

# V&V Reference Report

## L2 ASCDS Version : 10.8.4

Observation 23233 - L2 Version 1  
Chandra X-Ray Center

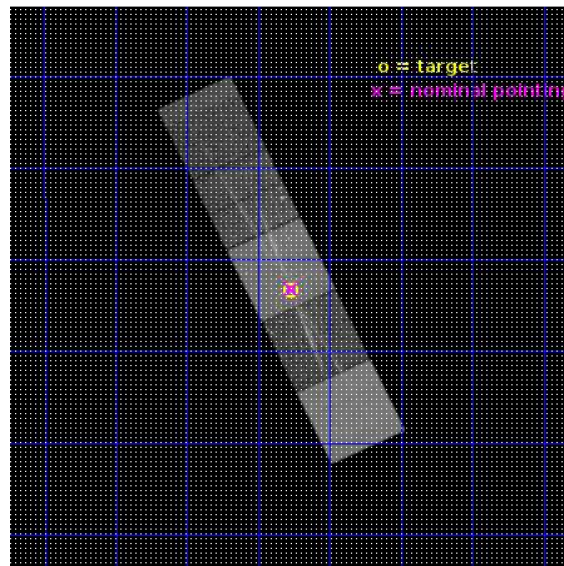
L2 Processing Date : May 2 2020

## Contents

<b>1</b>	<b>Front</b>	<b>2</b>
<b>2</b>	<b>OBI</b>	<b>3</b>
2.1	OBI . . . . .	3
2.1.1	Images . . . . .	3
2.1.2	Bias . . . . .	3
2.1.3	Parameters . . . . .	4
2.1.4	Events . . . . .	4
2.2	Compared Parameters . . . . .	5
2.3	Aspect . . . . .	6
2.4	Star Slots . . . . .	9
2.4.1	Slot 3 . . . . .	9
2.4.2	Slot 4 . . . . .	10
2.4.3	Slot 5 . . . . .	11
2.4.4	Slot 6 . . . . .	12
2.4.5	Slot 7 . . . . .	13
2.5	FID Slots . . . . .	14
2.5.1	Slot 0 . . . . .	14
2.5.2	Slot 1 . . . . .	15
2.5.3	Slot 2 . . . . .	16
<b>3</b>	<b>Gratings</b>	<b>17</b>
3.1	HEG Arm . . . . .	17
3.2	MEG Arm . . . . .	19
<b>A</b>	<b>Summary</b>	<b>21</b>
A.1	Status . . . . .	21
A.2	Comments . . . . .	21

# 1 Front

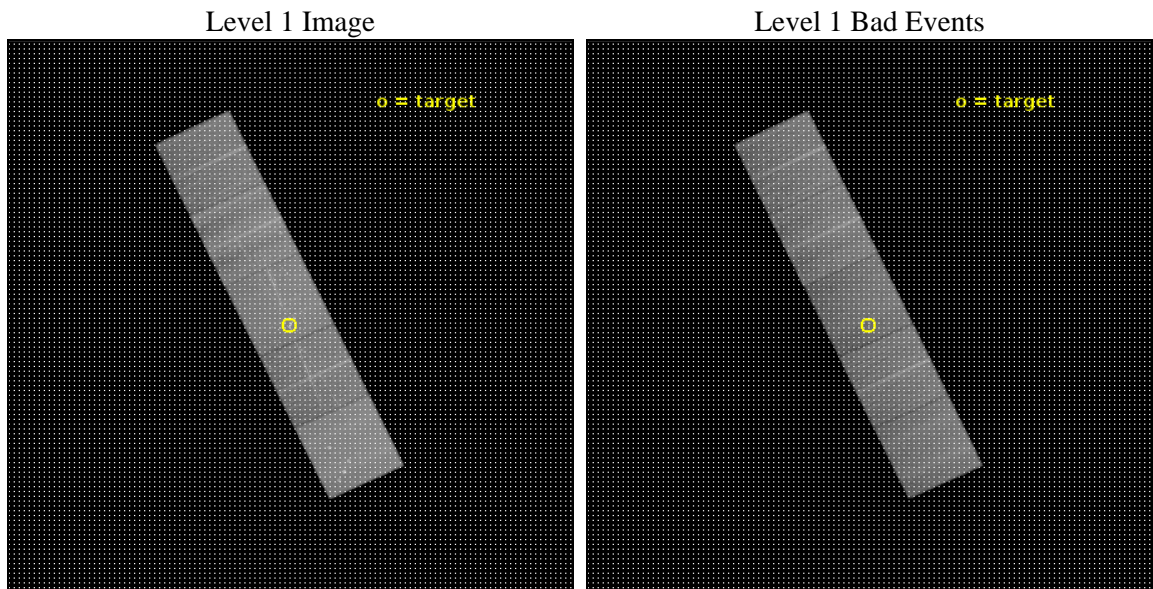
seq_num	201298	Sequence number
obs_id	23233	Observation id
title	THE TRUE NATURE OF X-RAYS FROM THE ORION TRAPEZIUM	Proposal title
observer	Norbert Schulz	Principal investigator
object	Orion Nebula Cluster	Source name
dtcycle	0	&#160
cycle	P	events from which exps? Prim/Second/Both
ra_targ	83.81875	Observer's specified target RA [deg]
dec_targ	-5.38975	Observer's specified target Dec [deg]
ra_nom	83.8174135855	Nominal RA [deg]
dec_nom	-5.38661743745	Nominal Dec [deg]
roll_nom	244.659179172	Nominal Roll [deg]
revision	1	Processing version of data
ontime	35048.291621566	Sum of GTIs [s]
livetime	34590.359889353	Livetime [s]
ontime5	35048.250581622	Sum of GTIs [s]
ontime6	35048.209541559	Sum of GTIs [s]
ontime7	35048.291621566	Sum of GTIs [s]
ontime8	35045.027531385	Sum of GTIs [s]
ontime9	35048.127461553	Sum of GTIs [s]
l2events	539045	Number of level 2 events



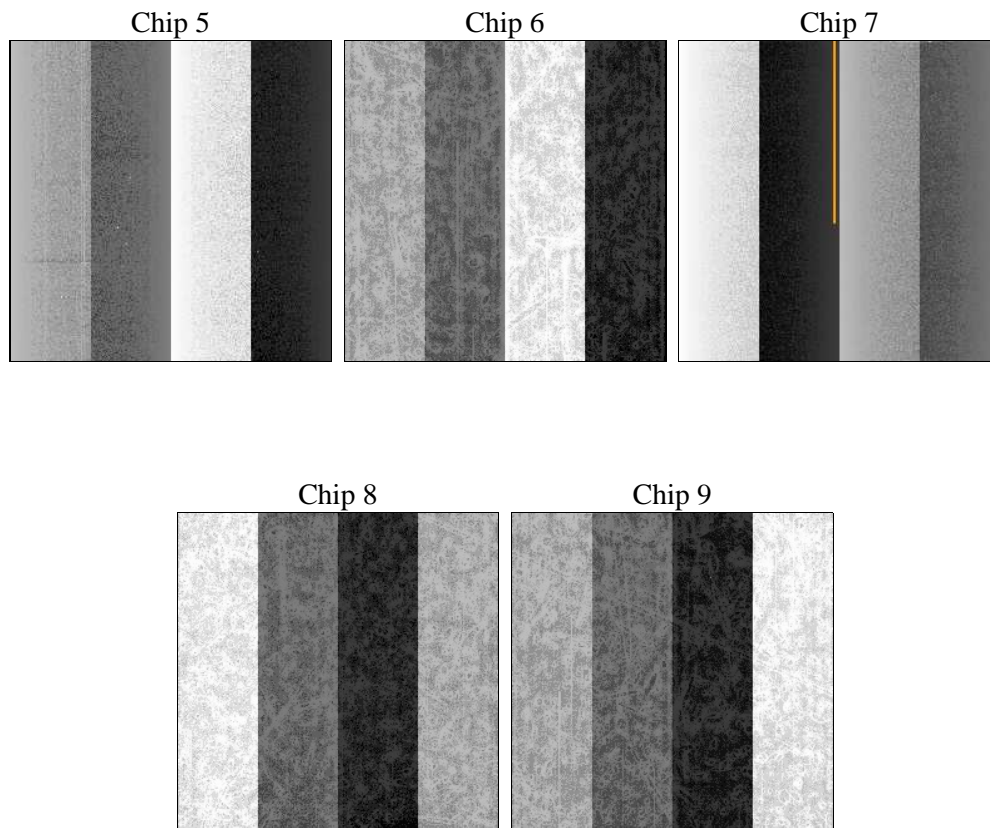
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

obi_num	1	Obi number	sched_exp_time	35000.000000	[s] Scheduled observation exposure time
ascdsver	10.8.4	Processing system revision	ontime	35048.291621566	Sum of GTIs [s]
caldsver	4.9.1	&#160	ontime5	35048.250581622	Sum of GTIs [s]
date	2020-05-02T03:41:45	Date and time of file creation	ontime6	35048.209541559	Sum of GTIs [s]
revision	1	Processing version of data	ontime7	35048.291621566	Sum of GTIs [s]
			ontime8	35045.027531385	Sum of GTIs [s]
			ontime9	35048.127461553	Sum of GTIs [s]
			l1events	1847419	Number of level 1 events
			tgmethod	TGDETECT	Method used to create src1a file
			zo_pos	(4088.64, 4073.92)	src1a sky pixel position

### 2.1.4 Events

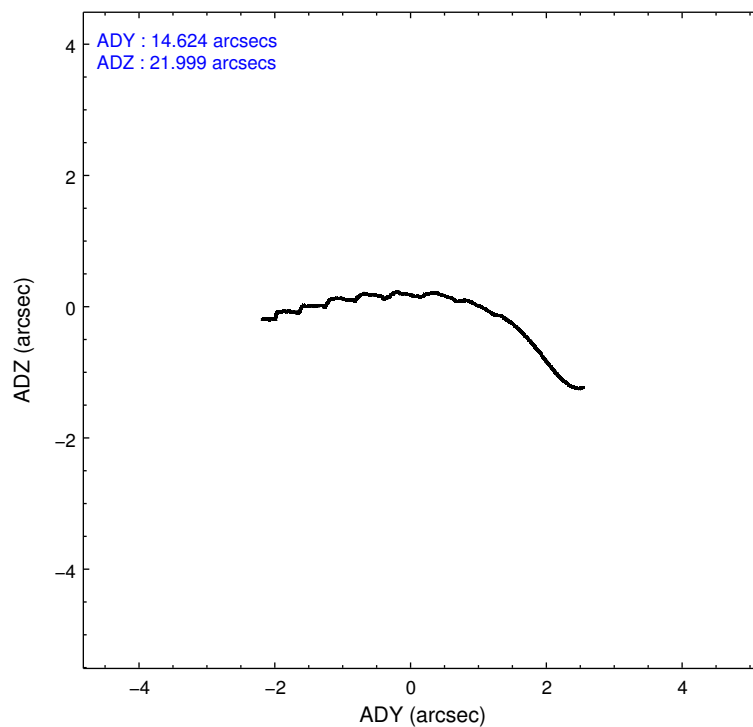
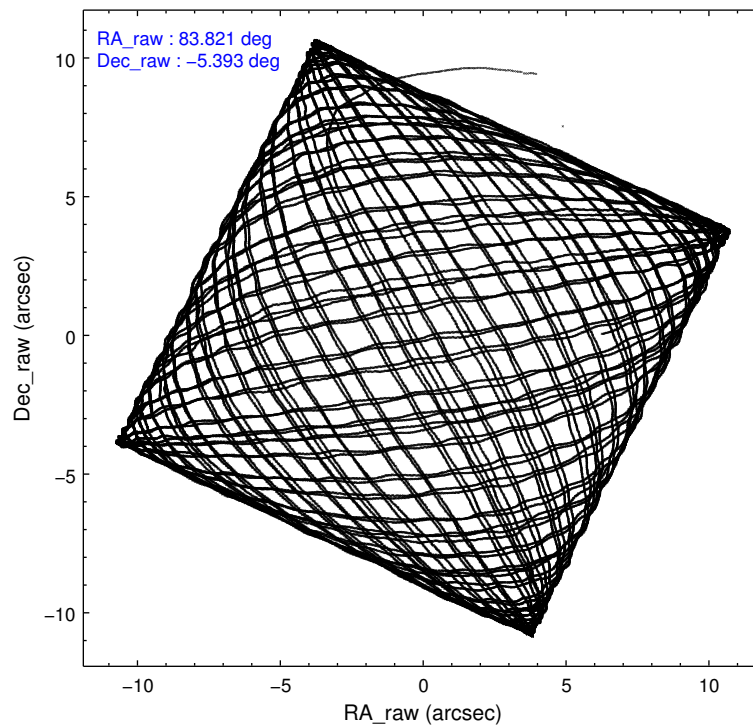
	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
level 1 events	457618	310705	413172	383072	282852
rejected events	234259	255828	206530	270814	246206
rejected %	51%	82%	49%	70%	87%

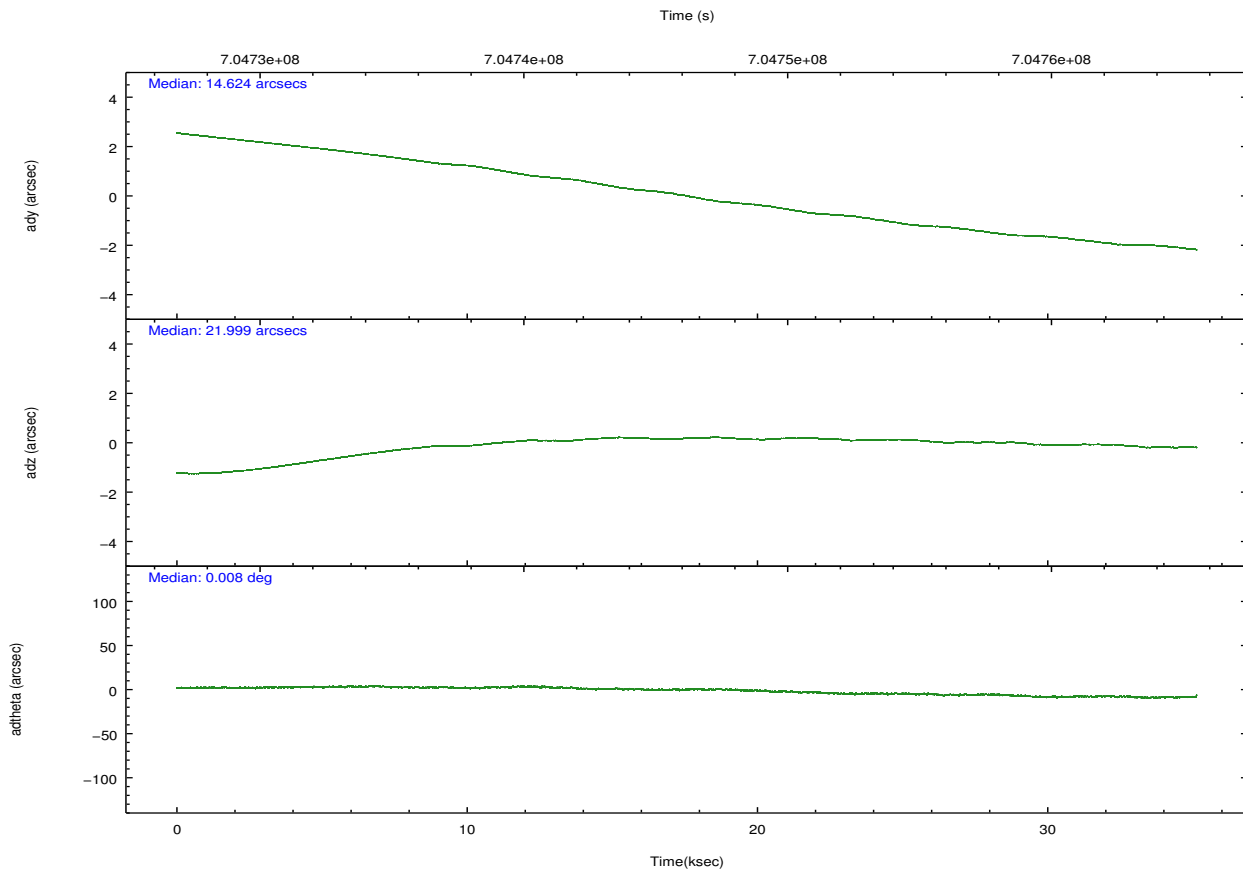
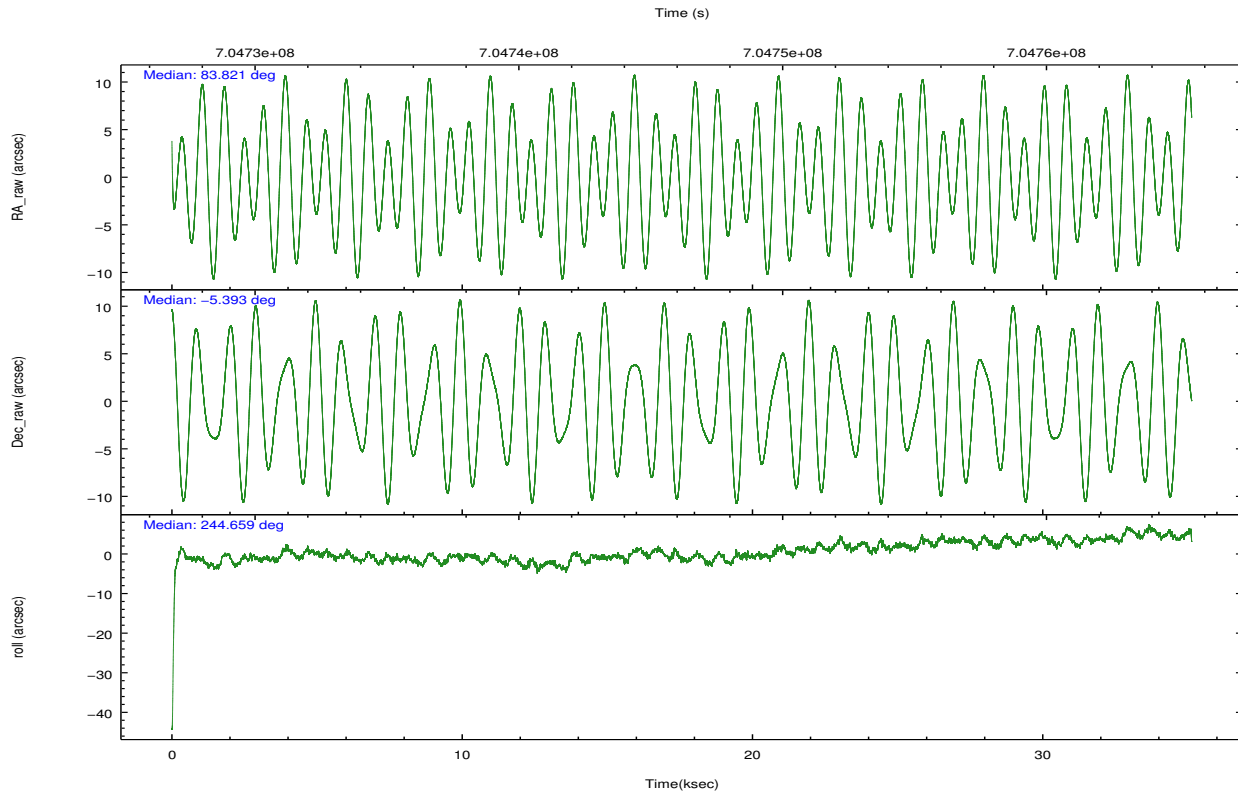
	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
grade 0 events	20309	27082	24173	38749	13626
	4%	8%	5%	10%	4%
grade 1 events	1389	216	758	358	151
	0%	0%	0%	0%	0%
grade 2 events	69228	11605	46549	26371	8609
	15%	3%	11%	6%	3%
grade 3 events	6961	3500	17286	10150	3400
	1%	1%	4%	2%	1%
grade 4 events	6737	3587	17288	9840	3145
	1%	1%	4%	2%	1%
grade 5 events	29237	12124	35350	19164	14214
	6%	3%	8%	5%	5%
grade 6 events	120164	9114	101386	27163	7878
	26%	2%	24%	7%	2%
grade 7 events	203593	243477	170382	251277	231829
	44%	78%	41%	65%	81%

## 2.2 Compared Parameters

Parameter	Planned	Actual	Parameter	Planned	Actual
Instrument	ACIS	ACIS	Obspar version number	8	8
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	83.818653	83.81741358550001	CCD I2 on	N	N
[deg] Pointing Dec	-5.365891	-5.38661743745	CCD I3 on	N	N
[deg] Pointing Roll	244.499995	244.659179172	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)	704728744.184000	704727429.87938	CCD S5 on	O2	Y
Observation start date	2020-05-01T13:57:55	2020-05-01T13:37:09	Number of optional ACIS chips dropped	1	1
[s] Observation end time (MET)	704763744.184000	704764815.73165	On-chip summing requested	N	N
Observation end date	2020-05-01T23:41:15	2020-05-02T00:00:15	Subarray requested	NONE	NONE
Read mode	TIMED	TIMED	Alternating exposures requested	N	N
			[s] Primary exposure time	0.000000	3.1

## 2.3 Aspect





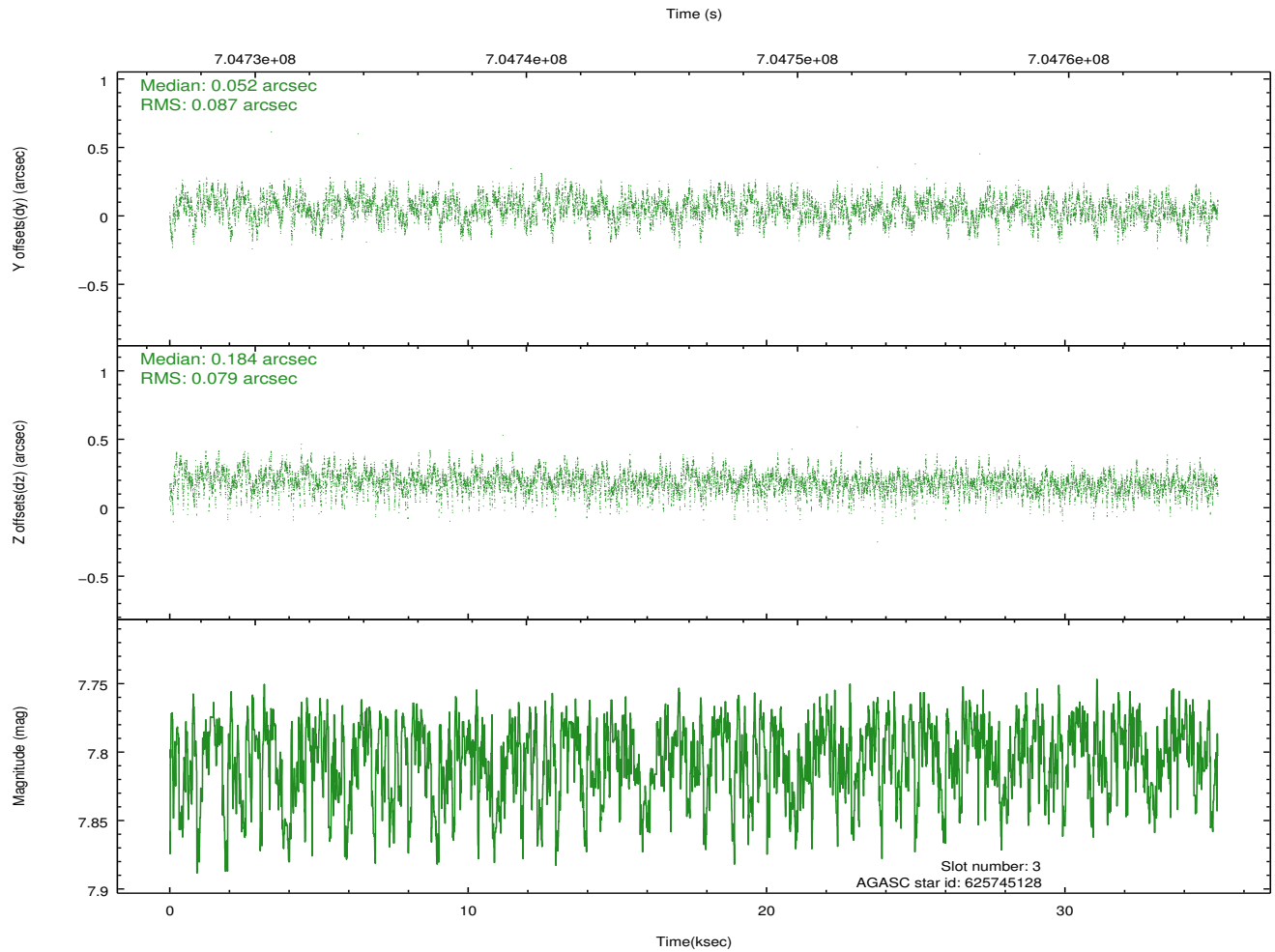
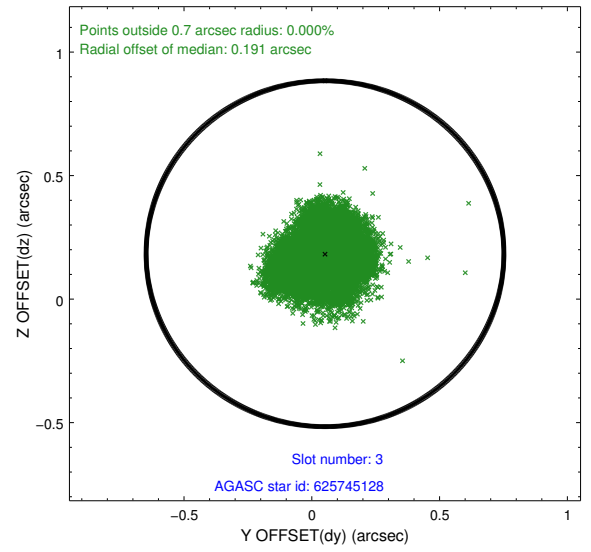
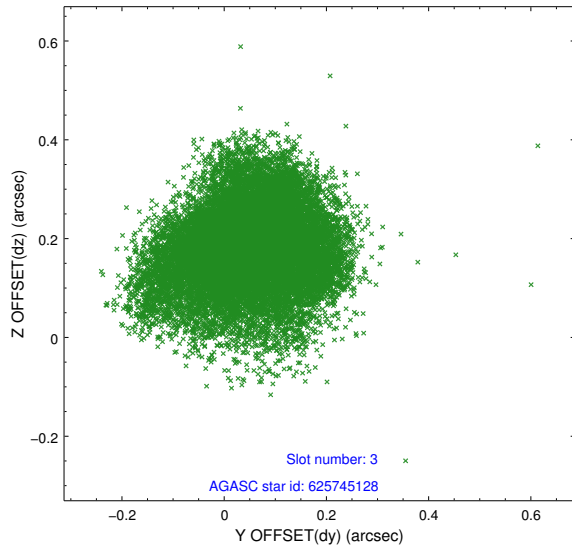
### Slot Statistics

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	7.09	8569	1.000	0.209	-0.137	0.040	0.058	0.000000	0.000000	-767.78	-1743
1	FID		ACIS-S-4	7.21	8569	1.000	0.105	-0.066	0.029	0.041	0.000000	0.000000	2145.74	164
2	FID		ACIS-S-5	7.18	8569	1.000	-0.360	0.212	0.028	0.070	0.000000	0.000000	-1820.77	159
3	GUIDE	used	625745128	7.80	17128	1.000	0.052	0.184	0.126	0.201	83.769930	-4.731835	-1984.62	-1139
4	GUIDE	used	625745136	7.20	17136	1.000	0.160	-0.092	0.134	0.213	83.600341	-4.804339	-1487.35	-1576
5	GUIDE	used	625874672	7.67	17131	1.000	-0.363	0.052	0.116	0.213	84.403143	-4.934124	-2304.35	1224
6	GUIDE	used	626272880	7.68	17125	1.000	0.029	-0.087	0.090	0.145	83.815609	-6.032748	2172.11	1023
7	GUIDE	used	626272976	7.96	17067	1.000	0.124	-0.056	0.096	0.161	83.795875	-5.926912	1858.98	795

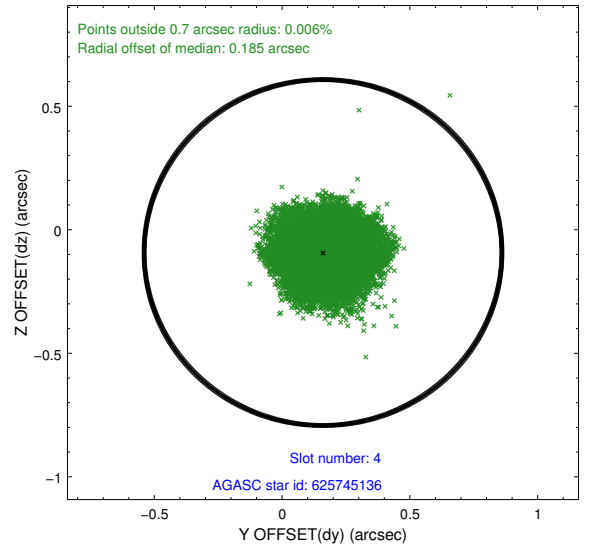
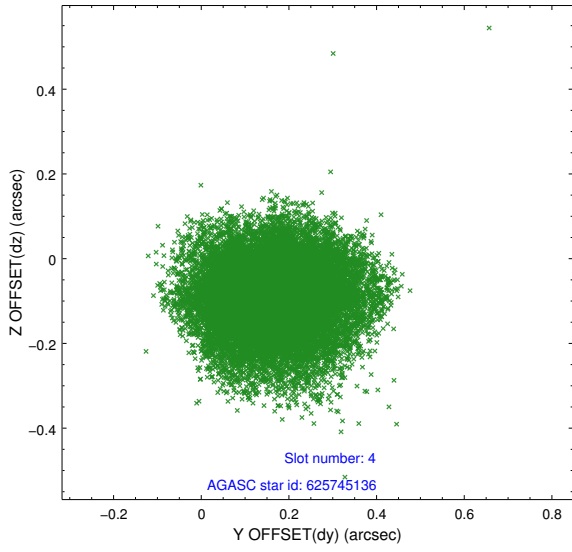
∞

## 2.4 Star Slots

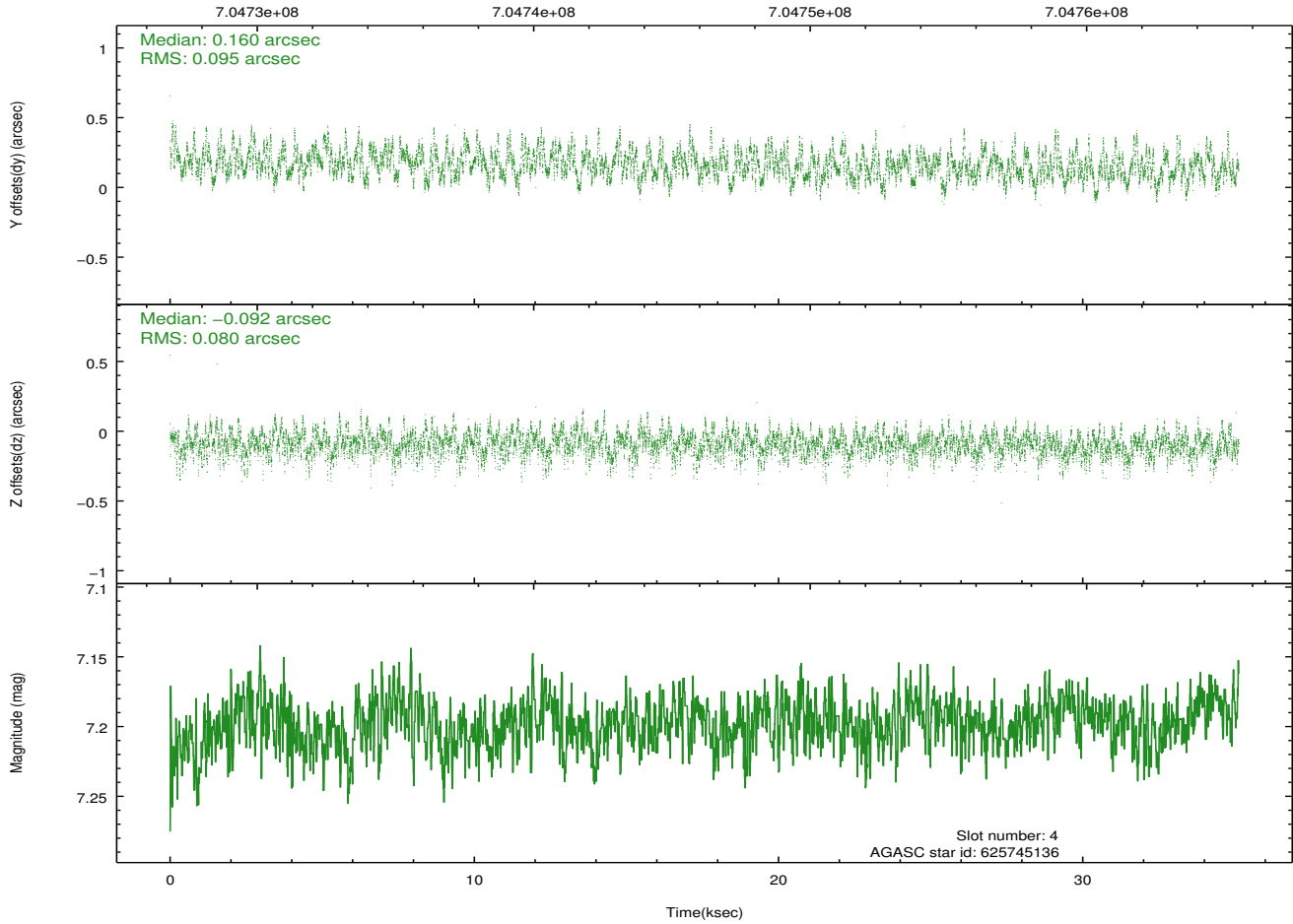
### 2.4.1 Slot 3



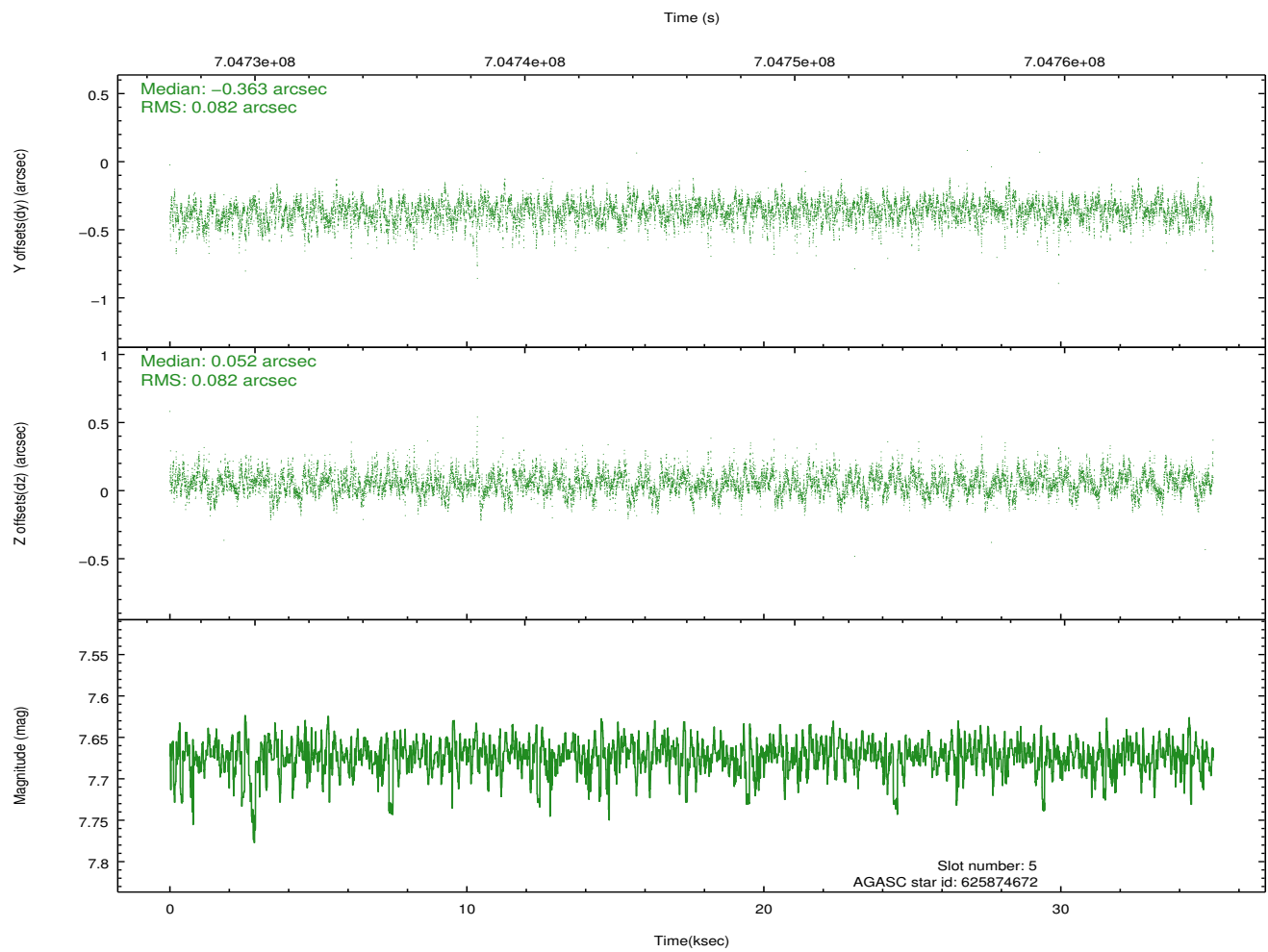
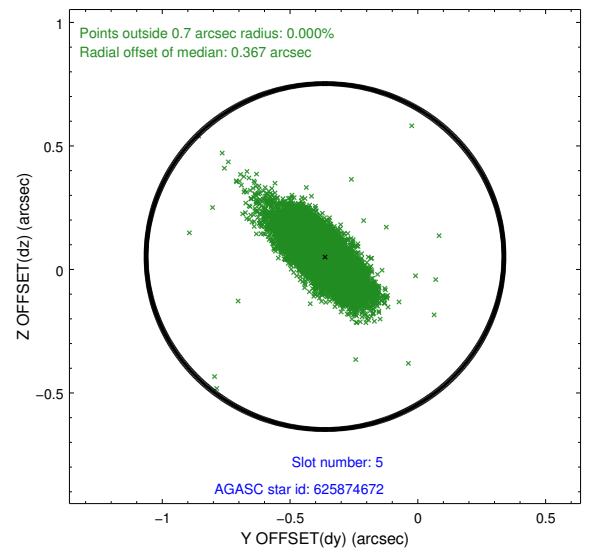
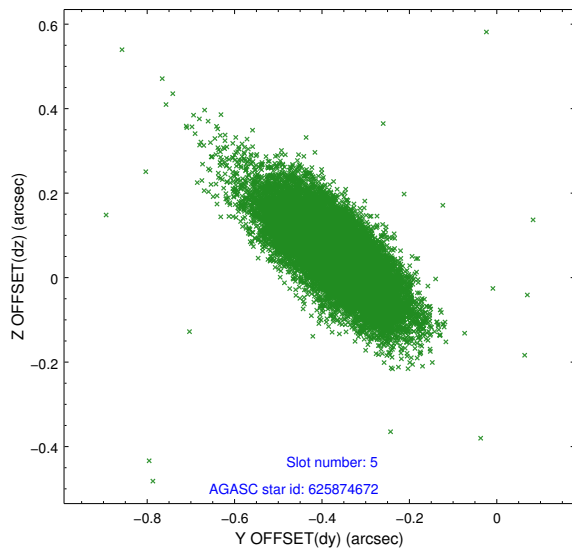
### 2.4.2 Slot 4



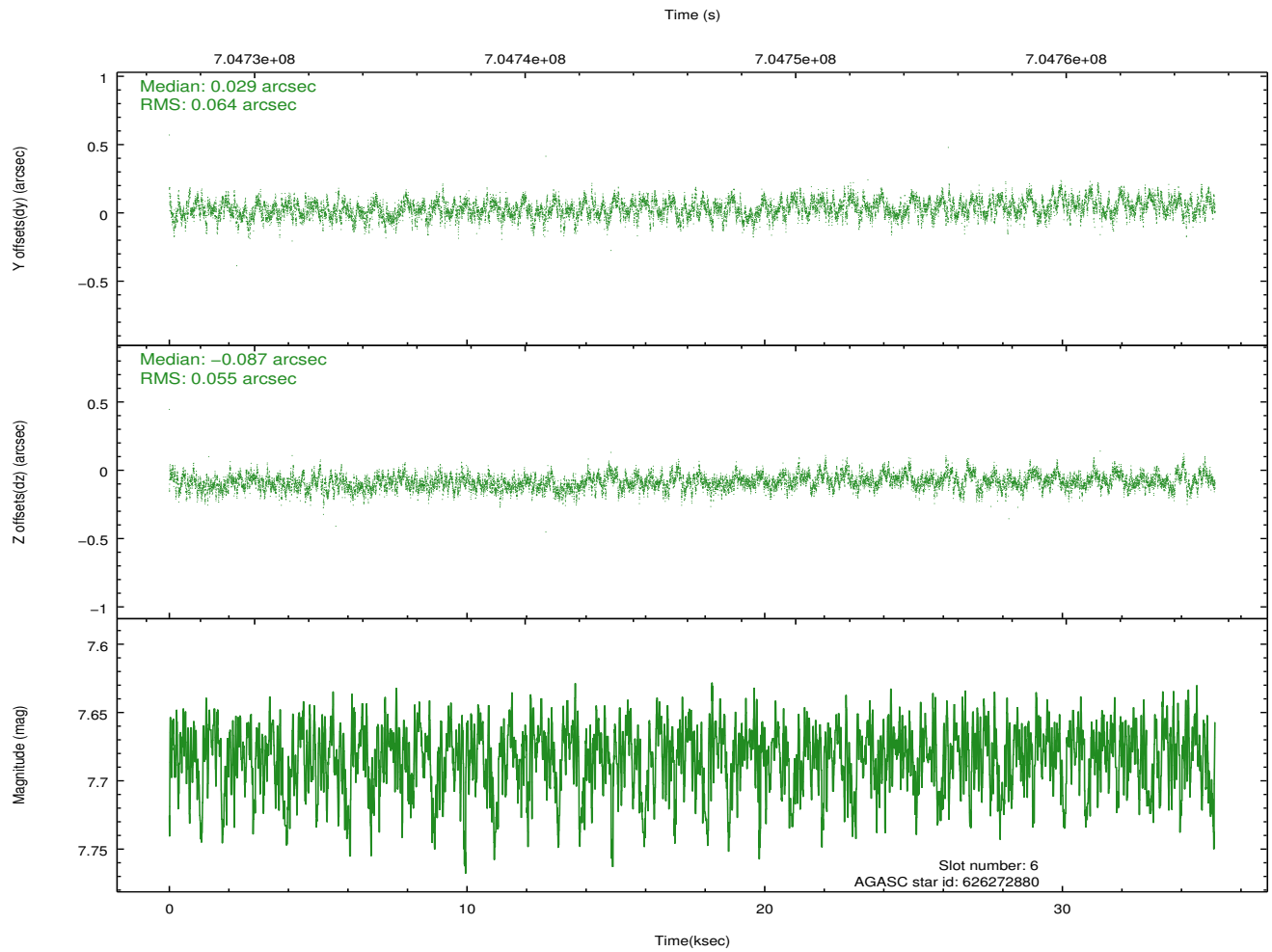
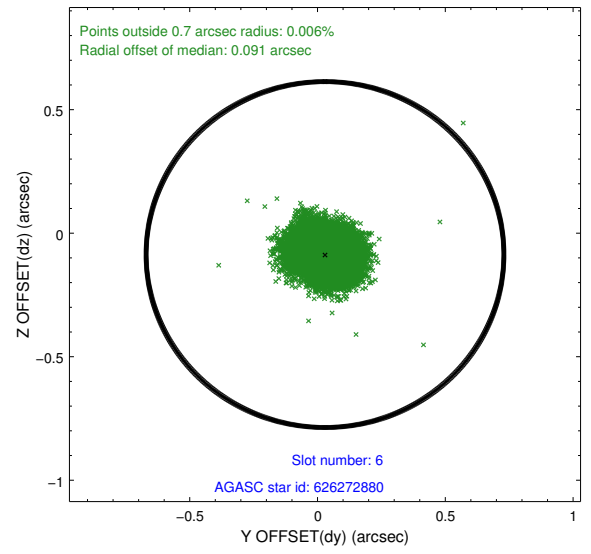
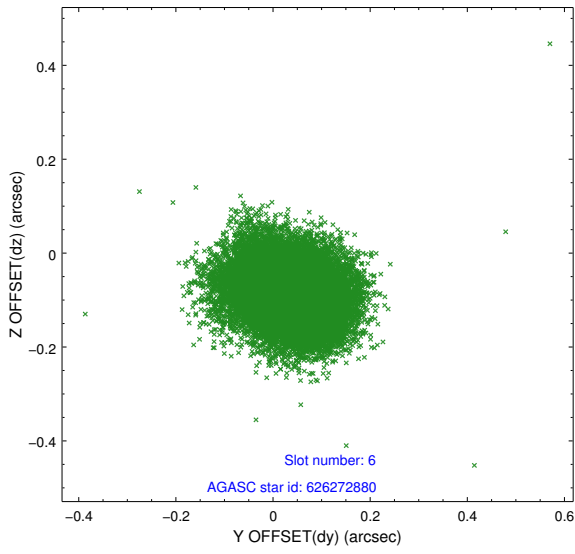
Time (s)



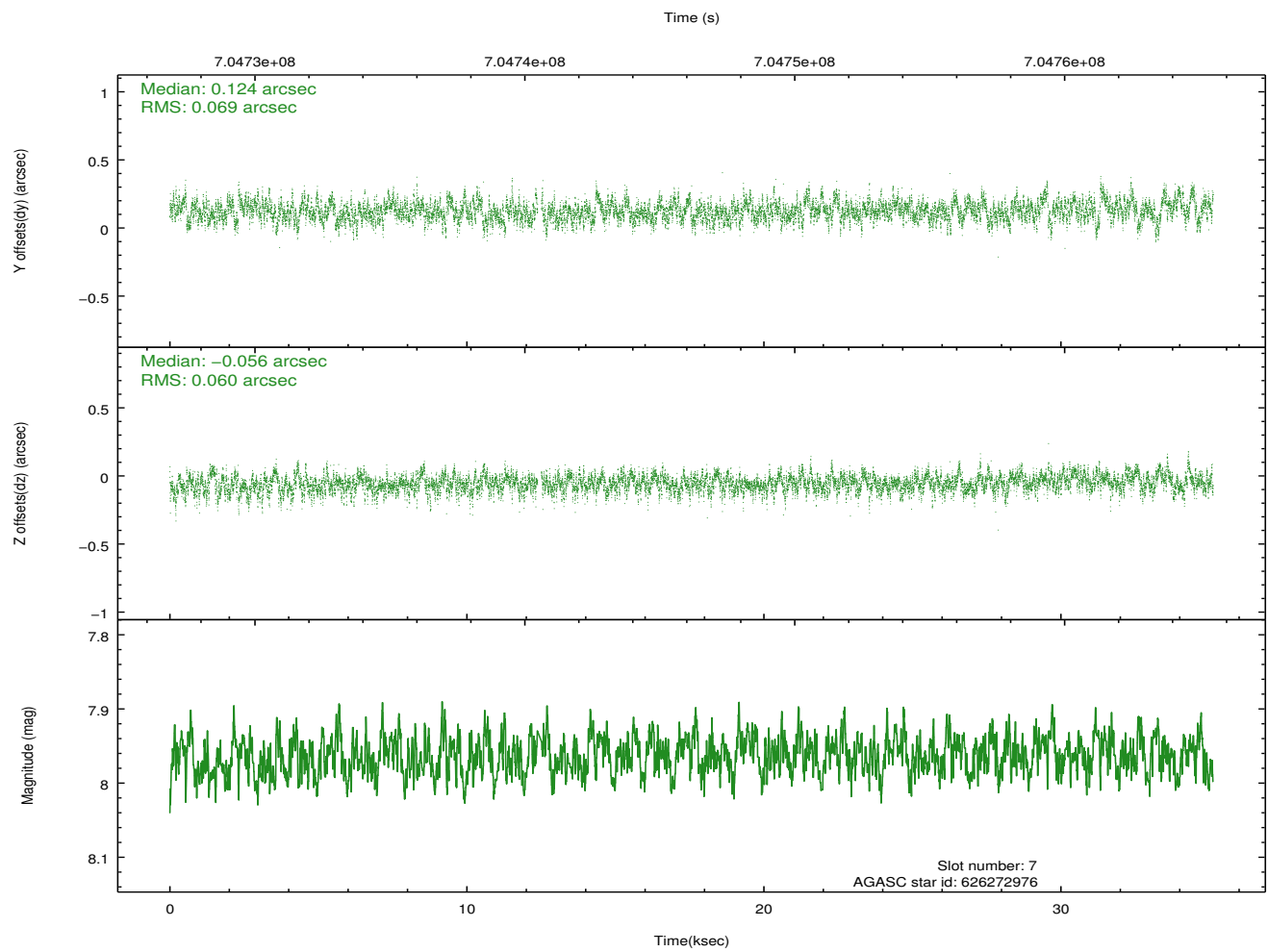
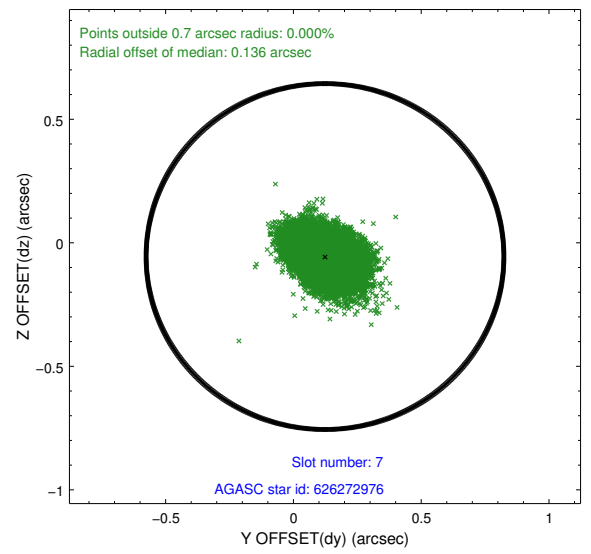
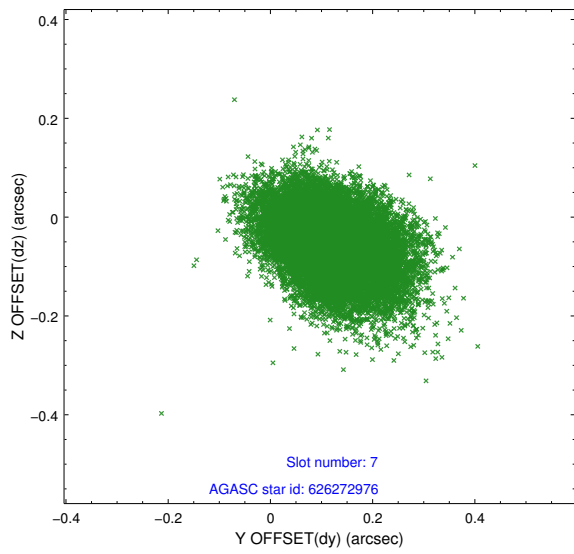
### 2.4.3 Slot 5



### 2.4.4 Slot 6

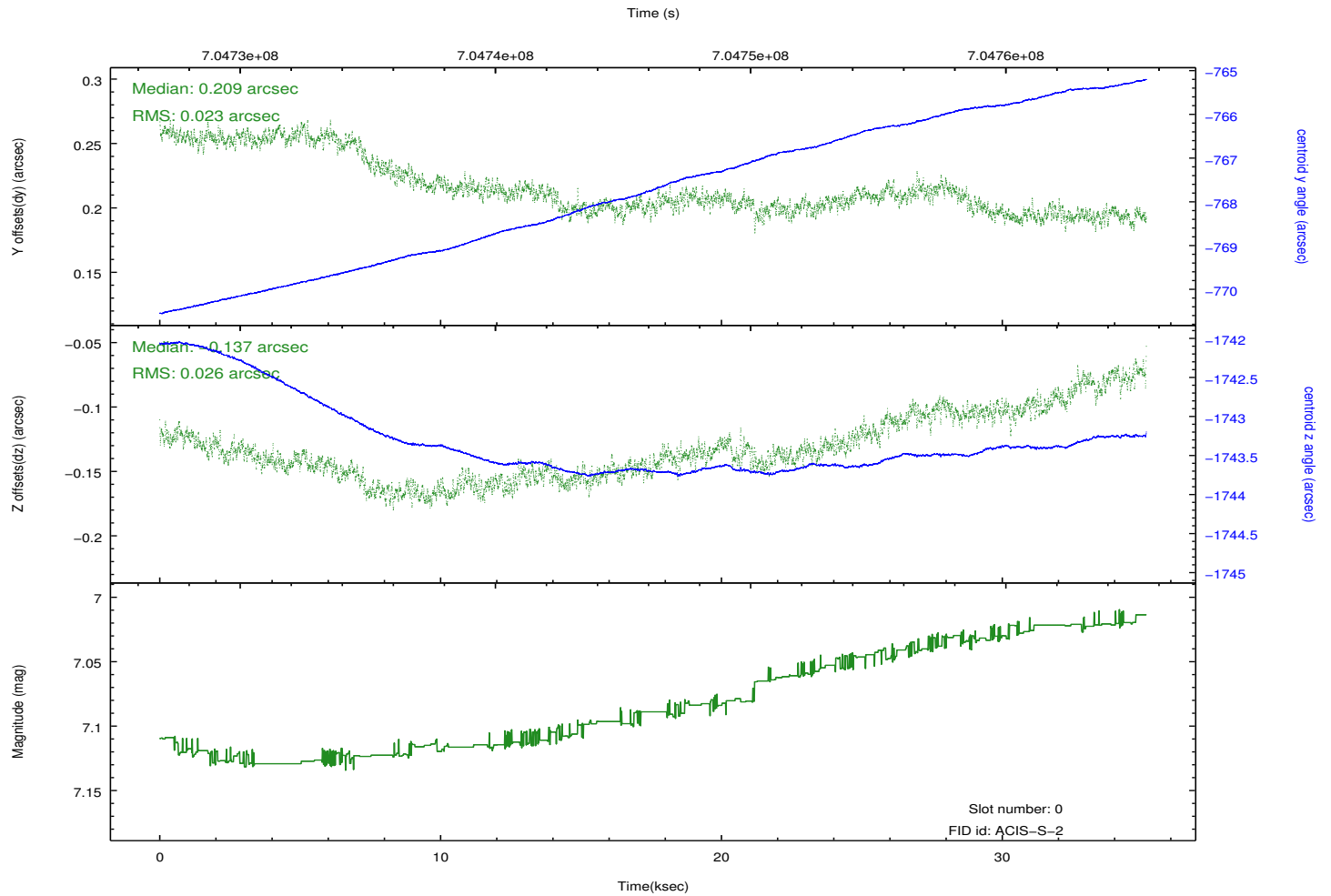
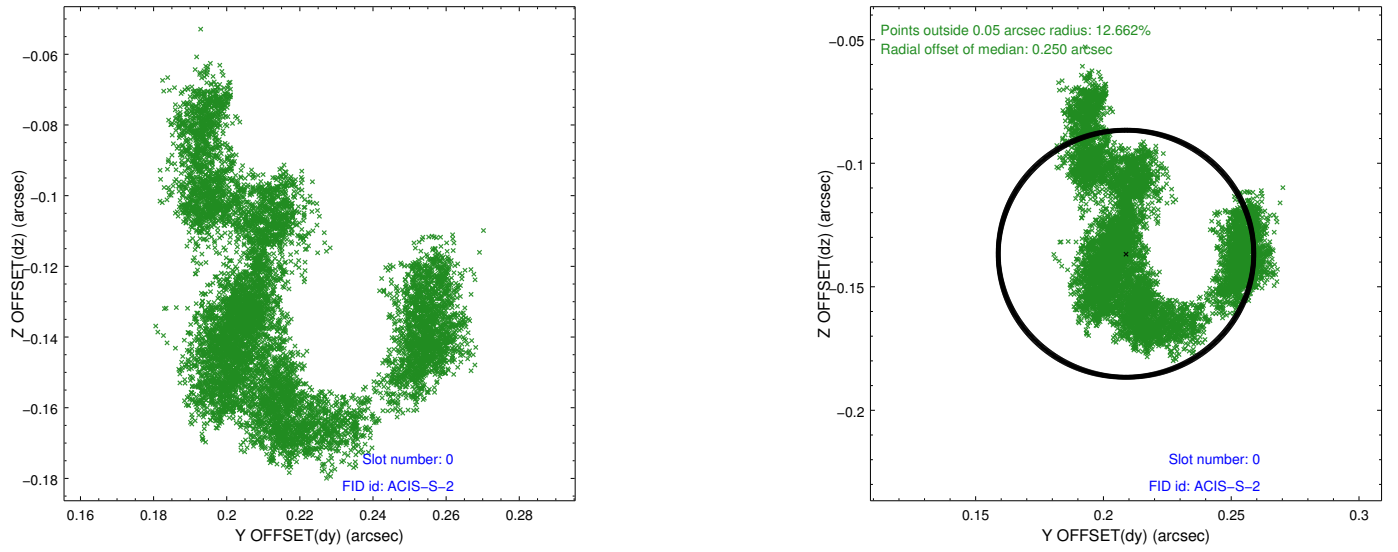


## 2.4.5 Slot 7

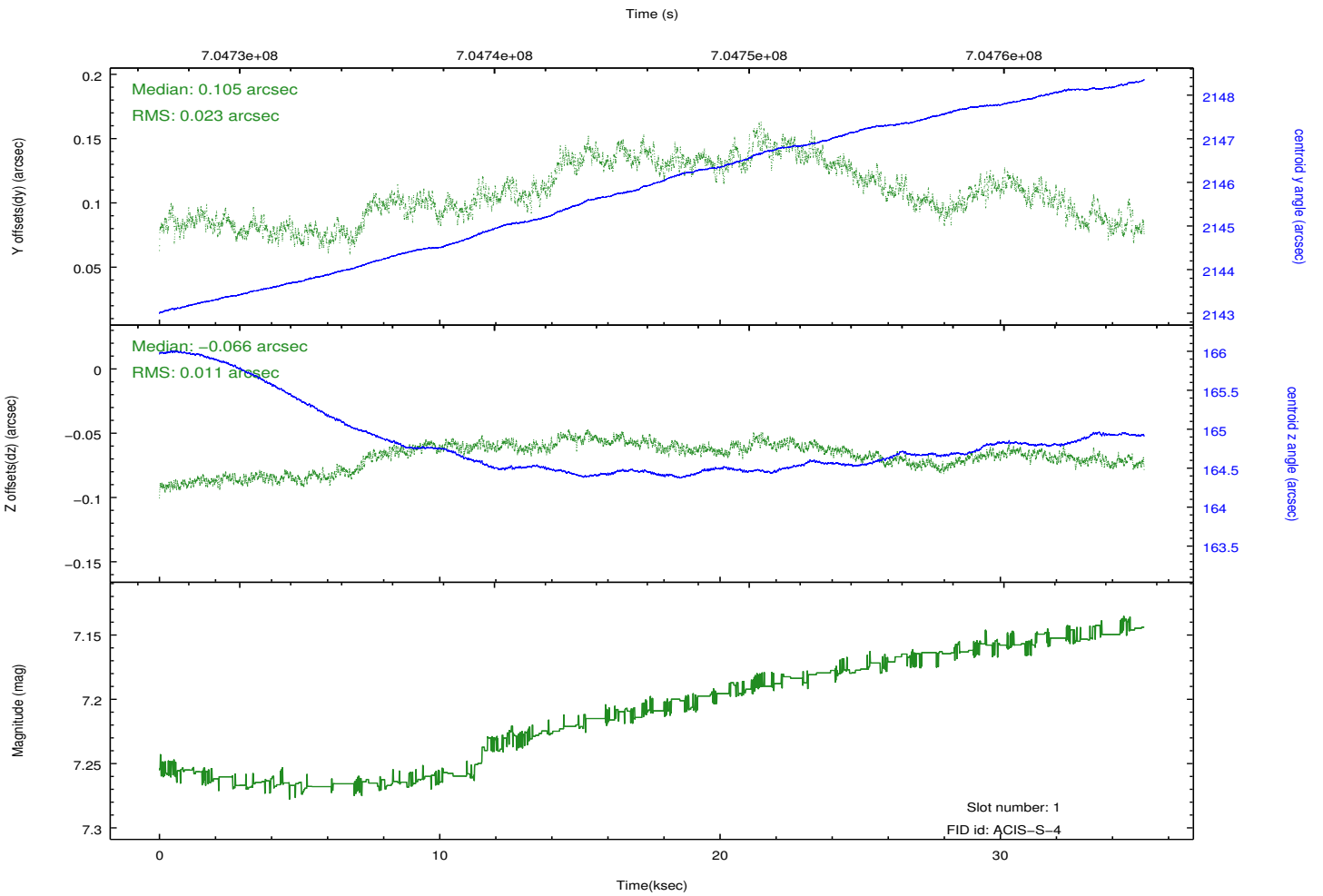
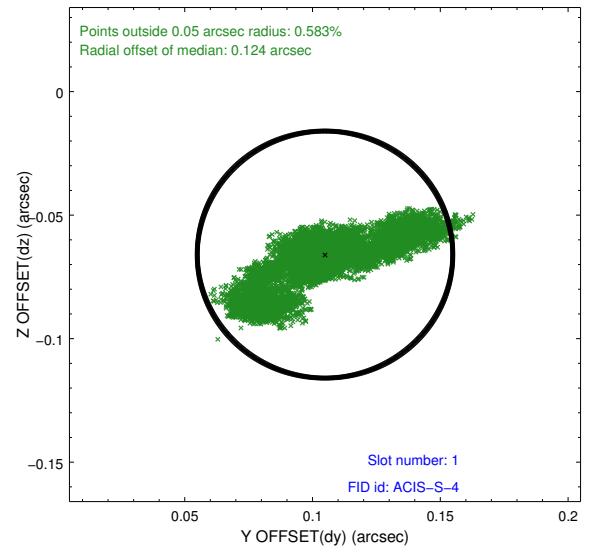
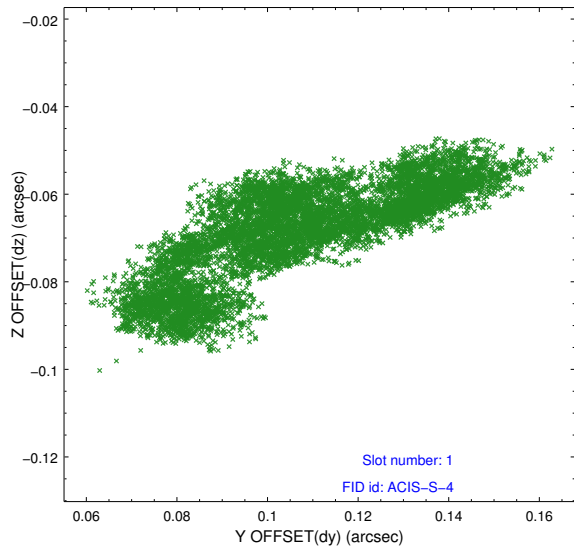


## 2.5 FID Slots

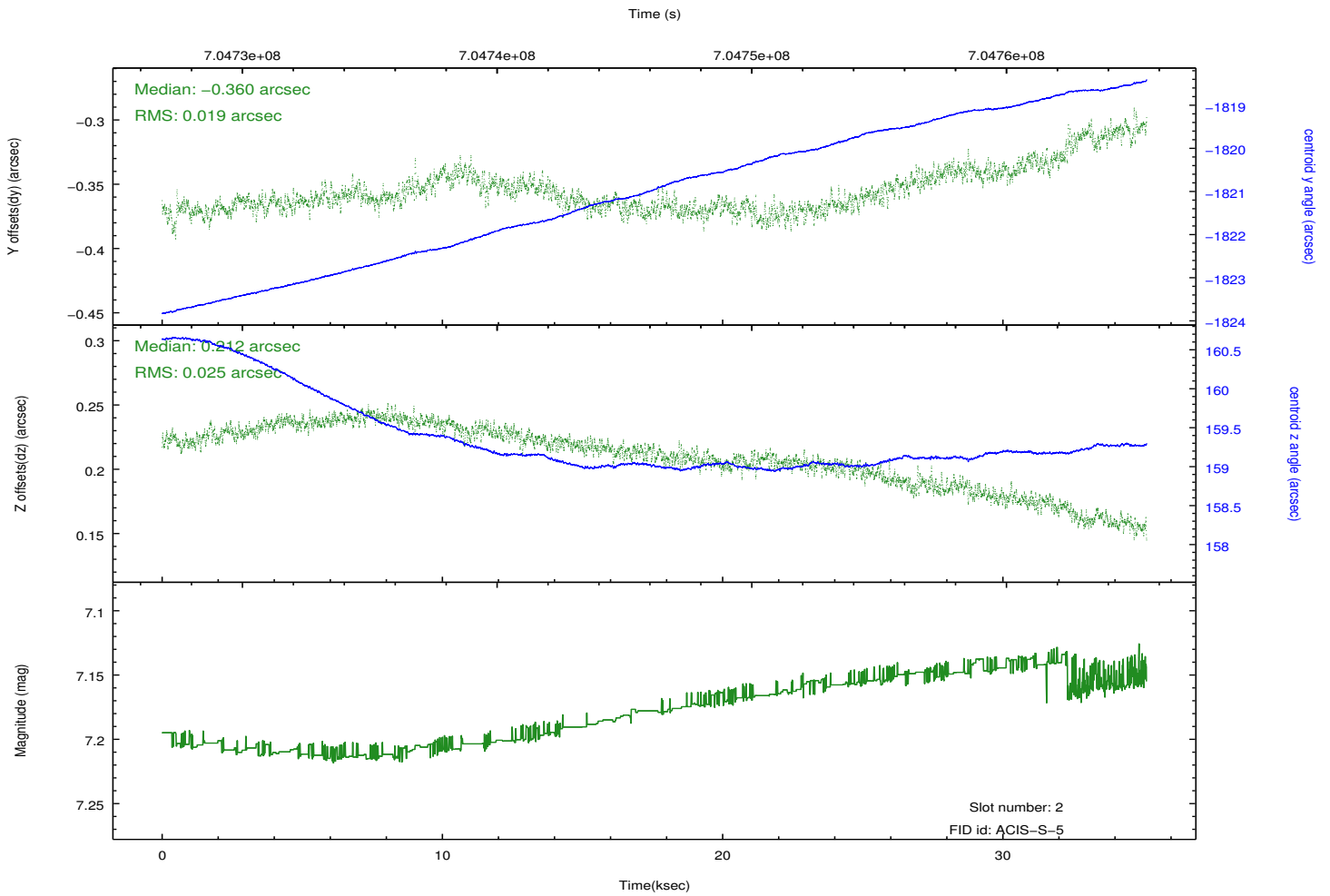
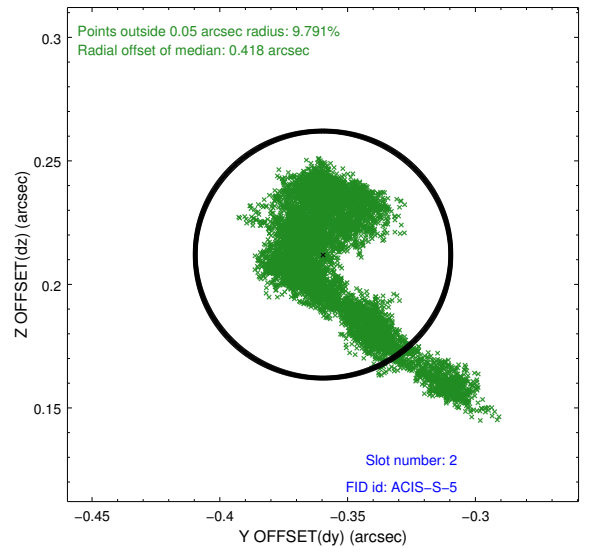
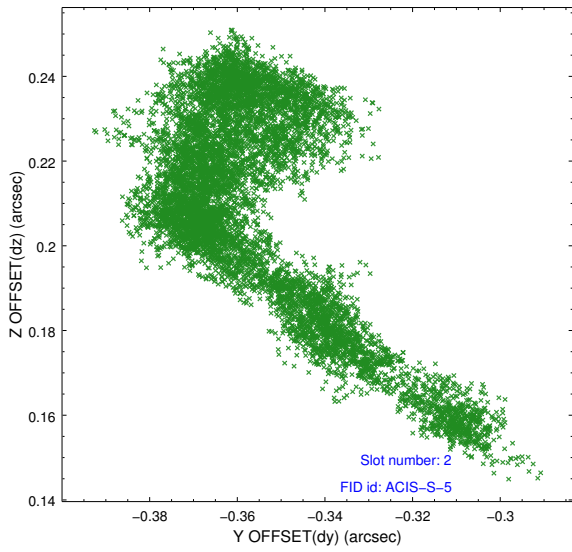
### 2.5.1 Slot 0



## 2.5.2 Slot 1

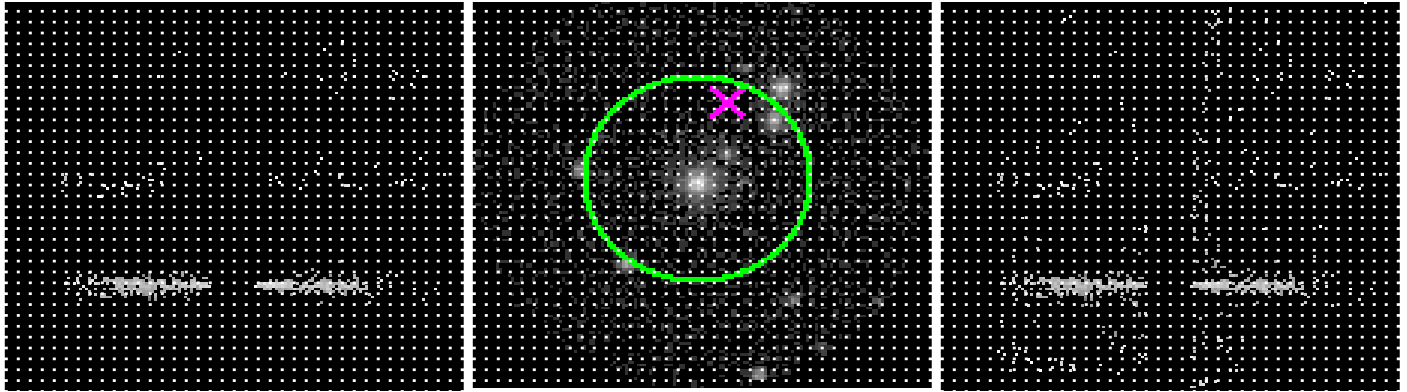


### 2.5.3 Slot 2



### 3 Gratings

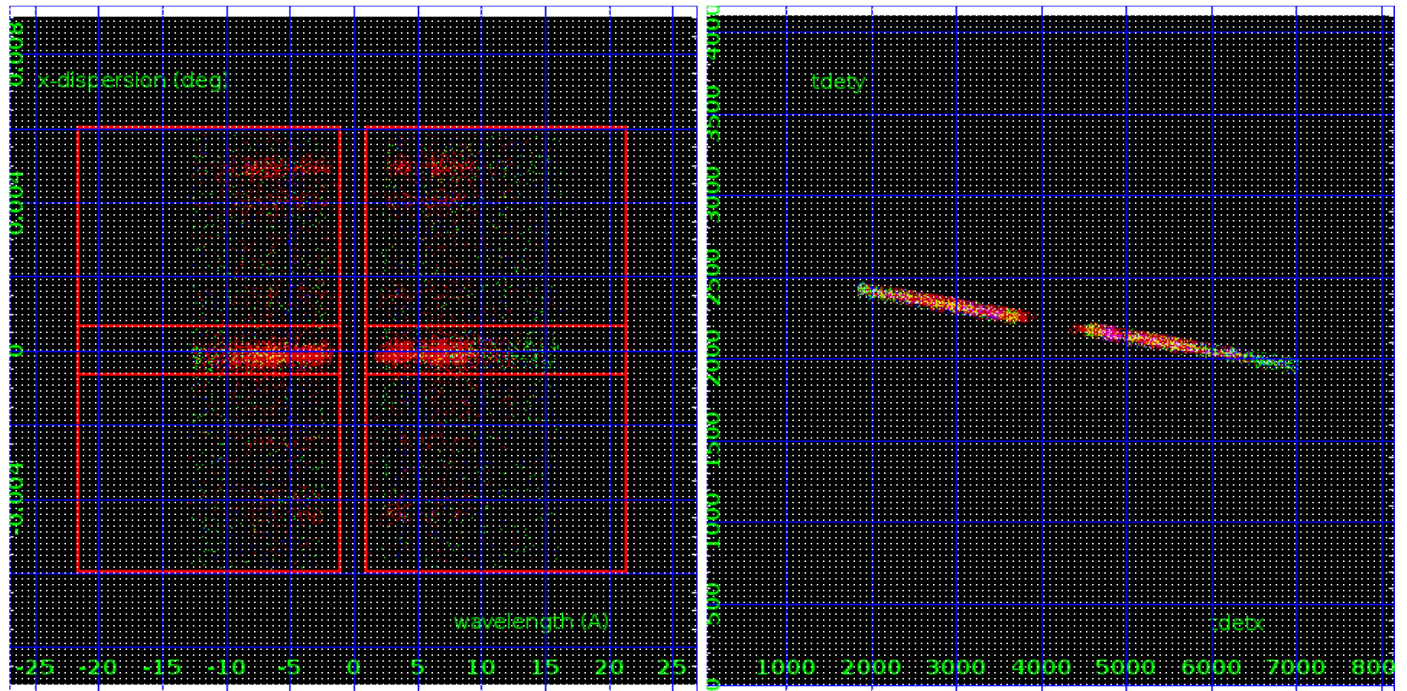
#### 3.1 HEG Arm



HEG Order Sort 123

HEG Zero Order

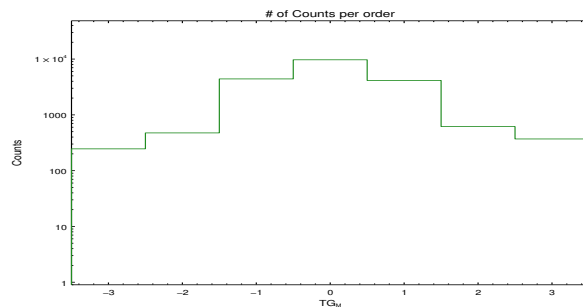
HEG Order Sort ALL



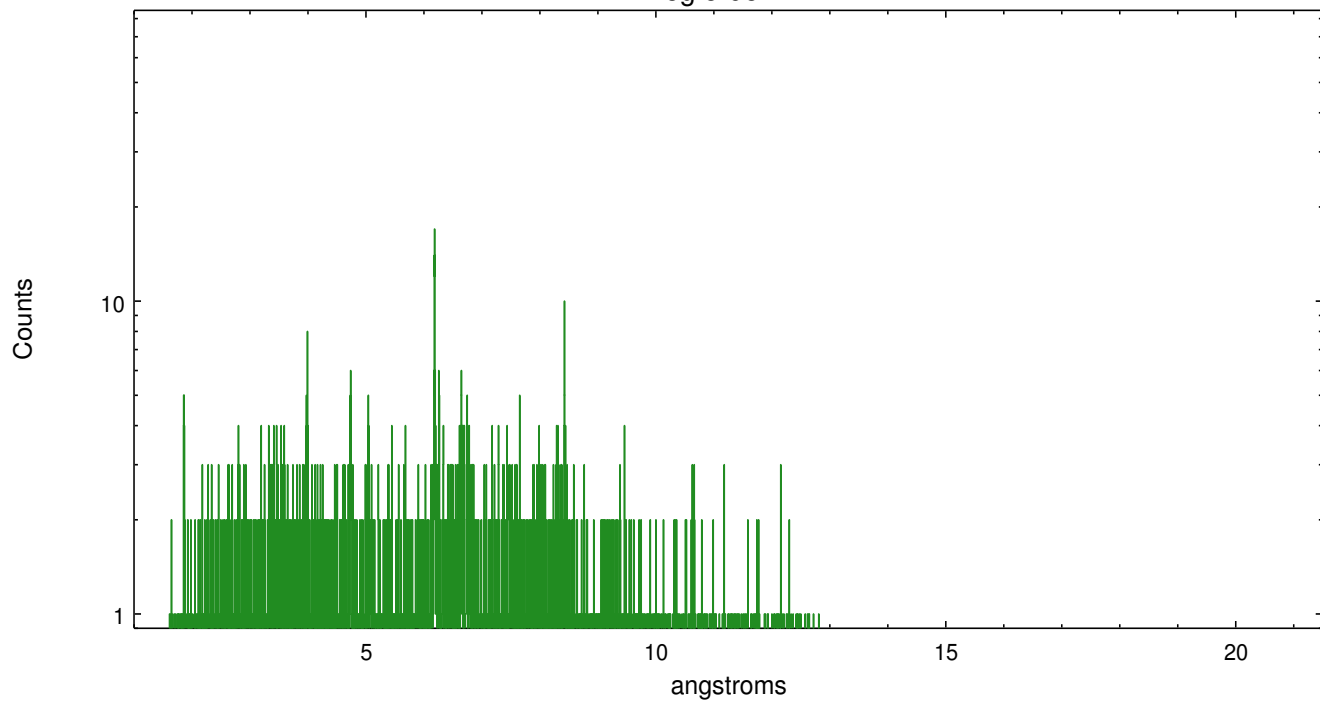
Spot Image HEG

Full Detector HEG

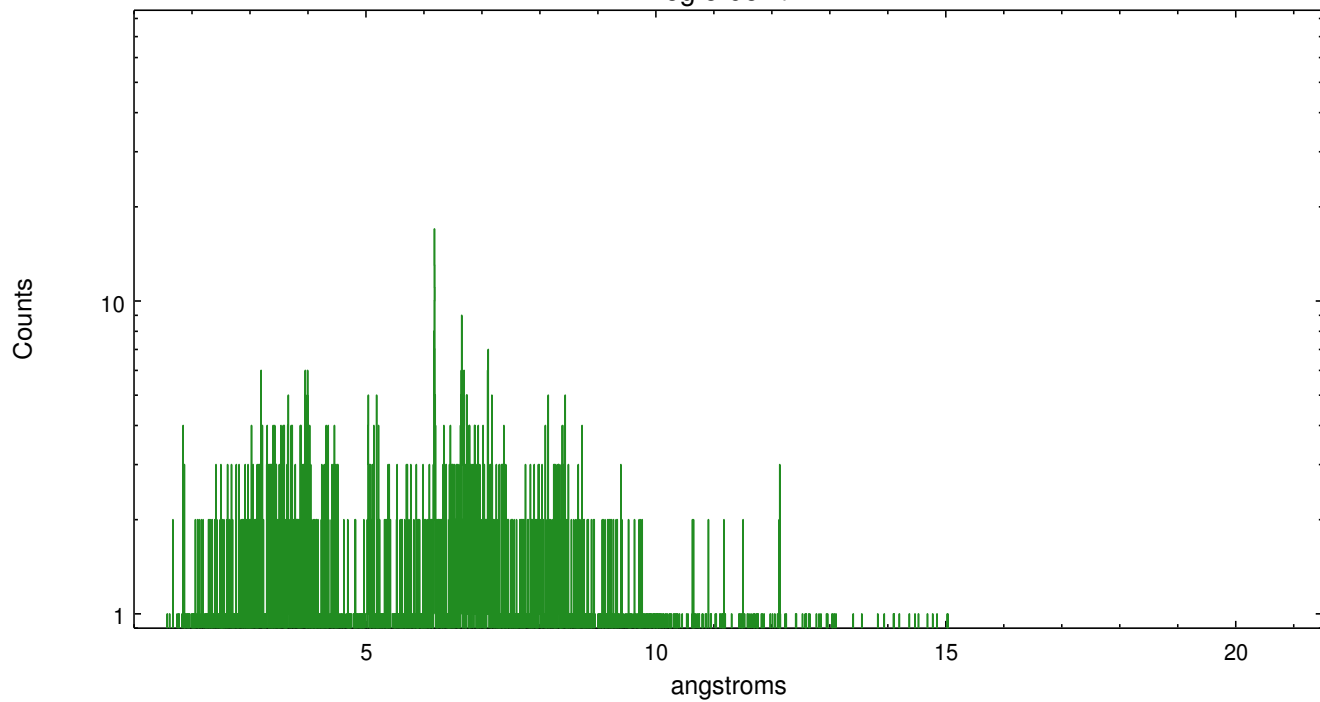
	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	246	475	4411	9712	4140	617	370



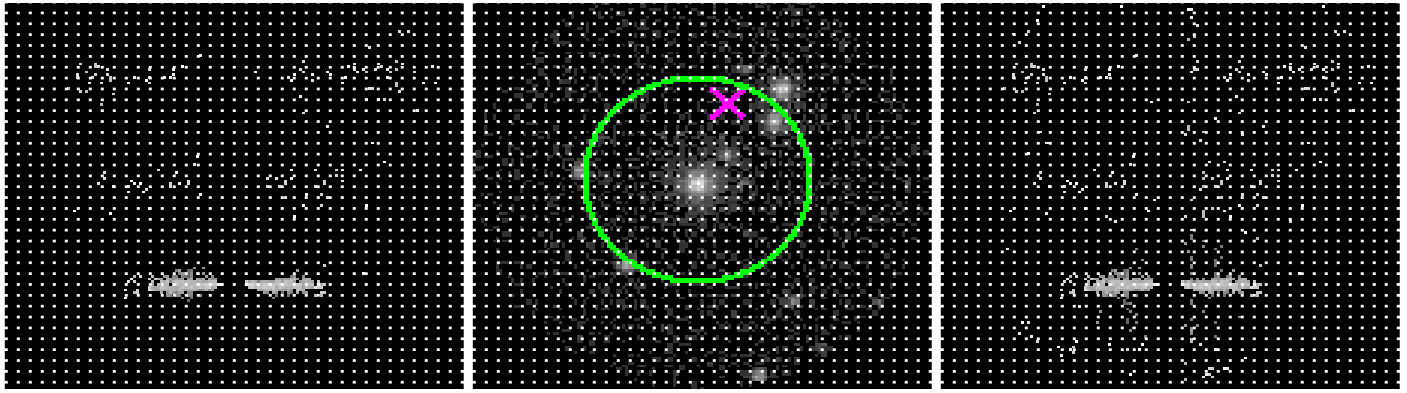
heg order -1



heg order +1



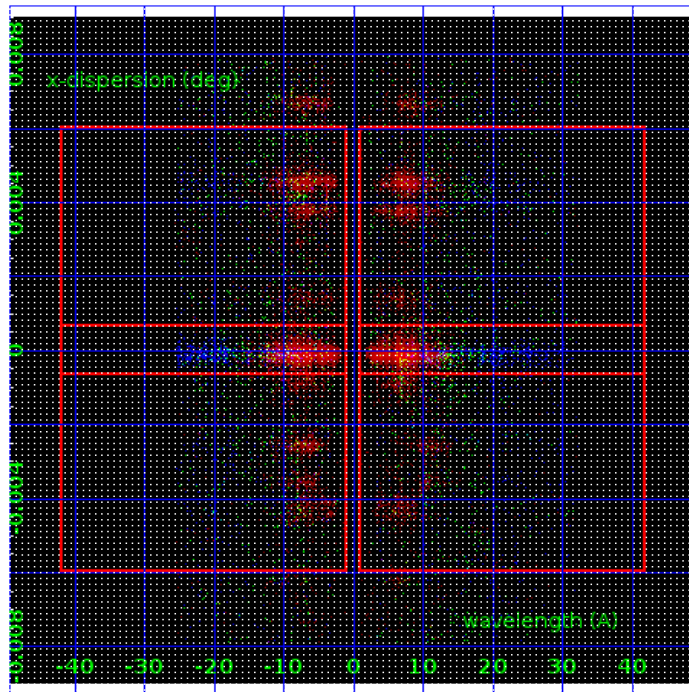
### 3.2 MEG Arm



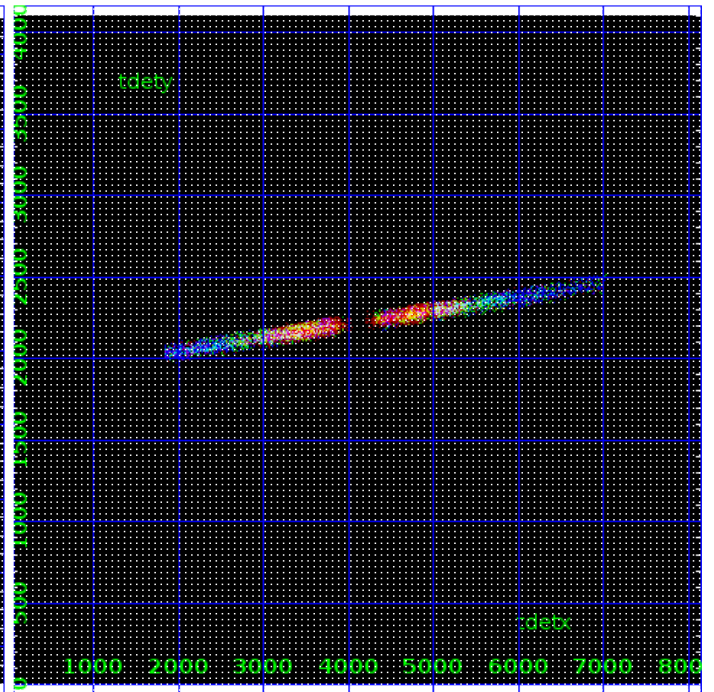
MEG Order Sort 123

MEG Zero Order

MEG Order Sort ALL

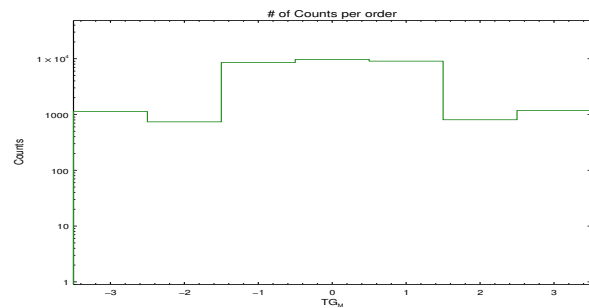


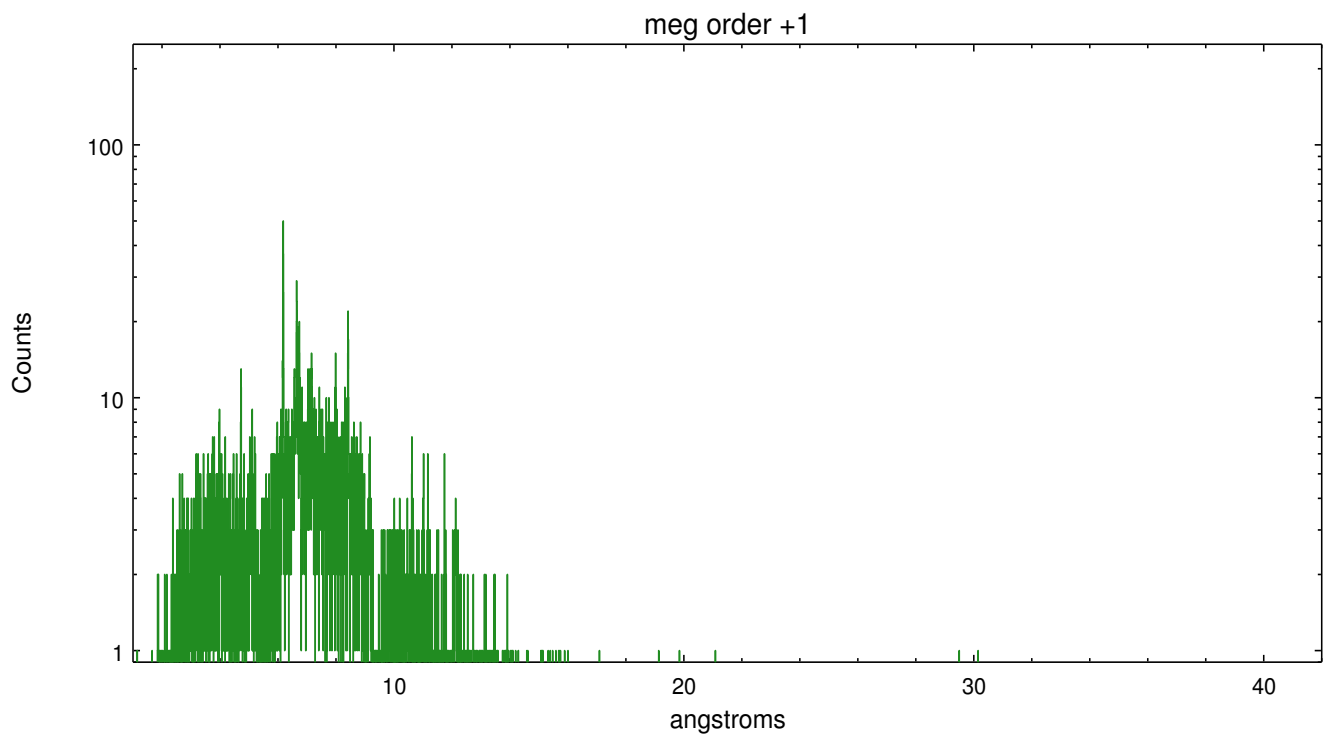
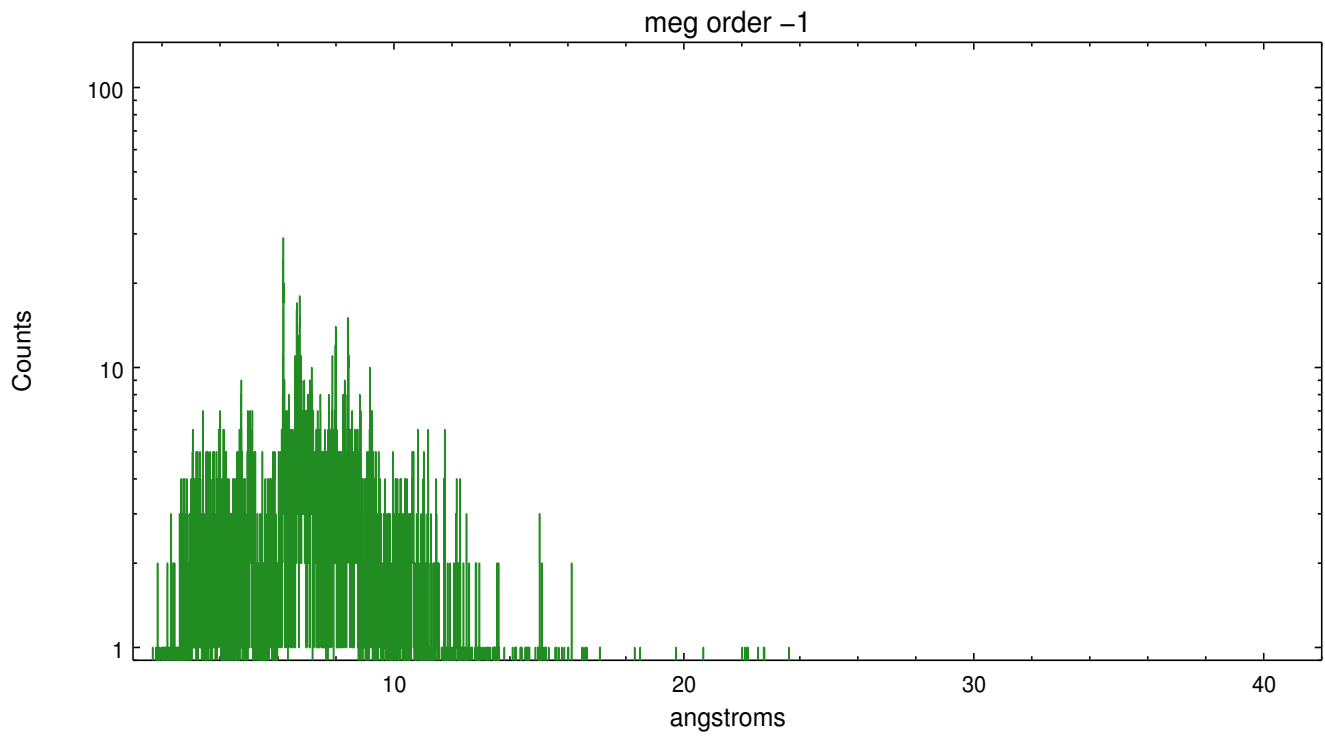
Spot Image MEG



Full Detector MEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	1130	739	8558	9712	9041	806	1181





## **A Summary**

### **A.1 Status**

V&V Scientist	Melania Nynka
V&V Date (YYYY-MM-DD)	2020.05.04
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	35.048291621566

### **A.2 Comments**