

# V&V Reference Report

## L2 ASCDS Version : 10.9.1

Observation 4587 - L2 Version 5  
Chandra X-Ray Center

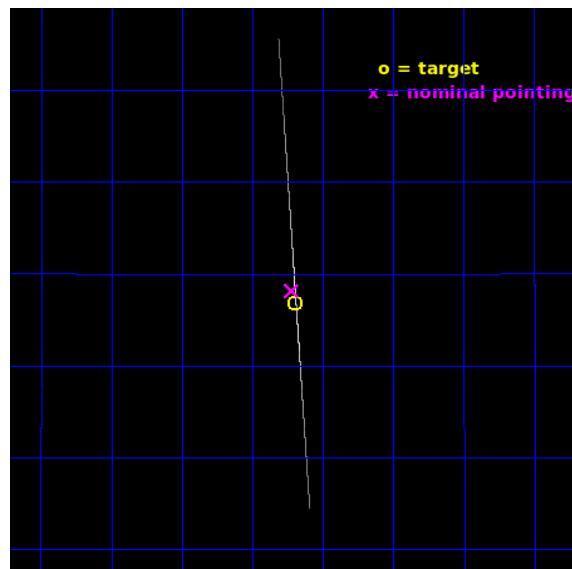
L2 Processing Date : Sep 24 2020

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# 1 Front

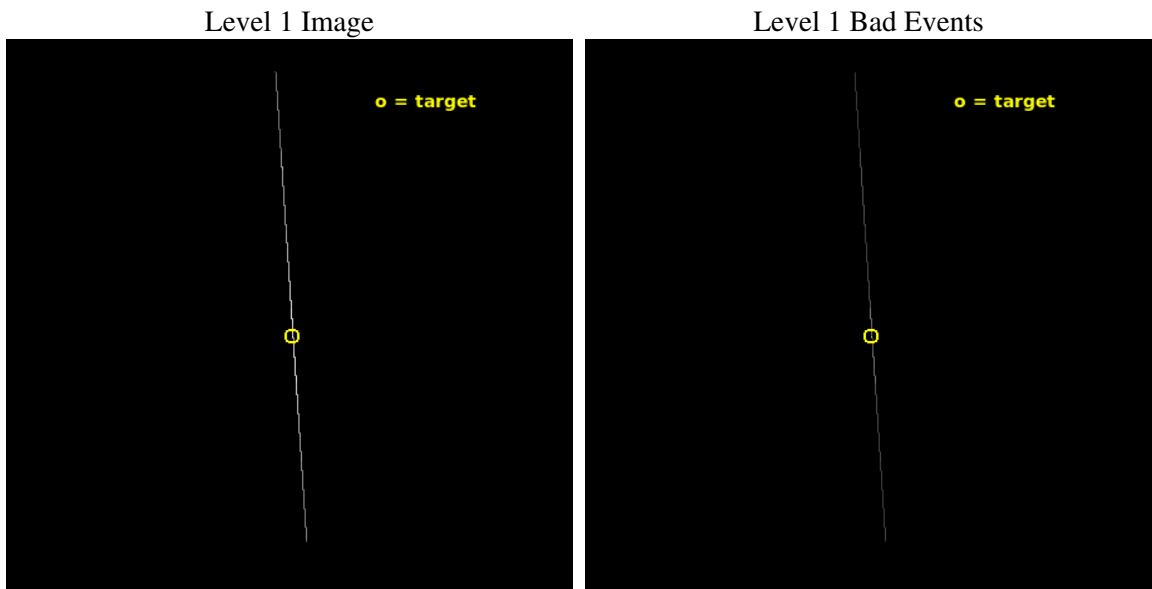
seq_num	400369	Sequence number
obs_id	4587	Observation id
title	Probe the relativistic Out-flow in the microquasar GRS1915+105 with HETG/Chandra	Proposal title
observer	Dr. Yuxin Feng	Principal investigator
object	GRS 1915+105	Source name
ra_targ	288.798333	Observer's specified target RA [deg]
dec_targ	10.945806	Observer's specified target Dec [deg]
ra_nom	288.80492703135	Nominal RA [deg]
dec_nom	10.969560791225	Nominal Dec [deg]
roll_nom	86.334776984085	Nominal Roll [deg]
revision	5	Processing version of data
ontime	30155.25	Sum of GTIs [s]
livetime	30037.456054688	Livetime [s]
ontime4	30155.25	Sum of GTIs [s]
ontime5	30155.25	Sum of GTIs [s]
ontime6	30155.25	Sum of GTIs [s]
ontime7	30155.25	Sum of GTIs [s]
ontime8	30155.25	Sum of GTIs [s]
ontime9	30155.25	Sum of GTIs [s]
l2events	4437993	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	30000.000000	[s] Scheduled observation exposure time
ascdsver	10.9.1	Processing system revision	ontime	30155.25	Sum of GTIs [s]
caldbver	4.9.2	&#160	ontime4	30155.25	Sum of GTIs [s]
date	2020-09-24T11:48:35	Date and time of file creation	ontime5	30155.25	Sum of GTIs [s]
revision	5	Processing version of data	ontime6	30155.25	Sum of GTIs [s]
			ontime7	30155.25	Sum of GTIs [s]
			ontime8	30155.25	Sum of GTIs [s]
			ontime9	30155.25	Sum of GTIs [s]
			l1events	4882077	Number of level 1 events
			tgmethod	TGDETECT	Method used to create src1a file
				4113.60	

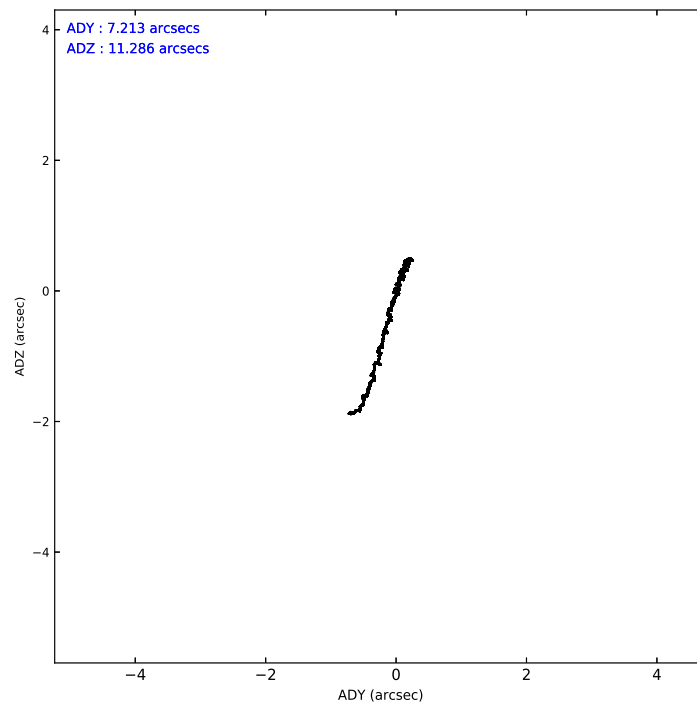
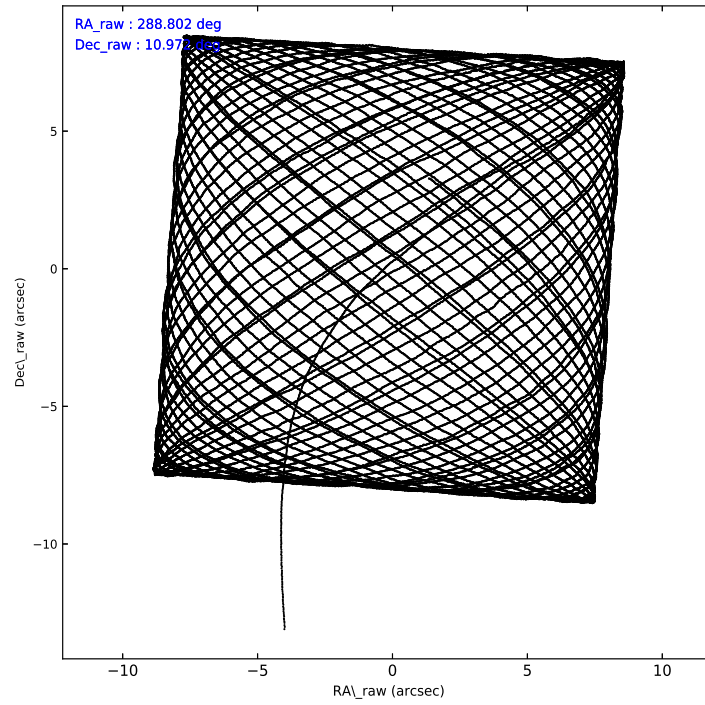
### 2.1.3 Events

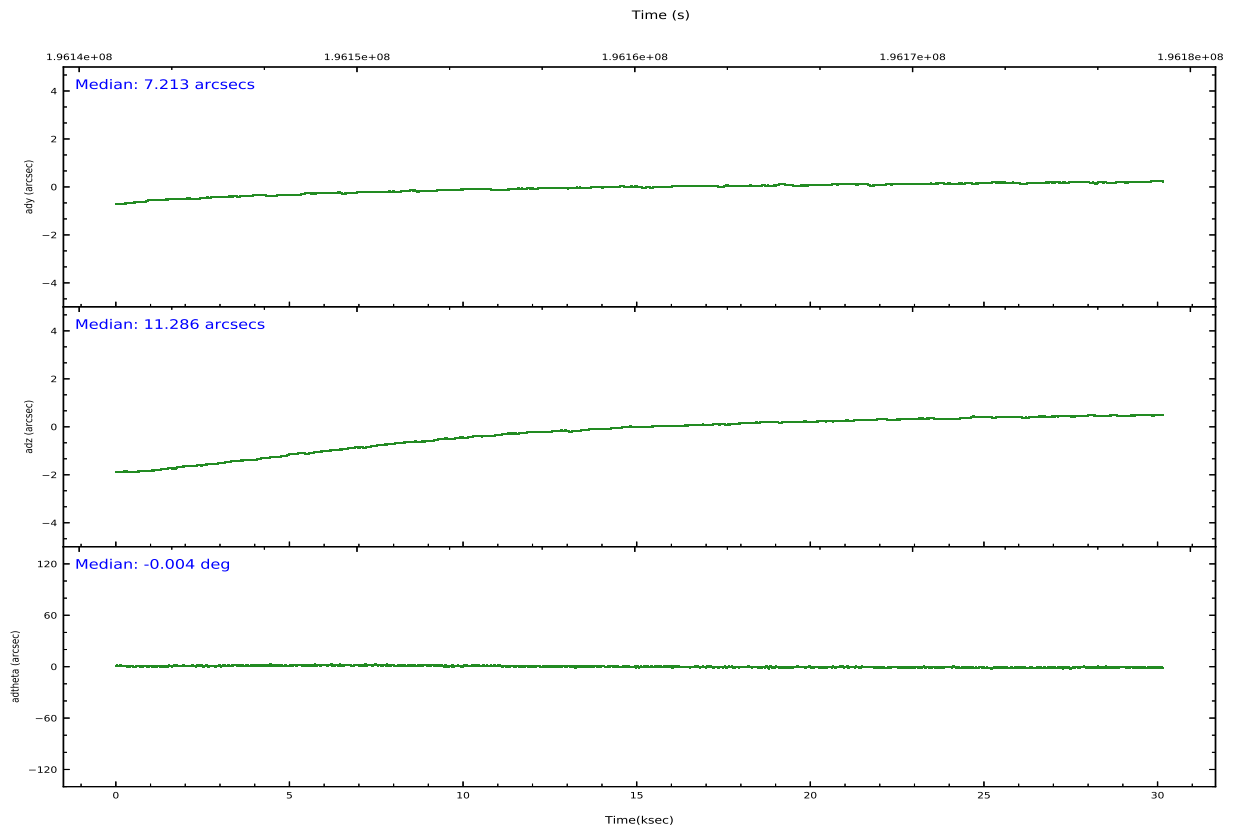
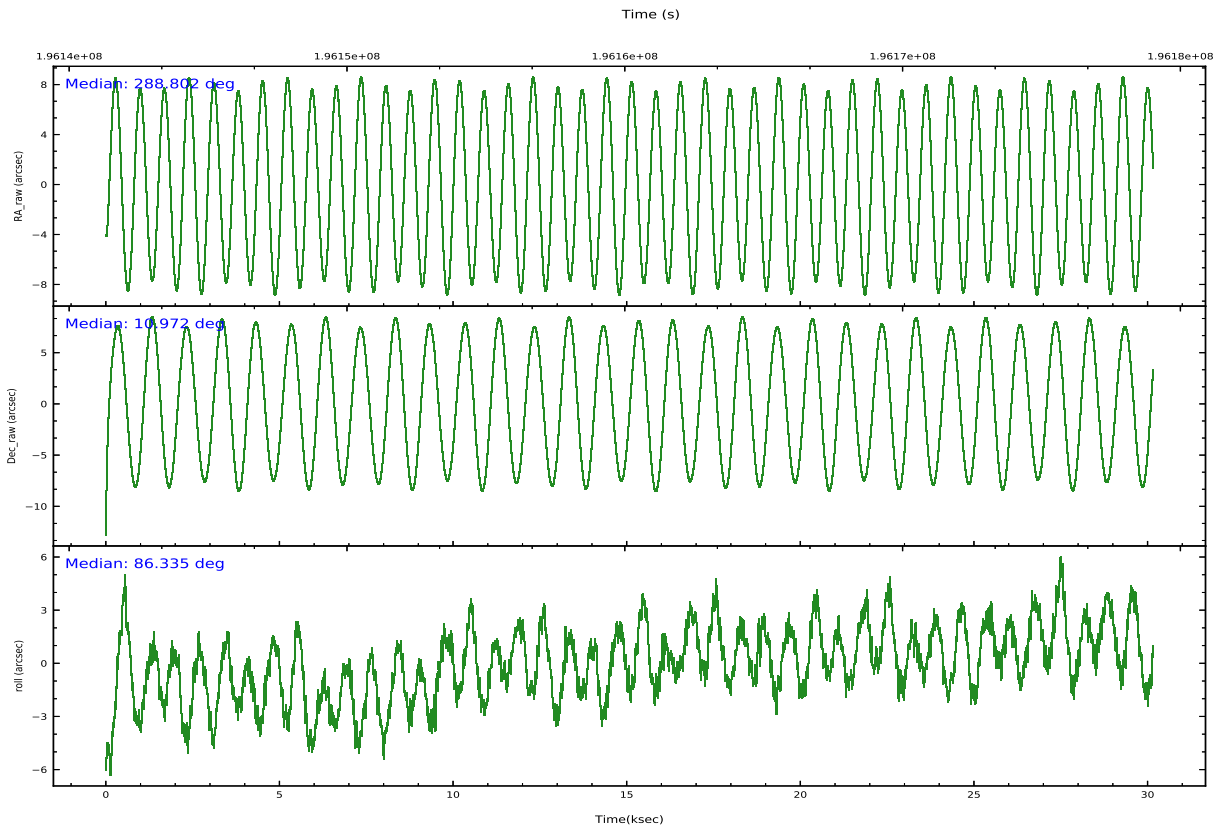
	ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9		ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
level 1 events	77689	297257	1039005	2746675	596438	125013	grade 0 events	4470	34497	14195	249443	26569	6402
rejected events	8565	24269	18147	87166	17279	10415		5%	11%	1%	9%	4%	5%
rejected %	11%	8%	1%	3%	2%	8%	grade 1 events	115	230	153	2284	288	157
								0%	0%	0%	0%	0%	0%
							grade 2 events	44687	106201	886120	1005327	471228	82727
								57%	35%	85%	36%	79%	66%
							grade 3 events	4809	4903	5070	141366	9105	4415
								6%	1%	0%	5%	1%	3%
							grade 4 events	5043	4665	4797	139372	8961	4751
								6%	1%	0%	5%	1%	3%
							grade 5 events	7401	17881	12701	65910	13444	9111
								9%	6%	1%	2%	2%	7%
							grade 6 events	11164	128880	115969	1142973	66843	17450
								14%	43%	11%	41%	11%	13%
							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 version number	8	8
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	288.814446	288.80492703135	Subarray requested	NONE	NONE
[deg] Pointing Dec	10.947584	10.969560791225	Alternating exposures requested	N	N
[deg] Pointing Roll	86.174499	86.334776984085	[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)	196145215.184000	196144133.52204			
Observation start date	2004-03-20T04:45:51	2004-03-20T04:28:53			
[s] Observation end time (MET)	196175215.184000	196176396.93595			
Observation end date	2004-03-20T13:05:51	2004-03-20T13:26:36			
Read mode	CONTINUOUS	CONTINUOUS			

## 2.3 Aspect





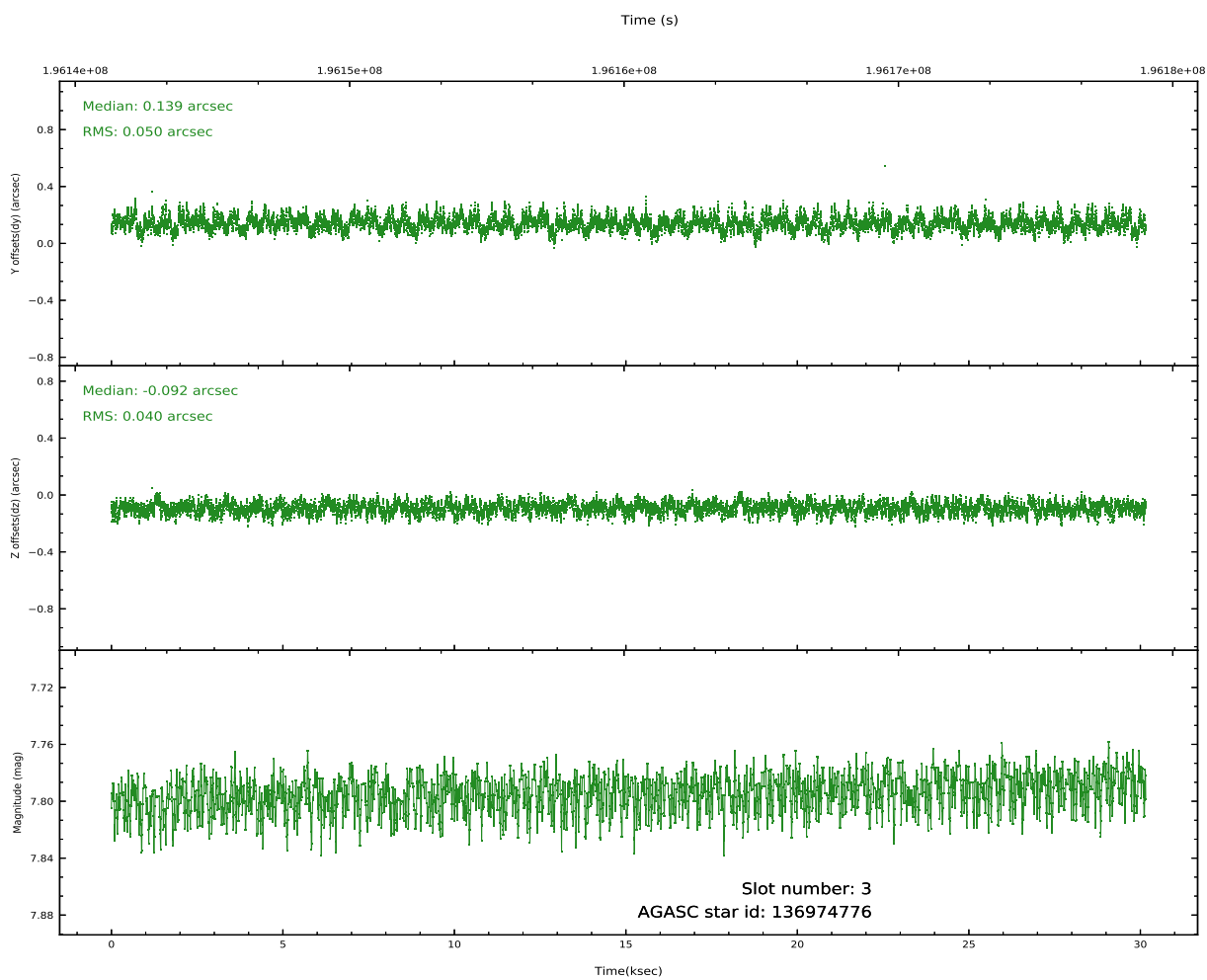
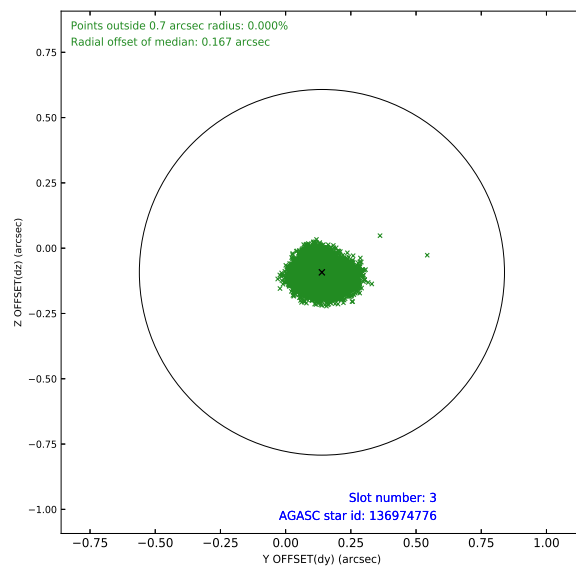
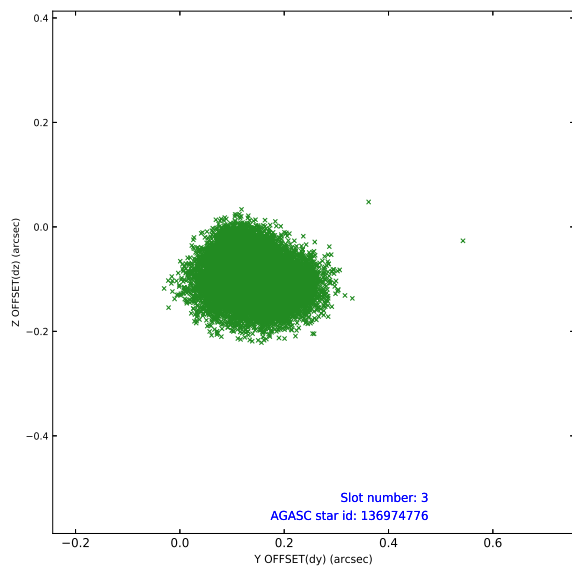
### Slot Statistics

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	7356	1.000	-0.051	-0.029	0.012	0.020	0.000000	0.000000	-760.22	-1650
1	FID		ACIS-S-4	7.21	7356	1.000	0.079	0.014	0.008	0.013	0.000000	0.000000	2153.17	258
2	FID		ACIS-S-6	7.32	7356	1.000	-0.056	0.022	0.012	0.017	0.000000	0.000000	401.87	895
3	GUIDE	used	136974776	7.79	14713	1.000	0.139	-0.092	0.069	0.109	288.742109	10.409402	-1949.92	126
4	GUIDE	used	137108368	9.23	14707	1.000	0.041	0.270	0.093	0.150	289.421925	10.352056	-1993.44	-2289
5	GUIDE	used	137497048	7.99	14713	1.000	-0.209	0.119	0.052	0.085	288.896055	11.554718	2199.18	-141
6	GUIDE	used	136977584	8.42	14711	1.000	0.177	-0.098	0.060	0.094	288.635599	10.555283	-1450.74	537
7	GUIDE	used	137498872	7.06	14712	1.000	-0.151	-0.206	0.060	0.095	288.350862	11.344926	1319.09	1728

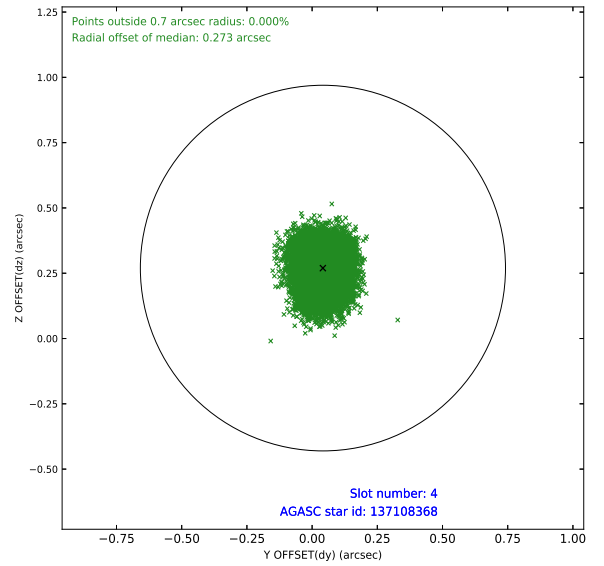
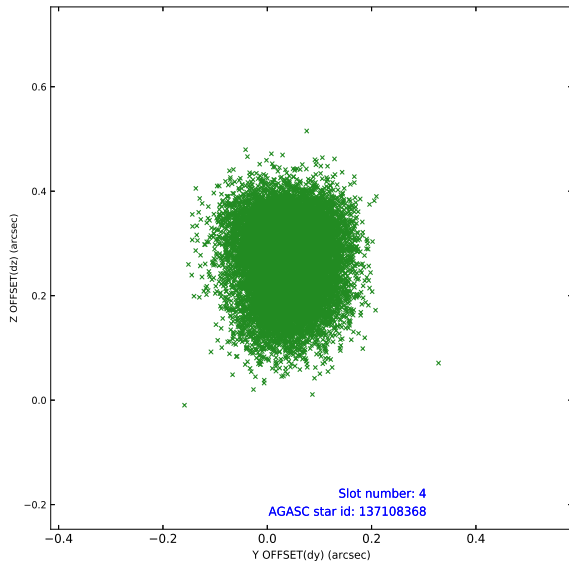
∞

## 2.4 Star Slots

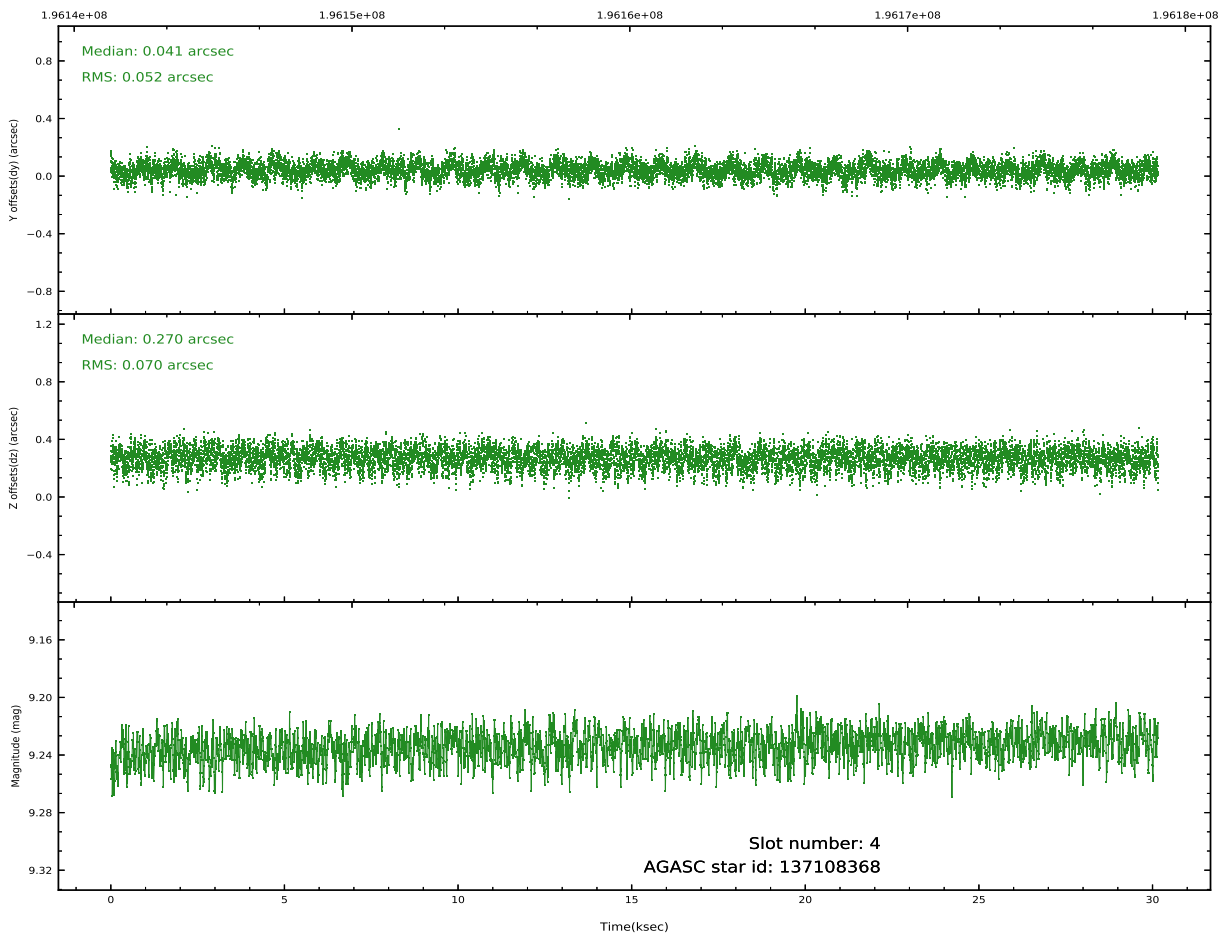
### 2.4.1 Slot 3



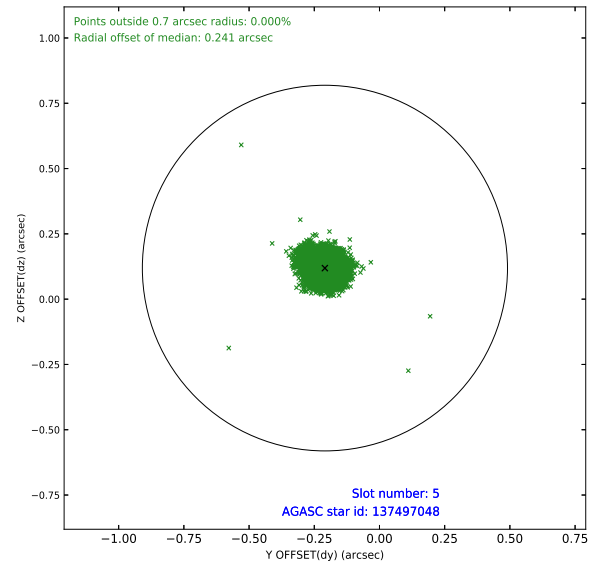
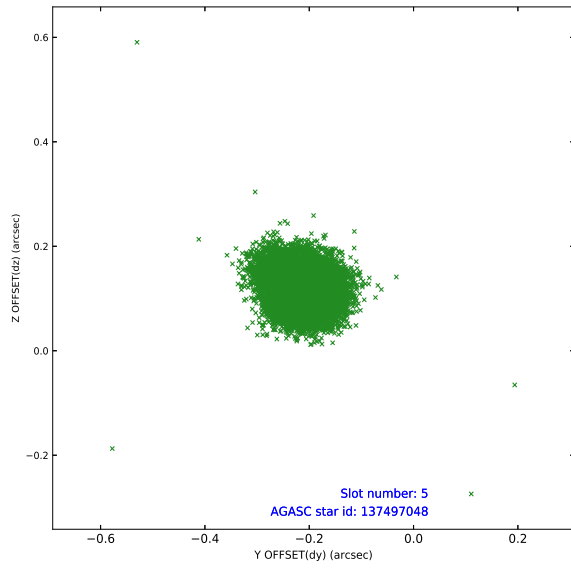
## 2.4.2 Slot 4



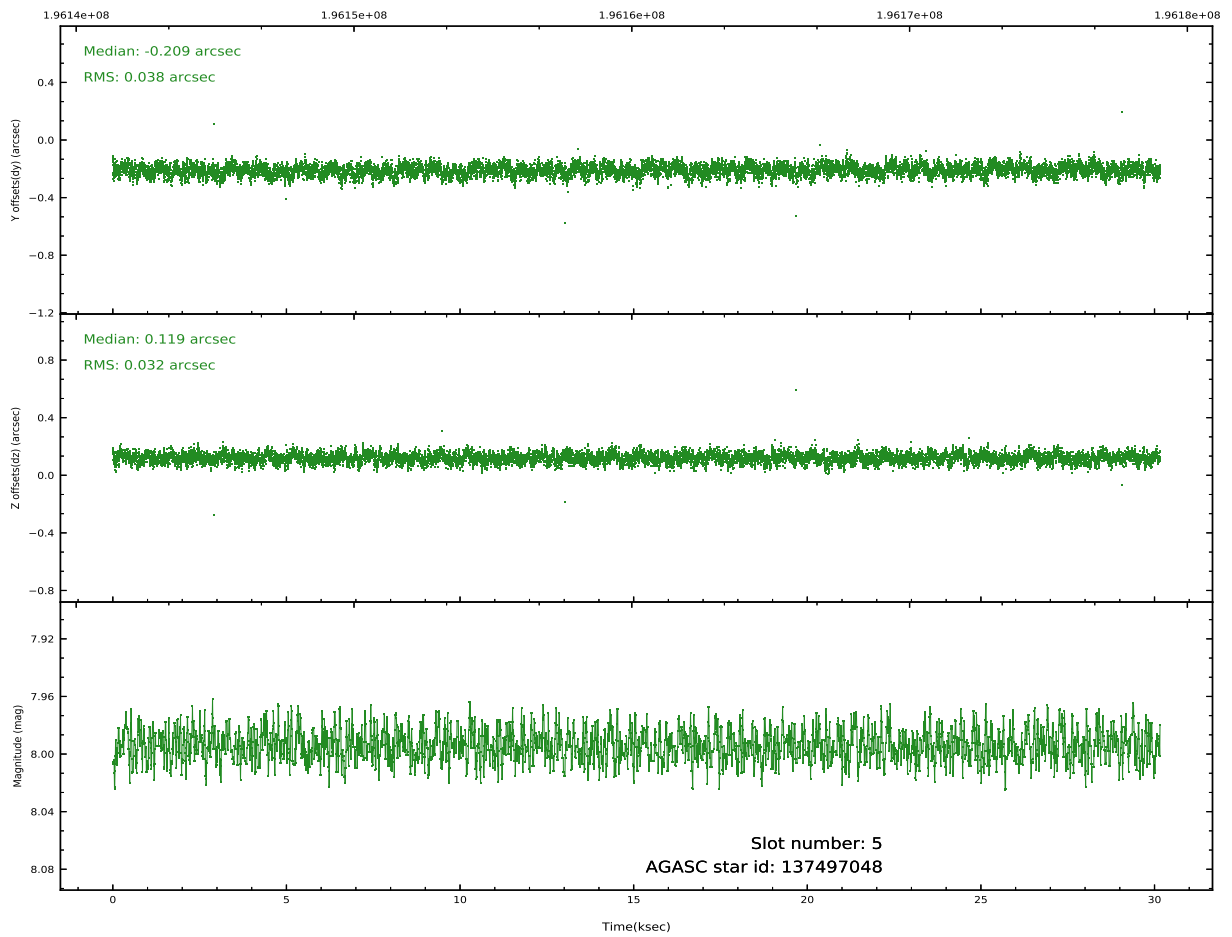
Time (s)



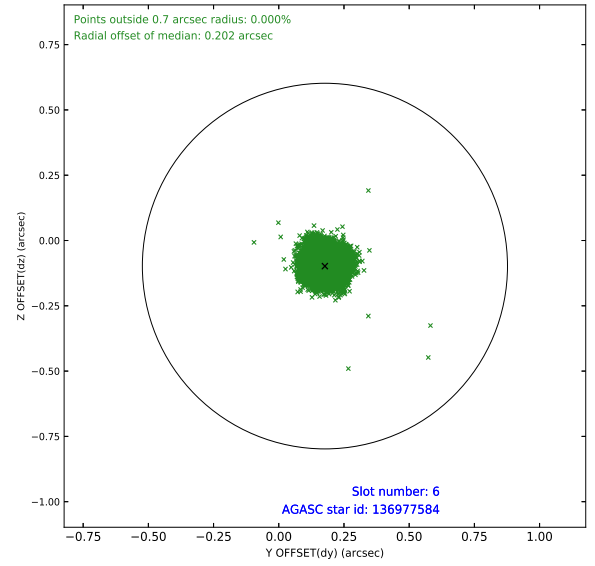
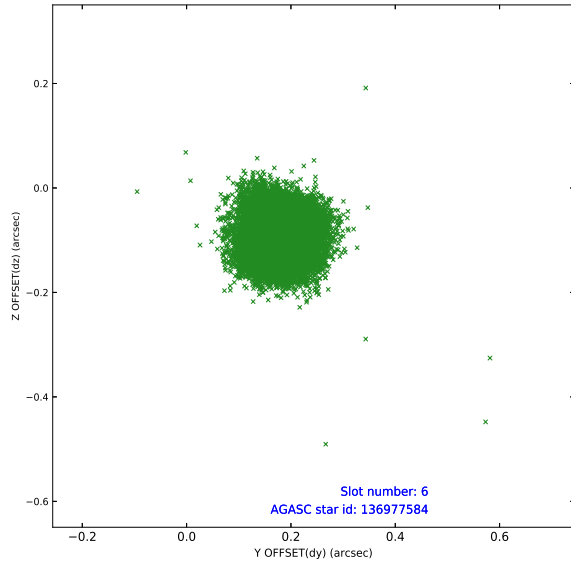
### 2.4.3 Slot 5



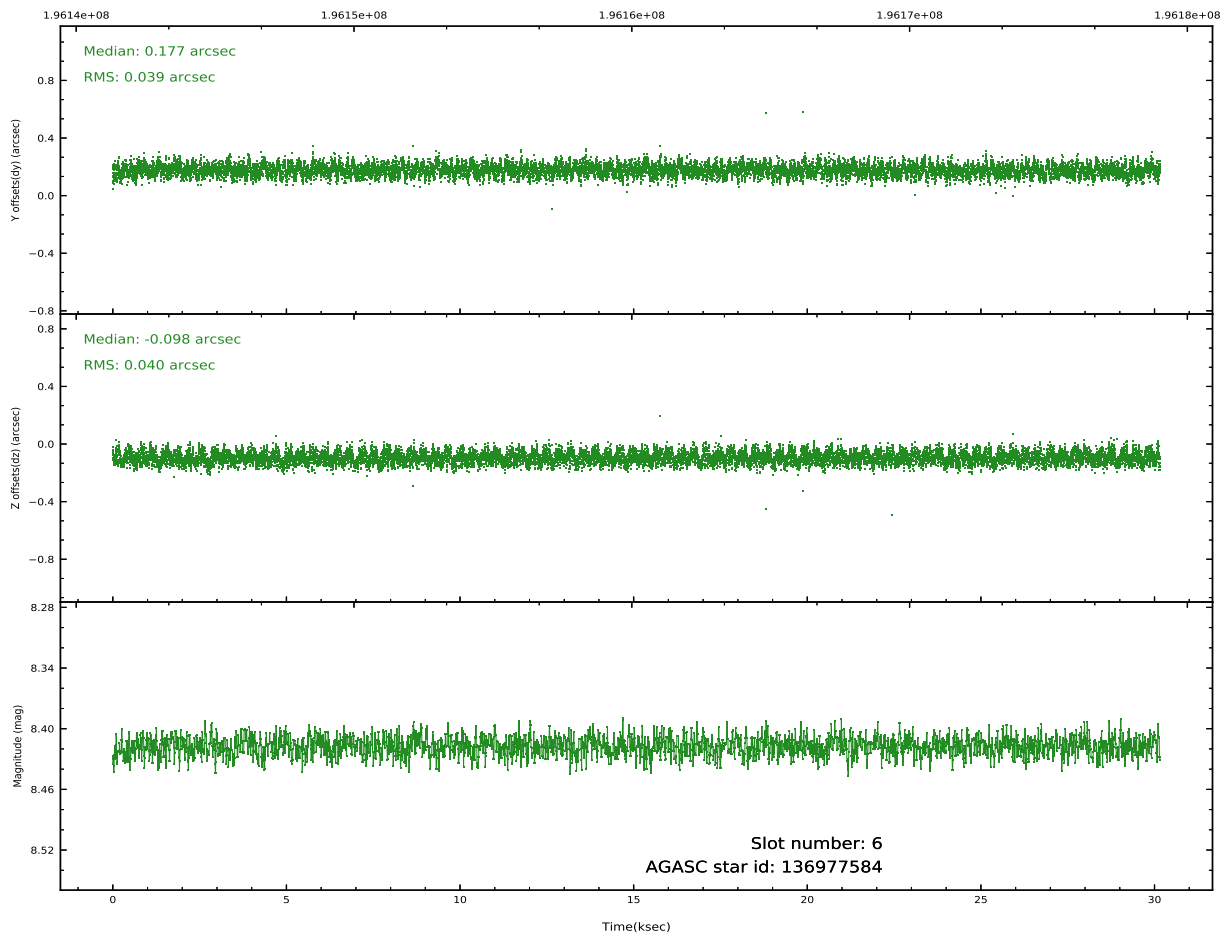
Time (s)



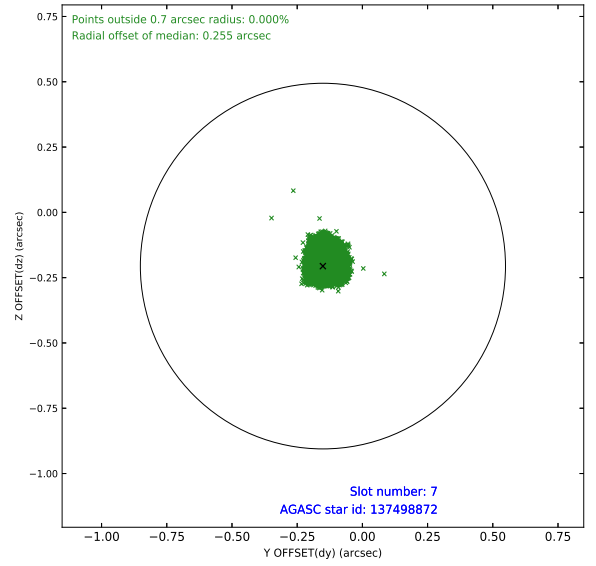
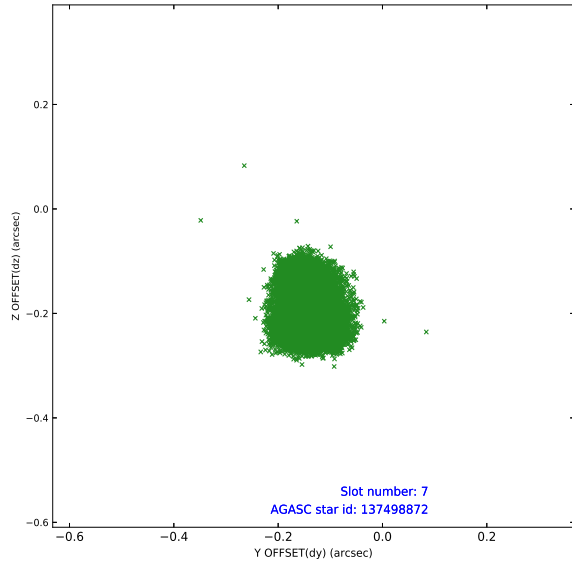
## 2.4.4 Slot 6



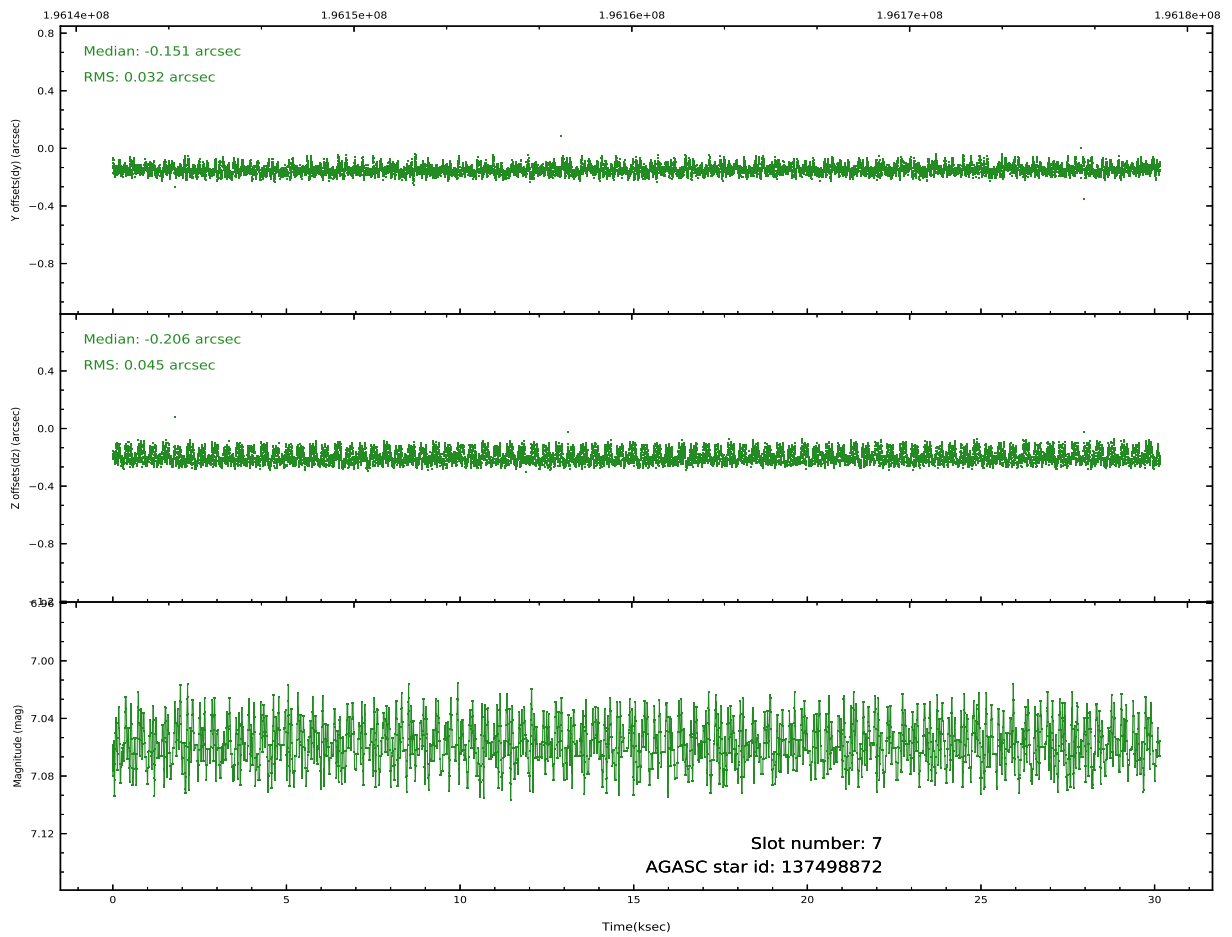
Time (s)



## 2.4.5 Slot 7

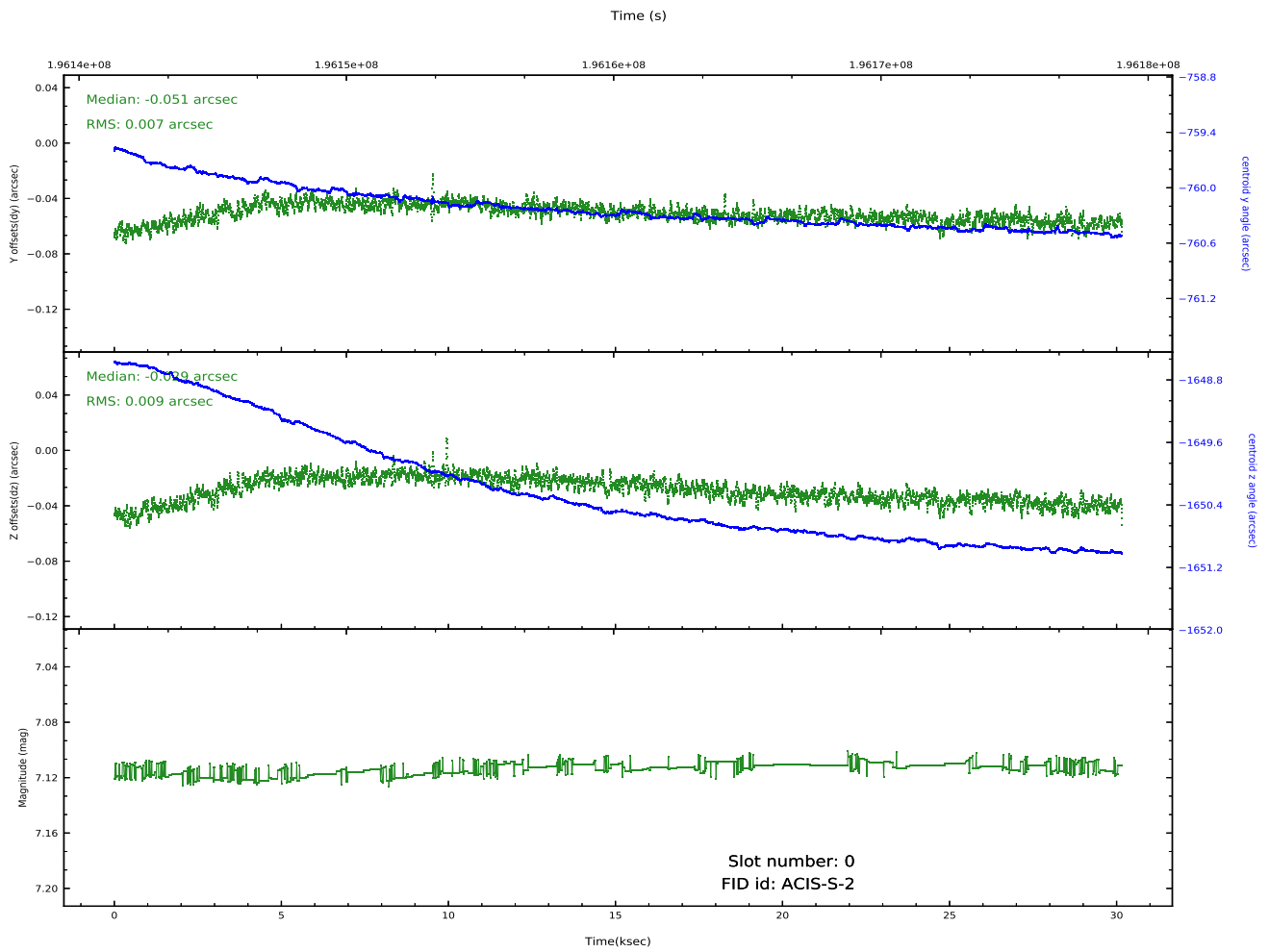
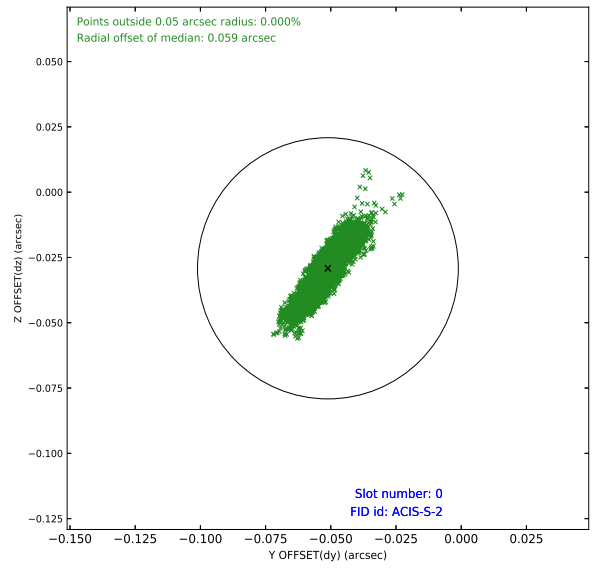
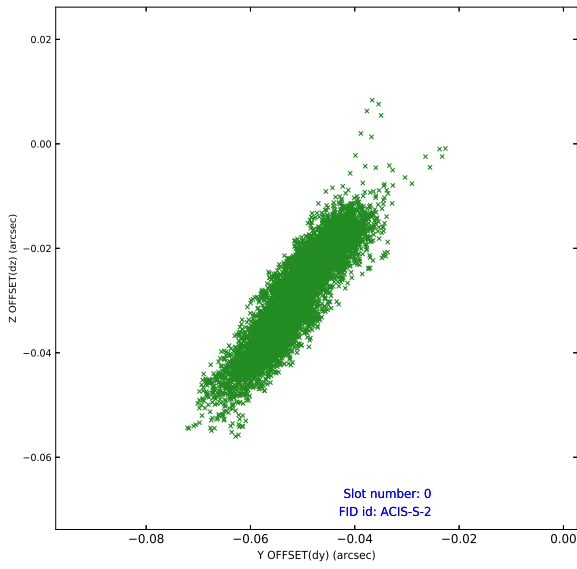


Time (s)

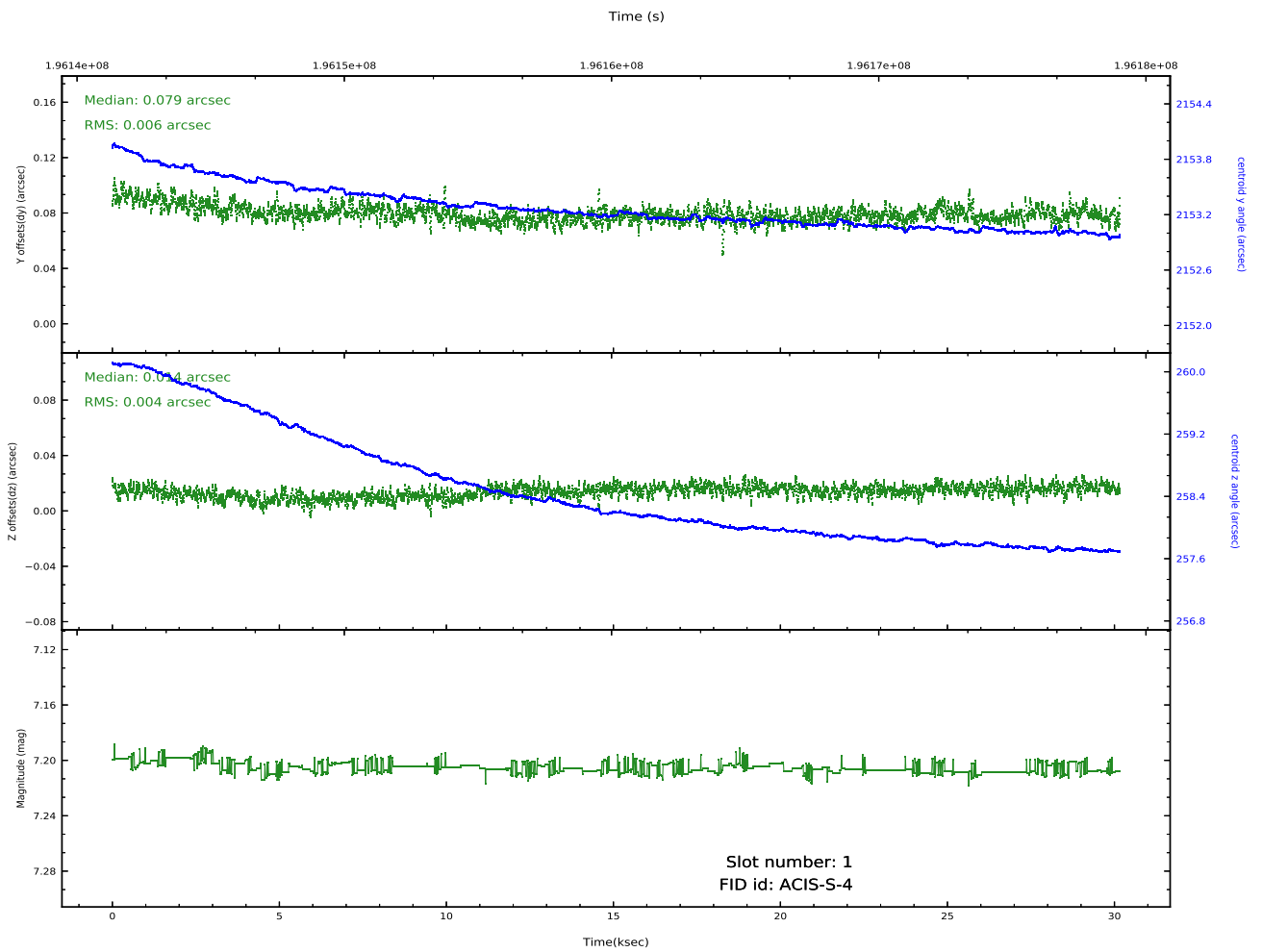
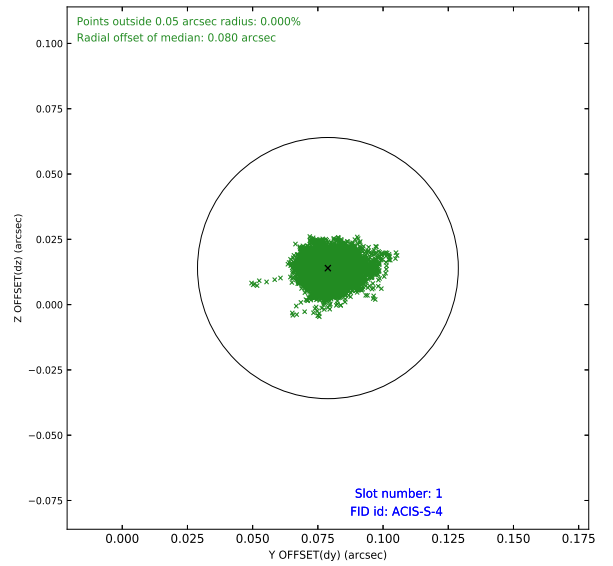
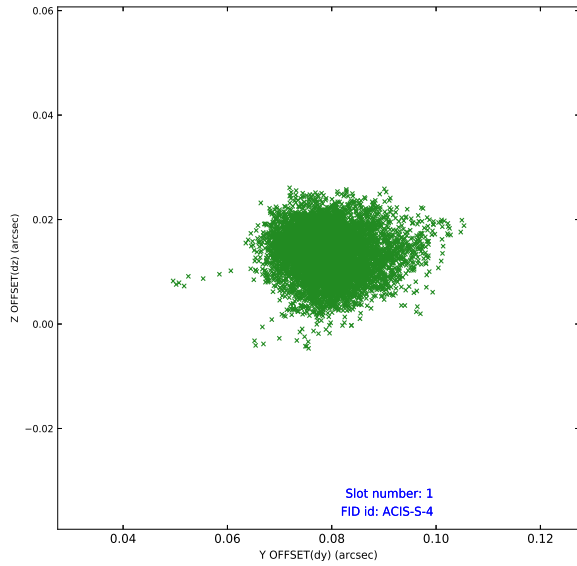


## 2.5 FID Slots

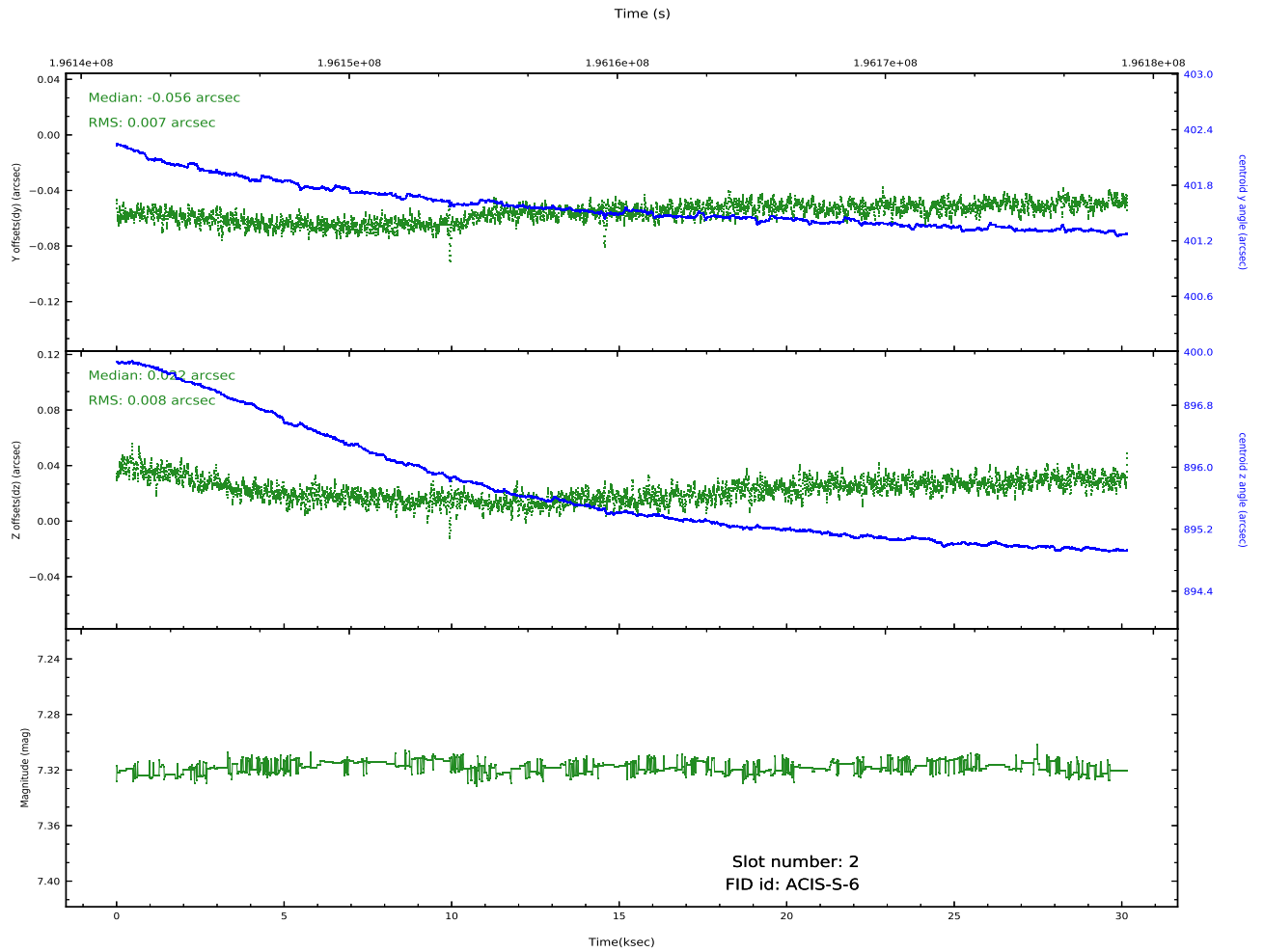
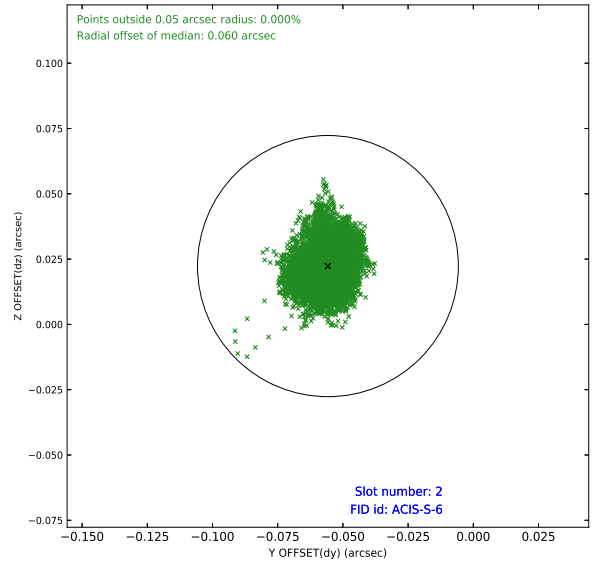
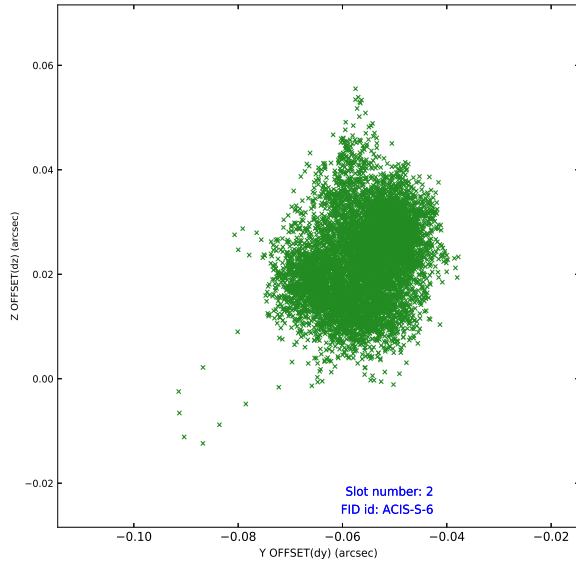
### 2.5.1 Slot 0



## 2.5.2 Slot 1

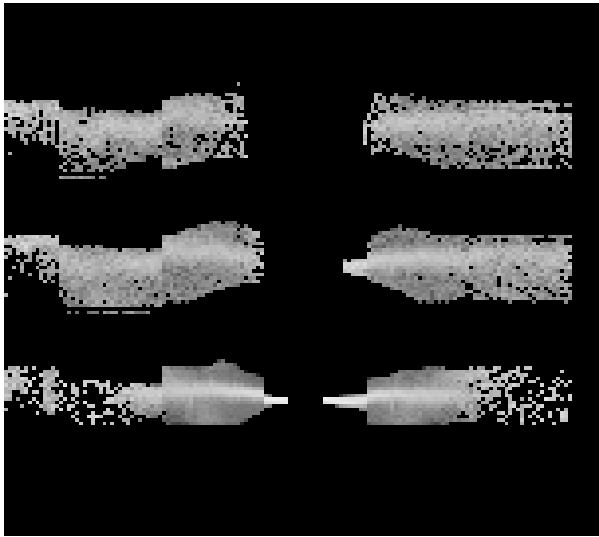


### 2.5.3 Slot 2

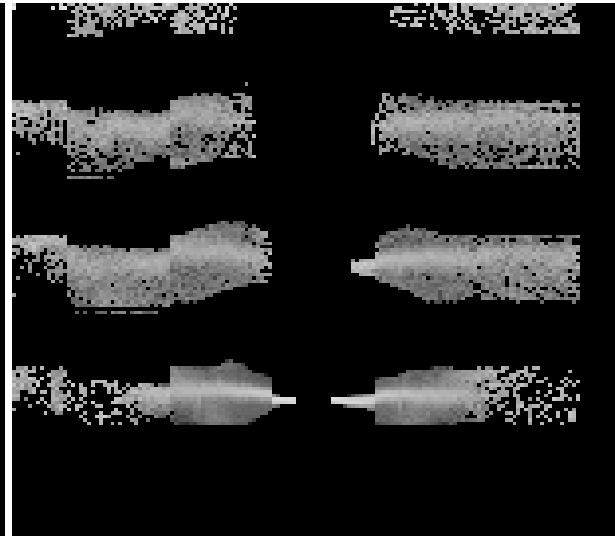


# 3 Gratings

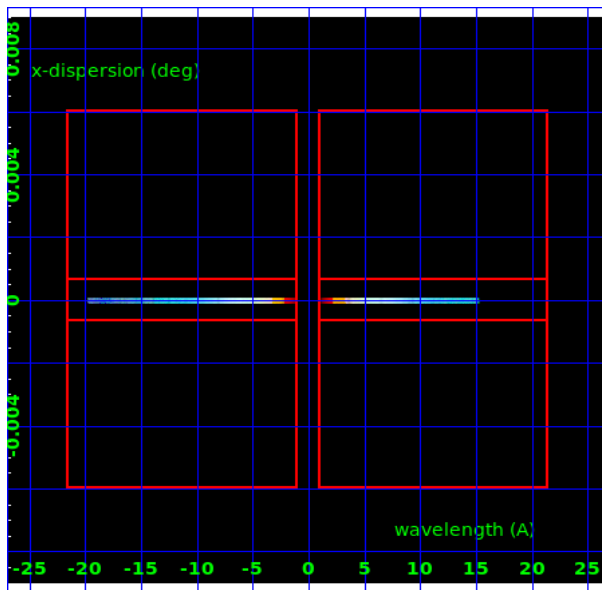
## 3.1 HEG Arm



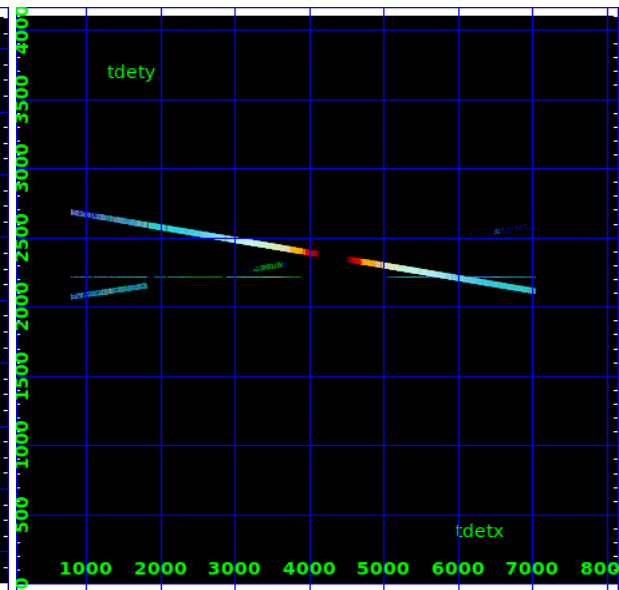
HEG Order Sort 123



HEG Order Sort ALL

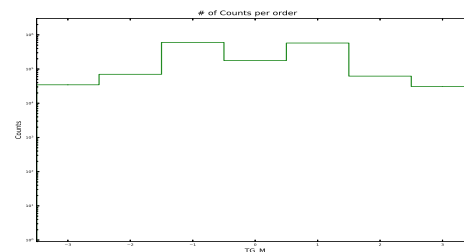


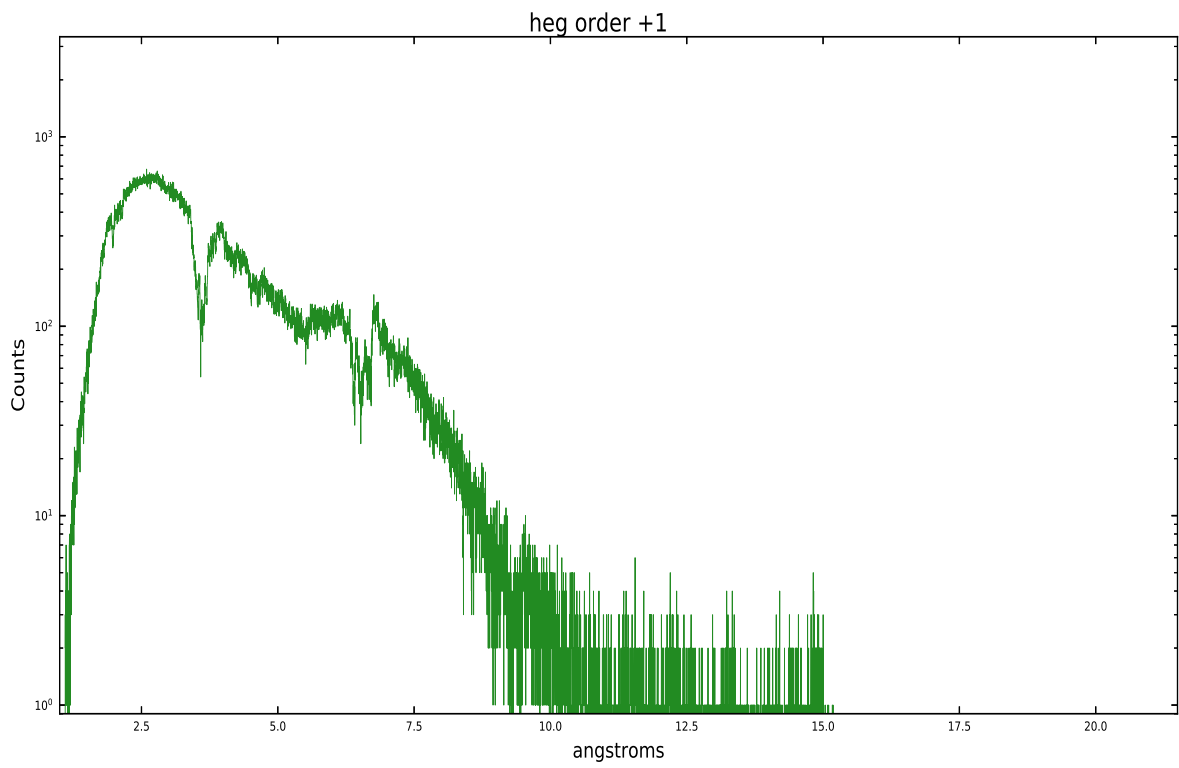
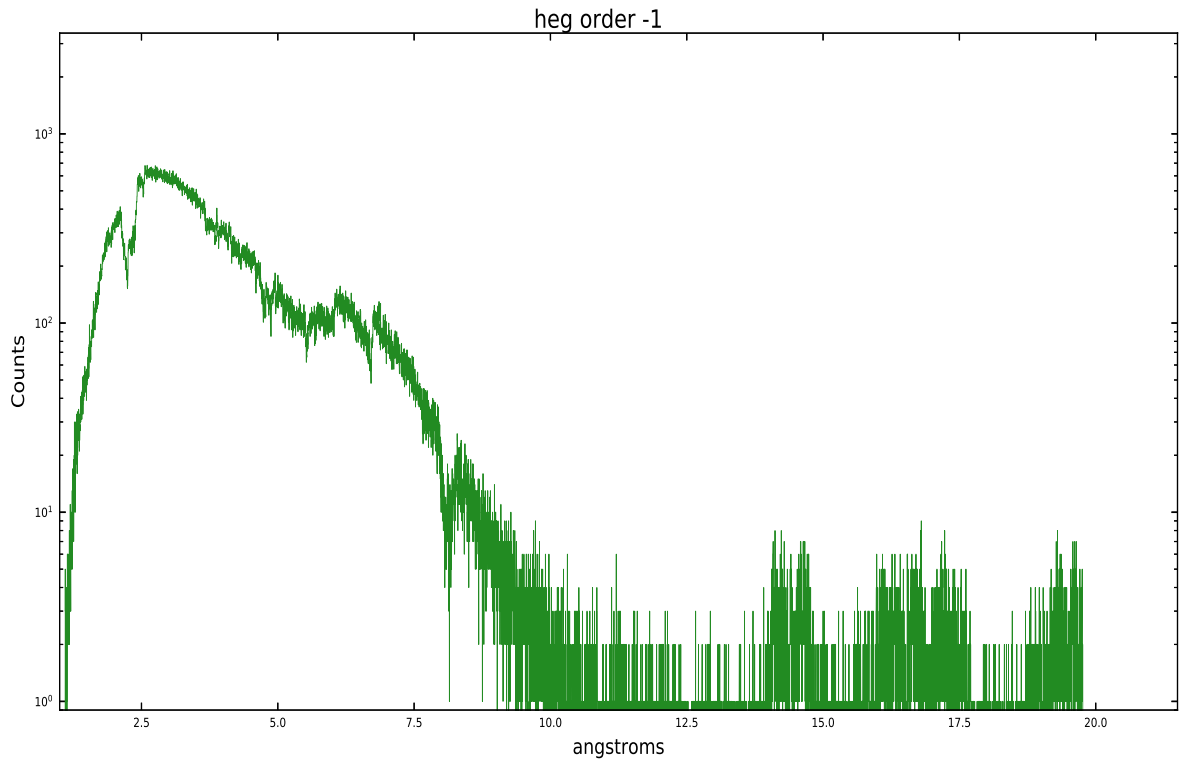
Spot Image HEG



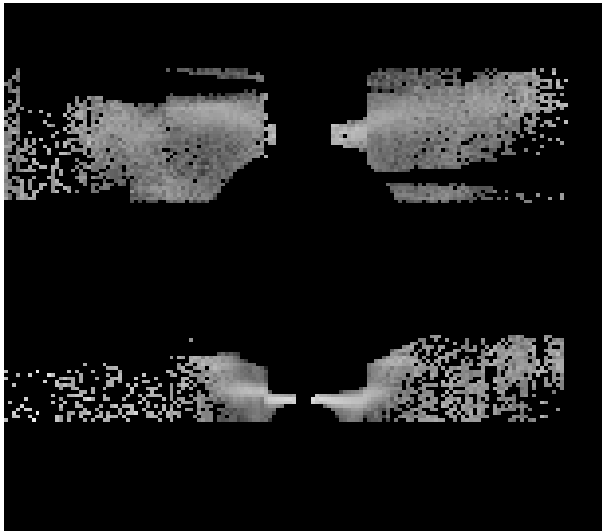
Full Detector HEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	34671	70105	601678	176918	576721	62022	30727





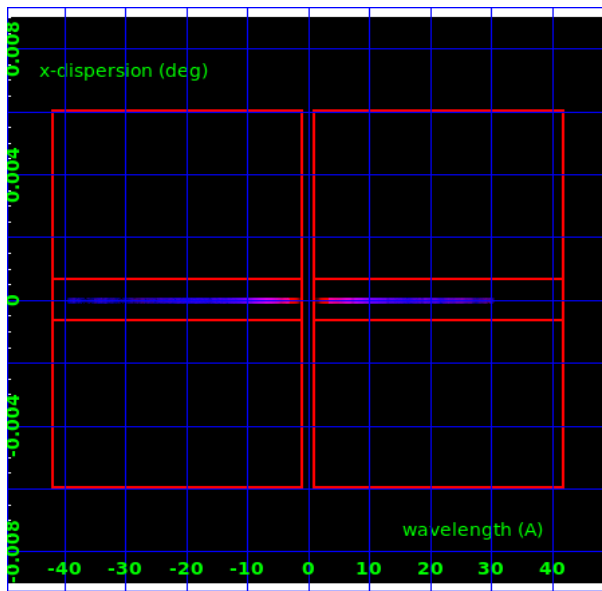
### 3.2 MEG Arm



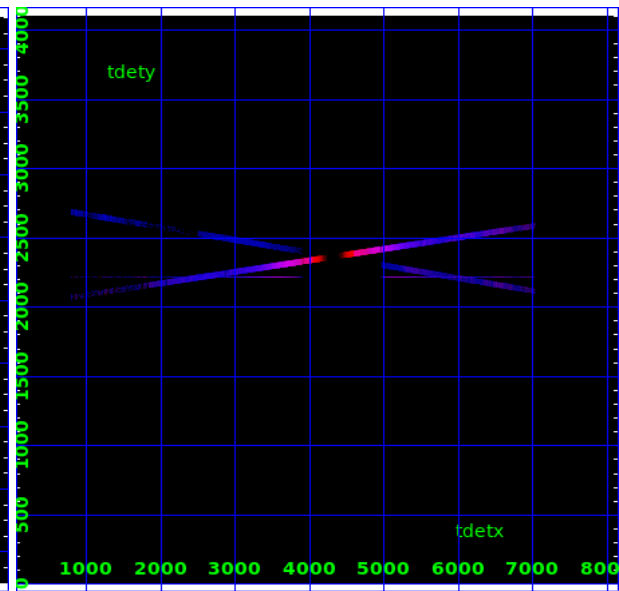
MEG Order Sort 123



MEG Order Sort ALL

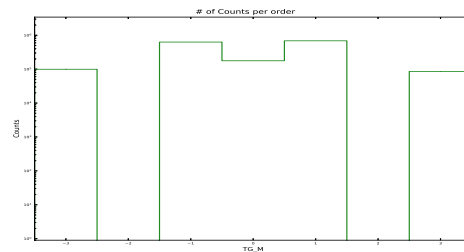


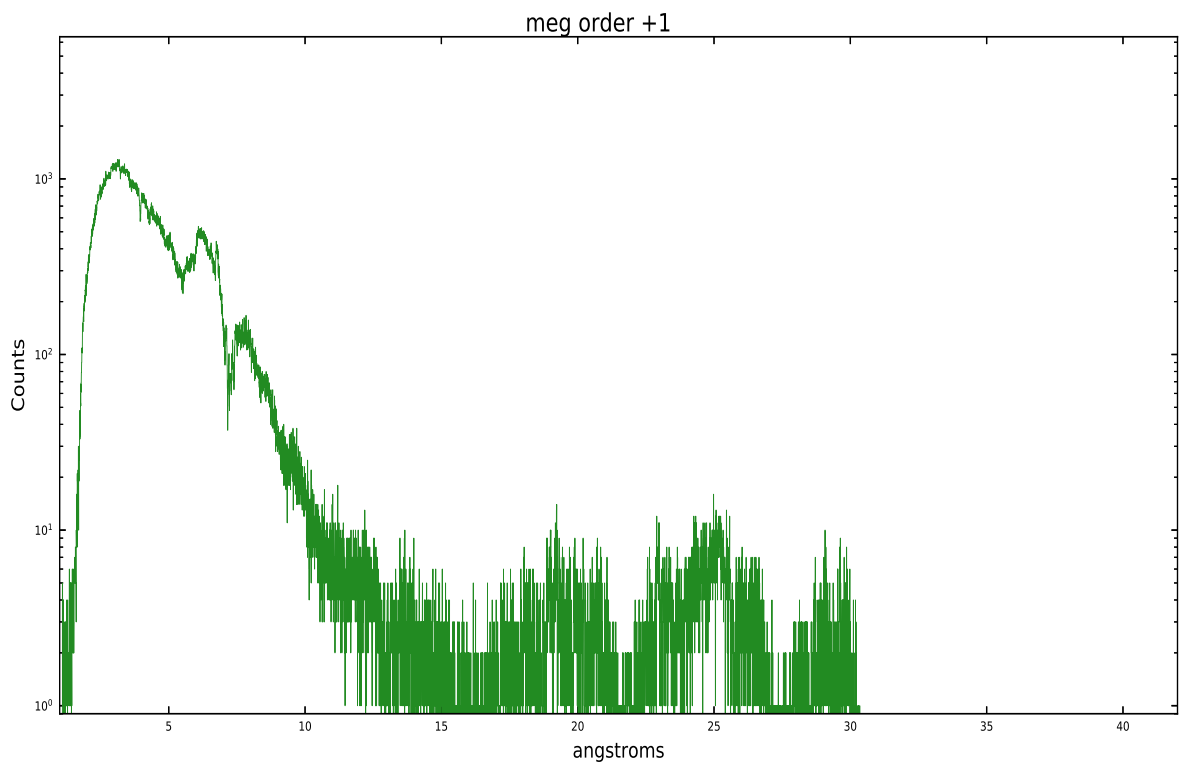
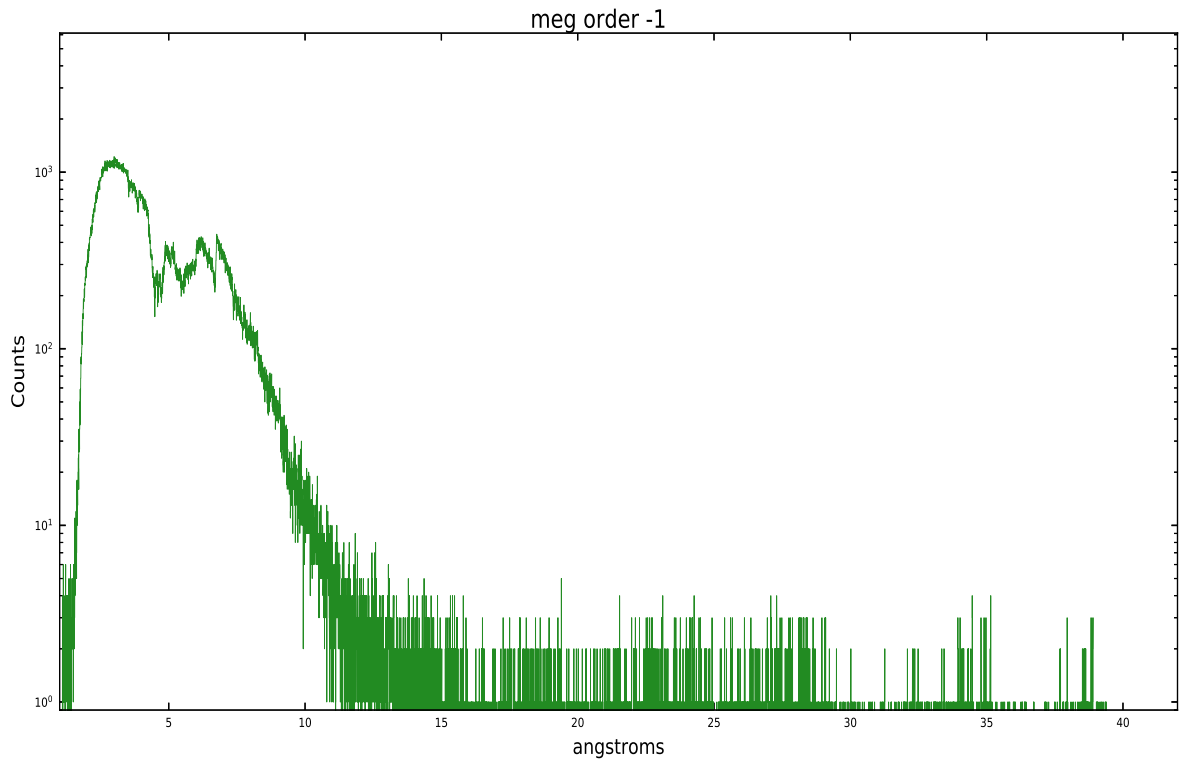
Spot Image MEG



Full Detector MEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	99277	0	630056	176918	686723	0	85816





# A Summary

## A.1 Status

V&V Scientist	David Huenemoerder
V&V Date (YYYY-MM-DD)	2020.09.25
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	30.159

## A.2 Comments