

V&V Reference Report

L2 ASCDS Version : 8.1.2

Observation 93 - L2 Version 3

Chandra X-Ray Center

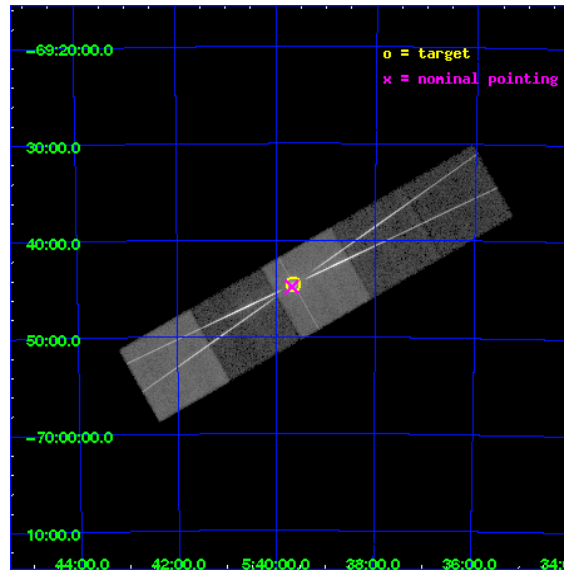
L2 Processing Date : Dec 2 2009

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1 Front

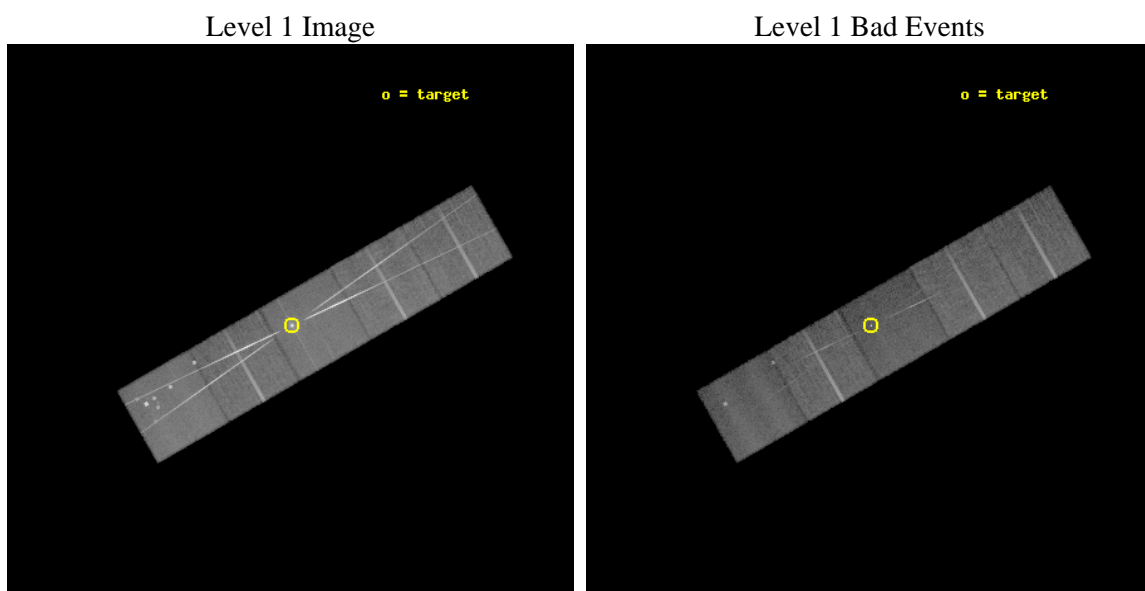
seq_num	400006	Sequence number
obs_id	93	Observation id
title	MEASURING BLACK HOLE SPIN	Proposal title
observer	Prof Gordon Garmire	Principal investigator
object	LMC X-1	Source name
dtcycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	84.911667	Observer's specified target RA
dec_targ	-69.743361	Observer's specified target Dec
ra_nom	84.920244793709	Nominal RA
dec_nom	-69.747227841116	Nominal Dec
roll_nom	330.13479564534	Nominal Roll
revision	3	Processing version of data
ontime	19169.799606375	Sum of GTIs [s]
livetime	18927.060061092	Livetime [s]
ontime5	19169.758566372	Sum of GTIs [s]
ontime6	19169.717526376	Sum of GTIs [s]
ontime7	19169.799606375	Sum of GTIs [s]
ontime8	19169.676486373	Sum of GTIs [s]
ontime9	19169.635446377	Sum of GTIs [s]
l2events	501030	Number of level 2 events



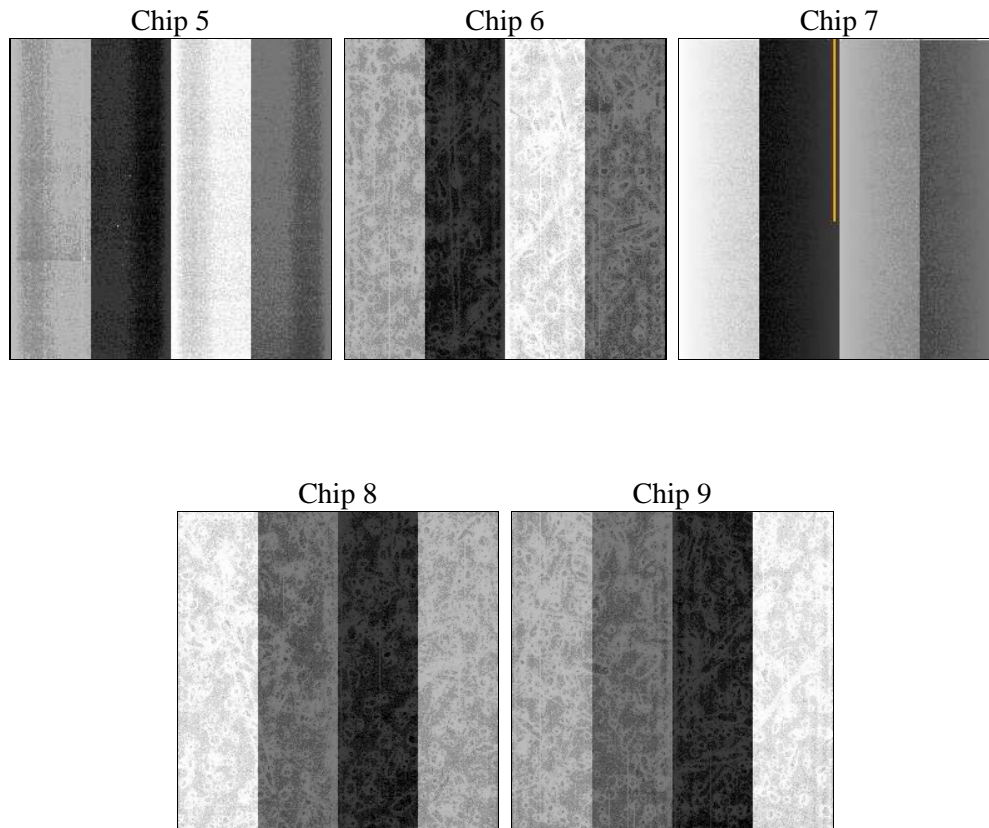
2 OBI

2.1 OBI

2.1.1 Images



2.1.2 Bias



2.1.3 Parameters

obi_num	0	Obi number	sched_exp_time	20000.000000	Scheduled observation exposure time
ascdsver	8.1.2	ASCDS version number	ontime	19169.799606375	Sum of GTIs [s]
caldbver	4.1.4	 	ontime5	19169.758566372	Sum of GTIs [s]
date	2009-12-02T15:41:36	Date and time of file creation	ontime6	19169.717526376	Sum of GTIs [s]
revision	3	Processing version of data	ontime7	19169.799606375	Sum of GTIs [s]
			ontime8	19169.676486373	Sum of GTIs [s]
			ontime9	19169.635446377	Sum of GTIs [s]
			l1events	1230070	Number of level 1 events

2.1.4 Events

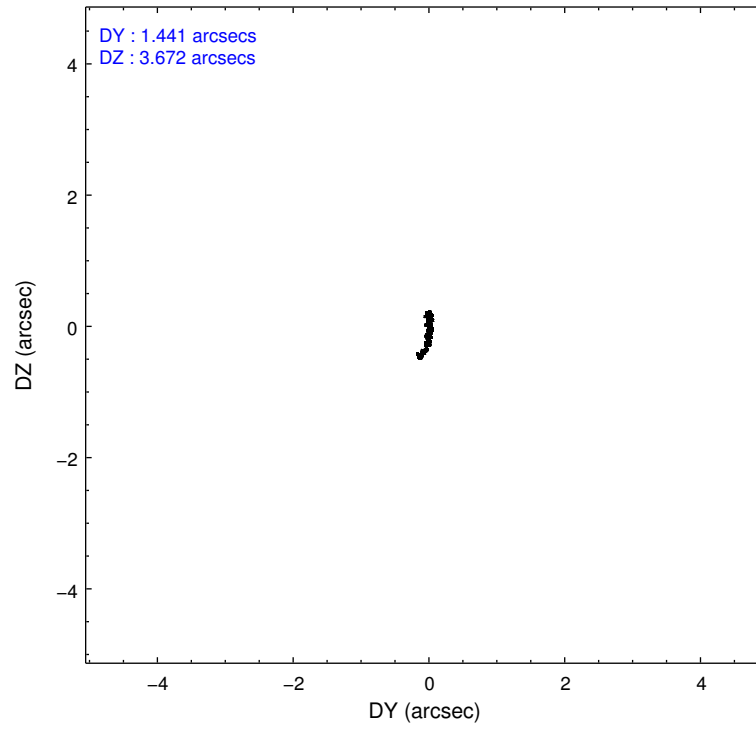
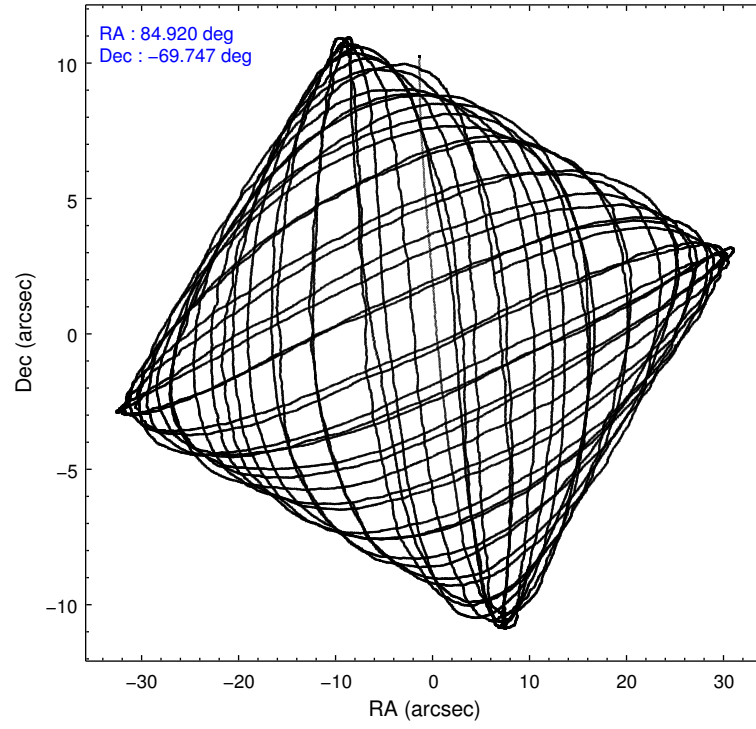
	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
level 1 events	241400	281729	289965	248007	168969
rejected events	119129	151900	112403	160592	141929
rejected %	49%	53%	38%	64%	83%

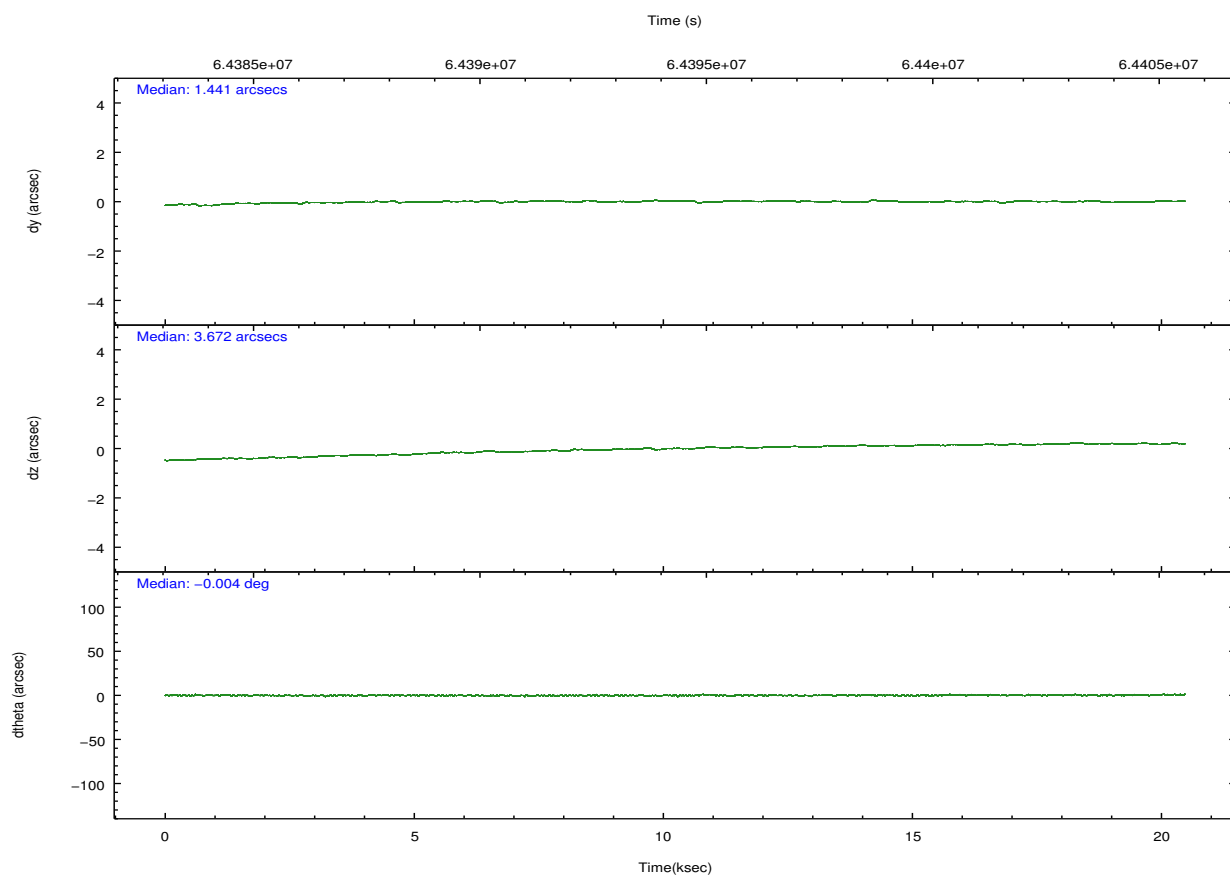
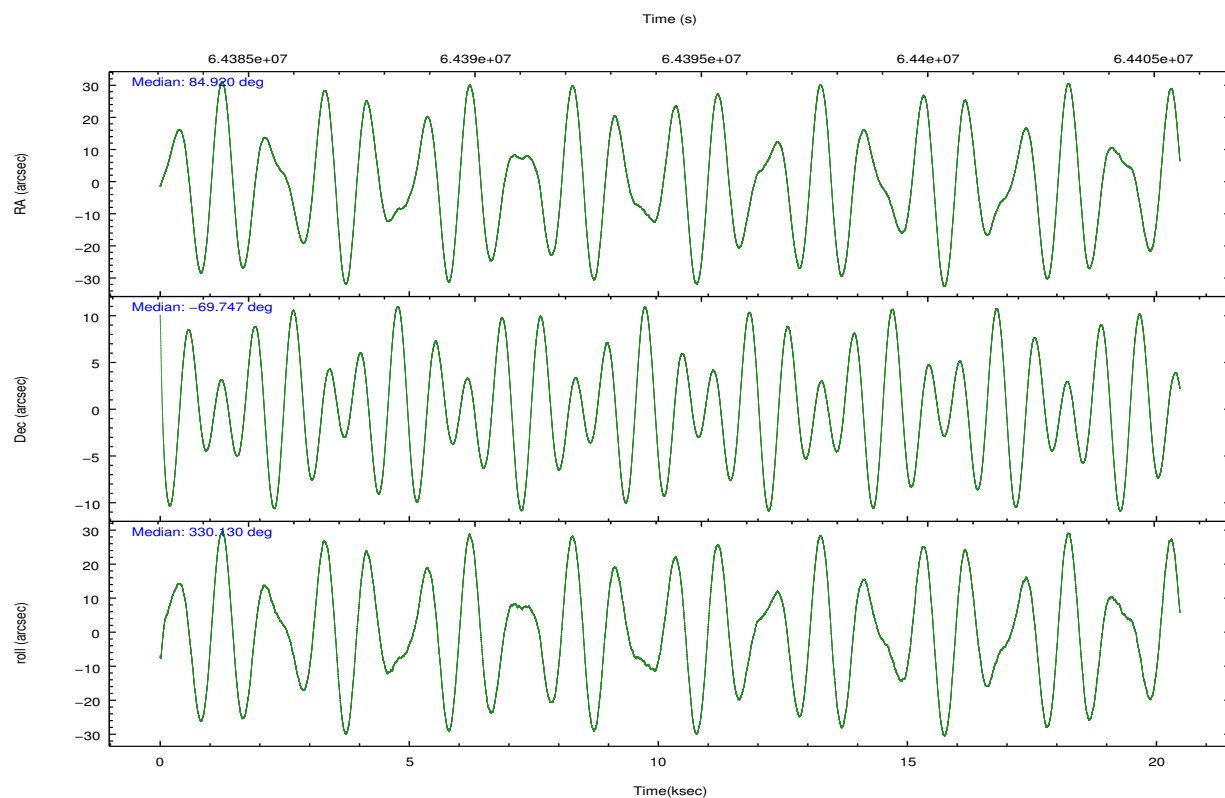
	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
grade 0 events	24416	81731	25919	51862	11084
	10%	29%	8%	20%	6%
grade 1 events	1184	828	419	305	45
	0%	0%	0%	0%	0%
grade 2 events	30549	30612	43779	17151	8575
	12%	10%	15%	6%	5%
grade 3 events	5449	4676	16161	4089	1315
	2%	1%	5%	1%	0%
grade 4 events	5023	4448	15027	3891	1263
	2%	1%	5%	1%	0%
grade 5 events	8718	4239	13112	4944	3463
	3%	1%	4%	1%	2%
grade 6 events	56857	8383	76702	10450	4806
	23%	2%	26%	4%	2%
grade 7 events	109204	146812	98846	155315	138418
	45%	52%	34%	62%	81%

2.2 Compared Parameters

Parameter	Planned	Actual	Parameter	Planned	Actual
Instrument	ACIS	ACIS	Obspar format version number	6	6
Detector	ACIS-56789	ACIS-56789	Obspar file type	PREDICTED	ACTUAL
Grating	HETG	HETG	Obspar update status	NONE	UPDATED
Data mode	FAINT	FAINT	Number of optional ACIS chips dropped	0	0
Observation mode	POINTING	POINTING	On-chip summing requested	N	N
Pointing RA	84.840674	84.92024479370851	Subarray requested	NONE	NONE
Pointing Dec	-69.747239	-69.74722784111566	Alternating exposures requested	N	N
Pointing Roll	329.903516	330.1347956453415	Primary exposure time	0.000000	3.2
SIM focus pos (mm)	-0.684267	-0.6828225247311905			
SIM defocus (mm)	0	0.001444936568705701			
SIM translation stage pos (mm)	-187.132523	-187.1254020033014			
SIM translation stage offset (mm)	-3	-3.007120579706367			
Observation start time	64384543.184000	64383062.132972			
Observation start date	2000-01-16T04:34:39	2000-01-16T04:11:02			
Observation end time	64404543.184000	64405161.646275			
Observation end date	2000-01-16T10:07:59	2000-01-16T10:19:21			
Read mode	TIMED	TIMED			

2.3 Aspect



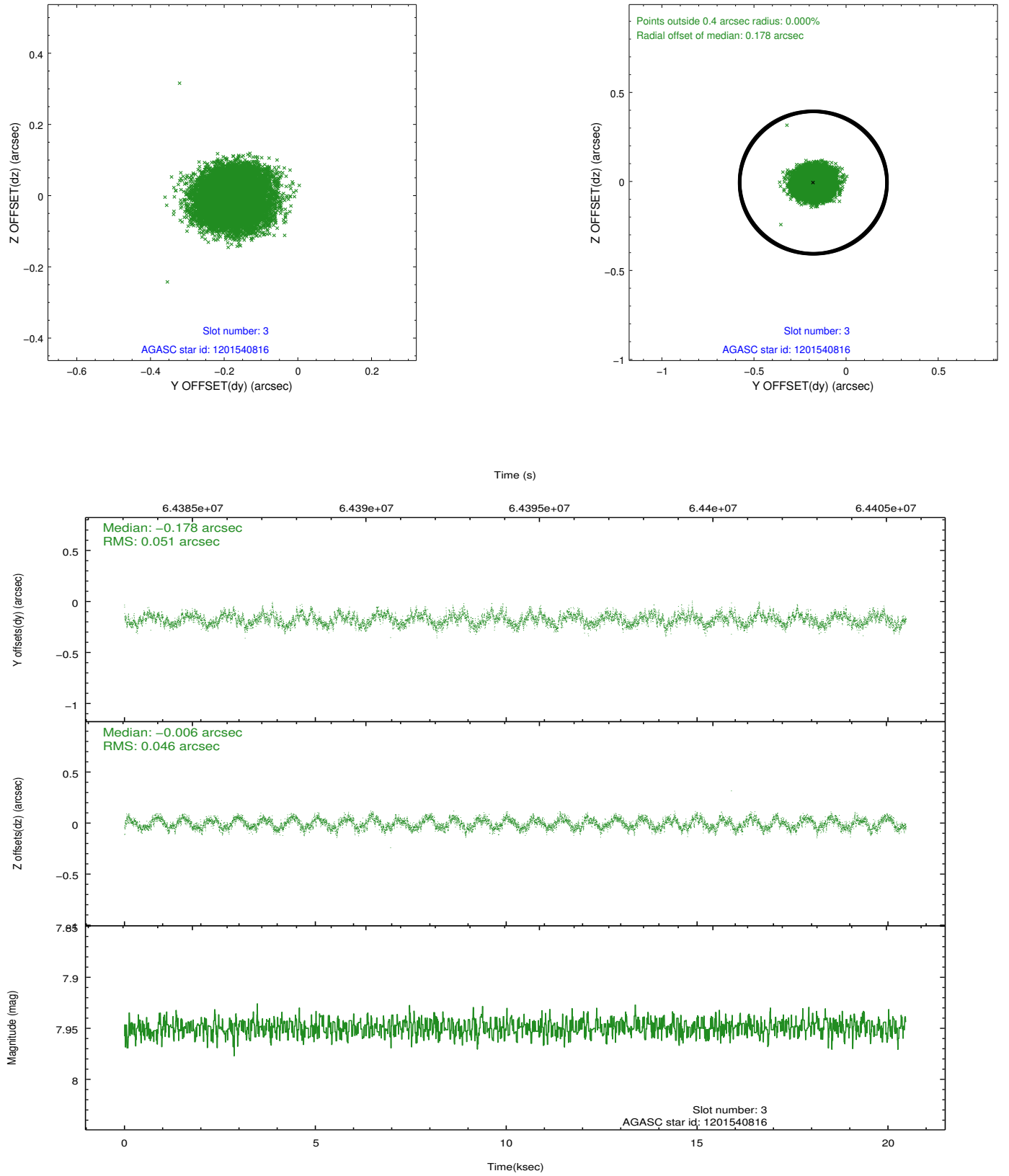


Slot Statistics

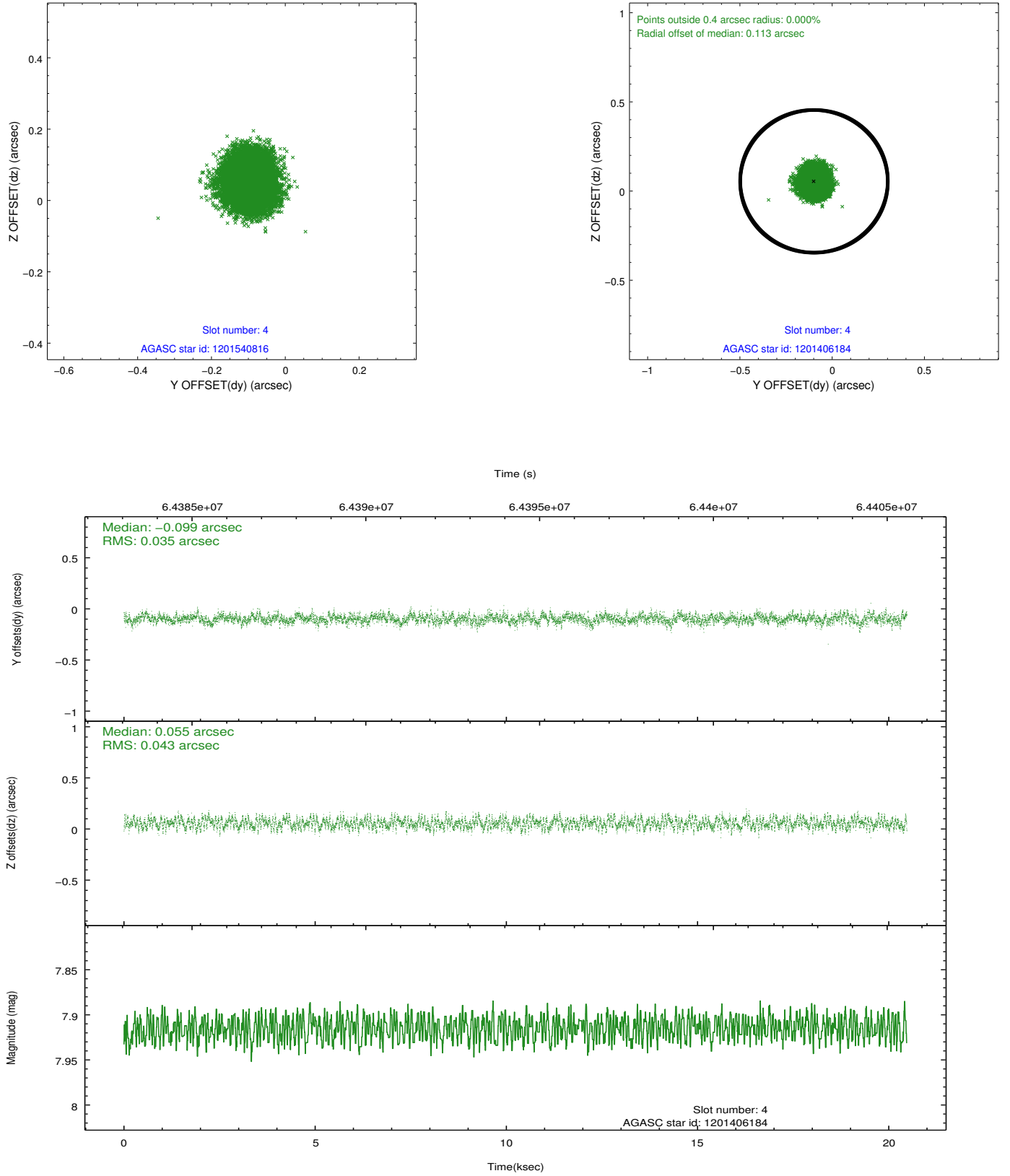
slot	status	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID	ACIS-S-2	7.11	4994	-0.049	-0.049	0.006	0.010	0.000000	0.000000	-753.88	-1786.83
1	FID	ACIS-S-4	7.20	4994	0.033	0.015	0.007	0.012	0.000000	0.000000	2159.41	121.50
2	FID	ACIS-S-6	7.38	4994	-0.012	0.041	0.007	0.012	0.000000	0.000000	408.38	759.14
3	GUIDE	1201540816	7.95	9987	-0.178	-0.006	0.074	0.112	86.998494	-69.749817	2353.76	1299.78
4	GUIDE	1201406184	7.91	9985	-0.099	0.055	0.060	0.094	82.503234	-69.975517	-2052.54	-2202.67
5	GUIDE	1201539448	8.94	9983	0.067	0.090	0.074	0.121	85.635707	-70.382152	1980.51	-1500.44
6	GUIDE	1201406992	9.26	9982	0.141	-0.020	0.070	0.113	83.682859	-69.471866	-1754.55	113.17
7	GUIDE	1201017424	10.16	9975	0.069	-0.115	0.124	0.203	85.854985	-69.248506	223.89	2193.44

2.4 Star Slots

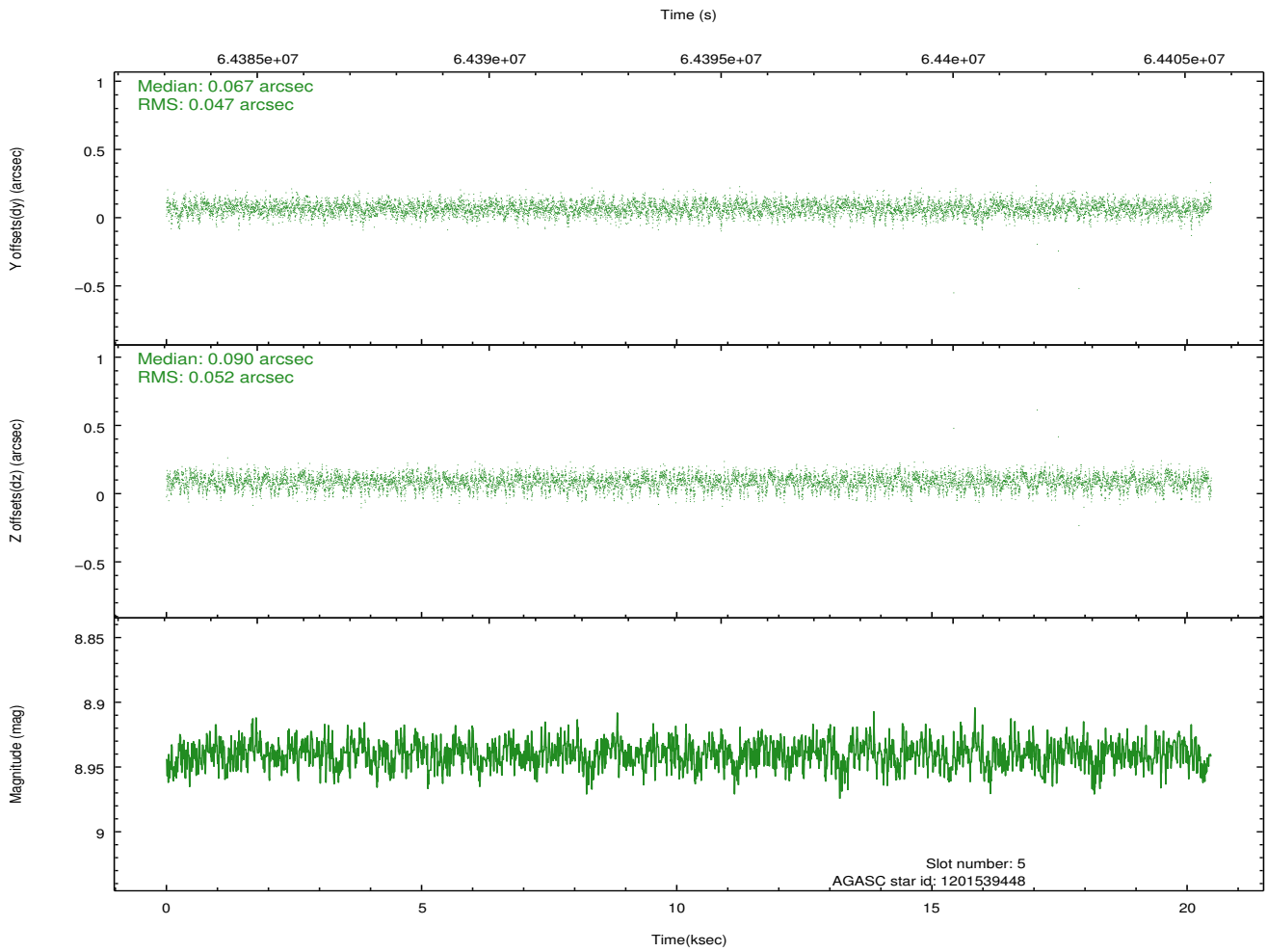
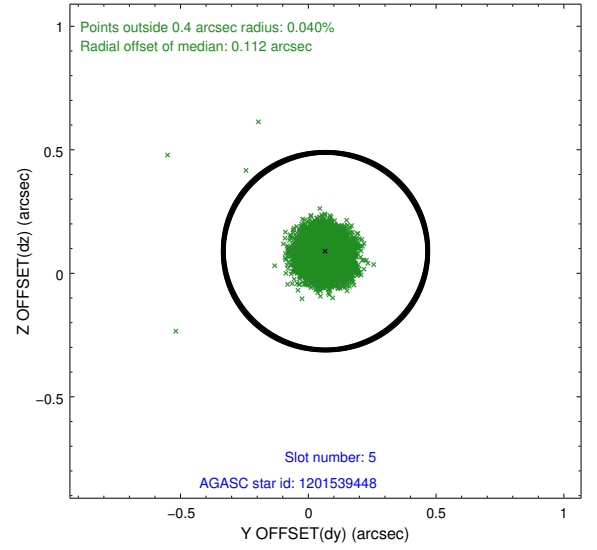
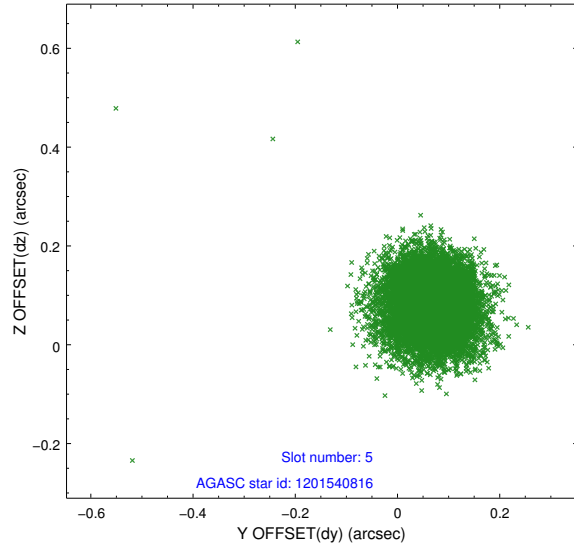
2.4.1 Slot 3



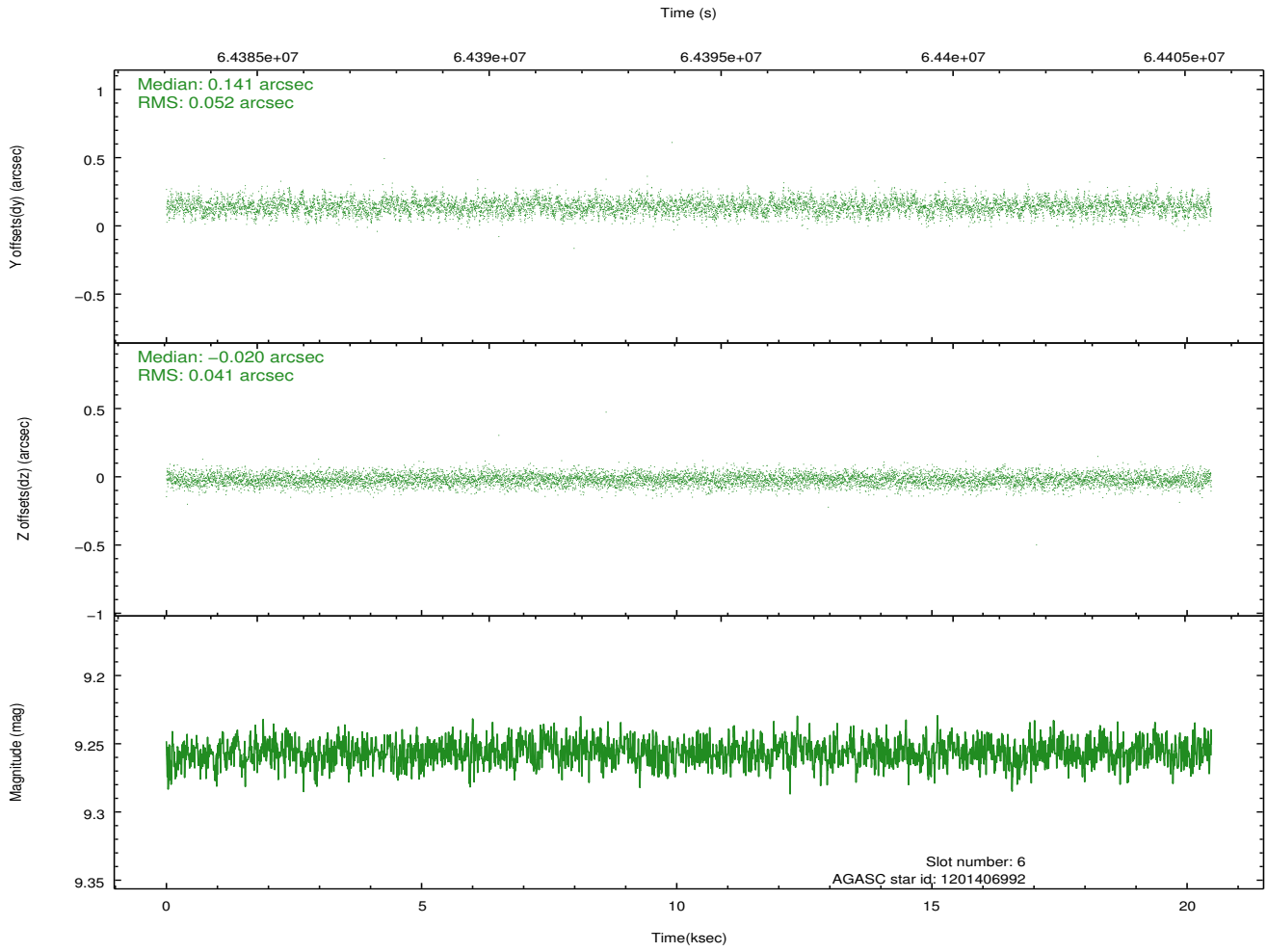
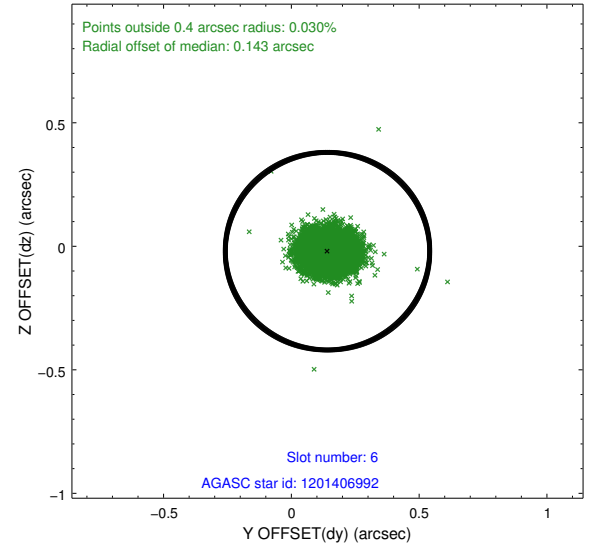
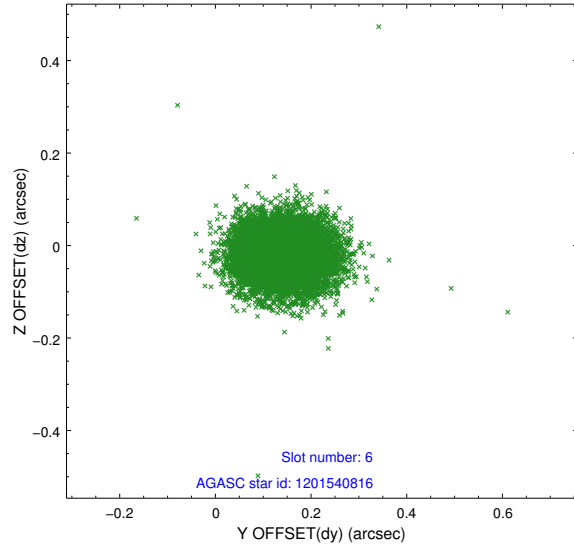
2.4.2 Slot 4



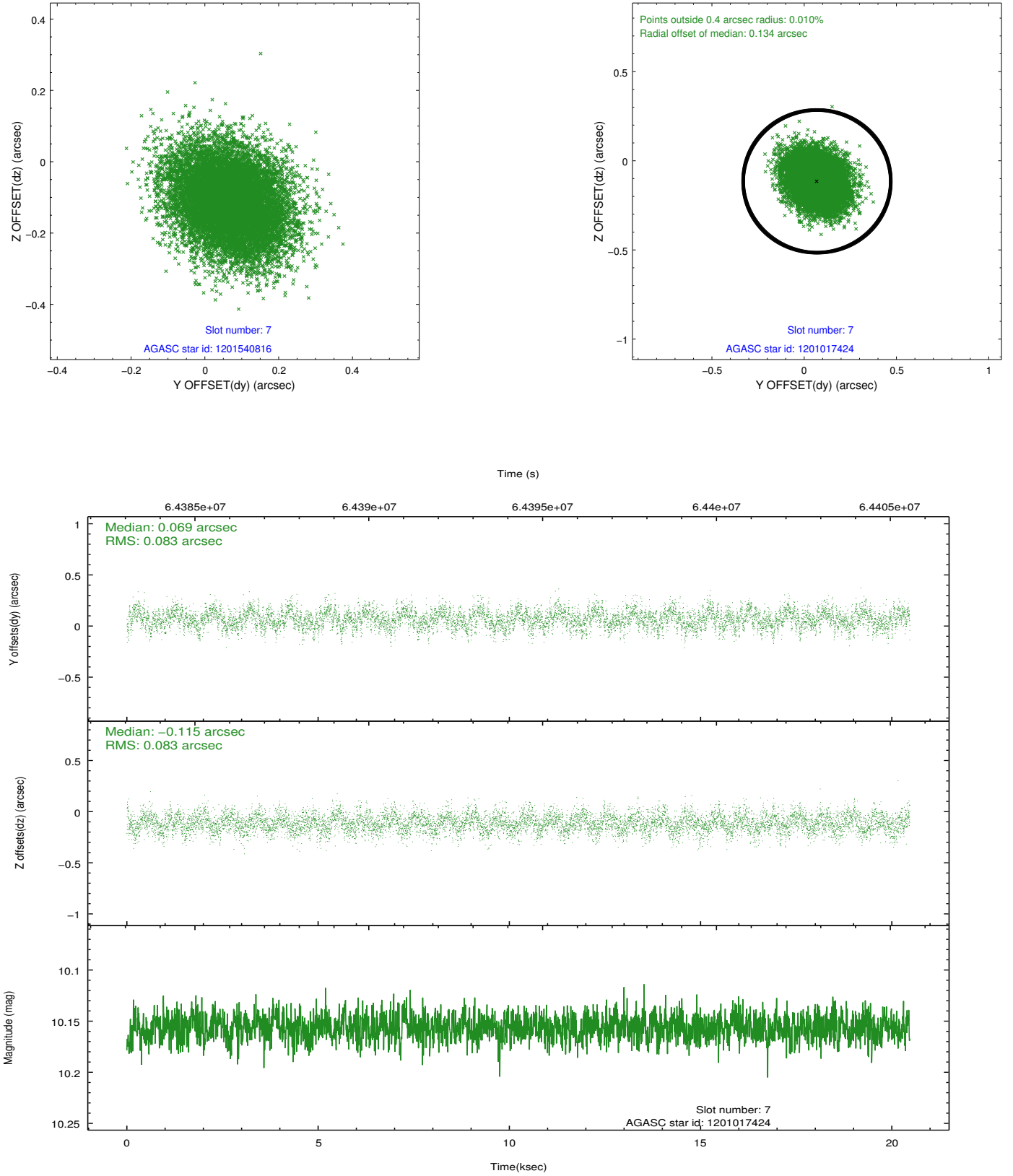
2.4.3 Slot 5



2.4.4 Slot 6

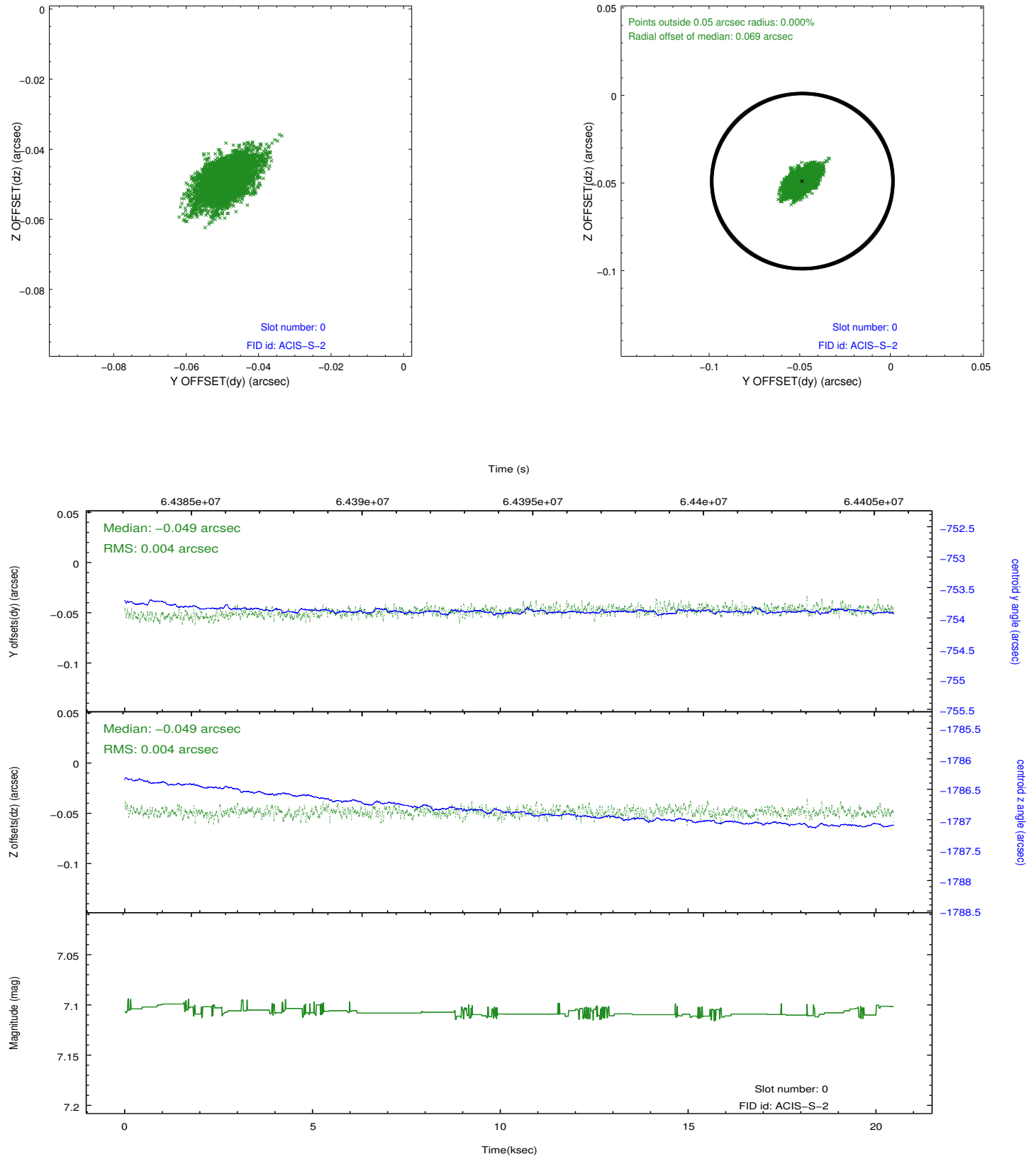


2.4.5 Slot 7

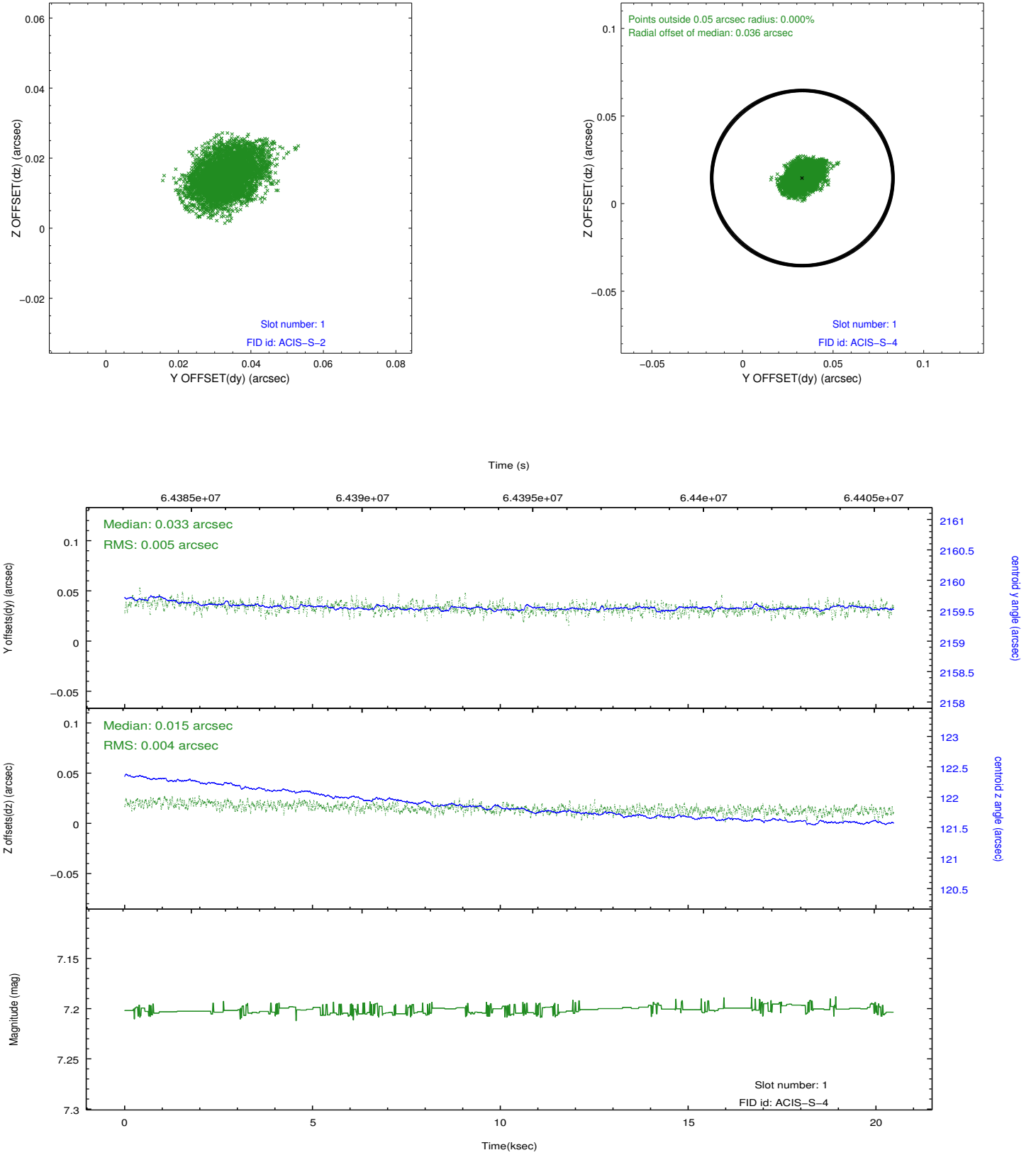


2.5 FID Slots

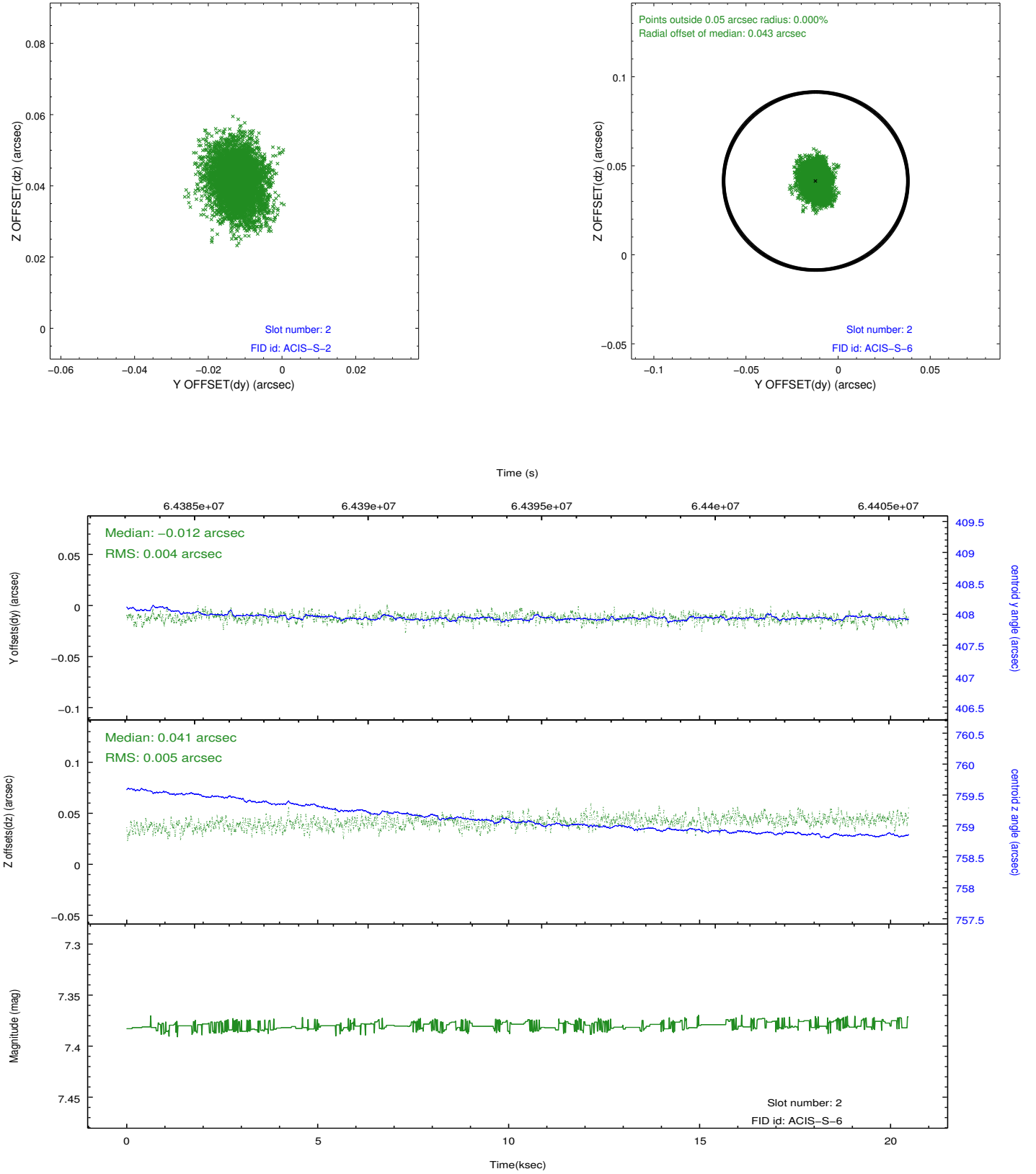
2.5.1 Slot 0



2.5.2 Slot 1

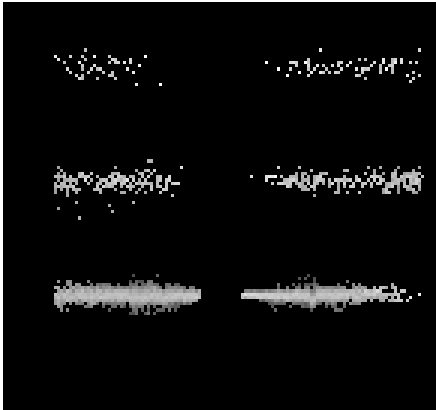


2.5.3 Slot 2

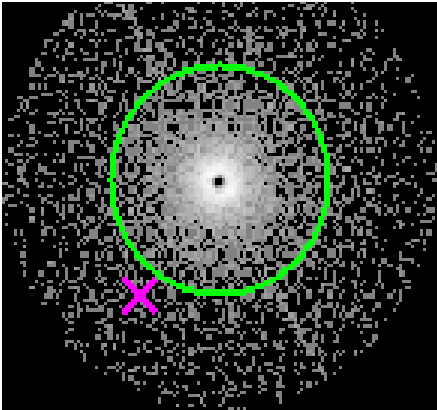


3 Gratings

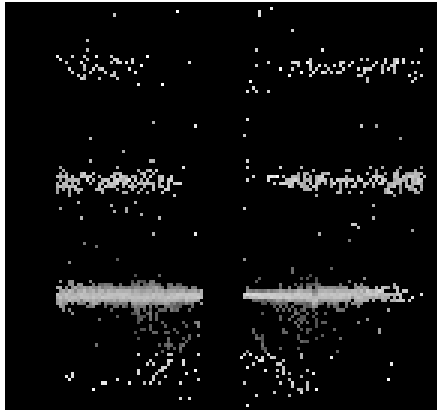
3.1 HEG Arm



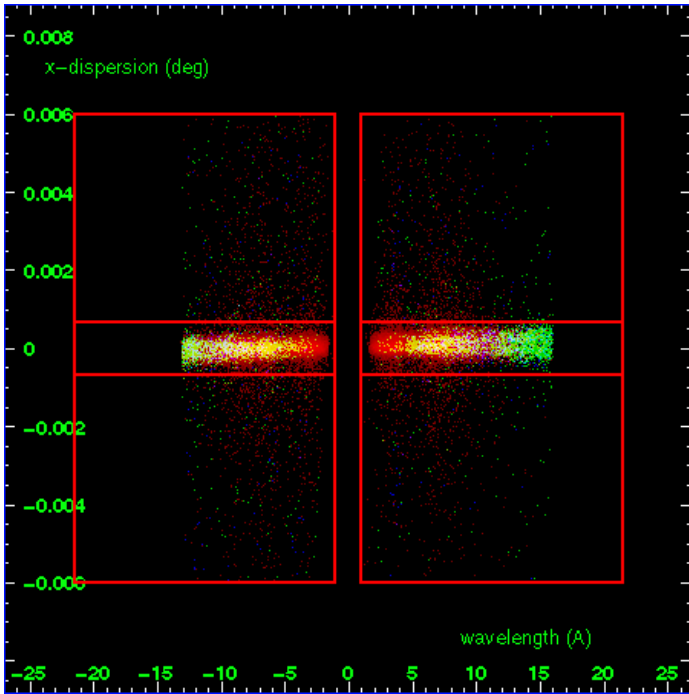
HEG Order Sort 123



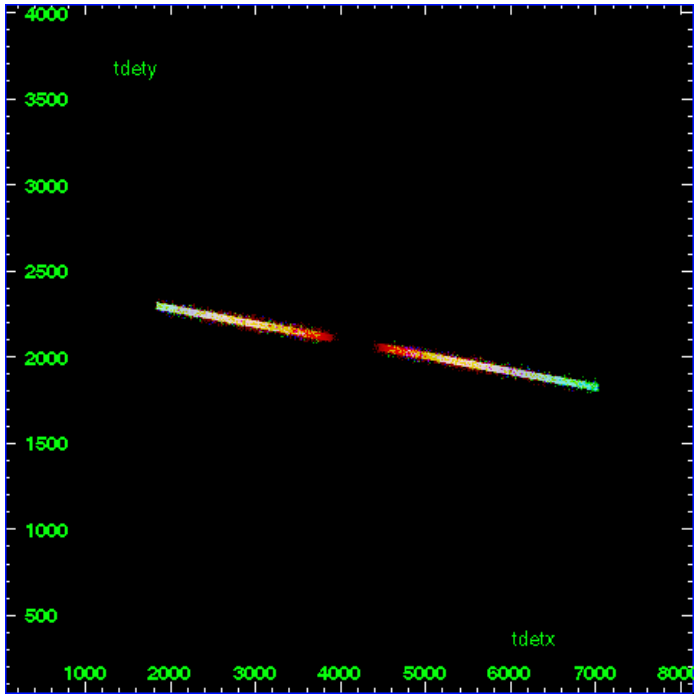
HEG Zero Order



HEG Order Sort ALL

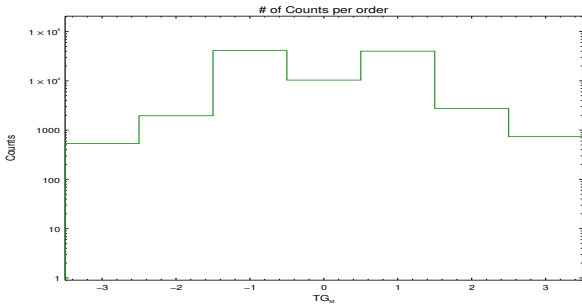


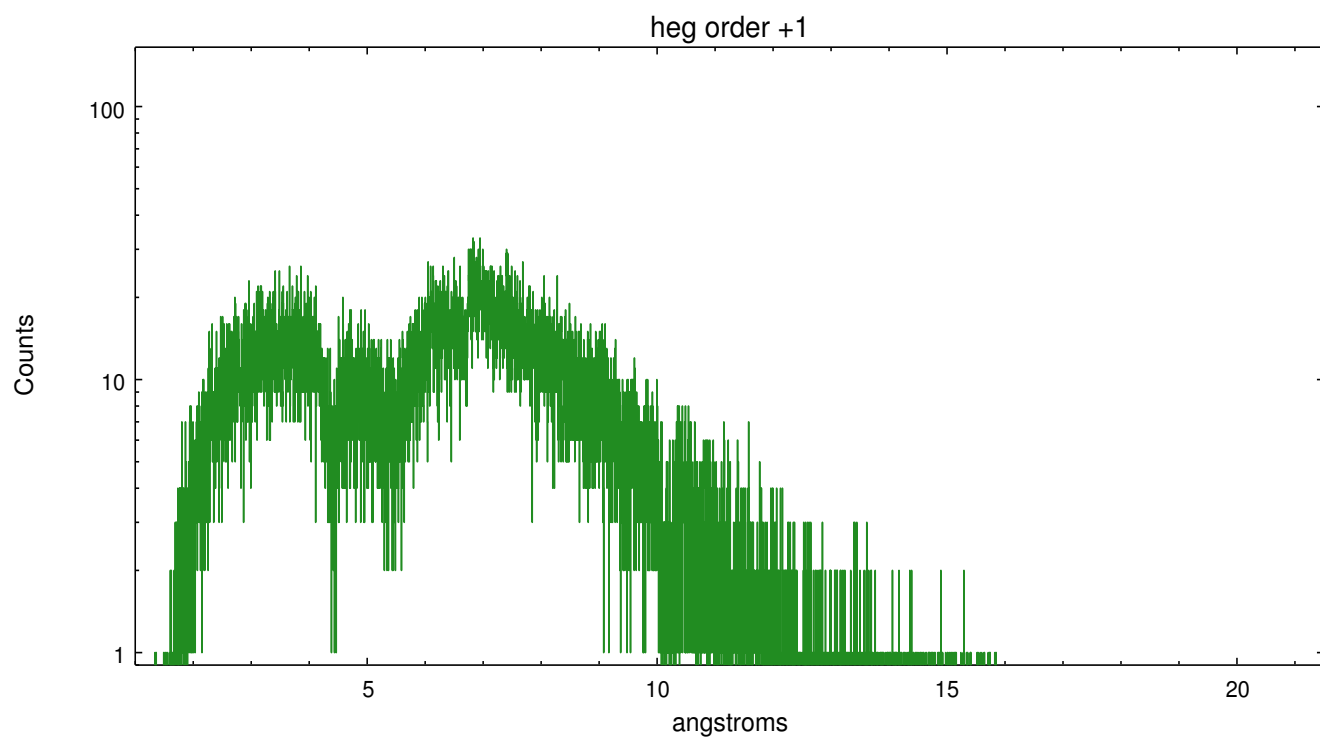
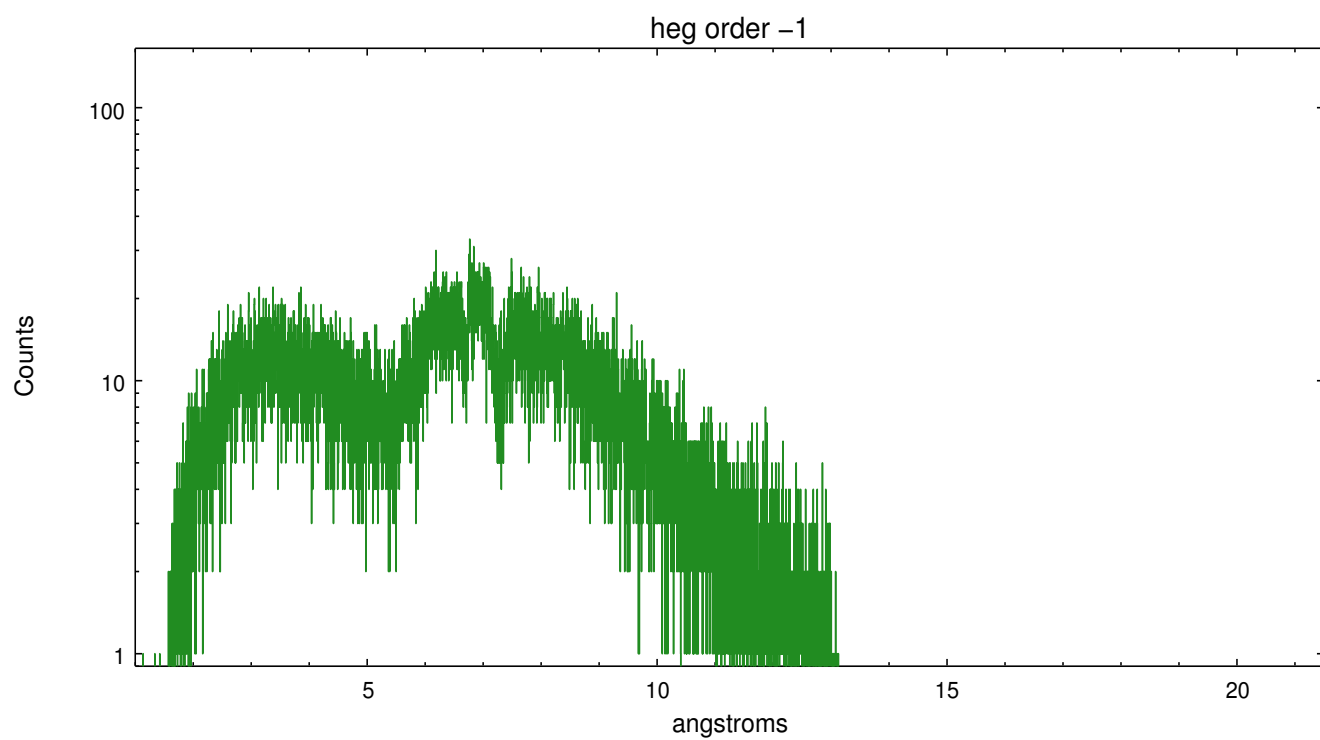
Spot Image HEG



Full Detector HEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	533	1960	41168	10362	40080	2745	737

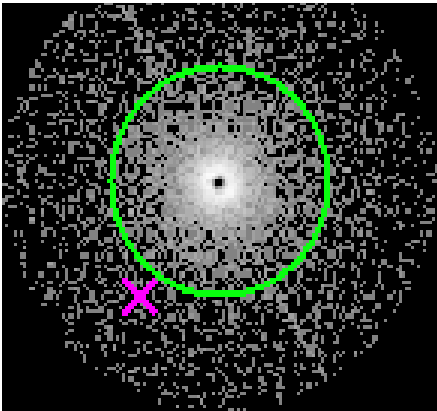




3.2 MEG Arm



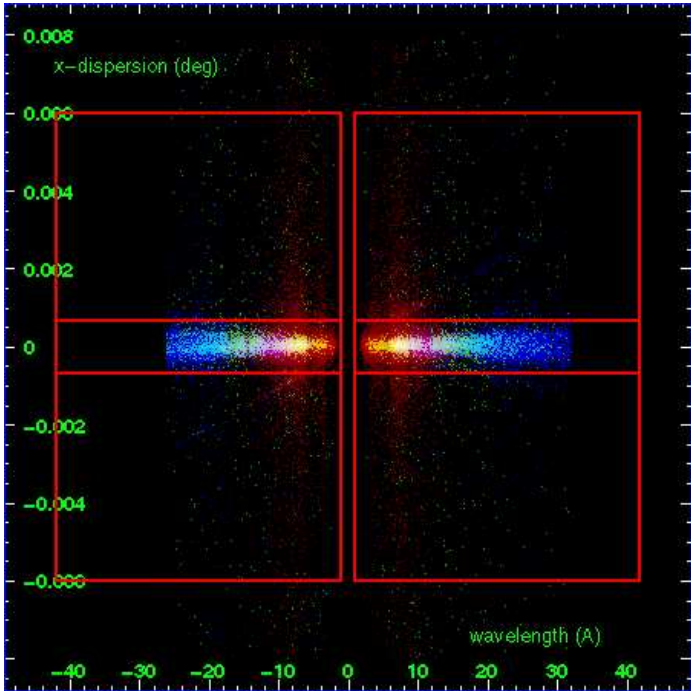
MEG Order Sort 123



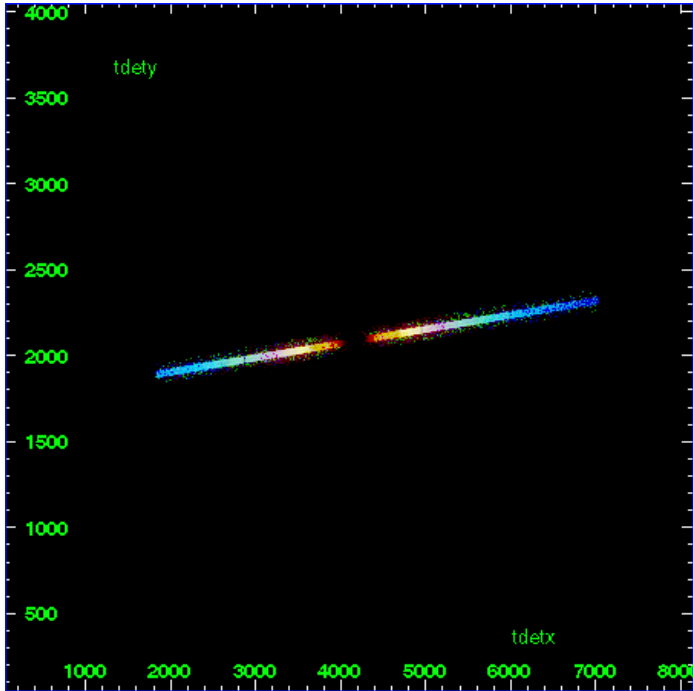
MEG Zero Order



MEG Order Sort ALL

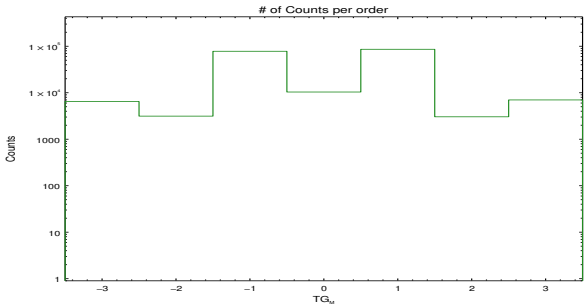


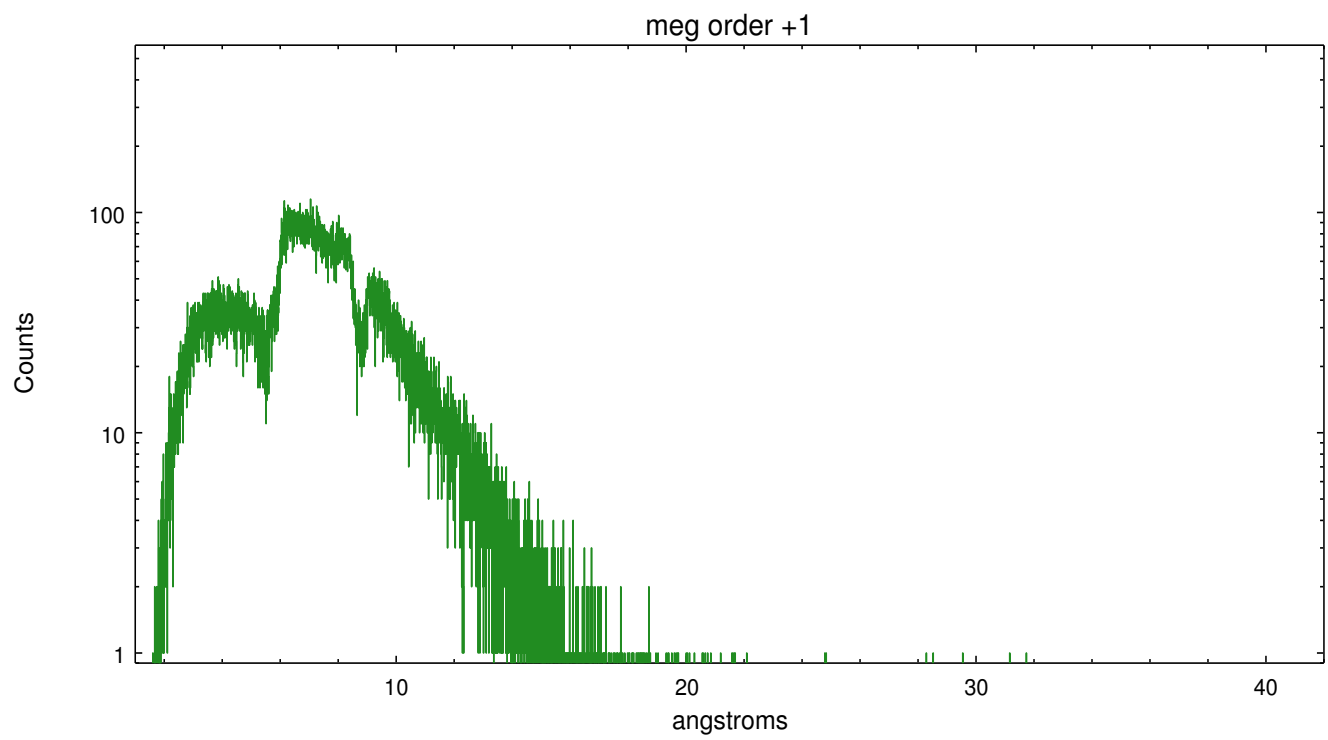
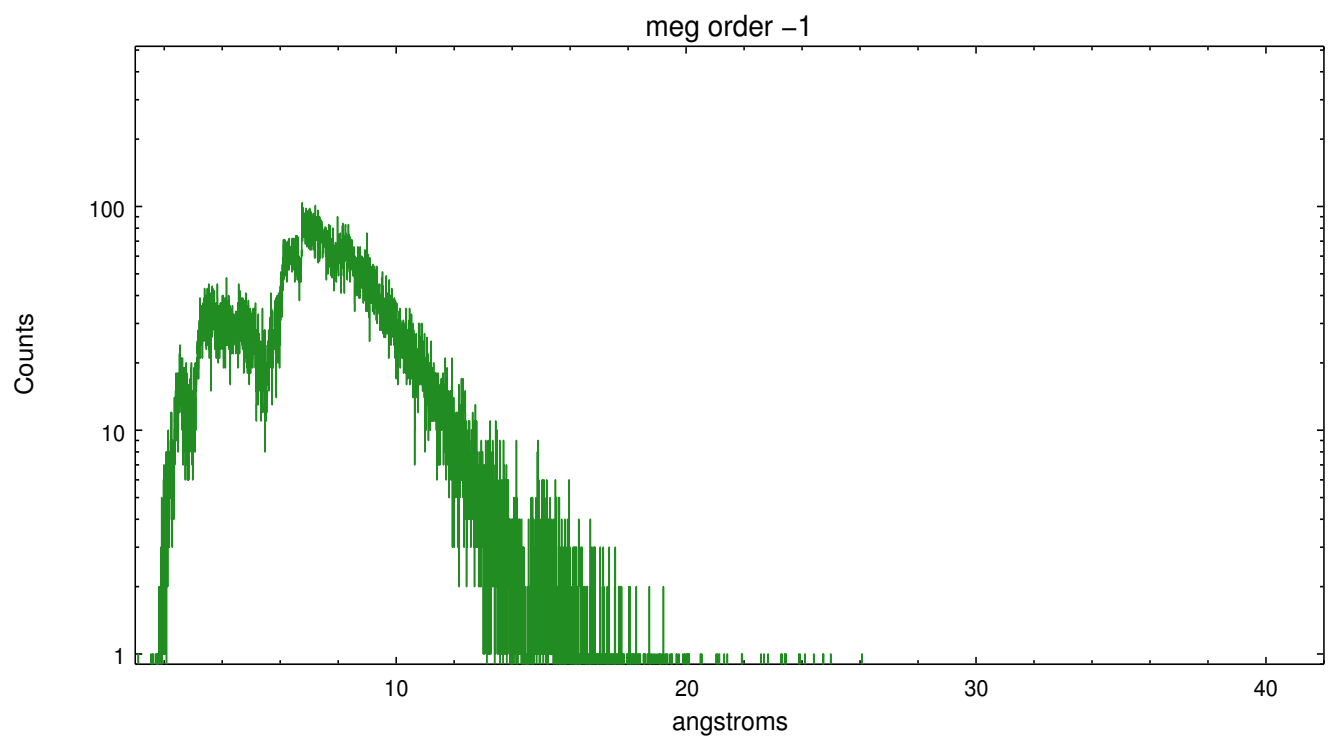
Spot Image MEG



Full Detector MEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	6472	3137	77938	10362	85991	3038	7003





A Summary

A.1 Status

V&V Scientist	Dan Dewey
V&V Date (YYYY-MM-DD)	2009.12.09
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	19.171

A.2 Comments

Bright source, zeroth-order piledup showing a hole. Recommend using findzo for zeroth-order determination; see entry in <http://tgcat.mit.edu>

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