

V&V Reference Report

L2 ASCDS Version : 10.6

Observation 20909 - L2 Version 1
Chandra X-Ray Center

L2 Processing Date : Jan 4 2018

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1 Front

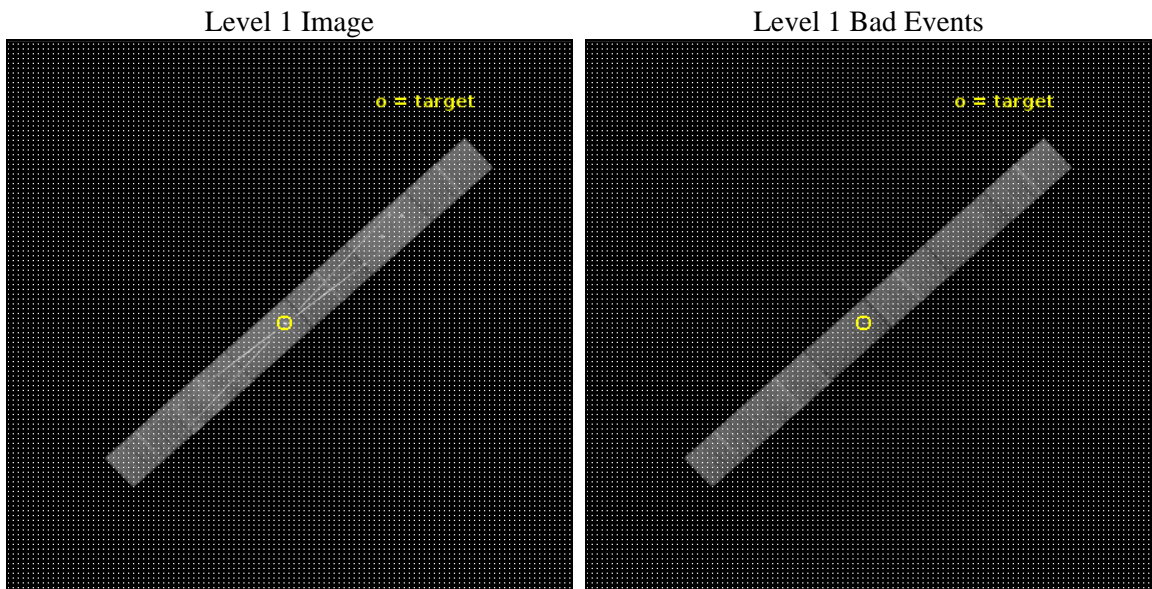
seq_num	901398	Sequence number
obs_id	20909	Observation id
title	The Narrow Fe K Line in 4U 1626-67	Proposal title
observer	Claude Canizares	Principal investigator
object	4U 1626-67	Source name
dtycycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	248.069583	Observer's specified target RA [deg]
dec_targ	-67.461667	Observer's specified target Dec [deg]
ra_nom	248.05169090196	Nominal RA [deg]
dec_nom	-67.461936354961	Nominal Dec [deg]
roll_nom	137.14009811226	Nominal Roll [deg]
revision	1	Processing version of data
ontime	25744.717038274	Sum of GTIs [s]
livetime	25137.859535143	Livetime [s]
ontime4	25744.758078218	Sum of GTIs [s]
ontime5	25744.675998211	Sum of GTIs [s]
ontime6	25744.634958267	Sum of GTIs [s]
ontime7	25744.717038274	Sum of GTIs [s]
ontime8	25744.593918204	Sum of GTIs [s]
ontime9	25744.552878261	Sum of GTIs [s]
l2events	328178	Number of level 2 events



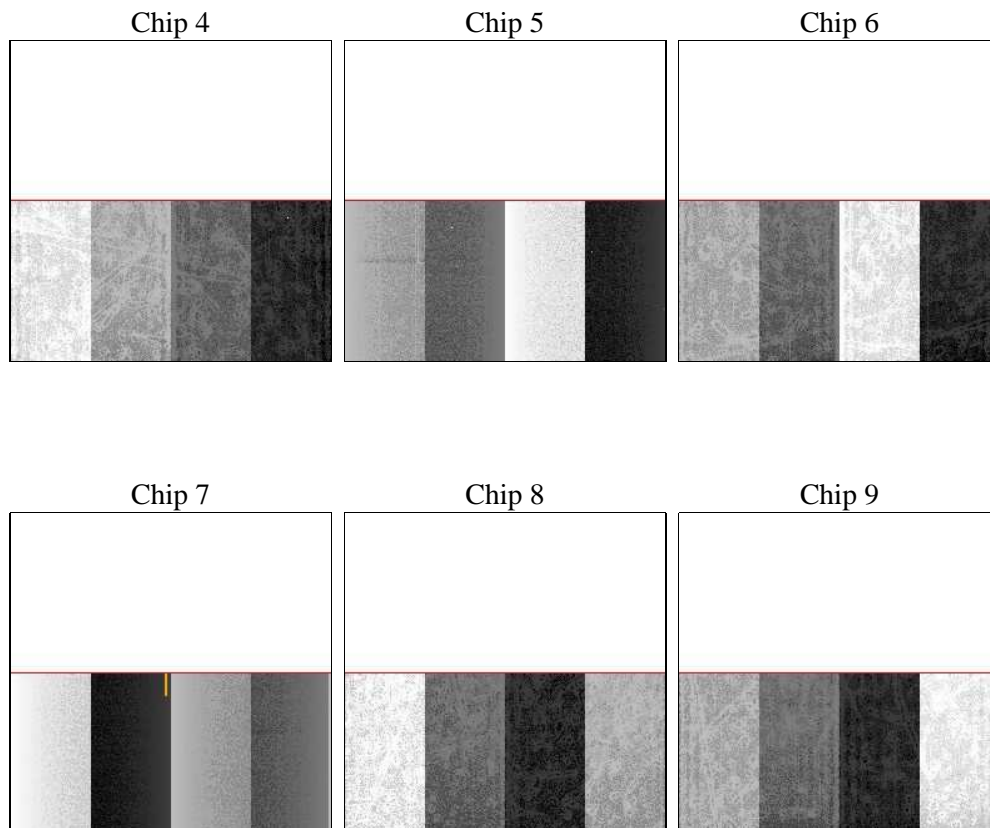
2 OBI

2.1 OBI

2.1.1 Images



2.1.2 Bias



2.1.3 Parameters

obi_num	0	Obi number	sched_exp_time	25705.000000	[s] Scheduled observation exposure time
ascdsver	10.6	Processing system revision	ontime	25744.717038274	Sum of GTIs [s]
caldbver	4.7.7	 	ontime4	25744.758078218	Sum of GTIs [s]
date	2018-01-04T17:44:34	Date and time of file creation	ontime5	25744.675998211	Sum of GTIs [s]
revision	1	Processing version of data	ontime6	25744.634958267	Sum of GTIs [s]
			ontime7	25744.717038274	Sum of GTIs [s]
			ontime8	25744.593918204	Sum of GTIs [s]
			ontime9	25744.552878261	Sum of GTIs [s]
			l1events	896726	Number of level 1 events
			tgmethod	FINDZO	Method used to create src1a file
			zpc_pos	(4046.36, 4101.07)	src1a sky pixel position

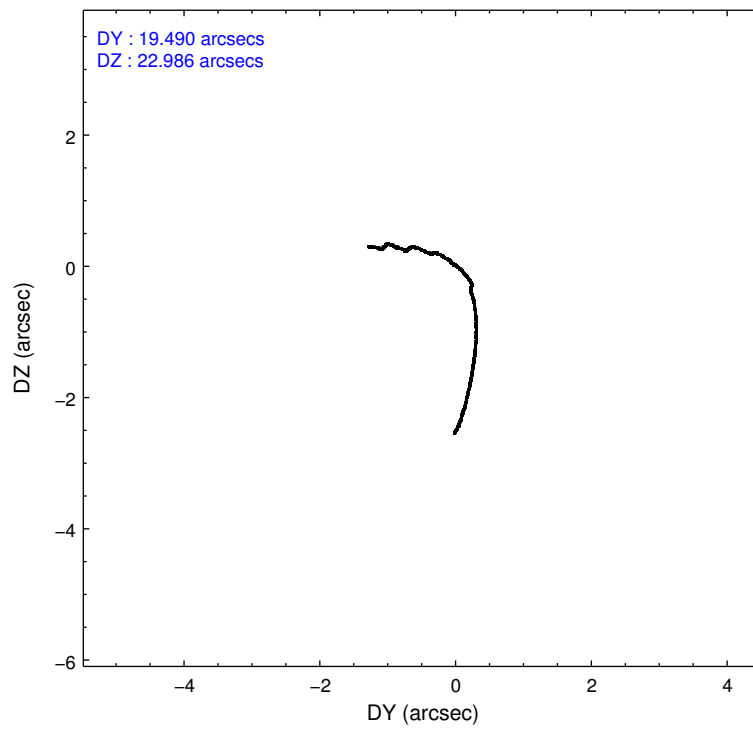
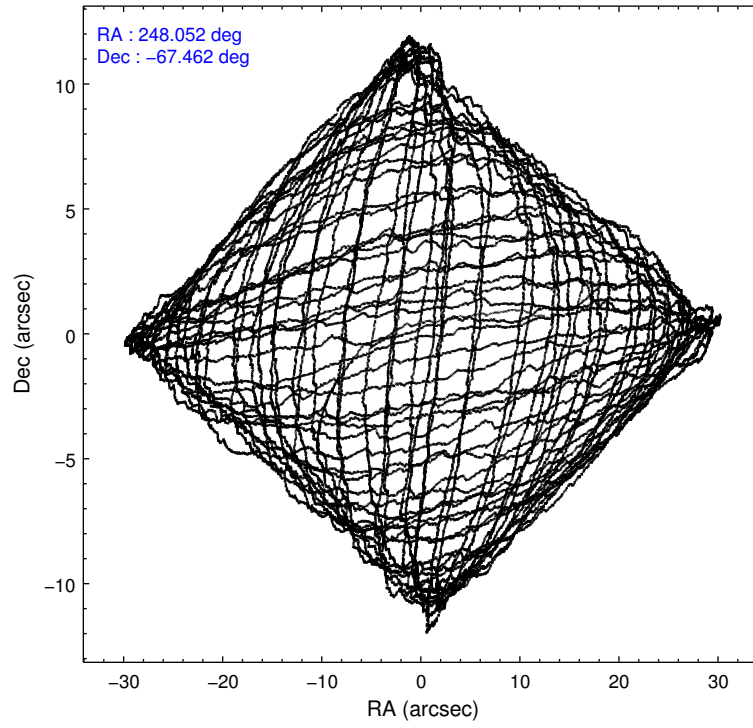
2.1.4 Events

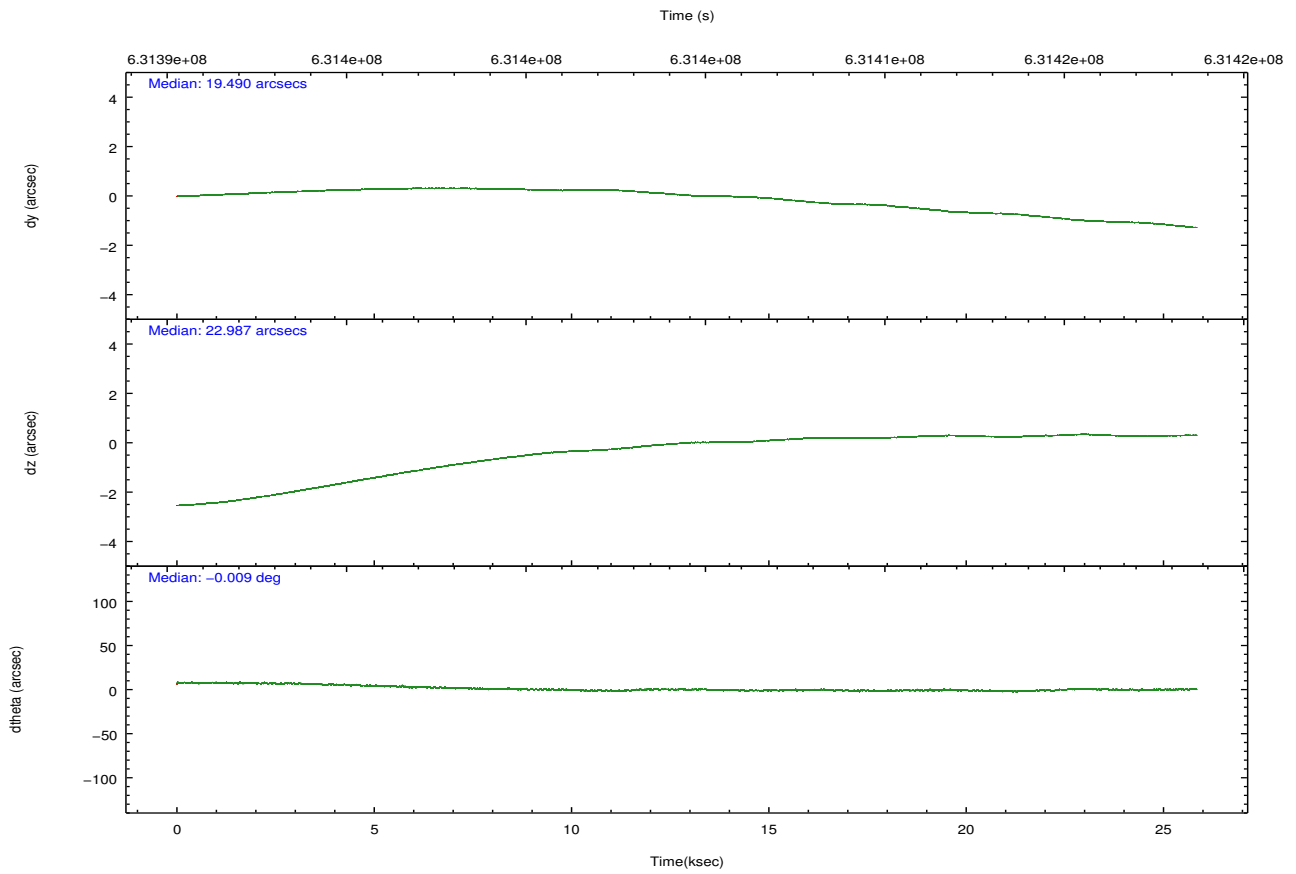
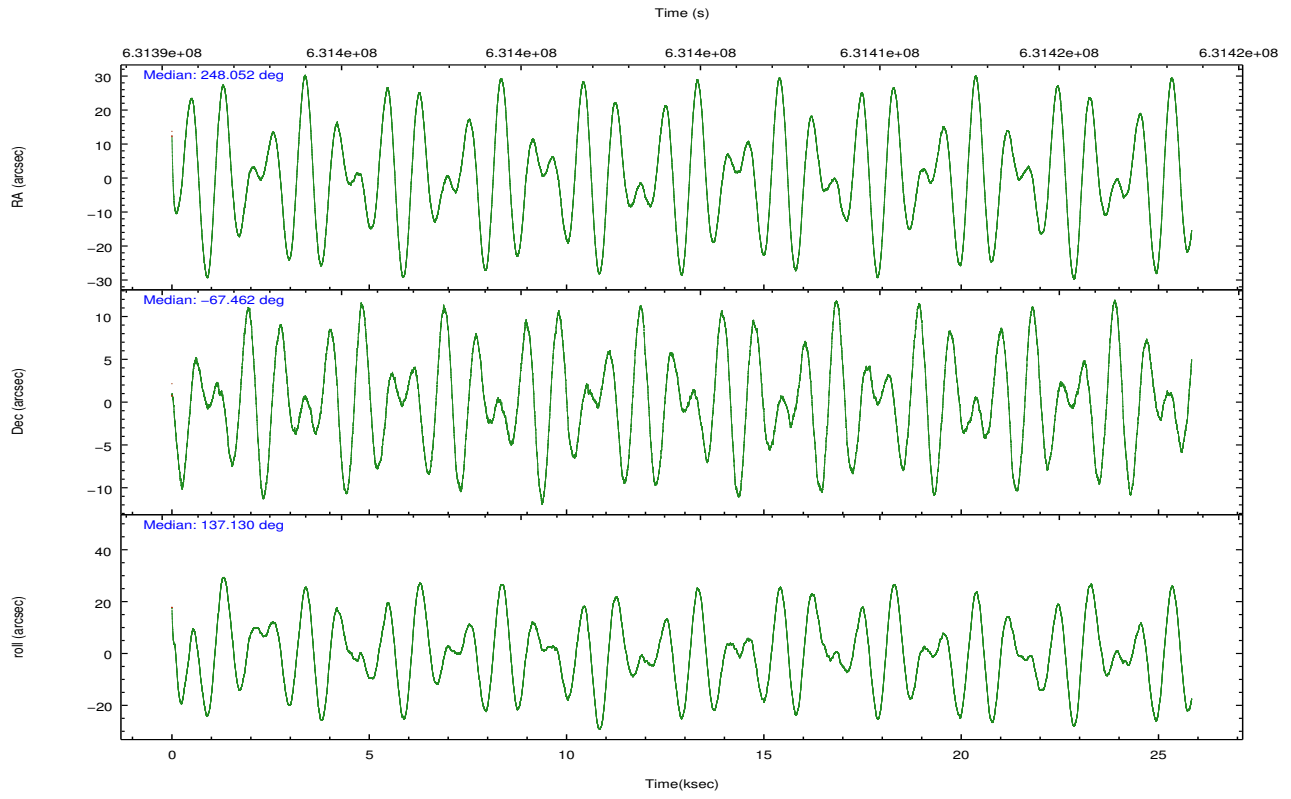
	ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9		ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
level 1 events	113290	170898	161902	197747	153622	99267	grade 0 events	6517	16712	49244	20730	27848	7280
rejected events	98721	76663	89858	72317	97090	83163		5%	9%	30%	10%	18%	7%
rejected %	87%	44%	55%	36%	63%	83%	grade 1 events	74	667	228	531	149	61
								0%	0%	0%	0%	0%	0%
							grade 2 events	3037	28320	10363	28472	10228	3097
								2%	16%	6%	14%	6%	3%
							grade 3 events	1469	4325	3625	12509	4279	1600
								1%	2%	2%	6%	2%	1%
							grade 4 events	1300	4402	3565	12469	4127	1411
								1%	2%	2%	6%	2%	1%
							grade 5 events	4168	10898	4230	14005	6492	4614
								3%	6%	2%	7%	4%	4%
							grade 6 events	2251	40488	5255	51267	10055	2721
								1%	23%	3%	25%	6%	2%
							grade 7 events	94474	65086	85392	57764	90444	78483
								83%	38%	52%	29%	58%	79%

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	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	248.121721	248.051690901957	CCD I2 on	N	N
[deg] Pointing Dec	-67.467650	-67.46193635496111	CCD I3 on	N	N
[deg] Pointing Roll	137.048156	137.1400981122599	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	-183.992523	-183.9875365069546	CCD S3 on	Y	Y
[mm] SIM translation stage offset	-6.14	-6.144986076053243	CCD S4 on	Y	Y
[s] Observation start time (MET)	631391670.184000	631390393.82856	CCD S5 on	O2	Y
Observation start date	2018-01-03T18:33:21	2018-01-03T18:13:13	Number of optional ACIS chips dropped	0	0
[s] Observation end time (MET)	631417375.184000	631418348.14271	On-chip summing requested	N	N
Observation end date	2018-01-04T01:41:46	2018-01-04T01:59:08	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



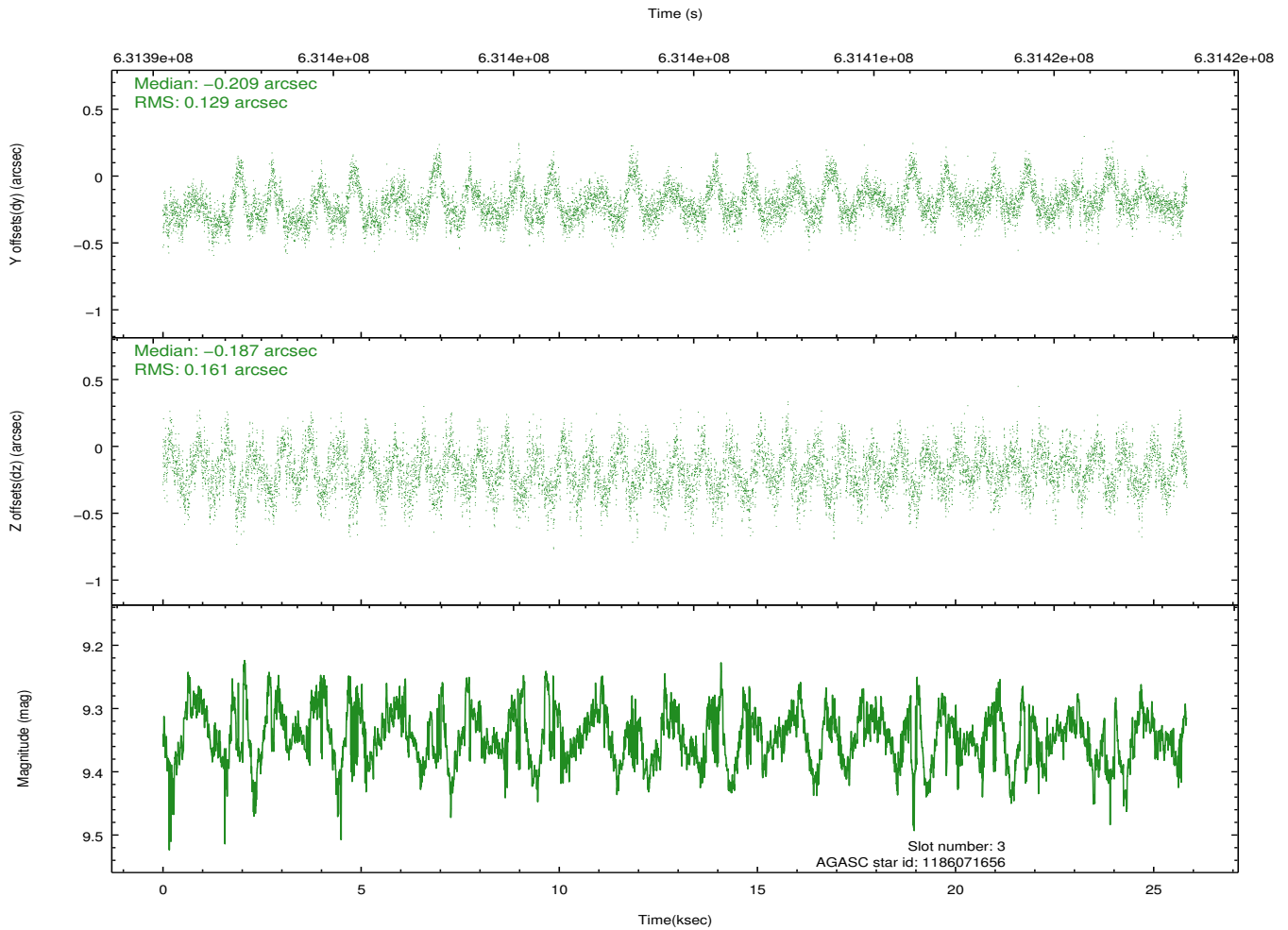
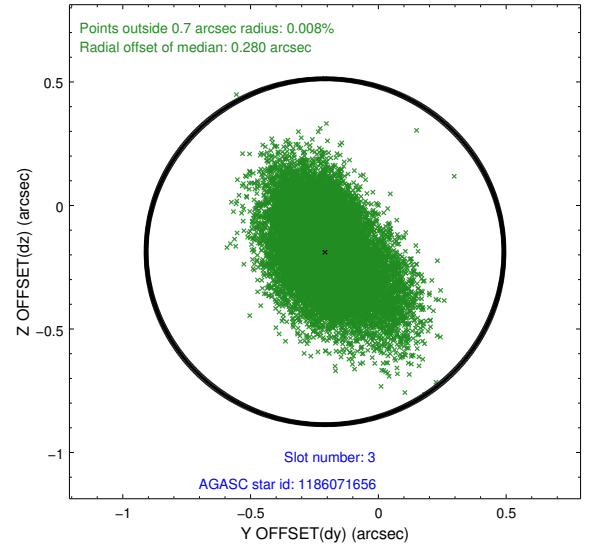
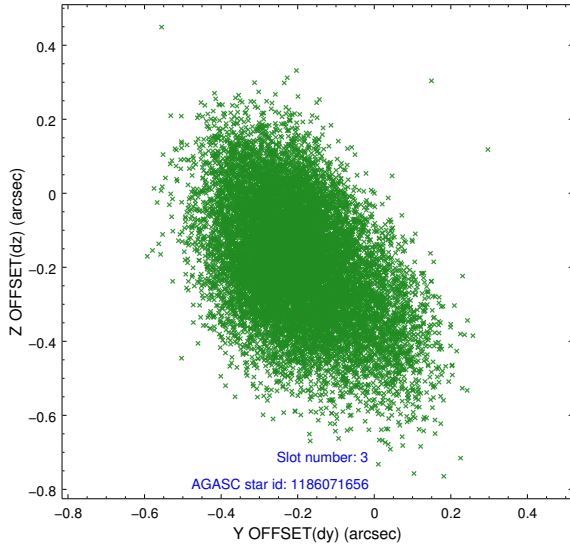


Slot Statistics

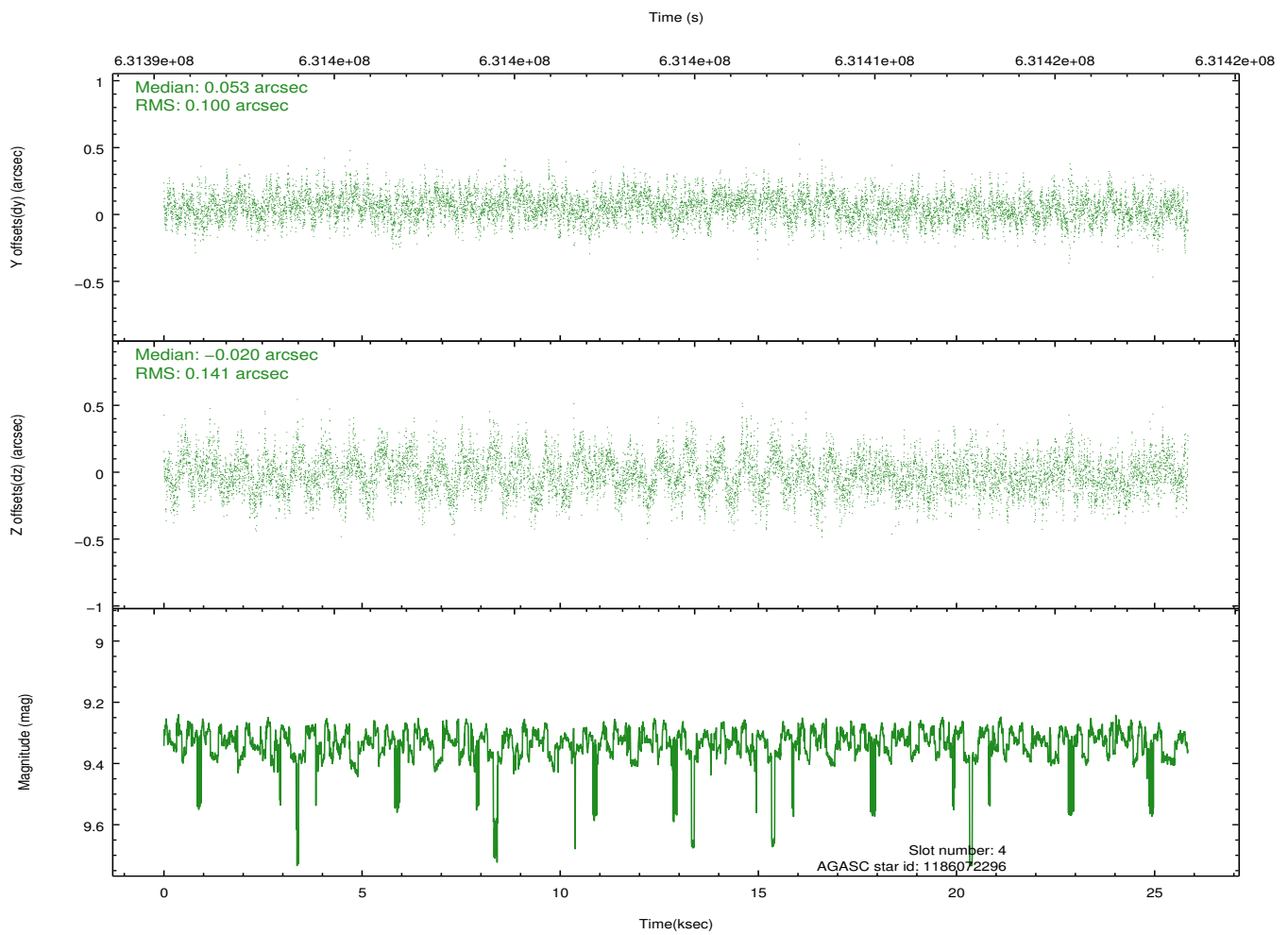
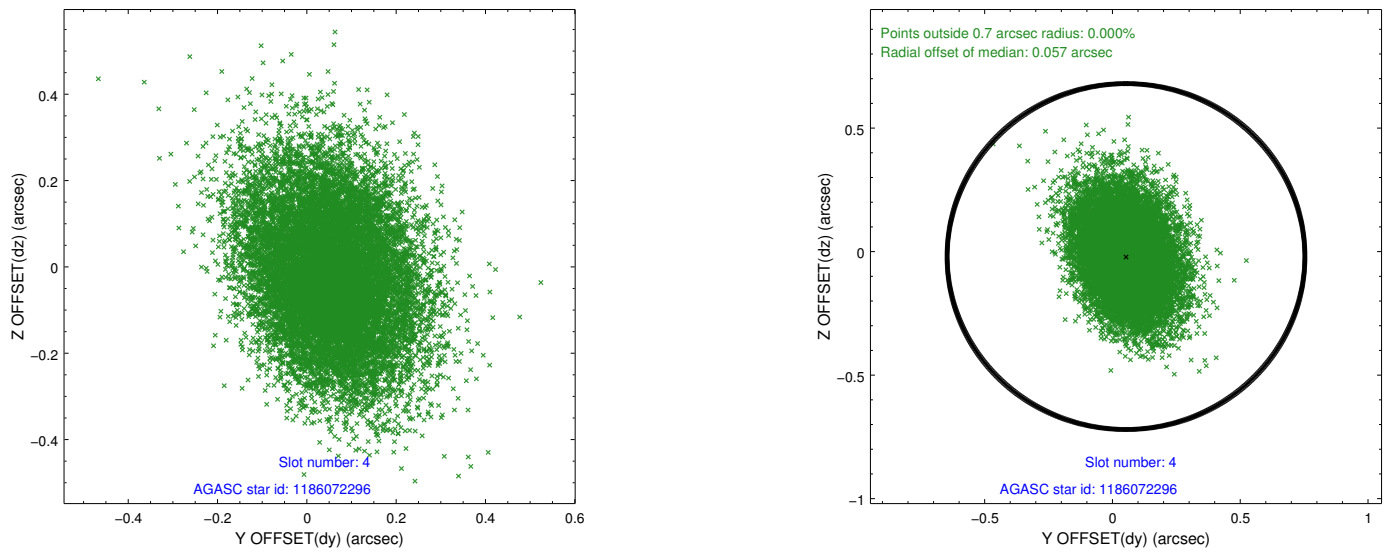
slot	status	used	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID		ACIS-S-1	7.22	6303	0.009	0.016	0.019	0.046	0.000000	0.000000	924.20	-1866.31
1	FID		ACIS-S-4	7.22	6303	0.448	-0.009	0.030	0.053	0.000000	0.000000	2141.98	37.74
2	FID		ACIS-S-5	7.26	6303	-0.476	0.006	0.026	0.044	0.000000	0.000000	-1825.13	31.23
3	GUIDE	used	1186071656	9.35	12595	-0.209	-0.187	0.216	0.365	247.561655	-67.321127	925.80	147.62
4	GUIDE	used	1186072296	9.33	12531	0.053	-0.020	0.182	0.301	247.909553	-67.035246	1279.05	-935.49
5	GUIDE	used	1215569992	9.21	12589	0.287	0.527	0.156	0.259	249.398538	-67.627995	-1685.10	-756.27
6	GUIDE	used	1186076360	8.46	12599	0.241	0.333	0.142	0.241	248.266100	-67.434021	-63.08	-224.15
7	GUIDE	used	1215570568	8.40	12597	-0.381	-0.660	0.151	0.263	246.859352	-67.889721	203.86	2290.36

2.4 Star Slots

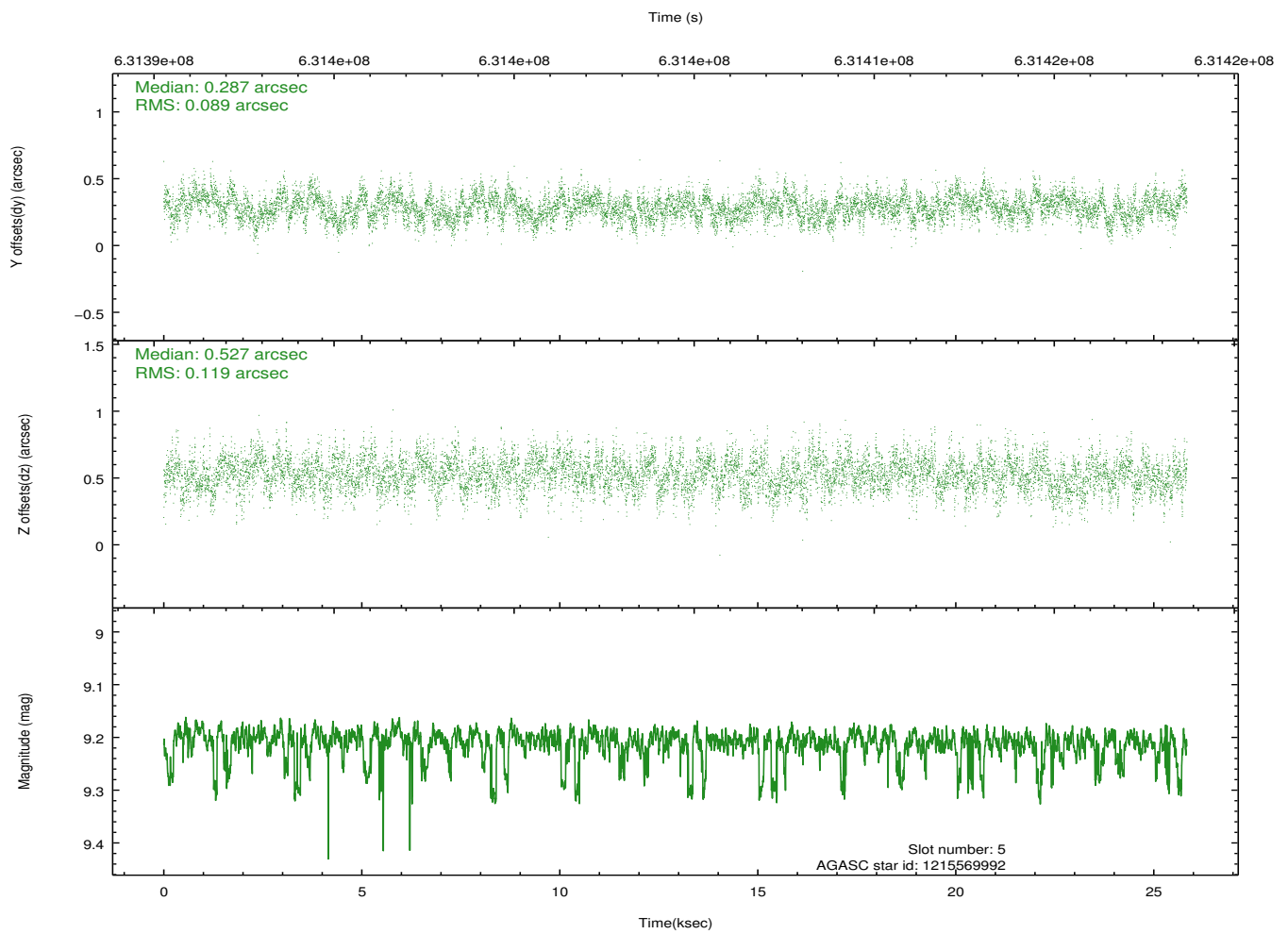
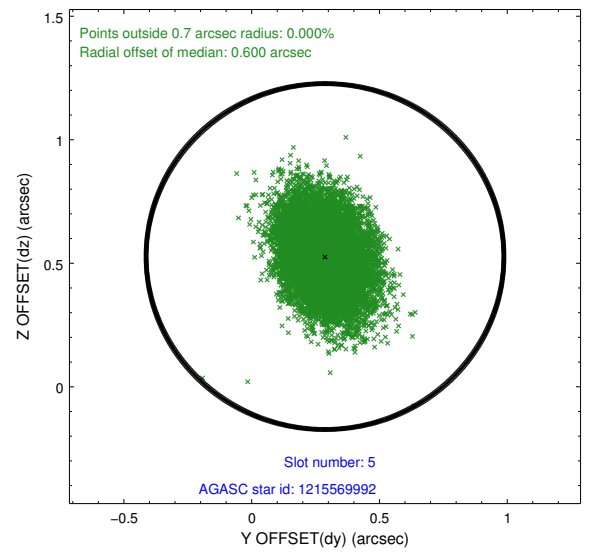
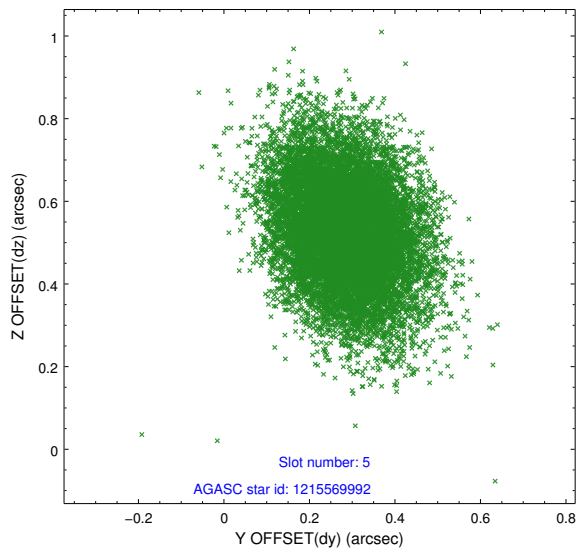
2.4.1 Slot 3



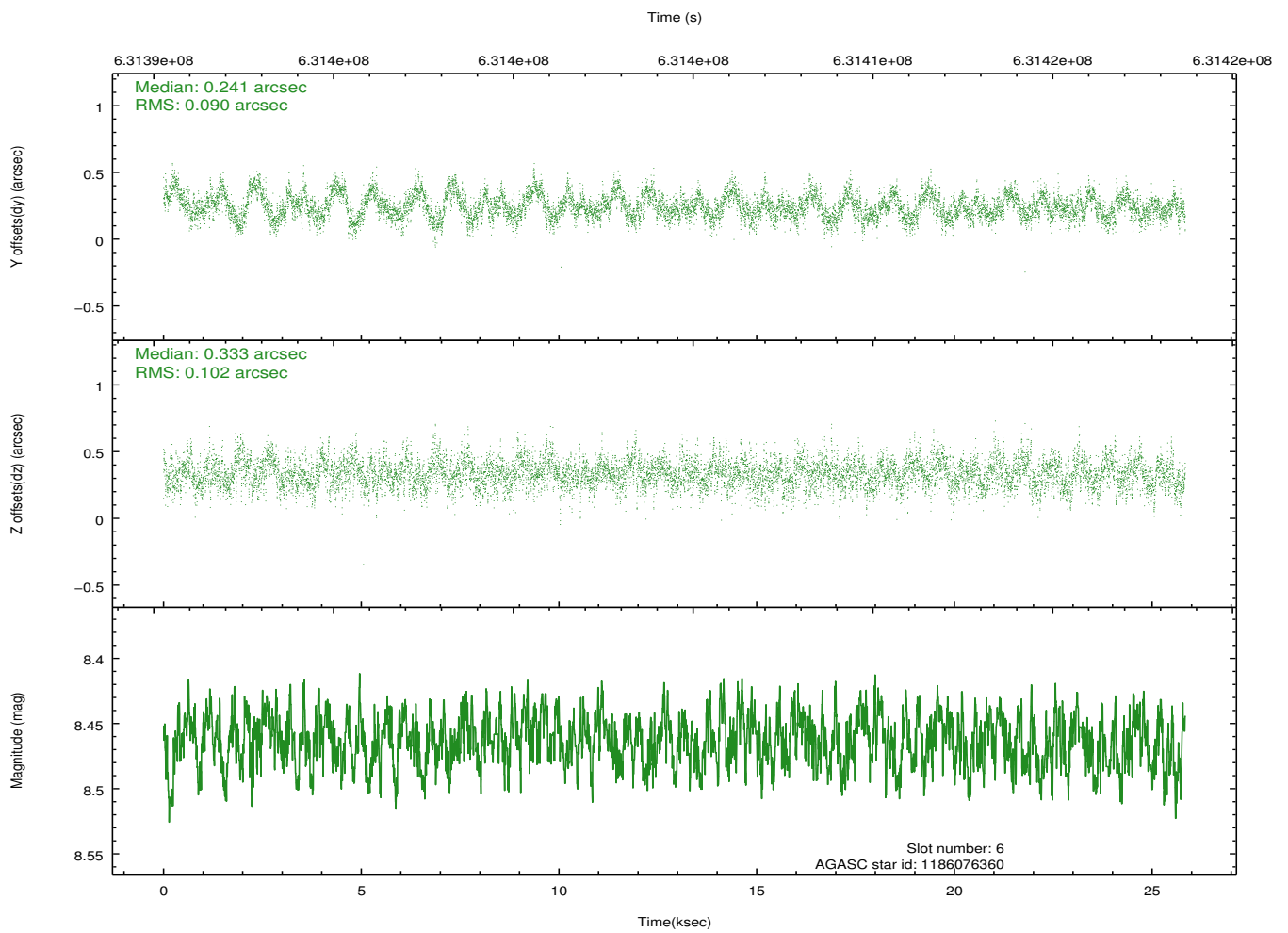
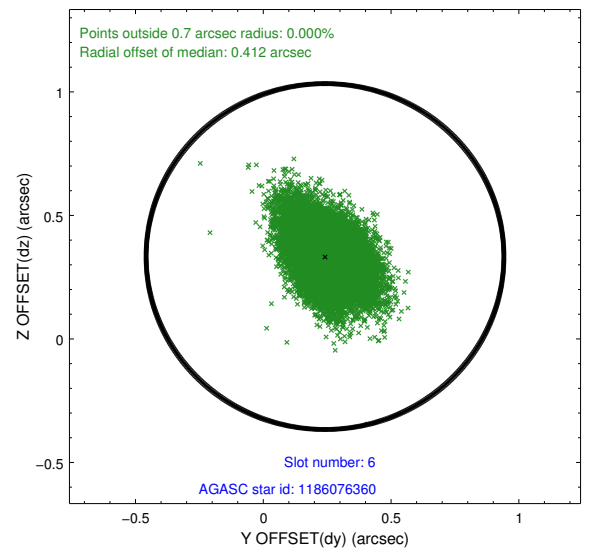
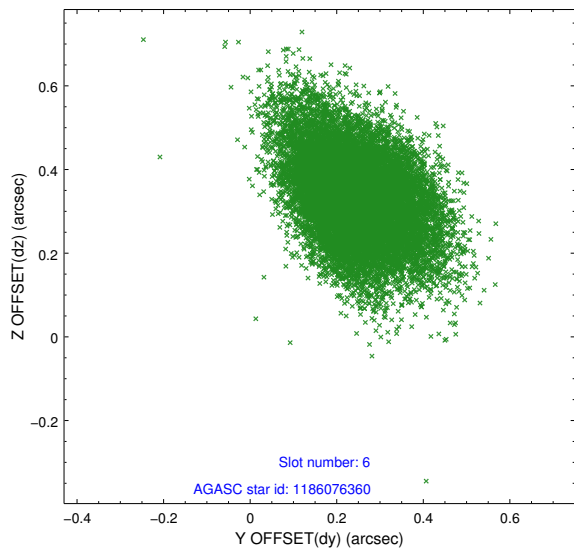
2.4.2 Slot 4



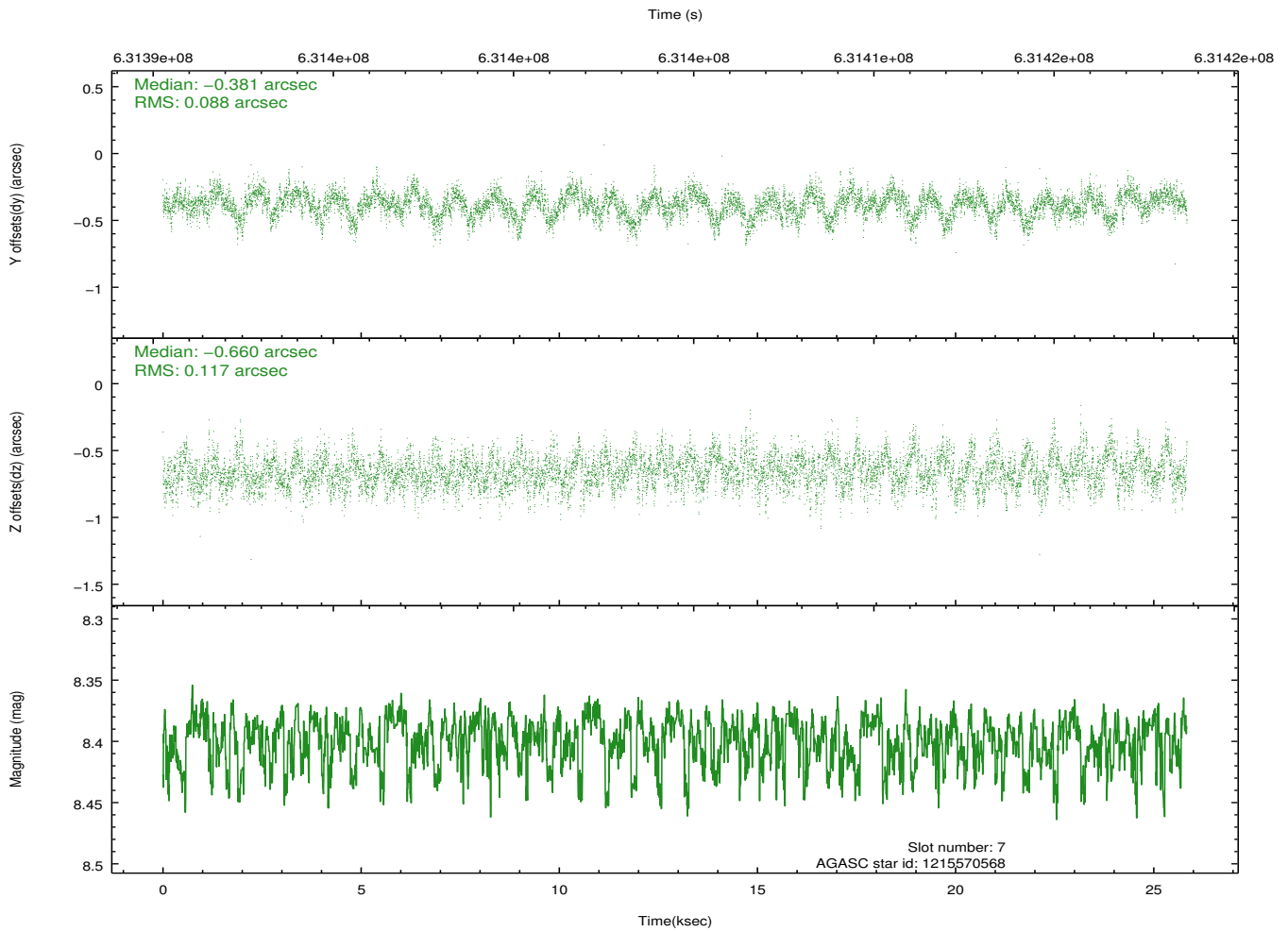
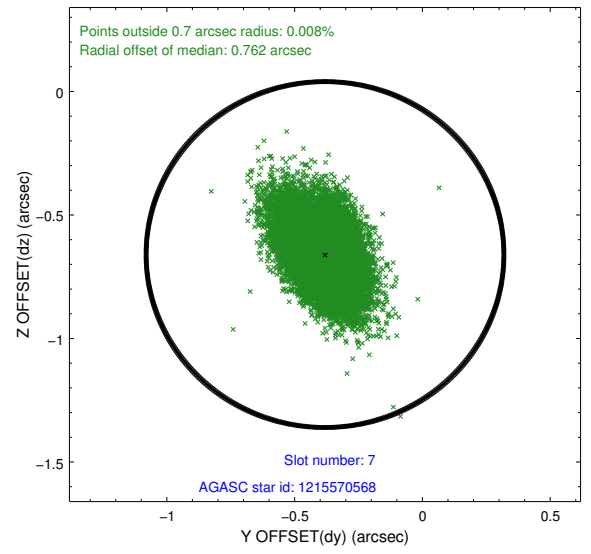
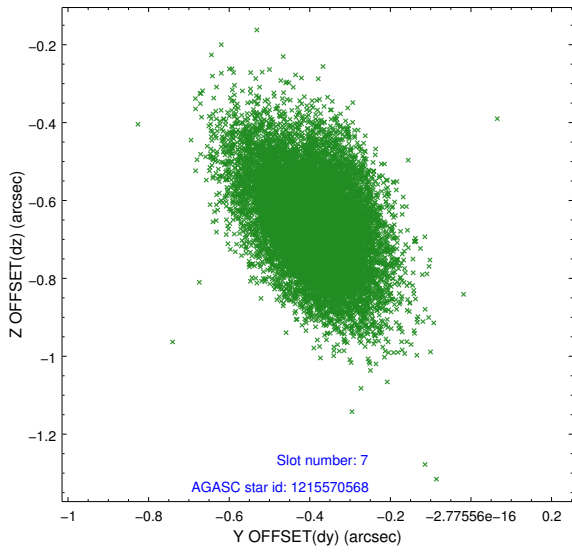
2.4.3 Slot 5



2.4.4 Slot 6

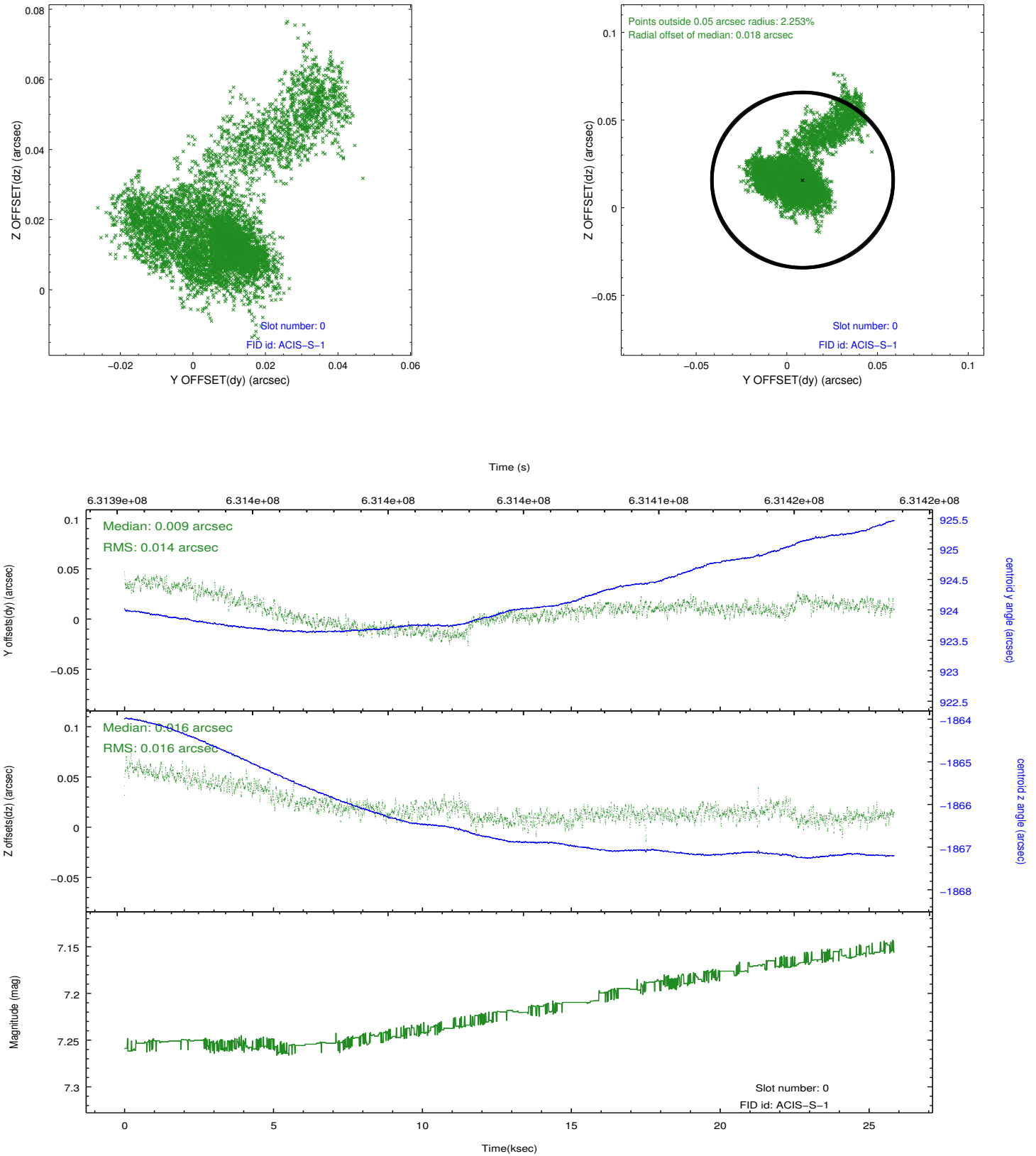


2.4.5 Slot 7

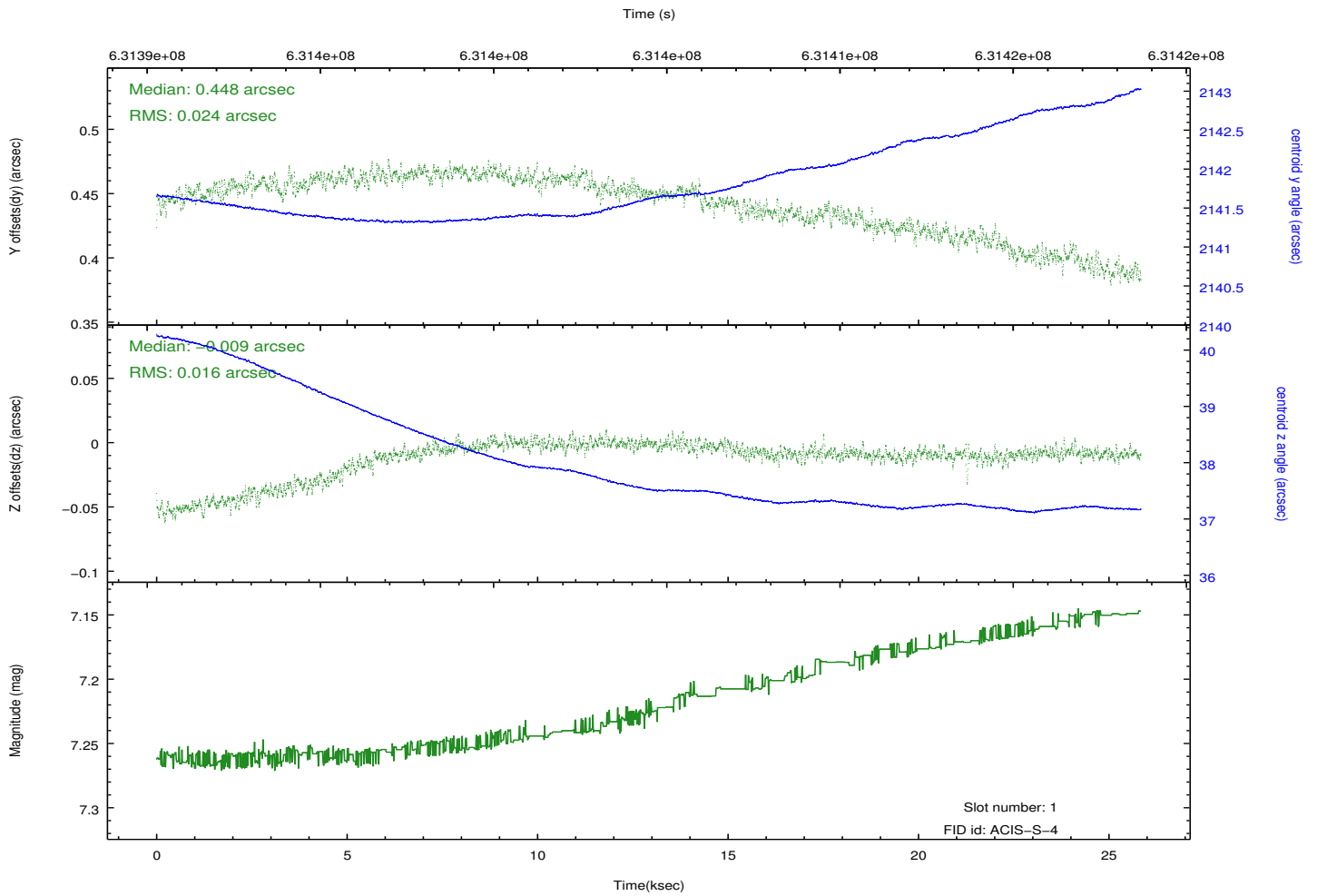
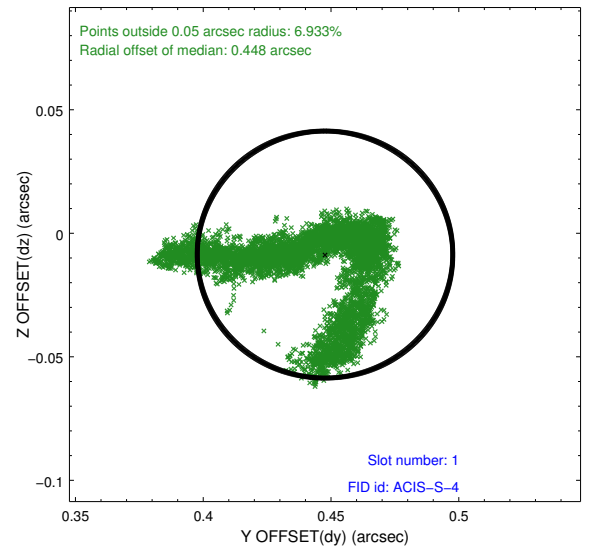
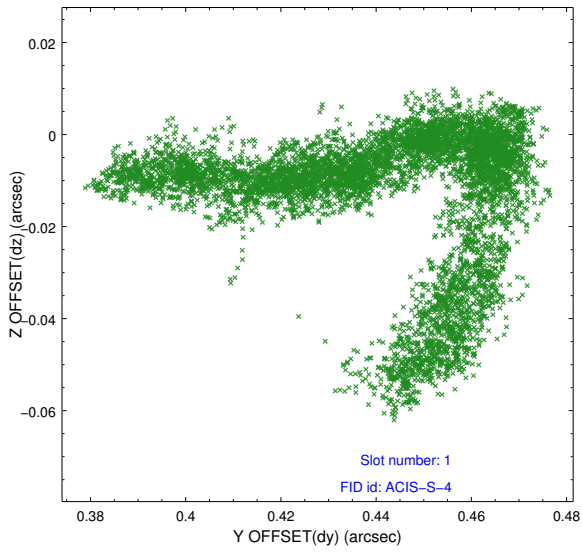


2.5 FID Slots

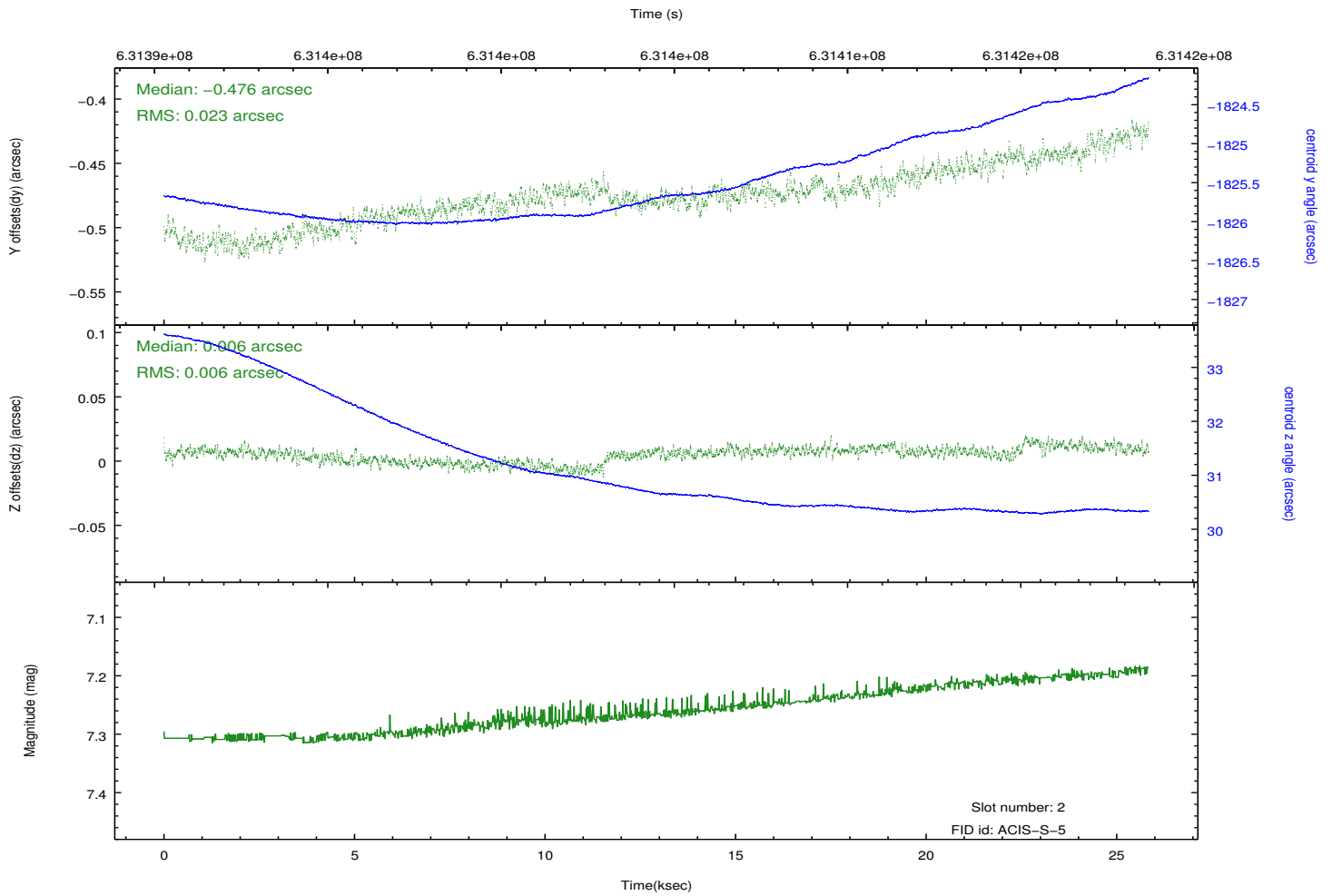
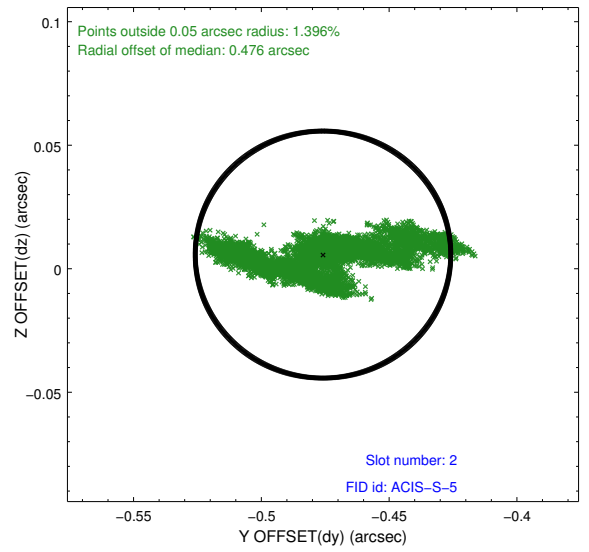
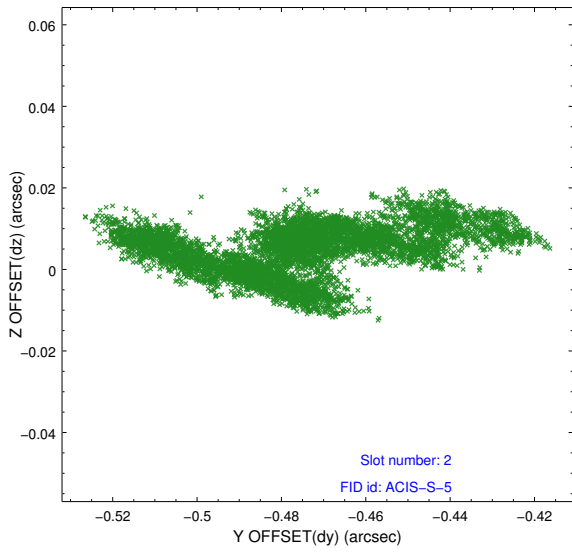
2.5.1 Slot 0



2.5.2 Slot 1

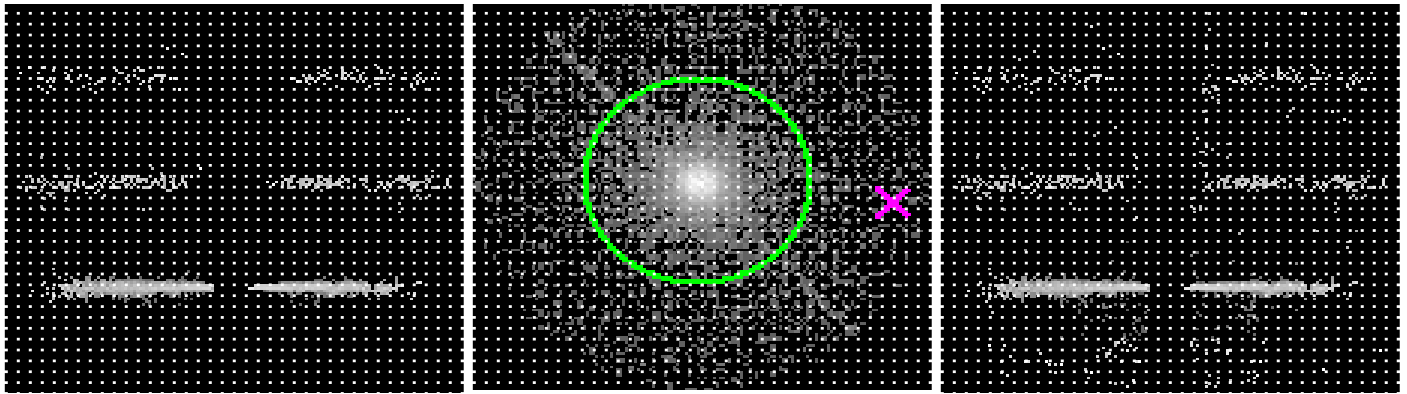


2.5.3 Slot 2



3 Gratings

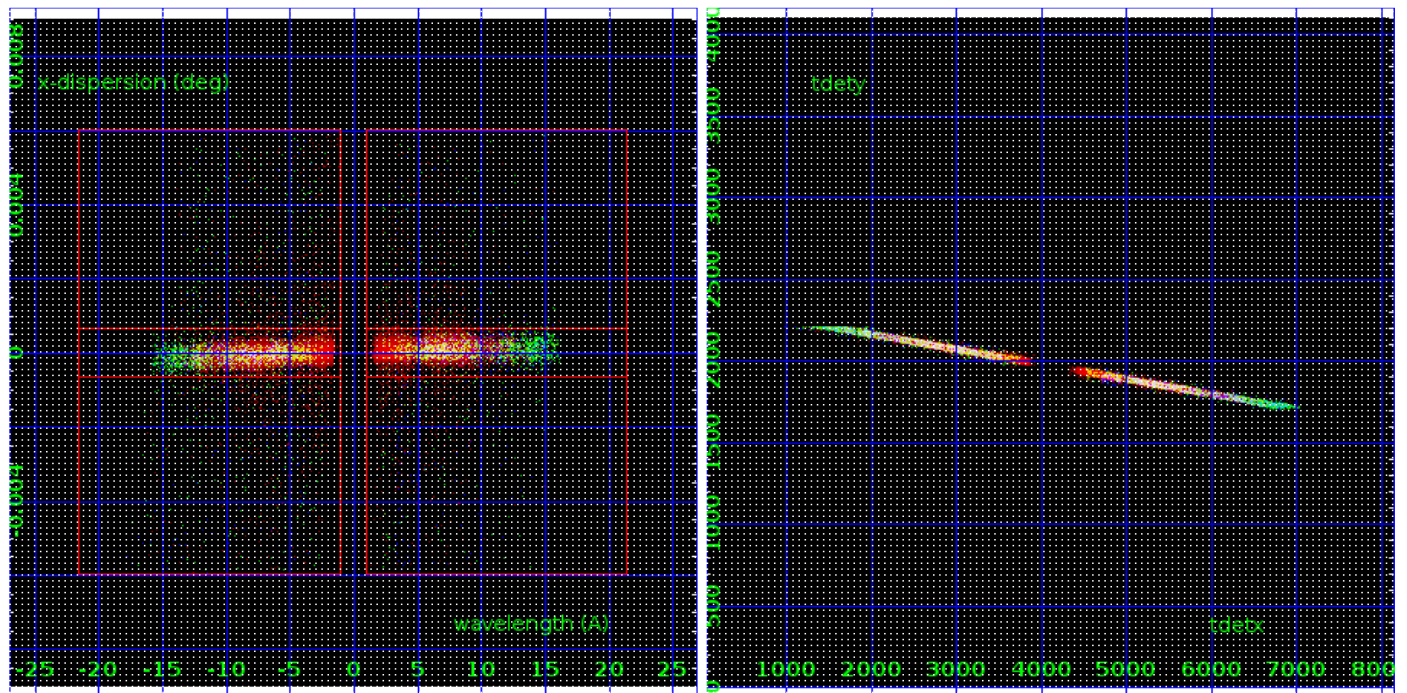
3.1 HEG Arm



HEG Order Sort 123

HEG Zero Order

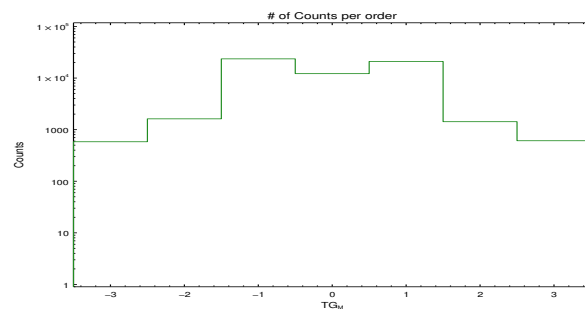
HEG Order Sort ALL

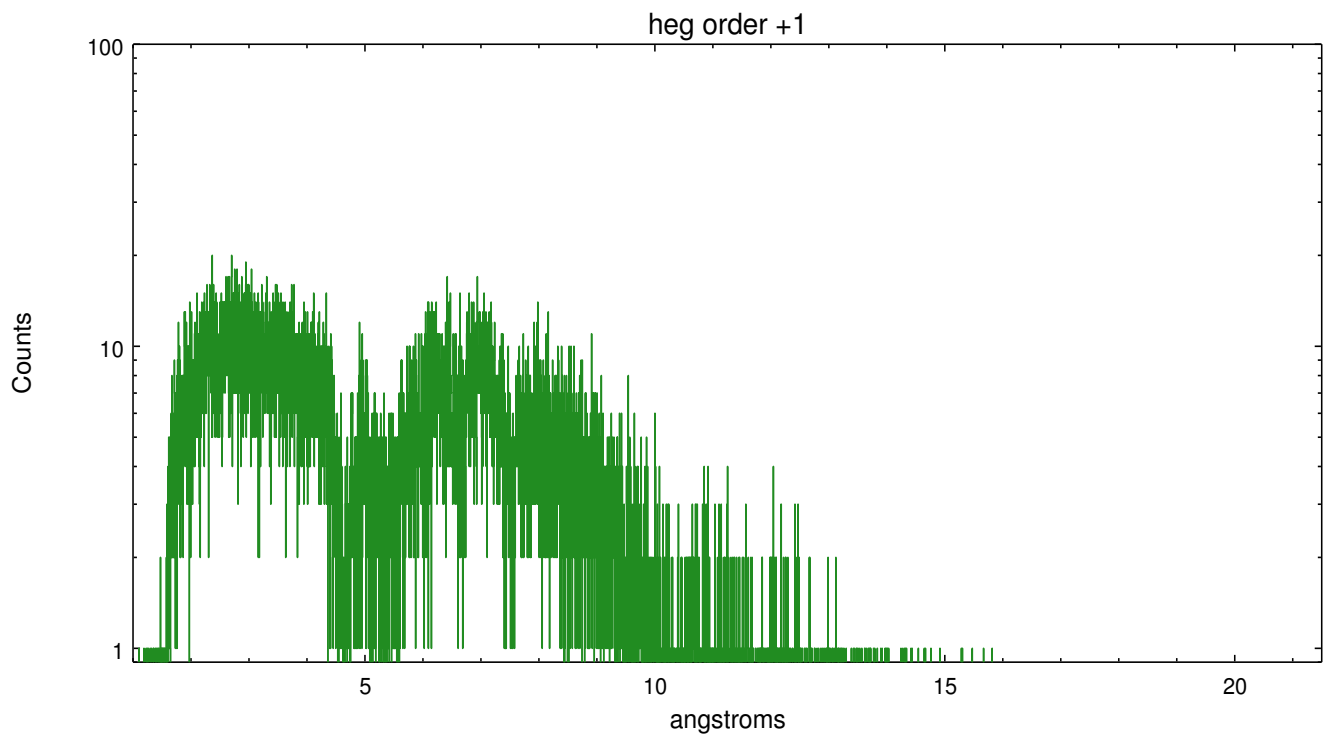
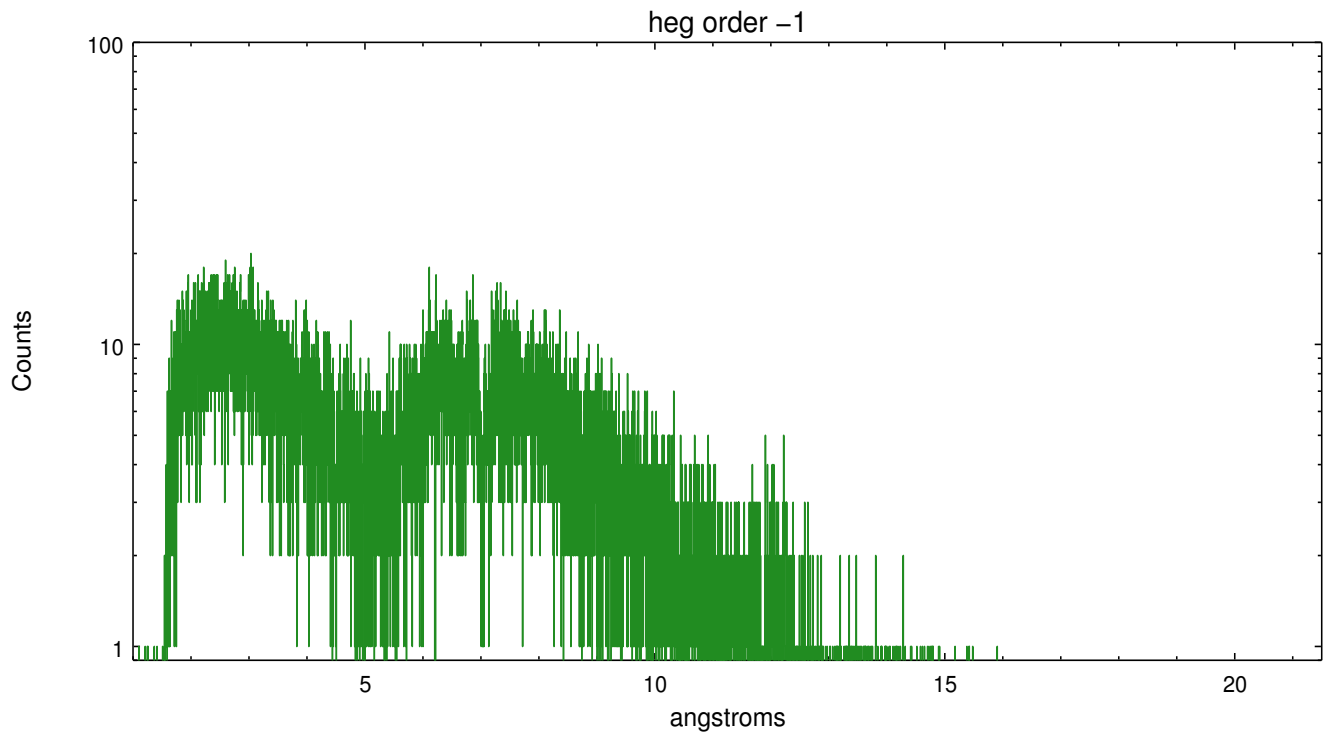


Spot Image HEG

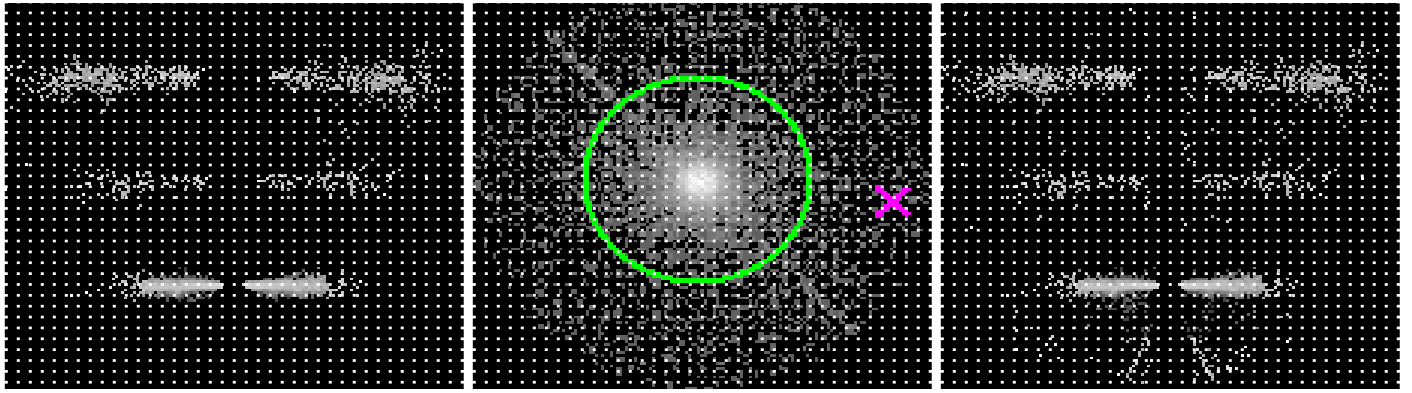
Full Detector HEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	583	1621	23567	12181	20979	1427	610





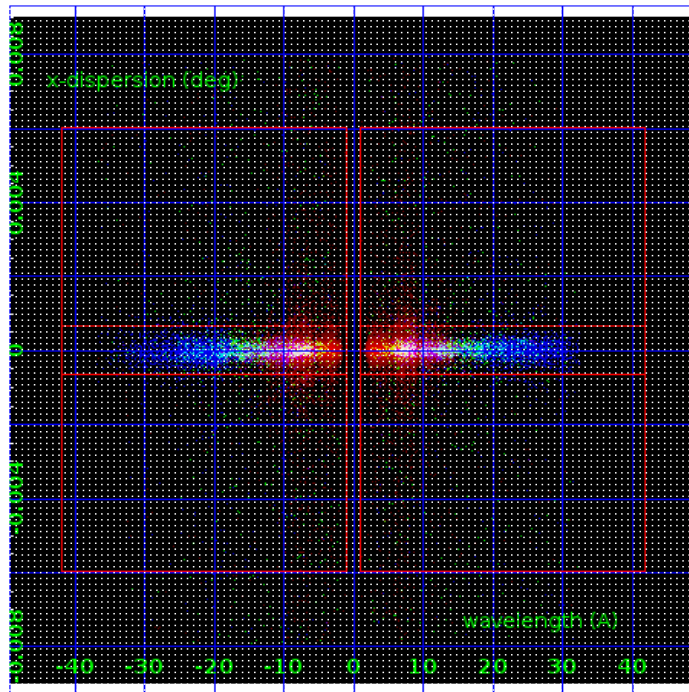
3.2 MEG Arm



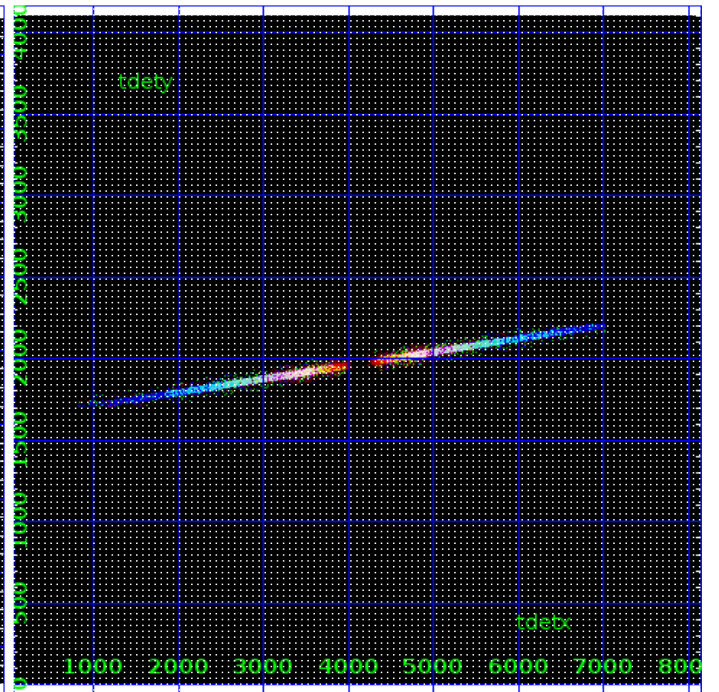
MEG Order Sort 123

MEG Zero Order

MEG Order Sort ALL

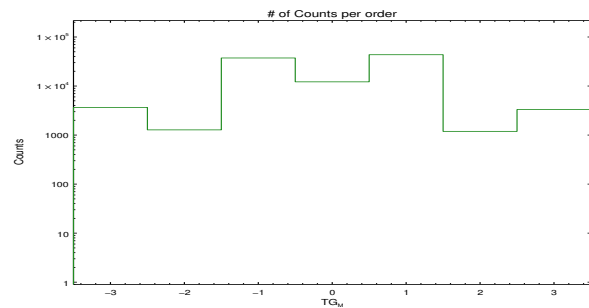


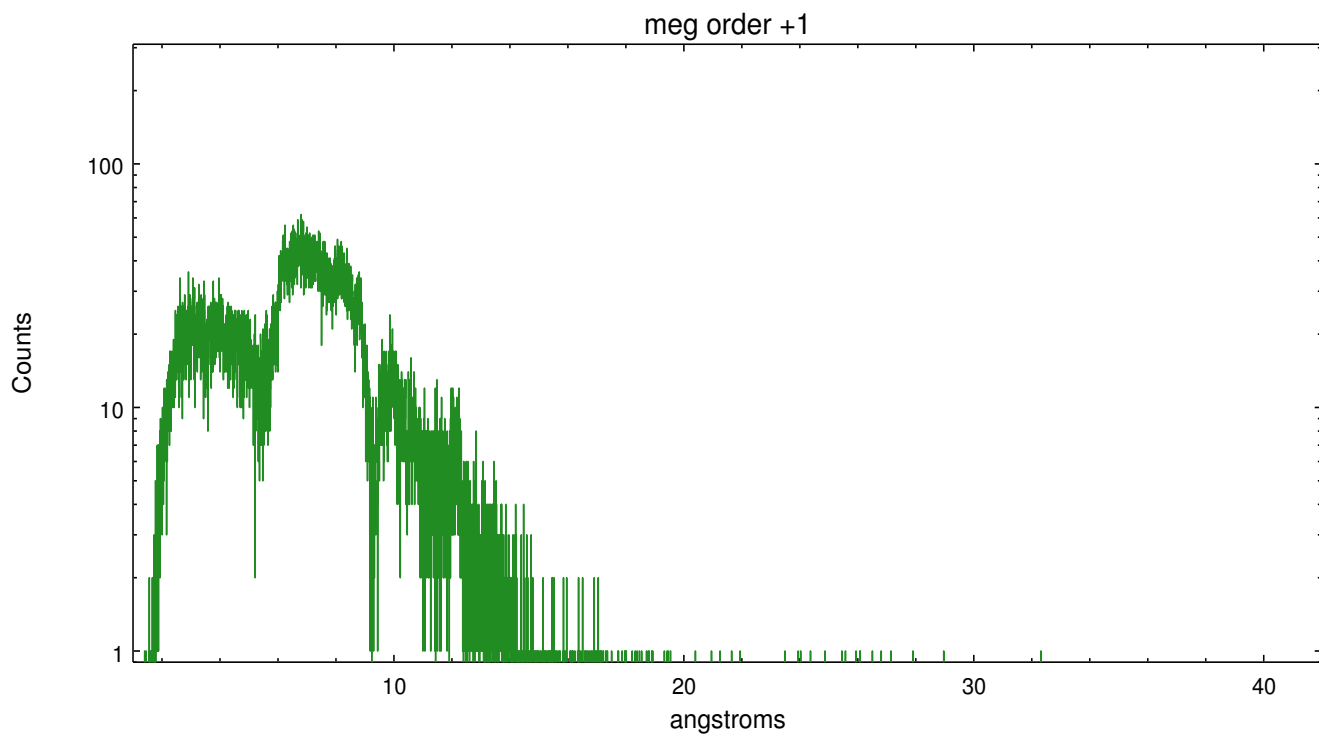
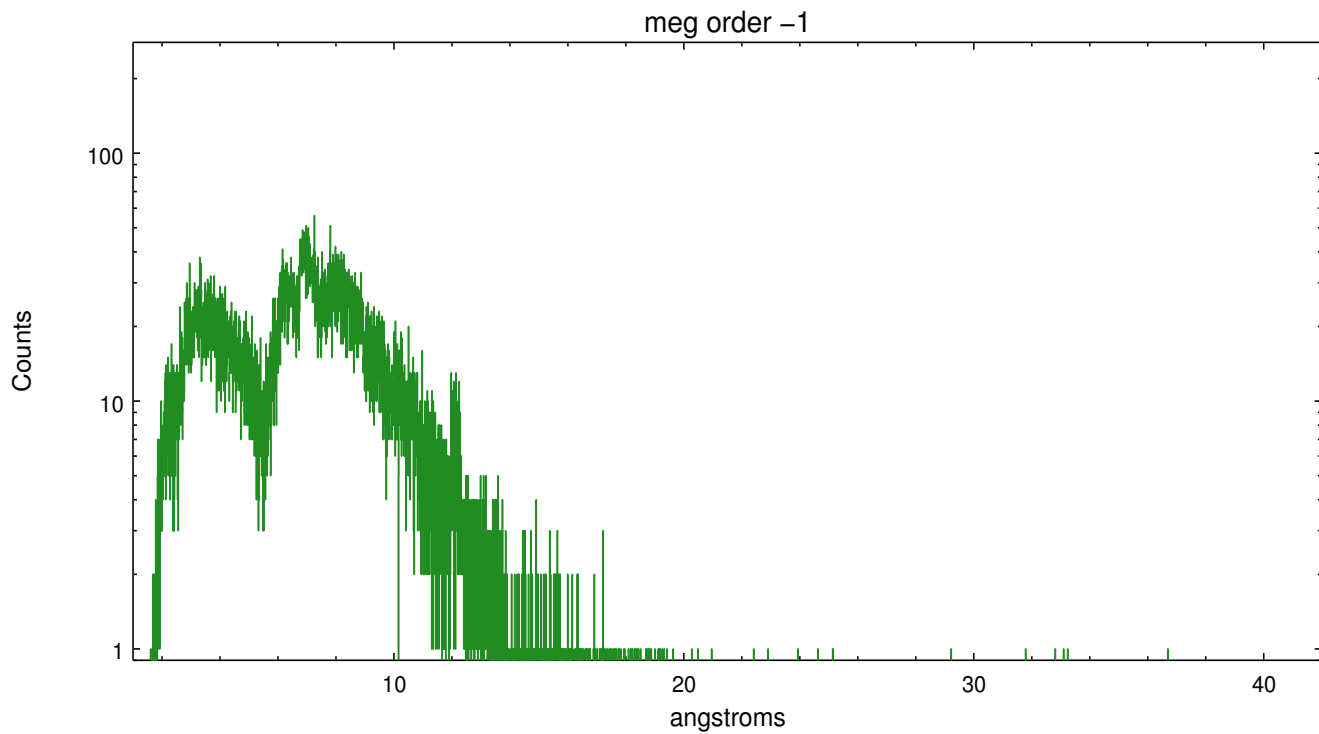
Spot Image MEG



Full Detector MEG

	order	order	order	order	order	order	order
	-3	-2	-1	0	1	2	3
Events	3659	1277	37352	12181	43551	1189	3311





A Summary

A.1 Status

V&V Scientist	Joy Nichols
V&V Date (YYYY-MM-DD)	2018.01.05
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	25.744717038274

A.2 Comments

Zeroth order is piled up, asymmetric, and slightly extended. 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 dispersed spectral arm, rather than using a centroid position of the source. The findzero results are more accurate than source centroid in this case.

===

Source is slightly extended with non-uniform X-ray flux in the core. The user may want to extract the spectrum using a different zeroth order position to center on the area of interest.

===

WARNING: there are no standard ciao tools for analysis of grating spectra from extended sources. The shape of an emission 'line' will be the shape of the zero order spatial structure convolved with the instrumental LSF. Grating extractions can be used, but need to be combined with custom spatial-spectral analysis, since wavelength is multi-valued at any particular diffraction angle.

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