

V&V Reference Report

L2 ASCDS Version : 8.4.5

Observation 4770 - L2 Version 3
Chandra X-Ray Center

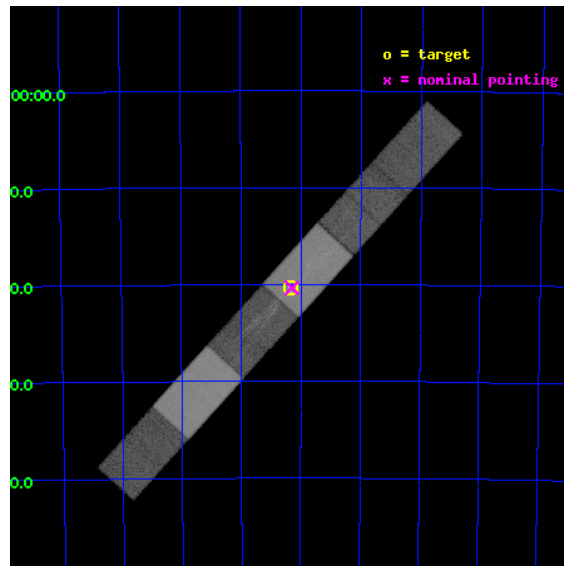
L2 Processing Date : Dec 15 2012

Contents

1	Front	2
2	OBI	3
2.1	OBI	3
2.1.1	Images	3
2.1.2	Bias	3
2.1.3	Parameters	4
2.1.4	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

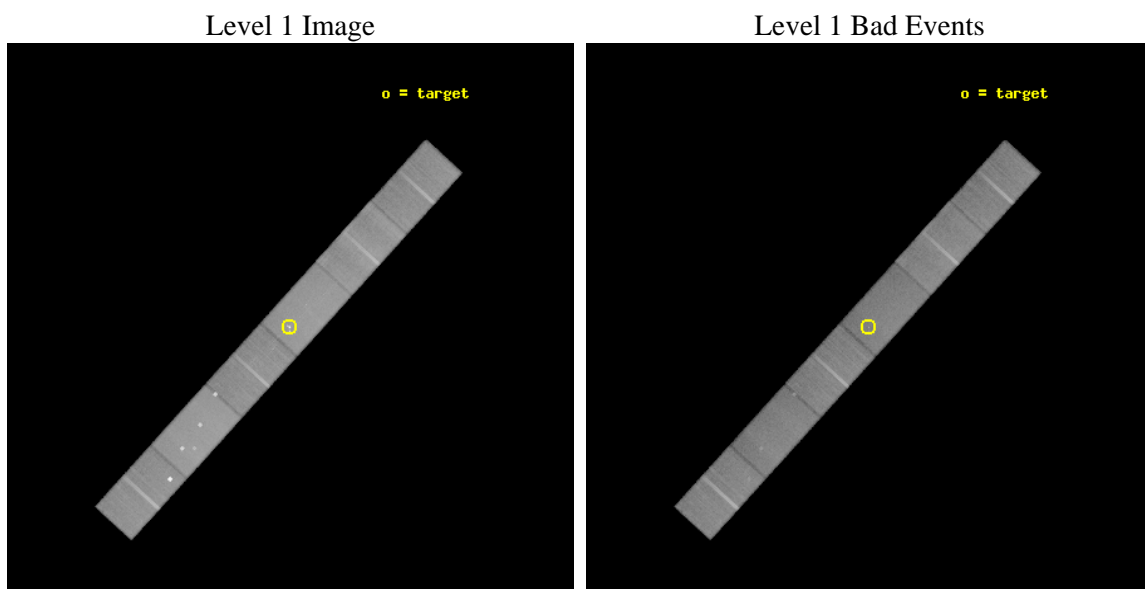
seq_num	700853	Sequence number
obs_id	4770	Observation id
title	The size of the nuclear reflector in the Circinus Galaxy	Proposal
observer	Professor Giorgio Matt	Principal investigator
object	Circinus Galaxy	Source name
dtcycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	213.2925	Observer's specified target RA [deg]
dec_targ	-65.339111	Observer's specified target Dec [deg]
ra_nom	213.2871631326	Nominal RA [deg]
dec_nom	-65.339134554753	Nominal Dec [deg]
roll_nom	312.28384334037	Nominal Roll [deg]
revision	3	Processing version of data
ontime	56103.59984073	Sum of GTIs [s]
livetime	55028.19175052	Livetime [s]
ontime4	56103.59984073	Sum of GTIs [s]
ontime5	56103.59984073	Sum of GTIs [s]
ontime6	56103.59984073	Sum of GTIs [s]
ontime7	56103.59984073	Sum of GTIs [s]
ontime8	56103.59984073	Sum of GTIs [s]
ontime9	56103.59984073	Sum of GTIs [s]
l2events	411824	Number of level 2 events



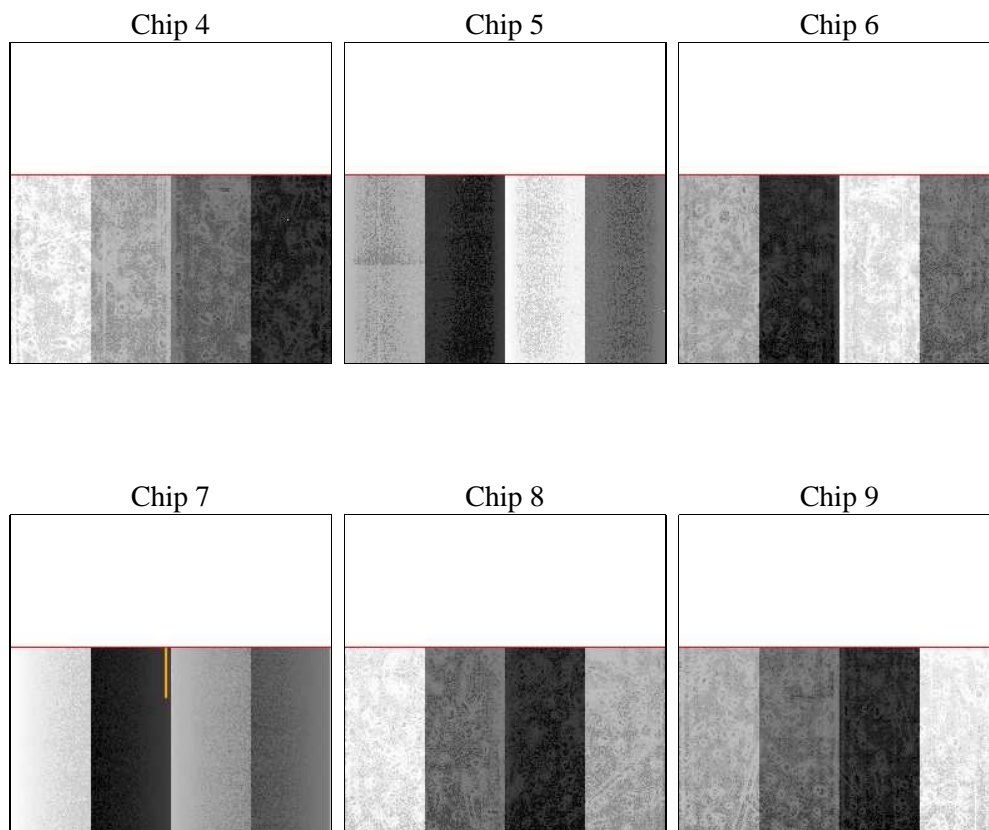
2 OBI

2.1 OBI

2.1.1 Images



2.1.2 Bias



2.1.3 Parameters

obi_num	0	Obi number	sched_exp_time	56000.000000	[s] Scheduled observation exposure time
ascdsver	8.4.5	Processing system revision	ontime	56103.59984073	Sum of GTIs [s]
caldsver	4.5.2	 	ontime4	56103.59984073	Sum of GTIs [s]
date	2012-12-03T01:37:23	Date and time of file creation	ontime5	56103.59984073	Sum of GTIs [s]
revision	3	Processing version of data	ontime6	56103.59984073	Sum of GTIs [s]
			ontime7	56103.59984073	Sum of GTIs [s]
			ontime8	56103.59984073	Sum of GTIs [s]
			ontime9	56103.59984073	Sum of GTIs [s]
			l1events	1813376	Number of level 1 events

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	295931	372903	251449	334403	316742	241948	grade 0 events	37209	30714	14188	14810	21275	12410
rejected events	240394	192091	217881	184939	247500	211445		12%	8%	5%	4%	6%	5%
rejected %	81%	51%	86%	55%	78%	87%	grade 1 events	353	1395	123	351	141	108
								0%	0%	0%	0%	0%	0%
							grade 2 events	6581	48327	6518	30656	14877	5717
								2%	12%	2%	9%	4%	2%
							grade 3 events	3435	8462	3447	14062	7639	3428
								1%	2%	1%	4%	2%	1%
							grade 4 events	3204	8114	3367	14071	7077	3220
								1%	2%	1%	4%	2%	1%
							grade 5 events	10257	28298	10614	30618	13982	11310
								3%	7%	4%	9%	4%	4%
							grade 6 events	5112	85212	6048	75879	18377	5729
								1%	22%	2%	22%	5%	2%
							grade 7 events	229780	162381	207144	153956	233374	200026
								77%	43%	82%	46%	73%	82%

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	FAINT	FAINT	Number of optional ACIS chips dropped	0	0
Observation mode	POINTING	POINTING	On-chip summing requested	N	N
[deg] Pointing RA	213.224739	213.2871631325991	Subarray requested	CUSTOM	CUSTOM
[deg] Pointing Dec	-65.331184	-65.33913455475253	Subarray start row	1	1
[deg] Pointing Roll	312.070491	312.2838433403684	Subarray row count	600	600
[mm] SIM focus pos	-0.684267	-0.6828225247311905	Alternating exposures requested	N	N
[mm] SIM defocus	0	0.001444936568705701	[s] Primary exposure time	0.000000	2.1
[mm] SIM translation stage pos	-185.052523	-185.0510918795144			
[mm] SIM translation stage offset	-5.08	-5.081430703493368			
[s] Observation start time (MET)	202568360.184000	202567306.04256			
Observation start date	2004-06-02T12:58:16	2004-06-02T12:41:46			
[s] Observation end time (MET)	202624360.184000	202625285.68262			
Observation end date	2004-06-03T04:31:36	2004-06-03T04:48:05			
Read mode	TIMED	TIMED			

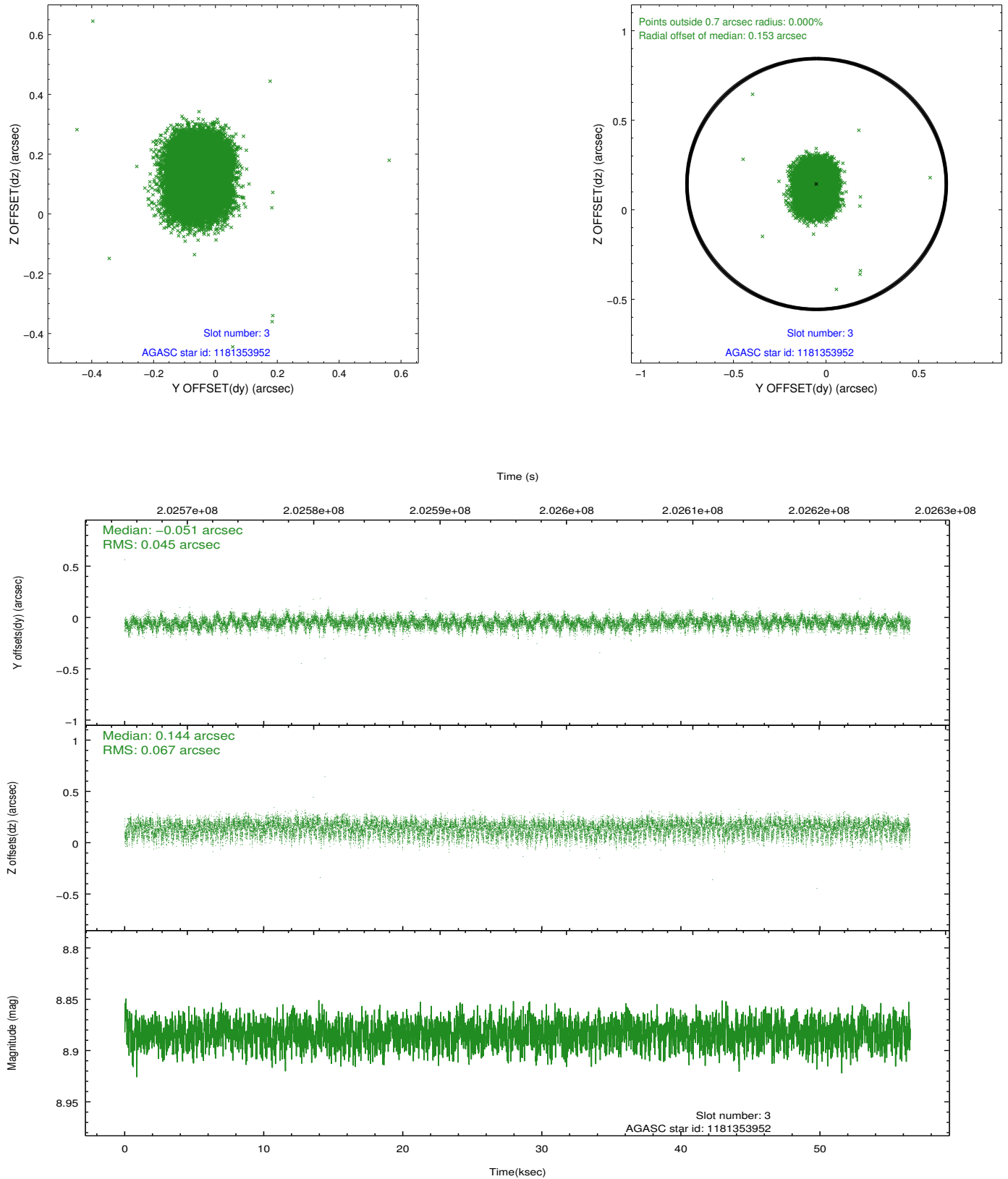
2.3 Aspect

Slot Statistics

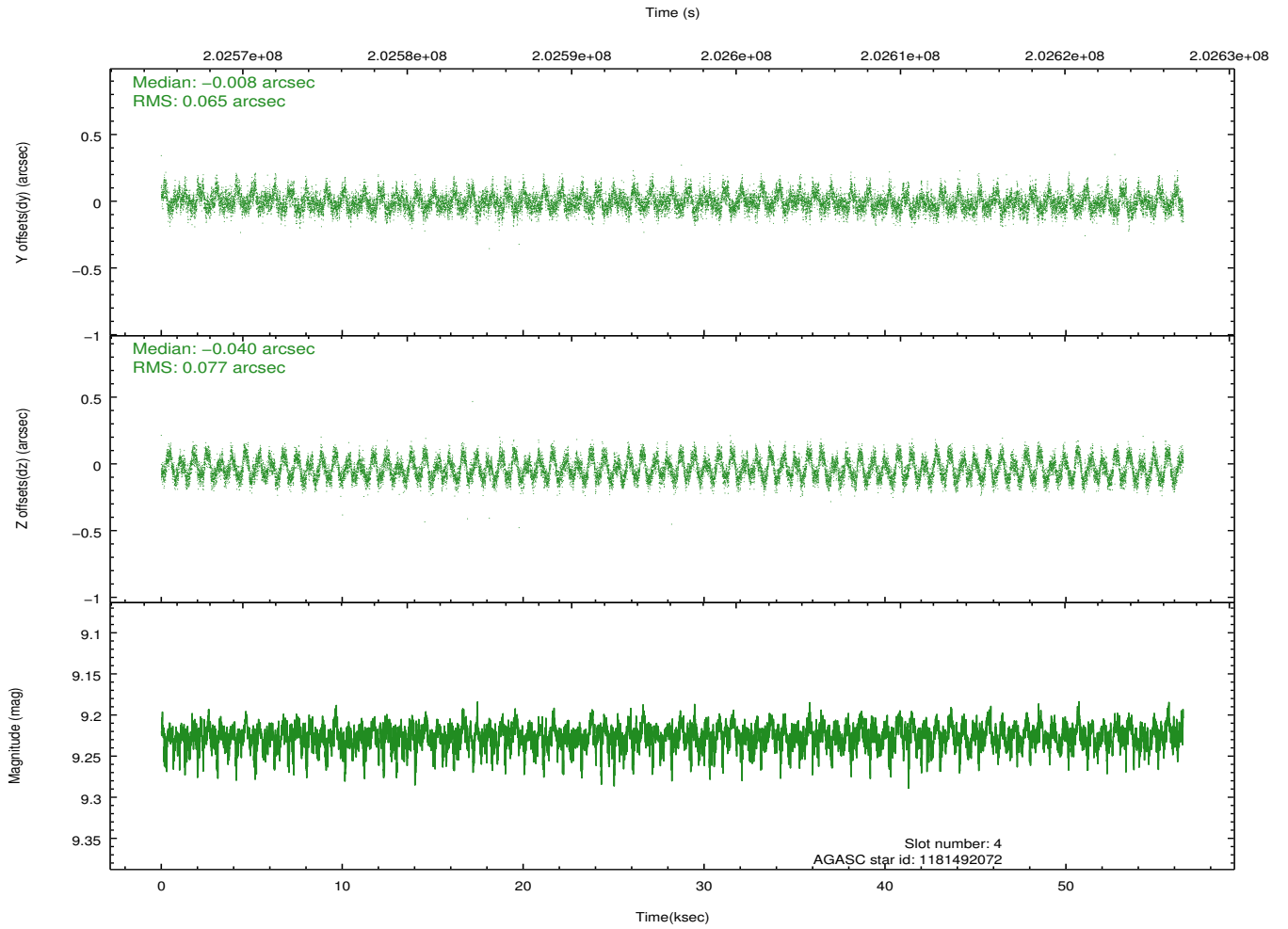
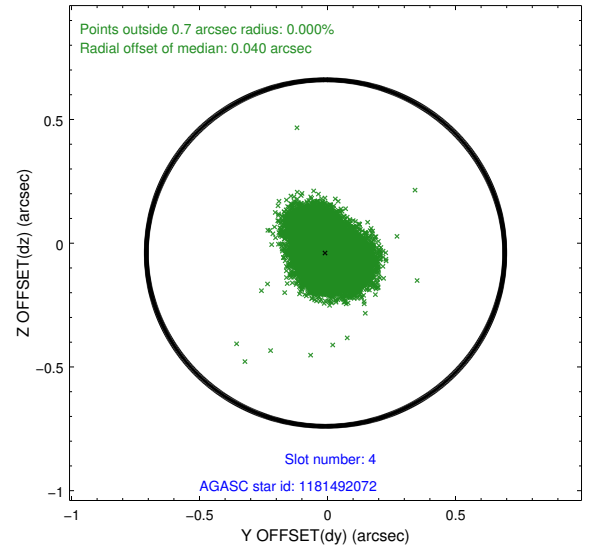
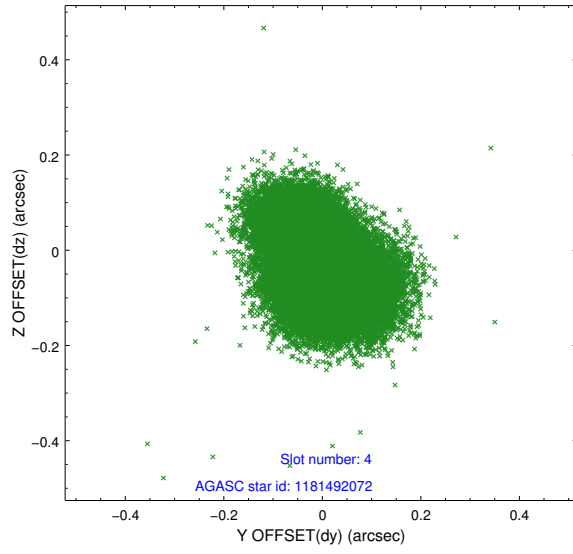
slot	status	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID	ACIS-S-2	7.09	13777	-0.134	-0.100	0.016	0.029	0.000000	0.000000	-757.64	-1834.52
1	FID	ACIS-S-4	7.19	13777	0.081	0.089	0.015	0.024	0.000000	0.000000	2155.90	74.13
2	FID	ACIS-S-6	7.39	13775	0.025	0.023	0.013	0.023	0.000000	0.000000	404.49	711.45
3	GUIDE	1181353952	8.88	27537	-0.051	0.144	0.085	0.139	211.658427	-65.506998	-1074.52	-2178.42
4	GUIDE	1181492072	9.23	27542	-0.008	-0.040	0.109	0.168	214.479575	-65.592809	1963.84	742.28
5	GUIDE	1181492872	9.10	27544	0.050	0.068	0.085	0.135	214.965330	-65.517798	2265.39	1453.64
6	GUIDE	1181888328	9.14	27544	0.060	-0.069	0.093	0.150	213.100875	-66.006078	1682.73	-1762.47
7	GUIDE	1181362720	8.22	27550	-0.054	-0.101	0.056	0.089	212.359703	-64.776136	-2365.48	347.61

2.4 Star Slots

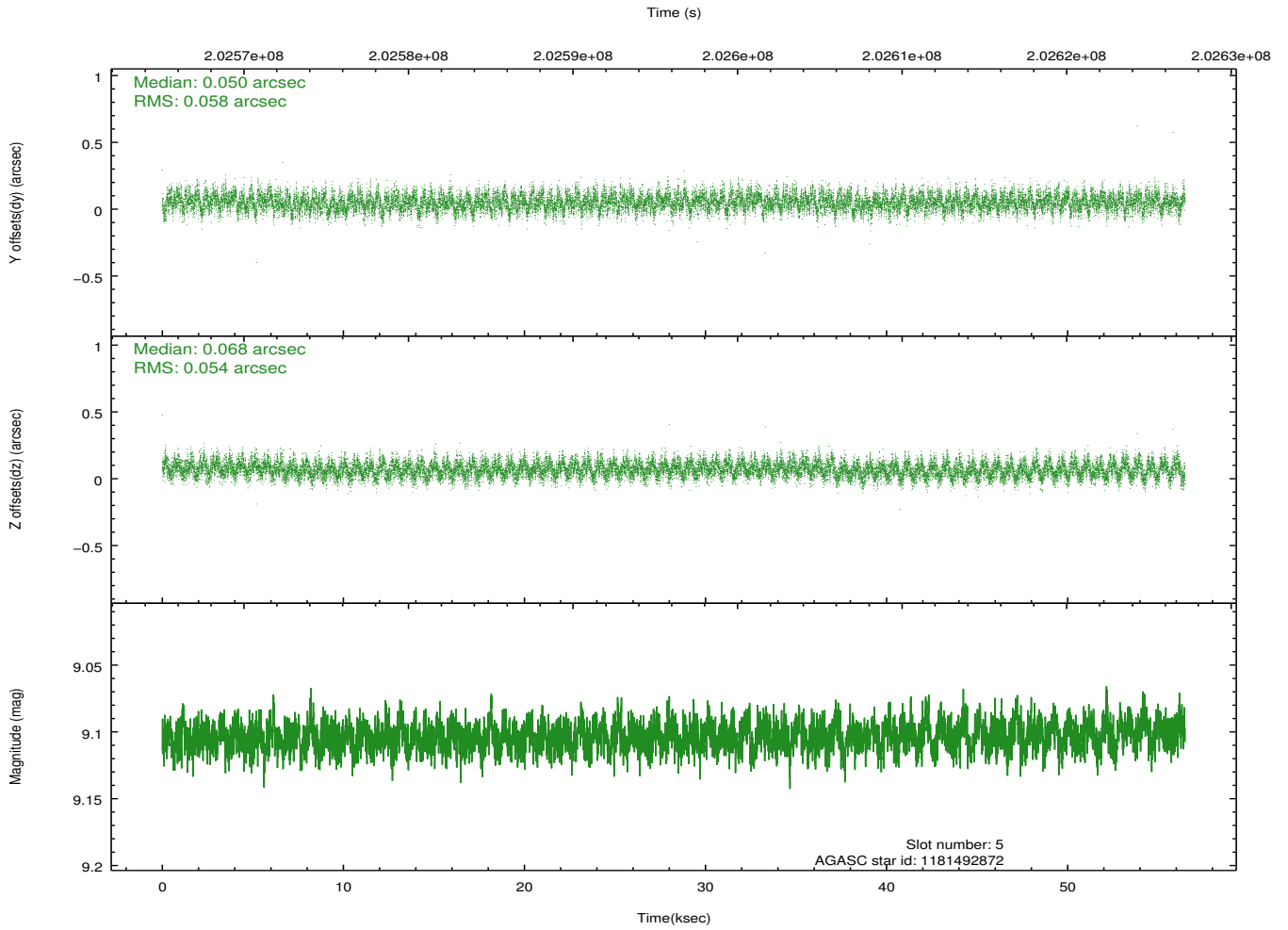
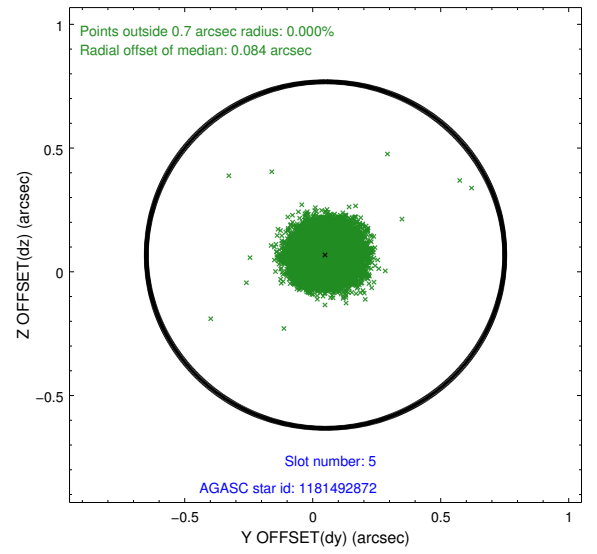
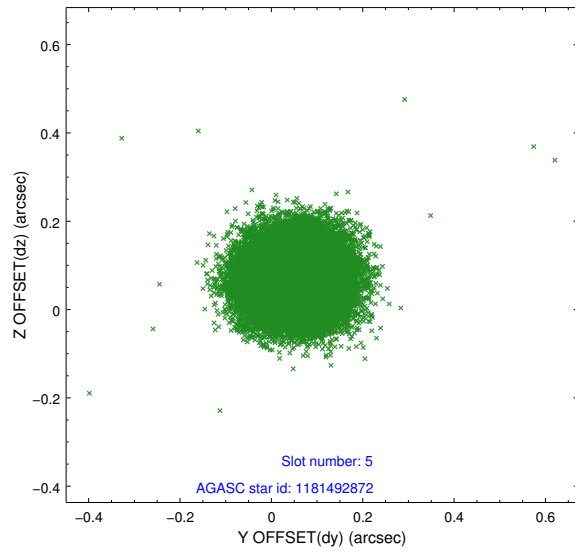
2.4.1 Slot 3



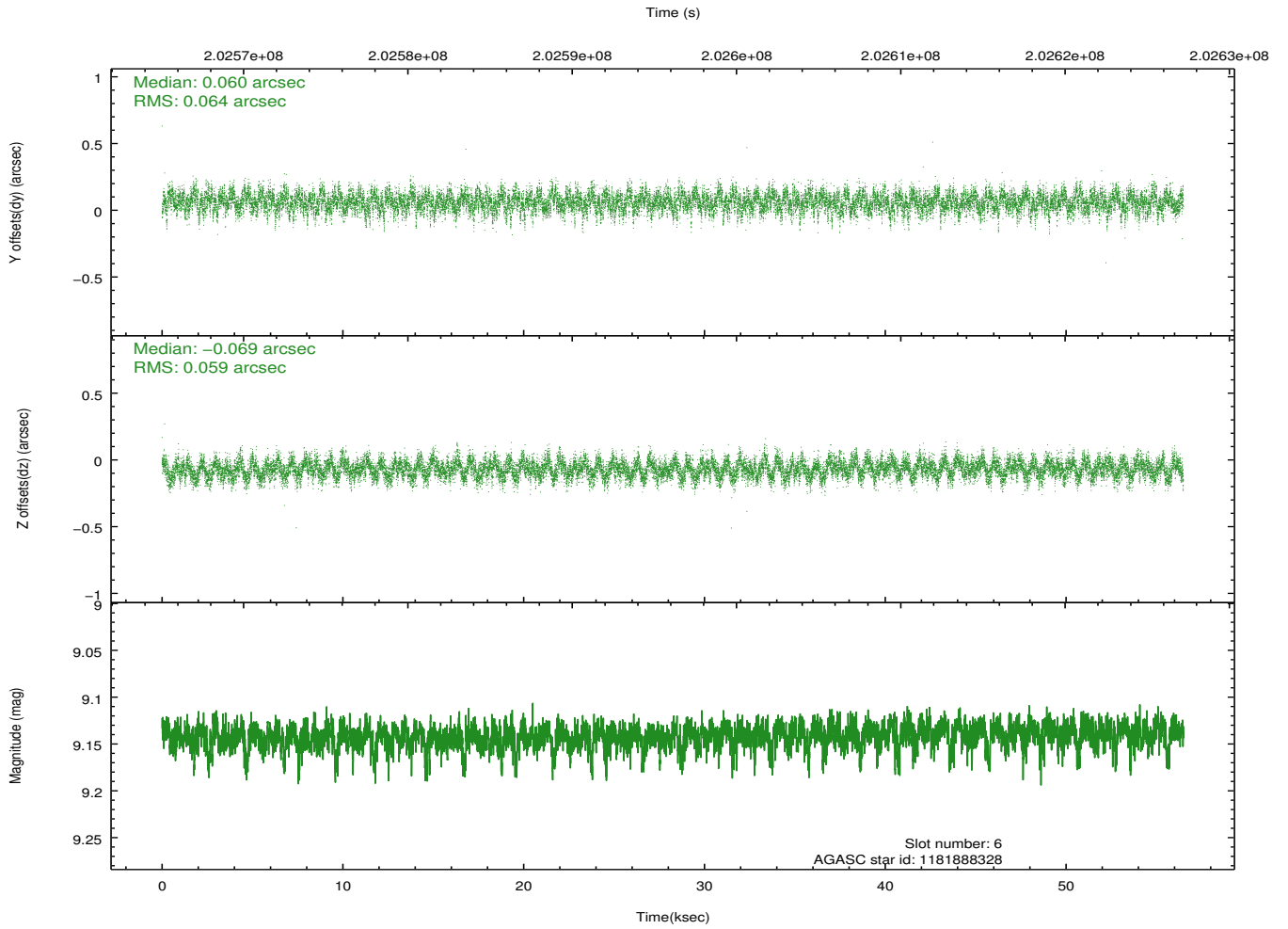
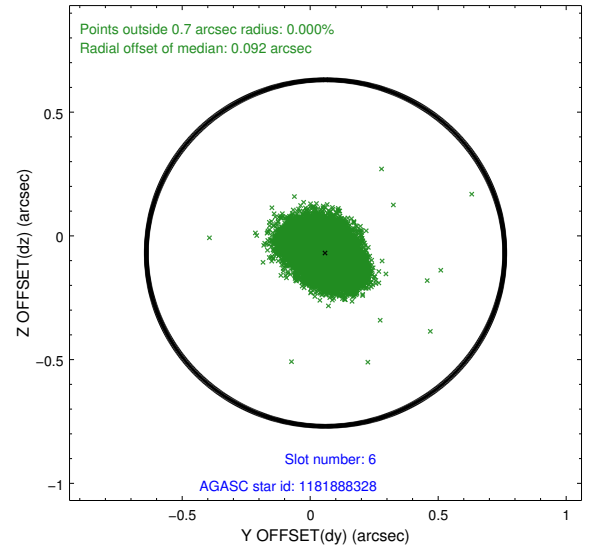
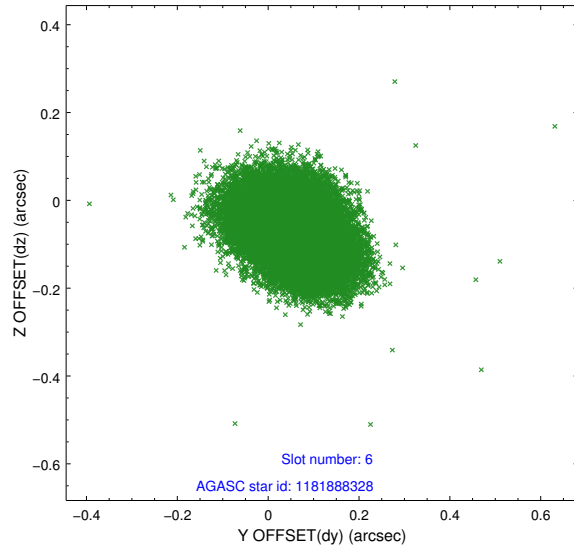
2.4.2 Slot 4



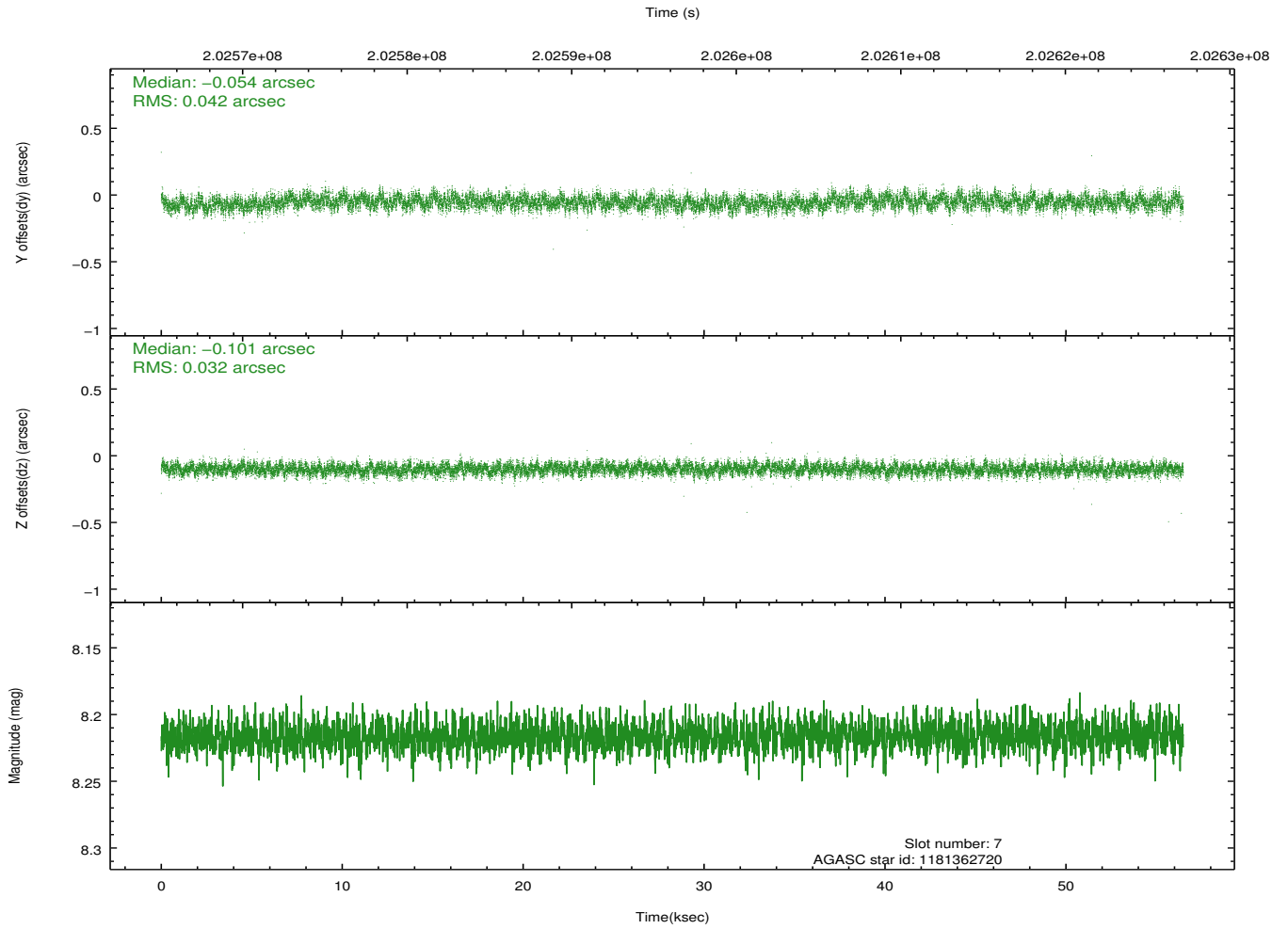
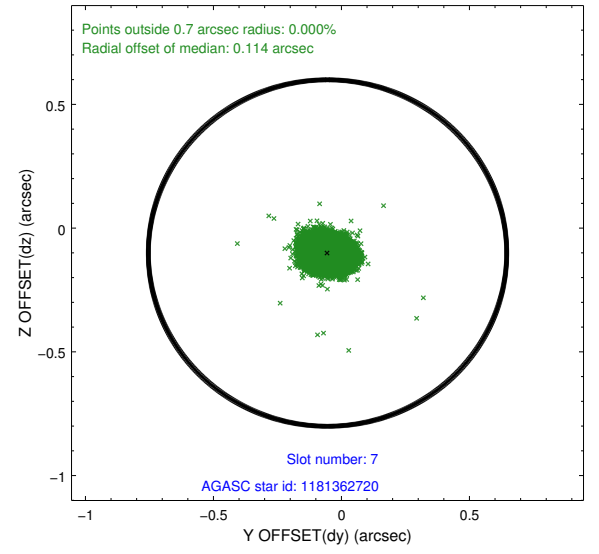
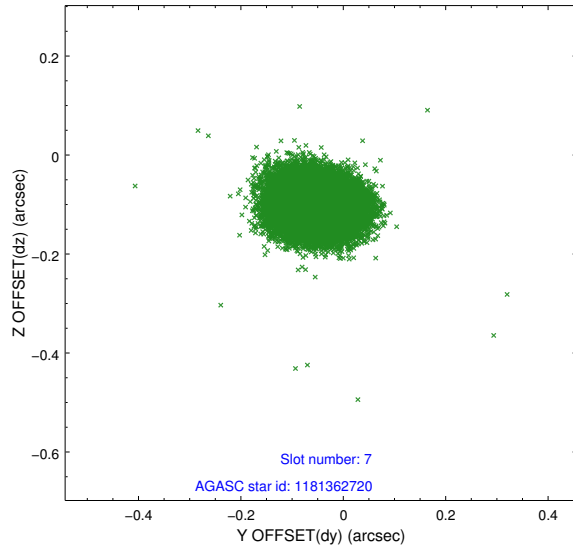
2.4.3 Slot 5



2.4.4 Slot 6

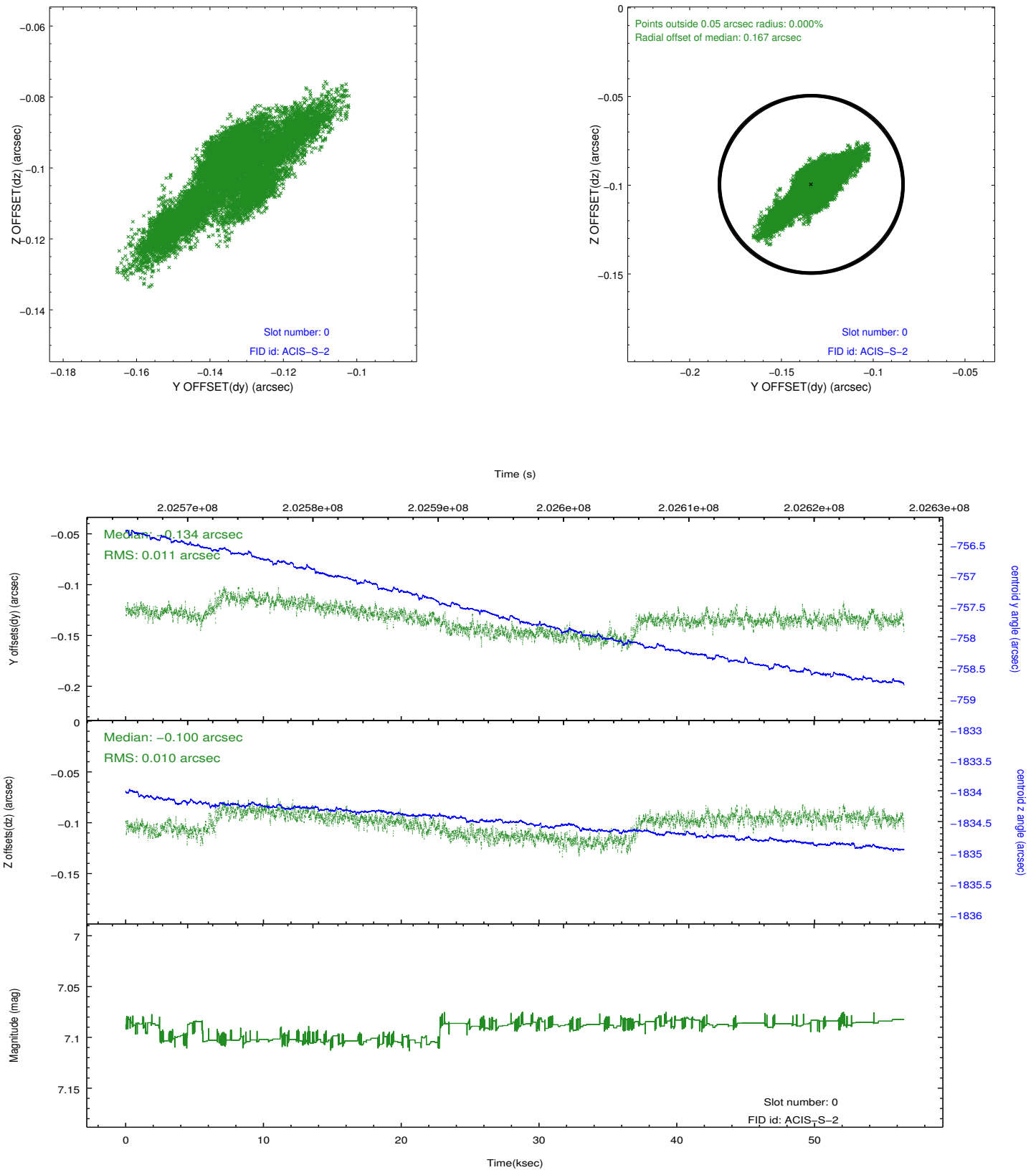


2.4.5 Slot 7

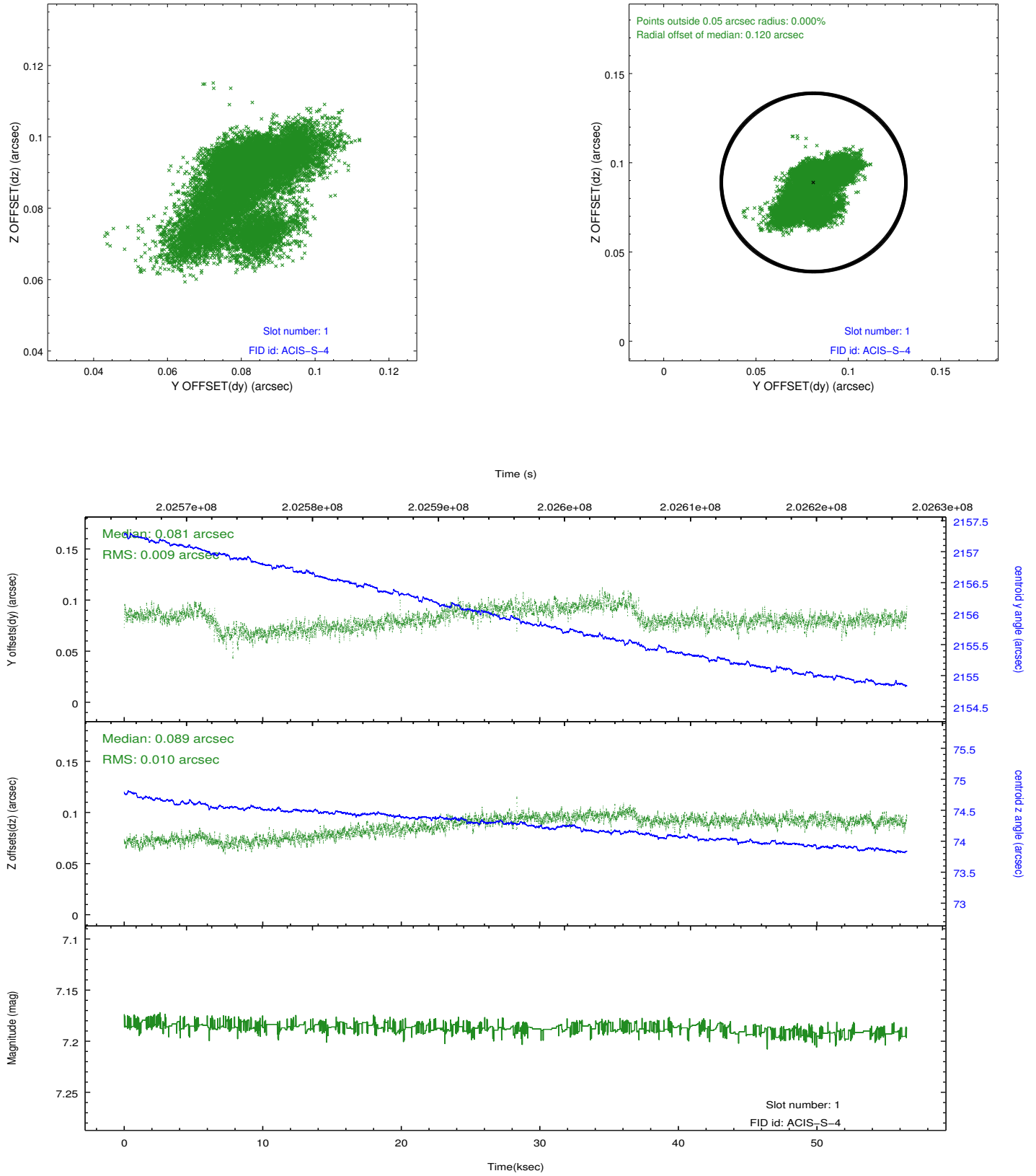


2.5 FID Slots

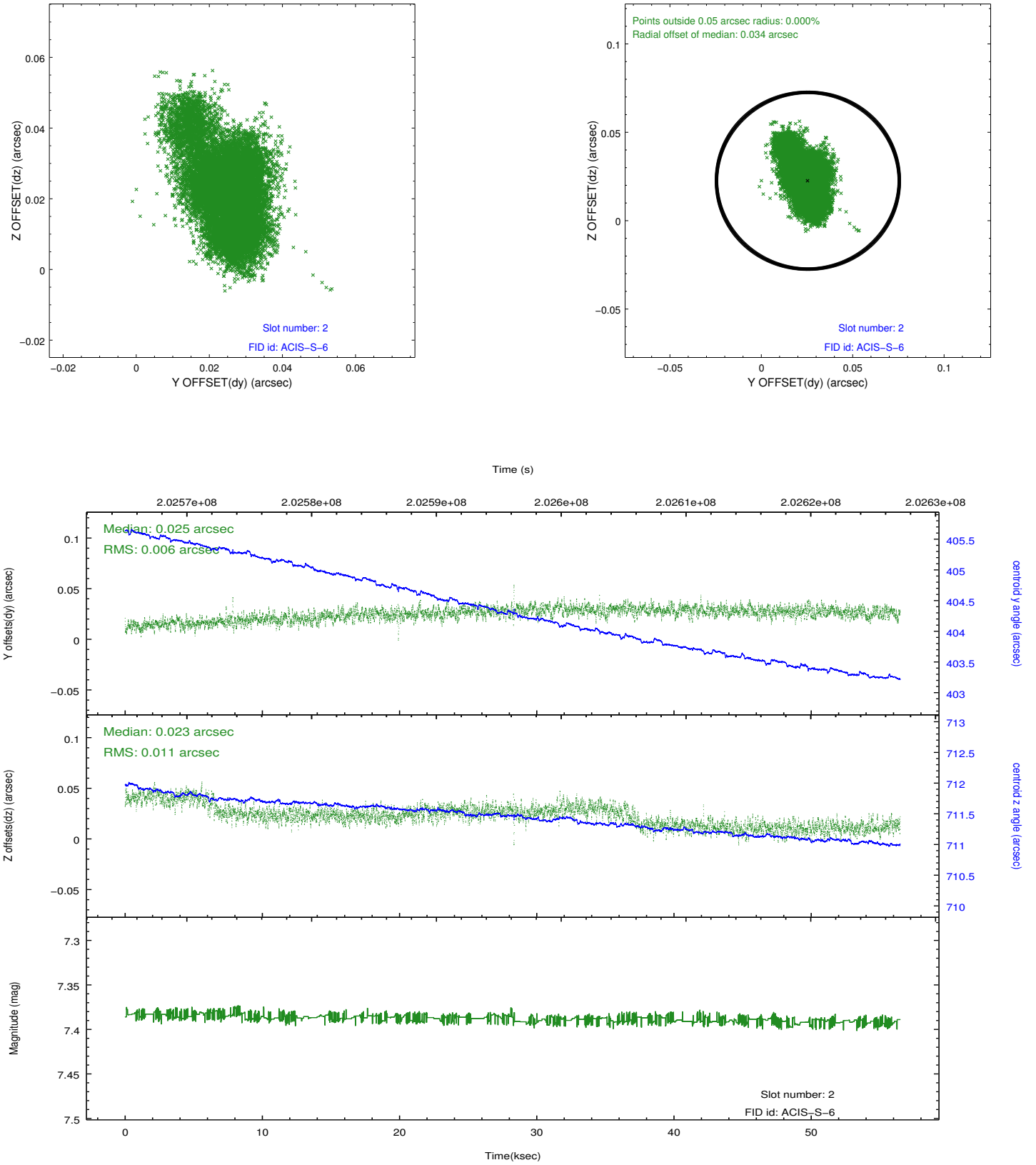
2.5.1 Slot 0



2.5.2 Slot 1

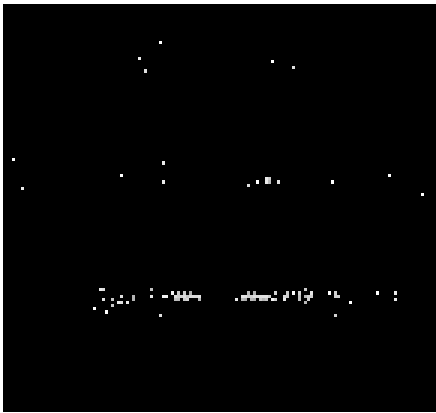


2.5.3 Slot 2

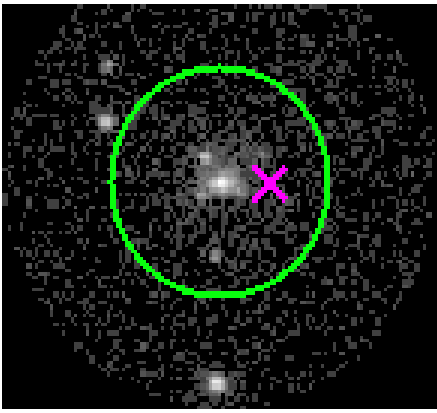


3 Gratings

3.1 HEG Arm



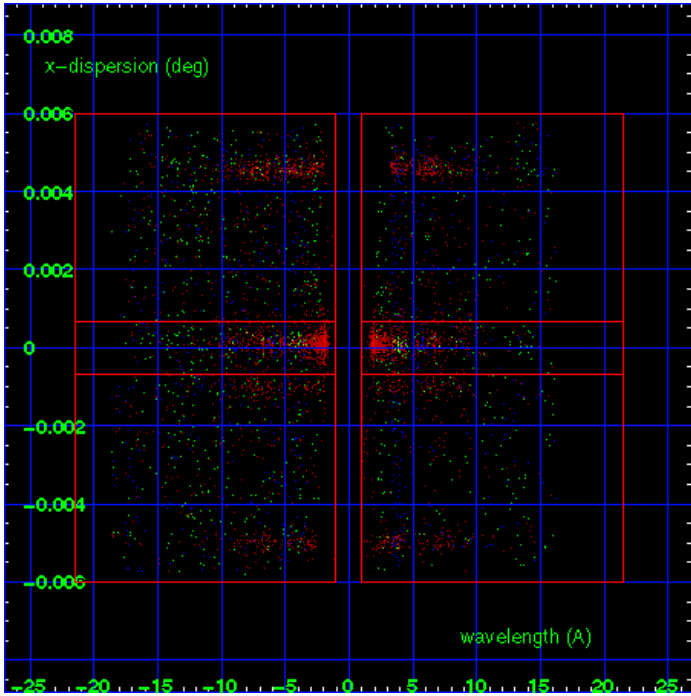
HEG Order Sort 123



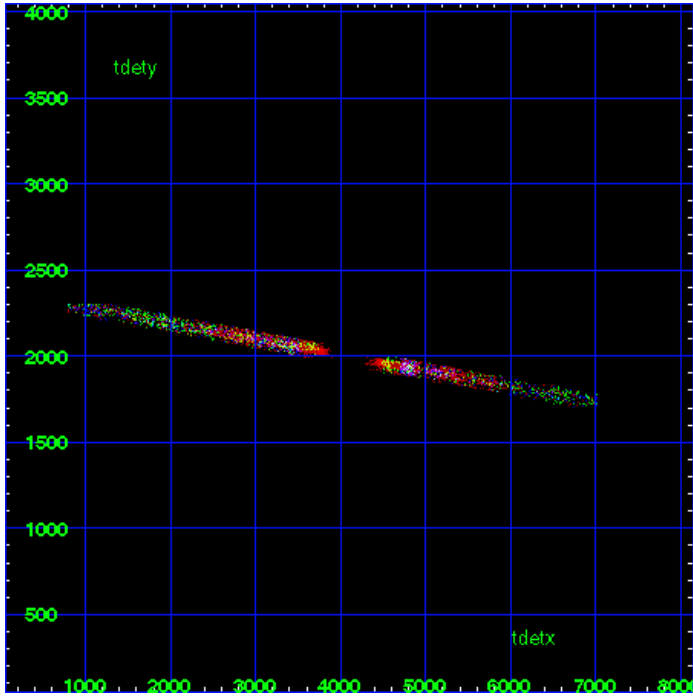
HEG Zero Order



HEG Order Sort ALL

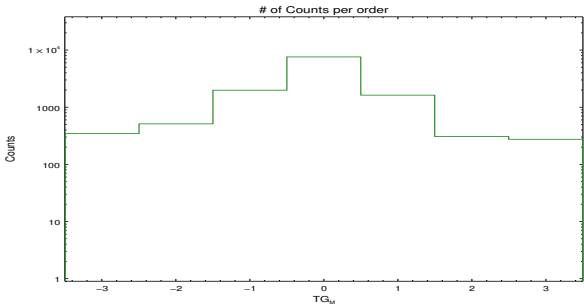


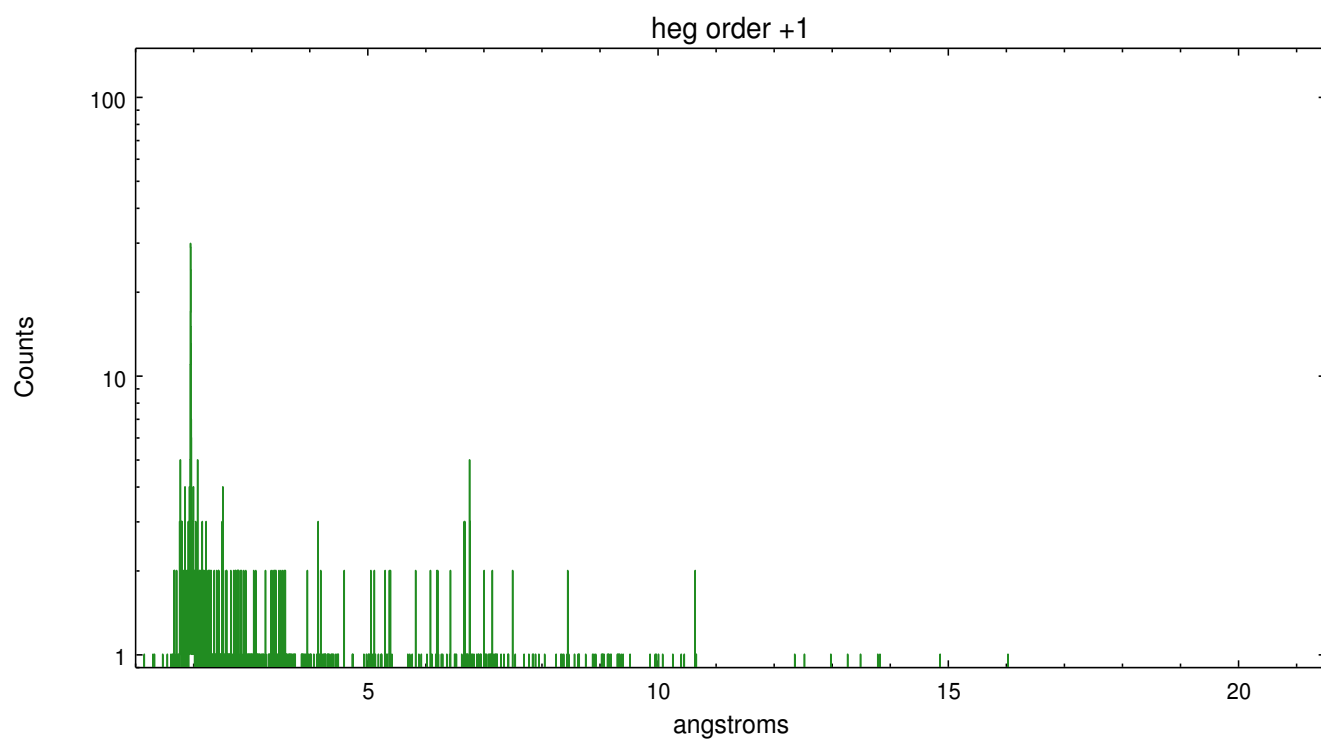
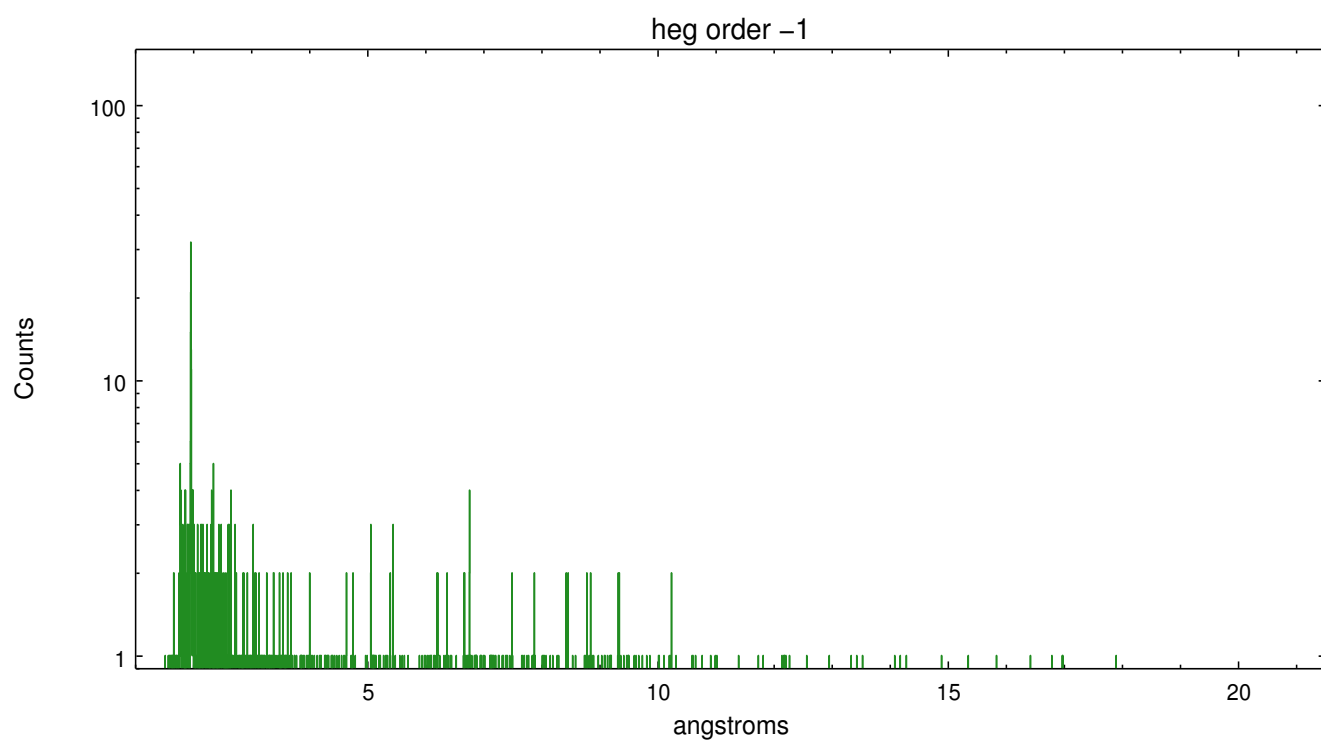
Spot Image HEG



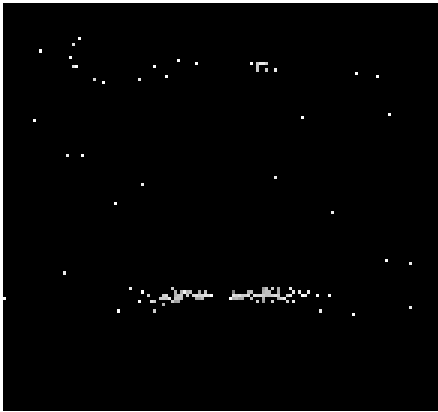
Full Detector HEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	346	513	1994	7644	1633	307	275

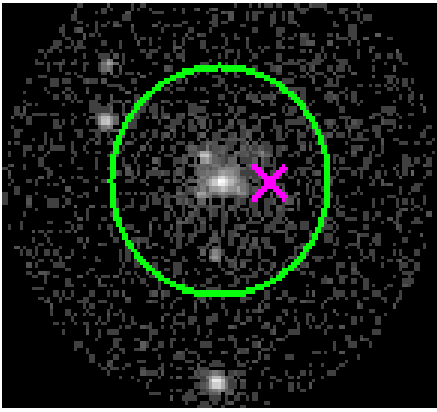




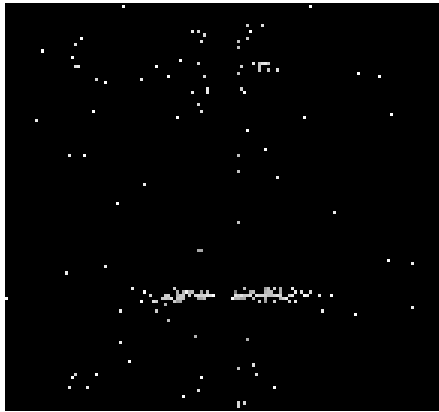
3.2 MEG Arm



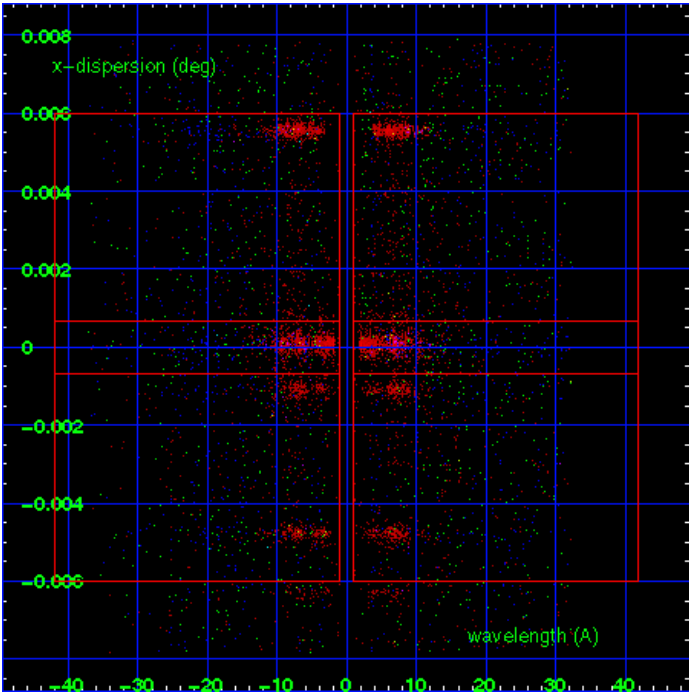
MEG Order Sort 123



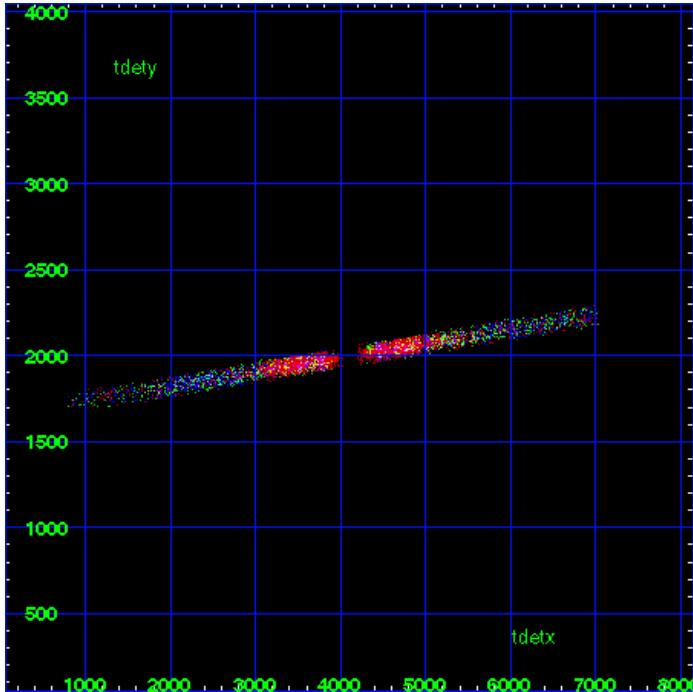
MEG Zero Order



MEG Order Sort ALL

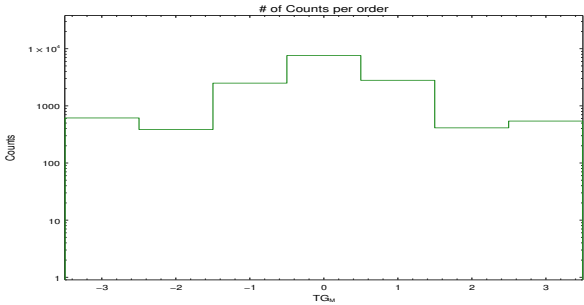


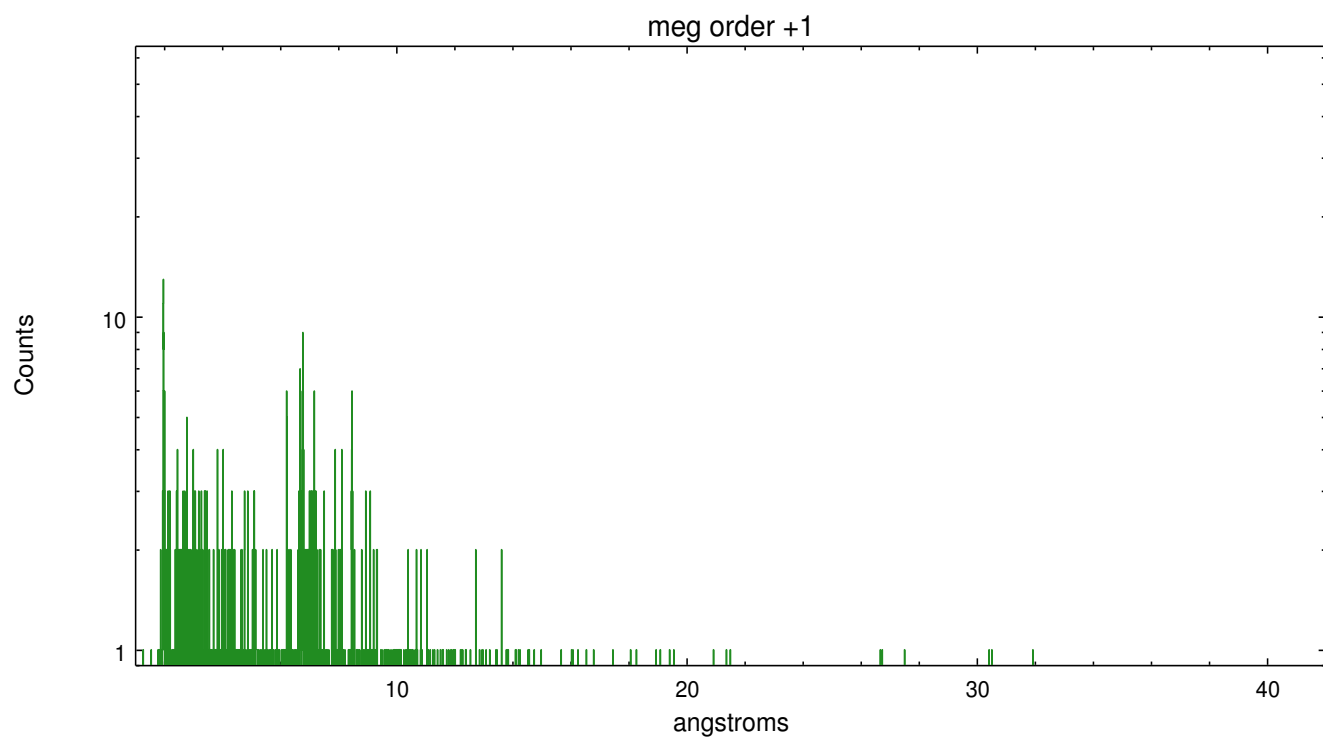
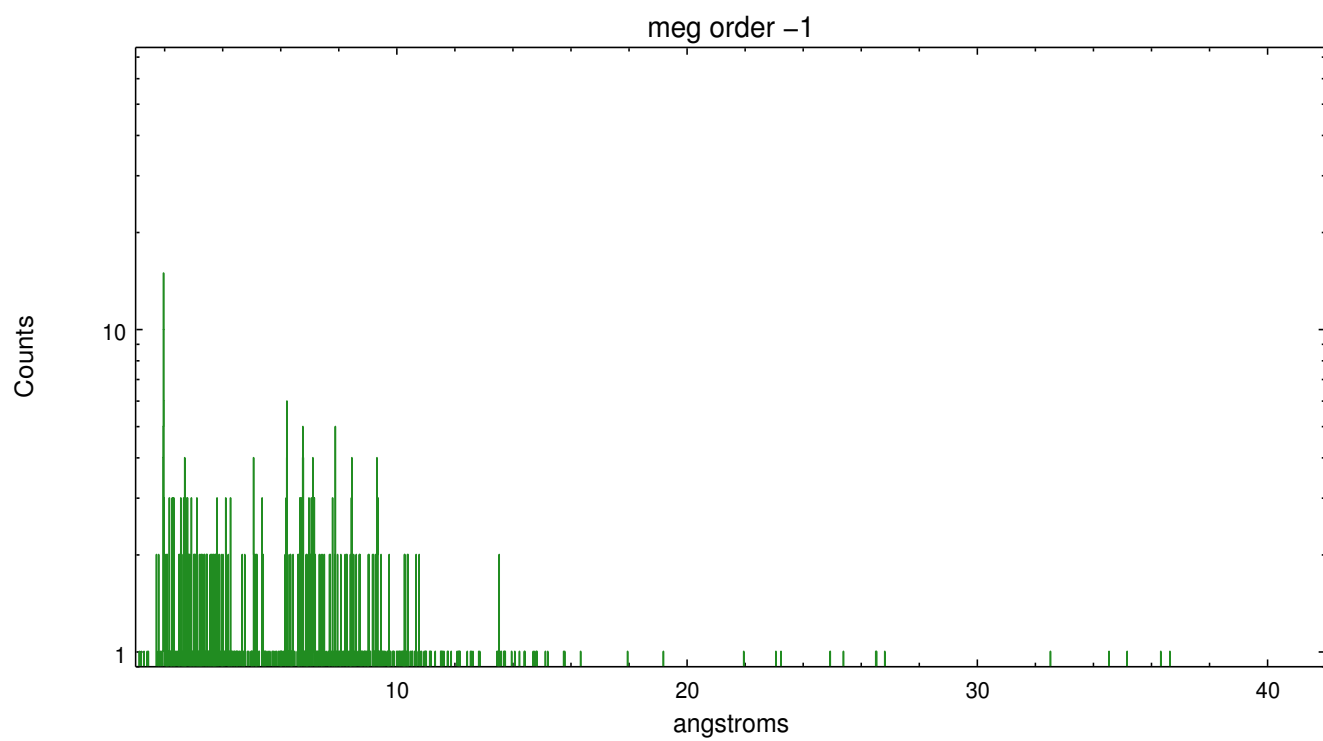
Spot Image MEG



Full Detector MEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	616	386	2511	7644	2814	413	543





A Summary

A.1 Status

V&V Scientist	Joy Nichols
V&V Date (YYYY-MM-DD)	2013.01.10
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	56.105

A.2 Comments

Multiple sources within 5 arcsec of source. Also, Circinus Galaxy is extended source. The zeroth order for the spectral extraction is centered on the brightest X-ray emission, presumably at the nucleus of the galaxy. The zeroth order position is at ra=14:13:09.97, dec=-65:20:20.9. The spectral data supplied in this processing are only energy-calibrated for this position.

===

Multiple, closely-spaced dispersed spectra. Care should be taken to be sure the extraction mask only includes the spectrum of interest. A narrow extraction mask can be used to re-extract the data in CIAO.

===

WARNING: there are no standard ciao tools for analysis of grating spectra from extended sources. The shape of an emission 'line' will be the shape of the zero order spatial structure convolved with the instrumental LSF. Grating extractions can be used, but need to be combined with custom spatial-spectral analysis, since wavelength is multi-valued at any particular diffraction angle.