

V&V Reference Report

L2 ASCDS Version : 10.6.4

Observation 20738 - L2 Version 1
Chandra X-Ray Center

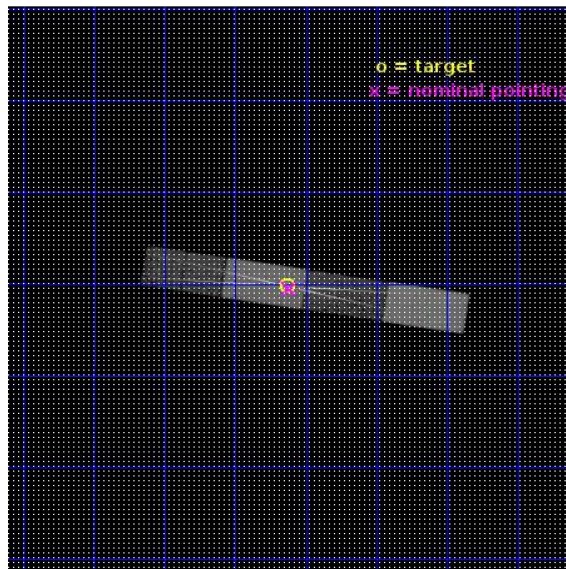
L2 Processing Date : Jul 11 2018

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1 Front

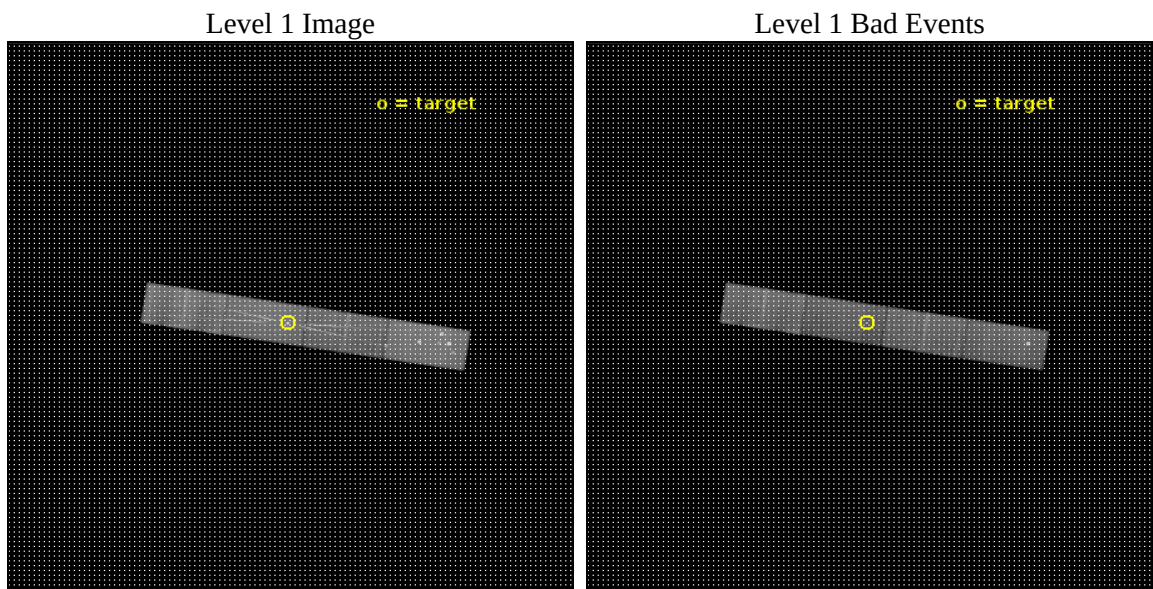
seq_num	402007	Sequence number
obs_id	20738	Observation id
title	Searching for Emission Lines in 4U 1907+09	Proposal title
observer	Claude Canizares	Principal investigator
object	4U 1907+09	Source name
dtcycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	287.407917	Observer's specified target RA [deg]
dec_targ	9.830278	Observer's specified target Dec [deg]
ra_nom	287.40399629171	Nominal RA [deg]
dec_nom	9.8248344876452	Nominal Dec [deg]
roll_nom	188.85731197083	Nominal Roll [deg]
revision	1	Processing version of data
ontime	28756.20897007	Sum of GTIs [s]
livetime	28037.058421557	Livetime [s]
ontime5	28756.167930126	Sum of GTIs [s]
ontime6	28756.126890063	Sum of GTIs [s]
ontime7	28756.20897007	Sum of GTIs [s]
ontime8	28754.444800019	Sum of GTIs [s]
l2events	231863	Number of level 2 events



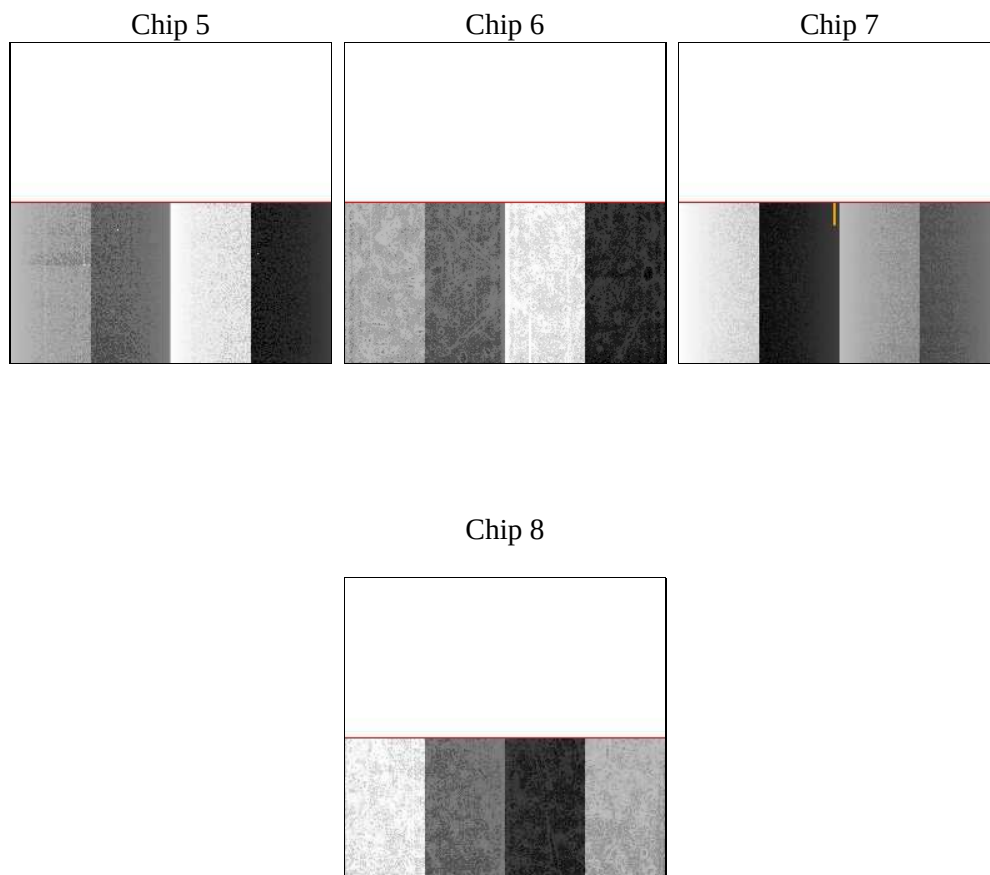
2 OBI

2.1 OBI

2.1.1 Images



2.1.2 Bias



2.1.3 Parameters

obi_num	0	Obi number	sched_exp_time	28700.000000	[s] Scheduled observation exposure time
ascdsver	10.6.4	Processing system revision	ontime	28756.20897007	Sum of GTIs [s]
caldbver	4.7.8	 	ontime5	28756.167930126	Sum of GTIs [s]
date	2018-07-11T04:05:53	Date and time of file creation	ontime6	28756.126890063	Sum of GTIs [s]
revision	1	Processing version of data	ontime7	28756.20897007	Sum of GTIs [s]
			ontime8	28754.444800019	Sum of GTIs [s]
			l1events	703614	Number of level 1 events
			tgmethod	FINDZO	Method used to create src1a file
			zo_pos	(4063.92, 4132.92)	src1a sky pixel position
			zo_pos_tgd	(4063.93, 4133.08)	src1a sky pixel position via radetect

2.1.4 Events

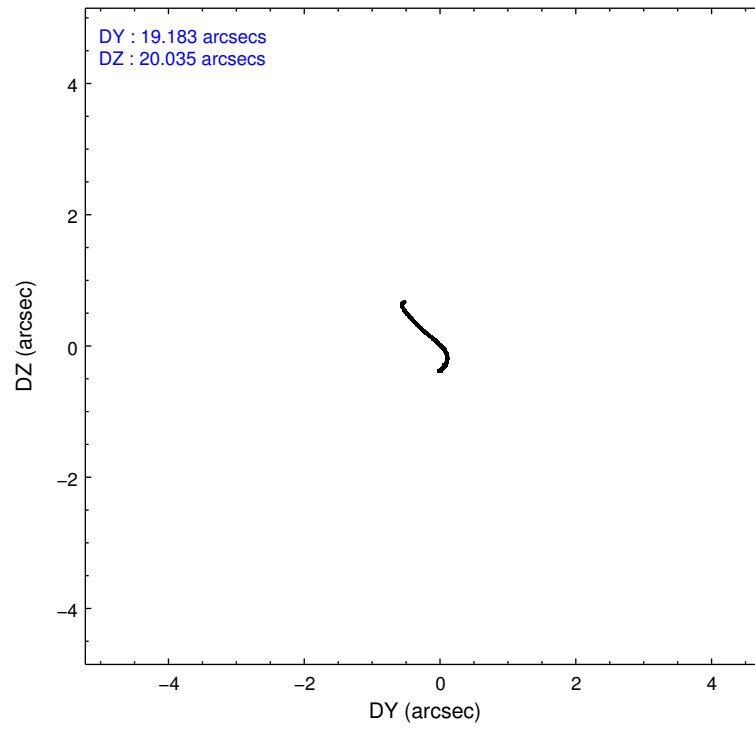
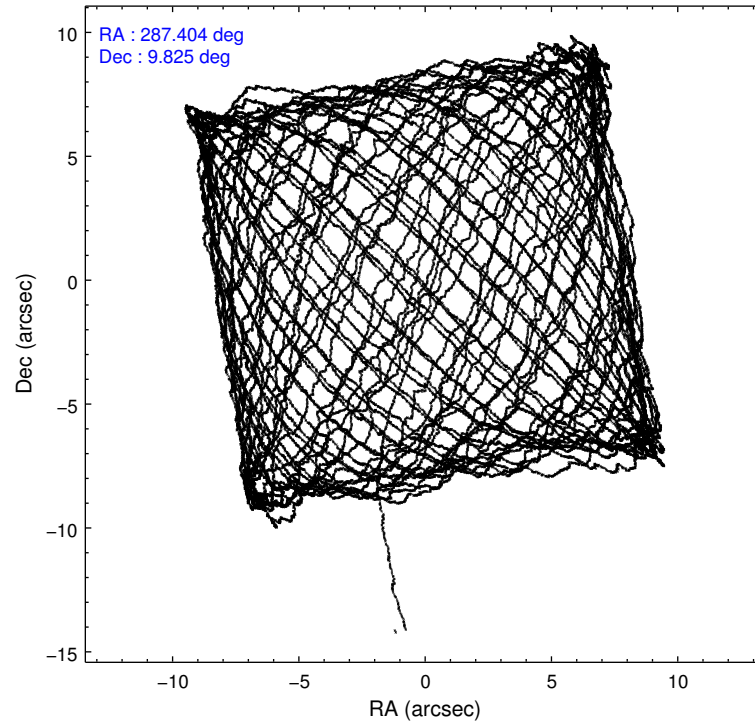
	ccd 5	ccd 6	ccd 7	ccd 8
level 1 events	222640	134844	188341	157789
rejected events	102939	101717	84571	112418
rejected %	46%	75%	44%	71%

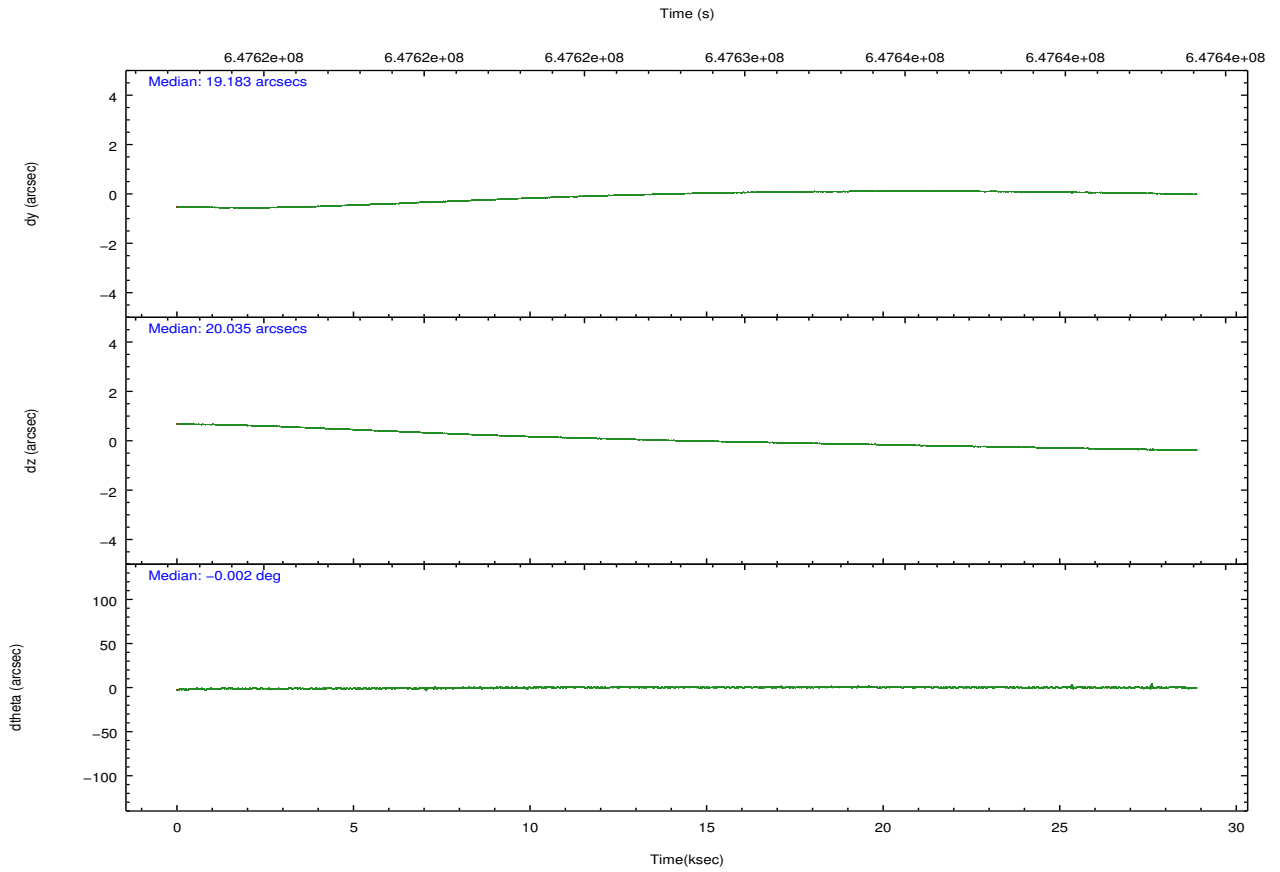
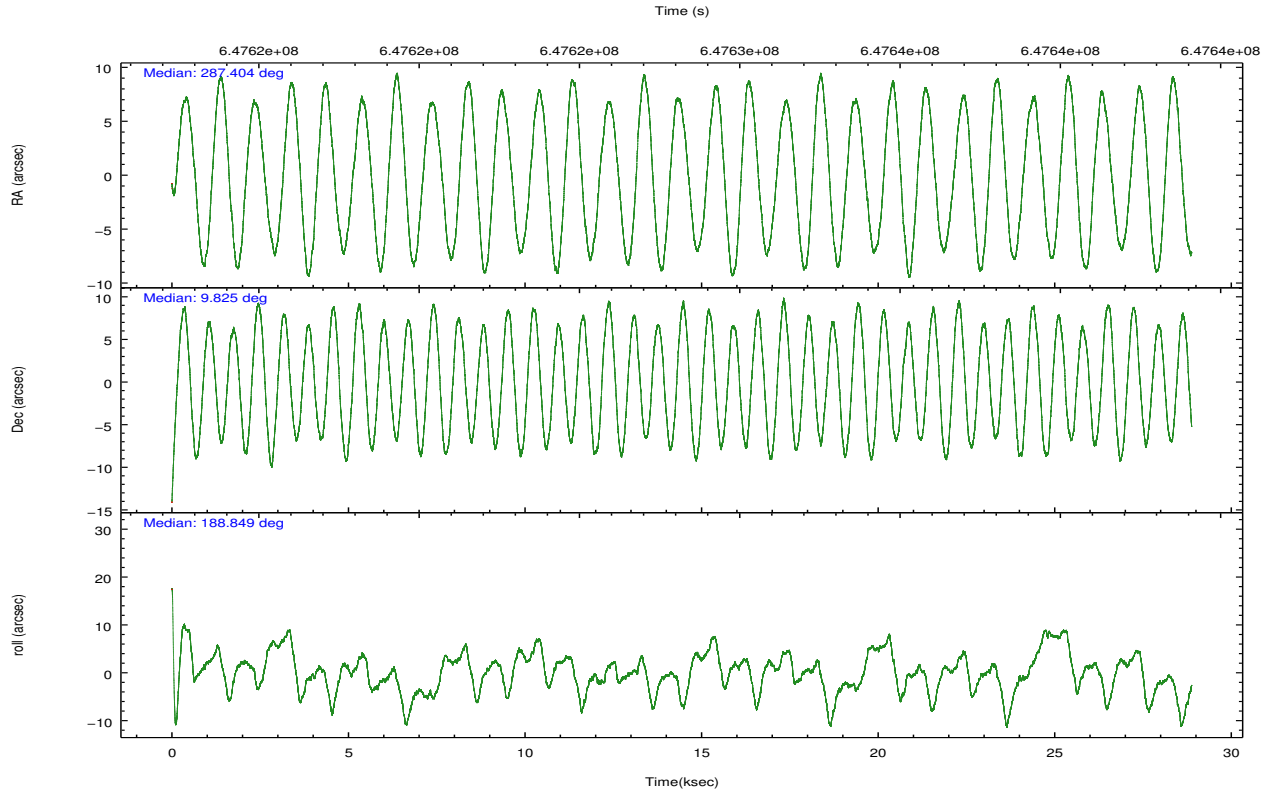
	ccd 5	ccd 6	ccd 7	ccd 8
grade 0 events	33347	17664	12827	13524
	14%	13%	6%	8%
grade 1 events	404	104	579	94
	0%	0%	0%	0%
grade 2 events	28210	5884	22255	10412
	12%	4%	11%	6%
grade 3 events	6782	2460	9843	4837
	3%	1%	5%	3%
grade 4 events	5179	2566	9755	4471
	2%	1%	5%	2%
grade 5 events	17754	5151	16513	7671
	7%	3%	8%	4%
grade 6 events	46201	4558	49099	12132
	20%	3%	26%	7%
grade 7 events	84763	96457	67470	104648
	38%	71%	35%	66%

2.2 Compared Parameters

Parameter	Planned	Actual	Parameter	Planned	Actual
Instrument	ACIS	ACIS	Obspar format version number	7	7
Detector	ACIS-5678	ACIS-5678	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	287.425442	287.4039962917109	CCD I2 on	N	N
[deg] Pointing Dec	9.842332	9.824834487645159	CCD I3 on	N	N
[deg] Pointing Roll	188.697005	188.8573119708292	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)	647613941.184000	647612918.08602	CCD S5 on	O2	N
Observation start date	2018-07-10T12:44:32	2018-07-10T12:28:38	Number of optional ACIS chips dropped	2	2
[s] Observation end time (MET)	647642641.184000	647643425.67532	On-chip summing requested	N	N
Observation end date	2018-07-10T20:42:52	2018-07-10T20:57:05	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	1.6

2.3 Aspect



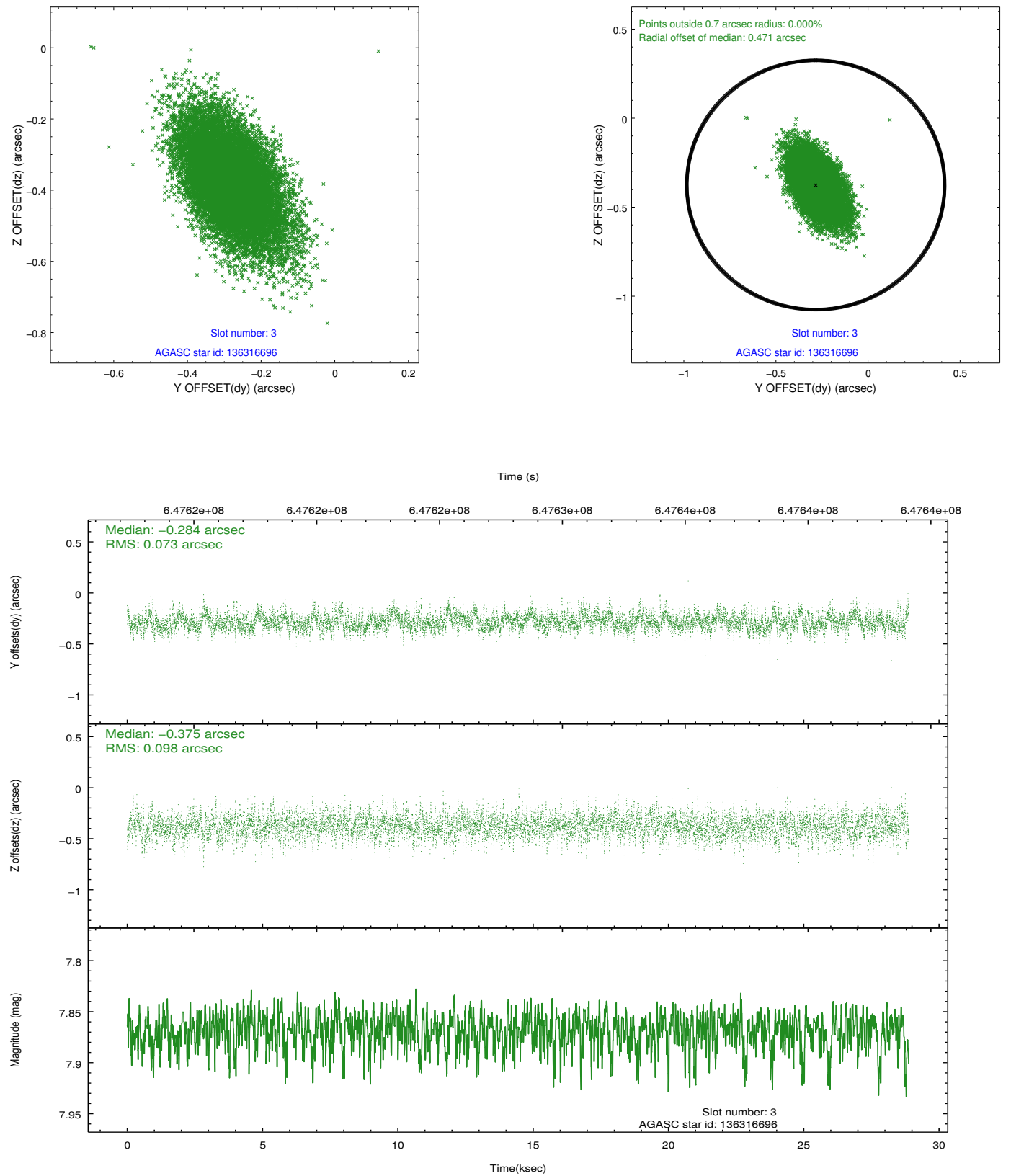


Slot Statistics

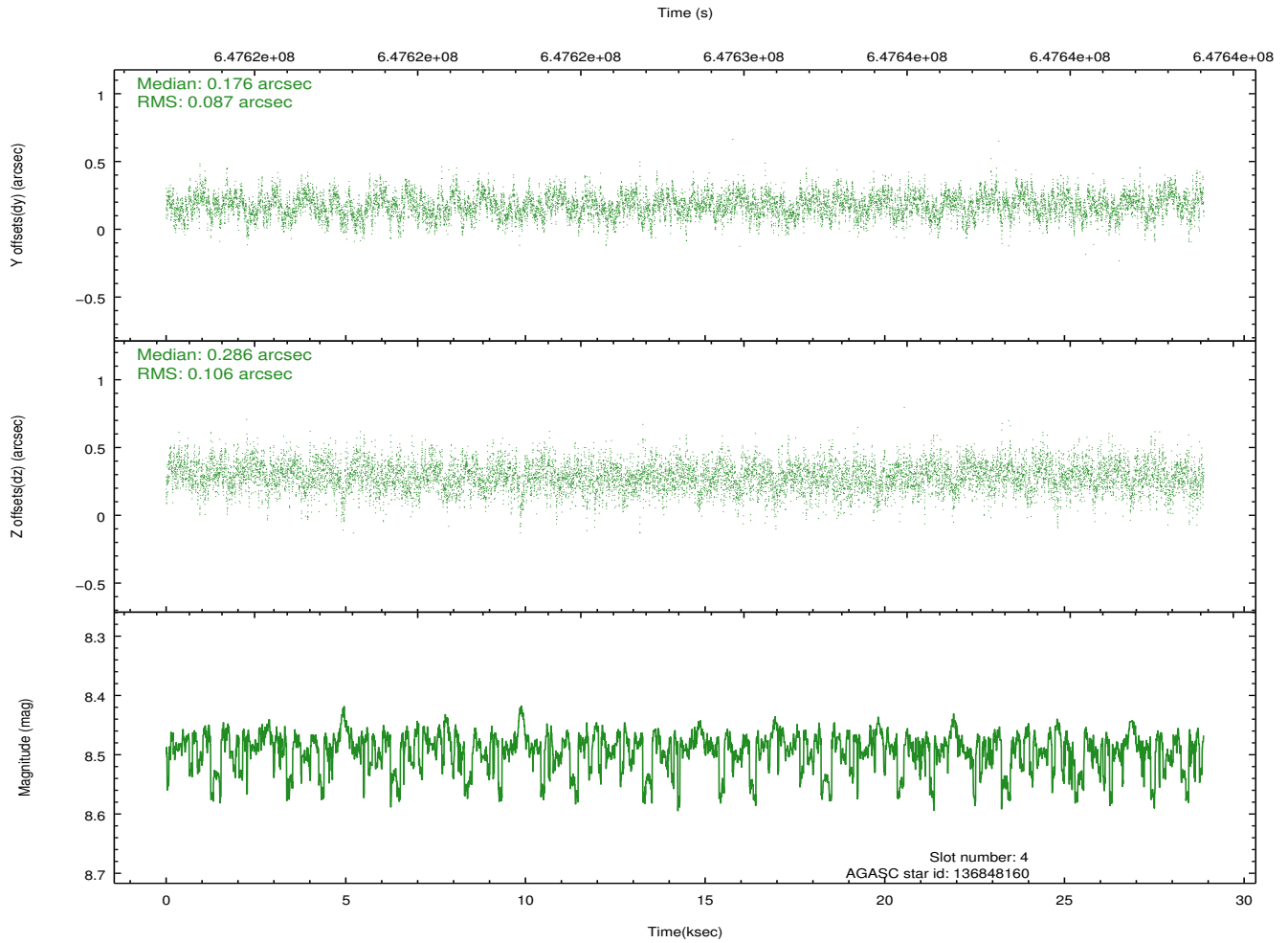
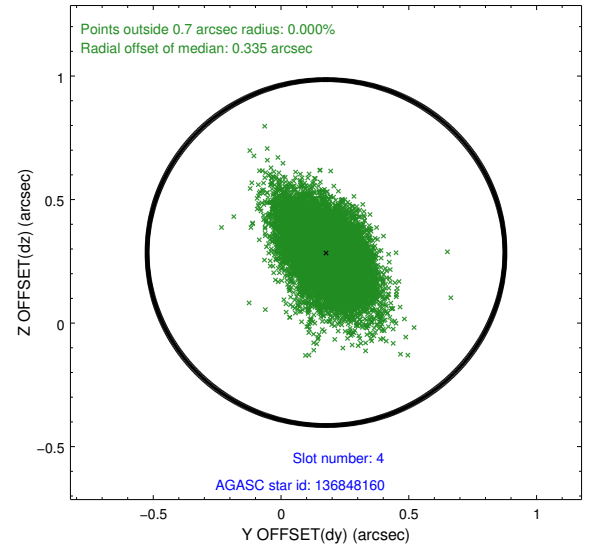
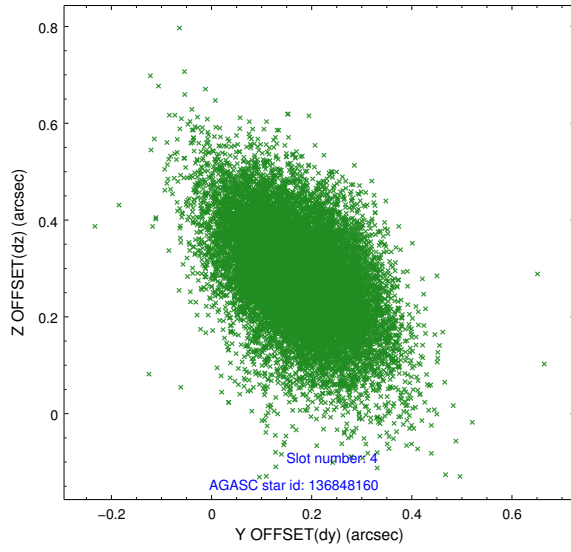
pt	status	used	id	mag	n_pts	frac_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mea
0	FID		ACIS-S-2	7.01	7044	1.000	-0.351	-0.253	0.025	0.046	0.000000	0.000000	-772.13	-1868
1	FID		ACIS-S-4	7.11	7044	1.000	0.331	0.212	0.021	0.031	0.000000	0.000000	2141.86	40
2	FID		ACIS-S-6	7.32	7043	1.000	-0.007	0.045	0.011	0.018	0.000000	0.000000	390.40	677
3	GUIDE	used	136316696	7.87	14086	1.000	-0.284	-0.375	0.124	0.220	287.190166	9.367792	1084.93	1561
4	GUIDE	used	136848160	8.49	14075	1.000	0.176	0.286	0.141	0.244	287.100689	10.380263	844.31	-2088
5	GUIDE	used	136850720	9.08	14068	1.000	0.033	-0.086	0.162	0.256	287.164458	9.793870	941.98	32
6	GUIDE	used	136974696	6.64	14088	1.000	0.200	0.526	0.126	0.215	287.707206	10.345780	-1259.63	-1640
7	GUIDE	used	136316960	9.15	14069	1.000	-0.130	-0.346	0.149	0.255	287.104881	9.133555	1511.91	2349

2.4 Star Slots

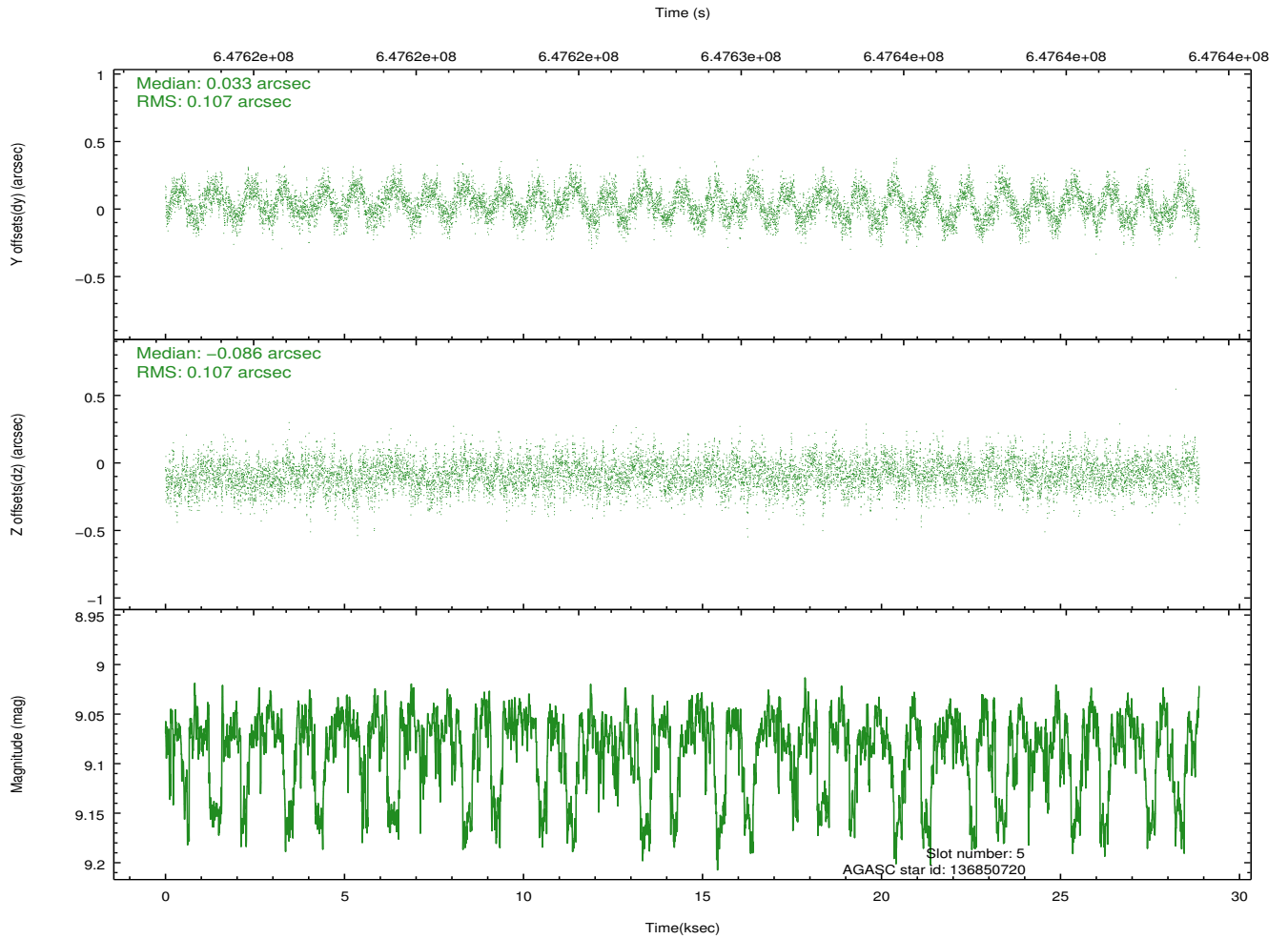
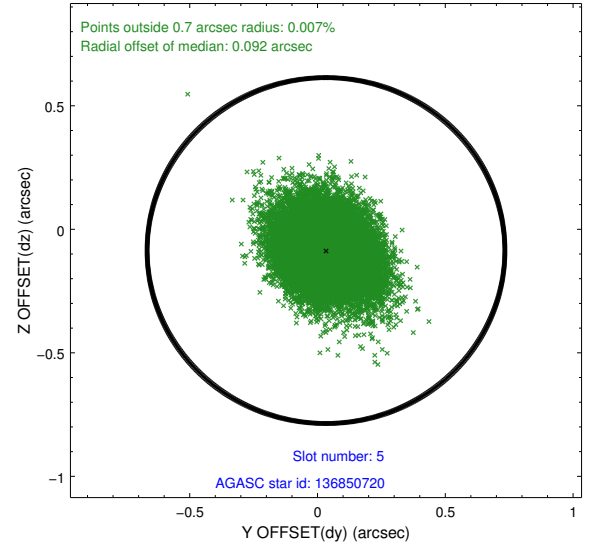
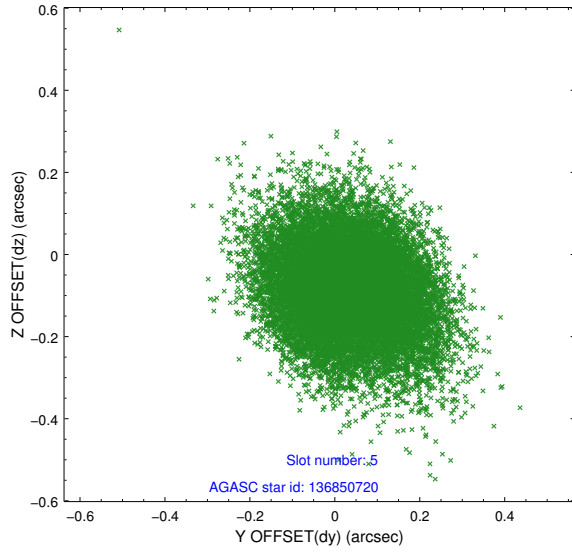
2.4.1 Slot 3



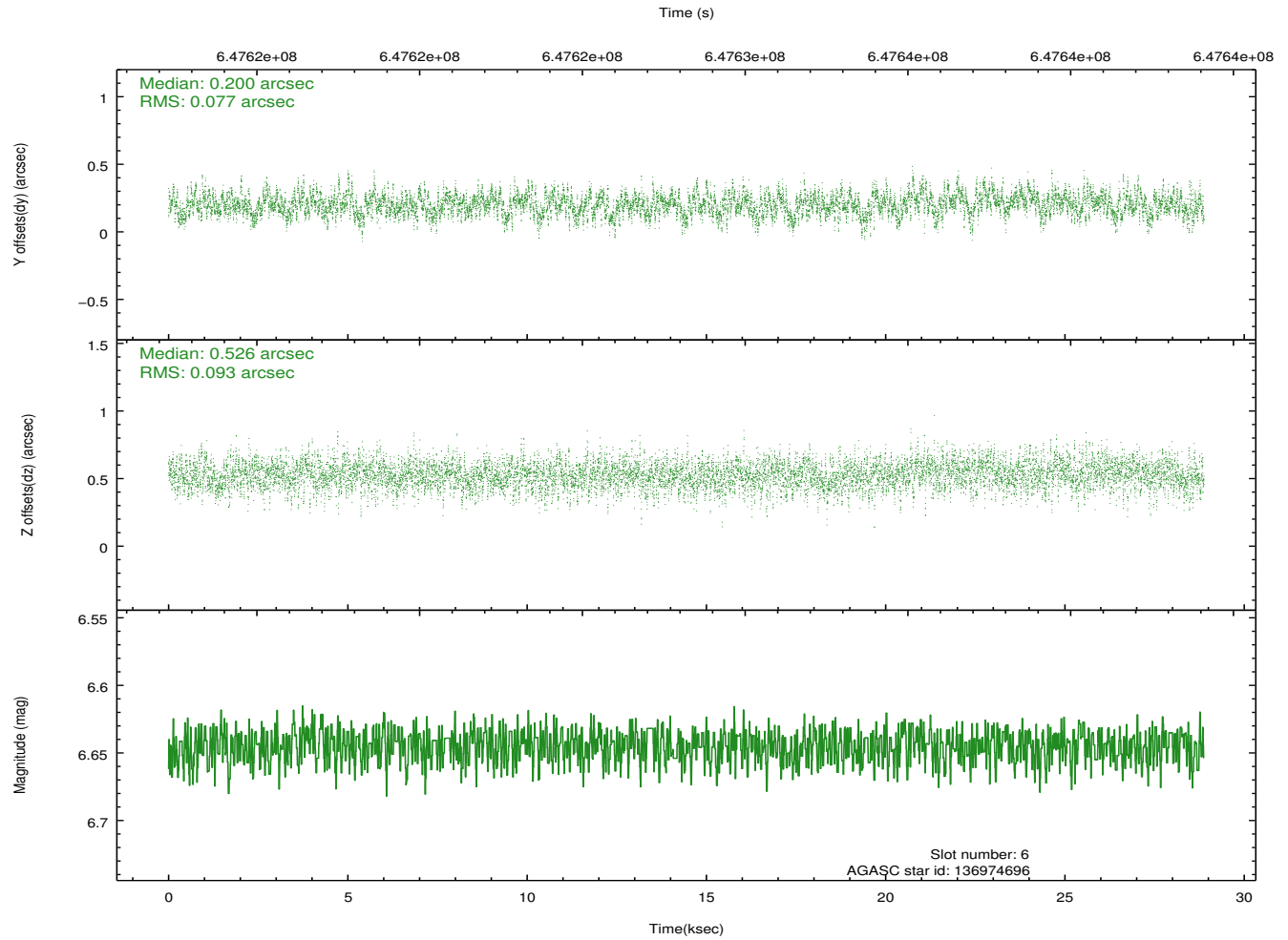
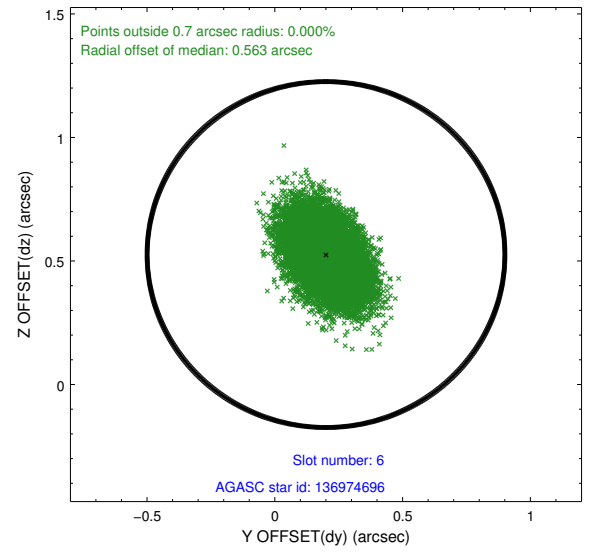
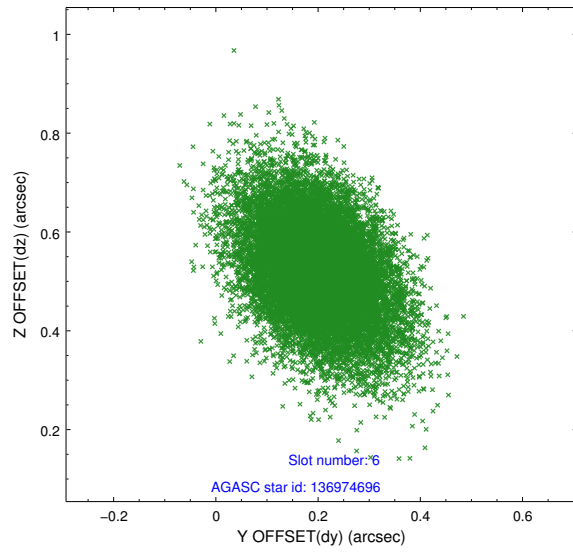
2.4.2 Slot 4



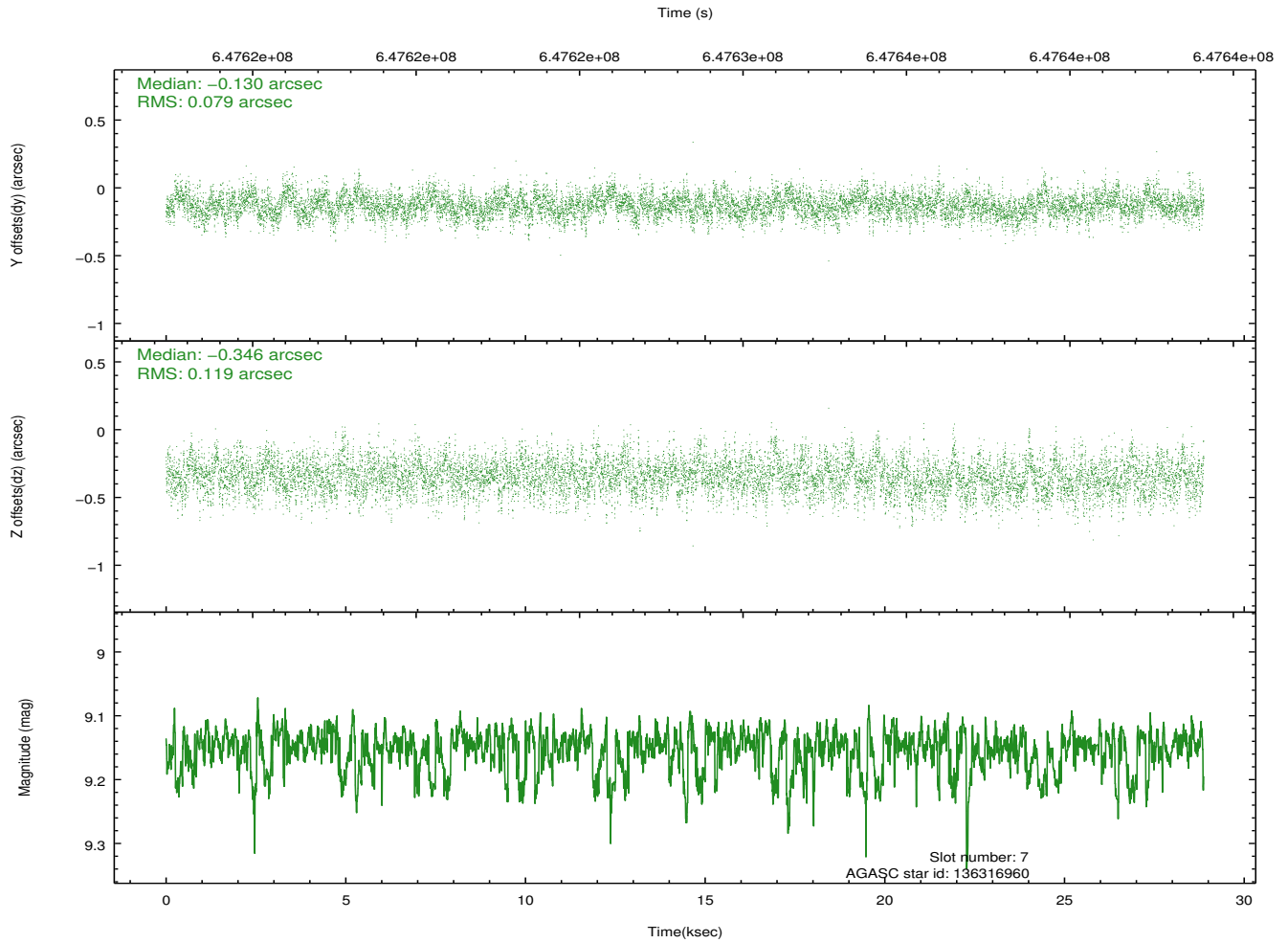
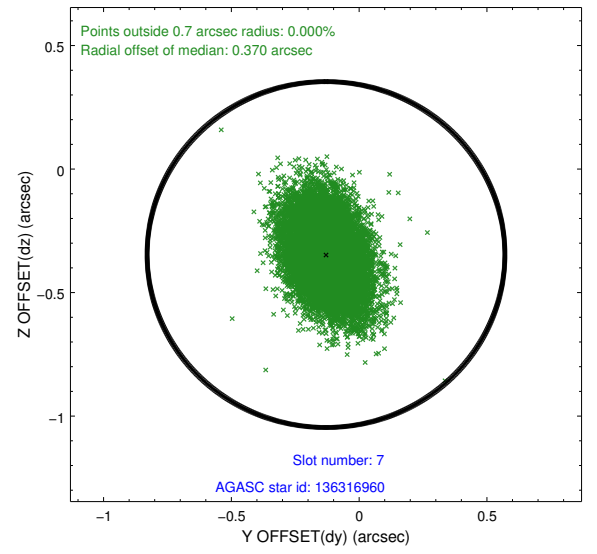
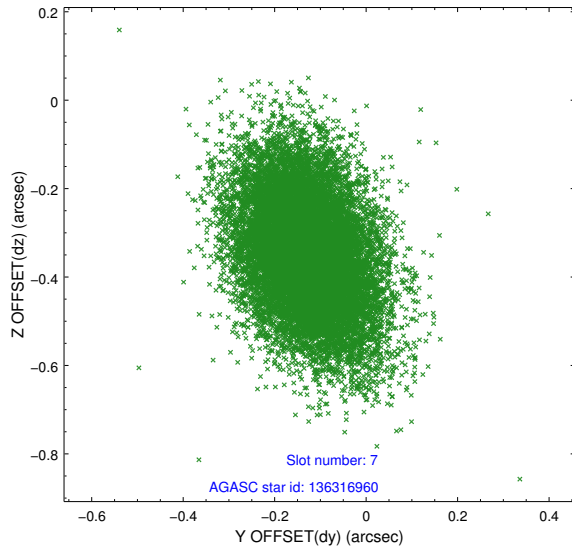
2.4.3 Slot 5



2.4.4 Slot 6

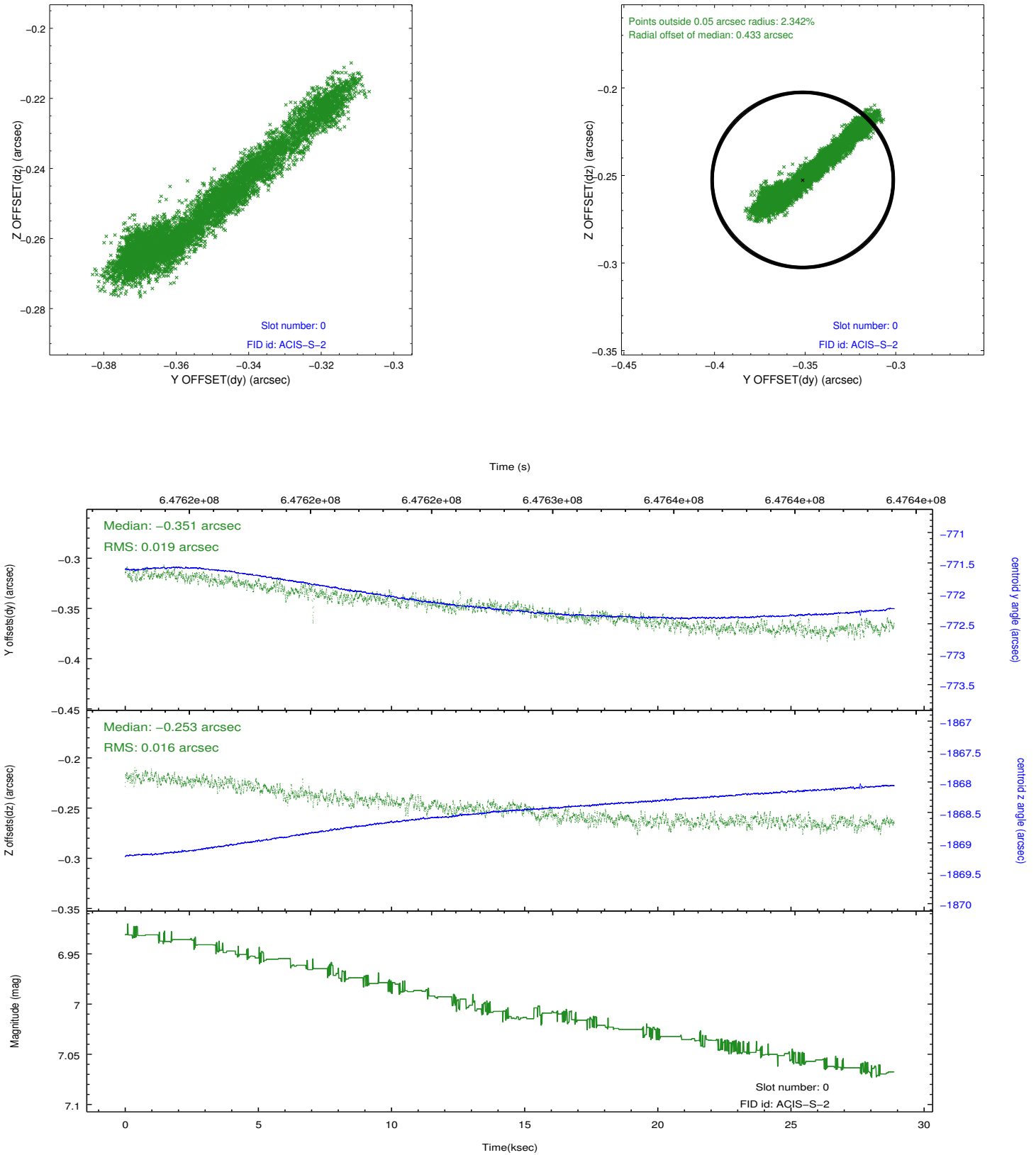


2.4.5 Slot 7

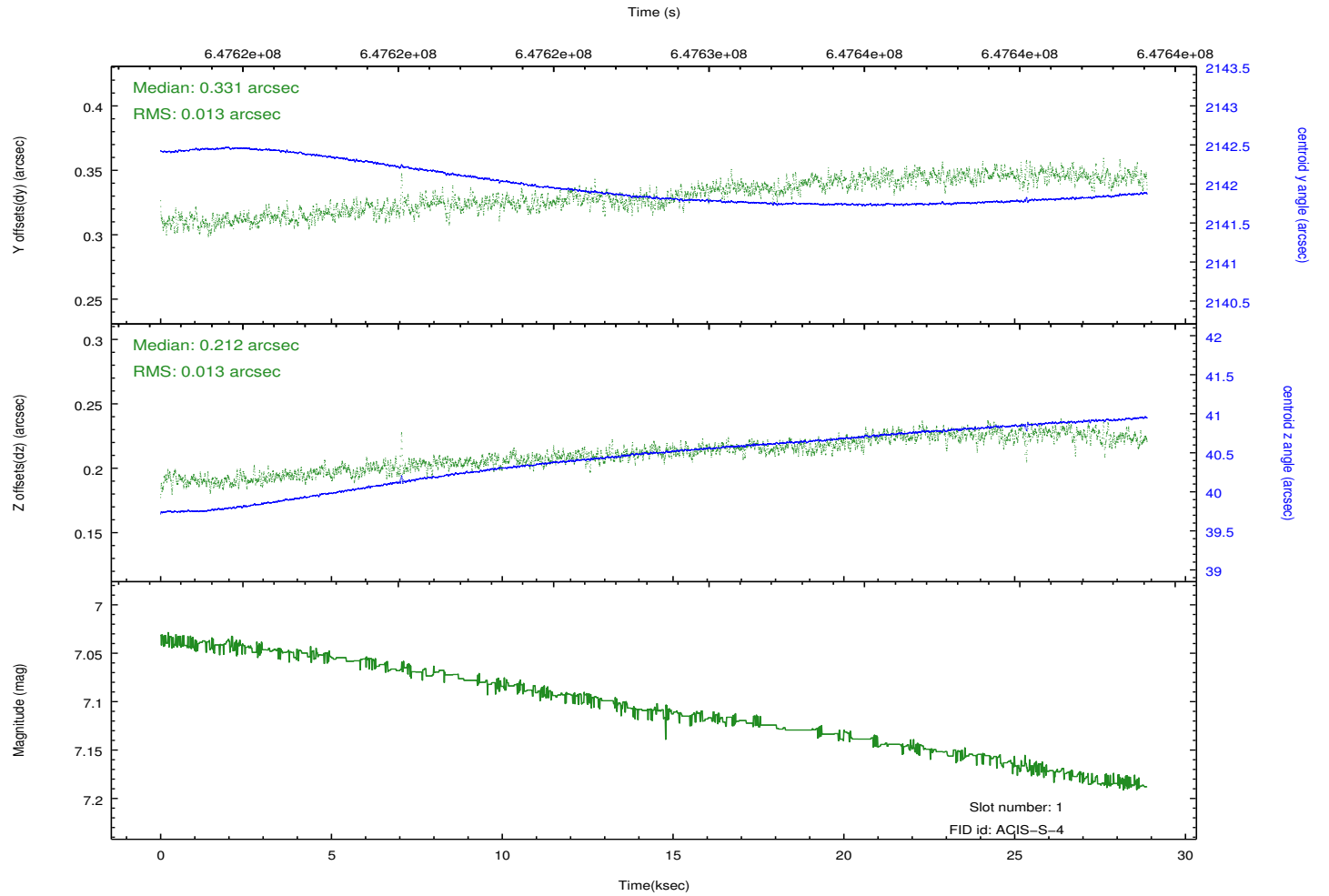
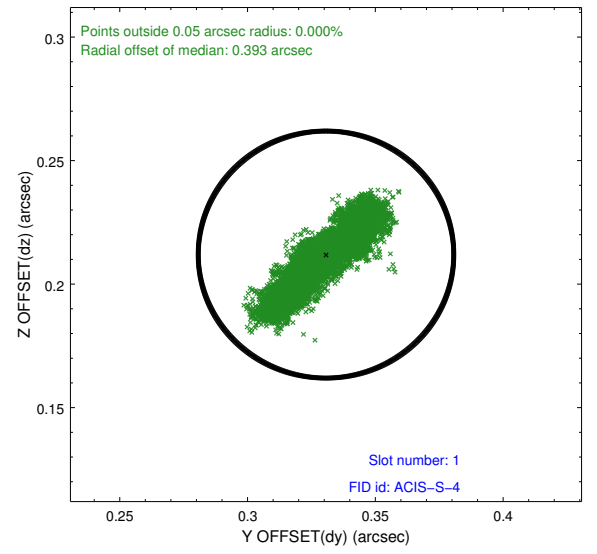
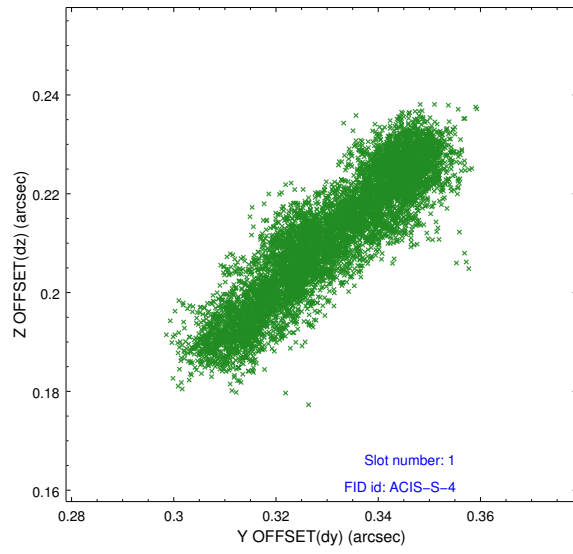


2.5 FID Slots

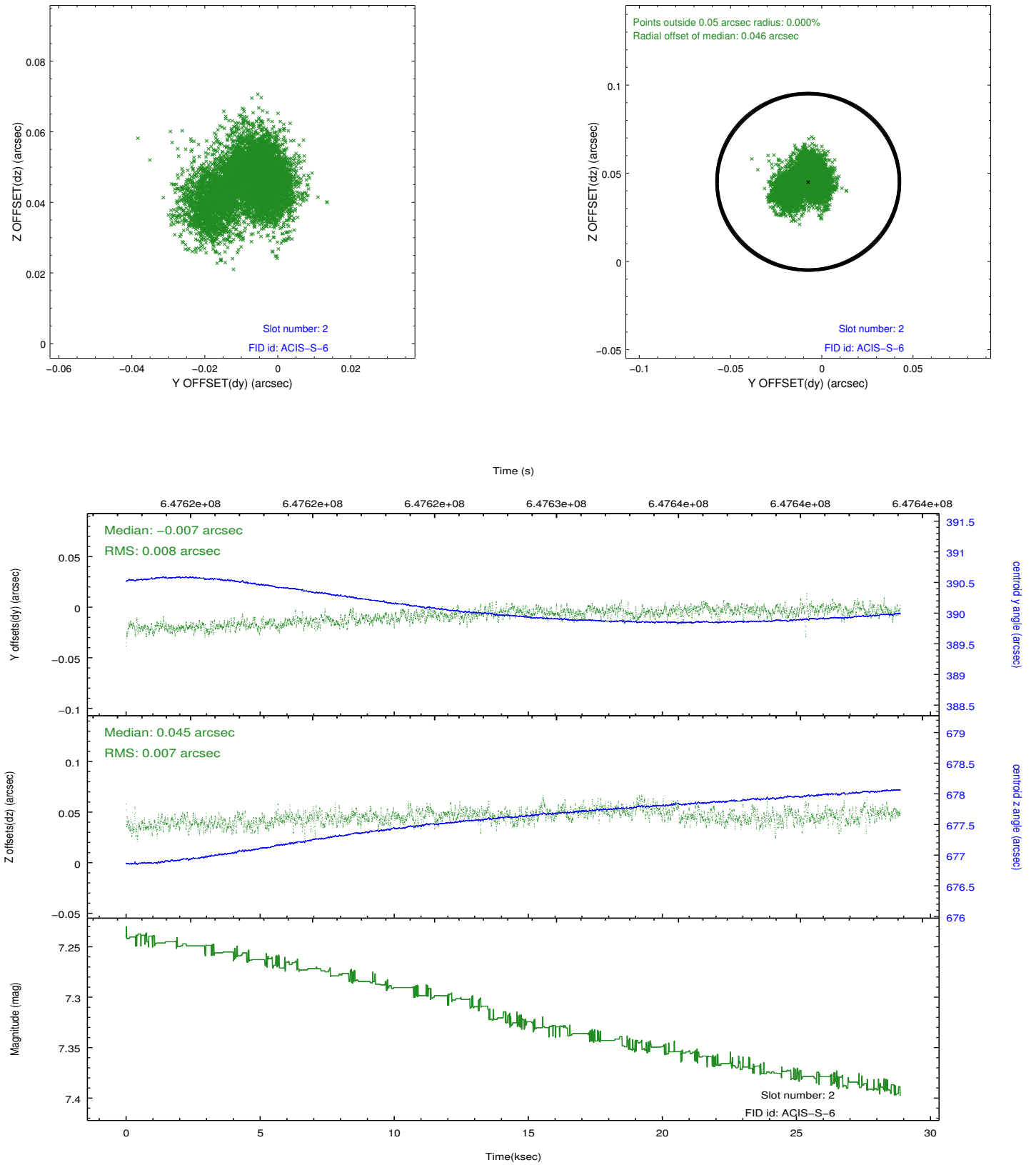
2.5.1 Slot 0



2.5.2 Slot 1

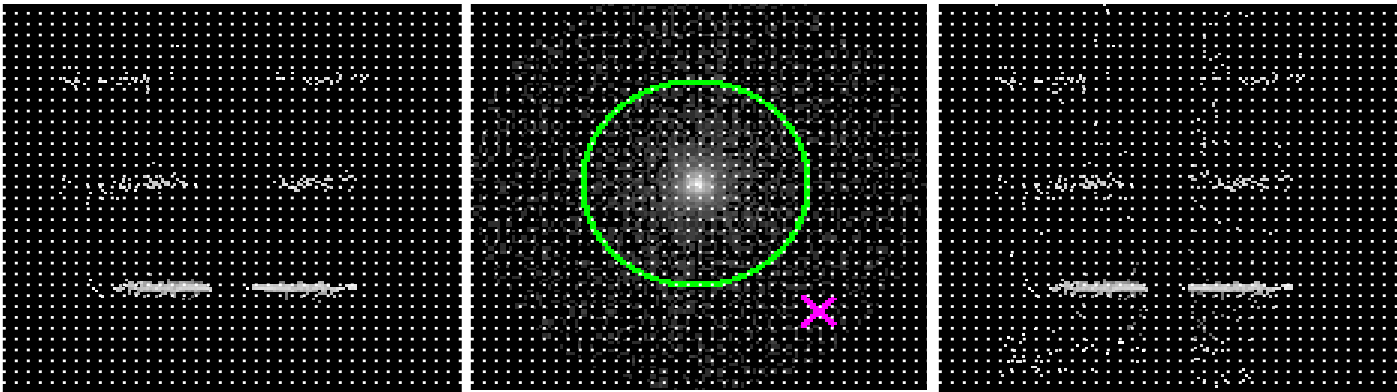


2.5.3 Slot 2



3 Gratings

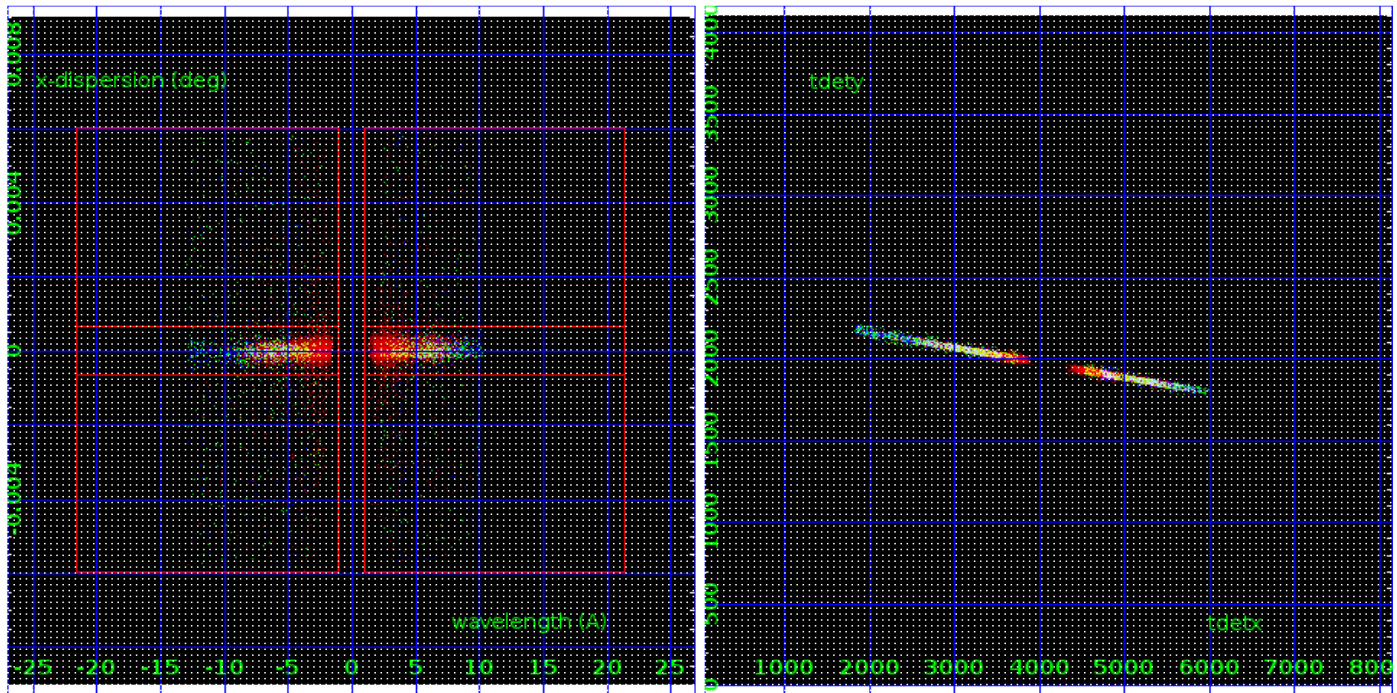
3.1 HEG Arm



HEG Order Sort 123

HEG Zero Order

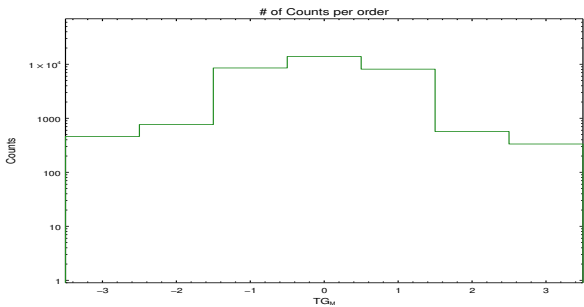
HEG Order Sort ALL

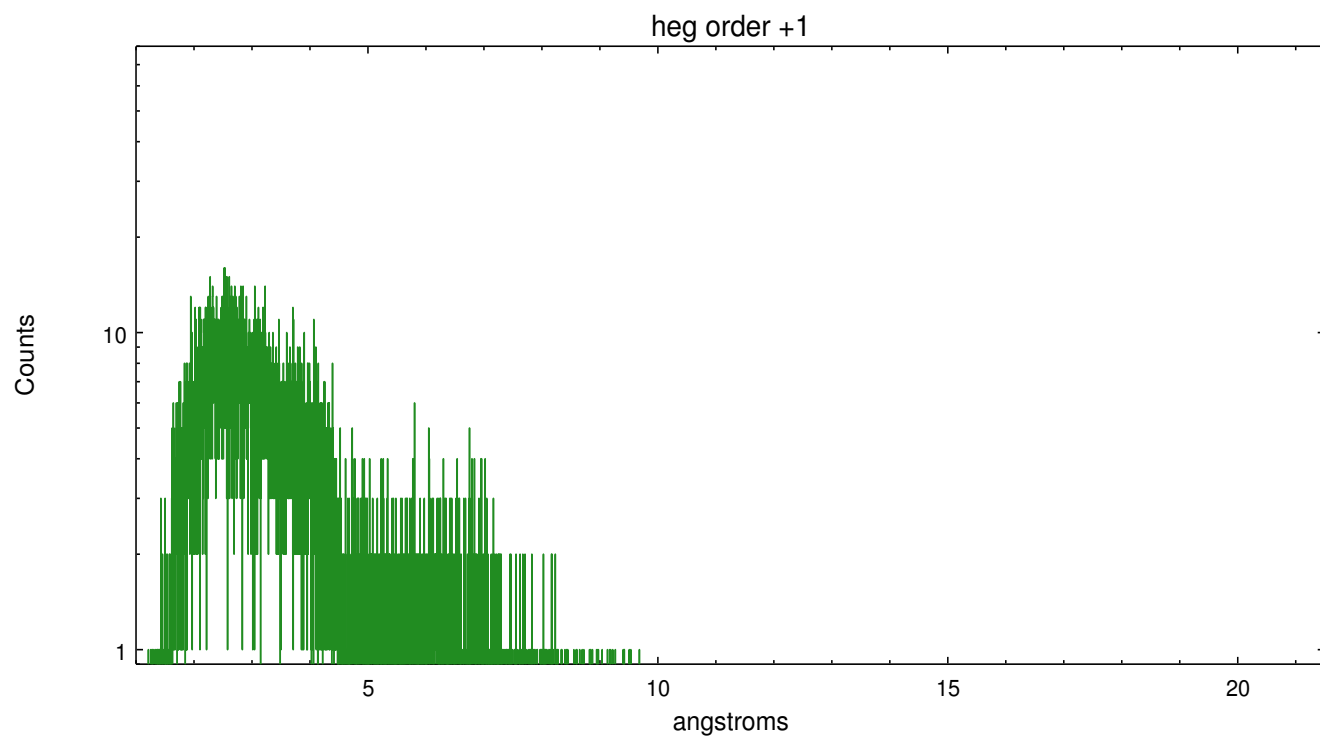
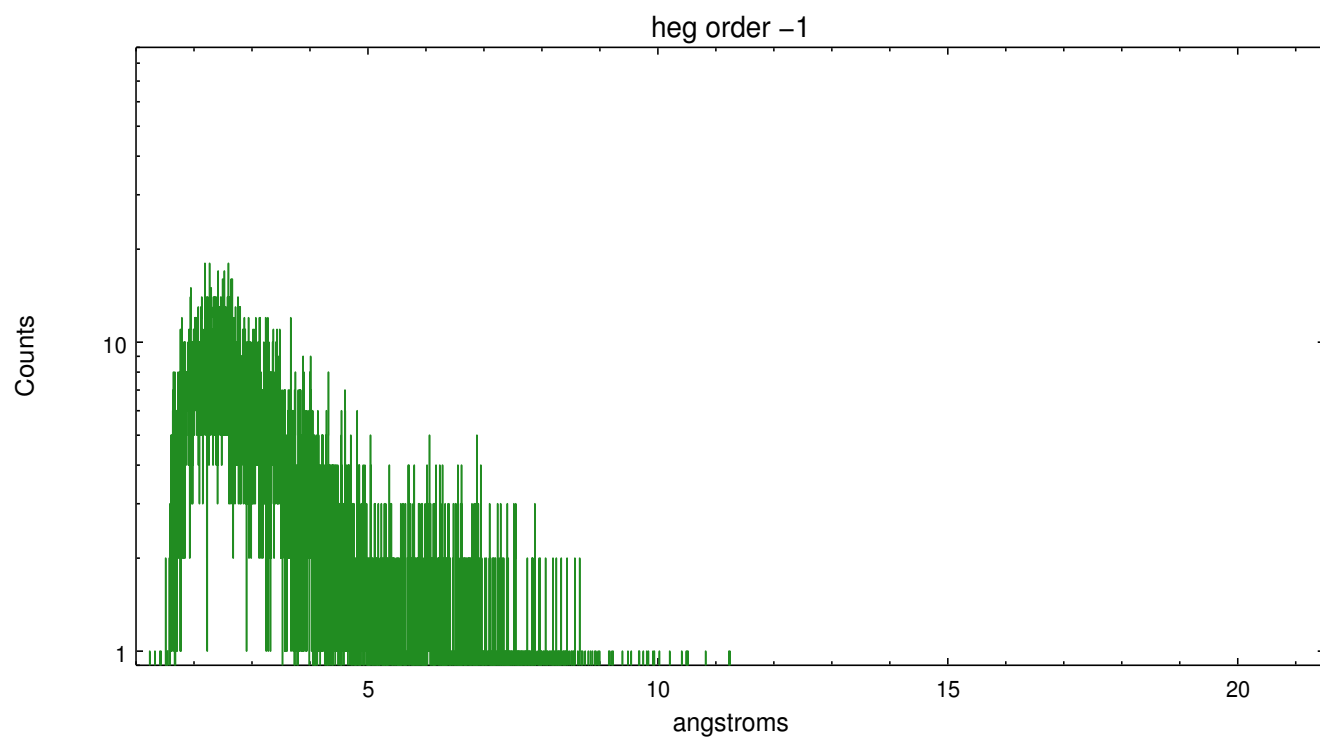


Spot Image HEG

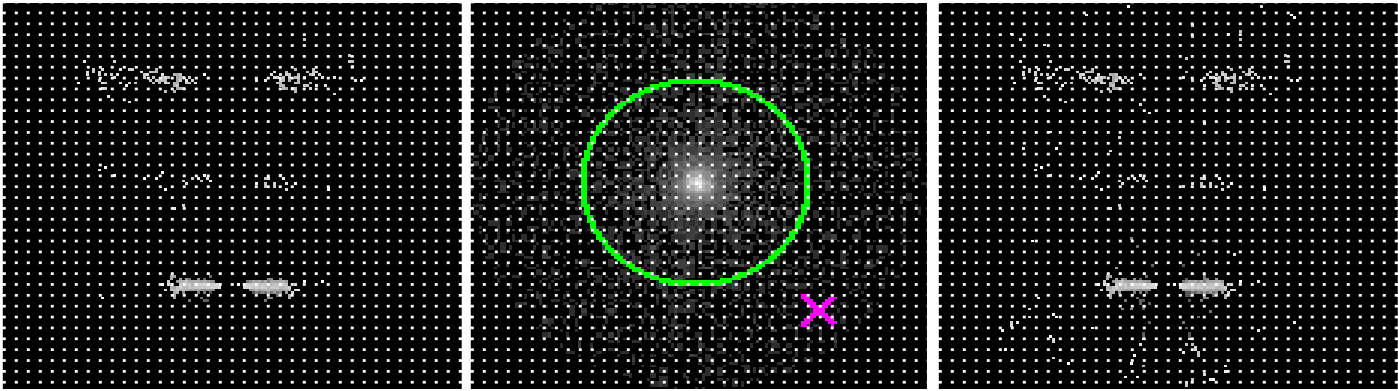
Full Detector HEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	461	765	8544	13905	8116	569	334





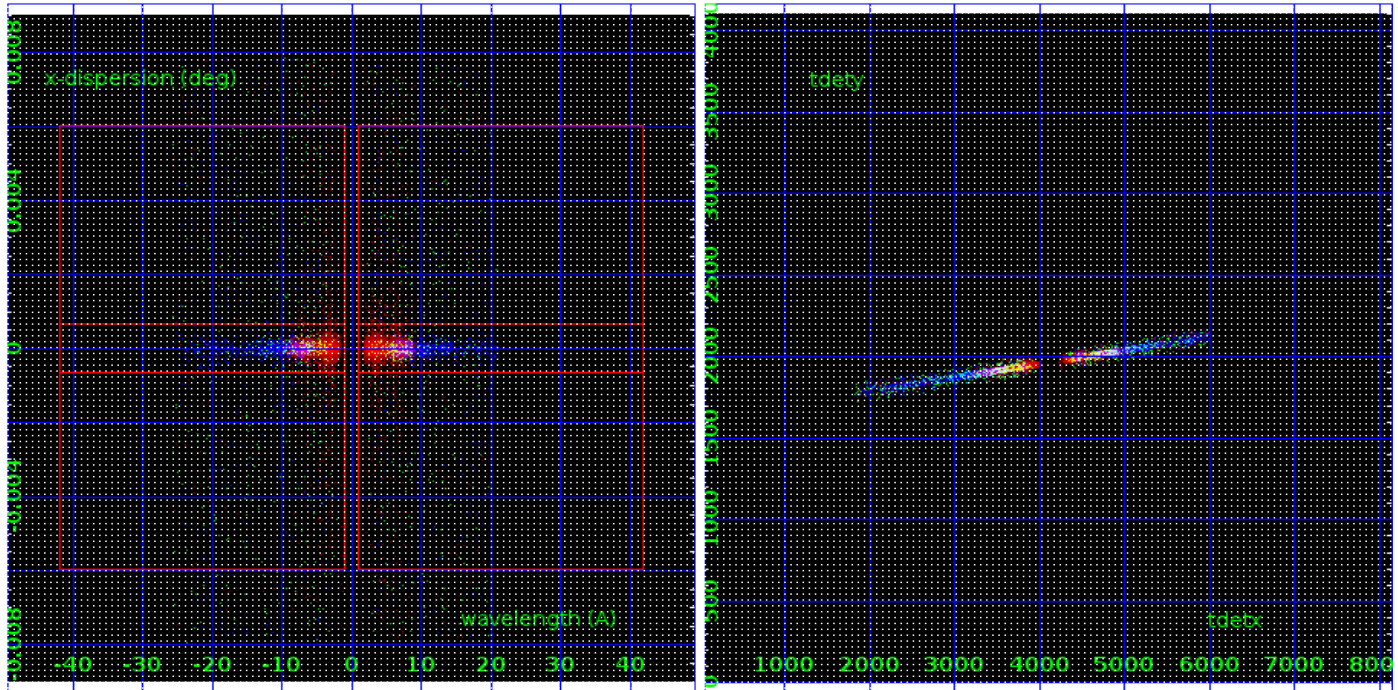
3.2 MEG Arm



MEG Order Sort 123

MEG Zero Order

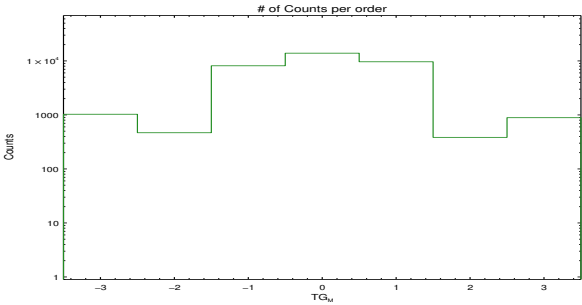
MEG Order Sort ALL

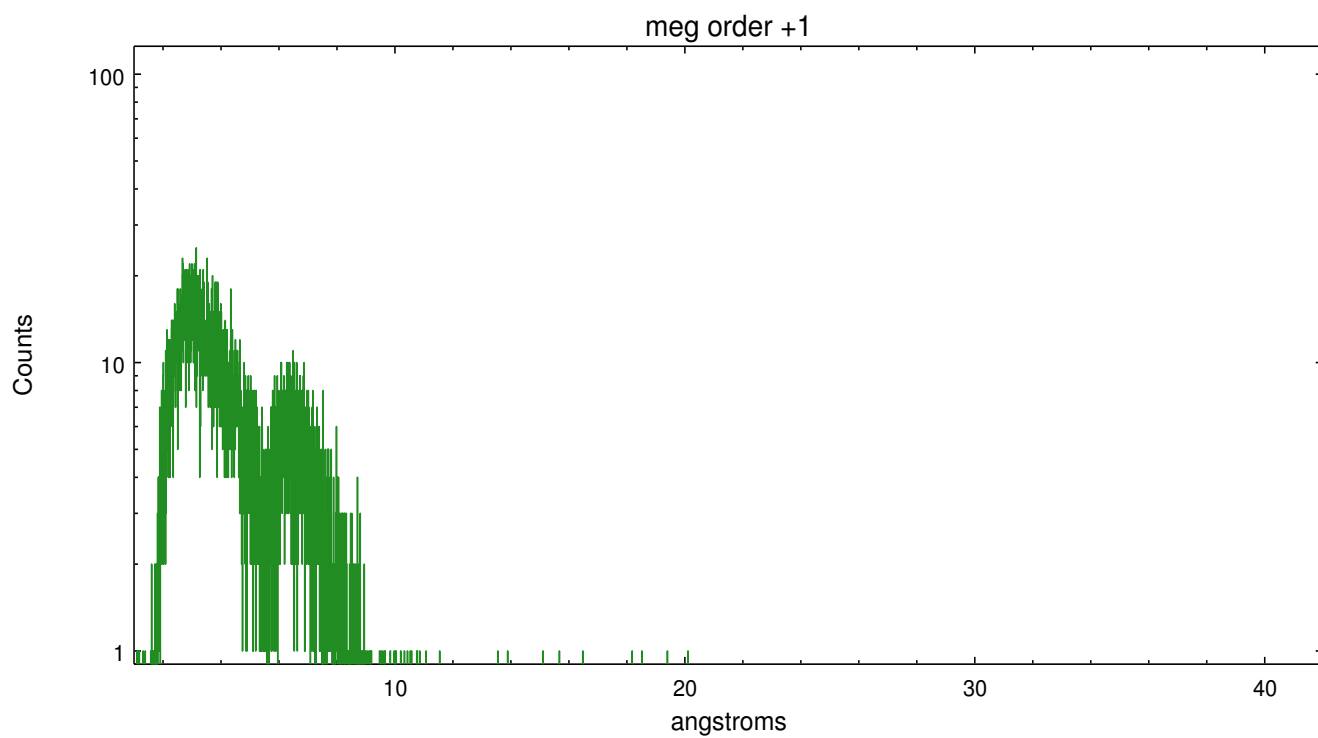
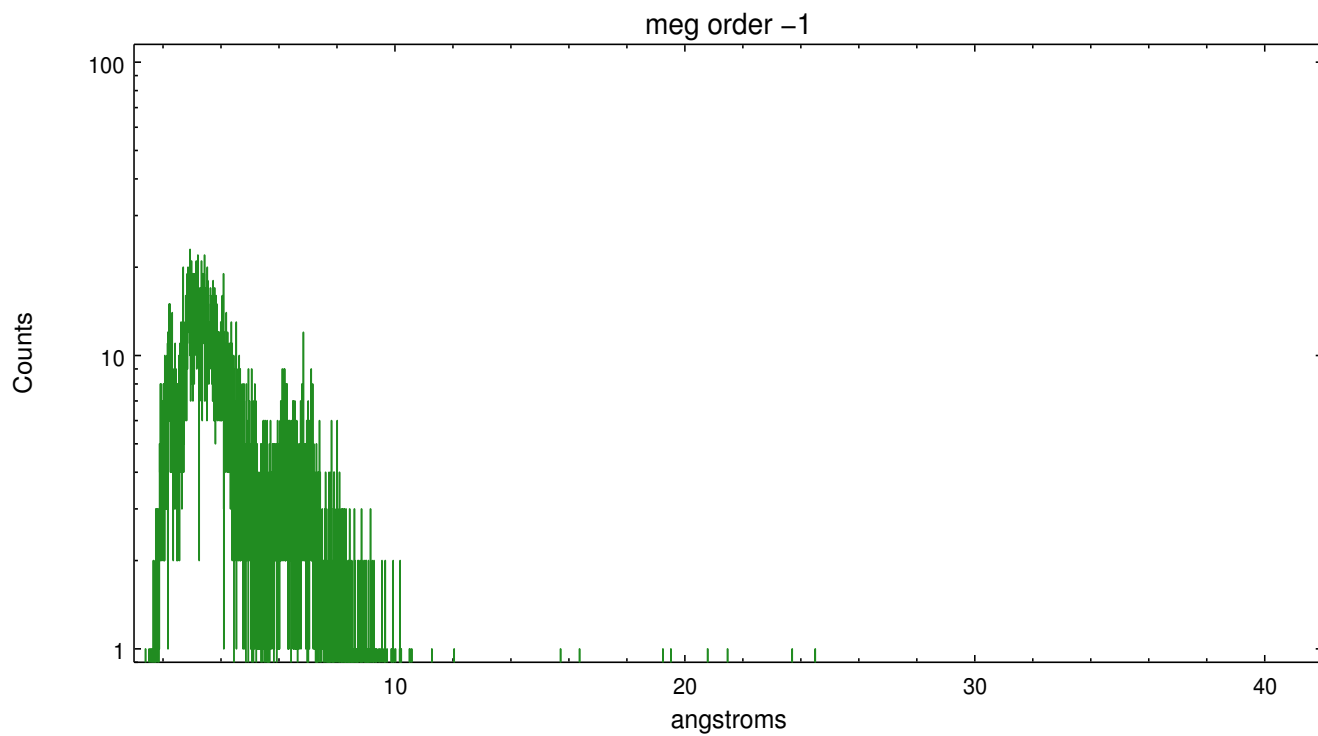


Spot Image MEG

Full Detector MEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	1029	468	8128	13905	9641	384	889





A Summary

A.1 Status

V&V Scientist	Joy Nichols
V&V Date (YYYY-MM-DD)	2018.07.11
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	28.75620897007

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.