

# V&V Reference Report

## L2 ASCDS Version : 10.8.1

Observation 22996 - L2 Version 1  
Chandra X-Ray Center

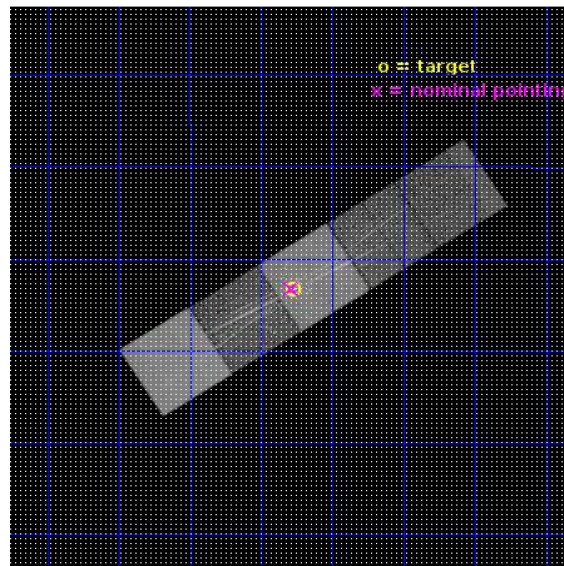
L2 Processing Date : Jan 3 2020

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# 1 Front

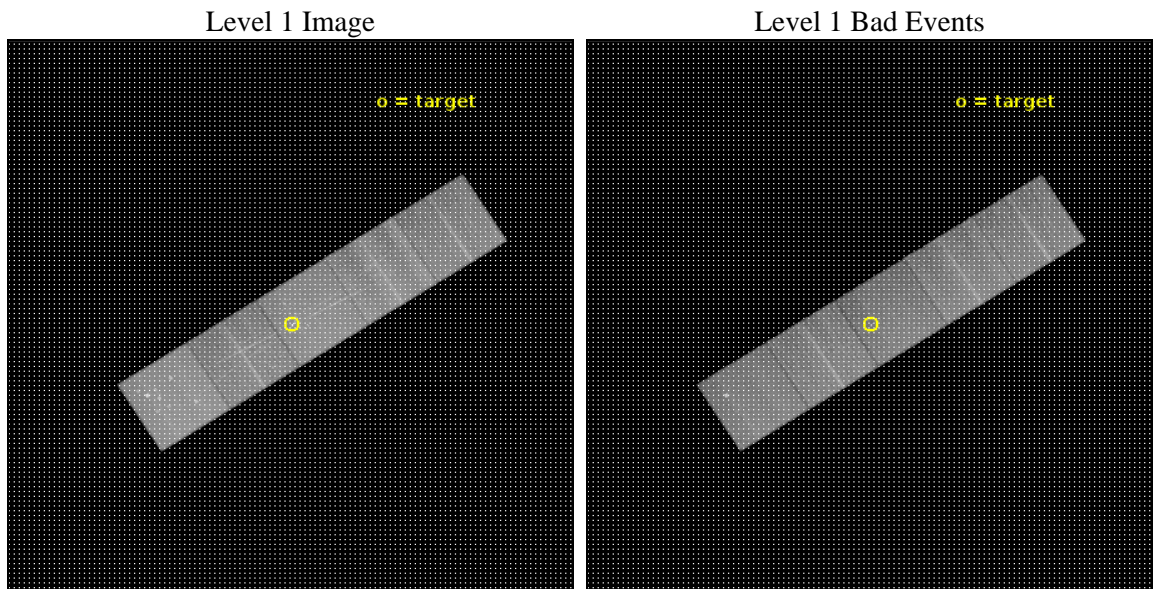
seq_num	201298	Sequence number
obs_id	22996	Observation id
title	THE TRUE NATURE OF X-RAYS FROM THE ORION TRAPEZIUM	Proposal title
observer	Norbert Schulz	Principal investigator
object	Orion Nebula Cluster	Source name
dtcycle	0	&#160
cycle	P	events from which exps? Prim/Second/Both
ra_targ	83.81875	Observer's specified target RA [deg]
dec_targ	-5.38975	Observer's specified target Dec [deg]
ra_nom	83.82216181282	Nominal RA [deg]
dec_nom	-5.3876772756912	Nominal Dec [deg]
roll_nom	327.54040407349	Nominal Roll [deg]
revision	1	Processing version of data
ontime	27052.398967147	Sum of GTIs [s]
livetime	26698.939458955	Livetime [s]
ontime5	27052.357927203	Sum of GTIs [s]
ontime6	27052.31688714	Sum of GTIs [s]
ontime7	27052.398967147	Sum of GTIs [s]
ontime8	27052.275847197	Sum of GTIs [s]
ontime9	27052.234807134	Sum of GTIs [s]
l2events	400845	Number of level 2 events



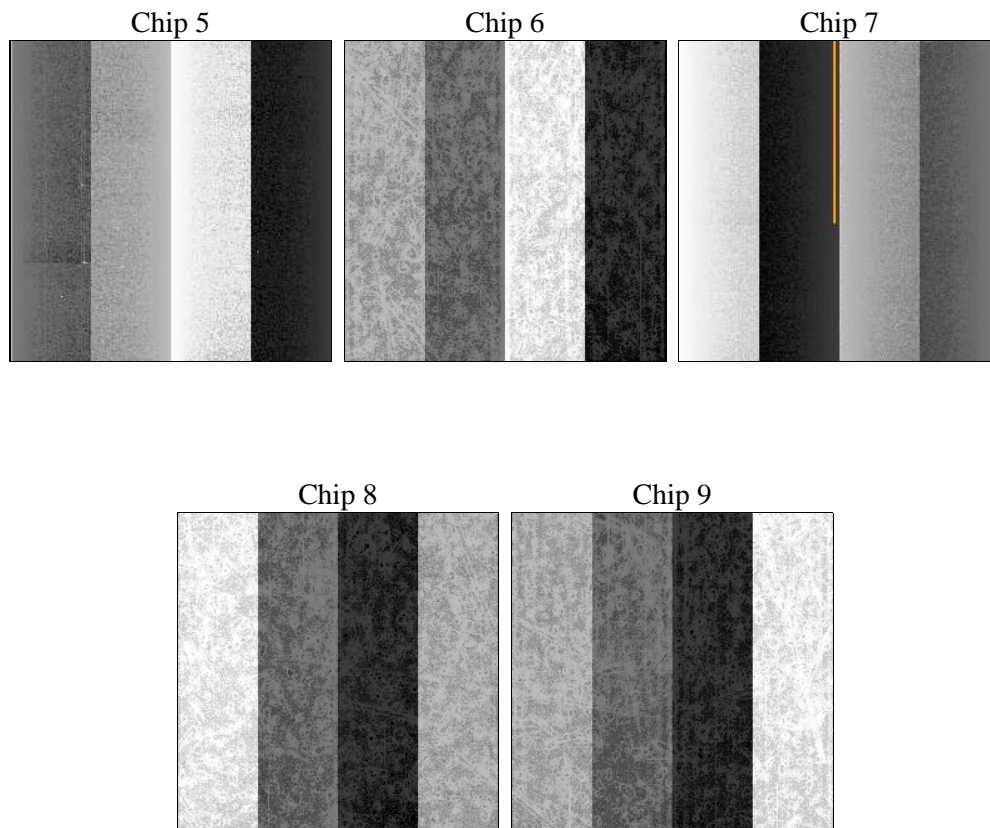
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

obi_num	0	Obi number	sched_exp_time	27000.000000	[s] Scheduled observation exposure time
ascdsver	10.8.1	Processing system revision	ontime	27052.398967147	Sum of GTIs [s]
caldsver	4.8.4.2	&#160	ontime5	27052.357927203	Sum of GTIs [s]
date	2020-01-03T16:04:11	Date and time of file creation	ontime6	27052.31688714	Sum of GTIs [s]
revision	1	Processing version of data	ontime7	27052.398967147	Sum of GTIs [s]
			ontime8	27052.275847197	Sum of GTIs [s]
			ontime9	27052.234807134	Sum of GTIs [s]
			l1events	1399895	Number of level 1 events
			tgmethod	TGDETECT	Method used to create src1a file
			zo_pos	(4121.73, 4080.84)	src1a sky pixel position

### 2.1.4 Events

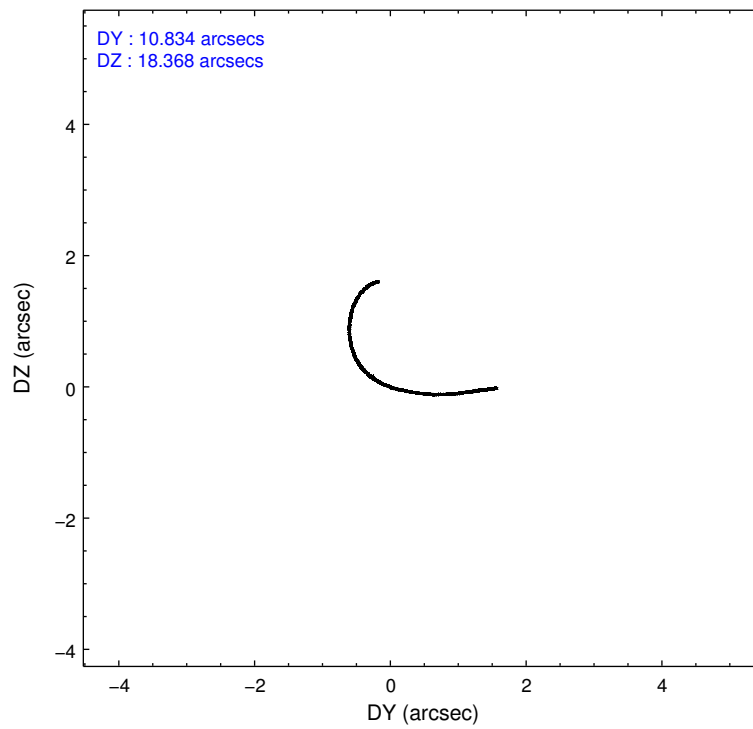
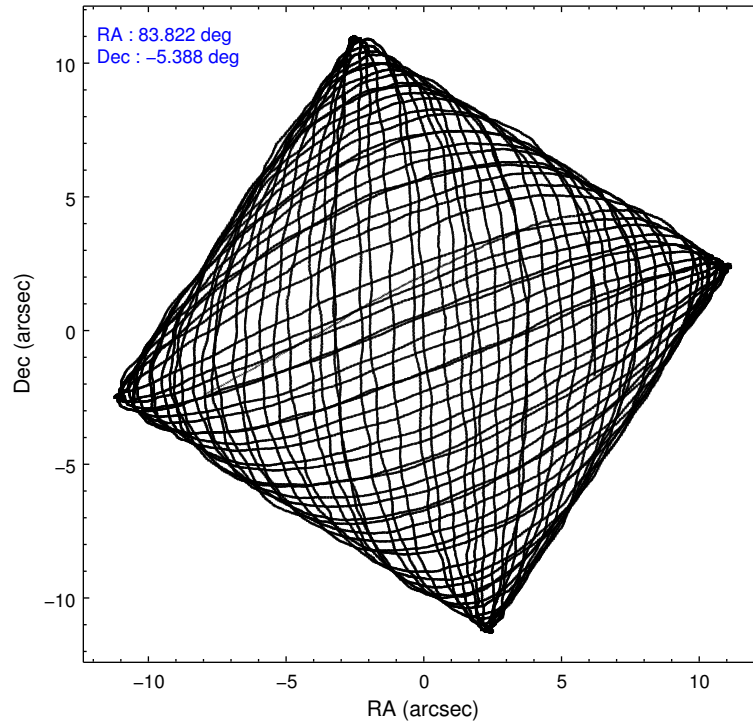
	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
level 1 events	357277	234349	311955	283407	212907
rejected events	181401	193221	158044	202970	186048
rejected %	50%	82%	50%	71%	87%

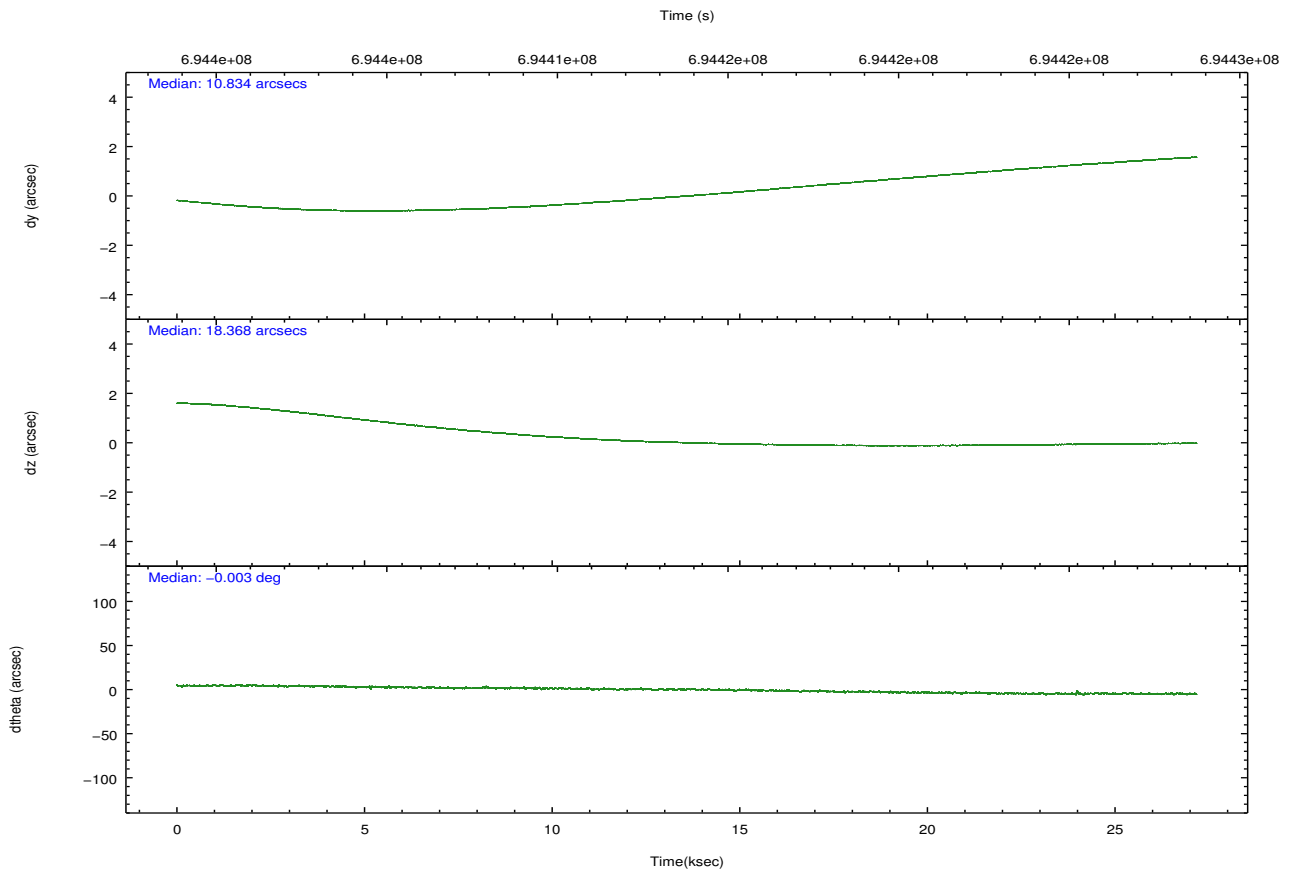
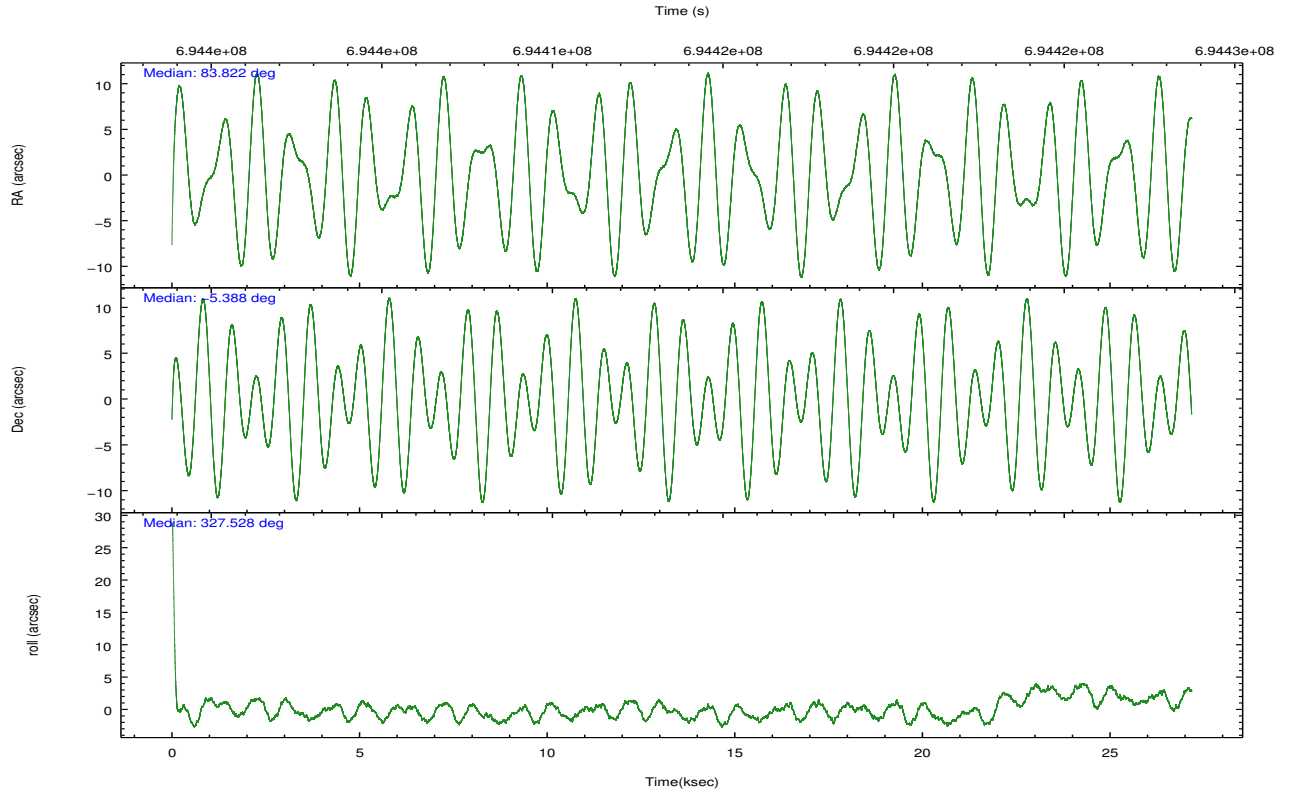
	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
grade 0 events	19892	20847	17755	26309	9823
	5%	8%	5%	9%	4%
grade 1 events	844	179	518	257	127
	0%	0%	0%	0%	0%
grade 2 events	54988	8194	34104	18561	6108
	15%	3%	10%	6%	2%
grade 3 events	5121	2716	13175	7745	2505
	1%	1%	4%	2%	1%
grade 4 events	4635	2734	12753	7331	2472
	1%	1%	4%	2%	1%
grade 5 events	22273	9738	27503	14956	10901
	6%	4%	8%	5%	5%
grade 6 events	91256	6638	76144	20495	5954
	25%	2%	24%	7%	2%
grade 7 events	158268	183303	130003	187753	175017
	44%	78%	41%	66%	82%

## 2.2 Compared Parameters

Parameter	Planned	Actual	Parameter	Planned	Actual
Instrument	ACIS	ACIS	Obspar format version number	7	7
Detector	ACIS-56789	ACIS-56789	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	83.794592	83.82216181281996	CCD I2 on	N	N
[deg] Pointing Dec	-5.386872	-5.387677275691249	CCD I3 on	N	N
[deg] Pointing Roll	327.381176	327.5404040734918	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	-190.1400660498719	CCD S3 on	Y	Y
[mm] SIM translation stage offset	0	0.00754346686406393	CCD S4 on	Y	Y
[s] Observation start time (MET)	694400376.184000	694399165.89114	CCD S5 on	O2	Y
Observation start date	2020-01-03T00:58:27	2020-01-03T00:39:25	Number of optional ACIS chips dropped	1	1
[s] Observation end time (MET)	694427376.184000	694428847.33043	On-chip summing requested	N	N
Observation end date	2020-01-03T08:28:27	2020-01-03T08:54:07	Subarray requested	NONE	NONE
Read mode	TIMED	TIMED	Alternating exposures requested	N	N
			[s] Primary exposure time	0.000000	3.1

## 2.3 Aspect





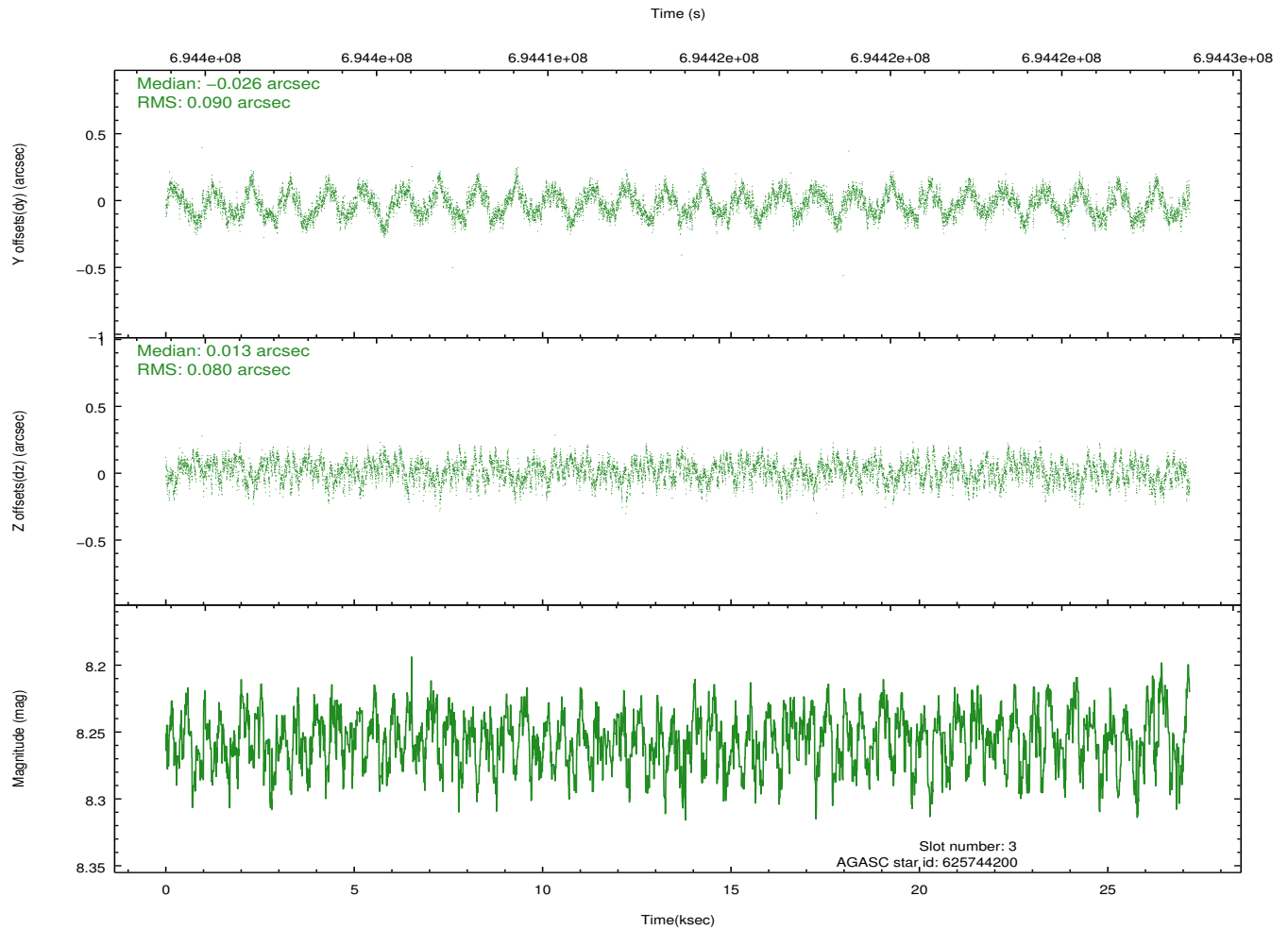
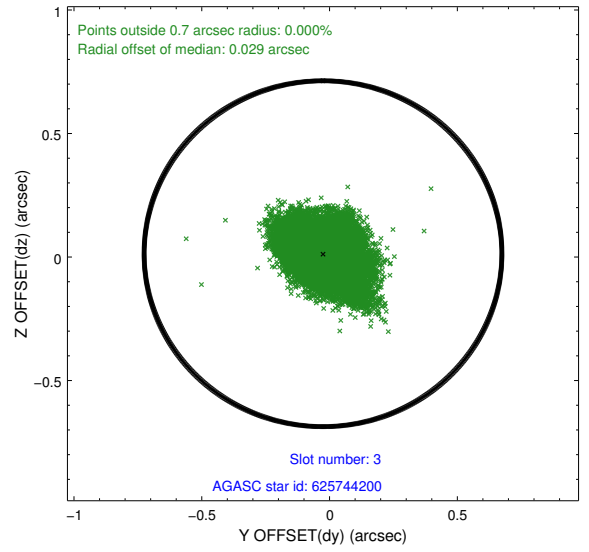
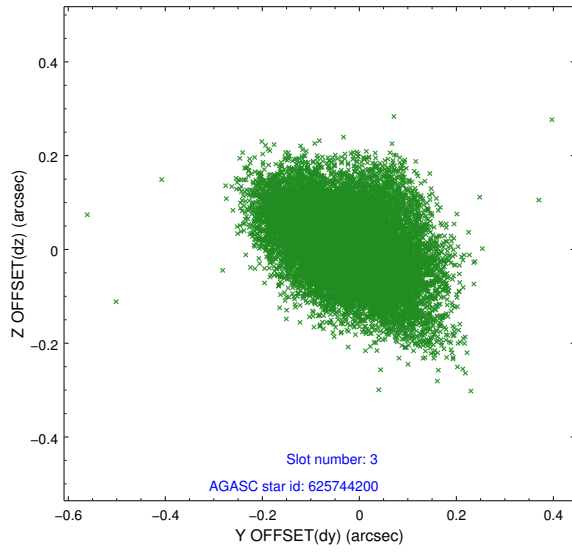
### Slot Statistics

slot	status	used	id	mag	n_pts	frac_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_x
0	FID		ACIS-S-1	7.15	6629	1.000	0.205	0.097	0.015	0.042	0.000000	0.000000	932.28	-1735
1	FID		ACIS-S-2	7.06	6628	1.000	-0.306	-0.152	0.011	0.024	0.000000	0.000000	-764.08	-1740
2	FID		ACIS-S-6	7.32	6629	1.000	0.082	0.058	0.013	0.028	0.000000	0.000000	397.85	805
3	GUIDE	used	625744200	8.26	13243	1.000	-0.026	0.013	0.131	0.202	83.695760	-5.570729	59.07	-748
4	GUIDE	used	625745128	7.80	13247	1.000	-0.022	0.067	0.119	0.195	83.769930	-4.731835	-1345.74	1938
5	GUIDE	used	625745136	7.18	13258	1.000	-0.151	0.138	0.105	0.170	83.600341	-4.804339	-1717.38	1391
6	GUIDE	used	626272880	7.67	13258	1.000	0.077	-0.106	0.112	0.183	83.815609	-6.032748	1317.53	-1917
7	GUIDE	used	626272976	7.97	13249	1.000	0.126	-0.106	0.115	0.192	83.795875	-5.926912	1052.84	-1634

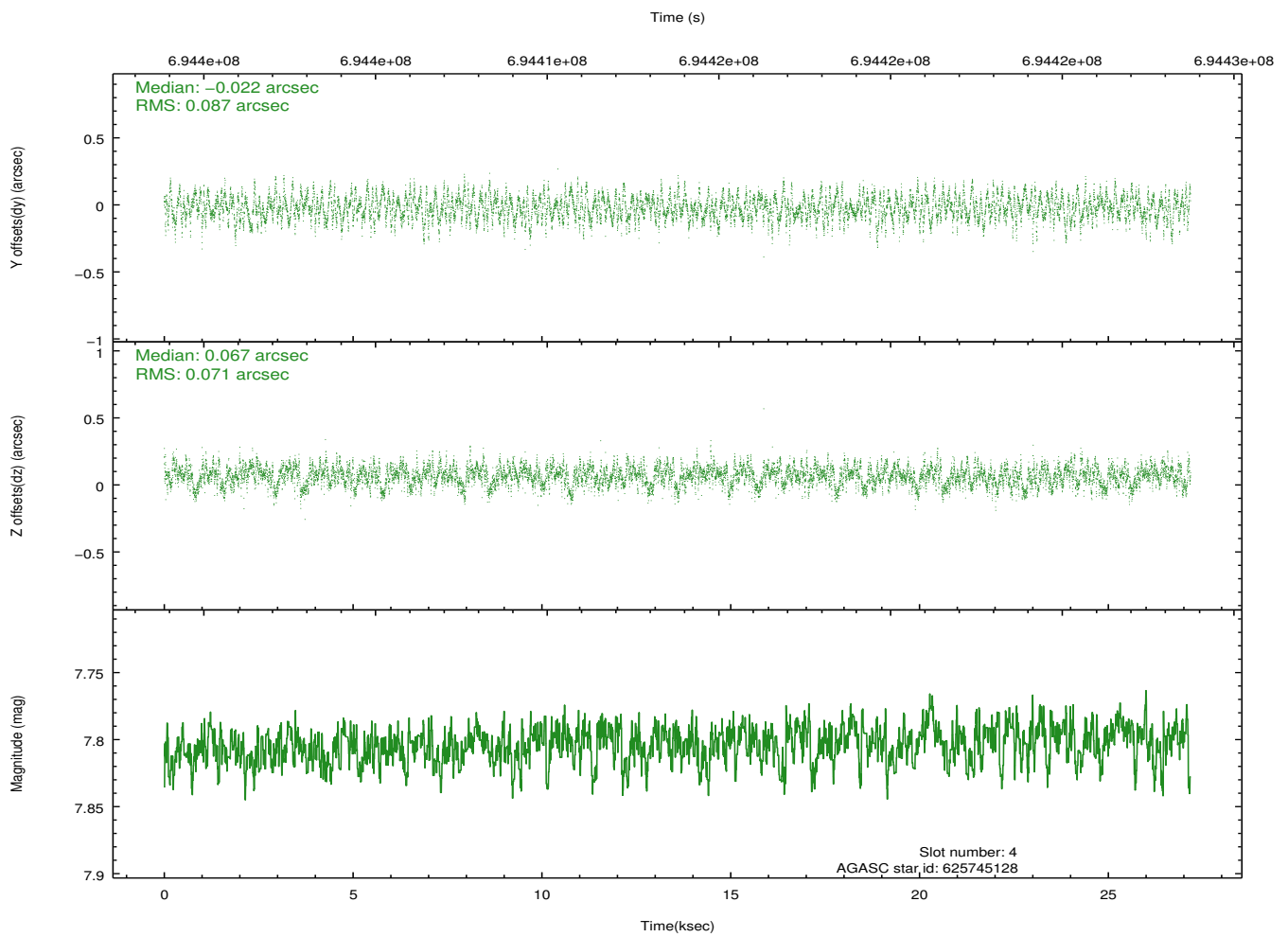
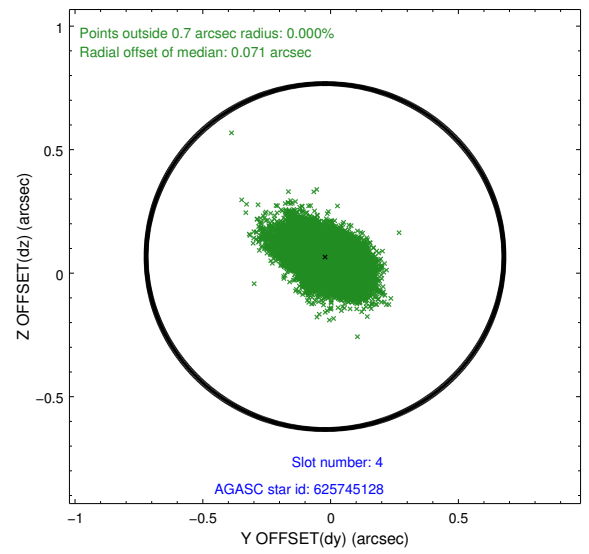
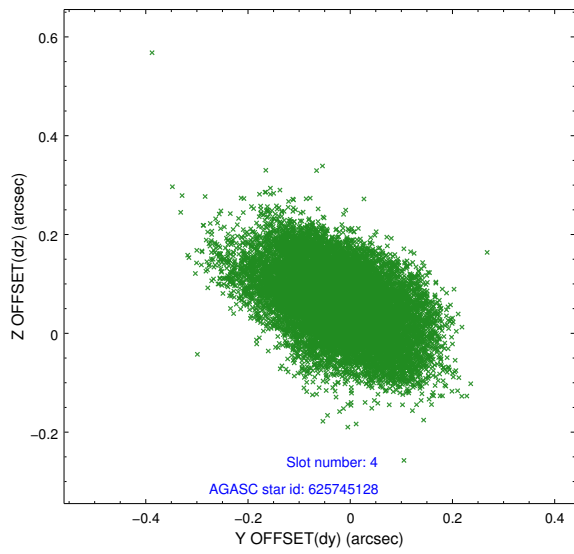
∞

## 2.4 Star Slots

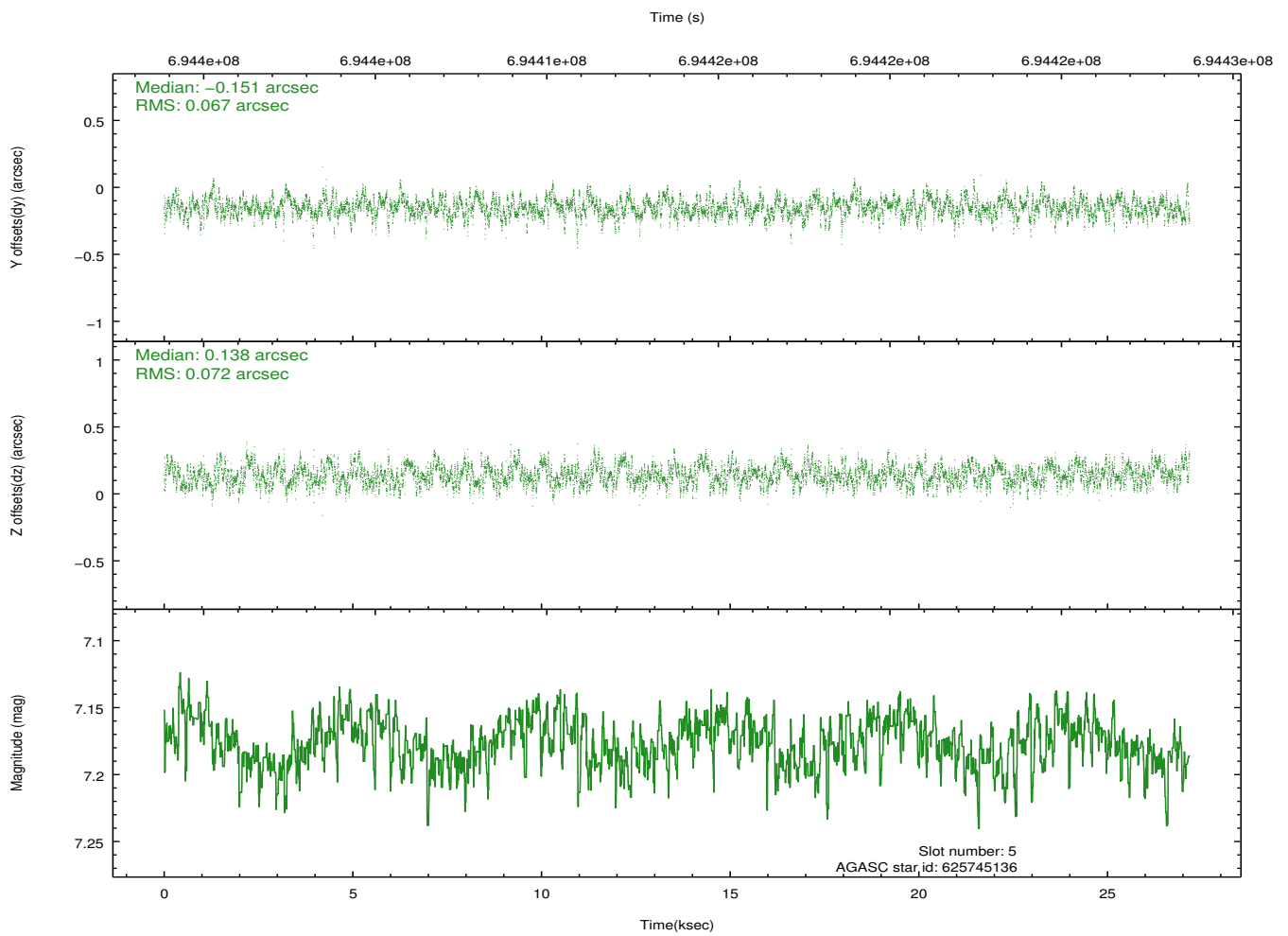
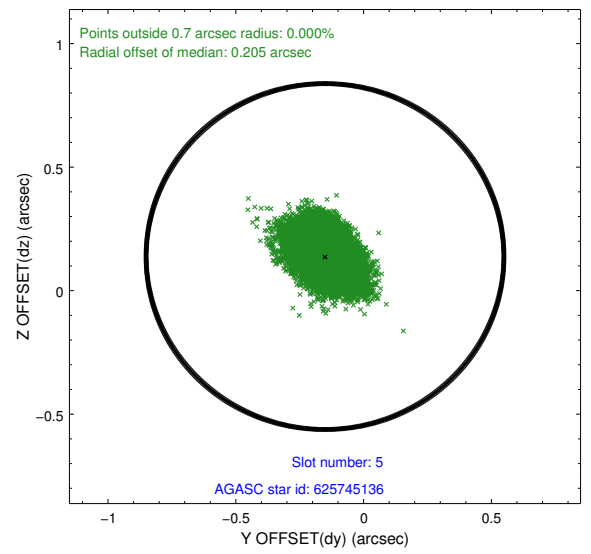
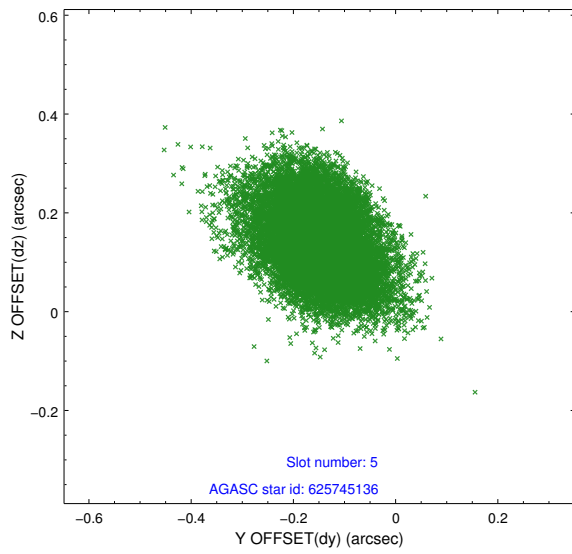
### 2.4.1 Slot 3



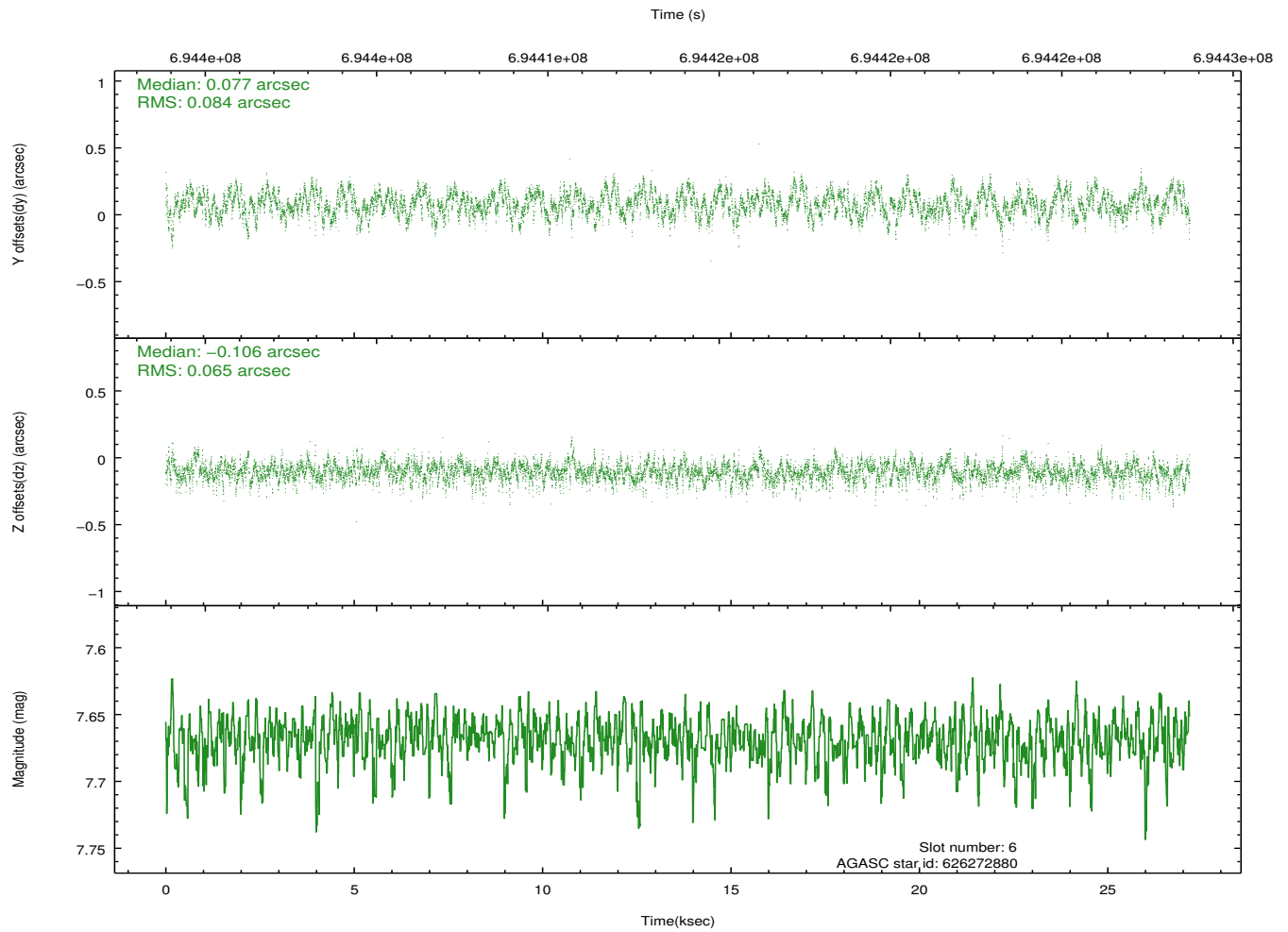
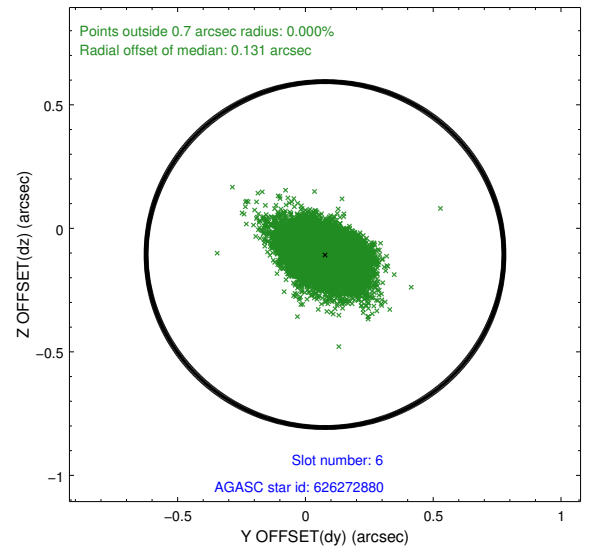
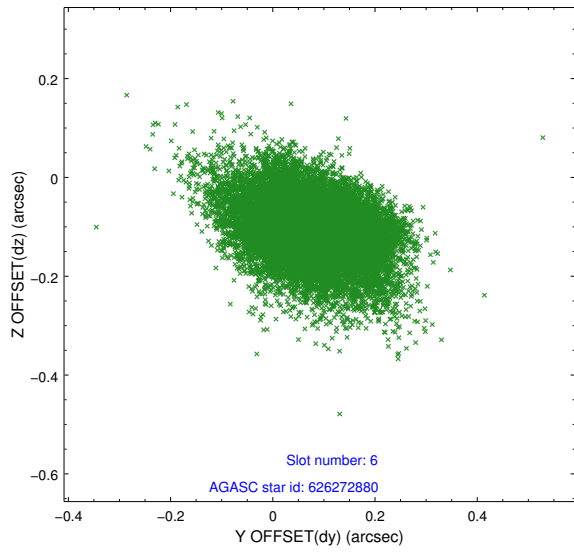
## 2.4.2 Slot 4



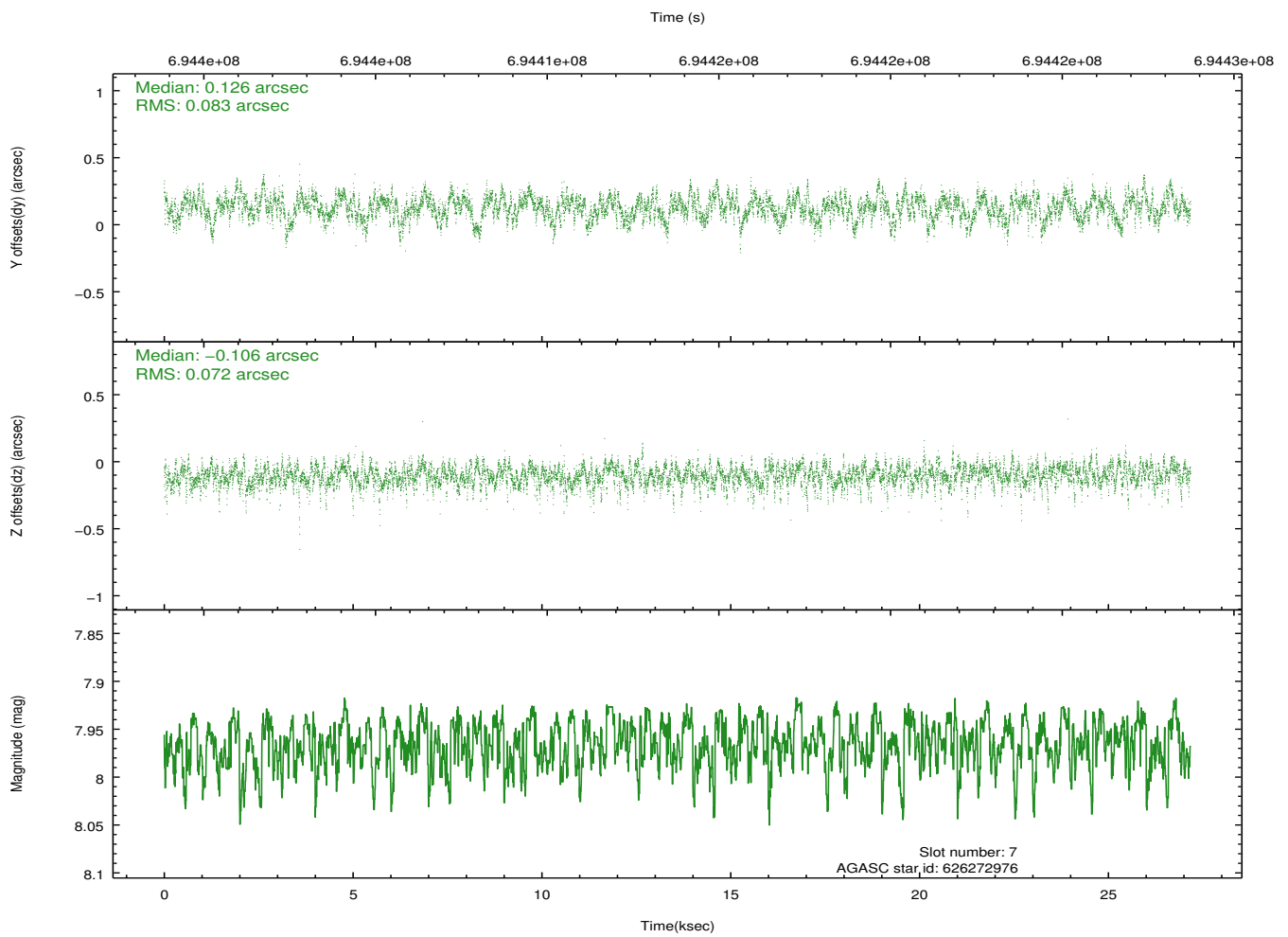
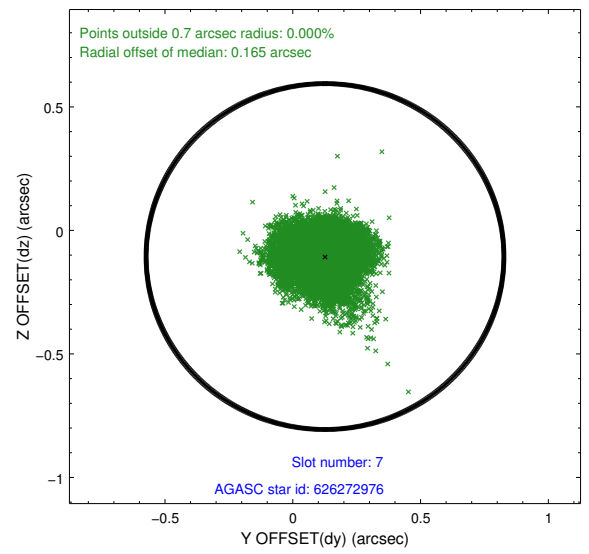
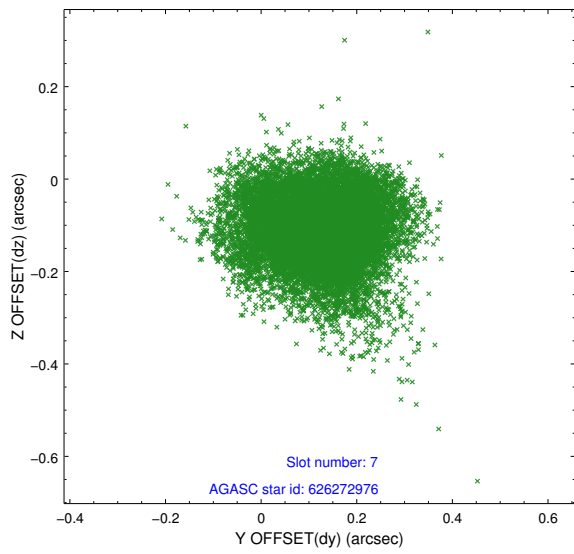
### 2.4.3 Slot 5



## 2.4.4 Slot 6

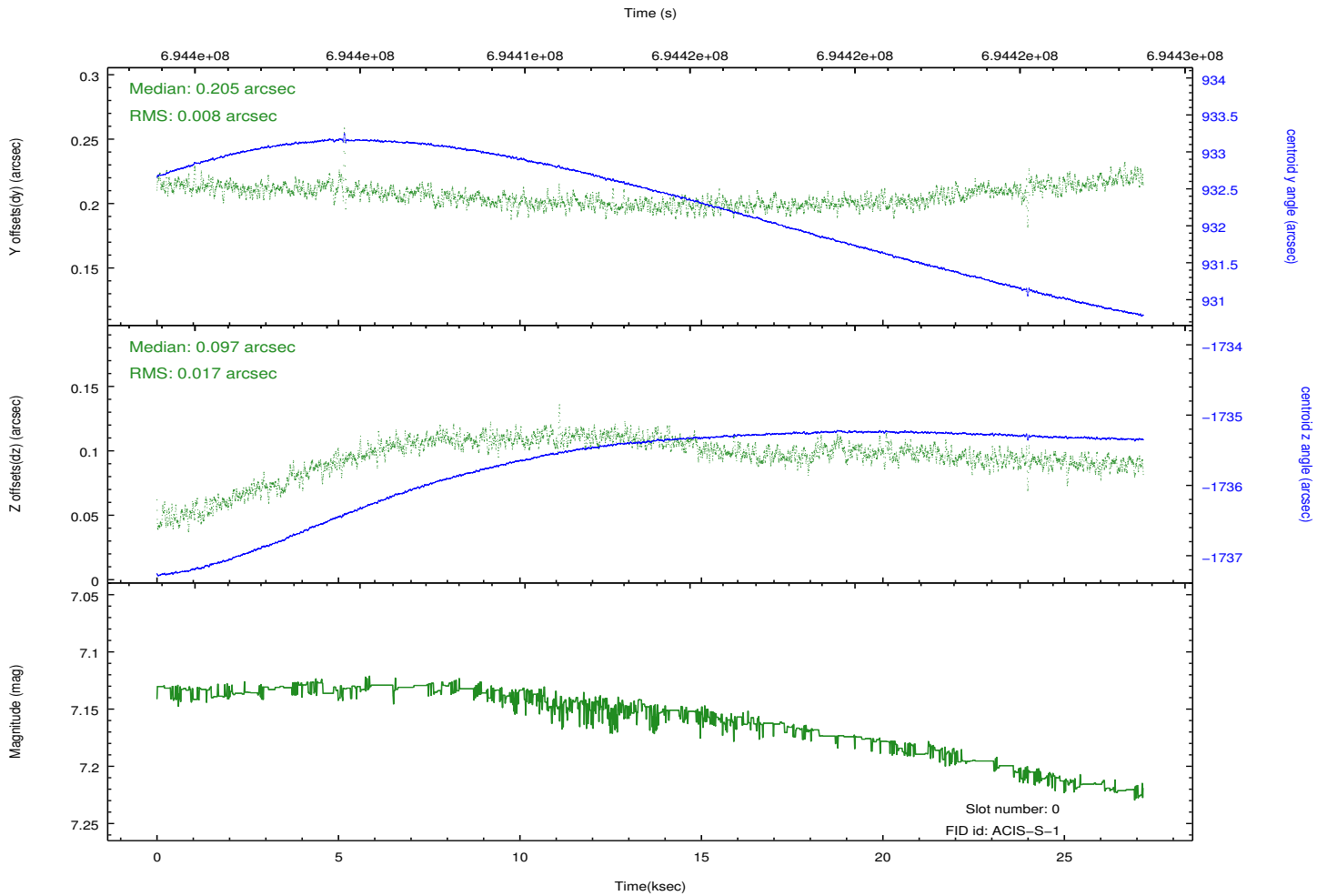
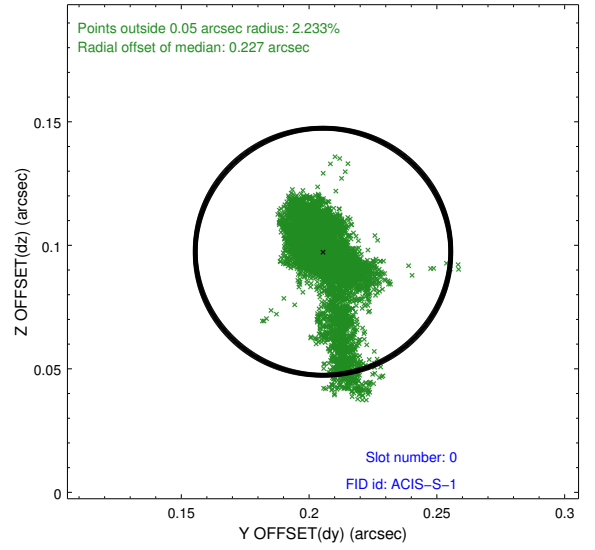
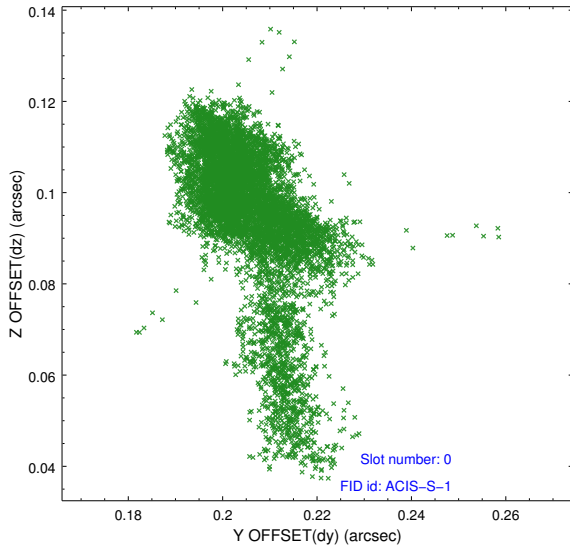


## 2.4.5 Slot 7

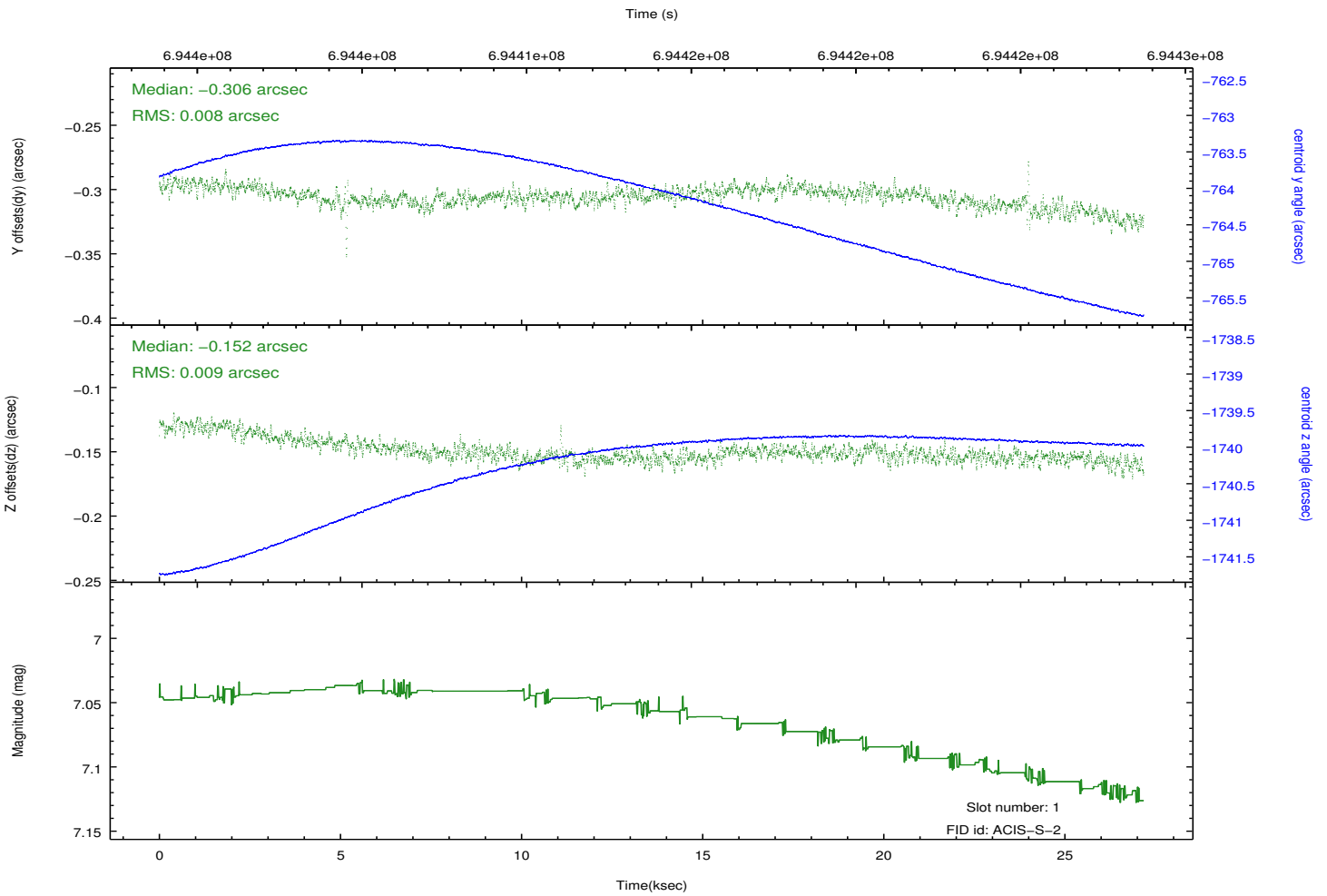
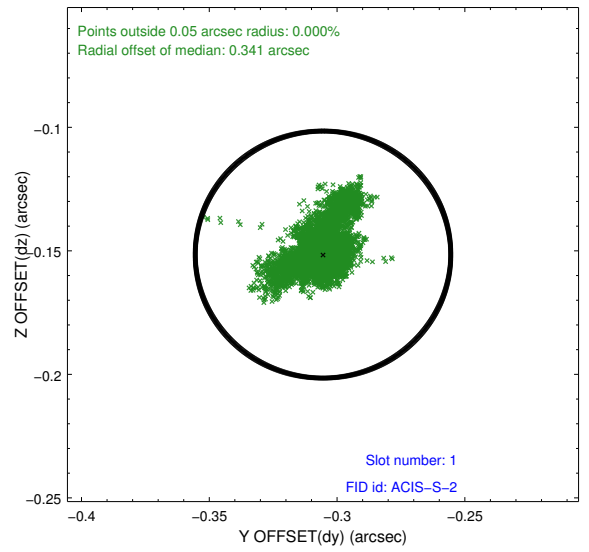
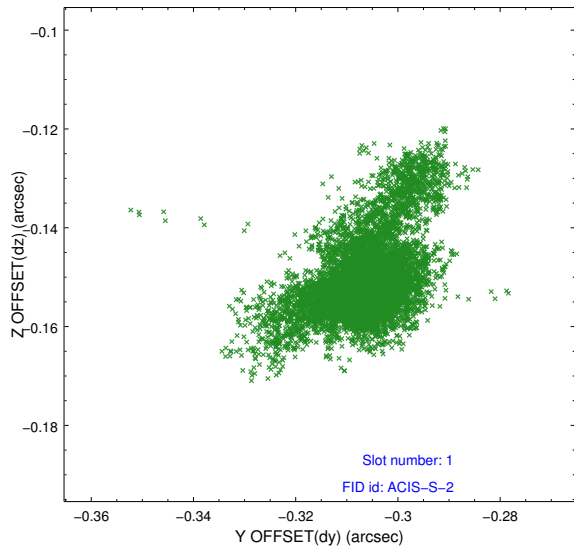


## 2.5 FID Slots

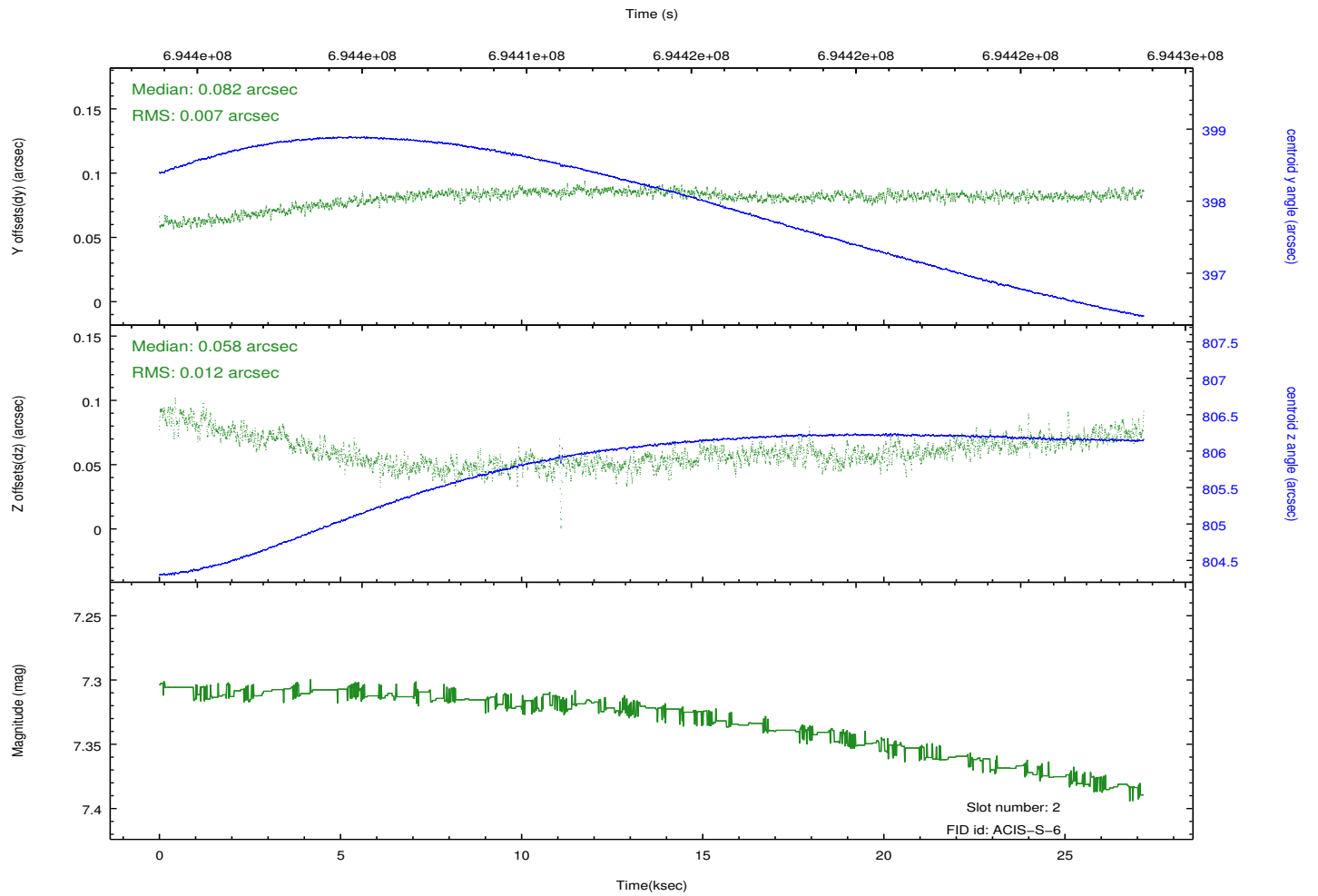
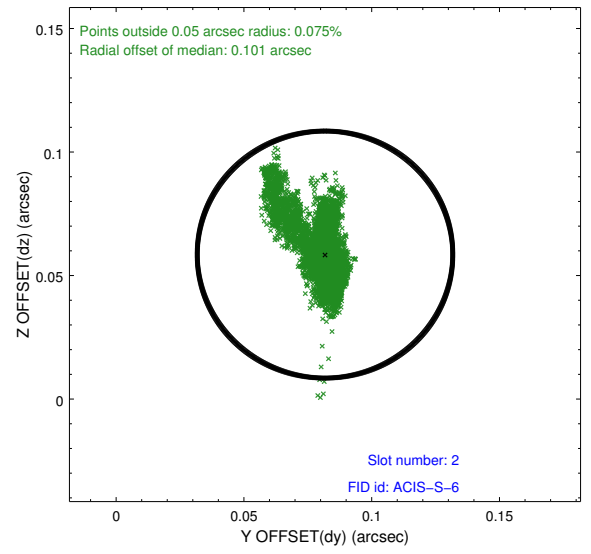
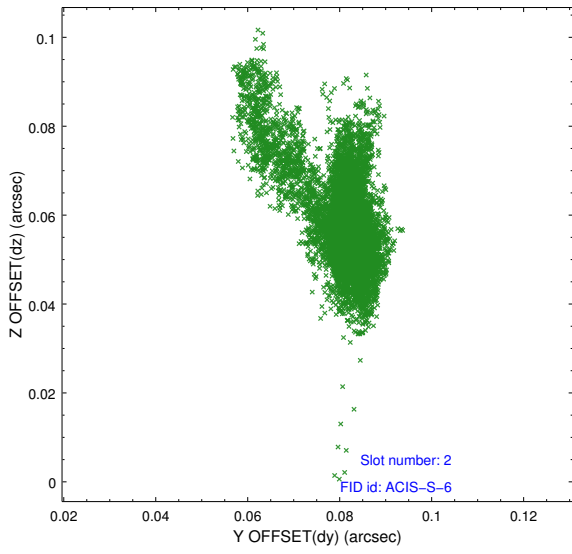
### 2.5.1 Slot 0



## 2.5.2 Slot 1

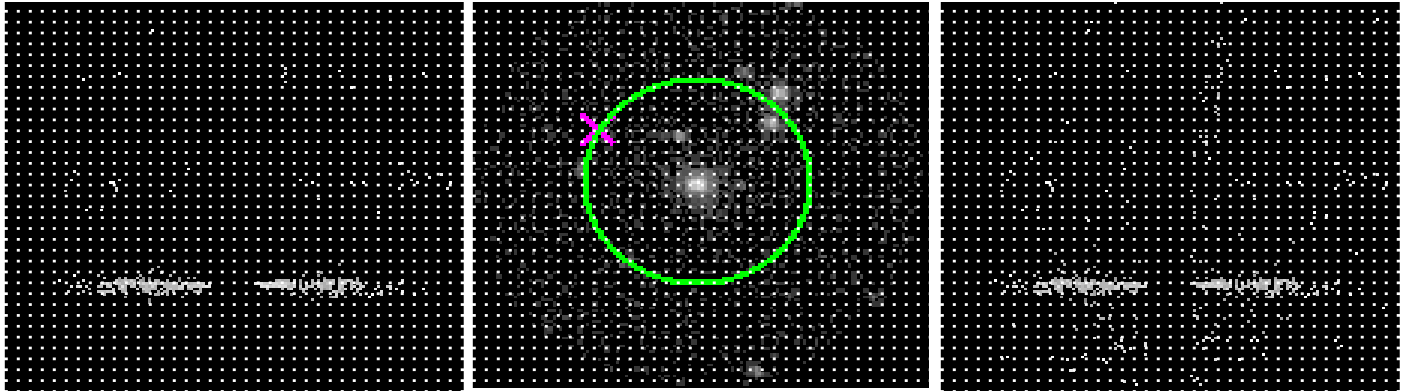


### 2.5.3 Slot 2



# 3 Gratings

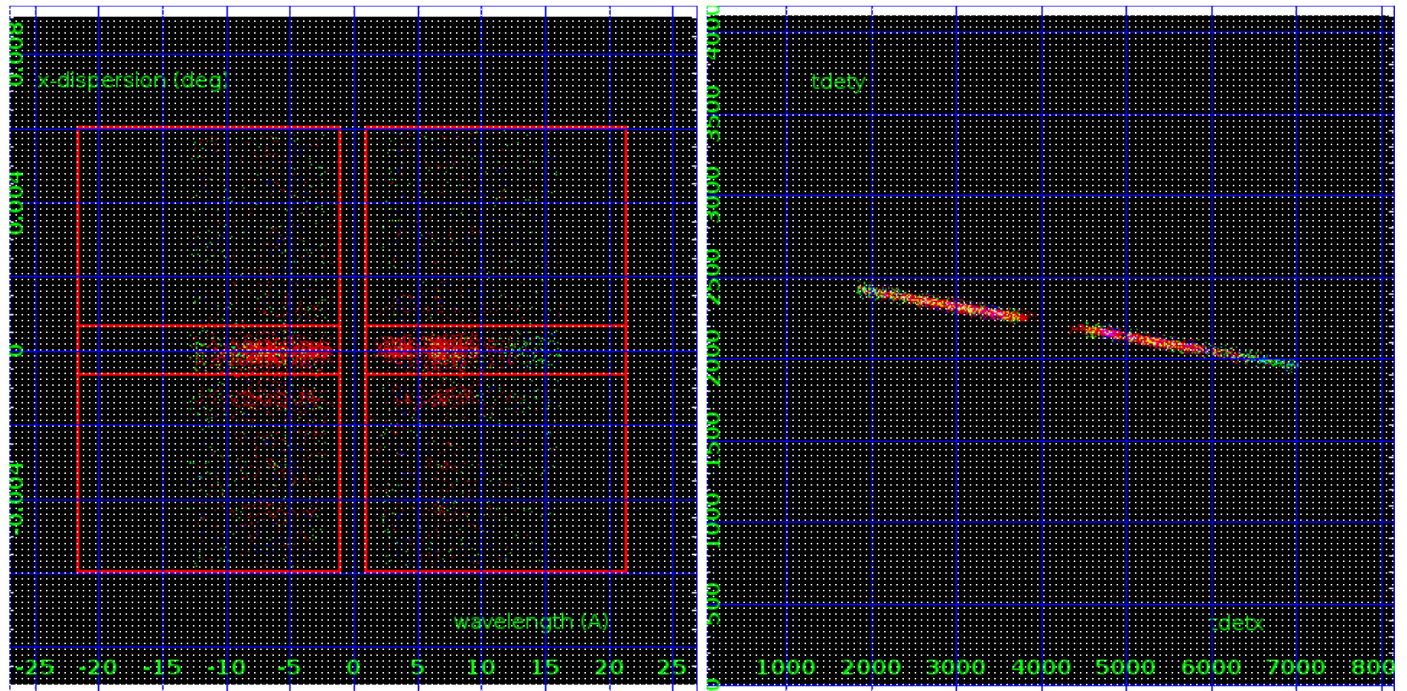
## 3.1 HEG Arm



HEG Order Sort 123

HEG Zero Order

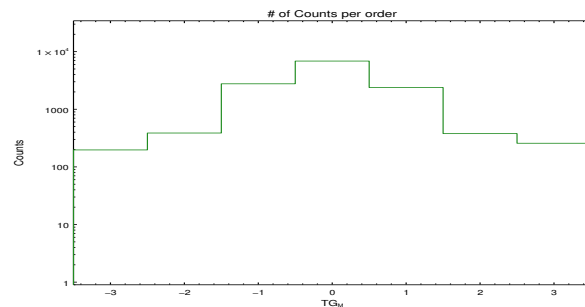
HEG Order Sort ALL



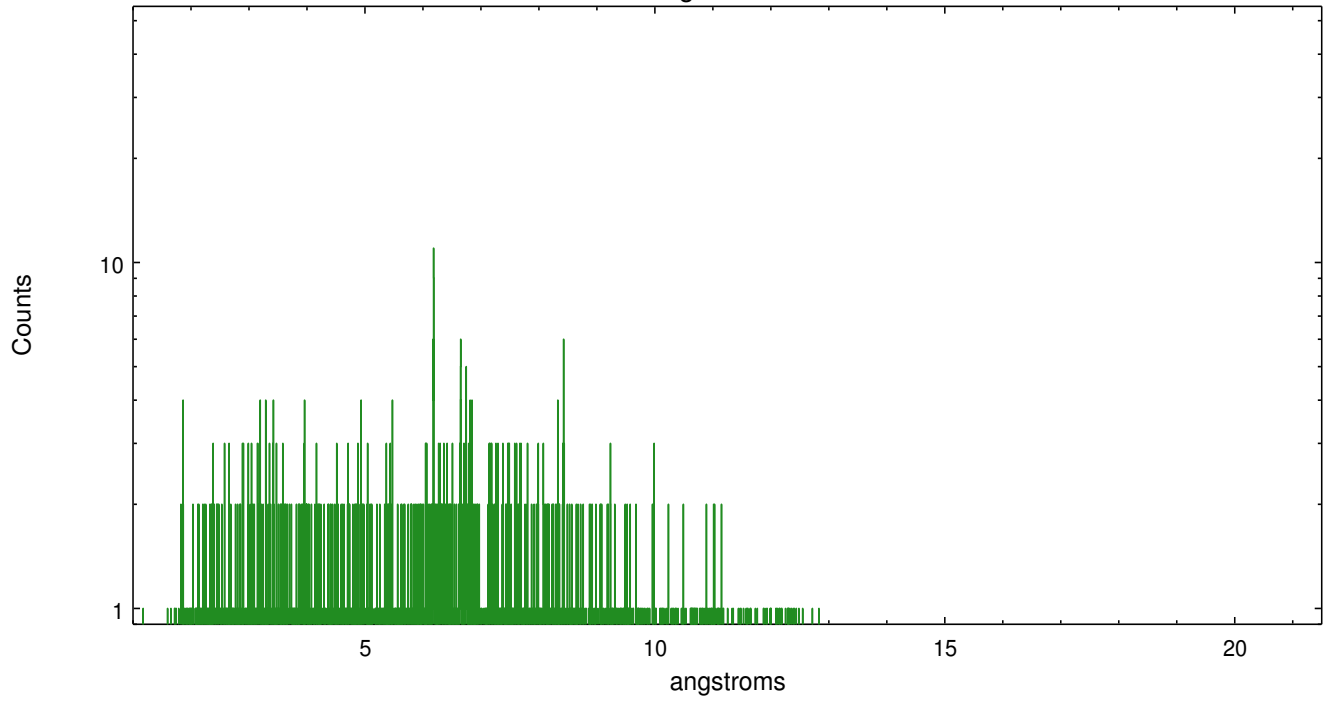
Spot Image HEG

Full Detector HEG

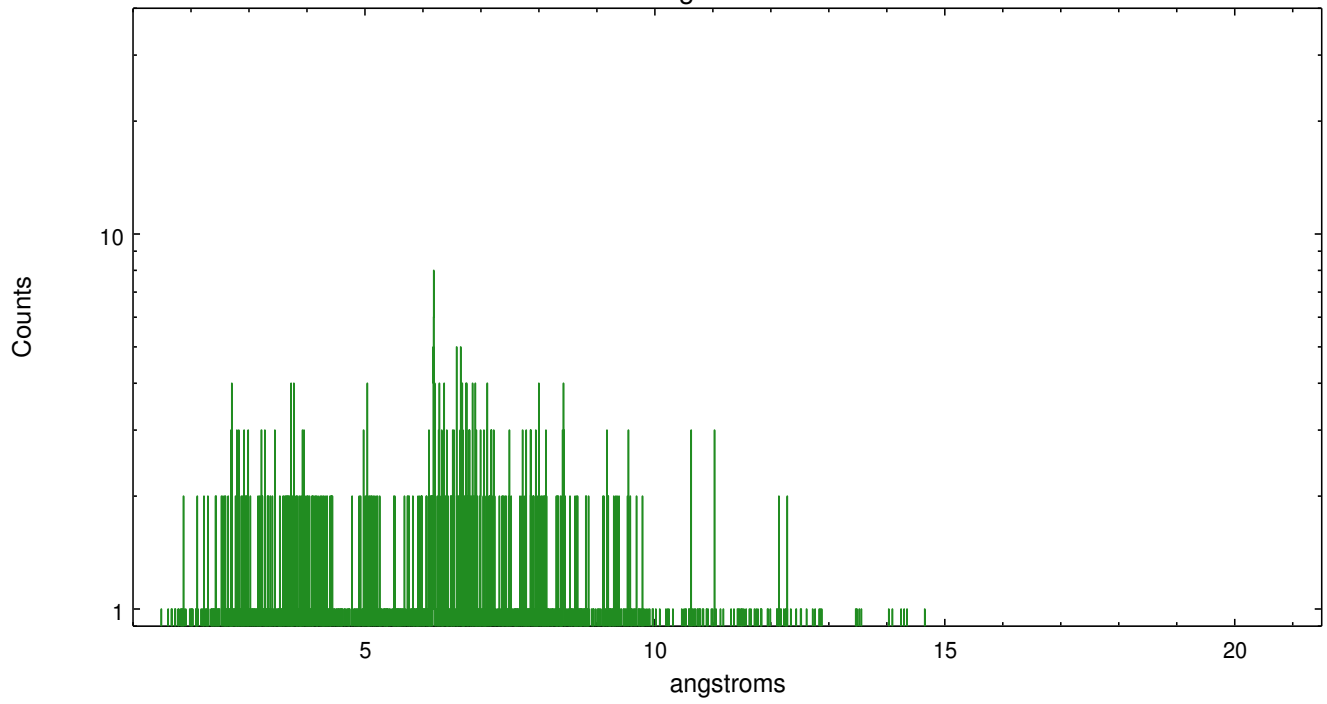
	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	197	387	2767	6860	2384	378	257



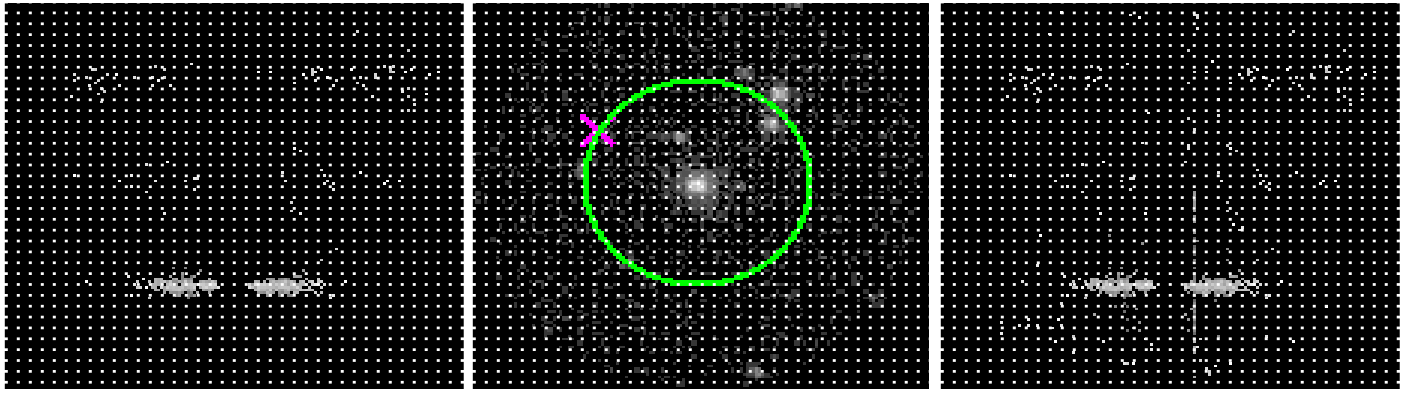
heg order -1



heg order +1



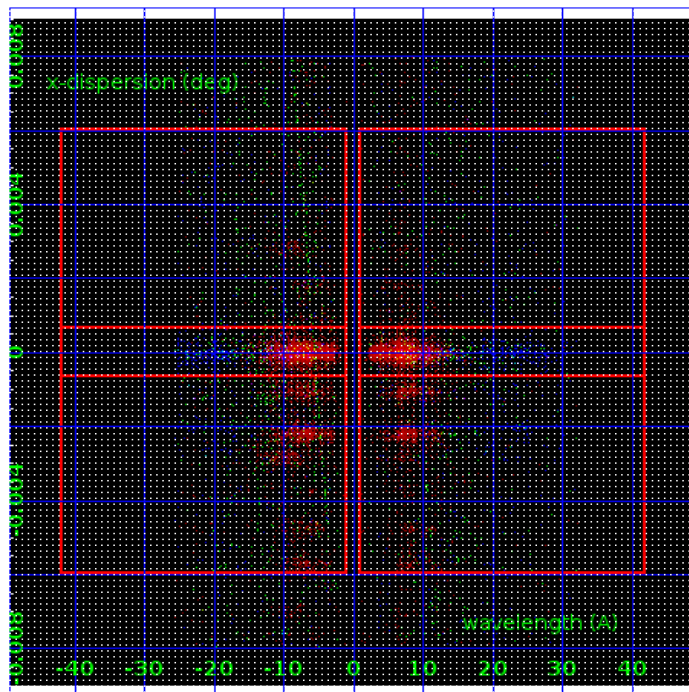
### 3.2 MEG Arm



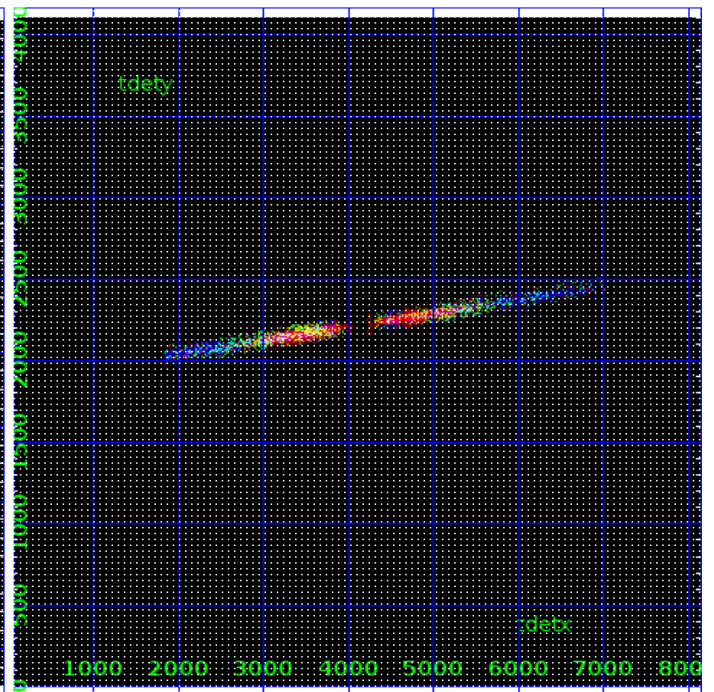
MEG Order Sort 123

MEG Zero Order

MEG Order Sort ALL

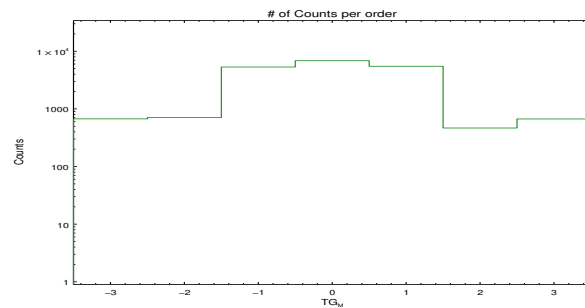


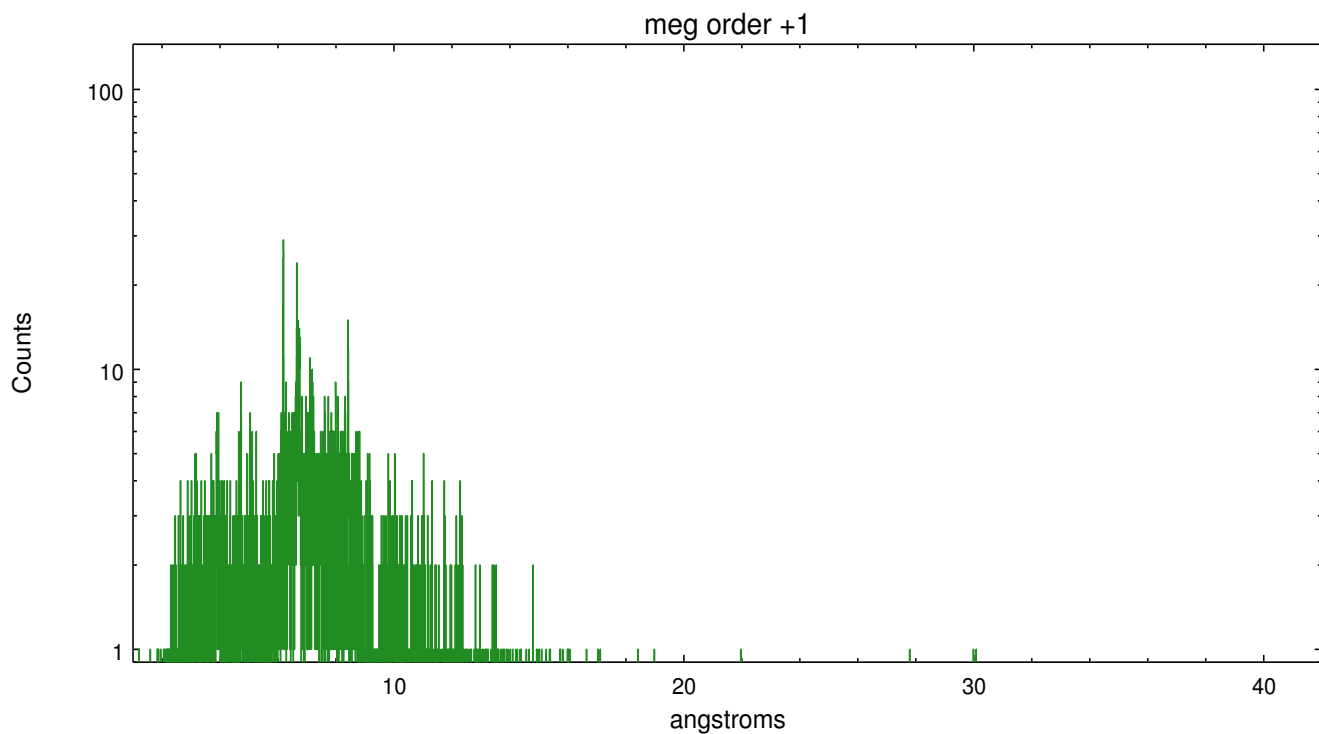
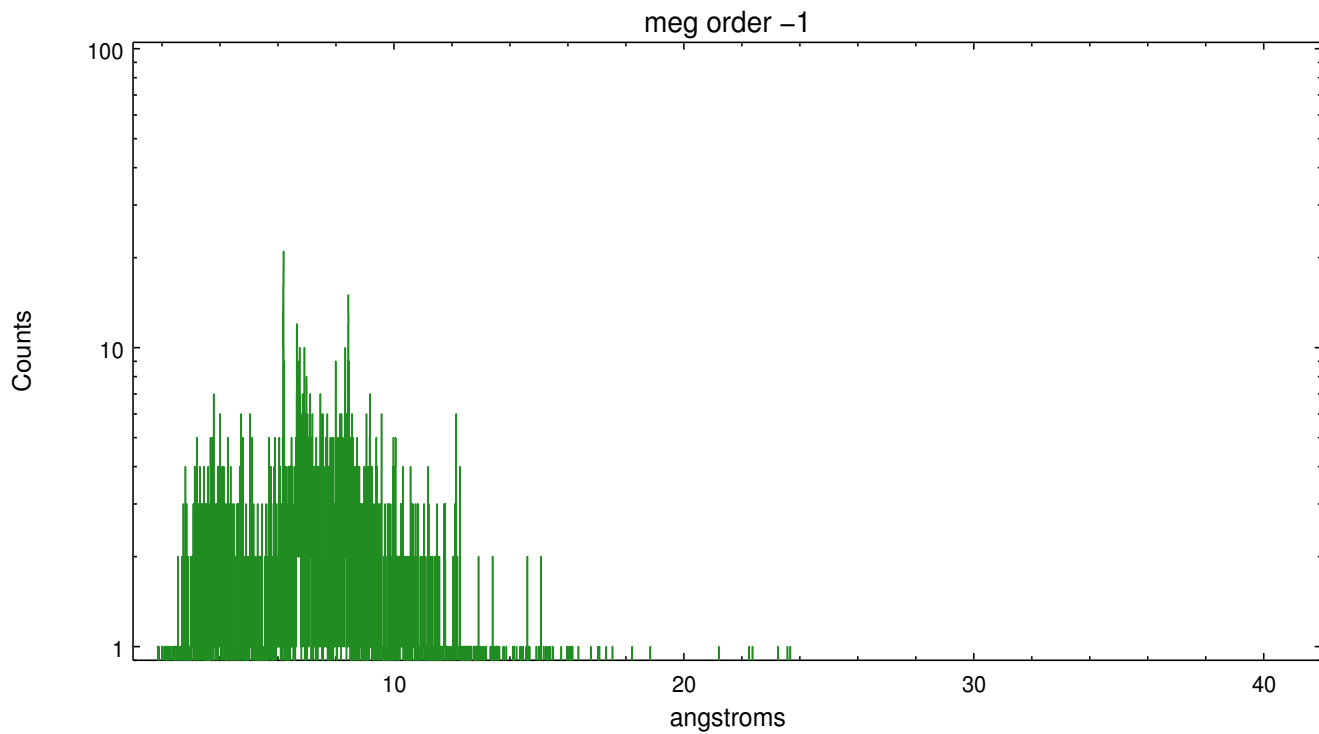
Spot Image MEG



Full Detector MEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	672	709	5331	6860	5491	466	669





## 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	27.052398967147

### A.2 Comments