

# V&V Reference Report

## L2 ASCDS Version : 8.4.5

Observation 4588 - L2 Version 4  
Chandra X-Ray Center

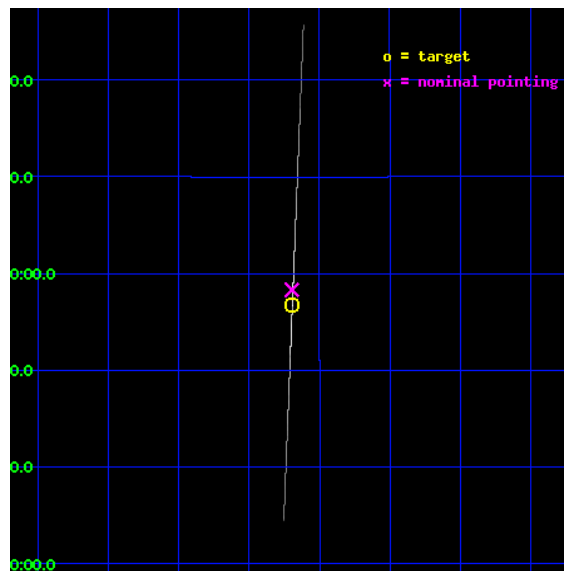
L2 Processing Date : Nov 14 2012

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# 1 Front

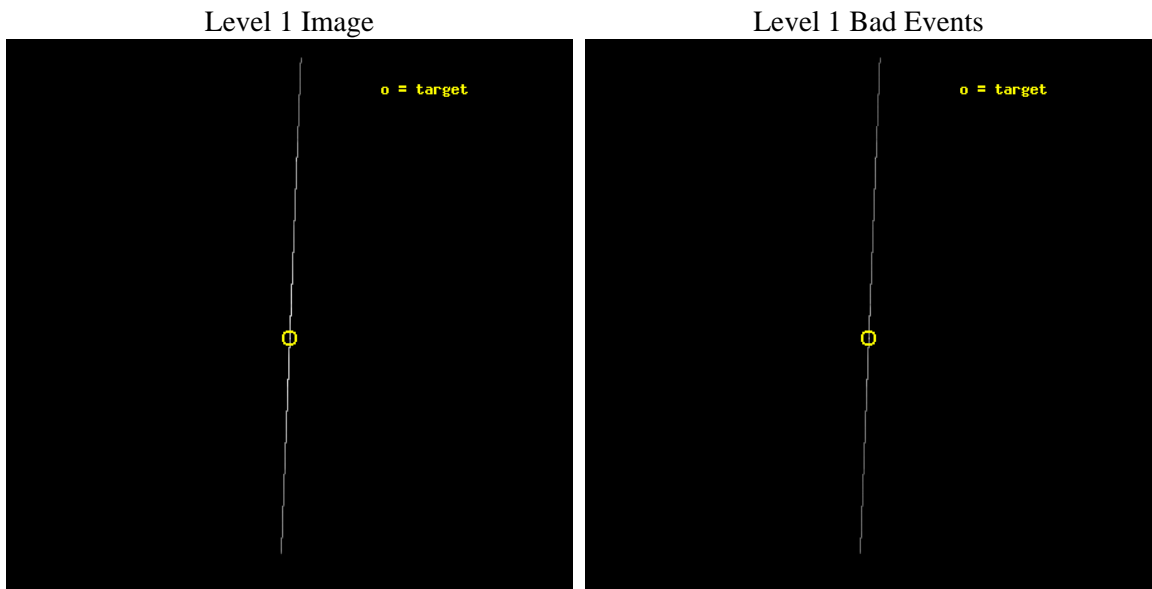
seq_num	400370	Sequence number
obs_id	4588	Observation id
title	Probe the relativistic Out-flow in the microquasar GRS1915+105 with HETG/Chandra	Proposal title
observer	Dr. Yuxin Feng	Principal investigator
object	GRS 1915+105	Source name
ra_targ	288.798333	Observer's specified target RA [deg]
dec_targ	10.945806	Observer's specified target Dec [deg]
ra_nom	288.79905594563	Nominal RA [deg]
dec_nom	10.972070473537	Nominal Dec [deg]
roll_nom	92.26340880229	Nominal Roll [deg]
revision	4	Processing version of data
ontime	27281.25	Sum of GTIs [s]
livetime	27174.682617188	Livetime [s]
ontime4	27281.25	Sum of GTIs [s]
ontime5	27281.25	Sum of GTIs [s]
ontime6	27281.25	Sum of GTIs [s]
ontime7	27281.25	Sum of GTIs [s]
ontime8	27281.25	Sum of GTIs [s]
ontime9	27281.25	Sum of GTIs [s]
l2events	3579762	Number of level 2 events



## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



### 2.1.2 Parameters

obi_num	0	Obi number	sched_exp_time	27000.000000	[s] Scheduled observation exposure time
ascdsver	8.4.5	Processing system revision	ontime	27281.25	Sum of GTIs [s]
caldsver	4.5.2	&#160	ontime4	27281.25	Sum of GTIs [s]
date	2012-11-14T01:45:02	Date and time of file creation	ontime5	27281.25	Sum of GTIs [s]
revision	4	Processing version of data	ontime6	27281.25	Sum of GTIs [s]
			ontime7	27281.25	Sum of GTIs [s]
			ontime8	27281.25	Sum of GTIs [s]
			ontime9	27281.25	Sum of GTIs [s]
			l1events	3951763	Number of level 1 events

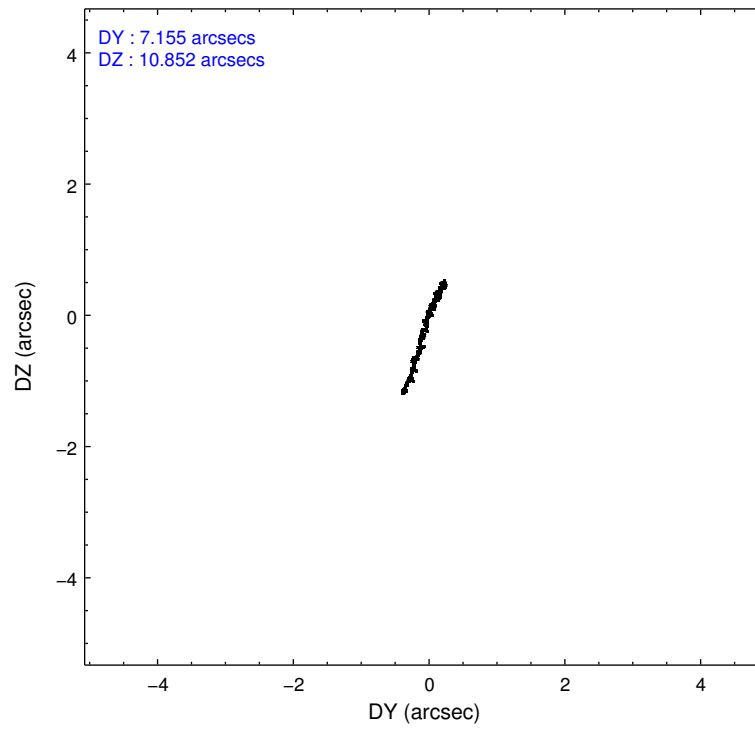
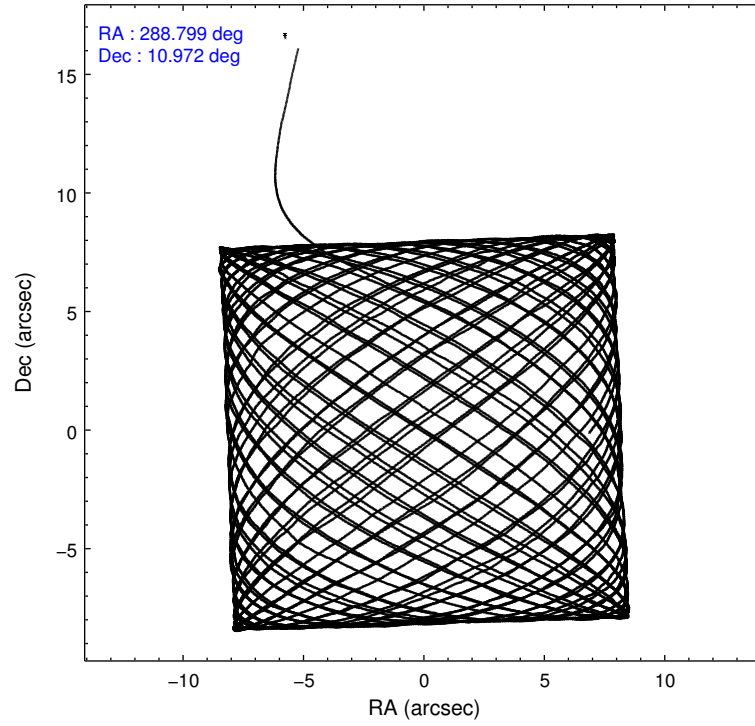
### 2.1.3 Events

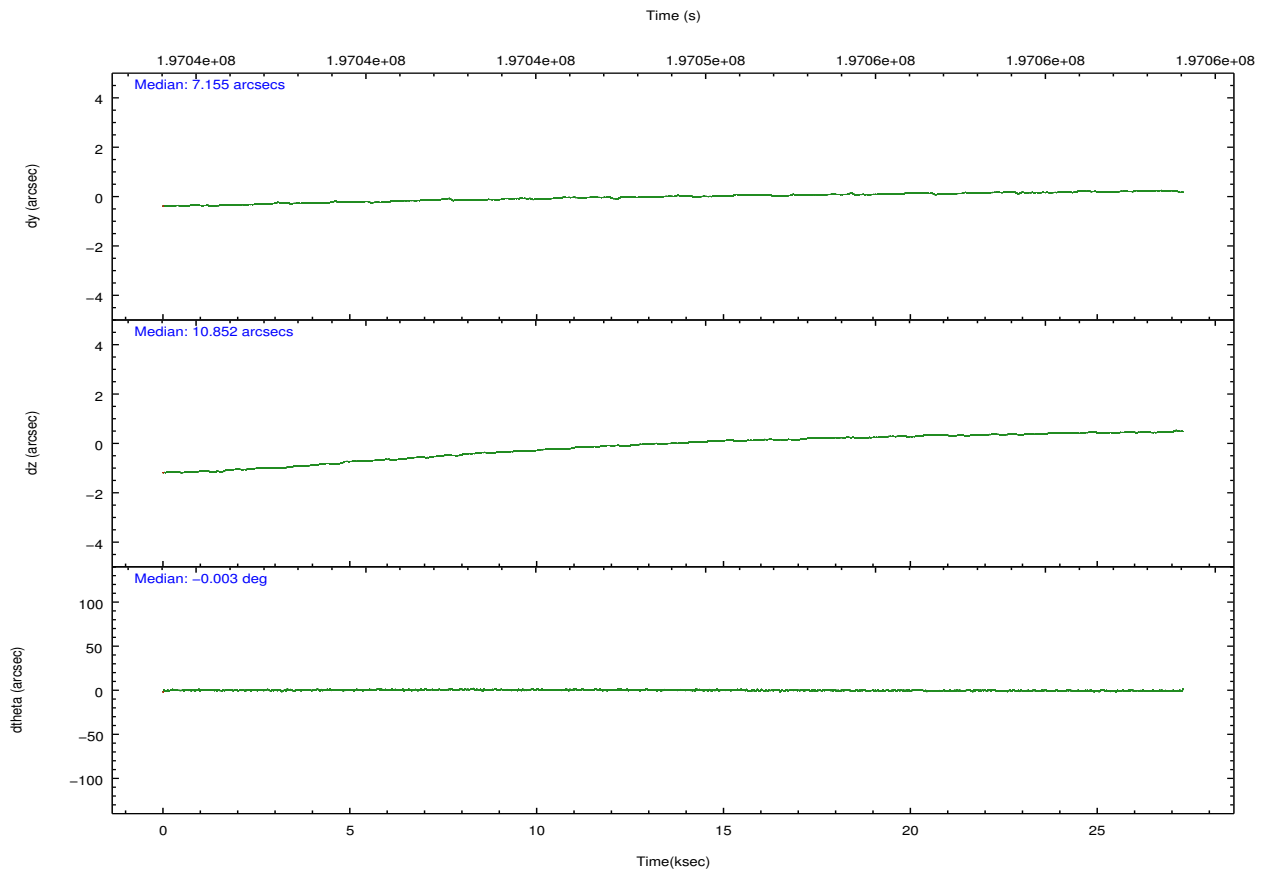
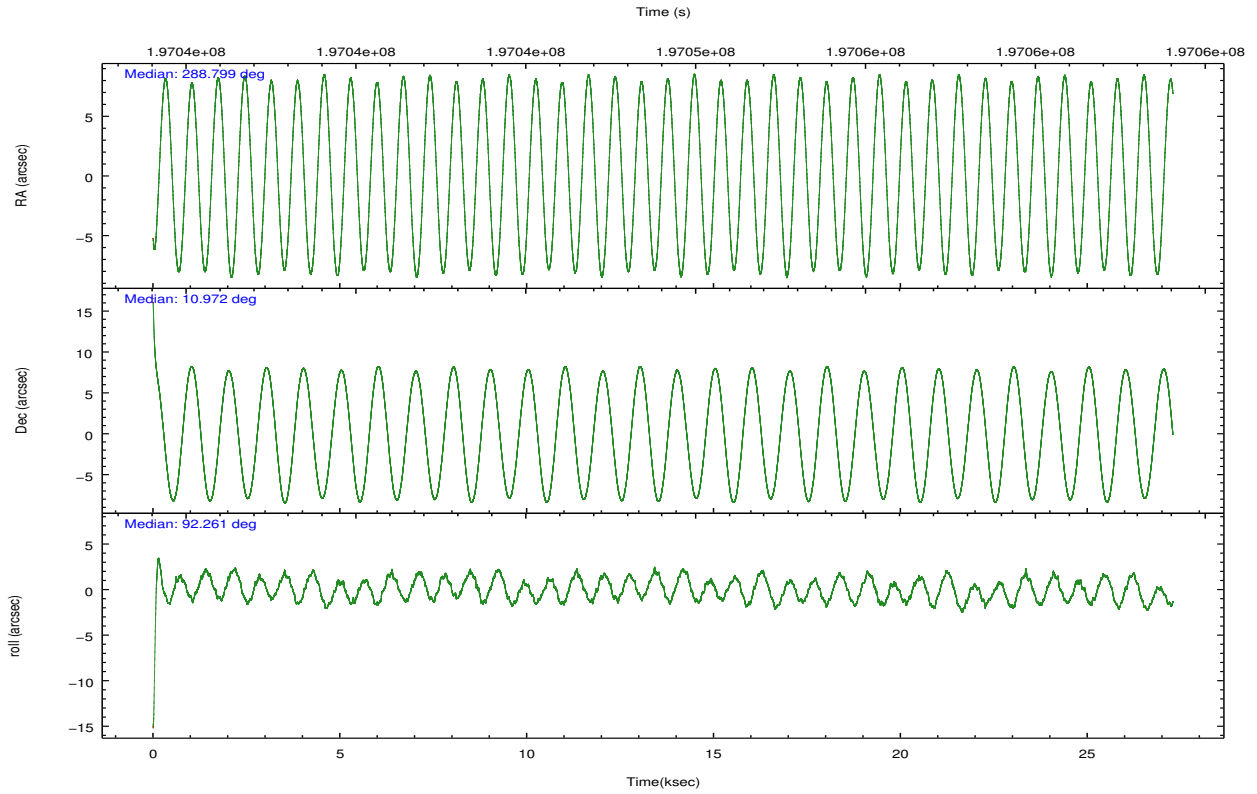
	ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9		ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
level 1 events	68016	268384	829142	2201471	478789	105961	grade 0 events	4192	39467	10306	176581	23299	6208
rejected events	8192	22474	20533	73938	16783	9679		6%	14%	1%	8%	4%	5%
rejected %	12%	8%	2%	3%	3%	9%	grade 1 events	105	206	137	1814	289	142
								0%	0%	0%	0%	0%	0%
							grade 2 events	37555	91732	704022	820755	372437	67549
								55%	34%	84%	37%	77%	63%
							grade 3 events	4646	4147	4445	101161	7930	4123
								6%	1%	0%	4%	1%	3%
							grade 4 events	4837	4127	4241	100445	7744	4418
								7%	1%	0%	4%	1%	4%
							grade 5 events	6941	16335	11155	56026	12133	8276
								10%	6%	1%	2%	2%	7%
							grade 6 events	9740	112370	94836	944689	54957	15245
								14%	41%	11%	42%	11%	14%
							grade 7 events	0	0	0	0	0	0
								0%	0%	0%	0%	0%	0%

## 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	CC33_GRADED	CC33_GRADED	Number of optional ACIS chips dropped	0	0
Observation mode	POINTING	POINTING	On-chip summing requested	N	N
[deg] Pointing RA	288.814168	288.7990559456255	Subarray requested	NONE	NONE
[deg] Pointing Dec	10.949213	10.97207047353695	Alternating exposures requested	N	N
[deg] Pointing Roll	92.103917	92.26340880228997	[s] Primary exposure time	0.000000	0
[mm] SIM focus pos	-0.684267	-0.6828225247311905			
[mm] SIM defocus	0	0.001444936568705701			
[mm] SIM translation stage pos	-194.132523	-194.1227414875429			
[mm] SIM translation stage offset	4	3.990218904535112			
[s] Observation start time (MET)	197035685.184000	197034662.27366			
Observation start date	2004-03-30T12:07:01	2004-03-30T11:51:02			
[s] Observation end time (MET)	197062685.184000	197064095.66245			
Observation end date	2004-03-30T19:37:01	2004-03-30T20:01:35			
Read mode	CONTINUOUS	CONTINUOUS			

## 2.3 Aspect



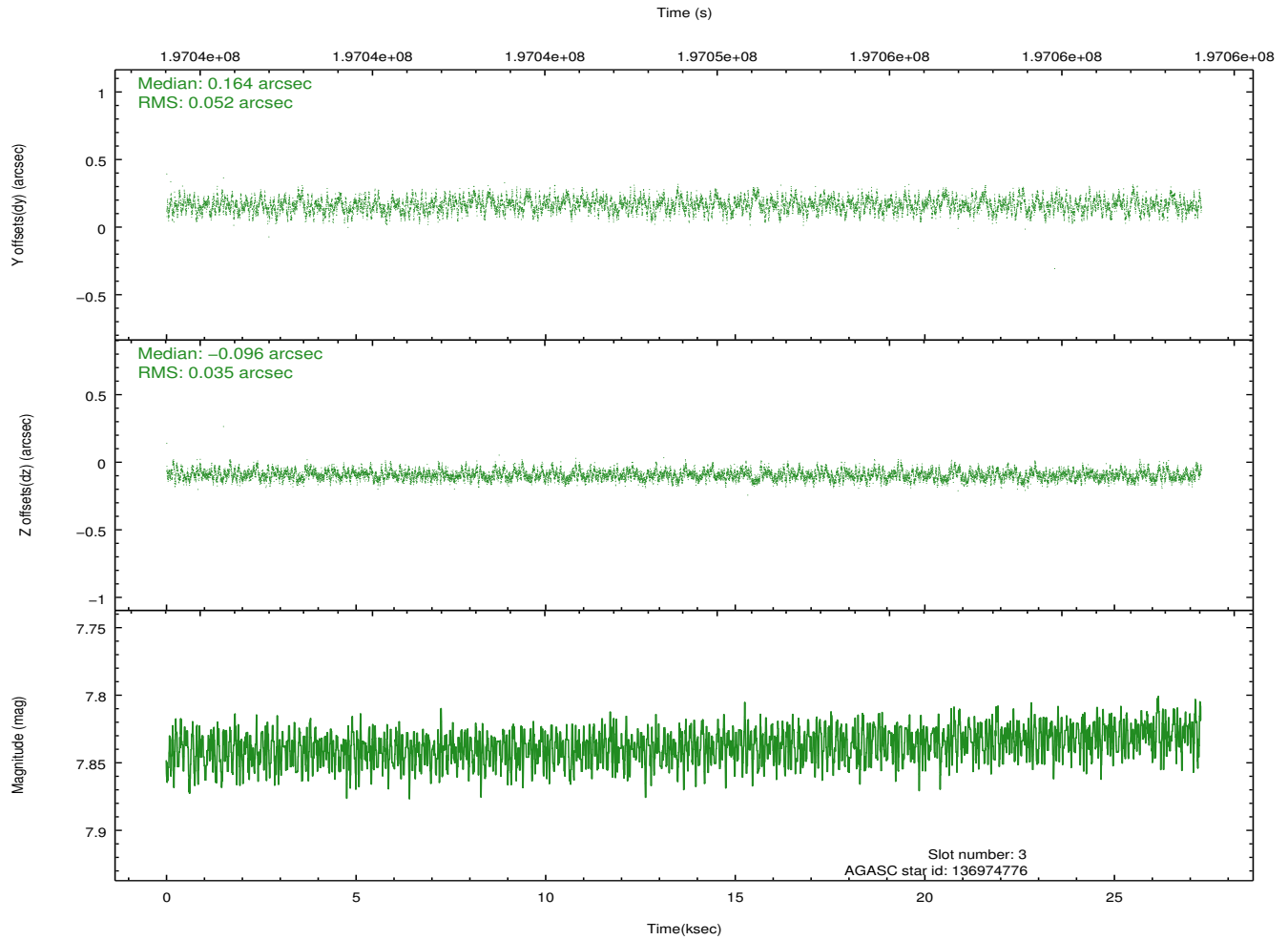
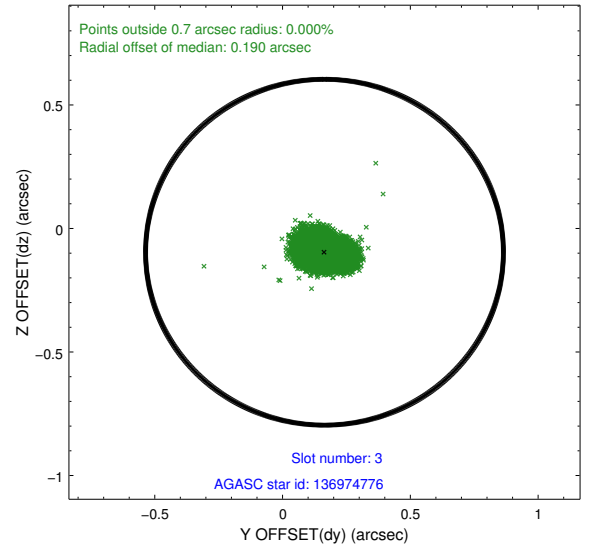
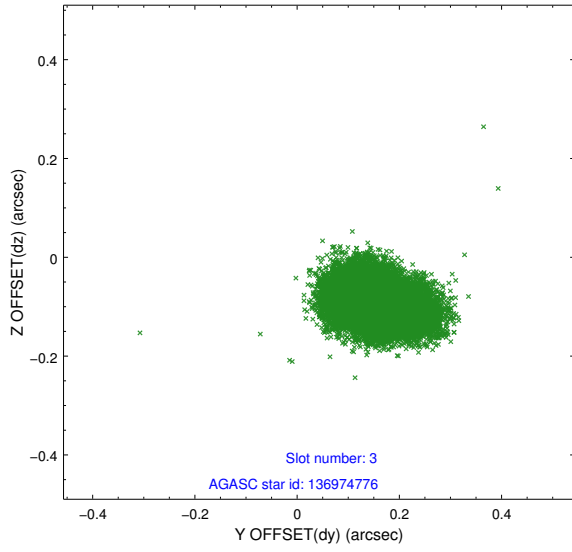


### Slot Statistics

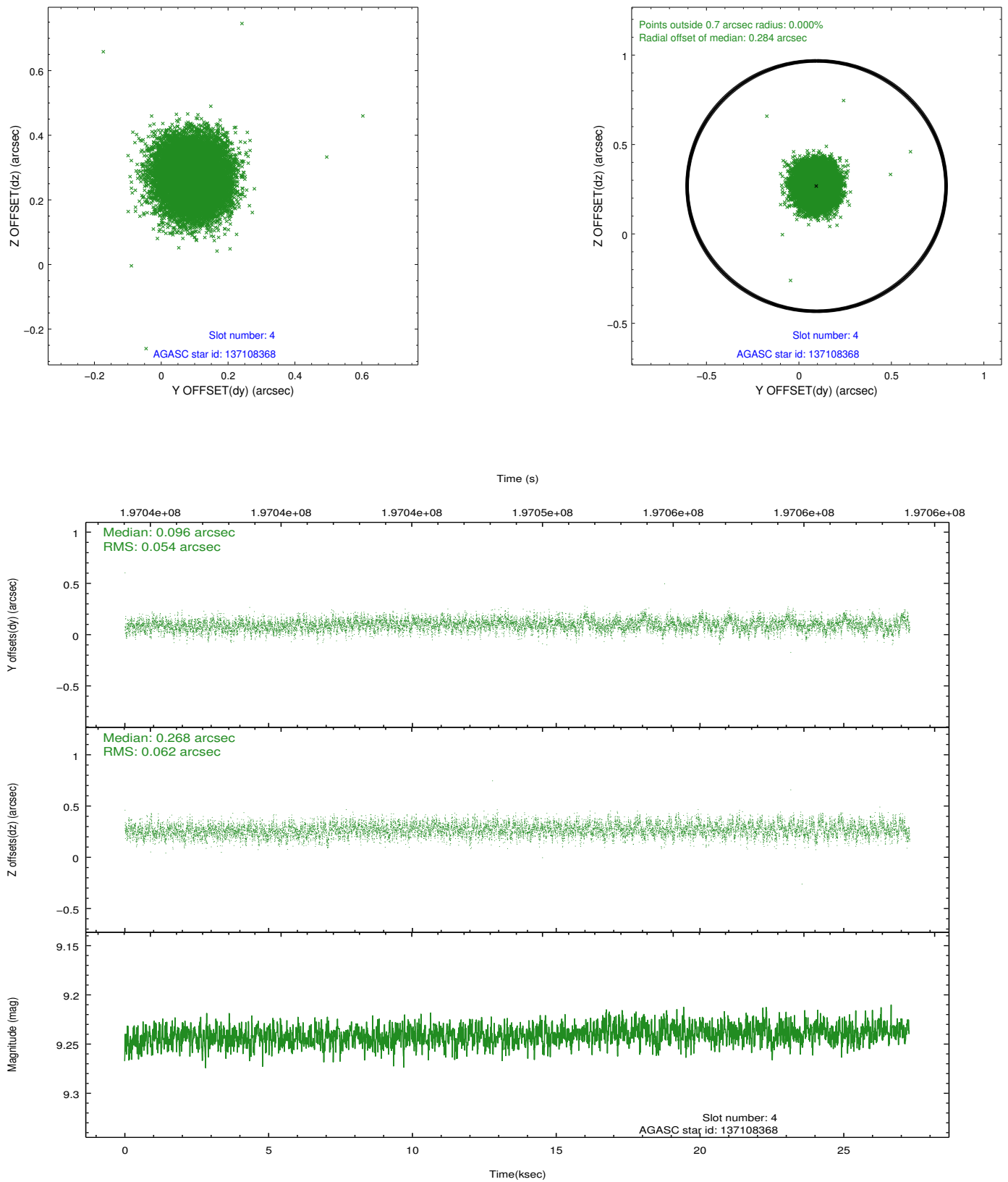
slot	status	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID	ACIS-S-2	7.12	6655	0.003	0.027	0.015	0.034	0.000000	0.000000	-760.17	-1649.83
1	FID	ACIS-S-4	7.20	6656	0.040	-0.014	0.011	0.028	0.000000	0.000000	2153.15	258.48
2	FID	ACIS-S-6	7.32	6656	-0.073	-0.006	0.011	0.027	0.000000	0.000000	401.91	896.03
3	GUIDE	136974776	7.84	13312	0.164	-0.096	0.067	0.108	288.742109	10.409402	-1932.46	326.37
4	GUIDE	137108368	9.24	13306	0.096	0.268	0.088	0.140	289.421925	10.352056	-2225.25	-2071.71
5	GUIDE	137497048	7.99	13310	-0.231	0.136	0.062	0.097	288.896055	11.554718	2166.65	-369.16
6	GUIDE	136977584	8.41	13309	0.171	-0.111	0.065	0.103	288.635599	10.555283	-1393.50	683.64
7	GUIDE	137498872	7.05	13310	-0.203	-0.198	0.050	0.083	288.350862	11.344926	1484.47	1581.97

## 2.4 Star Slots

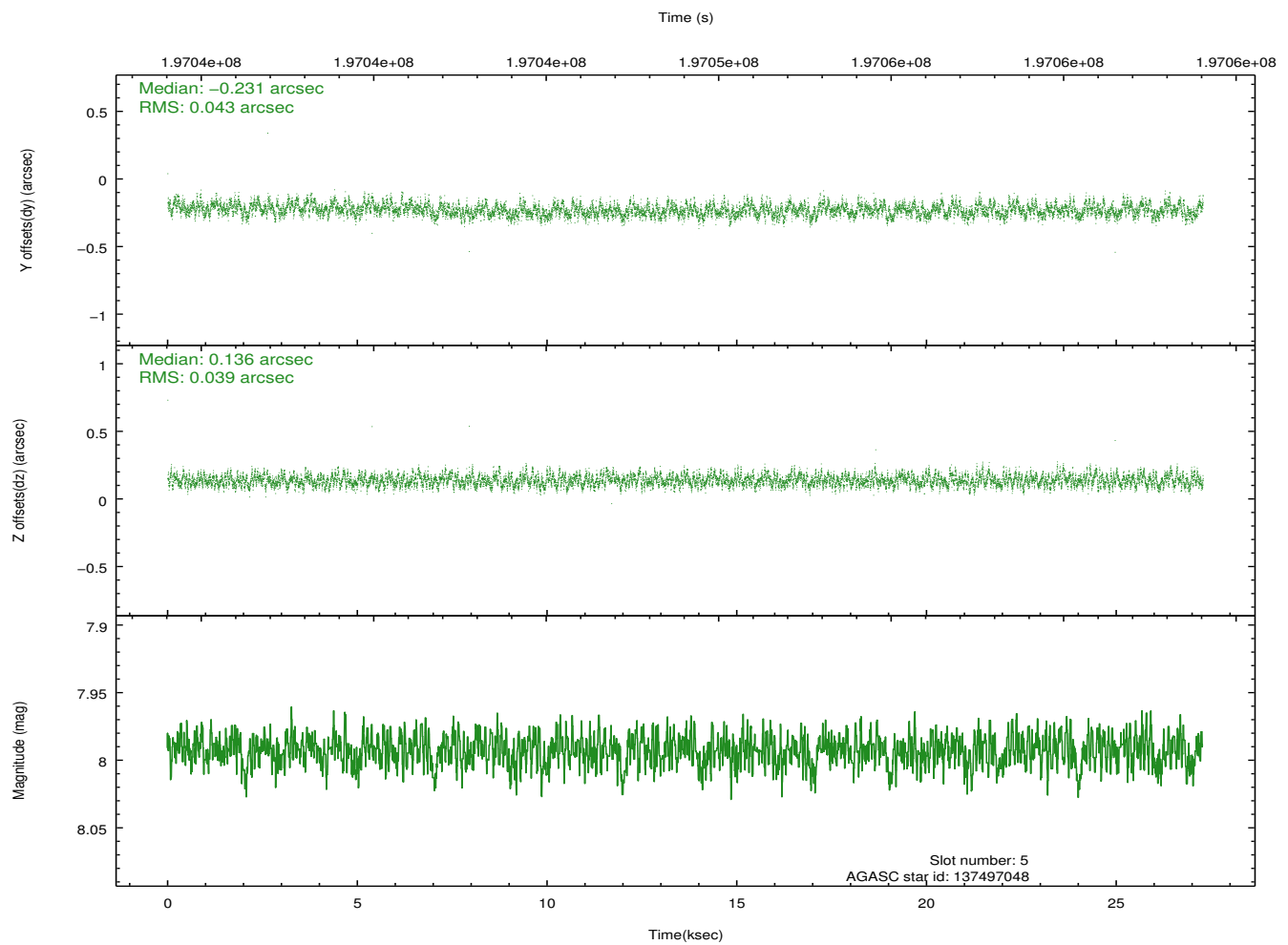
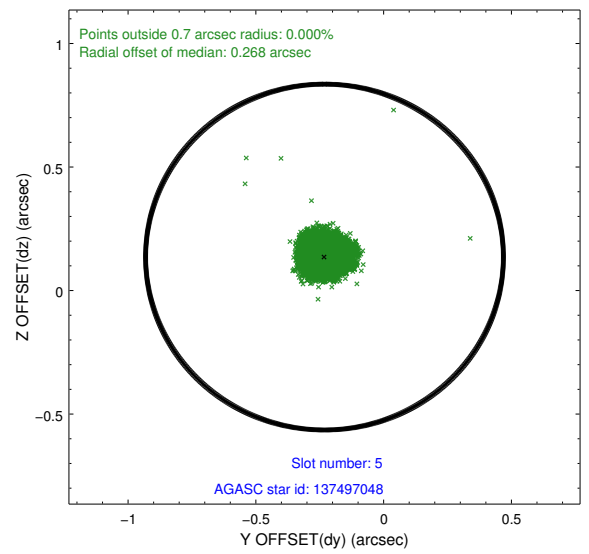
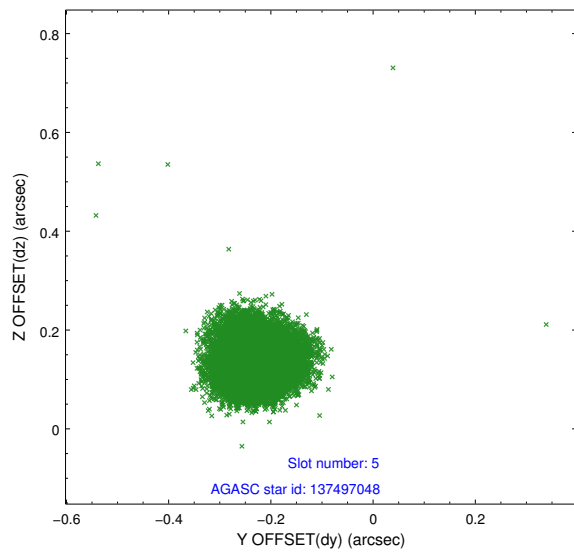
### 2.4.1 Slot 3



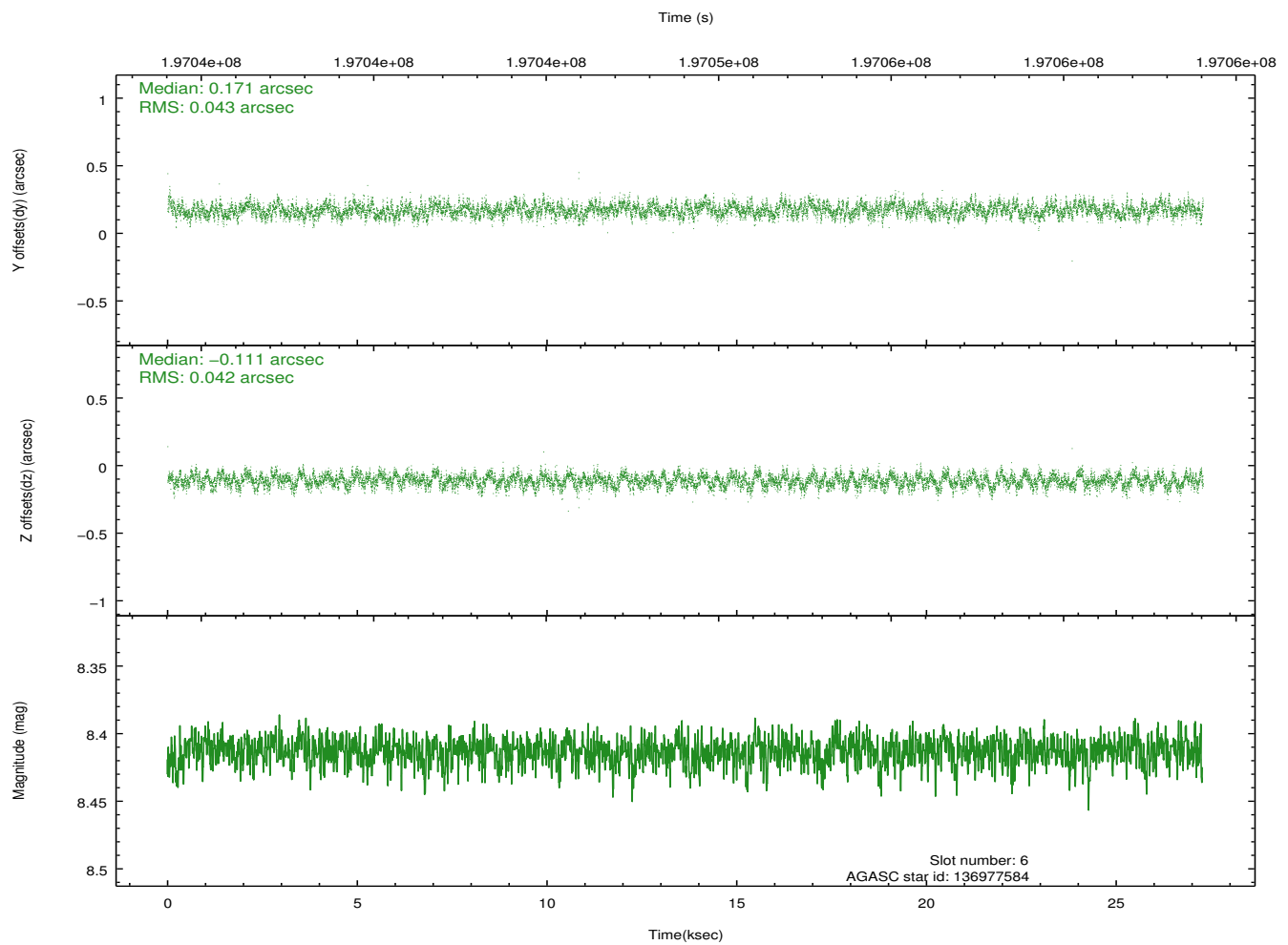
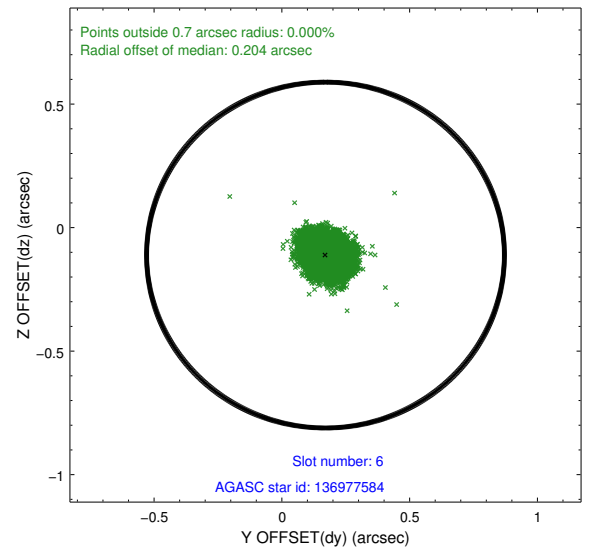
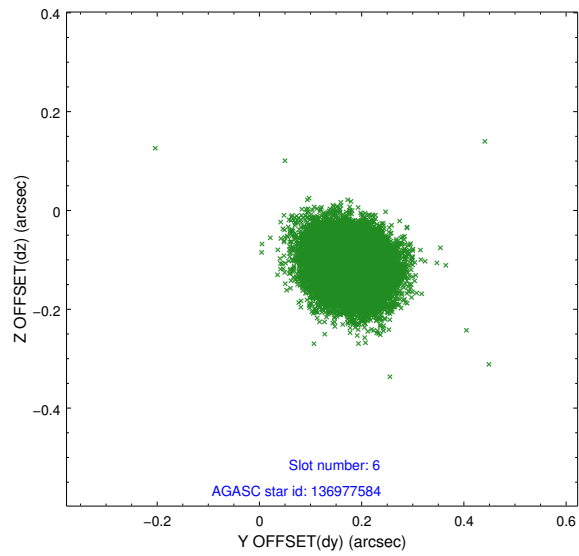
## 2.4.2 Slot 4



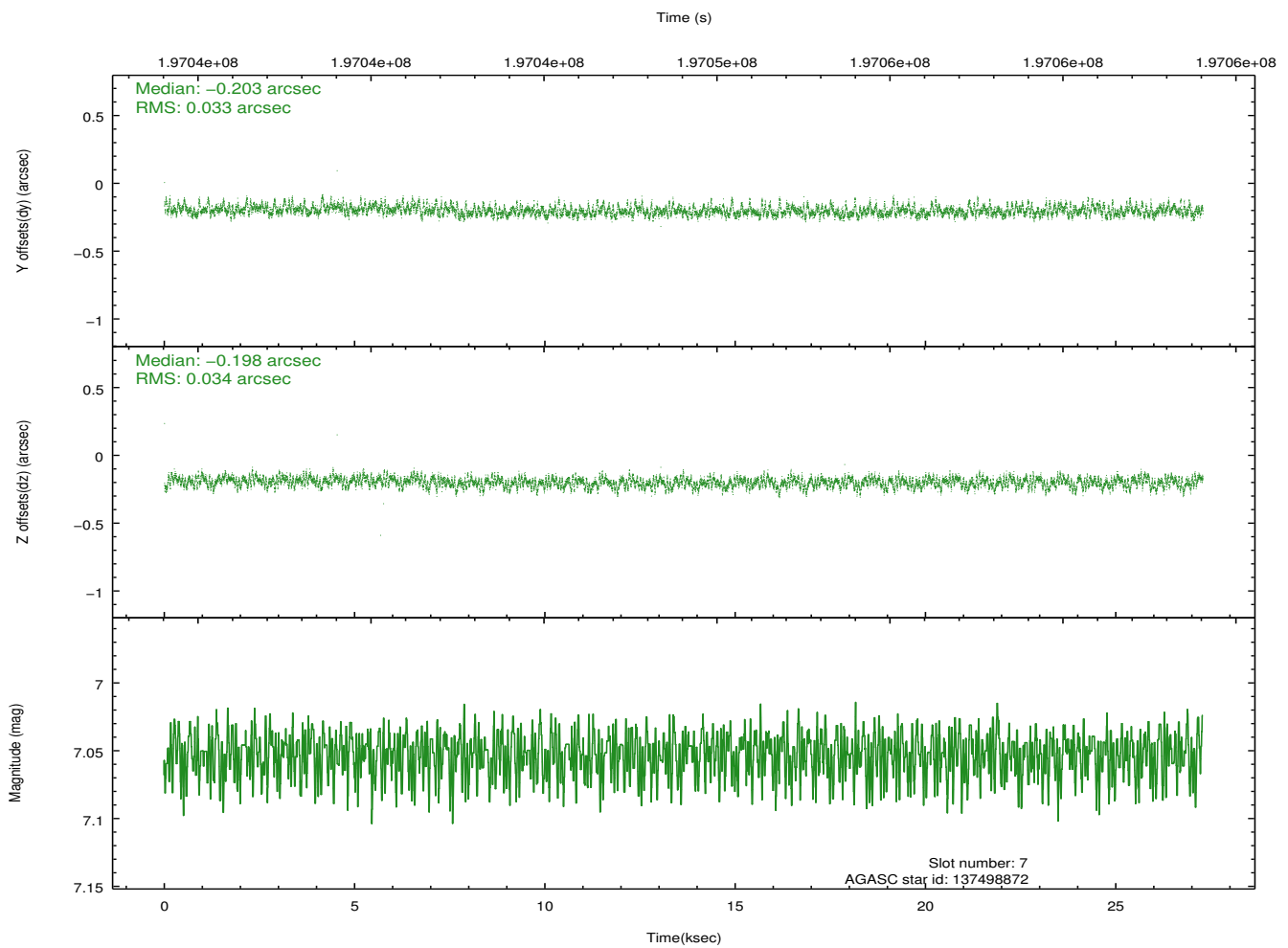
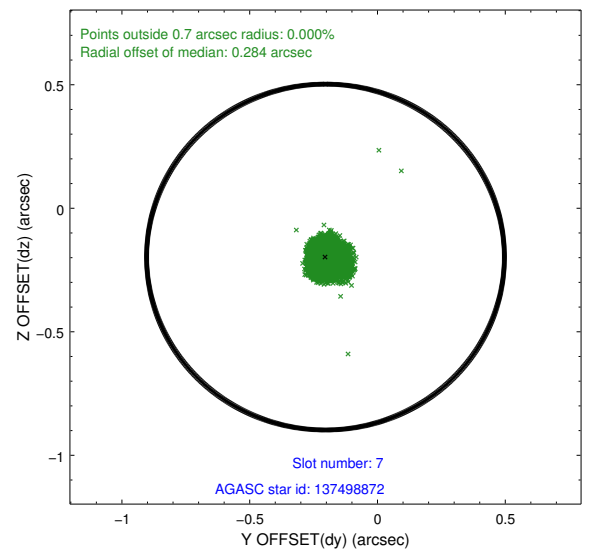
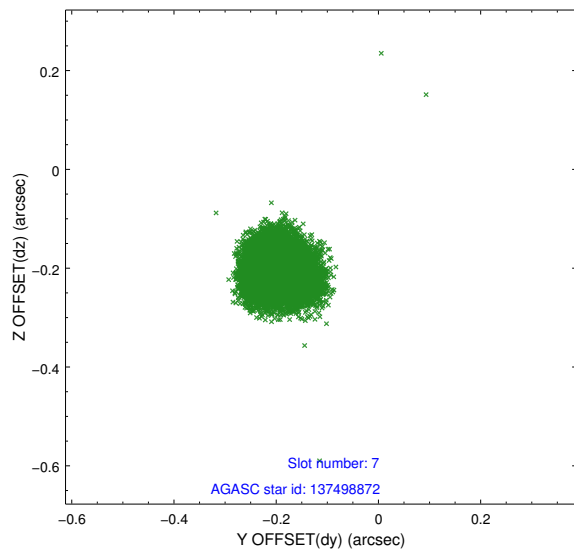
### 2.4.3 Slot 5



## 2.4.4 Slot 6

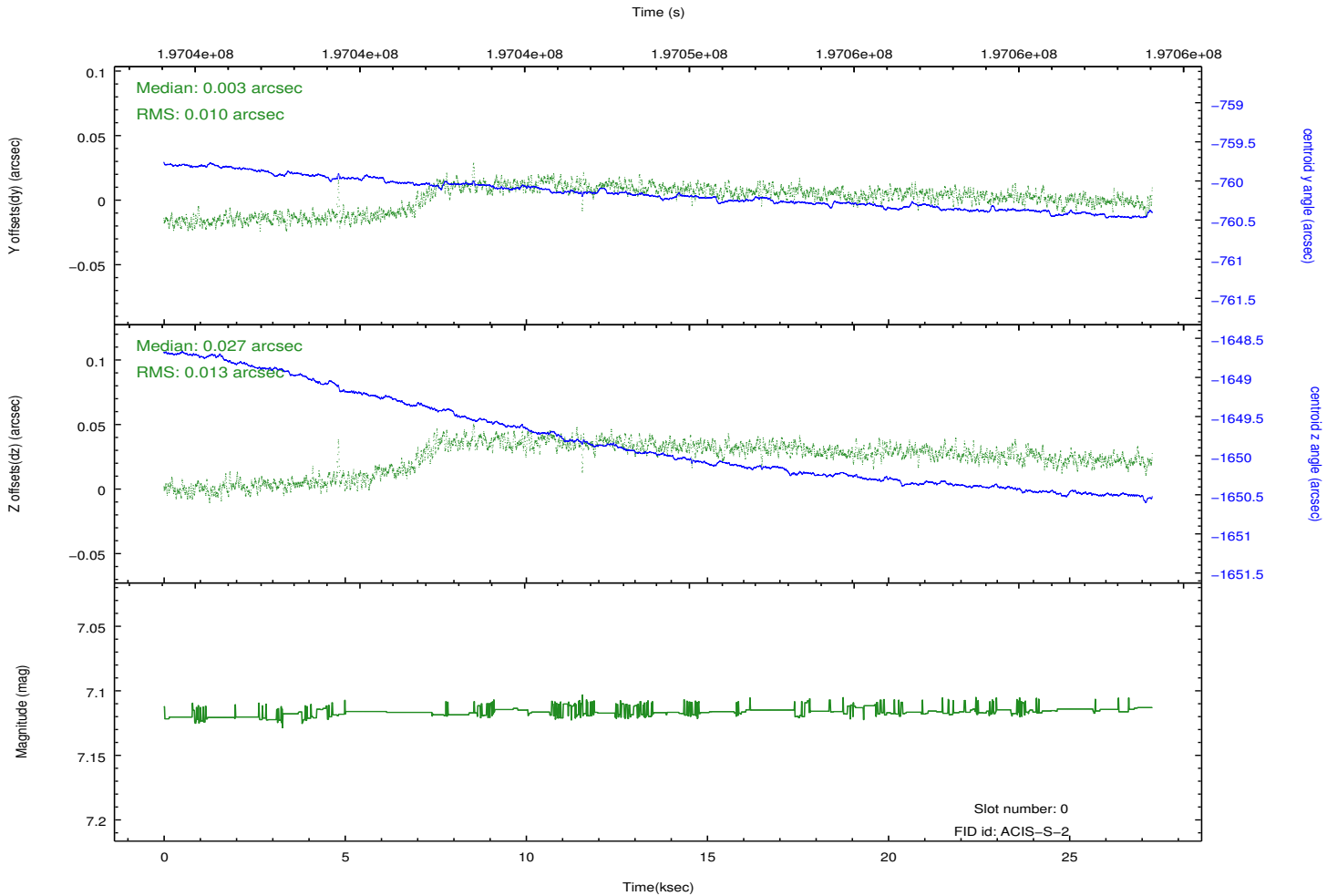
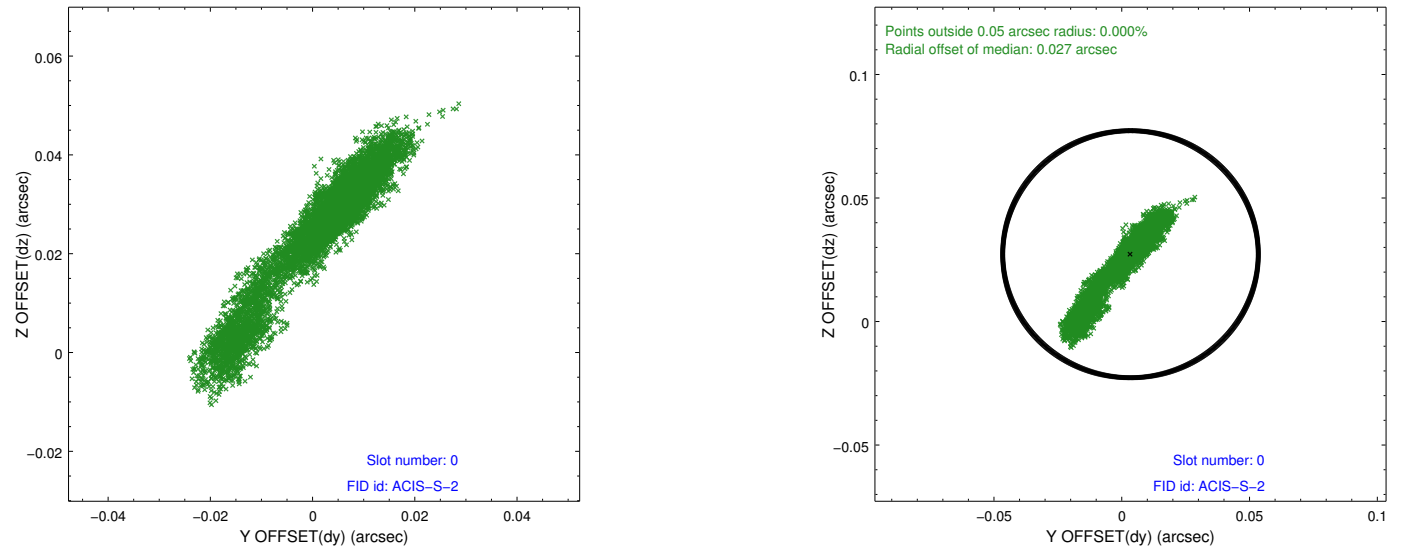


## 2.4.5 Slot 7

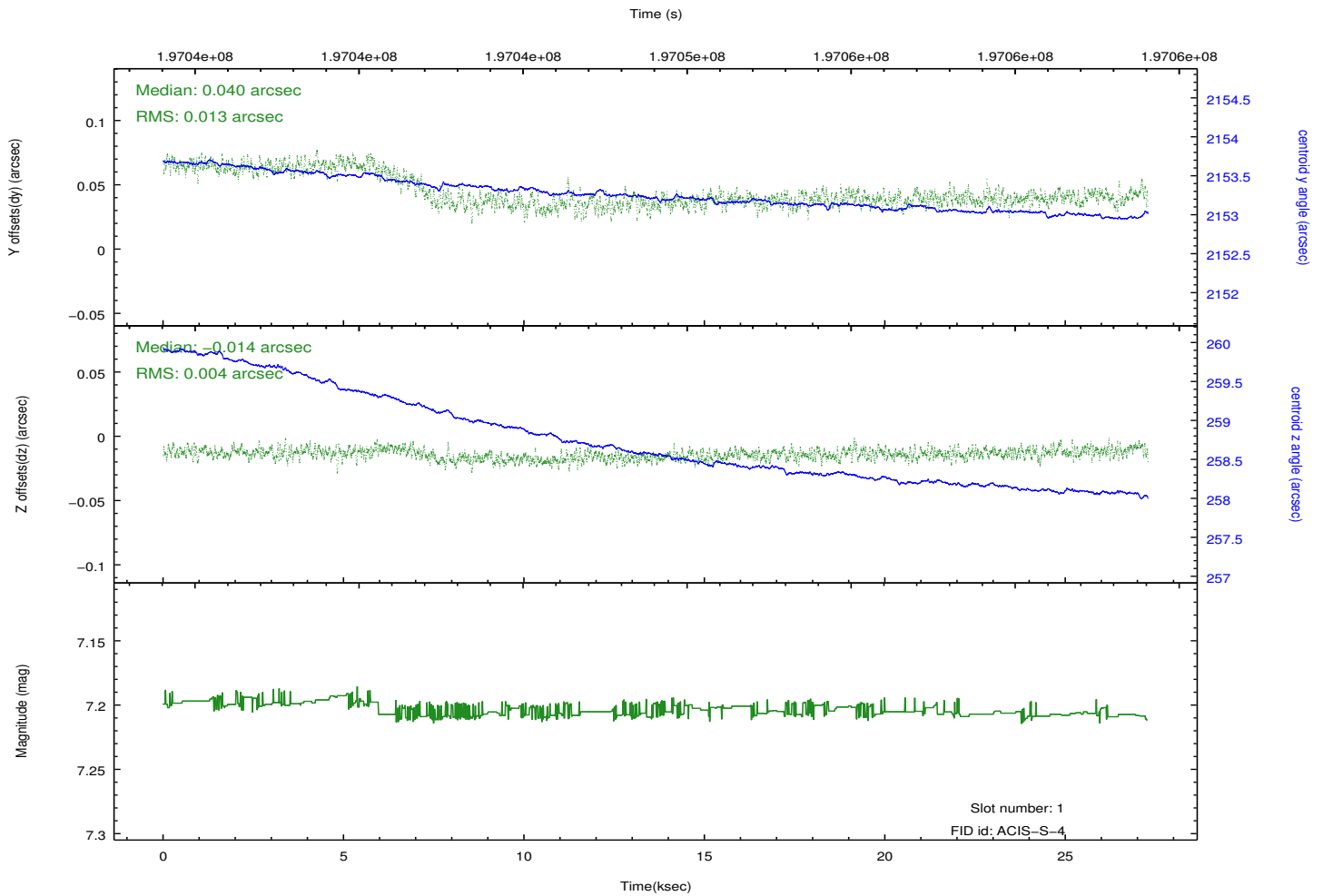
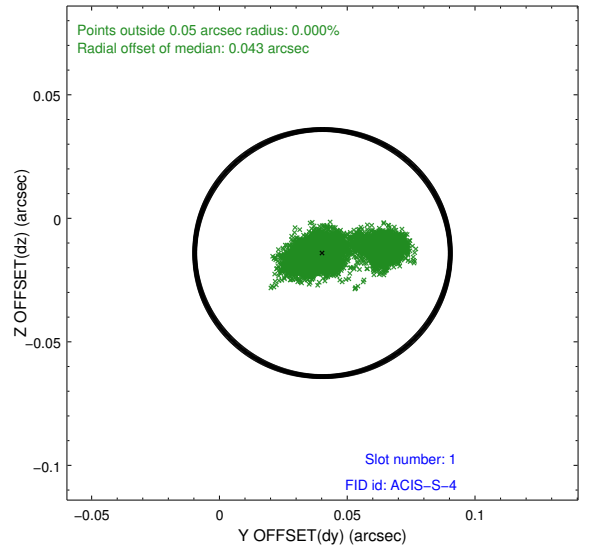
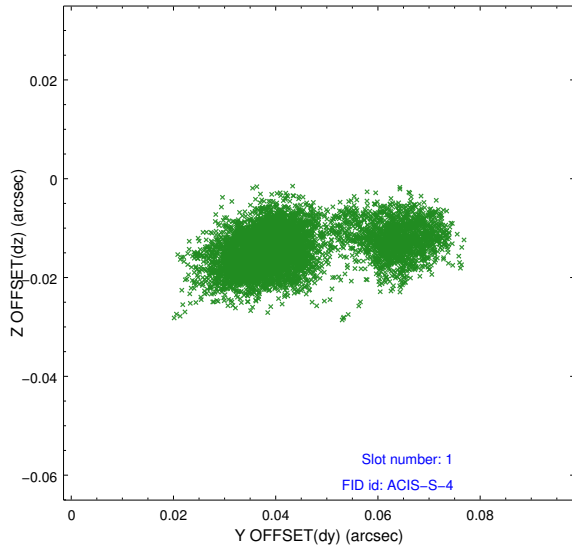


## 2.5 FID Slots

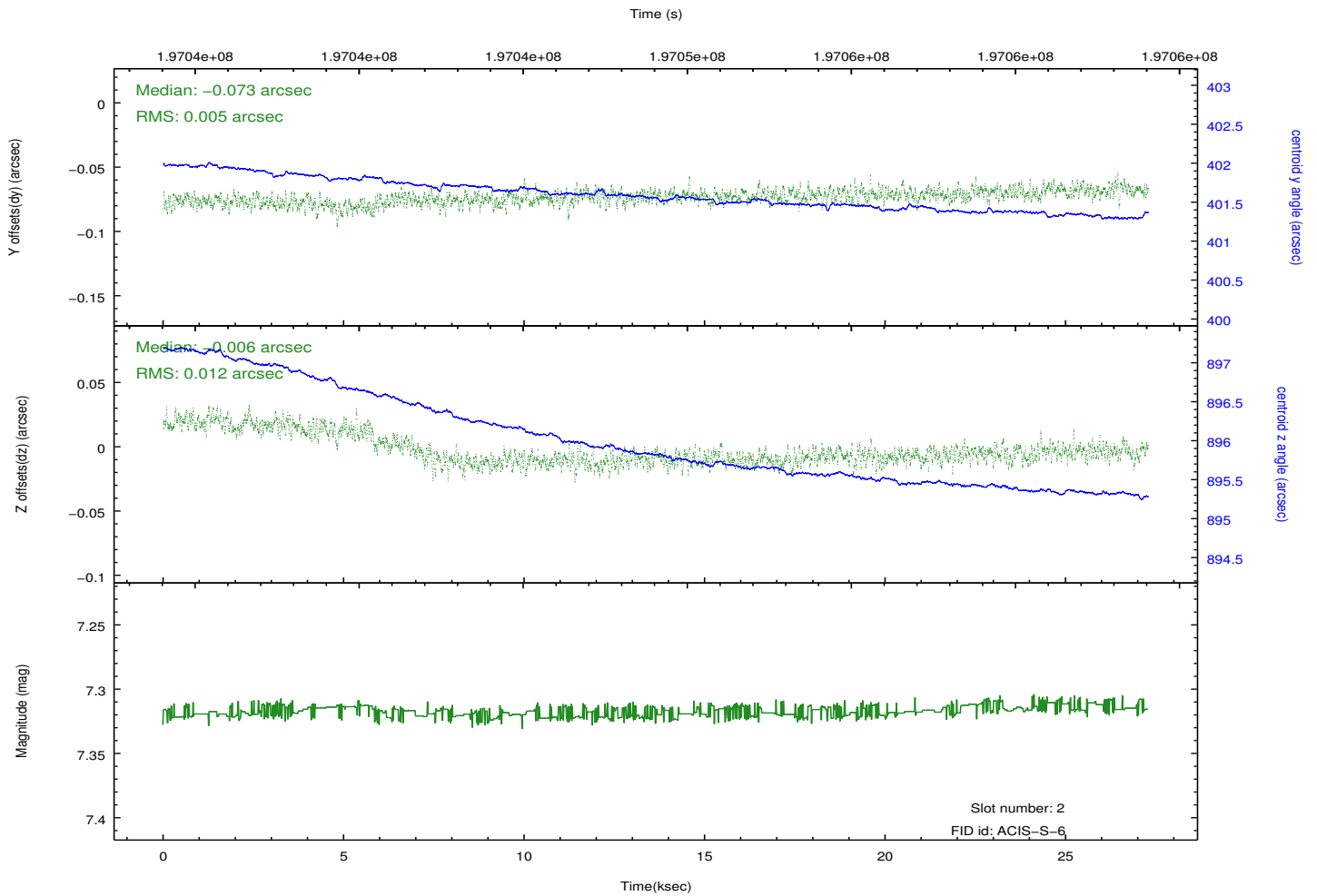
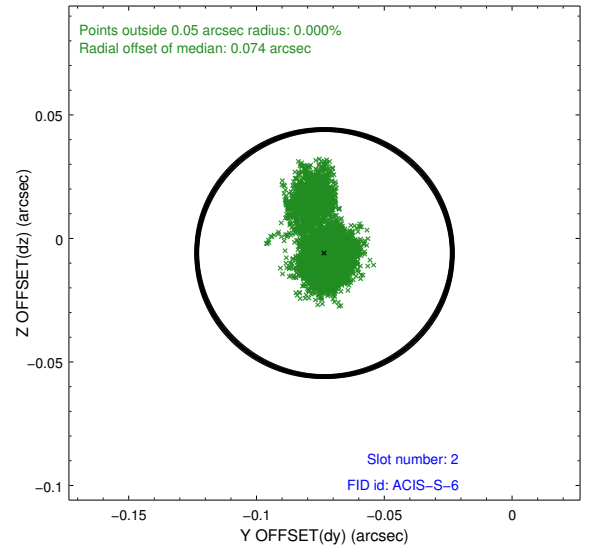
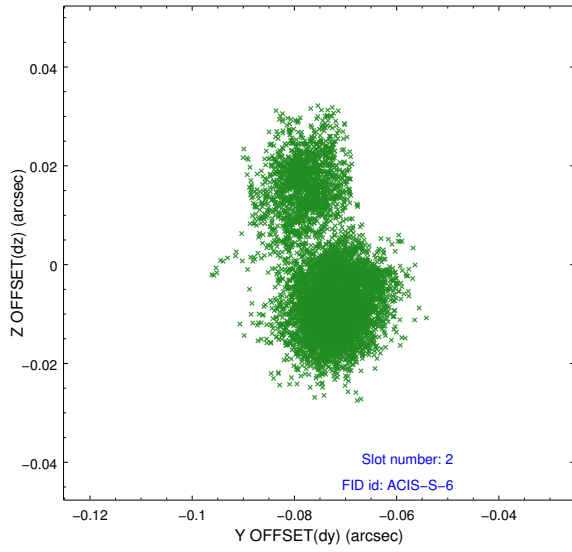
### 2.5.1 Slot 0



## 2.5.2 Slot 1

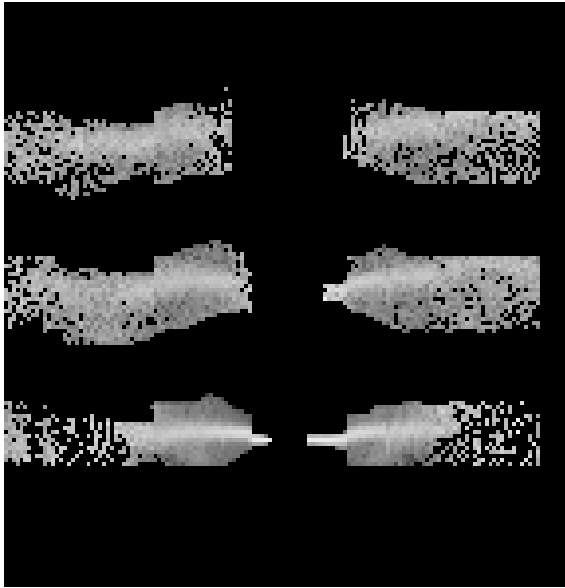


### 2.5.3 Slot 2

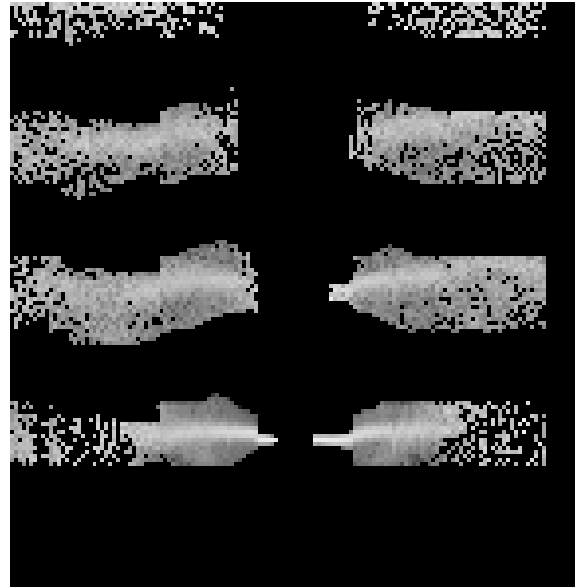


# 3 Gratings

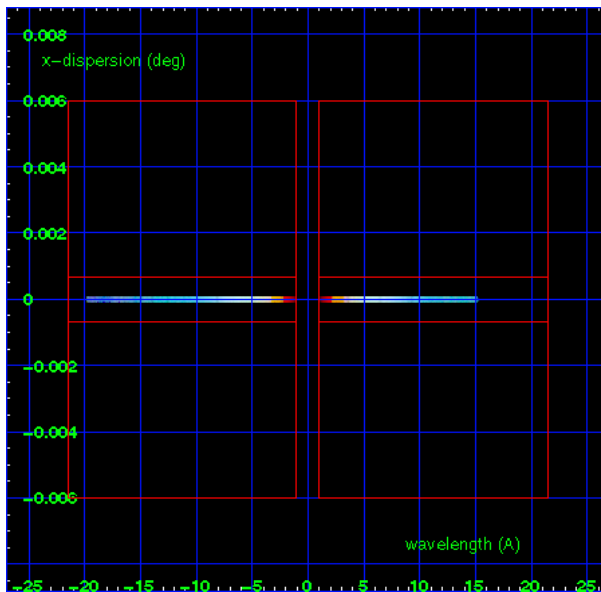
## 3.1 HEG Arm



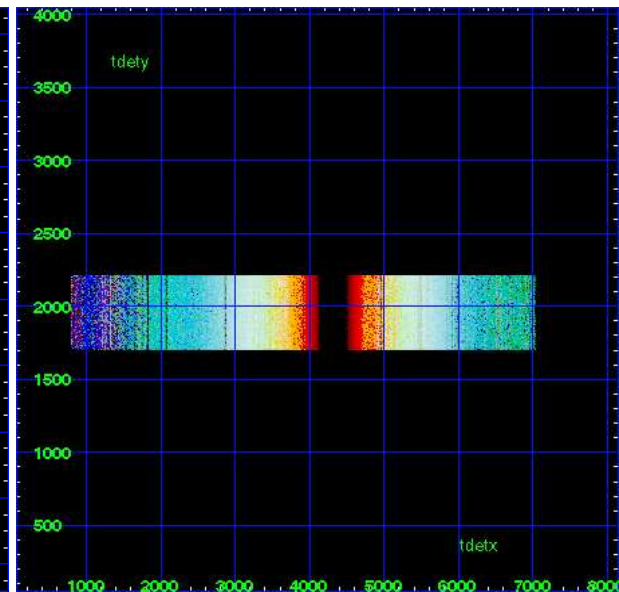
HEG Order Sort 123



HEG Order Sort ALL

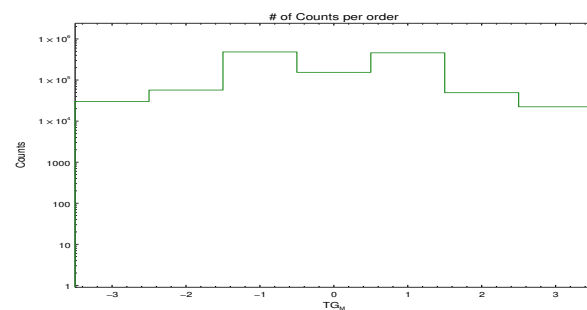


Spot Image HEG

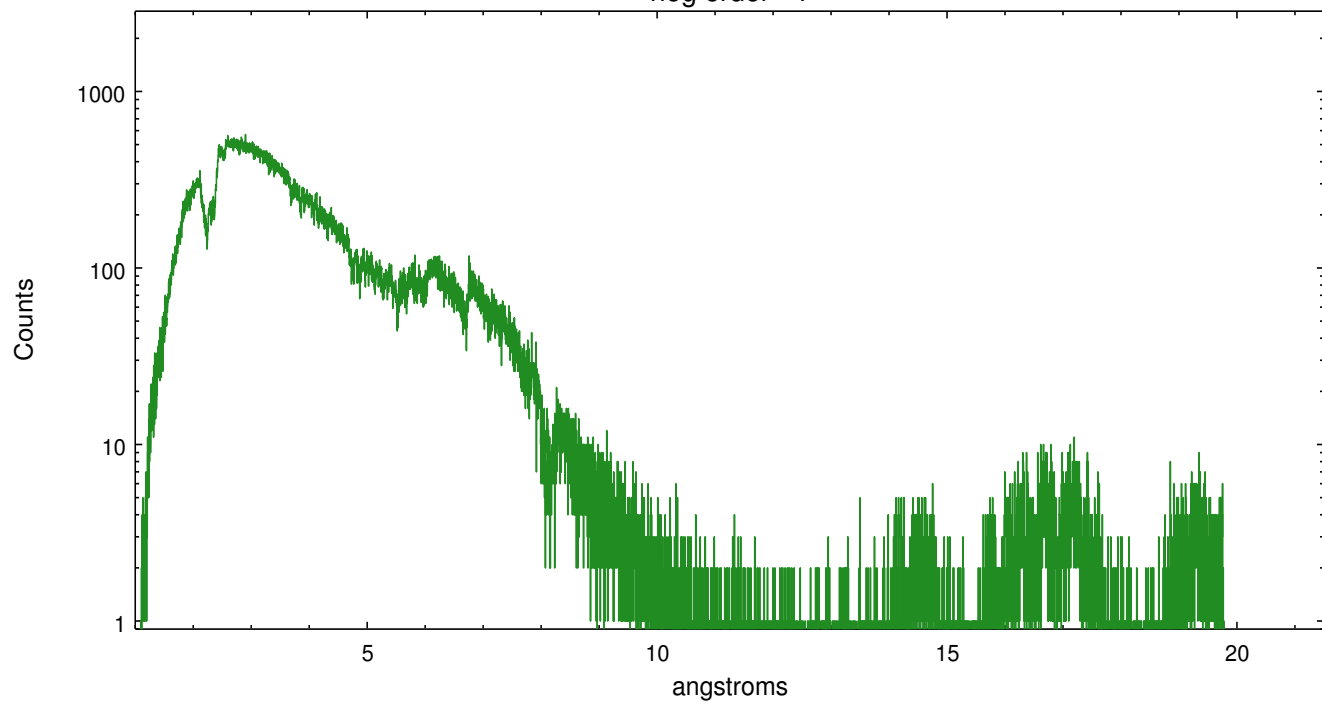


Full Detector HEG

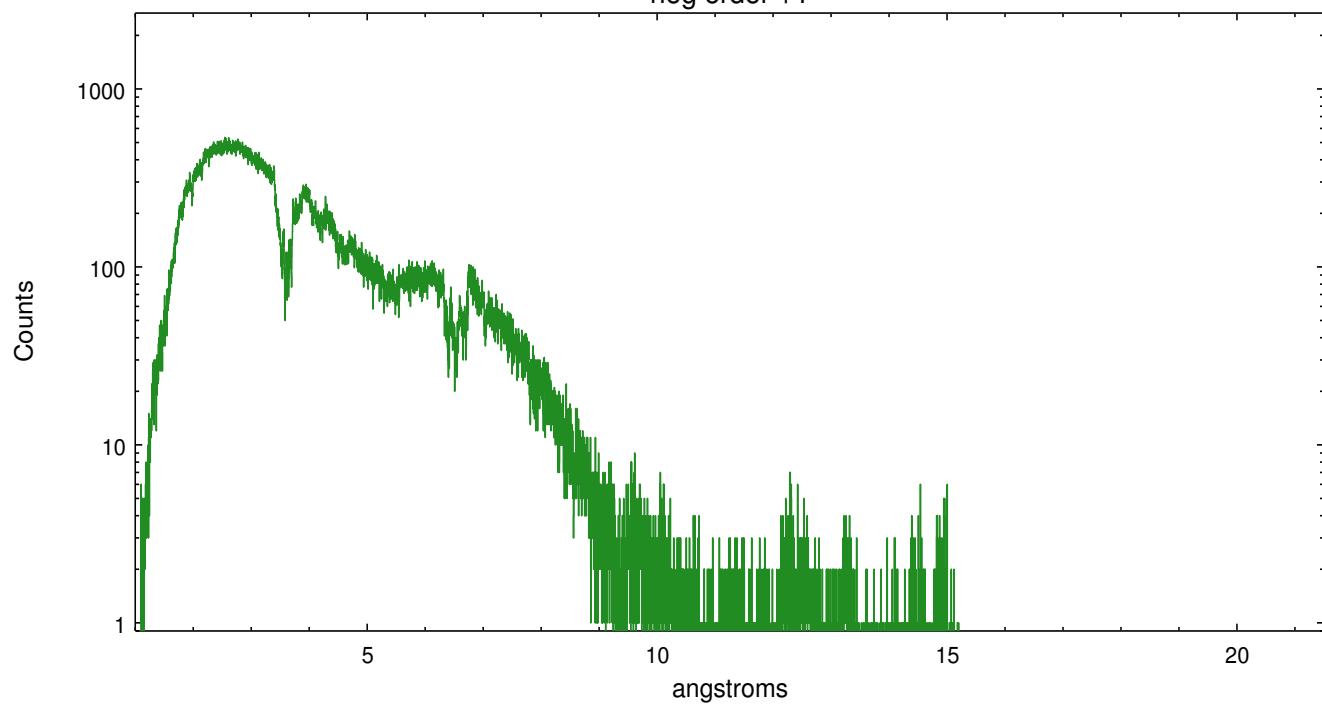
	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	30032	56971	482736	153826	459530	49188	22298



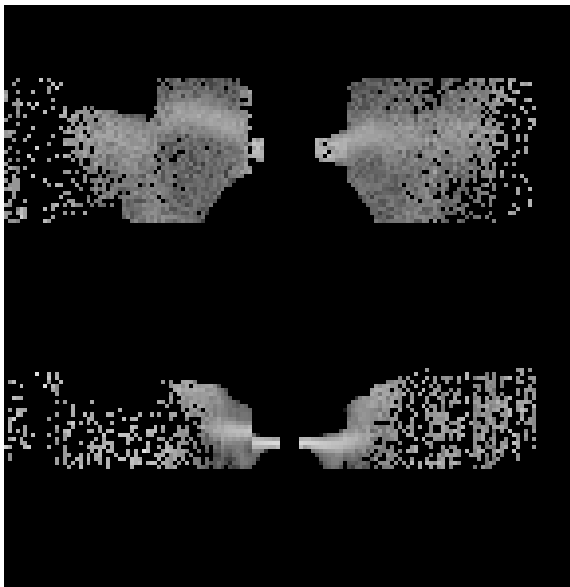
heg order -1



heg order +1



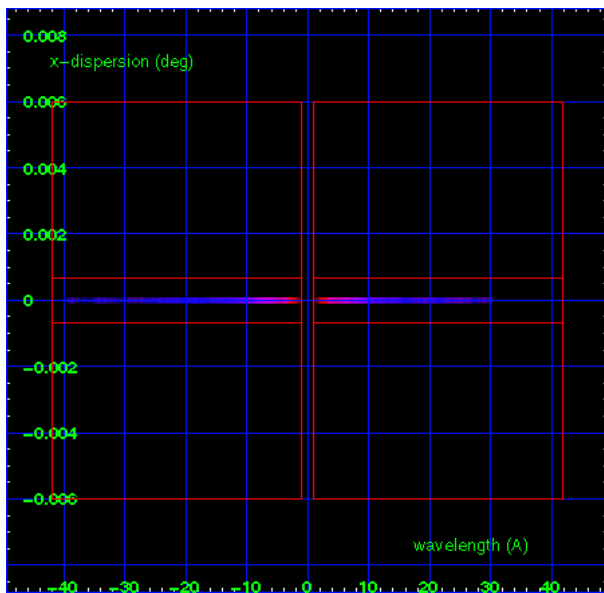
### 3.2 MEG Arm



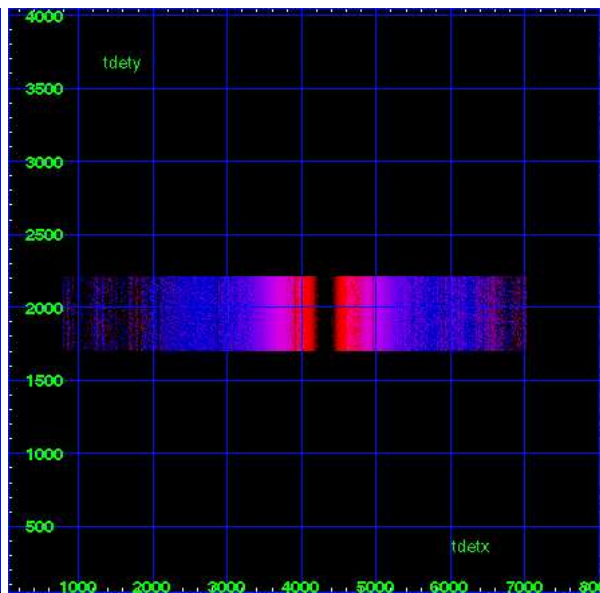
MEG Order Sort 123



MEG Order Sort ALL

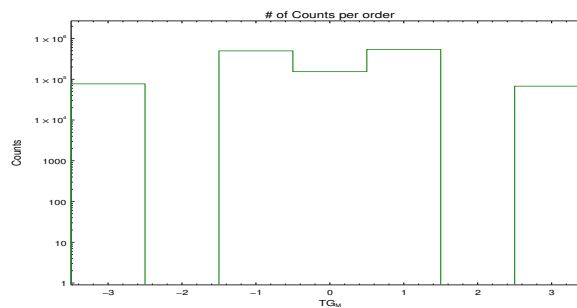


Spot Image MEG

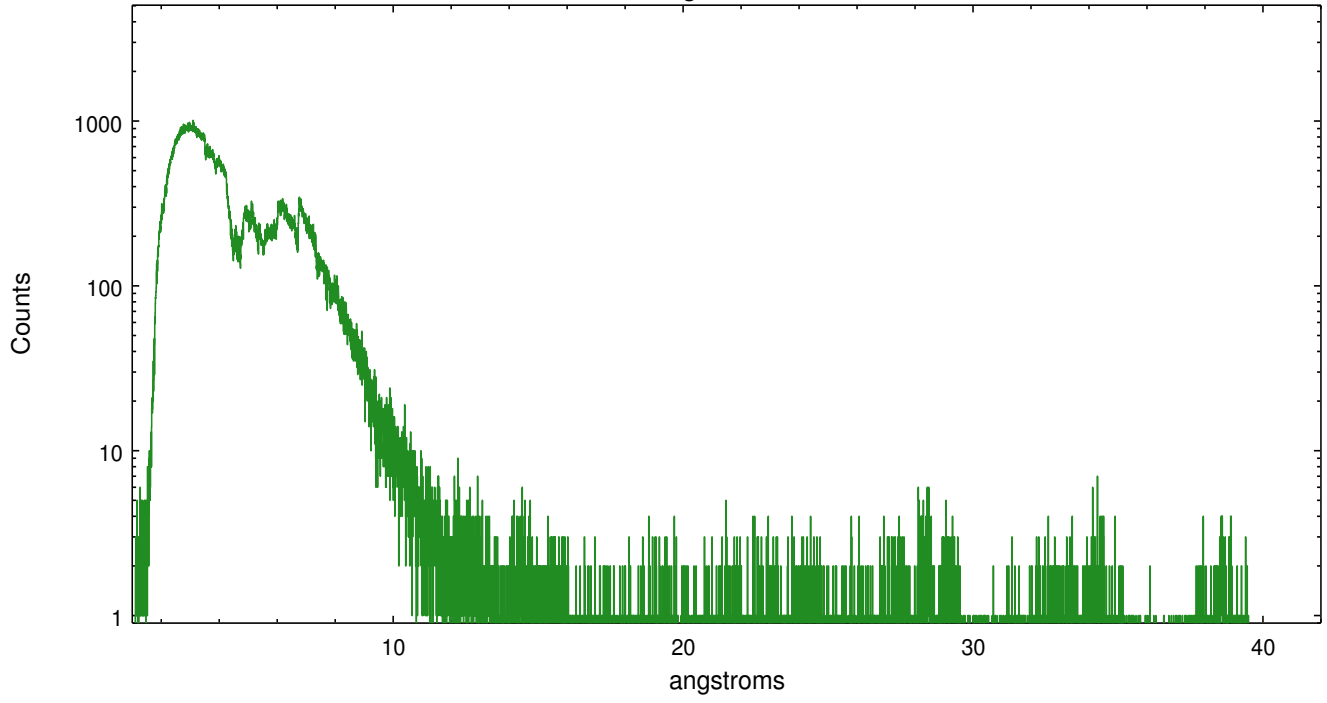


Full Detector MEG

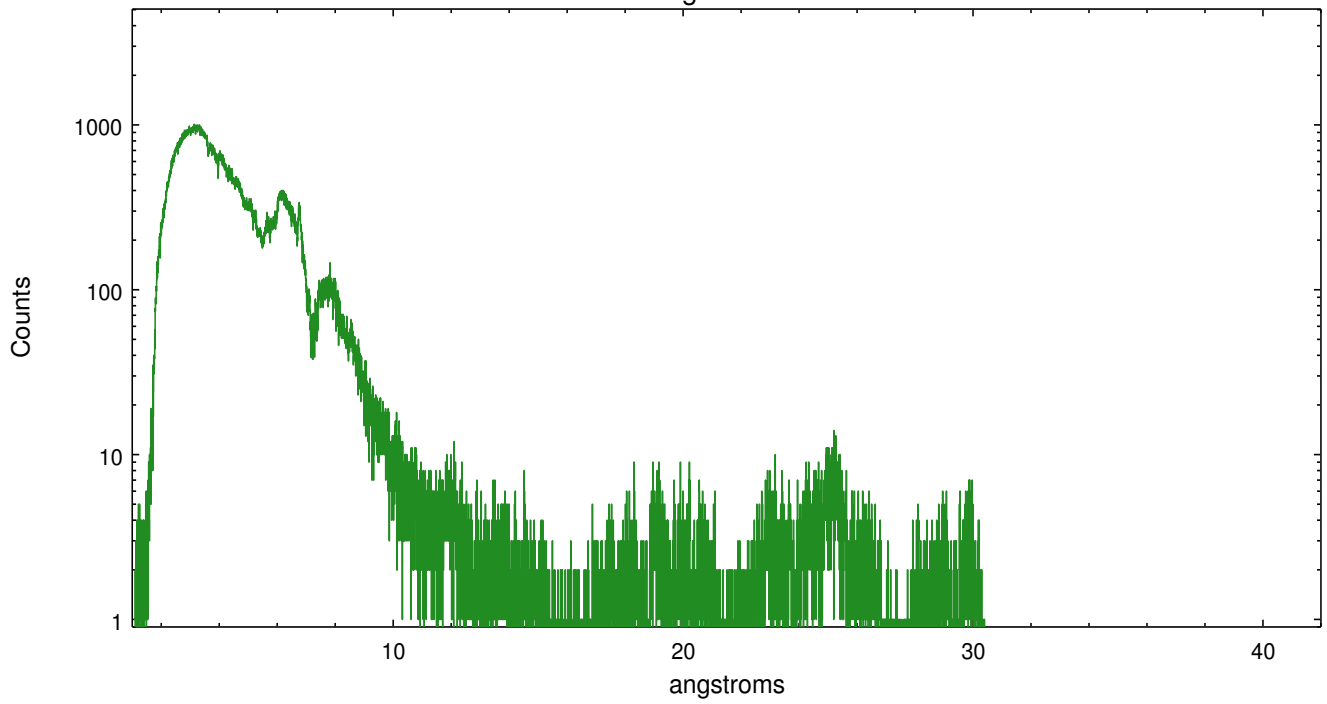
	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	77210	0	497344	153826	541054	0	67605



meg order -1



meg order +1



# A Summary

## A.1 Status

V&V Scientist	David Huenemoerder
V&V Date (YYYY-MM-DD)	2012.12.17
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	27.285

## A.2 Comments