

V&V Reference Report

L2 ASCDS Version : 8.4.5

Observation 13131 - L2 Version 2
Chandra X-Ray Center

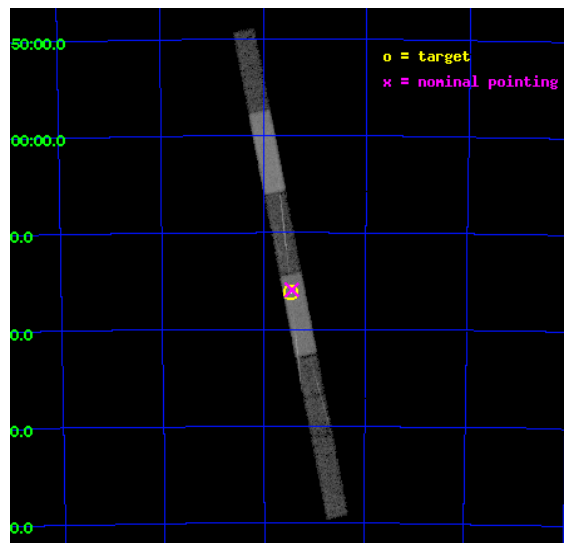
L2 Processing Date : Jul 4 2012

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

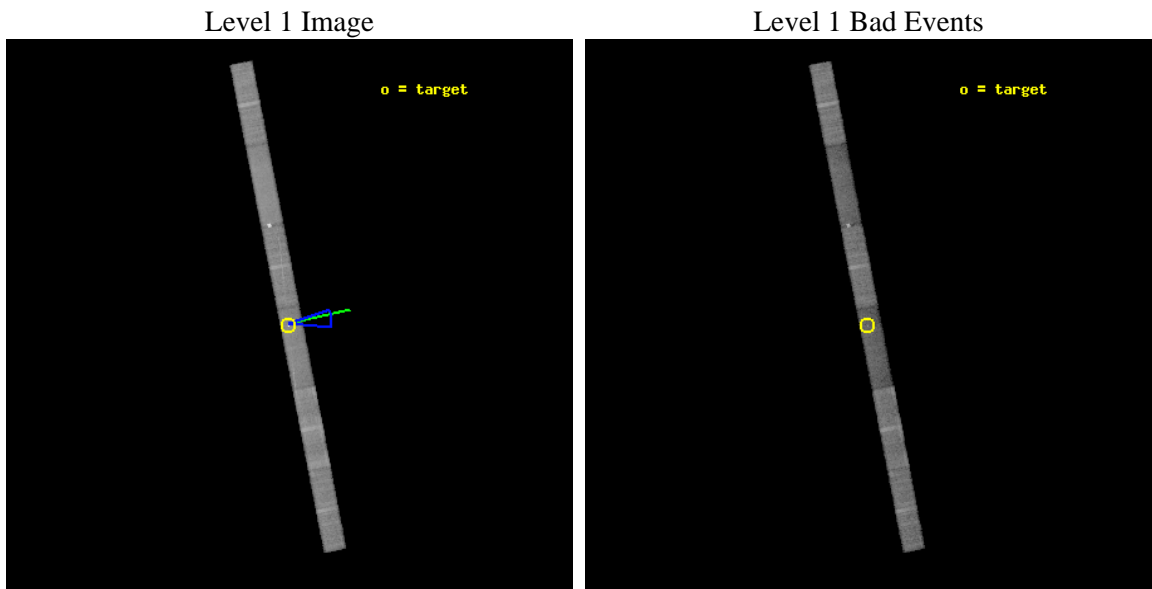
seq_num	501181	Sequence number
obs_id	13131	Observation id
title	CHANDRA CYCLE 11 SPATIAL AND SPECTRAL MONITORING OF SNR1987A	Propo
observer	Prof. David Burrows	Principal investigator
object	SNR 1987A	Source name
dtcycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	83.866667	Observer's specified target RA [deg]
dec_targ	-69.26975	Observer's specified target Dec [deg]
ra_nom	83.861853856388	Nominal RA [deg]
dec_nom	-69.265224565534	Nominal Dec [deg]
roll_nom	78.902122207129	Nominal Roll [deg]
revision	2	Processing version of data
ontime	27569.0	Sum of GTIs [s]
livetime	26482.171674479	Livetime [s]
ontime4	27569.0	Sum of GTIs [s]
ontime5	27569.0	Sum of GTIs [s]
ontime6	27567.958979905	Sum of GTIs [s]
ontime7	27569.0	Sum of GTIs [s]
ontime8	27569.0	Sum of GTIs [s]
ontime9	27569.0	Sum of GTIs [s]
l2events	85968	Number of level 2 events



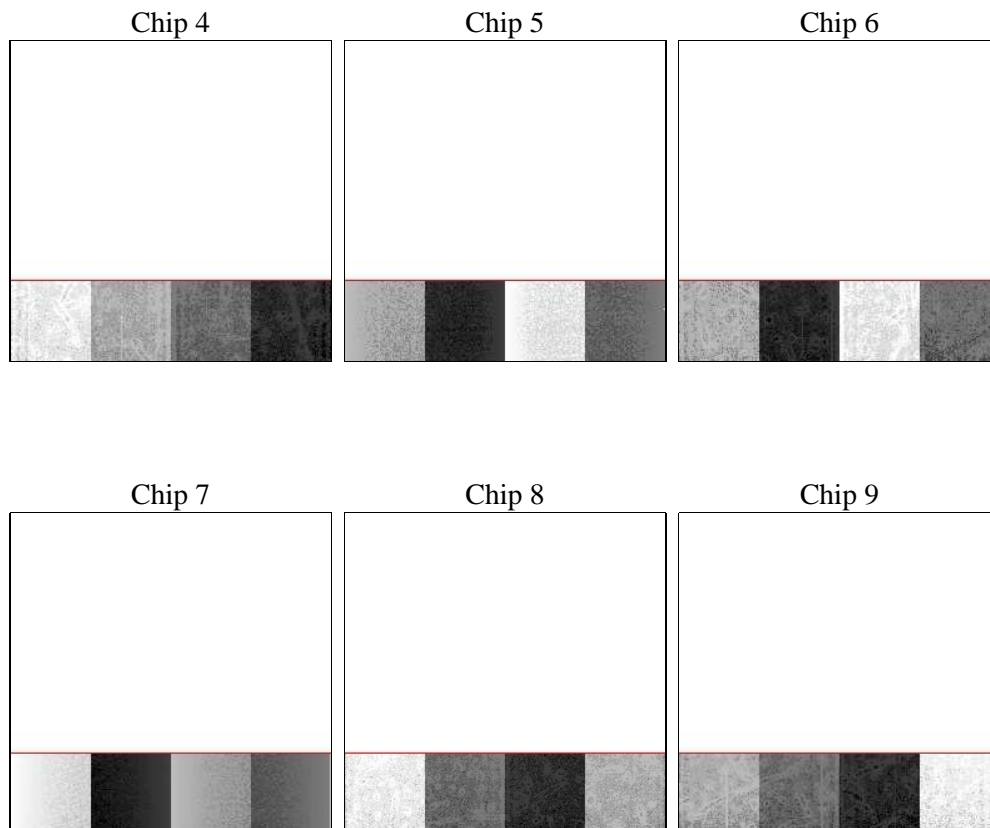
2 OBI

2.1 OBI

2.1.1 Images



2.1.2 Bias



2.1.3 Parameters

obi_num	0	Obi number	sched_exp_time	27500.000000	[s] Scheduled observation exposure time
ascdsver	8.4.5	Processing system revision	ontime	27569.0	Sum of GTIs [s]
caldbver	4.5.0	 	ontime4	27569.0	Sum of GTIs [s]
date	2012-07-04T03:14:26	Date and time of file creation	ontime5	27569.0	Sum of GTIs [s]
revision	2	Processing version of data	ontime6	27567.958979905	Sum of GTIs [s]
			ontime7	27569.0	Sum of GTIs [s]
			ontime8	27569.0	Sum of GTIs [s]
			ontime9	27569.0	Sum of GTIs [s]
			l1events	368473	Number of level 1 events

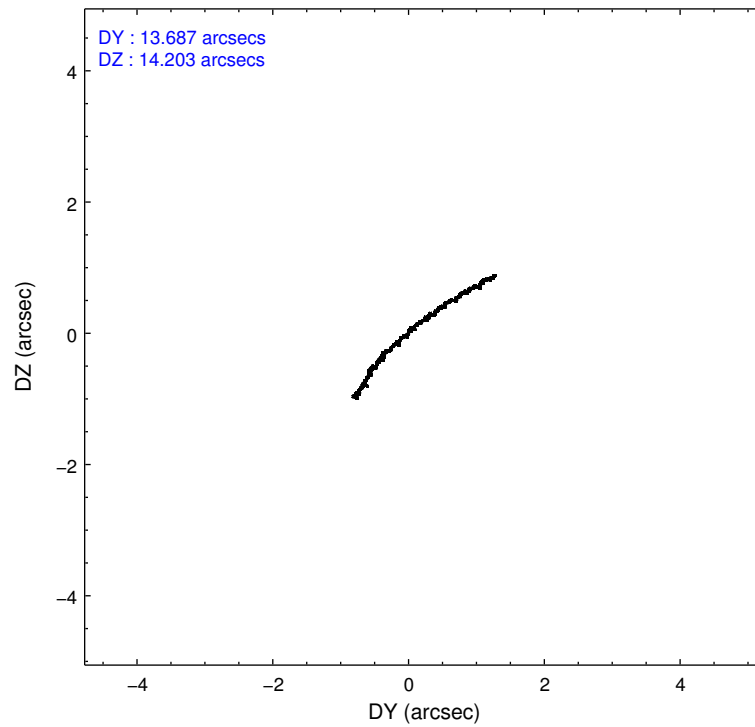
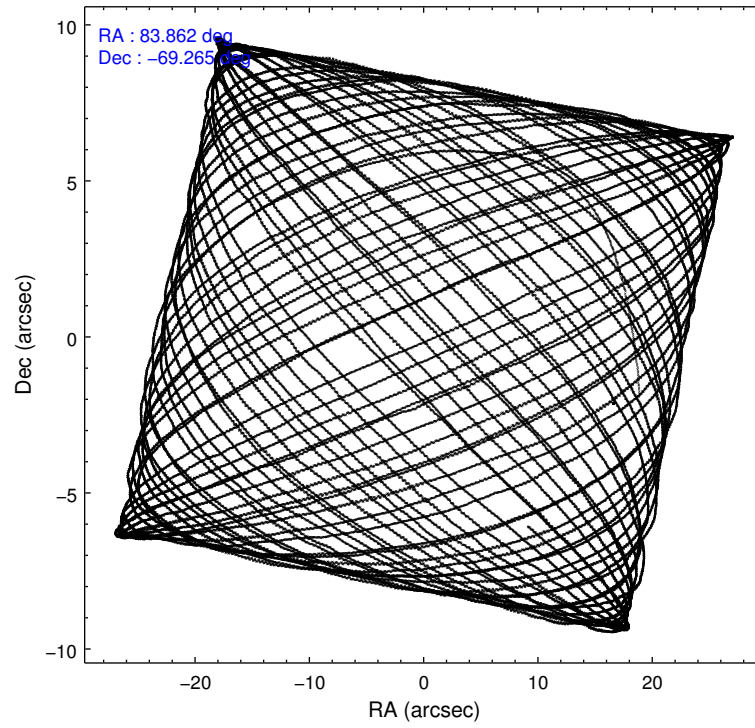
2.1.4 Events

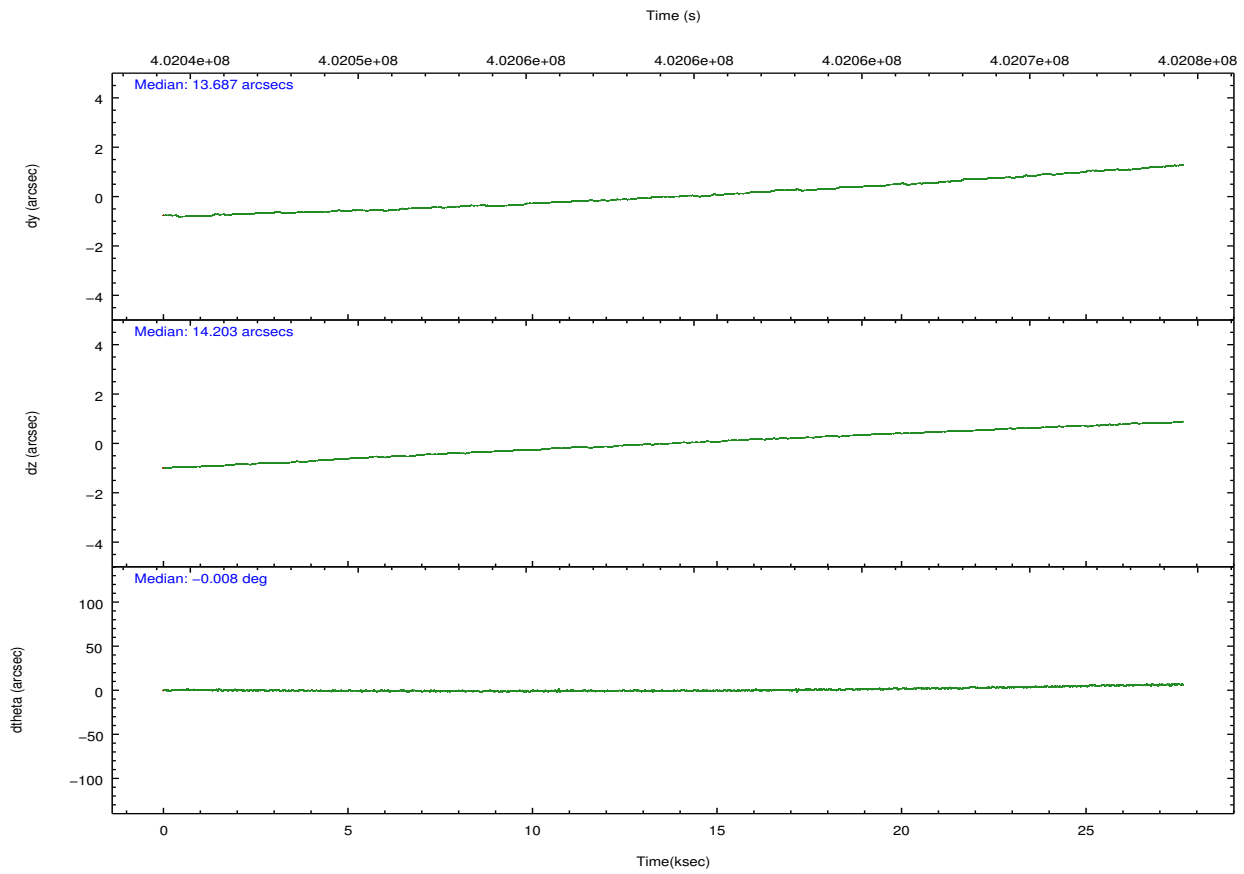
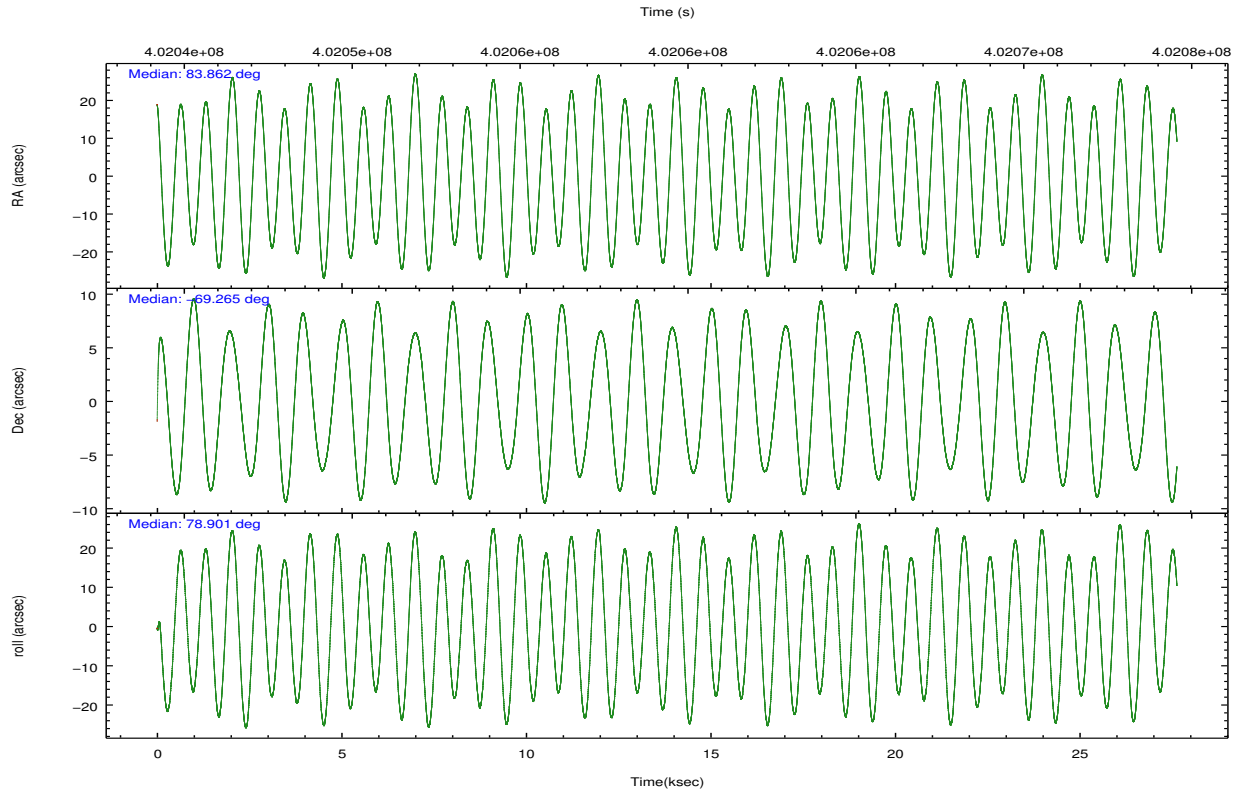
	ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9		ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
level 1 events	63410	70836	58054	54670	71139	50364	grade 0 events	1979	6442	4001	3870	5608	1775
rejected events	56976	30488	49332	24375	51526	44498		3%	9%	6%	7%	7%	3%
rejected %	89%	43%	84%	44%	72%	88%	grade 1 events	11	1004	21	84	36	18
								0%	1%	0%	0%	0%	0%
							grade 2 events	1487	10421	1569	6690	4020	1157
								2%	14%	2%	12%	5%	2%
							grade 3 events	973	3006	1013	3373	2488	942
								1%	4%	1%	6%	3%	1%
							grade 4 events	900	3383	977	3398	2280	878
								1%	4%	1%	6%	3%	1%
							grade 5 events	1613	6793	1588	5157	2437	1703
								2%	9%	2%	9%	3%	3%
							grade 6 events	1095	17100	1163	12965	5218	1115
								1%	24%	2%	23%	7%	2%
							grade 7 events	55352	22687	47722	19133	49052	42776
								87%	32%	82%	34%	68%	84%

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	83.887898	83.86185385638764	CCD I2 on	N	N
[deg] Pointing Dec	-69.290940	-69.26522456553359	CCD I3 on	N	N
[deg] Pointing Roll	78.769863	78.90212220712877	CCD S0 on	O1	Y
[deg] Roll angle	84.000000	84.000000	CCD S1 on	Y	Y
[deg] Roll tolerance	12.000000	12.000000	CCD S2 on	Y	Y
Roll constraint allows 180D rotation	N	N	CCD S3 on	Y	Y
[s] Window start time (MET)	400550466.184000	400550466.184000	CCD S4 on	Y	Y
[s] Window stop time (MET)	402624066.184000	402624066.184000	CCD S5 on	Y	Y
[mm] SIM focus pos	-0.684267	-0.6828225247311905	Number of optional ACIS chips dropped	0	0
[mm] SIM defocus	0	0.001444936568705701	On-chip summing requested	N	N
[mm] SIM translation stage pos	-181.712523	-181.7171097896459	Subarray requested	CUSTOM	1/4
[mm] SIM translation stage offset	-8.42	-8.415412793361924	Subarray start row	1	1
[s] Observation start time (MET)	402045693.184000	402044493.91359	Subarray row count	256	256
Observation start date	2010-09-28T07:20:27	2010-09-28T07:01:33	Alternating exposures requested	N	N
[s] Observation end time (MET)	402073193.184000	402073748.4401	[s] Primary exposure time	0.000000	1
Observation end date	2010-09-28T14:58:47	2010-09-28T15:09:08			
Read mode	TIMED	TIMED			

2.3 Aspect



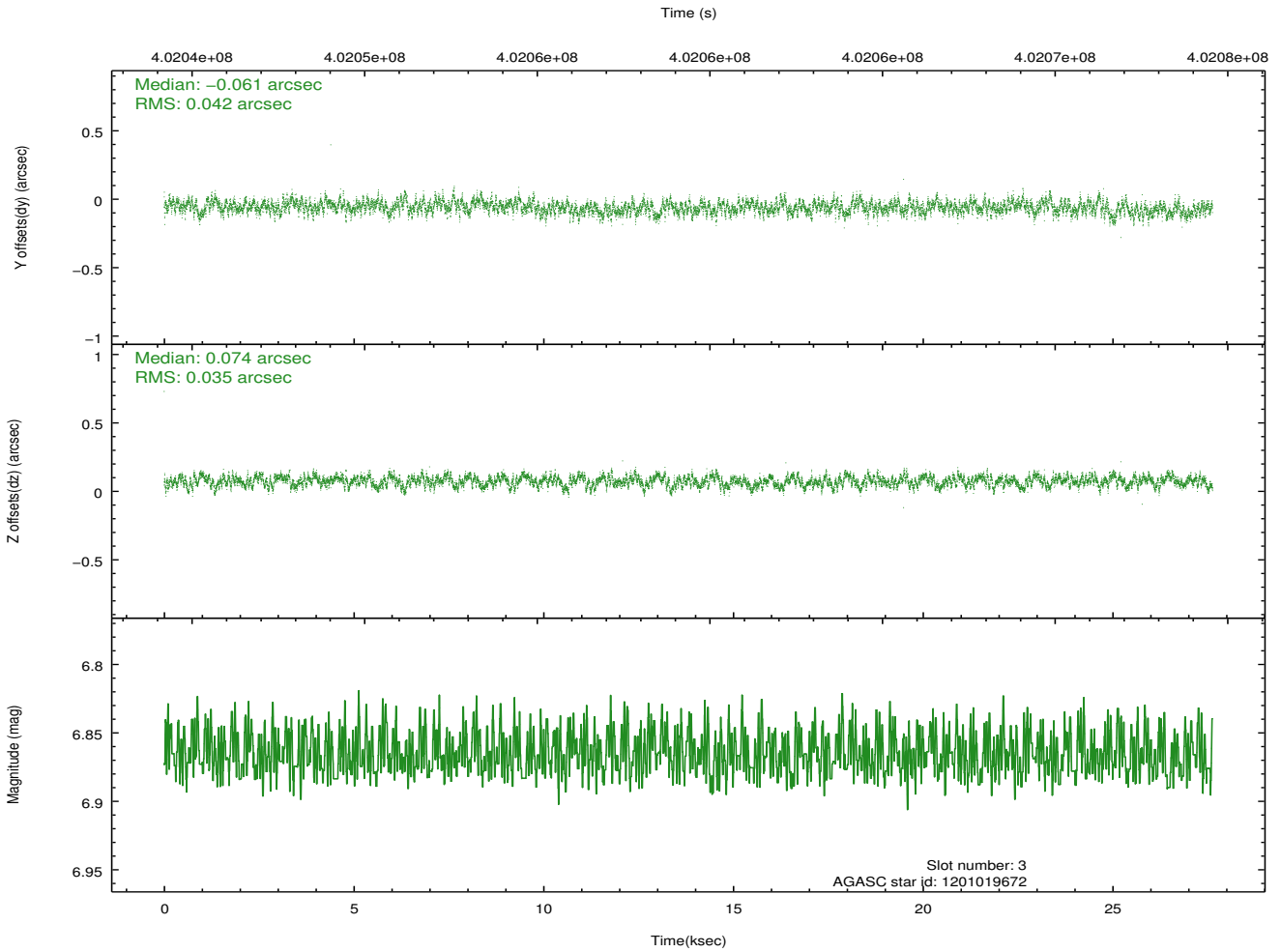
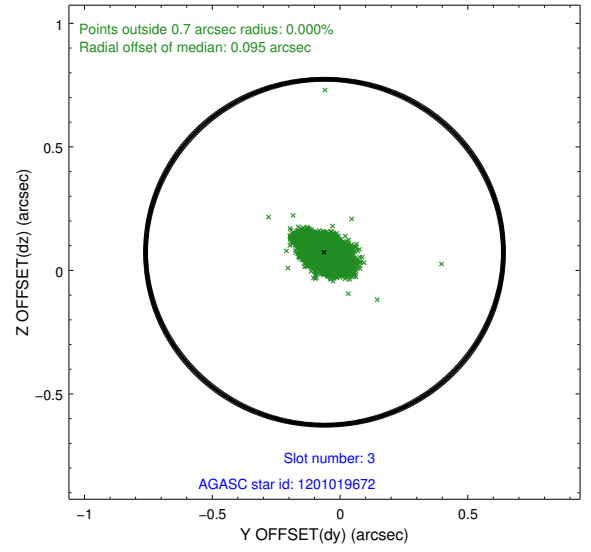
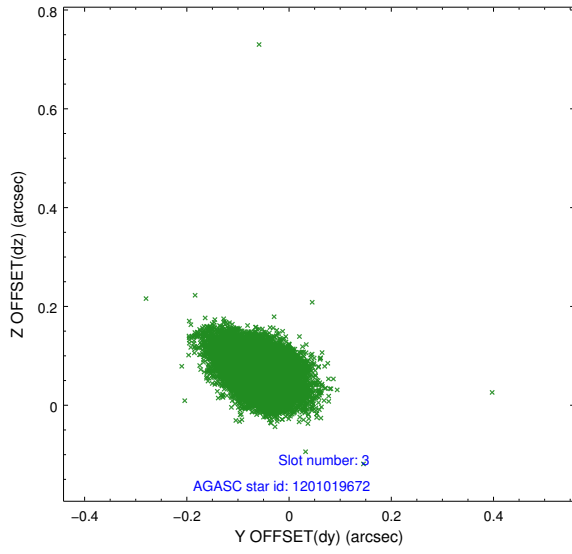


Slot Statistics

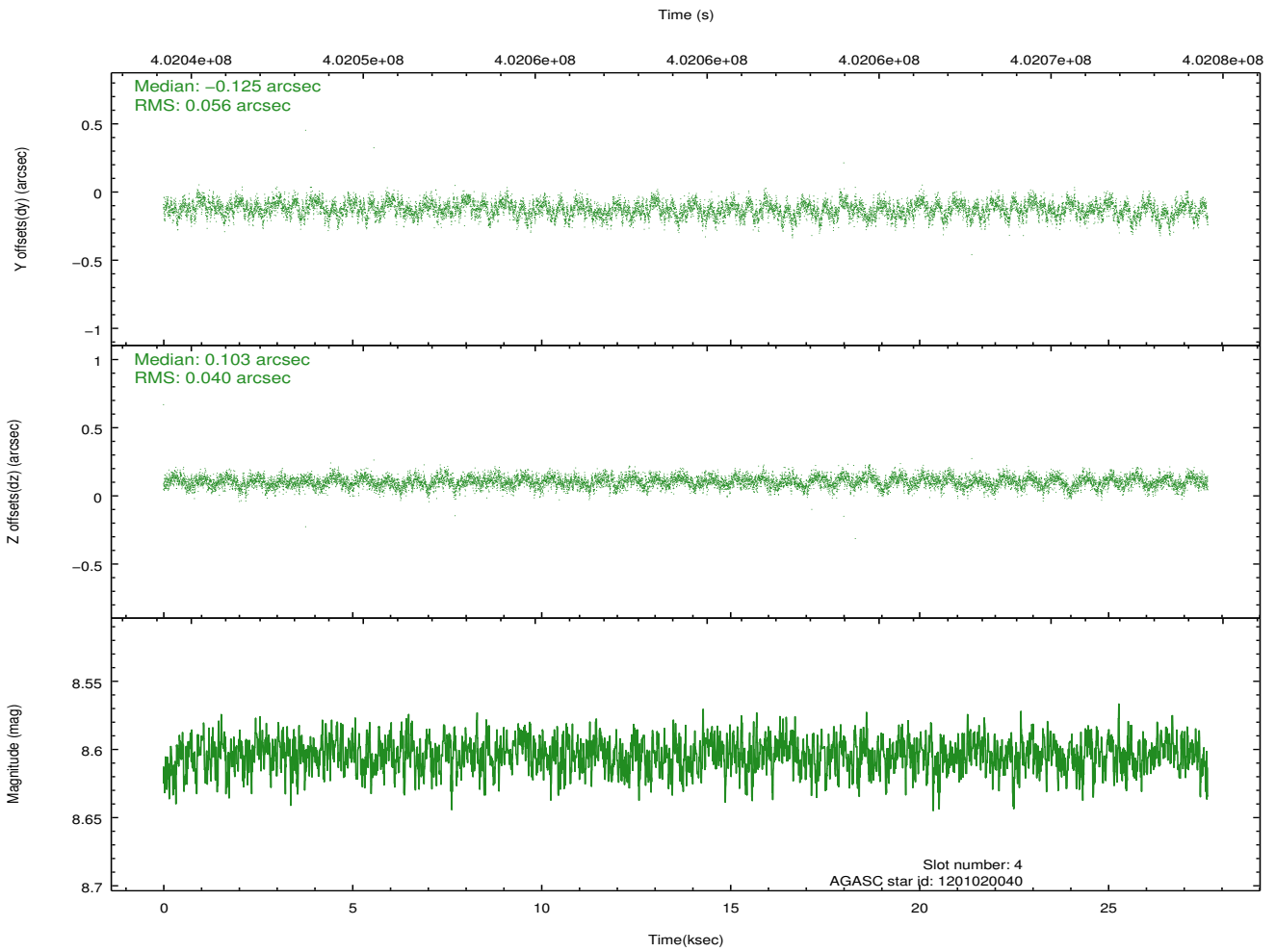
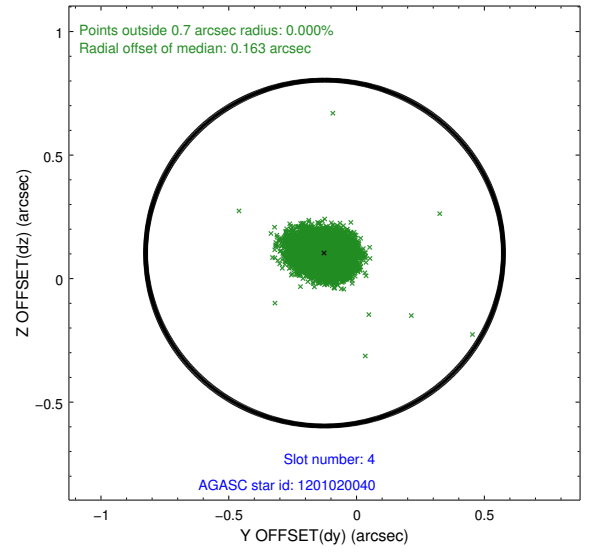
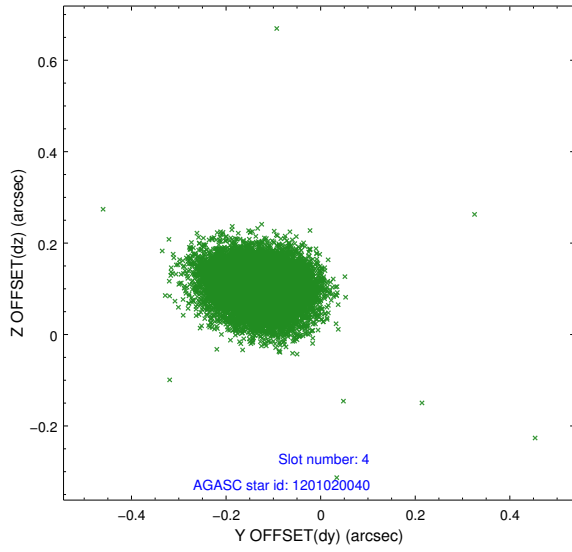
slot	status	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID	ACIS-S-1	7.01	6740	0.081	0.168	0.022	0.036	0.000000	0.000000	930.11	-1904.32
1	FID	ACIS-S-2	6.92	6740	-0.187	-0.125	0.020	0.031	0.000000	0.000000	-766.02	-1909.34
2	FID	ACIS-S-6	7.22	6740	0.084	-0.043	0.020	0.033	0.000000	0.000000	395.63	636.66
3	GUIDE	1201019672	6.87	13479	-0.061	0.074	0.057	0.095	85.312192	-68.770187	2179.68	-1459.73
4	GUIDE	1201020040	8.60	13472	-0.125	0.103	0.072	0.118	85.379163	-68.879396	1807.37	-1613.00
5	GUIDE	1201410616	9.33	13446	0.218	-0.181	0.106	0.172	82.516808	-69.784406	-2092.64	1323.14
6	GUIDE	1201541752	7.36	13476	-0.089	0.004	0.056	0.089	85.373891	-70.033762	-2288.84	-2316.46
7	GUIDE	1201542672	8.18	13464	0.062	-0.005	0.058	0.091	84.492488	-69.957531	-2209.90	-1199.93

2.4 Star Slots

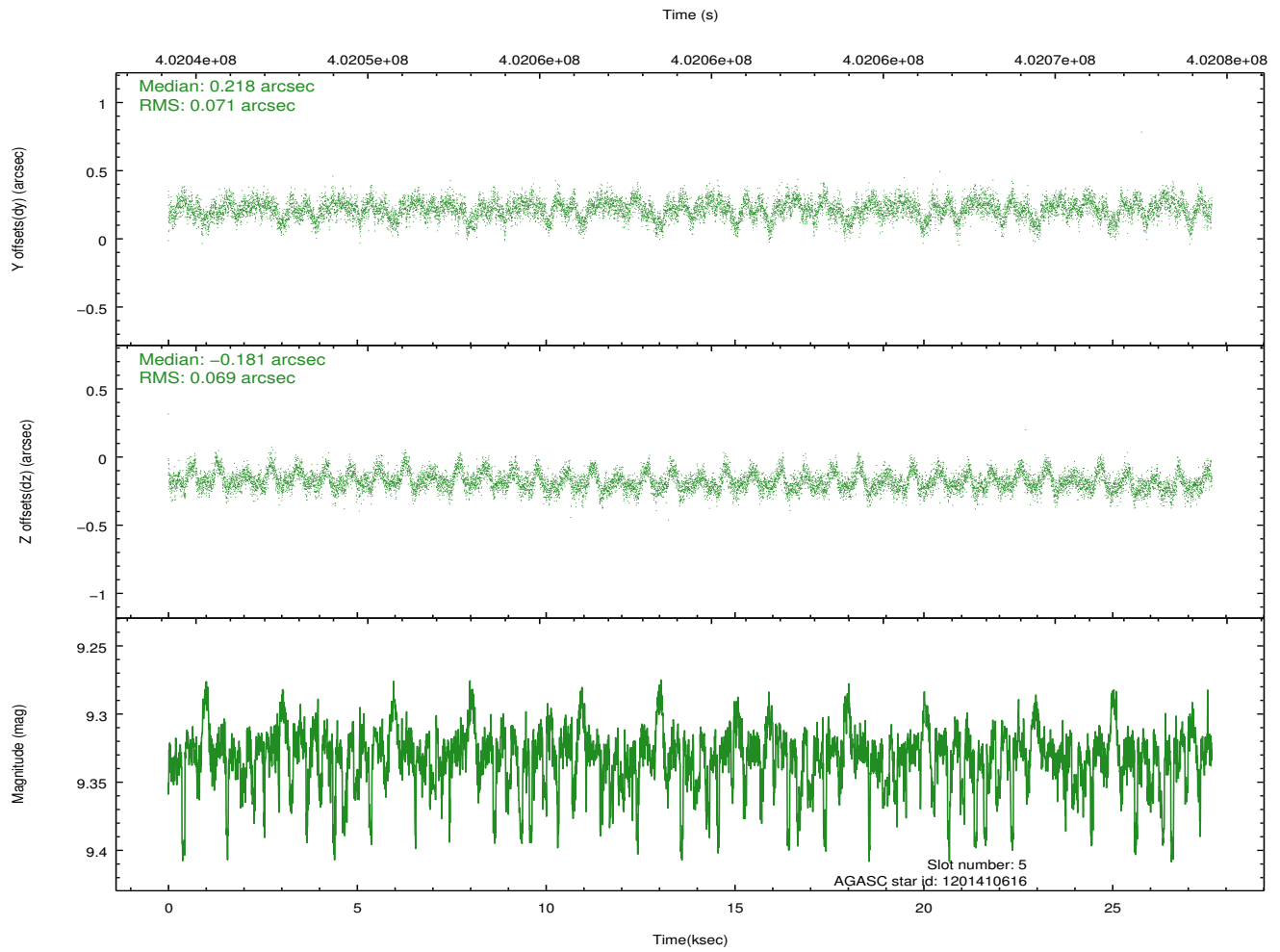
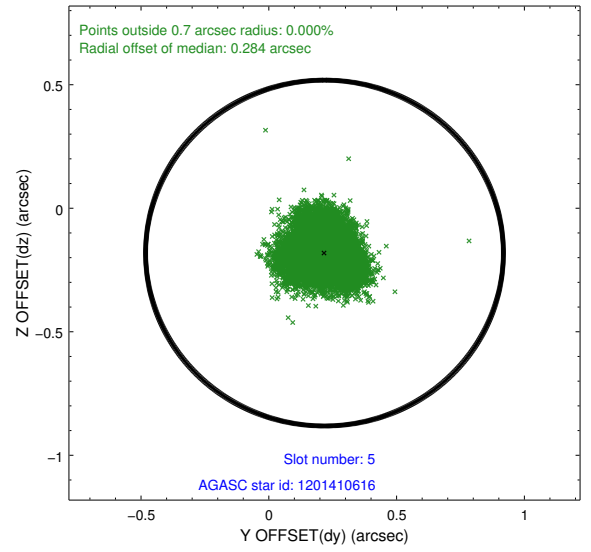
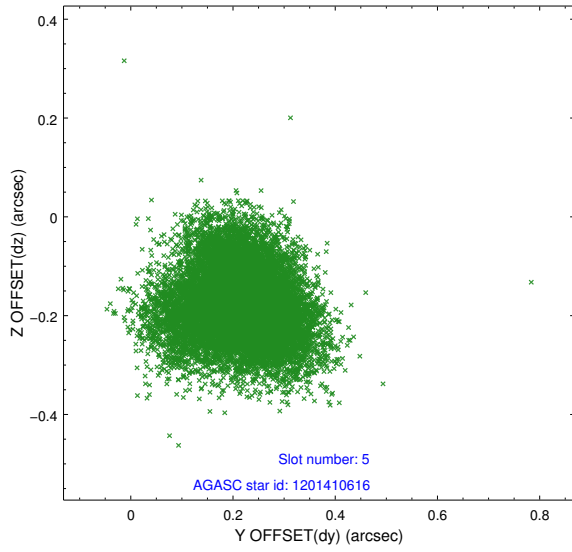
2.4.1 Slot 3



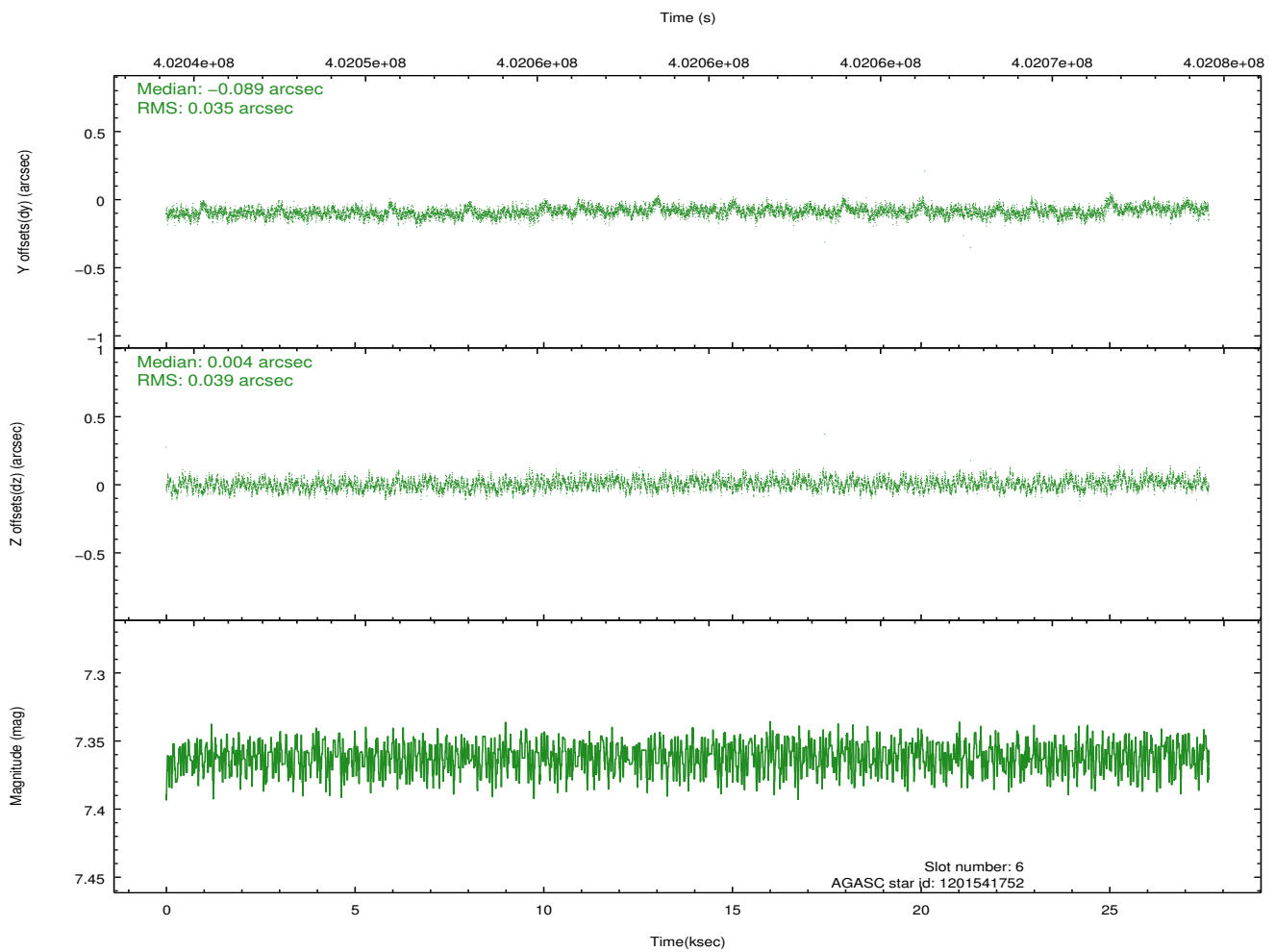
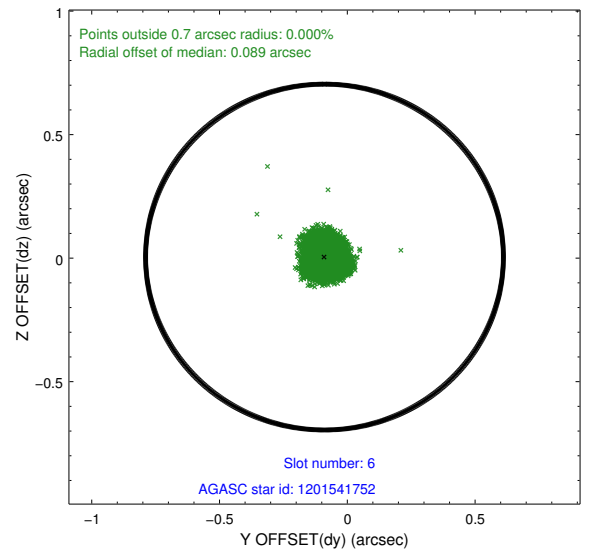
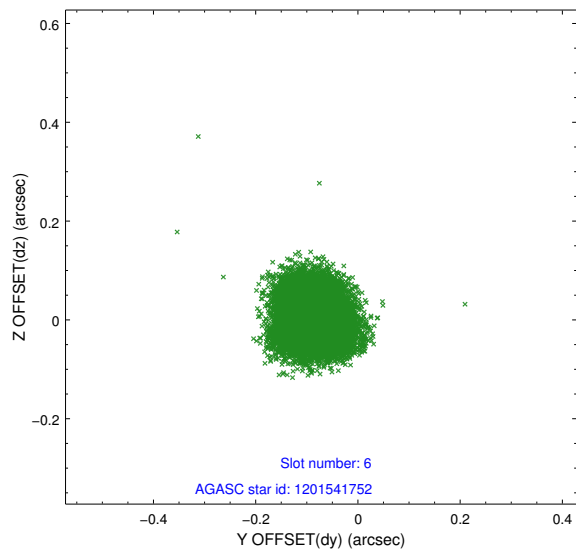
2.4.2 Slot 4



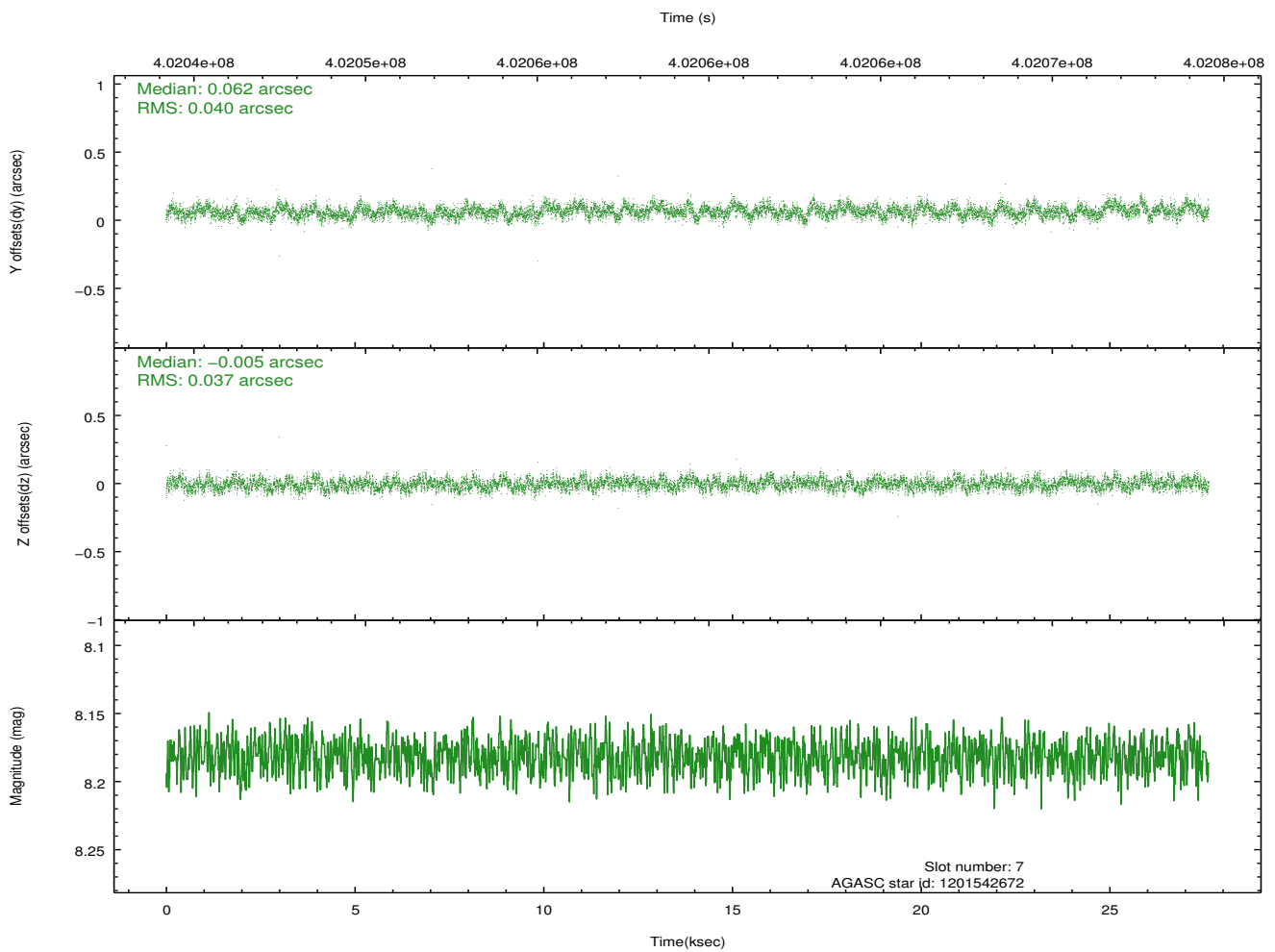
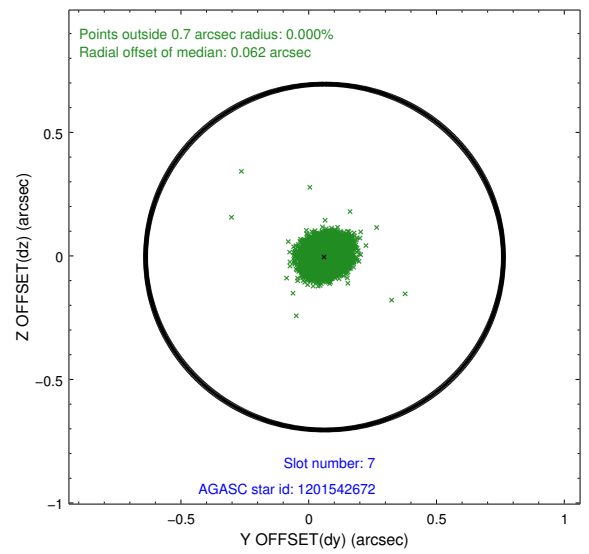
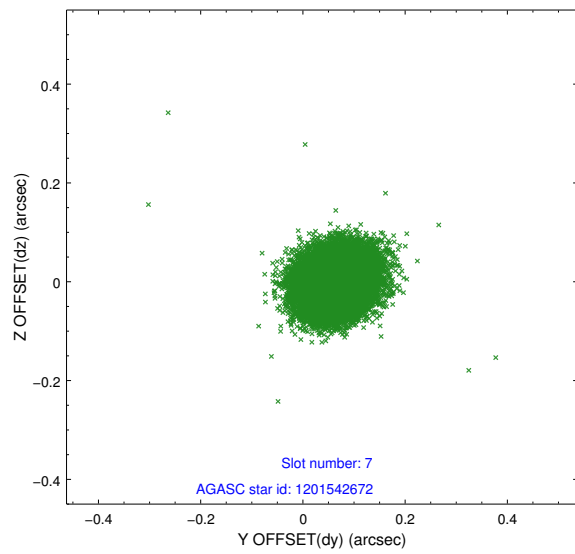
2.4.3 Slot 5



2.4.4 Slot 6

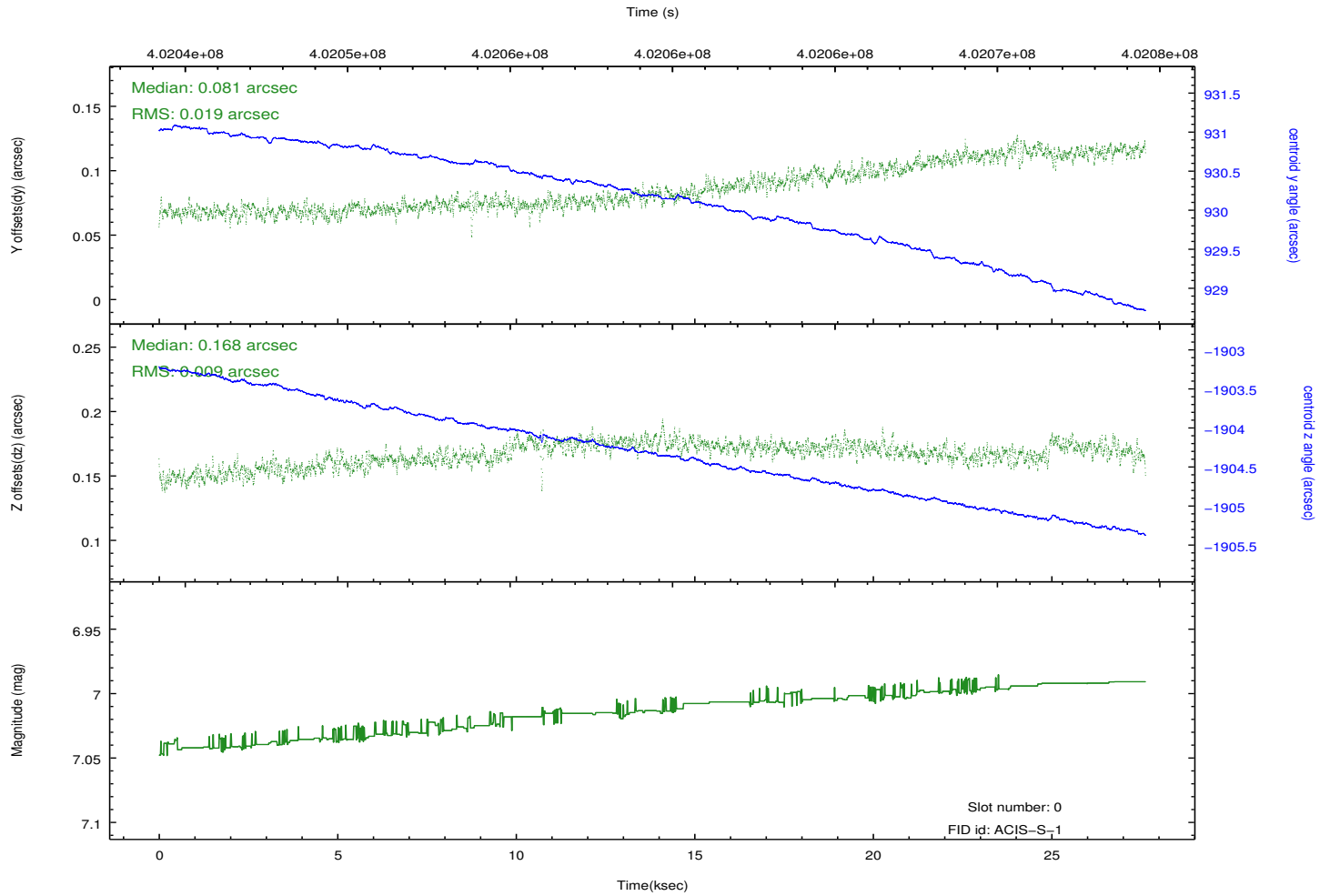
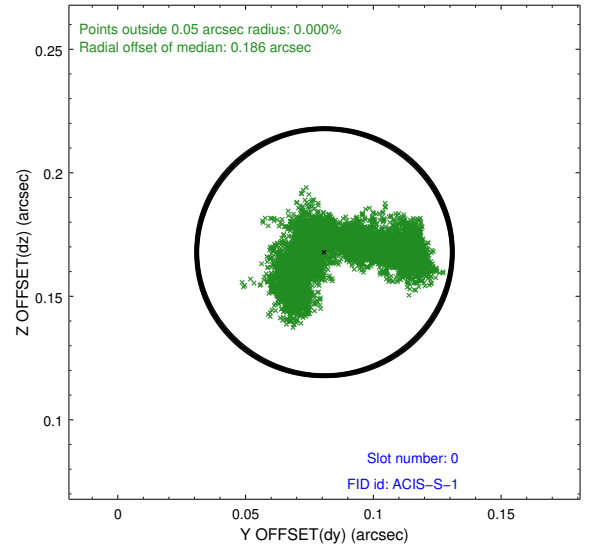
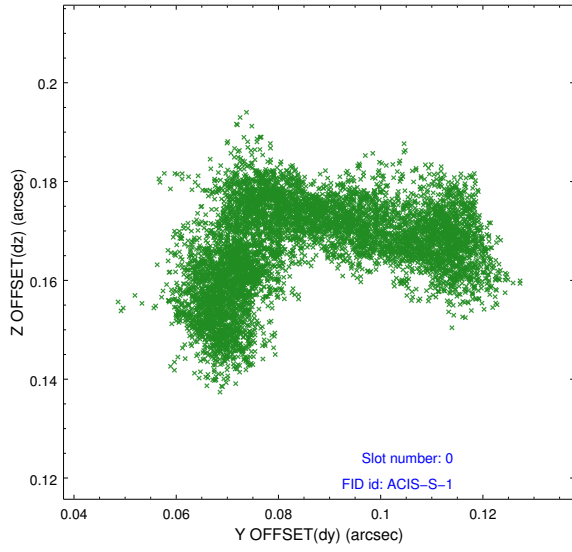


2.4.5 Slot 7

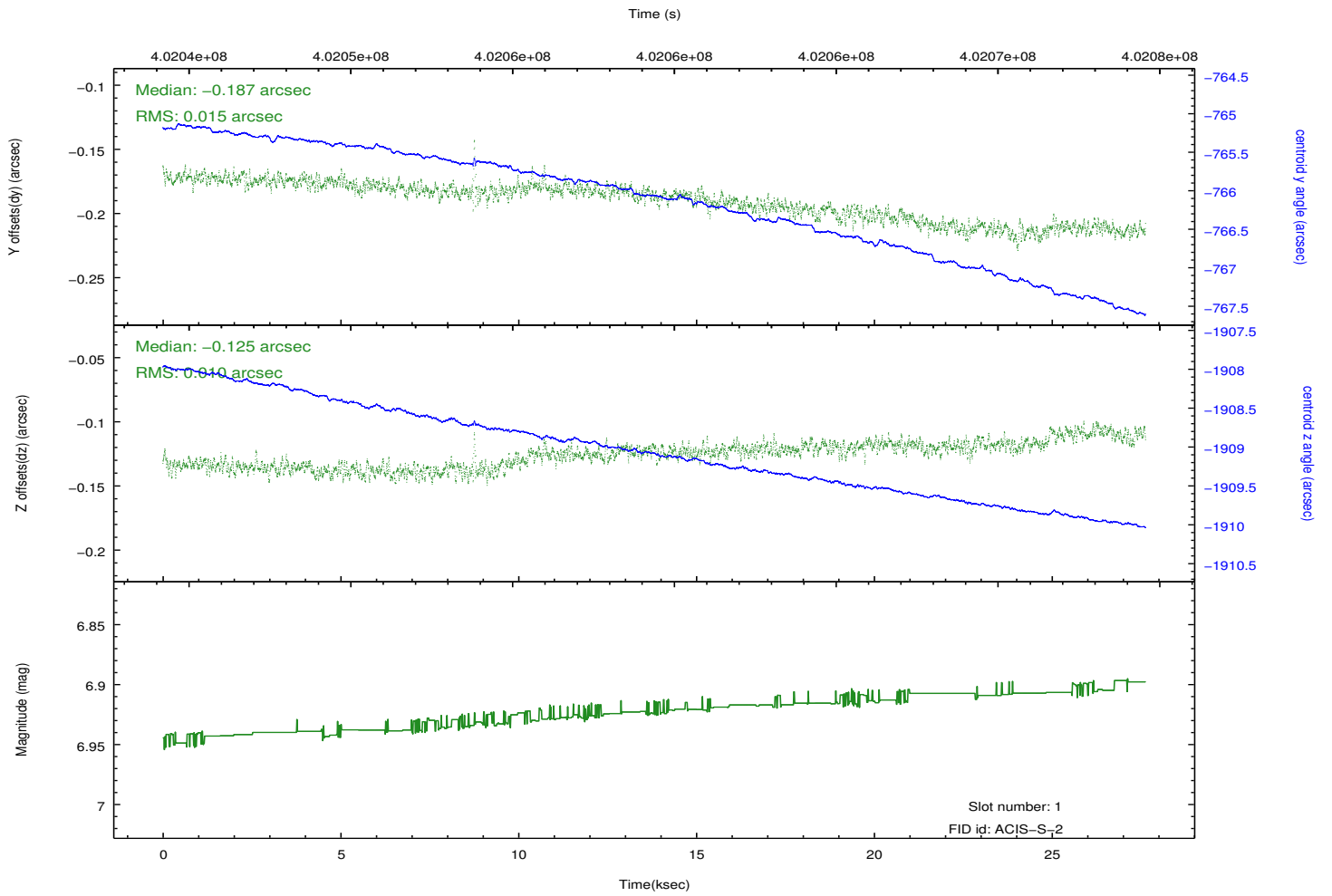
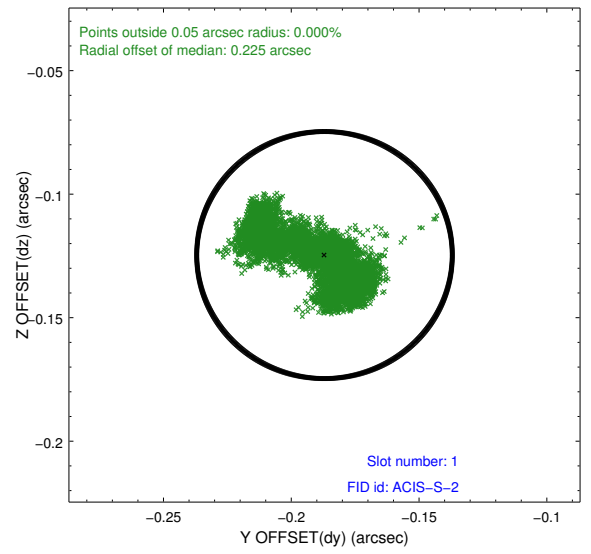
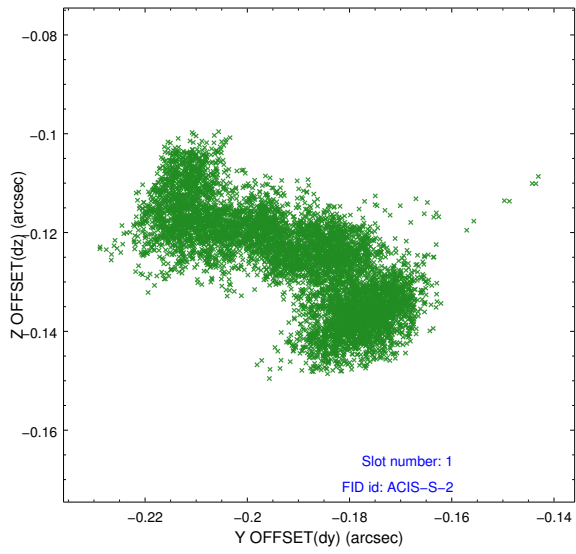


2.5 FID Slots

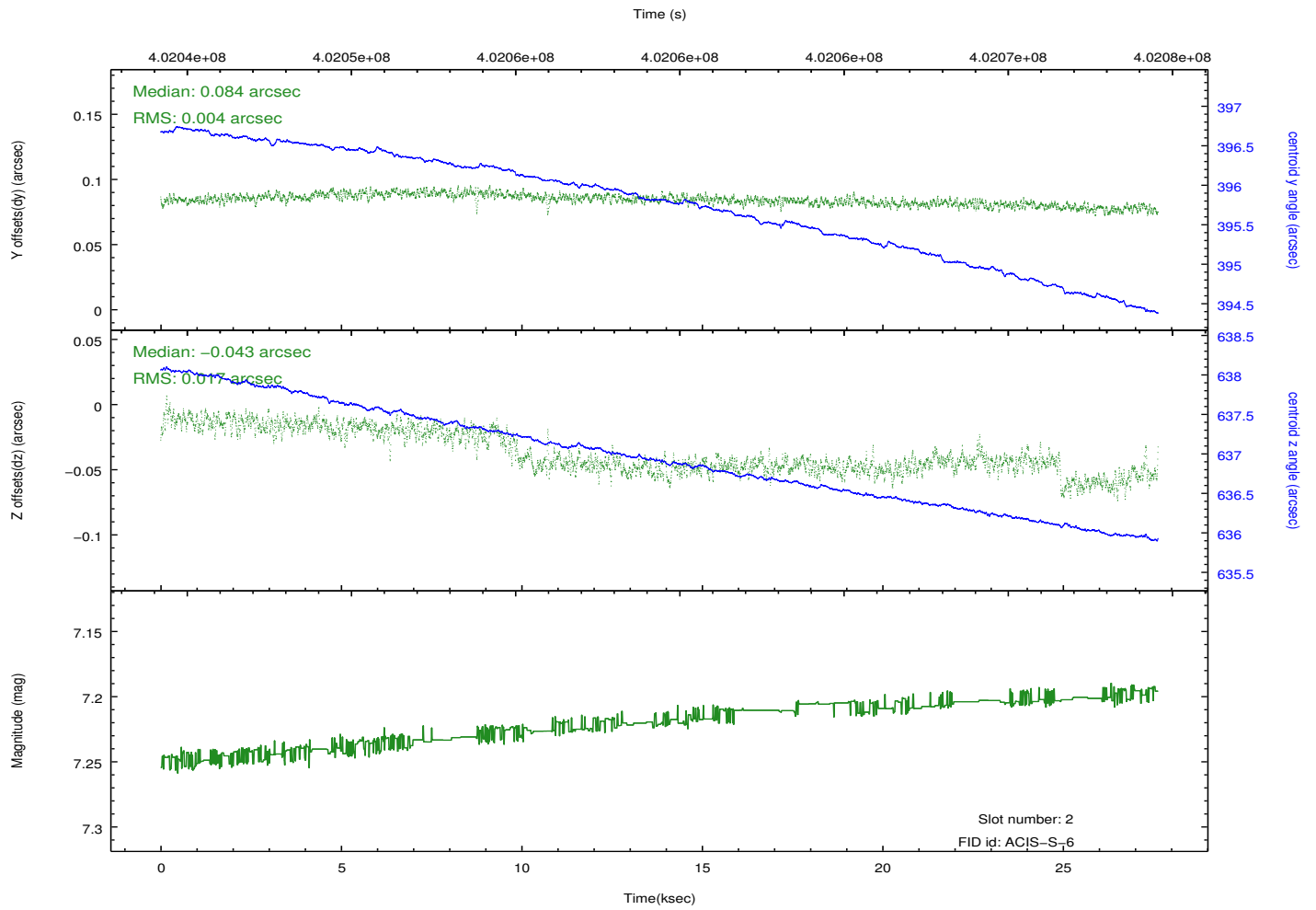
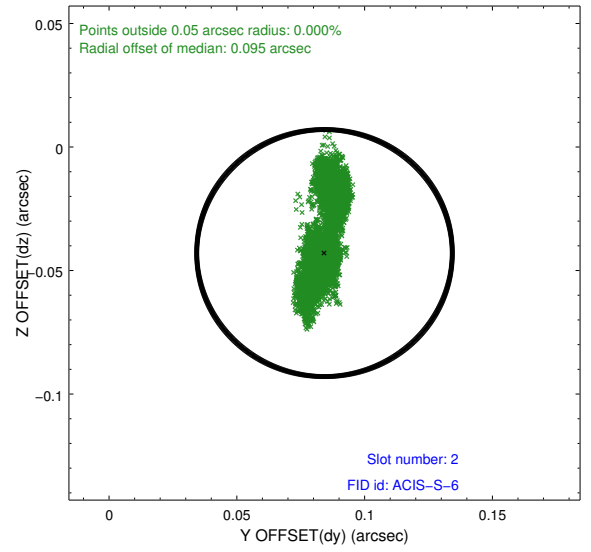
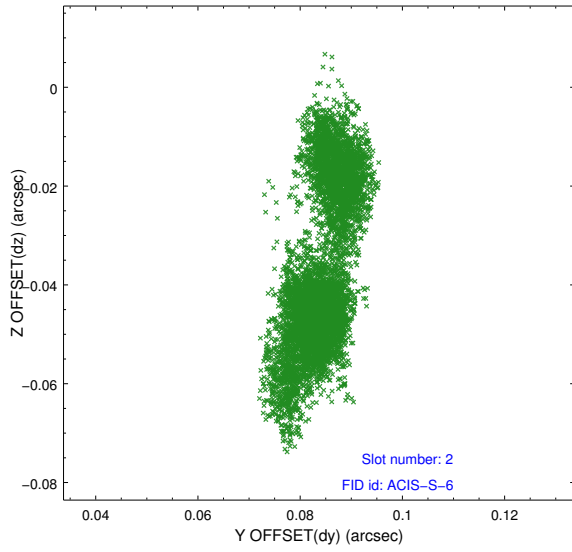
2.5.1 Slot 0



2.5.2 Slot 1



2.5.3 Slot 2

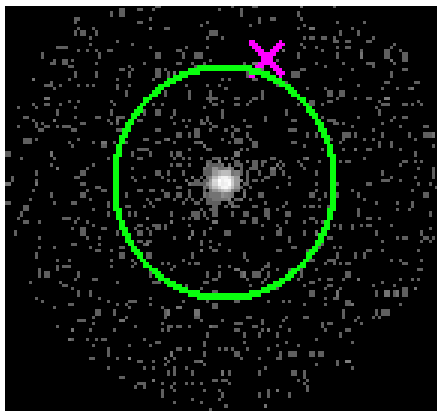


3 Gratings

3.1 HEG Arm



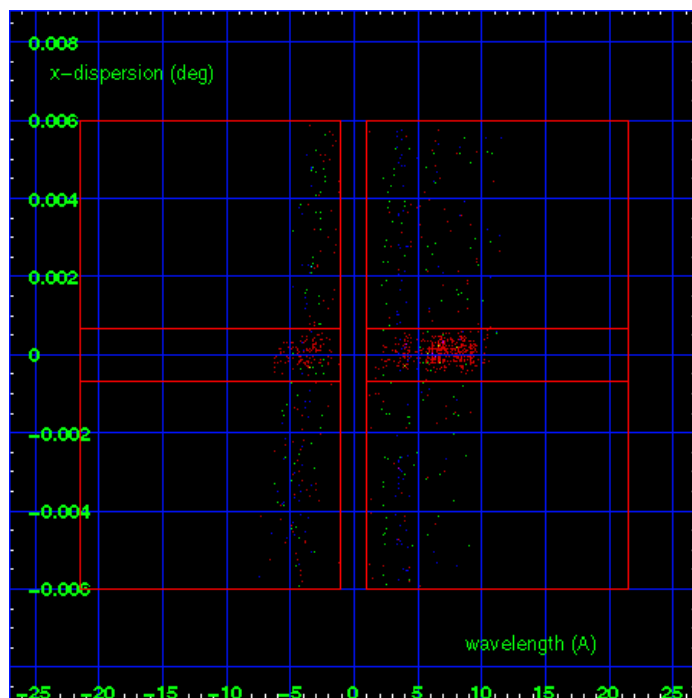
HEG Order Sort 123



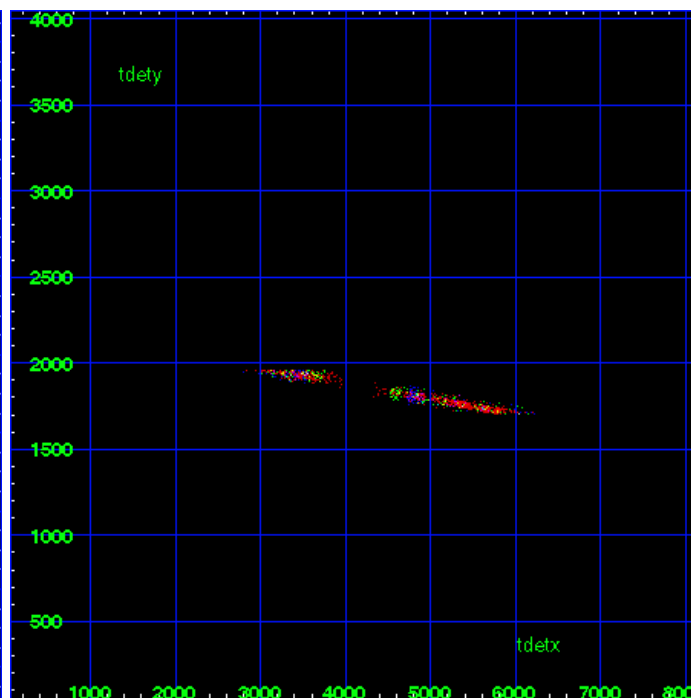
HEG Zero Order



HEG Order Sort ALL

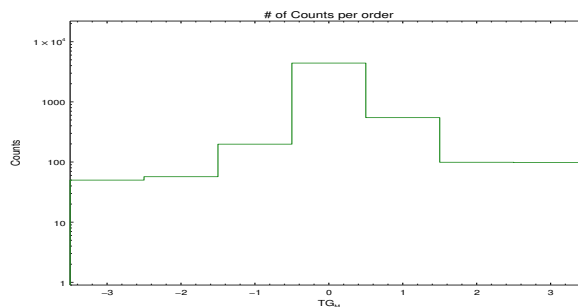


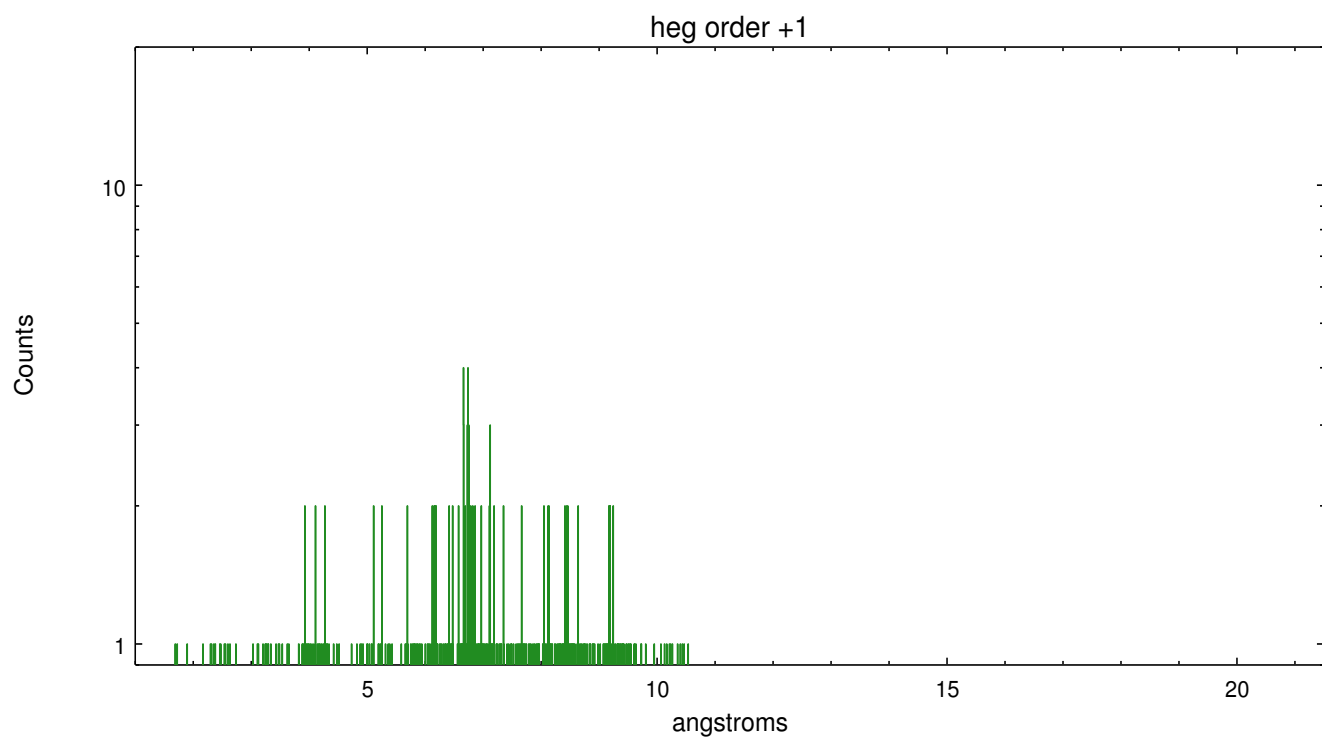
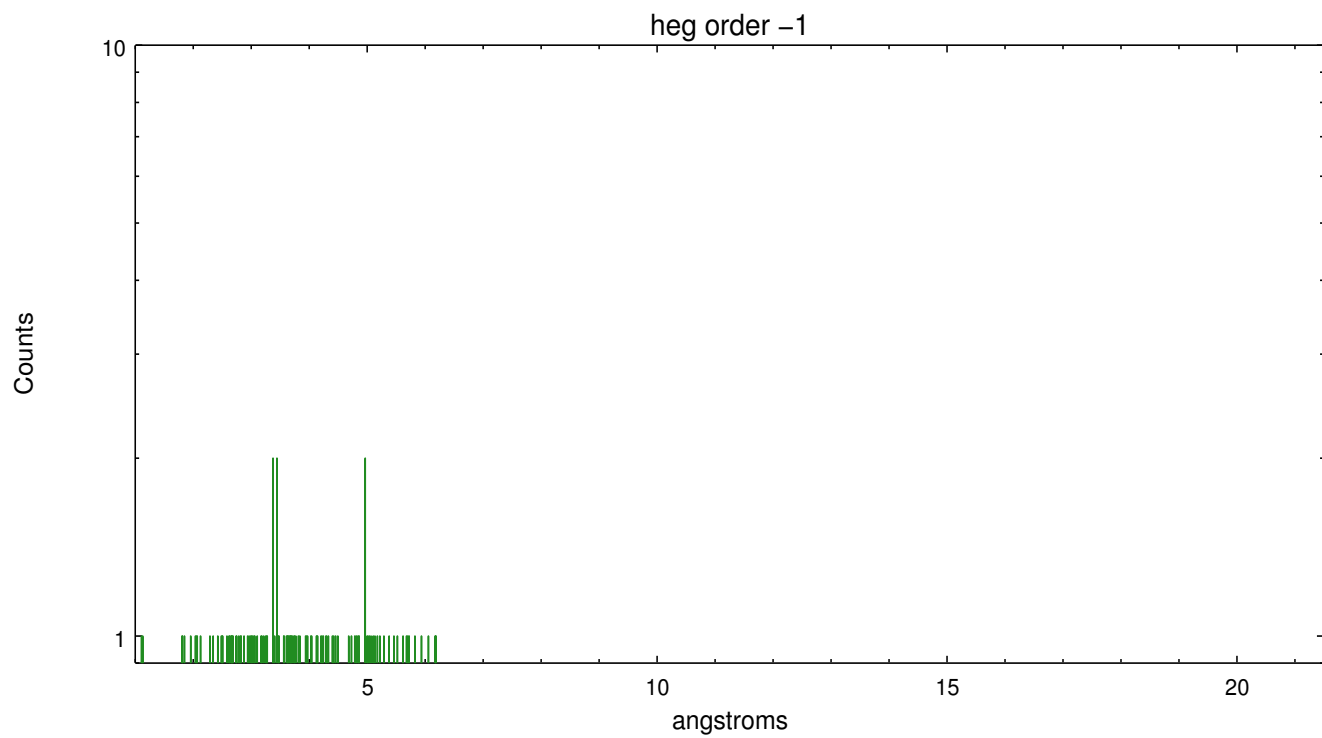
Spot Image HEG



Full Detector HEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	50	57	198	4416	547	99	98

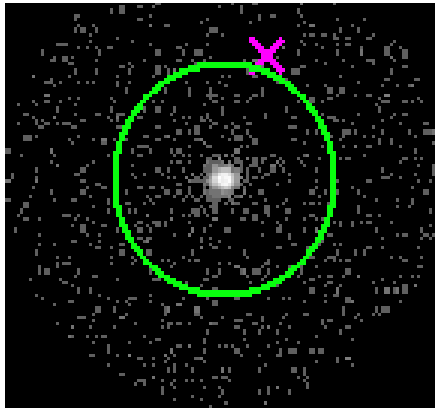




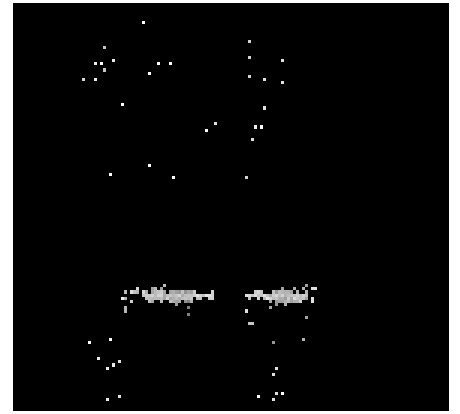
3.2 MEG Arm



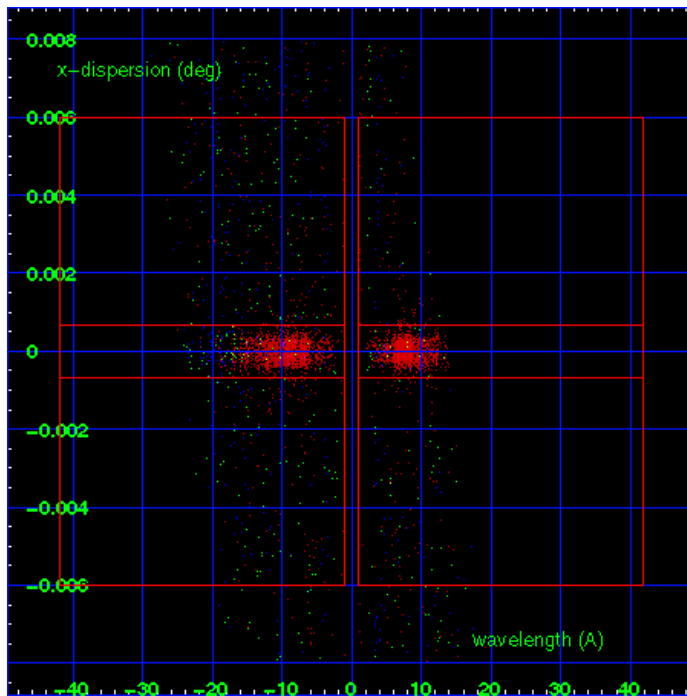
MEG Order Sort 123



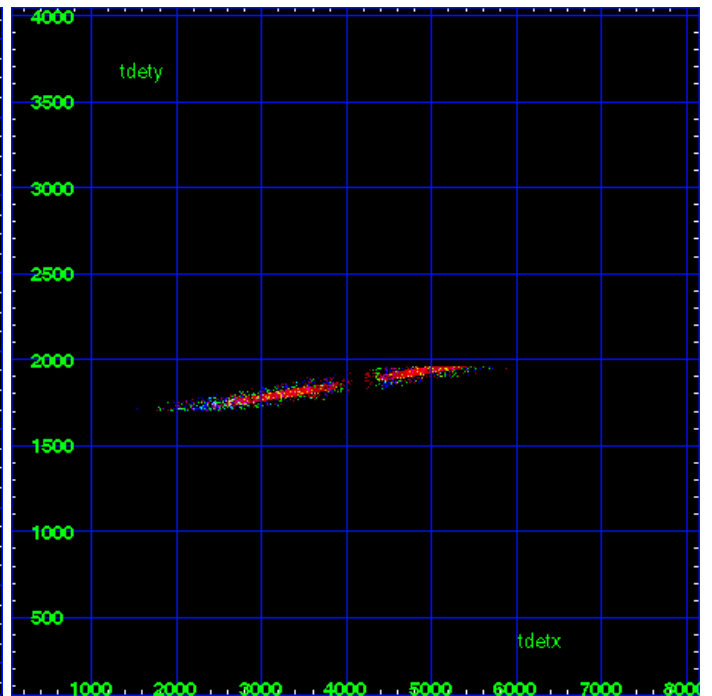
MEG Zero Order



MEG Order Sort ALL

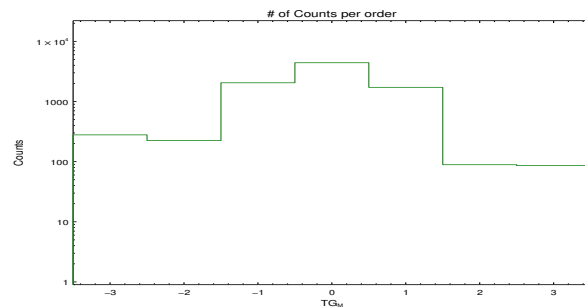


Spot Image MEG

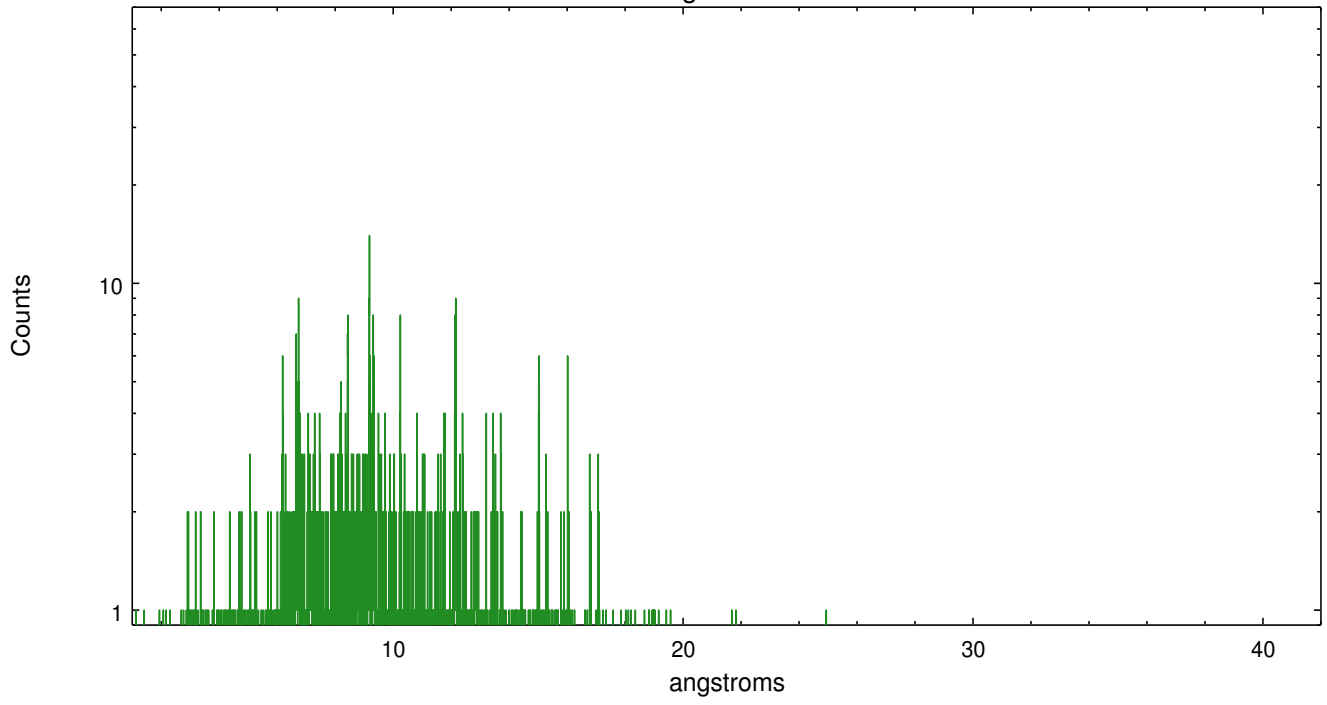


Full Detector MEG

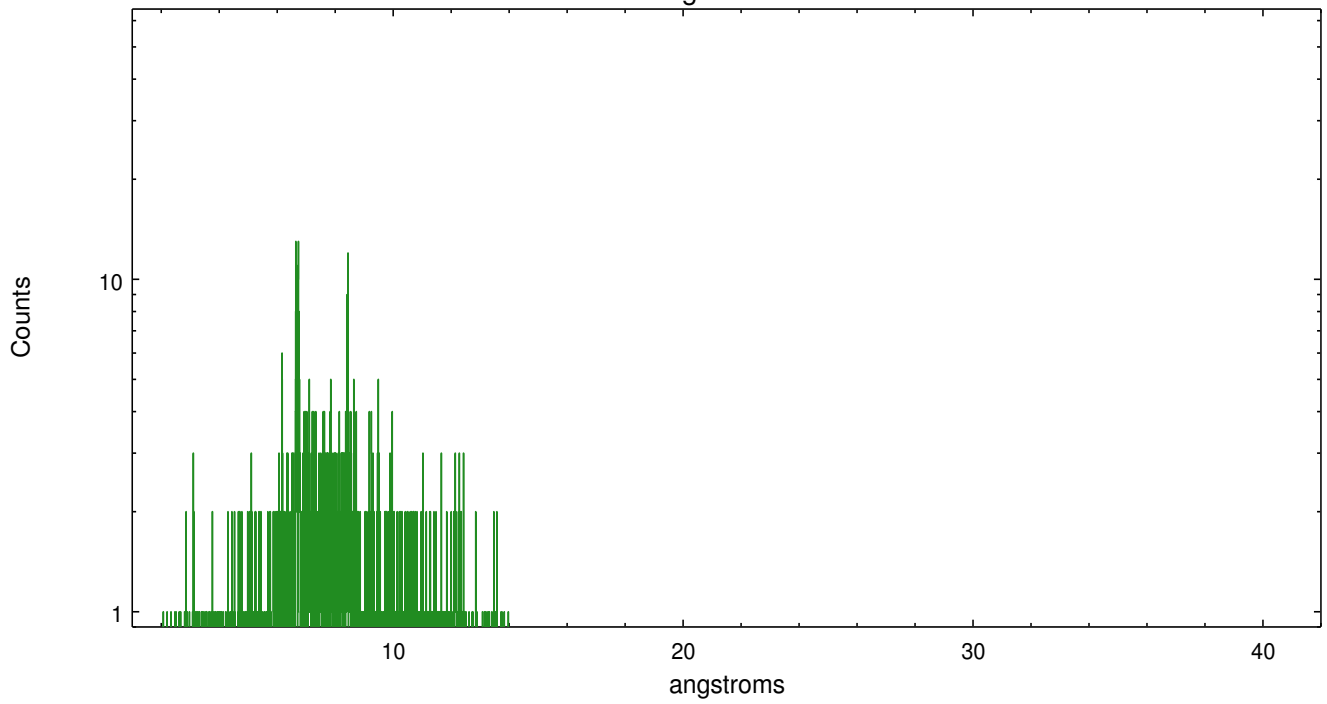
	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	279	224	2050	4416	1719	89	86



meg order -1



meg order +1



A Summary

A.1 Status

V&V Scientist	Joy Nichols
V&V Date (YYYY-MM-DD)	2012.07.19
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	27.569

A.2 Comments

Roll constraint met. ===

Source is extended with structure. The zeroth order used for extracting the spectral data in this processing is located at the centroid of the SNR, but is not located at the position of the brightest X-ray emission in the supernova remnant.

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. ===

The sub-array configuration chosen and the off-center placement of the target eliminate counts from the soft ends of the spectral arms for both HEG negative (>7A) and MEG positive (>15A) orders.