

# V&V Reference Report

## L2 ASCDS Version : 10.8.1

Observation 22893 - L2 Version 1  
Chandra X-Ray Center

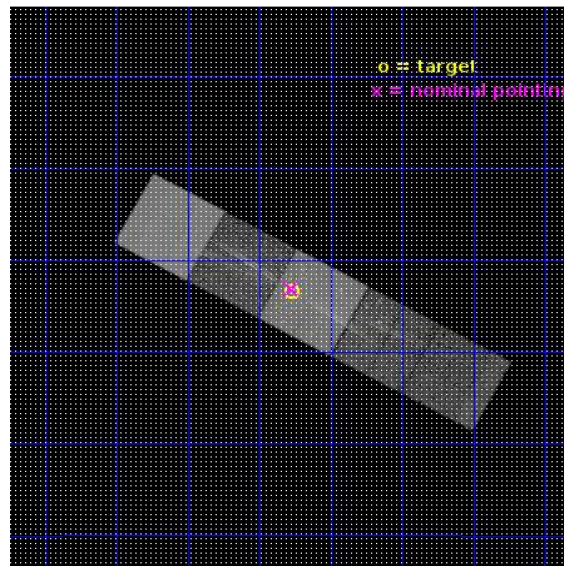
L2 Processing Date : Dec 3 2019

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# 1 Front

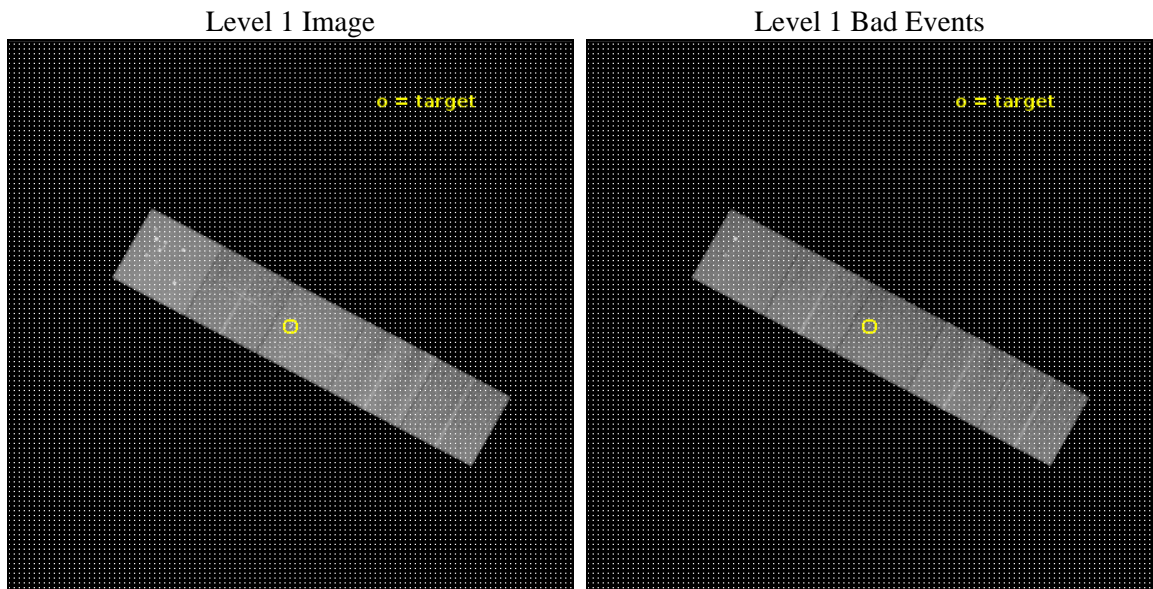
seq_num	201298	Sequence number
obs_id	22893	Observation id
title	THE TRUE NATURE OF X-RAYS FROM THE ORION TRAPEZIUM	Proposal title
observer	Norbert Schulz	Principal investigator
object	Orion Nebula Cluster	Source name
dtcycle	0	&#160
cycle	P	events from which exps? Prim/Second/Both
ra_targ	83.81875	Observer's specified target RA [deg]
dec_targ	-5.38975	Observer's specified target Dec [deg]
ra_nom	83.819030305243	Nominal RA [deg]
dec_nom	-5.3851729518816	Nominal Dec [deg]
roll_nom	28.652849030165	Nominal Roll [deg]
revision	1	Processing version of data
ontime	25054.200192809	Sum of GTIs [s]
livetime	24726.848622656	Livetime [s]
ontime5	25054.200192809	Sum of GTIs [s]
ontime6	25051.059122562	Sum of GTIs [s]
ontime7	25054.200192809	Sum of GTIs [s]
ontime8	25051.059182525	Sum of GTIs [s]
ontime9	25054.200192809	Sum of GTIs [s]
l2events	374445	Number of level 2 events



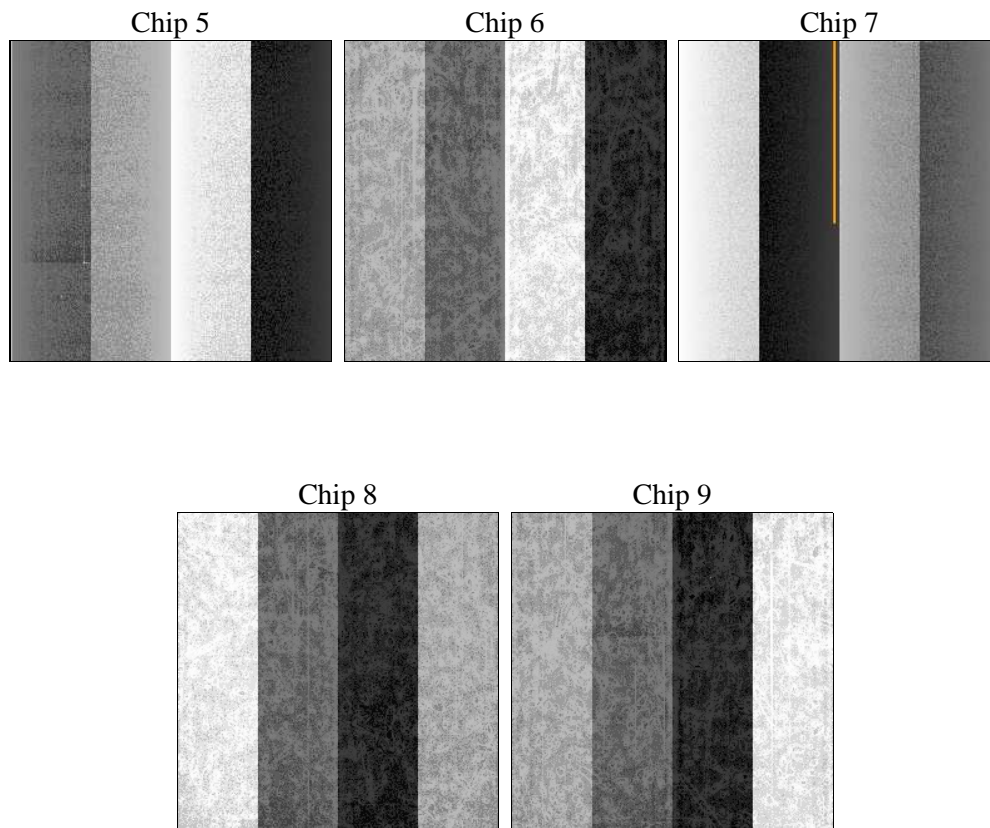
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

obi_num	0	Obi number	sched_exp_time	25000.000000	[s] Scheduled observation exposure time
ascdsver	10.8.1	Processing system revision	ontime	25054.200192809	Sum of GTIs [s]
caldsver	4.8.4.2	&#160	ontime5	25054.200192809	Sum of GTIs [s]
date	2019-12-03T04:49:38	Date and time of file creation	ontime6	25051.059122562	Sum of GTIs [s]
revision	1	Processing version of data	ontime7	25054.200192809	Sum of GTIs [s]
			ontime8	25051.059182525	Sum of GTIs [s]
			ontime9	25054.200192809	Sum of GTIs [s]
			l1events	1310537	Number of level 1 events
			tgmethod	TGDETECT	Method used to create src1a file
			zo_pos	(4099.20, 4062.69)	src1a sky pixel position

### 2.1.4 Events

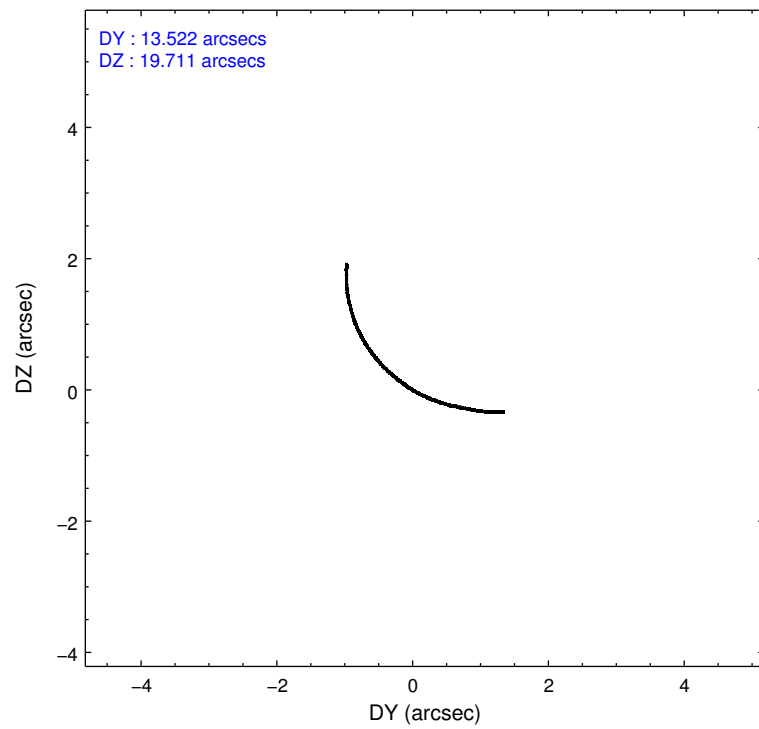
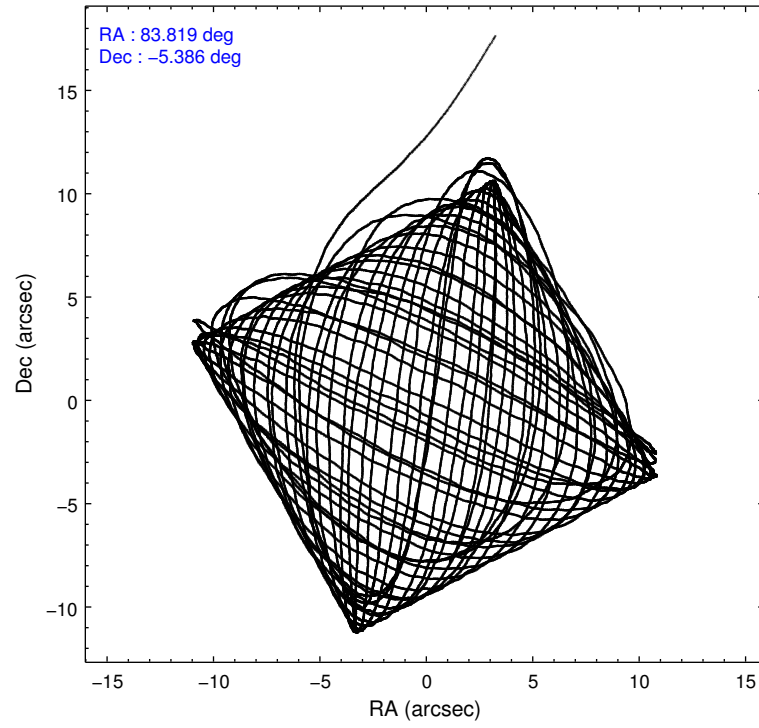
	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
level 1 events	347805	215817	288926	261044	196945
rejected events	171502	176896	145129	184576	171261
rejected %	49%	81%	50%	70%	86%

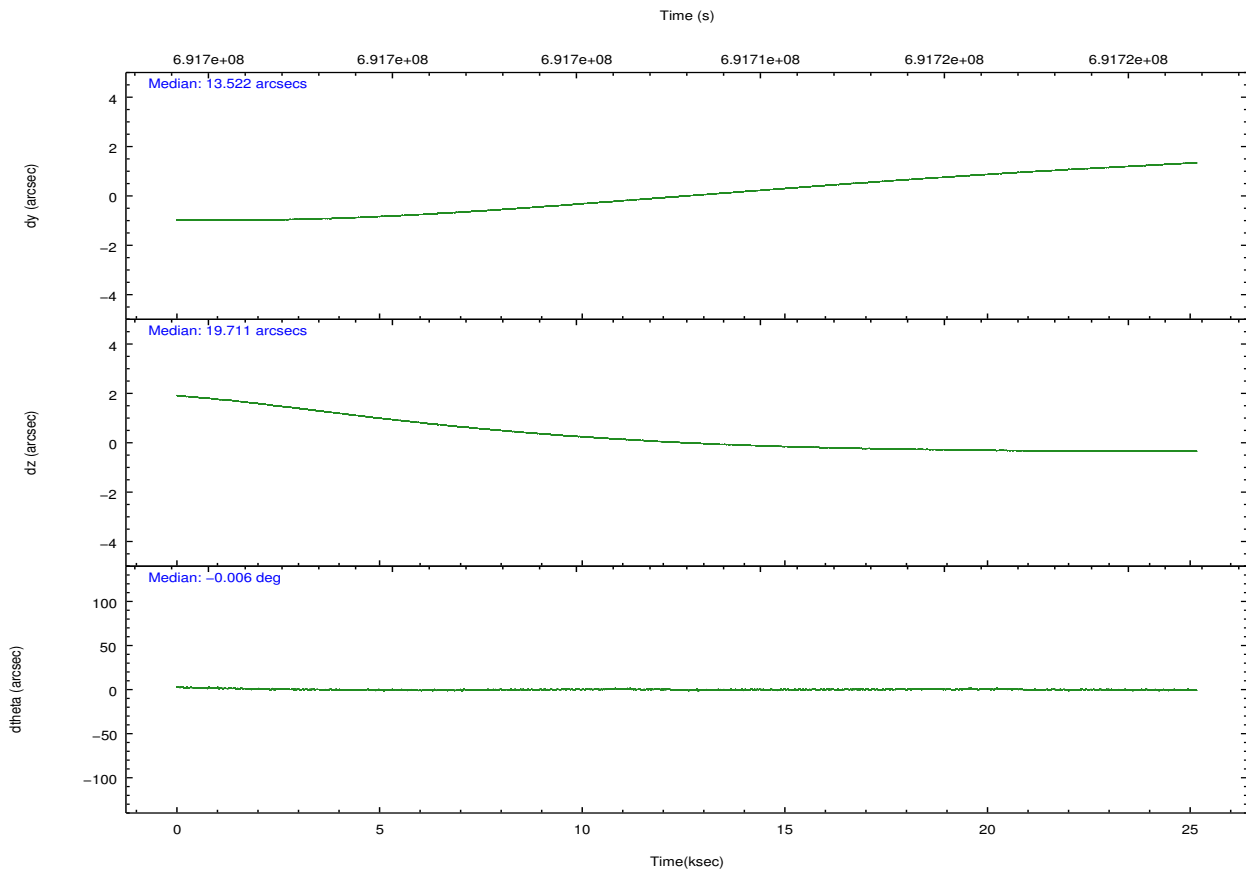
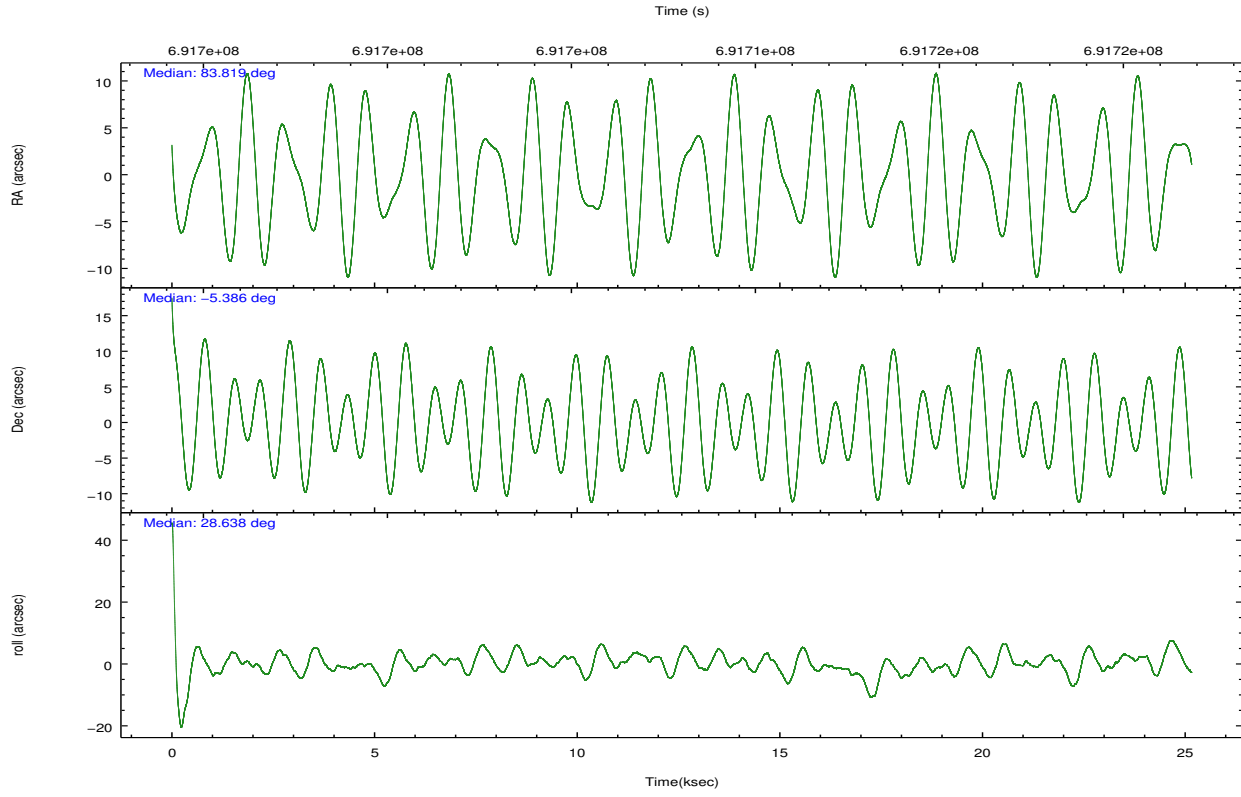
	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
grade 0 events	30762	19979	16350	25709	9903
	8%	9%	5%	9%	5%
grade 1 events	742	172	441	228	114
	0%	0%	0%	0%	0%
grade 2 events	52994	7483	32464	17912	5595
	15%	3%	11%	6%	2%
grade 3 events	5154	2781	12301	7247	2457
	1%	1%	4%	2%	1%
grade 4 events	4524	2711	11975	6916	2436
	1%	1%	4%	2%	1%
grade 5 events	21497	9178	25277	13958	10284
	6%	4%	8%	5%	5%
grade 6 events	82894	5971	70728	18689	5295
	23%	2%	24%	7%	2%
grade 7 events	149238	167542	119390	170385	160861
	42%	77%	41%	65%	81%

## 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	83.805007	83.81903030524303	CCD I2 on	N	N
[deg] Pointing Dec	-5.408819	-5.385172951881556	CCD I3 on	N	N
[deg] Pointing Roll	28.494868	28.65284903016494	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)	691695590.184000	691694372.15274	CCD S5 on	O2	Y
Observation start date	2019-12-02T17:38:41	2019-12-02T17:19:32	Number of optional ACIS chips dropped	1	1
[s] Observation end time (MET)	691720590.184000	691721825.75439	On-chip summing requested	N	N
Observation end date	2019-12-03T00:35:21	2019-12-03T00:57:05	Subarray requested	NONE	NONE
Read mode	TIMED	TIMED	Alternating exposures requested	N	N
			[s] Primary exposure time	0.000000	3.1

## 2.3 Aspect





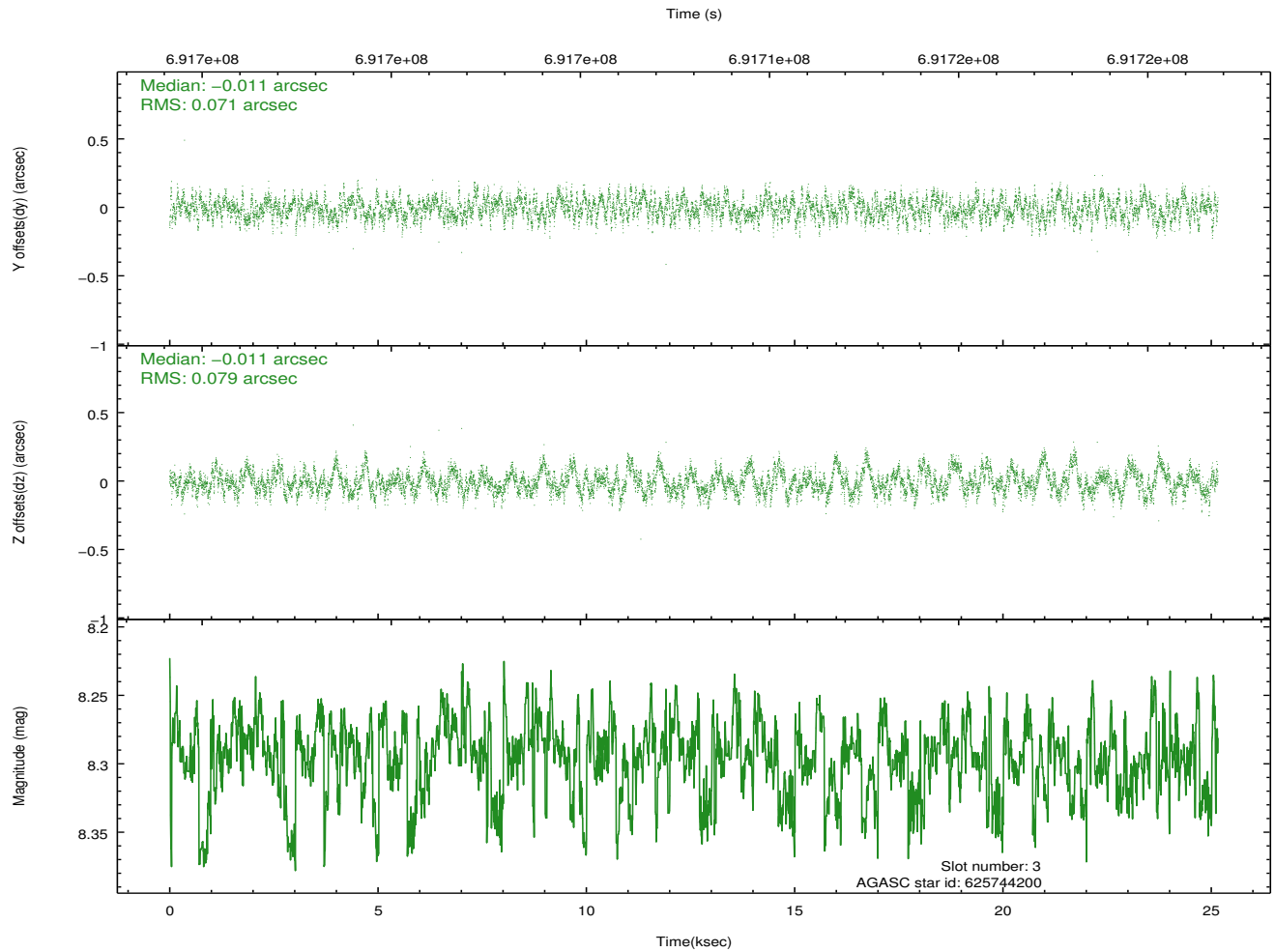
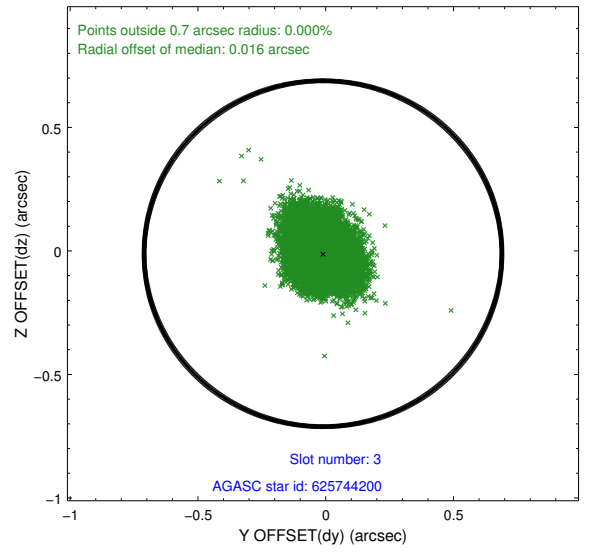
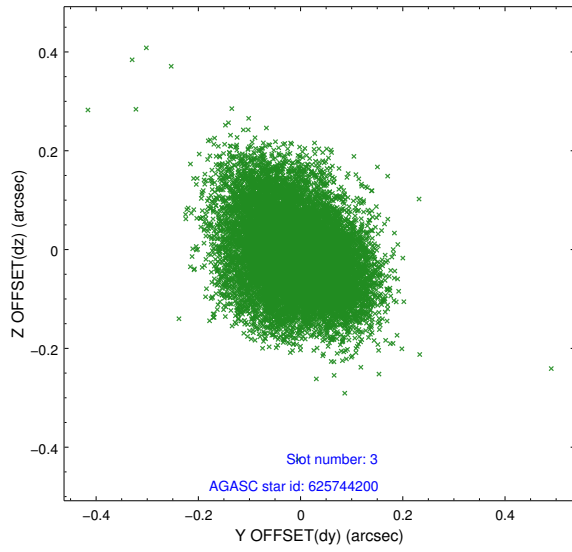
### Slot Statistics

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-3	7.28	6137	1.000	-0.208	-0.213	0.017	0.029	0.000000	0.000000	46.56	-1870
1	FID		ACIS-S-4	7.16	6137	1.000	0.707	0.210	0.044	0.095	0.000000	0.000000	2147.55	167
2	FID		ACIS-S-5	7.11	6138	1.000	-0.526	0.013	0.055	0.112	0.000000	0.000000	-1819.70	160
3	GUIDE	used	625744200	8.29	12264	1.000	-0.011	-0.011	0.114	0.180	83.695760	-5.570729	-621.32	-324
4	GUIDE	used	626270568	8.89	12258	1.000	-0.209	-0.099	0.137	0.221	84.121775	-5.770142	376.99	-1683
5	GUIDE	used	626272976	7.94	12271	1.000	0.103	0.094	0.107	0.164	83.795875	-5.926912	-917.31	-1622
6	GUIDE	used	626272880	7.65	12271	1.000	0.111	0.210	0.122	0.193	83.815609	-6.032748	-1037.00	-1991
7	GUIDE	used	625741512	8.98	12252	1.000	0.010	-0.193	0.185	0.281	83.281151	-5.340585	-1533.10	1111

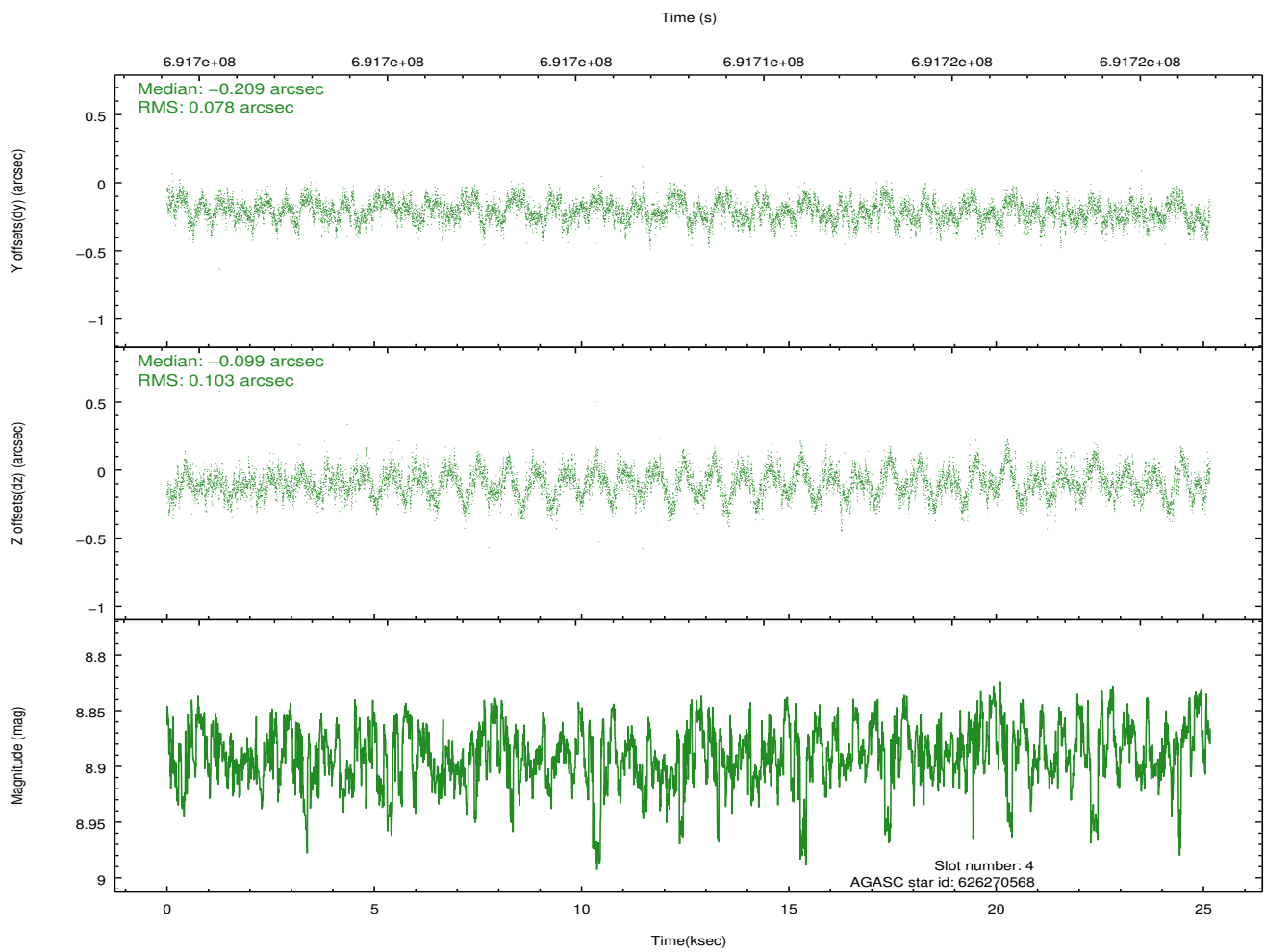
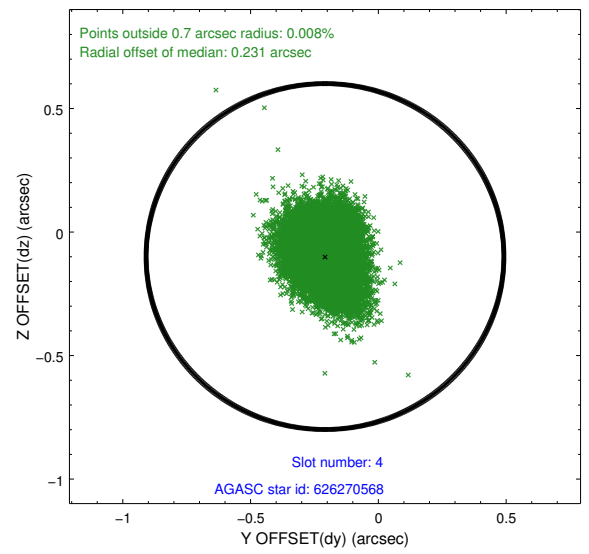
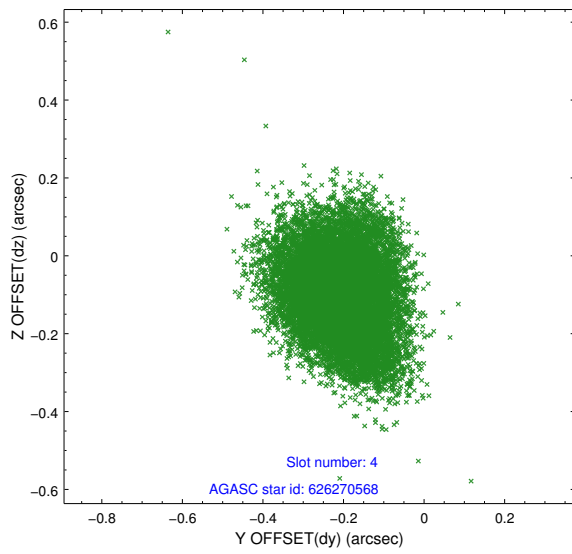
∞

## 2.4 Star Slots

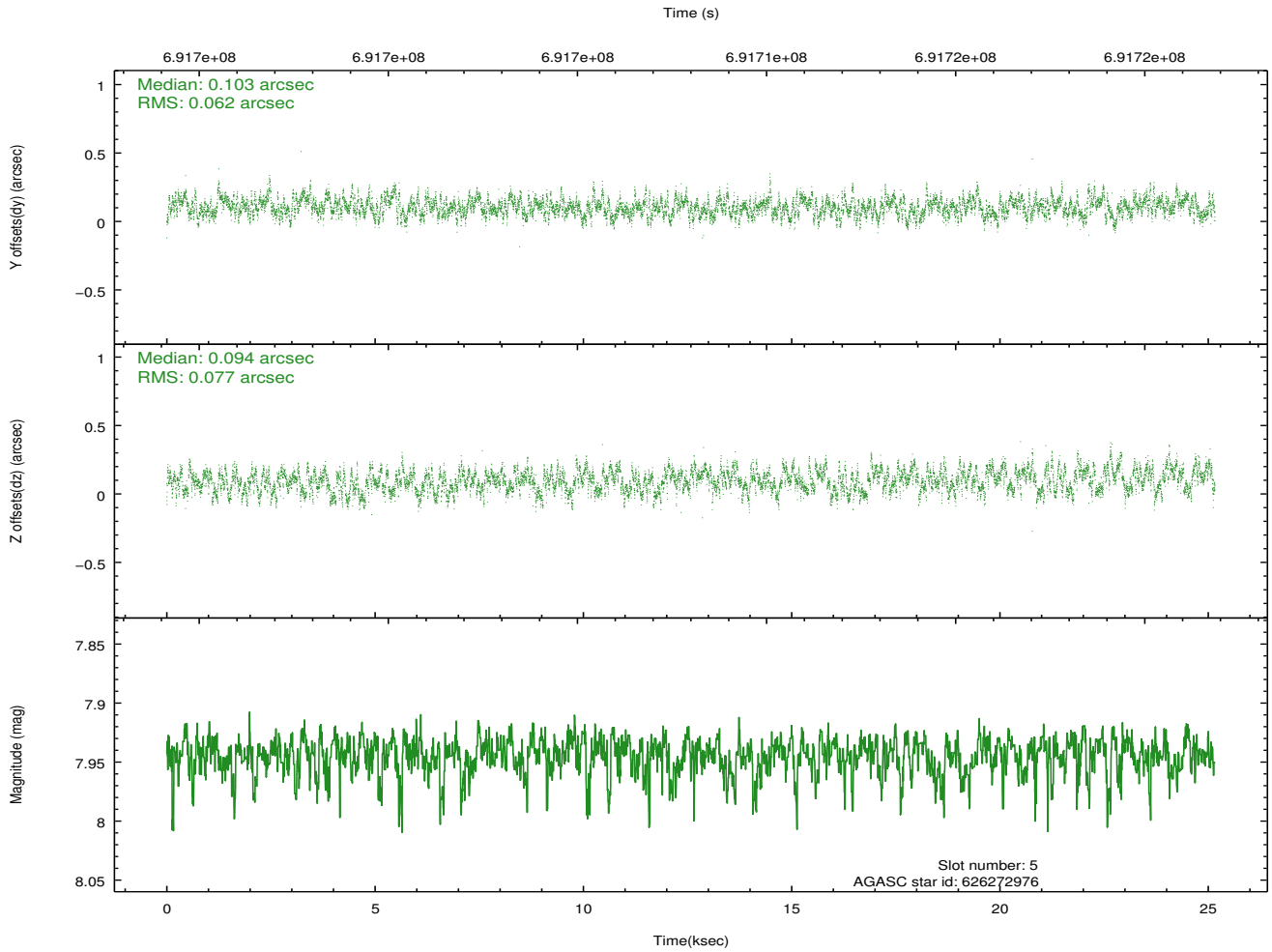
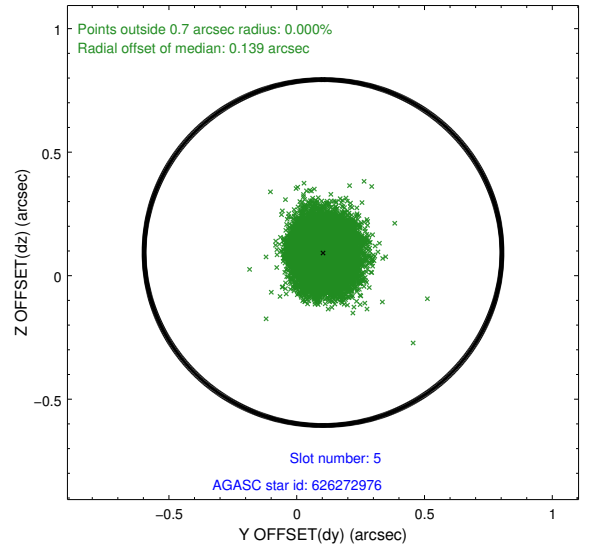
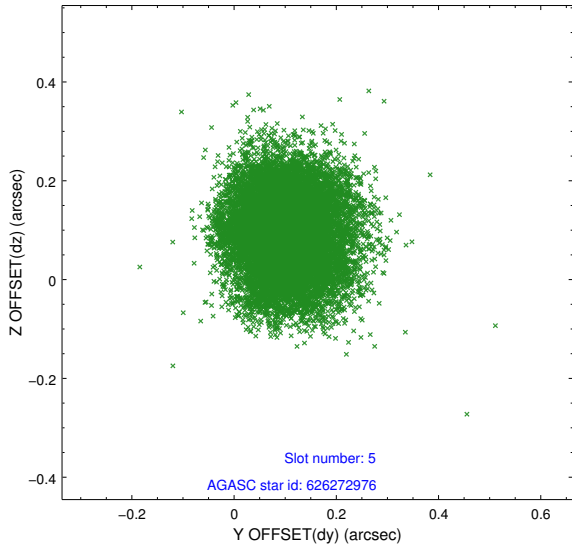
### 2.4.1 Slot 3



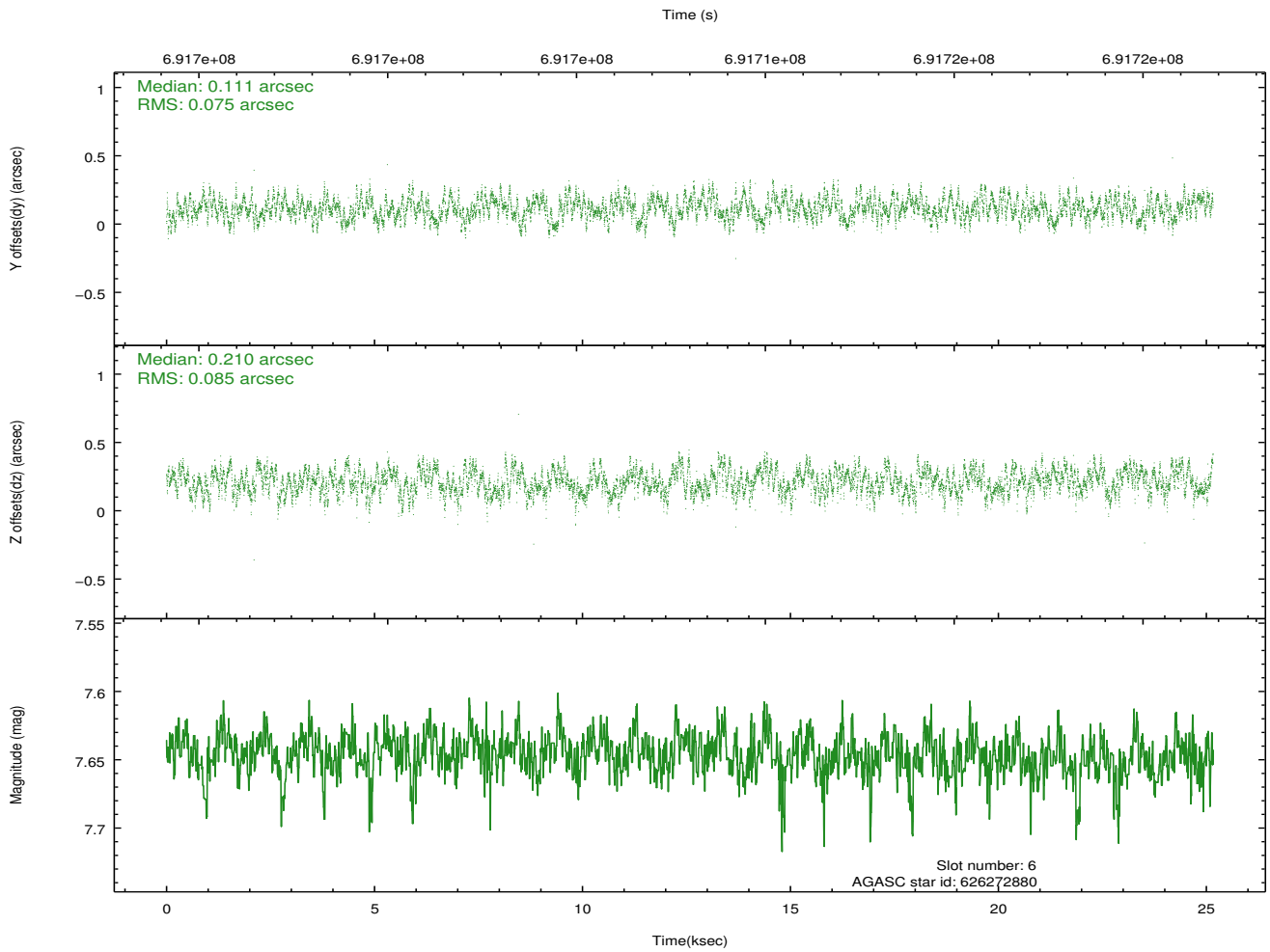
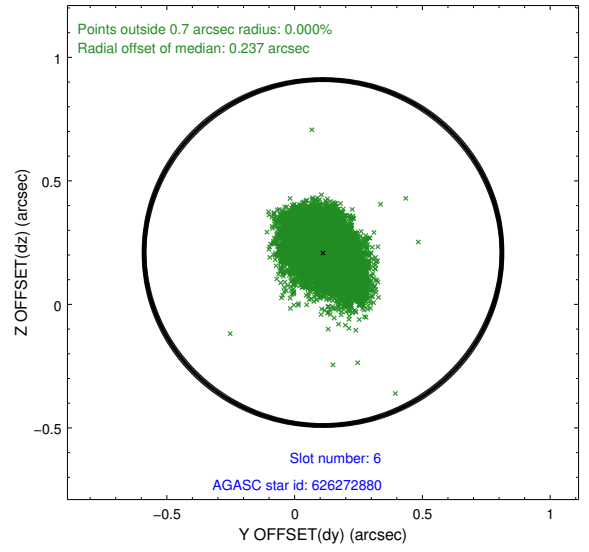
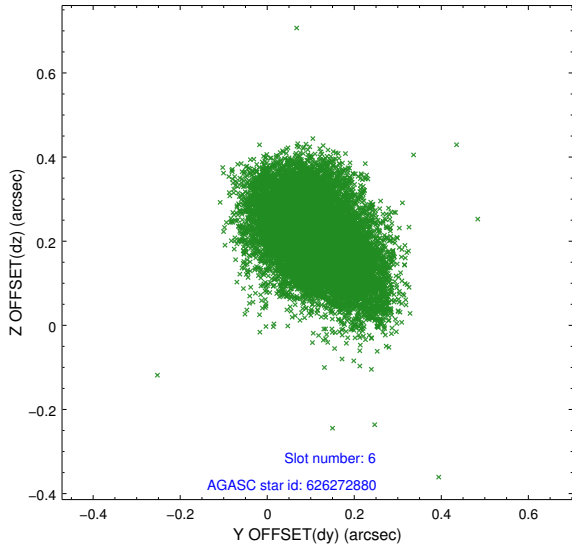
## 2.4.2 Slot 4



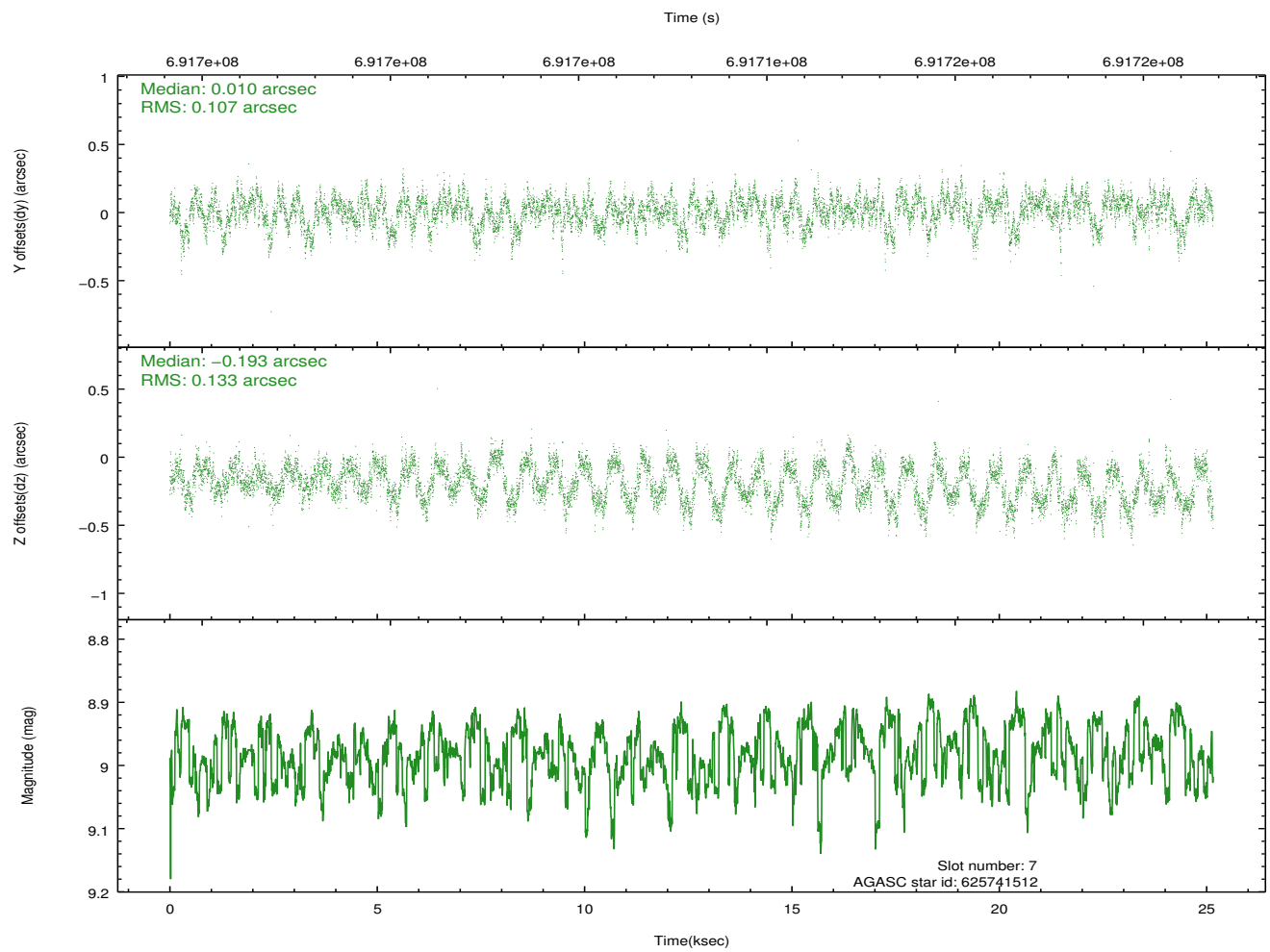
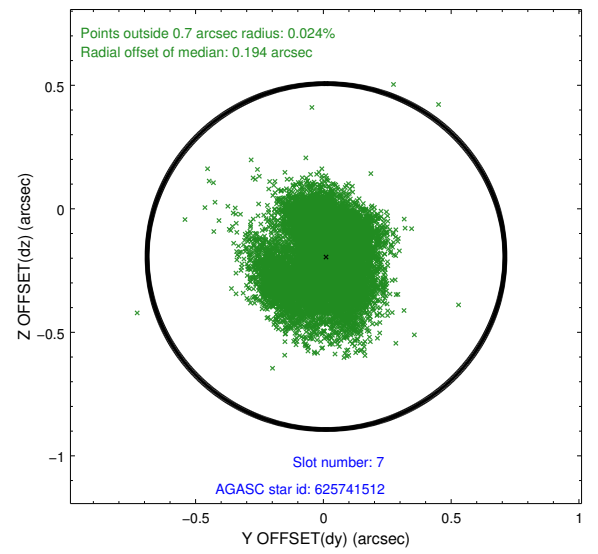
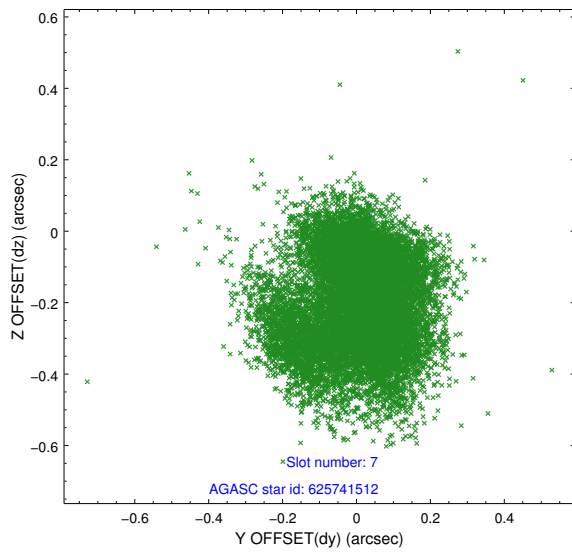
### 2.4.3 Slot 5



## 2.4.4 Slot 6

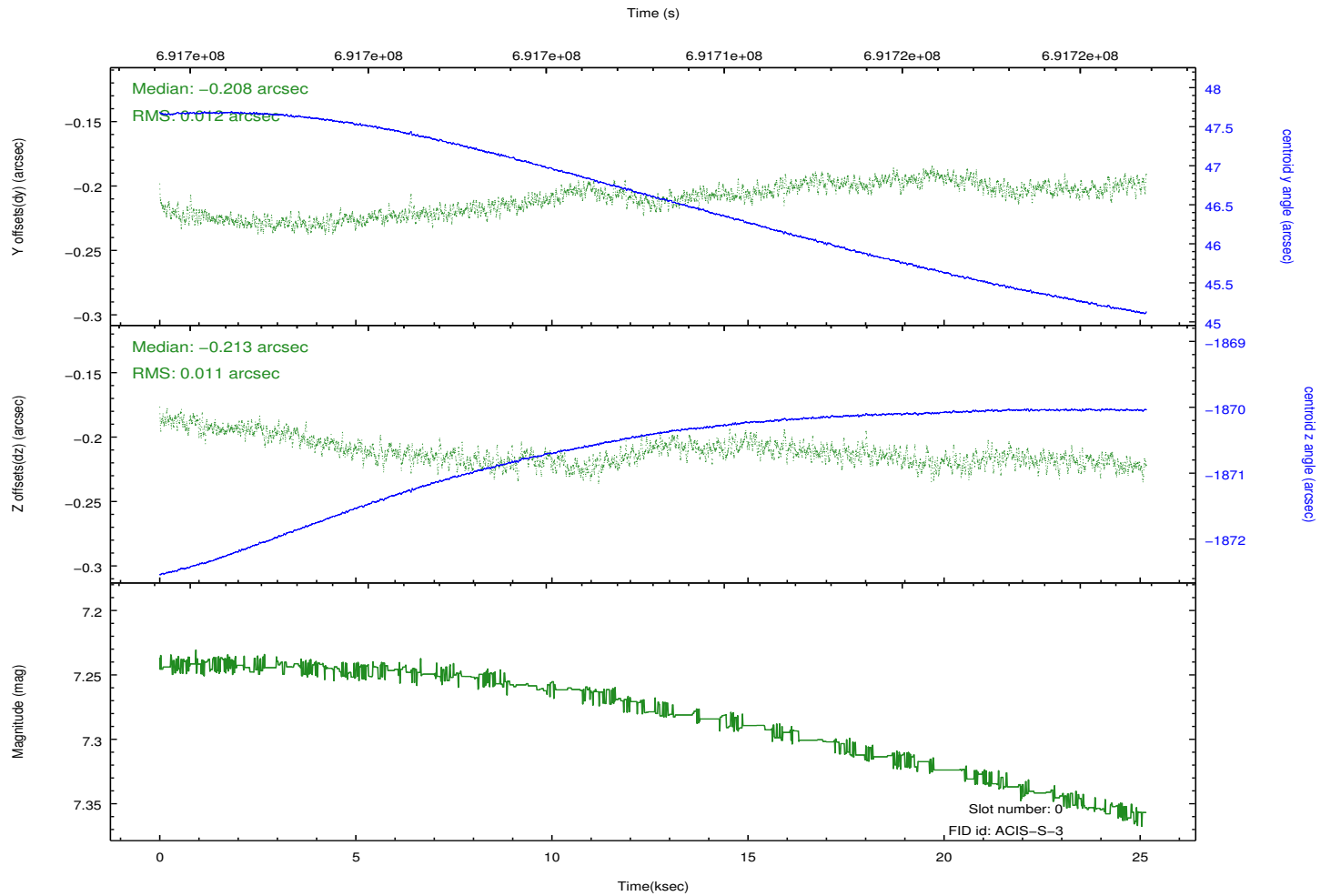
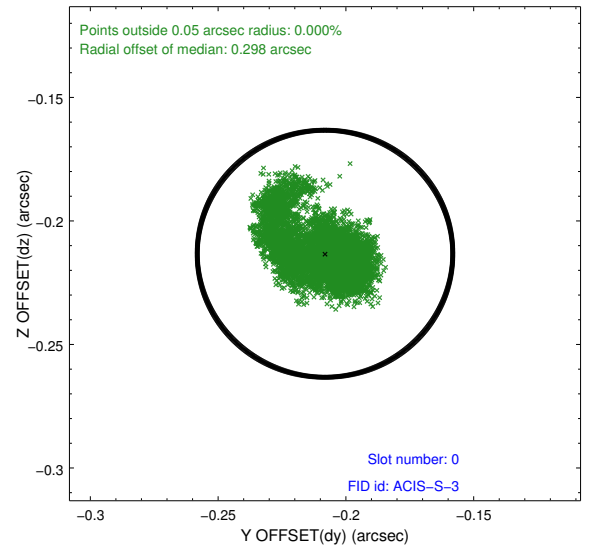
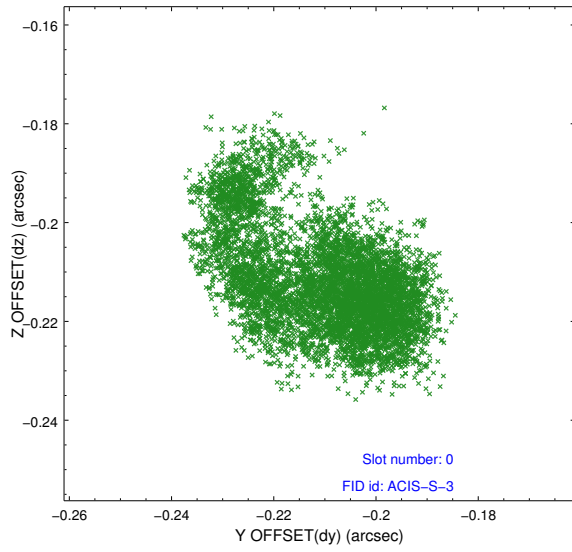


## 2.4.5 Slot 7

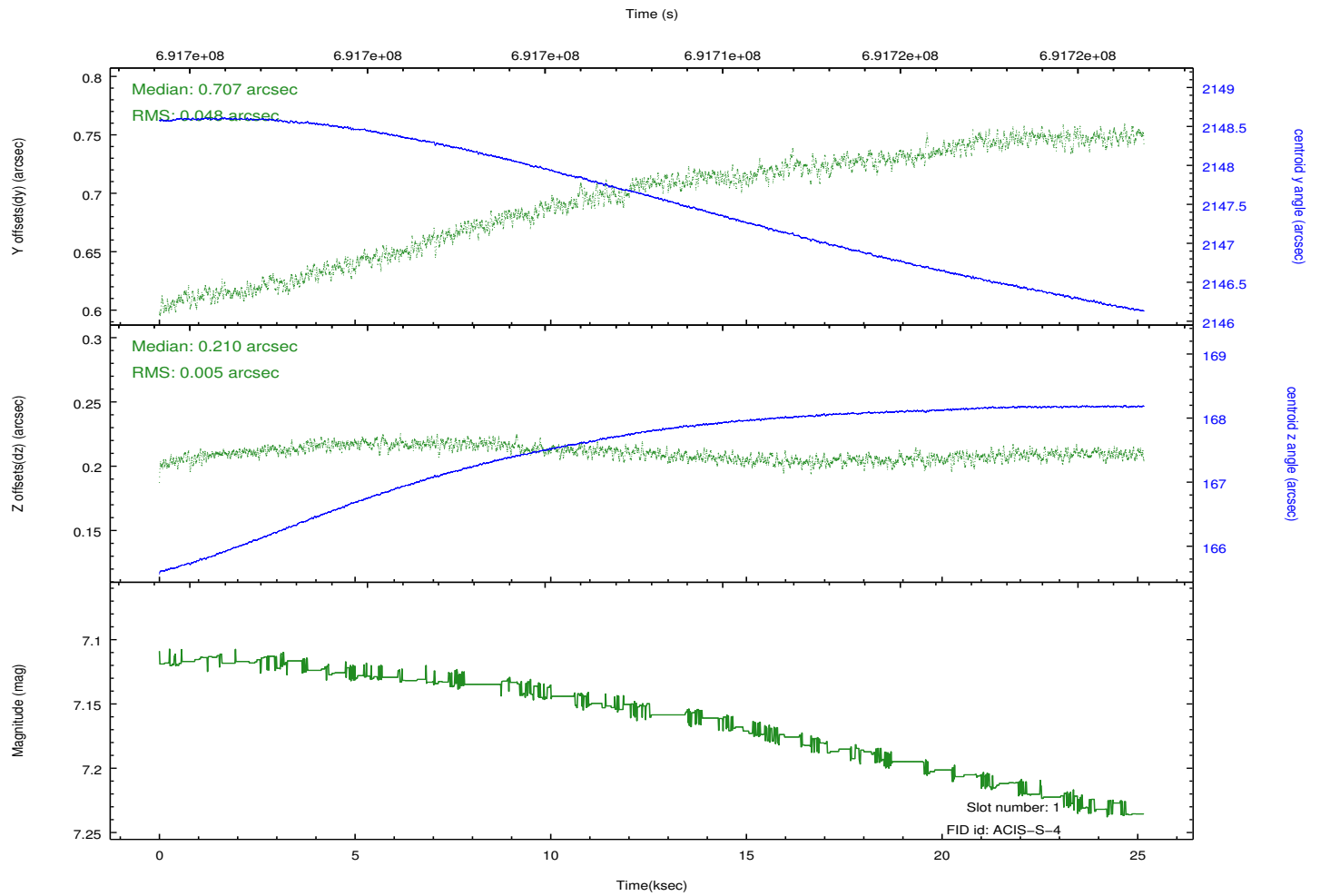
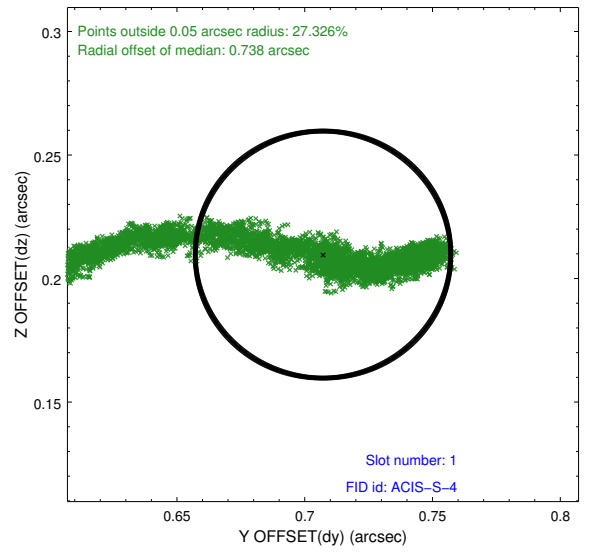
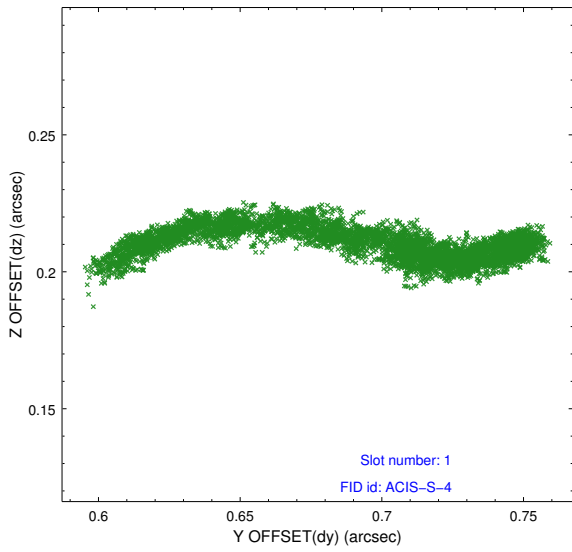


## 2.5 FID Slots

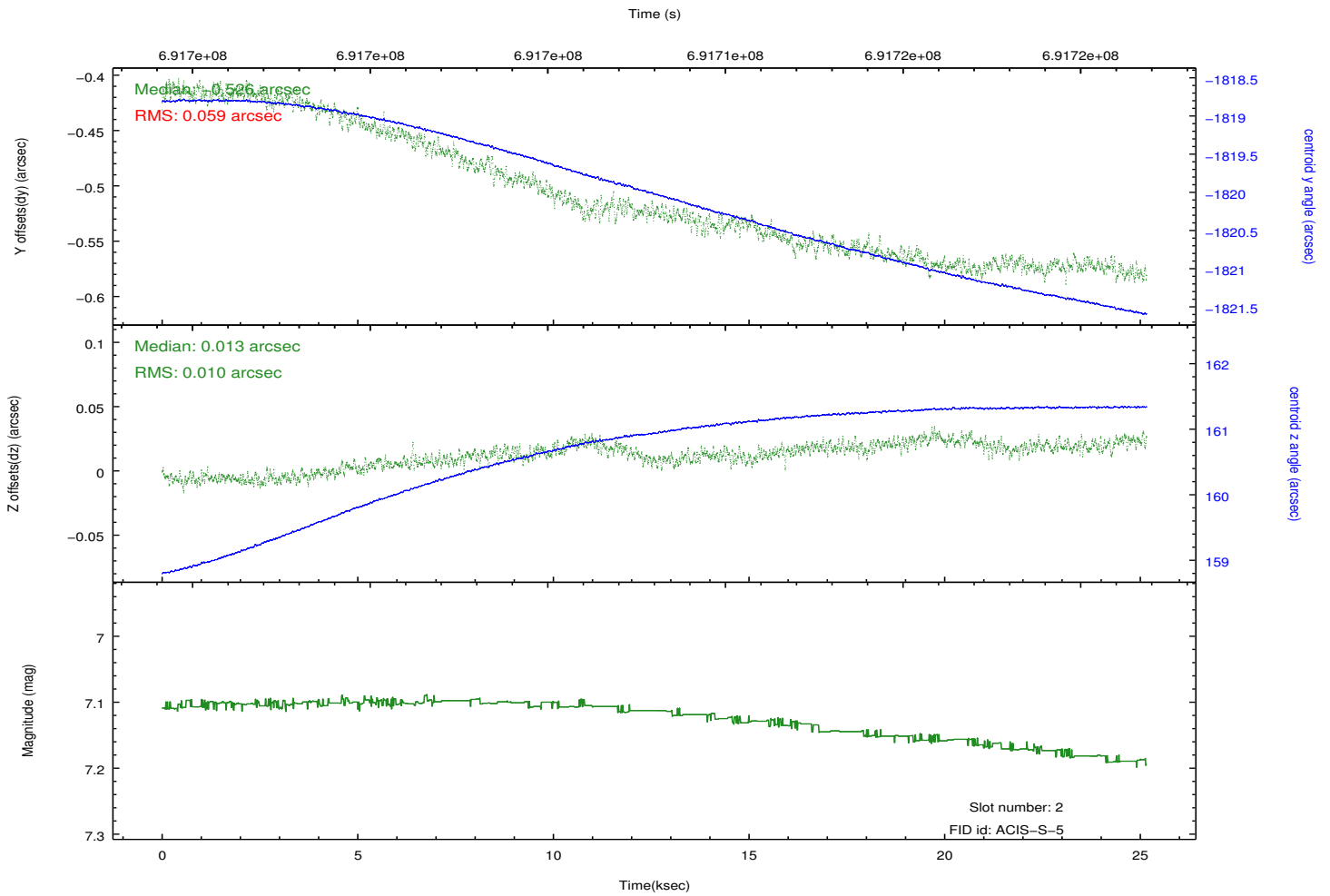
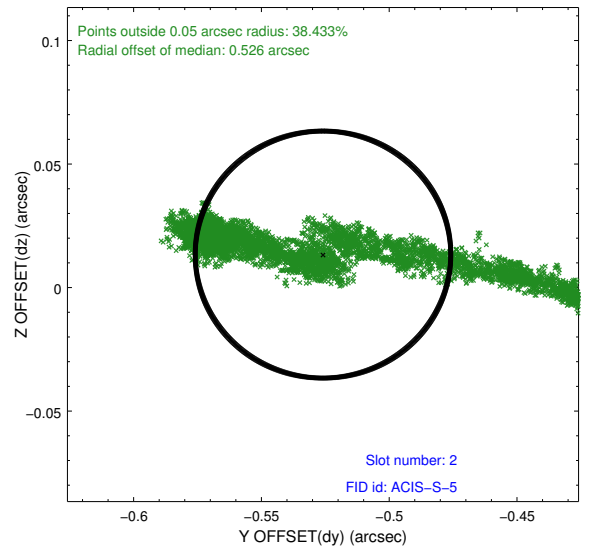
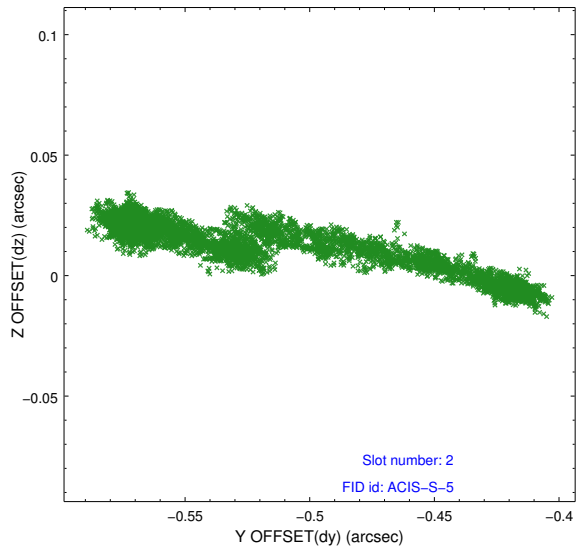
### 2.5.1 Slot 0



## 2.5.2 Slot 1

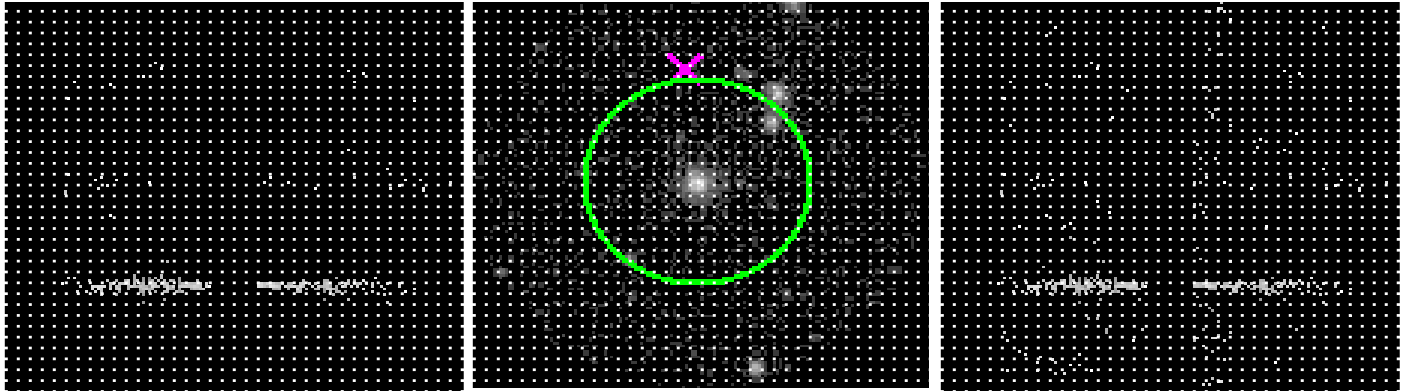


### 2.5.3 Slot 2



# 3 Gratings

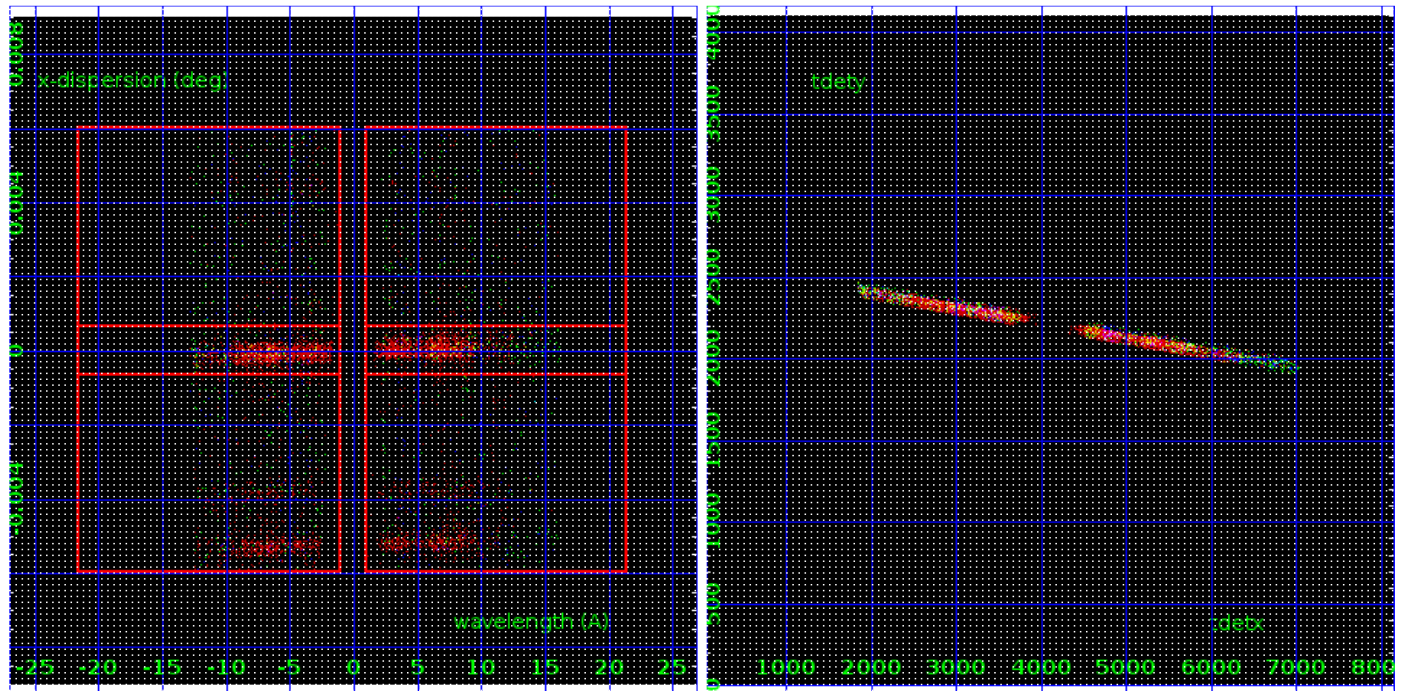
## 3.1 HEG Arm



HEG Order Sort 123

HEG Zero Order

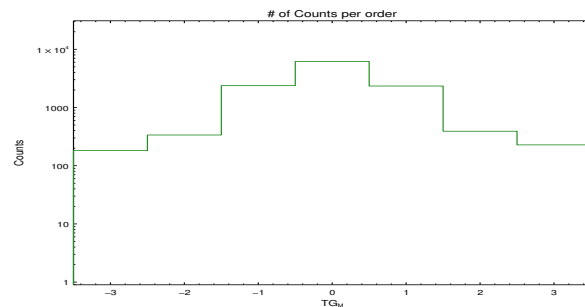
HEG Order Sort ALL



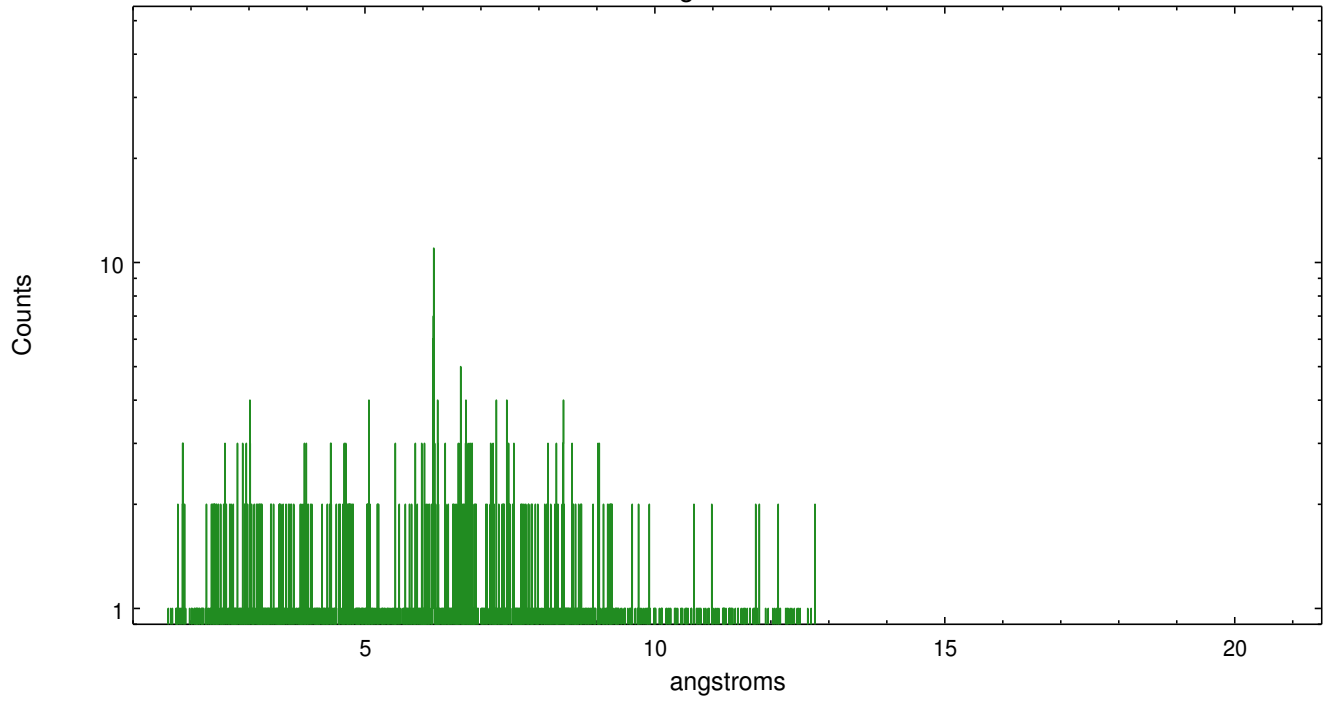
Spot Image HEG

Full Detector HEG

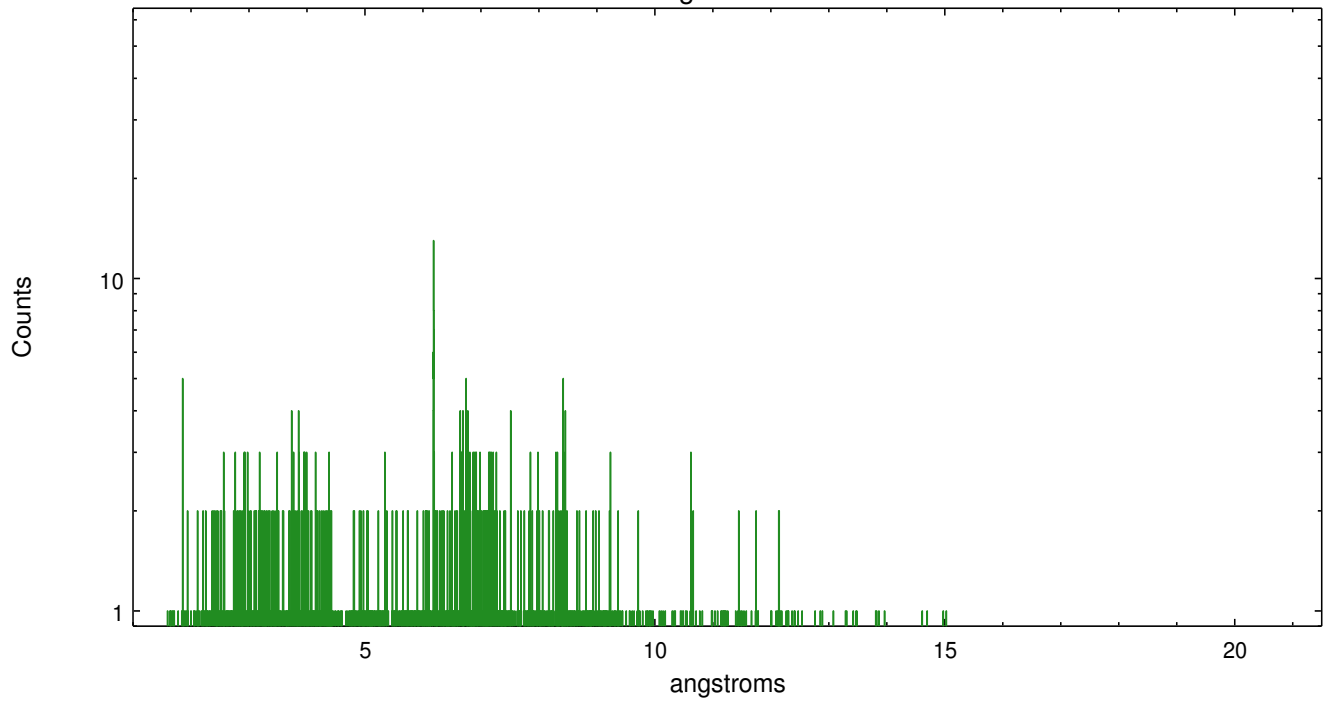
	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	182	337	2376	6179	2340	391	228



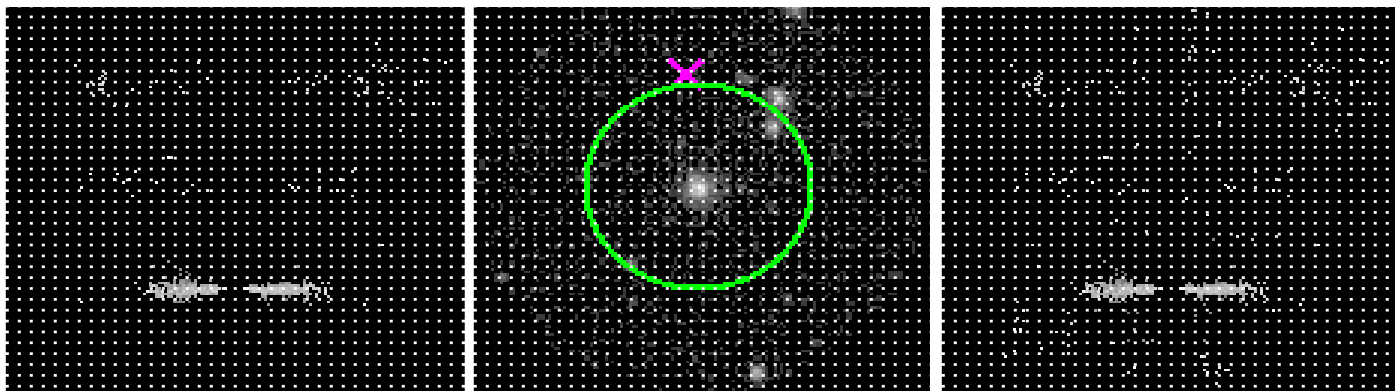
heg order -1



heg order +1



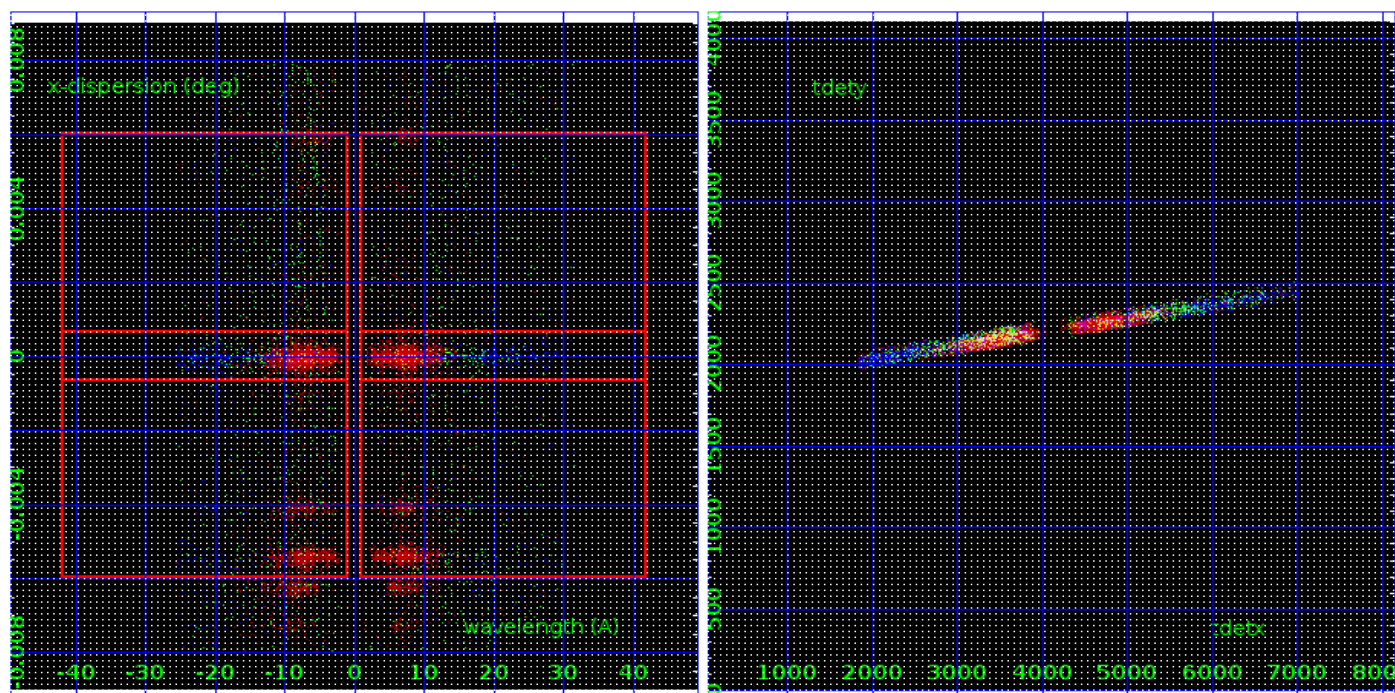
### 3.2 MEG Arm



MEG Order Sort 123

MEG Zero Order

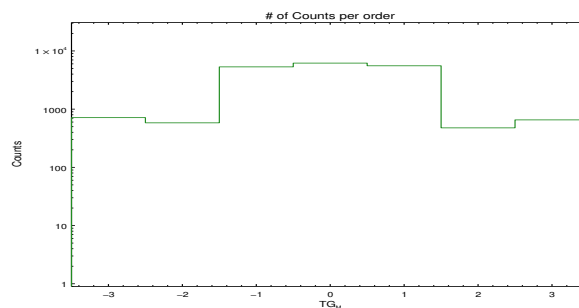
MEG Order Sort ALL



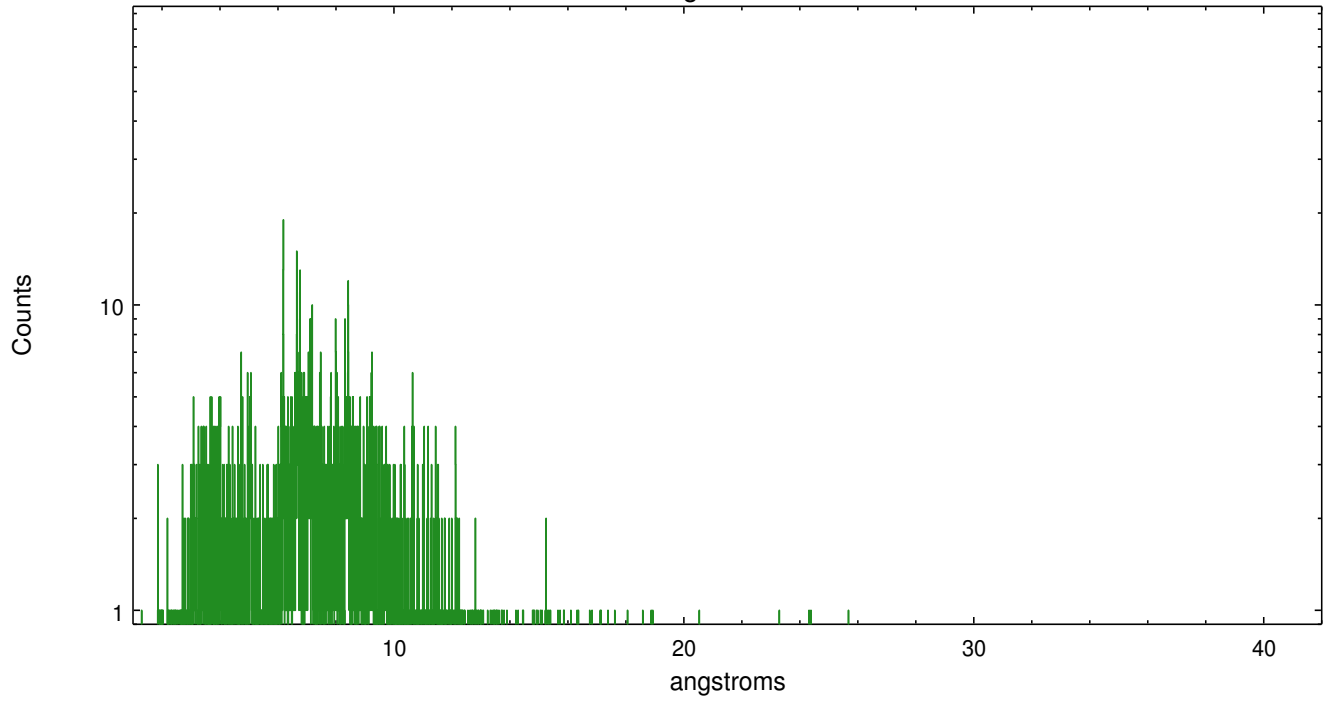
Spot Image MEG

Full Detector MEG

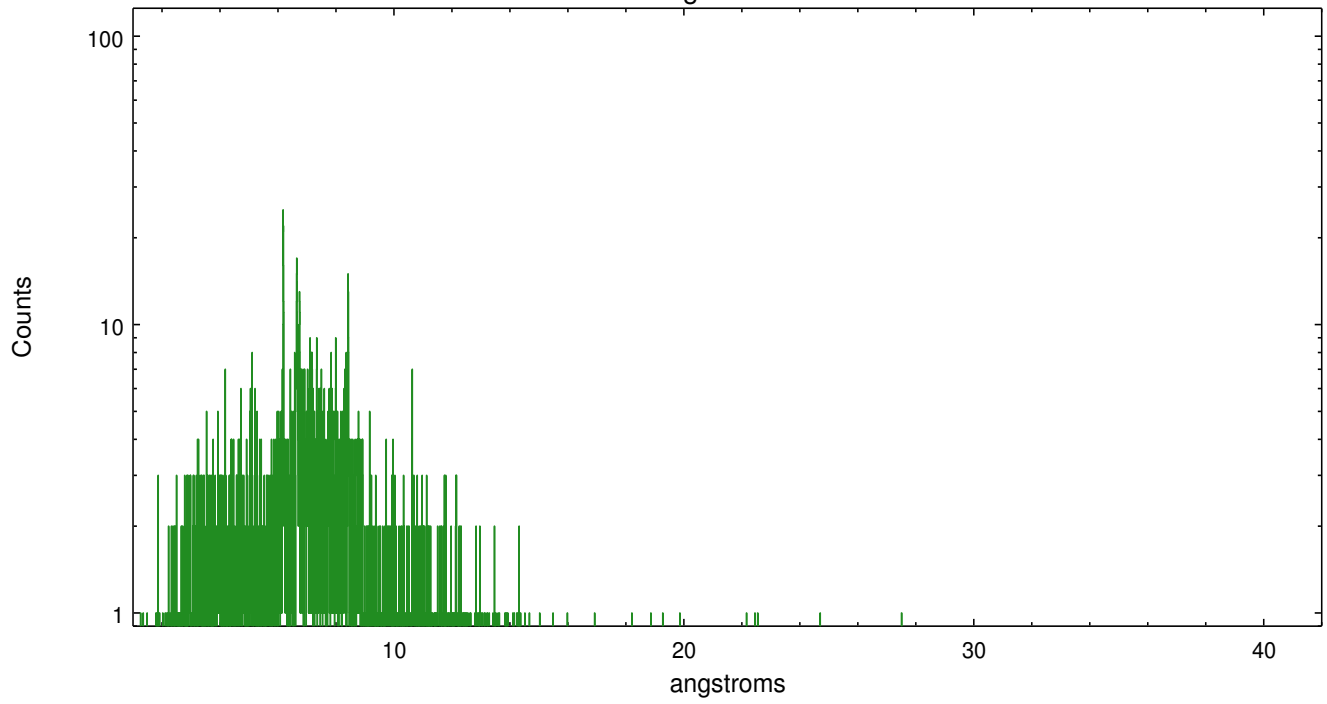
	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	715	582	5326	6179	5559	477	654



meg order -1



meg order +1



## **A Summary**

### **A.1 Status**

V&V Scientist	Melania Nynka
V&V Date (YYYY-MM-DD)	2019.12.09
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	25.054200192809

### **A.2 Comments**