

V&V Reference Report

L2 ASCDS Version : 10.6

Observation 20835 - L2 Version 1
Chandra X-Ray Center

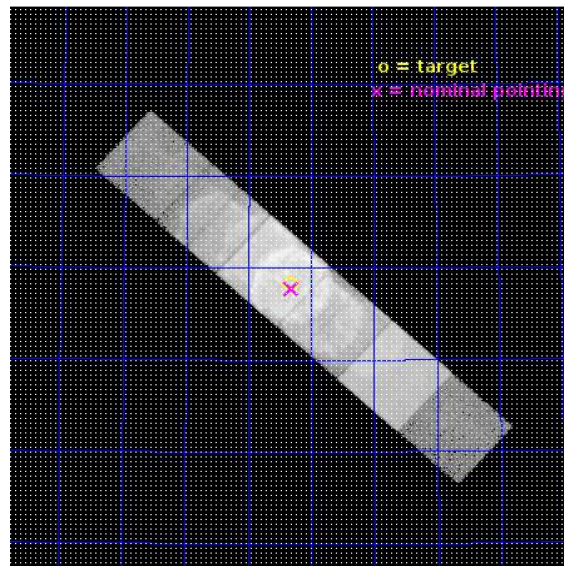
L2 Processing Date : Nov 6 2017

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1 Front

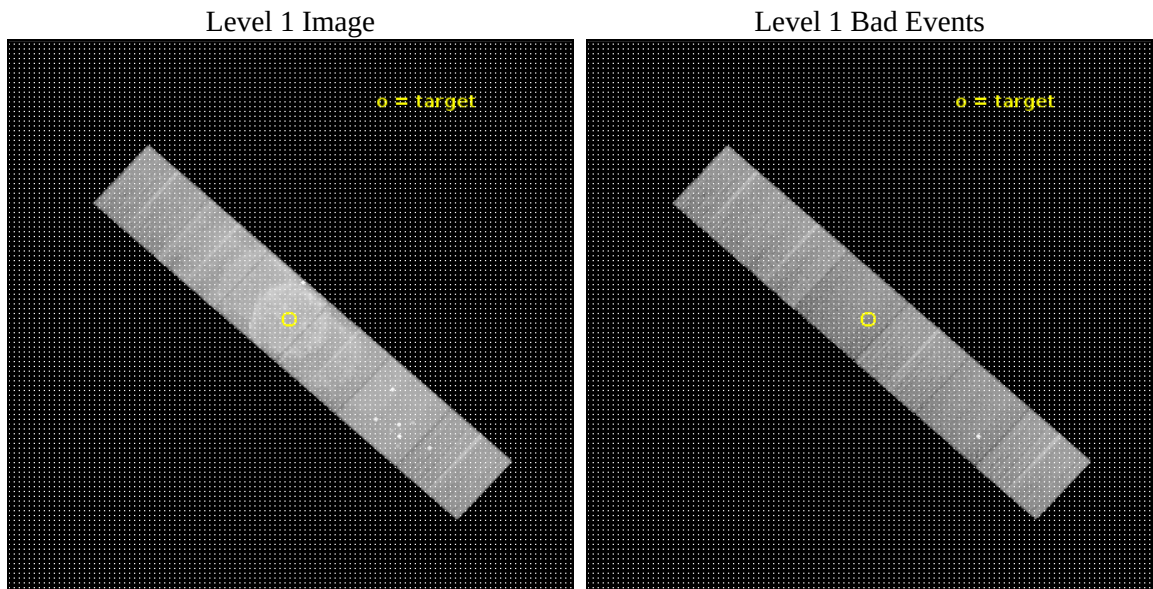
seq_num	502941	Sequence number
obs_id	20835	Observation id
title	Ejecta Kinematics Study of Tycho's SNR With Chandra HETGS	Proposa
observer	SANGWOOK PARK	Principal investigator
object	Tycho's Supernova Remnant	Source name
dtcycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	6.329167	Observer's specified target RA [deg]
dec_targ	64.136111	Observer's specified target Dec [deg]
ra_nom	6.328487648489	Nominal RA [deg]
dec_nom	64.129427393186	Nominal Dec [deg]
roll_nom	222.15723948841	Nominal Roll [deg]
revision	1	Processing version of data
ontime	27948.80041647	Sum of GTIs [s]
livetime	27594.895876849	Livetime [s]
ontime4	27712.20173943	Sum of GTIs [s]
ontime5	27948.80041647	Sum of GTIs [s]
ontime6	27741.371413112	Sum of GTIs [s]
ontime7	27948.80041647	Sum of GTIs [s]
ontime8	27945.559376121	Sum of GTIs [s]
ontime9	27922.871803761	Sum of GTIs [s]
l2events	921038	Number of level 2 events



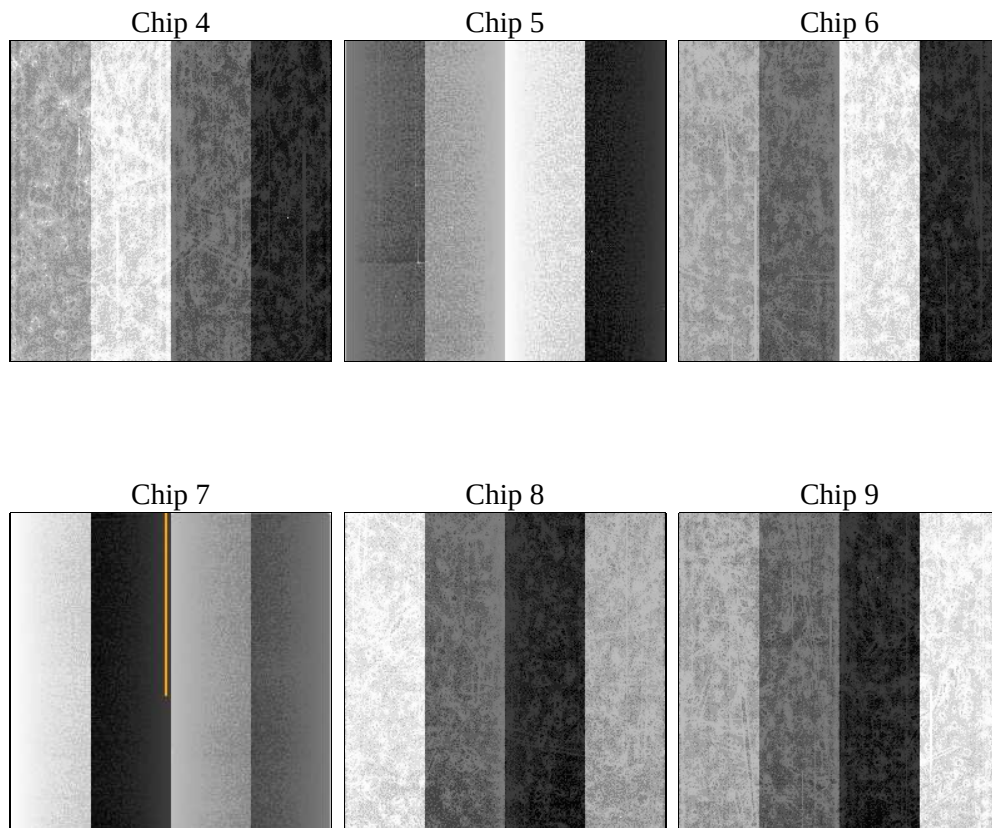
2 OBI

2.1 OBI

2.1.1 Images



2.1.2 Bias



2.1.3 Parameters

obi_num	0	Obi number	sched_exp_time	28000.000000	[s] Scheduled observation exposure time
ascdsver	10.6	Processing system revision	ontime	27948.80041647	Sum of GTIs [s]
caldsver	4.7.6	 	ontime4	27712.20173943	Sum of GTIs [s]
date	2017-11-06T17:44:05	Date and time of file creation	ontime5	27948.80041647	Sum of GTIs [s]
revision	1	Processing version of data	ontime6	27741.371413112	Sum of GTIs [s]
			ontime7	27948.80041647	Sum of GTIs [s]
			ontime8	27945.559376121	Sum of GTIs [s]
			ontime9	27922.871803761	Sum of GTIs [s]
			l1events	1962754	Number of level 1 events
			tgmethod	USER	Method used to create src1a file
			src1a_pos	(4094.41, 4145.42)	src1a sky pixel position

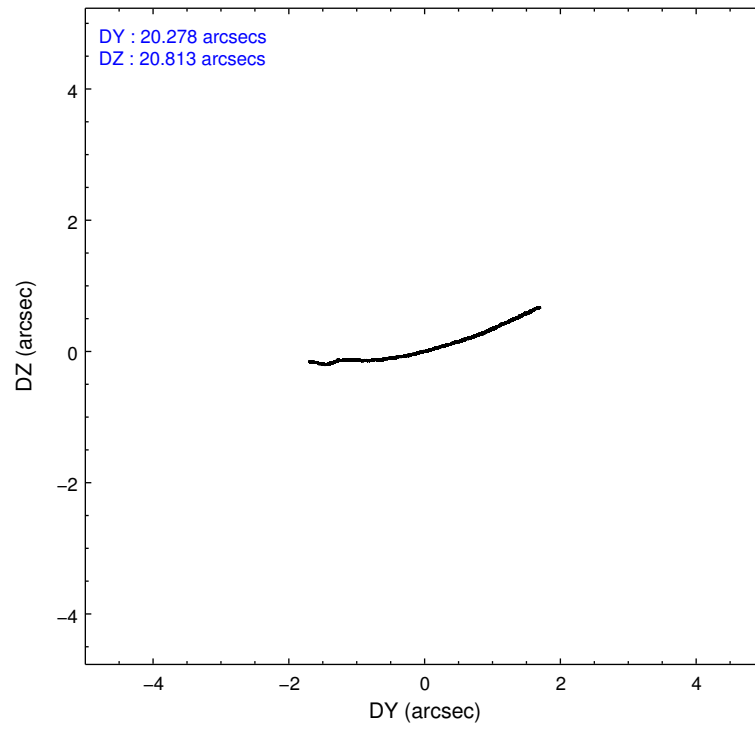
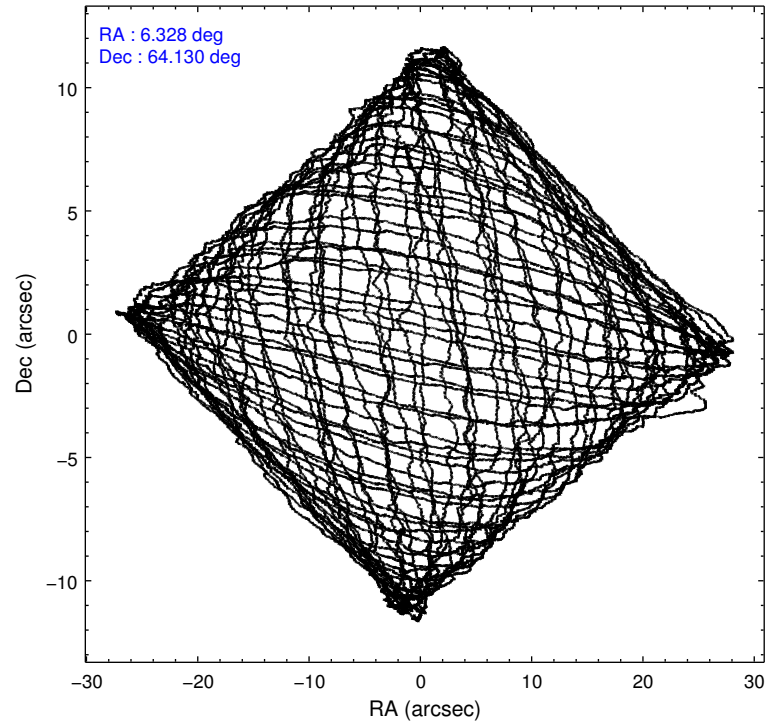
2.1.4 Events

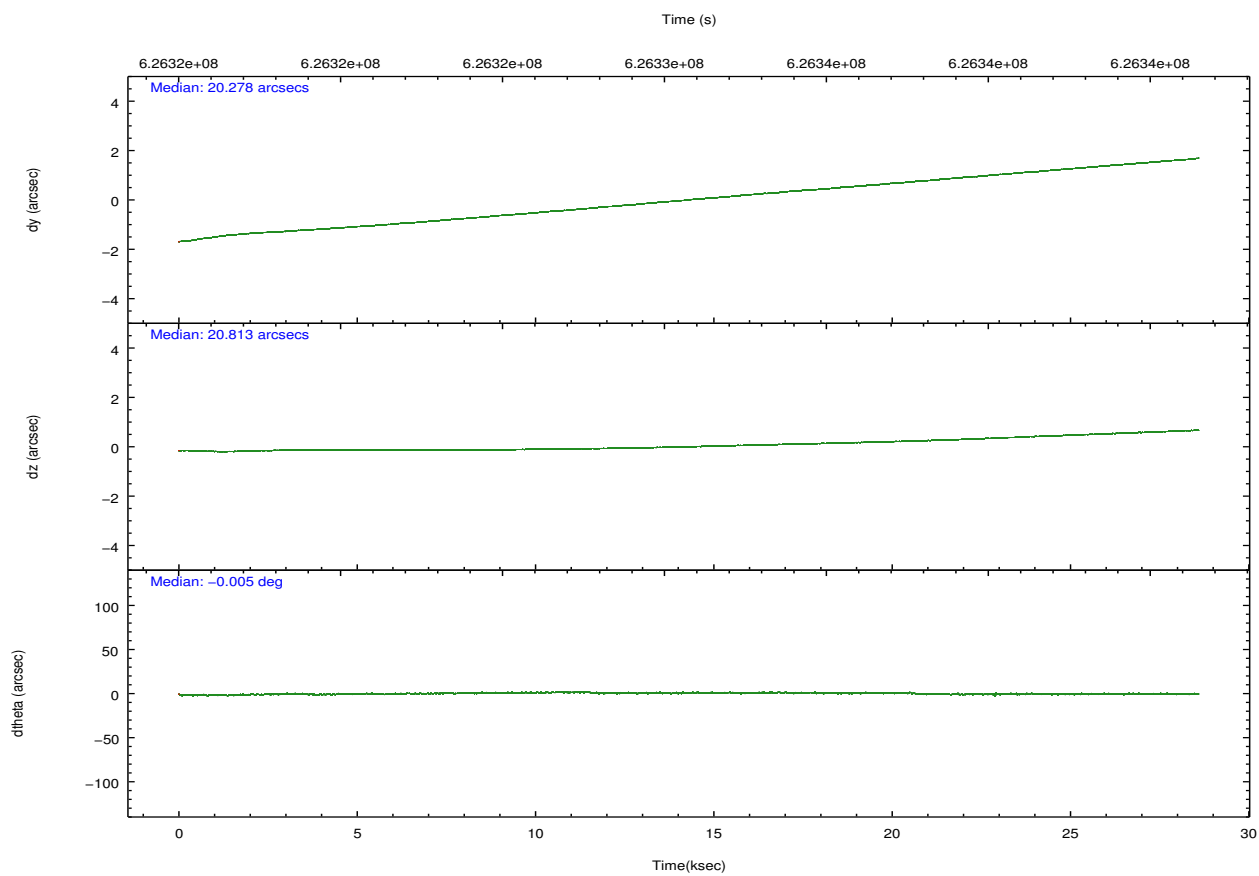
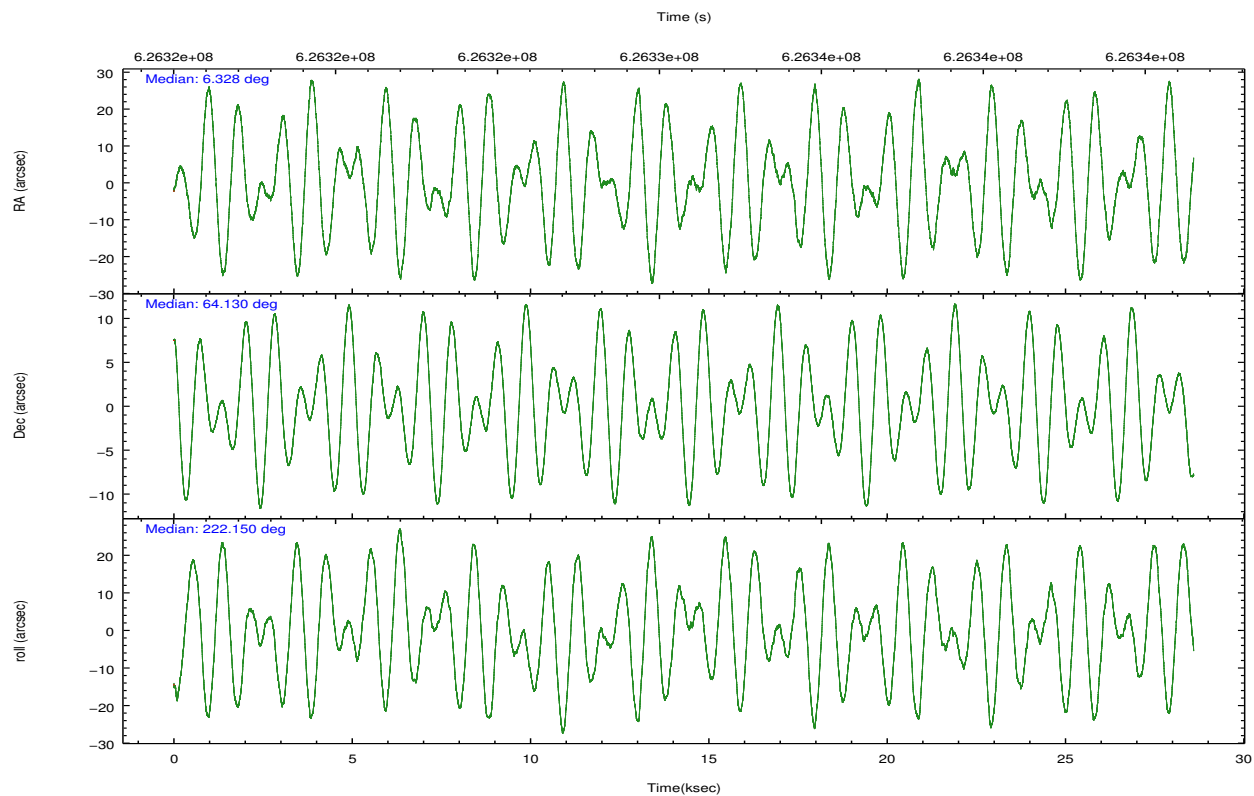
	ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9		ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
level 1 events	218991	339000	368743	529074	318627	188319	grade 0 events	18652	42448	156947	87826	88574	17528
rejected events	185762	138700	162784	110484	167400	155537		8%	12%	42%	16%	27%	9%
rejected %	84%	40%	44%	20%	52%	82%	grade 1 events	236	682	754	430	487	165
								0%	0%	0%	0%	0%	0%
							grade 2 events	6109	61300	25149	105864	24856	5573
								2%	18%	6%	20%	7%	2%
							grade 3 events	2397	8215	7592	44134	9270	2519
								1%	2%	2%	8%	2%	1%
							grade 4 events	2320	7722	7582	43515	9023	2481
								1%	2%	2%	8%	2%	1%
							grade 5 events	7822	19719	8142	23239	11832	8209
								3%	5%	2%	4%	3%	4%
							grade 6 events	3753	80640	8710	137291	19510	4683
								1%	23%	2%	25%	6%	2%
							grade 7 events	177702	118274	153867	86775	155075	147161
								81%	34%	41%	16%	48%	78%

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	6.347012	6.328487648488988	CCD I2 on	N	N
[deg] Pointing Dec	64.155674	64.12942739318621	CCD I3 on	N	N
[deg] Pointing Roll	221.983947	222.1572394884093	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)	626317037.184000	626315723.59305	CCD S5 on	Y	Y
Observation start date	2017-11-06T00:56:08	2017-11-06T00:35:23	Number of optional ACIS chips dropped	0	0
[s] Observation end time (MET)	626345037.184000	626345906.25732	On-chip summing requested	N	N
Observation end date	2017-11-06T08:42:48	2017-11-06T08:58:26	Subarray requested	NONE	NONE
Read mode	TIMED	TIMED	Alternating exposures requested	N	N
			[s] Primary exposure time	0.000000	3.2

2.3 Aspect



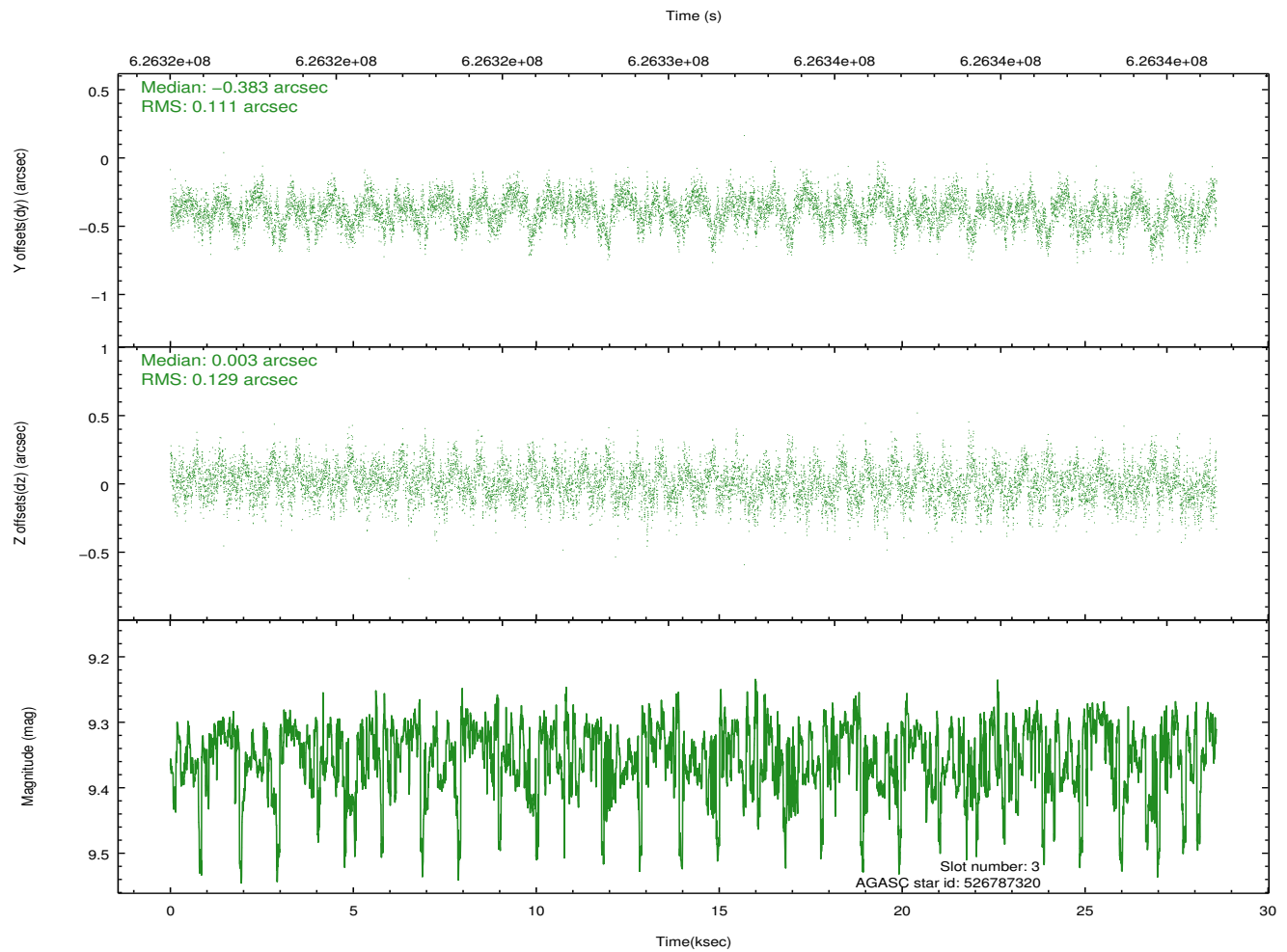
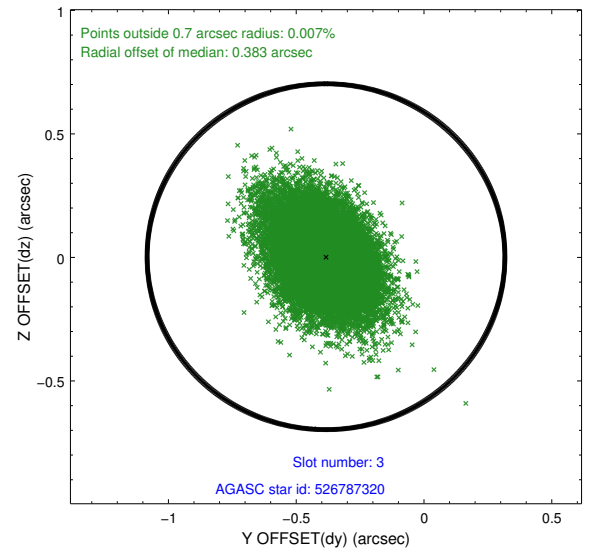
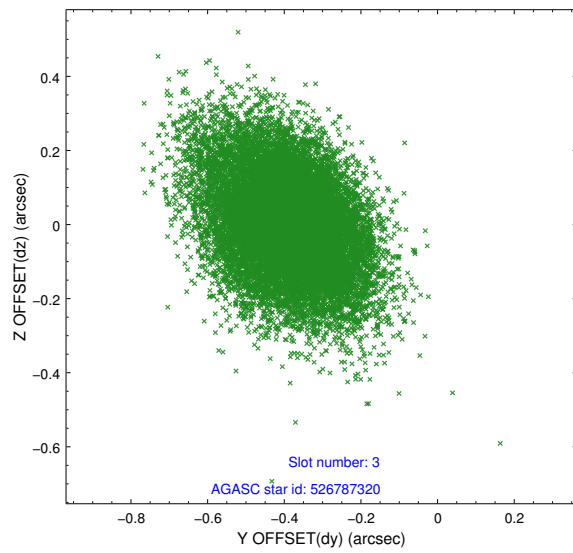


Slot Statistics

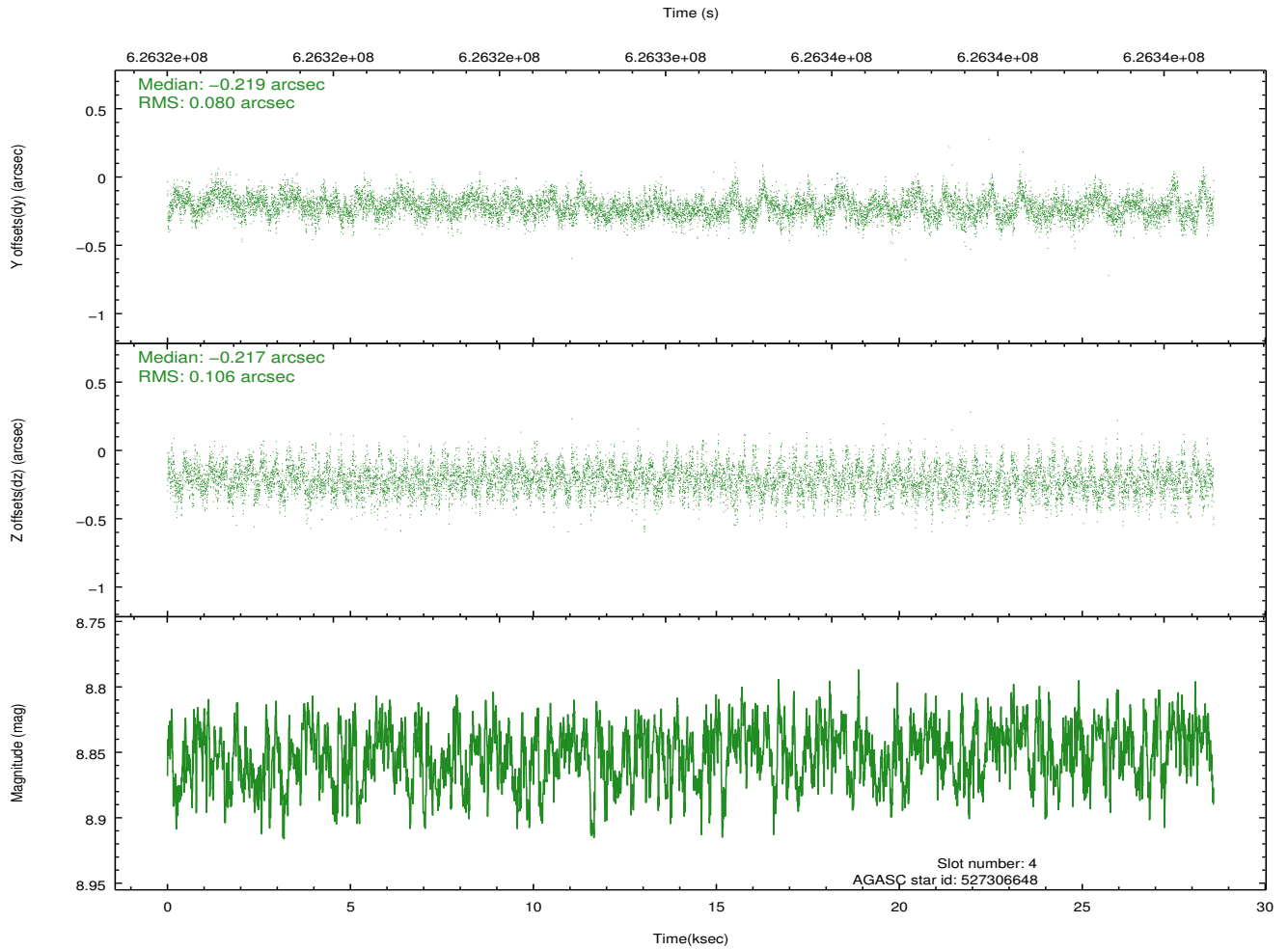
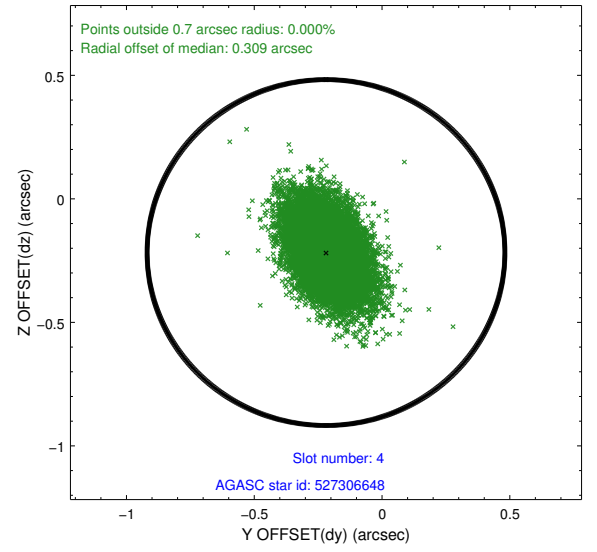
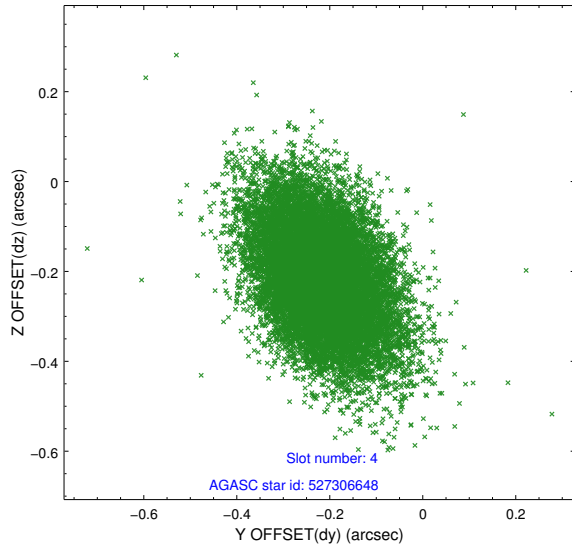
slot	status	used	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID		ACIS-S-2	6.99	6975	-0.251	-0.121	0.024	0.041	0.000000	0.000000	-773.62	-1742.57
1	FID		ACIS-S-4	7.11	6974	0.532	0.155	0.016	0.027	0.000000	0.000000	2140.37	166.14
2	FID		ACIS-S-5	7.10	6973	-0.317	-0.027	0.020	0.035	0.000000	0.000000	-1826.45	159.67
3	GUIDE	used	526787320	9.35	13928	-0.383	0.003	0.179	0.298	6.103299	63.719181	1339.01	908.17
4	GUIDE	used	527306648	8.85	13933	-0.219	-0.217	0.138	0.236	6.477351	63.853785	573.02	946.28
5	GUIDE	used	527307888	8.42	13940	0.055	-0.084	0.127	0.220	4.965121	64.287990	1270.40	-1814.66
6	GUIDE	used	527310400	7.70	13946	0.238	0.527	0.121	0.204	6.292387	64.638680	-1099.94	-1348.32
7	GUIDE	used	527309096	8.27	13943	0.304	-0.229	0.129	0.220	7.726277	64.064373	-1409.91	1679.24

2.4 Star Slots

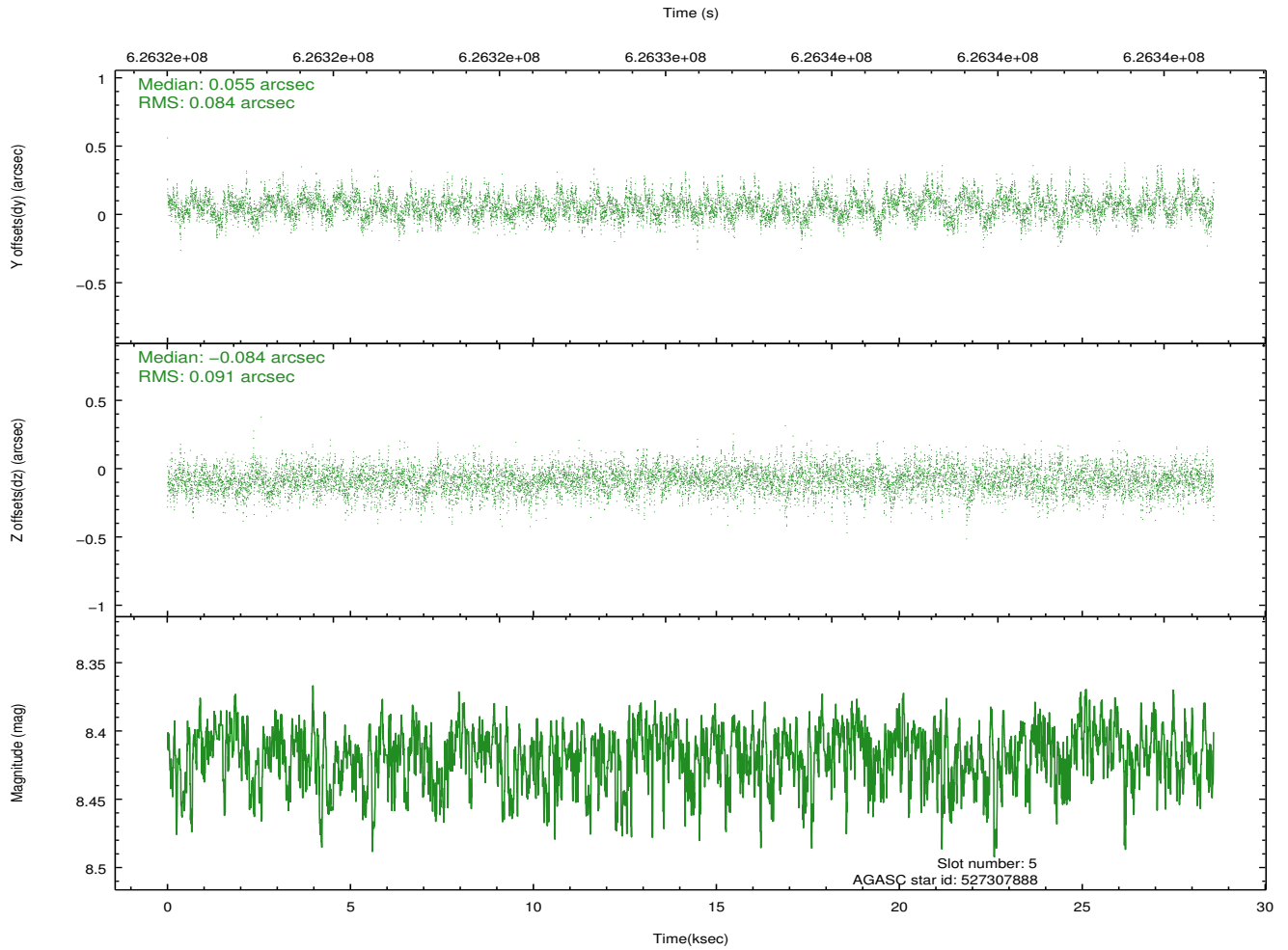
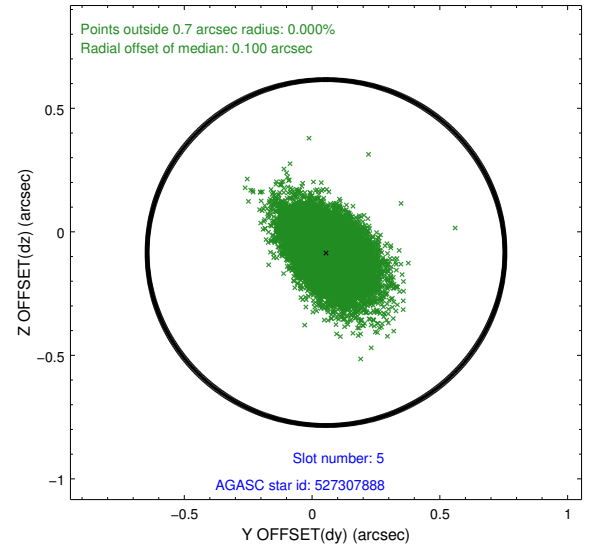
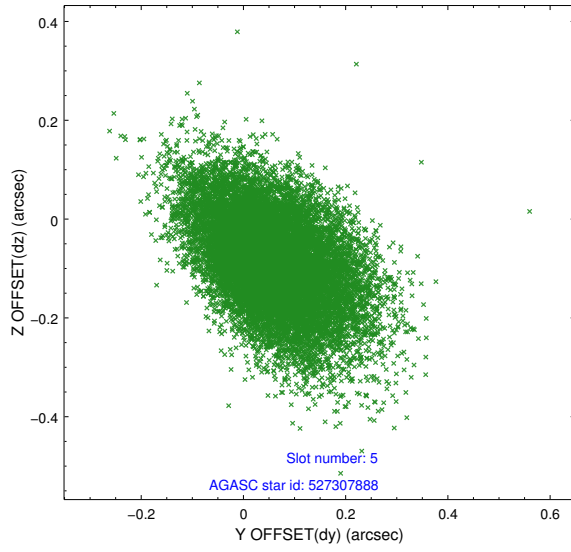
2.4.1 Slot 3



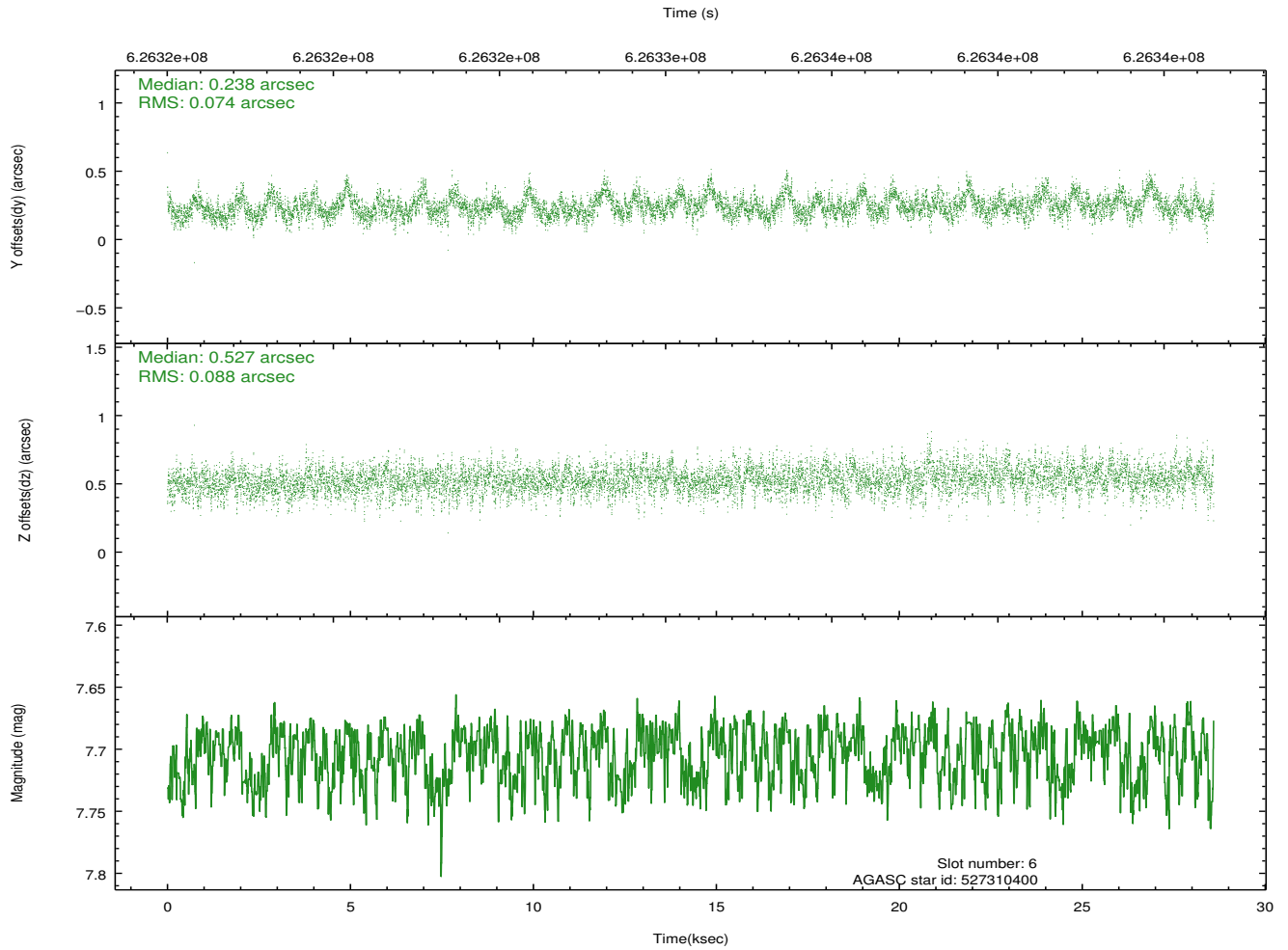
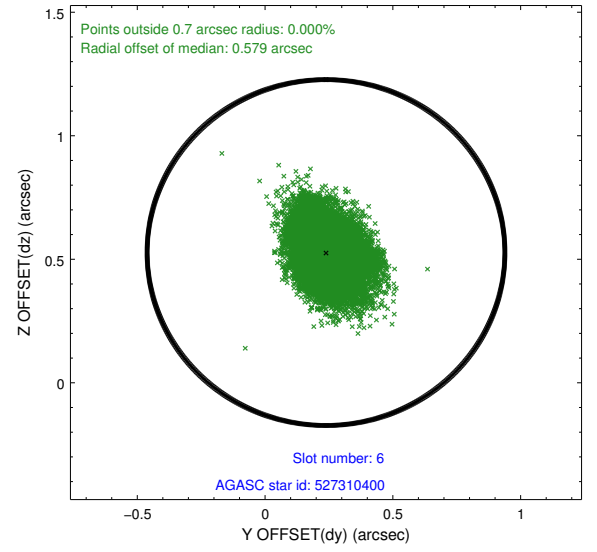
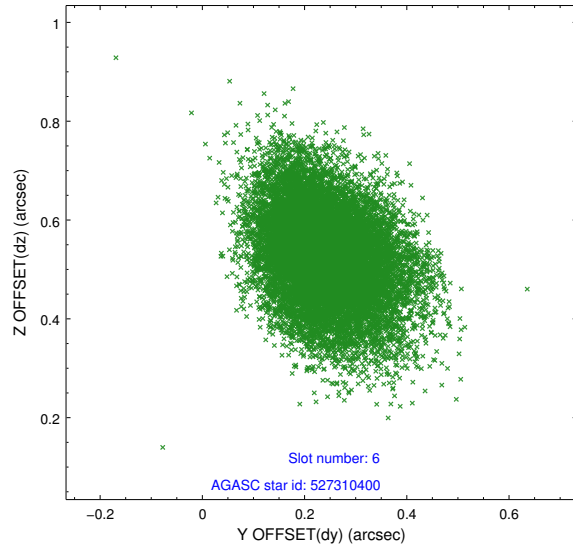
2.4.2 Slot 4



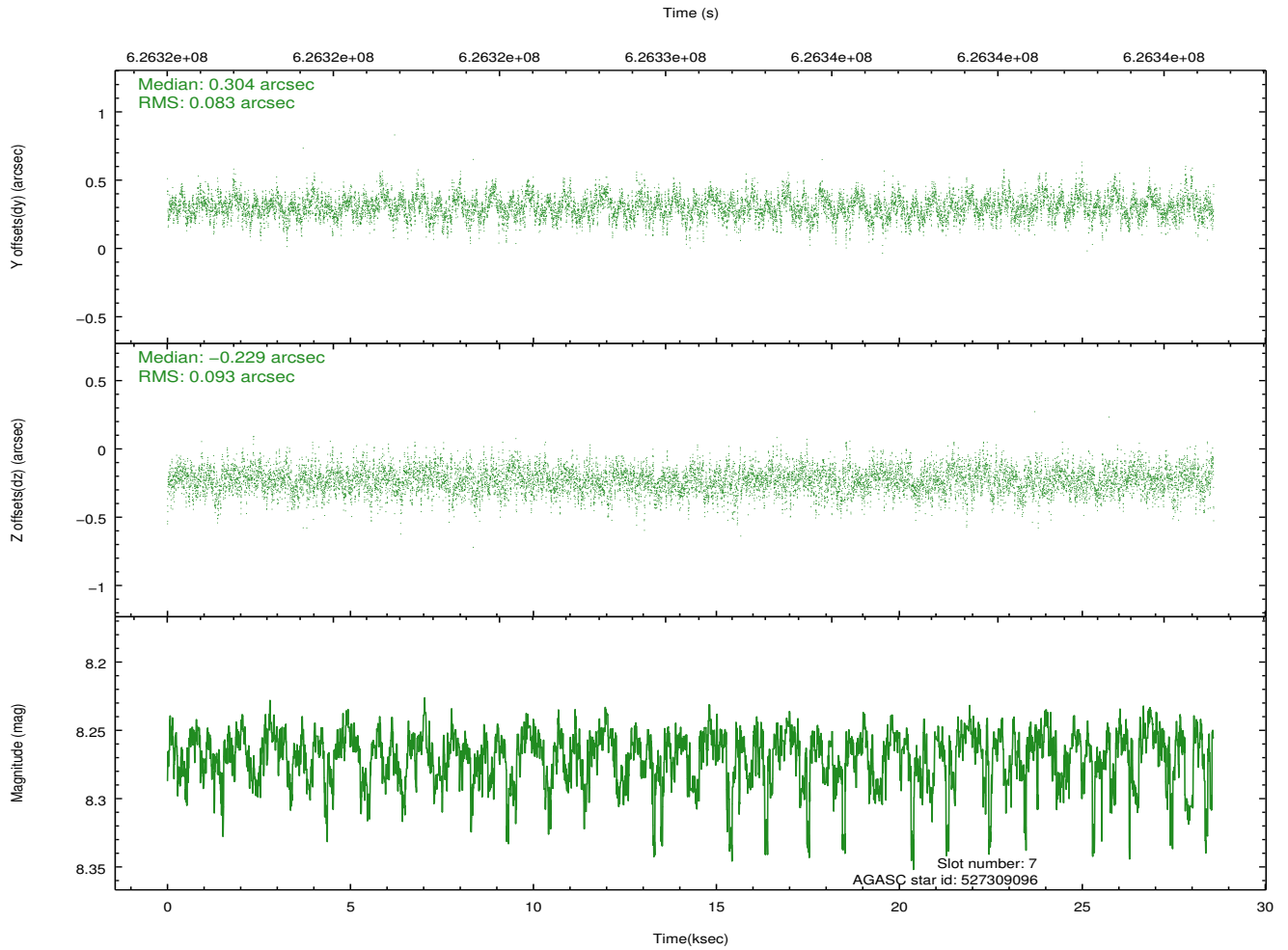
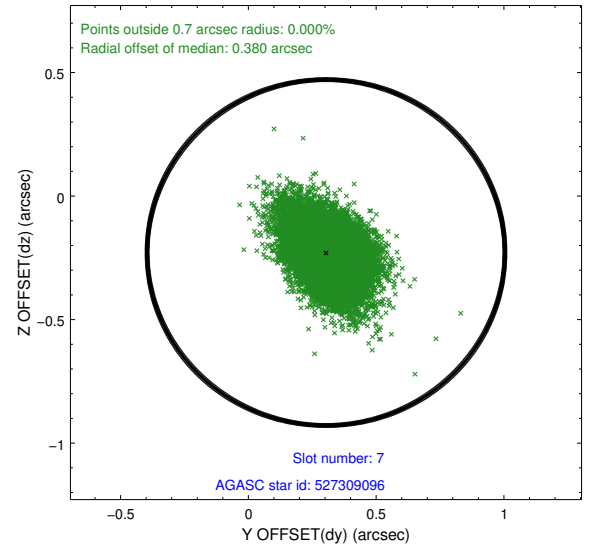
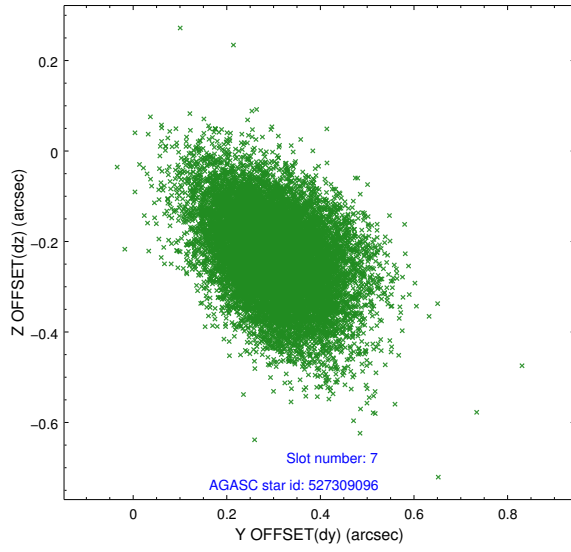
2.4.3 Slot 5



2.4.4 Slot 6

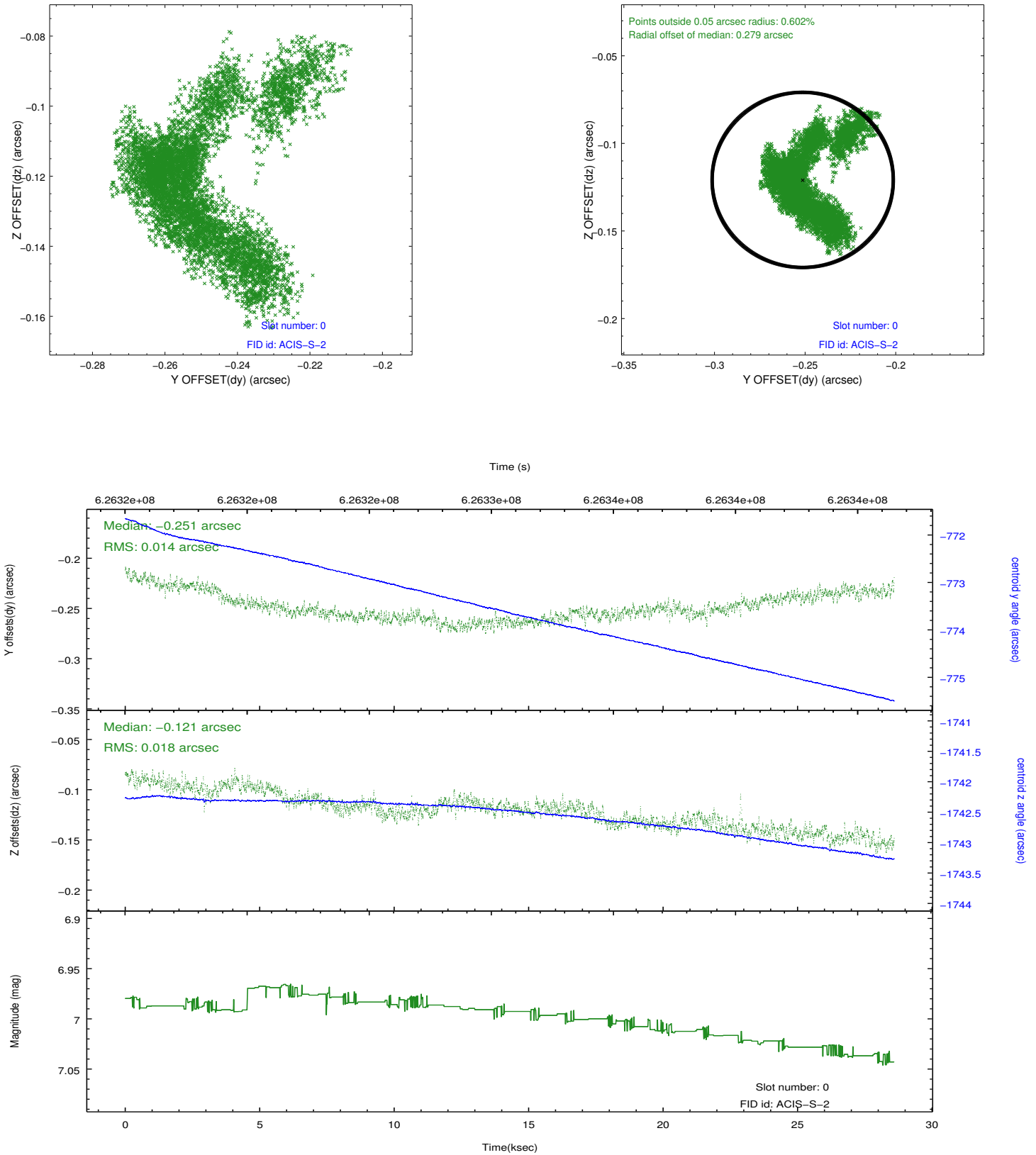


2.4.5 Slot 7

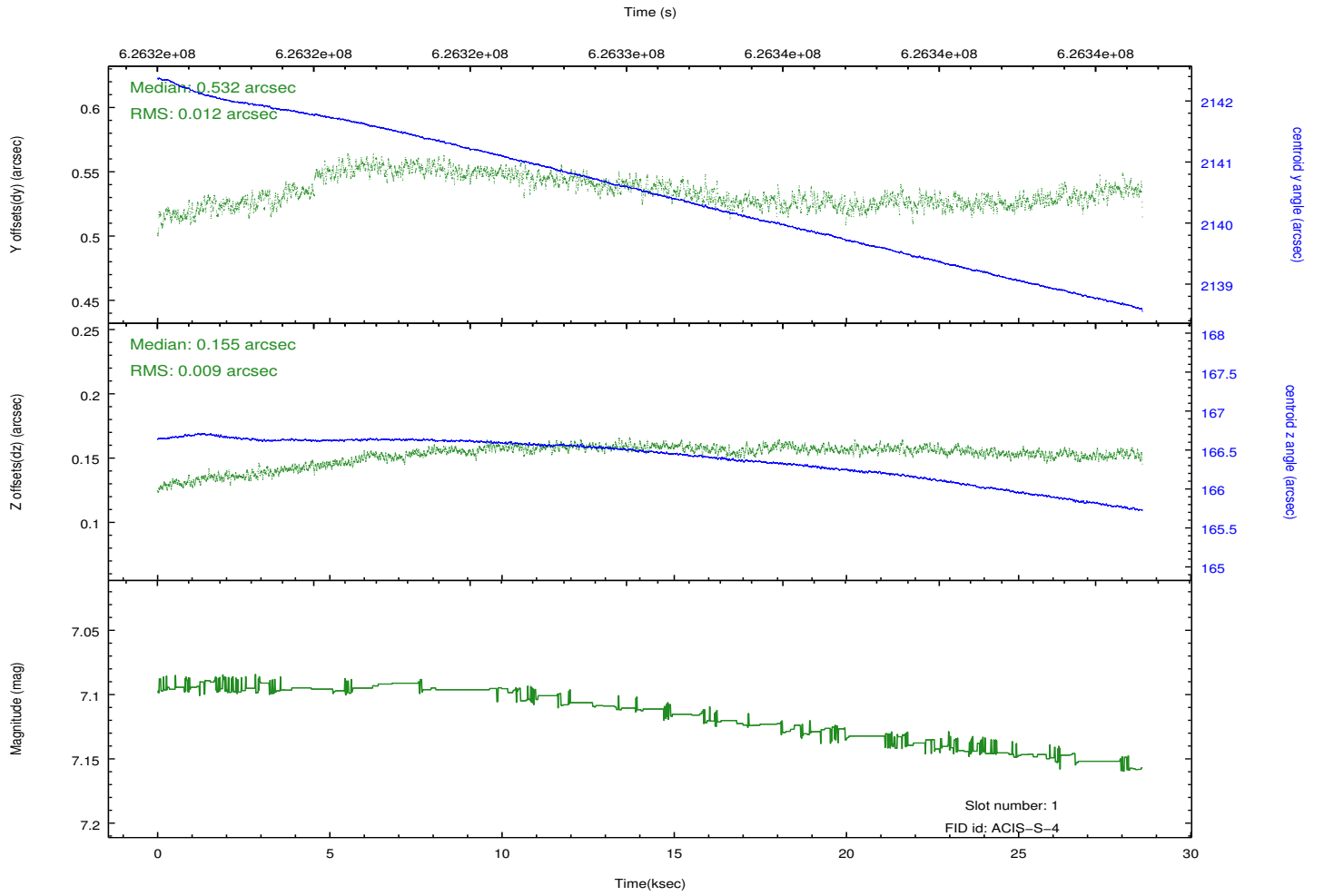
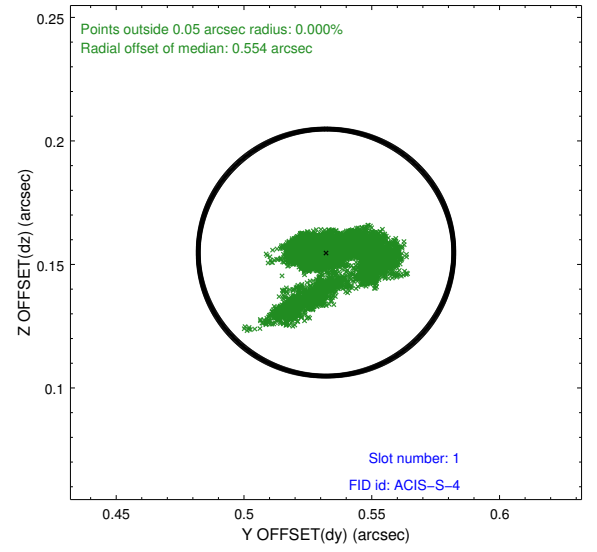
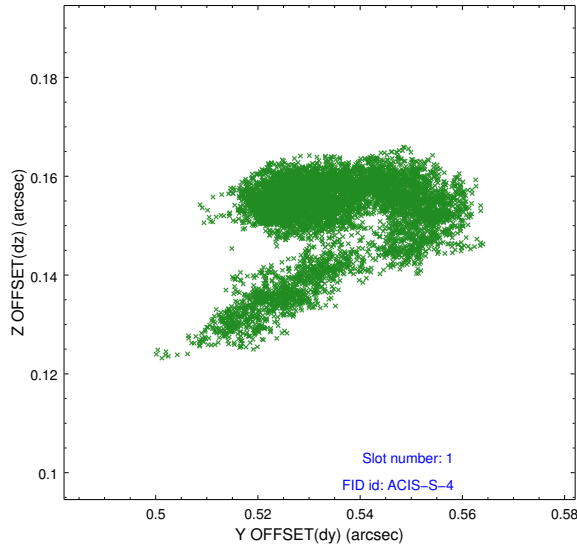


2.5 FID Slots

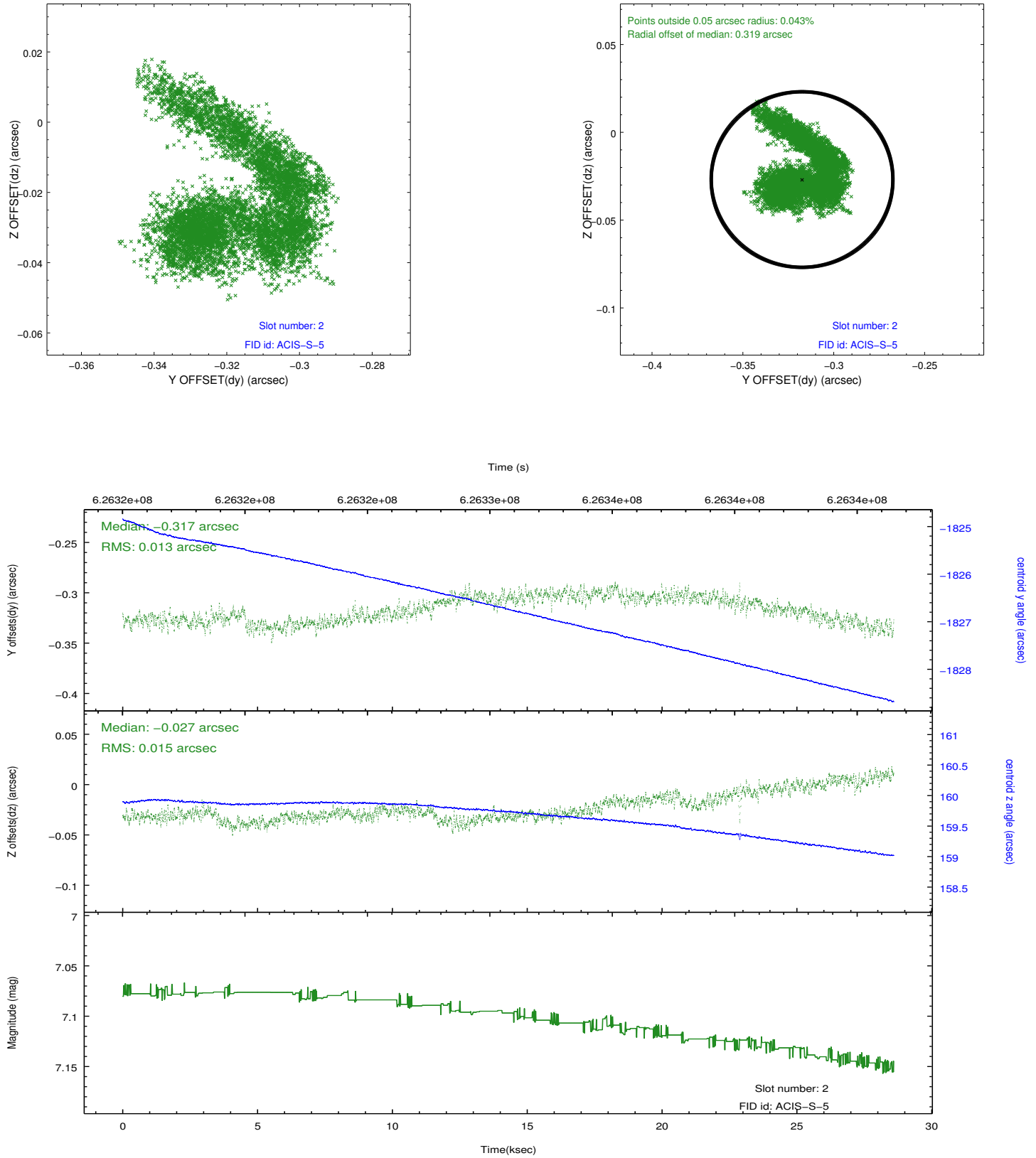
2.5.1 Slot 0



2.5.2 Slot 1

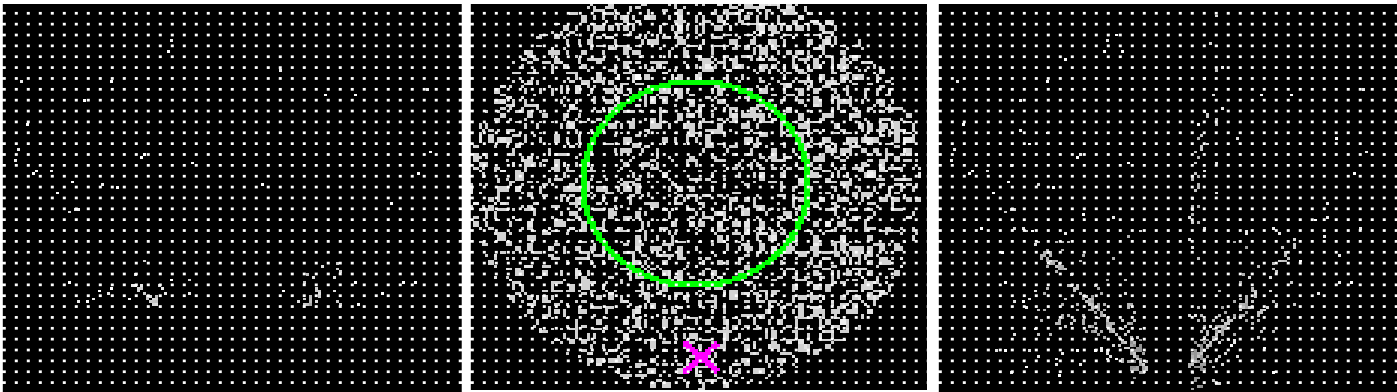


2.5.3 Slot 2



3 Gratings

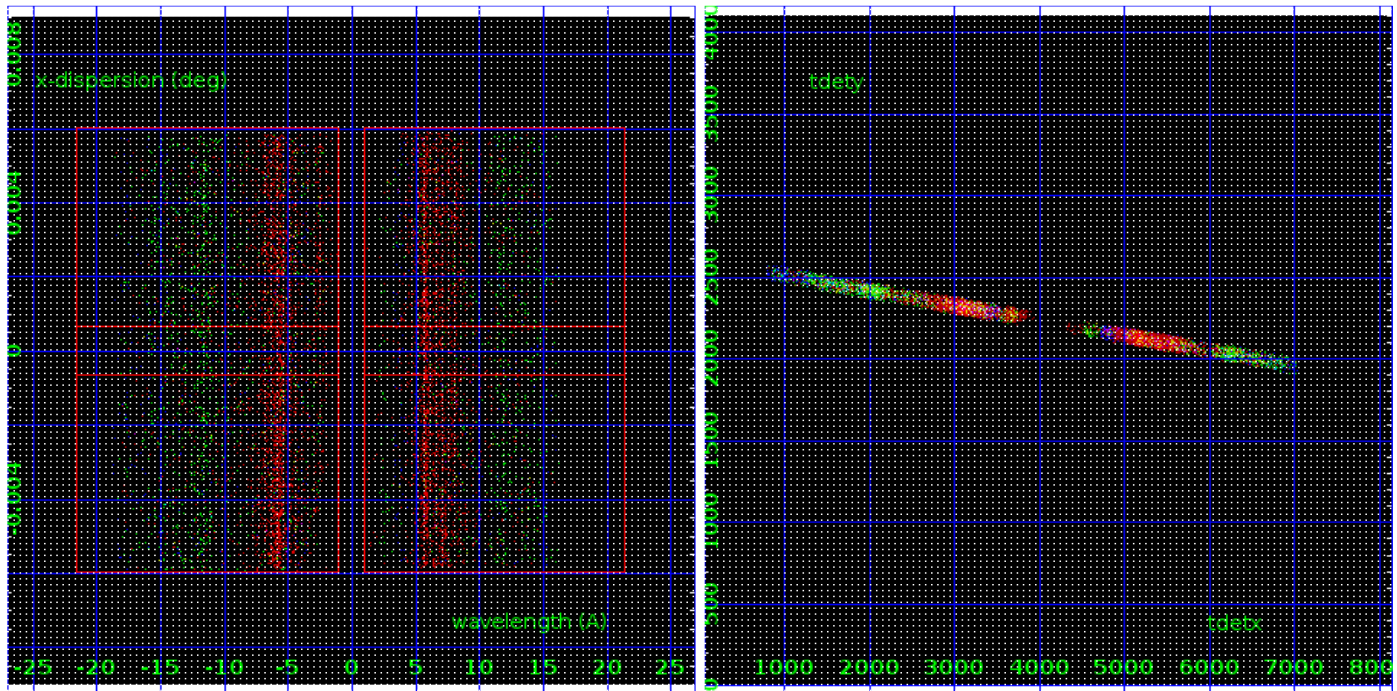
3.1 HEG Arm



HEG Order Sort 123

HEG Zero Order

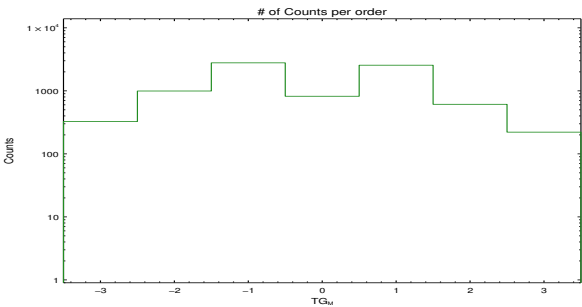
HEG Order Sort ALL

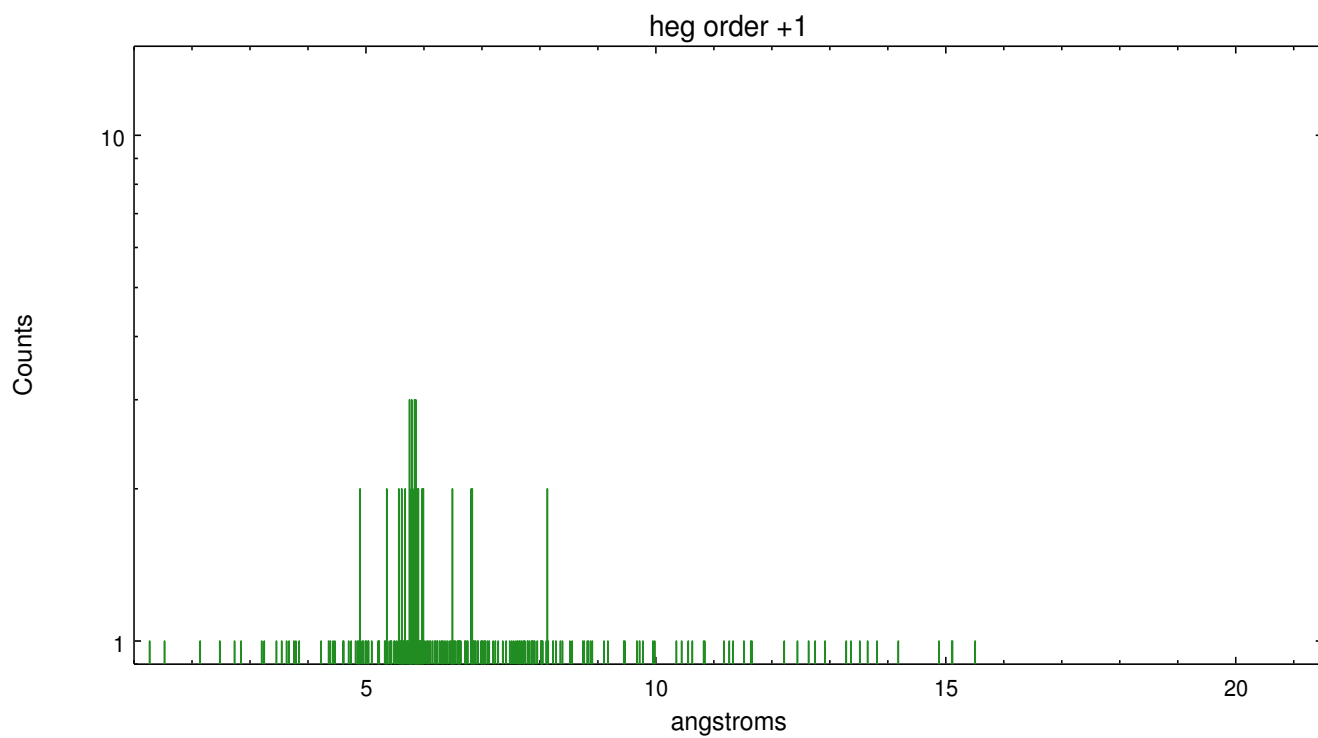
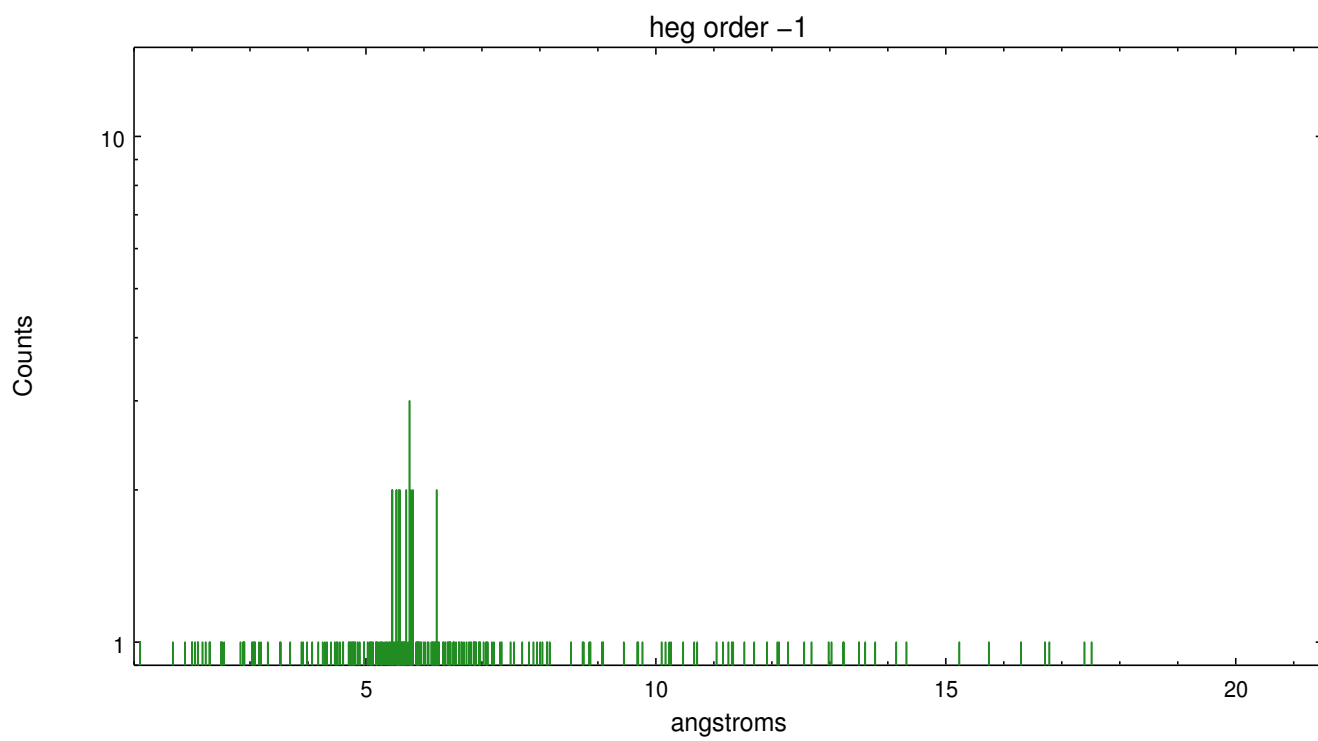


Spot Image HEG

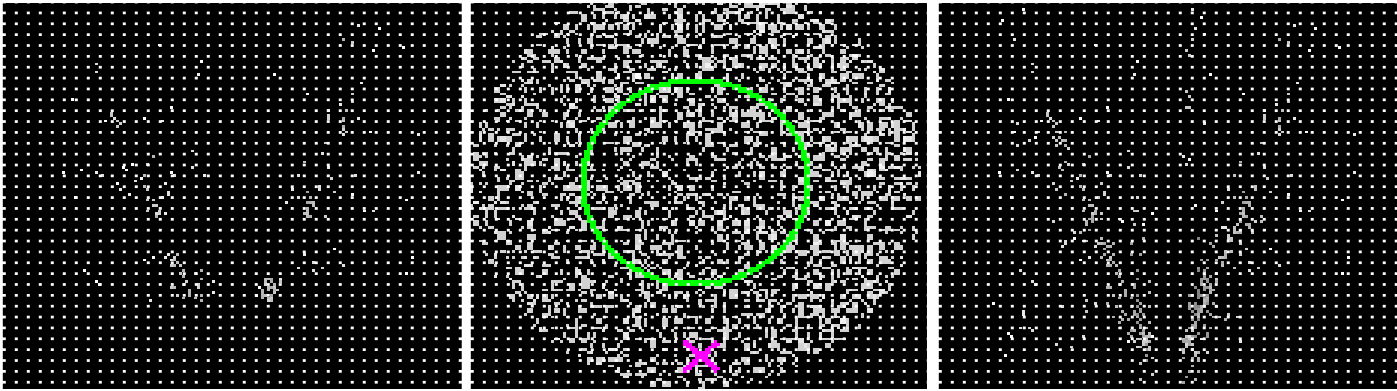
Full Detector HEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	326	994	2782	820	2551	611	221





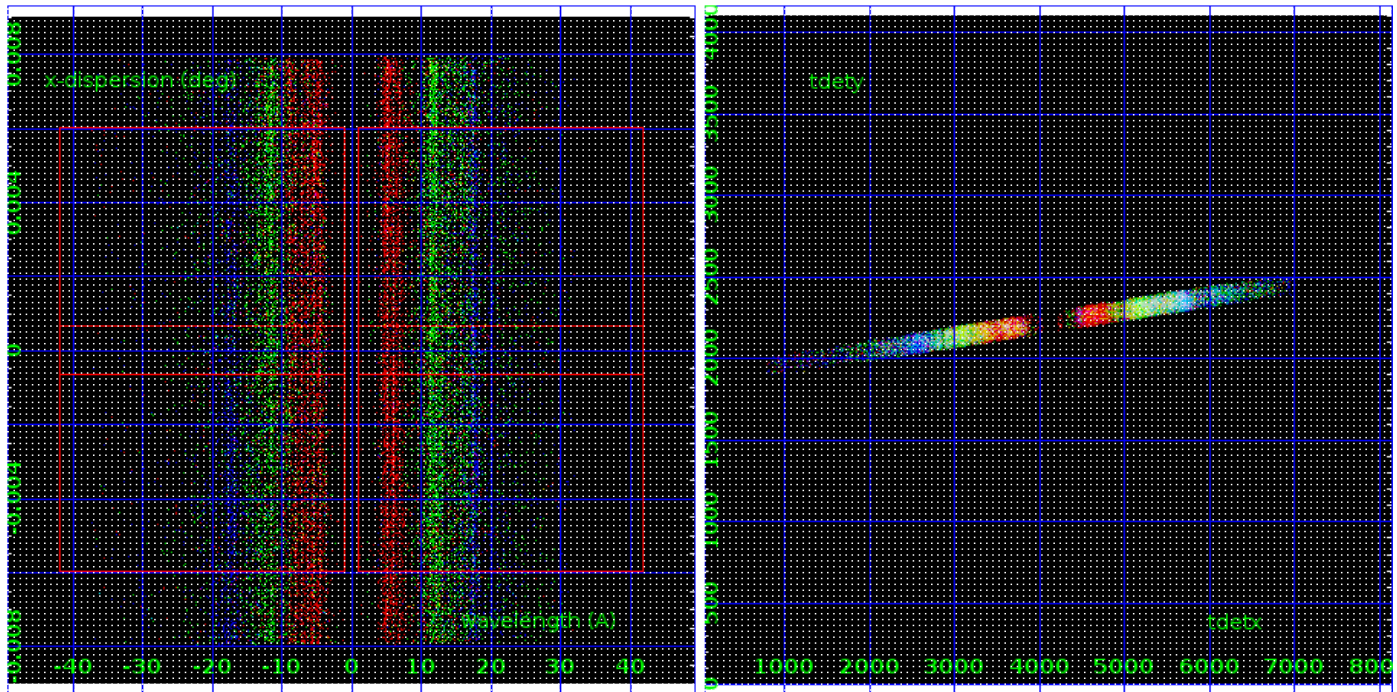
3.2 MEG Arm



MEG Order Sort 123

MEG Zero Order

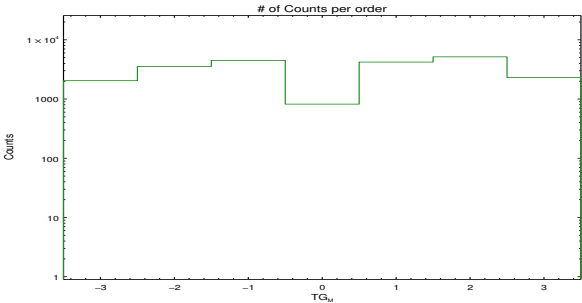
MEG Order Sort ALL

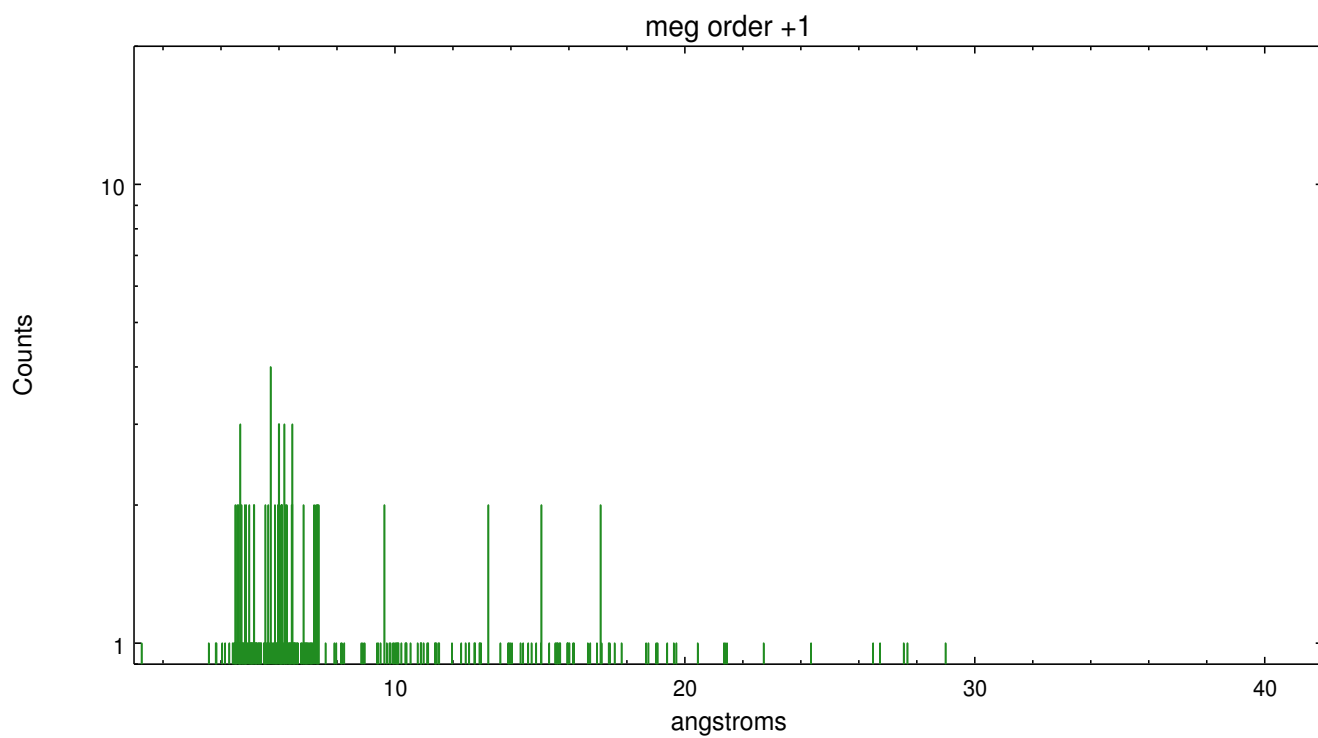
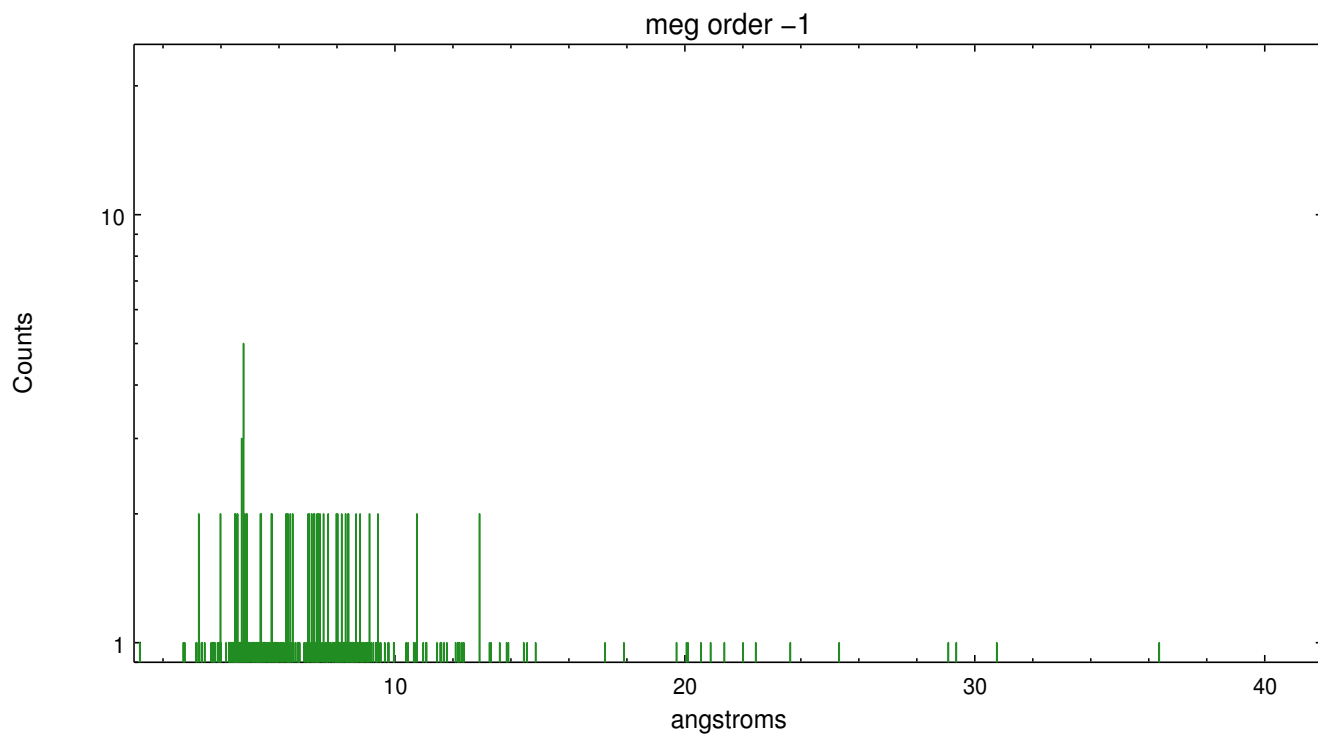


Spot Image MEG

Full Detector MEG

	order	order	order	order	order	order	order
	-3	-2	-1	0	1	2	3
Events	2043	3552	4492	820	4207	5160	2308





A Summary

A.1 Status

V&V Scientist	David Huenemoerder
V&V Date (YYYY-MM-DD)	2017.11.07
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	27.94880041647

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.