

V&V Reference Report

L2 ASCDS Version : 8.4.3

Observation 13103 - L2 Version 3
Chandra X-Ray Center

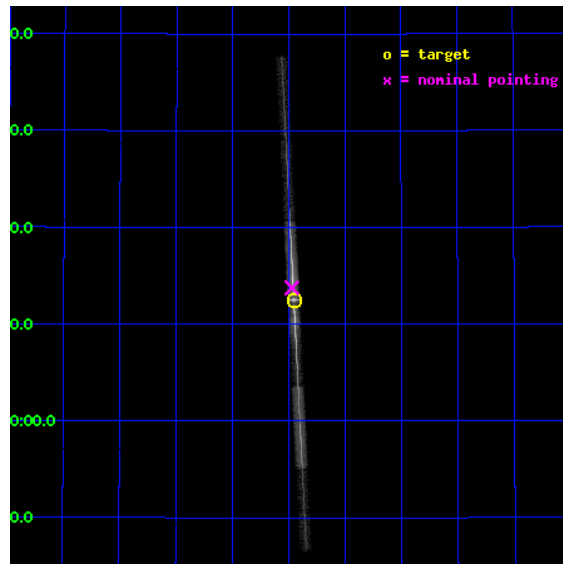
L2 Processing Date : Mar 21 2012

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
3	Gratings	17
3.1	LETG Arm	17
A	Summary	19
A.1	Status	19
A.2	Comments	19

1 Front

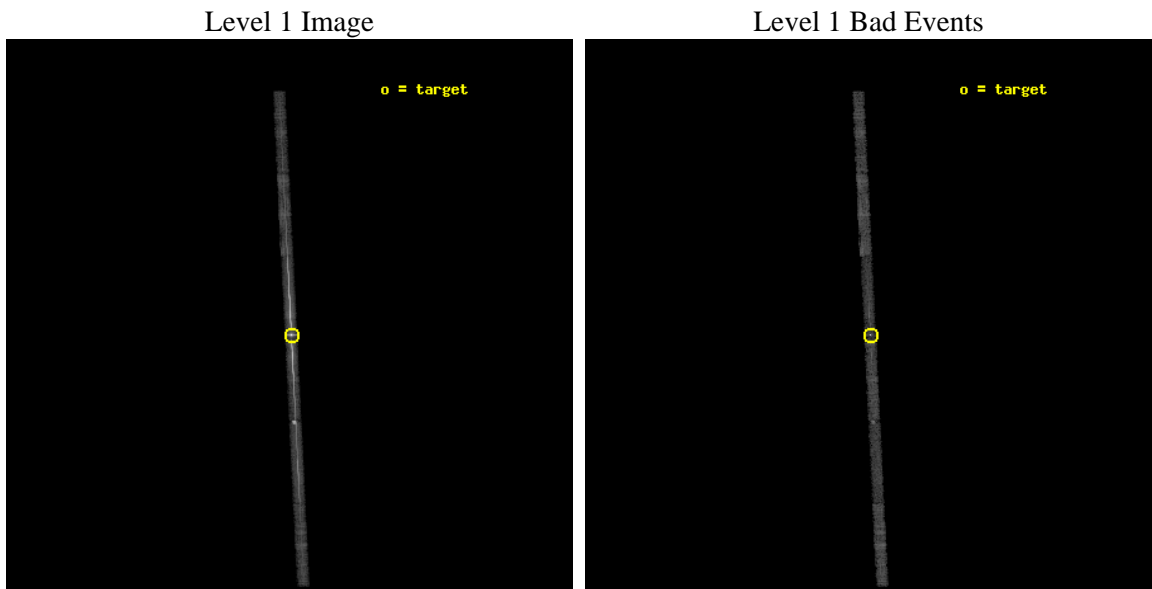
seq_num	790233	Sequence number
obs_id	13103	Observation id
title	AO-12 Calibration Observations of Mkn421	Proposal title
observer	Dr. CXC Calibration	Principal investigator
object	MKN421	Source name
dtcycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	166.113333	Observer's specified target RA [deg]
dec_targ	38.208806	Observer's specified target Dec [deg]
ra_nom	166.11803362547	Nominal RA [deg]
dec_nom	38.229489932612	Nominal Dec [deg]
roll_nom	267.13000993802	Nominal Roll [deg]
revision	3	Processing version of data
ontime	9768.4998335838	Sum of GTIs [s]
livetime	9227.5044309466	Livetime [s]
ontime4	9768.4998335838	Sum of GTIs [s]
ontime5	9768.4937990904	Sum of GTIs [s]
ontime6	9768.4527590871	Sum of GTIs [s]
ontime7	9768.4998335838	Sum of GTIs [s]
ontime8	9768.4117190838	Sum of GTIs [s]
ontime9	9768.3706790805	Sum of GTIs [s]
l2events	148084	Number of level 2 events



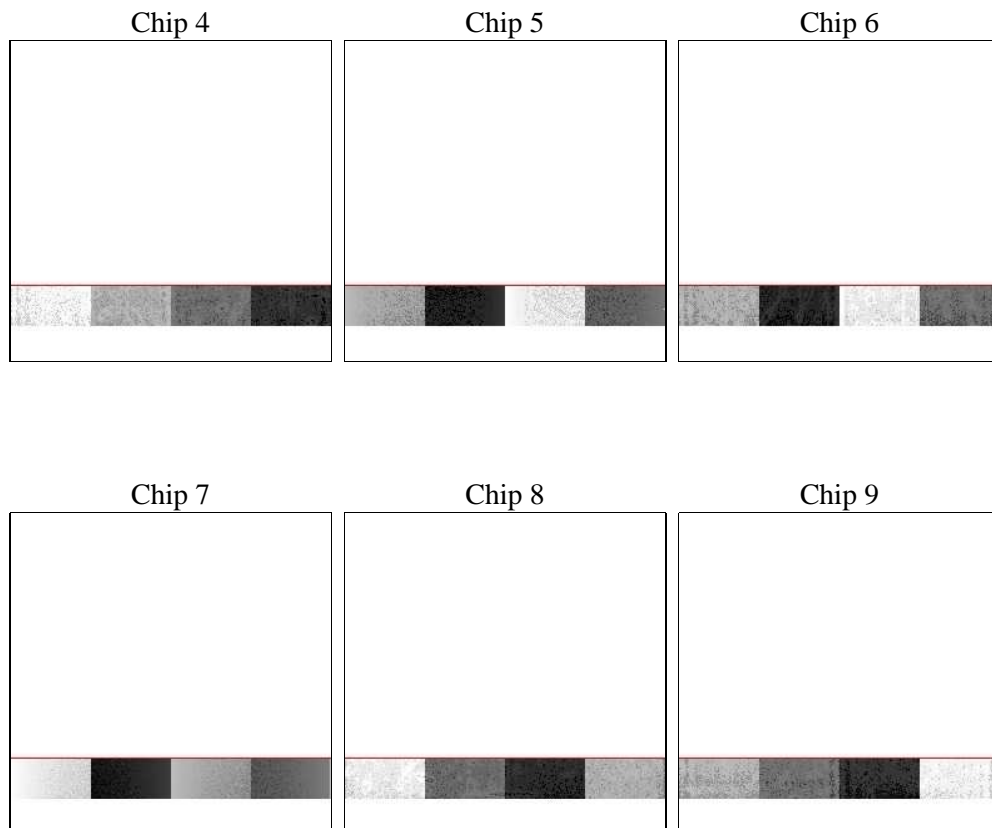
2 OBI

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	9768.4998335838	Sum of GTIs [s]
caldsver	4.4.8	 	ontime4	9768.4998335838	Sum of GTIs [s]
date	2012-03-18T18:33:09	Date and time of file creation	ontime5	9768.4937990904	Sum of GTIs [s]
revision	2	Processing version of data	ontime6	9768.4527590871	Sum of GTIs [s]
			ontime7	9768.4998335838	Sum of GTIs [s]
			ontime8	9768.4117190838	Sum of GTIs [s]
			ontime9	9768.3706790805	Sum of GTIs [s]
			l1events	222109	Number of level 1 events

2.1.4 Events

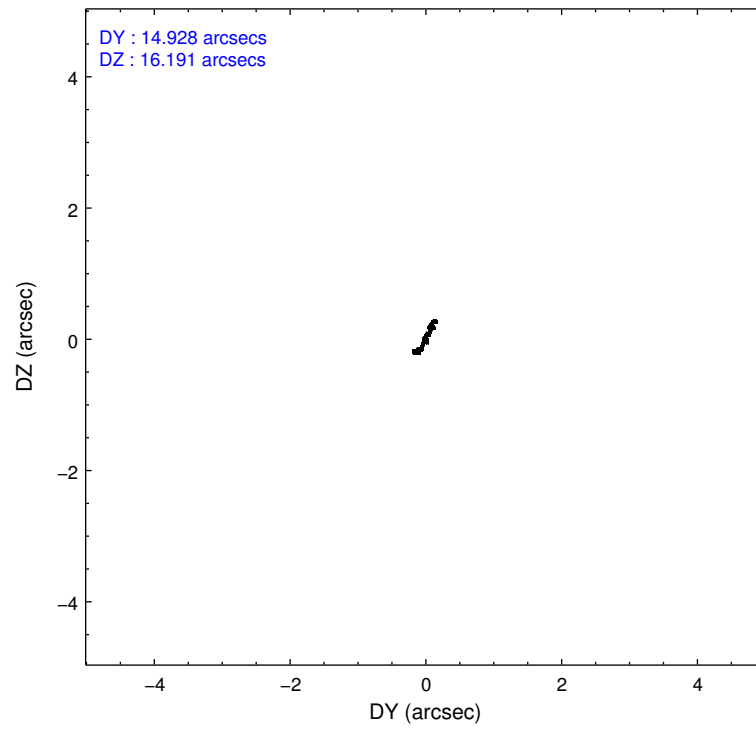
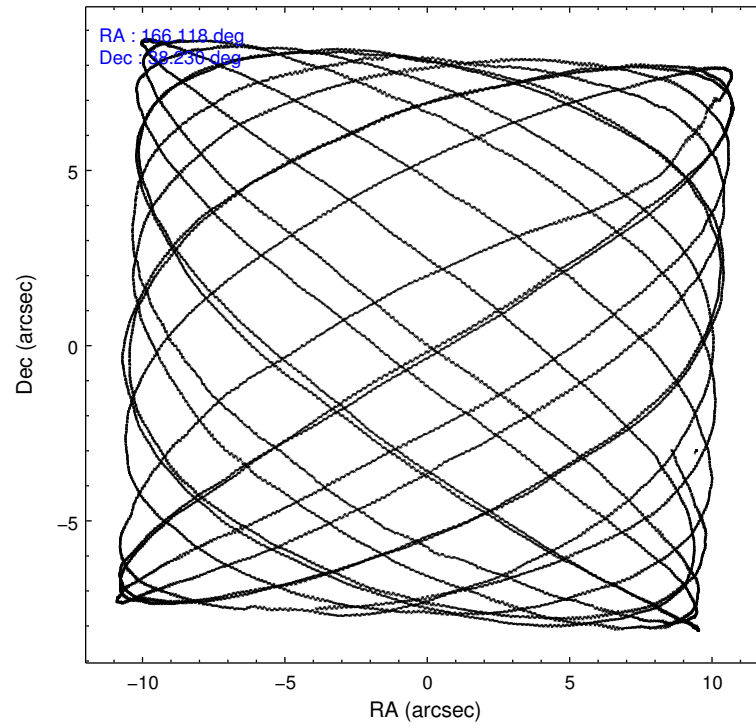
	ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
level 1 events	12228	27074	54265	100651	17748	10143
rejected events	9666	6320	8640	19061	10906	7600
rejected %	79%	23%	15%	18%	61%	74%

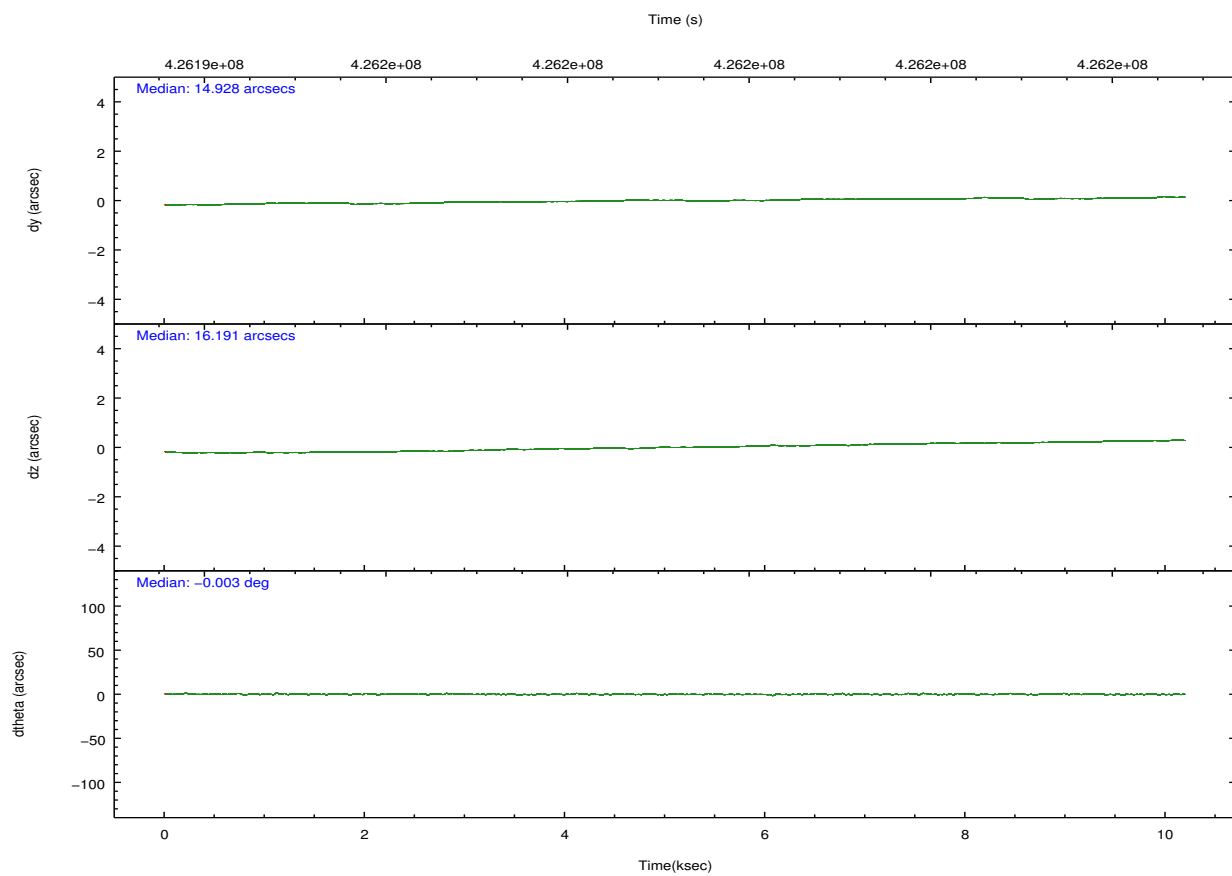
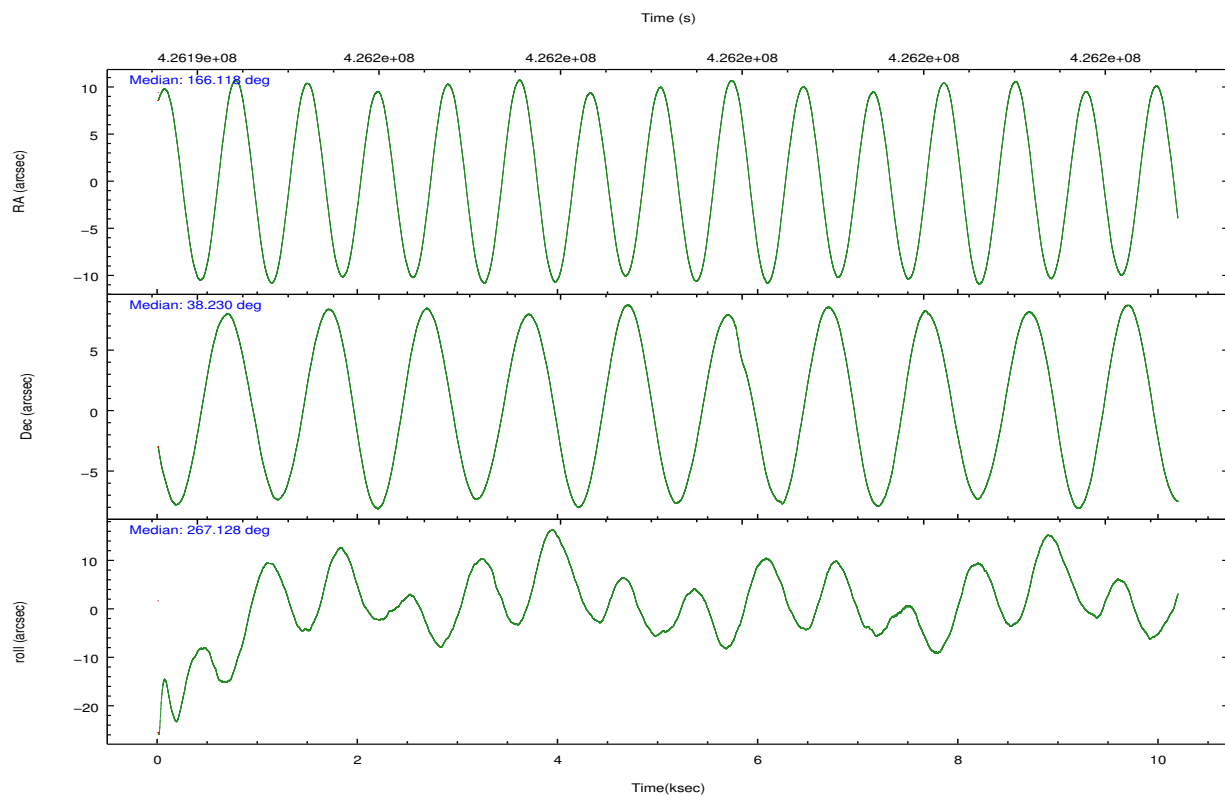
	ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
grade 0 events	1604	9897	36696	21305	3958	1539
	13%	36%	67%	21%	22%	15%
grade 1 events	6	272	154	519	11	1
	0%	1%	0%	0%	0%	0%
grade 2 events	382	3365	4605	20615	1017	363
	3%	12%	8%	20%	5%	3%
grade 3 events	200	1420	1567	9240	437	224
	1%	5%	2%	9%	2%	2%
grade 4 events	183	2517	1554	9171	386	202
	1%	9%	2%	9%	2%	1%
grade 5 events	355	1277	456	3602	525	341
	2%	4%	0%	3%	2%	3%
grade 6 events	193	3556	1208	21269	1047	215
	1%	13%	2%	21%	5%	2%
grade 7 events	9305	4770	8025	14930	10367	7258
	76%	17%	14%	14%	58%	71%

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	166.101694	166.1180336254689	CCD I2 on	N	N
[deg] Pointing Dec	38.253679	38.22948993261177	CCD I3 on	N	N
[deg] Pointing Roll	266.983513	267.1300099380185	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)	426194279.184000	426193774.47556	CCD S5 on	Y	Y
Observation start date	2011-07-04T19:16:53	2011-07-04T19:09:34	Number of optional ACIS chips dropped	0	0
[s] Observation end time (MET)	426204279.184000	426204504.17612	On-chip summing requested	N	N
Observation end date	2011-07-04T22:03:33	2011-07-04T22:08:24	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



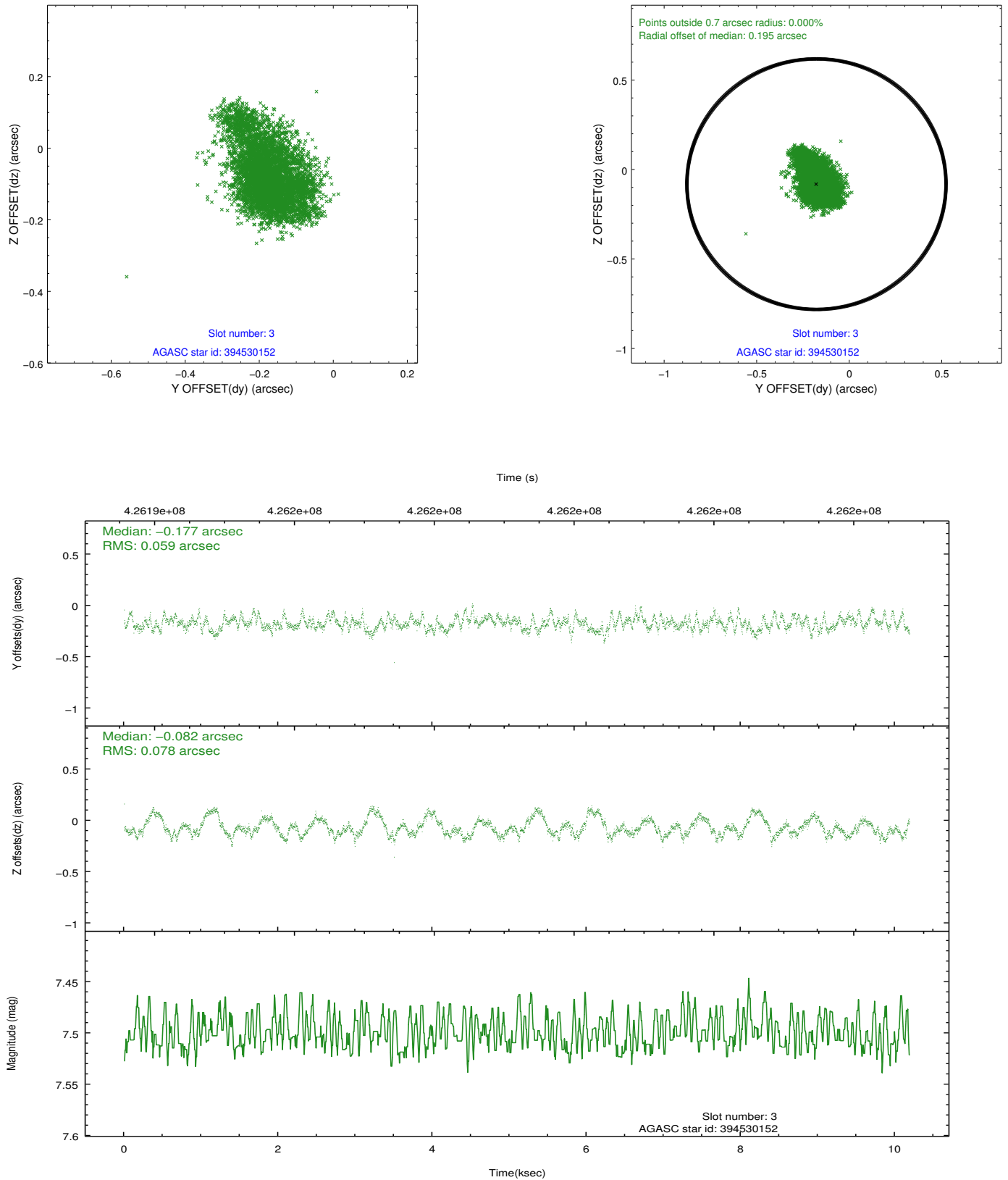


Slot Statistics

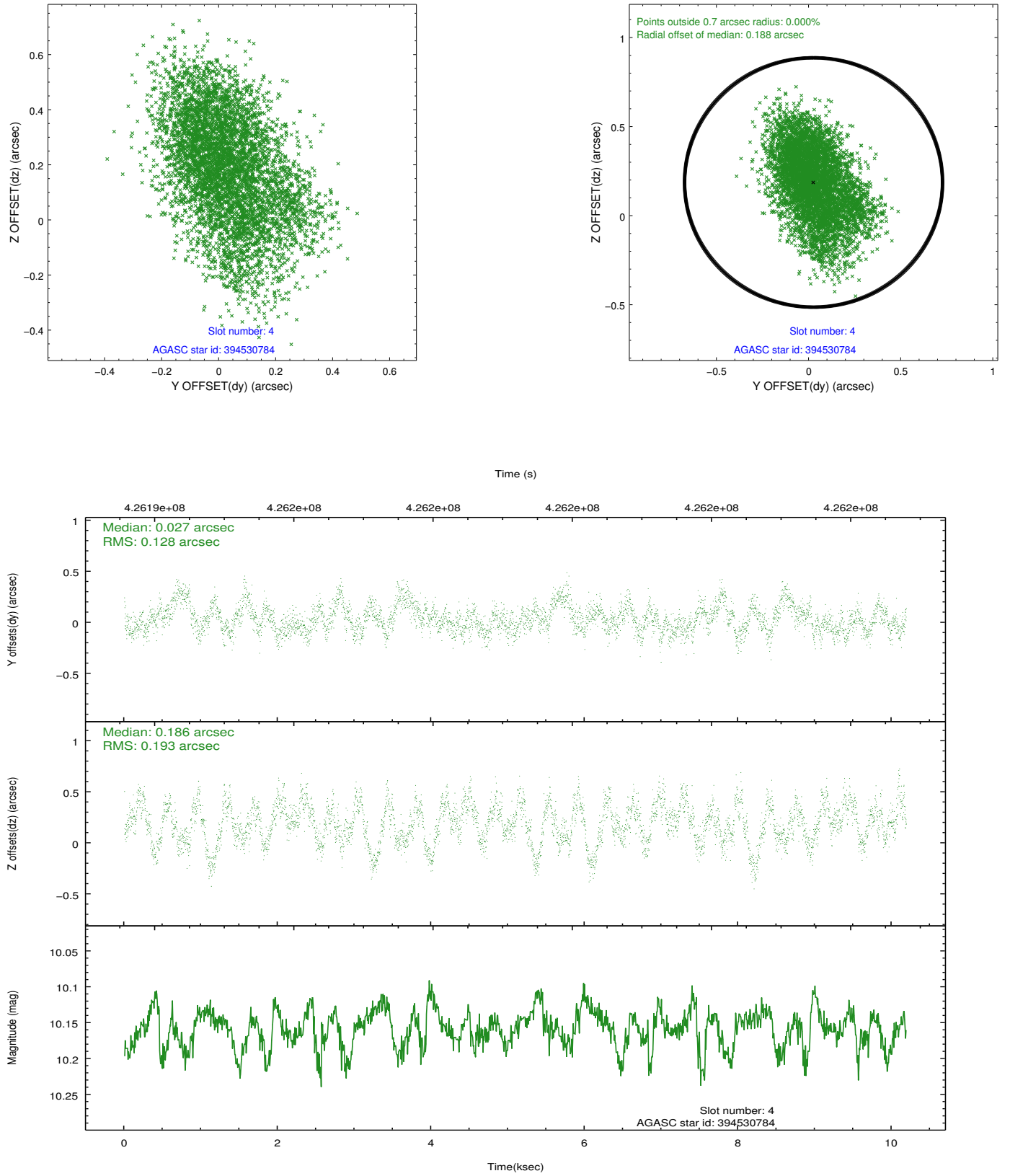
slot	status	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID	ACIS-S-2	6.82	2486	-0.161	-0.132	0.008	0.013	0.000000	0.000000	-767.51	-1902.49
1	FID	ACIS-S-4	6.88	2486	0.141	0.084	0.006	0.010	0.000000	0.000000	2145.87	5.53
2	FID	ACIS-S-6	7.11	2486	-0.007	0.054	0.009	0.015	0.000000	0.000000	395.34	643.53
3	GUIDE	394530152	7.50	4970	-0.177	-0.082	0.100	0.178	166.075805	38.868252	-2205.60	-188.92
4	GUIDE	394530784	10.16	4966	0.027	0.186	0.249	0.399	165.569172	38.418674	-518.64	-1531.16
5	GUIDE	394533848	8.71	4967	0.123	0.010	0.113	0.172	166.382906	38.276007	-123.64	785.26
6	GUIDE	394543960	9.77	4953	0.137	-0.116	0.147	0.245	165.802757	37.787371	1720.08	-760.84
7	GUIDE	394546712	6.61	4968	-0.112	-0.048	0.134	0.267	166.451462	38.394357	-558.93	957.84

2.4 Star Slots

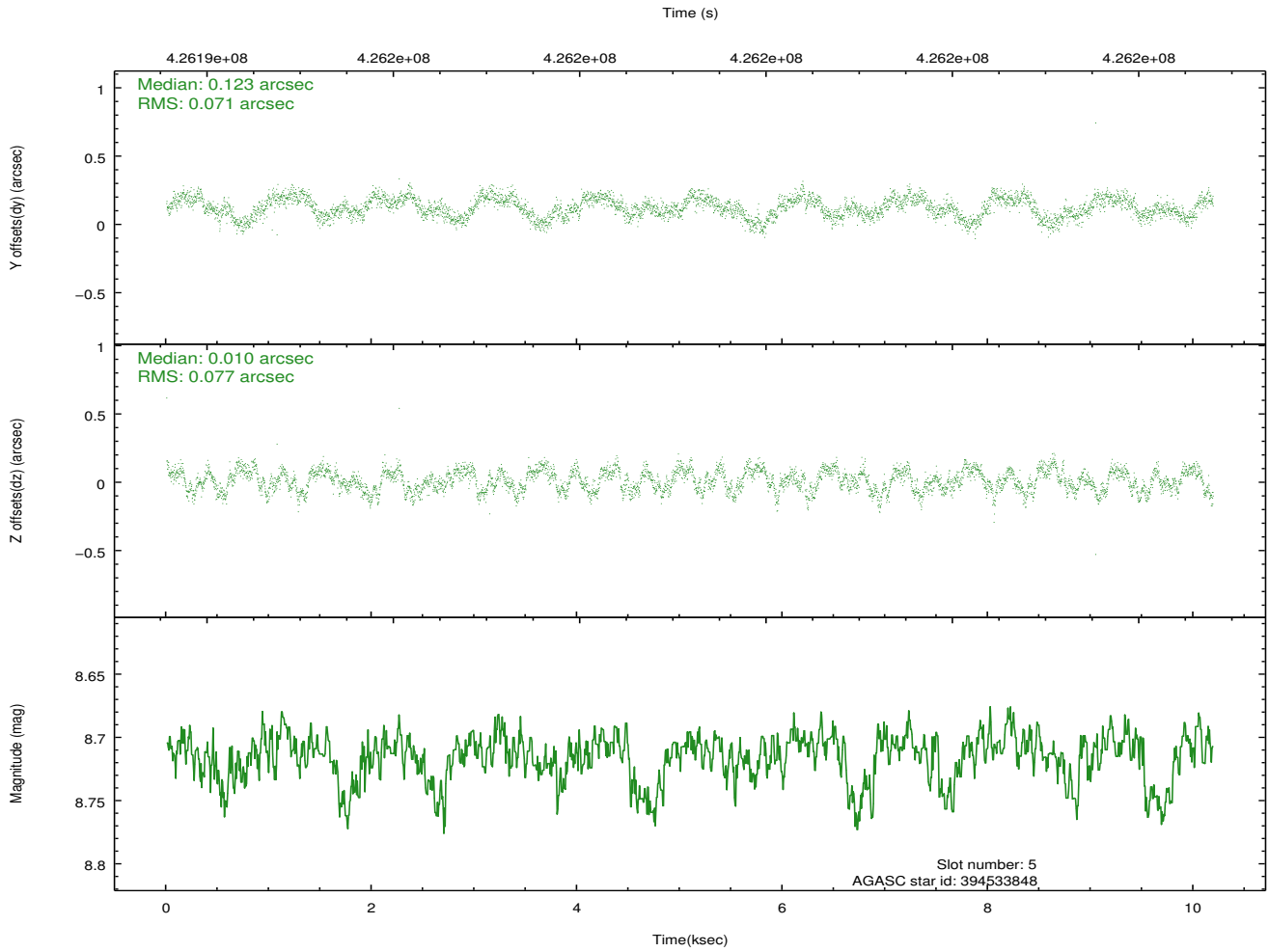
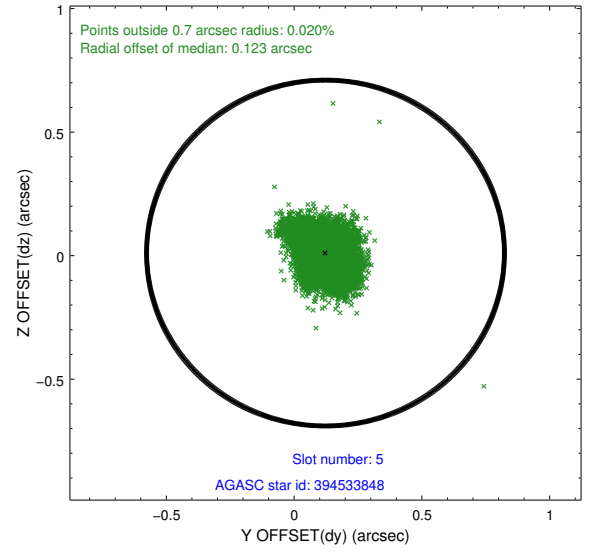
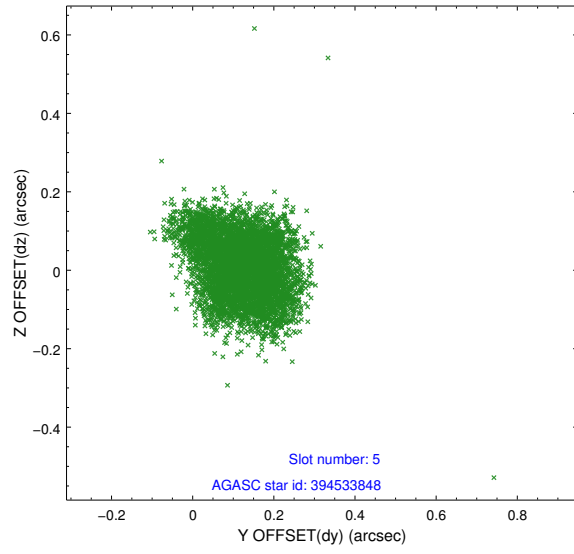
2.4.1 Slot 3



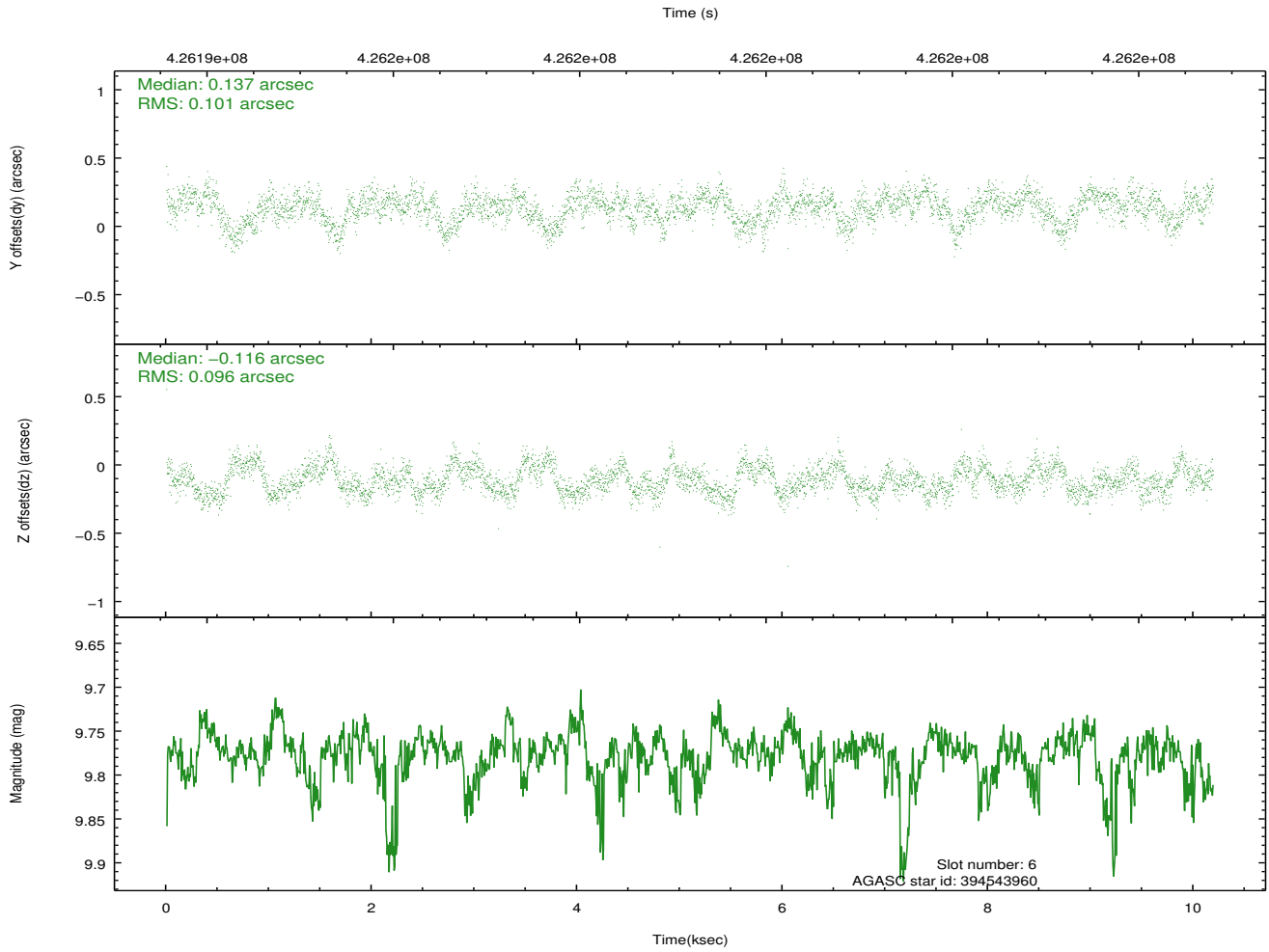
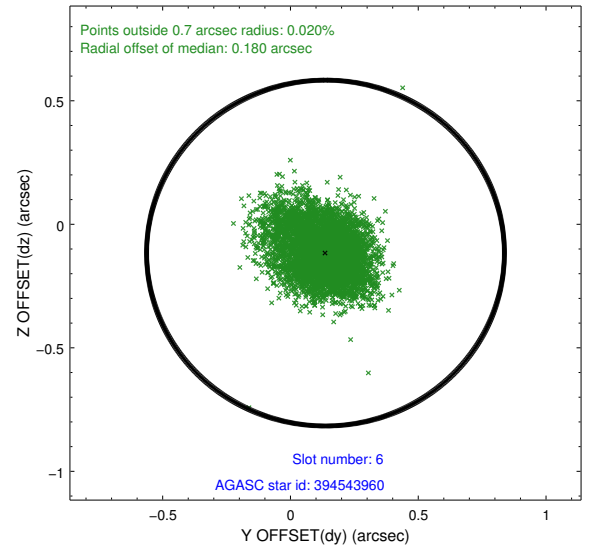
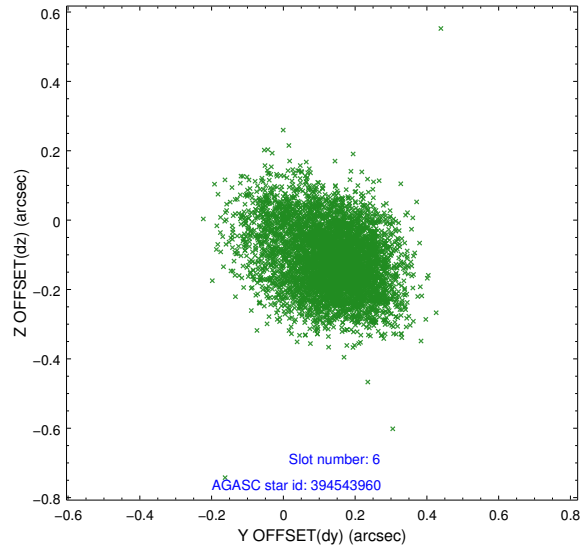
2.4.2 Slot 4



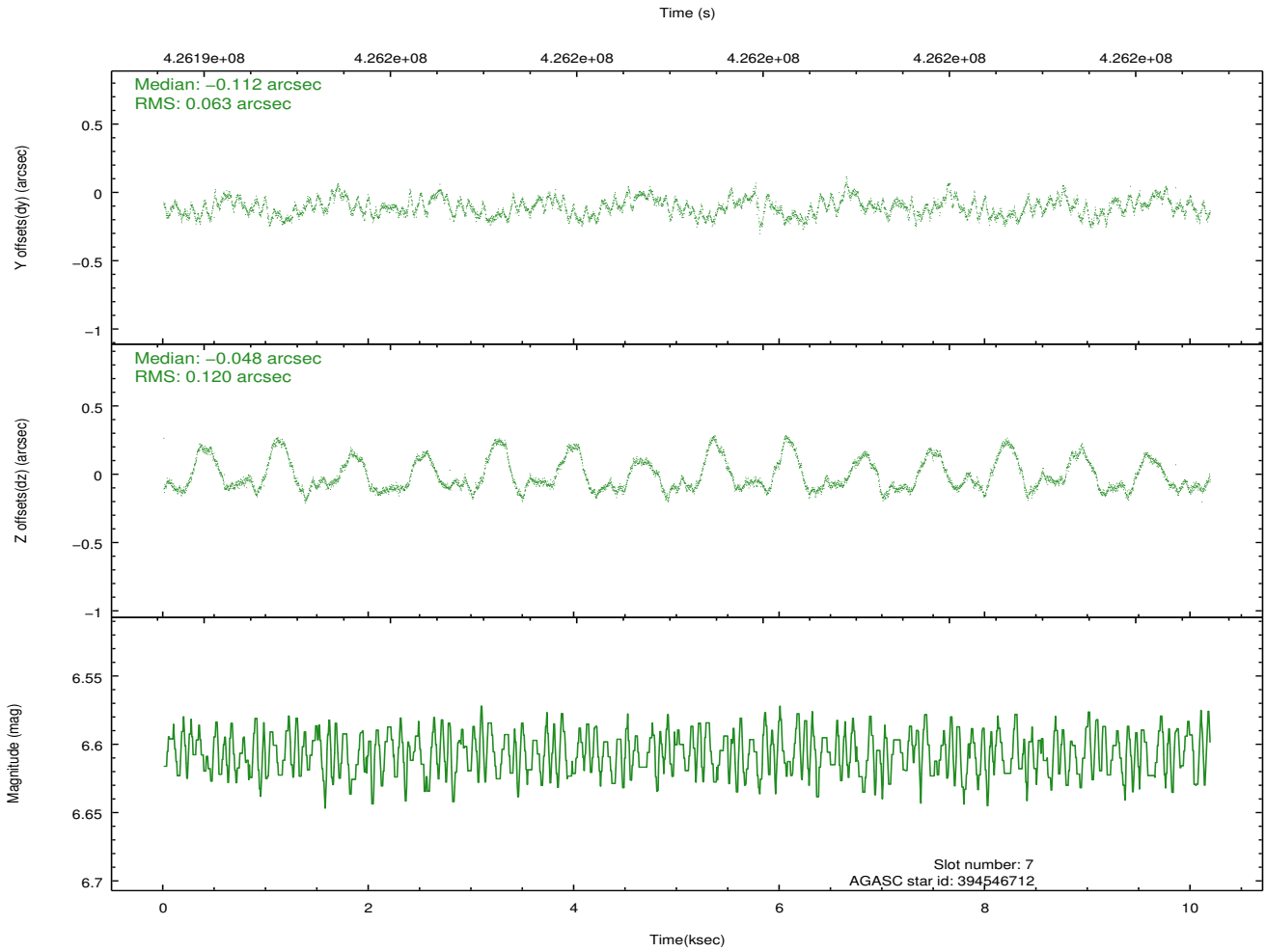
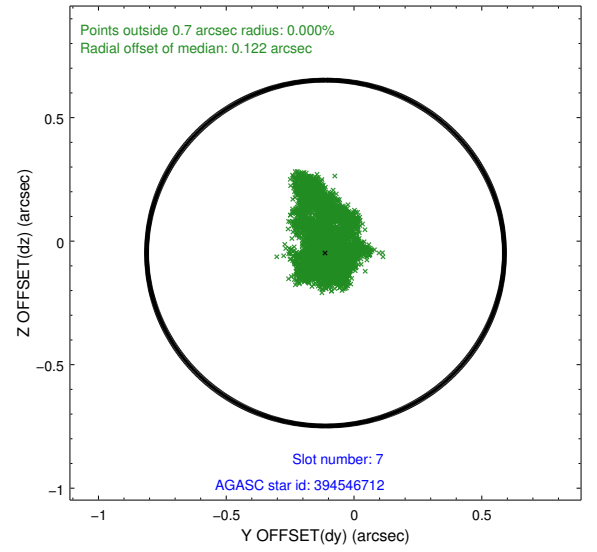
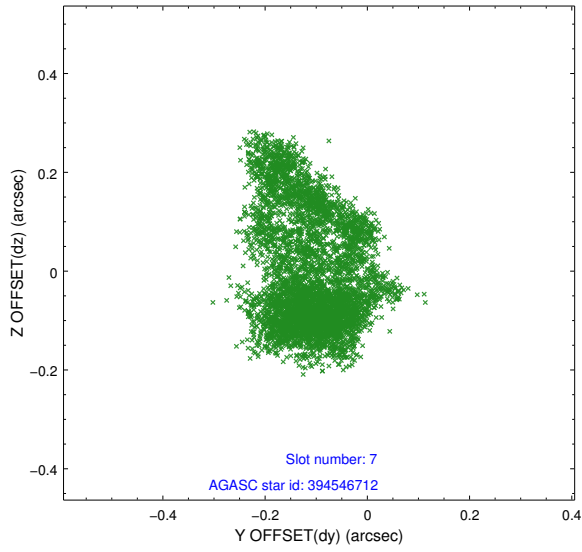
2.4.3 Slot 5



2.4.4 Slot 6

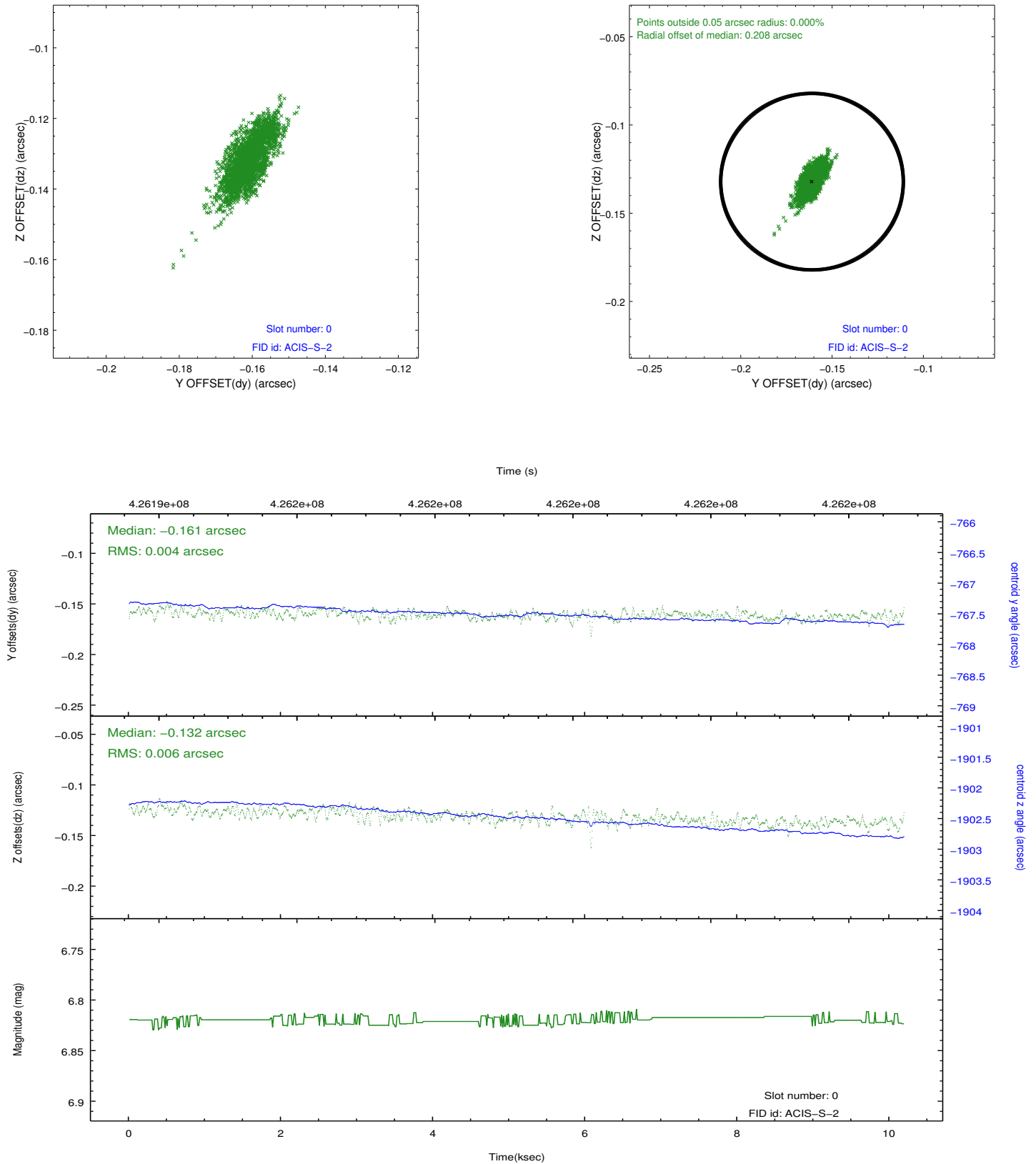


2.4.5 Slot 7

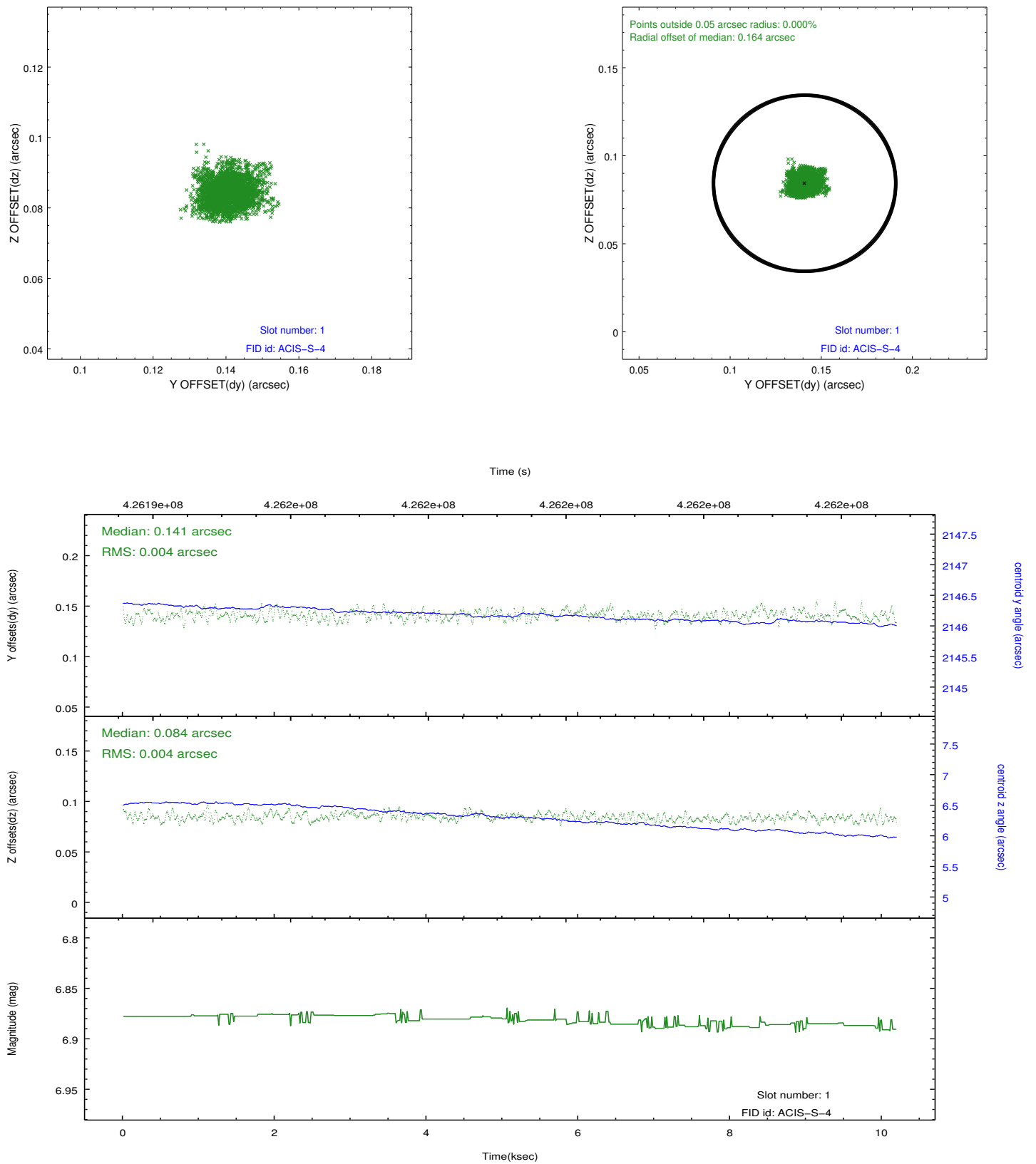


2.5 FID Slots

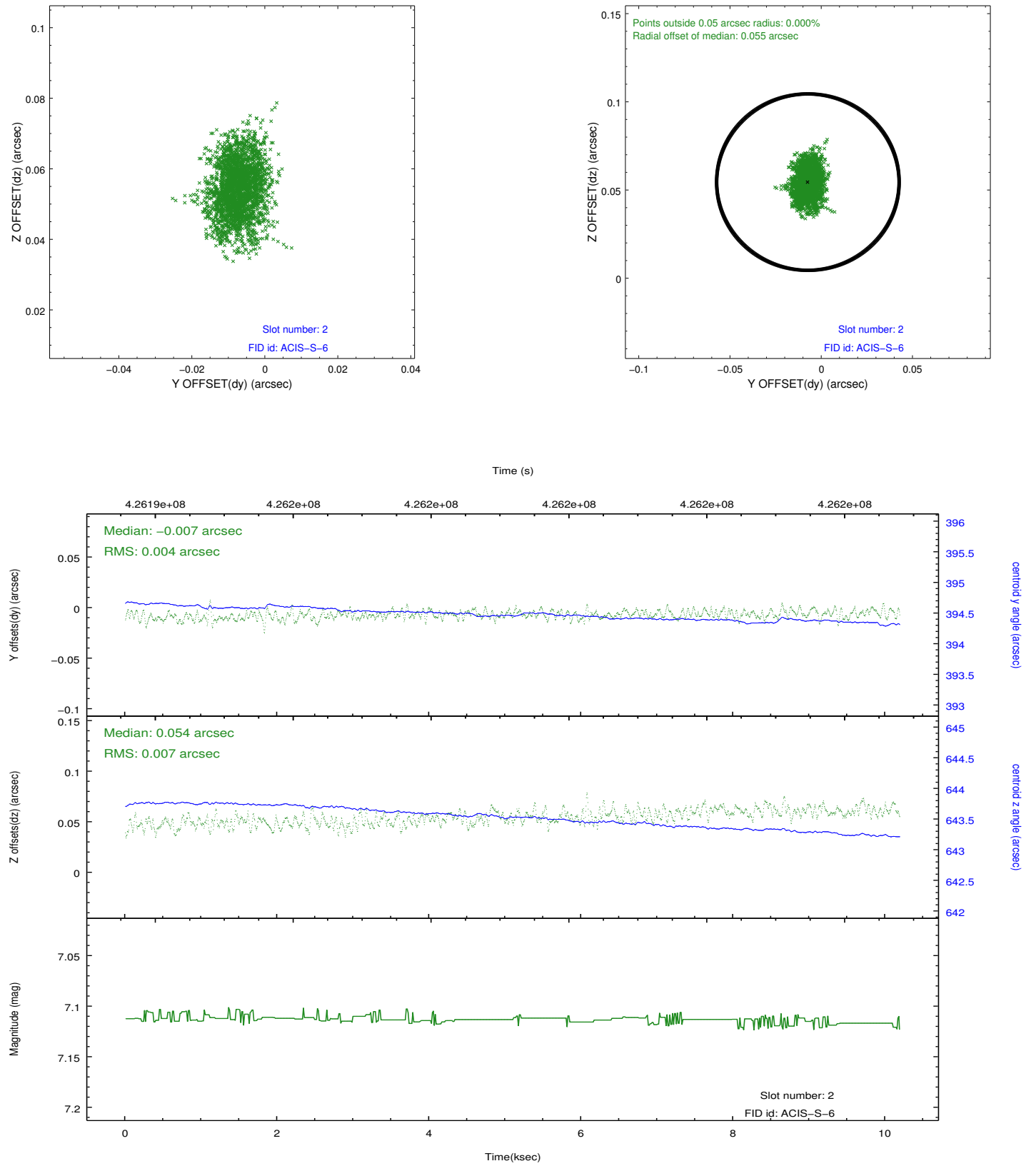
2.5.1 Slot 0



2.5.2 Slot 1

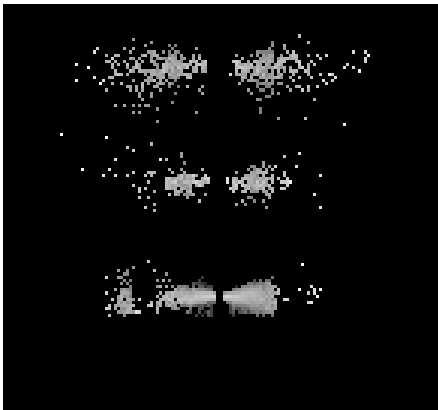


2.5.3 Slot 2

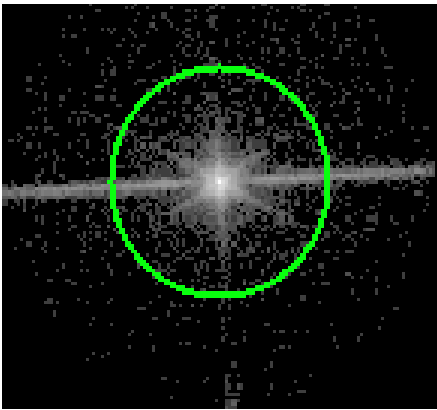


3 Gratings

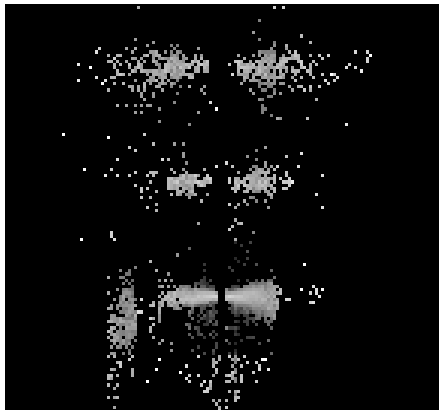
3.1 LETG Arm



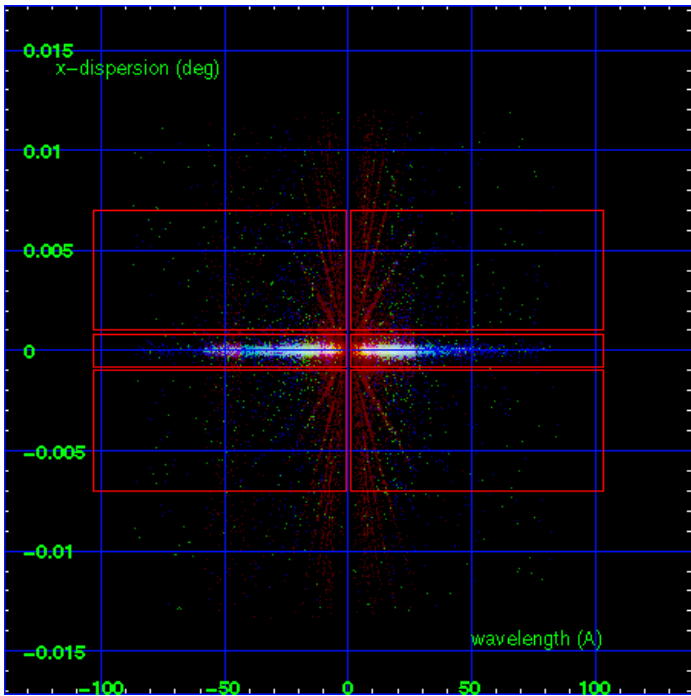
LETG Order Sort 123



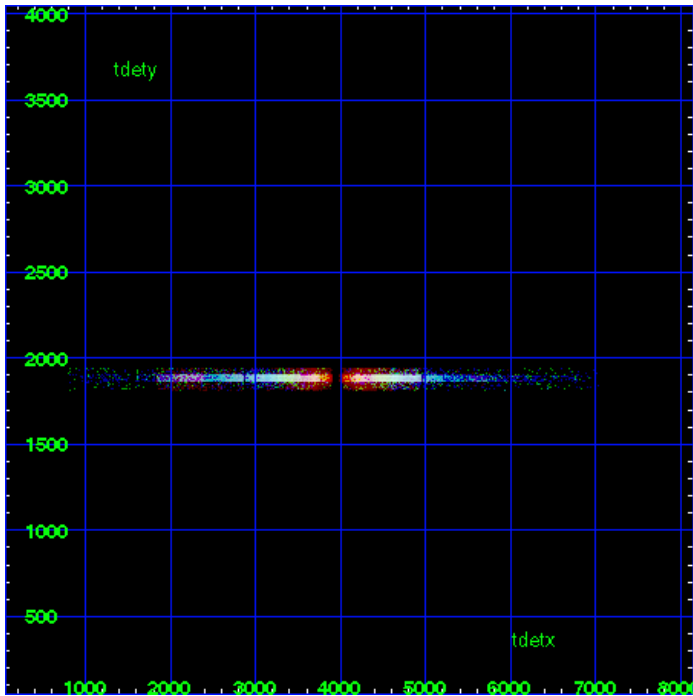
LETG Zero Order



LETG Order Sort ALL

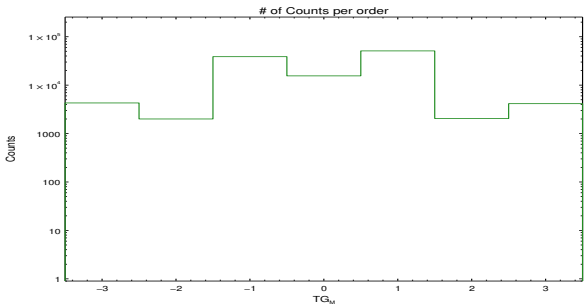


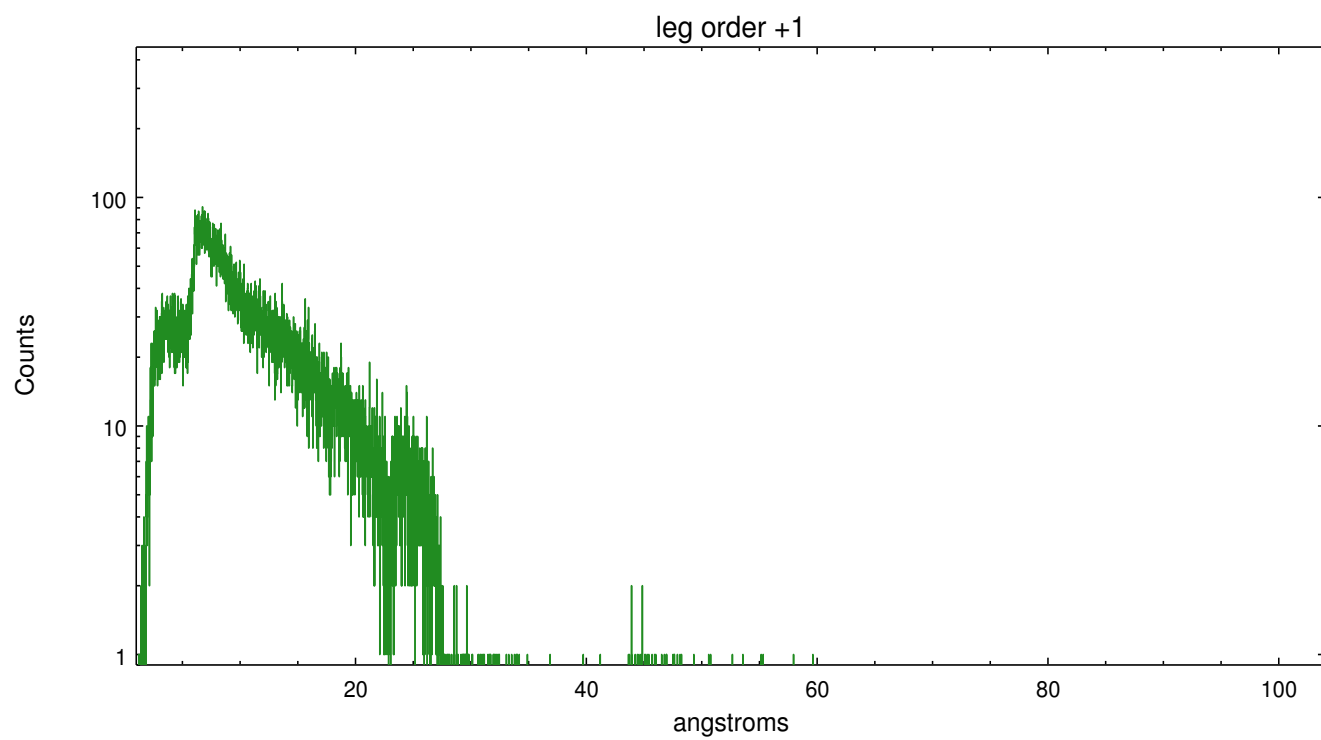
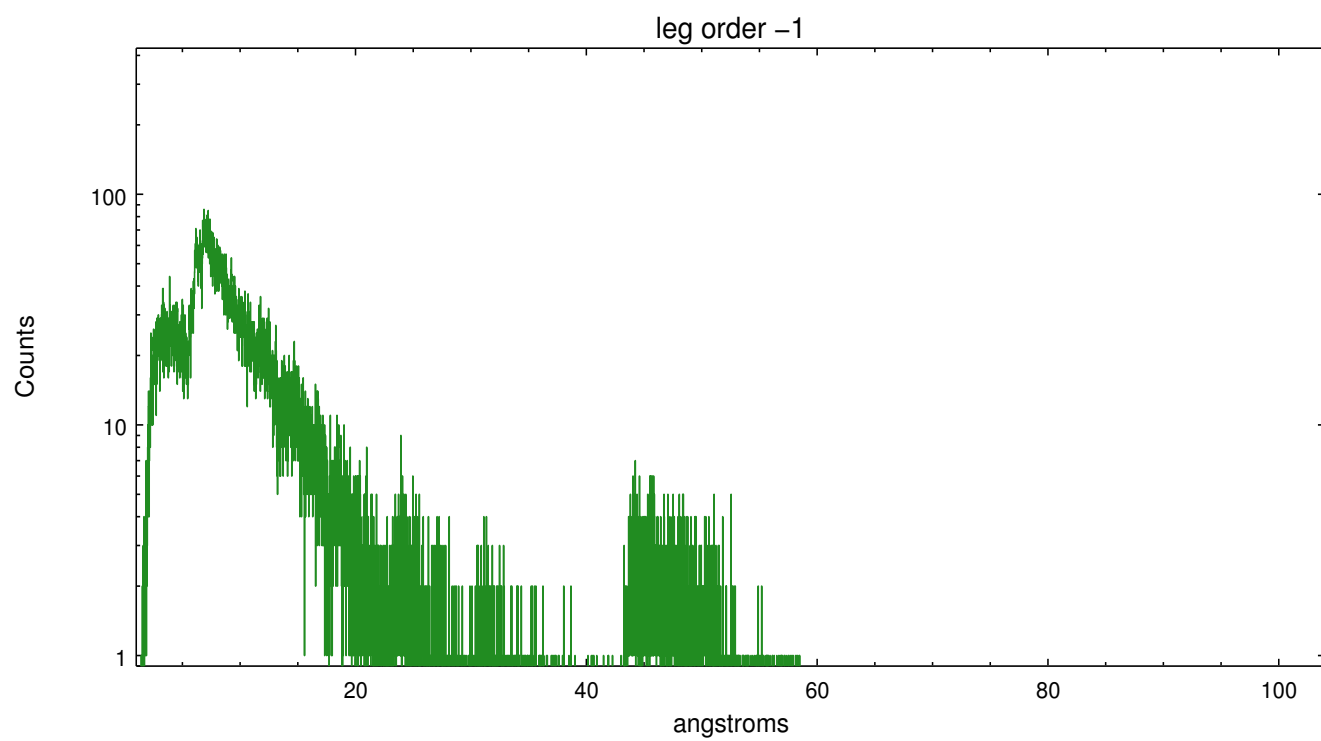
Spot Image LETG



Full Detector LETG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	4290	2002	38741	15546	50982	2048	4148





A Summary

A.1 Status

V&V Scientist	Joy Nichols
V&V Date (YYYY-MM-DD)	2012.03.27
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	9.7684998335838

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=4121.09, y=3945.17) 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.