

V&V Reference Report

L2 ASCDS Version : 10.7

Observation 20361 - L2 Version 1
Chandra X-Ray Center

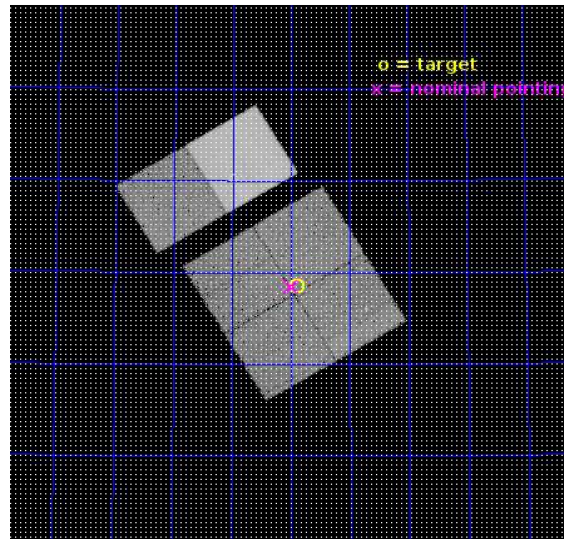
L2 Processing Date : Nov 13 2018

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1 Front

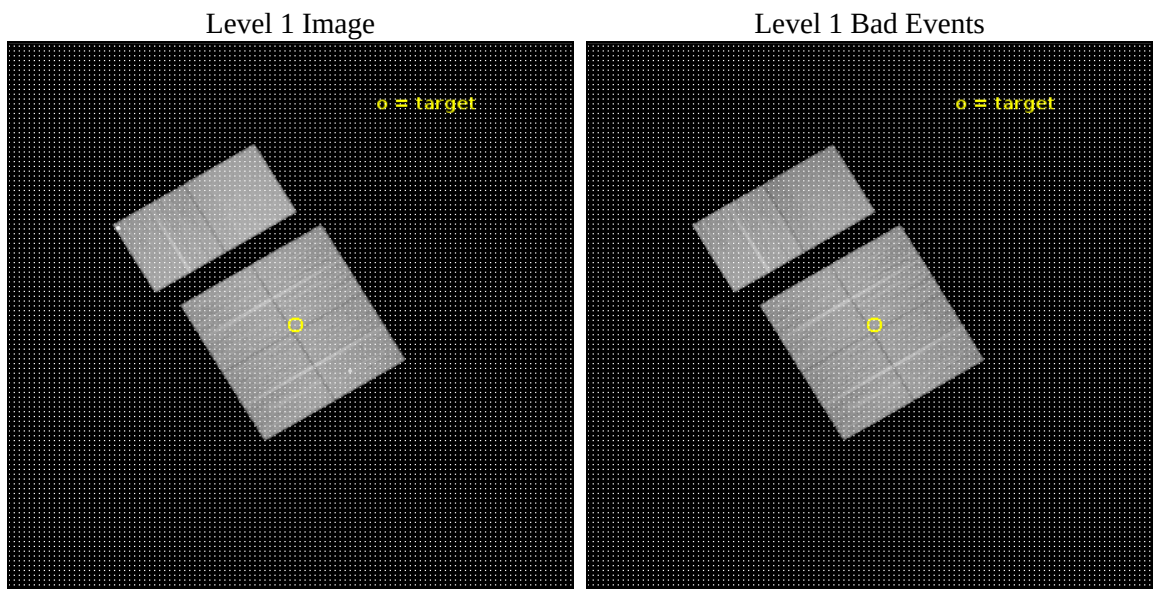
seq_num	901404	Sequence number
obs_id	20361	Observation id
title	Deep Pilot X-ray Observations of the JWST-NEP Time Domain Field	Pr
observer	Walter Maksym	Principal investigator
object	JWST-DTDF-4	Source name
dtcycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	260.725	Observer's specified target RA [deg]
dec_targ	65.808333	Observer's specified target Dec [deg]
ra_nom	260.74788851155	Nominal RA [deg]
dec_nom	65.807758723185	Nominal Dec [deg]
roll_nom	329.18781886033	Nominal Roll [deg]
revision	1	Processing version of data
ontime	37528.303859115	Sum of GTIs [s]
livetime	37053.097878819	Livetime [s]
ontime0	37528.180739164	Sum of GTIs [s]
ontime1	37528.221779108	Sum of GTIs [s]
ontime2	37528.262819171	Sum of GTIs [s]
ontime3	37528.303859115	Sum of GTIs [s]
ontime6	37528.385939121	Sum of GTIs [s]
ontime7	37528.344899178	Sum of GTIs [s]
l2events	277279	Number of level 2 events



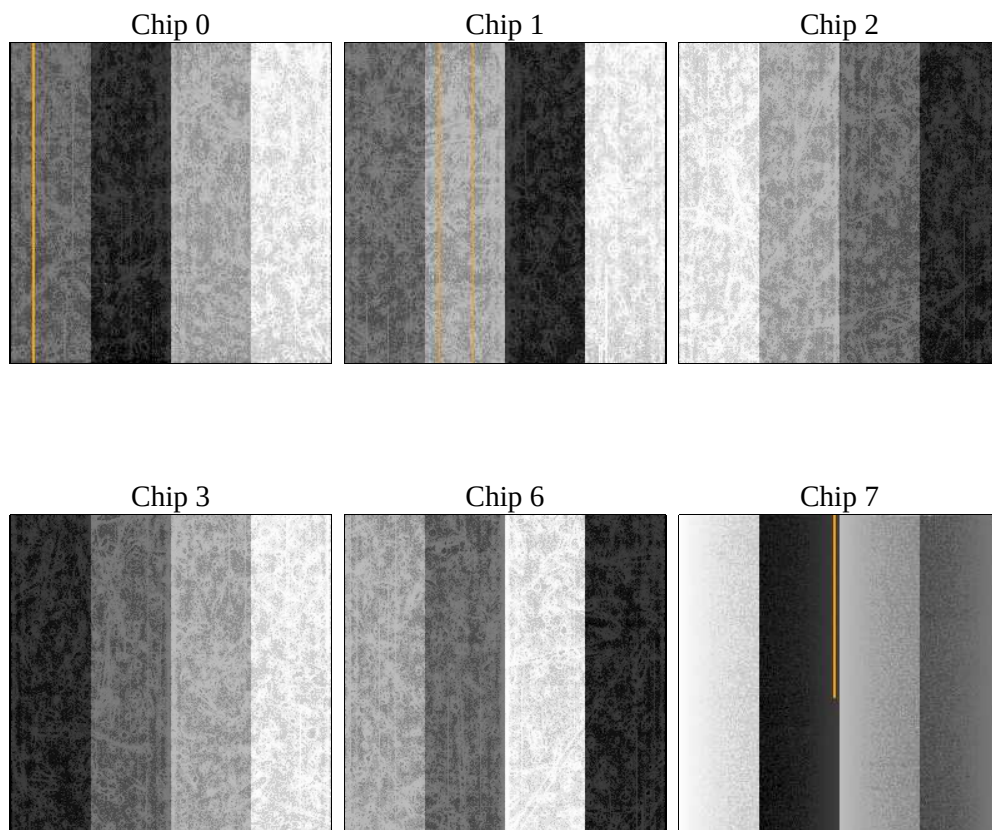
2 OBI

2.1 OBI

2.1.1 Images



2.1.2 Bias



2.1.3 Parameters

obi_num	0	Obi number	sched_exp_time	37579.128000	[s] Scheduled observation exposure time
ascdsver	10.7	Processing system revision	ontime	37528.303859115	Sum of GTIs [s]
caldsver	4.8.0.1	 	ontime0	37528.180739164	Sum of GTIs [s]
date	2018-11-13T08:13:57	Date and time of file creation	ontime1	37528.221779108	Sum of GTIs [s]
revision	1	Processing version of data	ontime2	37528.262819171	Sum of GTIs [s]
			ontime3	37528.303859115	Sum of GTIs [s]
			ontime6	37528.385939121	Sum of GTIs [s]
			ontime7	37528.344899178	Sum of GTIs [s]
			l1events	1716799	Number of level 1 events

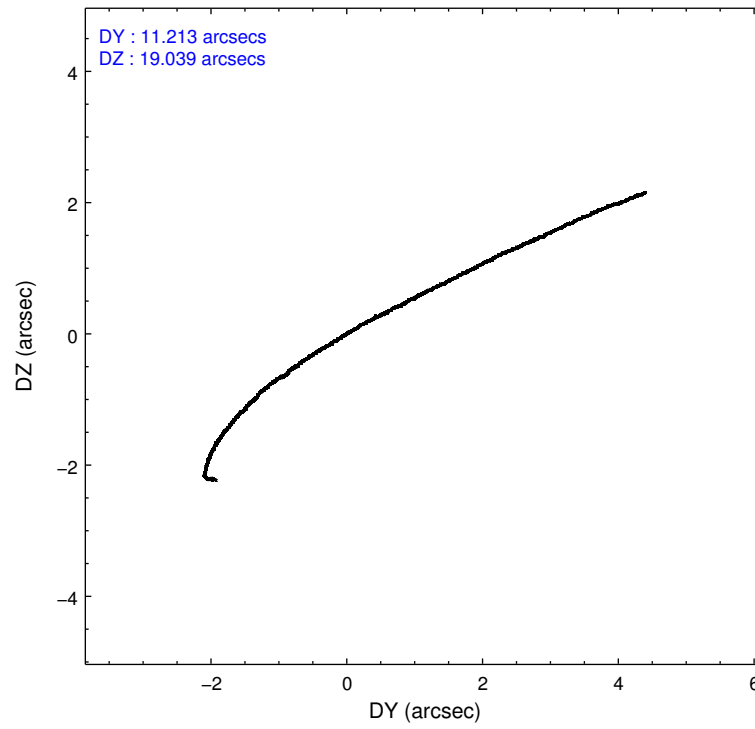
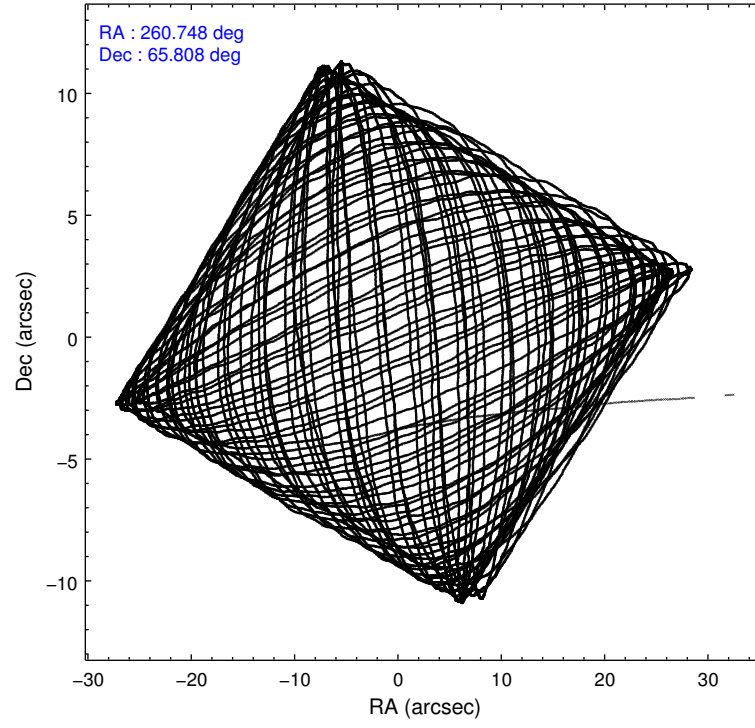
2.1.4 Events

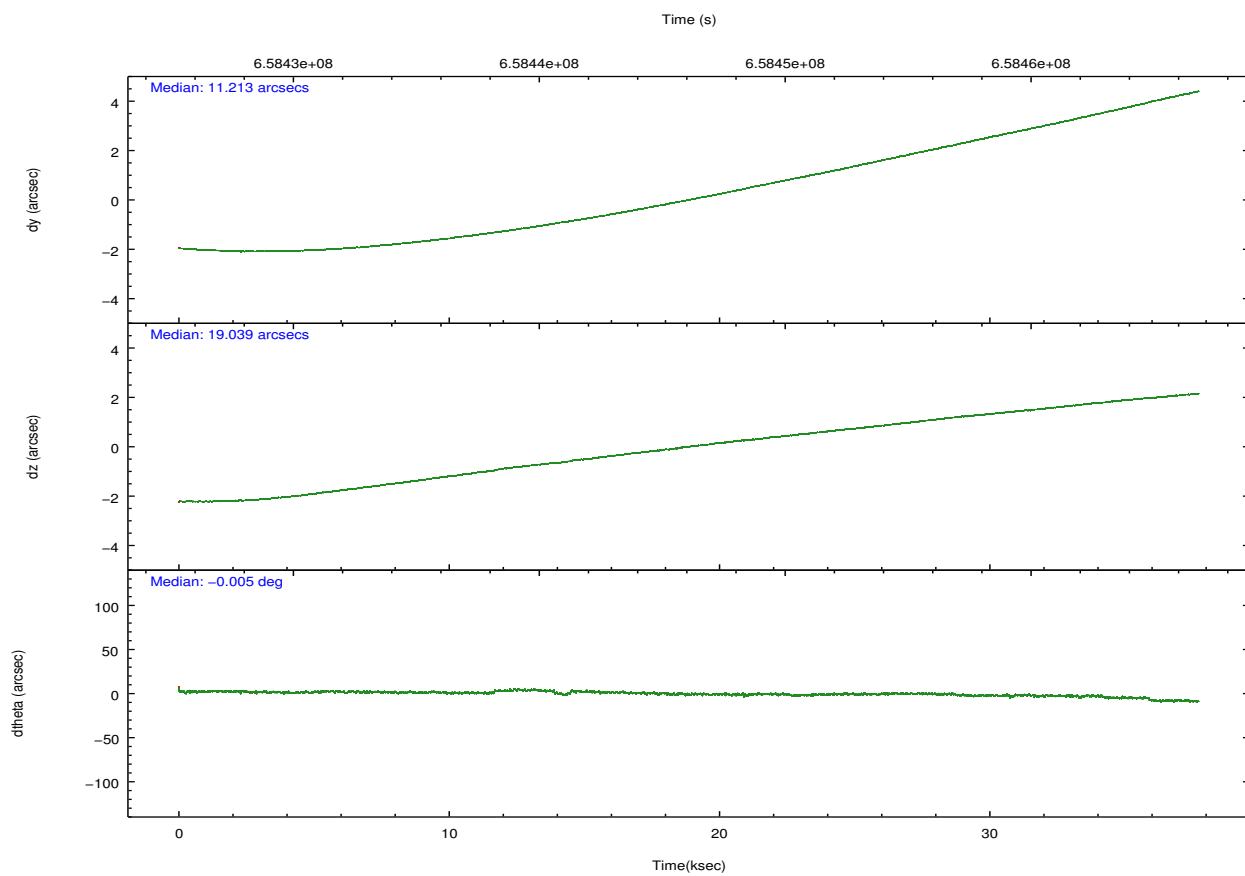
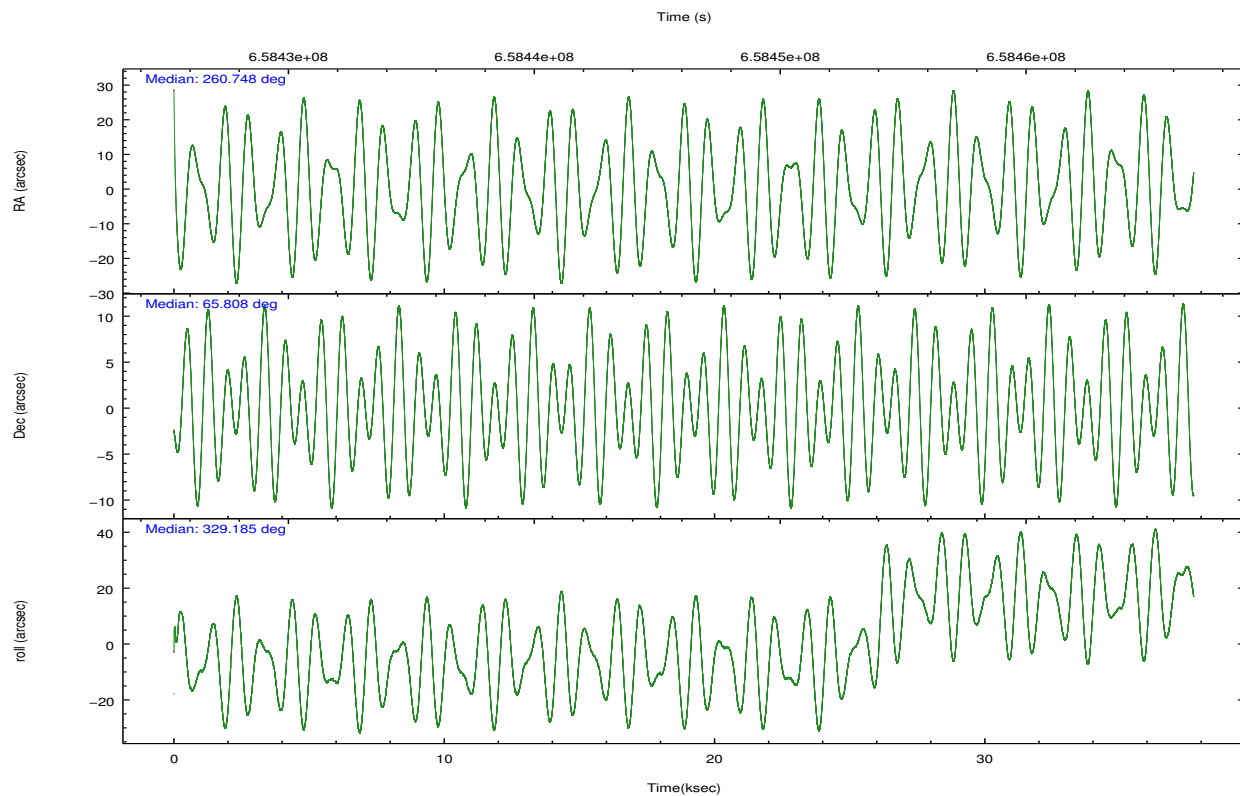
	ccd 0	ccd 1	ccd 2	ccd 3	ccd 6	ccd 7		ccd 0	ccd 1	ccd 2	ccd 3	ccd 6	ccd 7
level 1 events	257544	255092	276647	271222	304520	351774	grade 0 events	10241	13854	10670	10140	20820	12796
rejected events	227578	218859	247270	242540	262331	199079		3%	5%	3%	3%	6%	3%
rejected %	88%	85%	89%	89%	86%	56%	grade 1 events	144	141	176	141	204	544
								0%	0%	0%	0%	0%	0%
							grade 2 events	7613	8755	7008	6325	7868	32455
								2%	3%	2%	2%	2%	9%
							grade 3 events	2889	2889	2957	2930	2766	11910
								1%	1%	1%	1%	0%	3%
							grade 4 events	2786	2994	2924	3020	2913	11852
								1%	1%	1%	1%	0%	3%
							grade 5 events	11223	11556	10571	12641	12786	34618
								4%	4%	3%	4%	4%	9%
							grade 6 events	6444	7747	5826	6273	7826	83708
								2%	3%	2%	2%	2%	23%
							grade 7 events	216204	207156	236515	229752	249337	163891
								83%	81%	85%	84%	81%	46%

2.2 Compared Parameters

Parameter	Planned	Actual	Parameter	Planned	Actual
Instrument	ACIS	ACIS	Obspar format version number	7	7
Detector	ACIS-012367	ACIS-012367	Obspar file type	PREDICTED	ACTUAL
Grating	NONE	NONE	Obspar update status	NONE	UPDATED
Data mode	VFAINT	VFAINT	CCD I0 on	Y	Y
Observation mode	POINTING	POINTING	CCD I1 on	Y	Y
[deg] Pointing RA	260.680574	260.7478885115486	CCD I2 on	Y	Y
[deg] Pointing Dec	65.808024	65.8077587231849	CCD I3 on	Y	Y
[deg] Pointing Roll	329.040525	329.1878188603289	CCD S0 on	N	N
[mm] SIM focus pos	-0.782348	-0.7809083437167272	CCD S1 on	N	N
[mm] SIM defocus	0	0.001439871863259334	CCD S2 on	O1	Y
[mm] SIM translation stage pos	-233.592463	-233.5874344608287	CCD S3 on	O2	Y
[mm] SIM translation stage offset	0	-0.005018542100998502	CCD S4 on	N	N
[s] Observation start time (MET)	658427373.184000	658426244.97063	CCD S5 on	N	N
Observation start date	2018-11-12T16:28:24	2018-11-12T16:10:44	Number of optional ACIS chips dropped	0	0
[s] Observation end time (MET)	658464952.184000	658465855.0729899	On-chip summing requested	N	N
Observation end date	2018-11-13T02:54:43	2018-11-13T03:10:55	Subarray requested	NONE	NONE
Read mode	TIMED	TIMED	Alternating exposures requested	N	N
			[s] Primary exposure time	0.000000	3.2

2.3 Aspect



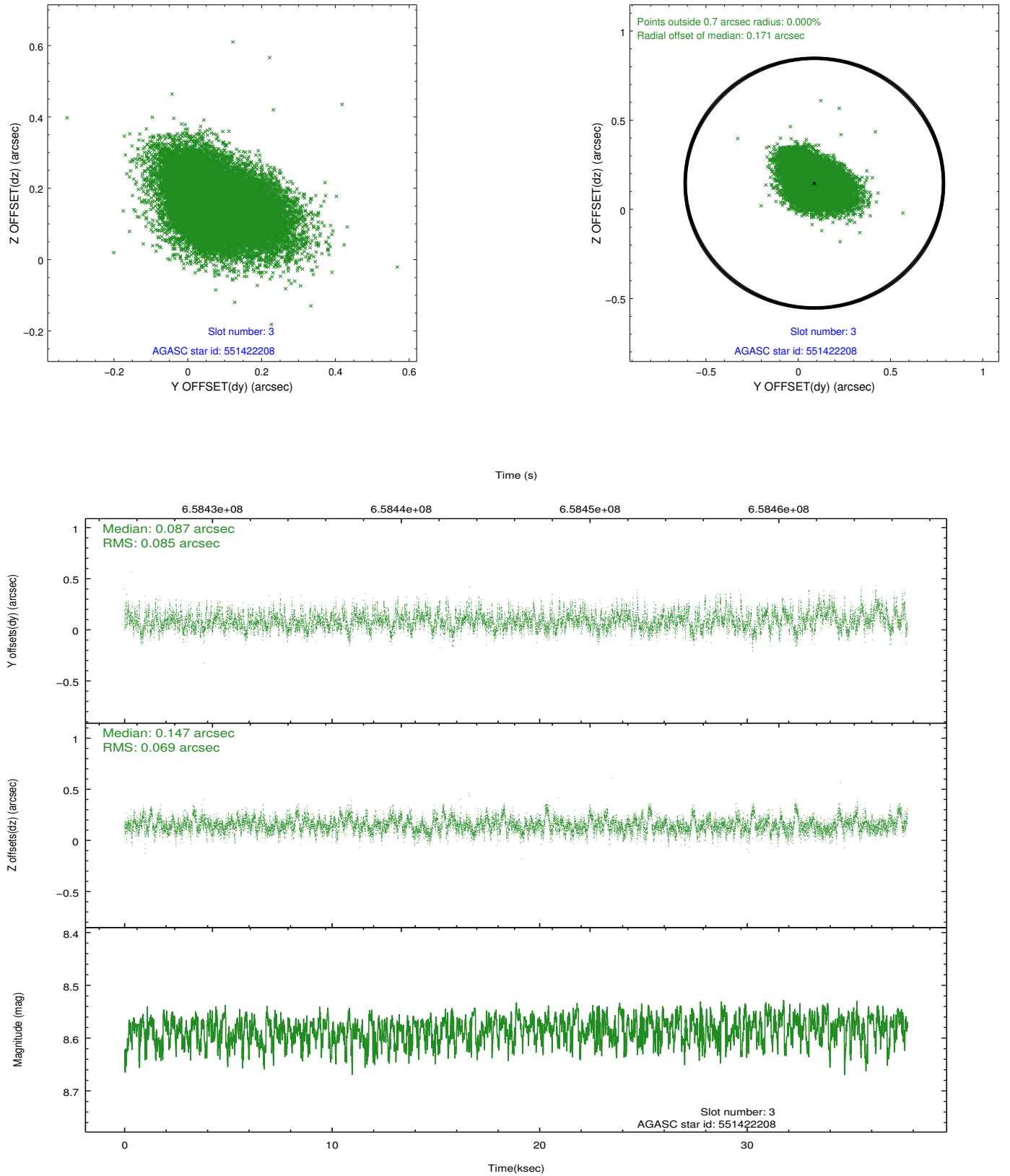


Slot Statistics

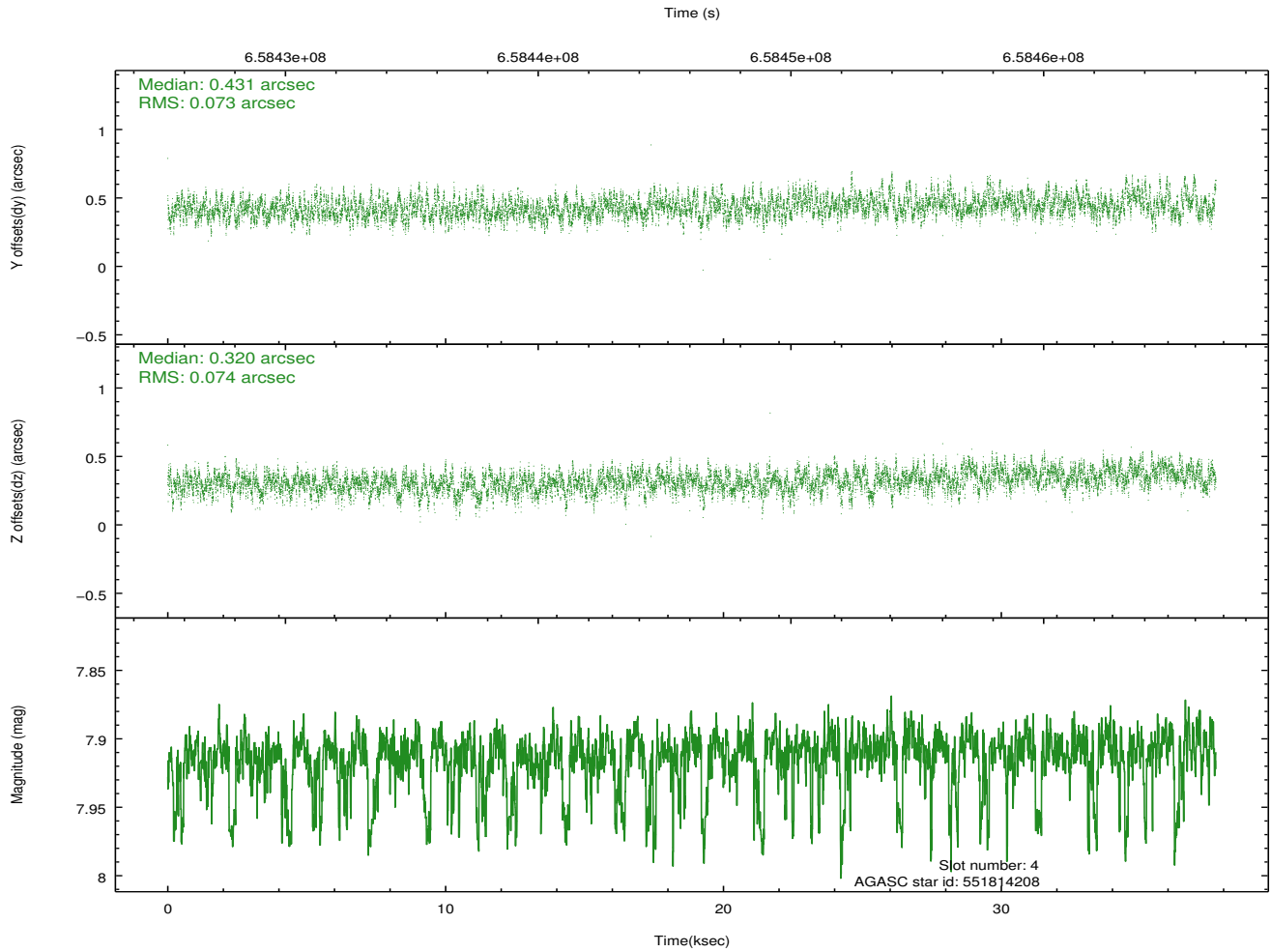
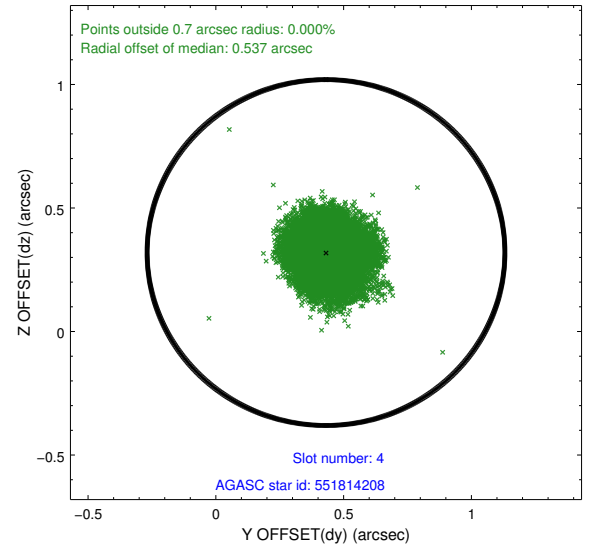
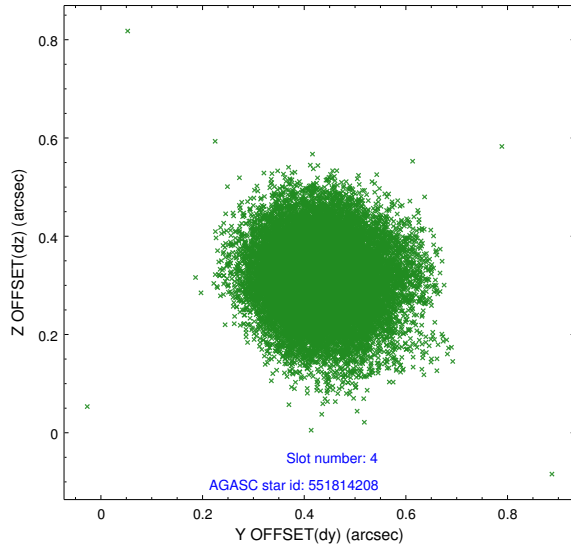
pt	status	used	id	mag	n_pts	frac_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mea
0	FID		ACIS-I-2	7.14	9198	1.000	-0.372	-0.086	0.039	0.100	0.000000	0.000000	-766.53	-849
1	FID		ACIS-I-4	7.19	9201	1.000	0.734	0.213	0.027	0.042	0.000000	0.000000	2148.53	1057
2	FID		ACIS-I-5	7.24	9201	1.000	-0.463	-0.056	0.034	0.060	0.000000	0.000000	-1820.51	1054
3	GUIDE	used	551422208	8.58	18392	1.000	0.087	0.147	0.115	0.194	261.600178	65.236311	2242.97	-1042
4	GUIDE	used	551814208	7.91	18399	1.000	0.431	0.320	0.110	0.176	260.175311	65.639944	-332.82	-901
5	GUIDE	used	551815096	6.76	18398	1.000	0.026	0.139	0.101	0.172	260.236273	66.562724	-1945.06	2005
6	GUIDE	used	551952296	8.72	18314	1.000	-0.302	-0.220	0.102	0.158	261.999680	65.847021	1583.13	1137
7	GUIDE	used	551951232	7.92	18397	1.000	-0.243	-0.390	0.089	0.150	262.419848	65.894071	2014.27	1611

2.4 Star Slots

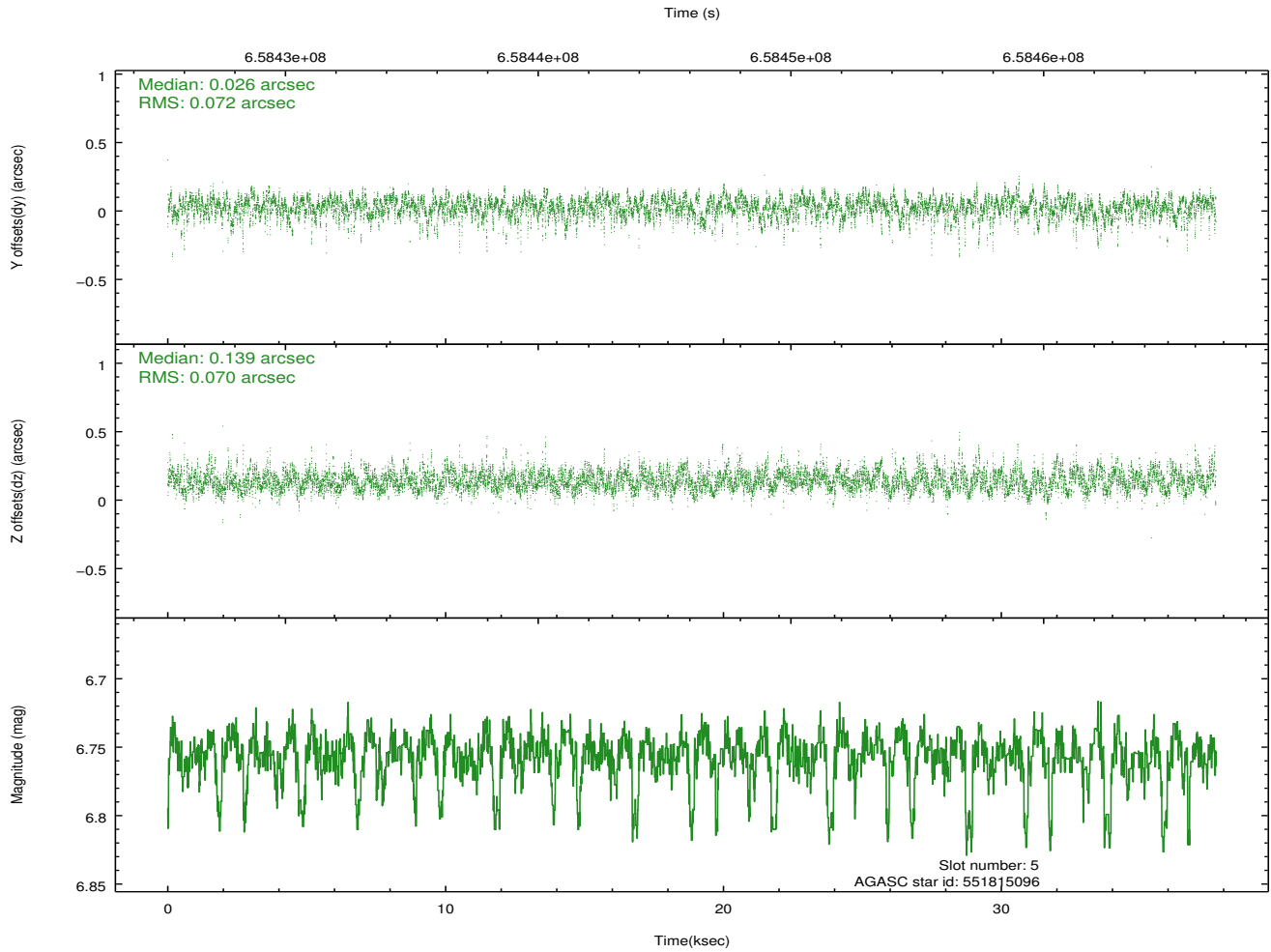
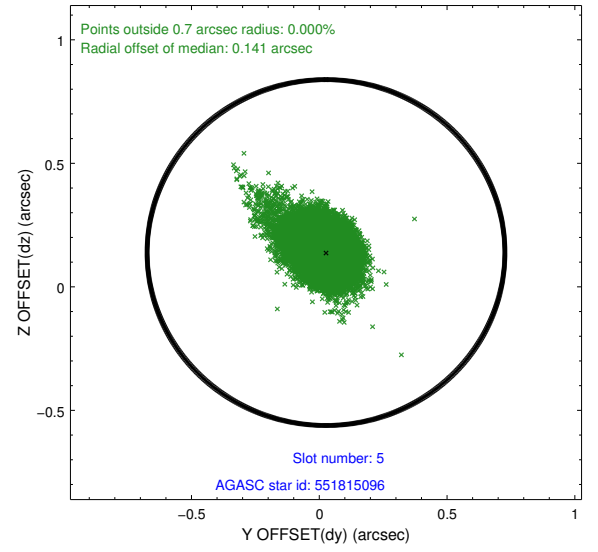
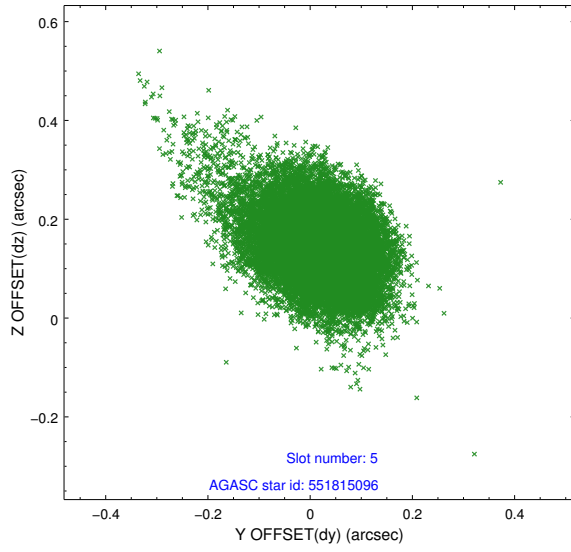
2.4.1 Slot 3



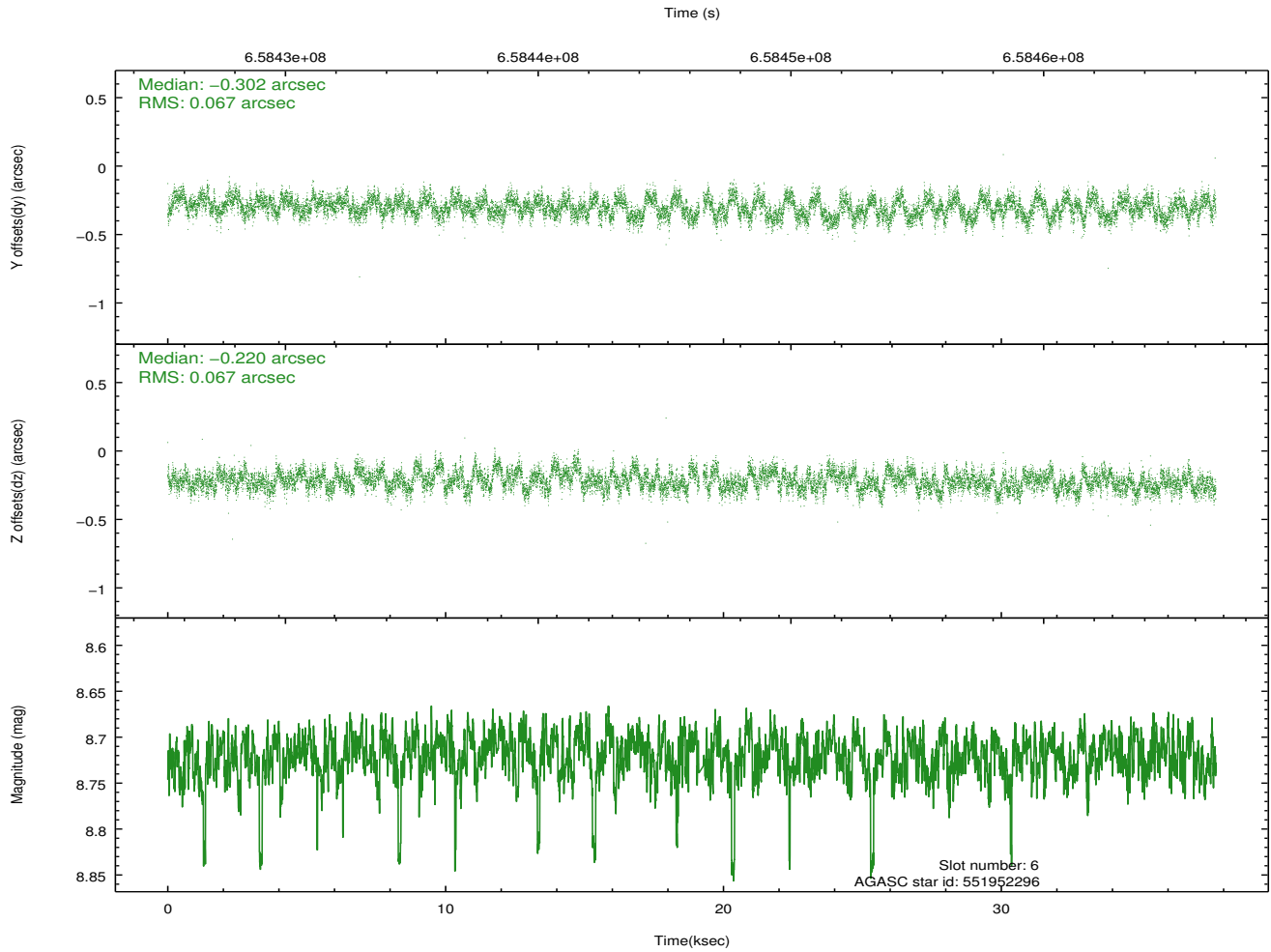
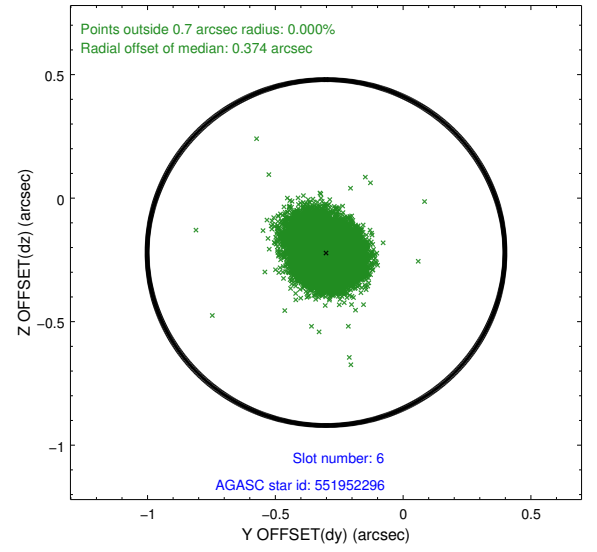
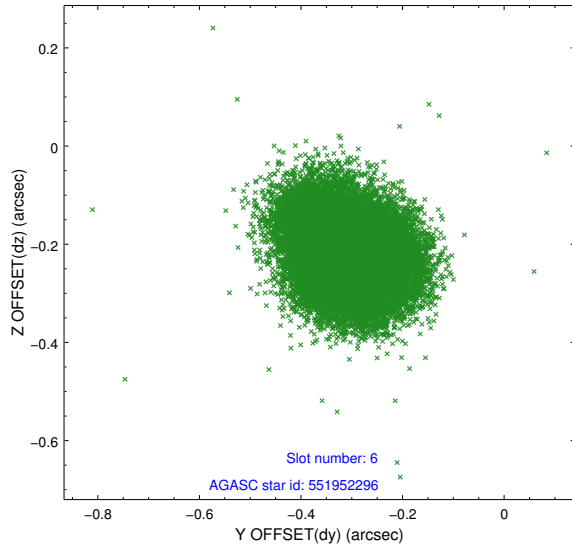
2.4.2 Slot 4



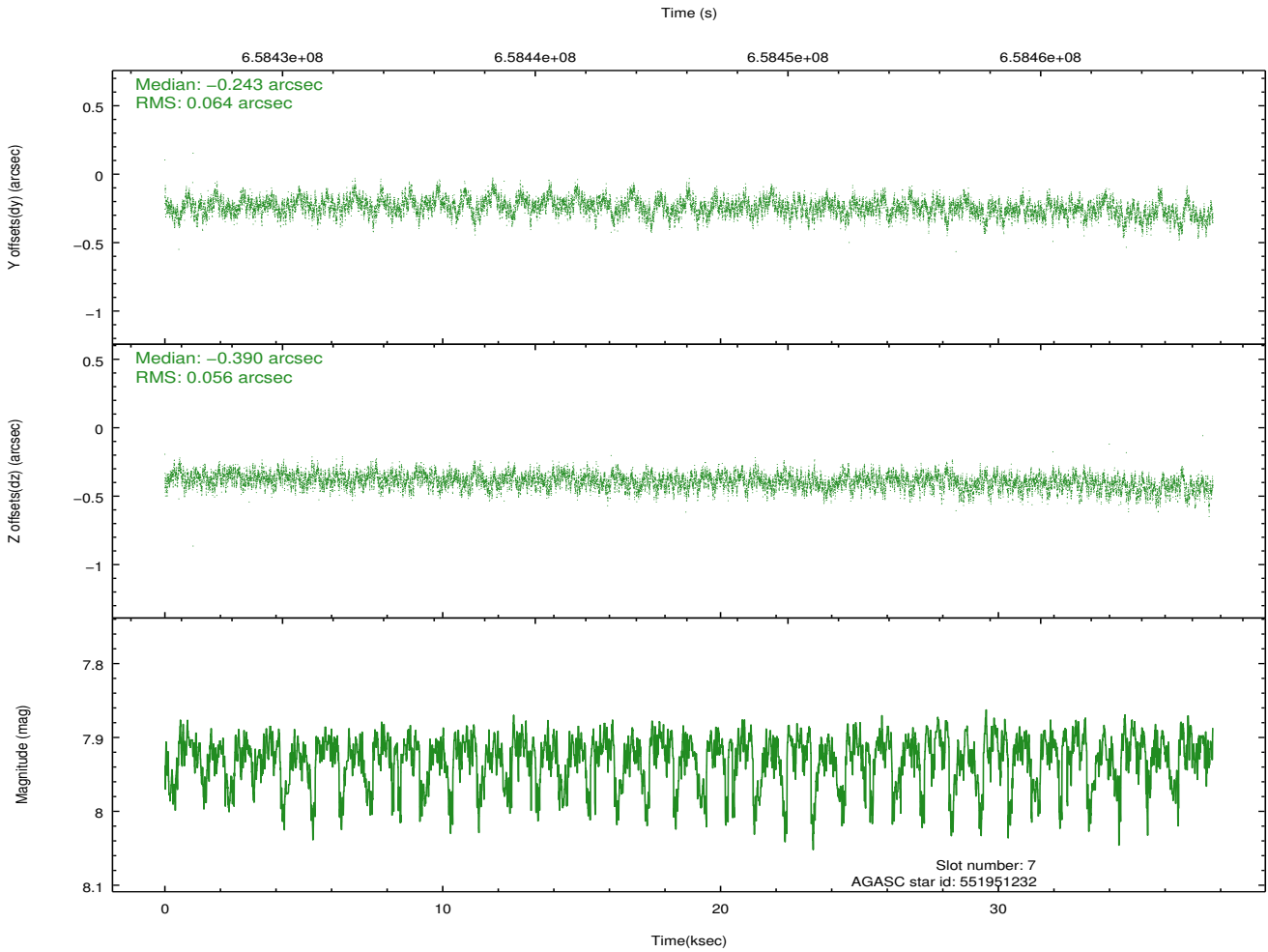
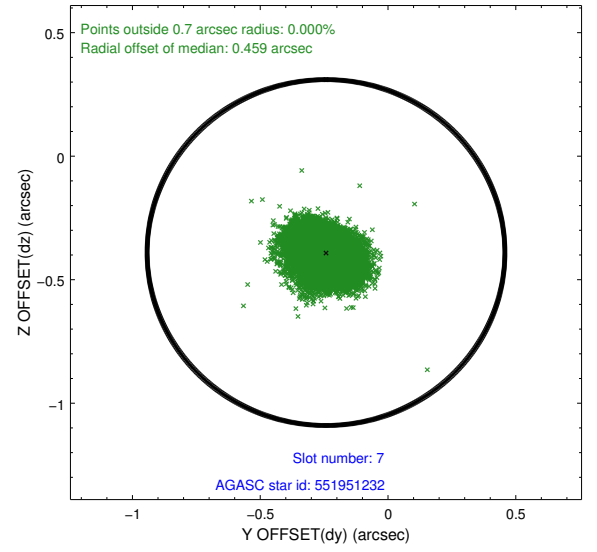
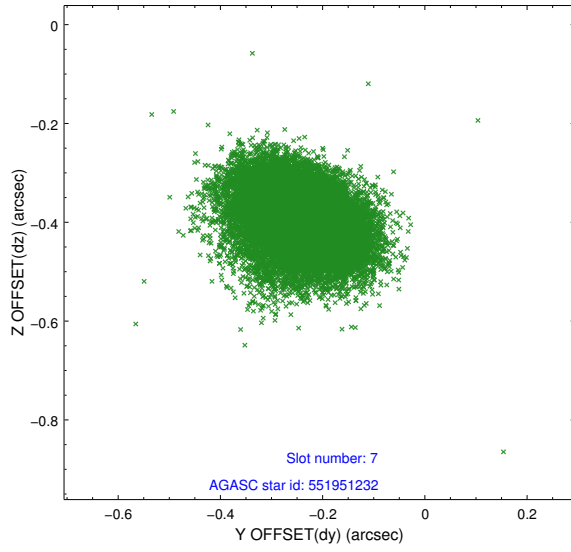
2.4.3 Slot 5



2.4.4 Slot 6

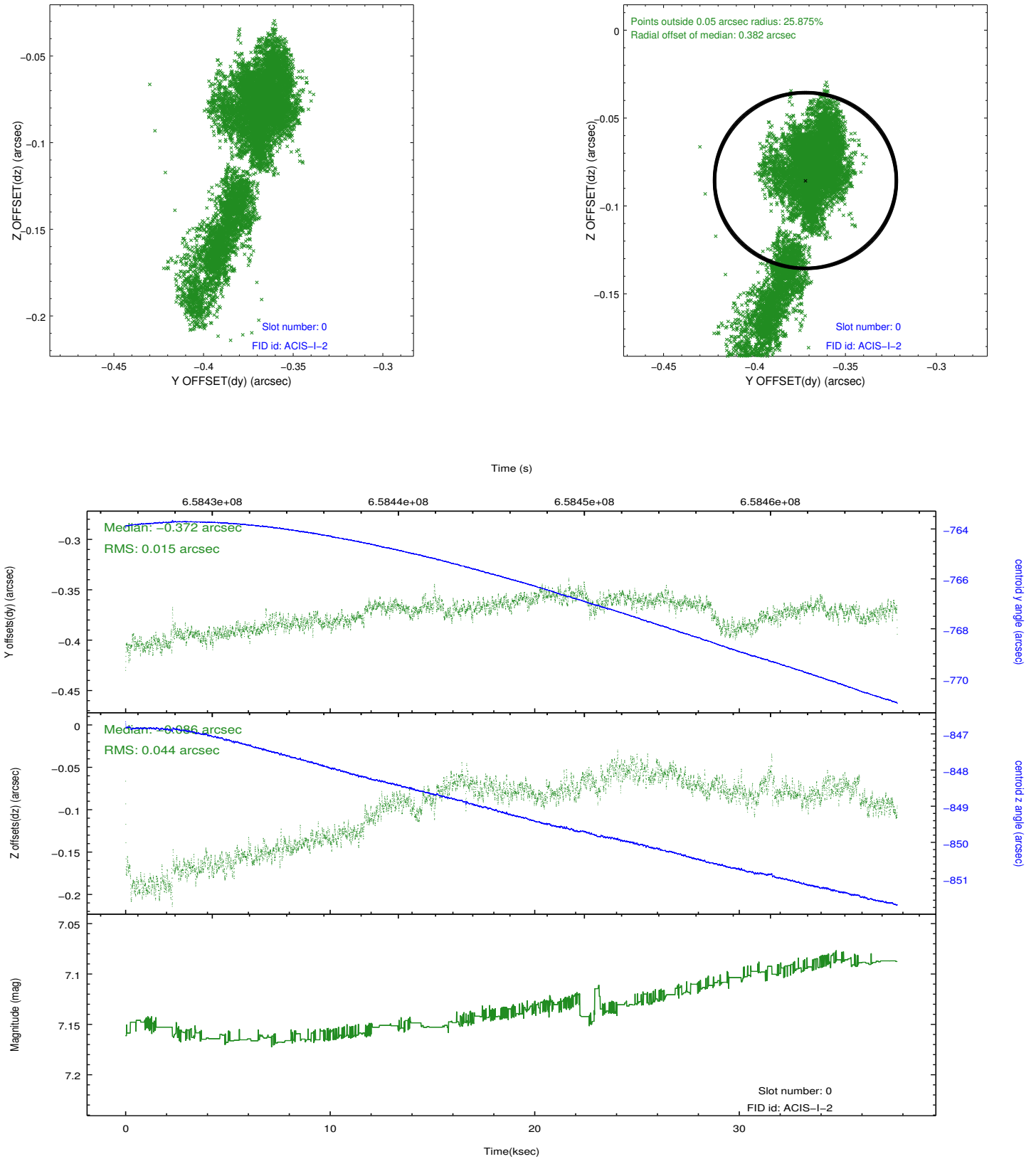


2.4.5 Slot 7

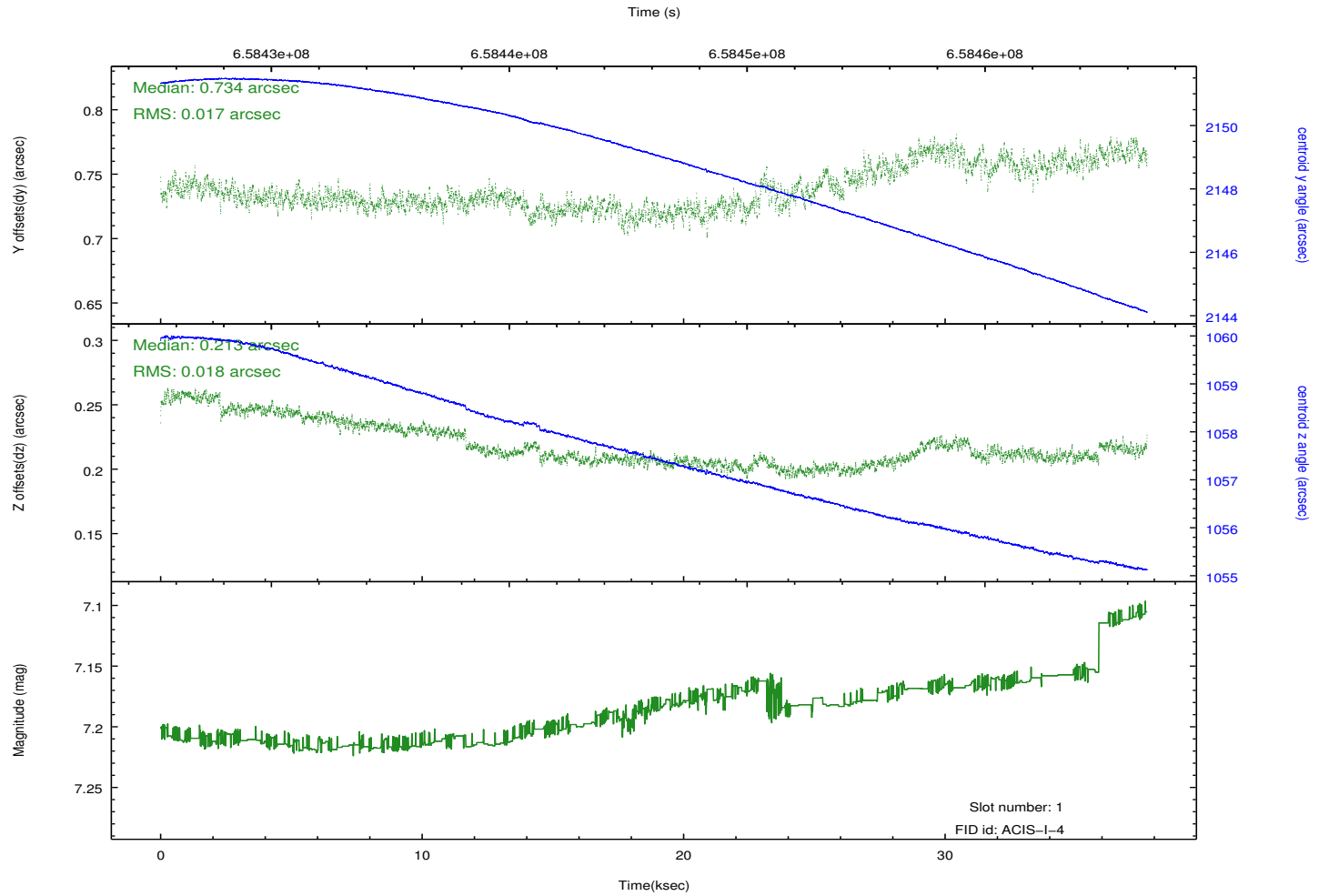
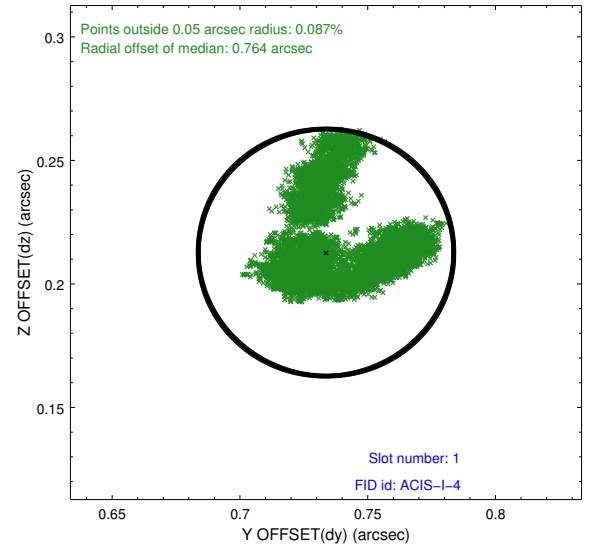
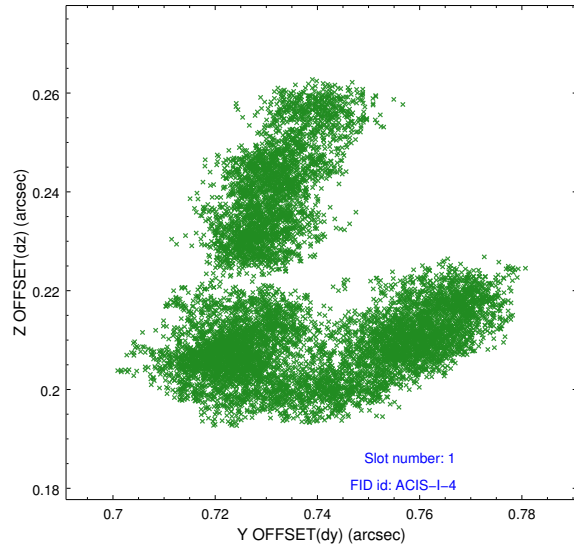


2.5 FID Slots

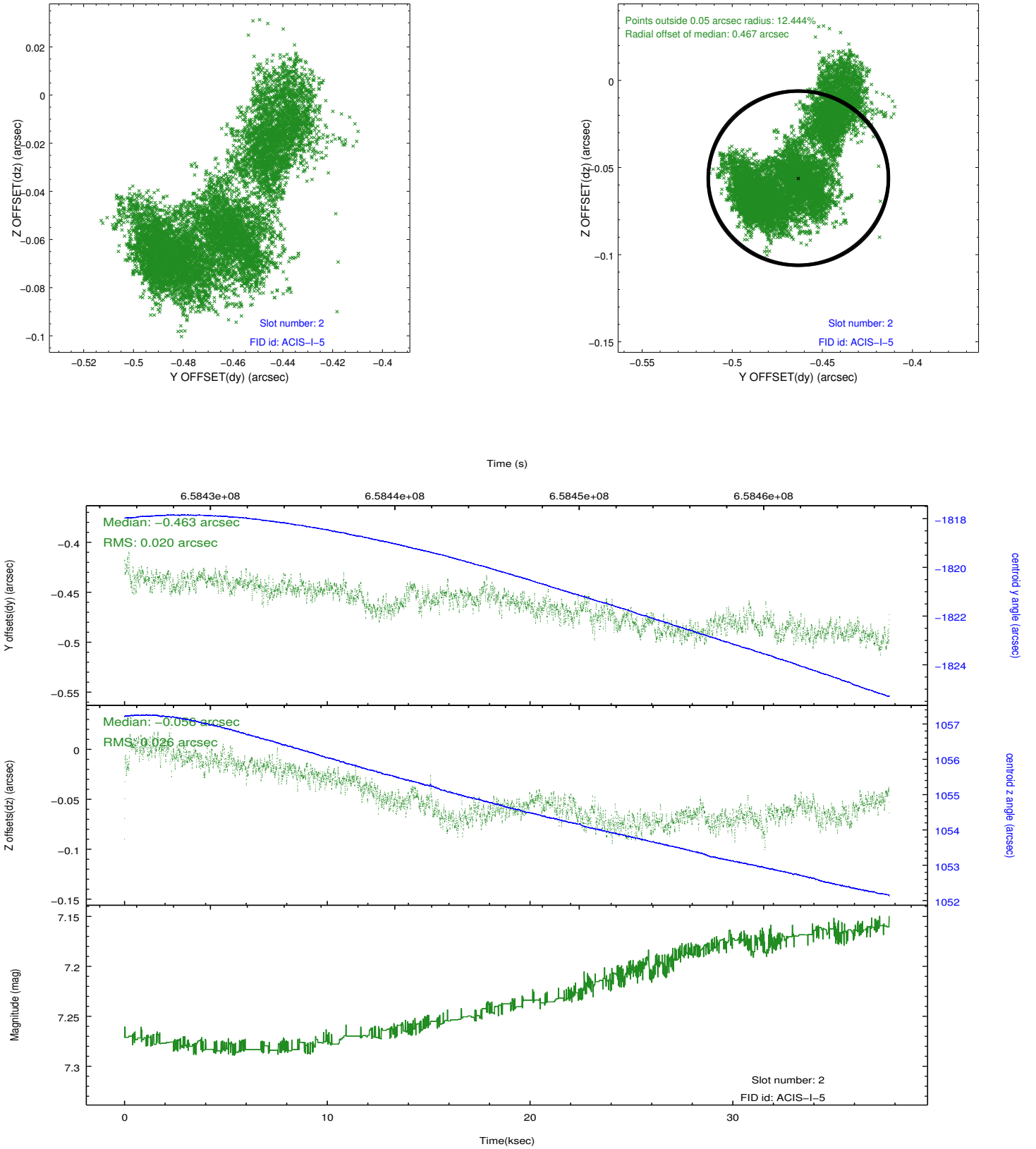
2.5.1 Slot 0



2.5.2 Slot 1



2.5.3 Slot 2



A Summary

A.1 Status

V&V Scientist	Joy Nichols
V&V Date (YYYY-MM-DD)	2018.11.14
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	37.528303859115

A.2 Comments

The focal plane temperature during the first appr. 8 ks 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.