

V&V Reference Report

L2 ASCDS Version : 8.4.5

Observation 10664 - L2 Version 2
Chandra X-Ray Center

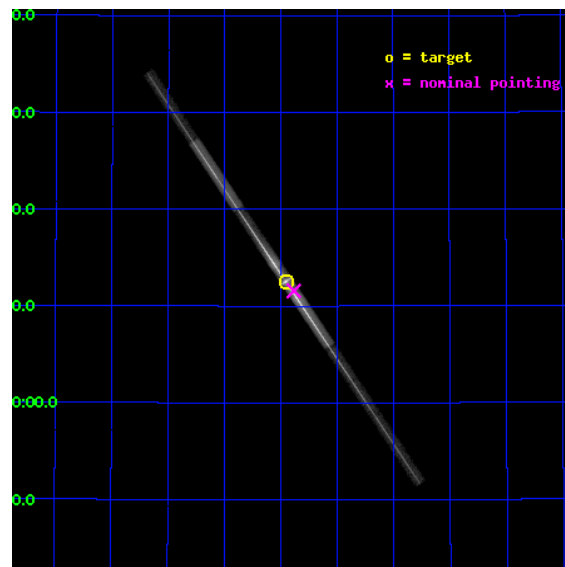
L2 Processing Date : Jun 18 2012

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1 Front

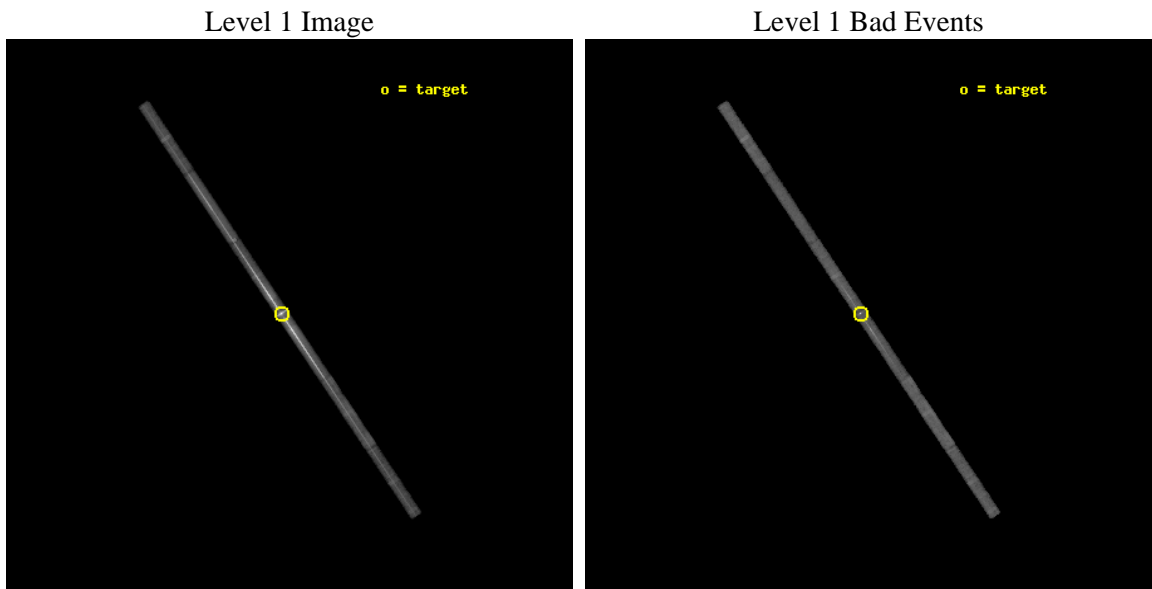
seq_num	790201	Sequence number
obs_id	10664	Observation id
title	AO-10 Calibration Observations of PKS2155-304	Proposal title
observer	Dr. CXC Calibration	Principal investigator
object	Mkn421	Source name
dtcycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	166.113333	Observer's specified target RA [deg]
dec_targ	38.208806	Observer's specified target Dec [deg]
ra_nom	166.09575337815	Nominal RA [deg]
dec_nom	38.192923071329	Nominal Dec [deg]
roll_nom	56.10266633516	Nominal Roll [deg]
revision	2	Processing version of data
ontime	20064.729827702	Sum of GTIs [s]
livetime	18953.512468141	Livetime [s]
ontime4	20064.770867705	Sum of GTIs [s]
ontime5	20064.688787699	Sum of GTIs [s]
ontime6	20063.906707644	Sum of GTIs [s]
ontime7	20064.729827702	Sum of GTIs [s]
ontime8	20064.606707692	Sum of GTIs [s]
ontime9	20064.565667689	Sum of GTIs [s]
l2events	693962	Number of level 2 events



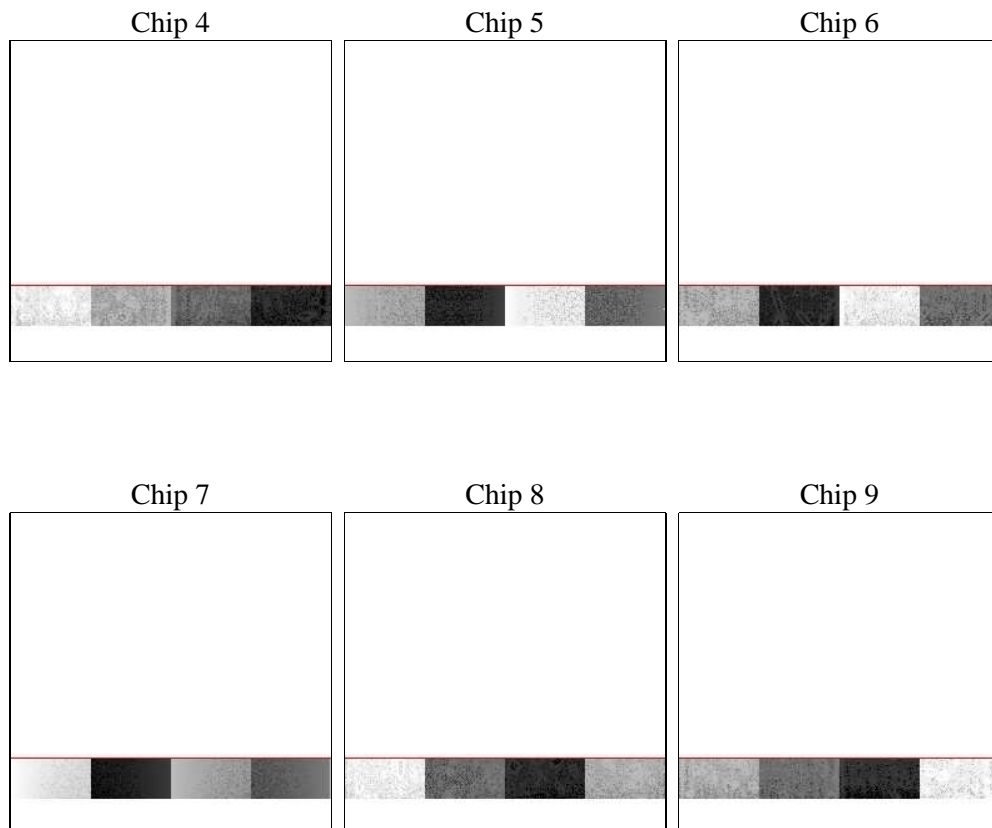
2 OBI

2.1 OBI

2.1.1 Images



2.1.2 Bias



2.1.3 Parameters

obi_num	1	Obi number	sched_exp_time	20000.000000	[s] Scheduled observation exposure time
ascdsver	8.4.5	Processing system revision	ontime	20064.729827702	Sum of GTIs [s]
caldsver	4.4.10	 	ontime4	20064.770867705	Sum of GTIs [s]
date	2012-06-16T03:02:25	Date and time of file creation	ontime5	20064.688787699	Sum of GTIs [s]
revision	2	Processing version of data	ontime6	20063.906707644	Sum of GTIs [s]
			ontime7	20064.729827702	Sum of GTIs [s]
			ontime8	20064.606707692	Sum of GTIs [s]
			ontime9	20064.565667689	Sum of GTIs [s]
			l1events	913166	Number of level 1 events

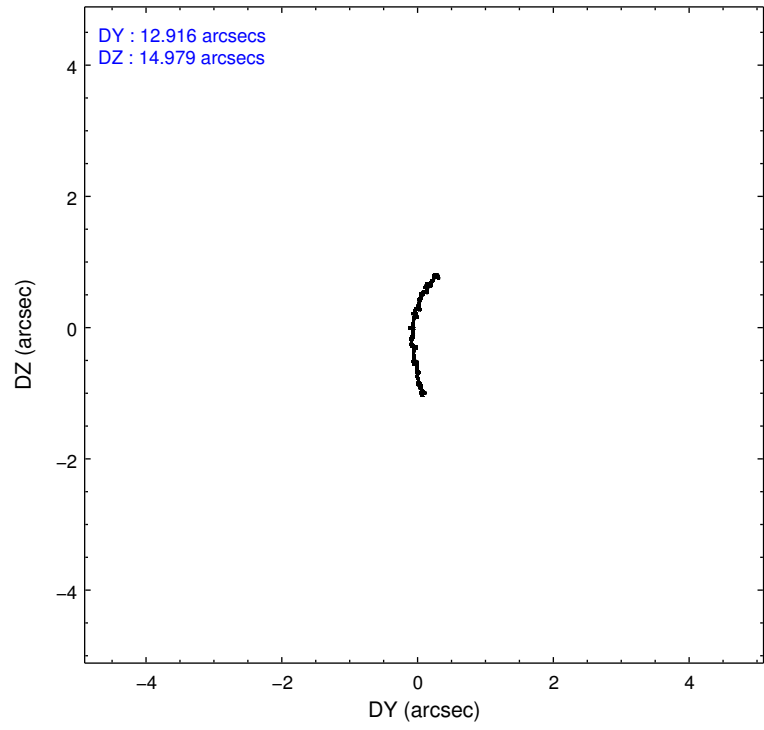
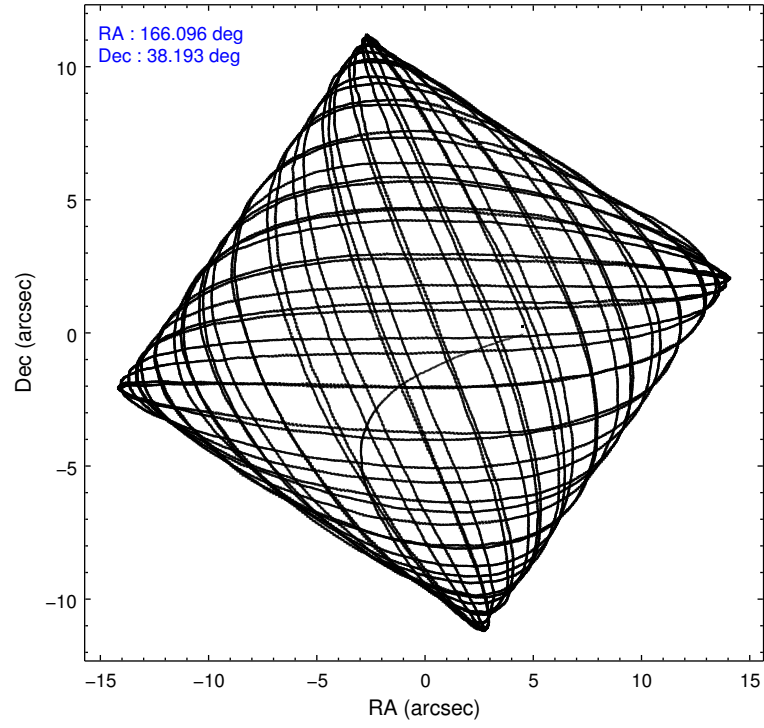
2.1.4 Events

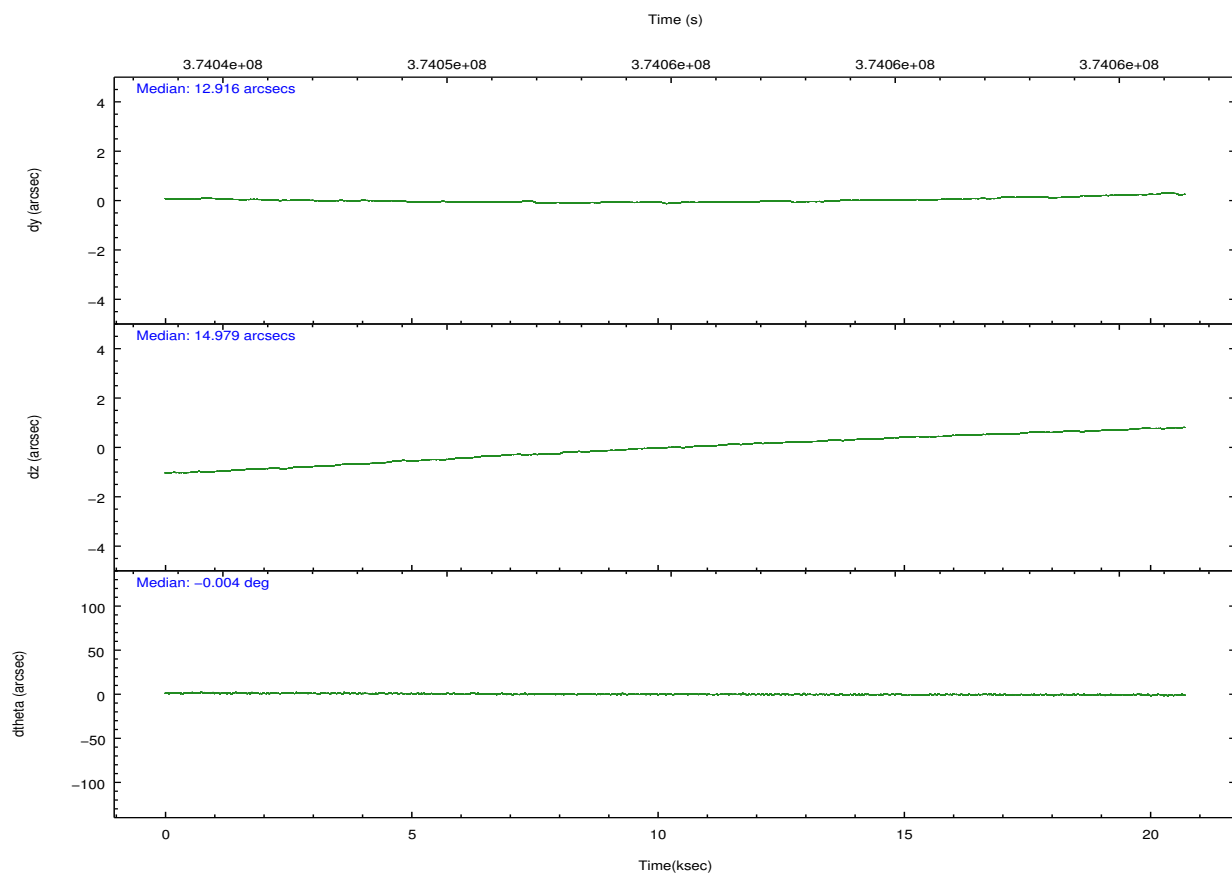
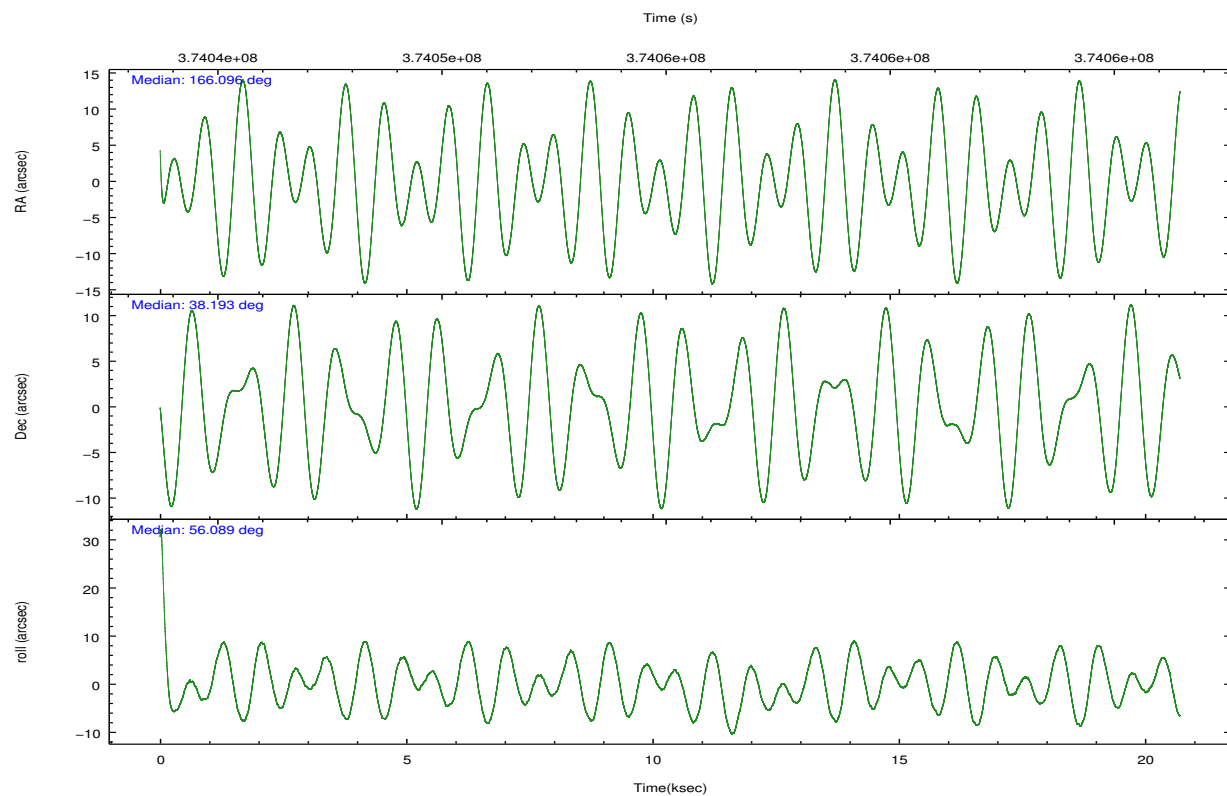
	ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9		ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
level 1 events	42602	86199	259965	423963	63829	36608	grade 0 events	7166	28466	183208	100647	18382	7302
rejected events	31504	22342	30543	48783	35324	25693		16%	33%	70%	23%	28%	19%
rejected %	73%	25%	11%	11%	55%	70%	grade 1 events	21	203	1414	1693	46	16
								0%	0%	0%	0%	0%	0%
							grade 2 events	1605	13635	23827	96378	3677	1338
								3%	15%	9%	22%	5%	3%
							grade 3 events	799	4568	7898	43785	1573	763
								1%	5%	3%	10%	2%	2%
							grade 4 events	750	4536	7989	43038	1578	743
								1%	5%	3%	10%	2%	2%
							grade 5 events	1268	3885	2014	10280	1622	1266
								2%	4%	0%	2%	2%	3%
							grade 6 events	779	12655	6505	91350	3295	770
								1%	14%	2%	21%	5%	2%
							grade 7 events	30214	18251	27110	36792	33656	24410
								70%	21%	10%	8%	52%	66%

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	166.093862	166.0957533781489	CCD I2 on	N	N
[deg] Pointing Dec	38.165639	38.19292307132872	CCD I3 on	N	N
[deg] Pointing Roll	55.947189	56.10266633516004	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)	374045432.184000	374043721.86464	CCD S5 on	Y	Y
Observation start date	2009-11-08T05:29:26	2009-11-08T05:02:01	Number of optional ACIS chips dropped	0	0
[s] Observation end time (MET)	374065432.184000	374066046.87826	On-chip summing requested	N	N
Observation end date	2009-11-08T11:02:46	2009-11-08T11:14:06	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



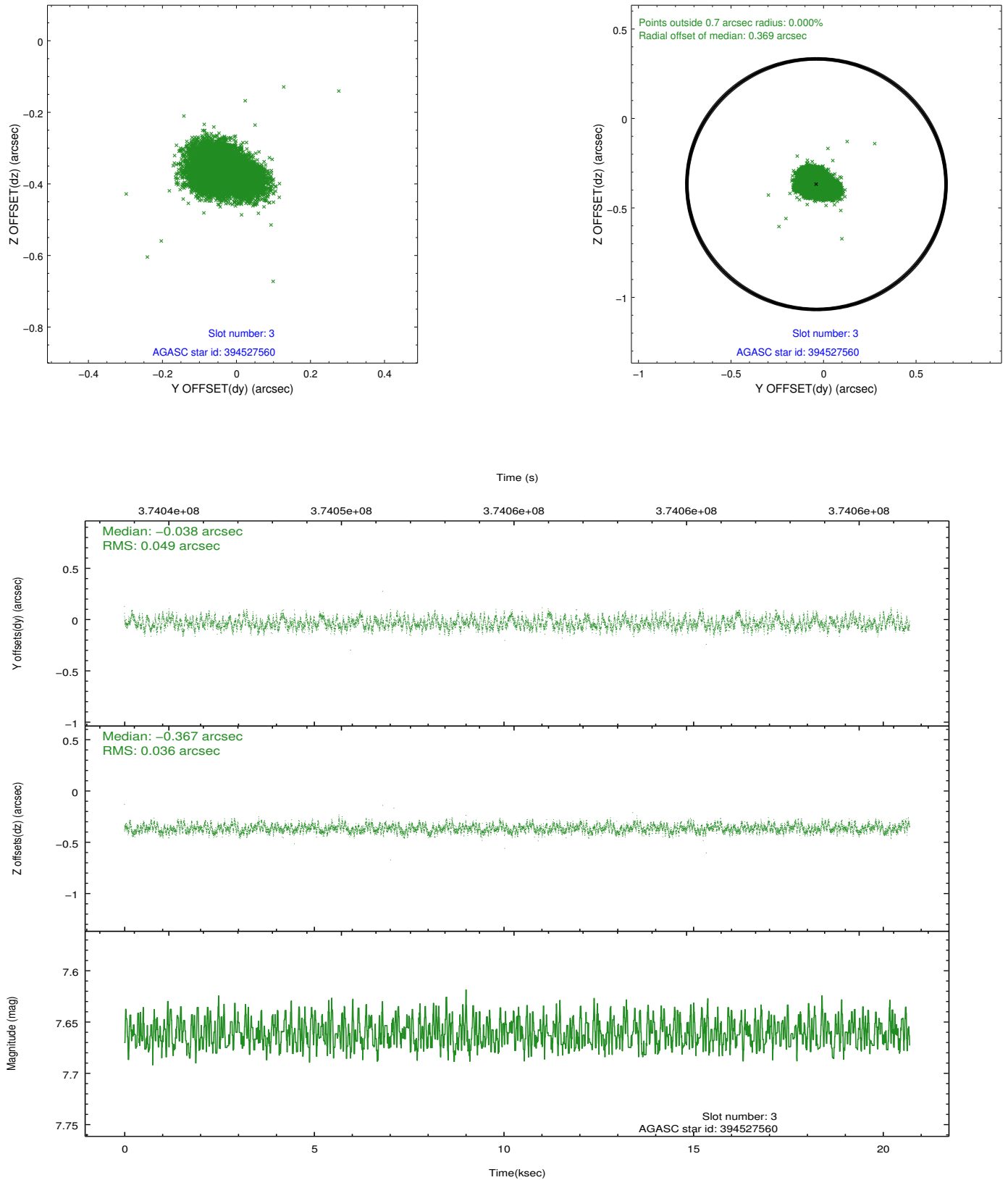


Slot Statistics

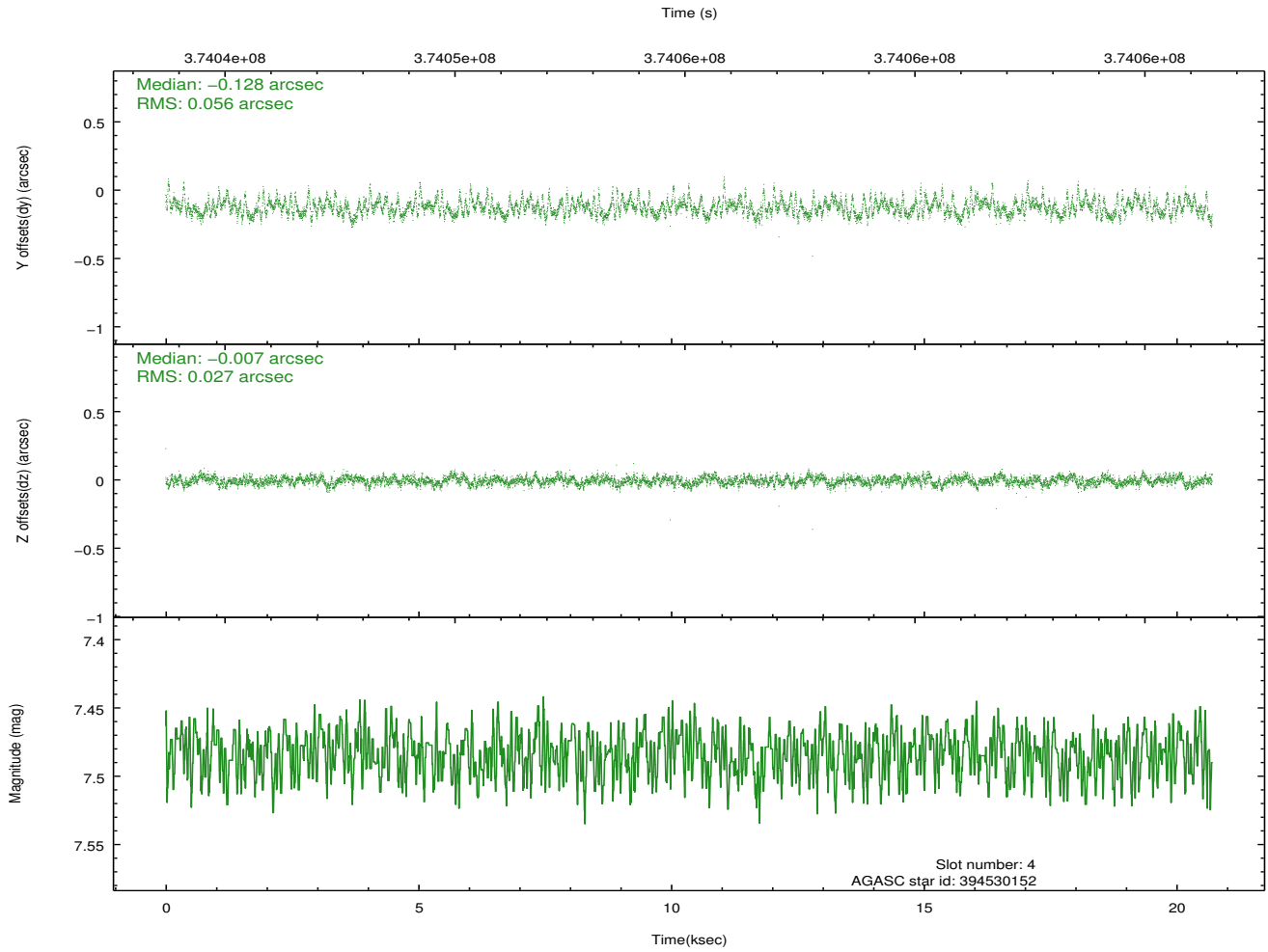
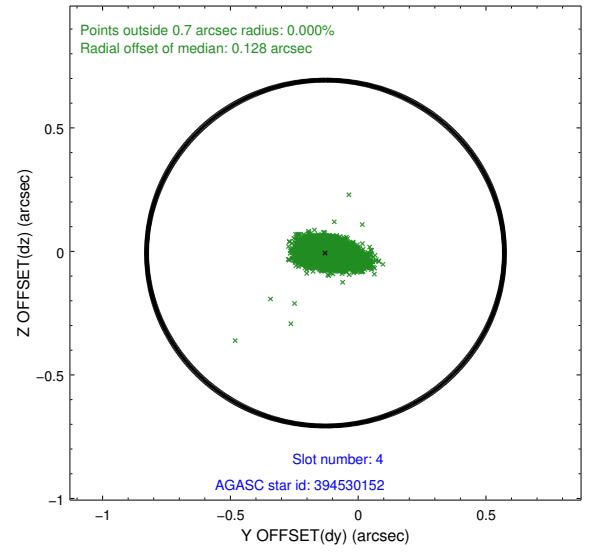
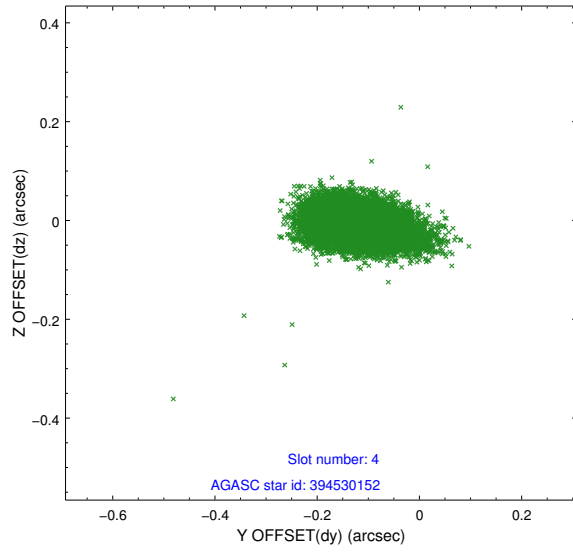
slot	status	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID	ACIS-S-2	6.86	5050	-0.105	-0.064	0.011	0.022	0.000000	0.000000	-765.39	-1901.13
1	FID	ACIS-S-4	6.92	5049	0.105	0.061	0.008	0.012	0.000000	0.000000	2148.02	7.23
2	FID	ACIS-S-6	7.15	5050	-0.027	0.010	0.015	0.030	0.000000	0.000000	396.91	644.79
3	GUIDE	394527560	7.66	10095	-0.038	-0.367	0.065	0.103	165.970713	38.960939	2179.09	1888.92
4	GUIDE	394530152	7.48	10100	-0.128	-0.007	0.064	0.112	166.075805	38.868252	2067.35	1458.76
5	GUIDE	394532424	9.44	10082	0.108	0.039	0.142	0.244	167.196007	38.297687	2152.45	-2303.31
6	GUIDE	394533848	8.72	10089	0.238	0.061	0.068	0.114	166.382906	38.276007	787.10	-450.76
7	GUIDE	394546720	6.39	10097	-0.177	0.276	0.096	0.160	166.130115	38.241361	283.39	67.77

2.4 Star Slots

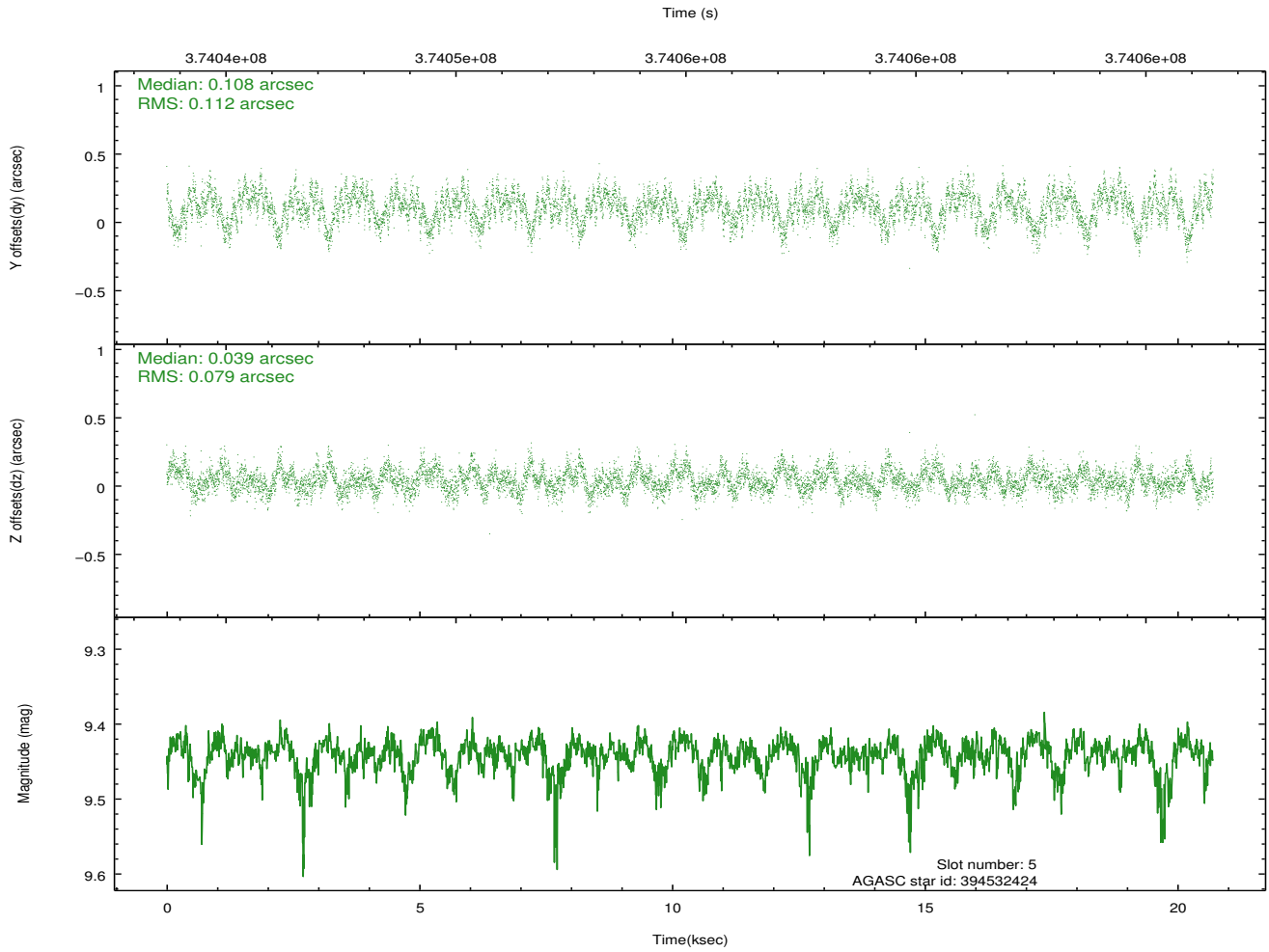
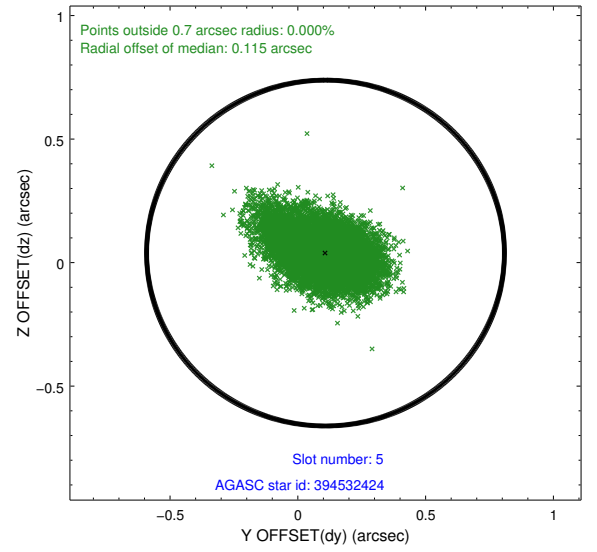
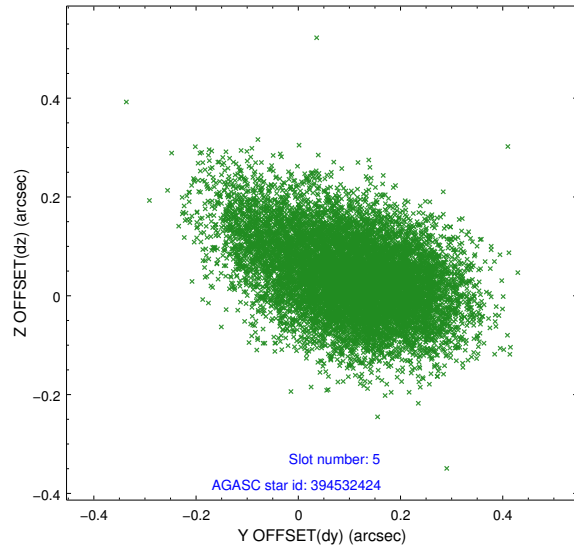
2.4.1 Slot 3



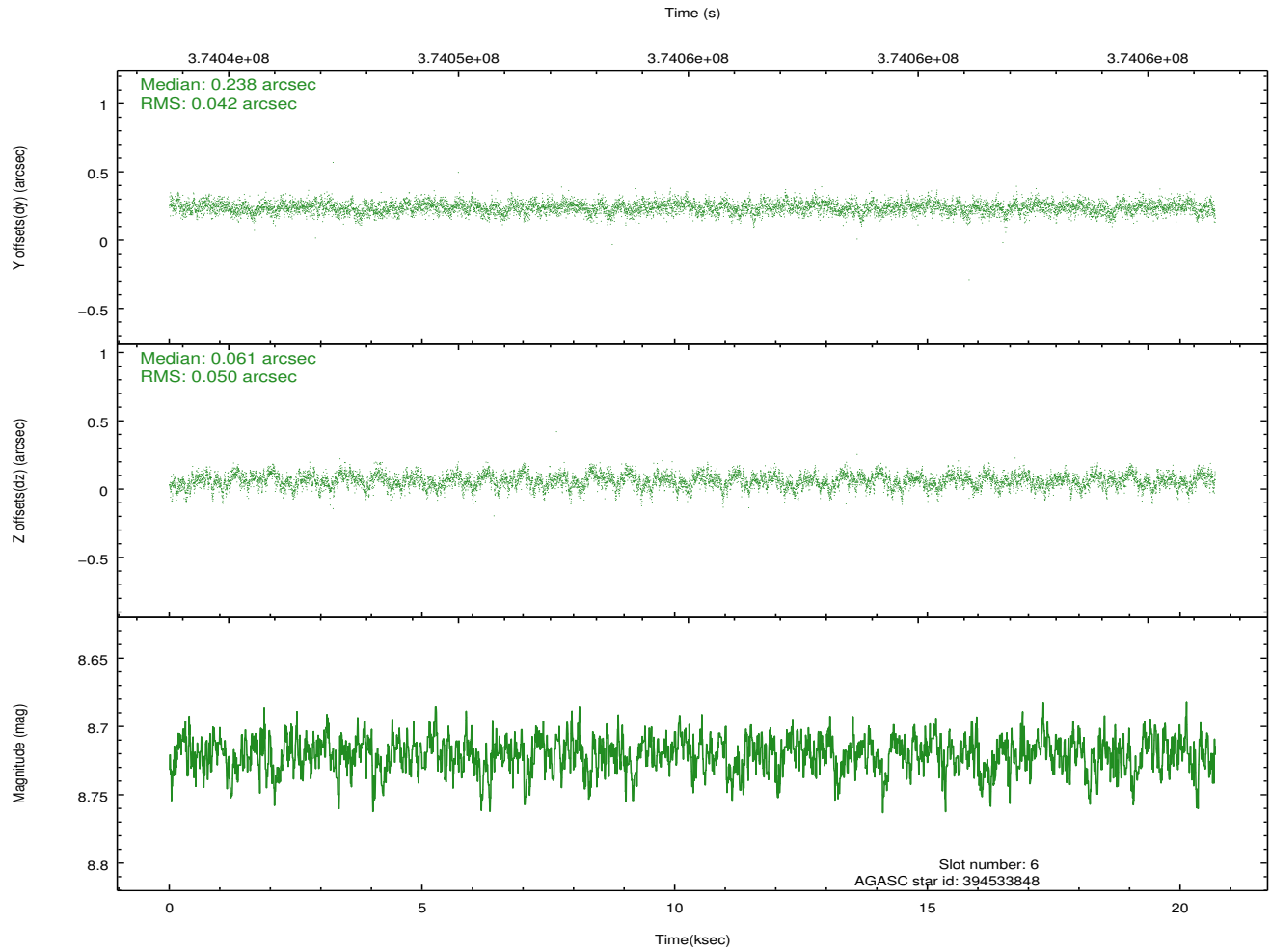
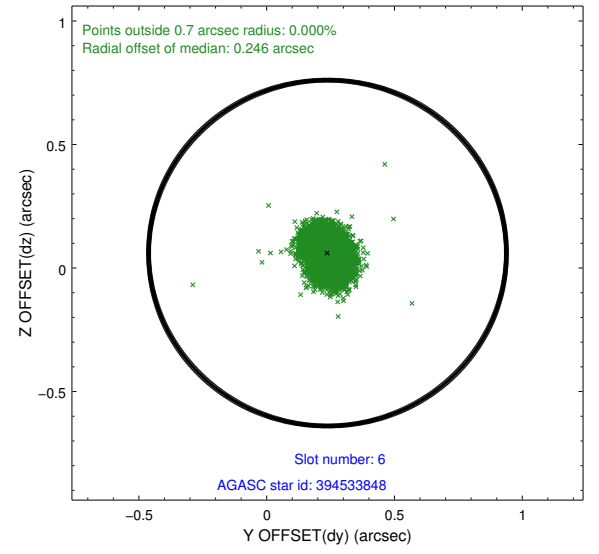
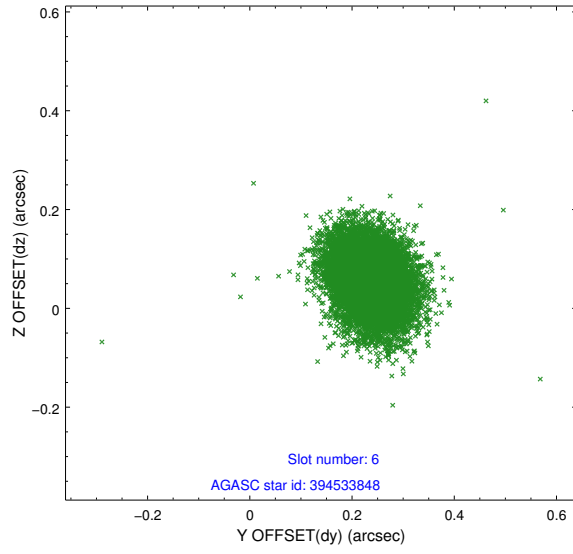
2.4.2 Slot 4



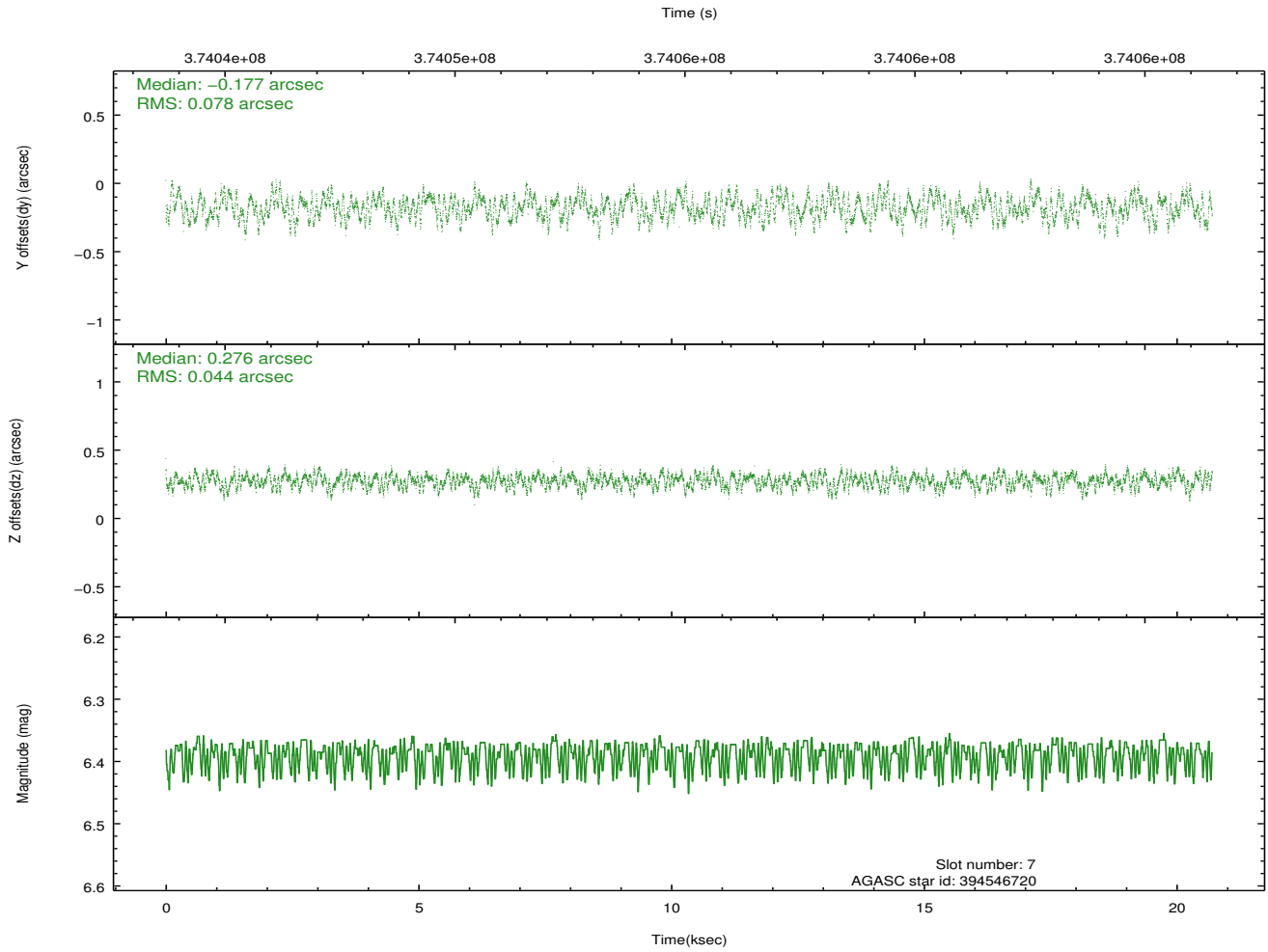
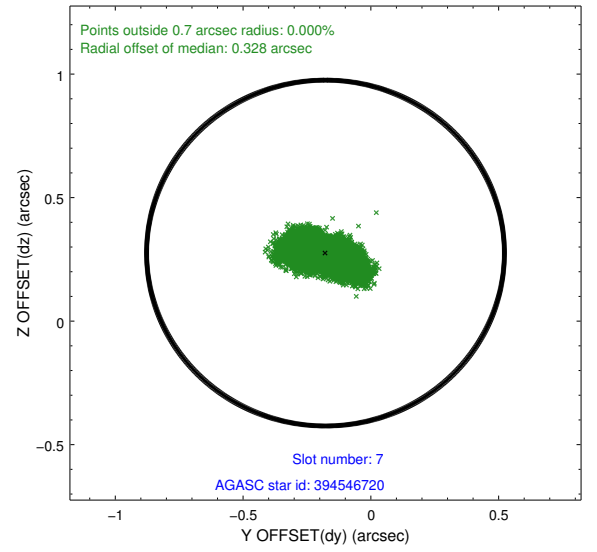
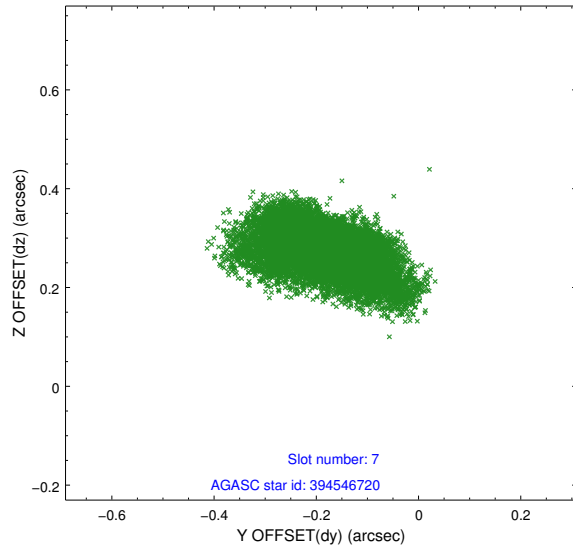
2.4.3 Slot 5



2.4.4 Slot 6

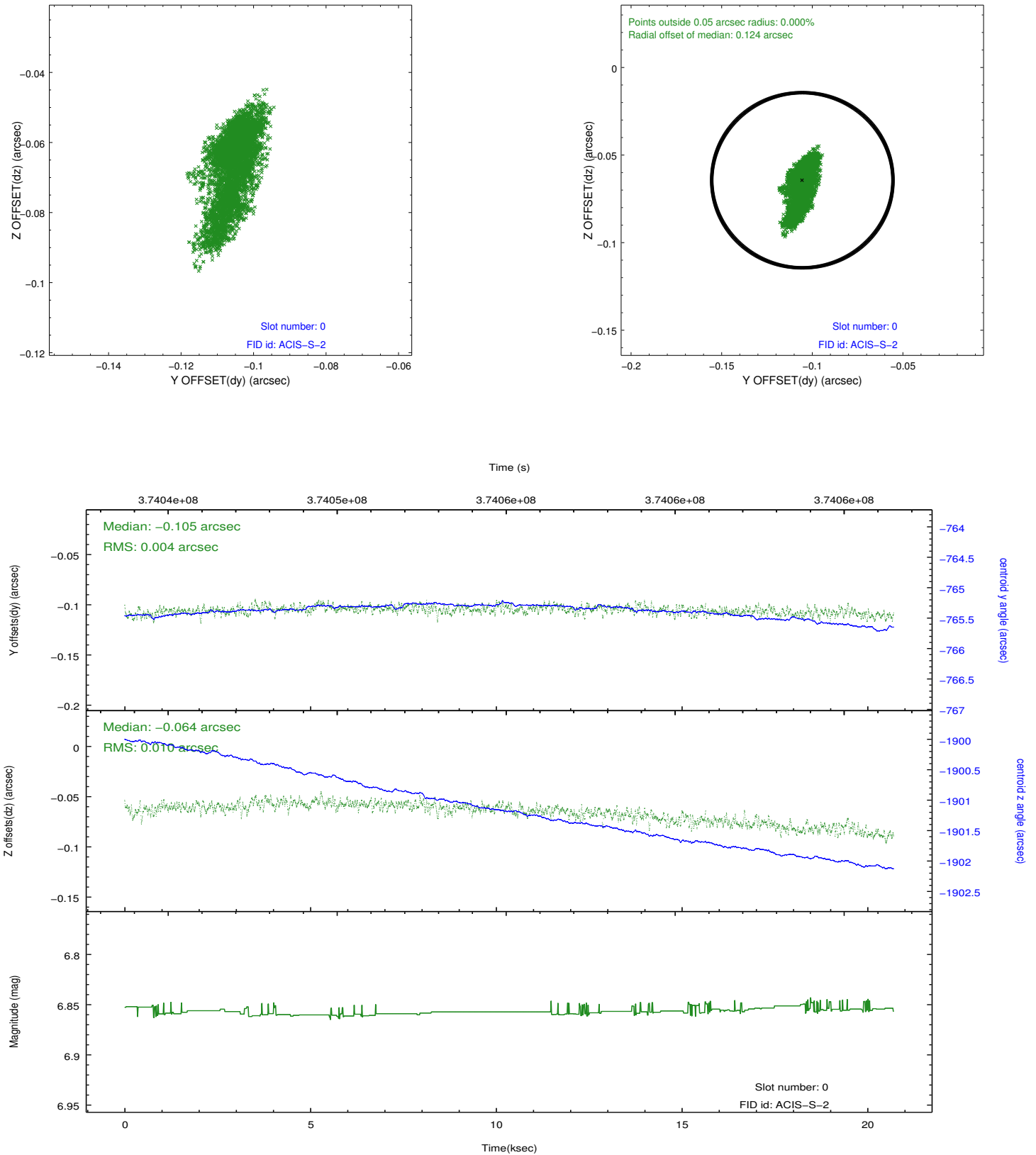


2.4.5 Slot 7

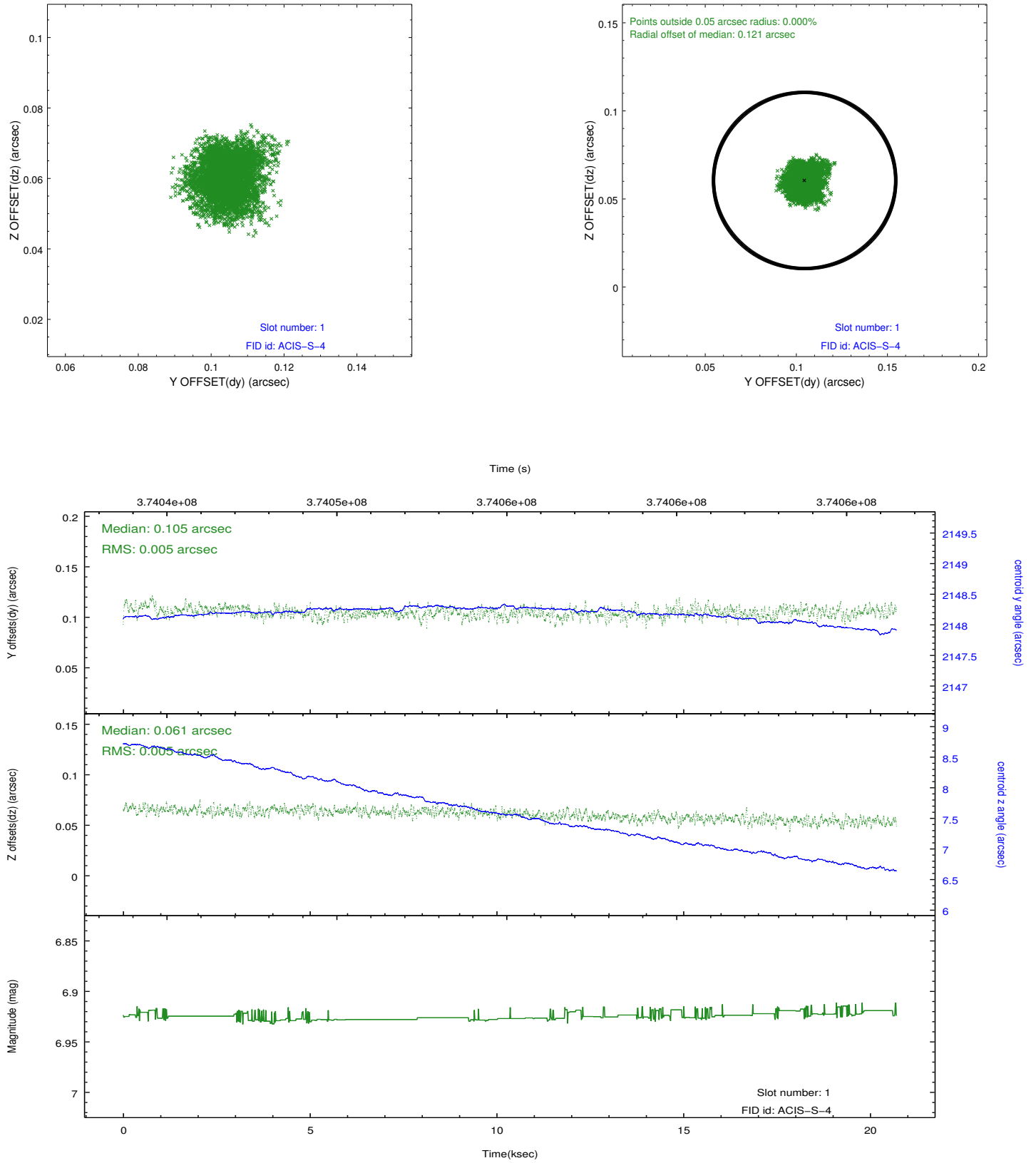


2.5 FID Slots

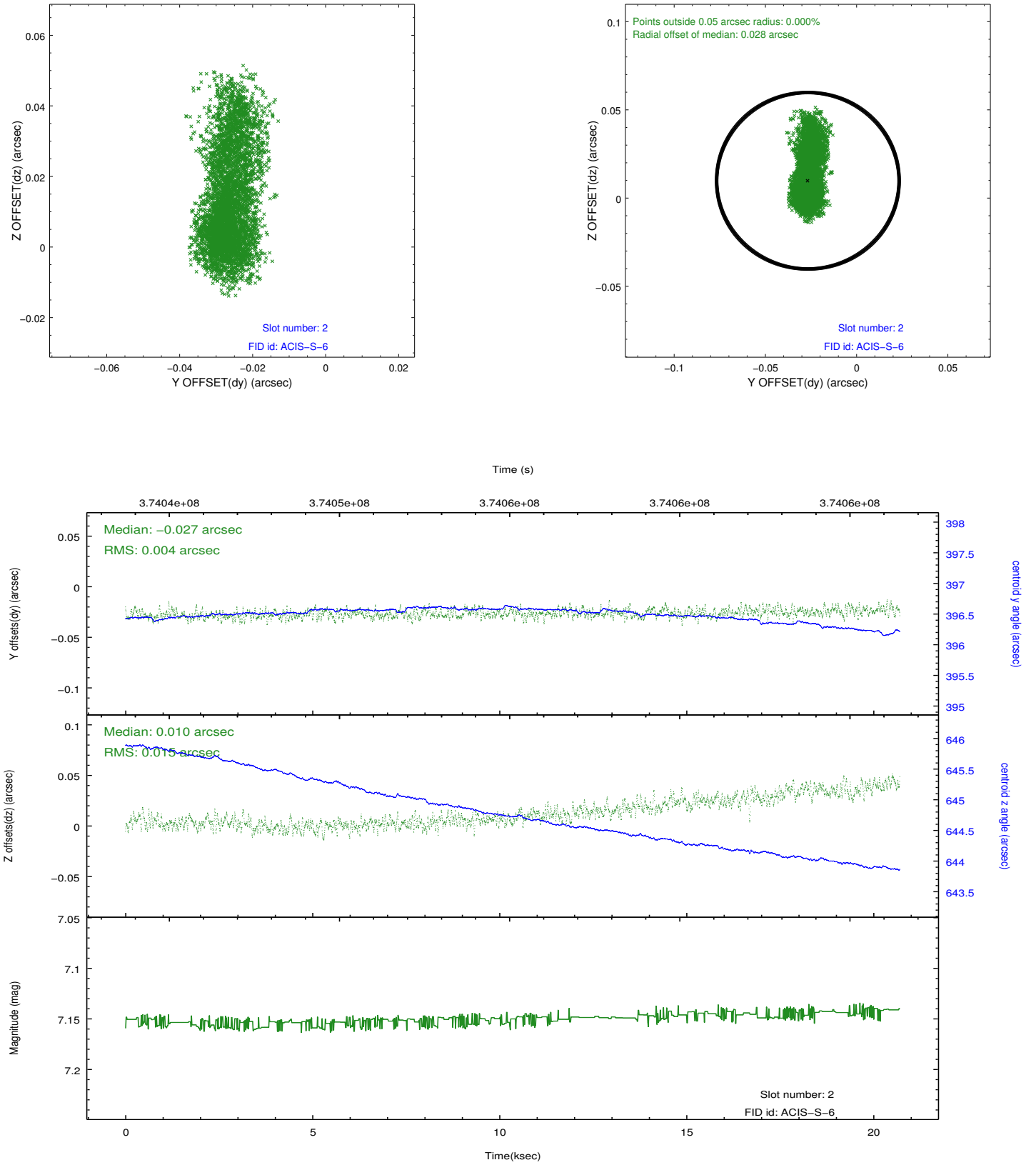
2.5.1 Slot 0



2.5.2 Slot 1



2.5.3 Slot 2

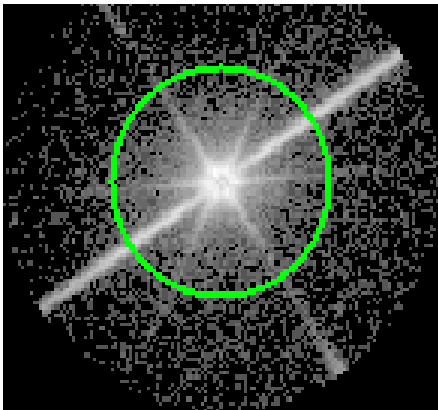


3 Gratings

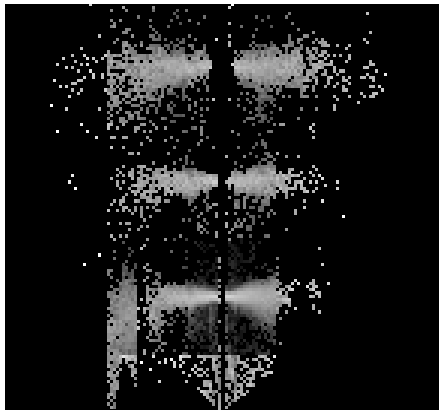
3.1 LETG Arm



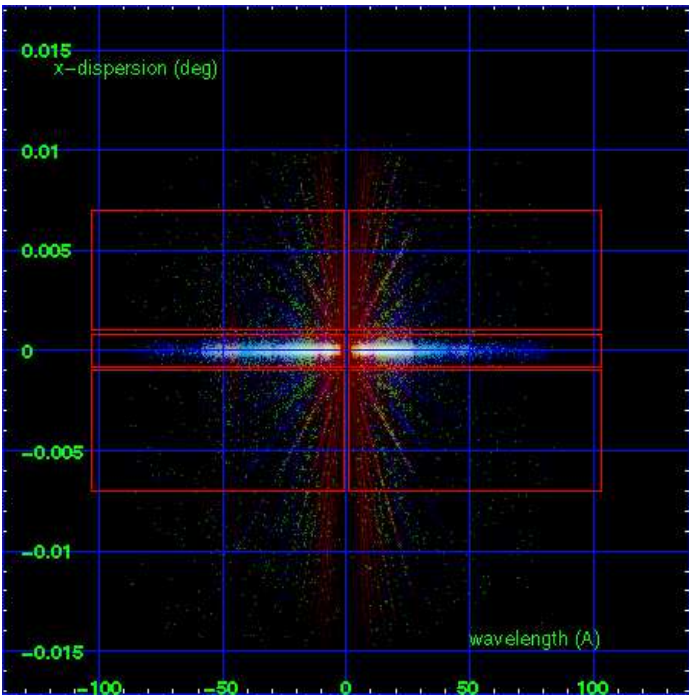
LETG Order Sort 123



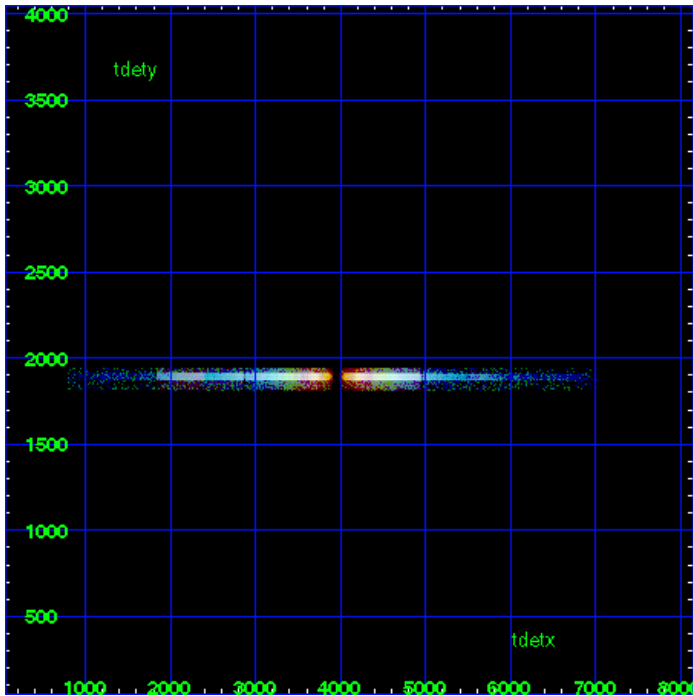
LETG Zero Order



LETG Order Sort ALL

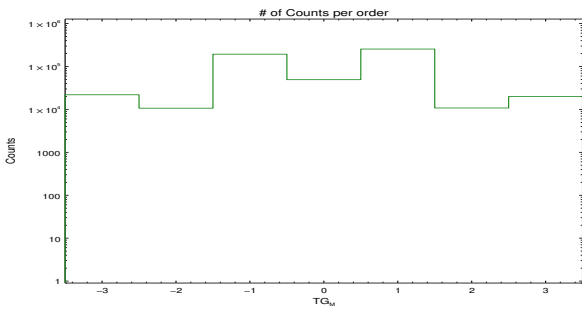


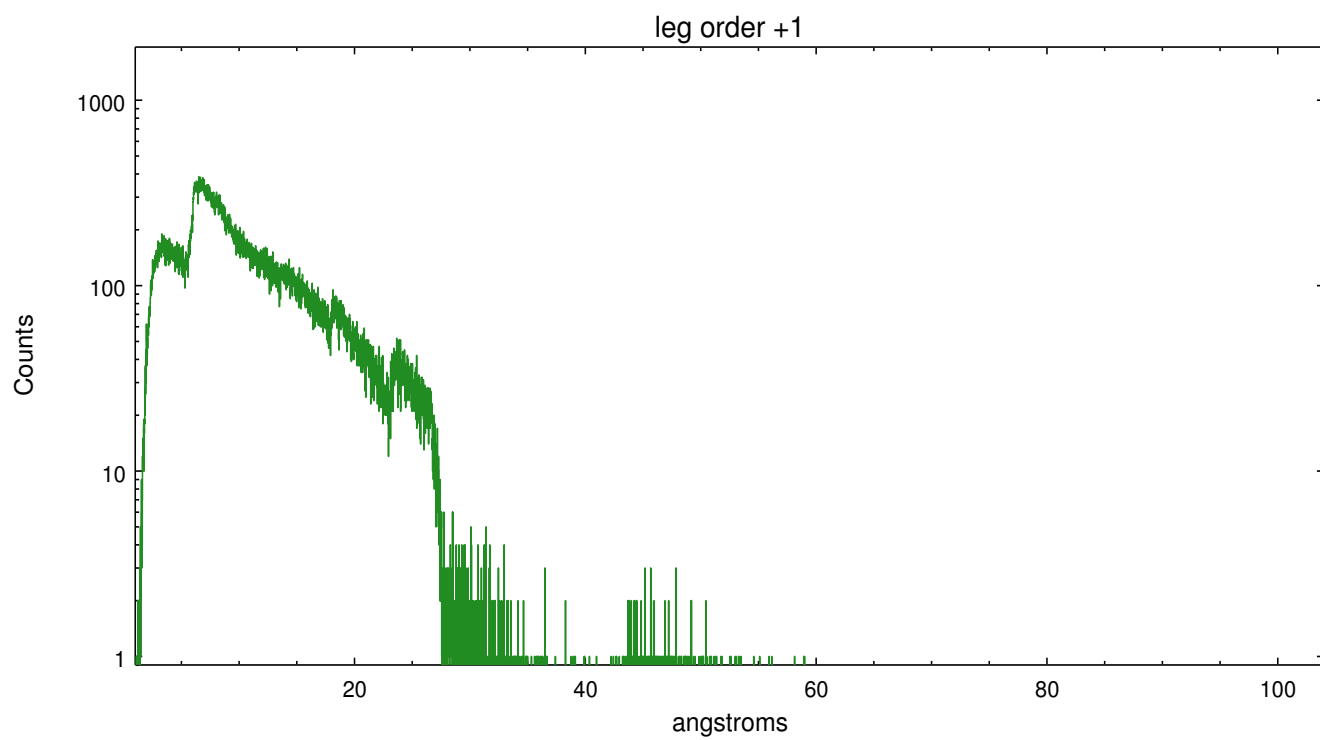
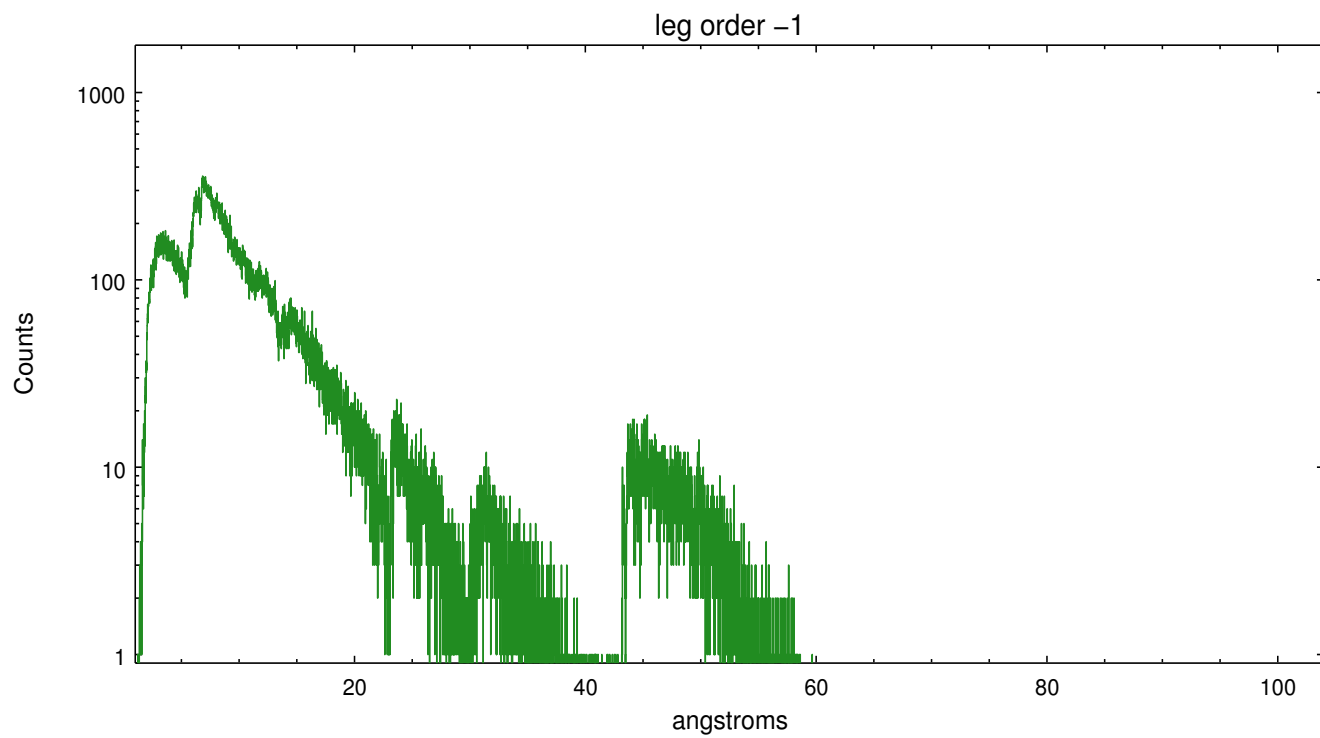
Spot Image LETG



Full Detector LETG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	21950	10679	193569	49358	255326	10810	19955





A Summary

A.1 Status

V&V Scientist	Joy Nichols
V&V Date (YYYY-MM-DD)	2012.06.26
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	20.064799658239

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=3992.27, y=4213.5) 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.

===

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.