

V&V Reference Report

L2 ASCDS Version : 8.4.5

Observation 703 - L2 Version 6
Chandra X-Ray Center

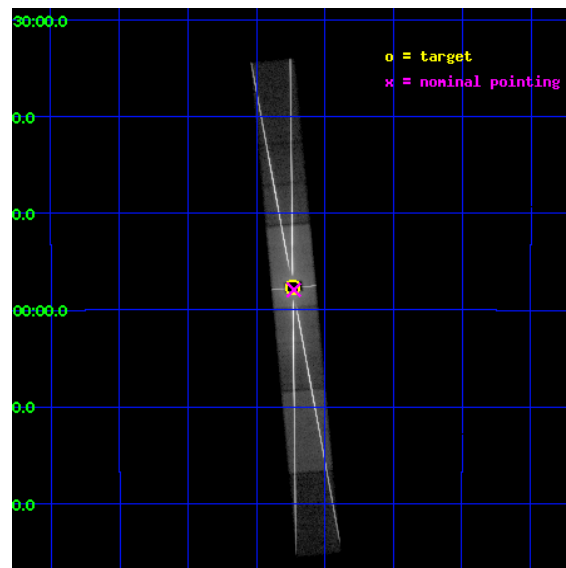
L2 Processing Date : Sep 14 2012

Contents

1	Front	2
2	OBI	3
2.1	OBI	3
2.1.1	Images	3
2.1.2	Parameters	4
2.1.3	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

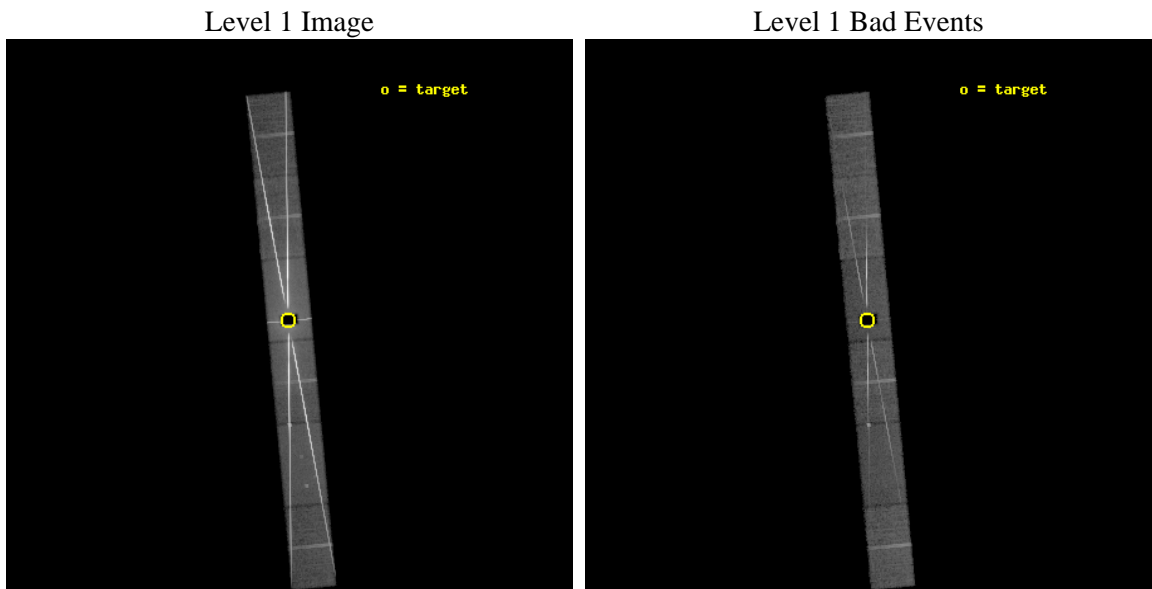
seq_num	400070	Sequence number
obs_id	703	Observation id
title	HIGH RESOLUTION X-RAY SPECTROSCOPY OF COMPACT BINARIES	Proposal ti
observer	Dr. Saeqa Vrtilek	Principal investigator
object	4U 1728-16	Source name
dtcycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	262.934125	Observer's specified target RA [deg]
dec_targ	-16.961439	Observer's specified target Dec [deg]
ra_nom	262.93183824092	Nominal RA [deg]
dec_nom	-16.965522366917	Nominal Dec [deg]
roll_nom	264.59238909922	Nominal Roll [deg]
revision	6	Processing version of data
ontime	21187.799964935	Sum of GTIs [s]
livetime	20715.486864426	Livetime [s]
ontime4	21187.799964935	Sum of GTIs [s]
ontime5	21187.799964935	Sum of GTIs [s]
ontime6	21187.799964935	Sum of GTIs [s]
ontime7	21187.799964935	Sum of GTIs [s]
ontime8	21187.799964935	Sum of GTIs [s]
ontime9	21187.799964935	Sum of GTIs [s]
l2events	2663143	Number of level 2 events



2 OBI

2.1 OBI

2.1.1 Images



2.1.2 Parameters

obi_num	0	Obi number	sched_exp_time	21000.000000	[s] Scheduled observation exposure time
ascdsver	8.4.5	Processing system revision	ontime	21187.799964935	Sum of GTIs [s]
caldsver	4.5.1.1	 	ontime4	21187.799964935	Sum of GTIs [s]
date	2012-09-01T03:14:35	Date and time of file creation	ontime5	21187.799964935	Sum of GTIs [s]
revision	5	Processing version of data	ontime6	21187.799964935	Sum of GTIs [s]
			ontime7	21187.799964935	Sum of GTIs [s]
			ontime8	21187.799964935	Sum of GTIs [s]
			ontime9	21187.799964935	Sum of GTIs [s]
			l1events	3354247	Number of level 1 events

2.1.3 Events

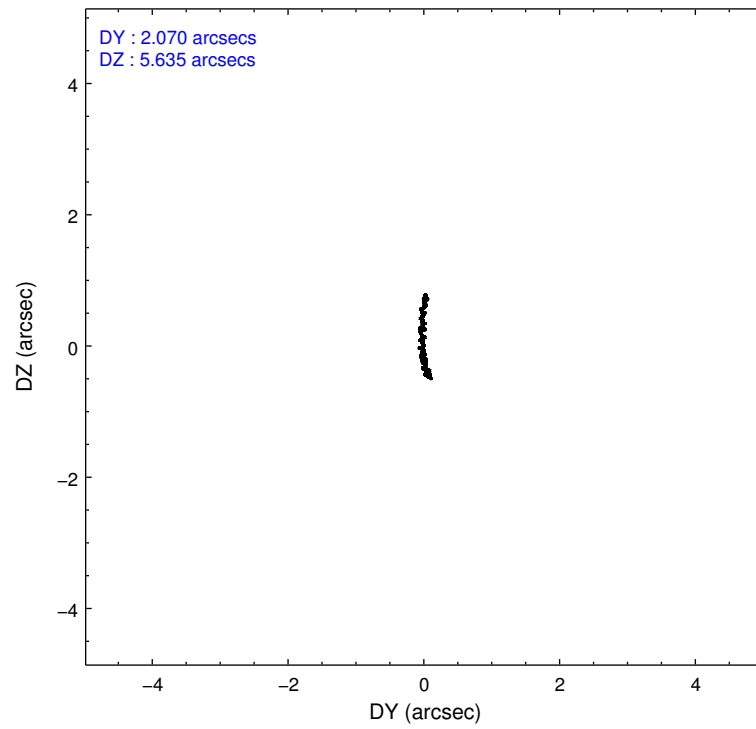
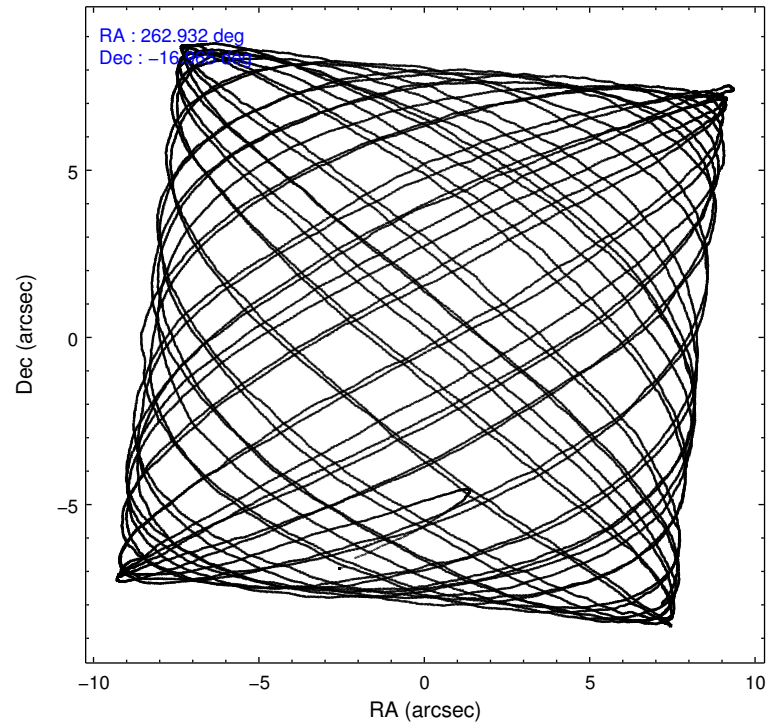
	ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9		ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
level 1 events	134500	356311	1115425	1011287	568467	168257	grade 0 events	44445	85679	740349	164888	380939	78642
rejected events	75582	63181	120999	125835	91043	67108		33%	24%	66%	16%	67%	46%
rejected %	56%	17%	10%	12%	16%	39%	grade 1 events	141	1972	23498	6301	5699	270
								0%	0%	2%	0%	1%	0%
							grade 2 events	7656	96203	128837	232860	51855	11807
								5%	26%	11%	23%	9%	7%
							grade 3 events	2357	24027	45481	90611	17111	3847
								1%	6%	4%	8%	3%	2%
							grade 4 events	2352	23516	44387	89632	17275	3970
								1%	6%	3%	8%	3%	2%
							grade 5 events	2218	9352	18063	34421	6207	2755
								1%	2%	1%	3%	1%	1%
							grade 6 events	2482	65671	41907	313513	13842	3572
								1%	18%	3%	31%	2%	2%
							grade 7 events	72849	49891	72903	79061	75539	63394
								54%	14%	6%	7%	13%	37%

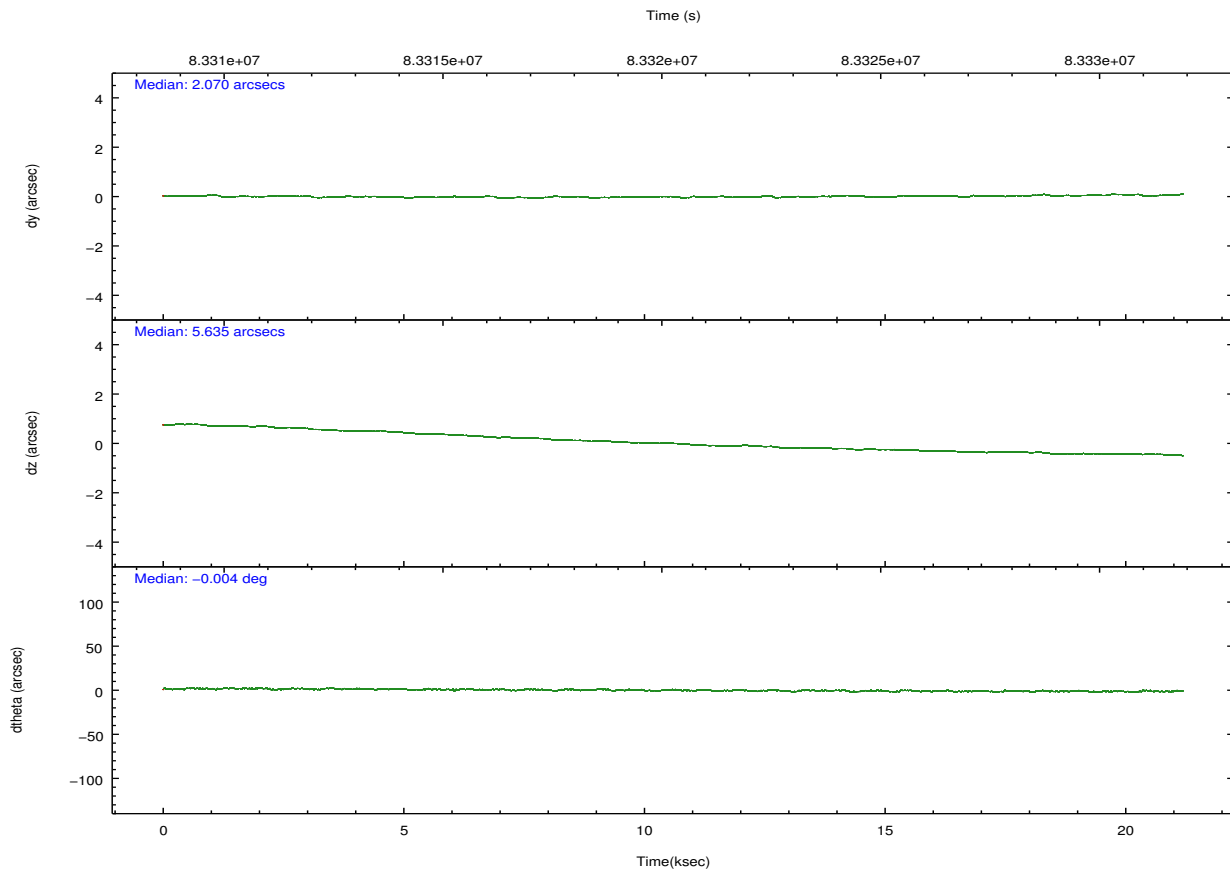
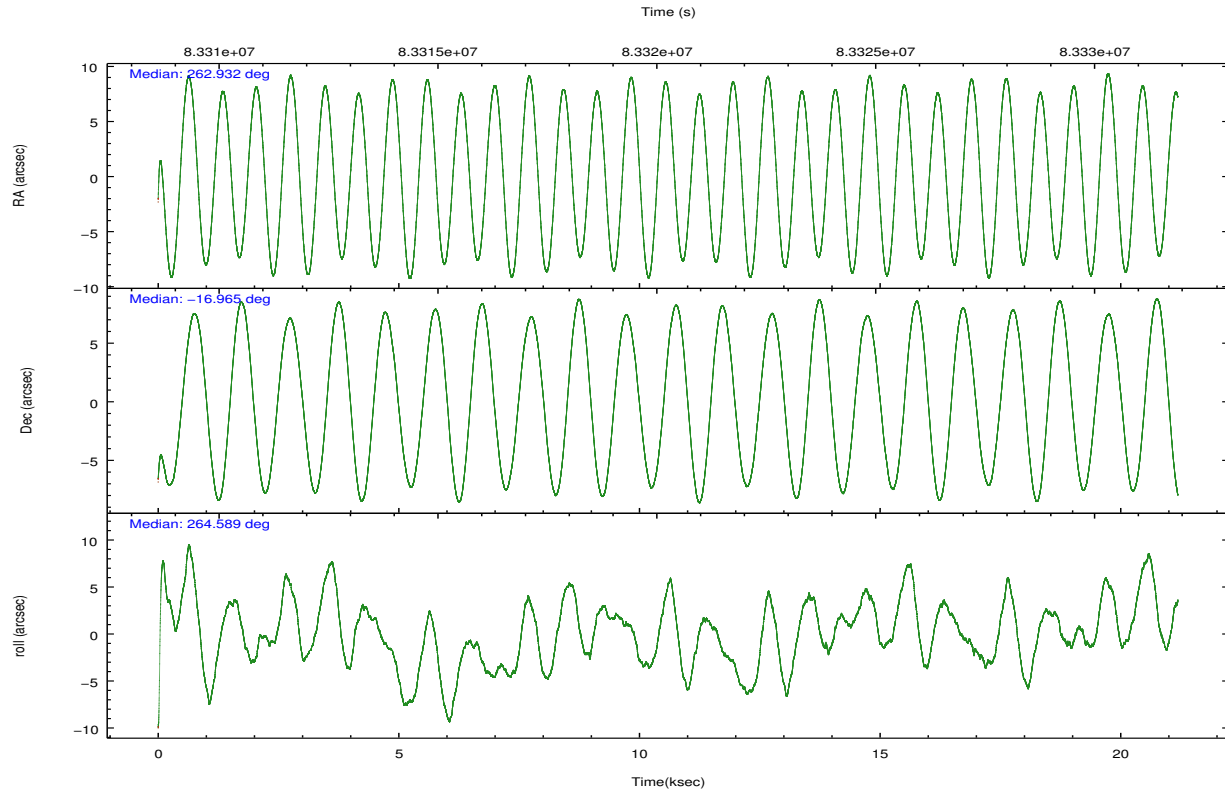
2.2 Compared Parameters

Parameter	Planned	Actual
Instrument	ACIS	ACIS
Detector	ACIS-456789	ACIS-456789
Grating	HETG	HETG
Data mode	GRADED	GRADED
Observation mode	POINTING	POINTING
[deg] Pointing RA	262.919791	262.9318382409226
[deg] Pointing Dec	-16.940680	-16.96552236691722
[deg] Pointing Roll	264.432257	264.5923890992185
[mm] SIM focus pos	-0.684267	-0.6828225247311905
[mm] SIM defocus	0	0.001444936568705701
[mm] SIM translation stage pos	-184.532523	-184.5306286120915
[mm] SIM translation stage offset	-5.6	-5.601893970916279
[s] Observation start time (MET)	83309853.184000	83308885.307399
Observation start date	2000-08-22T05:36:29	2000-08-22T05:21:25
[s] Observation end time (MET)	83330853.184000	83331329.220741
Observation end date	2000-08-22T11:26:29	2000-08-22T11:35:29
Read mode	TIMED	TIMED

Parameter	Planned	Actual
Obspar format version number	7	7
Obspar file type	PREDICTED	ACTUAL
Obspar update status	NONE	UPDATED
Number of optional ACIS chips dropped	0	0
On-chip summing requested	N	N
Subarray requested	CUSTOM	CUSTOM
Subarray start row	15	15
Subarray row count	542	542
Alternating exposures requested	N	N
[s] Primary exposure time	0.000000	1.8

2.3 Aspect



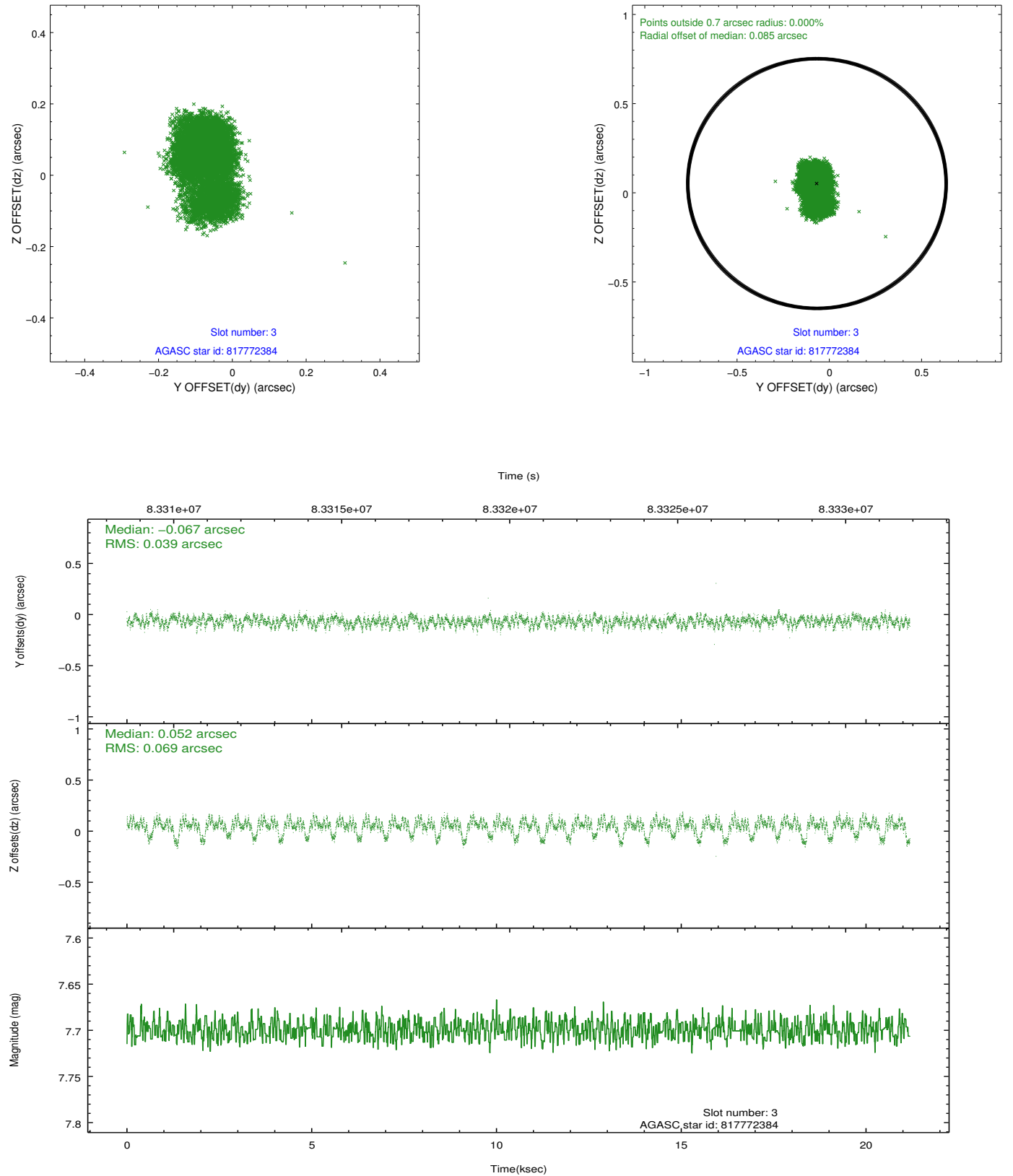


Slot Statistics

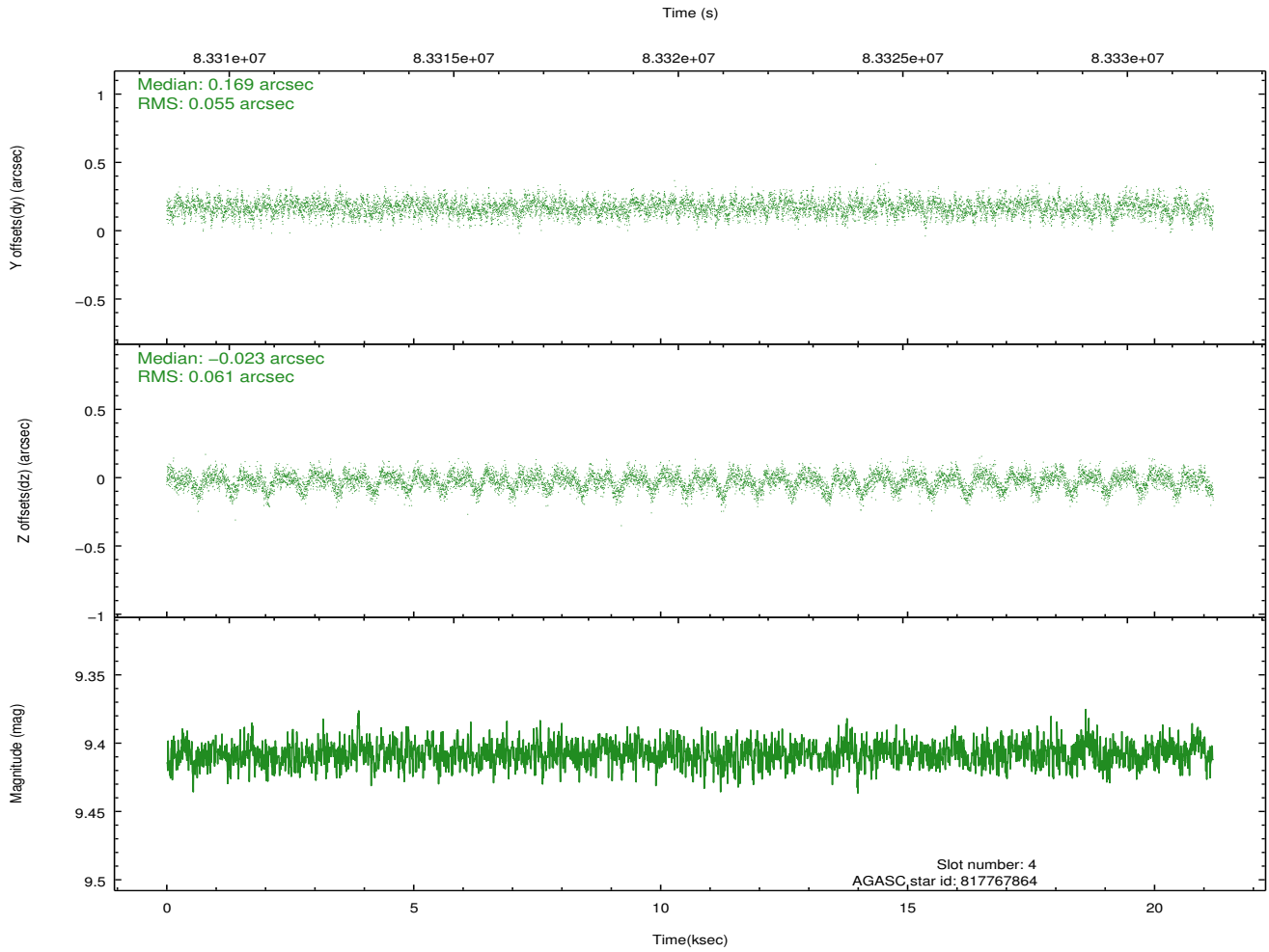
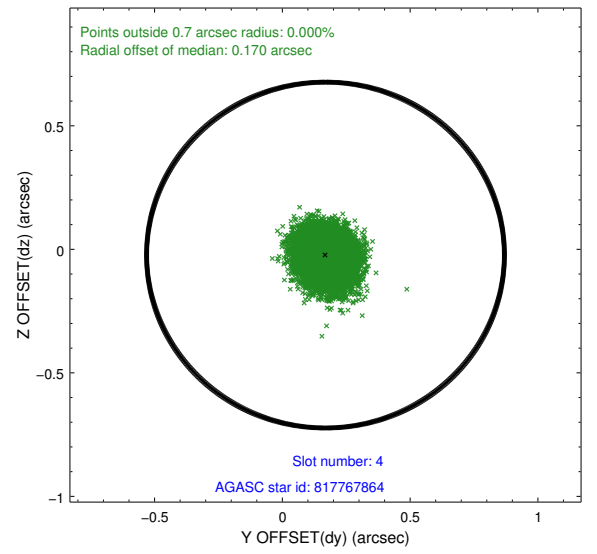
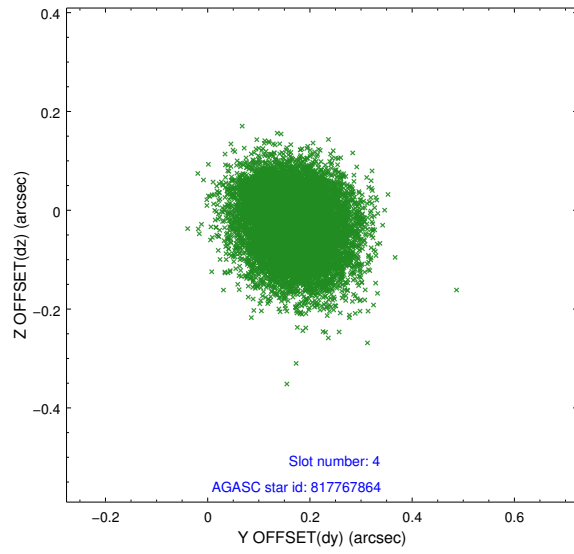
slot	status	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID	ACIS-S-2	7.09	5169	-0.049	-0.064	0.016	0.024	0.000000	0.000000	-754.36	-1842.37
1	FID	ACIS-S-4	7.19	5168	0.003	0.041	0.009	0.016	0.000000	0.000000	2158.91	66.00
2	FID	ACIS-S-5	7.23	5169	0.015	0.031	0.014	0.022	0.000000	0.000000	-1806.91	59.88
3	GUIDE	817772384	7.70	10336	-0.067	0.052	0.080	0.152	263.349126	-17.303212	1158.04	1596.17
4	GUIDE	817767864	9.41	10332	0.169	-0.023	0.088	0.140	262.973127	-17.324232	1357.57	317.18
5	GUIDE	817766376	9.11	10331	0.047	-0.083	0.078	0.128	262.480803	-17.079573	646.97	-1454.32
6	GUIDE	817255128	9.23	10336	-0.162	-0.162	0.105	0.167	262.326809	-16.590807	-1051.27	-2157.96
7	GUIDE	817772808	10.02	10330	0.015	0.189	0.209	0.409	263.524030	-17.138376	510.45	2138.85

2.4 Star Slots

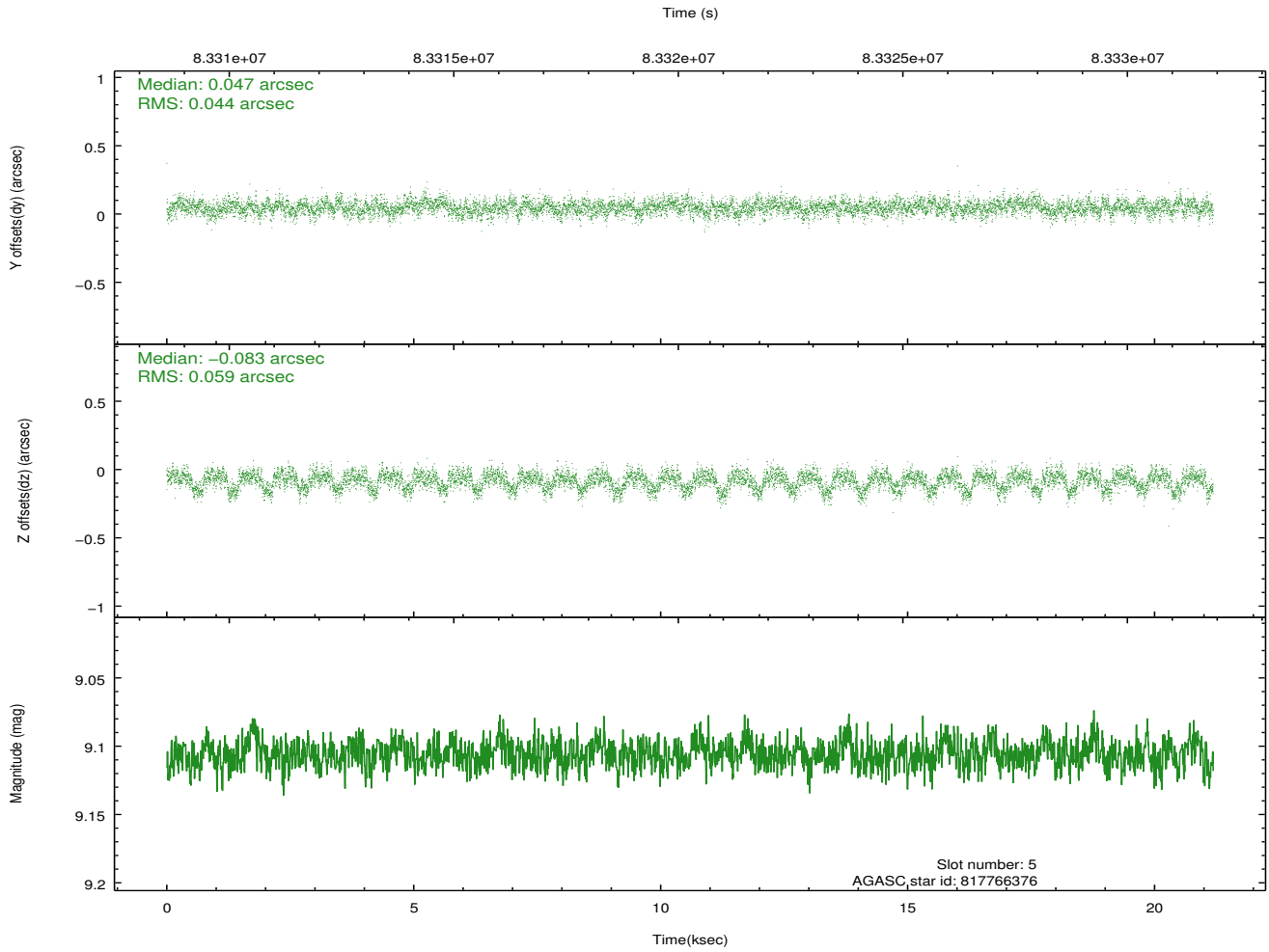
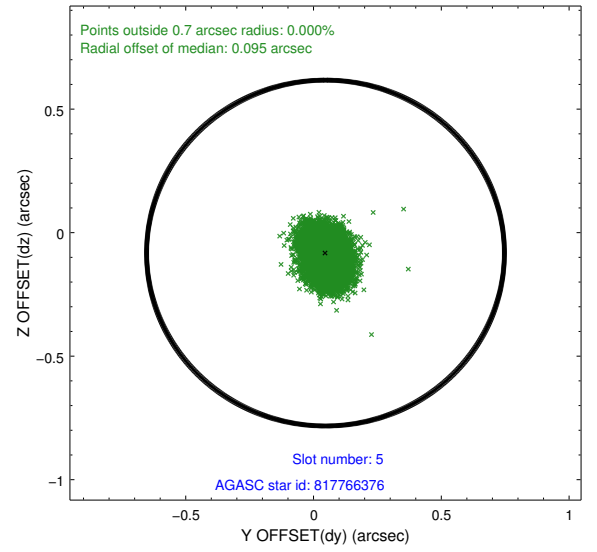
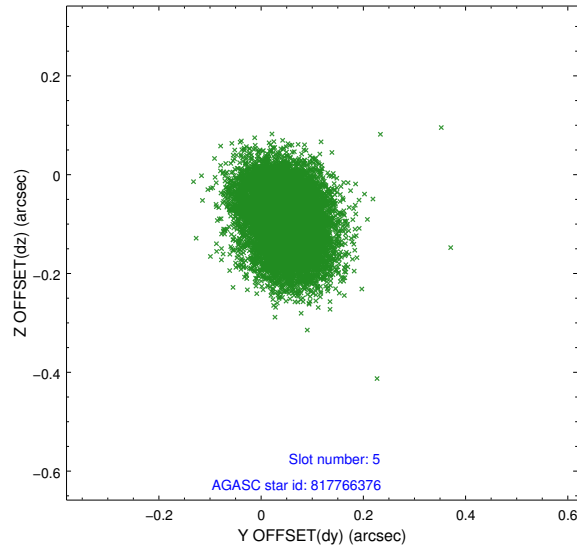
2.4.1 Slot 3



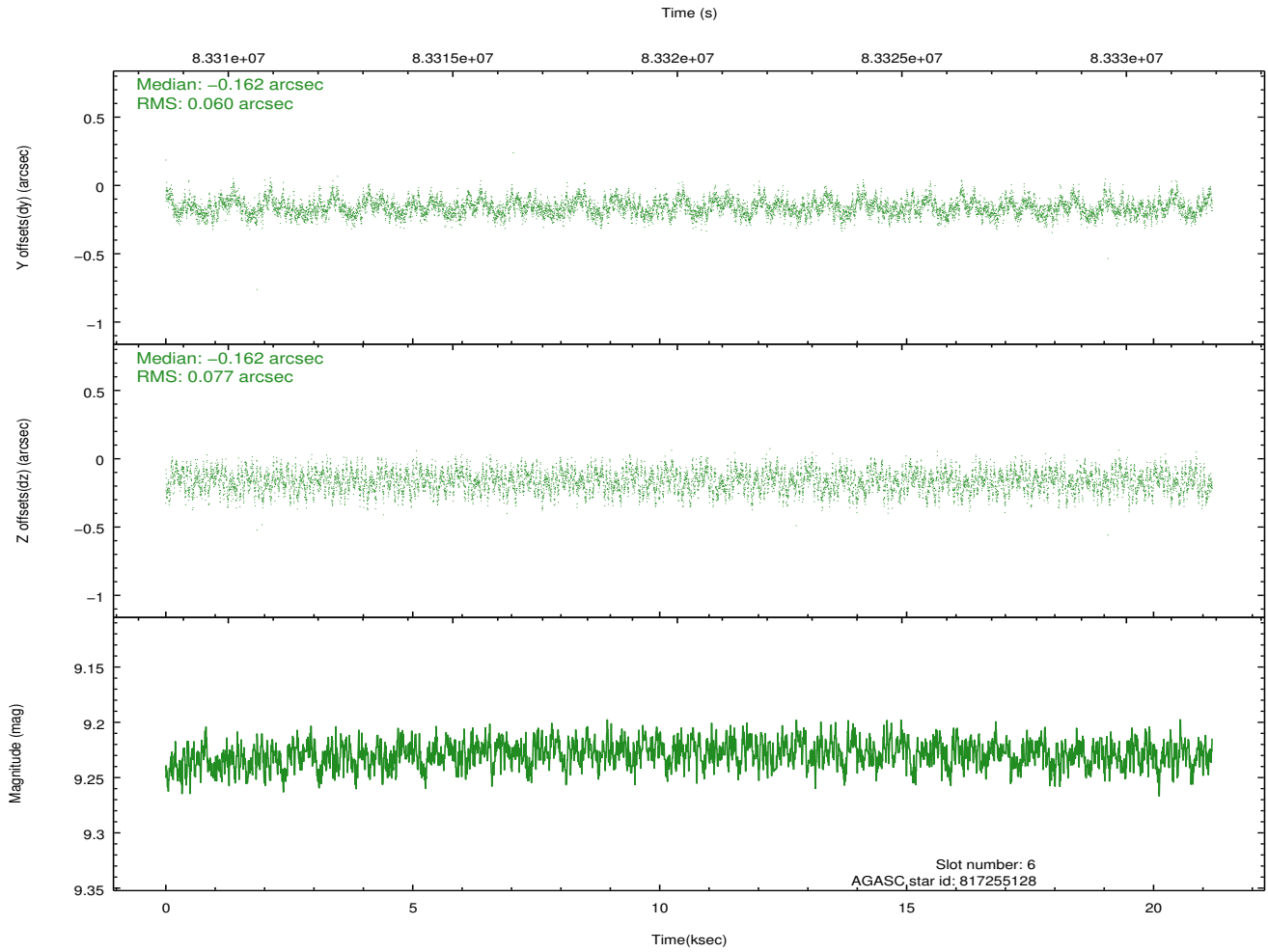
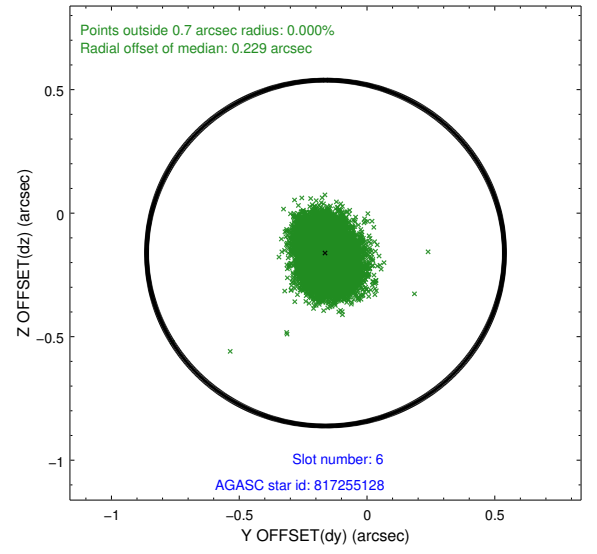
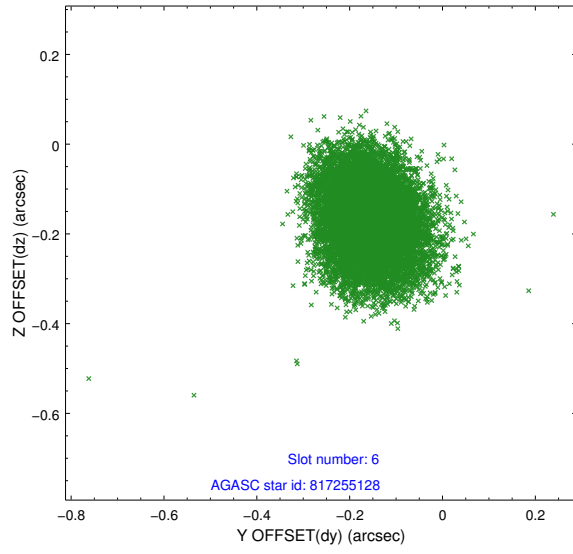
2.4.2 Slot 4



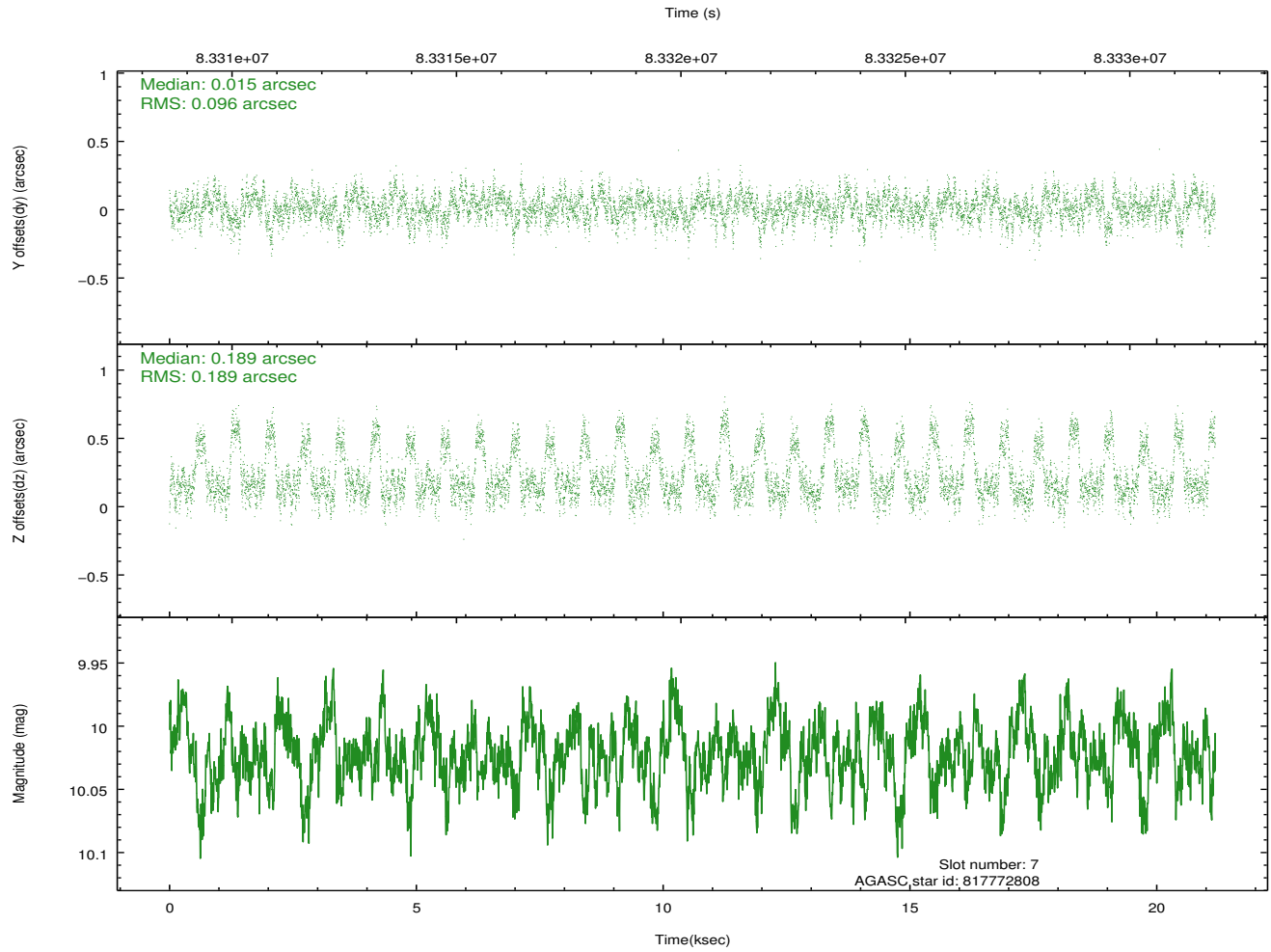
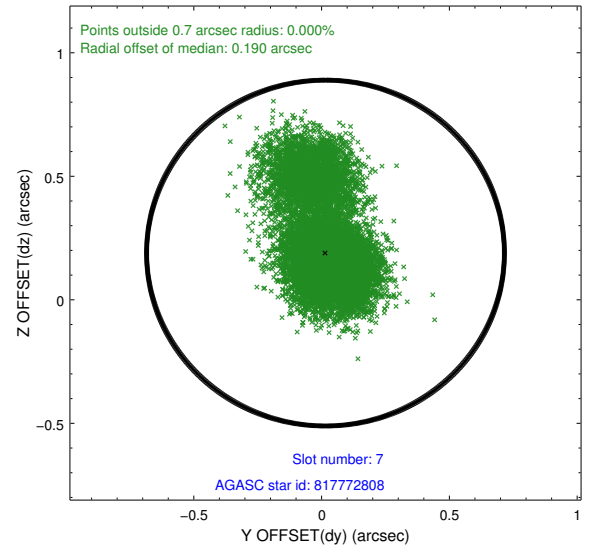
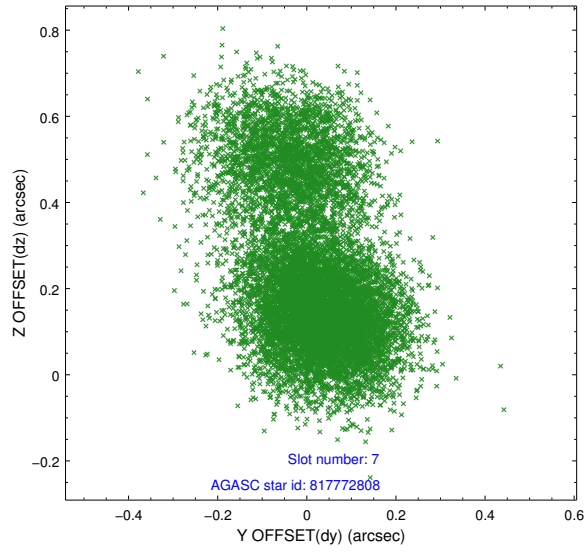
2.4.3 Slot 5



2.4.4 Slot 6

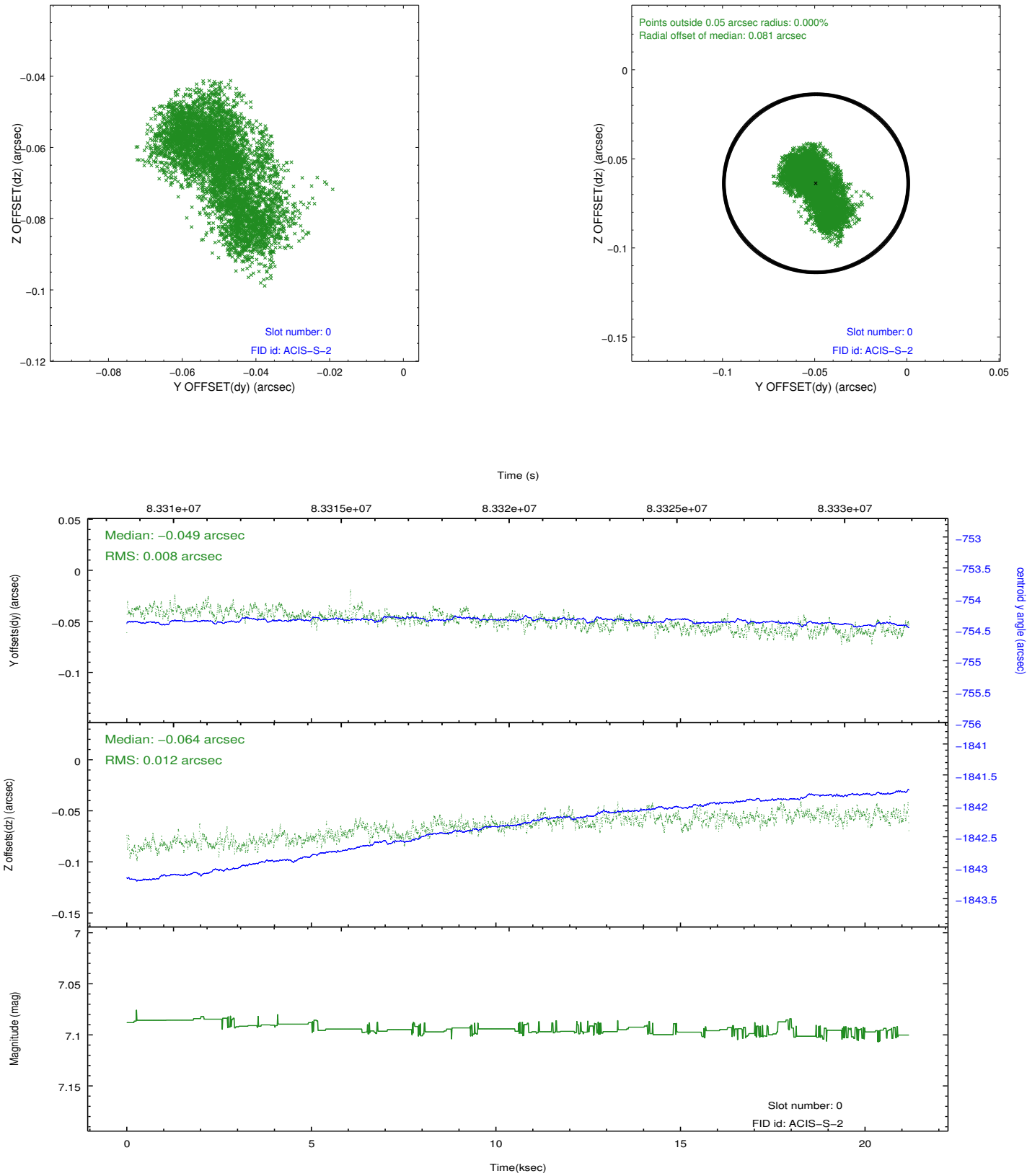


2.4.5 Slot 7

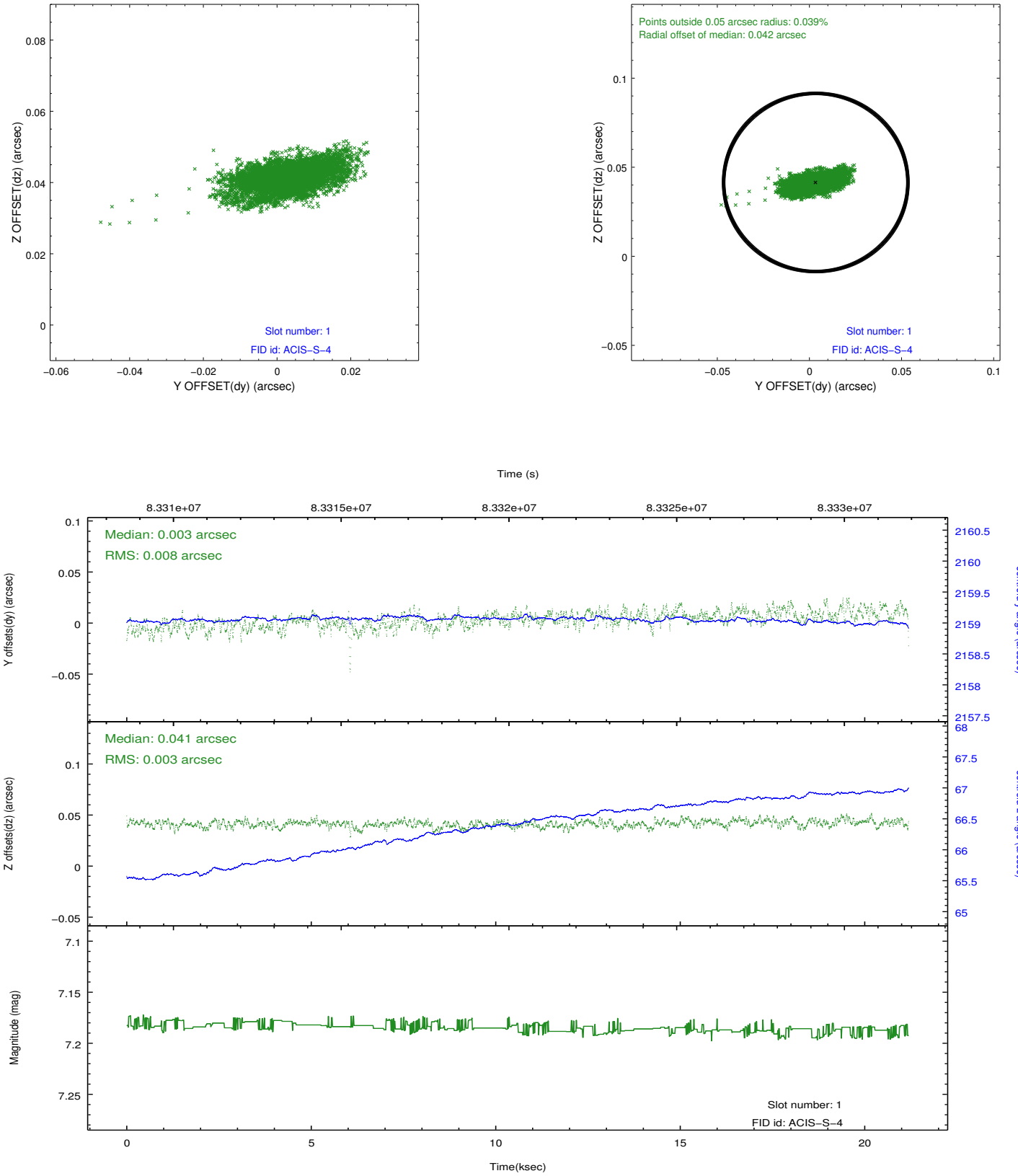


2.5 FID Slots

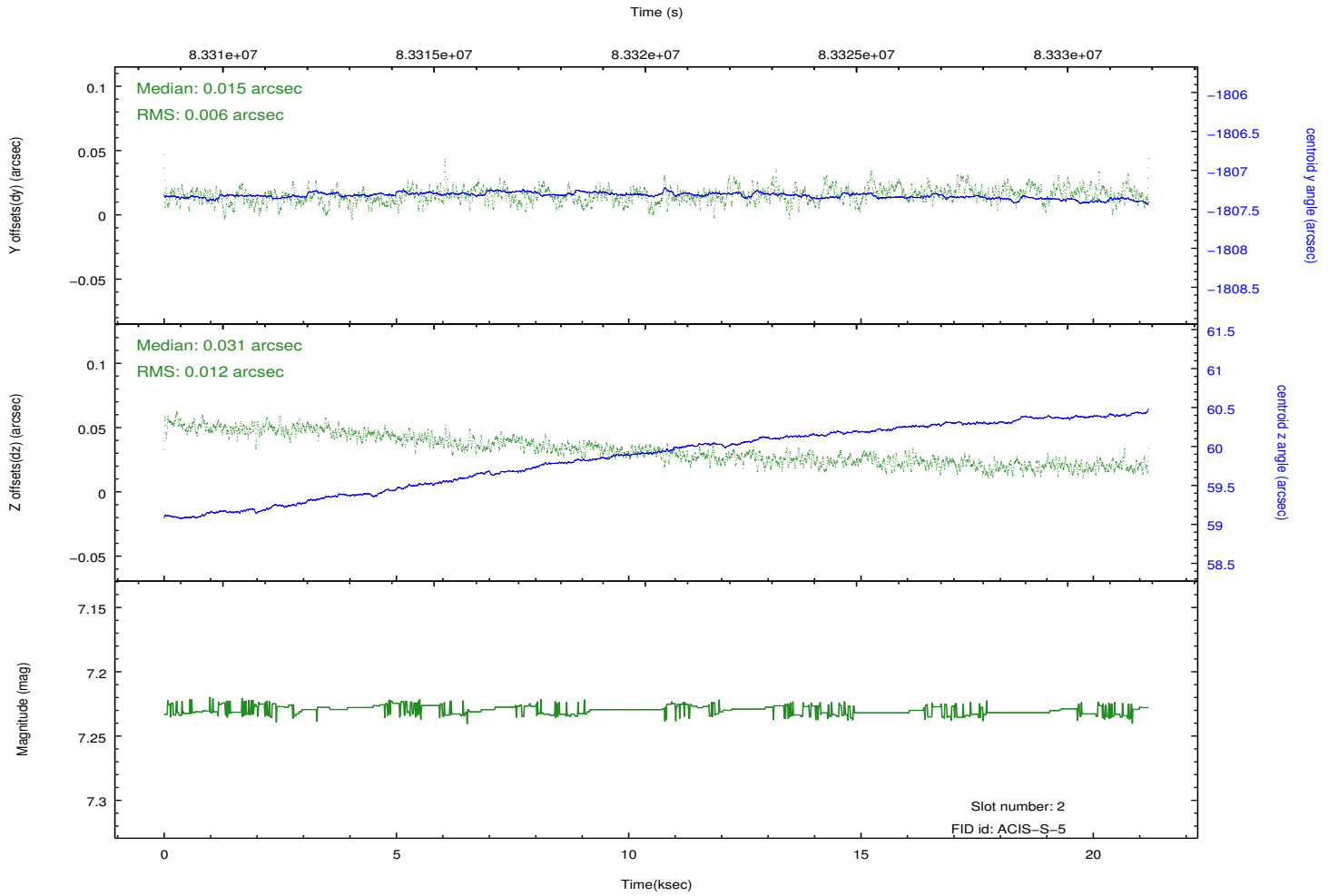
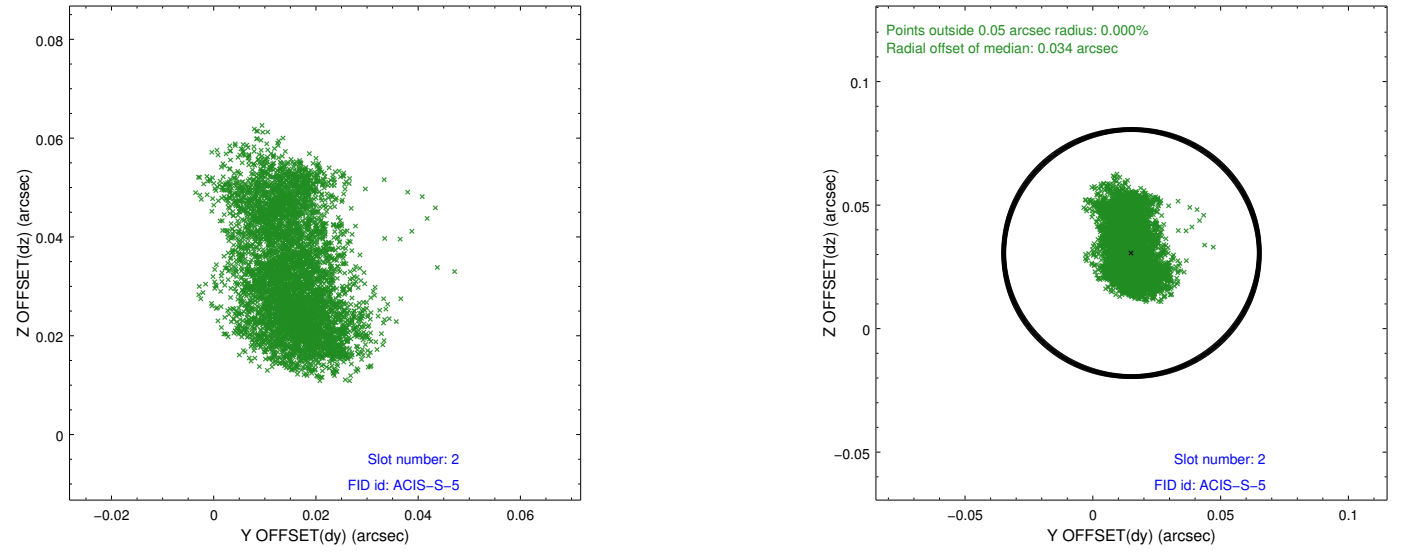
2.5.1 Slot 0



2.5.2 Slot 1

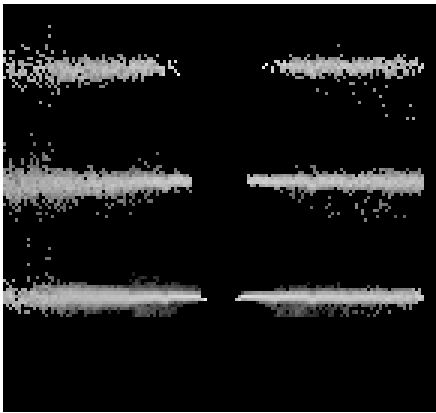


2.5.3 Slot 2

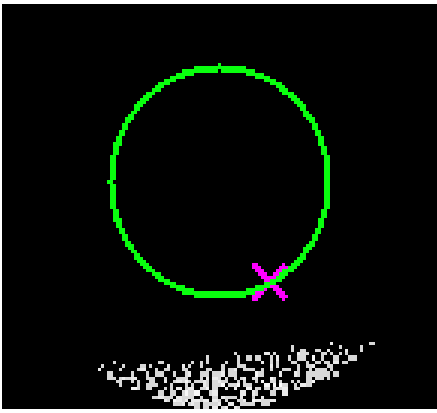


3 Gratings

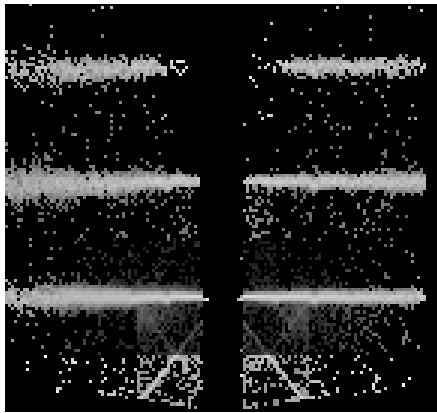
3.1 HEG Arm



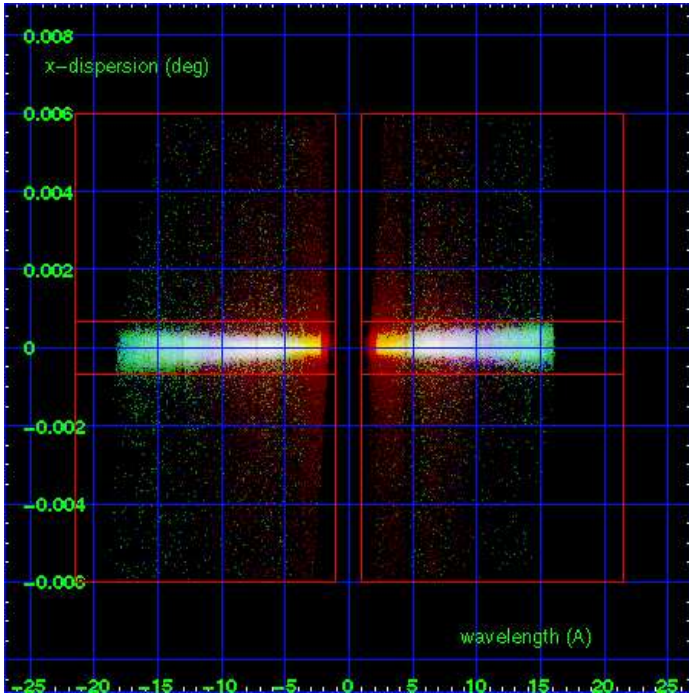
HEG Order Sort 123



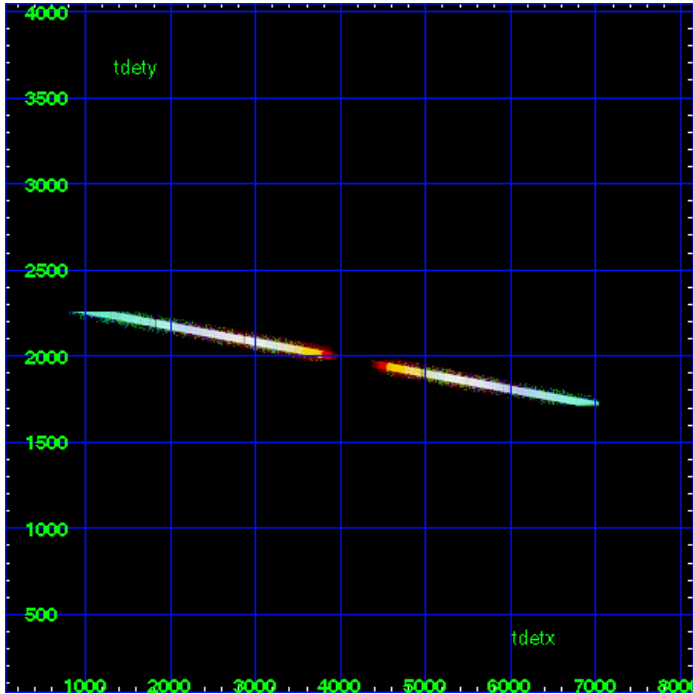
HEG Zero Order



HEG Order Sort ALL

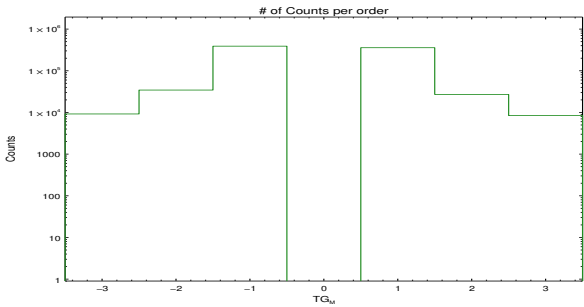


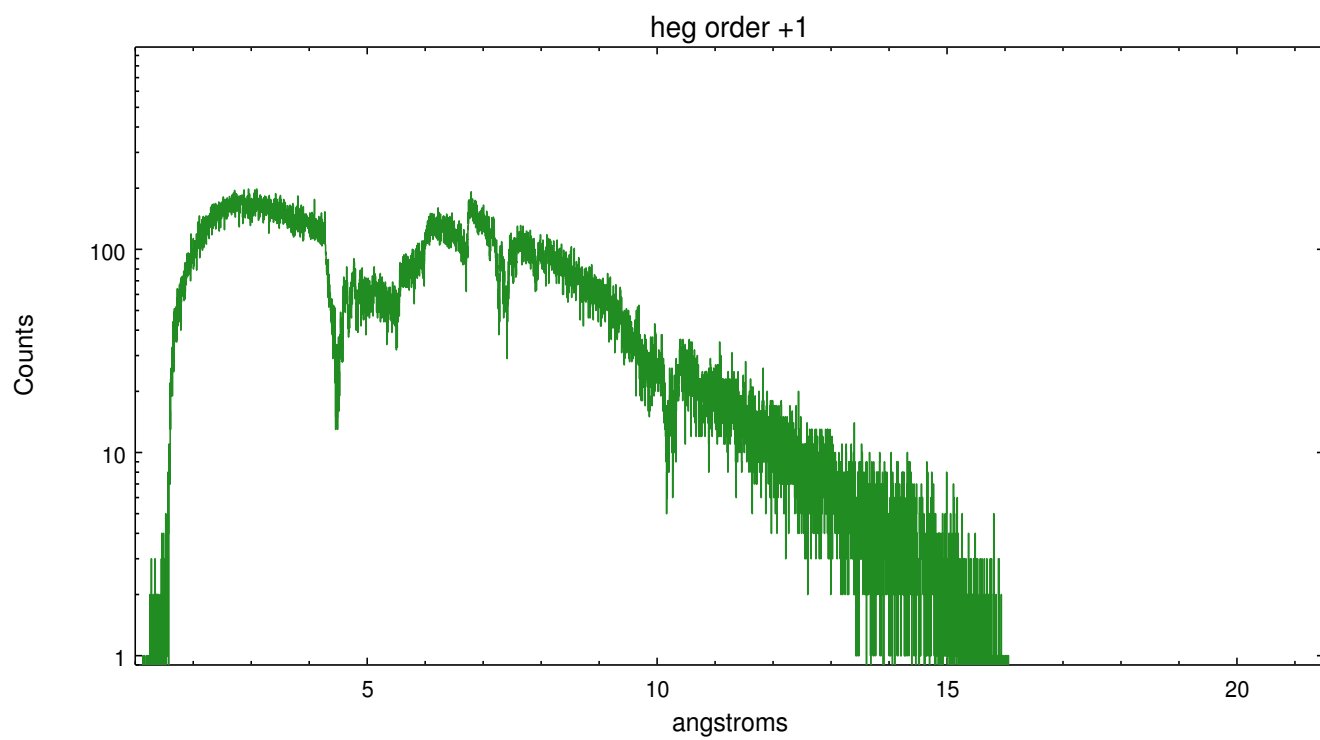
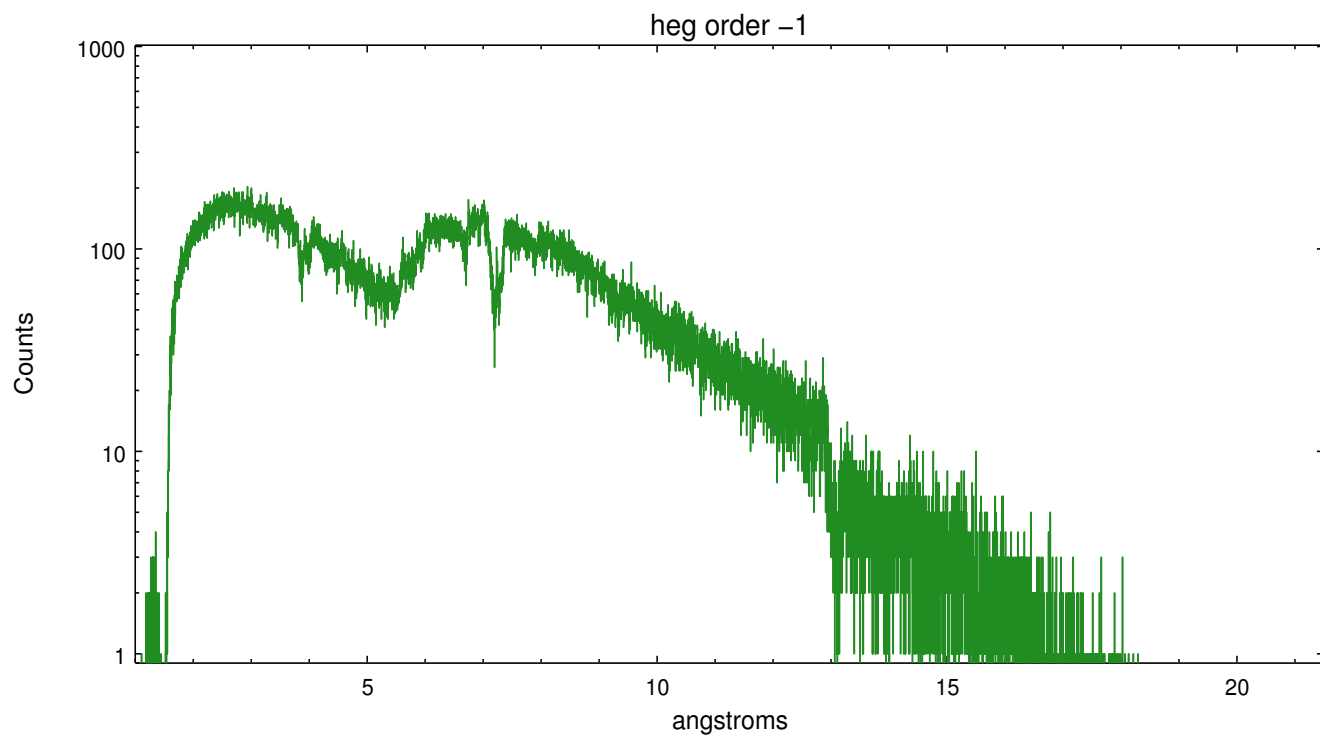
Spot Image HEG



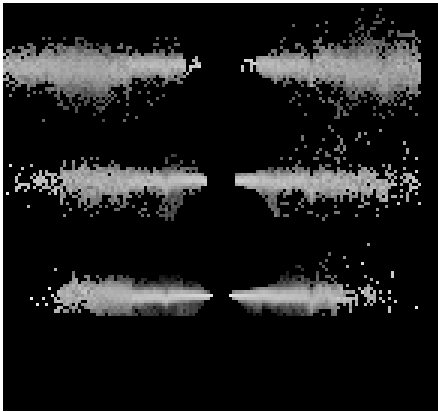
Full Detector HEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	9203	34441	389250	0	357967	27037	8404

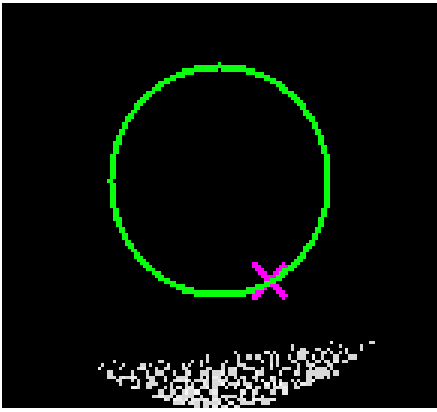




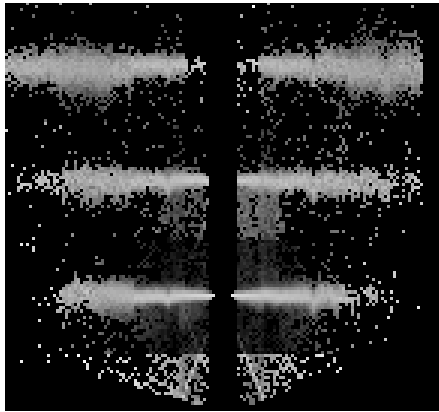
3.2 MEG Arm



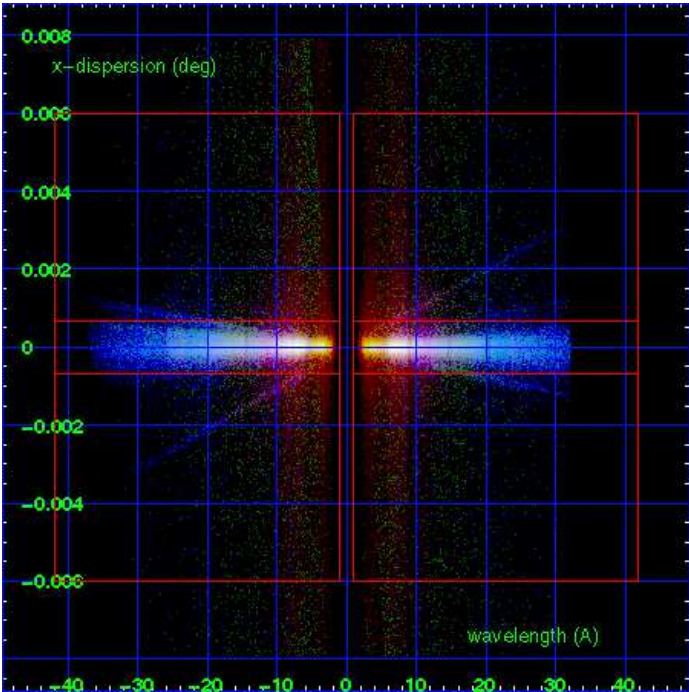
MEG Order Sort 123



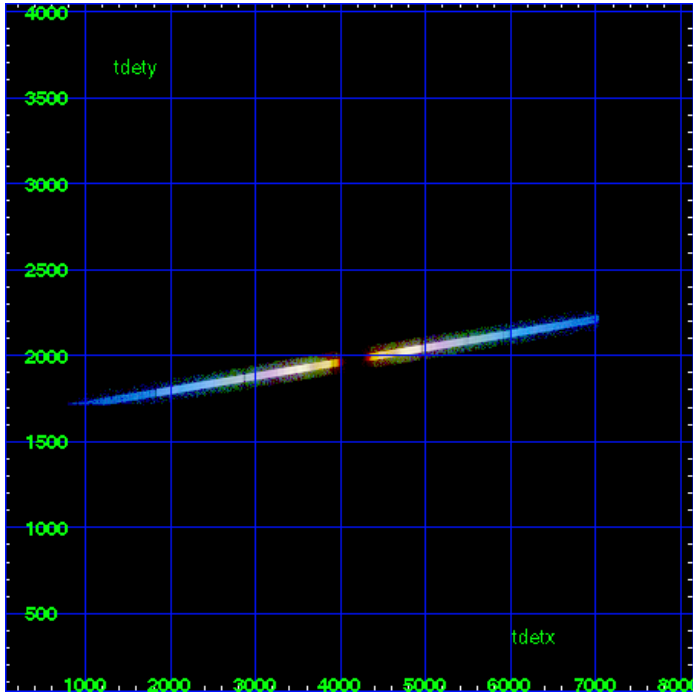
MEG Zero Order



MEG Order Sort ALL

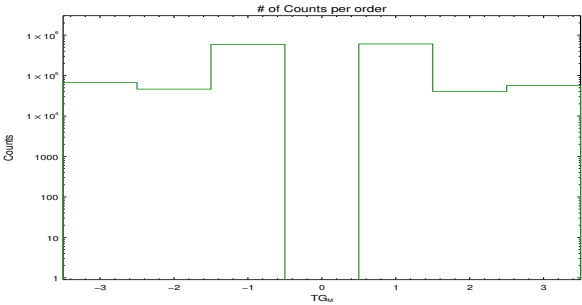


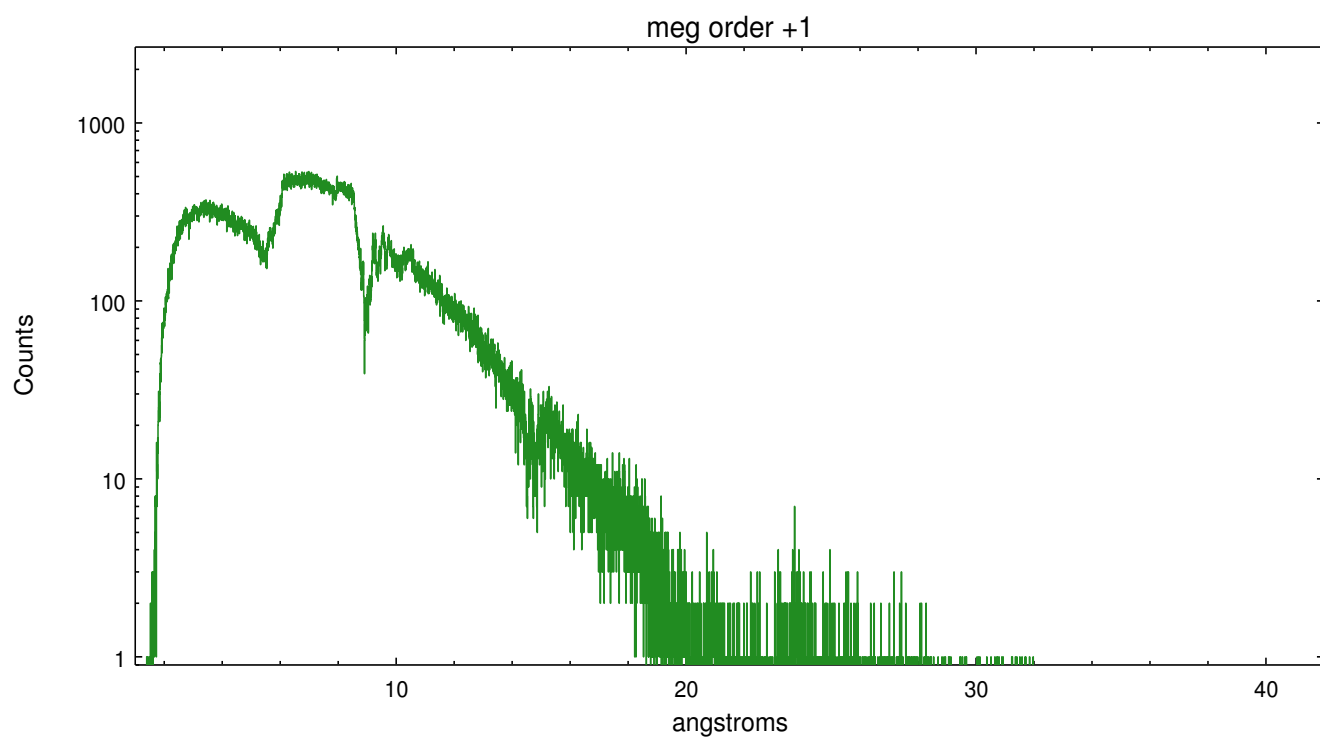
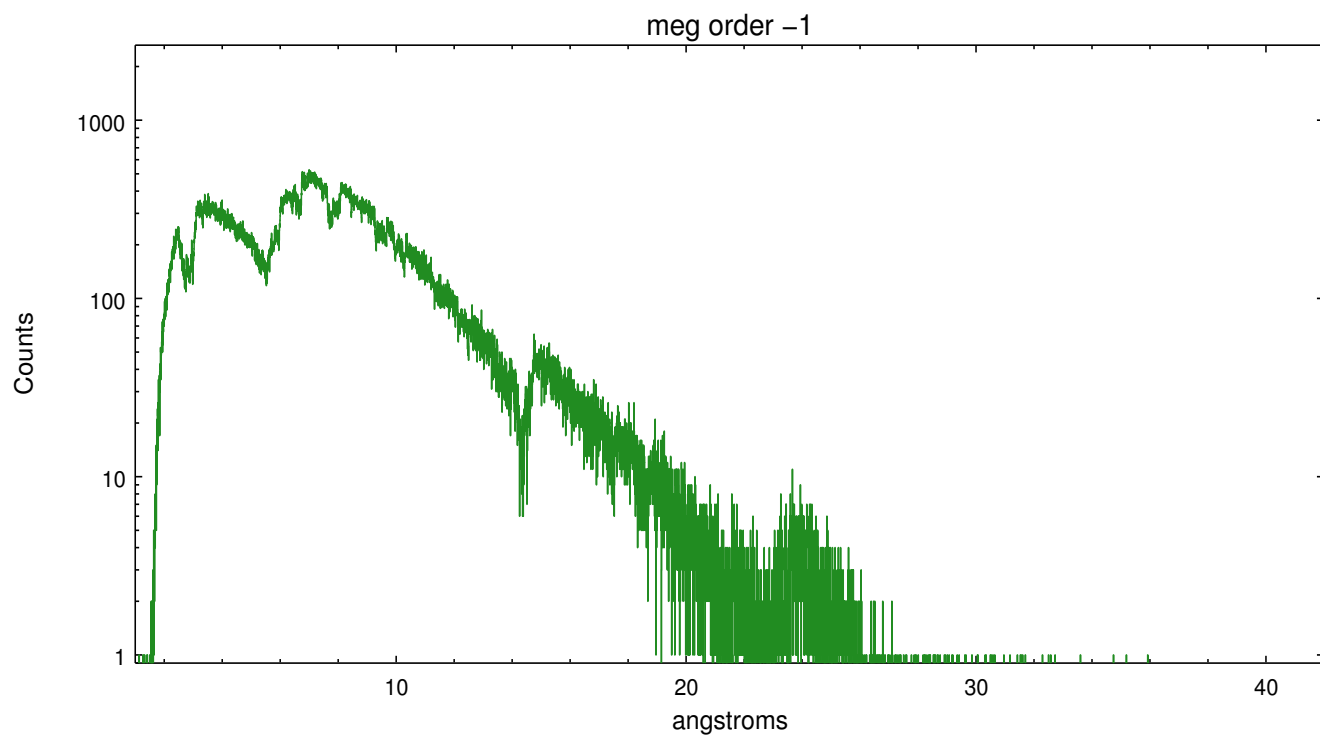
Spot Image MEG



Full Detector MEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	66891	46177	589782	0	604755	40693	56474





A Summary

A.1 Status

V&V Scientist	Joy Nichols
V&V Date (YYYY-MM-DD)	2012.09.19
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	21.188

A.2 Comments

Standard data processing software did not correctly locate the zeroth order because a spatial exclusion window was used to block the zeroth order image. Manual intervention was used to input the correct sky coordinates (x=4082.2, y=4122.36) into the *src1a.fits file table. These corrected coordinates were determined using a software tool developed by CXC called findzero, which is expected to be released in CIAO (currently in ISIS). The tool calculates the point of intersection of the readout streak and the meg arm. The zeroth order source position determined by the standard pipeline processing using the tool tgdetect was not used in this processing. The newly determined zeroth order coordinates have been placed in the *src1a.fits file, replacing the coordinates determined by tgdetect. Note that these corrected coordinates of the zeroth order cannot be reproduced by running tgdetect on the data.