

# V&V Reference Report

## L2 ASCDS Version : 10.9.1

Observation 5040 - L2 Version 4  
Chandra X-Ray Center

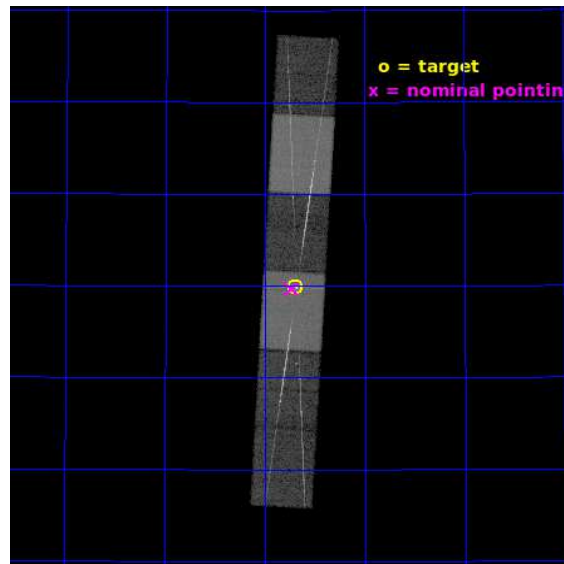
L2 Processing Date : Oct 1 2020

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# 1 Front

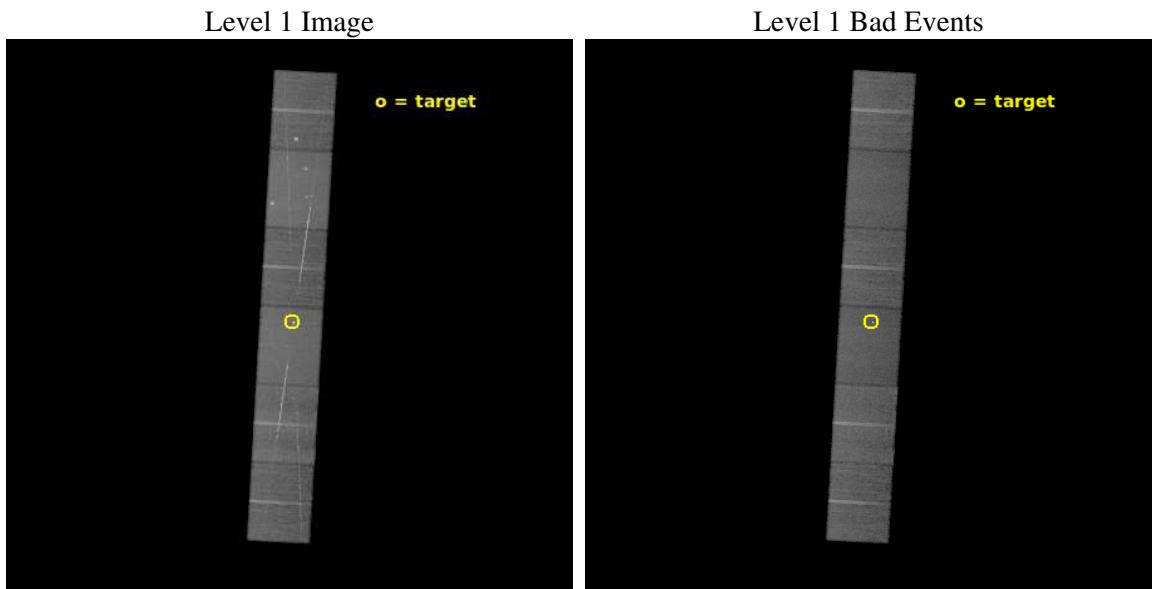
seq_num	290313	Sequence number
obs_id	5040	Observation id
title	AO5 Calibration Observations of Capella	Proposal title
observer	CXC Calibration	Principal investigator
object	Capella	Source name
dtcycle	0	&#160
cycle	P	events from which exps? Prim/Second/Both
ra_targ	79.17625	Observer's specified target RA [deg]
dec_targ	45.997889	Observer's specified target Dec [deg]
ra_nom	79.182896172123	Nominal RA [deg]
dec_nom	45.994925458073	Nominal Dec [deg]
roll_nom	93.156229739849	Nominal Roll [deg]
revision	4	Processing version of data
ontime	29142.5	Sum of GTIs [s]
livetime	28671.82334792	Livetime [s]
ontime4	29142.5	Sum of GTIs [s]
ontime5	29142.5	Sum of GTIs [s]
ontime6	29142.5	Sum of GTIs [s]
ontime7	29142.5	Sum of GTIs [s]
ontime8	29142.5	Sum of GTIs [s]
ontime9	29142.5	Sum of GTIs [s]
l2events	340620	Number of level 2 events



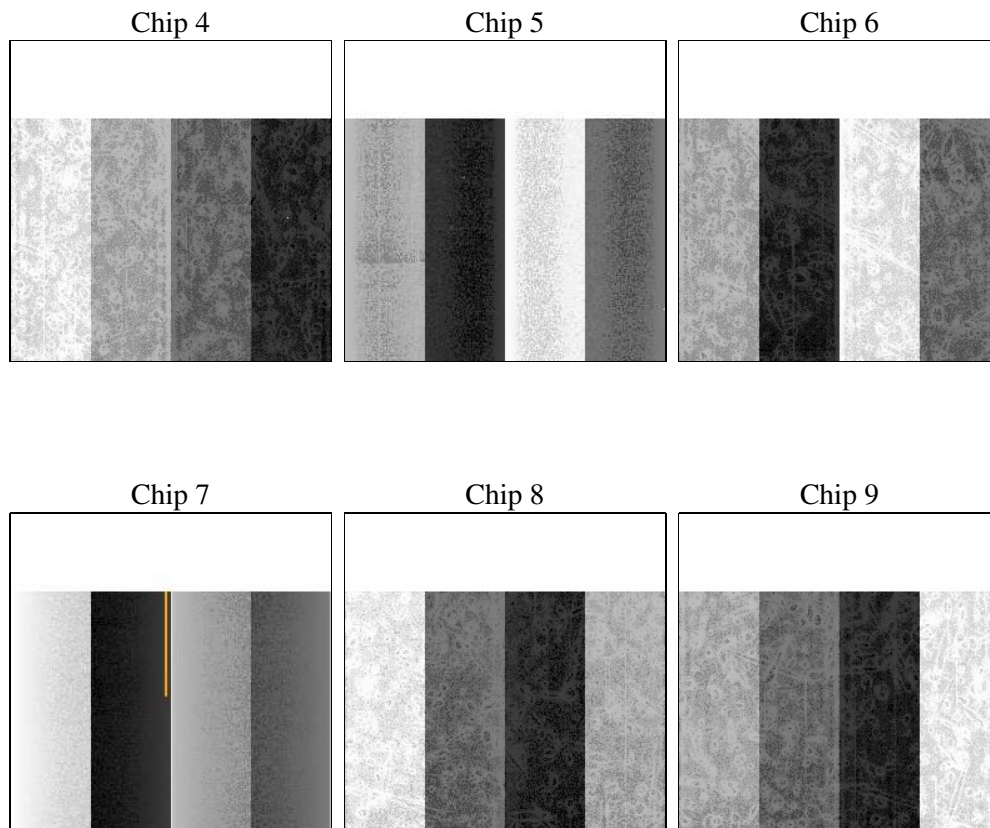
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

obi_num	0	Obi number	sched_exp_time	29000.000000	[s] Scheduled observation exposure time
ascdsver	10.9.1	Processing system revision	ontime	29142.5	Sum of GTIs [s]
caldbver	4.9.2	&#160	ontime4	29142.5	Sum of GTIs [s]
date	2020-10-01T23:40:55	Date and time of file creation	ontime5	29142.5	Sum of GTIs [s]
revision	4	Processing version of data	ontime6	29142.5	Sum of GTIs [s]
			ontime7	29142.5	Sum of GTIs [s]
			ontime8	29142.5	Sum of GTIs [s]
			ontime9	29142.5	Sum of GTIs [s]
			l1events	1354550	Number of level 1 events
			tgmethod	FINDZO	Method used to create src1a file
				14140.40	

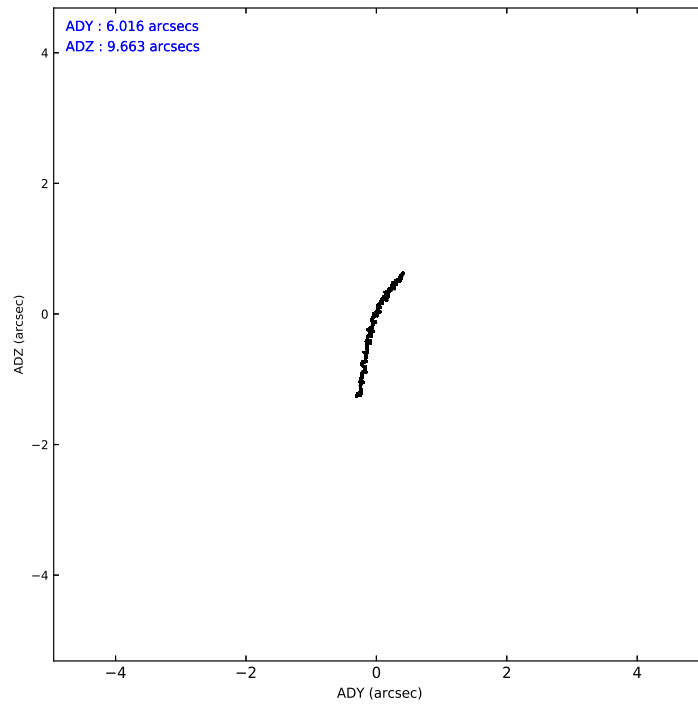
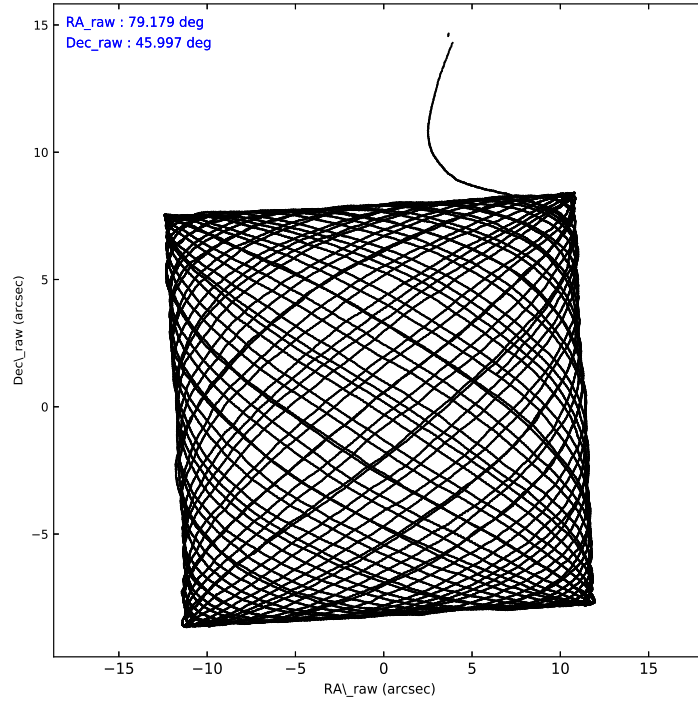
### 2.1.4 Events

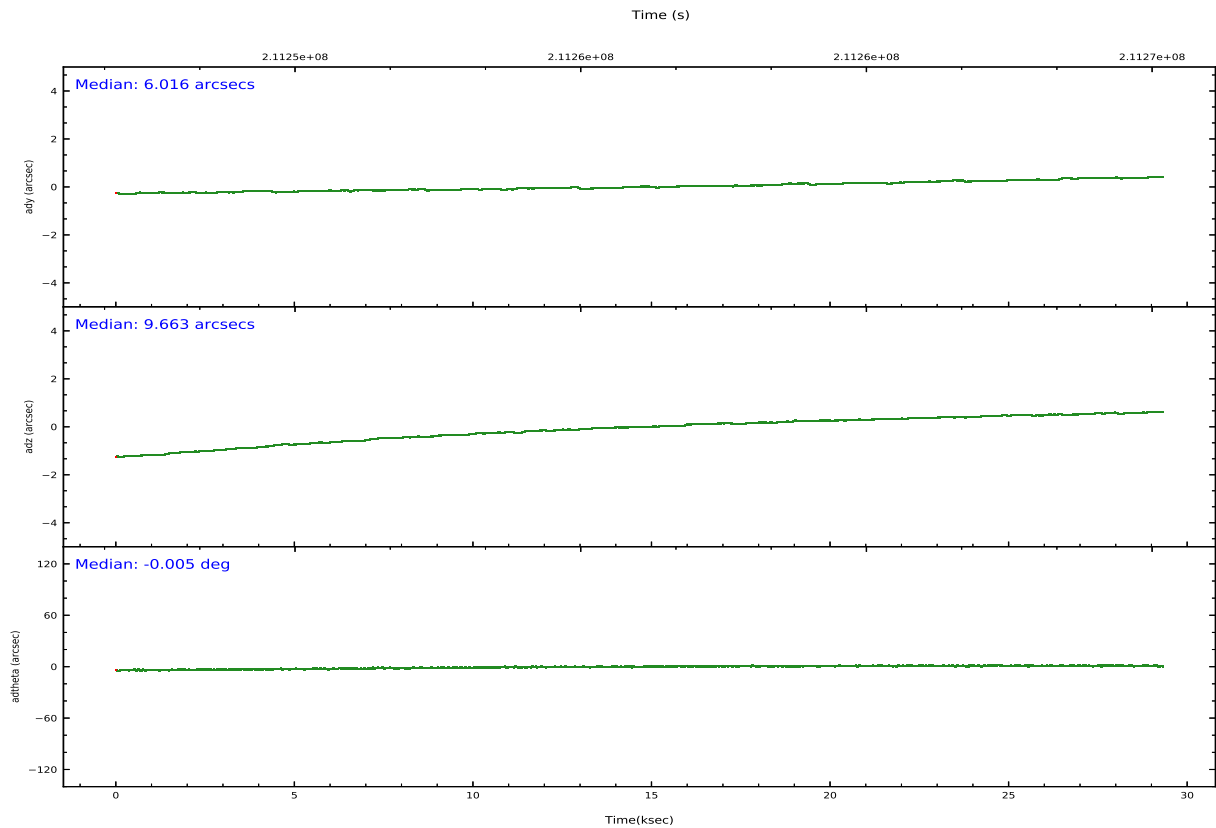
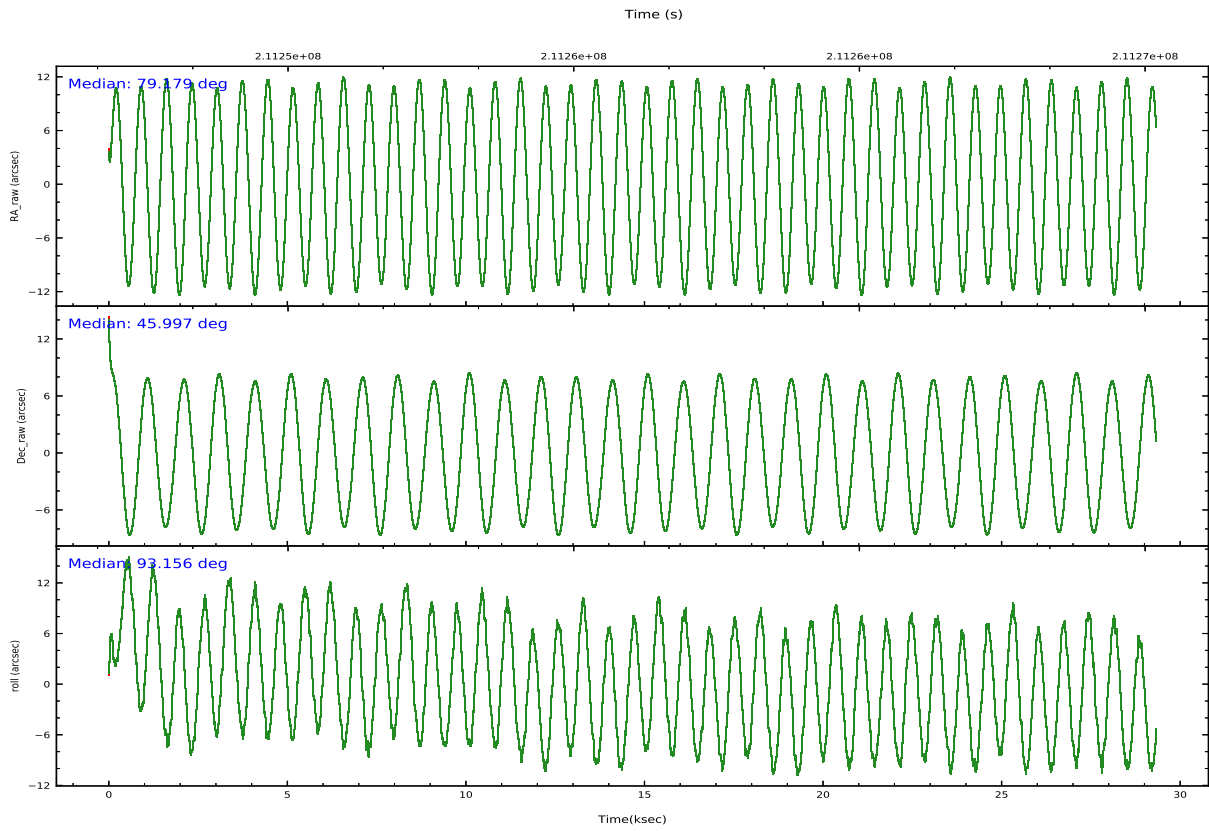
	ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9		ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
level 1 events	201849	278448	194339	257022	245035	177857	grade 0 events	18425	21565	22885	11804	31803	12488
rejected events	171772	145866	157353	148758	179400	153006		9%	7%	11%	4%	12%	7%
rejected %	85%	52%	80%	57%	73%	86%	grade 1 events	158	485	164	452	206	89
								0%	0%	0%	0%	0%	0%
							grade 2 events	4811	38653	5795	22975	12010	4431
								2%	13%	2%	8%	4%	2%
							grade 3 events	2443	7172	2616	10341	5511	2360
								1%	2%	1%	4%	2%	1%
							grade 4 events	2234	6789	2485	10230	5146	2345
								1%	2%	1%	3%	2%	1%
							grade 5 events	7420	19797	7998	23856	10527	8306
								3%	7%	4%	9%	4%	4%
							grade 6 events	3423	63965	4232	56947	13291	4142
								1%	22%	2%	22%	5%	2%
							grade 7 events	162935	120022	148164	120417	166541	143696
								80%	43%	76%	46%	67%	80%

## 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	FAINT	FAINT	Number of optional ACIS chips dropped	0	0
Observation mode	POINTING	POINTING	On-chip summing requested	N	N
[deg] Pointing RA	79.200631	79.18289617212299	Subarray requested	CUSTOM	CUSTOM
[deg] Pointing Dec	45.973912	45.994925458073	Subarray start row	1	1
[deg] Pointing Roll	92.982469	93.156229739849	Subarray row count	774	774
[s] Window start time (MET)	210384064.184000	210384064.184000	Alternating exposures requested	N	N
[s] Window stop time (MET)	215568064.184000	215568064.184000	[s] Primary exposure time	0.000000	2.5
[mm] SIM focus pos	-0.684267	-0.6828225247311905			
[mm] SIM defocus	0	0.001444936568705701			
[mm] SIM translation stage pos	-187.132523	-187.1254020033014			
[mm] SIM translation stage offset	-3	-3.007120579706367			
[s] Observation start time (MET)	211243128.184000	211241409.92778			
Observation start date	2004-09-10T22:37:44	2004-09-10T22:10:09			
[s] Observation end time (MET)	211272128.184000	211272309.57916			
Observation end date	2004-09-11T06:41:04	2004-09-11T06:45:09			
Read mode	TIMED	TIMED			

## 2.3 Aspect





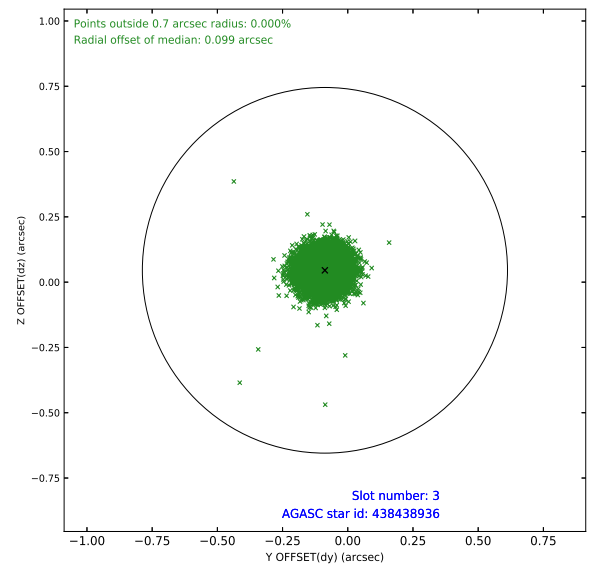
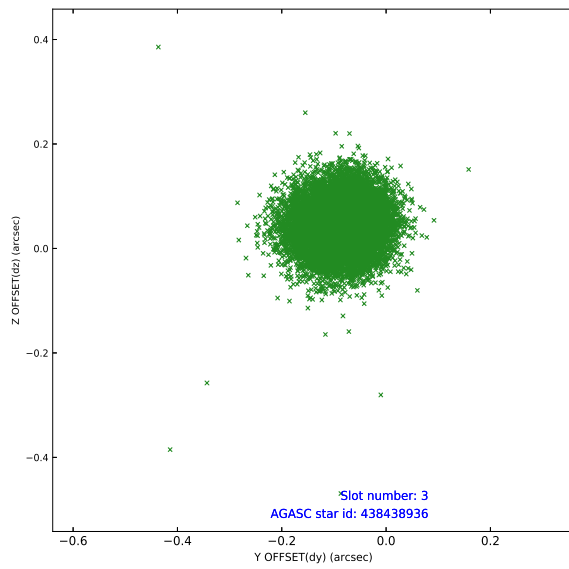
### Slot Statistics

pt	status	used	id	mag	n_pts	frac_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mea
0	FID		ACIS-S-1	7.18	7154	1.000	0.018	-0.053	0.019	0.028	0.000000	0.000000	937.48	-1788
1	FID		ACIS-S-4	7.19	7154	1.000	0.118	0.035	0.018	0.027	0.000000	0.000000	2155.04	115
2	FID		ACIS-S-5	7.23	7154	1.000	-0.161	0.031	0.008	0.014	0.000000	0.000000	-1811.46	109
3	GUIDE	used	438438936	8.96	14304	1.000	-0.088	0.045	0.066	0.108	78.241026	46.550197	2209.73	2264
4	GUIDE	used	438460832	8.98	14302	1.000	0.081	-0.245	0.084	0.135	78.414614	45.554782	-1393.97	2056
5	GUIDE	used	440145944	9.08	14299	1.000	0.101	0.216	0.089	0.139	80.083717	45.428844	-2063.25	-2126
6	GUIDE	used	440150048	7.19	14305	1.000	-0.152	-0.138	0.058	0.088	79.112838	46.416060	1600.84	134
7	GUIDE	used	440163960	8.90	14302	1.000	0.054	0.123	0.083	0.130	79.298370	45.827072	-540.16	-217

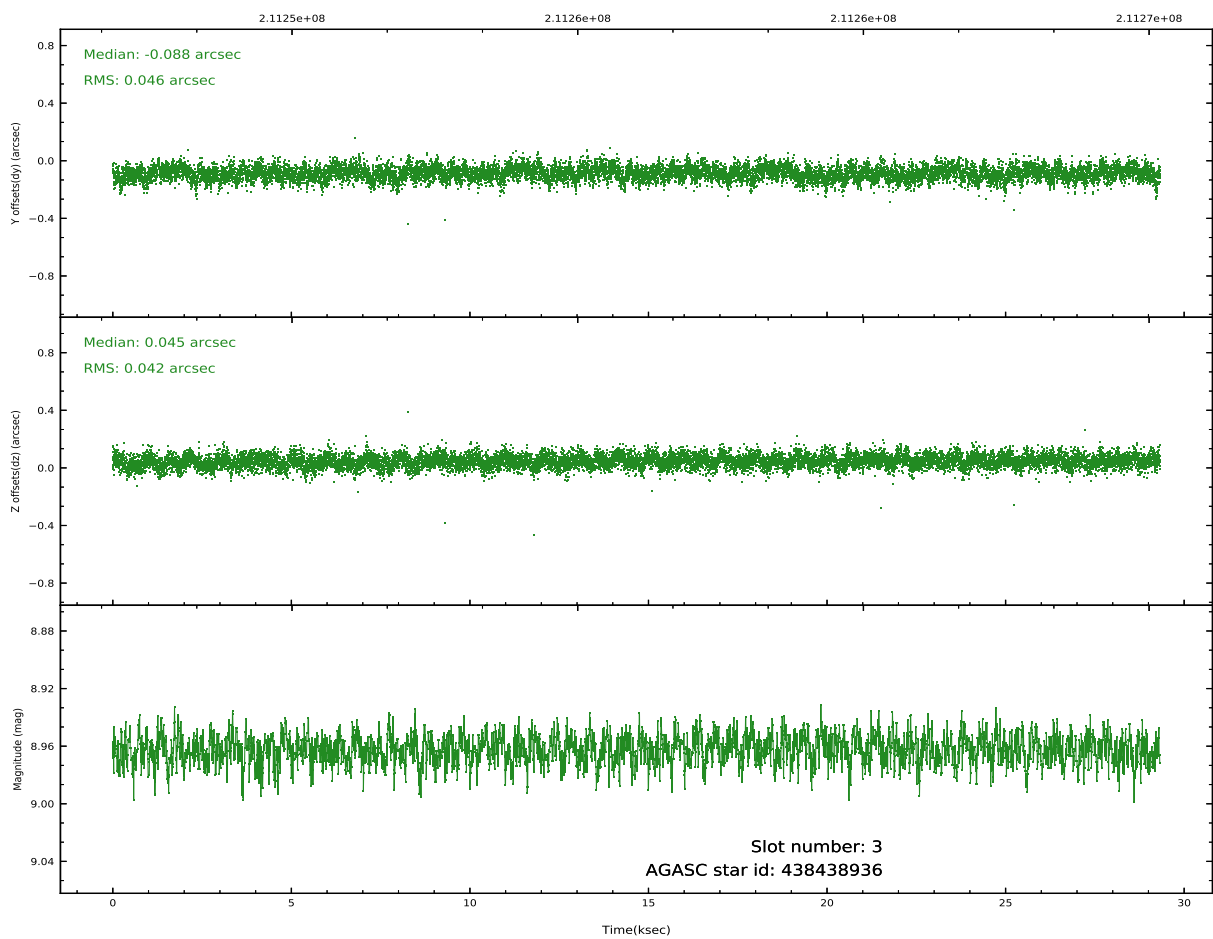
∞

## 2.4 Star Slots

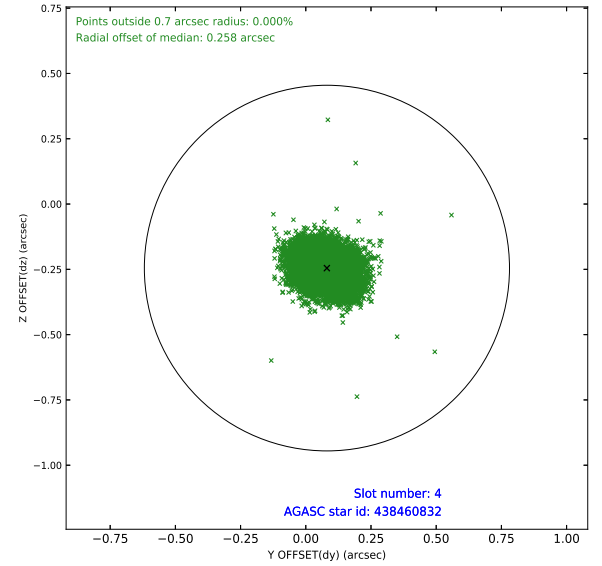
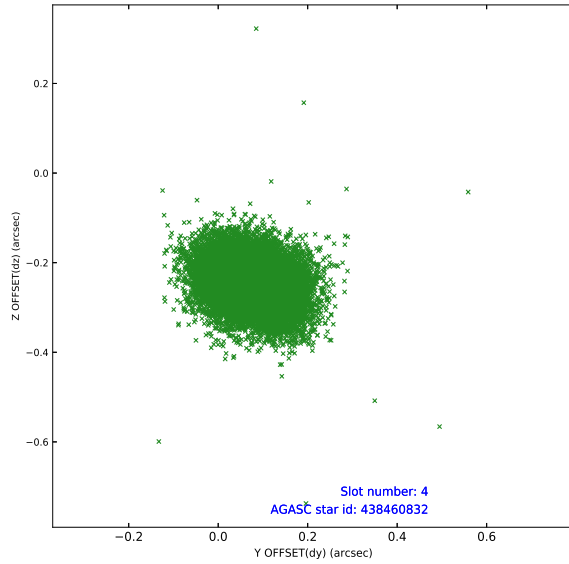
### 2.4.1 Slot 3



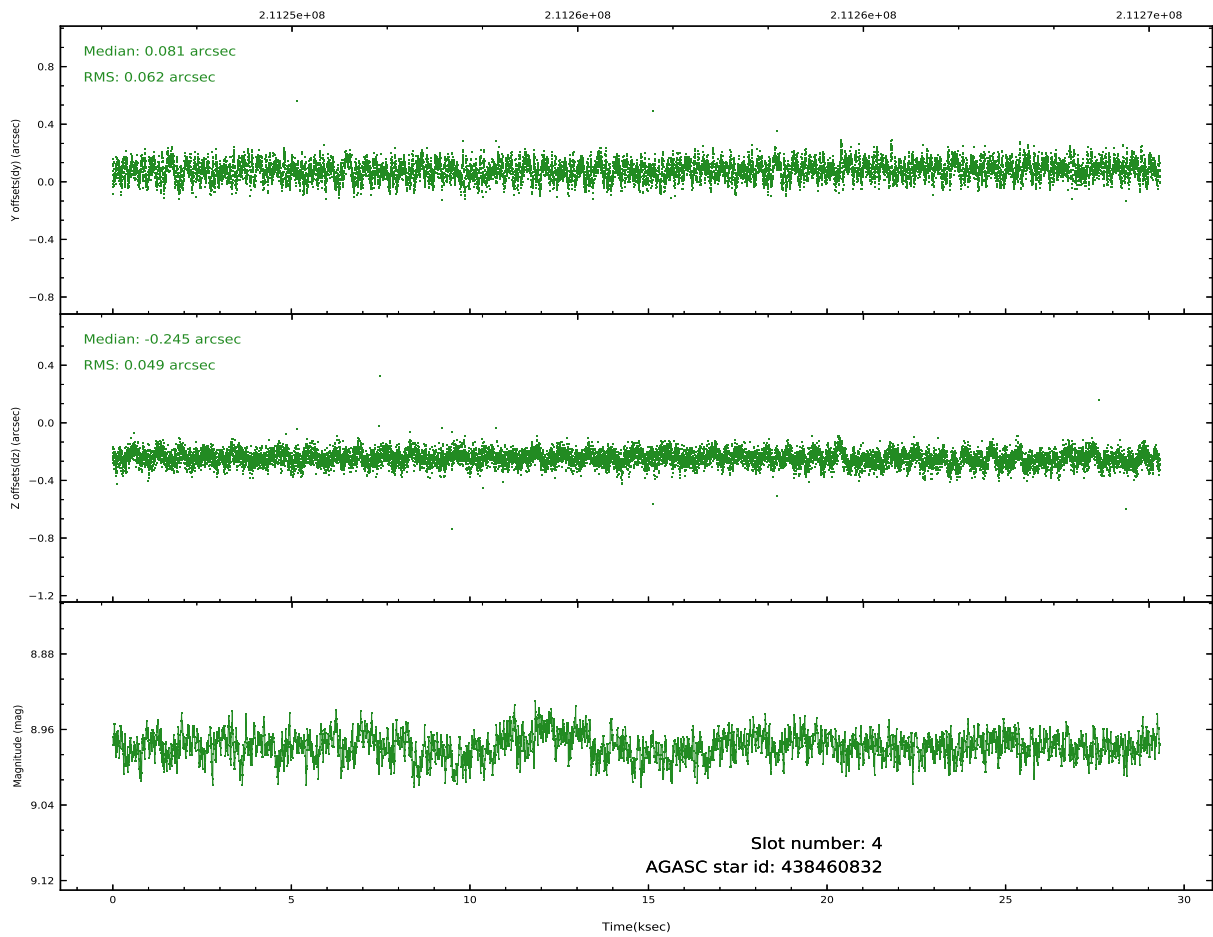
Time (s)



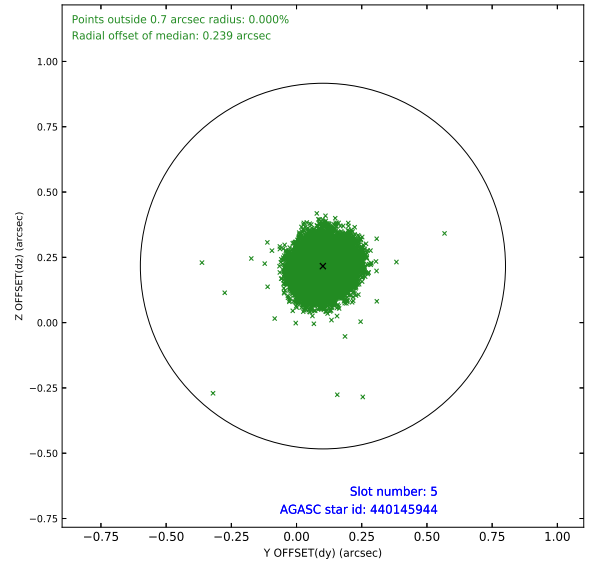
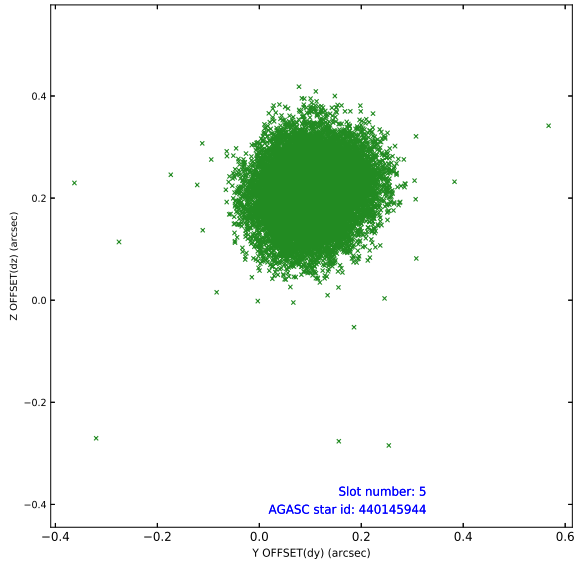
## 2.4.2 Slot 4



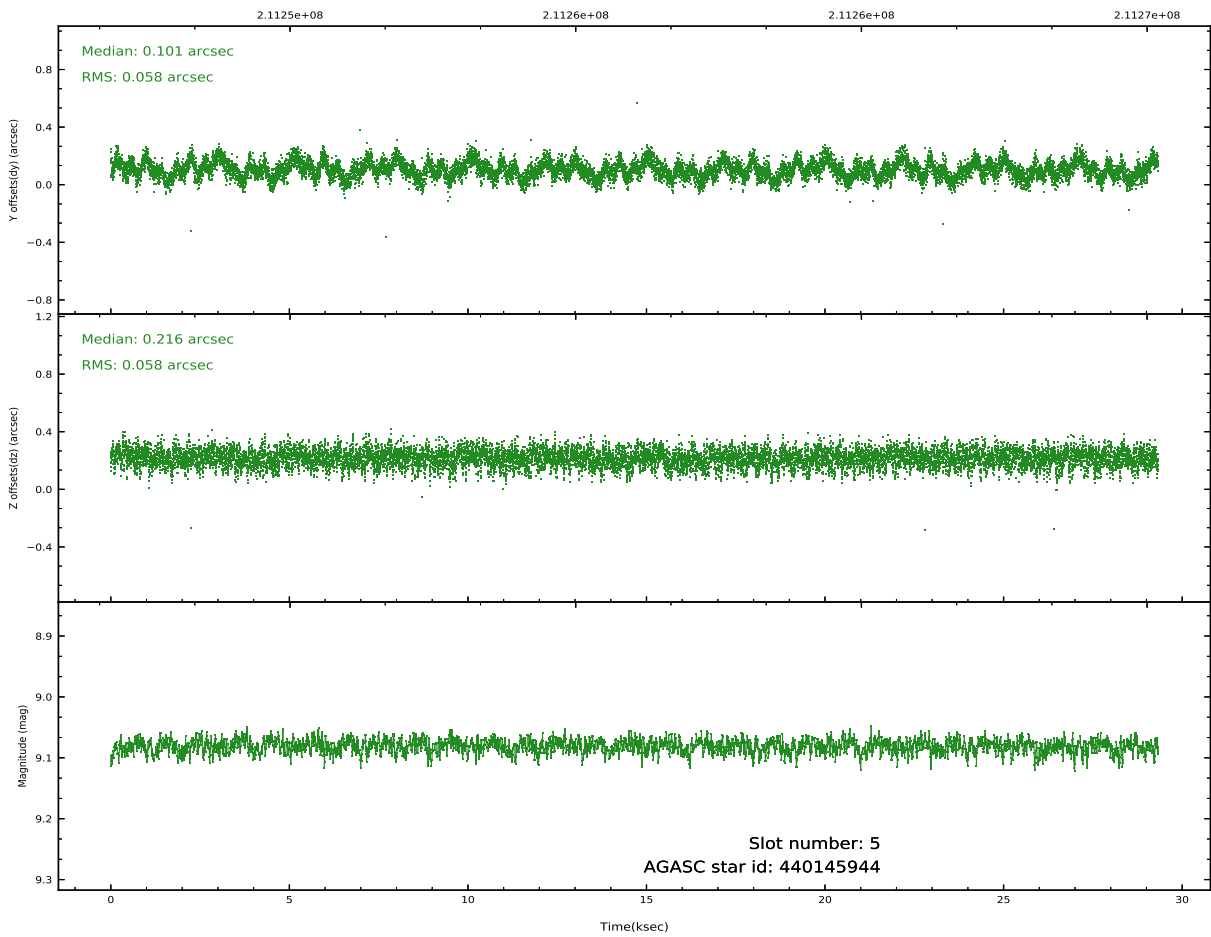
Time (s)



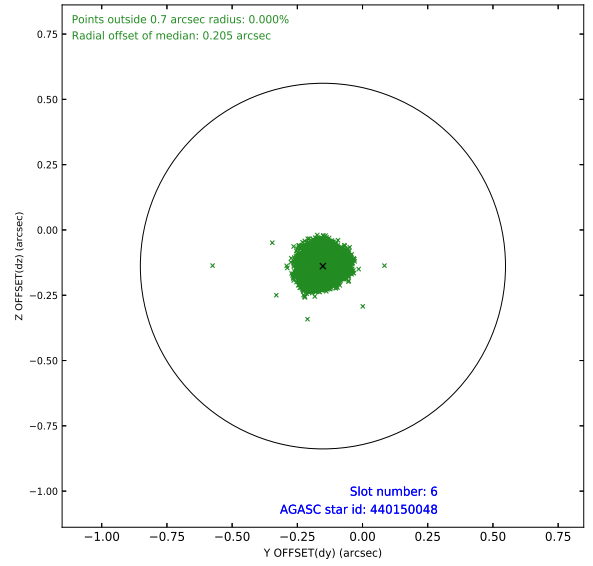
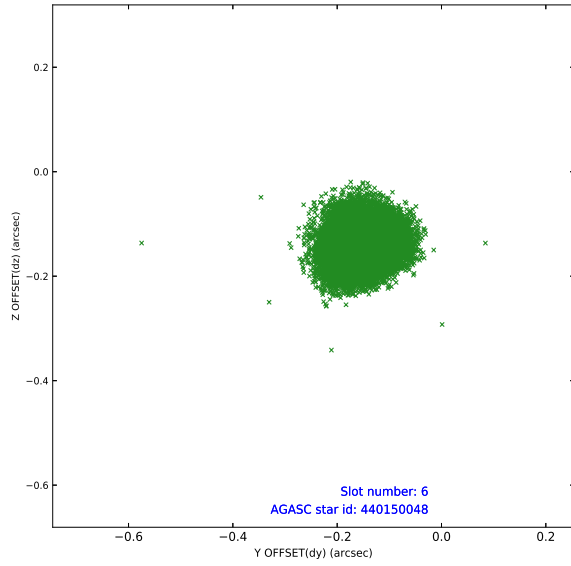
### 2.4.3 Slot 5



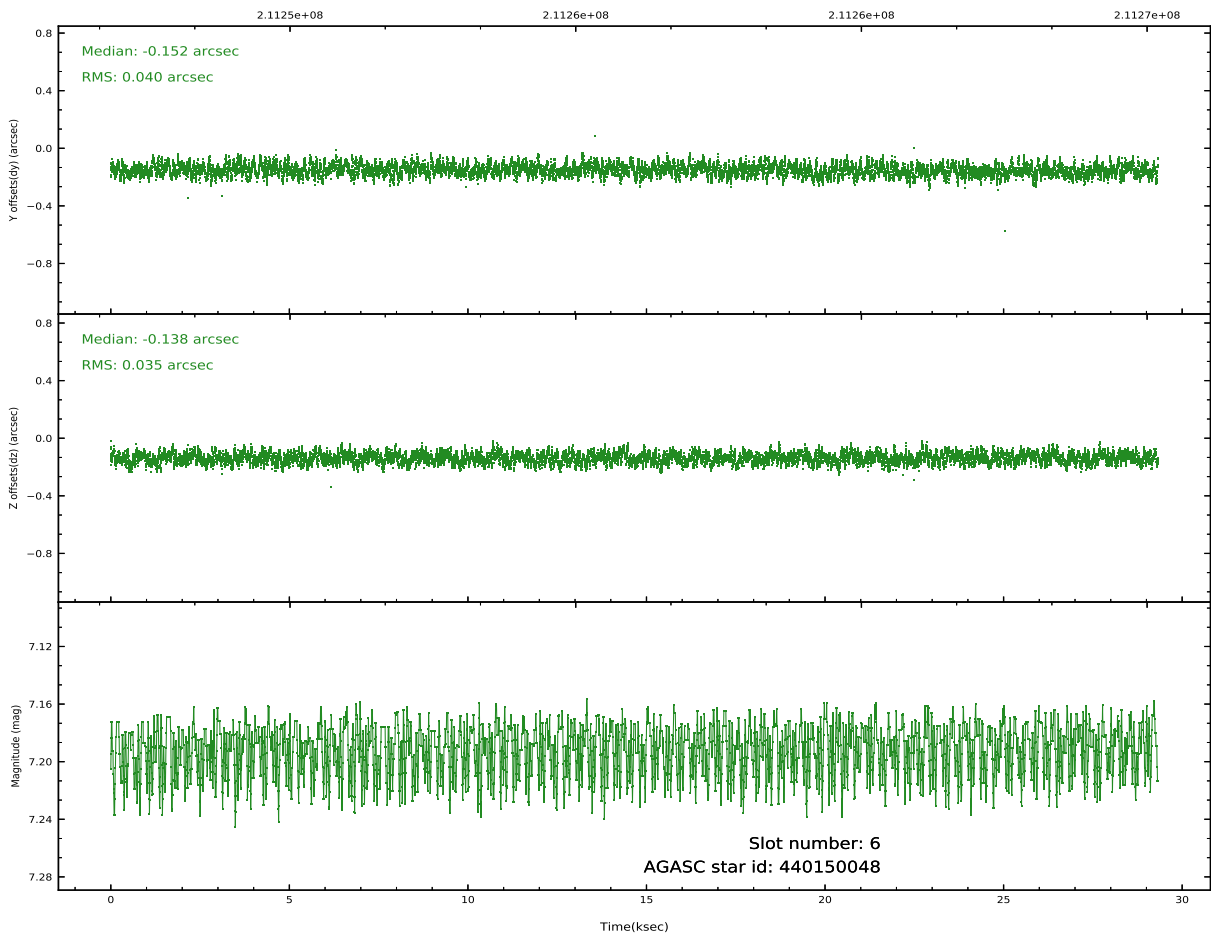
Time (s)



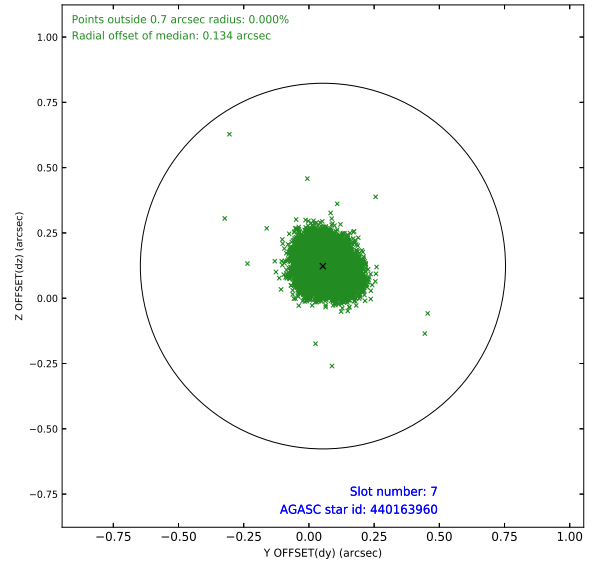
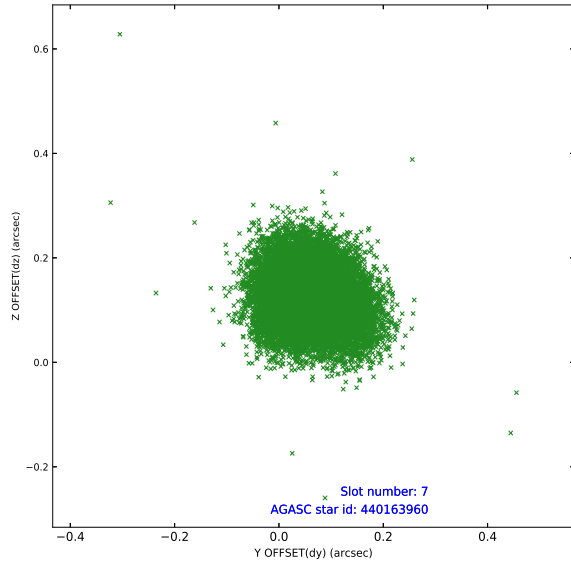
## 2.4.4 Slot 6



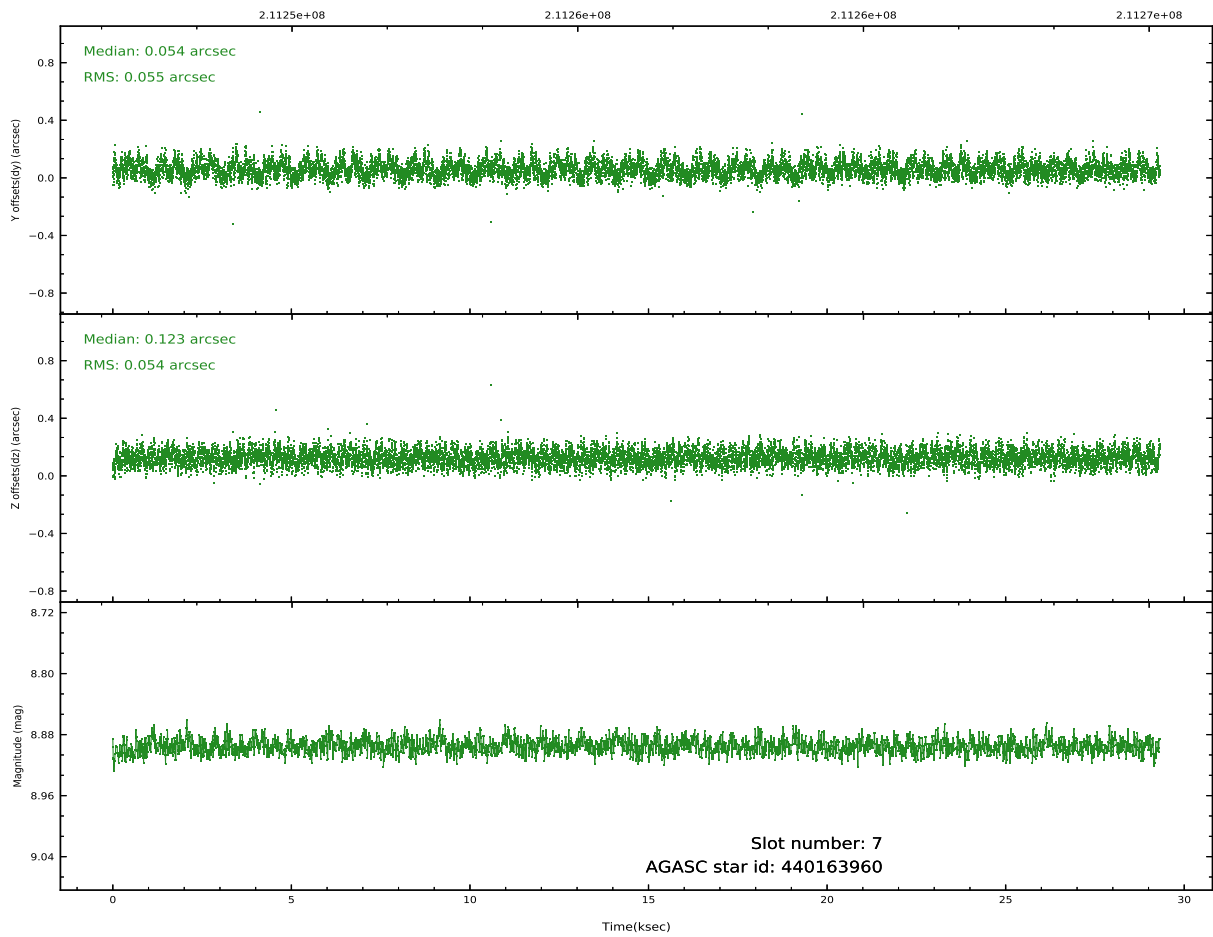
Time (s)



## 2.4.5 Slot 7

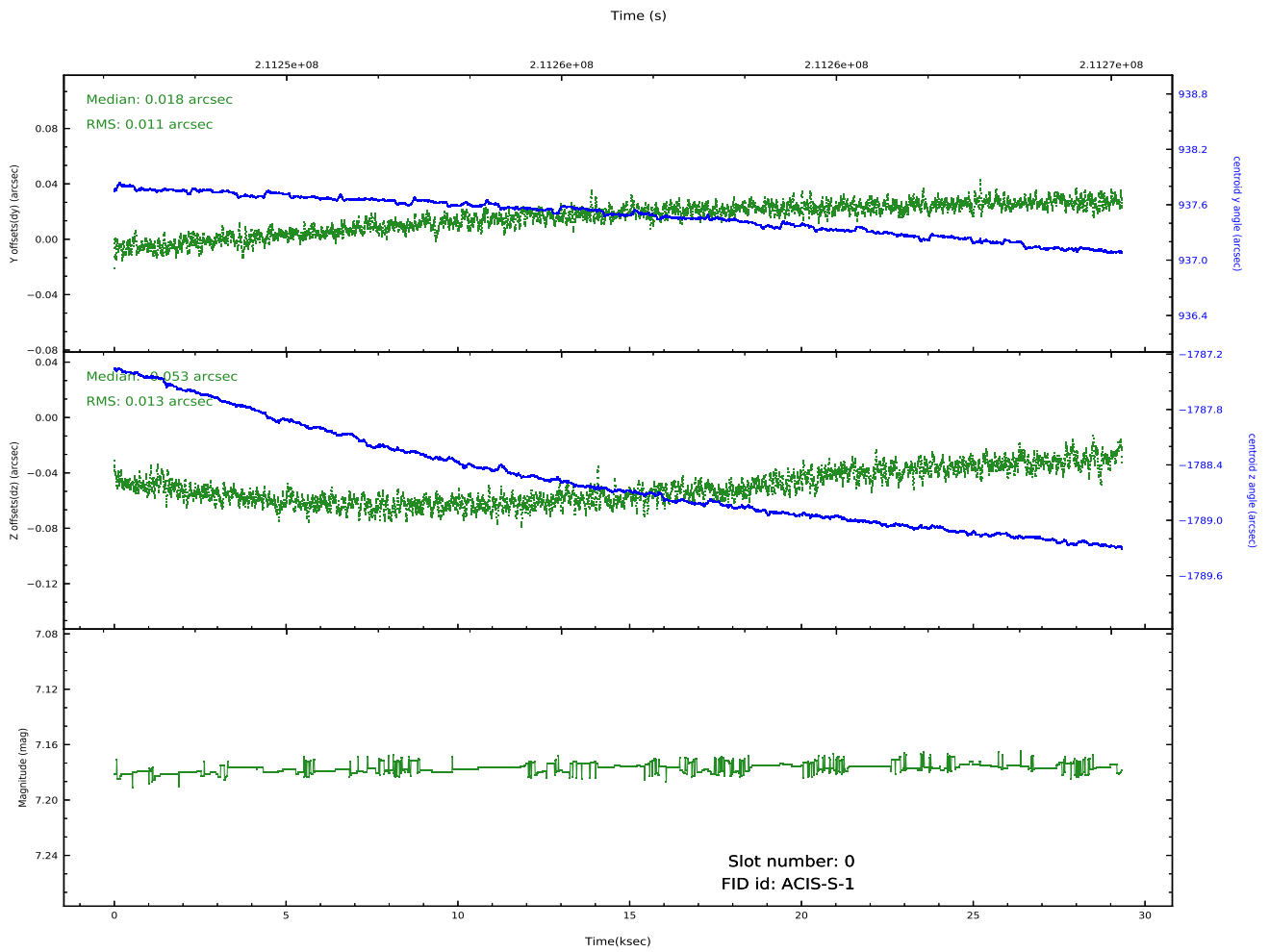
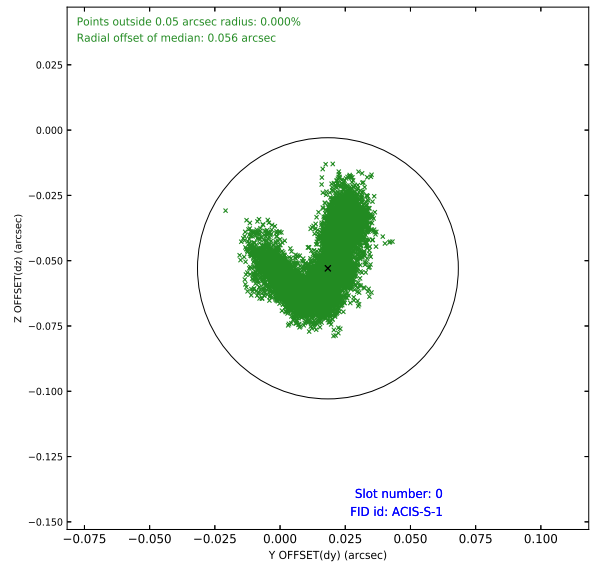
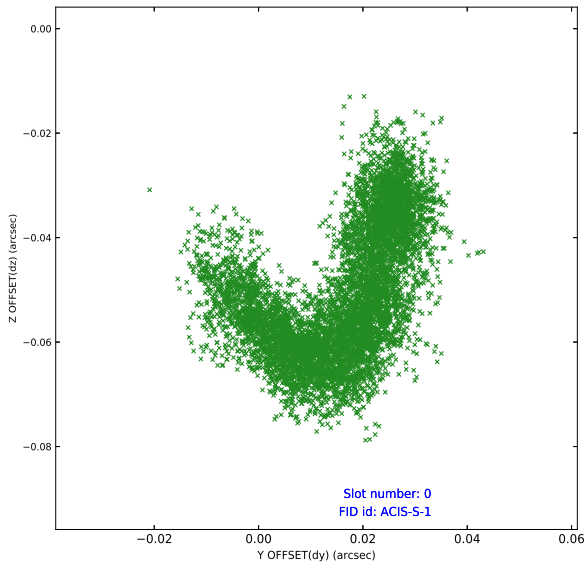


Time (s)

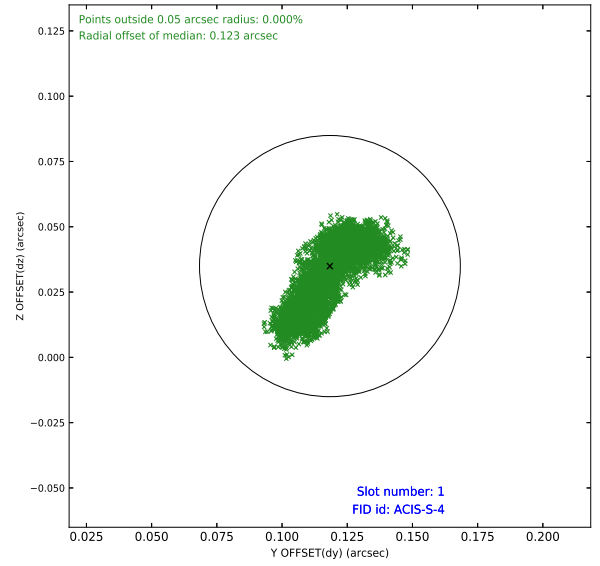
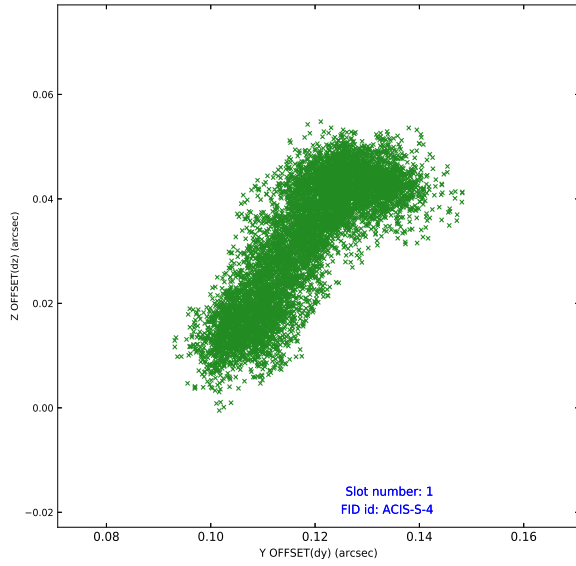


## 2.5 FID Slots

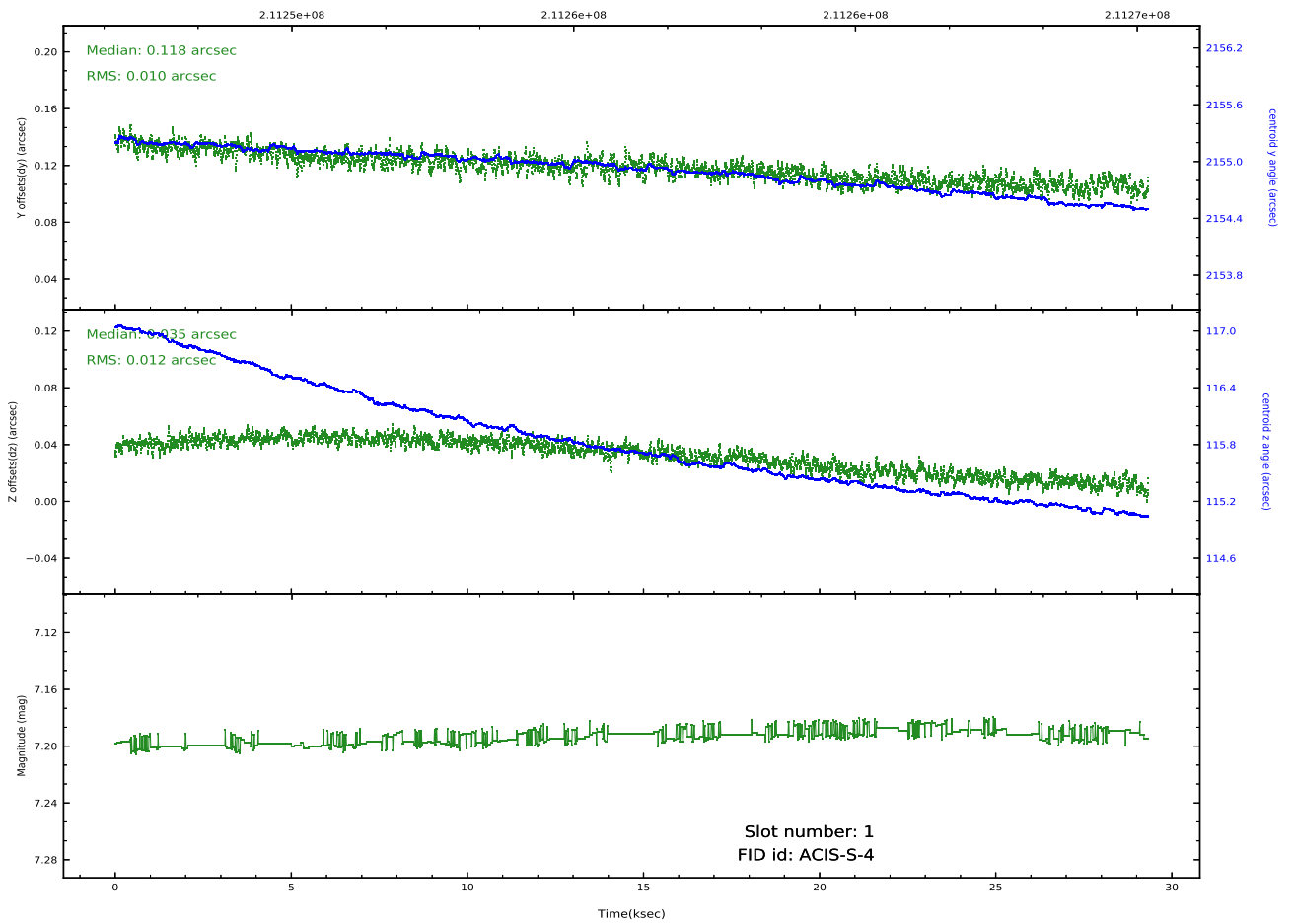
### 2.5.1 Slot 0



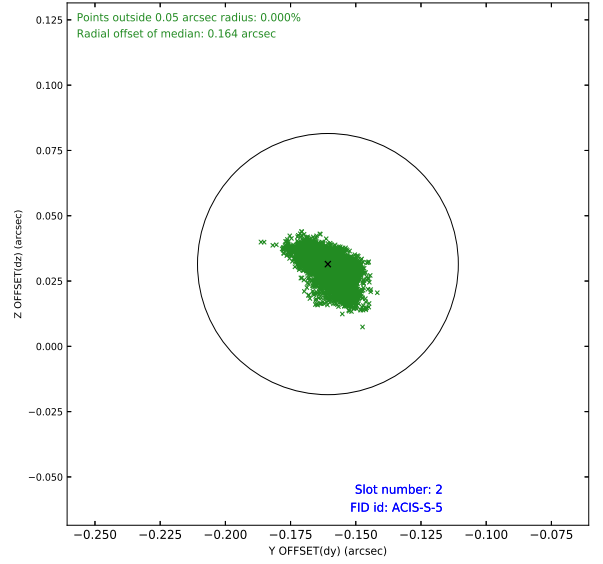
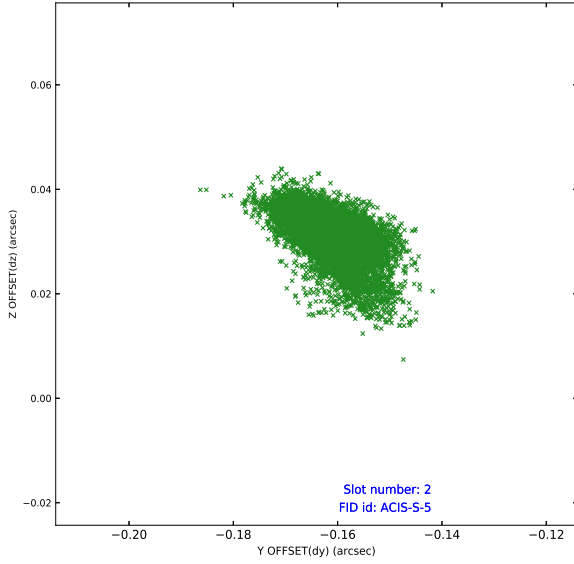
## 2.5.2 Slot 1



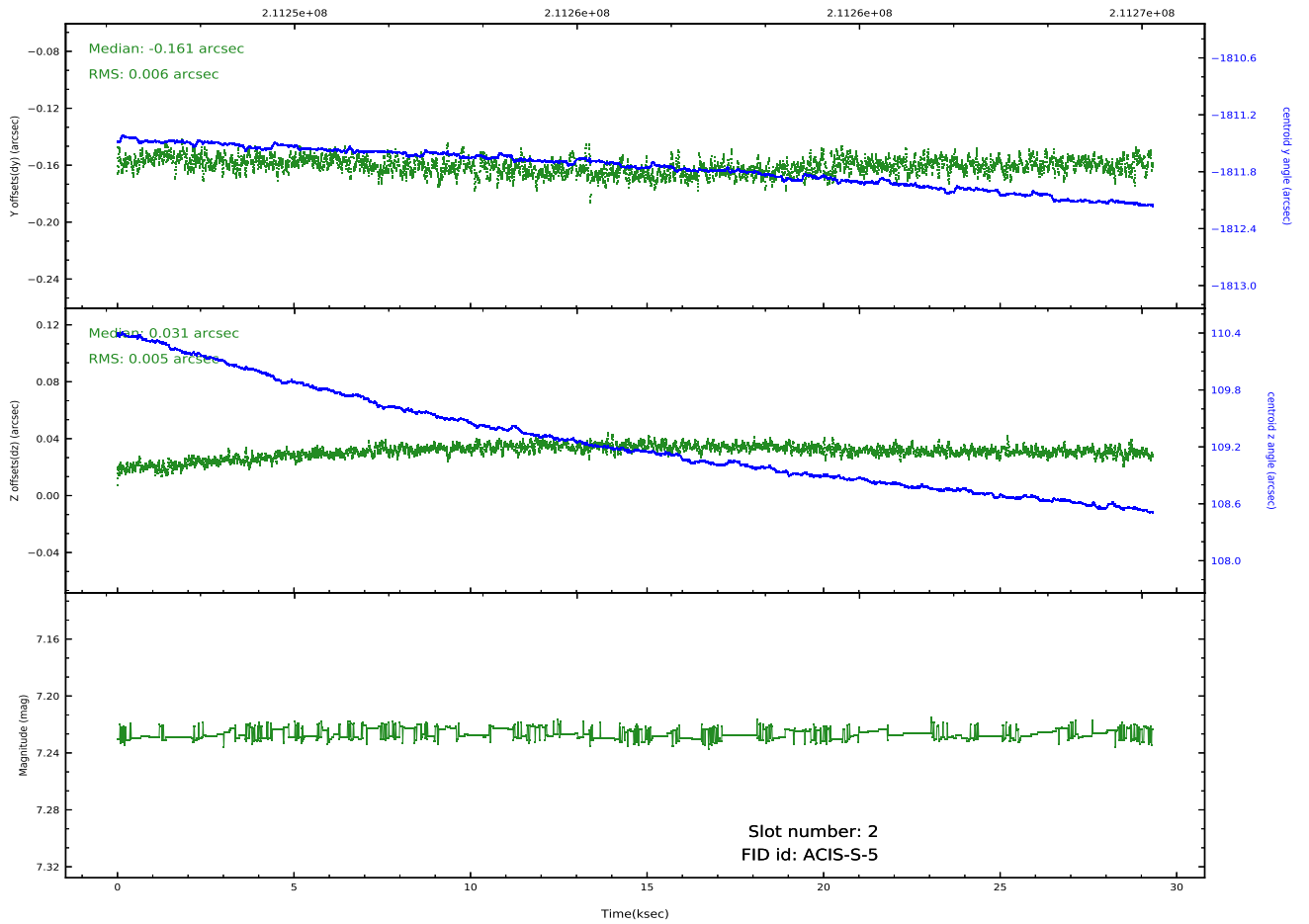
Time (s)



### 2.5.3 Slot 2

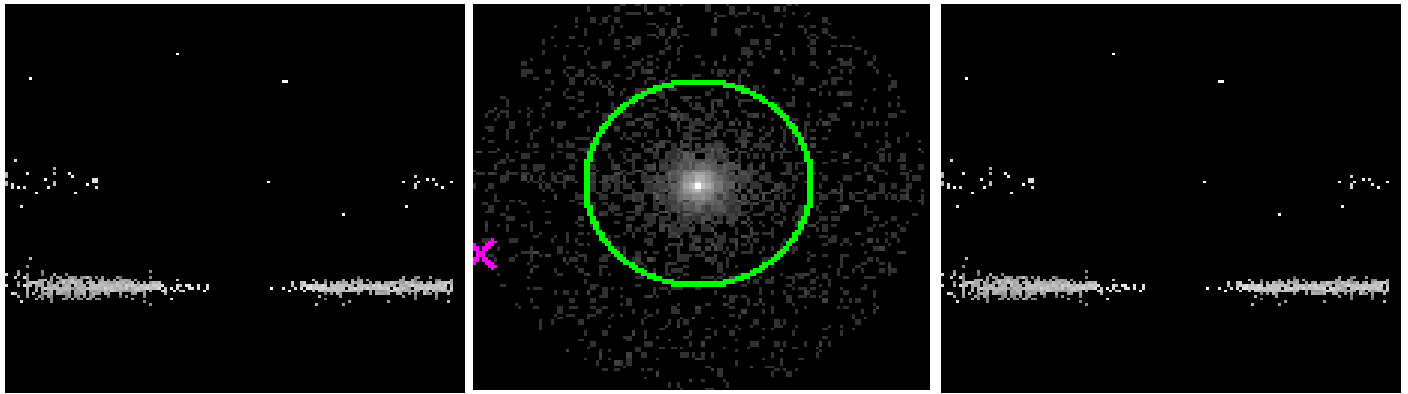


Time (s)



### 3 Gratings

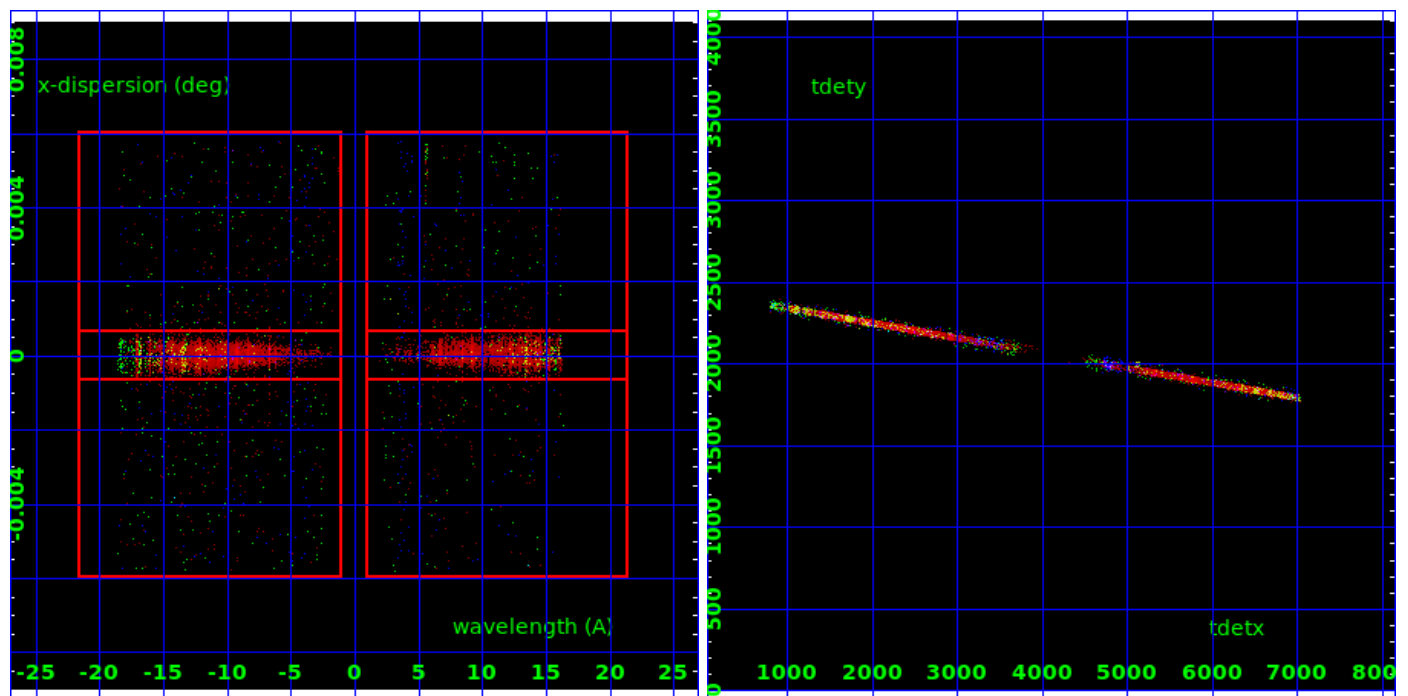
#### 3.1 HEG Arm



HEG Order Sort 123

HEG Zero Order

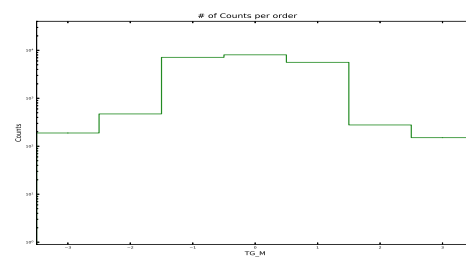
HEG Order Sort ALL

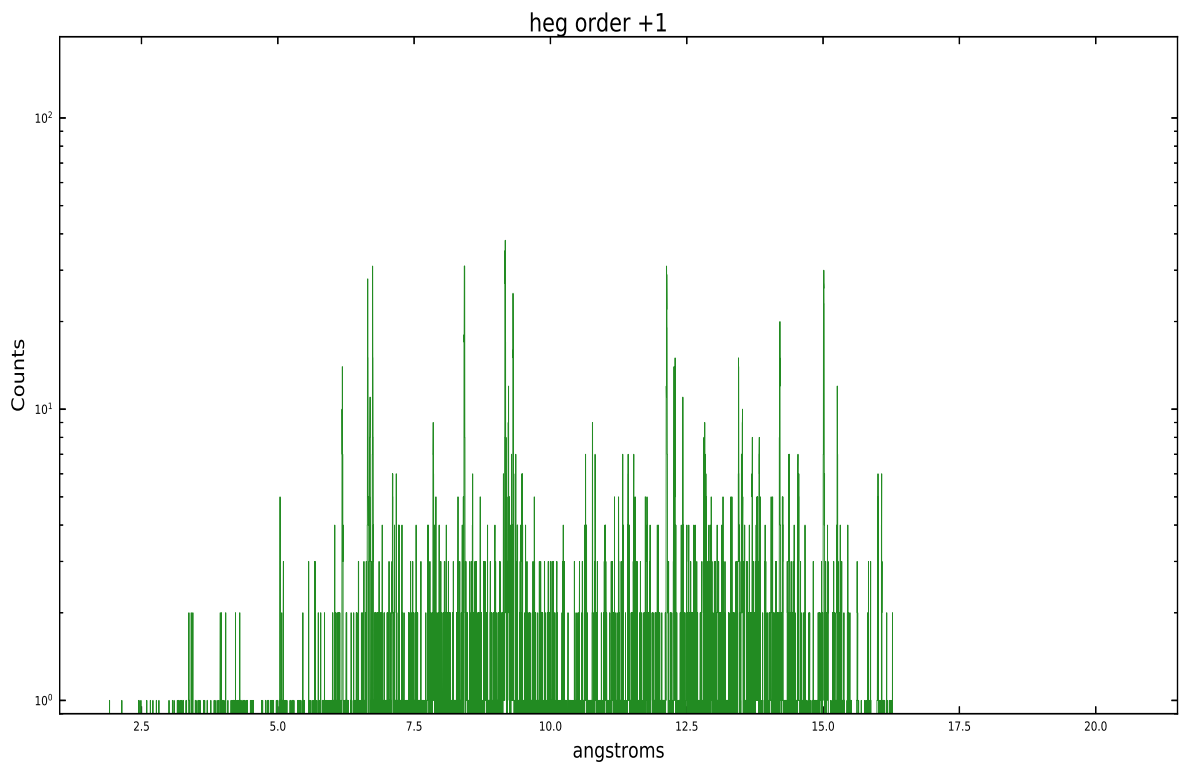
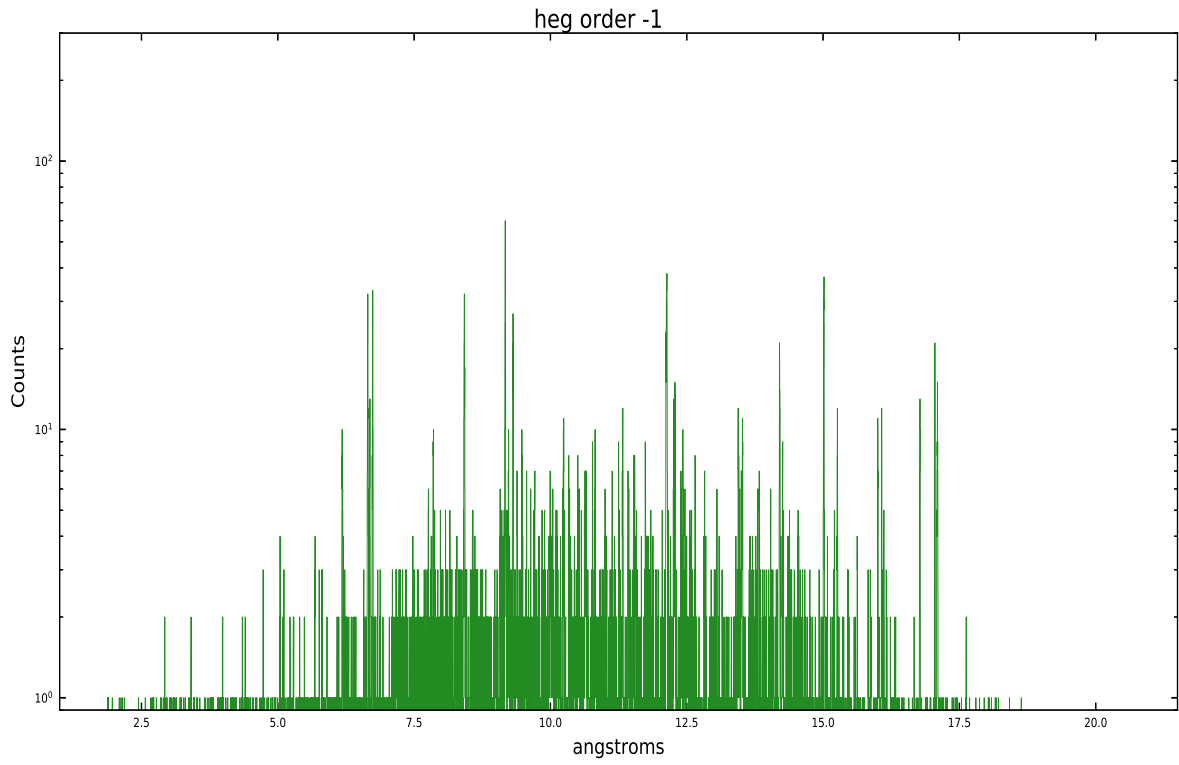


Spot Image HEG

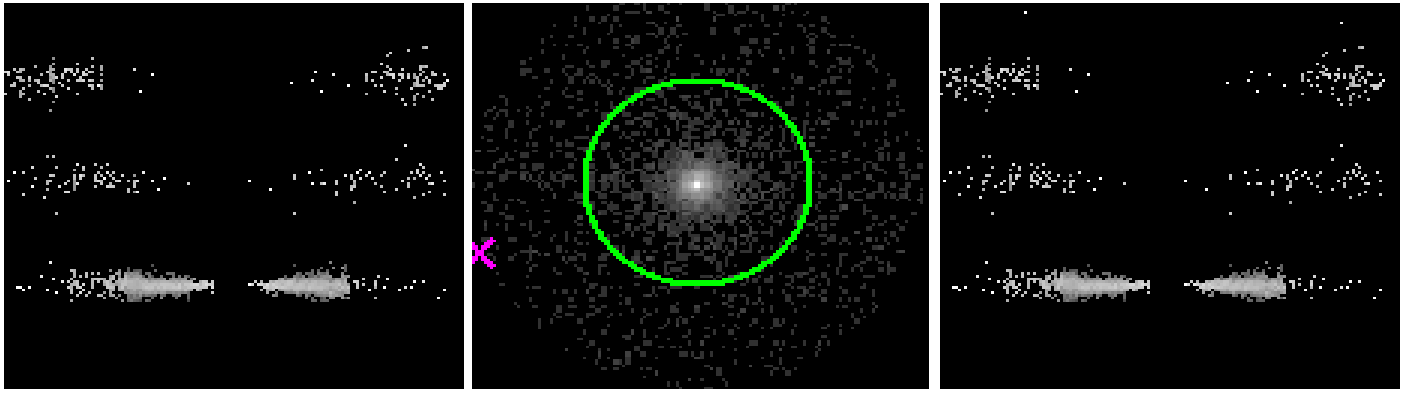
Full Detector HEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	189	472	7137	8050	5615	278	151





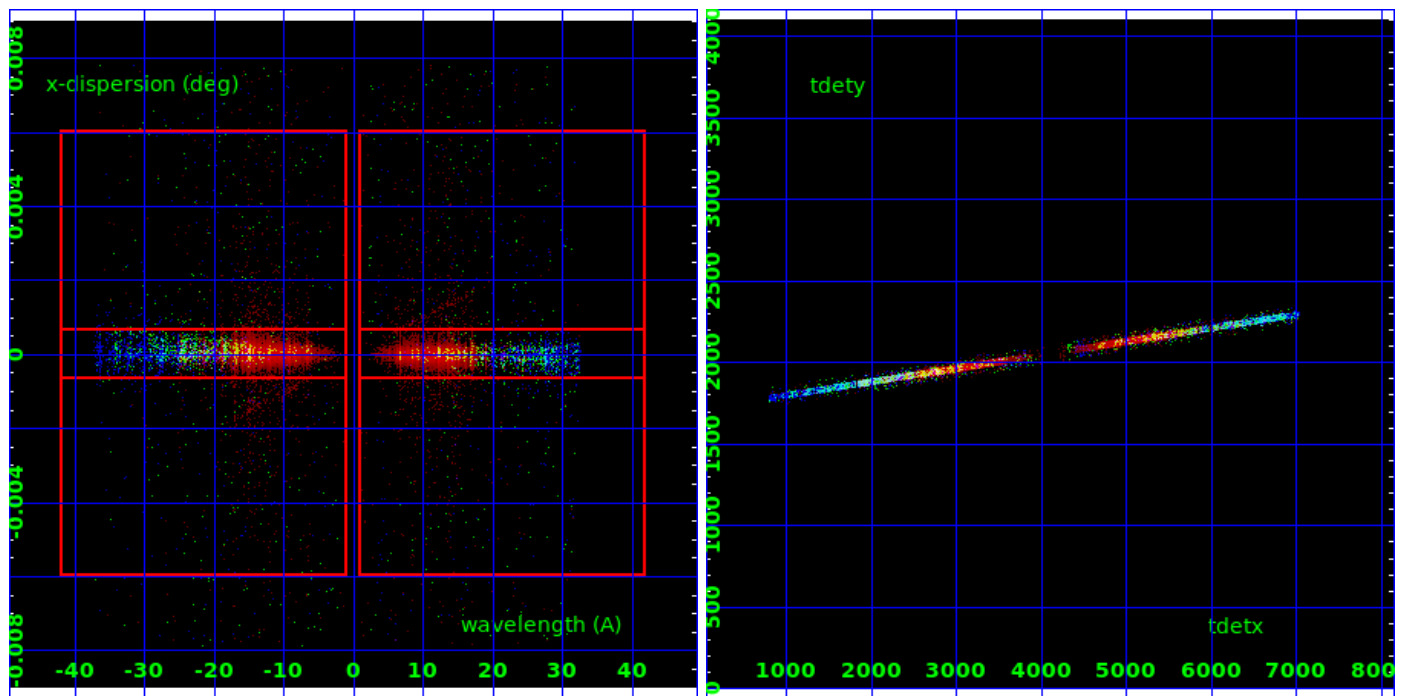
### 3.2 MEG Arm



MEG Order Sort 123

MEG Zero Order

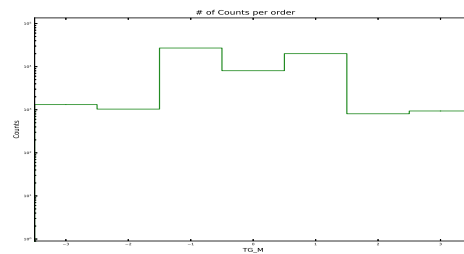
MEG Order Sort ALL

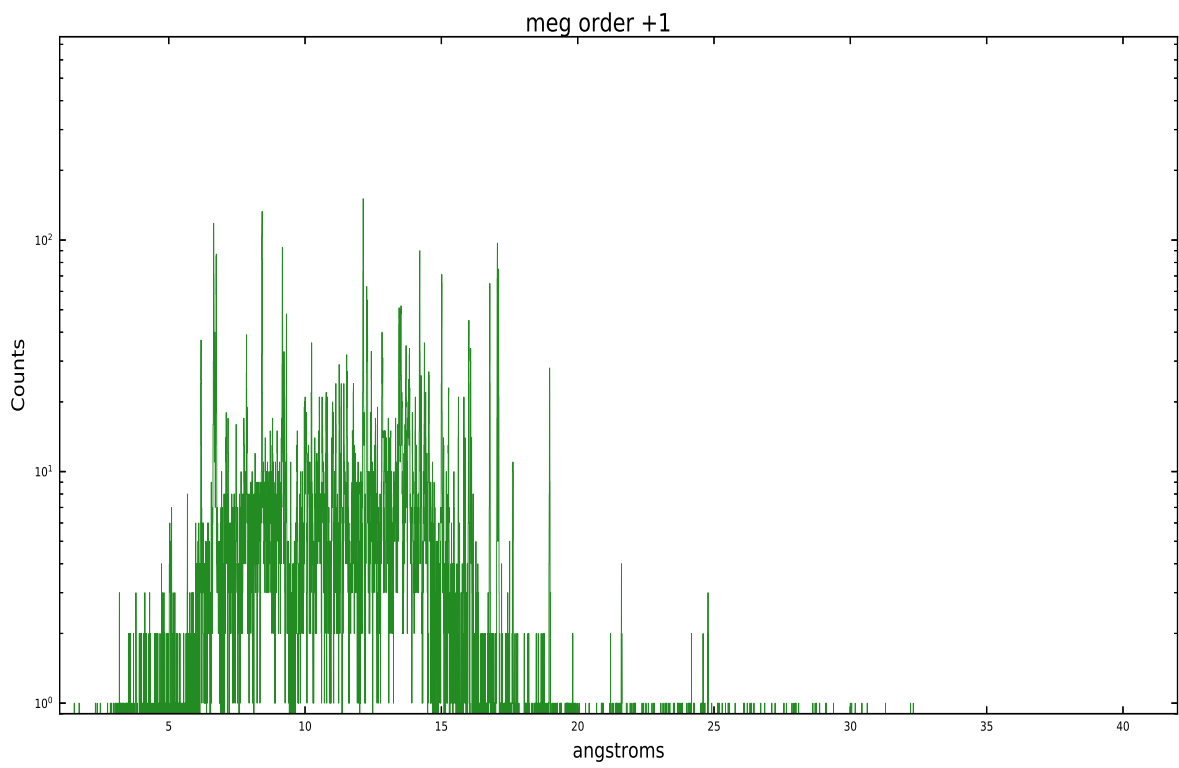
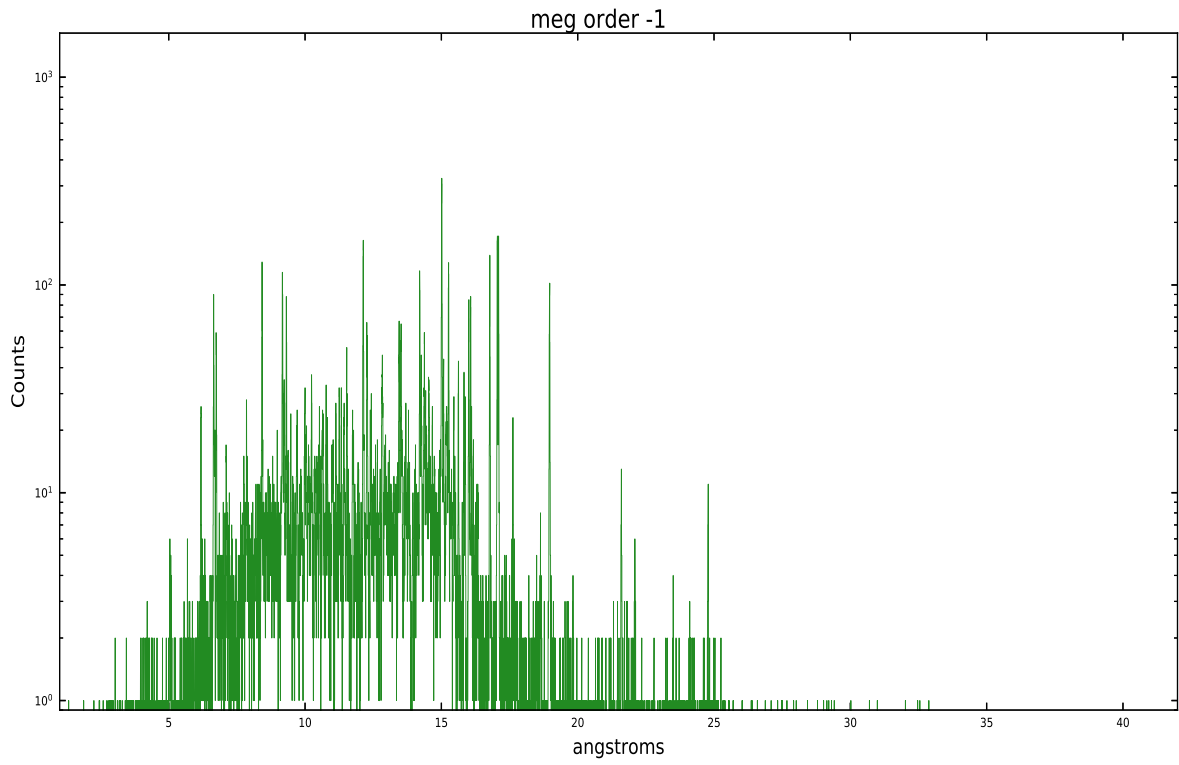


Spot Image MEG

Full Detector MEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	1315	1034	27035	8050	20021	806	936





# A Summary

## A.1 Status

V&V Scientist	David Huenemoerder
V&V Date (YYYY-MM-DD)	2020.10.02
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	29.142

## A.2 Comments