

V&V Reference Report

L2 ASCDS Version : 10.6

Observation 20799 - L2 Version 1
Chandra X-Ray Center

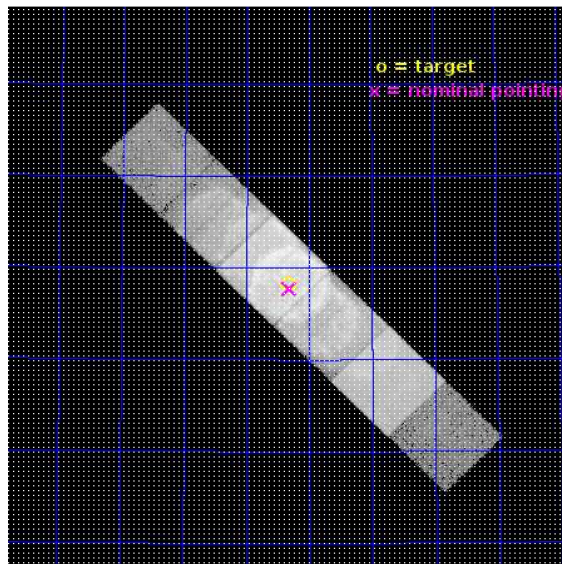
L2 Processing Date : Nov 19 2017

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

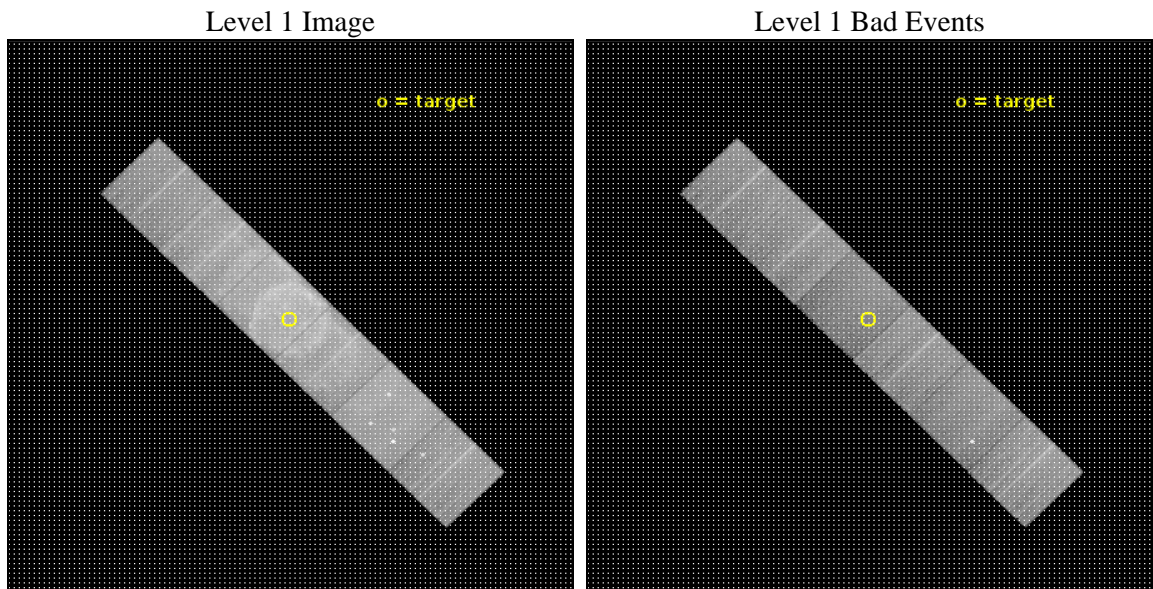
seq_num	502941	Sequence number
obs_id	20799	Observation id
title	Ejecta Kinematics Study of Tycho's SNR With Chandra HETGS	Proposa
observer	SANGWOOK PARK	Principal investigator
object	Tycho's Supernova Remnant	Source name
dtycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	6.329167	Observer's specified target RA [deg]
dec_targ	64.136111	Observer's specified target Dec [deg]
ra_nom	6.3290474968497	Nominal RA [deg]
dec_nom	64.129071601843	Nominal Dec [deg]
roll_nom	225.15672779778	Nominal Roll [deg]
revision	1	Processing version of data
ontime	22453.013459325	Sum of GTIs [s]
livetime	22168.699883321	Livetime [s]
ontime4	22449.813519001	Sum of GTIs [s]
ontime5	22452.972419262	Sum of GTIs [s]
ontime6	22449.690498233	Sum of GTIs [s]
ontime7	22453.013459325	Sum of GTIs [s]
ontime8	22452.890339255	Sum of GTIs [s]
ontime9	22452.849299312	Sum of GTIs [s]
l2events	740827	Number of level 2 events



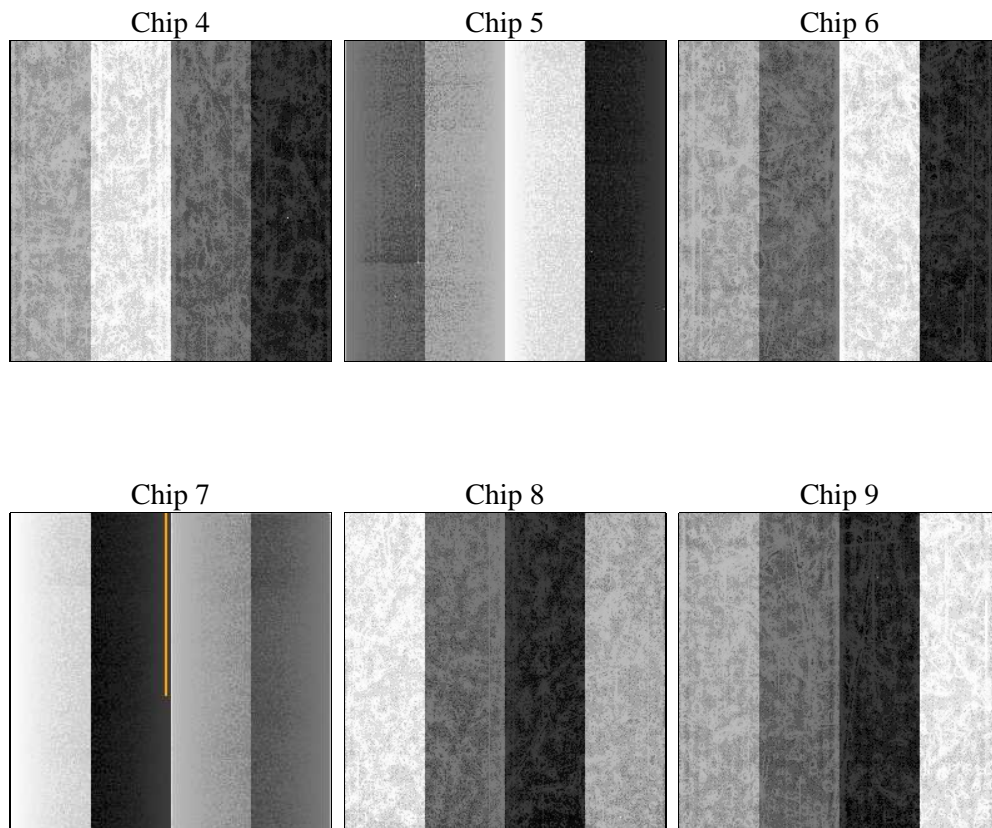
2 OBI

2.1 OBI

2.1.1 Images



2.1.2 Bias



2.1.3 Parameters

obi_num	0	Obi number	sched_exp_time	22500.000000	[s] Scheduled observation exposure time
ascdsver	10.6	Processing system revision	ontime	22453.013459325	Sum of GTIs [s]
caldbver	4.7.6	 	ontime4	22449.813519001	Sum of GTIs [s]
date	2017-11-18T04:52:06	Date and time of file creation	ontime5	22452.972419262	Sum of GTIs [s]
revision	1	Processing version of data	ontime6	22449.690498233	Sum of GTIs [s]
			ontime7	22453.013459325	Sum of GTIs [s]
			ontime8	22452.890339255	Sum of GTIs [s]
			ontime9	22452.849299312	Sum of GTIs [s]
			l1events	1565369	Number of level 1 events
			tgmethod	USER	Method used to create src1a file
			z0_pos	(4006.20, 4148.00)	grade 0 sky pixel position

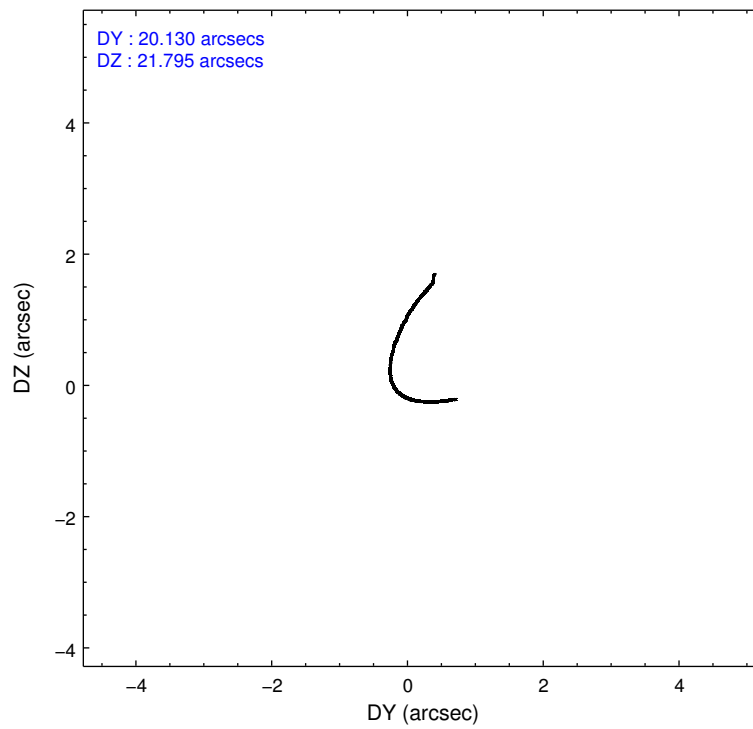
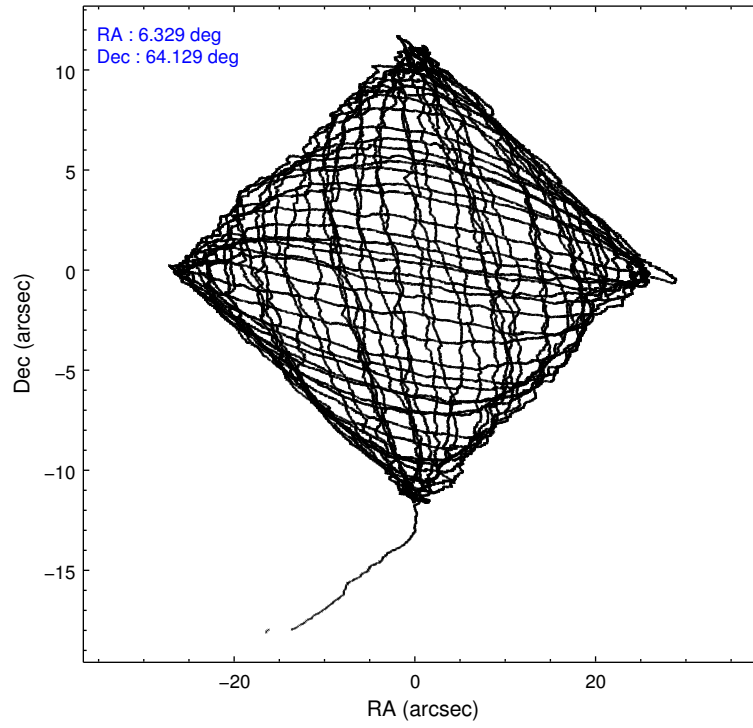
2.1.4 Events

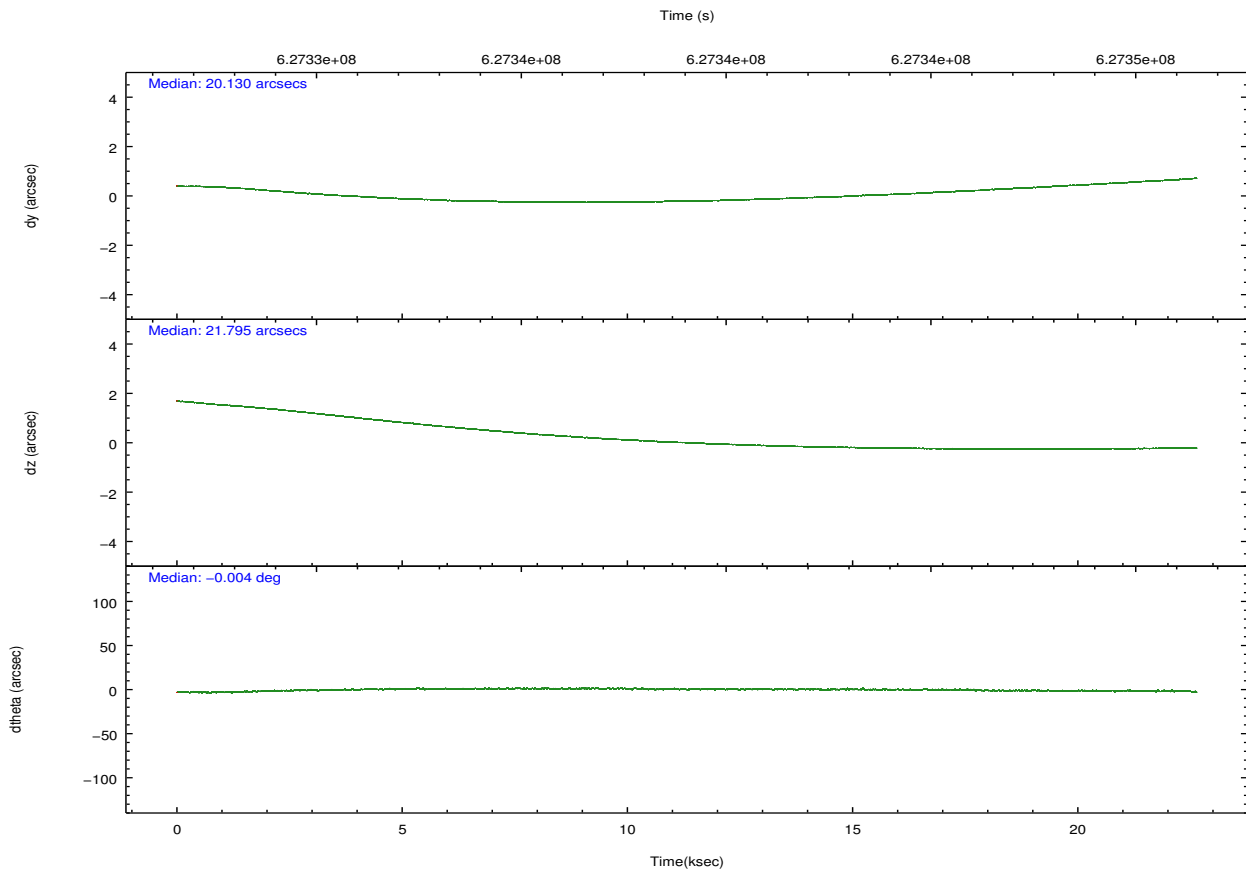
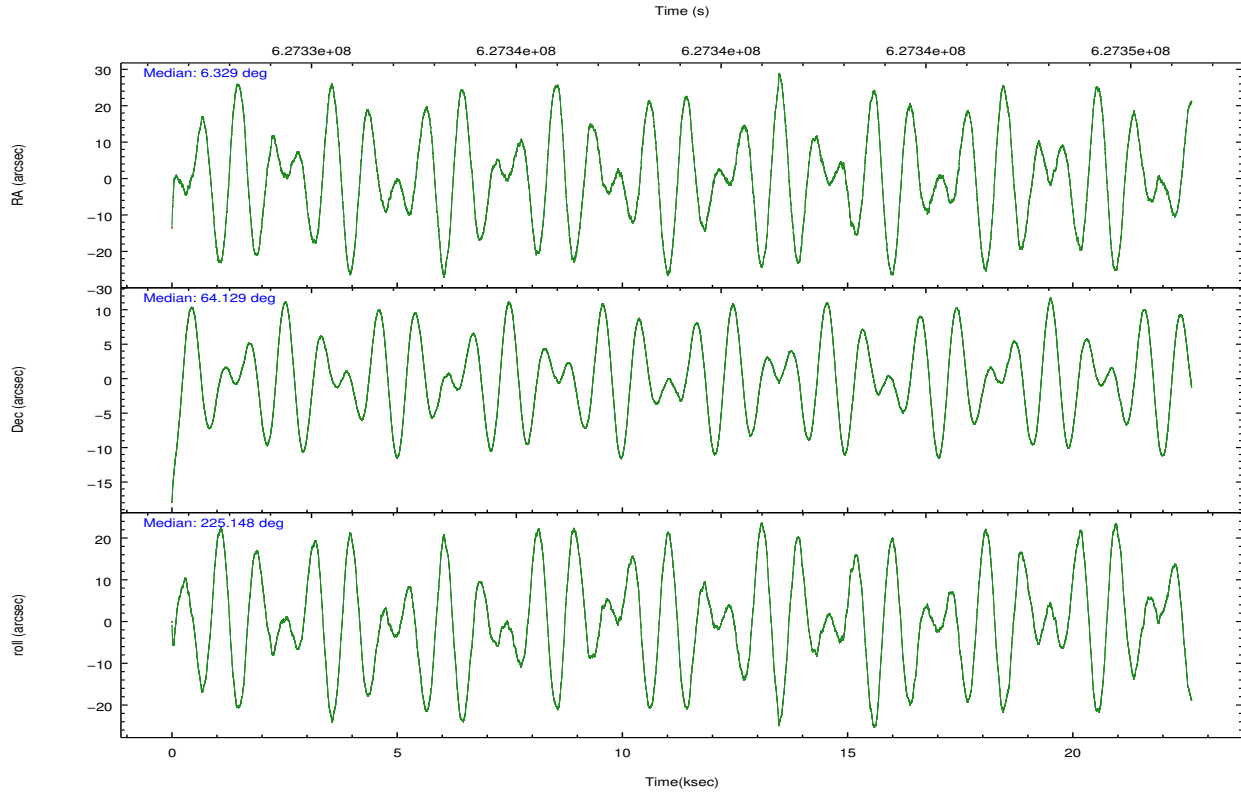
	ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9		ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
level 1 events	174066	266072	296741	417559	259190	151741	grade 0 events	14622	26290	126620	61250	72218	14471
rejected events	147789	113029	130390	89953	135938	124973		8%	9%	42%	14%	27%	9%
rejected %	84%	42%	43%	21%	52%	82%	grade 1 events	193	602	638	407	413	125
								0%	0%	0%	0%	0%	0%
							grade 2 events	4785	49406	20216	84571	20041	4603
								2%	18%	6%	20%	7%	3%
							grade 3 events	2016	6238	6230	34675	7826	2017
								1%	2%	2%	8%	3%	1%
							grade 4 events	1766	6310	6334	34356	7389	1963
								1%	2%	2%	8%	2%	1%
							grade 5 events	6198	16384	6346	18901	9694	6994
								3%	6%	2%	4%	3%	4%
							grade 6 events	3089	64817	6968	112807	15806	3718
								1%	24%	2%	27%	6%	2%
							grade 7 events	141397	96025	123389	70592	125803	117850
								81%	36%	41%	16%	48%	77%

2.2 Compared Parameters

Parameter	Planned	Actual	Parameter	Planned	Actual
Instrument	ACIS	ACIS	Obspar format version number	7	7
Detector	ACIS-456789	ACIS-456789	Obspar file type	PREDICTED	ACTUAL
Grating	HETG	HETG	Obspar update status	NONE	UPDATED
Data mode	VFAINT	VFAINT	CCD I0 on	N	N
Observation mode	POINTING	POINTING	CCD I1 on	N	N
[deg] Pointing RA	6.344361	6.329047496849711	CCD I2 on	N	N
[deg] Pointing Dec	64.155693	64.12907160184263	CCD I3 on	N	N
[deg] Pointing Roll	224.986328	225.1567277977754	CCD S0 on	O1	Y
[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	-190.1400660498719	CCD S3 on	Y	Y
[mm] SIM translation stage offset	0	0.00754346686406393	CCD S4 on	Y	Y
[s] Observation start time (MET)	627327863.184000	627326426.95233	CCD S5 on	Y	Y
Observation start date	2017-11-17T17:43:14	2017-11-17T17:20:26	Number of optional ACIS chips dropped	0	0
[s] Observation end time (MET)	627350363.184000	627351522.0288	On-chip summing requested	N	N
Observation end date	2017-11-17T23:58:14	2017-11-18T00:18:42	Subarray requested	NONE	NONE
Read mode	TIMED	TIMED	Alternating exposures requested	N	N
			[s] Primary exposure time	0.000000	3.2

2.3 Aspect



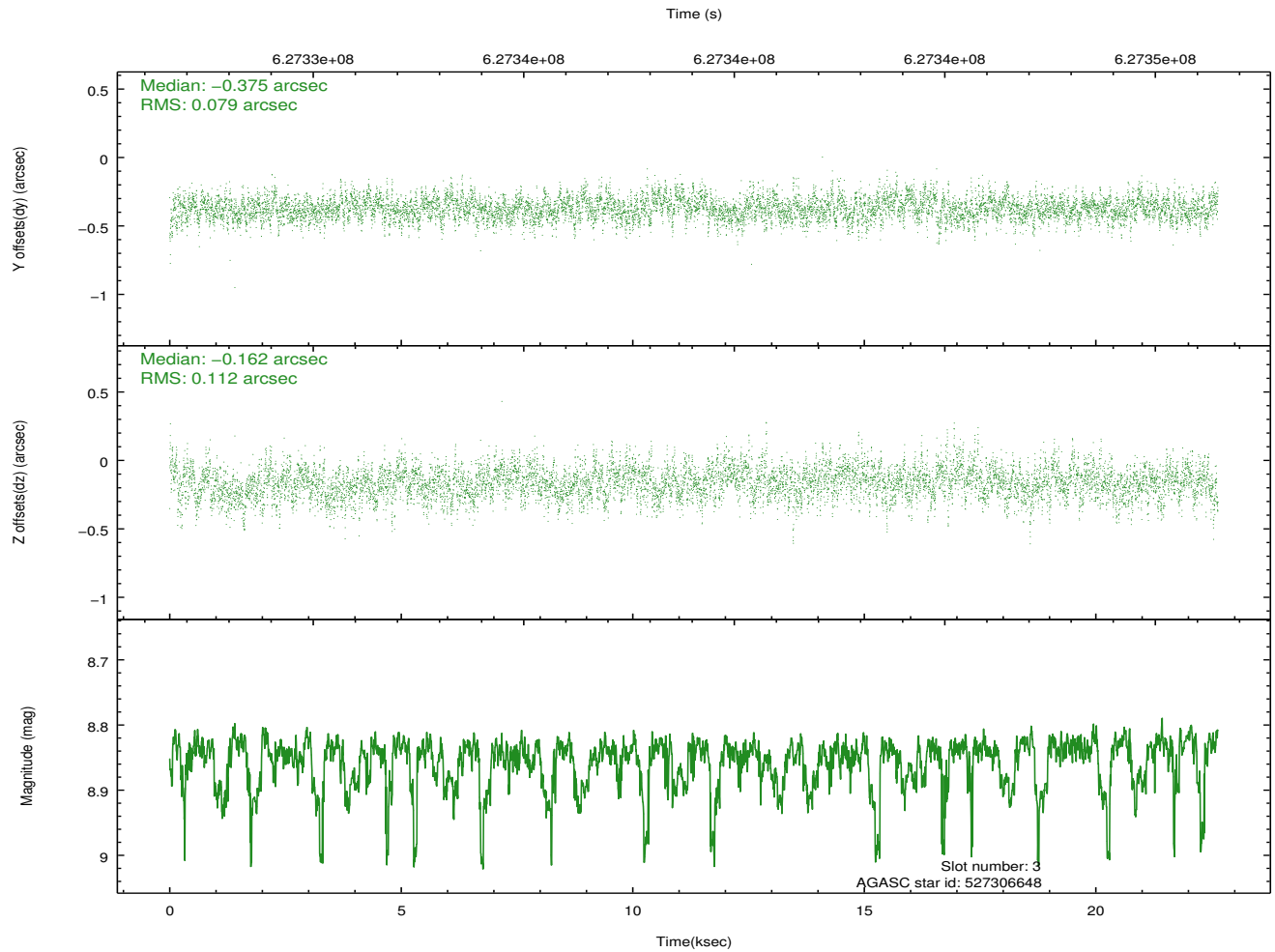
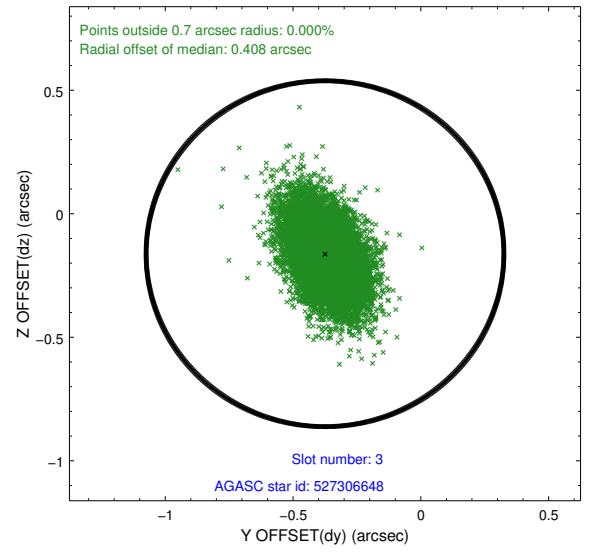
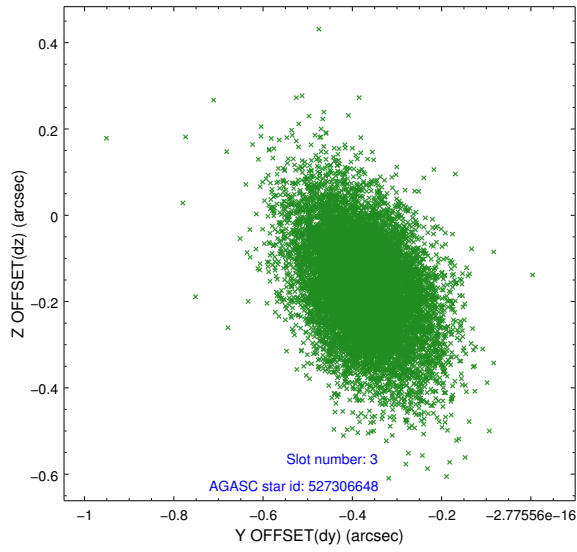


Slot Statistics

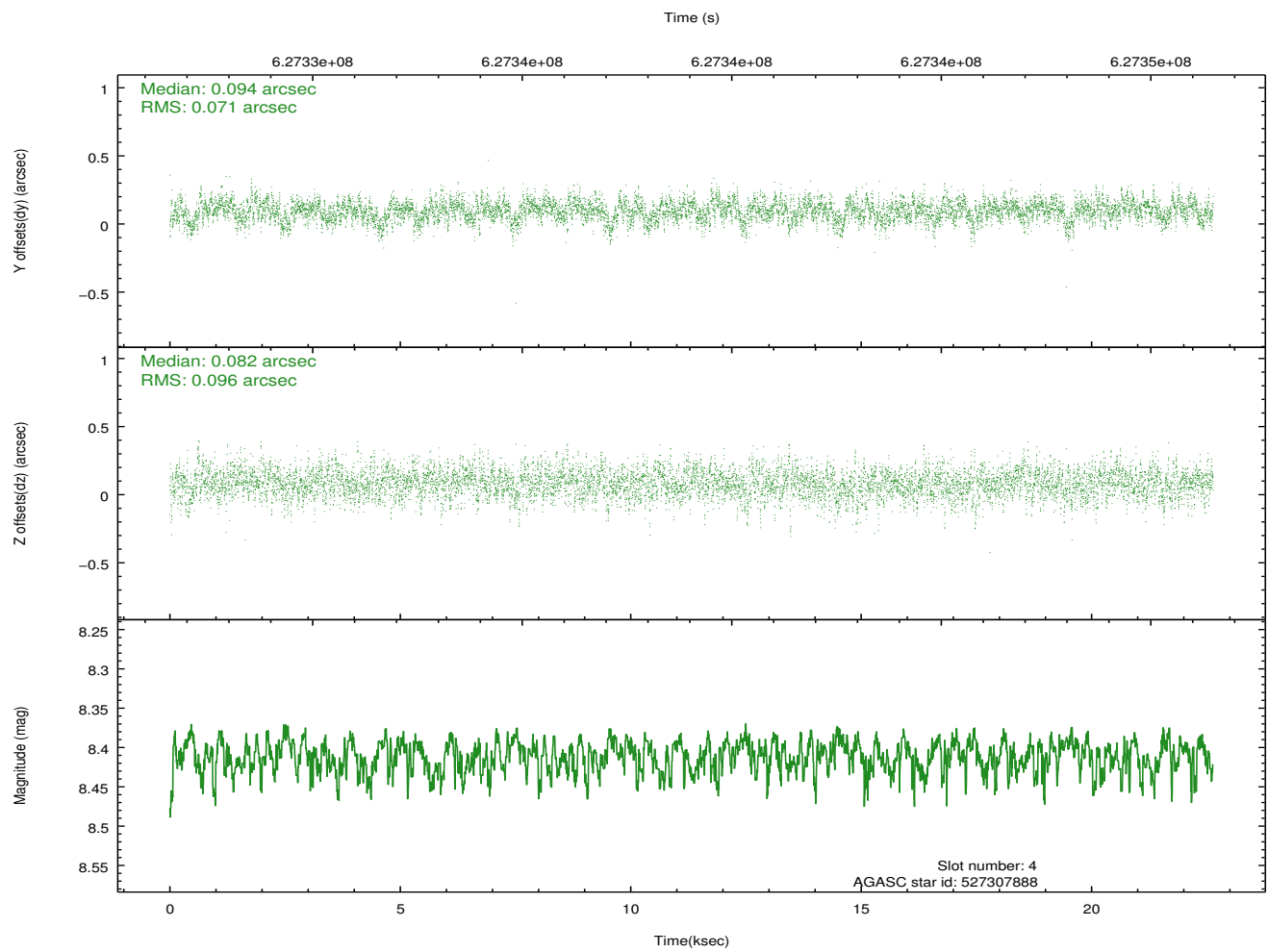
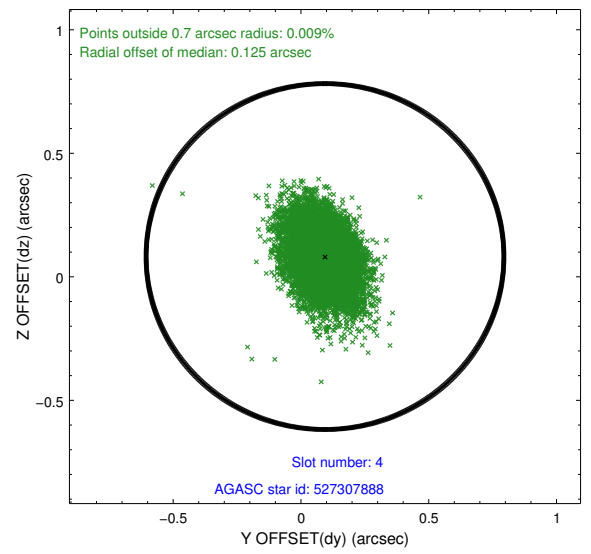
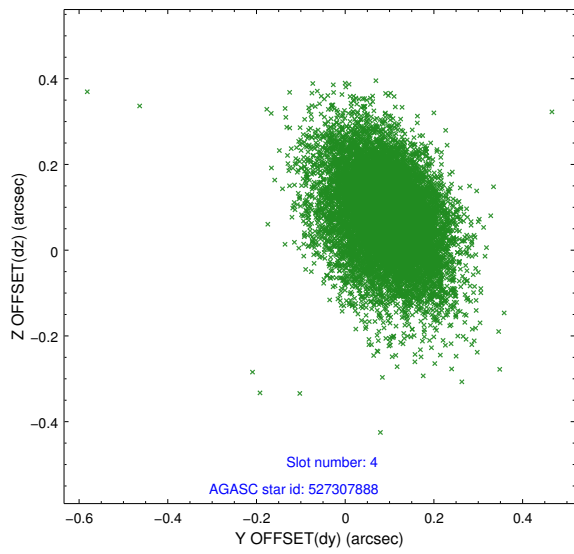
slot	status	used	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID		ACIS-S-2	7.01	5522	-0.250	-0.142	0.009	0.015	0.000000	0.000000	-773.57	-1743.78
1	FID		ACIS-S-4	7.12	5522	0.527	0.158	0.009	0.020	0.000000	0.000000	2140.43	164.83
2	FID		ACIS-S-5	7.11	5522	-0.309	-0.007	0.010	0.023	0.000000	0.000000	-1826.27	158.52
3	GUIDE	used	527306648	8.85	11025	-0.375	-0.162	0.140	0.246	6.477351	63.853785	618.90	917.87
4	GUIDE	used	527307888	8.41	11040	0.094	0.082	0.124	0.214	4.965121	64.287990	1171.17	-1875.57
5	GUIDE	used	527310400	7.71	11043	0.108	0.543	0.122	0.211	6.292387	64.638680	-1171.71	-1286.05
6	GUIDE	used	527306552	8.71	11037	0.134	-0.192	0.143	0.242	4.766895	63.925622	2329.53	-1199.66
7	GUIDE	used	527309096	8.26	11035	0.042	-0.266	0.141	0.230	7.726277	64.064373	-1322.68	1753.55

2.4 Star Slots

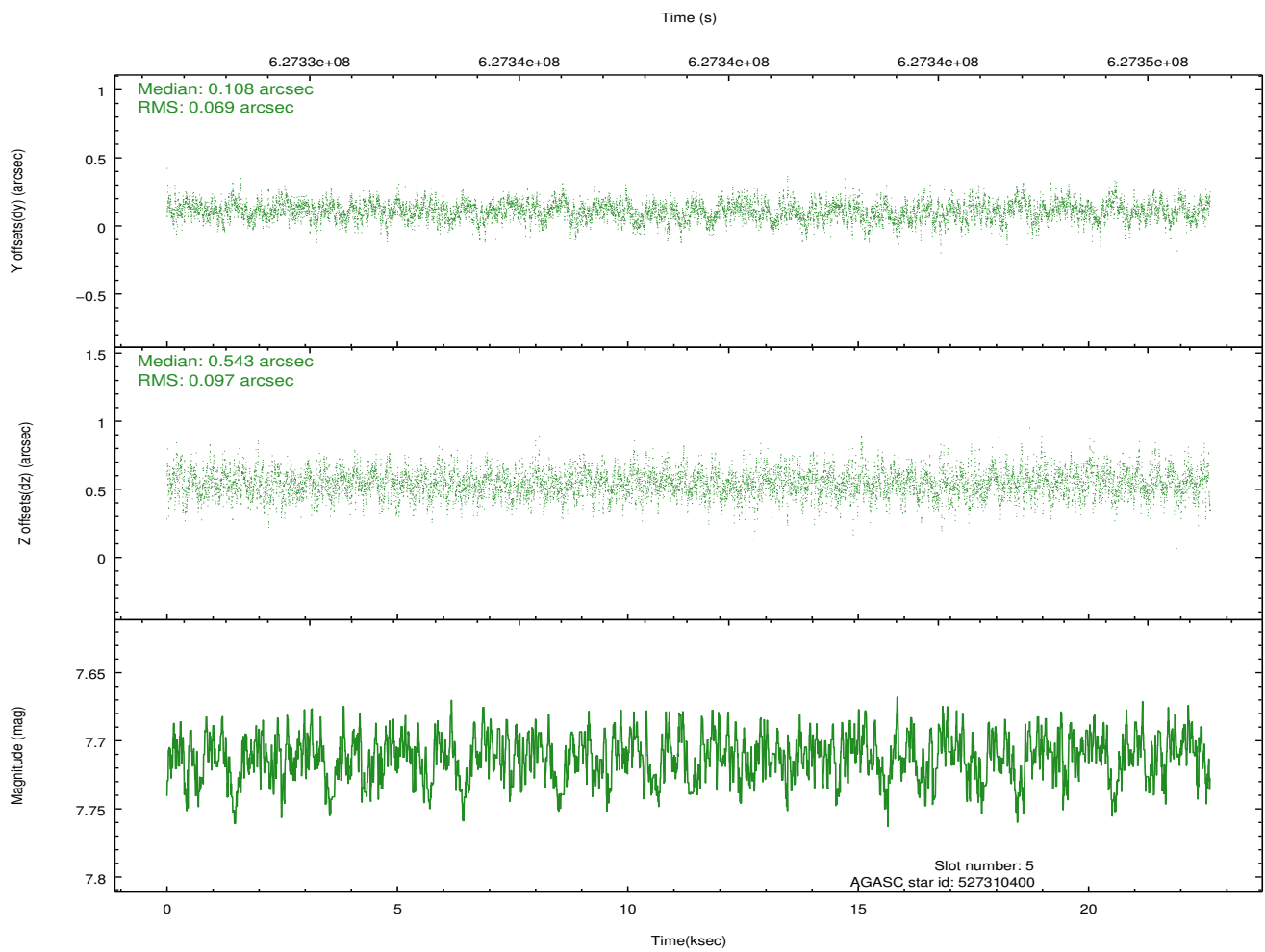
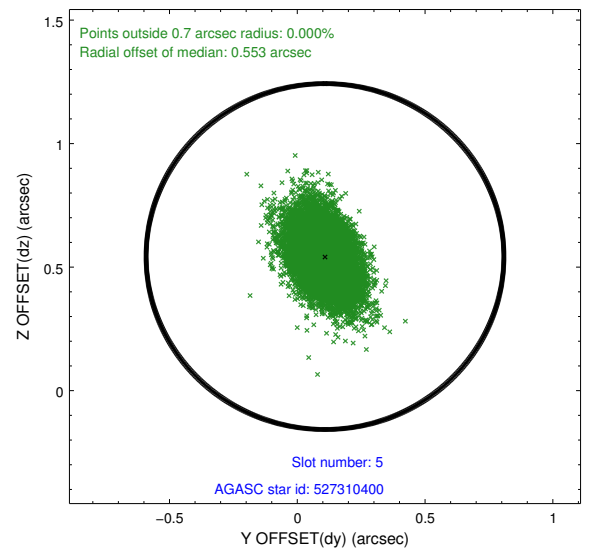
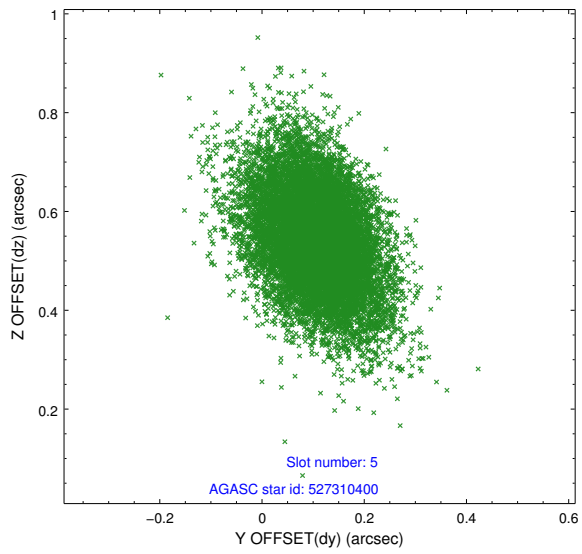
2.4.1 Slot 3



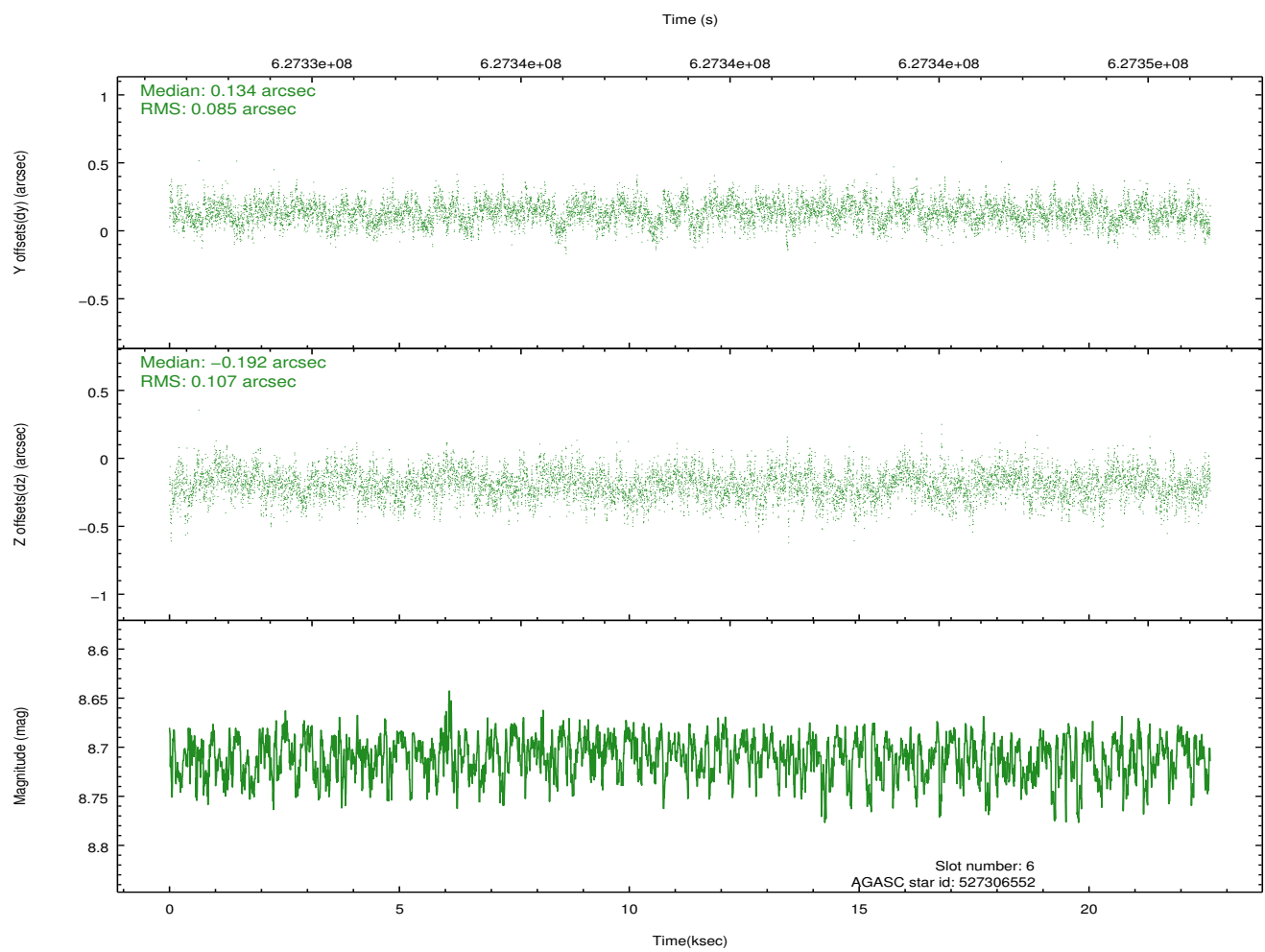
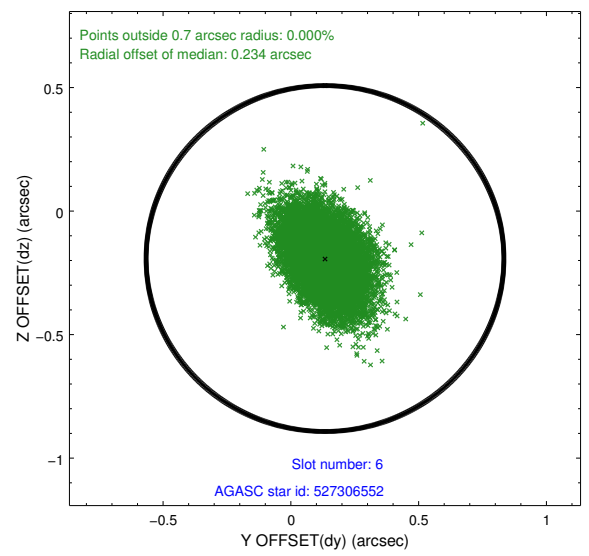
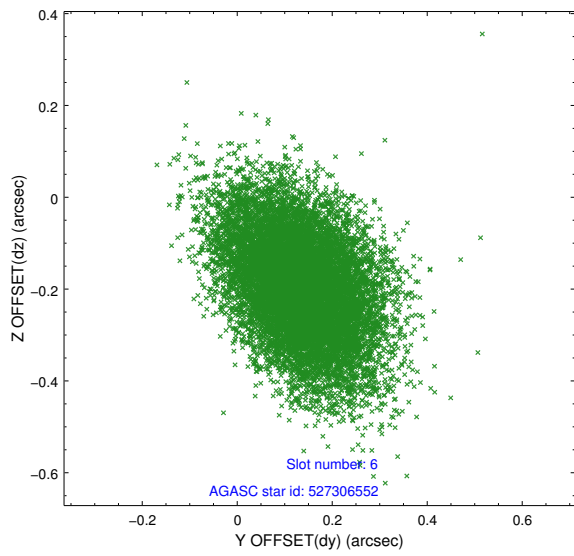
2.4.2 Slot 4



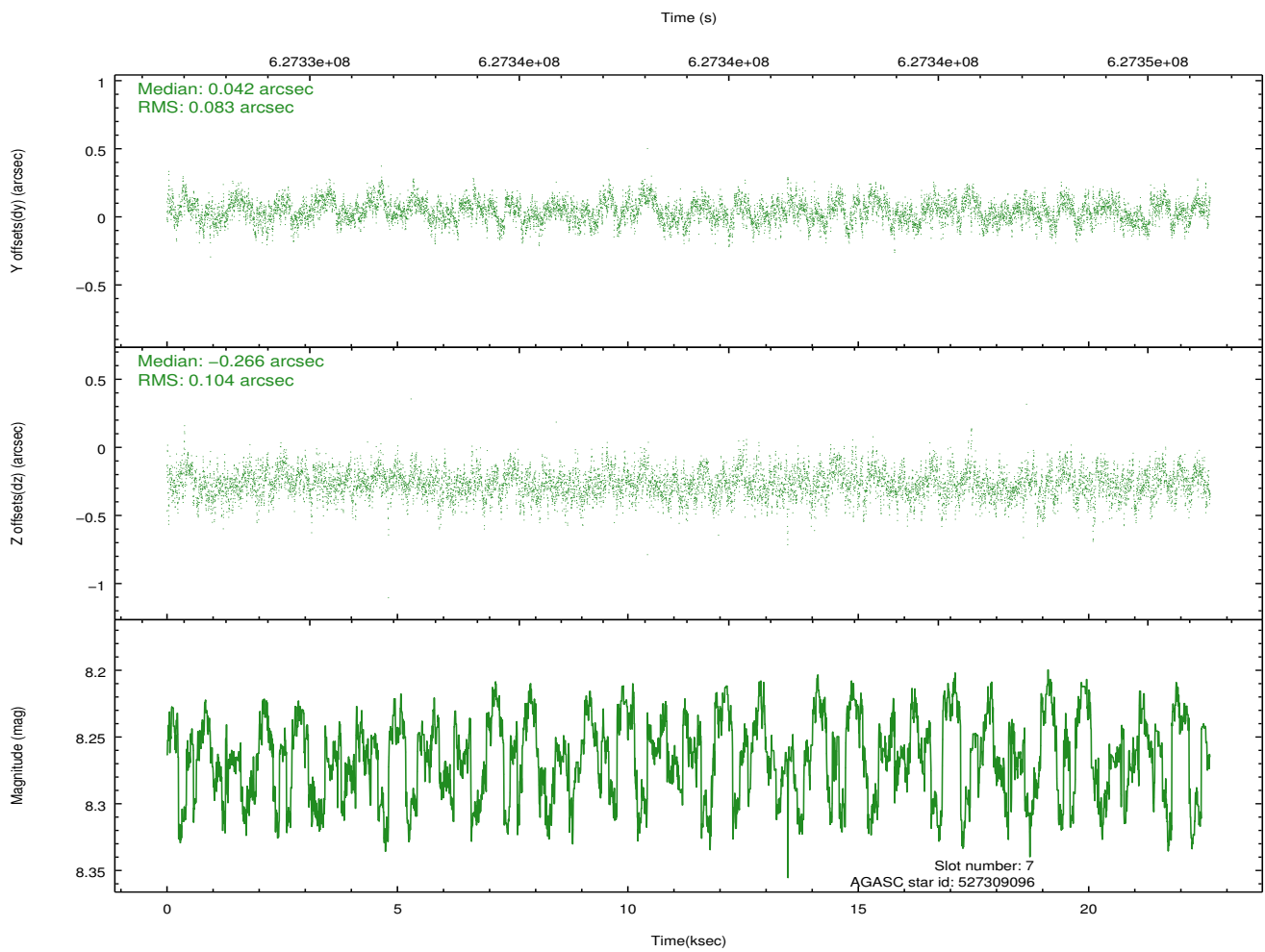
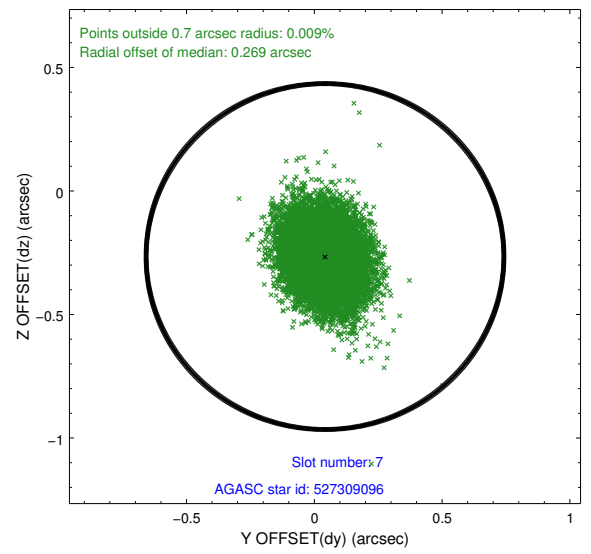
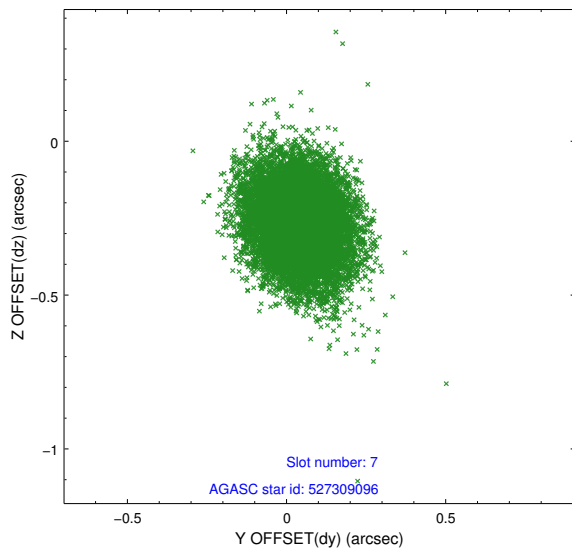
2.4.3 Slot 5



2.4.4 Slot 6

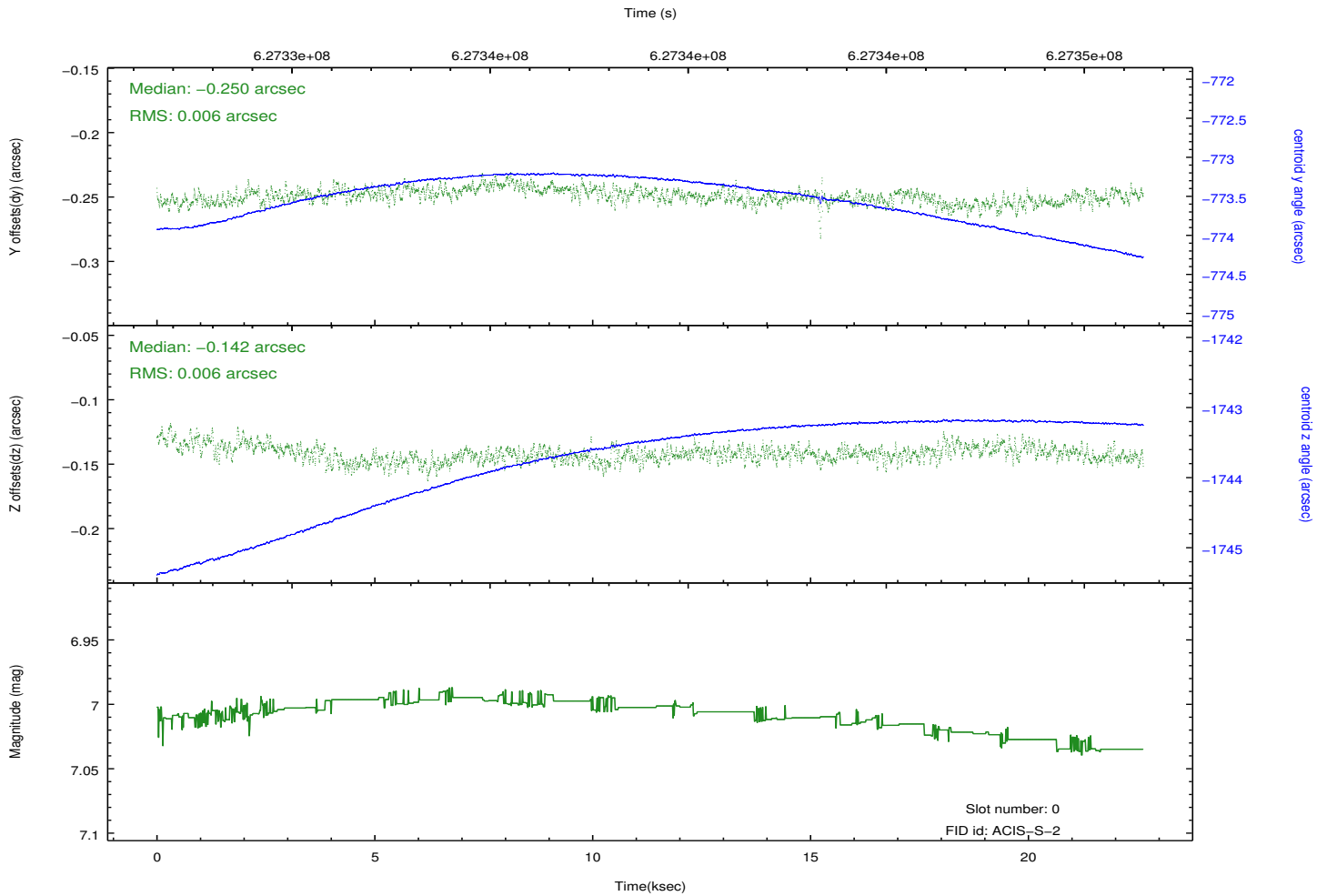
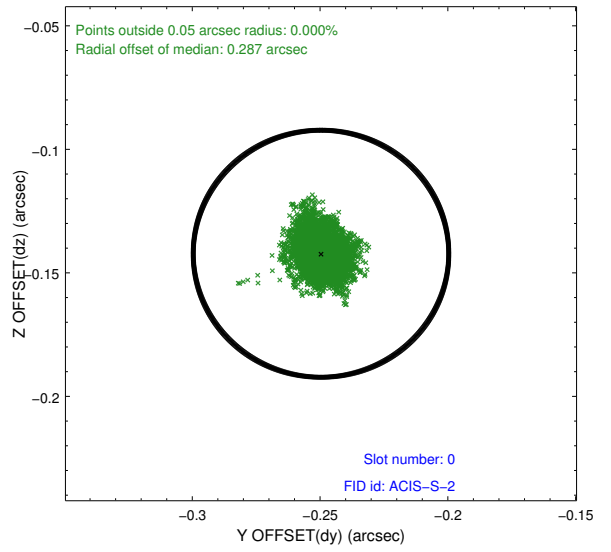
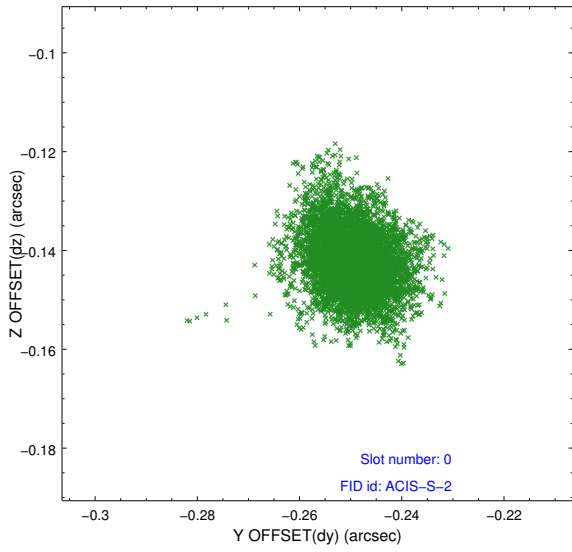


2.4.5 Slot 7

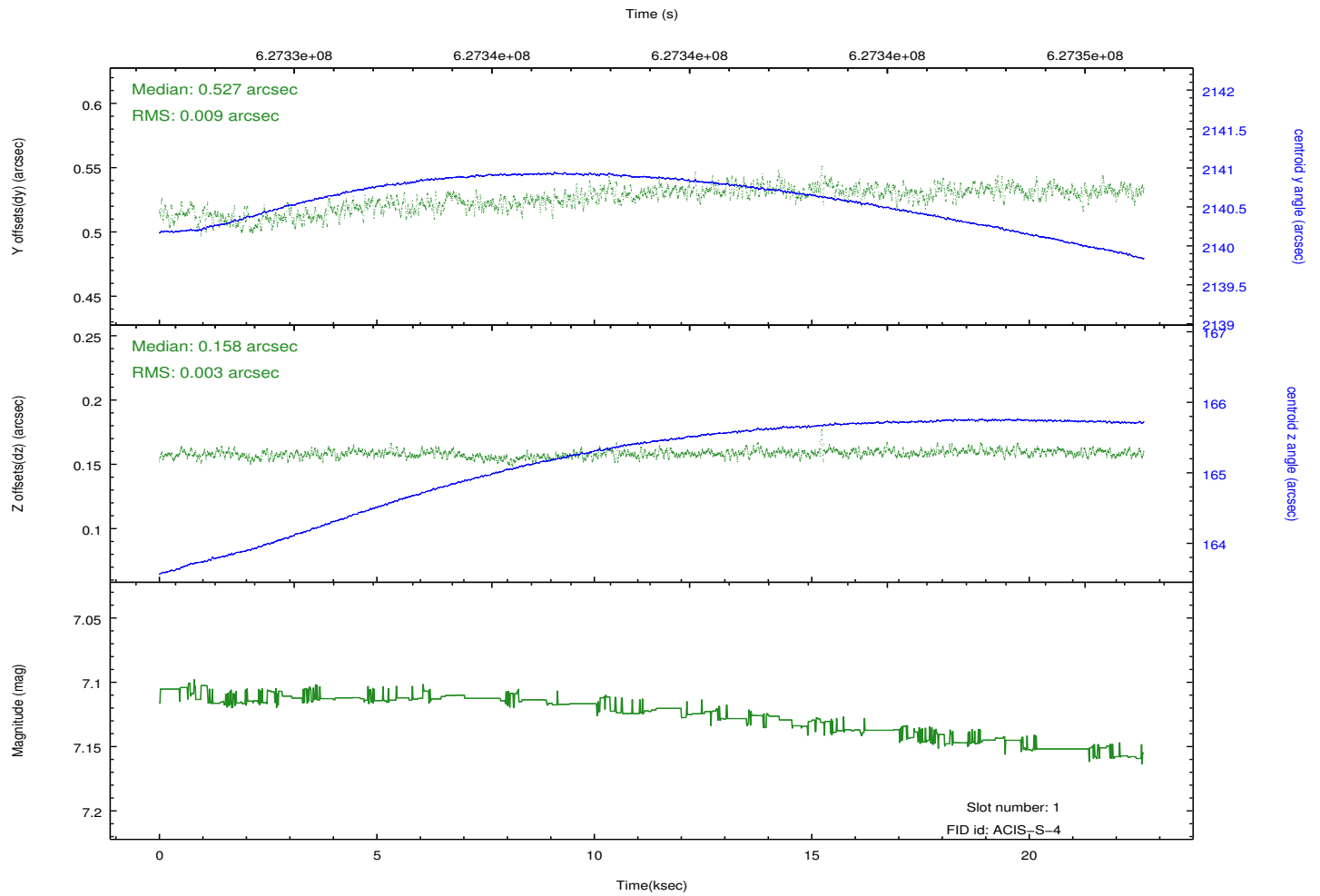
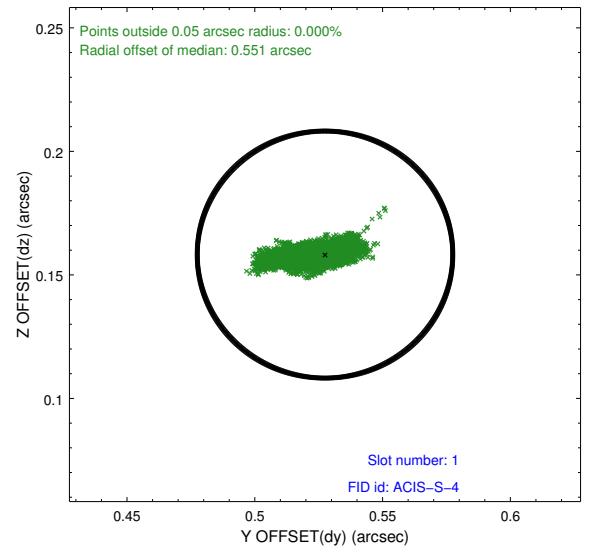
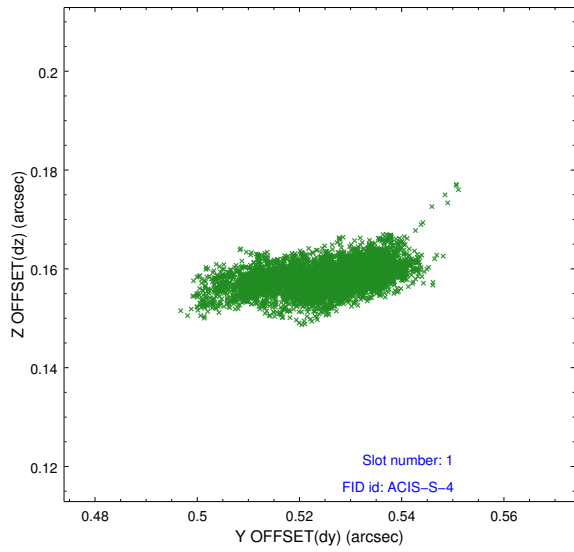


2.5 FID Slots

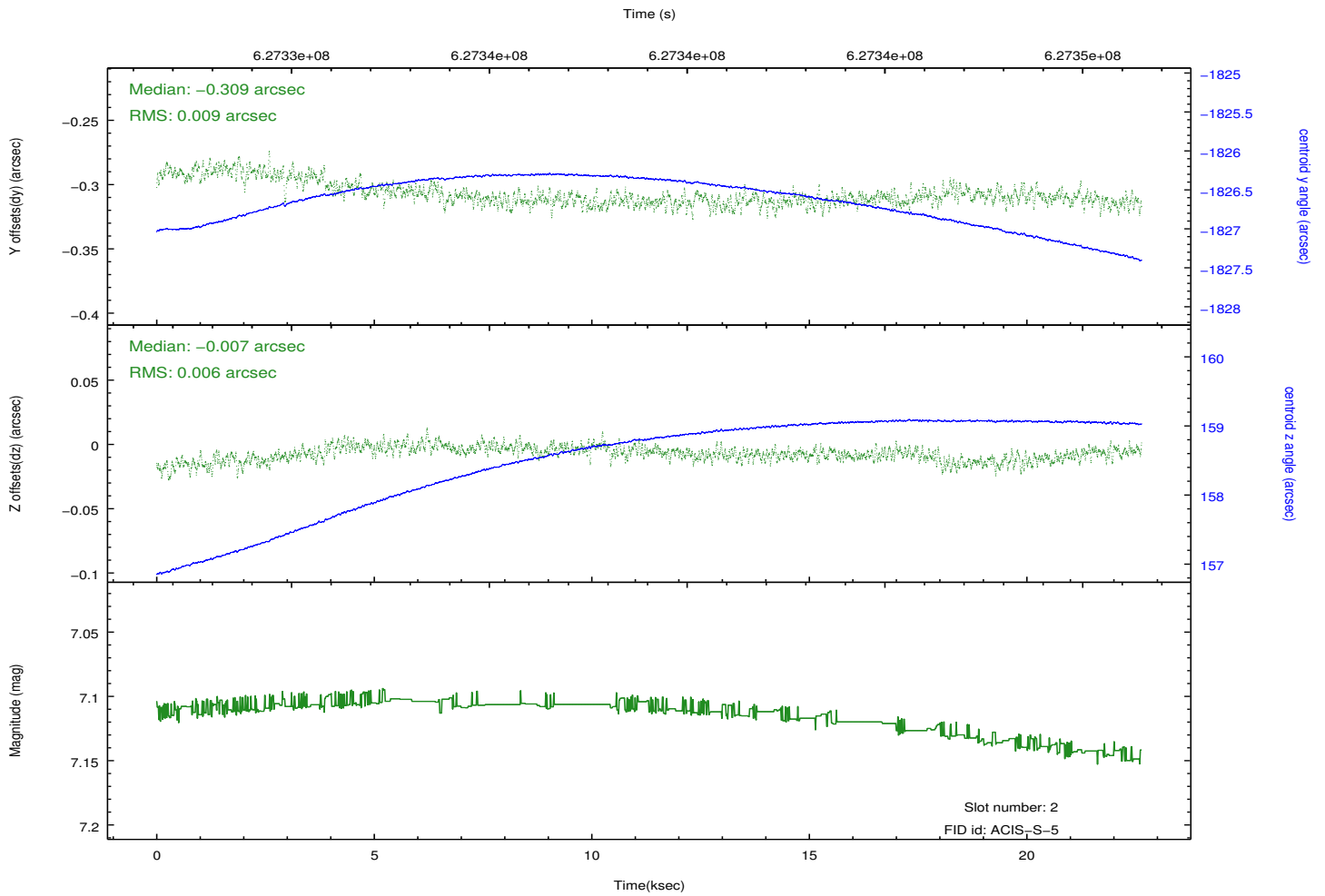
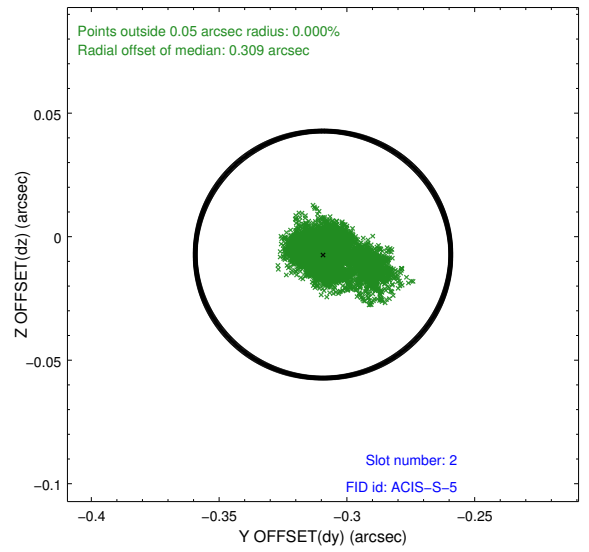
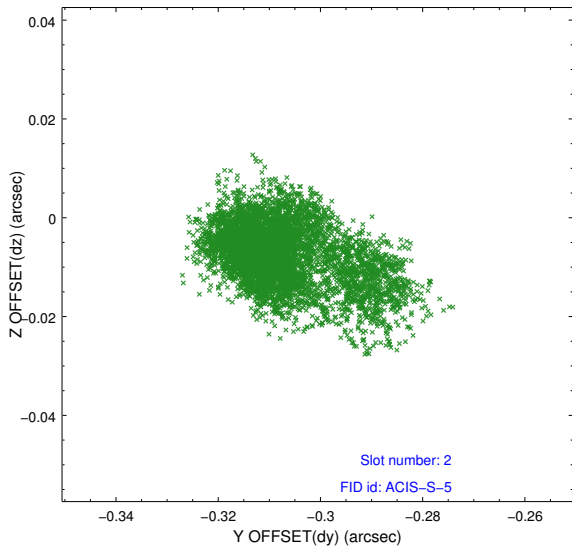
2.5.1 Slot 0



2.5.2 Slot 1

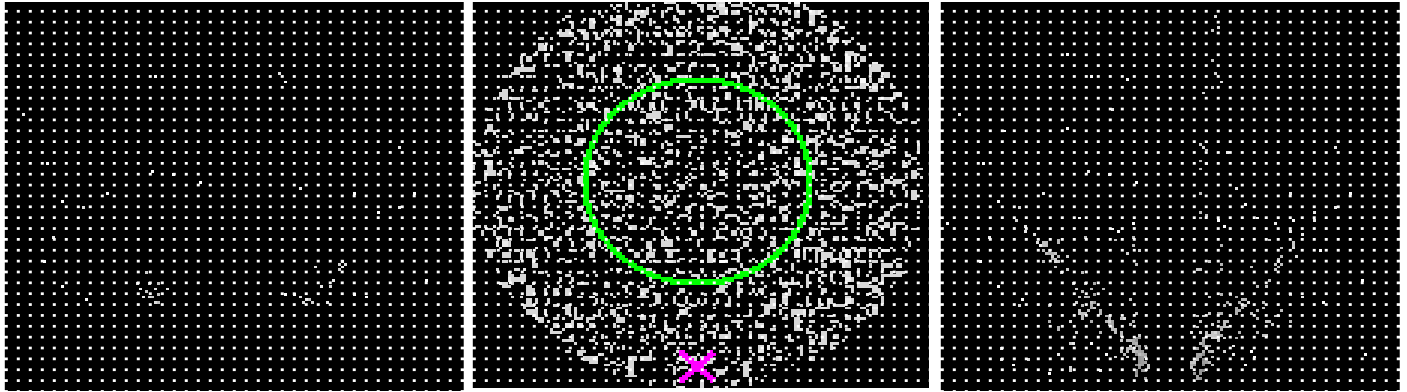


2.5.3 Slot 2



3 Gratings

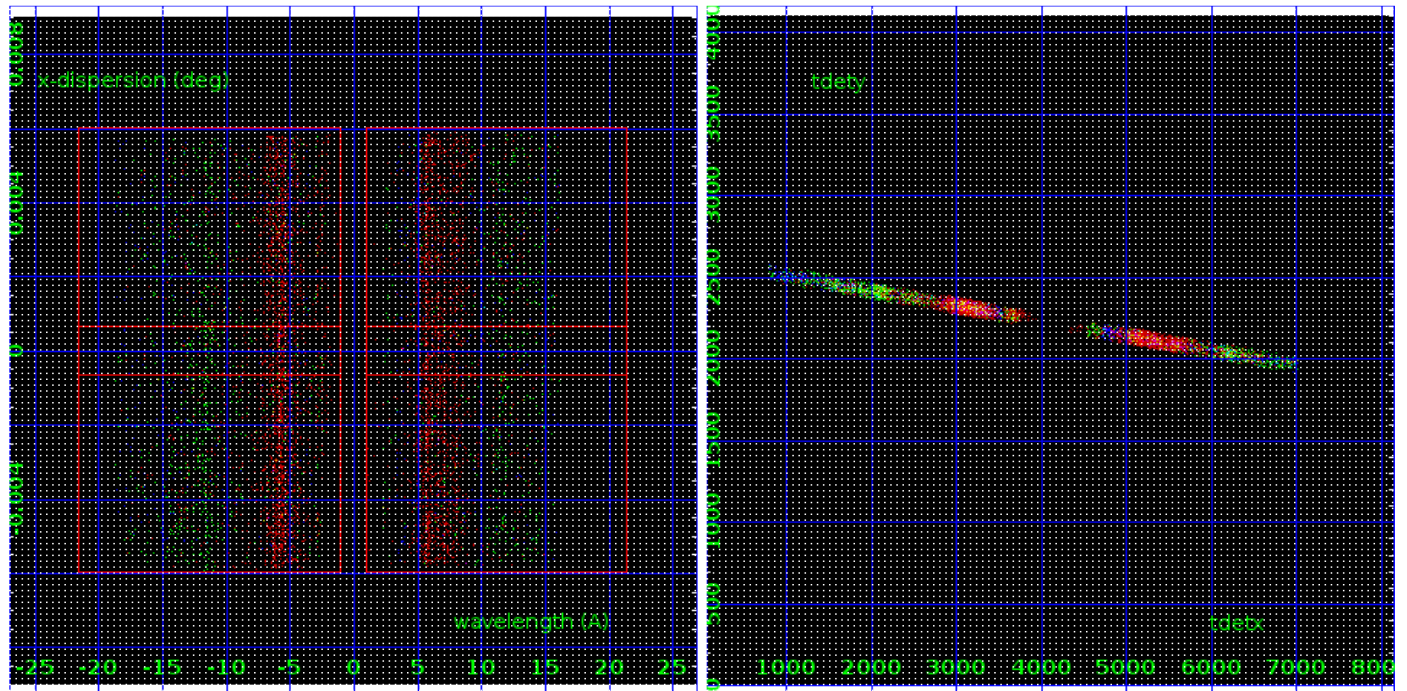
3.1 HEG Arm



HEG Order Sort 123

HEG Zero Order

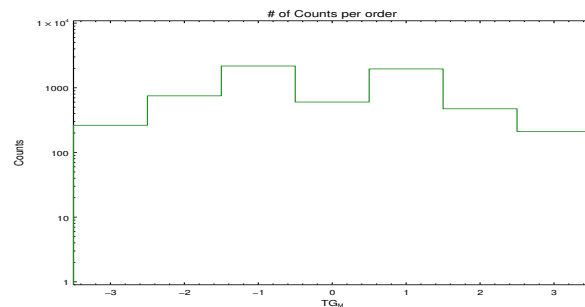
HEG Order Sort ALL

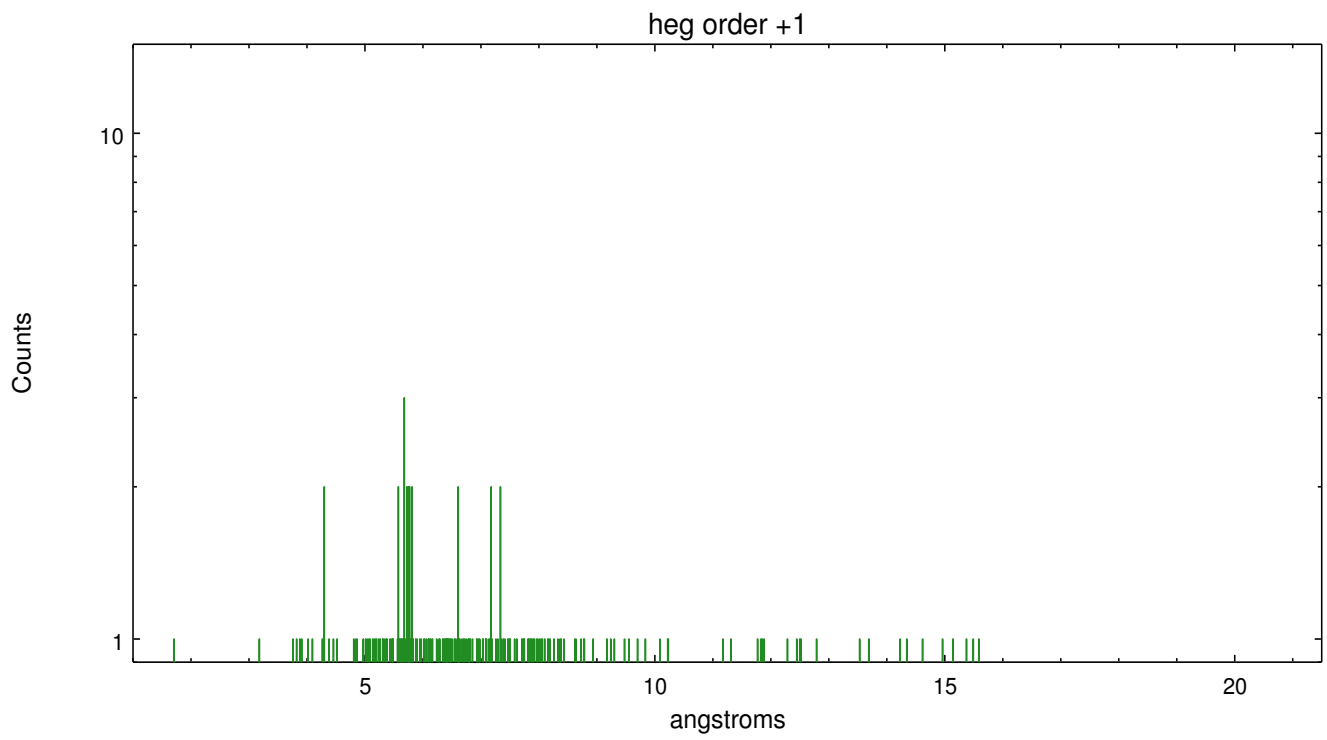
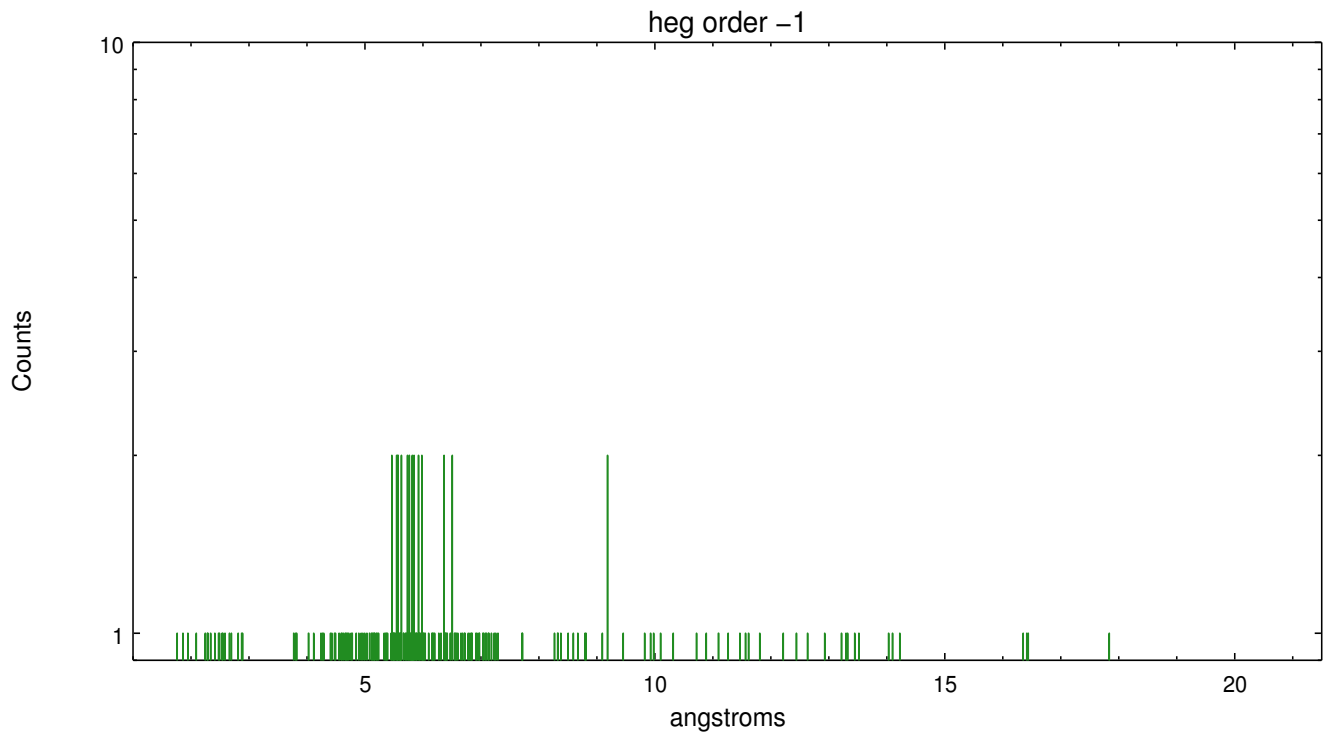


Spot Image HEG

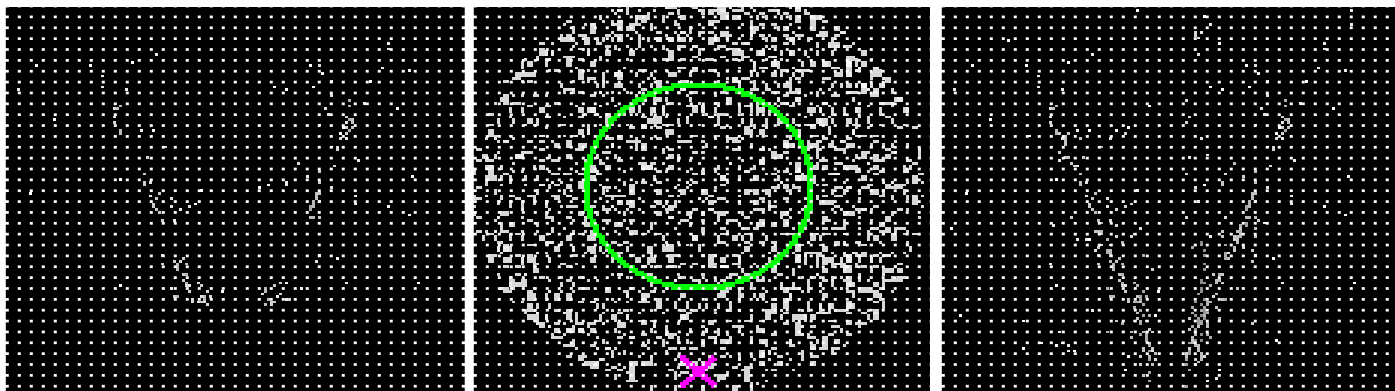
Full Detector HEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	263	751	2172	602	1958	474	210





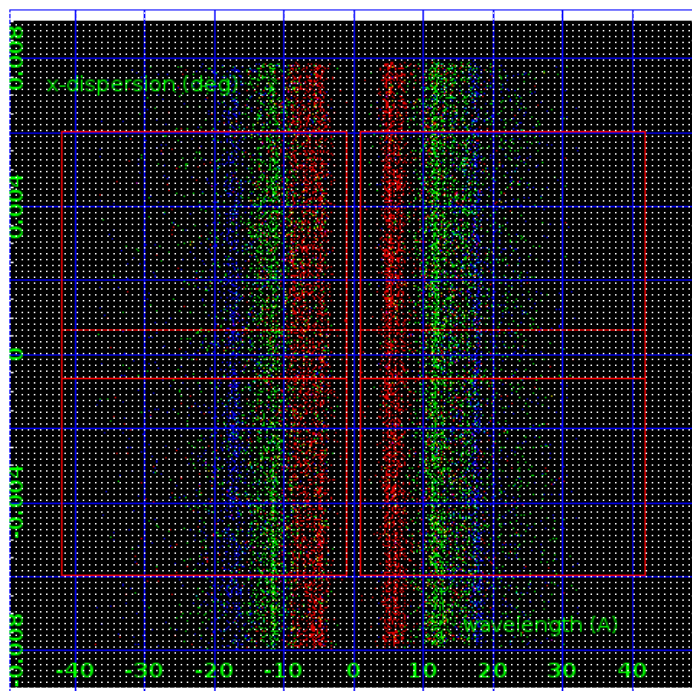
3.2 MEG Arm



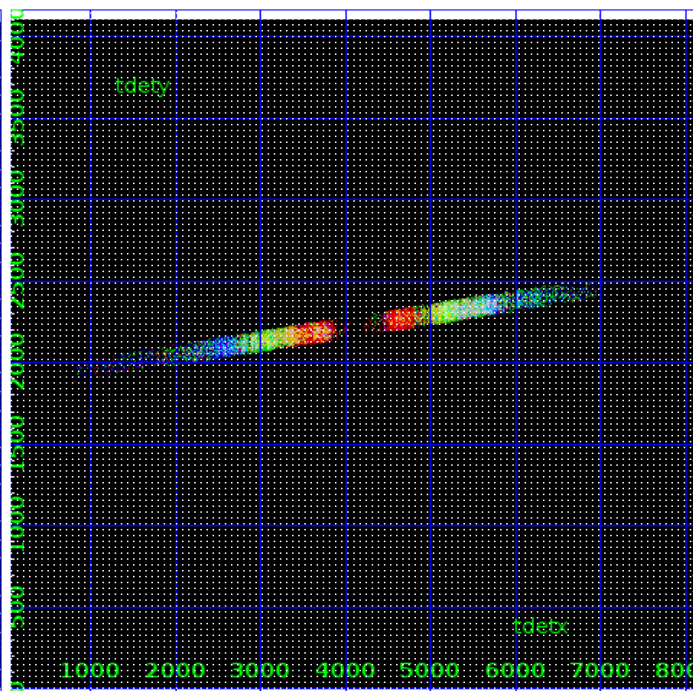
MEG Order Sort 123

MEG Zero Order

MEG Order Sort ALL

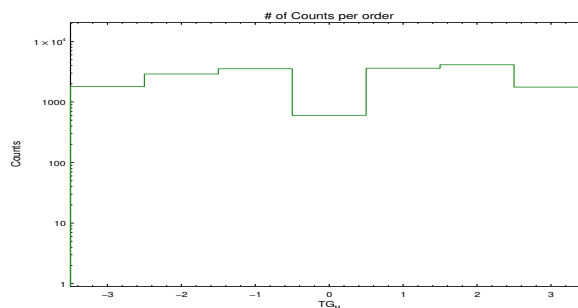


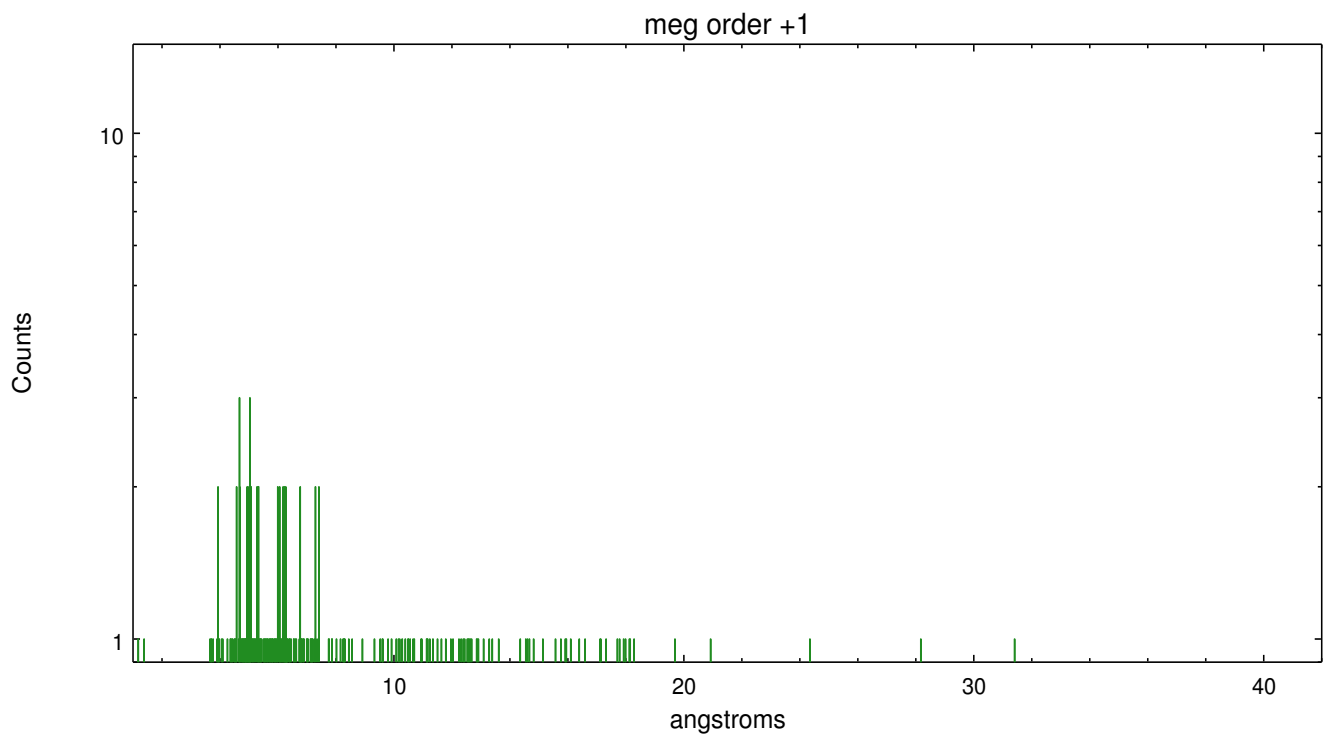
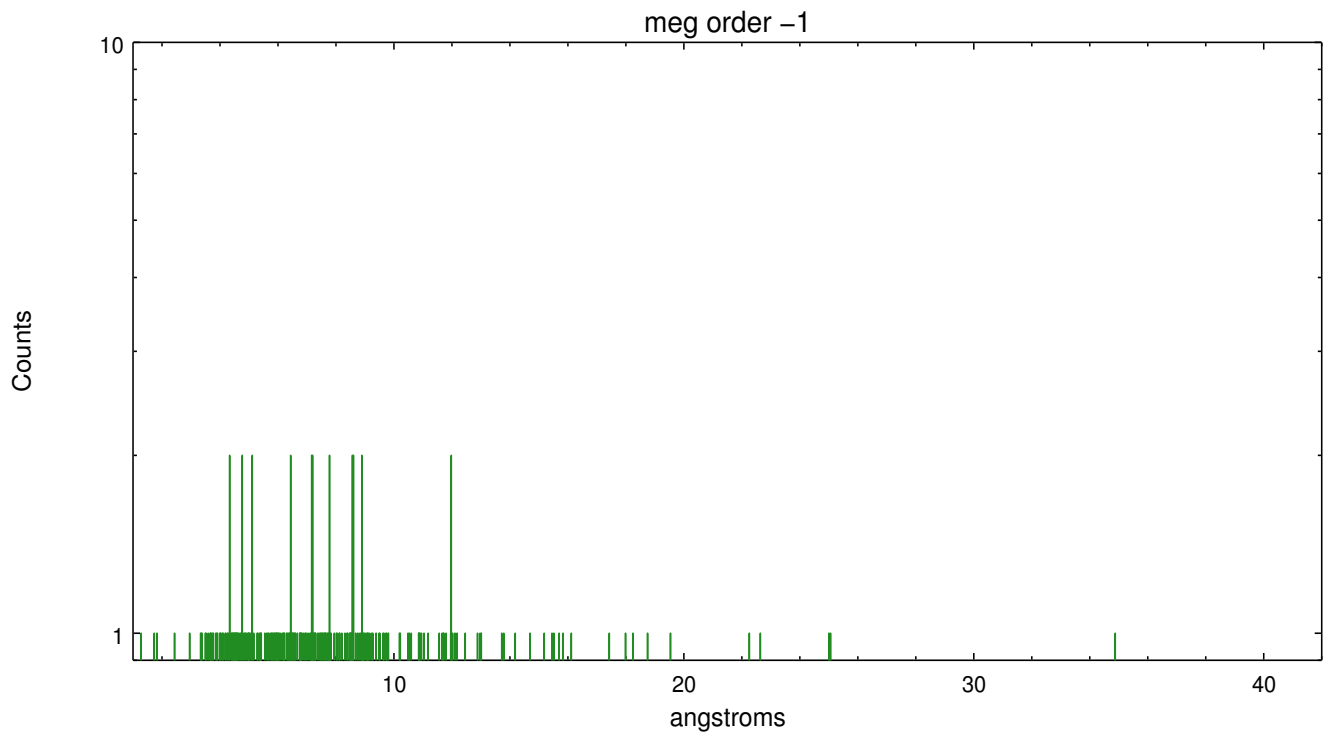
Spot Image MEG



Full Detector MEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	1797	2896	3536	602	3605	4116	1760





A Summary

A.1 Status

V&V Scientist	David Huenemoerder
V&V Date (YYYY-MM-DD)	2017.11.20
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	22.453013459325

A.2 Comments

WARNING: this is a grating observation of a very extended source. Dispersed spectra are a mix of spatial and spectral information. The default extraction, on the nominal target position, is of no particular significance. Custom analysis will be required to perform extractions on features of interest (e.g., bright knots). Note that there are also no standard responses for analysis of extended sources; the grating RMFs (LSF) are as if point sources, so custom analysis will be required to model profiles, with care to disentangle spatial-spectral features.

Comments for Obi 0
Fid in slot 1 radial offset > 0.550000 arcsec
Aspect review: acceptable.