V&V Reference Report
L2 ASCDS Version : 8.5.1.1

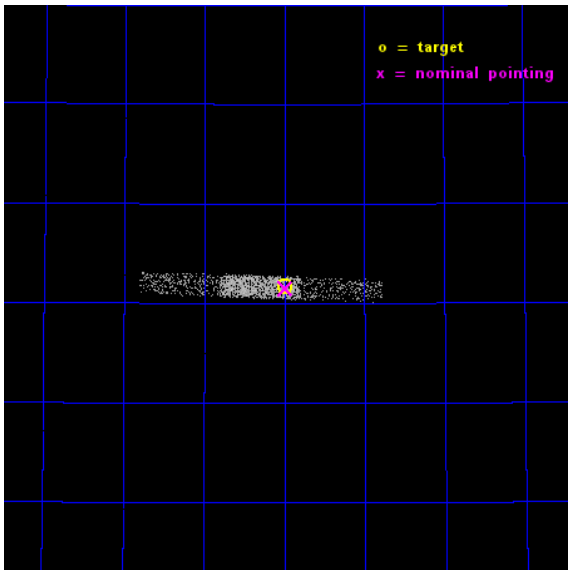
Observation 15344 - L2 Version 2
Chandra X-Ray Center

L2 Processing Date : Dec 2 2014

Contents

1 Front

seq_num	702904	Sequence number
obs_id	15344	Observation id
title	Clarifying the Nature of Weak-Line Quasars with Chandra Spectroscopy and Snapshots	Proposal title
observer	Professor Gordon Garmire	Principal investigator
object	SDSS J1310+5601	Source name
dtycycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	197.749167	Observer's specified target RA [deg]
dec_targ	56.027806	Observer's specified target Dec [deg]
ra_nom	197.74663746687	Nominal RA [deg]
dec_nom	56.025128178894	Nominal Dec [deg]
roll_nom	181.93464645251	Nominal Roll [deg]
revision	2	Processing version of data
ontime	2094.29994452	Sum of GTIs [s]
livetime	2002.9647518363	Livetime [s]
ontime6	2094.29994452	Sum of GTIs [s]
ontime7	2094.29994452	Sum of GTIs [s]
ontime8	2094.29994452	Sum of GTIs [s]
l2events	2223	Number of level 2 events

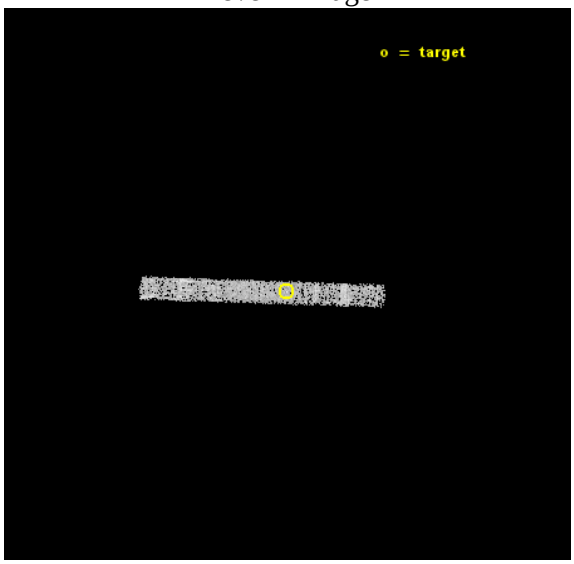


2 OBI

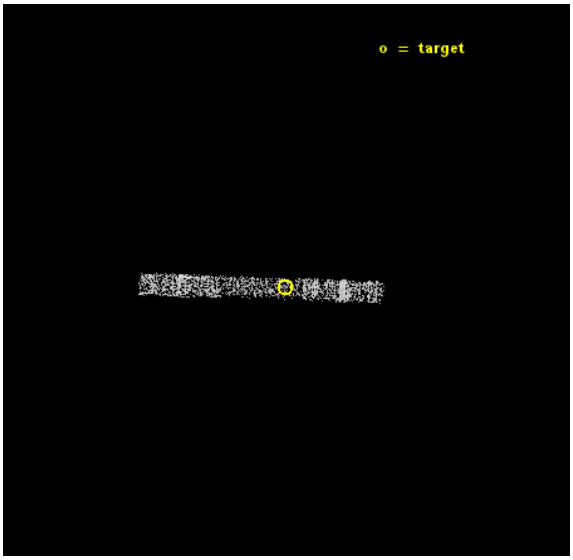
2.1 OBI

2.1.1 Images

Level 1 Image

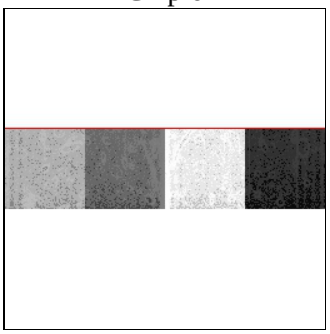


Level 1 Bad Events

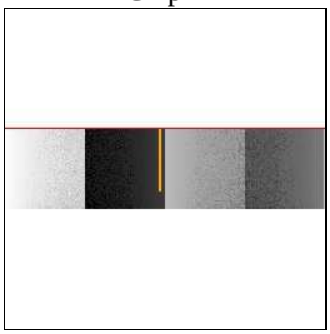


2.1.2 Bias

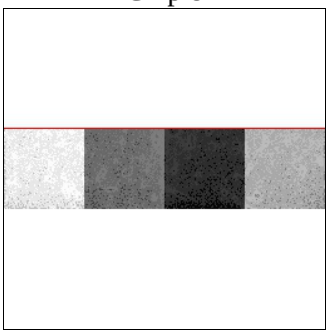
Chip 6



Chip 7



Chip 8



2.1.3 Parameters

obi_num	0	Obi number
ascdsver	10.3	Processing system revision
caldbver	4.6.4	
date	2014-12-02T15:24:38	Date and time of file creation
revision	2	Processing version of data

sched_exp_time	2000.000000	[s] Scheduled observation exposure time
ontime	2094.29994452	Sum of GTIs [s]
ontime6	2094.29994452	Sum of GTIs [s]
ontime7	2094.29994452	Sum of GTIs [s]
ontime8	2094.29994452	Sum of GTIs [s]
l1events	10661	Number of level 1 events

2.1.4 Events

	ccd 6	**ccd 7**	**ccd 8**
level 1 events	3321	3290	4050
rejected events	2970	1601	3103
rejected %	89%	48%	76%

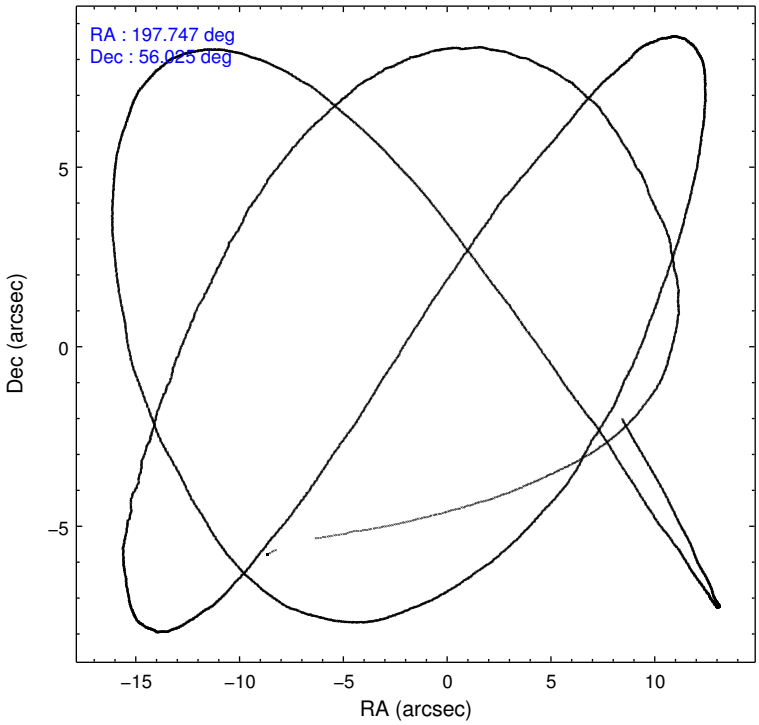
	ccd 6	**ccd 7**	**ccd 8**
grade 0 events	113	213	250
	3%	6%	6%
grade 1 events	2	5	2
	0%	0%	0%
grade 2 events	52	367	196
	1%	11%	4%
grade 3 events	60	180	126
	1%	5%	3%
grade 4 events	64	190	103
	1%	5%	2%
grade 5 events	122	338	175
	3%	10%	4%
grade 6 events	62	740	272
	1%	22%	6%
grade 7 events	2846	1257	2926
	85%	38%	72%

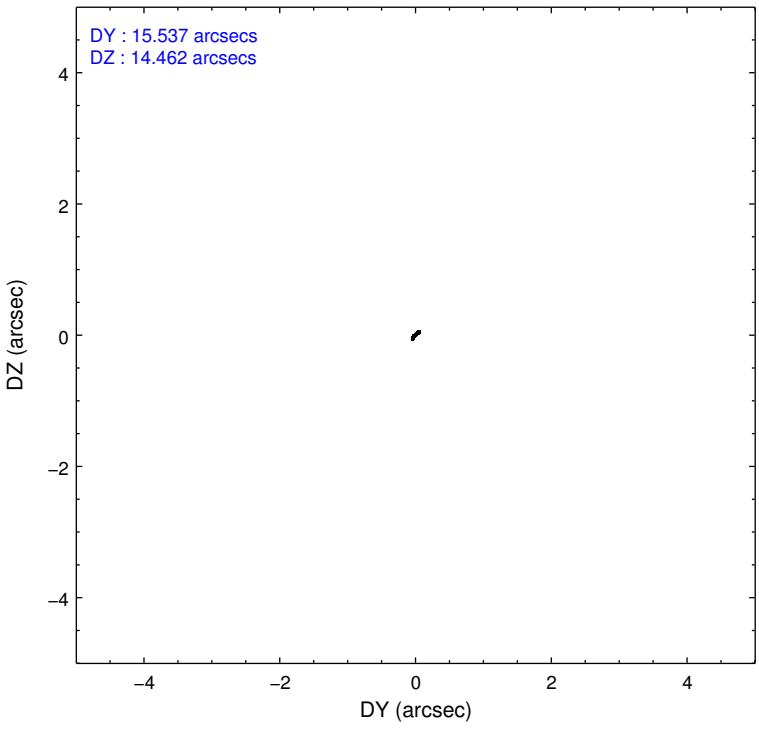
2.2 Compared Parameters

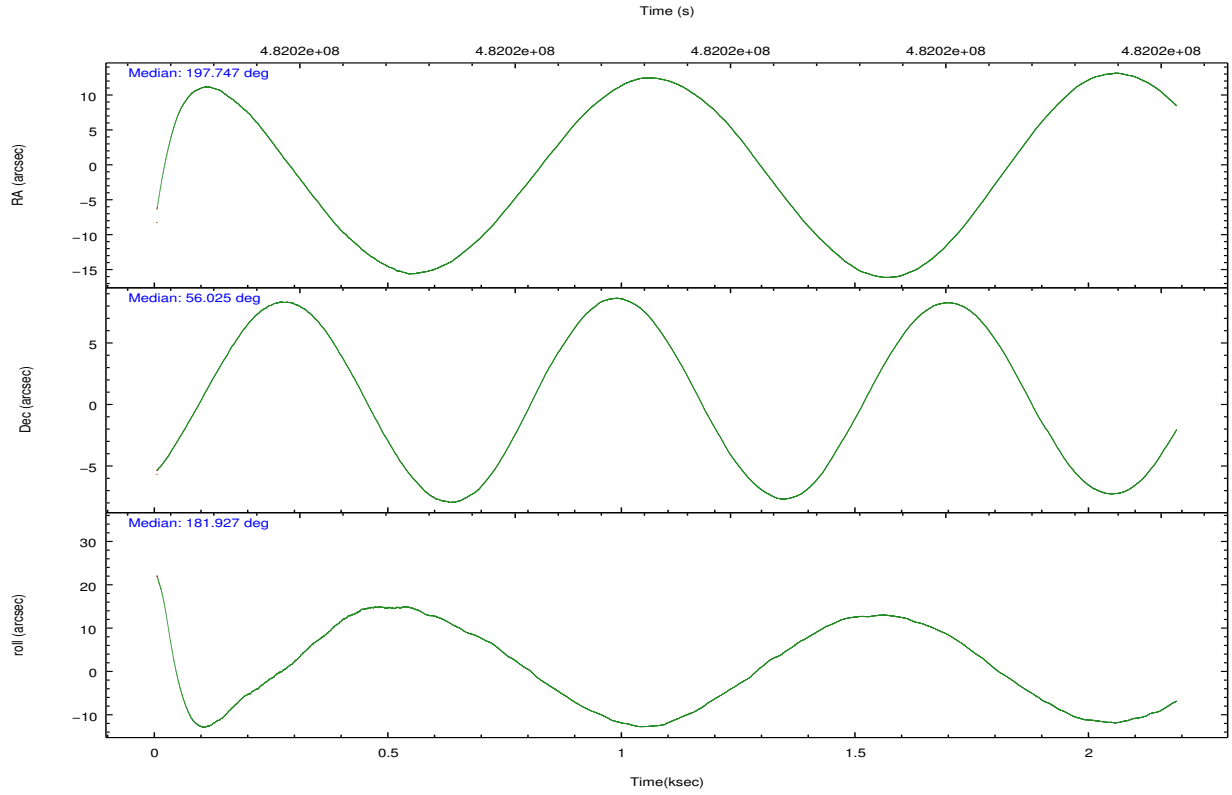
Parameter	Planned	Actual
Instrument	ACIS	ACIS
Detector	ACIS-678	ACIS-678
Grating	NONE	NONE
Data mode	VFAINT	VFAINT
Observation mode	POINTING	POINTING
[deg] Pointing RA	197.787585	197.7466374668742
[deg] Pointing Dec	56.039983	56.02512817889408
[deg] Pointing Roll	181.743926	181.9346464525147
[mm] SIM 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)	482019454.184000	482018329.30769
Observation start date	2013-04-10T22:16:27	2013-04-10T21:58:49
[s] Observation end time (MET)	482021454.184000	482022140.25789
Observation end date	2013-04-10T22:49:47	2013-04-10T23:02:20
Read mode	TIMED	TIMED

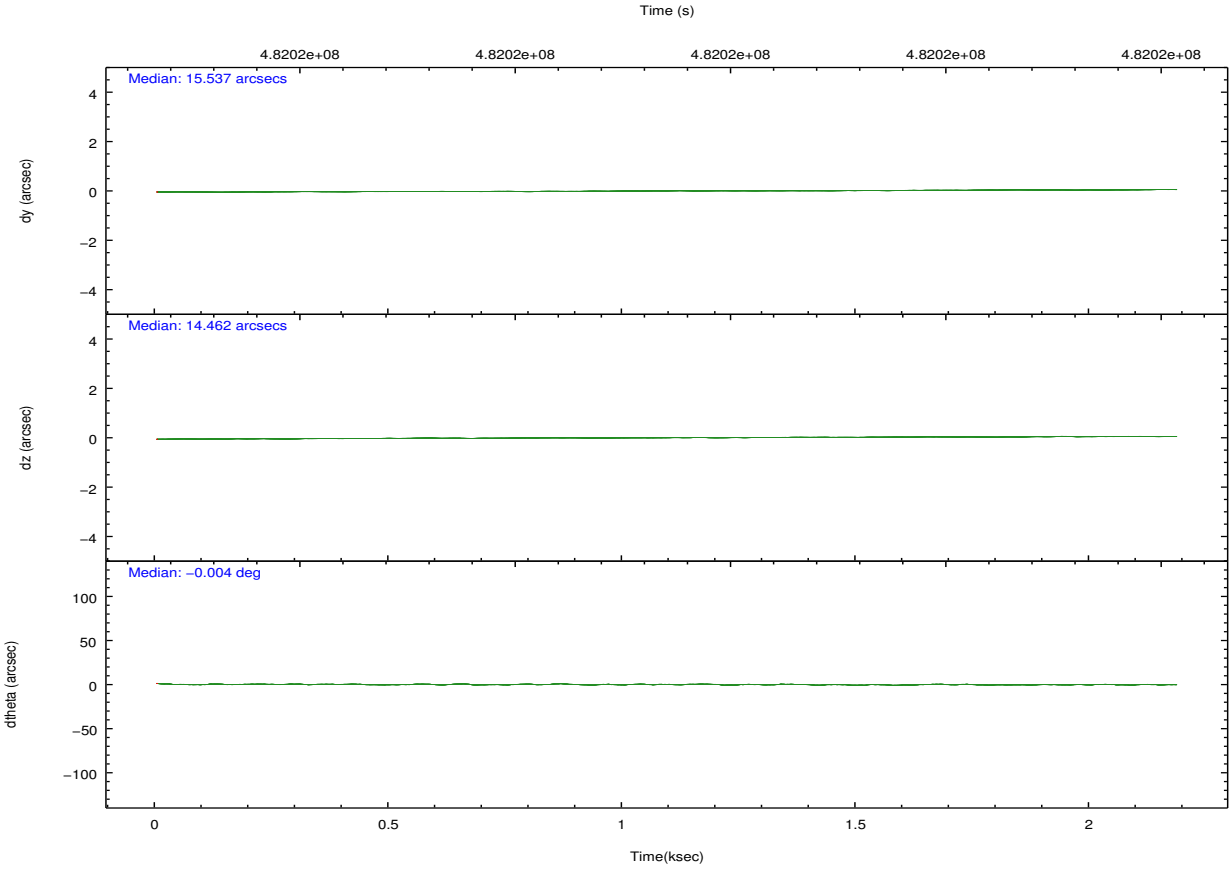
Parameter	Planned	Actual
Obspar format version number	7	7
Obspar file type	PREDICTED	ACTUAL
Obspar update status	NONE	UPDATED
Number of optional ACIS chips dropped	0	0
On-chip summing requested	N	N
Subarray requested	CUSTOM	1/4
Subarray start row	385	385
Subarray row count	256	256
Alternating exposures requested	N	N
[s] Primary exposure time	0.000000	0.9

2.3 Aspect


RA : 197.747 deg
Dec : 56.025 deg
Dec (arcsec)
RA (arcsec)
5
0
−5
−15
−10
−5
0
5
10


DY : 15.537 arcsecs
DZ : 14.462 arcsecs
DZ (arcsec)
DY (arcsec)
4
2
0
−2
−4
−4
−2
0
2
4


Time (s)
4.8202e+08
4.8202e+08
4.8202e+08
4.8202e+08
4.8202e+08
Median: 197.747 deg
RA (arcsec)
Median: 56.025 deg
Dec (arcsec)
Median: 181.927 deg
roll (arcsec)
Time(ksec)

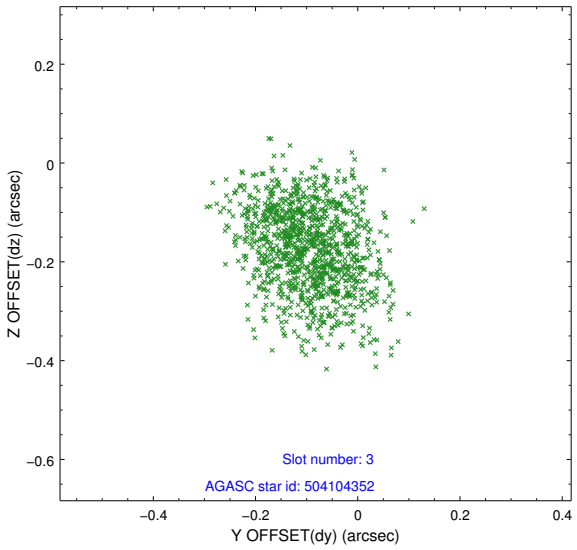

Time (s)
4.8202e+08
4.8202e+08
4.8202e+08
4.8202e+08
4.8202e+08
Median: 15.537 arcsecs
dy (arcsec)
Median: 14.462 arcsecs
dz (arcsec)
Median: −0.004 deg
dtheta (arcsec)
Time(ksec)

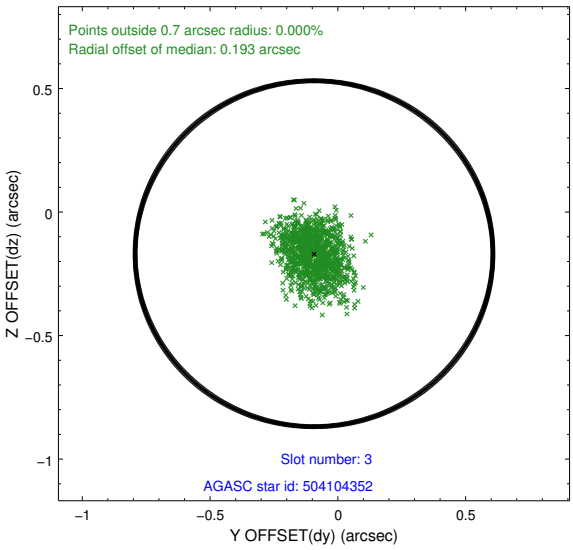
Slot Statistics

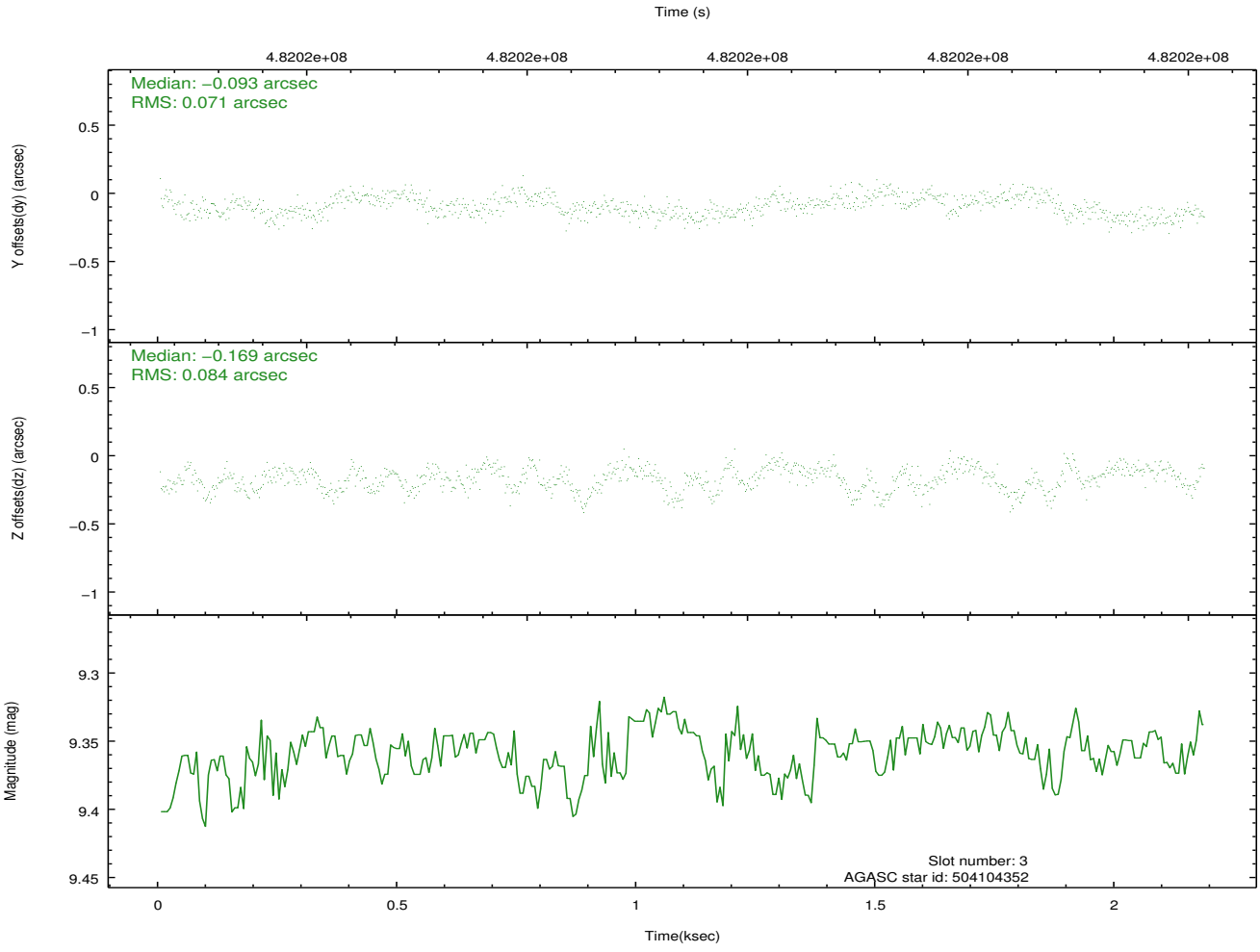
slot	status	used	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID		ACIS-S-2	7.03	533	-0.118	-0.039	0.006	0.011	0.000000	0.000000	-768.64	-1735.81
1	FID		ACIS-S-4	7.11	533	0.253	0.068	0.006	0.011	0.000000	0.000000	2143.64	169.67
2	FID		ACIS-S-5	7.14	533	-0.166	-0.020	0.007	0.011	0.000000	0.000000	-1817.70	166.66
3	GUIDE	used	504104352	9.36	1066	-0.093	-0.169	0.117	0.188	197.605623	55.960925	376.56	272.99
4	GUIDE	used	504106056	8.91	1063	0.004	-0.094	0.103	0.183	197.917232	55.926583	-248.07	416.33
5	GUIDE	used	504110328	9.64	1065	0.279	0.174	0.166	0.341	197.787936	56.617075	-62.11	-2076.21
6	GUIDE	used	504110864	7.77	1066	-0.070	0.102	0.085	0.243	198.368365	56.680888	-1217.38	-2277.88
7	GUIDE	used	504110312	6.93	1065	-0.104	-0.009	0.092	0.161	198.404207	56.708267	-1292.87	-2375.08

2.4 Star Slots

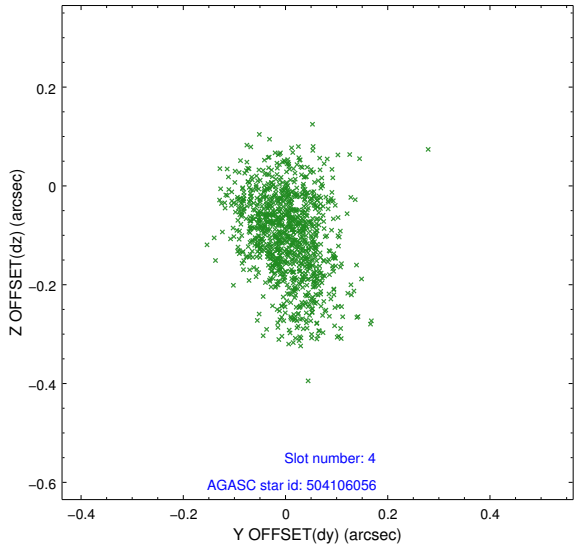
2.4.1 Slot 3

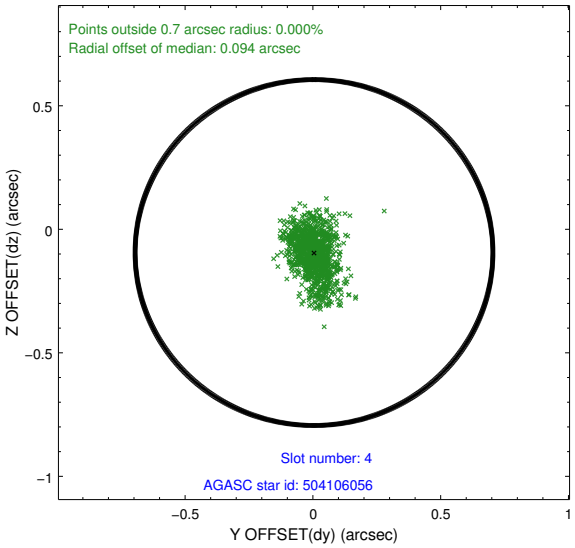


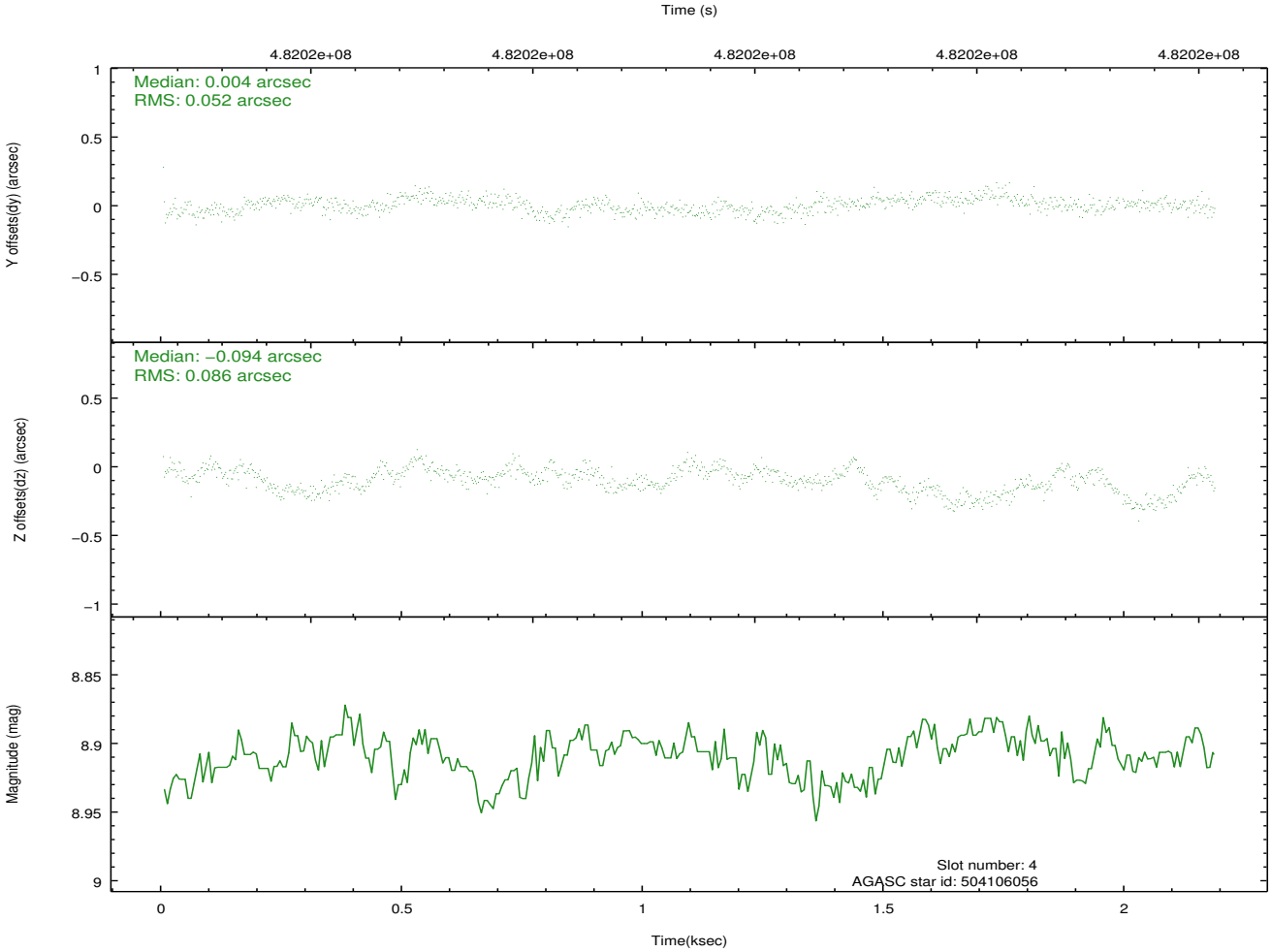




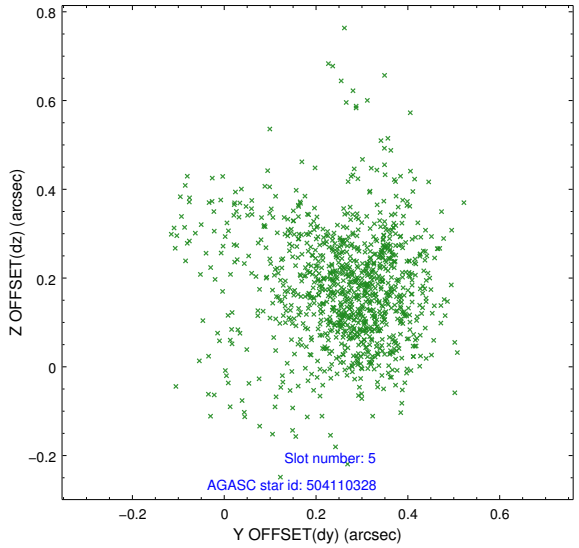
2.4.2 Slot 4

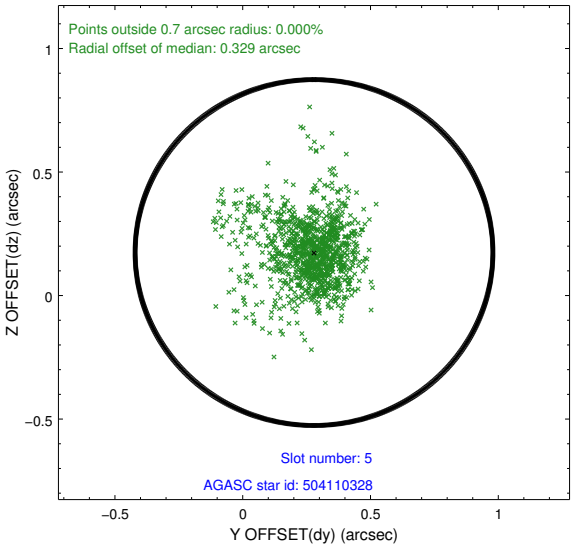

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 4
AGASC star id: 504106056

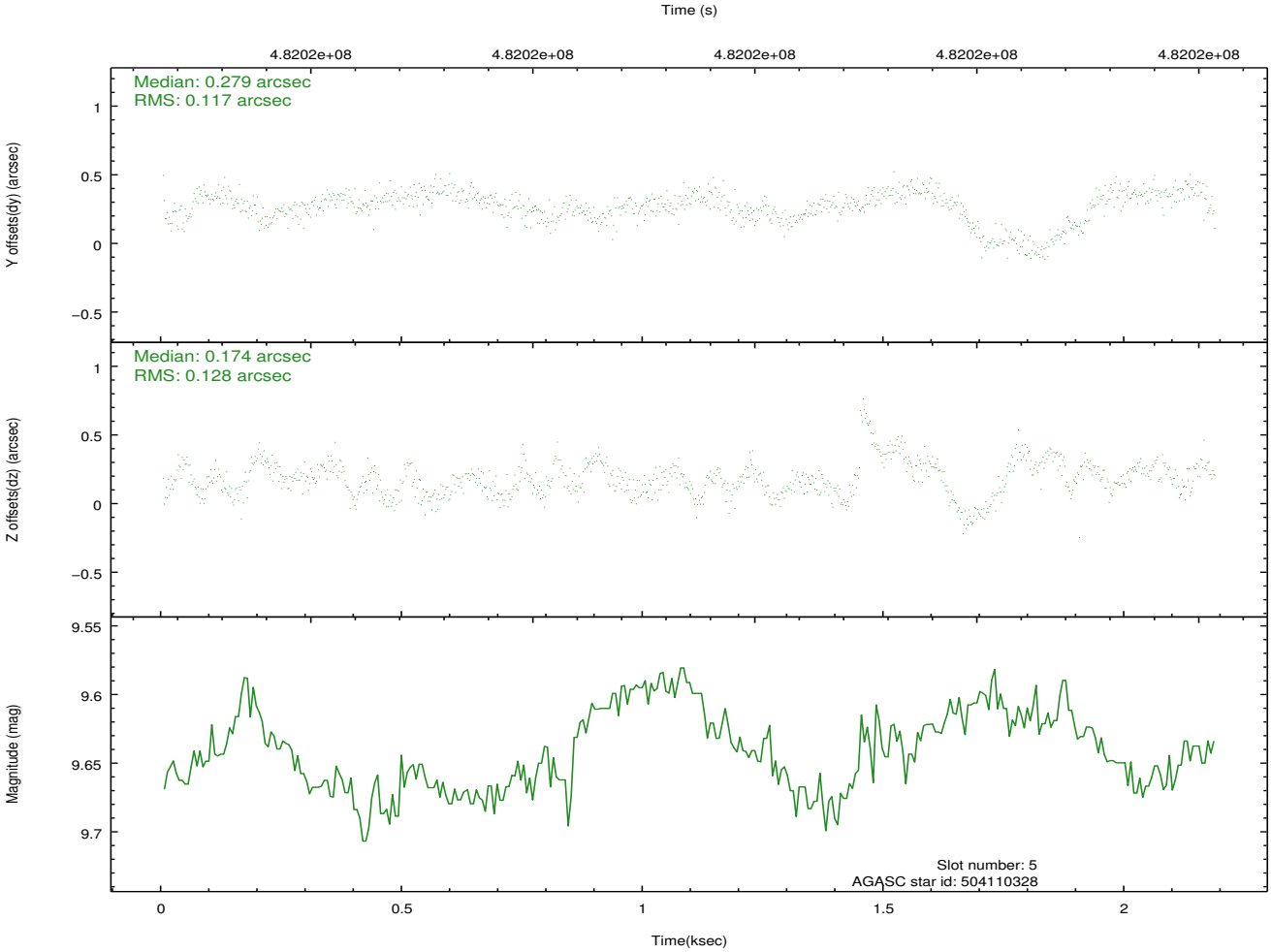

Points outside 0.7 arcsec radius: 0.000%
Radial offset of median: 0.094 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 4
AGASC star id: 504106056


Time (s)
Median: 0.004 arcsec
RMS: 0.052 arcsec
Y offsets(dy) (arcsec)
Median: −0.094 arcsec
RMS: 0.086 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number: 4
AGASC star id: 504106056
Time(ksec)

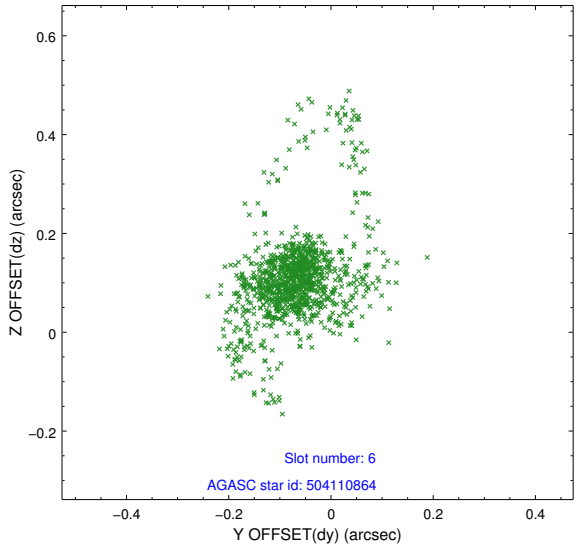
2.4.3 Slot 5

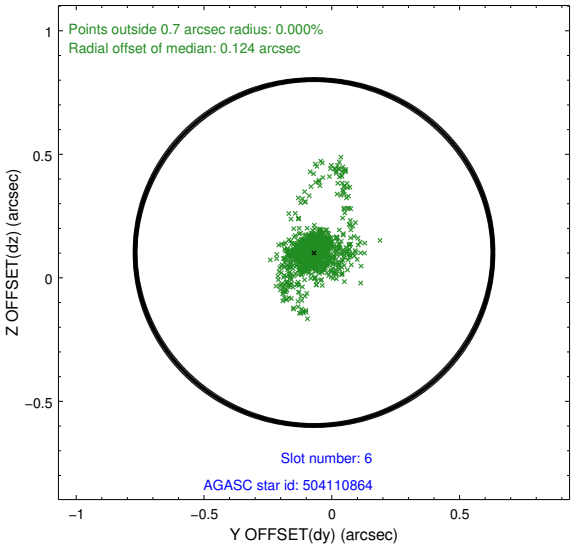

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 5
AGASC star id: 504110328

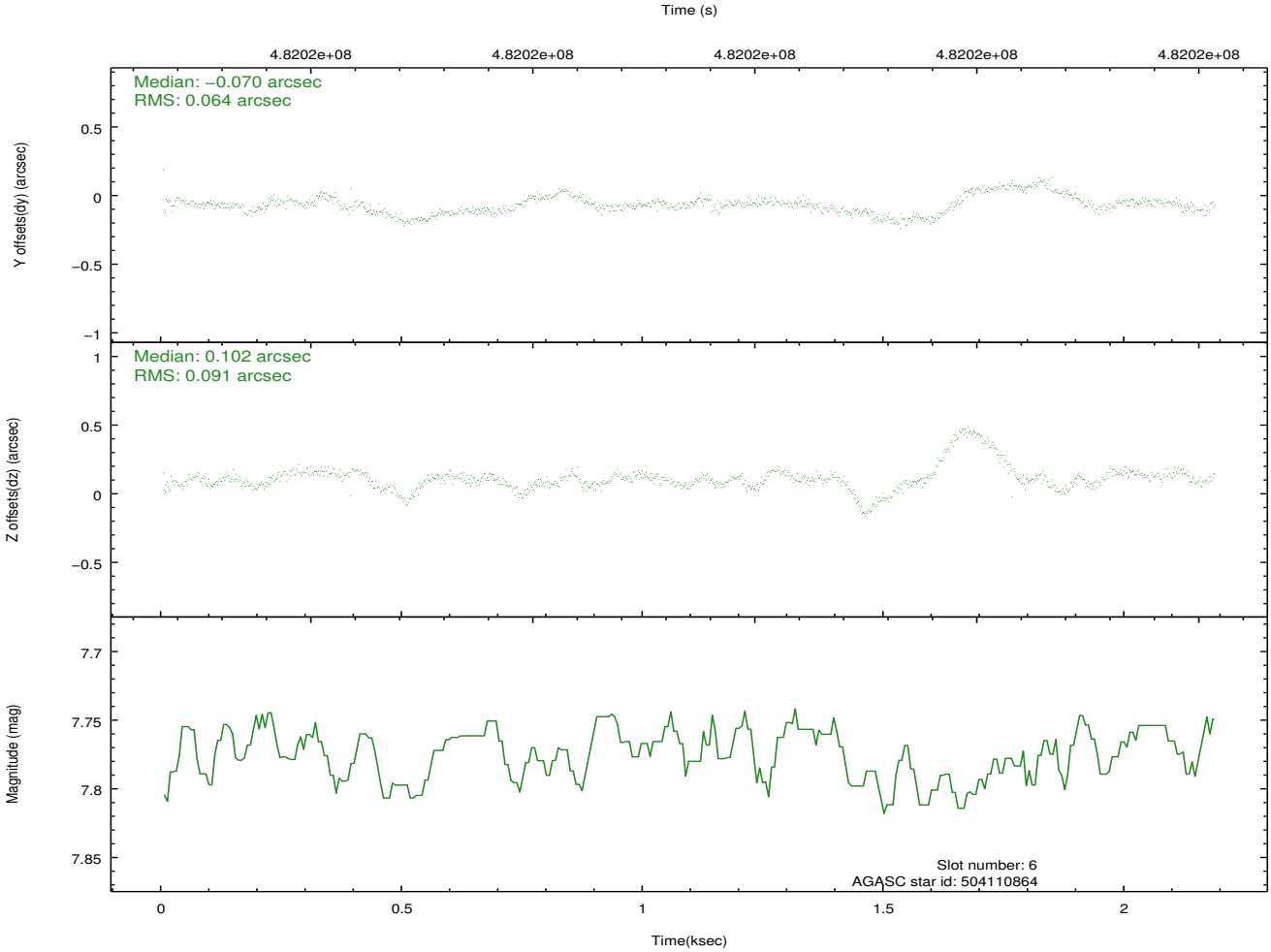

Points outside 0.7 arcsec radius: 0.000%
Radial offset of median: 0.329 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 5
AGASC star id: 504110328


Time (s)
4.8202e+08
Median: 0.279 arcsec
RMS: 0.117 arcsec
Y offsets(dy) (arcsec)
Median: 0.174 arcsec
RMS: 0.128 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number: 5
AGASC star id: 504110328
Time(ksec)

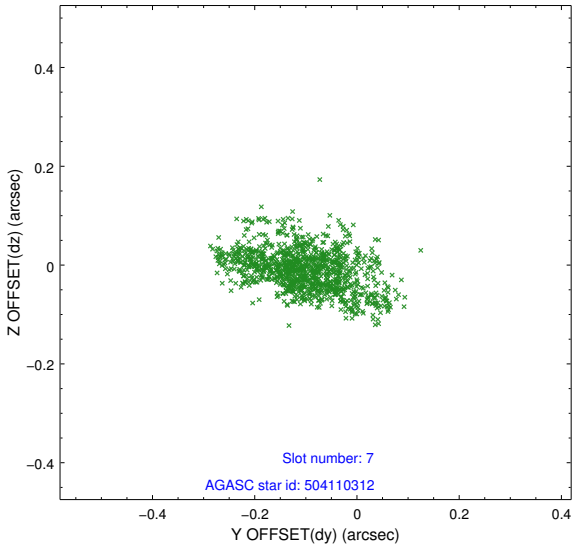
2.4.4 Slot 6

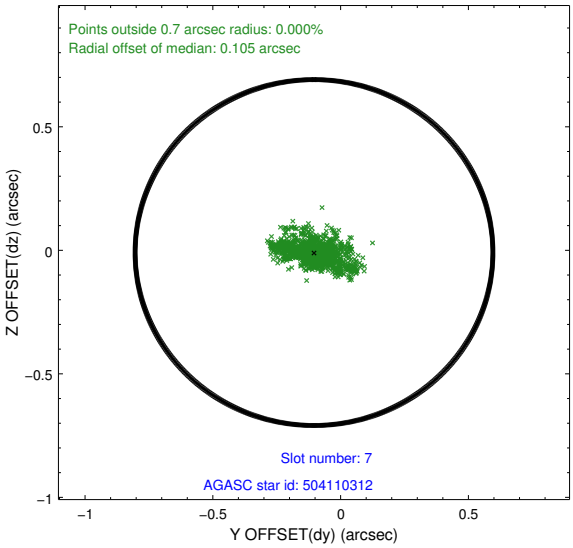

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 6
AGASC star id: 504110864

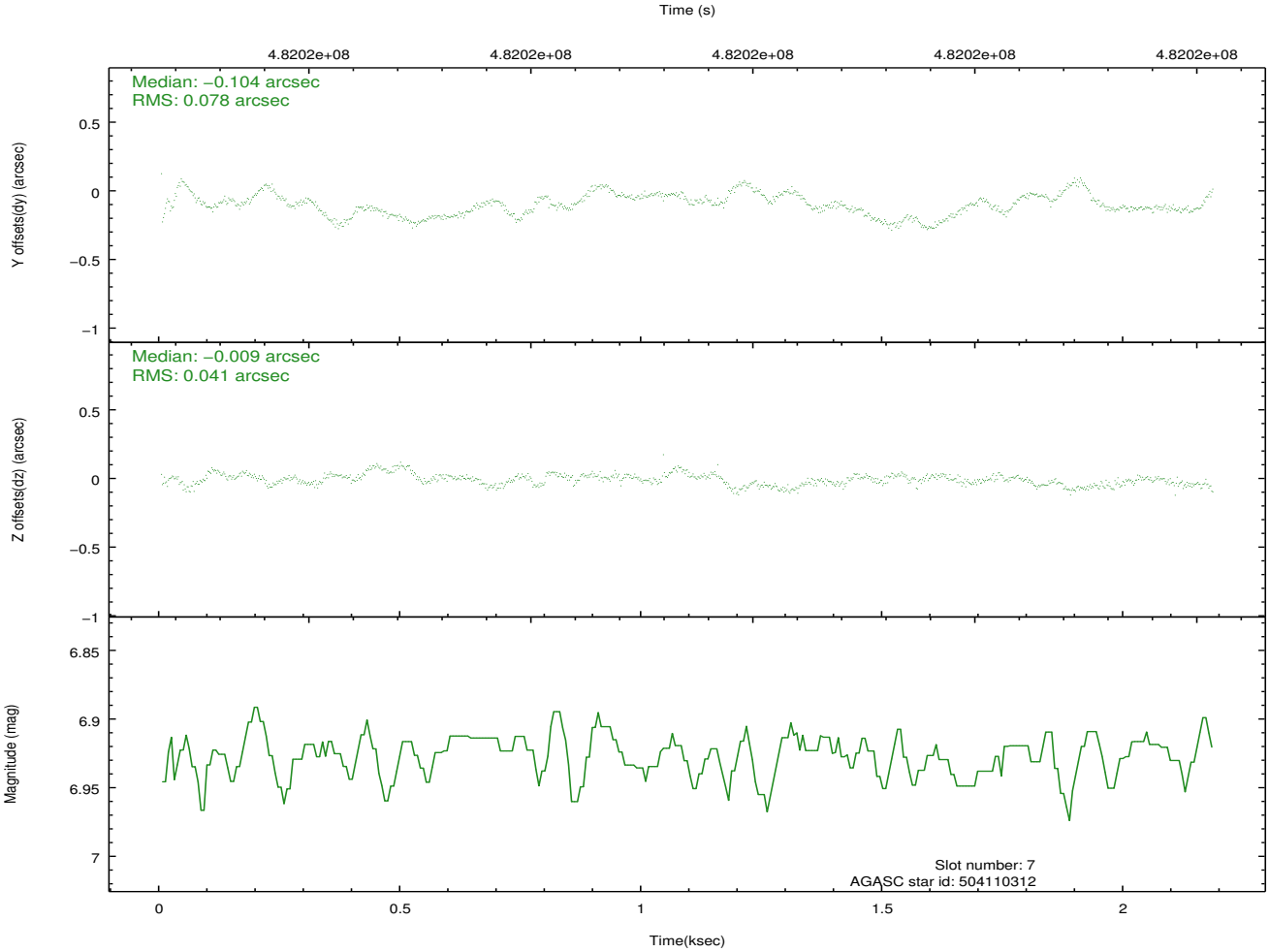

Points outside 0.7 arcsec radius: 0.000%
Radial offset of median: 0.124 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 6
AGASC star id: 504110864


Time (s)
4.8202e+08
Median: −0.070 arcsec
RMS: 0.064 arcsec
Y offsets(dy) (arcsec)
Median: 0.102 arcsec
RMS: 0.091 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number: 6
AGASC star id: 504110864
Time(ksec)

2.4.5 Slot 7

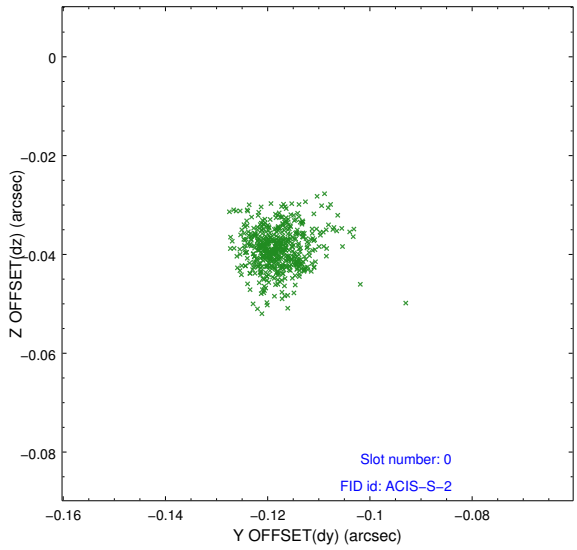

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 7
AGASC star id: 504110312

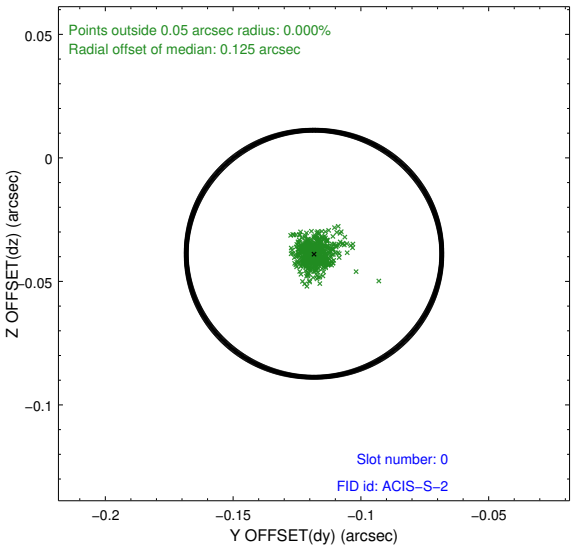

Points outside 0.7 arcsec radius: 0.000%
Radial offset of median: 0.105 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 7
AGASC star id: 504110312

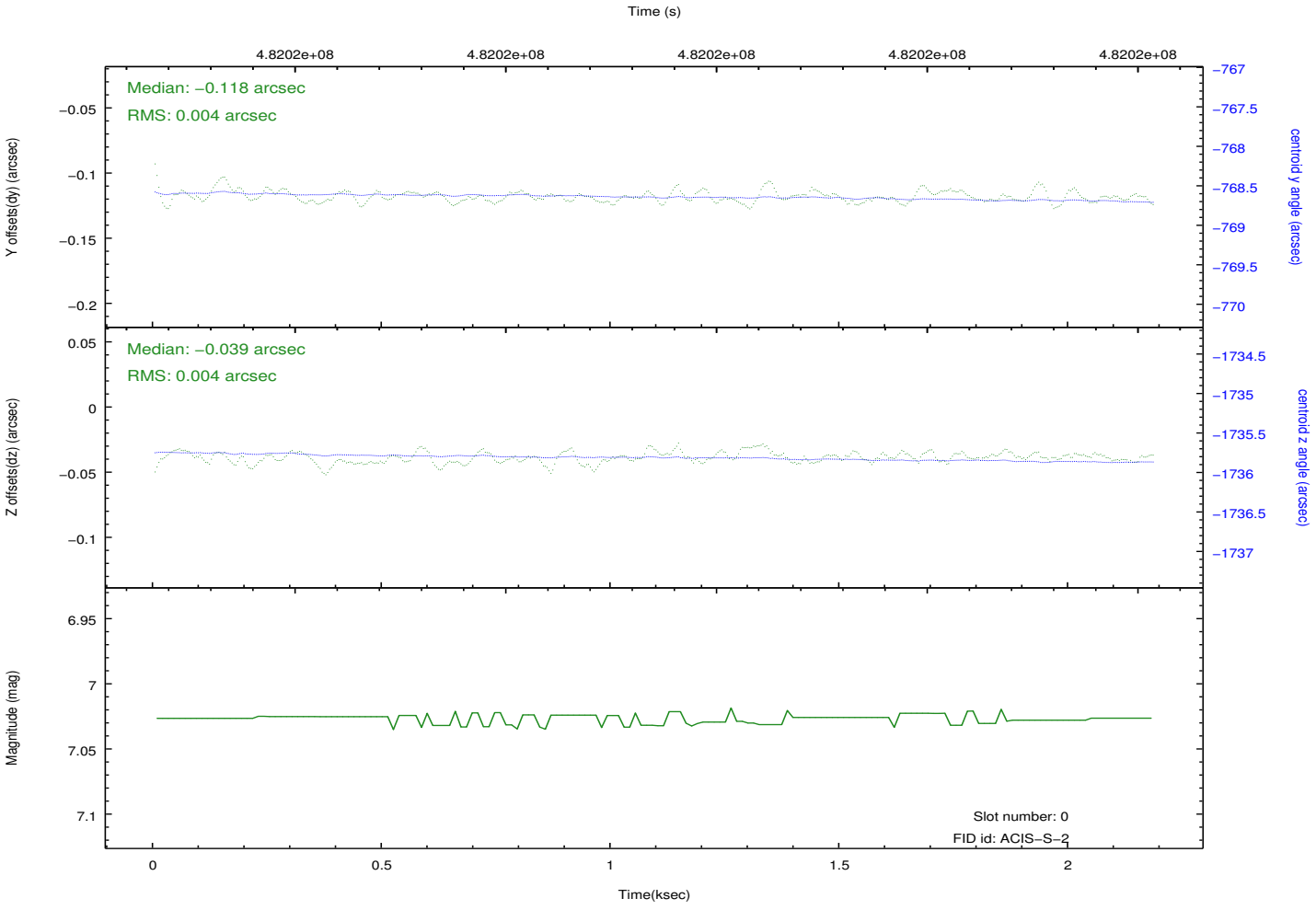

Time (s)
Median: −0.104 arcsec
RMS: 0.078 arcsec
Y offsets(dy) (arcsec)
Median: −0.009 arcsec
RMS: 0.041 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number: 7
AGASC star id: 504110312
Time(ksec)

2.5 FID Slots

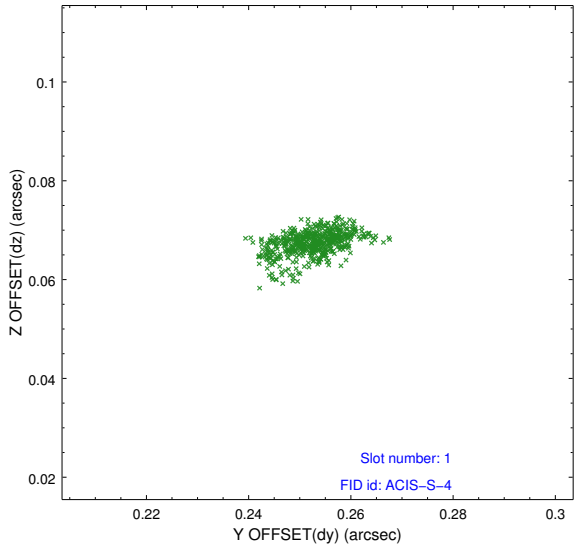
2.5.1 Slot 0

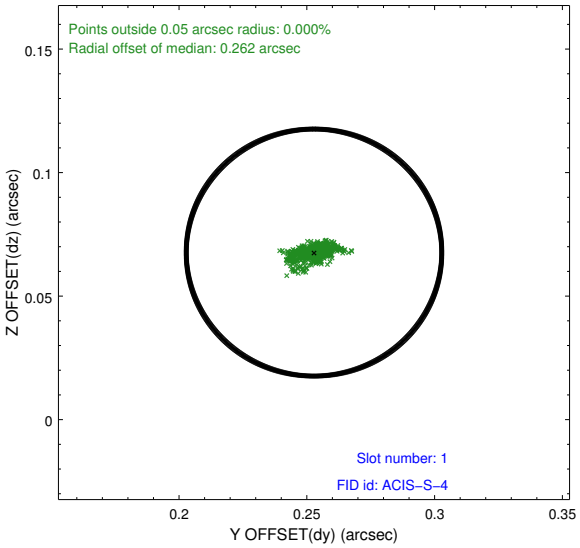


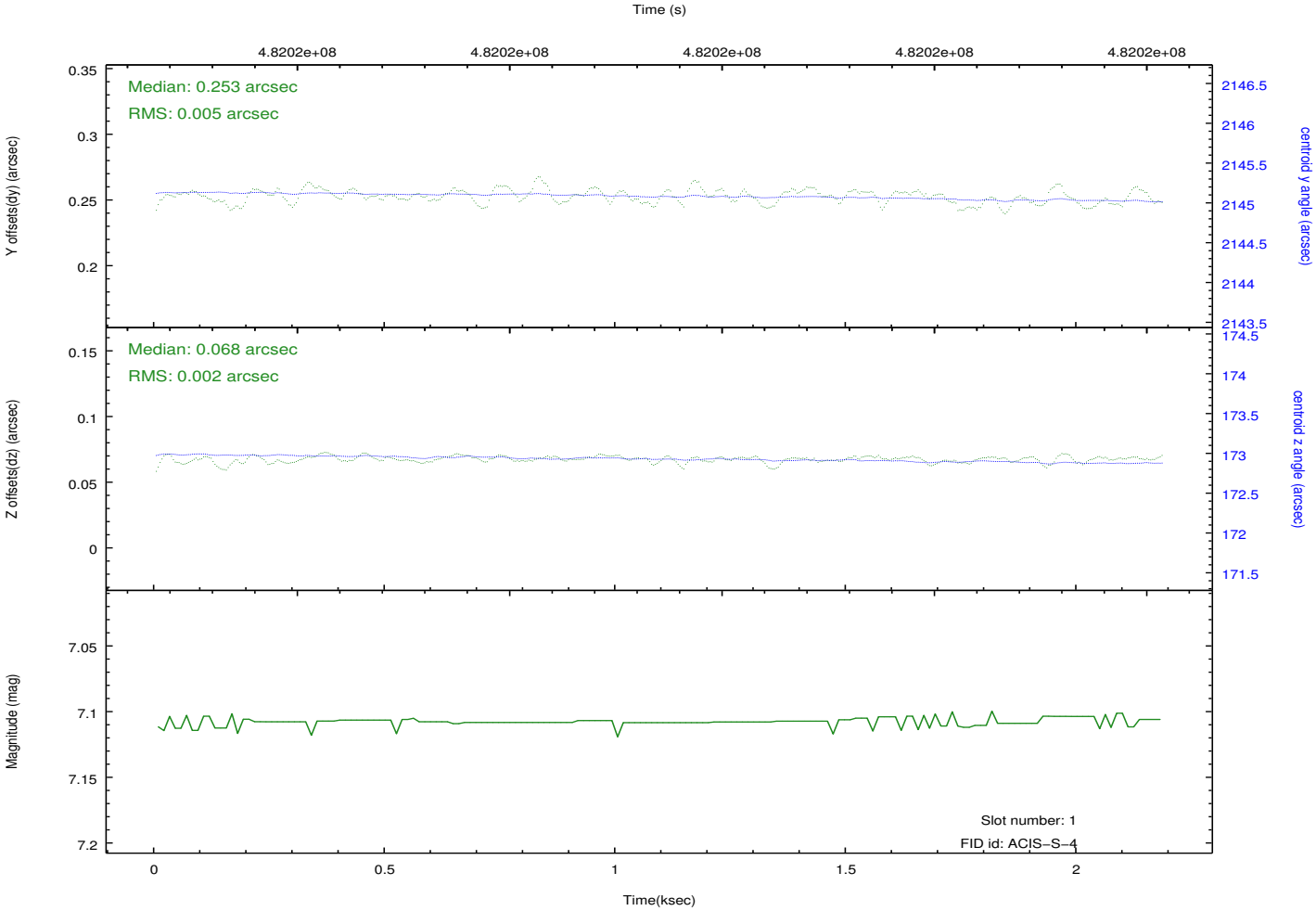




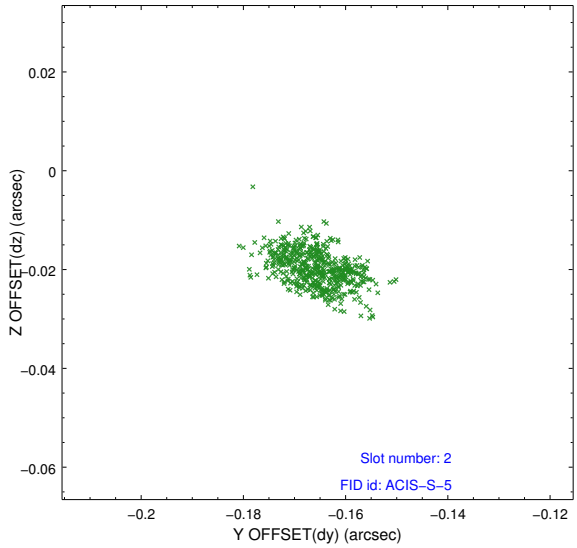
2.5.2 Slot 1

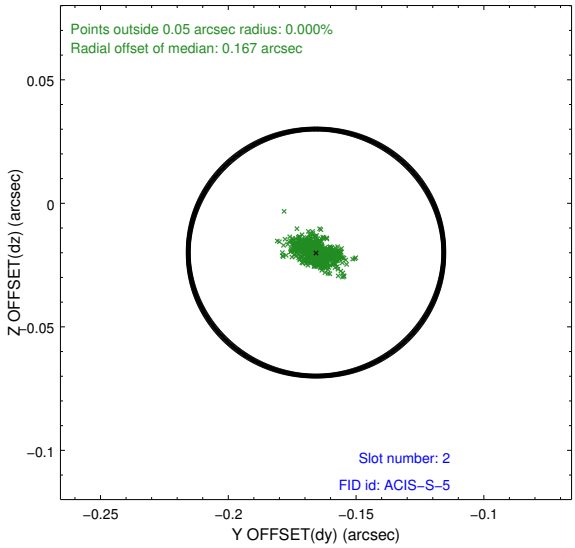

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 1
FID id: ACIS−S−4

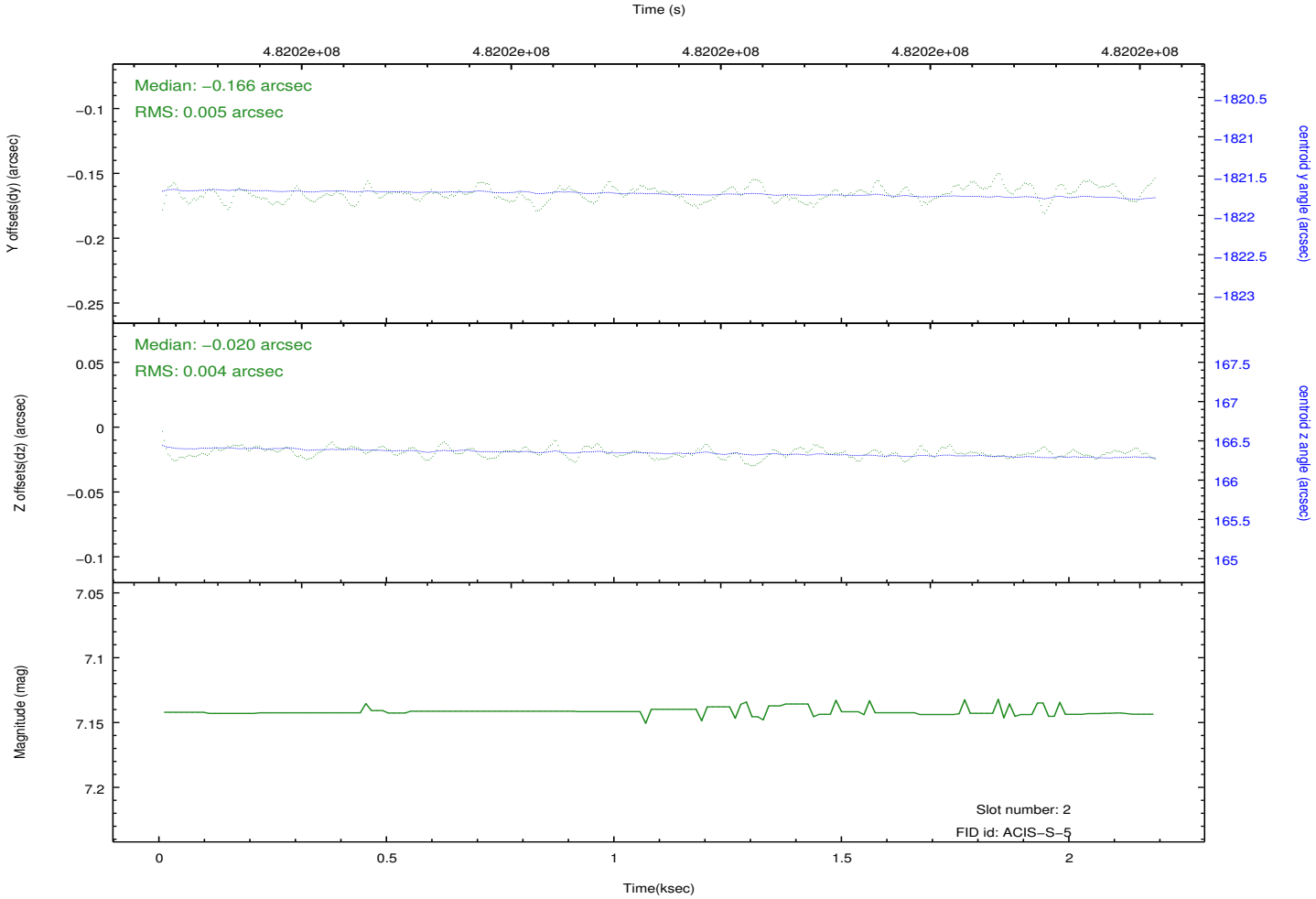

Points outside 0.05 arcsec radius: 0.000%
Radial offset of median: 0.262 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 1
FID id: ACIS−S−4


Time (s)
Median: 0.253 arcsec
RMS: 0.005 arcsec
Y offsets(dy) (arcsec)
centroid y angle (arcsec)
Median: 0.068 arcsec
RMS: 0.002 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: 0.167 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 2
FID id: ACIS−S−5


Time (s)
Median: −0.166 arcsec
RMS: 0.005 arcsec
Y offsets(dy) (arcsec)
centroid y angle (arcsec)
Median: −0.020 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	Beth Sundheim
V&V Date (YYYY-MM-DD)	2014.12.10
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	2.09429994452

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.
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