

# V&V Reference Report

## L2 ASCDS Version : 10

Observation 14660 - L2 Version 2  
Chandra X-Ray Center

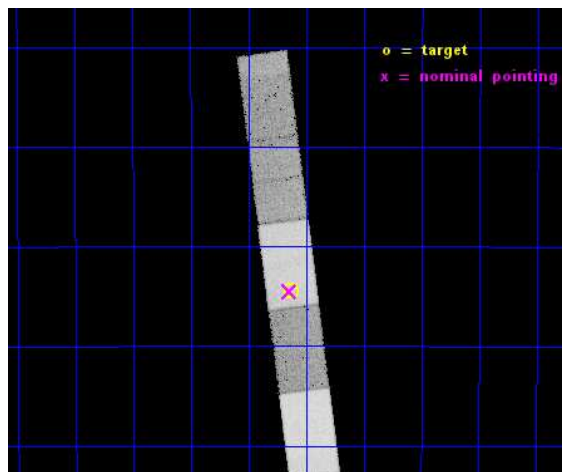
L2 Processing Date : Dec 17 2014

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# 1 Front

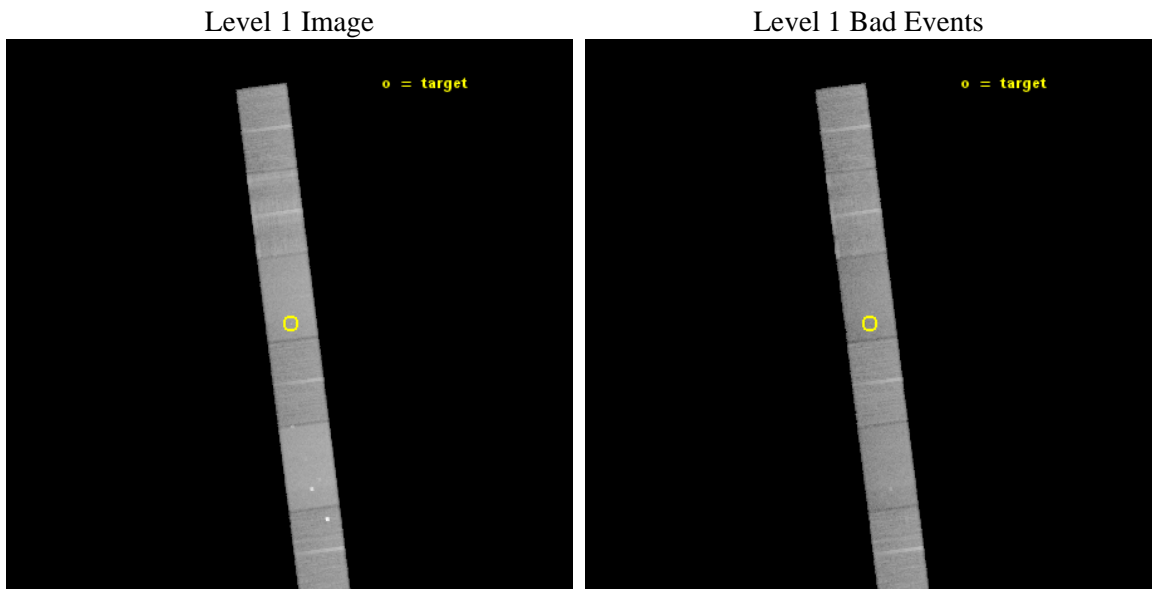
seq_num	401493	Sequence number
obs_id	14660	Observation id
title	The Disk-Wind-Jet Coupling in Black Hole Candidate IGR J17091-3624	&#160
observer	Ashley King	Principal investigator
object	IGR J17091-3624	Source name
dtcycle	0	&#160
cycle	P	events from which exps? Prim/Second/Both
ra_targ	257.283333	Observer's specified target RA [deg]
dec_targ	-36.406667	Observer's specified target Dec [deg]
ra_nom	257.28621361056	Nominal RA [deg]
dec_nom	-36.408601356184	Nominal Dec [deg]
roll_nom	262.54875564019	Nominal Roll [deg]
revision	2	Processing version of data
ontime	43067.336489558	Sum of GTIs [s]
livetime	42201.364490219	Livetime [s]
ontime4	43067.377529562	Sum of GTIs [s]
ontime5	43067.295449555	Sum of GTIs [s]
ontime6	43067.254409552	Sum of GTIs [s]
ontime7	43067.336489558	Sum of GTIs [s]
ontime8	43067.213369548	Sum of GTIs [s]
ontime9	43065.131289303	Sum of GTIs [s]
l2events	232361	Number of level 2 events



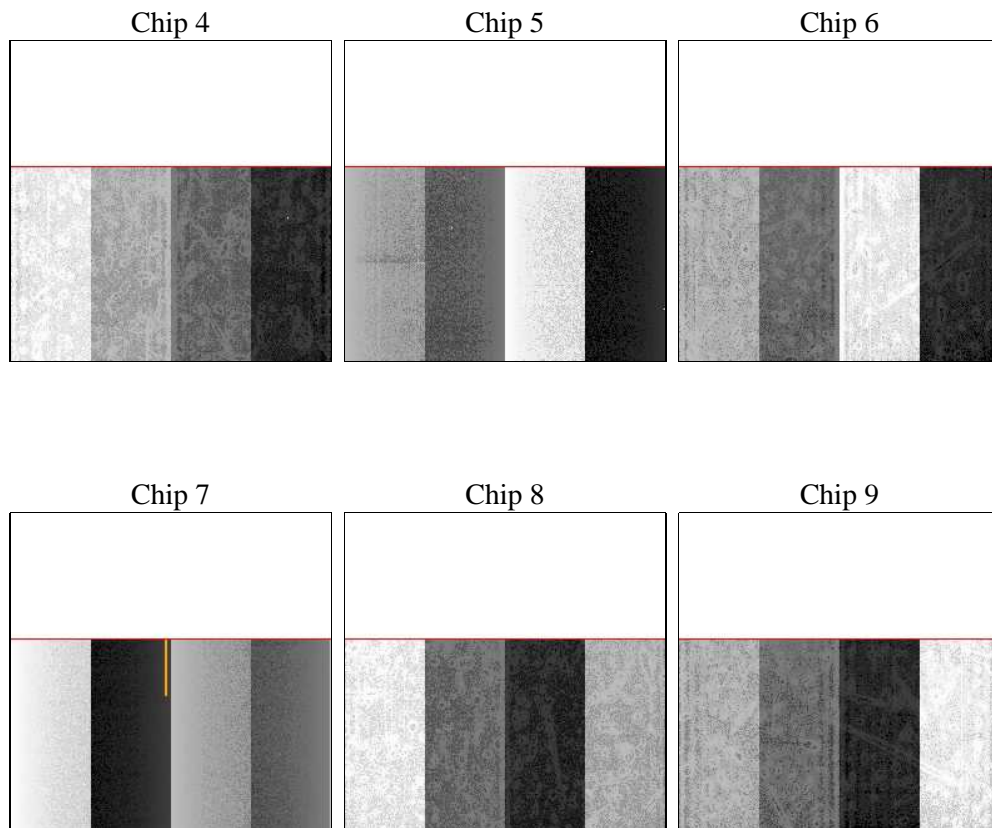
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

obi_num	0	Obi number	sched_exp_time	43000.000000	[s] Scheduled observation exposure time
ascdsver	10.3.1	Processing system revision	ontime	43067.336489558	Sum of GTIs [s]
caldbver	4.6.4	&#160	ontime4	43067.377529562	Sum of GTIs [s]
date	2014-12-06T22:12:09	Date and time of file creation	ontime5	43067.295449555	Sum of GTIs [s]
revision	2	Processing version of data	ontime6	43067.254409552	Sum of GTIs [s]
			ontime7	43067.336489558	Sum of GTIs [s]
			ontime8	43067.213369548	Sum of GTIs [s]
			ontime9	43065.131289303	Sum of GTIs [s]
			l1events	978113	Number of level 1 events
			tgmetho	iPSF	Method used to create src1a file
			ra_pos	(4112.28 4107.28)	src1a sky pixel position

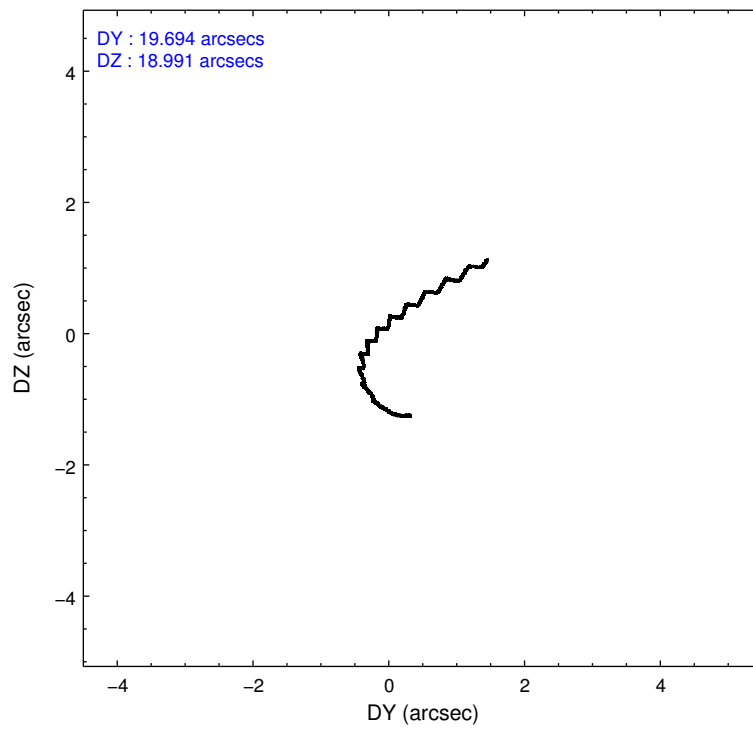
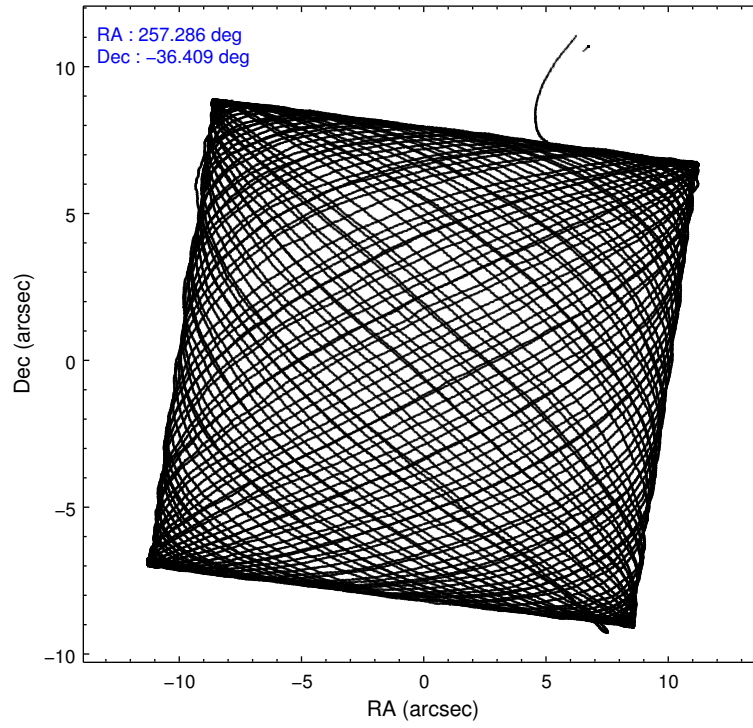
### 2.1.4 Events

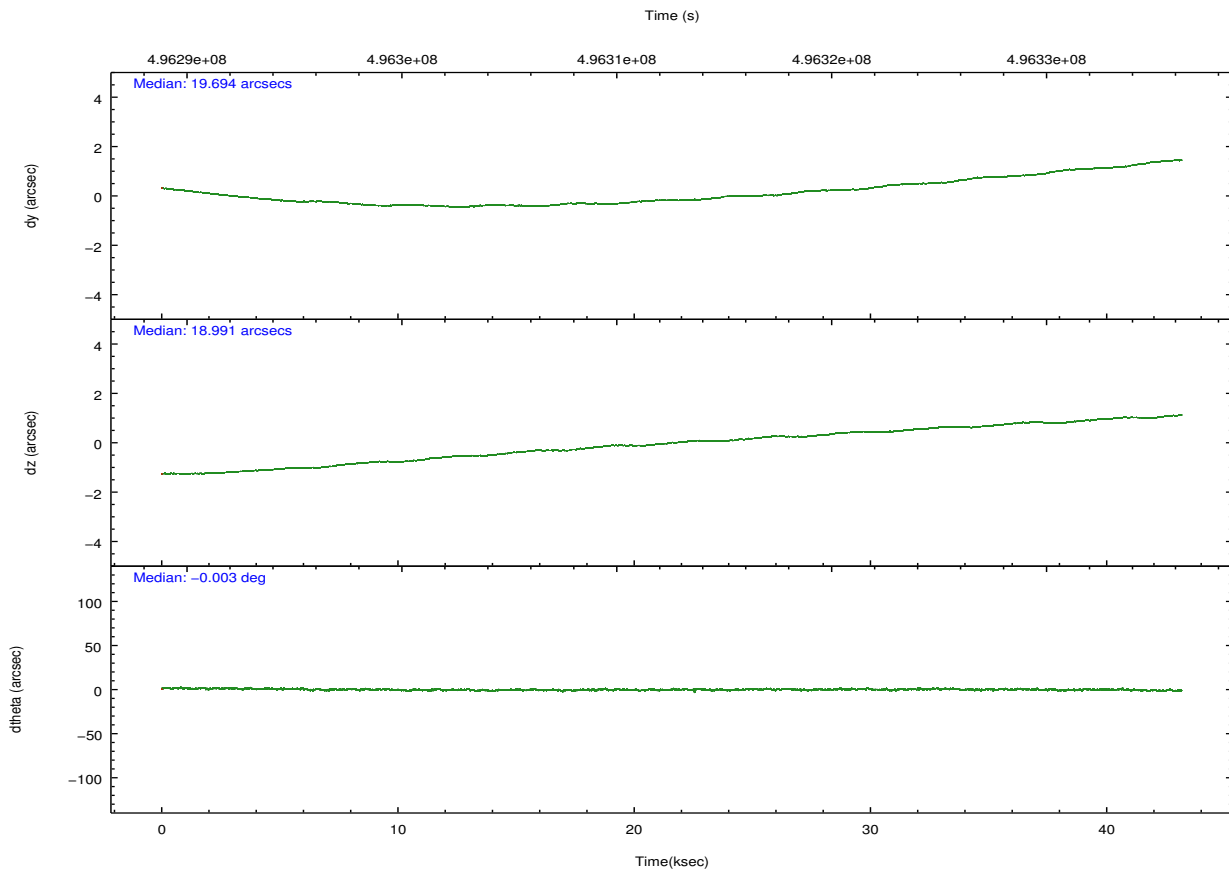
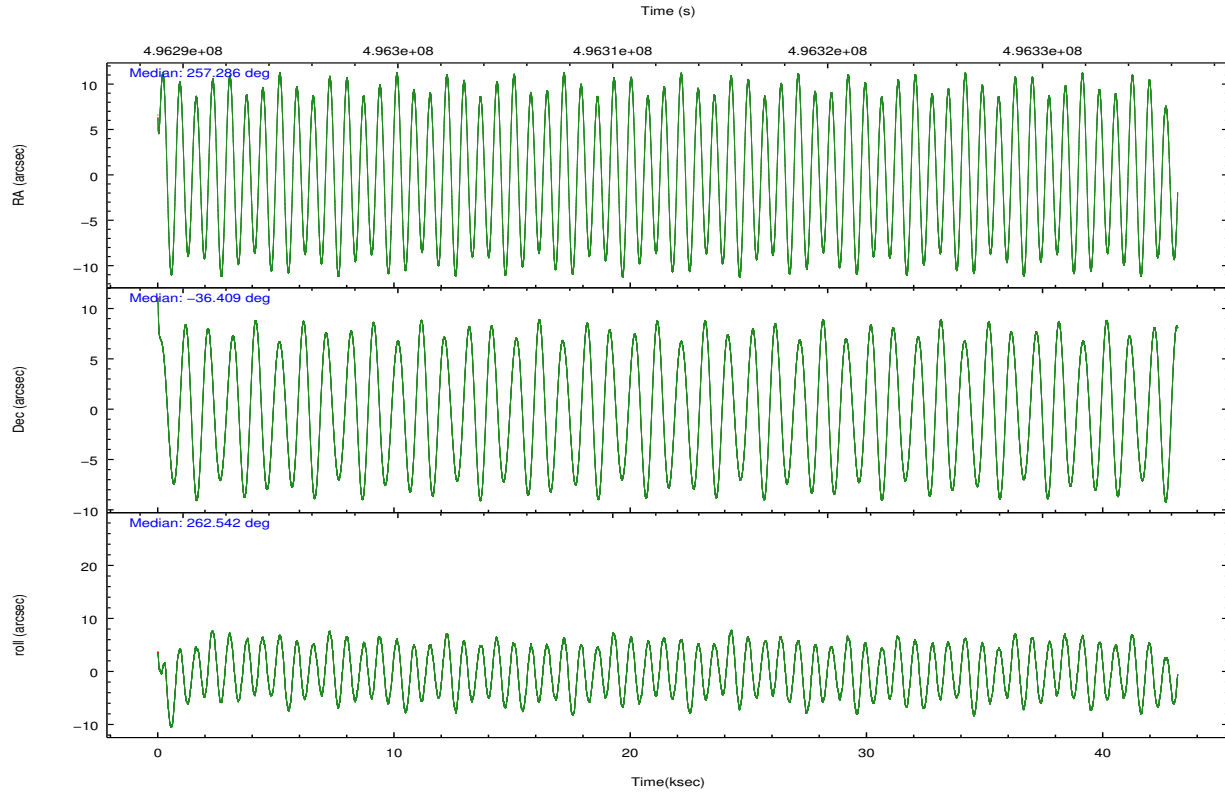
	ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9		ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
level 1 events	153520	214496	132778	173009	175307	129003	grade 0 events	17612	10871	5648	6689	13829	5956
rejected events	124567	109586	116304	96503	127168	111869		11%	5%	4%	3%	7%	4%
rejected %	81%	51%	87%	55%	72%	86%	grade 1 events	102	697	40	194	90	66
								0%	0%	0%	0%	0%	0%
							grade 2 events	4453	30252	3645	15633	10958	3764
								2%	14%	2%	9%	6%	2%
							grade 3 events	1921	4869	1803	6895	5095	1940
								1%	2%	1%	3%	2%	1%
							grade 4 events	1815	4959	1803	6916	4913	1900
								1%	2%	1%	3%	2%	1%
							grade 5 events	6396	17317	6490	17989	9375	7052
								4%	8%	4%	10%	5%	5%
							grade 6 events	3153	53964	3576	40379	13348	3574
								2%	25%	2%	23%	7%	2%
							grade 7 events	118068	91567	109773	78314	117699	104751
								76%	42%	82%	45%	67%	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	257.272775	257.2862136105579	CCD I2 on	N	N
[deg] Pointing Dec	-36.383505	-36.40860135618411	CCD I3 on	N	N
[deg] Pointing Roll	262.384155	262.5487556401864	CCD S0 on	Y	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	-185.262523	-185.2572657342424	CCD S3 on	Y	Y
[mm] SIM translation stage offset	-4.87	-4.875256848765446	CCD S4 on	Y	Y
[s] Observation start time (MET)	496291149.184000	496290017.00861	CCD S5 on	O1	Y
Observation start date	2013-09-23T02:38:02	2013-09-23T02:20:17	Number of optional ACIS chips dropped	0	0
[s] Observation end time (MET)	496334149.184000	496335574.1611	On-chip summing requested	N	N
Observation end date	2013-09-23T14:34:42	2013-09-23T14:59:34	Subarray requested	CUSTOM	CUSTOM
Read mode	TIMED	TIMED	Subarray start row	1	1
			Subarray row count	620	620
			Alternating exposures requested	N	N
			[s] Primary exposure time	0.000000	2

## 2.3 Aspect





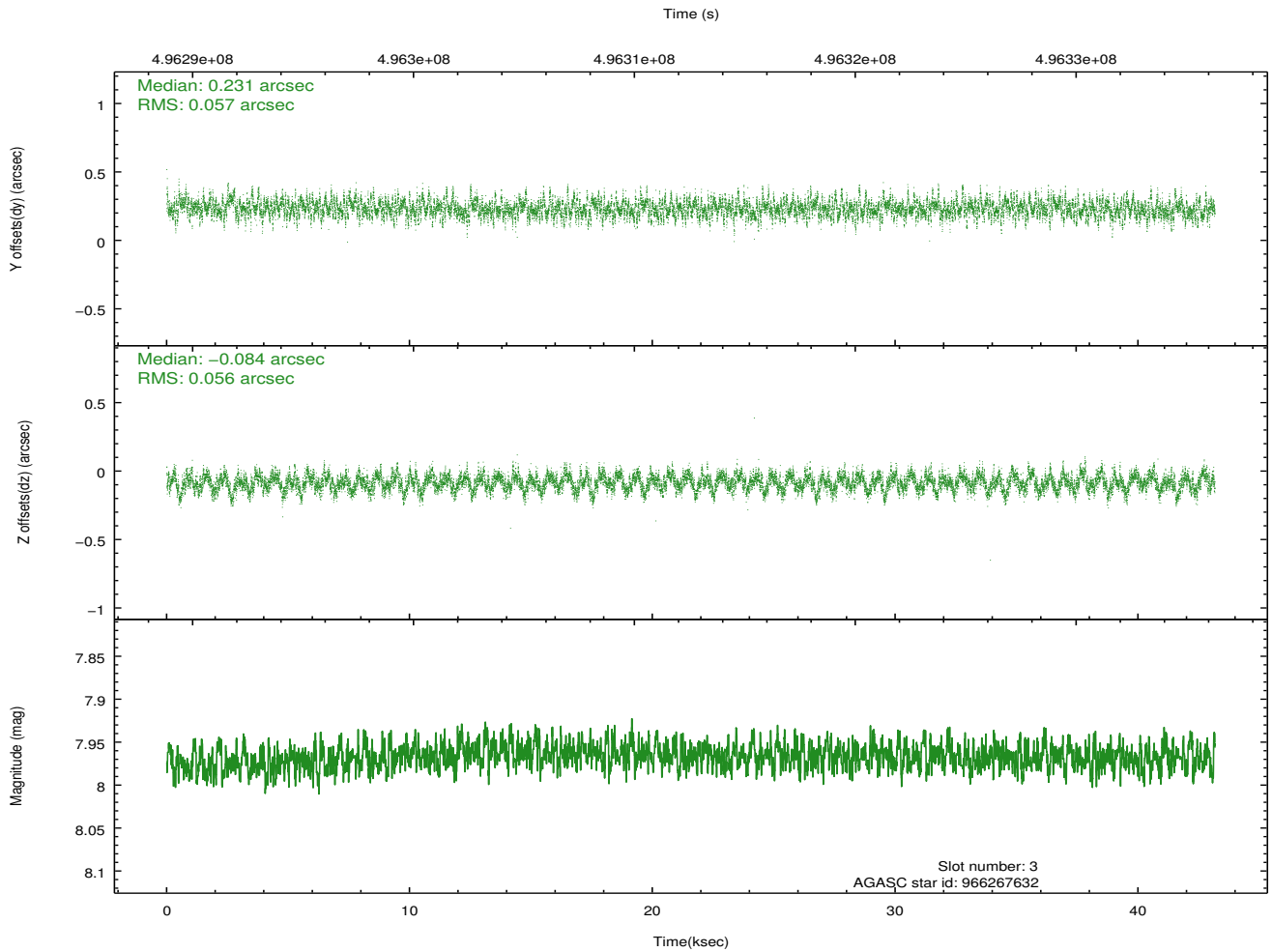
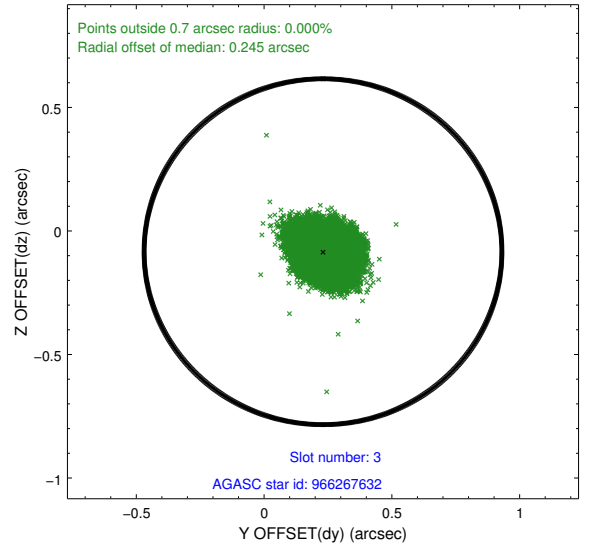
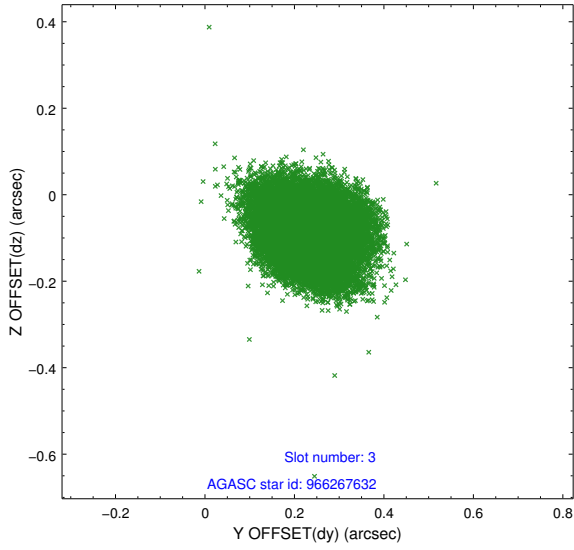
### Slot Statistics

slot	status	used	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID		ACIS-S-1	7.05	10528	0.071	0.073	0.027	0.060	0.000000	0.000000	923.40	-1836.54
1	FID		ACIS-S-2	6.95	10529	-0.282	-0.163	0.016	0.030	0.000000	0.000000	-772.85	-1841.27
2	FID		ACIS-S-4	7.05	10529	0.187	0.093	0.022	0.031	0.000000	0.000000	2140.85	67.55
3	GUIDE	used	966267632	7.97	21051	0.231	-0.084	0.085	0.138	256.428991	-36.740525	1608.05	-2240.59
4	GUIDE	used	966395864	7.61	21057	0.020	0.012	0.064	0.100	256.670769	-36.077904	-852.24	-1881.10
5	GUIDE	used	966396120	7.85	21051	0.046	-0.105	0.054	0.089	256.737004	-36.720258	1411.51	-1370.73
6	GUIDE	used	966401448	7.80	21053	-0.107	0.156	0.054	0.085	256.771484	-35.758991	-2030.08	-1748.89
7	GUIDE	used	966402904	8.09	21052	-0.190	0.027	0.075	0.118	257.709598	-36.005094	-1516.06	1080.87

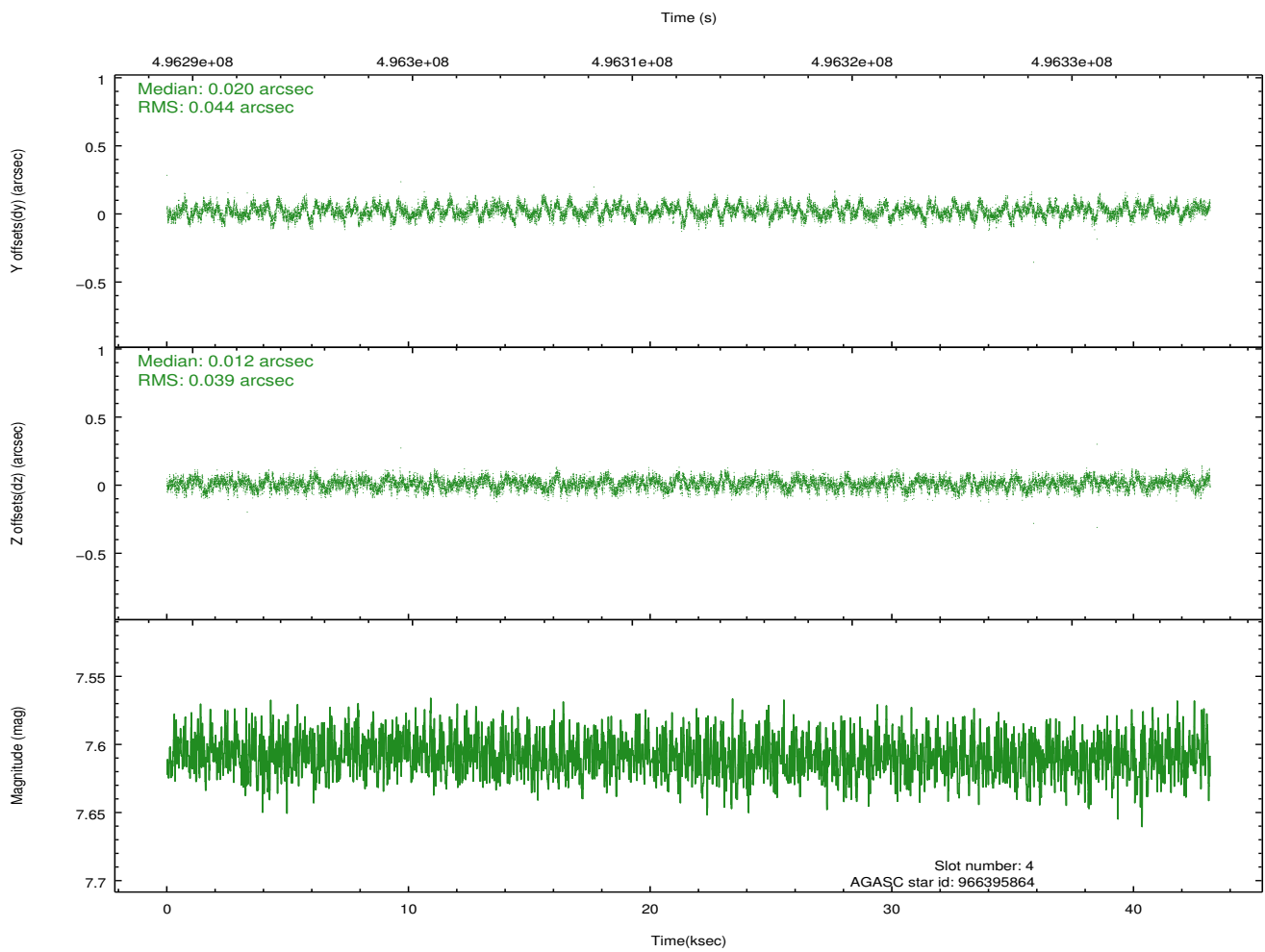
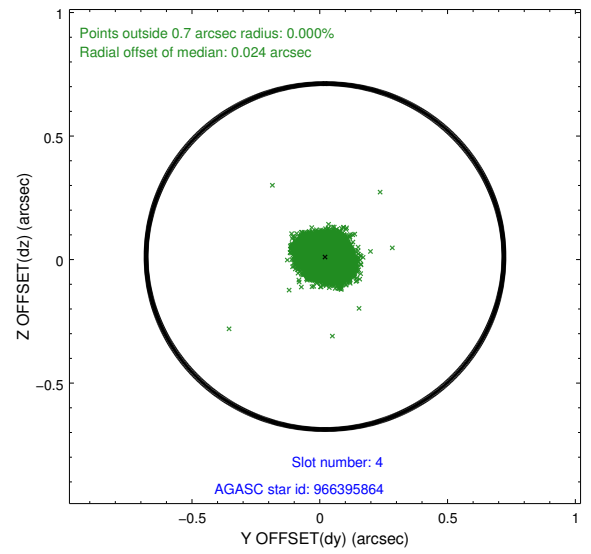
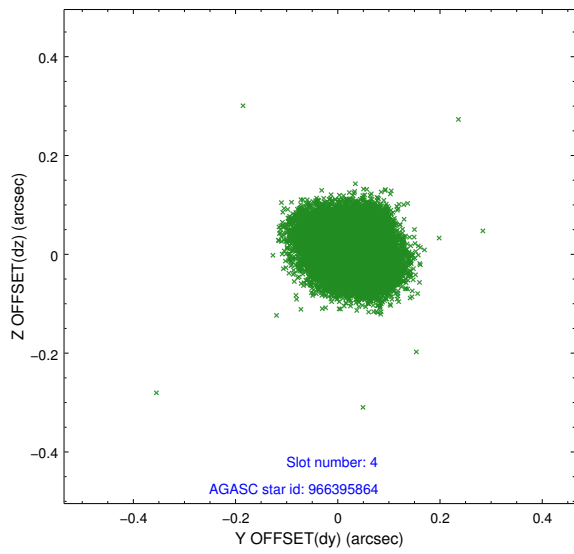
∞

## 2.4 Star Slots

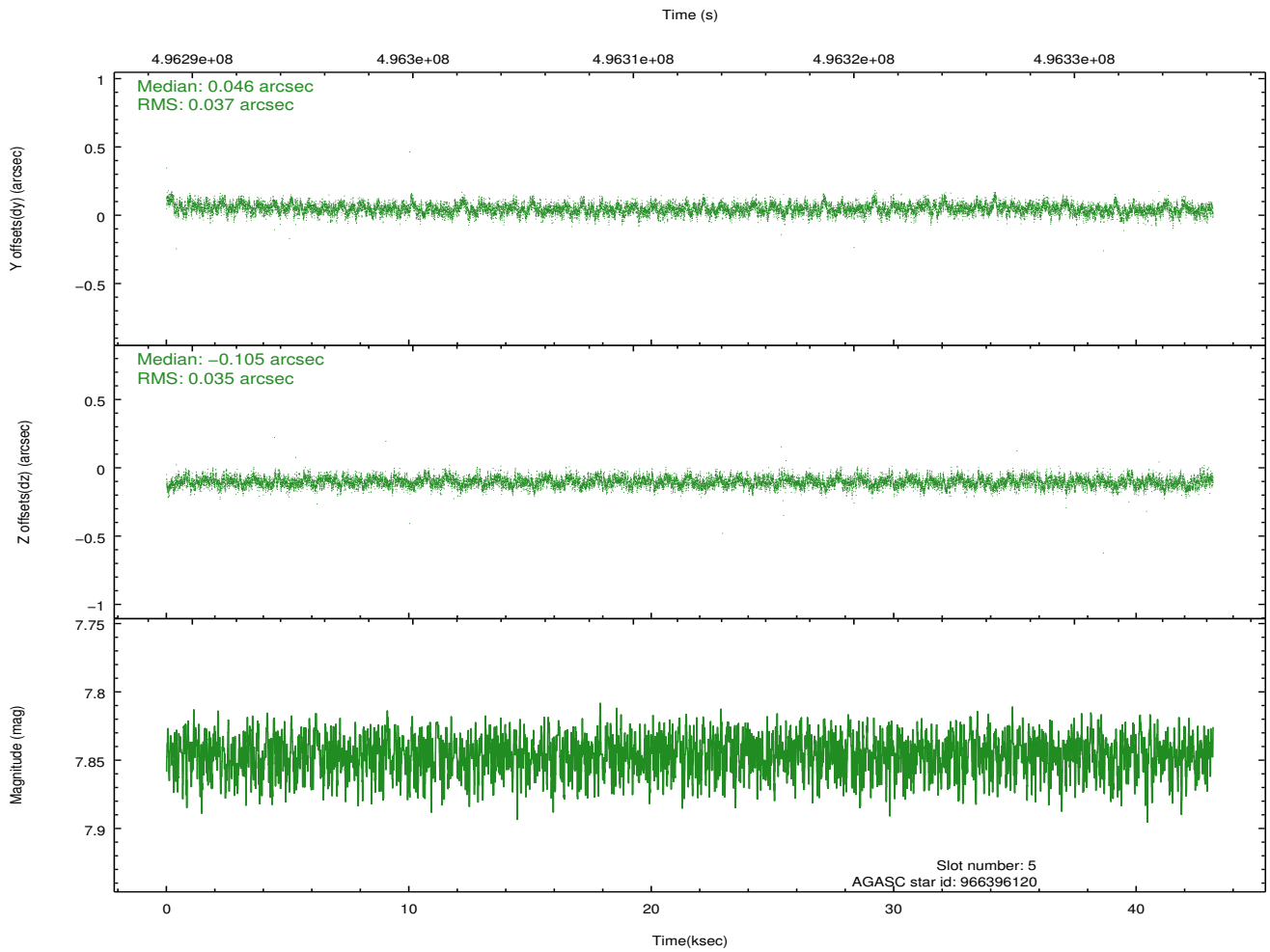
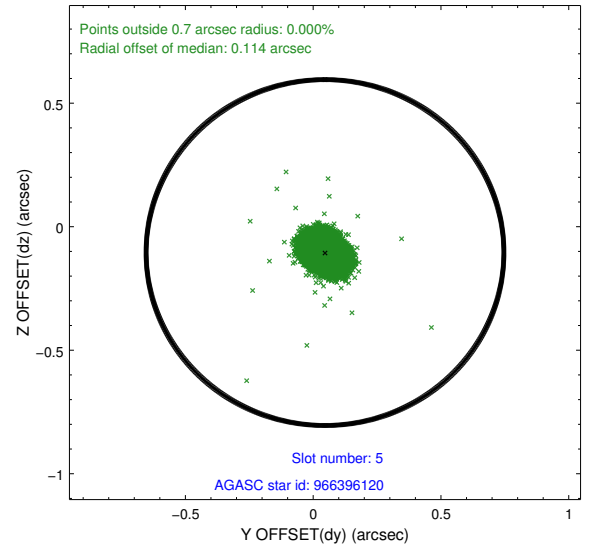
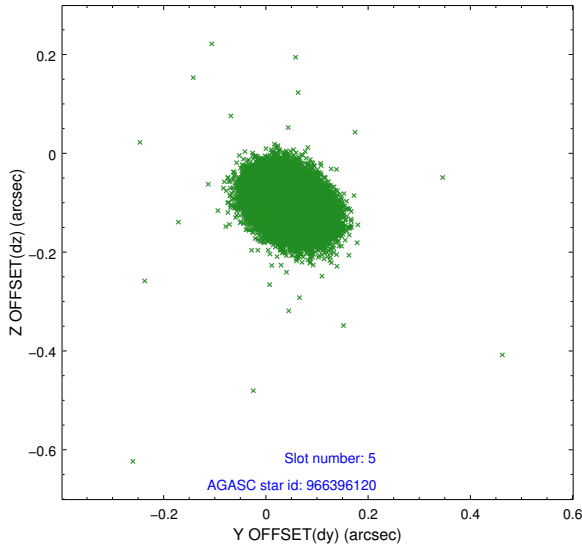
### 2.4.1 Slot 3



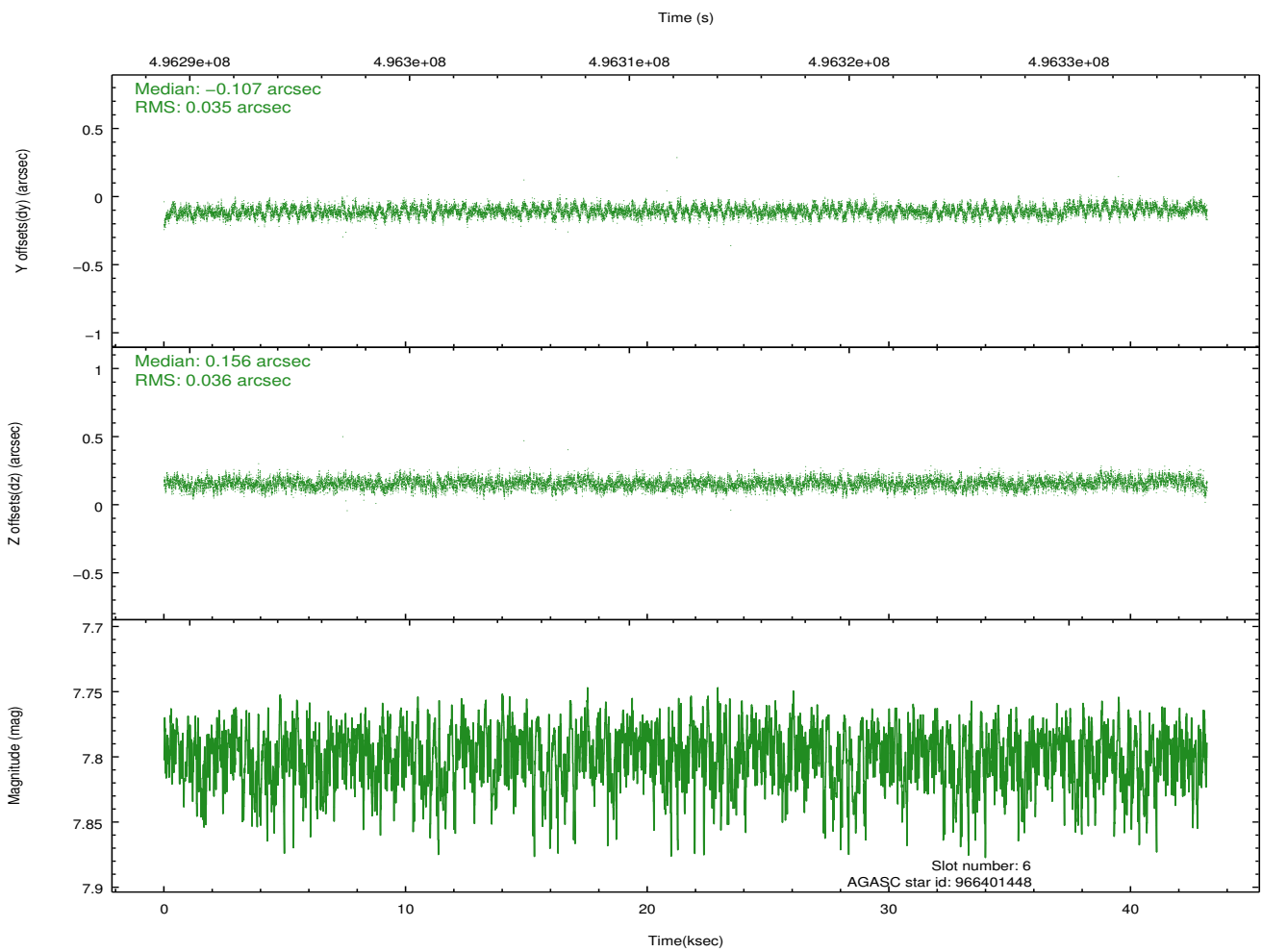
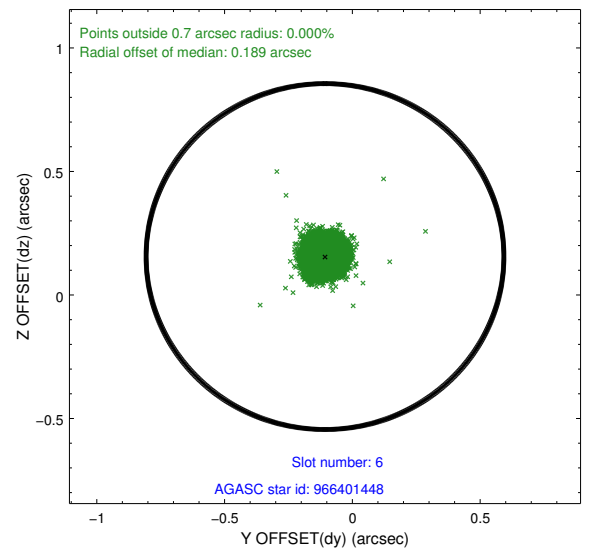
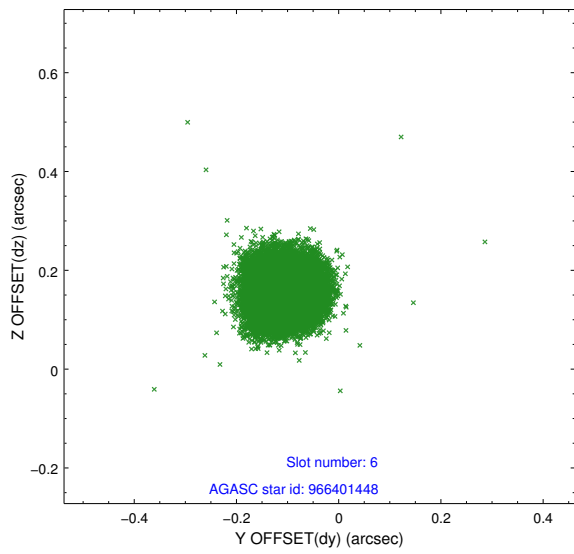
## 2.4.2 Slot 4



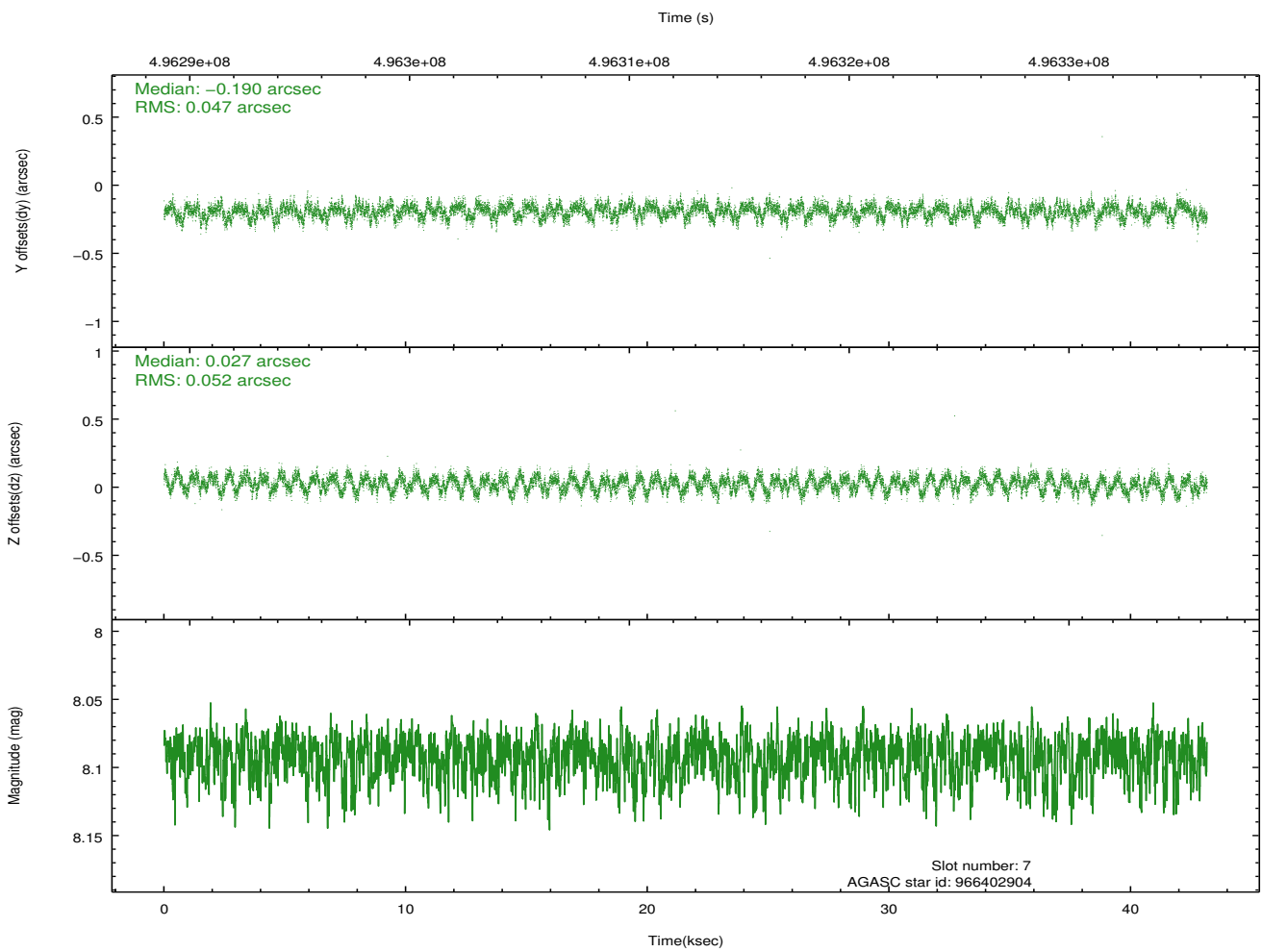
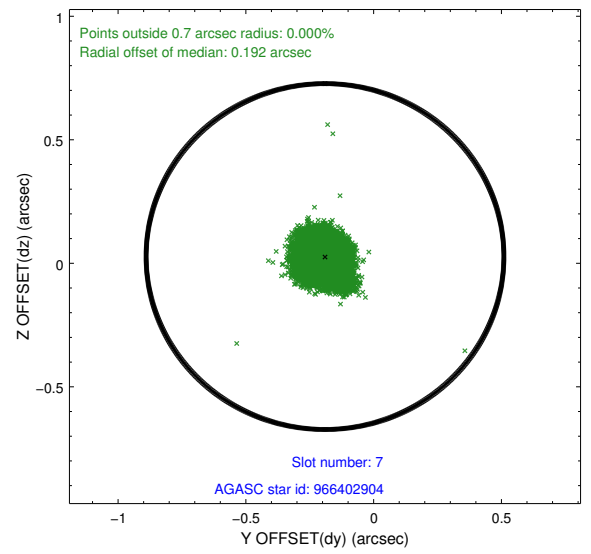
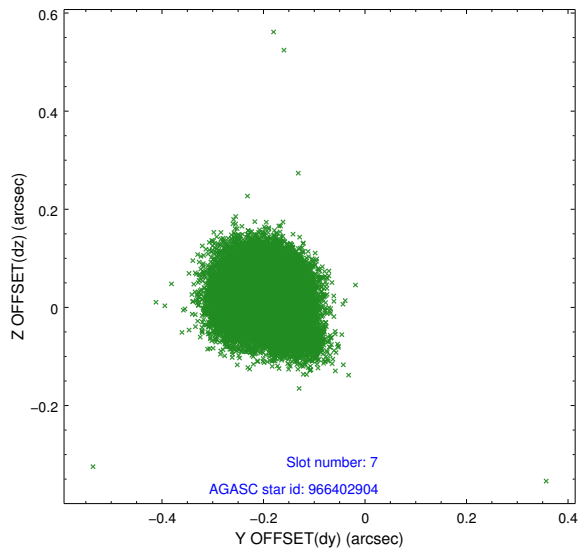
### 2.4.3 Slot 5



## 2.4.4 Slot 6

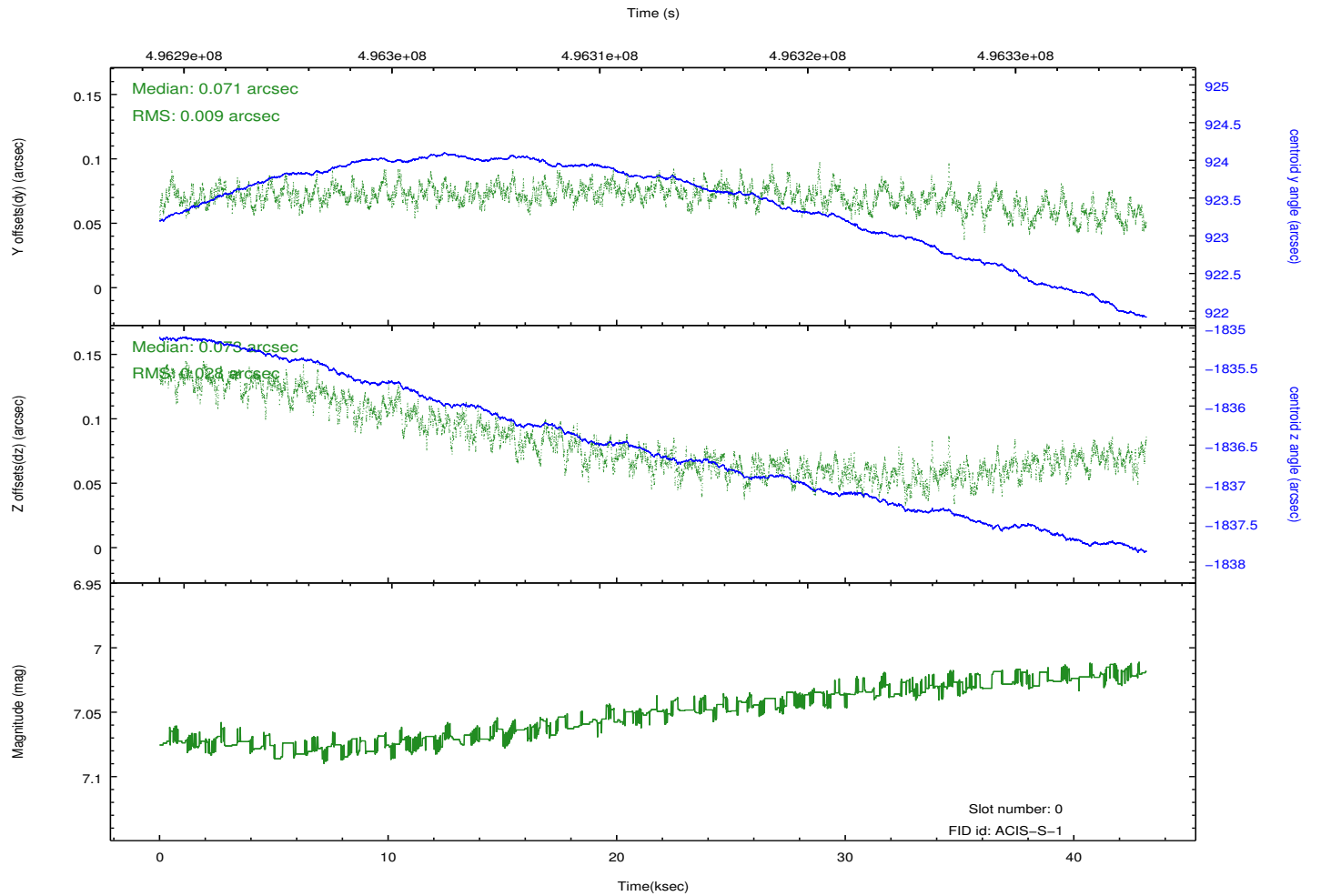
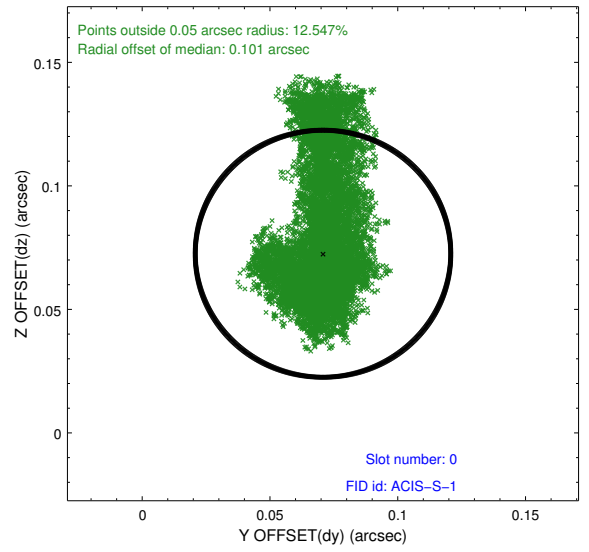
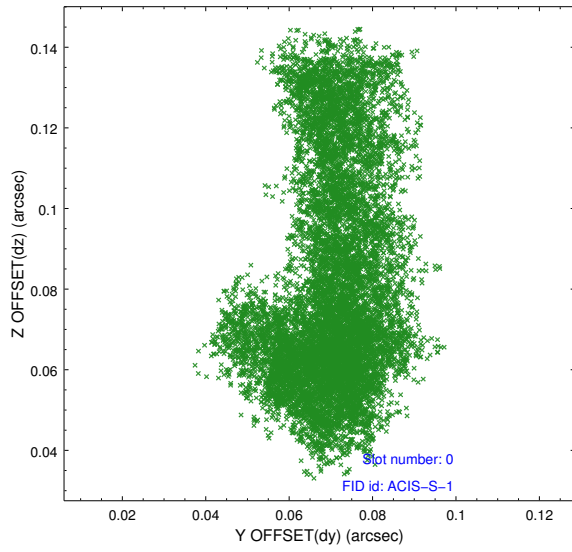


### 2.4.5 Slot 7

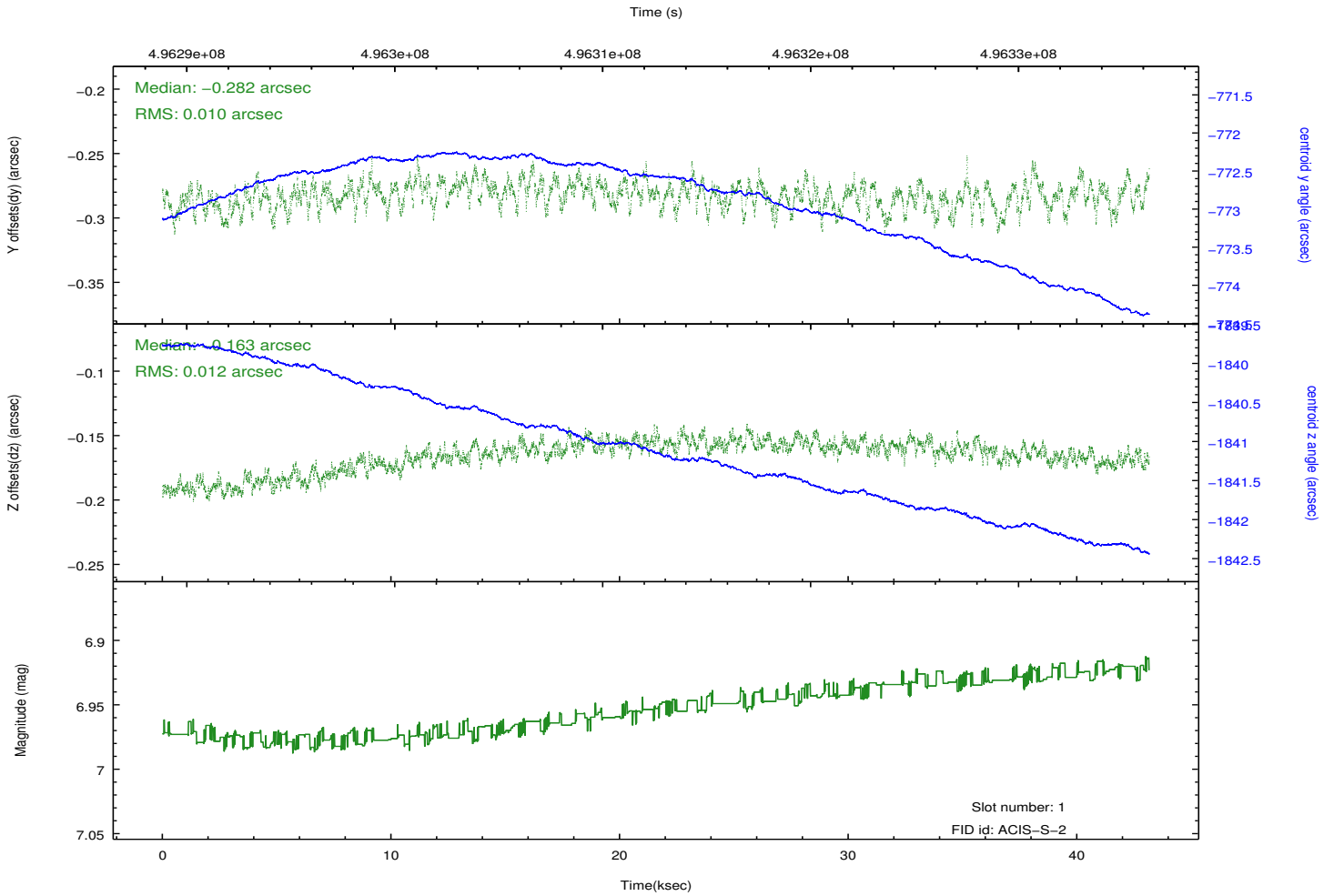
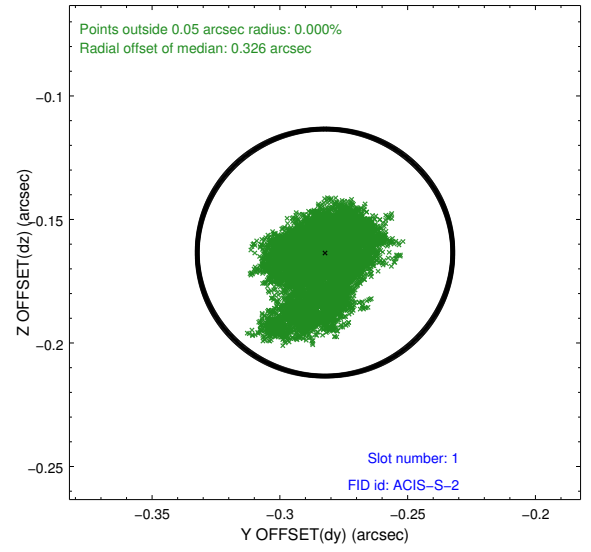
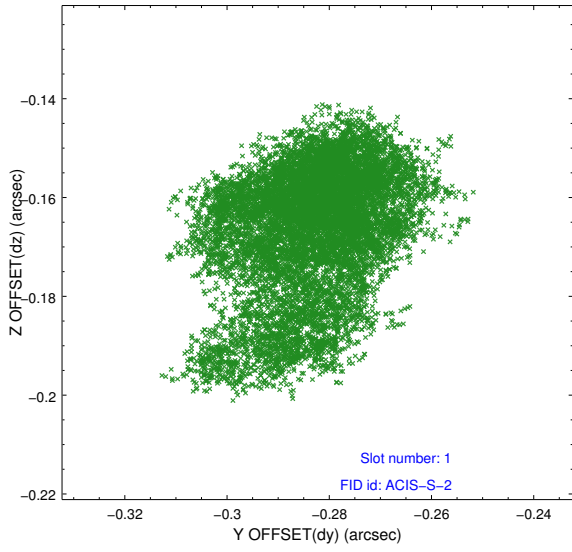


## 2.5 FID Slots

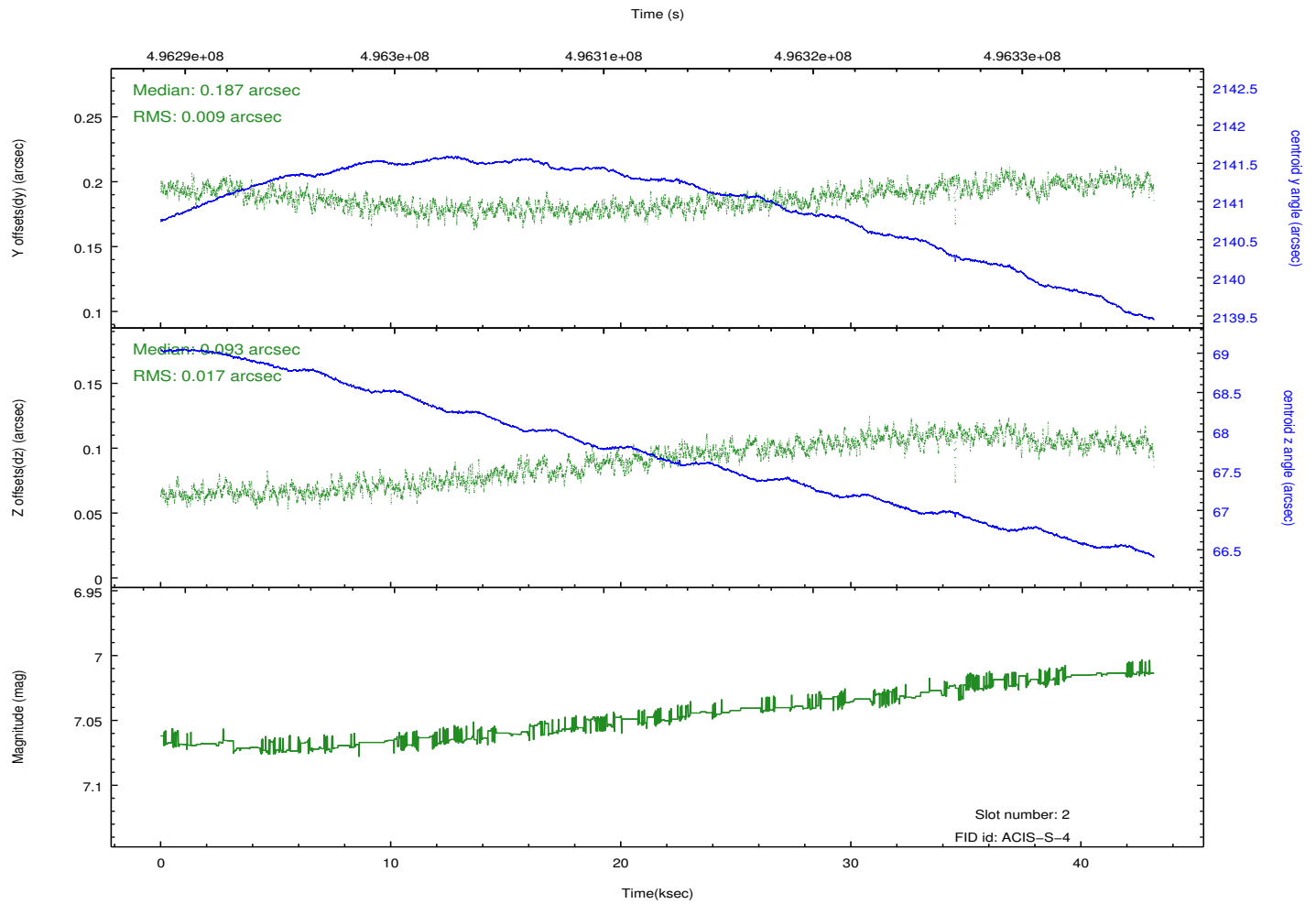
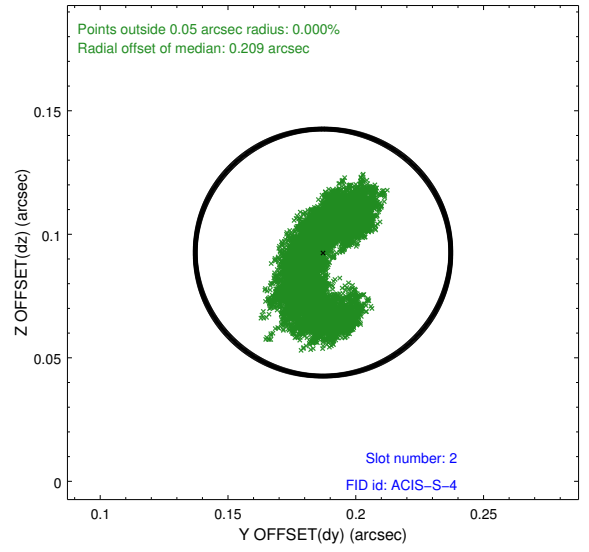
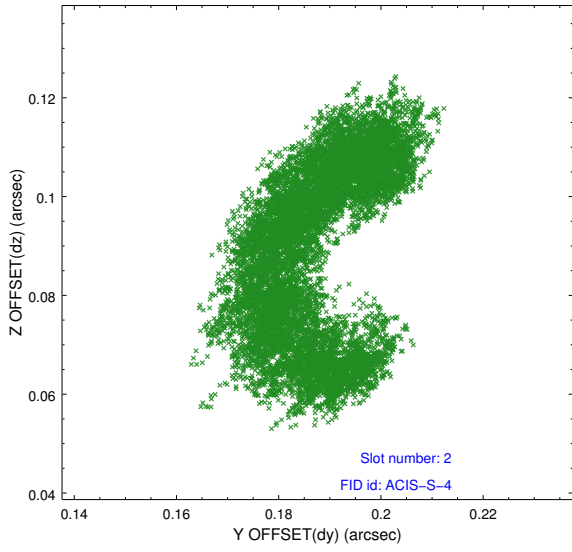
### 2.5.1 Slot 0



## 2.5.2 Slot 1

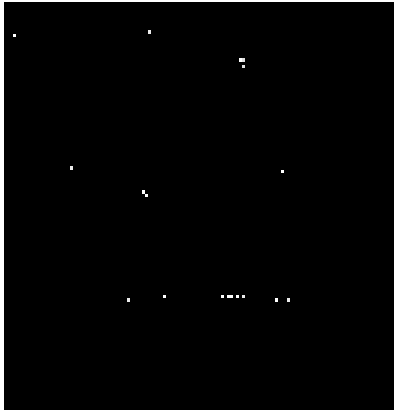


### 2.5.3 Slot 2

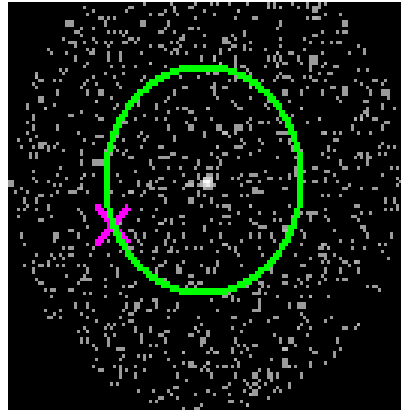


# 3 Gratings

## 3.1 HEG Arm



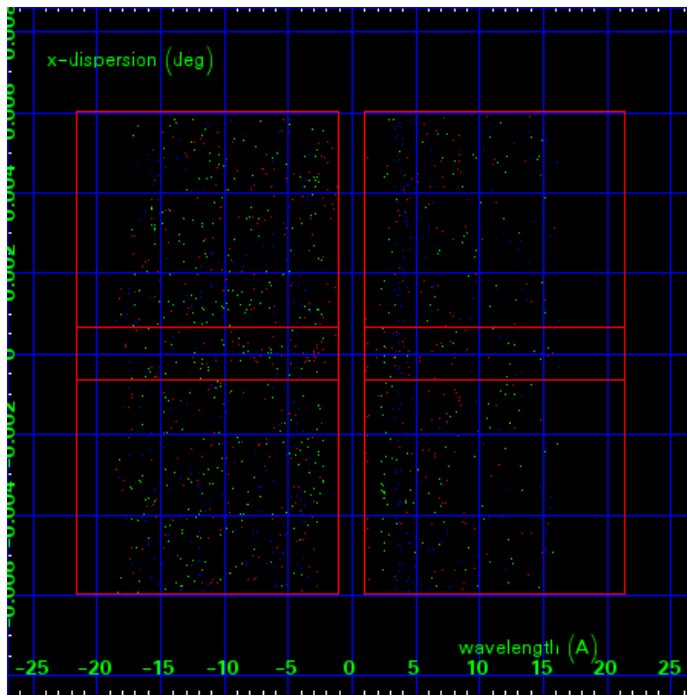
HEG Order Sort 123



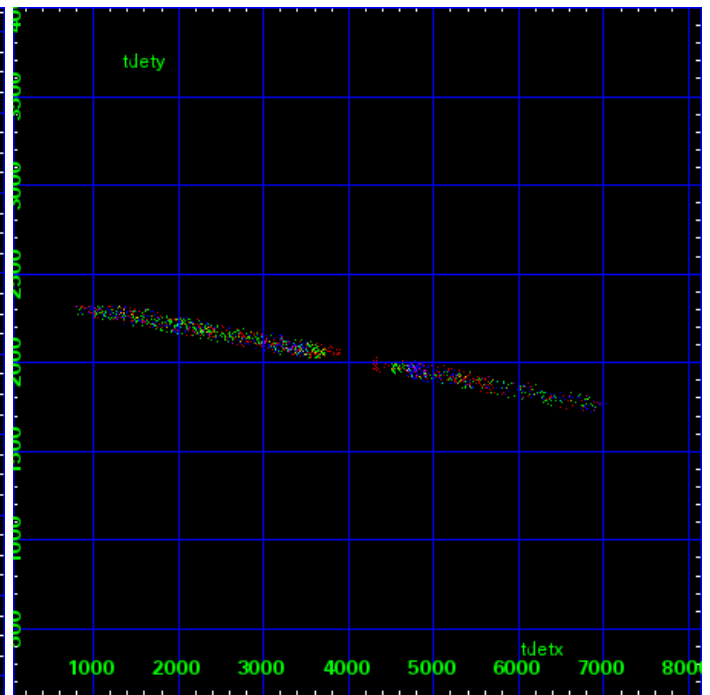
HEG Zero Order



HEG Order Sort ALL

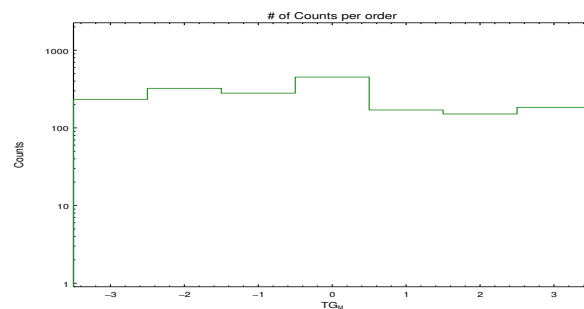


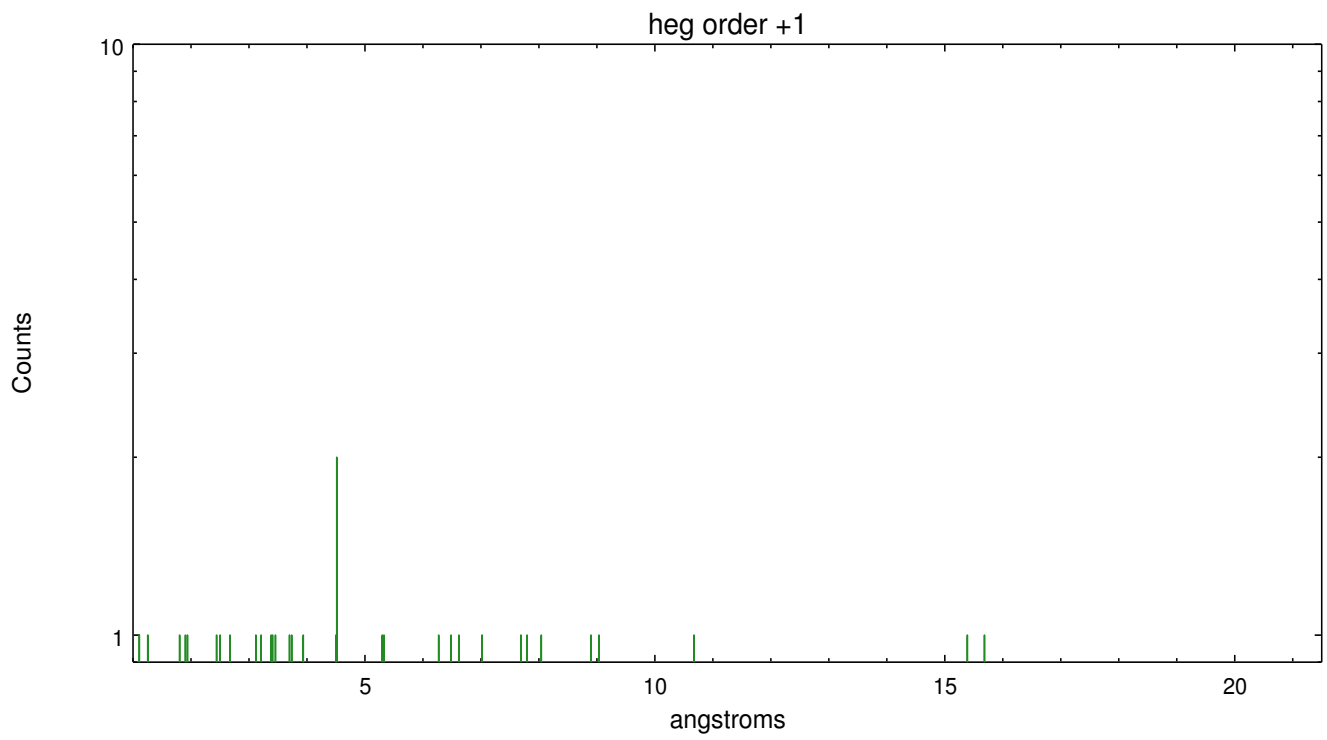
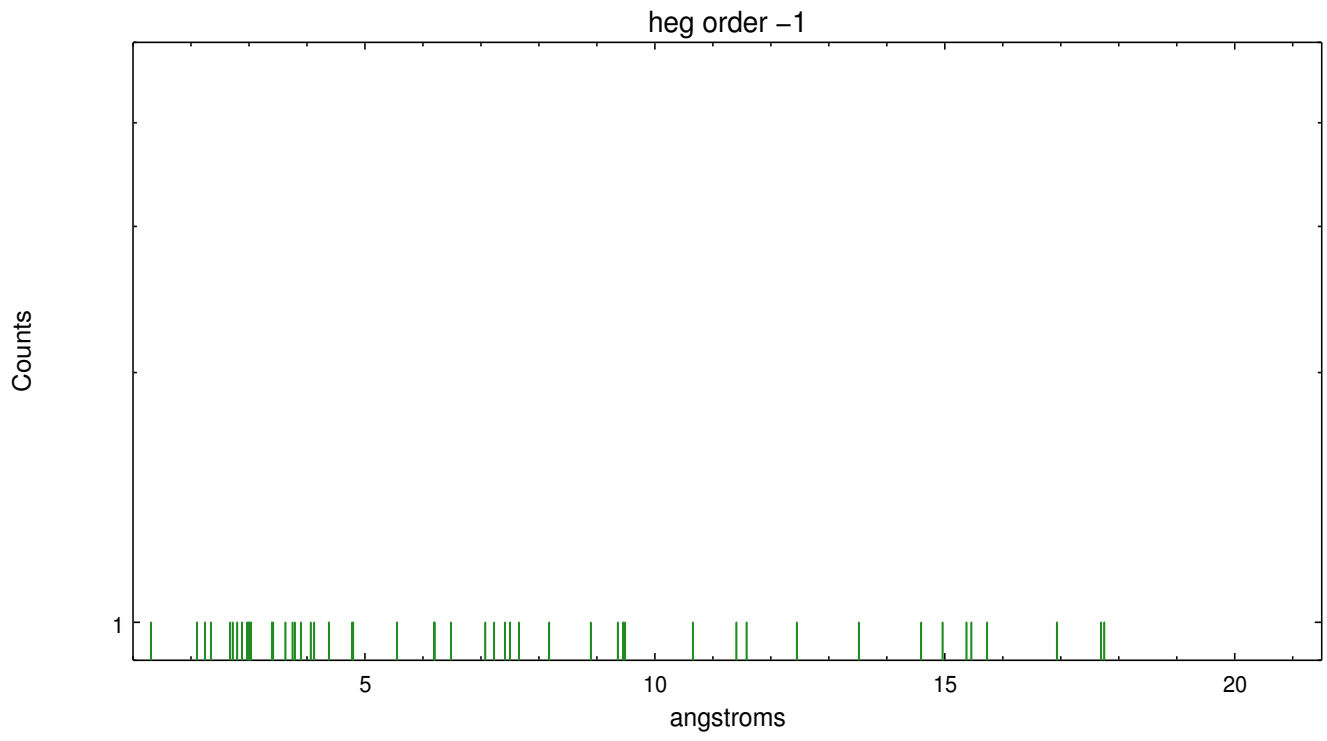
Spot Image HEG



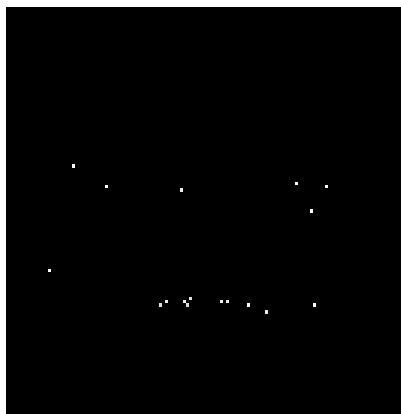
Full Detector HEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	233	323	280	451	170	151	184

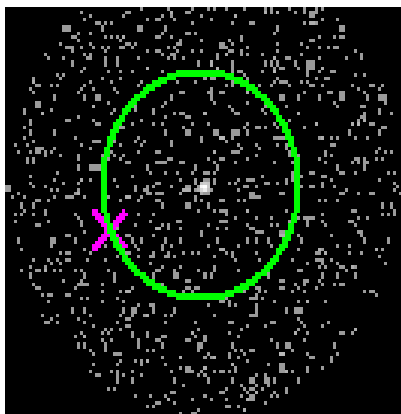




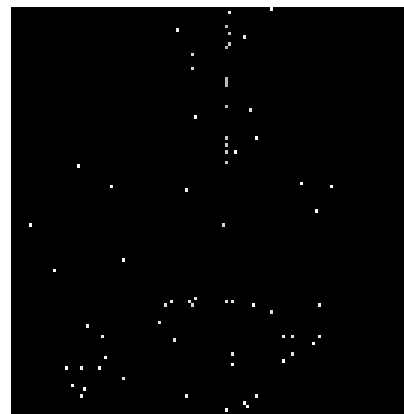
### 3.2 MEG Arm



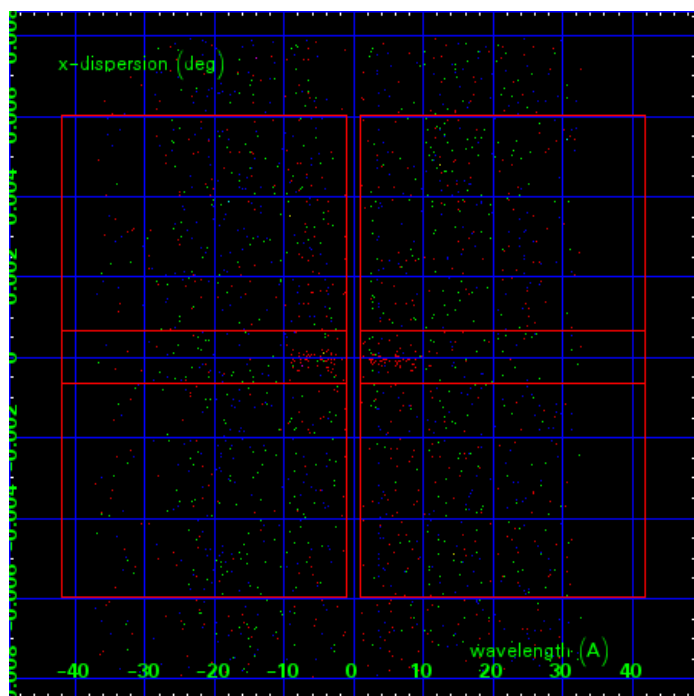
MEG Order Sort 123



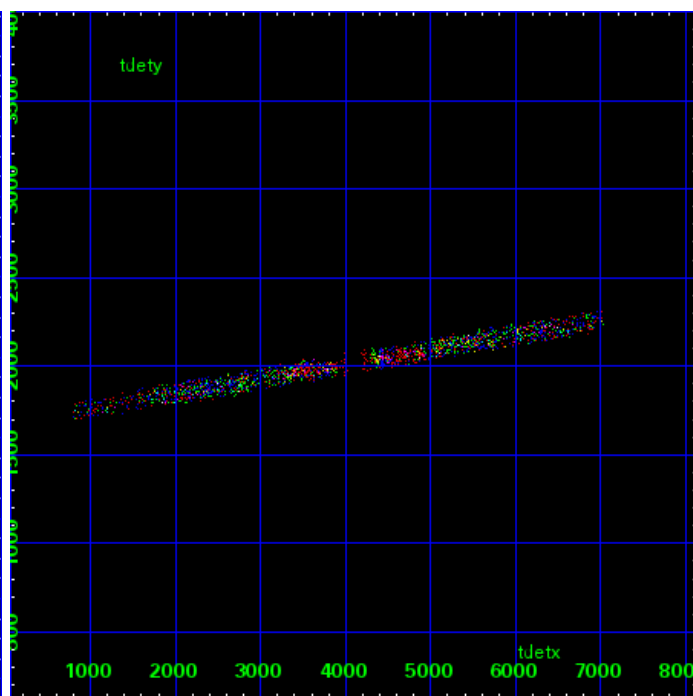
MEG Zero Order



MEG Order Sort ALL

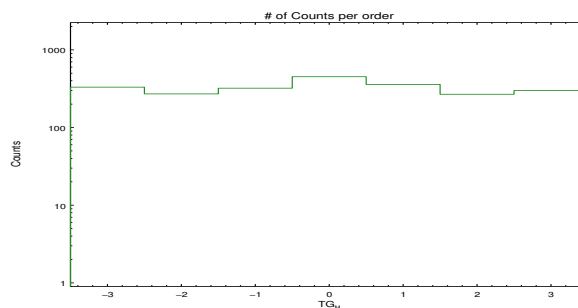


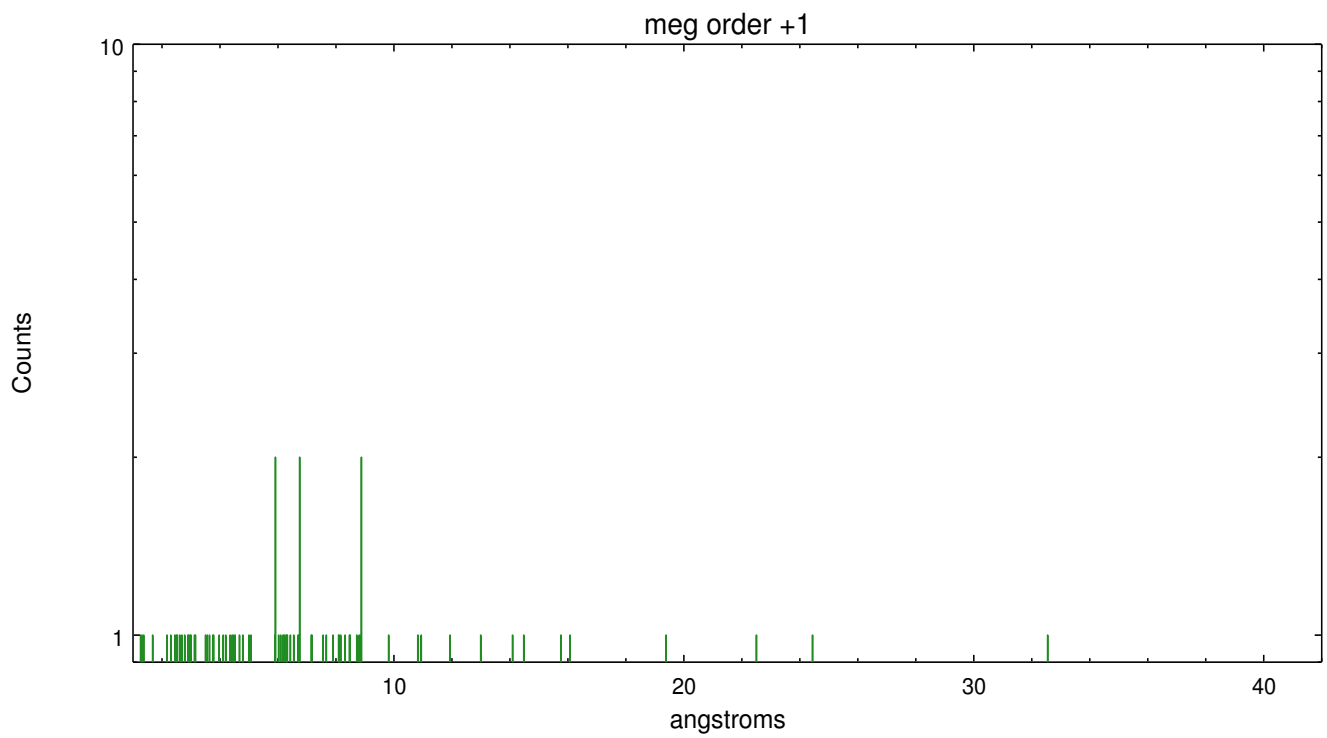
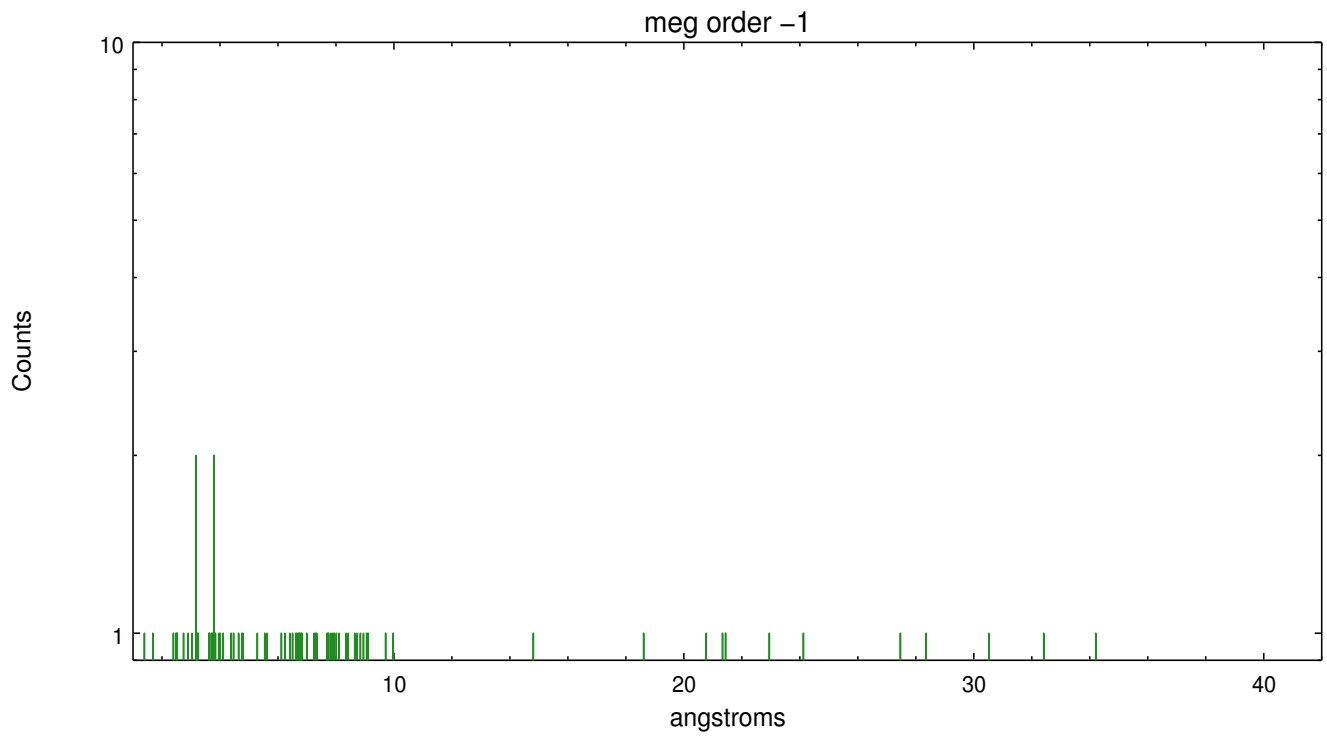
Spot Image MEG



Full Detector MEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	331	271	321	451	359	268	299





# A Summary

## A.1 Status

V&V Scientist	Joy Nichols
V&V Date (YYYY-MM-DD)	2015.05.01
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	43.067336489558

## A.2 Comments

No source was detected by software at the position of the target. The zeroth order position was determined by eye using ds9 and a rough psf model, then manually inserted in the processing.

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These data have been reprocessed with new aspect alignment calibration files that correct small mean offsets (up to 0.4 arcsecs) and improve overall astrometric accuracy. The new calibration was determined using data from the time period being reprocessed and was performed using cross-correlation of X-ray sources with radio and optical counterparts.