

V&V Reference Report

L2 ASCDS Version : 10.6.4

Observation 21664 - L2 Version 1
Chandra X-Ray Center

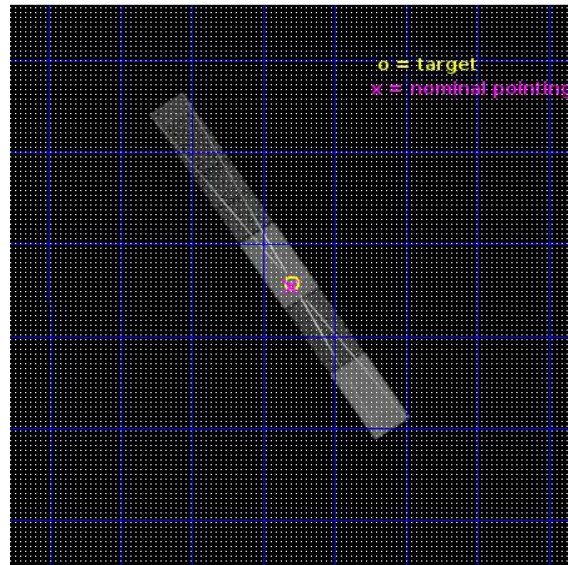
L2 Processing Date : Aug 5 2018

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	HEG Arm	17
3.2	MEG Arm	19
A	Summary	21
A.1	Status	21
A.2	Comments	21

1 Front

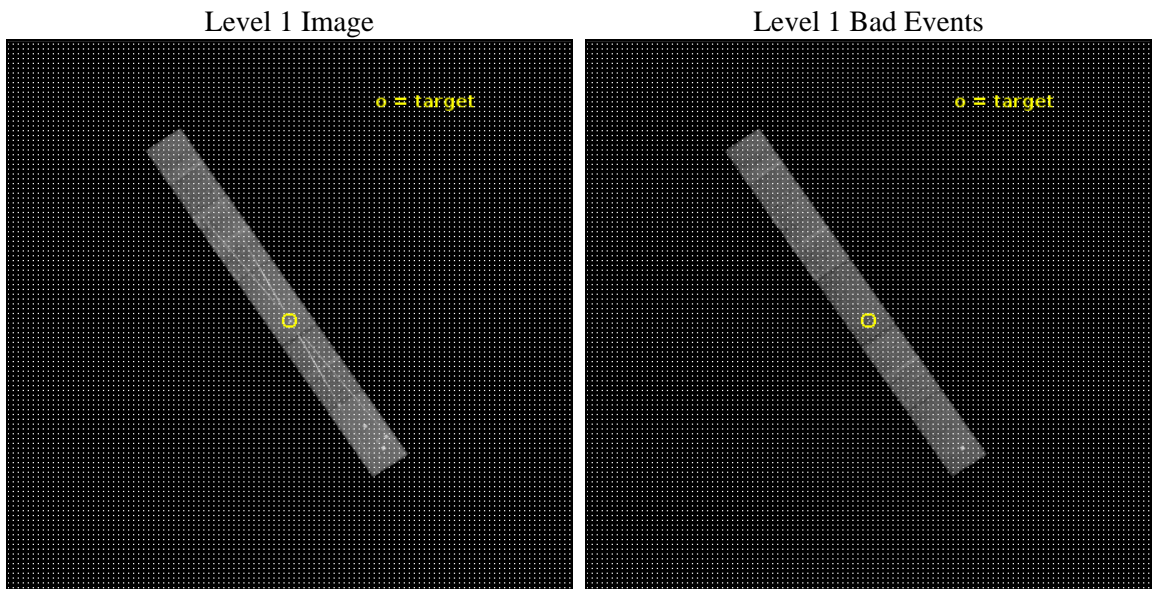
seq_num	401899	Sequence number
obs_id	21664	Observation id
title	An X-ray Outflow in an Ultracompact X-ray Binary	Proposal title
observer	Jon Miller	Principal investigator
object	4U 1916-053	Source name
dtcycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	289.699583	Observer's specified target RA [deg]
dec_targ	-5.238083	Observer's specified target Dec [deg]
ra_nom	289.70114225835	Nominal RA [deg]
dec_nom	-5.2433983673812	Nominal Dec [deg]
roll_nom	236.15677266137	Nominal Roll [deg]
revision	1	Processing version of data
ontime	22424.227823377	Sum of GTIs [s]
livetime	21895.641283222	Livetime [s]
ontime5	22424.186783433	Sum of GTIs [s]
ontime6	22424.14574337	Sum of GTIs [s]
ontime7	22424.227823377	Sum of GTIs [s]
ontime8	22424.104703426	Sum of GTIs [s]
ontime9	22424.063663363	Sum of GTIs [s]
l2events	257032	Number of level 2 events



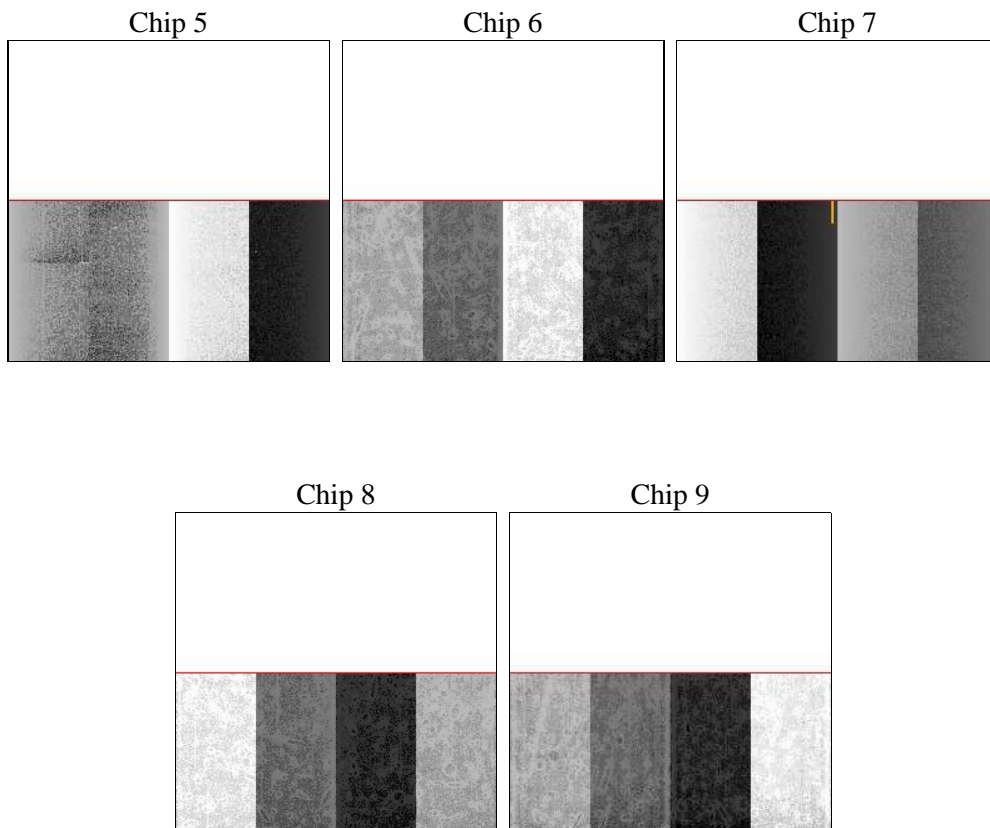
2 OBI

2.1 OBI

2.1.1 Images



2.1.2 Bias



2.1.3 Parameters

obi_num	1	Obi number	sched_exp_time	22337.000000	[s] Scheduled observation exposure time
ascdsver	10.6.4	Processing system revision	ontime	22424.227823377	Sum of GTIs [s]
caldsver	4.7.8	 	ontime5	22424.186783433	Sum of GTIs [s]
date	2018-08-05T21:28:55	Date and time of file creation	ontime6	22424.14574337	Sum of GTIs [s]
revision	1	Processing version of data	ontime7	22424.227823377	Sum of GTIs [s]
			ontime8	22424.104703426	Sum of GTIs [s]
			ontime9	22424.063663363	Sum of GTIs [s]
			l1events	704229	Number of level 1 events
			tgmethod	FINDZO	Method used to create src1a file
			zo_pos	(4109.69, 4135.23)	src1a sky pixel position
					src1a sky pixel position via

2.1.4 Events

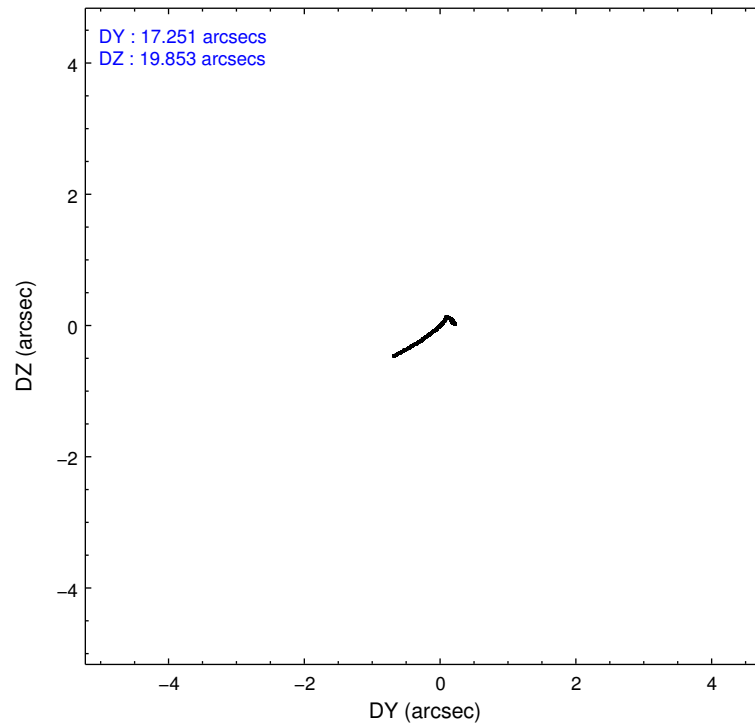
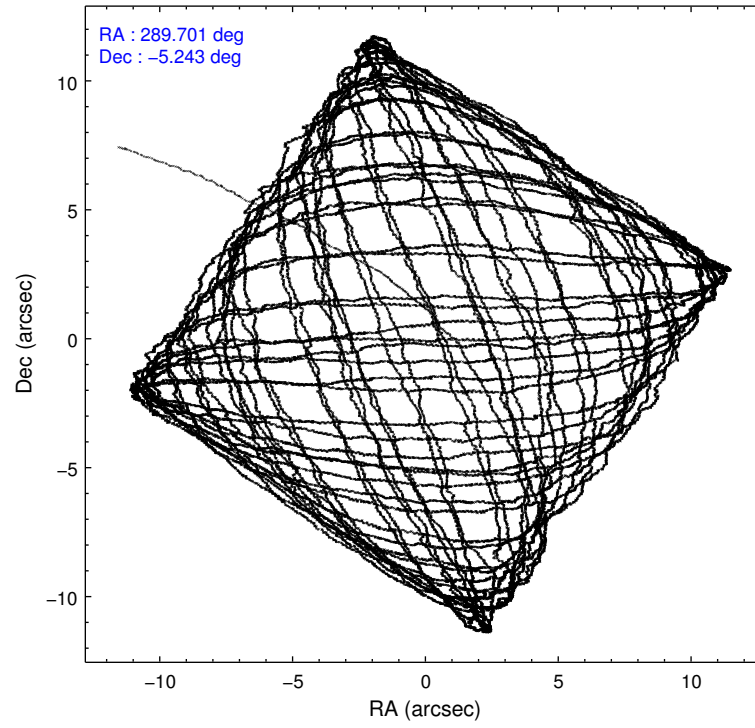
	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
level 1 events	178759	132277	169021	133089	91083
rejected events	79029	79825	67503	85038	77193
rejected %	44%	60%	39%	63%	84%

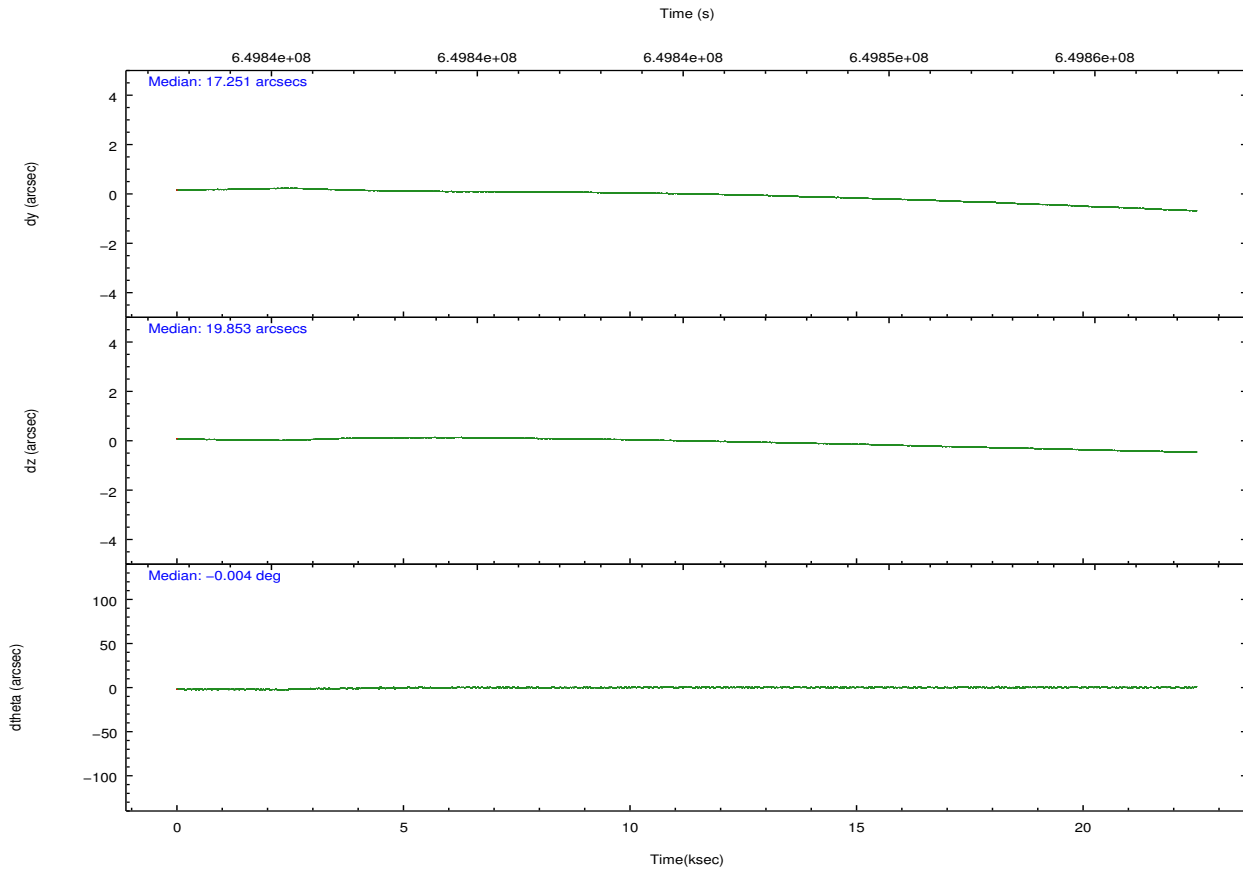
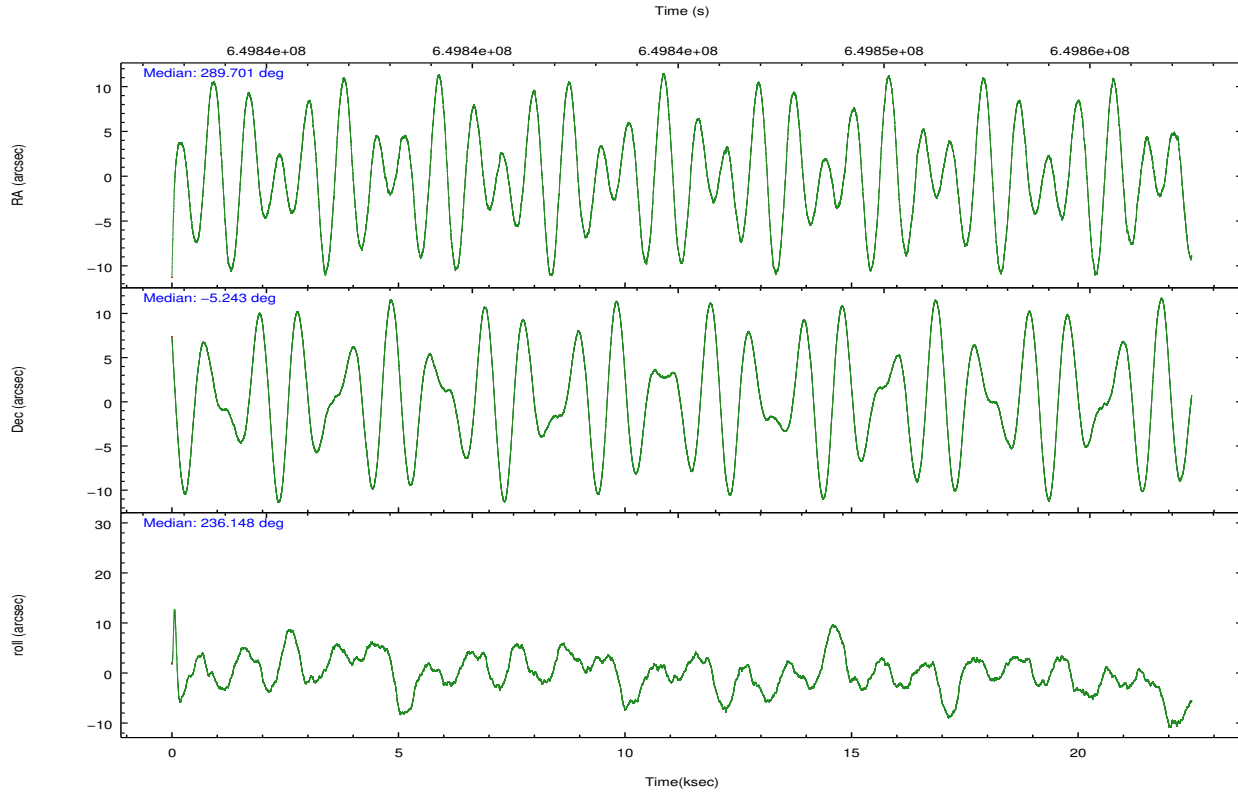
	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
grade 0 events	28391	35307	15614	21229	5947
	15%	26%	9%	15%	6%
grade 1 events	331	143	428	108	46
	0%	0%	0%	0%	0%
grade 2 events	23855	7513	23271	8959	2766
	13%	5%	13%	6%	3%
grade 3 events	6091	2819	10069	4351	1418
	3%	2%	5%	3%	1%
grade 4 events	4372	2806	9889	4239	1398
	2%	2%	5%	3%	1%
grade 5 events	12650	4059	12854	5912	4320
	7%	3%	7%	4%	4%
grade 6 events	37032	4008	42680	9275	2361
	20%	3%	25%	6%	2%
grade 7 events	66037	75622	54216	79016	72827
	36%	57%	32%	59%	79%

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	HETG	HETG	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	289.702630	289.701142258346	CCD I2 on	N	N
[deg] Pointing Dec	-5.215962	-5.243398367381164	CCD I3 on	N	N
[deg] Pointing Roll	236.000283	236.1567726613725	CCD S0 on	O1	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	-183.992523	-183.985022191653	CCD S3 on	Y	Y
[mm] SIM translation stage offset	-6.14	-6.147500391354811	CCD S4 on	Y	Y
[s] Observation start time (MET)	649834005.184000	649833053.86759	CCD S5 on	Y	Y
Observation start date	2018-08-05T05:25:36	2018-08-05T05:10:53	Number of optional ACIS chips dropped	1	1
[s] Observation end time (MET)	649856342.184000	649856990.18151	On-chip summing requested	N	N
Observation end date	2018-08-05T11:37:53	2018-08-05T11:49:50	Subarray requested	CUSTOM	1/2
Read mode	TIMED	TIMED	Subarray start row	1	1
			Subarray row count	512	512
			Alternating exposures requested	N	N
			[s] Primary exposure time	0.000000	1.7

2.3 Aspect



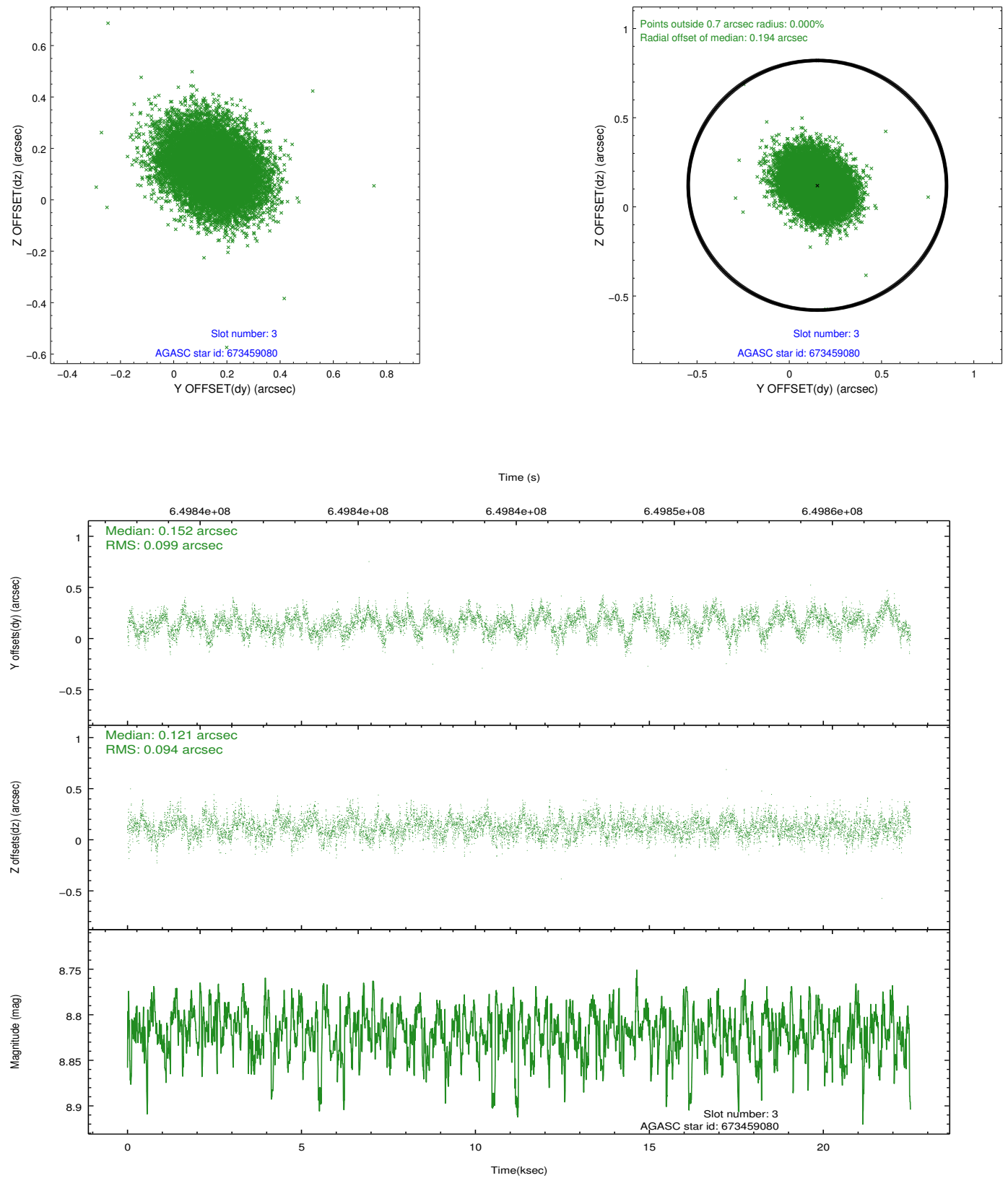


Slot Statistics

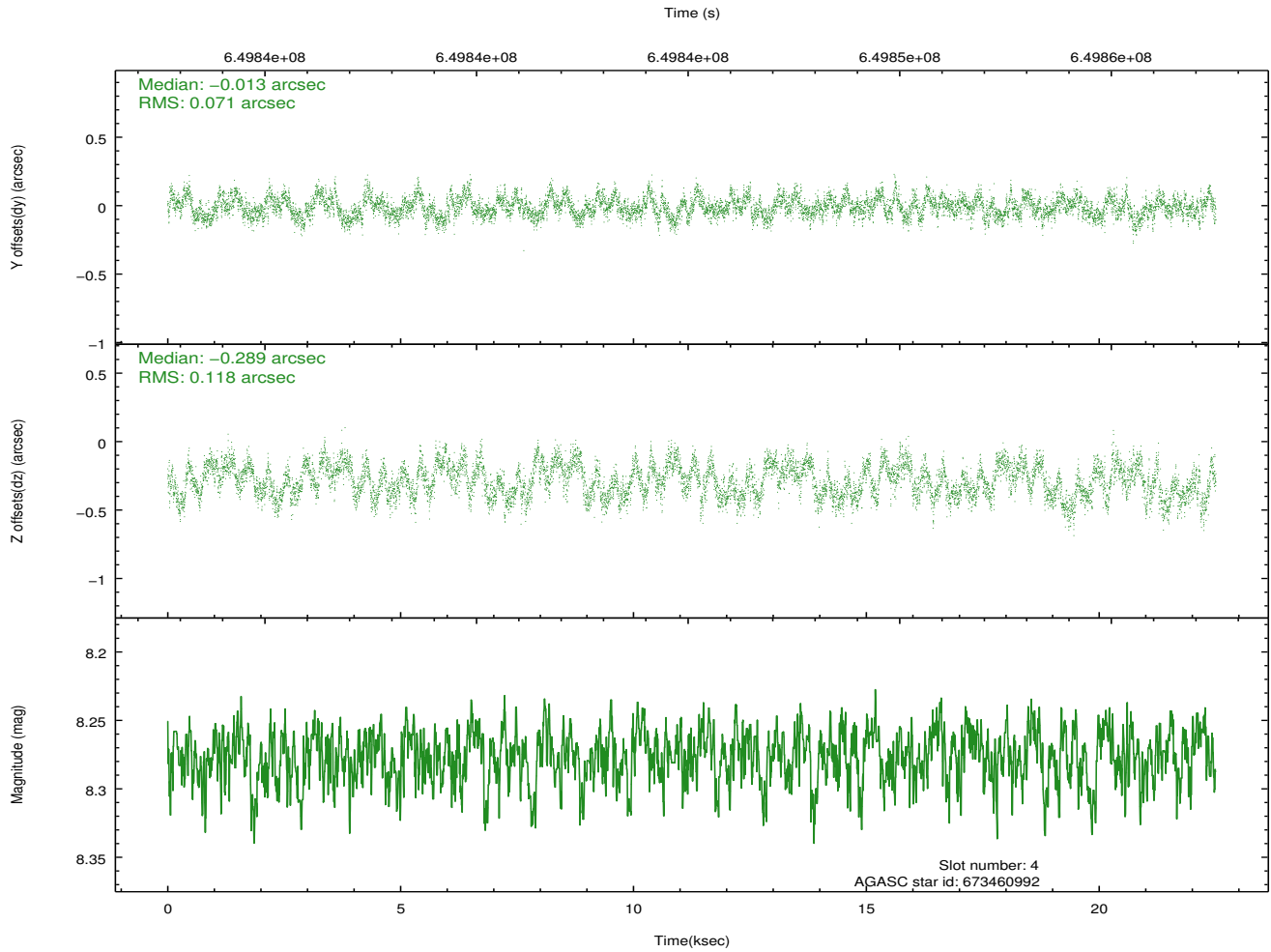
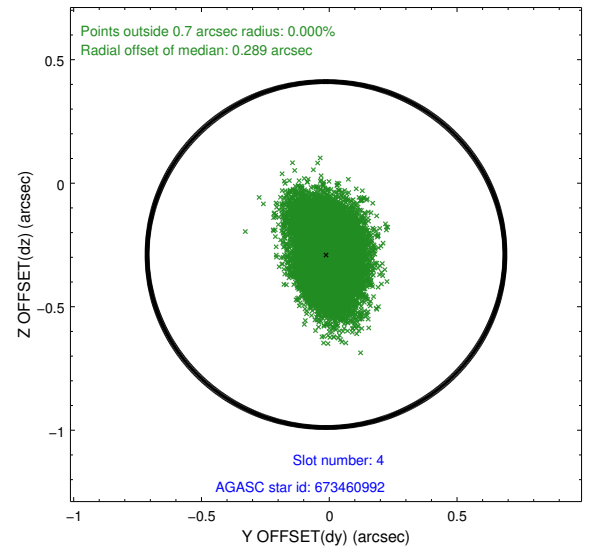
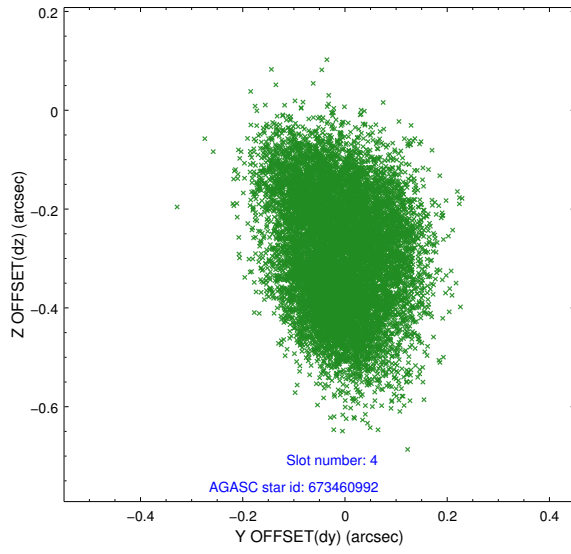
pt	status	used	id	mag	n_pts	frac_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mea
0	FID		ACIS-S-2	6.98	5490	1.000	-0.212	-0.156	0.013	0.026	0.000000	0.000000	-769.96	-1868
1	FID		ACIS-S-4	7.10	5490	1.000	0.472	0.145	0.008	0.014	0.000000	0.000000	2143.93	40
2	FID		ACIS-S-5	7.11	5490	1.000	-0.290	0.021	0.013	0.025	0.000000	0.000000	-1822.69	34
3	GUIDE	used	673459080	8.82	10973	1.000	0.152	0.121	0.146	0.228	289.246637	-5.373686	1385.82	-1036
4	GUIDE	used	673460992	8.28	10977	1.000	-0.013	-0.289	0.147	0.231	289.799374	-5.232721	-143.34	321
5	GUIDE	used	673463704	8.93	10969	1.000	-0.015	0.208	0.131	0.216	289.894494	-4.869892	-1417.21	-125
6	GUIDE	used	673466464	9.22	10968	1.000	-0.250	-0.238	0.191	0.313	289.850458	-5.613937	891.16	1240
7	GUIDE	used	673455744	9.45	10918	1.000	0.118	0.199	0.300	0.512	289.673010	-4.488976	-2109.72	-1550

2.4 Star Slots

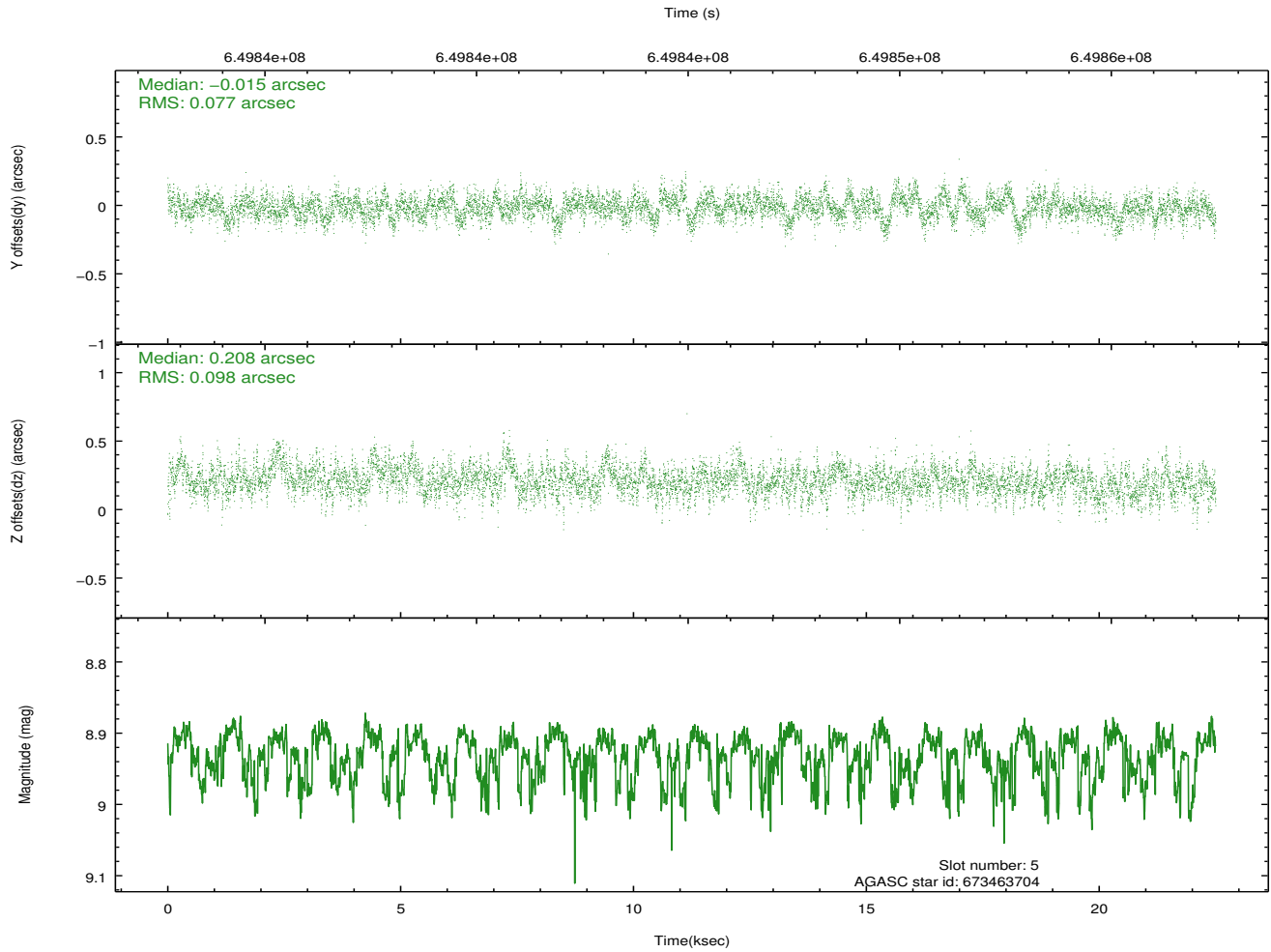
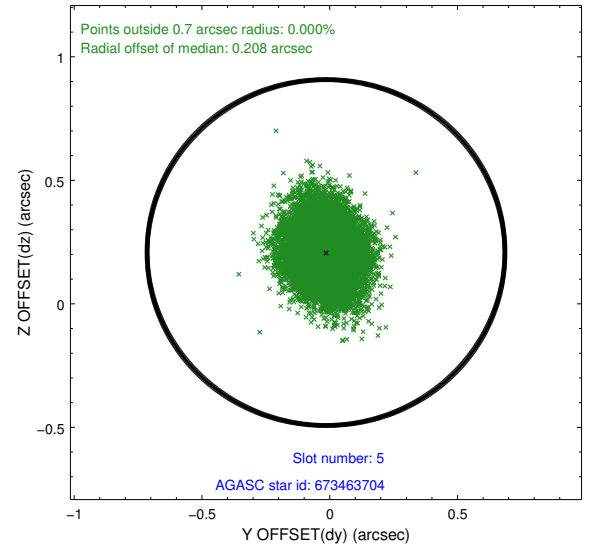
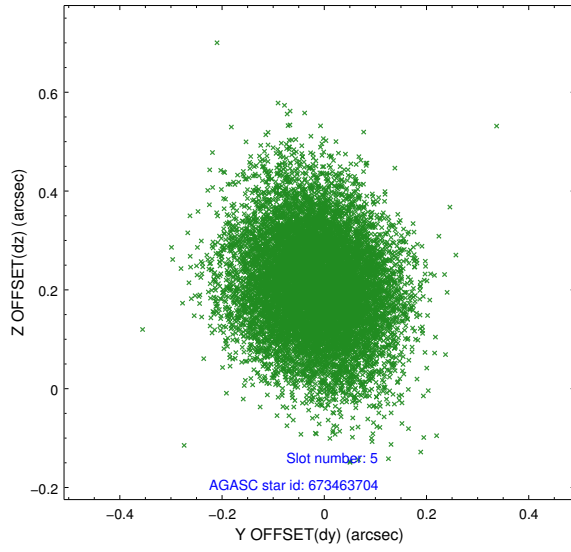
2.4.1 Slot 3



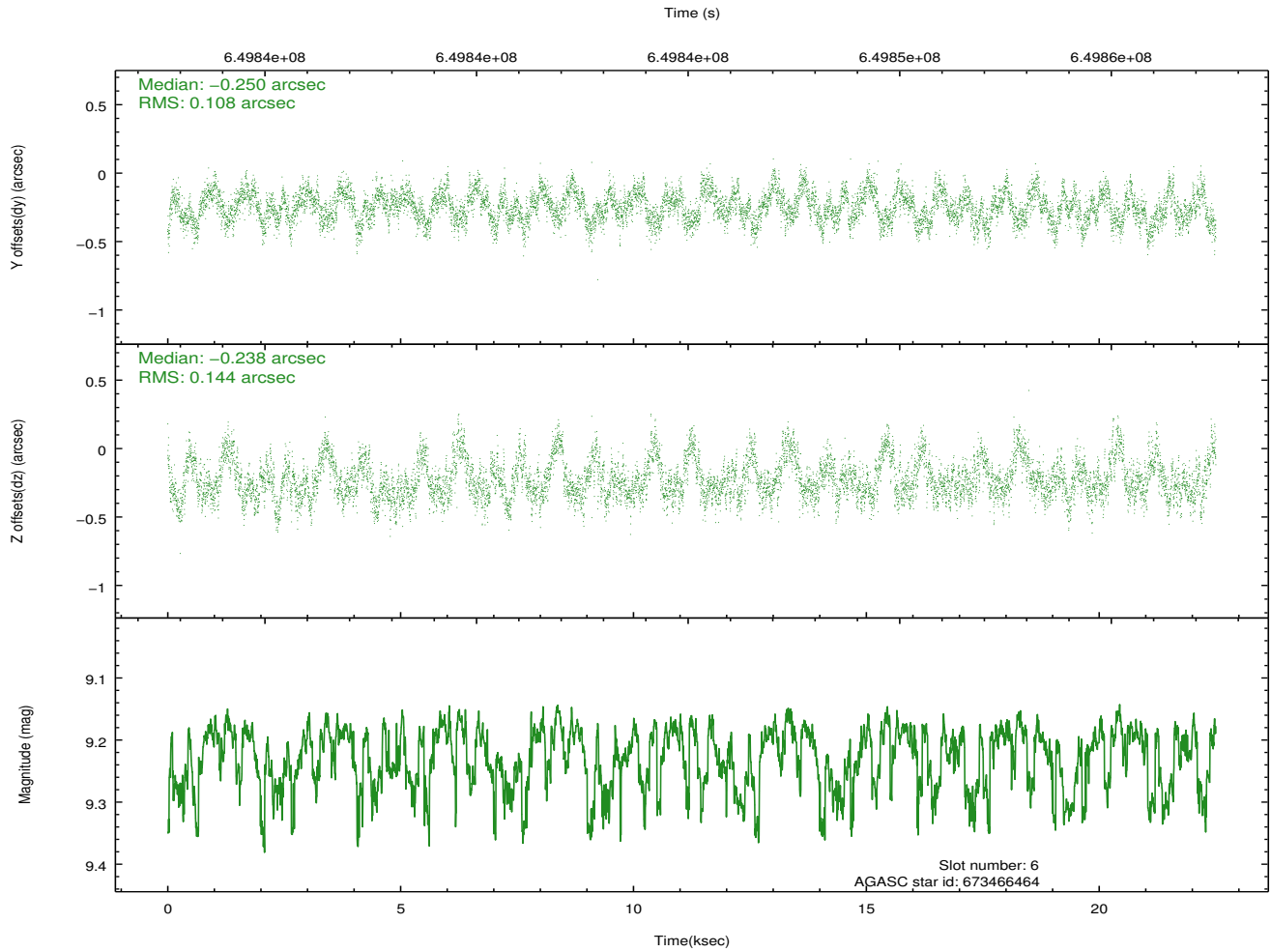
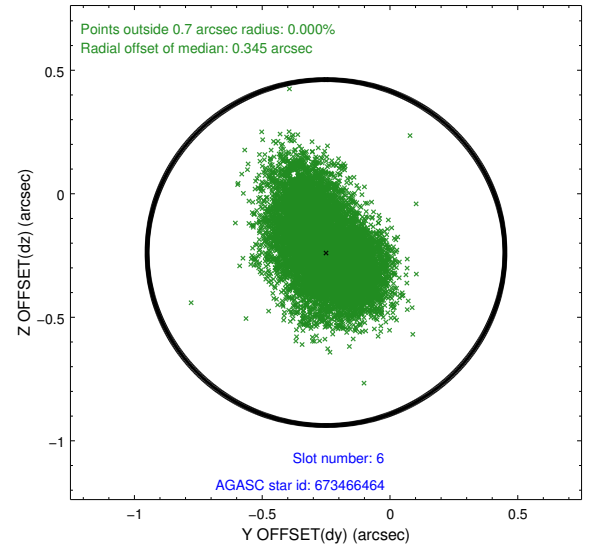
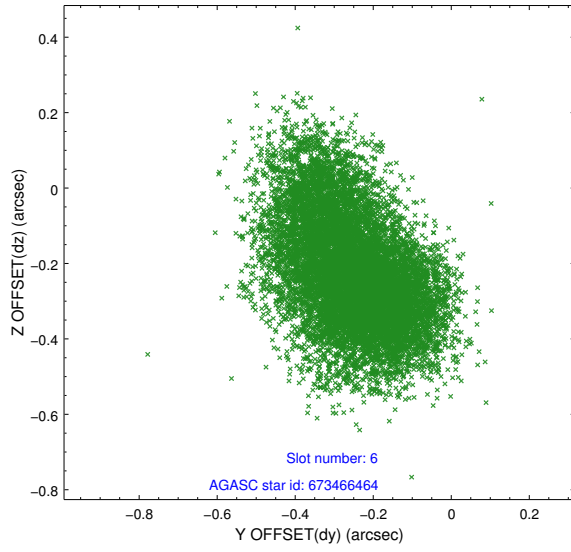
2.4.2 Slot 4



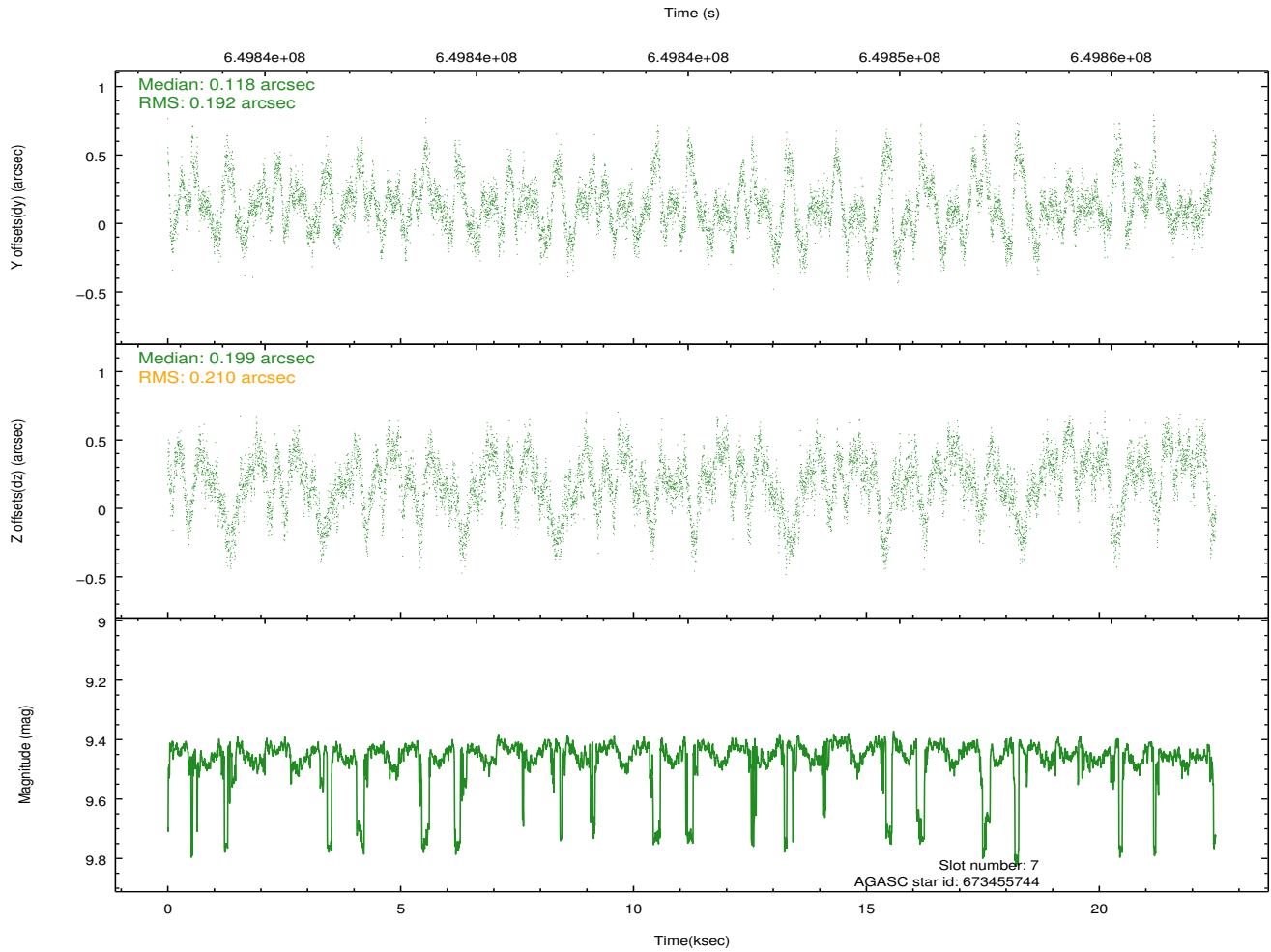
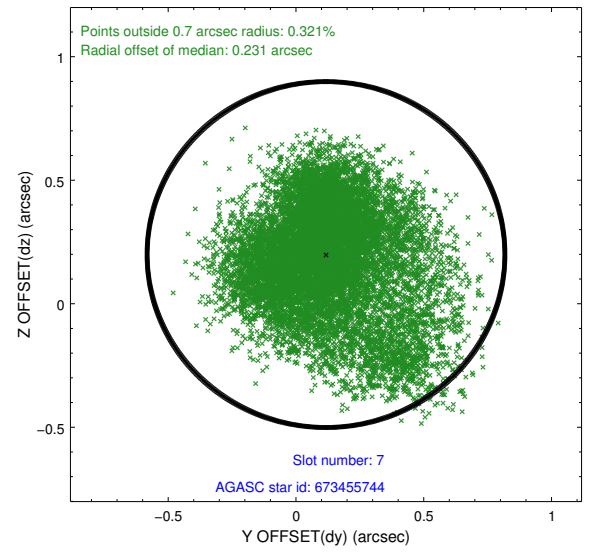
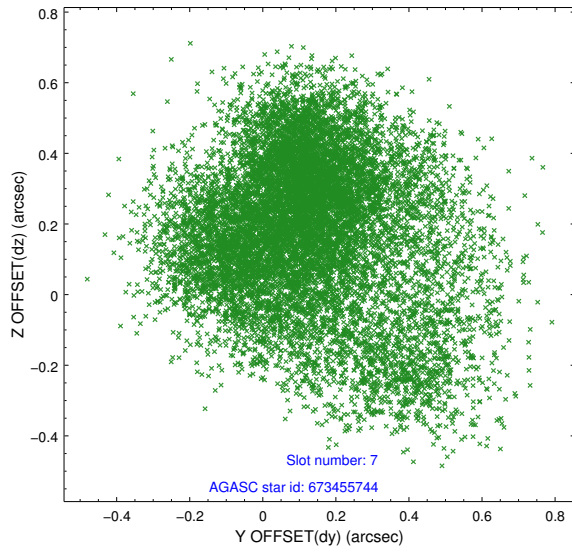
2.4.3 Slot 5



2.4.4 Slot 6

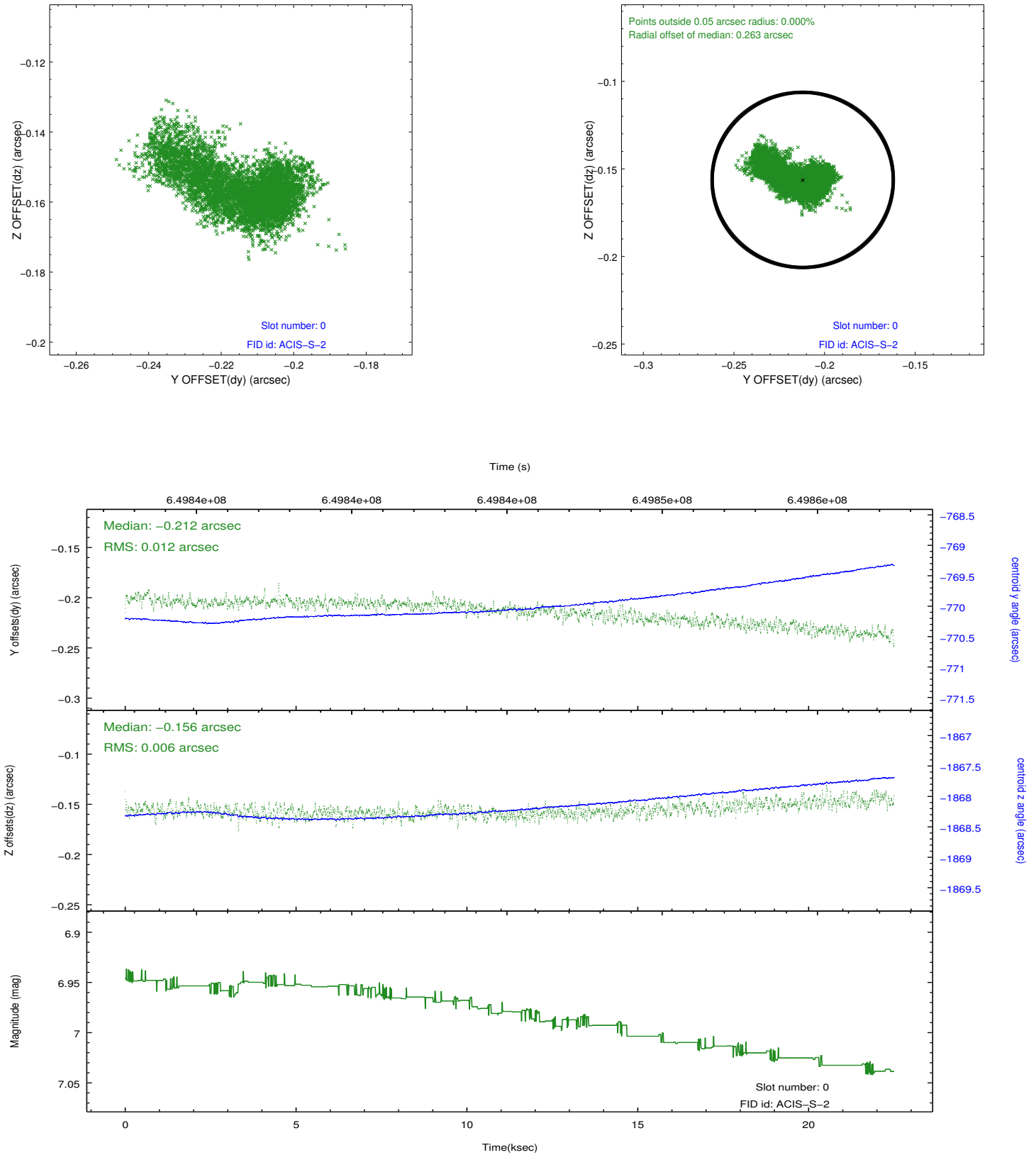


2.4.5 Slot 7

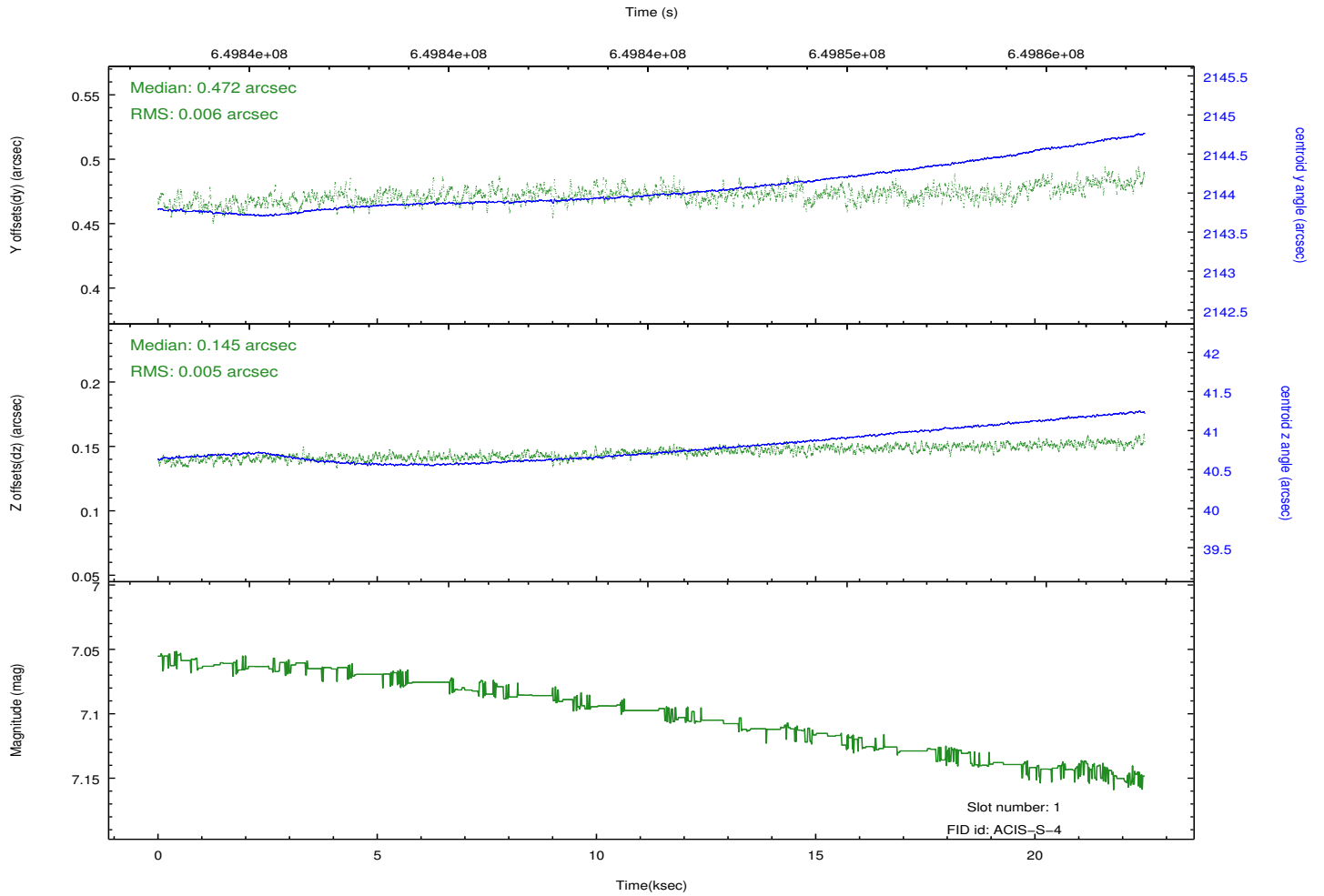
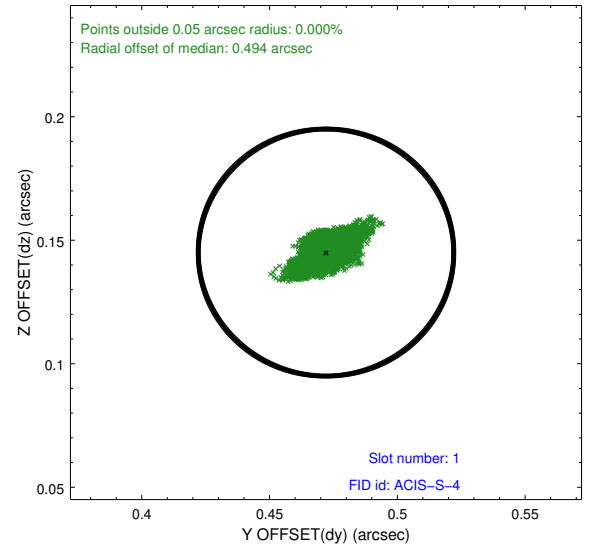
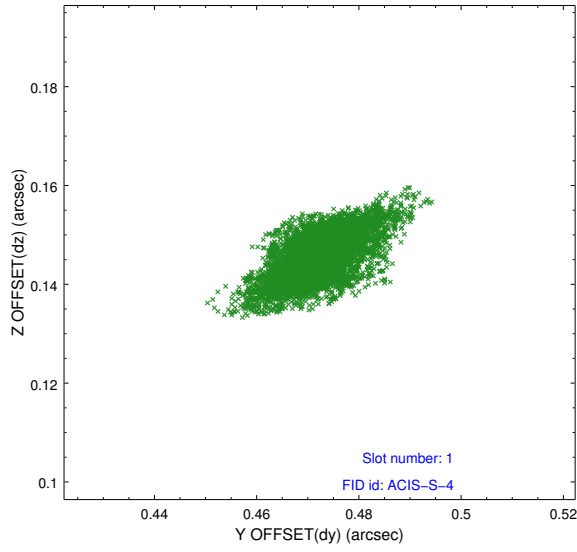


2.5 FID Slots

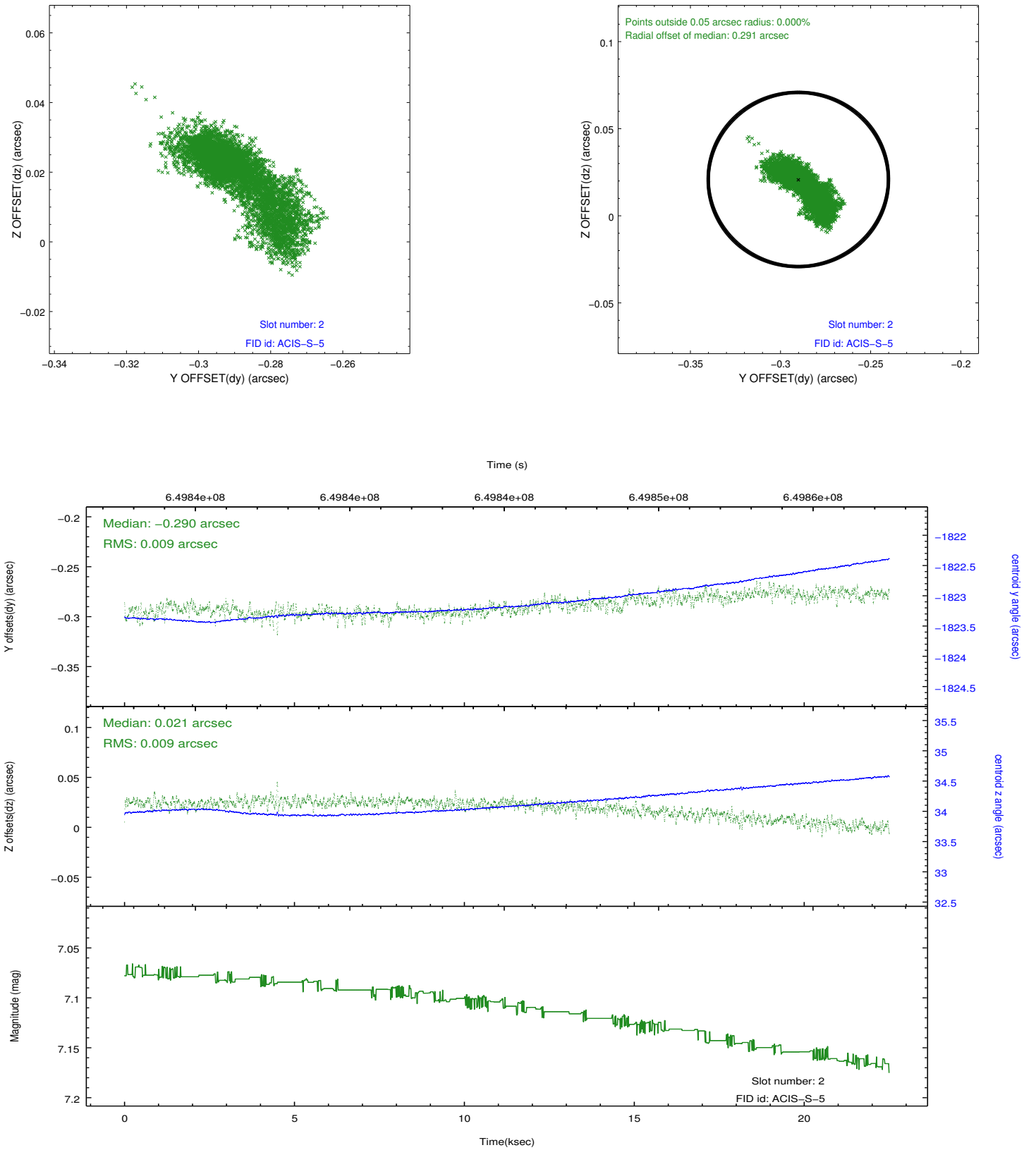
2.5.1 Slot 0



2.5.2 Slot 1

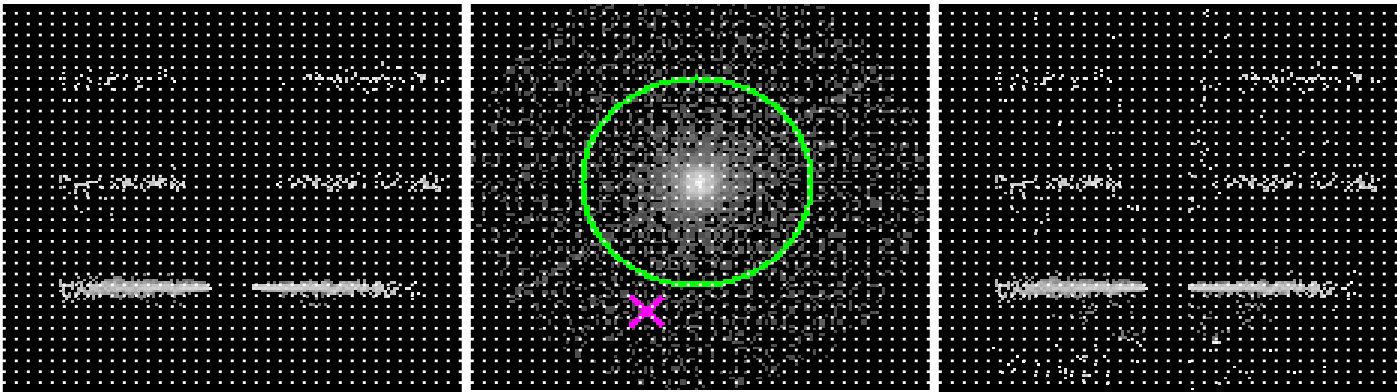


2.5.3 Slot 2



3 Gratings

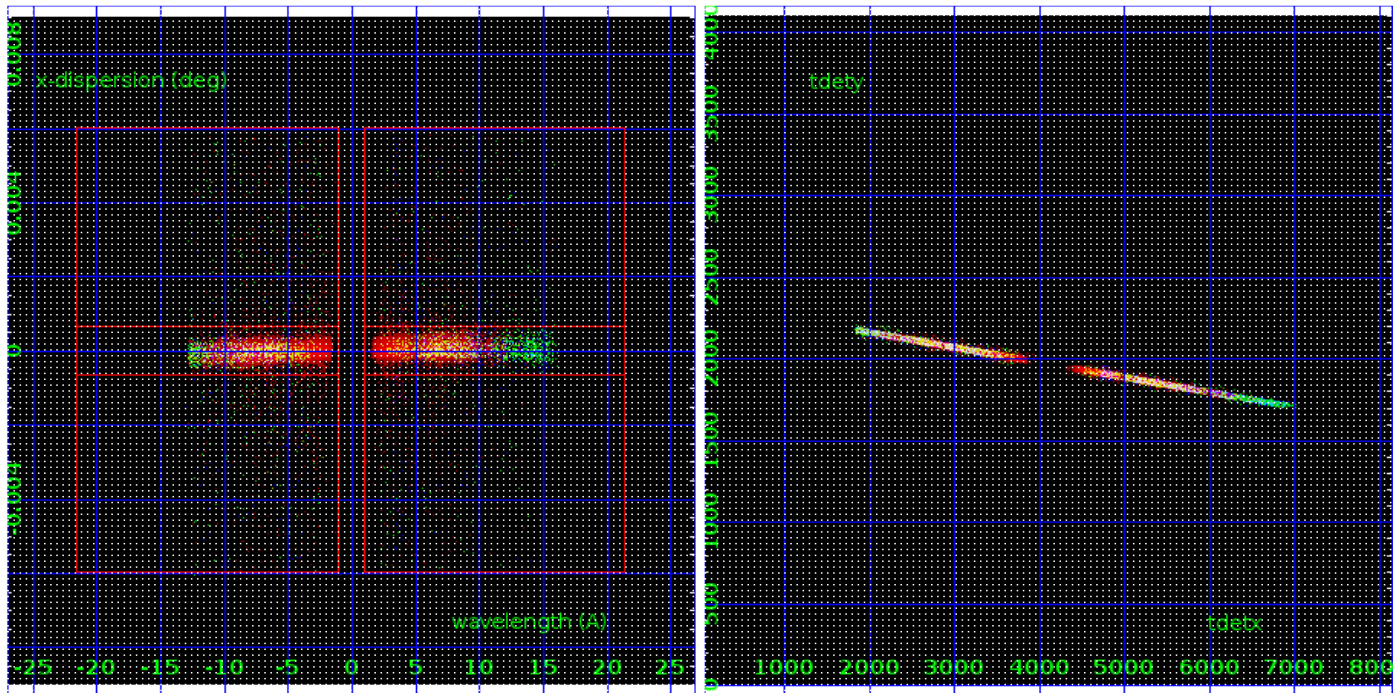
3.1 HEG Arm



HEG Order Sort 123

HEG Zero Order

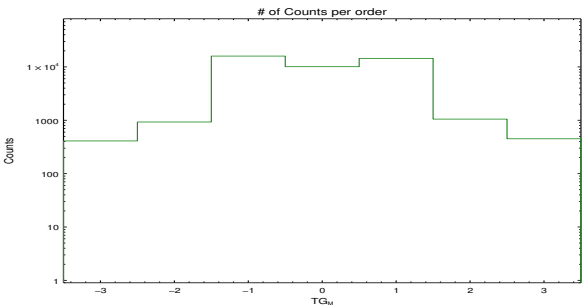
HEG Order Sort ALL

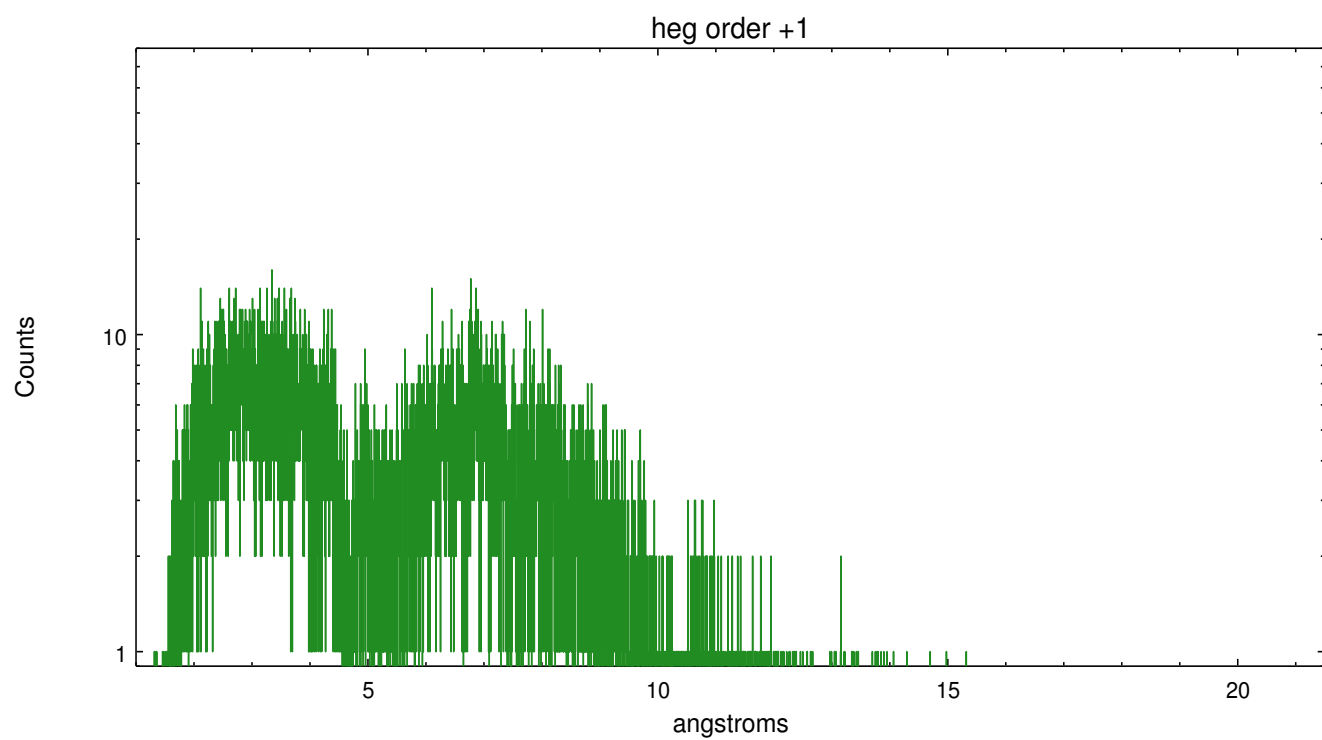
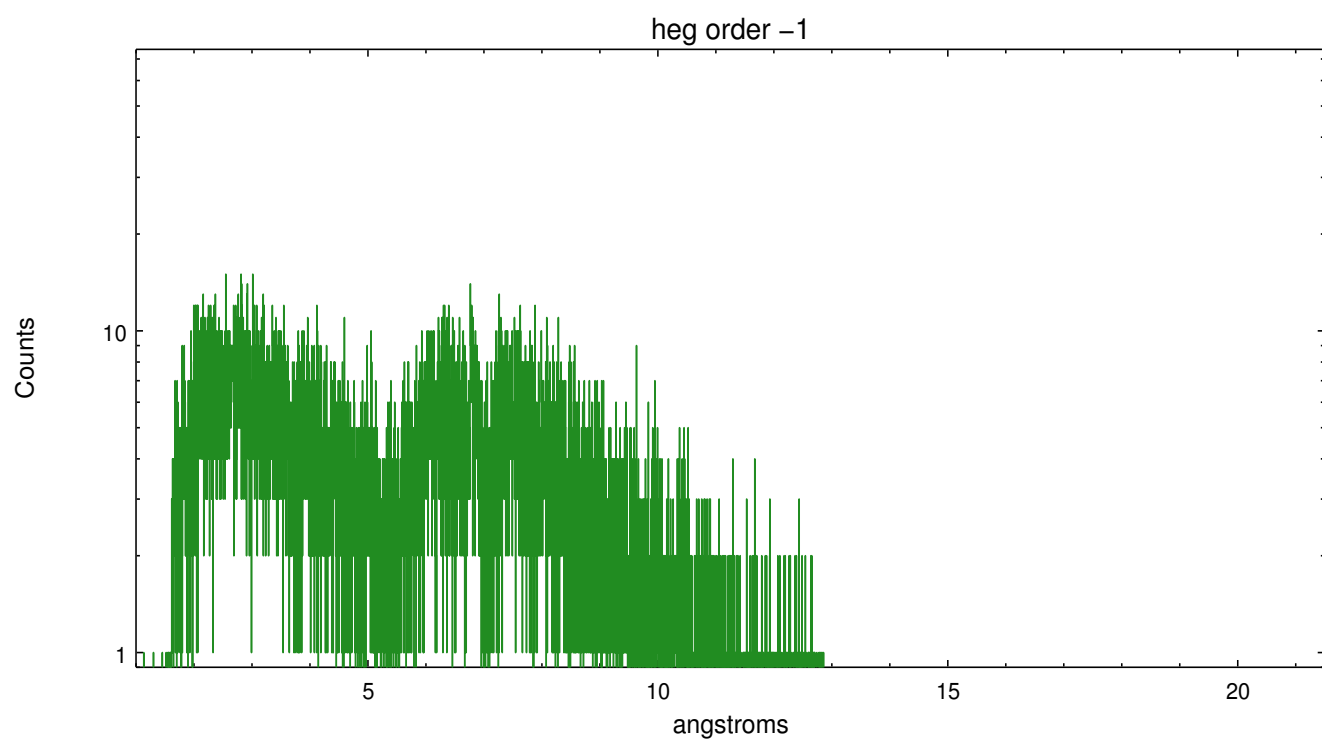


Spot Image HEG

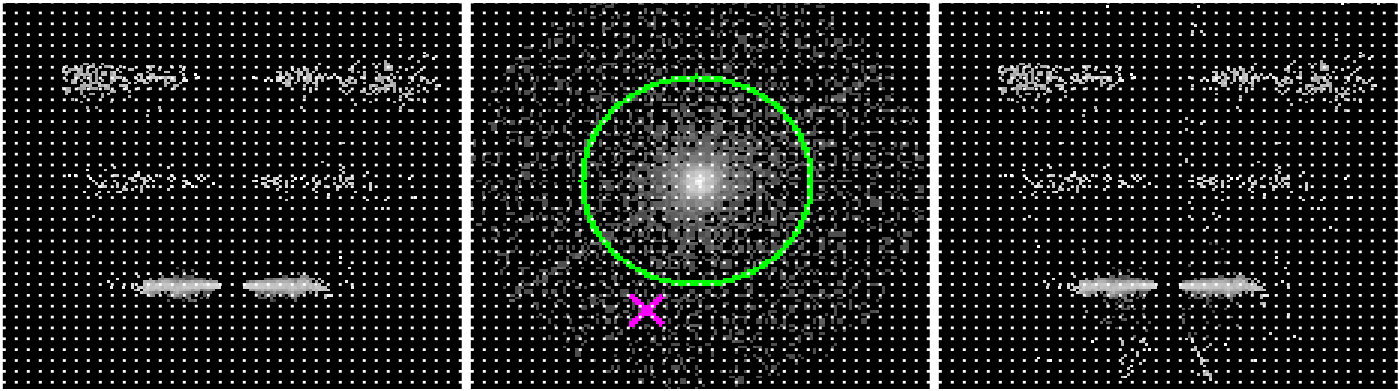
Full Detector HEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	410	928	15957	10104	14445	1051	450





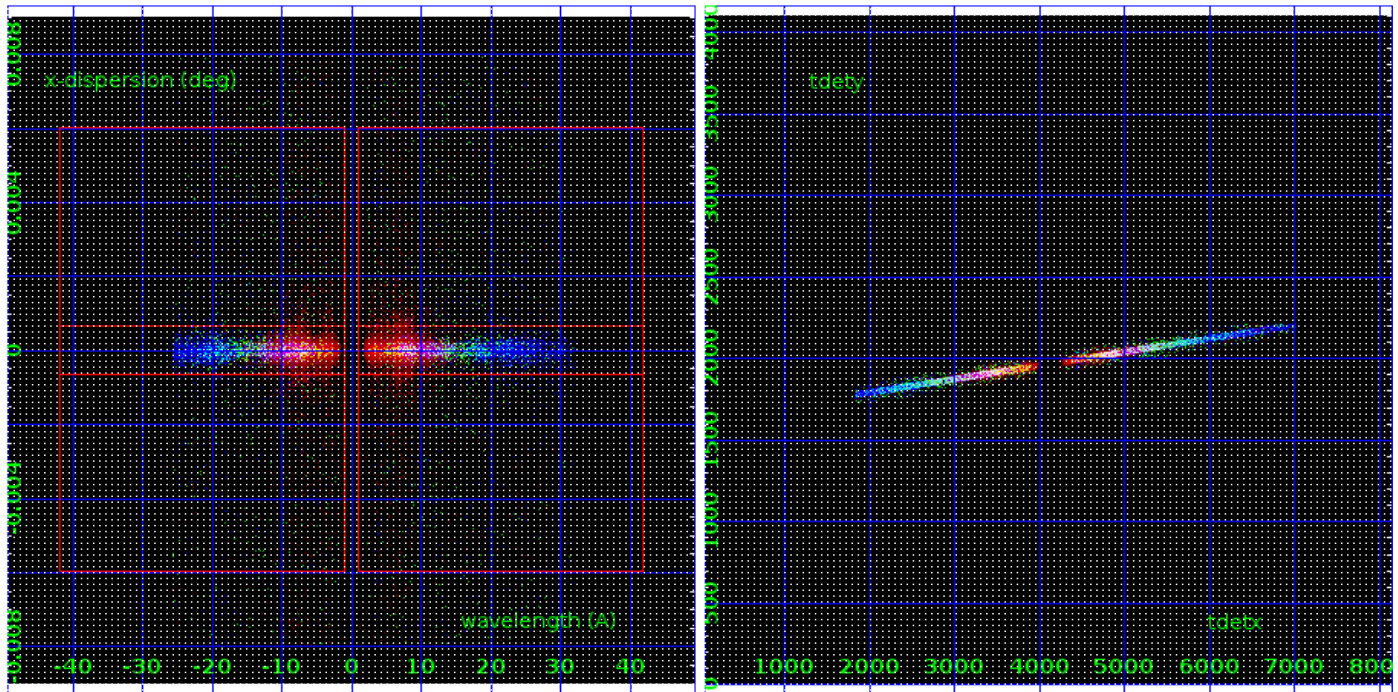
3.2 MEG Arm



MEG Order Sort 123

MEG Zero Order

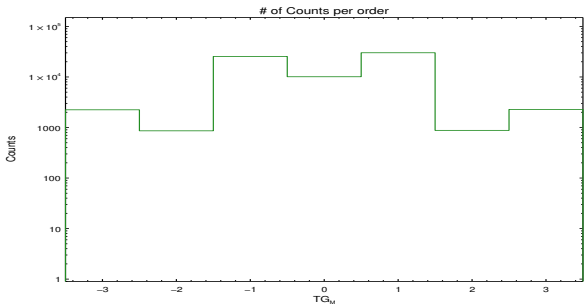
MEG Order Sort ALL

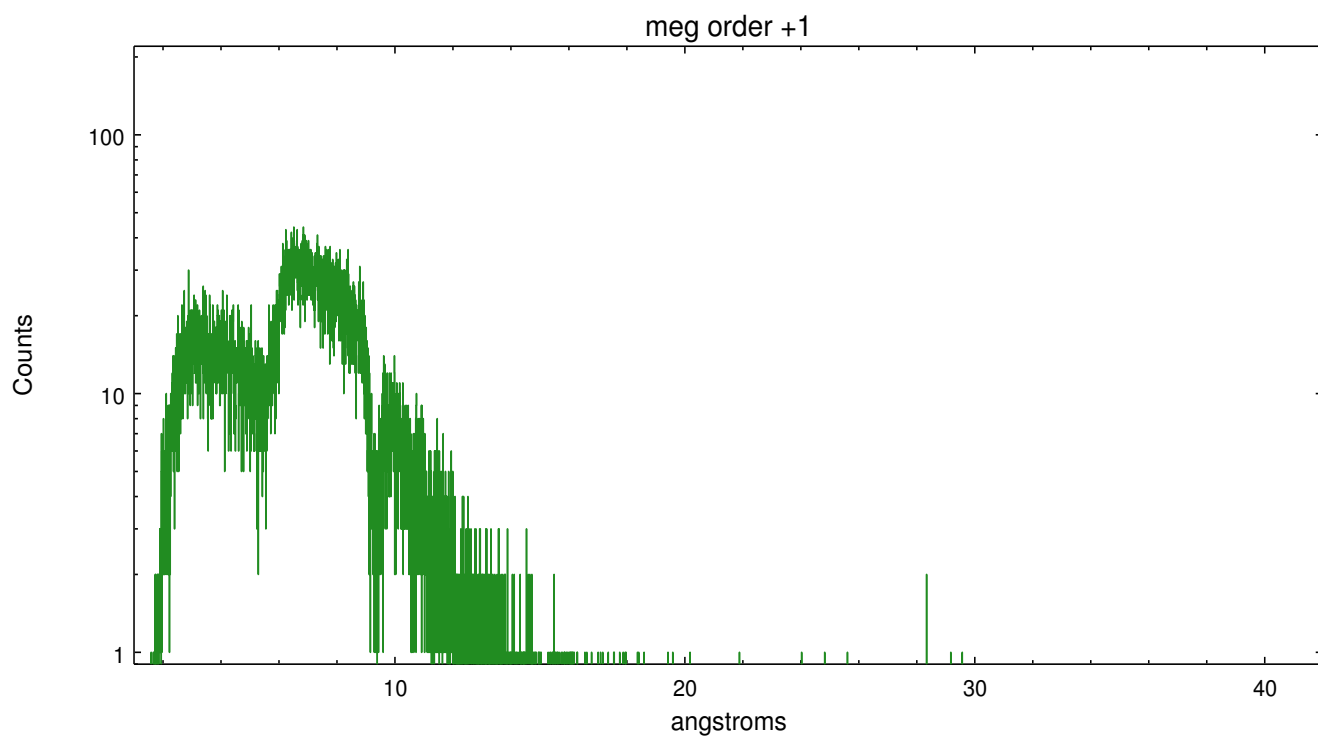
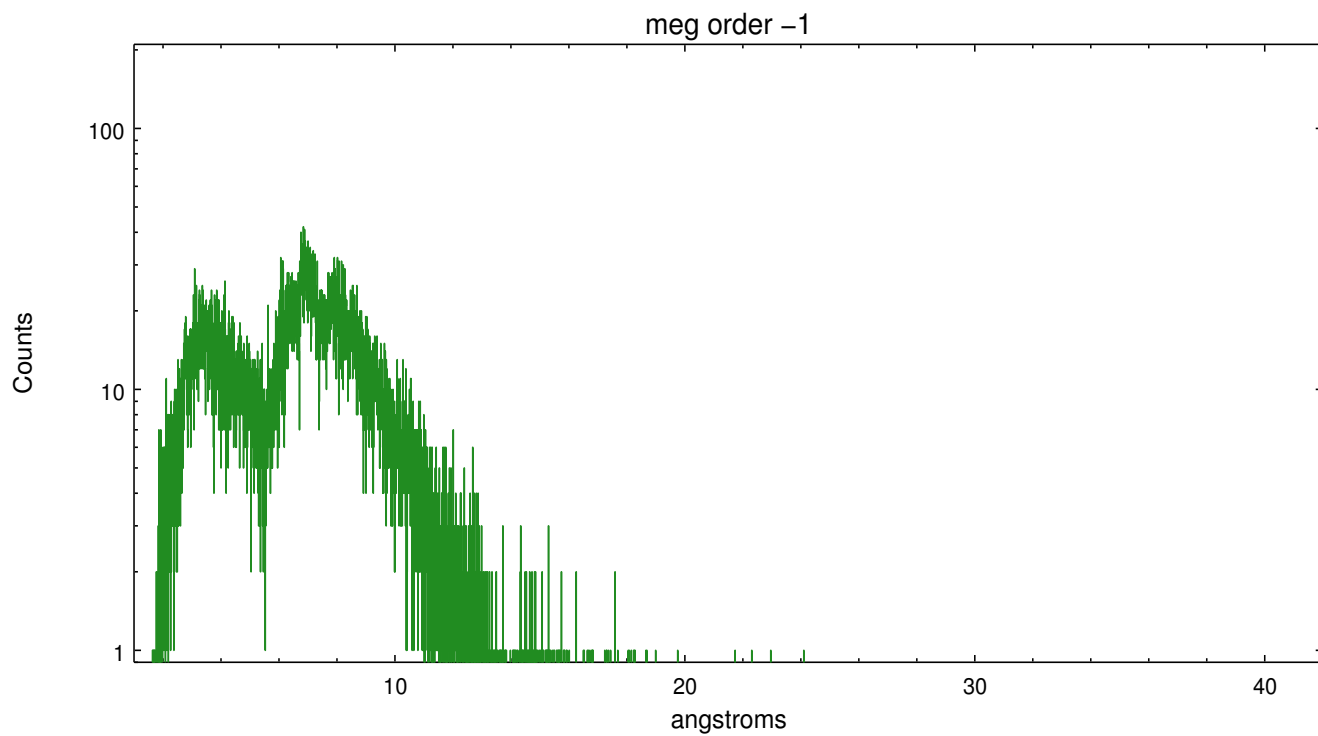


Spot Image MEG

Full Detector MEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	2241	860	25460	10104	30143	877	2279





A Summary

A.1 Status

V&V Scientist	Joy Nichols
V&V Date (YYYY-MM-DD)	2018.08.06
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	22.424227823377

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.