V&V Reference Report
L2 ASCDS Version : 10

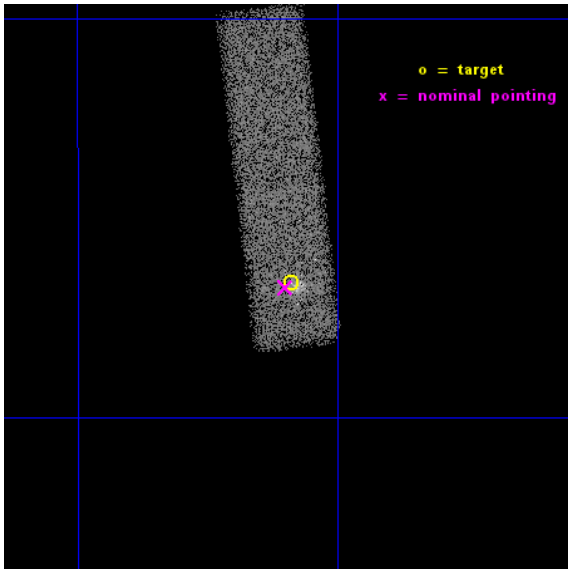
Observation 14478 - L2 Version 2
Chandra X-Ray Center

L2 Processing Date : Dec 4 2014

Contents

1 Front

seq_num	401440	Sequence number
obs_id	14478	Observation id
title	Crust cooling of accretion heated neutron stars	Proposal title
observer	Dr. Rudy Wijnands	Principal investigator
object	Swift J174805.3-244637	Source name
dtycycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	267.022554	Observer's specified target RA [deg]
dec_targ	-24.777131	Observer's specified target Dec [deg]
ra_nom	267.02513947549	Nominal RA [deg]
dec_nom	-24.779062656132	Nominal Dec [deg]
roll_nom	263.15772039359	Nominal Roll [deg]
revision	2	Processing version of data
ontime	30063.129275143	Sum of GTIs [s]
livetime	28596.146937262	Livetime [s]
ontime7	30063.129275143	Sum of GTIs [s]
l2events	26187	Number of level 2 events

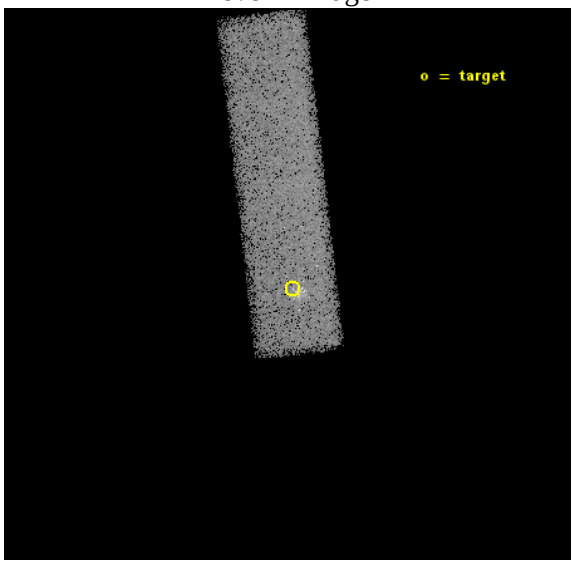


2 OBI

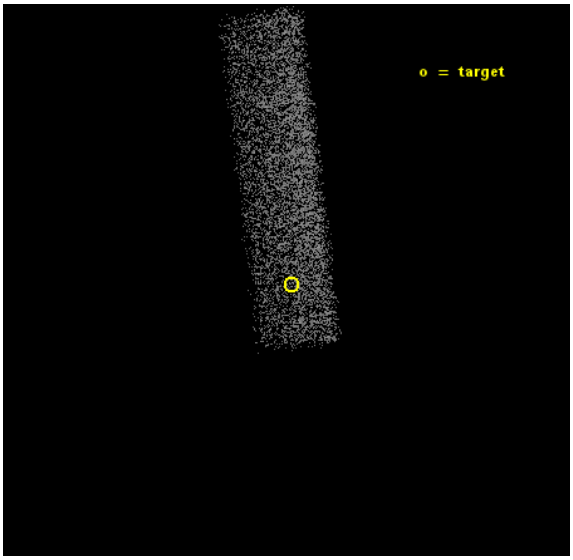
2.1 OBI

2.1.1 Images

Level 1 Image

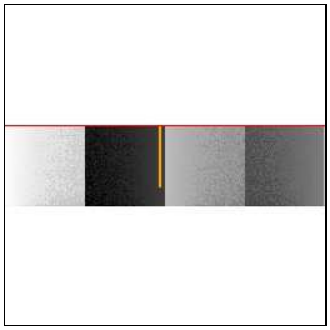


Level 1 Bad Events



2.1.2 Bias

Chip 7



2.1.3 Parameters

obi_num	0	Obi number
ascdsver	10.3	Processing system revision
caldbver	4.6.4	
date	2014-12-04T19:00:54	Date and time of file creation
revision	2	Processing version of data

sched_exp_time	30000.000000	[s] Scheduled observation exposure time
ontime	30063.129275143	Sum of GTIs [s]
ontime7	30063.129275143	Sum of GTIs [s]
l1events	53028	Number of level 1 events

2.1.4 Events

	ccd 7
level 1 events	53028
rejected events	26044
rejected %	49%

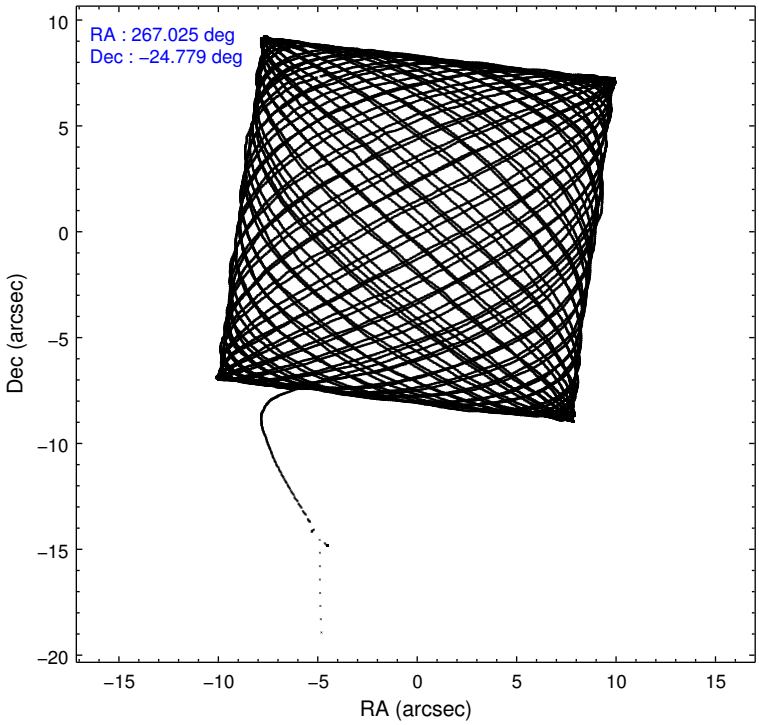
	ccd 7
grade 0 events	3170
	5%
grade 1 events	61
	0%
grade 2 events	5710
	10%
grade 3 events	3047
	5%
grade 4 events	2863
	5%
grade 5 events	5422
	10%
grade 6 events	12194
	22%
grade 7 events	20561
	38%

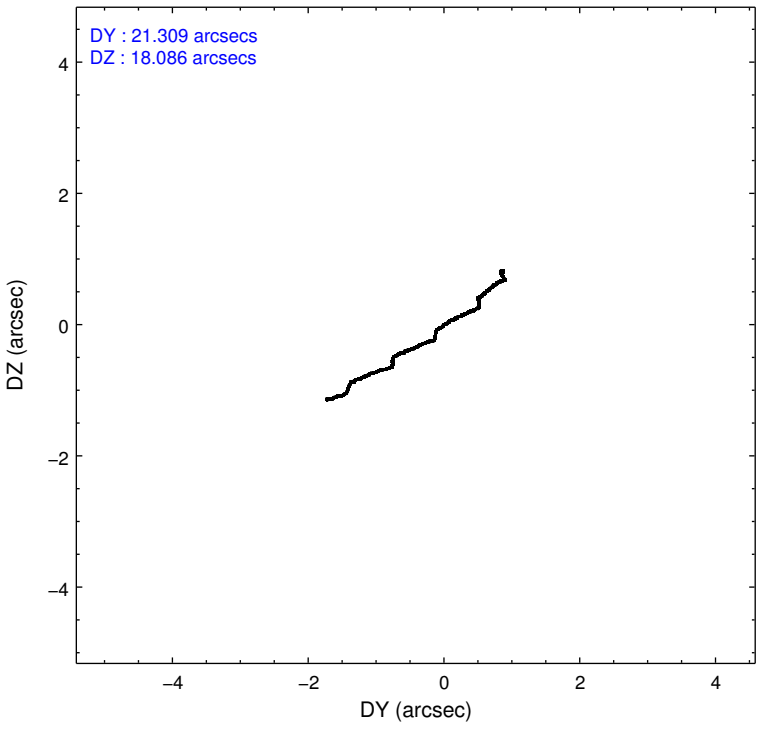
2.2 Compared Parameters

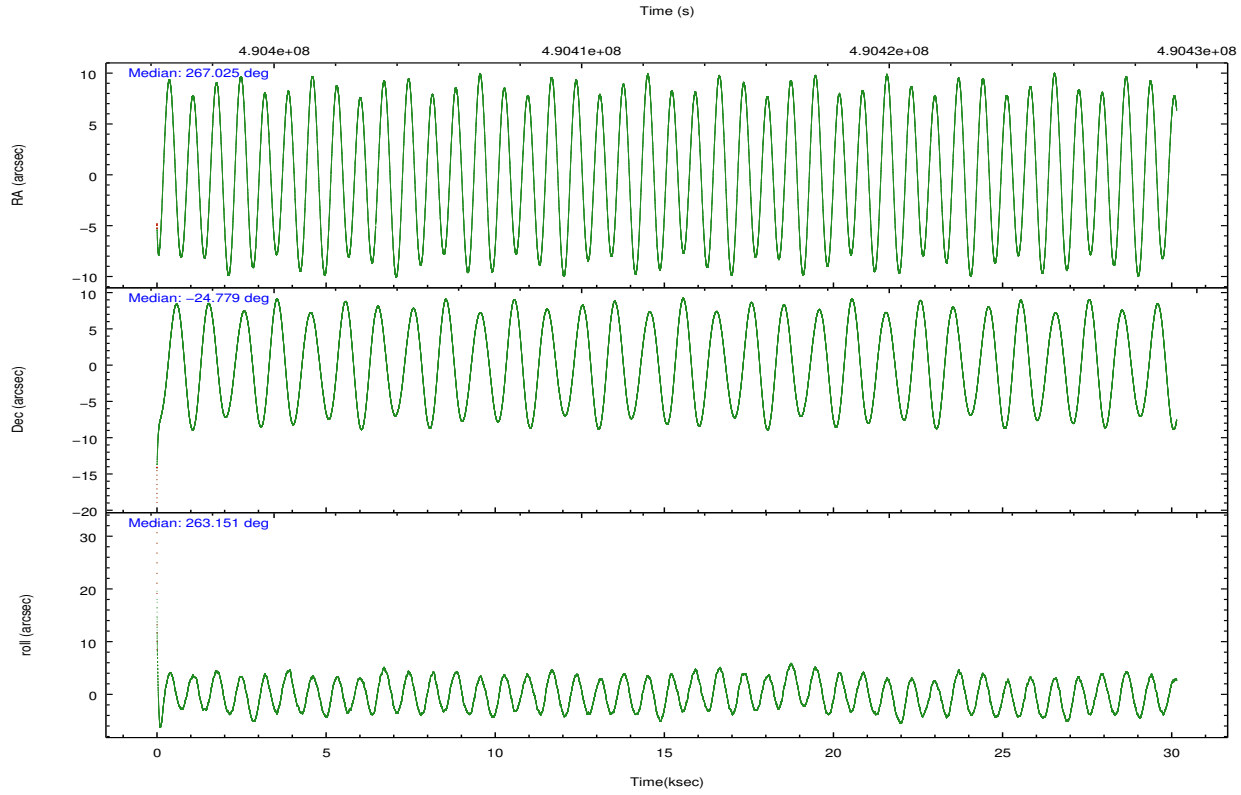
Parameter	Planned	Actual
Instrument	ACIS	ACIS
Detector	ACIS-7	ACIS-7
Grating	NONE	NONE
Data mode	FAINT	FAINT
Observation mode	POINTING	POINTING
[deg] Pointing RA	267.012917	267.025139475494
[deg] Pointing Dec	-24.754058	-24.77906265613192
[deg] Pointing Roll	262.995971	263.1577203935898
[mm] SIM focus pos	-0.684267	-0.6828225247311905
[mm] SIM defocus	0	0.001444936568705701
[mm] SIM translation stage pos	-190.132523	-190.1400660498719
[mm] SIM translation stage offset	0	0.00754346686406393
[s] Observation start time (MET)	490397844.184000	490396446.57477
Observation start date	2013-07-16T21:36:17	2013-07-16T21:14:06
[s] Observation end time (MET)	490427844.184000	490428996.47654
Observation end date	2013-07-17T05:56:17	2013-07-17T06:16:36
Read mode	TIMED	TIMED

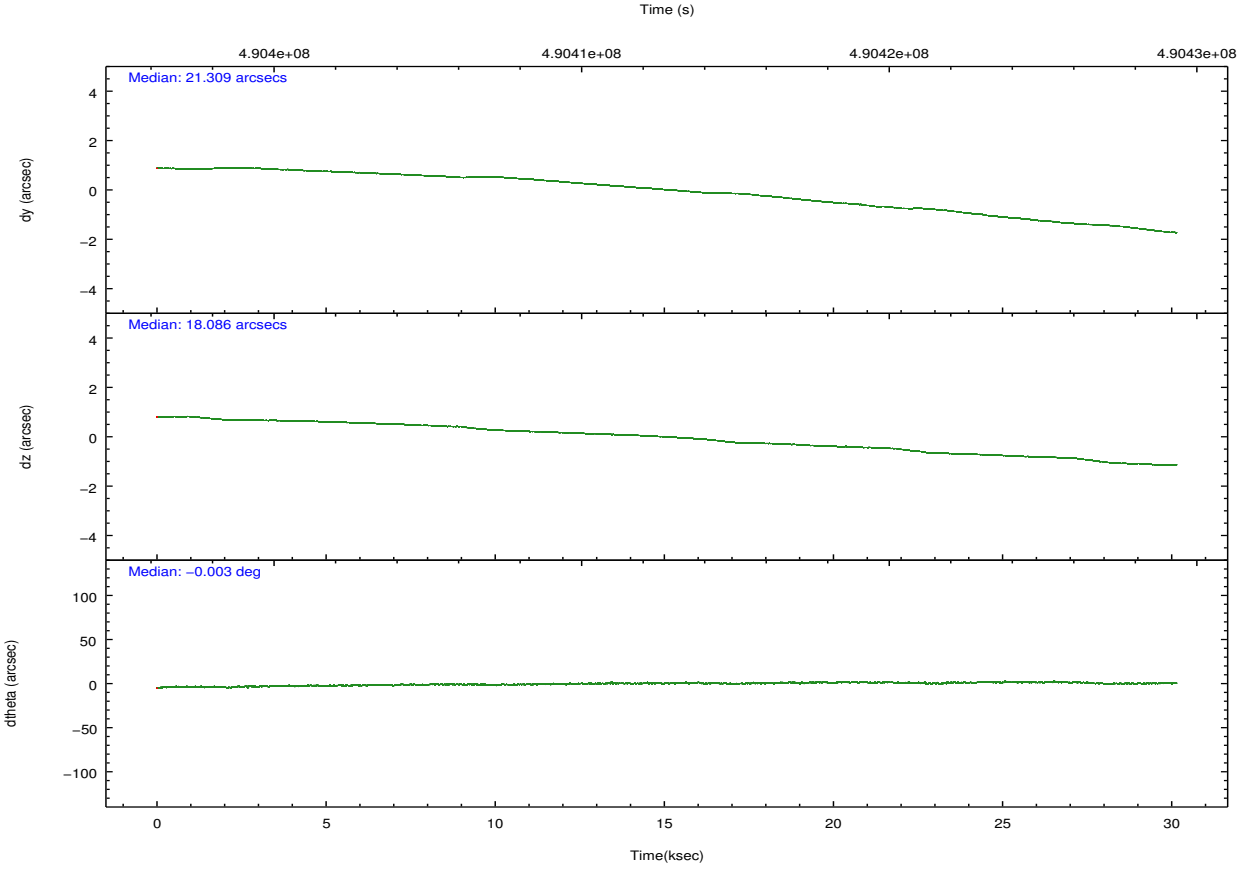
Parameter	Planned	Actual
Obspar format version number	7	7
Obspar file type	PREDICTED	ACTUAL
Obspar update status	NONE	UPDATED
Number of optional ACIS chips dropped	0	0
On-chip summing requested	N	N
Subarray requested	CUSTOM	1/4
Subarray start row	384	384
Subarray row count	256	256
Alternating exposures requested	N	N
[s] Primary exposure time	0.000000	0.8

2.3 Aspect


RA : 267.025 deg
Dec : −24.779 deg
Dec (arcsec)
RA (arcsec)
10
5
0
−5
−10
−15
−20
−15
−10
−5
0
5
10
15


DY : 21.309 arcsecs
DZ : 18.086 arcsecs
DZ (arcsec)
DY (arcsec)
4
2
0
−2
−4
−4
−2
0
2
4


Time (s)
4.904e+08
4.9041e+08
4.9042e+08
4.9043e+08
Median: 267.025 deg
RA (arcsec)
Median: −24.779 deg
Dec (arcsec)
Median: 263.151 deg
roll (arcsec)
Time(ksec)

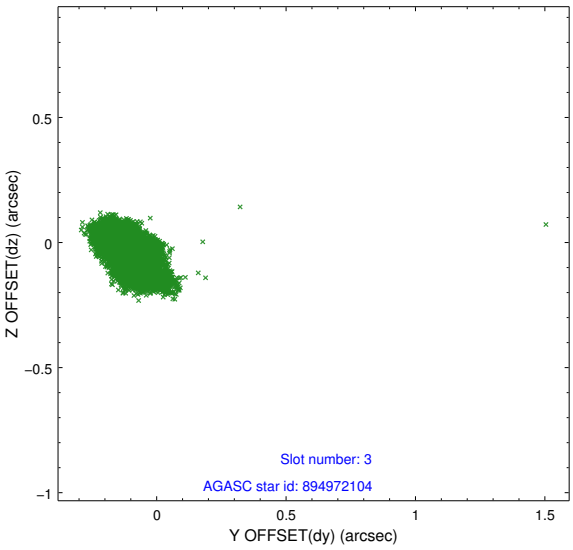

Time (s)
4.904e+08
4.9041e+08
4.9042e+08
4.9043e+08
Median: 21.309 arcsecs
dy (arcsec)
Median: 18.086 arcsecs
dz (arcsec)
Median: −0.003 deg
dtheta (arcsec)
Time(ksec)

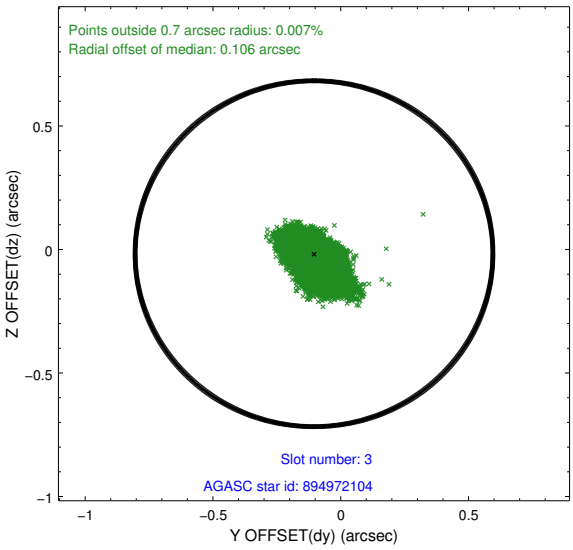
Slot Statistics

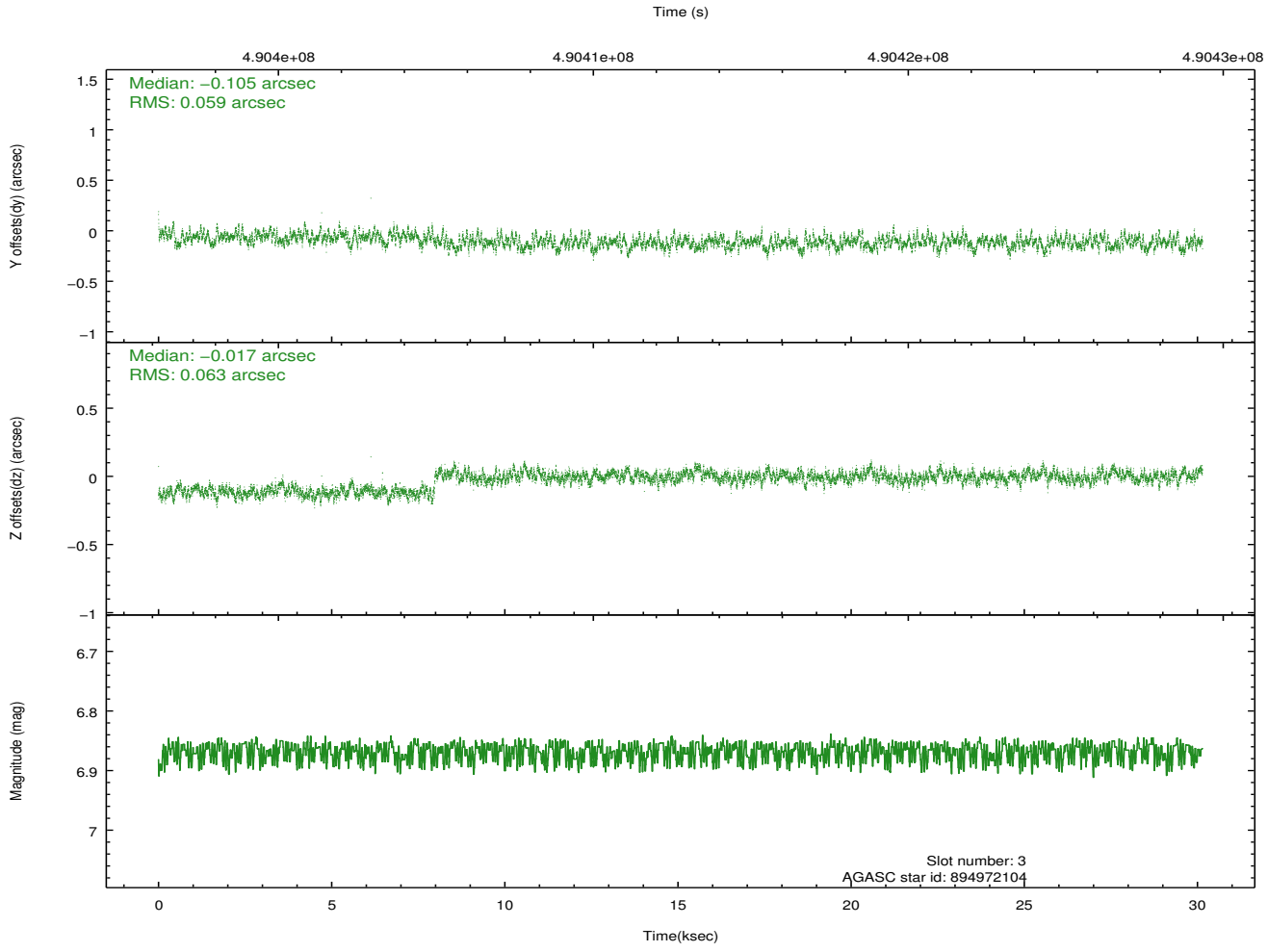
slot	status	used	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID		ACIS-S-2	6.95	7354	-0.107	-0.048	0.013	0.026	0.000000	0.000000	-774.47	-1739.50
1	FID		ACIS-S-4	7.03	7354	0.245	0.065	0.011	0.022	0.000000	0.000000	2139.16	168.97
2	FID		ACIS-S-5	7.06	7353	-0.169	-0.007	0.015	0.026	0.000000	0.000000	-1827.25	162.71
3	GUIDE	used	894972104	6.87	14707	-0.105	-0.017	0.089	0.156	267.489380	-24.207054	-2141.97	1312.42
4	GUIDE	used	895488888	8.54	14691	0.188	-0.072	0.120	0.206	266.751949	-24.913497	674.90	-775.18
5	GUIDE	used	895489248	8.84	14667	0.140	-0.013	0.121	0.211	266.526793	-24.872603	620.71	-1523.17
6	GUIDE	used	894973544	8.06	14705	0.051	0.254	0.092	0.156	266.605572	-24.141151	-2023.95	-1597.04
7	GUIDE	used	895486672	9.00	14695	-0.201	-0.275	0.113	0.184	267.522168	-25.216127	1452.28	1849.36

2.4 Star Slots

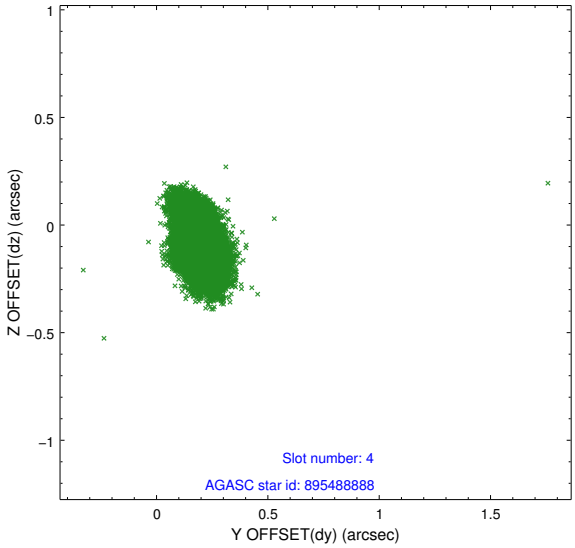
2.4.1 Slot 3

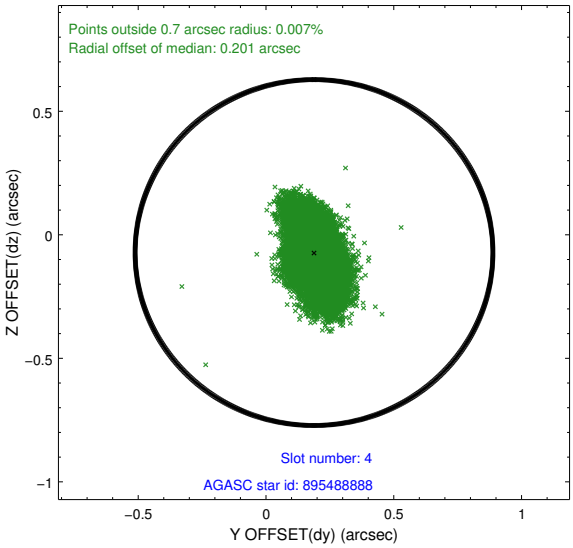


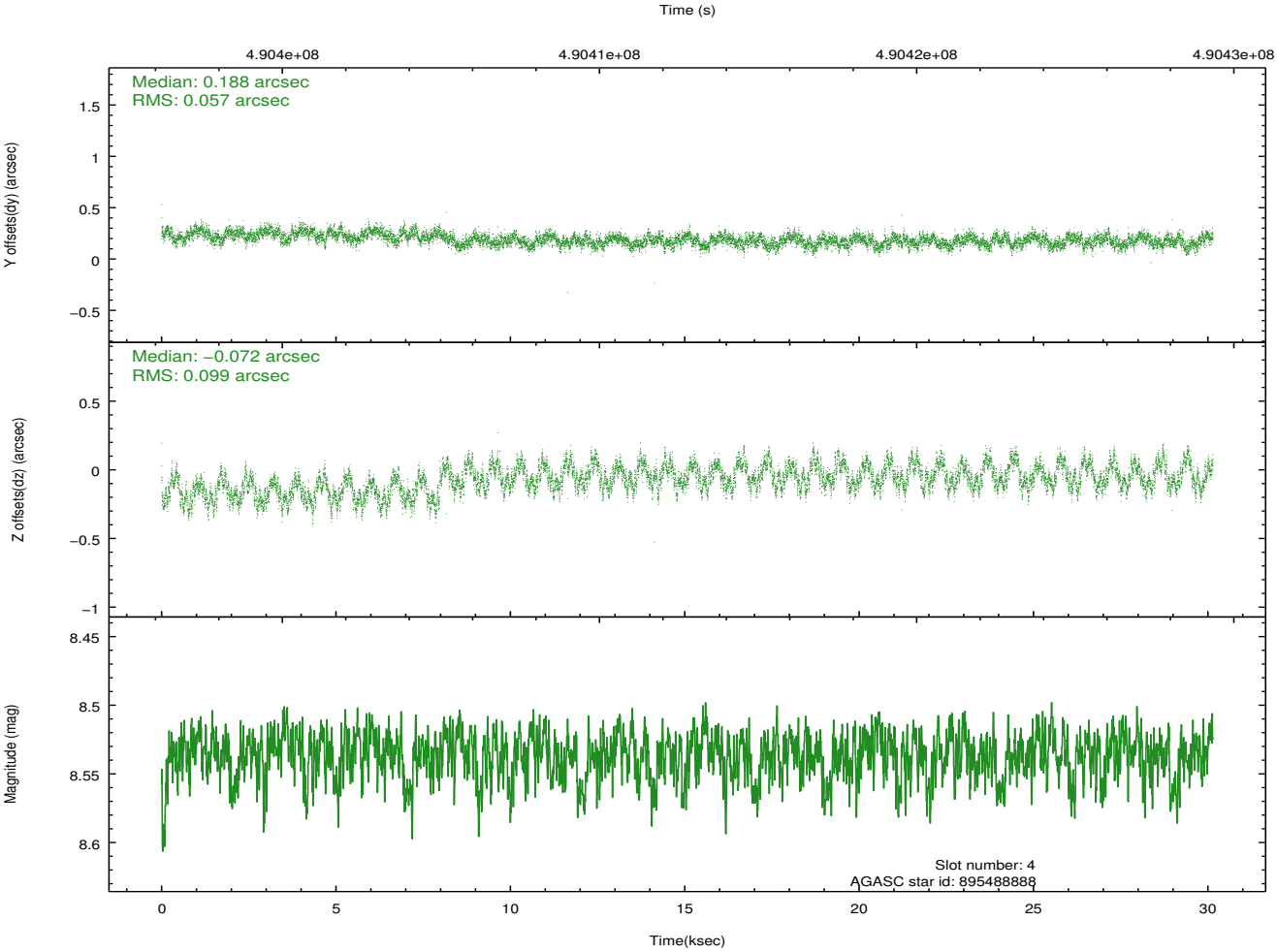




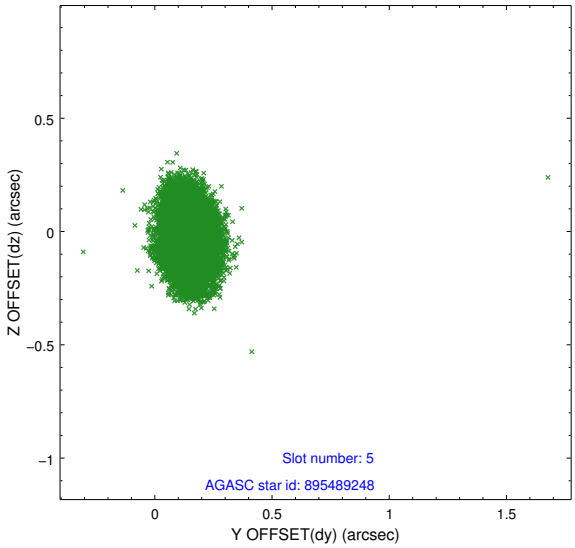
2.4.2 Slot 4

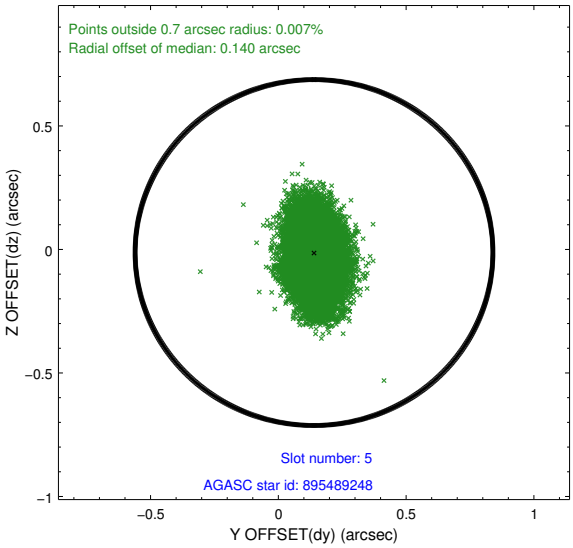

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 4
AGASC star id: 895488888

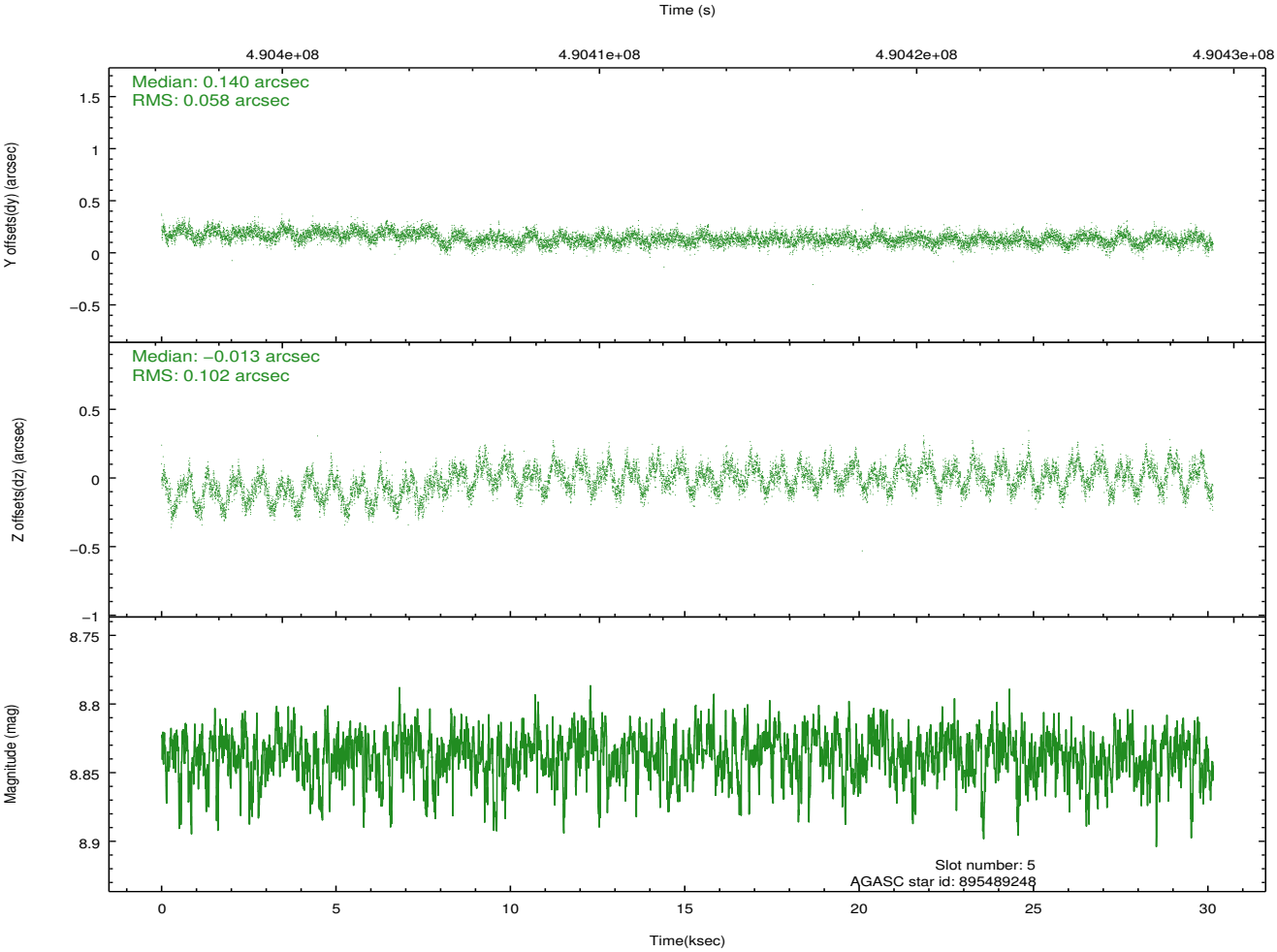

Points outside 0.7 arcsec radius: 0.007%
Radial offset of median: 0.201 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 4
AGASC star id: 895488888


Time (s)
4.904e+08
4.9041e+08
4.9042e+08
4.9043e+08
Median: 0.188 arcsec
RMS: 0.057 arcsec
Y offsets(dy) (arcsec)
Median: −0.072 arcsec
RMS: 0.099 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number: 4
AGASC star id: 895488888
Time(ksec)

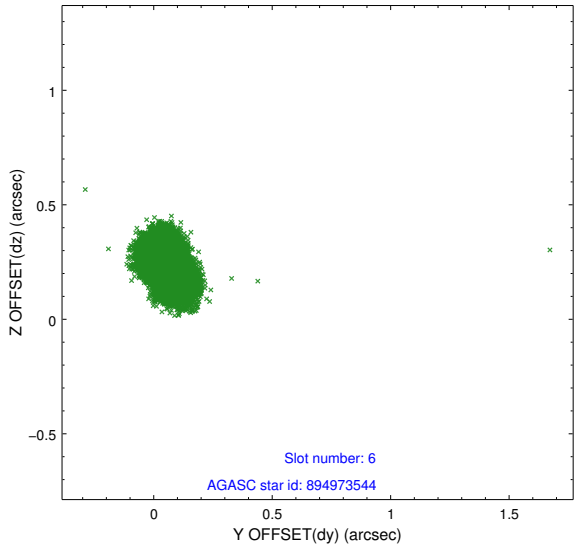
2.4.3 Slot 5

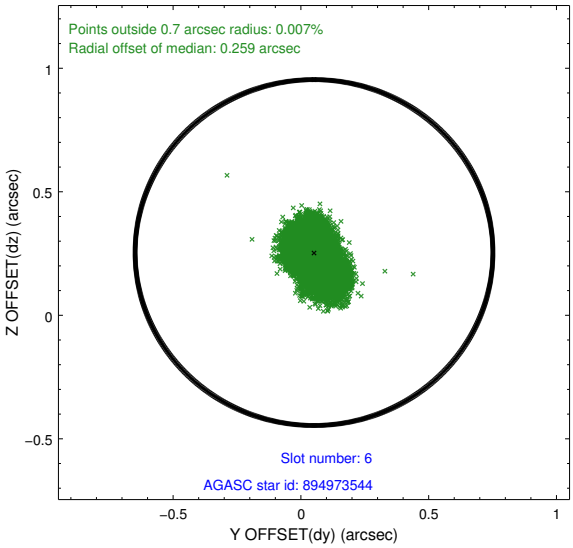

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 5
AGASC star id: 895489248

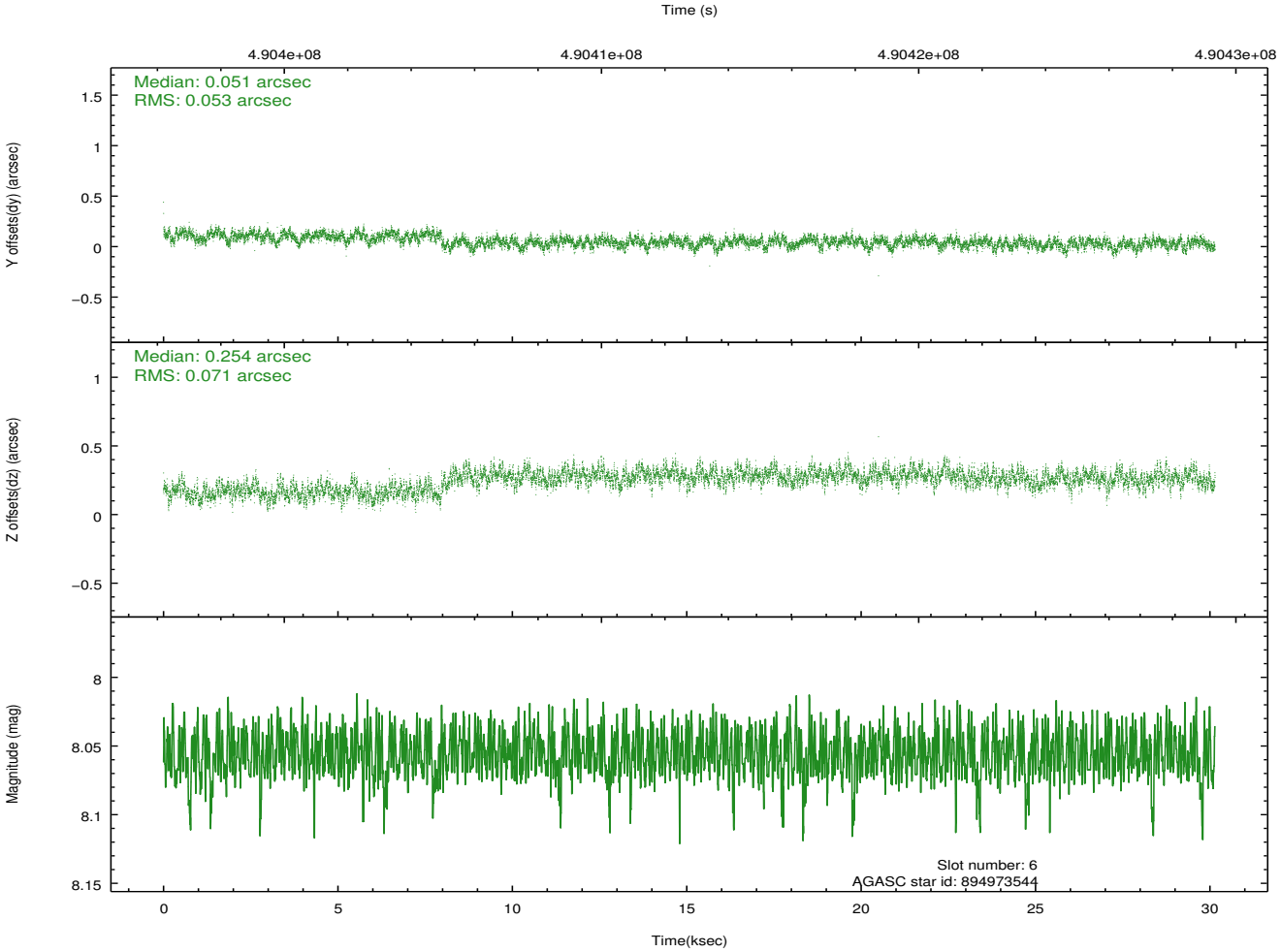

Points outside 0.7 arcsec radius: 0.007%
Radial offset of median: 0.140 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 5
AGASC star id: 895489248


Time (s)
Median: 0.140 arcsec
RMS: 0.058 arcsec
Y offsets(dy) (arcsec)
Median: −0.013 arcsec
RMS: 0.102 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number: 5
AGASC star id: 895489248
Time(ksec)

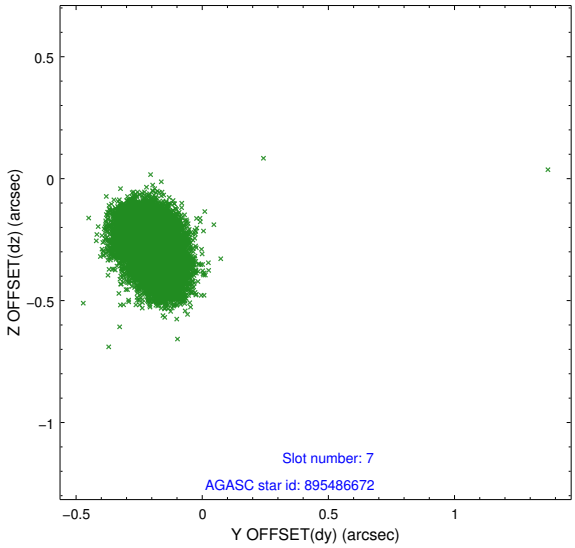
2.4.4 Slot 6

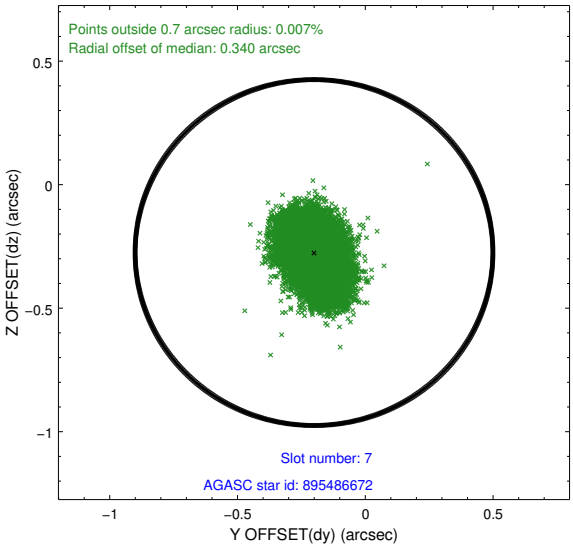

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 6
AGASC star id: 894973544

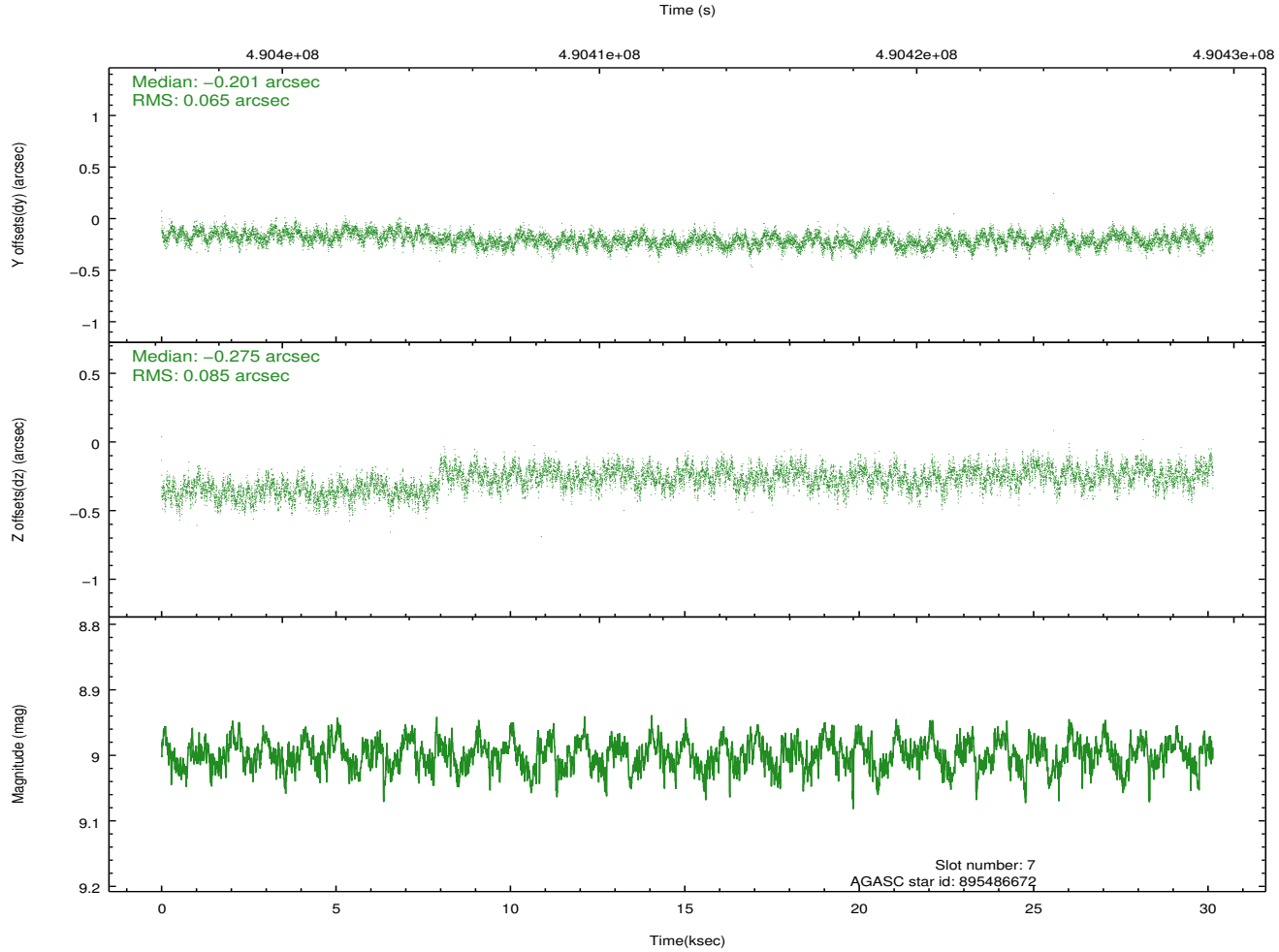

Points outside 0.7 arcsec radius: 0.007%
Radial offset of median: 0.259 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 6
AGASC star id: 894973544


Time (s)
4.904e+08
4.9041e+08
4.9042e+08
4.9043e+08
Median: 0.051 arcsec
RMS: 0.053 arcsec
Y offsets(dy) (arcsec)
Median: 0.254 arcsec
RMS: 0.071 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number: 6
AGASC star id: 894973544
Time(ksec)

2.4.5 Slot 7

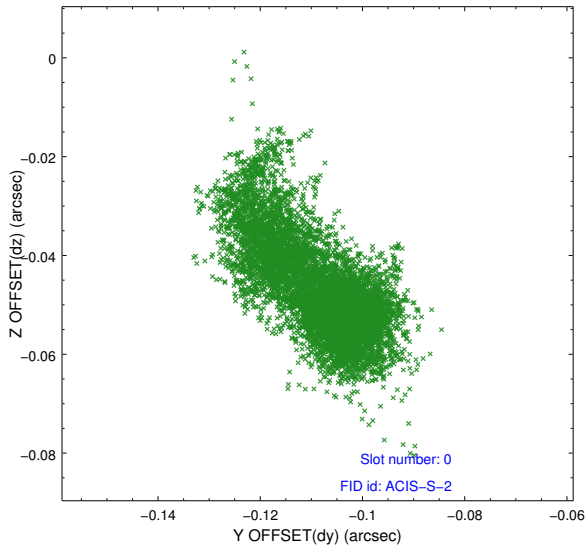

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 7
AGASC star id: 895486672

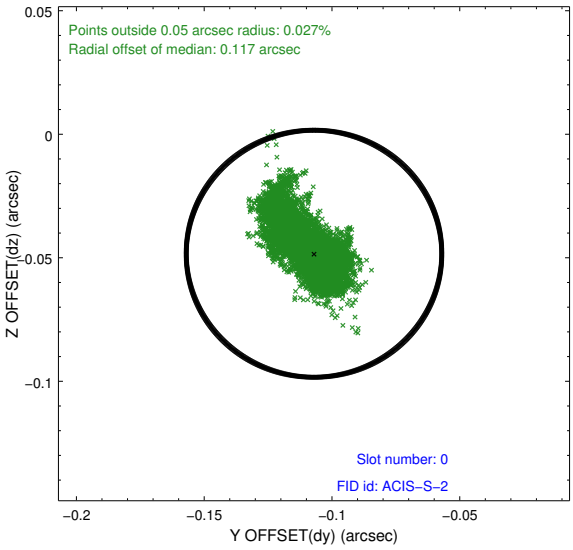

Points outside 0.7 arcsec radius: 0.007%
Radial offset of median: 0.340 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 7
AGASC star id: 895486672

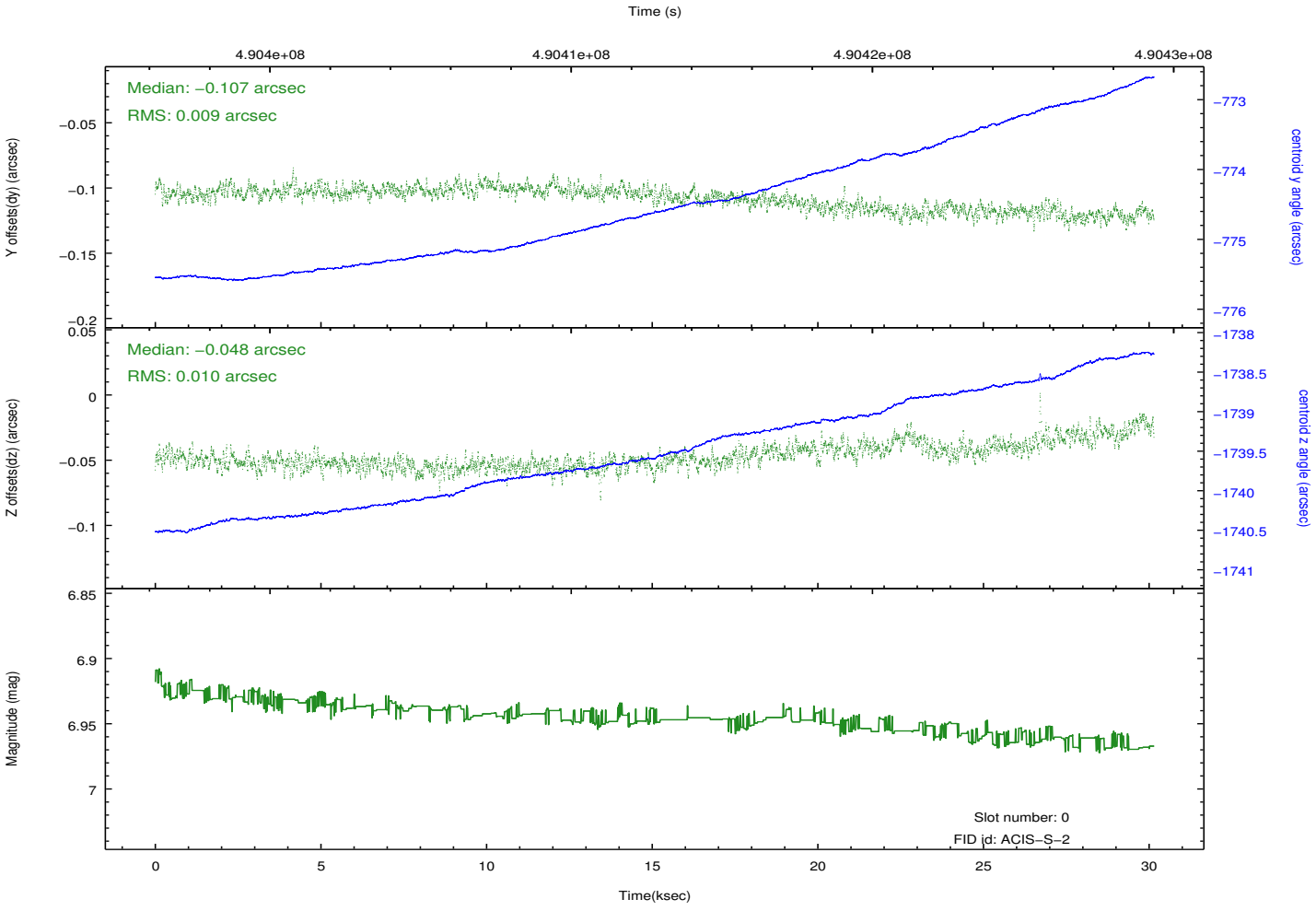

Time (s)
4.904e+08
4.9041e+08
4.9042e+08
4.9043e+08
Median: −0.201 arcsec
RMS: 0.065 arcsec
Y offsets(dy) (arcsec)
Median: −0.275 arcsec
RMS: 0.085 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number: 7
AGASC star id: 895486672
Time(ksec)

2.5 FID Slots

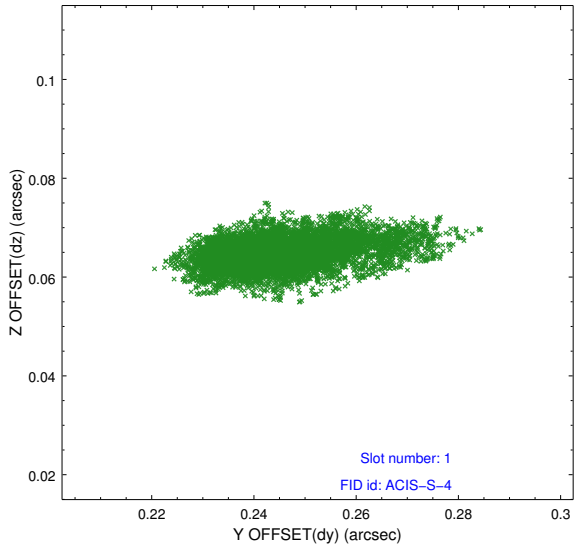
2.5.1 Slot 0

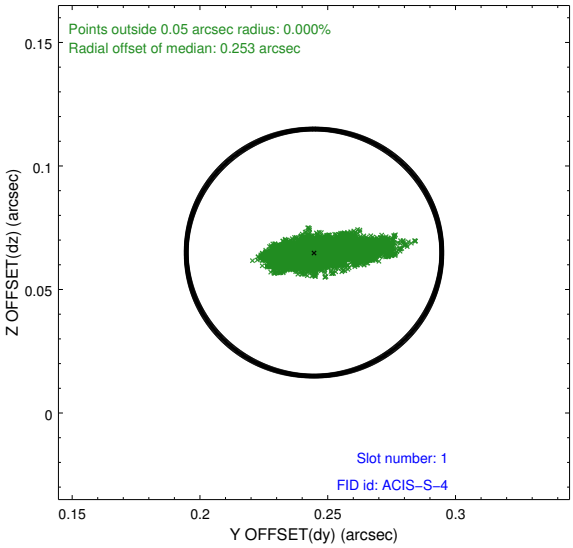


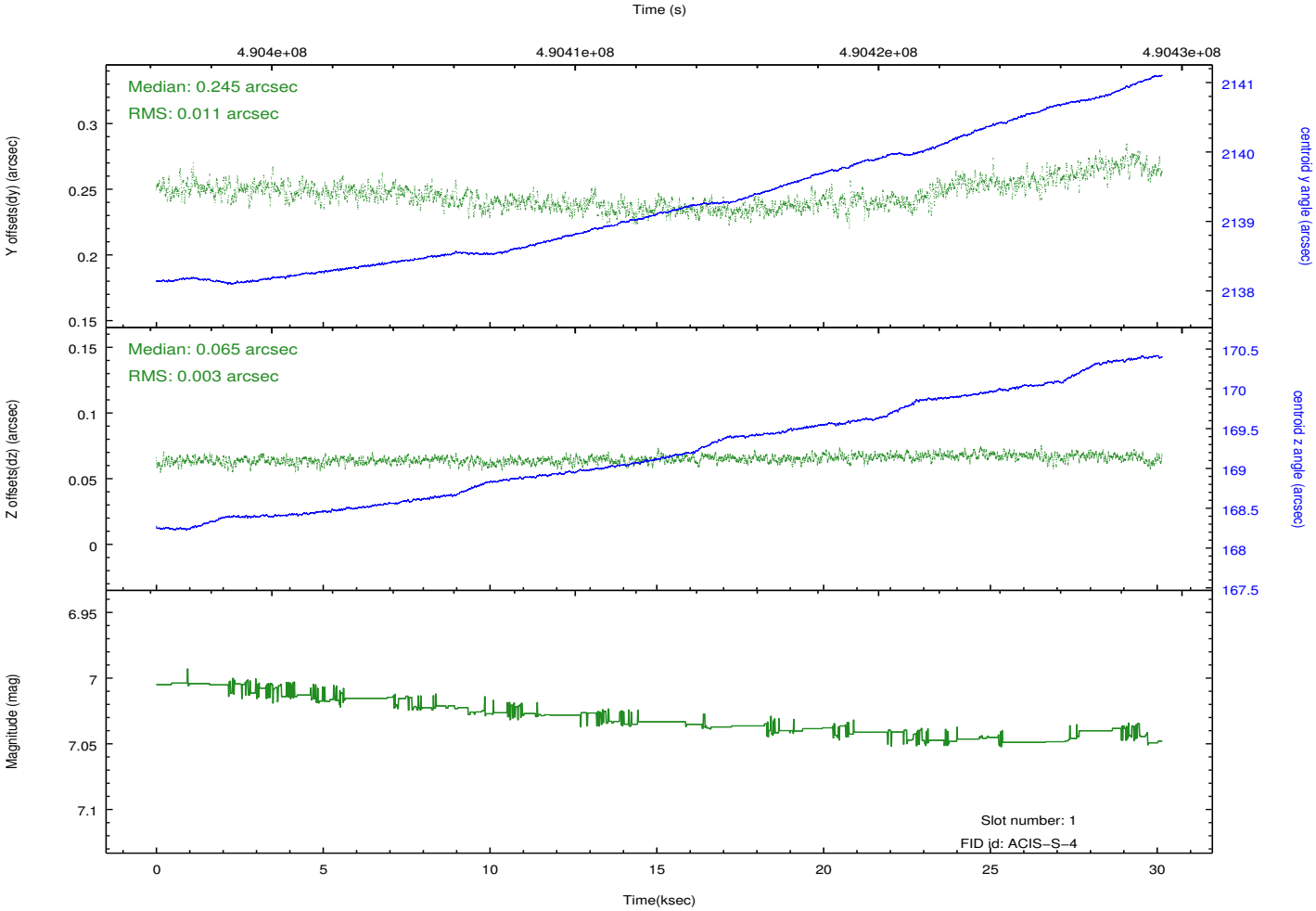




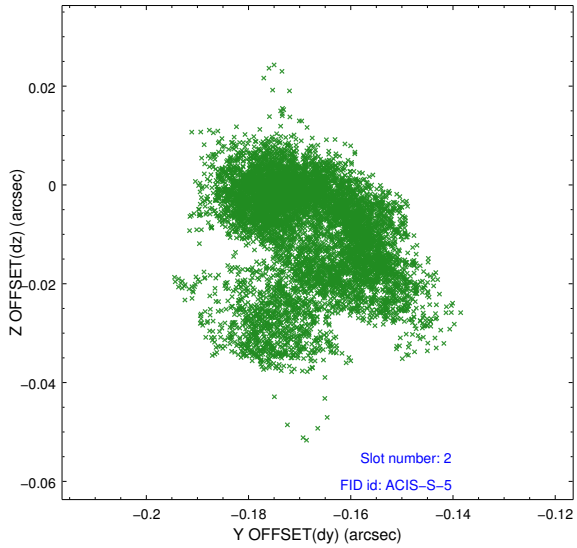
2.5.2 Slot 1

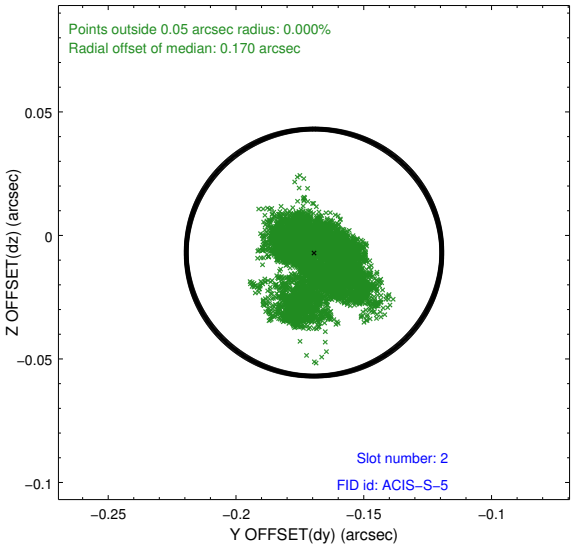

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 1
FID id: ACIS−S−4

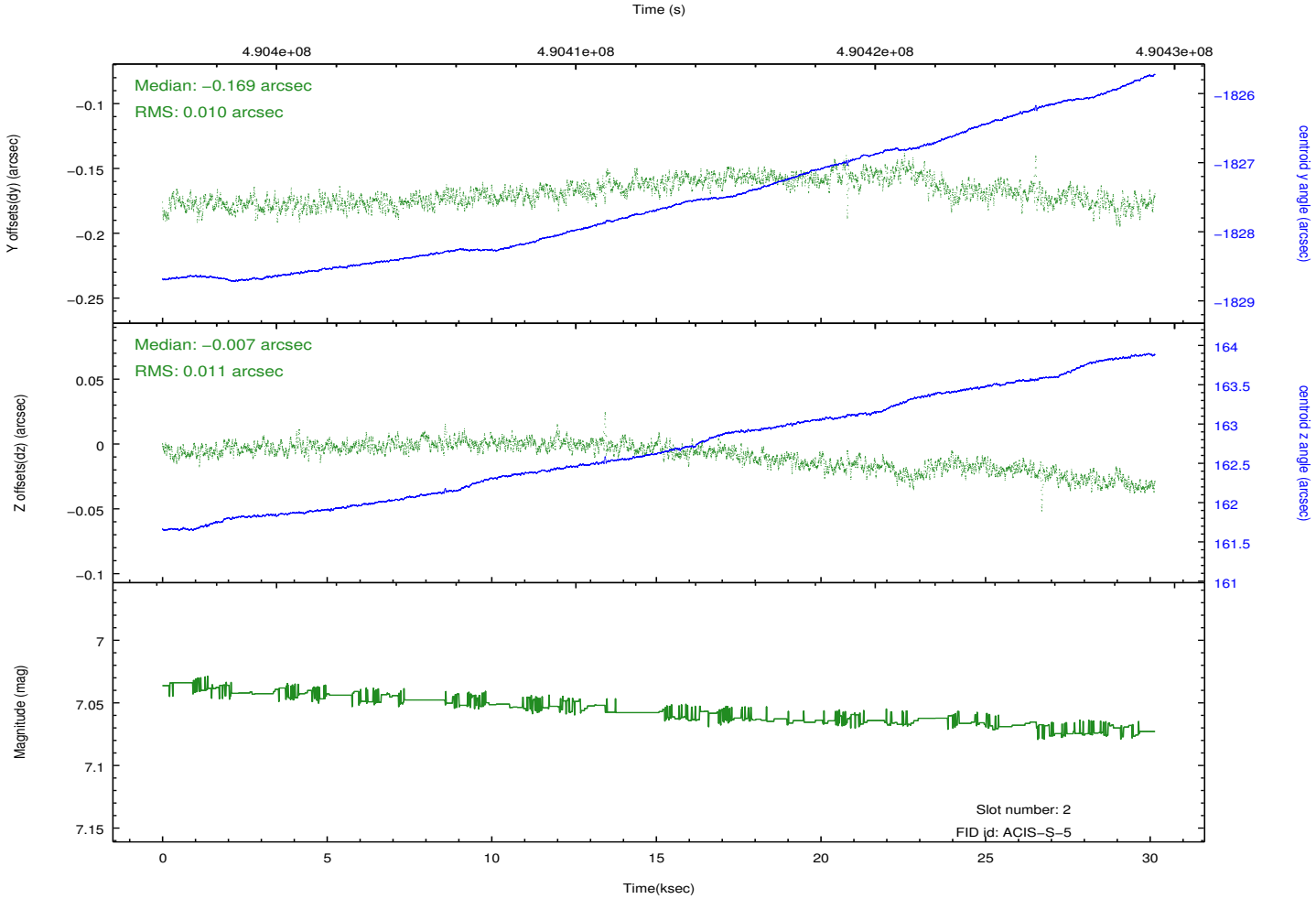

Points outside 0.05 arcsec radius: 0.000%
Radial offset of median: 0.253 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 1
FID id: ACIS−S−4


Time (s)
4.904e+08
4.9041e+08
4.9042e+08
4.9043e+08
Median: 0.245 arcsec
RMS: 0.011 arcsec
Y offsets(dy) (arcsec)
centroid y angle (arcsec)
Median: 0.065 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: 0.170 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 2
FID id: ACIS−S−5


Time (s)
Median: −0.169 arcsec
RMS: 0.010 arcsec
Y offsets(dy) (arcsec)
centroid y angle (arcsec)
Median: −0.007 arcsec
RMS: 0.011 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)	2014.12.11
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	30.063129275143

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.