

V&V Reference Report

L2 ASCDS Version : 10.5.2

Observation 20047 - L2 Version 1
Chandra X-Ray Center

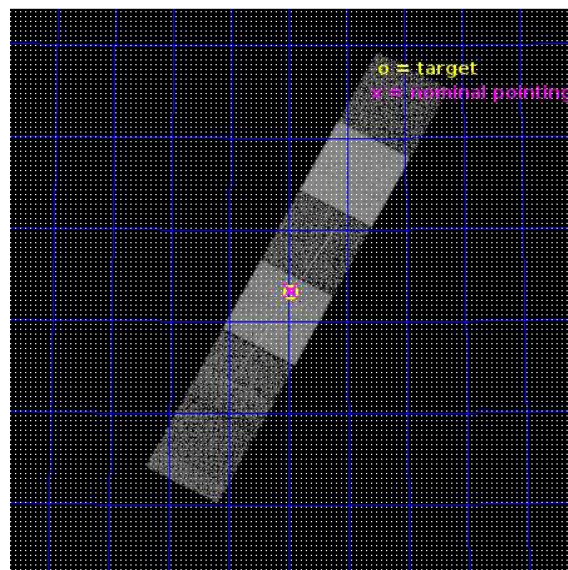
L2 Processing Date : Mar 29 2017

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

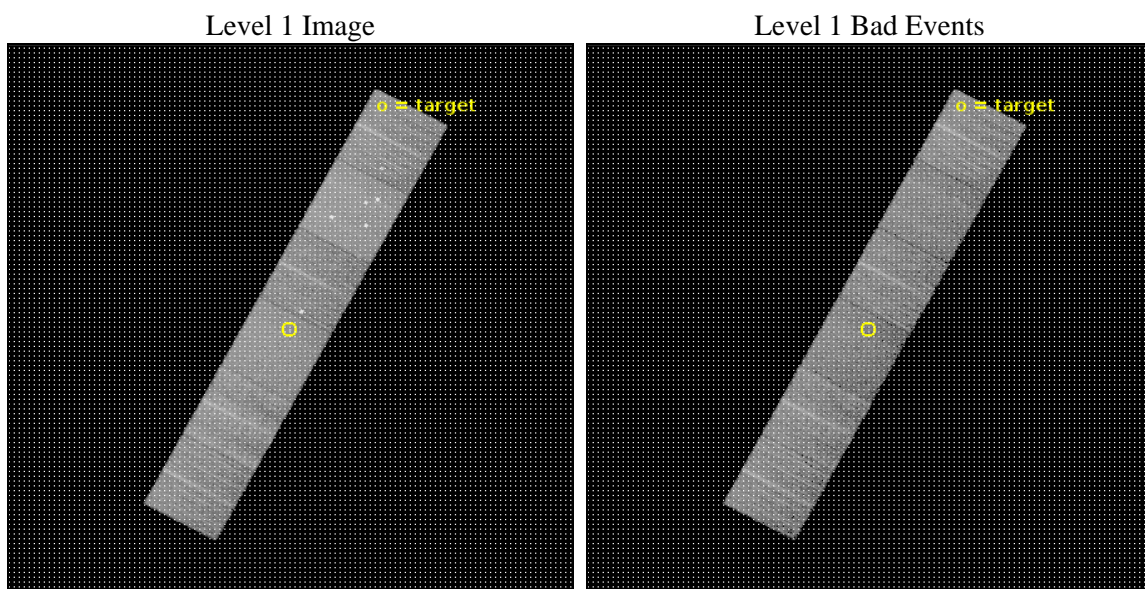
seq_num	703214	Sequence number
obs_id	20047	Observation id
title	Picturing Feedback in Action: from the innermost nuclear region to the Galaxy Scale	Proposal title
observer	Fabrizio Nicastro	Principal investigator
object	Mkn 876	Source name
dtcycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	243.488333	Observer's specified target RA [deg]
dec_targ	65.719444	Observer's specified target Dec [deg]
ra_nom	243.4877179918	Nominal RA [deg]
dec_nom	65.722795526562	Nominal Dec [deg]
roll_nom	118.1571903097	Nominal Roll [deg]
revision	1	Processing version of data
ontime	9936.0001480579	Sum of GTIs [s]
livetime	9810.1845314422	Livetime [s]
ontime4	9936.0001480579	Sum of GTIs [s]
ontime5	9936.0001480579	Sum of GTIs [s]
ontime6	9936.0001480579	Sum of GTIs [s]
ontime7	9936.0001480579	Sum of GTIs [s]
ontime8	9936.0001480579	Sum of GTIs [s]
ontime9	9936.0001480579	Sum of GTIs [s]
l2events	119327	Number of level 2 events



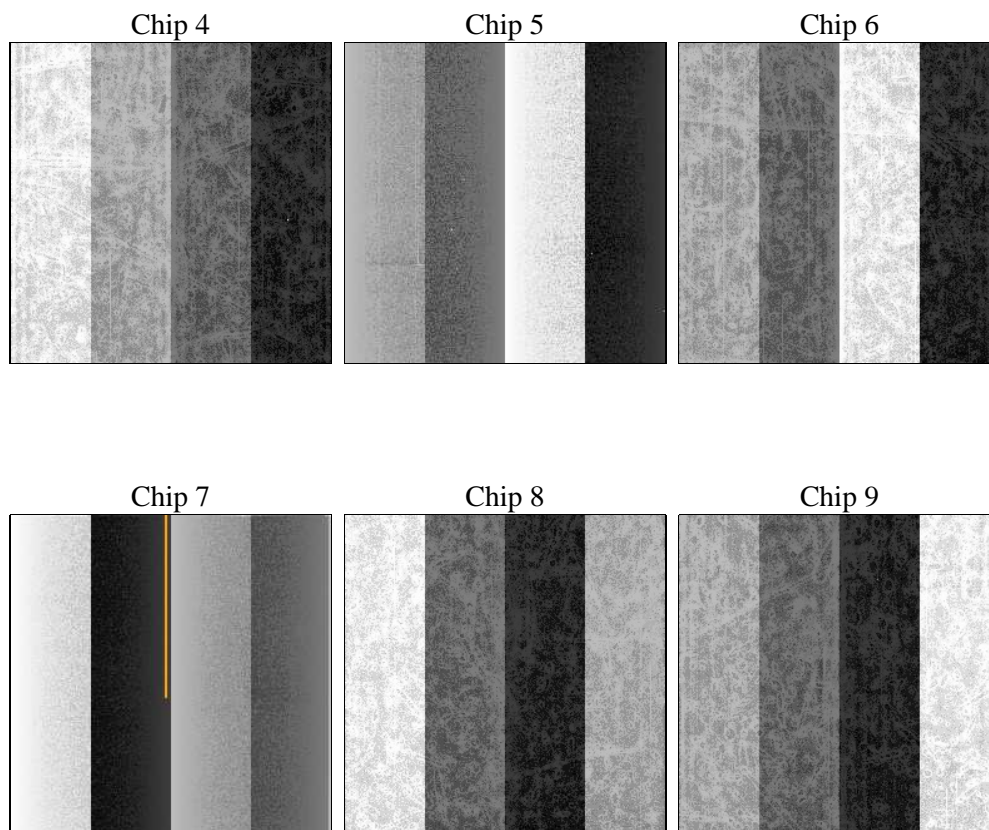
2 OBI

2.1 OBI

2.1.1 Images



2.1.2 Bias



2.1.3 Parameters

obi_num	0	Obi number	sched_exp_time	10000.000000	[s] Scheduled observation exposure time
ascdsver	10.5.2	Processing system revision	ontime	9936.0001480579	Sum of GTIs [s]
caldbver	4.7.3	 	ontime4	9936.0001480579	Sum of GTIs [s]
date	2017-03-29T19:29:19	Date and time of file creation	ontime5	9936.0001480579	Sum of GTIs [s]
revision	1	Processing version of data	ontime6	9936.0001480579	Sum of GTIs [s]
			ontime7	9936.0001480579	Sum of GTIs [s]
			ontime8	9936.0001480579	Sum of GTIs [s]
			ontime9	9936.0001480579	Sum of GTIs [s]
			l1events	544867	Number of level 1 events
			tgmethod	TGDETECT	Method used to create src1a file
			ra_pos	(4004.04, 4071.45)	grade sky pixel position

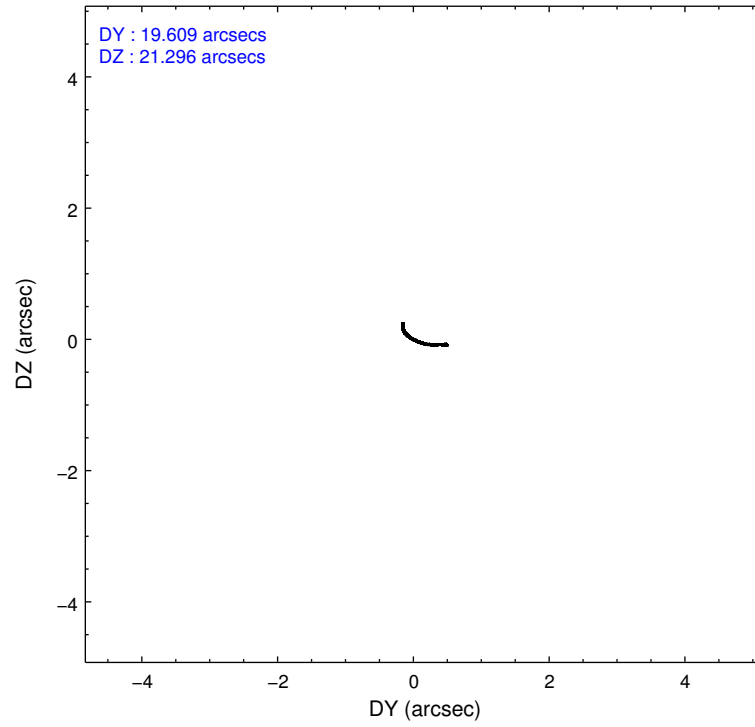
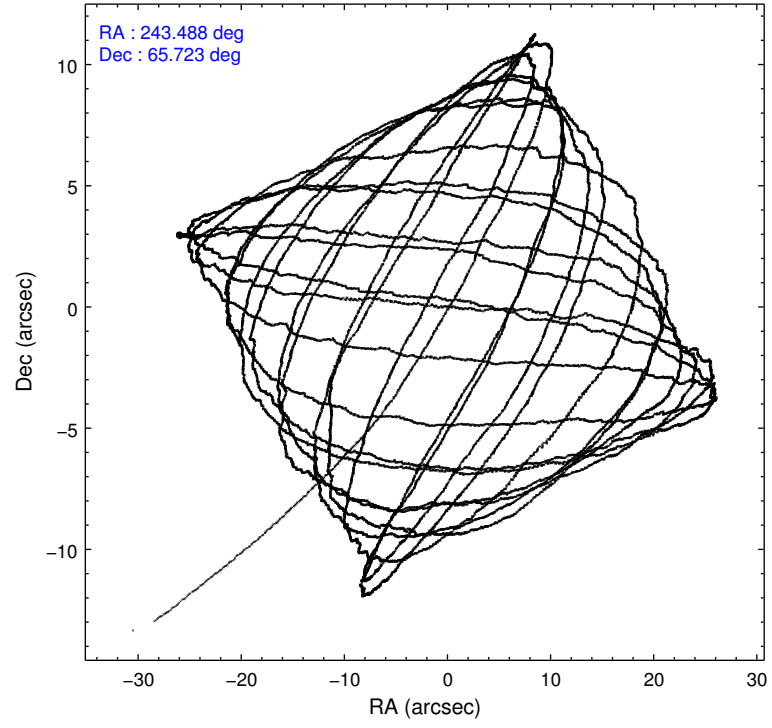
2.1.4 Events

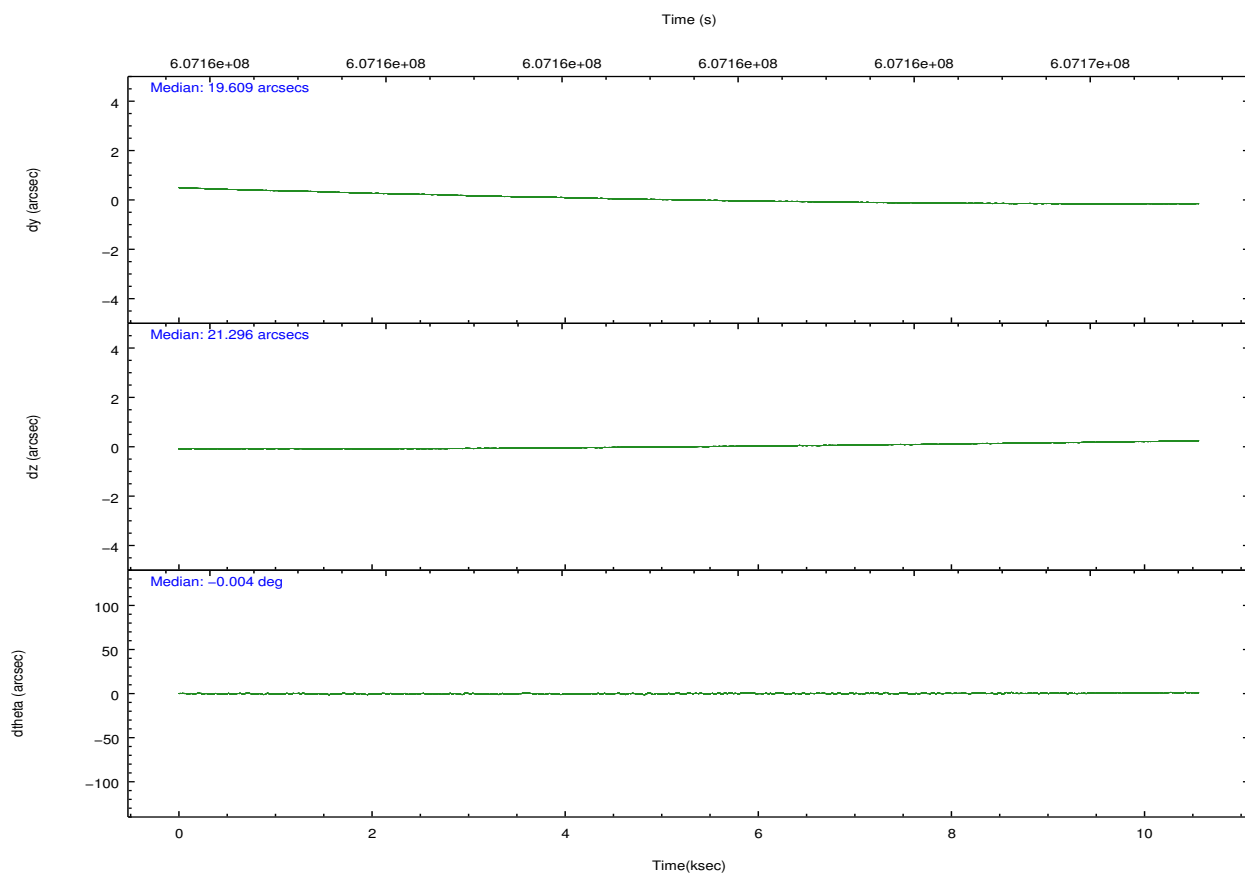
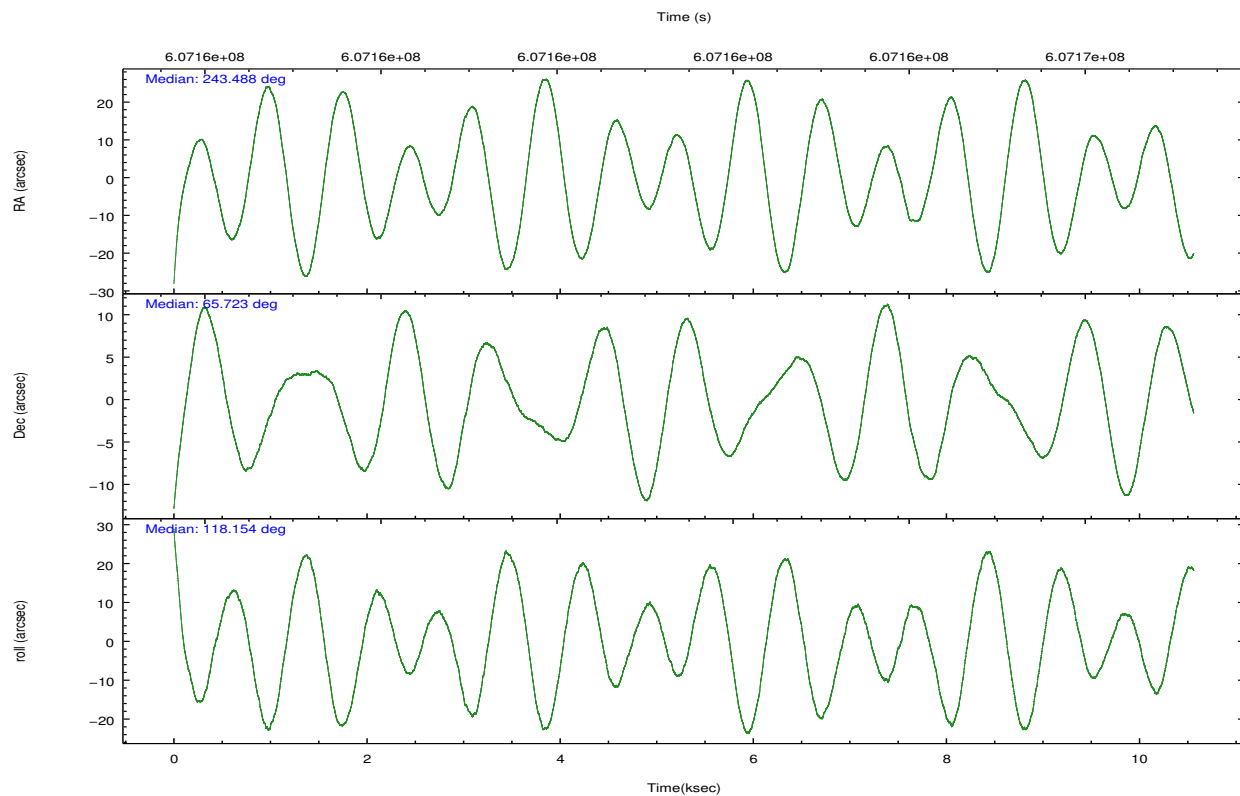
	ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9		ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
level 1 events	85756	122252	76656	92069	93323	74811	grade 0 events	3904	10889	5675	3526	6739	2953
rejected events	76725	59003	65484	51579	69568	66441		4%	8%	7%	3%	7%	3%
rejected %	89%	48%	85%	56%	74%	88%	grade 1 events	76	387	49	134	73	44
								0%	0%	0%	0%	0%	0%
							grade 2 events	1900	19348	1978	8717	6024	1852
								2%	15%	2%	9%	6%	2%
							grade 3 events	917	1552	769	3157	2327	826
								1%	1%	1%	3%	2%	1%
							grade 4 events	885	1618	756	3077	2213	816
								1%	1%	0%	3%	2%	1%
							grade 5 events	3342	7311	3368	8640	4980	3780
								3%	5%	4%	9%	5%	5%
							grade 6 events	1437	29896	2006	22045	6465	1932
								1%	24%	2%	23%	6%	2%
							grade 7 events	73295	51251	62055	42773	64502	62608
								85%	41%	80%	46%	69%	83%

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	CCD I0 on	N	N
Observation mode	POINTING	POINTING	CCD I1 on	N	N
[deg] Pointing RA	243.544941	243.4877179918037	CCD I2 on	N	N
[deg] Pointing Dec	65.708556	65.72279552656198	CCD I3 on	N	N
[deg] Pointing Roll	117.948402	118.1571903097027	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)	607156715.184000	607155415.92529	CCD S5 on	Y	Y
Observation start date	2017-03-29T06:37:26	2017-03-29T06:16:55	Number of optional ACIS chips dropped	0	0
[s] Observation end time (MET)	607166715.184000	607167386.38849	On-chip summing requested	N	N
Observation end date	2017-03-29T09:24:06	2017-03-29T09:36:26	Subarray requested	NONE	NONE
Read mode	TIMED	TIMED	Alternating exposures requested	N	N
			[s] Primary exposure time	0.000000	3.2

2.3 Aspect





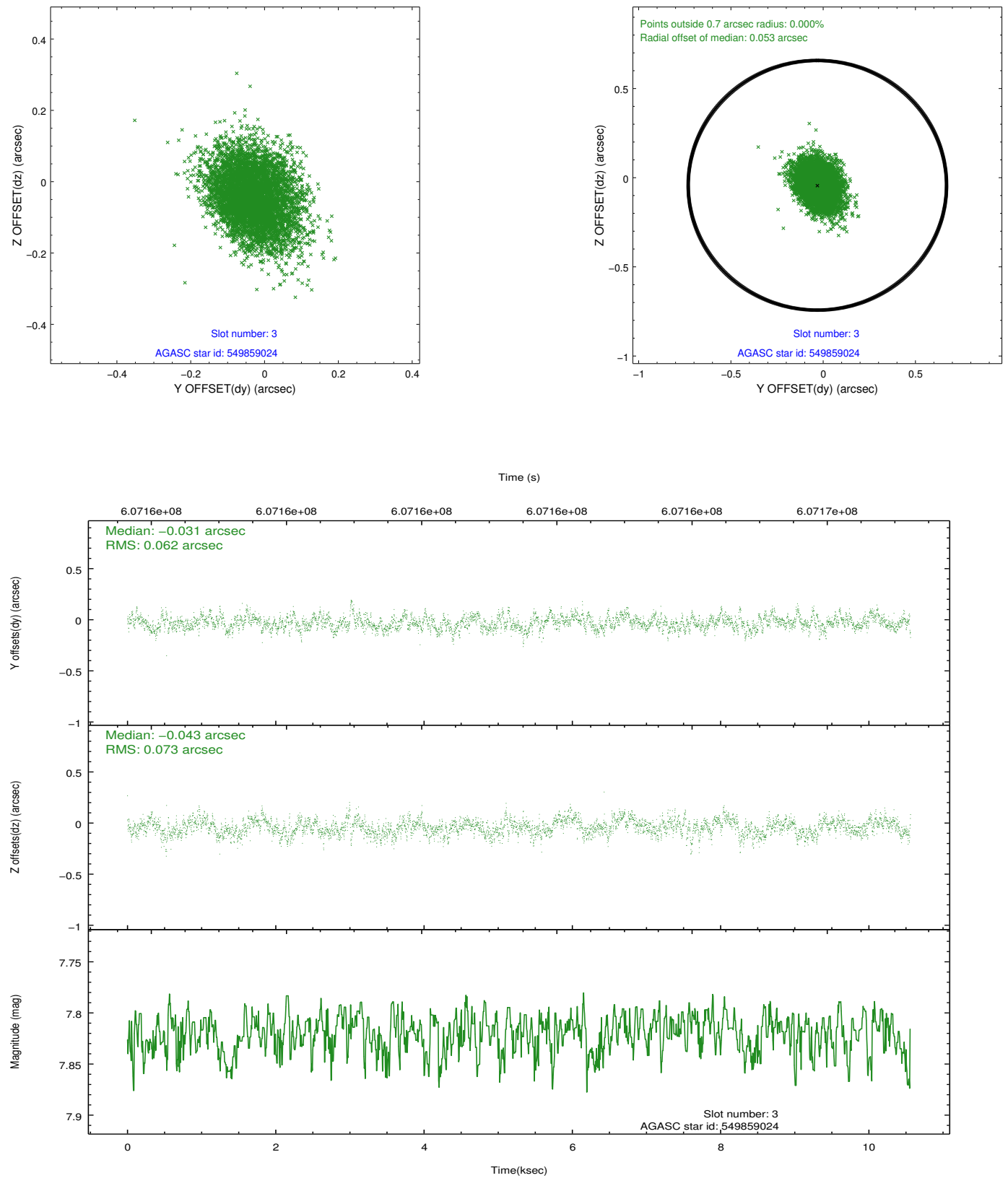
Slot Statistics

slot	status	used	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID		ACIS-S-2	7.08	2576	-0.275	-0.169	0.009	0.015	0.000000	0.000000	-773.03	-1743.04
1	FID		ACIS-S-4	7.19	2576	0.582	0.178	0.007	0.014	0.000000	0.000000	2140.87	165.27
2	FID		ACIS-S-5	7.19	2576	-0.338	0.000	0.009	0.016	0.000000	0.000000	-1825.31	159.33
3	GUIDE	used	549859024	7.82	5152	-0.031	-0.043	0.100	0.165	243.777882	65.072262	-2187.73	761.14
4	GUIDE	used	549862784	8.87	5148	-0.033	-0.021	0.116	0.196	243.335157	66.115006	1435.89	-414.80
5	GUIDE	used	549863464	7.50	5153	-0.212	-0.053	0.094	0.158	243.630740	66.376841	2067.35	-1236.68
6	GUIDE	used	549864952	8.91	5151	0.267	0.186	0.148	0.246	244.861755	65.614211	-1198.47	-1579.23
7	GUIDE	used	549864184	9.04	5139	0.006	-0.066	0.147	0.240	243.727034	65.246202	-1599.06	537.43

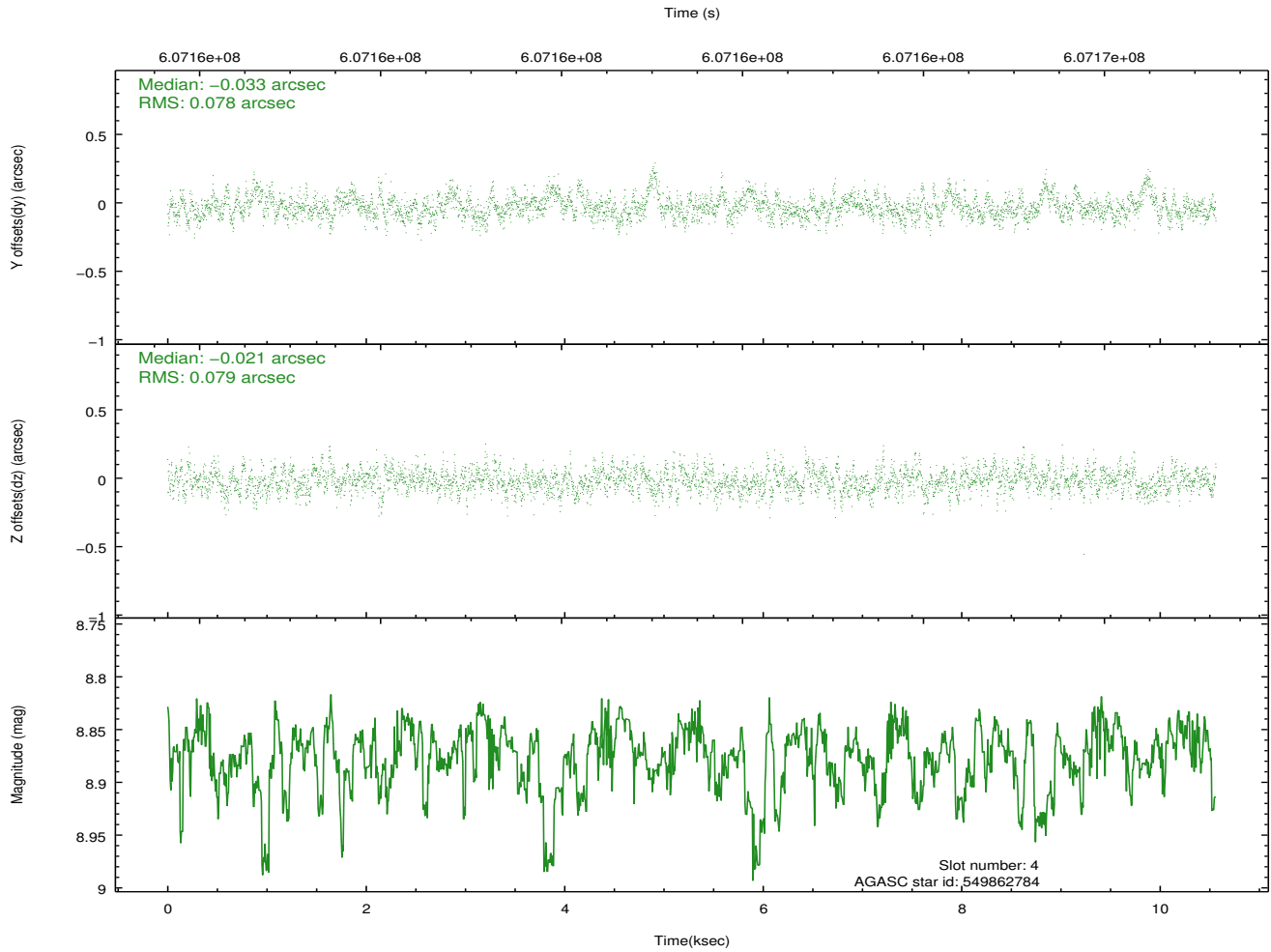
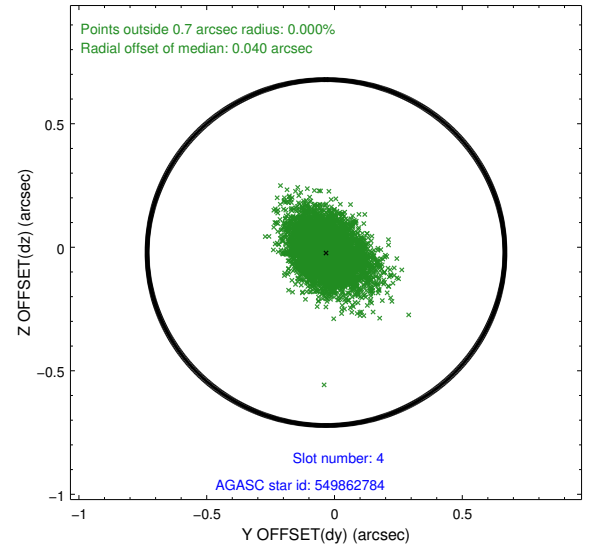
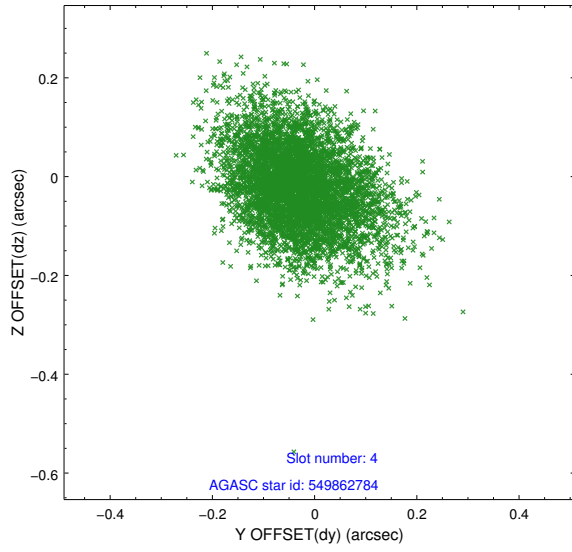
∞

2.4 Star Slots

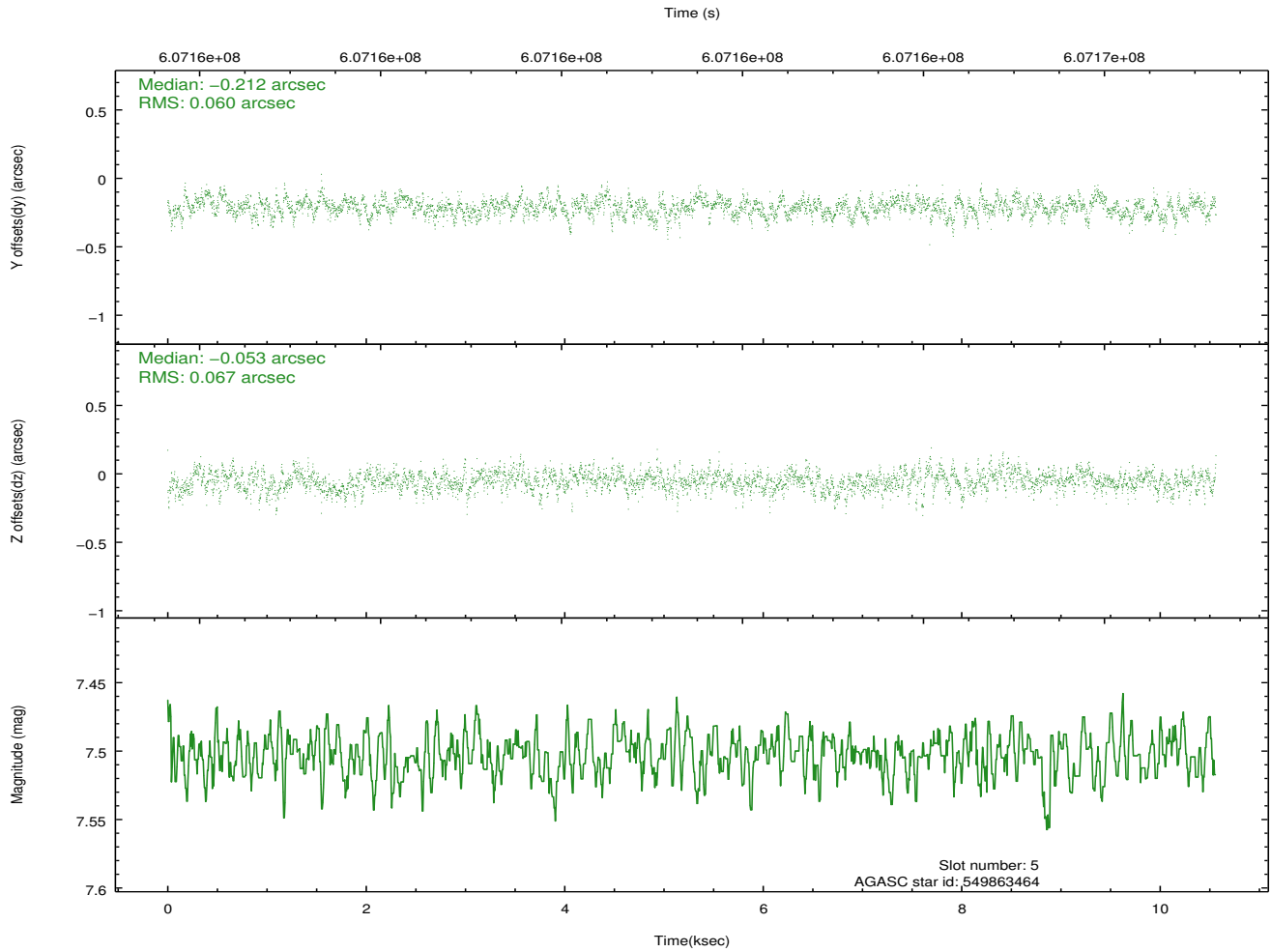
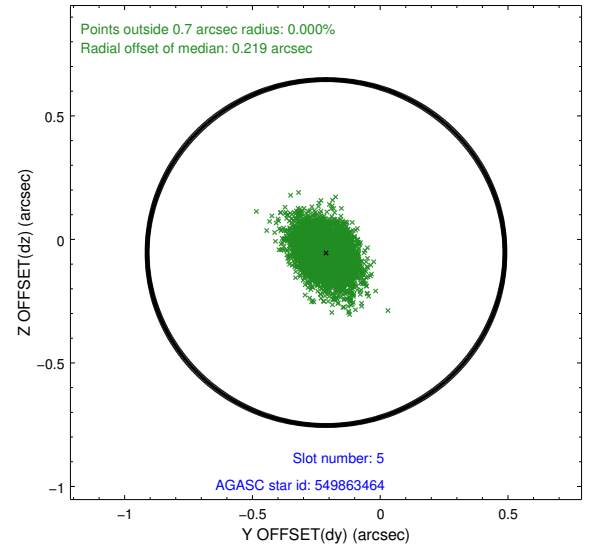
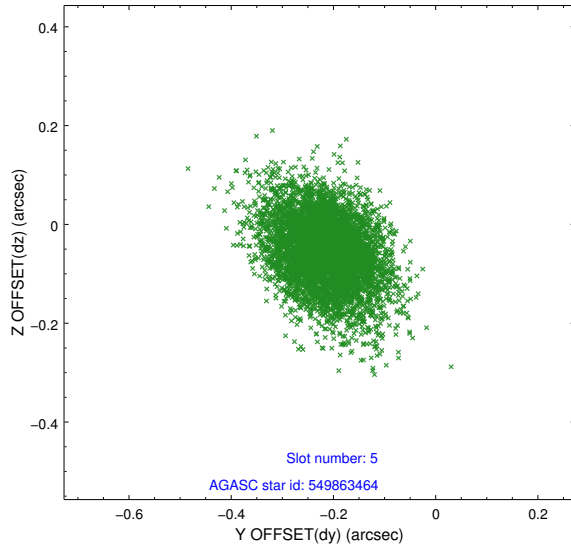
2.4.1 Slot 3



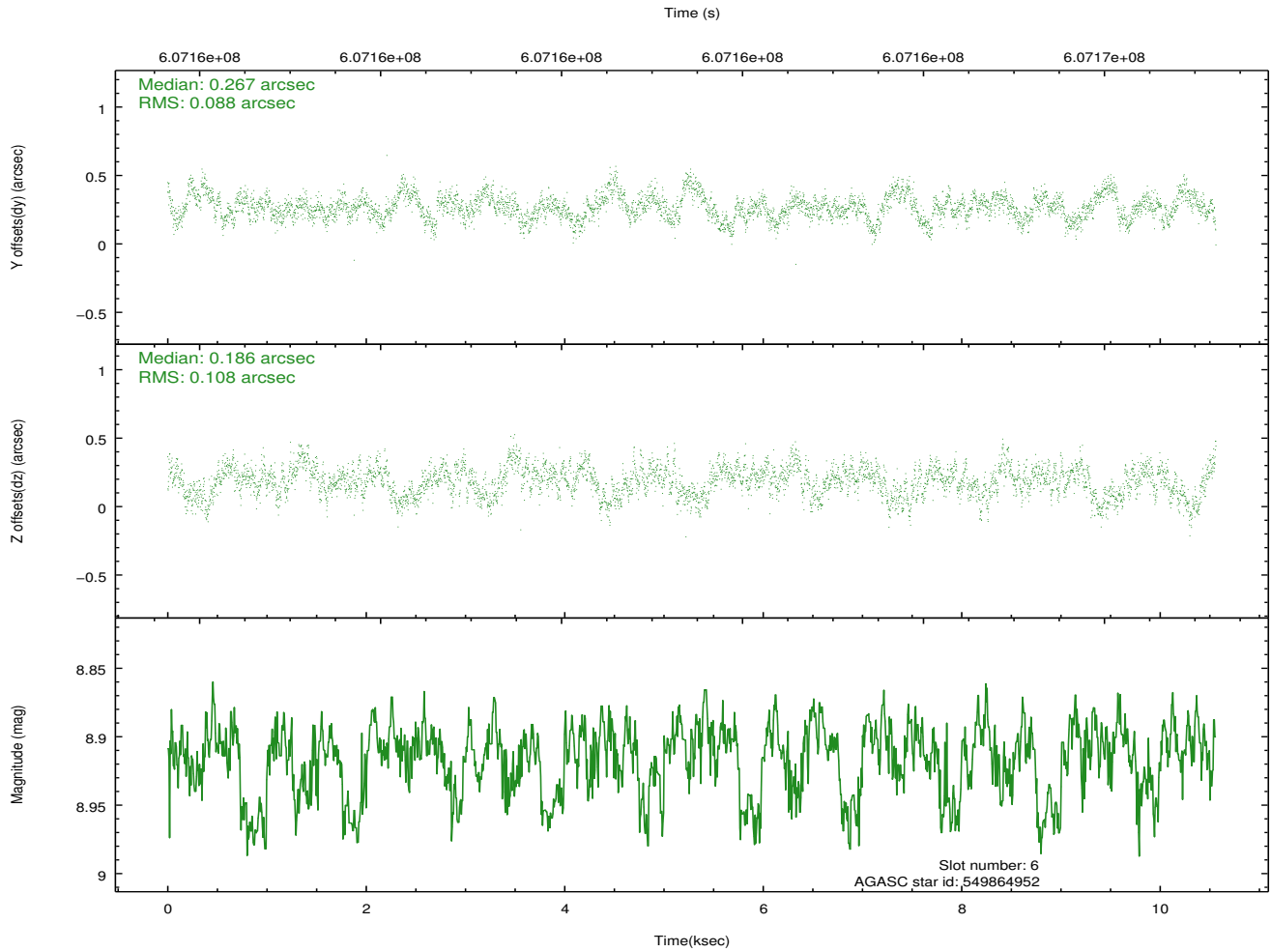
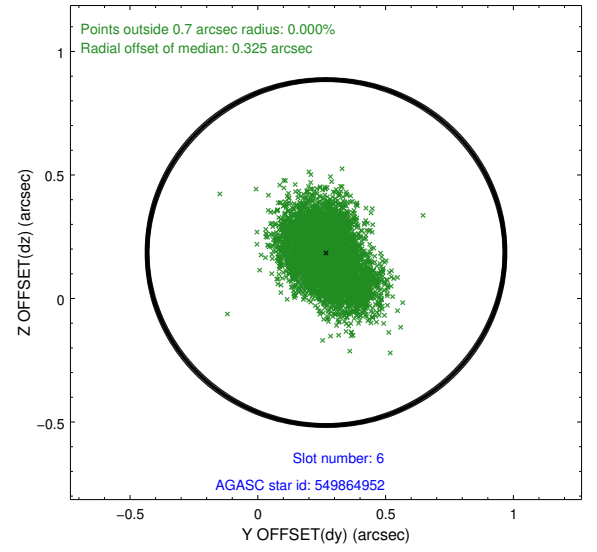
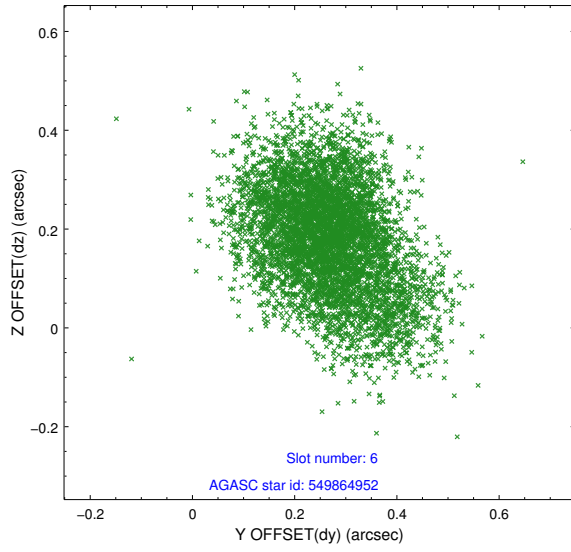
2.4.2 Slot 4



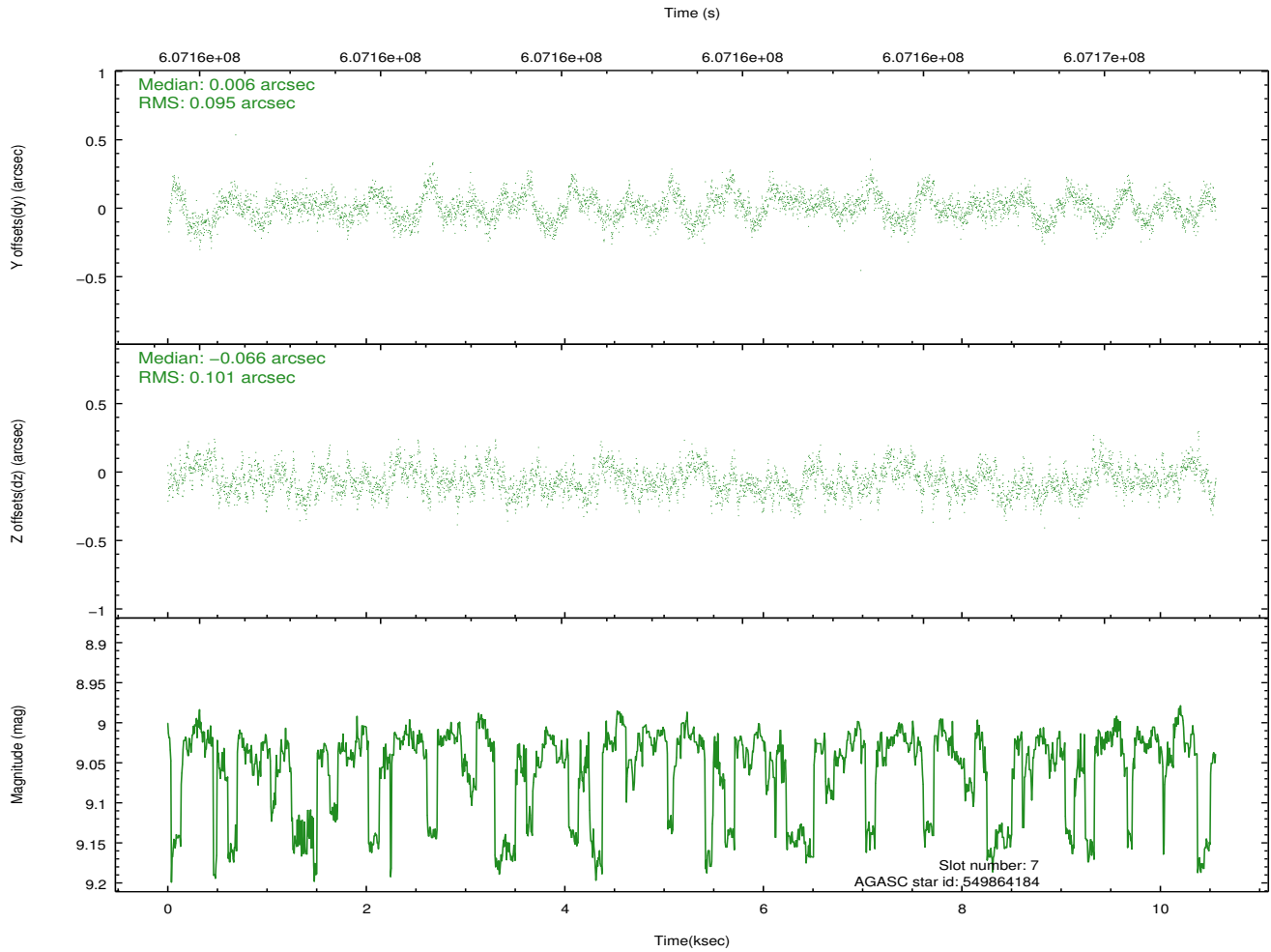
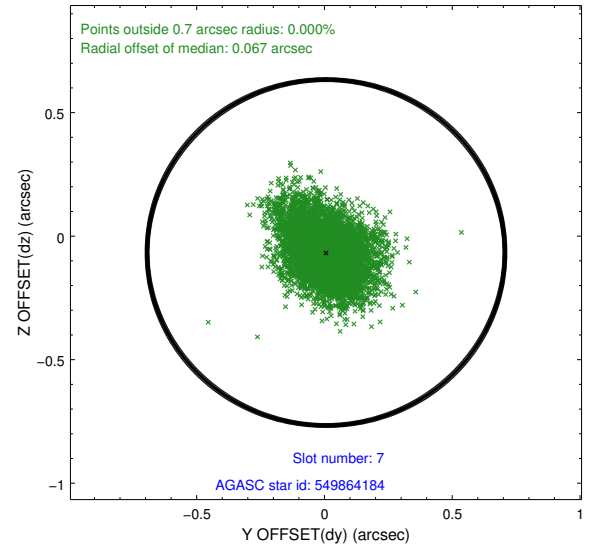
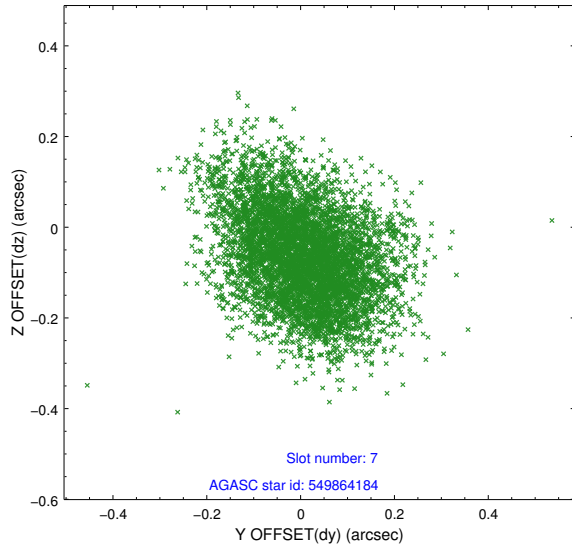
2.4.3 Slot 5



2.4.4 Slot 6

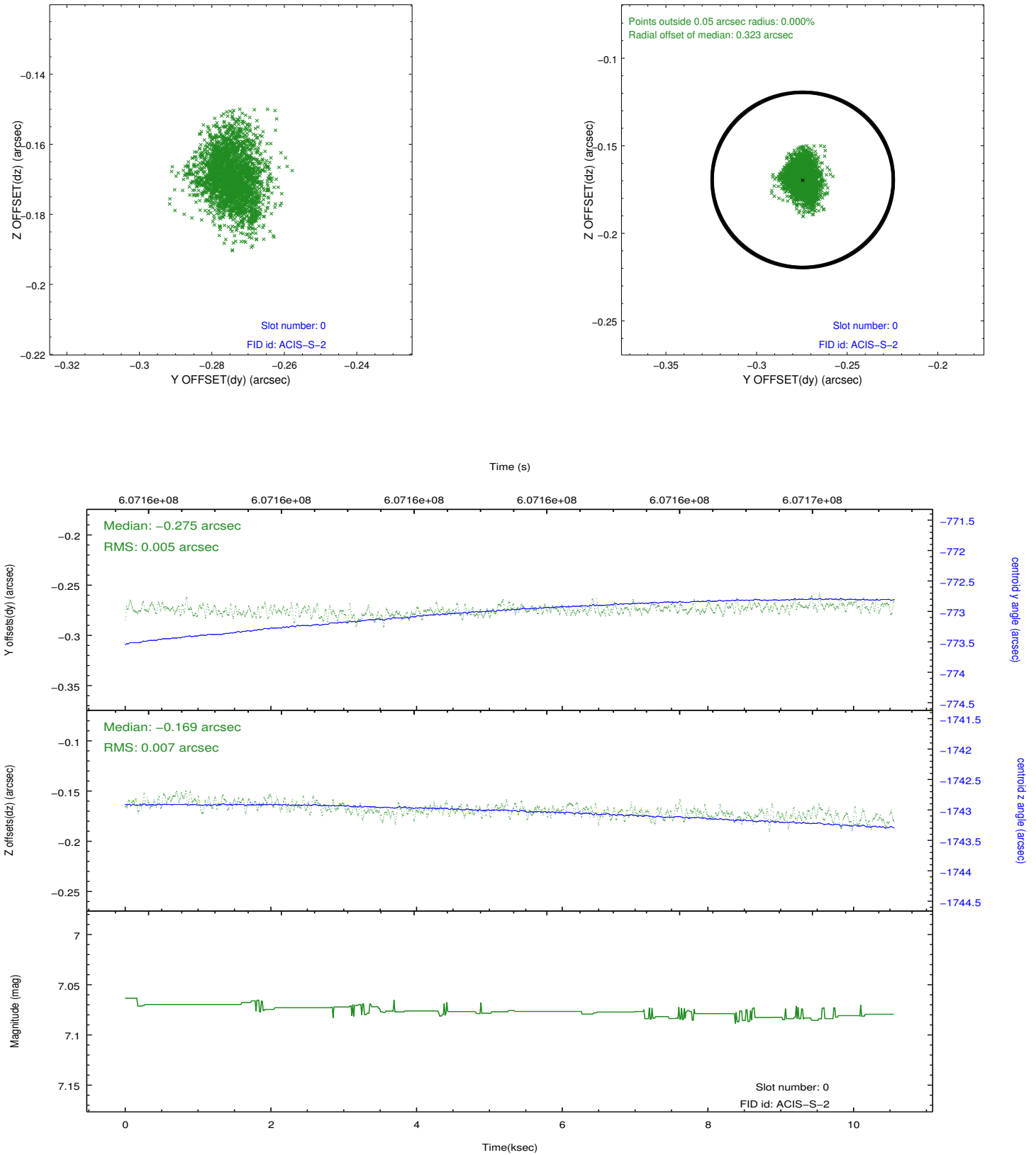


2.4.5 Slot 7

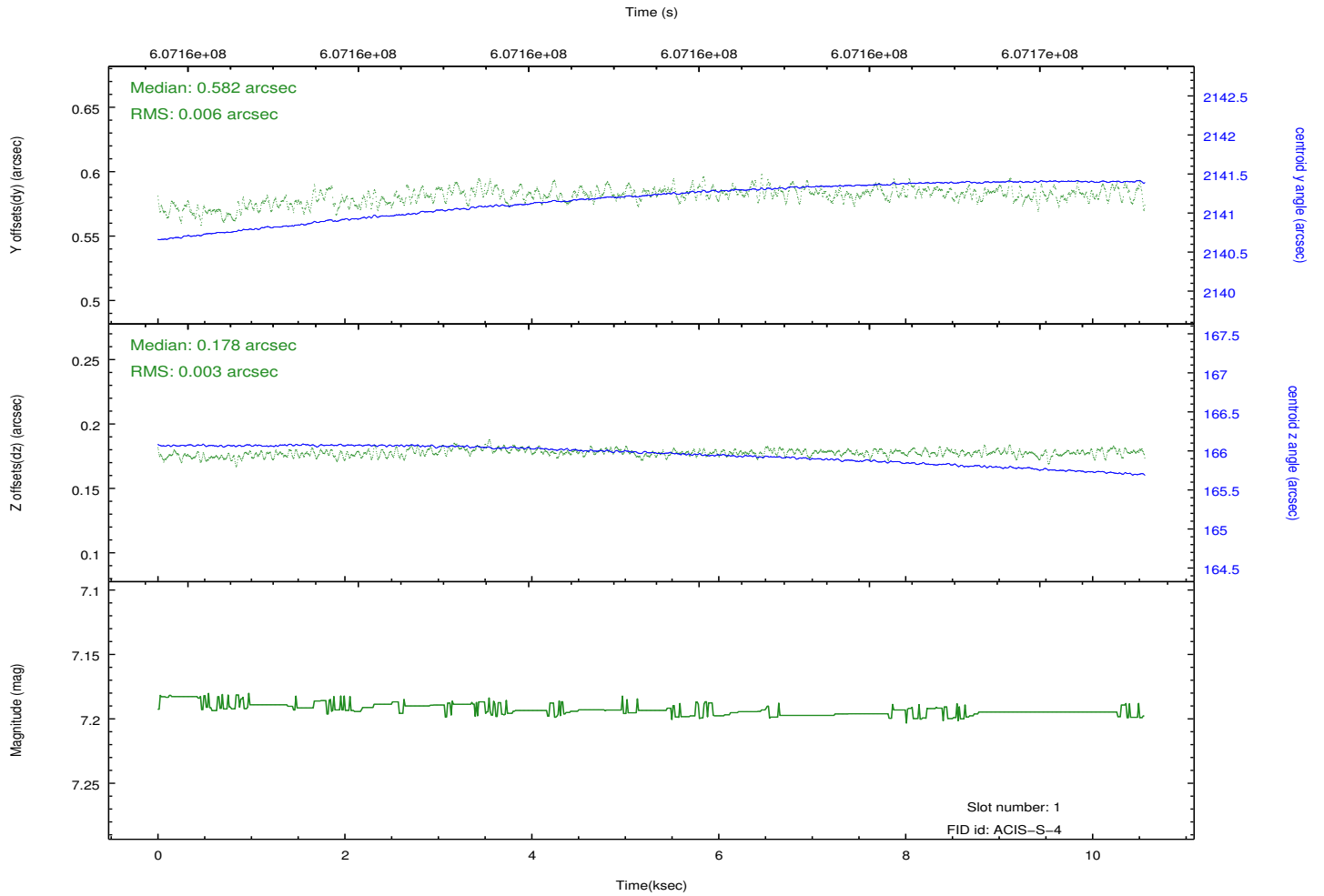
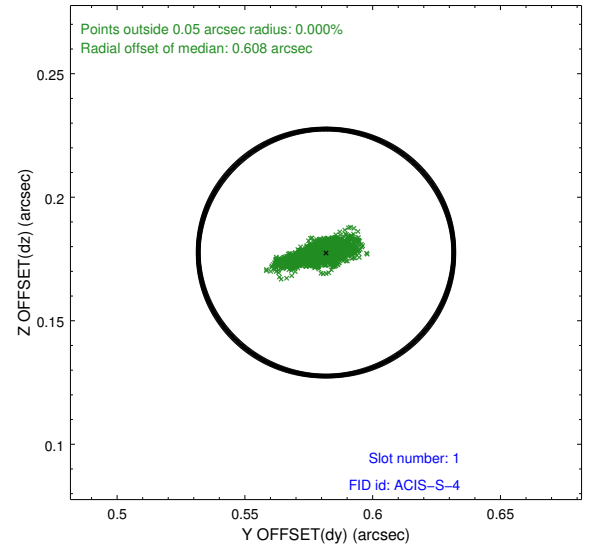
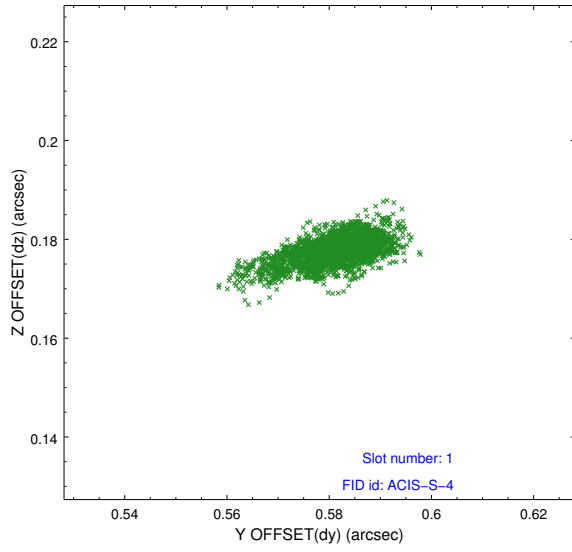


2.5 FID Slots

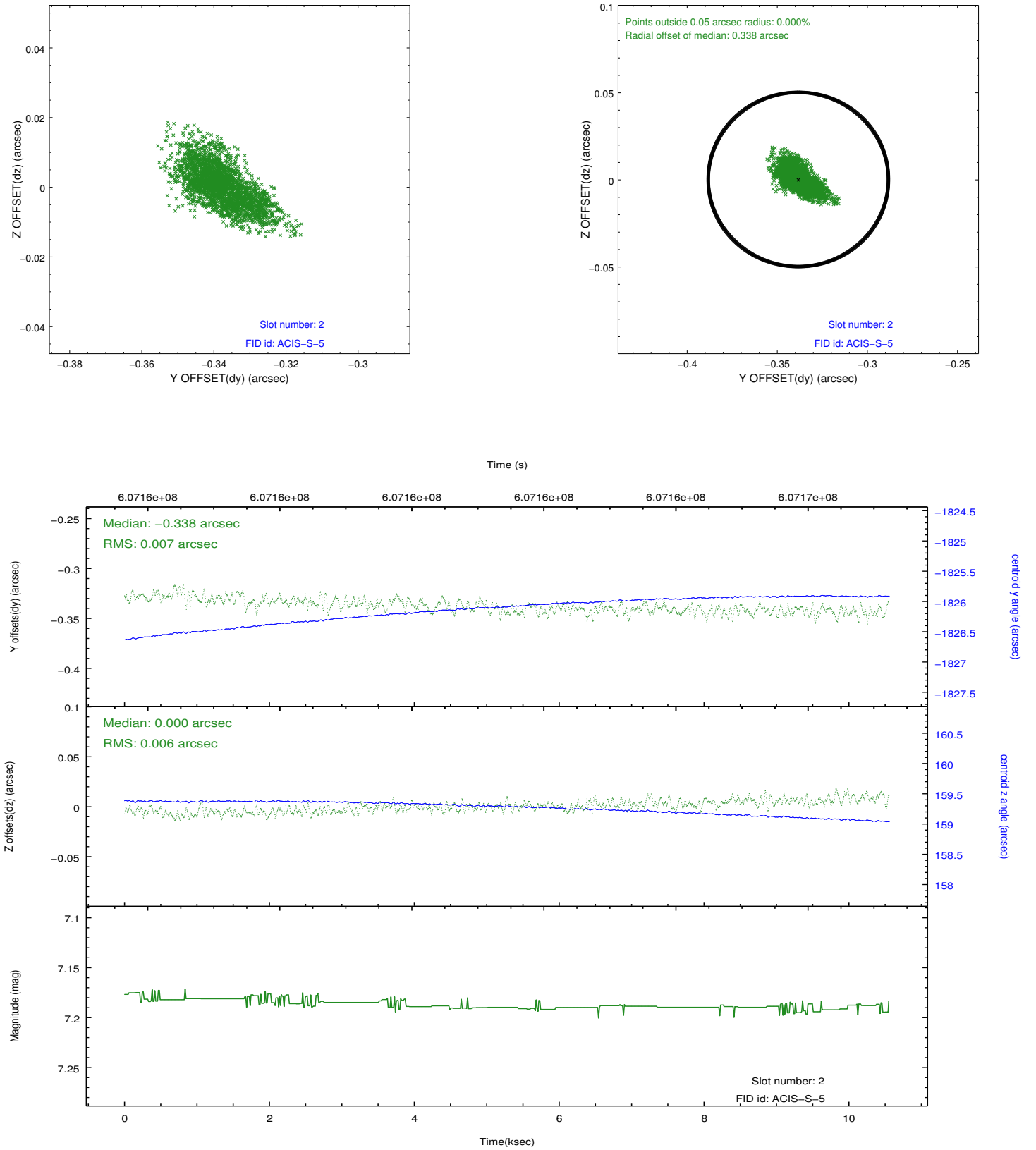
2.5.1 Slot 0



2.5.2 Slot 1

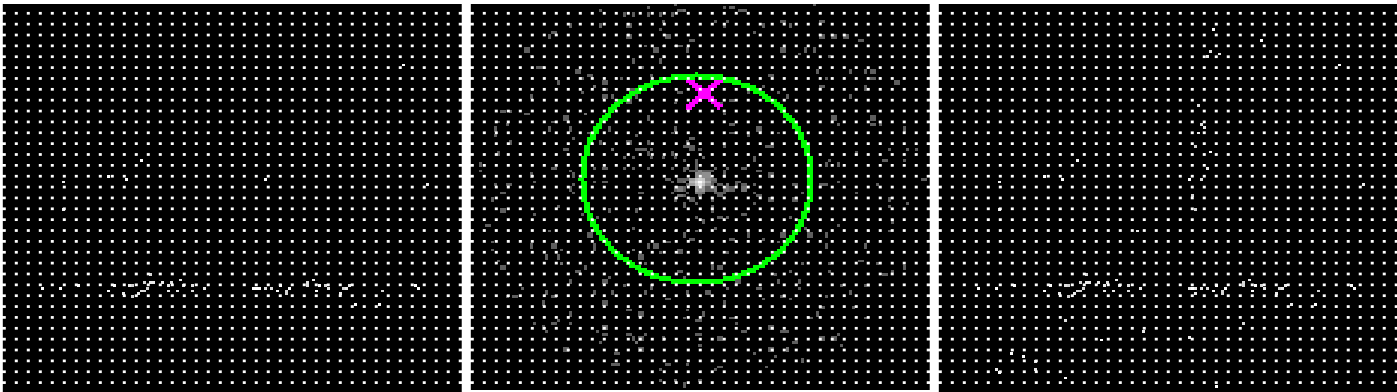


2.5.3 Slot 2



3 Gratings

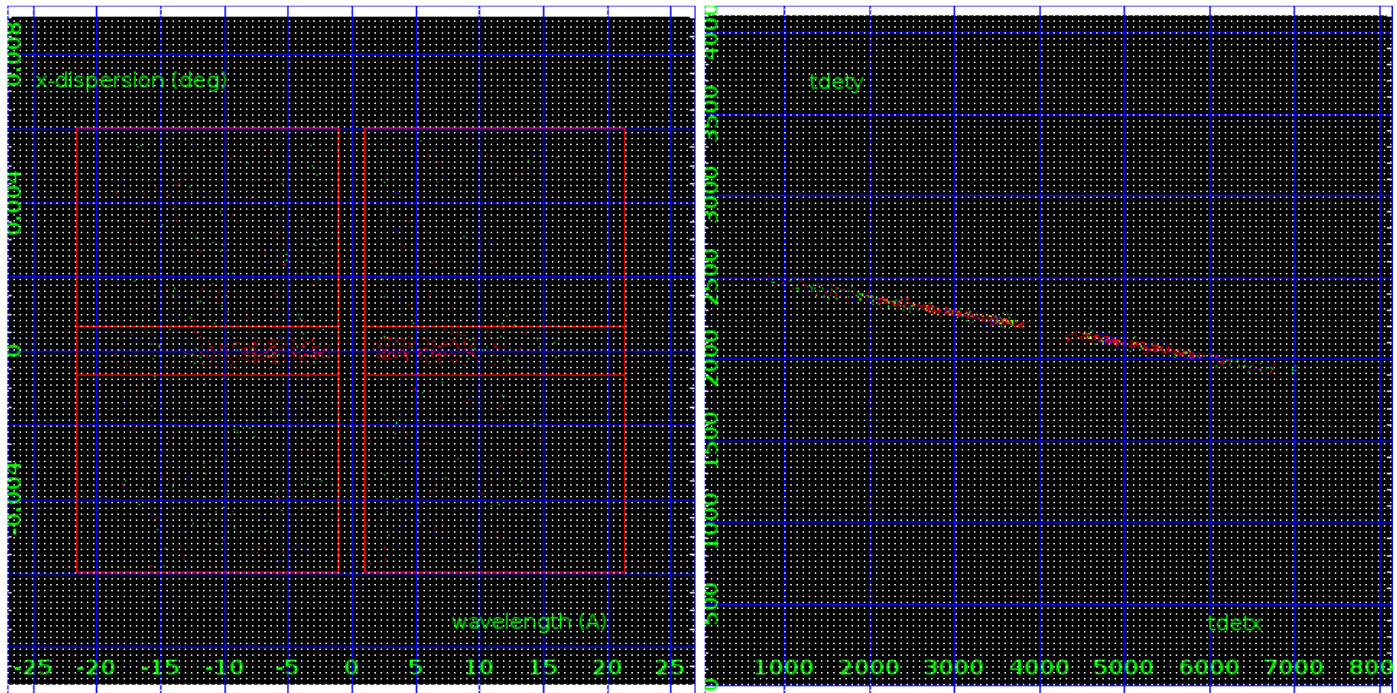
3.1 HEG Arm



HEG Order Sort 123

HEG Zero Order

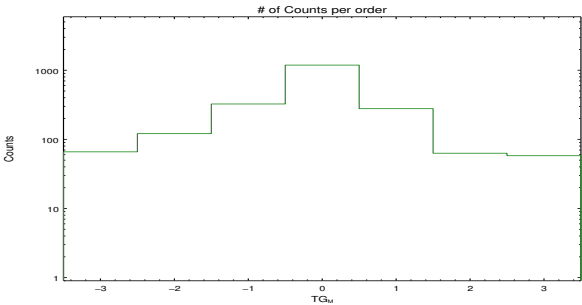
HEG Order Sort ALL

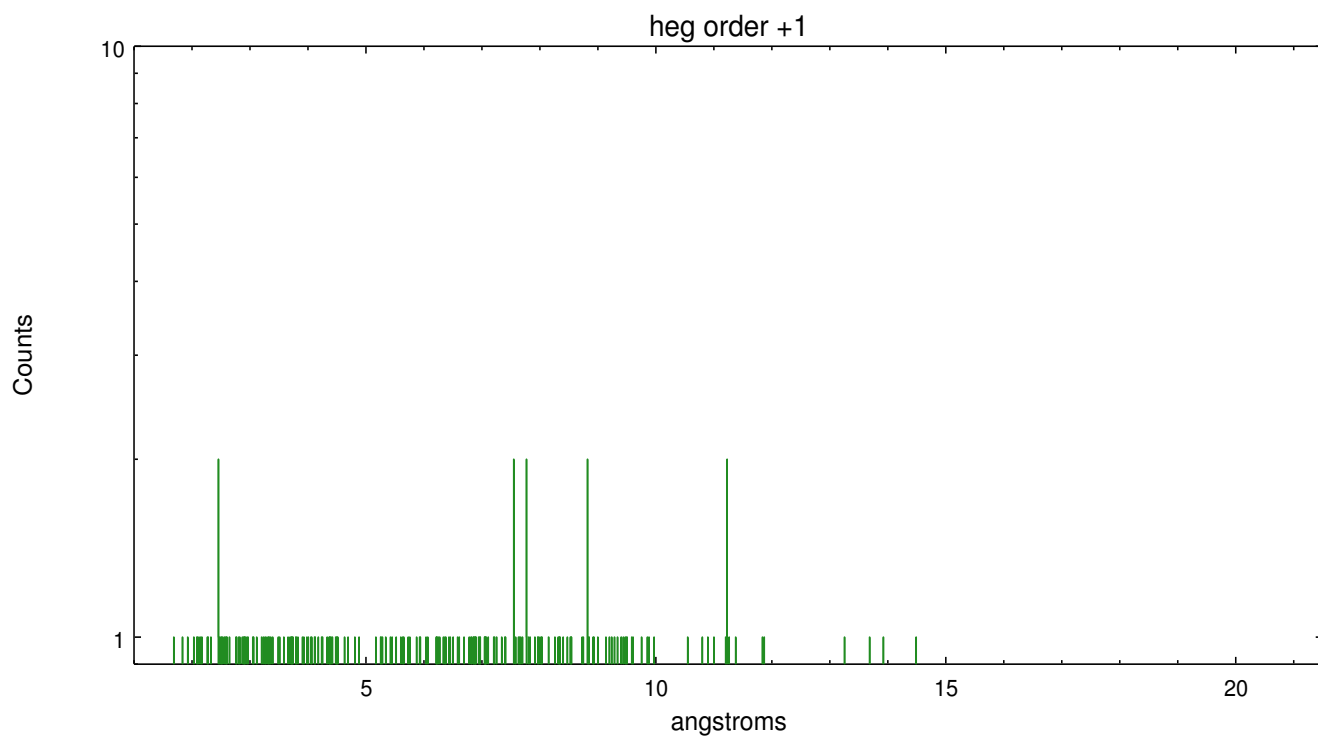
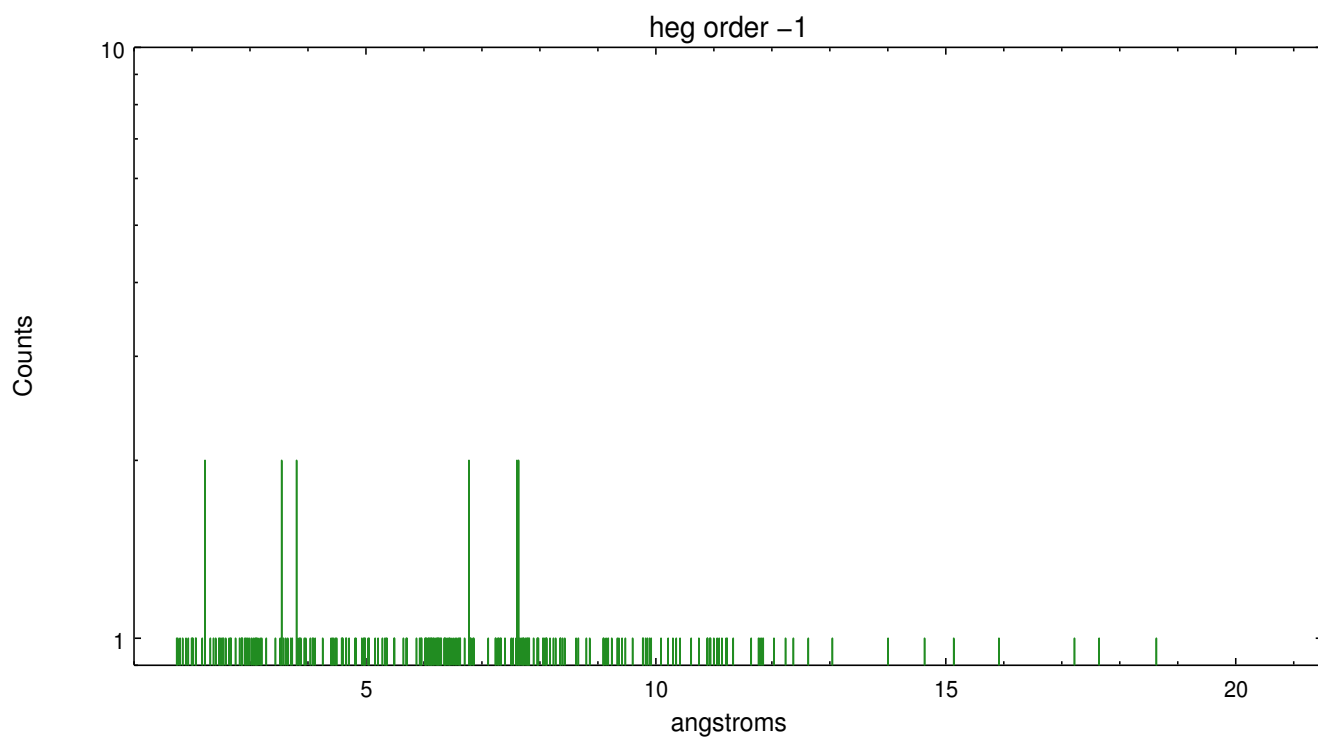


Spot Image HEG

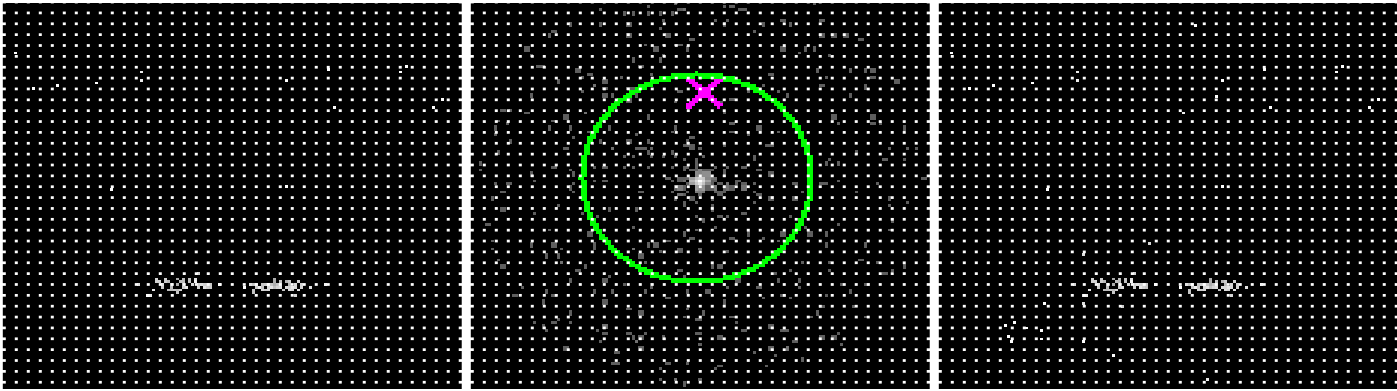
Full Detector HEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	66	121	325	1186	278	63	58





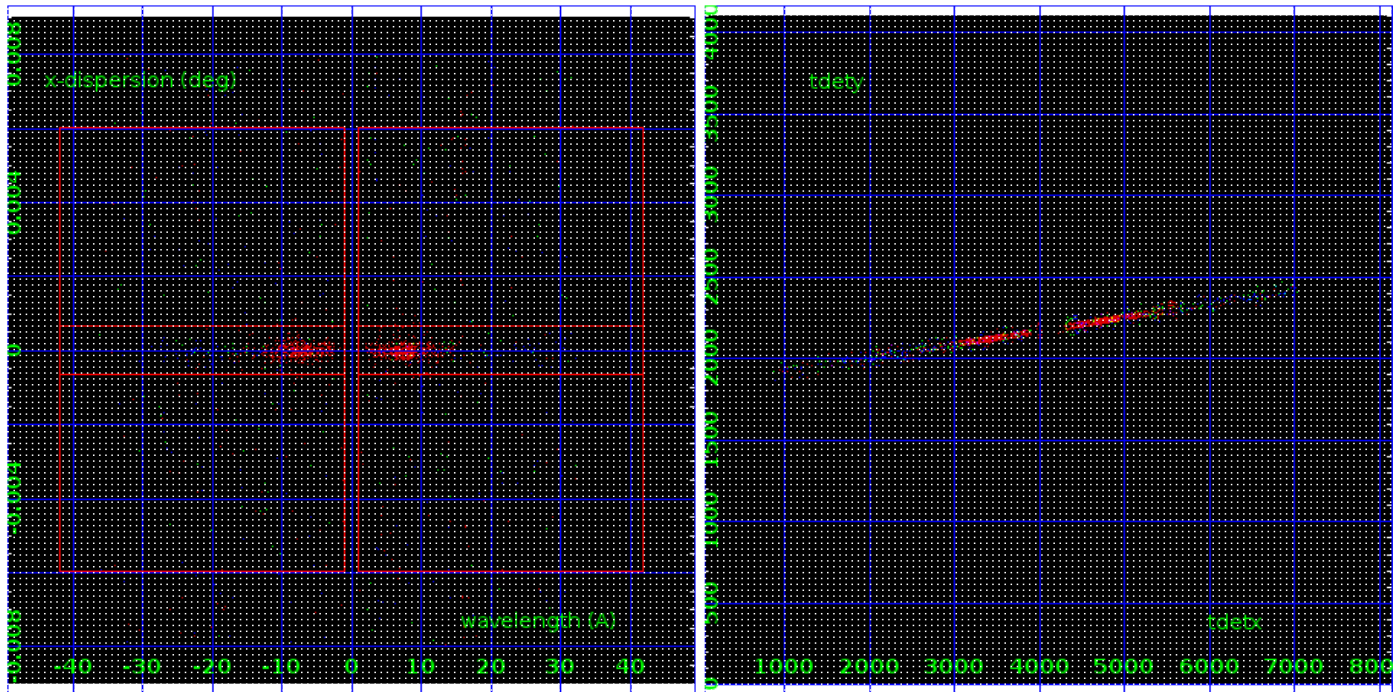
3.2 MEG Arm



MEG Order Sort 123

MEG Zero Order

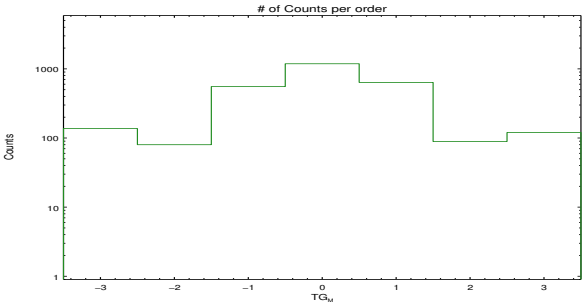
MEG Order Sort ALL

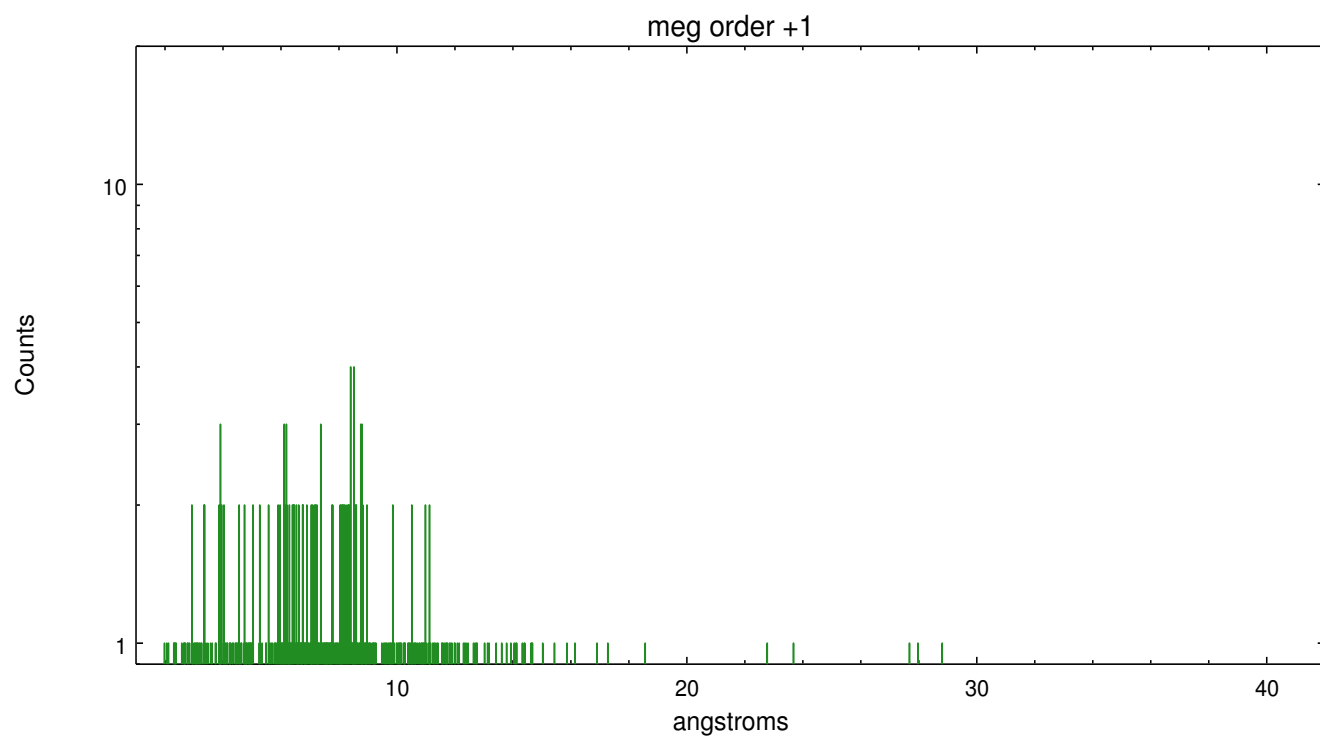
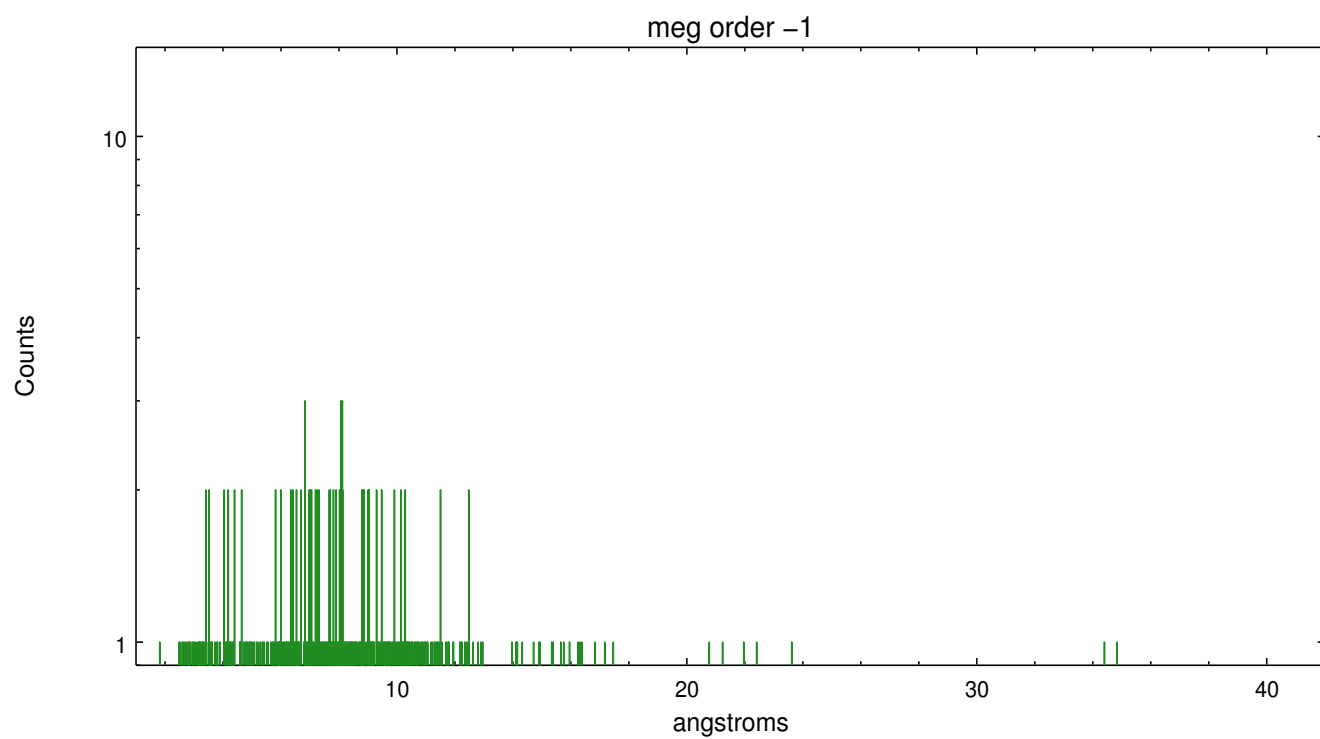


Spot Image MEG

Full Detector MEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	137	80	554	1186	637	89	120





A Summary

A.1 Status

V&V Scientist	Joy Nichols
V&V Date (YYYY-MM-DD)	2017.03.30
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	9.9360001480579

A.2 Comments

The slot 1 fid radial offset of 0.608 arcsec is acceptable to the aspect team.===

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.