

V&V Reference Report

L2 ASCDS Version : 10.5

Observation 18360 - L2 Version 1
Chandra X-Ray Center

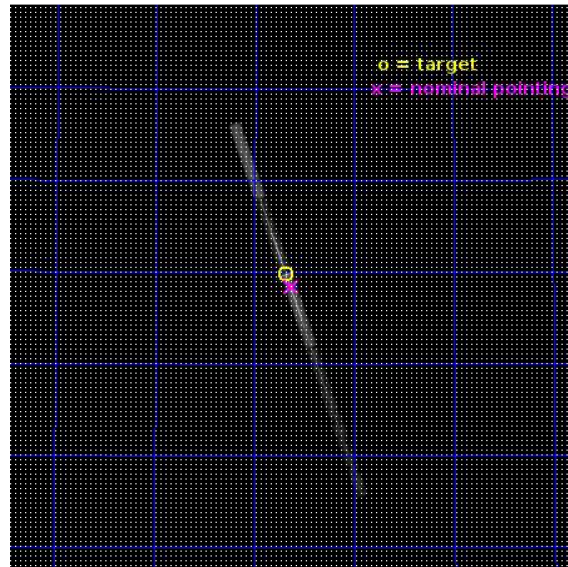
L2 Processing Date : Jul 27 2016

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1 Front

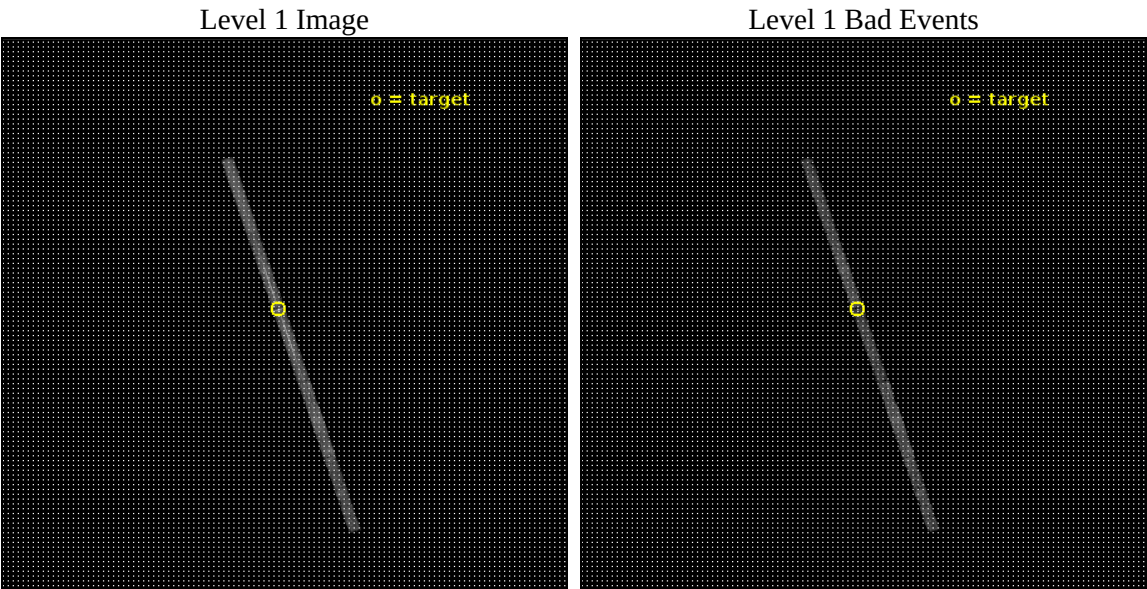
seq_num	291255	Sequence number
obs_id	18360	Observation id
title	AO-17 Internal Cross-Calibration Study	Proposal title
observer	Dr. CXC Calibration	Principal investigator
object	Capella	Source name
dtcycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	79.172917	Observer's specified target RA [deg]
dec_targ	45.996389	Observer's specified target Dec [deg]
ra_nom	79.158253374936	Nominal RA [deg]
dec_nom	45.973747017525	Nominal Dec [deg]
roll_nom	71.69947481717	Nominal Roll [deg]
revision	1	Processing version of data
ontime	10063.200399995	Sum of GTIs [s]
liveltime	9418.9445900364	Livetime [s]
ontime5	10063.200399995	Sum of GTIs [s]
ontime6	10063.200399995	Sum of GTIs [s]
ontime7	10063.200399995	Sum of GTIs [s]
ontime8	10063.200399995	Sum of GTIs [s]
ontime9	10063.200399995	Sum of GTIs [s]
l2events	47061	Number of level 2 events



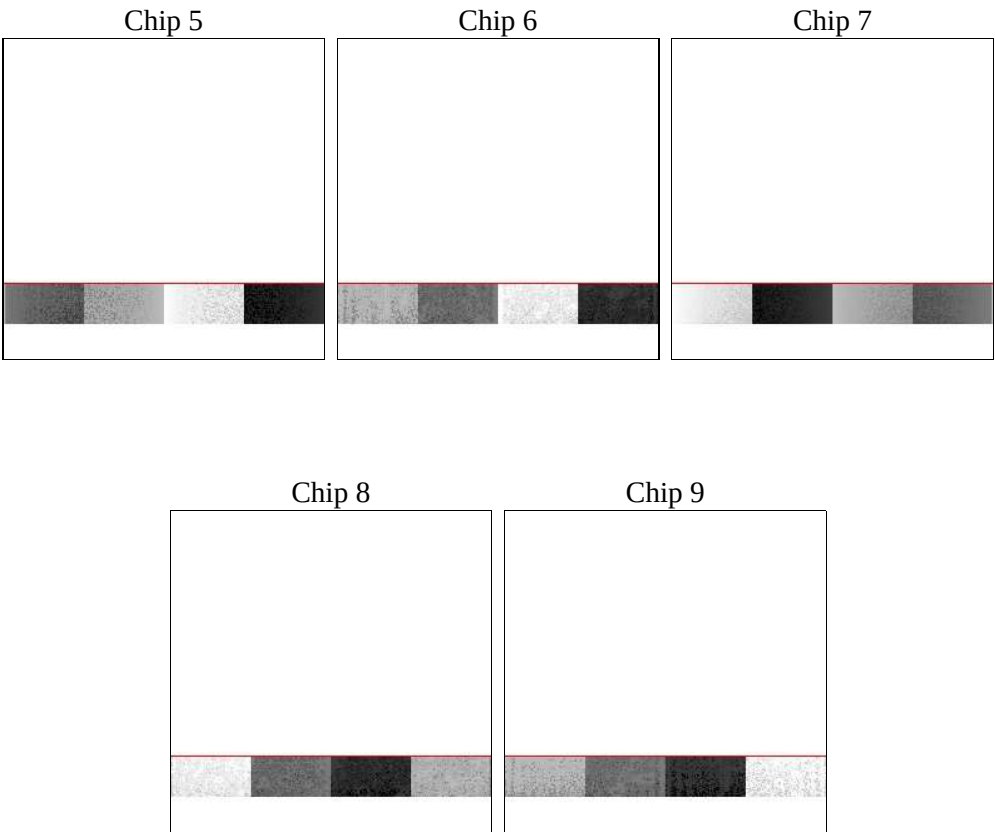
2 OBI

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	10.5	Processing system revision	ontime	10063.200399995	Sum of GTIs [s]
caldsver	4.7.2	 	ontime5	10063.200399995	Sum of GTIs [s]
date	2016-07-27T14:30:07	Date and time of file creation	ontime6	10063.200399995	Sum of GTIs [s]
revision	1	Processing version of data	ontime7	10063.200399995	Sum of GTIs [s]
			ontime8	10063.200399995	Sum of GTIs [s]
			ontime9	10063.200399995	Sum of GTIs [s]
			l1events	95462	Number of level 1 events
			tgmethod	FINDZO	Method used to create src1a file
			zo_pos	(4023.17, 4259.91)	src1a sky pixel position
					src1a sky pixel position via

2.1.4 Events

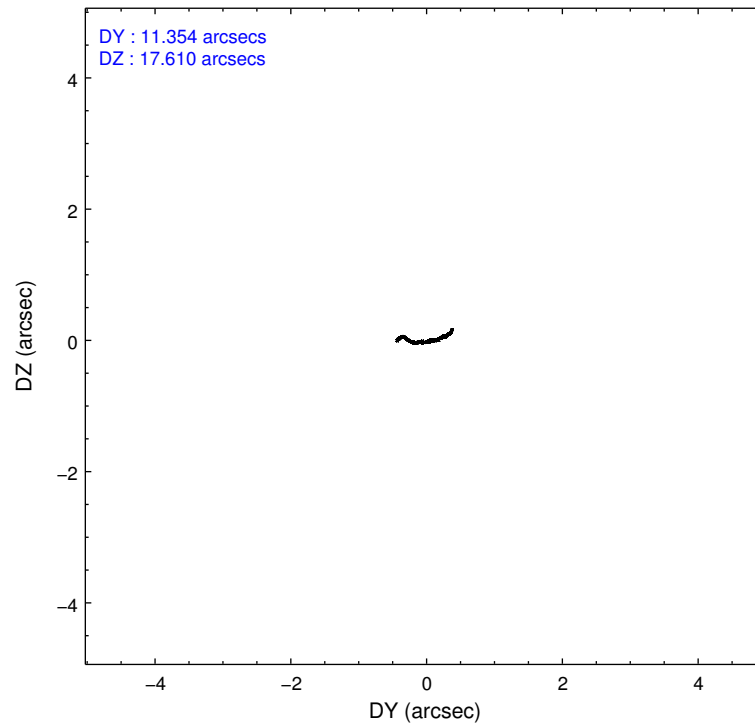
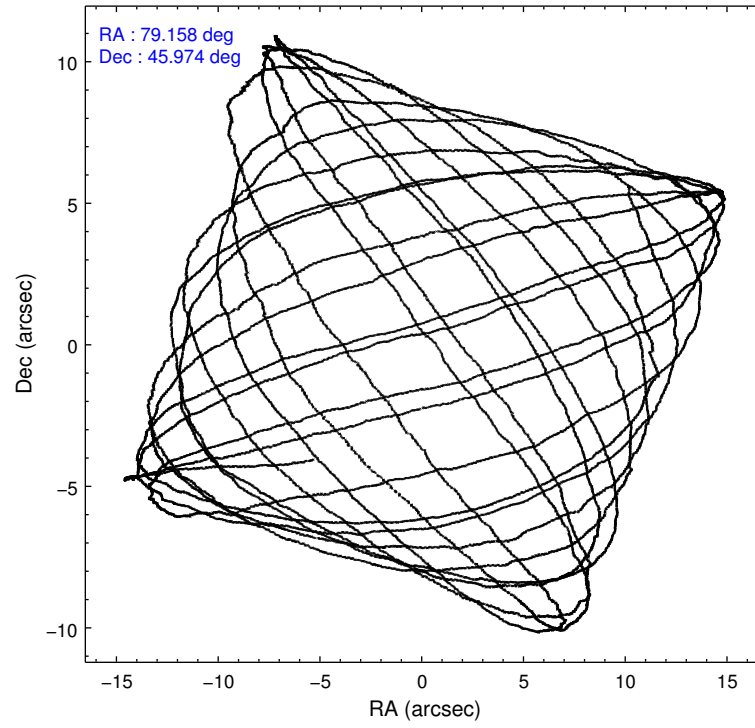
	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
level 1 events	15161	18844	35997	15937	9523
rejected events	6901	9685	8291	11462	8048
rejected %	45%	51%	23%	71%	84%

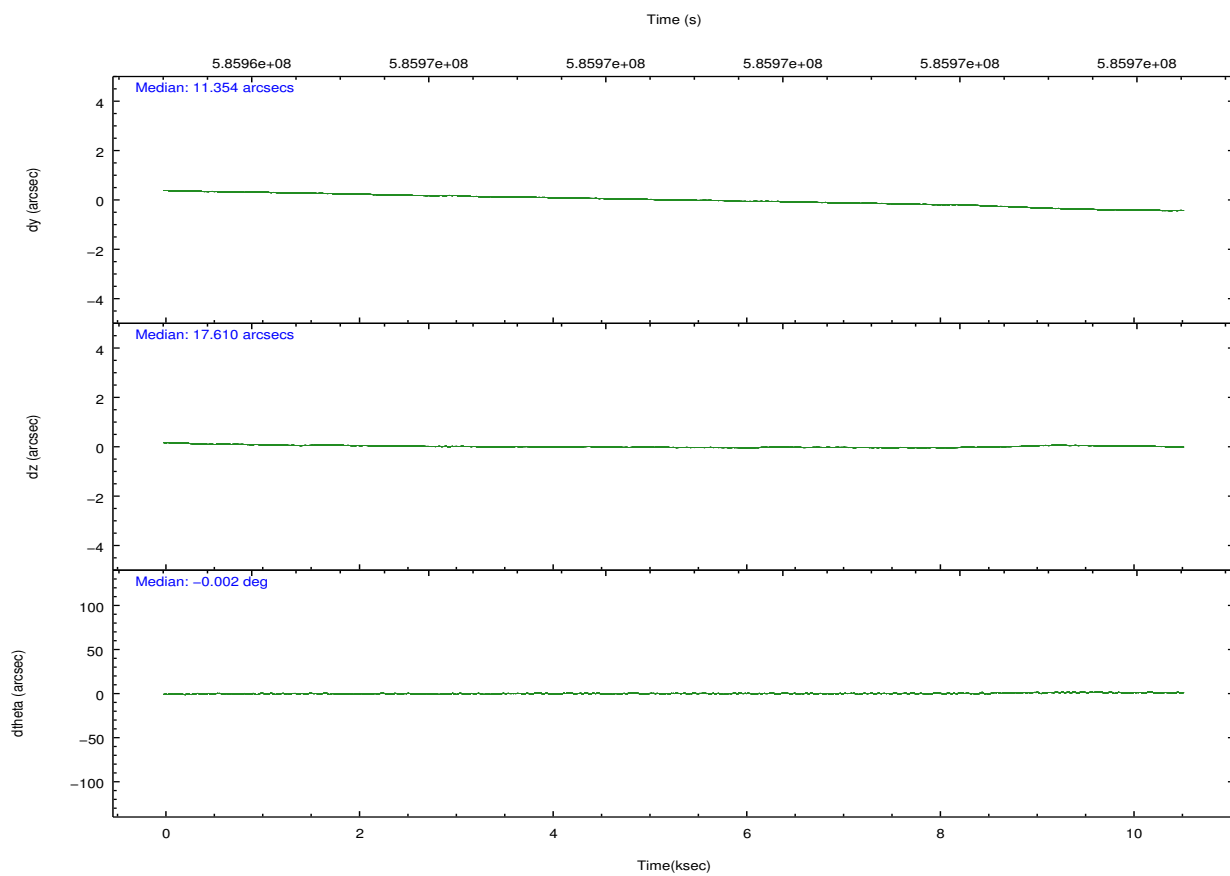
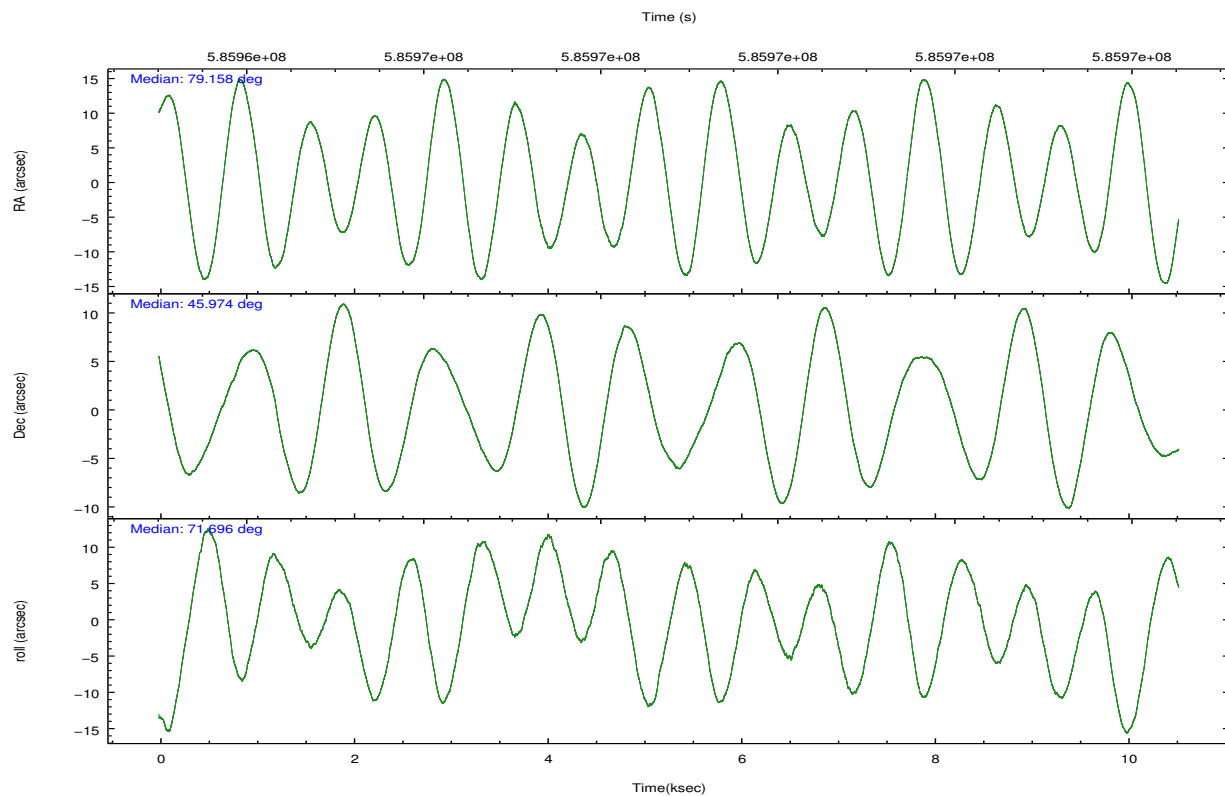
	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
grade 0 events	1304	6996	6370	1514	567
	8%	37%	17%	9%	5%
grade 1 events	25	11	258	7	4
	0%	0%	0%	0%	0%
grade 2 events	2185	958	7137	838	227
	14%	5%	19%	5%	2%
grade 3 events	659	415	3257	443	227
	4%	2%	9%	2%	2%
grade 4 events	675	435	3093	456	206
	4%	2%	8%	2%	2%
grade 5 events	1298	410	2052	558	419
	8%	2%	5%	3%	4%
grade 6 events	3437	355	7852	1224	248
	22%	1%	21%	7%	2%
grade 7 events	5578	9264	5978	10897	7625
	36%	49%	16%	68%	80%

2.2 Compared Parameters

Parameter	Planned	Actual	Parameter	Planned	Actual
Instrument	ACIS	ACIS	Obspar format version number	7	7
Detector	ACIS-56789	ACIS-56789	Obspar file type	PREDICTED	ACTUAL
Grating	LETG	LETG	Obspar update status	NONE	UPDATED
Data mode	FAINT	FAINT	CCD I0 on	N	N
Observation mode	POINTING	POINTING	CCD I1 on	N	N
[deg] Pointing RA	79.166777	79.15825337493601	CCD I2 on	N	N
[deg] Pointing Dec	45.946993	45.97374701752467	CCD I3 on	N	N
[deg] Pointing Roll	71.536736	71.6994748171703	CCD S0 on	N	N
[mm] SIM focus pos	-0.684267	-0.6828225247311905	CCD S1 on	Y	Y
[mm] SIM defocus	0	0.001444936568705701	CCD S2 on	Y	Y
[mm] SIM translation stage pos	-182.132523	-182.1344861297048	CCD S3 on	Y	Y
[mm] SIM translation stage offset	-8	-7.998036453302973	CCD S4 on	Y	Y
[s] Observation start time (MET)	585964034.184000	585963178.38902	CCD S5 on	O1	Y
Observation start date	2016-07-26T23:46:06	2016-07-26T23:32:58	Number of optional ACIS chips dropped	0	0
[s] Observation end time (MET)	585974034.184000	585974258.12716	On-chip summing requested	N	N
Observation end date	2016-07-27T02:32:46	2016-07-27T02:37:38	Subarray requested	CUSTOM	1/8
Read mode	TIMED	TIMED	Subarray start row	113	113
			Subarray row count	128	128
			Alternating exposures requested	N	N
			[s] Primary exposure time	0.000000	0.6

2.3 Aspect



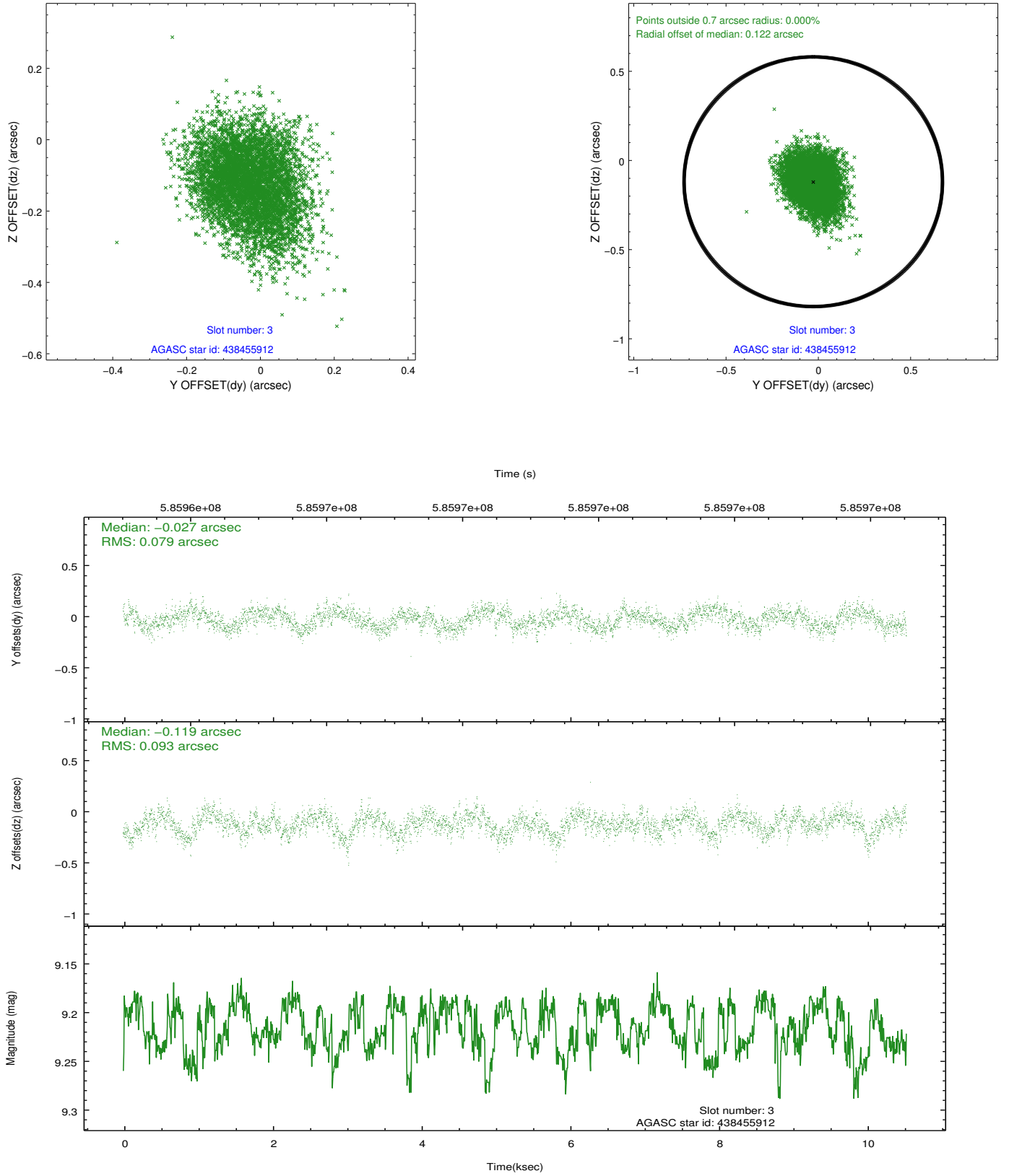


Slot Statistics

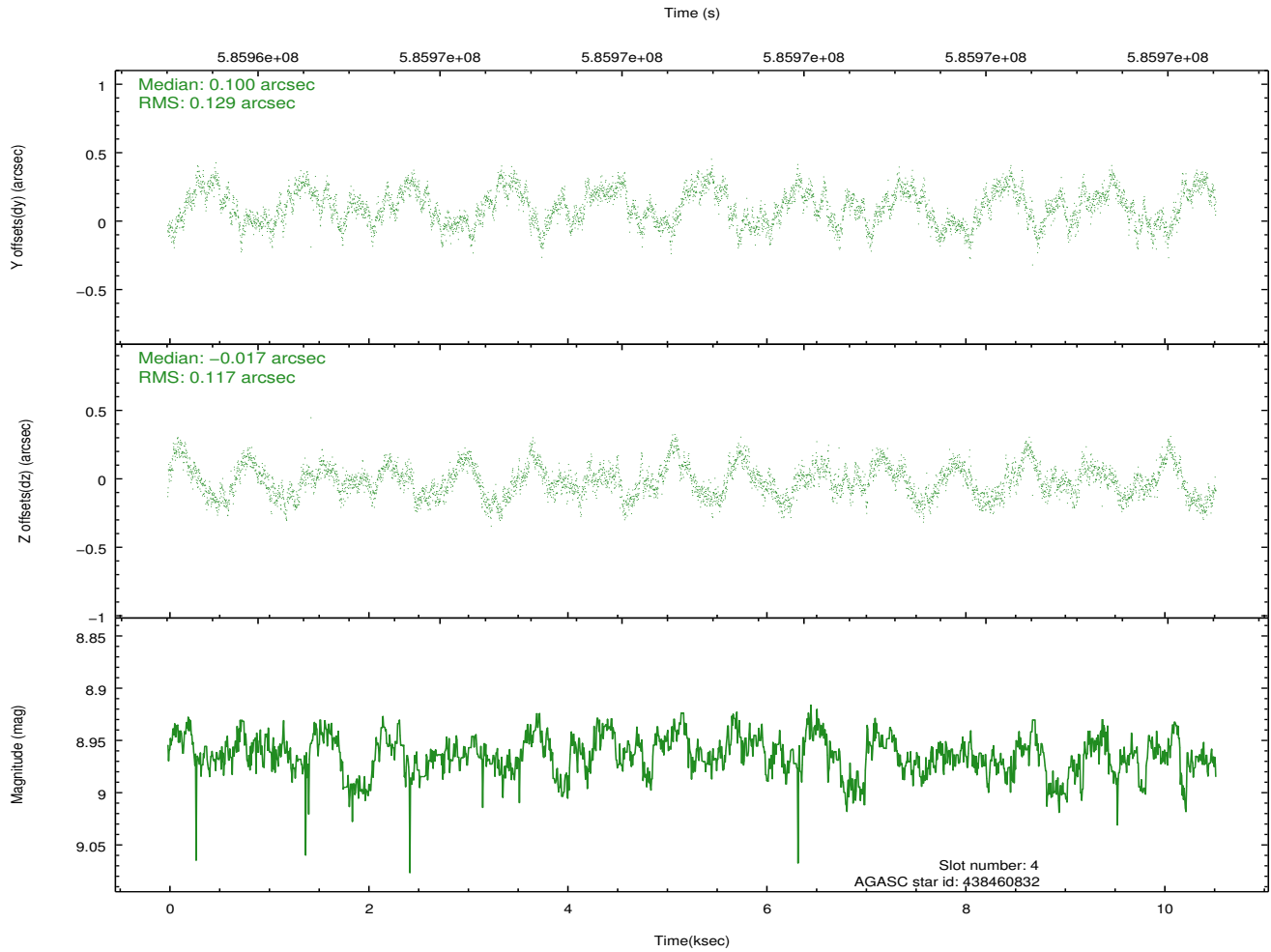
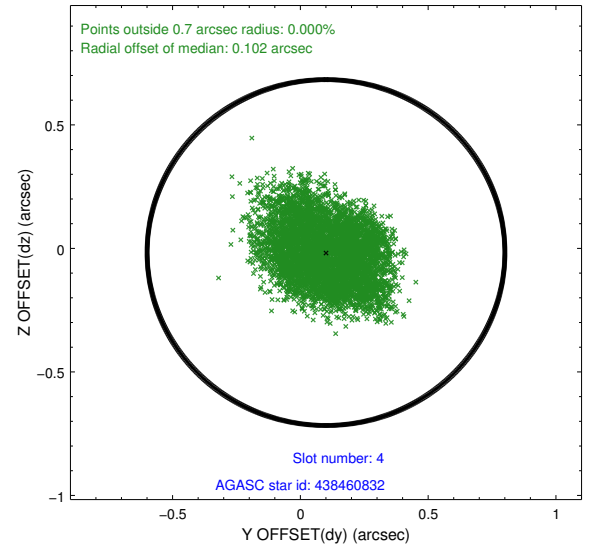
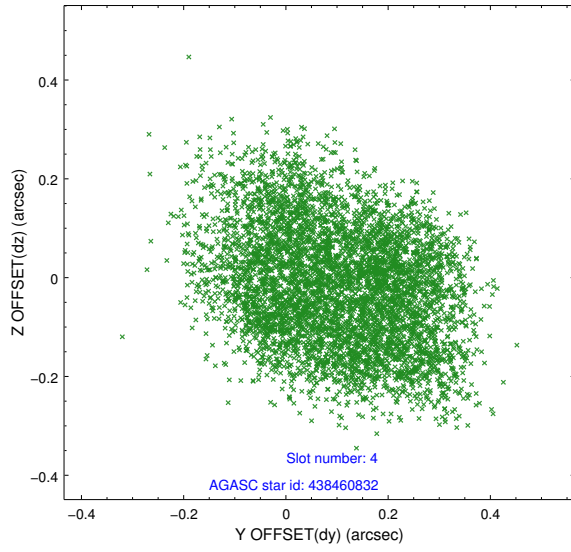
slot	status	used	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID		ACIS-S-2	6.89	2570	-0.223	-0.163	0.008	0.013	0.000000	0.000000	-763.95	-1903.96
1	FID		ACIS-S-4	6.97	2570	0.230	0.123	0.006	0.011	0.000000	0.000000	2149.64	4.08
2	FID		ACIS-S-6	7.20	2570	-0.034	0.047	0.008	0.014	0.000000	0.000000	398.97	642.04
3	GUIDE	used	438455912	9.22	5138	-0.027	-0.119	0.130	0.208	78.251946	45.690923	-1590.28	1894.45
4	GUIDE	used	438460832	8.96	5135	0.100	-0.017	0.189	0.284	78.414614	45.554782	-1931.65	1354.44
5	GUIDE	used	440149480	9.14	5137	0.310	0.552	0.163	0.262	79.794341	45.220426	-1970.71	-2334.90
6	GUIDE	used	440150048	7.09	5140	-0.343	-0.260	0.103	0.161	79.112838	46.416060	1558.98	661.54
7	GUIDE	used	438461584	9.22	5134	-0.027	-0.163	0.159	0.275	78.061532	45.583834	-2103.45	2233.61

2.4 Star Slots

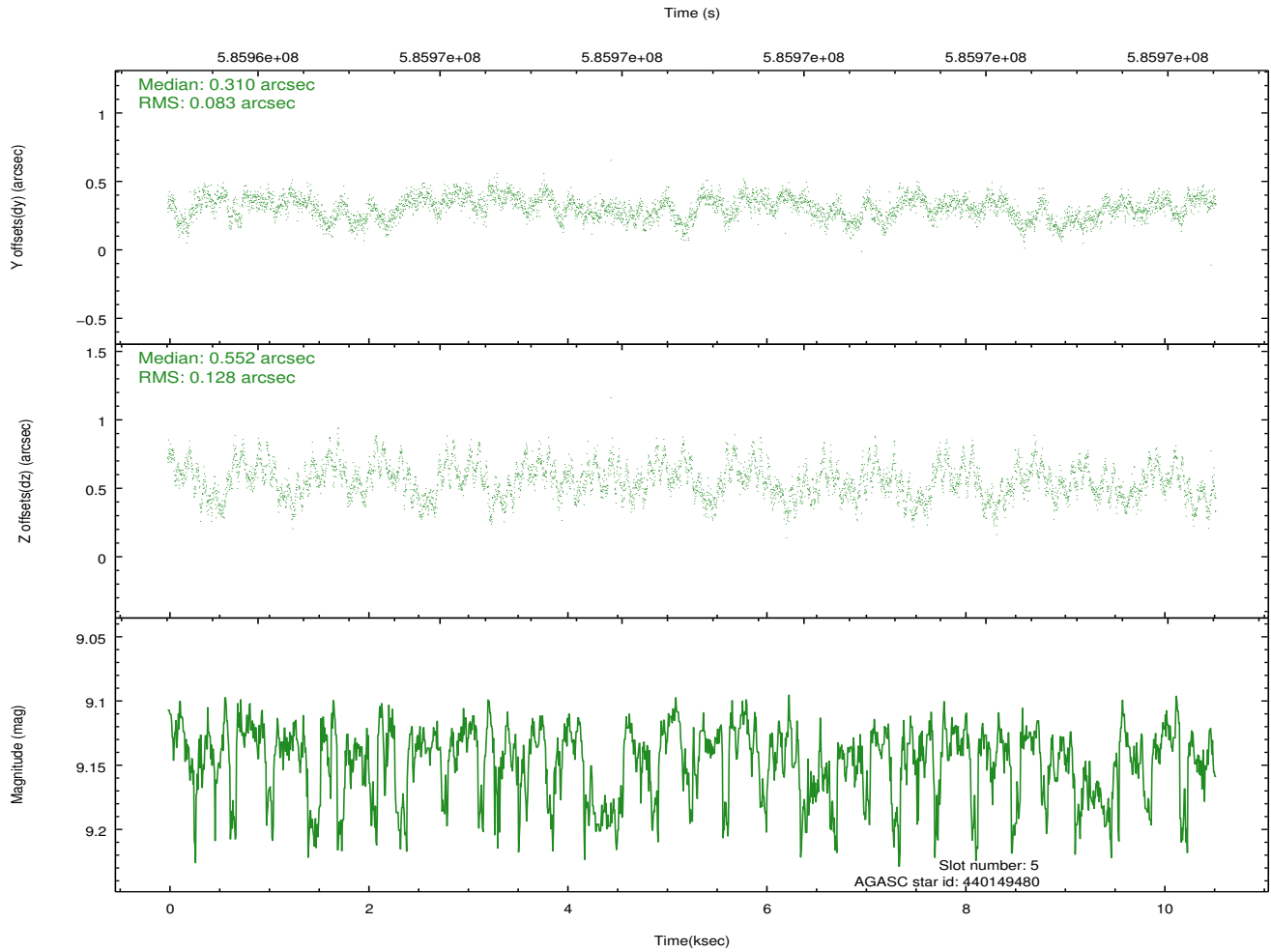
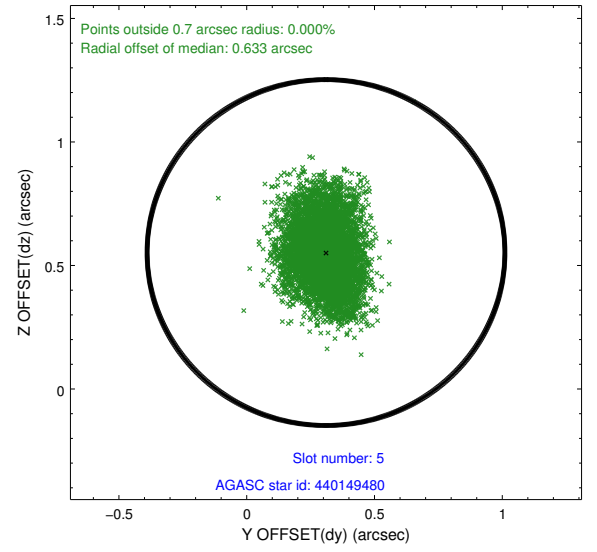
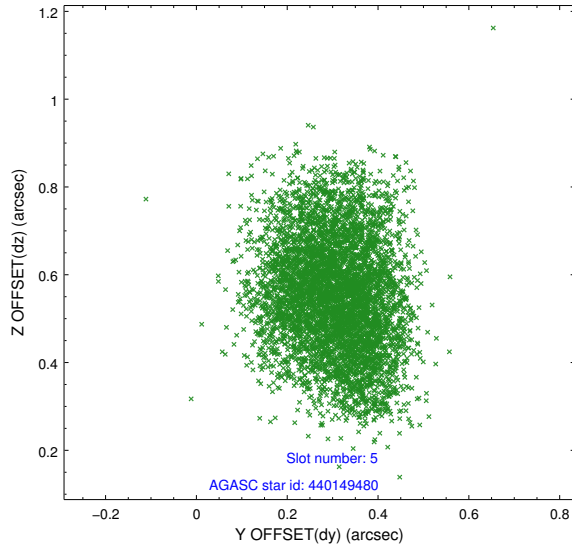
2.4.1 Slot 3



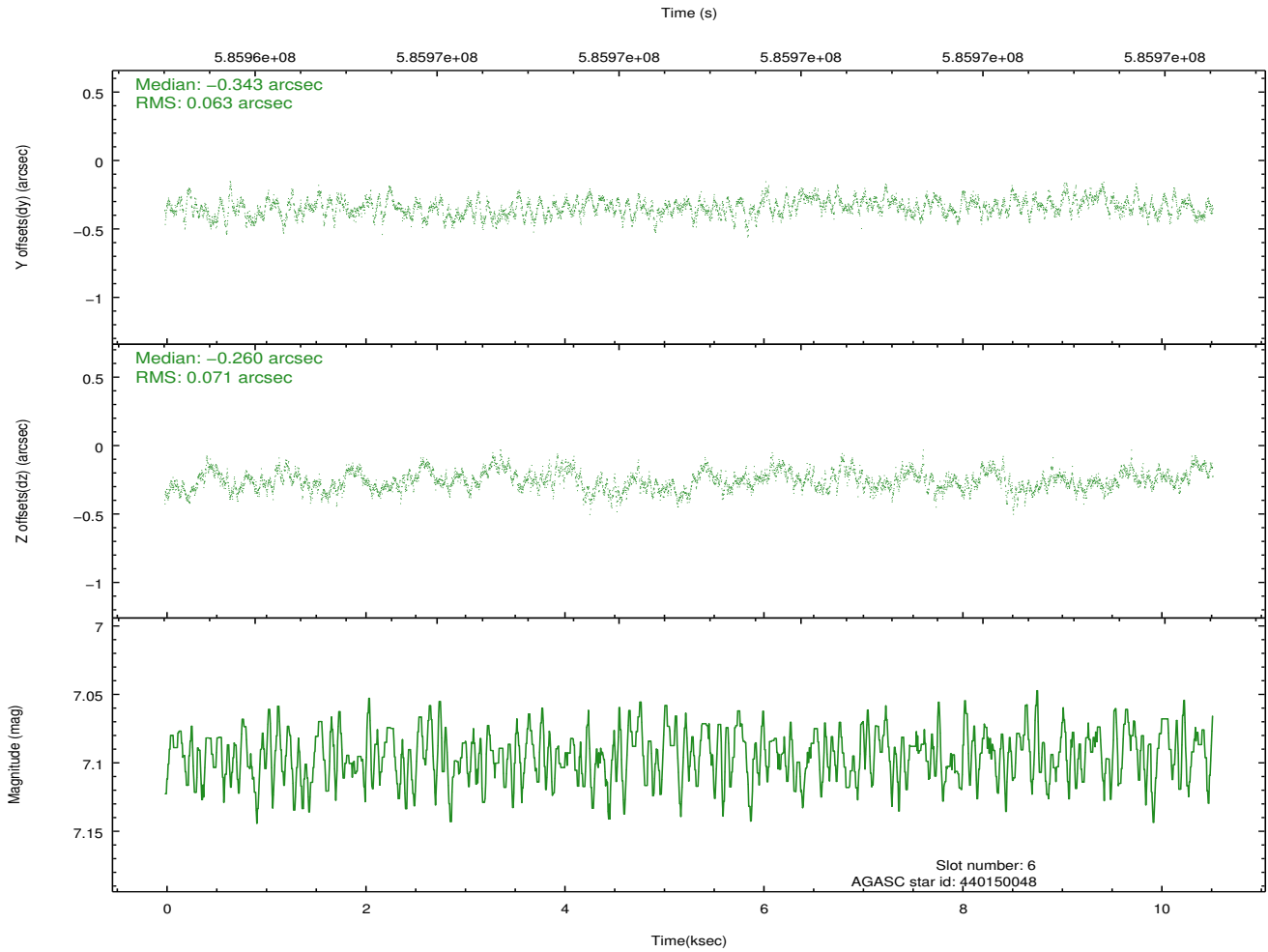
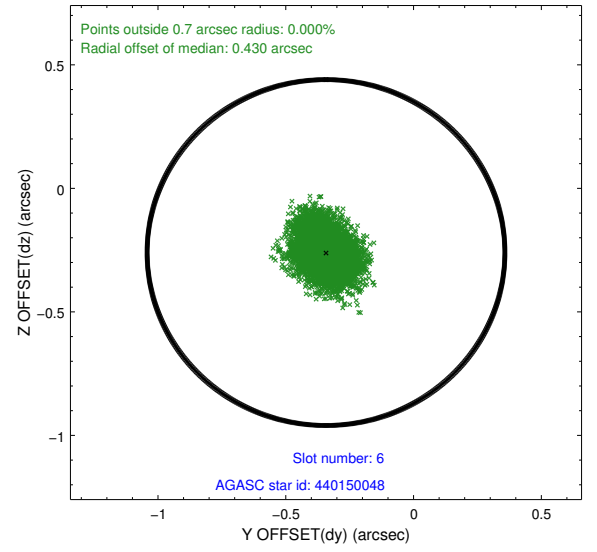
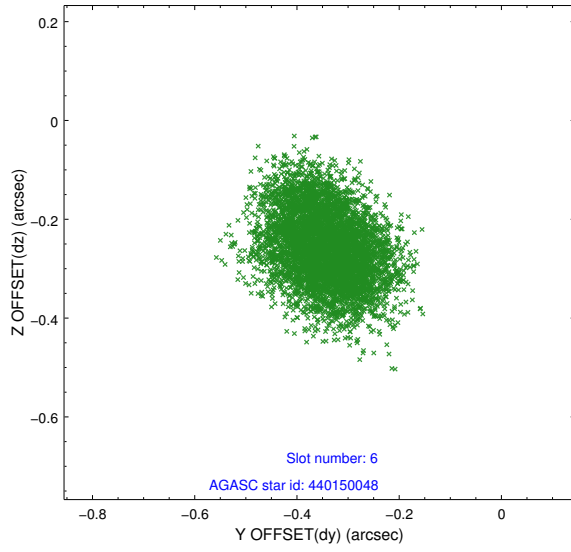
2.4.2 Slot 4



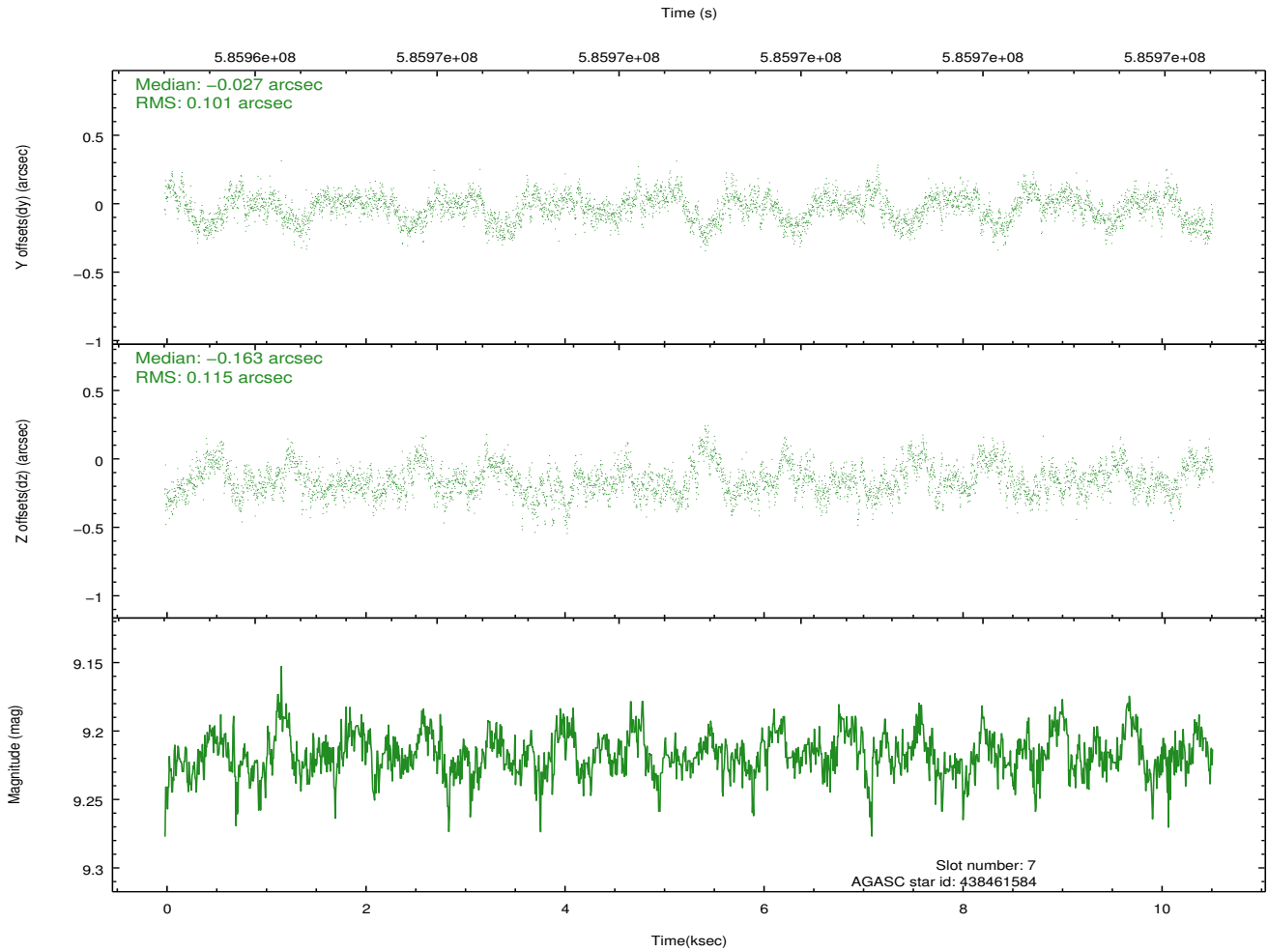
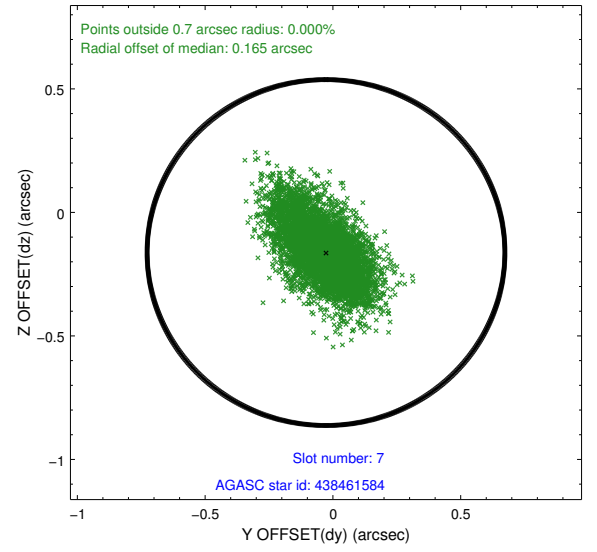
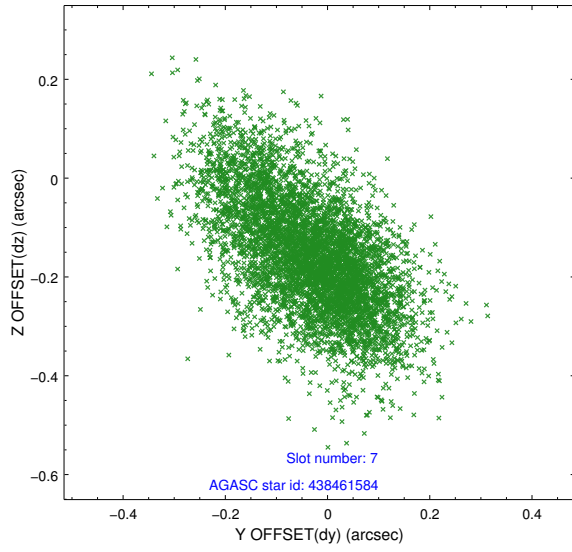
2.4.3 Slot 5



2.4.4 Slot 6

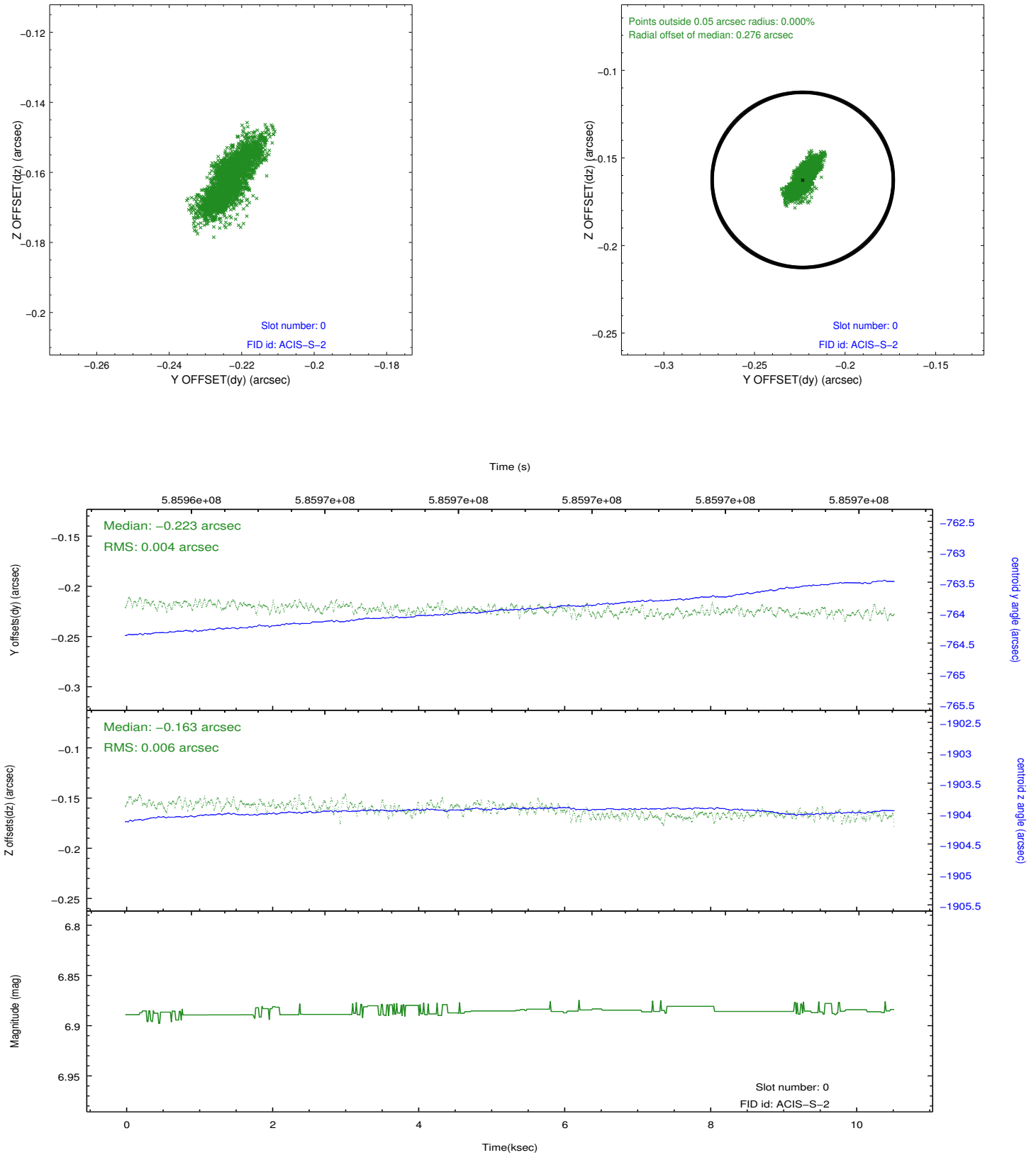


2.4.5 Slot 7

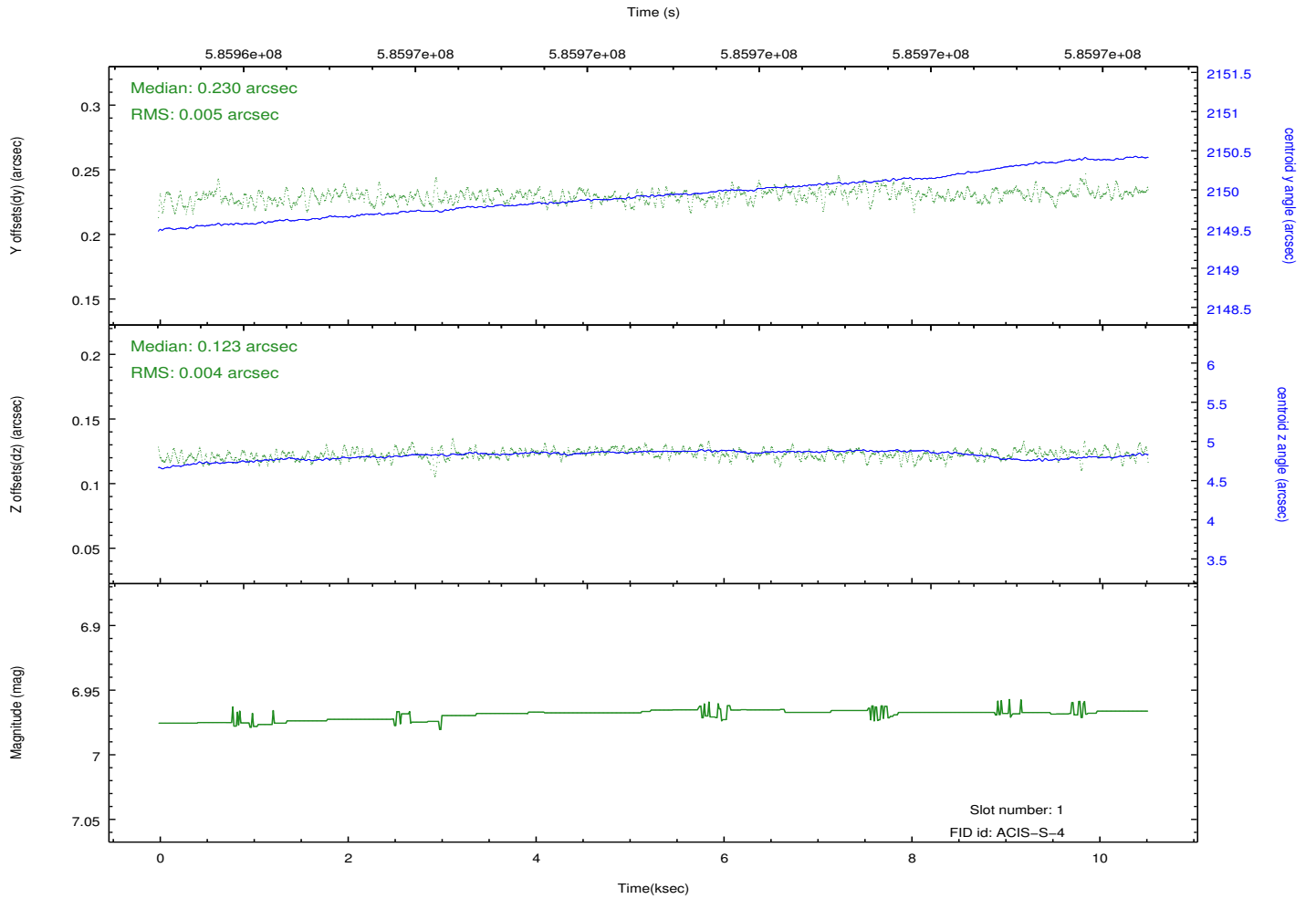
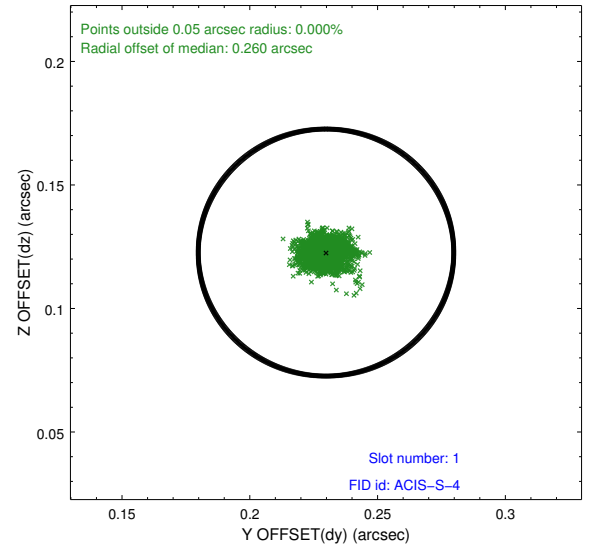
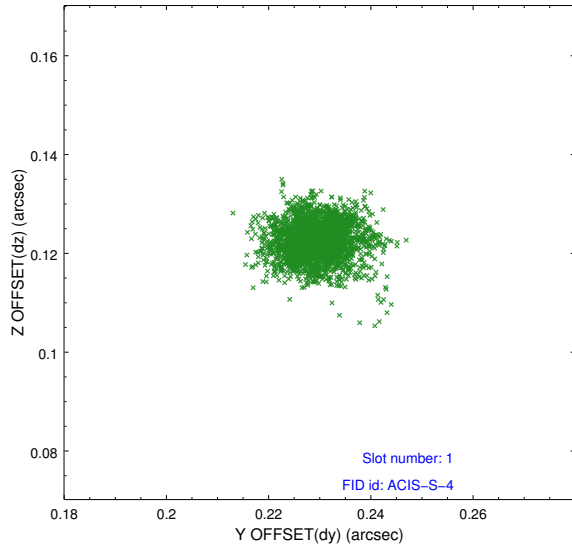


2.5 FID Slots

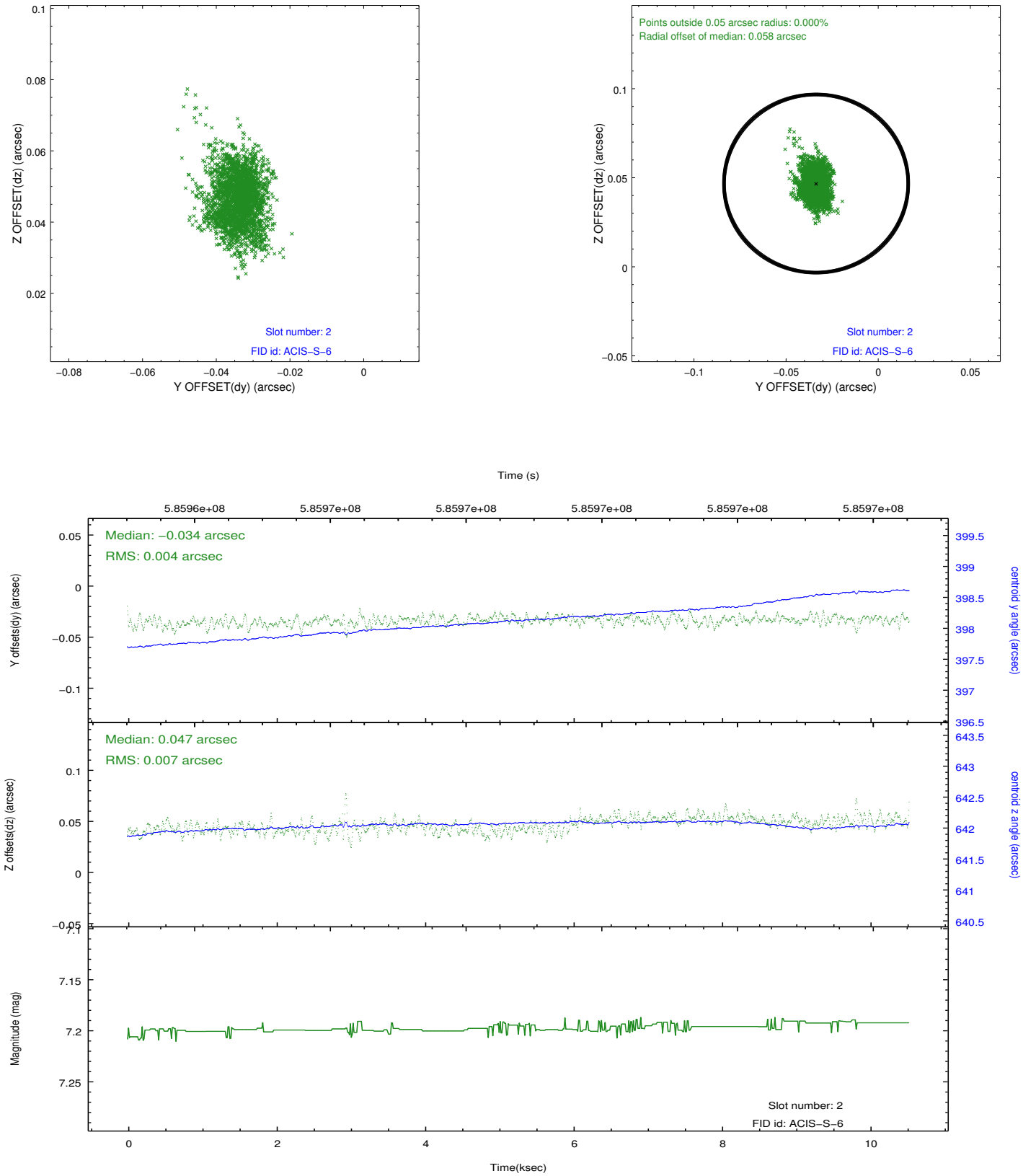
2.5.1 Slot 0



2.5.2 Slot 1

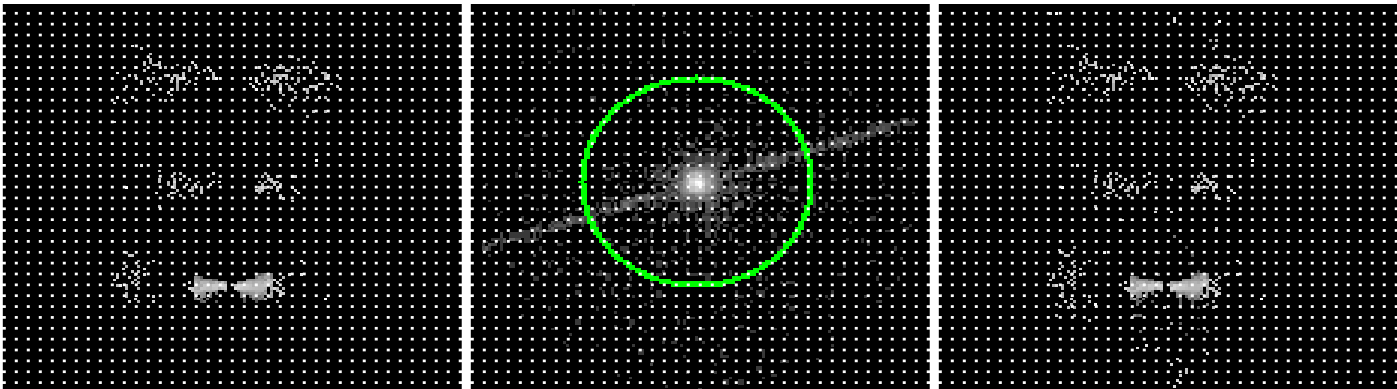


2.5.3 Slot 2



3 Gratings

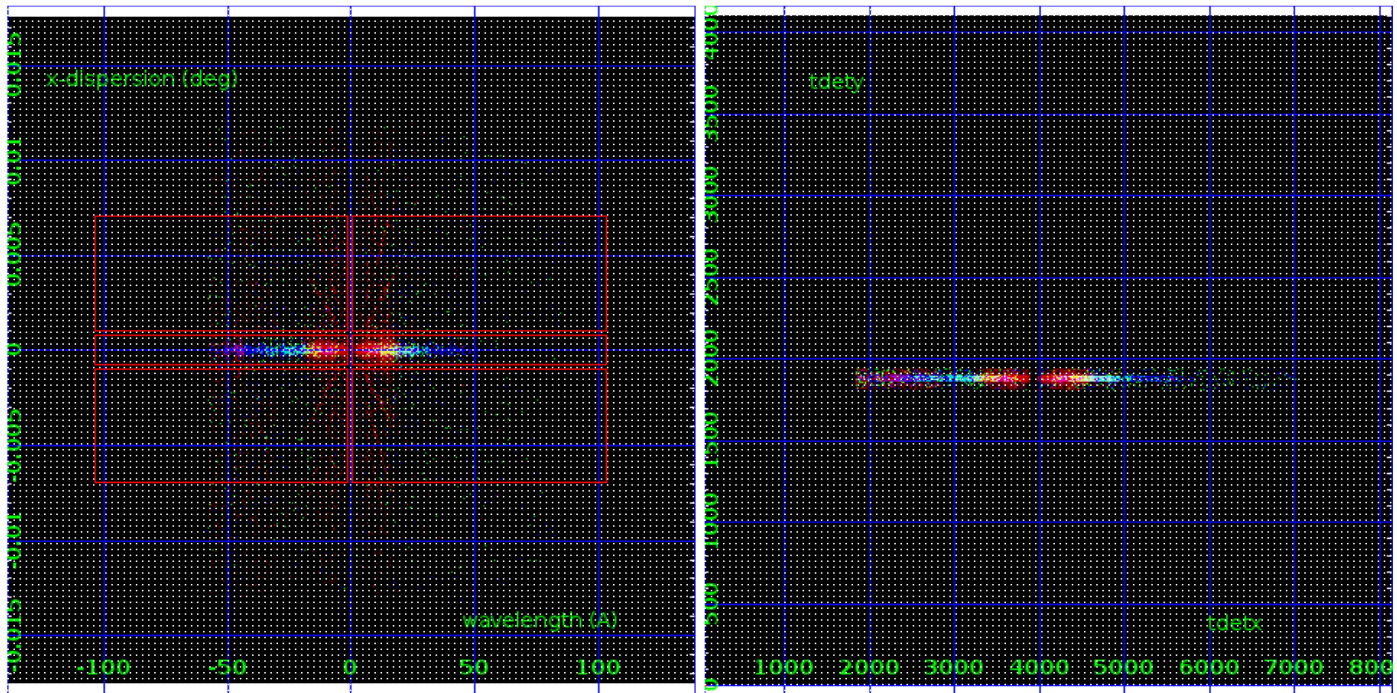
3.1 LETG Arm



LETG Order Sort 123

LETG Zero Order

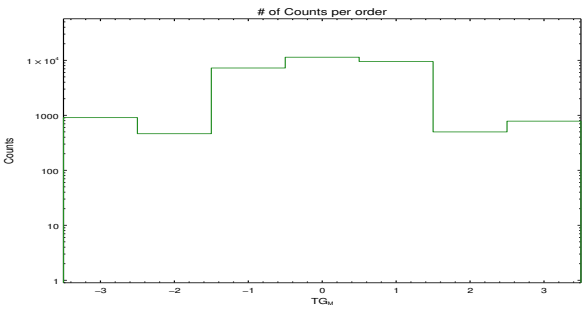
LETG Order Sort ALL

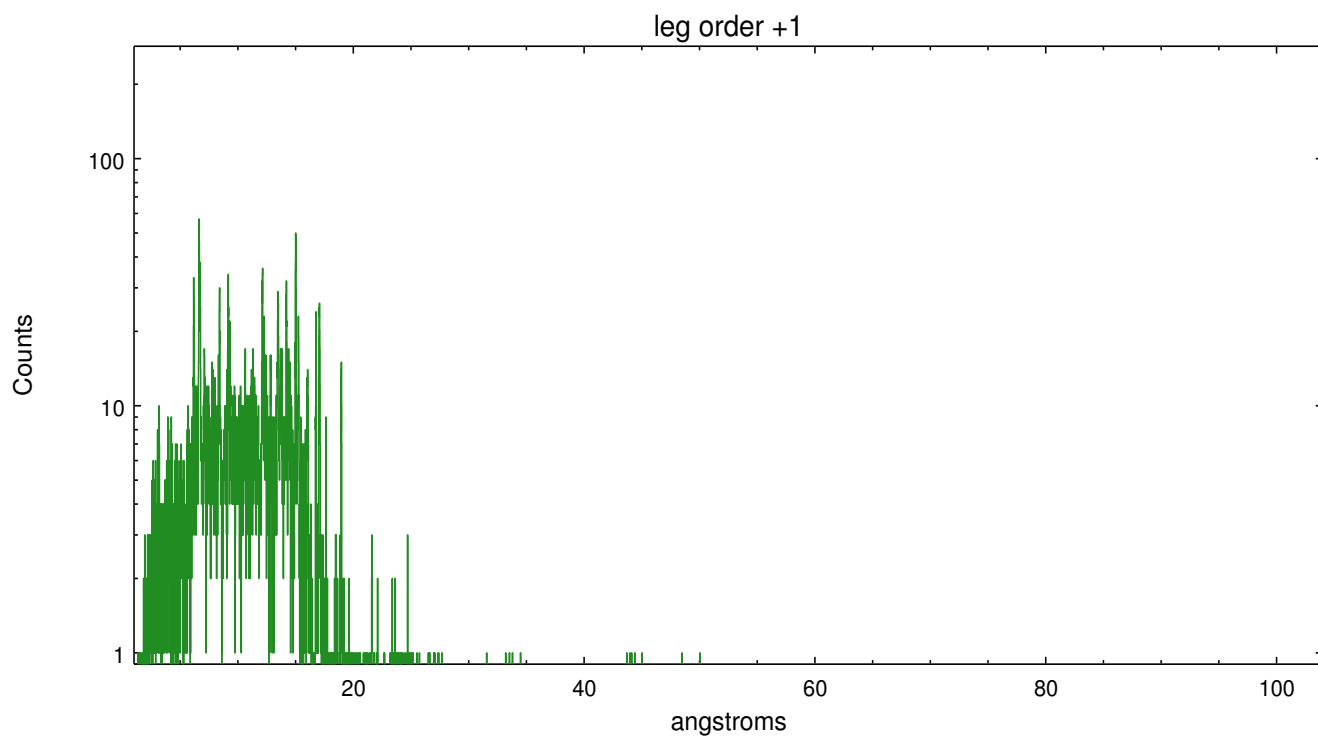
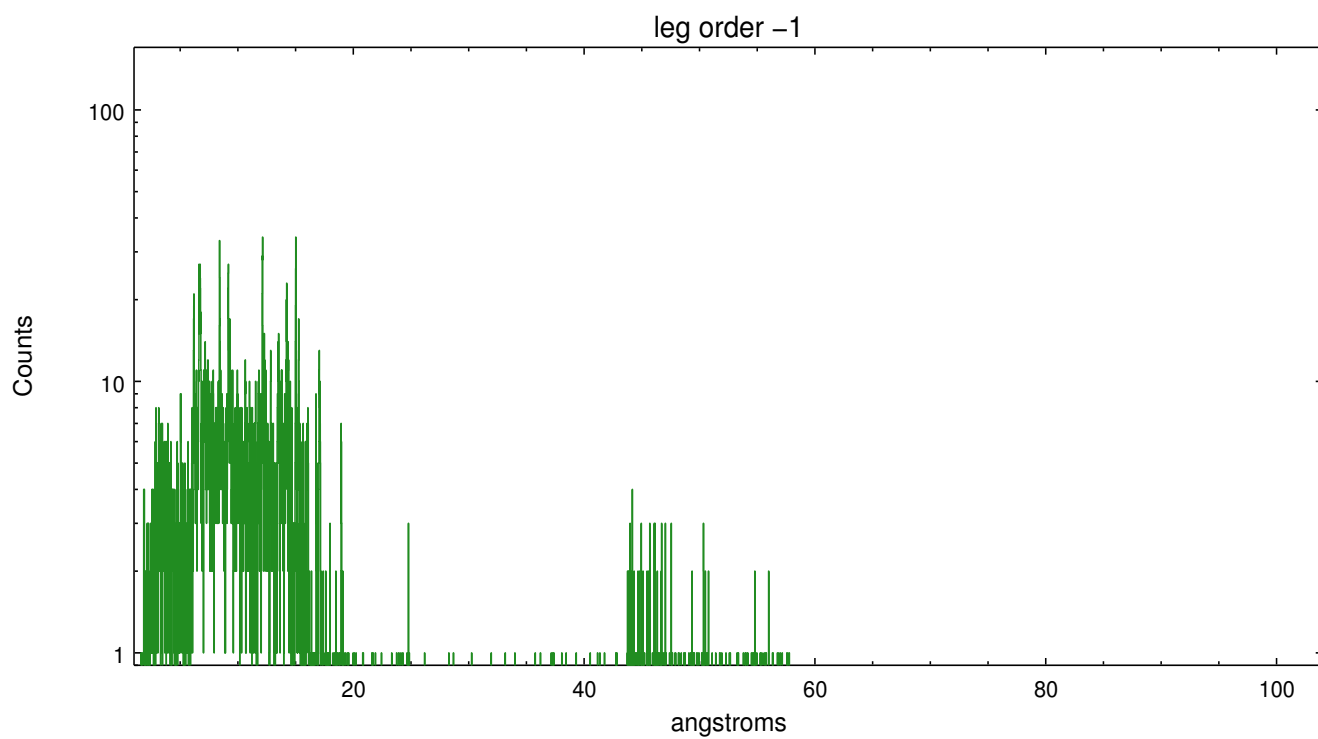


Spot Image LETG

Full Detector LETG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	908	463	7252	11389	9506	499	783





A Summary

A.1 Status

V&V Scientist	Joy Nichols
V&V Date (YYYY-MM-DD)	2016.07.28
V&V Edition	2
V&V Disposition and Status	OK
V&V Charge Time	10.063200399995

A.2 Comments

Zeroth order piled up. The zeroth order sky position was determined using a software tool developed by CXC called findzero, which is available in CIAO as part of the tgdetect2 tool. The tool calculates the point of intersection of the readout streak on the ACIS CCD and the meg or leg dispersed spectral arm, rather than using a centroid position of the source. The findzero results are more accurate than source centroid in this case.

===

Gain and CTI correction are not well calibrated on CCD_ID 5 (ACIS-S1). Default order sorting can clip some regions, particularly longward of 30A (first order). User-specified custom processing parameters may be required in tg_resolve_events (osipfile=none, osort_lo, osort_hi ~0.5) though this can allow more zeroth order background at short wavelengths.