

V&V Reference Report

L2 ASCDS Version : 10.6

Observation 21037 - L2 Version 1
Chandra X-Ray Center

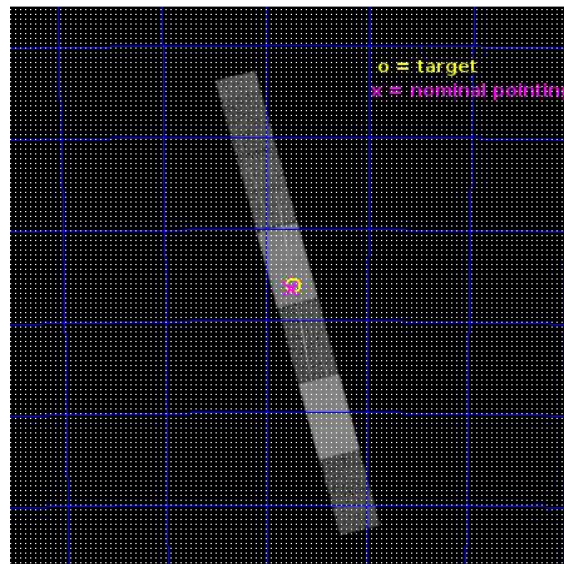
L2 Processing Date : Mar 15 2018

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1 Front

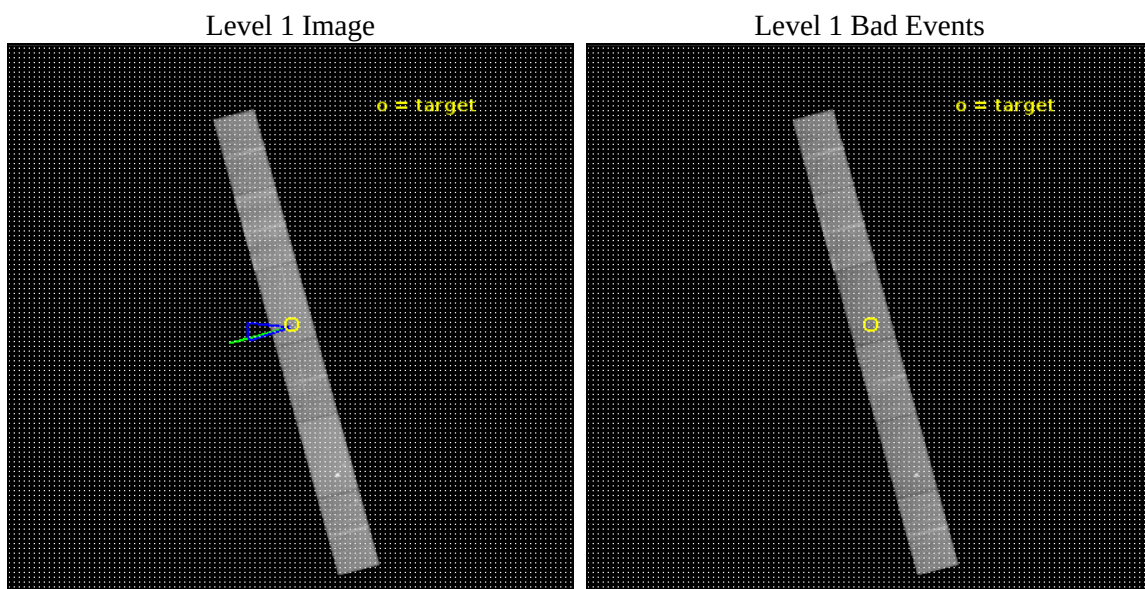
seq_num	503016	Sequence number
obs_id	21037	Observation id
title	High Resolution Spectroscopy of SN 1987A	Proposal title
observer	SANGWOOK PARK	Principal investigator
object	SN 1987A	Source name
dtcycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	83.866667	Observer's specified target RA [deg]
dec_targ	-69.26975	Observer's specified target Dec [deg]
ra_nom	83.876114033019	Nominal RA [deg]
dec_nom	-69.275202838547	Nominal Dec [deg]
roll_nom	255.16546123174	Nominal Roll [deg]
revision	1	Processing version of data
ontime	30127.400182128	Sum of GTIs [s]
livetime	29417.233555586	Livetime [s]
ontime4	30127.400845051	Sum of GTIs [s]
ontime5	30127.359142065	Sum of GTIs [s]
ontime6	30127.318102121	Sum of GTIs [s]
ontime7	30127.400182128	Sum of GTIs [s]
ontime8	30123.795061707	Sum of GTIs [s]
ontime9	30127.236022115	Sum of GTIs [s]
l2events	212225	Number of level 2 events



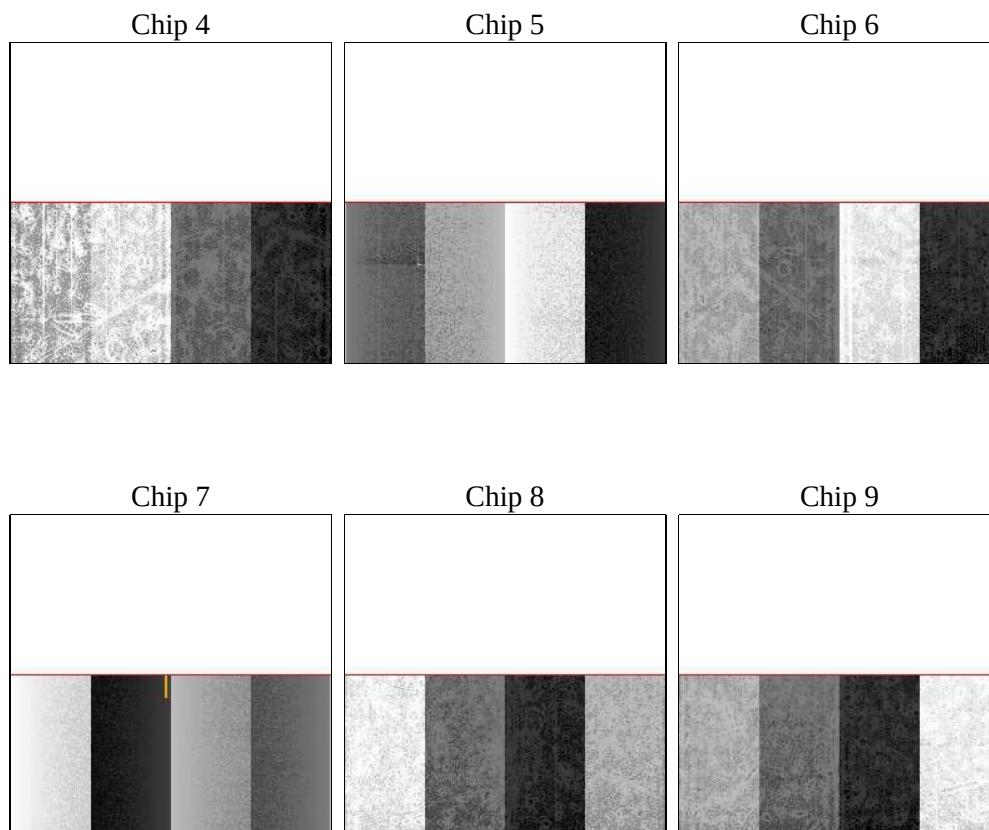
2 OBI

2.1 OBI

2.1.1 Images



2.1.2 Bias



2.1.3 Parameters

obi_num	0	Obi number	sched_exp_time	30082.000000	[s] Scheduled observation exposure time
ascdsver	10.6	Processing system revision	ontime	30127.400182128	Sum of GTIs [s]
caldsver	4.7.7	 	ontime4	30127.400845051	Sum of GTIs [s]
date	2018-03-15T23:08:13	Date and time of file creation	ontime5	30127.359142065	Sum of GTIs [s]
revision	1	Processing version of data	ontime6	30127.318102121	Sum of GTIs [s]
			ontime7	30127.400182128	Sum of GTIs [s]
			ontime8	30123.795061707	Sum of GTIs [s]
			ontime9	30127.236022115	Sum of GTIs [s]
			l1events	881252	Number of level 1 events
			tgmethod	TGDETECT	Method used to create src1a file
			src1a_pos	(4121.76, 4124.89)	src1a sky pixel position

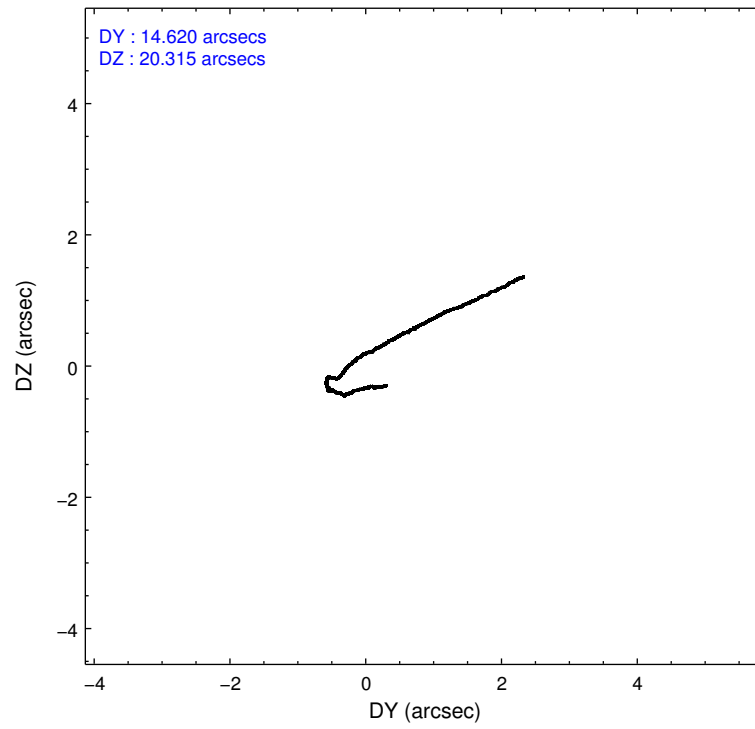
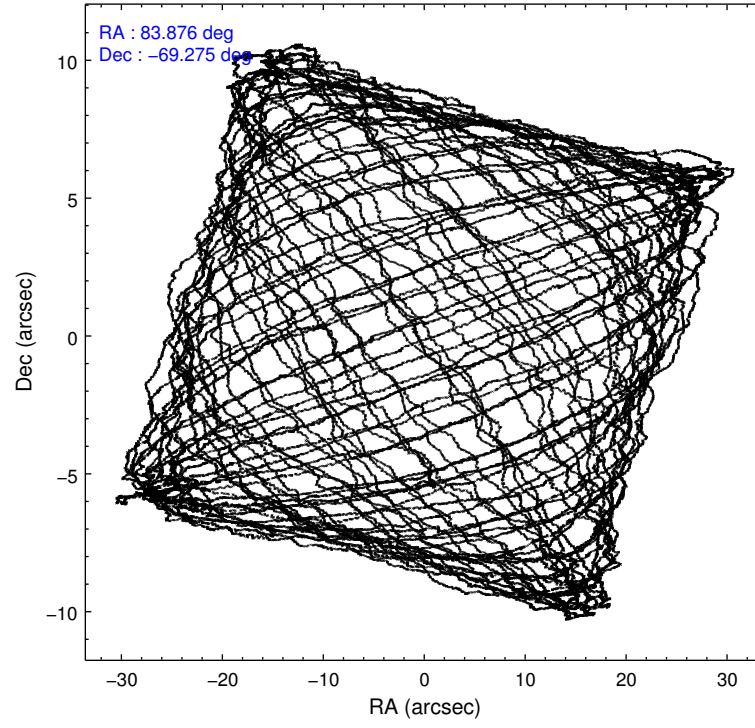
2.1.4 Events

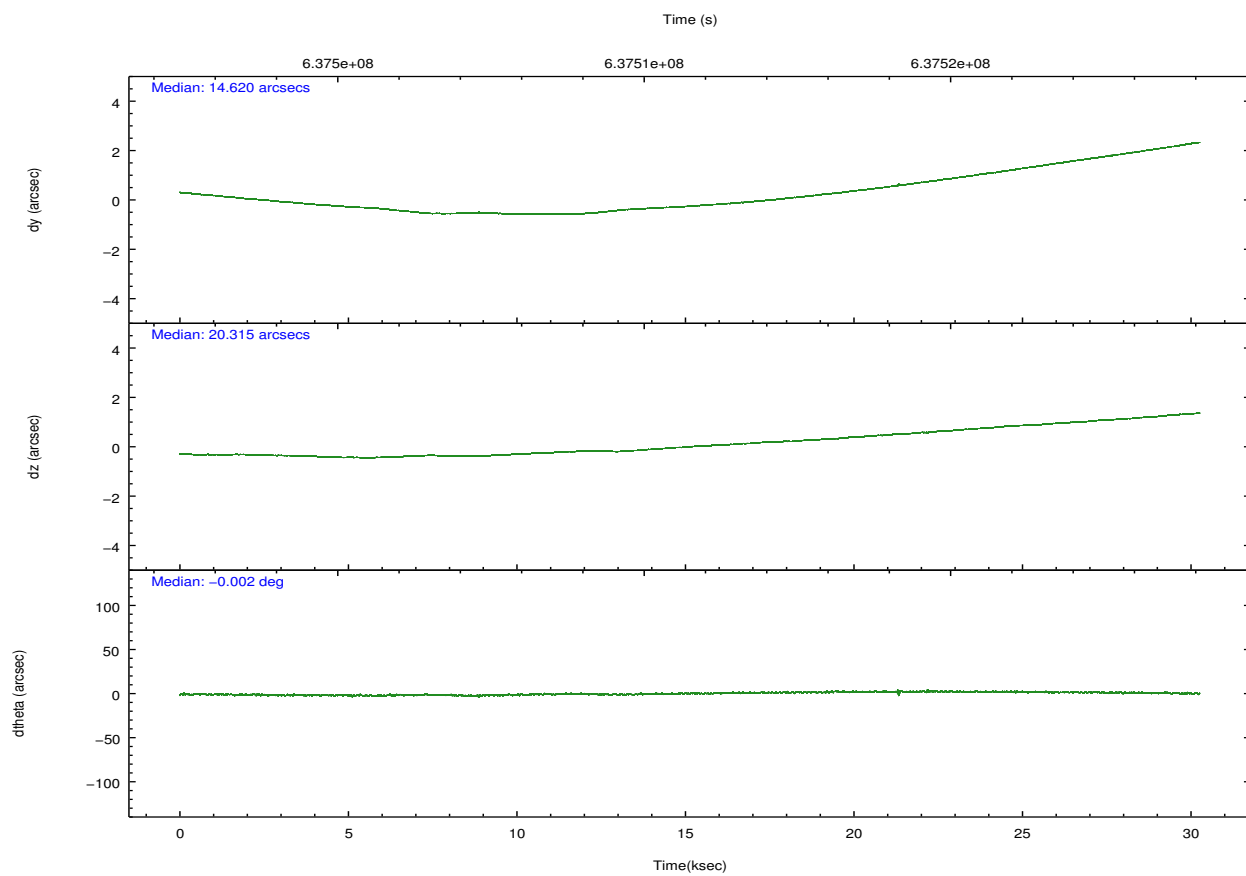
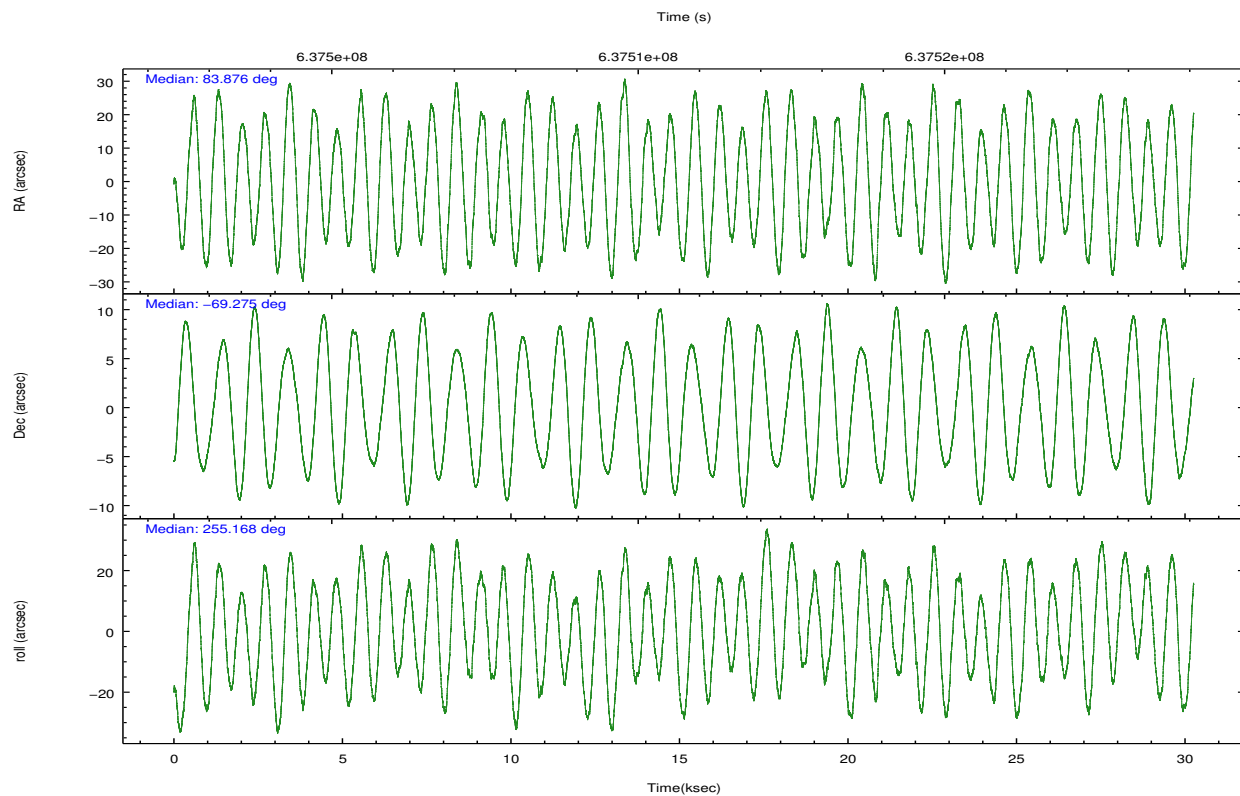
	ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9		ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
level 1 events	134113	193915	121793	150632	167082	113717	grade 0 events	6974	10634	6607	7504	14601	5223
rejected events	117345	95796	105444	78082	118298	98836		5%	5%	5%	4%	8%	4%
rejected %	87%	49%	86%	51%	70%	86%	grade 1 events	82	363	50	215	101	63
								0%	0%	0%	0%	0%	0%
							grade 2 events	3900	31970	3451	15660	10942	3355
								2%	16%	2%	10%	6%	2%
							grade 3 events	1670	4853	1650	6900	5184	1686
								1%	2%	1%	4%	3%	1%
							grade 4 events	1556	4390	1710	6697	4820	1623
								1%	2%	1%	4%	2%	1%
							grade 5 events	5368	15118	5256	14848	7642	5724
								4%	7%	4%	9%	4%	5%
							grade 6 events	2669	46285	2932	35794	13271	2995
								1%	23%	2%	23%	7%	2%
							grade 7 events	111894	80302	100137	63014	110521	93048
								83%	41%	82%	41%	66%	81%

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	83.854909	83.87611403301851	CCD I2 on	N	N
[deg] Pointing Dec	-69.248824	-69.27520283854683	CCD I3 on	N	N
[deg] Pointing Roll	254.989000	255.1654612317418	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	-183.985022191653	Subarray requested	CUSTOM	1/2
[mm] SIM translation stage offset	-6.14	-6.147500391354811	Subarray start row	1	1
[s] Observation start time (MET)	637496566.184000	637495581.18814	Subarray row count	512	512
Observation start date	2018-03-15T10:21:37	2018-03-15T10:06:21	Alternating exposures requested	N	N
[s] Observation end time (MET)	637526648.184000	637527435.62752	[s] Primary exposure time	0.000000	1.7
Observation end date	2018-03-15T18:42:59	2018-03-15T18:57:15			
Read mode	TIMED	TIMED			

2.3 Aspect



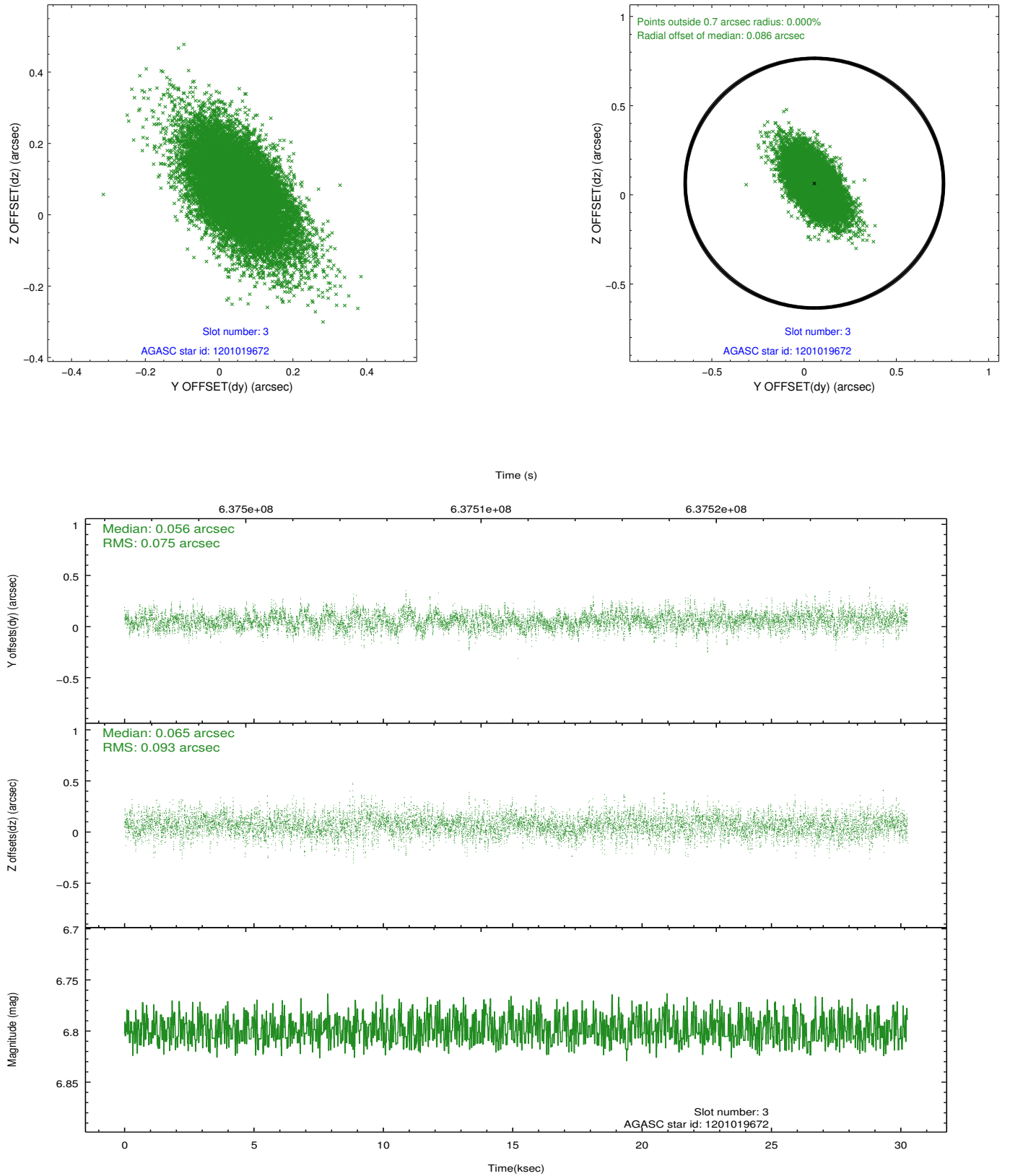


Slot Statistics

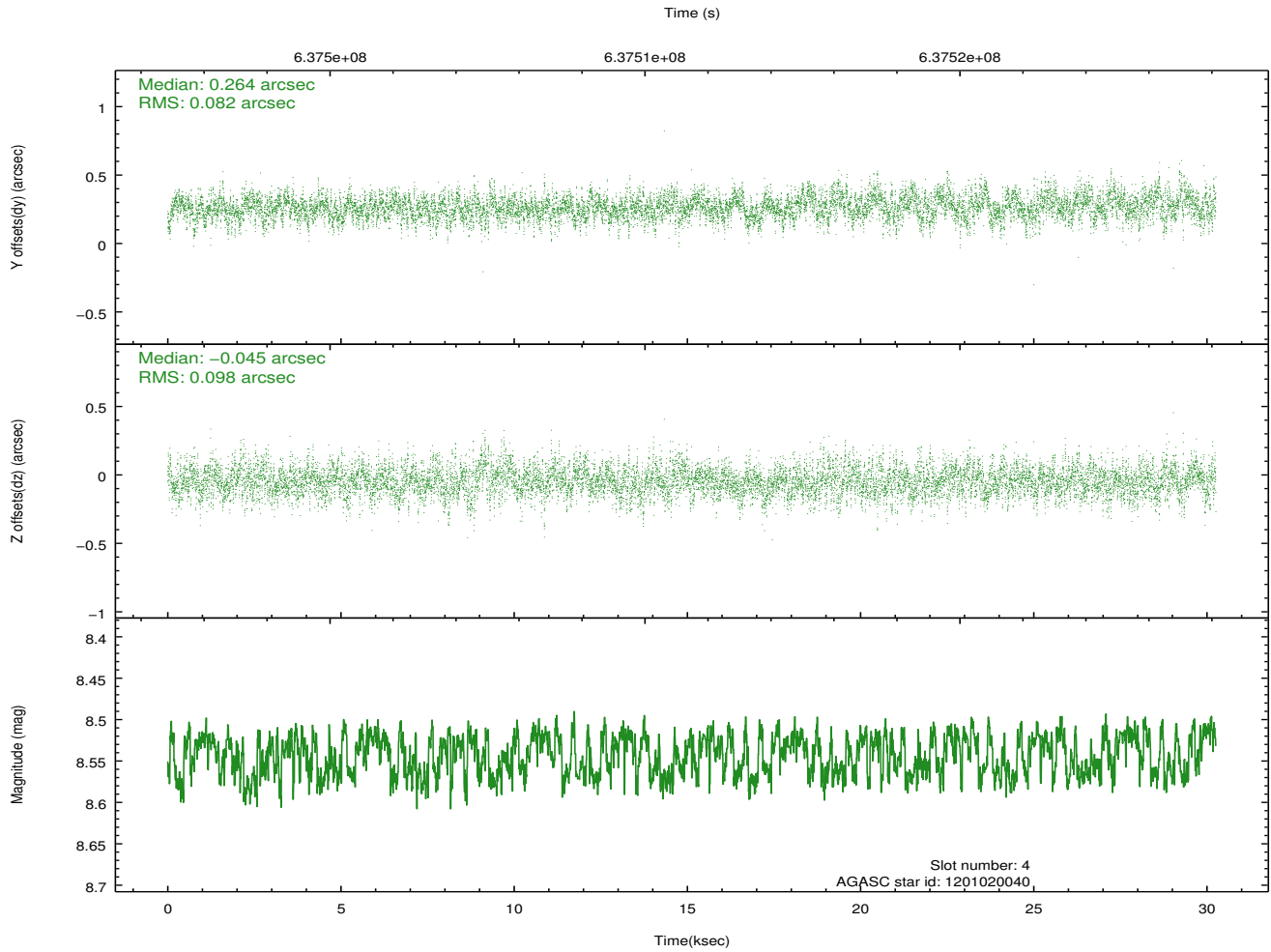
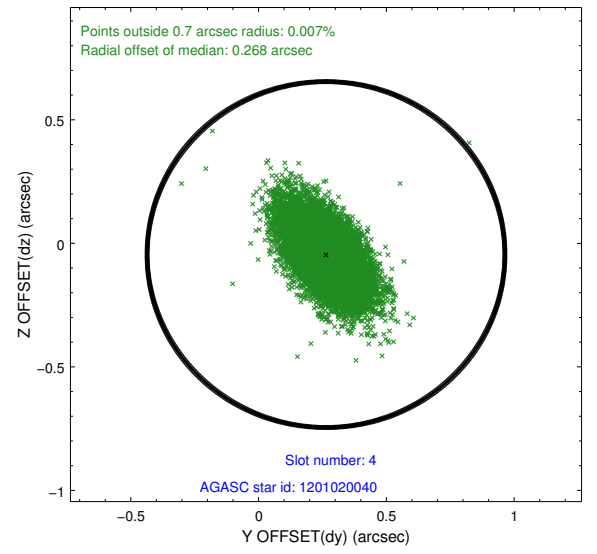
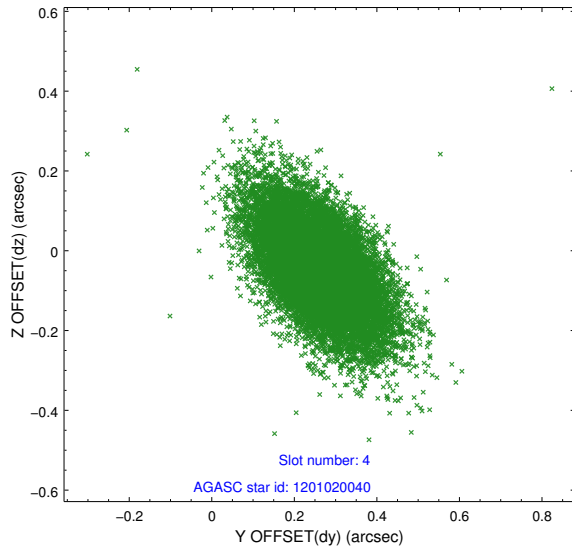
slot	status	used	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID		ACIS-S-1	7.02	7380	0.117	0.169	0.017	0.070	0.000000	0.000000	928.60	-1864.24
1	FID		ACIS-S-2	6.92	7380	-0.375	-0.234	0.016	0.041	0.000000	0.000000	-767.75	-1869.19
2	FID		ACIS-S-4	7.01	7380	0.240	0.072	0.024	0.035	0.000000	0.000000	2146.04	39.67
3	GUIDE	used	1201019672	6.80	14760	0.056	0.065	0.119	0.219	85.312192	-68.770187	-2134.45	1394.80
4	GUIDE	used	1201020040	8.54	14755	0.264	-0.045	0.129	0.234	85.379163	-68.879396	-1772.78	1571.98
5	GUIDE	used	1201540776	9.54	14740	-0.172	-0.183	0.177	0.299	85.107945	-69.858480	1732.76	2072.98
6	GUIDE	used	1201542672	8.16	14751	-0.113	-0.159	0.132	0.229	84.492488	-69.957531	2261.34	1422.09
7	GUIDE	used	1201410616	9.27	14727	-0.034	0.318	0.190	0.320	82.516808	-69.784406	2311.04	-1103.01

2.4 Star Slots

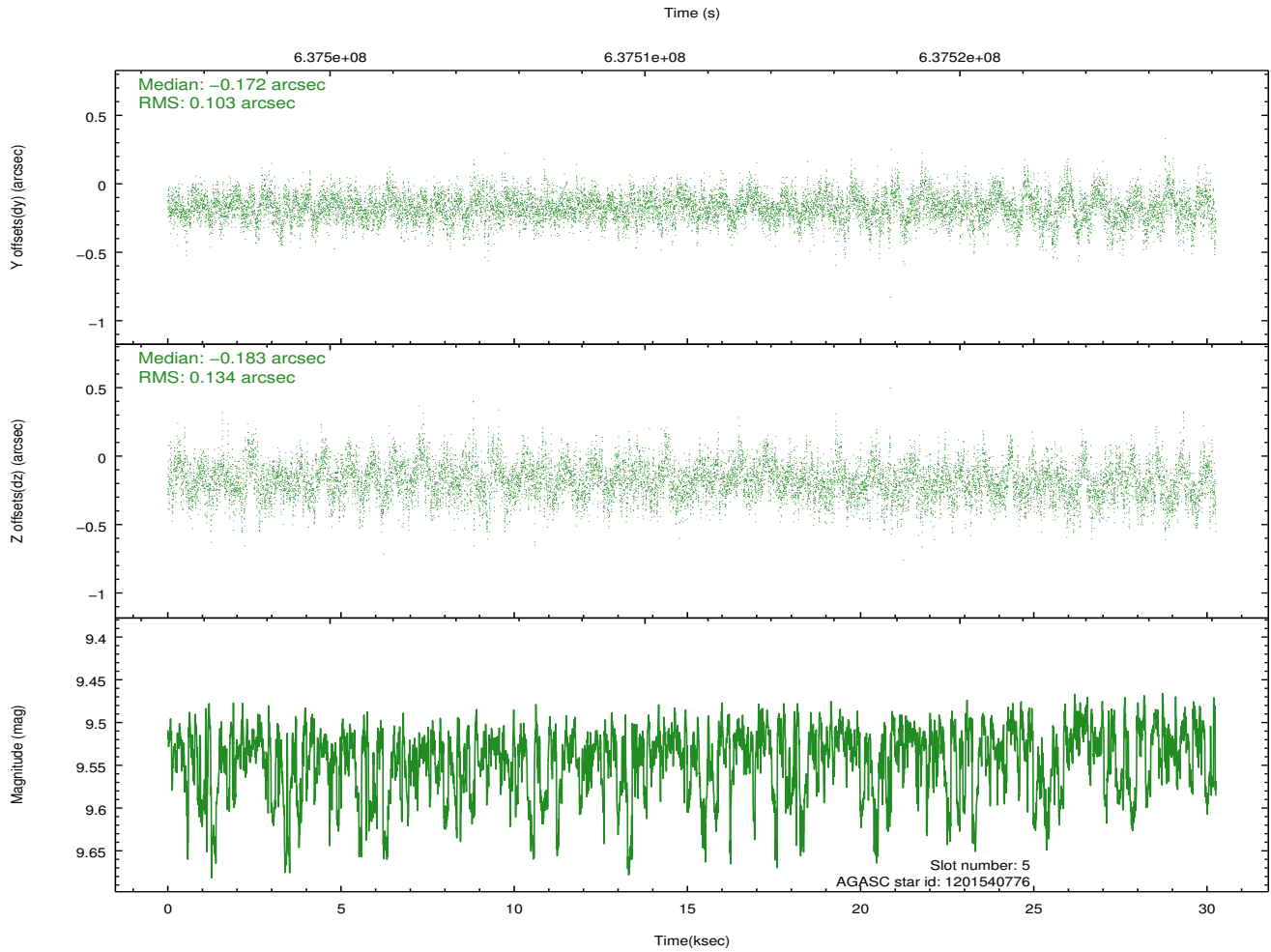
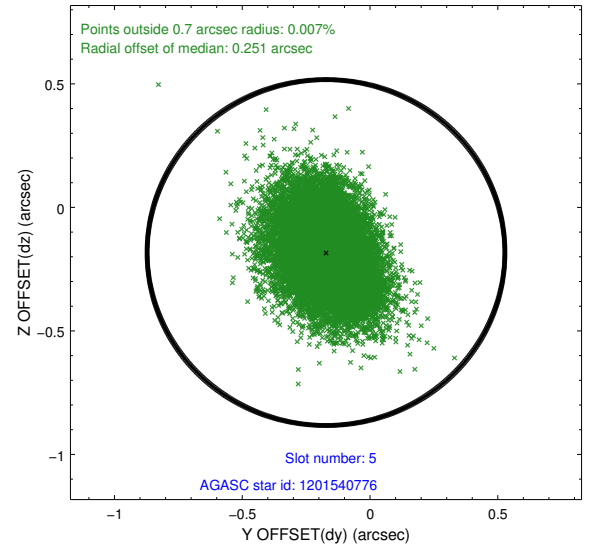
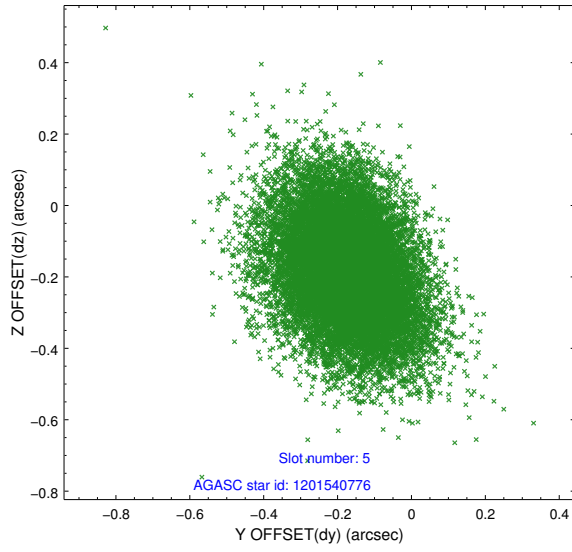
2.4.1 Slot 3



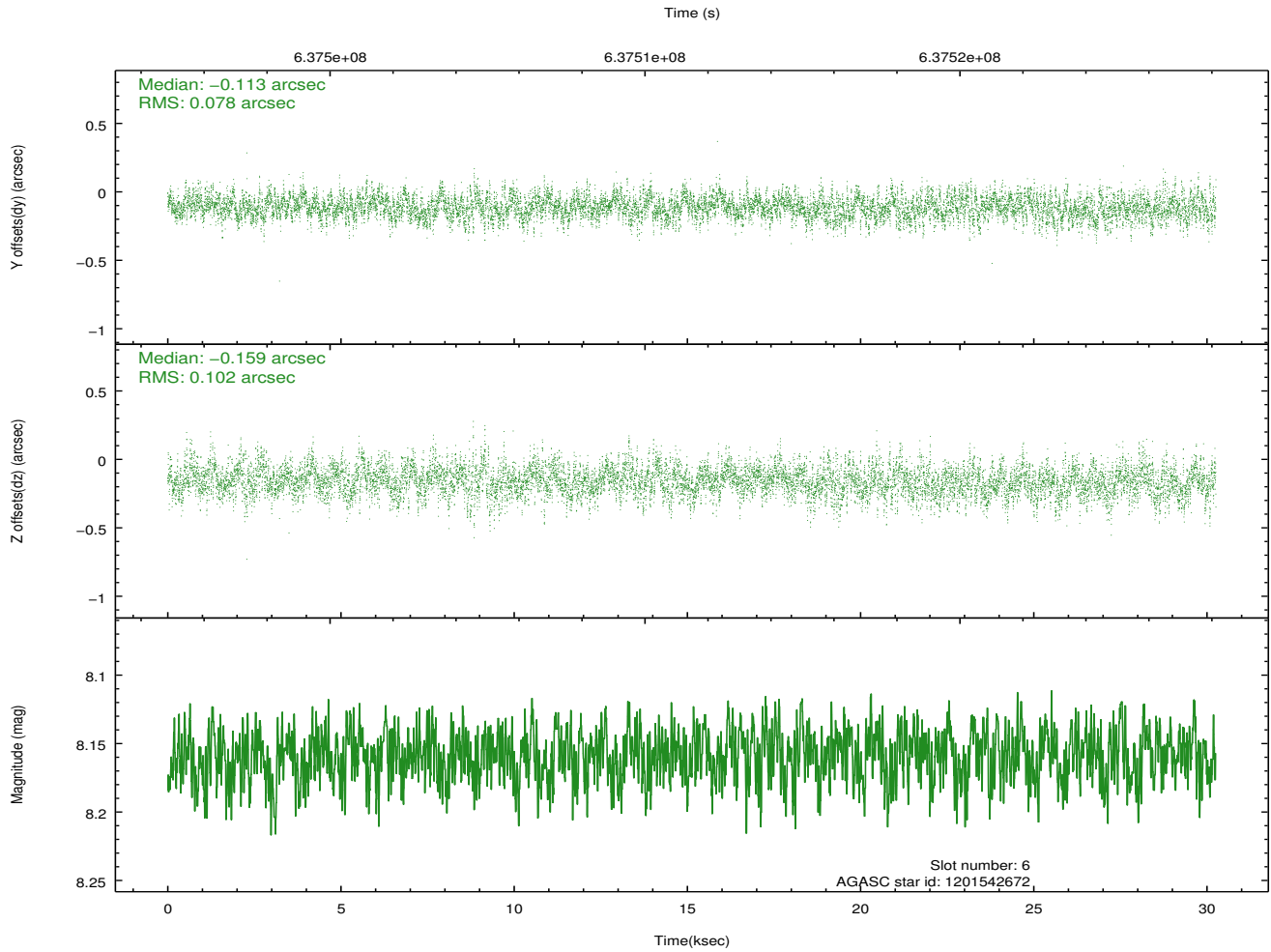
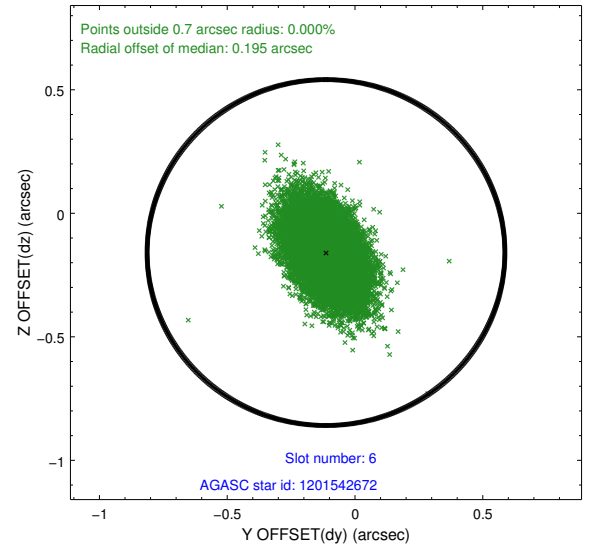
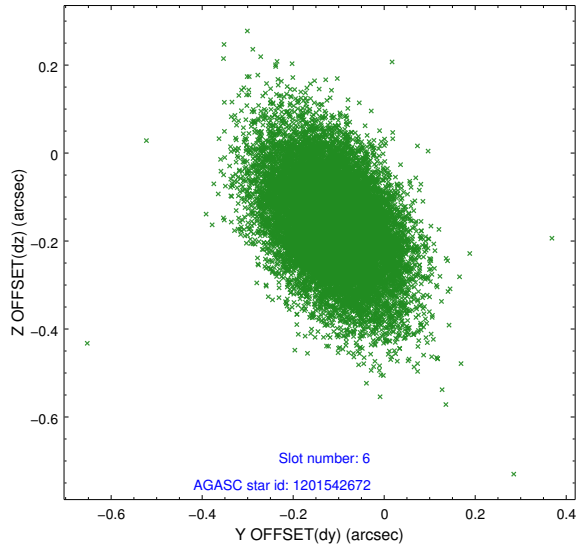
2.4.2 Slot 4



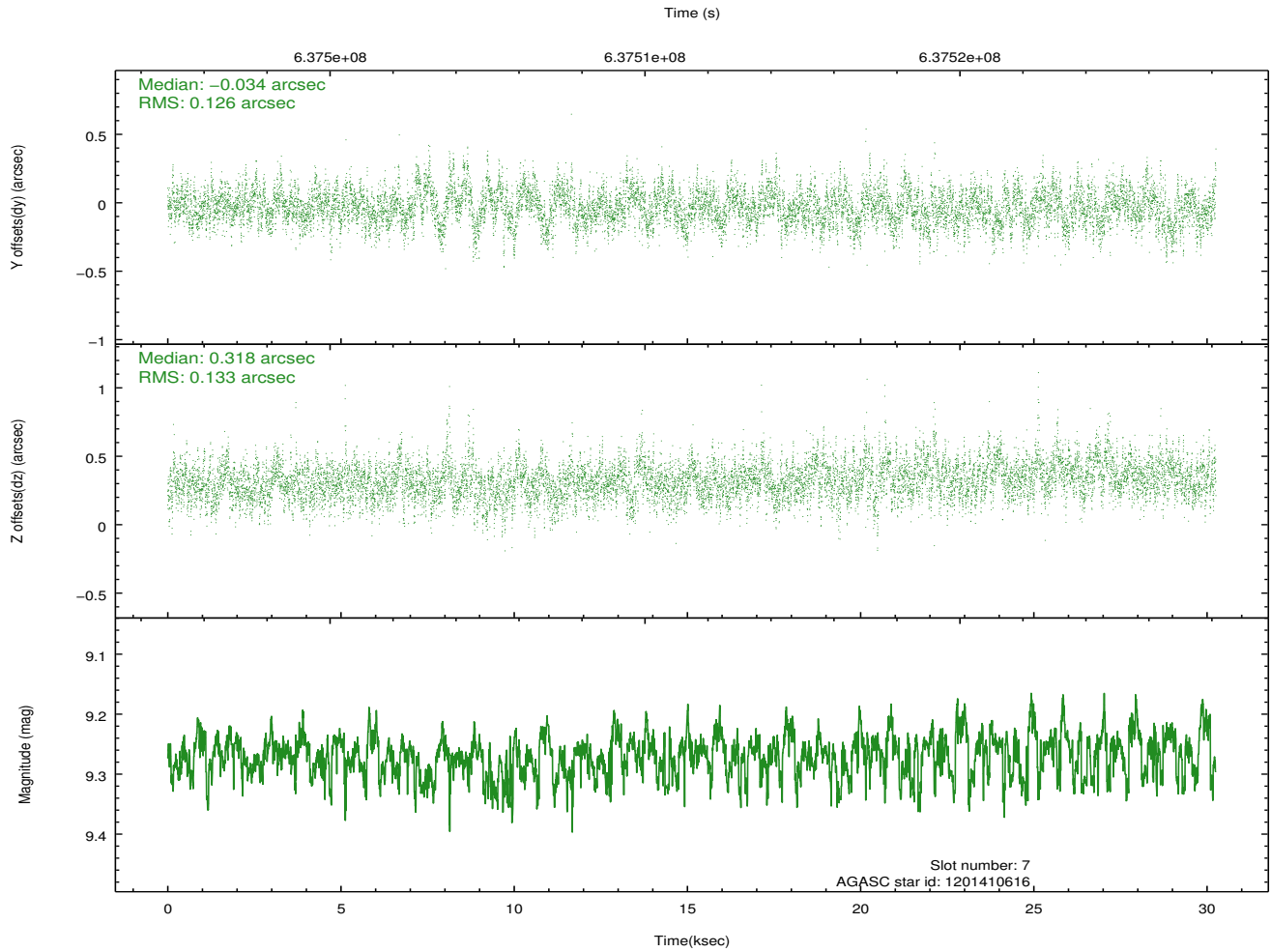
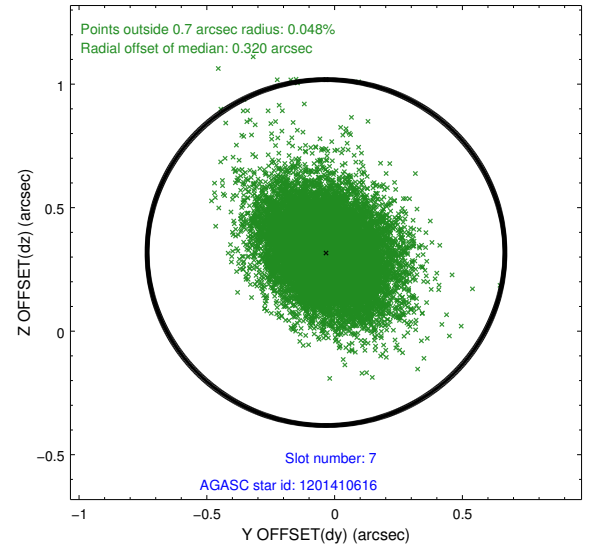
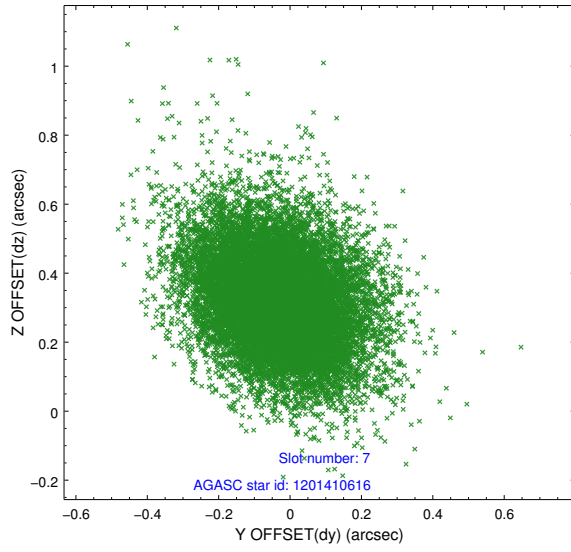
2.4.3 Slot 5



2.4.4 Slot 6

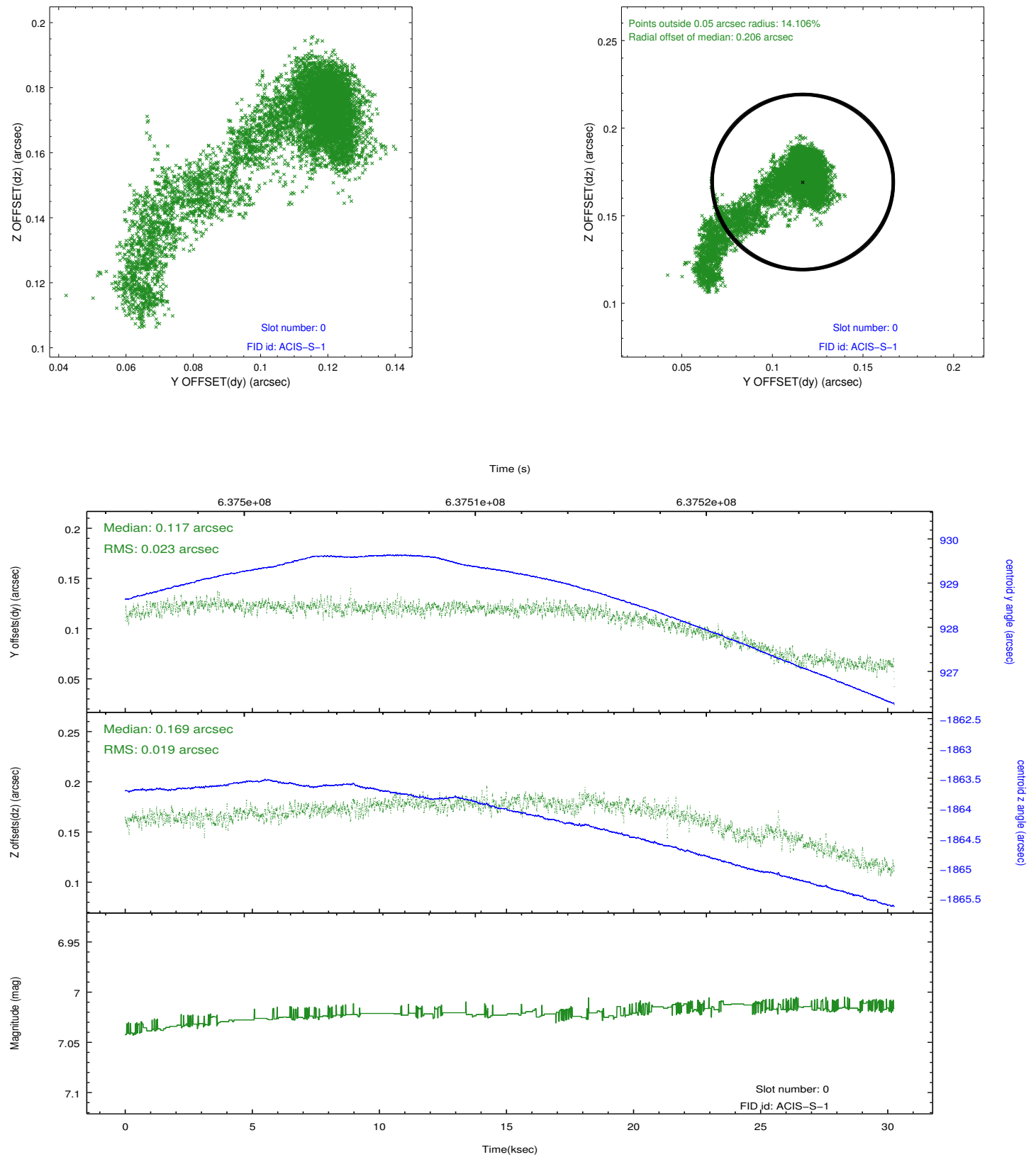


2.4.5 Slot 7

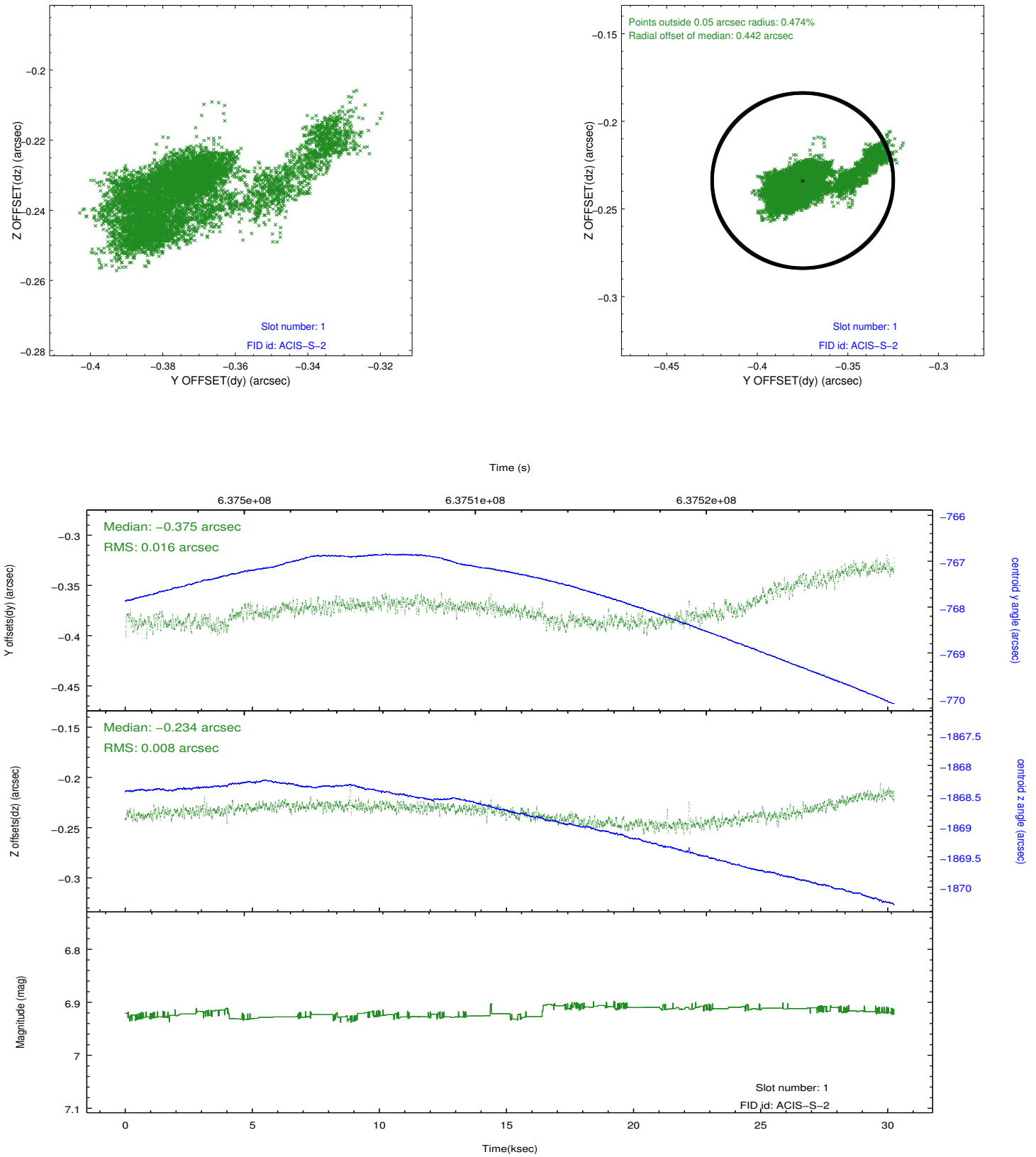


2.5 FID Slots

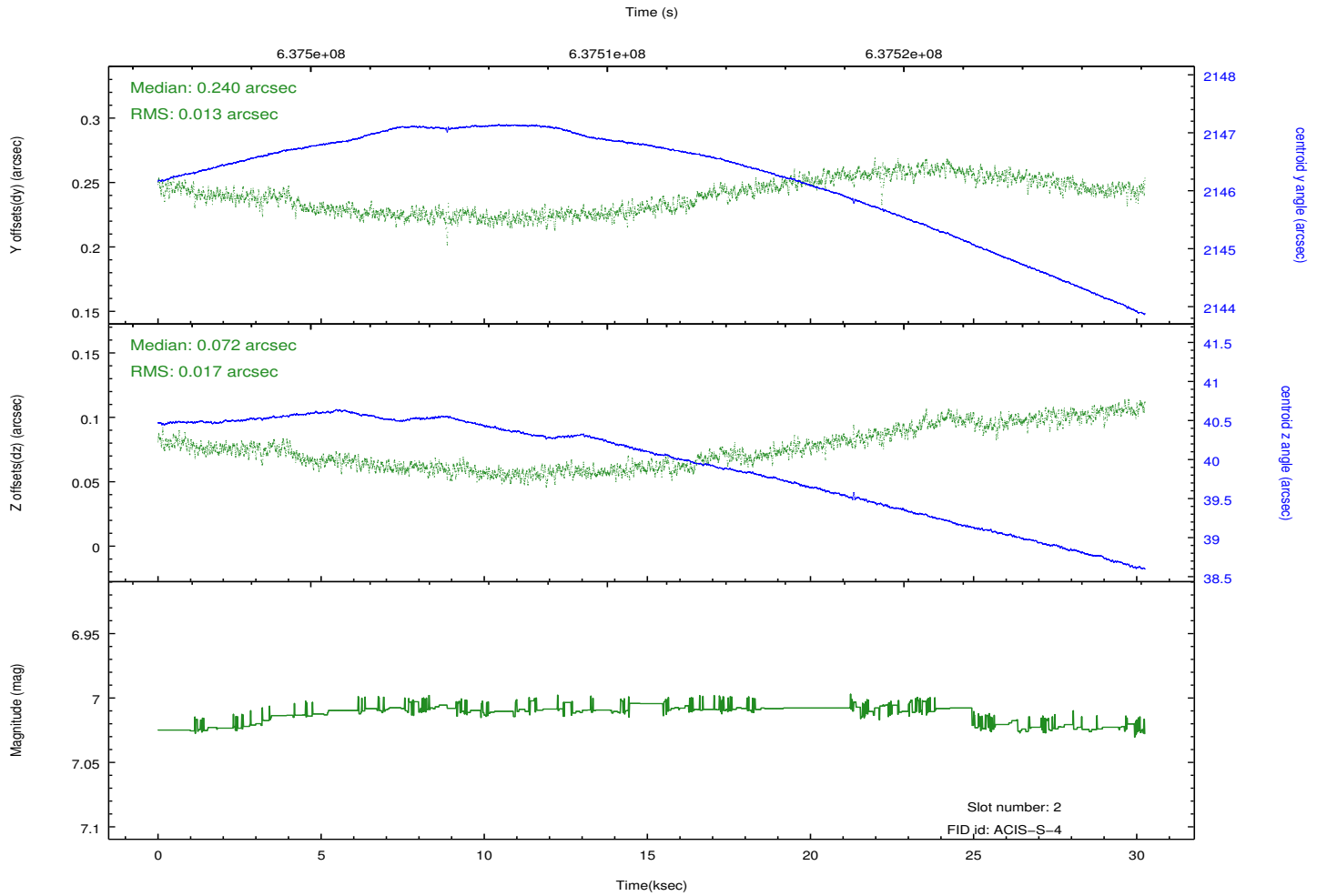
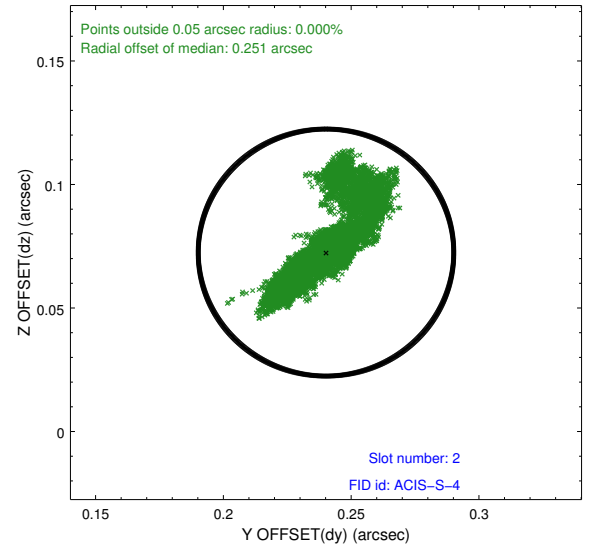
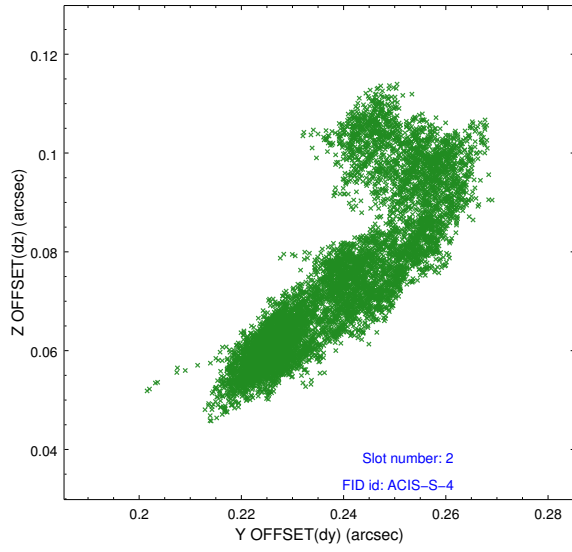
2.5.1 Slot 0



2.5.2 Slot 1

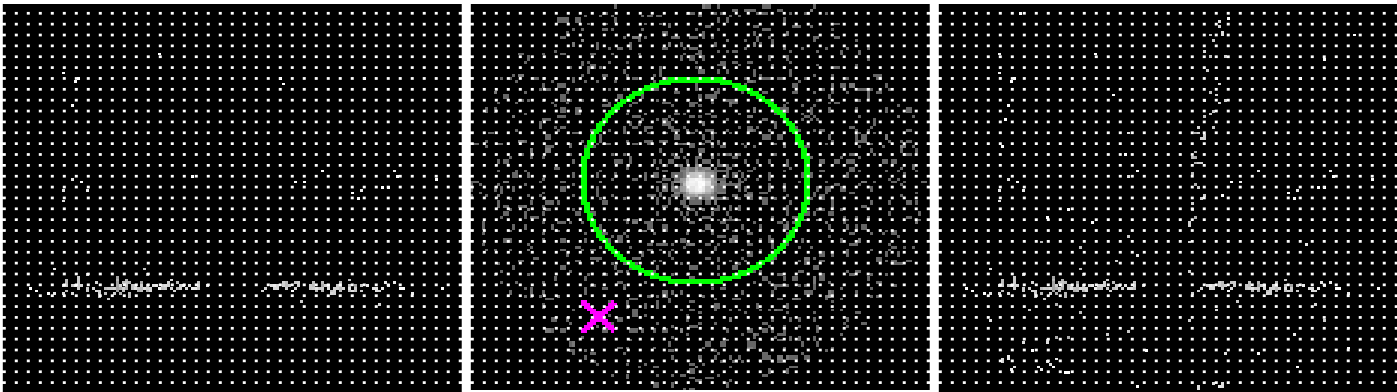


2.5.3 Slot 2



3 Gratings

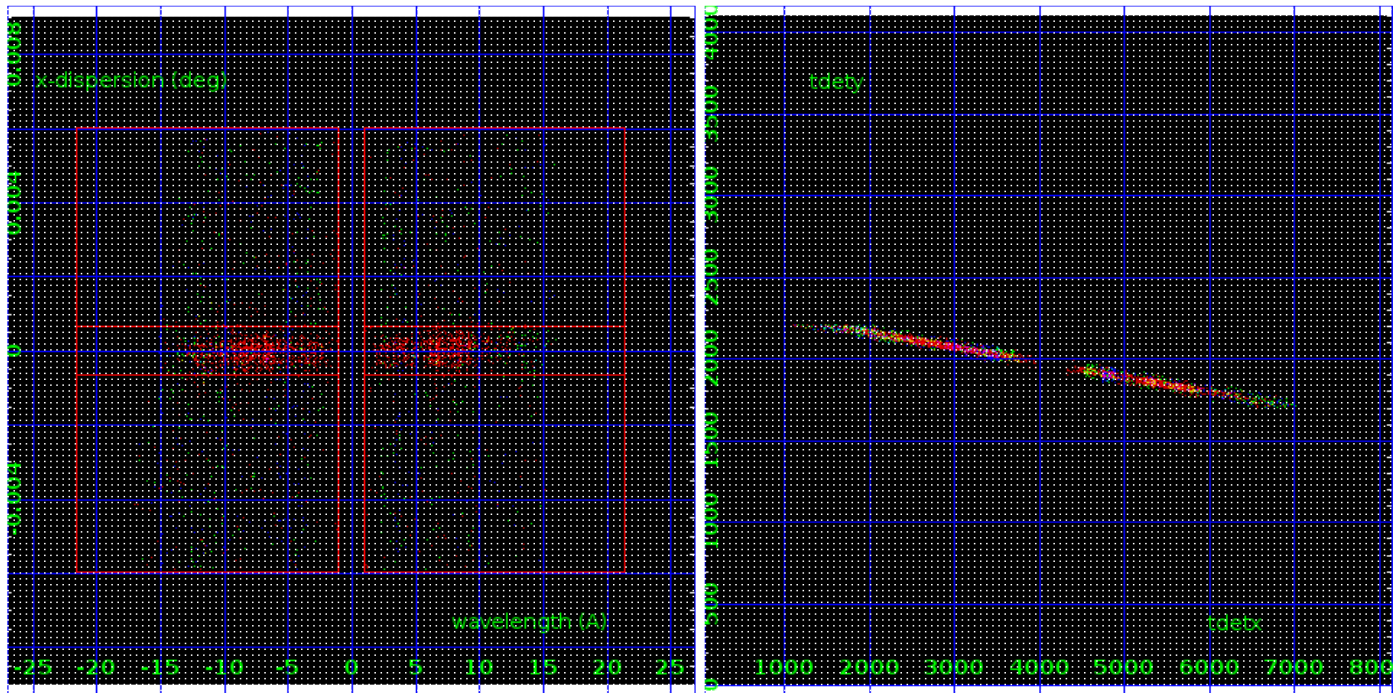
3.1 HEG Arm



HEG Order Sort 123

HEG Zero Order

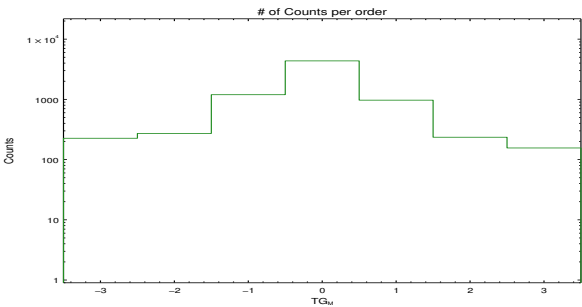
HEG Order Sort ALL

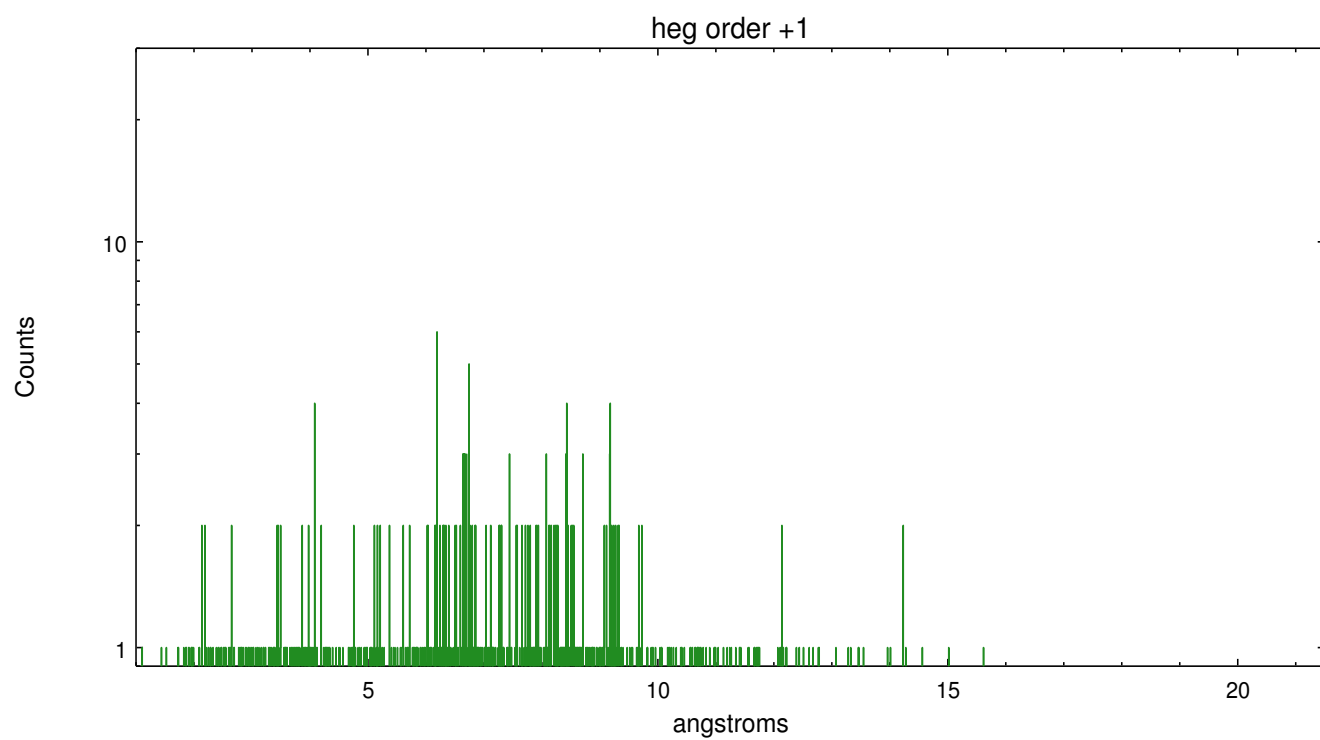
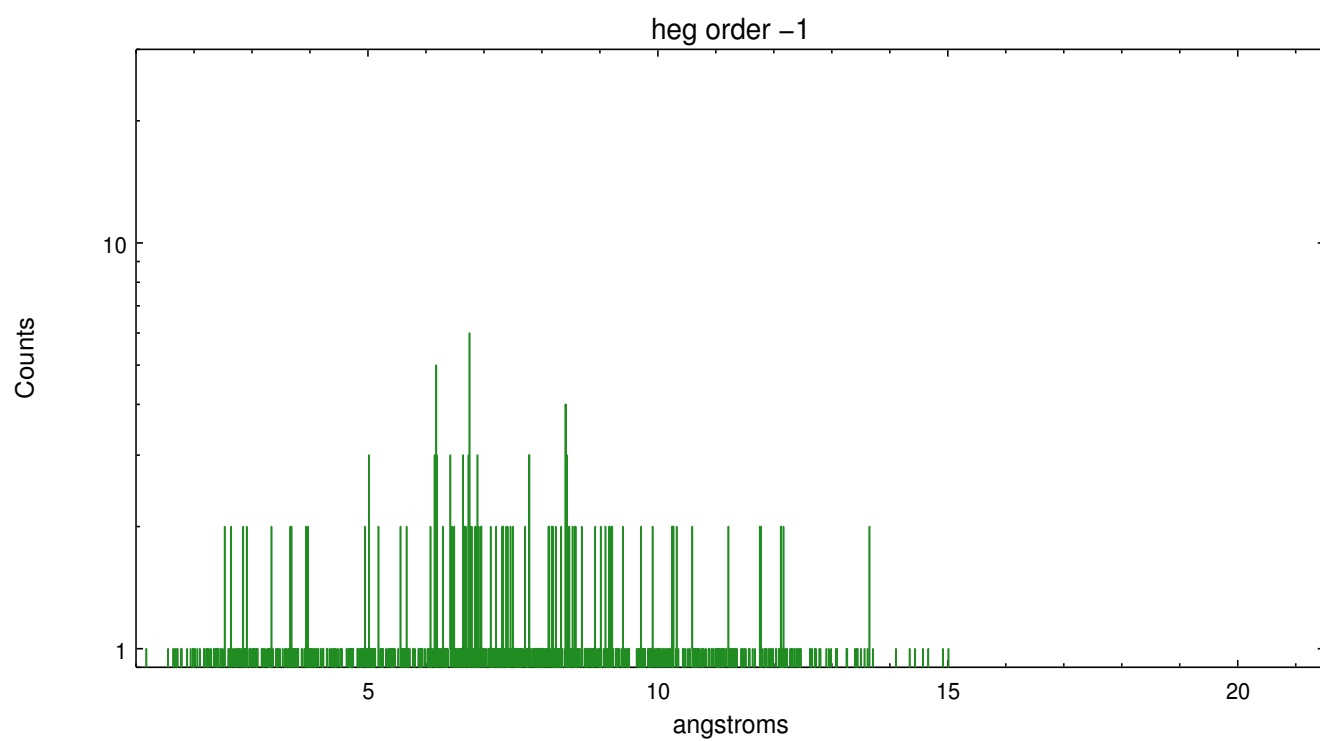


Spot Image HEG

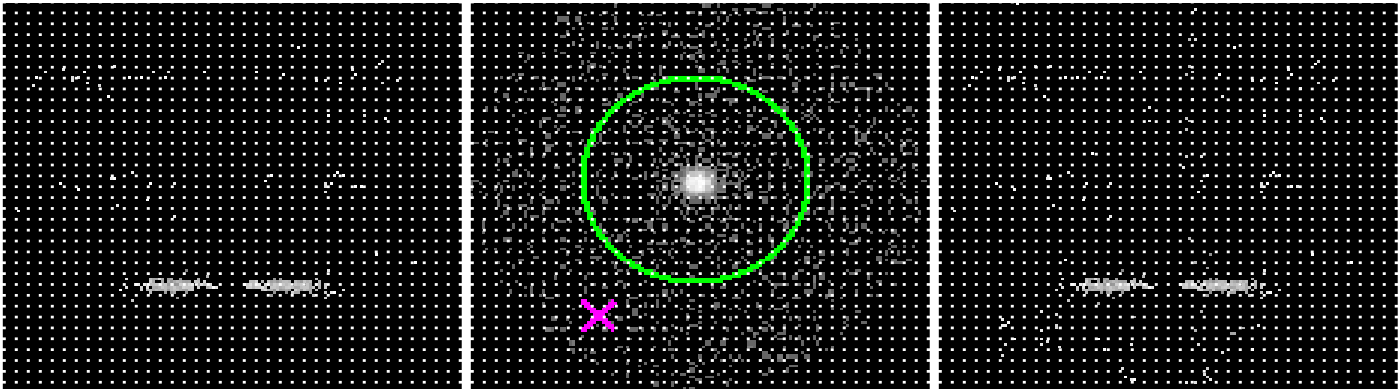
Full Detector HEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	226	272	1196	4358	970	235	156





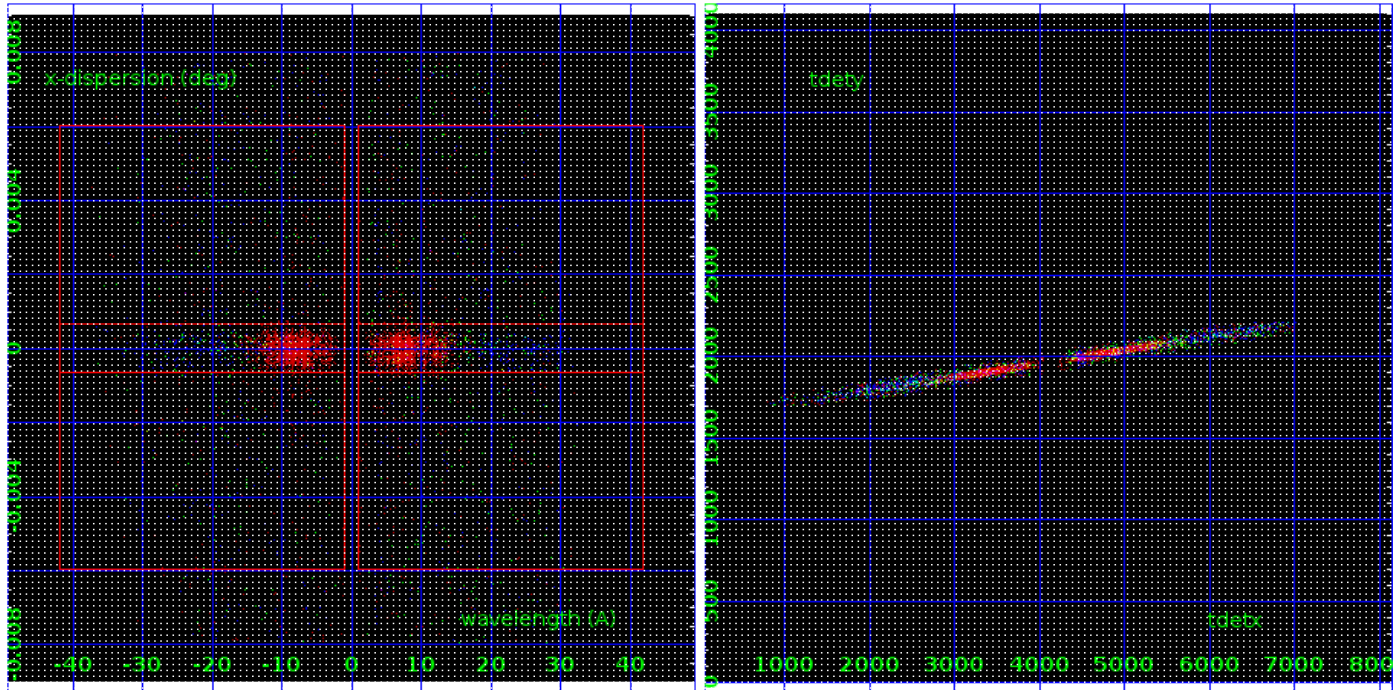
3.2 MEG Arm



MEG Order Sort 123

MEG Zero Order

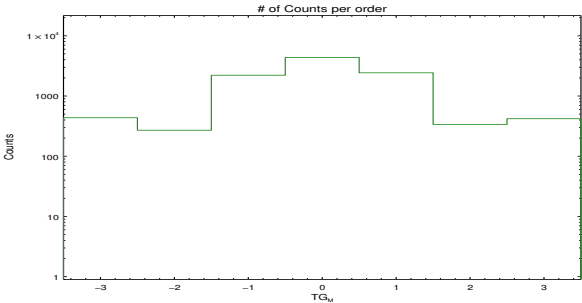
MEG Order Sort ALL

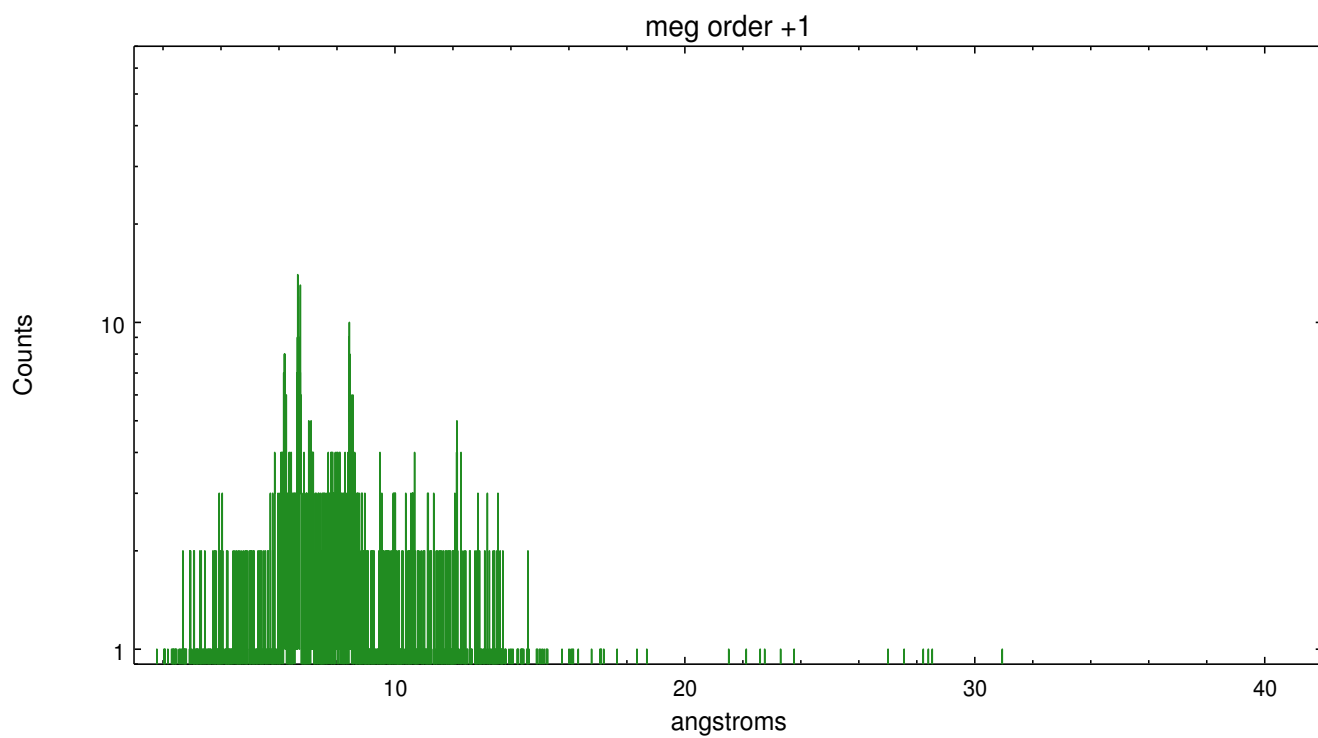
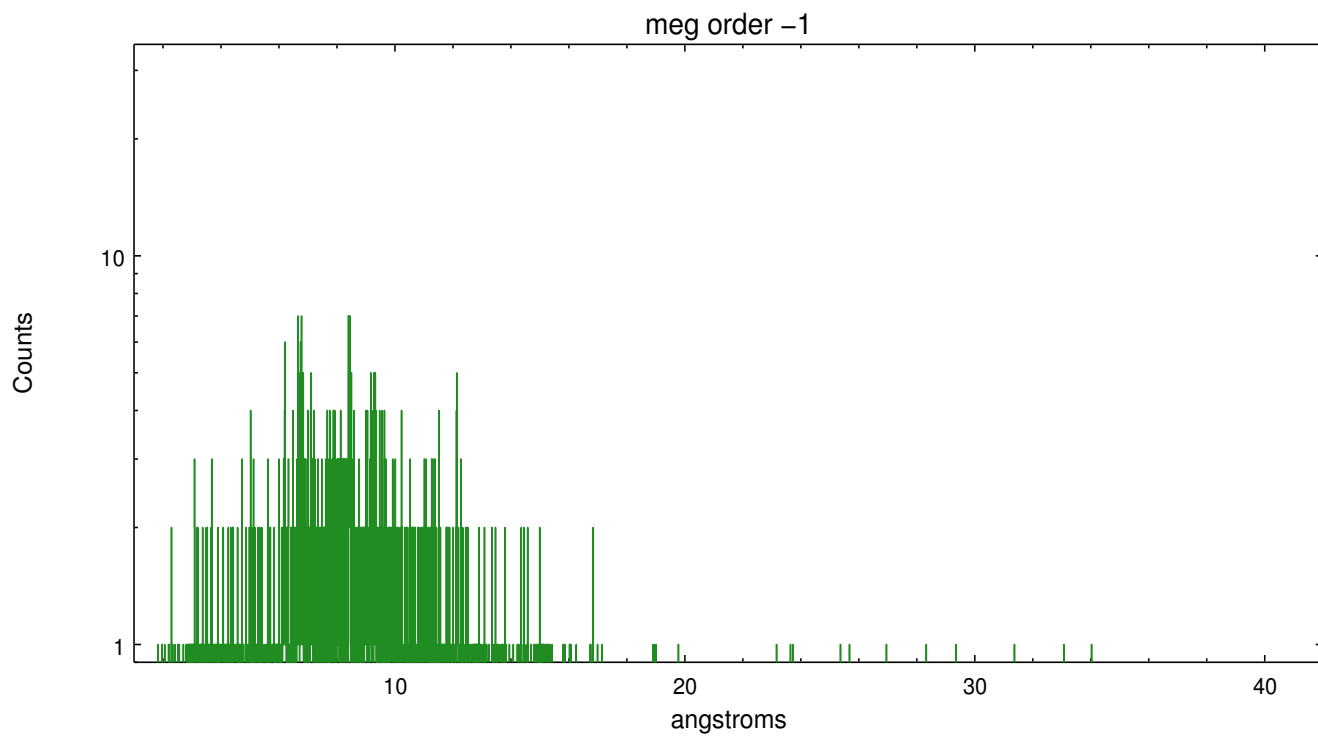


Spot Image MEG

Full Detector MEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	436	270	2214	4358	2429	338	420





A Summary

A.1 Status

V&V Scientist	Joy Nichols
V&V Date (YYYY-MM-DD)	2018.03.16
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	30.127400182128

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.