

V&V Reference Report

L2 ASCDS Version : 10.6

Observation 21050 - L2 Version 1
Chandra X-Ray Center

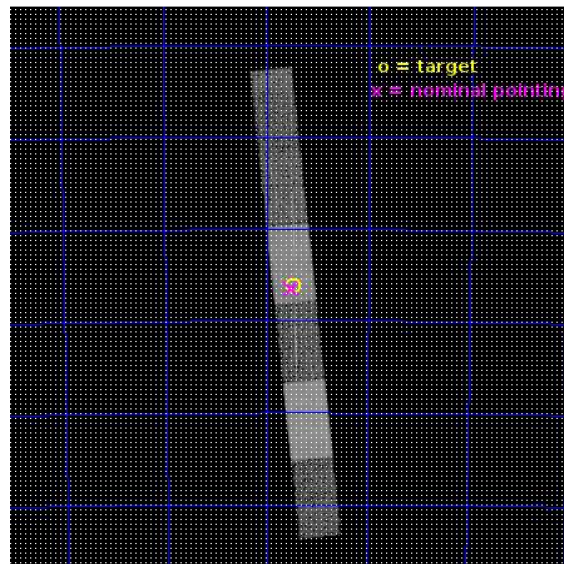
L2 Processing Date : Mar 30 2018

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1 Front

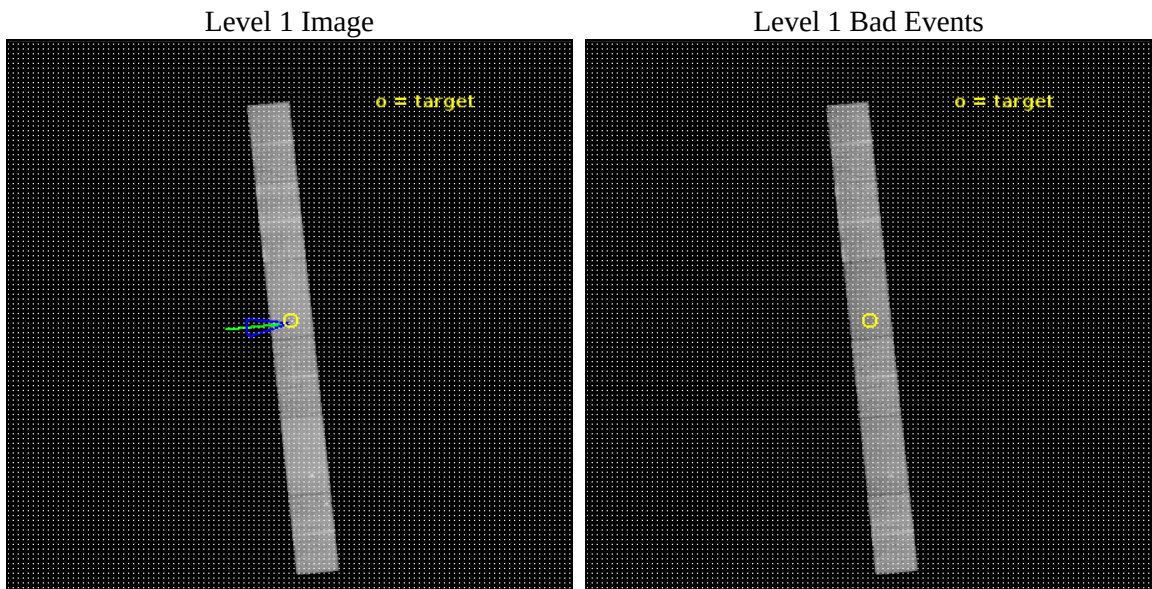
seq_num	503016	Sequence number
obs_id	21050	Observation id
title	High Resolution Spectroscopy of SN 1987A	Proposal title
observer	SANGWOOK PARK	Principal investigator
object	SN 1987A	Source name
dtcycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	83.866667	Observer's specified target RA [deg]
dec_targ	-69.26975	Observer's specified target Dec [deg]
ra_nom	83.878935550462	Nominal RA [deg]
dec_nom	-69.275073351734	Nominal Dec [deg]
roll_nom	264.16813567756	Nominal Roll [deg]
revision	1	Processing version of data
ontime	18191.700510263	Sum of GTIs [s]
livetime	17762.883602587	Livetime [s]
ontime4	18191.700510263	Sum of GTIs [s]
ontime5	18191.700510263	Sum of GTIs [s]
ontime6	18191.700510263	Sum of GTIs [s]
ontime7	18191.700510263	Sum of GTIs [s]
ontime8	18189.959470034	Sum of GTIs [s]
ontime9	18191.700510263	Sum of GTIs [s]
l2events	123188	Number of level 2 events



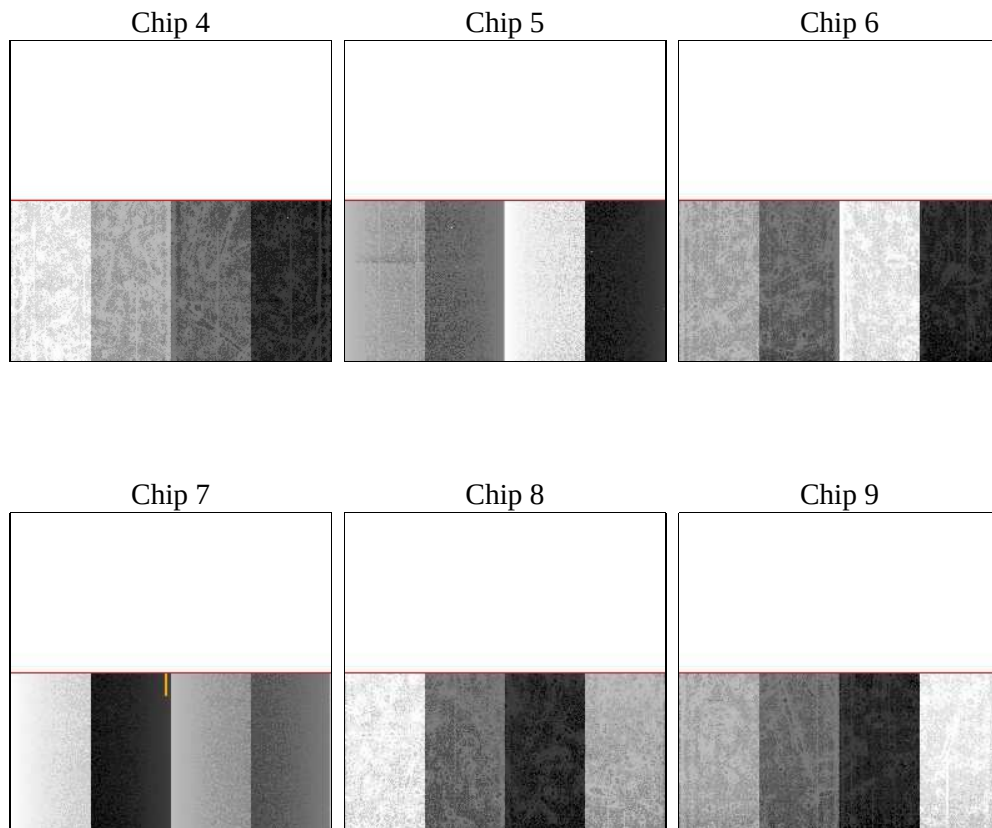
2 OBI

2.1 OBI

2.1.1 Images



2.1.2 Bias



2.1.3 Parameters

obi_num	0	Obi number	sched_exp_time	18150.000000	[s] Scheduled observation exposure time
ascdsver	10.6	Processing system revision	ontime	18191.700510263	Sum of GTIs [s]
caldsver	4.7.8	 	ontime4	18191.700510263	Sum of GTIs [s]
date	2018-03-30T04:50:33	Date and time of file creation	ontime5	18191.700510263	Sum of GTIs [s]
revision	1	Processing version of data	ontime6	18191.700510263	Sum of GTIs [s]
			ontime7	18191.700510263	Sum of GTIs [s]
			ontime8	18189.959470034	Sum of GTIs [s]
			ontime9	18191.700510263	Sum of GTIs [s]
			l1events	519162	Number of level 1 events
			tgmethod	TGDETECT	Method used to create src1a file
			src1a_pos	(4120.21, 4125.20)	src1a sky pixel position

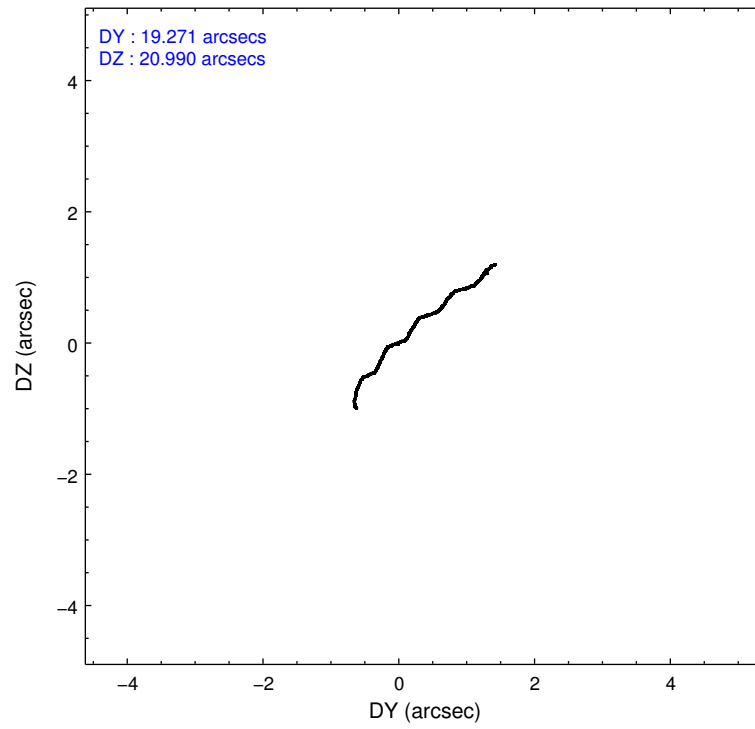
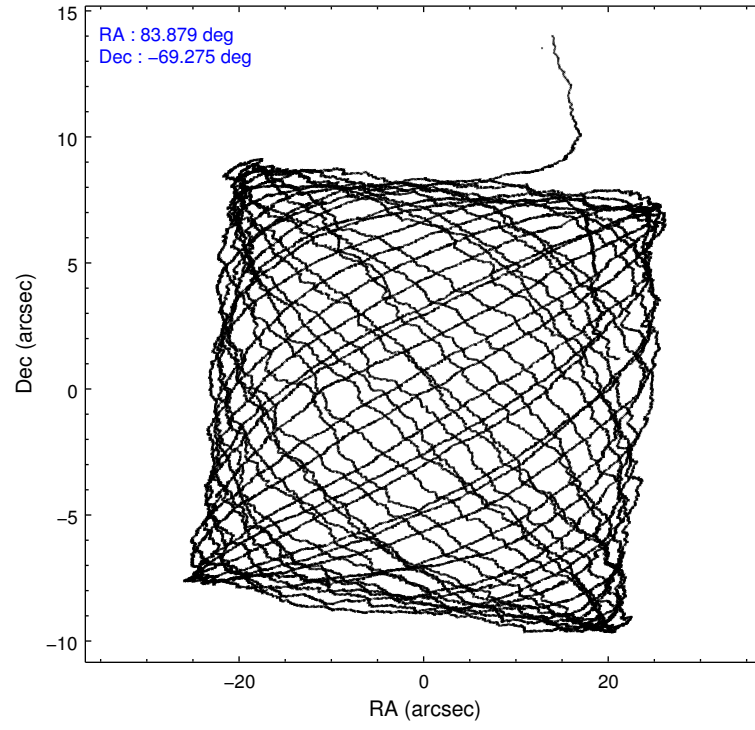
2.1.4 Events

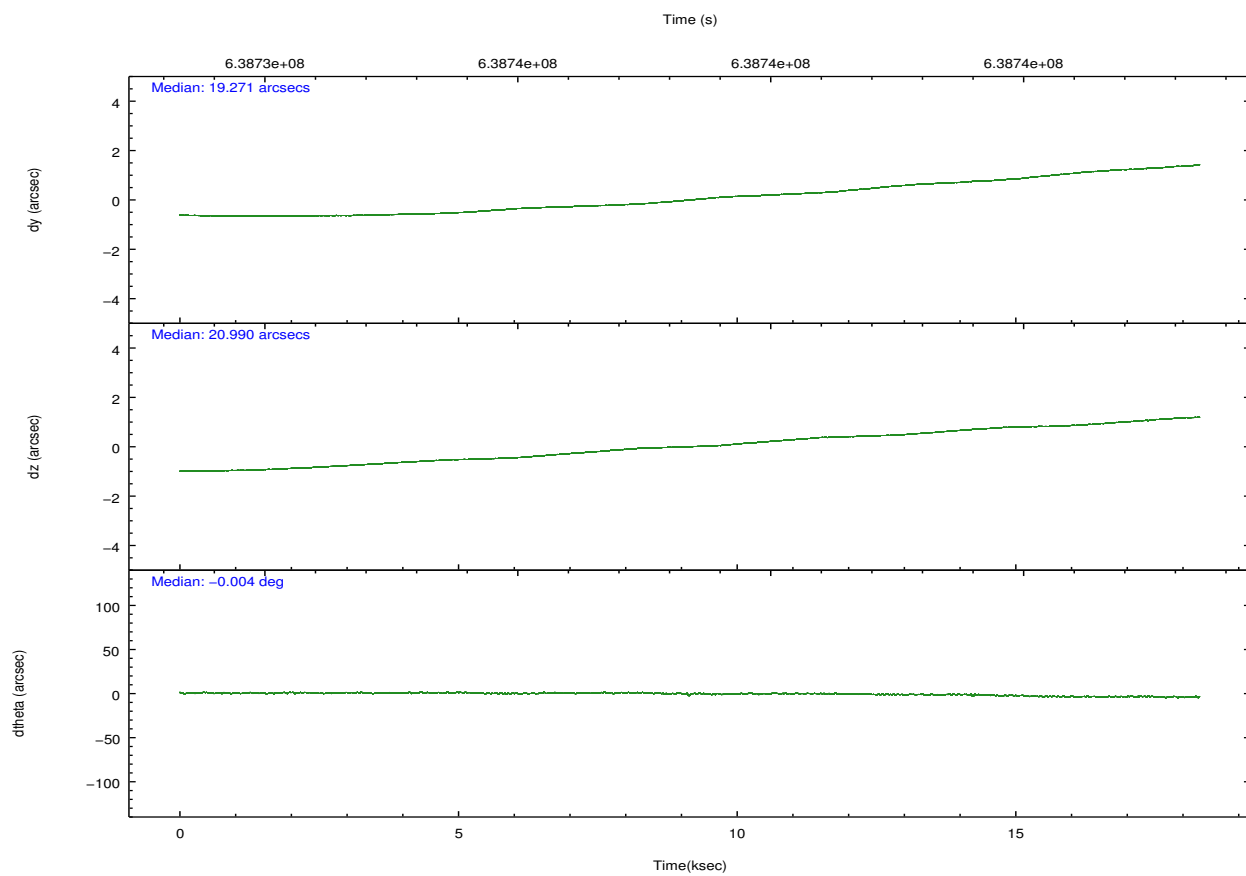
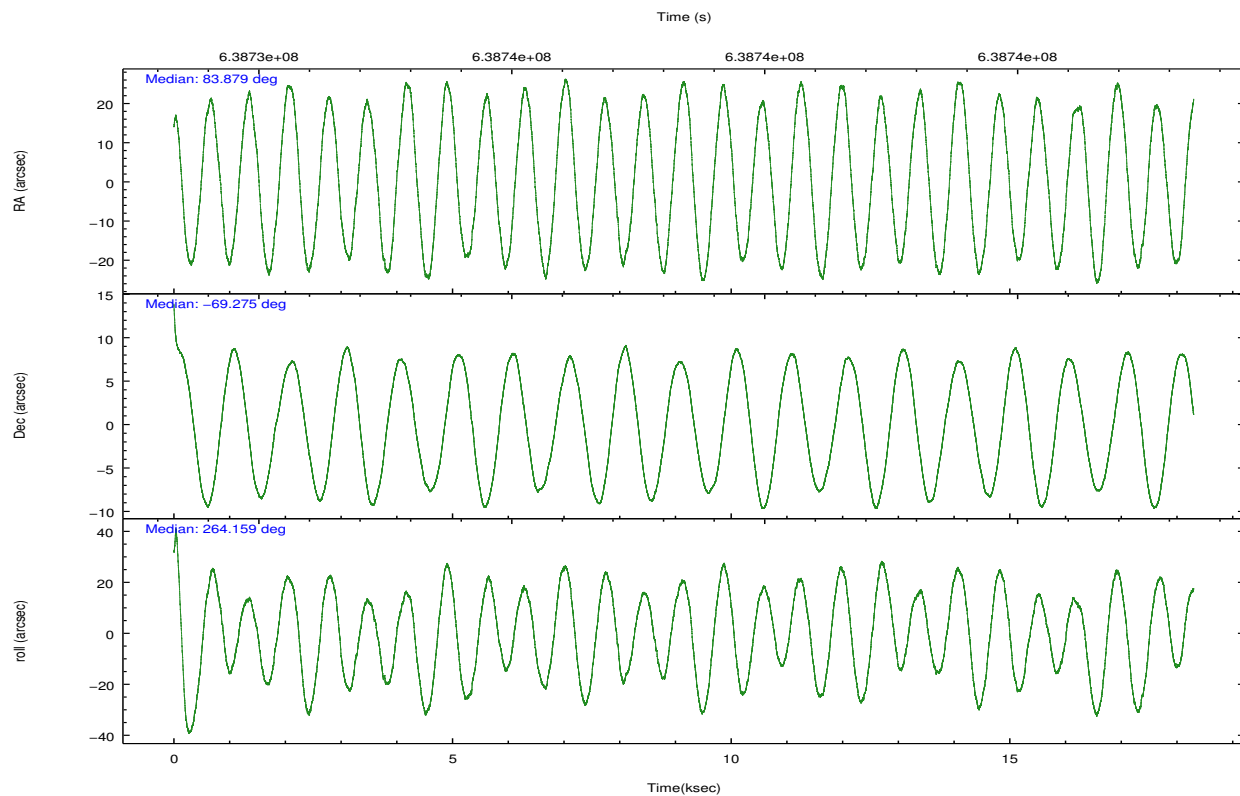
	ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9		ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
level 1 events	83993	108495	71897	89376	96516	68885	grade 0 events	4237	4621	3821	4216	8221	3013
rejected events	74019	55850	62296	47343	69698	60119		5%	4%	5%	4%	8%	4%
rejected %	88%	51%	86%	52%	72%	87%	grade 1 events	49	841	29	120	47	31
								0%	0%	0%	0%	0%	0%
							grade 2 events	2204	15290	1996	8739	6069	1891
								2%	14%	2%	9%	6%	2%
							grade 3 events	1038	2400	982	3912	2776	1026
								1%	2%	1%	4%	2%	1%
							grade 4 events	961	2104	981	3909	2675	992
								1%	1%	1%	4%	2%	1%
							grade 5 events	3099	7761	3083	8726	4584	3504
								3%	7%	4%	9%	4%	5%
							grade 6 events	1537	28240	1824	21274	7080	1844
								1%	26%	2%	23%	7%	2%
							grade 7 events	70868	47238	59181	38480	65064	56584
								84%	43%	82%	43%	67%	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	83.846329	83.8789355504623	CCD I2 on	N	N
[deg] Pointing Dec	-69.250220	-69.27507335173442	CCD I3 on	N	N
[deg] Pointing Roll	263.980980	264.1681356775645	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)	638729385.184000	638728275.98585	Subarray row count	512	512
Observation start date	2018-03-29T16:48:36	2018-03-29T16:31:15	Alternating exposures requested	N	N
[s] Observation end time (MET)	638747535.184000	638748591.4870501	[s] Primary exposure time	0.000000	1.7
Observation end date	2018-03-29T21:51:06	2018-03-29T22:09:51			
Read mode	TIMED	TIMED			

2.3 Aspect



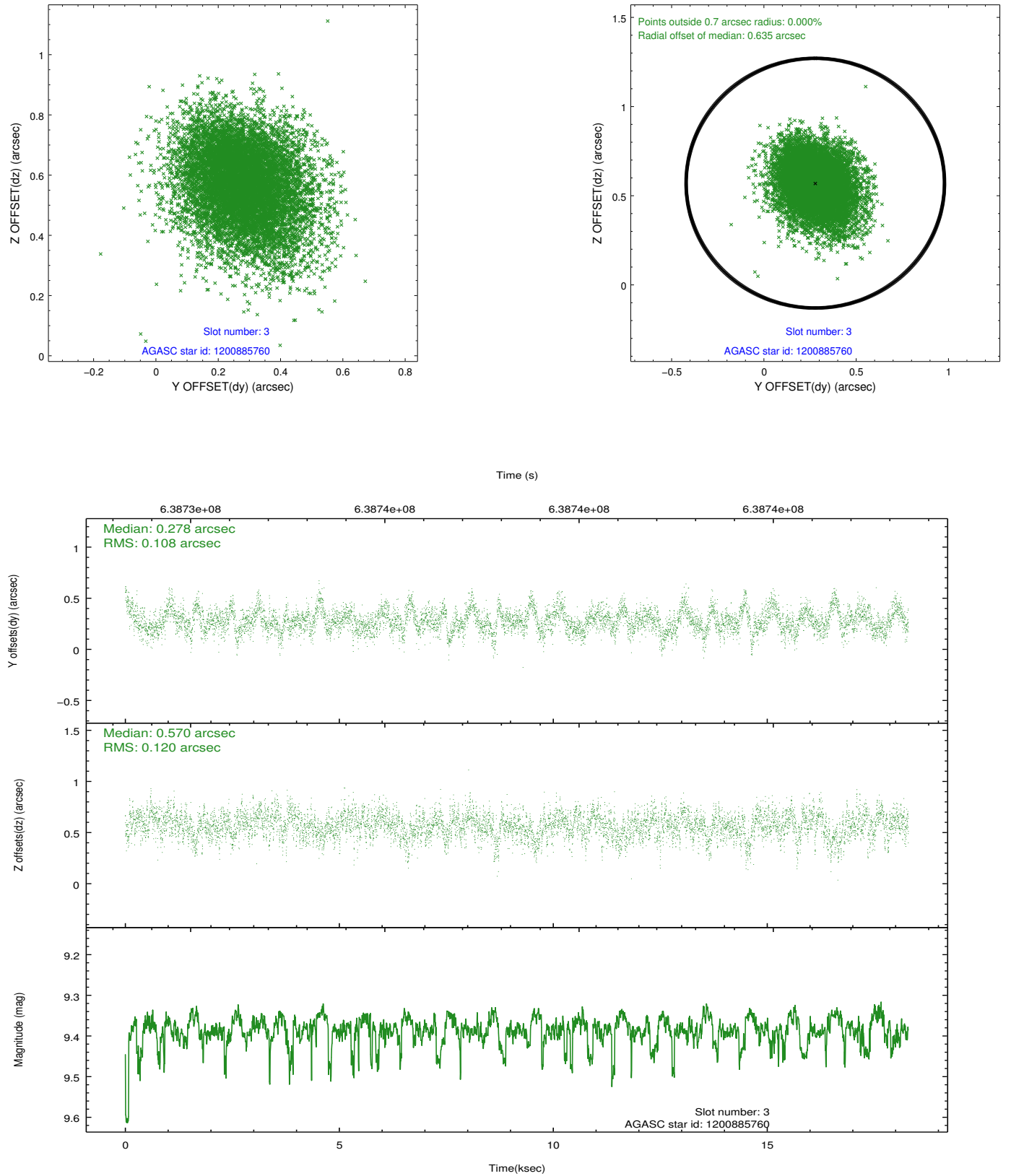


Slot Statistics

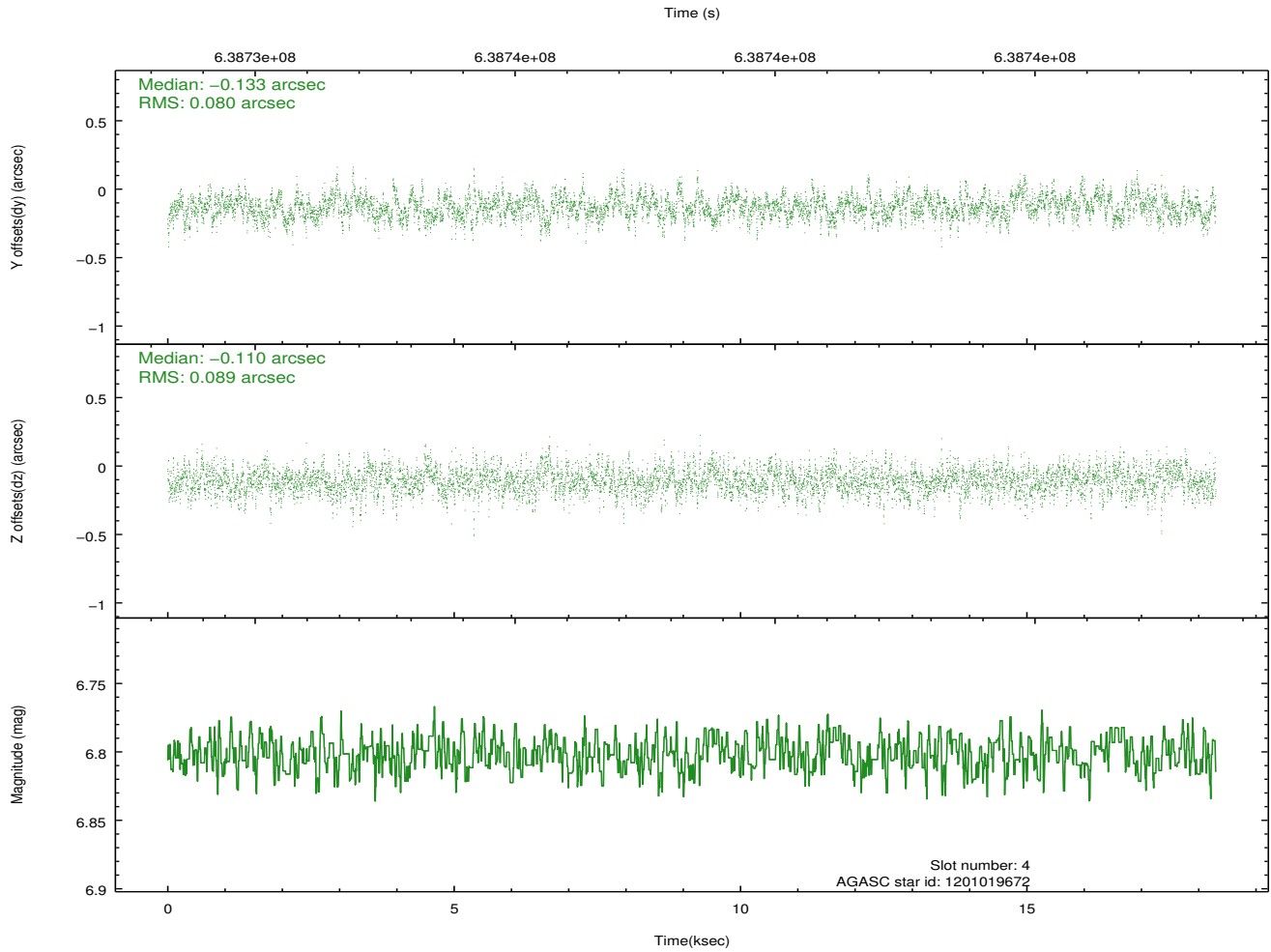
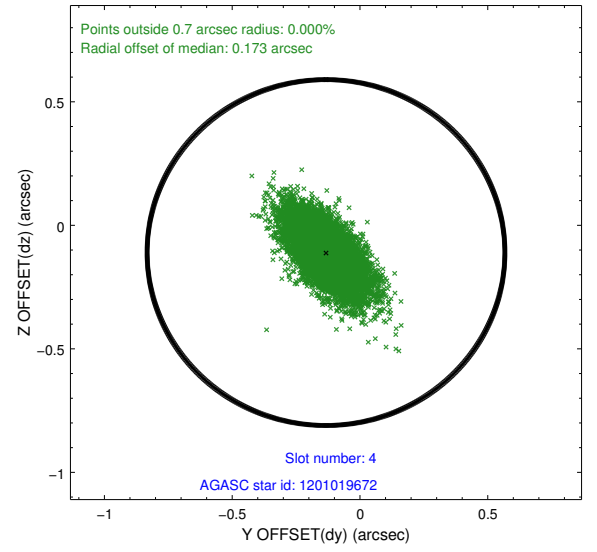
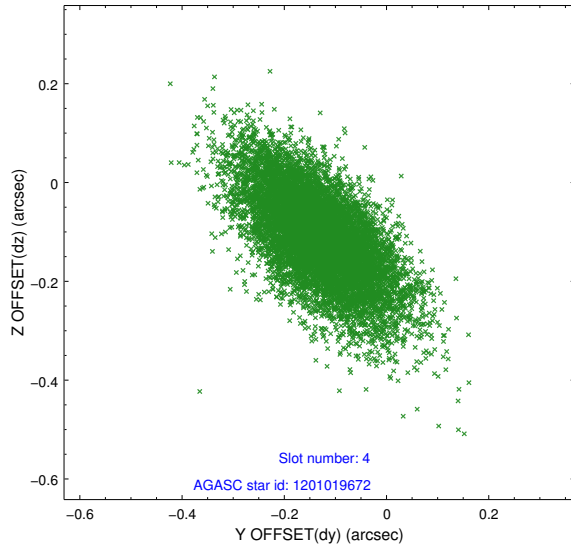
slot	status	used	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID		ACIS-S-2	7.07	4464	-0.238	-0.161	0.036	0.086	0.000000	0.000000	-772.27	-1869.37
1	FID		ACIS-S-4	7.19	4463	0.560	0.161	0.027	0.043	0.000000	0.000000	2141.70	39.18
2	FID		ACIS-S-5	7.22	4464	-0.347	0.011	0.031	0.075	0.000000	0.000000	-1824.95	32.90
3	GUIDE	used	1200885760	9.38	8917	0.278	0.570	0.169	0.286	83.723637	-68.777667	-1673.99	-336.35
4	GUIDE	used	1201019672	6.80	8928	-0.133	-0.110	0.121	0.219	85.312192	-68.770187	-1896.52	1721.52
5	GUIDE	used	1201020040	8.55	8925	0.130	-0.315	0.135	0.241	85.379163	-68.879396	-1511.44	1840.06
6	GUIDE	used	1201540776	9.52	8709	-0.263	-0.264	0.293	0.445	85.107945	-69.858480	2029.59	1787.39
7	GUIDE	used	1201410616	9.31	8916	-0.028	0.133	0.284	0.436	82.516808	-69.784406	2104.56	-1440.03

2.4 Star Slots

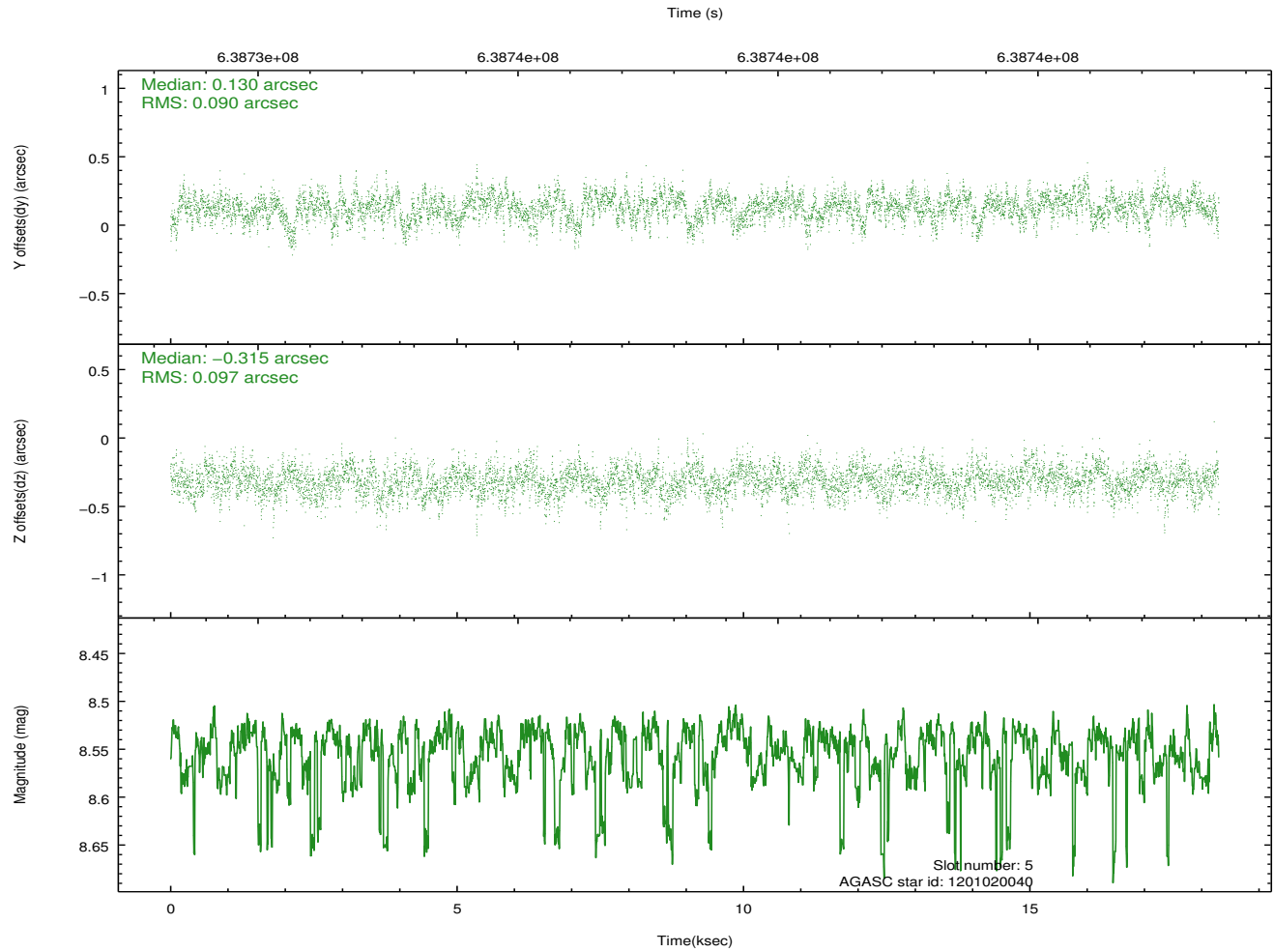
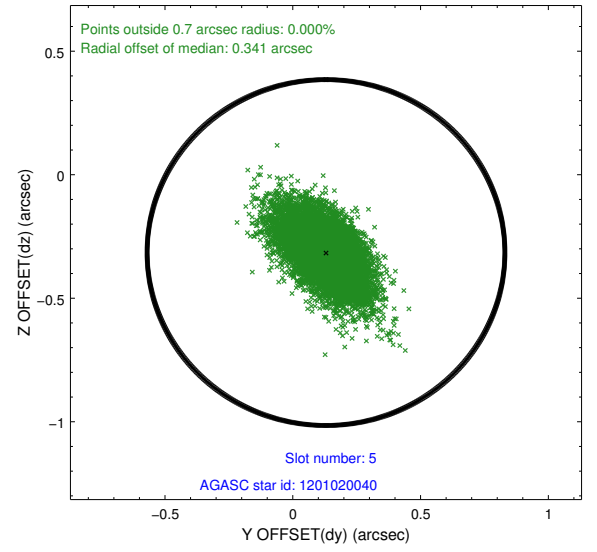
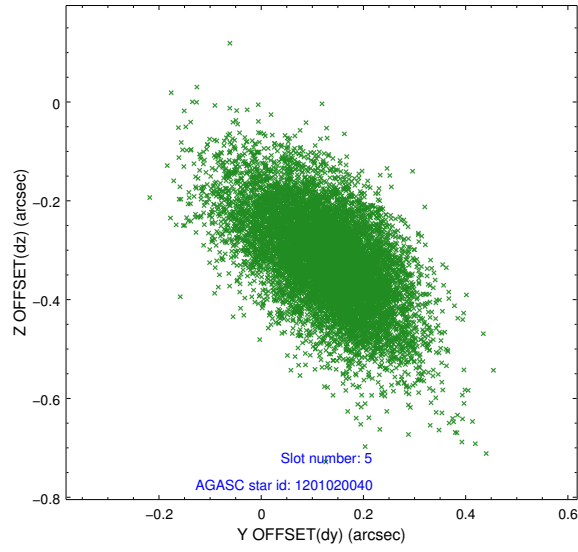
2.4.1 Slot 3



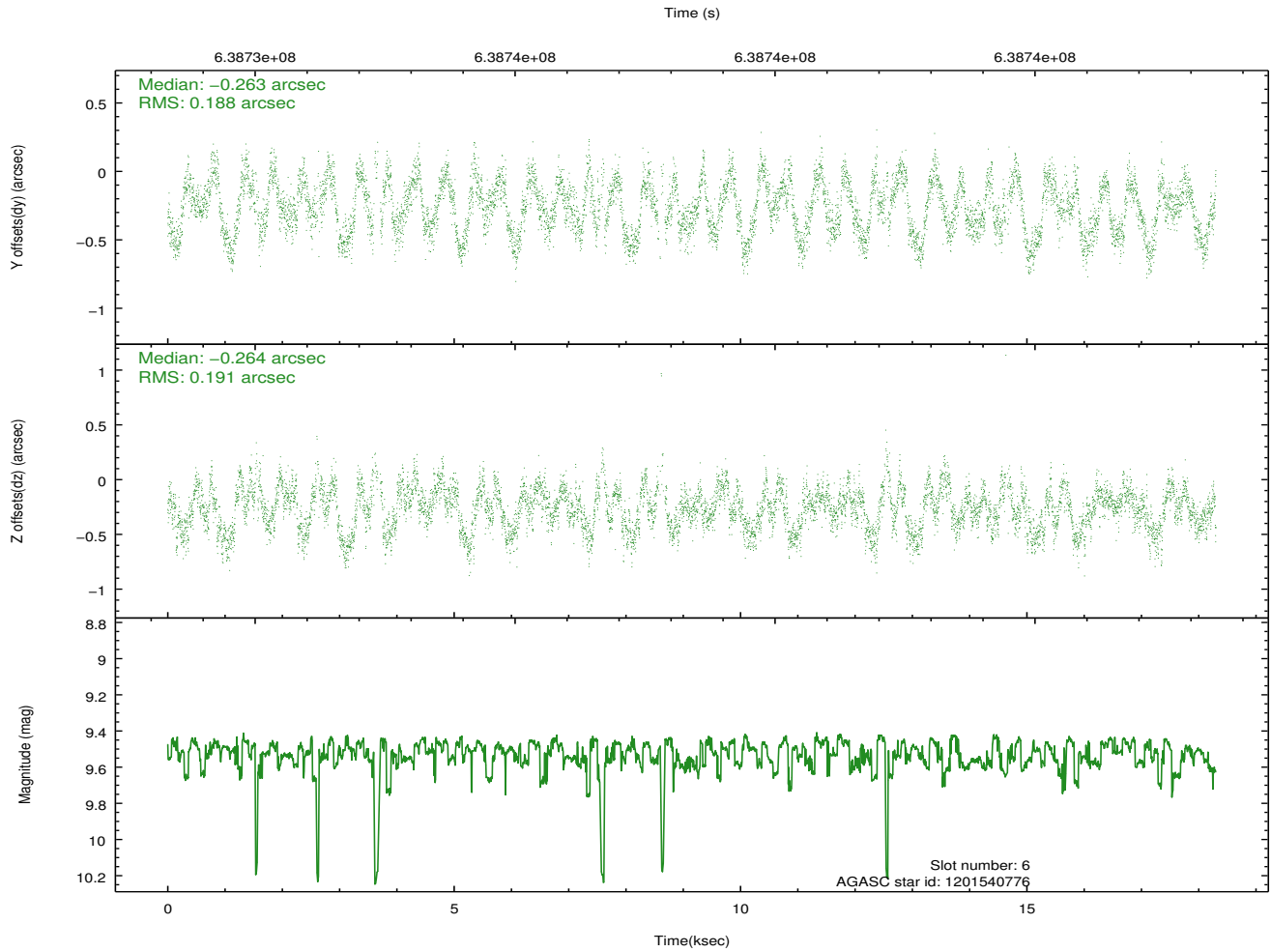
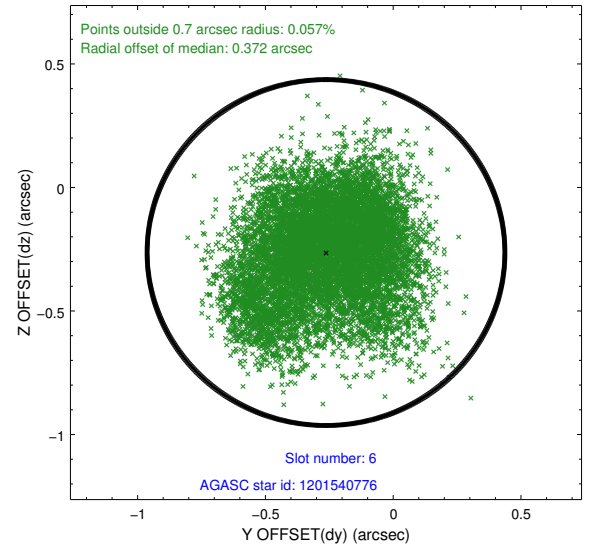
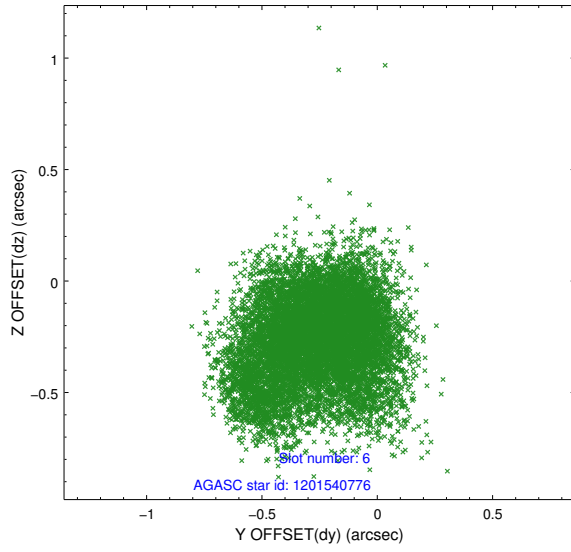
2.4.2 Slot 4



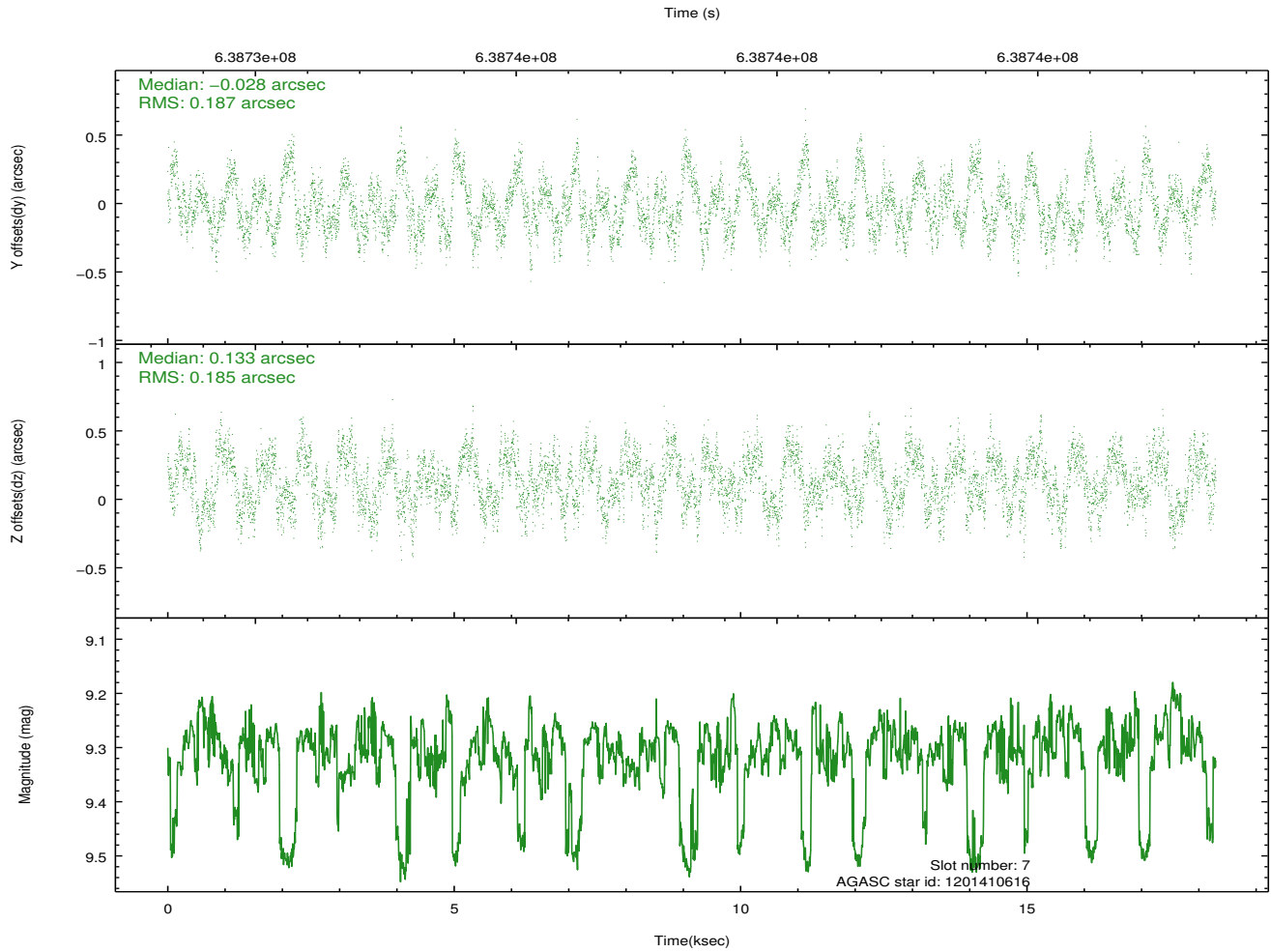
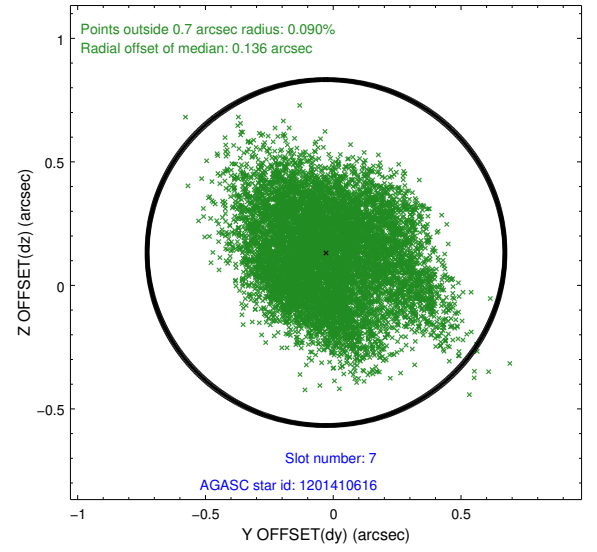
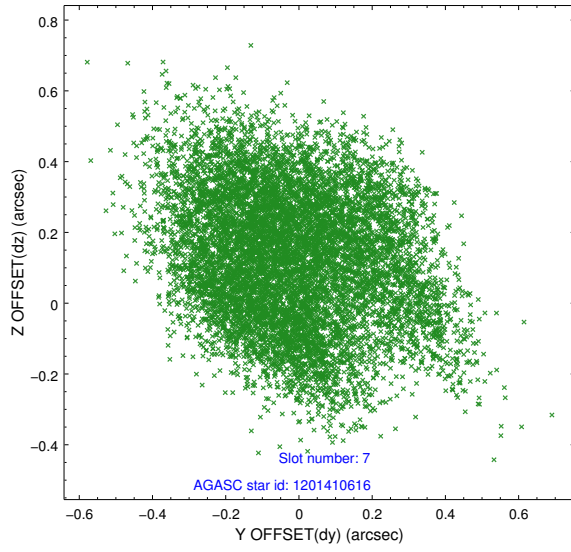
2.4.3 Slot 5



2.4.4 Slot 6

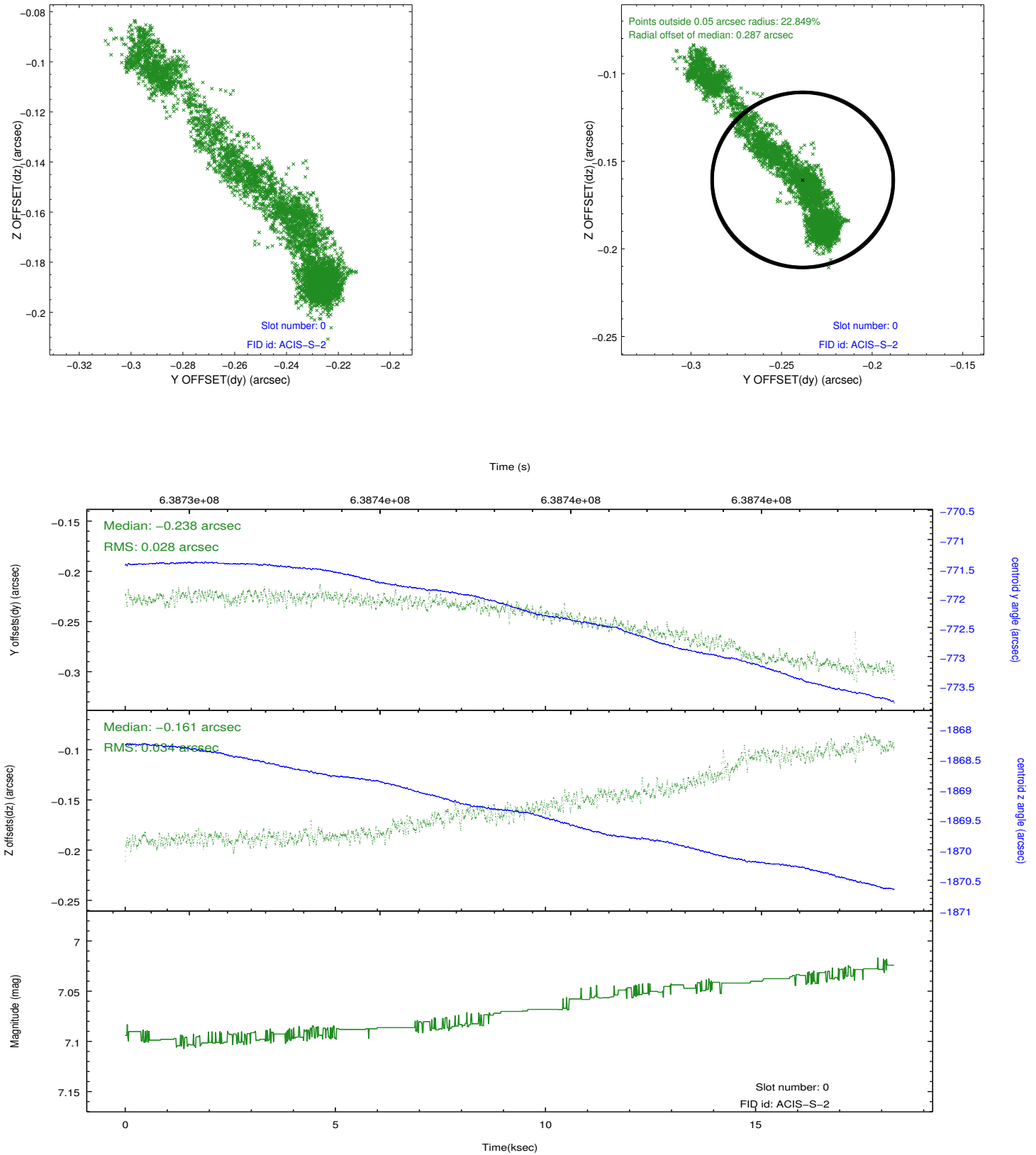


2.4.5 Slot 7

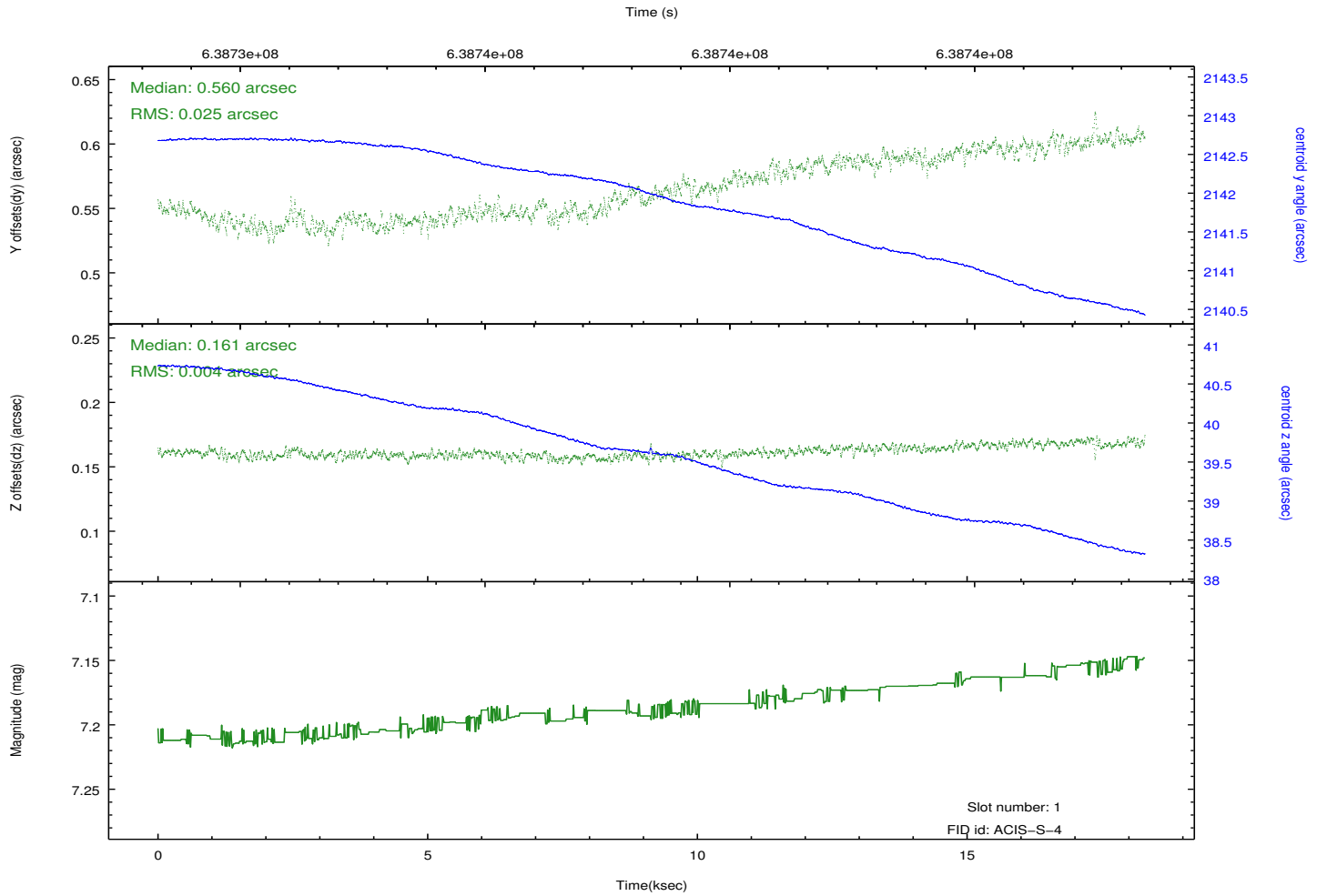
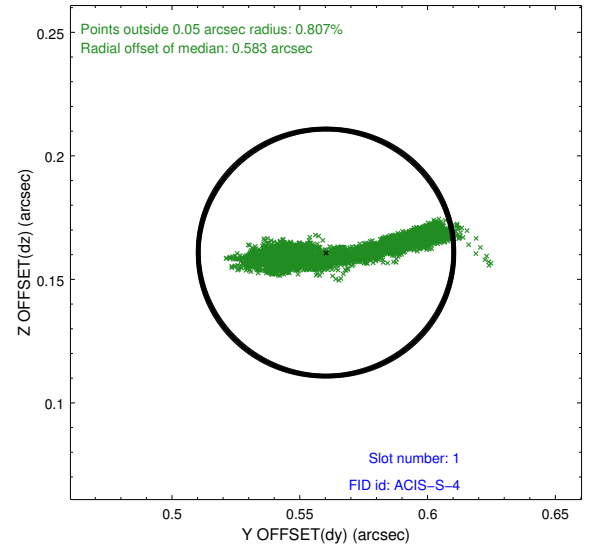
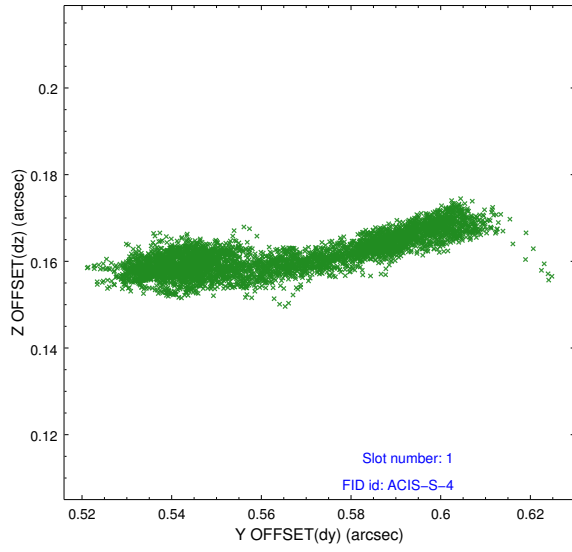


2.5 FID Slots

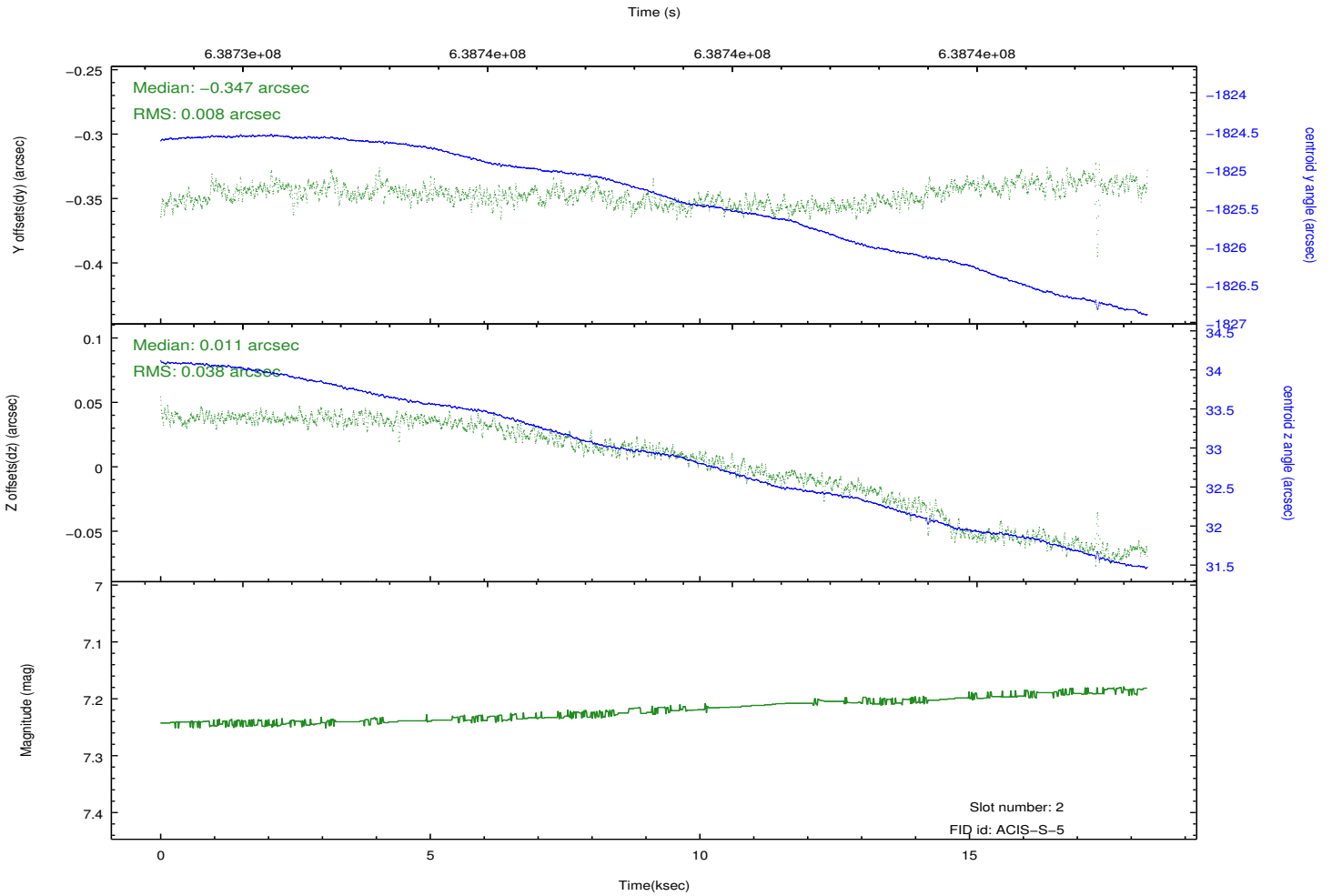
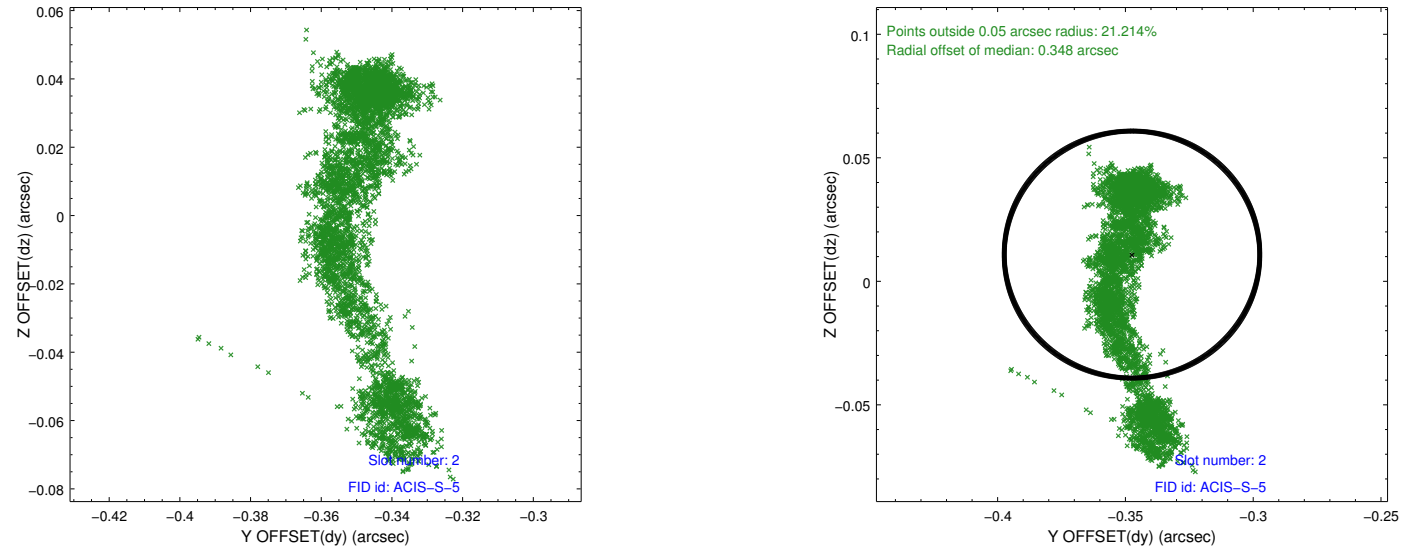
2.5.1 Slot 0



2.5.2 Slot 1

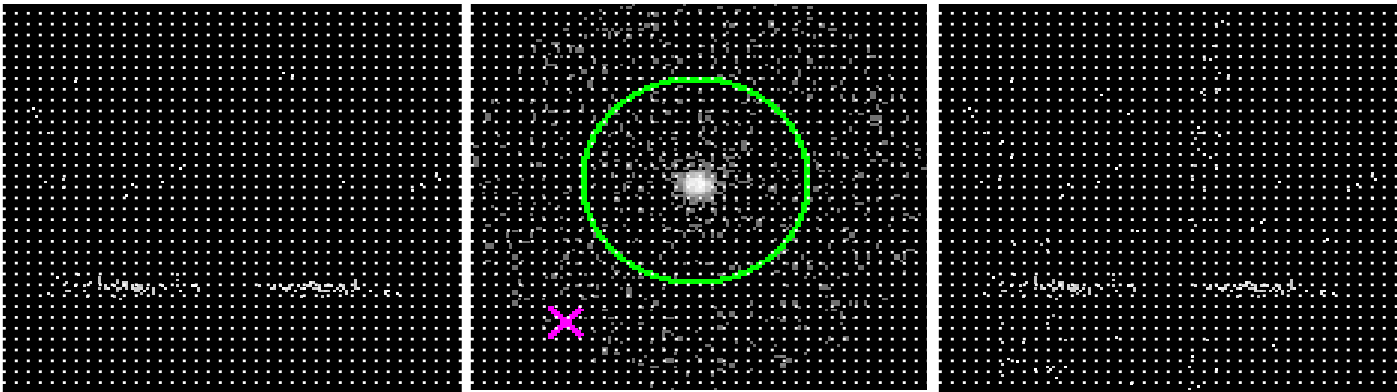


2.5.3 Slot 2



3 Gratings

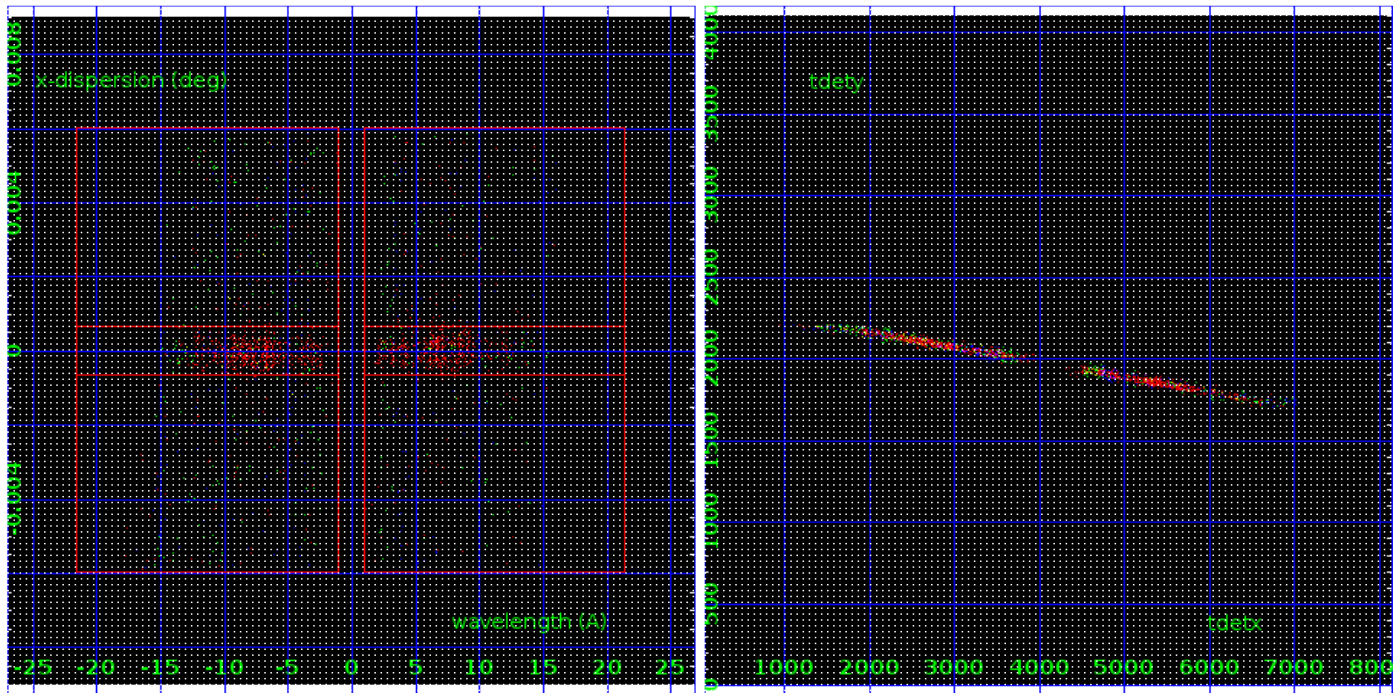
3.1 HEG Arm



HEG Order Sort 123

HEG Zero Order

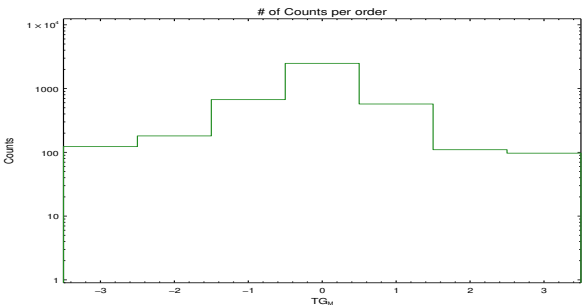
HEG Order Sort ALL

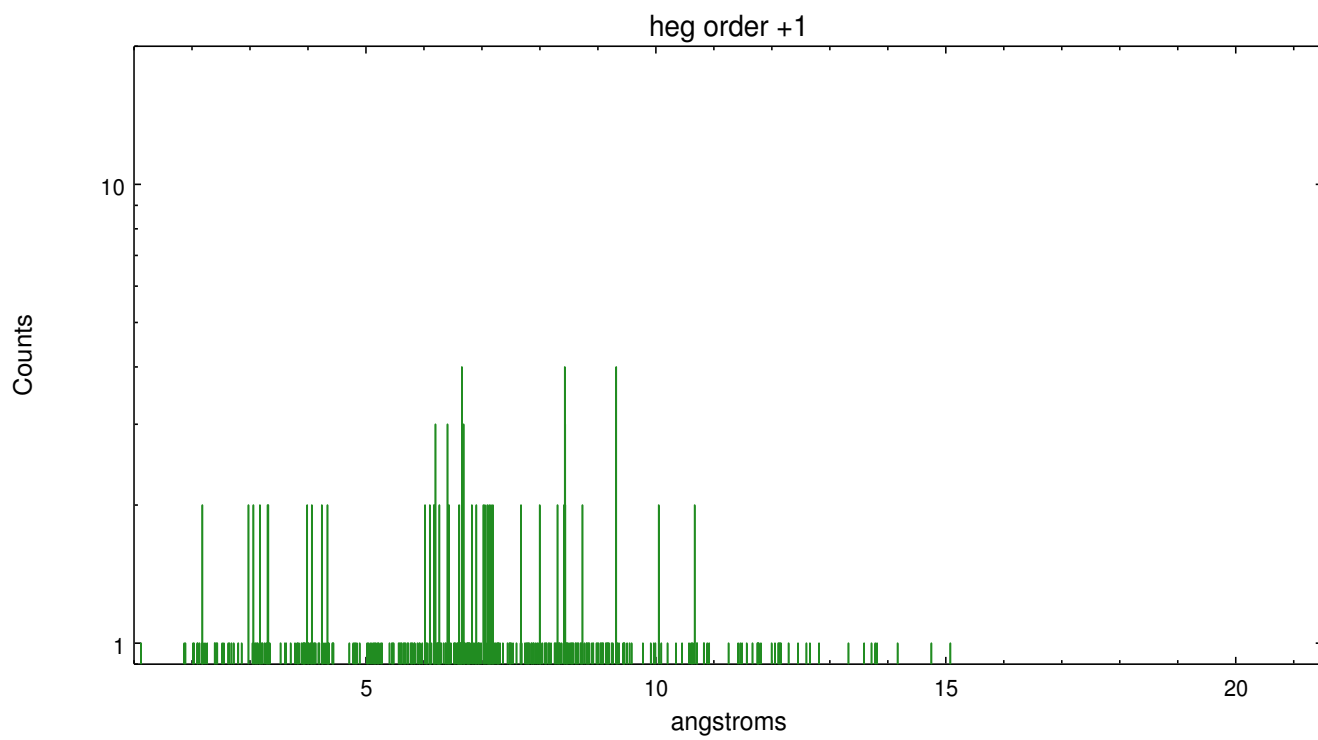
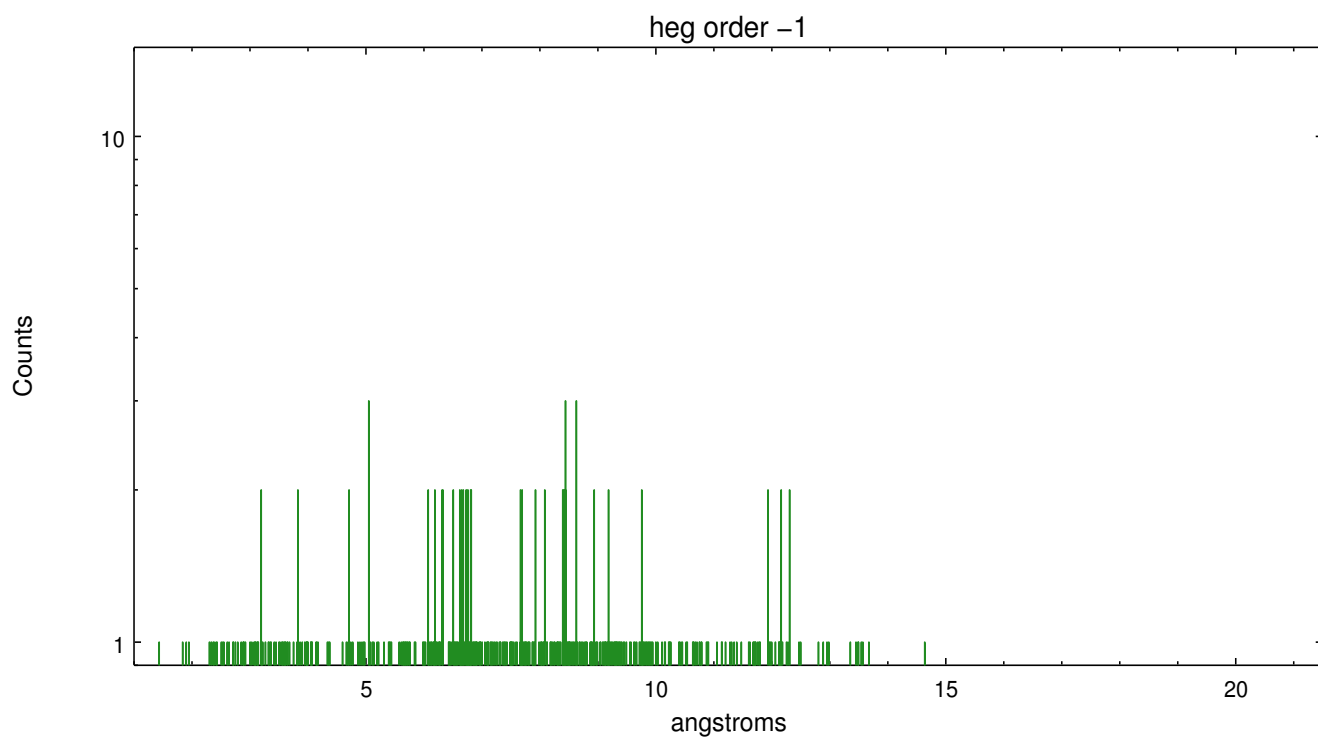


Spot Image HEG

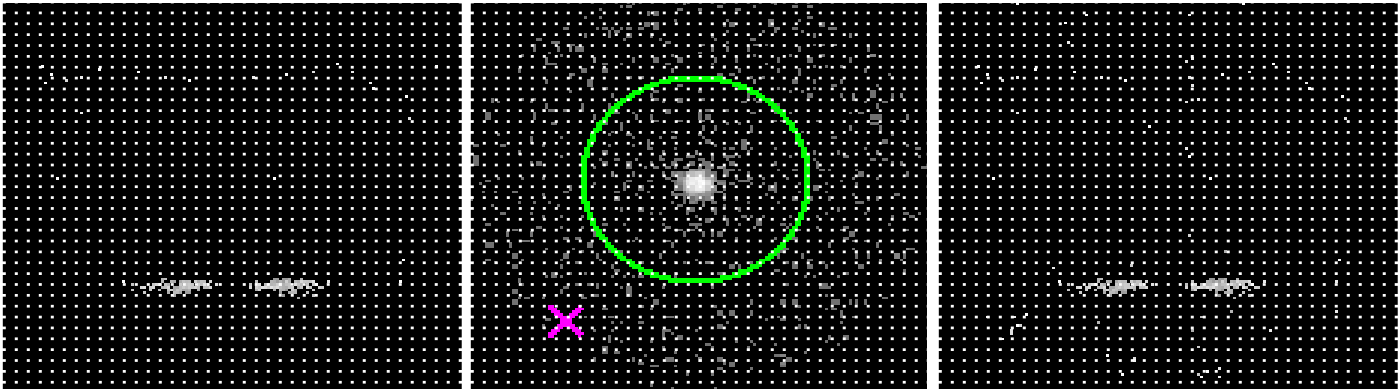
Full Detector HEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	123	181	671	2486	573	110	97





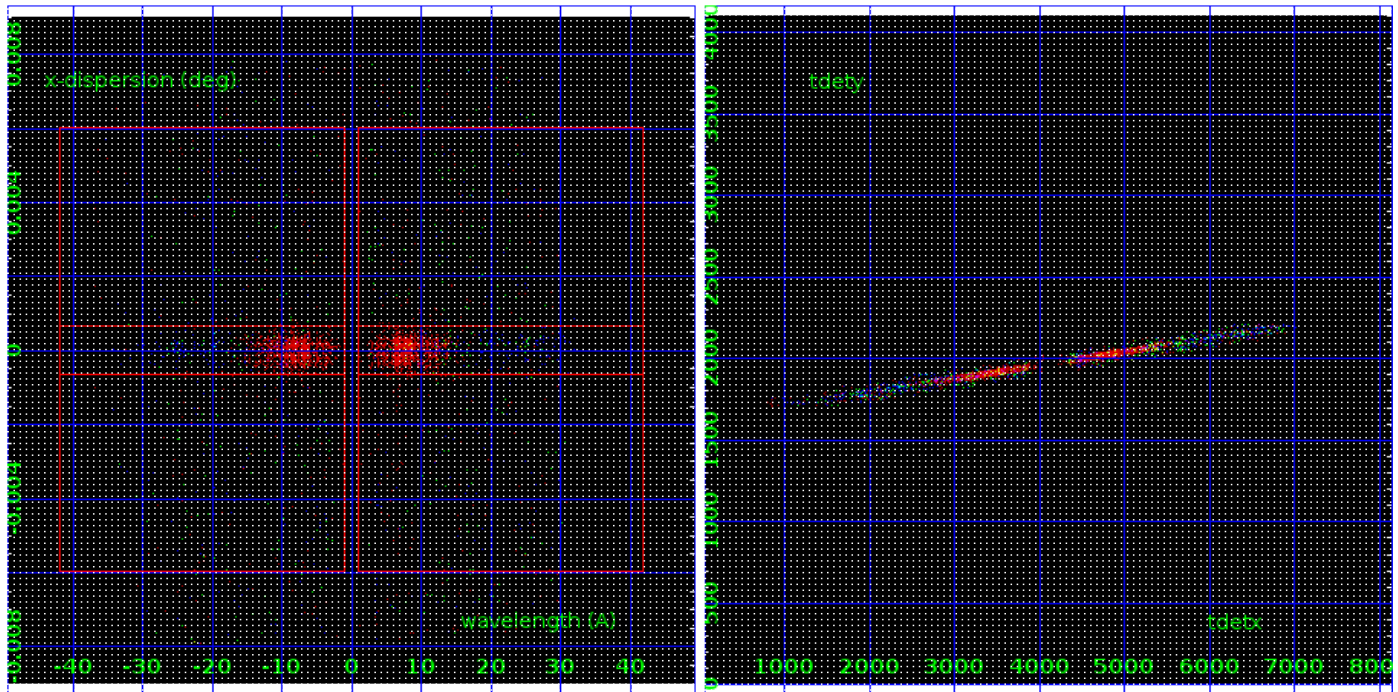
3.2 MEG Arm



MEG Order Sort 123

MEG Zero Order

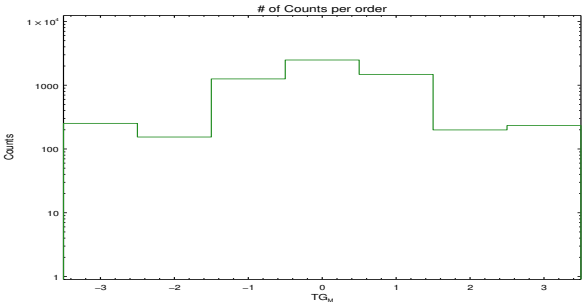
MEG Order Sort ALL

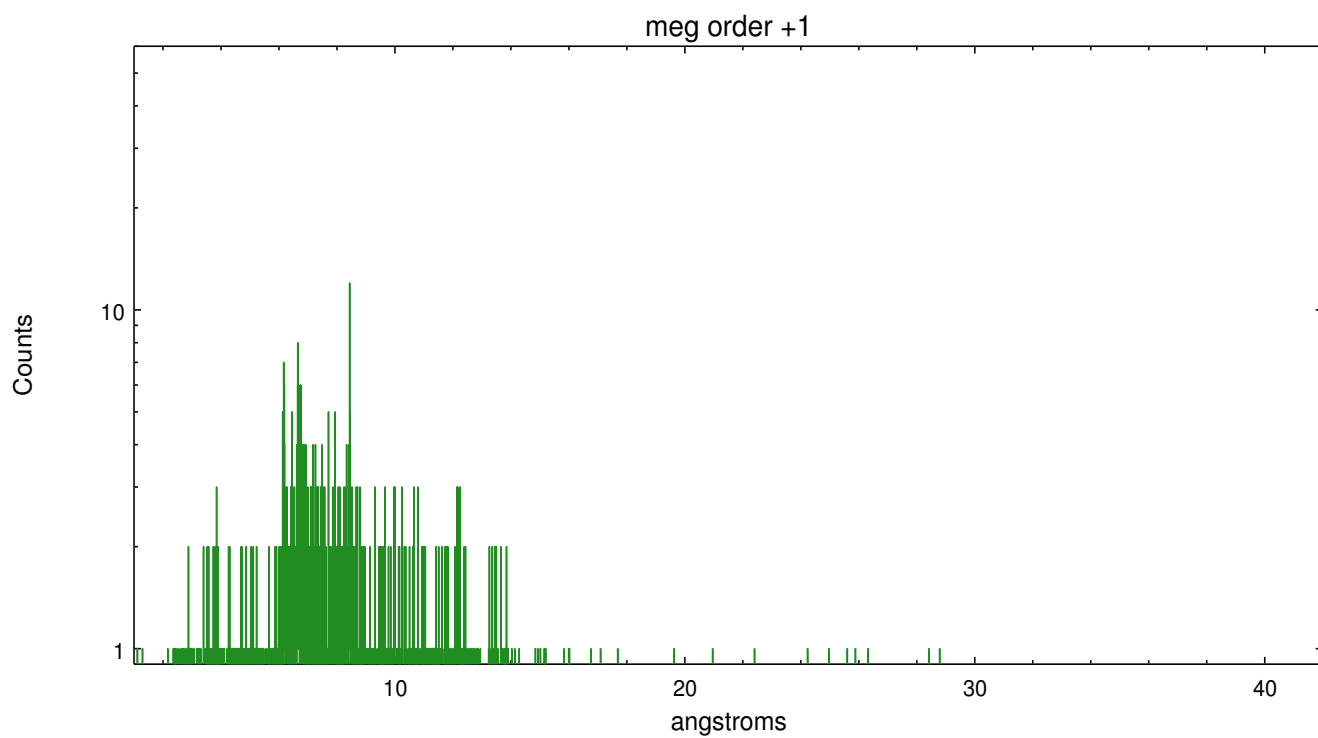
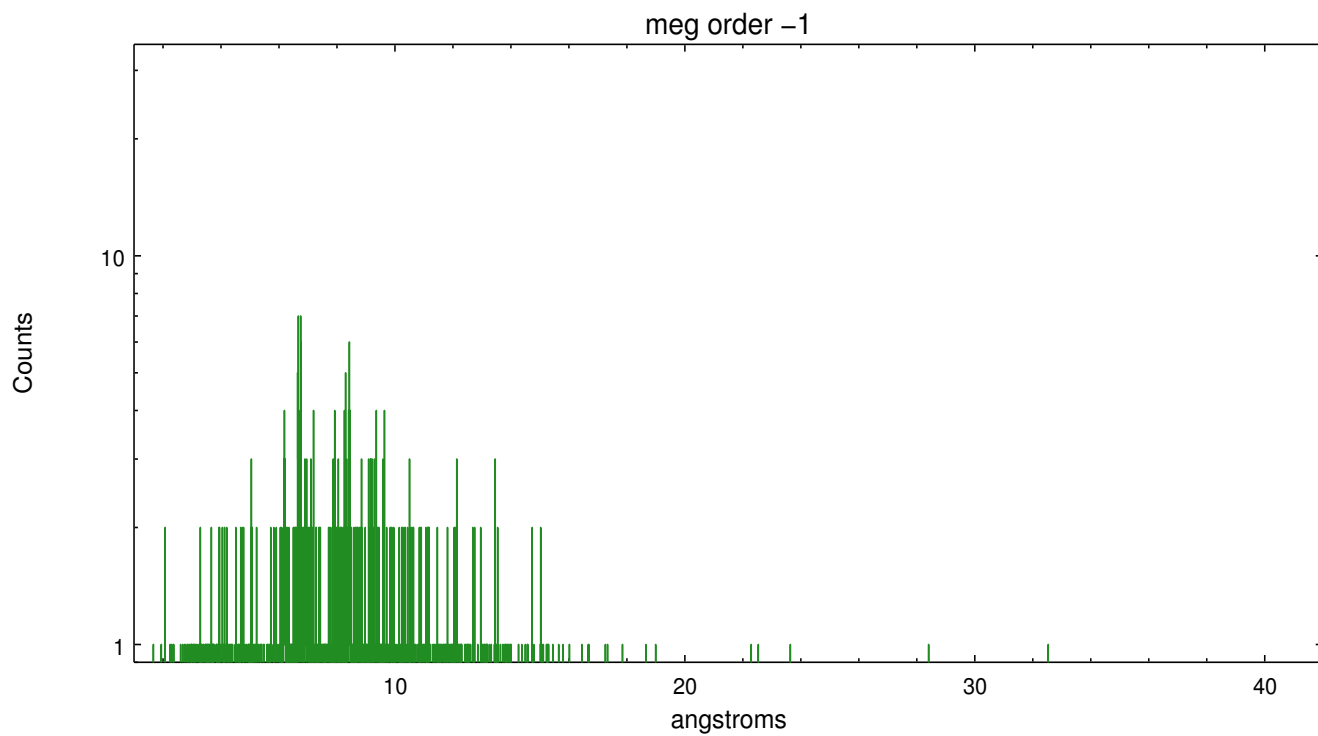


Spot Image MEG

Full Detector MEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	252	154	1256	2486	1478	199	233





A Summary

A.1 Status

V&V Scientist	Beth Sundheim
V&V Date (YYYY-MM-DD)	2018.03.30
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	18.191700510263

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.