

# V&V Reference Report

## L2 ASCDS Version : 10.8.1

Observation 23120 - L2 Version 1  
Chandra X-Ray Center

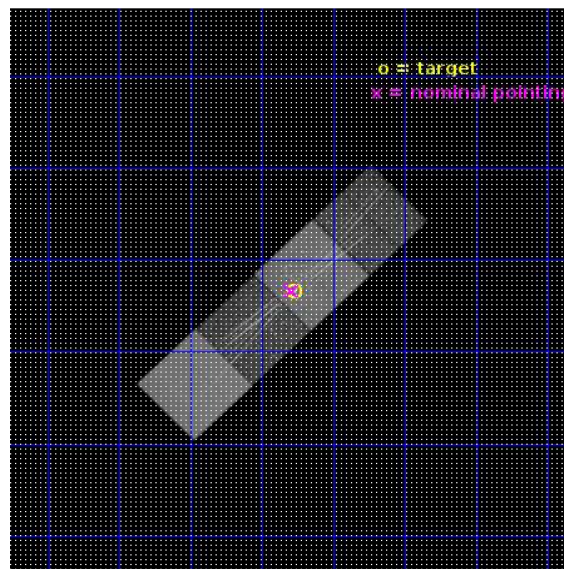
L2 Processing Date : Jan 12 2020

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# 1 Front

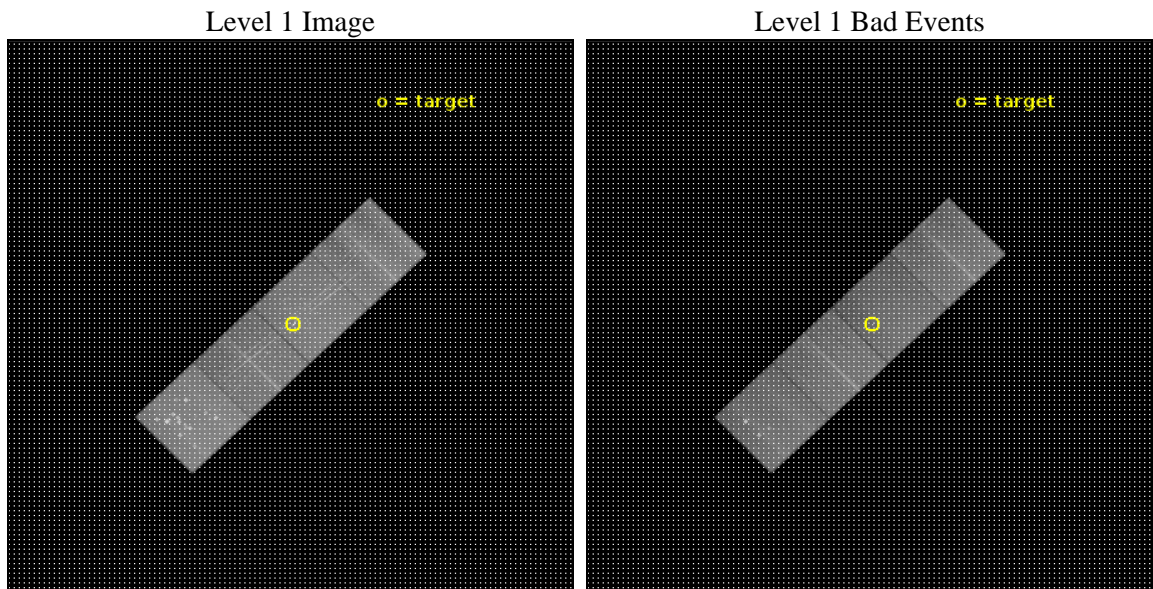
seq_num	201298	Sequence number
obs_id	23120	Observation id
title	THE TRUE NATURE OF X-RAYS FROM THE ORION TRAPEZIUM	Proposal title
observer	Norbert Schulz	Principal investigator
object	Orion Nebula Cluster	Source name
dtcycle	0	&#160
cycle	P	events from which exps? Prim/Second/Both
ra_targ	83.81875	Observer's specified target RA [deg]
dec_targ	-5.38975	Observer's specified target Dec [deg]
ra_nom	83.823607011261	Nominal RA [deg]
dec_nom	-5.3888085253742	Nominal Dec [deg]
roll_nom	315.68193739322	Nominal Roll [deg]
revision	1	Processing version of data
ontime	40061.300308228	Sum of GTIs [s]
livetime	39537.869927	Livetime [s]
ontime5	40061.300308228	Sum of GTIs [s]
ontime6	40061.300308228	Sum of GTIs [s]
ontime7	40061.300308228	Sum of GTIs [s]
ontime8	40061.300308228	Sum of GTIs [s]
l2events	580269	Number of level 2 events



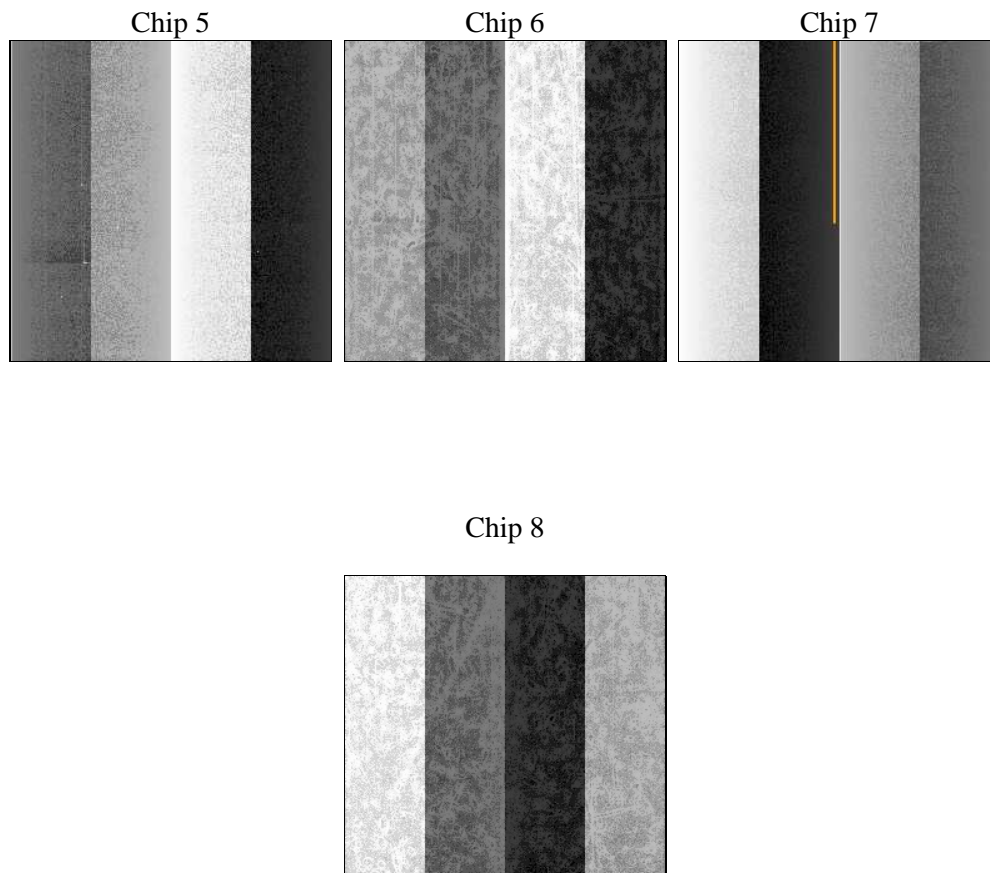
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

obi_num	0	Obi number	sched_exp_time	40000.000000	[s] Scheduled observation exposure time
ascdsver	10.8.1	Processing system revision	ontime	40061.300308228	Sum of GTIs [s]
caldbver	4.8.4.2	&#160	ontime5	40061.300308228	Sum of GTIs [s]
date	2020-01-12T05:44:10	Date and time of file creation	ontime6	40061.300308228	Sum of GTIs [s]
revision	1	Processing version of data	ontime7	40061.300308228	Sum of GTIs [s]
			ontime8	40061.300308228	Sum of GTIs [s]
			l1events	1833221	Number of level 1 events
			tgmethod	TGDETECT	Method used to create src1a file
			zo_pos	(4133.35, 4089.59)	src1a sky pixel position

### 2.1.4 Events

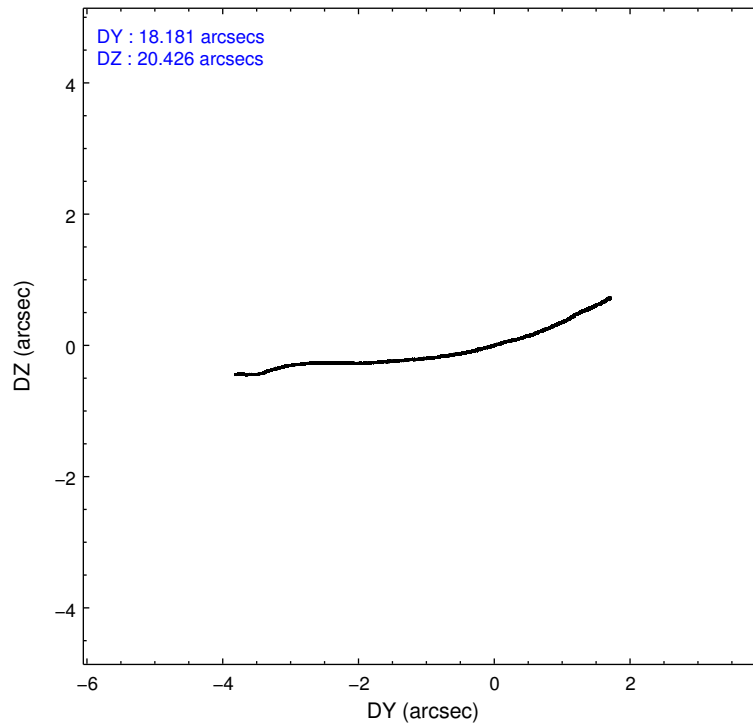
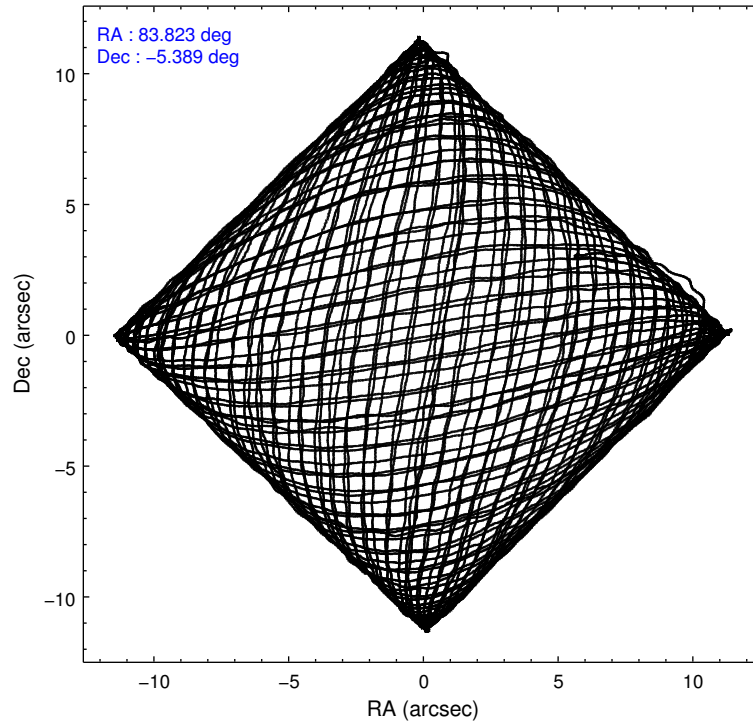
	ccd 5	ccd 6	ccd 7	ccd 8
level 1 events	580223	360290	474324	418384
rejected events	275994	291427	233935	298677
rejected %	47%	80%	49%	71%

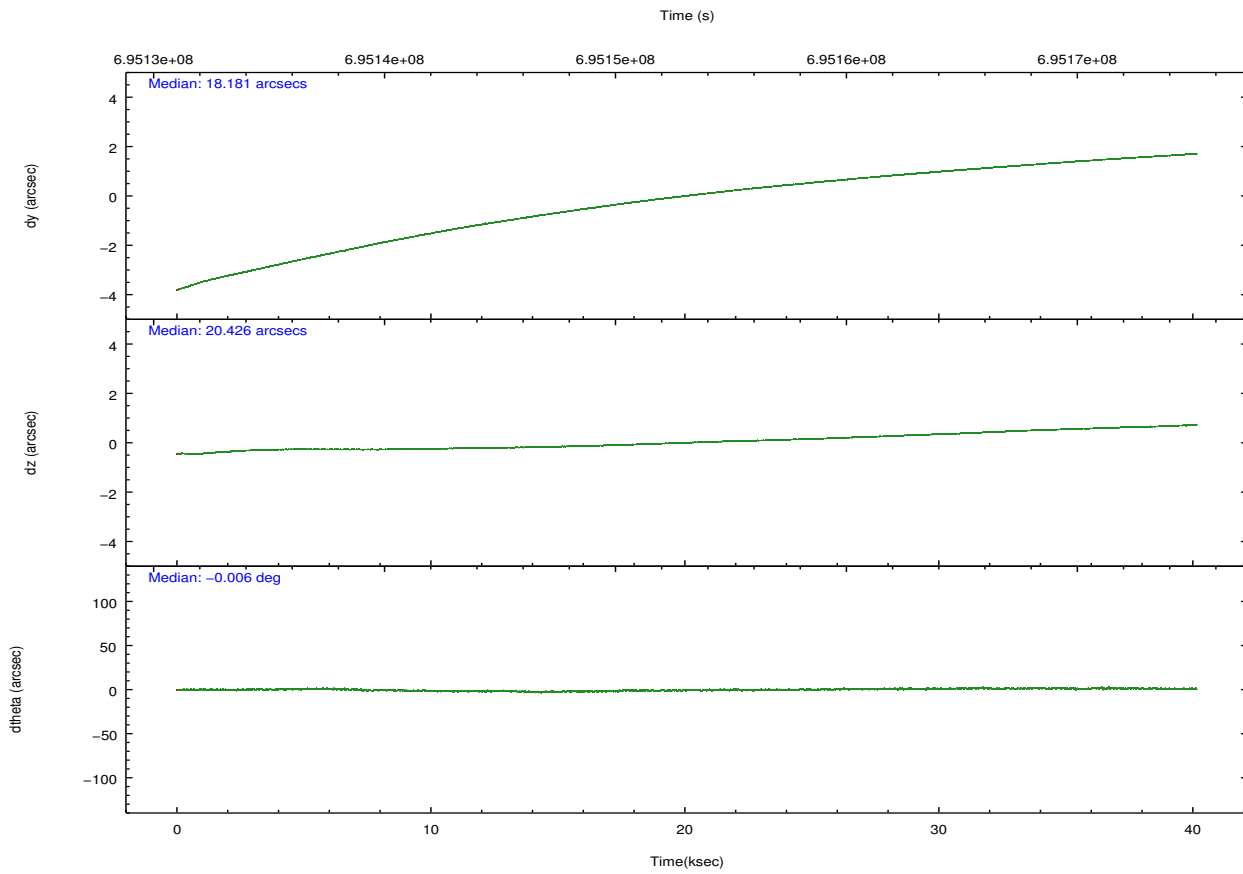
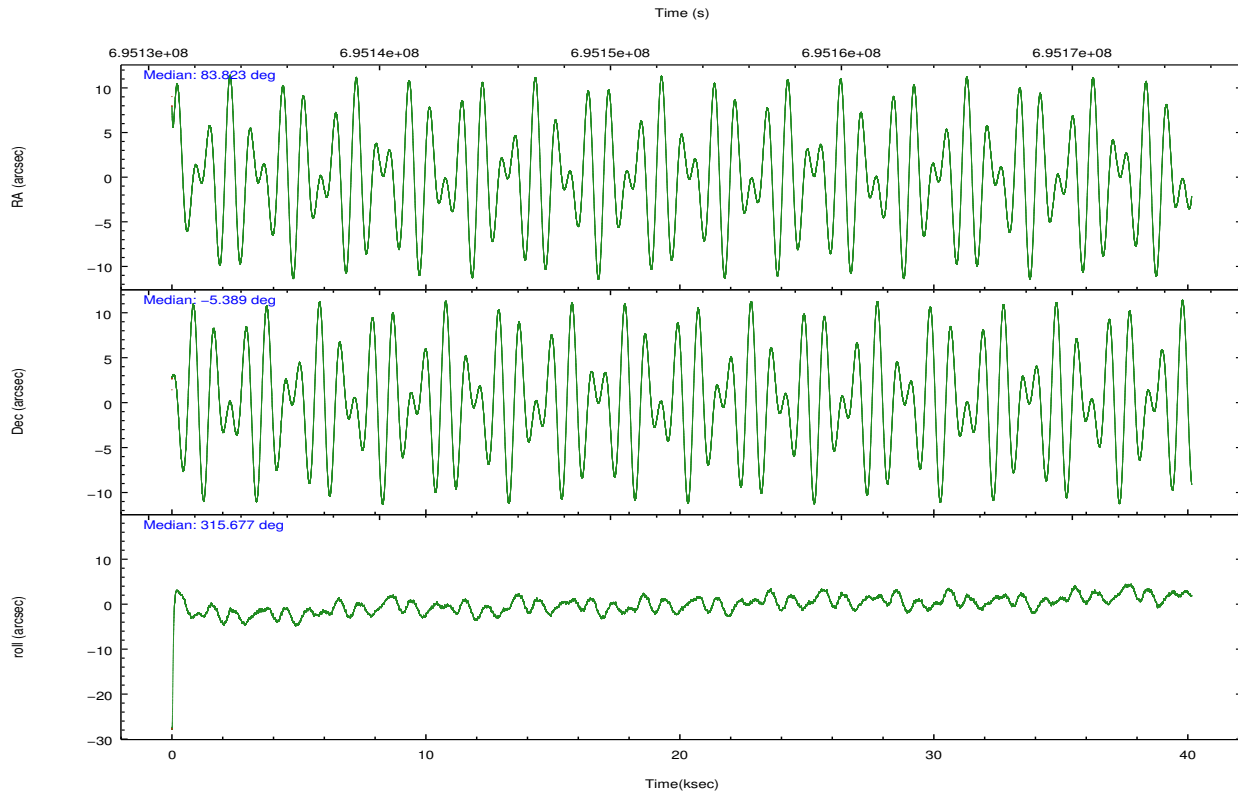
	ccd 5	ccd 6	ccd 7	ccd 8
grade 0 events	62799	35994	28393	41353
	10%	9%	5%	9%
grade 1 events	1447	251	858	386
	0%	0%	0%	0%
grade 2 events	89867	14100	53669	27282
	15%	3%	11%	6%
grade 3 events	8424	4211	20562	10797
	1%	1%	4%	2%
grade 4 events	7149	4260	20450	10262
	1%	1%	4%	2%
grade 5 events	34409	13737	40460	21517
	5%	3%	8%	5%
grade 6 events	136024	10303	117333	30018
	23%	2%	24%	7%
grade 7 events	240104	277434	192599	276769
	41%	77%	40%	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	83.796793	83.82360701126063	CCD I2 on	N	N
[deg] Pointing Dec	-5.382378	-5.388808525374203	CCD I3 on	N	N
[deg] Pointing Roll	315.522807	315.6819373932226	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	-190.145094680475	CCD S3 on	Y	Y
[mm] SIM translation stage offset	0	0.01257209746719923	CCD S4 on	Y	Y
[s] Observation start time (MET)	695133181.184000	695132015.31046	CCD S5 on	O2	N
Observation start date	2020-01-11T12:31:52	2020-01-11T12:13:35	Number of optional ACIS chips dropped	2	2
[s] Observation end time (MET)	695173181.184000	695174104.888	On-chip summing requested	N	N
Observation end date	2020-01-11T23:38:32	2020-01-11T23:55:04	Subarray requested	NONE	NONE
Read mode	TIMED	TIMED	Alternating exposures requested	N	N
			[s] Primary exposure time	0.000000	3.1

## 2.3 Aspect





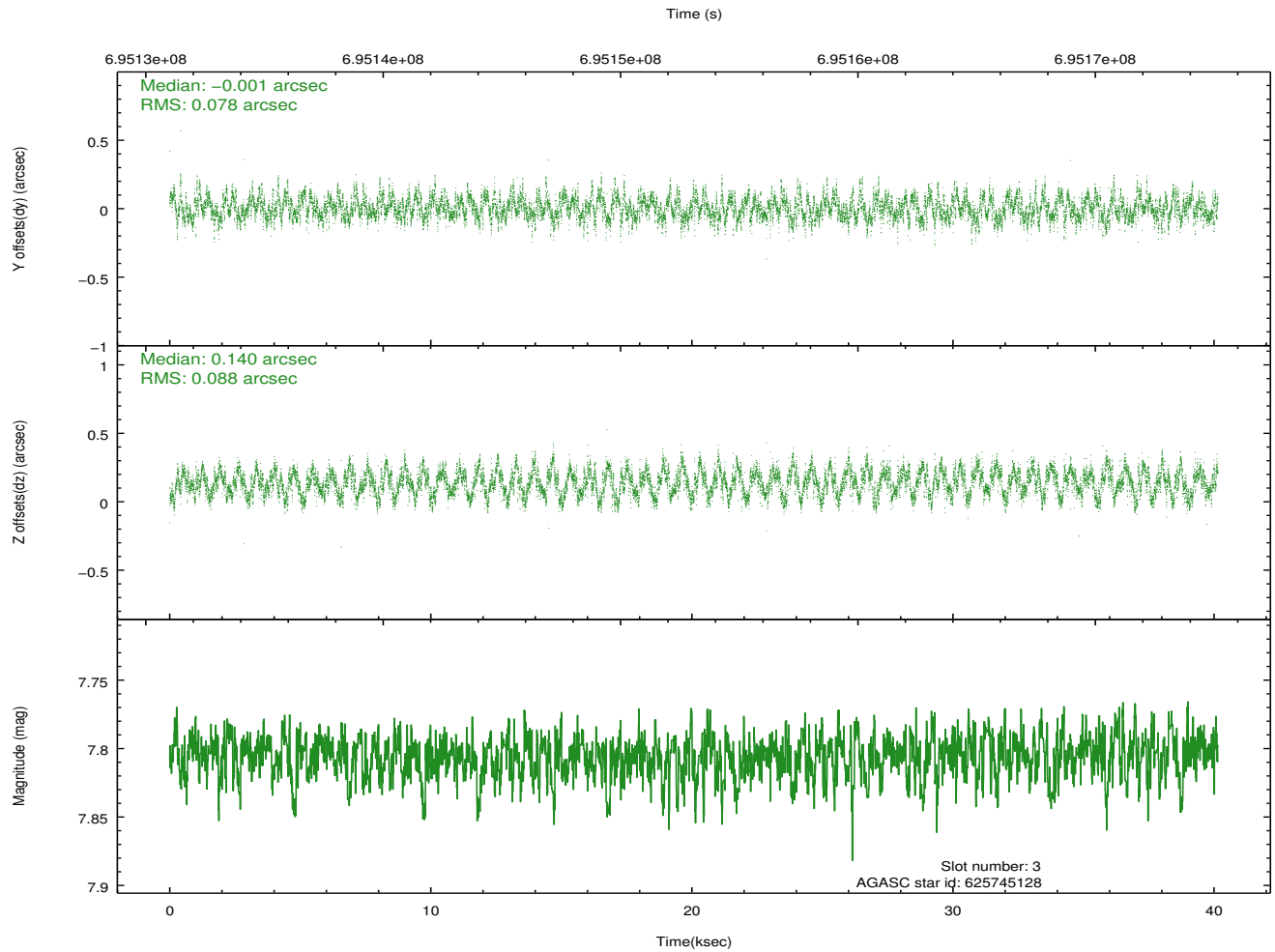
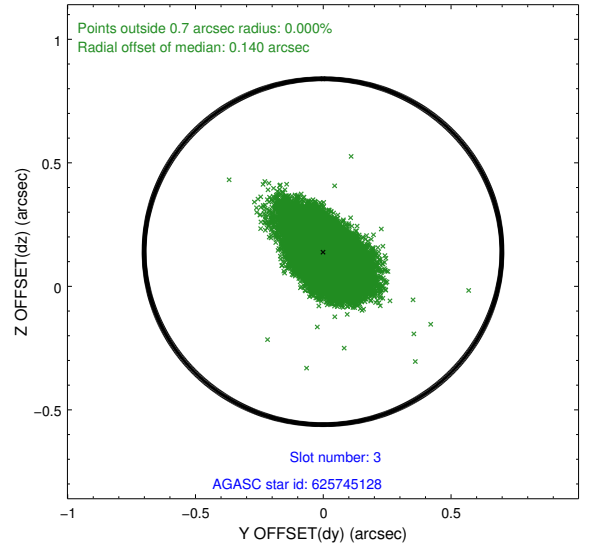
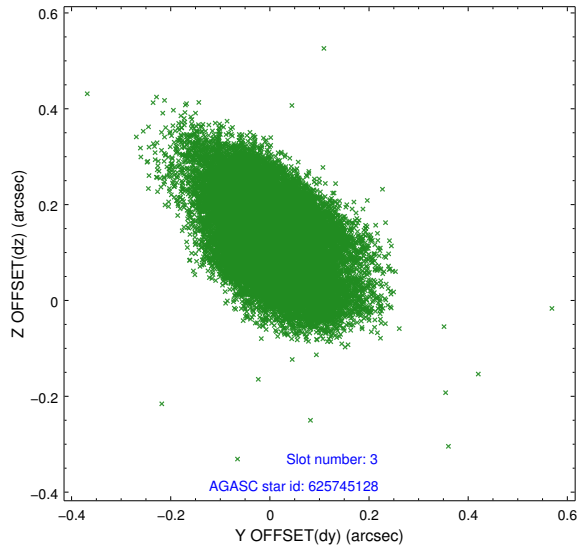
### Slot Statistics

slot	status	used	id	mag	n_pts	frac_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mea
0	FID		ACIS-S-2	7.11	9793	1.000	-0.341	-0.243	0.050	0.077	0.000000	0.000000	-771.16	-1742
1	FID		ACIS-S-4	7.23	9793	1.000	0.834	0.228	0.028	0.048	0.000000	0.000000	2143.22	166
2	FID		ACIS-S-5	7.19	9791	1.000	-0.517	0.020	0.027	0.040	0.000000	0.000000	-1824.23	160
3	GUIDE	used	625745128	7.81	19584	1.000	-0.001	0.140	0.124	0.204	83.769930	-4.731835	-1709.09	1603
4	GUIDE	used	625745136	7.19	19581	1.000	-0.105	0.179	0.111	0.194	83.600341	-4.804339	-1960.29	991
5	GUIDE	used	625745104	7.12	19584	1.000	-0.238	0.038	0.119	0.252	83.841109	-4.494168	-2126.76	2393
6	GUIDE	used	626272880	7.67	19499	1.000	0.223	-0.230	0.138	0.207	83.815609	-6.032748	1689.39	-1623
7	GUIDE	used	626272976	7.96	19577	1.000	0.124	-0.129	0.100	0.171	83.795875	-5.926912	1372.12	-1401

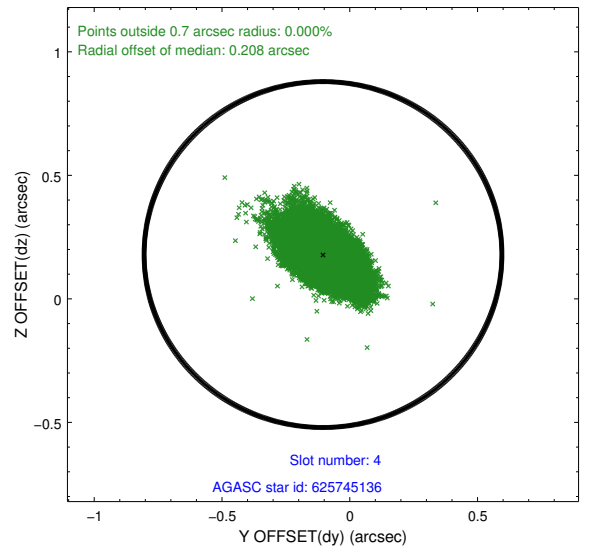
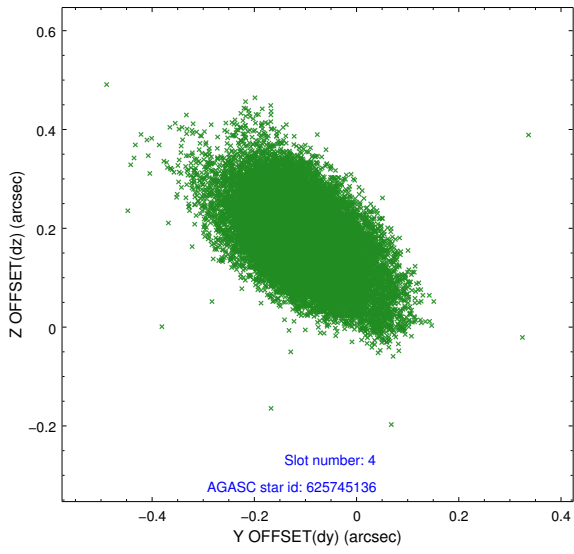
∞

## 2.4 Star Slots

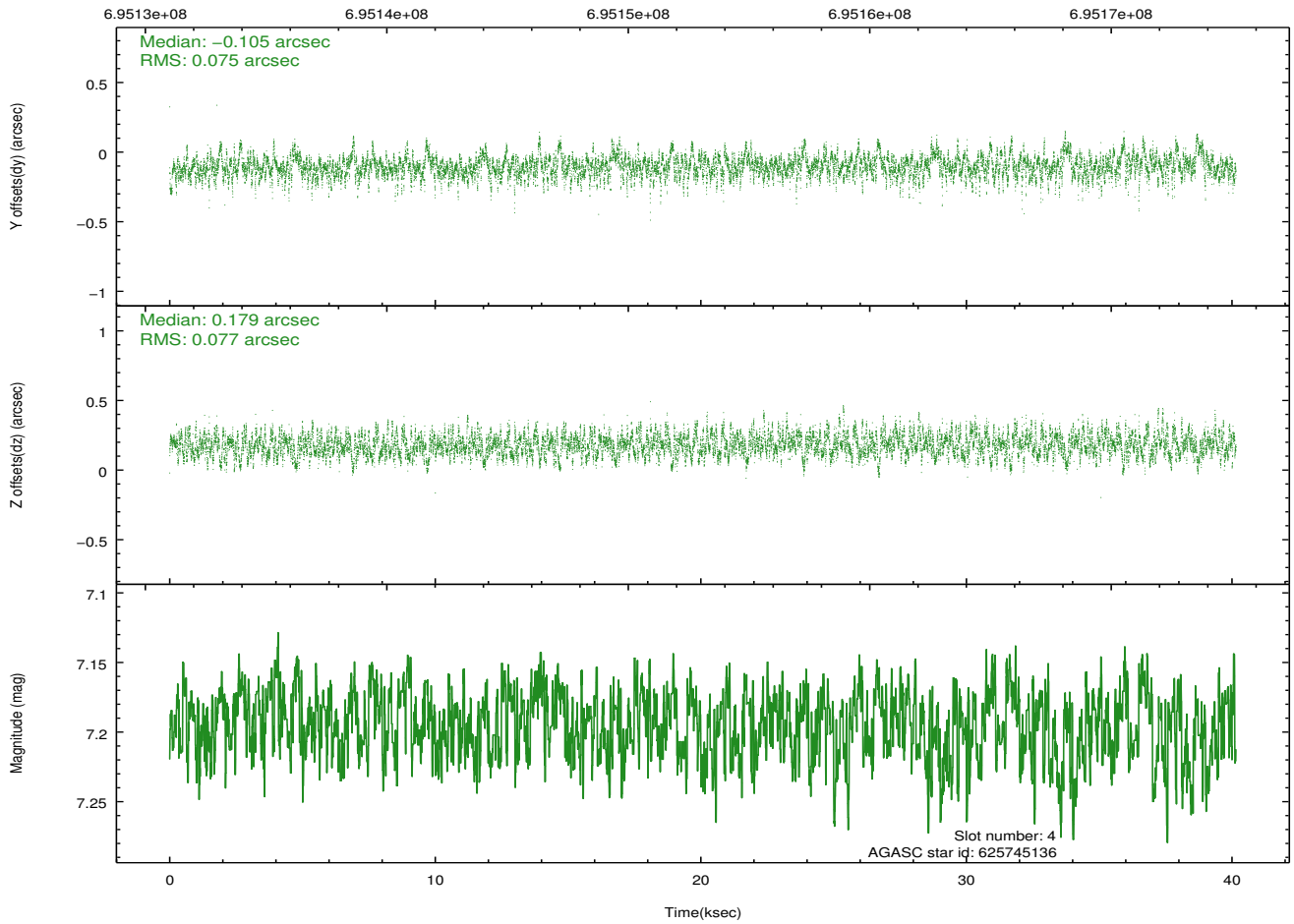
### 2.4.1 Slot 3



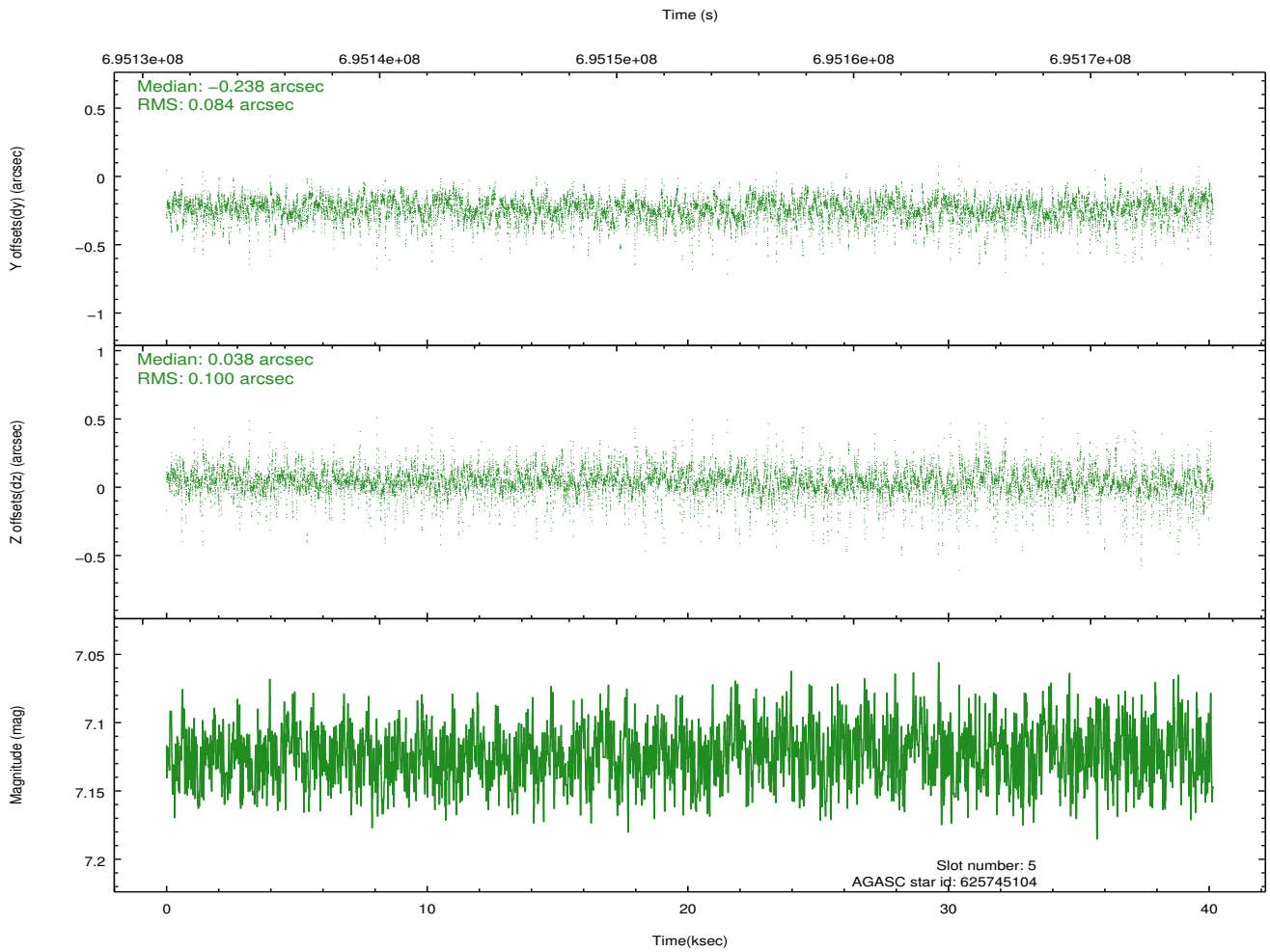
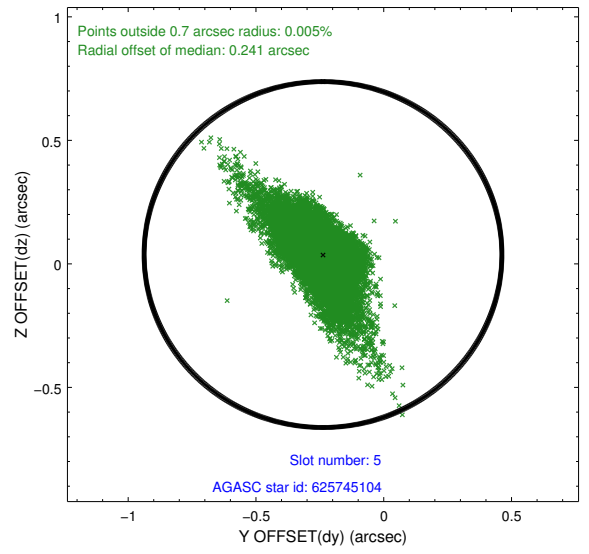
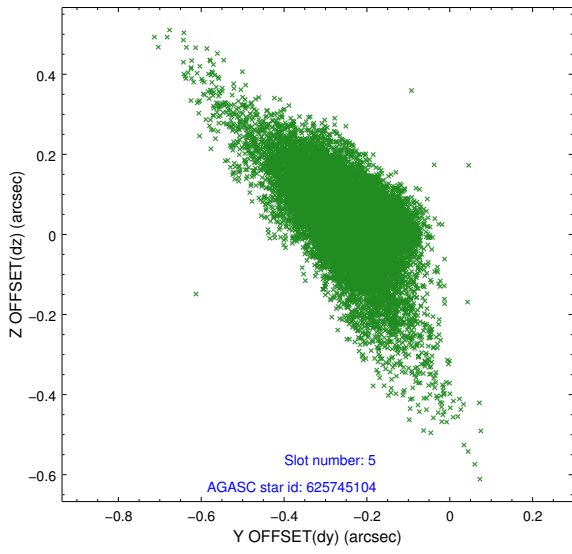
### 2.4.2 Slot 4



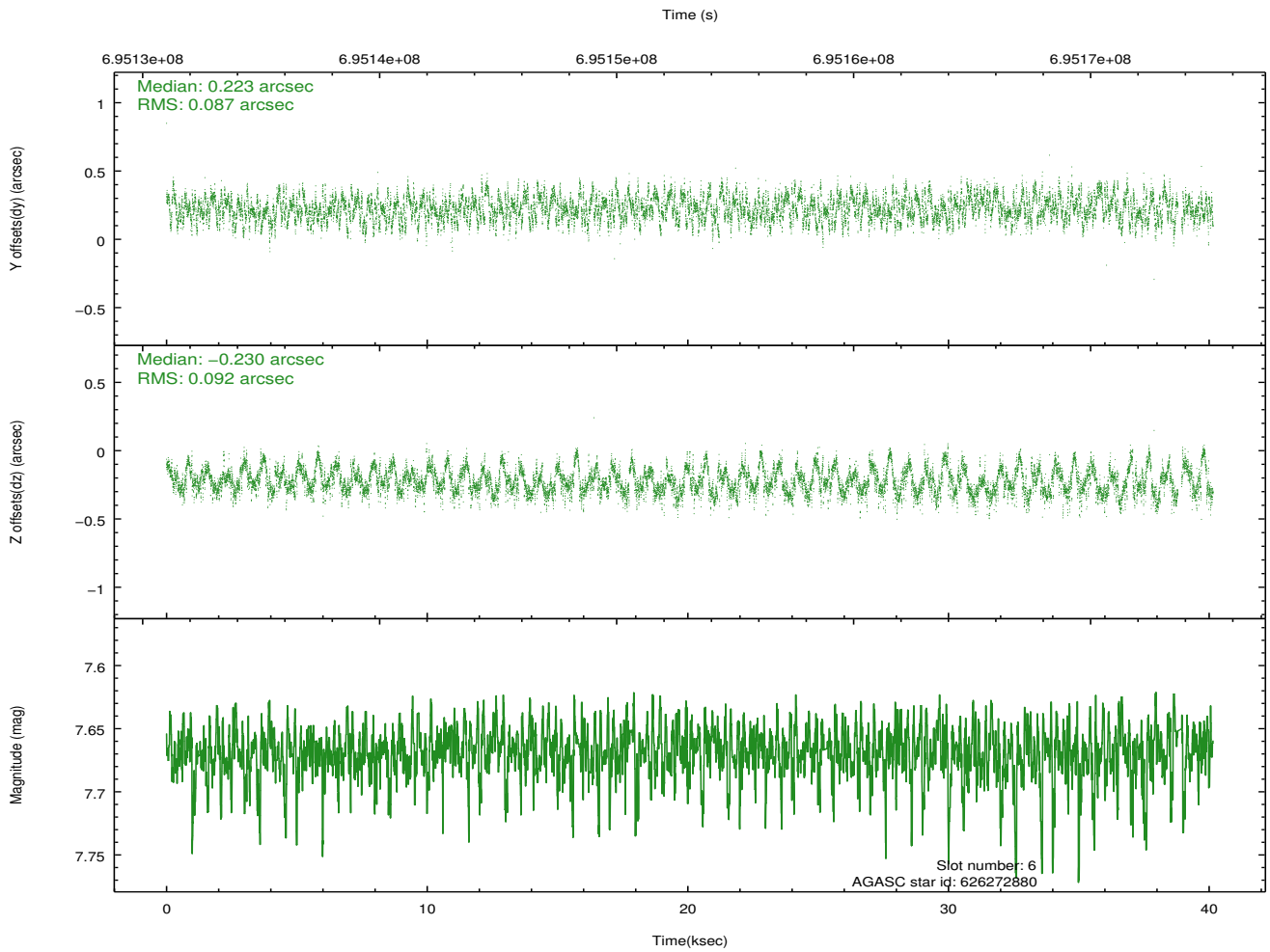
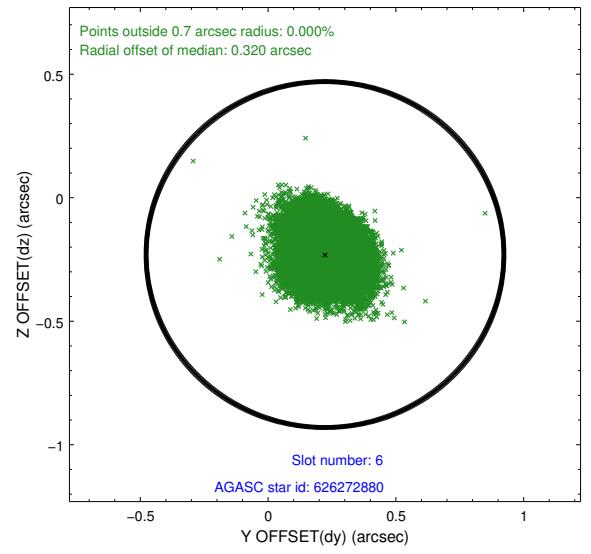
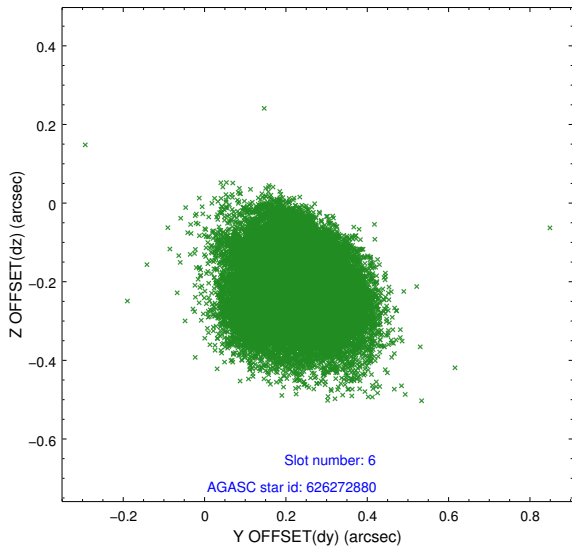
Time (s)



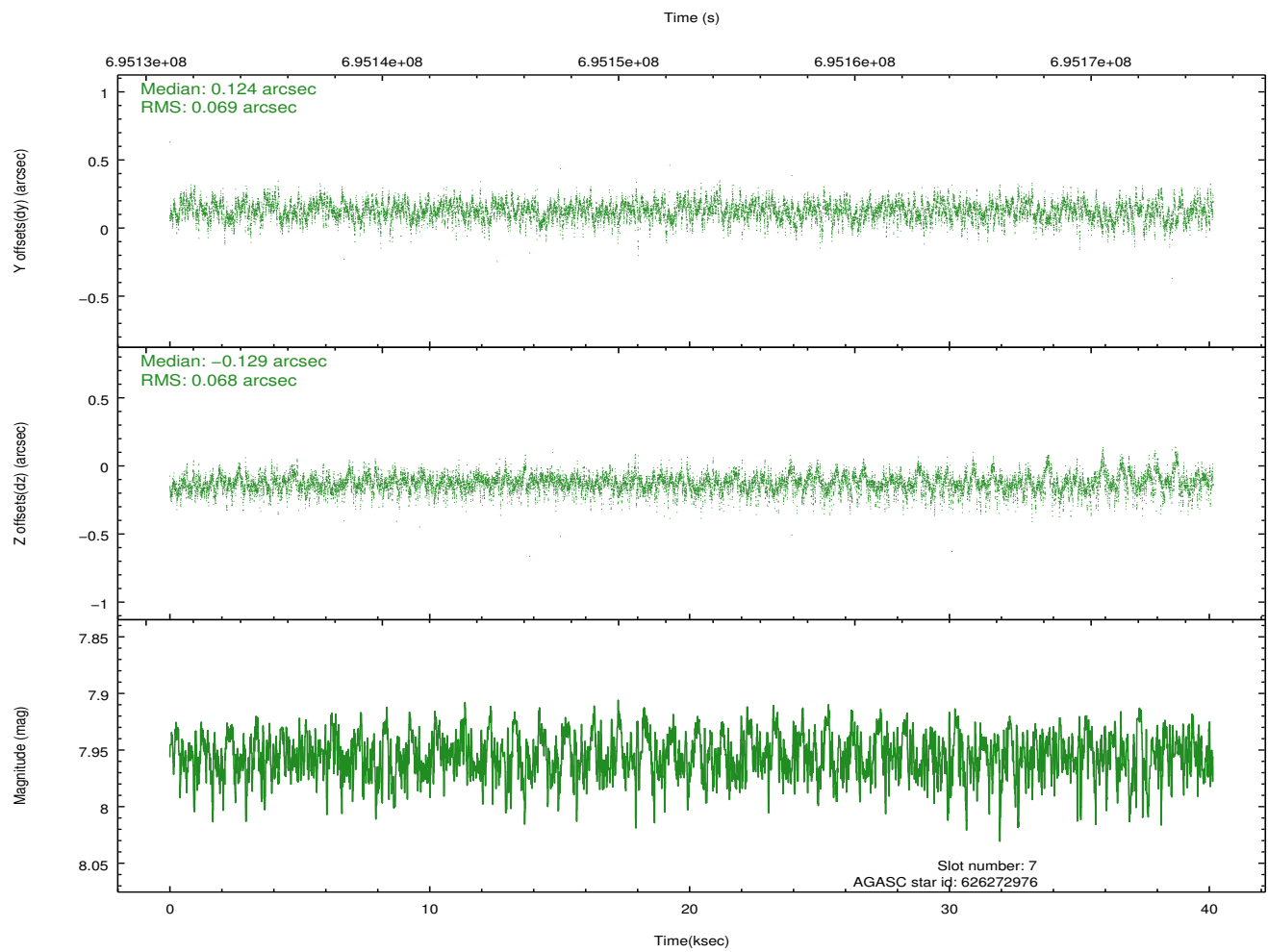
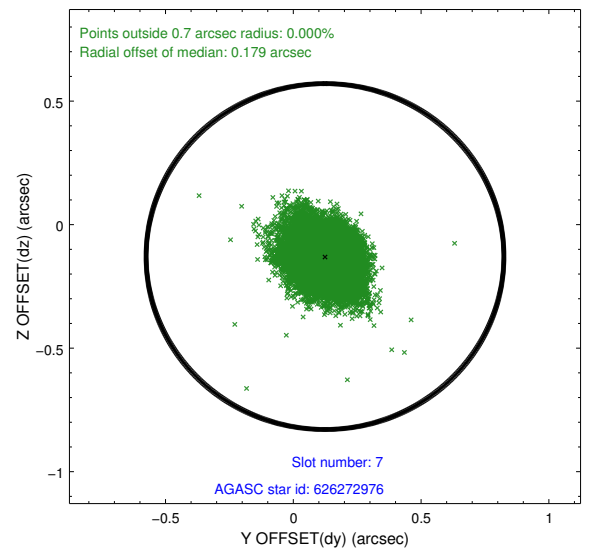
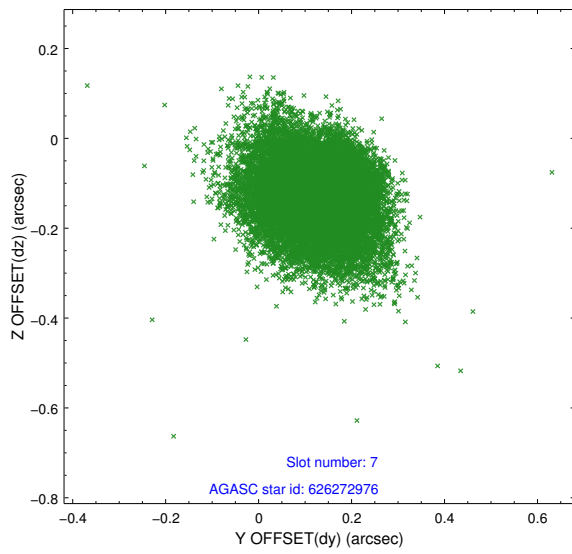
### 2.4.3 Slot 5



### 2.4.4 Slot 6

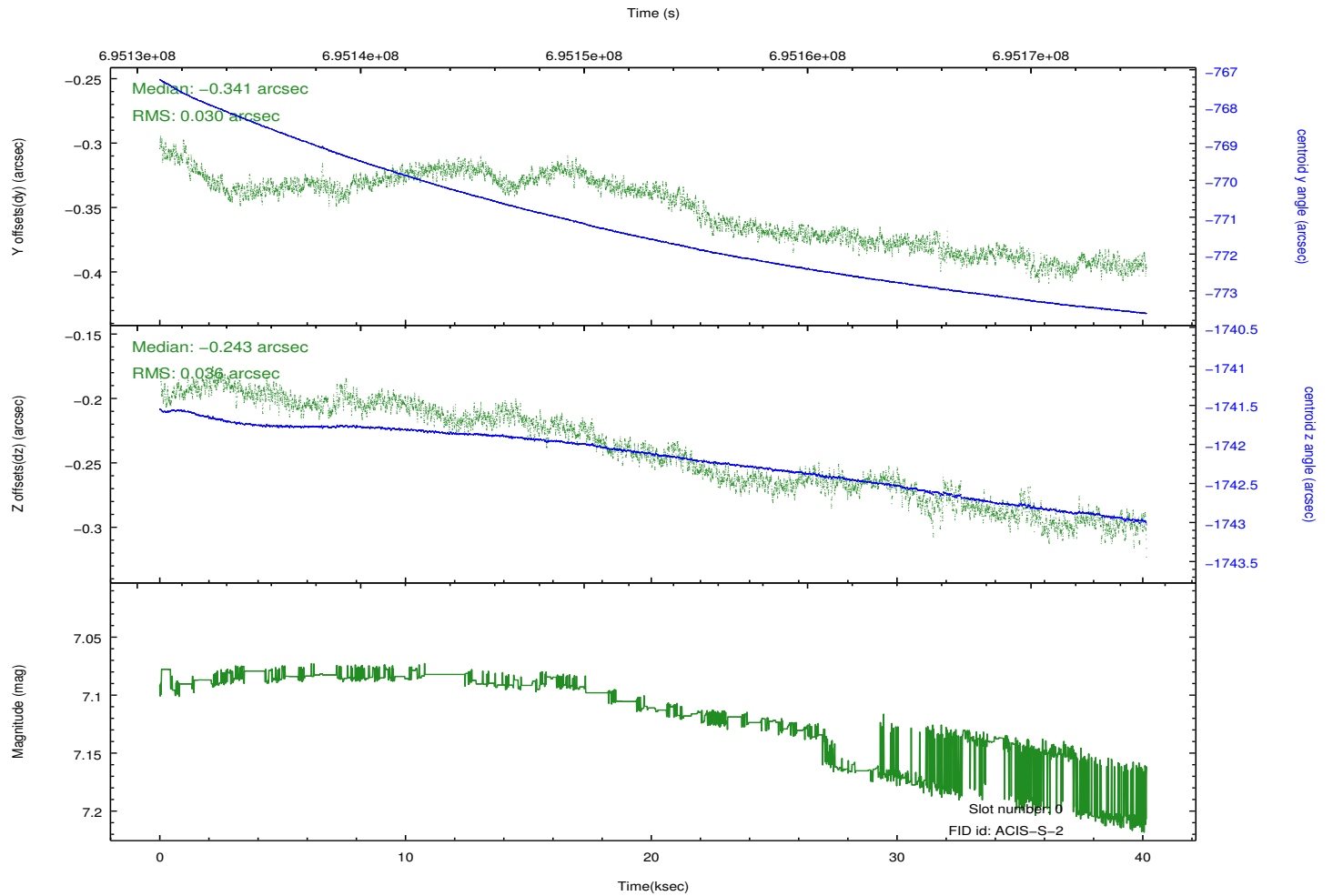
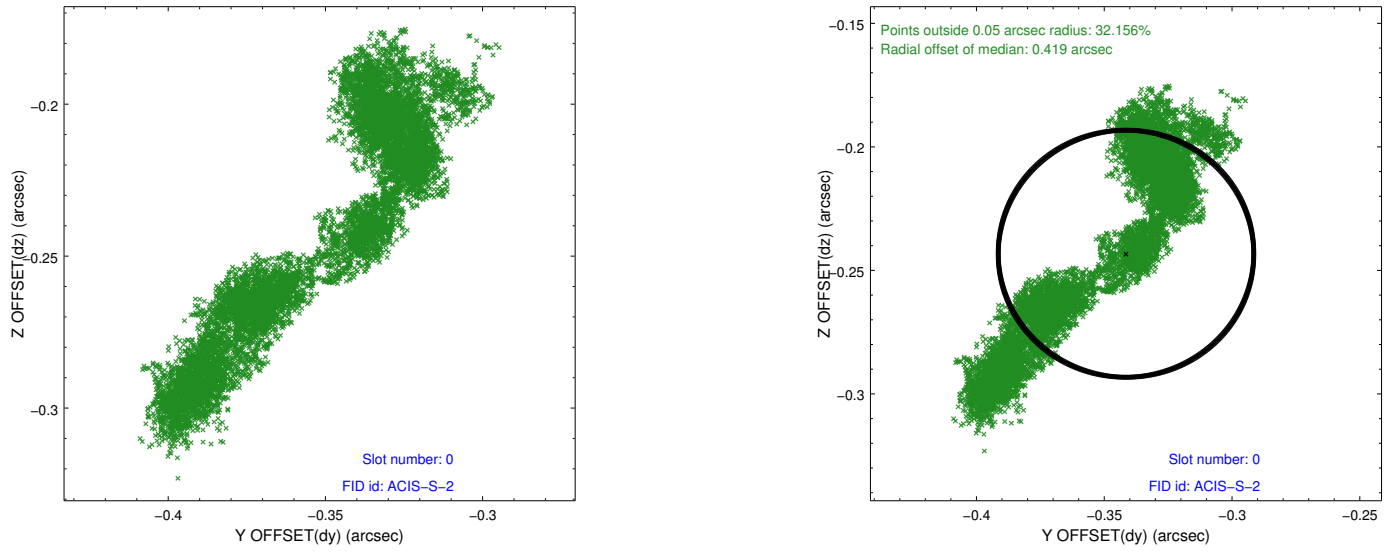


## 2.4.5 Slot 7

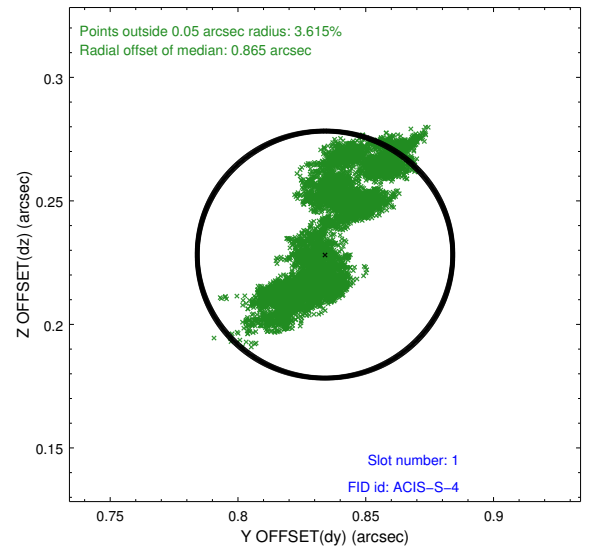
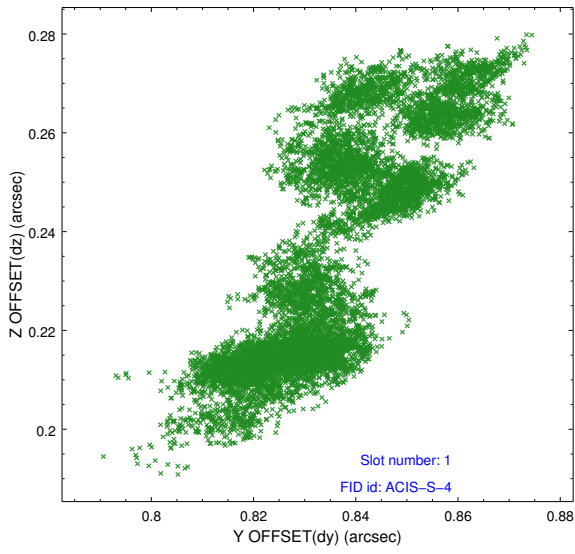


## 2.5 FID Slots

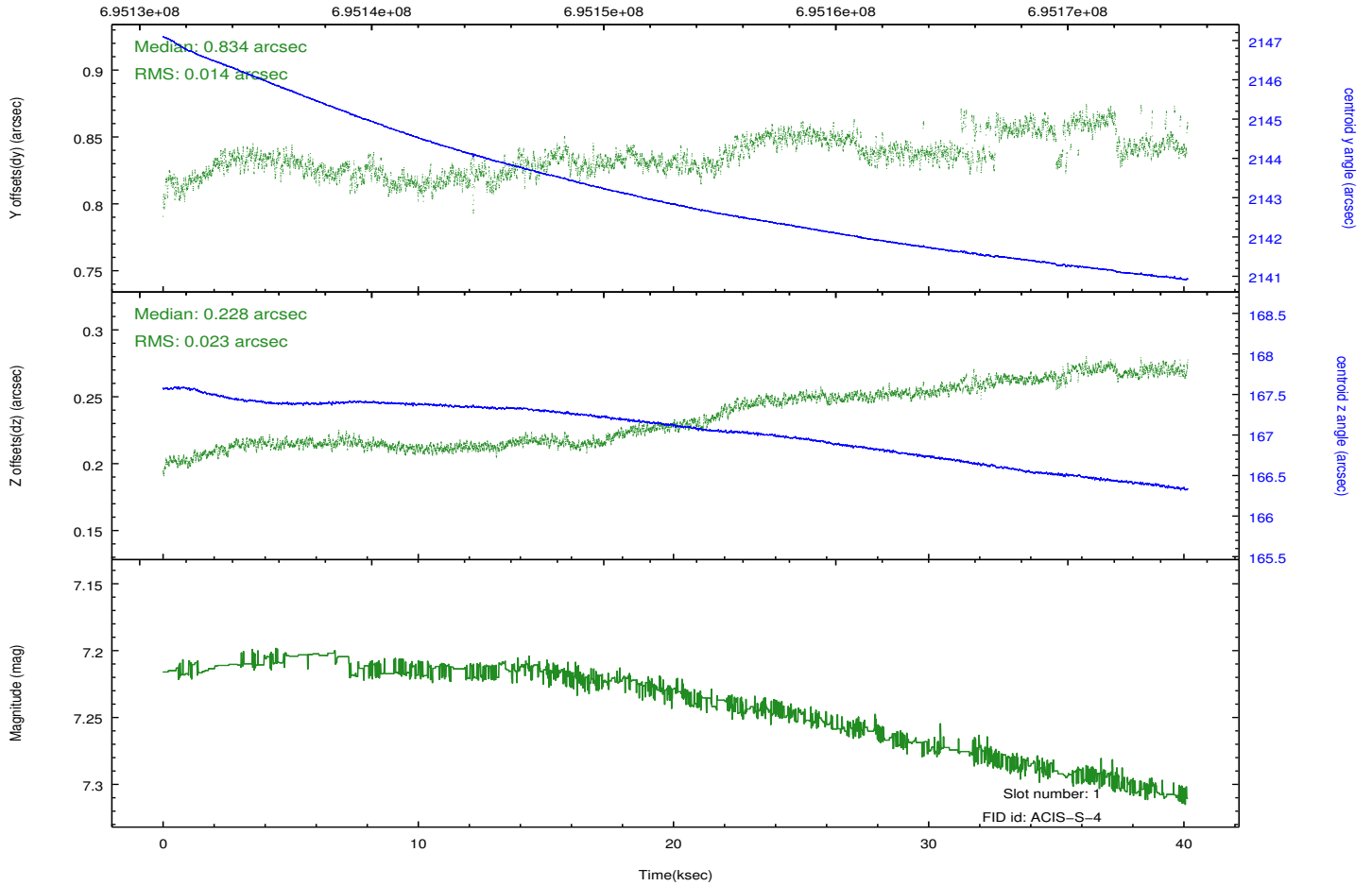
### 2.5.1 Slot 0



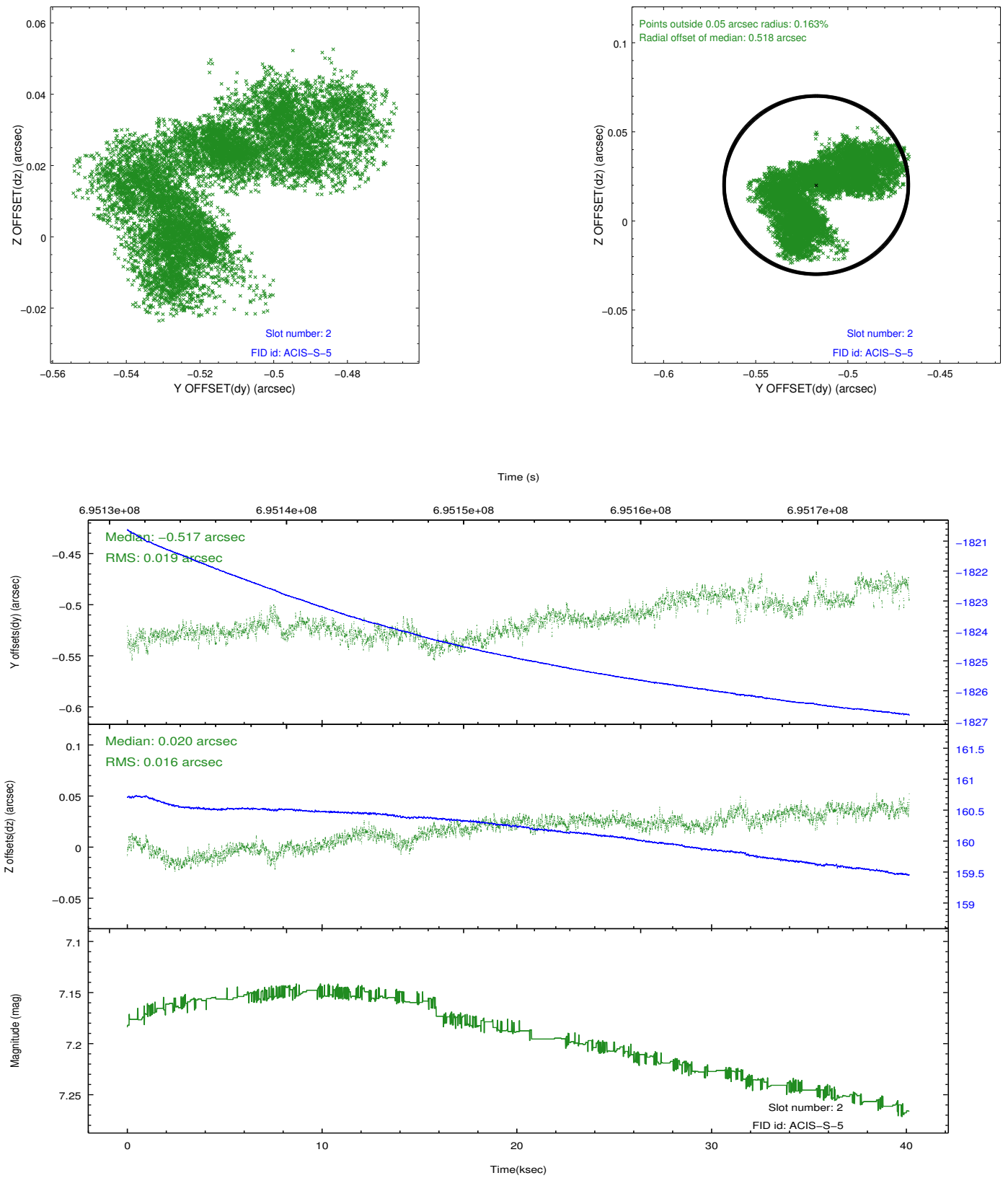
## 2.5.2 Slot 1



Time (s)

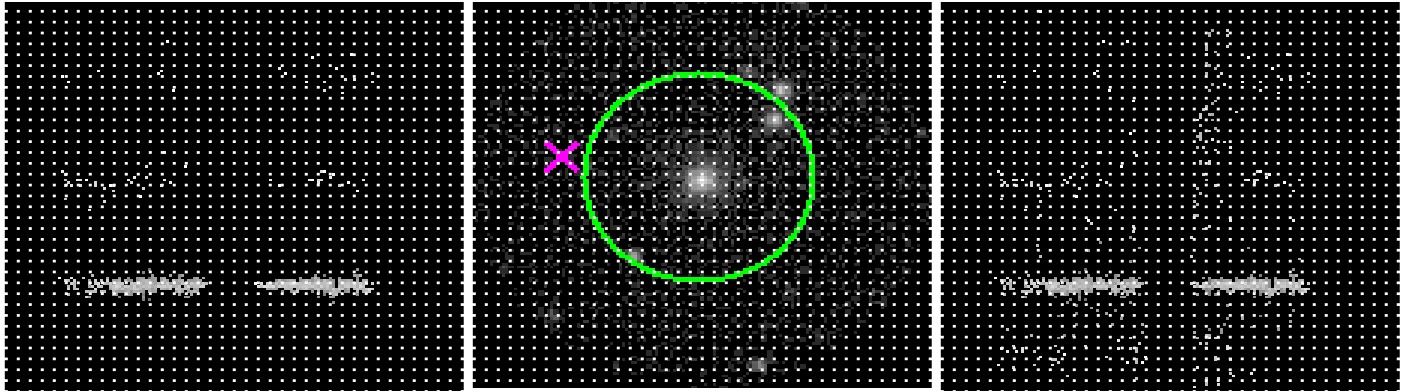


### 2.5.3 Slot 2



# 3 Gratings

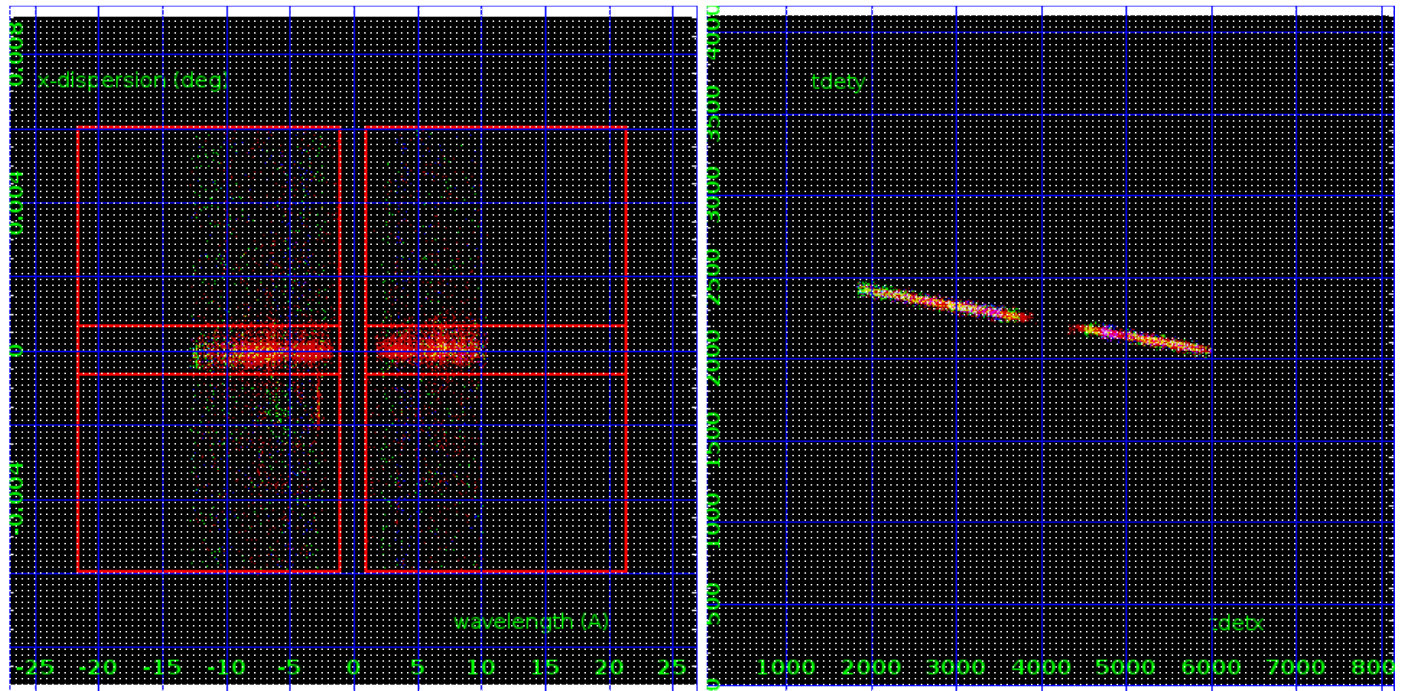
## 3.1 HEG Arm



HEG Order Sort 123

HEG Zero Order

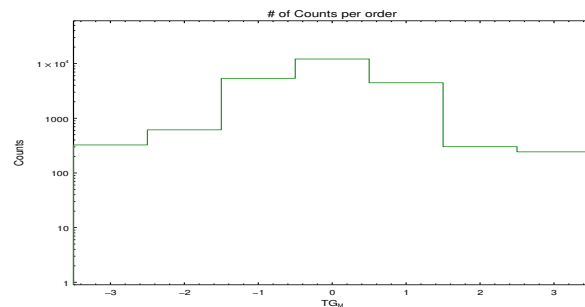
HEG Order Sort ALL

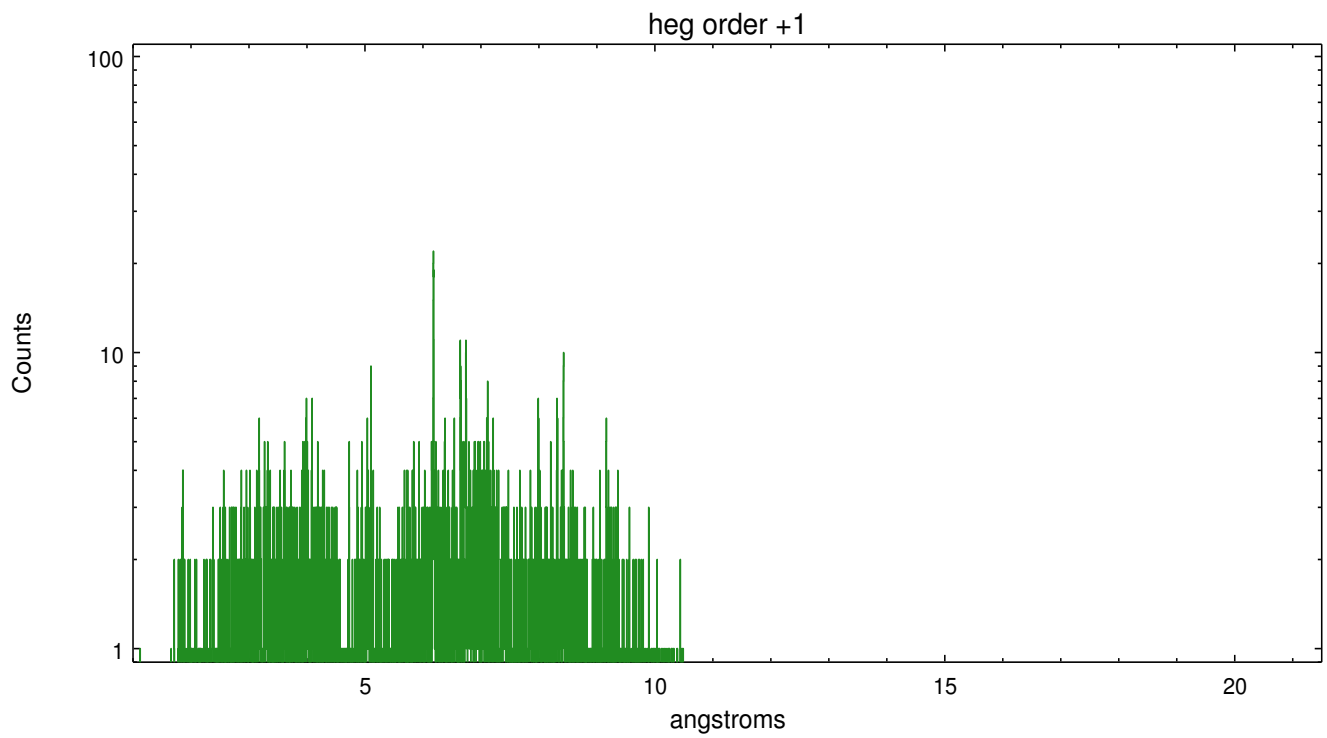
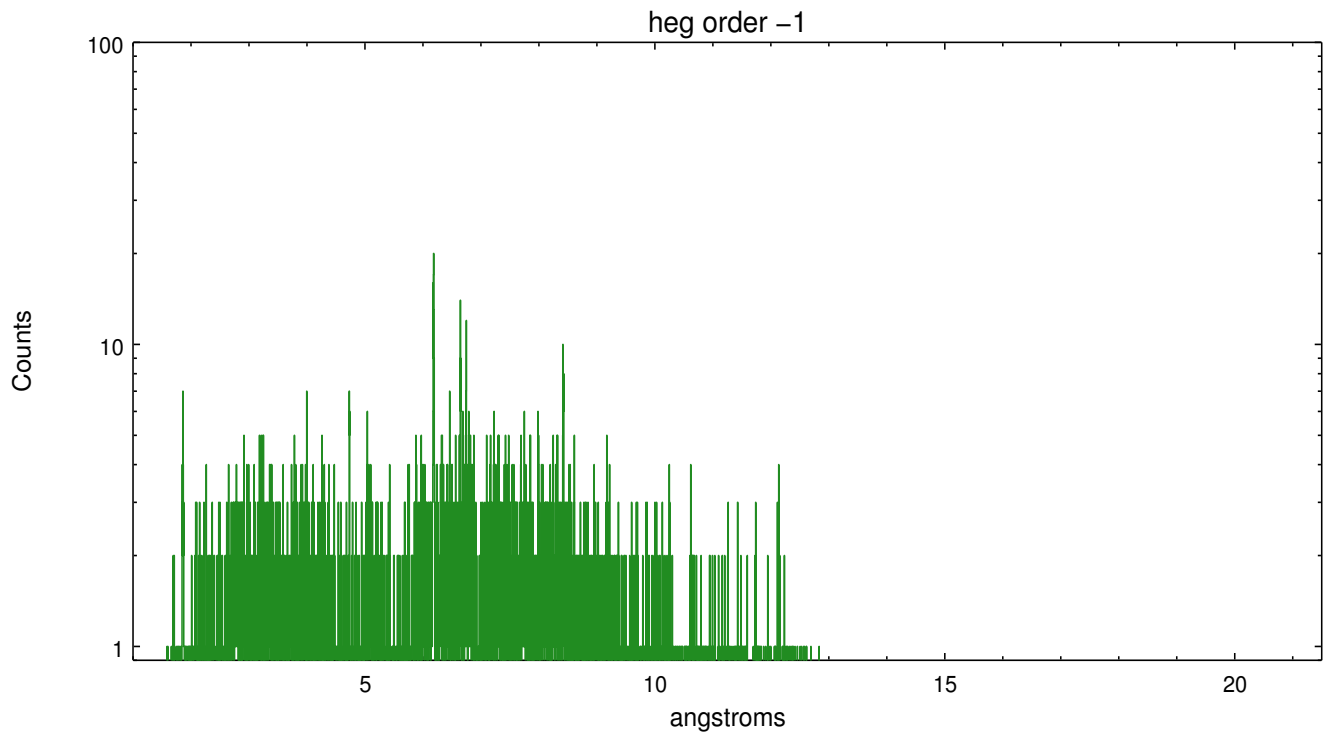


Spot Image HEG

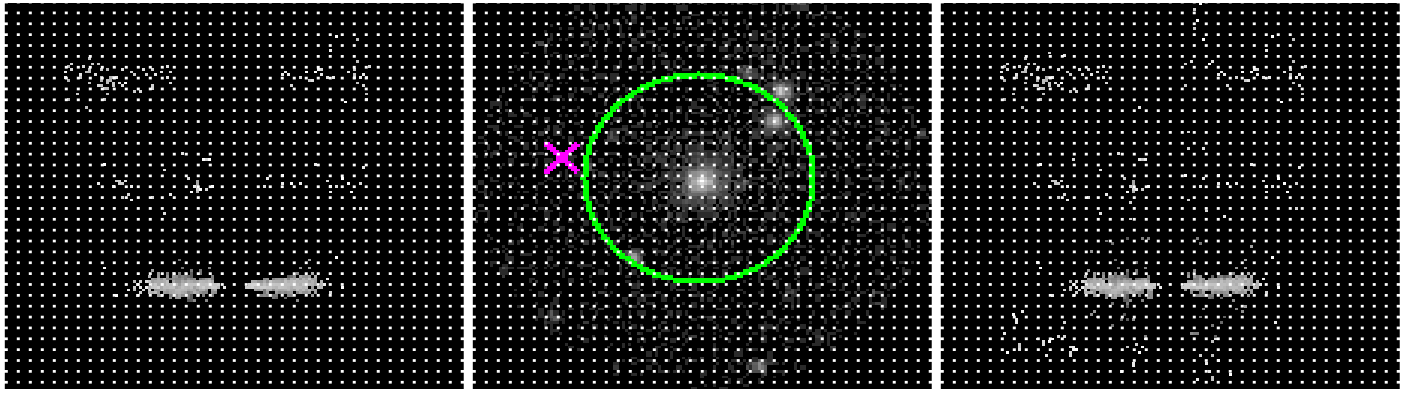
Full Detector HEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	325	614	5372	12124	4456	302	243





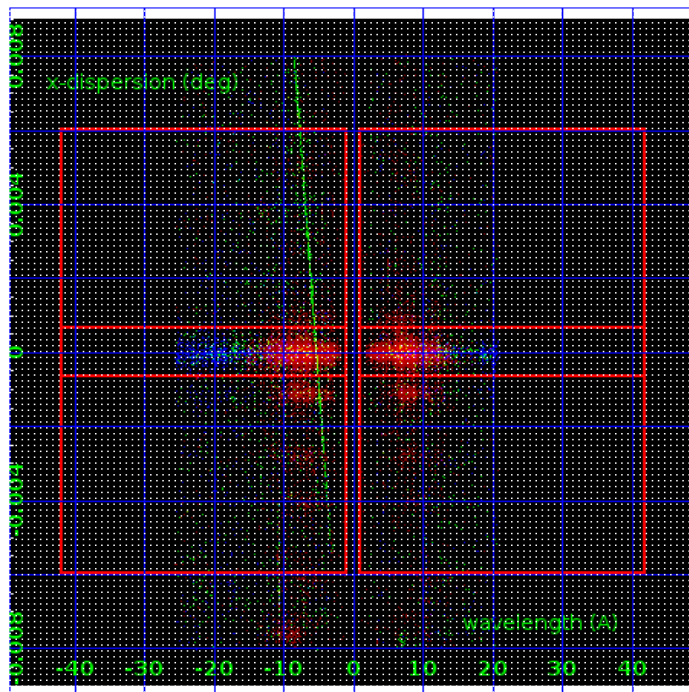
### 3.2 MEG Arm



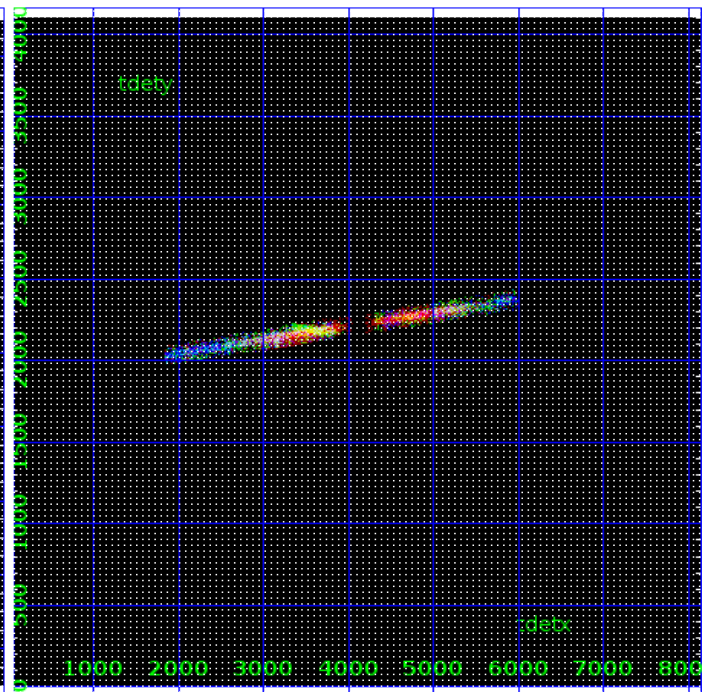
MEG Order Sort 123

MEG Zero Order

MEG Order Sort ALL

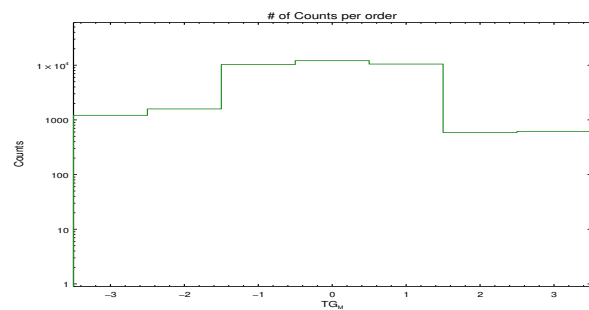


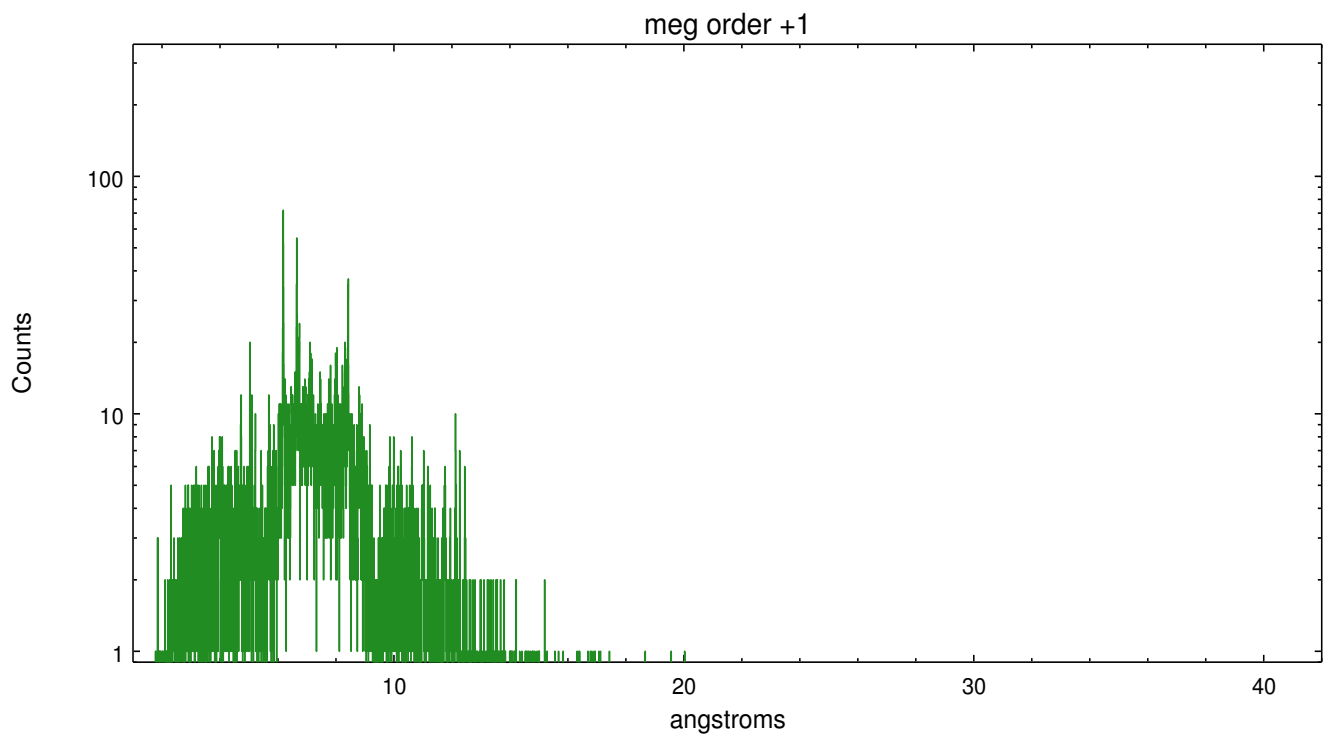
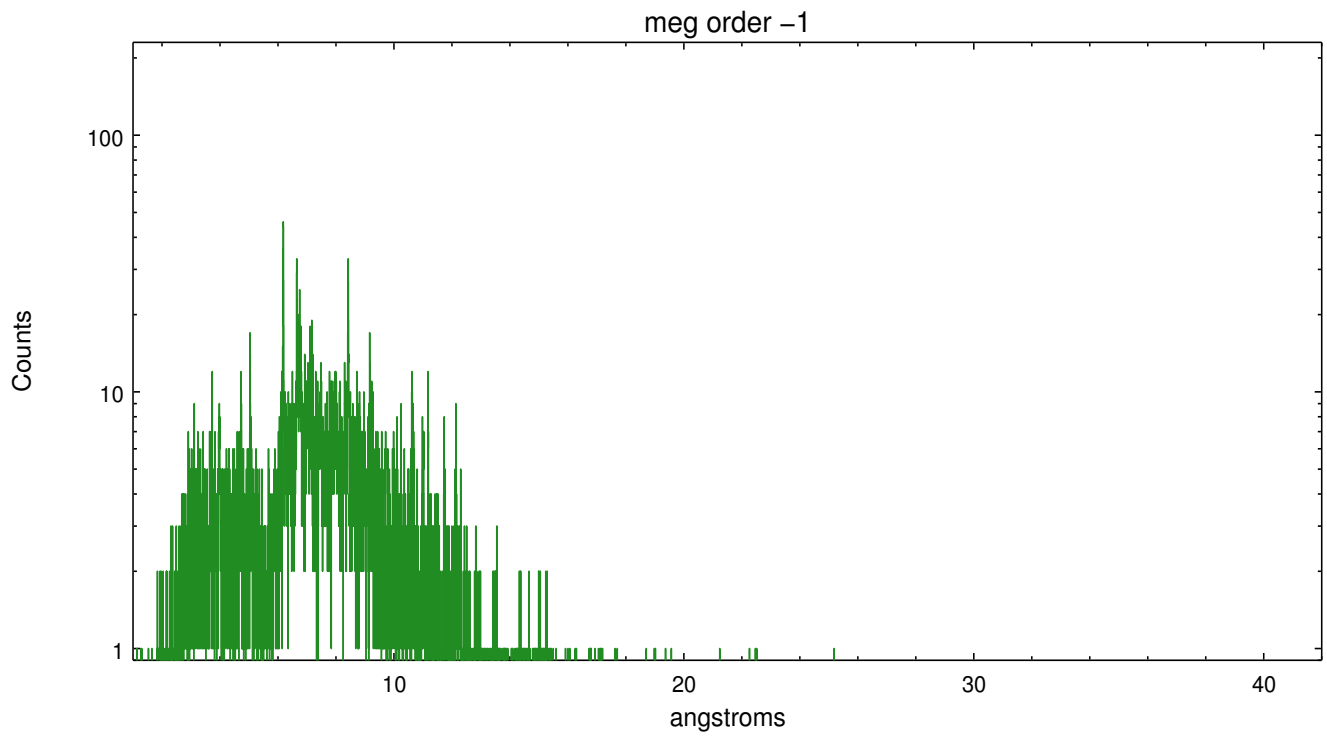
Spot Image MEG



Full Detector MEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	1211	1587	10288	12124	10497	589	614





## **A Summary**

### **A.1 Status**

V&V Scientist	Melania Nynka
V&V Date (YYYY-MM-DD)	2020.01.17
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	40.061300308228

### **A.2 Comments**