

V&V Reference Report

L2 ASCDS Version : 8.4.3.1

Observation 13101 - L2 Version 3
Chandra X-Ray Center

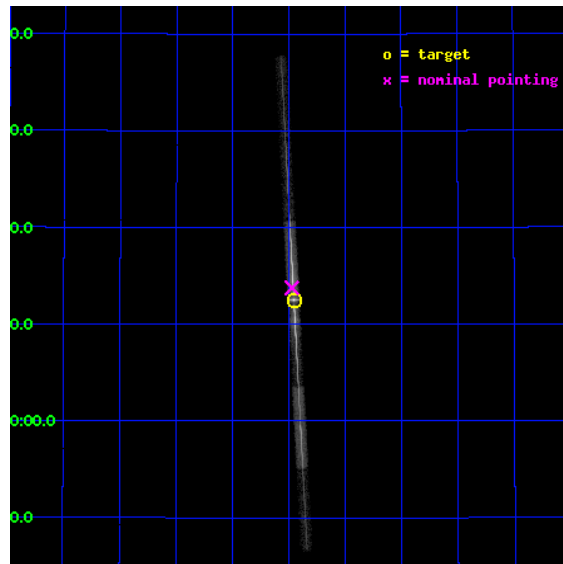
L2 Processing Date : Mar 21 2012

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1 Front

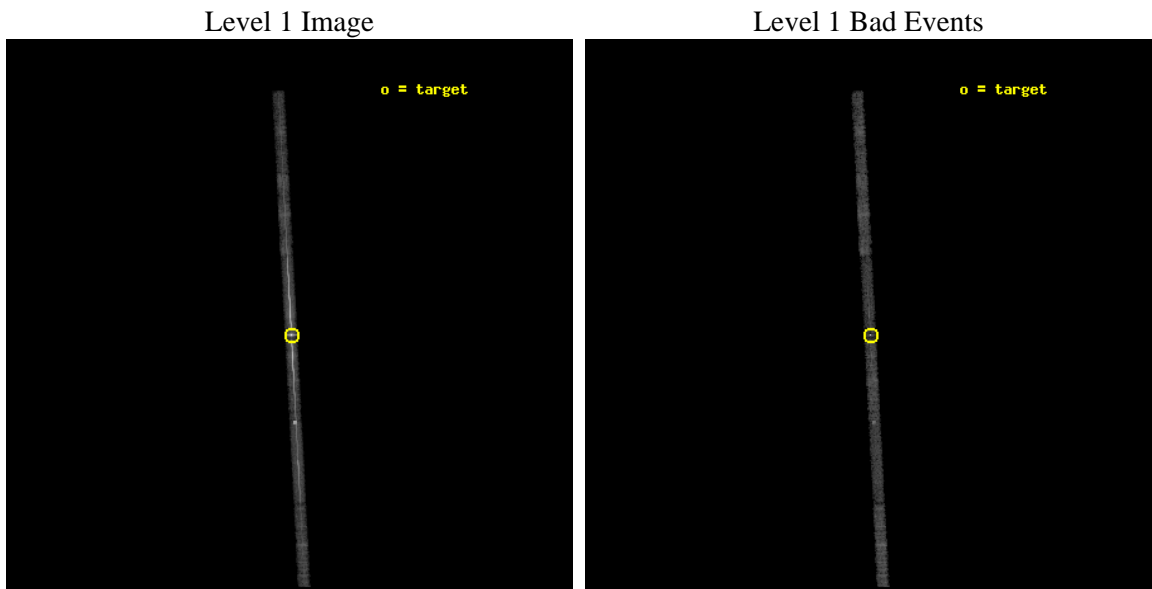
seq_num	790231	Sequence number
obs_id	13101	Observation id
title	AO-12 Calibration Observations of Mkn421	Proposal title
observer	Dr. CXC Calibration	Principal investigator
object	MKN421	Source name
dtcycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	166.113333	Observer's specified target RA [deg]
dec_targ	38.208806	Observer's specified target Dec [deg]
ra_nom	166.11812515813	Nominal RA [deg]
dec_nom	38.229523371311	Nominal Dec [deg]
roll_nom	266.95474561848	Nominal Roll [deg]
revision	3	Processing version of data
ontime	9764.2998336554	Sum of GTIs [s]
livetime	9223.5370338426	Livetime [s]
ontime4	9764.2998336554	Sum of GTIs [s]
ontime5	9764.2968963981	Sum of GTIs [s]
ontime6	9764.2558563948	Sum of GTIs [s]
ontime7	9764.2998336554	Sum of GTIs [s]
ontime8	9764.2148163915	Sum of GTIs [s]
ontime9	9764.1737763882	Sum of GTIs [s]
l2events	133830	Number of level 2 events



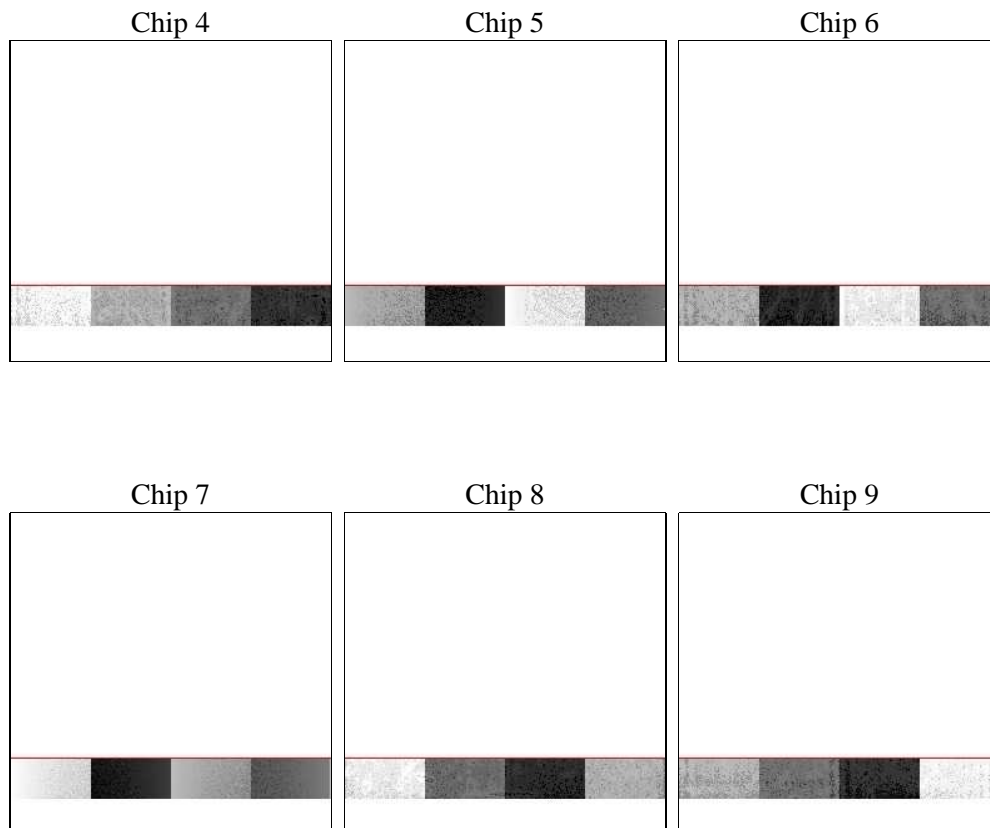
2 OBI

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	8.4.3	Processing system revision	ontime	9764.2998336554	Sum of GTIs [s]
caldbver	4.4.8	 	ontime4	9764.2998336554	Sum of GTIs [s]
date	2012-03-18T18:17:29	Date and time of file creation	ontime5	9764.2968963981	Sum of GTIs [s]
revision	2	Processing version of data	ontime6	9764.2558563948	Sum of GTIs [s]
			ontime7	9764.2998336554	Sum of GTIs [s]
			ontime8	9764.2148163915	Sum of GTIs [s]
			ontime9	9764.1737763882	Sum of GTIs [s]
			l1events	206807	Number of level 1 events

2.1.4 Events

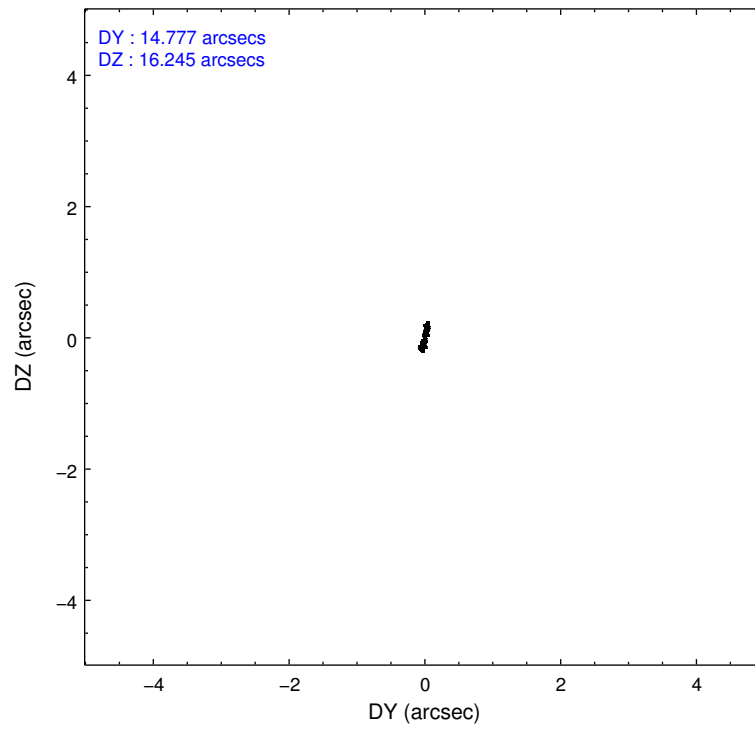
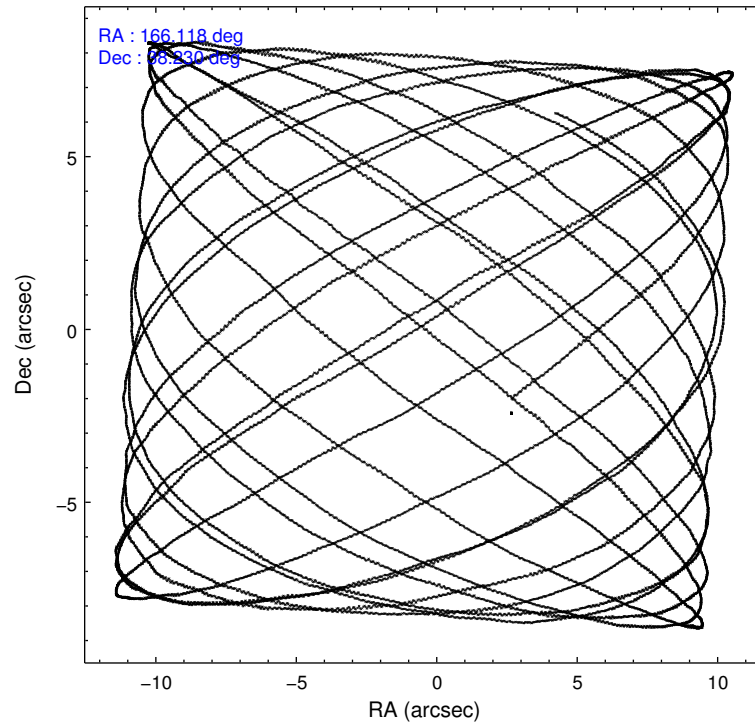
	ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
level 1 events	12306	27288	48882	92441	16418	9472
rejected events	9889	6460	8745	18317	9909	7239
rejected %	80%	23%	17%	19%	60%	76%

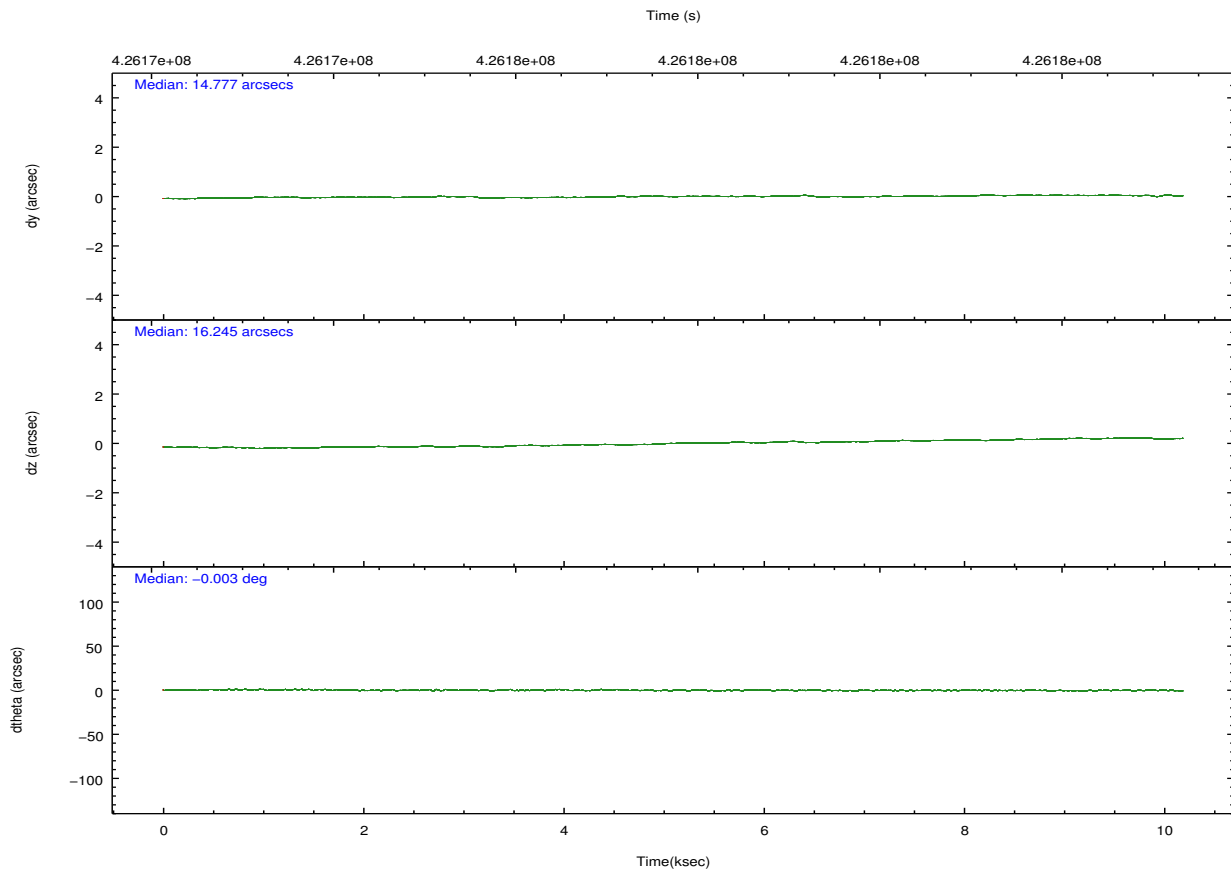
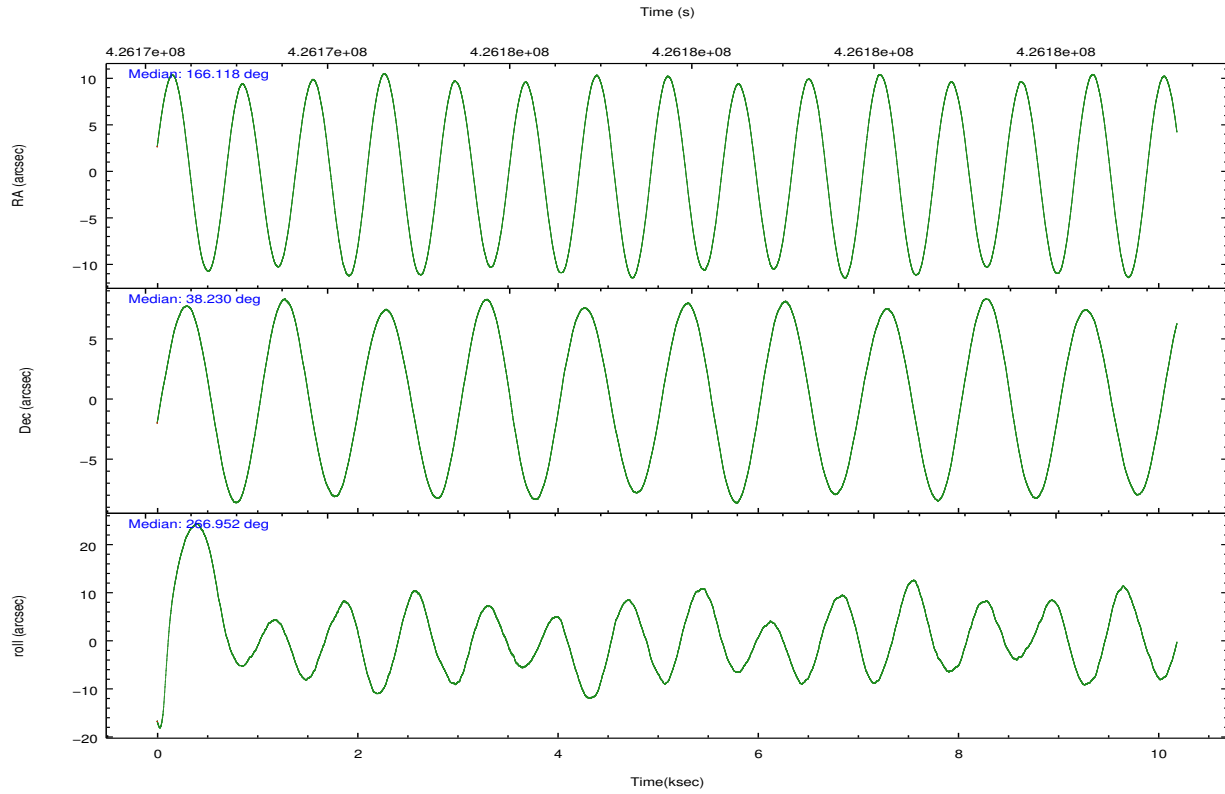
	ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
grade 0 events	1455	9699	32440	19290	3656	1337
	11%	35%	66%	20%	22%	14%
grade 1 events	5	342	124	549	7	4
	0%	1%	0%	0%	0%	0%
grade 2 events	386	3206	4007	18413	1003	272
	3%	11%	8%	19%	6%	2%
grade 3 events	179	1423	1358	8394	437	199
	1%	5%	2%	9%	2%	2%
grade 4 events	211	2798	1311	8267	423	204
	1%	10%	2%	8%	2%	2%
grade 5 events	331	1379	450	3590	454	360
	2%	5%	0%	3%	2%	3%
grade 6 events	186	3703	1027	19767	990	221
	1%	13%	2%	21%	6%	2%
grade 7 events	9553	4738	8165	14171	9448	6875
	77%	17%	16%	15%	57%	72%

2.2 Compared Parameters

Parameter	Planned	Actual	Parameter	Planned	Actual
Instrument	ACIS	ACIS	Obspar format version number	7	7
Detector	ACIS-456789	ACIS-456789	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	166.101866	166.1181251581303	CCD I2 on	N	N
[deg] Pointing Dec	38.253712	38.22952337131137	CCD I3 on	N	N
[deg] Pointing Roll	266.808195	266.9547456184775	CCD S0 on	O1	Y
[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)	426172823.184000	426172318.14945	CCD S5 on	Y	Y
Observation start date	2011-07-04T13:19:17	2011-07-04T13:11:58	Number of optional ACIS chips dropped	0	0
[s] Observation end time (MET)	426182823.184000	426183046.3125	On-chip summing requested	N	N
Observation end date	2011-07-04T16:05:57	2011-07-04T16:10:46	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	0.7

2.3 Aspect



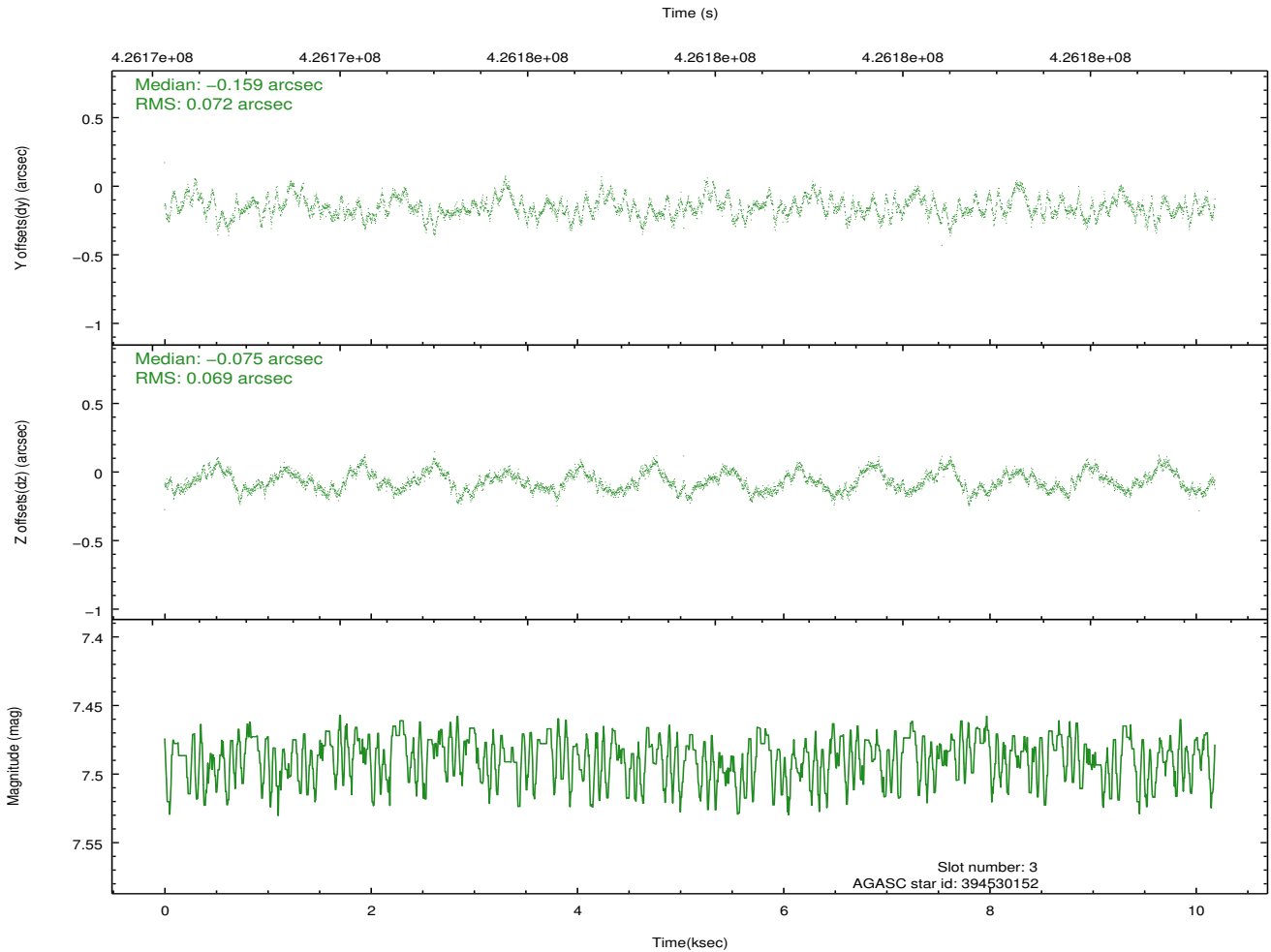
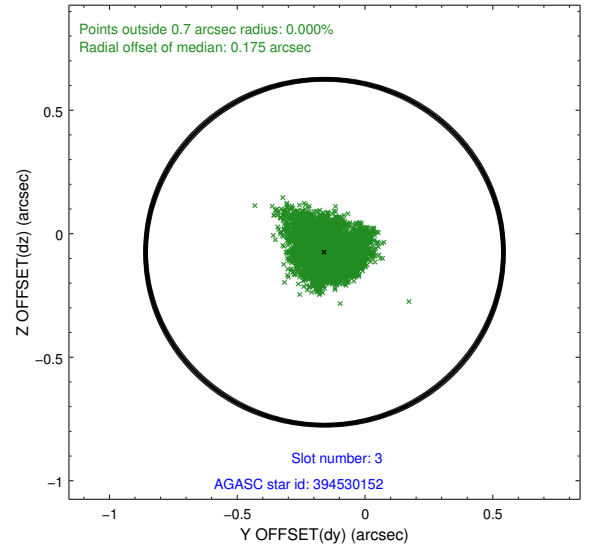
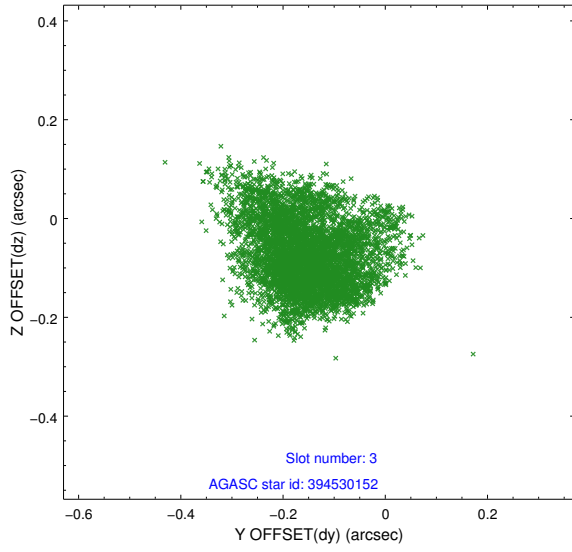


Slot Statistics

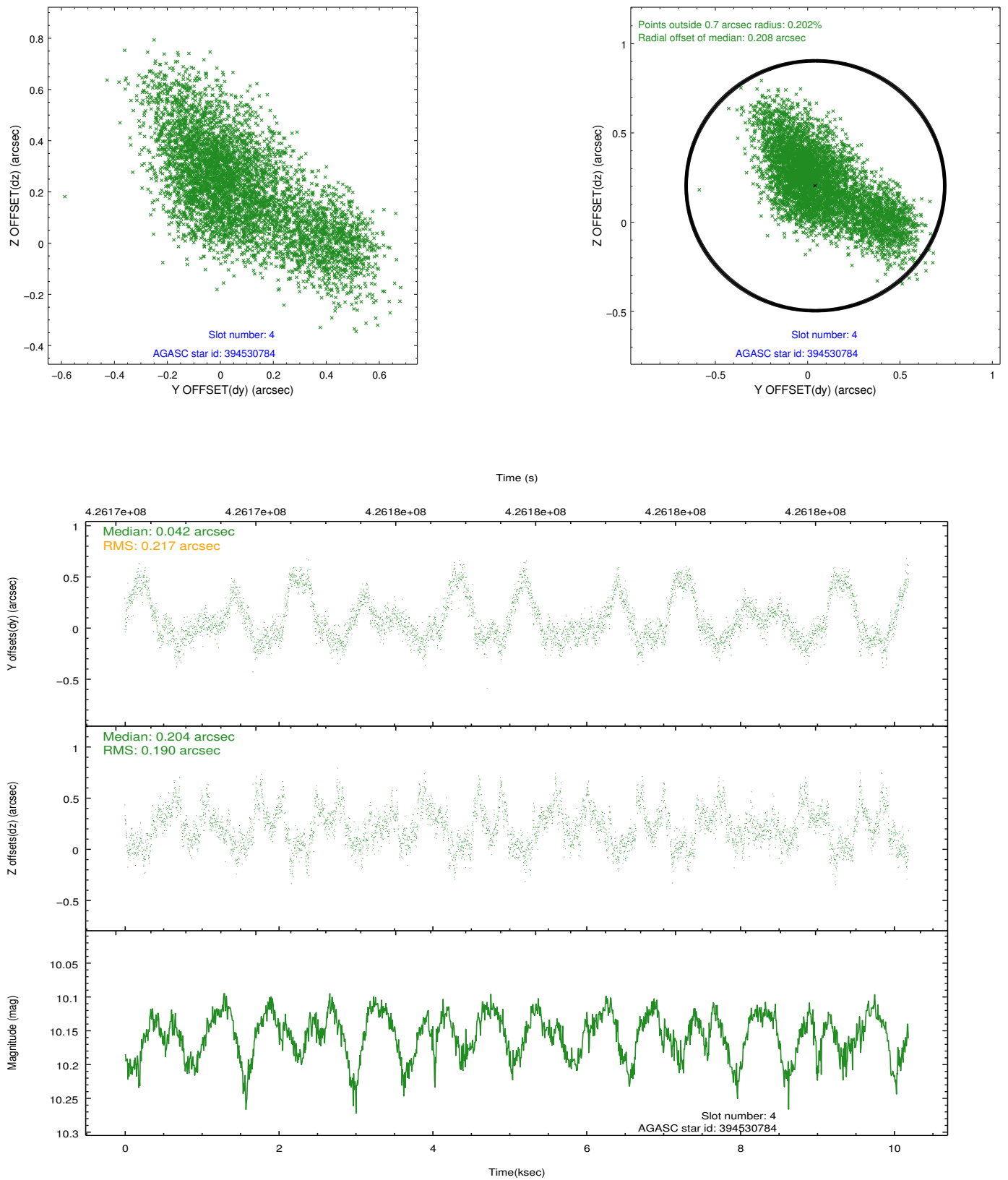
slot	status	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID	ACIS-S-2	6.84	2485	-0.153	-0.125	0.007	0.013	0.000000	0.000000	-767.35	-1902.53
1	FID	ACIS-S-4	6.90	2485	0.132	0.080	0.007	0.011	0.000000	0.000000	2146.01	5.48
2	FID	ACIS-S-6	7.13	2485	-0.007	0.052	0.008	0.014	0.000000	0.000000	395.49	643.48
3	GUIDE	394530152	7.49	4970	-0.159	-0.075	0.107	0.170	166.075805	38.868252	-2204.70	-196.19
4	GUIDE	394530784	10.15	4962	0.042	0.204	0.304	0.522	165.569172	38.418674	-513.60	-1533.22
5	GUIDE	394533848	8.70	4967	0.139	0.009	0.174	0.241	166.382906	38.276007	-125.75	784.39
6	GUIDE	394543960	9.76	4963	0.120	-0.151	0.224	0.353	165.802757	37.787371	1722.65	-756.08
7	GUIDE	394546712	6.59	4969	-0.163	-0.002	0.079	0.120	166.451462	38.394357	-561.63	955.64

2.4 Star Slots

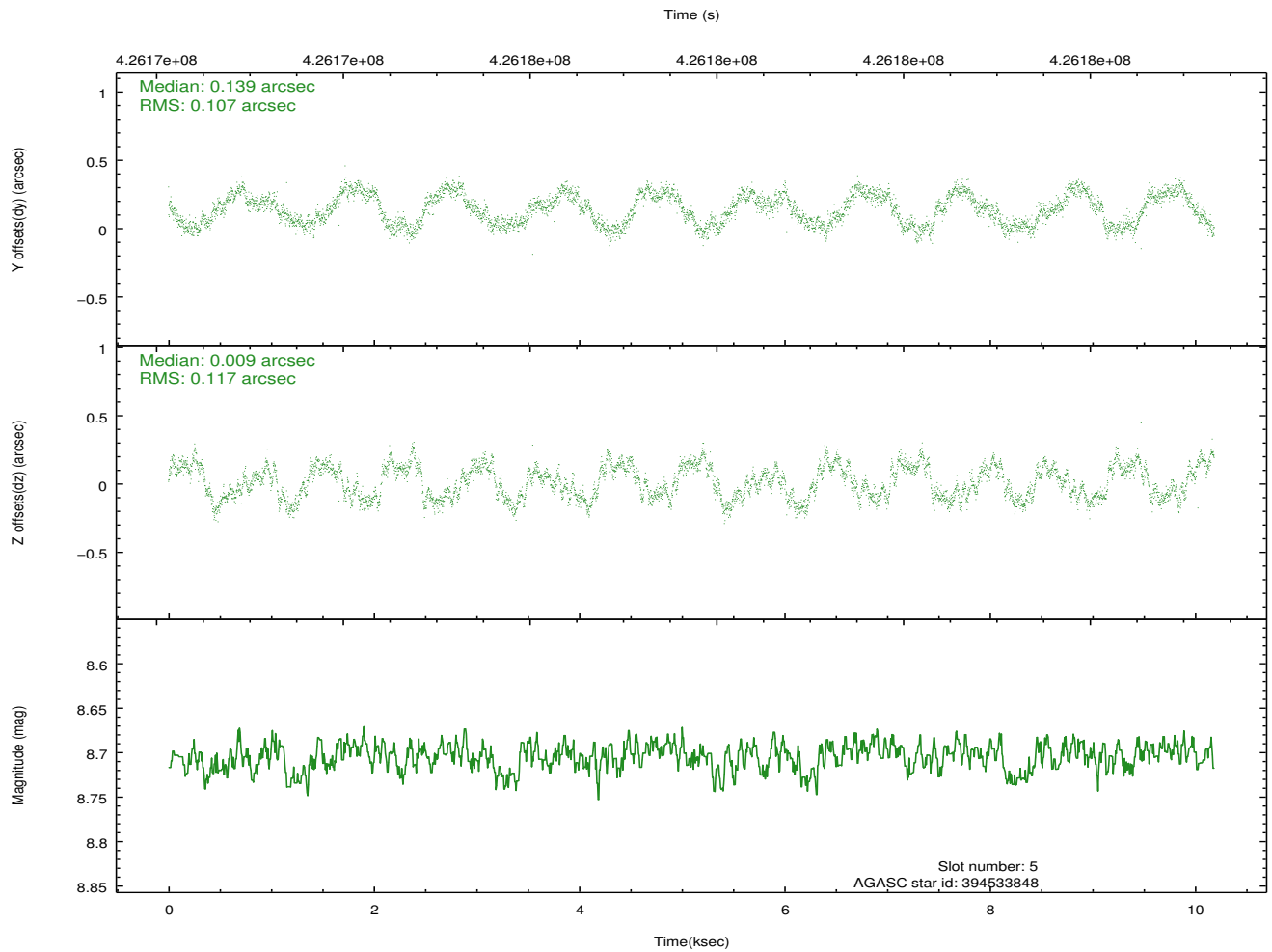
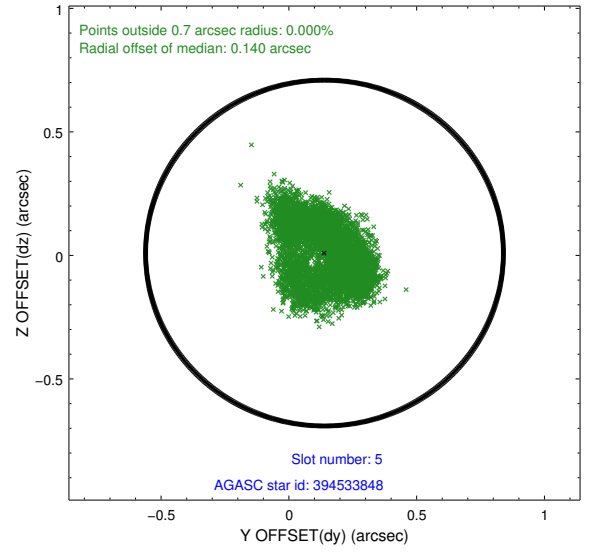
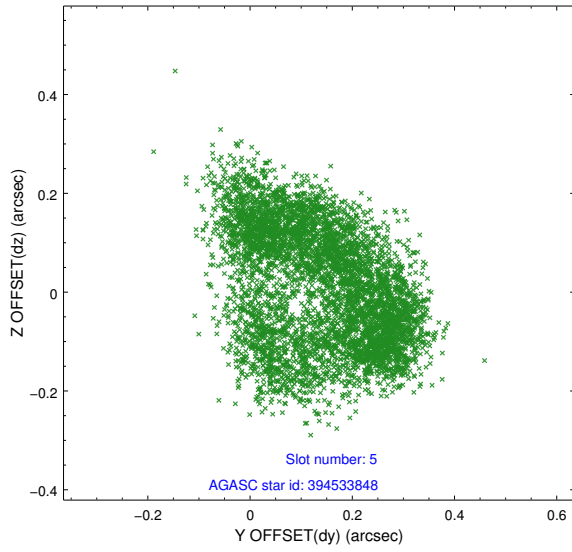
2.4.1 Slot 3



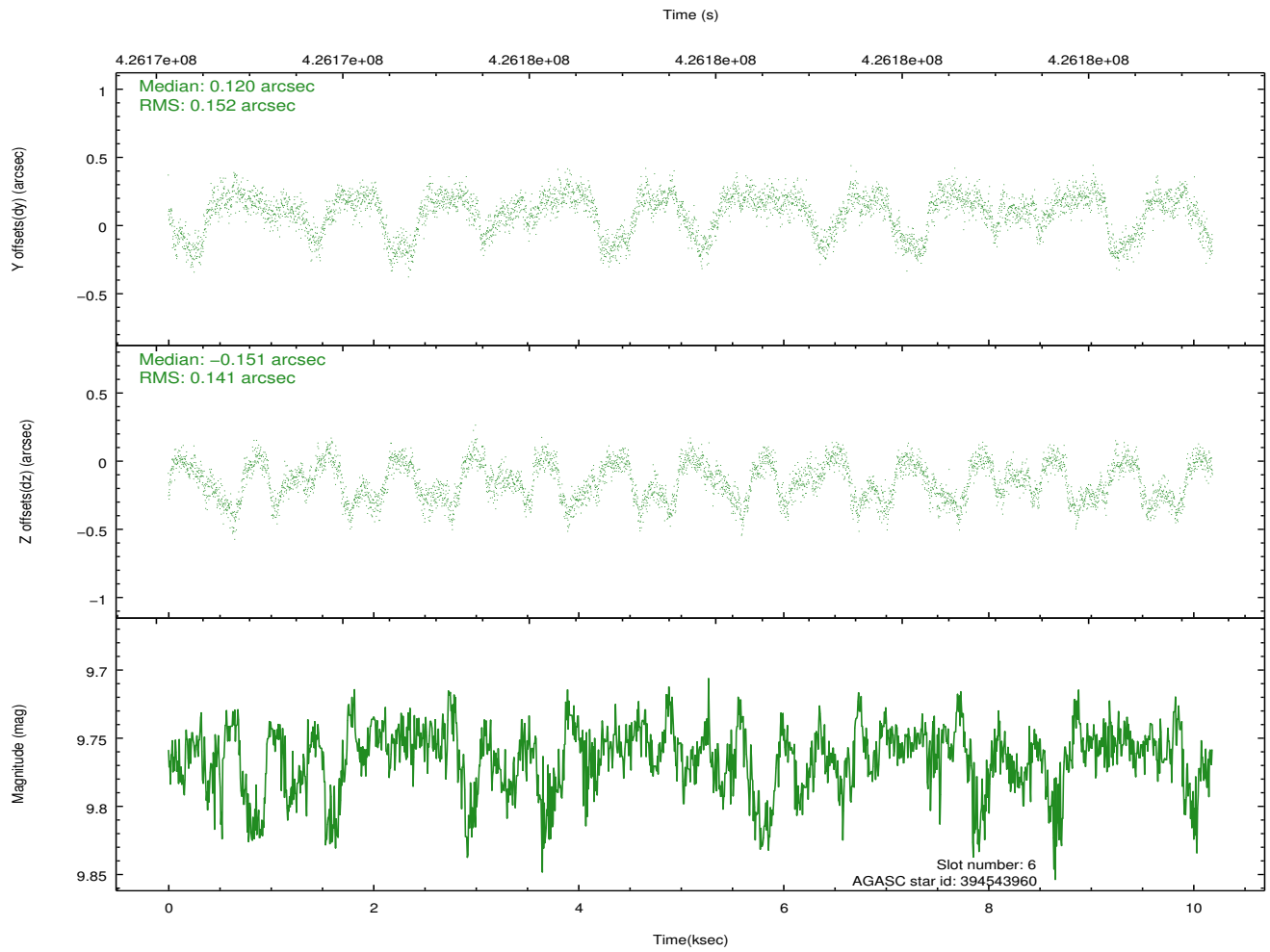
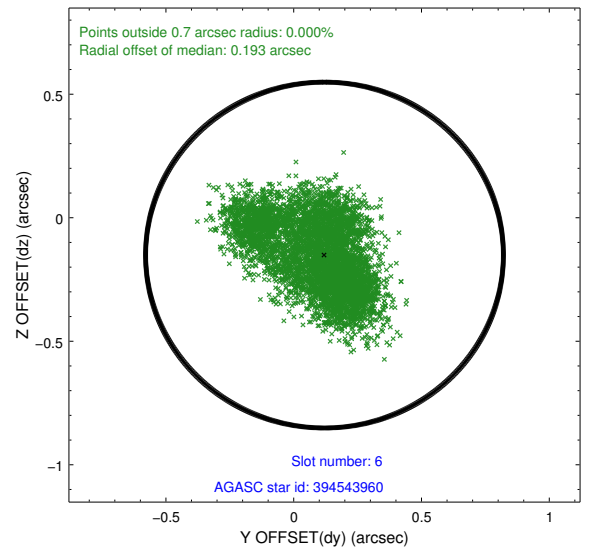
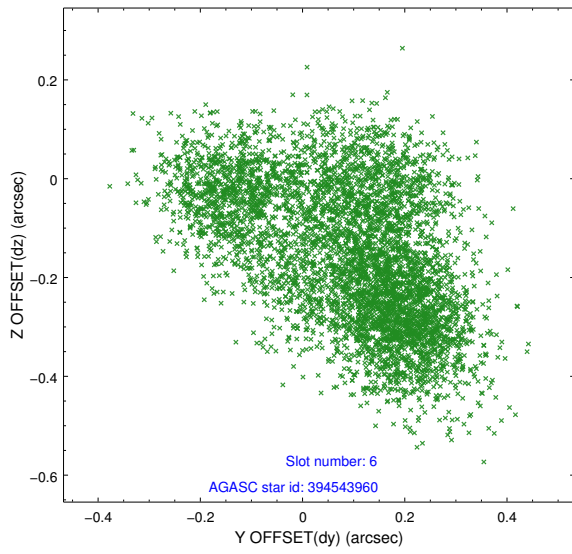
2.4.2 Slot 4



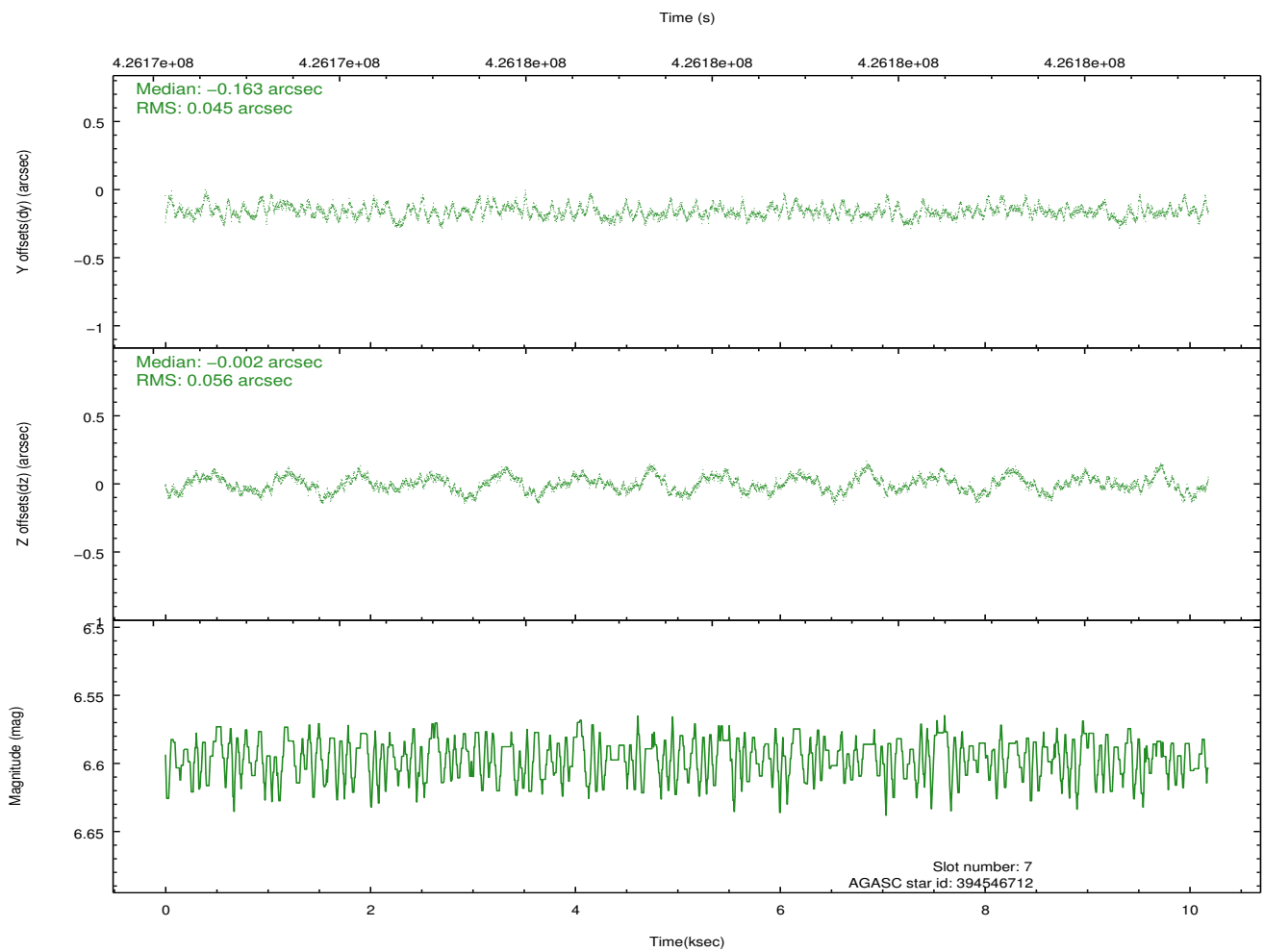
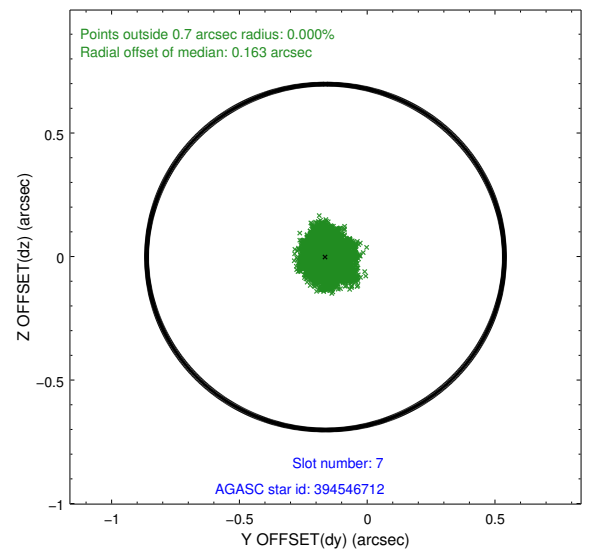
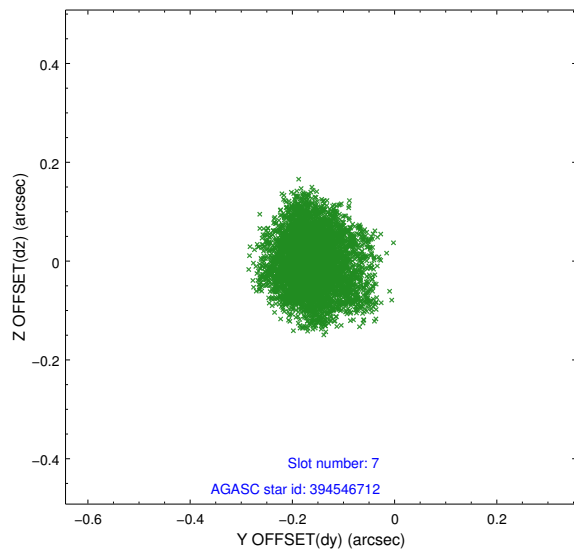
2.4.3 Slot 5



2.4.4 Slot 6

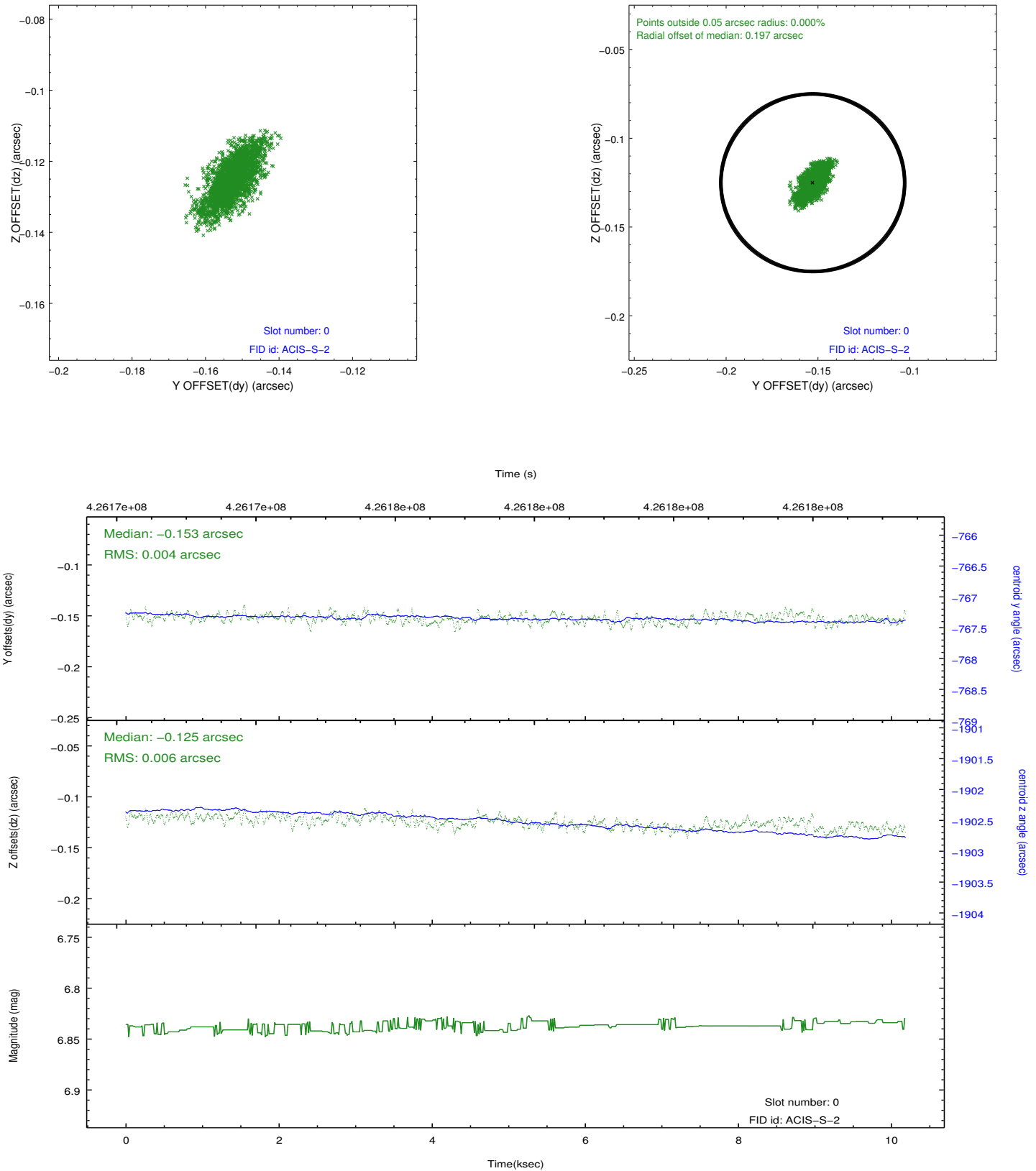


2.4.5 Slot 7

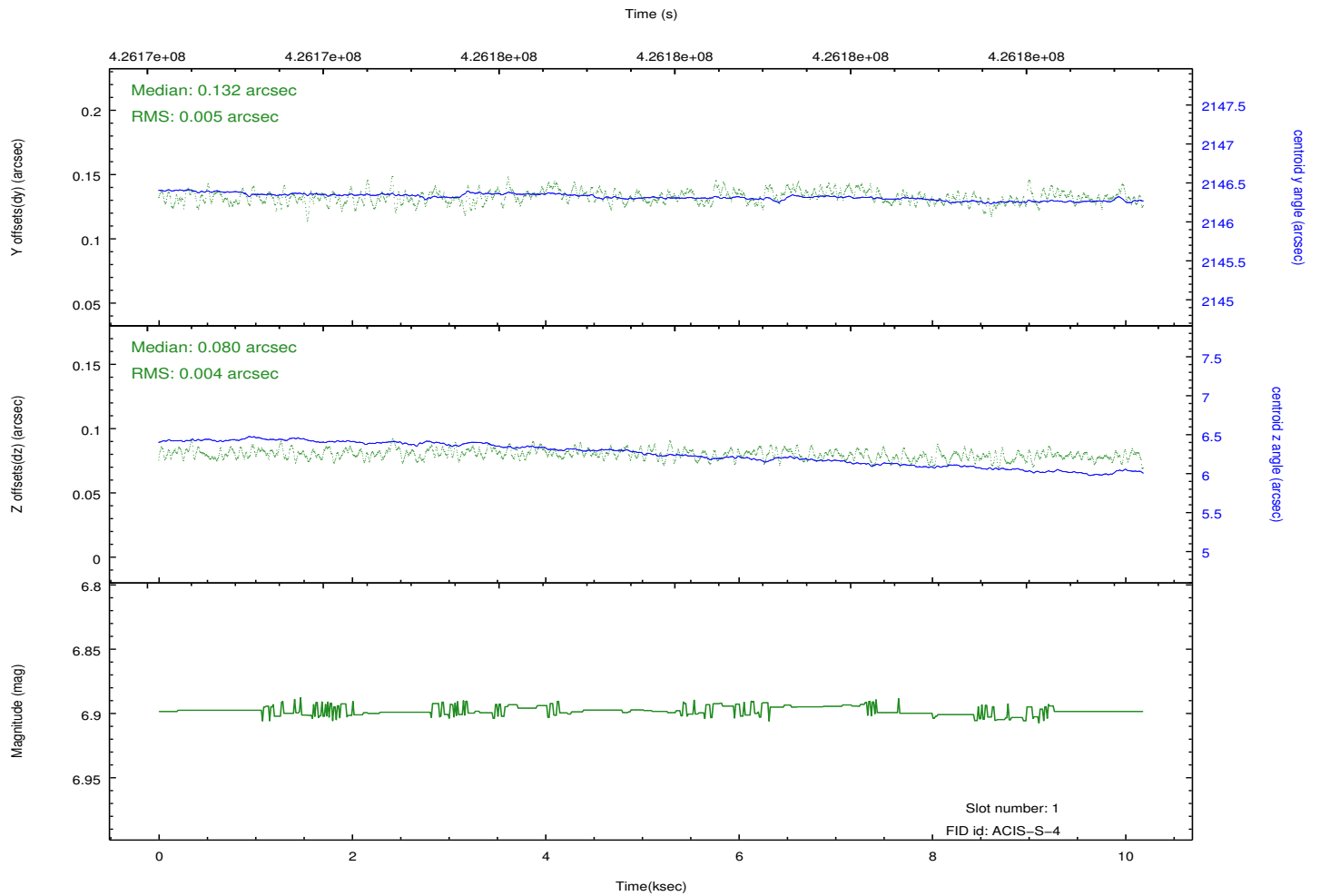
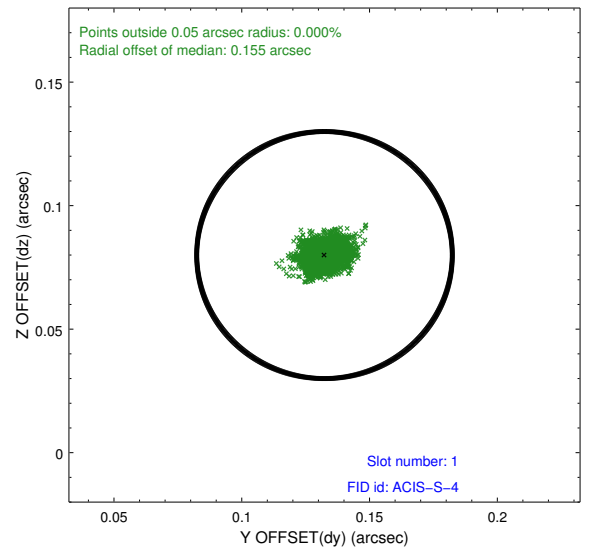
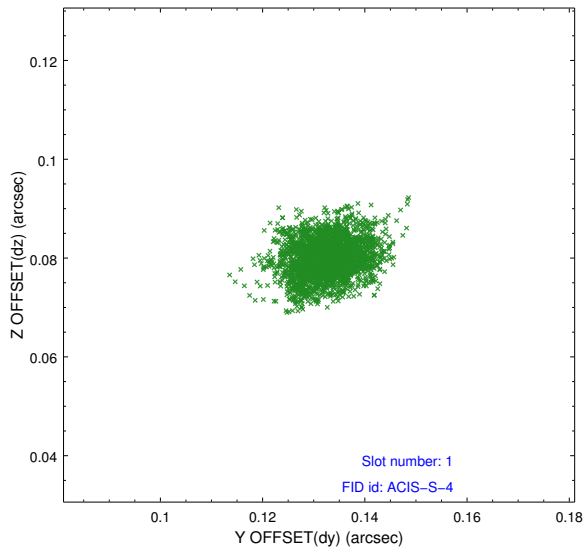


2.5 FID Slots

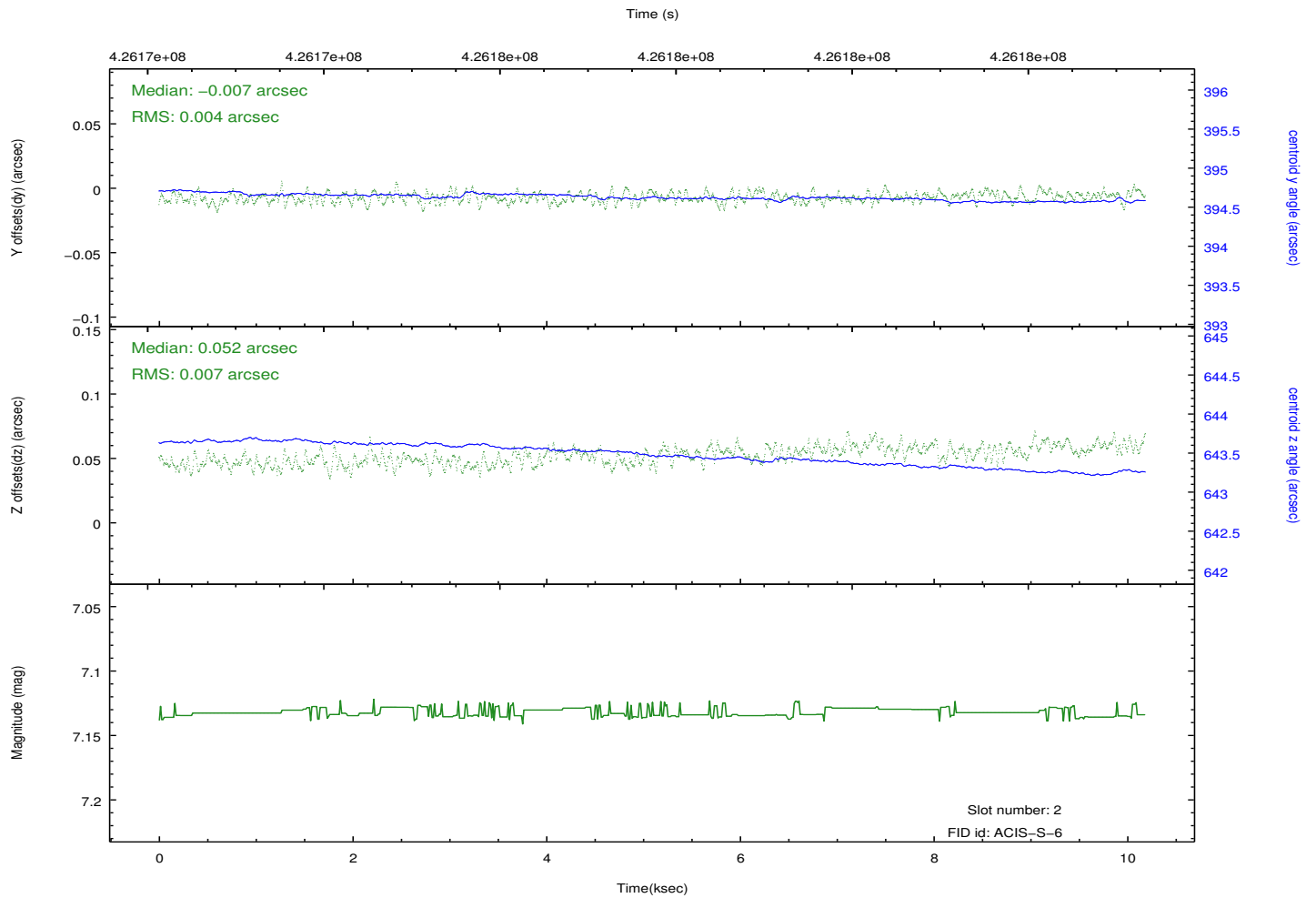
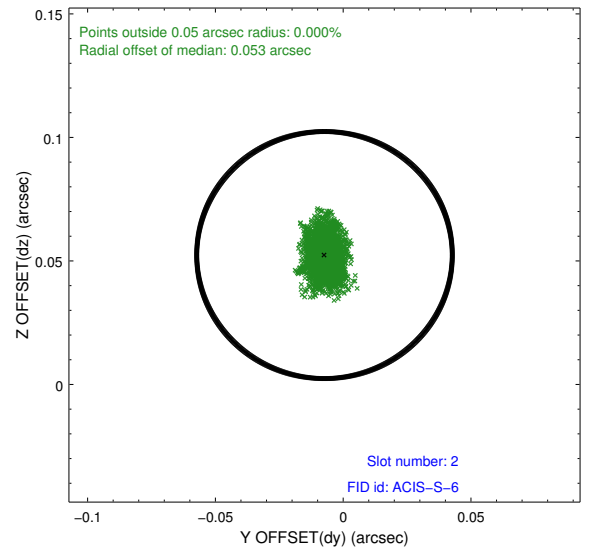
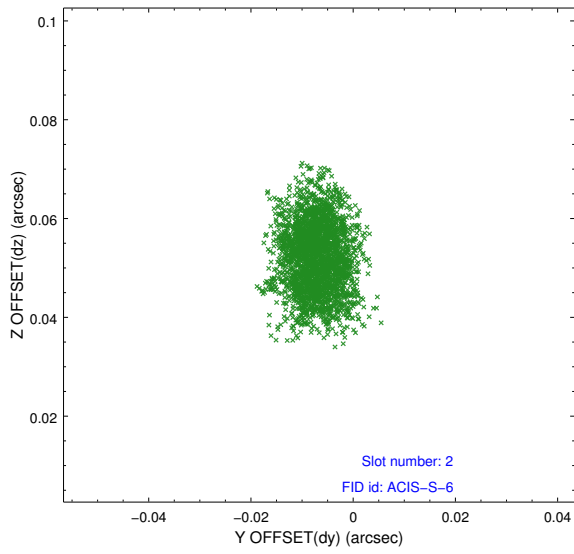
2.5.1 Slot 0



2.5.2 Slot 1

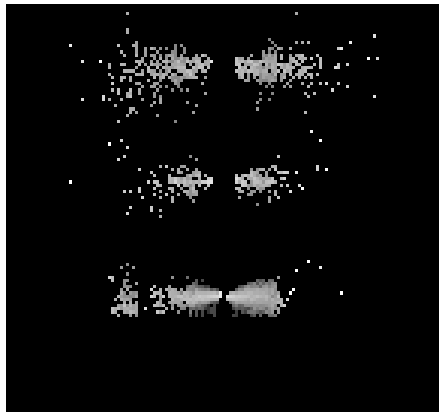


2.5.3 Slot 2

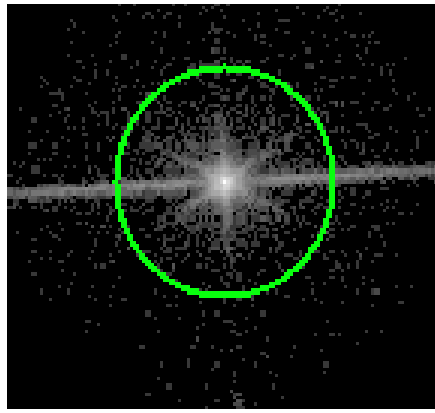


3 Gratings

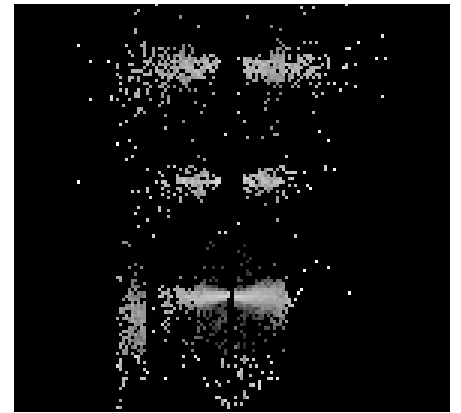
3.1 LETG Arm



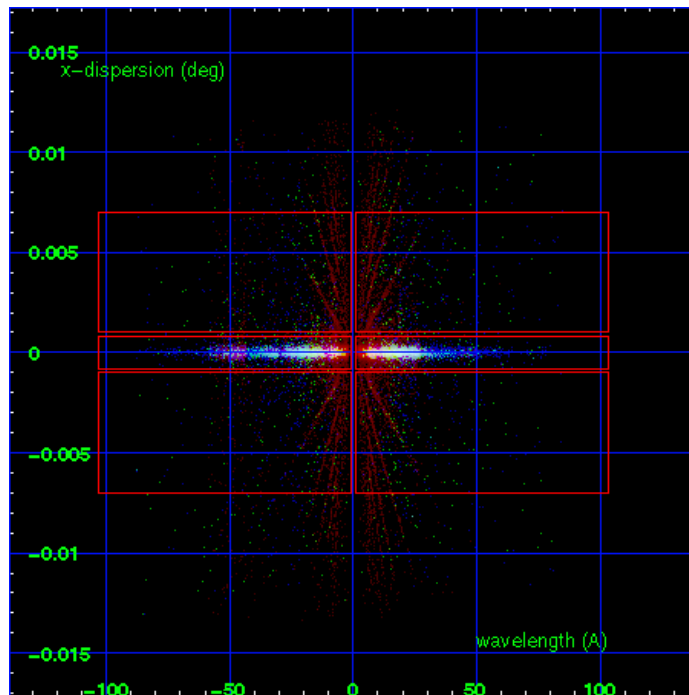
LETG Order Sort 123



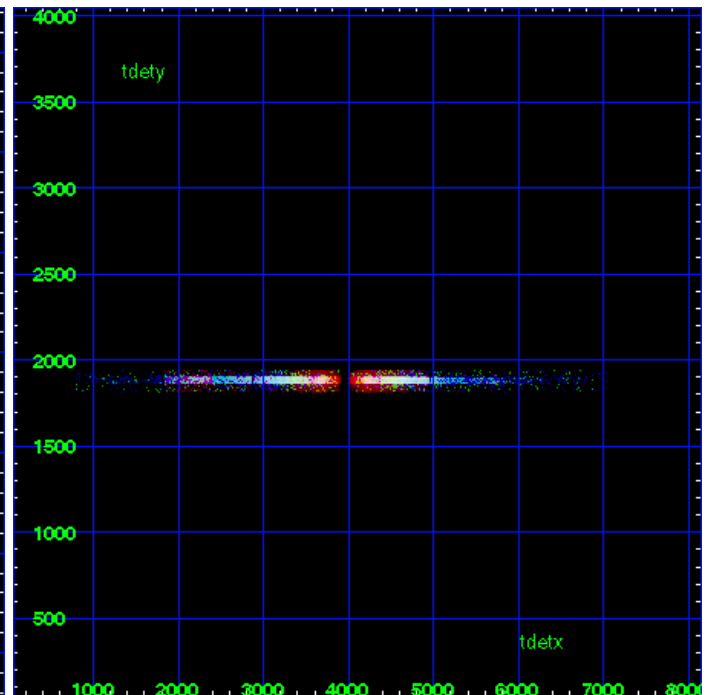
LETG Zero Order



LETG Order Sort ALL

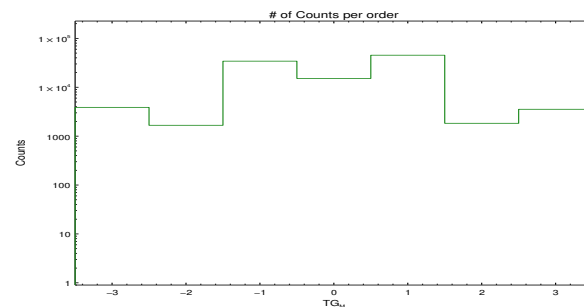


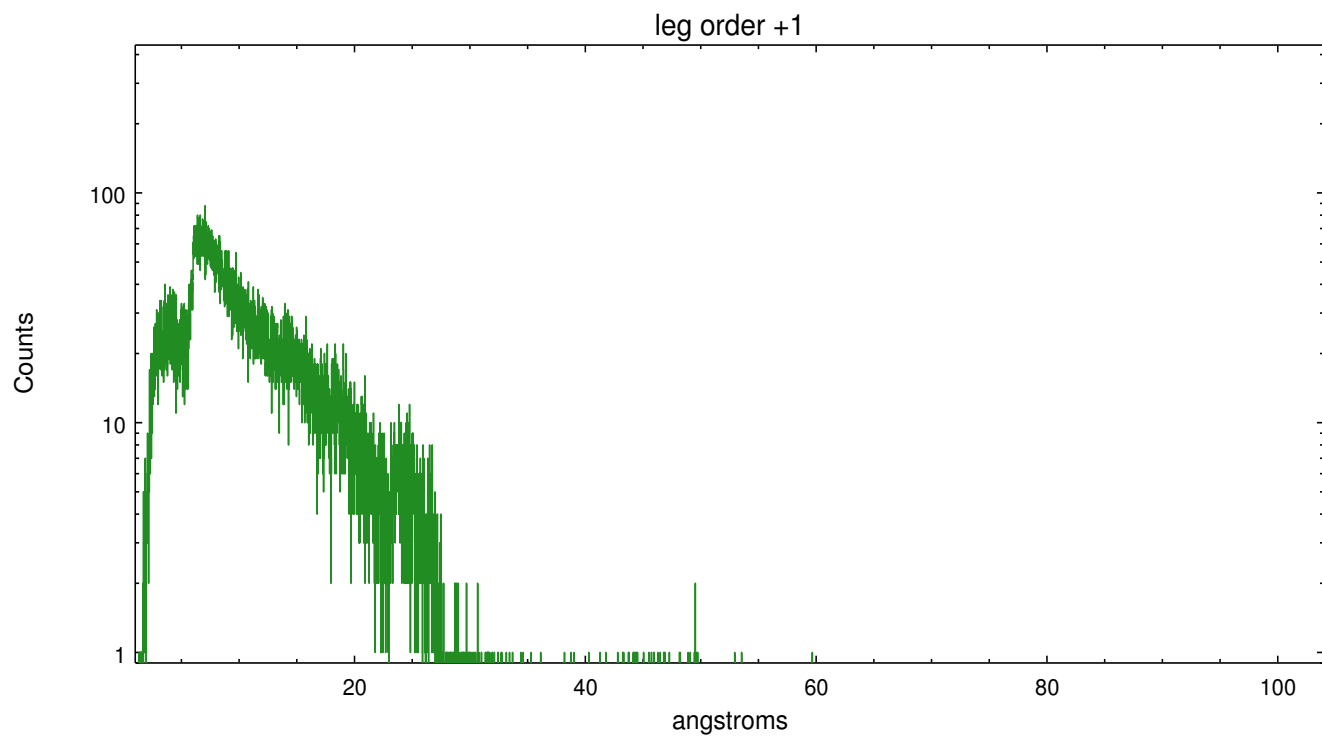
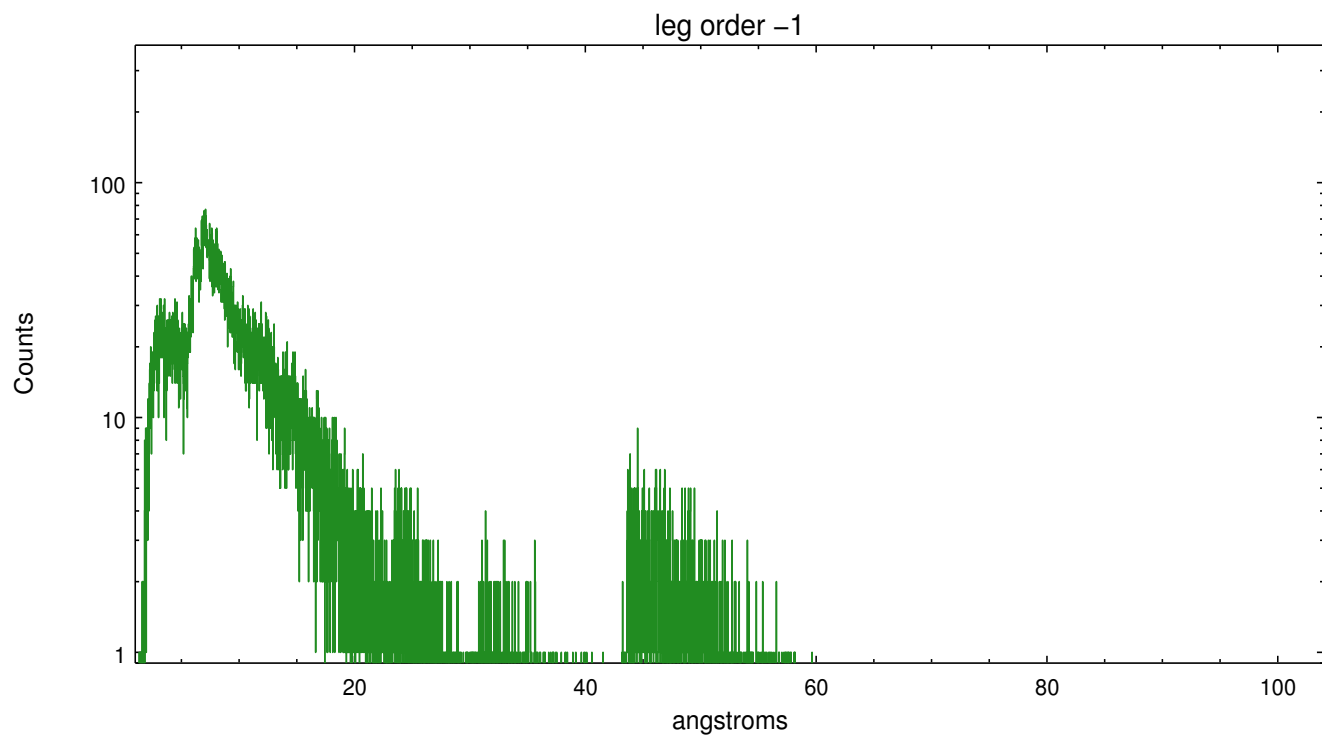
Spot Image LETG



Full Detector LETG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	3878	1667	34193	15159	45263	1831	3543





A Summary

A.1 Status

V&V Scientist	Joy Nichols
V&V Date (YYYY-MM-DD)	2012.03.26
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	9.7642998336554

A.2 Comments

Zeroth order piled up. Standard data processing software did not correctly locate the zeroth order due to pileup. Manual intervention was used to input the correct sky coordinates (x=4121.6, y=3945.0) into the *src1a.fits file table. These corrected coordinates were determined using a software tool developed by CXC called findzero, which is expected to be released in CIAO (currently in ISIS). The tool calculates the point of intersection of the readout streak and the meg arm (preferred position), or the readout streak and the heg arm. The zeroth order source position determined by the standard pipeline processing using the tool tgdetect was not used in this processing. The newly determined zeroth order coordinates have been placed in the *src1a.fits file, replacing the coordinates determined by tgdetect. Note that these corrected coordinates of the zeroth order cannot be reproduced by running tgdetect on the data.