

V&V Reference Report

L2 ASCDS Version : 10.6

Observation 21051 - L2 Version 1
Chandra X-Ray Center

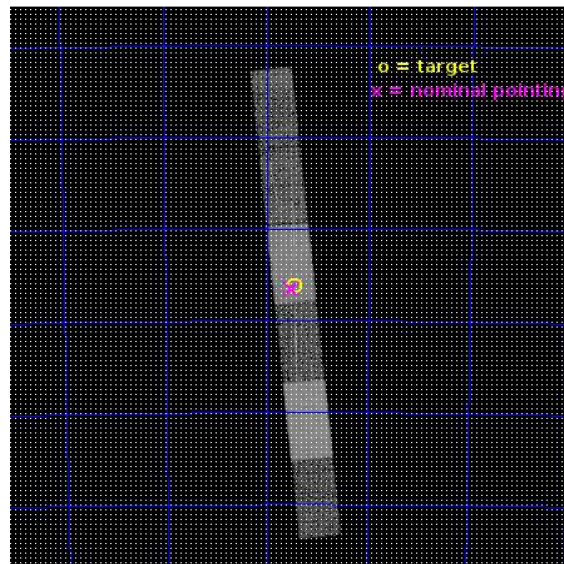
L2 Processing Date : Mar 30 2018

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1 Front

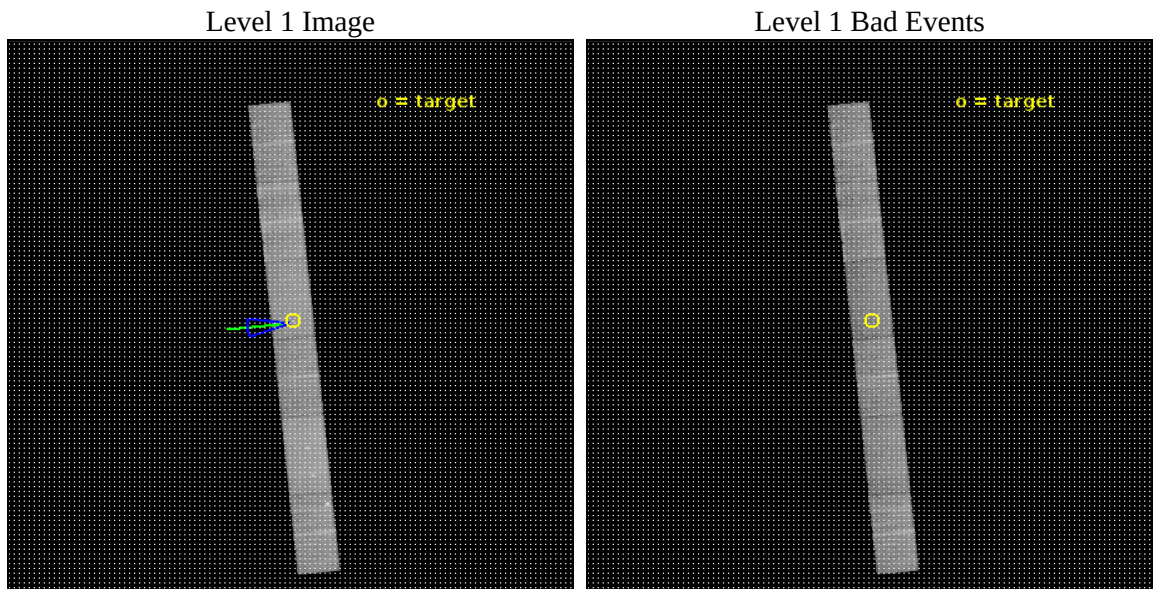
seq_num	503016	Sequence number
obs_id	21051	Observation id
title	High Resolution Spectroscopy of SN 1987A	Proposal title
observer	SANGWOOK PARK	Principal investigator
object	SN 1987A	Source name
dtcycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	83.866667	Observer's specified target RA [deg]
dec_targ	-69.26975	Observer's specified target Dec [deg]
ra_nom	83.879314022601	Nominal RA [deg]
dec_nom	-69.275379706247	Nominal Dec [deg]
roll_nom	264.16848744679	Nominal Roll [deg]
revision	1	Processing version of data
ontime	15371.400431156	Sum of GTIs [s]
livetime	15009.063969217	Livetime [s]
ontime4	15371.400431156	Sum of GTIs [s]
ontime5	15371.379418135	Sum of GTIs [s]
ontime6	15371.338378191	Sum of GTIs [s]
ontime7	15371.400431156	Sum of GTIs [s]
ontime8	15371.297338128	Sum of GTIs [s]
ontime9	15371.256298184	Sum of GTIs [s]
l2events	105639	Number of level 2 events



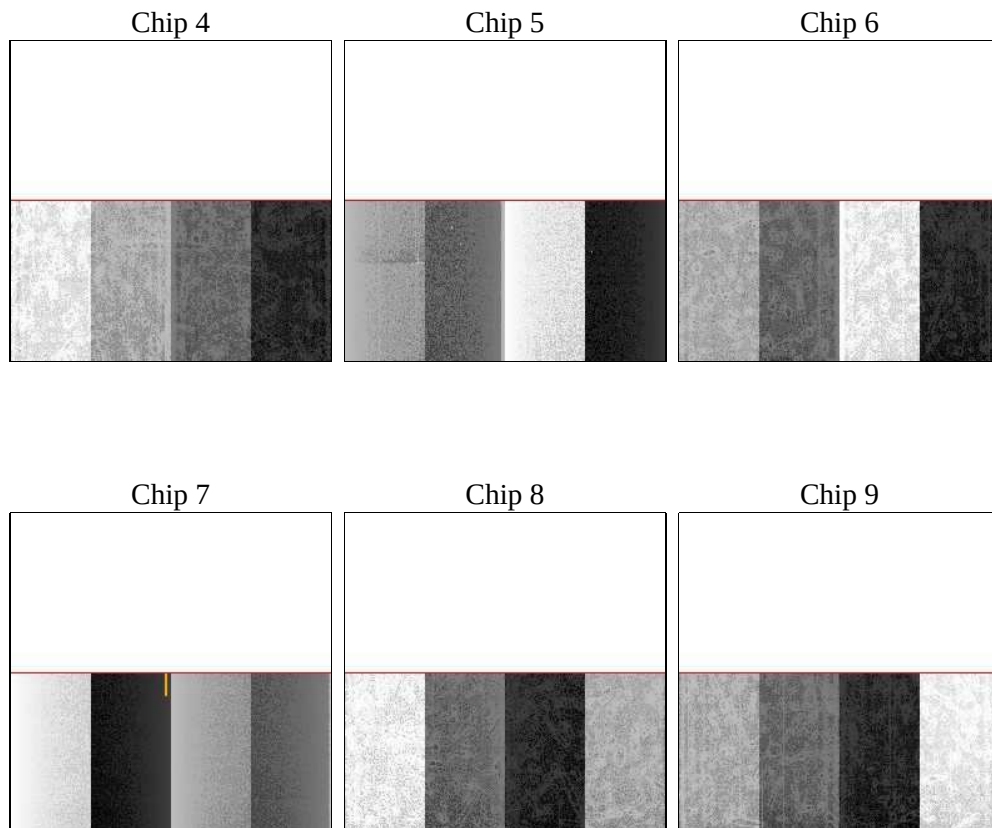
2 OBI

2.1 OBI

2.1.1 Images



2.1.2 Bias



2.1.3 Parameters

obi_num	0	Obi number	sched_exp_time	15325.215000	[s] Scheduled observation exposure time
ascdsver	10.6	Processing system revision	ontime	15371.400431156	Sum of GTIs [s]
caldsver	4.7.8	 	ontime4	15371.400431156	Sum of GTIs [s]
date	2018-03-30T22:56:27	Date and time of file creation	ontime5	15371.379418135	Sum of GTIs [s]
revision	1	Processing version of data	ontime6	15371.338378191	Sum of GTIs [s]
			ontime7	15371.400431156	Sum of GTIs [s]
			ontime8	15371.297338128	Sum of GTIs [s]
			ontime9	15371.256298184	Sum of GTIs [s]
			l1events	437610	Number of level 1 events
			tgmethod	TGDETECT	Method used to create src1a file
			src1a_pos	(4120.22, 4127.58)	src1a sky pixel position

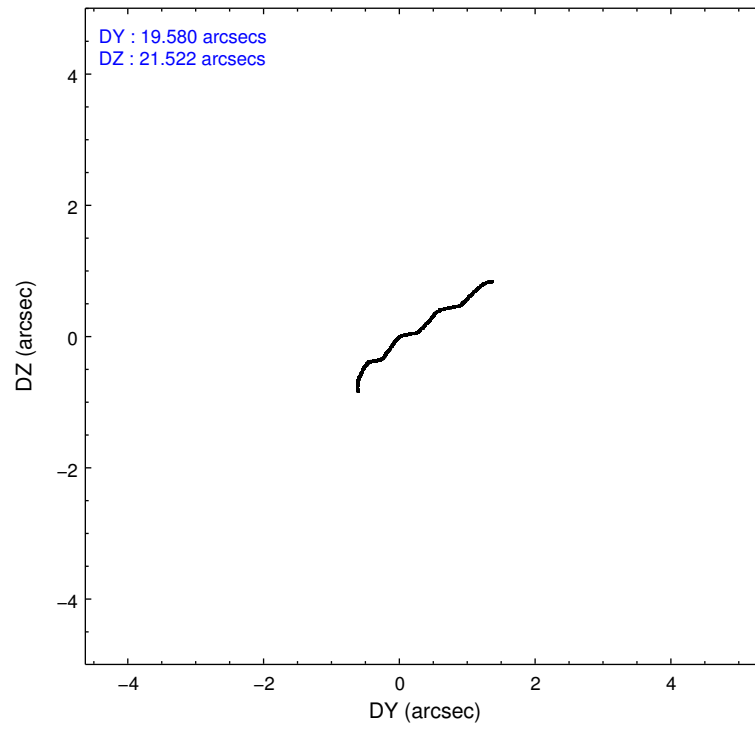
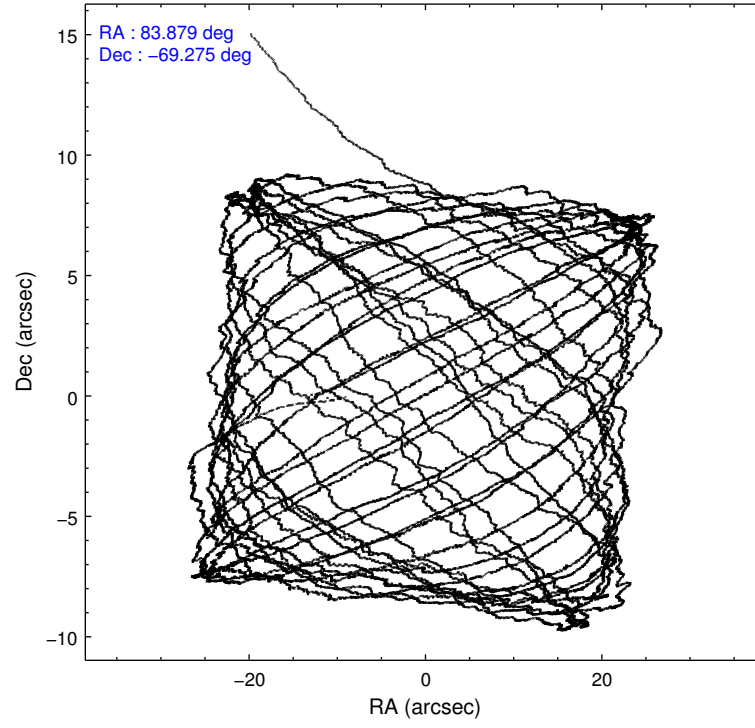
2.1.4 Events

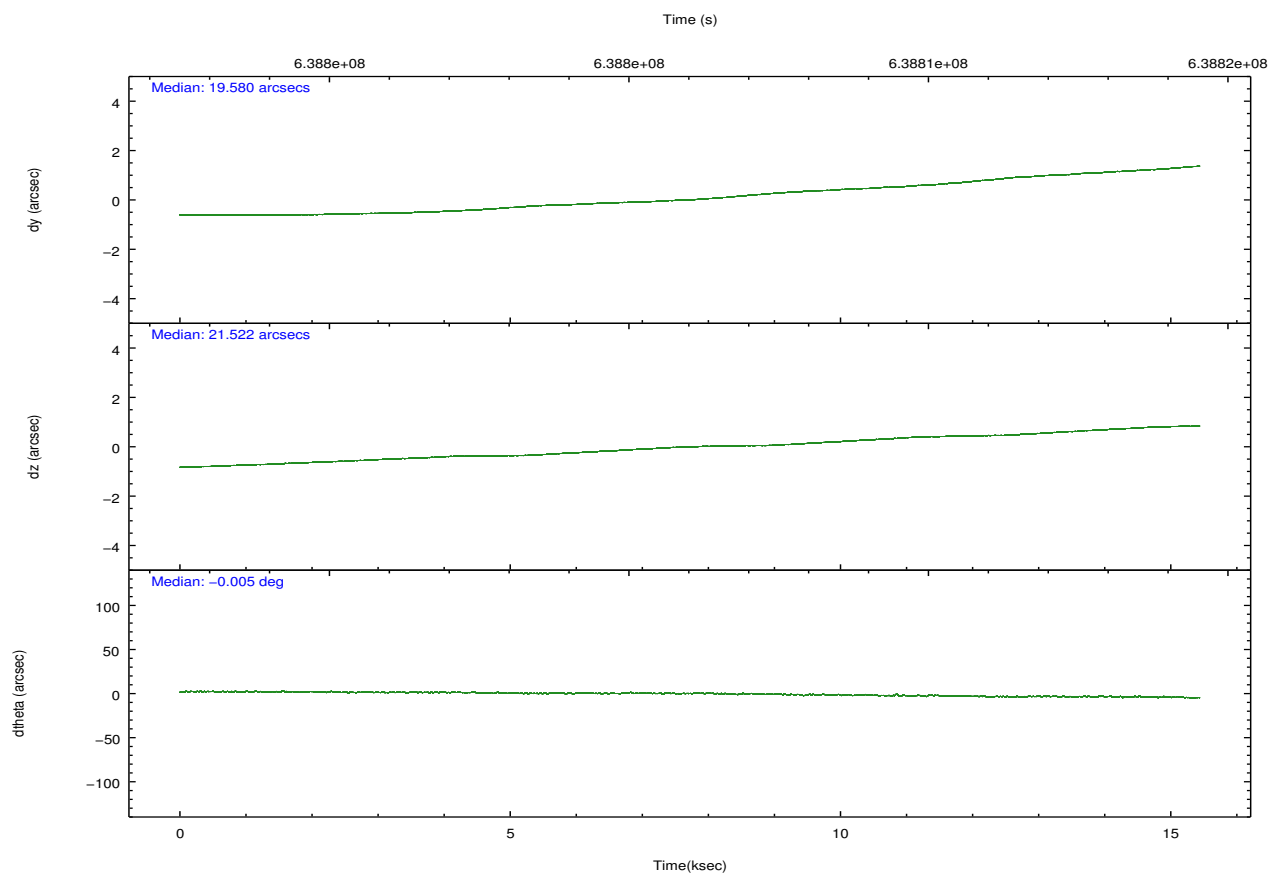
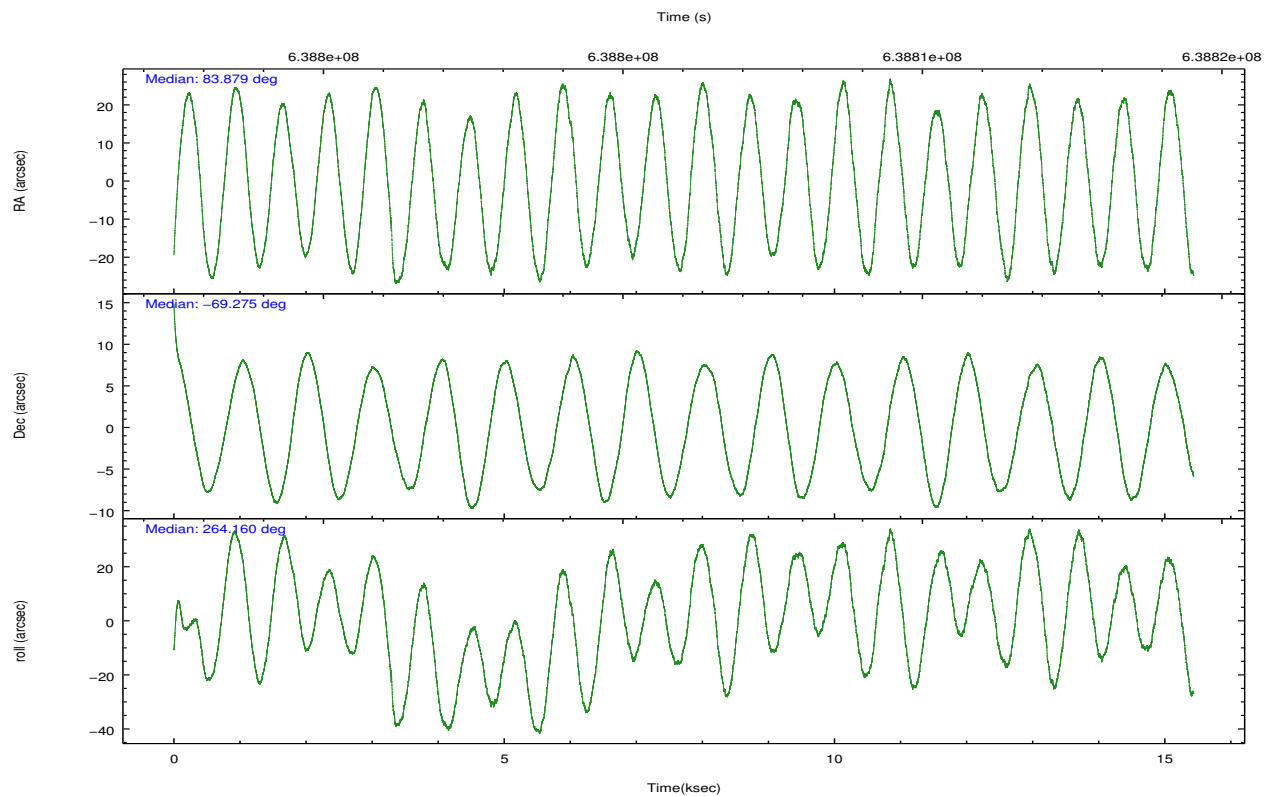
	ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9		ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
level 1 events	70602	92356	60129	75208	79359	59956	grade 0 events	5484	4606	3378	3806	7174	2646
rejected events	60194	46801	51881	39355	55816	52354		7%	4%	5%	5%	9%	4%
rejected %	85%	50%	86%	52%	70%	87%	grade 1 events	60	201	23	97	49	32
								0%	0%	0%	0%	0%	0%
							grade 2 events	1924	13266	1680	7545	5406	1624
								2%	14%	2%	10%	6%	2%
							grade 3 events	854	2092	837	3381	2416	866
								1%	2%	1%	4%	3%	1%
							grade 4 events	796	1871	879	3414	2182	842
								1%	2%	1%	4%	2%	1%
							grade 5 events	2718	6947	2595	7606	3805	2906
								3%	7%	4%	10%	4%	4%
							grade 6 events	1351	23723	1474	17710	6365	1625
								1%	25%	2%	23%	8%	2%
							grade 7 events	57415	39650	49263	31649	51962	49415
								81%	42%	81%	42%	65%	82%

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	83.846614	83.87931402260114	CCD I2 on	N	N
[deg] Pointing Dec	-69.250501	-69.27537970624687	CCD I3 on	N	N
[deg] Pointing Roll	263.981248	264.16848744679	CCD S0 on	O1	Y
[deg] Roll angle	264.000000	264.000000	CCD S1 on	Y	Y
[deg] Roll tolerance	12.000000	12.000000	CCD S2 on	Y	Y
Roll constraint allows 180D rotation	N	N	CCD S3 on	Y	Y
[s] Window start time (MET)	636940869.184000	636940869.184000	CCD S4 on	Y	Y
[s] Window stop time (MET)	639014469.184000	639014469.184000	CCD S5 on	Y	Y
[mm] SIM focus pos	-0.684267	-0.6828225247311905	Number of optional ACIS chips dropped	0	0
[mm] SIM defocus	0	0.001444936568705701	On-chip summing requested	N	N
[mm] SIM translation stage pos	-183.992523	-183.9875365069546	Subarray requested	CUSTOM	1/2
[mm] SIM translation stage offset	-6.14	-6.144986076053243	Subarray start row	1	1
[s] Observation start time (MET)	638798416.184000	638797099.10241	Subarray row count	512	512
Observation start date	2018-03-30T11:59:07	2018-03-30T11:38:19	Alternating exposures requested	N	N
[s] Observation end time (MET)	638813741.184000	638814619.94095	[s] Primary exposure time	0.000000	1.7
Observation end date	2018-03-30T16:14:32	2018-03-30T16:30:19			
Read mode	TIMED	TIMED			

2.3 Aspect



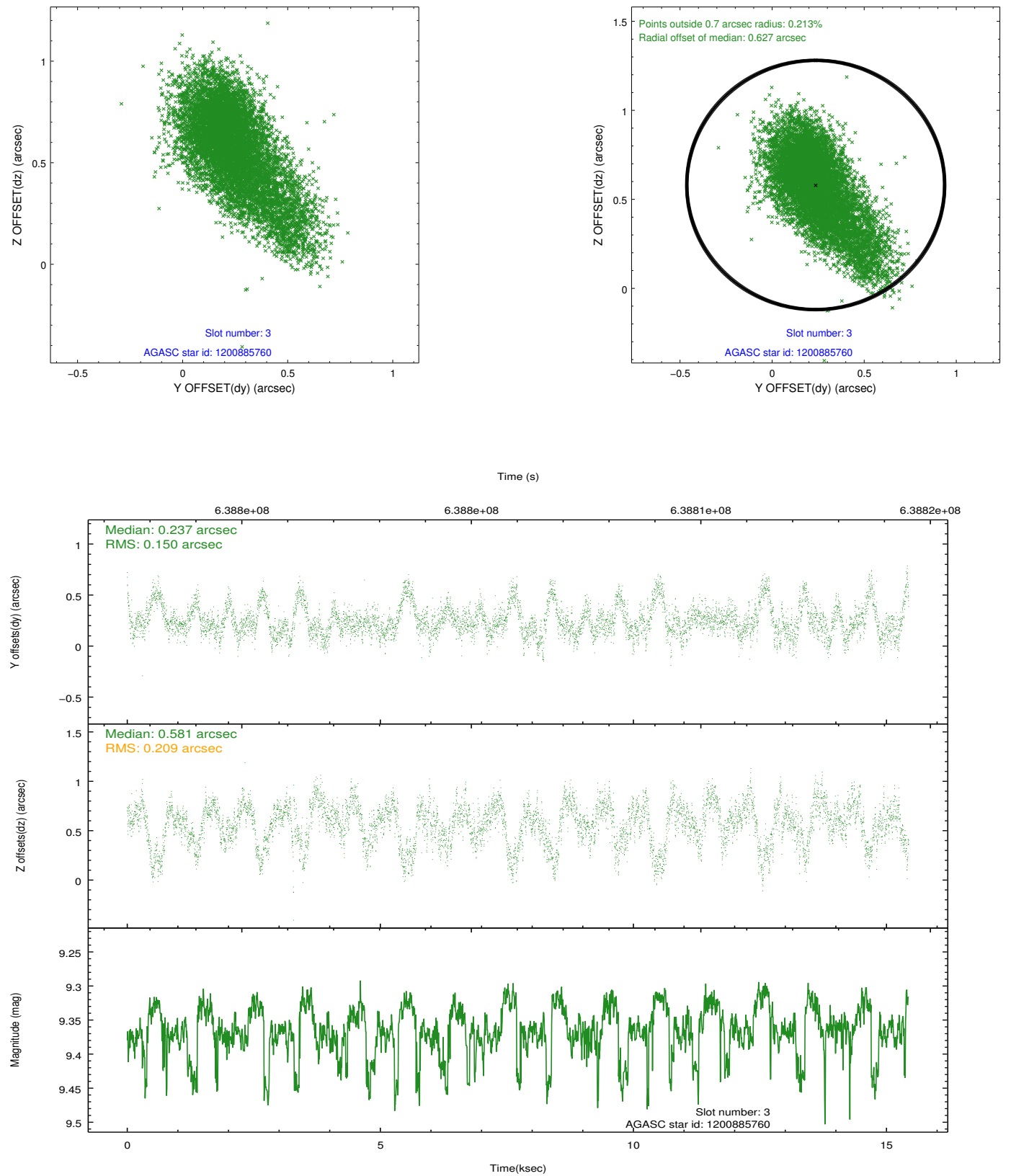


Slot Statistics

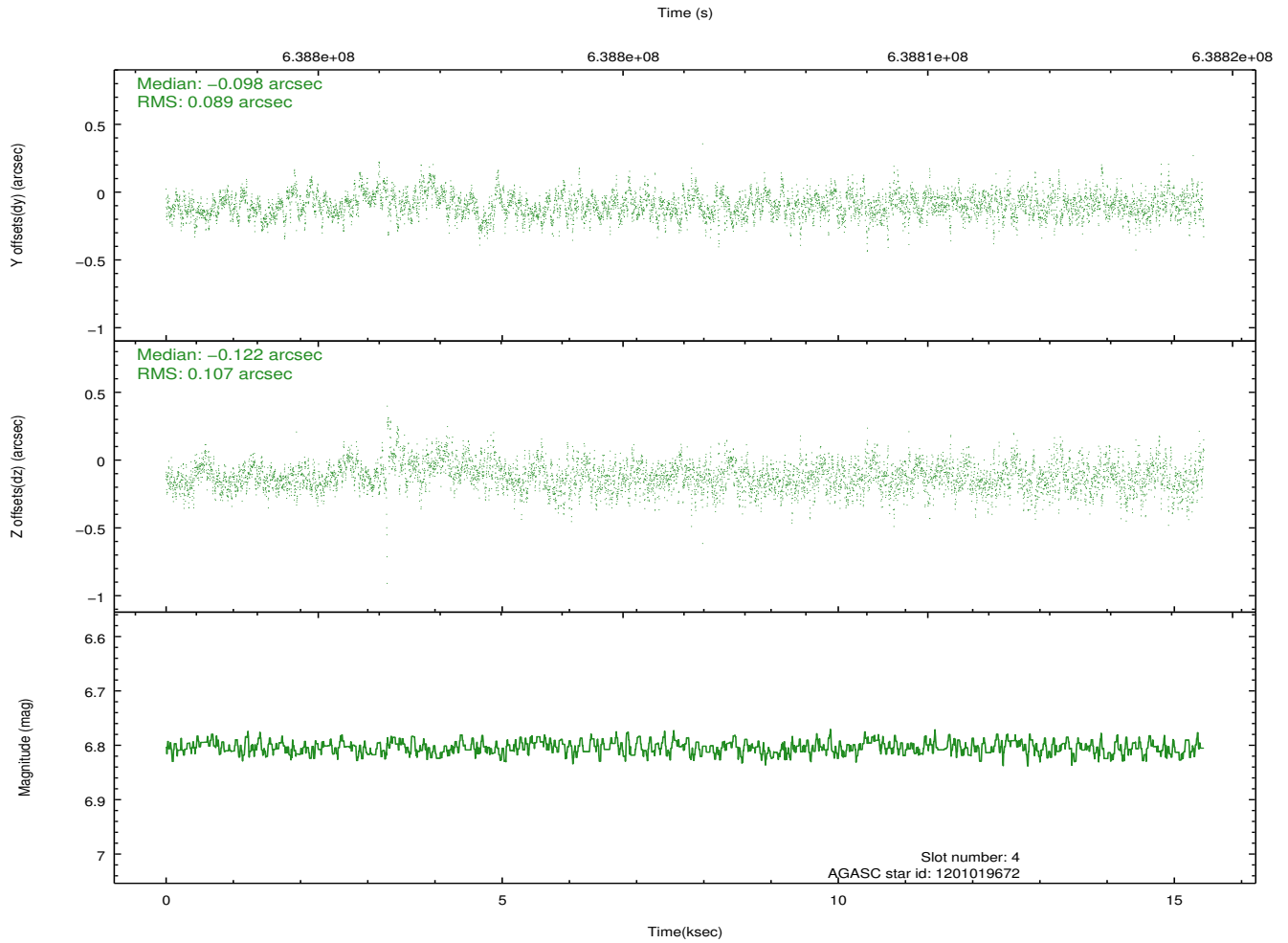
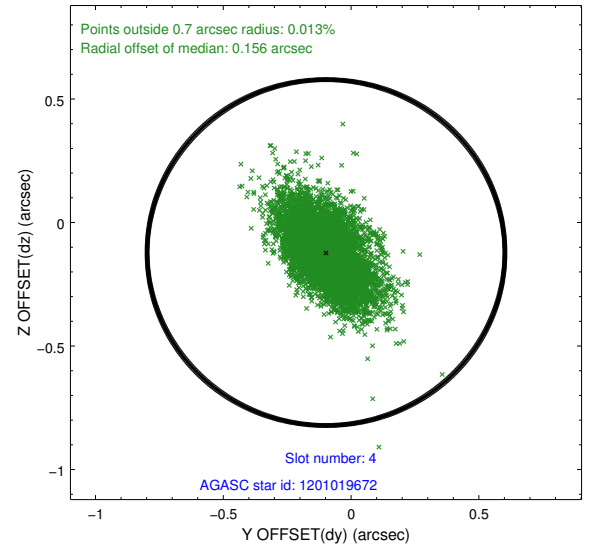
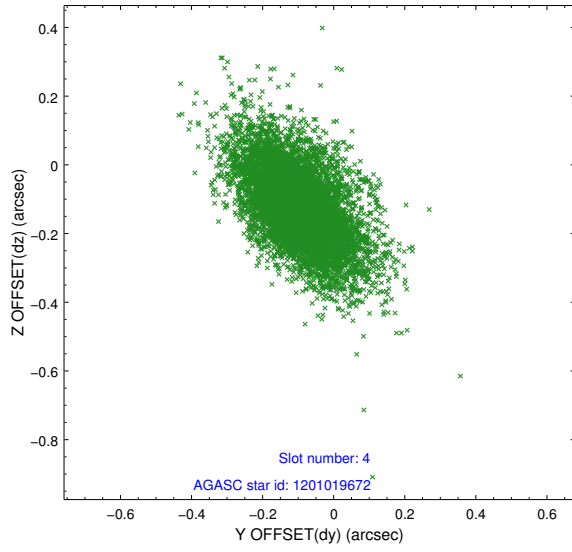
slot	status	used	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID		ACIS-S-2	7.02	3765	-0.258	-0.132	0.048	0.060	0.000000	0.000000	-772.63	-1869.85
1	FID		ACIS-S-4	7.14	3766	0.580	0.160	0.026	0.040	0.000000	0.000000	2141.33	38.61
2	FID		ACIS-S-5	7.17	3766	-0.347	-0.020	0.042	0.054	0.000000	0.000000	-1825.21	32.38
3	GUIDE	used	1200885760	9.36	7525	0.237	0.581	0.254	0.493	83.723637	-68.777667	-1675.12	-336.87
4	GUIDE	used	1201019672	6.80	7532	-0.098	-0.122	0.140	0.252	85.312192	-68.770187	-1897.58	1721.01
5	GUIDE	used	1201020040	8.56	7528	0.192	-0.333	0.161	0.270	85.379163	-68.879396	-1512.47	1839.58
6	GUIDE	used	1201540776	9.54	7133	-0.325	-0.247	0.333	0.537	85.107945	-69.858480	2028.43	1786.87
7	GUIDE	used	1201410616	9.29	7512	-0.046	0.120	0.282	0.452	82.516808	-69.784406	2103.45	-1440.57

2.4 Star Slots

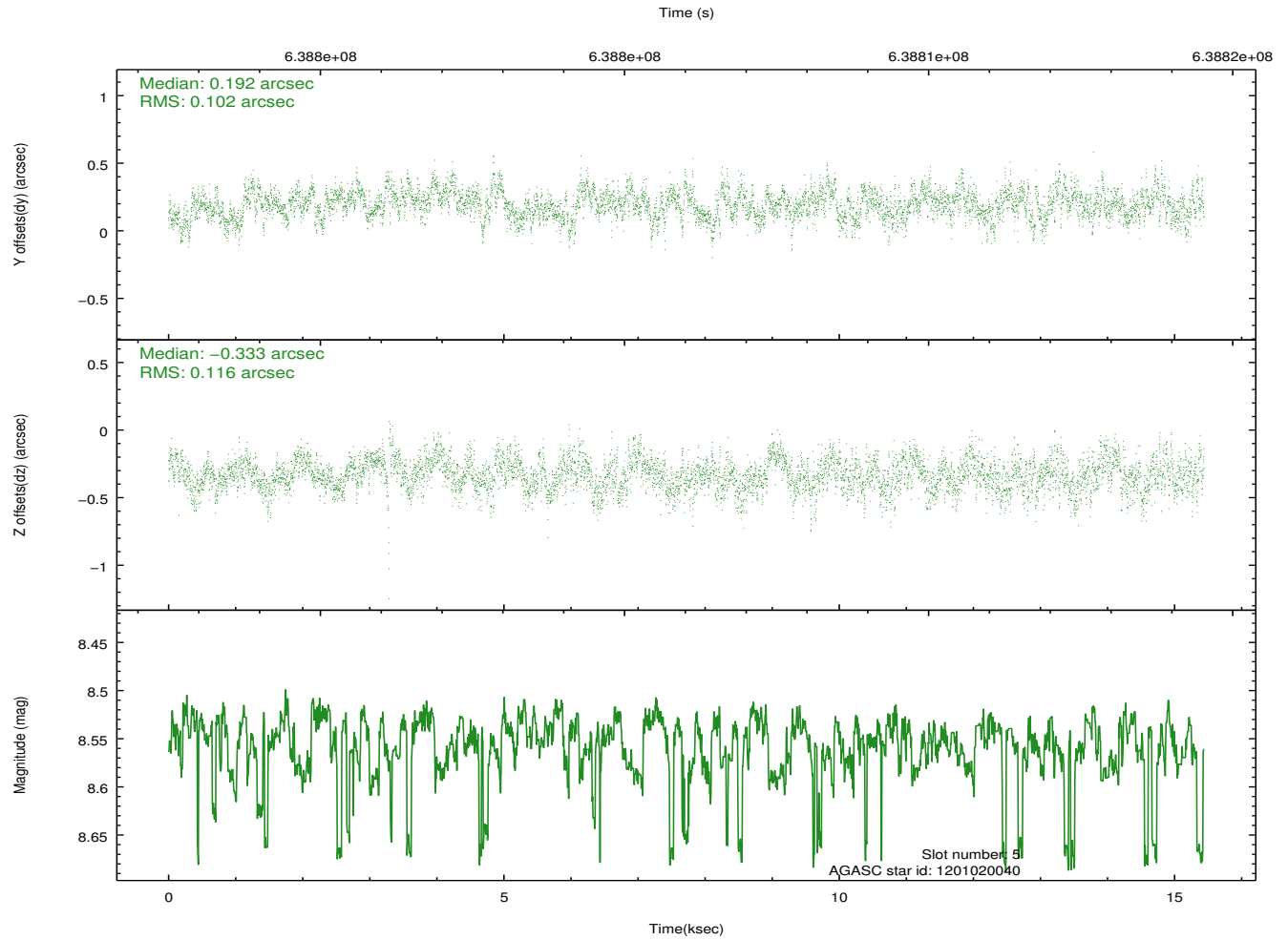
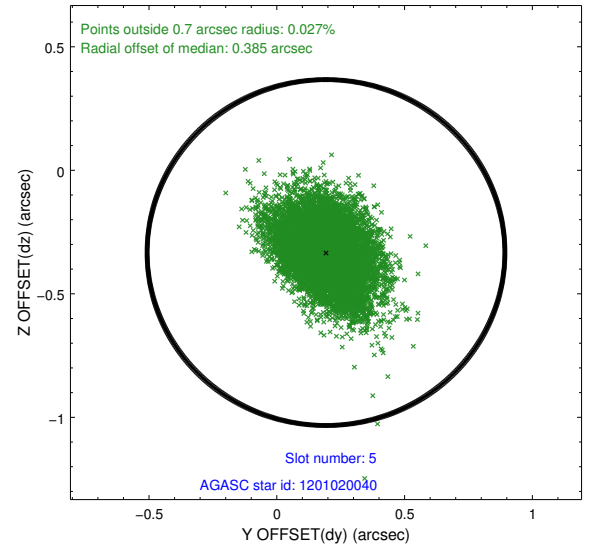
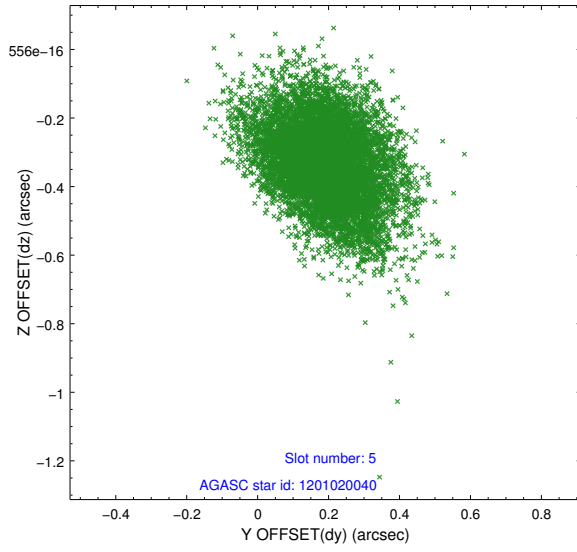
2.4.1 Slot 3



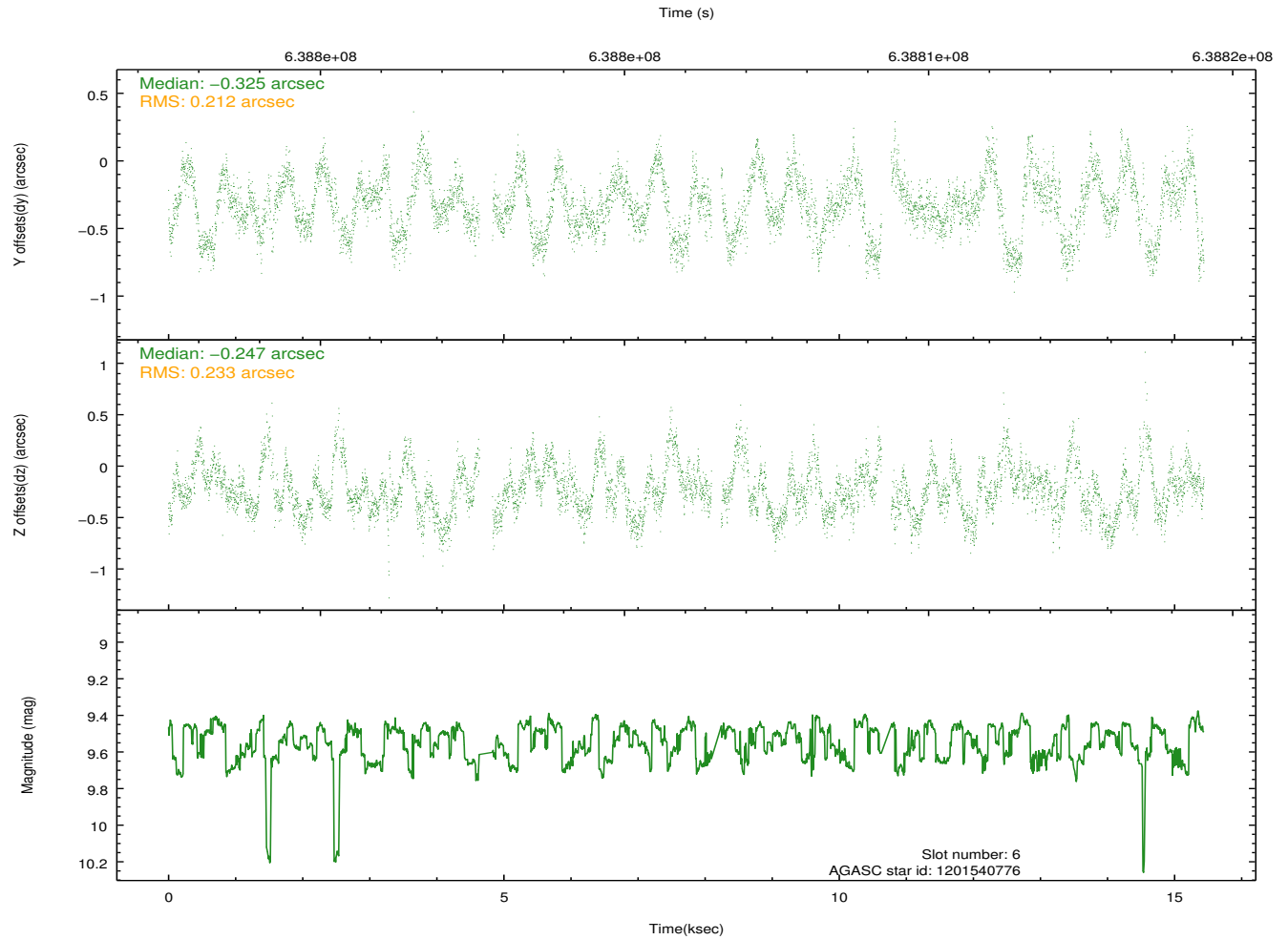
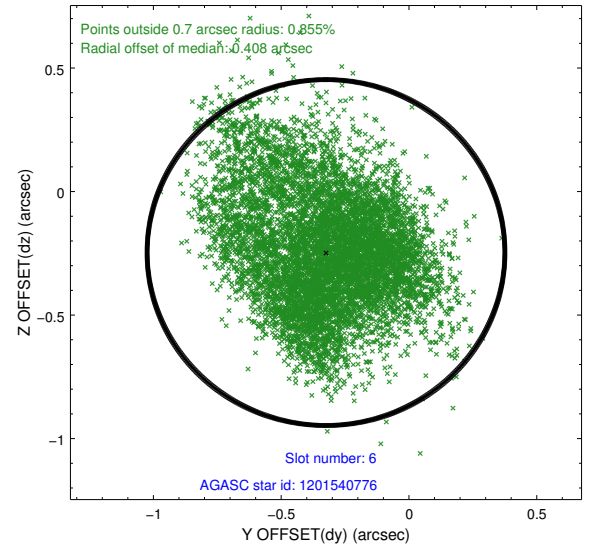
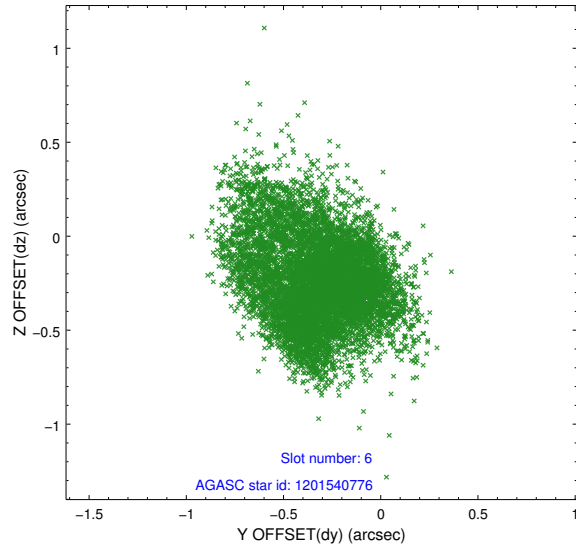
2.4.2 Slot 4



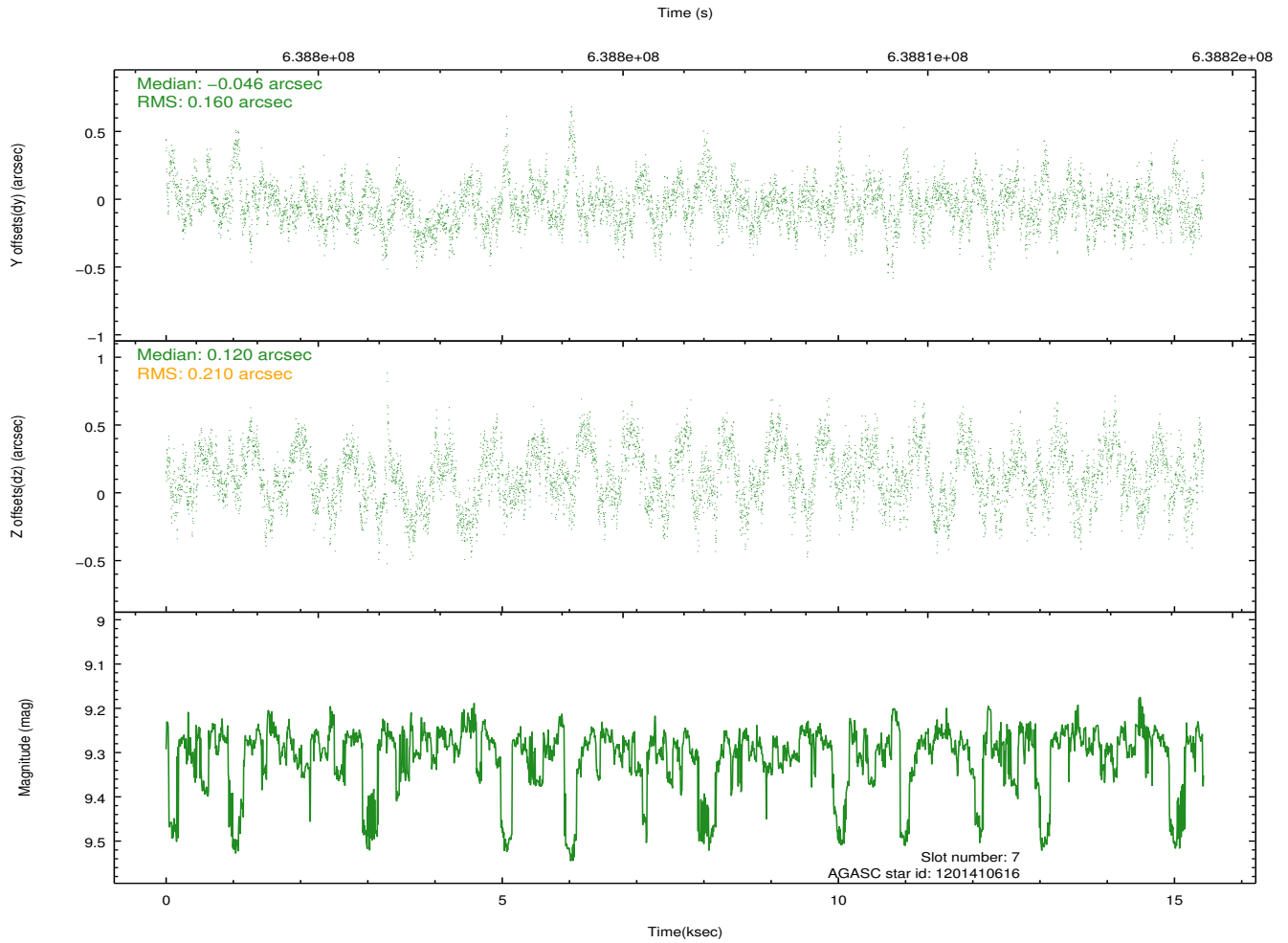
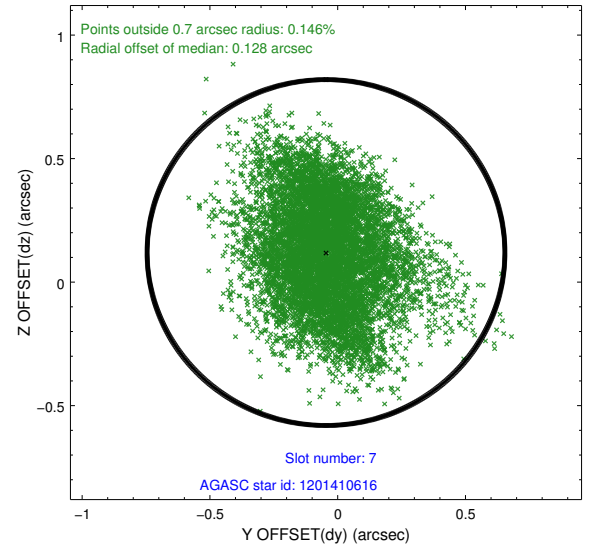
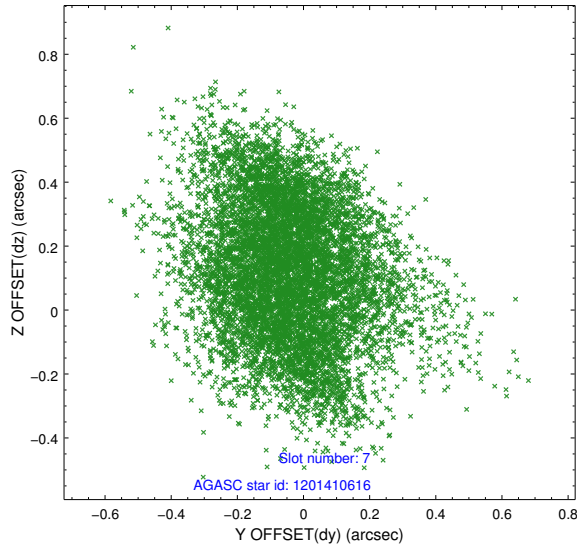
2.4.3 Slot 5



2.4.4 Slot 6

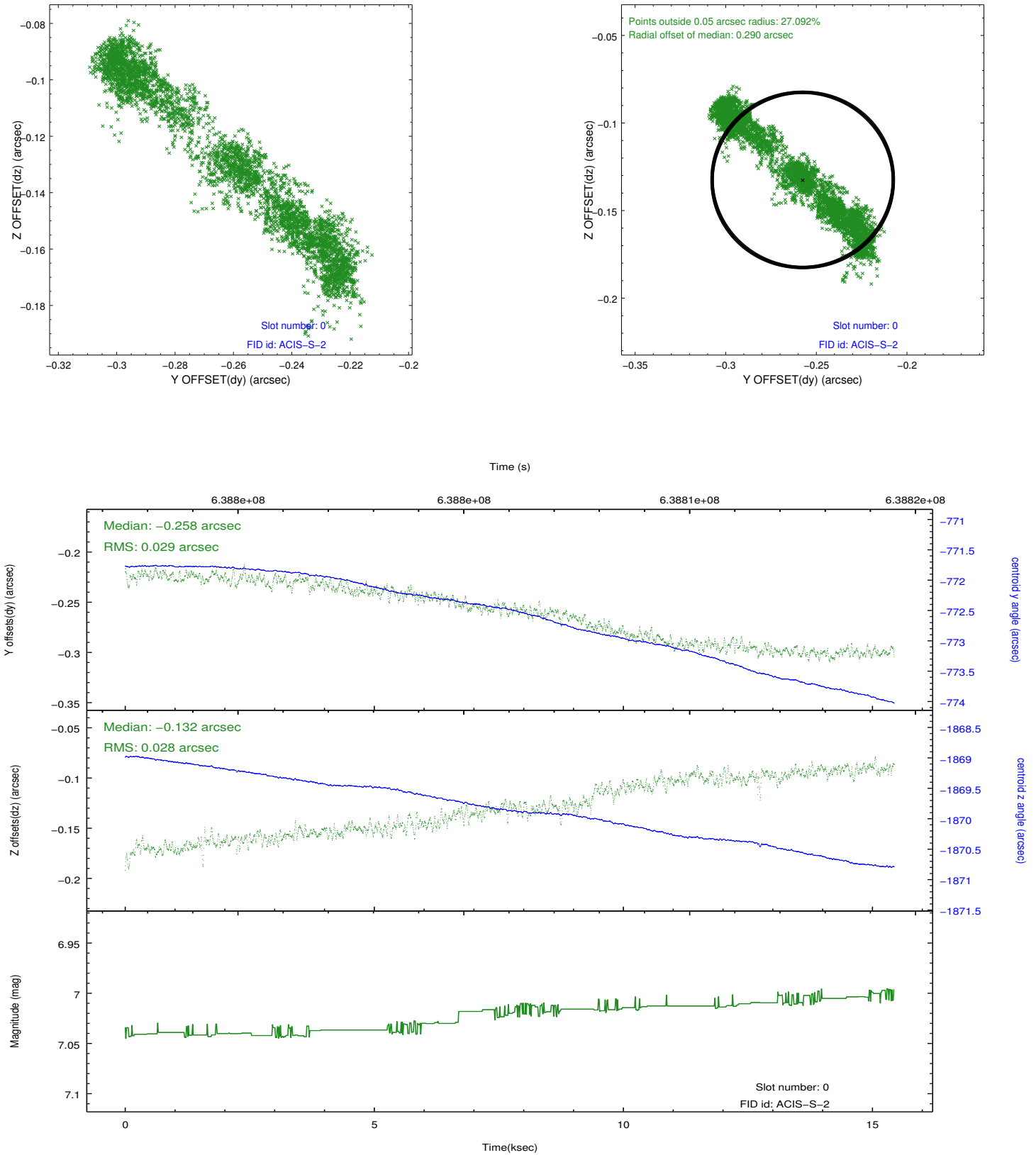


2.4.5 Slot 7

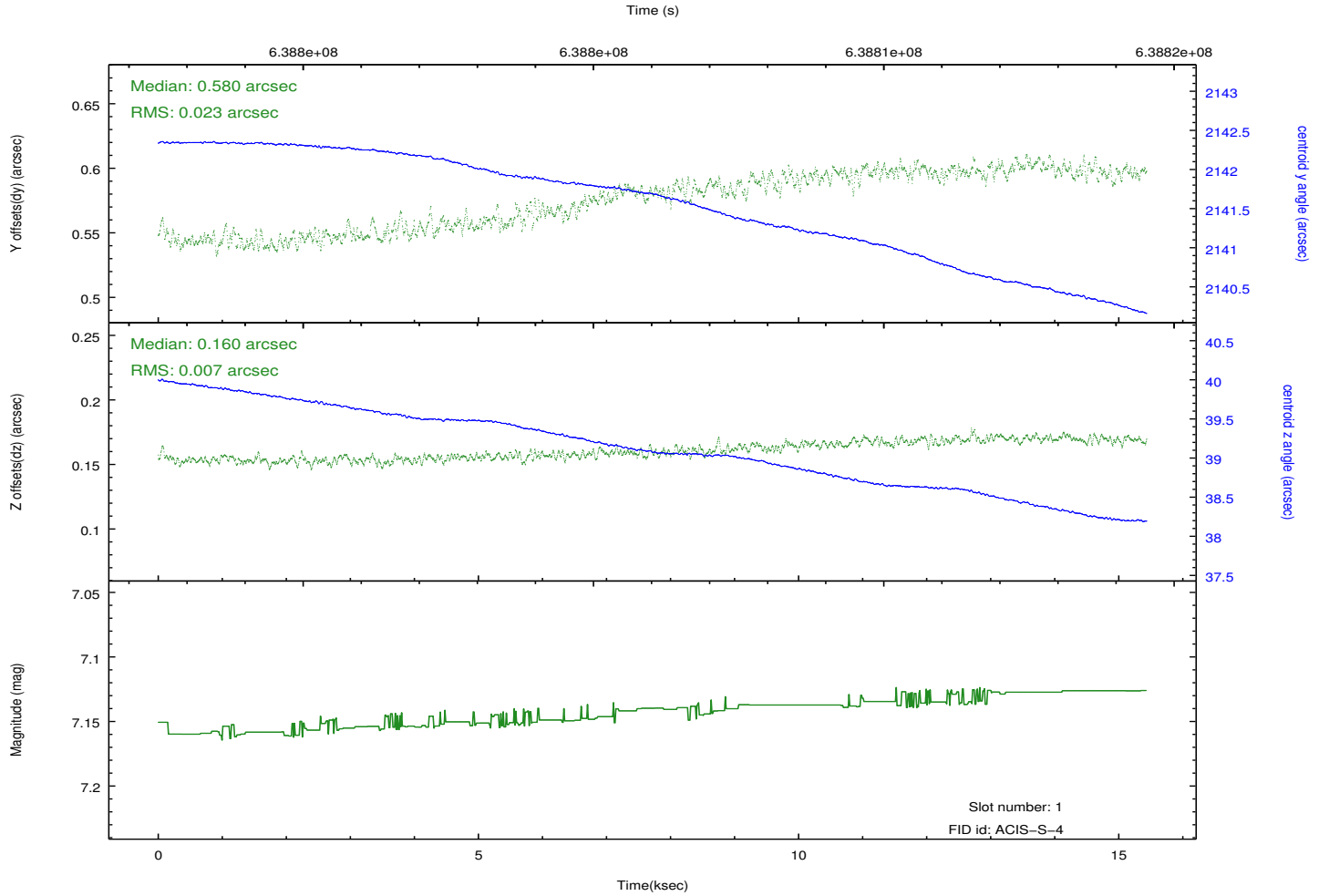
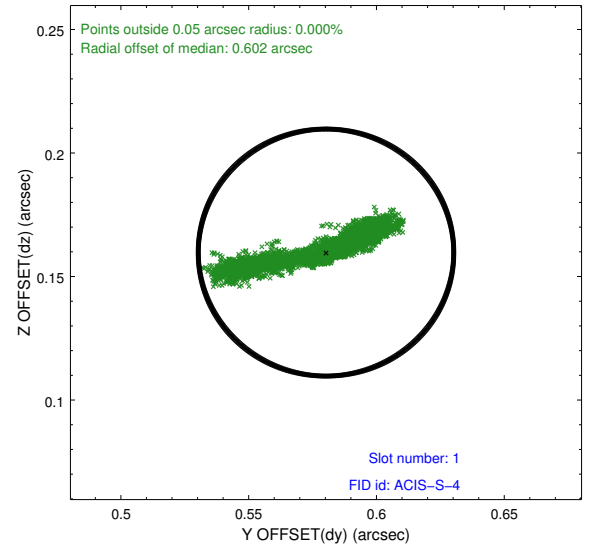
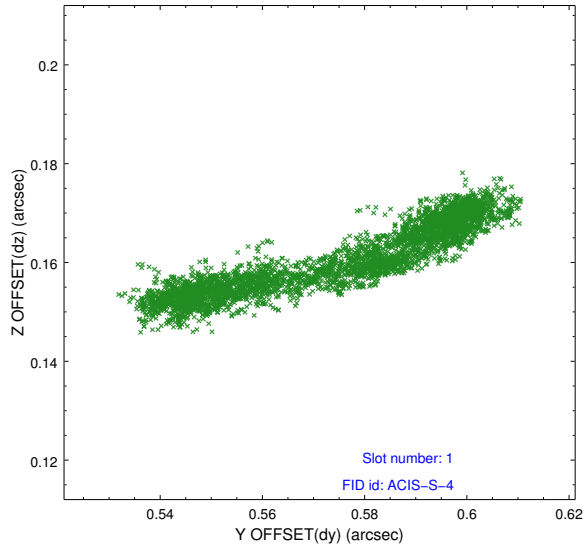


2.5 FID Slots

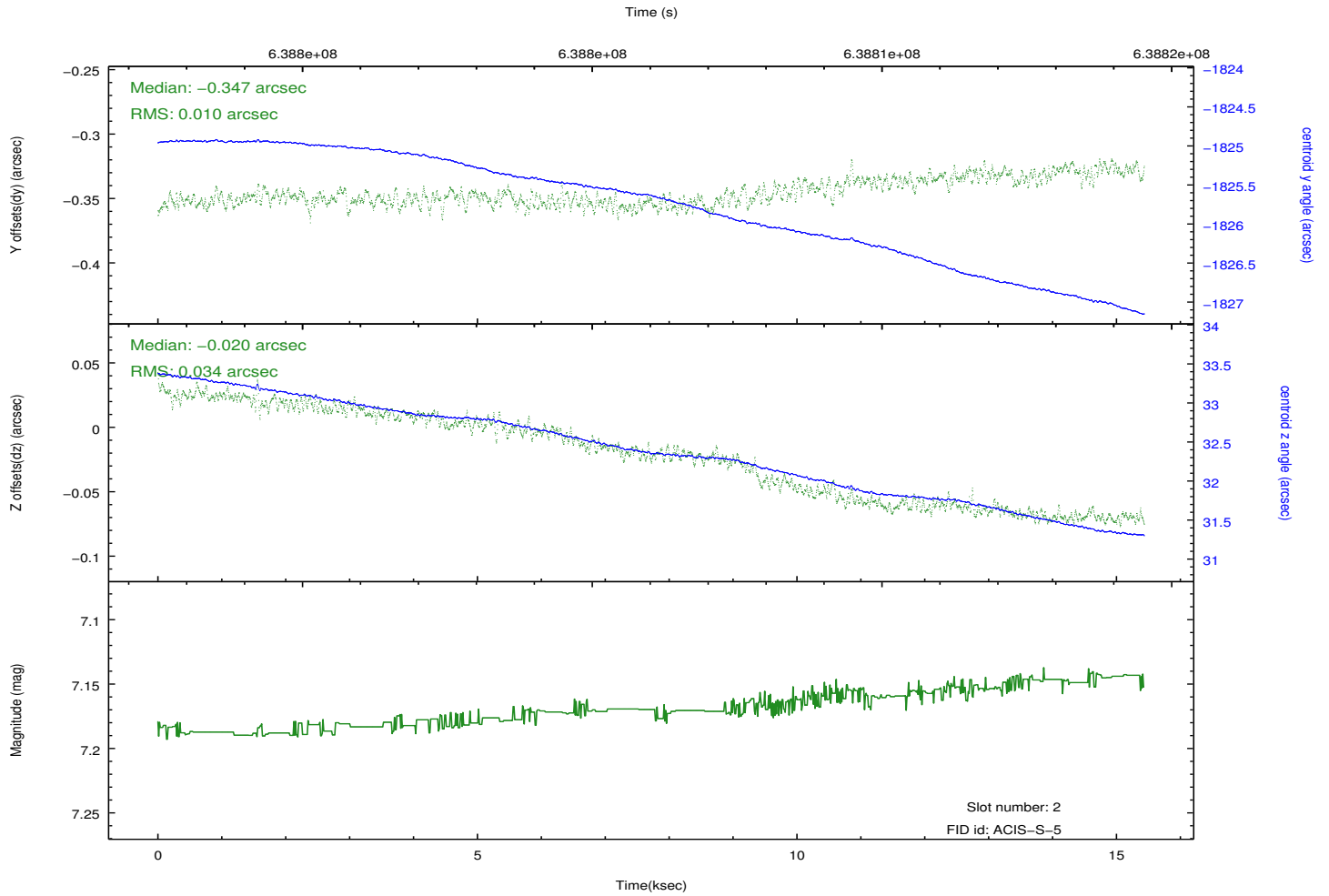
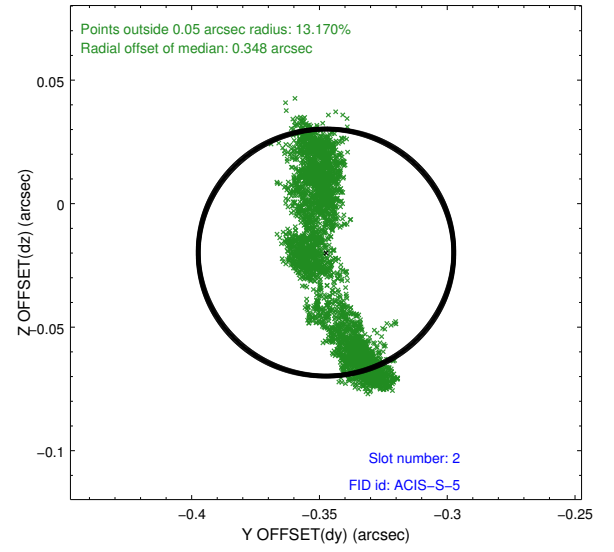
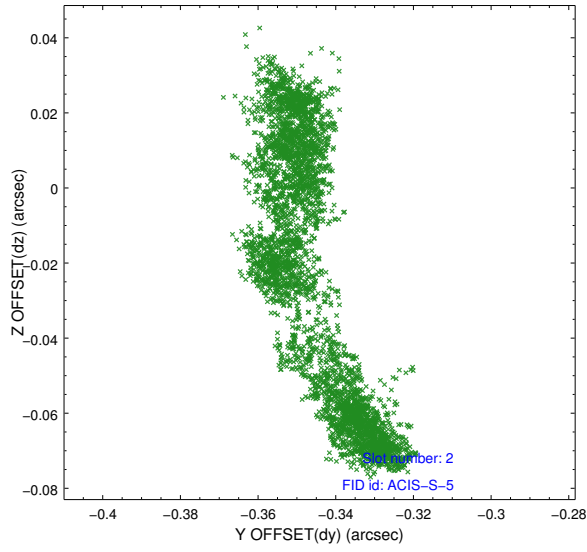
2.5.1 Slot 0



2.5.2 Slot 1

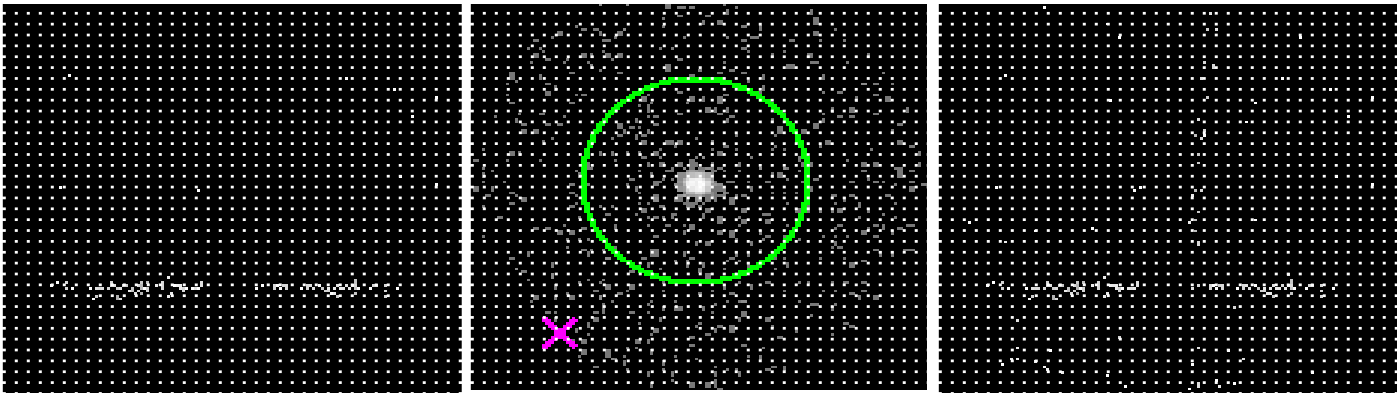


2.5.3 Slot 2



3 Gratings

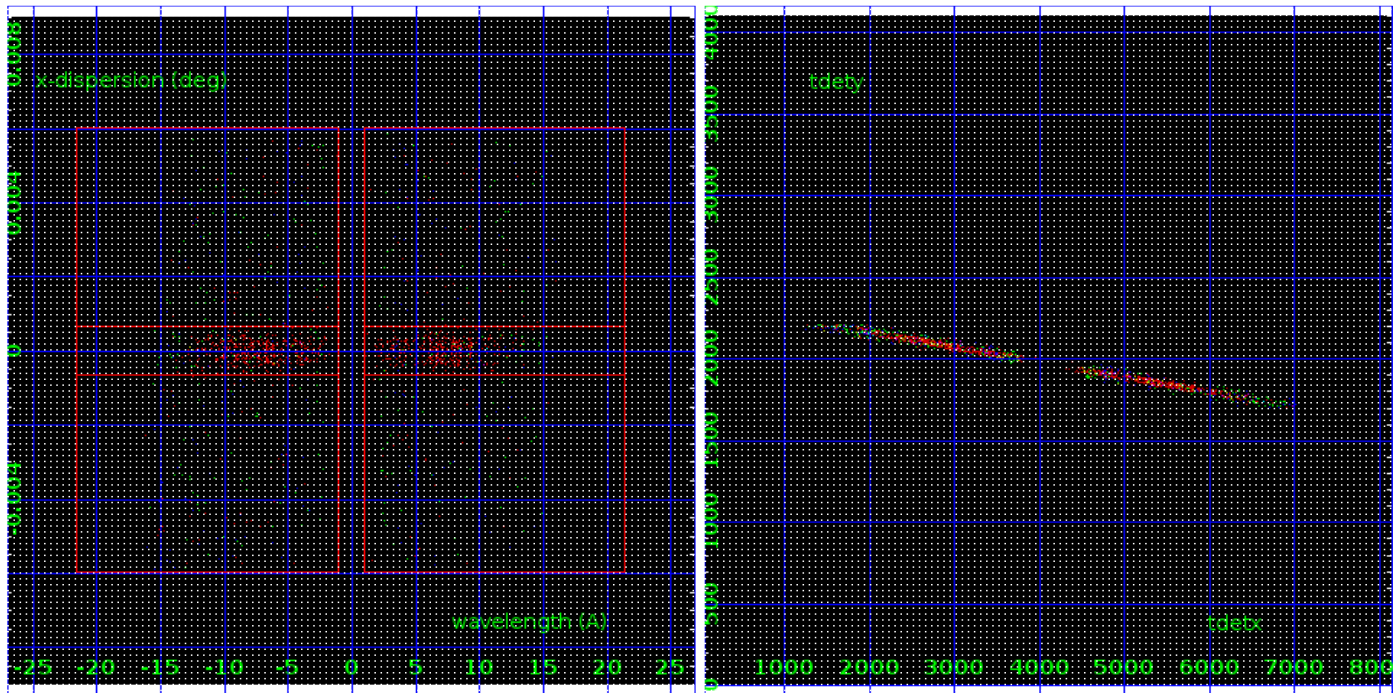
3.1 HEG Arm



HEG Order Sort 123

HEG Zero Order

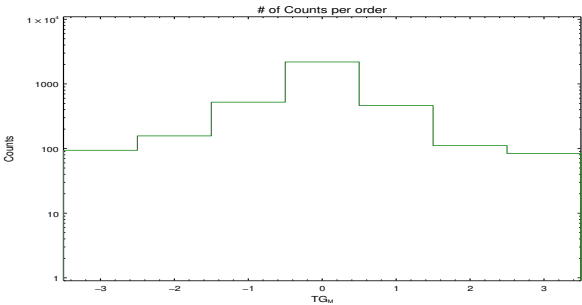
HEG Order Sort ALL

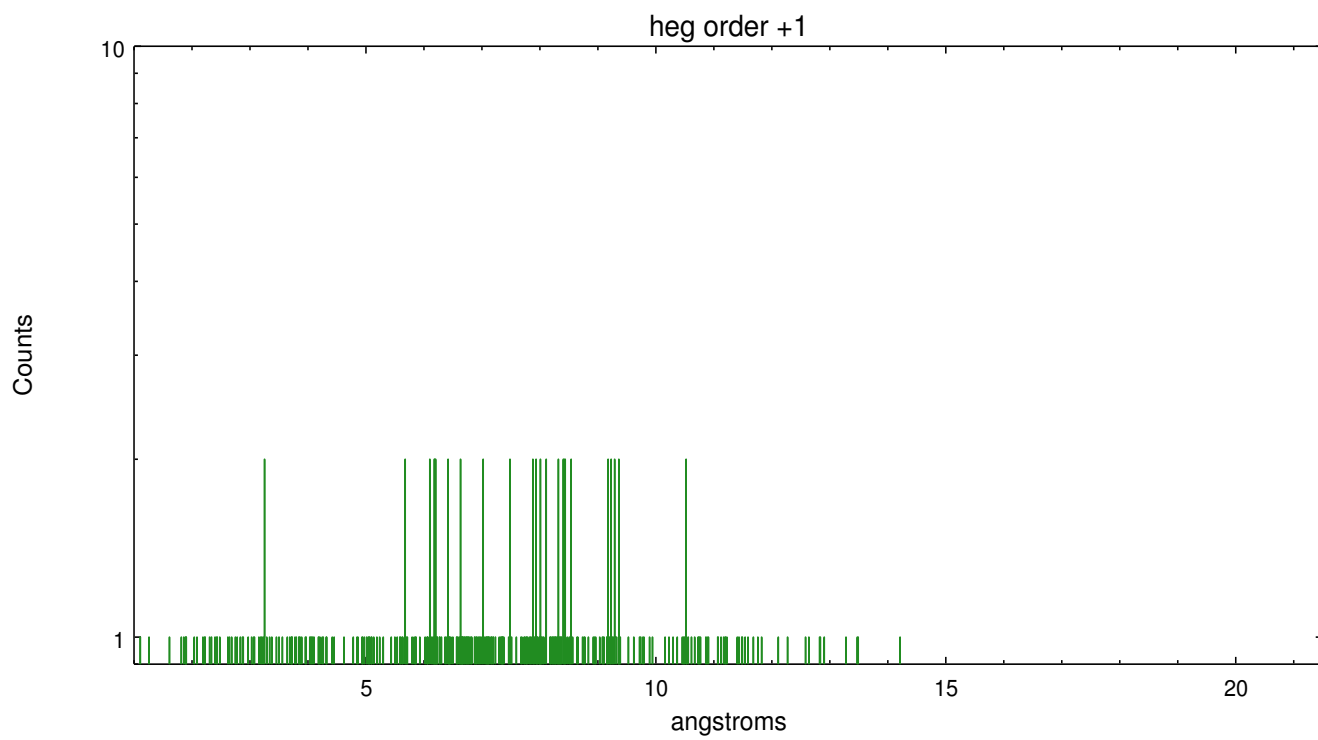
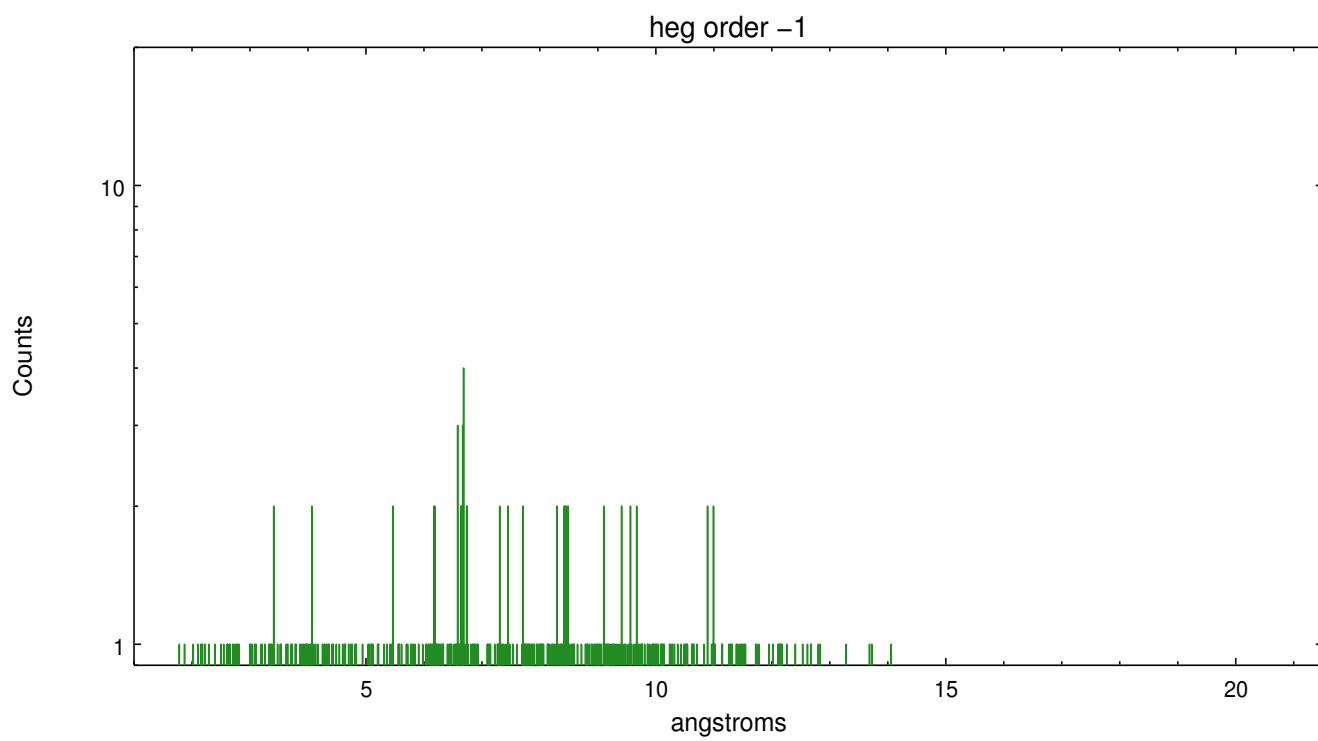


Spot Image HEG

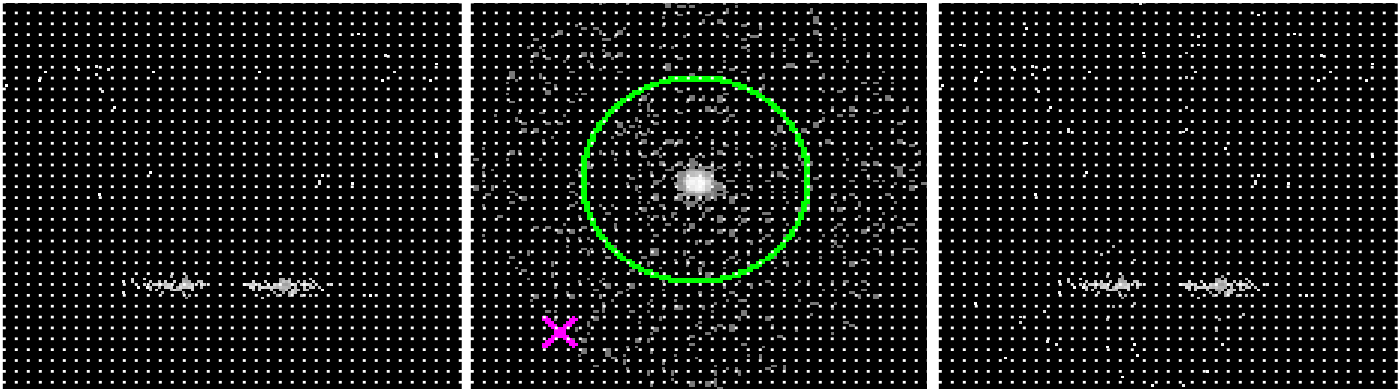
Full Detector HEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	94	157	522	2186	462	111	84





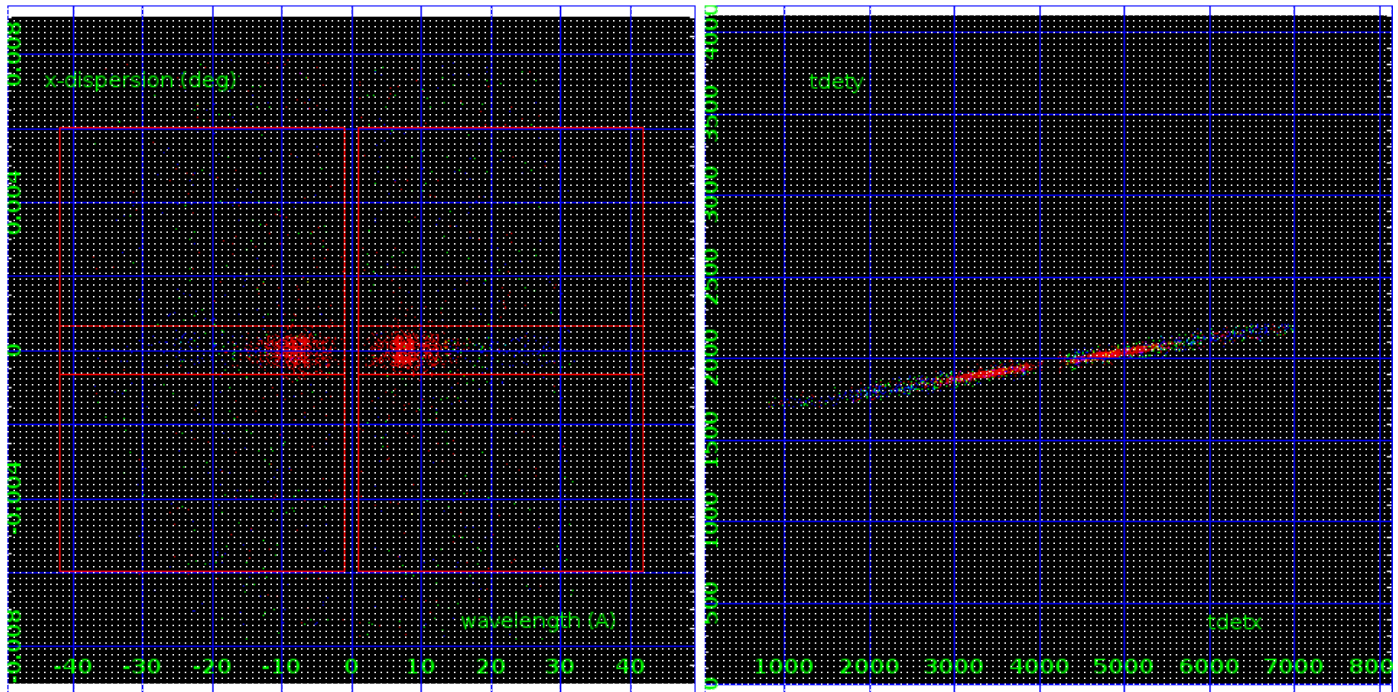
3.2 MEG Arm



MEG Order Sort 123

MEG Zero Order

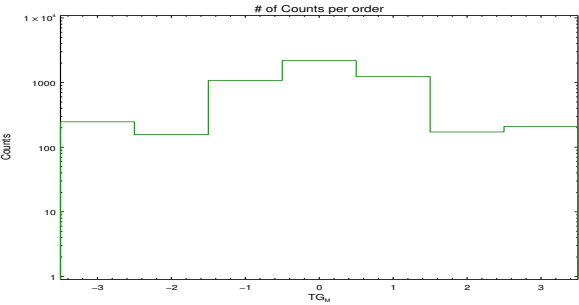
MEG Order Sort ALL

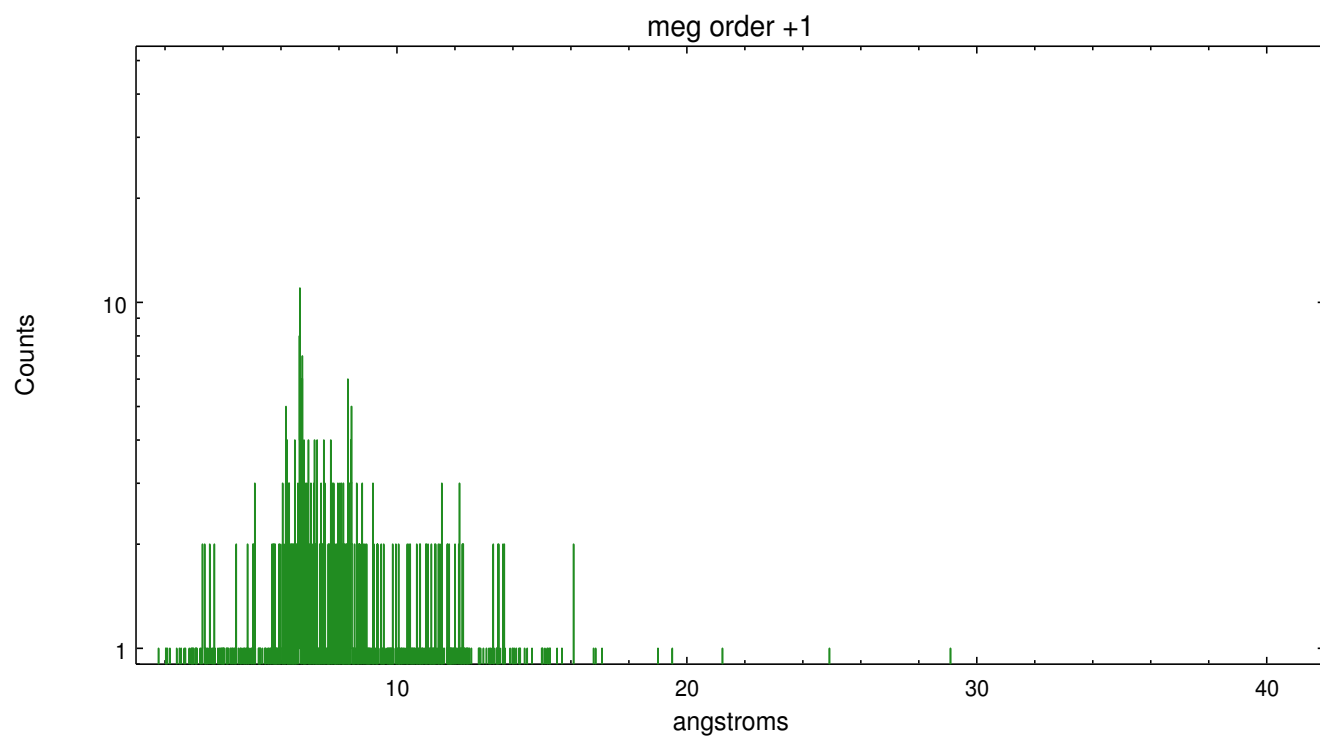
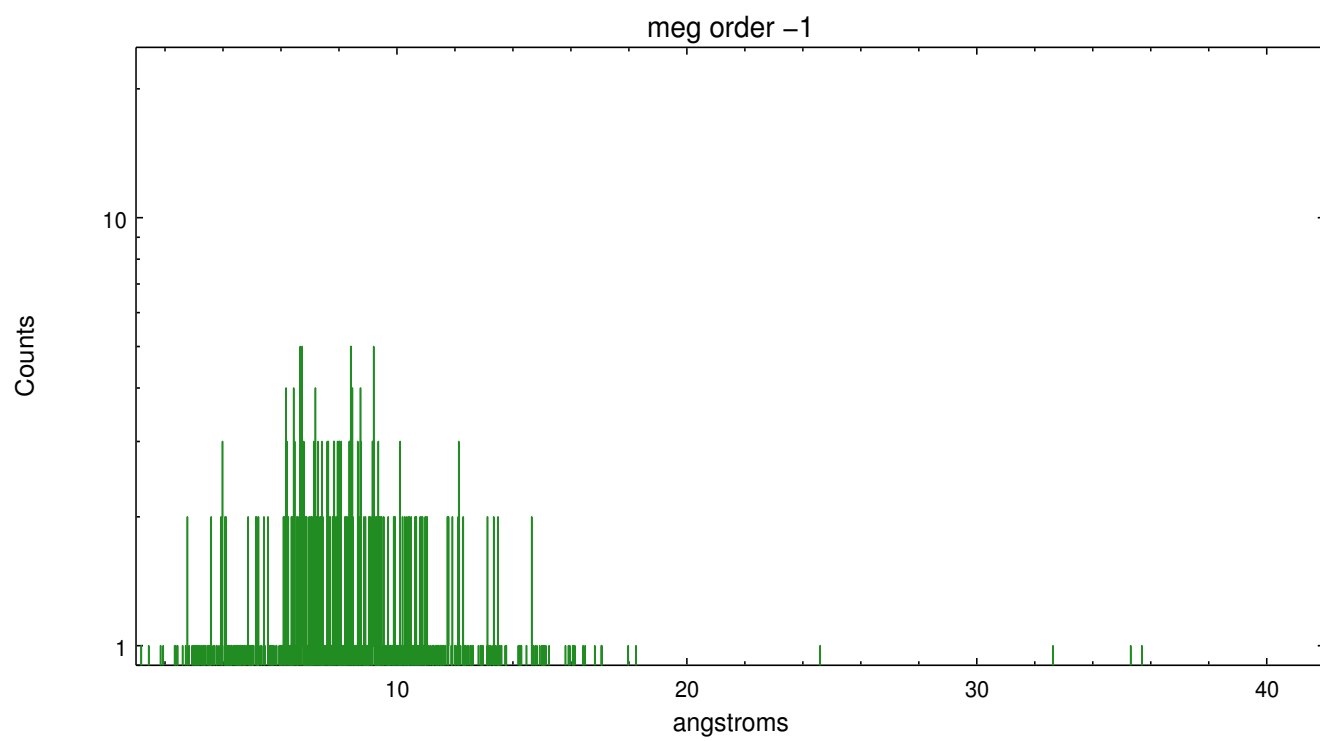


Spot Image MEG

Full Detector MEG

	order	order	order	order	order	order	order
	-3	-2	-1	0	1	2	3
Events	247	157	1079	2186	1236	172	209





A Summary

A.1 Status

V&V Scientist	Joy Nichols
V&V Date (YYYY-MM-DD)	2018.04.02
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	15.371400431156

A.2 Comments

Roll constraint met.===

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. ===WARNING::Zeroth order selected by pipeline tools is well-centered in the supernova remnant but is not at the position(s) of brightest emission. The user may want to select a region or source of interest, then use software tools such as CIAO to specify the coordinates of the zeroth order source of interest before running the tools to resolve the dispersed events.