

V&V Reference Report

L2 ASCDS Version : 10.6.4

Observation 21663 - L2 Version 1
Chandra X-Ray Center

L2 Processing Date : Aug 3 2018

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1 Front

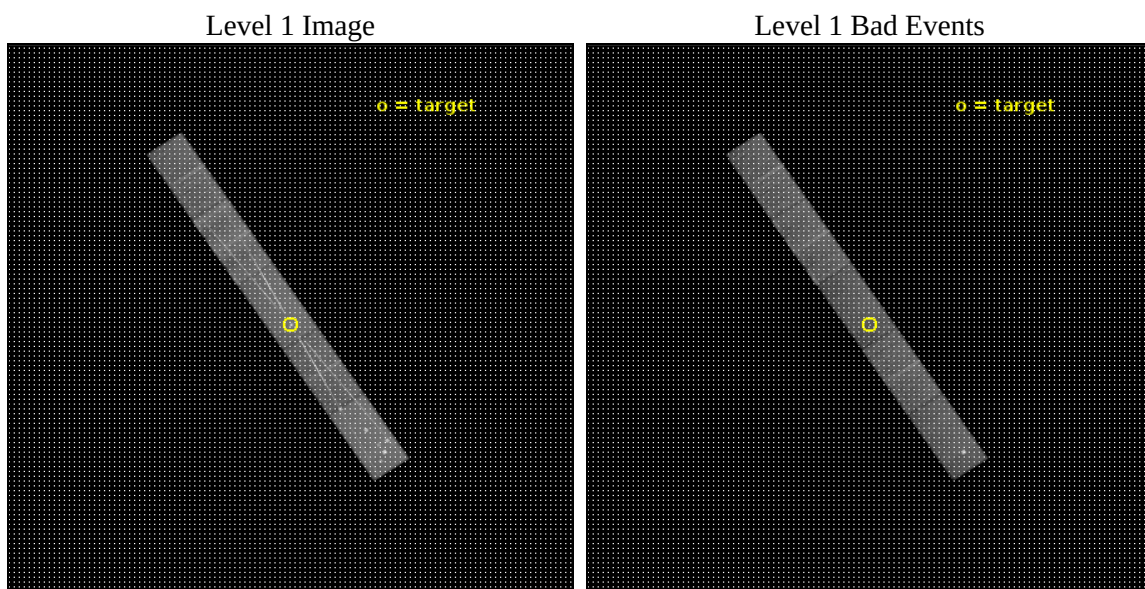
seq_num	401899	Sequence number
obs_id	21663	Observation id
title	An X-ray Outflow in an Ultracompact X-ray Binary	Proposal title
observer	Jon Miller	Principal investigator
object	4U 1916-053	Source name
dtcycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	289.699583	Observer's specified target RA [deg]
dec_targ	-5.238083	Observer's specified target Dec [deg]
ra_nom	289.70103949742	Nominal RA [deg]
dec_nom	-5.2440664055712	Nominal Dec [deg]
roll_nom	236.15678404567	Nominal Roll [deg]
revision	1	Processing version of data
ontime	30549.000856876	Sum of GTIs [s]
livetime	29828.896209559	Livetime [s]
ontime5	30549.000856876	Sum of GTIs [s]
ontime6	30549.000856876	Sum of GTIs [s]
ontime7	30549.000856876	Sum of GTIs [s]
ontime8	30549.000856876	Sum of GTIs [s]
ontime9	30549.000856876	Sum of GTIs [s]
l2events	358285	Number of level 2 events



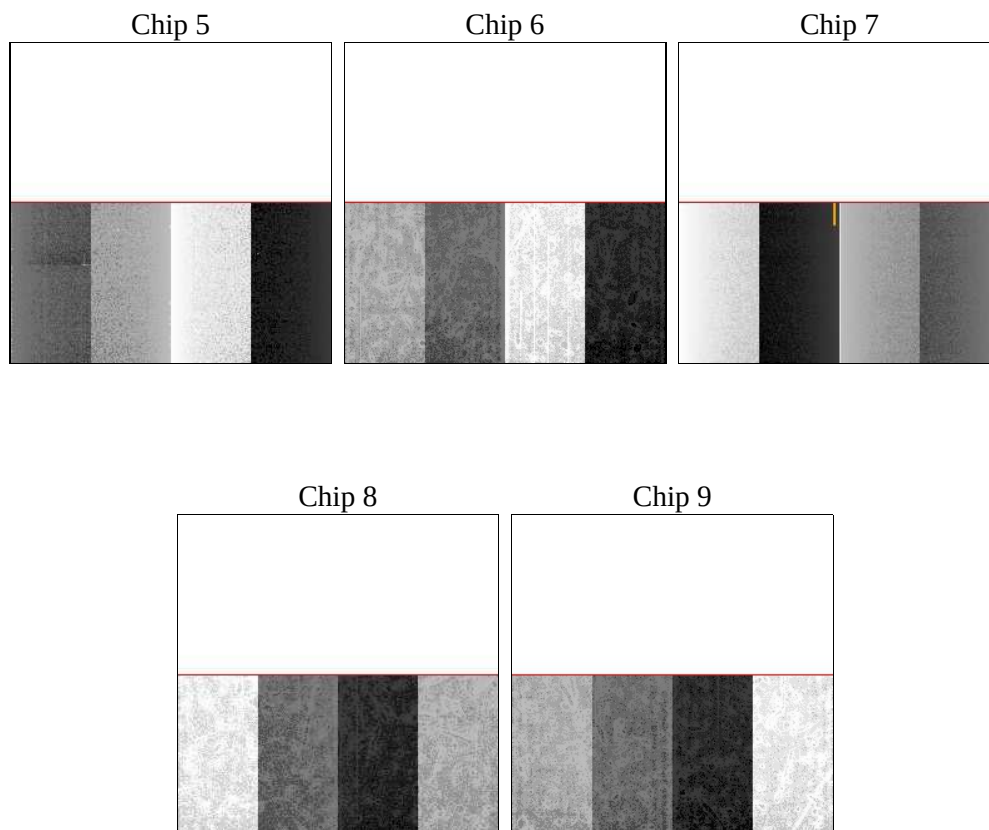
2 OBI

2.1 OBI

2.1.1 Images



2.1.2 Bias



2.1.3 Parameters

obi_num	0	Obi number	sched_exp_time	30463.000000	[s] Scheduled observation exposure time
ascdsver	10.6.4	Processing system revision	ontime	30549.000856876	Sum of GTIs [s]
caldsver	4.7.8	 	ontime5	30549.000856876	Sum of GTIs [s]
date	2018-08-03T13:53:55	Date and time of file creation	ontime6	30549.000856876	Sum of GTIs [s]
revision	1	Processing version of data	ontime7	30549.000856876	Sum of GTIs [s]
			ontime8	30549.000856876	Sum of GTIs [s]
			ontime9	30549.000856876	Sum of GTIs [s]
			l1events	976513	Number of level 1 events
			tgmethod	FINDZO	Method used to create src1a file
			zo_pos	(4109.01, 4139.88)	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	246540	186116	232633	186411	124813
rejected events	108823	111699	91233	118477	105773
rejected %	44%	60%	39%	63%	84%

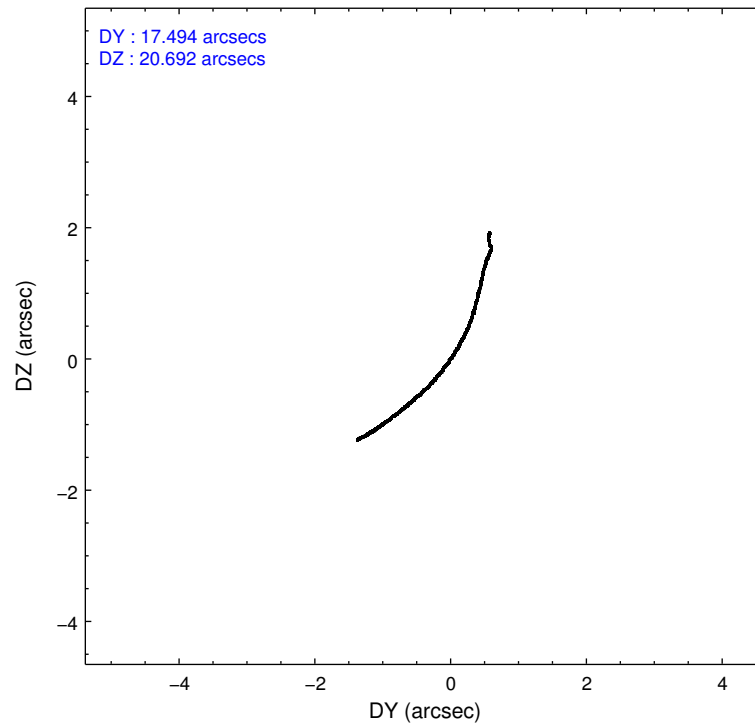
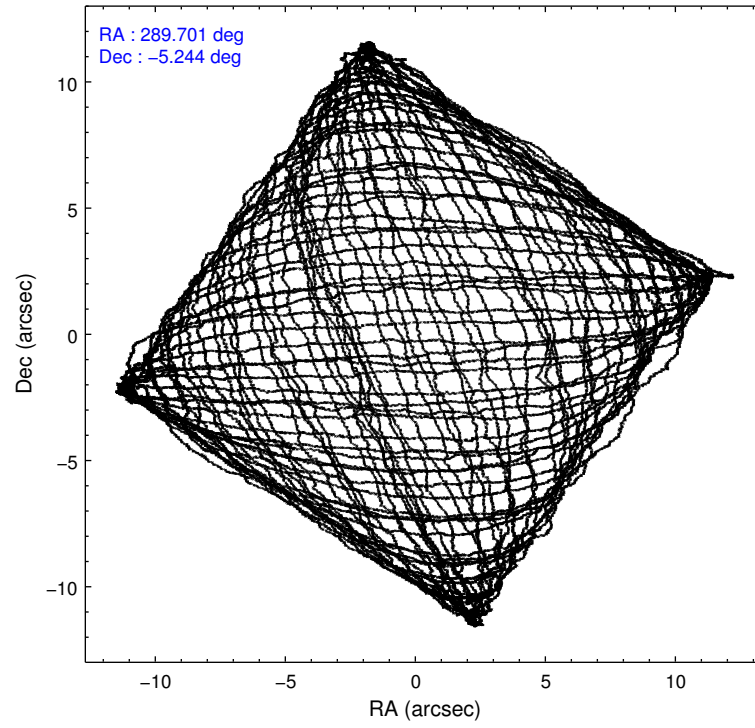
	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
grade 0 events	37377	50482	21666	30171	8259
	15%	27%	9%	16%	6%
grade 1 events	401	247	599	151	50
	0%	0%	0%	0%	0%
grade 2 events	33394	10455	32502	13199	3808
	13%	5%	13%	7%	3%
grade 3 events	8601	4033	14212	5758	1953
	3%	2%	6%	3%	1%
grade 4 events	7759	4016	13895	5405	1808
	3%	2%	5%	2%	1%
grade 5 events	17657	5597	17613	8214	5833
	7%	3%	7%	4%	4%
grade 6 events	50598	5433	59131	13411	3213
	20%	2%	25%	7%	2%
grade 7 events	90753	105853	73015	110102	99889
	36%	56%	31%	59%	80%

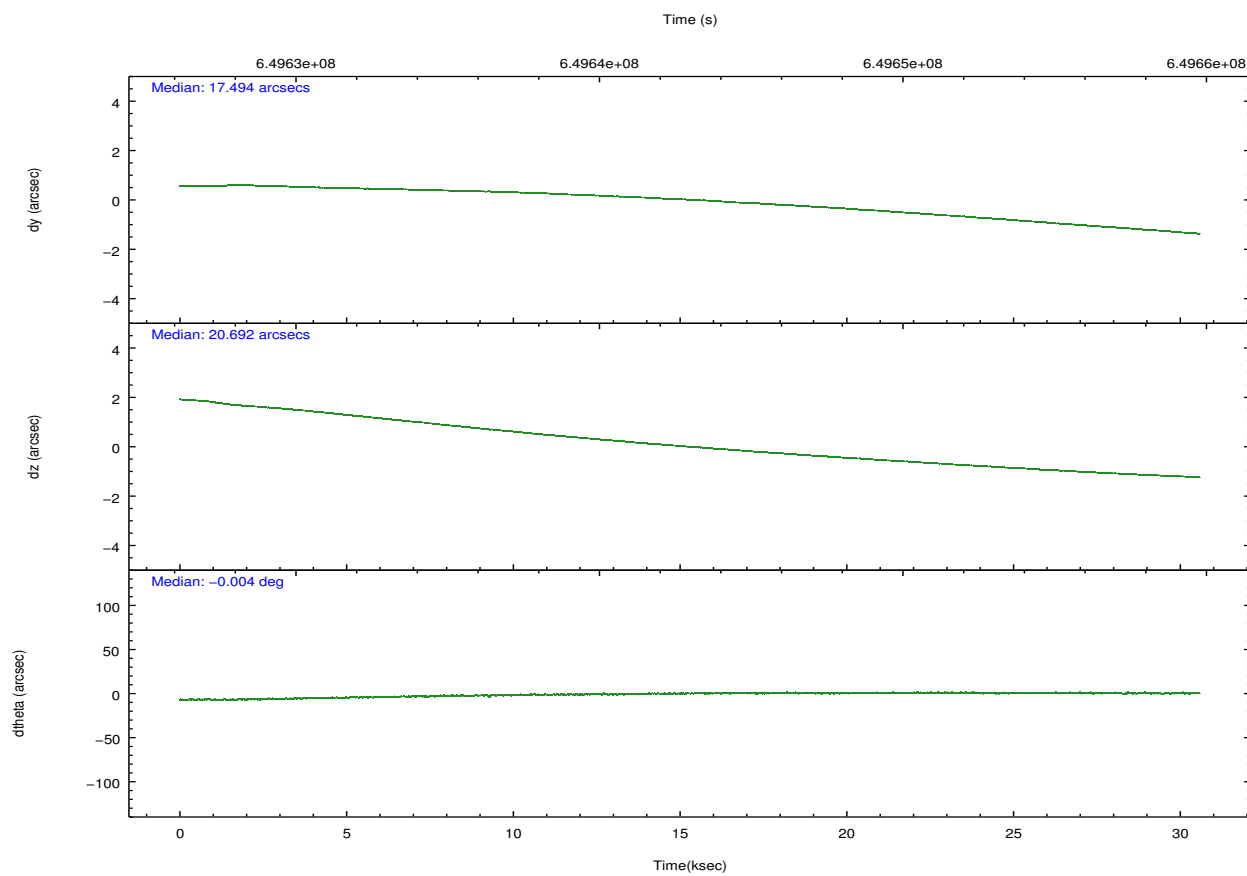
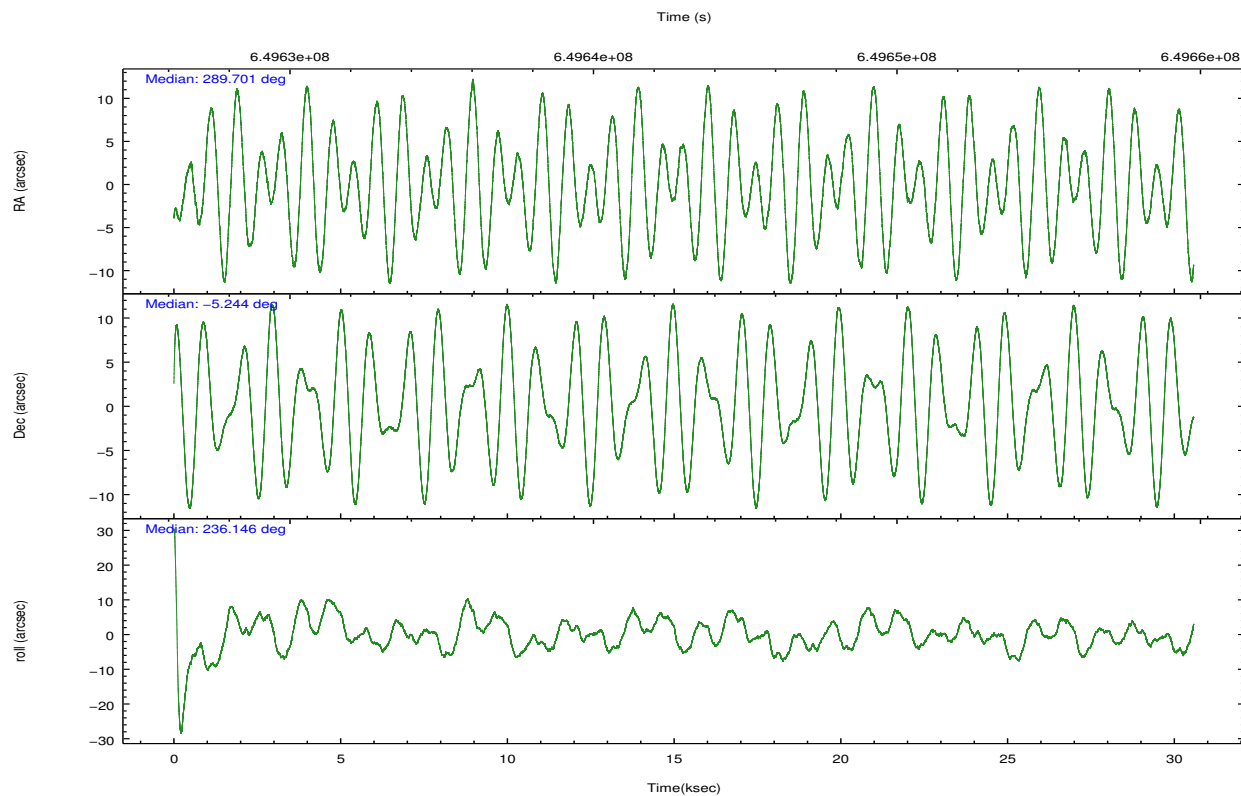
2.2 Compared Parameters

Parameter	Planned	Actual
Instrument	ACIS	ACIS
Detector	ACIS-56789	ACIS-56789
Grating	HETG	HETG
Data mode	FAINT	FAINT
Observation mode	POINTING	POINTING
[deg] Pointing RA	289.702538	289.701039497422
[deg] Pointing Dec	-5.216659	-5.244066405571244
[deg] Pointing Roll	236.000268	236.1567840456687
[mm] SIM focus pos	-0.684267	-0.6828225247311905
[mm] SIM defocus	0	0.001444936568705701
[mm] SIM translation stage pos	-183.992523	-183.9875365069546
[mm] SIM translation stage offset	-6.14	-6.144986076053243
[s] Observation start time (MET)	649627798.184000	649626542.4928401
Observation start date	2018-08-02T20:08:49	2018-08-02T19:49:02
[s] Observation end time (MET)	649658261.184000	649659033.45727
Observation end date	2018-08-03T04:36:32	2018-08-03T04:50:33
Read mode	TIMED	TIMED

Parameter	Planned	Actual
Obspar format version number	7	7
Obspar file type	PREDICTED	ACTUAL
Obspar update status	NONE	UPDATED
CCD I0 on	N	N
CCD I1 on	N	N
CCD I2 on	N	N
CCD I3 on	N	N
CCD S0 on	O1	N
CCD S1 on	Y	Y
CCD S2 on	Y	Y
CCD S3 on	Y	Y
CCD S4 on	Y	Y
CCD S5 on	Y	Y
Number of optional ACIS chips dropped	1	1
On-chip summing requested	N	N
Subarray requested	CUSTOM	1/2
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



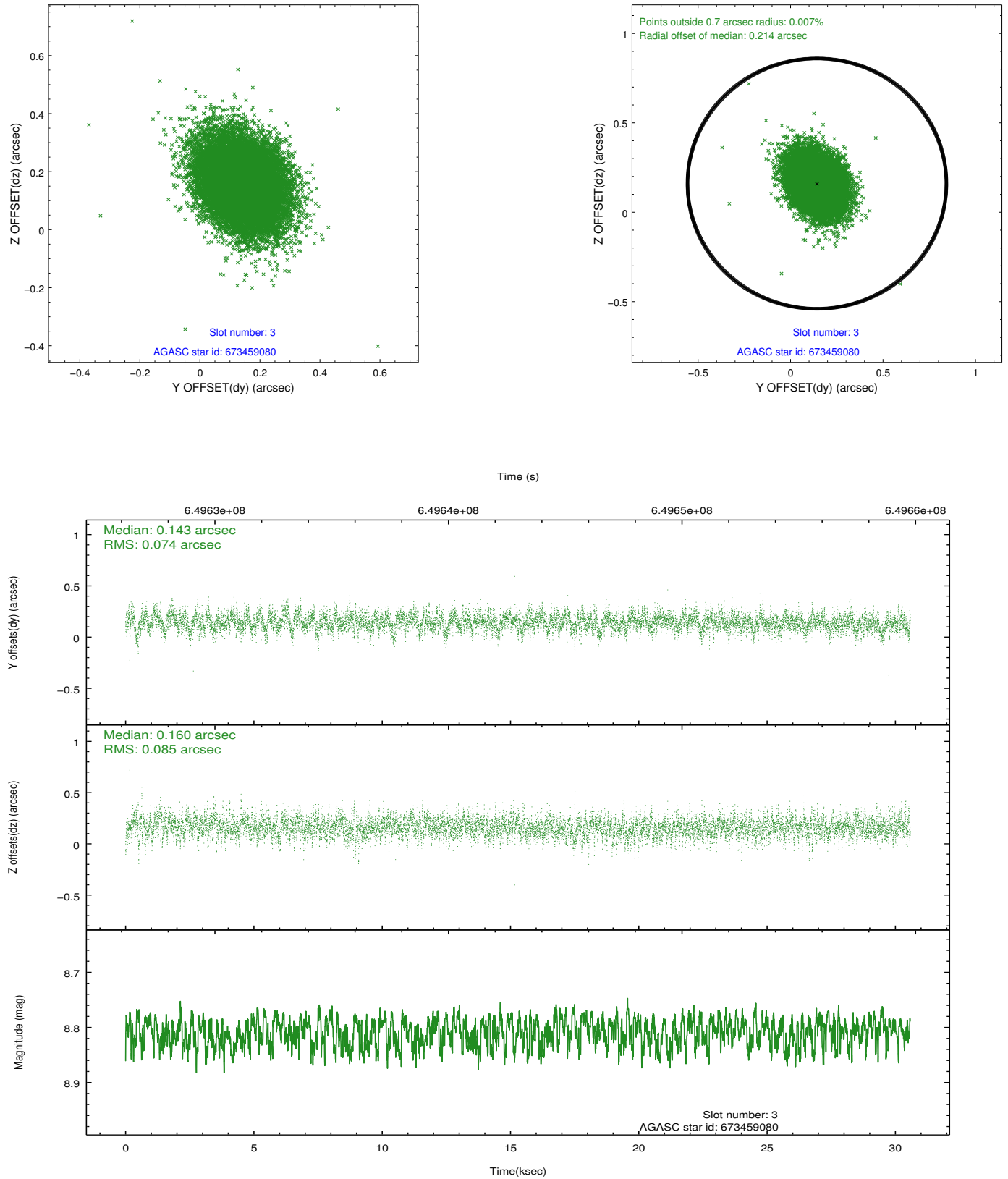


Slot Statistics

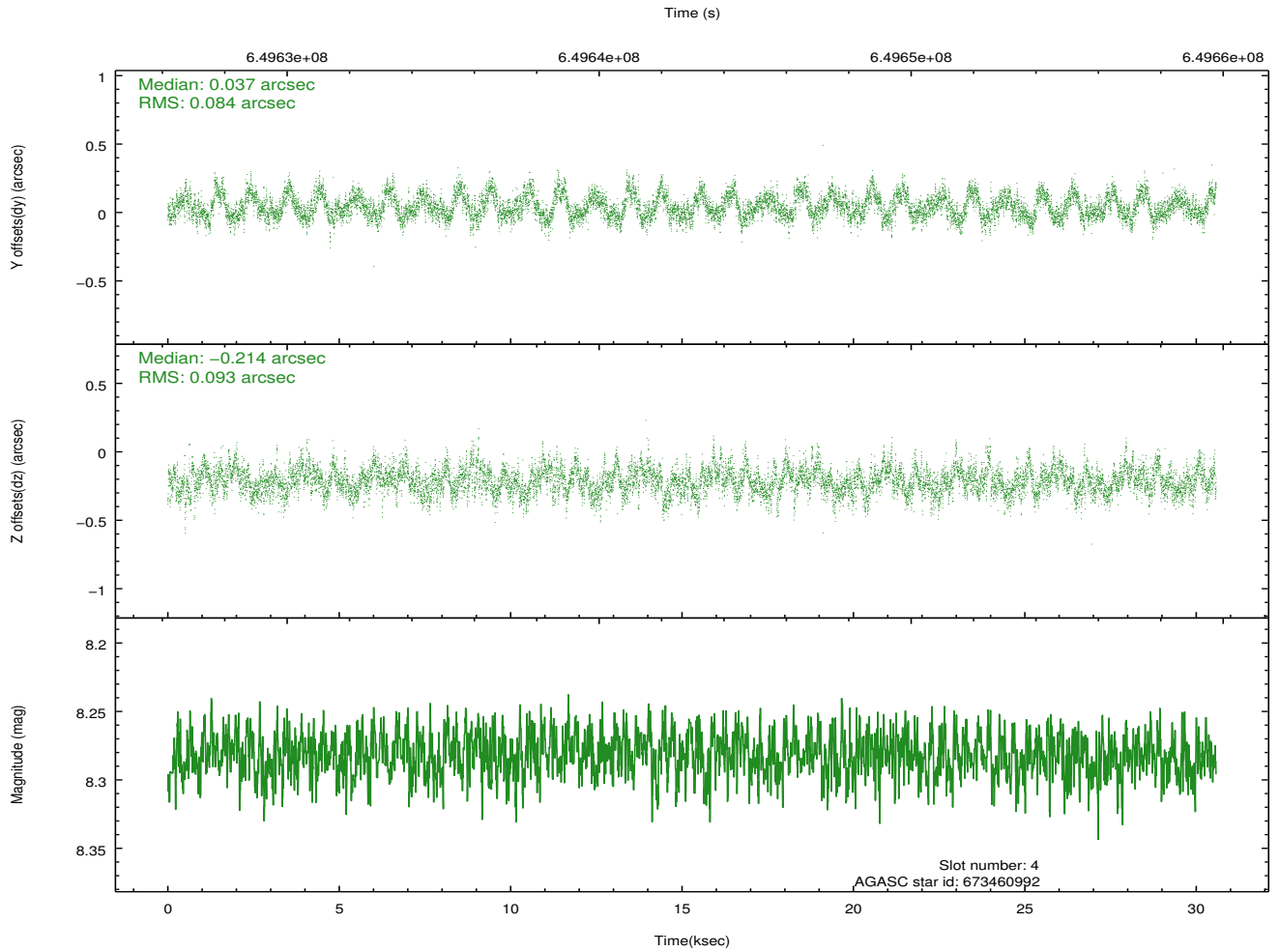
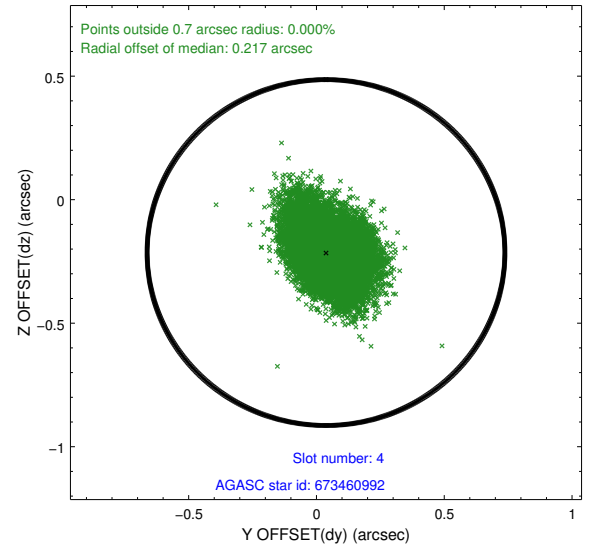
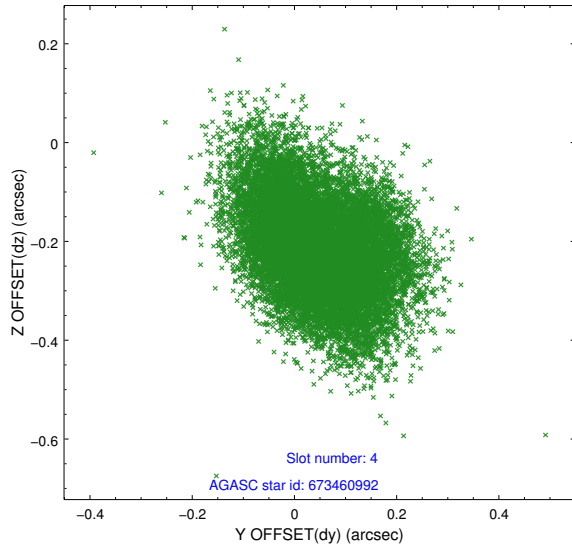
pt	status	used	id	mag	n_pts	frac_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mea
0	FID		ACIS-S-2	7.01	7459	1.000	-0.213	-0.151	0.033	0.076	0.000000	0.000000	-770.16	-1869
1	FID		ACIS-S-4	7.13	7459	1.000	0.480	0.138	0.013	0.024	0.000000	0.000000	2143.77	39
2	FID		ACIS-S-5	7.15	7459	1.000	-0.299	0.011	0.022	0.056	0.000000	0.000000	-1823.01	33
3	GUIDE	used	673459080	8.81	14908	1.000	0.143	0.160	0.118	0.198	289.246637	-5.373686	1383.58	-1037
4	GUIDE	used	673460992	8.28	14911	1.000	0.037	-0.214	0.133	0.217	289.799374	-5.232721	-145.60	320
5	GUIDE	used	673463704	8.94	14901	1.000	0.013	0.292	0.151	0.252	289.894494	-4.869892	-1419.44	-126
6	GUIDE	used	673466464	9.23	14886	1.000	-0.202	-0.243	0.158	0.258	289.850458	-5.613937	888.93	1239
7	OMITTED			0.00	0	0.000	0.000	0.000	0.000	0.000	0.000000	0.000000	0.00	0

2.4 Star Slots

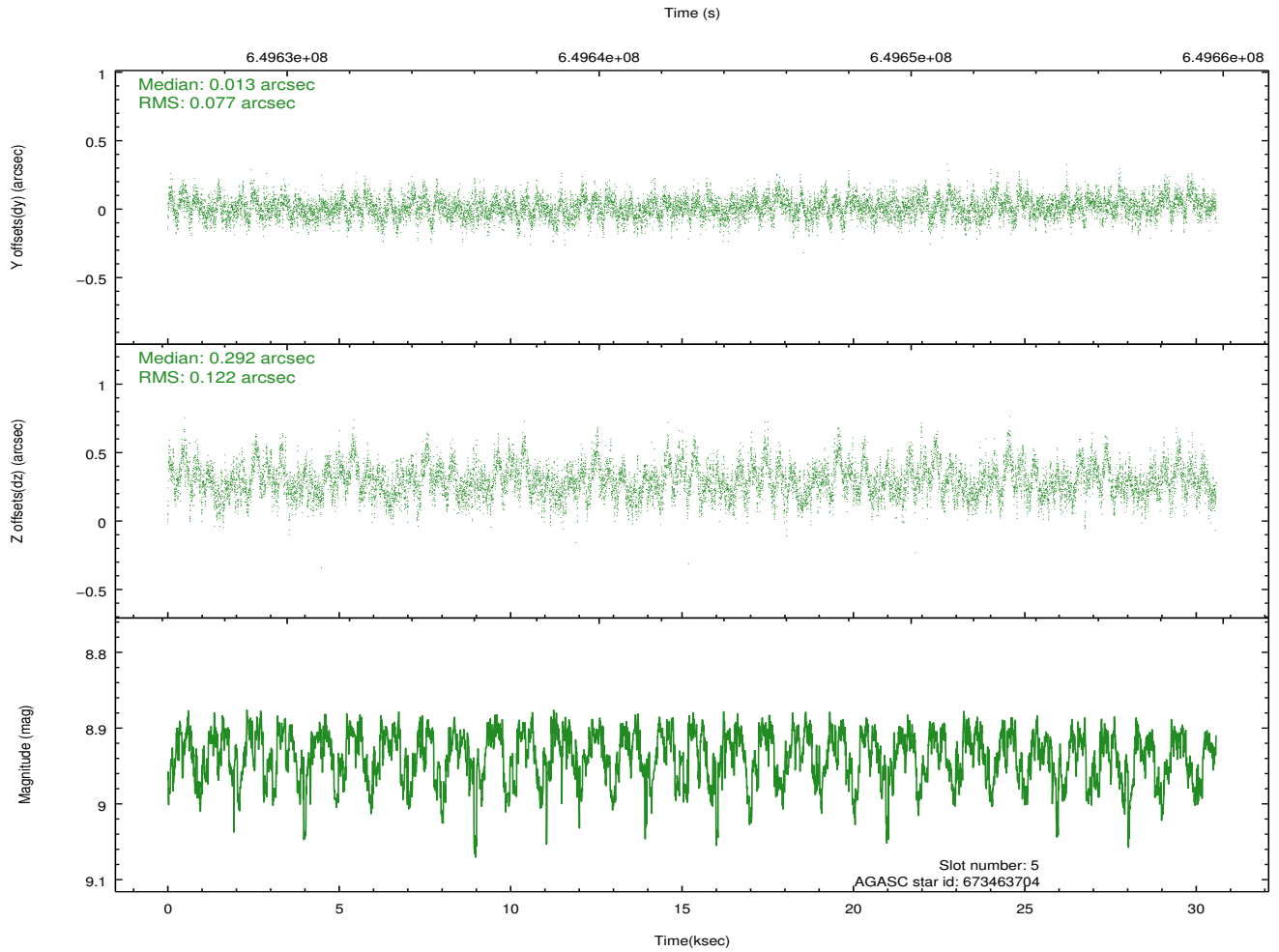
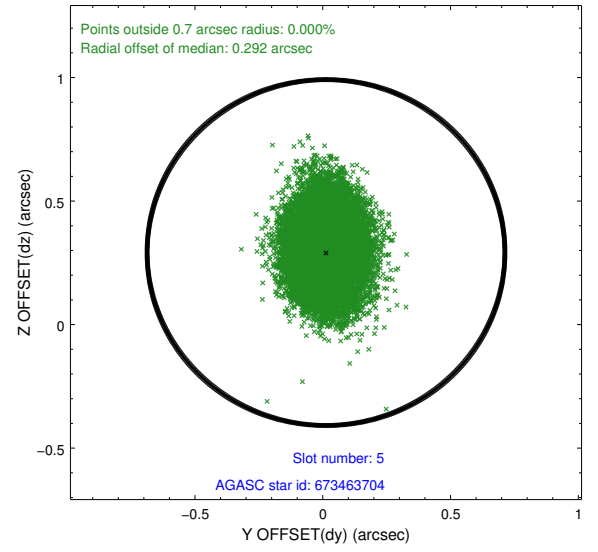
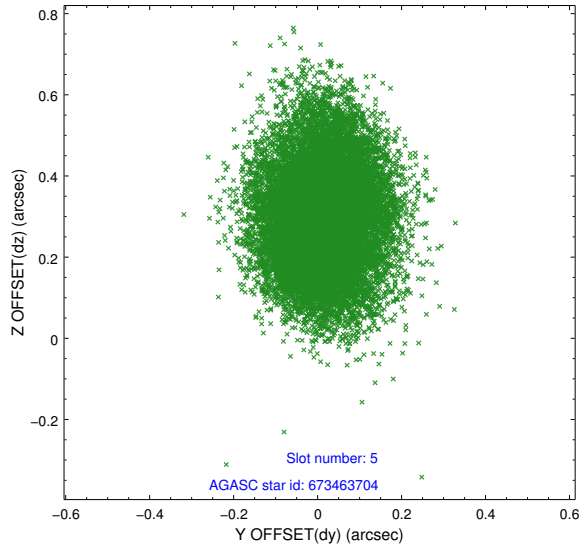
2.4.1 Slot 3



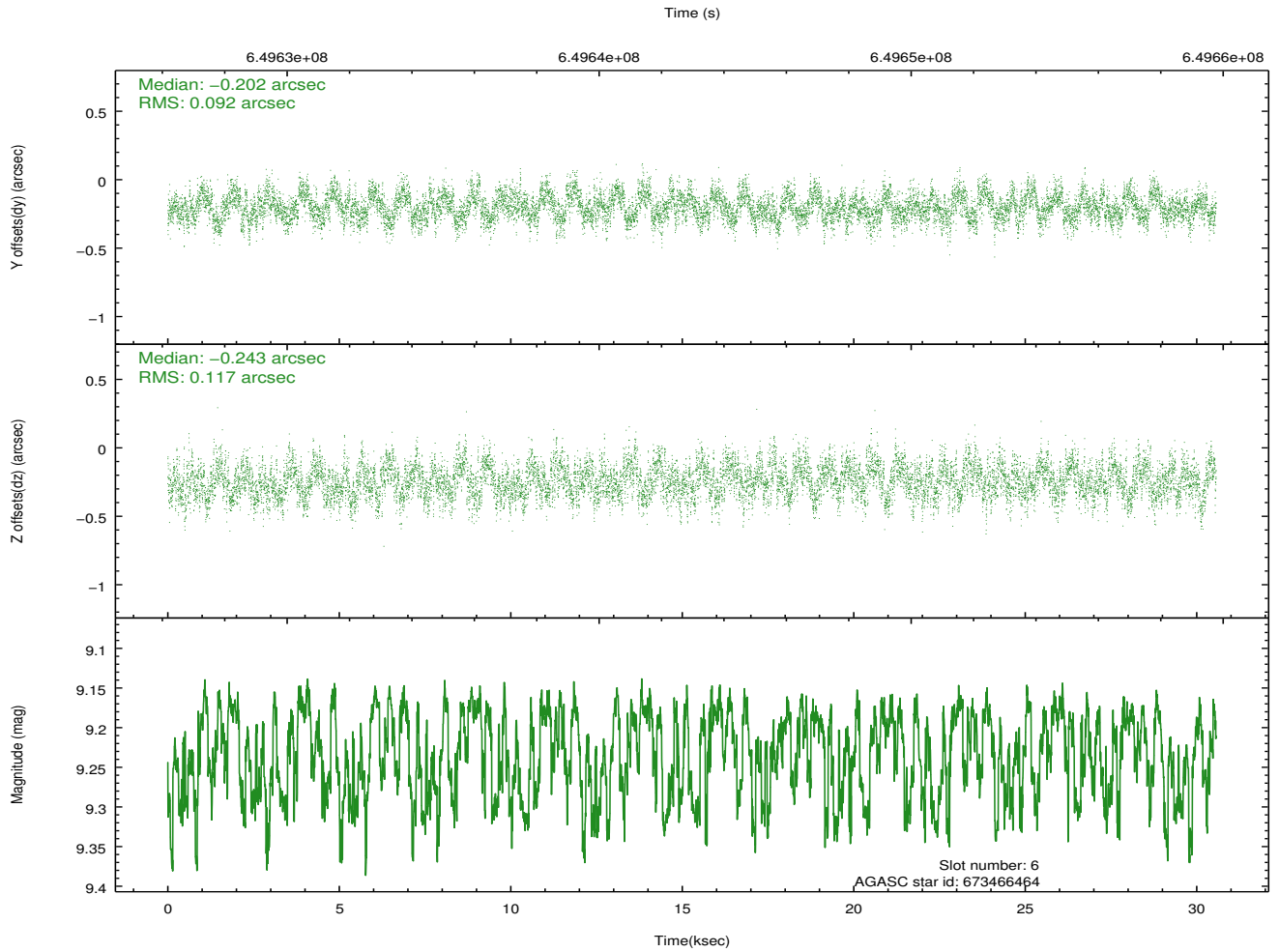
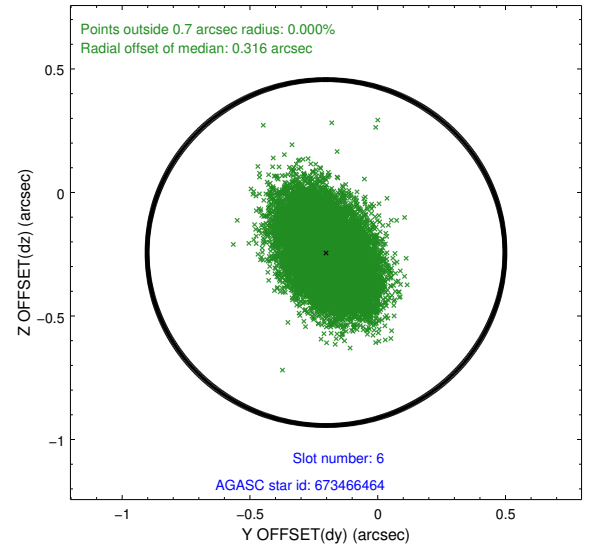
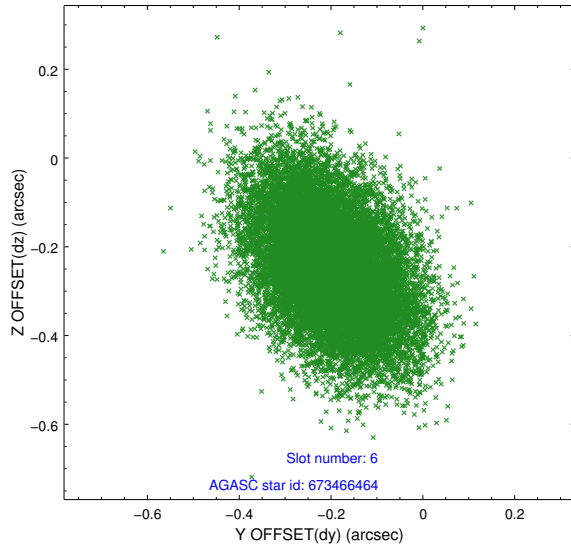
2.4.2 Slot 4



2.4.3 Slot 5

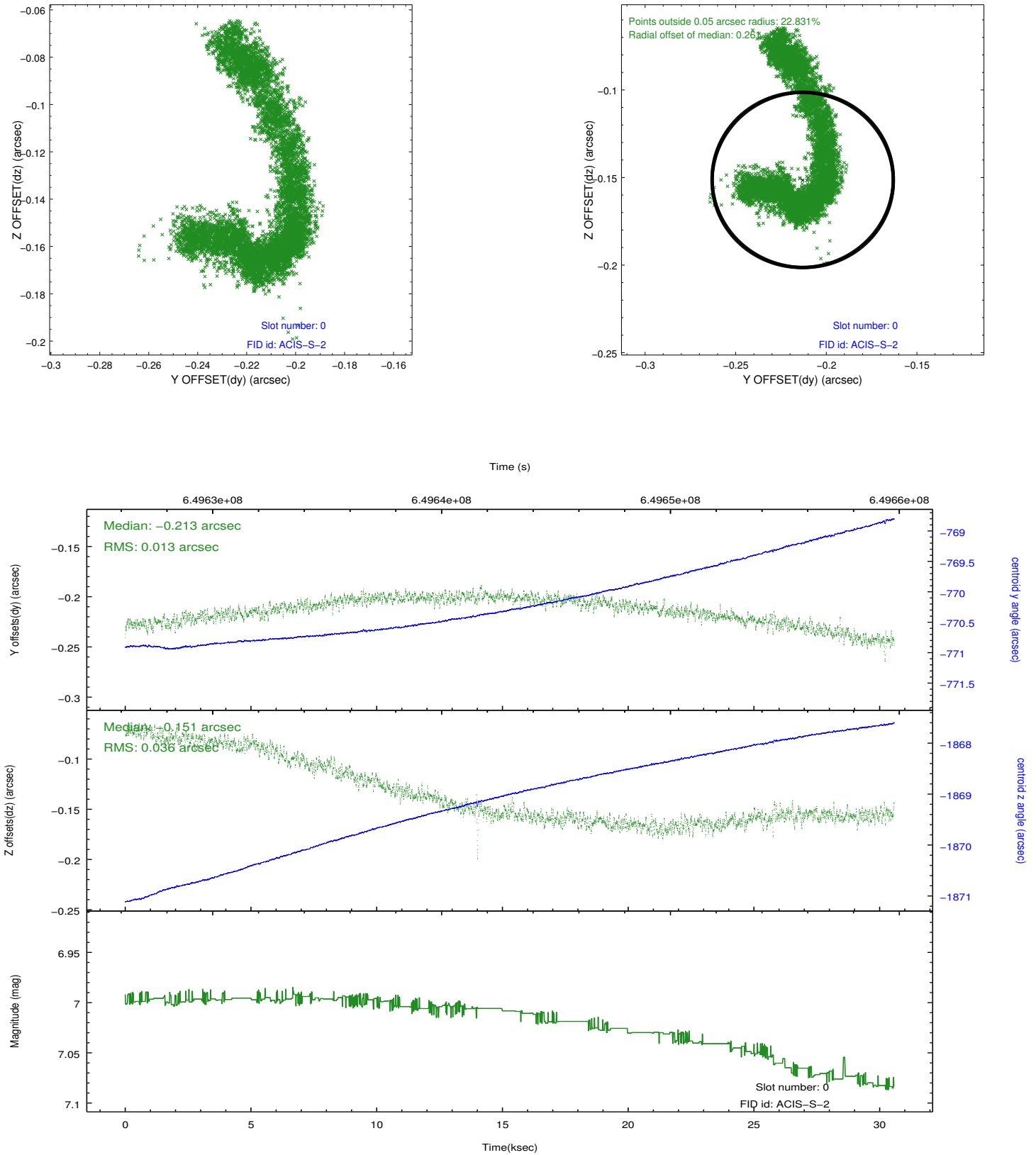


2.4.4 Slot 6

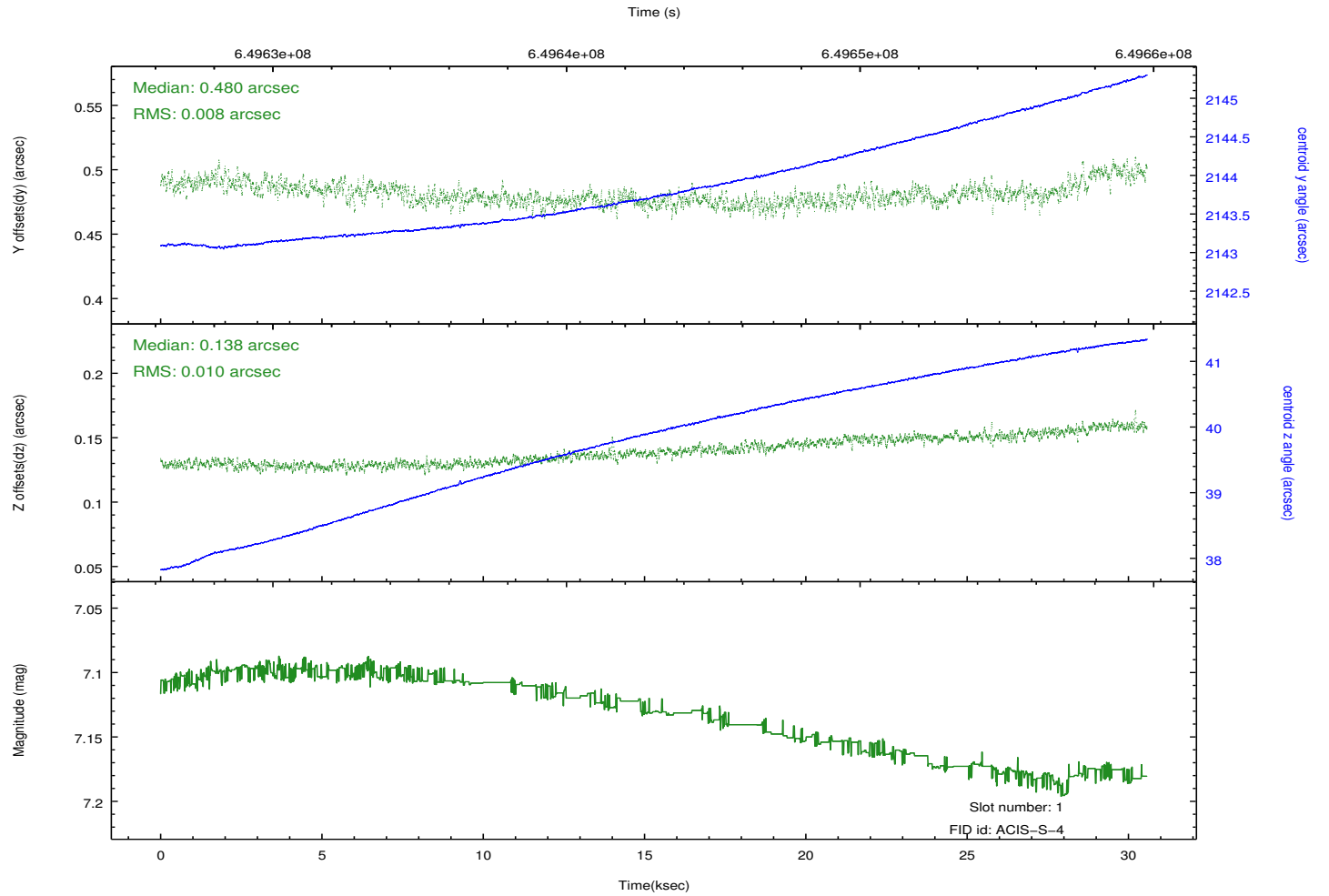
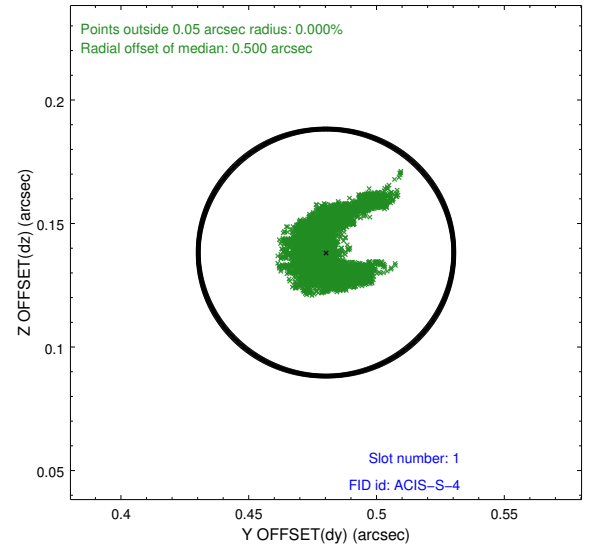
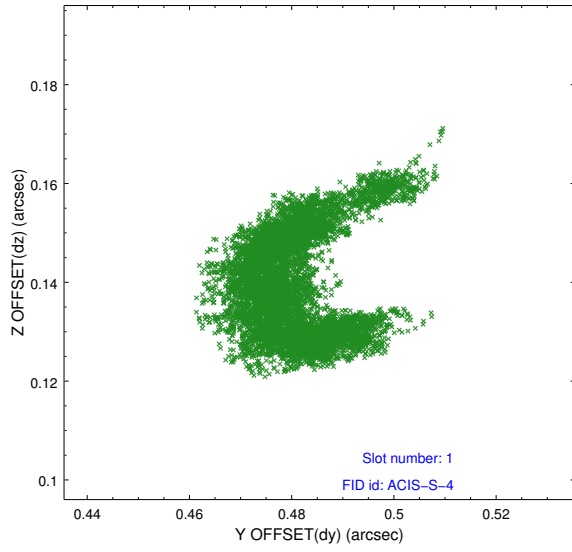


2.5 FID Slots

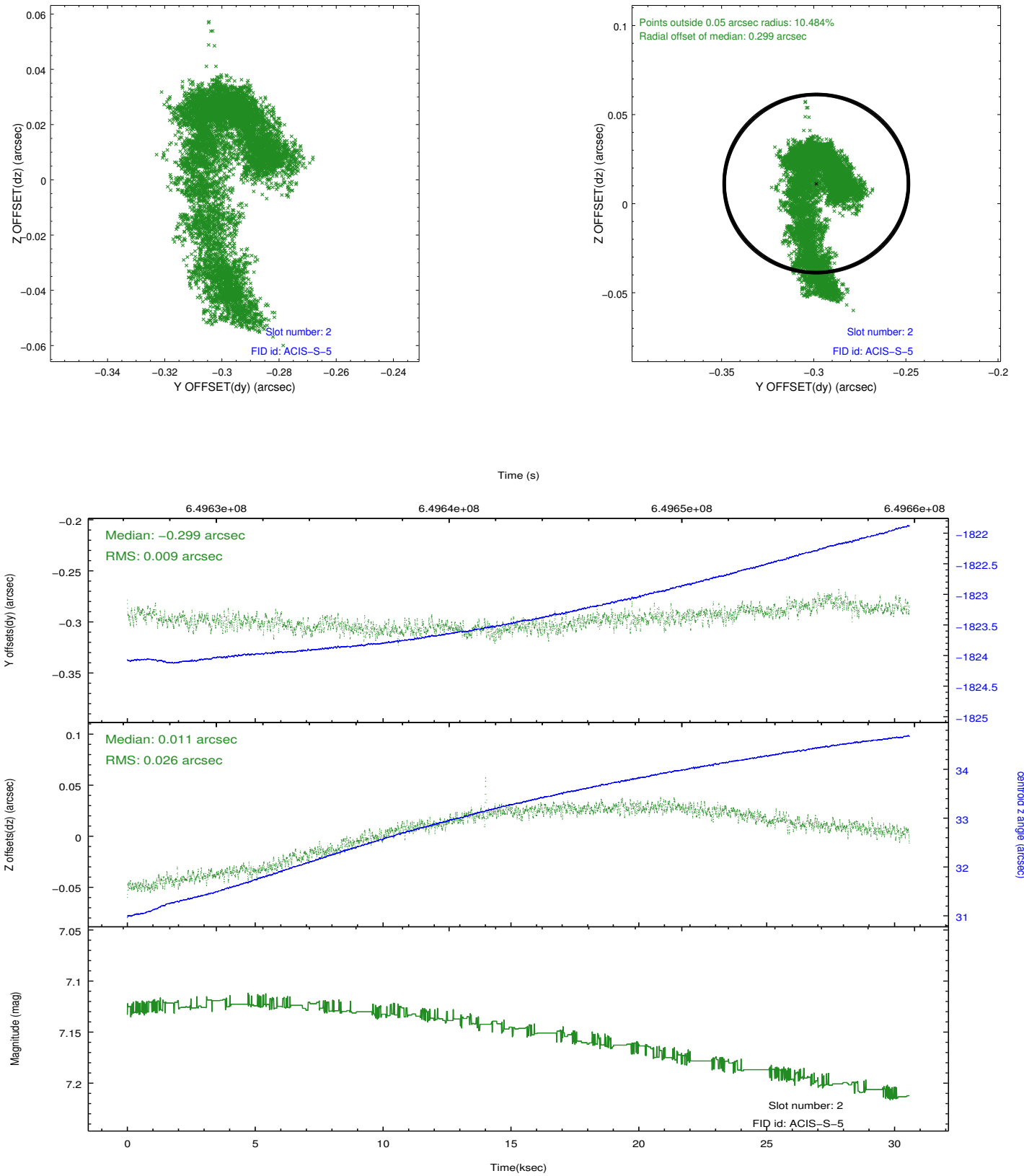
2.5.1 Slot 0



2.5.2 Slot 1

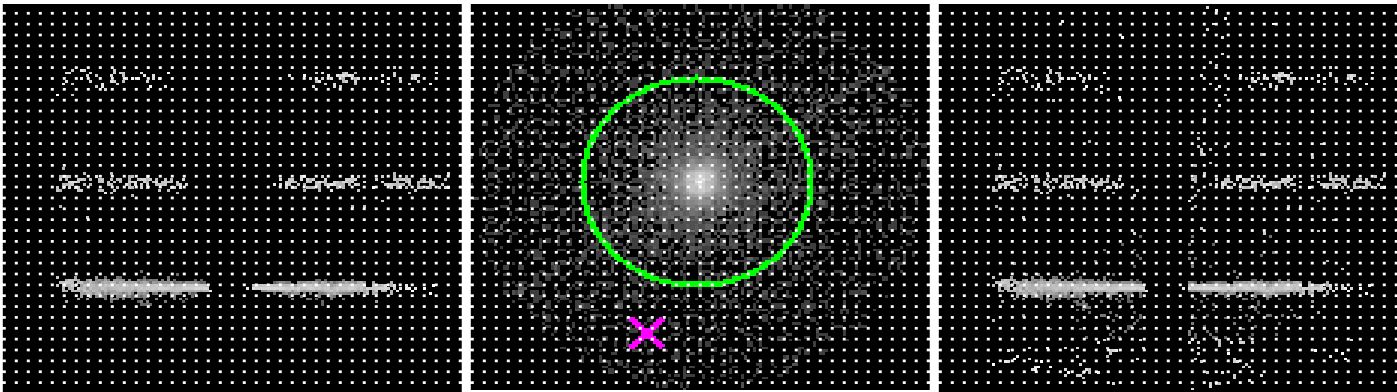


2.5.3 Slot 2



3 Gratings

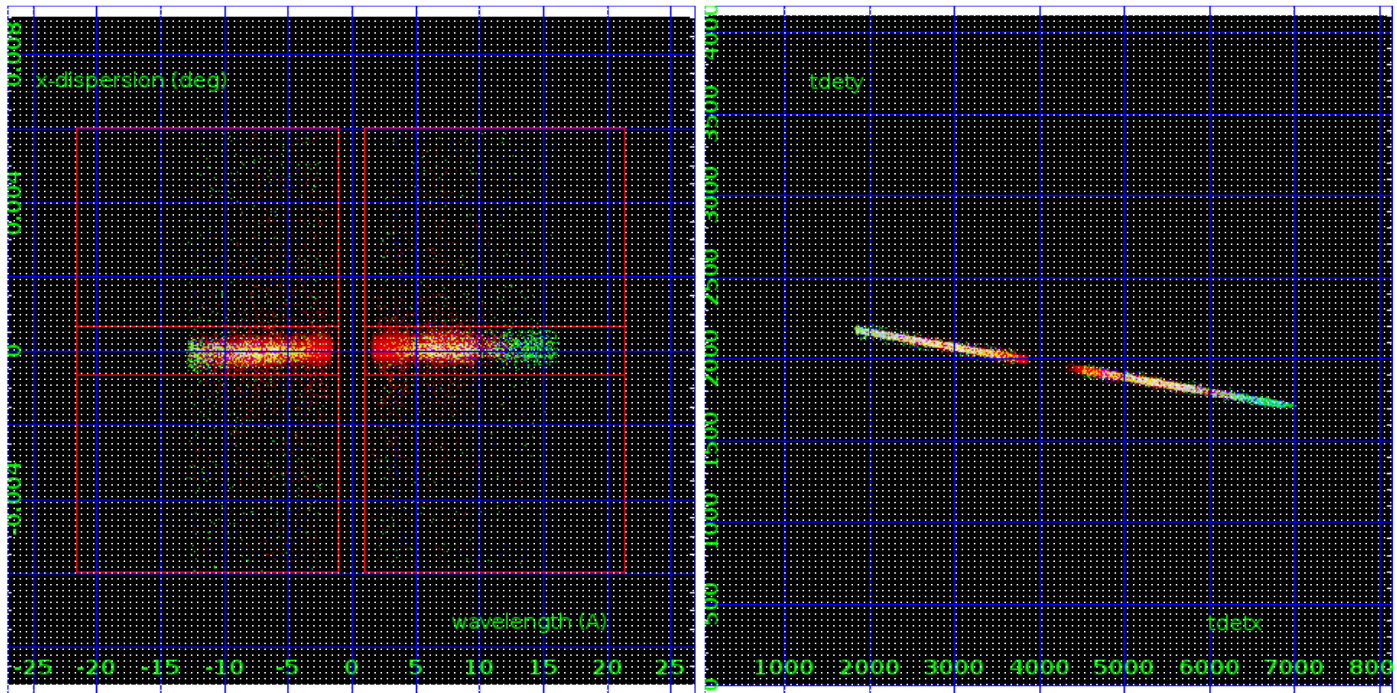
3.1 HEG Arm



HEG Order Sort 123

HEG Zero Order

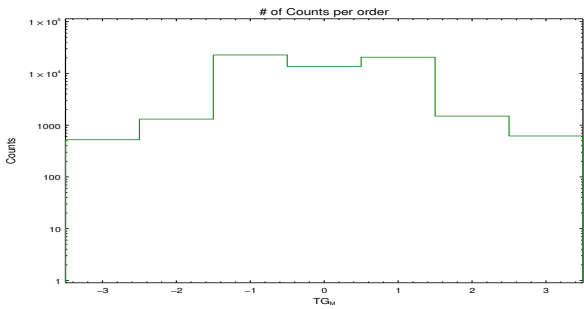
HEG Order Sort ALL

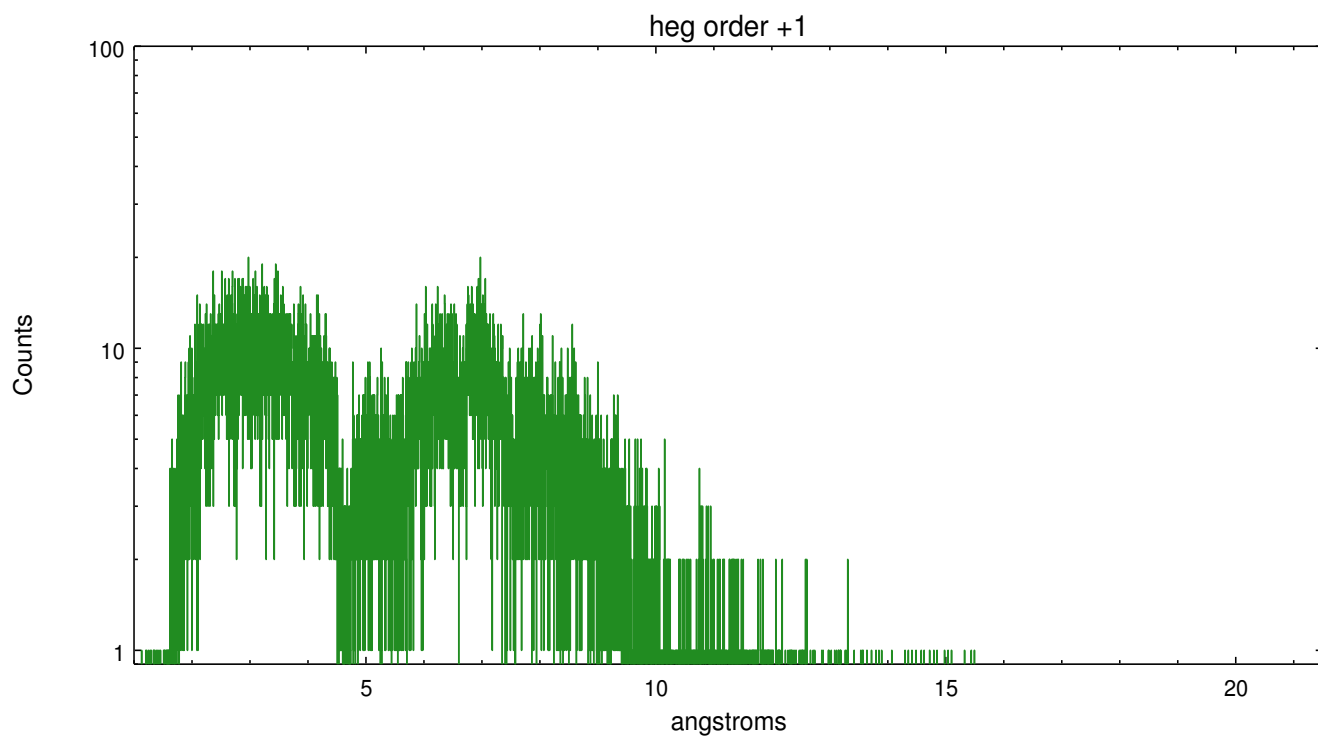
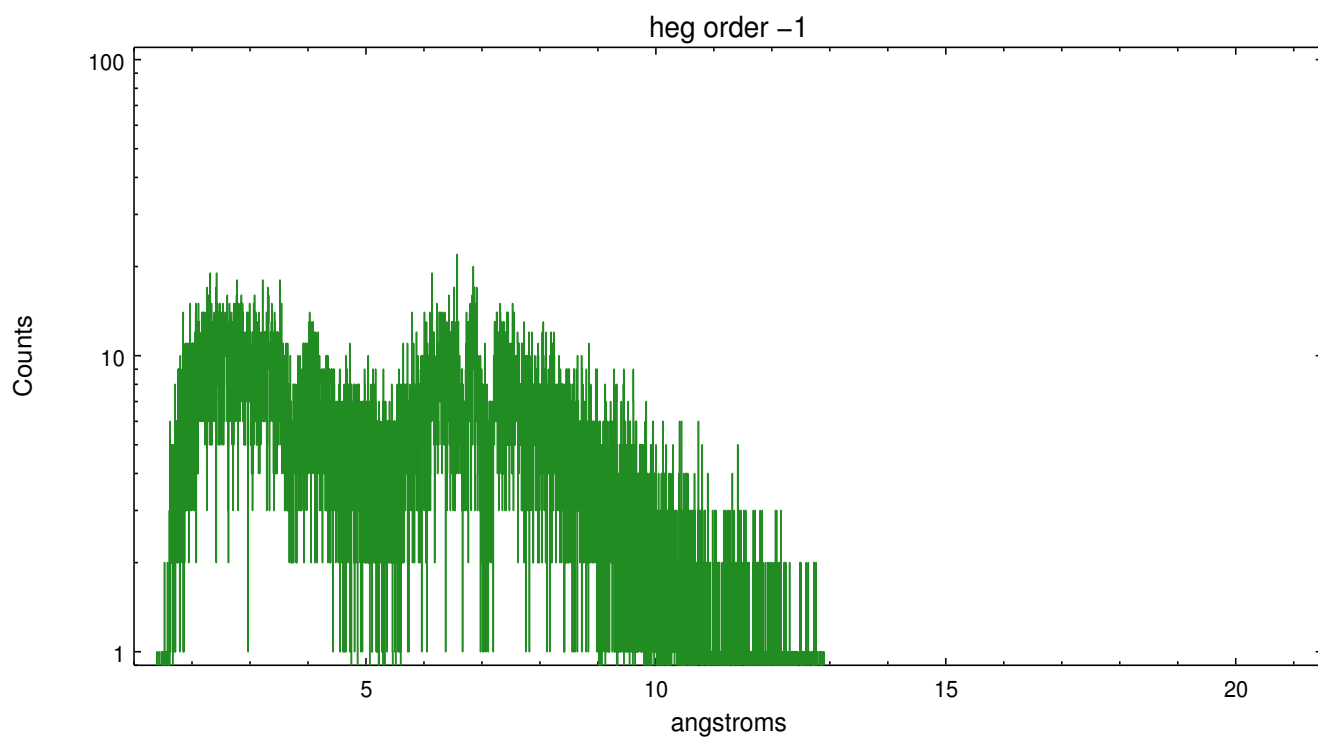


Spot Image HEG

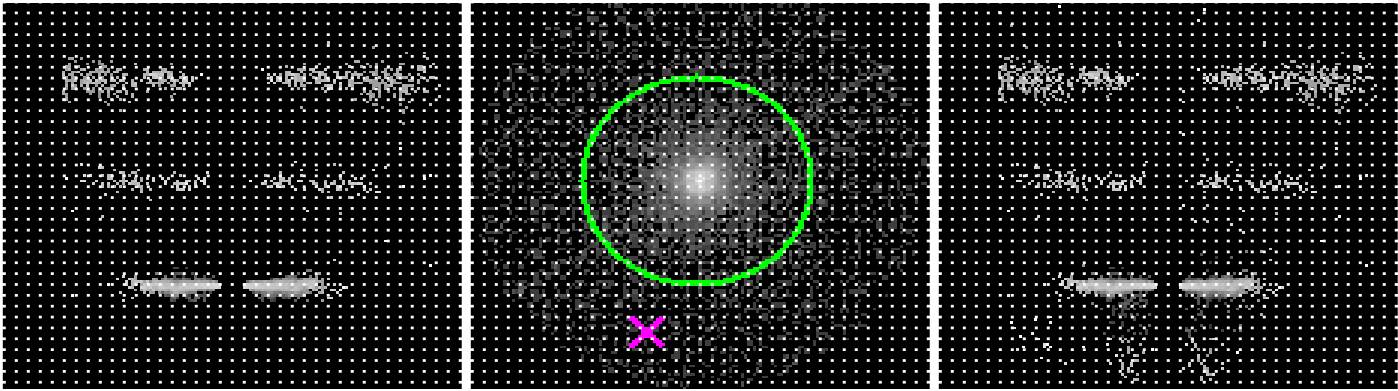
Full Detector HEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	523	1310	22721	13656	20527	1496	618





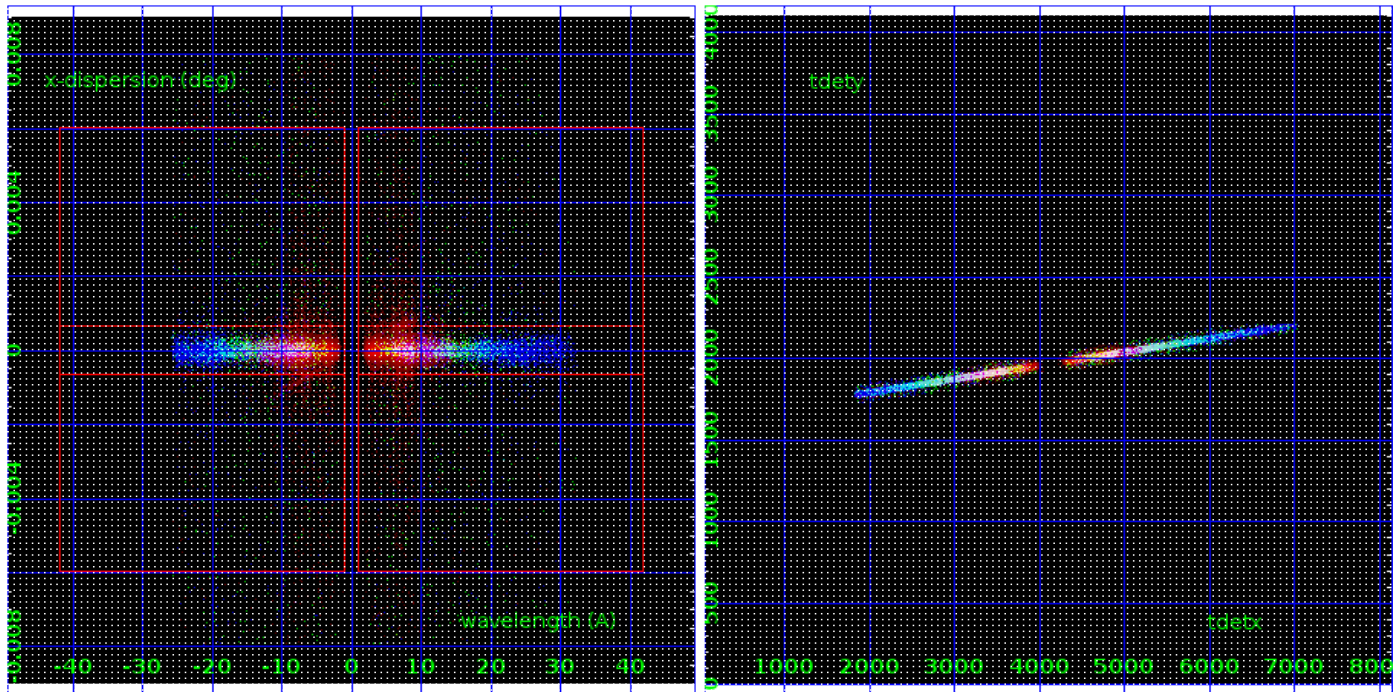
3.2 MEG Arm



MEG Order Sort 123

MEG Zero Order

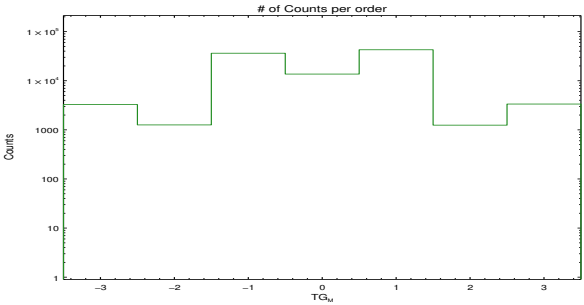
MEG Order Sort ALL

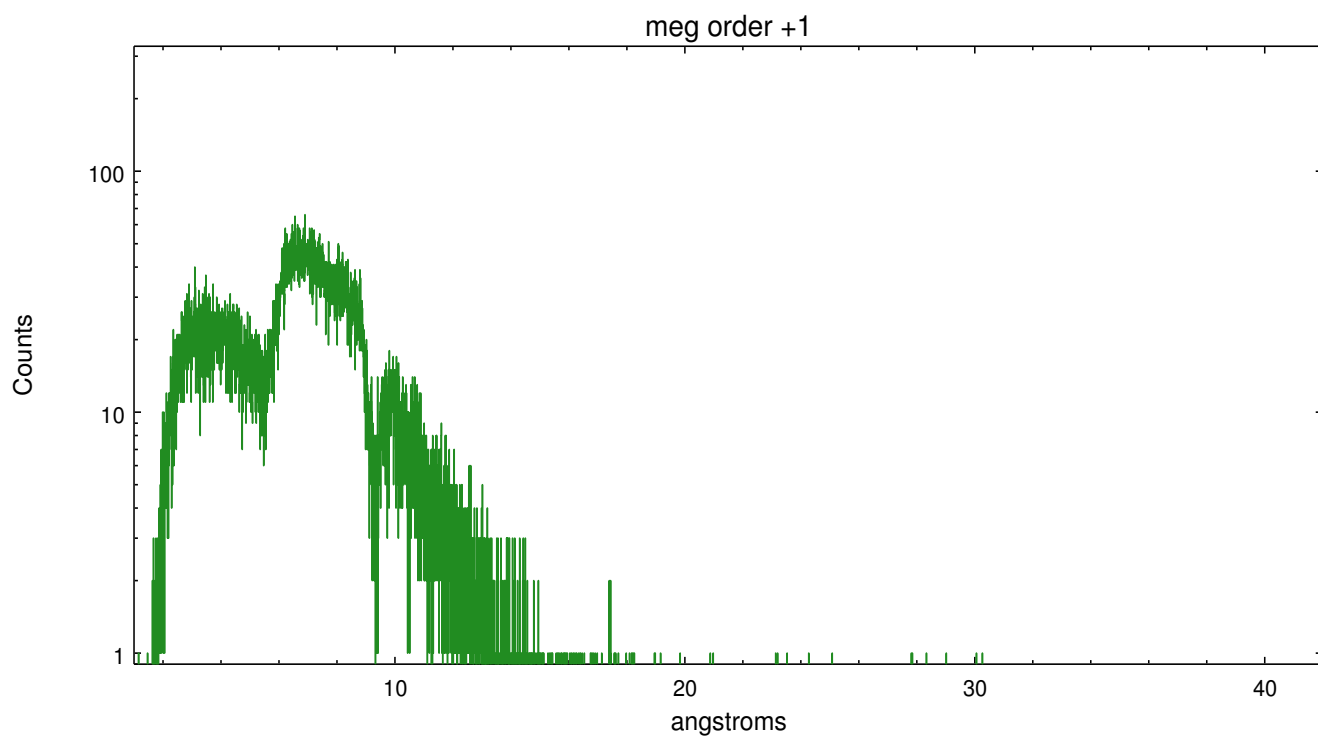
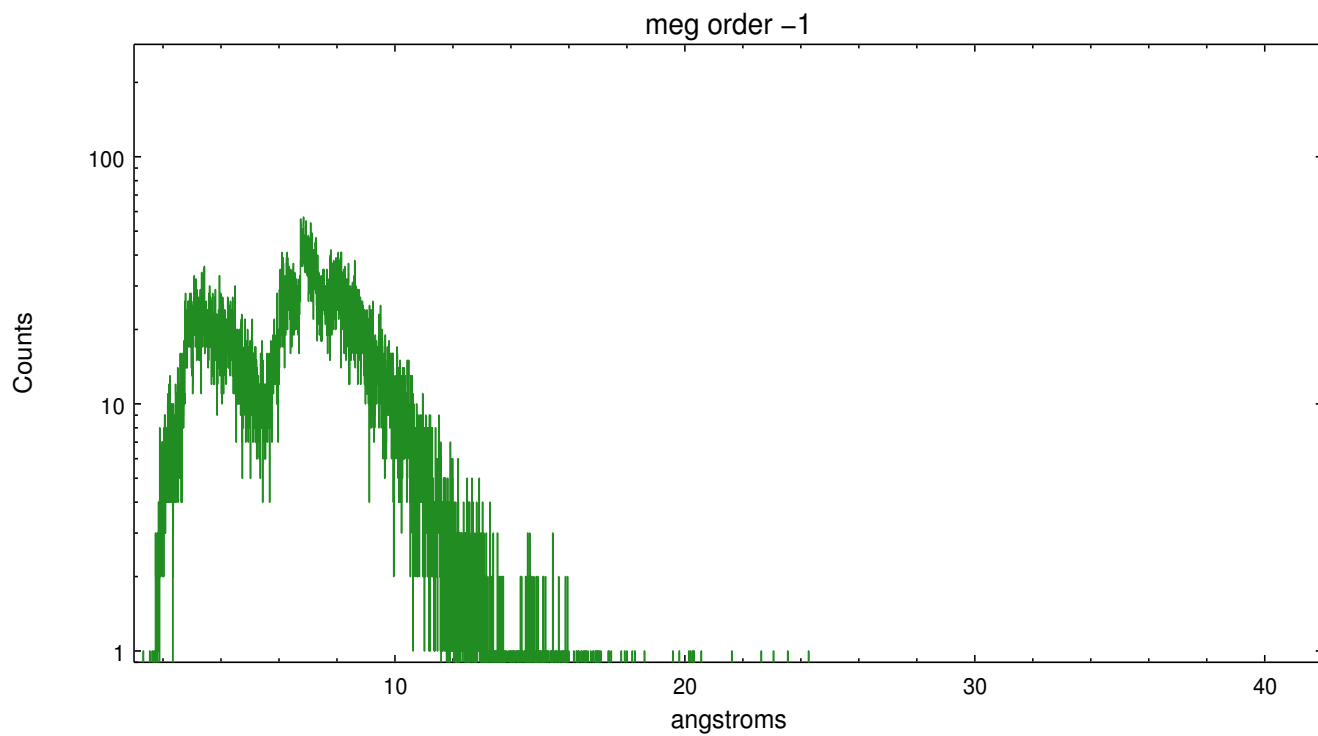


Spot Image MEG

Full Detector MEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	3271	1260	36296	13656	42716	1245	3351





A Summary

A.1 Status

V&V Scientist	Joy Nichols
V&V Date (YYYY-MM-DD)	2018.08.03
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	30.549000856876

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.

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The guide star in slot 7 was removed from the aspect solution due to poor data quality. The aspect solution is improved by the removal of this guide star from the solution.