

# V&V Reference Report

## L2 ASCDS Version : 8.4.5

Observation 14320 - L2 Version 2  
Chandra X-Ray Center

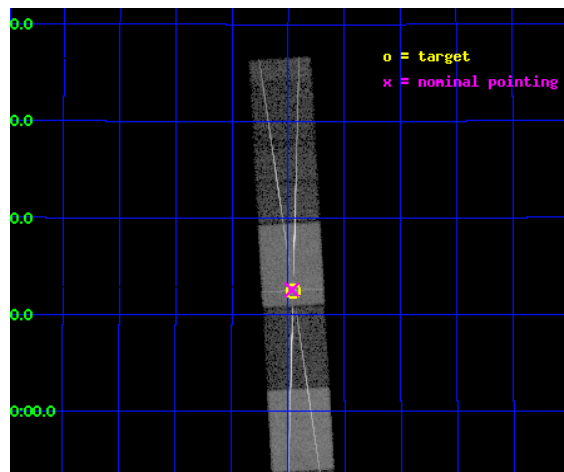
L2 Processing Date : Jul 6 2012

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# 1 Front

seq_num	790239	Sequence number
obs_id	14320	Observation id
title	AO-13 Calibration Observations of Mkn421 to Calibrate the New HRC-S HV Setting	Proposal title
observer	Dr. CXC Calibration	Principal investigator
object	MKN421	Source name
dtcycle	0	&#160
cycle	P	events from which exps? Prim/Second/Both
ra_targ	166.113333	Observer's specified target RA [deg]
dec_targ	38.208806	Observer's specified target Dec [deg]
ra_nom	166.11668057239	Nominal RA [deg]
dec_nom	38.209775201857	Nominal Dec [deg]
roll_nom	266.71420882237	Nominal Roll [deg]
revision	2	Processing version of data
ontime	15032.5	Sum of GTIs [s]
livetime	14789.71208639	Livetime [s]
ontime4	15032.5	Sum of GTIs [s]
ontime5	15032.5	Sum of GTIs [s]
ontime6	15032.5	Sum of GTIs [s]
ontime7	15032.5	Sum of GTIs [s]
ontime8	15032.5	Sum of GTIs [s]
ontime9	15032.5	Sum of GTIs [s]
l2events	211509	Number of level 2 events

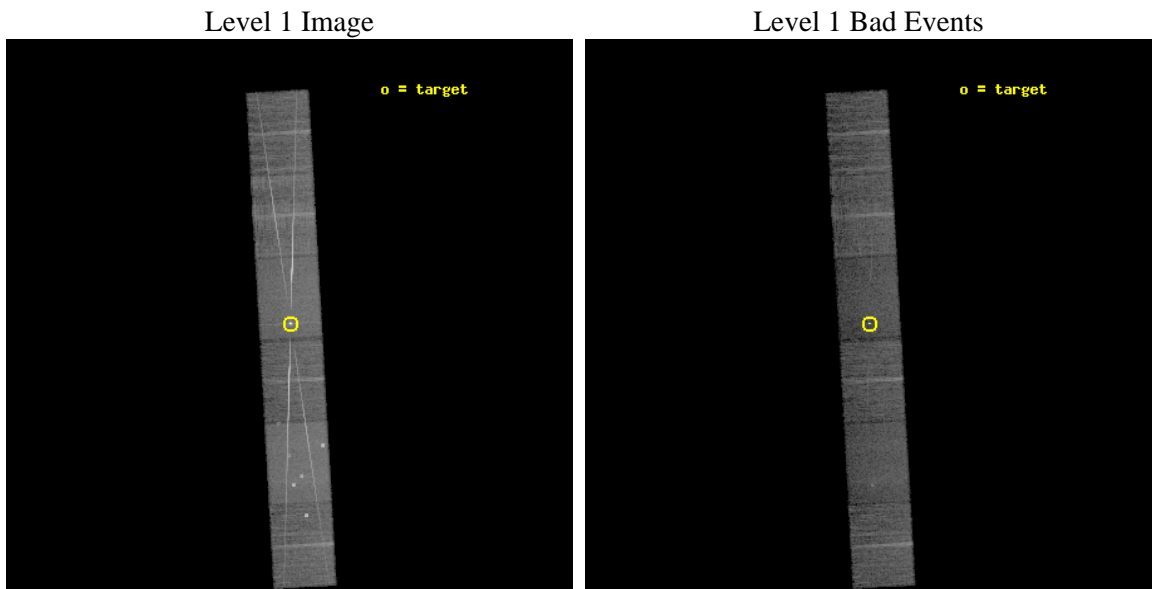




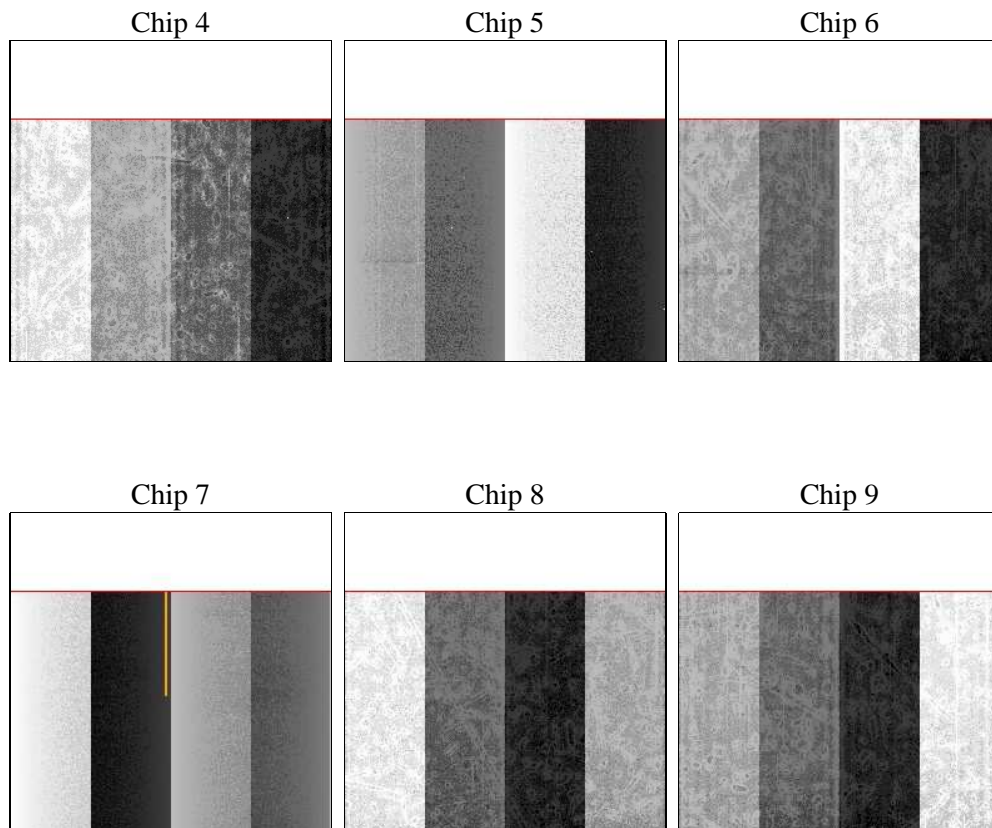
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

obi_num	0	Obi number	sched_exp_time	15000.000000	[s] Scheduled observation exposure time
ascdsver	8.4.5	Processing system revision	ontime	15032.5	Sum of GTIs [s]
caldsver	4.5.0	&#160	ontime4	15032.5	Sum of GTIs [s]
date	2012-07-04T02:57:49	Date and time of file creation	ontime5	15032.5	Sum of GTIs [s]
revision	1	Processing version of data	ontime6	15032.5	Sum of GTIs [s]
			ontime7	15032.5	Sum of GTIs [s]
			ontime8	15032.5	Sum of GTIs [s]
			ontime9	15032.5	Sum of GTIs [s]
			l1events	603162	Number of level 1 events

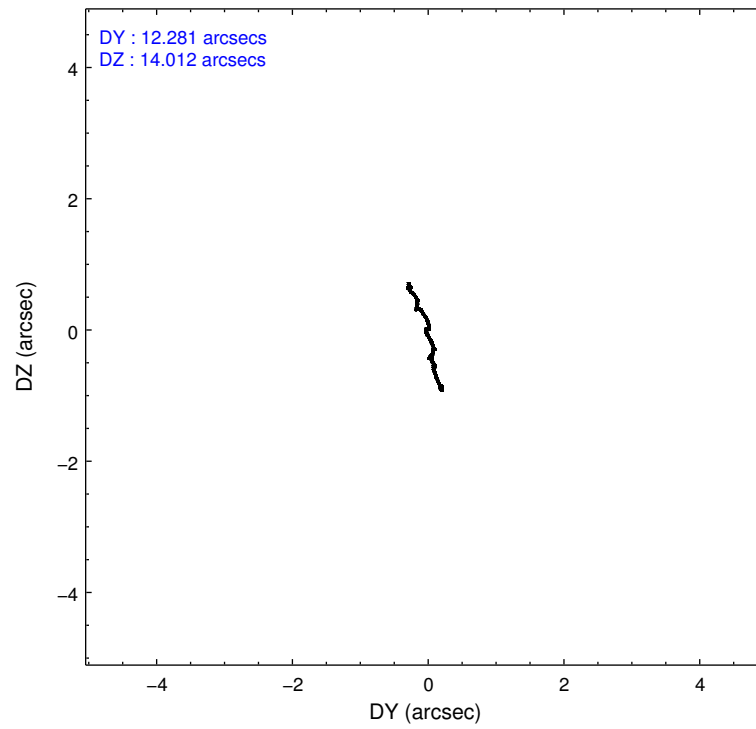
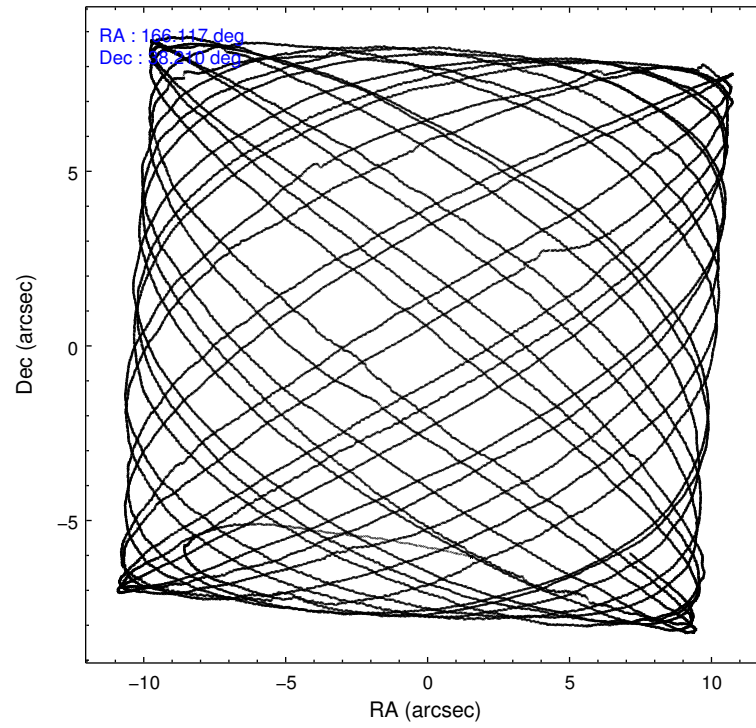
### 2.1.4 Events

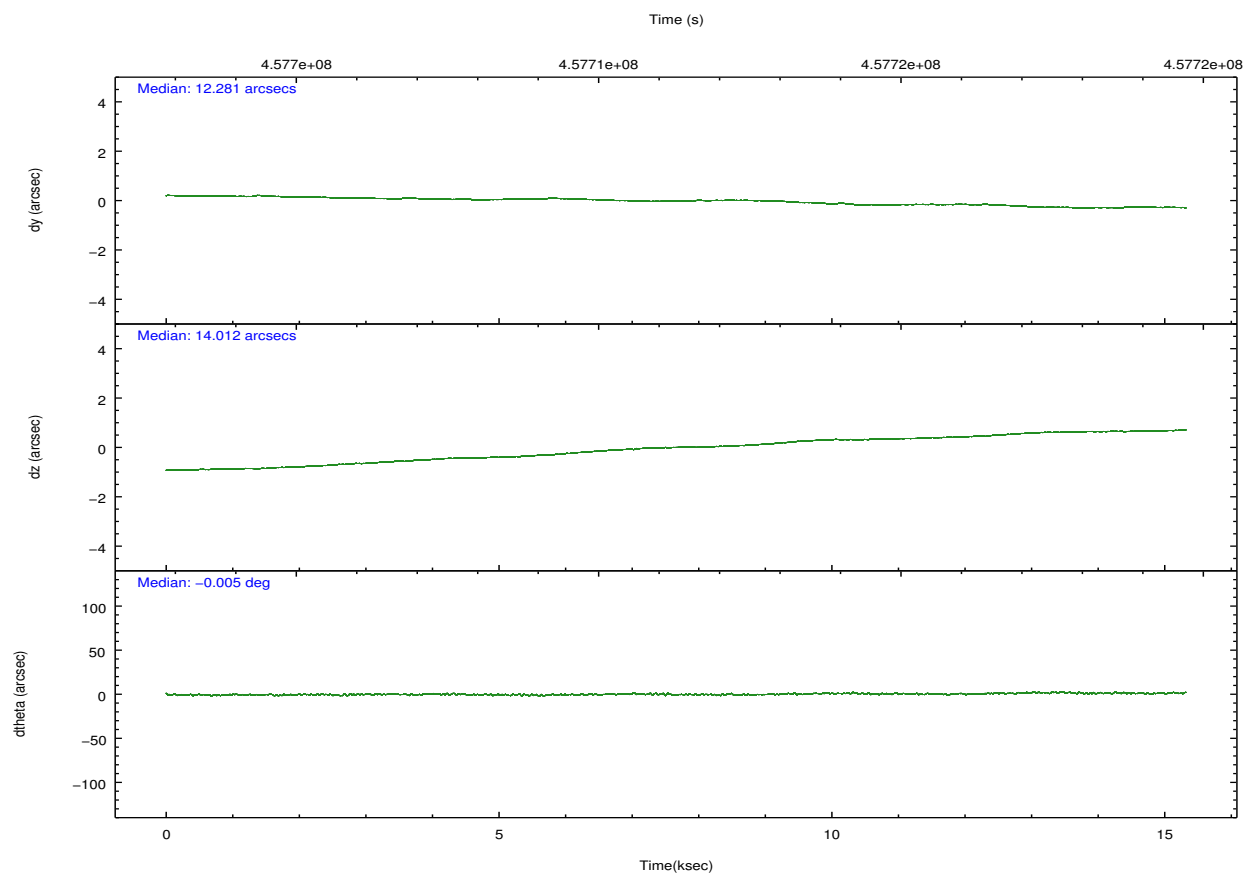
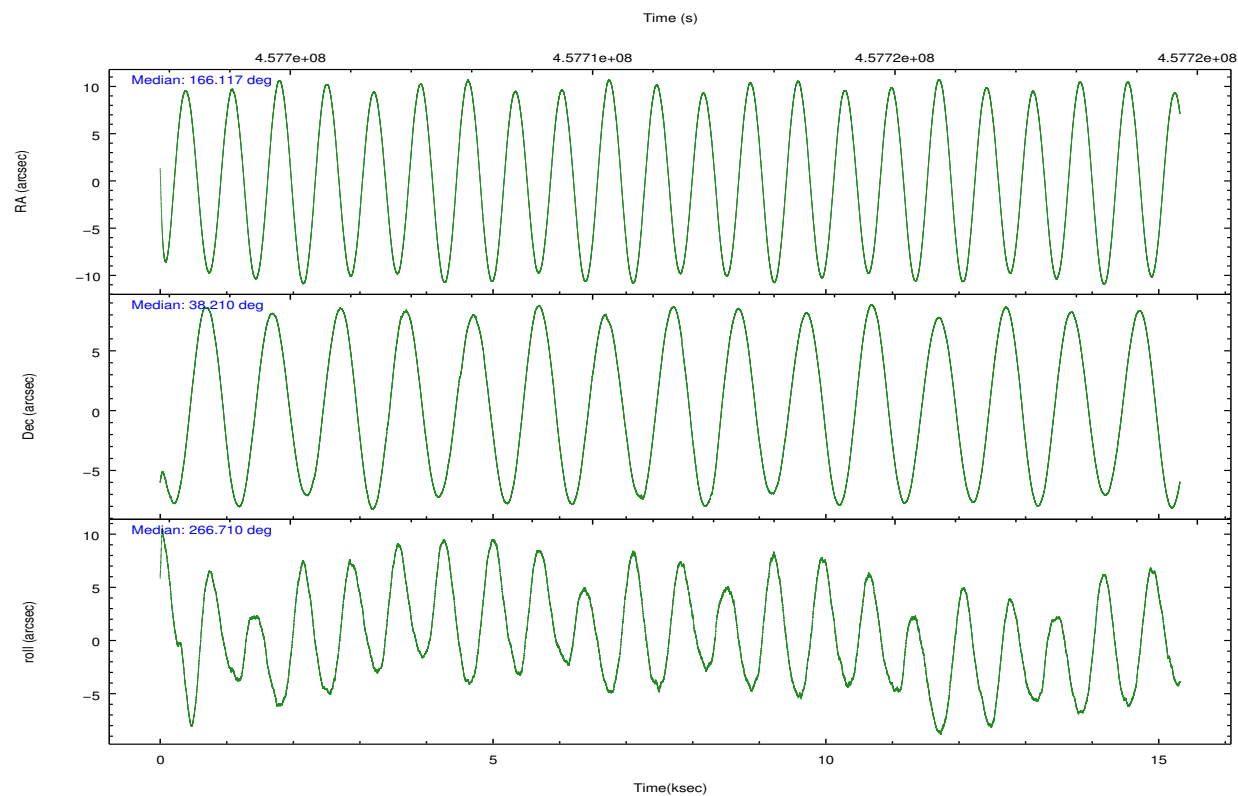
	ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9		ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
level 1 events	81104	126436	99221	119045	108477	68879	grade 0 events	8881	16828	27948	11277	23460	6602
rejected events	66520	53697	60188	51559	65615	56404		10%	13%	28%	9%	21%	9%
rejected %	82%	42%	60%	43%	60%	81%	grade 1 events	69	394	144	258	120	46
								0%	0%	0%	0%	0%	0%
							grade 2 events	2328	19954	5001	15357	7113	2129
								2%	15%	5%	12%	6%	3%
							grade 3 events	946	3610	1881	6764	2871	1045
								1%	2%	1%	5%	2%	1%
							grade 4 events	917	3455	1818	6562	2781	922
								1%	2%	1%	5%	2%	1%
							grade 5 events	3125	8062	3279	9574	4712	3468
								3%	6%	3%	8%	4%	5%
							grade 6 events	1515	28908	2400	27543	6645	1784
								1%	22%	2%	23%	6%	2%
							grade 7 events	63323	45225	56750	41710	60775	52883
								78%	35%	57%	35%	56%	76%

## 2.2 Compared Parameters

Parameter	Planned	Actual	Parameter	Planned	Actual
Instrument	ACIS	ACIS	Obspar format version number	7	7
Detector	ACIS-456789	ACIS-456789	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	166.100597	166.1166805723923	CCD I2 on	N	N
[deg] Pointing Dec	38.234069	38.20977520185679	CCD I3 on	N	N
[deg] Pointing Roll	266.567528	266.7142088223694	CCD S0 on	O1	Y
[s] Window start time (MET)	454896066.184000	454896066.184000	CCD S1 on	Y	Y
[s] Window stop time (MET)	462758467.184000	462758467.184000	CCD S2 on	Y	Y
[mm] SIM focus pos	-0.684267	-0.6828225247311905	CCD S3 on	Y	Y
[mm] SIM defocus	0	0.001444936568705701	CCD S4 on	Y	Y
[mm] SIM translation stage pos	-187.132523	-187.1254020033014	CCD S5 on	Y	Y
[mm] SIM translation stage offset	-3	-3.007120579706367	Number of optional ACIS chips dropped	0	0
[s] Observation start time (MET)	457703756.184000	457702512.32532	On-chip summing requested	N	N
Observation start date	2012-07-03T11:54:49	2012-07-03T11:35:12	Subarray requested	CUSTOM	CUSTOM
[s] Observation end time (MET)	457718756.184000	457718936.41366	Subarray start row	1	1
Observation end date	2012-07-03T16:04:49	2012-07-03T16:08:56	Subarray row count	774	774
Read mode	TIMED	TIMED	Alternating exposures requested	N	N
			[s] Primary exposure time	0.000000	2.5

## 2.3 Aspect



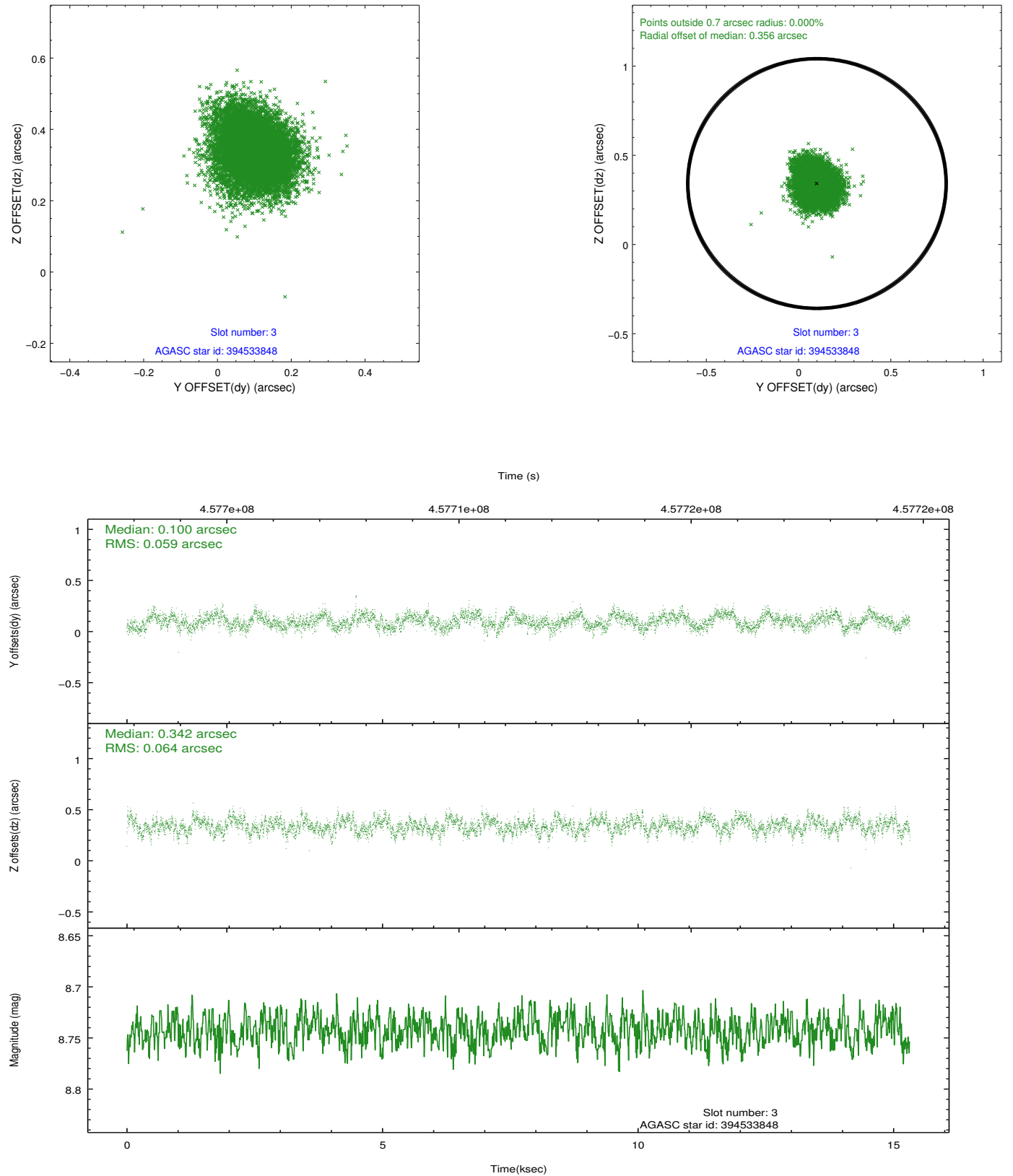


### Slot Statistics

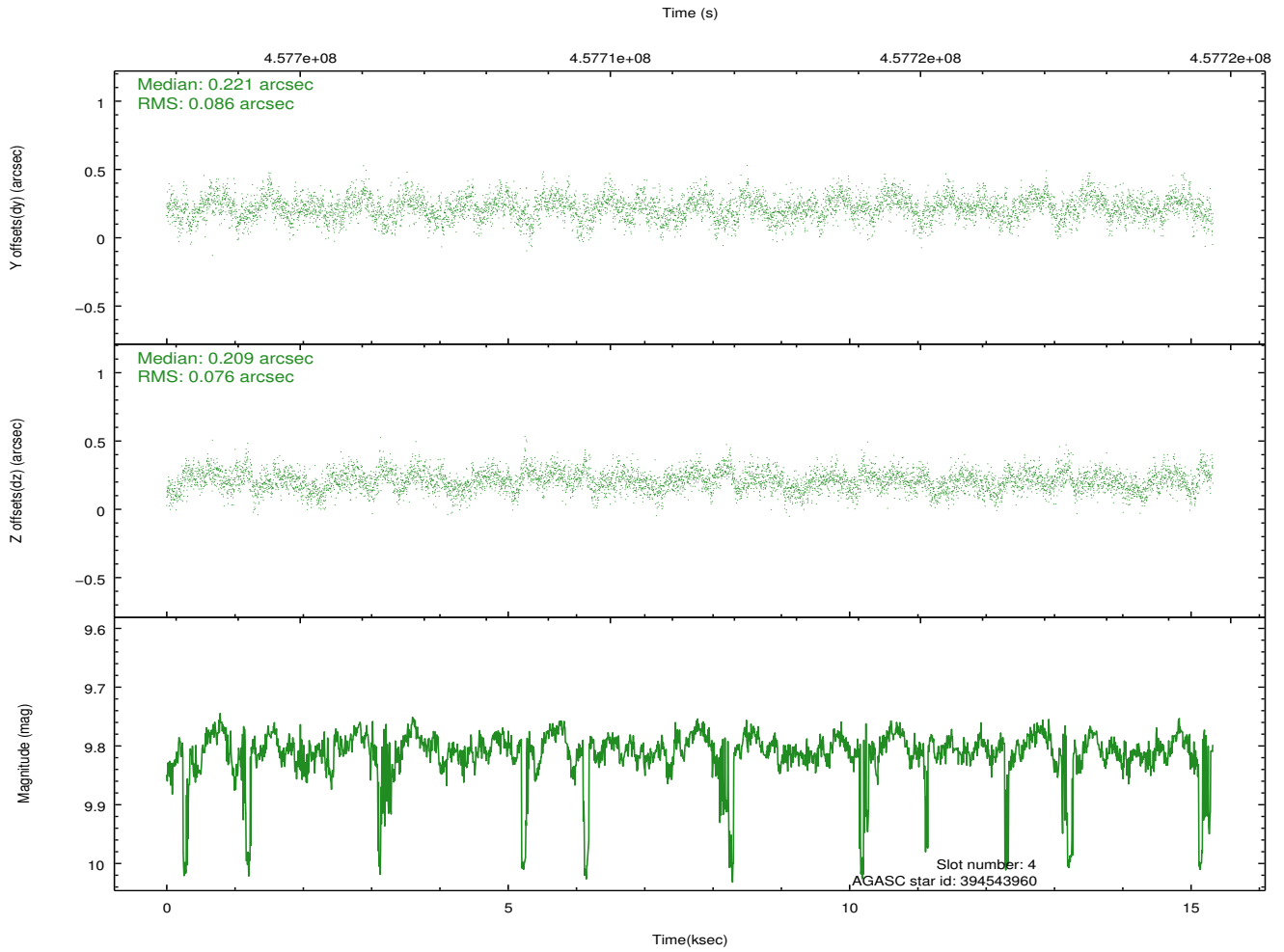
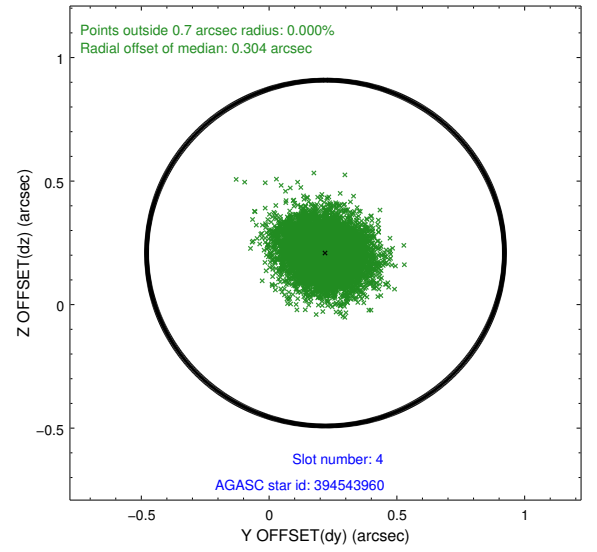
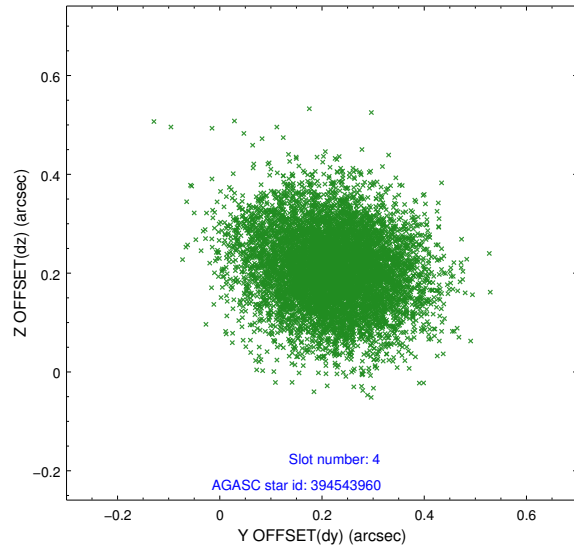
slot	status	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID	ACIS-S-1	7.09	3737	-0.027	-0.048	0.011	0.018	0.000000	0.000000	931.06	-1793.07
1	FID	ACIS-S-4	7.09	3737	0.095	0.014	0.009	0.014	0.000000	0.000000	2148.76	110.82
2	FID	ACIS-S-6	7.26	3737	-0.092	0.045	0.009	0.017	0.000000	0.000000	397.32	748.55
3	GUIDE	394533848	8.74	7467	0.100	0.342	0.094	0.146	166.382906	38.276007	-200.04	783.51
4	GUIDE	394543960	9.81	7433	0.221	0.209	0.122	0.200	165.802757	37.787371	1655.00	-749.11
5	GUIDE	394546712	6.61	7474	-0.182	0.261	0.070	0.117	166.451462	38.394357	-636.79	952.84
6	GUIDE	394546720	6.43	7474	0.048	-0.965	0.094	0.173	166.130115	38.241361	-31.13	81.02
7	GUIDE	394530152	7.49	7472	-0.193	0.156	0.081	0.147	166.075805	38.868252	-2274.86	-205.95

## 2.4 Star Slots

### 2.4.1 Slot 3

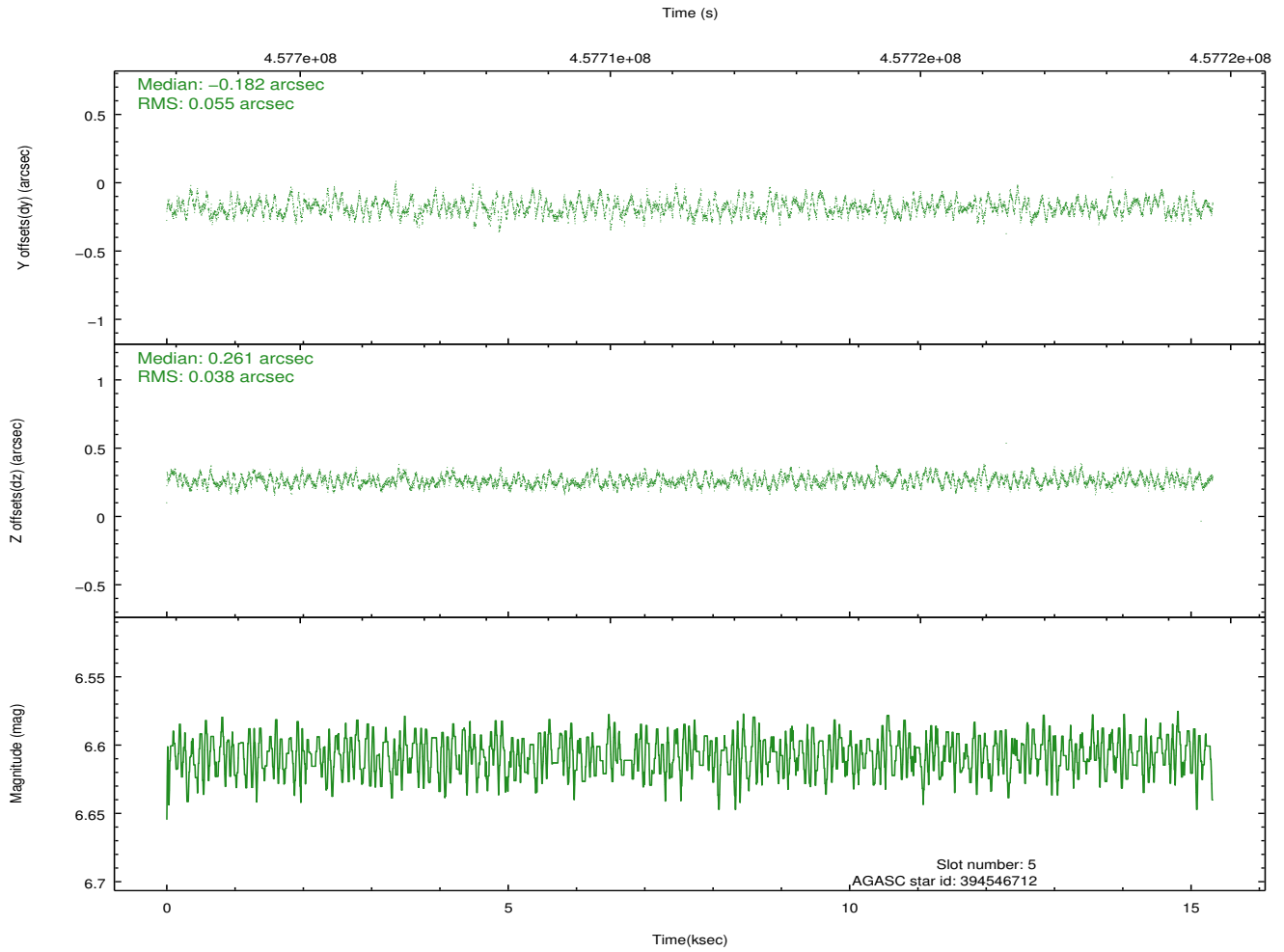
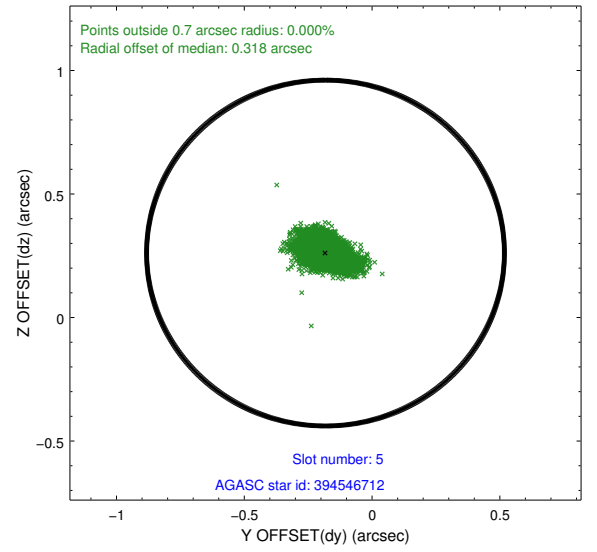
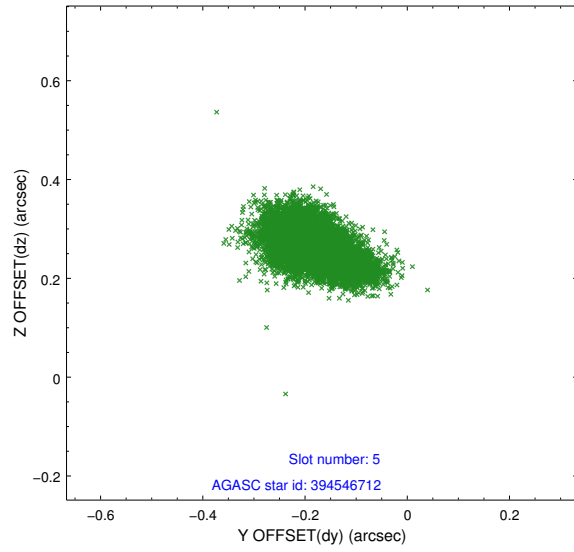


## 2.4.2 Slot 4

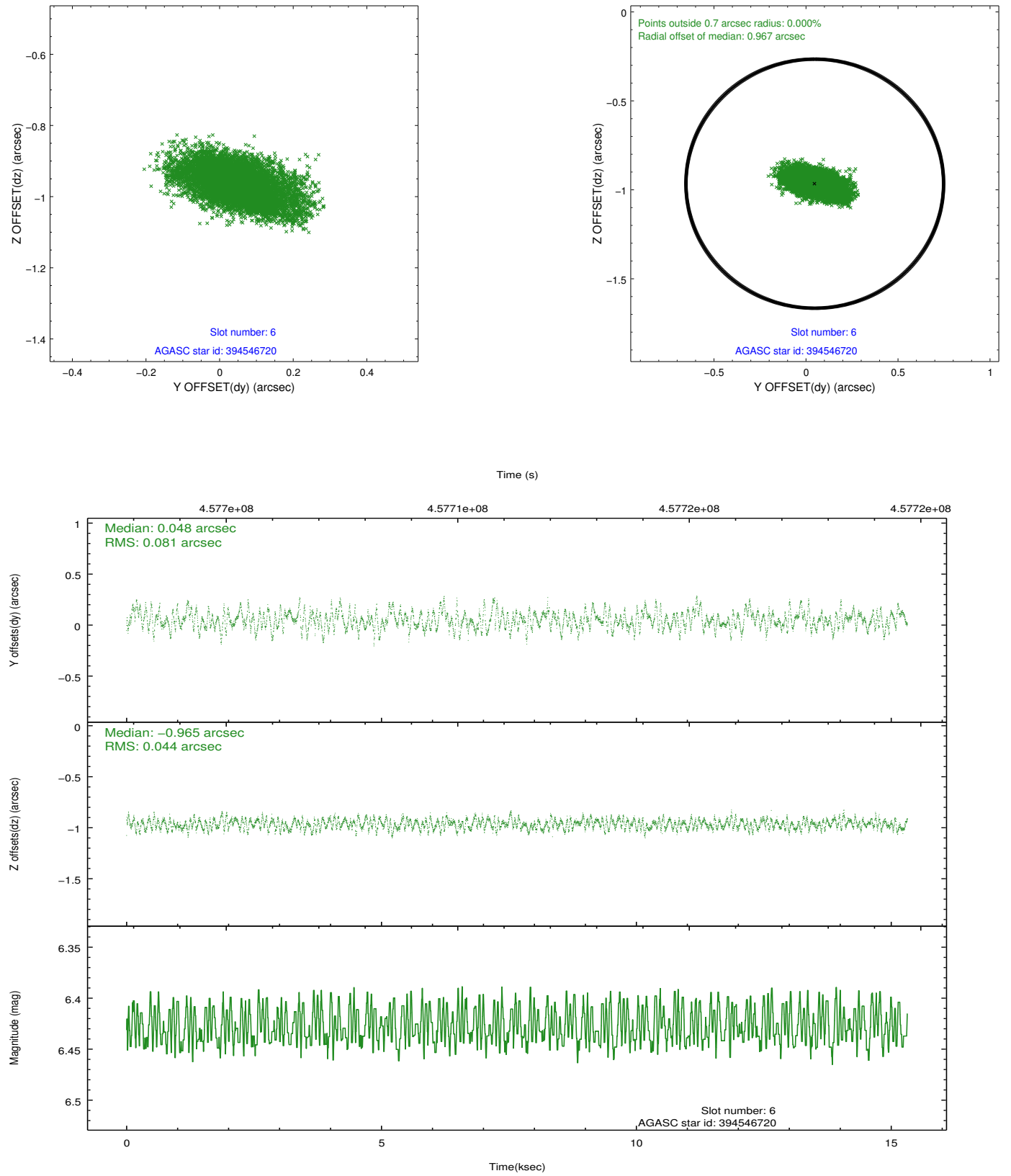




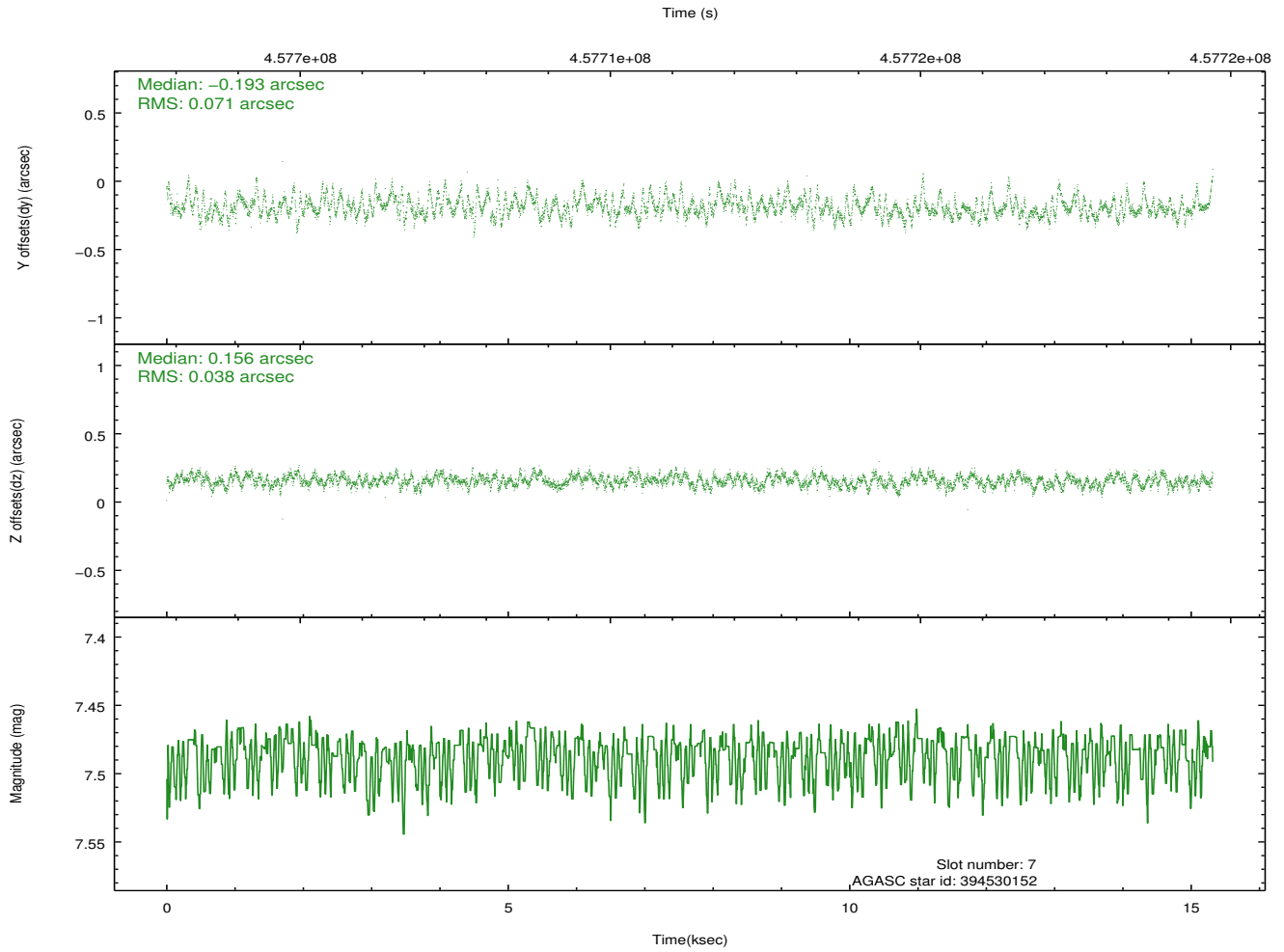
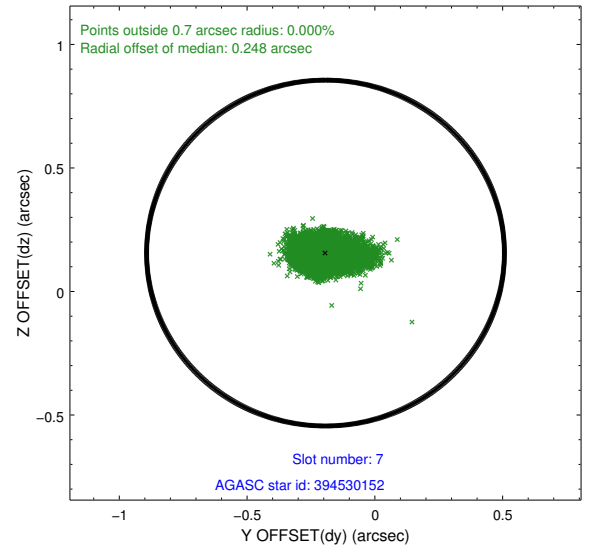
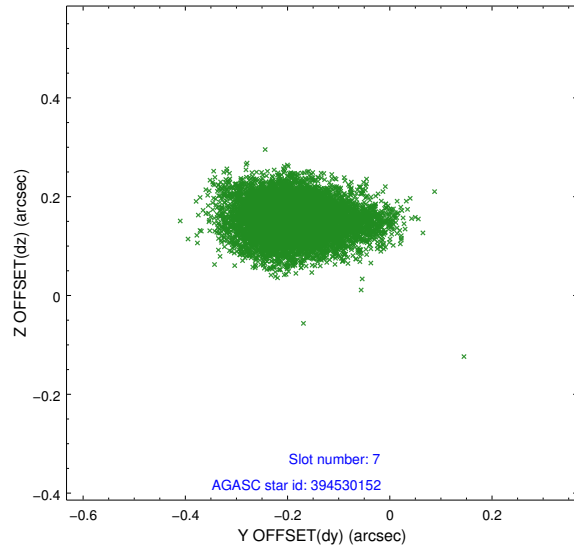
### 2.4.3 Slot 5



## 2.4.4 Slot 6

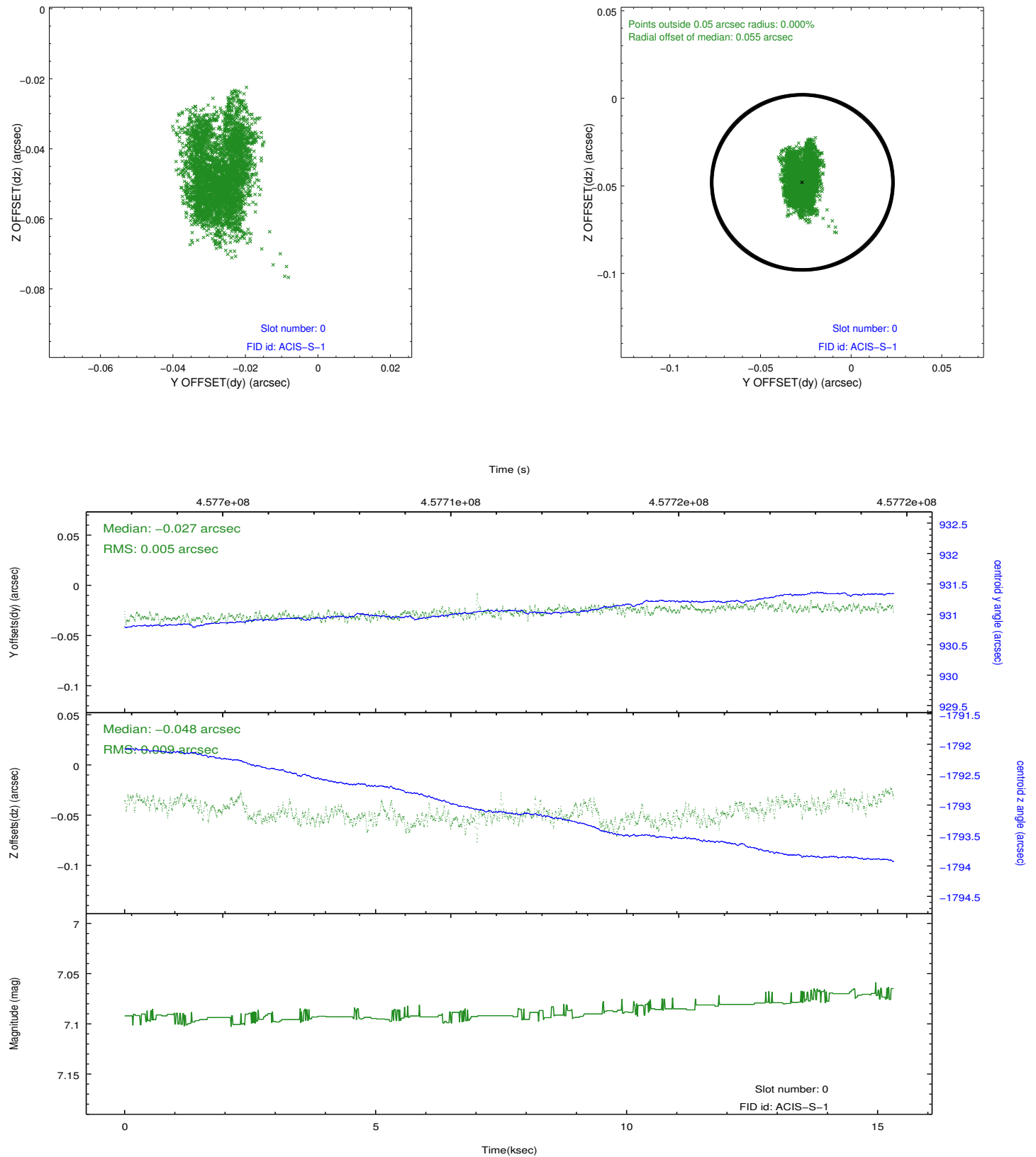


## 2.4.5 Slot 7

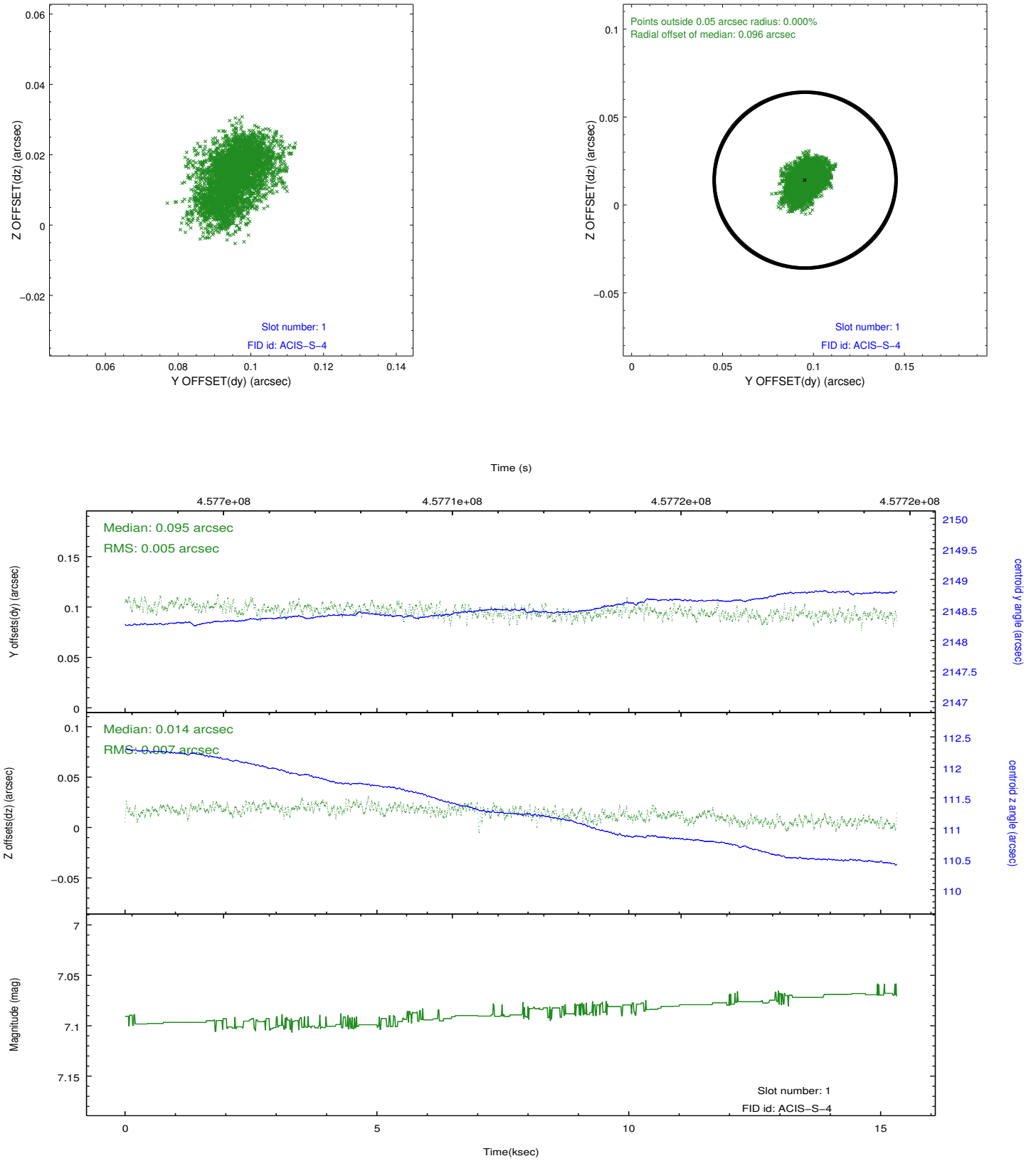


## 2.5 FID Slots

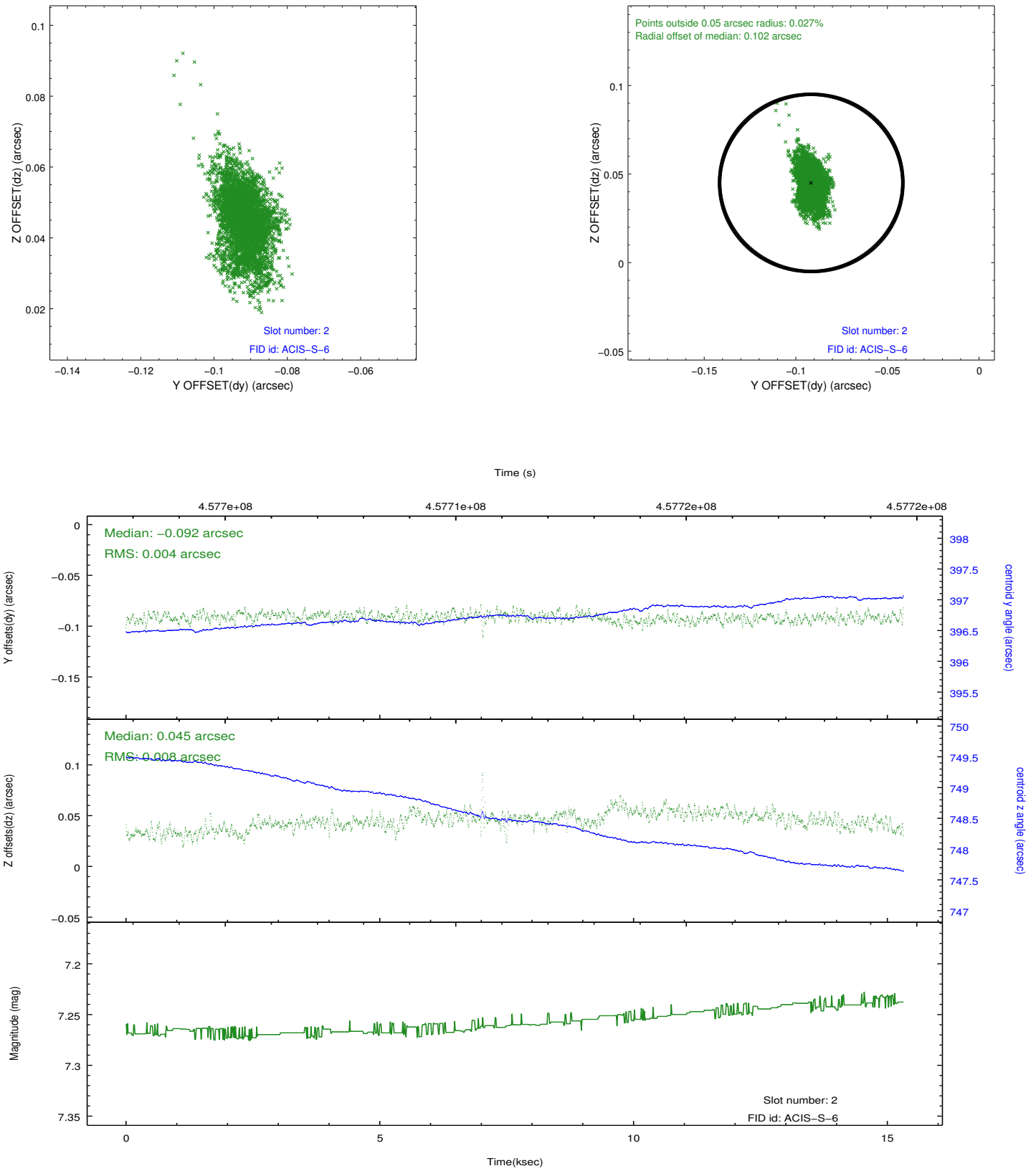
### 2.5.1 Slot 0



## 2.5.2 Slot 1

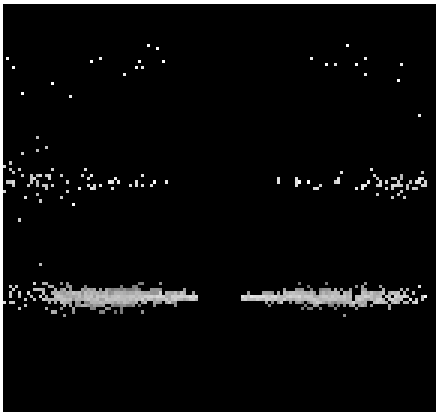


### 2.5.3 Slot 2

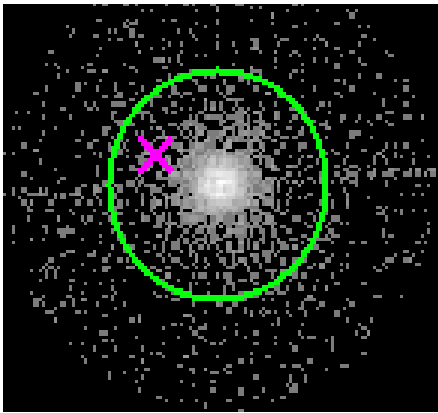


# 3 Gratings

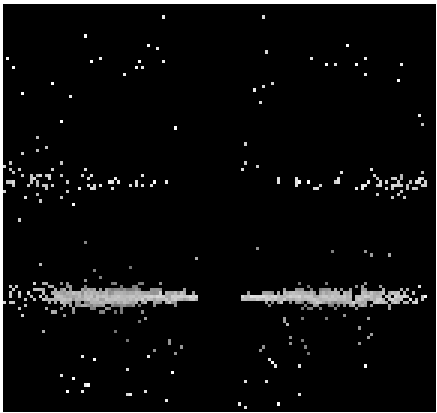
## 3.1 HEG Arm



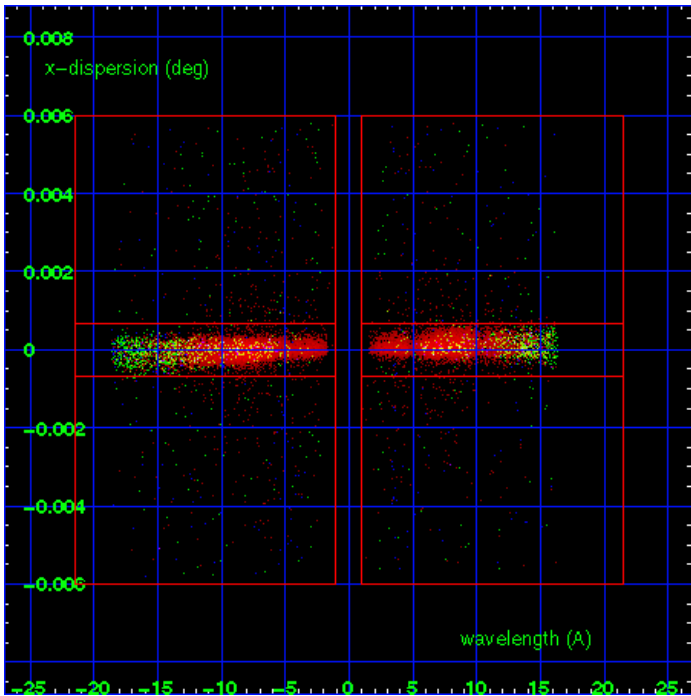
HEG Order Sort 123



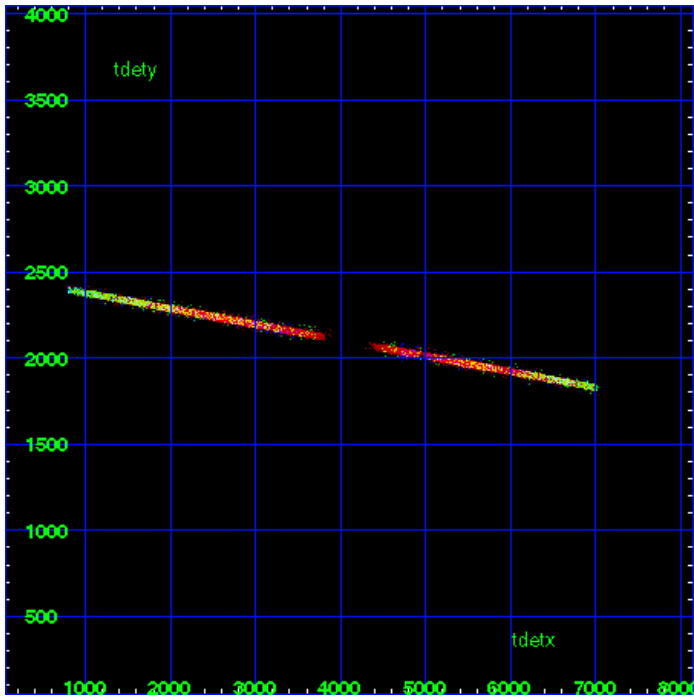
HEG Zero Order



HEG Order Sort ALL

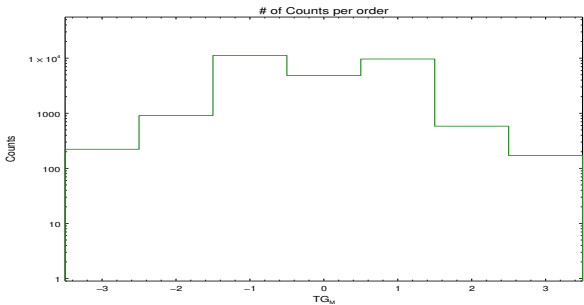


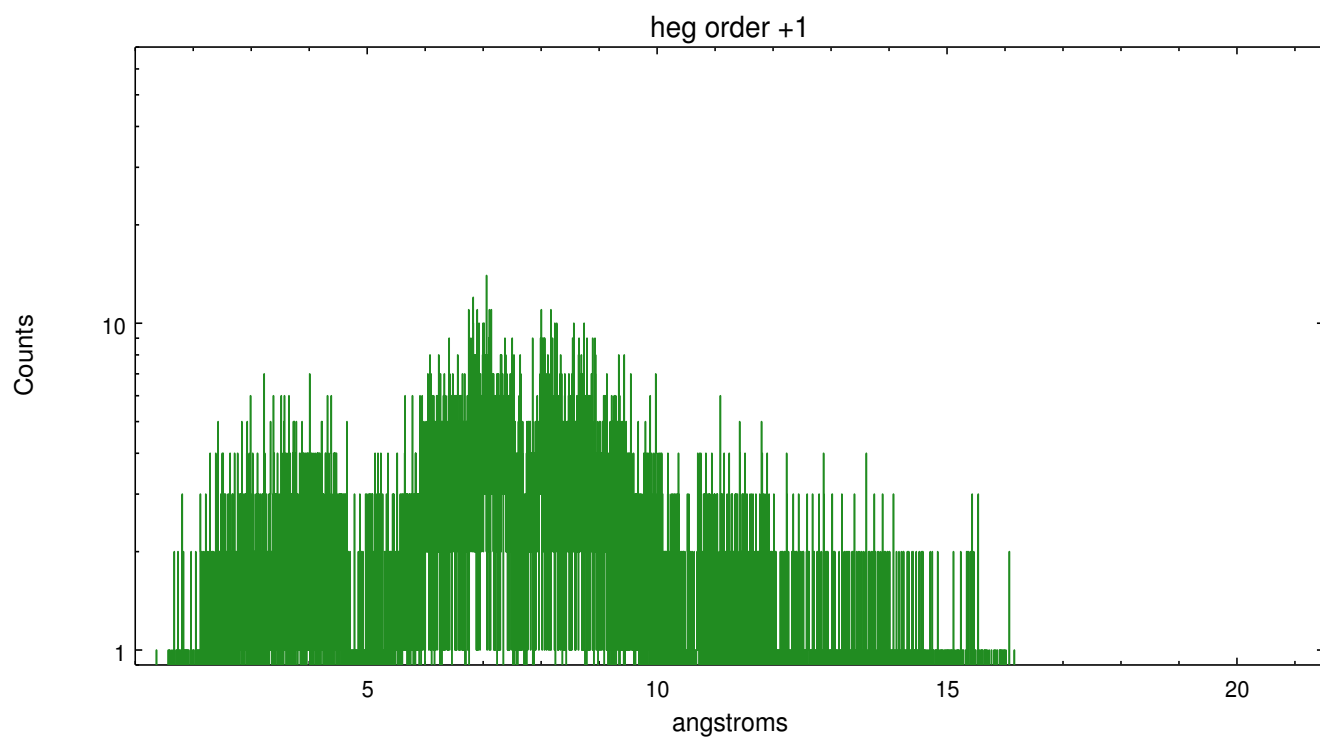
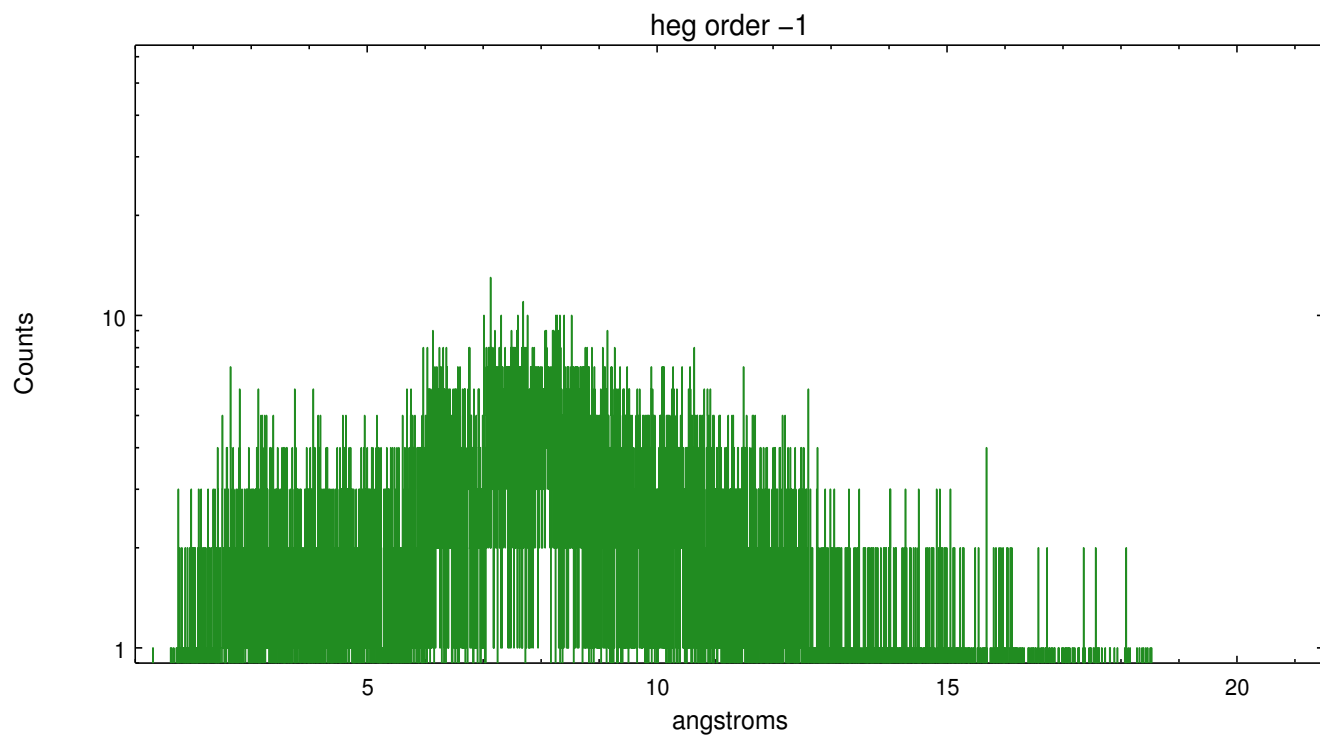
Spot Image HEG



Full Detector HEG

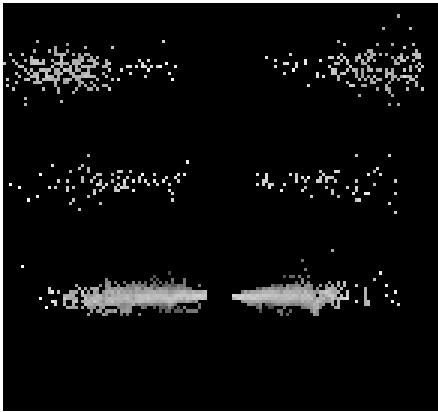
	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	222	908	11166	4860	9662	583	171



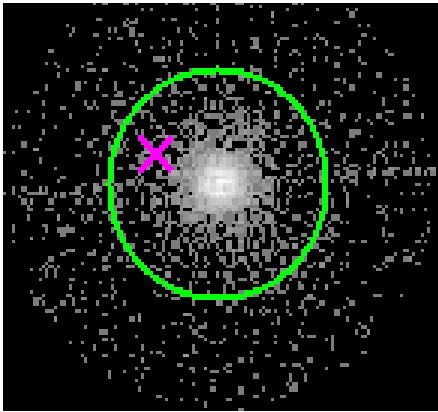




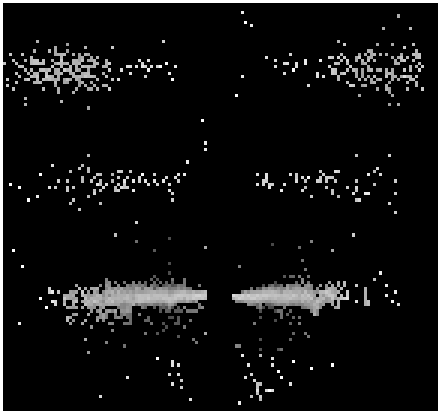
3.2 MEG Arm



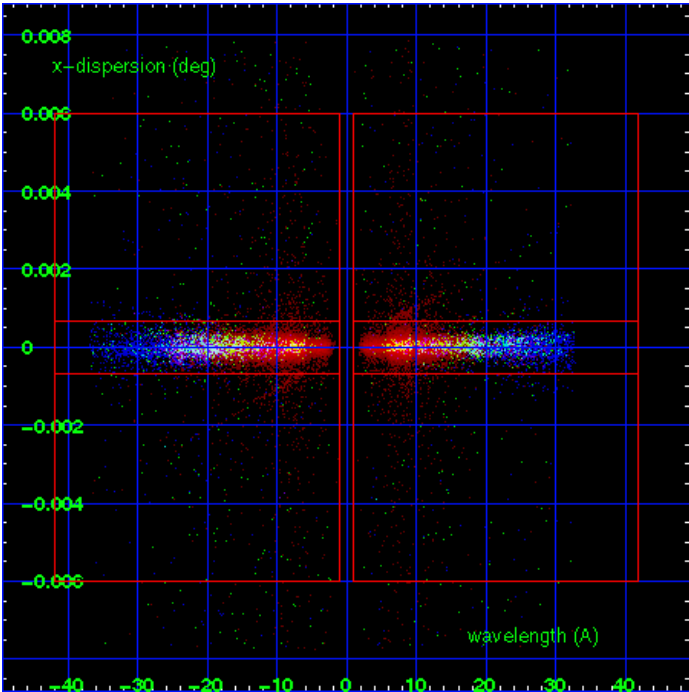
MEG Order Sort 123



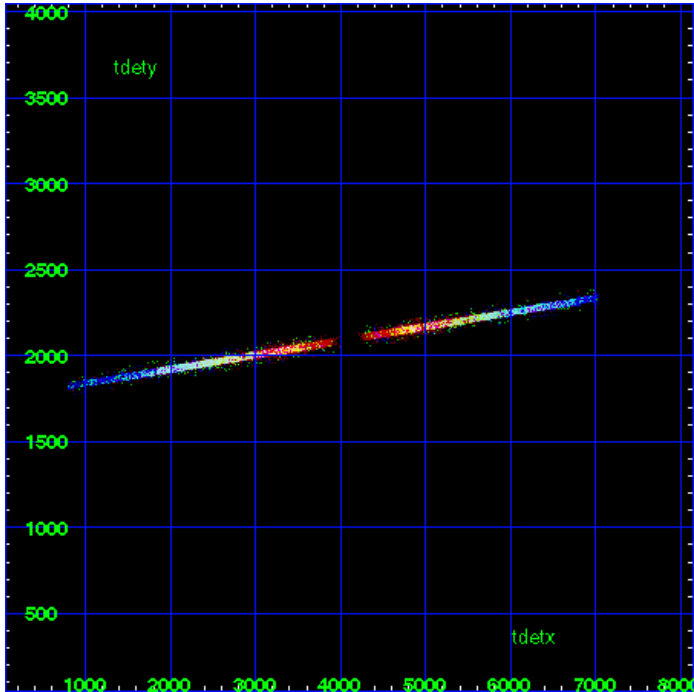
MEG Zero Order



MEG Order Sort ALL

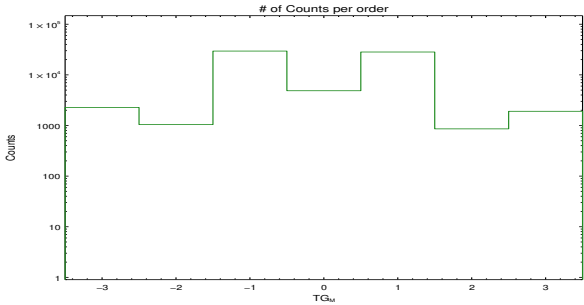


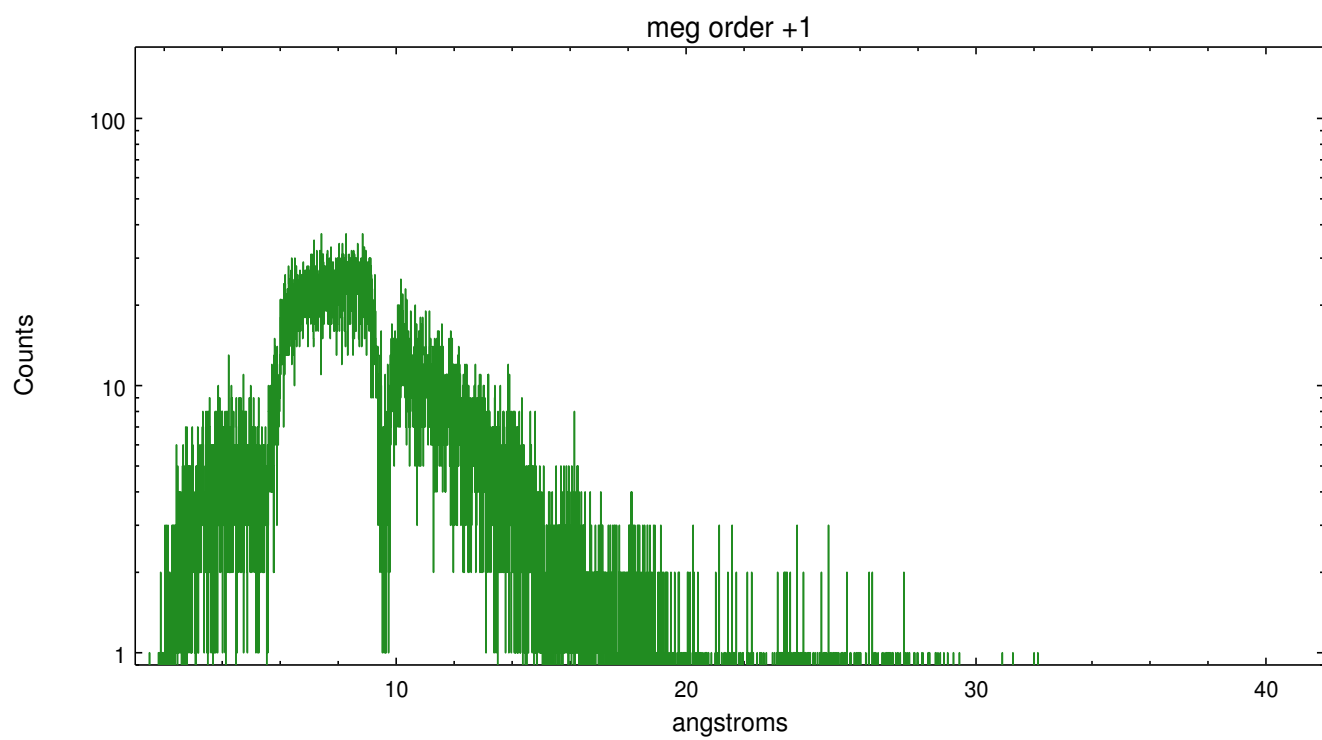
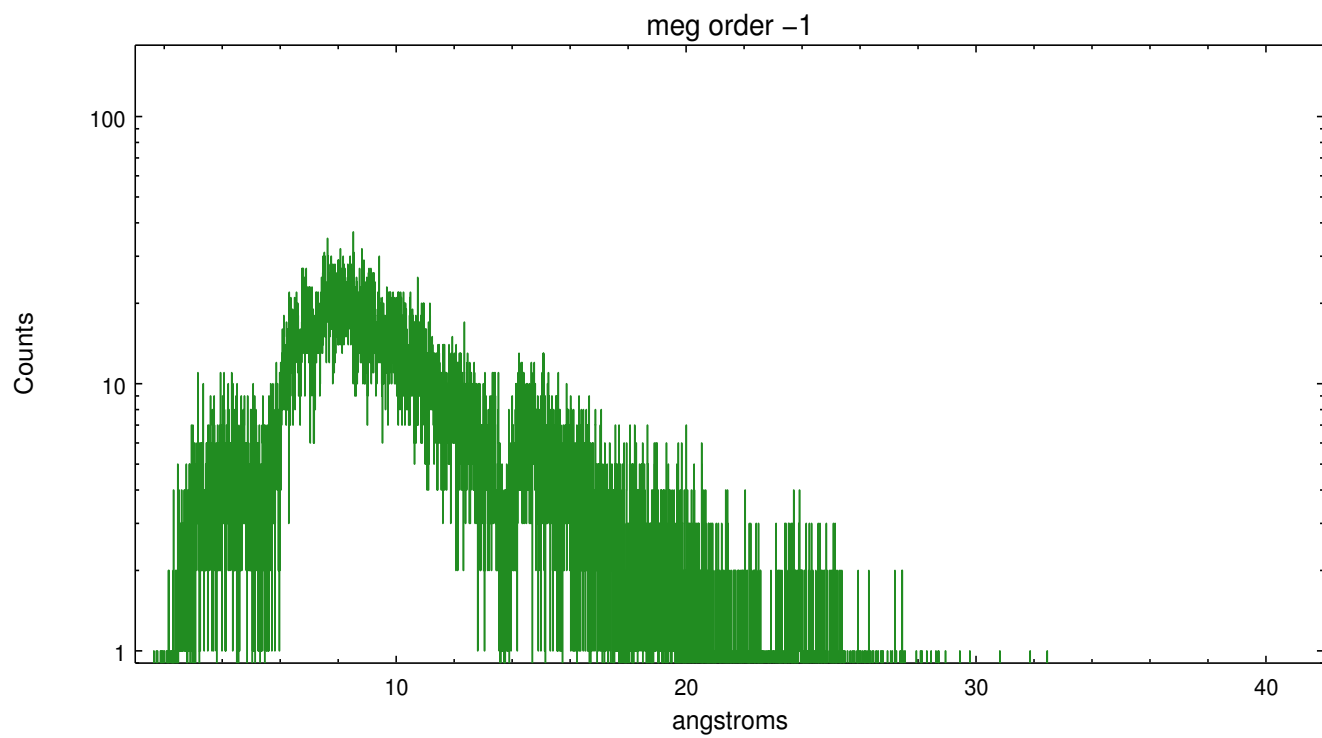
Spot Image MEG



Full Detector MEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	2273	1041	29500	4860	28268	858	1906





## A Summary

### A.1 Status

V&V Scientist	David Huenemoerder
V&V Date (YYYY-MM-DD)	2012.07.10
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	15.0325

### A.2 Comments