

V&V Reference Report

L2 ASCDS Version : 10.8

Observation 21144 - L2 Version 1
Chandra X-Ray Center

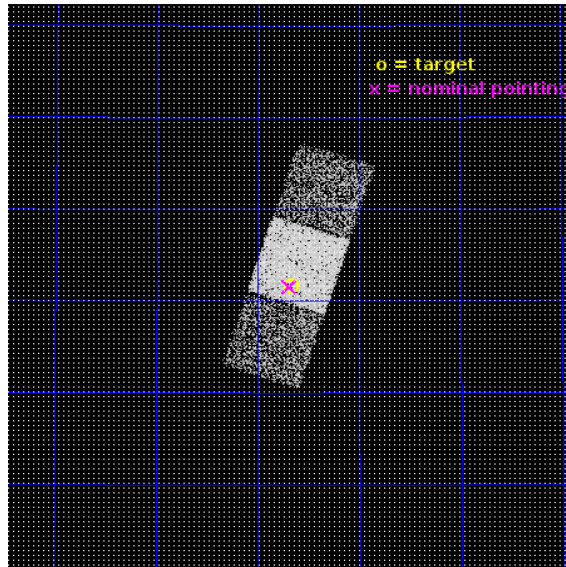
L2 Processing Date : Aug 22 2019

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1 Front

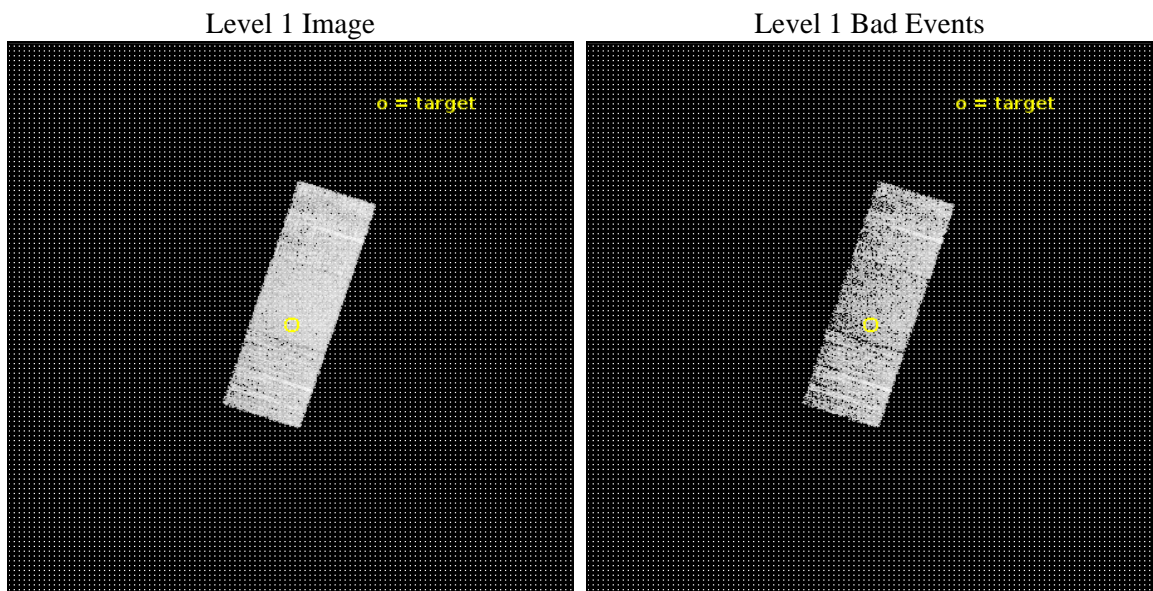
seq_num	703684	Sequence number
obs_id	21144	Observation id
title	A Chandra view of Eddington-limited accretion in DOGs	Proposal tit
observer	Gordon Garmire	Principal investigator
object	J1324+4501	Source name
dtcycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	201.1675	Observer's specified target RA [deg]
dec_targ	45.026083	Observer's specified target Dec [deg]
ra_nom	201.17222594011	Nominal RA [deg]
dec_nom	45.025868013235	Nominal Dec [deg]
roll_nom	288.1532453191	Nominal Roll [deg]
revision	1	Processing version of data
ontime	3109.3000240326	Sum of GTIs [s]
livetime	3068.6747301852	Livetime [s]
ontime6	3109.3000240326	Sum of GTIs [s]
ontime7	3109.3000240326	Sum of GTIs [s]
ontime8	3109.3000240326	Sum of GTIs [s]
l2events	17881	Number of level 2 events



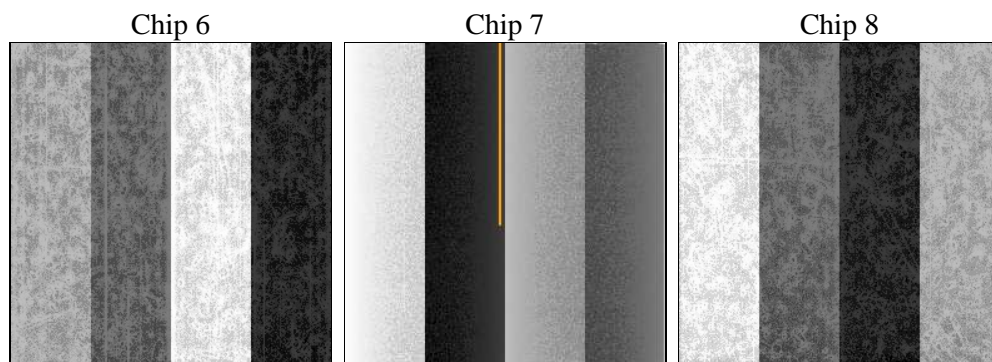
2 OBI

2.1 OBI

2.1.1 Images



2.1.2 Bias



2.1.3 Parameters

obi_num	0	Obi number	sched_exp_time	3000.000000	[s] Scheduled observation exposure time
ascdsver	10.8	Processing system revision	ontime	3109.3000240326	Sum of GTIs [s]
caldsver	4.8.3.1	 	ontime6	3109.3000240326	Sum of GTIs [s]
date	2019-08-22T16:27:03	Date and time of file creation	ontime7	3109.3000240326	Sum of GTIs [s]
revision	1	Processing version of data	ontime8	3109.3000240326	Sum of GTIs [s]
			l1events	87311	Number of level 1 events

2.1.4 Events

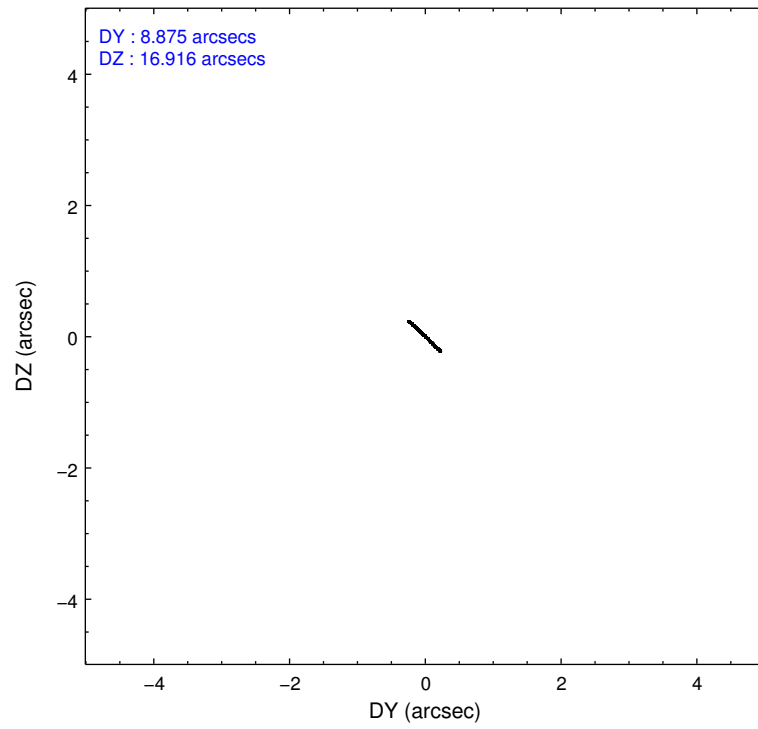
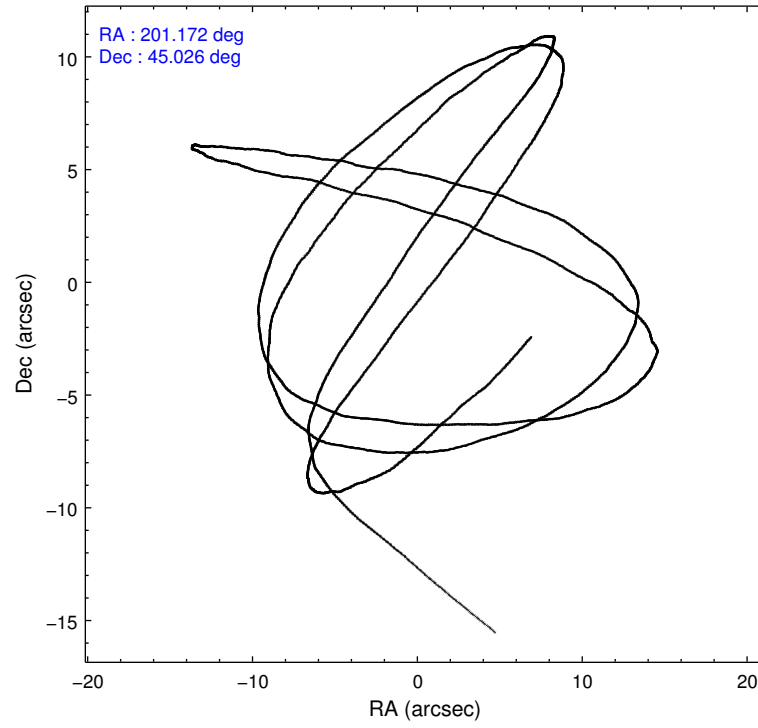
	ccd 6	ccd 7	ccd 8
level 1 events	25578	31011	30722
rejected events	22897	17650	23642
rejected %	89%	56%	76%

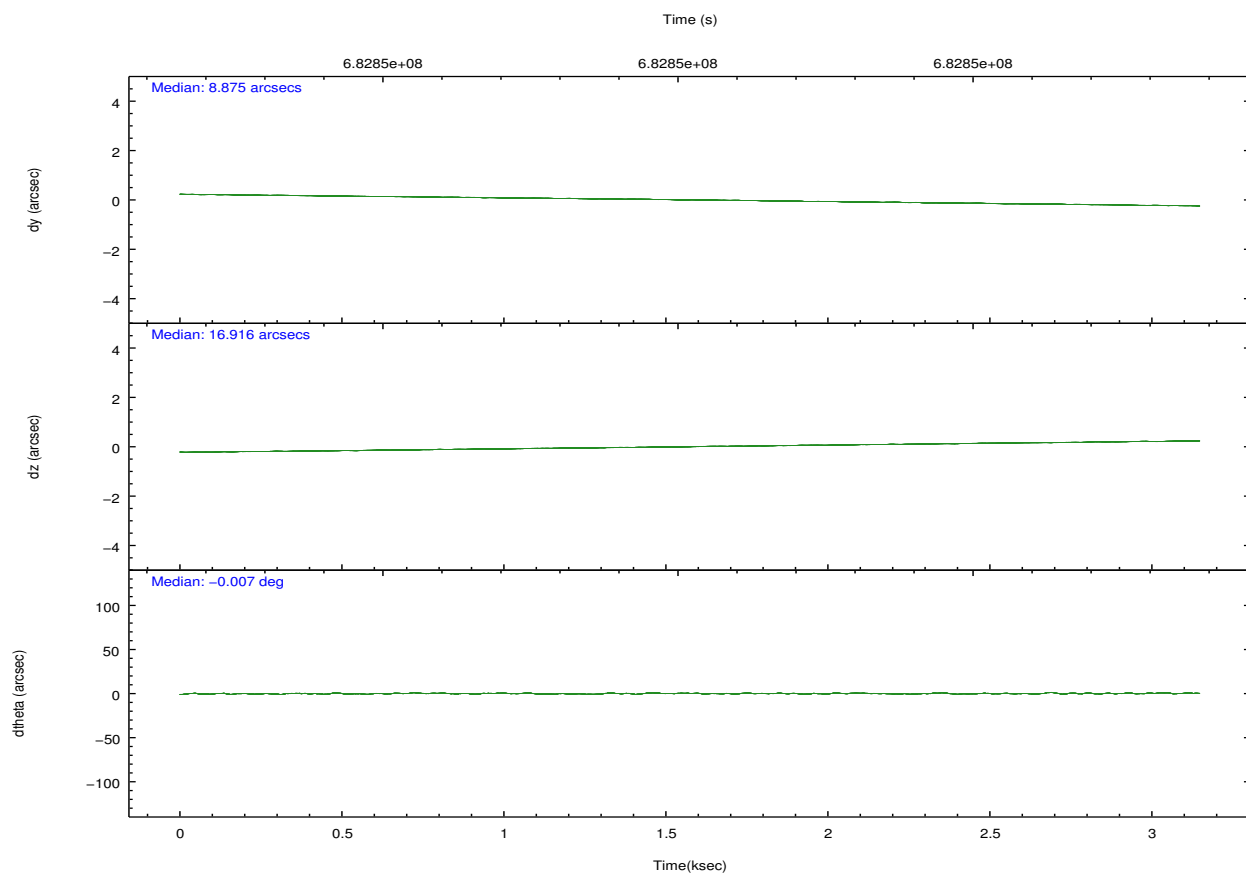
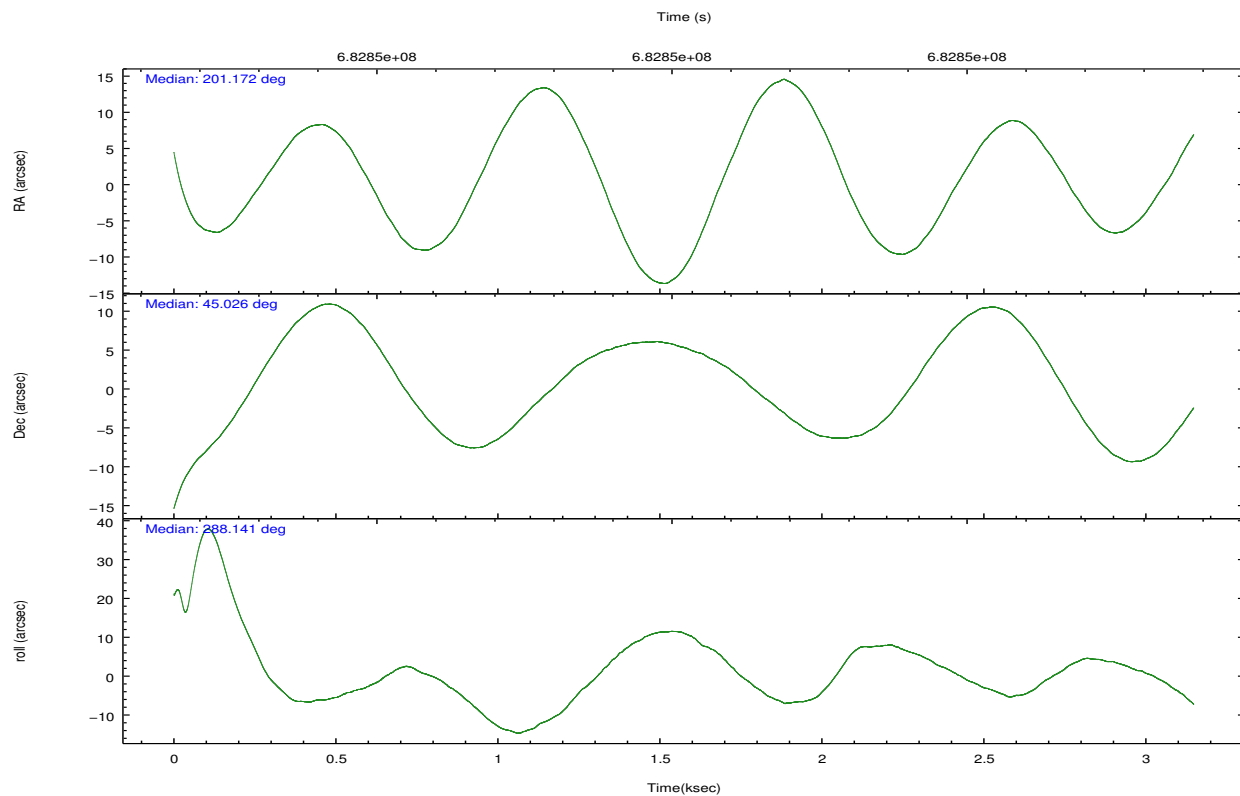
	ccd 6	ccd 7	ccd 8
grade 0 events	623	1125	1938
	2%	3%	6%
grade 1 events	16	48	18
	0%	0%	0%
grade 2 events	829	2745	1842
	3%	8%	5%
grade 3 events	205	1084	648
	0%	3%	2%
grade 4 events	200	991	668
	0%	3%	2%
grade 5 events	933	2938	1518
	3%	9%	4%
grade 6 events	826	7426	1987
	3%	23%	6%
grade 7 events	21946	14654	22103
	85%	47%	71%

2.2 Compared Parameters

Parameter	Planned	Actual	Parameter	Planned	Actual
Instrument	ACIS	ACIS	Obspar format version number	7	7
Detector	ACIS-678	ACIS-678	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	201.143069	201.1722259401093	Subarray requested	NONE	NONE
[deg] Pointing Dec	45.044052	45.02586801323457	Alternating exposures requested	N	N
[deg] Pointing Roll	288.017288	288.1532453191014	[s] Primary exposure time	0.000000	3.1
[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)	682845591.184000	682844124.432			
Observation start date	2019-08-22T07:18:42	2019-08-22T06:55:24			
[s] Observation end time (MET)	682848591.184000	682849120.7948			
Observation end date	2019-08-22T08:08:42	2019-08-22T08:18:40			
Read mode	TIMED	TIMED			

2.3 Aspect



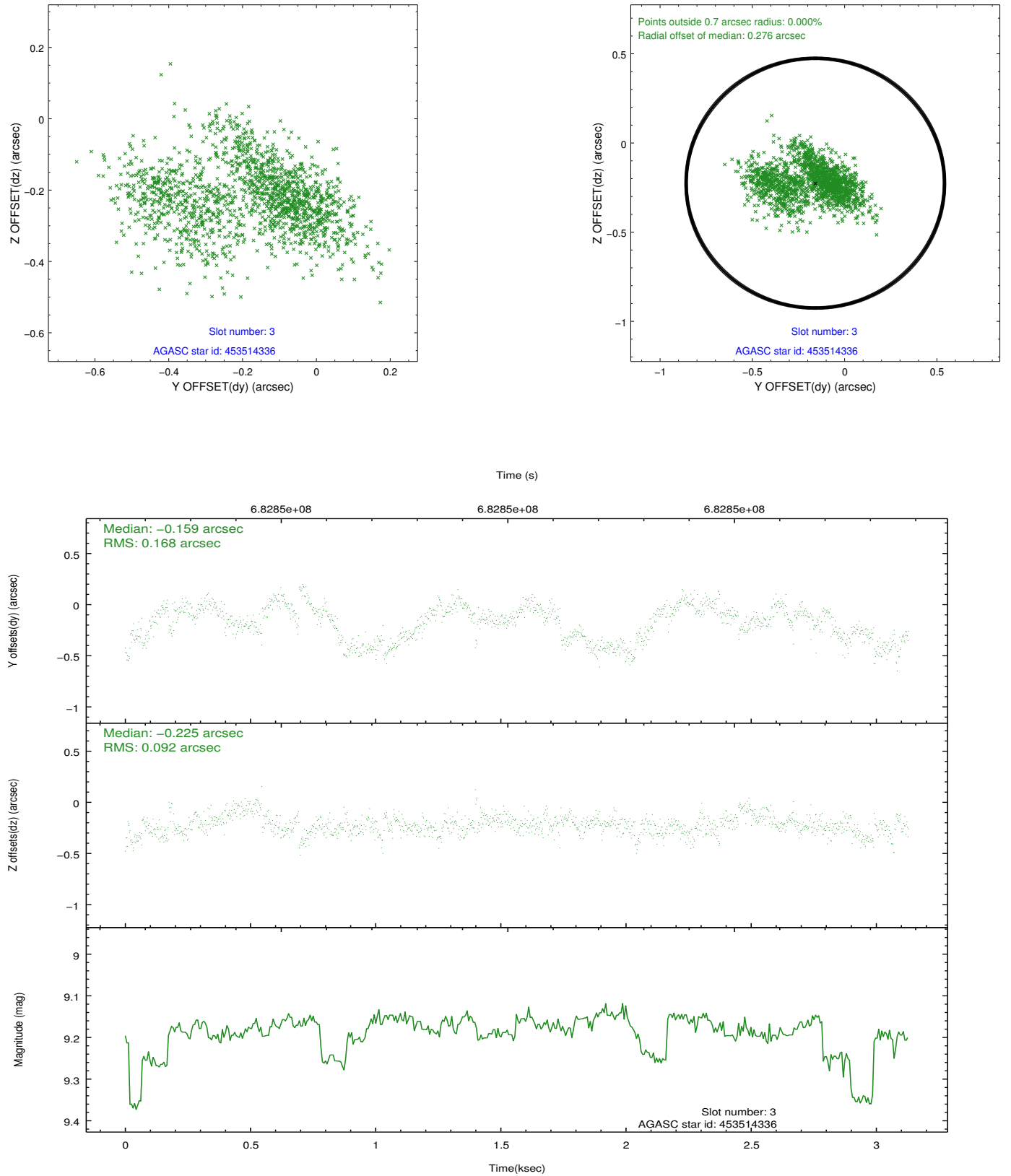


Slot Statistics

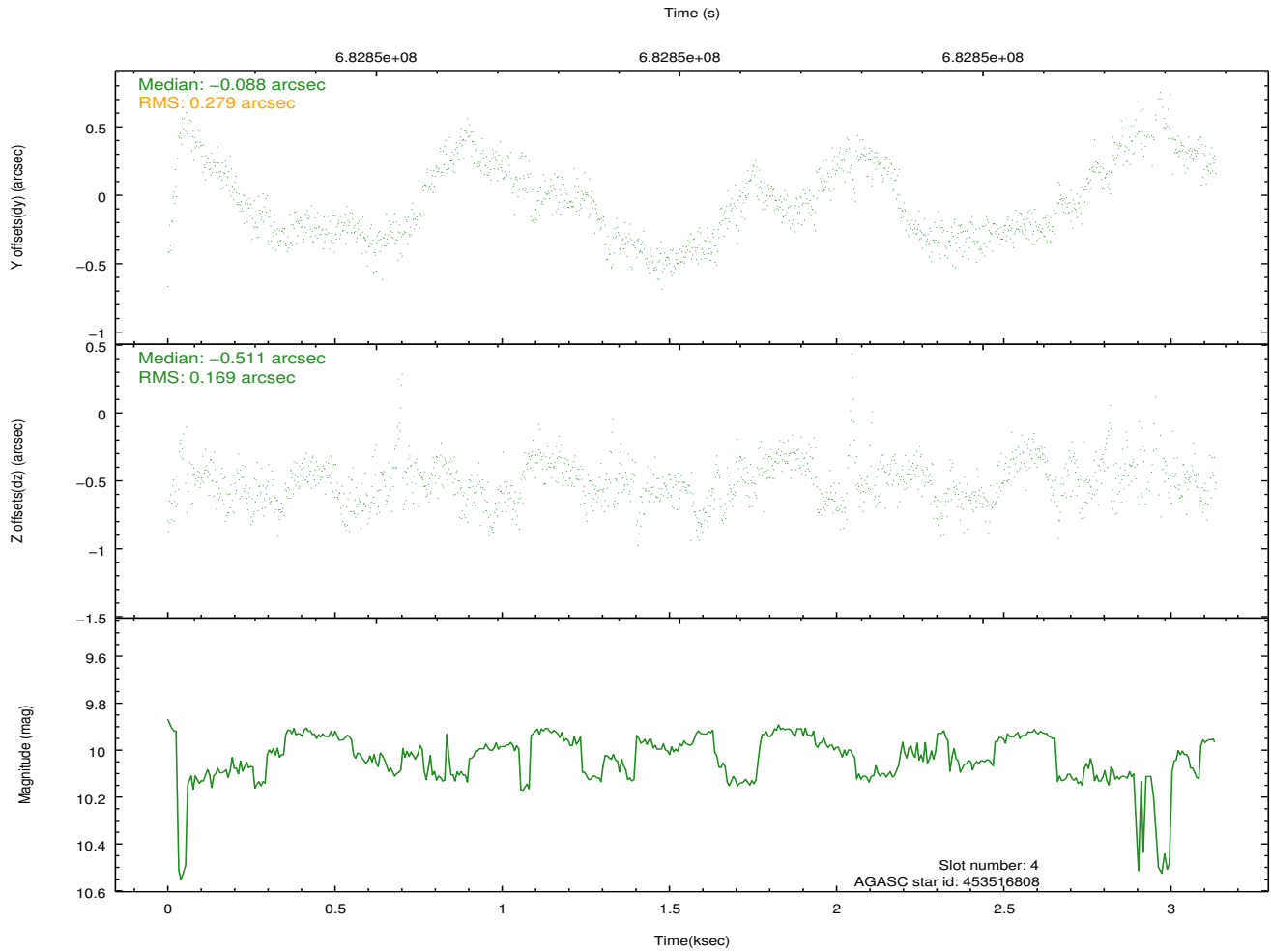
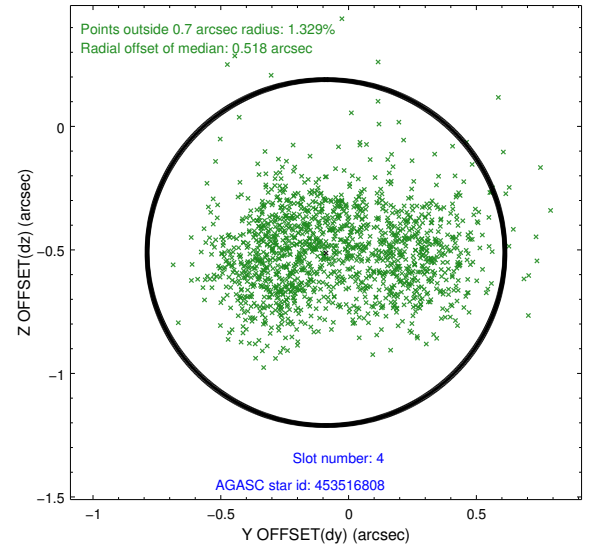
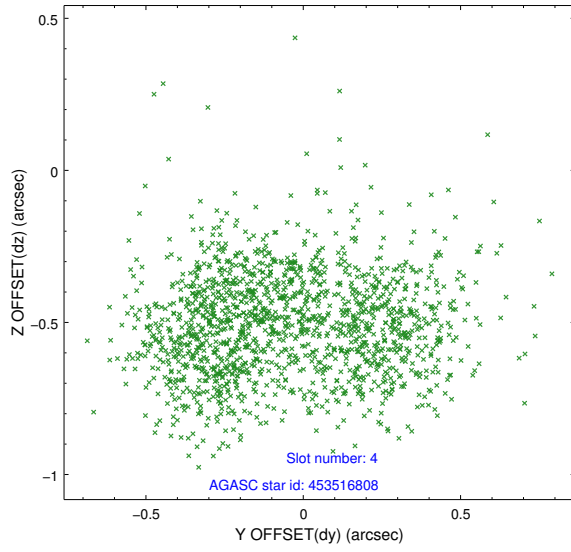
pt	status	used	id	mag	n_pts	frac_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mea
0	FID		ACIS-S-1	7.31	768	1.000	0.189	-0.101	0.006	0.011	0.000000	0.000000	934.61	-1734
1	FID		ACIS-S-5	7.31	768	1.000	-0.437	0.079	0.010	0.015	0.000000	0.000000	-1813.95	161
2	FID		ACIS-S-6	7.46	768	1.000	0.226	0.033	0.012	0.018	0.000000	0.000000	397.93	807
3	GUIDE	used	453514336	9.18	1523	1.000	-0.159	-0.225	0.206	0.334	201.621939	45.818234	-2282.59	2006
4	GUIDE	used	453516808	10.02	1505	1.000	-0.088	-0.511	0.345	0.549	201.738944	45.223099	-152.90	1639
5	GUIDE	used	453518632	8.52	1534	1.000	0.017	0.159	0.176	0.308	200.096493	45.109368	-1061.92	-2448
6	GUIDE	used	453523240	9.66	1534	1.000	0.224	0.556	0.222	0.369	200.280966	45.522964	-2323.71	-1531
7	GUIDE	used	453523336	8.76	1536	1.000	-0.032	0.028	0.157	0.250	200.882674	45.662706	-2323.05	65

2.4 Star Slots

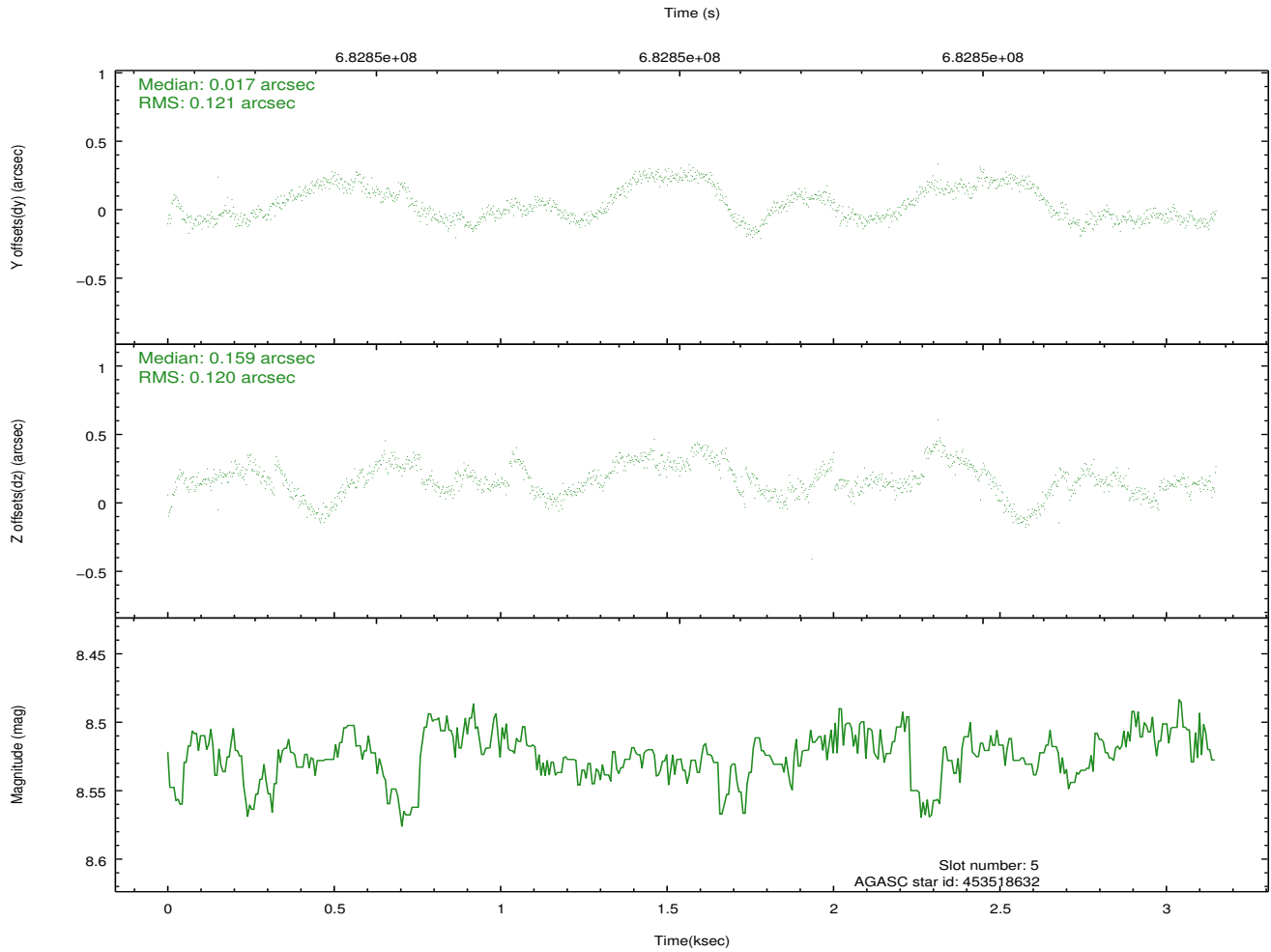
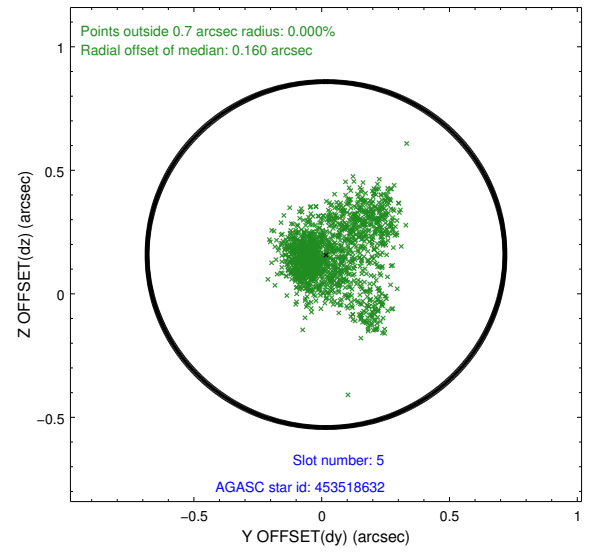
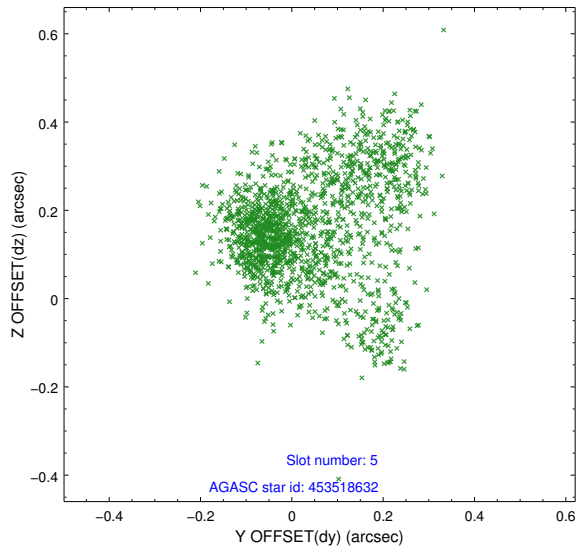
2.4.1 Slot 3



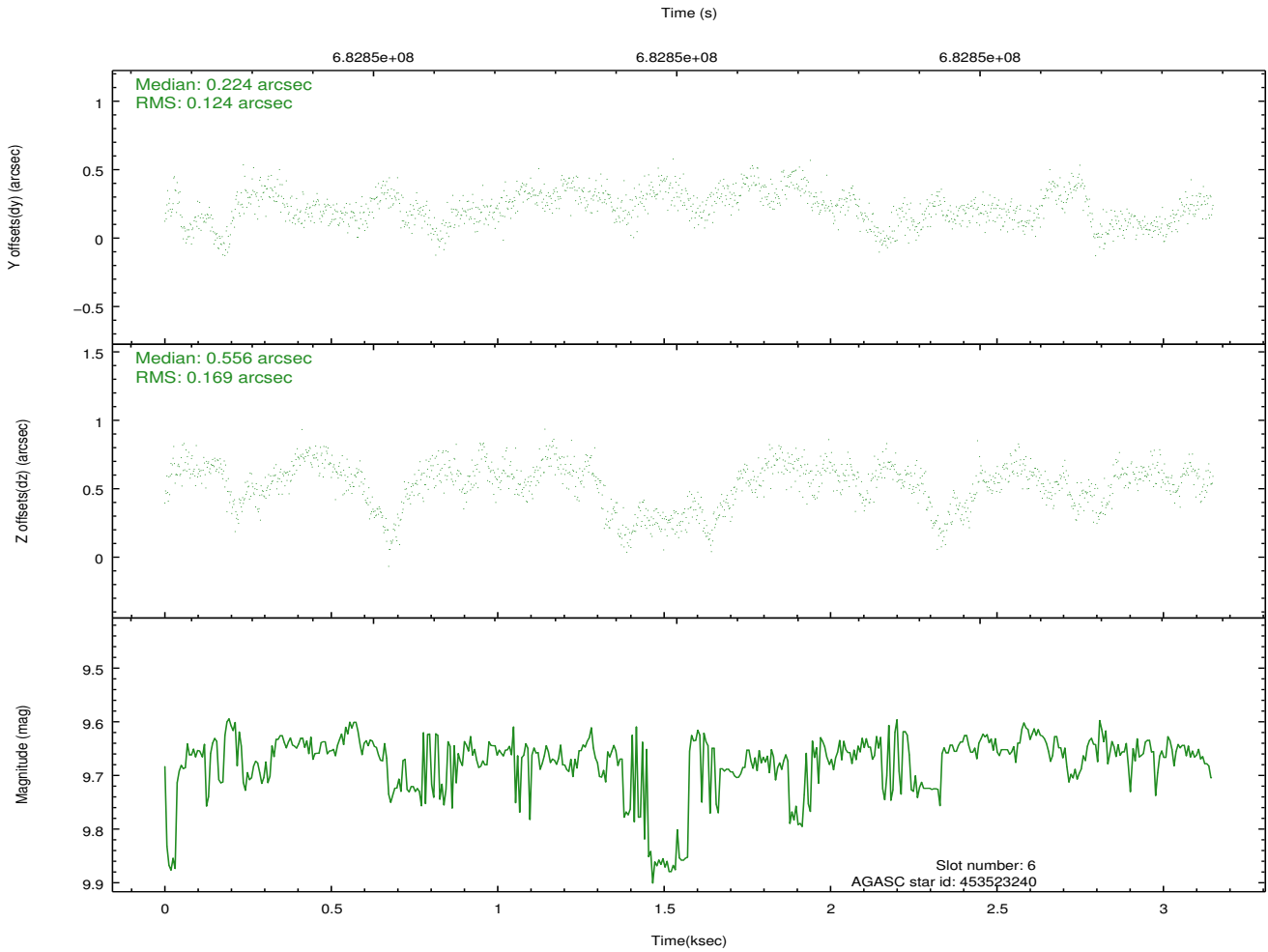
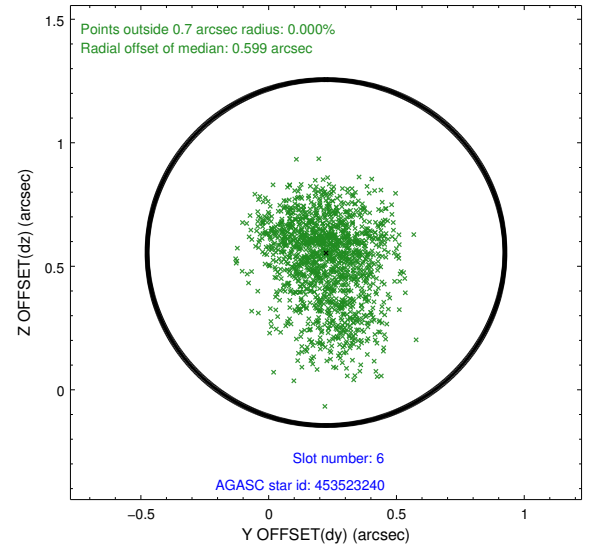
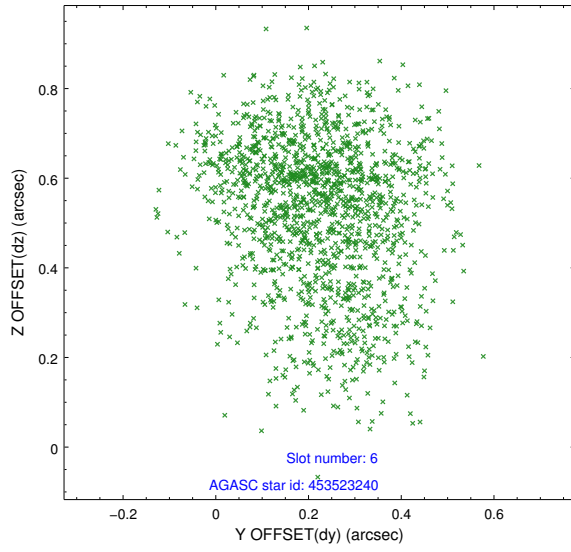
2.4.2 Slot 4



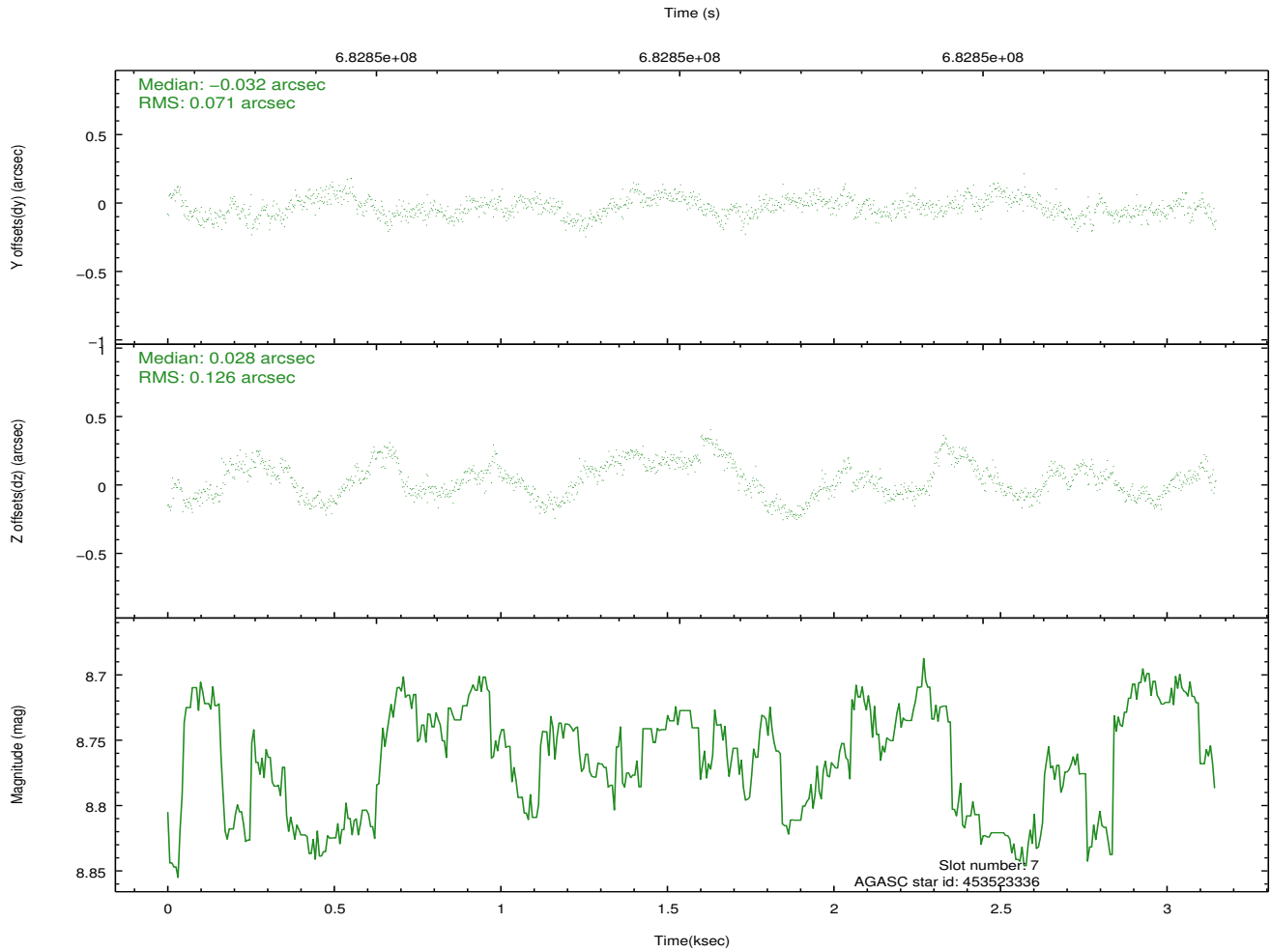
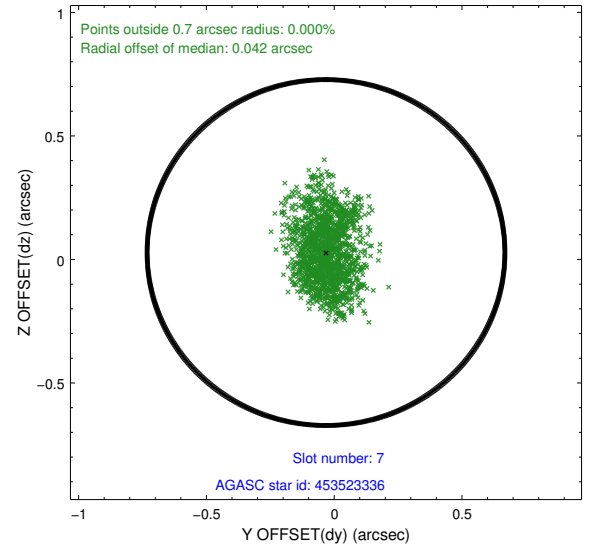
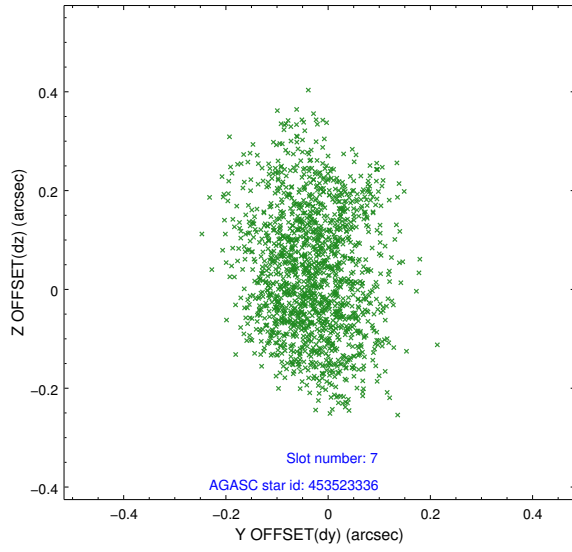
2.4.3 Slot 5



2.4.4 Slot 6

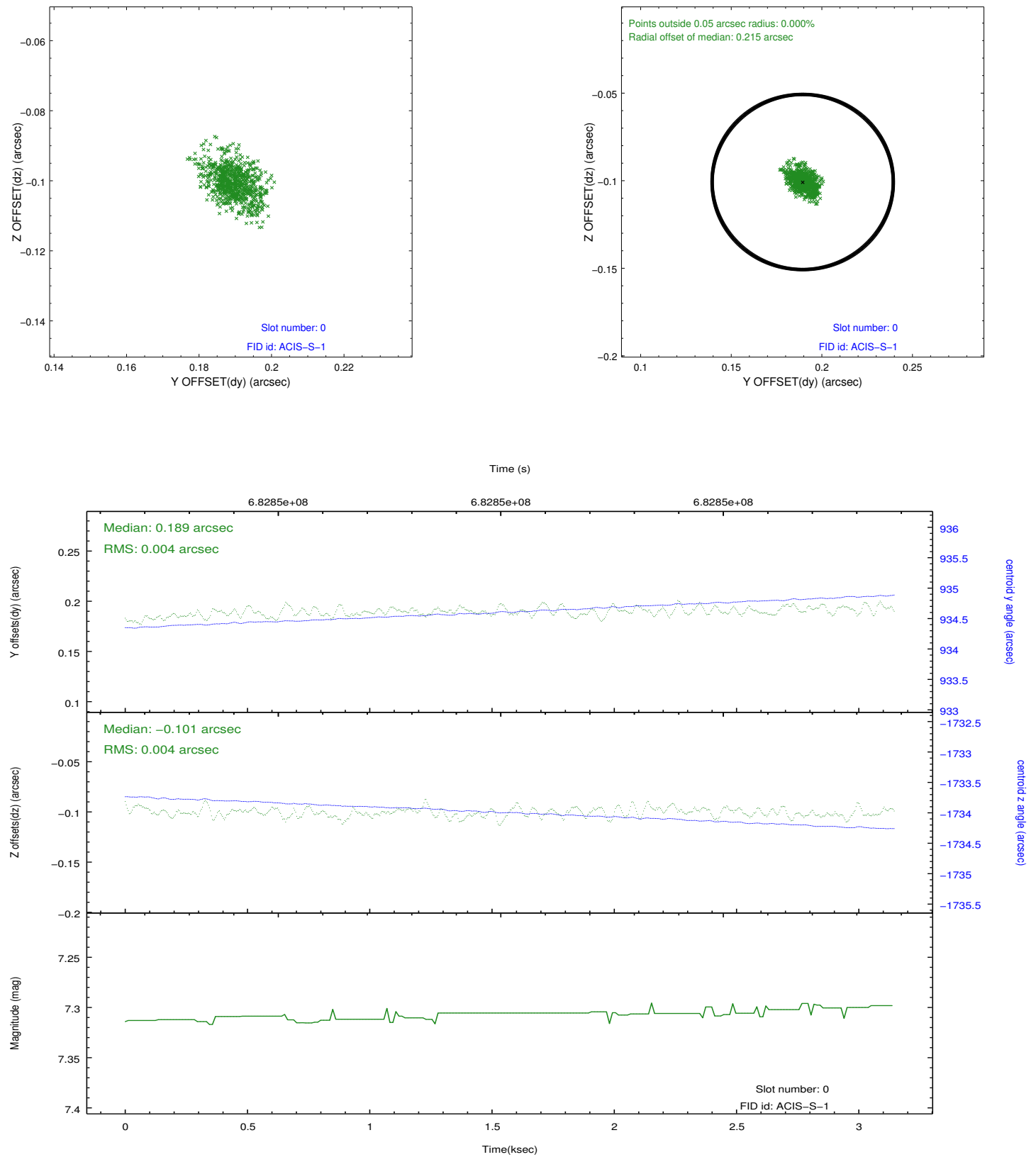


2.4.5 Slot 7

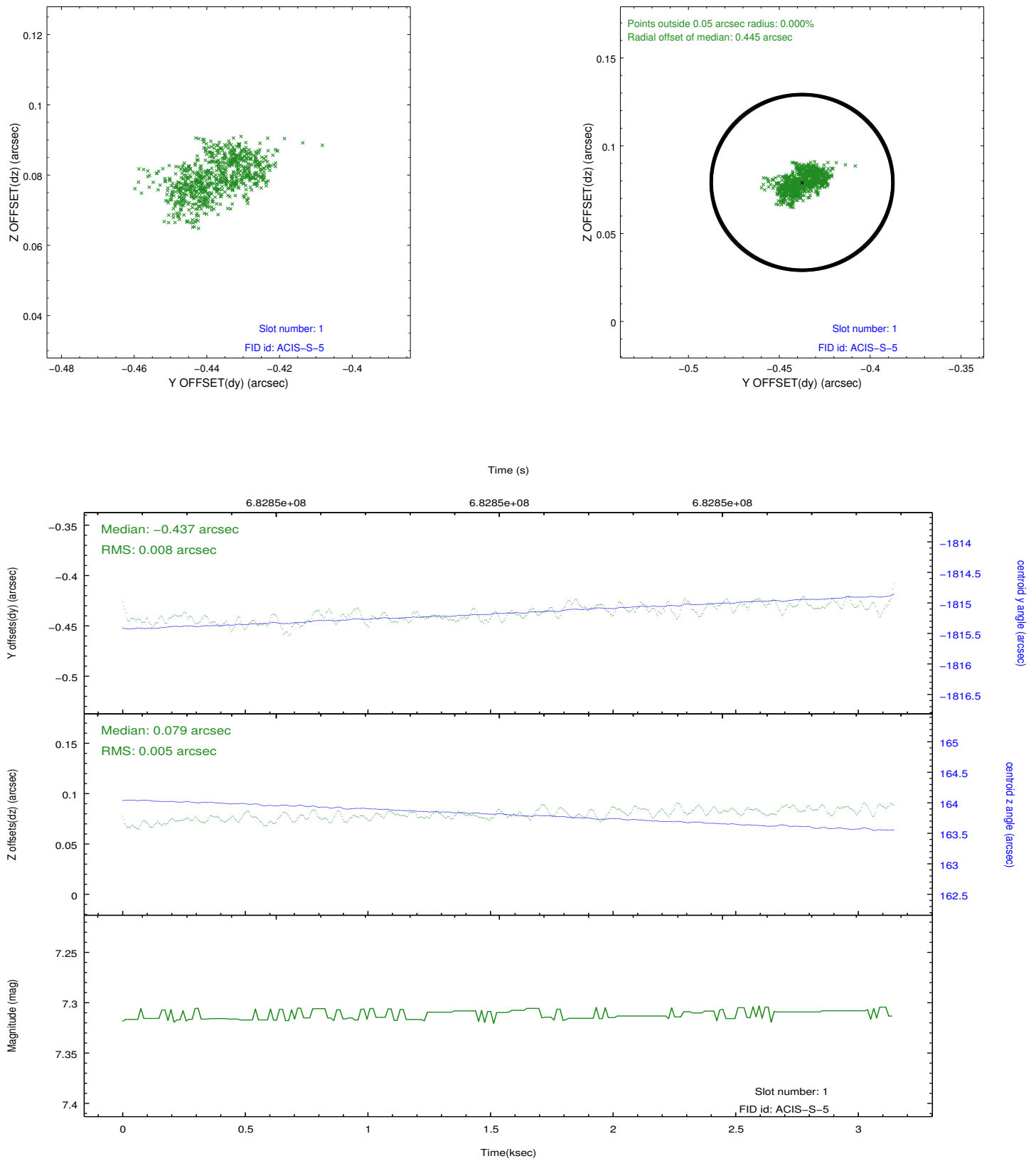


2.5 FID Slots

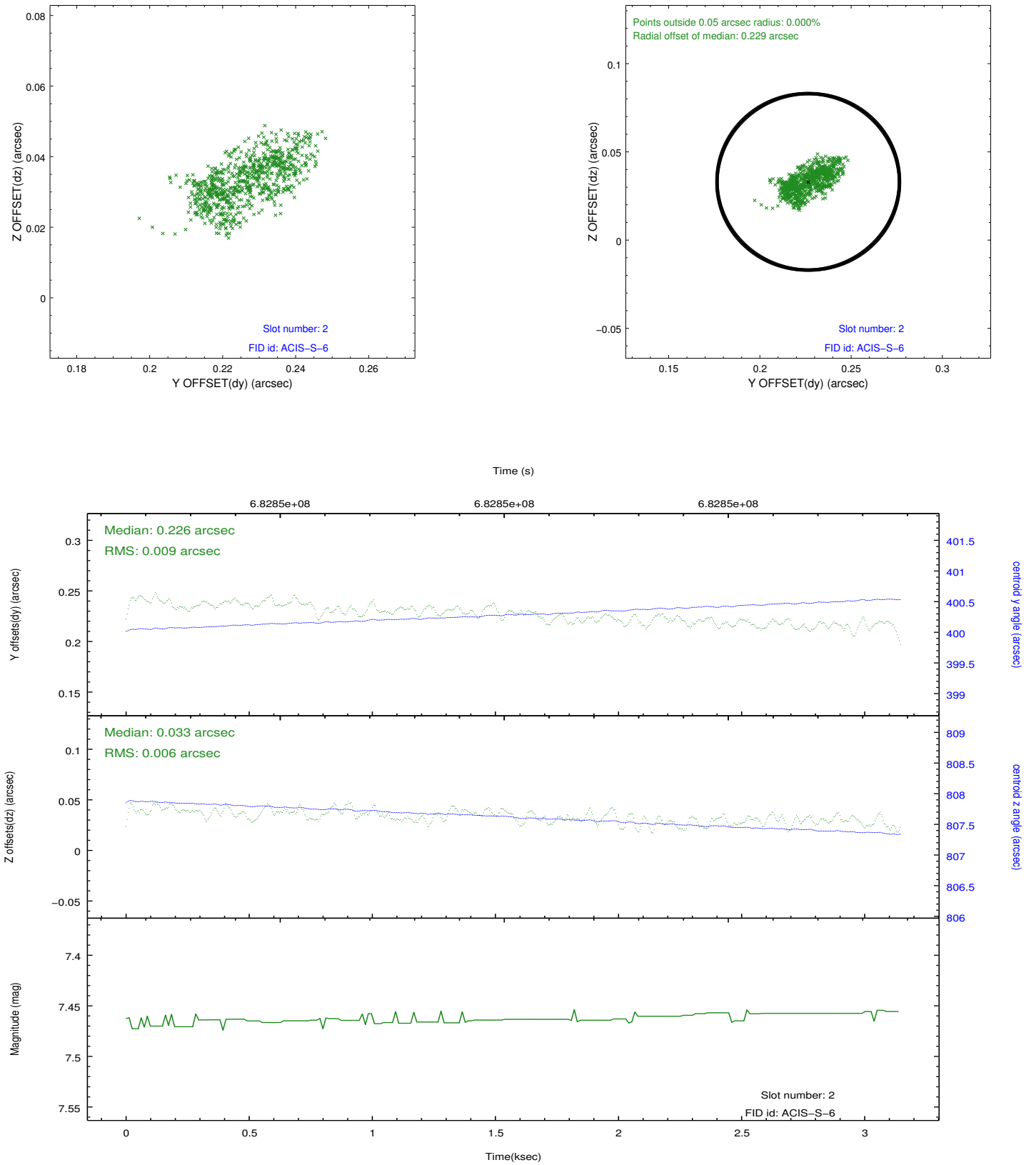
2.5.1 Slot 0



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)	2019.08.22
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	3.1093000240326

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., -111.0 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

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.