

V&V Reference Report

L2 ASCDS Version : 10.9.1

Observation 5553 - L2 Version 4
Chandra X-Ray Center

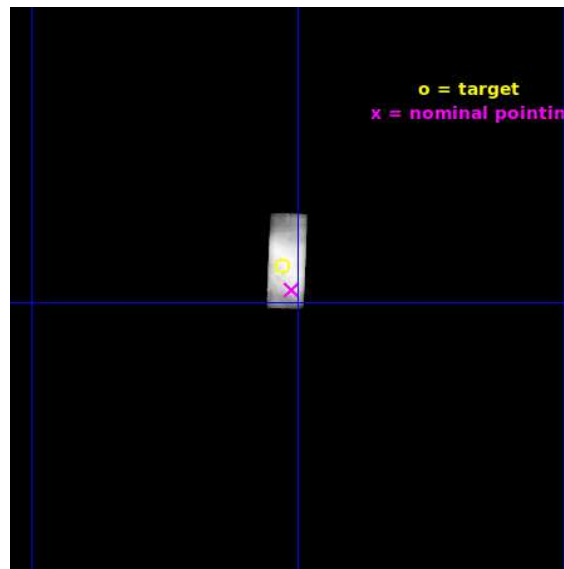
L2 Processing Date : Oct 7 2020

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1 Front

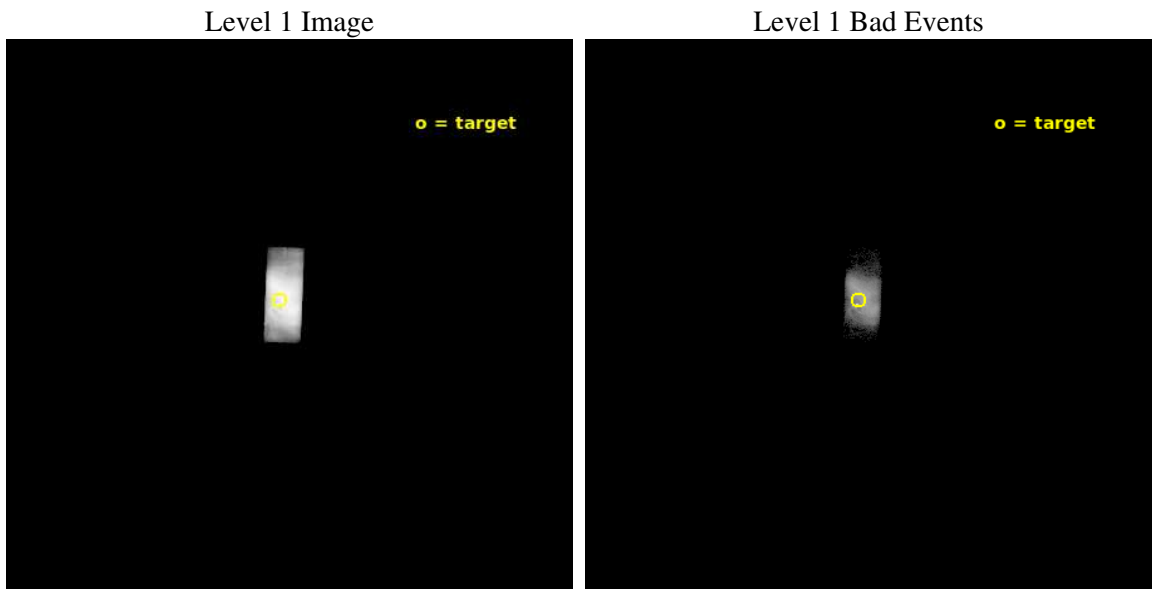
seq_num	500542	Sequence number
obs_id	5553	Observation id
title	Monitoring of the Relativistic Magnetohydrodynamic Shock in the Crab Nebula	Proposal title
observer	Dr Koji Mori	Principal investigator
object	Crab Nebula	Source name
dtcycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	83.632083	Observer's specified target RA [deg]
dec_targ	22.016472	Observer's specified target Dec [deg]
ra_nom	83.627617369469	Nominal RA [deg]
dec_nom	22.005757186705	Nominal Dec [deg]
roll_nom	272.22231809113	Nominal Roll [deg]
revision	4	Processing version of data
ontime	10152.600403428	Sum of GTIs [s]
livetime	8930.8589051971	Livetime [s]
ontime7	10152.600403428	Sum of GTIs [s]
l2events	2673249	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	10000.000000	[s] Scheduled observation exposure time
ascdsver	10.9.1	Processing system revision	ontime	10152.600403428	Sum of GTIs [s]
caldbver	4.9.2	 	ontime7	10152.600403428	Sum of GTIs [s]
date	2020-10-07T16:19:20	Date and time of file creation	l1events	2837012	Number of level 1 events
revision	4	Processing version of data	tgmethod	FINDZO	Method used to create src1a file
			zo_pos	(4100.44, 4179.31)	src1a sky pixel position
			zo_pos_tgd	(4052.72, 4157.05)	src1a sky pixel position via tgdetect

2.1.3 Events

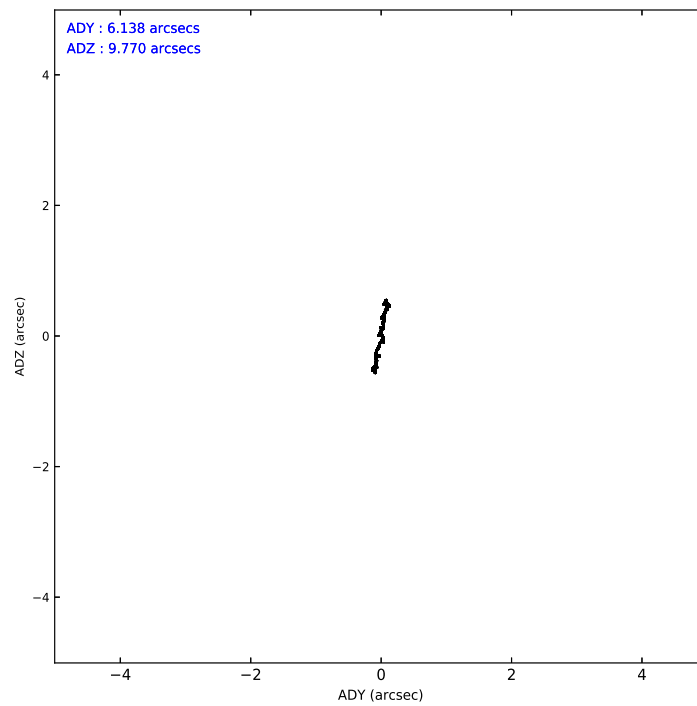
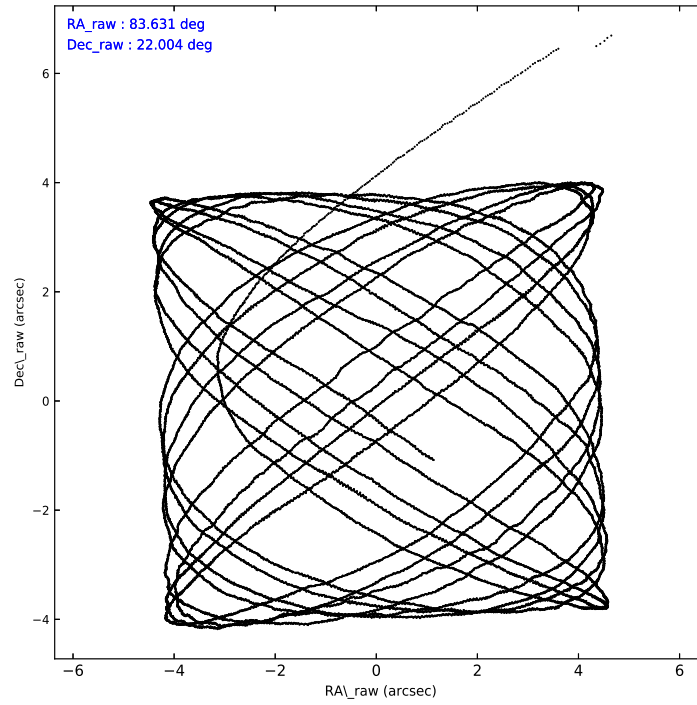
	ccd 7
level 1 events	2837012
rejected events	135418
rejected %	4%

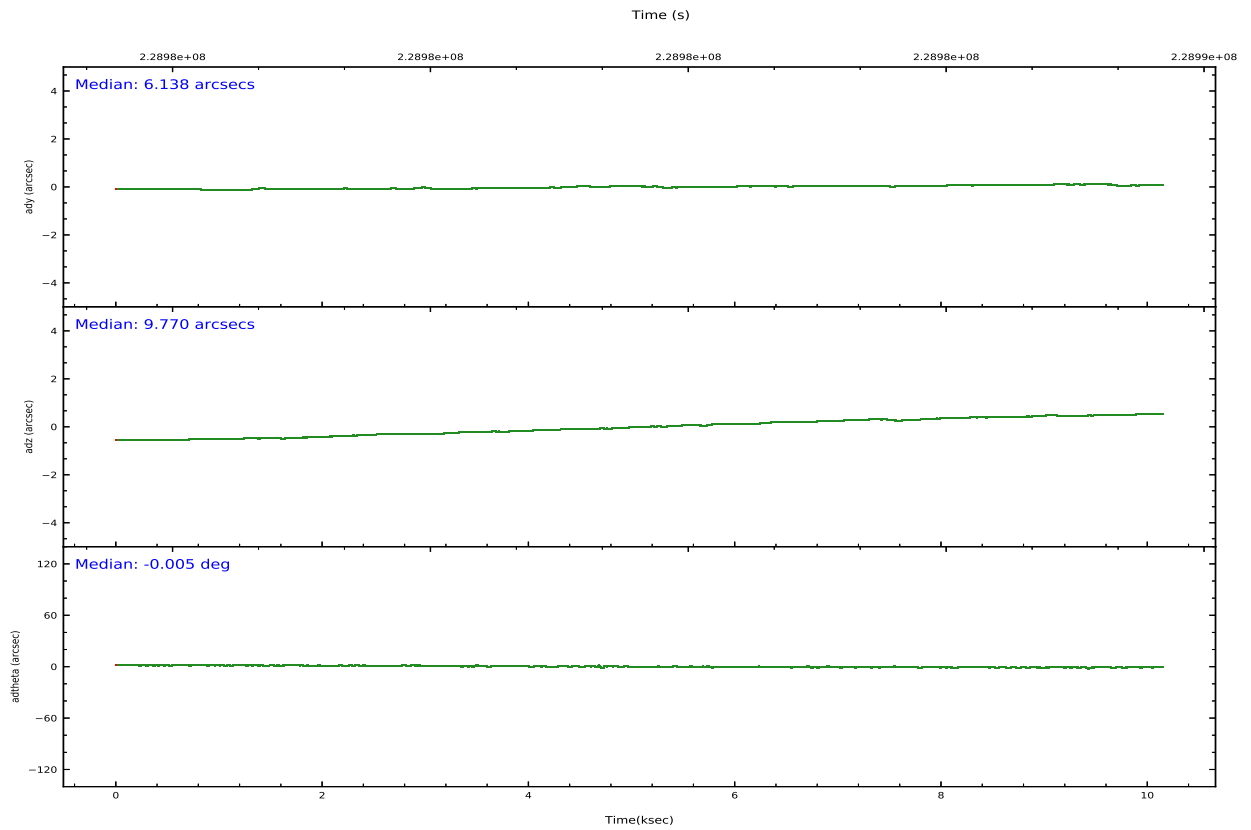
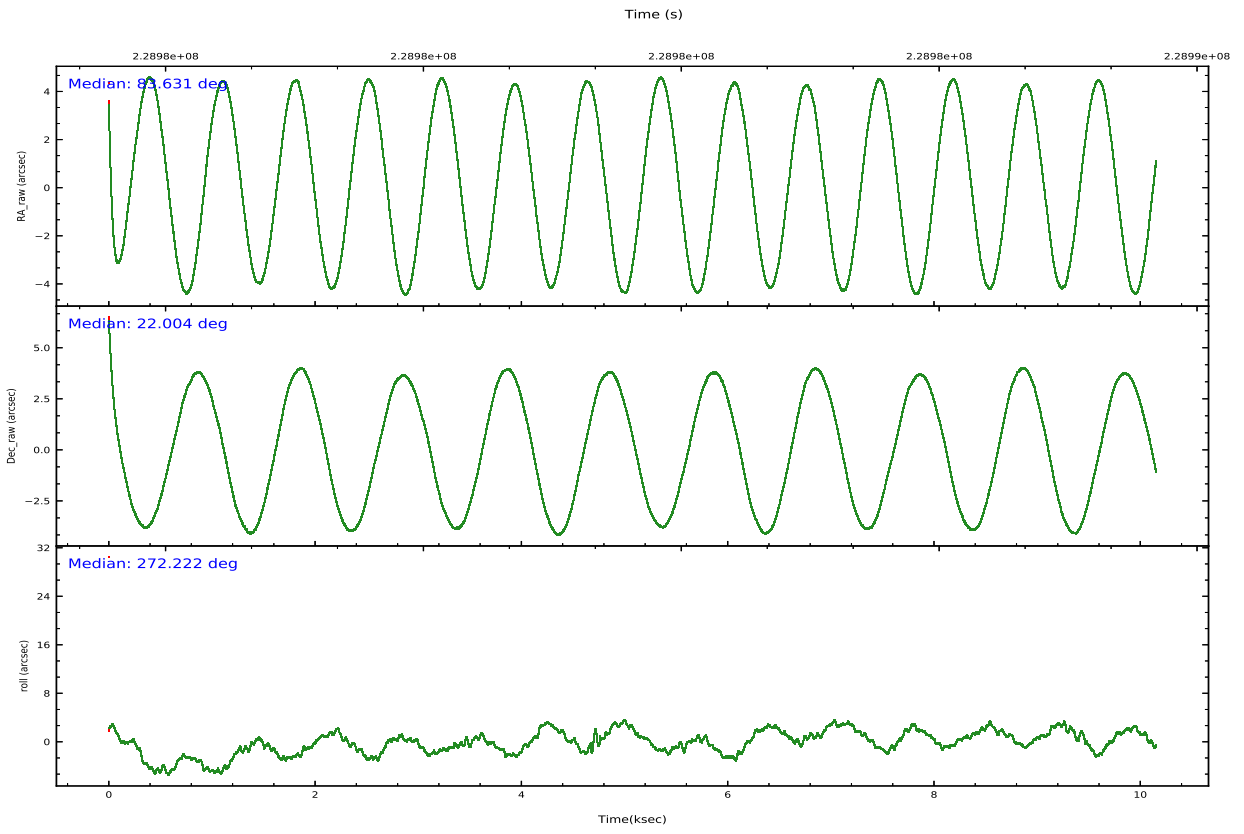
	ccd 7
grade 0 events	552210
	19%
grade 1 events	10511
	0%
grade 2 events	698593
	24%
grade 3 events	311303
	10%
grade 4 events	297514
	10%
grade 5 events	43732
	1%
grade 6 events	871997
	30%
grade 7 events	51152
	1%

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	83.614771	83.62761736946899	Subarray requested	CUSTOM	CUSTOM
[deg] Pointing Dec	22.026897	22.005757186705	Subarray start row	127	127
[deg] Pointing Roll	272.076174	272.22231809113	Subarray row count	101	101
[s] Window start time (MET)	228960064.184000	228960064.184000	Alternating exposures requested	N	N
[s] Window stop time (MET)	229564864.184000	229564864.184000	[s] Primary exposure time	0.000000	0.3
[mm] SIM focus pos	-0.684267	-0.6828225247311905			
[mm] SIM defocus	0	0.001444936568705701			
[mm] SIM translation stage pos	-182.132523	-182.1370004450064			
[mm] SIM translation stage offset	-8	-7.995522138001405			
[s] Observation start time (MET)	228977103.184000	228976045.80127			
Observation start date	2005-04-04T04:43:59	2005-04-04T04:27:25			
[s] Observation end time (MET)	228987103.184000	228987237.26428			
Observation end date	2005-04-04T07:30:39	2005-04-04T07:33:57			
Read mode	TIMED	TIMED			

2.3 Aspect





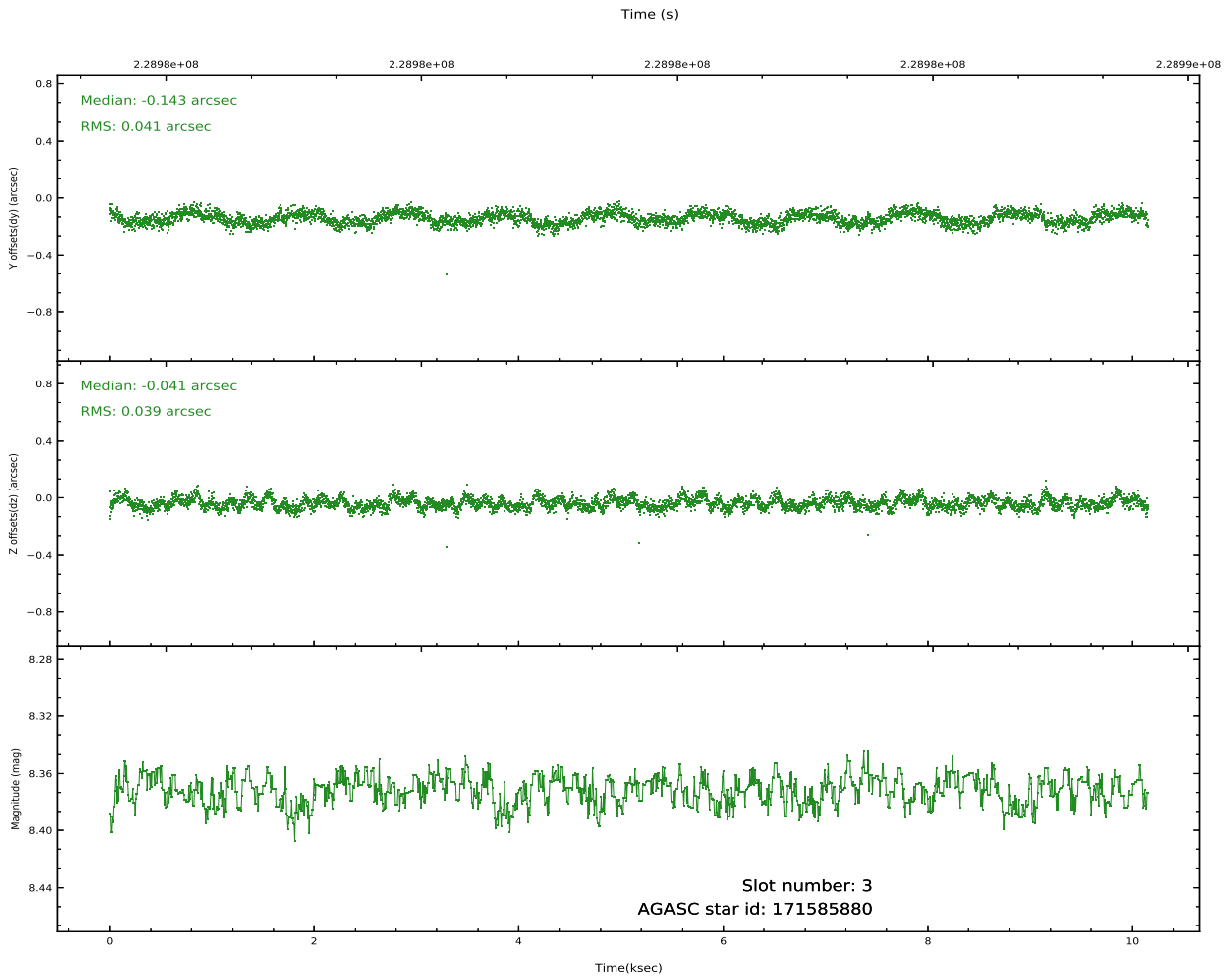
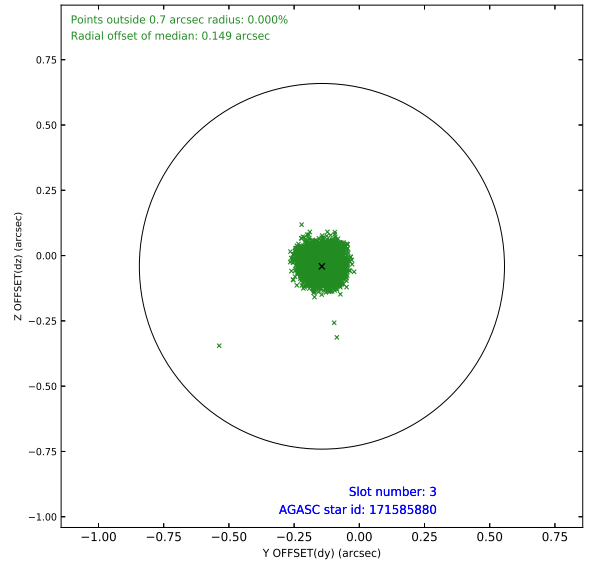
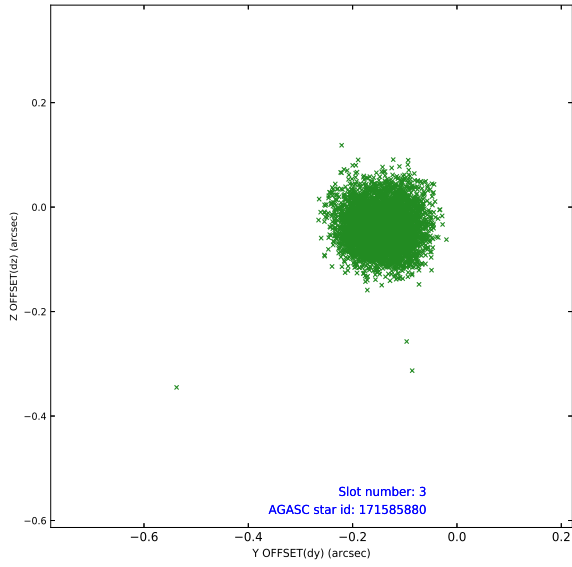
Slot Statistics

slot	status	used	id	mag	n_pts	frac_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mea
0	FID		ACIS-S-2	7.09	2477	1.000	-0.121	-0.140	0.008	0.014	0.000000	0.000000	-758.38	-1895
1	FID		ACIS-S-4	7.18	2477	1.000	0.227	0.096	0.007	0.013	0.000000	0.000000	2154.99	12
2	FID		ACIS-S-5	7.23	2475	1.000	-0.137	0.052	0.010	0.017	0.000000	0.000000	-1810.59	6
3	GUIDE	used	171585880	8.37	4953	1.000	-0.143	-0.041	0.060	0.094	83.676260	22.176319	-530.03	224
4	GUIDE	used	171586032	8.93	4949	1.000	0.051	0.074	0.067	0.109	83.950197	22.083225	-163.24	1125
5	GUIDE	used	171721904	9.20	4950	1.000	0.043	0.195	0.103	0.166	84.272676	22.116922	-249.20	2205
6	GUIDE	used	243941560	8.29	4954	1.000	-0.146	-0.072	0.068	0.105	83.733264	22.568598	-1934.64	464
7	GUIDE	used	171597832	9.16	4948	1.000	0.200	-0.161	0.108	0.167	83.183230	21.366702	2321.12	-1531

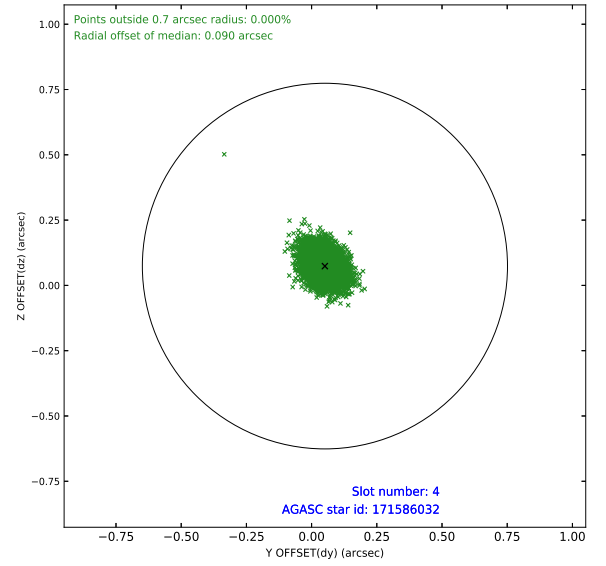
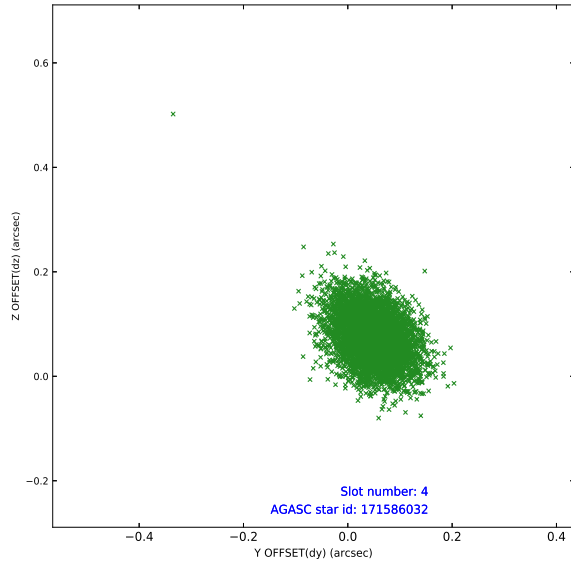
∞

2.4 Star Slots

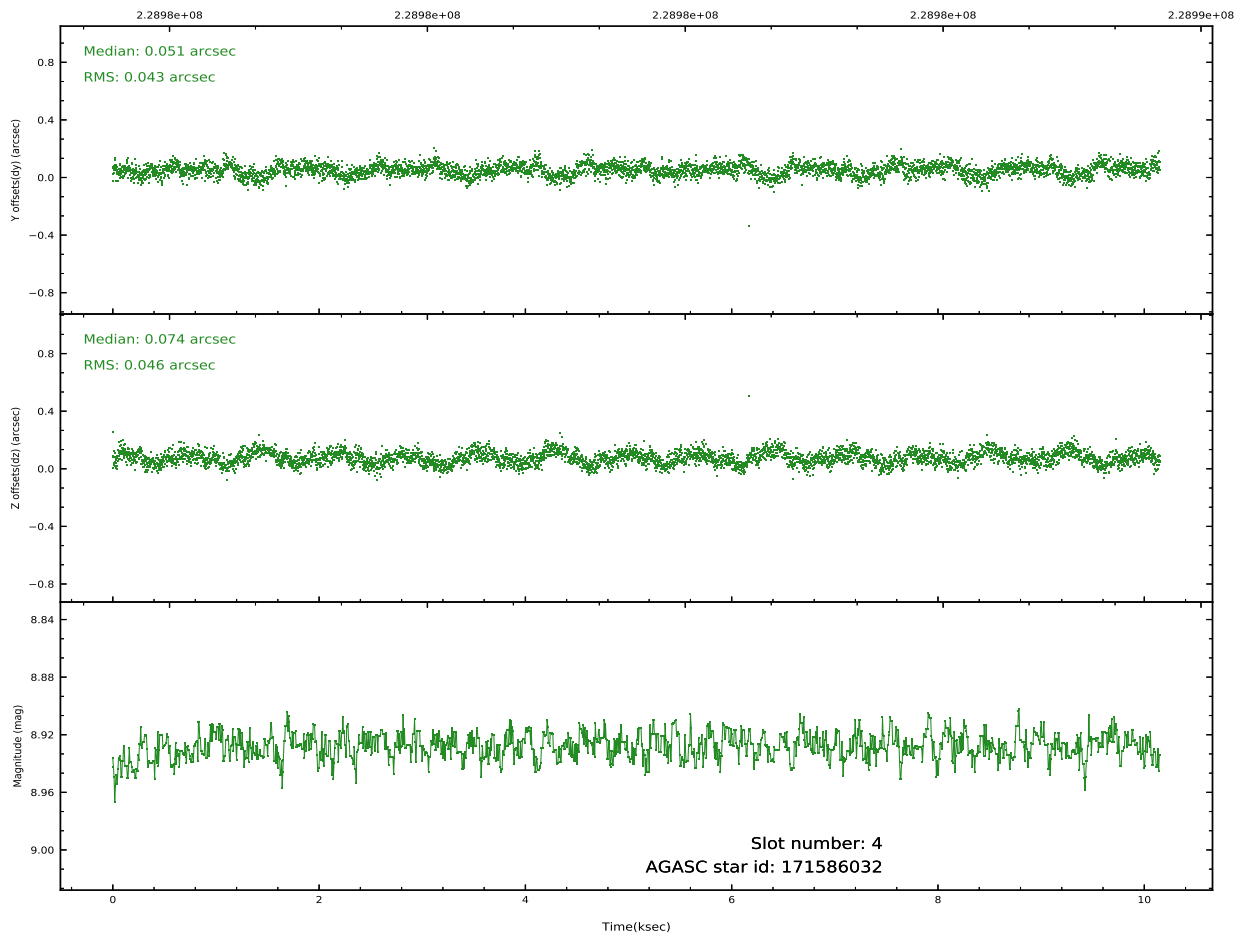
2.4.1 Slot 3



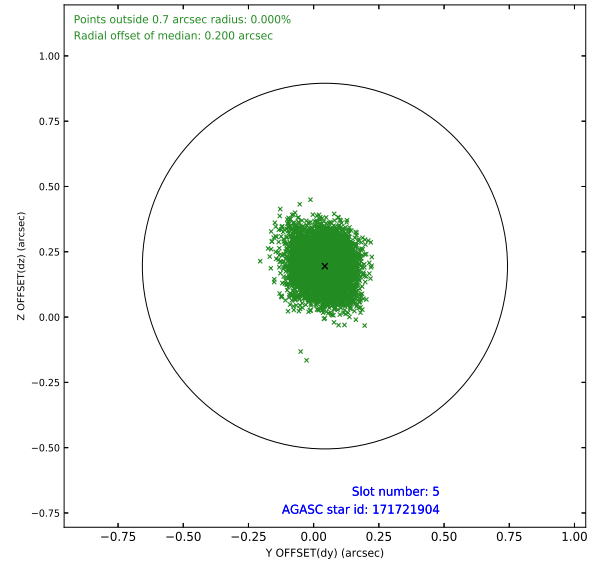
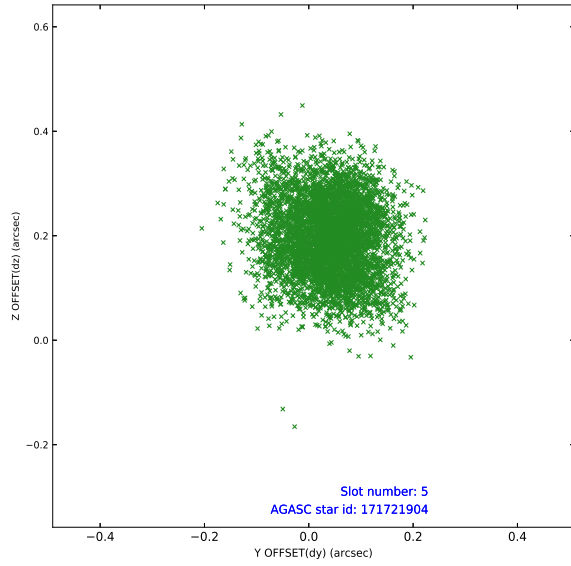
2.4.2 Slot 4



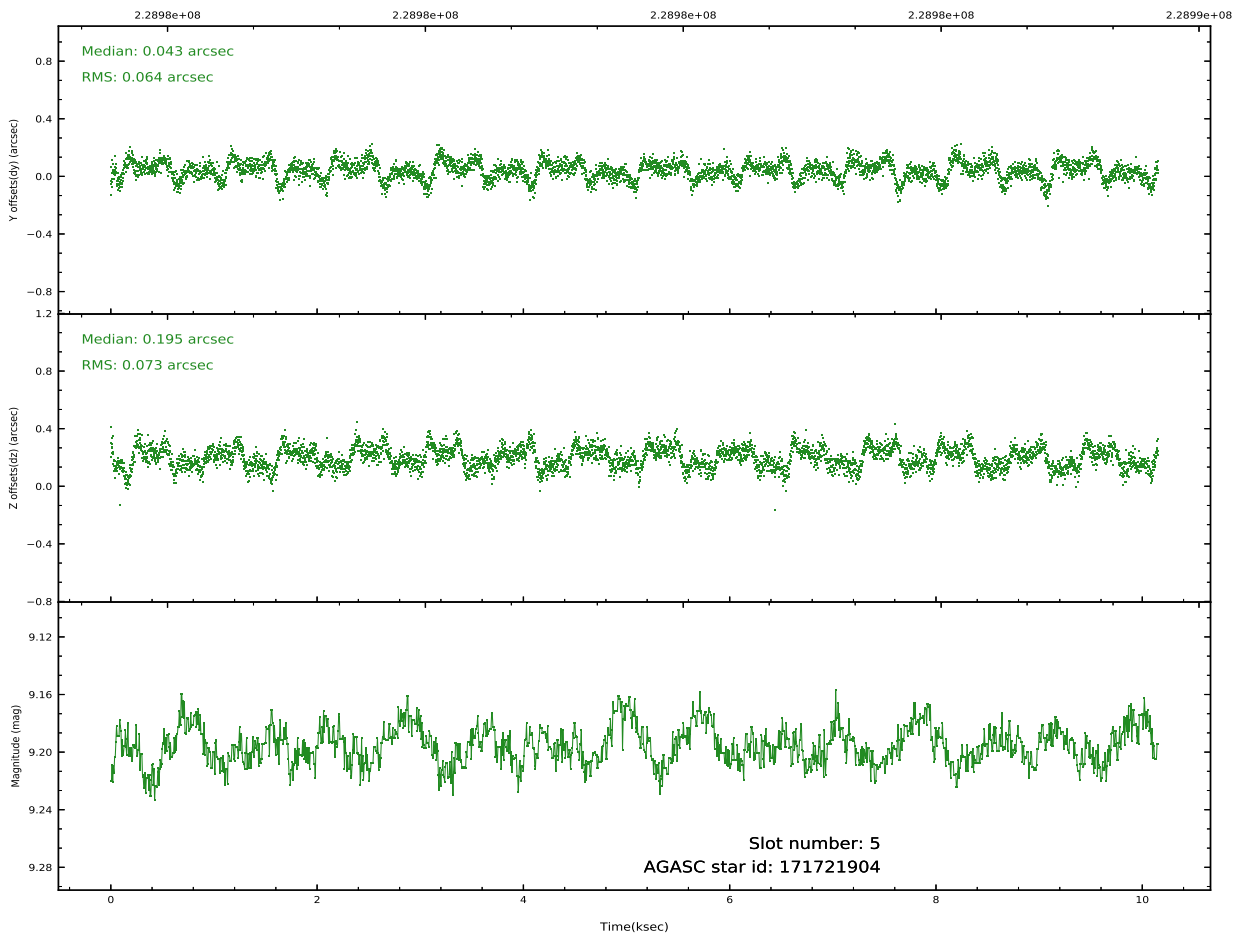
Time (s)



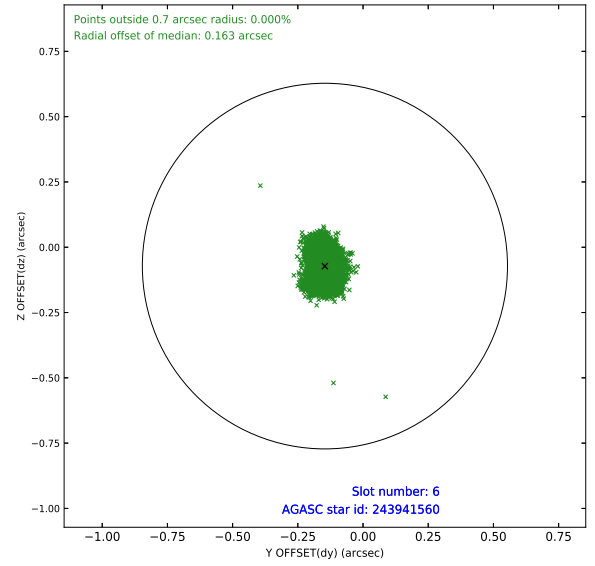
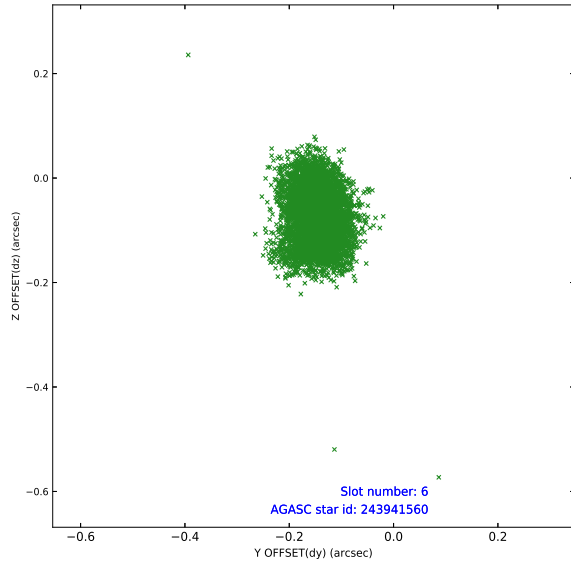
2.4.3 Slot 5



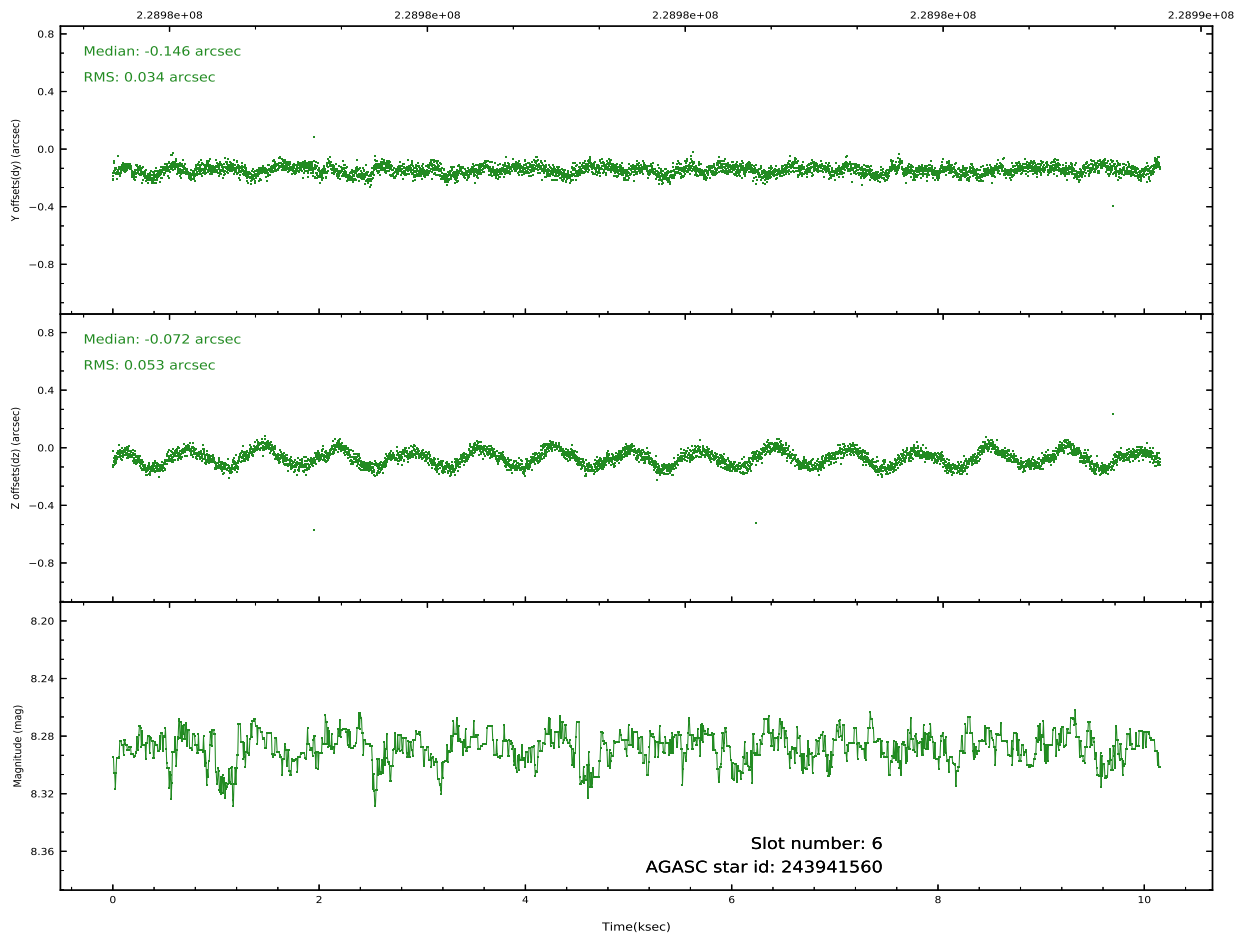
Time (s)



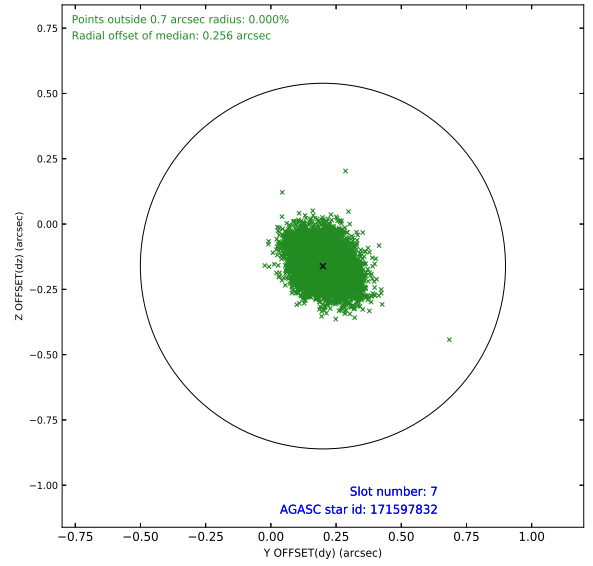
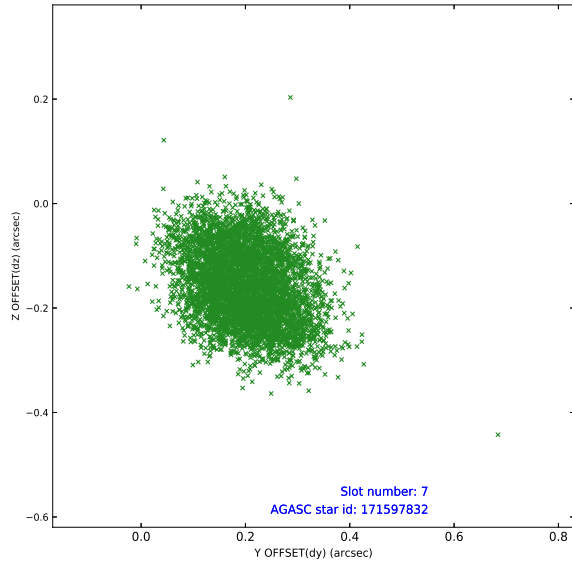
2.4.4 Slot 6



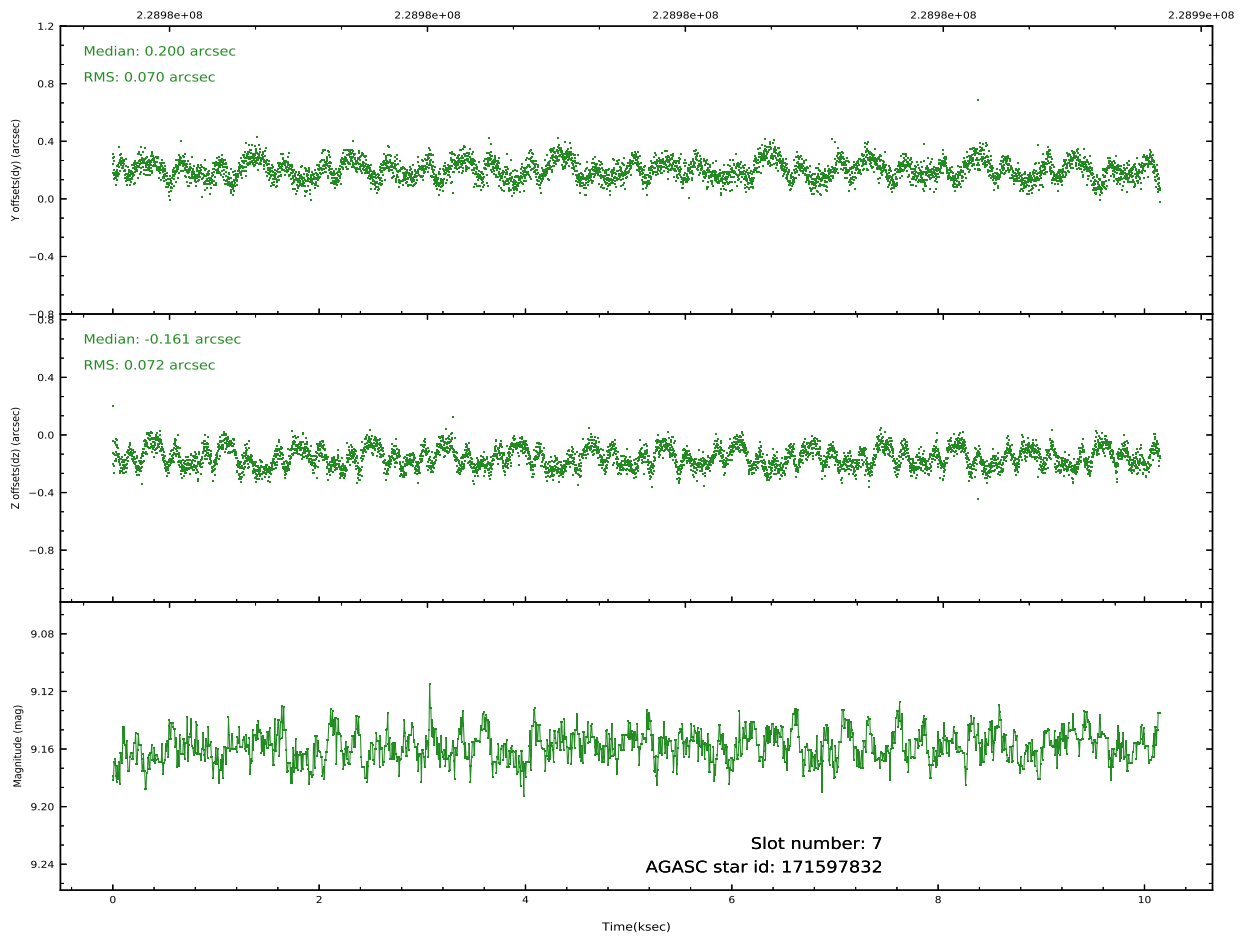
Time (s)



2.4.5 Slot 7

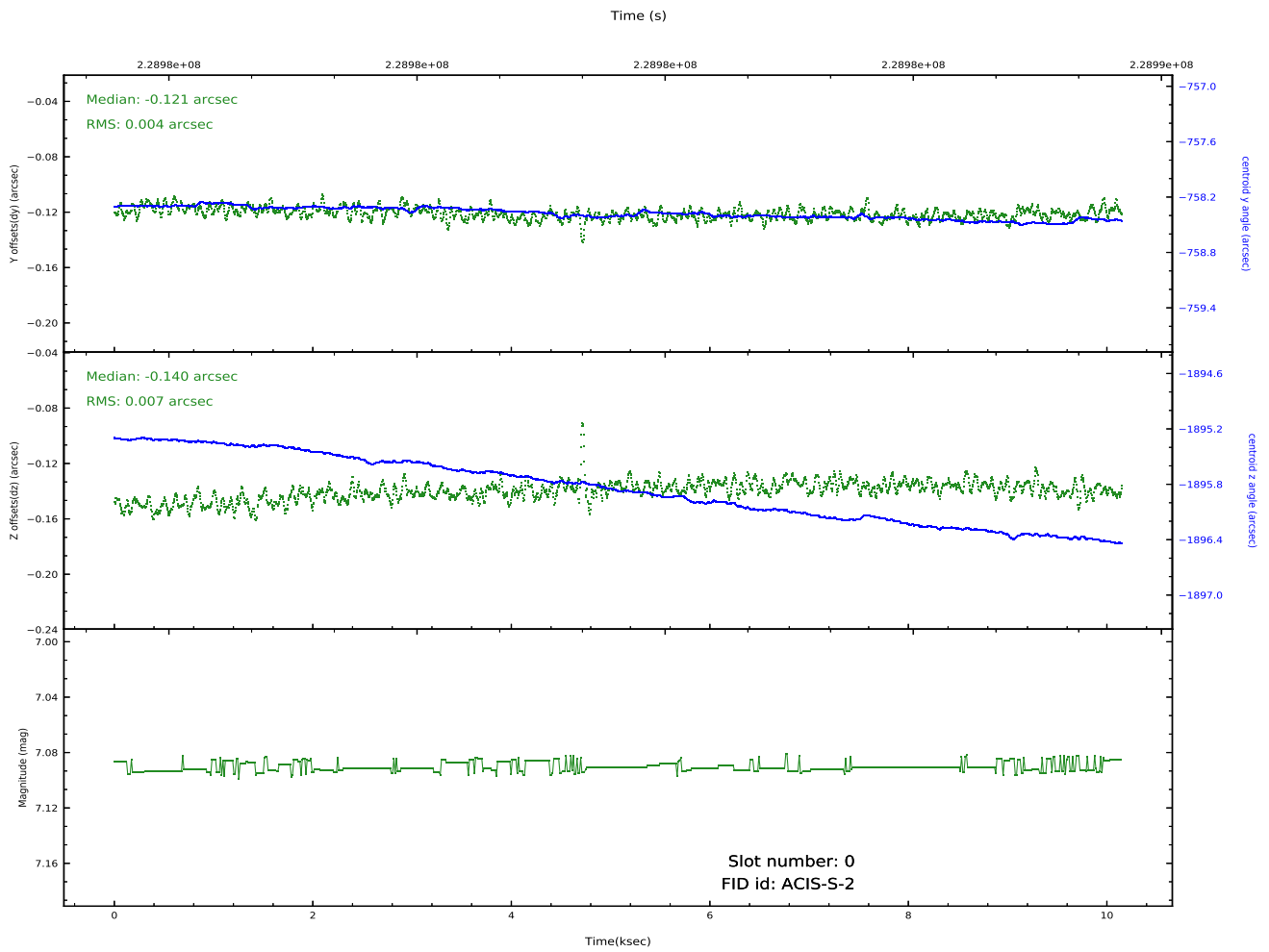
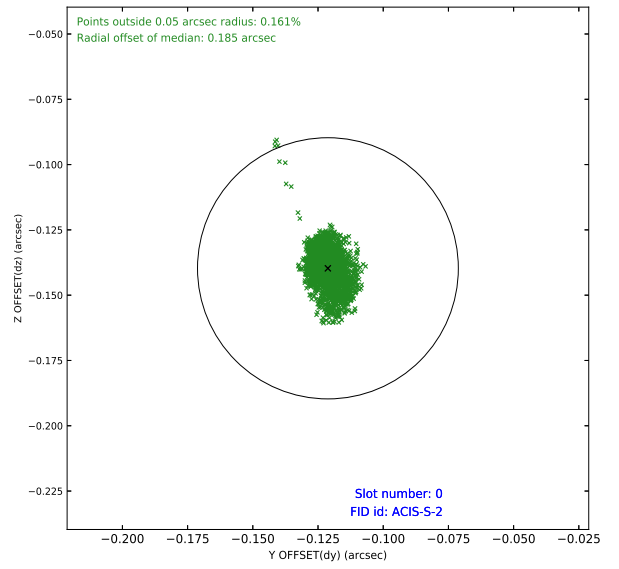
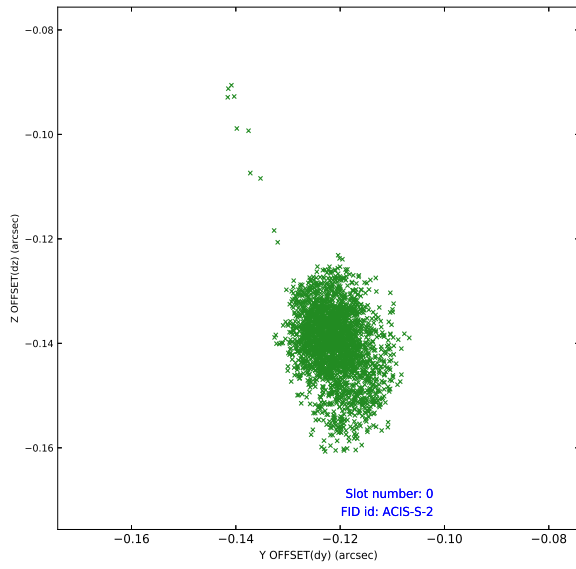


Time (s)

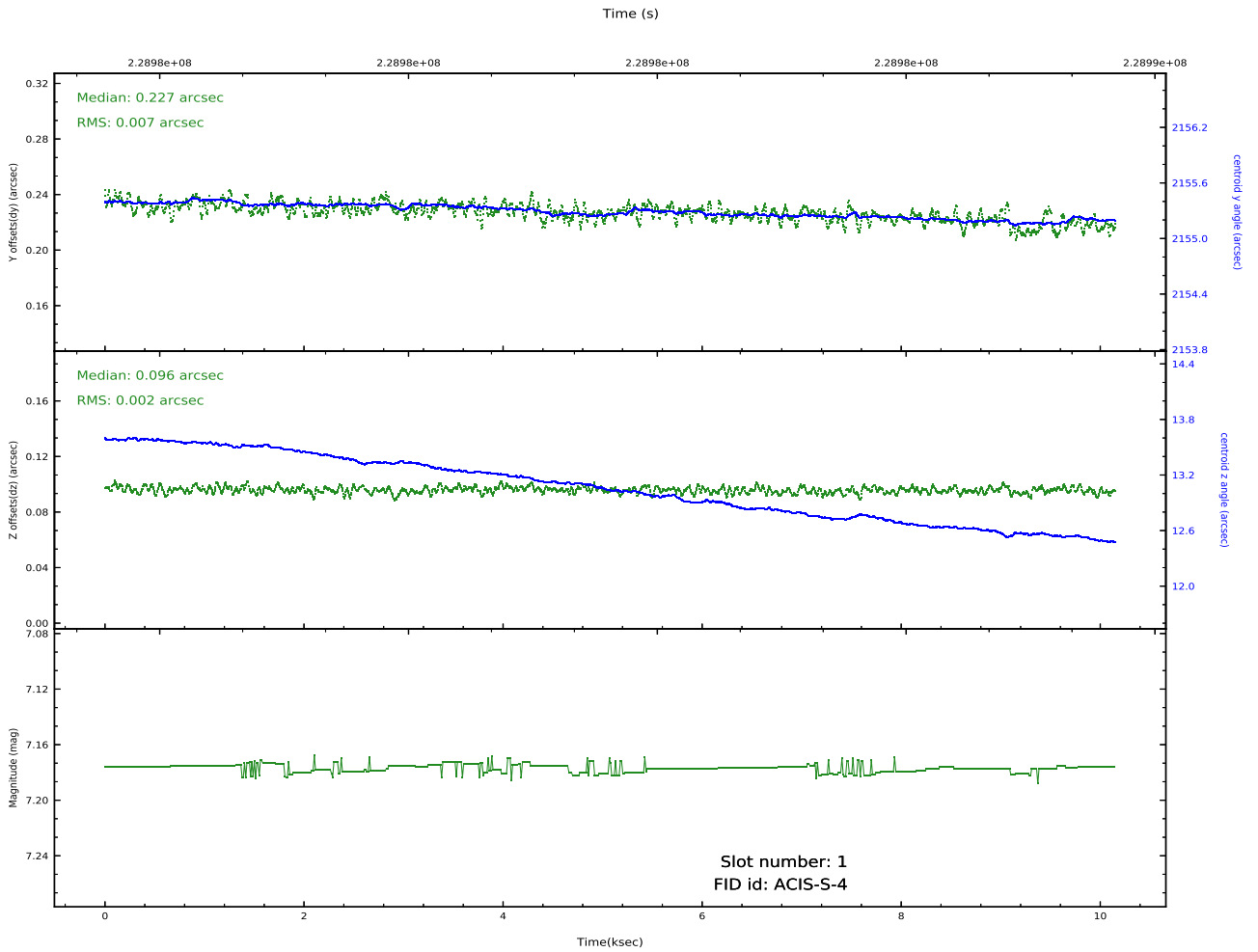
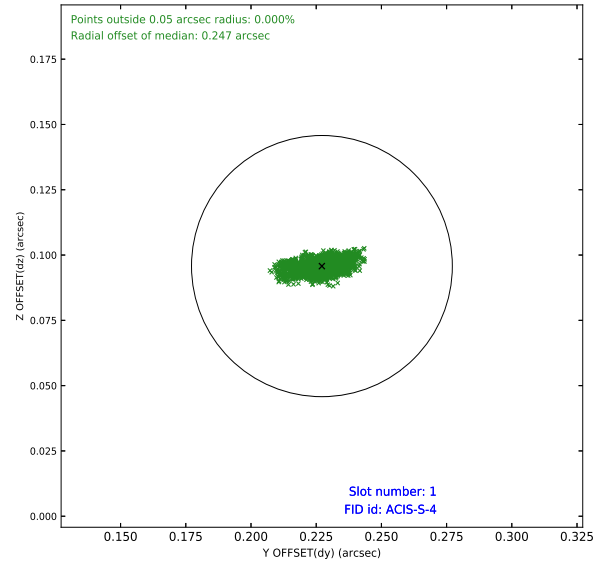
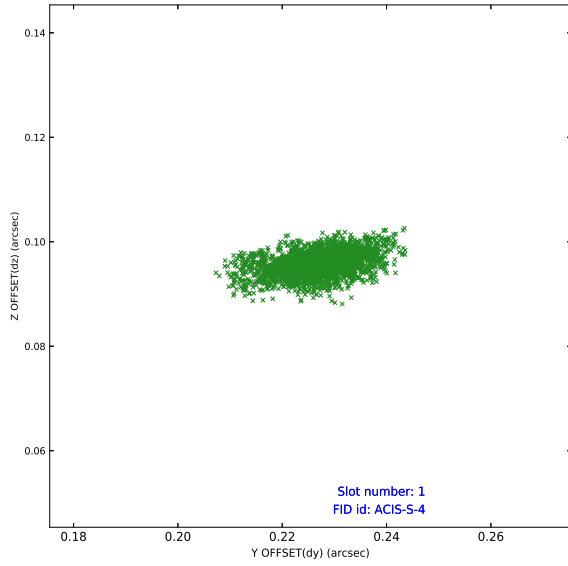


2.5 FID Slots

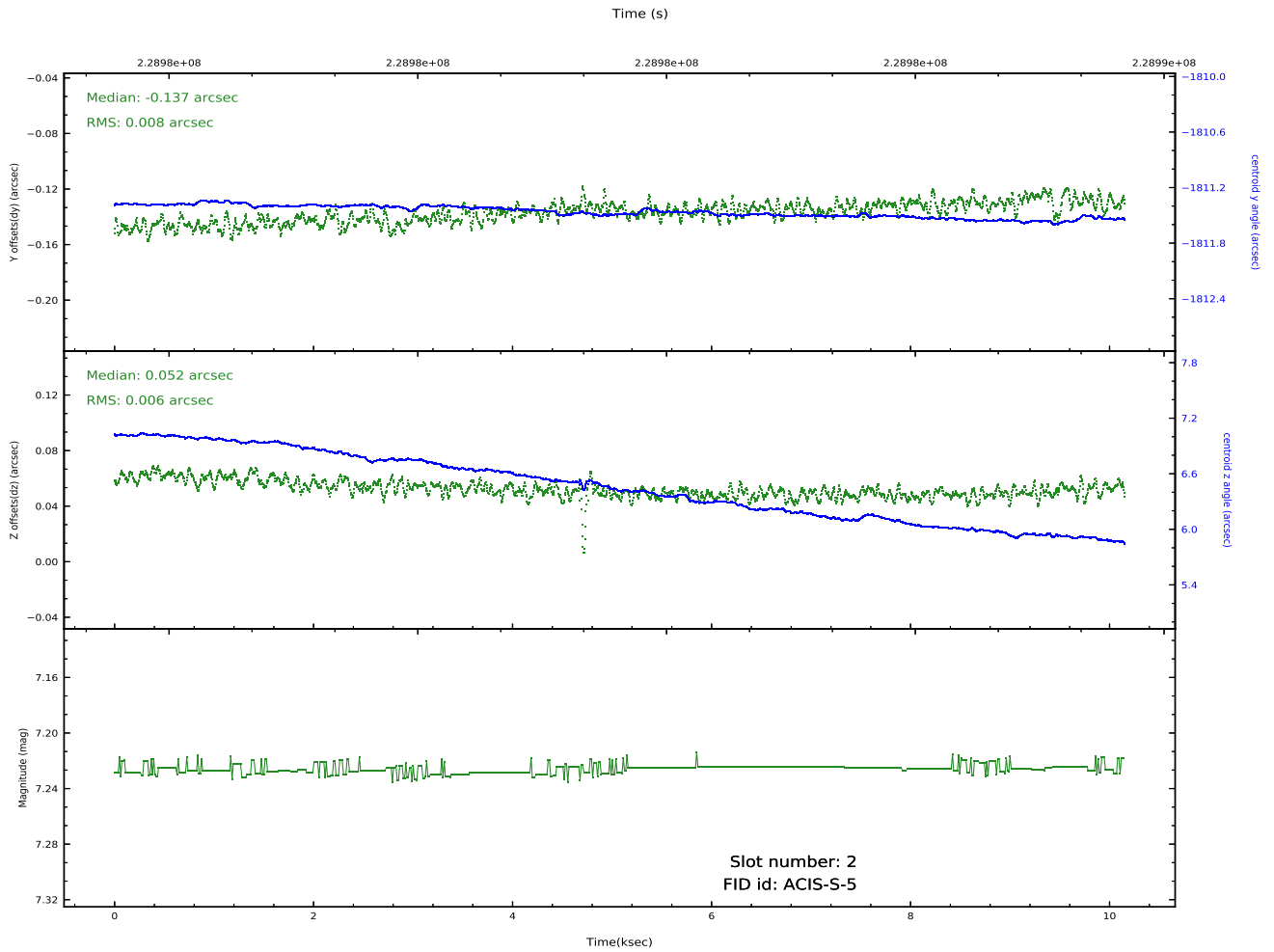
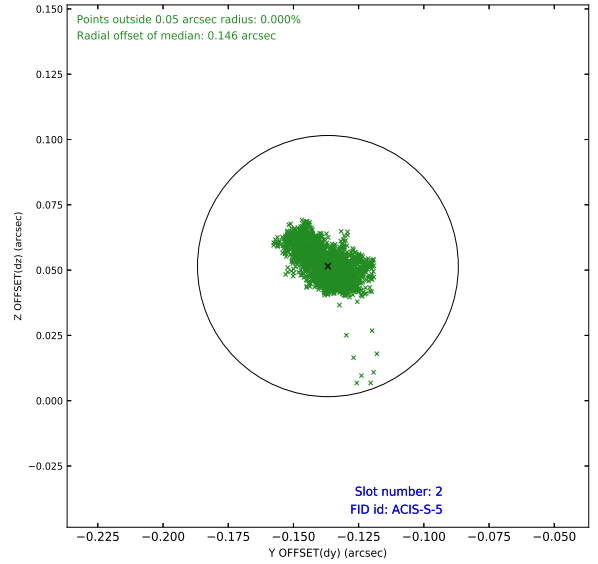
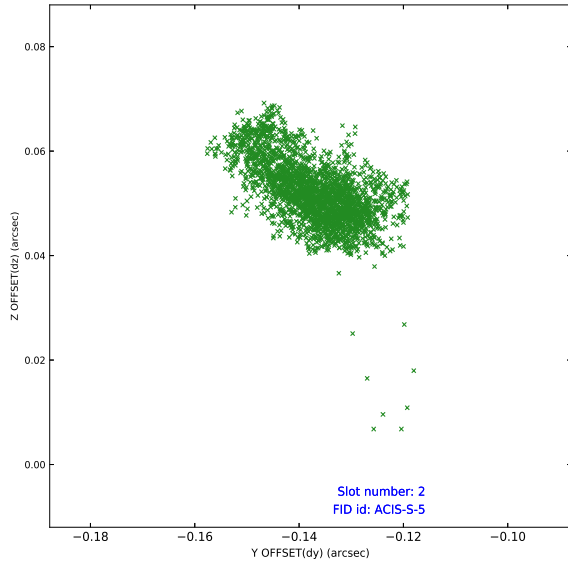
2.5.1 Slot 0



2.5.2 Slot 1

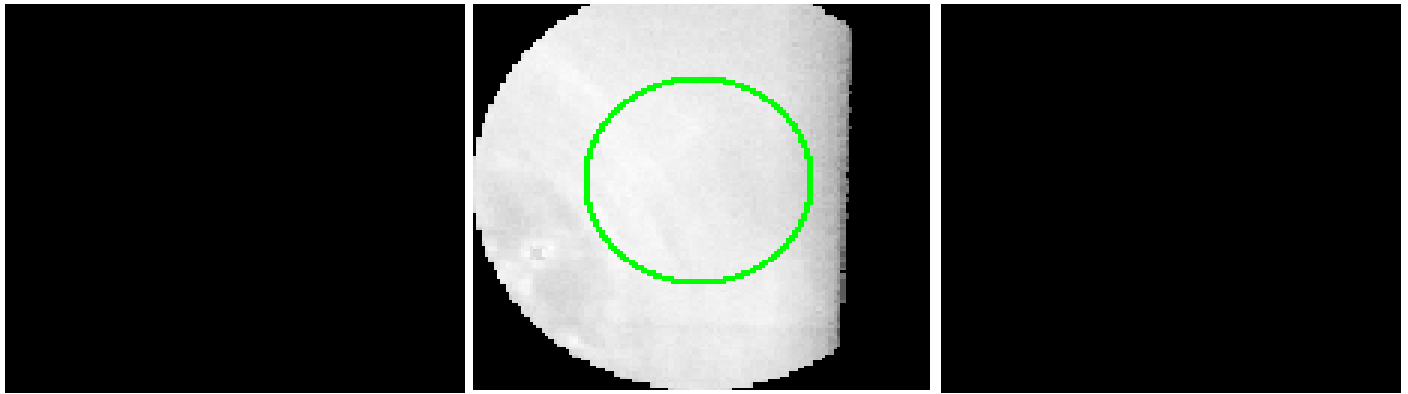


2.5.3 Slot 2



3 Gratings

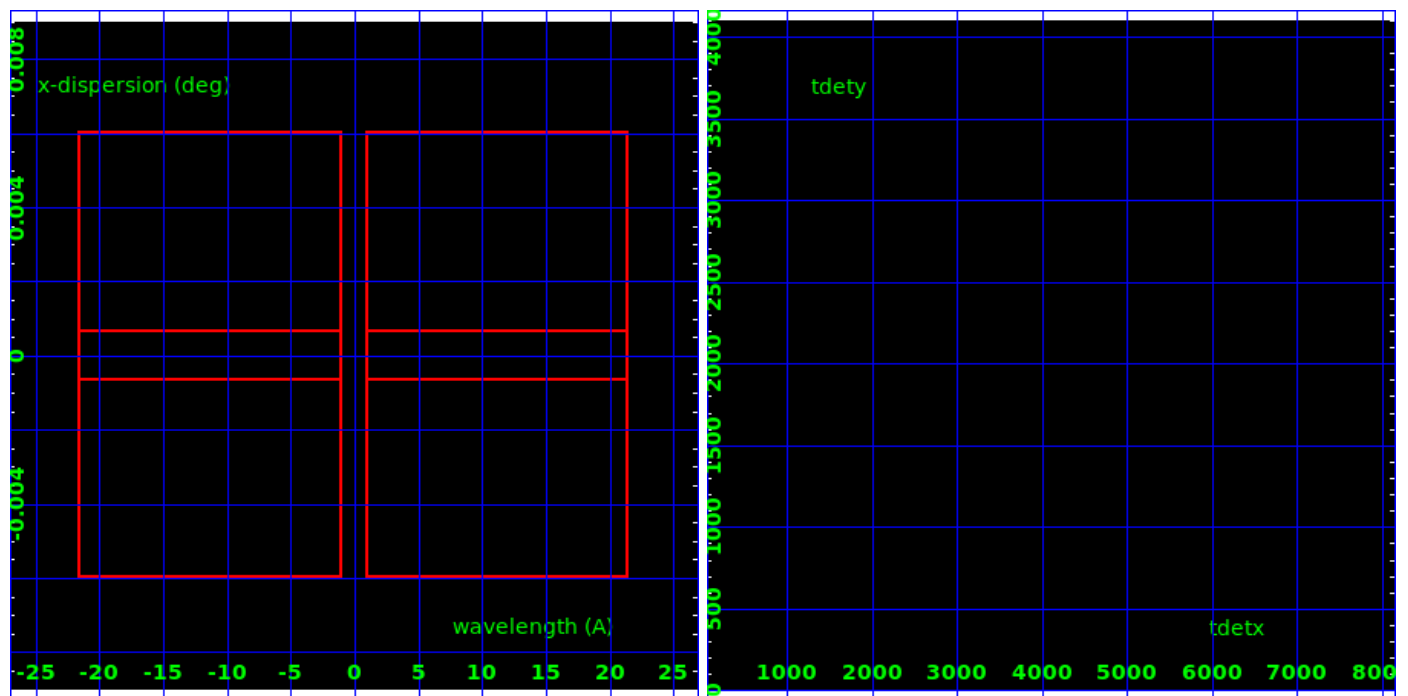
3.1 HEG Arm



HEG Order Sort 123

HEG Zero Order

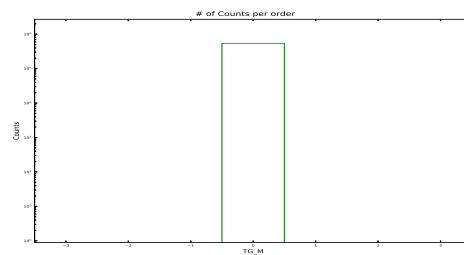
HEG Order Sort ALL

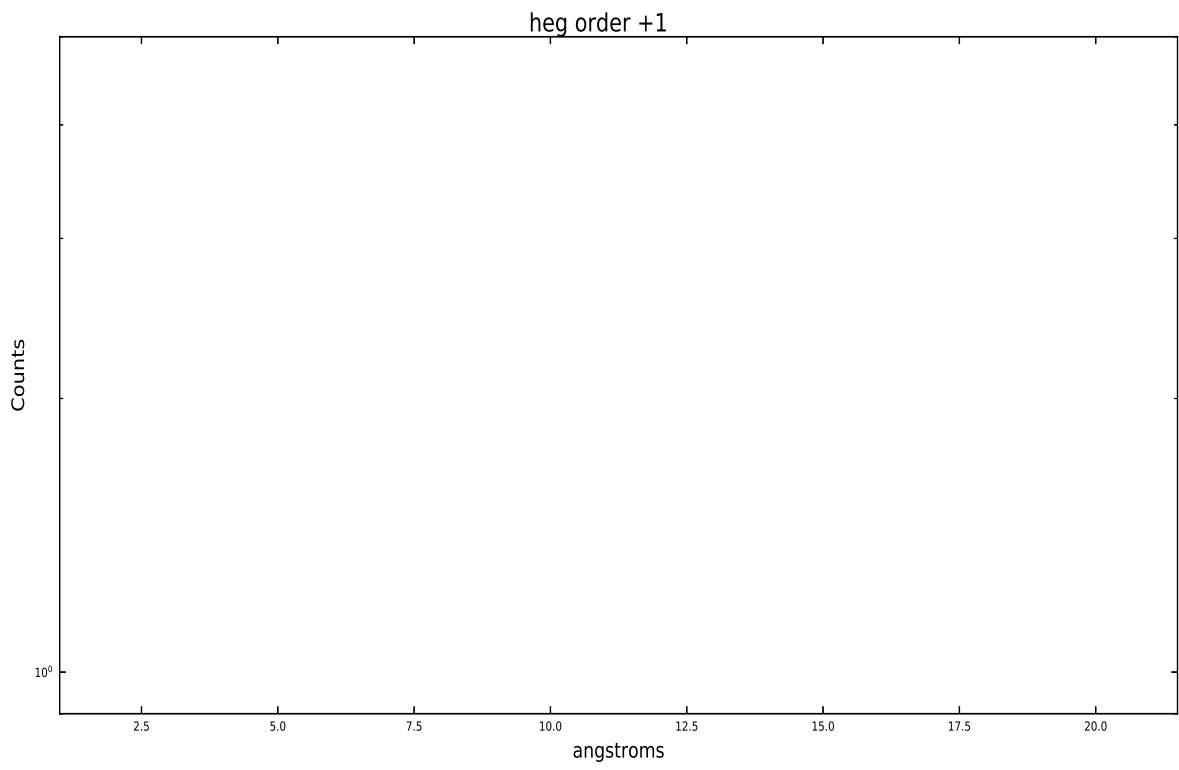
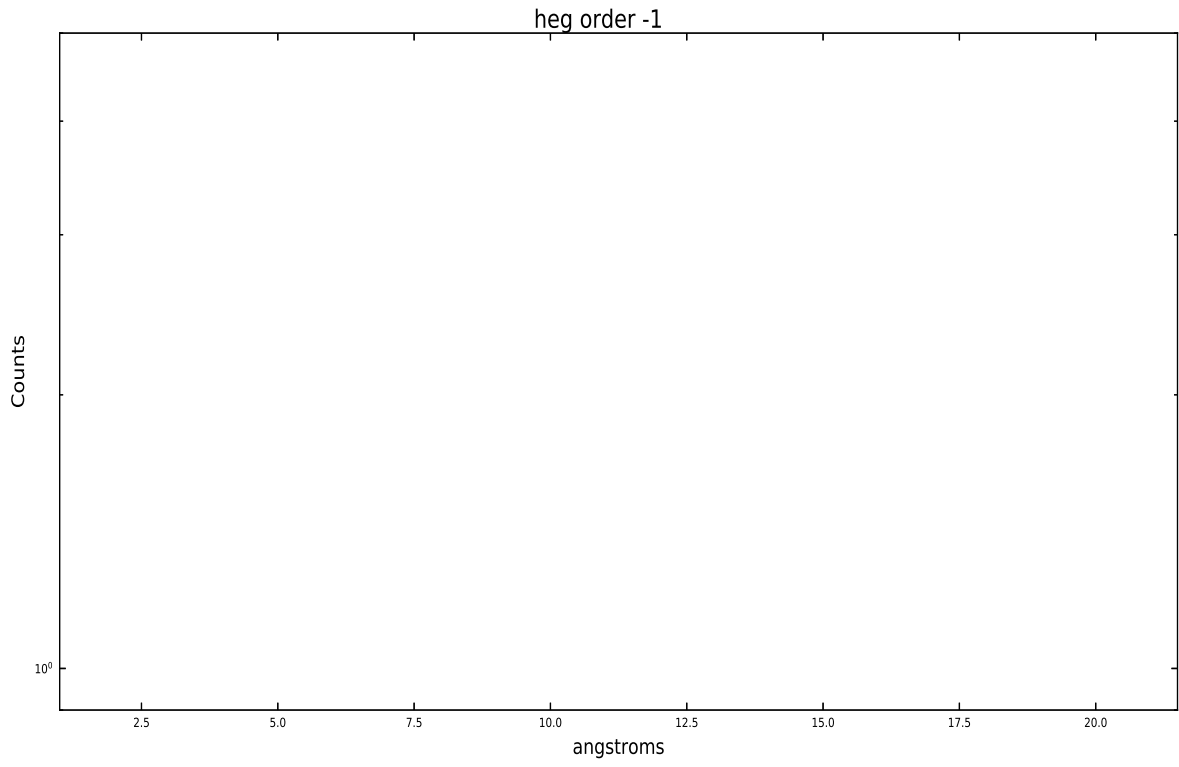


Spot Image HEG

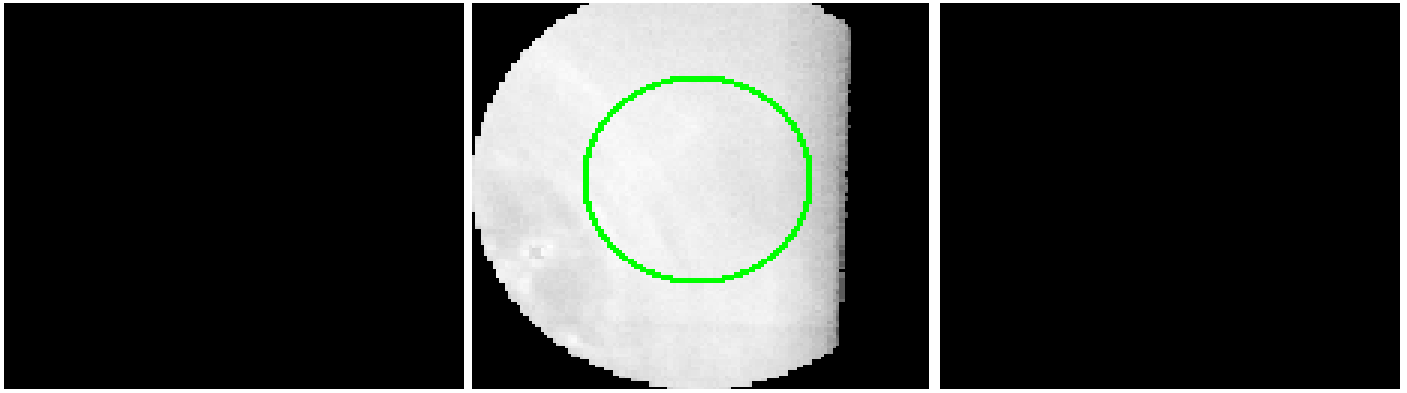
Full Detector HEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	0	0	0	541574	0	0	0





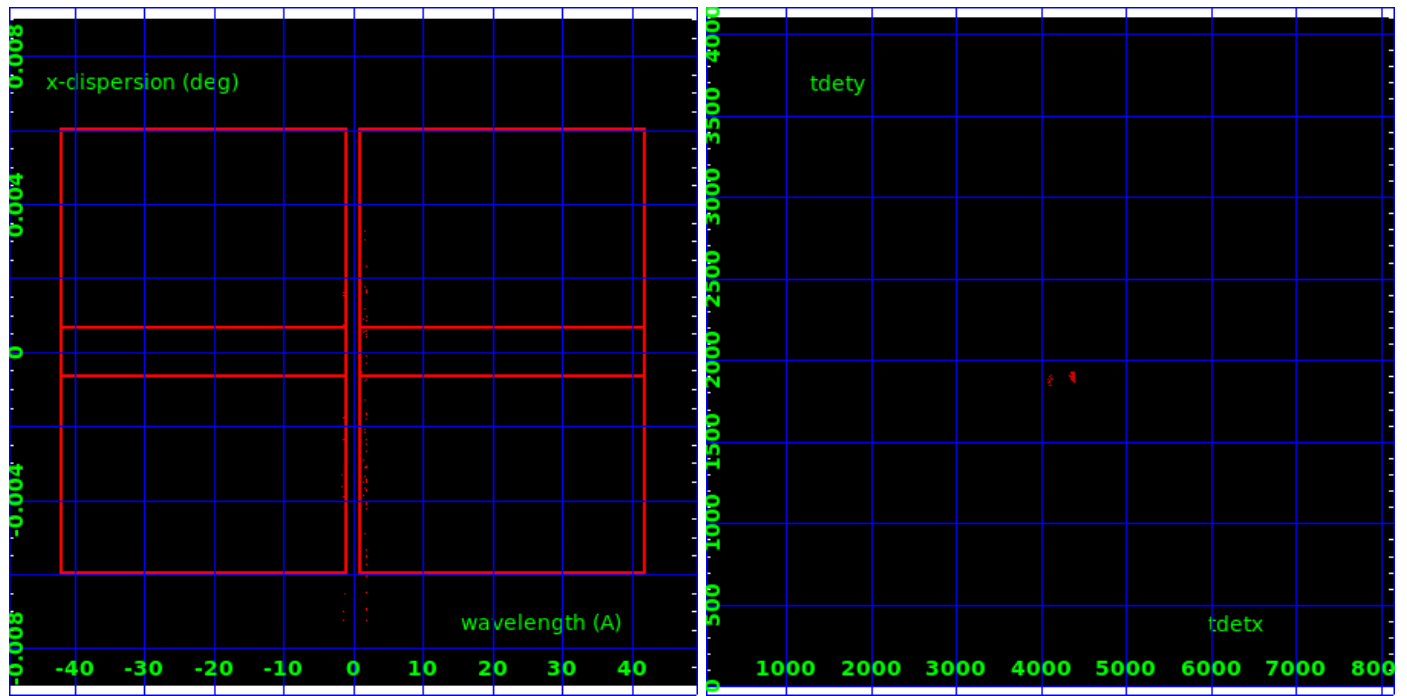
3.2 MEG Arm



MEG Order Sort 123

MEG Zero Order

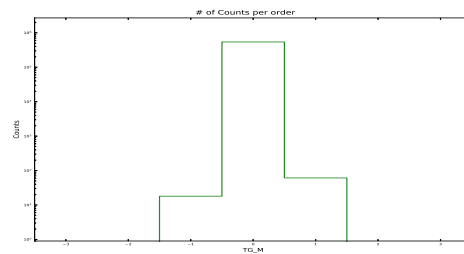
MEG Order Sort ALL

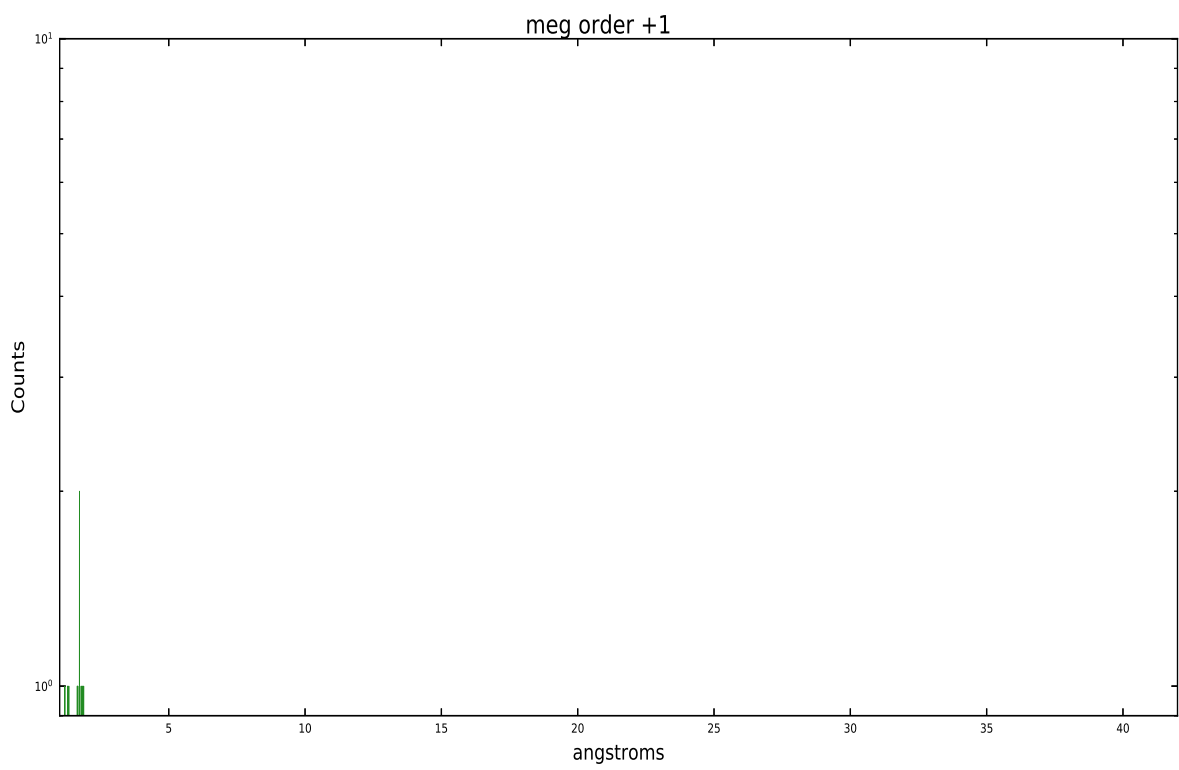
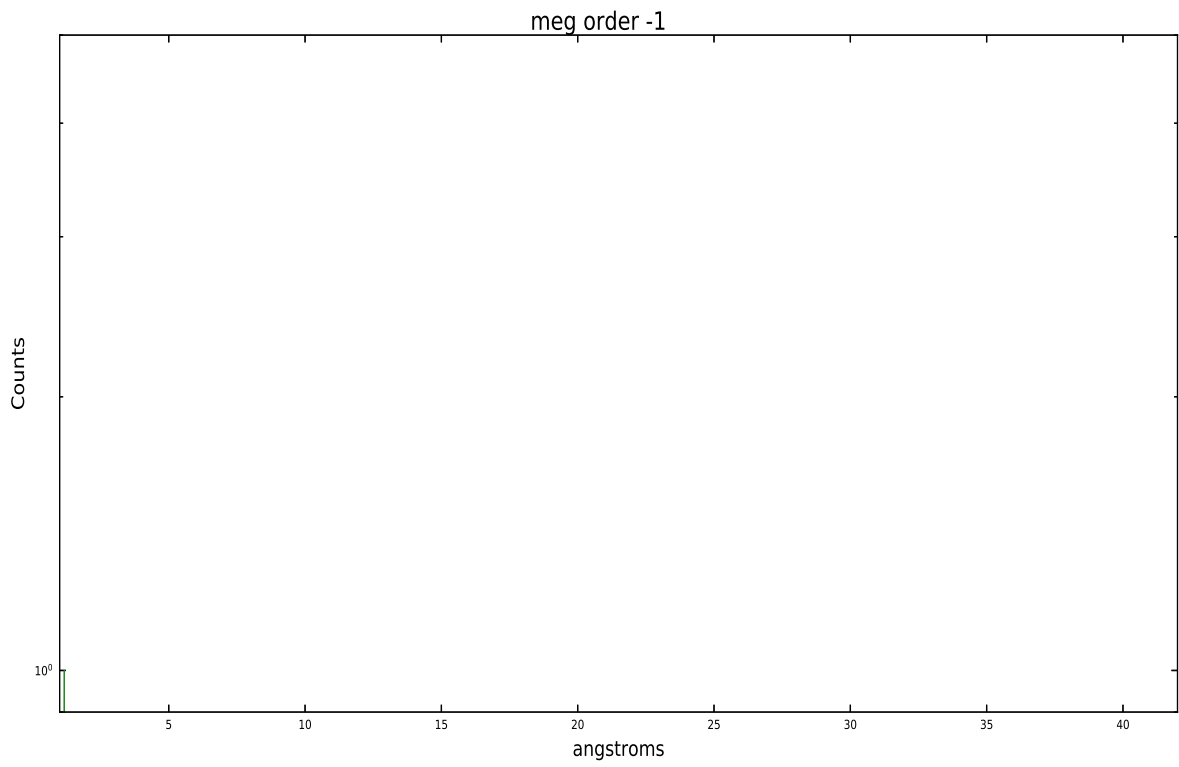


Spot Image MEG

Full Detector MEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	0	0	18	541574	61	0	0





A Summary

A.1 Status

V&V Scientist	David Principe
V&V Date (YYYY-MM-DD)	2020.10.08
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	10.1526

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. The dispersed spectrum only contains data for the meg +1 order between 1-2 A.