

V&V Reference Report

L2 ASCDS Version : 10.7

Observation 21875 - L2 Version 1
Chandra X-Ray Center

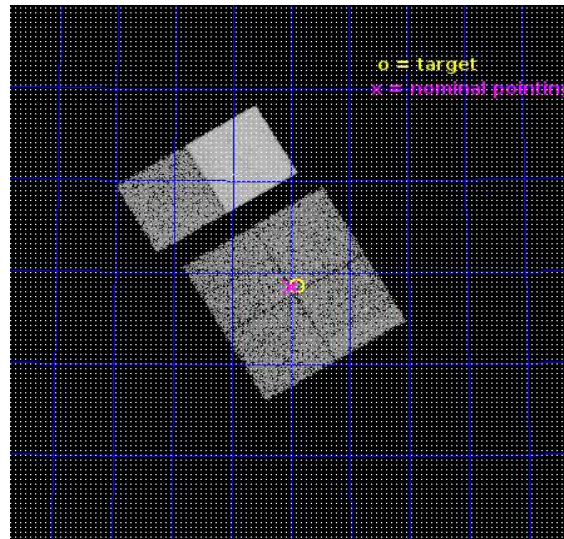
L2 Processing Date : Nov 14 2018

Contents

1	Front	2
2	OBI	3
2.1	OBI	3
2.1.1	Images	3
2.1.2	Bias	3
2.1.3	Parameters	4
2.1.4	Events	4
2.2	Compared Parameters	5
2.3	Aspect	6
2.4	Star Slots	9
2.4.1	Slot 3	9
2.4.2	Slot 4	10
2.4.3	Slot 5	11
2.4.4	Slot 6	12
2.4.5	Slot 7	13
2.5	FID Slots	14
2.5.1	Slot 0	14
2.5.2	Slot 1	15
2.5.3	Slot 2	16
A	Summary	17
A.1	Status	17
A.2	Comments	17

1 Front

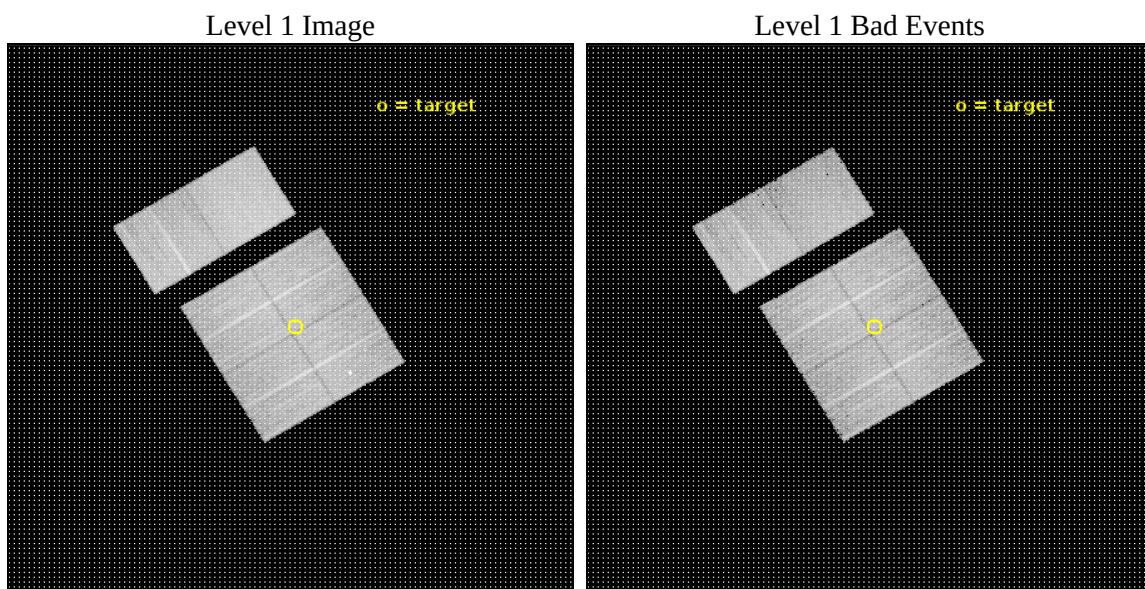
seq_num	901404	Sequence number
obs_id	21875	Observation id
title	Deep Pilot X-ray Observations of the JWST-NEP Time Domain Field	Pr
observer	Walter Maksym	Principal investigator
object	JWST-DTDF-4	Source name
dtcycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	260.725	Observer's specified target RA [deg]
dec_targ	65.808333	Observer's specified target Dec [deg]
ra_nom	260.74734596345	Nominal RA [deg]
dec_nom	65.807785507763	Nominal Dec [deg]
roll_nom	329.18828928312	Nominal Roll [deg]
revision	1	Processing version of data
ontime	12844.800191402	Sum of GTIs [s]
livetime	12682.151597169	Livetime [s]
ontime0	12844.800191402	Sum of GTIs [s]
ontime1	12844.800191402	Sum of GTIs [s]
ontime2	12841.559171081	Sum of GTIs [s]
ontime3	12844.800191402	Sum of GTIs [s]
ontime6	12844.800191402	Sum of GTIs [s]
ontime7	12844.800191402	Sum of GTIs [s]
l2events	94678	Number of level 2 events



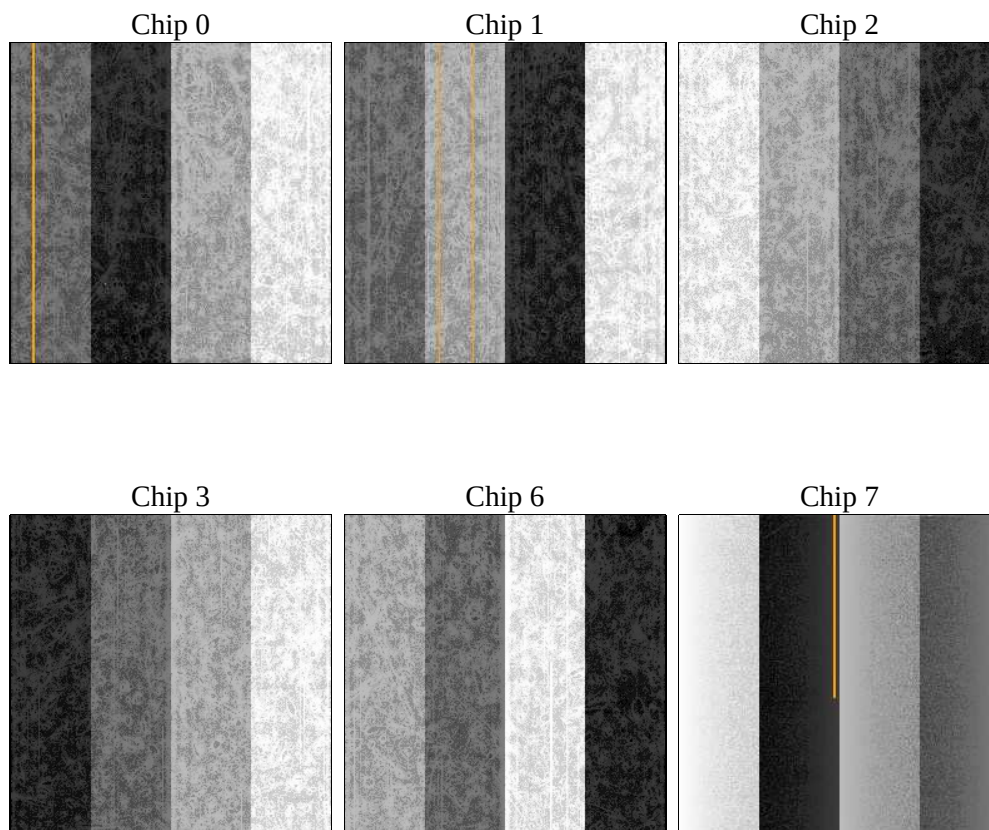
2 OBI

2.1 OBI

2.1.1 Images



2.1.2 Bias



2.1.3 Parameters

obi_num	0	Obi number	sched_exp_time	12899.000000	[s] Scheduled observation exposure time
ascdsver	10.7	Processing system revision	ontime	12844.800191402	Sum of GTIs [s]
caldsver	4.8.0.1	 	ontime0	12844.800191402	Sum of GTIs [s]
date	2018-11-15T04:07:15	Date and time of file creation	ontime1	12844.800191402	Sum of GTIs [s]
revision	1	Processing version of data	ontime2	12841.559171081	Sum of GTIs [s]
			ontime3	12844.800191402	Sum of GTIs [s]
			ontime6	12844.800191402	Sum of GTIs [s]
			ontime7	12844.800191402	Sum of GTIs [s]
			l1events	592606	Number of level 1 events

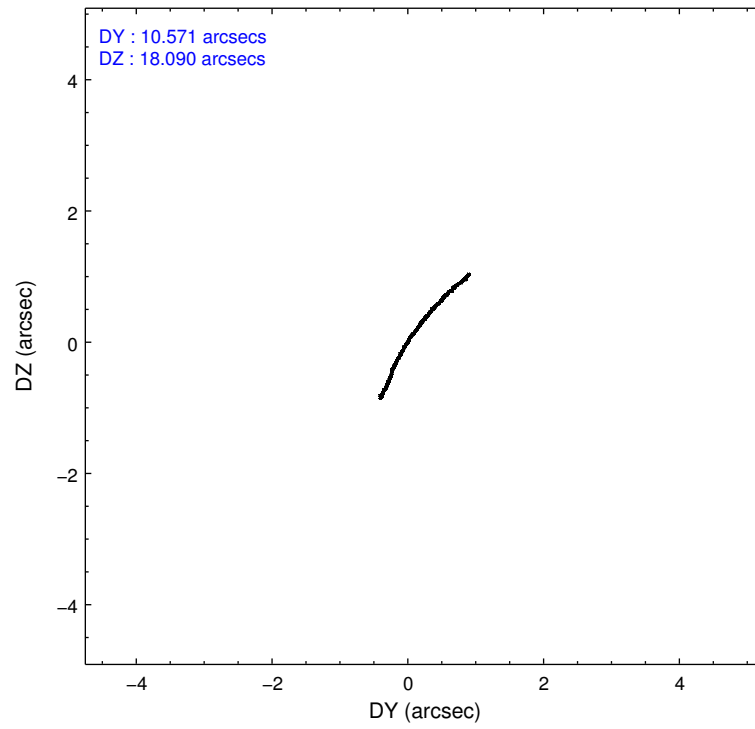
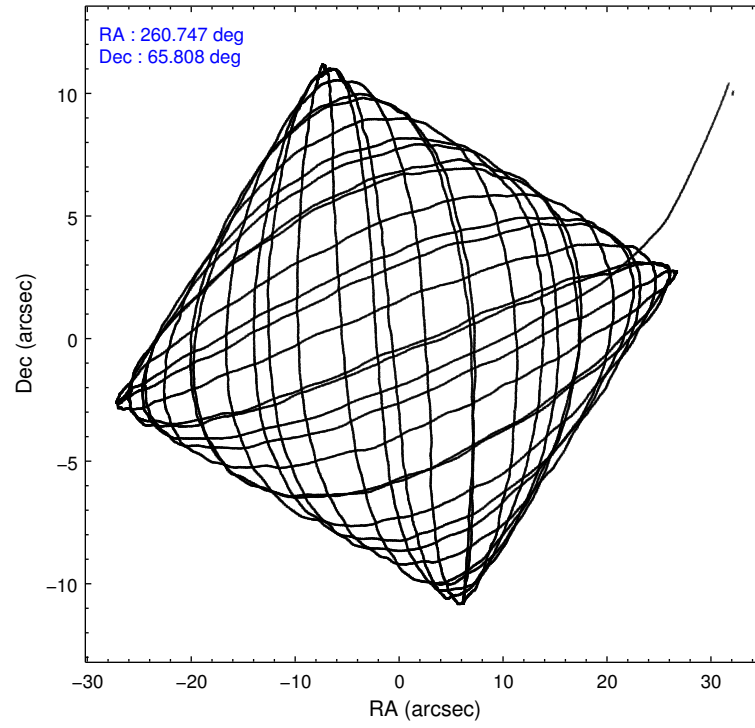
2.1.4 Events

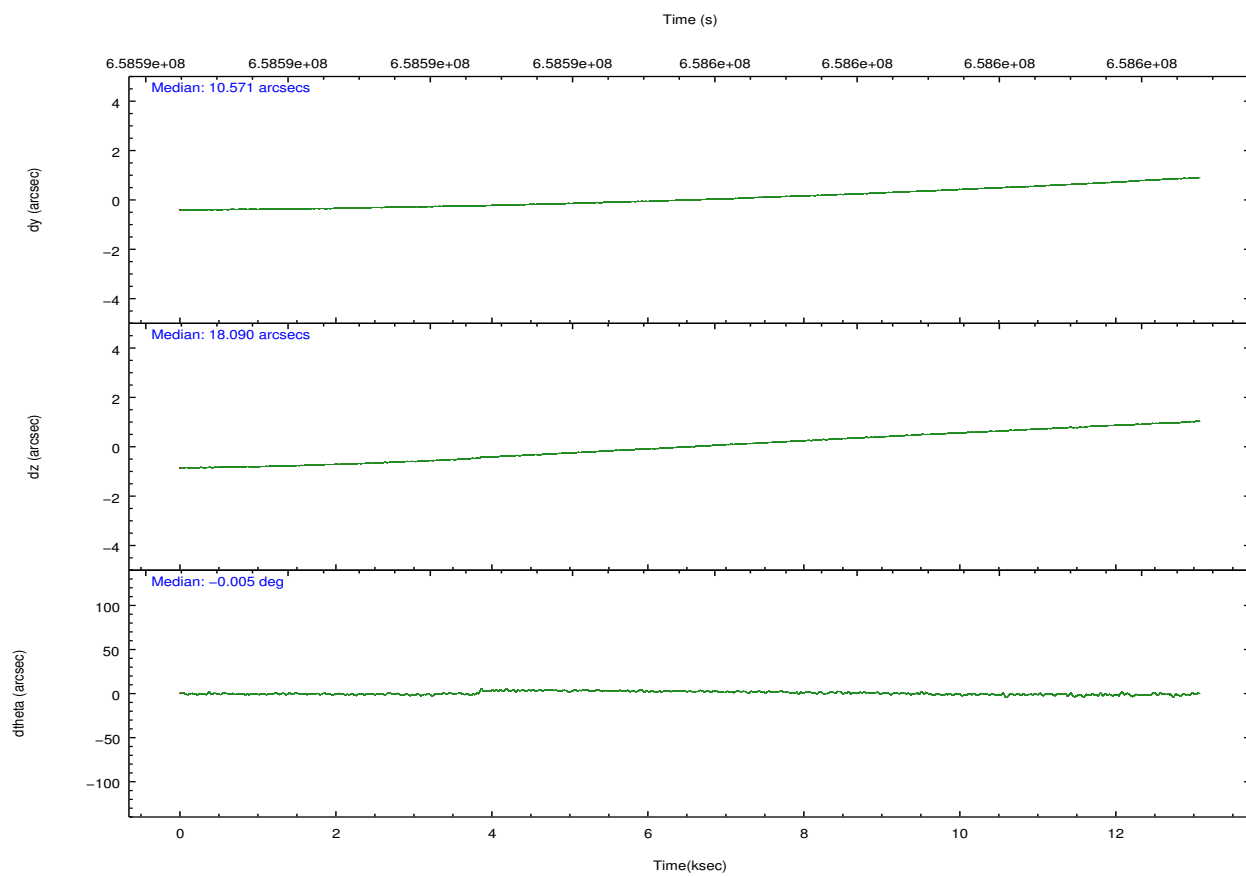
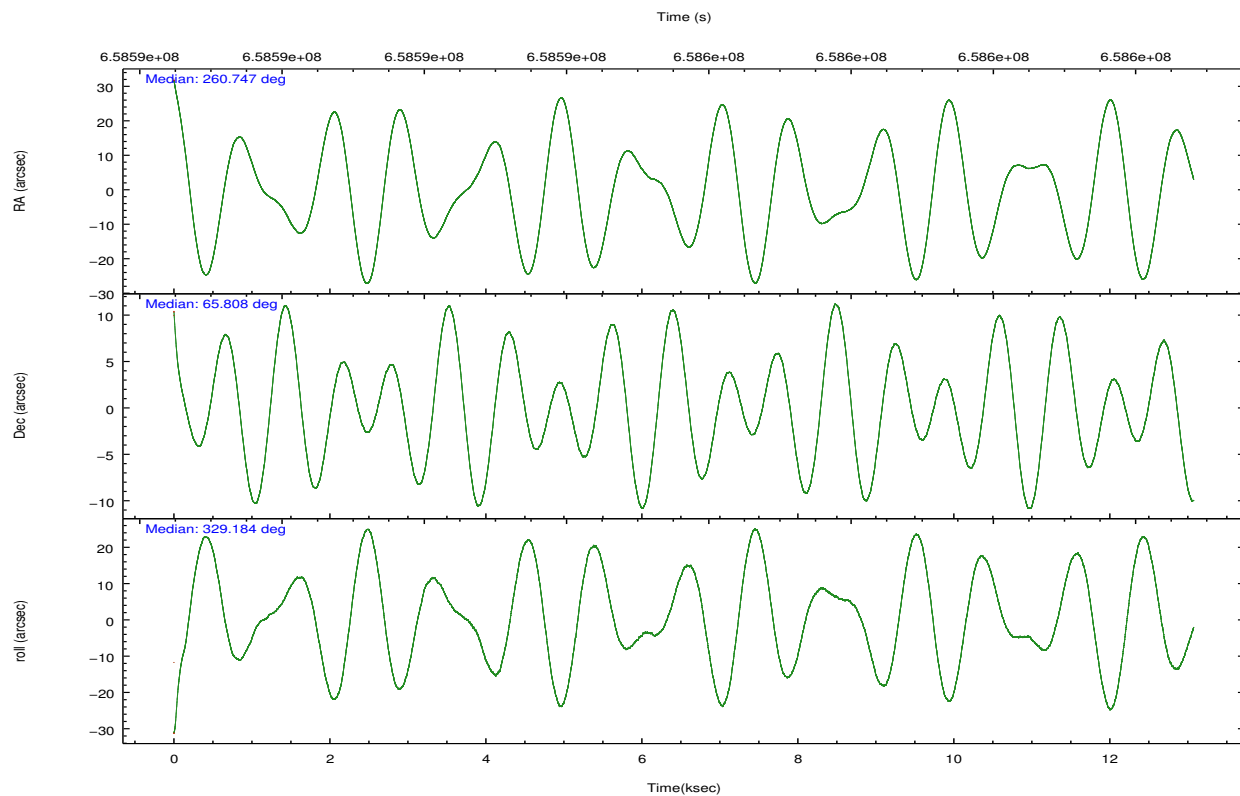
	ccd 0	ccd 1	ccd 2	ccd 3	ccd 6	ccd 7		ccd 0	ccd 1	ccd 2	ccd 3	ccd 6	ccd 7
level 1 events	86328	92724	97251	94401	99736	122166	grade 0 events	3403	4451	3558	3294	3043	4346
rejected events	76018	80627	87508	84761	88978	69938		3%	4%	3%	3%	3%	3%
rejected %	88%	86%	89%	89%	89%	57%	grade 1 events	52	62	50	36	45	188
								0%	0%	0%	0%	0%	0%
							grade 2 events	2651	3022	2279	2129	2882	10820
								3%	3%	2%	2%	2%	8%
							grade 3 events	996	957	913	1074	865	3943
								1%	1%	0%	1%	0%	3%
							grade 4 events	939	960	972	992	944	4028
								1%	1%	0%	1%	0%	3%
							grade 5 events	3711	3791	3566	4217	4089	11772
								4%	4%	3%	4%	4%	9%
							grade 6 events	2327	2712	2024	2157	3028	29112
								2%	2%	2%	2%	3%	23%
							grade 7 events	72249	76769	83889	80502	84840	57957
								83%	82%	86%	85%	85%	47%

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	260.679961	260.7473459634474	CCD I2 on	Y	Y
[deg] Pointing Dec	65.808043	65.80778550776319	CCD I3 on	Y	Y
[deg] Pointing Roll	329.041082	329.1882892831209	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)	658589290.184000	658588127.84279	CCD S5 on	N	N
Observation start date	2018-11-14T13:27:01	2018-11-14T13:08:47	Number of optional ACIS chips dropped	0	0
[s] Observation end time (MET)	658602189.184000	658603108.21868	On-chip summing requested	N	N
Observation end date	2018-11-14T17:02:00	2018-11-14T17:18:28	Subarray requested	NONE	NONE
Read mode	TIMED	TIMED	Alternating exposures requested	N	N
			[s] Primary exposure time	0.000000	3.2

2.3 Aspect



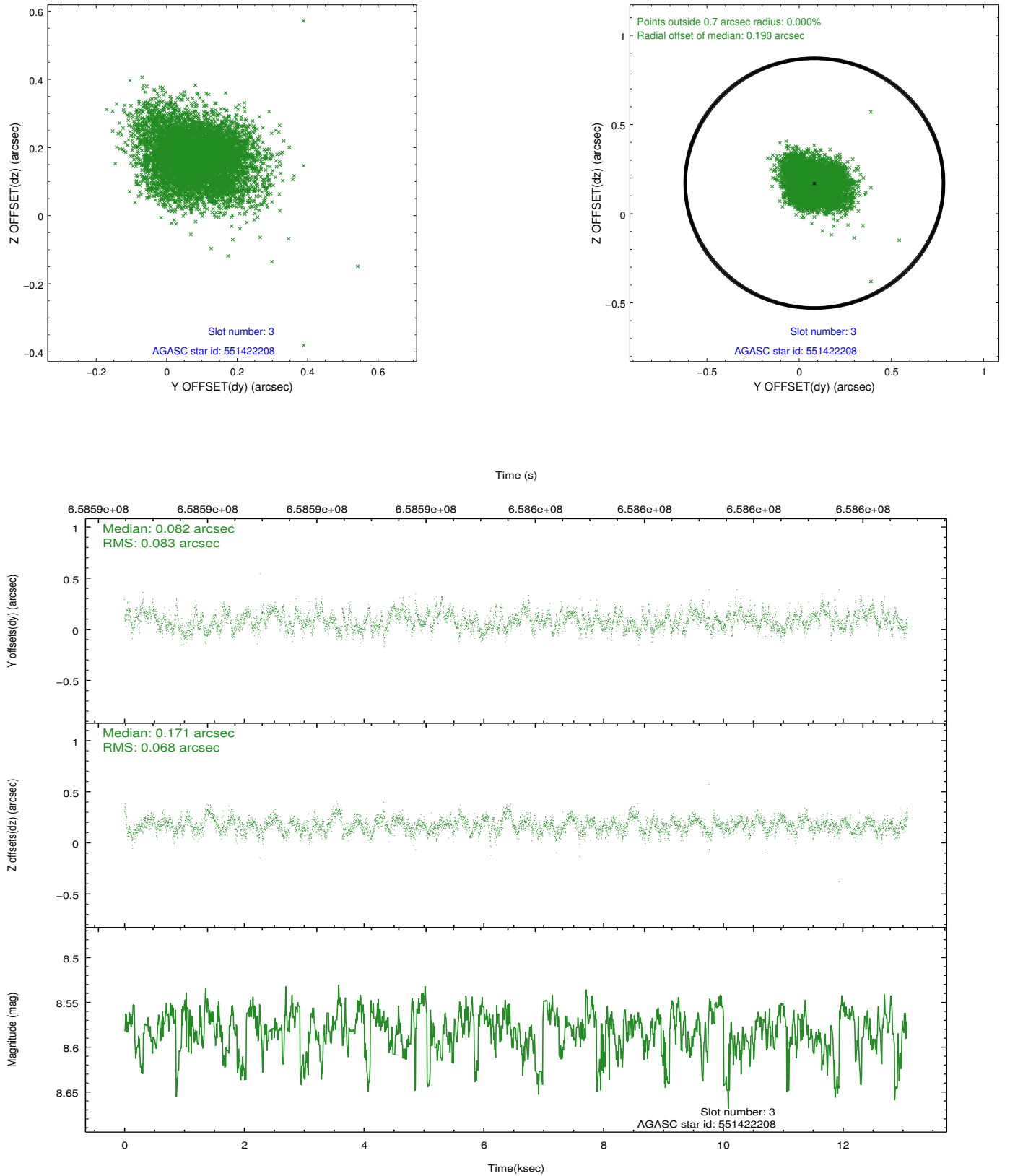


Slot Statistics

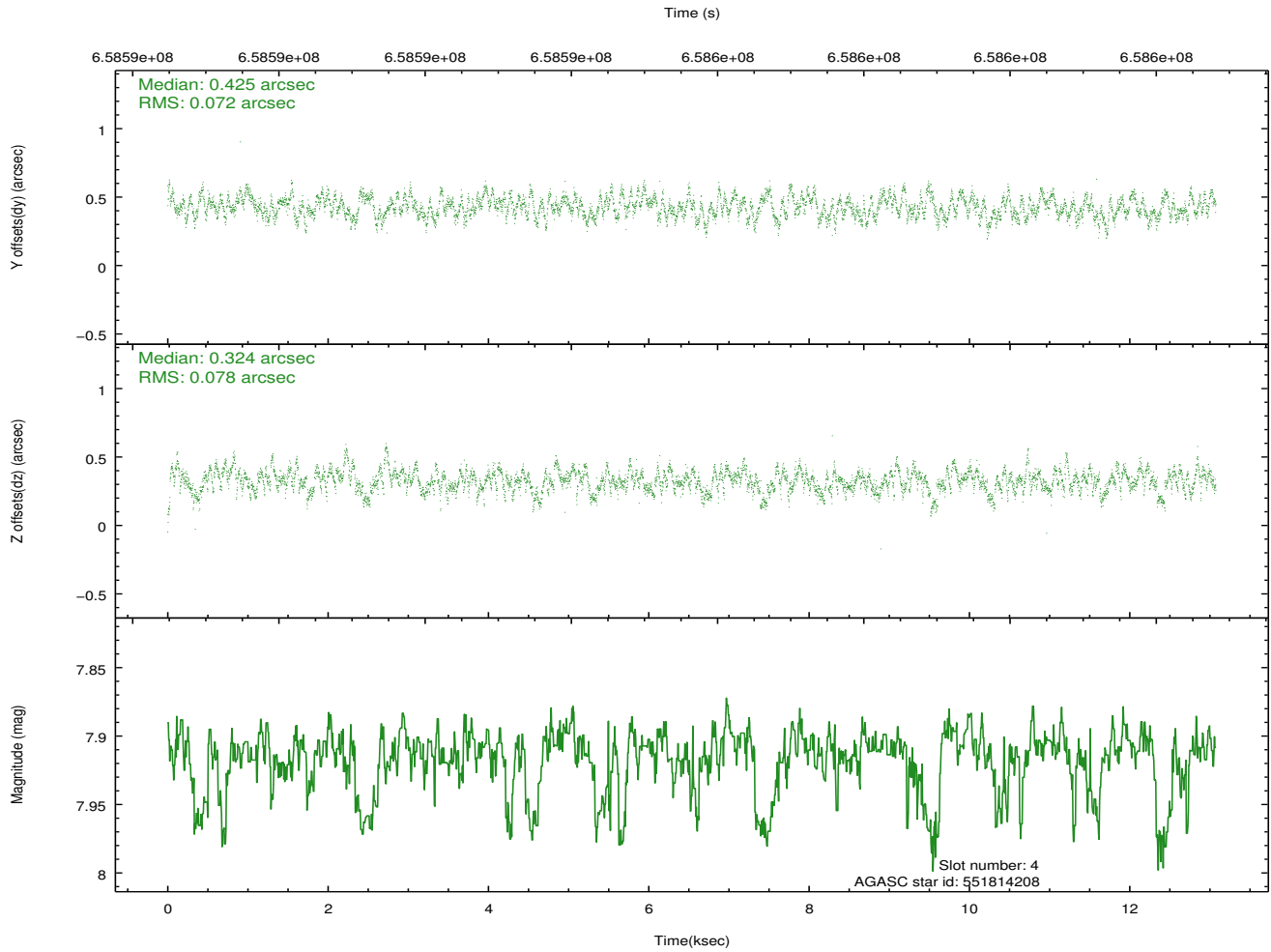
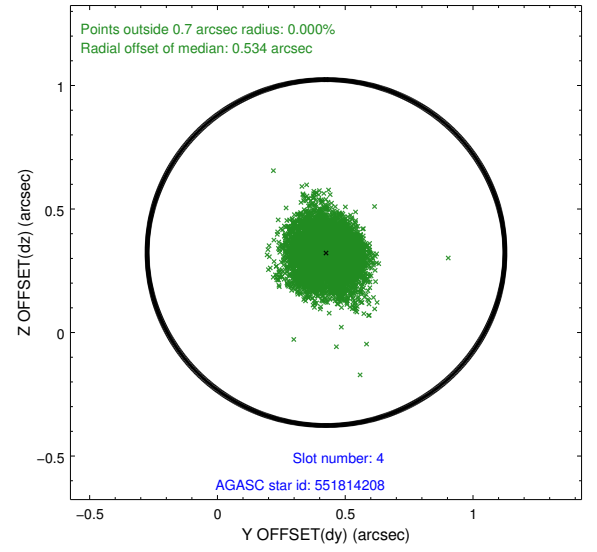
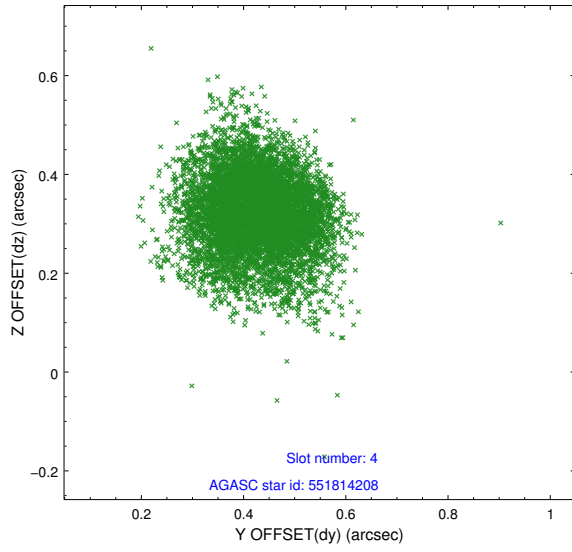
pt	status	used	id	mag	n_pts	frac_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mea
0	FID		ACIS-I-2	7.16	3189	1.000	-0.381	-0.111	0.038	0.057	0.000000	0.000000	-765.59	-848
1	FID		ACIS-I-4	7.21	3189	1.000	0.733	0.223	0.016	0.025	0.000000	0.000000	2149.31	1058
2	FID		ACIS-I-5	7.28	3188	1.000	-0.452	-0.043	0.026	0.038	0.000000	0.000000	-1819.11	1055
3	GUIDE	used	551422208	8.58	6375	1.000	0.082	0.171	0.114	0.184	261.600178	65.236311	2243.91	-1042
4	GUIDE	used	551814208	7.91	6376	1.000	0.425	0.324	0.113	0.179	260.175311	65.639944	-331.67	-901
5	GUIDE	used	551815096	6.76	6378	1.000	0.033	0.134	0.106	0.193	260.236273	66.562724	-1944.25	2005
6	GUIDE	used	551952296	8.73	6375	1.000	-0.284	-0.240	0.100	0.164	261.999680	65.847021	1583.84	1138
7	GUIDE	used	551951232	7.94	6375	1.000	-0.252	-0.391	0.083	0.133	262.419848	65.894071	2015.27	1612

2.4 Star Slots

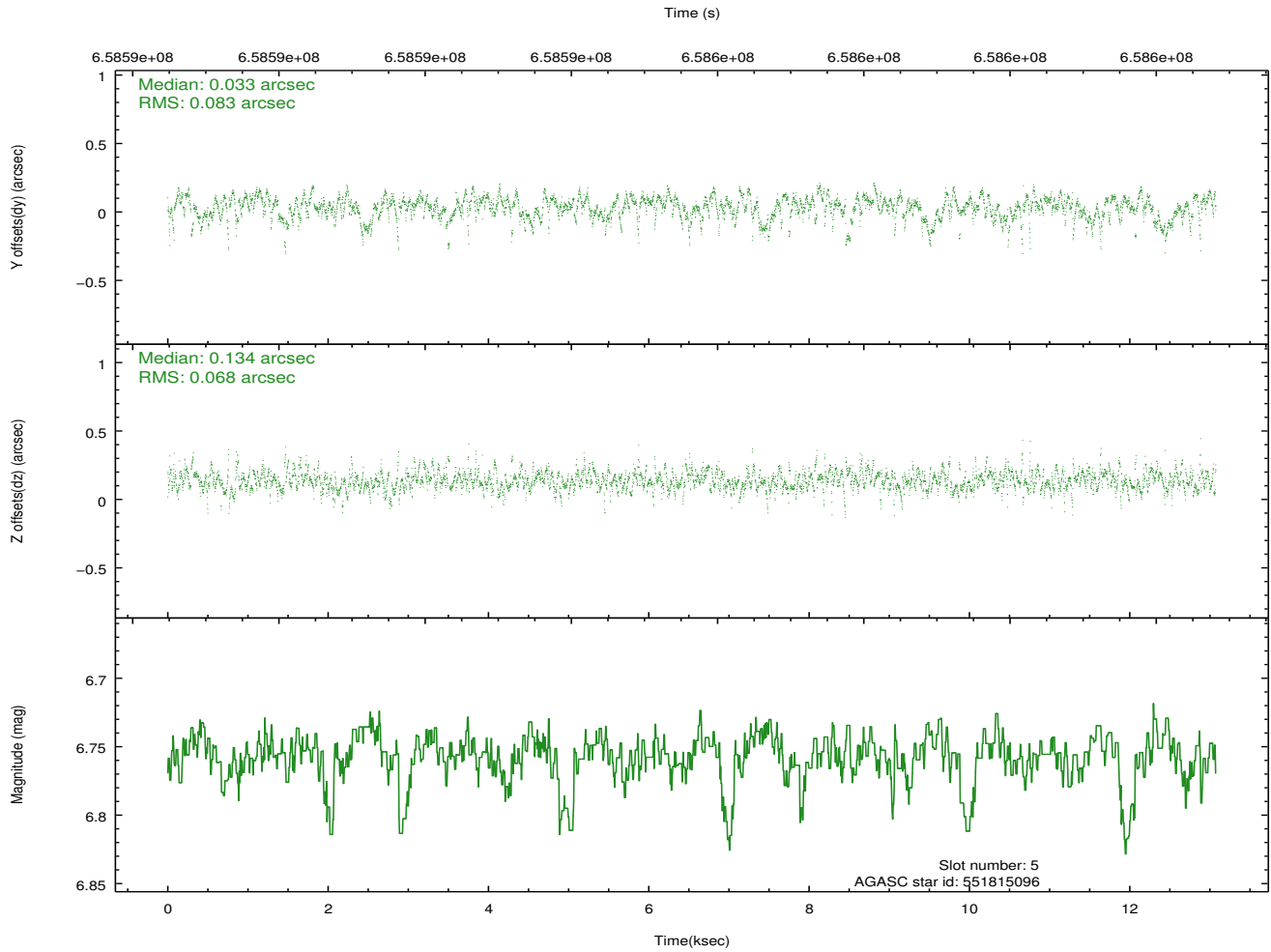
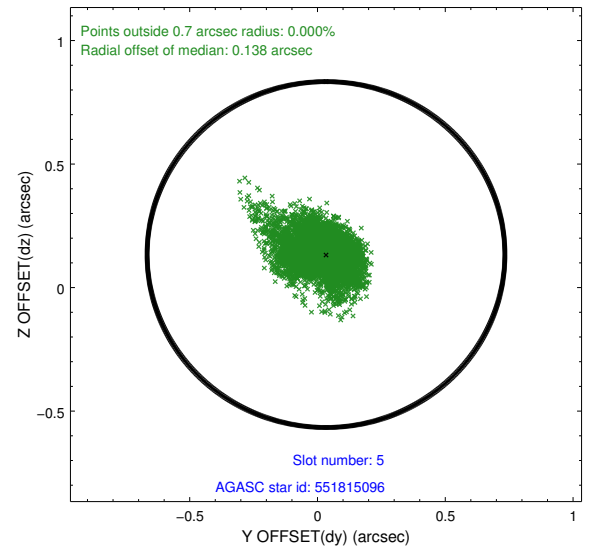
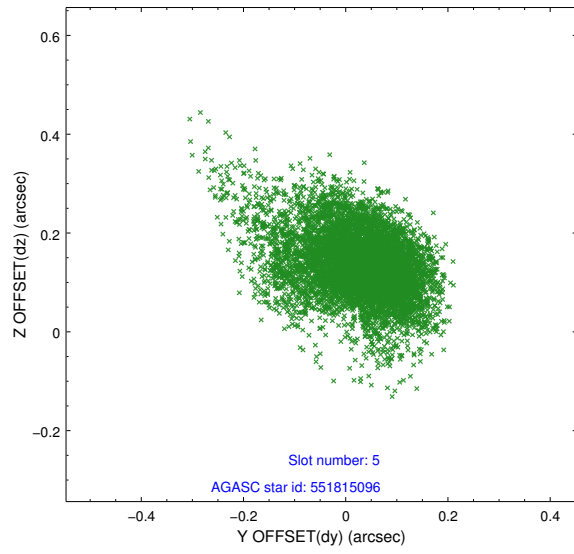
2.4.1 Slot 3



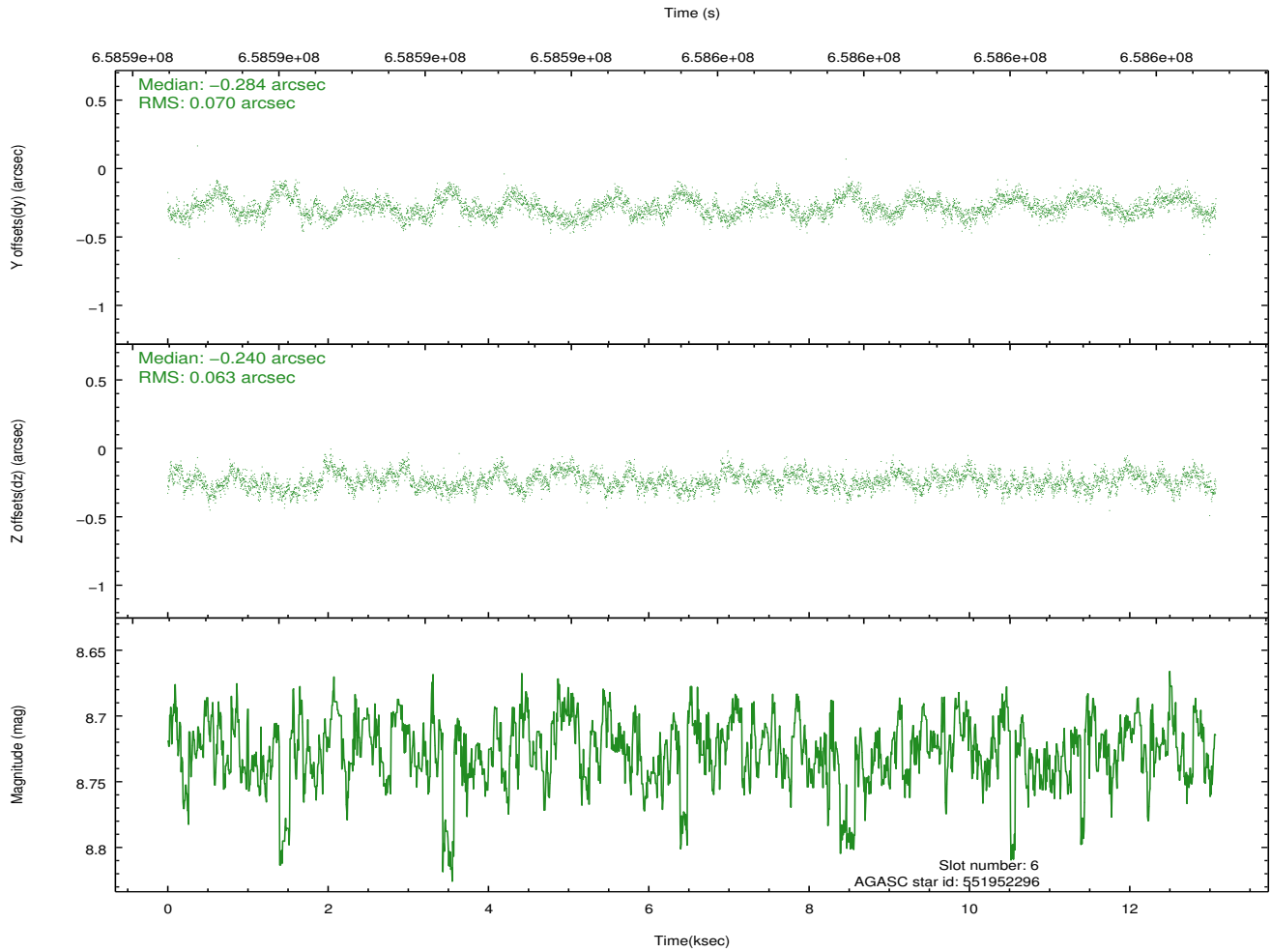
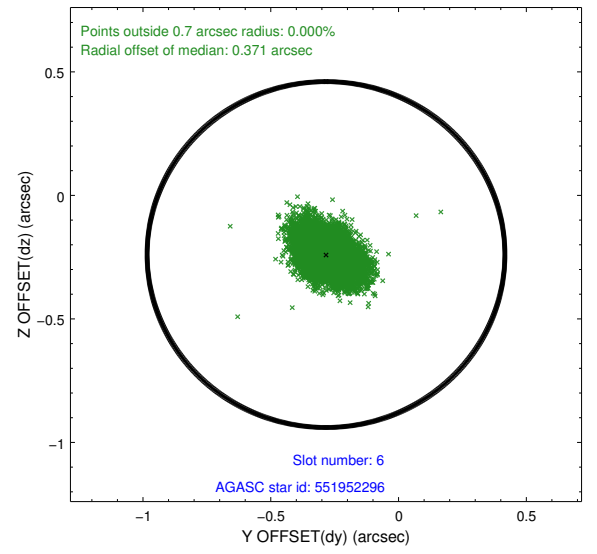
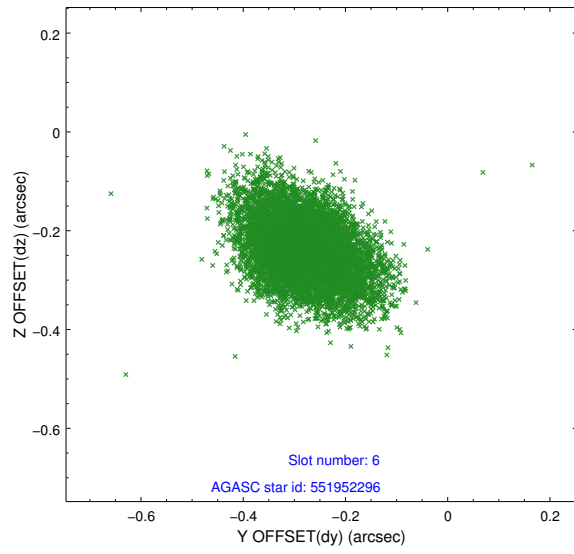
2.4.2 Slot 4



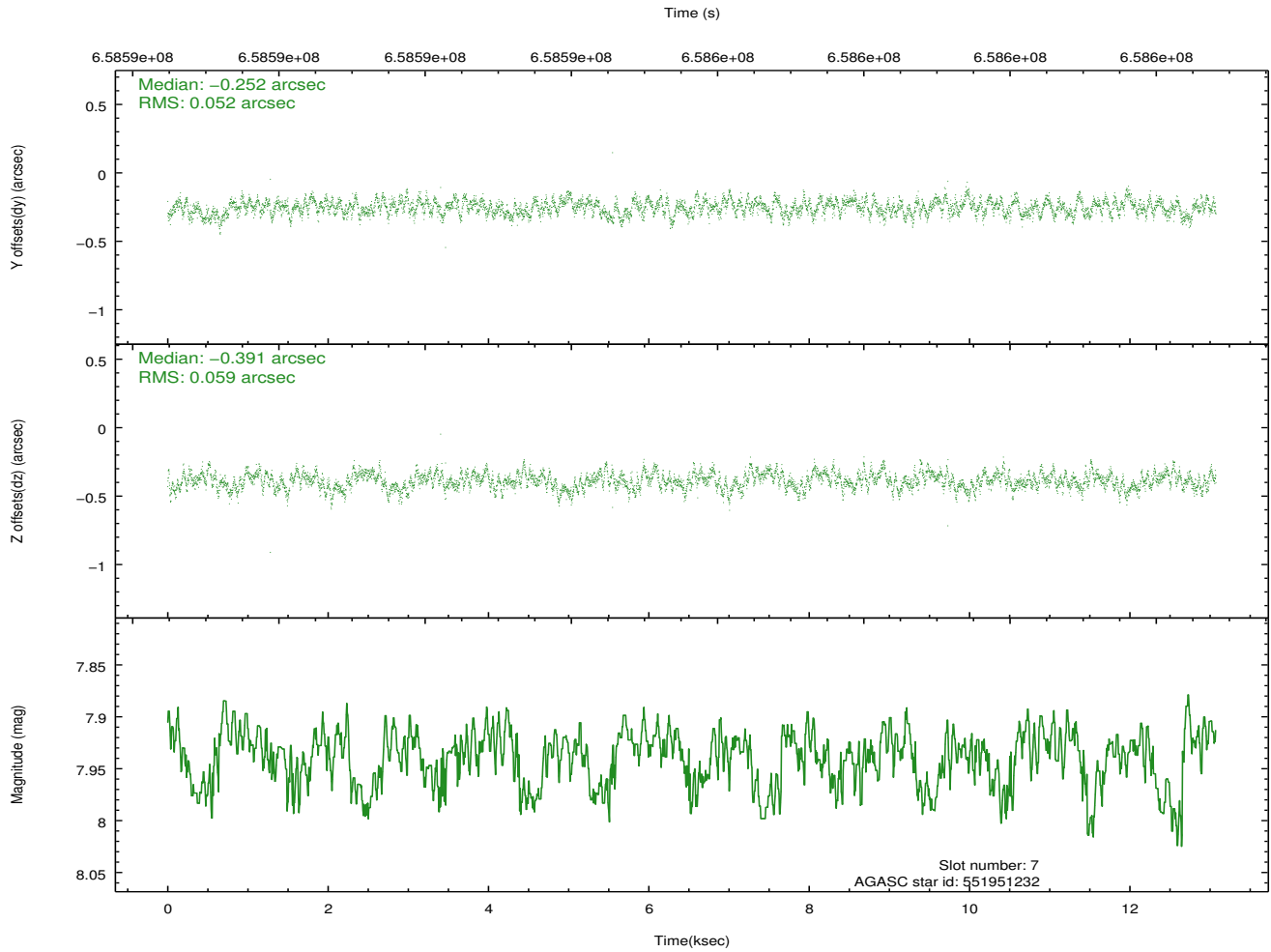
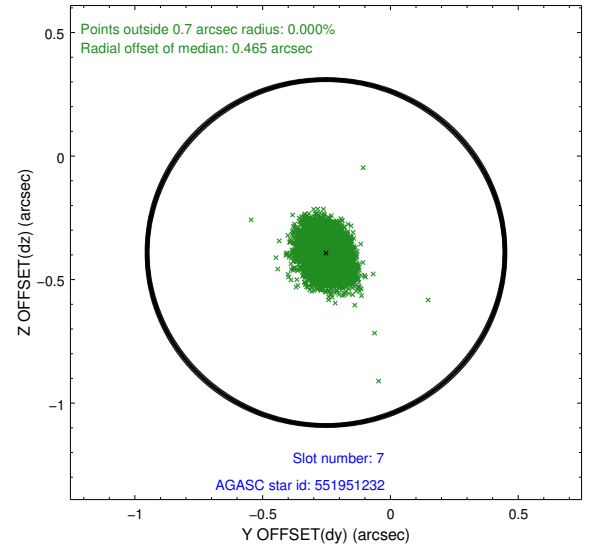
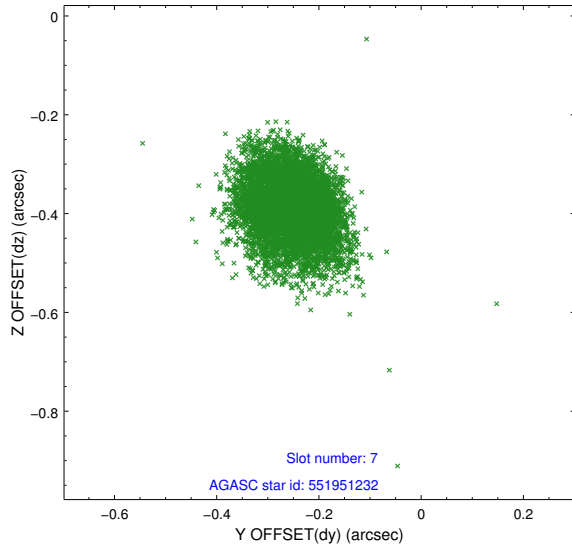
2.4.3 Slot 5



2.4.4 Slot 6

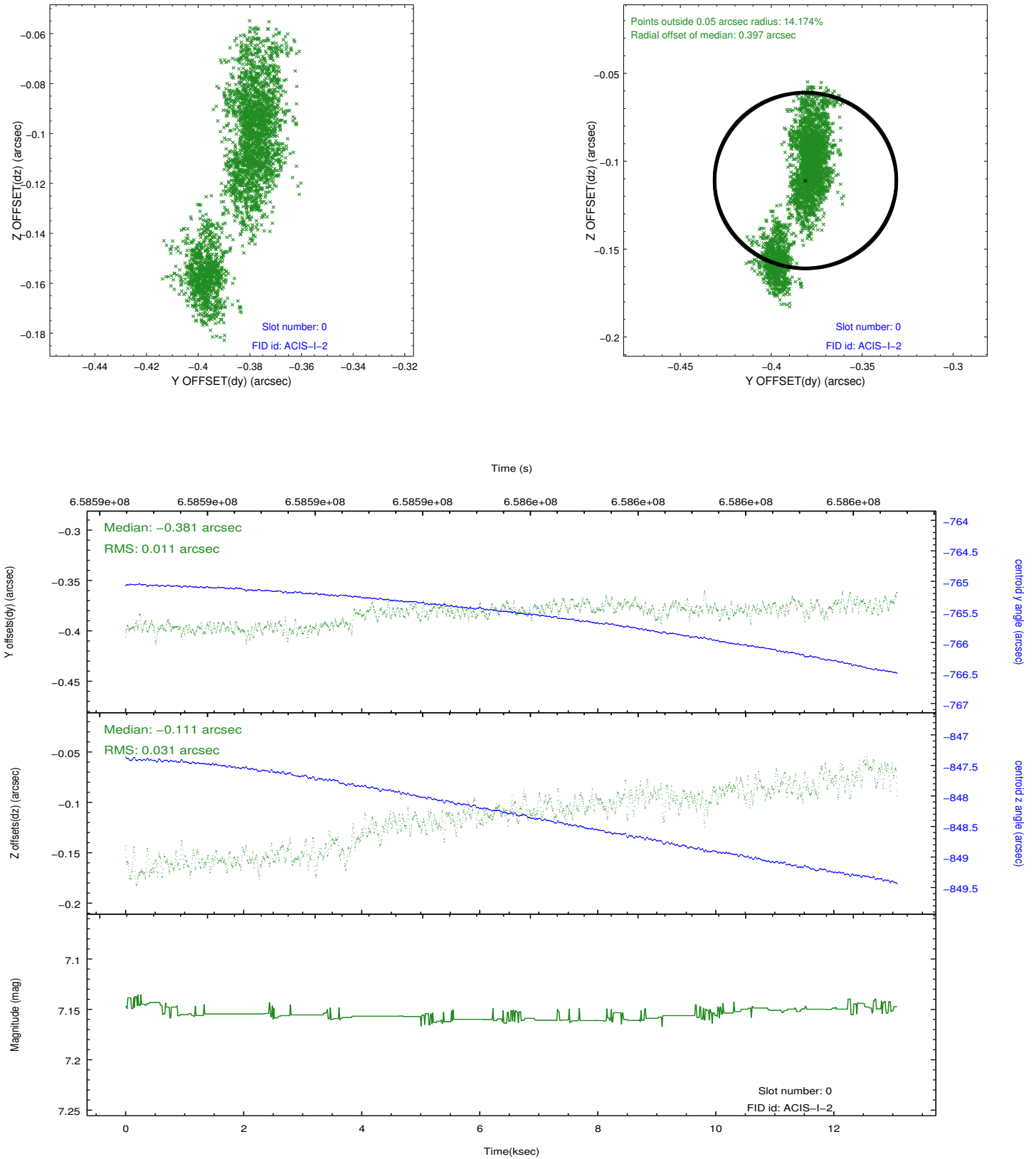


2.4.5 Slot 7

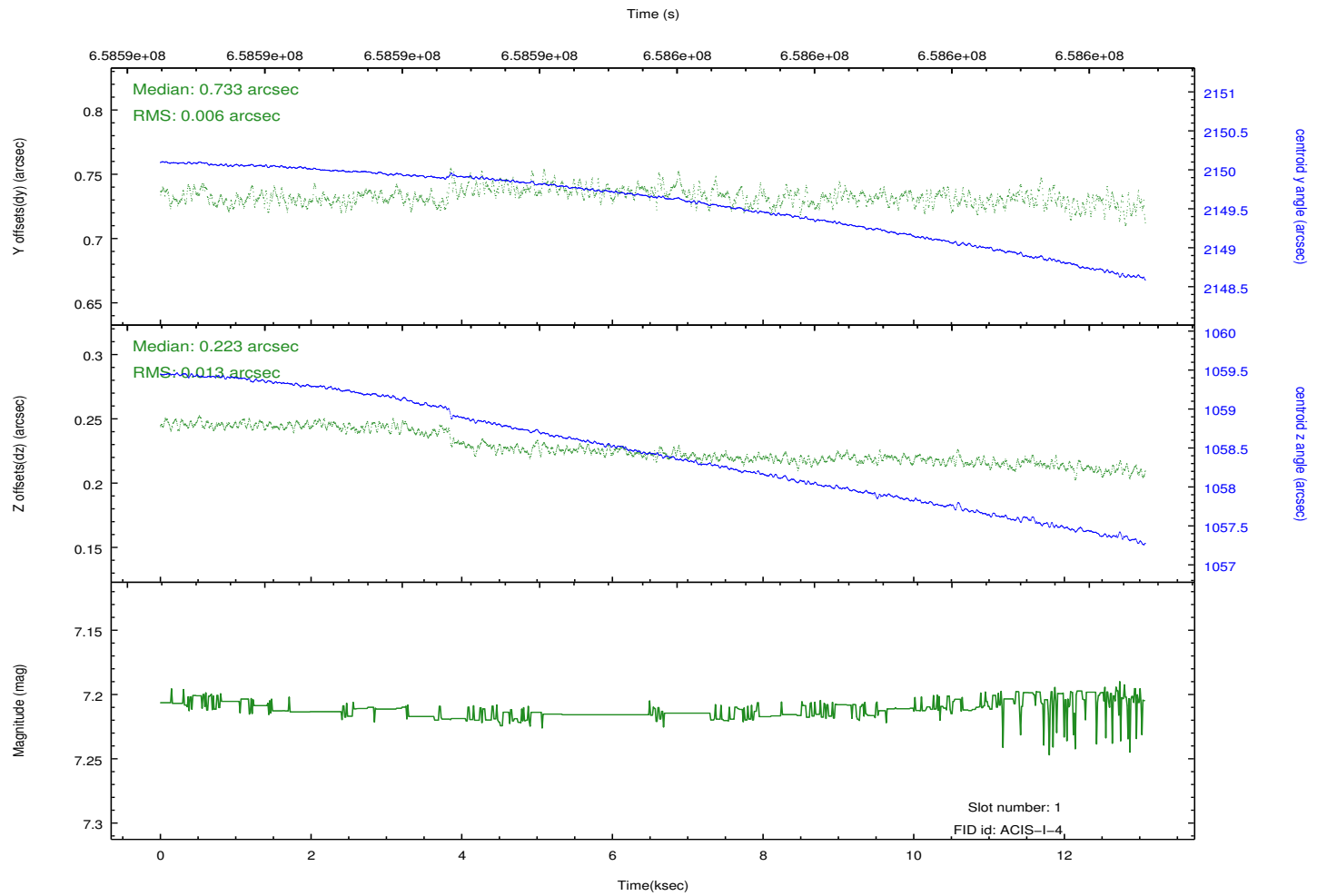
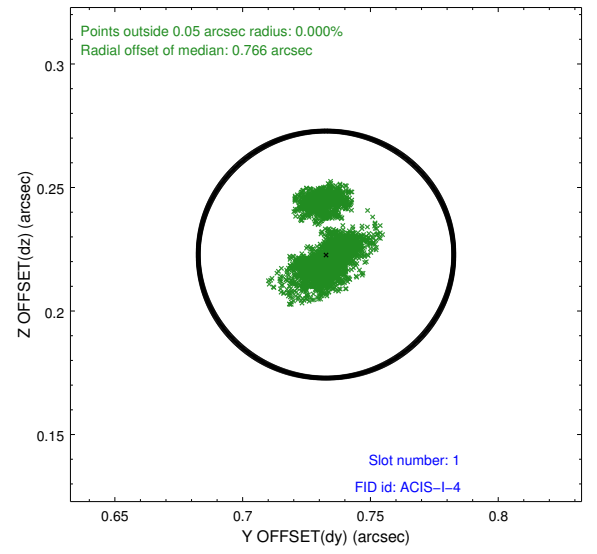
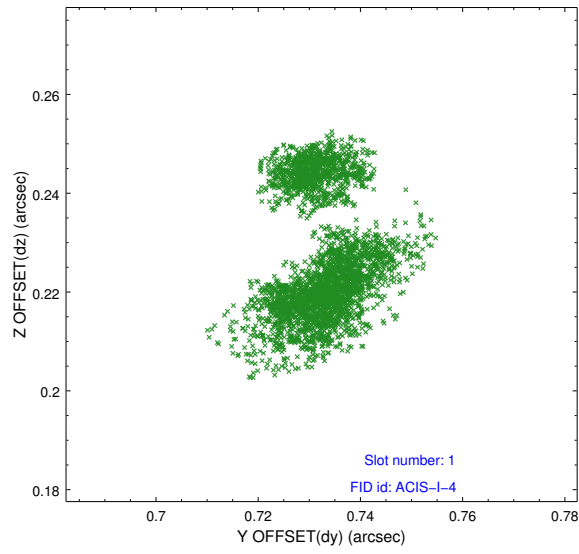


2.5 FID Slots

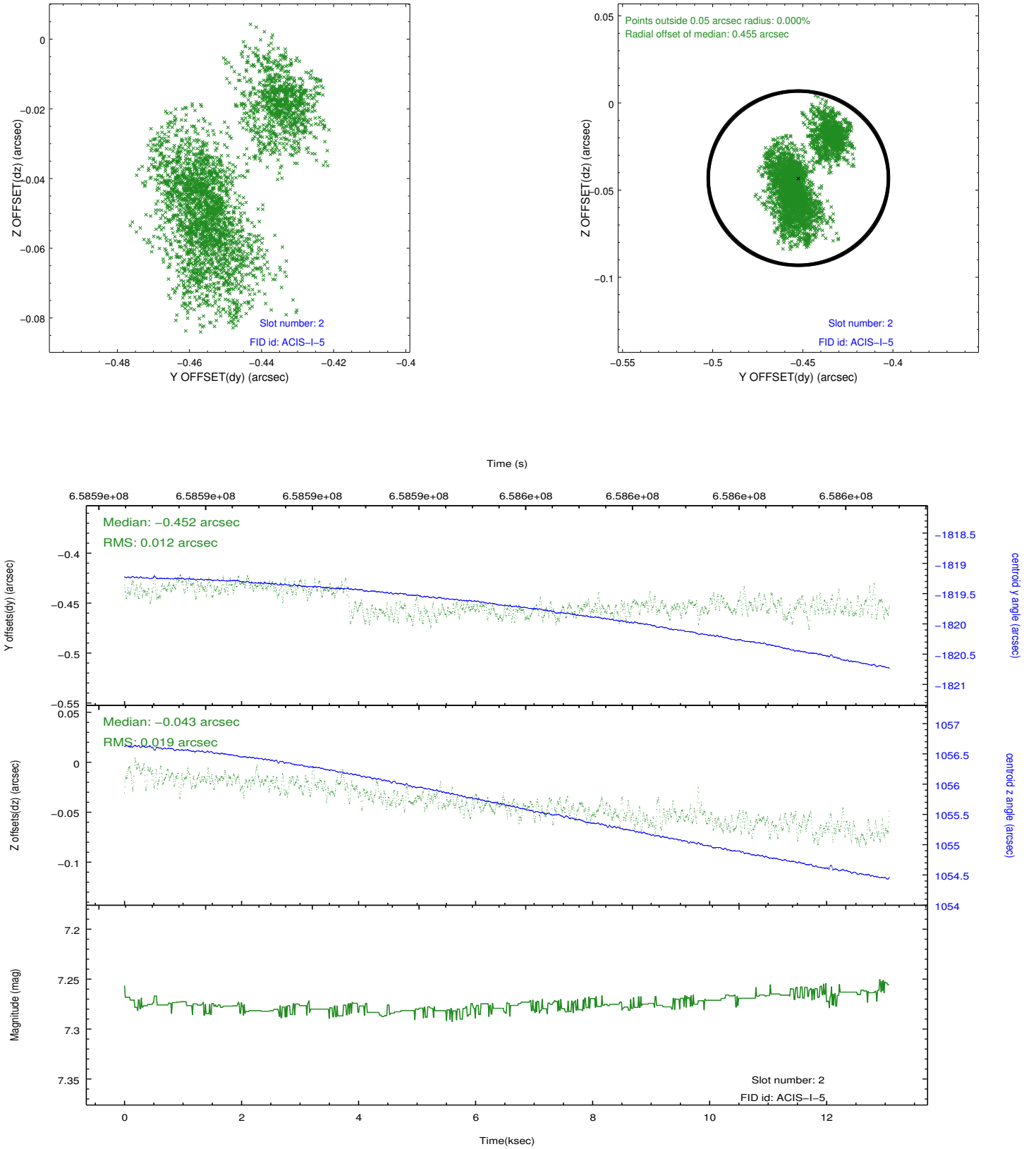
2.5.1 Slot 0



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)	2018.11.16
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	12.844800191402

A.2 Comments

The focal plane temperature during the interval 658589447.84 - 658595857.44 (MET s) 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.