

V&V Reference Report

L2 ASCDS Version : 8.4.3

Observation 13099 - L2 Version 3
Chandra X-Ray Center

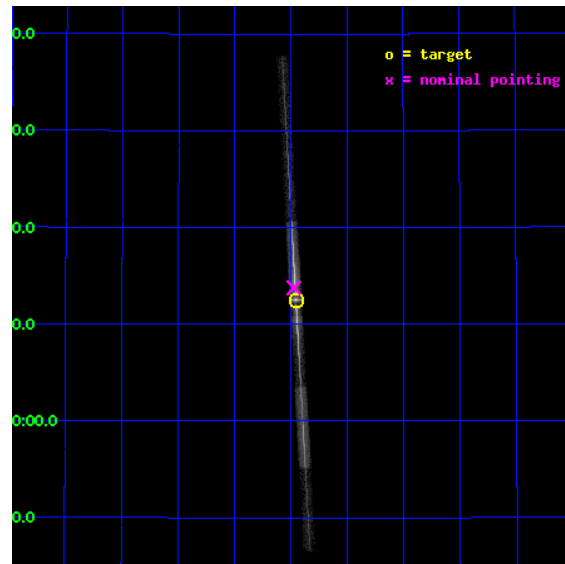
L2 Processing Date : Mar 21 2012

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

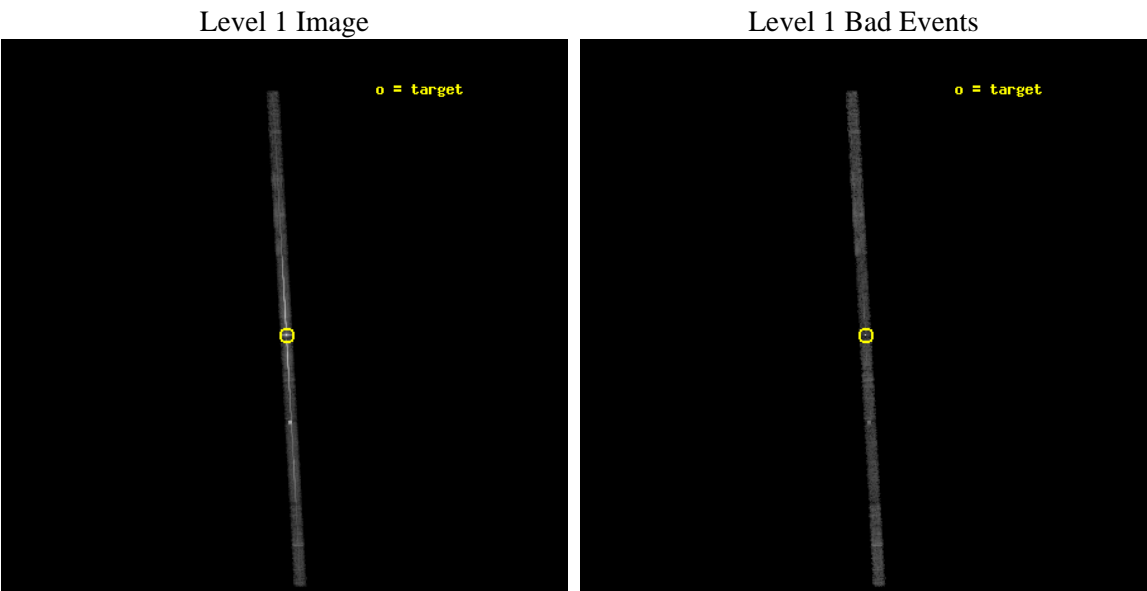
seq_num	790229	Sequence number
obs_id	13099	Observation id
title	AO-12 Calibration Observations of Mkn421	Proposal title
observer	Dr. CXC Calibration	Principal investigator
object	MKN421	Source name
dtcycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	166.113333	Observer's specified target RA [deg]
dec_targ	38.208806	Observer's specified target Dec [deg]
ra_nom	166.1181694797	Nominal RA [deg]
dec_nom	38.229498871795	Nominal Dec [deg]
roll_nom	266.7687574158	Nominal Roll [deg]
revision	3	Processing version of data
ontime	10064.599828541	Sum of GTIs [s]
livetime	9507.2059267771	Livetime [s]
ontime4	10064.599828541	Sum of GTIs [s]
ontime5	10064.599828541	Sum of GTIs [s]
ontime6	10064.599828541	Sum of GTIs [s]
ontime7	10064.599828541	Sum of GTIs [s]
ontime8	10064.599828541	Sum of GTIs [s]
ontime9	10064.599828541	Sum of GTIs [s]
l2events	133099	Number of level 2 events



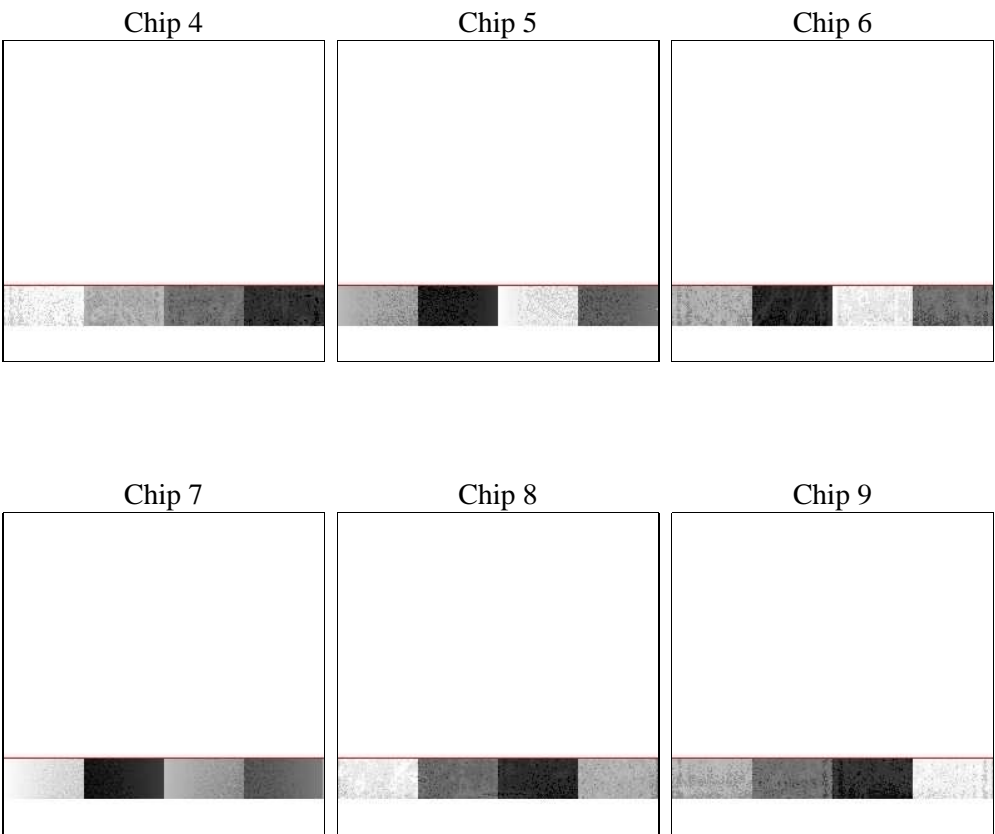
2 OBI

2.1 OBI

2.1.1 Images



2.1.2 Bias



Chip 7



Chip 8



Chip 9



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	10064.599828541	Sum of GTIs [s]
caldsver	4.4.8	 	ontime4	10064.599828541	Sum of GTIs [s]
date	2012-03-18T18:15:58	Date and time of file creation	ontime5	10064.599828541	Sum of GTIs [s]
revision	2	Processing version of data	ontime6	10064.599828541	Sum of GTIs [s]
			ontime7	10064.599828541	Sum of GTIs [s]
			ontime8	10064.599828541	Sum of GTIs [s]
			ontime9	10064.599828541	Sum of GTIs [s]
			l1events	208838	Number of level 1 events

2.1.4 Events

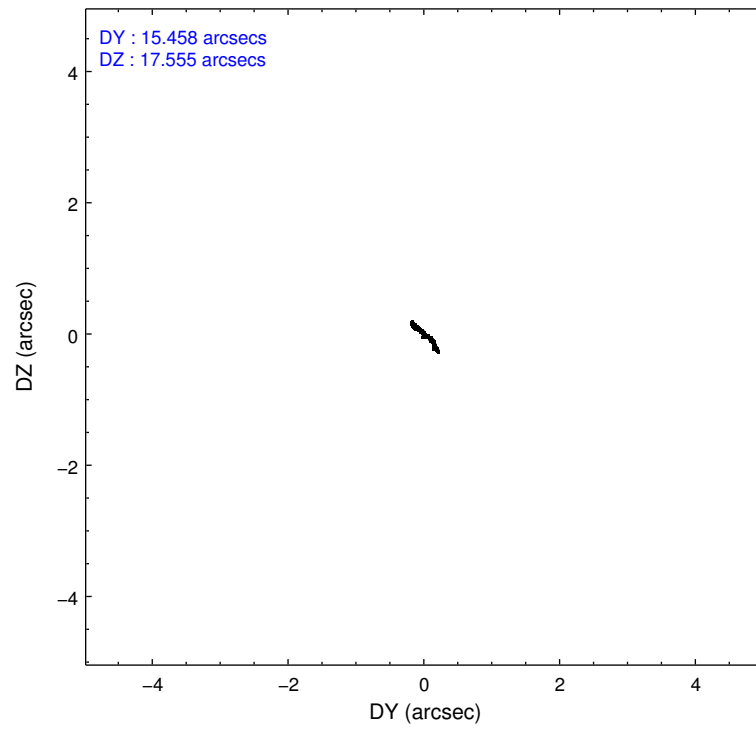
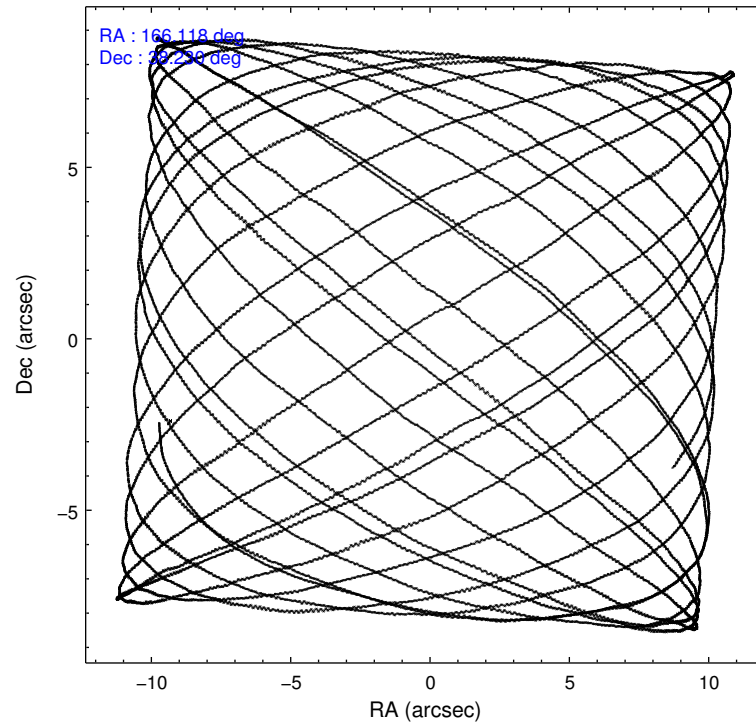
	ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
level 1 events	12395	27775	48198	92364	17745	10361
rejected events	9882	6719	8784	18317	11015	8045
rejected %	79%	24%	18%	19%	62%	77%

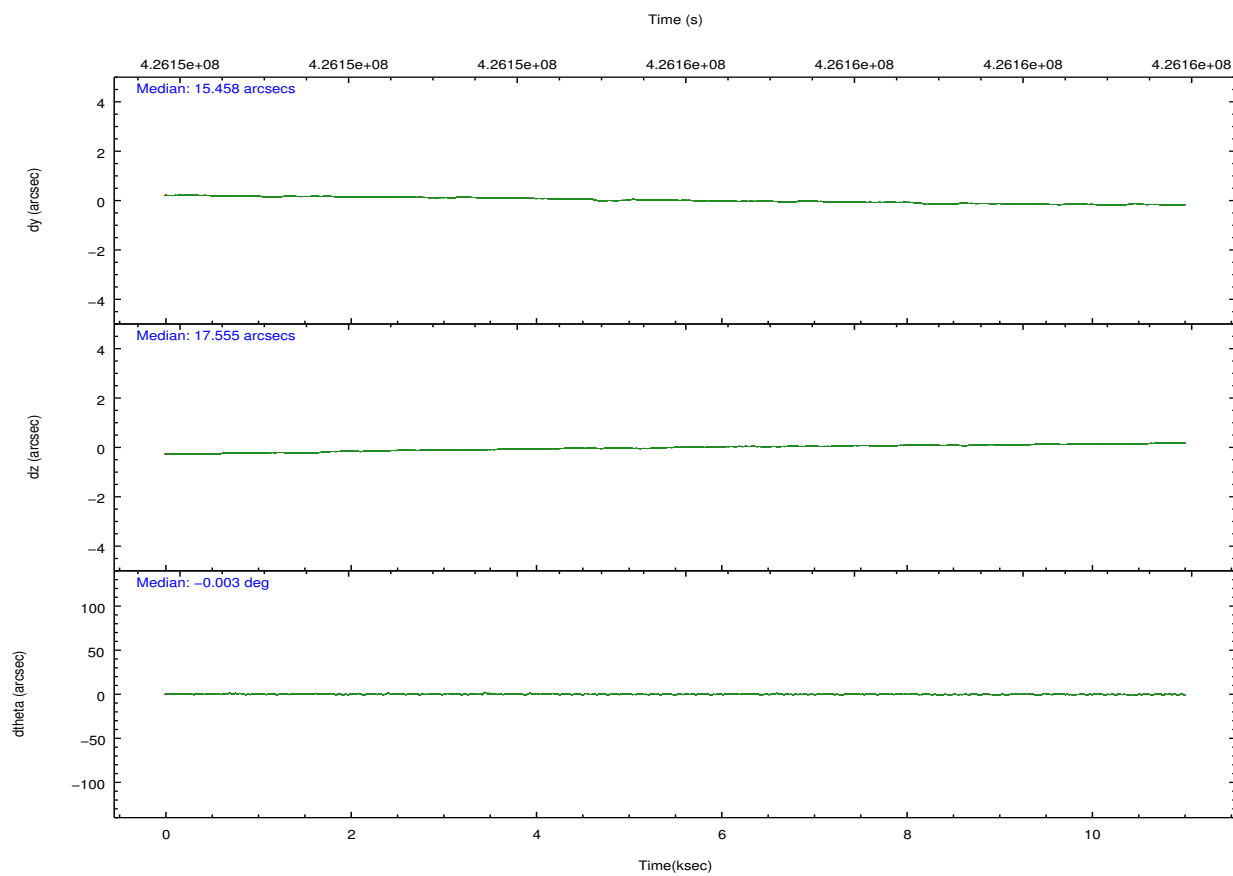
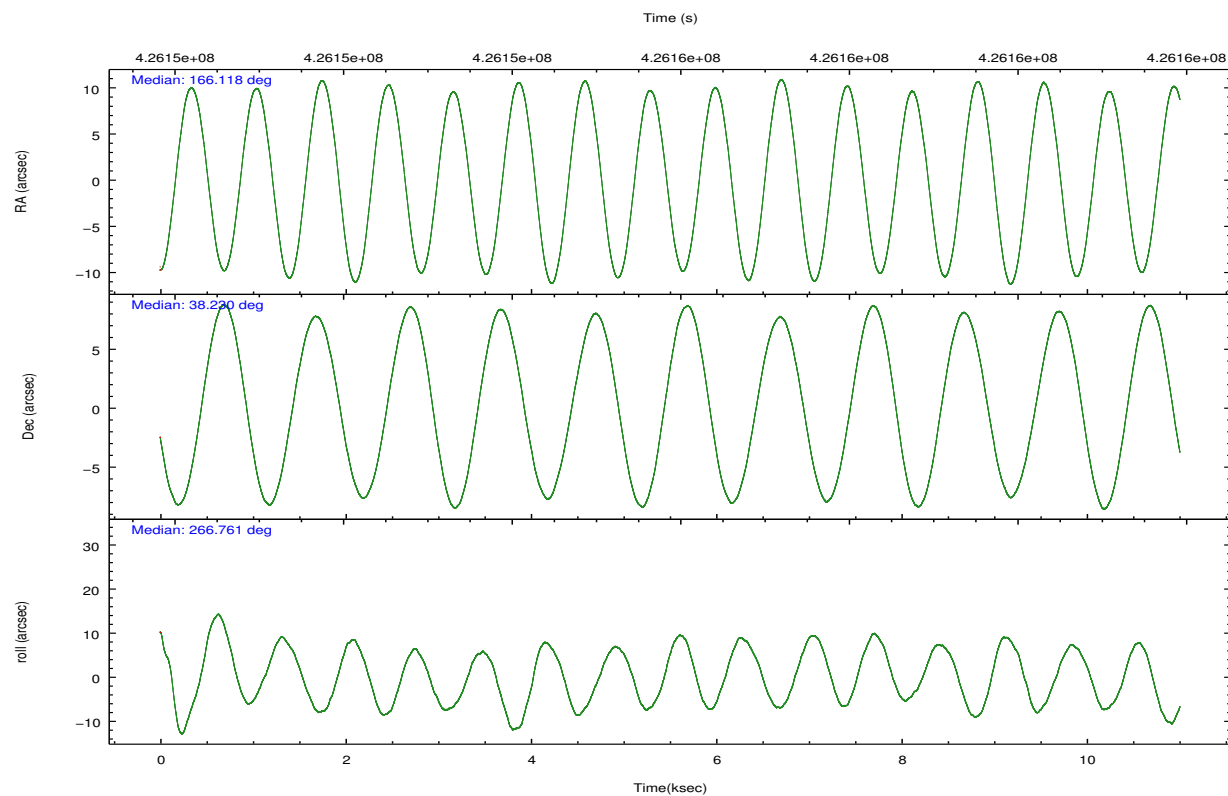
	ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
grade 0 events	1430	10105	31563	19162	3599	1349
	11%	36%	65%	20%	20%	13%
grade 1 events	4	368	96	580	11	5
	0%	1%	0%	0%	0%	0%
grade 2 events	387	3299	4009	18461	992	309
	3%	11%	8%	19%	5%	2%
grade 3 events	245	1463	1345	8314	479	218
	1%	5%	2%	9%	2%	2%
grade 4 events	215	2679	1419	8124	419	231
	1%	9%	2%	8%	2%	2%
grade 5 events	342	1402	434	3559	506	370
	2%	5%	0%	3%	2%	3%
grade 6 events	238	3513	1085	19999	1242	210
	1%	12%	2%	21%	6%	2%
grade 7 events	9534	4946	8247	14165	10497	7669
	76%	17%	17%	15%	59%	74%

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	166.102049	166.1181694796952	CCD I2 on	N	N
[deg] Pointing Dec	38.253732	38.22949887179475	CCD I3 on	N	N
[deg] Pointing Roll	266.622112	266.7687574158032	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	-182.1370004450064	CCD S3 on	Y	Y
[mm] SIM translation stage offset	-8	-7.995522138001405	CCD S4 on	Y	Y
[s] Observation start time (MET)	426151366.184000	426150053.61079	CCD S5 on	Y	Y
Observation start date	2011-07-04T07:21:40	2011-07-04T07:00:53	Number of optional ACIS chips dropped	0	0
[s] Observation end time (MET)	426161366.184000	426161589.98639	On-chip summing requested	N	N
Observation end date	2011-07-04T10:08:20	2011-07-04T10:13:09	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



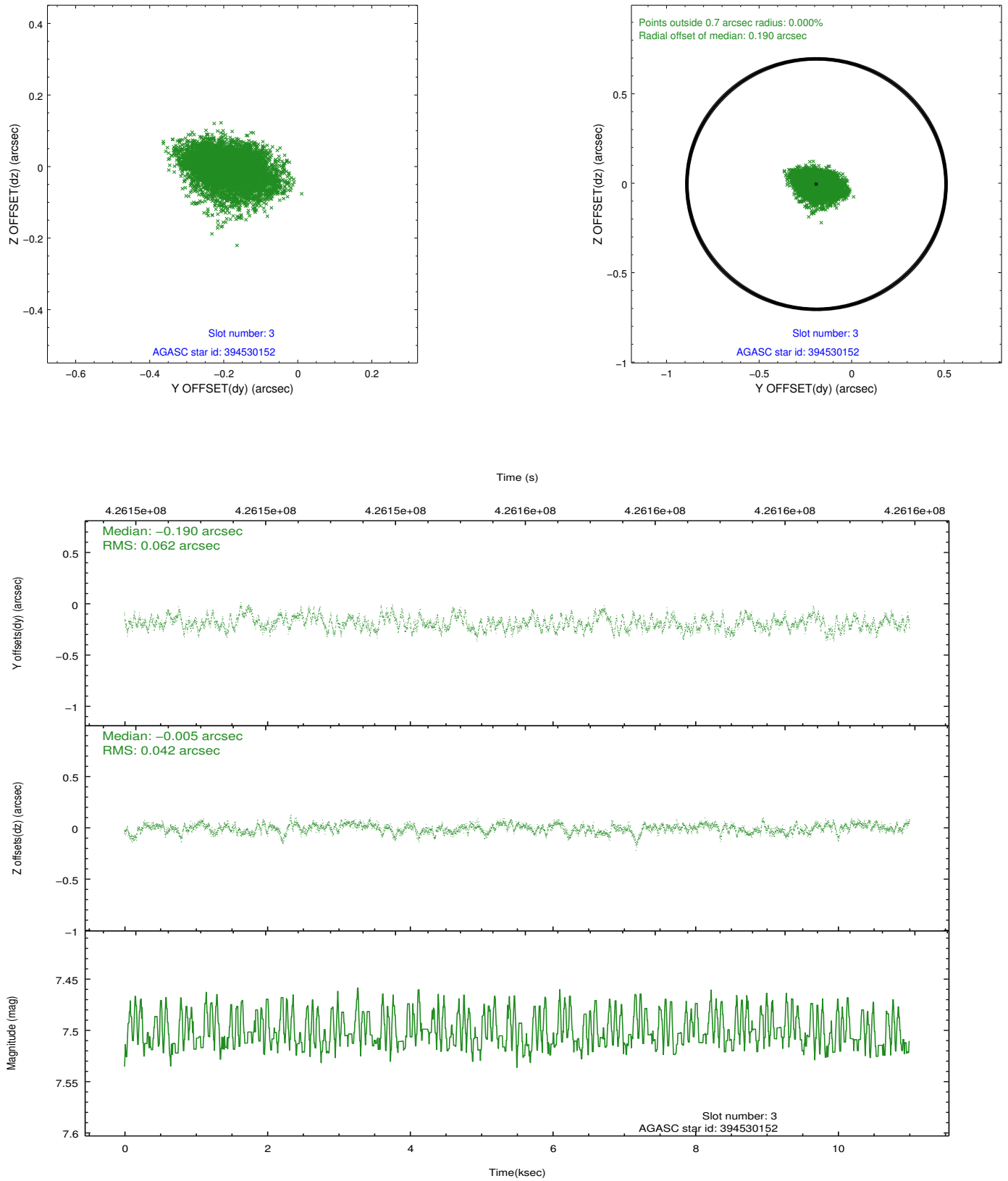


Slot Statistics

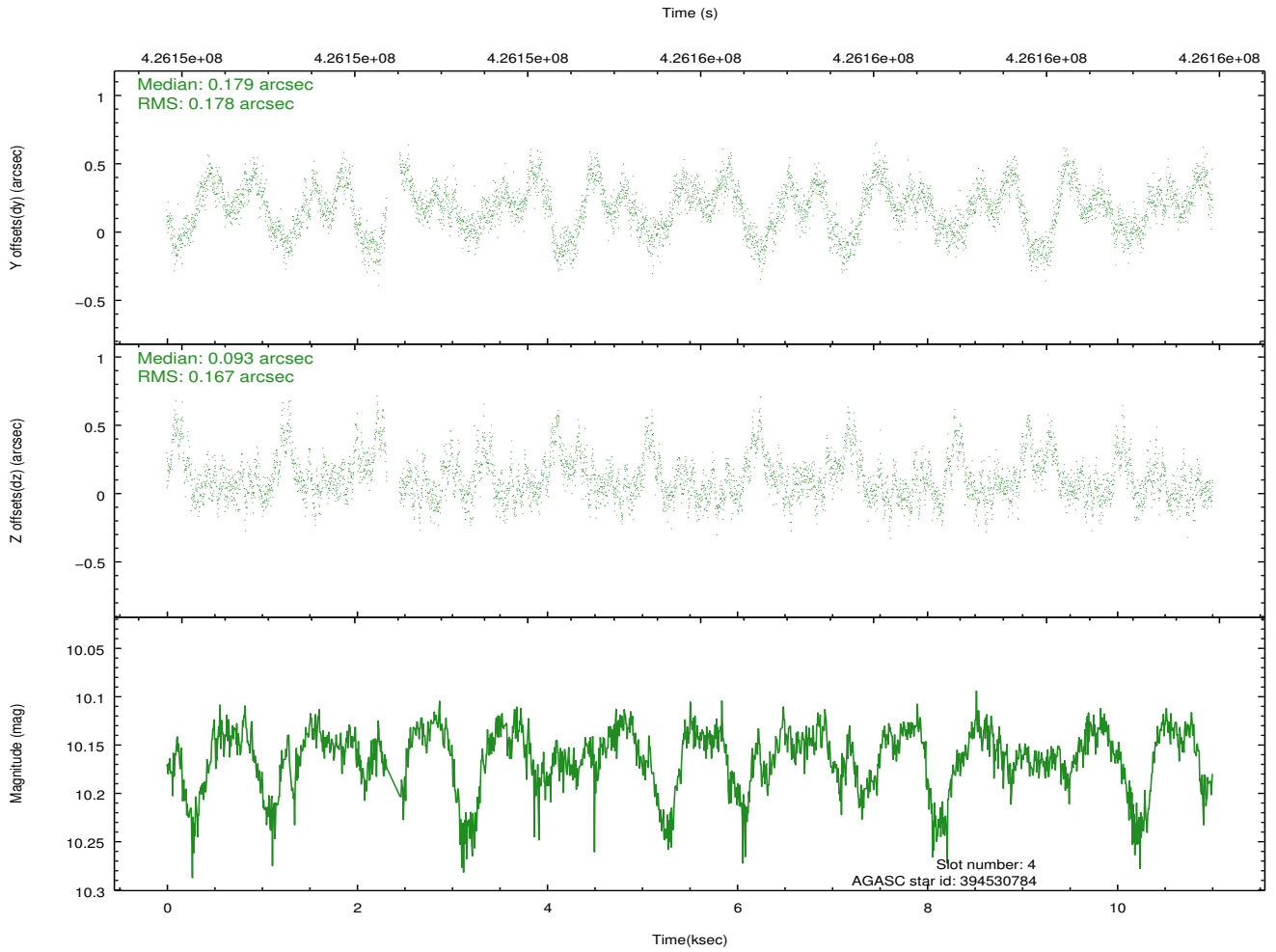
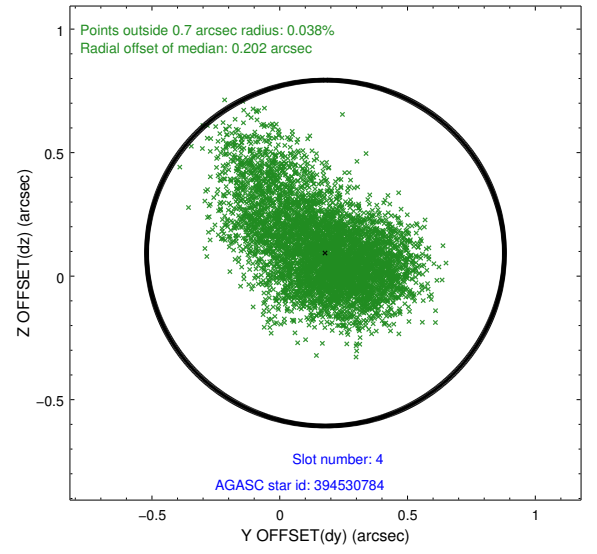
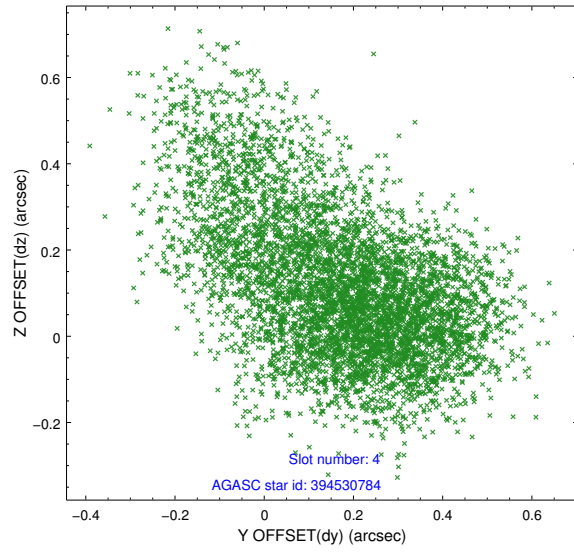
slot	status	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID	ACIS-S-2	6.87	2685	-0.164	-0.133	0.009	0.015	0.000000	0.000000	-768.09	-1903.80
1	FID	ACIS-S-4	6.93	2685	0.144	0.087	0.008	0.015	0.000000	0.000000	2145.32	4.26
2	FID	ACIS-S-6	7.17	2685	-0.007	0.054	0.008	0.014	0.000000	0.000000	394.71	642.20
3	GUIDE	394530152	7.50	5370	-0.190	-0.005	0.080	0.132	166.075805	38.868252	-2203.93	-203.83
4	GUIDE	394530784	10.16	5292	0.179	0.093	0.251	0.443	165.569172	38.418674	-508.20	-1535.29
5	GUIDE	394533848	8.72	5364	0.101	0.042	0.110	0.180	166.382906	38.276007	-128.25	783.67
6	GUIDE	394543960	9.76	5356	0.107	-0.171	0.186	0.296	165.802757	37.787371	1725.30	-750.75
7	GUIDE	394546712	6.61	5369	-0.177	0.030	0.076	0.130	166.451462	38.394357	-564.72	953.44

2.4 Star Slots

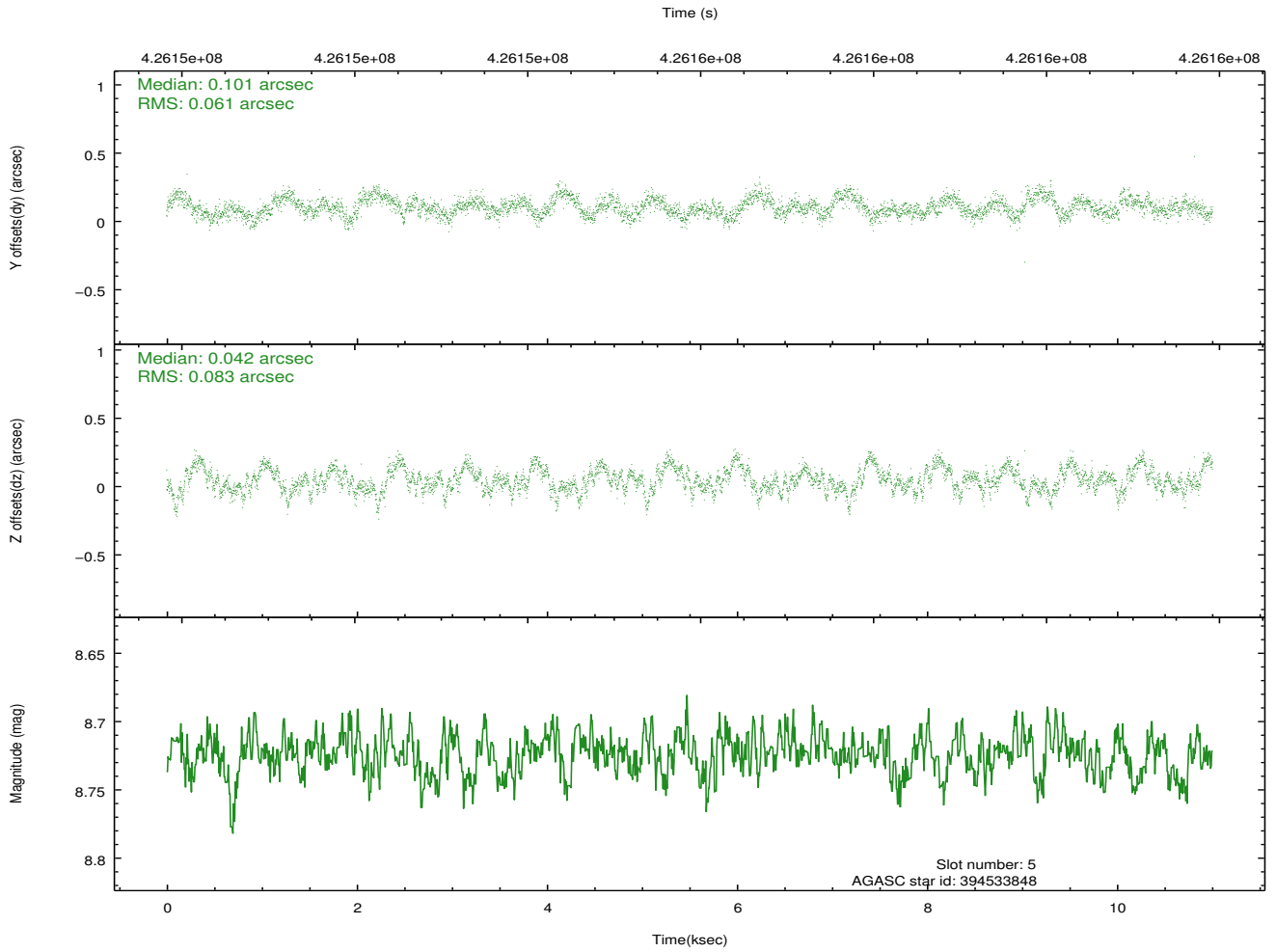
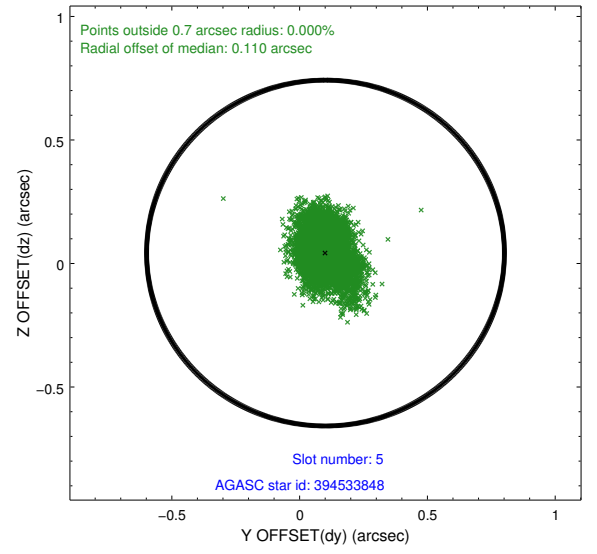
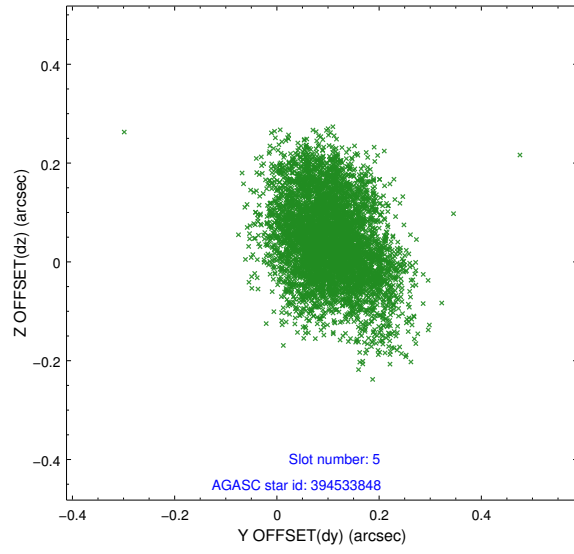
2.4.1 Slot 3



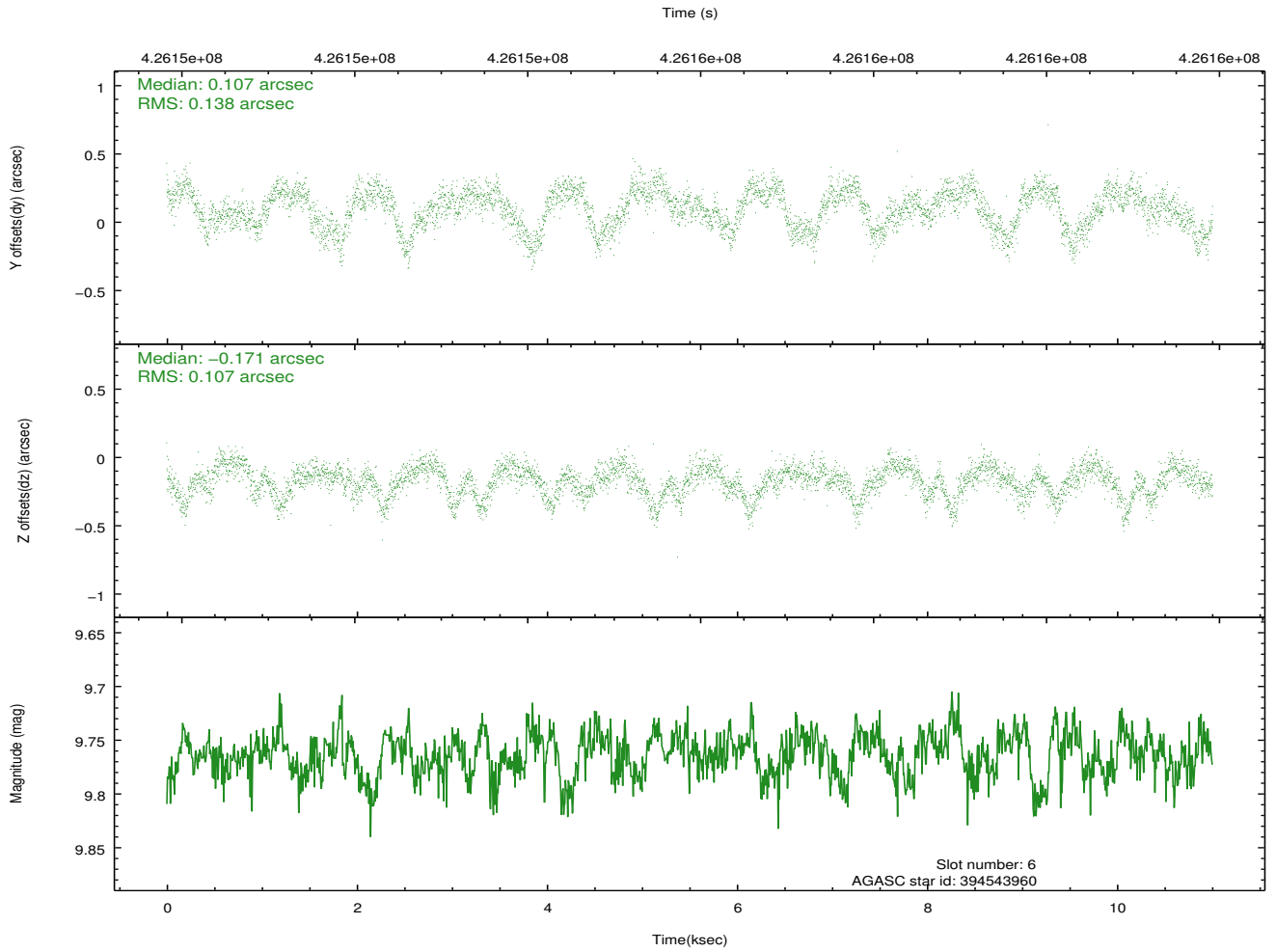
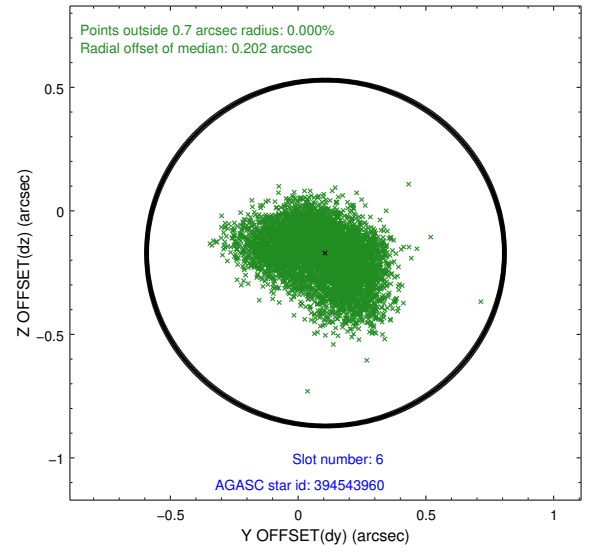
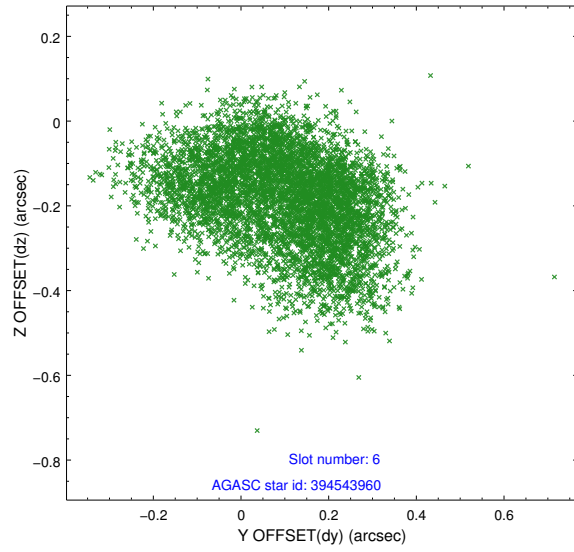
2.4.2 Slot 4



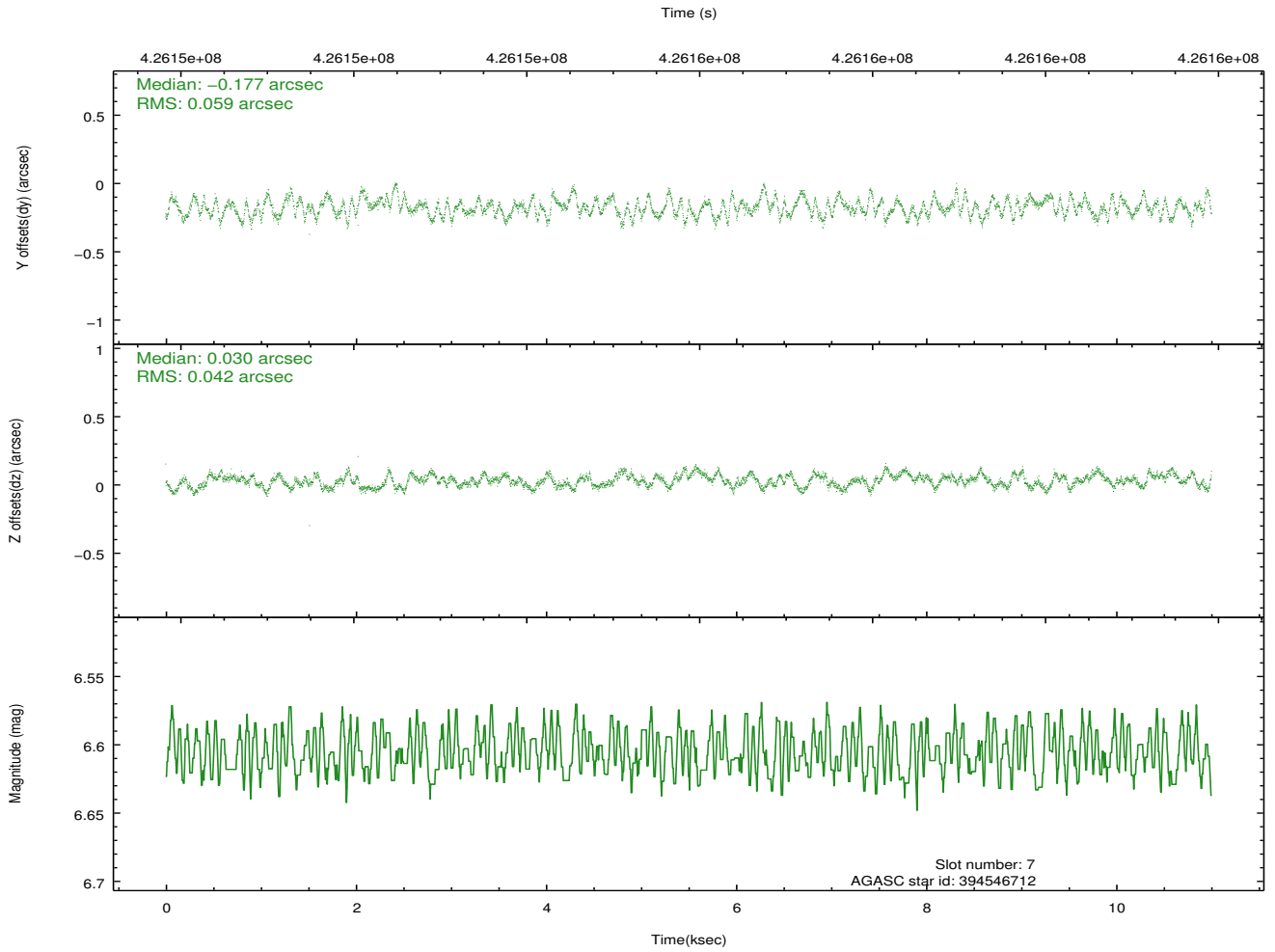
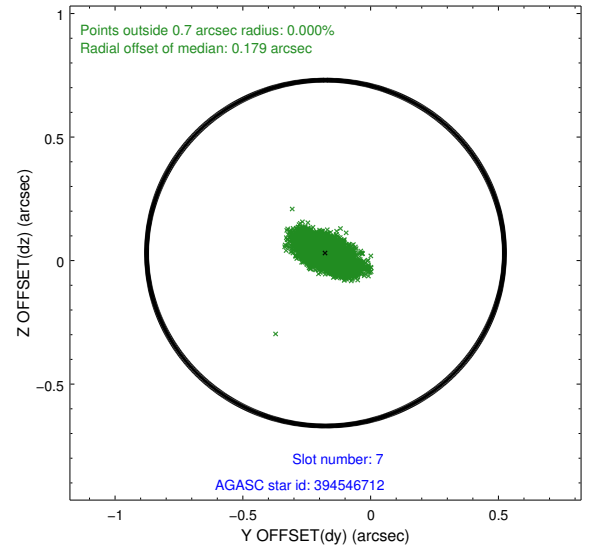
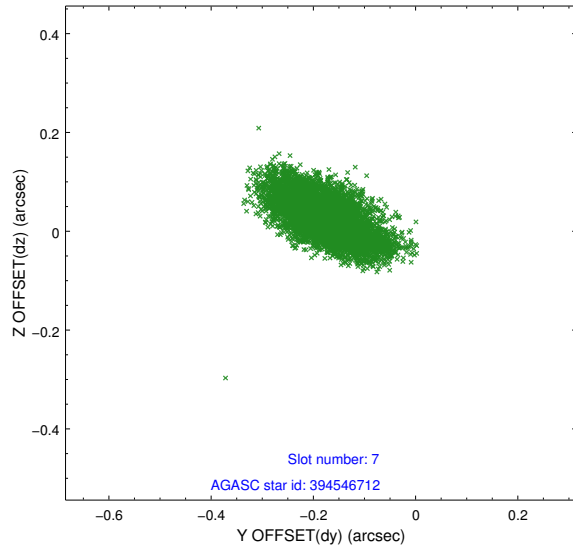
2.4.3 Slot 5



2.4.4 Slot 6

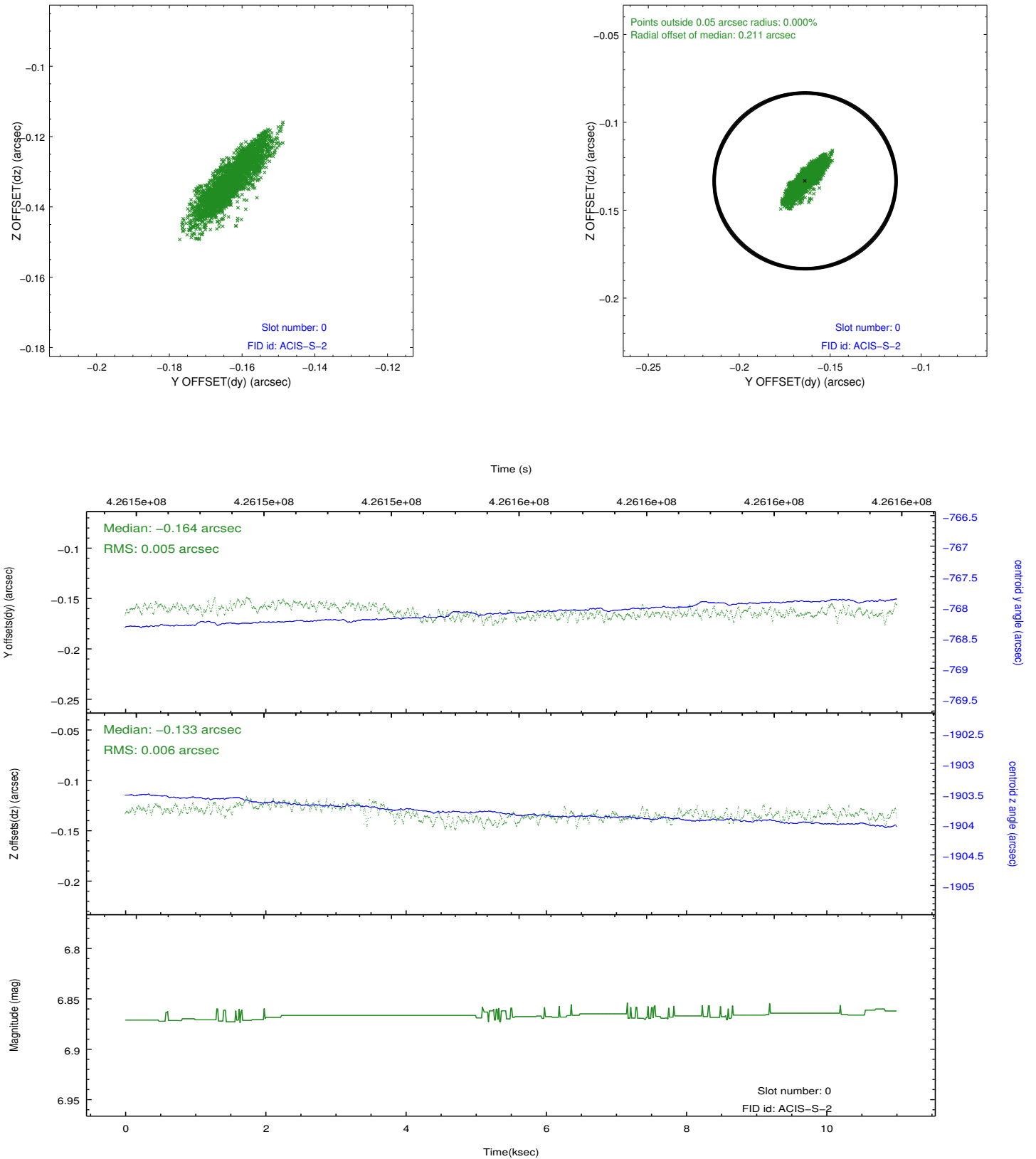


2.4.5 Slot 7

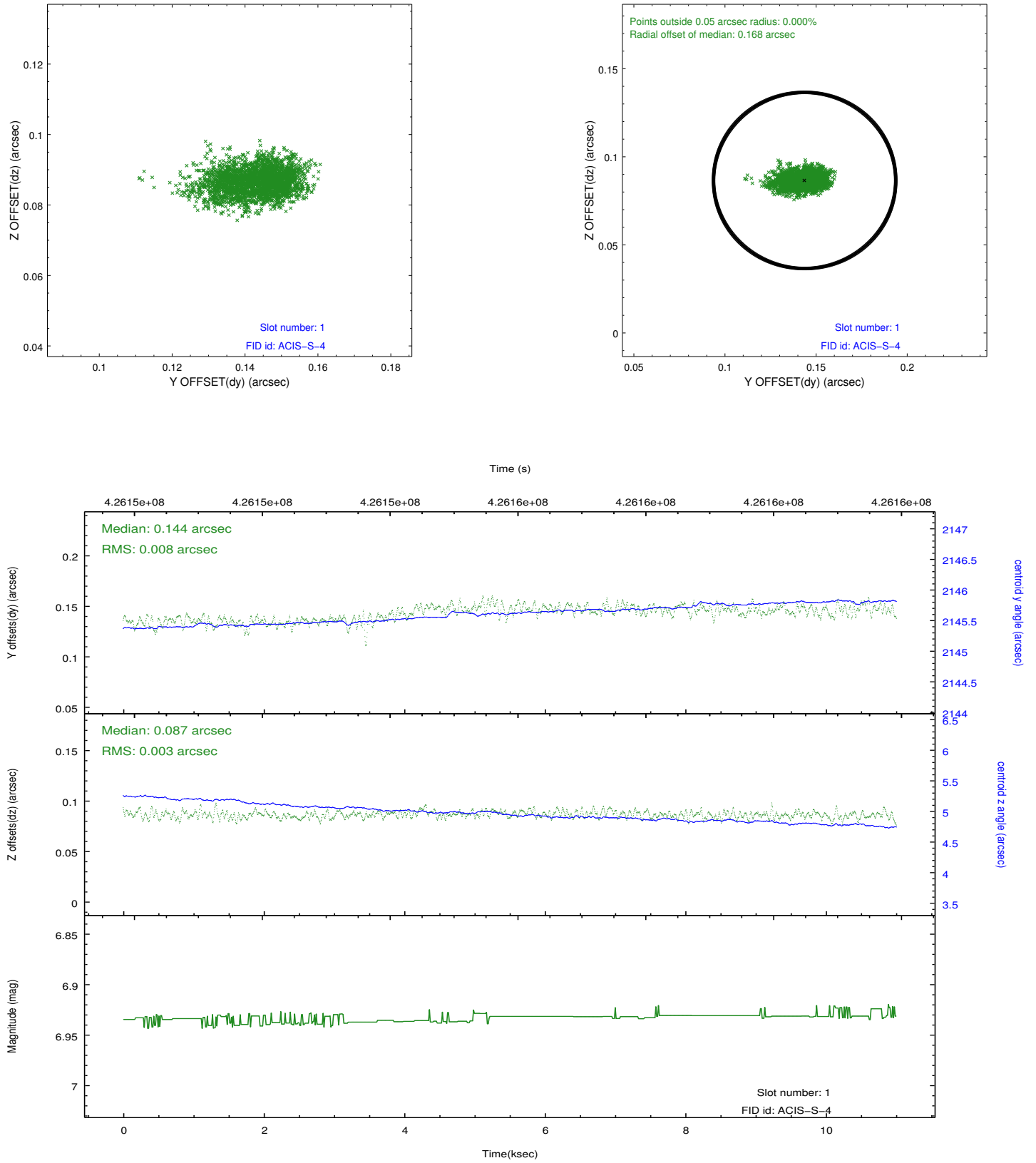


2.5 FID Slots

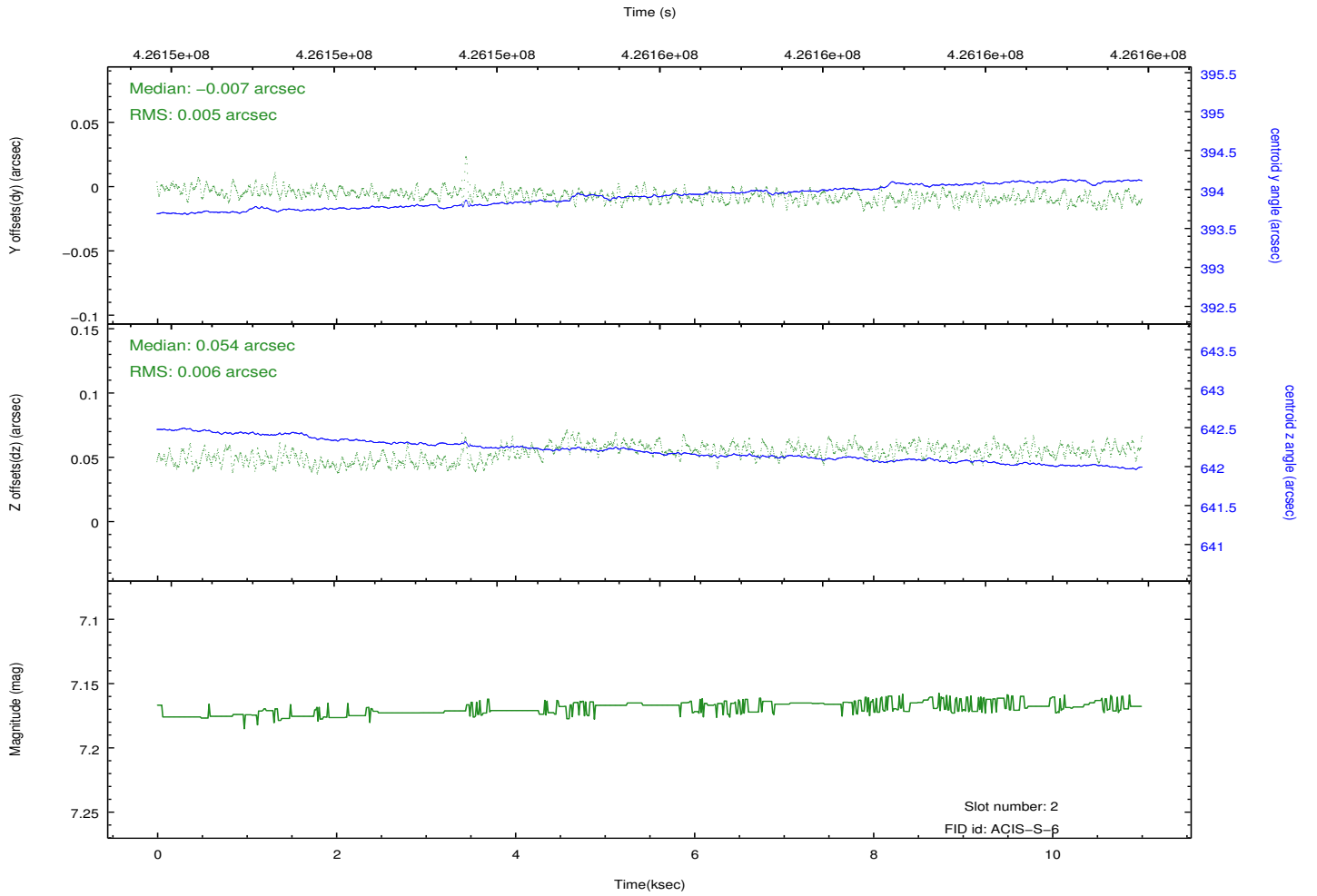
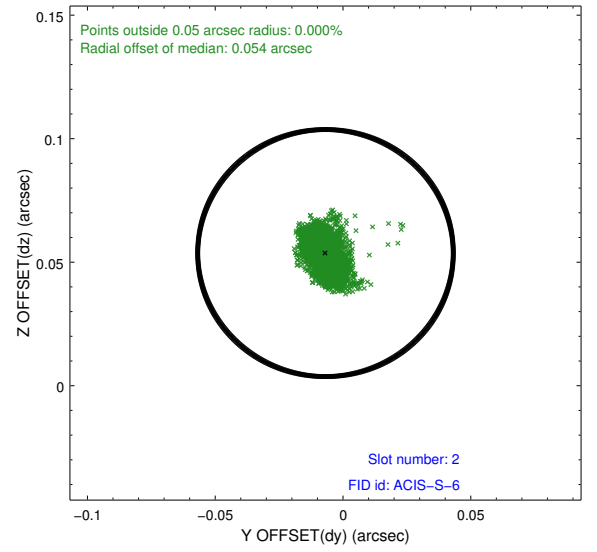
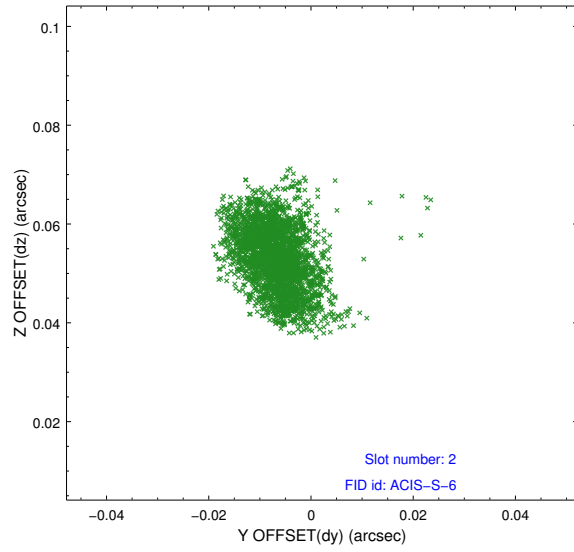
2.5.1 Slot 0



2.5.2 Slot 1



2.5.3 Slot 2

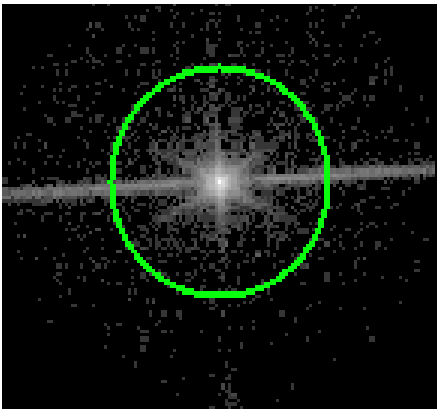


3 Gratings

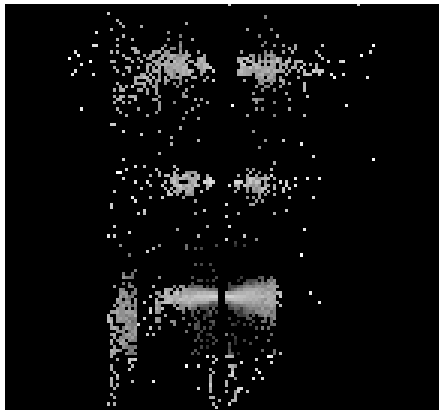
3.1 LETG Arm



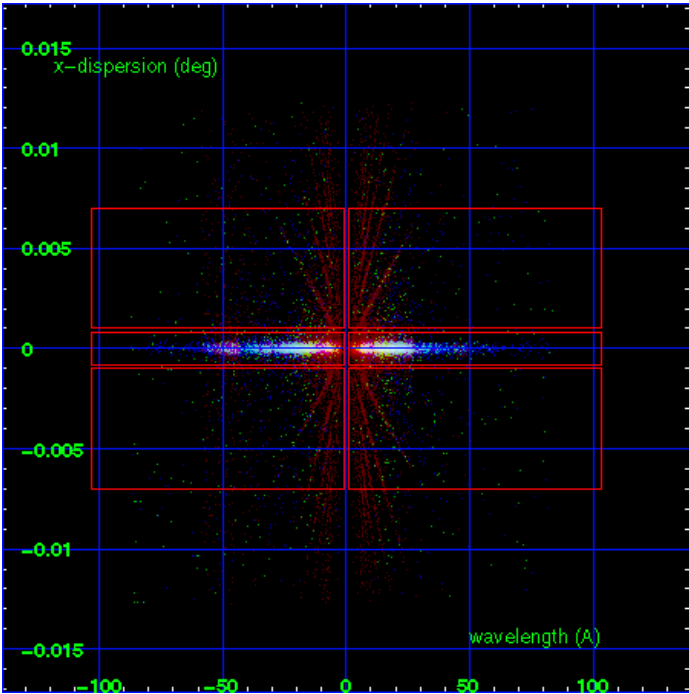
LETG Order Sort 123



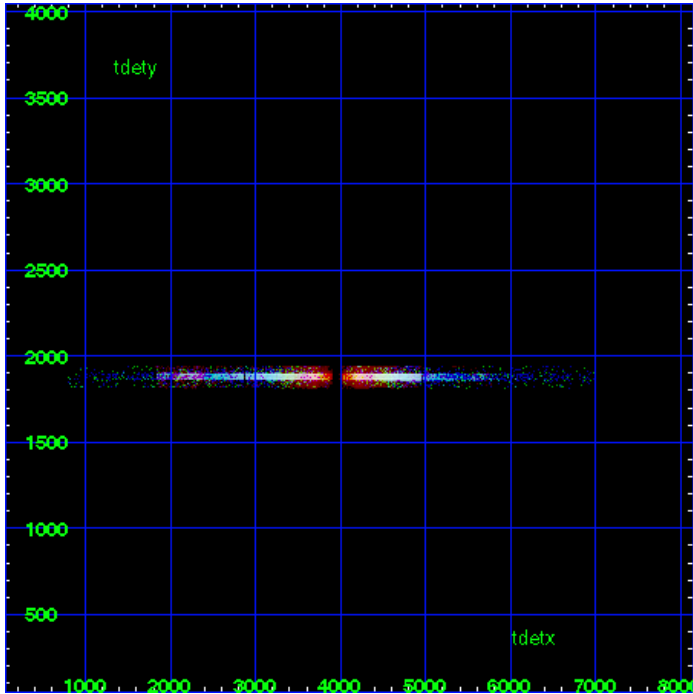
LETG Zero Order



LETG Order Sort ALL

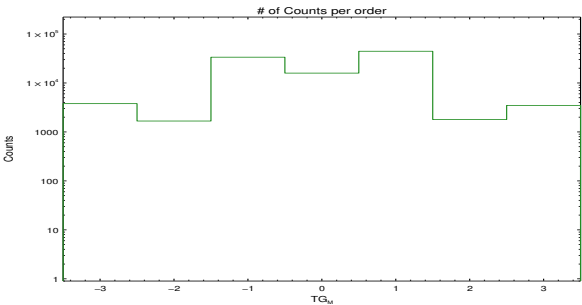


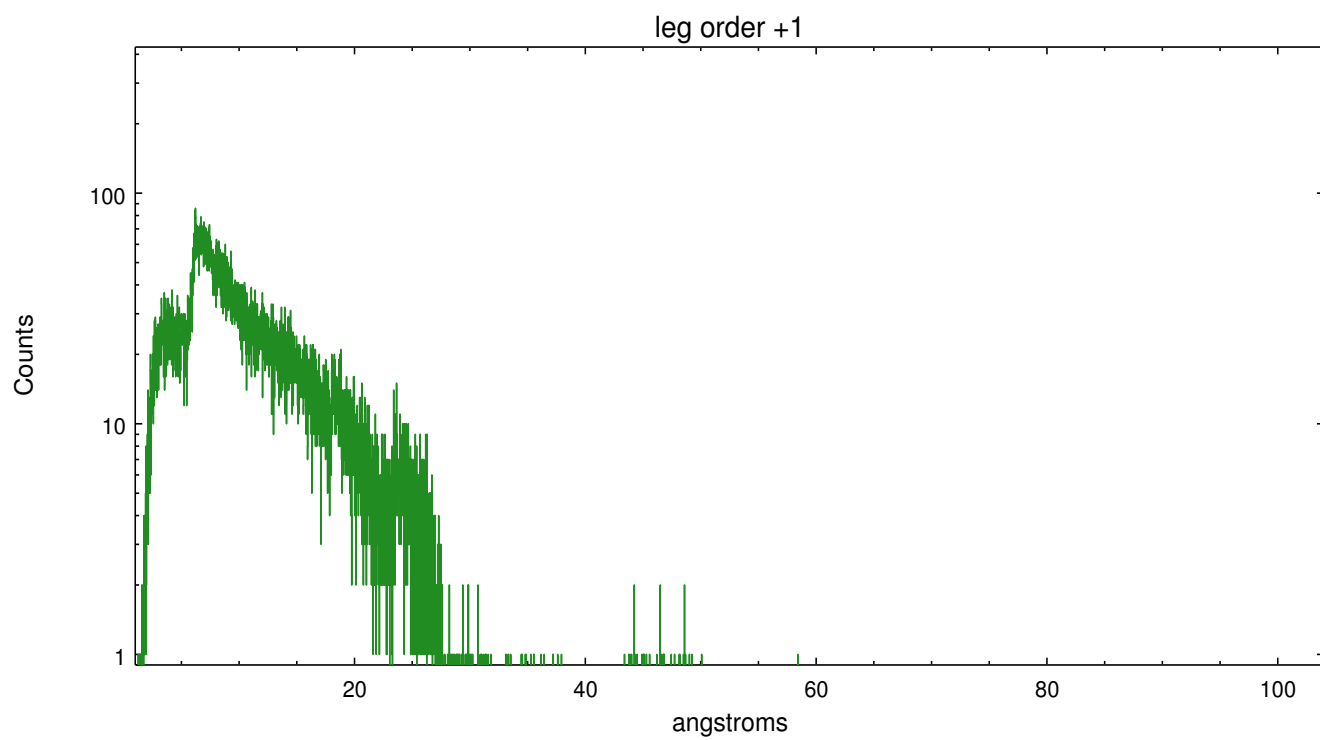
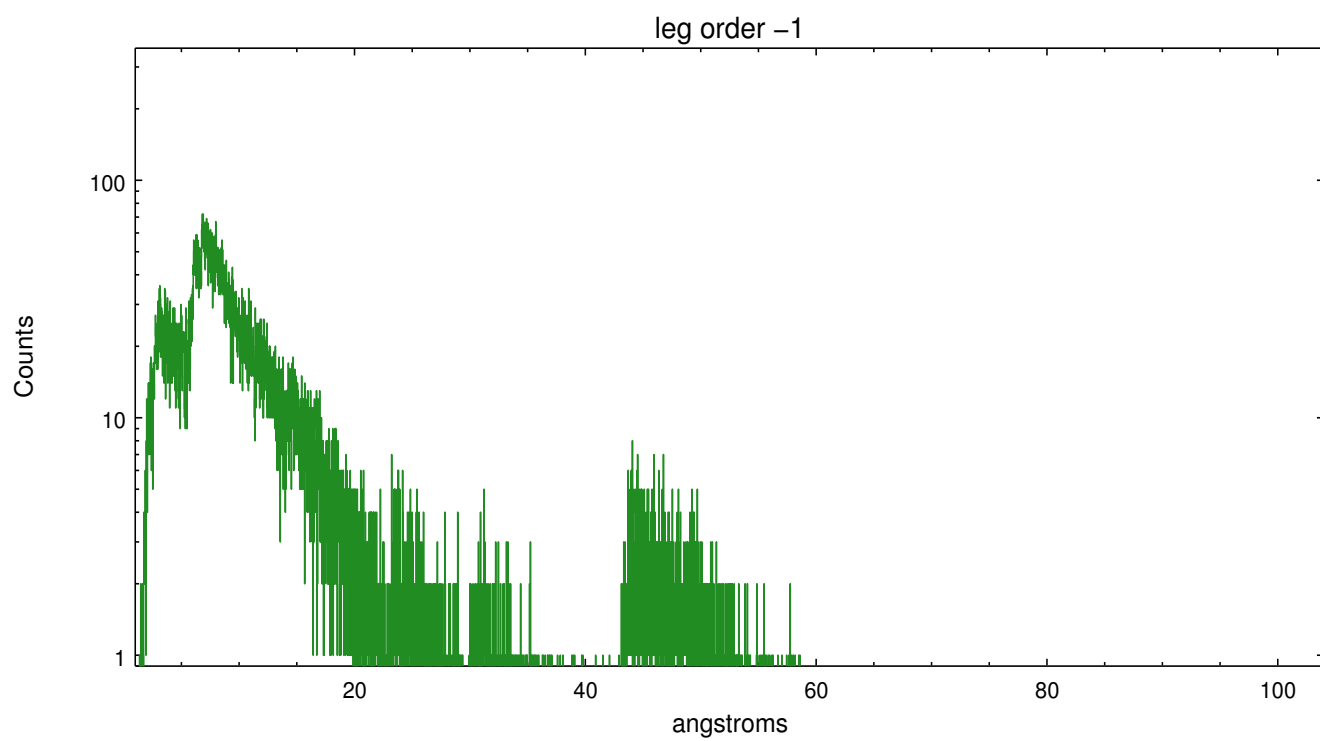
Spot Image LETG



Full Detector LETG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	3786	1670	33607	15895	44428	1791	3483





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	10.064599828541

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=4121.8 , y=3945.44) 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.