

V&V Reference Report

L2 ASCDS Version : 10.6

Observation 20834 - L2 Version 1
Chandra X-Ray Center

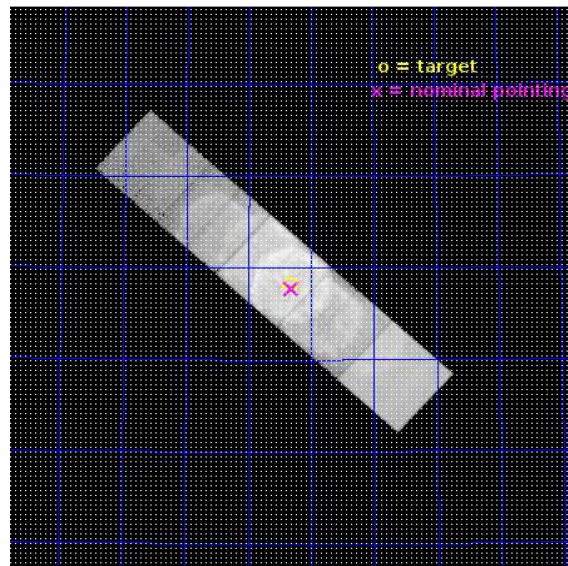
L2 Processing Date : Nov 6 2017

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1 Front

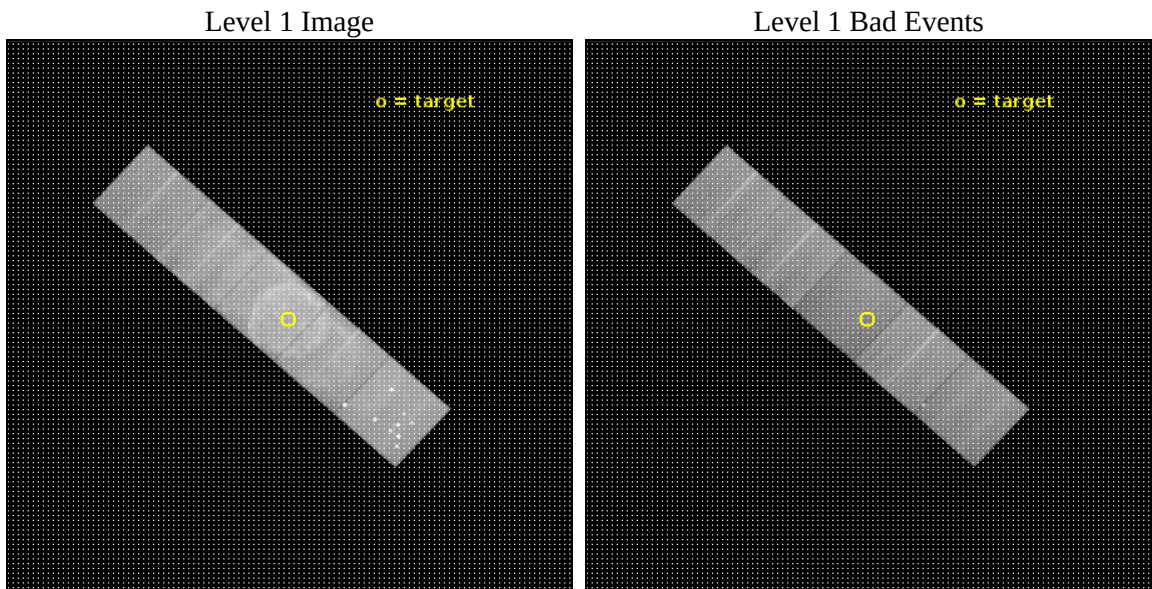
seq_num	502941	Sequence number
obs_id	20834	Observation id
title	Ejecta Kinematics Study of Tycho's SNR With Chandra HETGS	Proposa
observer	SANGWOOK PARK	Principal investigator
object	Tycho's Supernova Remnant	Source name
dtcycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	6.329167	Observer's specified target RA [deg]
dec_targ	64.136111	Observer's specified target Dec [deg]
ra_nom	6.3284366181652	Nominal RA [deg]
dec_nom	64.12933214814	Nominal Dec [deg]
roll_nom	222.15728290598	Nominal Roll [deg]
revision	1	Processing version of data
ontime	36369.200279832	Sum of GTIs [s]
livetime	35894.00990356	Livetime [s]
ontime5	36369.200279832	Sum of GTIs [s]
ontime6	36369.200279832	Sum of GTIs [s]
ontime7	36369.200279832	Sum of GTIs [s]
ontime8	36366.059209585	Sum of GTIs [s]
ontime9	36362.918038726	Sum of GTIs [s]
l2events	1163684	Number of level 2 events



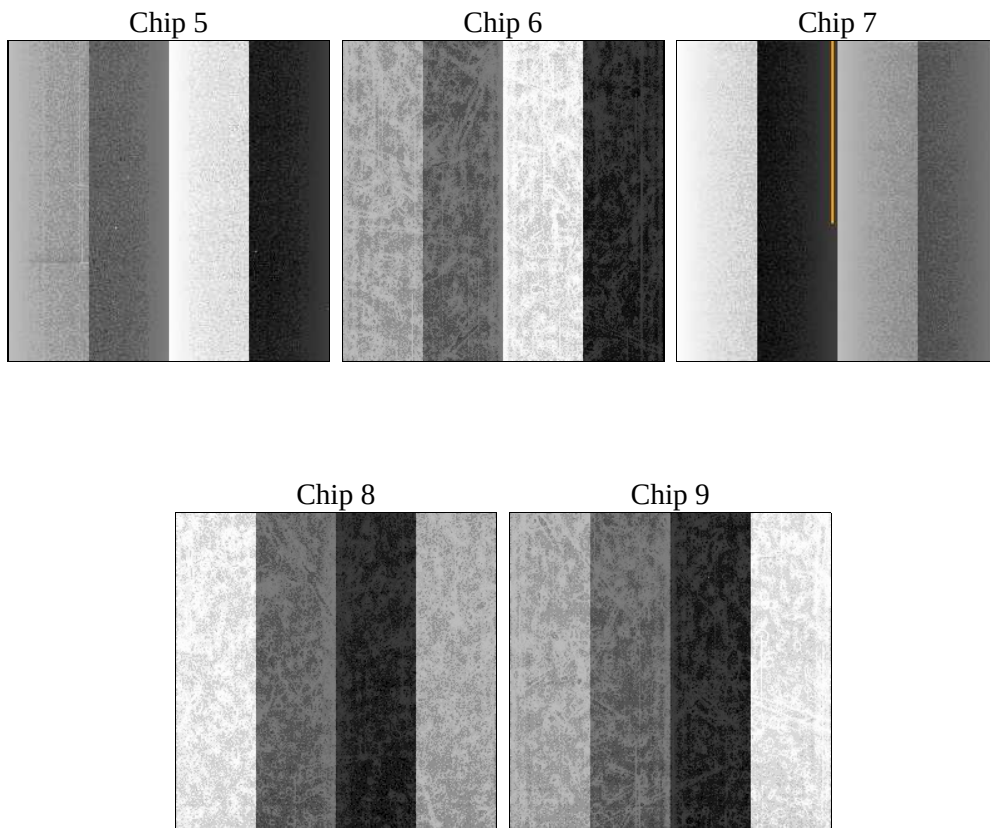
2 OBI

2.1 OBI

2.1.1 Images



2.1.2 Bias



2.1.3 Parameters

obi_num	0	Obi number	sched_exp_time	36276.695000	[s] Scheduled observation exposure time
ascdsver	10.6	Processing system revision	ontime	36369.200279832	Sum of GTIs [s]
caldsver	4.7.6	 	ontime5	36369.200279832	Sum of GTIs [s]
date	2017-11-05T17:38:27	Date and time of file creation	ontime6	36369.200279832	Sum of GTIs [s]
revision	1	Processing version of data	ontime7	36369.200279832	Sum of GTIs [s]
			ontime8	36366.059209585	Sum of GTIs [s]
			ontime9	36362.918038726	Sum of GTIs [s]
			l1events	2323475	Number of level 1 events
			tgmethod	USER	Method used to create src1a file
			zo_pos	(4094.25, 4146.10)	src1a sky pixel position

2.1.4 Events

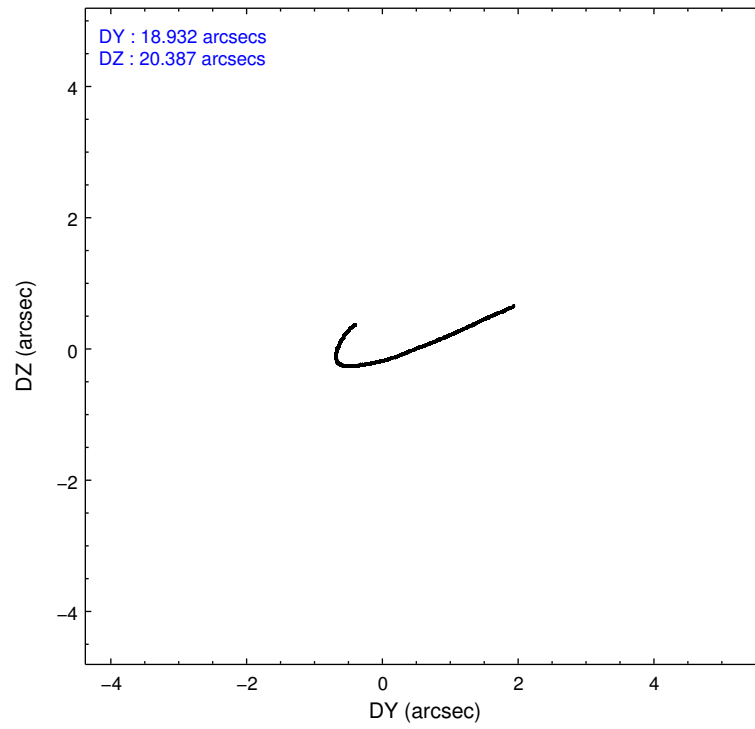
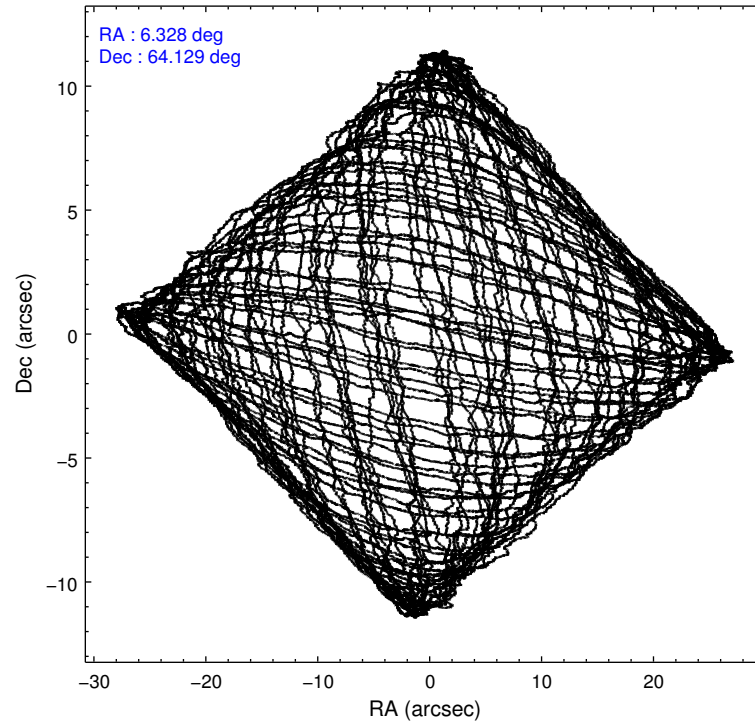
	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9		ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
level 1 events	481273	493439	674240	417073	257450	grade 0 events	81355	200404	99671	115664	23200
rejected events	173937	225253	147121	222978	214087		16%	40%	14%	27%	9%
rejected %	36%	45%	21%	53%	83%	grade 1 events	1306	863	587	552	234
							0%	0%	0%	0%	0%
						grade 2 events	90068	37114	134532	31576	7486
							18%	7%	19%	7%	2%
						grade 3 events	13231	9404	56193	11573	3288
							2%	1%	8%	2%	1%
						grade 4 events	14804	9517	55754	10981	3050
							3%	1%	8%	2%	1%
						grade 5 events	25544	10170	29908	15437	10859
							5%	2%	4%	3%	4%
						grade 6 events	107901	11760	181013	24340	6343
							22%	2%	26%	5%	2%
						grade 7 events	147064	214207	116582	206950	202990
							30%	43%	17%	49%	78%

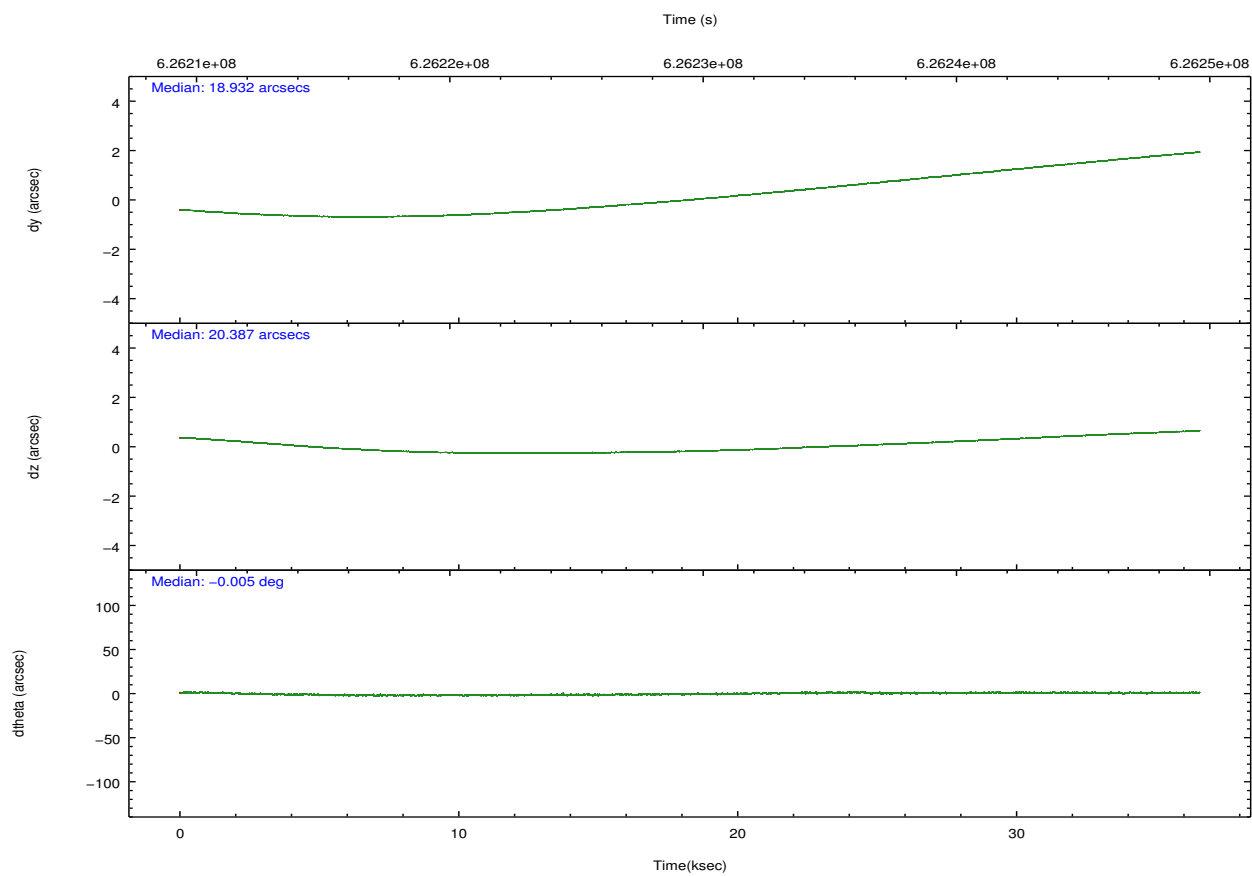
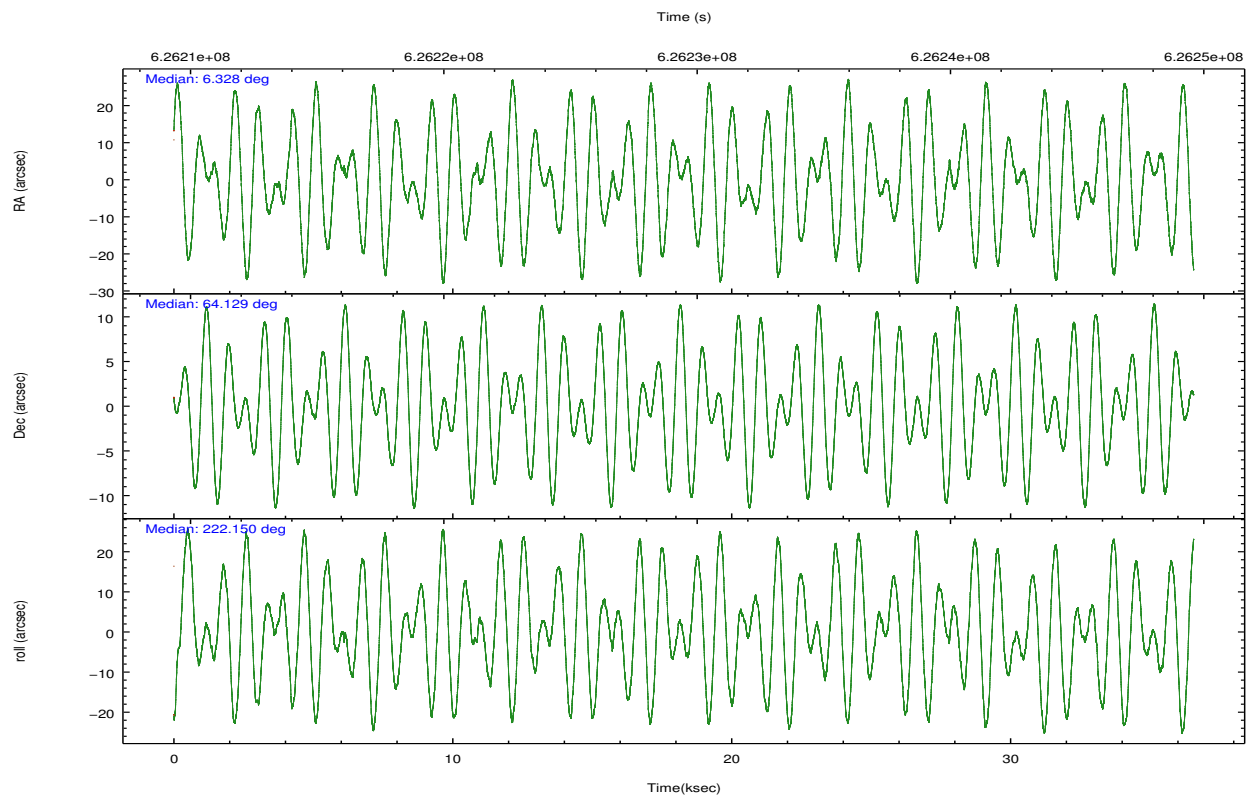
2.2 Compared Parameters

Parameter	Planned	Actual
Instrument	ACIS	ACIS
Detector	ACIS-56789	ACIS-56789
Grating	HETG	HETG
Data mode	VFAINT	VFAINT
Observation mode	POINTING	POINTING
[deg] Pointing RA	6.346904	6.328436618165249
[deg] Pointing Dec	64.155568	64.12933214814015
[deg] Pointing Roll	221.984039	222.1572829059795
[mm] SIM focus pos	-0.684267	-0.6828225247311905
[mm] SIM defocus	0	0.001444936568705701
[mm] SIM translation stage pos	-190.132523	-190.1400660498719
[mm] SIM translation stage offset	0	0.00754346686406393
[s] Observation start time (MET)	626211479.184000	626210464.7993701
Observation start date	2017-11-04T19:36:50	2017-11-04T19:21:04
[s] Observation end time (MET)	626247756.184000	626248609.15161
Observation end date	2017-11-05T05:41:27	2017-11-05T05:56:49
Read mode	TIMED	TIMED

Parameter	Planned	Actual
Obspar format version number	7	7
Obspar file type	PREDICTED	ACTUAL
Obspar update status	NONE	UPDATED
CCD I0 on	N	N
CCD I1 on	N	N
CCD I2 on	N	N
CCD I3 on	N	N
CCD S0 on	O1	N
CCD S1 on	Y	Y
CCD S2 on	Y	Y
CCD S3 on	Y	Y
CCD S4 on	Y	Y
CCD S5 on	Y	Y
Number of optional ACIS chips dropped	1	1
On-chip summing requested	N	N
Subarray requested	NONE	NONE
Alternating exposures requested	N	N
[s] Primary exposure time	0.000000	3.1

2.3 Aspect



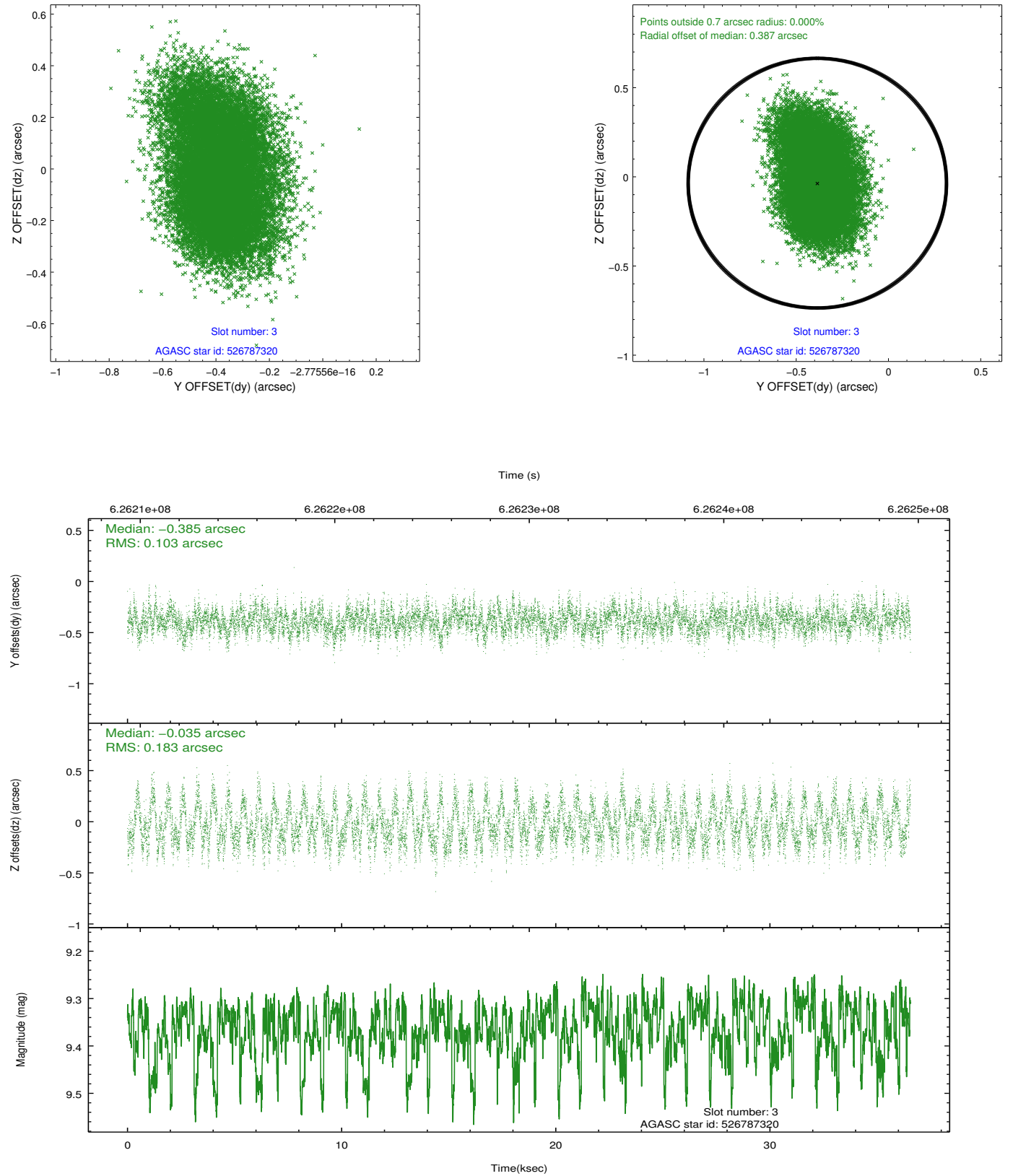


Slot Statistics

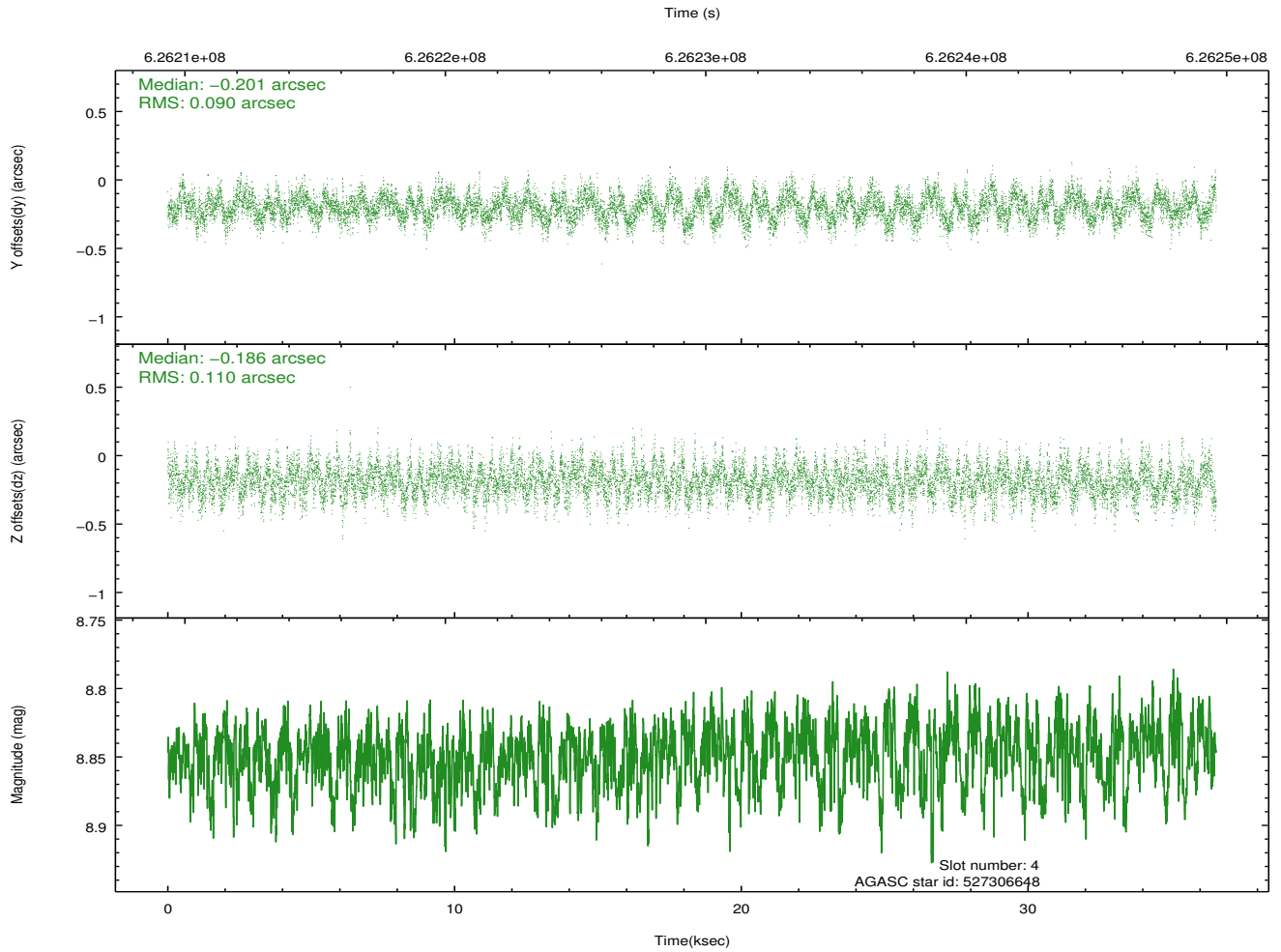
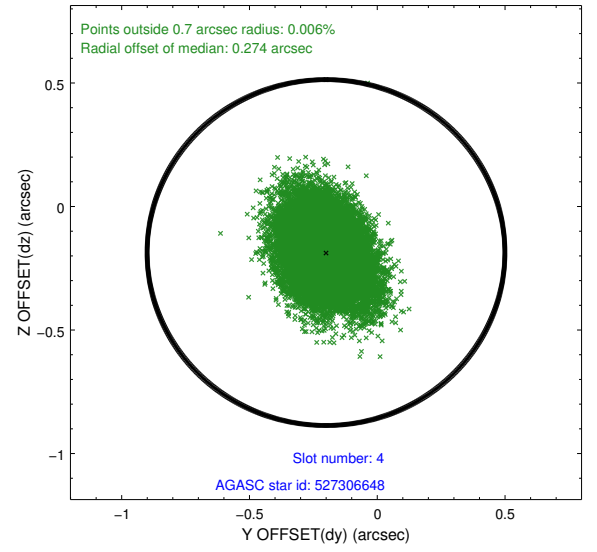
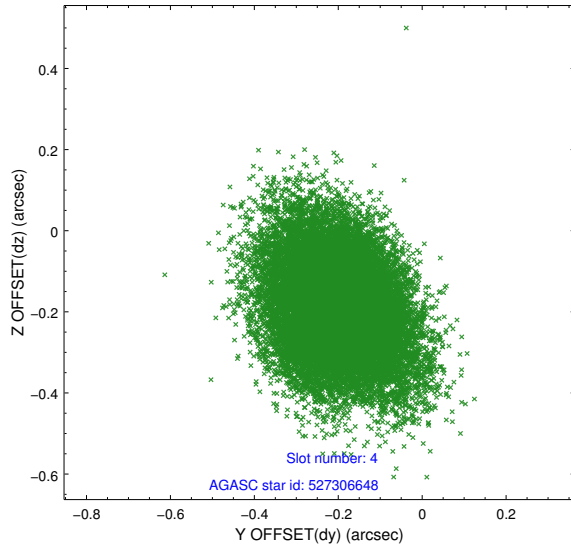
slot	status	used	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID		ACIS-S-2	7.13	8918	-0.247	-0.128	0.027	0.035	0.000000	0.000000	-772.47	-1742.11
1	FID		ACIS-S-4	7.24	8918	0.562	0.153	0.018	0.024	0.000000	0.000000	2141.57	166.67
2	FID		ACIS-S-5	7.23	8919	-0.348	-0.017	0.016	0.030	0.000000	0.000000	-1825.40	160.14
3	GUIDE	used	526787320	9.37	17808	-0.385	-0.035	0.225	0.365	6.103299	63.719181	1338.71	907.94
4	GUIDE	used	527306648	8.85	17828	-0.201	-0.186	0.150	0.247	6.477351	63.853785	572.71	946.08
5	GUIDE	used	527307888	8.42	17821	0.073	-0.087	0.124	0.218	4.965121	64.287990	1270.10	-1814.88
6	GUIDE	used	527310400	7.71	17832	0.220	0.519	0.109	0.192	6.292387	64.638680	-1100.28	-1348.50
7	GUIDE	used	527309096	8.27	17831	0.286	-0.222	0.135	0.228	7.726277	64.064373	-1410.22	1679.07

2.4 Star Slots

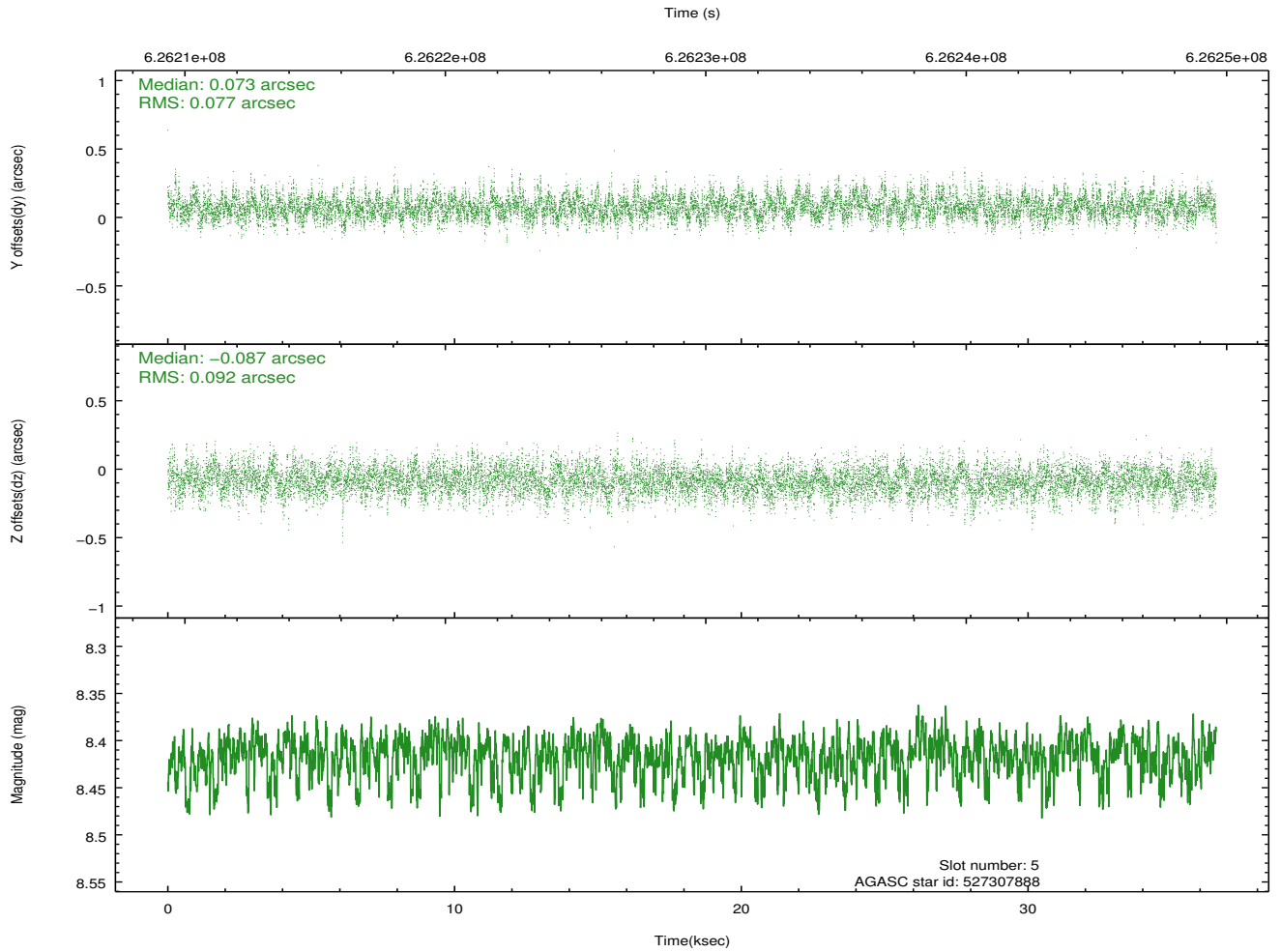
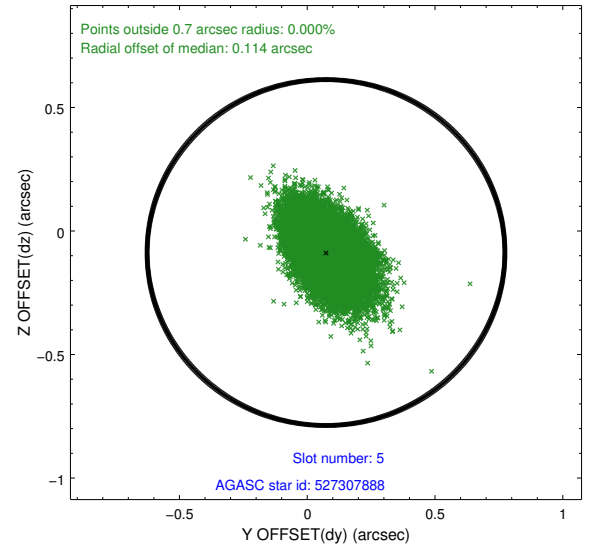
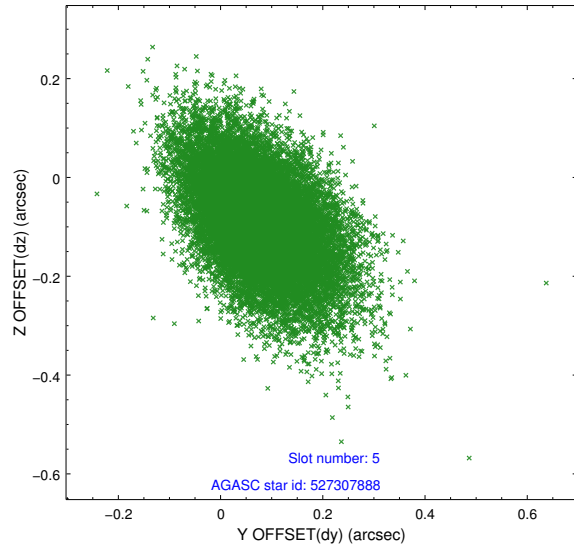
2.4.1 Slot 3



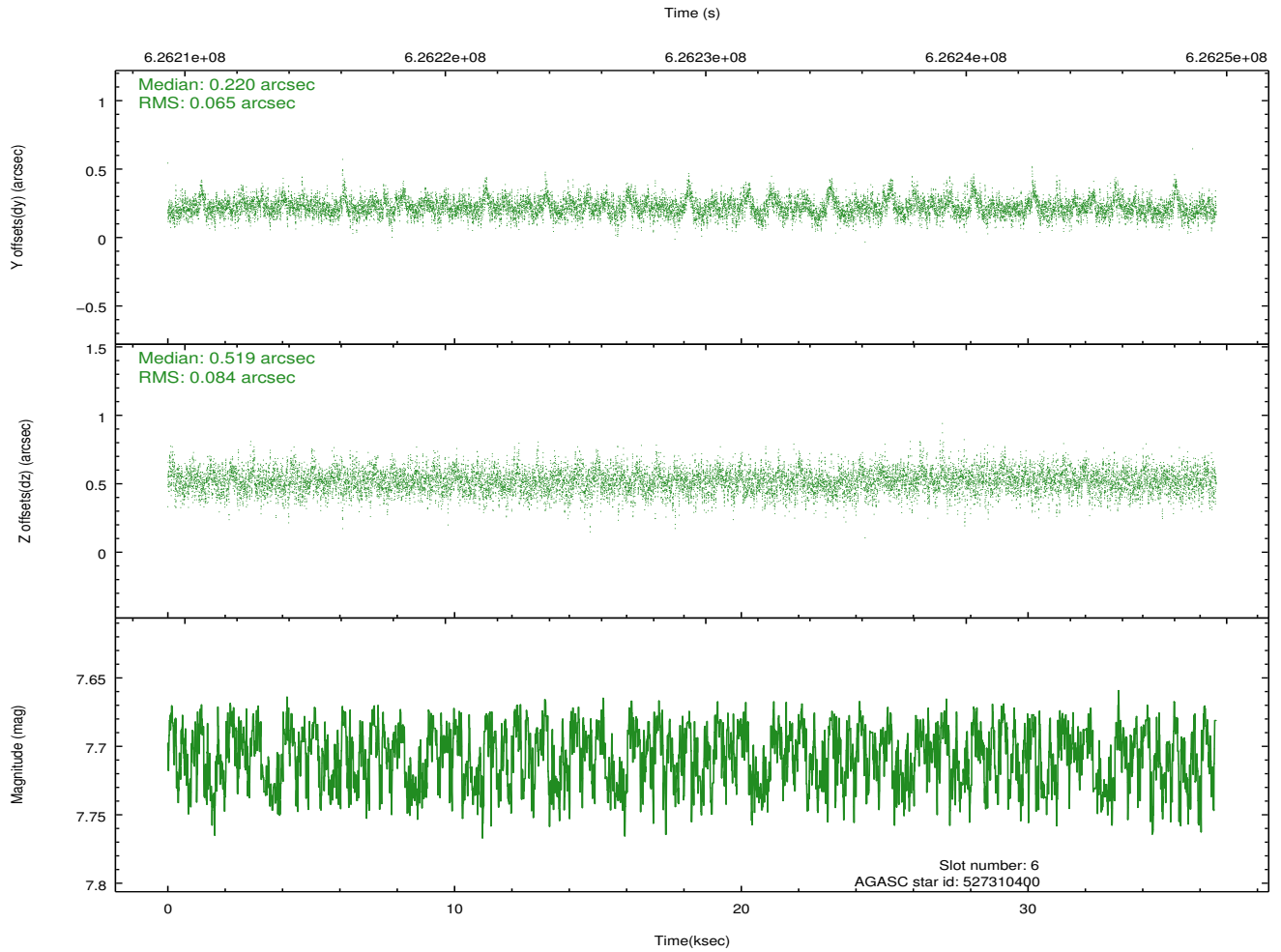
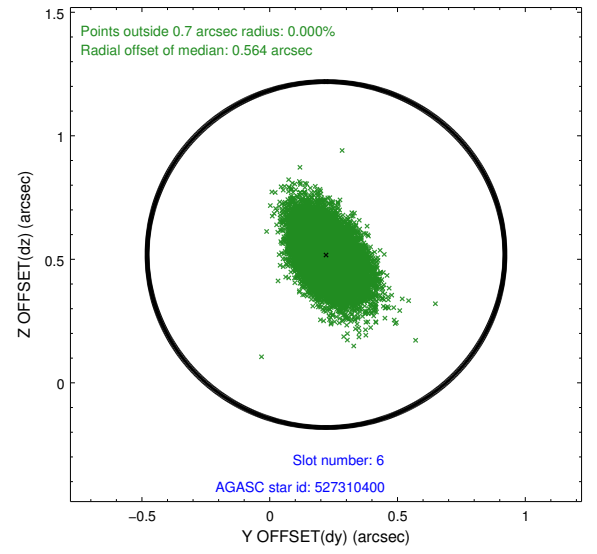
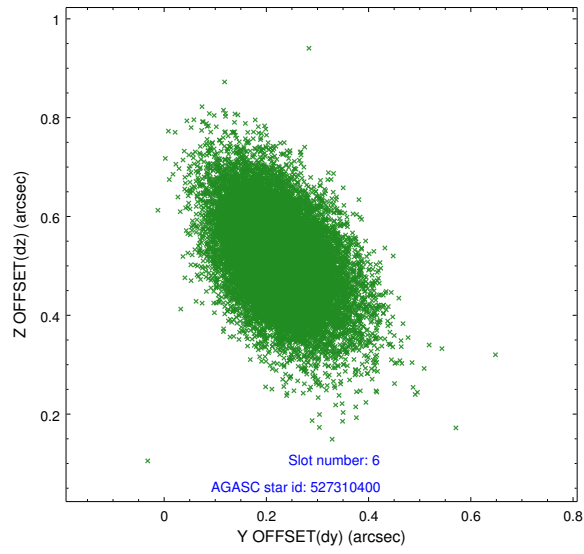
2.4.2 Slot 4



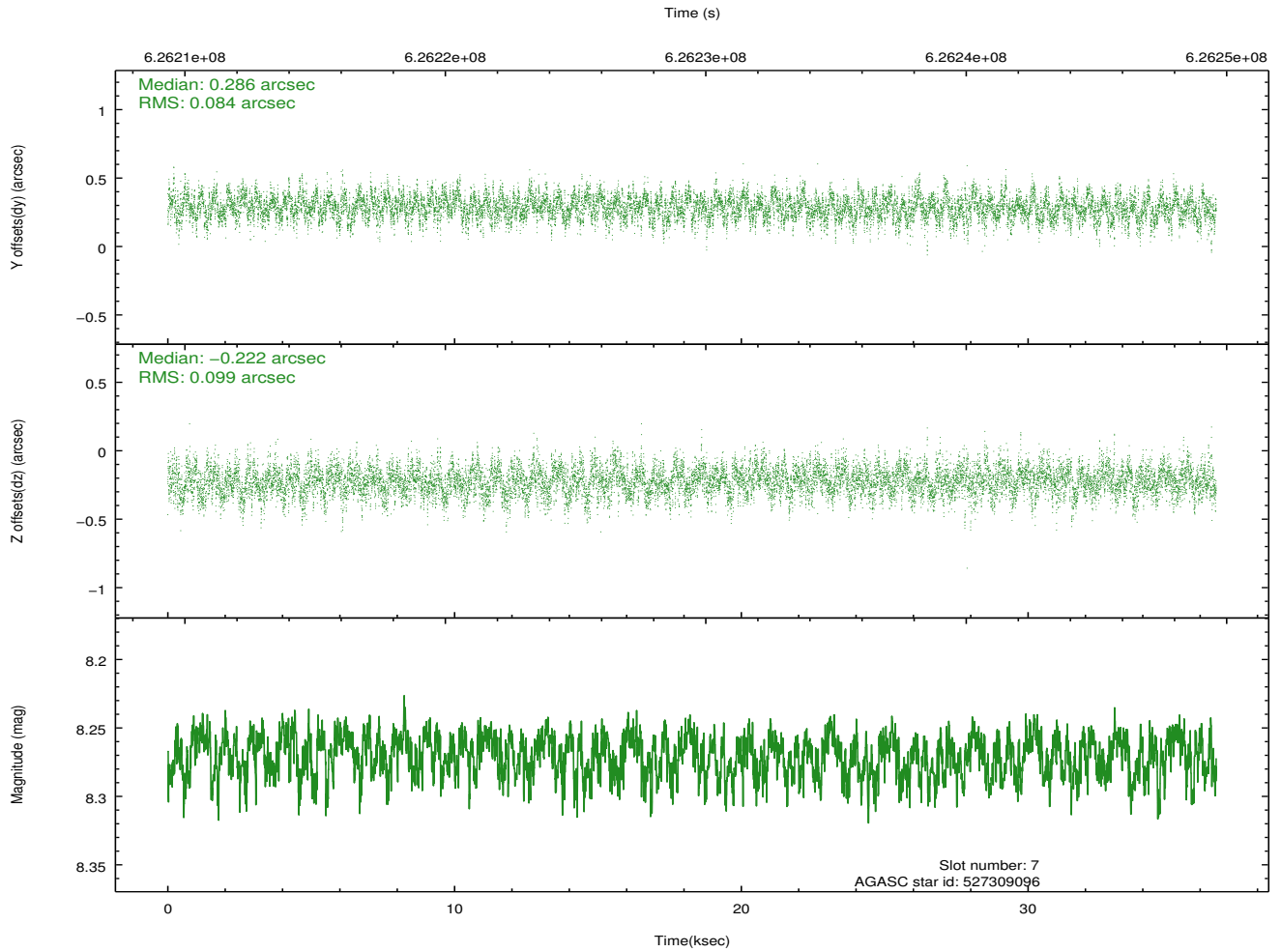
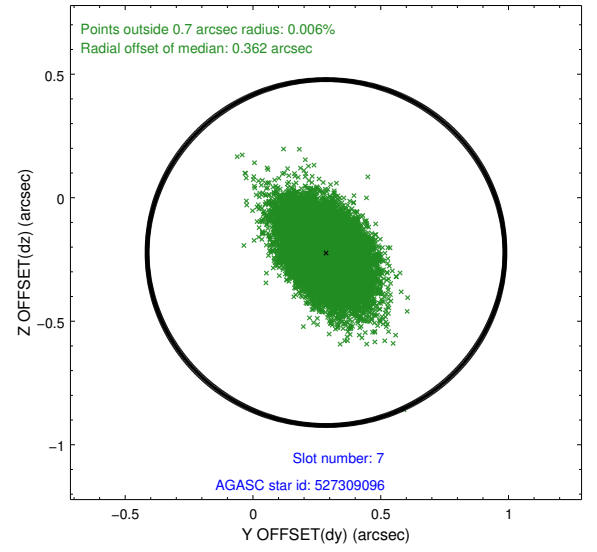
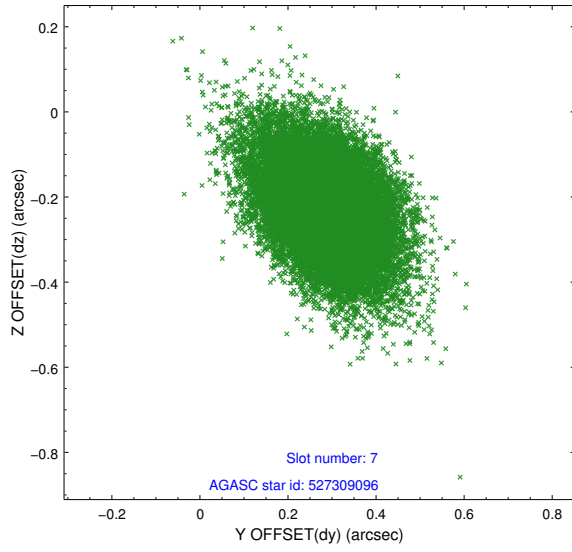
2.4.3 Slot 5



2.4.4 Slot 6

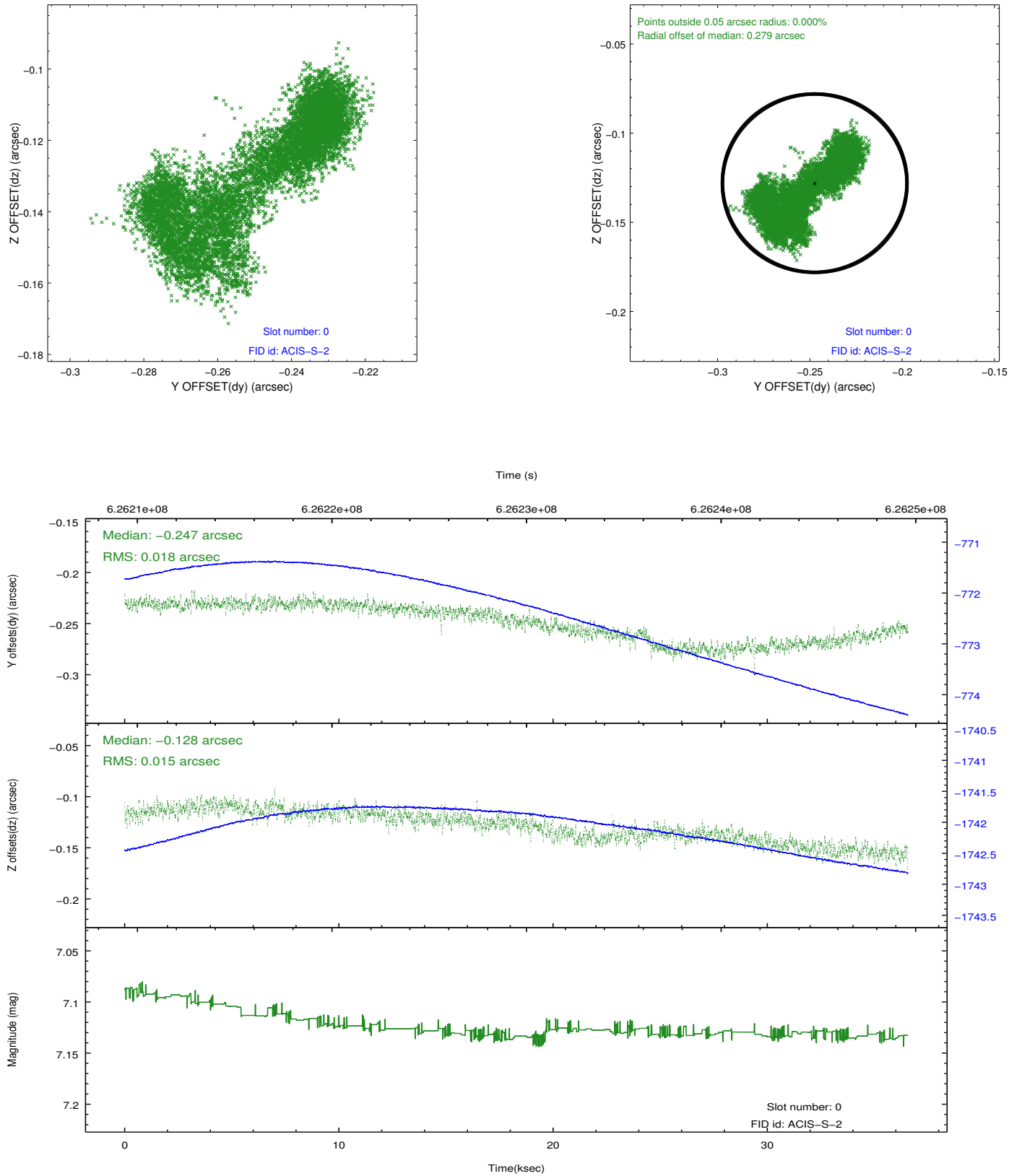


2.4.5 Slot 7

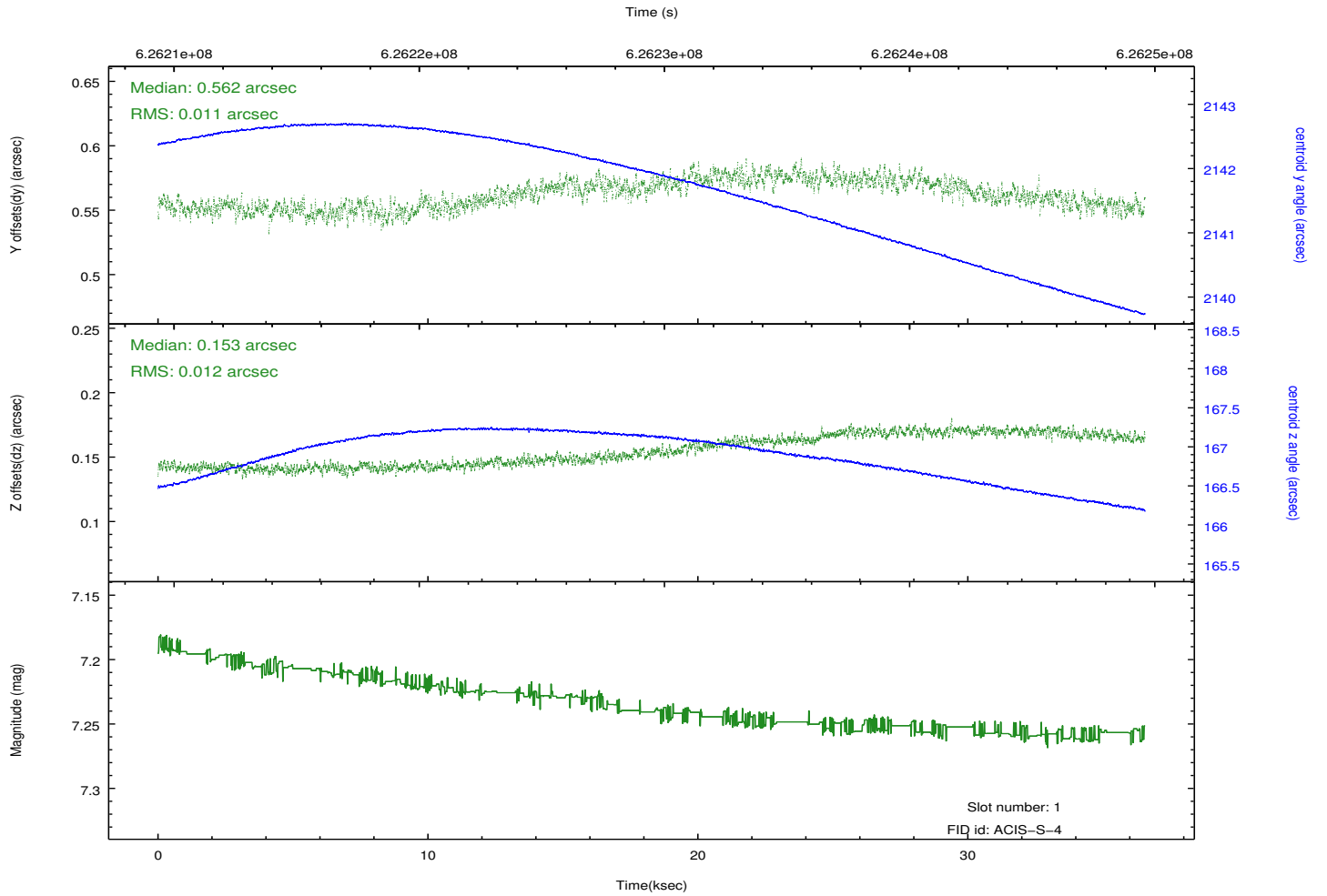
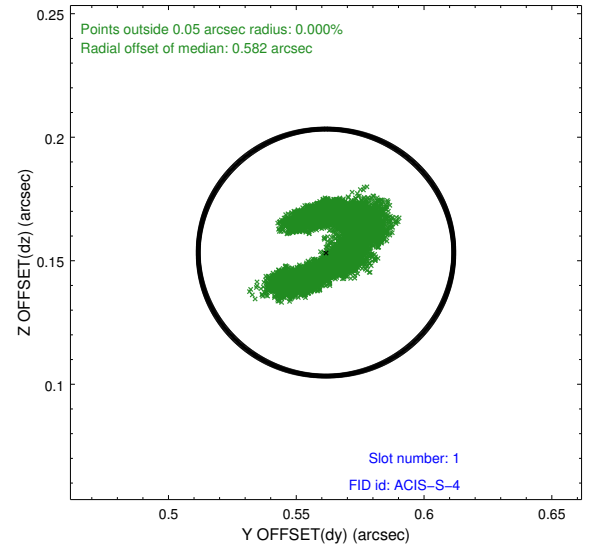
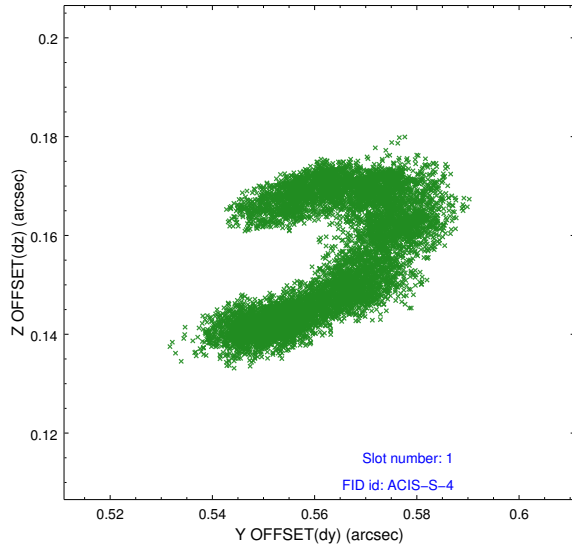


2.5 FID Slots

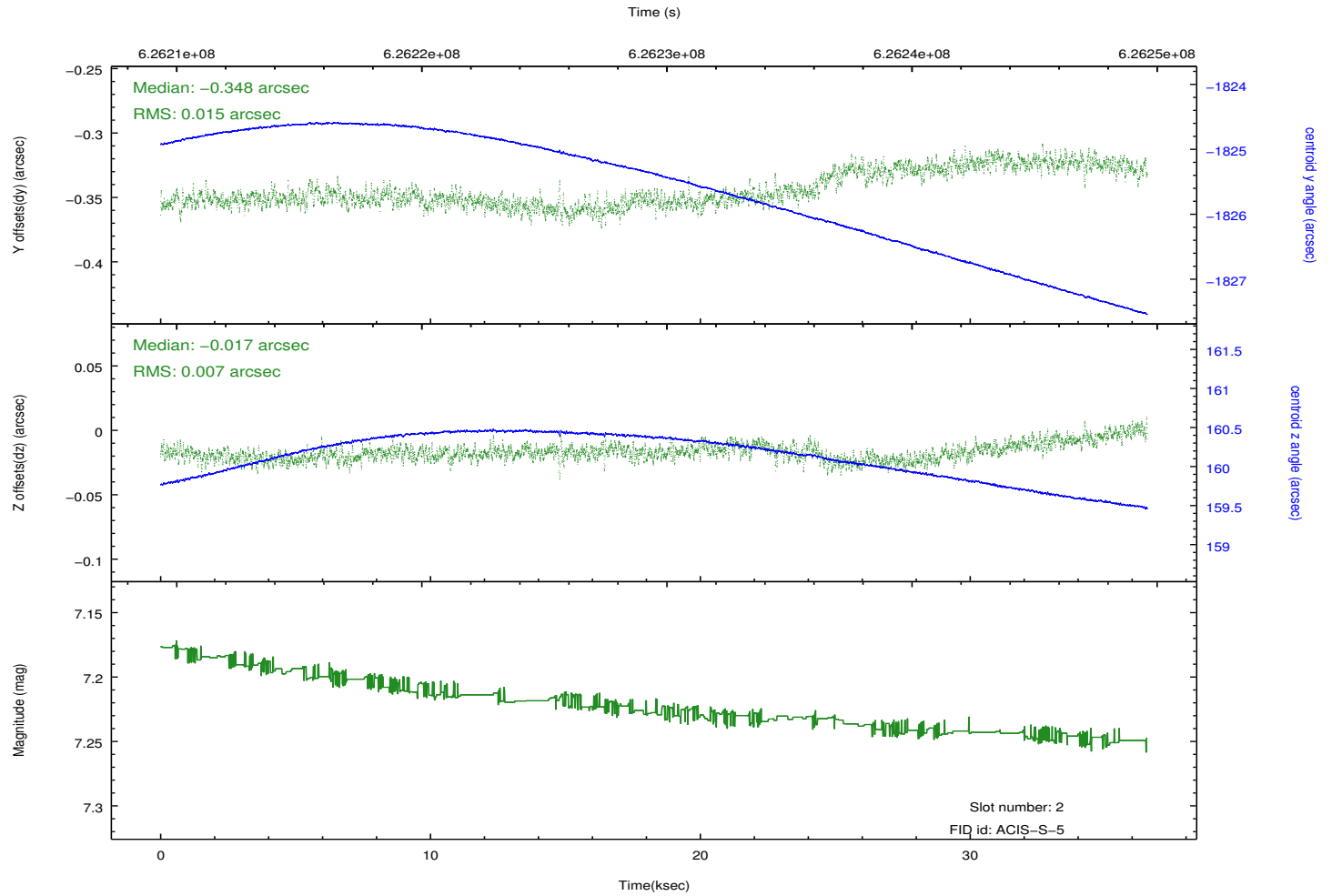
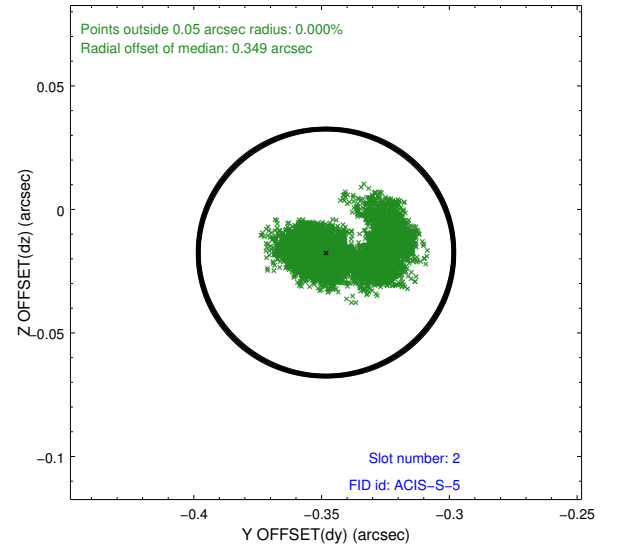
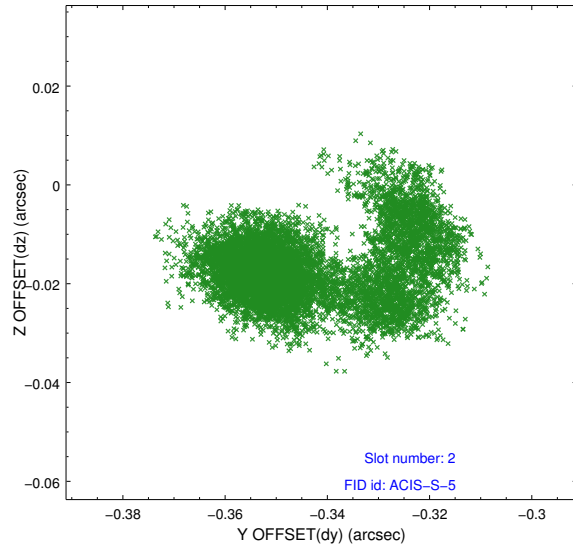
2.5.1 Slot 0



2.5.2 Slot 1

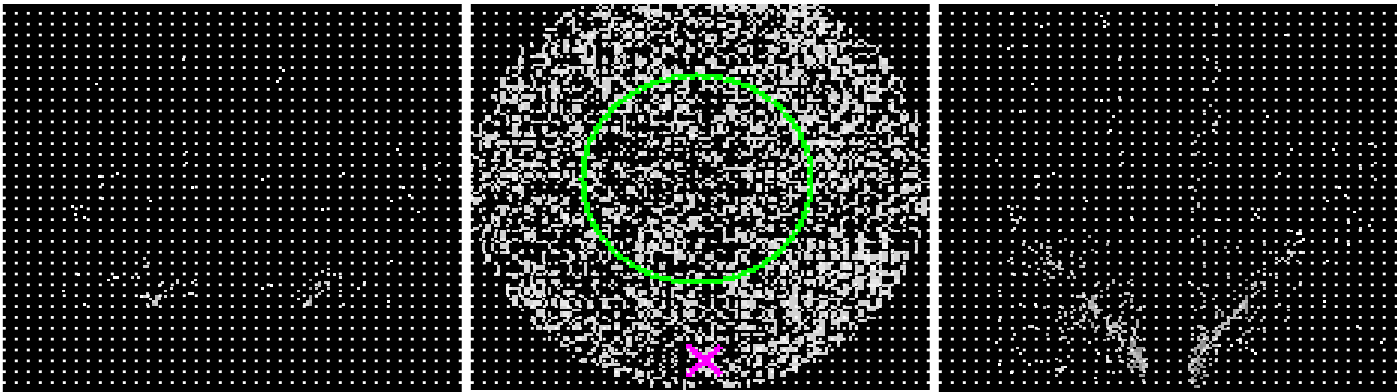


2.5.3 Slot 2



3 Gratings

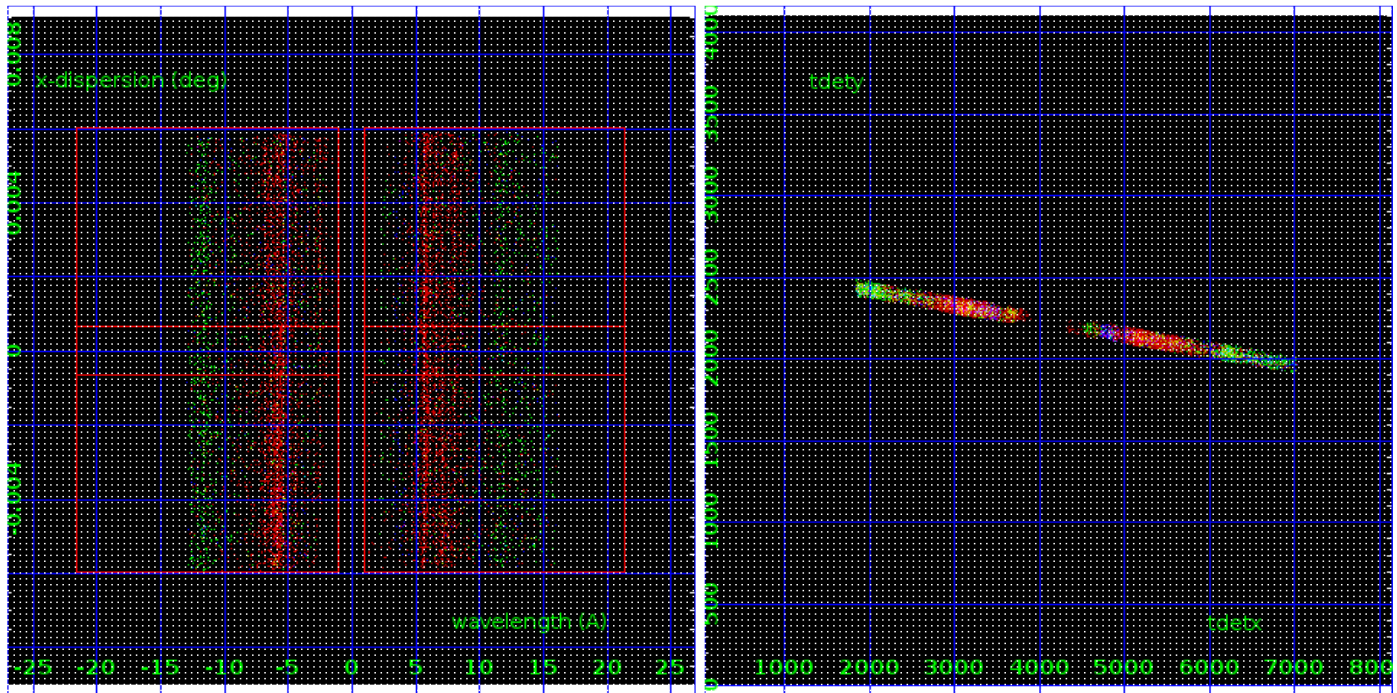
3.1 HEG Arm



HEG Order Sort 123

HEG Zero Order

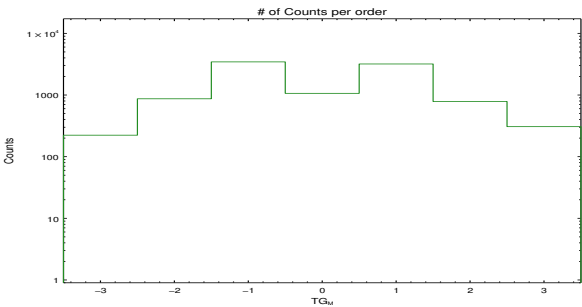
HEG Order Sort ALL

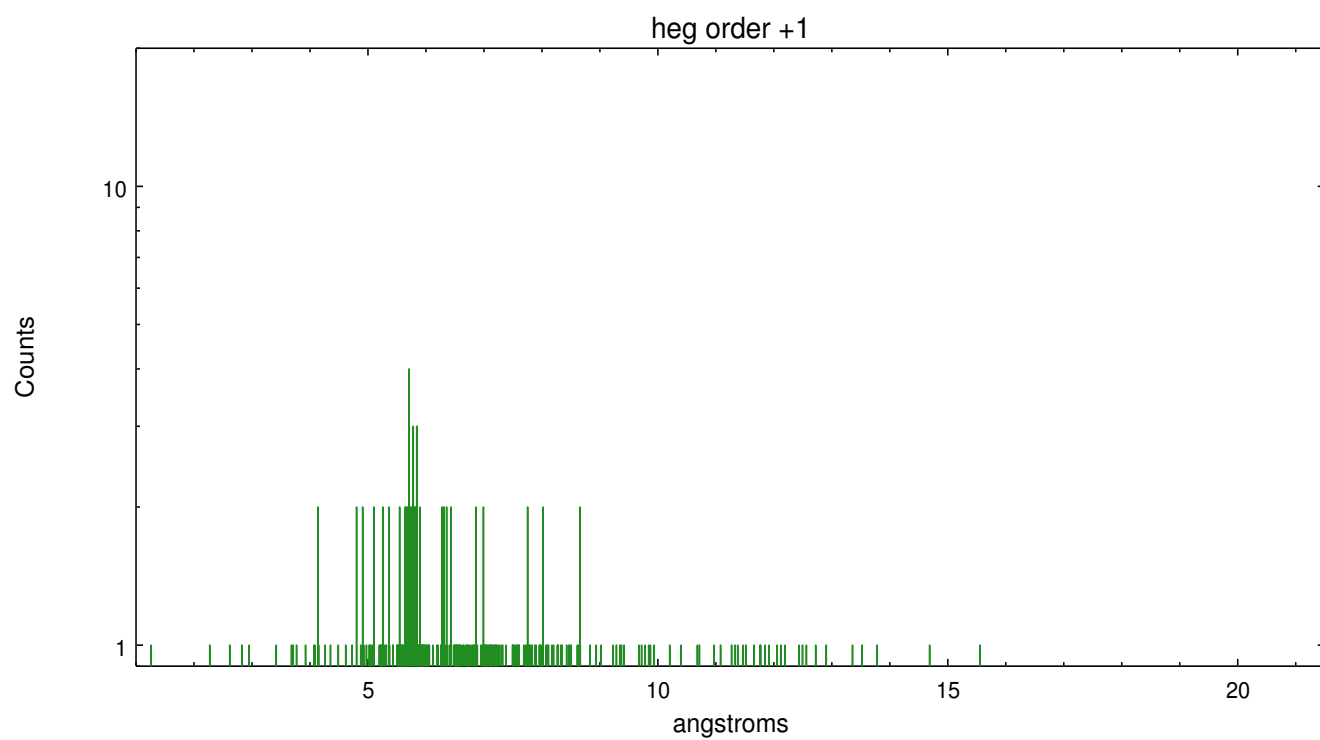
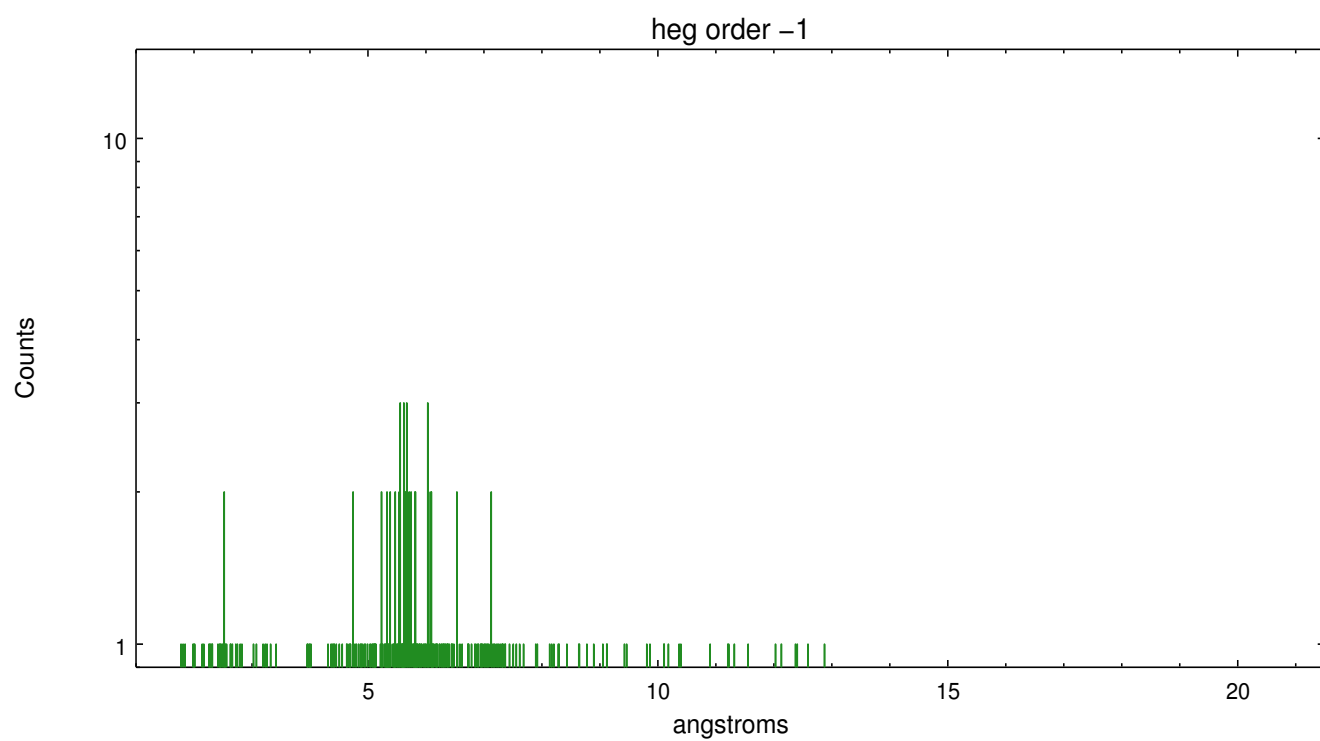


Spot Image HEG

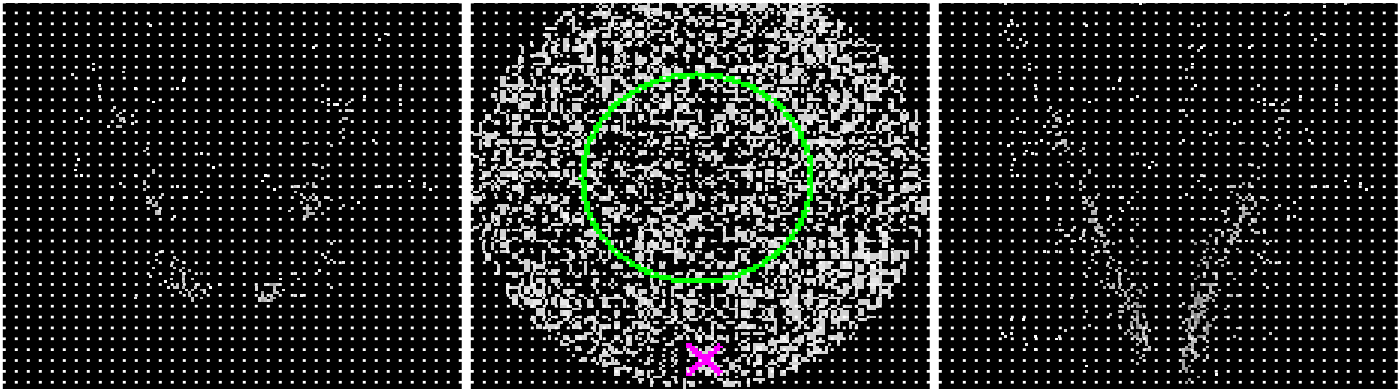
Full Detector HEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	223	869	3448	1064	3189	785	307





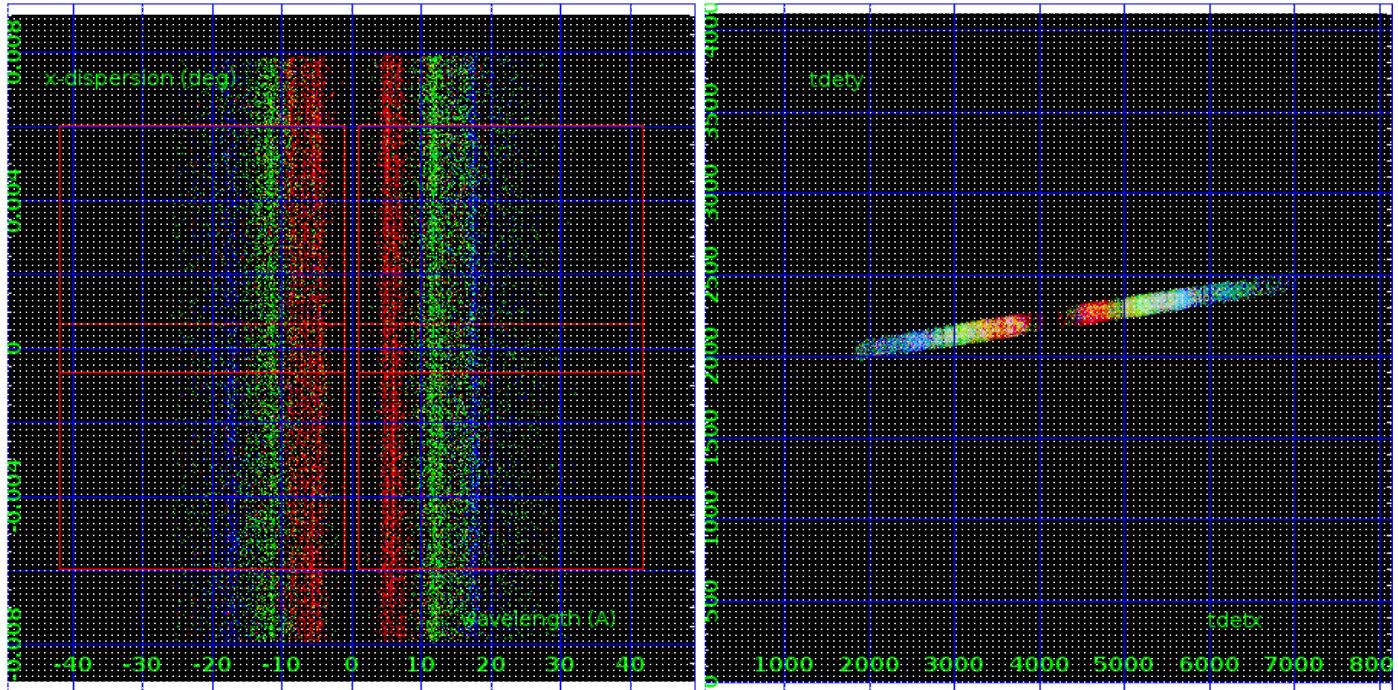
3.2 MEG Arm



MEG Order Sort 123

MEG Zero Order

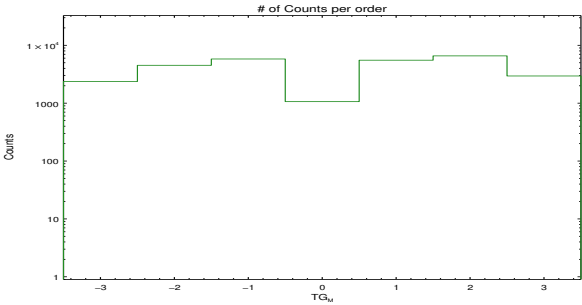
MEG Order Sort ALL

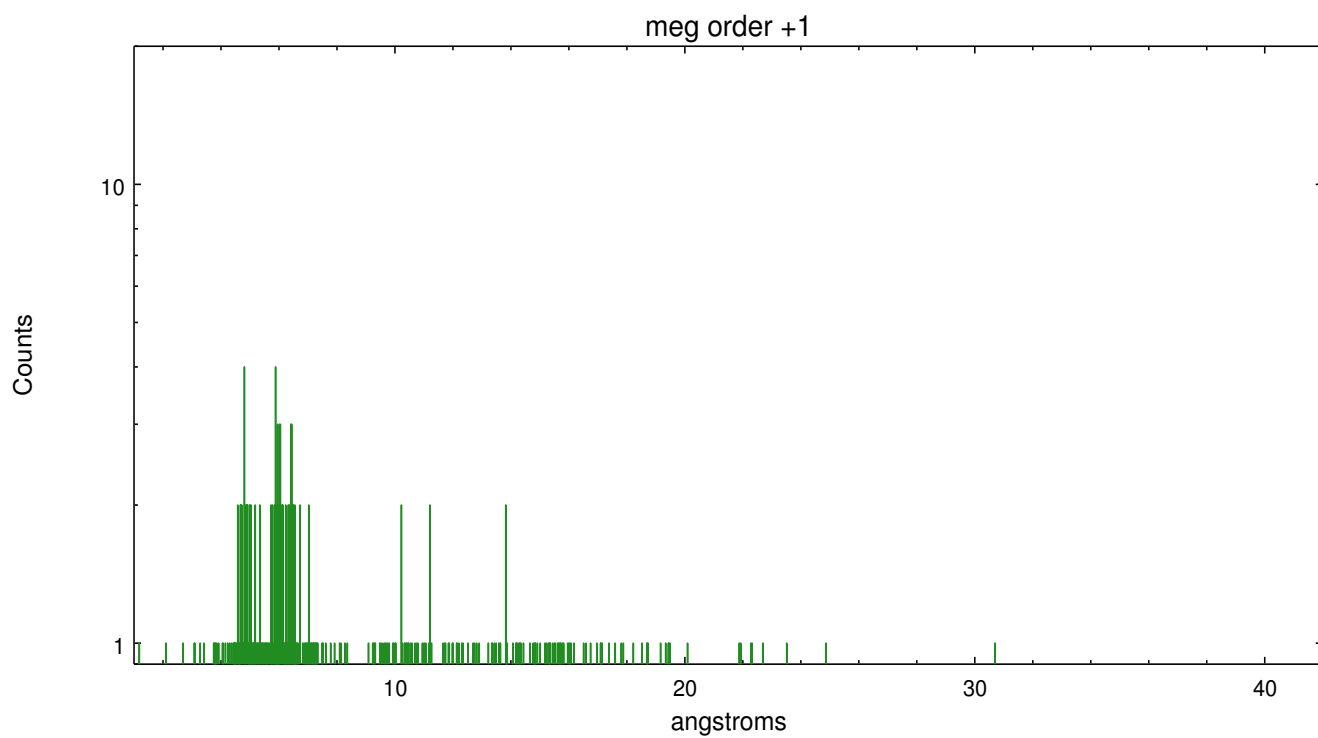
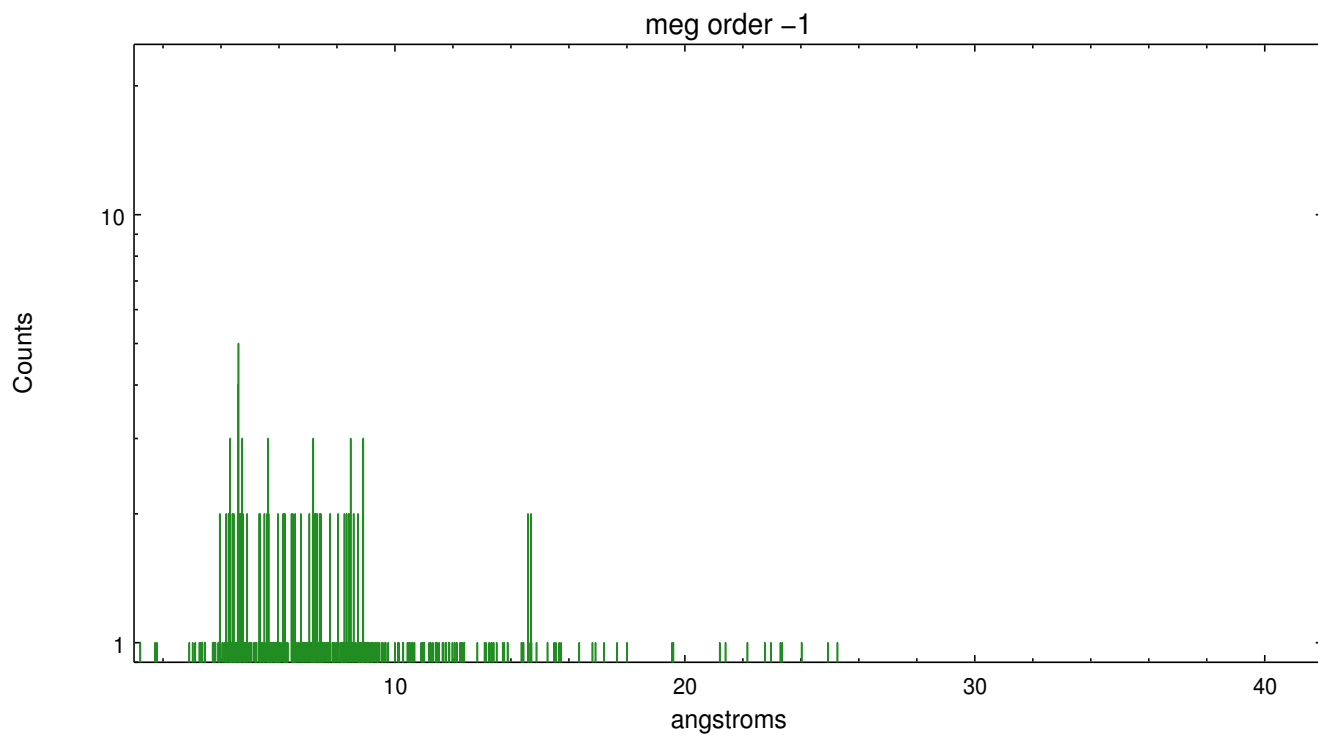


Spot Image MEG

Full Detector MEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	2371	4513	5806	1064	5530	6571	2953





A Summary

A.1 Status

V&V Scientist	David Huenemoerder
V&V Date (YYYY-MM-DD)	2017.11.06
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	36.369200279832

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.