

V&V Reference Report

L2 ASCDS Version : 10.6

Observation 19292 - L2 Version 1
Chandra X-Ray Center

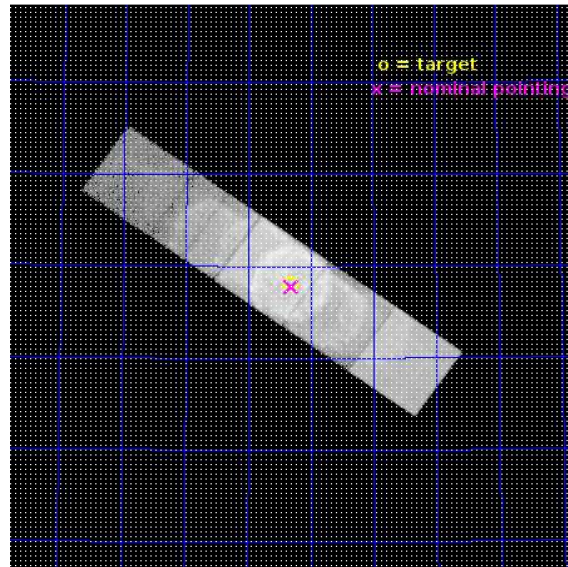
L2 Processing Date : Oct 27 2017

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1 Front

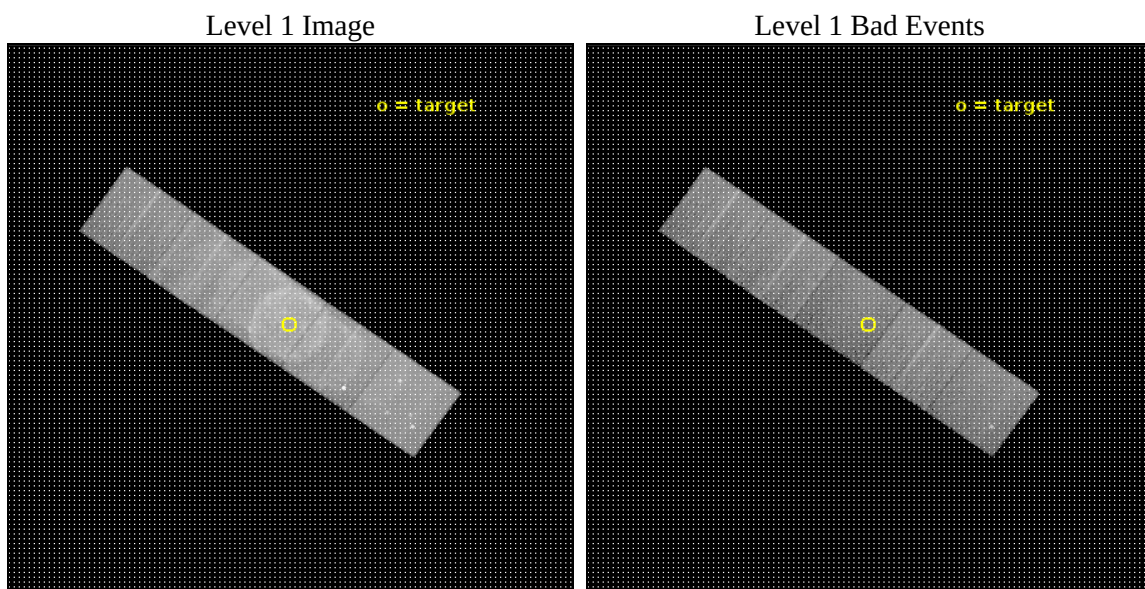
seq_num	502941	Sequence number
obs_id	19292	Observation id
title	Ejecta Kinematics Study of Tycho's SNR With Chandra HETGS	Proposa
observer	SANGWOOK PARK	Principal investigator
object	Tycho's Supernova Remnant	Source name
dtcycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	6.329167	Observer's specified target RA [deg]
dec_targ	64.136111	Observer's specified target Dec [deg]
ra_nom	6.3270533182301	Nominal RA [deg]
dec_nom	64.129791418709	Nominal Dec [deg]
roll_nom	215.15852880879	Nominal Roll [deg]
revision	1	Processing version of data
ontime	20096.731146574	Sum of GTIs [s]
livetime	19834.152559146	Livetime [s]
ontime5	20096.69010663	Sum of GTIs [s]
ontime6	20096.649066567	Sum of GTIs [s]
ontime7	20096.731146574	Sum of GTIs [s]
ontime8	20096.608026624	Sum of GTIs [s]
ontime9	20093.425966263	Sum of GTIs [s]
l2events	646209	Number of level 2 events



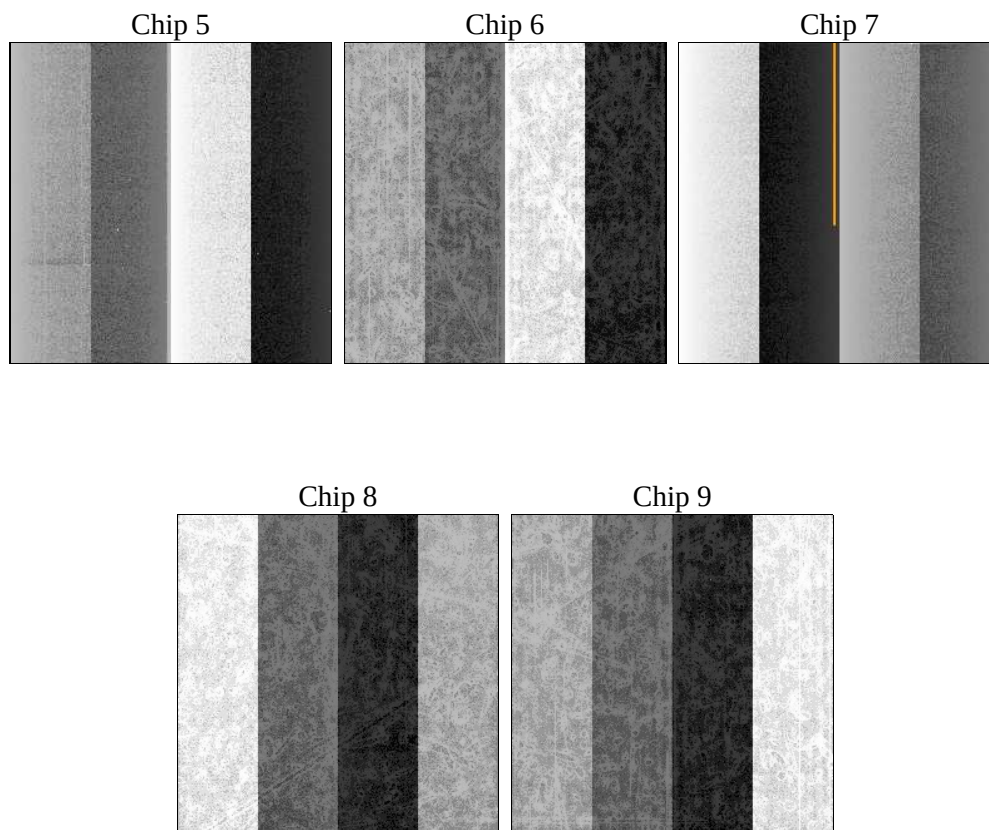
2 OBI

2.1 OBI

2.1.1 Images



2.1.2 Bias



2.1.3 Parameters

obi_num	1	Obi number	sched_exp_time	20000.000000	[s] Scheduled observation exposure time
ascdsver	10.6	Processing system revision	ontime	20096.731146574	Sum of GTIs [s]
caldsver	4.7.6	 	ontime5	20096.69010663	Sum of GTIs [s]
date	2017-10-27T00:10:28	Date and time of file creation	ontime6	20096.649066567	Sum of GTIs [s]
revision	1	Processing version of data	ontime7	20096.731146574	Sum of GTIs [s]
			ontime8	20096.608026624	Sum of GTIs [s]
			ontime9	20093.425966263	Sum of GTIs [s]
			l1events	1227115	Number of level 1 events
			tgmethod	USER	Method used to create src1a file
			zo_pos	(4089.83, 4142.75)	src1a sky pixel position

2.1.4 Events

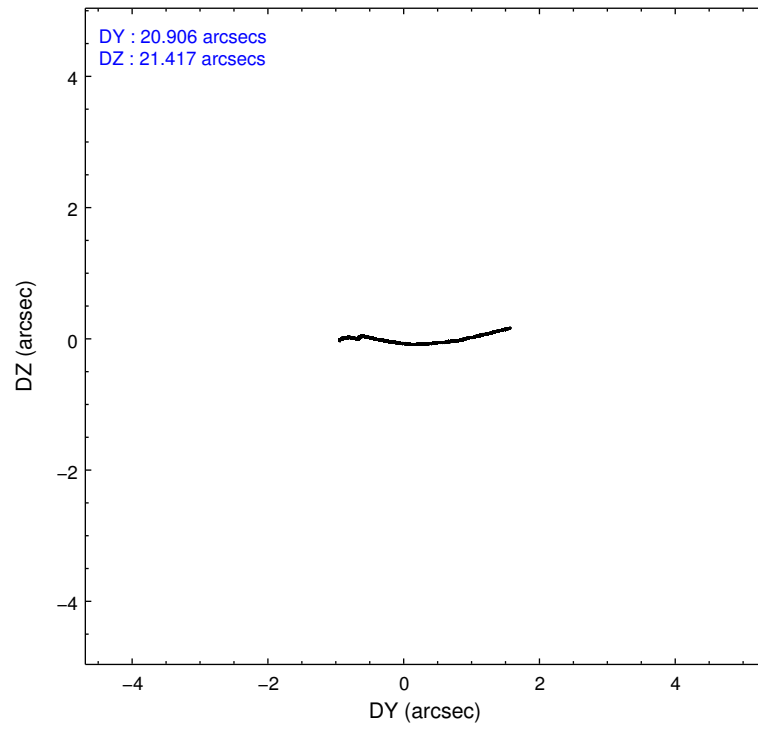
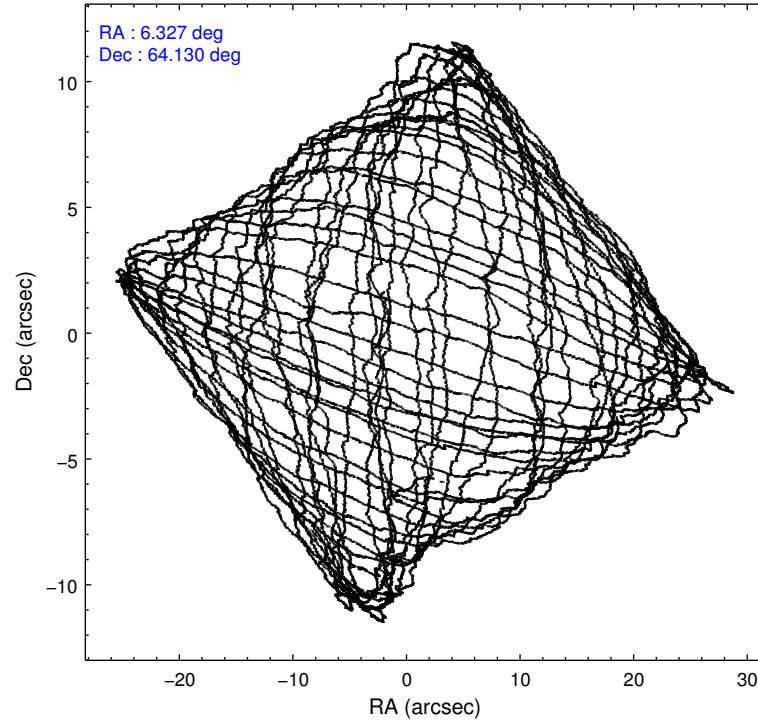
	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
level 1 events	223037	278917	369221	223300	132640
rejected events	91820	115766	76446	116017	109150
rejected %	41%	41%	20%	51%	82%

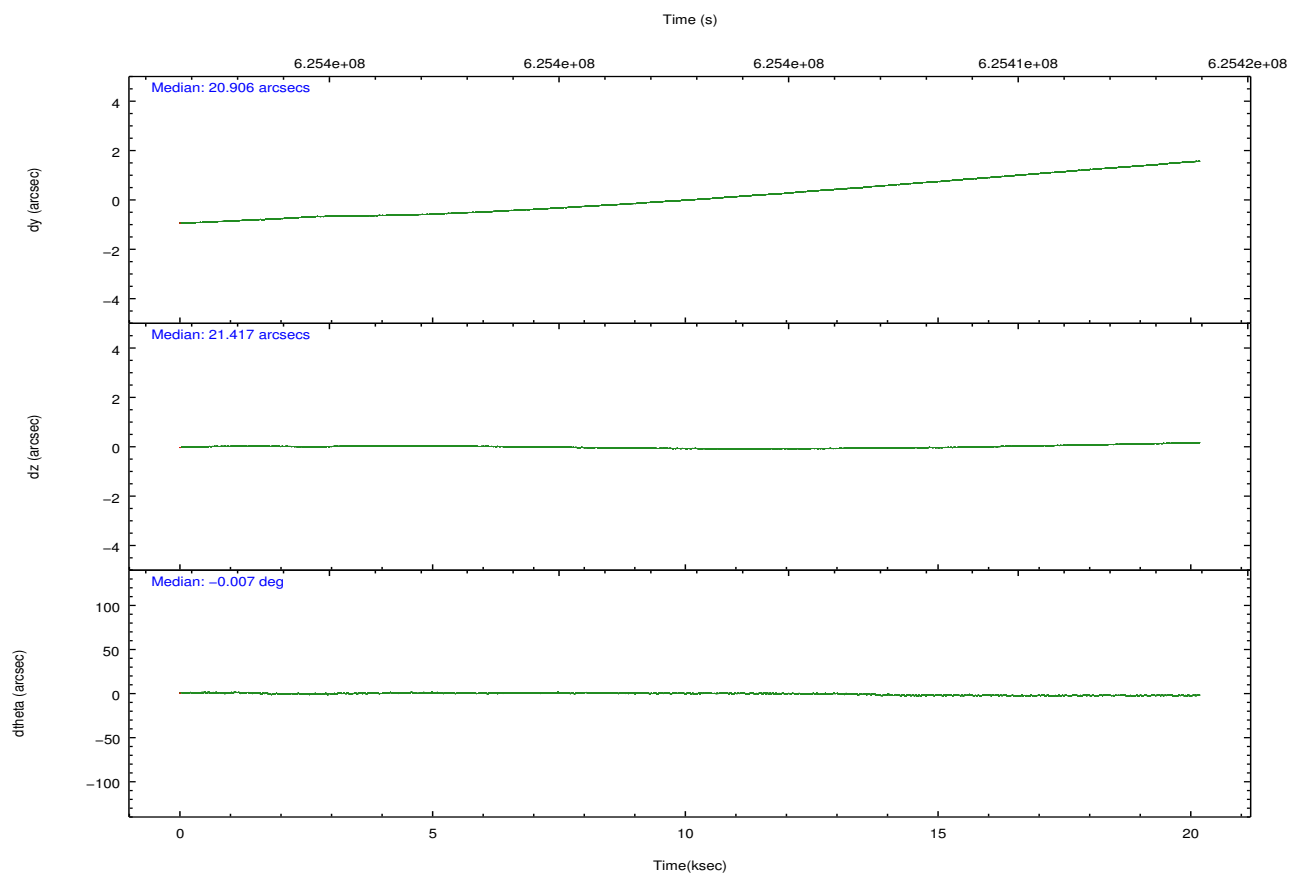
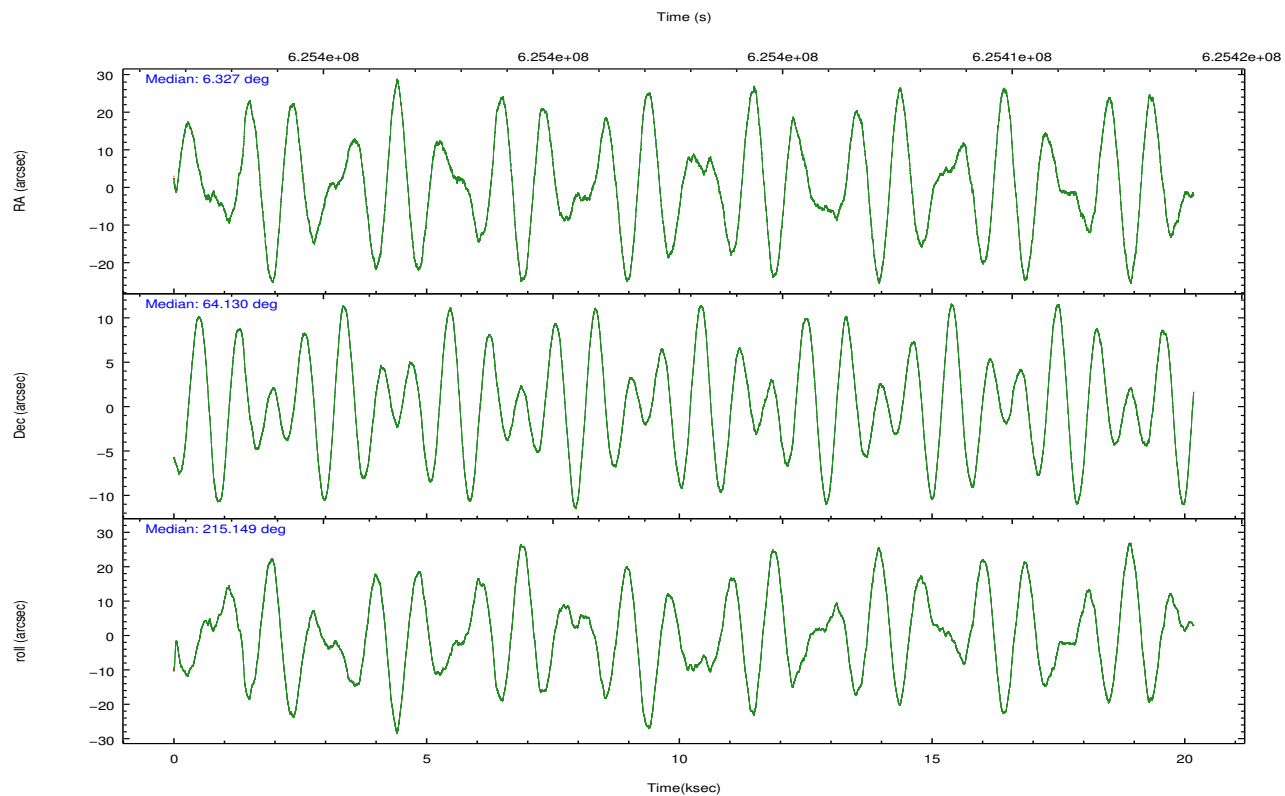
	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
grade 0 events	20155	116356	56817	62839	12650
	9%	41%	15%	28%	9%
grade 1 events	458	523	337	339	131
	0%	0%	0%	0%	0%
grade 2 events	43163	29455	75989	17744	4083
	19%	10%	20%	7%	3%
grade 3 events	5929	5623	31238	6453	1716
	2%	2%	8%	2%	1%
grade 4 events	5943	5637	31198	6153	1746
	2%	2%	8%	2%	1%
grade 5 events	14232	5779	16368	8427	6052
	6%	2%	4%	3%	4%
grade 6 events	56066	6141	97630	14123	3300
	25%	2%	26%	6%	2%
grade 7 events	77091	109403	59644	107222	102962
	34%	39%	16%	48%	77%

2.2 Compared Parameters

Parameter	Planned	Actual	Parameter	Planned	Actual
Instrument	ACIS	ACIS	Obspar format version number	7	7
Detector	ACIS-56789	ACIS-56789	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	6.352720	6.327053318230128	CCD I2 on	N	N
[deg] Pointing Dec	64.154880	64.12979141870942	CCD I3 on	N	N
[deg] Pointing Roll	214.978808	215.1585288087853	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	-190.1400660498719	CCD S3 on	Y	Y
[mm] SIM translation stage offset	0	0.00754346686406393	CCD S4 on	Y	Y
[s] Observation start time (MET)	625392915.184000	625391883.86387	CCD S5 on	Y	Y
Observation start date	2017-10-26T08:14:06	2017-10-26T07:58:03	Number of optional ACIS chips dropped	1	1
[s] Observation end time (MET)	625412915.184000	625413615.40264	On-chip summing requested	N	N
Observation end date	2017-10-26T13:47:26	2017-10-26T14:00:15	Subarray requested	NONE	NONE
Read mode	TIMED	TIMED	Alternating exposures requested	N	N
			[s] Primary exposure time	0.000000	3.1

2.3 Aspect



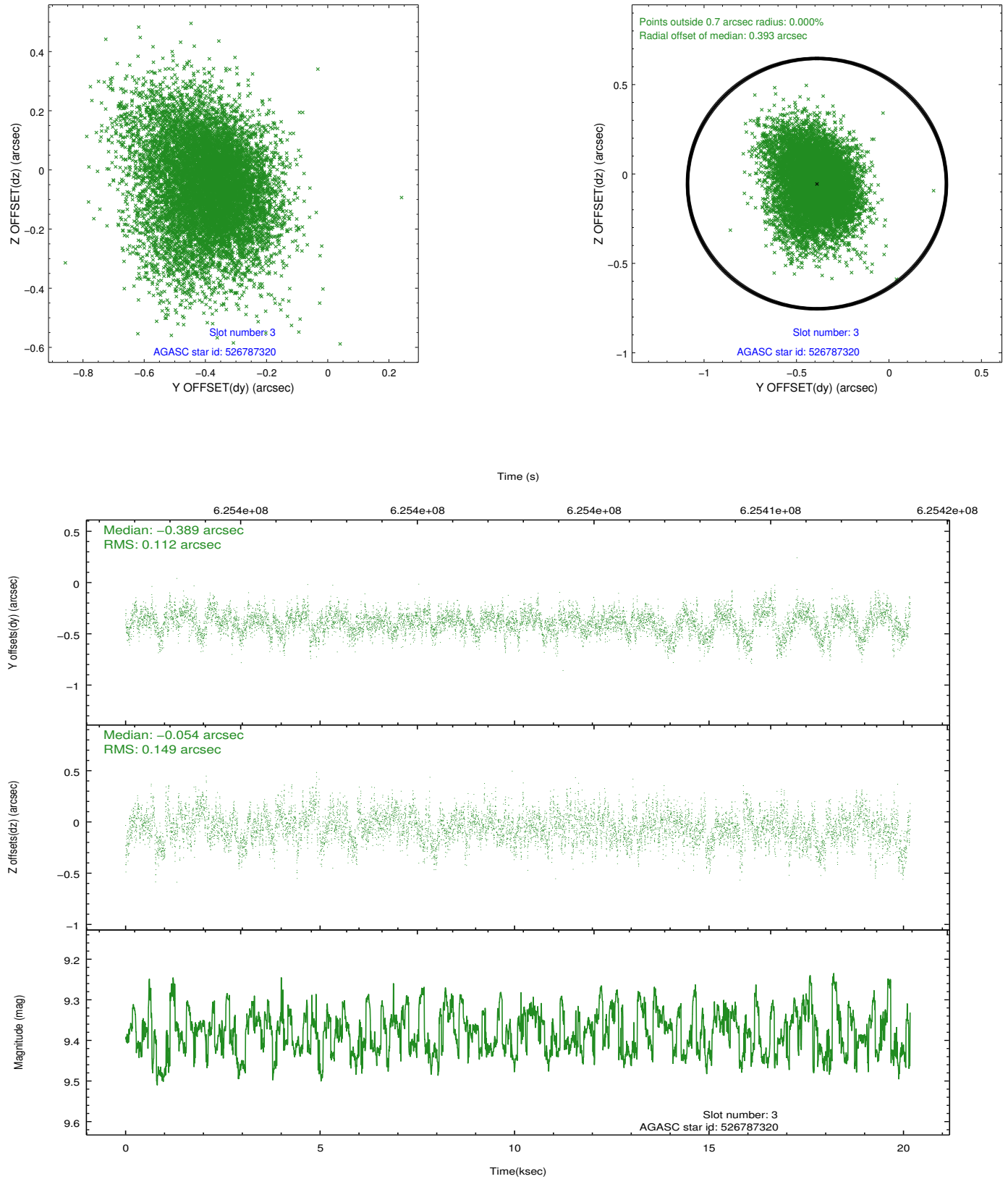


Slot Statistics

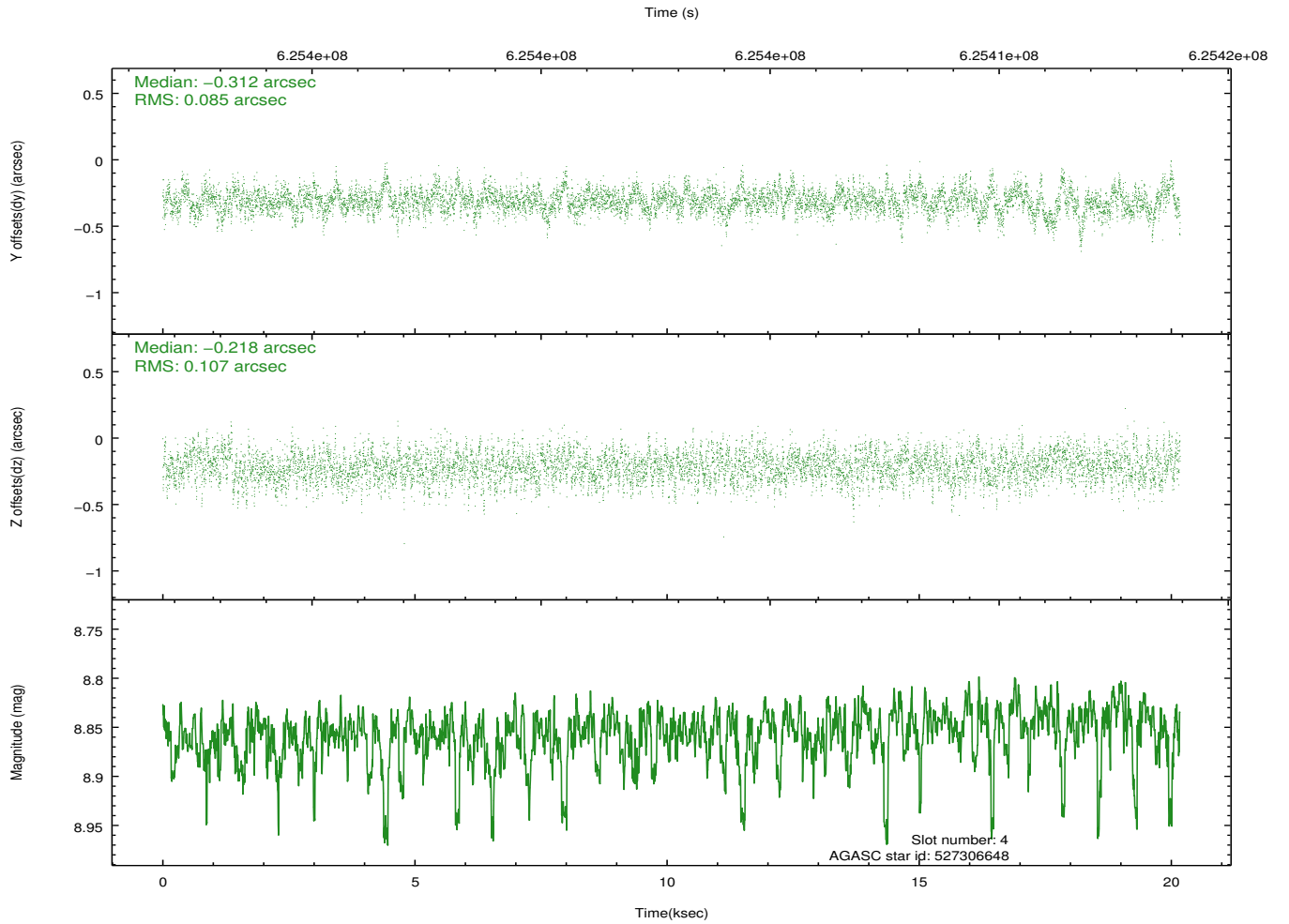
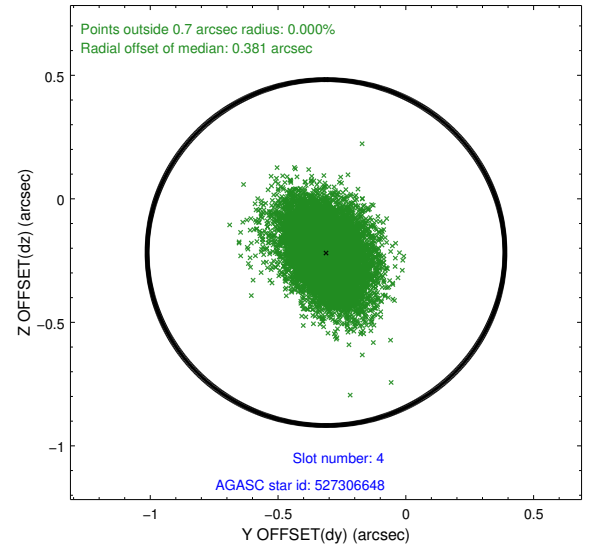
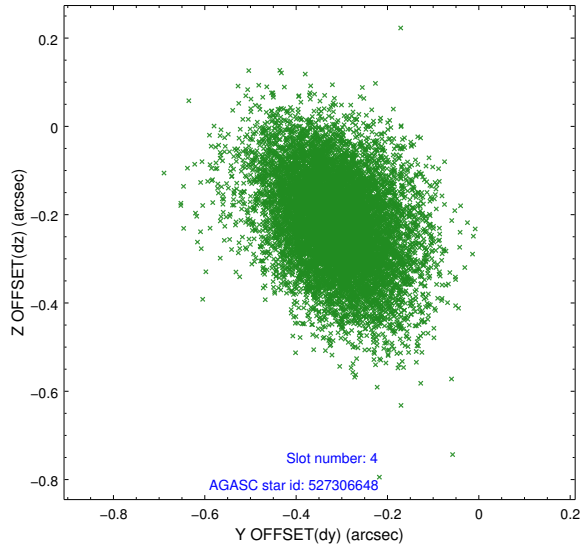
slot	status	used	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID		ACIS-S-1	7.06	4922	0.010	-0.080	0.017	0.028	0.000000	0.000000	921.93	-1738.65
1	FID		ACIS-S-4	7.10	4922	0.386	0.056	0.011	0.021	0.000000	0.000000	2139.75	165.49
2	FID		ACIS-S-5	7.09	4921	-0.418	0.038	0.015	0.044	0.000000	0.000000	-1827.20	159.15
3	GUIDE	used	526787320	9.38	9817	-0.389	-0.054	0.194	0.333	6.103299	63.719181	1224.13	1056.94
4	GUIDE	used	527306648	8.86	9832	-0.312	-0.218	0.143	0.241	6.477351	63.853785	459.12	1001.45
5	GUIDE	used	527307888	8.43	9838	0.110	-0.126	0.147	0.244	4.965121	64.287990	1487.99	-1653.97
6	GUIDE	used	527309096	8.26	9839	0.395	-0.138	0.124	0.216	7.726277	64.064373	-1597.99	1487.18
7	GUIDE	used	527310400	7.72	9841	0.202	0.537	0.132	0.235	6.292387	64.638680	-921.81	-1479.75

2.4 Star Slots

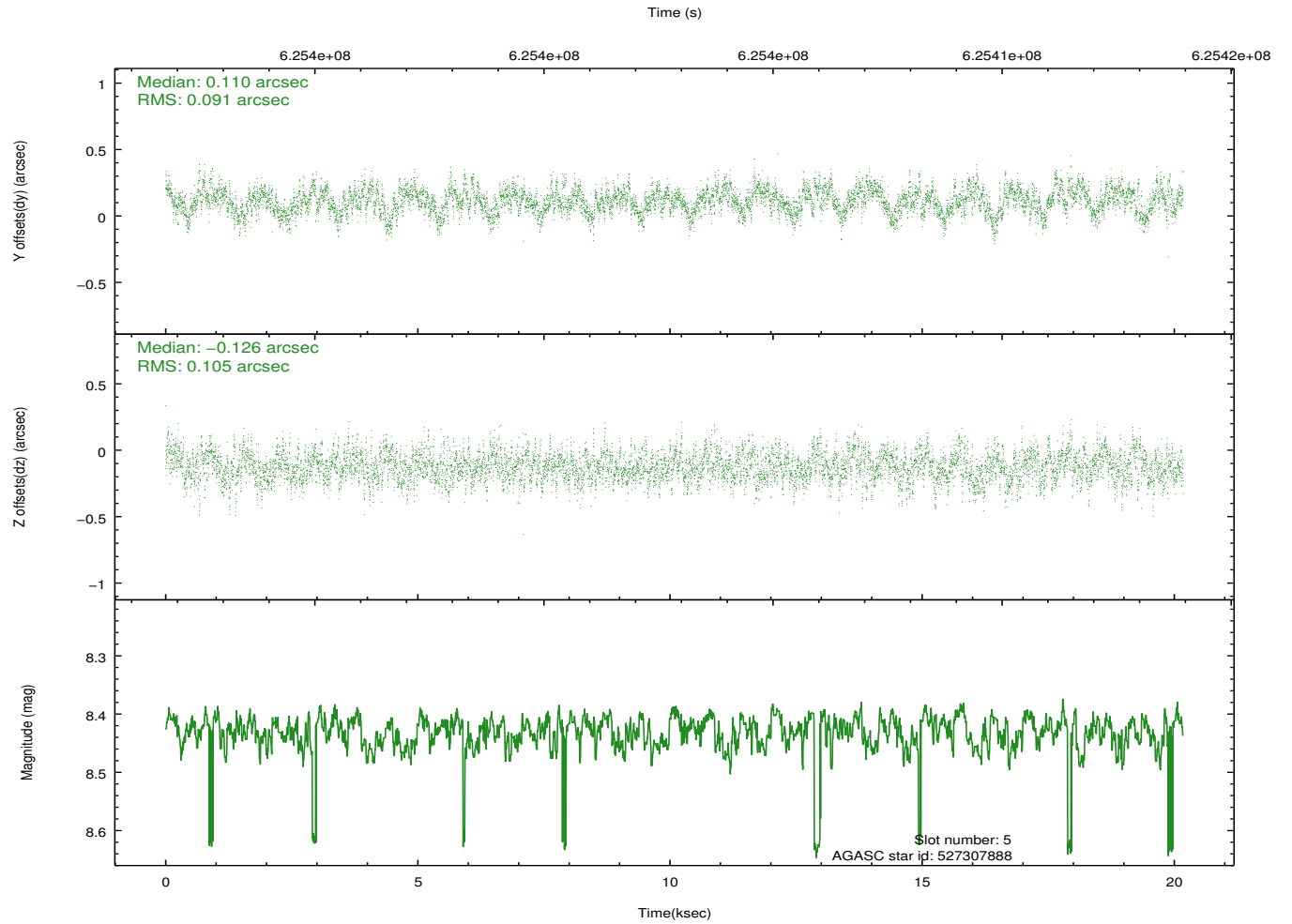
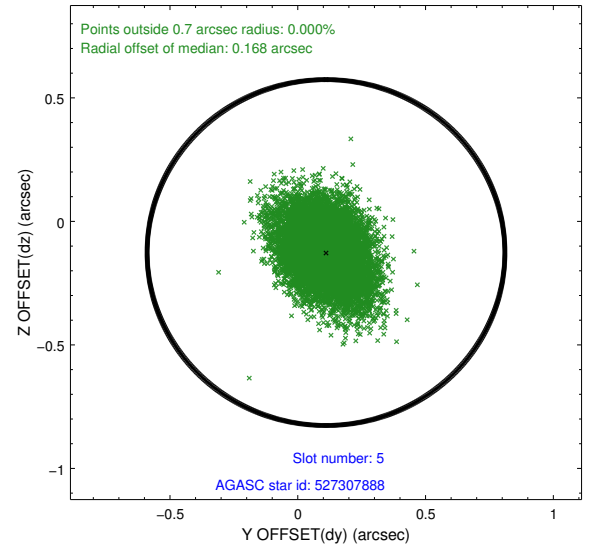
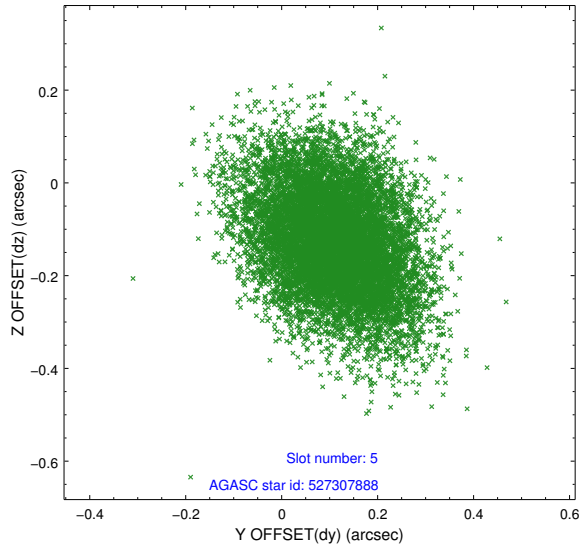
2.4.1 Slot 3



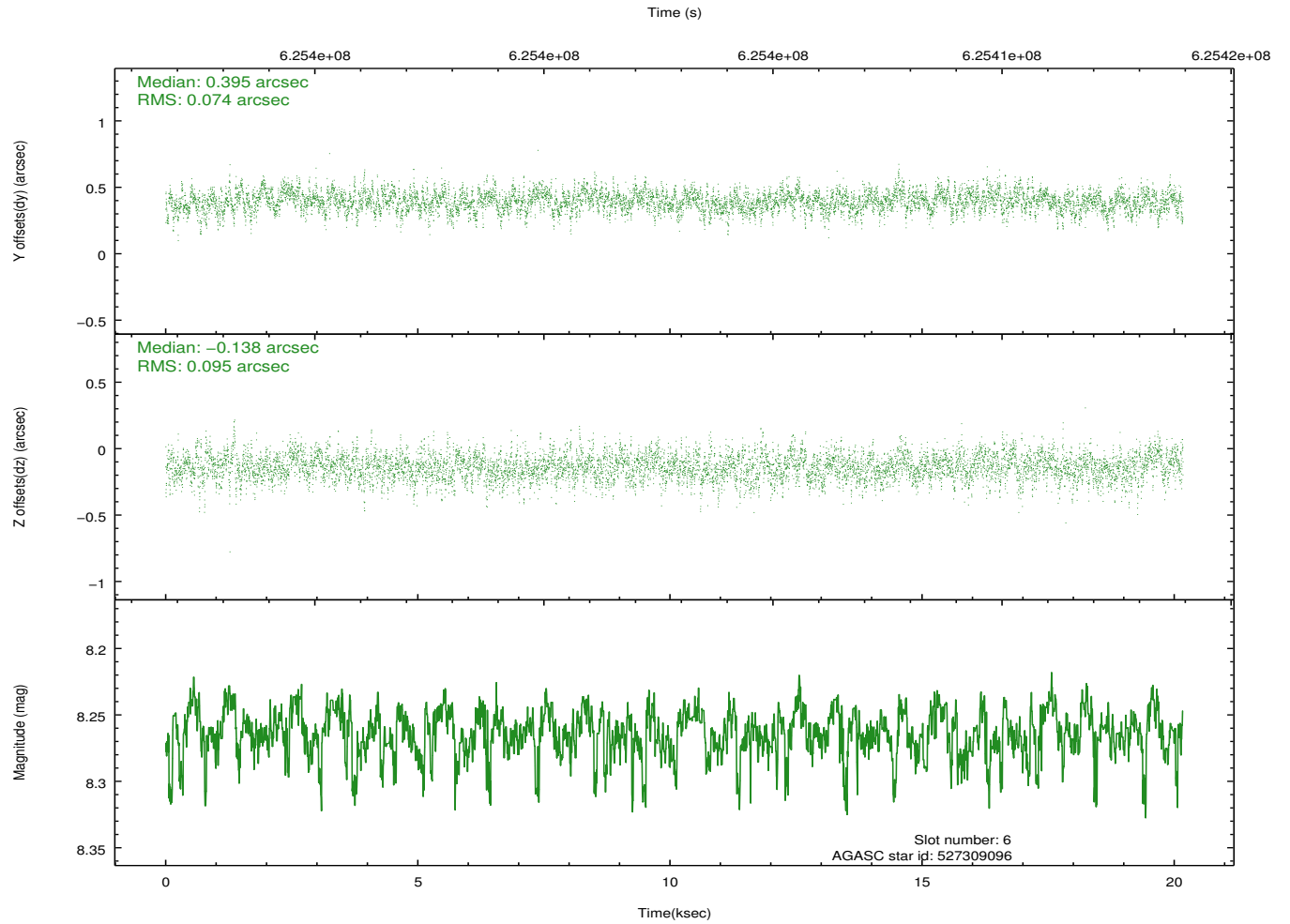
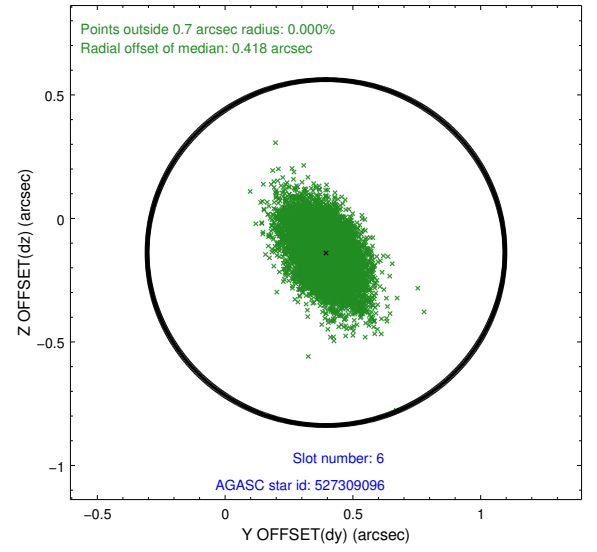
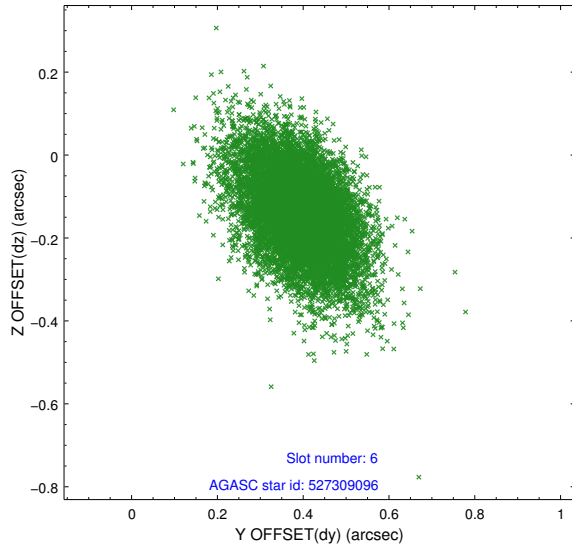
2.4.2 Slot 4



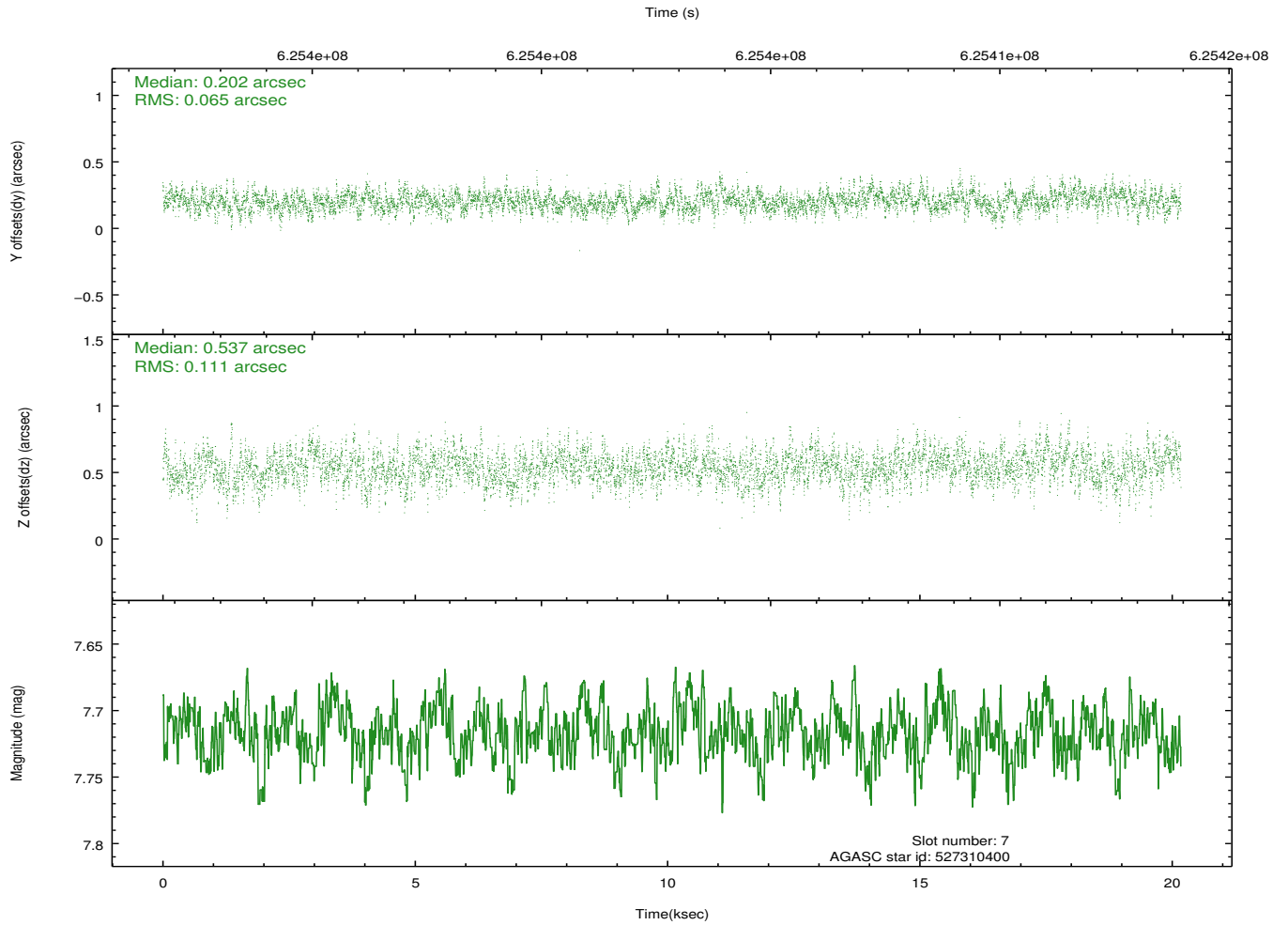
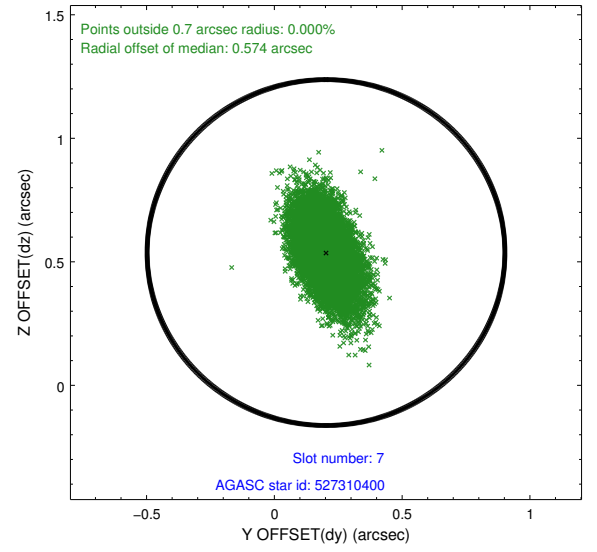
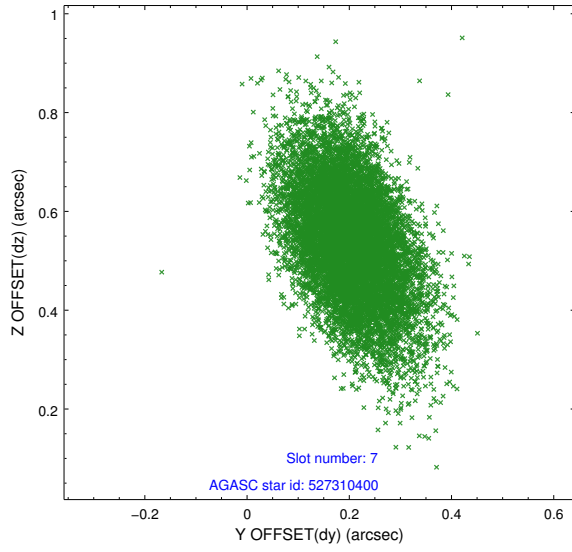
2.4.3 Slot 5



2.4.4 Slot 6

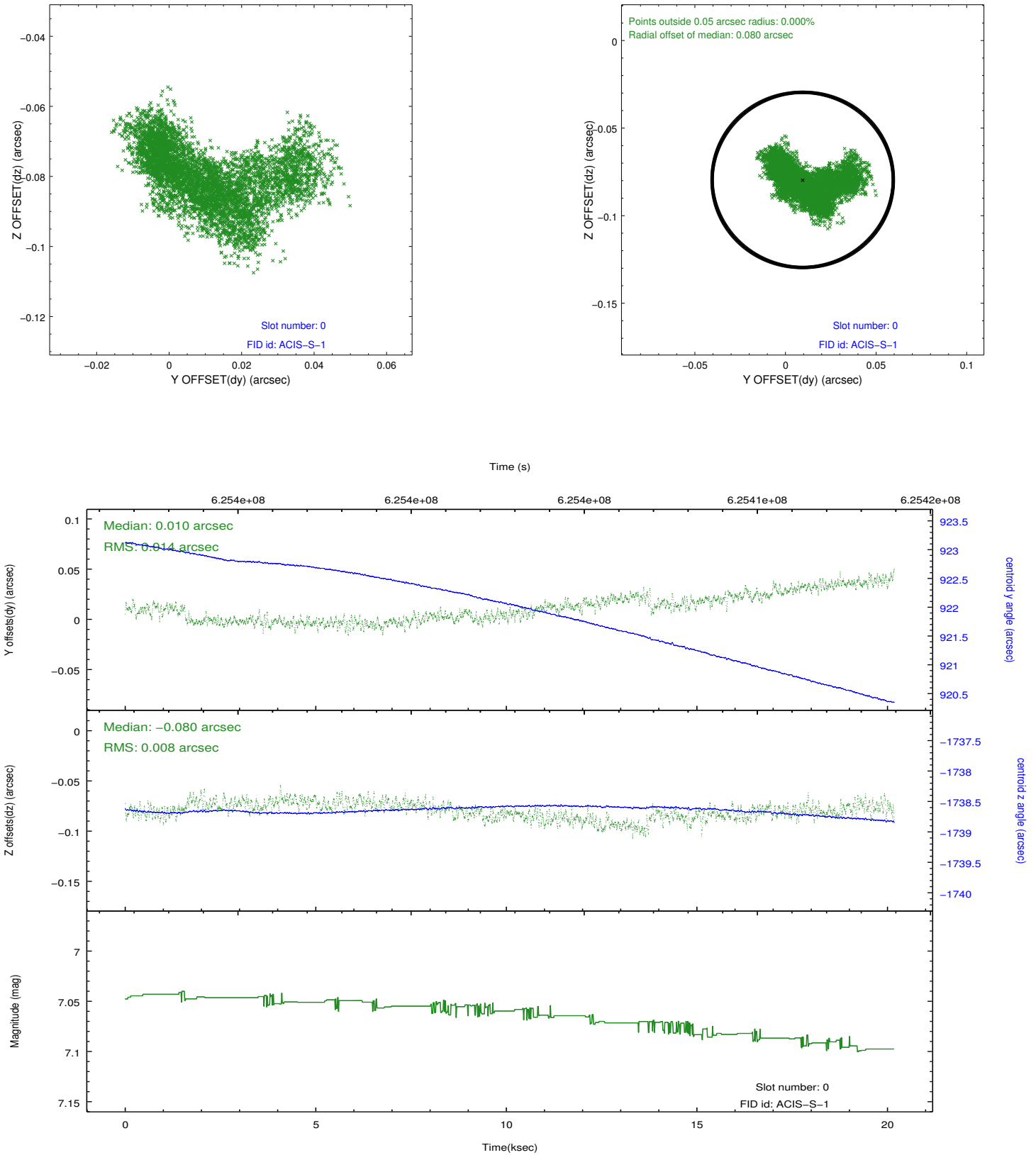


2.4.5 Slot 7

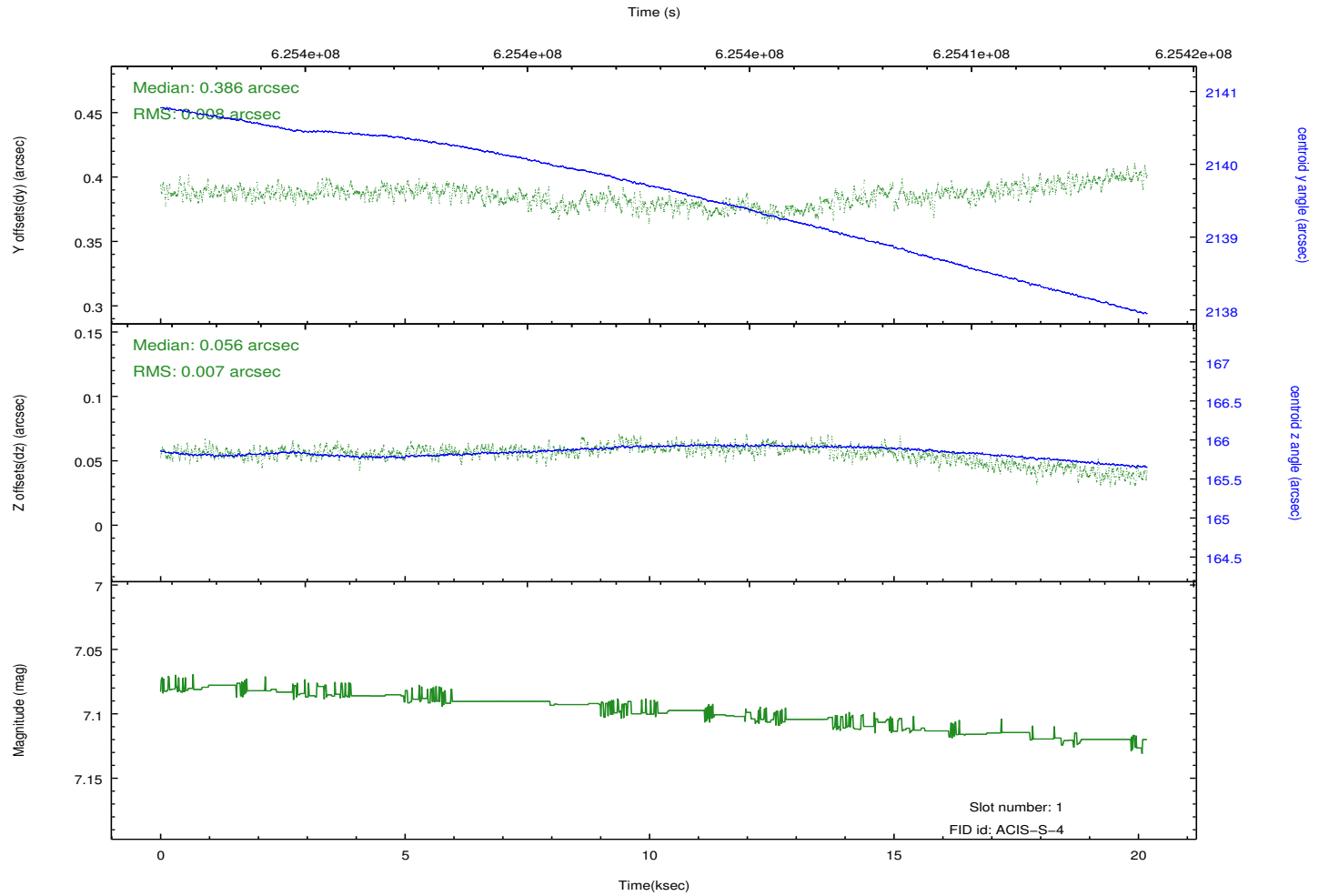
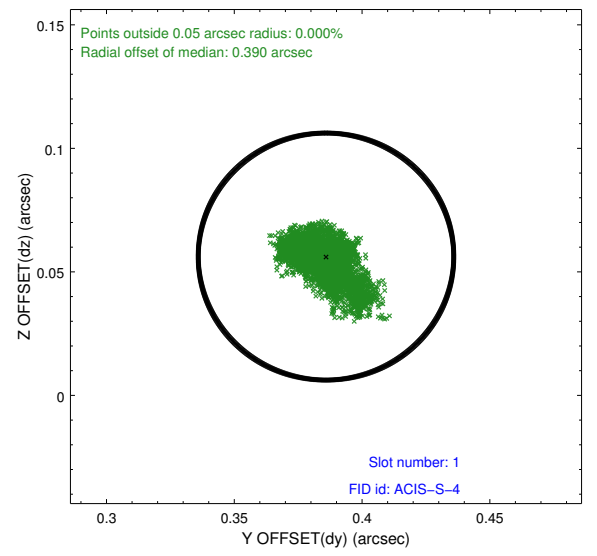
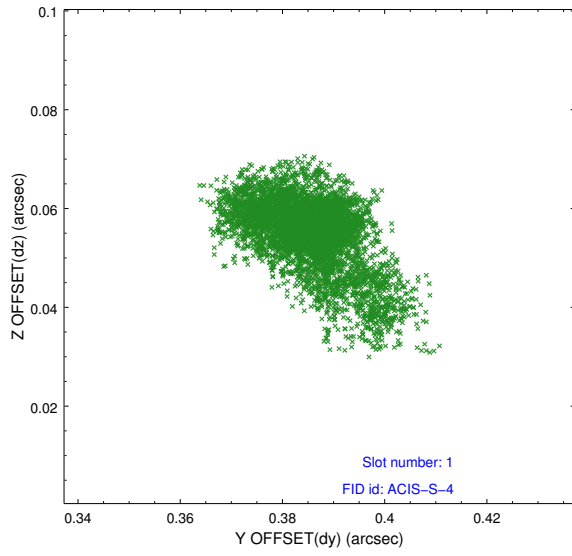


2.5 FID Slots

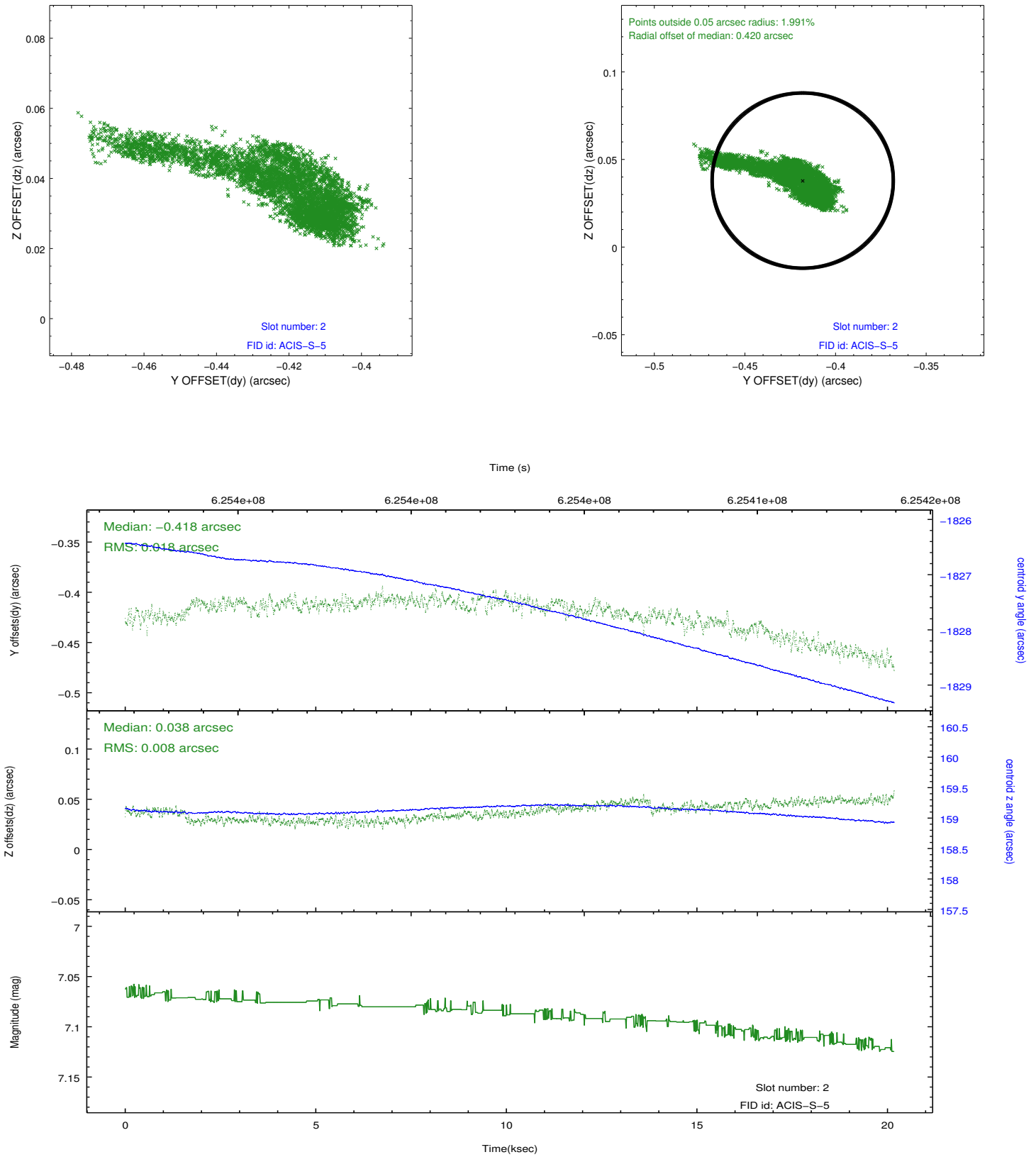
2.5.1 Slot 0



2.5.2 Slot 1

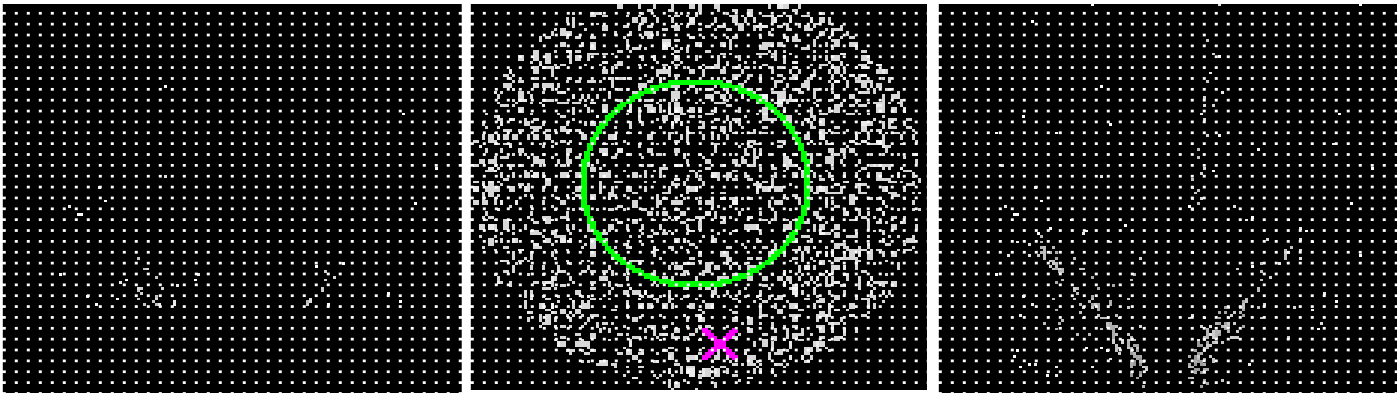


2.5.3 Slot 2



3 Gratings

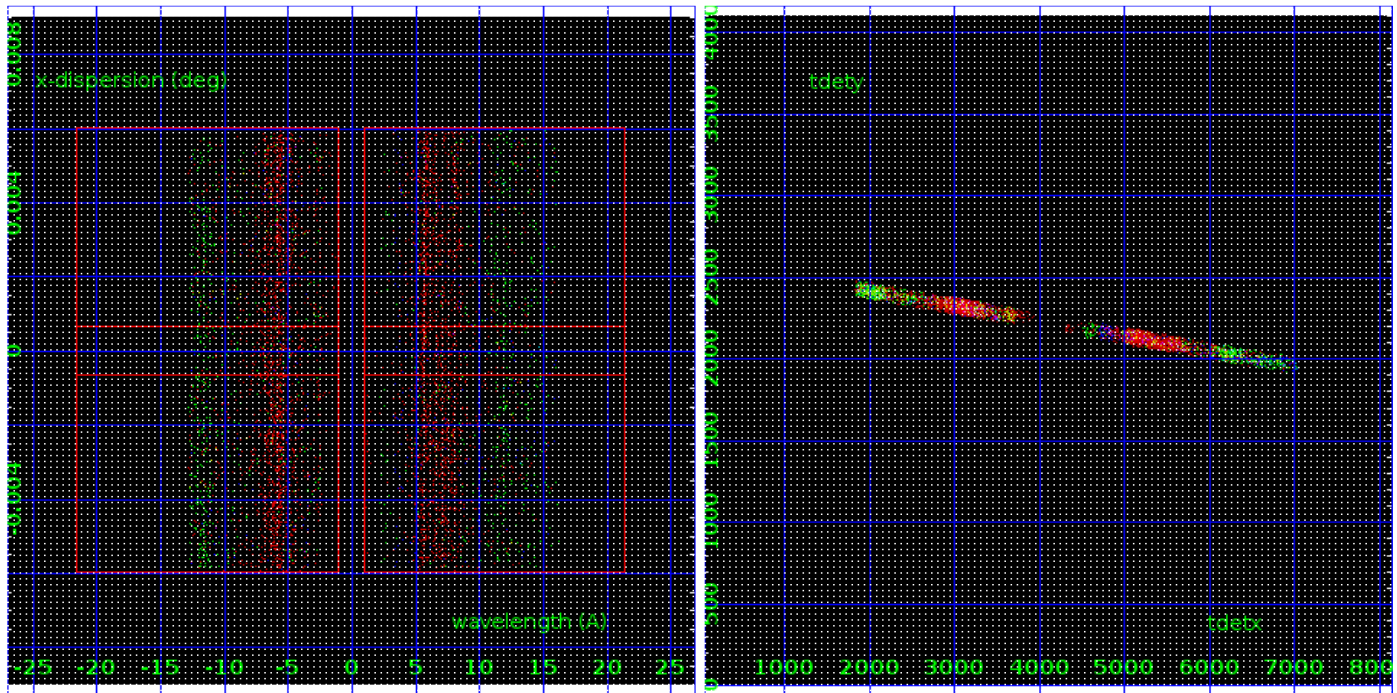
3.1 HEG Arm



HEG Order Sort 123

HEG Zero Order

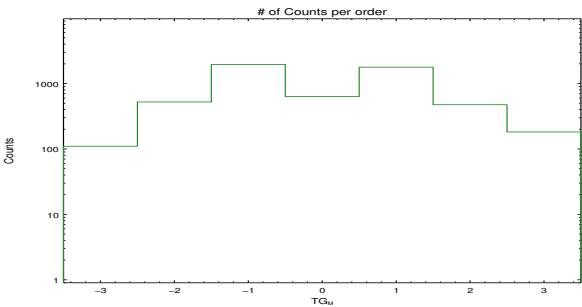
HEG Order Sort ALL

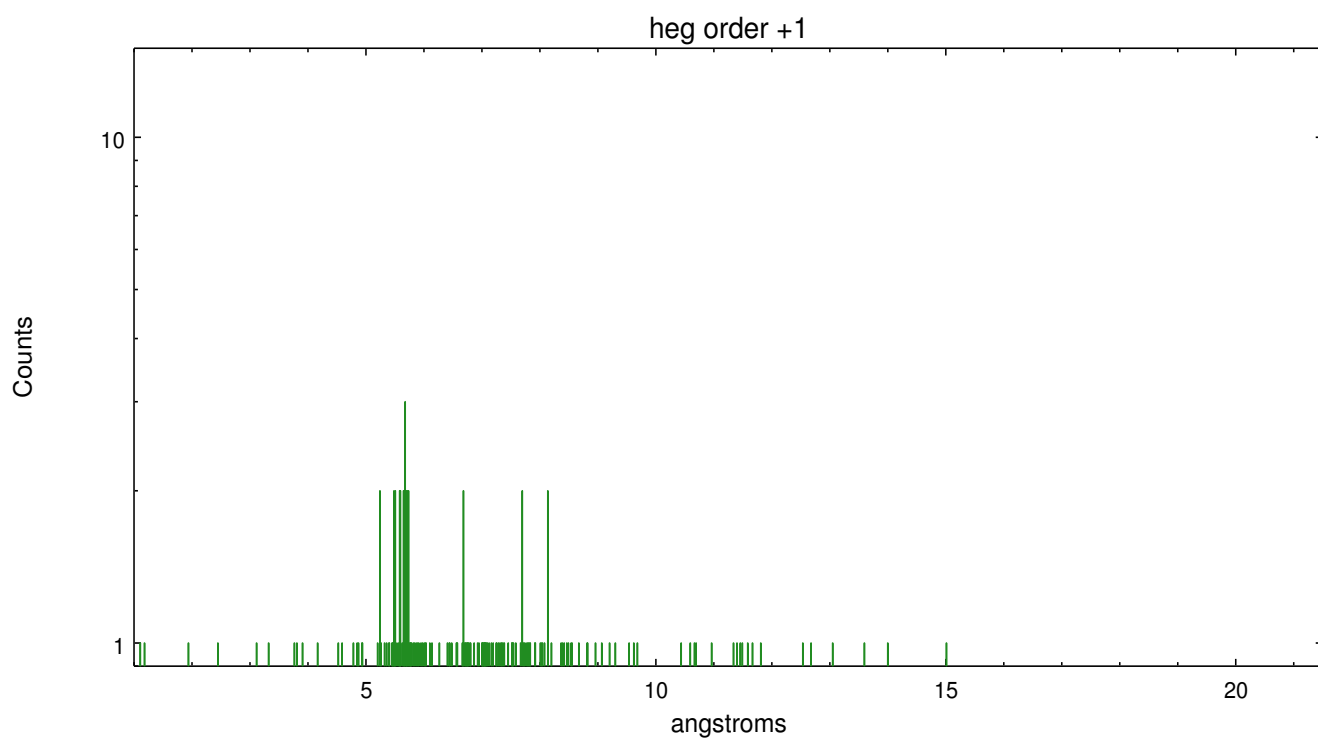
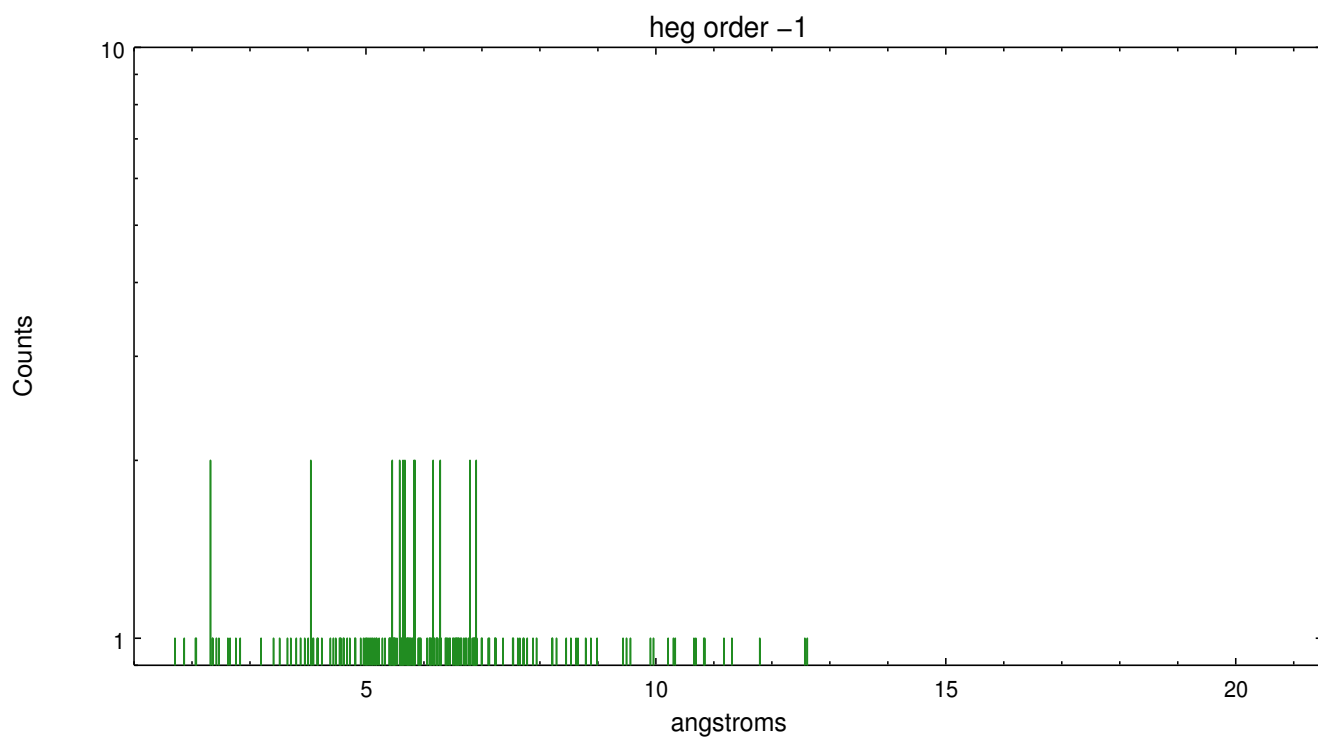


Spot Image HEG

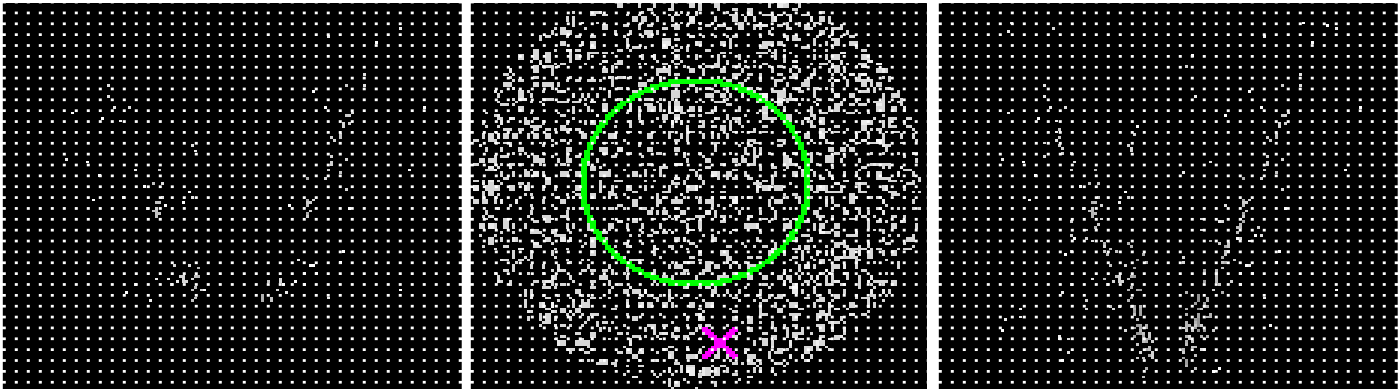
Full Detector HEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	110	523	1955	634	1779	475	182





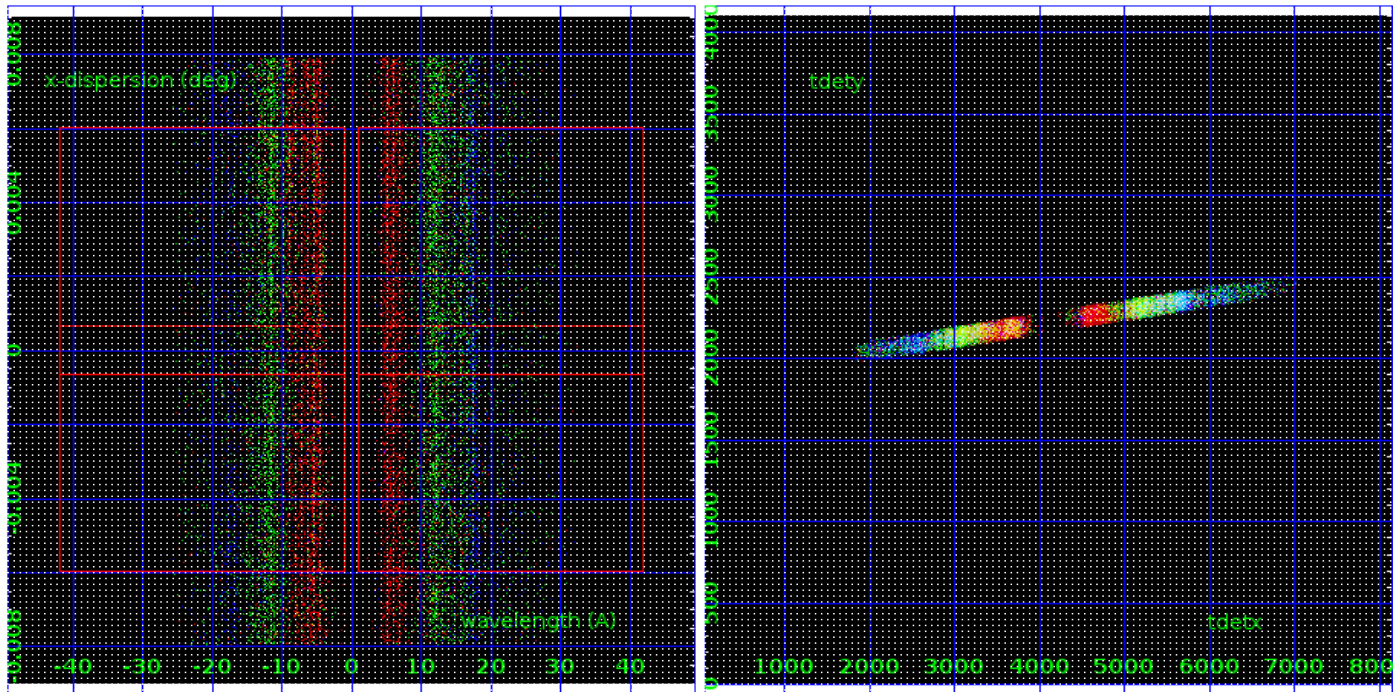
3.2 MEG Arm



MEG Order Sort 123

MEG Zero Order

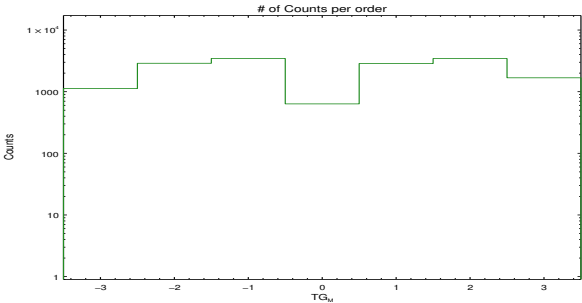
MEG Order Sort ALL

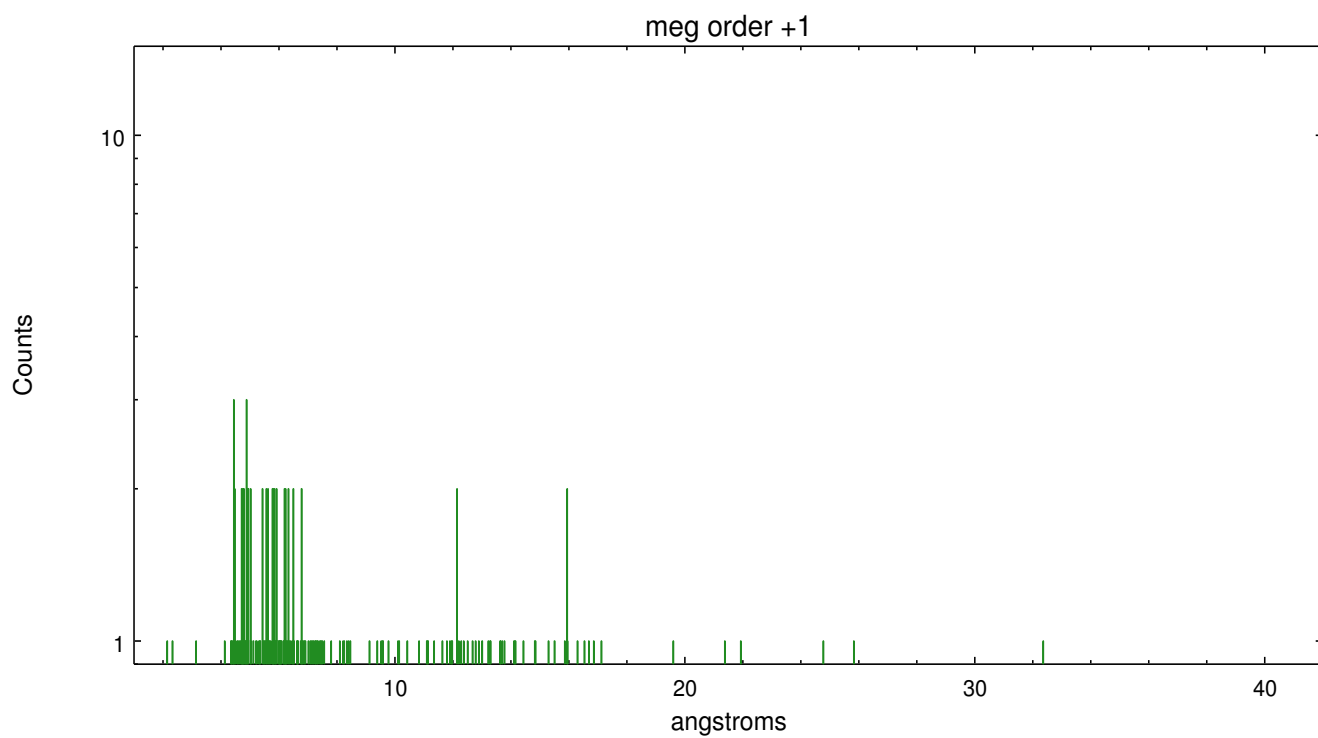
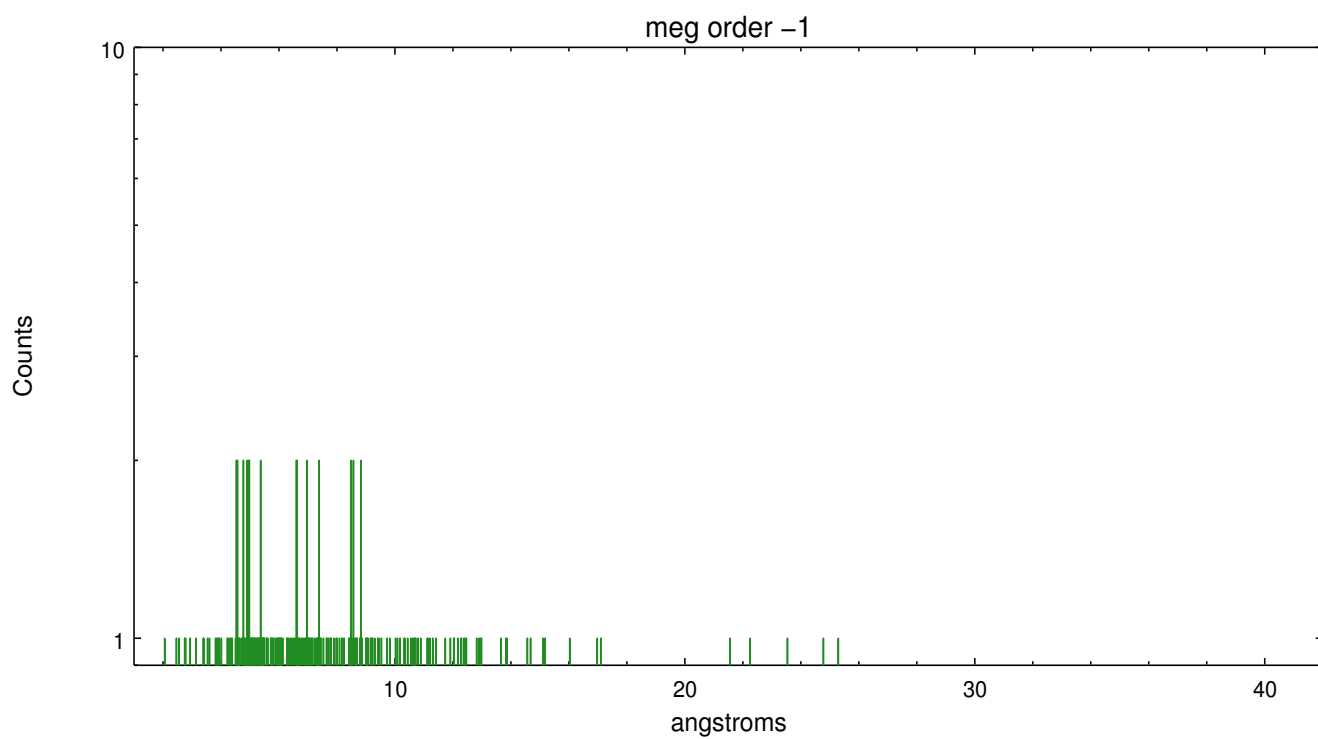


Spot Image MEG

Full Detector MEG

	order	order	order	order	order	order	order
	-3	-2	-1	0	1	2	3
Events	1124	2888	3452	634	2860	3445	1680





A Summary

A.1 Status

V&V Scientist	David Huenemoerder
V&V Date (YYYY-MM-DD)	2017.10.27
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	20.096731146574

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.