

V&V Reference Report

L2 ASCDS Version : 10.9.1

Observation 5552 - L2 Version 4
Chandra X-Ray Center

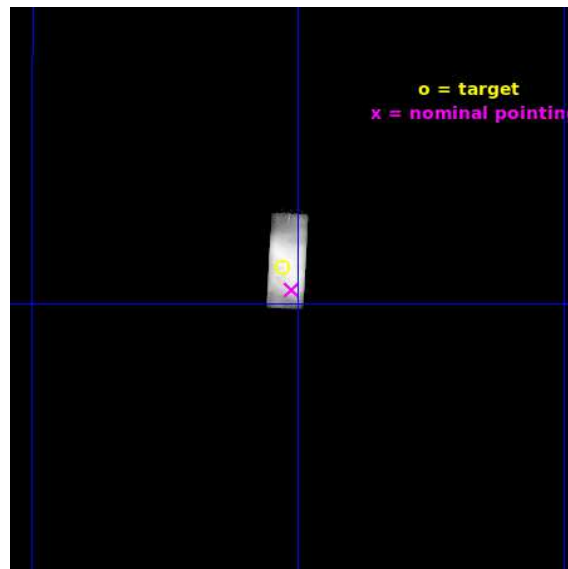
L2 Processing Date : Oct 7 2020

Contents

1	Front	2
2	OBI	3
2.1	OBI	3
2.1.1	Images	3
2.1.2	Parameters	4
2.1.3	Events	4
2.2	Compared Parameters	5
2.3	Aspect	6
2.4	Star Slots	9
2.4.1	Slot 3	9
2.4.2	Slot 4	10
2.4.3	Slot 5	11
2.4.4	Slot 6	12
2.4.5	Slot 7	13
2.5	FID Slots	14
2.5.1	Slot 0	14
2.5.2	Slot 1	15
2.5.3	Slot 2	16
3	Gratings	17
3.1	HEG Arm	17
3.2	MEG Arm	19
A	Summary	21
A.1	Status	21
A.2	Comments	21

1 Front

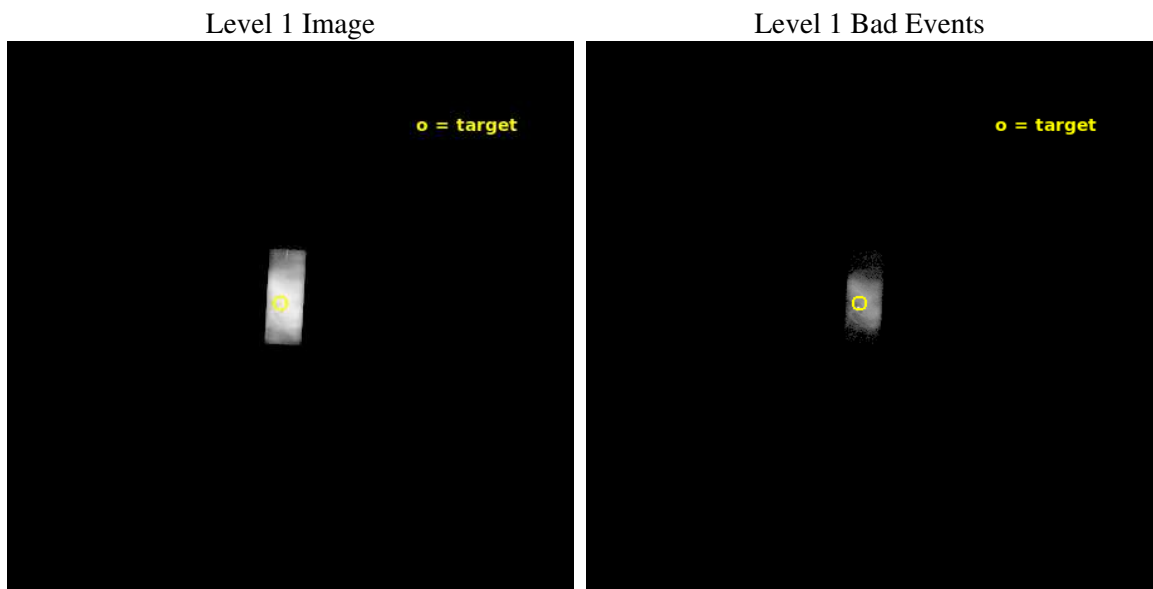
seq_num	500541	Sequence number
obs_id	5552	Observation id
title	Monitoring of the Relativistic Magnetohydrodynamic Shock in the Crab Nebula	Proposal title
observer	Dr Koji Mori	Principal investigator
object	Crab Nebula	Source name
dtcycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	83.632083	Observer's specified target RA [deg]
dec_targ	22.016472	Observer's specified target Dec [deg]
ra_nom	83.627798485517	Nominal RA [deg]
dec_nom	22.006244053459	Nominal Dec [deg]
roll_nom	272.98105485913	Nominal Roll [deg]
revision	4	Processing version of data
ontime	9175.2003645897	Sum of GTIs [s]
livetime	8071.0770272605	Livetime [s]
ontime7	9175.2003645897	Sum of GTIs [s]
l2events	2407282	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	9004.952000	[s] Scheduled observation exposure time
ascdsver	10.9.1	Processing system revision	ontime	9175.2003645897	Sum of GTIs [s]
caldsver	4.9.2	 	ontime7	9175.2003645897	Sum of GTIs [s]
date	2020-10-07T03:43:22	Date and time of file creation	l1events	2561418	Number of level 1 events
revision	4	Processing version of data	tgmethod	FINDZO	Method used to create src1a file
			zo_pos	(4076.41, 4176.90)	src1a sky pixel position
			zo_pos_tgd	(4051.93, 4153.25)	src1a sky pixel position via tgdetect

2.1.3 Events

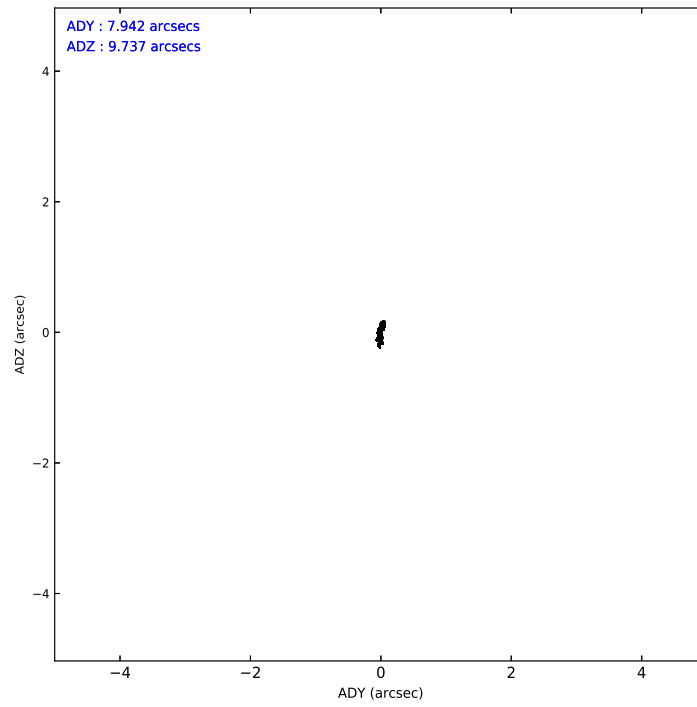
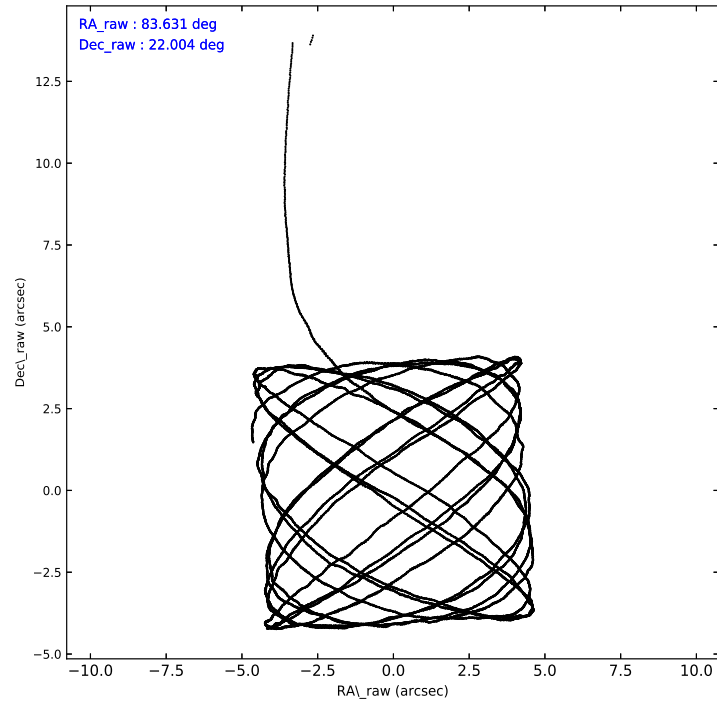
	ccd 7
level 1 events	2561418
rejected events	127288
rejected %	4%

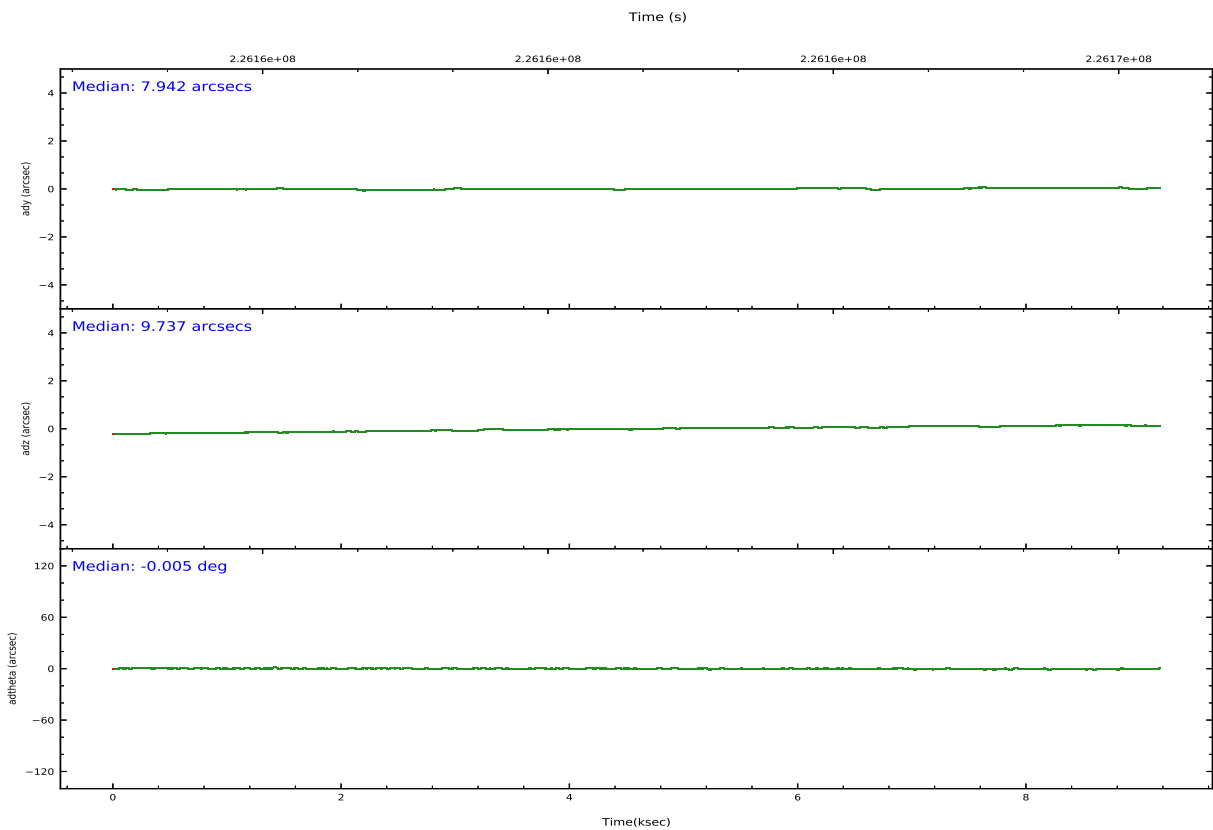
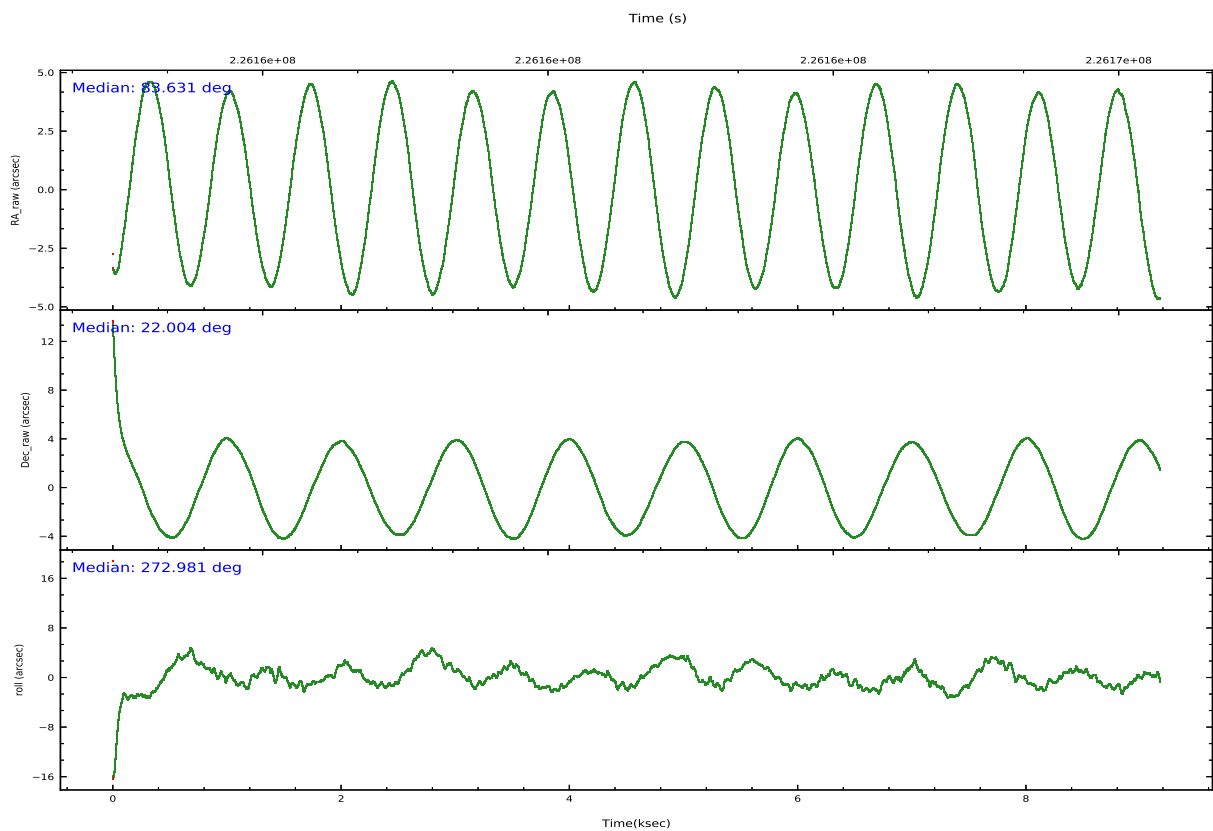
	ccd 7
grade 0 events	499960
	19%
grade 1 events	9602
	0%
grade 2 events	629681
	24%
grade 3 events	281178
	10%
grade 4 events	269425
	10%
grade 5 events	39306
	1%
grade 6 events	786367
	30%
grade 7 events	45899
	1%

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	83.614624	83.627798485517	Subarray requested	CUSTOM	CUSTOM
[deg] Pointing Dec	22.026682	22.006244053459	Subarray start row	127	127
[deg] Pointing Roll	272.830320	272.98105485913	Subarray row count	101	101
[s] Window start time (MET)	225936064.184000	225936064.184000	Alternating exposures requested	N	N
[s] Window stop time (MET)	226540864.184000	226540864.184000	[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)	226158859.184000	226157923.99845			
Observation start date	2005-03-02T13:53:15	2005-03-02T13:38:43			
[s] Observation end time (MET)	226167864.184000	226168076.11141			
Observation end date	2005-03-02T16:23:20	2005-03-02T16:27:56			
Read mode	TIMED	TIMED			

2.3 Aspect



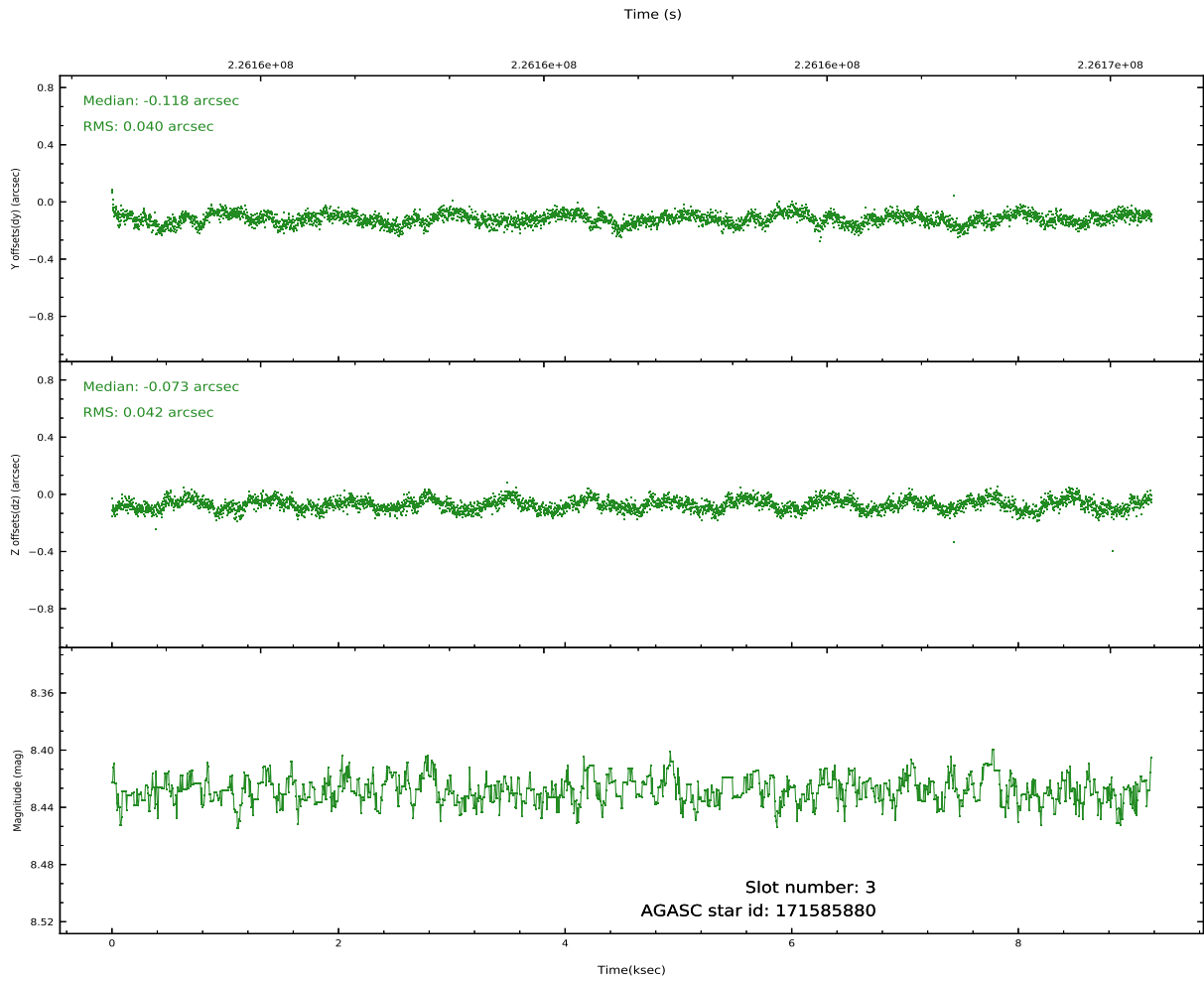
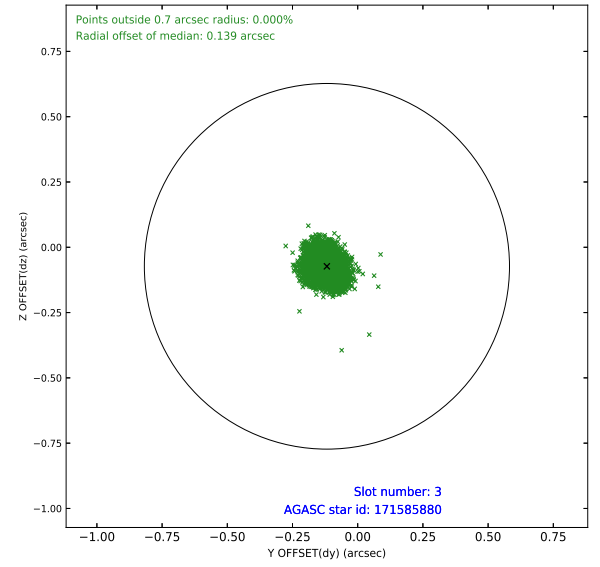
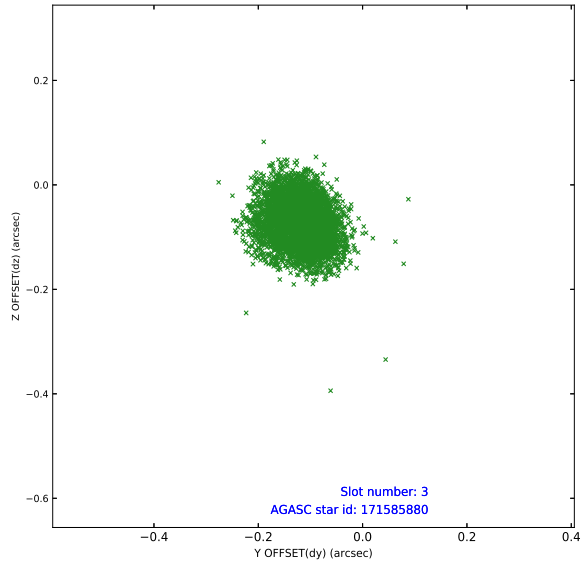


Slot Statistics

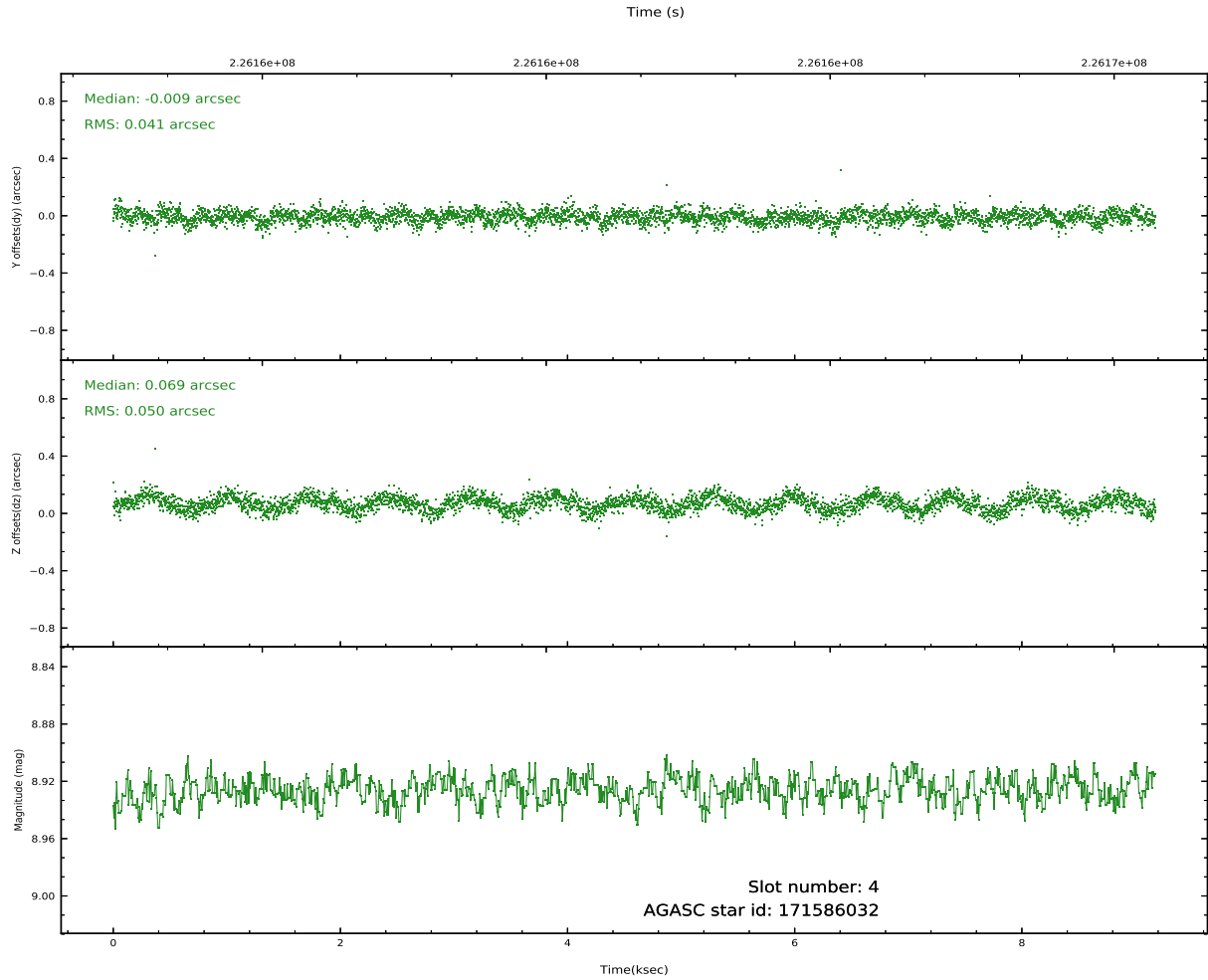
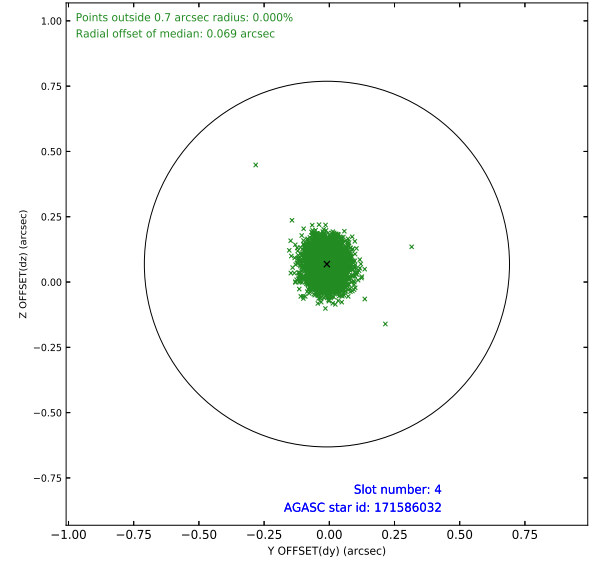
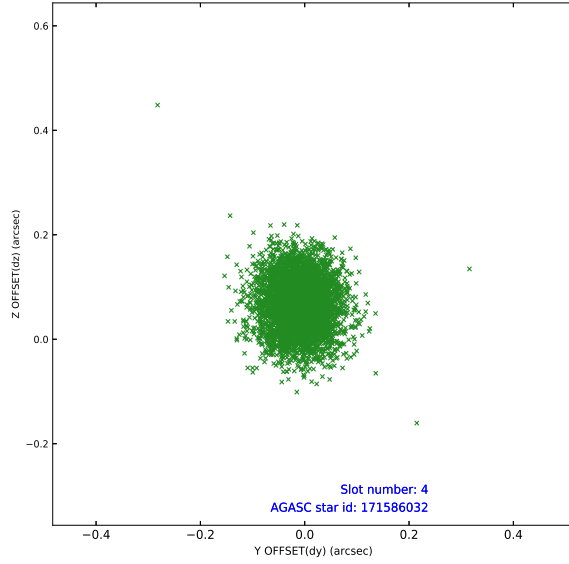
pt	status	used	id	mag	n_pts	frac_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mea
0	FID		ACIS-S-2	7.09	2239	1.000	-0.093	-0.130	0.006	0.011	0.000000	0.000000	-760.20	-1895
1	FID		ACIS-S-4	7.18	2239	1.000	0.173	0.079	0.005	0.010	0.000000	0.000000	2153.04	12
2	FID		ACIS-S-5	7.22	2239	1.000	-0.112	0.058	0.006	0.011	0.000000	0.000000	-1812.34	6
3	GUIDE	used	171585880	8.43	4476	1.000	-0.118	-0.073	0.062	0.098	83.676260	22.176319	-527.65	231
4	GUIDE	used	171586032	8.93	4474	1.000	-0.009	0.069	0.068	0.111	83.950197	22.083225	-149.06	1128
5	GUIDE	used	171597832	9.16	4474	1.000	0.218	-0.109	0.084	0.140	83.183230	21.366702	2300.36	-1561
6	GUIDE	used	171721904	9.22	4473	1.000	0.114	0.127	0.097	0.148	84.272676	22.116922	-220.03	2208
7	GUIDE	used	243941560	8.29	4476	1.000	-0.209	-0.011	0.068	0.107	83.733264	22.568598	-1929.05	490

2.4 Star Slots

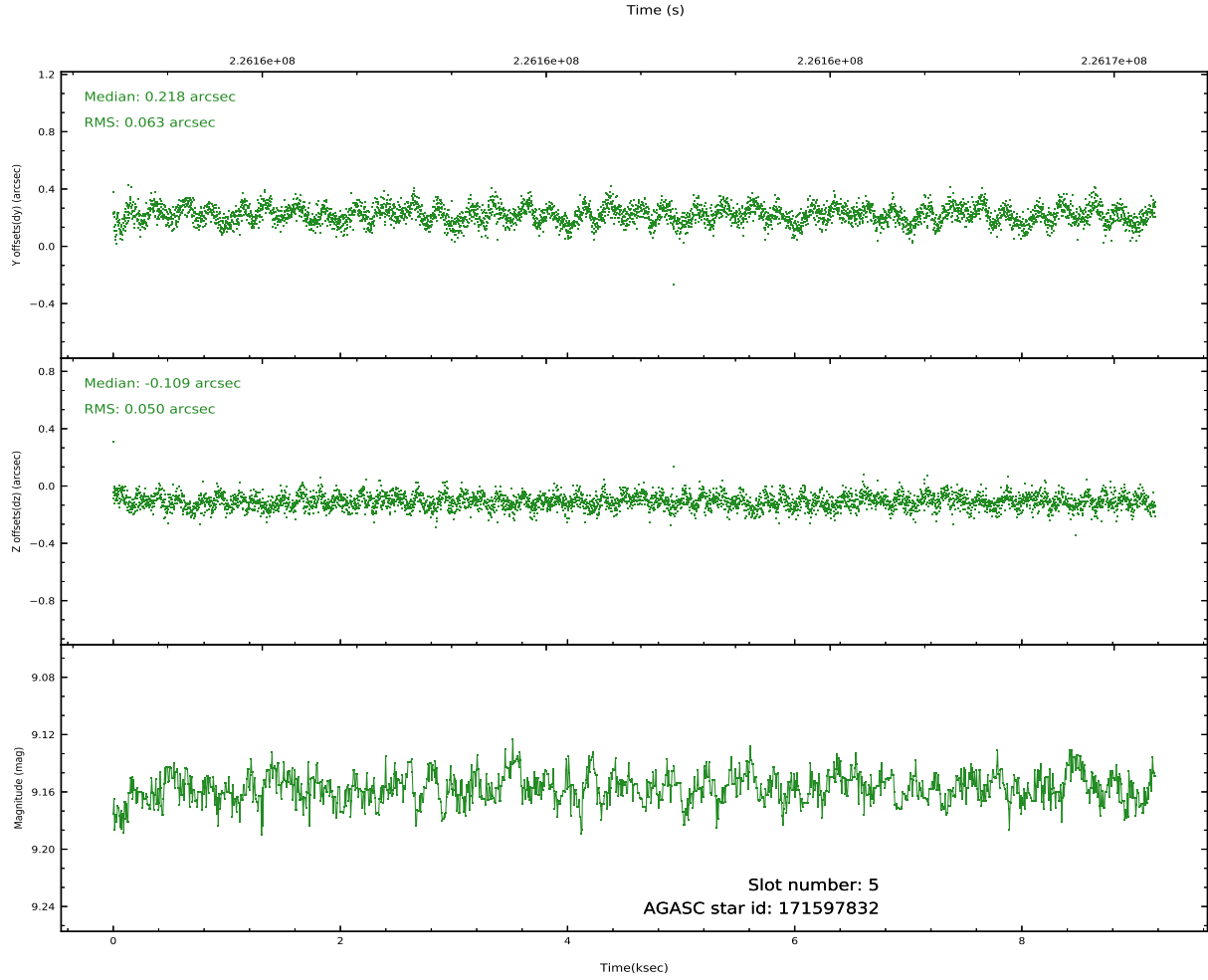
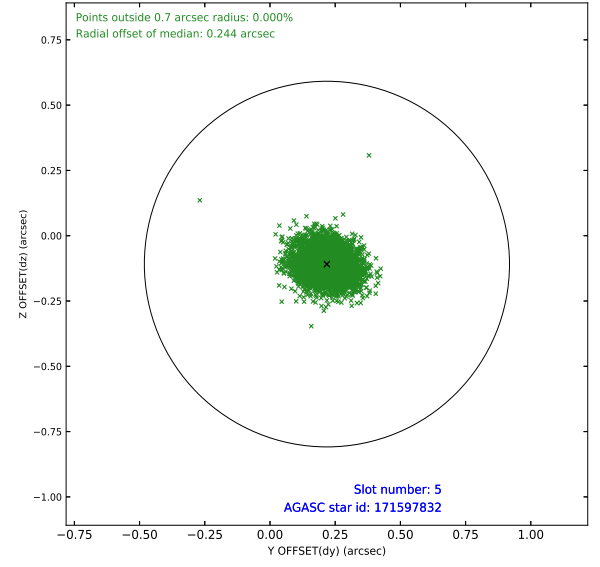
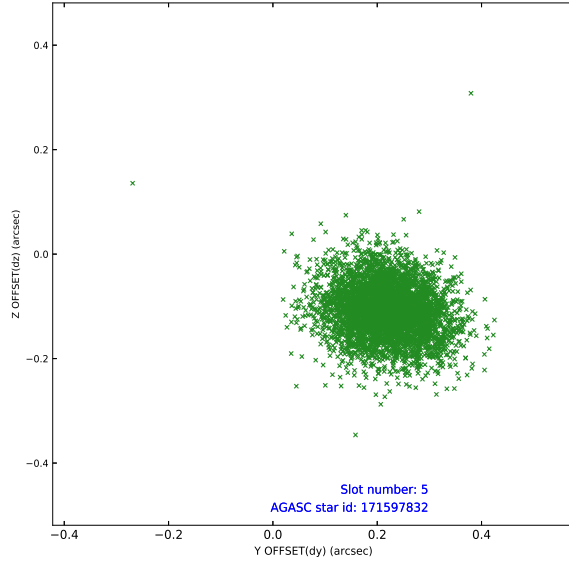
2.4.1 Slot 3



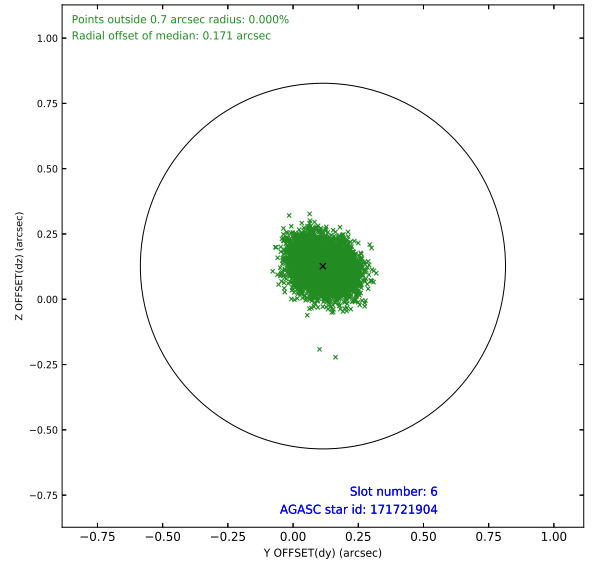
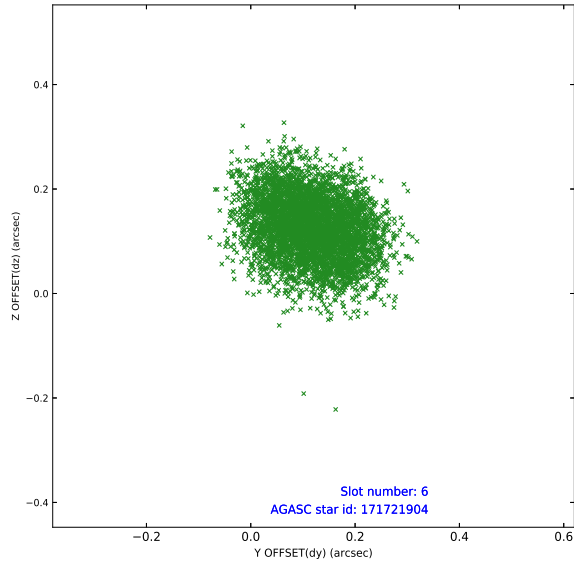
2.4.2 Slot 4



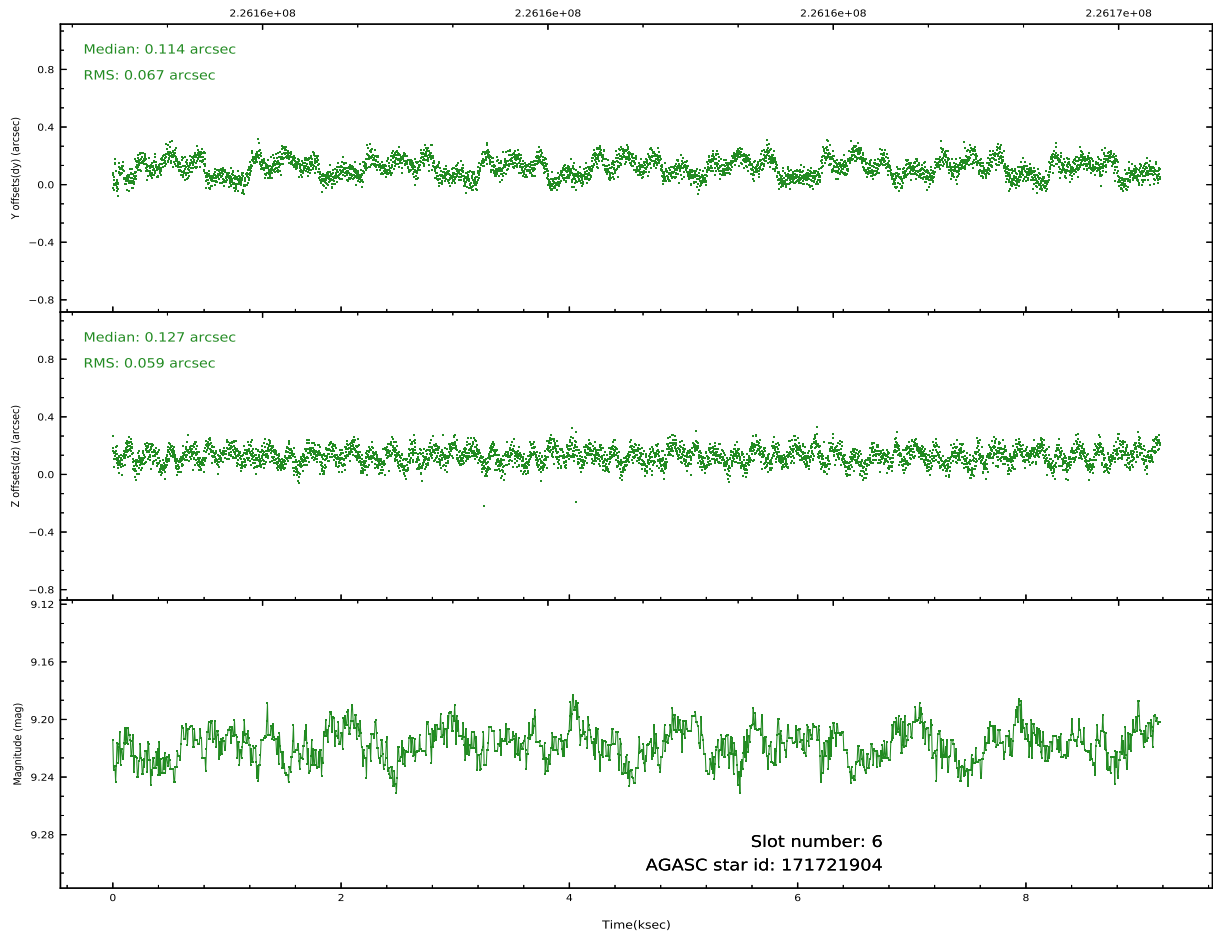
2.4.3 Slot 5



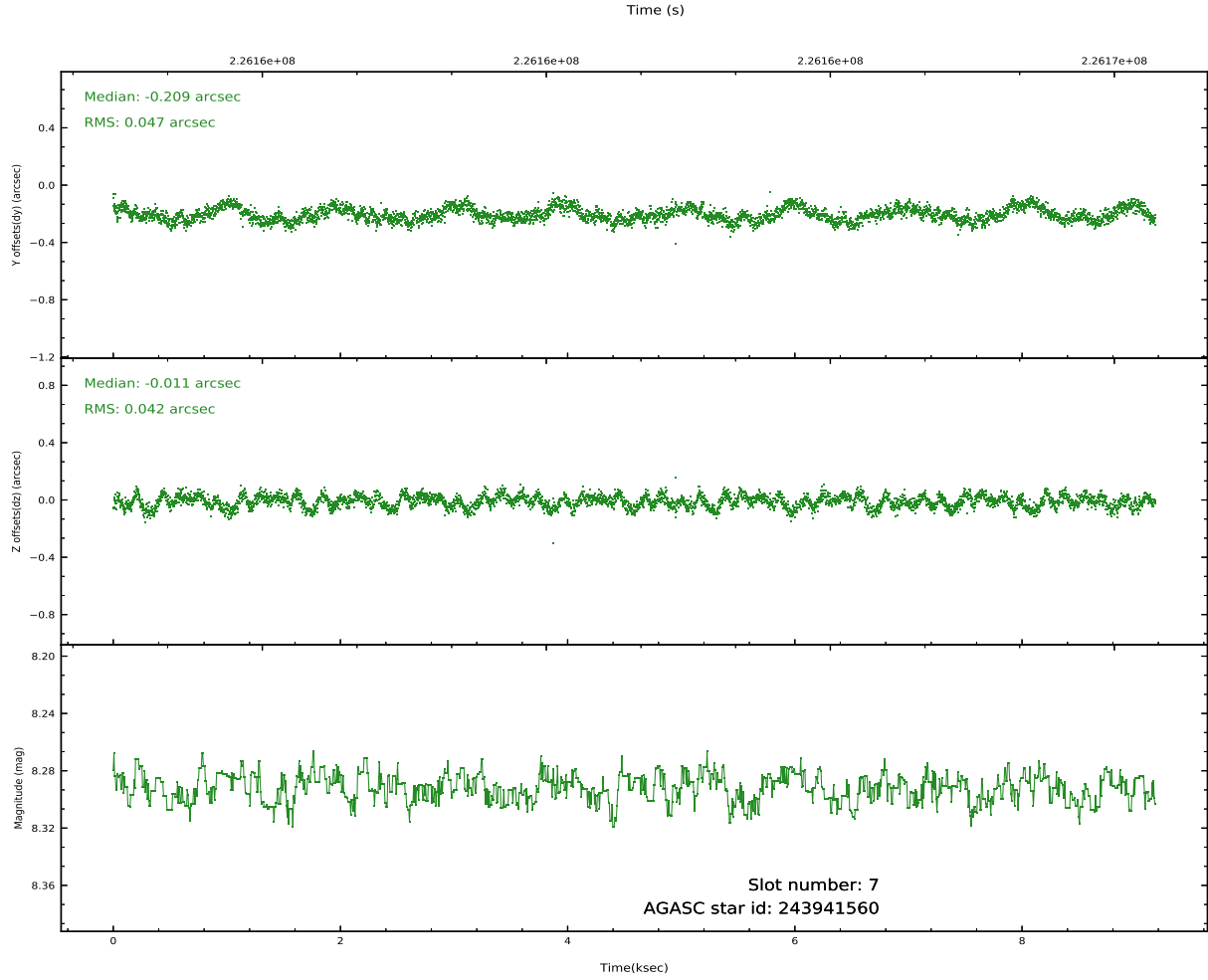
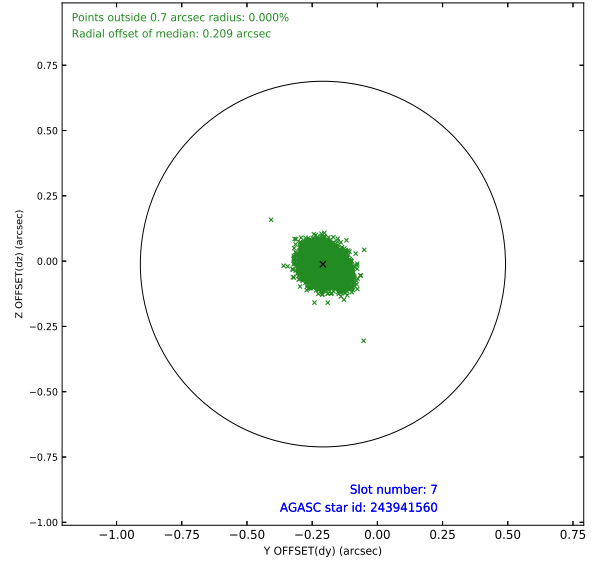
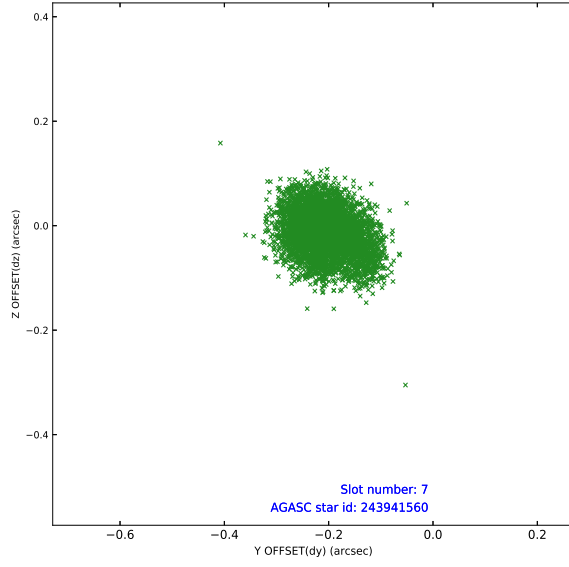
2.4.4 Slot 6



Time (s)

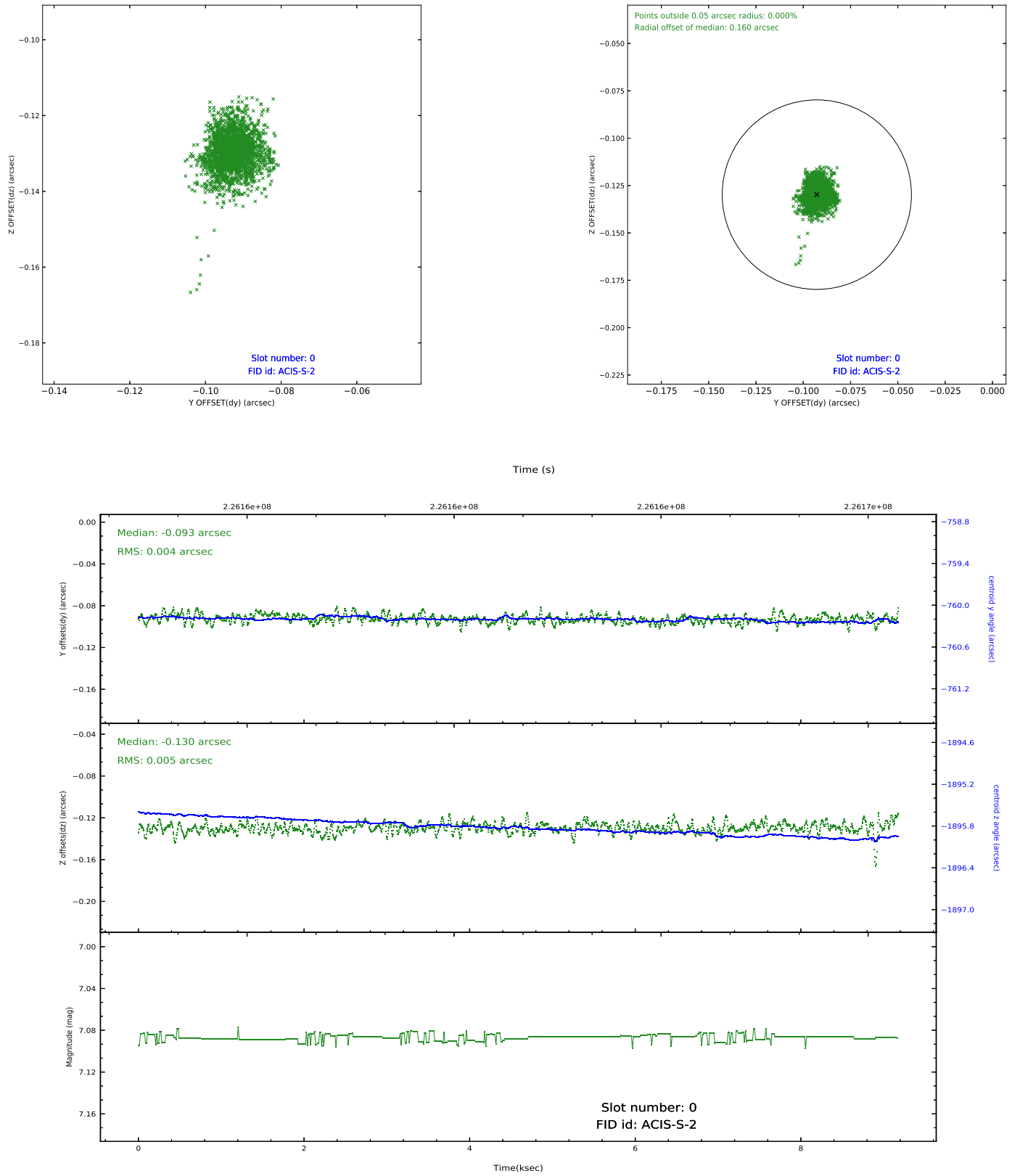


2.4.5 Slot 7

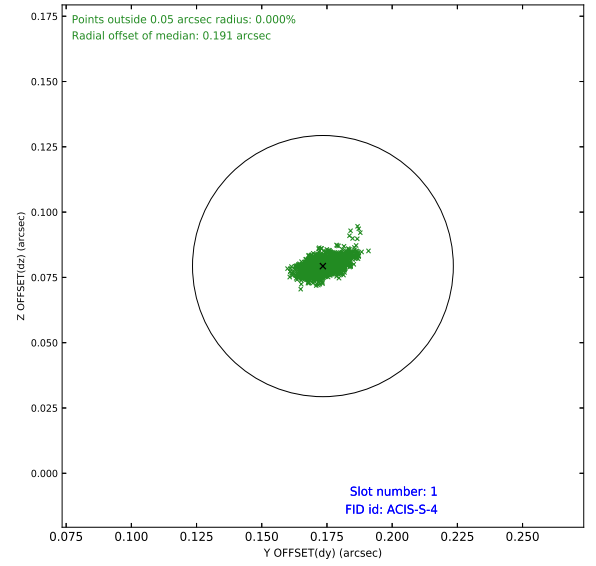
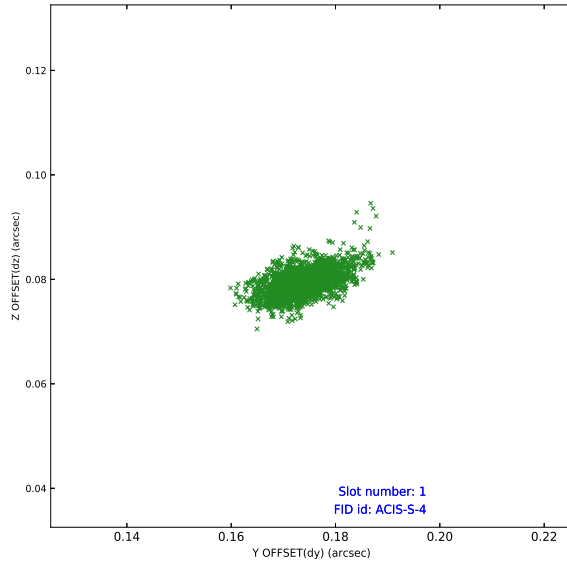


2.5 FID Slots

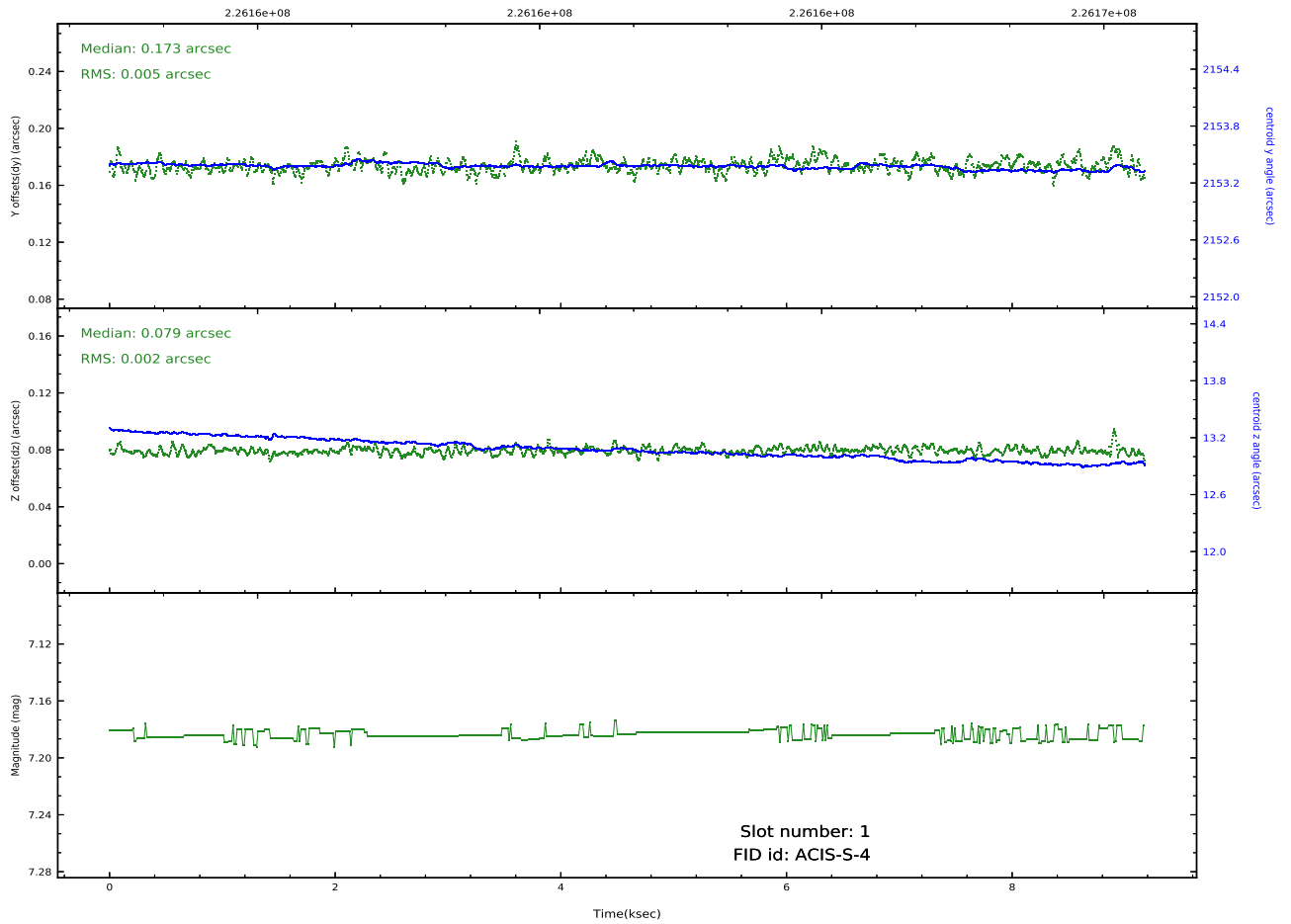
2.5.1 Slot 0



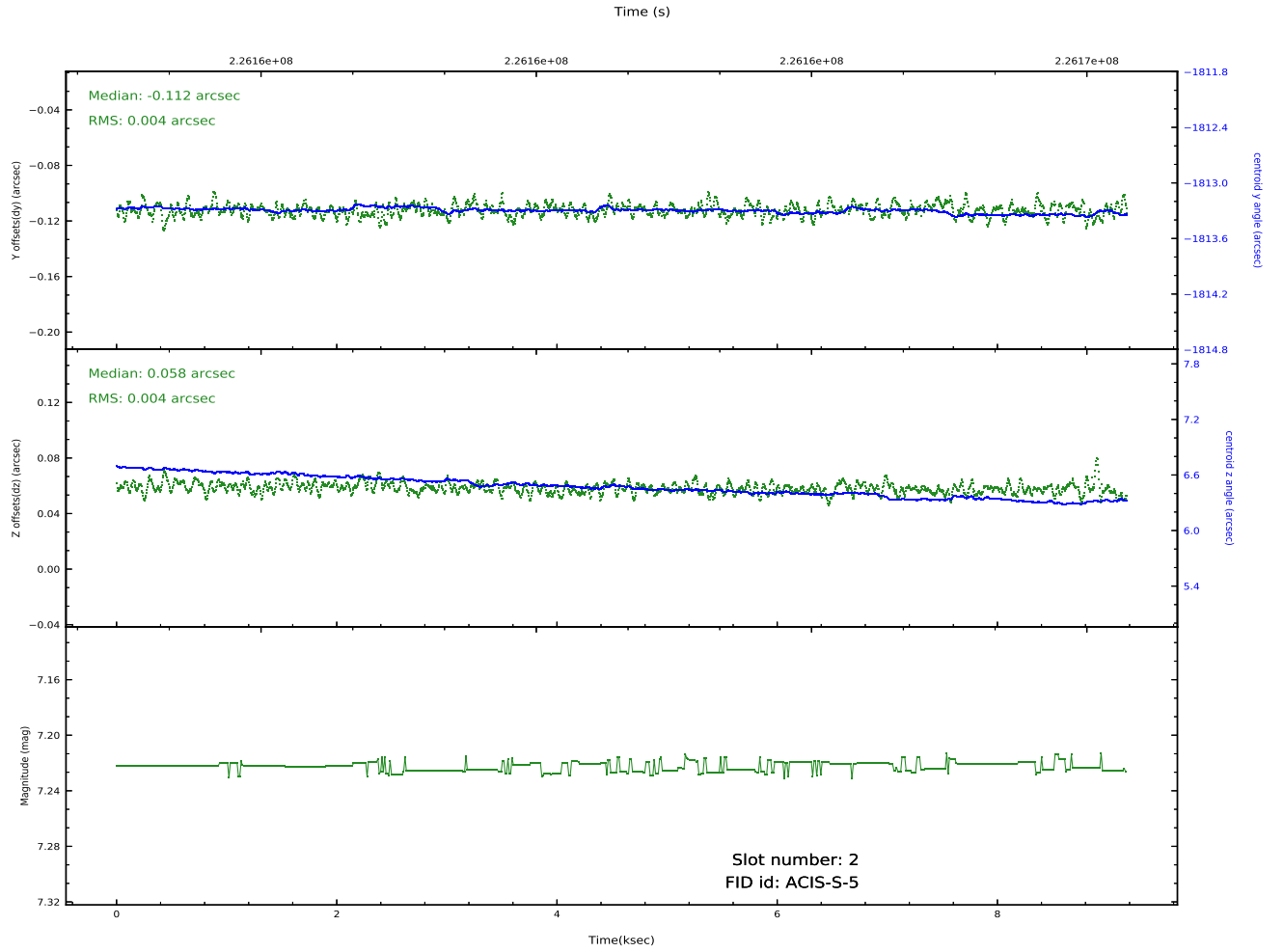
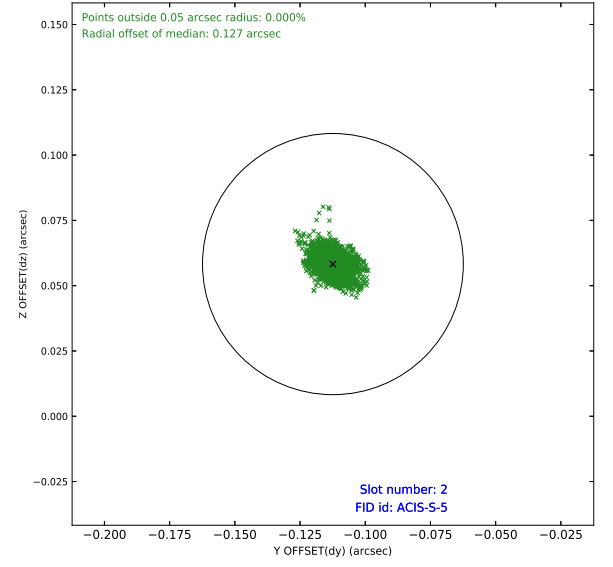
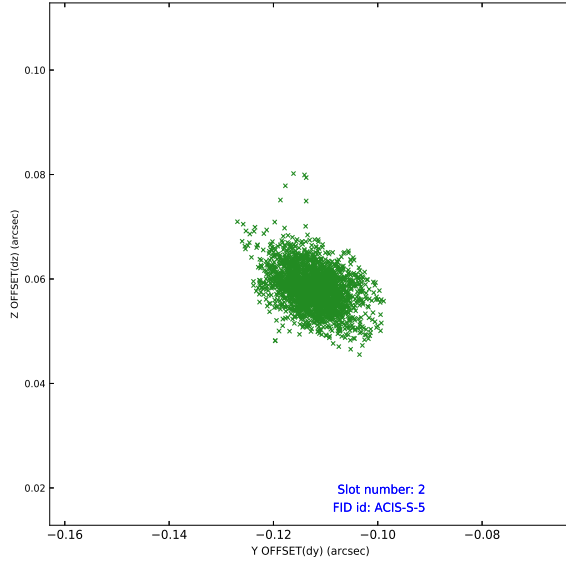
2.5.2 Slot 1



Time (s)

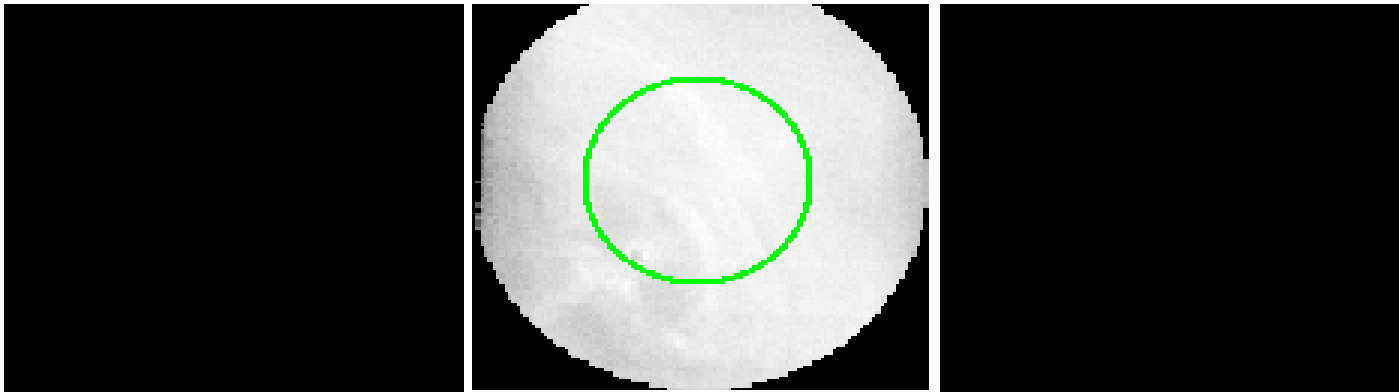


2.5.3 Slot 2



3 Gratings

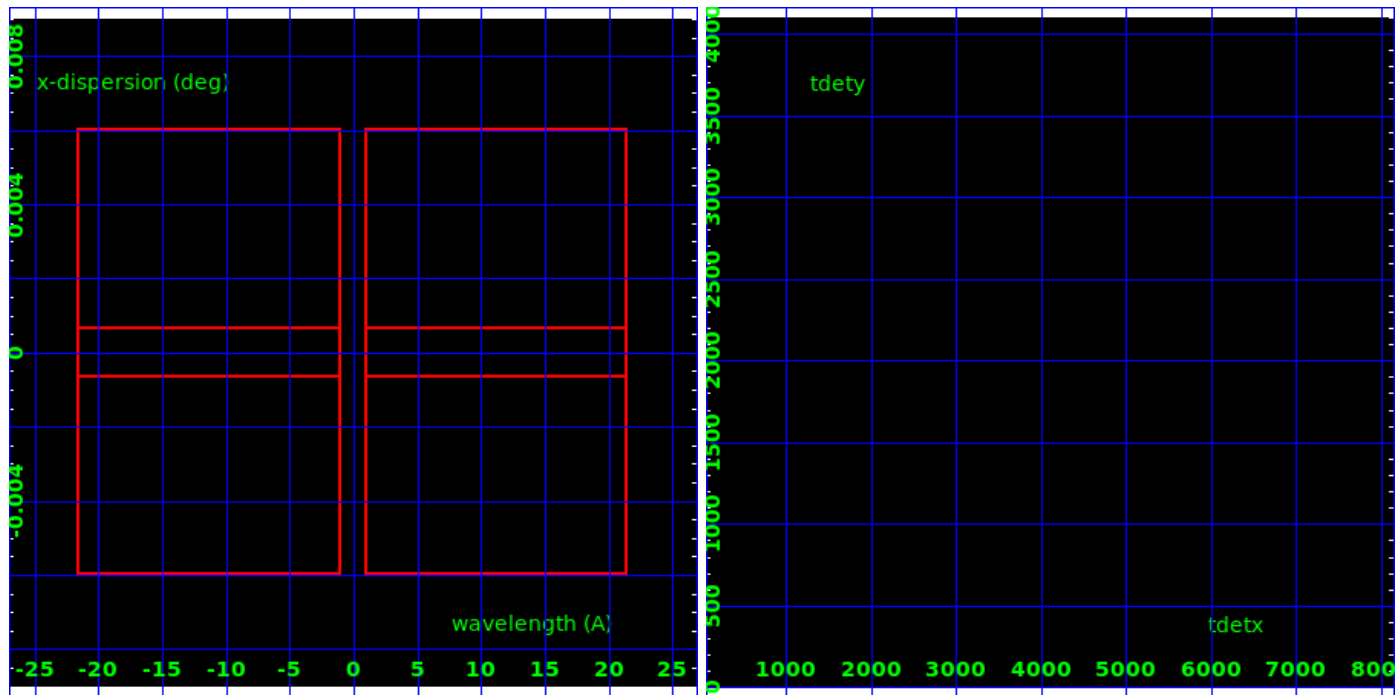
3.1 HEG Arm



HEG Order Sort 123

HEG Zero Order

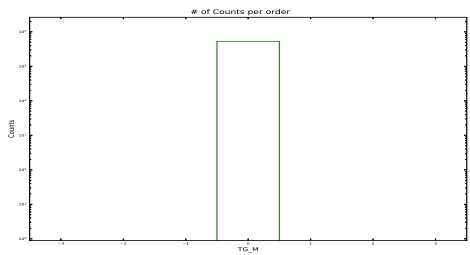
HEG Order Sort ALL

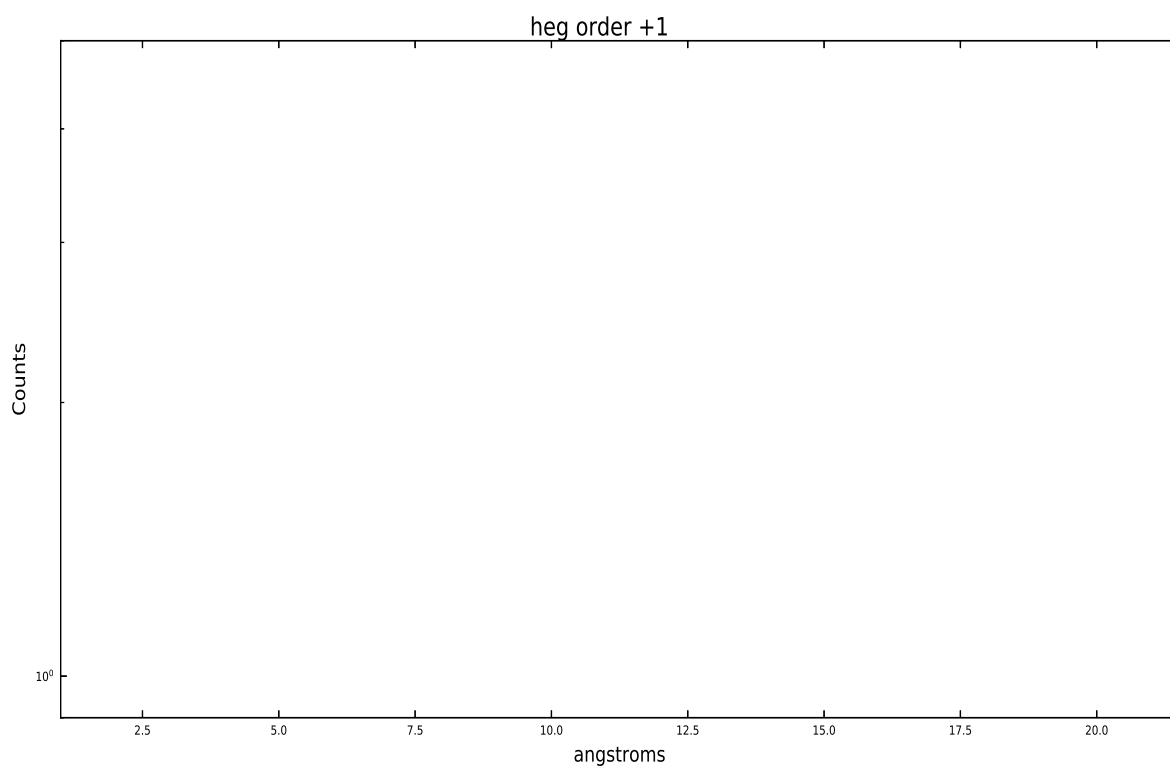
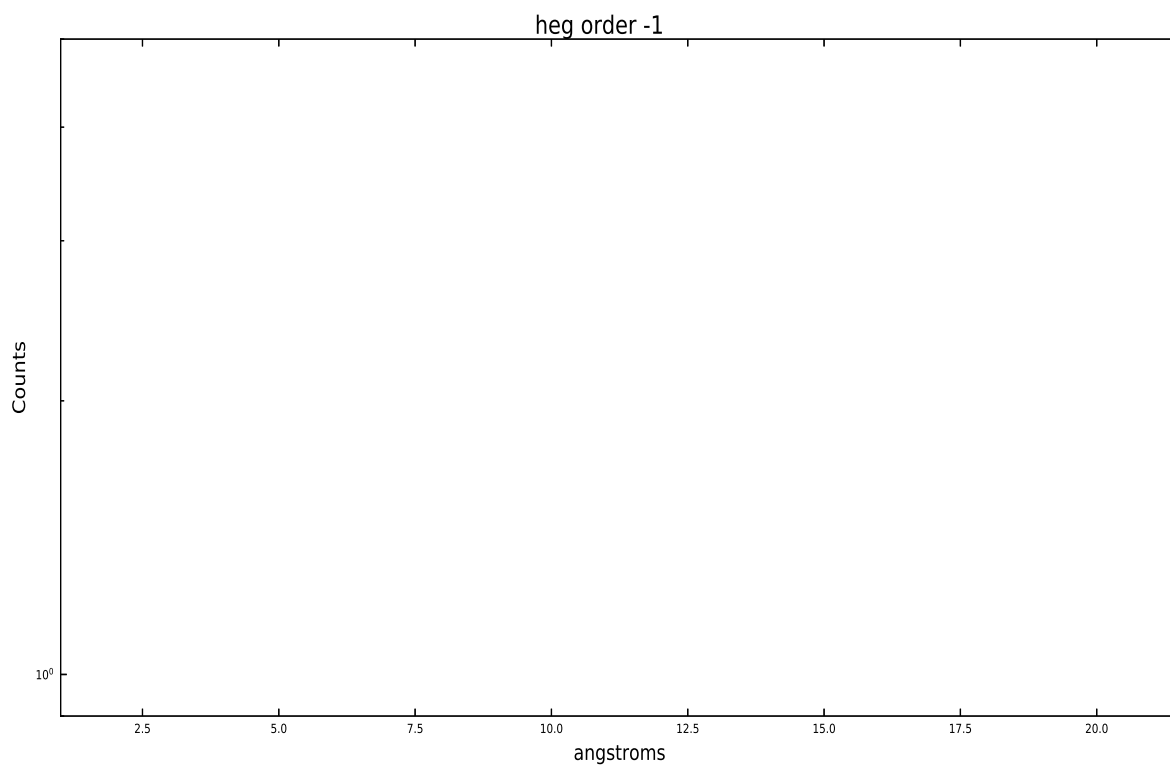


Spot Image HEG

Full Detector HEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	0	0	0	527380	0	0	0





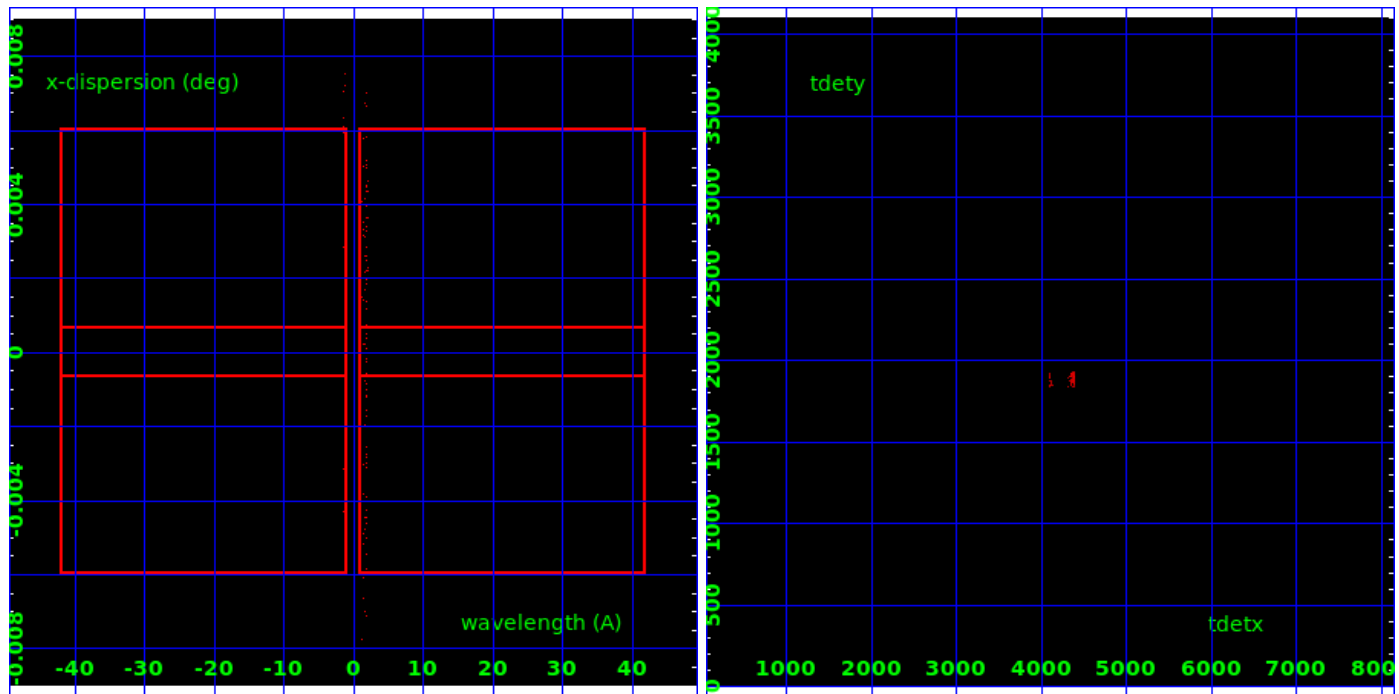
3.2 MEG Arm



MEG Order Sort 123

MEG Zero Order

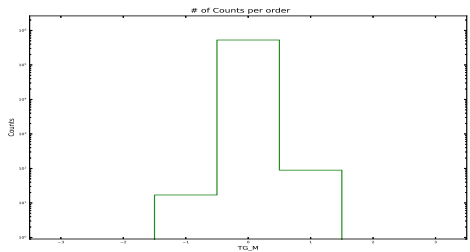
MEG Order Sort ALL

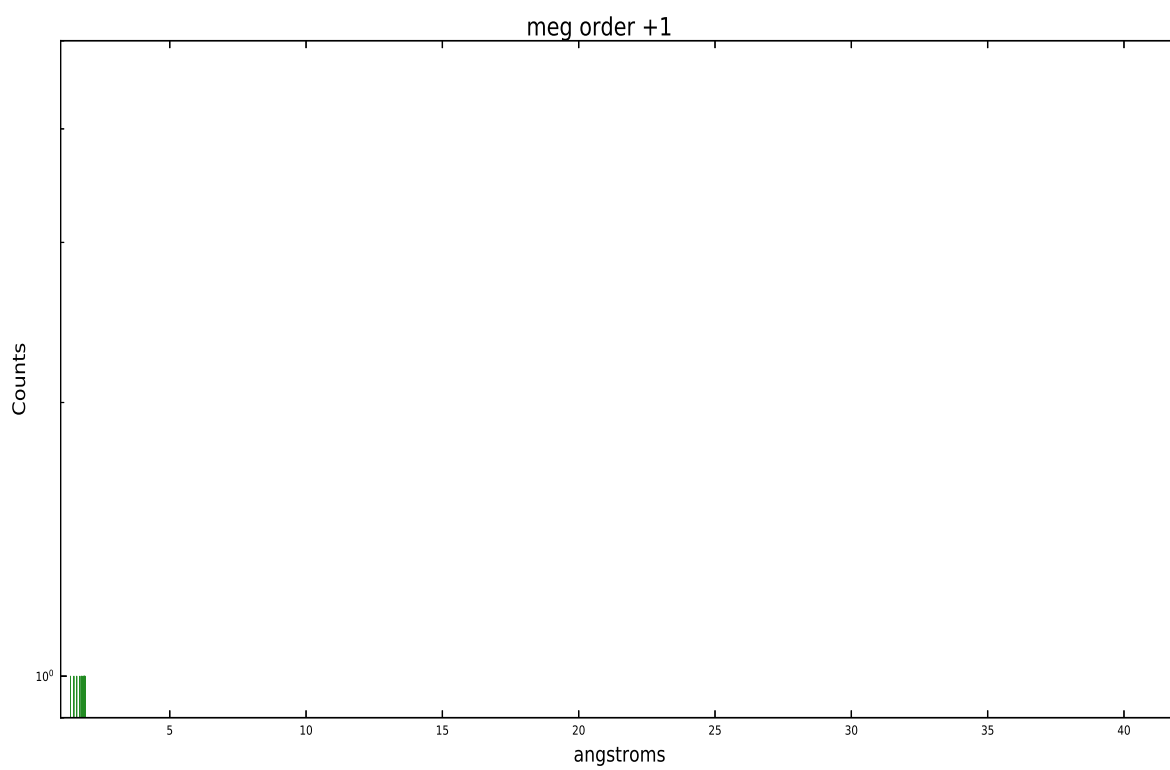
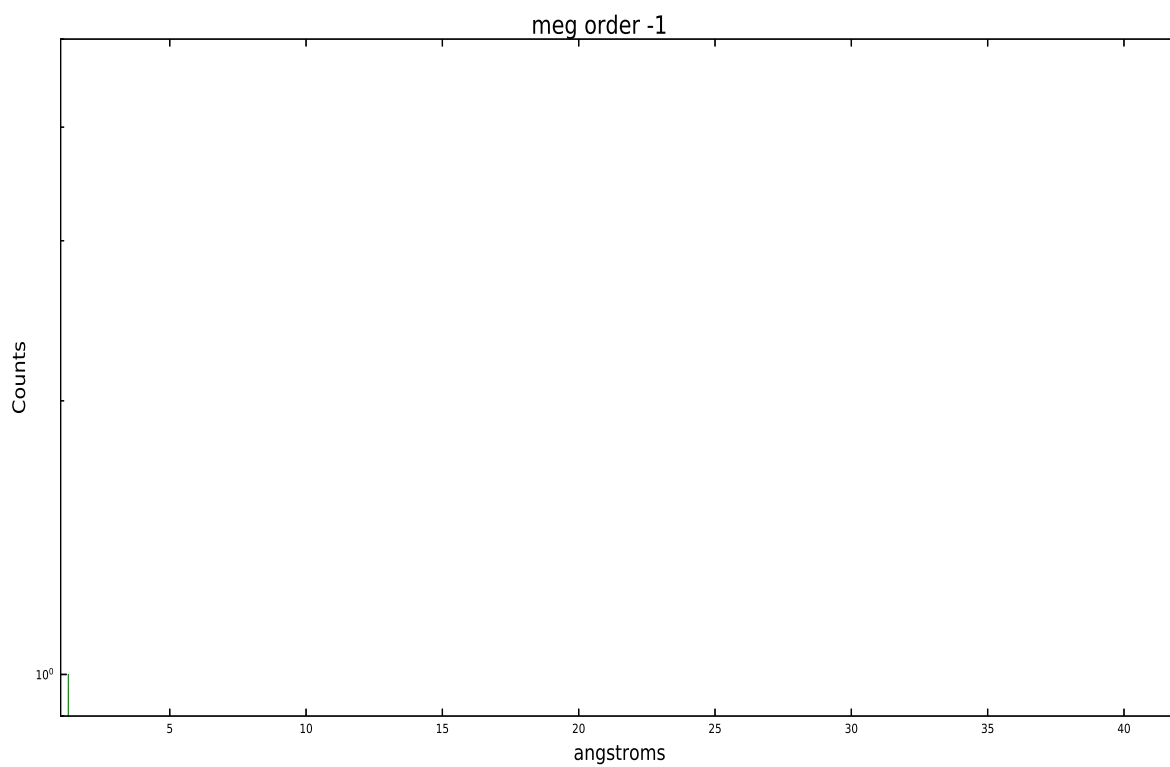


Spot Image MEG

Full Detector MEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	0	0	17	527380	89	0	0





A Summary

A.1 Status

V&V Scientist	Melania Nynka
V&V Date (YYYY-MM-DD)	2020.10.08
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	9.1752

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.