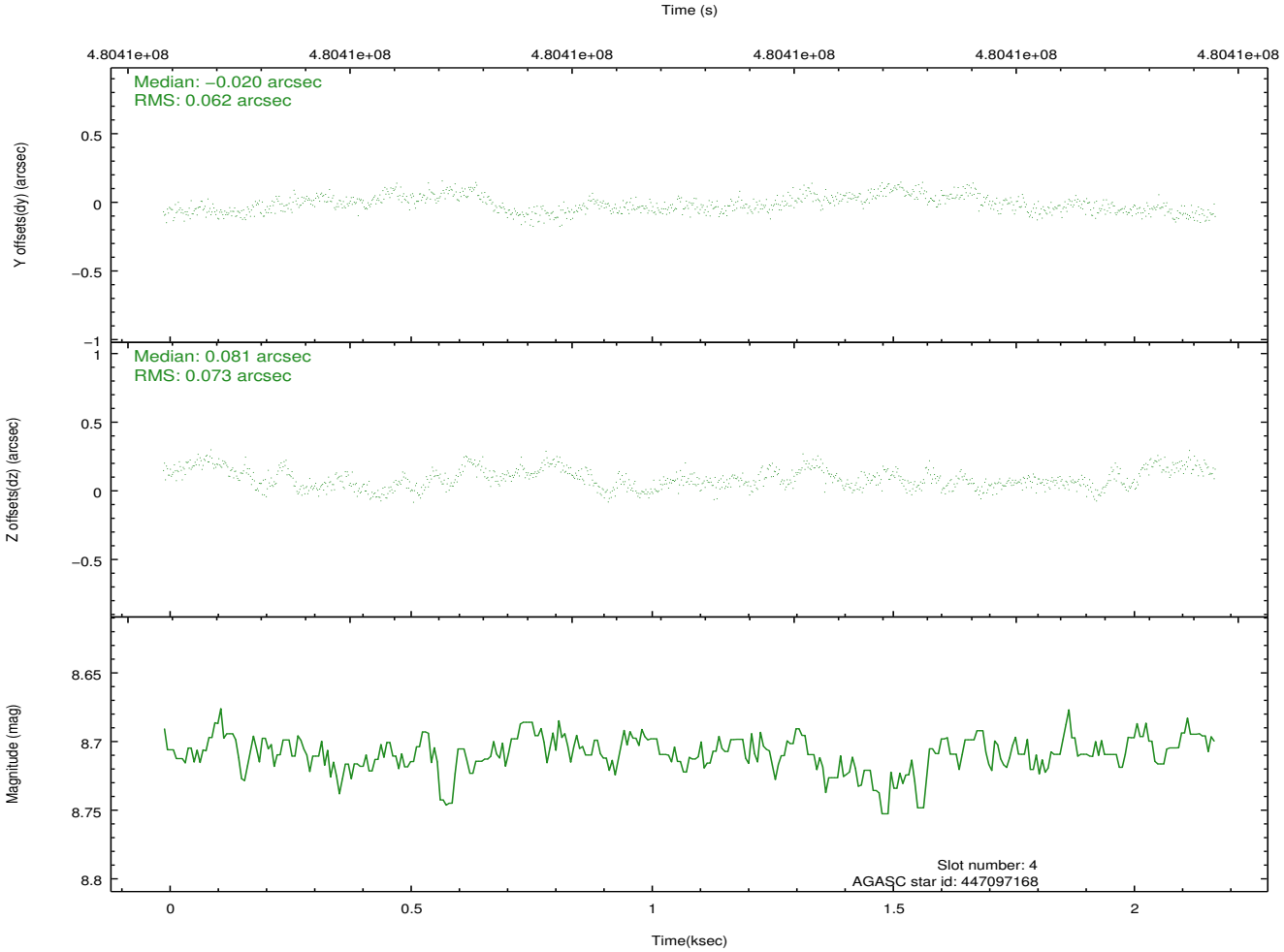




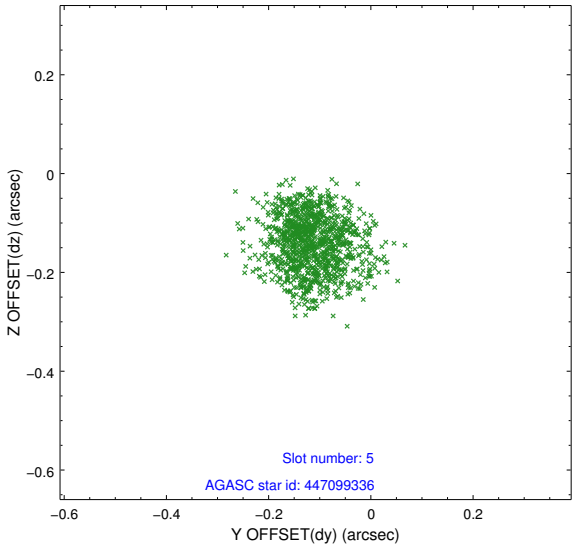
2.4.2 Slot 4

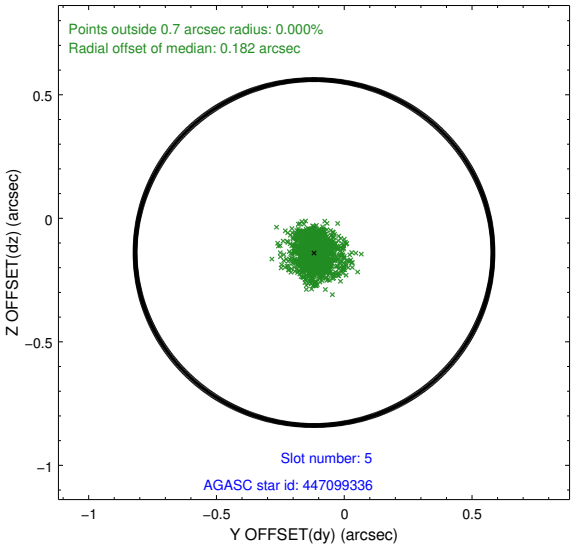

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 4
AGASC star id: 447097168

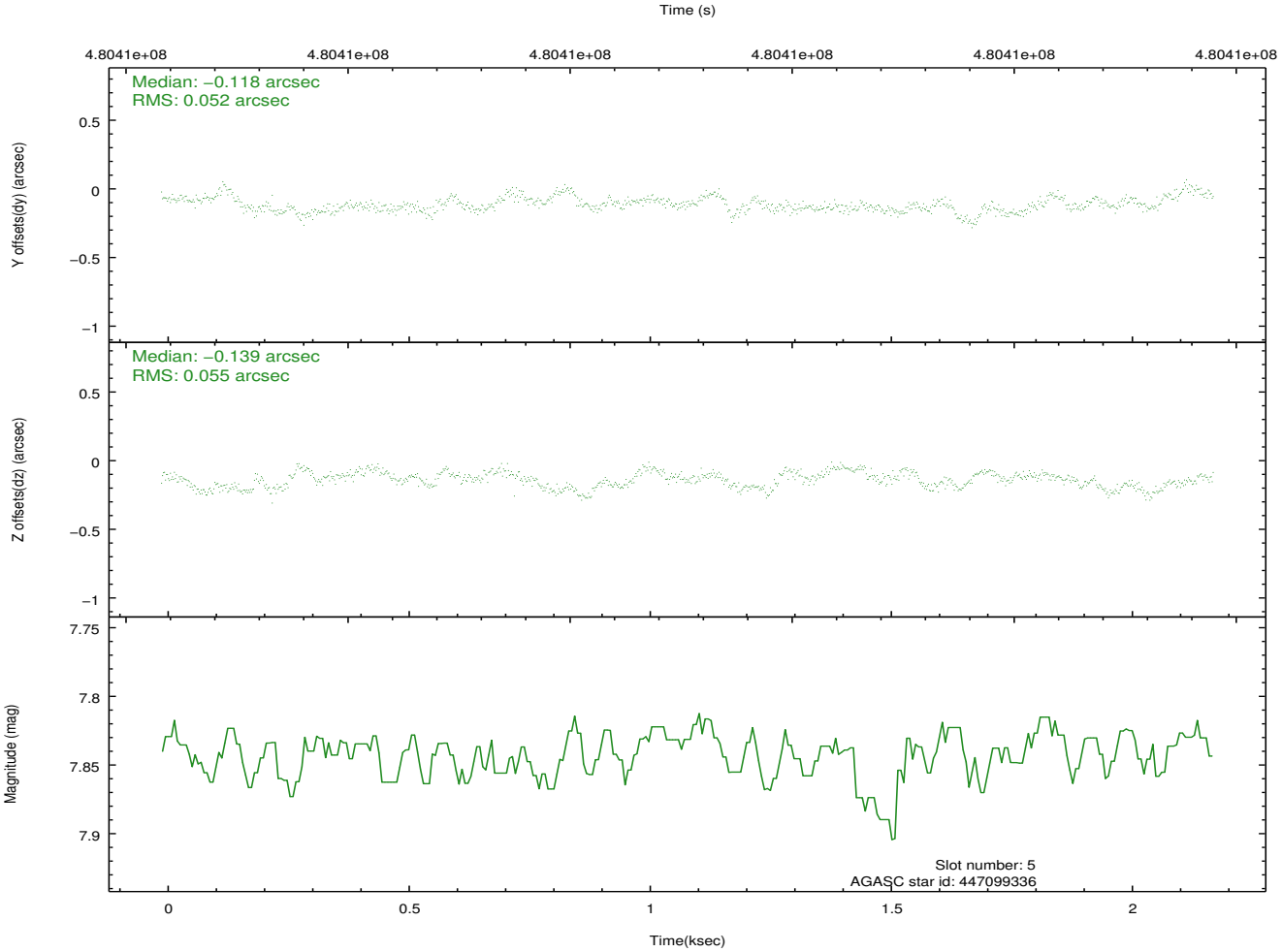

Points outside 0.7 arcsec radius: 0.000%
Radial offset of median: 0.084 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 4
AGASC star id: 447097168


Time (s)
Median: −0.020 arcsec
RMS: 0.062 arcsec
Y offsets(dy) (arcsec)
Median: 0.081 arcsec
RMS: 0.073 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number: 4
AGASC star id: 447097168
Time(ksec)

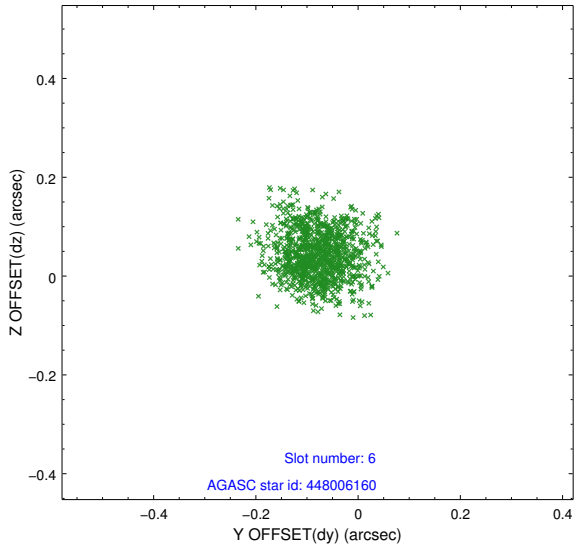
2.4.3 Slot 5

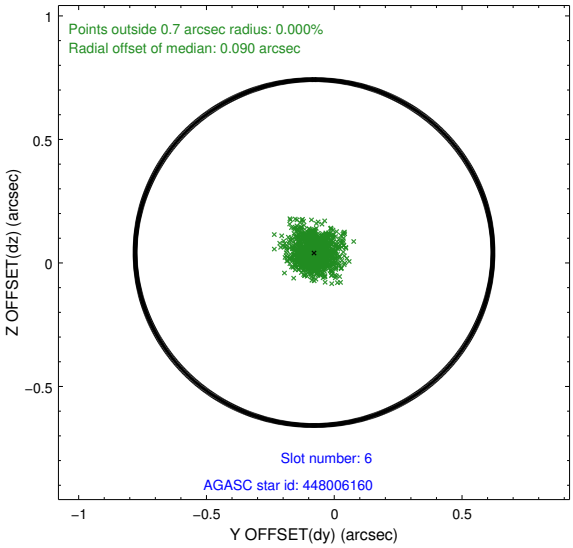

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 5
AGASC star id: 447099336

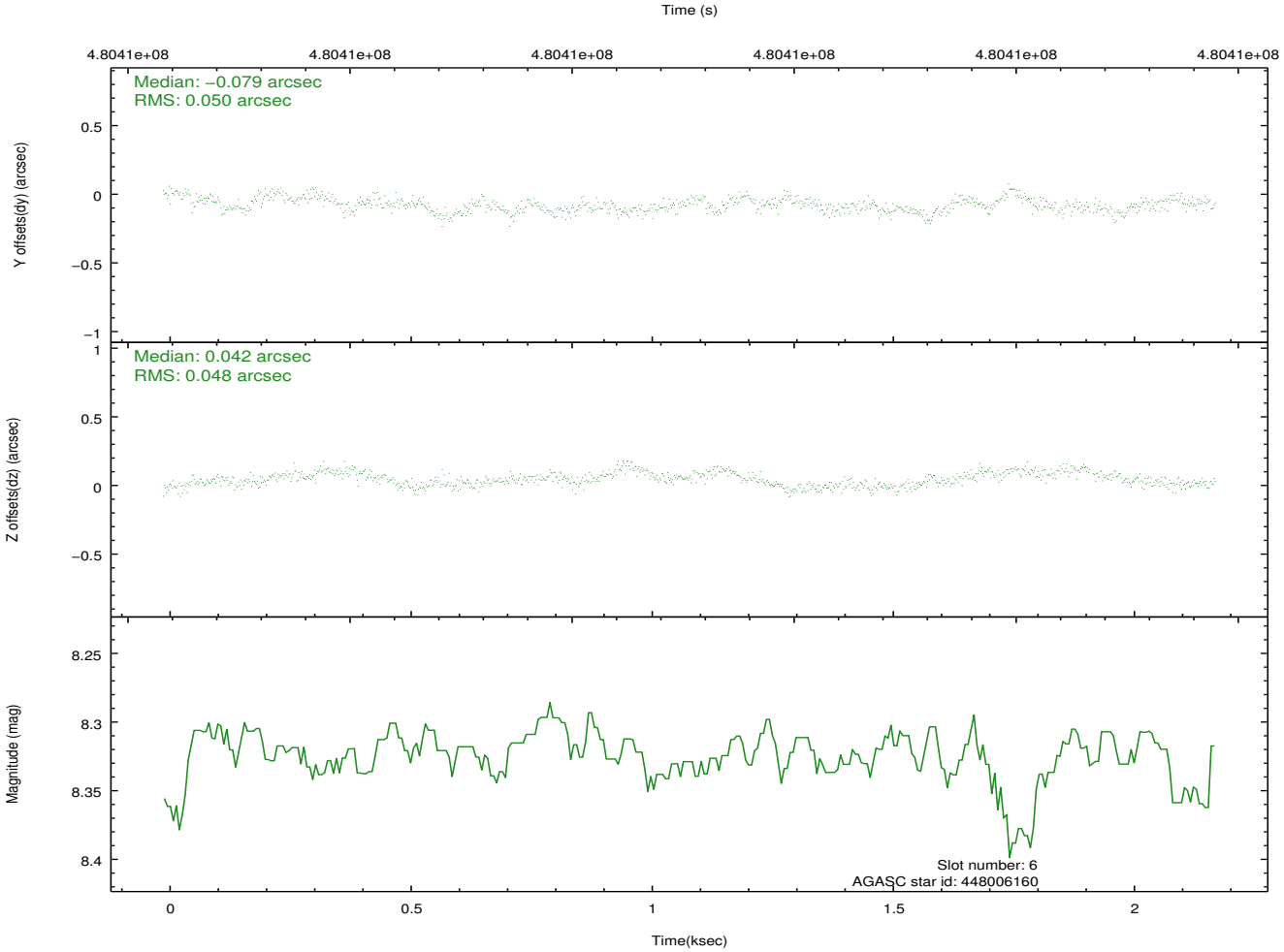

Points outside 0.7 arcsec radius: 0.000%
Radial offset of median: 0.182 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 5
AGASC star id: 447099336


Time (s)
Median: −0.118 arcsec
RMS: 0.052 arcsec
Y offsets(dy) (arcsec)
Median: −0.139 arcsec
RMS: 0.055 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number: 5
AGASC star id: 447099336
Time(ksec)

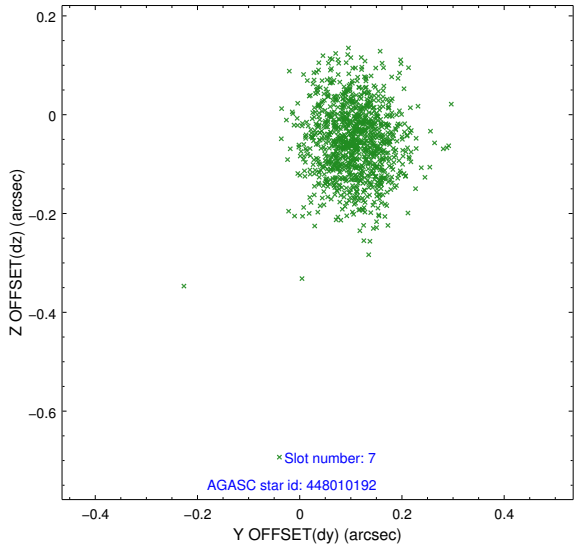
2.4.4 Slot 6

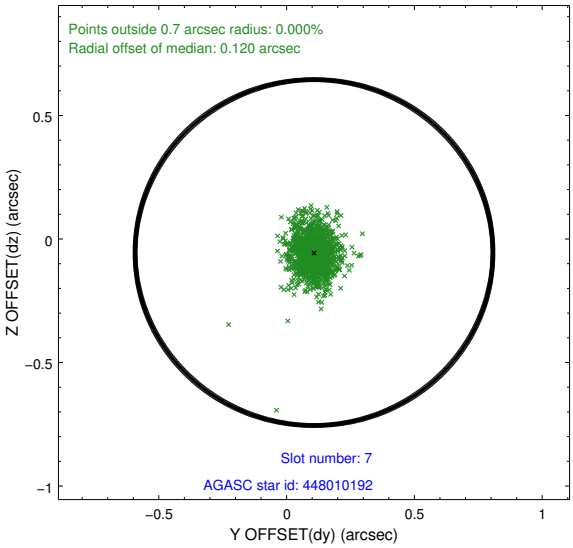

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 6
AGASC star id: 448006160

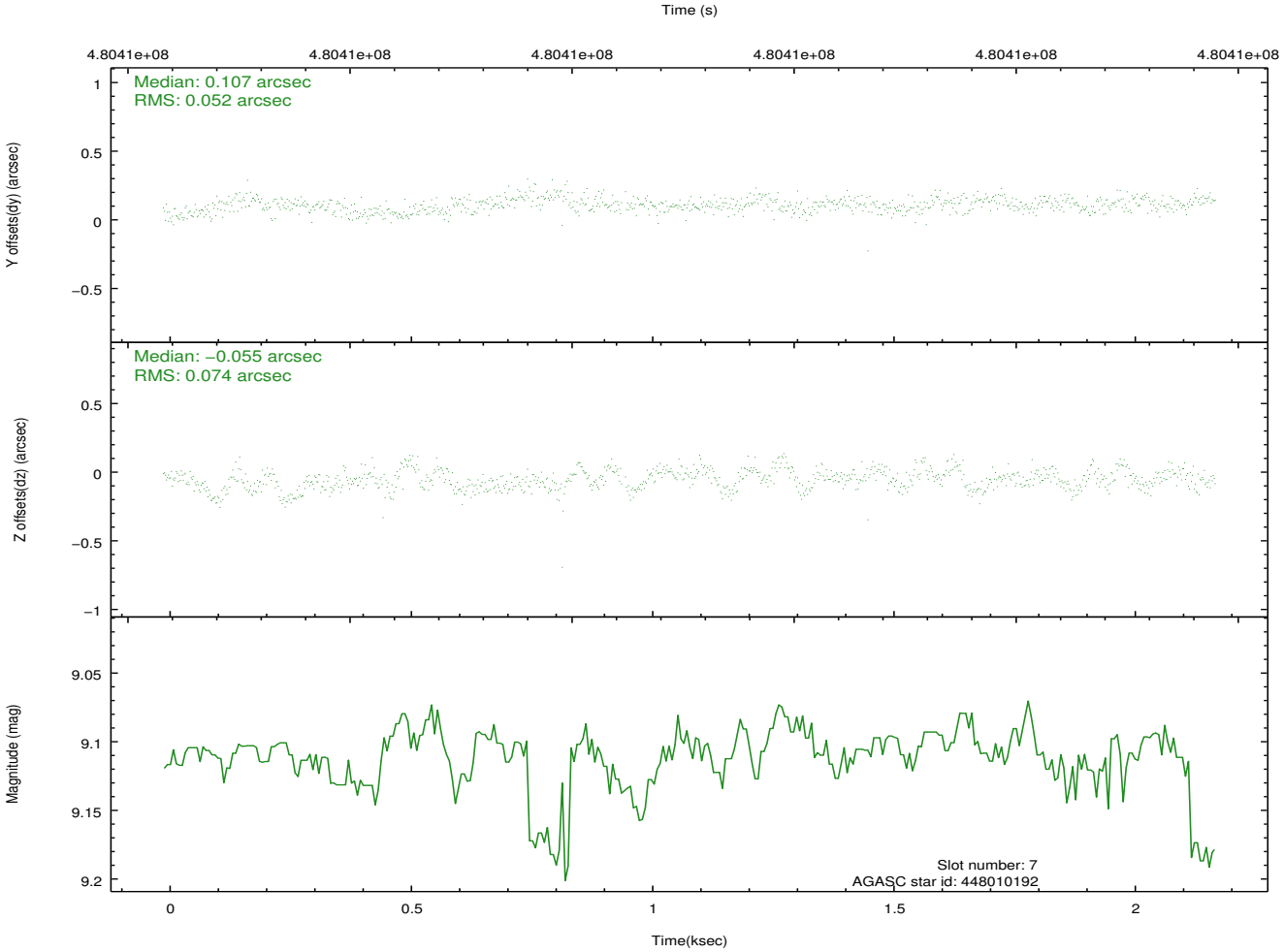

Points outside 0.7 arcsec radius: 0.000%
Radial offset of median: 0.090 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 6
AGASC star id: 448006160


Time (s)
Median: −0.079 arcsec
RMS: 0.050 arcsec
Y offsets(dy) (arcsec)
Median: 0.042 arcsec
RMS: 0.048 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number: 6
AGASC star id: 448006160
Time(ksec)

2.4.5 Slot 7

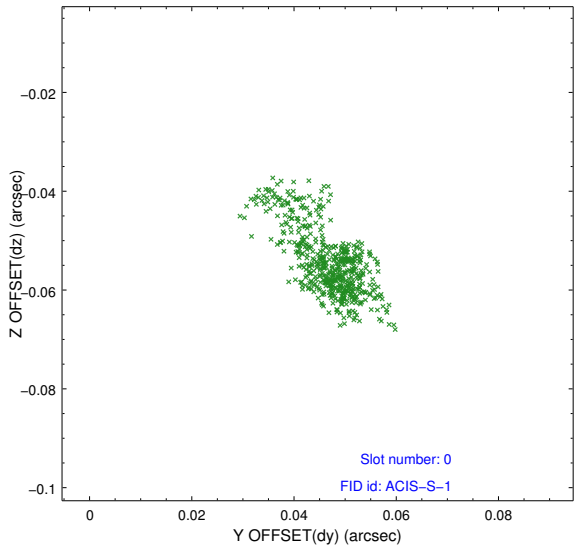

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 7
AGASC star id: 448010192

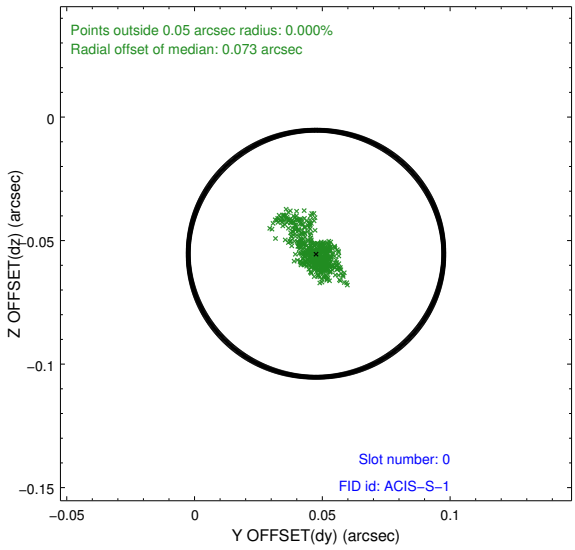

Points outside 0.7 arcsec radius: 0.000%
Radial offset of median: 0.120 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 7
AGASC star id: 448010192

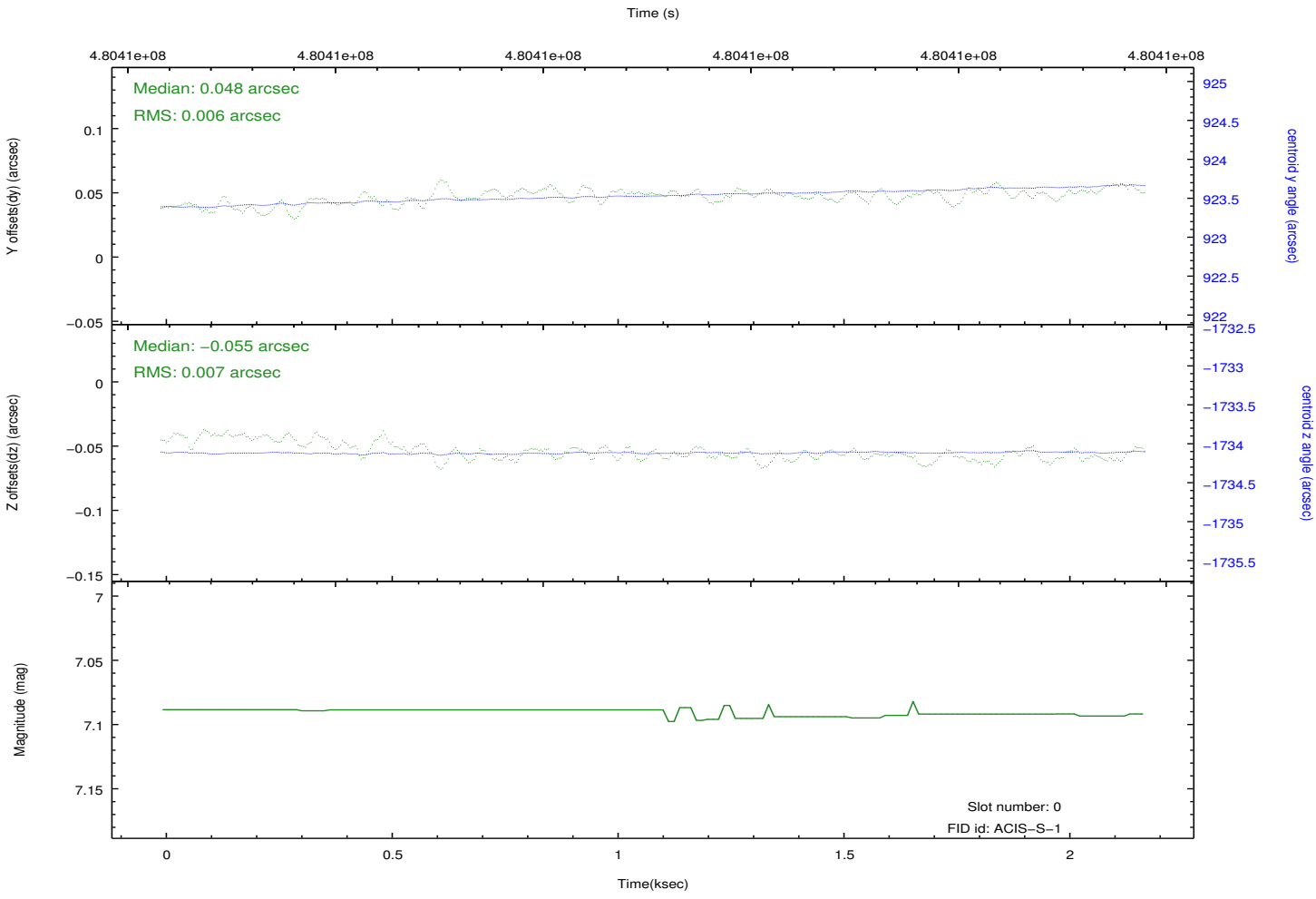

Time (s)
Median: 0.107 arcsec
RMS: 0.052 arcsec
Y offsets(dy) (arcsec)
Median: −0.055 arcsec
RMS: 0.074 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number: 7
AGASC star id: 448010192
Time(ksec)

2.5 FID Slots

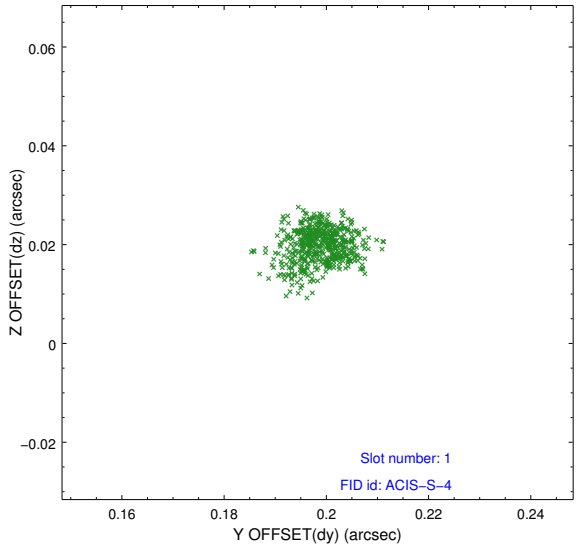
2.5.1 Slot 0

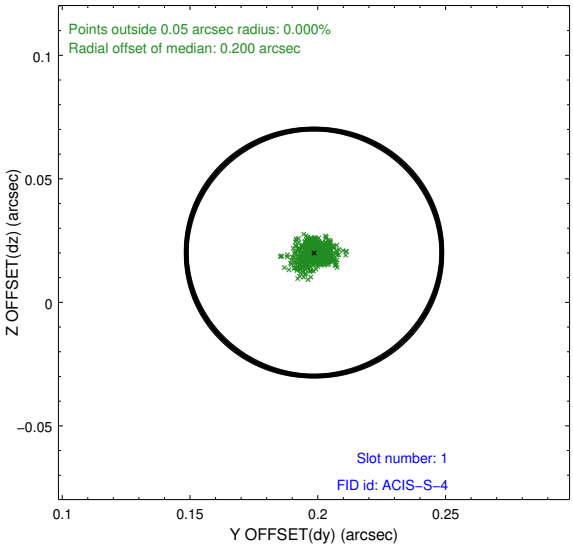


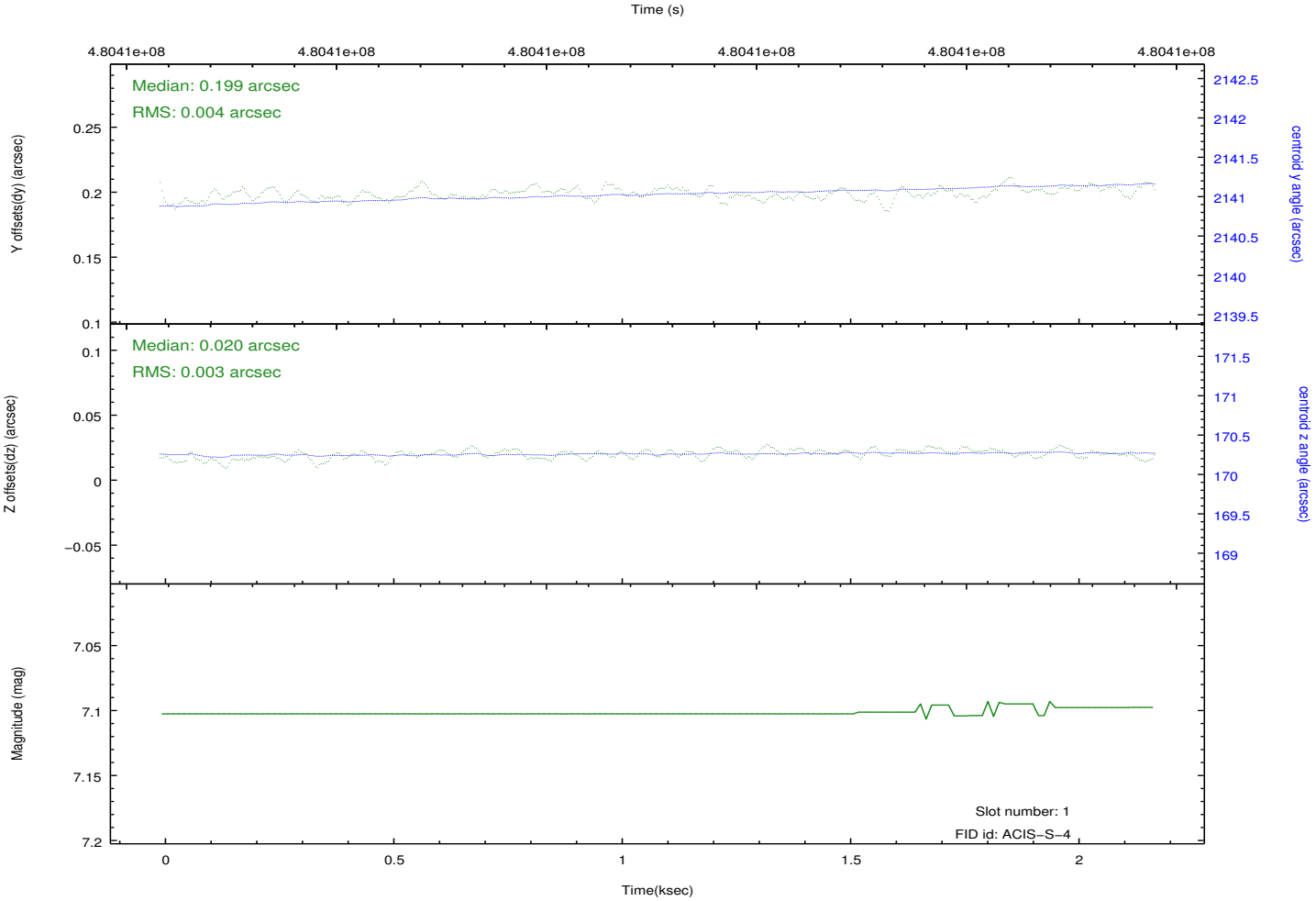




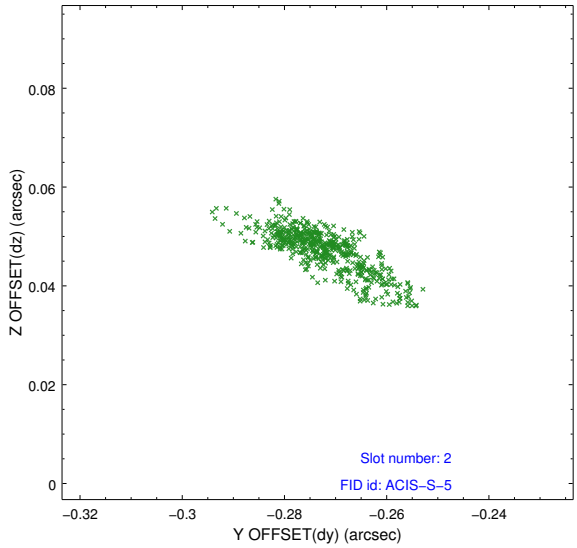
2.5.2 Slot 1

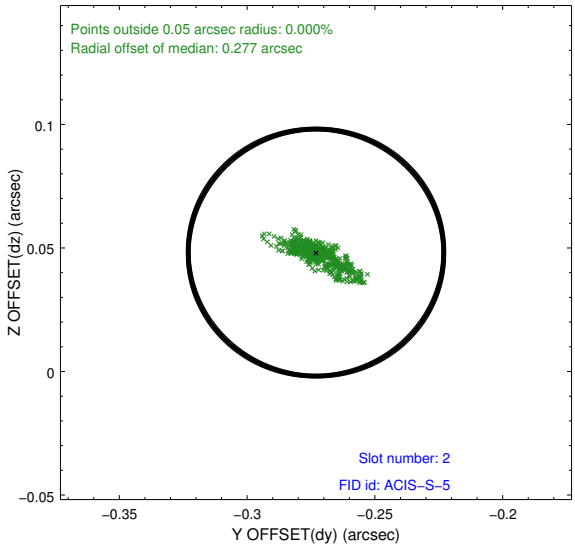

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 1
FID id: ACIS−S−4

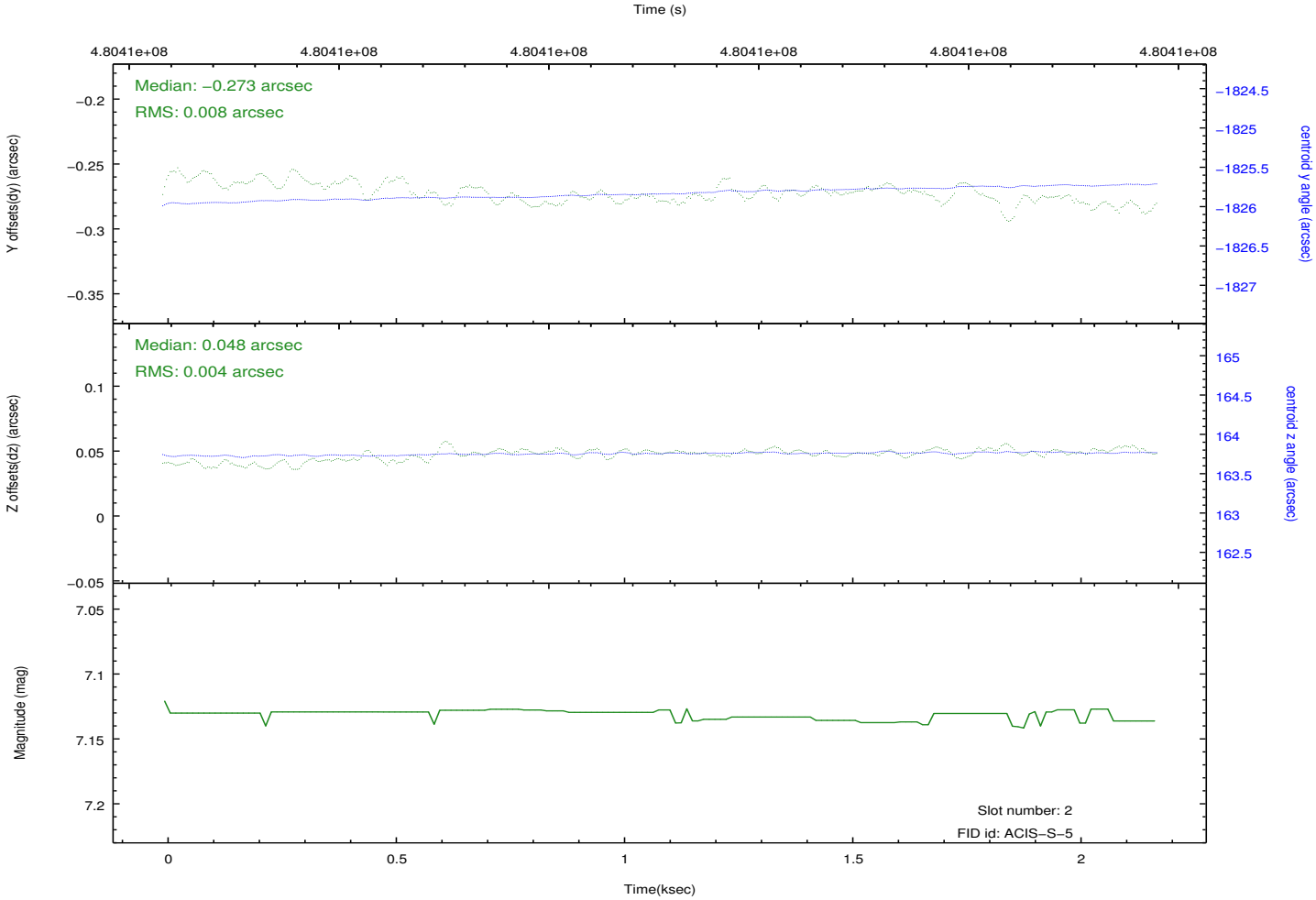

Points outside 0.05 arcsec radius: 0.000%
Radial offset of median: 0.200 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 1
FID id: ACIS−S−4


Time (s)
Median: 0.199 arcsec
RMS: 0.004 arcsec
Y offsets(dy) (arcsec)
centroid y angle (arcsec)
Median: 0.020 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: 0.277 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 2
FID id: ACIS−S−5


Time (s)
Median: −0.273 arcsec
RMS: 0.008 arcsec
Y offsets(dy) (arcsec)
centroid y angle (arcsec)
Median: 0.048 arcsec
RMS: 0.004 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	Jen Lauer
V&V Date (YYYY-MM-DD)	2014.12.10
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	2.084

A.2 Comments

These data have been reprocessed with new aspect alignment calibration files that correct small mean offsets (up to 0.4 arcsecs) and improve overall astrometric accuracy. The new calibration was determined using data from the time period being reprocessed and was performed using cross-correlation of X-ray sources with radio and optical counterparts.