

V&V Reference Report

L2 ASCDS Version : 10.6

Observation 20547 - L2 Version 1
Chandra X-Ray Center

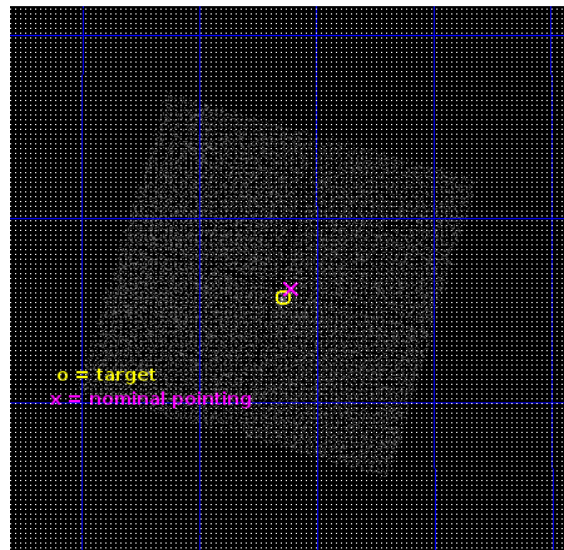
L2 Processing Date : Dec 24 2017

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1 Front

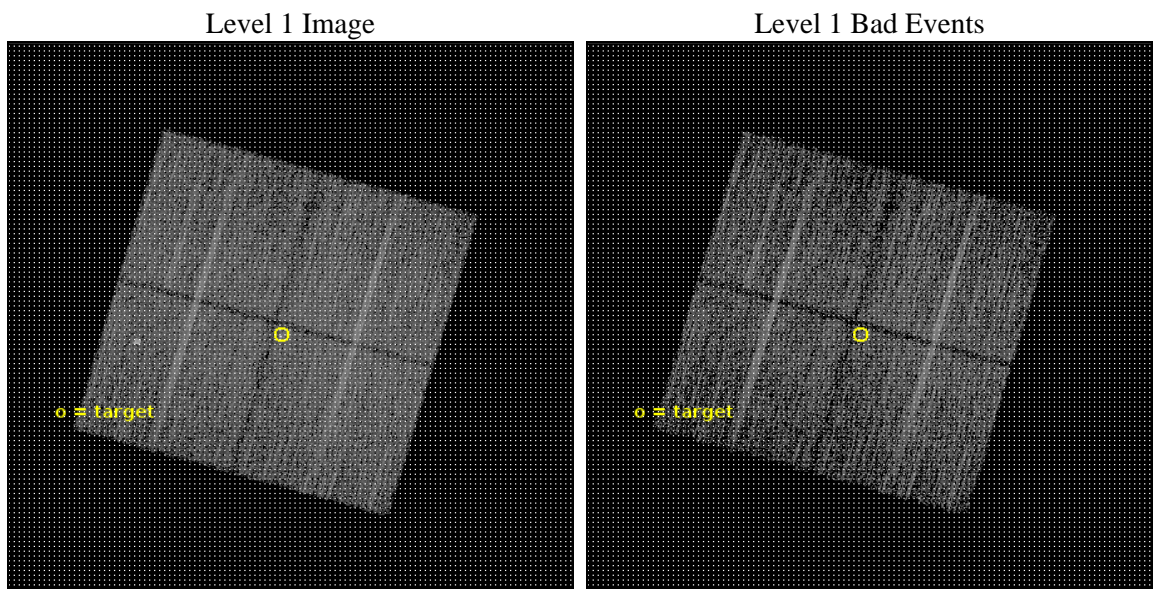
seq_num	801757	Sequence number
obs_id	20547	Observation id
title	Hiding in Plain Sight - Recovering Clusters with the Strongest AGN in their Cores	Proposal title
observer	Paul Nulsen	Principal investigator
object	1RXSJ080938.5+345544	Source name
dtcycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	122.410417	Observer's specified target RA [deg]
dec_targ	34.928889	Observer's specified target Dec [deg]
ra_nom	122.40167719262	Nominal RA [deg]
dec_nom	34.936565323291	Nominal Dec [deg]
roll_nom	106.10394057449	Nominal Roll [deg]
revision	1	Processing version of data
ontime	10078.100077629	Sum of GTIs [s]
livetime	9946.4222807255	Livetime [s]
ontime0	10078.100077629	Sum of GTIs [s]
ontime1	10078.100077629	Sum of GTIs [s]
ontime2	10078.100077629	Sum of GTIs [s]
ontime3	10078.100077629	Sum of GTIs [s]
l2events	26063	Number of level 2 events



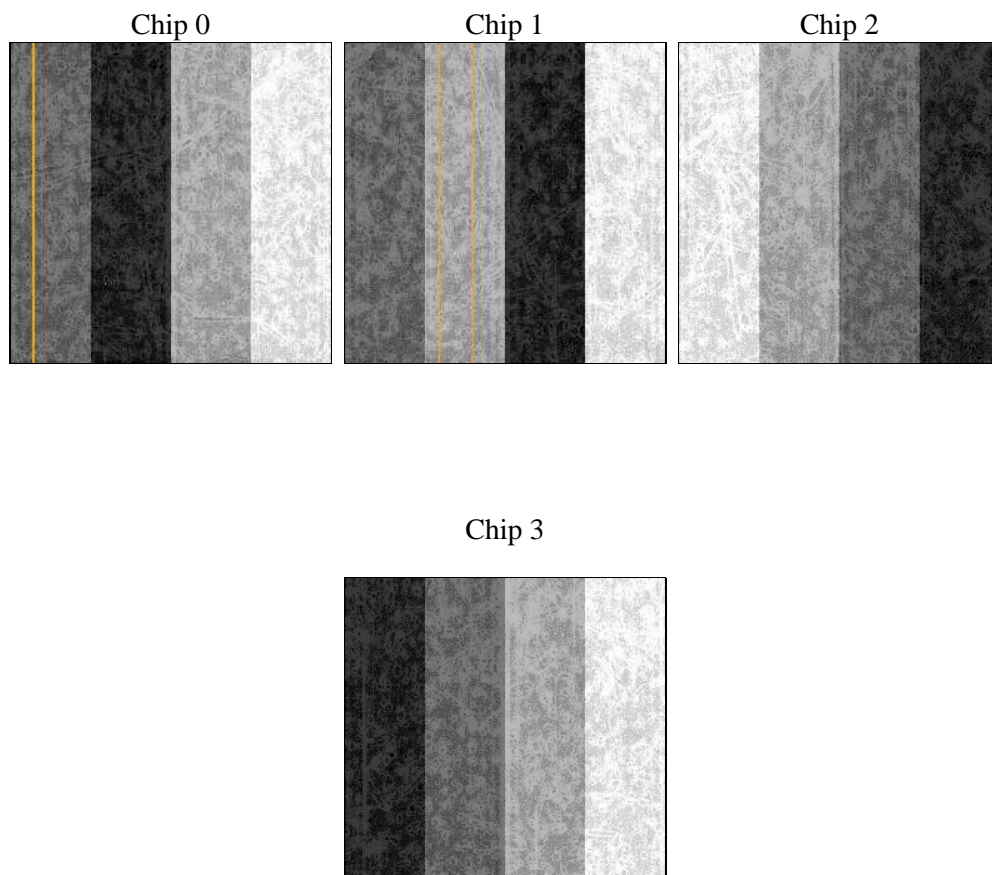
2 OBI

2.1 OBI

2.1.1 Images



2.1.2 Bias



2.1.3 Parameters

obi_num	0	Obi number	sched_exp_time	10000.000000	[s] Scheduled observation exposure time
ascdsver	10.6	Processing system revision	ontime	10078.100077629	Sum of GTIs [s]
caldsver	4.7.7	 	ontime0	10078.100077629	Sum of GTIs [s]
date	2017-12-24T22:42:14	Date and time of file creation	ontime1	10078.100077629	Sum of GTIs [s]
revision	1	Processing version of data	ontime2	10078.100077629	Sum of GTIs [s]
			ontime3	10078.100077629	Sum of GTIs [s]
			l1events	277921	Number of level 1 events

2.1.4 Events

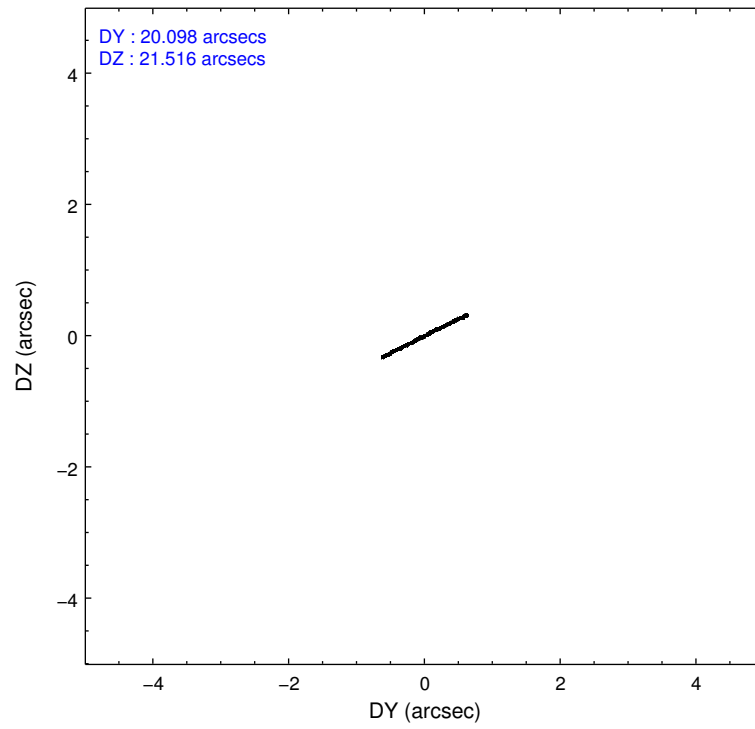
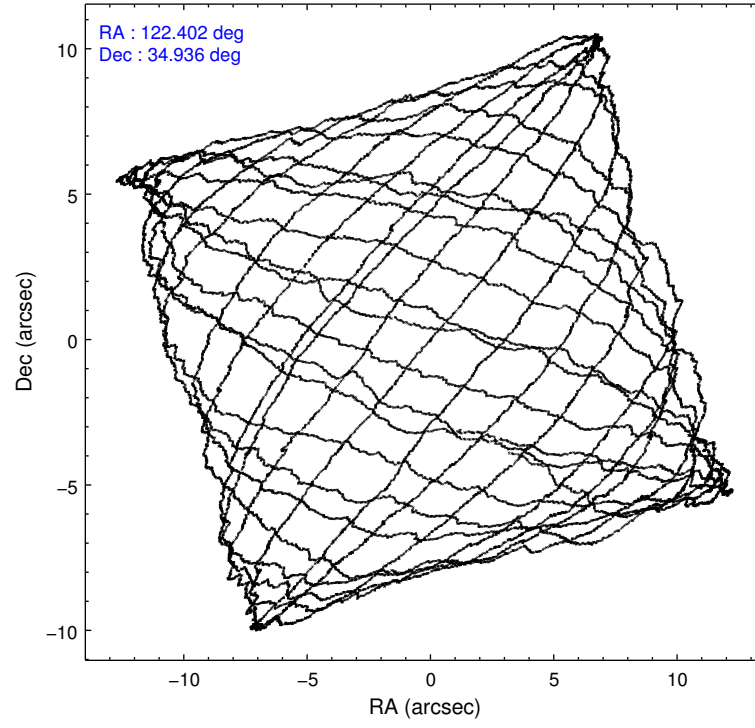
	ccd 0	ccd 1	ccd 2	ccd 3
level 1 events	66631	66117	74186	70987
rejected events	59062	57322	67213	62238
rejected %	88%	86%	90%	87%

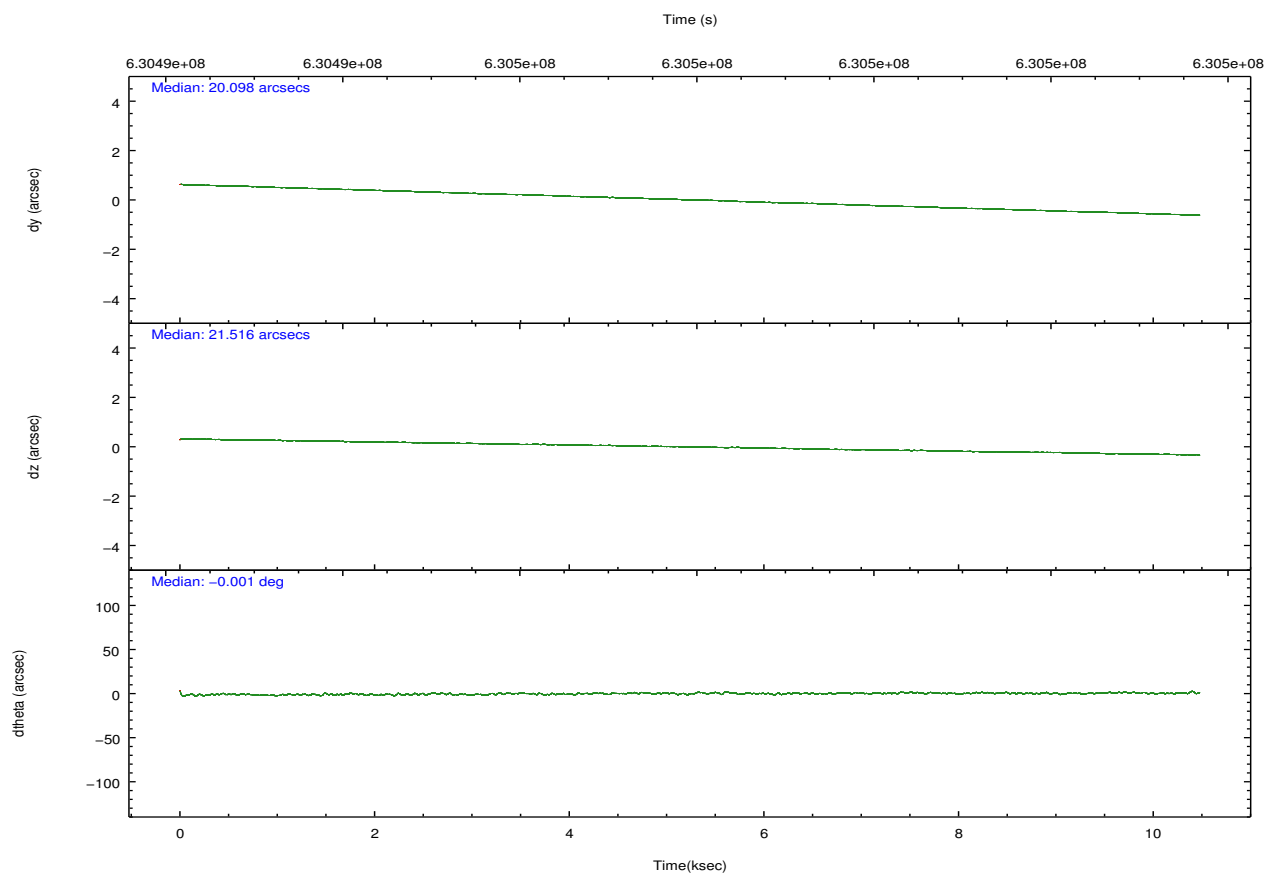
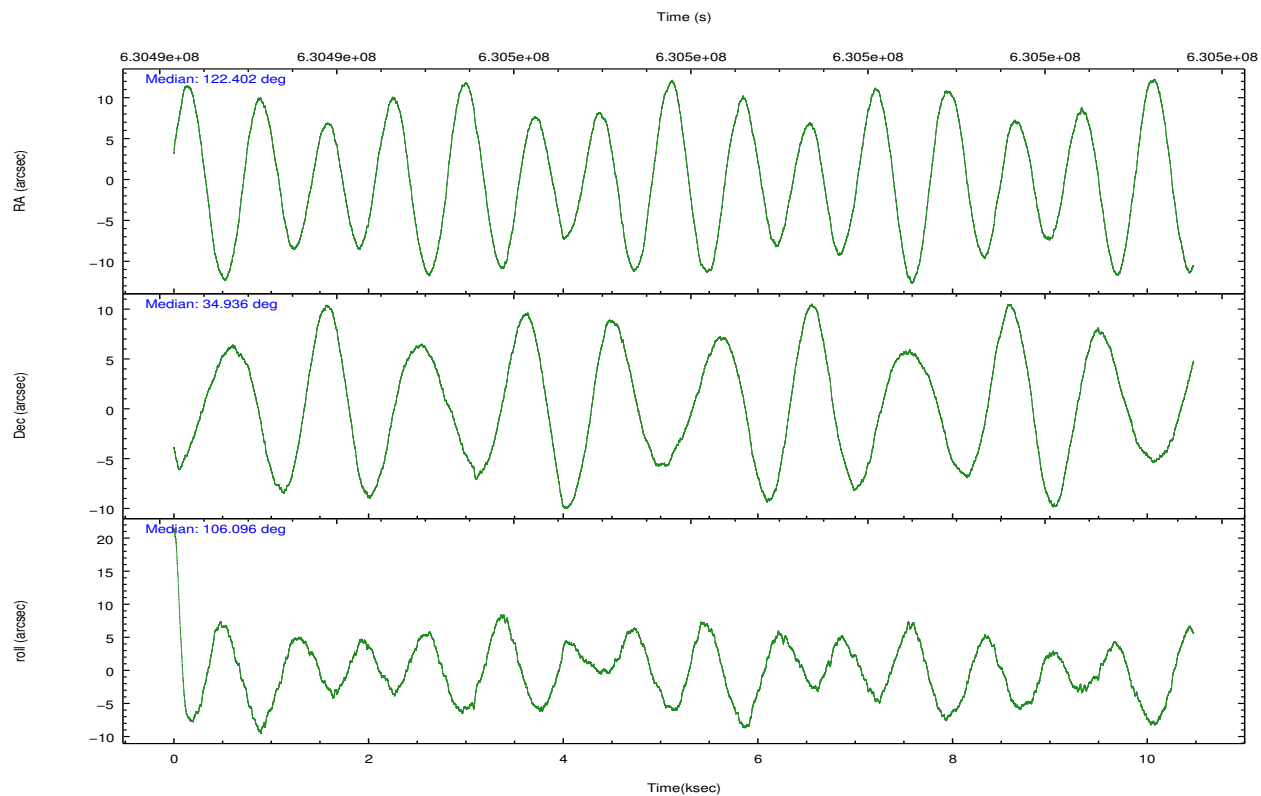
	ccd 0	ccd 1	ccd 2	ccd 3
grade 0 events	2589	3449	2568	3712
	3%	5%	3%	5%
grade 1 events	33	41	40	139
	0%	0%	0%	0%
grade 2 events	1932	2025	1666	1821
	2%	3%	2%	2%
grade 3 events	791	782	692	860
	1%	1%	0%	1%
grade 4 events	684	687	714	798
	1%	1%	0%	1%
grade 5 events	2449	2549	2230	2724
	3%	3%	3%	3%
grade 6 events	1576	1853	1334	1562
	2%	2%	1%	2%
grade 7 events	56577	54731	64942	59371
	84%	82%	87%	83%

2.2 Compared Parameters

Parameter	Planned	Actual	Parameter	Planned	Actual
Instrument	ACIS	ACIS	Obspar format version number	7	7
Detector	ACIS-0123	ACIS-0123	Obspar file type	PREDICTED	ACTUAL
Grating	NONE	NONE	Obspar update status	NONE	UPDATED
Data mode	VFAINT	VFAINT	Number of optional ACIS chips dropped	0	0
Observation mode	POINTING	POINTING	On-chip summing requested	N	N
[deg] Pointing RA	122.426007	122.4016771926204	Subarray requested	NONE	NONE
[deg] Pointing Dec	34.917530	34.93656532329146	Alternating exposures requested	N	N
[deg] Pointing Roll	105.881295	106.103940574489	[s] Primary exposure time	0.000000	3.1
[mm] SIM focus pos	-0.782348	-0.7809083437167272			
[mm] SIM defocus	0	0.001439871863259334			
[mm] SIM translation stage pos	-233.592463	-233.5874344608287			
[mm] SIM translation stage offset	0	-0.005018542100998502			
[s] Observation start time (MET)	630493141.184000	630492115.0382299			
Observation start date	2017-12-24T08:57:52	2017-12-24T08:41:55			
[s] Observation end time (MET)	630503141.184000	630504602.10147			
Observation end date	2017-12-24T11:44:32	2017-12-24T12:10:02			
Read mode	TIMED	TIMED			

2.3 Aspect



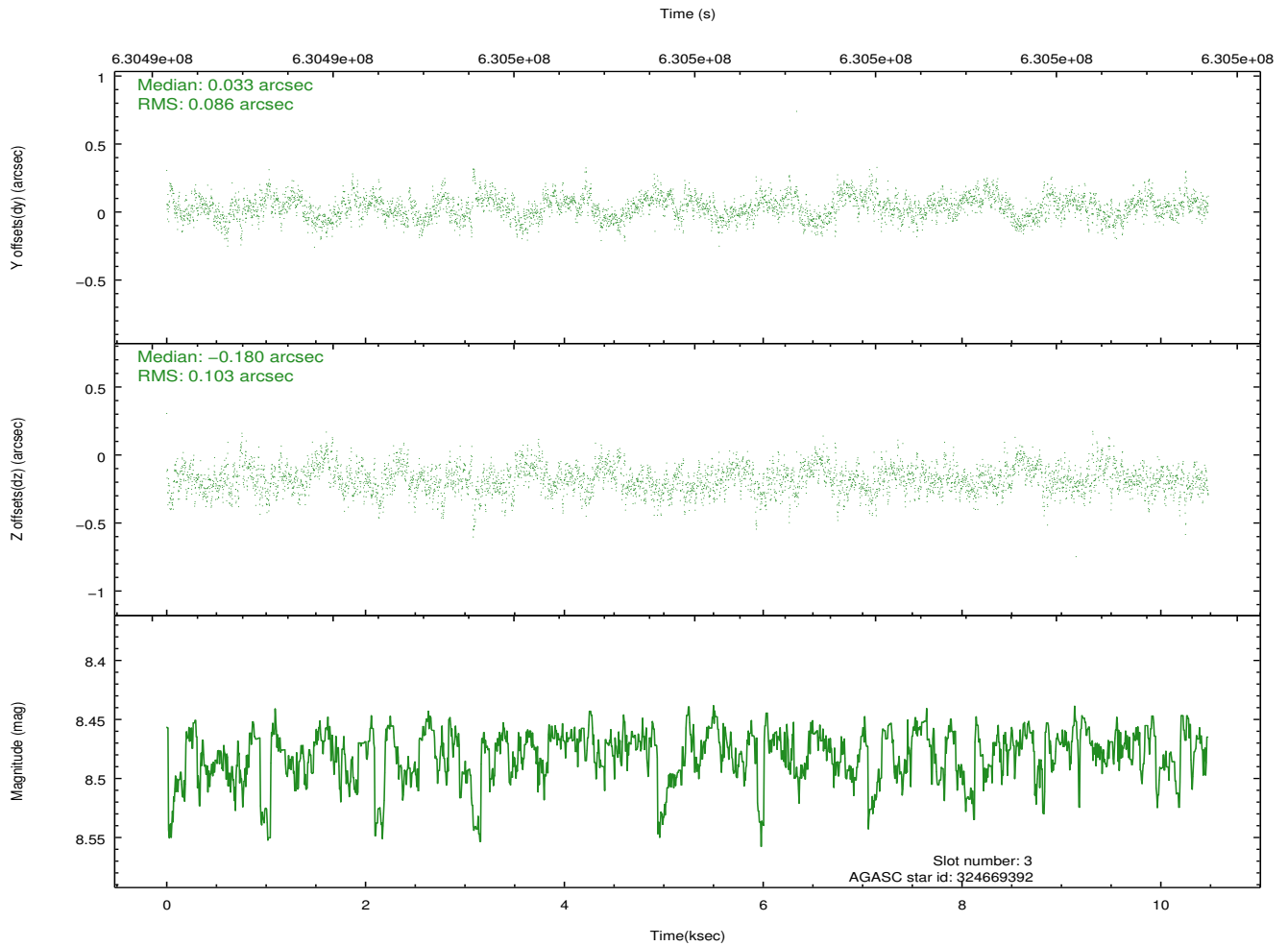
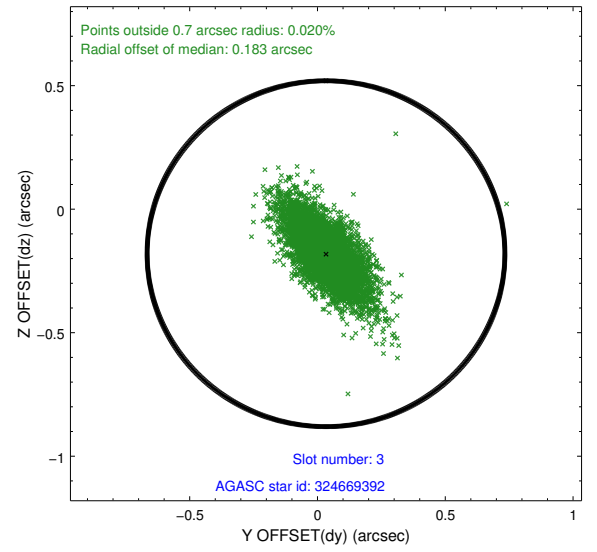
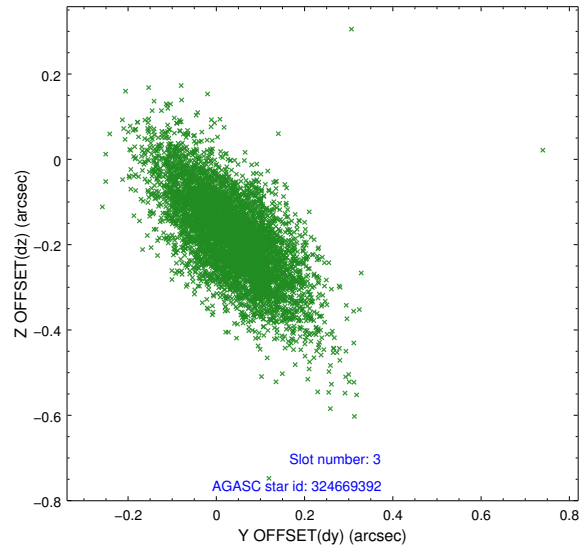


Slot Statistics

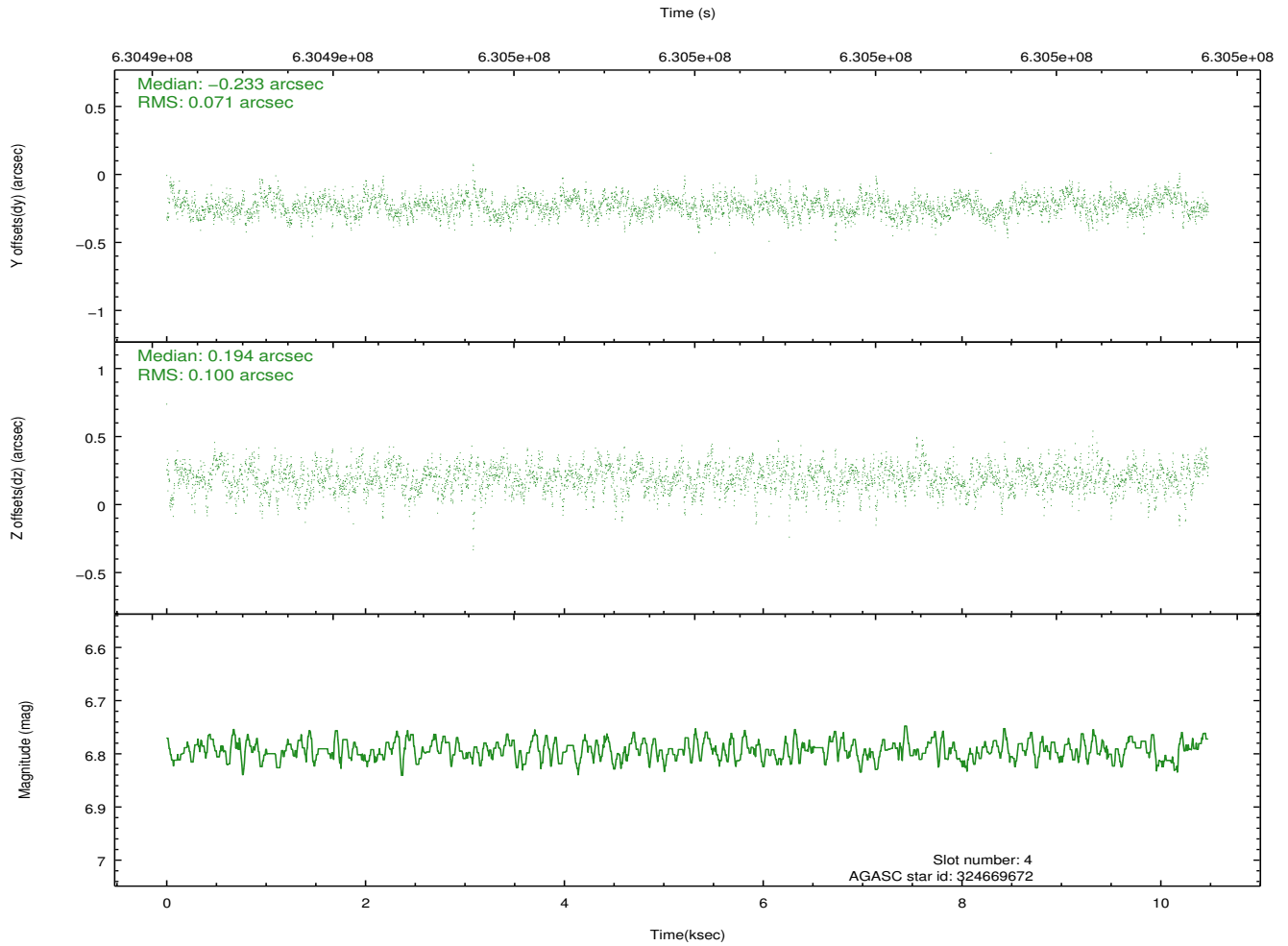
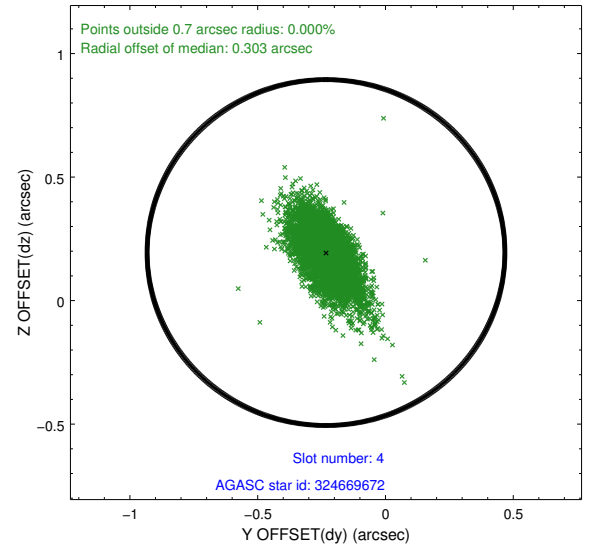
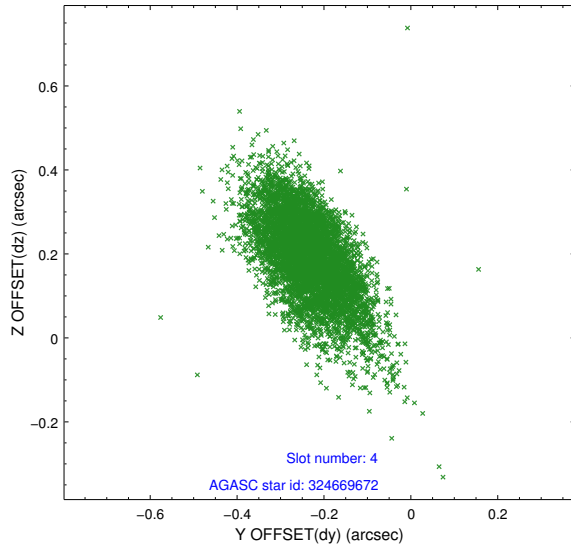
slot	status	used	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID		ACIS-I-1	7.26	2556	0.092	0.015	0.015	0.027	0.000000	0.000000	919.29	-845.28
1	FID		ACIS-I-2	7.14	2555	-0.224	-0.132	0.018	0.028	0.000000	0.000000	-774.84	-852.08
2	FID		ACIS-I-6	7.27	2556	0.038	0.184	0.011	0.018	0.000000	0.000000	384.70	1696.46
3	GUIDE	used	324669392	8.48	5105	0.033	-0.180	0.135	0.249	122.314154	34.306803	-2023.22	921.47
4	GUIDE	used	324669672	6.79	5112	-0.233	0.194	0.123	0.222	122.547825	35.454982	1758.13	-874.69
5	GUIDE	used	324673288	8.01	5110	-0.210	-0.132	0.115	0.208	122.449919	35.393958	1630.89	-536.23
6	GUIDE	used	324675744	8.24	5110	0.338	0.516	0.178	0.276	123.153334	34.445730	-2215.78	-1613.81
7	GUIDE	used	324676752	9.17	5104	0.066	-0.383	0.218	0.350	121.854434	34.330198	-1564.40	2211.15

2.4 Star Slots

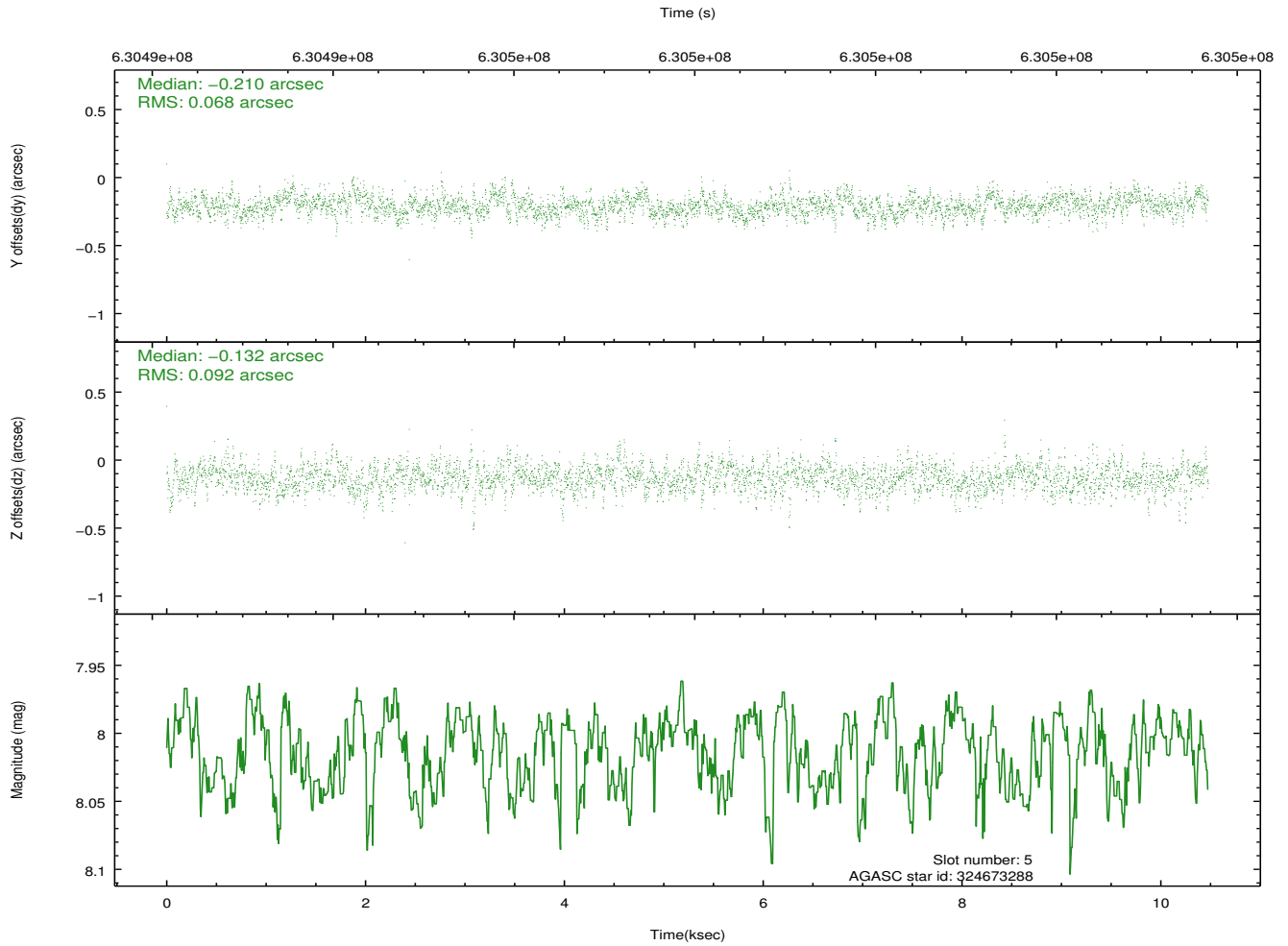
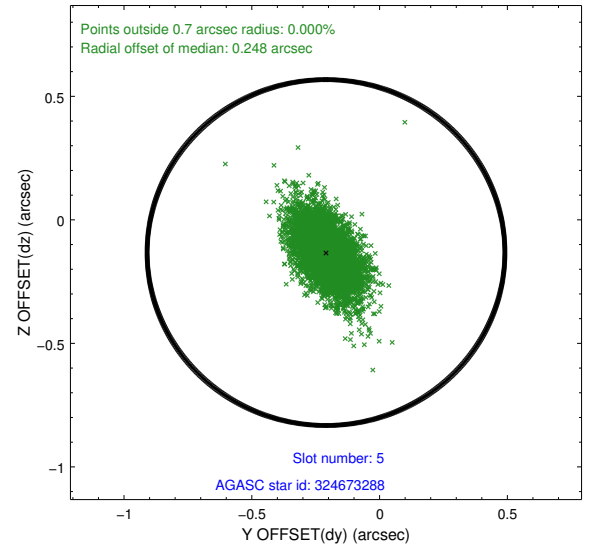
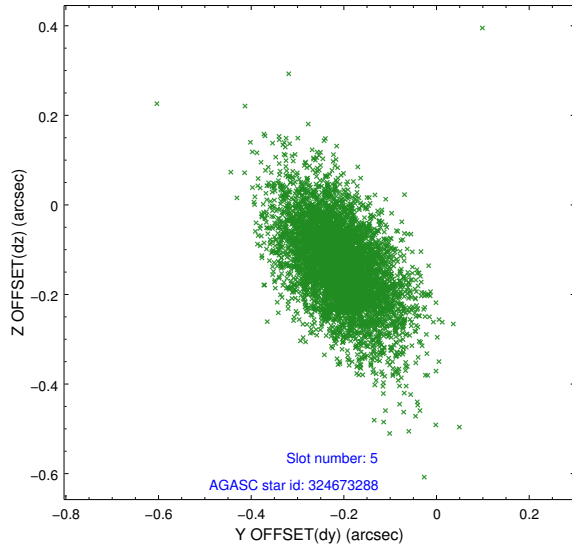
2.4.1 Slot 3



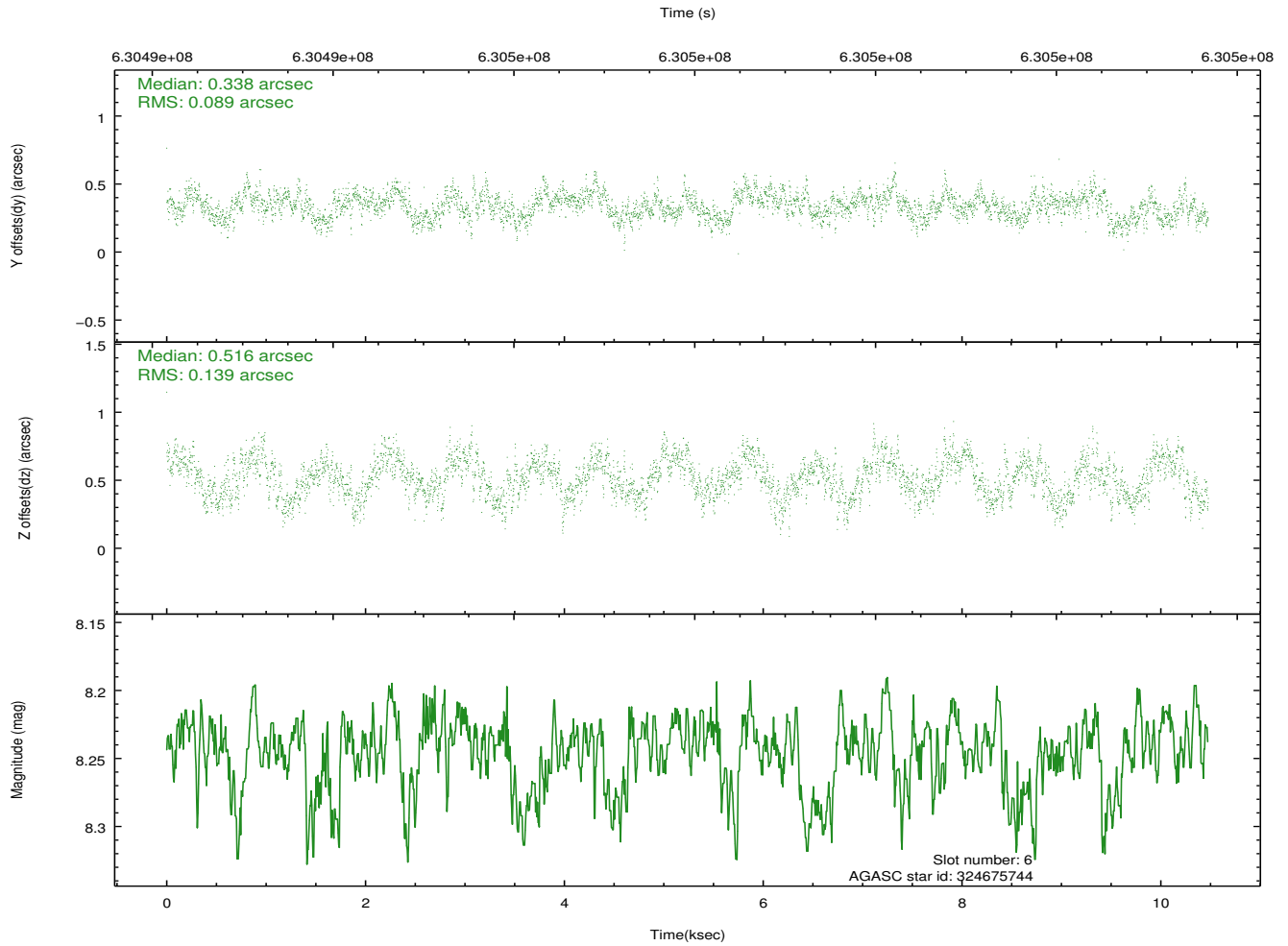
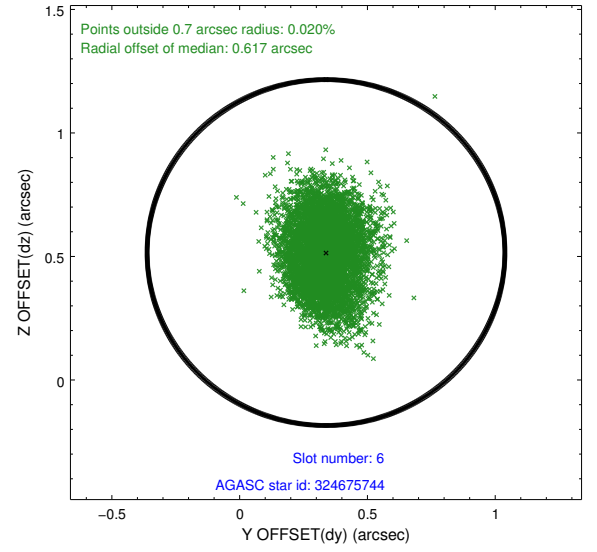
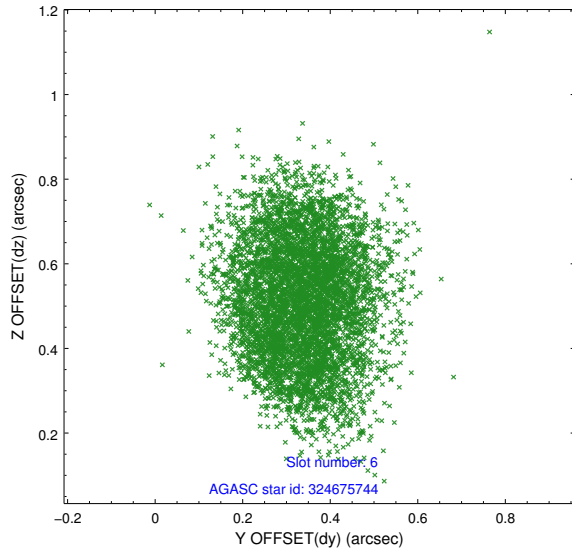
2.4.2 Slot 4



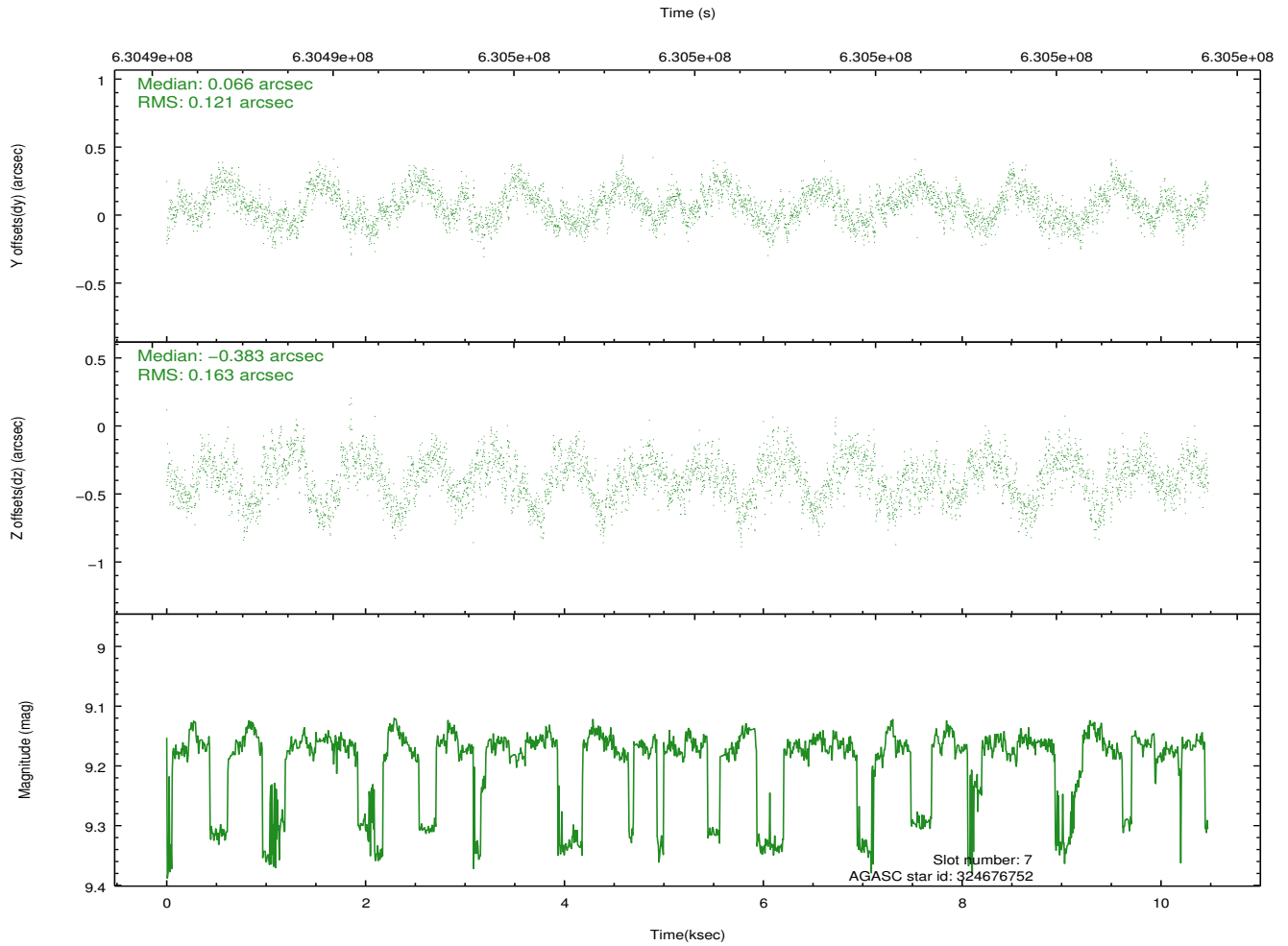
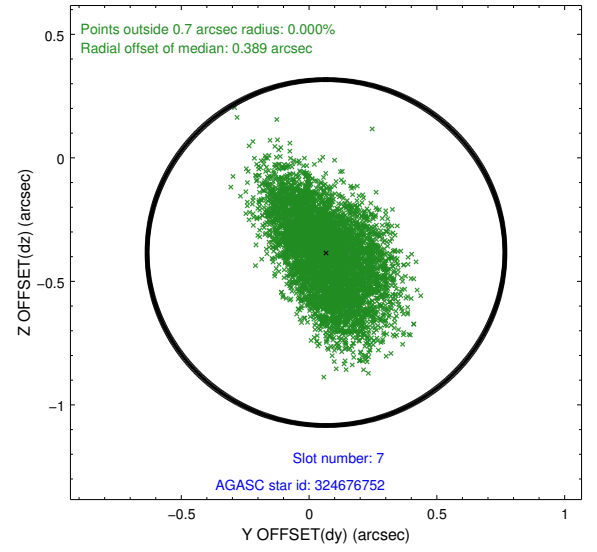
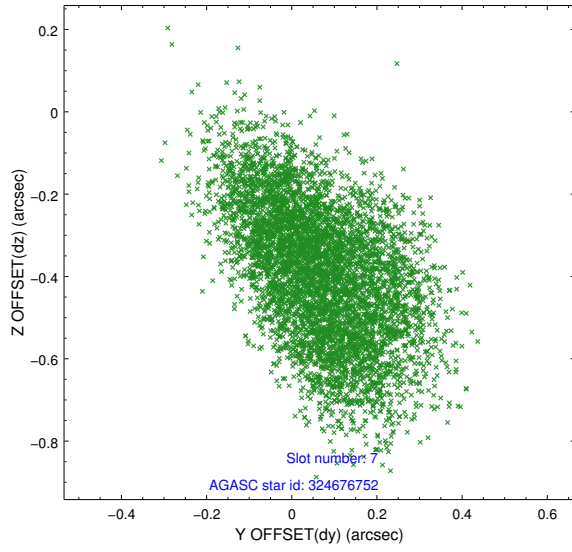
2.4.3 Slot 5



2.4.4 Slot 6

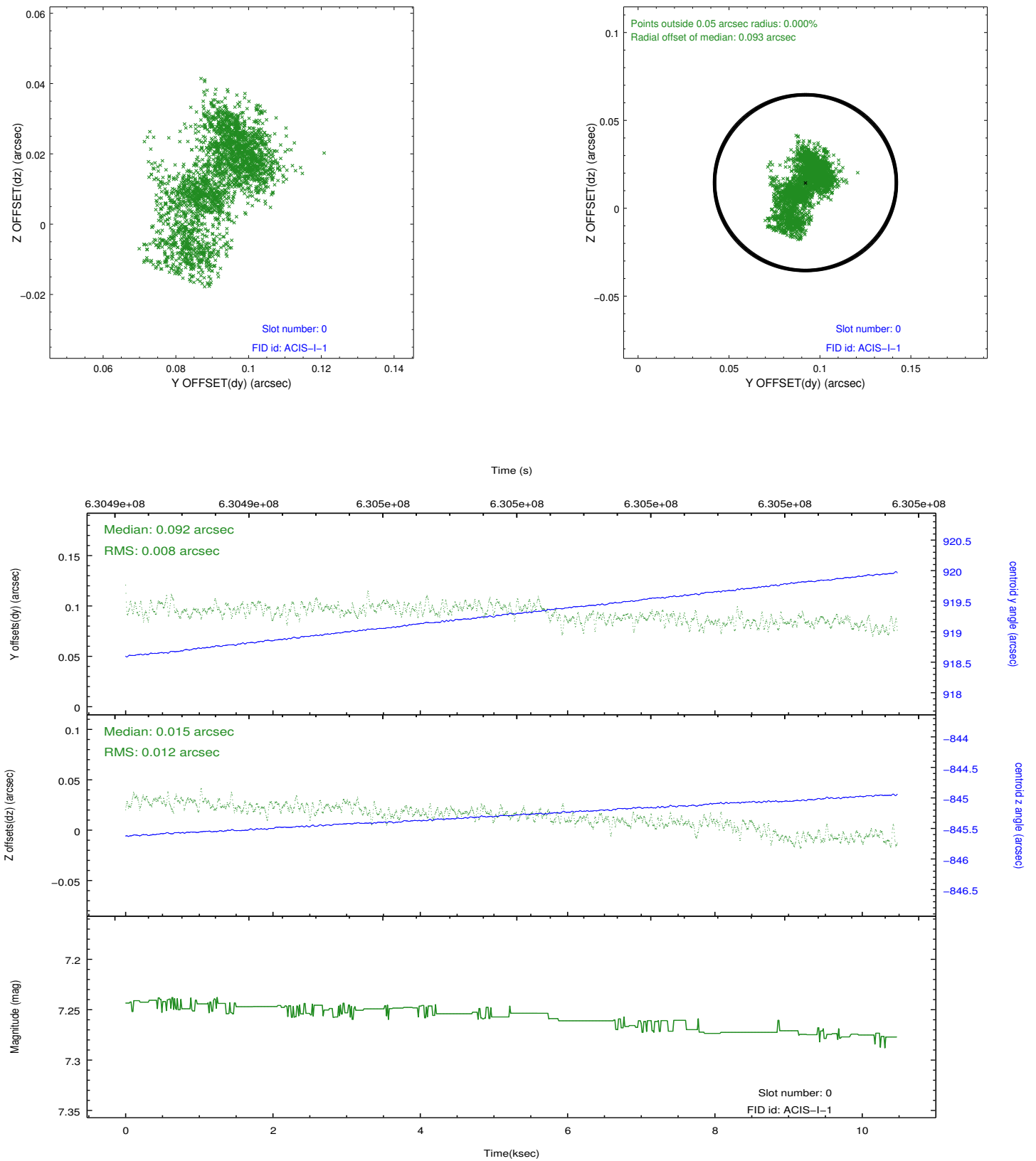


2.4.5 Slot 7

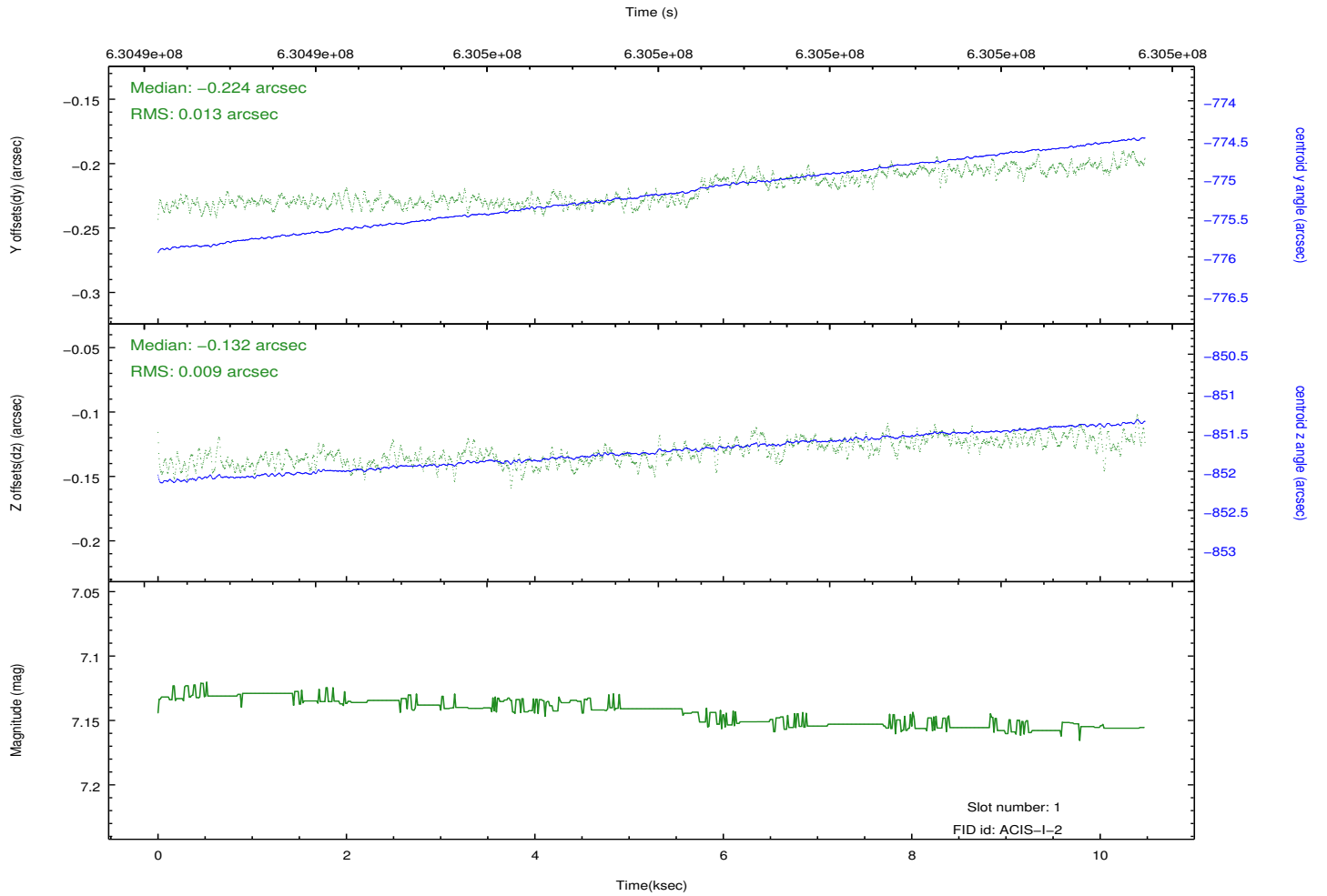
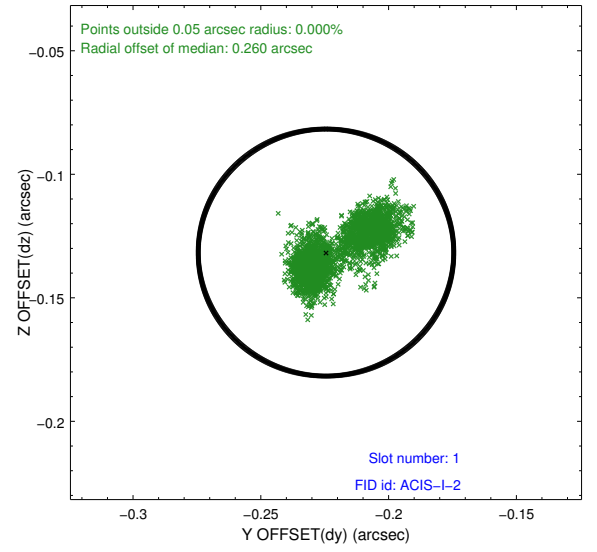
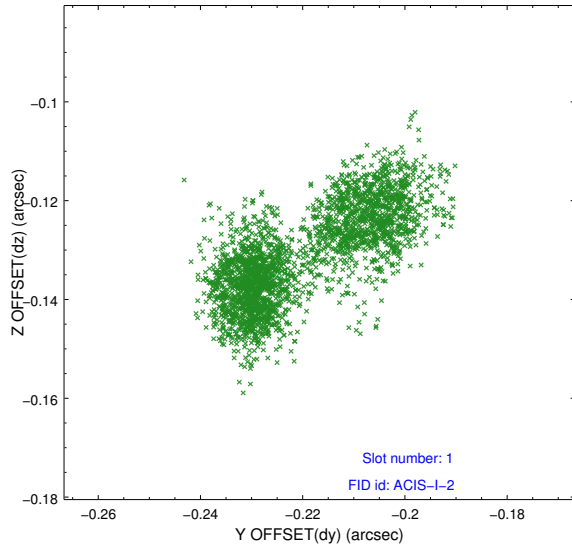


2.5 FID Slots

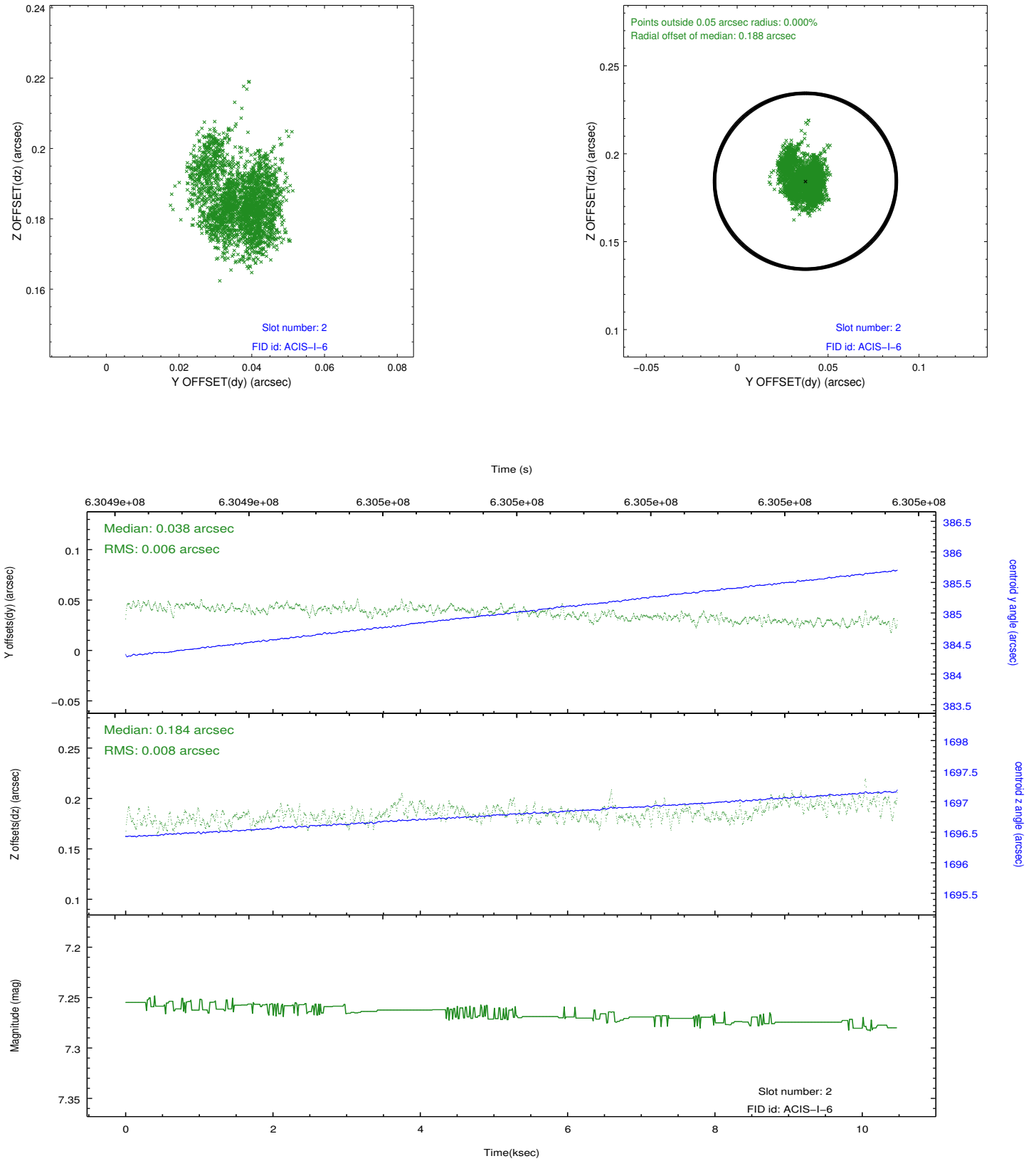
2.5.1 Slot 0



2.5.2 Slot 1



2.5.3 Slot 2



A Summary

A.1 Status

V&V Scientist	Beth Sundheim
V&V Date (YYYY-MM-DD)	2018.03.07
V&V Edition	2
V&V Disposition and Status	OK
V&V Charge Time	10.078100077629

A.2 Comments

The focal plane temperature during part of this observation was warmer than the upper limit for optimum calibration of the ACIS gain and spectral resolution (i.e., -114.0 C for ACIS-I and -112.0 C for ACIS-S).

The Chandra calibration team calibrates the ACIS gain and spectral resolution using data from the external calibration source (ECS). ECS data show that the frontside-illuminated (FI) CCDs are more temperature sensitive than the backside-illuminated (BI) CCDs.

A summary of the current calibration status of the ACIS gain and spectral resolution can be found at:

http://asc.harvard.edu/cal/Acis/Cal_prods/Gain_and_Spectral_Resolution/ACIS_response_summary.html

The main points are:

- 1) The gain on BI chips remains within 0.3% (i.e., the systematic uncertainty in the ACIS gain quoted on the Chandra Calibration Status Summary web page) at all measured temperatures.
 - 2) The gain on FI chips remains within 0.3% below row 600 at all measured temperatures.
 - 3) The gain on FI chips above row 600 can be underestimated by as much as 1% for focal plane temperatures exceeding -116 C.
 - 4) The spectral resolution (i.e., FWHM) on BI chips is insensitive to the focal plane temperature.
 - 5) Warmer focal plane temperatures increase the FWHM on FI chips by up to 30 eV near row 512 and by up to 70 eV near the top of the chips.
- In summary, the user should be cautious in the spectral analysis of high S/N emission lines detected on the top half of FI chips in this observation. Default processing with the current version of the CALDB will underestimate photon energies by up to 1% and broaden emission lines by up to 70 eV.