

# V&V Reference Report

## L2 ASCDS Version : 10.8.1

Observation 22335 - L2 Version 1  
Chandra X-Ray Center

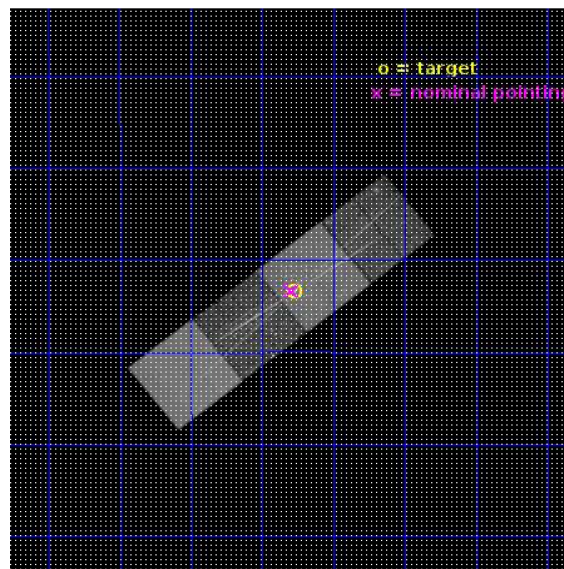
L2 Processing Date : Jan 7 2020

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# 1 Front

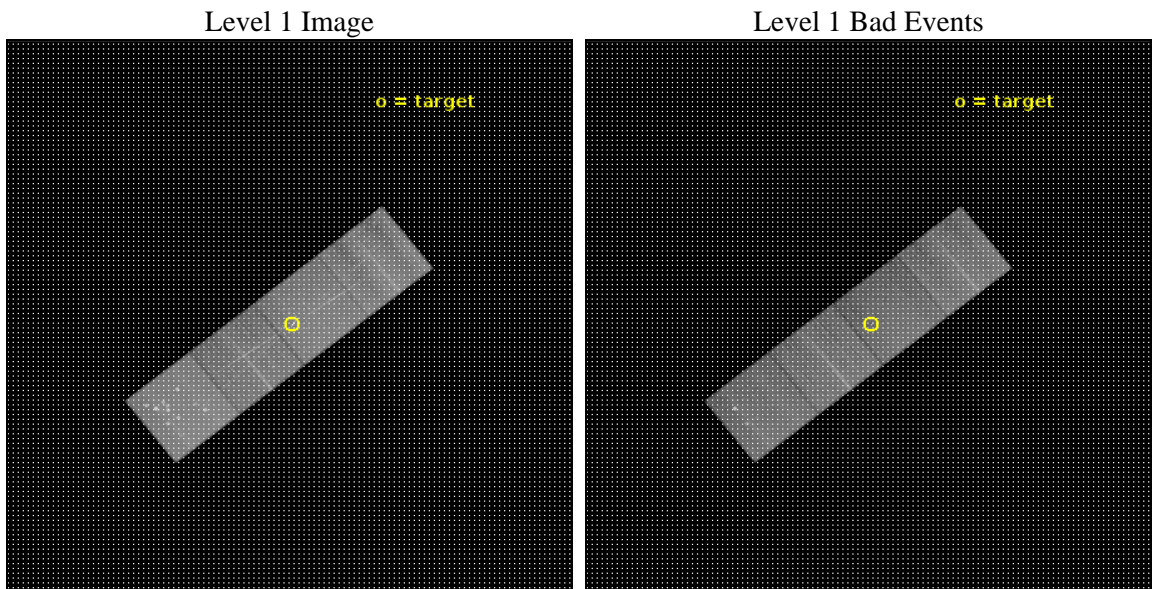
seq_num	201298	Sequence number
obs_id	22335	Observation id
title	THE TRUE NATURE OF X-RAYS FROM THE ORION TRAPEZIUM	Proposal title
observer	Norbert Schulz	Principal investigator
object	Orion Nebula Cluster	Source name
dtcycle	0	&#160
cycle	P	events from which exps? Prim/Second/Both
ra_targ	83.81875	Observer's specified target RA [deg]
dec_targ	-5.38975	Observer's specified target Dec [deg]
ra_nom	83.824223037057	Nominal RA [deg]
dec_nom	-5.388479215398	Nominal Dec [deg]
roll_nom	321.7047486215	Nominal Roll [deg]
revision	1	Processing version of data
ontime	30060.700231314	Sum of GTIs [s]
livetime	29667.935052426	Livetime [s]
ontime5	30060.700231314	Sum of GTIs [s]
ontime6	30060.668984175	Sum of GTIs [s]
ontime7	30060.700231314	Sum of GTIs [s]
ontime8	30060.627944231	Sum of GTIs [s]
l2events	418936	Number of level 2 events



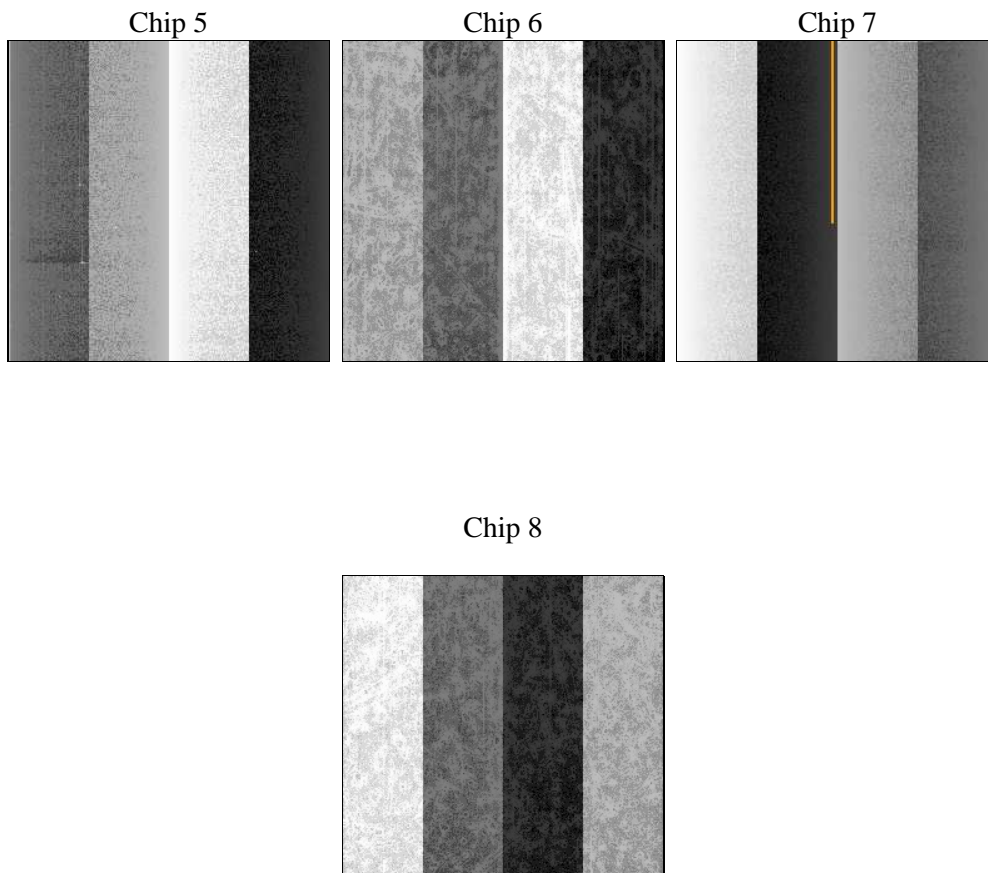
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

obi_num	0	Obi number	sched_exp_time	30000.000000	[s] Scheduled observation exposure time
ascdsver	10.8.1	Processing system revision	ontime	30060.700231314	Sum of GTIs [s]
caldbver	4.8.4.2	&#160	ontime5	30060.700231314	Sum of GTIs [s]
date	2020-01-07T14:37:53	Date and time of file creation	ontime6	30060.668984175	Sum of GTIs [s]
revision	1	Processing version of data	ontime7	30060.700231314	Sum of GTIs [s]
			ontime8	30060.627944231	Sum of GTIs [s]
			l1events	1333545	Number of level 1 events
			tgmethod	TGDETECT	Method used to create src1a file
			zo_pos	(4137.53, 4087.16)	src1a sky pixel position

### 2.1.4 Events

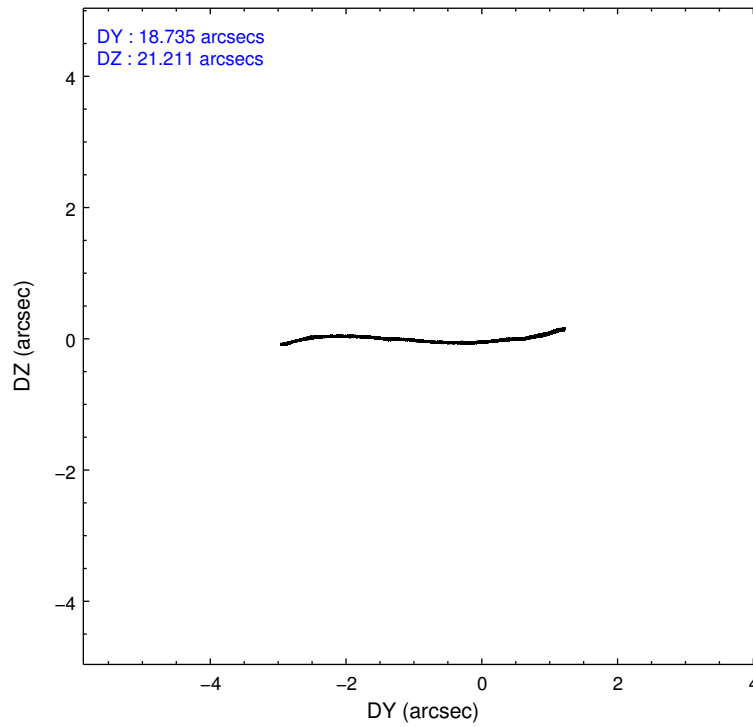
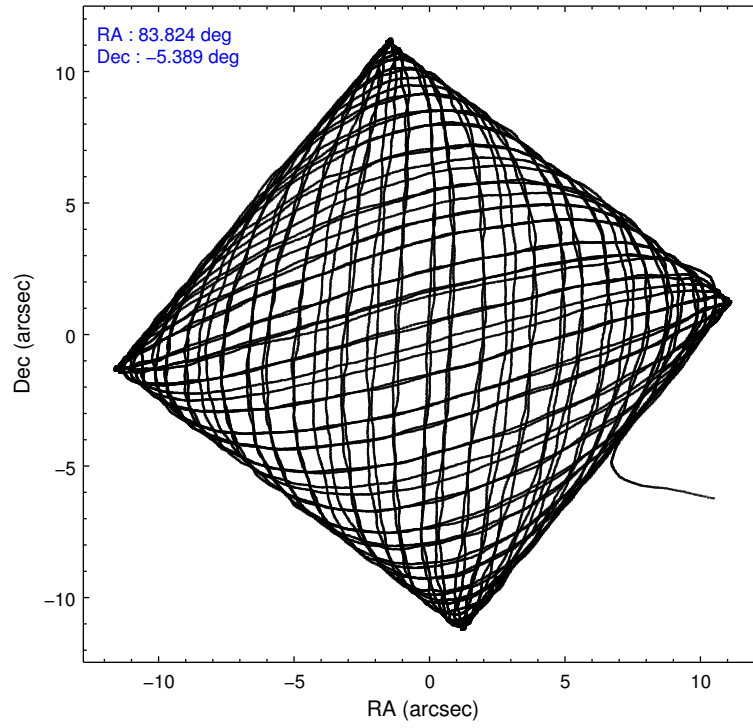
	ccd 5	ccd 6	ccd 7	ccd 8
level 1 events	411032	261682	345194	315637
rejected events	200838	214709	173536	225018
rejected %	48%	82%	50%	71%

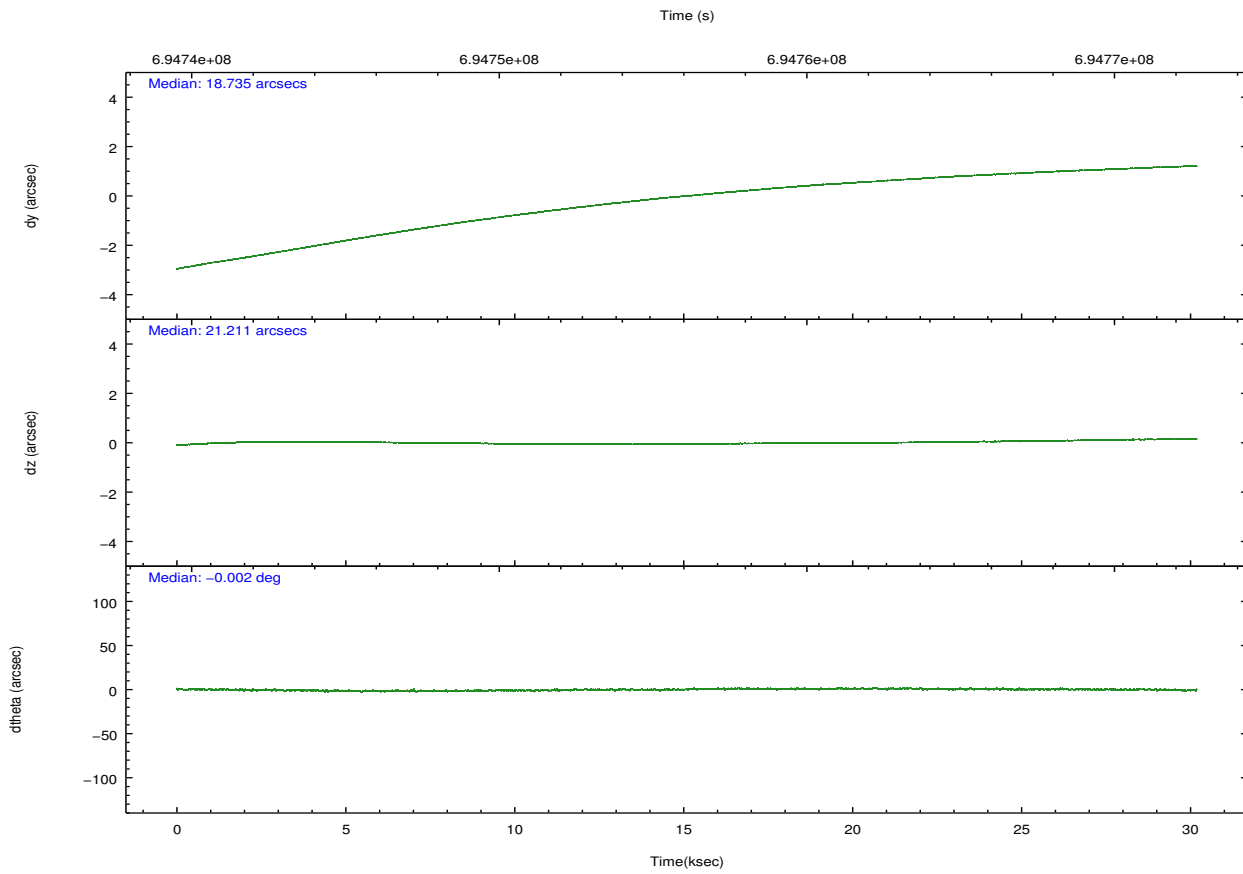
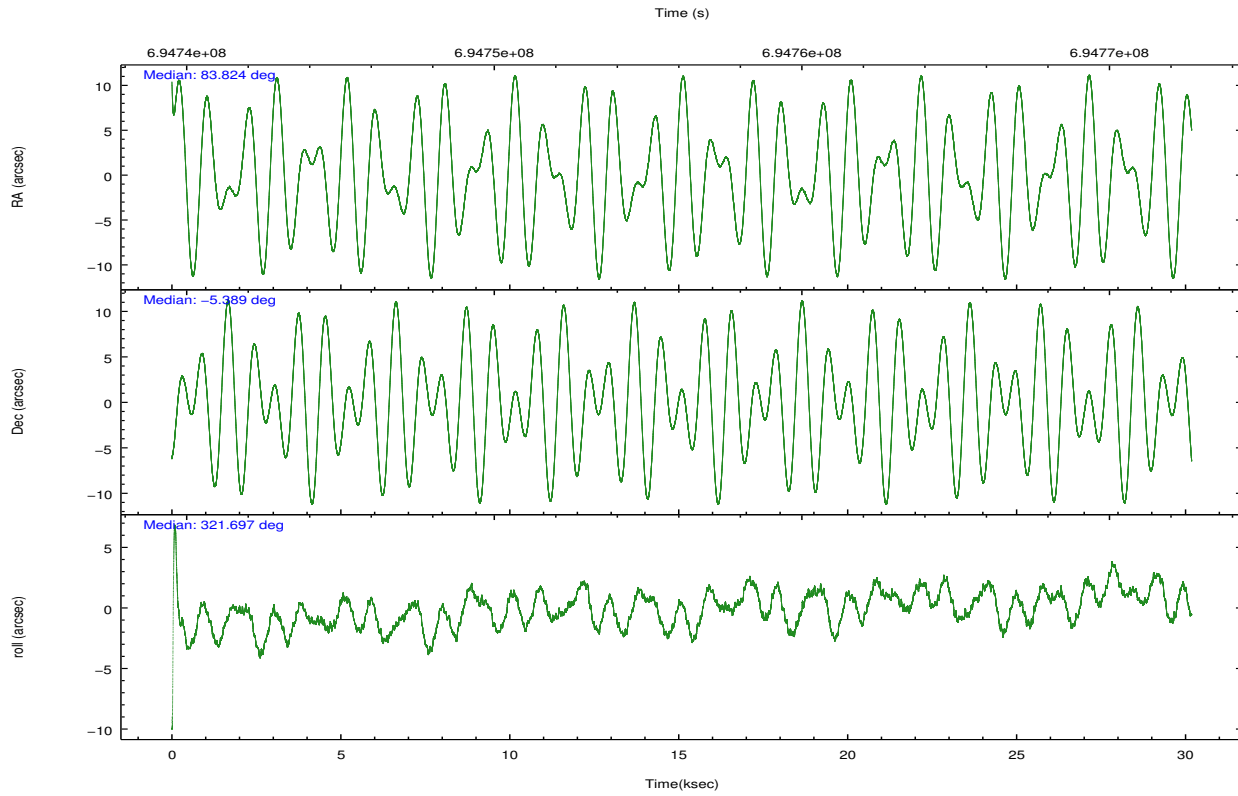
	ccd 5	ccd 6	ccd 7	ccd 8
grade 0 events	35567	24075	19519	30353
	8%	9%	5%	9%
grade 1 events	1031	183	630	268
	0%	0%	0%	0%
grade 2 events	63960	9466	38540	20522
	15%	3%	11%	6%
grade 3 events	5729	3064	14409	8809
	1%	1%	4%	2%
grade 4 events	5112	3055	14054	8270
	1%	1%	4%	2%
grade 5 events	24602	10539	29860	16395
	5%	4%	8%	5%
grade 6 events	99883	7321	85161	22675
	24%	2%	24%	7%
grade 7 events	175148	203979	143021	208345
	42%	77%	41%	66%

## 2.2 Compared Parameters

Parameter	Planned	Actual	Parameter	Planned	Actual
Instrument	ACIS	ACIS	Obspar format version number	7	7
Detector	ACIS-5678	ACIS-5678	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	83.796873	83.82422303705727	CCD I2 on	N	N
[deg] Pointing Dec	-5.384889	-5.388479215397995	CCD I3 on	N	N
[deg] Pointing Roll	321.545564	321.7047486215036	CCD S0 on	O1	N
[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	-190.132523	-190.1425803651734	CCD S3 on	Y	Y
[mm] SIM translation stage offset	0	0.01005778216563158	CCD S4 on	Y	Y
[s] Observation start time (MET)	694741194.184000	694740042.98674	CCD S5 on	O2	N
Observation start date	2020-01-06T23:38:45	2020-01-06T23:20:42	Number of optional ACIS chips dropped	2	2
[s] Observation end time (MET)	694771194.184000	694772118.82618	On-chip summing requested	N	N
Observation end date	2020-01-07T07:58:45	2020-01-07T08:15:18	Subarray requested	NONE	NONE
Read mode	TIMED	TIMED	Alternating exposures requested	N	N
			[s] Primary exposure time	0.000000	3.1

## 2.3 Aspect





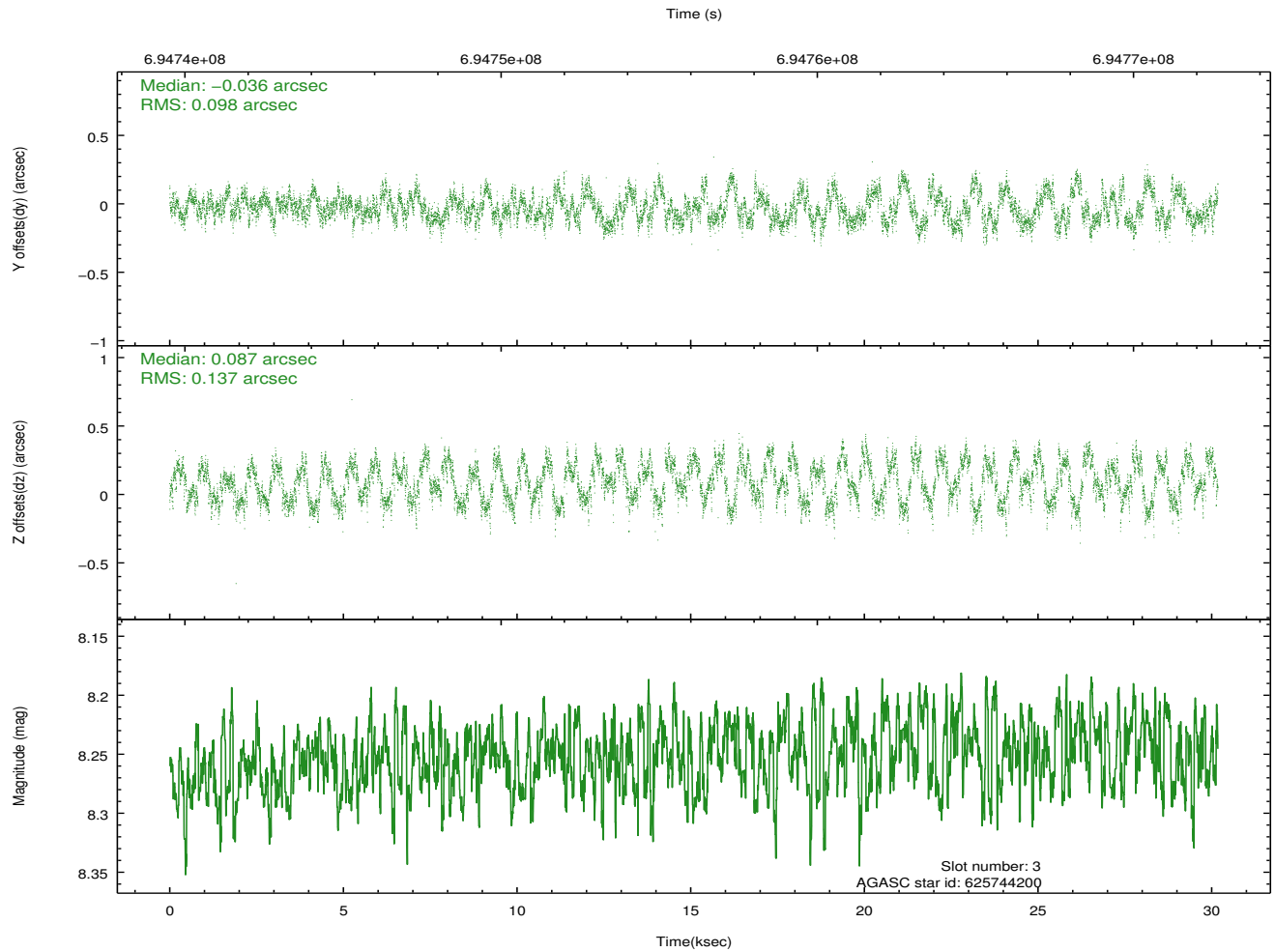
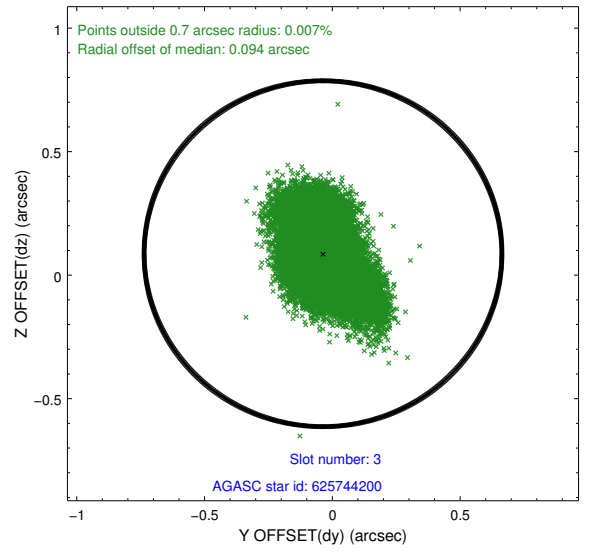
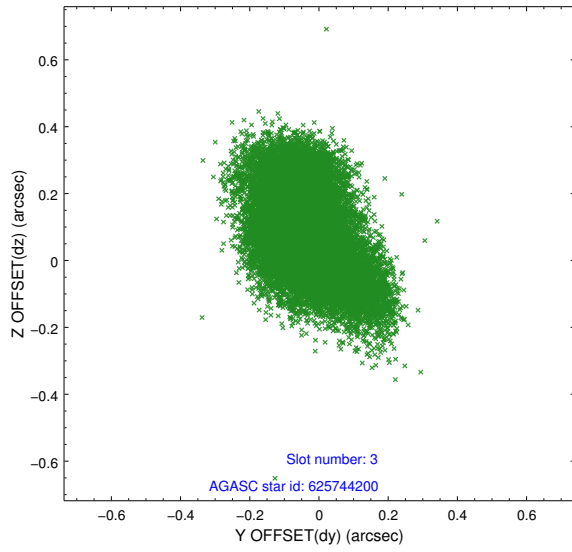
### Slot Statistics

pt	status	used	id	mag	n_pts	frac_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mea
0	FID		ACIS-S-2	7.10	7362	1.000	-0.538	-0.400	0.049	0.084	0.000000	0.000000	-772.06	-1743
1	FID		ACIS-S-4	7.22	7361	1.000	0.538	0.305	0.034	0.052	0.000000	0.000000	2142.29	165
2	FID		ACIS-S-6	7.37	7361	1.000	-0.032	0.098	0.023	0.038	0.000000	0.000000	390.58	803
3	GUIDE	used	625744200	8.25	14717	1.000	-0.036	0.087	0.182	0.277	83.695760	-5.570729	132.96	-748
4	GUIDE	used	625745128	7.81	14719	1.000	-0.011	0.015	0.142	0.230	83.769930	-4.731835	-1537.54	1781
5	GUIDE	used	625745136	7.18	14718	1.000	-0.197	0.153	0.101	0.160	83.600341	-4.804339	-1851.67	1198
6	GUIDE	used	626272880	7.68	14720	1.000	0.120	-0.156	0.132	0.209	83.815609	-6.032748	1503.76	-1784
7	GUIDE	used	626272976	7.96	14715	1.000	0.115	-0.087	0.138	0.226	83.795875	-5.926912	1211.66	-1529

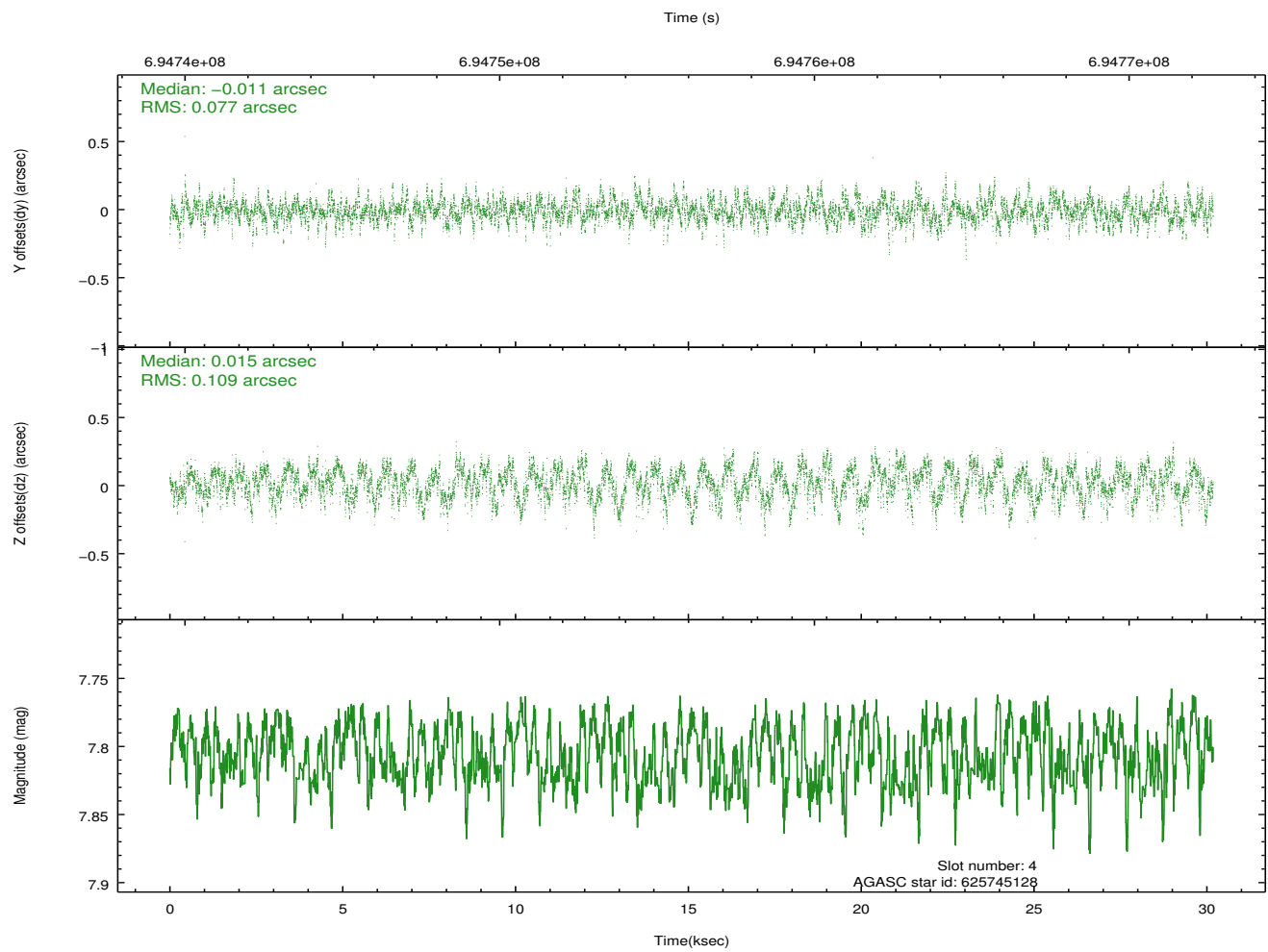
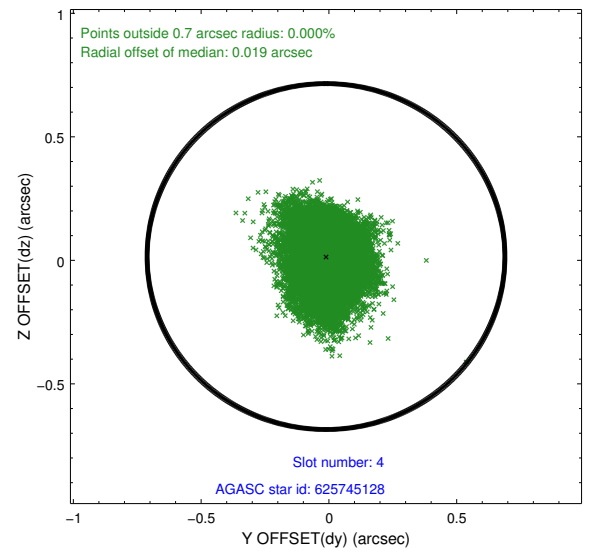
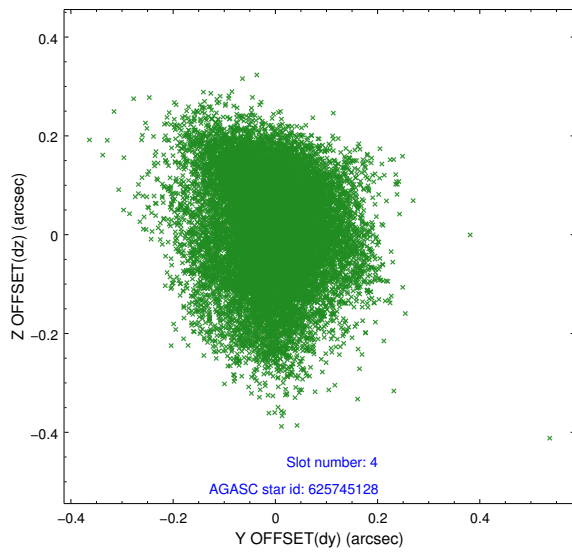
∞

## 2.4 Star Slots

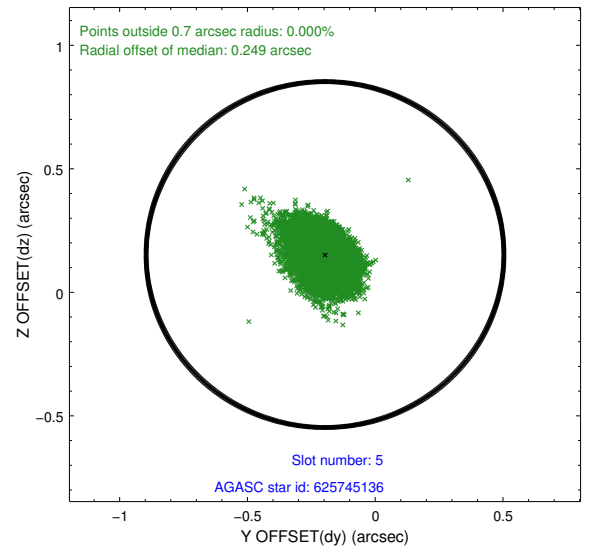
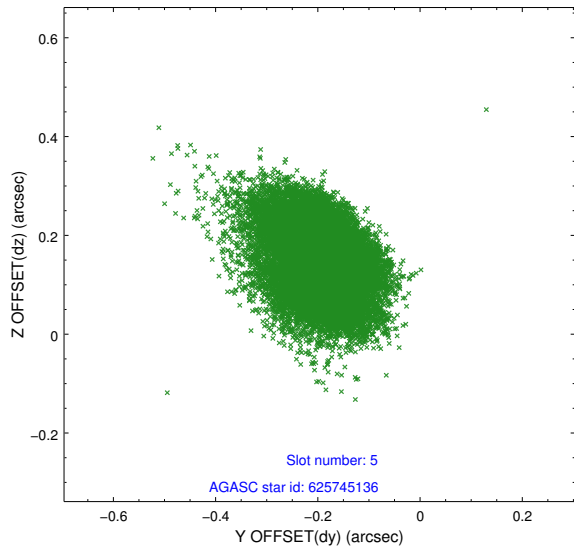
### 2.4.1 Slot 3



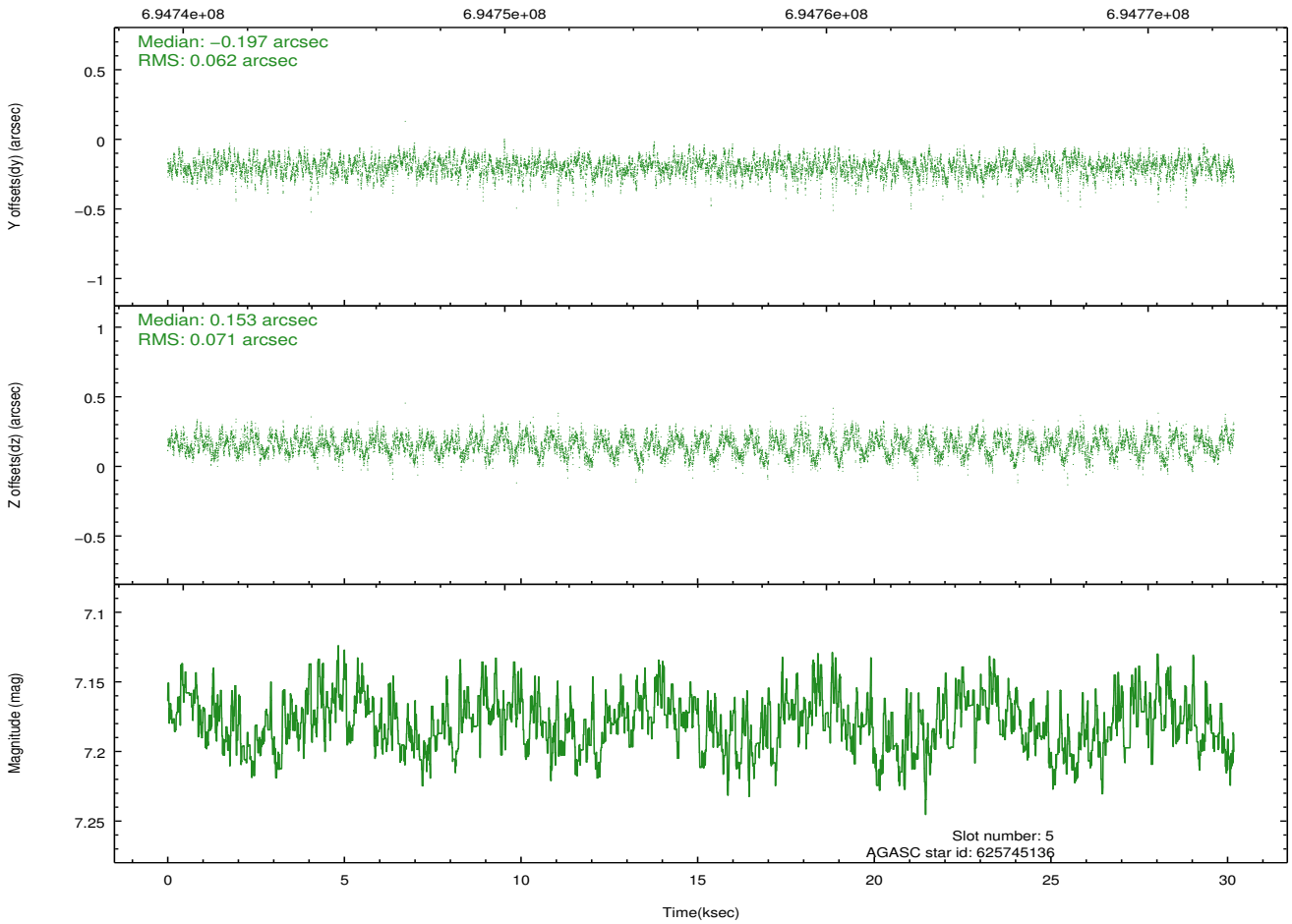
## 2.4.2 Slot 4



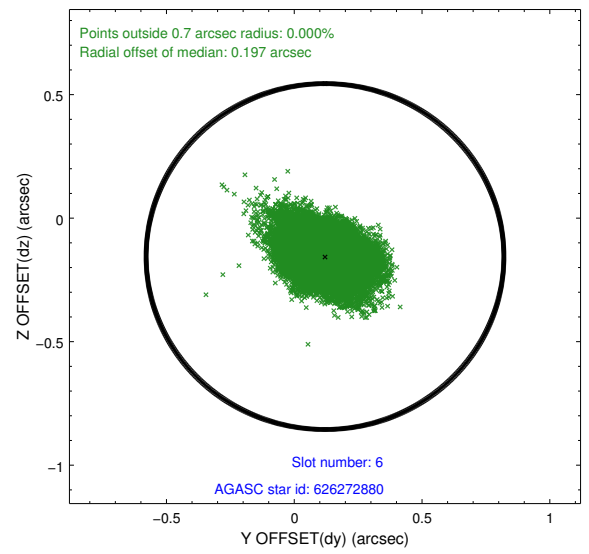
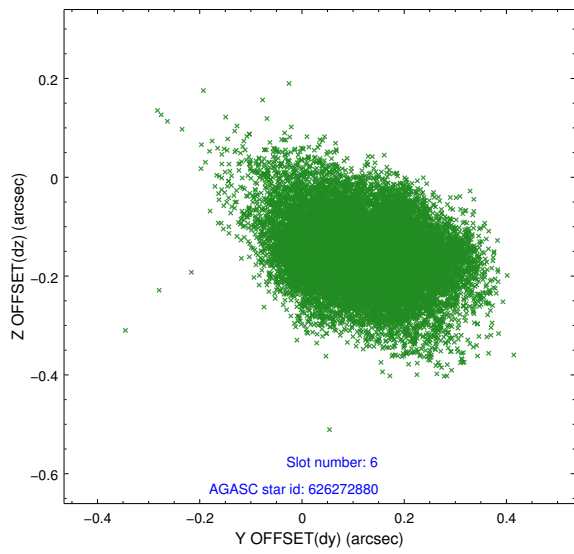
### 2.4.3 Slot 5



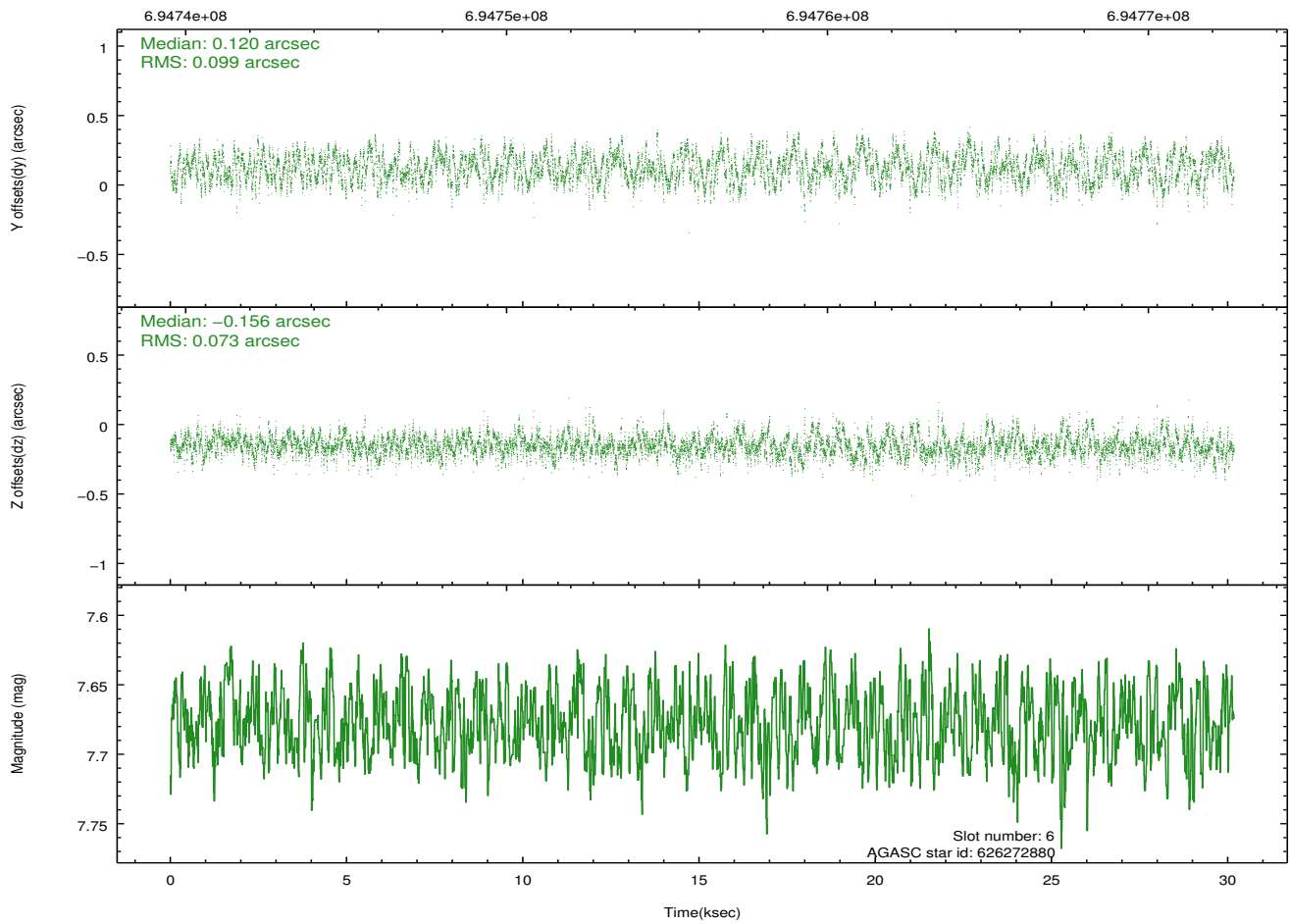
Time (s)



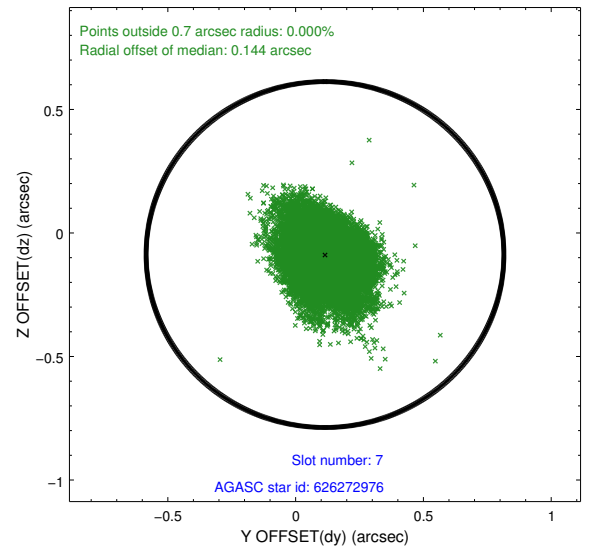
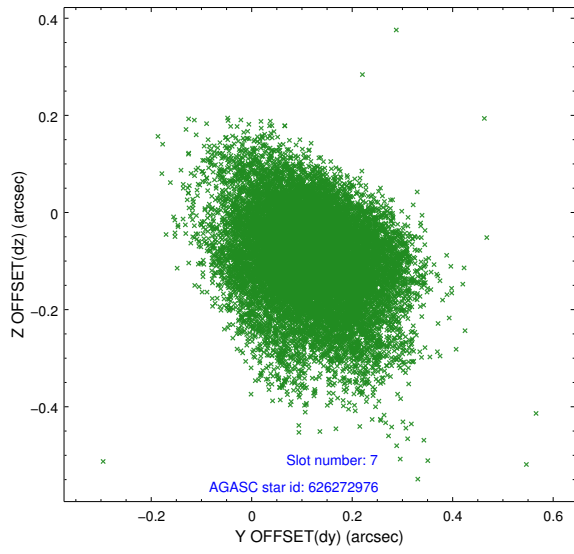
## 2.4.4 Slot 6



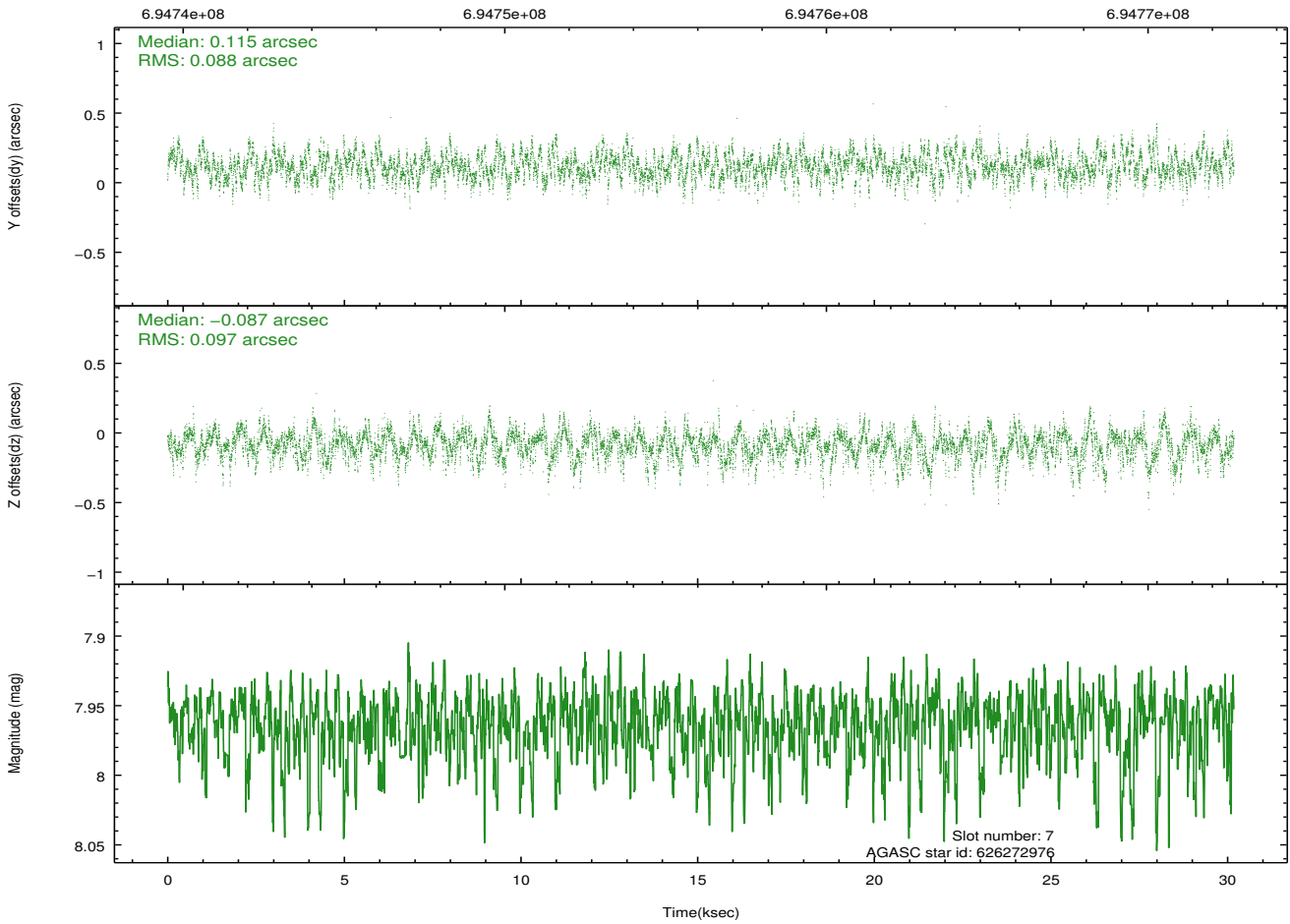
Time (s)



## 2.4.5 Slot 7

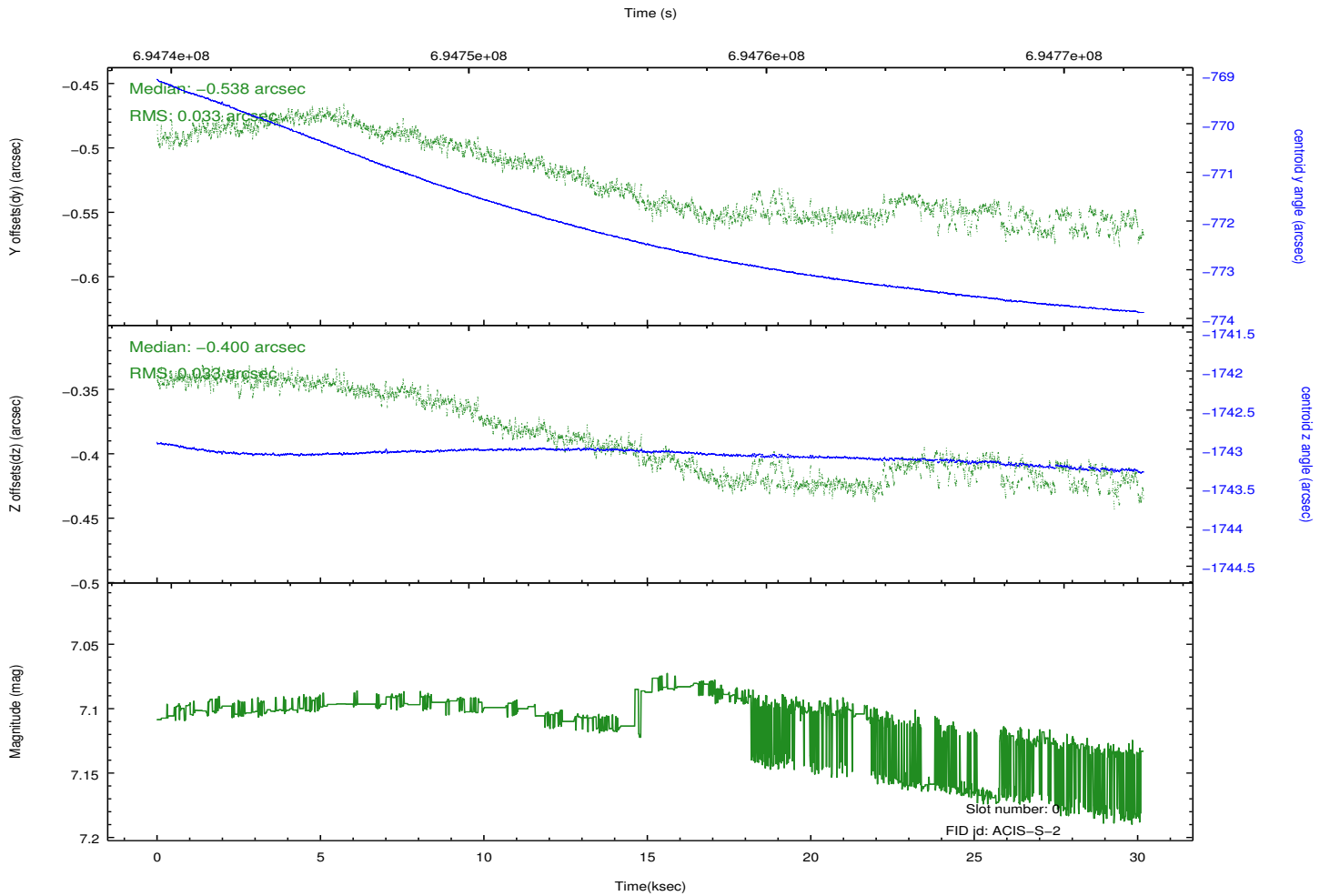
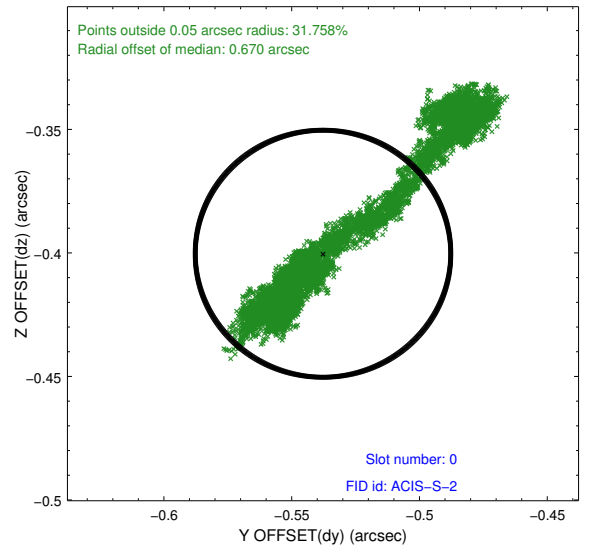
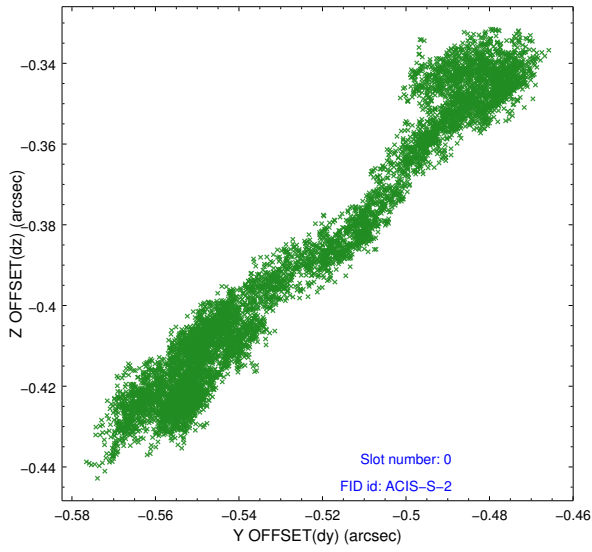


Time (s)

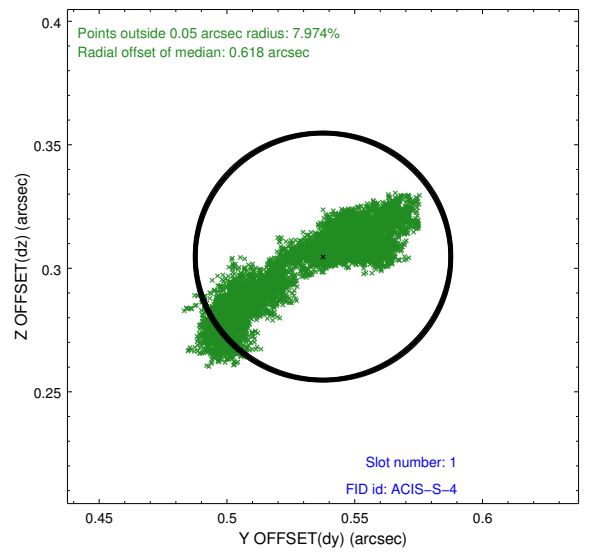
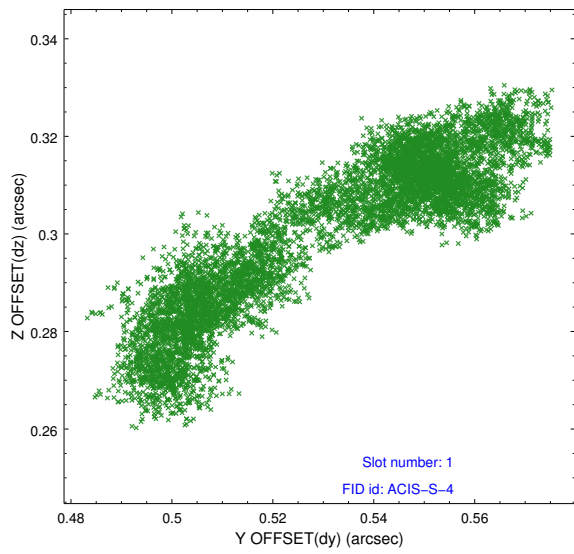


## 2.5 FID Slots

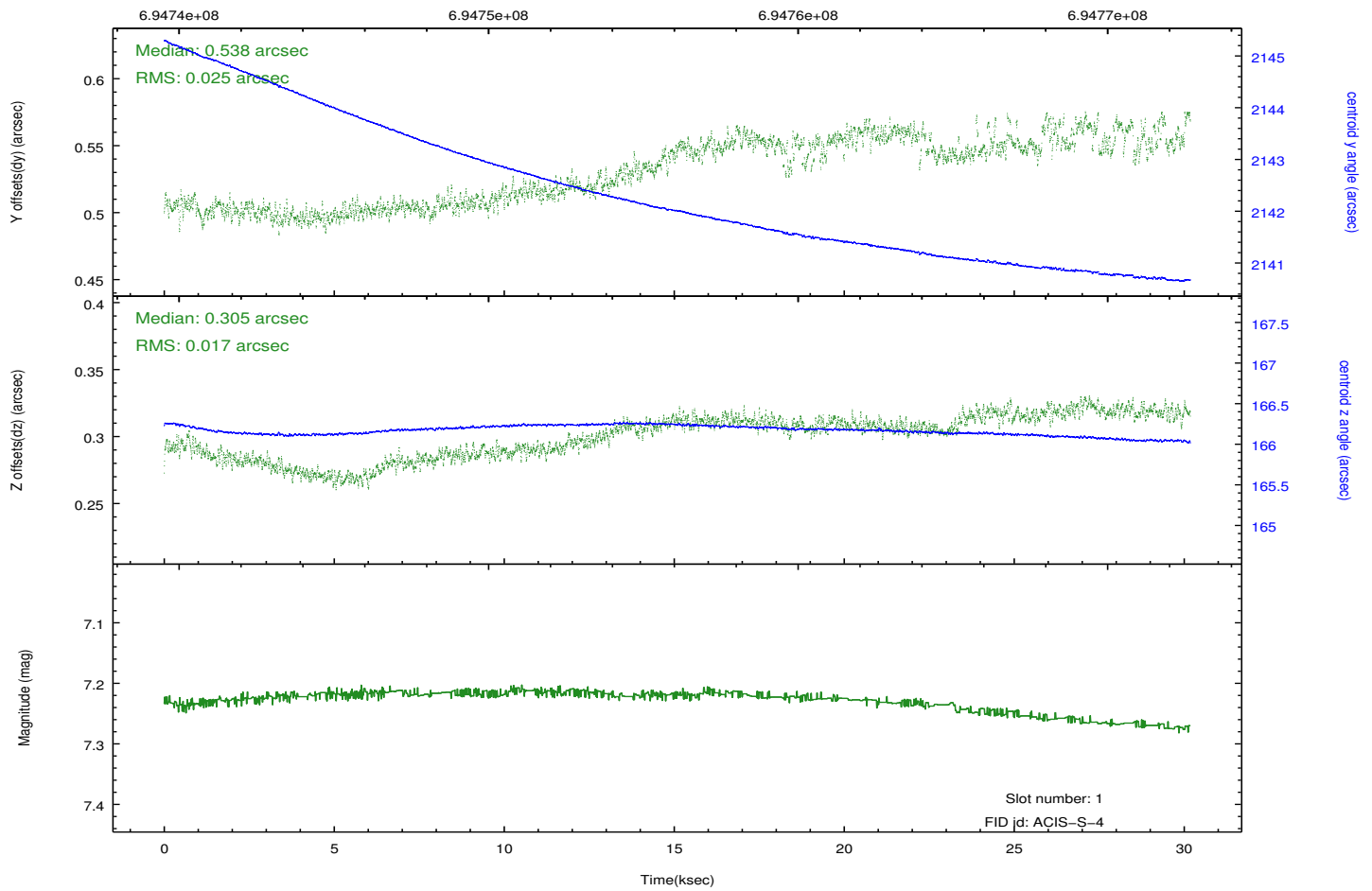
### 2.5.1 Slot 0



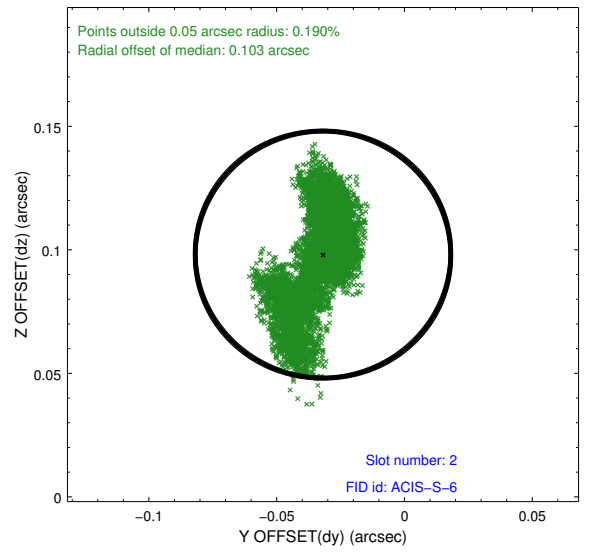
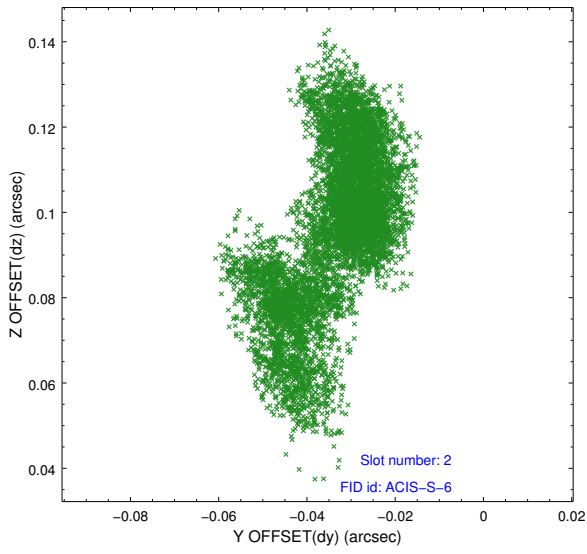
## 2.5.2 Slot 1



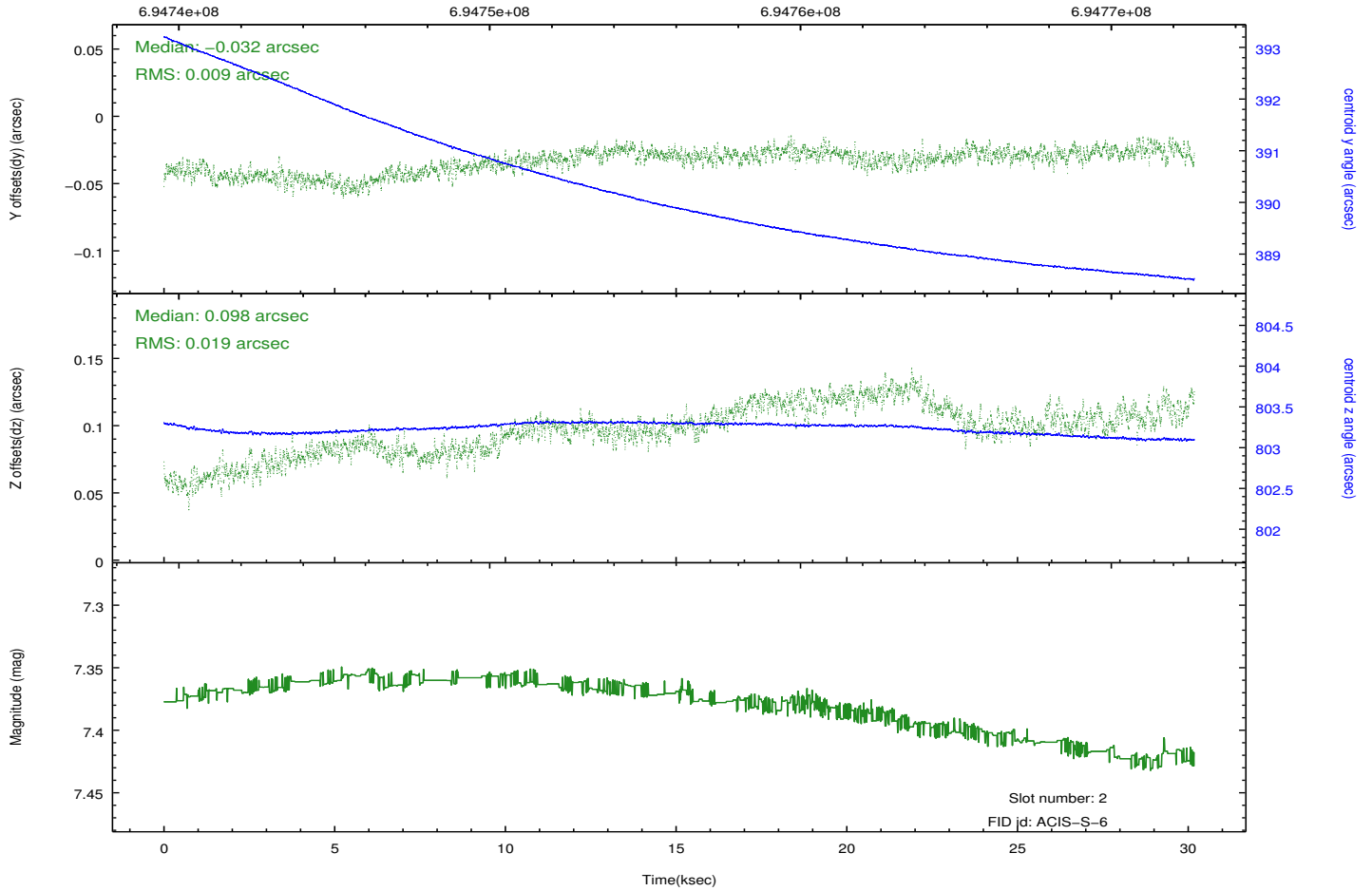
Time (s)



### 2.5.3 Slot 2

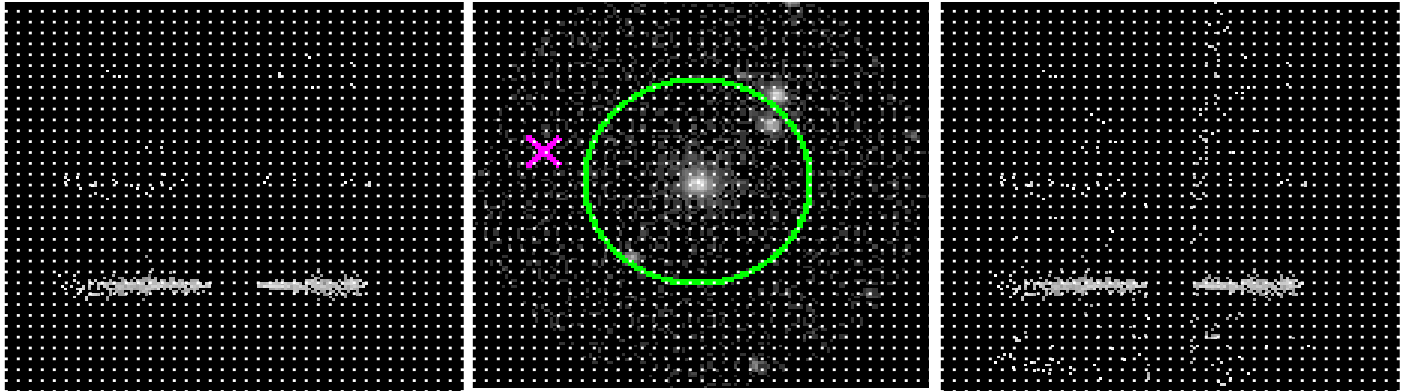


Time (s)



# 3 Gratings

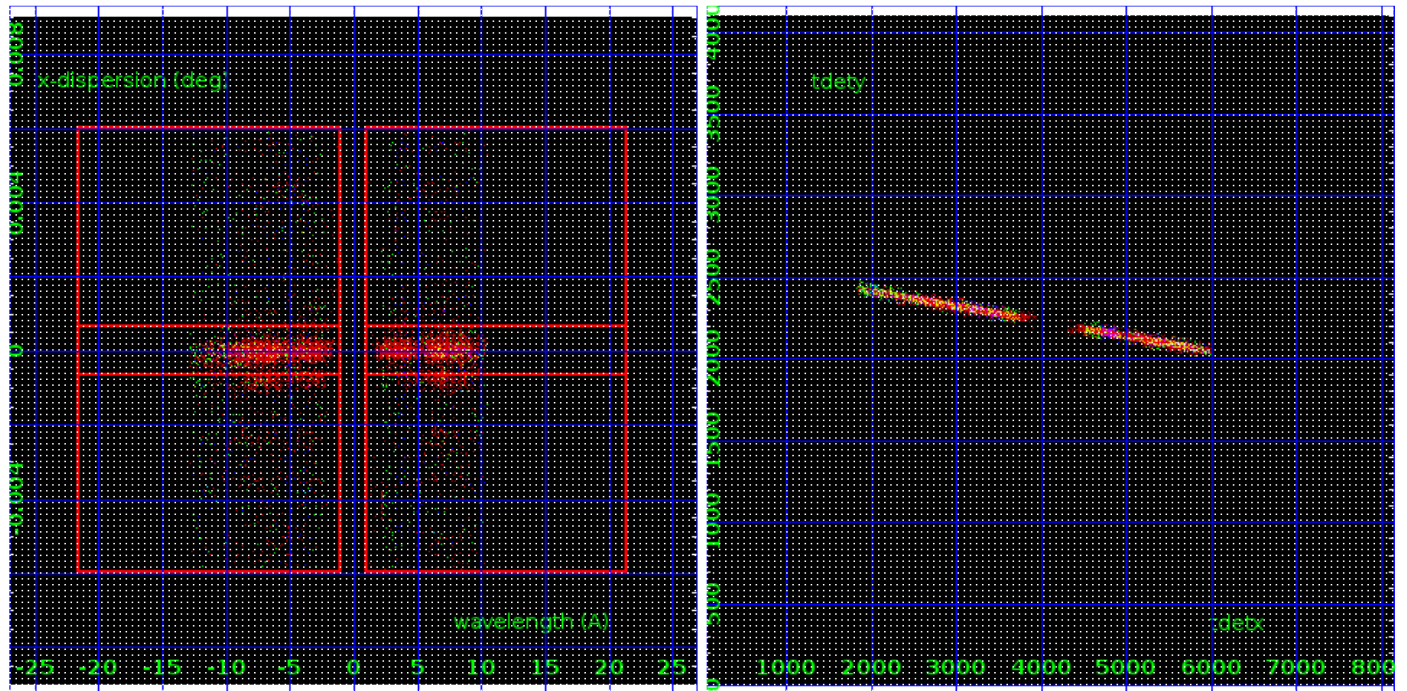
## 3.1 HEG Arm



HEG Order Sort 123

HEG Zero Order

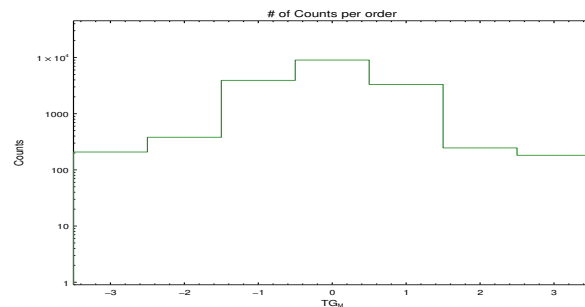
HEG Order Sort ALL



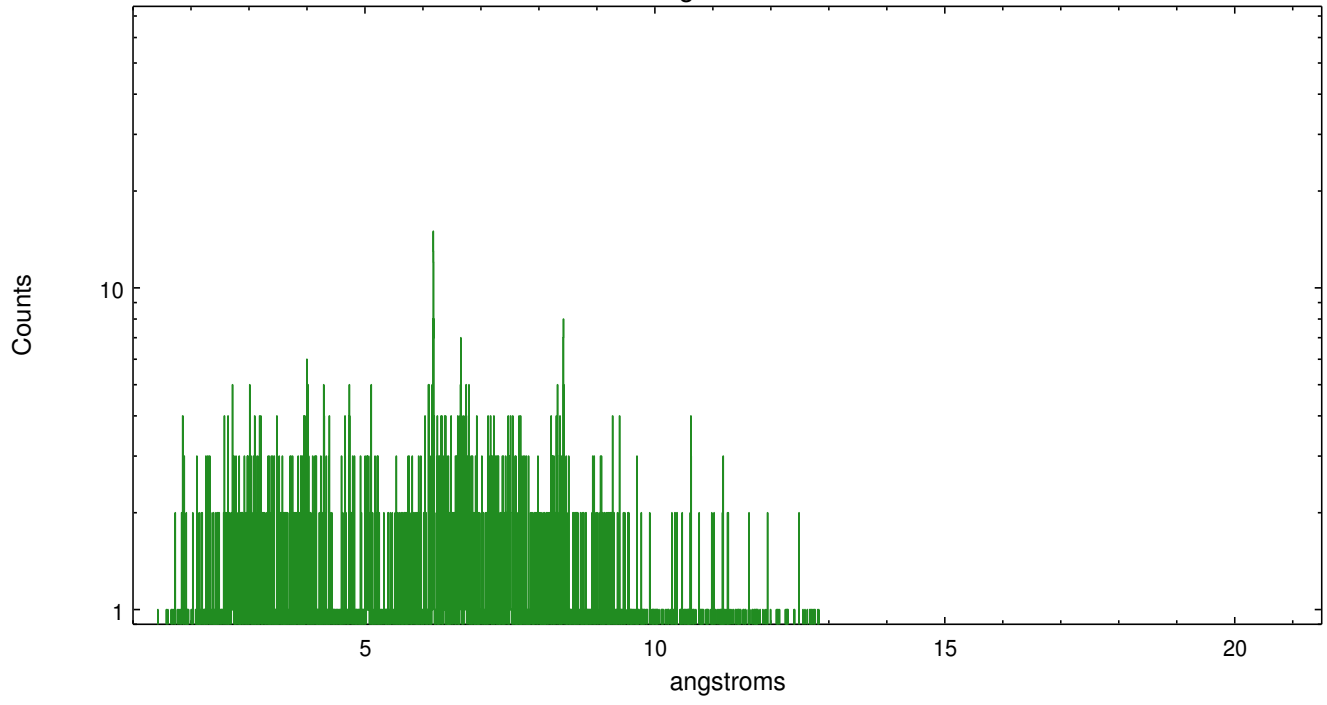
Spot Image HEG

Full Detector HEG

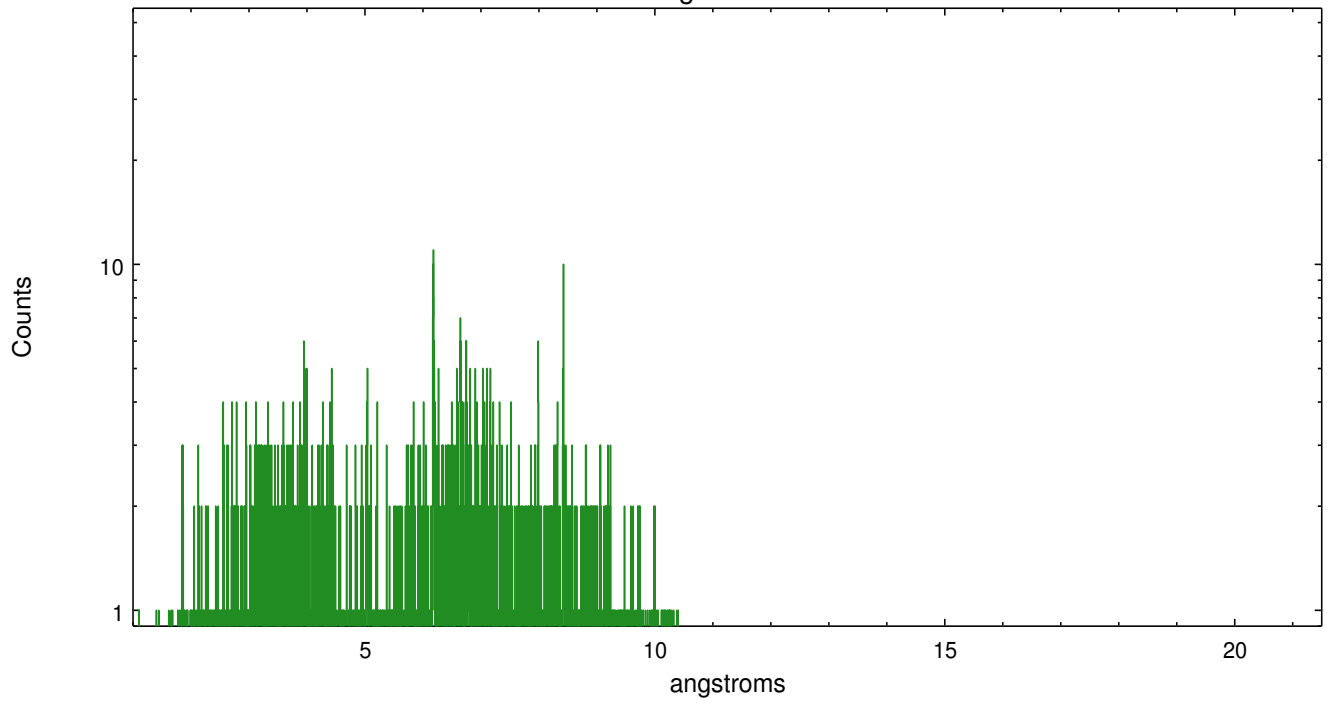
	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	208	381	3927	9025	3324	246	182



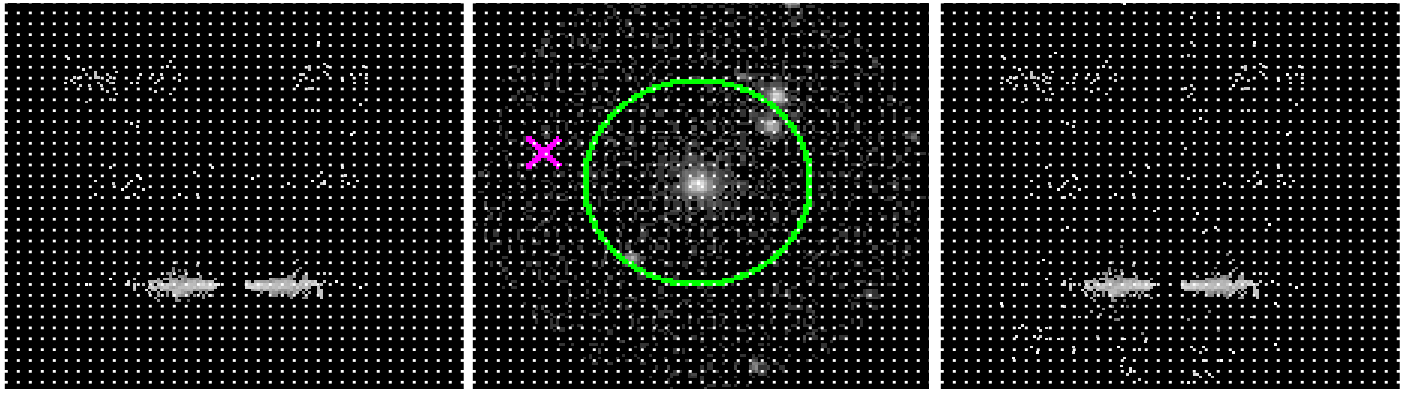
heg order -1



heg order +1



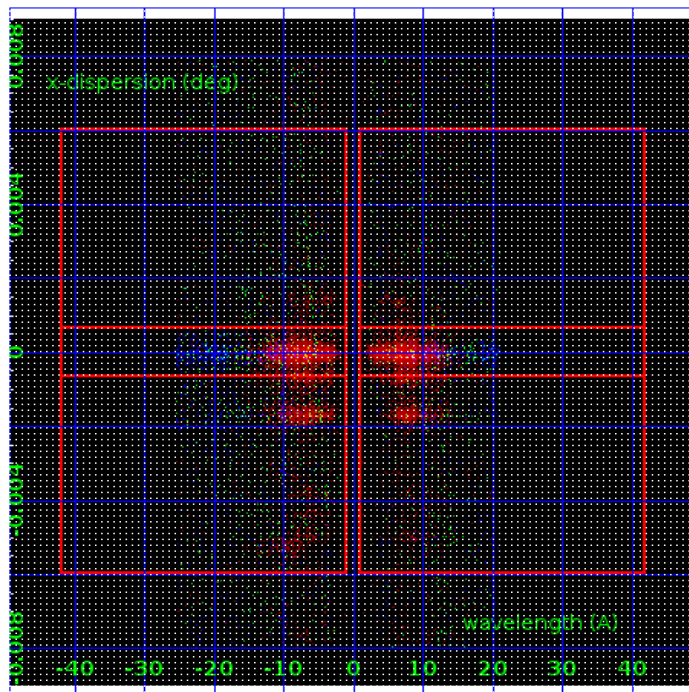
### 3.2 MEG Arm



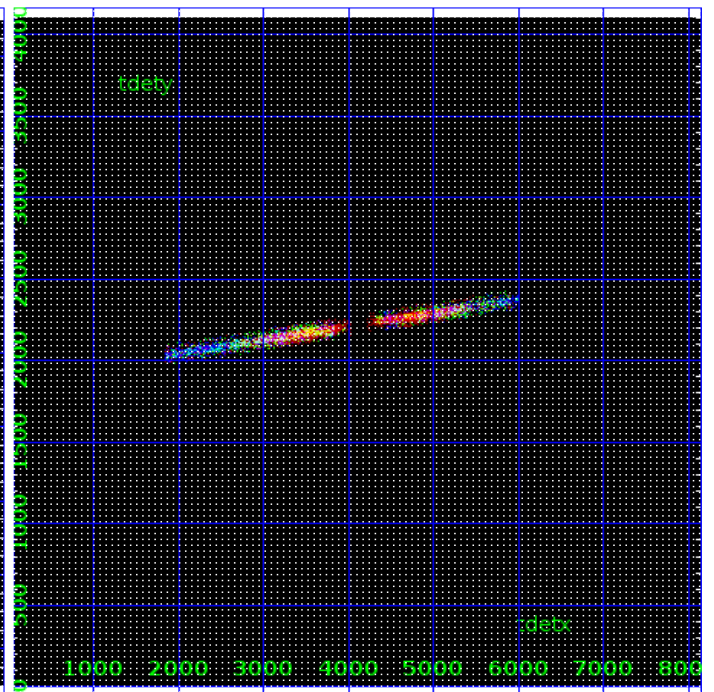
MEG Order Sort 123

MEG Zero Order

MEG Order Sort ALL

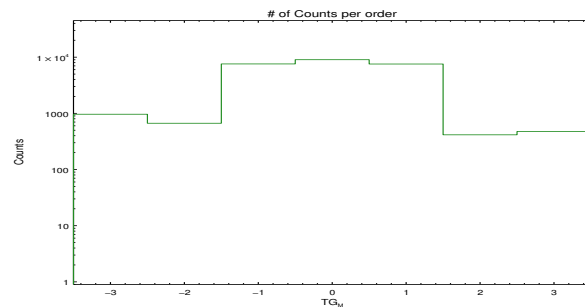


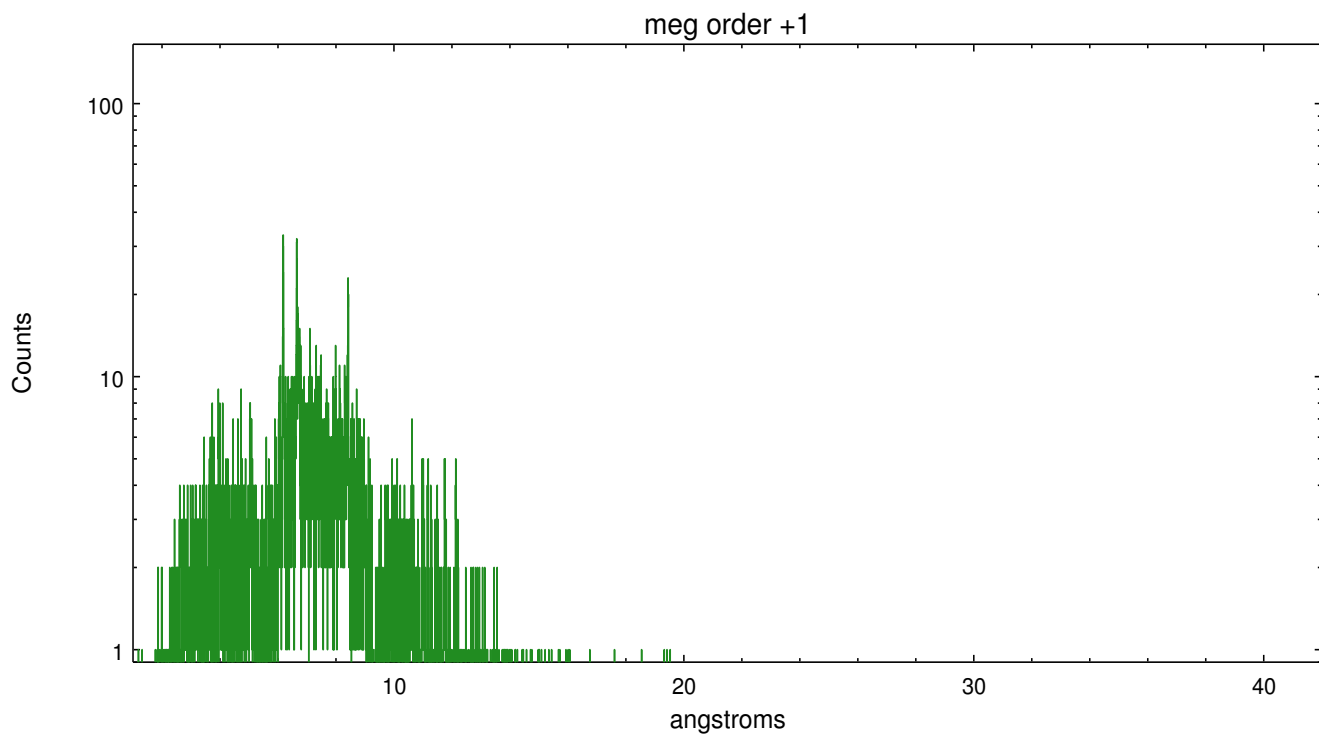
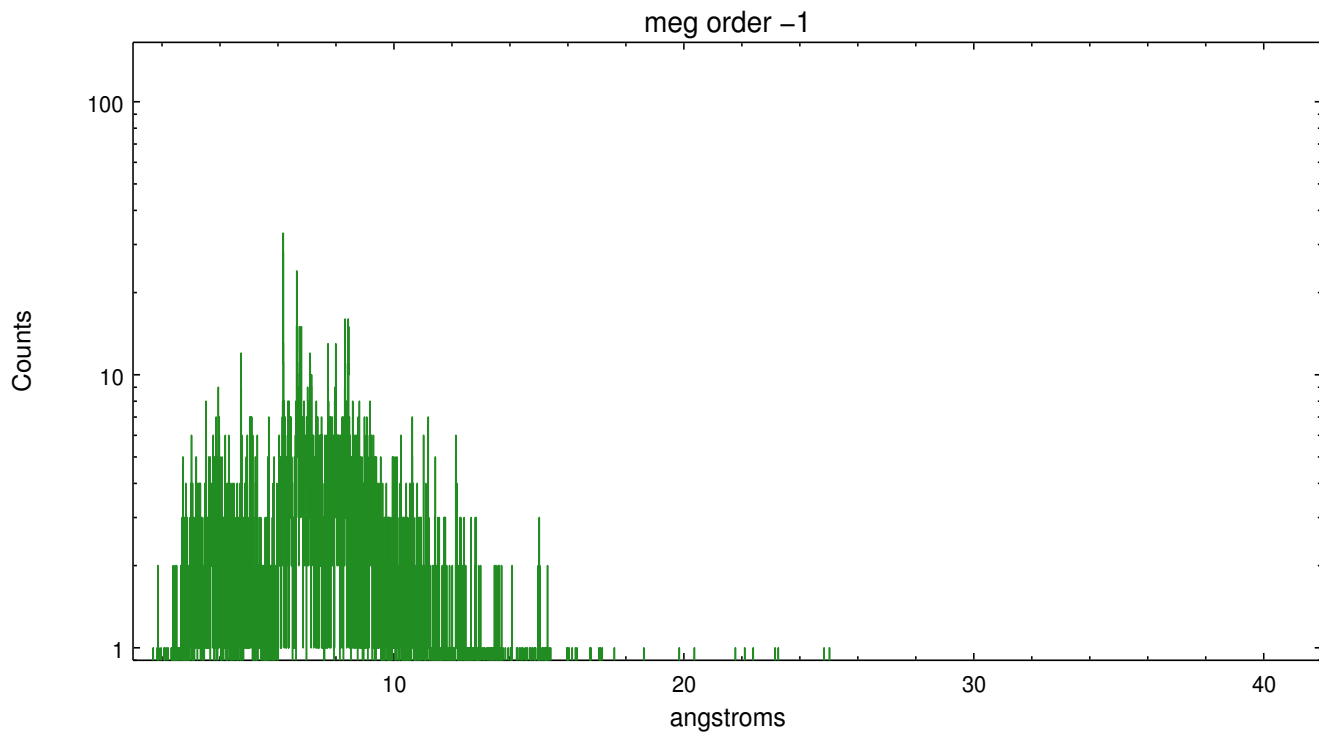
Spot Image MEG



Full Detector MEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	964	666	7587	9025	7556	415	475





## A Summary

### A.1 Status

V&V Scientist	Melania Nynka
V&V Date (YYYY-MM-DD)	2020.01.10
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	30.060700231314

### A.2 Comments