

V&V Reference Report

L2 ASCDS Version : 10.9.1

Observation 4621 - L2 Version 4
Chandra X-Ray Center

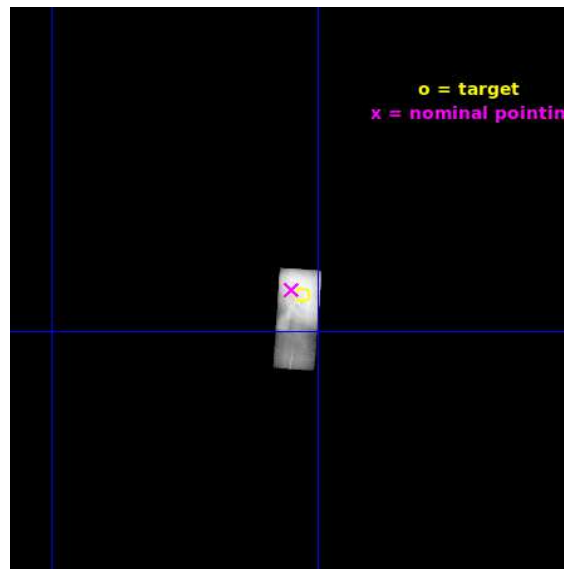
L2 Processing Date : Sep 28 2020

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1 Front

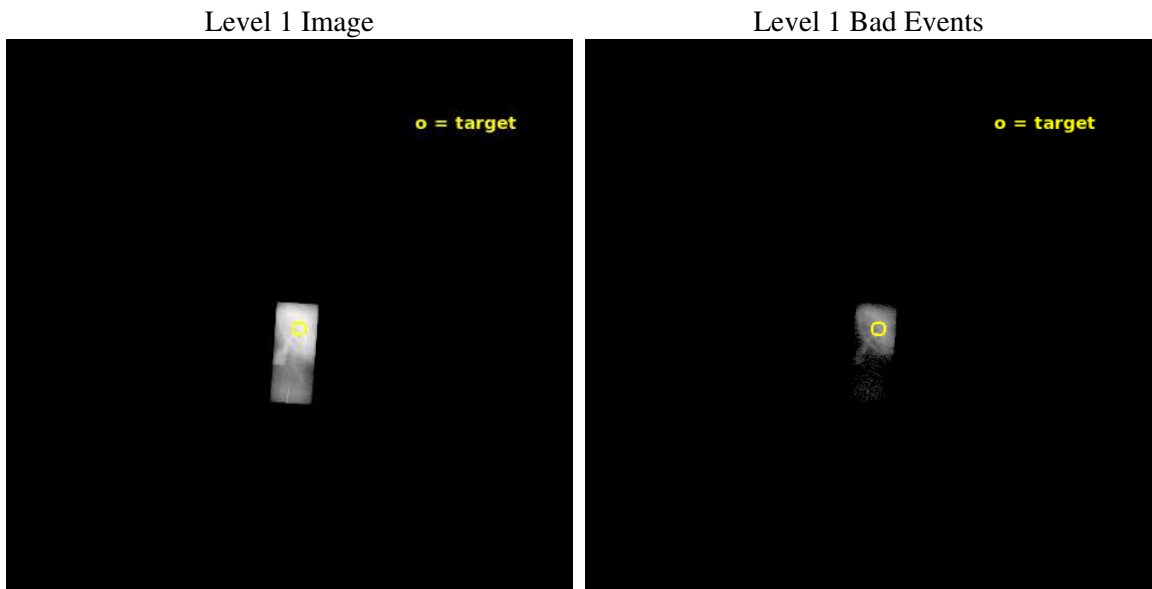
seq_num	500446	Sequence number
obs_id	4621	Observation id
title	Spectroscopic Study of the Dynamic Shock in the Pulsar Wind of the Crab Nebula	Proposal title
observer	Dr Koji Mori	Principal investigator
object	Crab Nebula	Source name
dtcycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	83.632083	Observer's specified target RA [deg]
dec_targ	22.016472	Observer's specified target Dec [deg]
ra_nom	83.636973042087	Nominal RA [deg]
dec_nom	22.019039929151	Nominal Dec [deg]
roll_nom	93.836788206431	Nominal Roll [deg]
revision	4	Processing version of data
ontime	10150.800403357	Sum of GTIs [s]
liveltime	8929.2755131567	Livetime [s]
ontime7	10150.800403357	Sum of GTIs [s]
l2events	2203634	Number of level 2 events



2 OBI

2.1 OBI

2.1.1 Images



2.1.2 Parameters

obi_num	2	Obi number	sched_exp_time	10000.000000	[s] Scheduled observation exposure time
ascdsver	10.9.1	Processing system revision	ontime	10150.800403357	Sum of GTIs [s]
caldbver	4.9.2	 	ontime7	10150.800403357	Sum of GTIs [s]
date	2020-09-28T05:55:30	Date and time of file creation	l1events	2358029	Number of level 1 events
revision	4	Processing version of data	tgmethod	FINDZO	Method used to create src1a file
			zo_pos	(4126.07, 4082.74)	src1a sky pixel position
			zo_pos_tgd	(4113.86, 4061.07)	src1a sky pixel position via tgdetect

2.1.3 Events

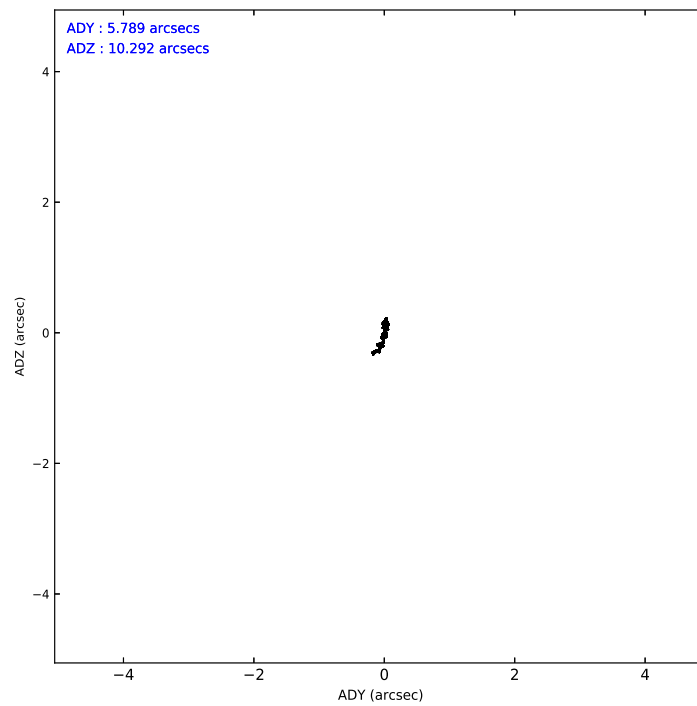
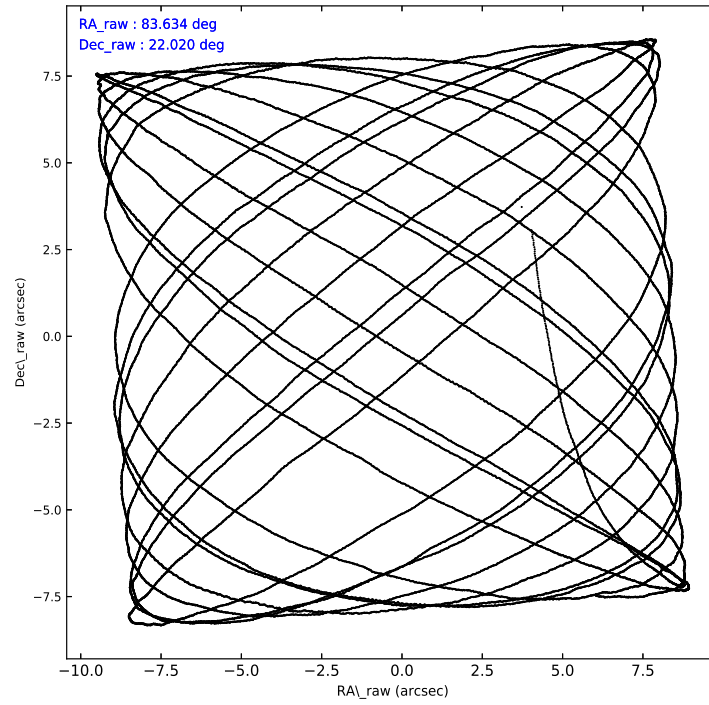
	ccd 7
level 1 events	2358029
rejected events	126411
rejected %	5%

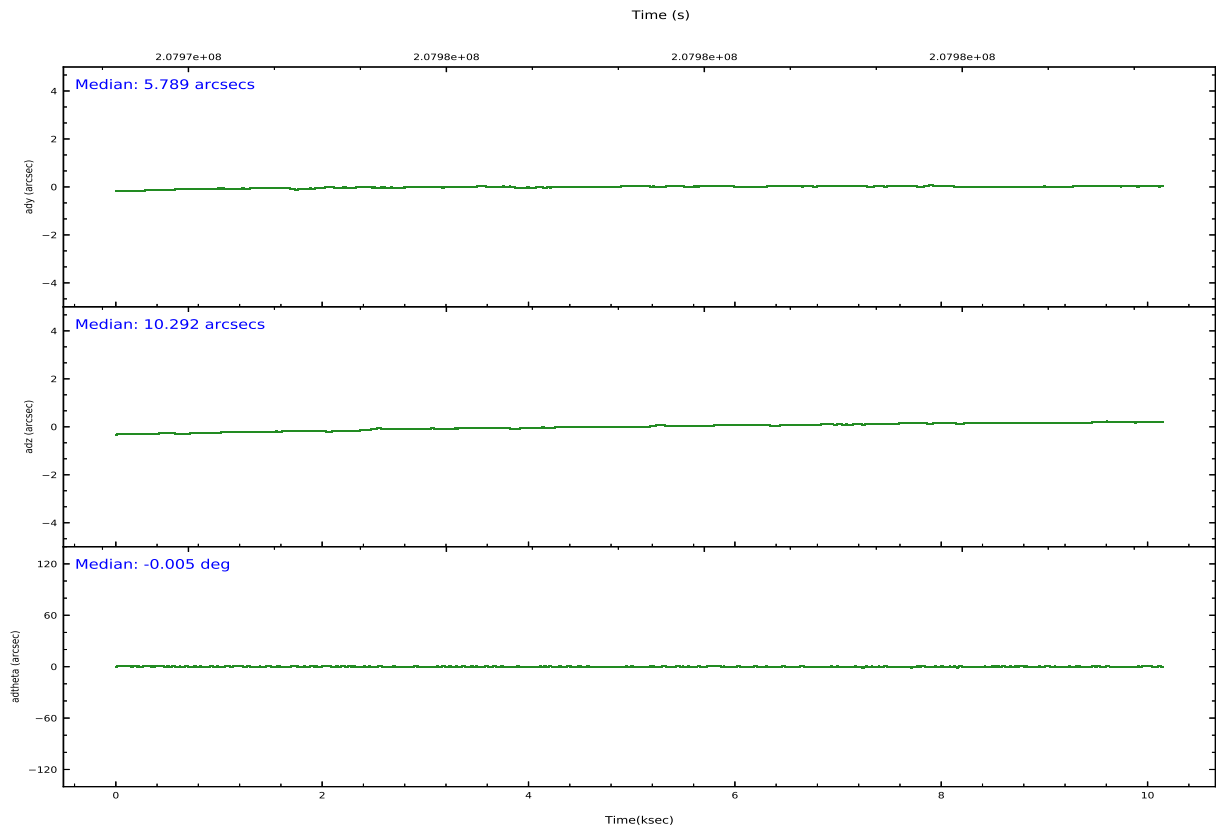
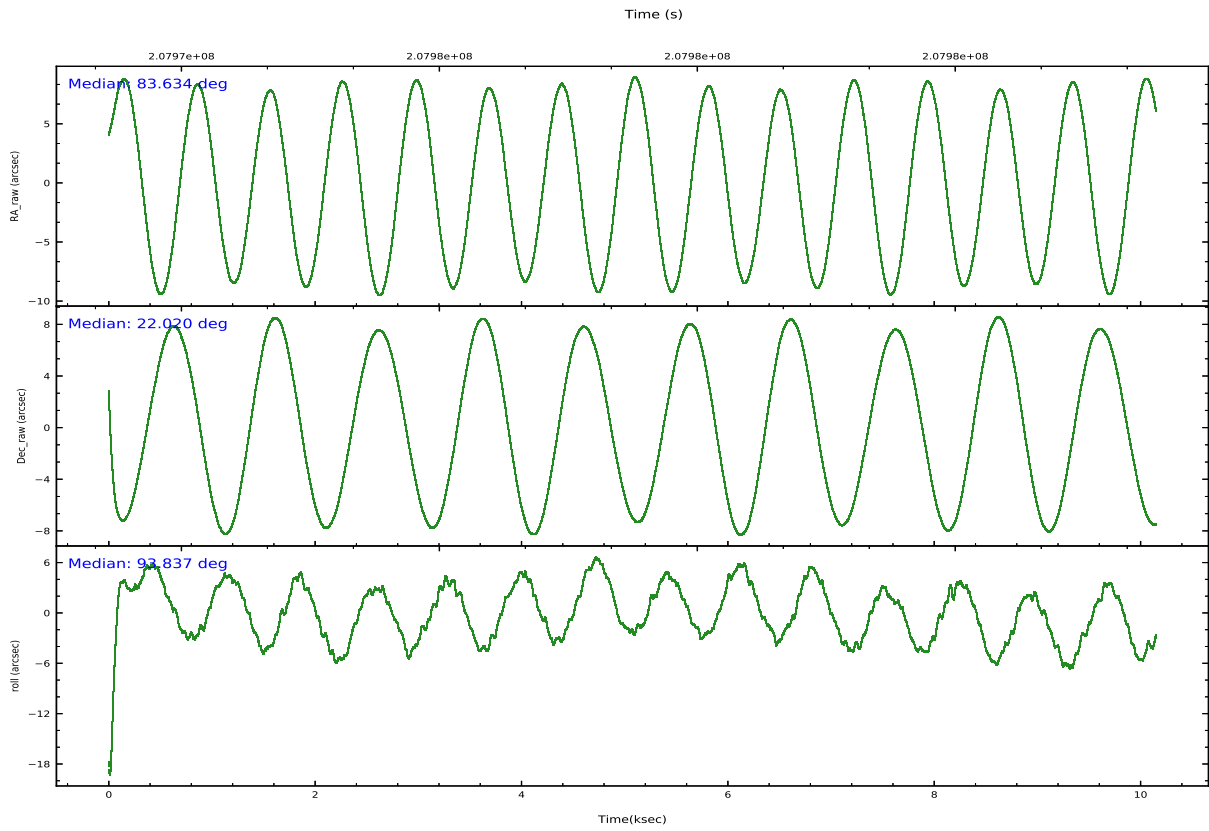
	ccd 7
grade 0 events	428755
	18%
grade 1 events	8377
	0%
grade 2 events	578177
	24%
grade 3 events	247536
	10%
grade 4 events	243525
	10%
grade 5 events	35593
	1%
grade 6 events	769796
	32%
grade 7 events	46270
	1%

2.2 Compared Parameters

Parameter	Planned	Actual	Parameter	Planned	Actual
Instrument	ACIS	ACIS	Obspar version number	8	8
Detector	ACIS-7	ACIS-7	Obspar file type	PREDICTED	ACTUAL
Grating	HETG	HETG	Obspar update status	NONE	UPDATED
Data mode	GRADED	GRADED	Number of optional ACIS chips dropped	0	0
Observation mode	POINTING	POINTING	On-chip summing requested	N	N
[deg] Pointing RA	83.650289	83.63697304208701	Subarray requested	CUSTOM	CUSTOM
[deg] Pointing Dec	21.998183	22.019039929151	Subarray start row	127	127
[deg] Pointing Roll	93.675064	93.836788206431	Subarray row count	101	101
[mm] SIM focus pos	-0.684267	-0.6828225247311905	Alternating exposures requested	N	N
[mm] SIM defocus	0	0.001444936568705701	[s] Primary exposure time	0.000000	0.3
[mm] SIM translation stage pos	-182.132523	-182.139514760308			
[mm] SIM translation stage offset	-8	-7.993007822699838			
[s] Observation start time (MET)	207971947.184000	207970834.14465			
Observation start date	2004-08-04T01:58:03	2004-08-04T01:40:34			
[s] Observation end time (MET)	207981947.184000	207982910.69519			
Observation end date	2004-08-04T04:44:43	2004-08-04T05:01:50			
Read mode	TIMED	TIMED			

2.3 Aspect





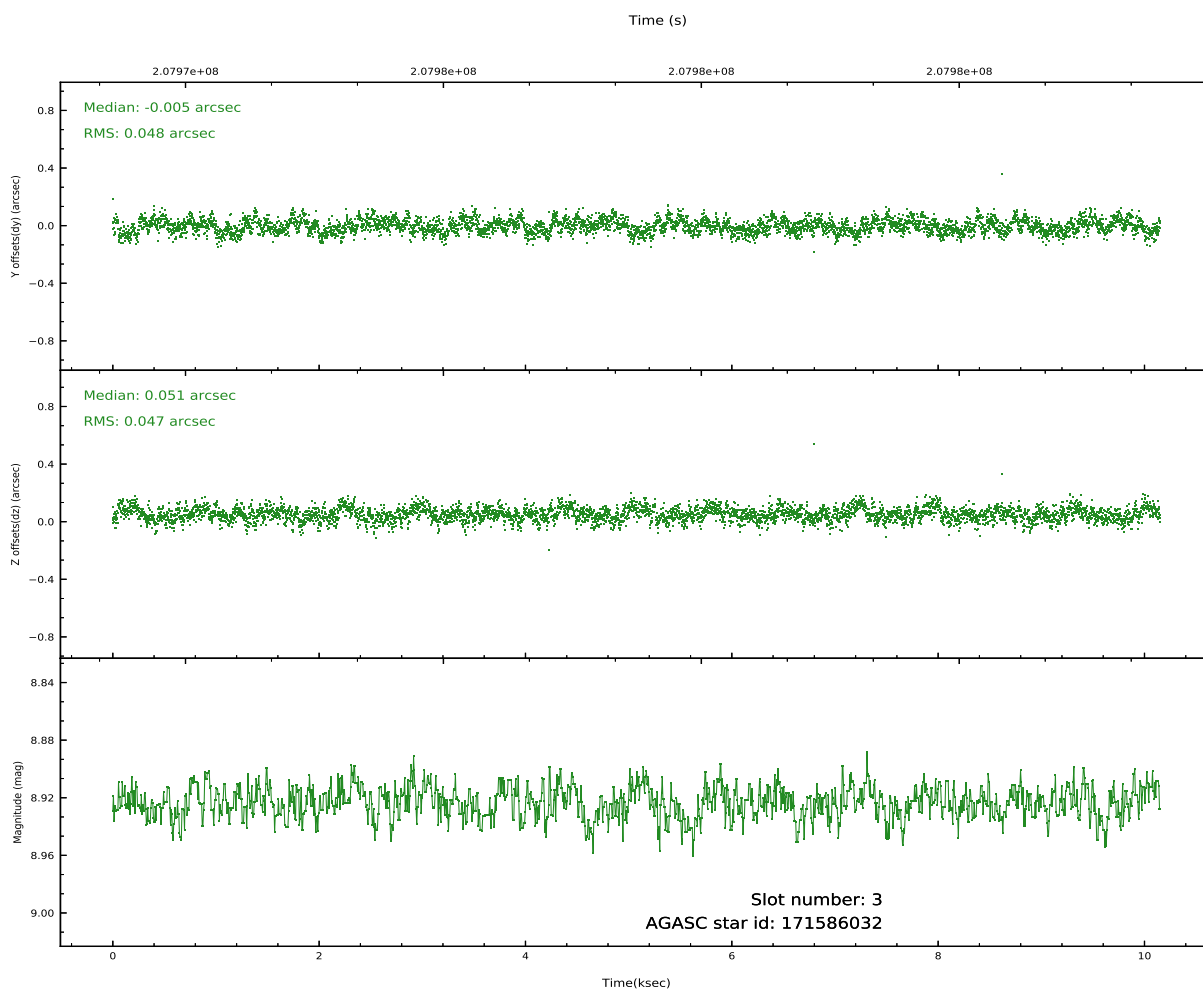
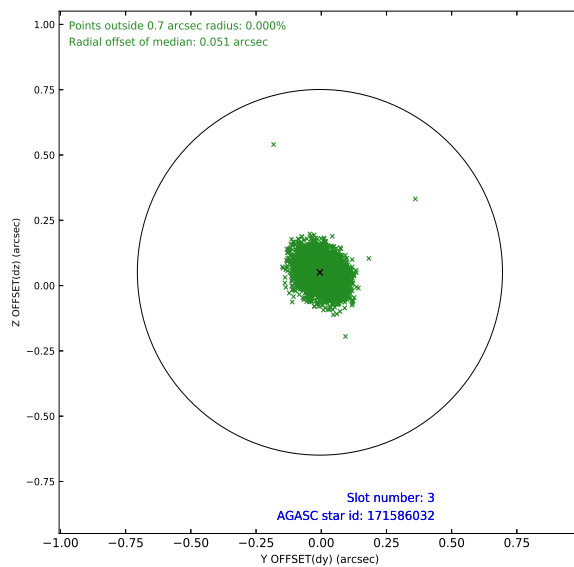
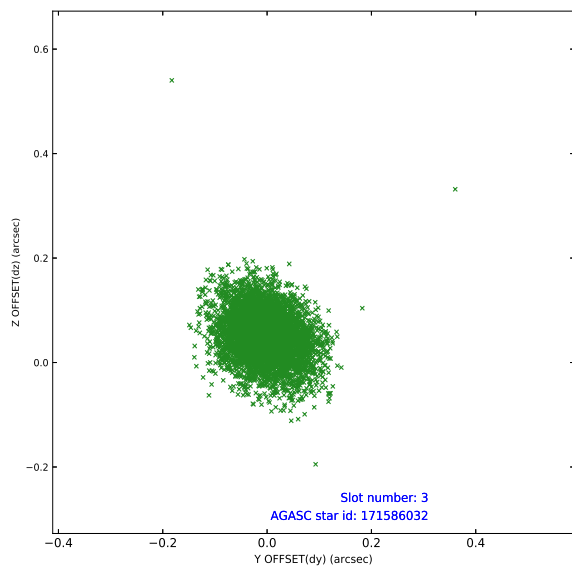
Slot Statistics

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-2	7.09	2476	1.000	-0.115	-0.127	0.007	0.012	0.000000	0.000000	-758.00	-1896
1	FID		ACIS-S-4	7.18	2476	1.000	0.209	0.089	0.006	0.012	0.000000	0.000000	2155.33	11
2	FID		ACIS-S-5	7.23	2476	1.000	-0.125	0.045	0.007	0.012	0.000000	0.000000	-1810.22	5
3	GUIDE	used	171586032	8.92	4951	1.000	-0.005	0.051	0.071	0.115	83.950197	22.083225	242.88	-1017
4	GUIDE	used	171586976	8.46	4951	1.000	-0.064	0.047	0.061	0.099	83.857953	22.438065	1536.90	-790
5	GUIDE	used	171597832	9.15	4946	1.000	0.275	-0.211	0.093	0.147	83.183230	21.366702	-2165.14	1707
6	GUIDE	used	171721904	9.19	4950	1.000	-0.057	0.040	0.099	0.162	84.272676	22.116922	297.95	-2098
7	GUIDE	used	243941560	8.30	4950	1.000	-0.150	0.077	0.064	0.102	83.733264	22.568598	2032.00	-406

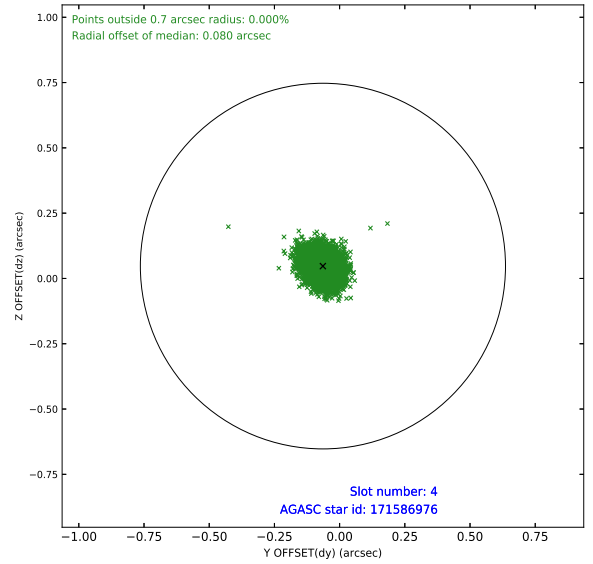
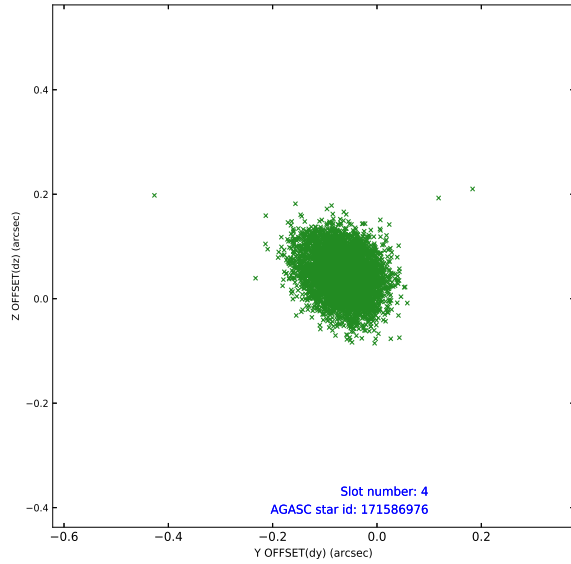
∞

2.4 Star Slots

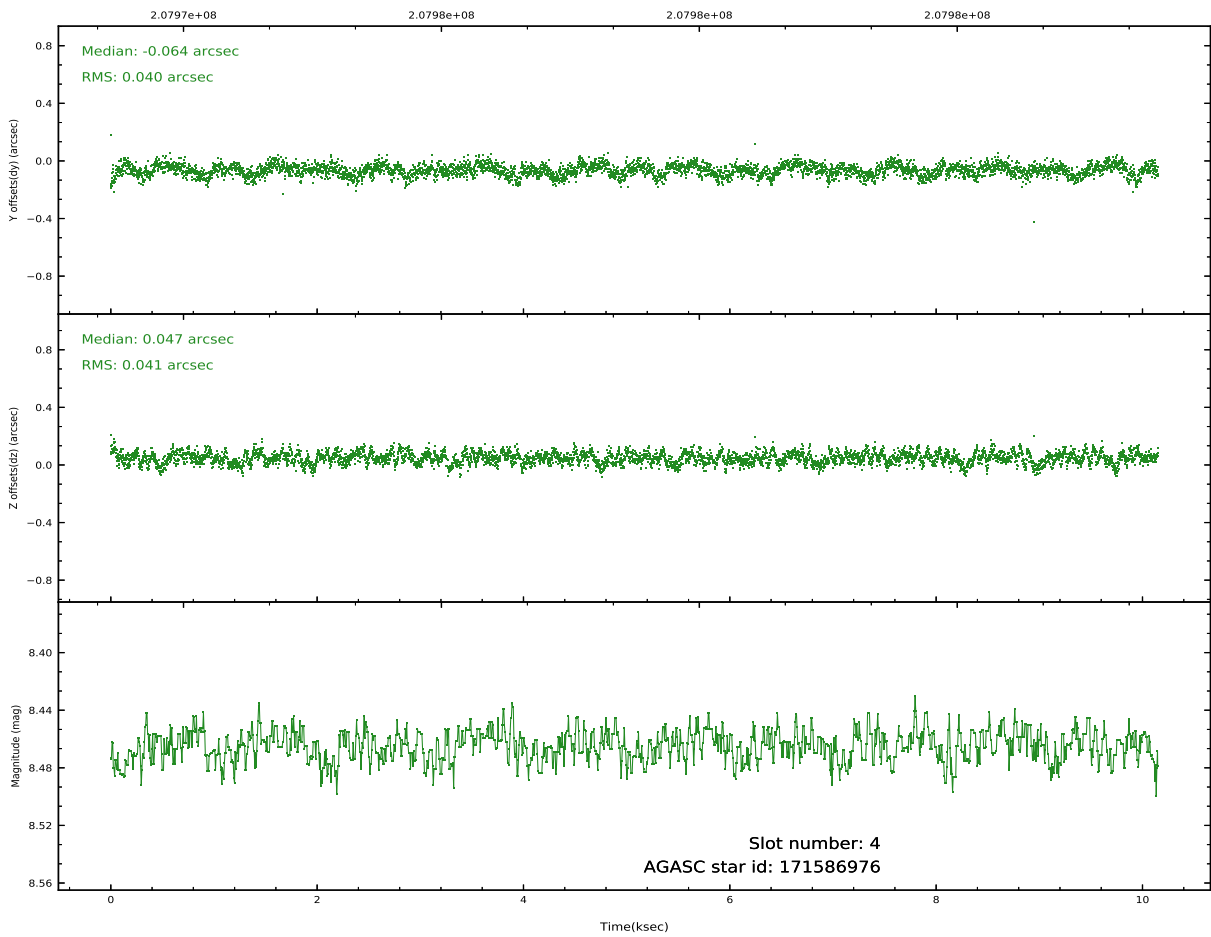
2.4.1 Slot 3



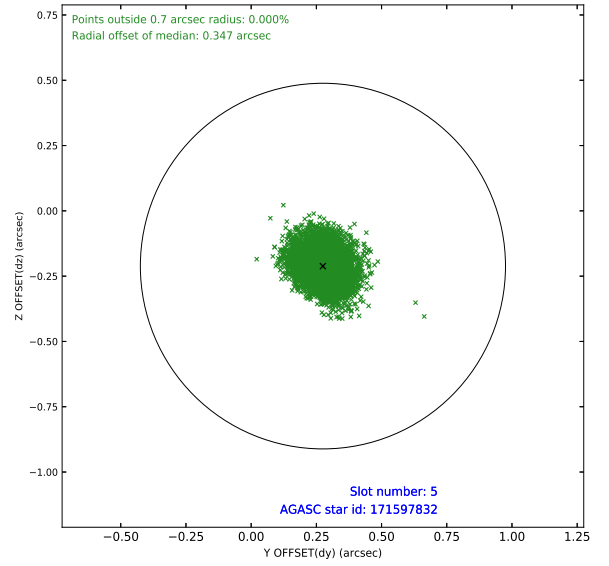
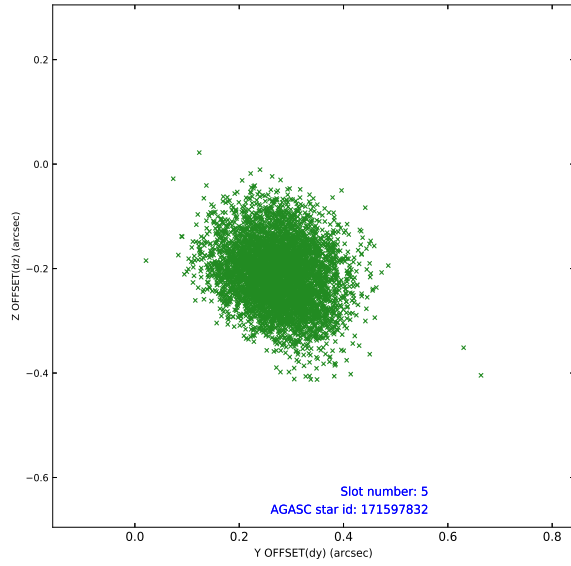
2.4.2 Slot 4



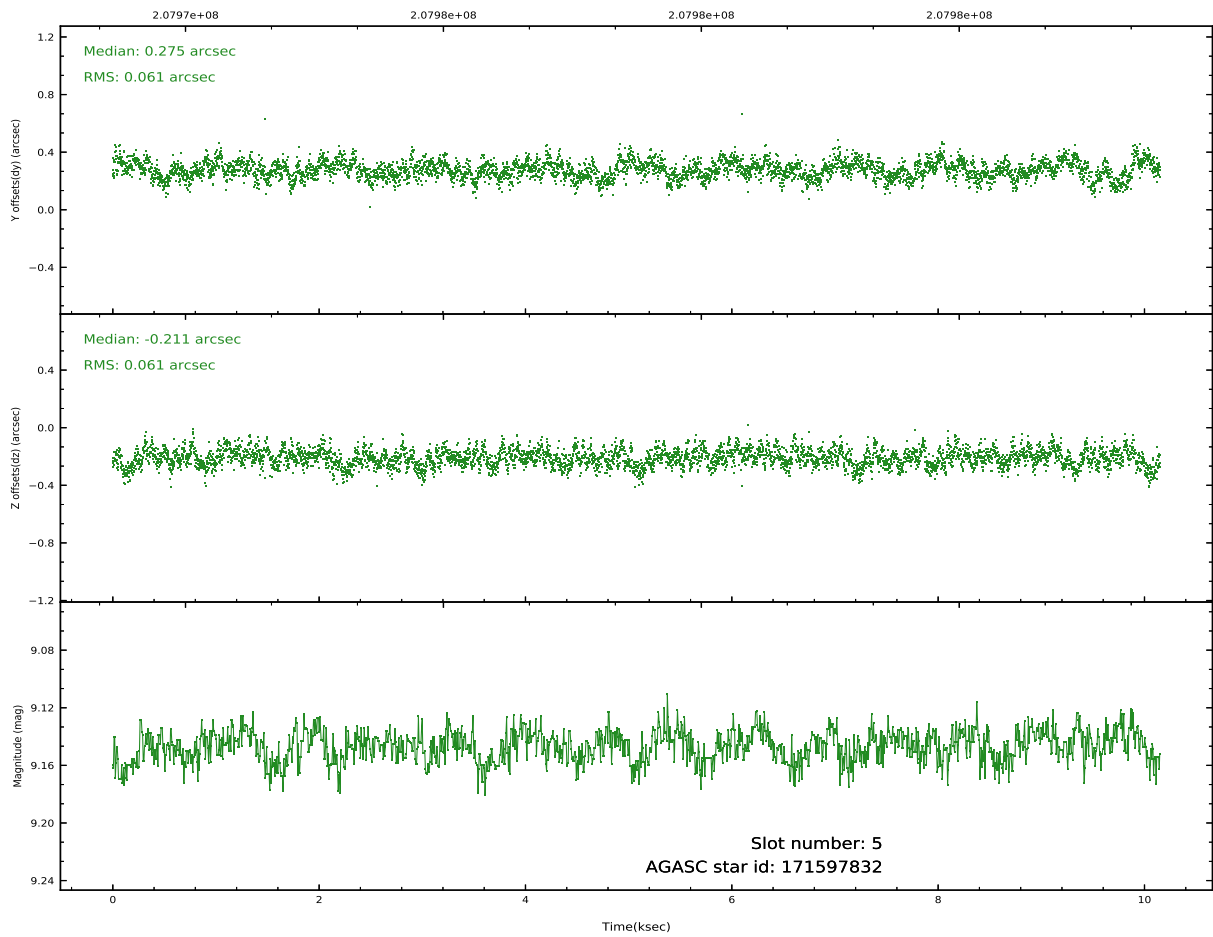
Time (s)



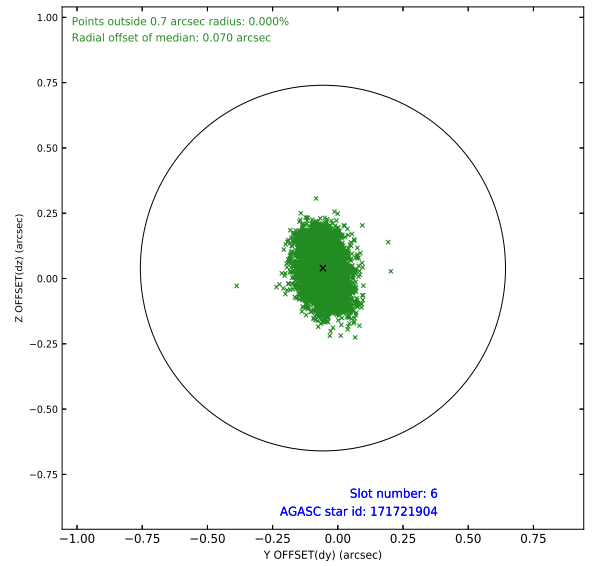
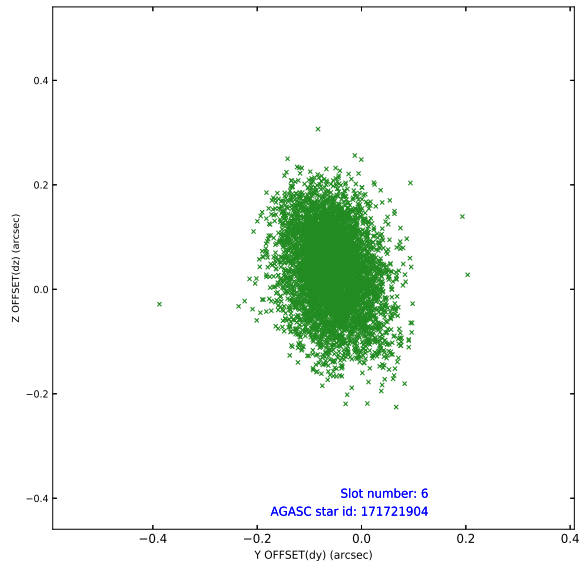
2.4.3 Slot 5



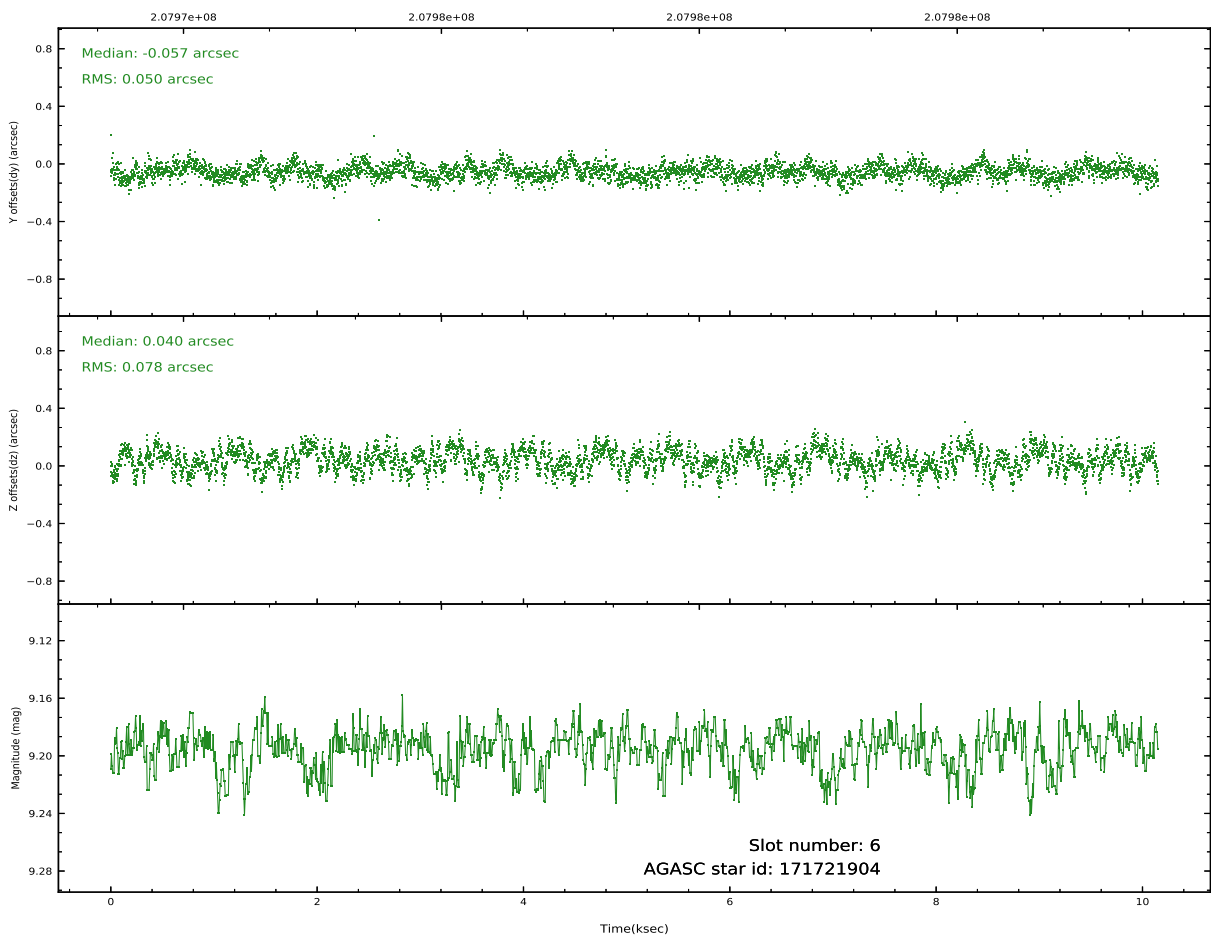
Time (s)



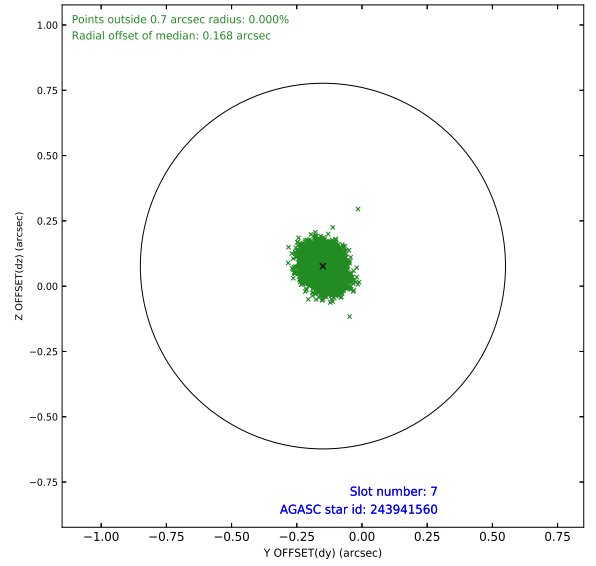
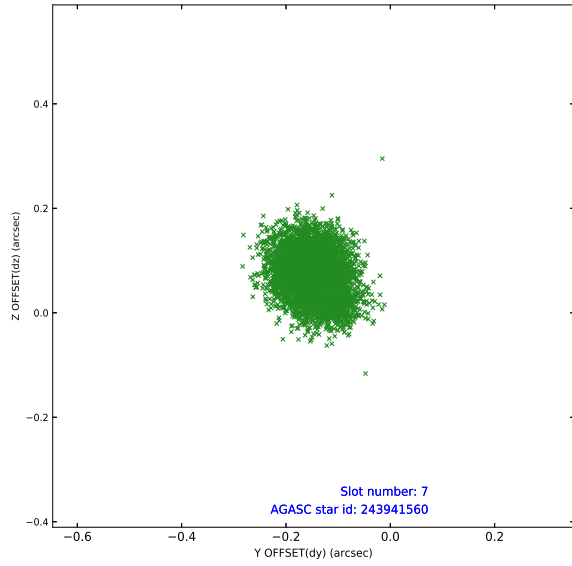
2.4.4 Slot 6



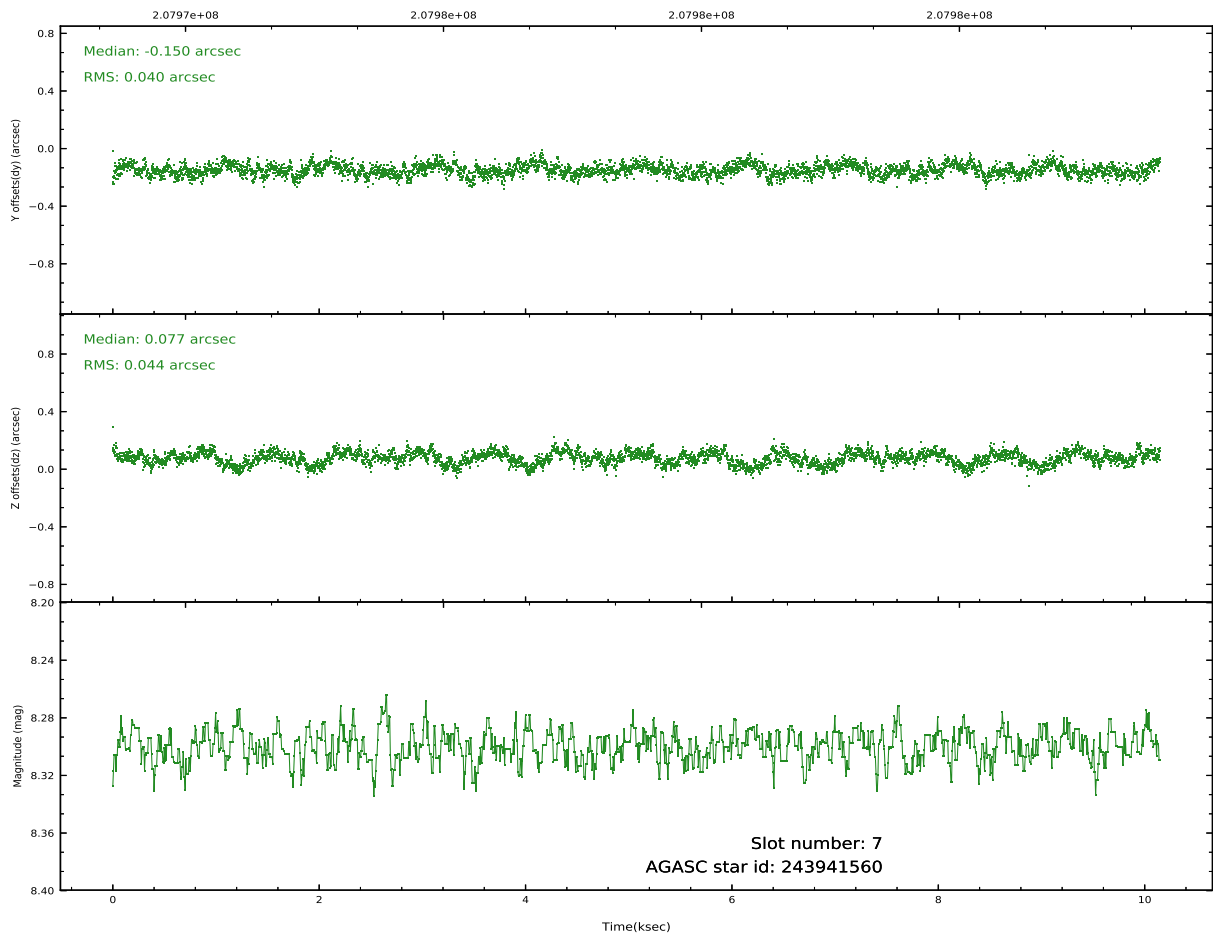
Time (s)



2.4.5 Slot 7

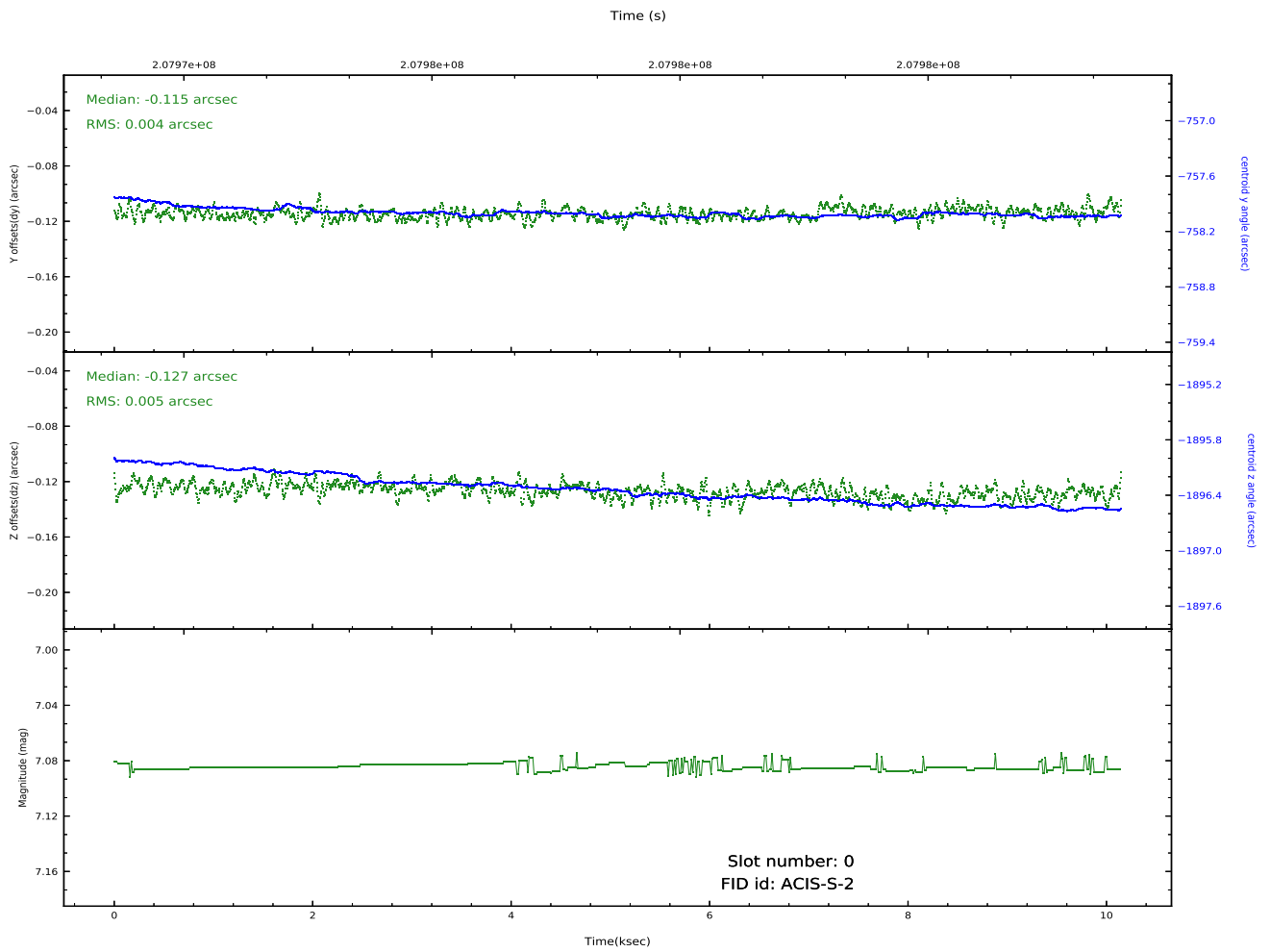
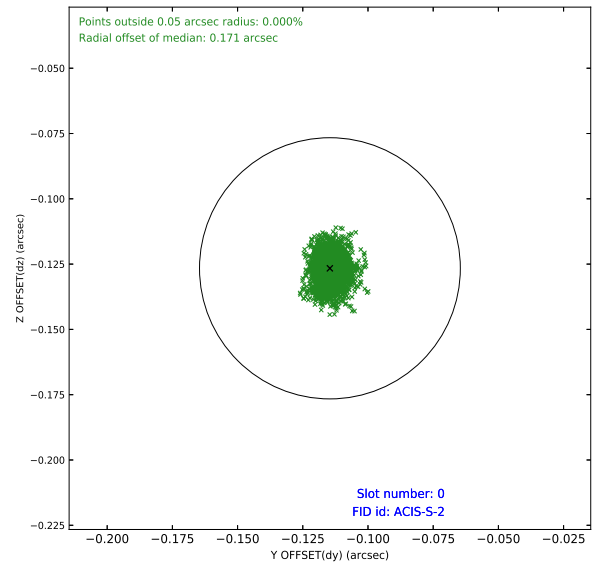
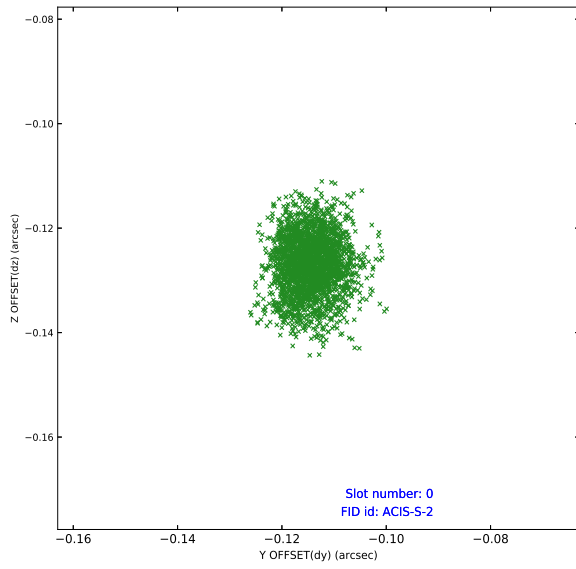


Time (s)

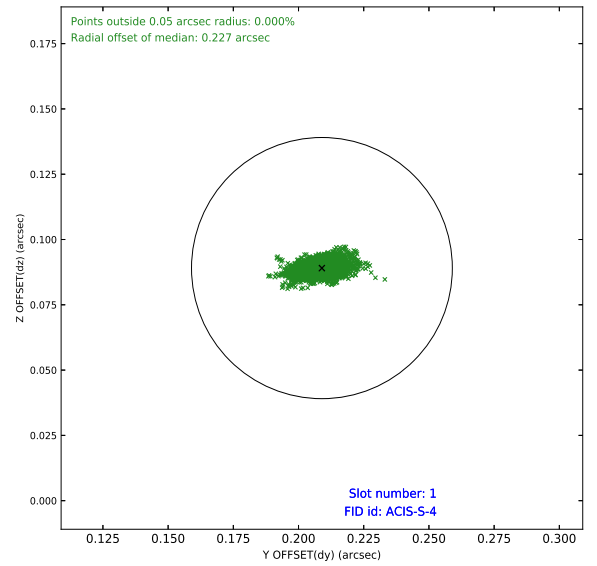
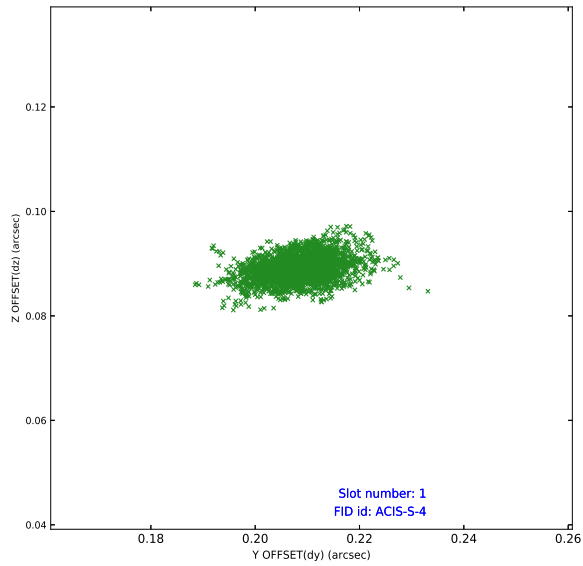


2.5 FID Slots

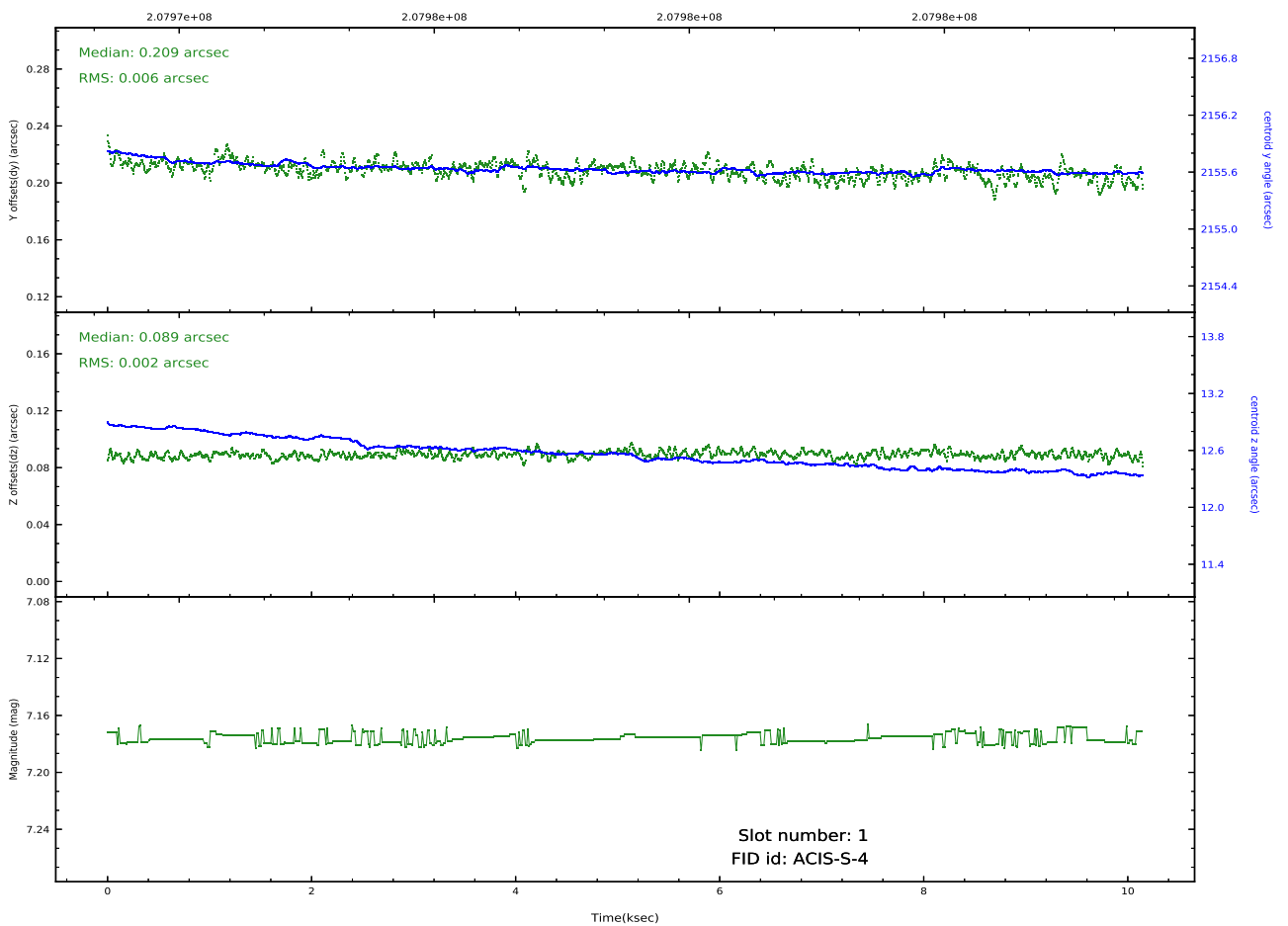
2.5.1 Slot 0



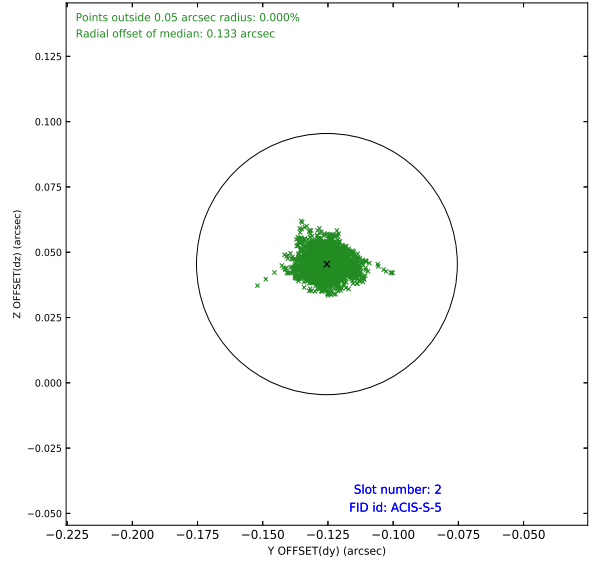
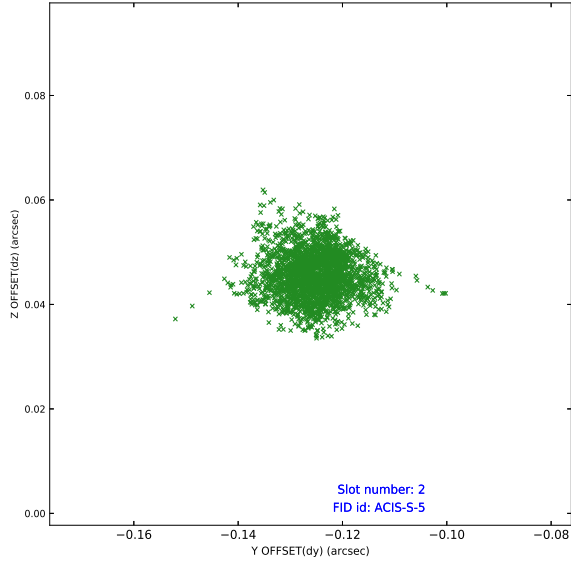
2.5.2 Slot 1



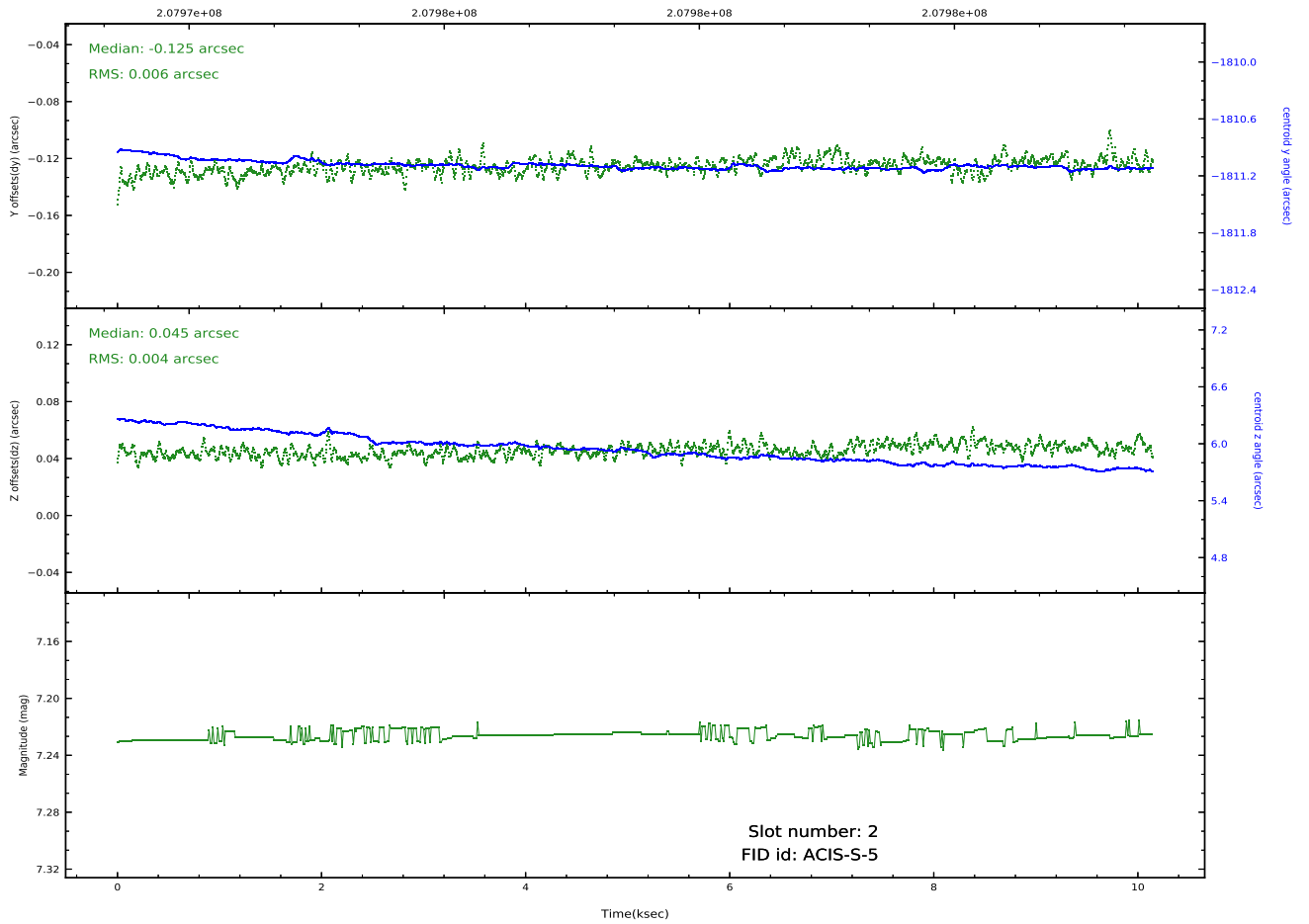
Time (s)



2.5.3 Slot 2

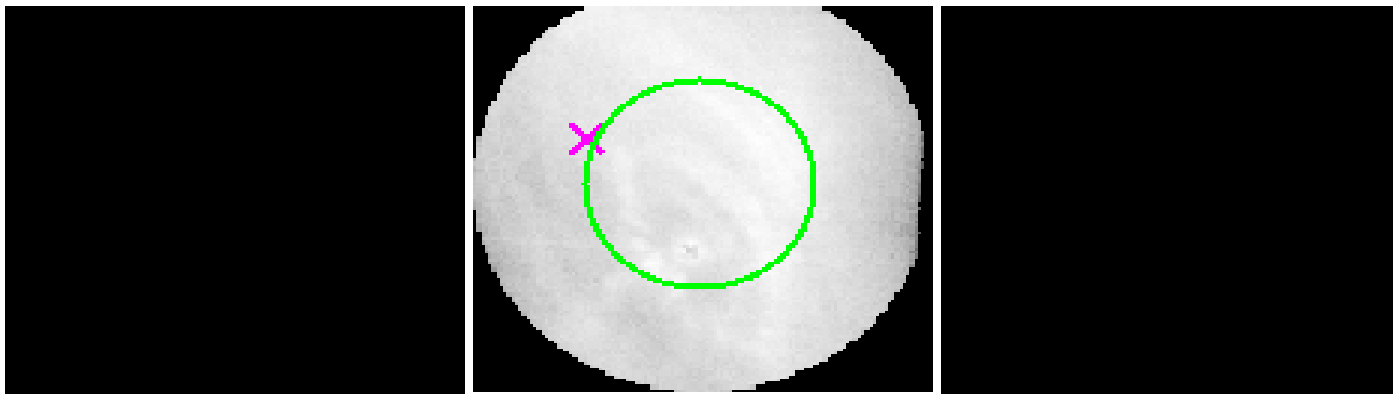


Time (s)



3 Gratings

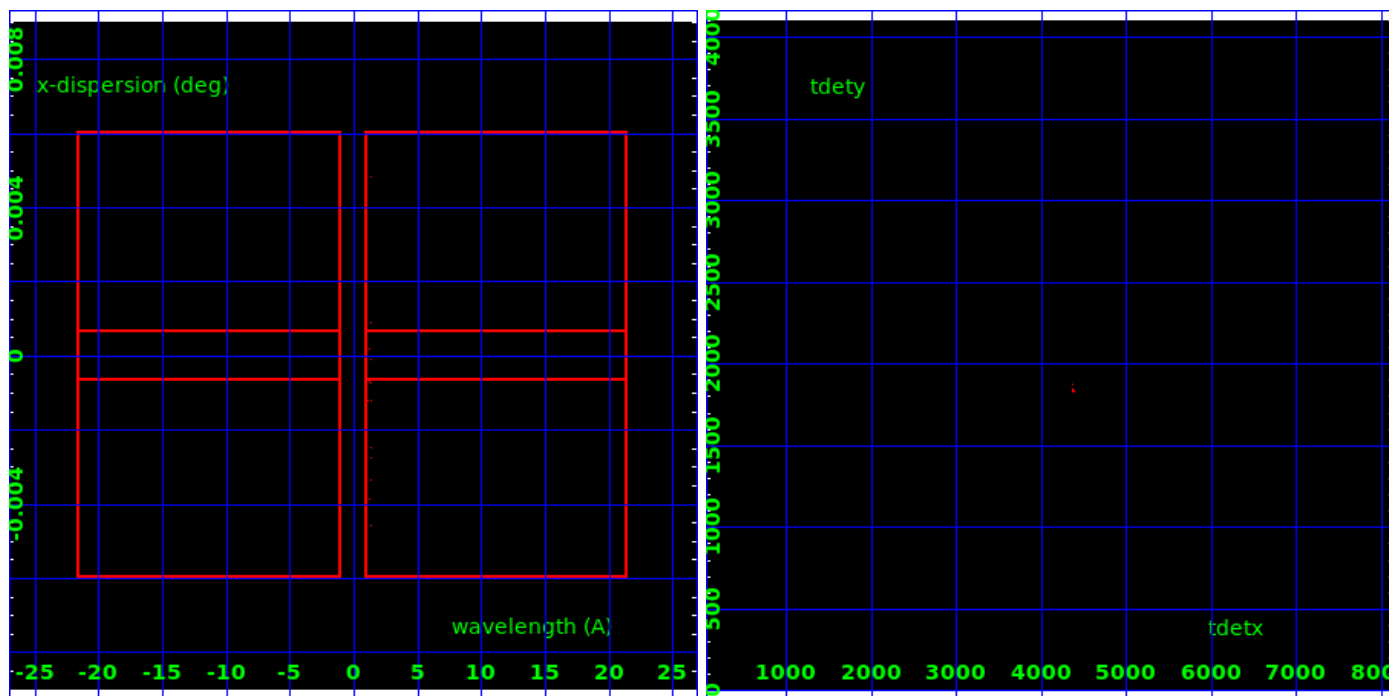
3.1 HEG Arm



HEG Order Sort 123

HEG Zero Order

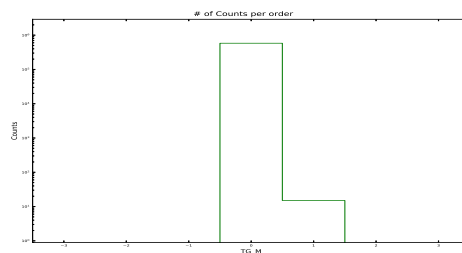
HEG Order Sort ALL

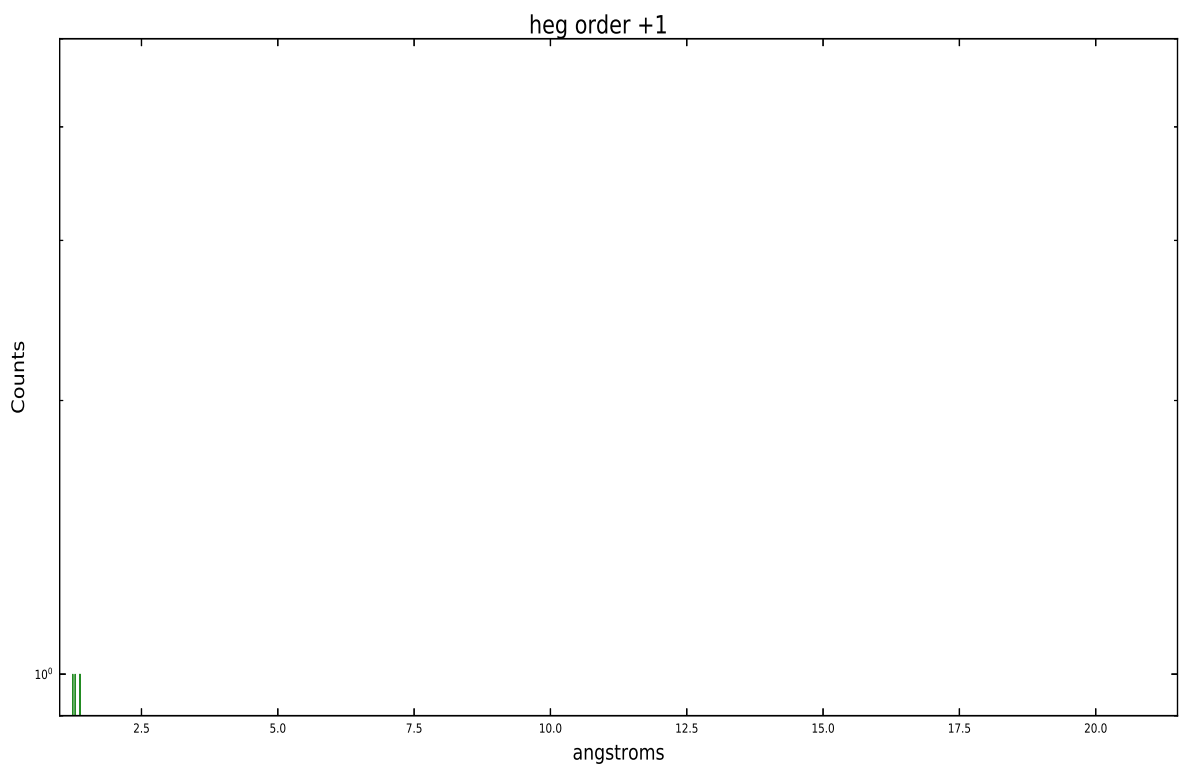
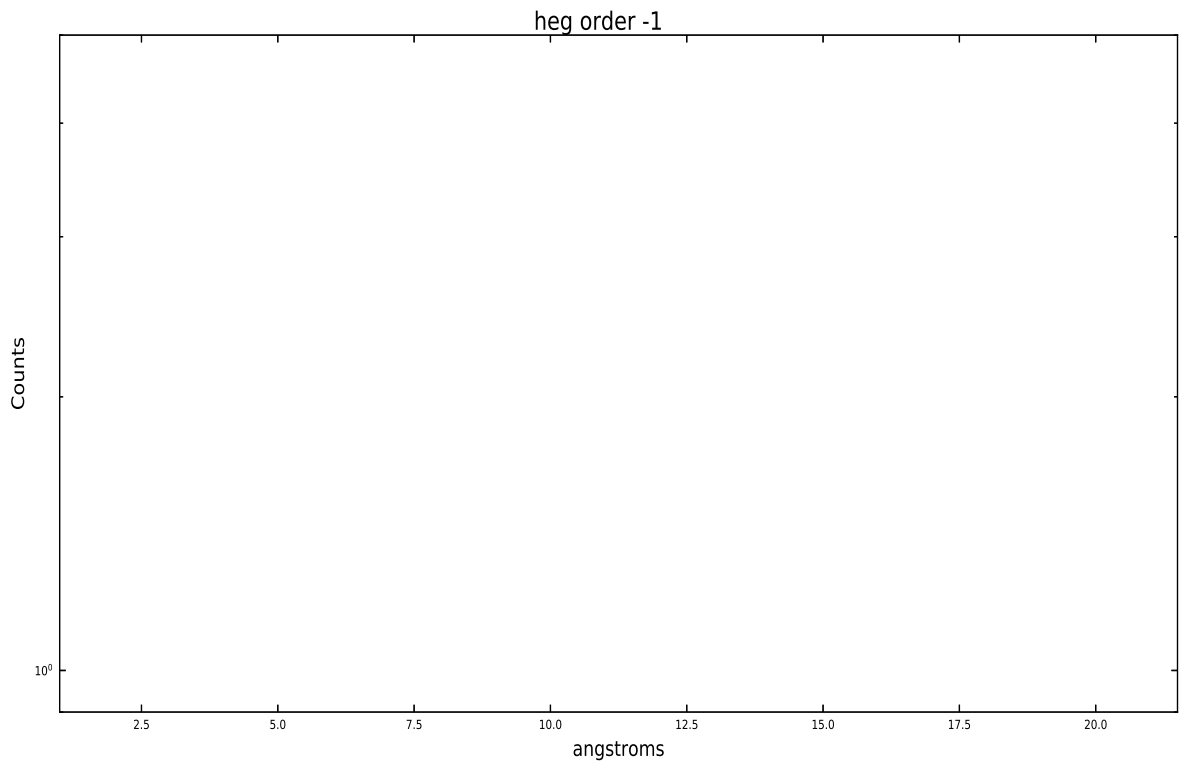


Spot Image HEG

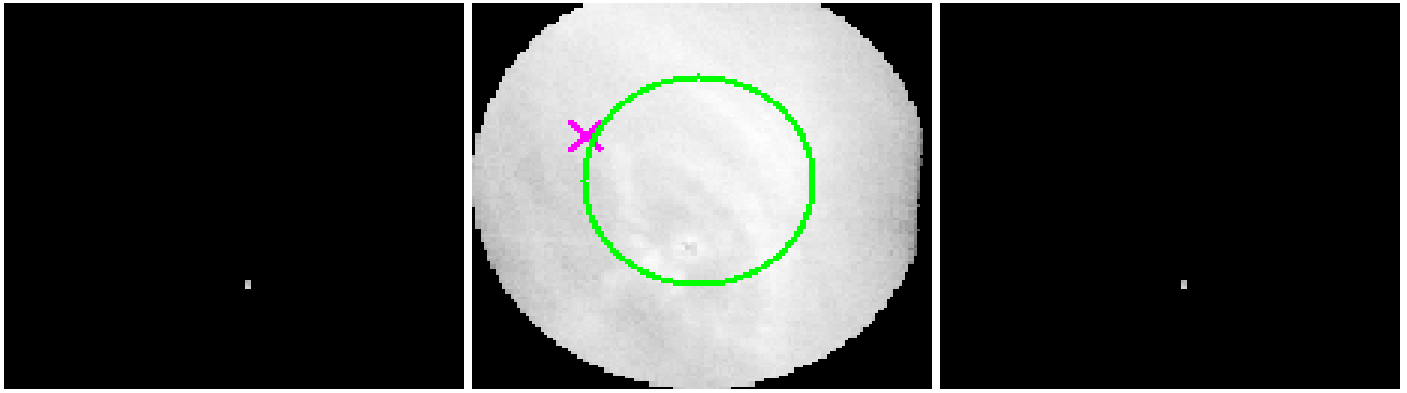
Full Detector HEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	0	0	0	580734	15	0	0





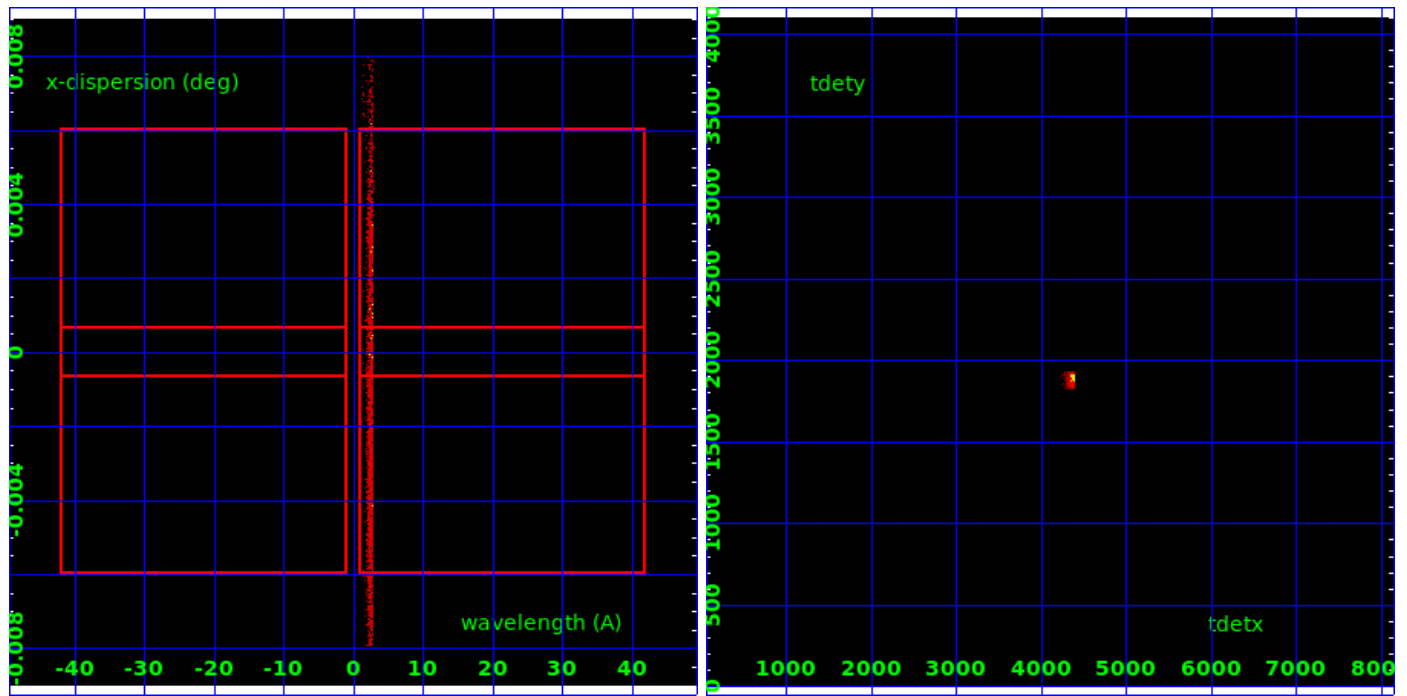
3.2 MEG Arm



MEG Order Sort 123

MEG Zero Order

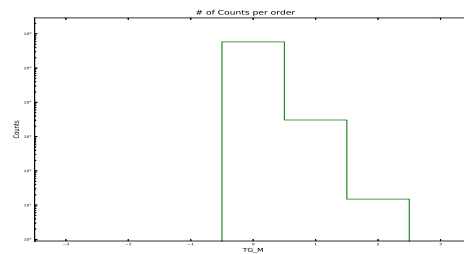
MEG Order Sort ALL

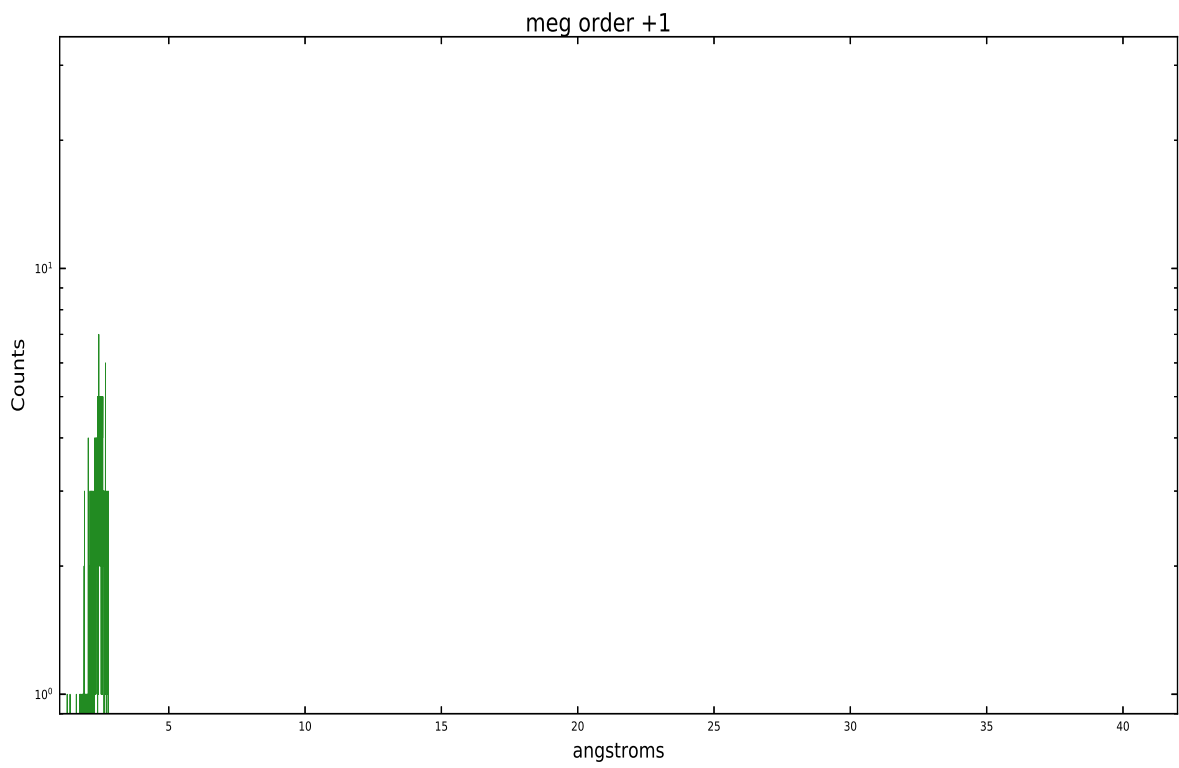
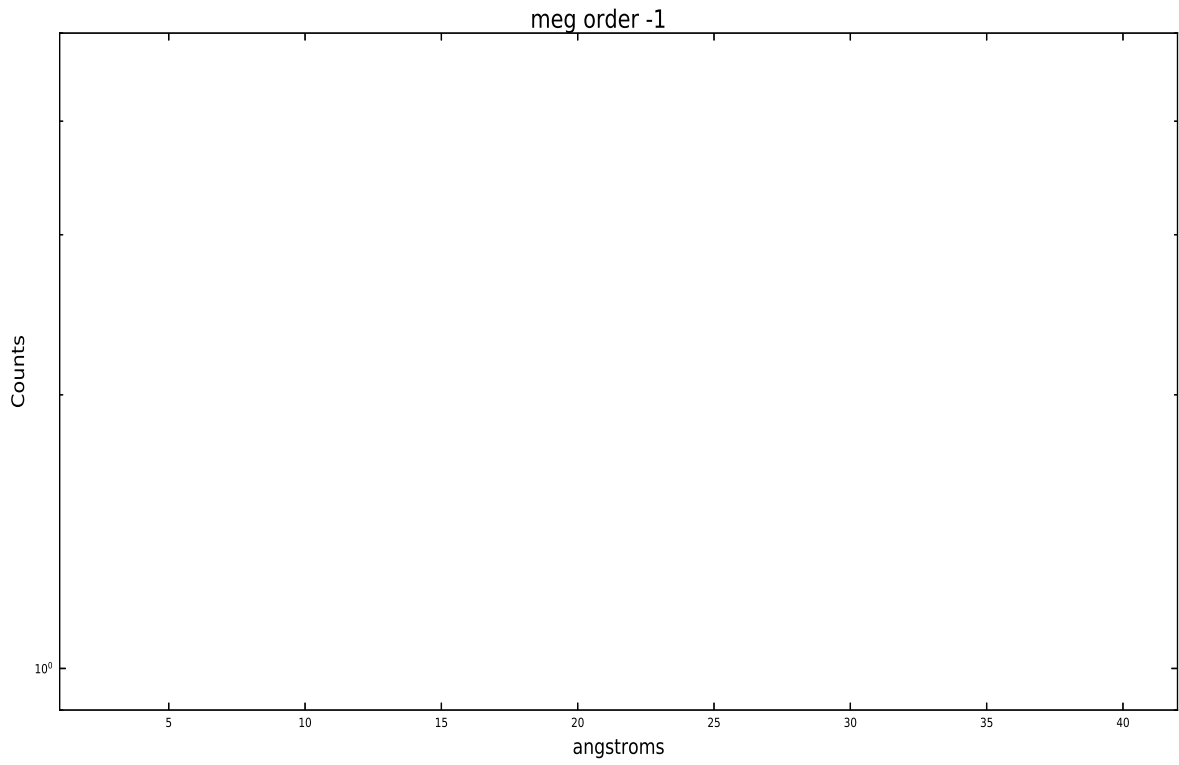


Spot Image MEG

Full Detector MEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	0	0	0	580734	3052	15	0





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	10.15

A.2 Comments

HETG is inserted as a filter; there is very little useful gratings information in the observation. The zeroth order position used in the grating extraction is NOT at the position of the pulsar, but is near a bright emission knot to the SE. If the dispersed grating spectrum is to be analyzed, it should be re-extracted using the exact position of the pulsar as the zeroth order position.