

V&V Reference Report

L2 ASCDS Version : 10.6

Observation 20323 - L2 Version 1
Chandra X-Ray Center

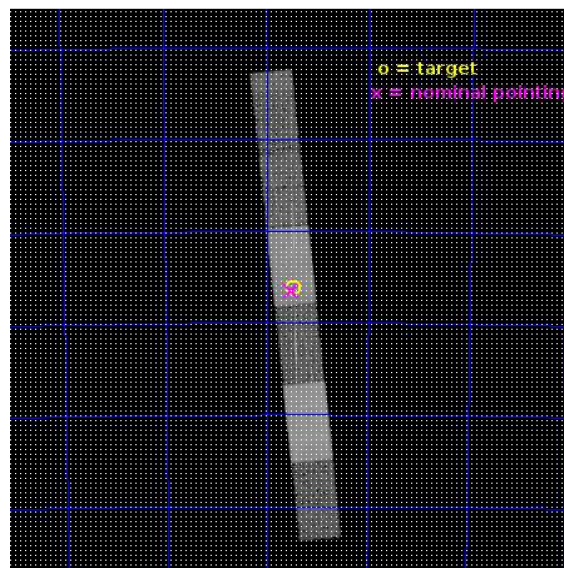
L2 Processing Date : Mar 28 2018

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

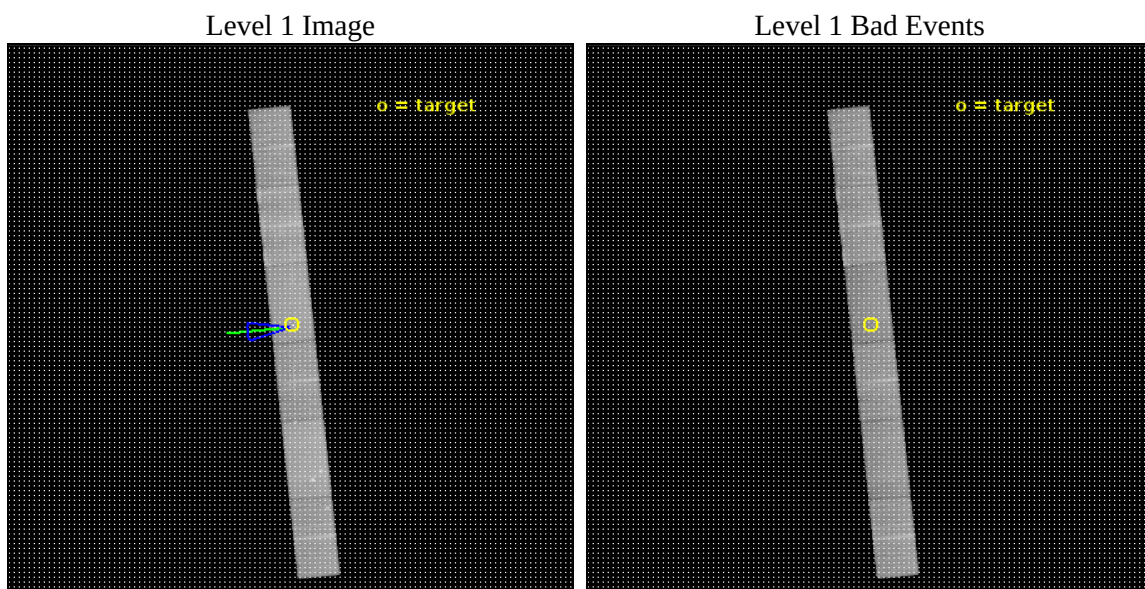
seq_num	503016	Sequence number
obs_id	20323	Observation id
title	High Resolution Spectroscopy of SN 1987A	Proposal title
observer	SANGWOOK PARK	Principal investigator
object	SN 1987A	Source name
dtcycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	83.866667	Observer's specified target RA [deg]
dec_targ	-69.26975	Observer's specified target Dec [deg]
ra_nom	83.878769503342	Nominal RA [deg]
dec_nom	-69.27491588498	Nominal Dec [deg]
roll_nom	264.16792269098	Nominal Roll [deg]
revision	1	Processing version of data
ontime	27749.100778341	Sum of GTIs [s]
livetime	27094.995705544	Livetime [s]
ontime4	27749.100778341	Sum of GTIs [s]
ontime5	27749.100778341	Sum of GTIs [s]
ontime6	27749.100778341	Sum of GTIs [s]
ontime7	27749.100778341	Sum of GTIs [s]
ontime8	27749.100778341	Sum of GTIs [s]
ontime9	27749.100778341	Sum of GTIs [s]
l2events	187516	Number of level 2 events



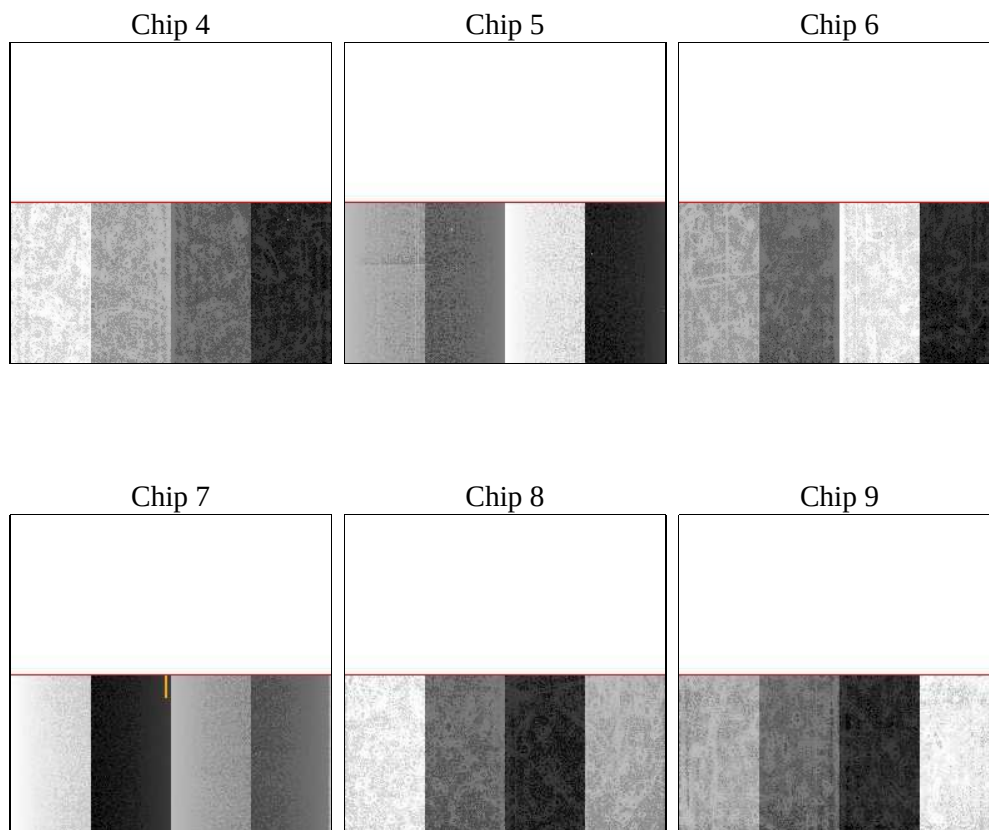
2 OBI

2.1 OBI

2.1.1 Images



2.1.2 Bias



2.1.3 Parameters

obi_num	0	Obi number	sched_exp_time	27705.796000	[s] Scheduled observation exposure time
ascdsver	10.6	Processing system revision	ontime	27749.100778341	Sum of GTIs [s]
caldsver	4.7.8	 	ontime4	27749.100778341	Sum of GTIs [s]
date	2018-03-28T15:46:19	Date and time of file creation	ontime5	27749.100778341	Sum of GTIs [s]
revision	1	Processing version of data	ontime6	27749.100778341	Sum of GTIs [s]
			ontime7	27749.100778341	Sum of GTIs [s]
			ontime8	27749.100778341	Sum of GTIs [s]
			ontime9	27749.100778341	Sum of GTIs [s]
			l1events	785845	Number of level 1 events
			tgmethod	TGDETECT	Method used to create src1a file
			src1a_pos	(4128.68, 4124.02)	src1a sky pixel position

2.1.4 Events

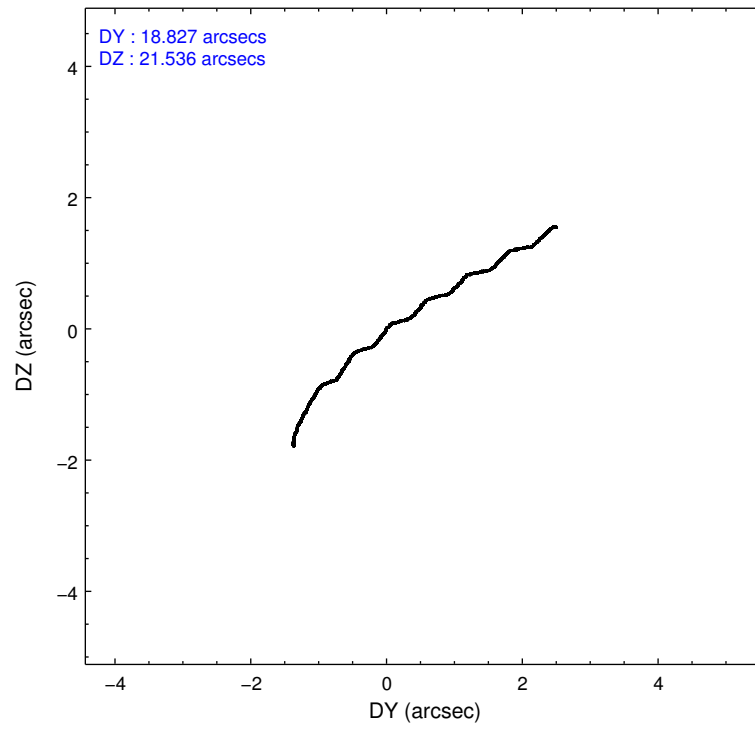
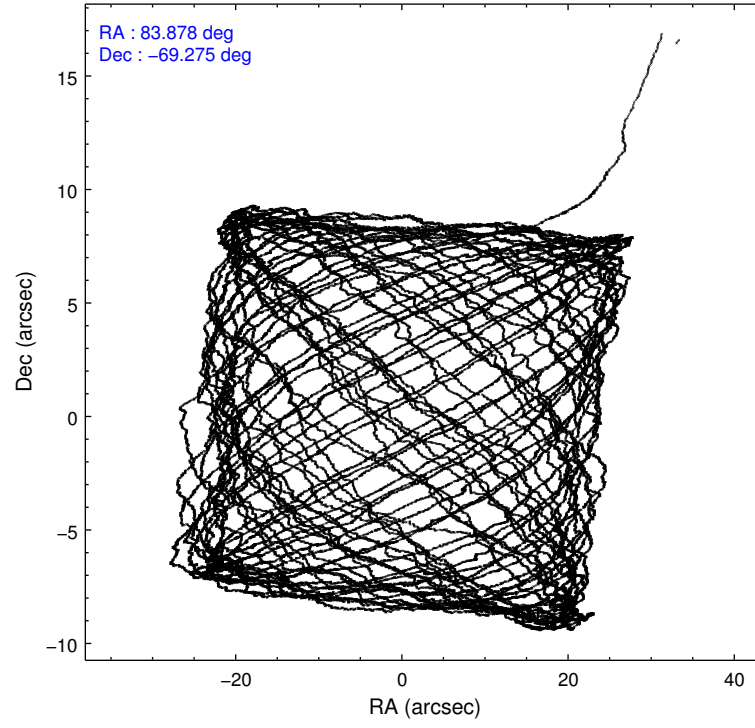
	ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9		ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
level 1 events	120743	166153	109408	135910	145657	107974	grade 0 events	6417	8702	5992	6339	12053	4394
rejected events	105653	83772	94536	71883	105011	94656		5%	5%	5%	4%	8%	4%
rejected %	87%	50%	86%	52%	72%	87%	grade 1 events	71	556	54	206	96	37
								0%	0%	0%	0%	0%	0%
							grade 2 events	3368	24216	3017	13338	9153	3059
								2%	14%	2%	9%	6%	2%
							grade 3 events	1478	3539	1530	6081	4311	1531
								1%	2%	1%	4%	2%	1%
							grade 4 events	1401	3421	1483	5652	3985	1502
								1%	2%	1%	4%	2%	1%
							grade 5 events	4529	11885	4575	12891	7033	4988
								3%	7%	4%	9%	4%	4%
							grade 6 events	2427	42507	2851	32621	11148	2832
								2%	25%	2%	24%	7%	2%
							grade 7 events	101052	71327	89906	58782	97878	89631
								83%	42%	82%	43%	67%	83%

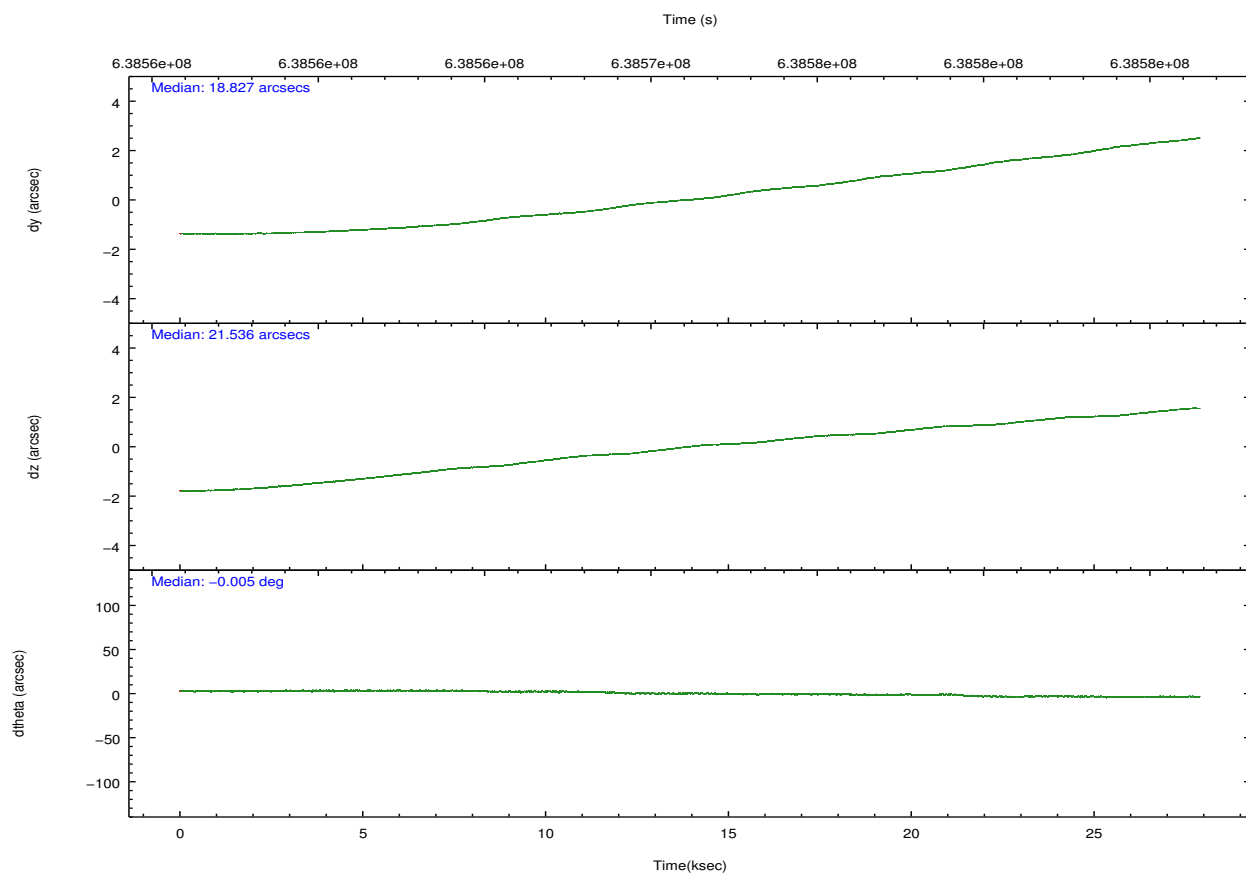
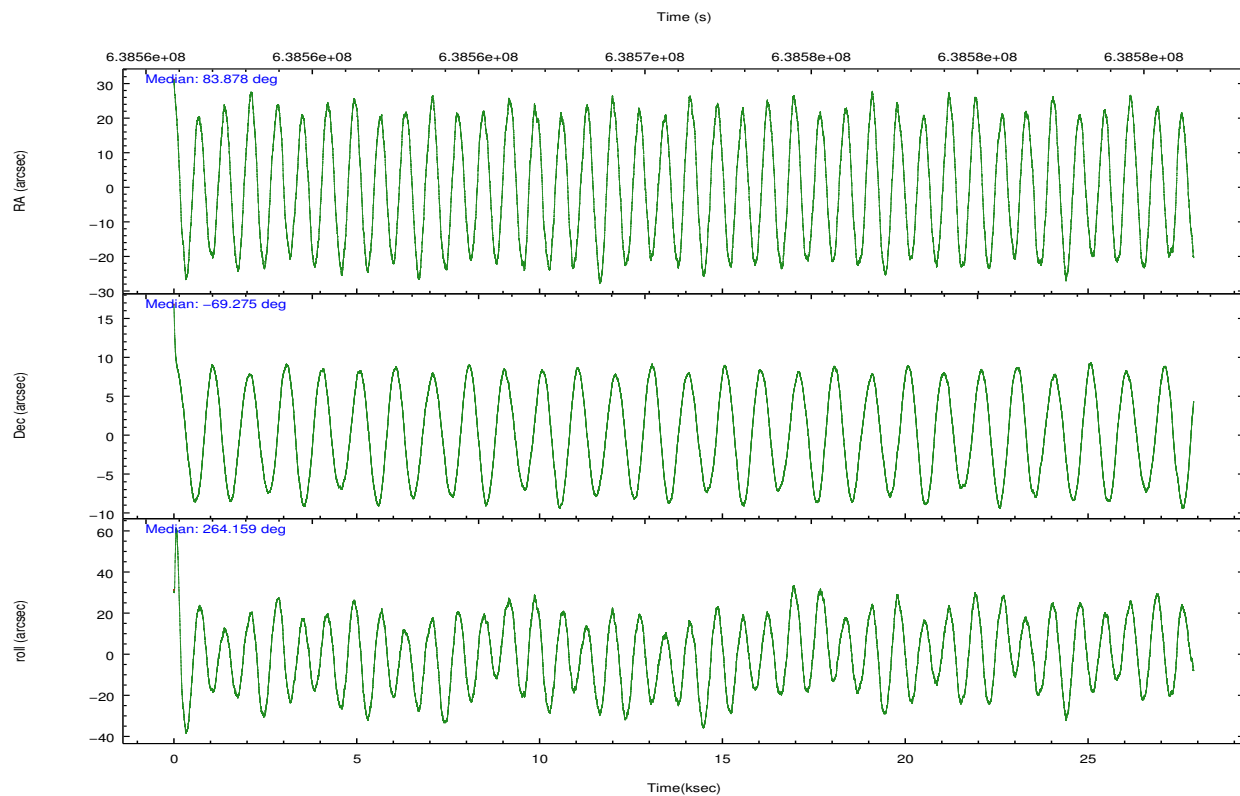
2.2 Compared Parameters

Parameter	Planned	Actual
Instrument	ACIS	ACIS
Detector	ACIS-456789	ACIS-456789
Grating	HETG	HETG
Data mode	FAINT	FAINT
Observation mode	POINTING	POINTING
[deg] Pointing RA	83.846111	83.87876950334228
[deg] Pointing Dec	-69.250031	-69.27491588497955
[deg] Pointing Roll	263.980770	264.1679226909794
[deg] Roll angle	264.000000	264.000000
[deg] Roll tolerance	12.000000	12.000000
Roll constraint allows 180D rotation	N	N
[s] Window start time (MET)	636940869.184000	636940869.184000
[s] Window stop time (MET)	639100869.184000	639100869.184000
[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)	638557414.184000	638556454.71322
Observation start date	2018-03-27T17:02:25	2018-03-27T16:47:34
[s] Observation end time (MET)	638585120.184000	638585987.0149601
Observation end date	2018-03-28T00:44:11	2018-03-28T00:59:47
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	Y
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	0	0
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



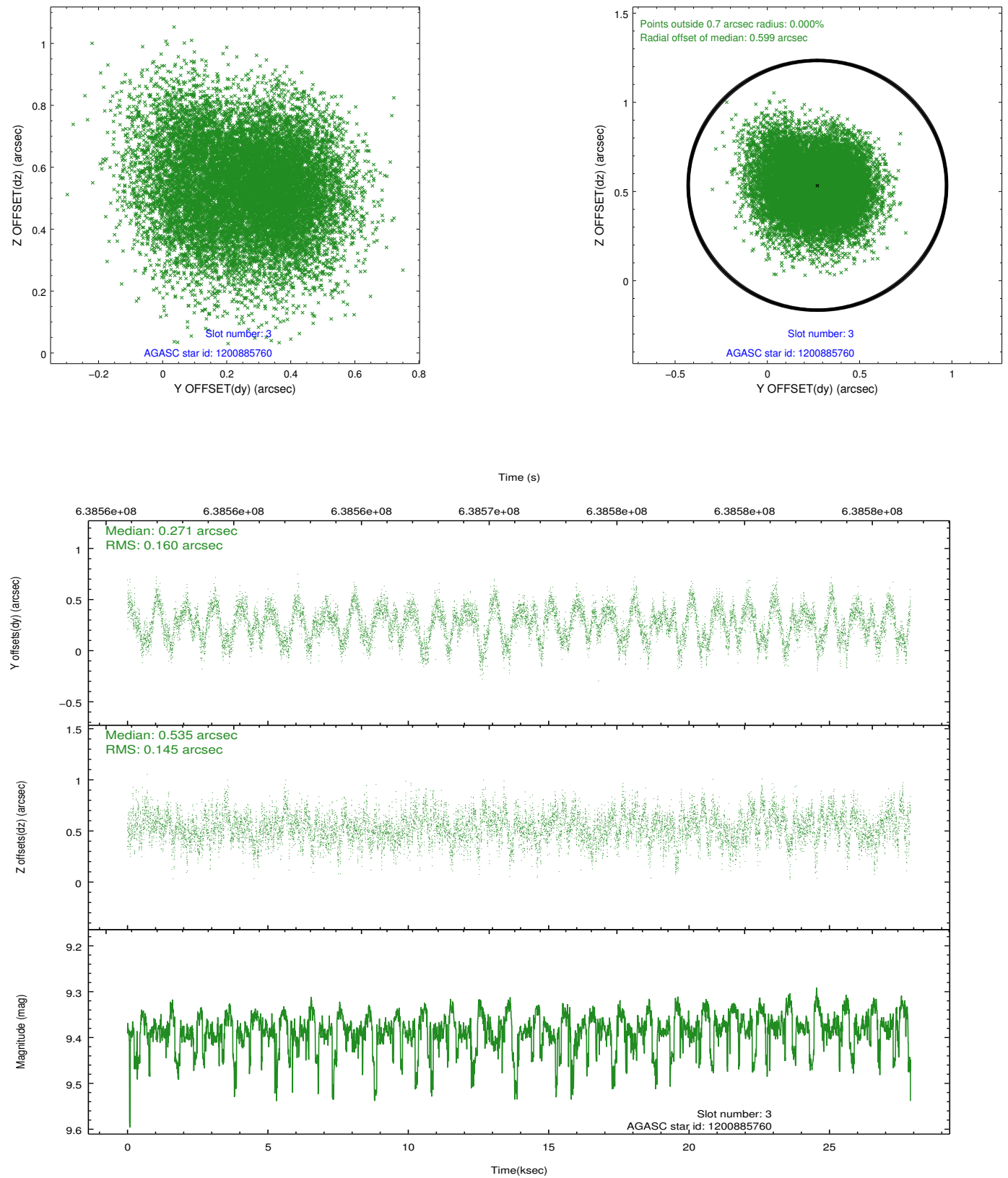


Slot Statistics

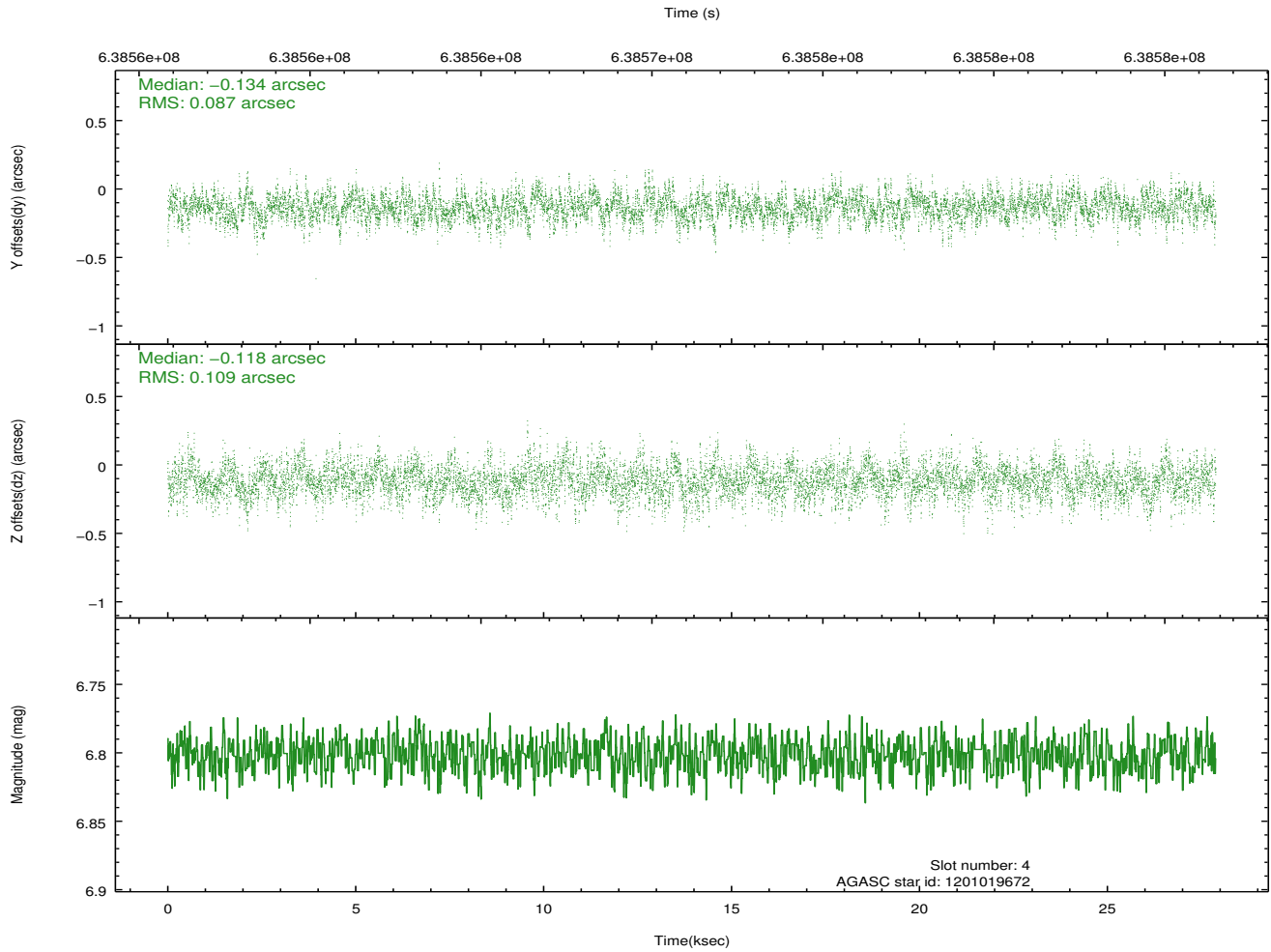
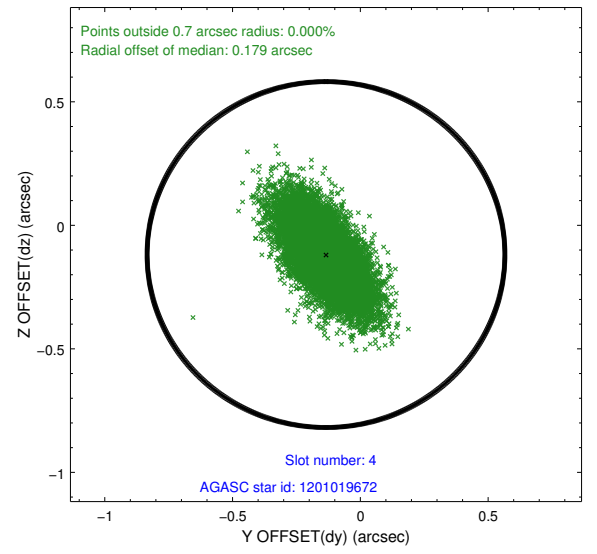
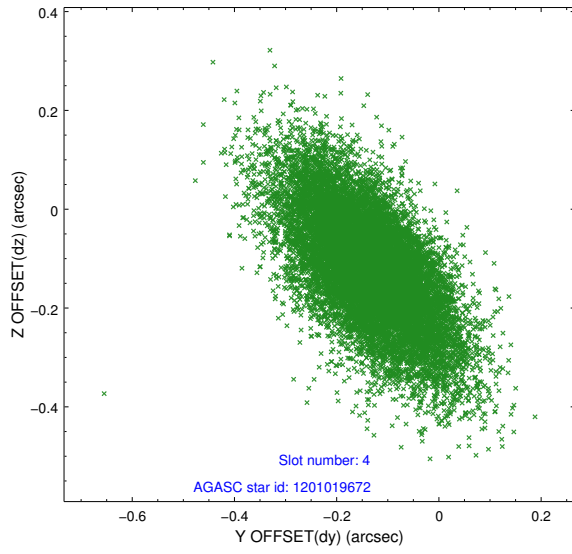
slot	status	used	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID		ACIS-S-2	7.08	6803	-0.235	-0.120	0.071	0.082	0.000000	0.000000	-771.86	-1869.79
1	FID		ACIS-S-4	7.19	6802	0.529	0.156	0.044	0.061	0.000000	0.000000	2142.13	38.91
2	FID		ACIS-S-5	7.23	6803	-0.318	-0.018	0.058	0.066	0.000000	0.000000	-1824.69	32.44
3	GUIDE	used	1200885760	9.38	13576	0.271	0.535	0.233	0.366	83.723637	-68.777667	-1673.45	-336.07
4	GUIDE	used	1201019672	6.80	13602	-0.134	-0.118	0.141	0.258	85.312192	-68.770187	-1895.89	1721.85
5	GUIDE	used	1201020040	8.55	13597	0.118	-0.286	0.144	0.259	85.379163	-68.879396	-1510.80	1840.35
6	GUIDE	used	1201410616	9.29	13579	-0.020	0.150	0.289	0.488	82.516808	-69.784406	2104.78	-1439.78
7	GUIDE	used	1201540776	9.52	13305	-0.221	-0.251	0.284	0.465	85.107945	-69.858480	2030.48	1787.35

2.4 Star Slots

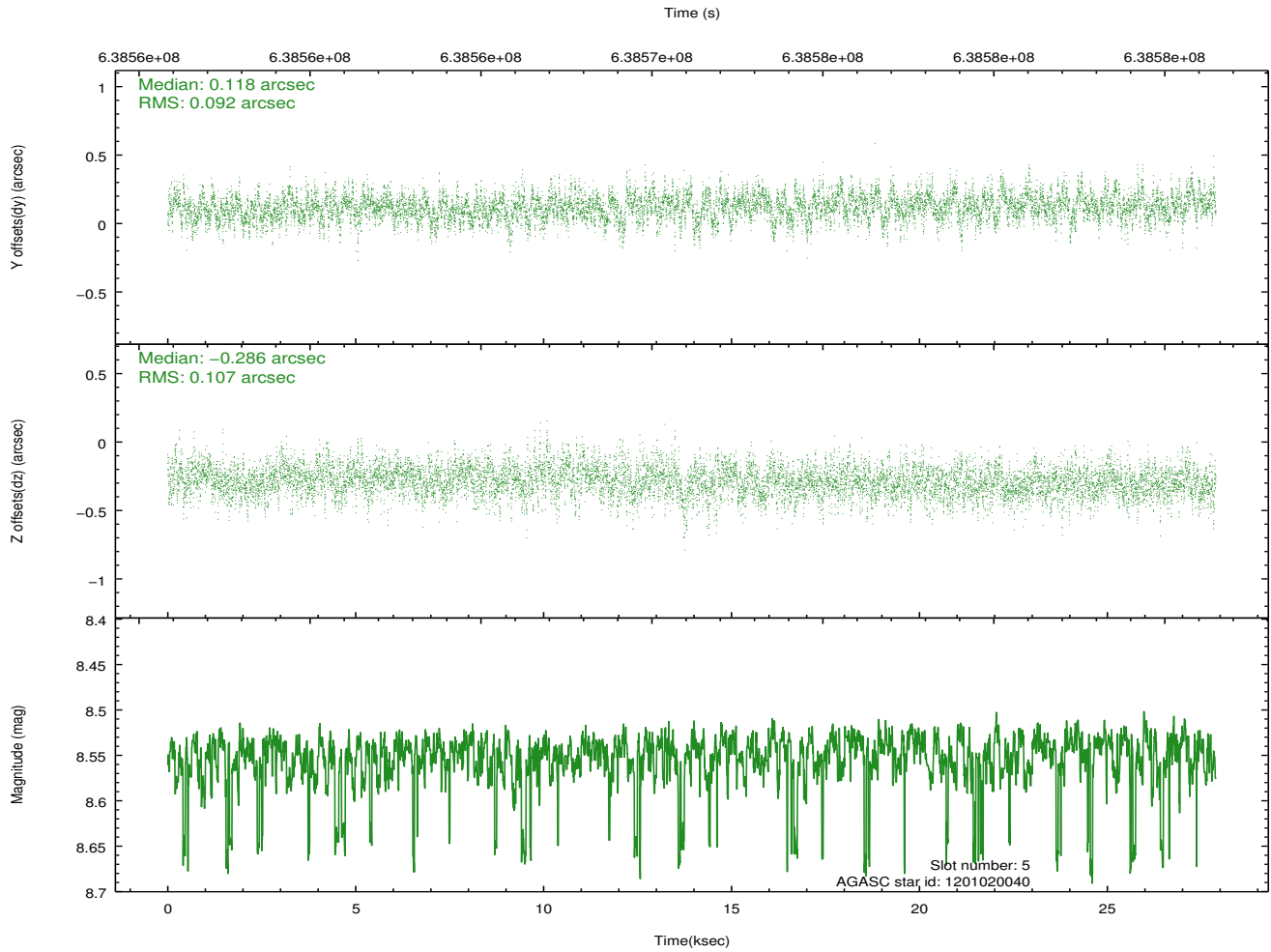
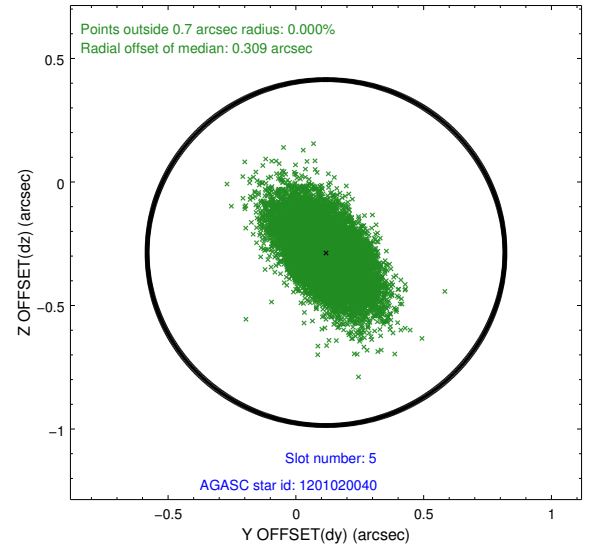
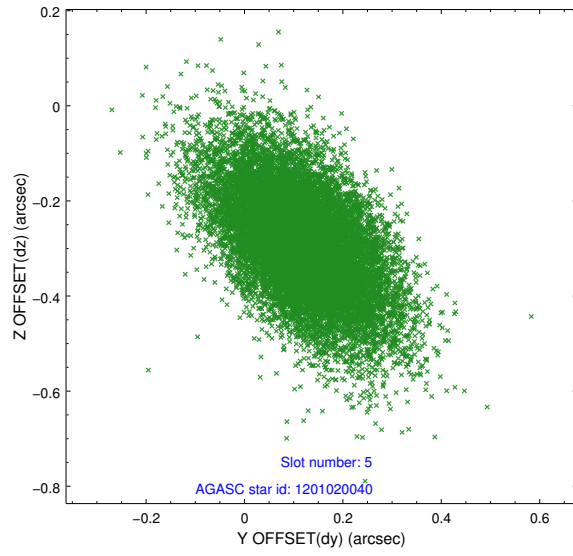
2.4.1 Slot 3



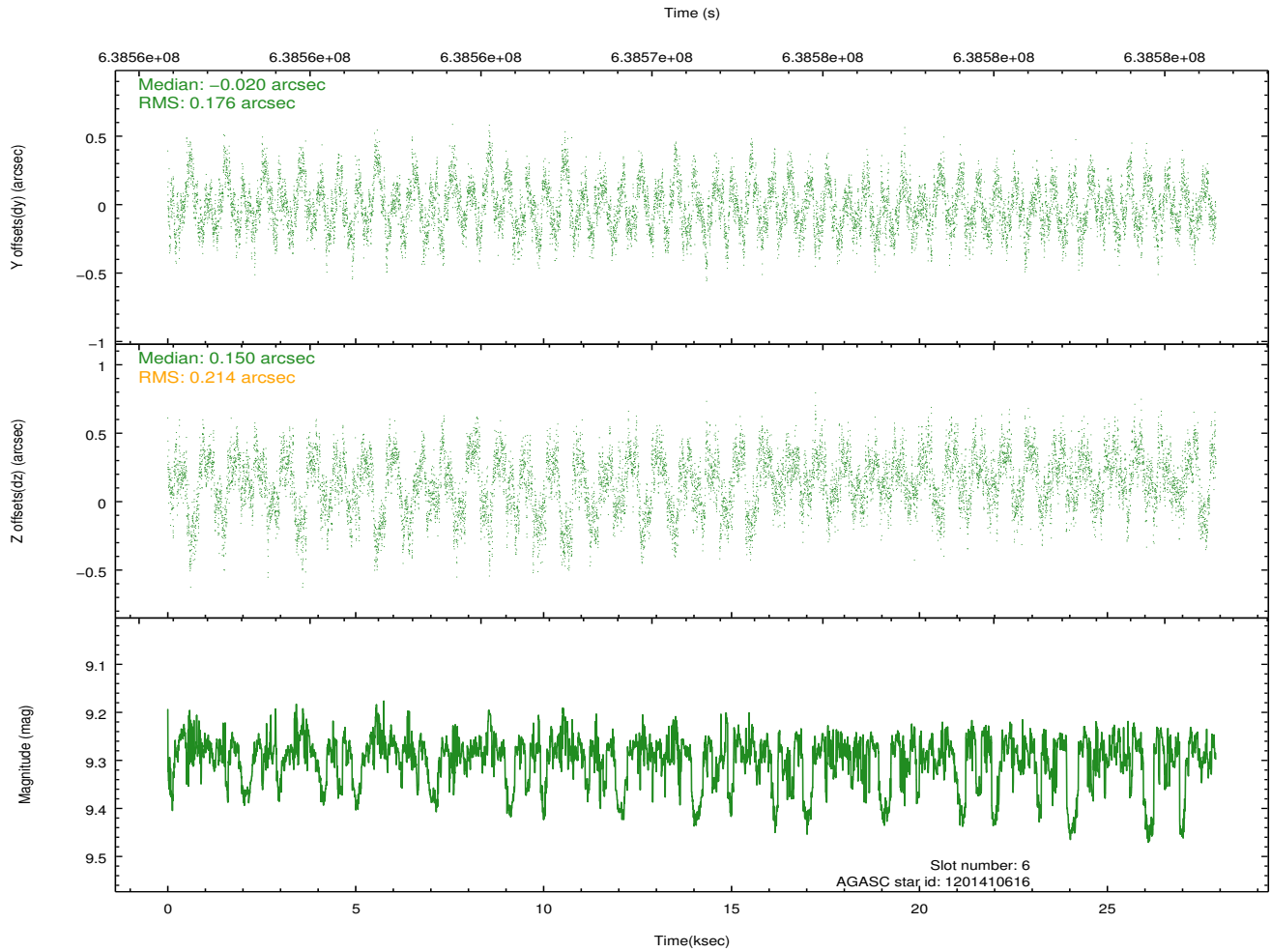
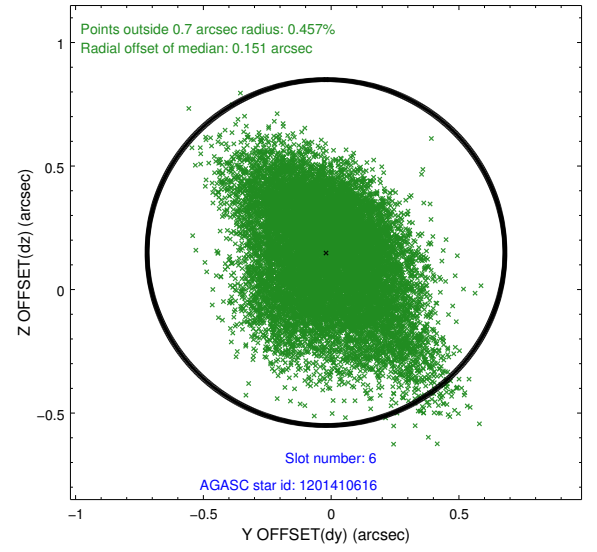
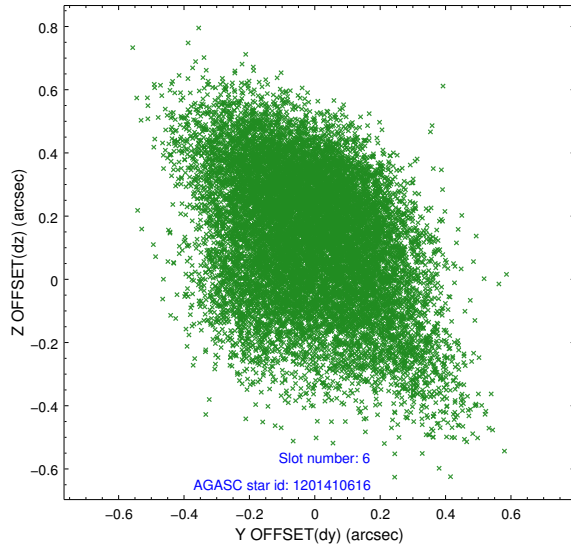
2.4.2 Slot 4



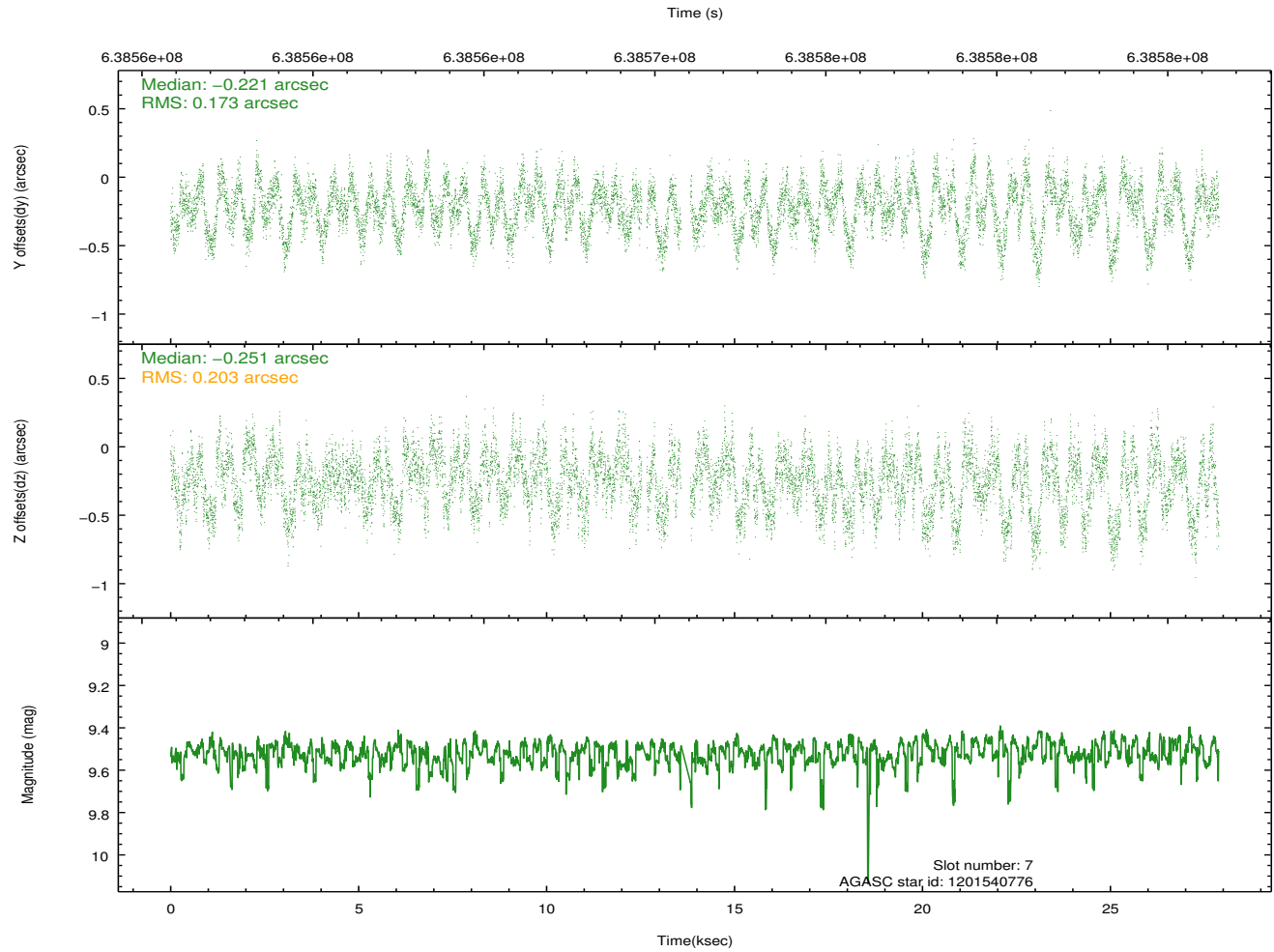
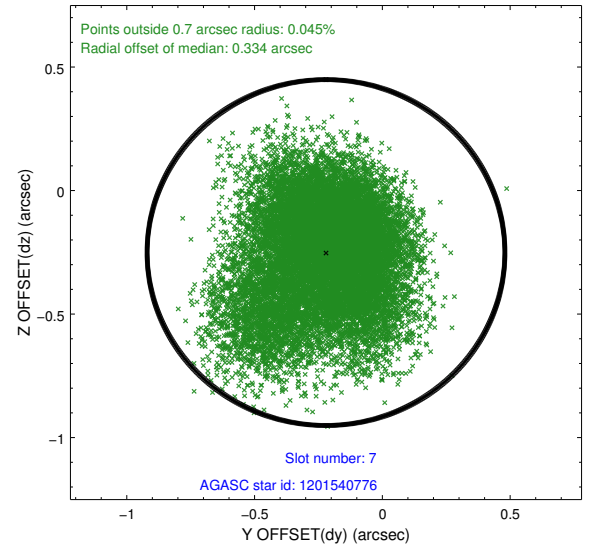
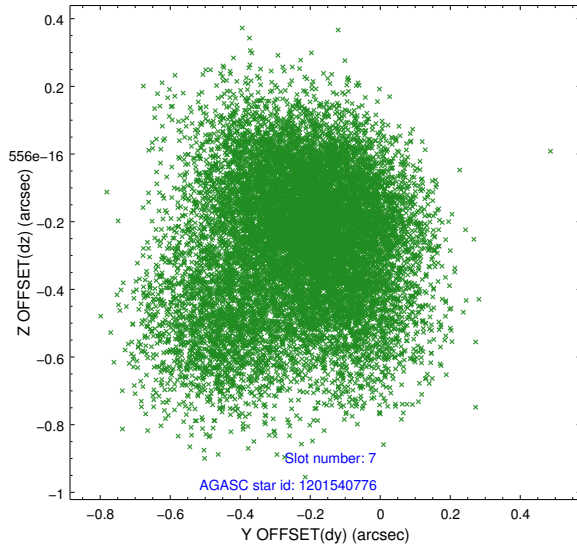
2.4.3 Slot 5



2.4.4 Slot 6

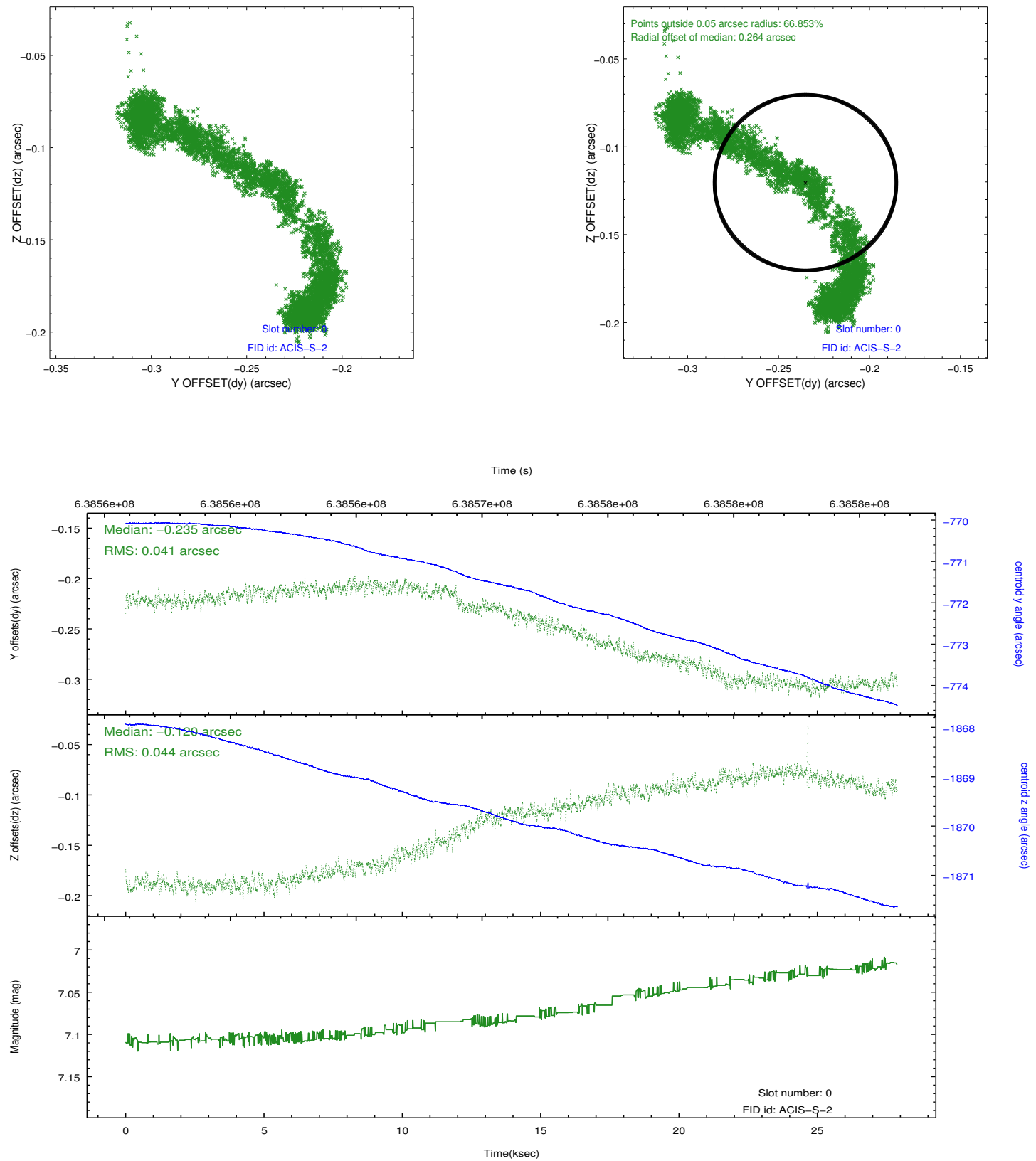


2.4.5 Slot 7

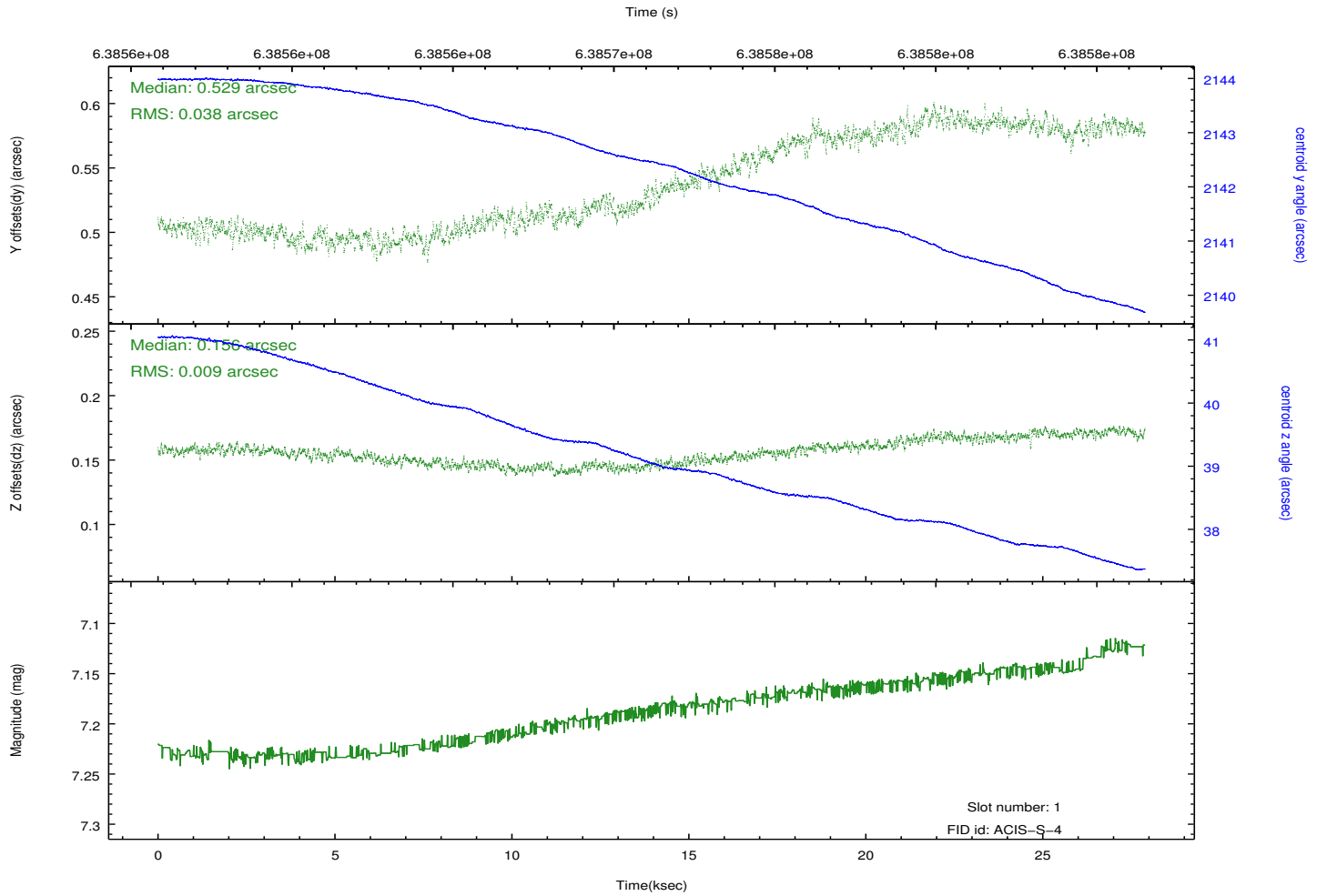
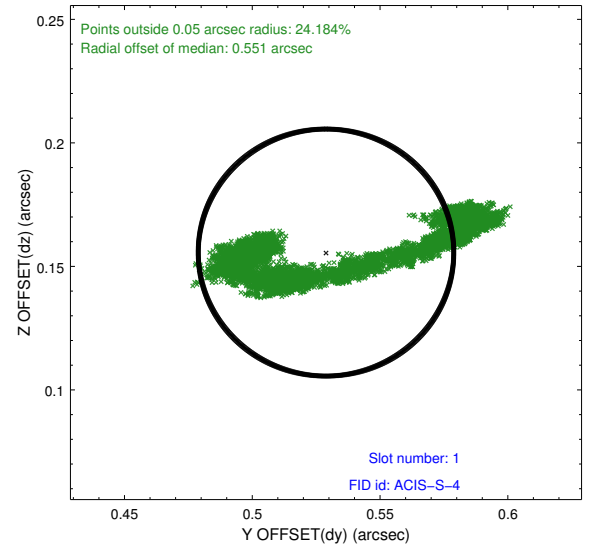
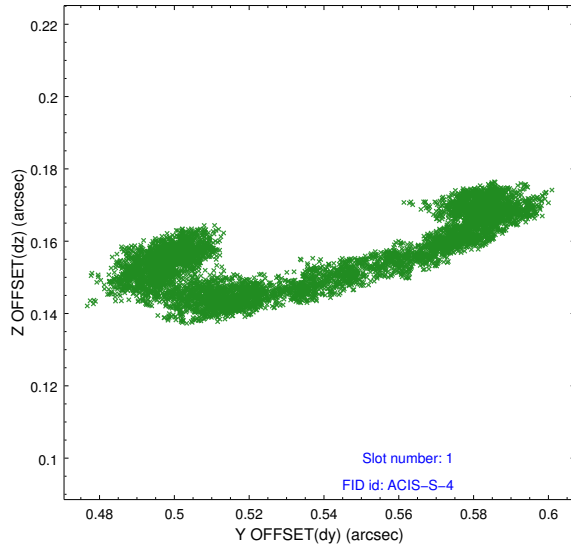


2.5 FID Slots

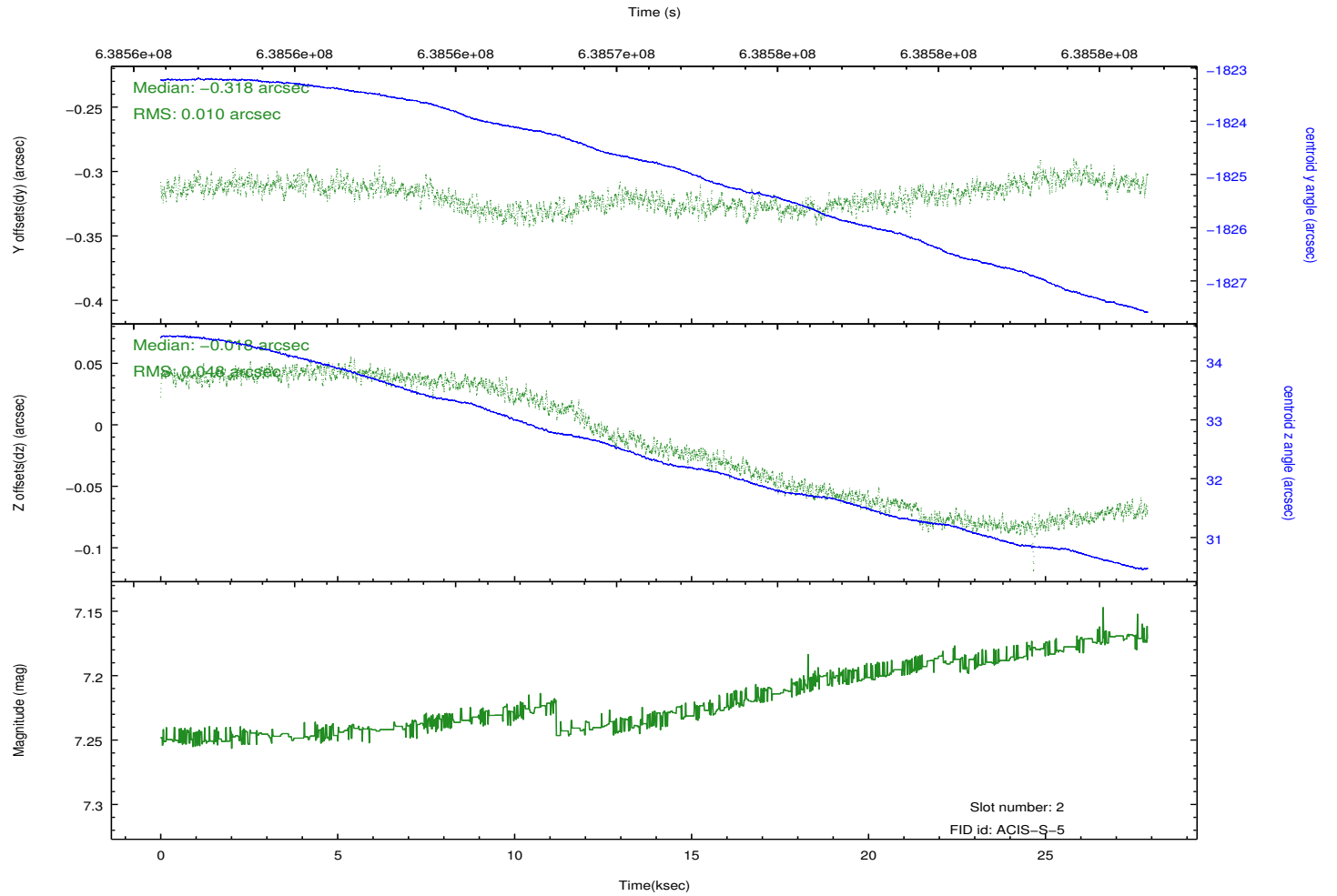
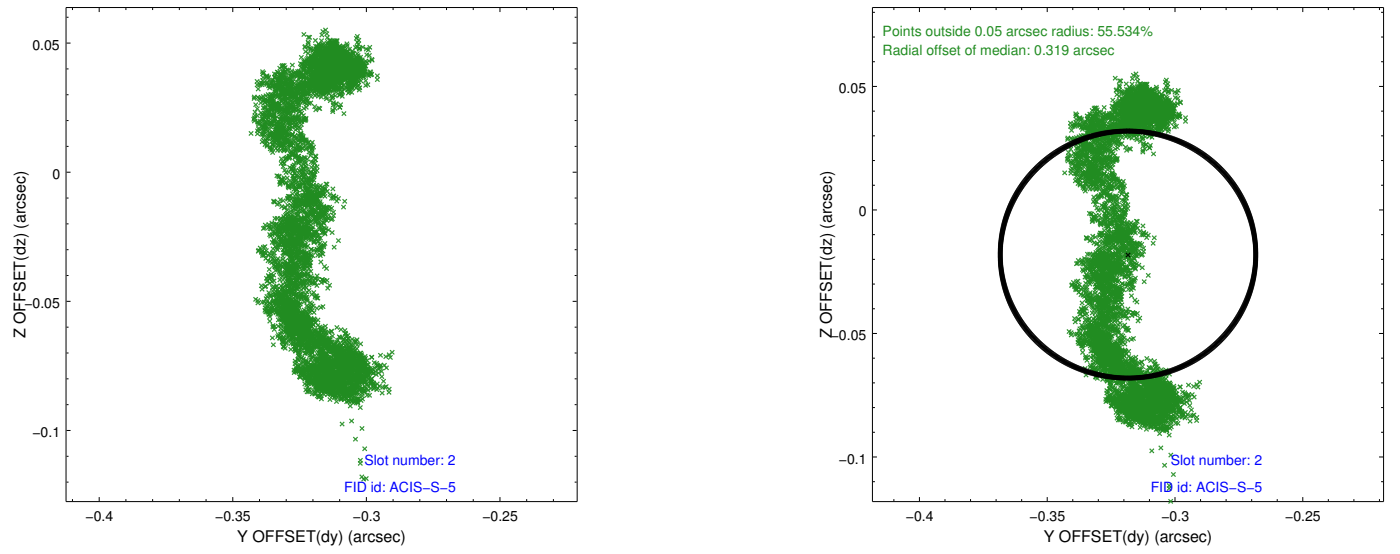
2.5.1 Slot 0



2.5.2 Slot 1

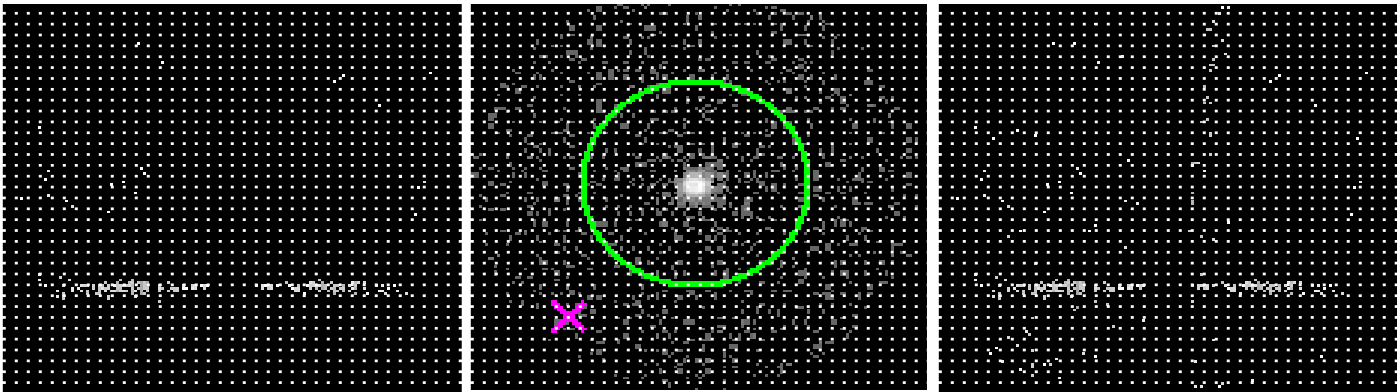


2.5.3 Slot 2



3 Gratings

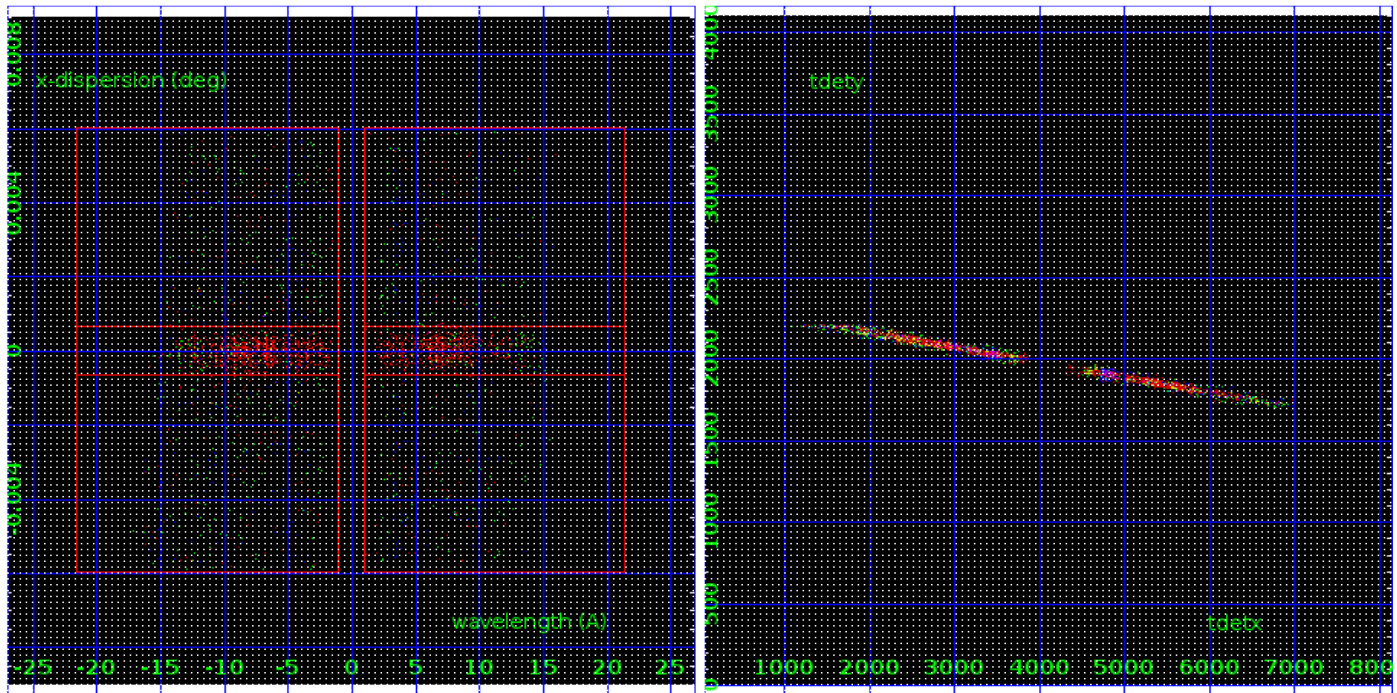
3.1 HEG Arm



HEG Order Sort 123

HEG Zero Order

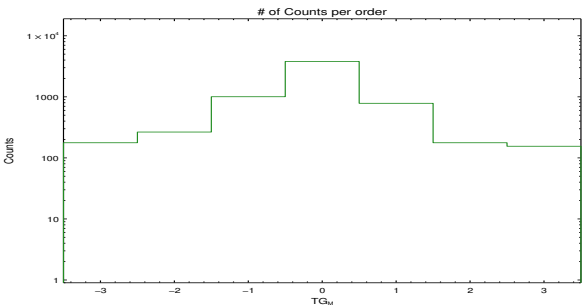
HEG Order Sort ALL

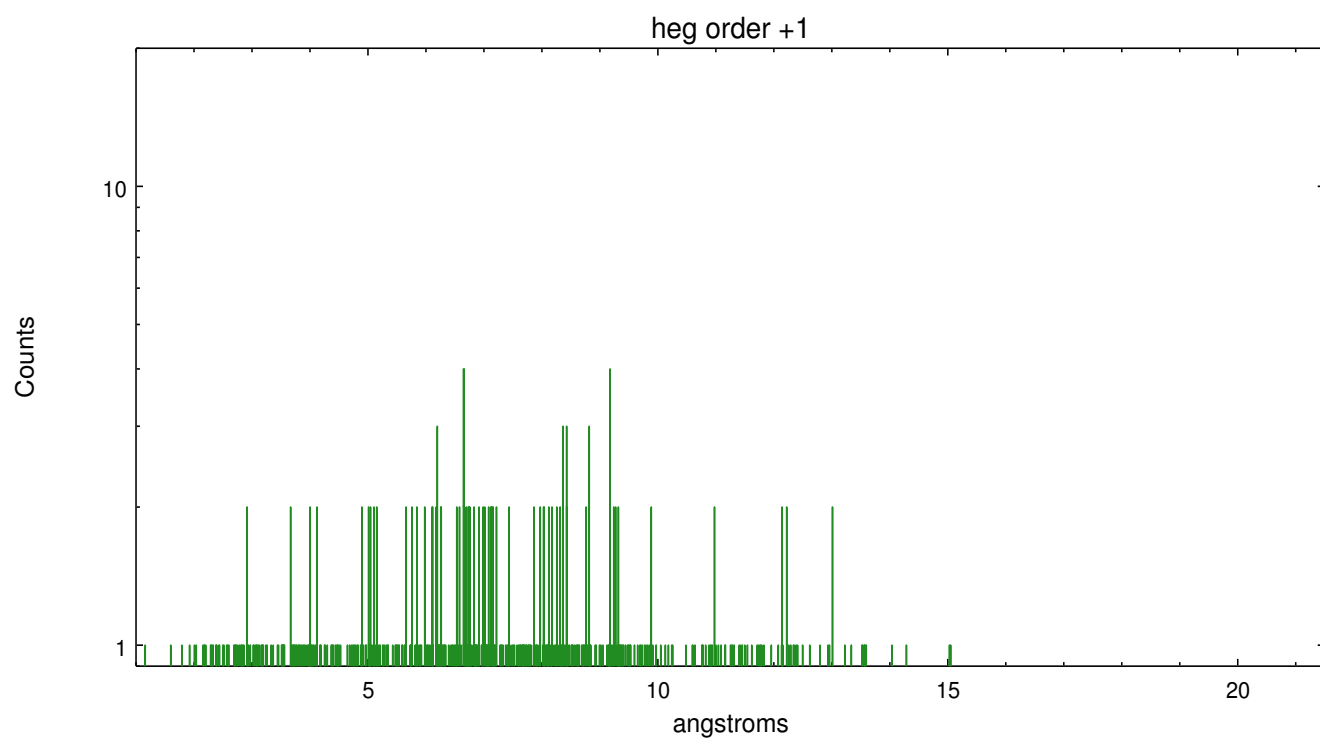
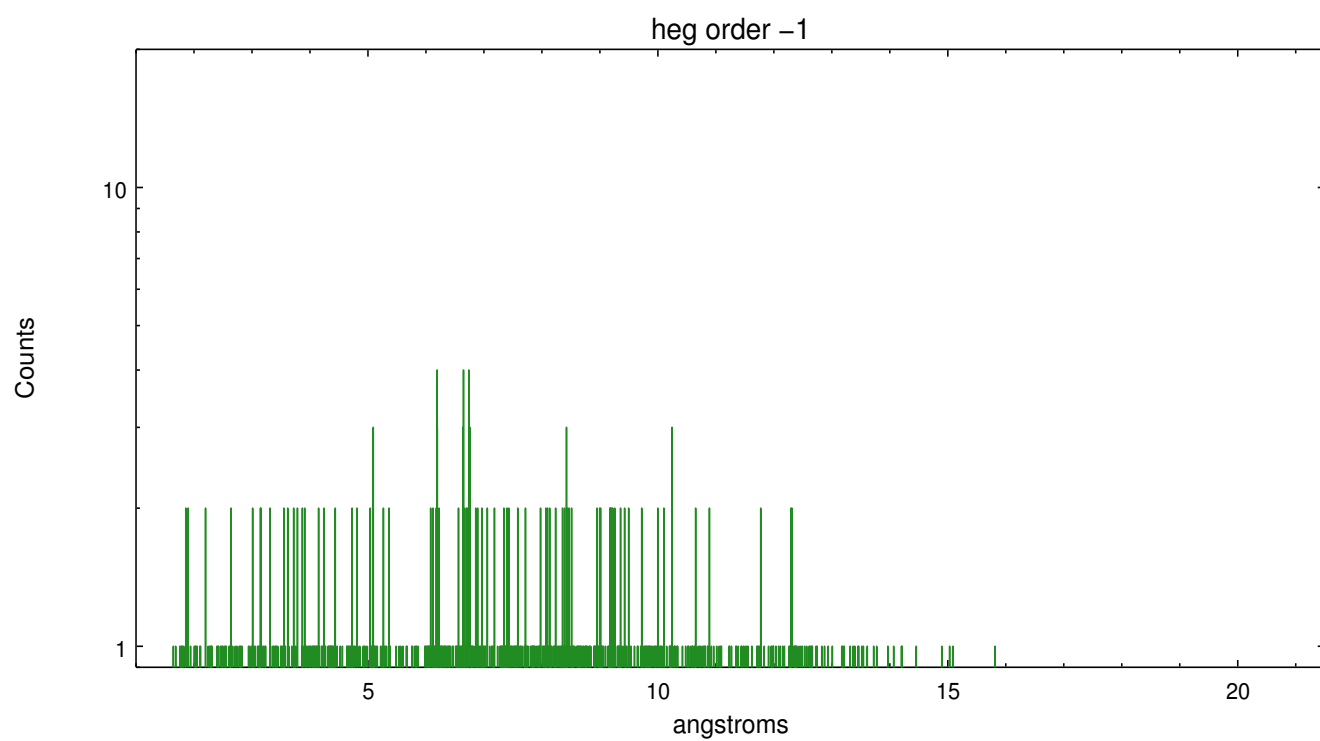


Spot Image HEG

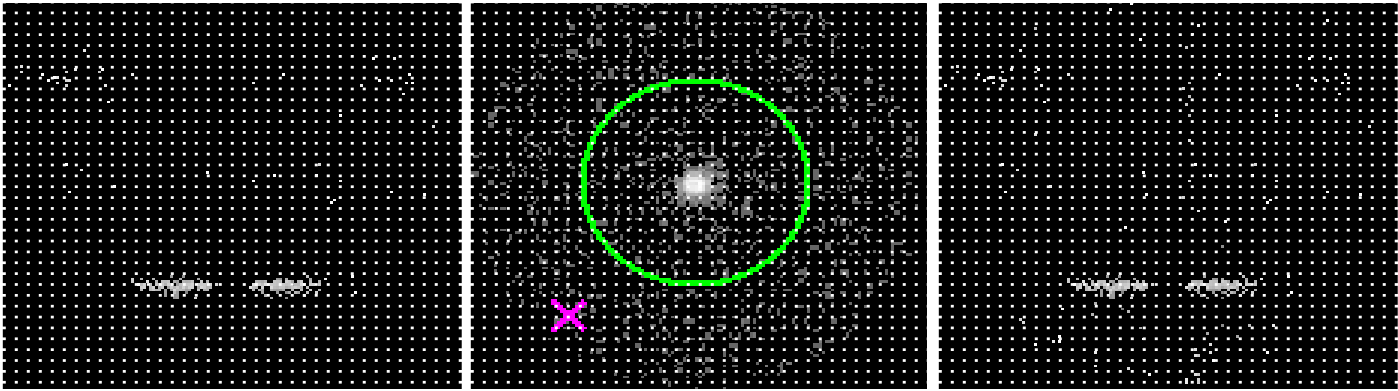
Full Detector HEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	177	265	1004	3796	783	177	155





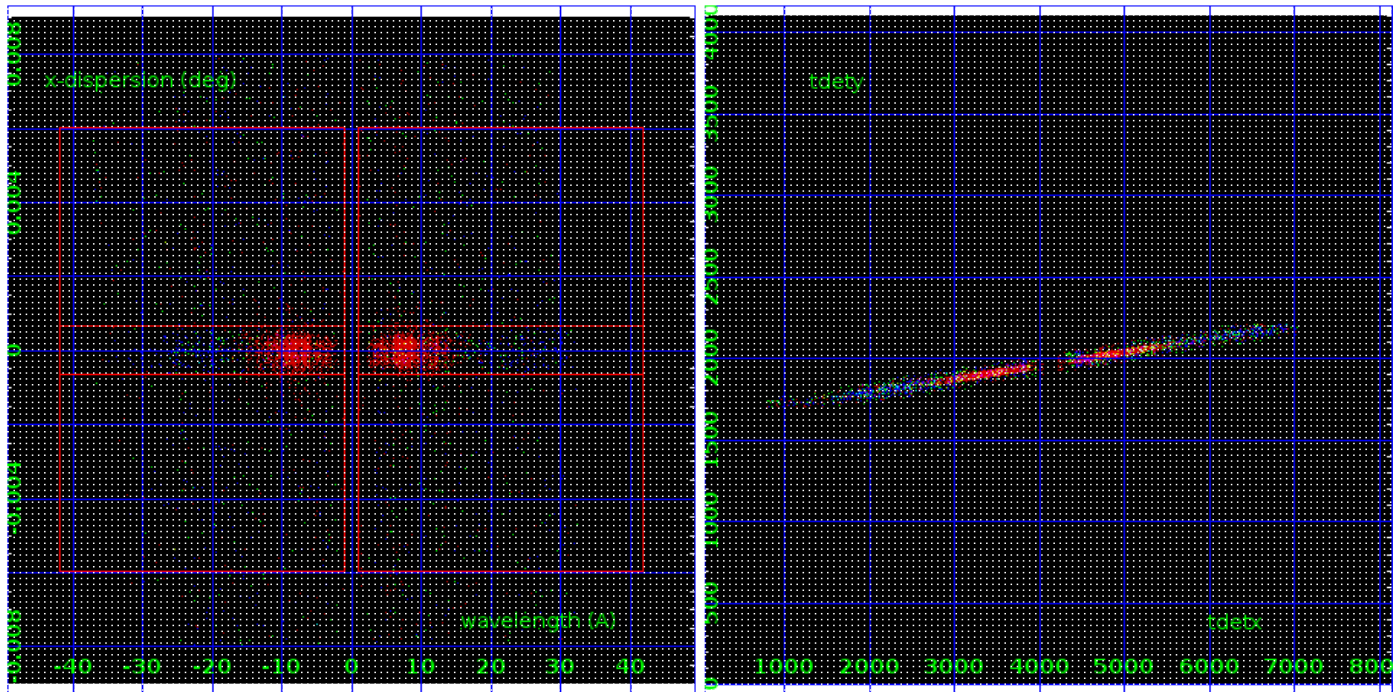
3.2 MEG Arm



MEG Order Sort 123

MEG Zero Order

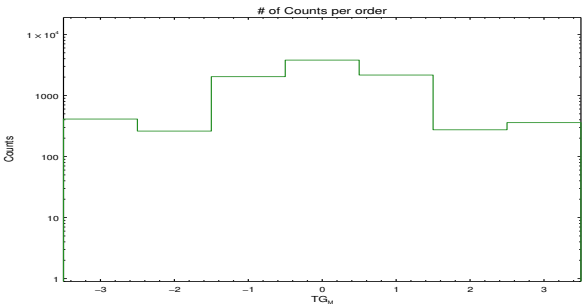
MEG Order Sort ALL

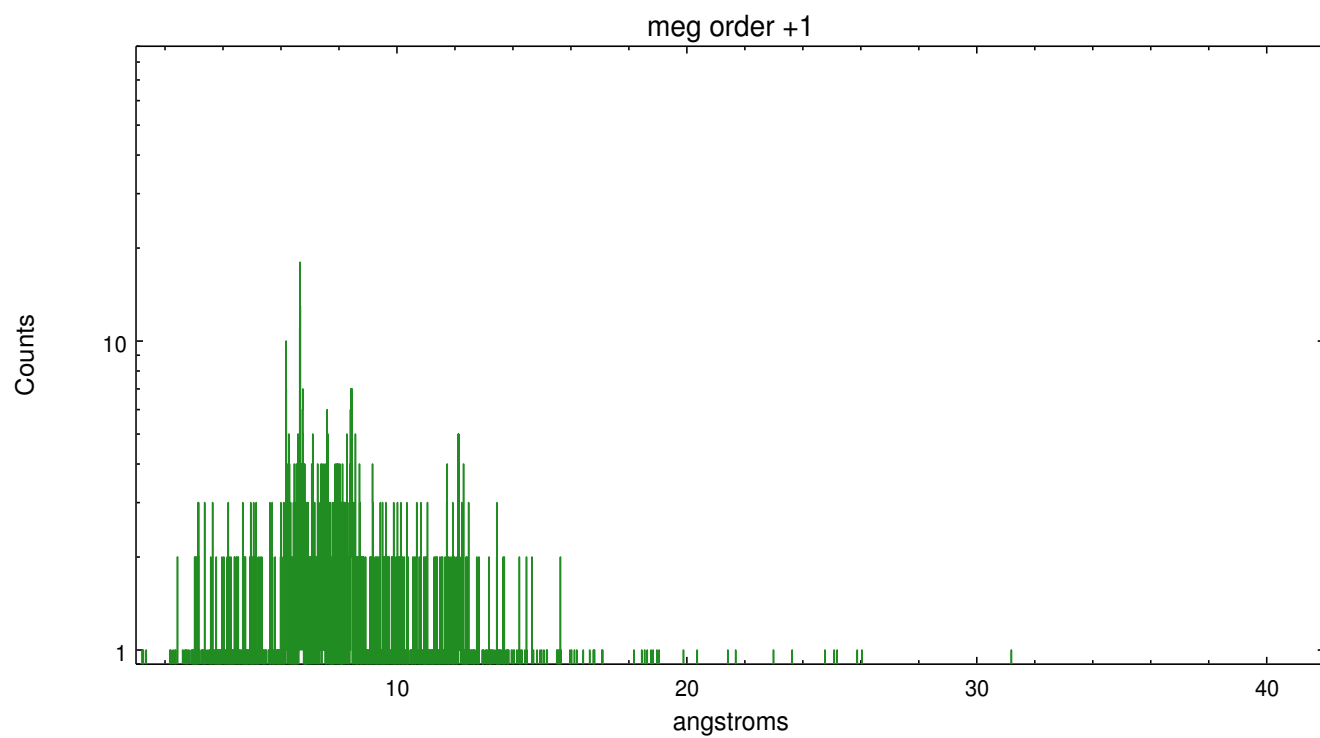
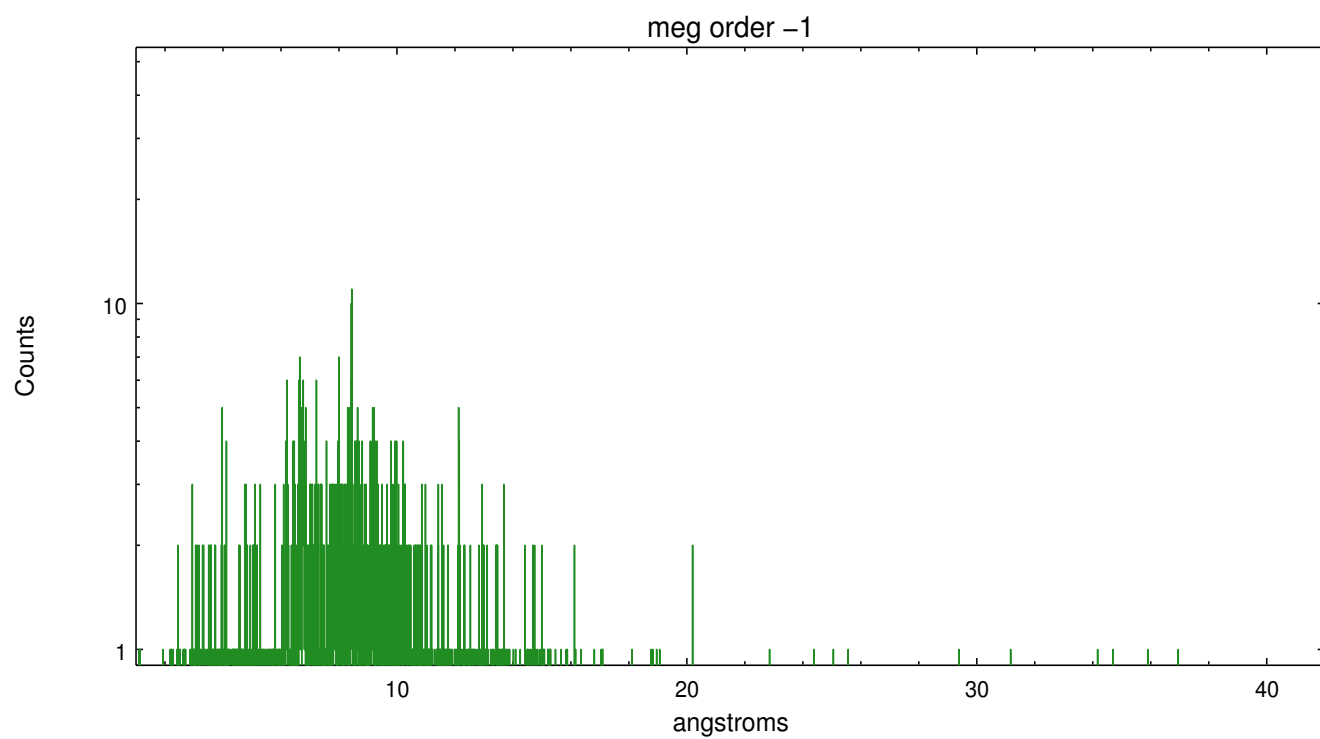


Spot Image MEG

Full Detector MEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	411	261	2032	3796	2161	274	359





A Summary

A.1 Status

V&V Scientist	Beth Sundheim
V&V Date (YYYY-MM-DD)	2018.03.29
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	27.749100778341

A.2 Comments

Roll and window constraints 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.