

V&V Reference Report

L2 ASCDS Version : 10.8.1

Observation 22904 - L2 Version 2
Chandra X-Ray Center

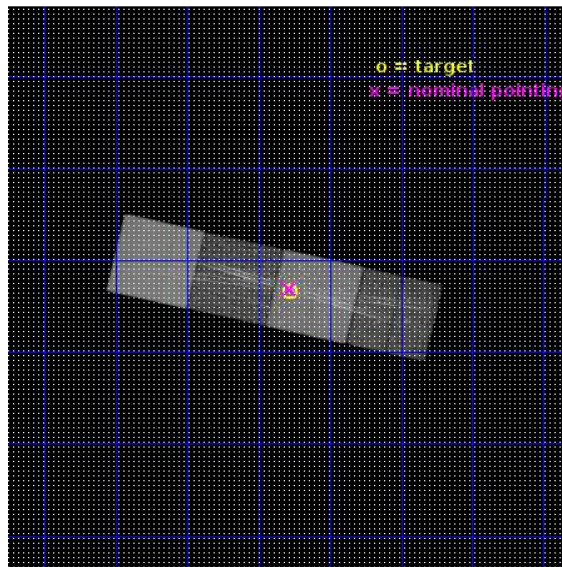
L2 Processing Date : Dec 30 2019

Contents

1	Front	2
2	OBI	3
2.1	OBI	3
2.1.1	Images	3
2.1.2	Bias	3
2.1.3	Parameters	4
2.1.4	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

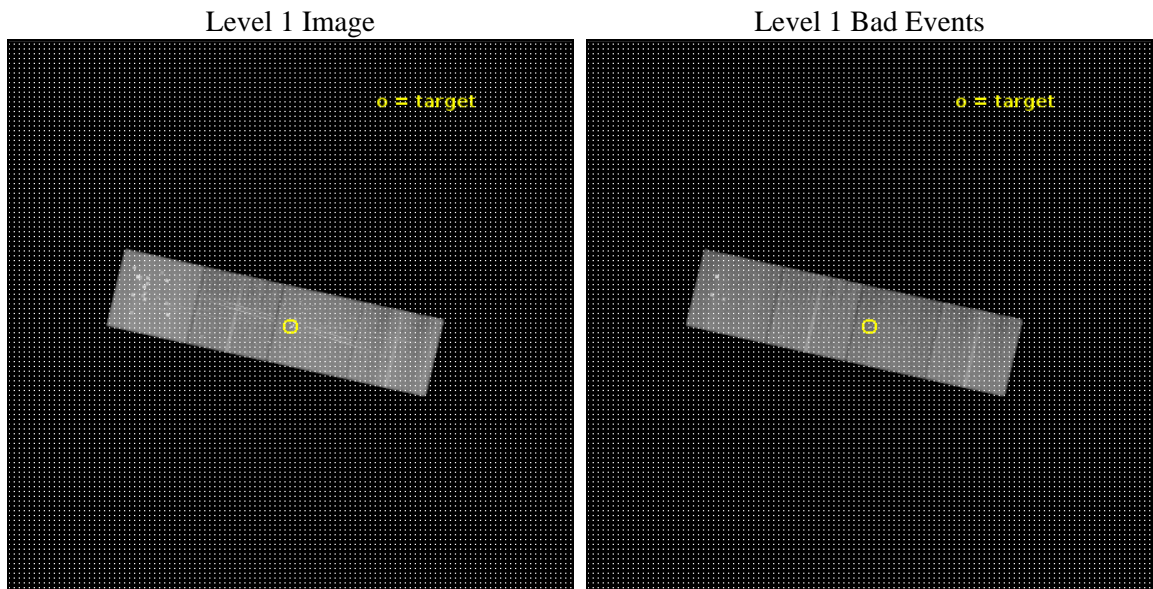
seq_num	201298	Sequence number
obs_id	22904	Observation id
title	THE TRUE NATURE OF X-RAYS FROM THE ORION TRAPEZIUM	Proposal title
observer	Norbert Schulz	Principal investigator
object	Orion Nebula Cluster	Source name
dtcycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	83.81875	Observer's specified target RA [deg]
dec_targ	-5.38975	Observer's specified target Dec [deg]
ra_nom	83.820706704149	Nominal RA [deg]
dec_nom	-5.3850668748172	Nominal Dec [deg]
roll_nom	13.02601322655	Nominal Roll [deg]
revision	2	Processing version of data
ontime	37062.164345741	Sum of GTIs [s]
livetime	36577.919883796	Livetime [s]
ontime5	37062.123305798	Sum of GTIs [s]
ontime6	37058.941275597	Sum of GTIs [s]
ontime7	37062.164345741	Sum of GTIs [s]
ontime8	37062.041225791	Sum of GTIs [s]
l2events	542561	Number of level 2 events



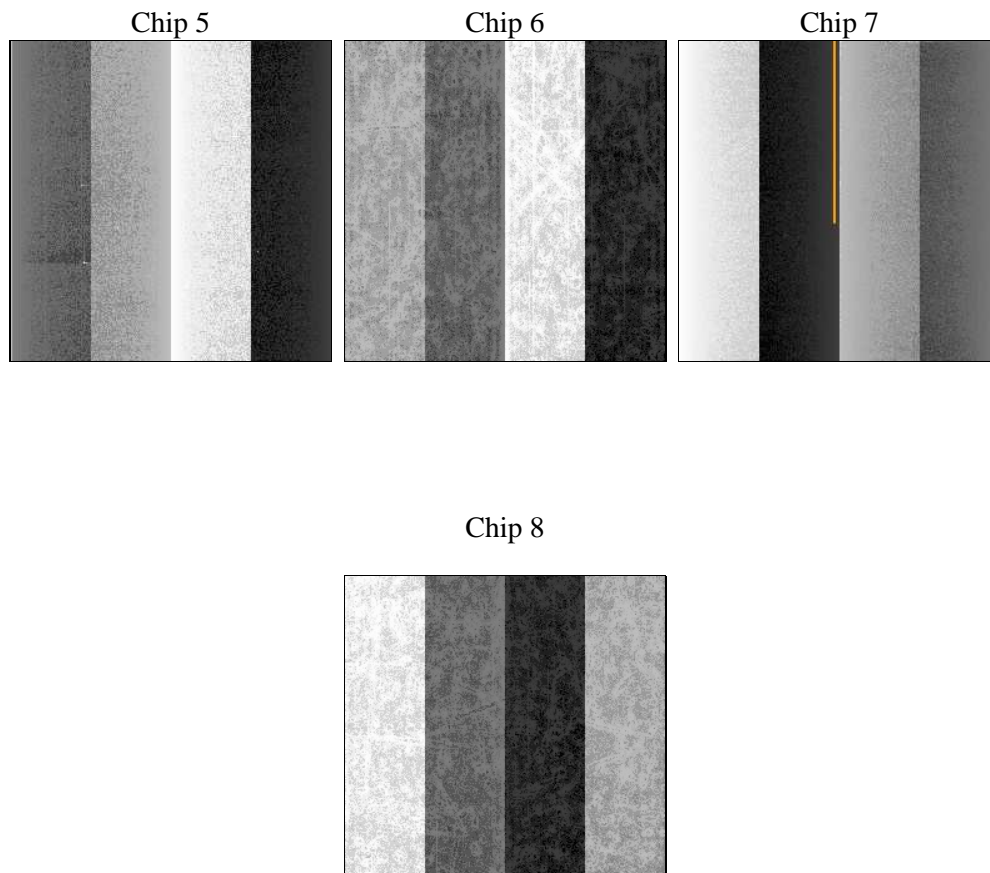
2 OBI

2.1 OBI

2.1.1 Images



2.1.2 Bias



2.1.3 Parameters

obi_num	0	Obi number	sched_exp_time	37000.000000	[s] Scheduled observation exposure time
ascdsver	10.8.1	Processing system revision	ontime	37062.164345741	Sum of GTIs [s]
caldsver	4.8.4.2	 	ontime5	37062.123305798	Sum of GTIs [s]
date	2019-12-30T22:00:24	Date and time of file creation	ontime6	37058.941275597	Sum of GTIs [s]
revision	2	Processing version of data	ontime7	37062.164345741	Sum of GTIs [s]
			ontime8	37062.041225791	Sum of GTIs [s]
			l1events	1698479	Number of level 1 events
			tgmethod	TGDETECT	Method used to create src1a file
			zo_pos	(4112.00, 4062.29)	src1a sky pixel position

2.1.4 Events

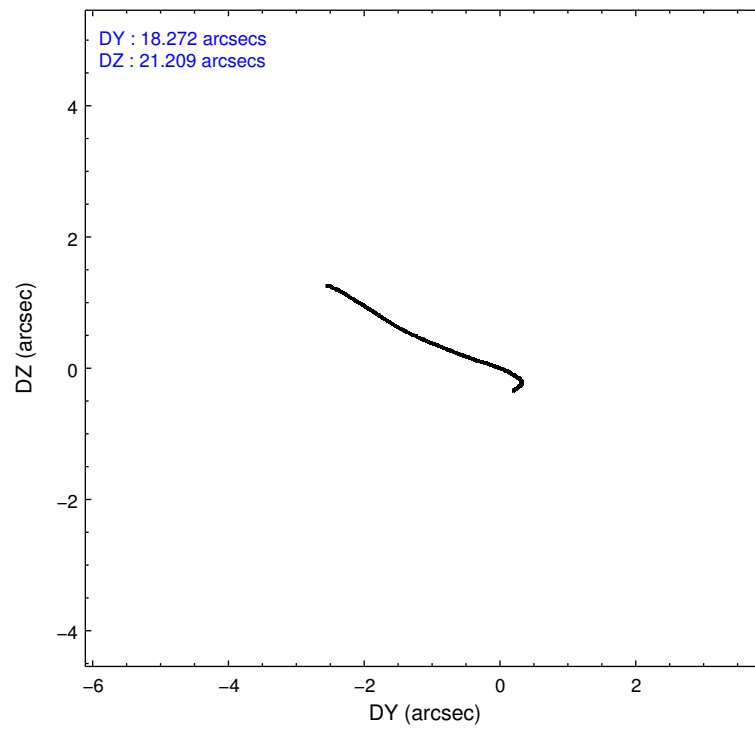
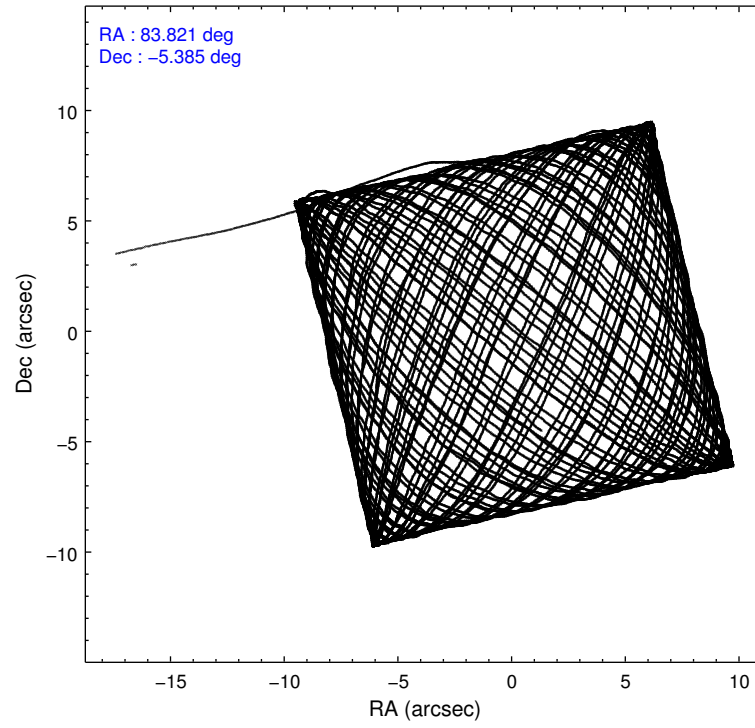
	ccd 5	ccd 6	ccd 7	ccd 8
level 1 events	545314	324929	443367	384869
rejected events	256431	259612	214429	271187
rejected %	47%	79%	48%	70%

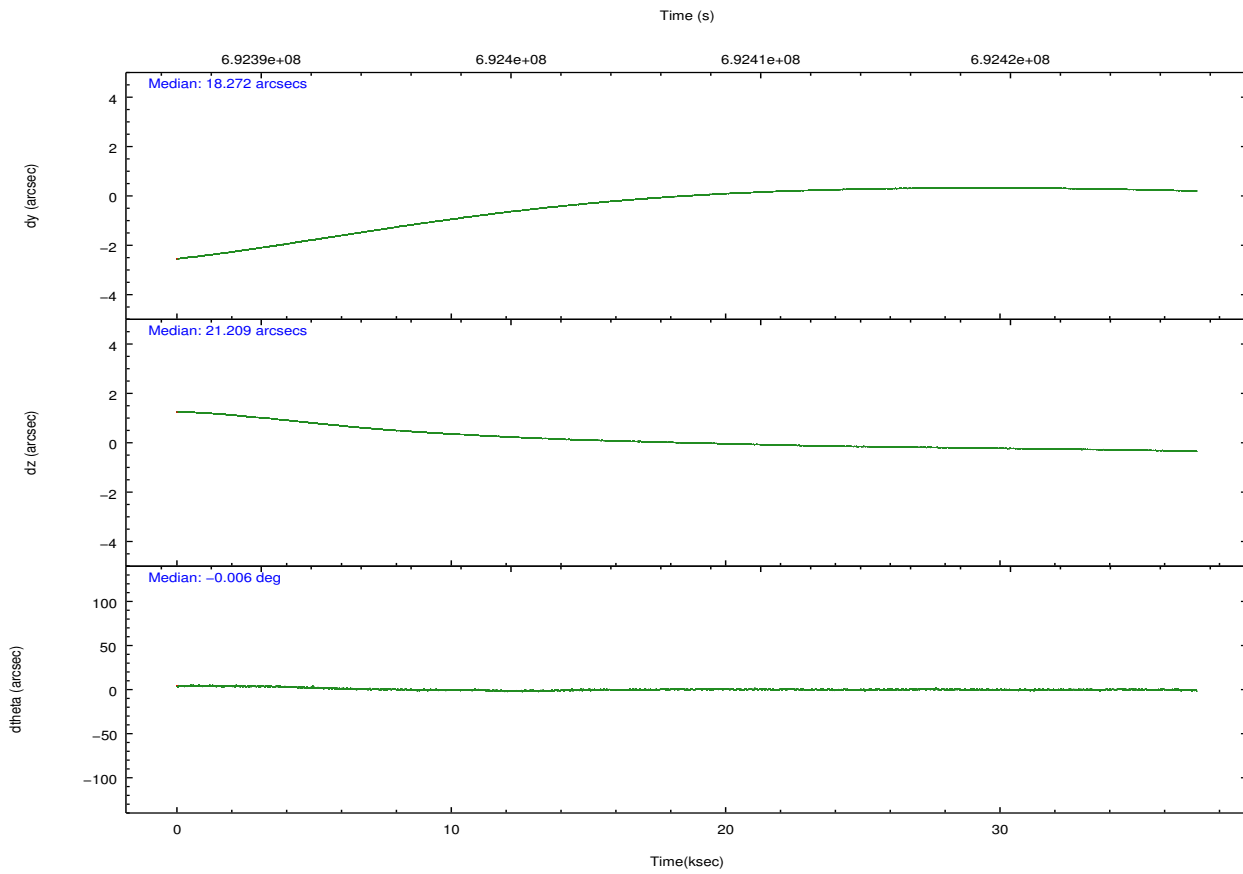
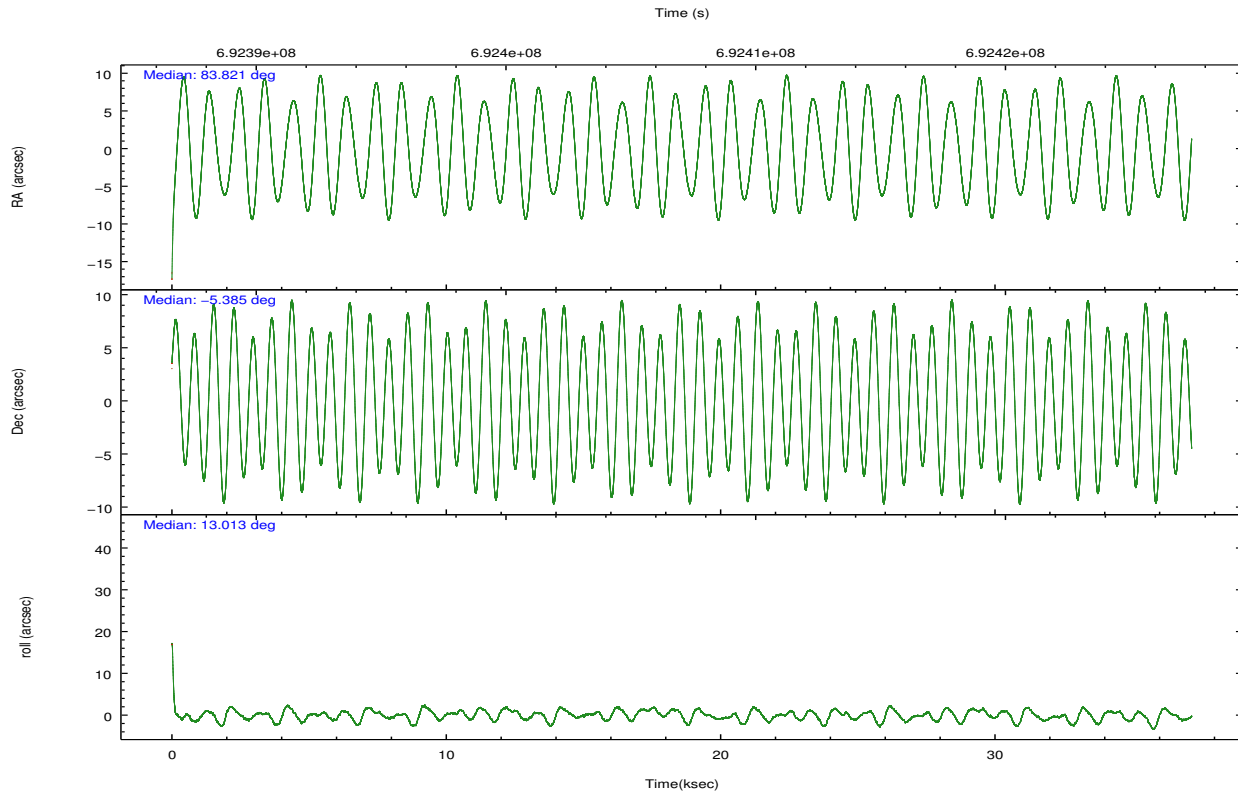
	ccd 5	ccd 6	ccd 7	ccd 8
grade 0 events	69930	34910	27469	39829
	12%	10%	6%	10%
grade 1 events	1178	282	845	377
	0%	0%	0%	0%
grade 2 events	82737	12942	51855	25832
	15%	3%	11%	6%
grade 3 events	8018	3957	19617	10643
	1%	1%	4%	2%
grade 4 events	6619	4031	19603	10169
	1%	1%	4%	2%
grade 5 events	32453	12856	37752	20112
	5%	3%	8%	5%
grade 6 events	121657	9486	110424	27230
	22%	2%	24%	7%
grade 7 events	222722	246465	175802	250677
	40%	75%	39%	65%

2.2 Compared Parameters

Parameter	Planned	Actual	Parameter	Planned	Actual
Instrument	ACIS	ACIS	Obspar format version number	7	7
Detector	ACIS-5678	ACIS-5678	Obspar file type	PREDICTED	ACTUAL
Grating	HETG	HETG	Obspar update status	NONE	UPDATED
Data mode	FAINT	FAINT	CCD I0 on	N	N
Observation mode	POINTING	POINTING	CCD I1 on	N	N
[deg] Pointing RA	83.800820	83.82070670414919	CCD I2 on	N	N
[deg] Pointing Dec	-5.404069	-5.385066874817189	CCD I3 on	N	N
[deg] Pointing Roll	12.867506	13.02601322654971	CCD S0 on	O1	N
[mm] SIM focus pos	-0.684267	-0.6828225247311905	CCD S1 on	Y	Y
[mm] SIM defocus	0	0.001444936568705701	CCD S2 on	Y	Y
[mm] SIM translation stage pos	-190.132523	-190.1425803651734	CCD S3 on	Y	Y
[mm] SIM translation stage offset	0	0.01005778216563158	CCD S4 on	Y	Y
[s] Observation start time (MET)	692388626.184000	692387468.48209	CCD S5 on	O2	N
Observation start date	2019-12-10T18:09:17	2019-12-10T17:51:08	Number of optional ACIS chips dropped	2	2
[s] Observation end time (MET)	692425626.184000	692426540.45945	On-chip summing requested	N	N
Observation end date	2019-12-11T04:25:57	2019-12-11T04:42:20	Subarray requested	NONE	NONE
Read mode	TIMED	TIMED	Alternating exposures requested	N	N
			[s] Primary exposure time	0.000000	3.1

2.3 Aspect





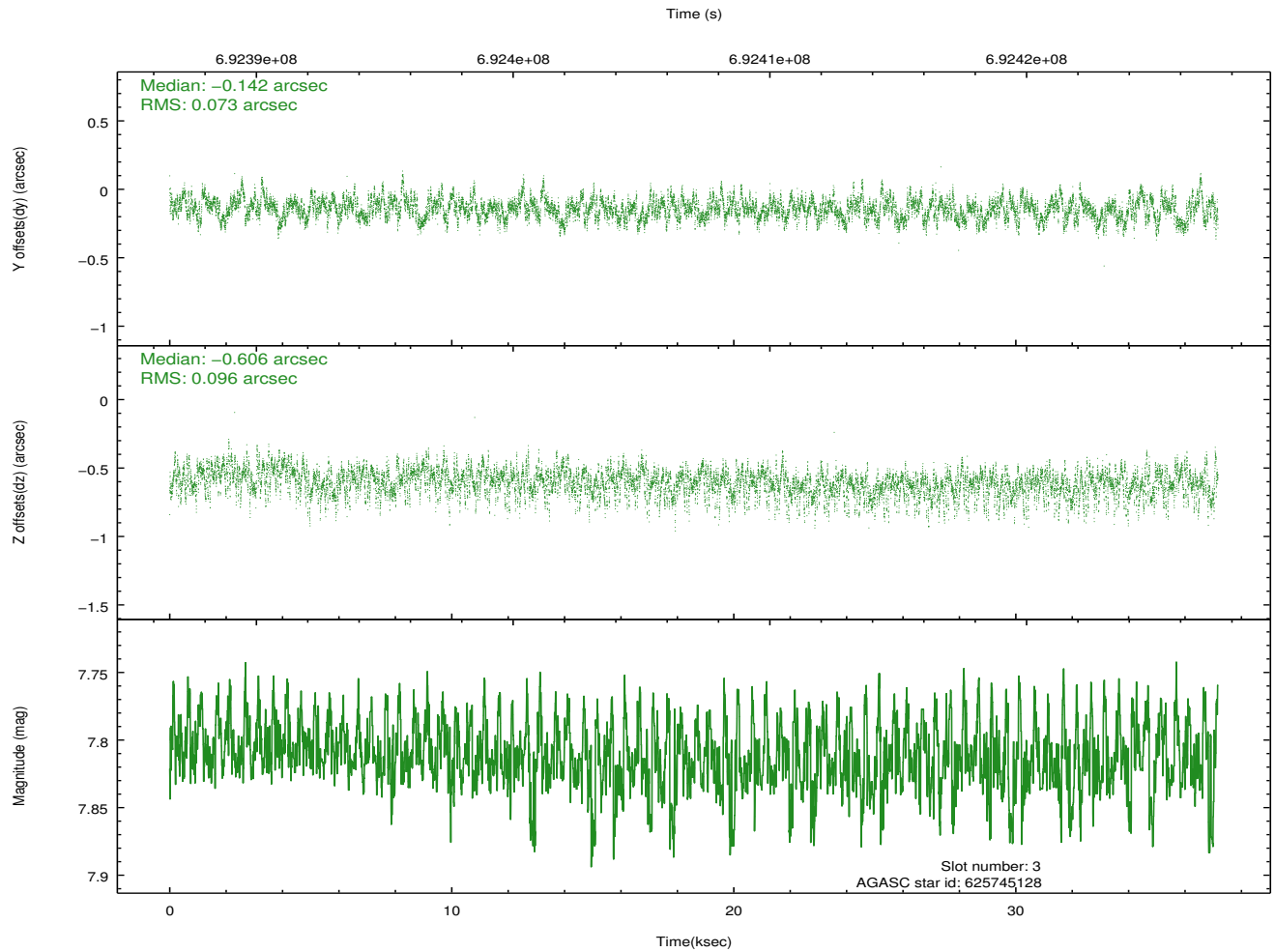
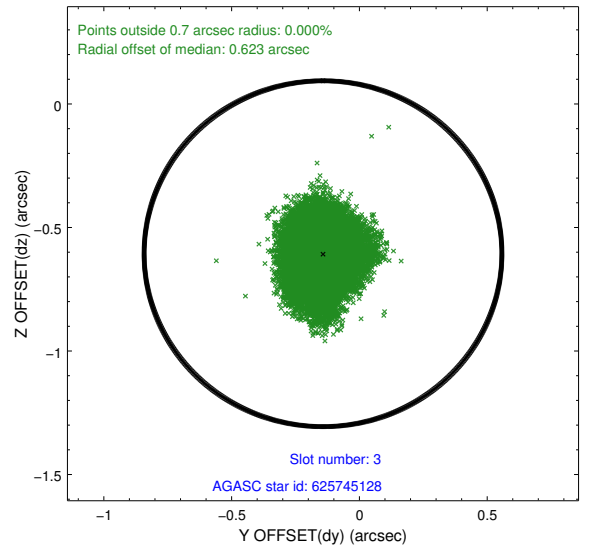
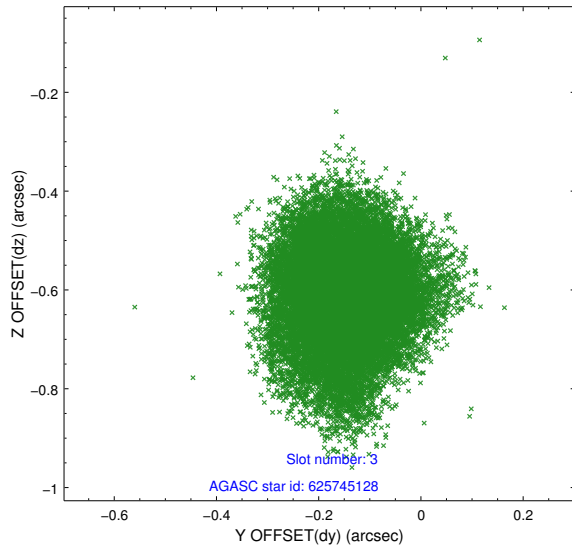
Slot Statistics

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	9065	1.000	-0.317	-0.264	0.038	0.047	0.000000	0.000000	-771.14	-1743
1	FID		ACIS-S-4	7.20	9066	1.000	0.801	0.224	0.044	0.063	0.000000	0.000000	2143.18	165
2	FID		ACIS-S-5	7.15	9065	1.000	-0.510	0.045	0.017	0.034	0.000000	0.000000	-1824.19	159
3	GUIDE	used	625745128	7.81	18124	1.000	-0.142	-0.606	0.130	0.206	83.769930	-4.731835	430.60	2383
4	GUIDE	used	625745136	7.20	18128	1.000	-0.037	-0.364	0.121	0.196	83.600341	-4.804339	-220.22	2264
5	GUIDE	used	626272760	6.63	18129	1.000	-0.092	-0.047	0.148	0.274	84.363987	-5.938389	1538.18	-2324
6	GUIDE	used	626272880	7.65	18126	1.000	0.099	0.557	0.125	0.210	83.815609	-6.032748	-451.36	-2217
7	GUIDE	used	626272976	7.96	18123	1.000	0.179	0.490	0.131	0.203	83.795875	-5.926912	-435.50	-1830

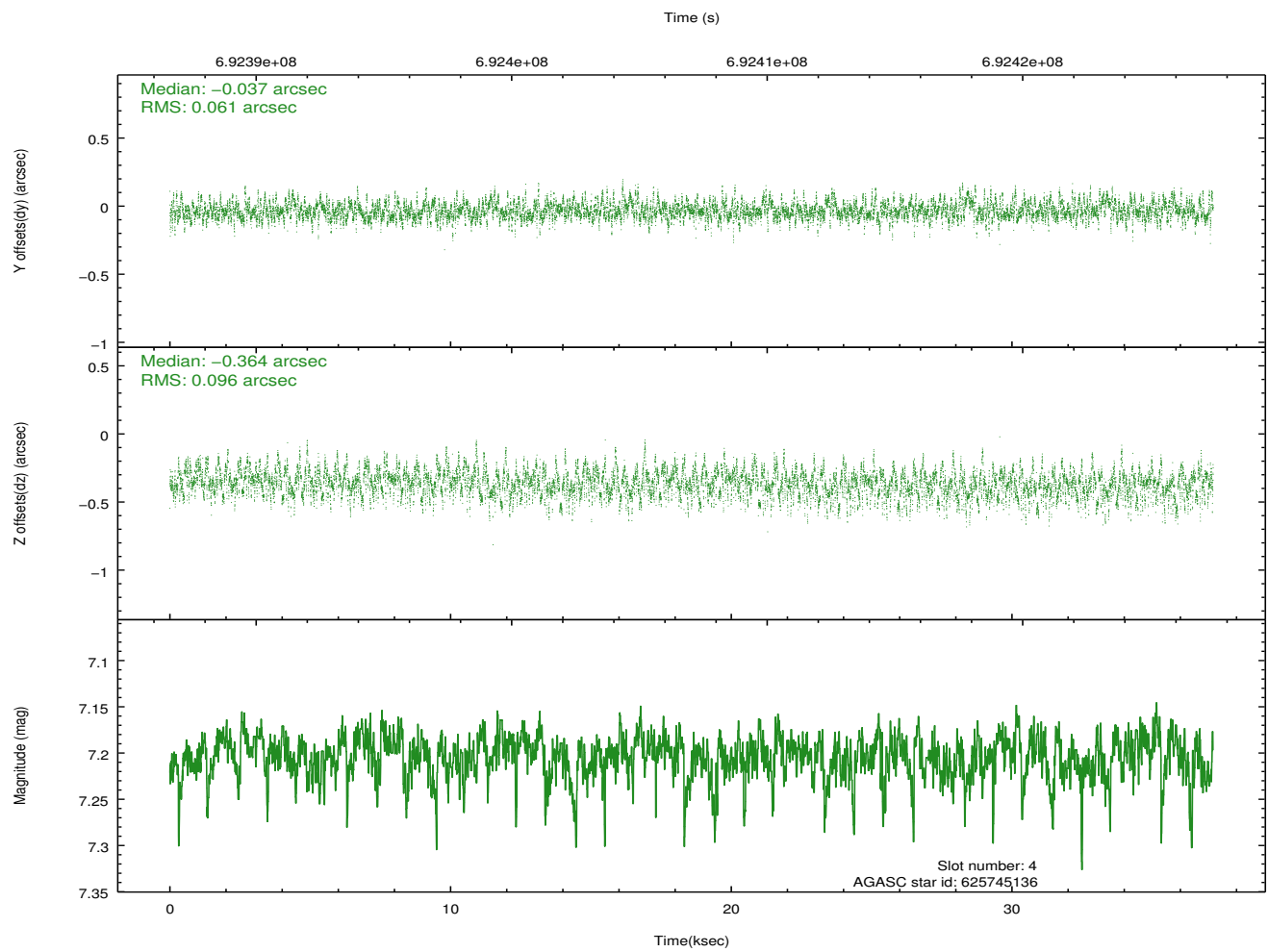
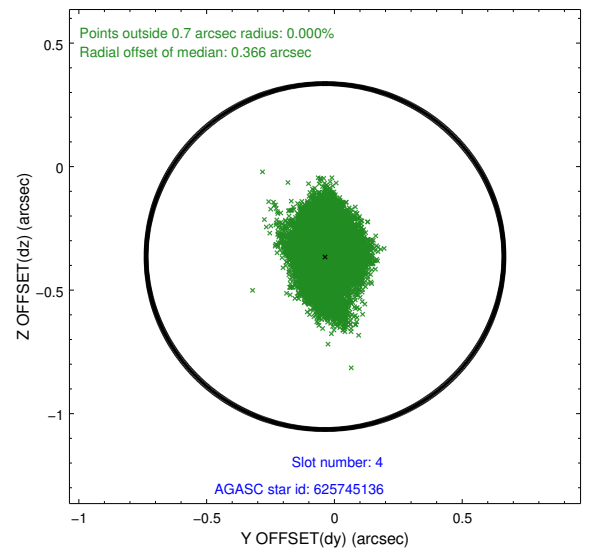
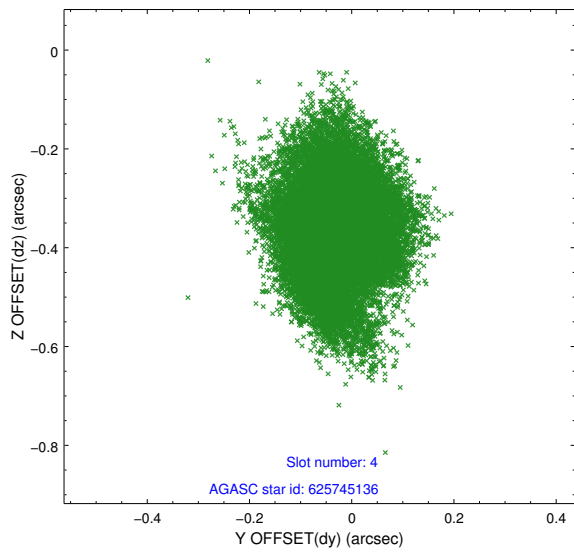
∞

2.4 Star Slots

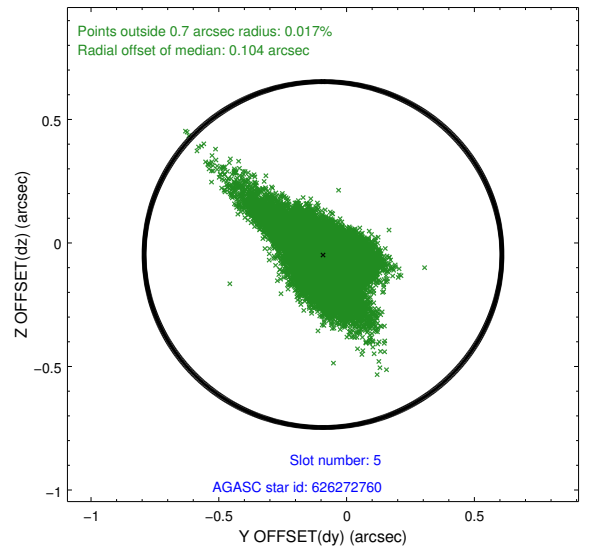
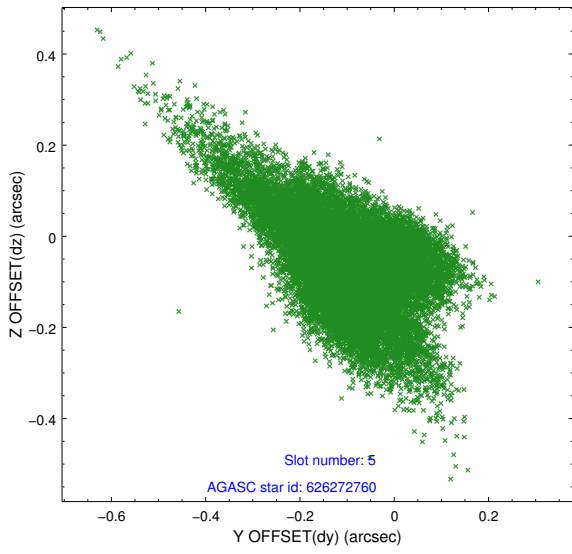
2.4.1 Slot 3



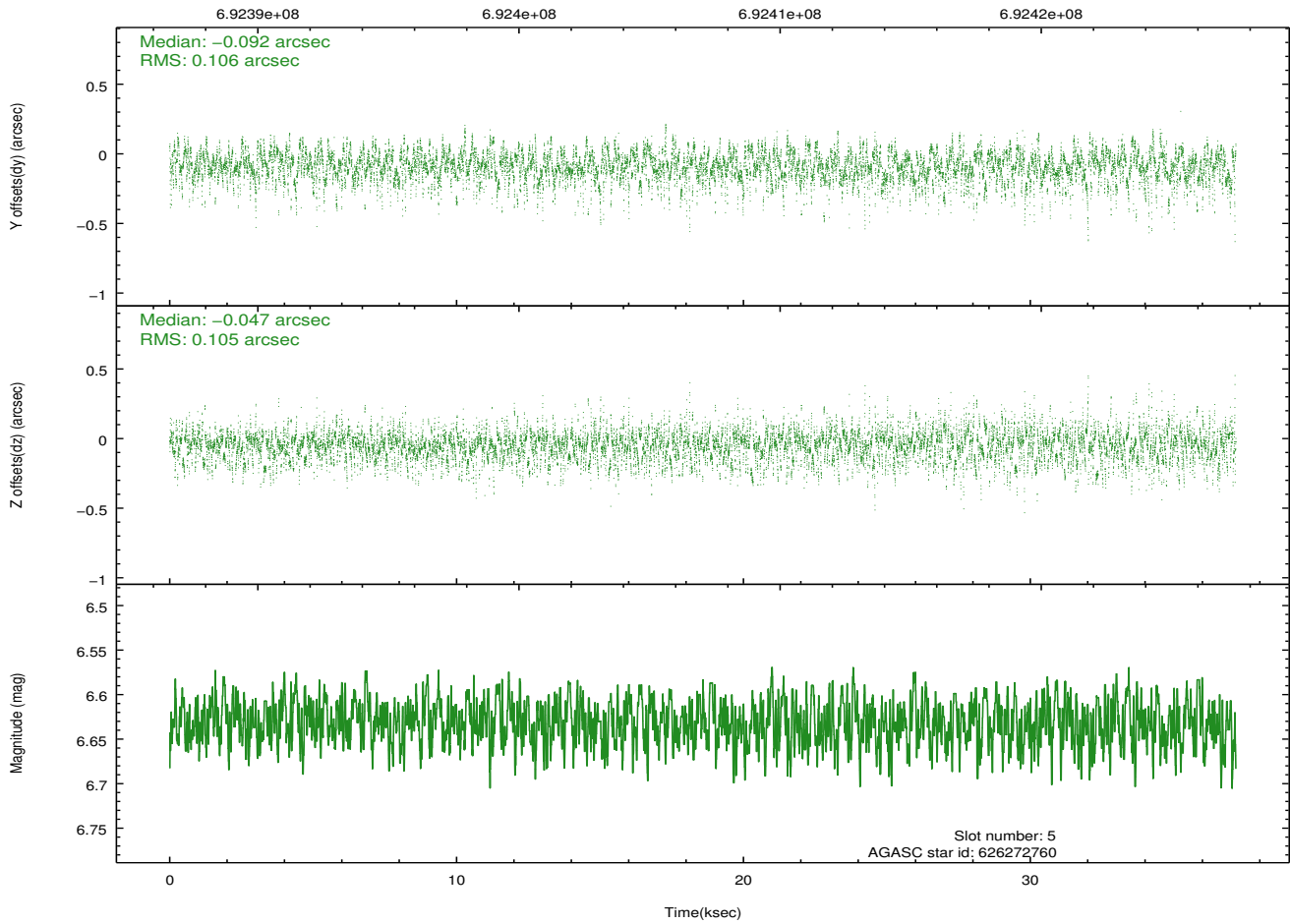
2.4.2 Slot 4



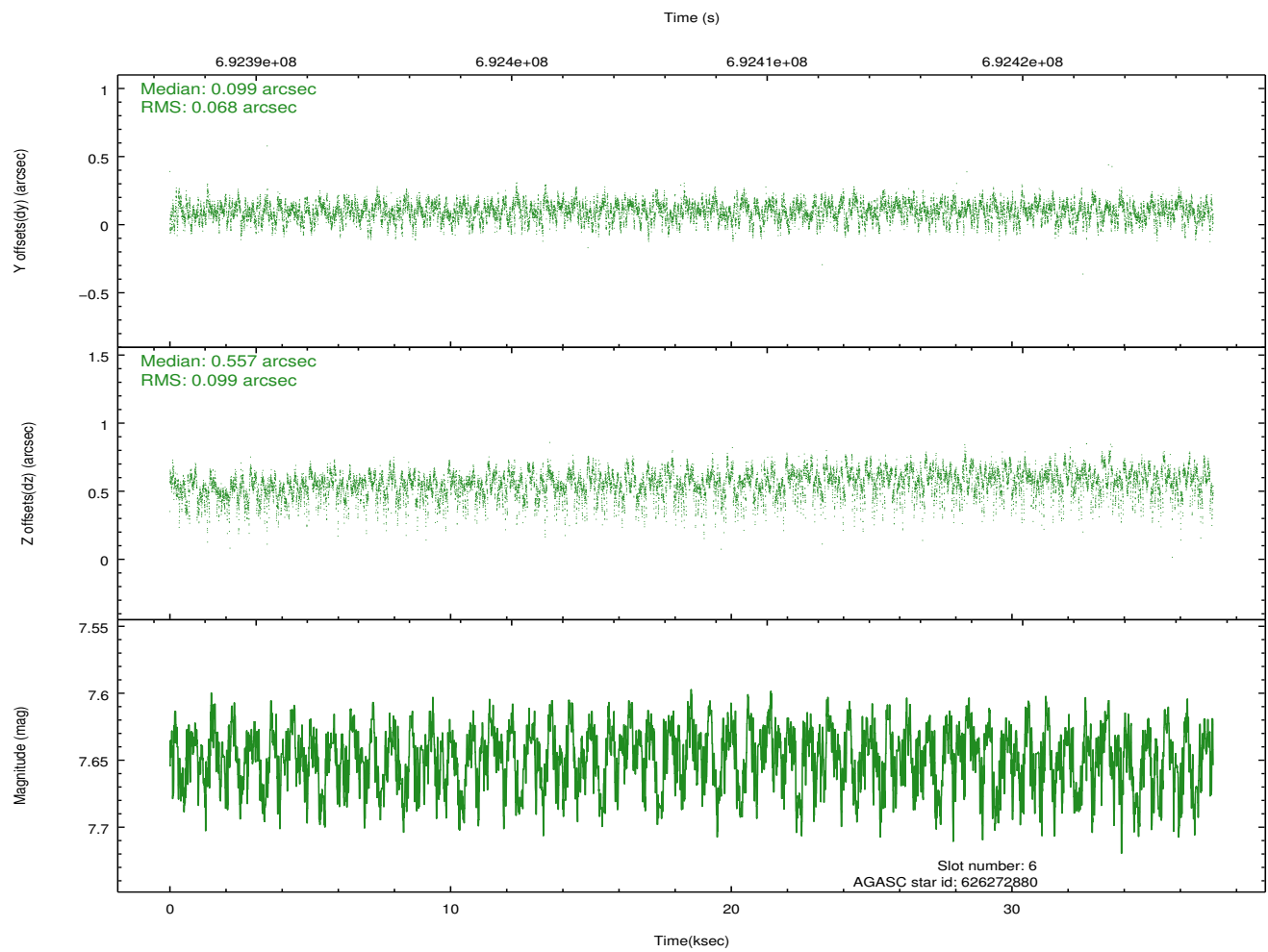
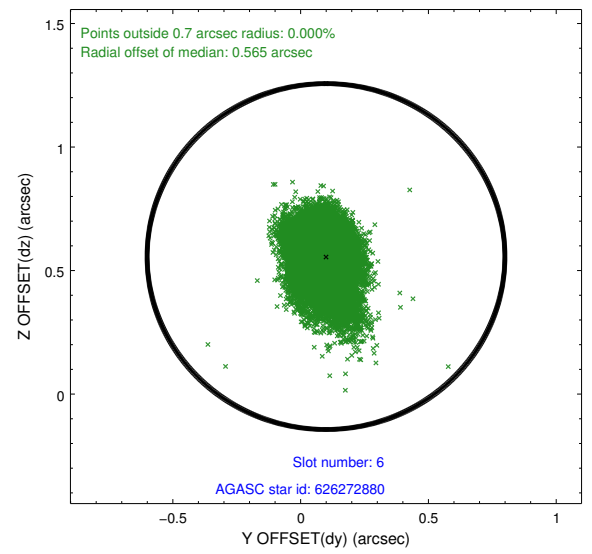
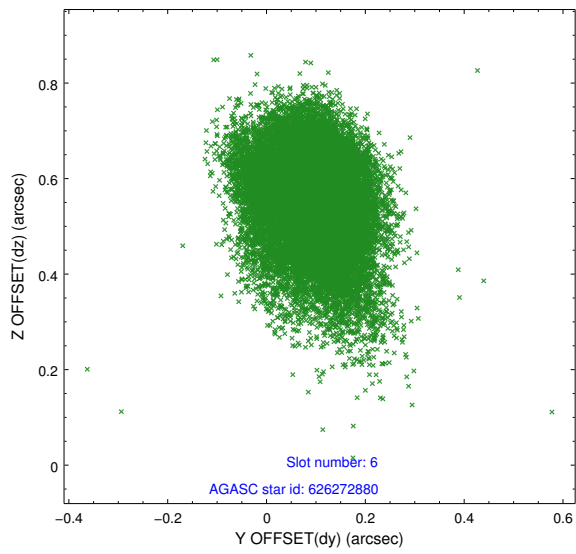
2.4.3 Slot 5



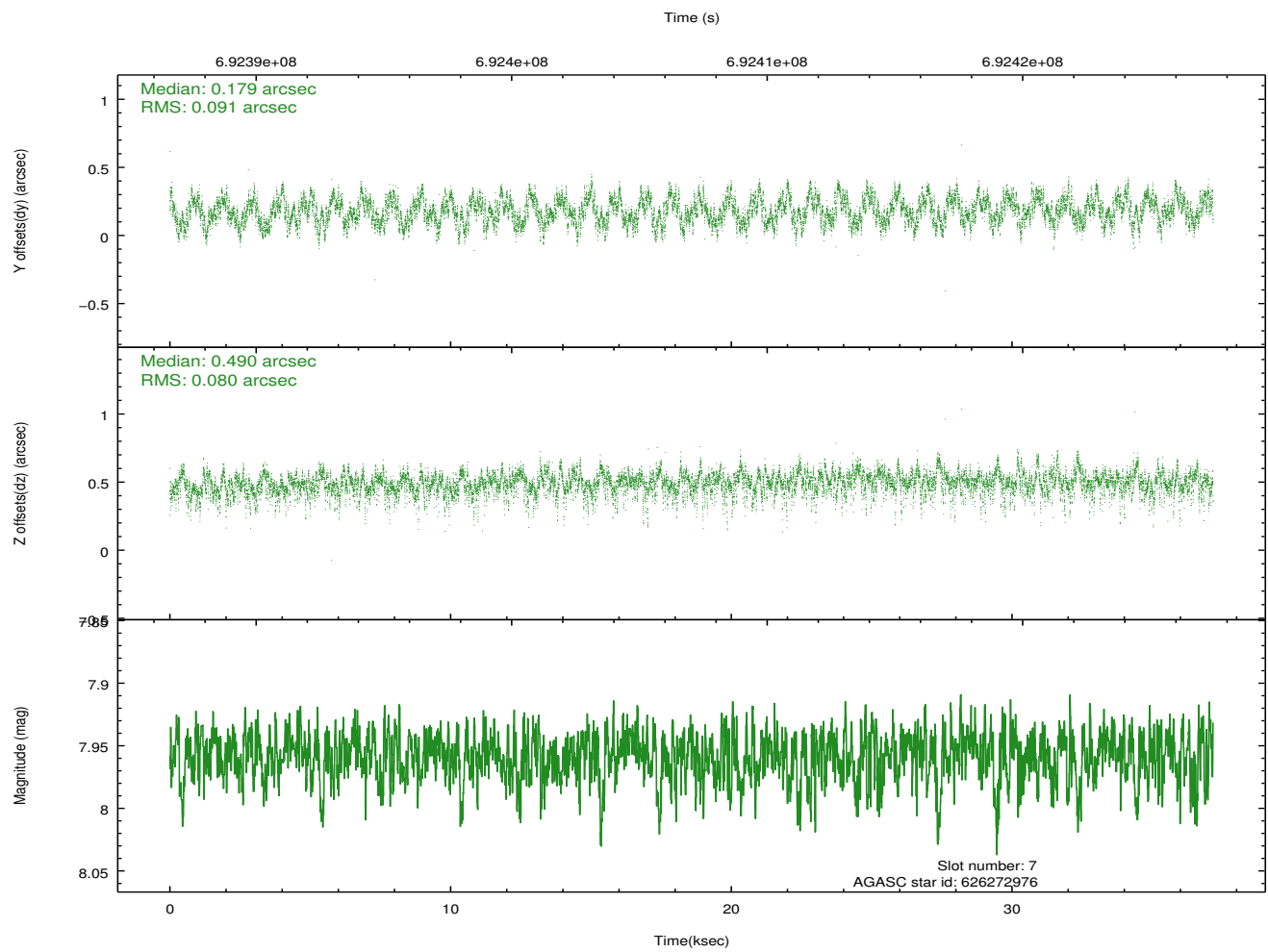
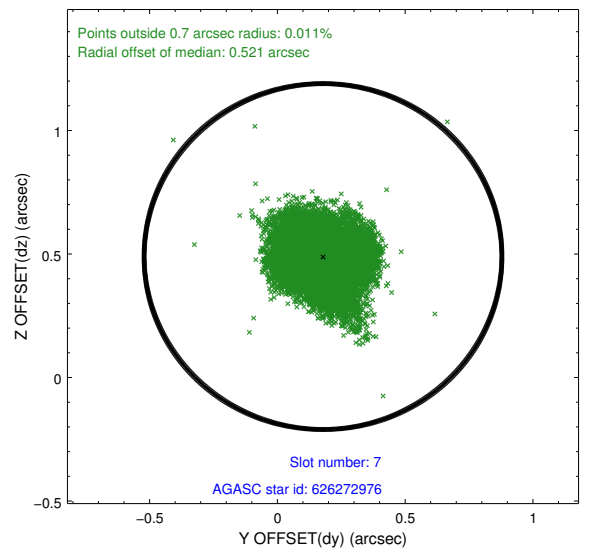
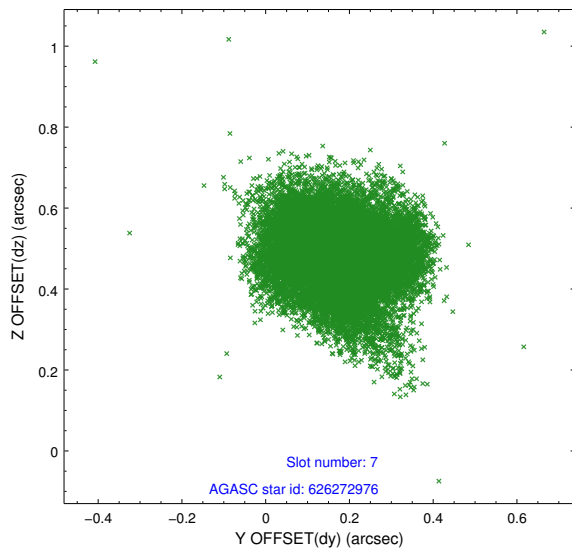
Time (s)



2.4.4 Slot 6

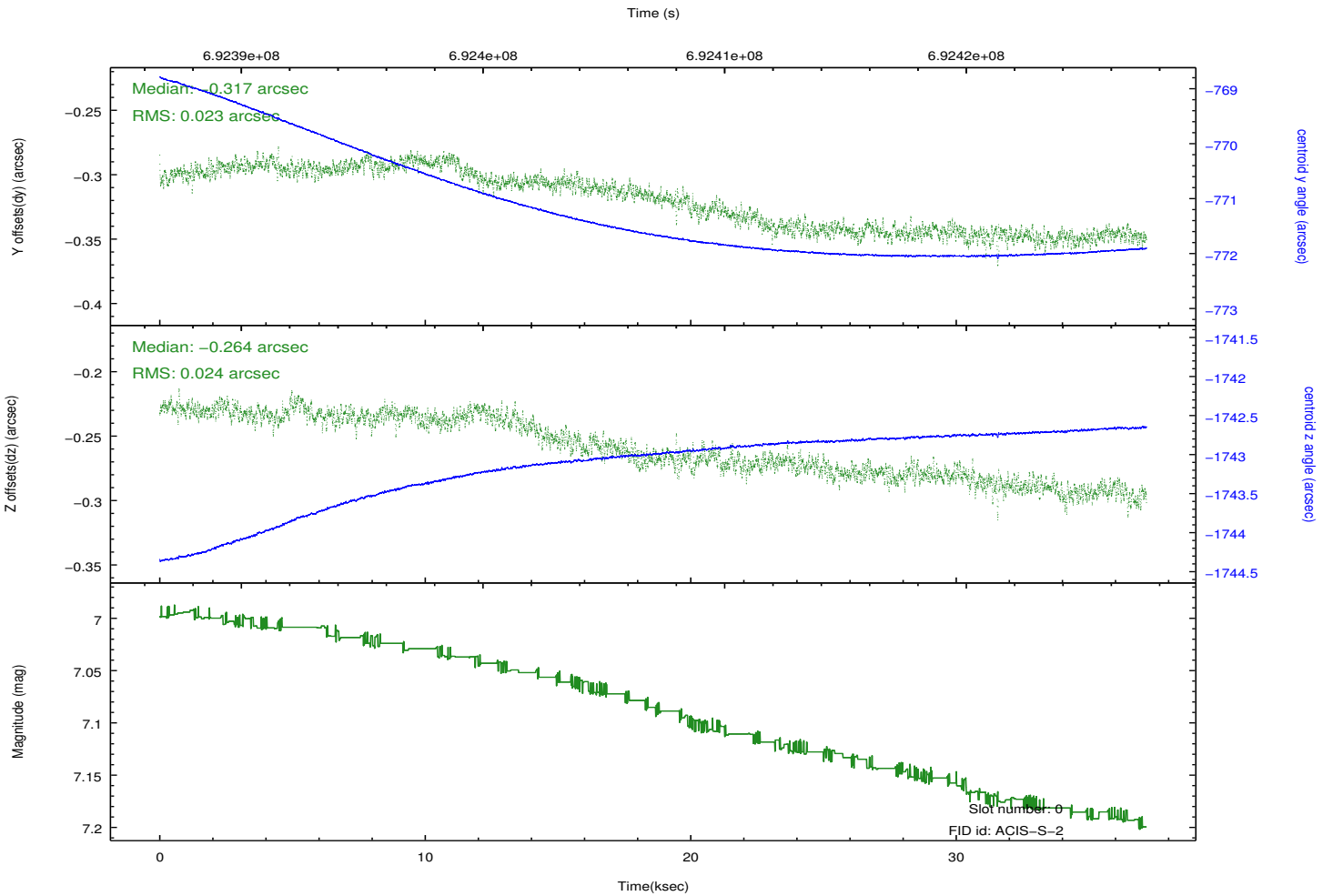
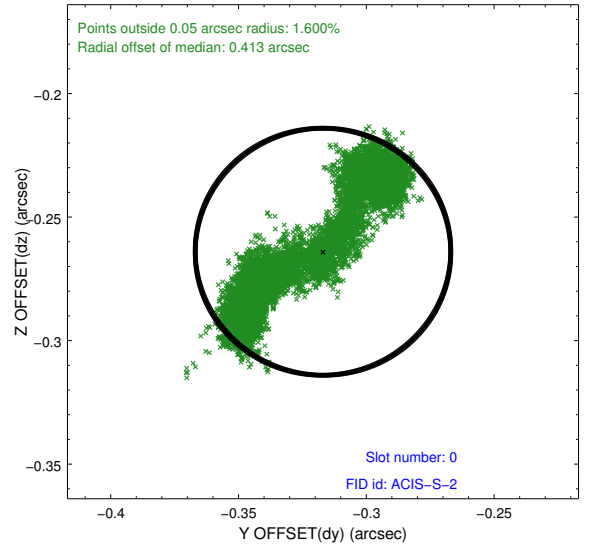
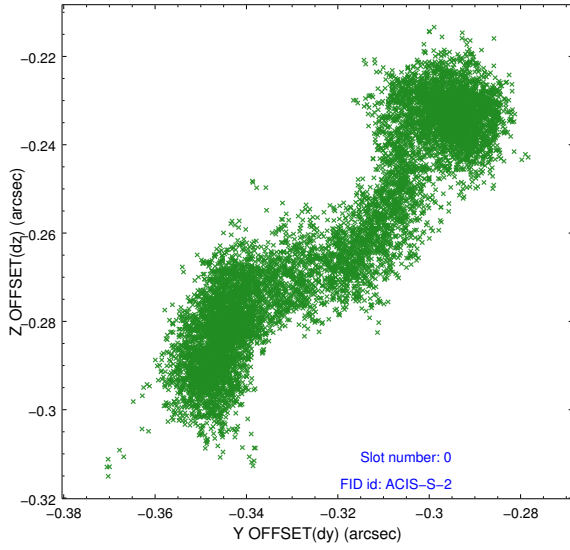


2.4.5 Slot 7

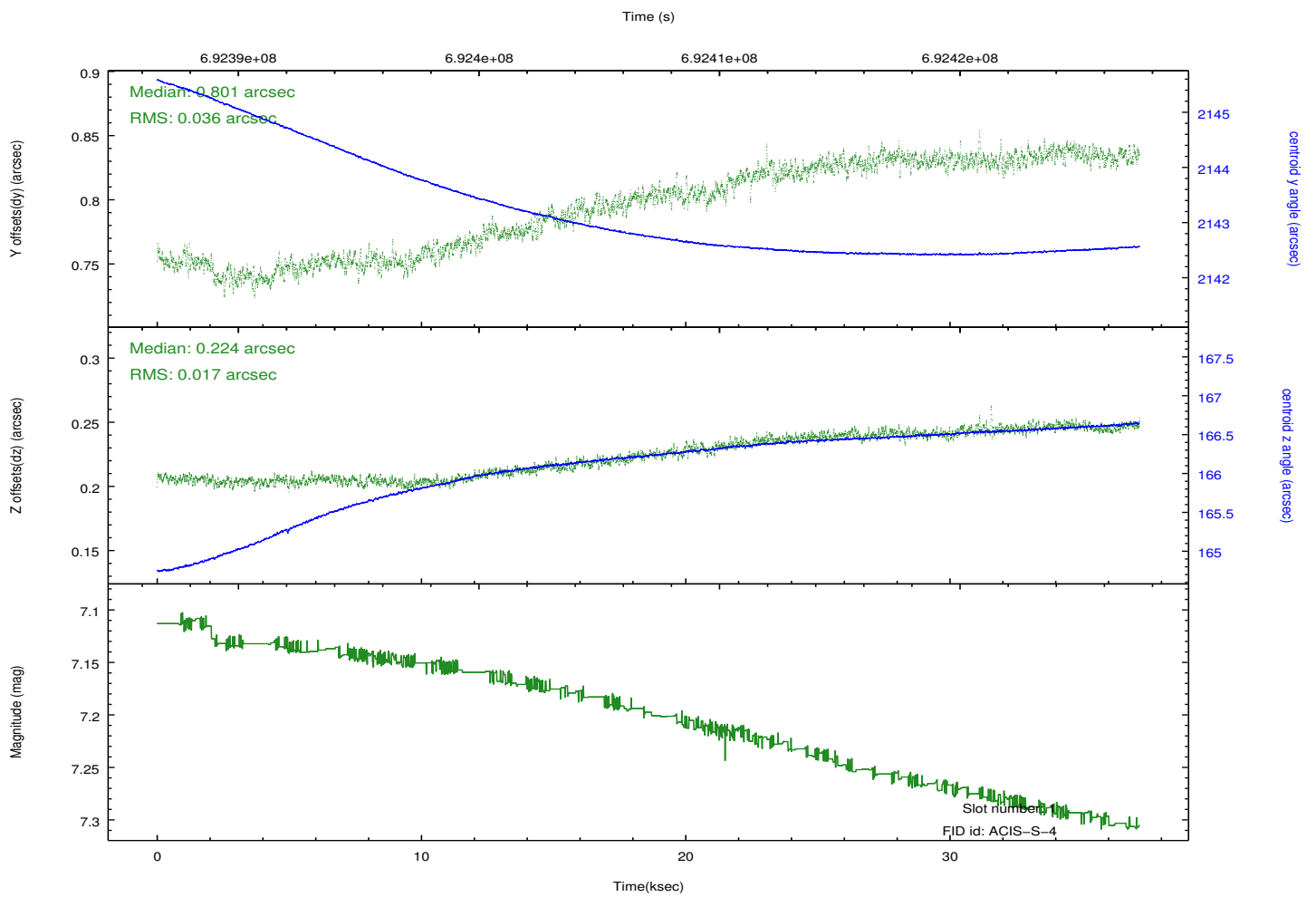
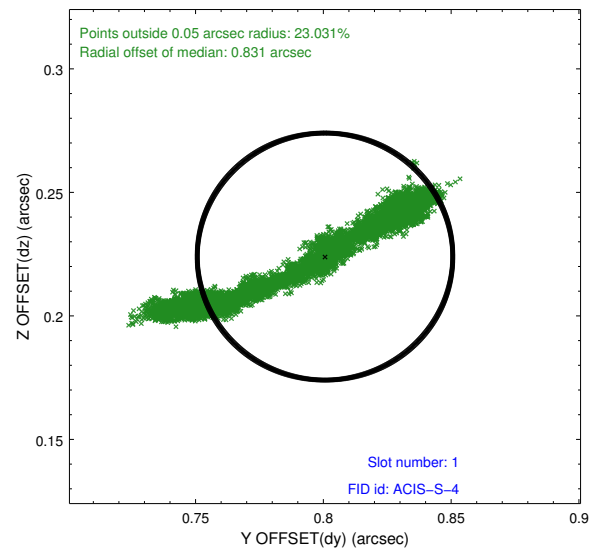
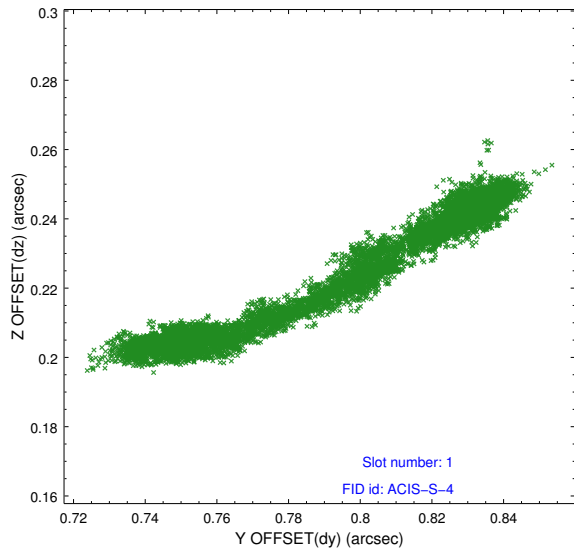


2.5 FID Slots

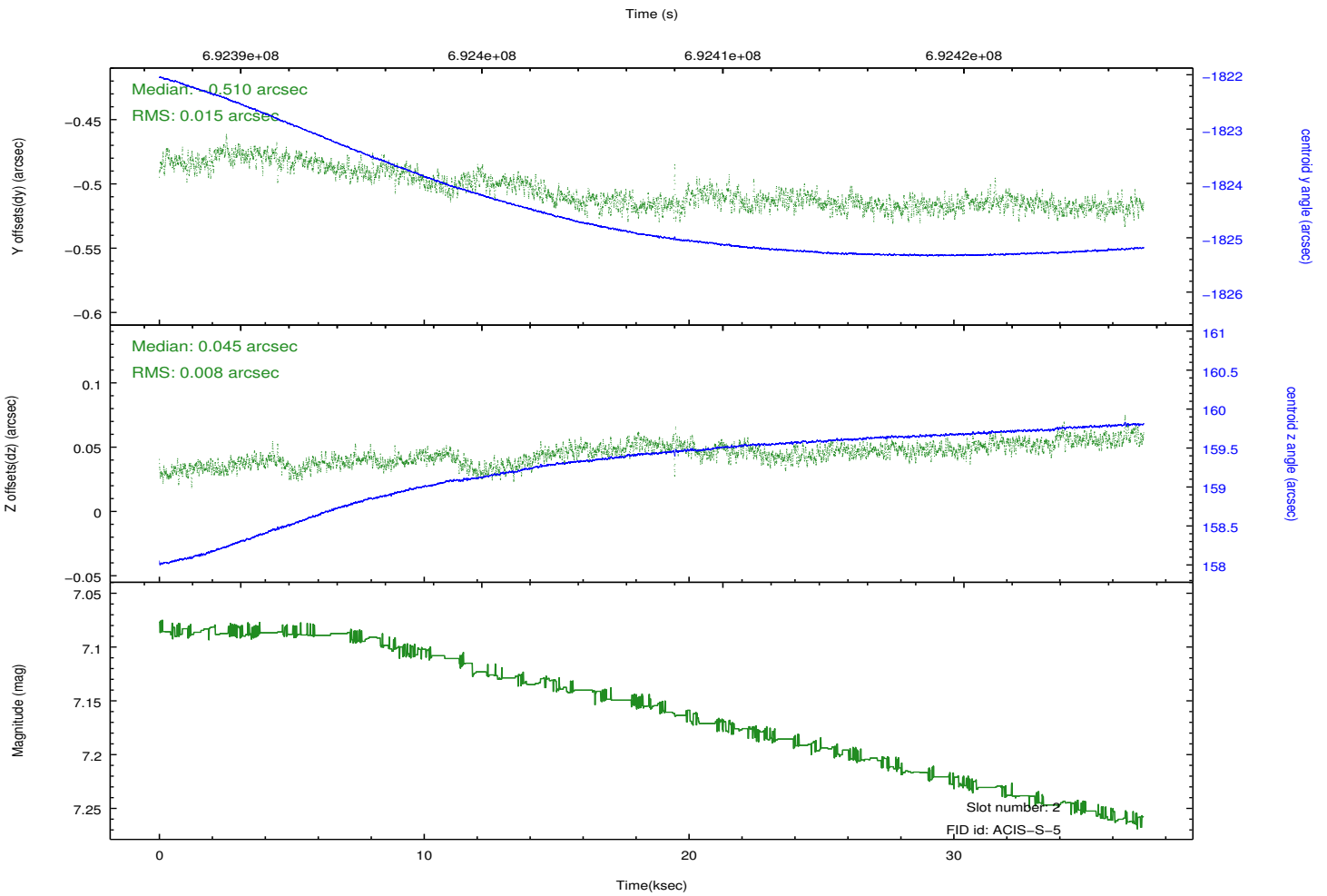
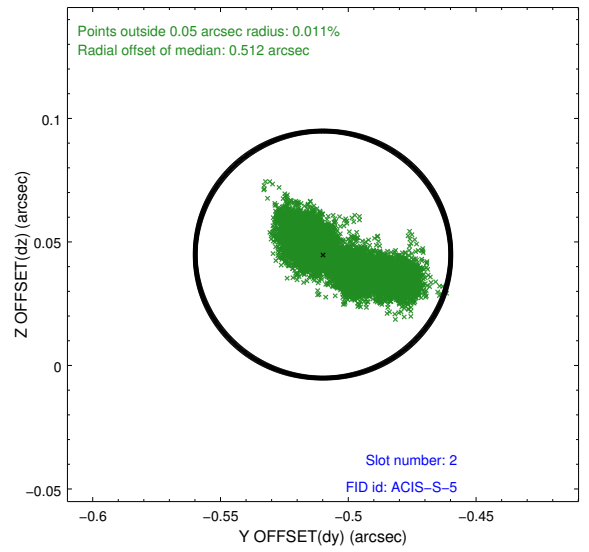
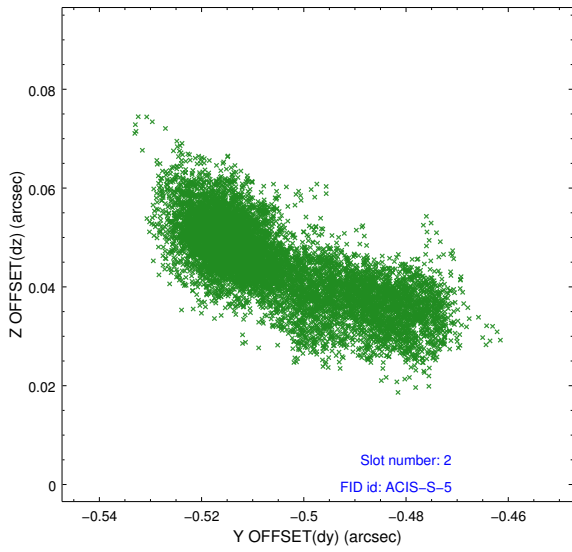
2.5.1 Slot 0



2.5.2 Slot 1

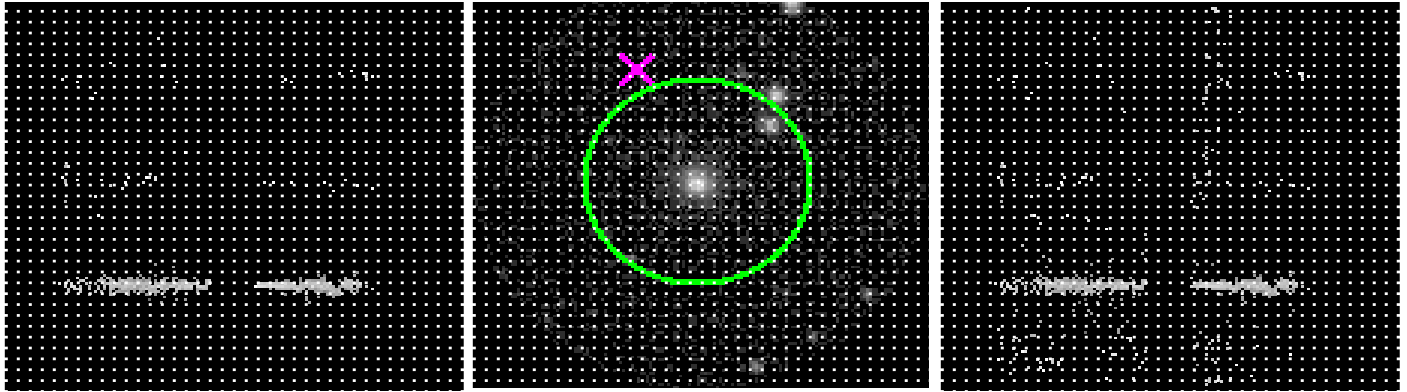


2.5.3 Slot 2



3 Gratings

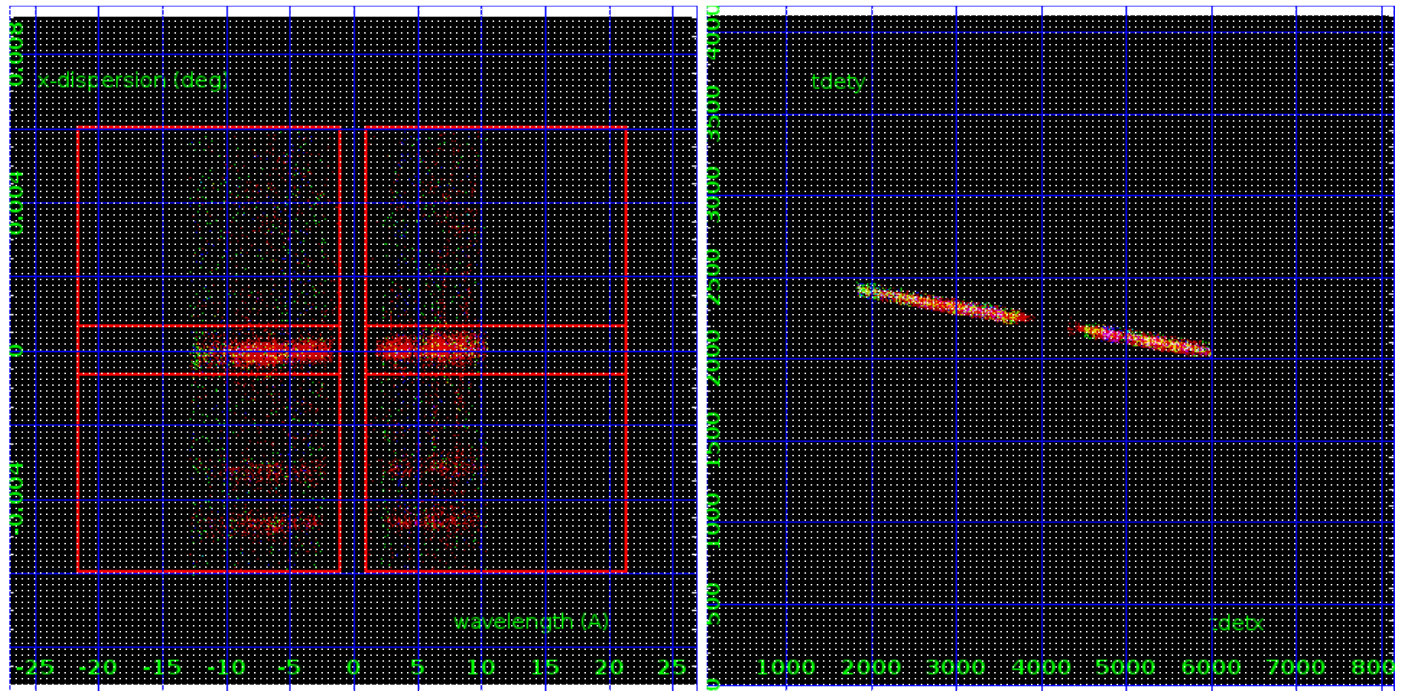
3.1 HEG Arm



HEG Order Sort 123

HEG Zero Order

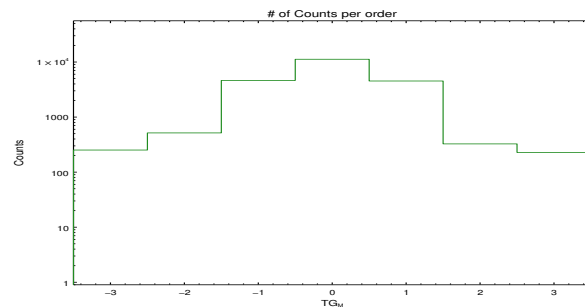
HEG Order Sort ALL

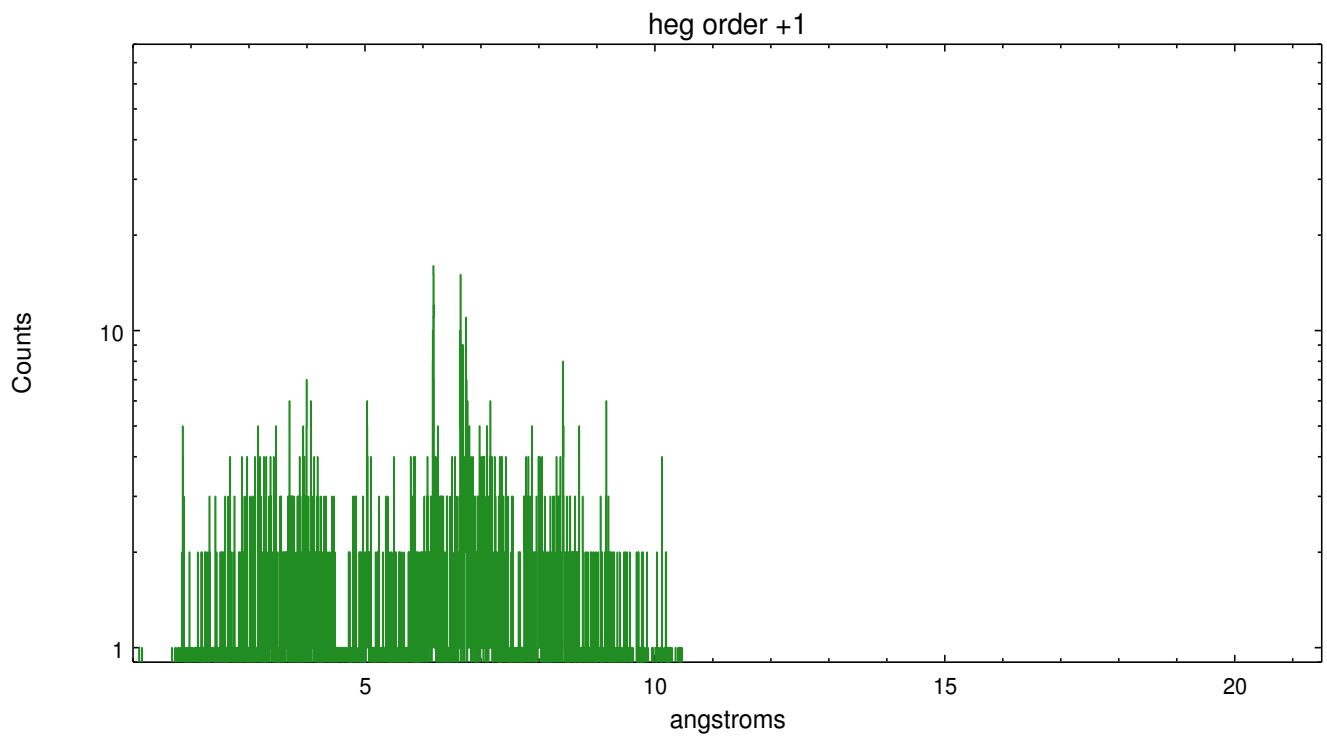
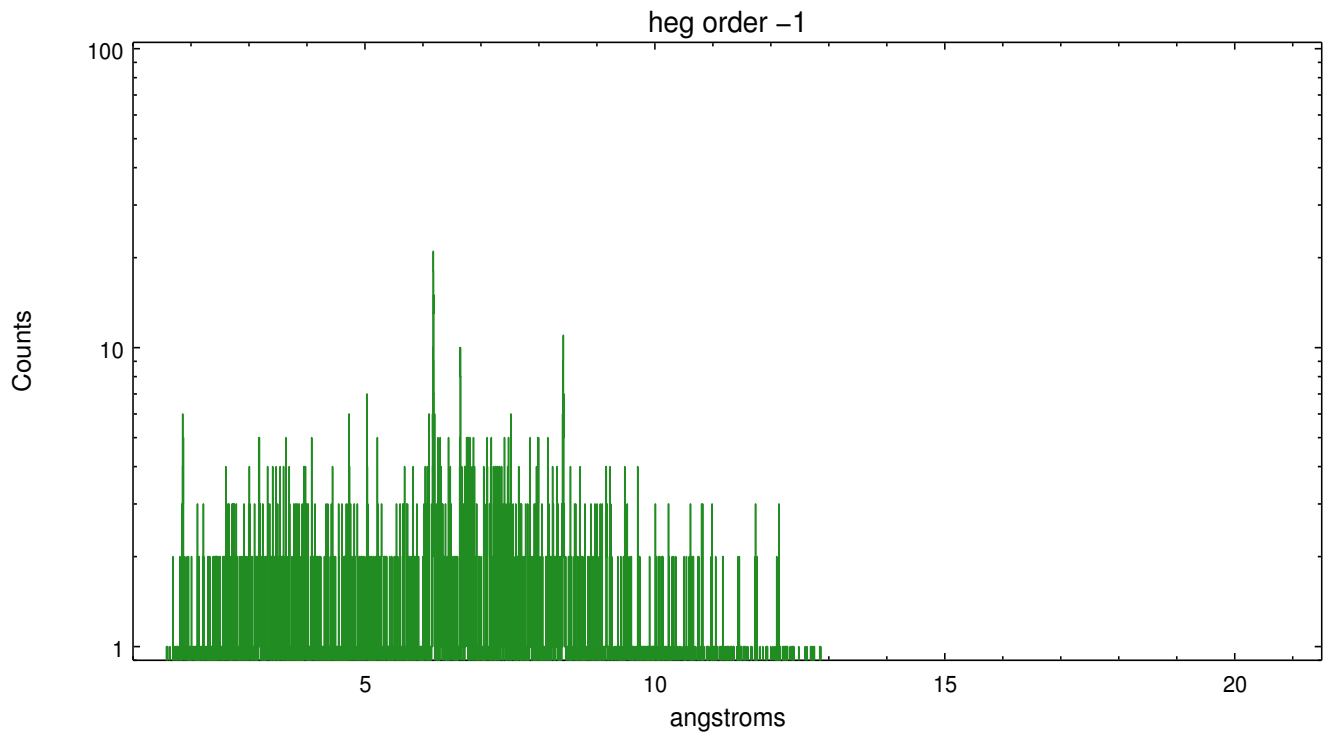


Spot Image HEG

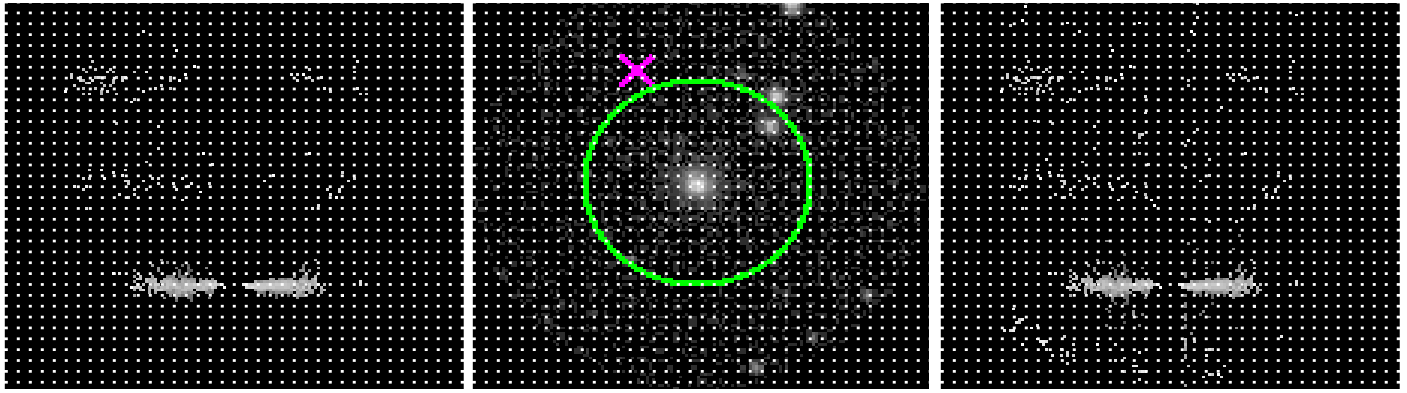
Full Detector HEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	252	516	4635	11219	4522	326	228





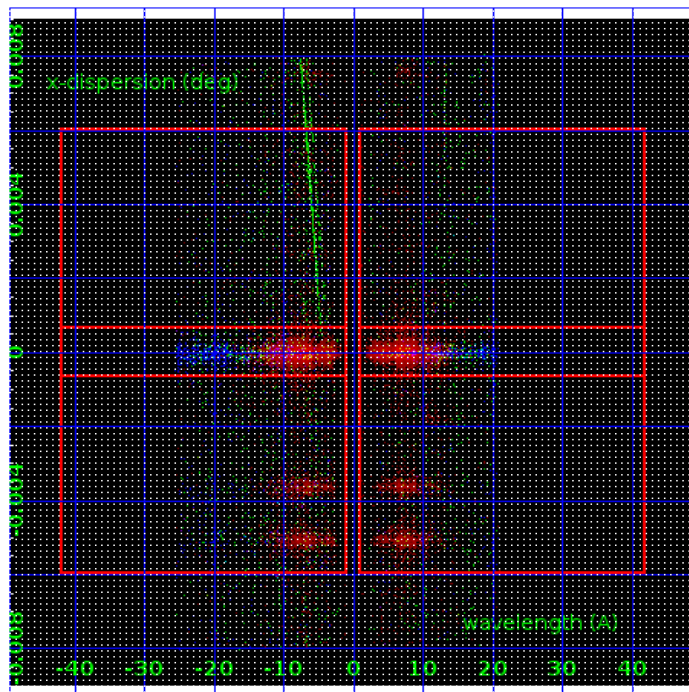
3.2 MEG Arm



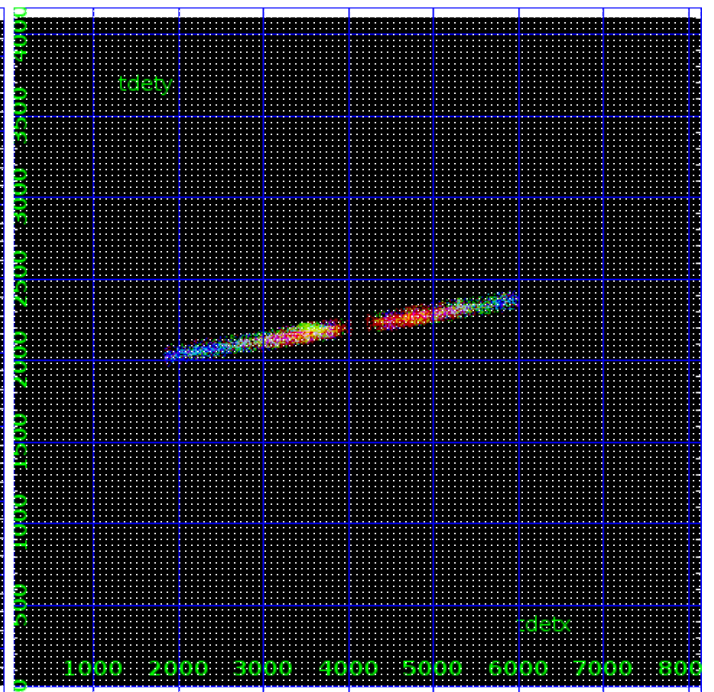
MEG Order Sort 123

MEG Zero Order

MEG Order Sort ALL

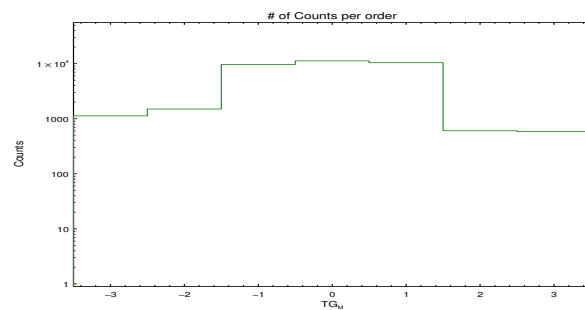


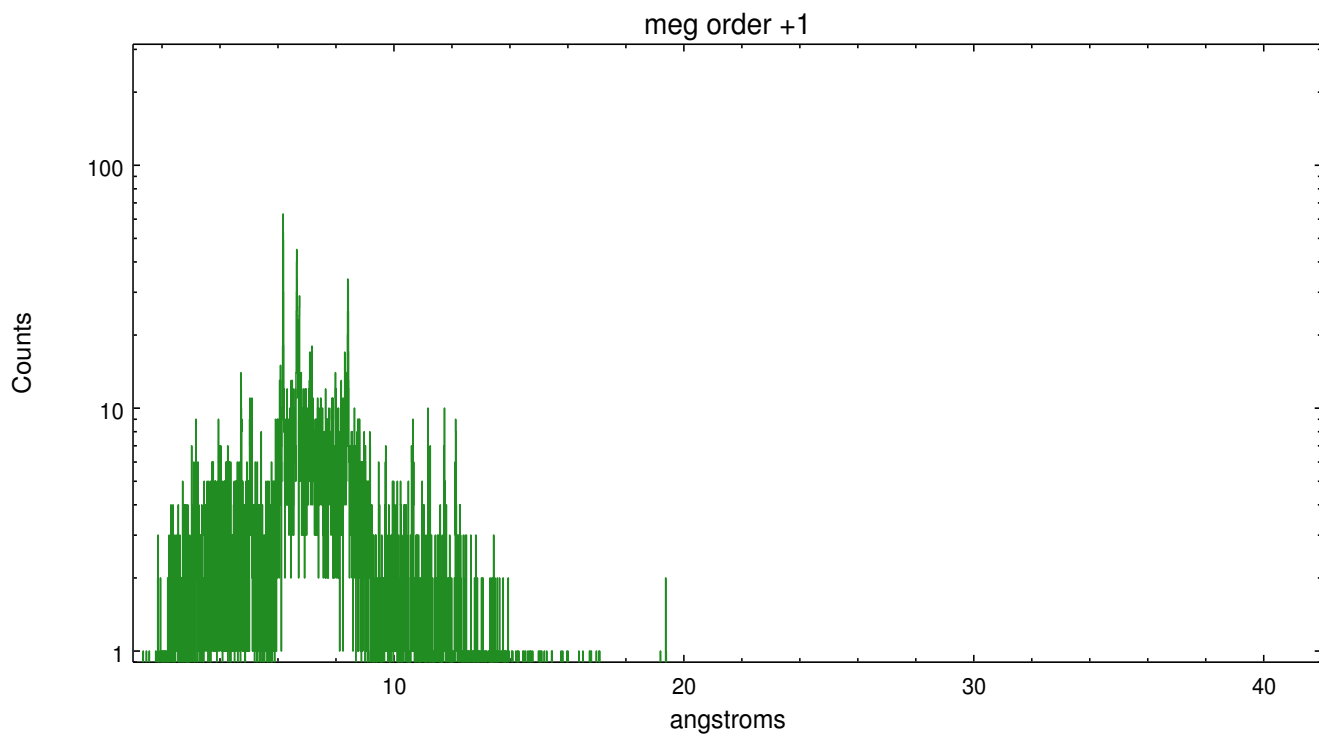
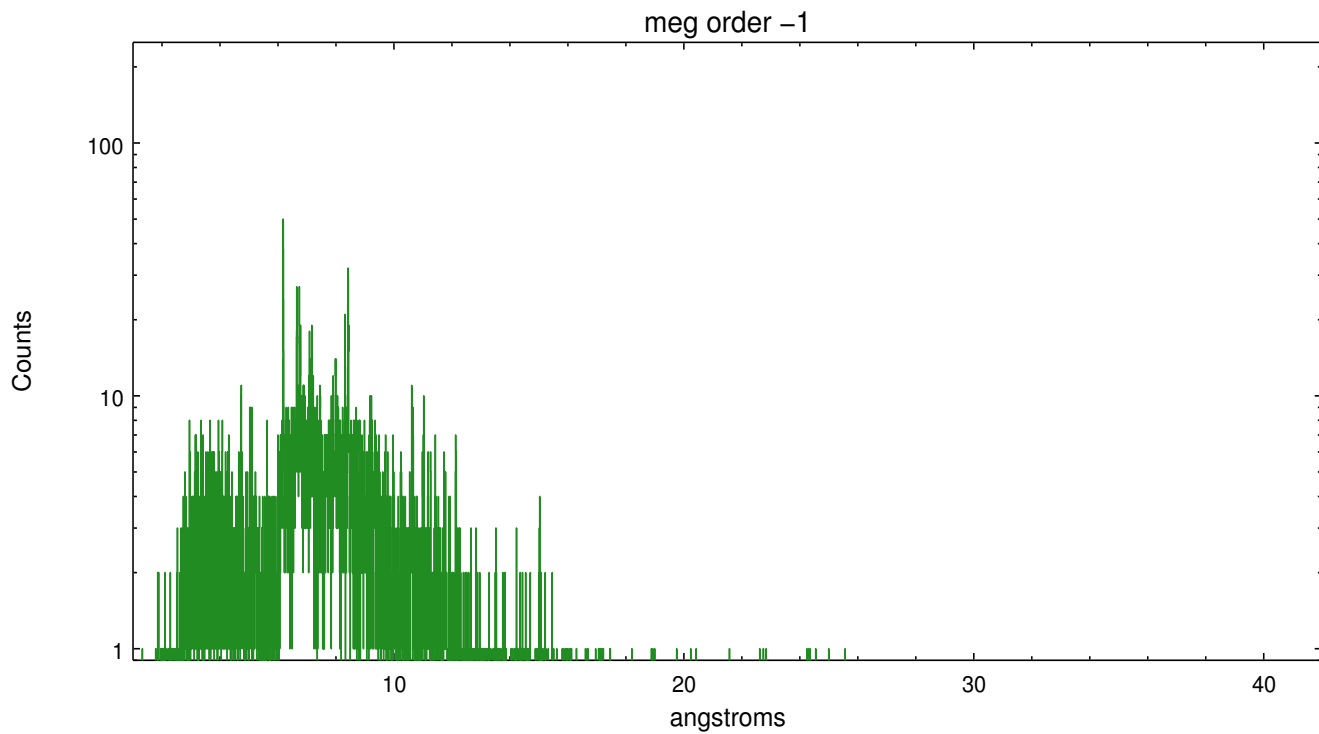
Spot Image MEG



Full Detector MEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	1127	1500	9648	11219	10423	605	584





A Summary

A.1 Status

V&V Scientist	Melania Nynka
V&V Date (YYYY-MM-DD)	2020.01.01
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	37.062164345741

A.2 Comments

To compensate for a few bad pixels not marked as bad that were not removed in the Level 2 processing, a custom bad pixel file with additional bad pixels at (chipx, chipy) = (232:234,322:339) in S1 was added in this processing. As a result, the user will NOT find a relatively bright square of pixels on the S1 chip for level 2 data caused by the application of the dither algorithm to the bad pixels in question, as opposed to previous processing(s).