

V&V Reference Report

L2 ASCDS Version : 8.4.5

Observation 2416 - L2 Version 3
Chandra X-Ray Center

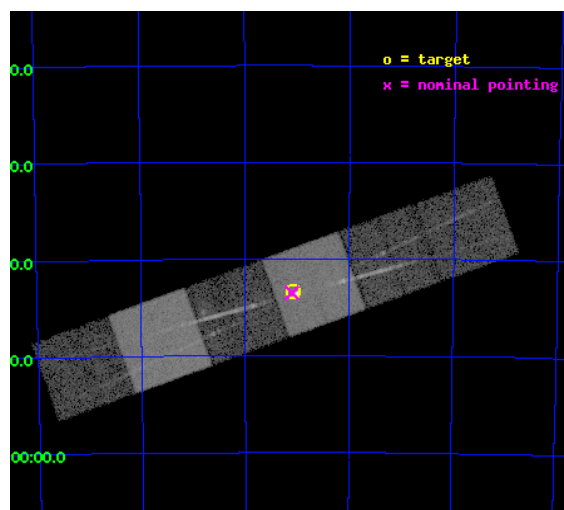
L2 Processing Date : Oct 26 2012

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1 Front

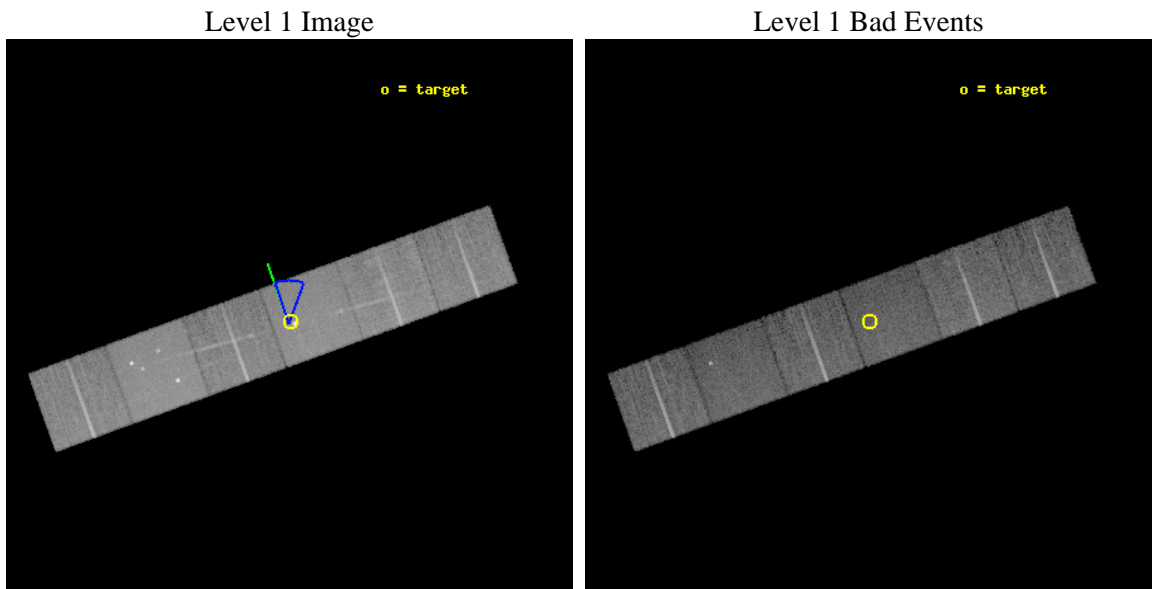
seq_num	500111	Sequence number
obs_id	2416	Observation id
title	HIGH RESOLUTION SPECTRA OF YOUNG SUPERNOVA REMNANTS	Proposal title
observer	Prof Claude Canizares	Principal investigator
object	N103B	Source name
dtcycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	77.26625	Observer's specified target RA [deg]
dec_targ	-68.721944	Observer's specified target Dec [deg]
ra_nom	77.275380863372	Nominal RA [deg]
dec_nom	-68.725016056469	Nominal Dec [deg]
roll_nom	340.10469436518	Nominal Roll [deg]
revision	3	Processing version of data
ontime	17619.200016394	Sum of GTIs [s]
livetime	17396.095096778	Livetime [s]
ontime4	17619.200016394	Sum of GTIs [s]
ontime5	17619.200016394	Sum of GTIs [s]
ontime6	17619.200016394	Sum of GTIs [s]
ontime7	17619.200016394	Sum of GTIs [s]
ontime8	17619.200016394	Sum of GTIs [s]
ontime9	17615.959056154	Sum of GTIs [s]
l2events	178347	Number of level 2 events



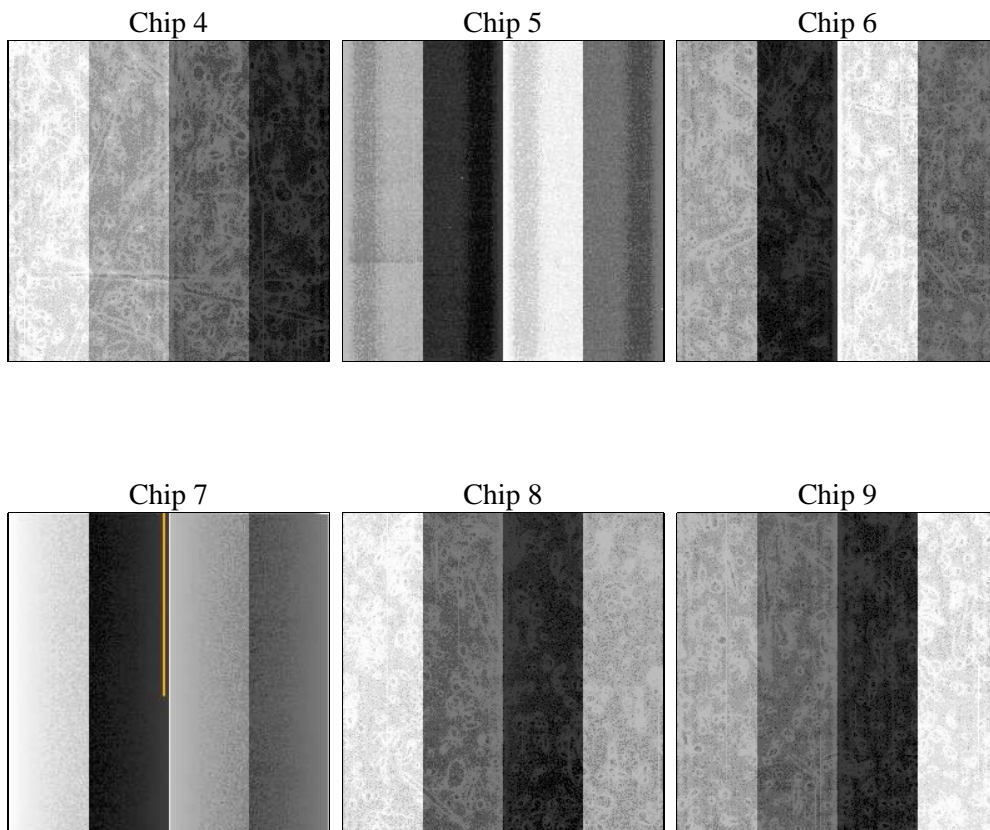
2 OBI

2.1 OBI

2.1.1 Images



2.1.2 Bias



2.1.3 Parameters

obi_num	0	Obi number	sched_exp_time	17667.406000	[s] Scheduled observation exposure time
ascdsver	8.4.5	Processing system revision	ontime	17619.200016394	Sum of GTIs [s]
caldbver	4.5.1.1	 	ontime4	17619.200016394	Sum of GTIs [s]
date	2012-09-06T09:25:19	Date and time of file creation	ontime5	17619.200016394	Sum of GTIs [s]
revision	3	Processing version of data	ontime6	17619.200016394	Sum of GTIs [s]
			ontime7	17619.200016394	Sum of GTIs [s]
			ontime8	17619.200016394	Sum of GTIs [s]
			ontime9	17615.959056154	Sum of GTIs [s]
			l1events	760422	Number of level 1 events

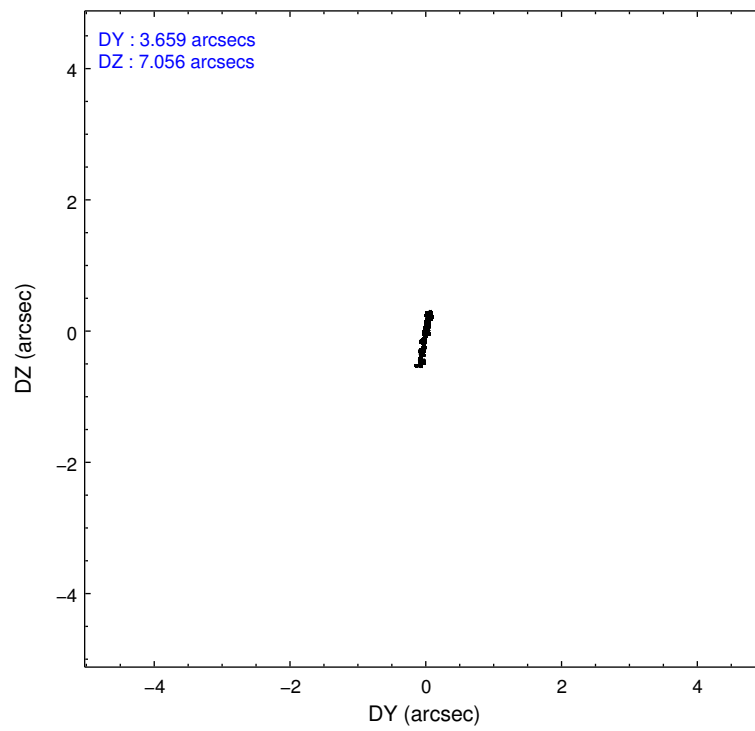
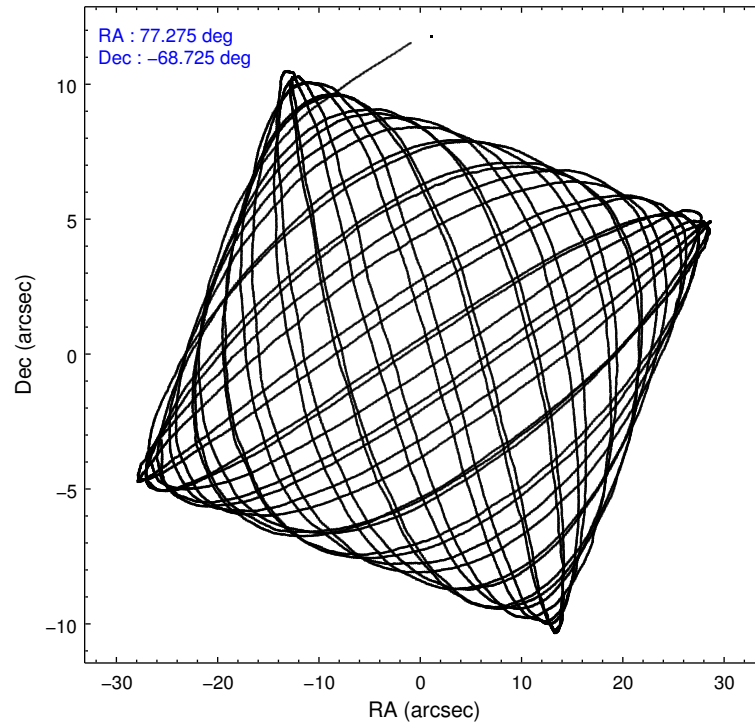
2.1.4 Events

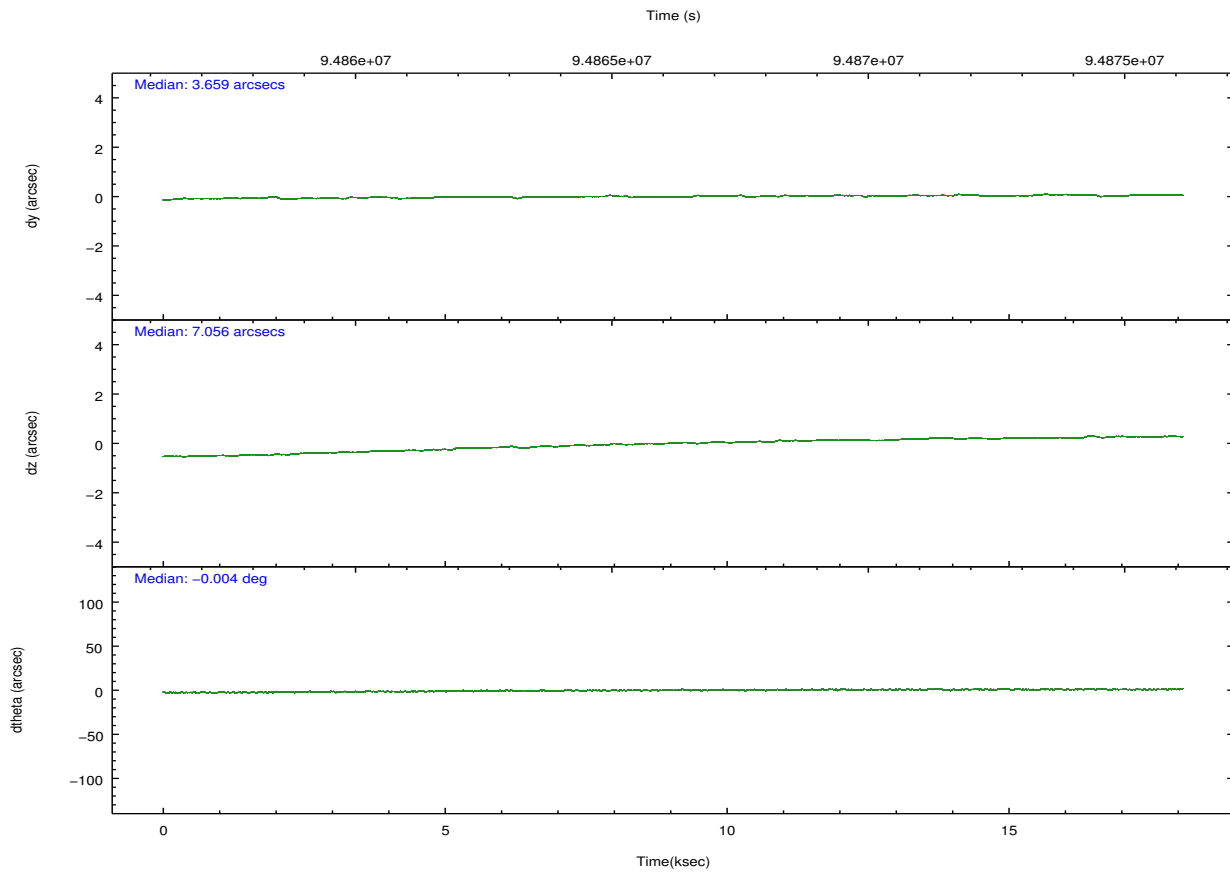
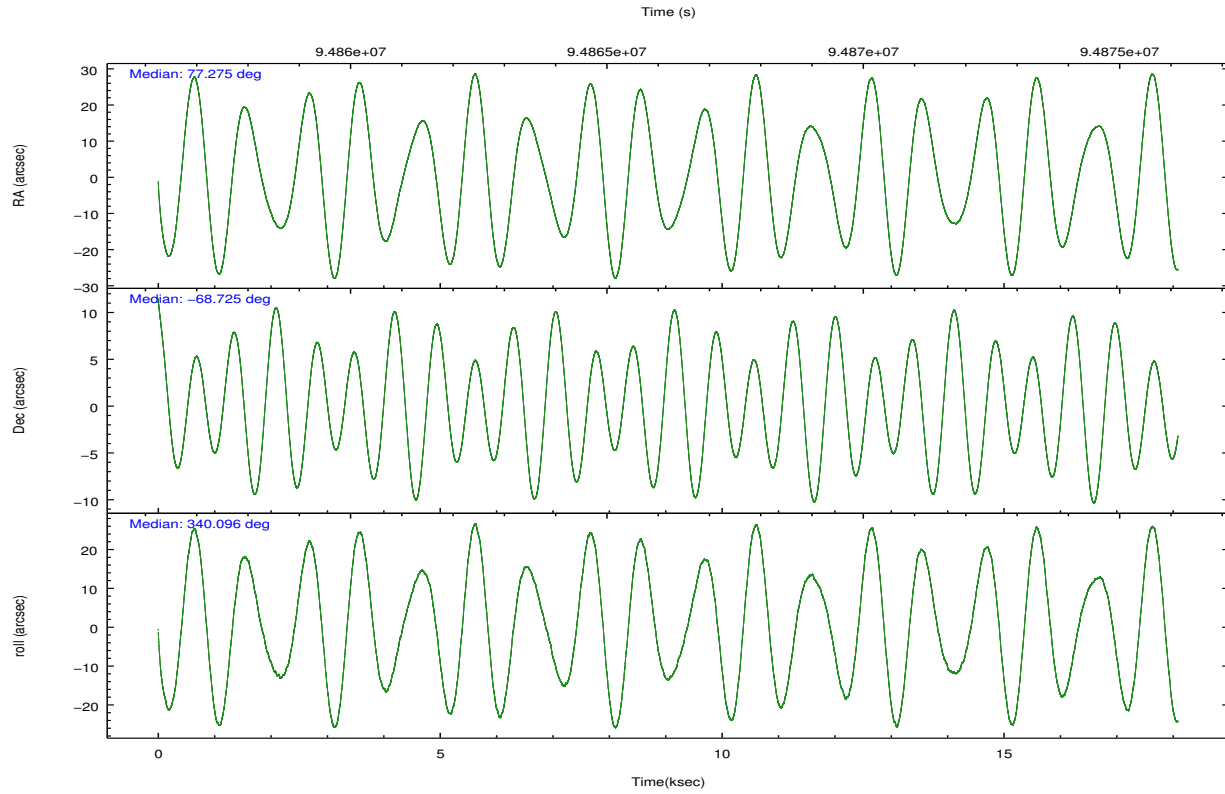
	ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9		ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
level 1 events	115324	152384	110632	143245	135017	103820	grade 0 events	5607	11039	8873	8340	11305	5542
rejected events	102407	80021	93930	77508	105656	90986		4%	7%	8%	5%	8%	5%
rejected %	88%	52%	84%	54%	78%	87%	grade 1 events	65	167	68	127	69	54
								0%	0%	0%	0%	0%	0%
							grade 2 events	2943	21143	2729	13625	5824	2428
								2%	13%	2%	9%	4%	2%
							grade 3 events	1161	2934	1410	6492	2830	1201
								1%	1%	1%	4%	2%	1%
							grade 4 events	1109	2826	1293	6225	2635	1219
								0%	1%	1%	4%	1%	1%
							grade 5 events	3690	11014	4306	12676	5525	4431
								3%	7%	3%	8%	4%	4%
							grade 6 events	2099	34435	2398	31076	6768	2446
								1%	22%	2%	21%	5%	2%
							grade 7 events	98650	68826	89555	64684	100061	86499
								85%	45%	80%	45%	74%	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	Number of optional ACIS chips dropped	0	0
Observation mode	POINTING	POINTING	On-chip summing requested	N	N
[deg] Pointing RA	77.201357	77.27538086337178	Subarray requested	NONE	NONE
[deg] Pointing Dec	-68.730022	-68.72501605646907	Alternating exposures requested	N	N
[deg] Pointing Roll	339.879085	340.1046943651776	[s] Primary exposure time	0.000000	3.2
[deg] Roll angle	0.000000	0.000000			
[deg] Roll tolerance	20.000000	20.000000			
Roll constraint allows 180D rotation	N	N			
[mm] SIM focus pos	-0.684267	-0.6828225247311905			
[mm] SIM defocus	0	0.001444936568705701			
[mm] SIM translation stage pos	-190.132523	-190.1400660498719			
[mm] SIM translation stage offset	0	0.00754346686406393			
[s] Observation start time (MET)	94857567.184000	94856494.232483			
Observation start date	2001-01-02T21:18:23	2001-01-02T21:01:34			
[s] Observation end time (MET)	94875235.184000	94875932.84572899			
Observation end date	2001-01-03T02:12:51	2001-01-03T02:25:32			
Read mode	TIMED	TIMED			

2.3 Aspect



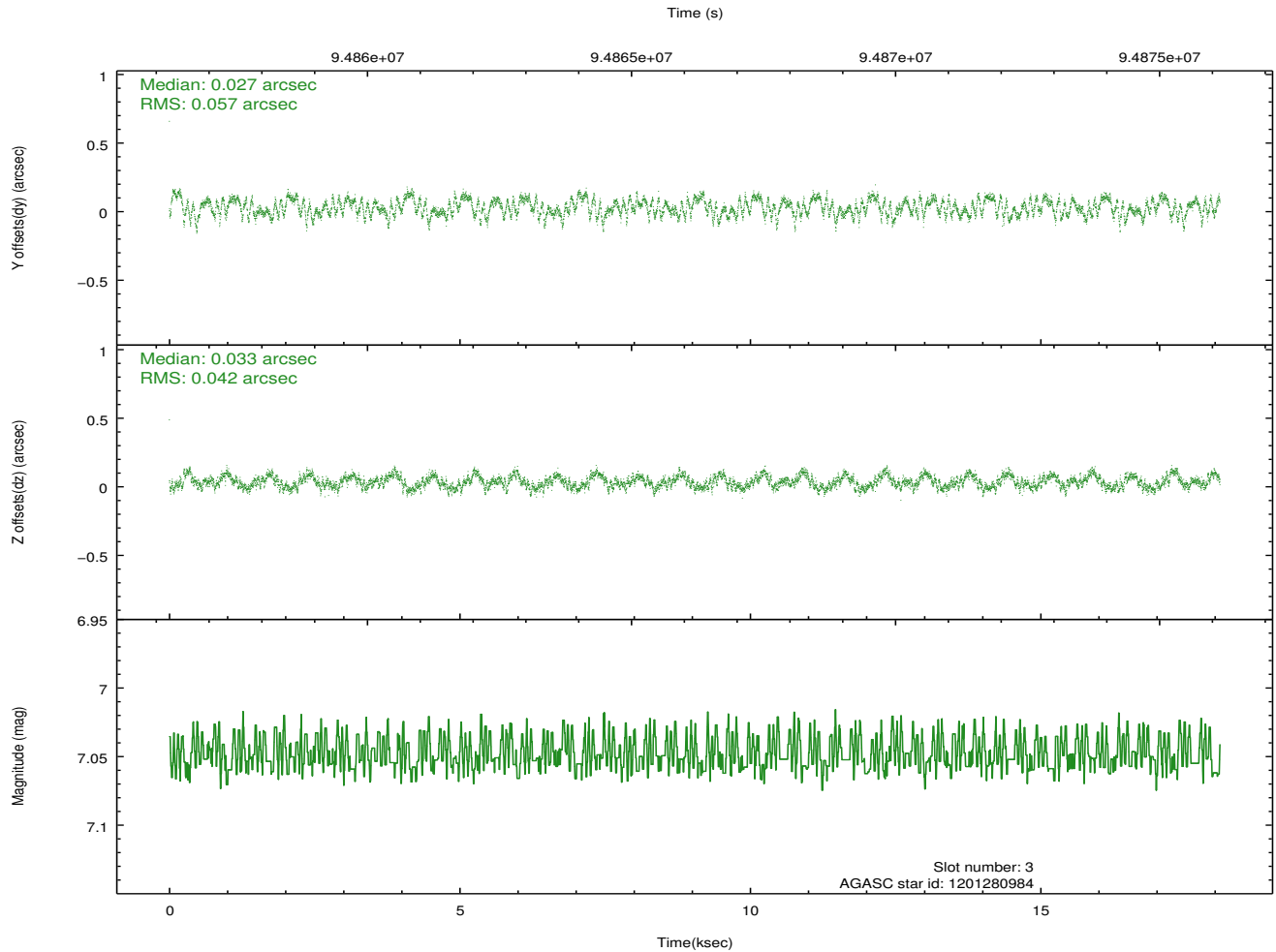
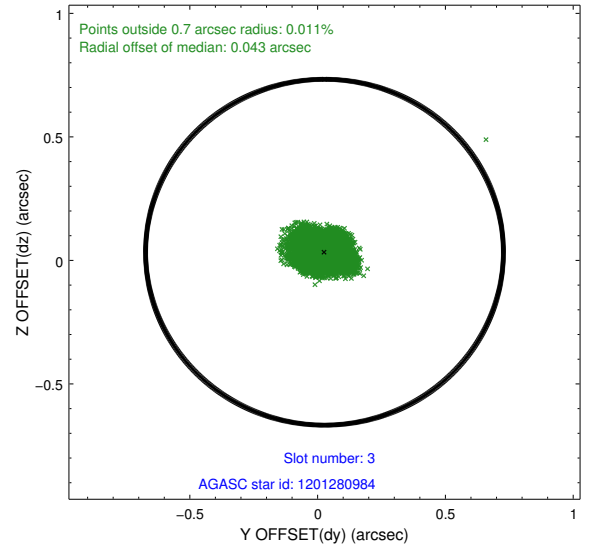
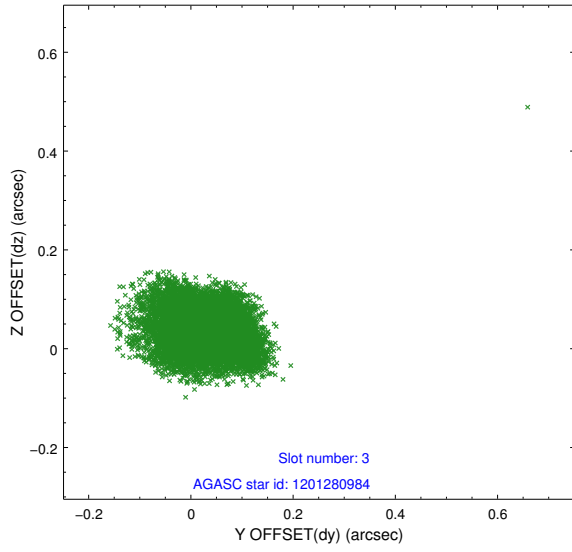


Slot Statistics

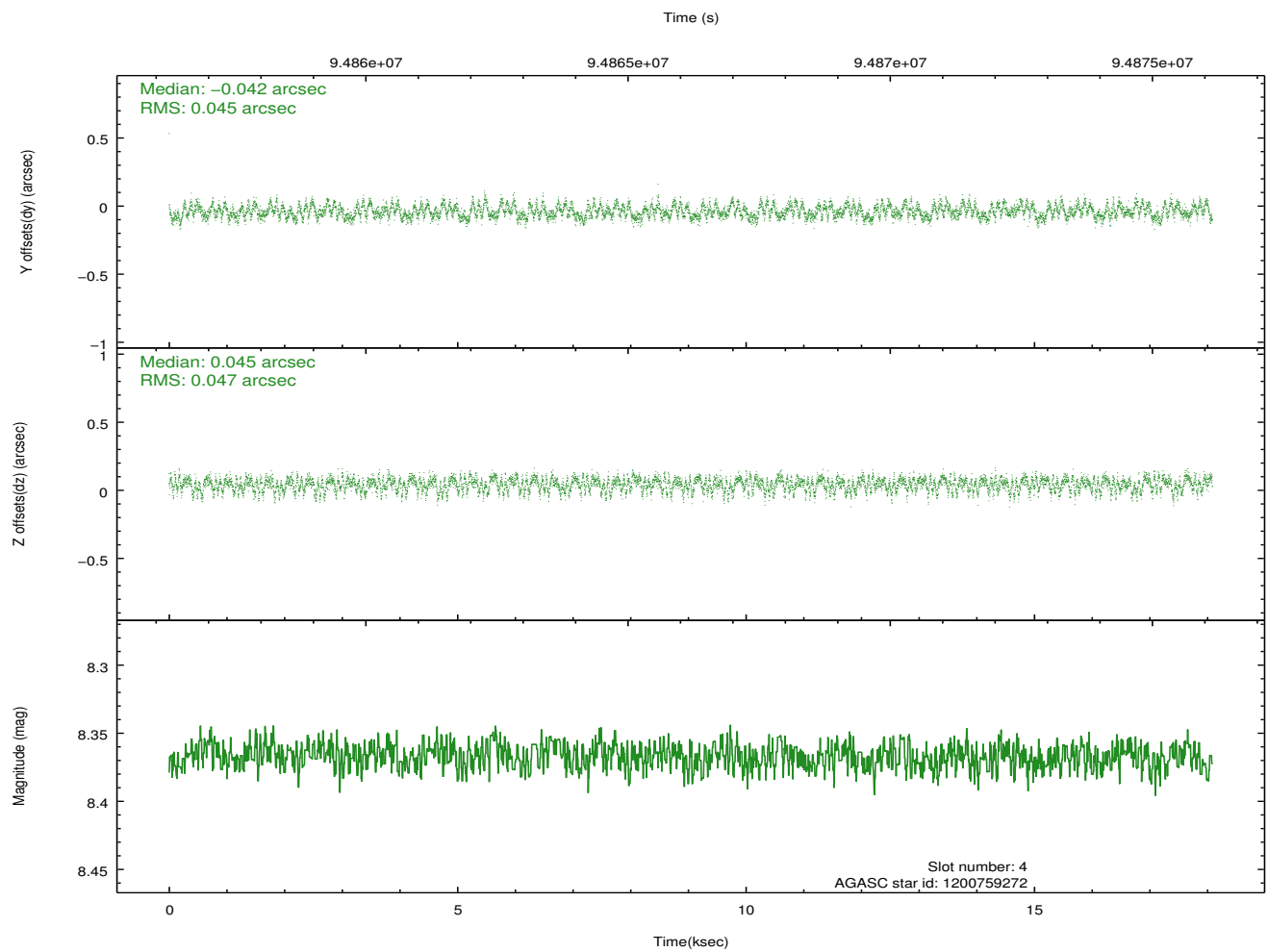
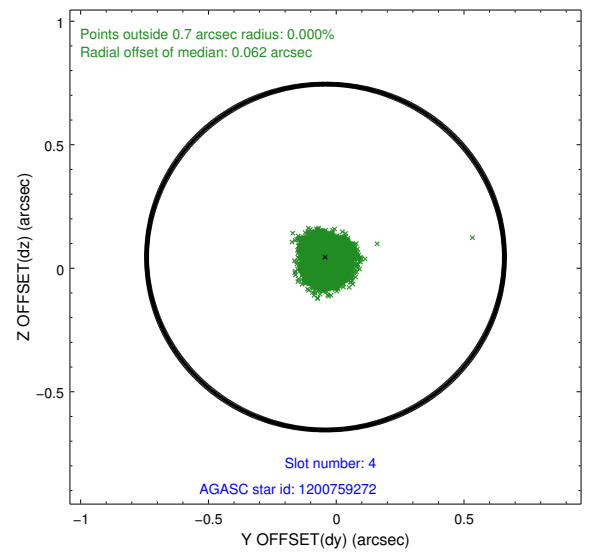
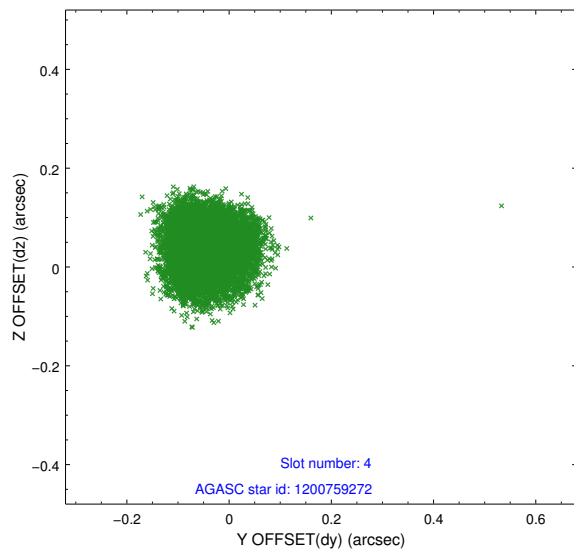
slot	status	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID	ACIS-S-2	7.11	4412	-0.006	0.009	0.009	0.014	0.000000	0.000000	-756.33	-1728.15
1	FID	ACIS-S-4	7.20	4410	-0.007	0.001	0.006	0.012	0.000000	0.000000	2156.85	180.07
2	FID	ACIS-S-5	7.24	4411	-0.017	-0.001	0.008	0.014	0.000000	0.000000	-1808.89	174.02
3	GUIDE	1201280984	7.05	8823	0.027	0.033	0.076	0.116	77.867422	-69.546090	1799.57	-2474.92
4	GUIDE	1200759272	8.37	8824	-0.042	0.045	0.070	0.107	75.444915	-68.988718	-1796.55	-1685.85
5	GUIDE	1200758760	8.31	8764	0.056	-0.015	0.074	0.123	76.277764	-68.086435	-1959.27	1738.81
6	GUIDE	1200760024	8.47	8819	-0.017	-0.001	0.055	0.091	77.625244	-69.320410	1237.97	-1812.28
7	GUIDE	1200757184	8.26	8821	-0.027	-0.061	0.073	0.116	76.495289	-68.416644	-1264.09	731.63

2.4 Star Slots

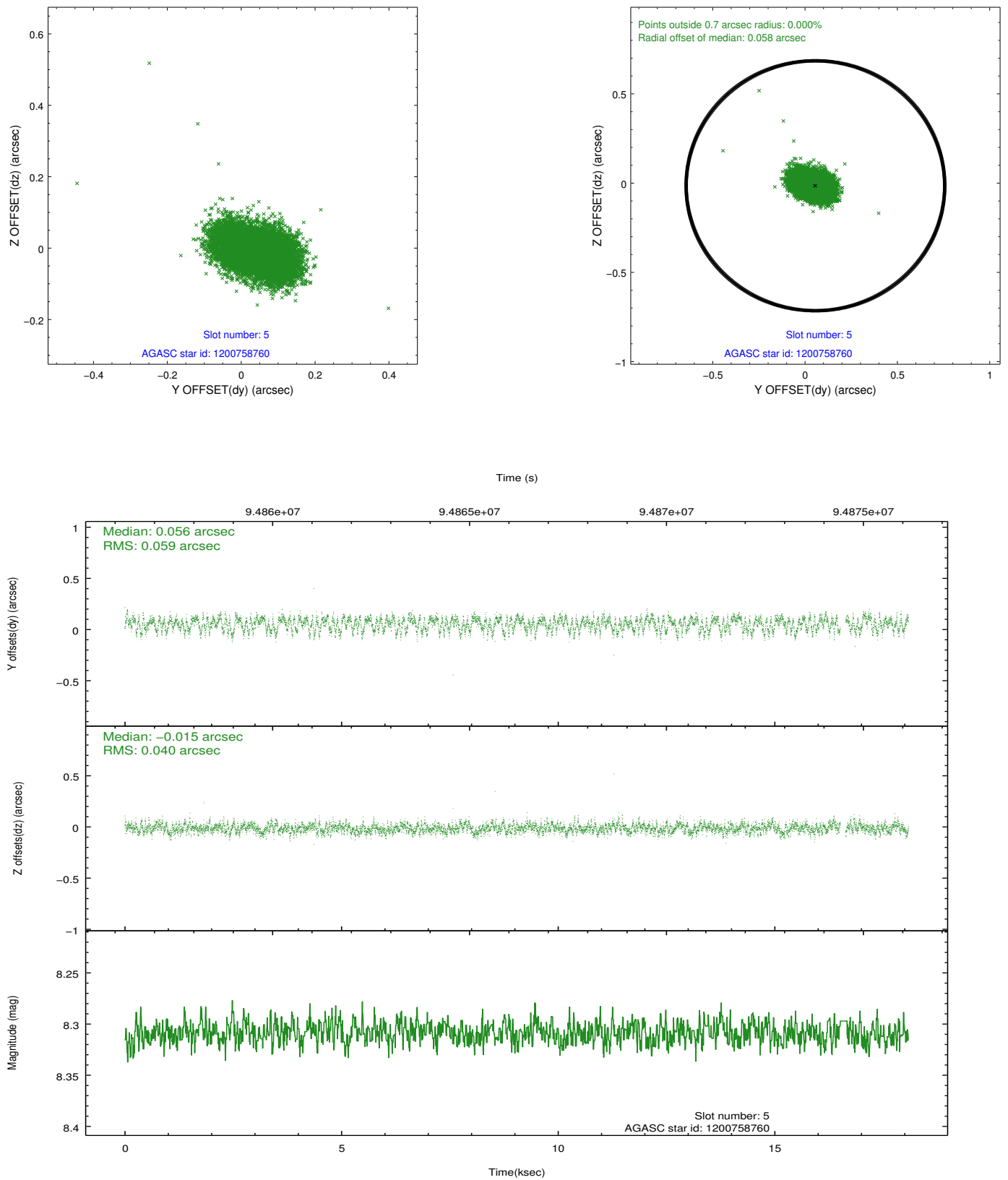
2.4.1 Slot 3



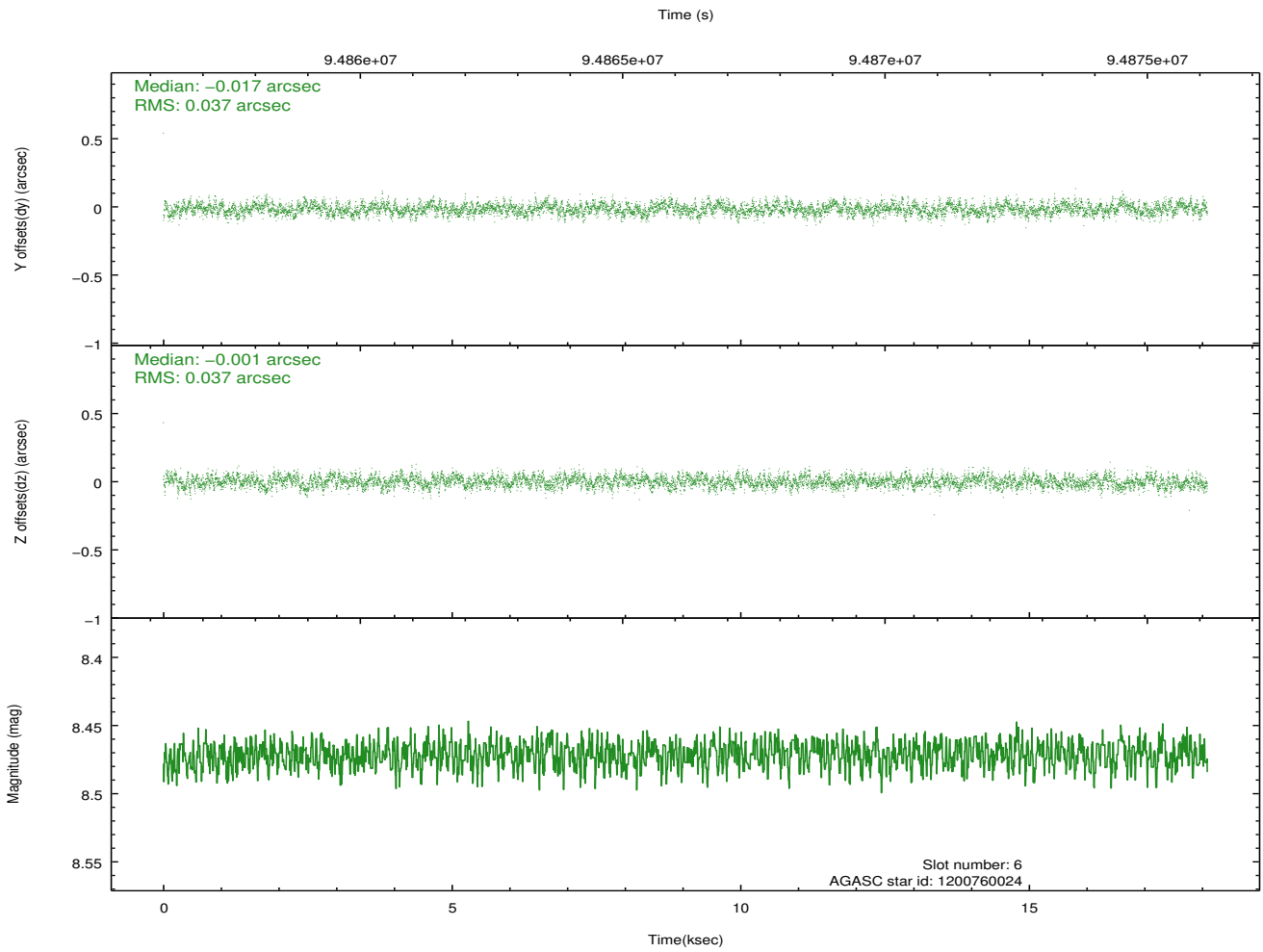
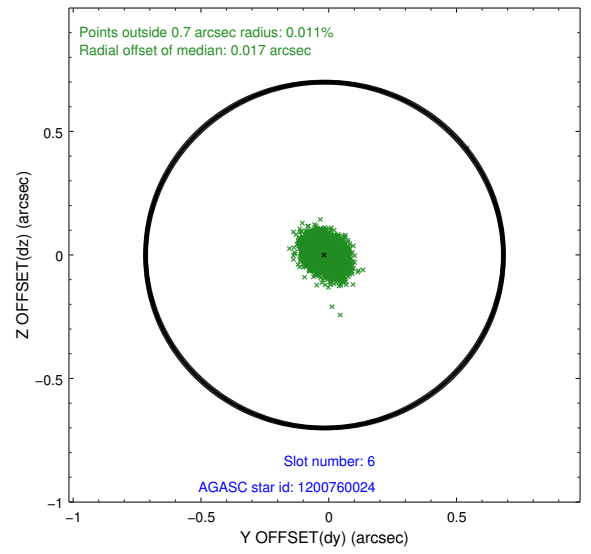
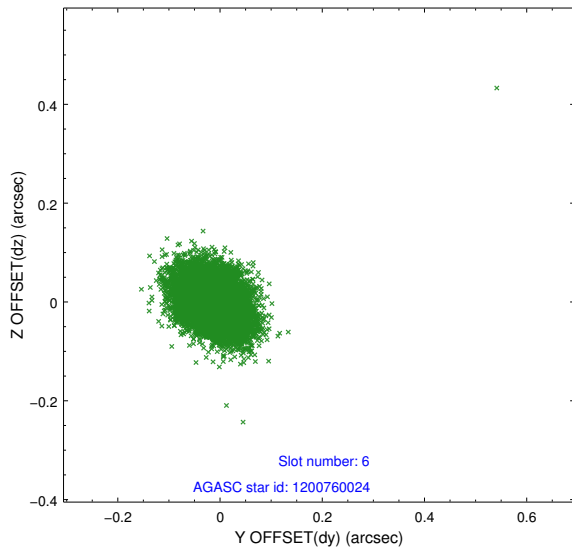
2.4.2 Slot 4



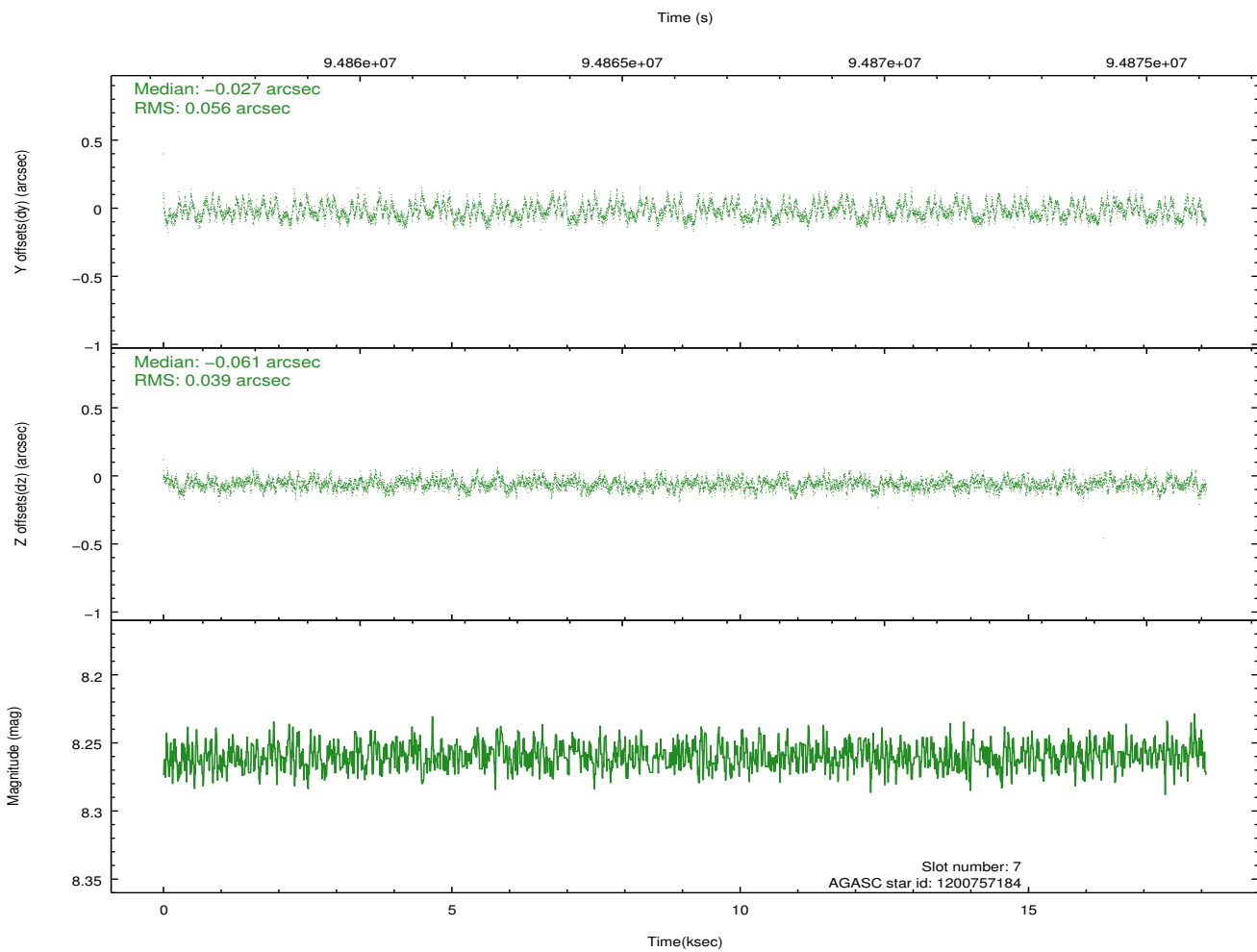
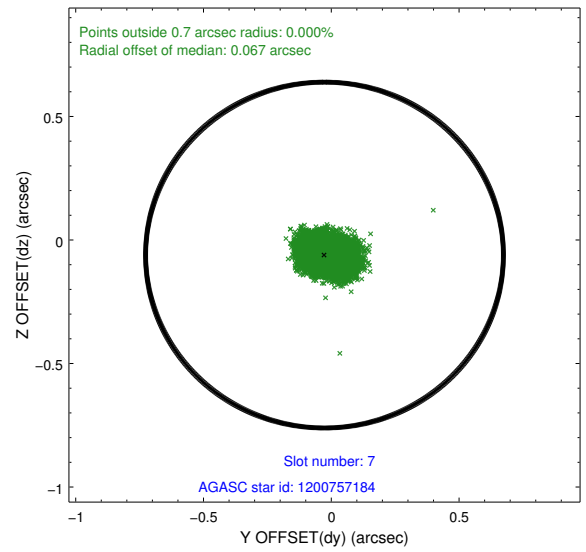
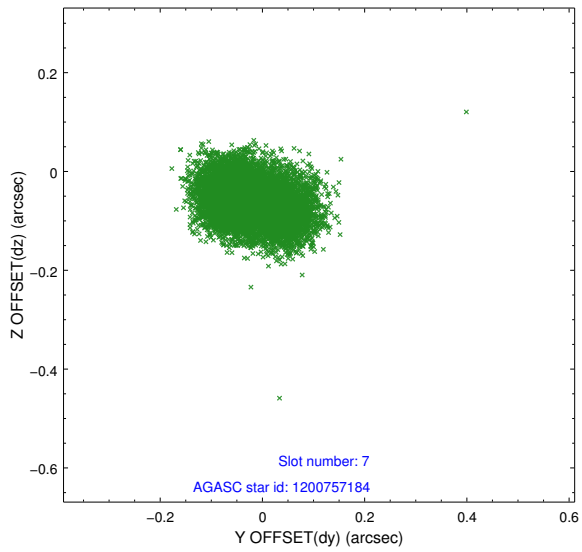
2.4.3 Slot 5



2.4.4 Slot 6

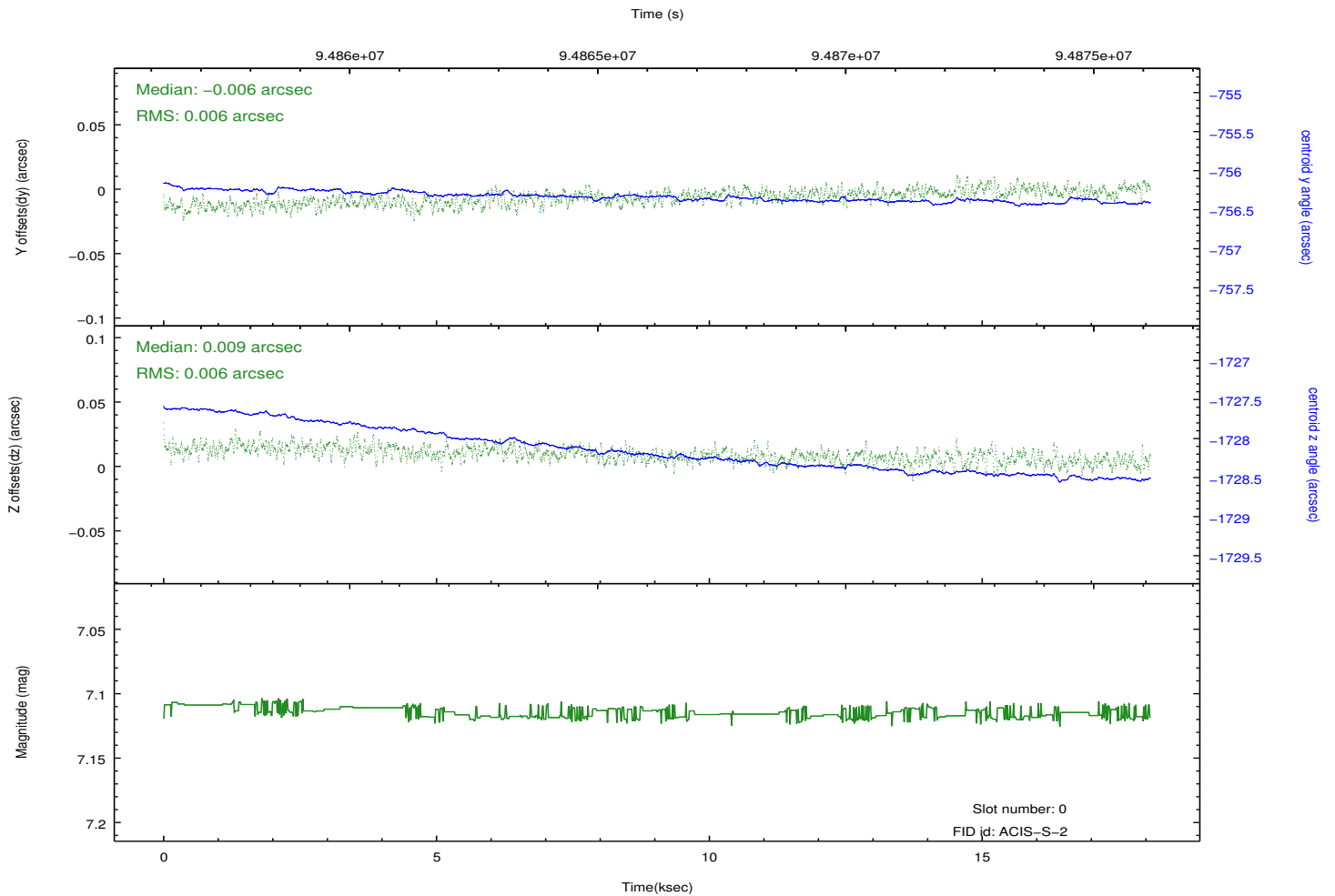
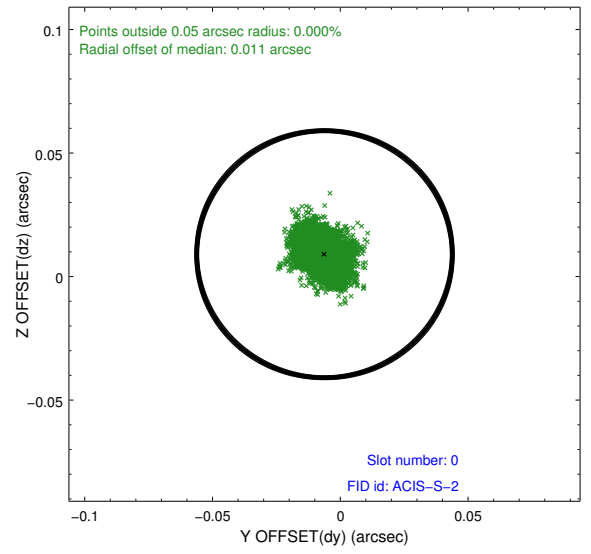
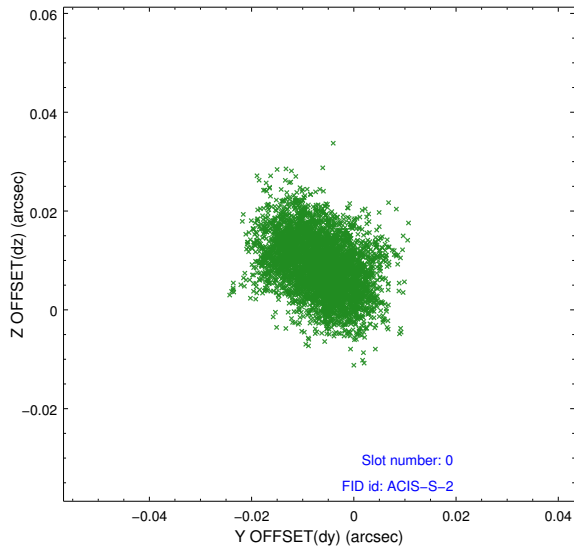


2.4.5 Slot 7

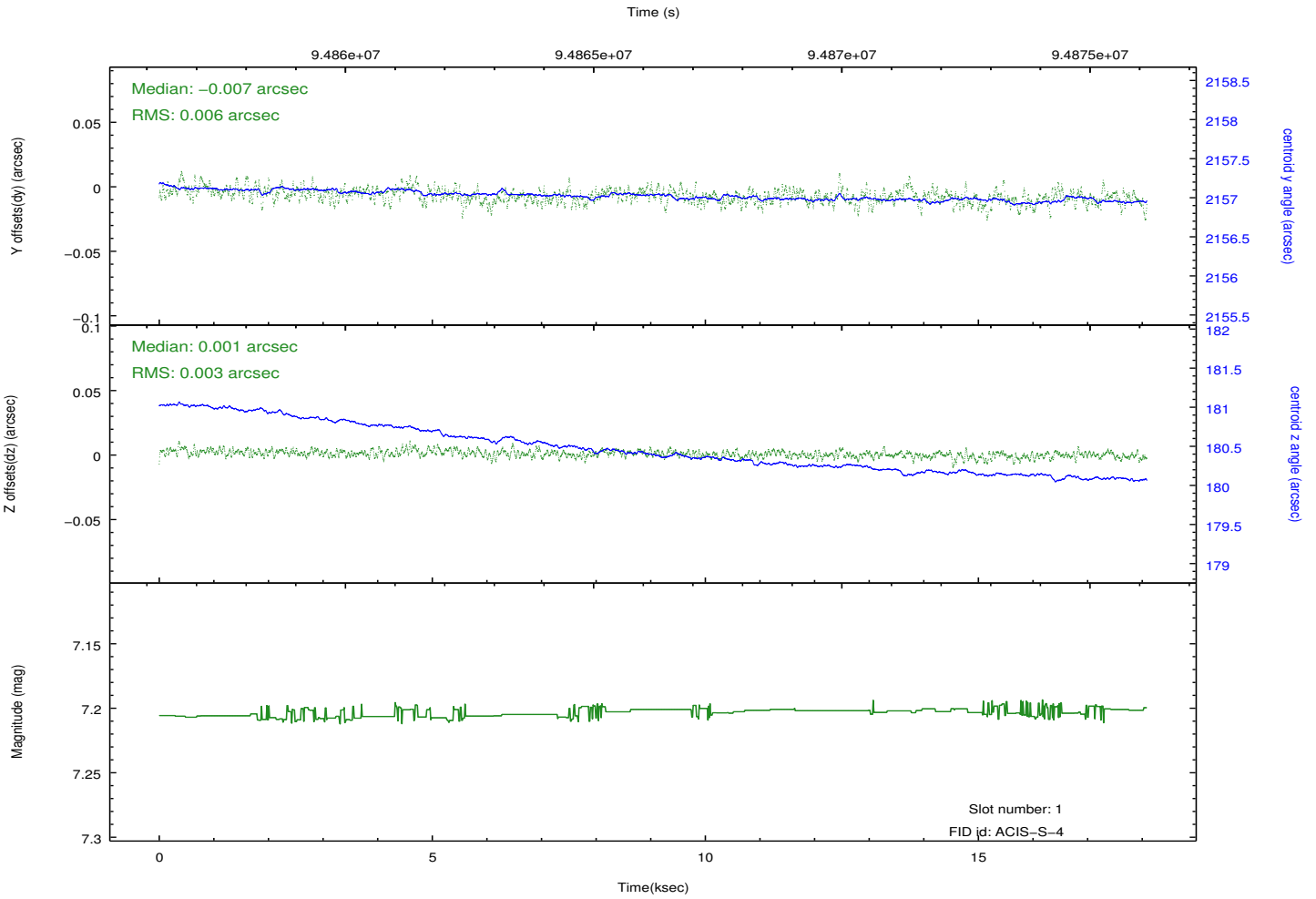
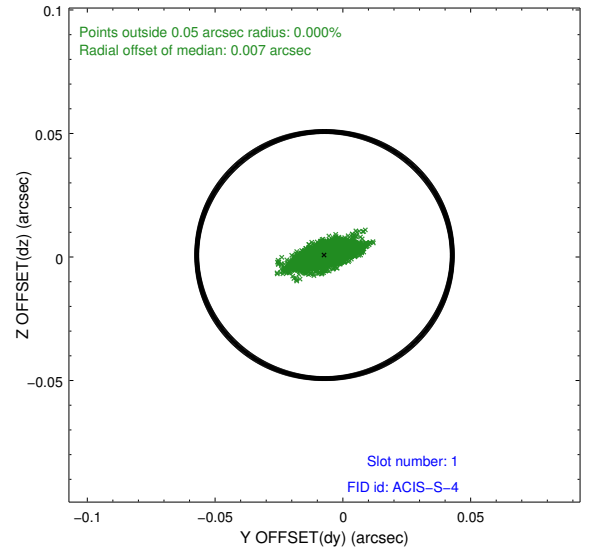
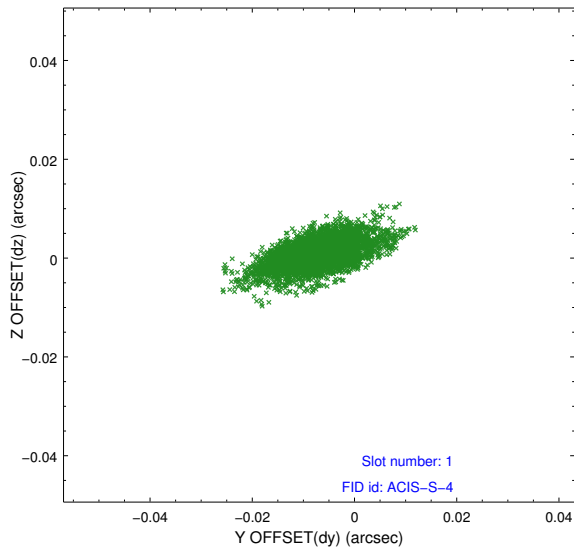


2.5 FID Slots

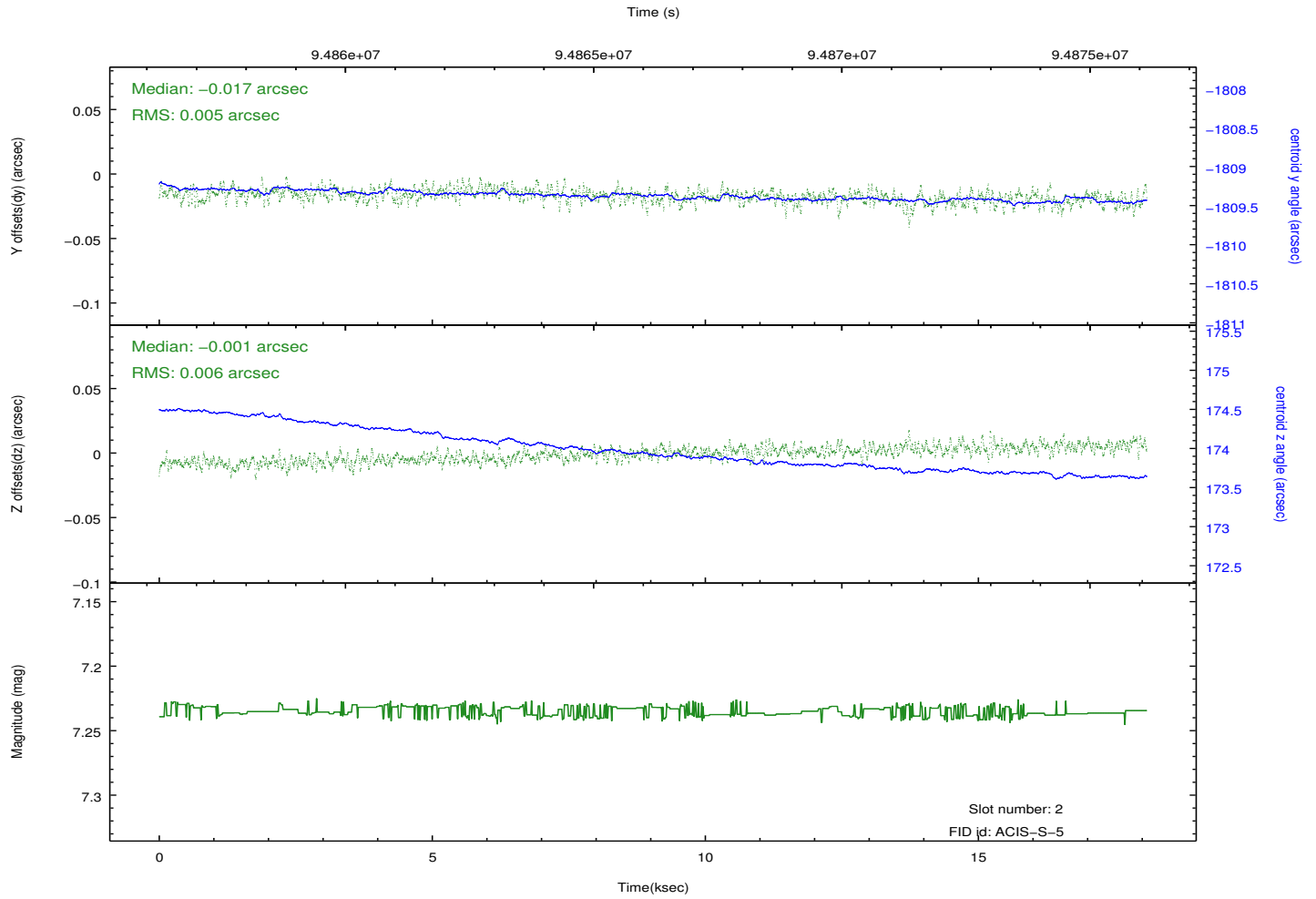
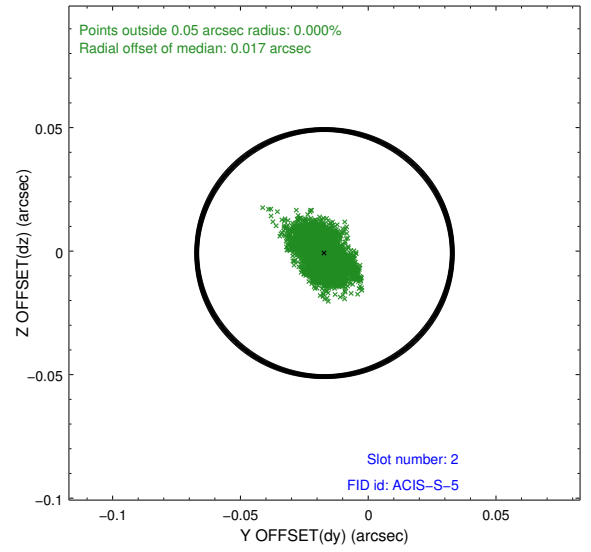
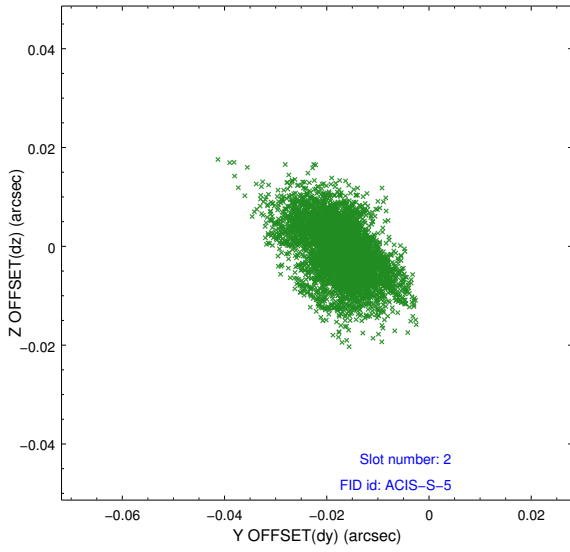
2.5.1 Slot 0



2.5.2 Slot 1



2.5.3 Slot 2

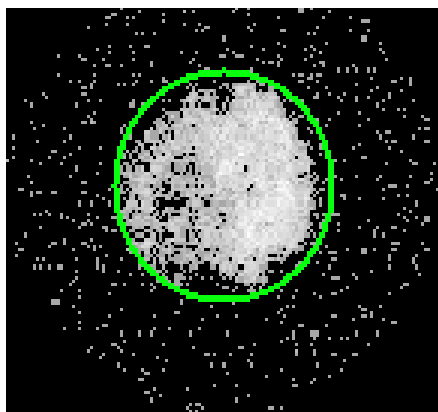


3 Gratings

3.1 HEG Arm



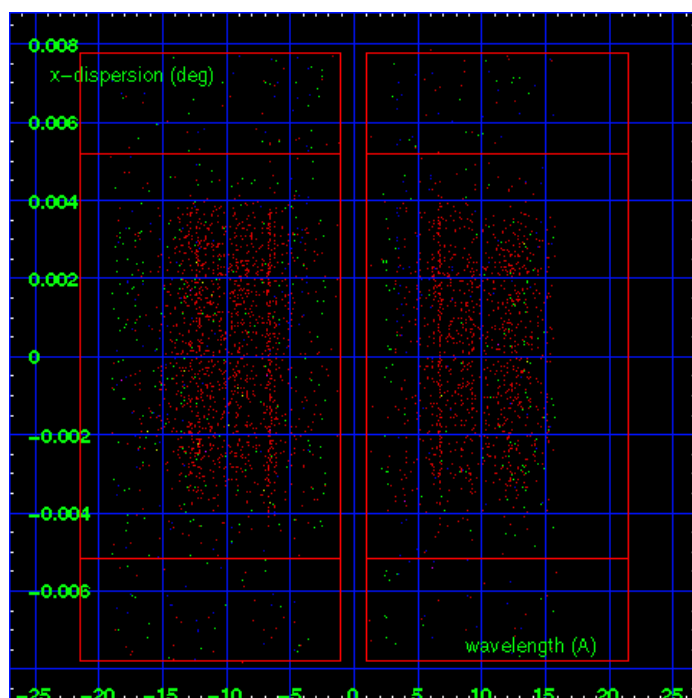
HEG Order Sort 123



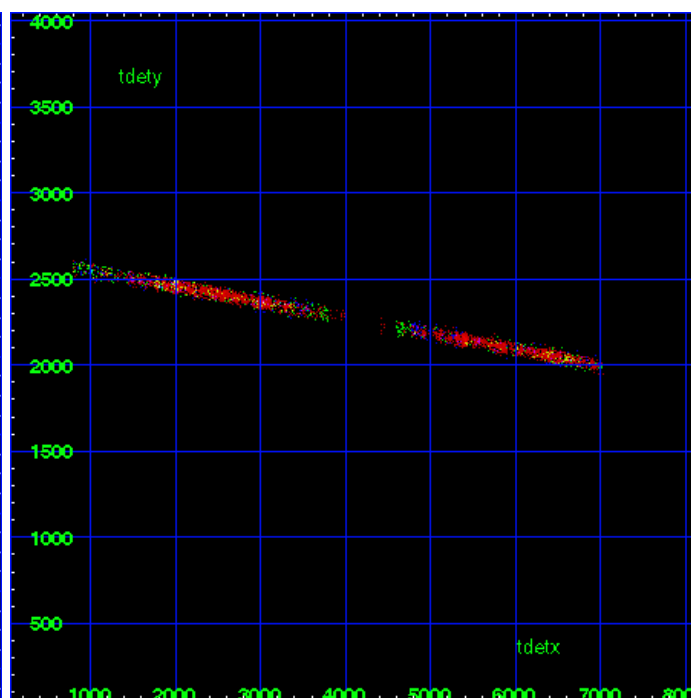
HEG Zero Order



HEG Order Sort ALL

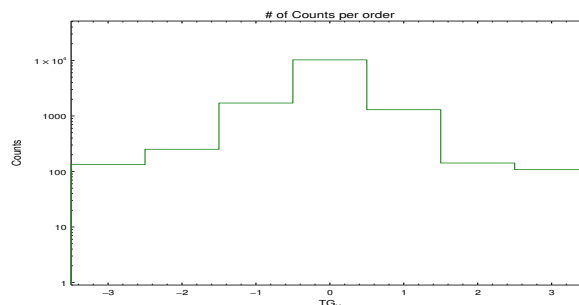


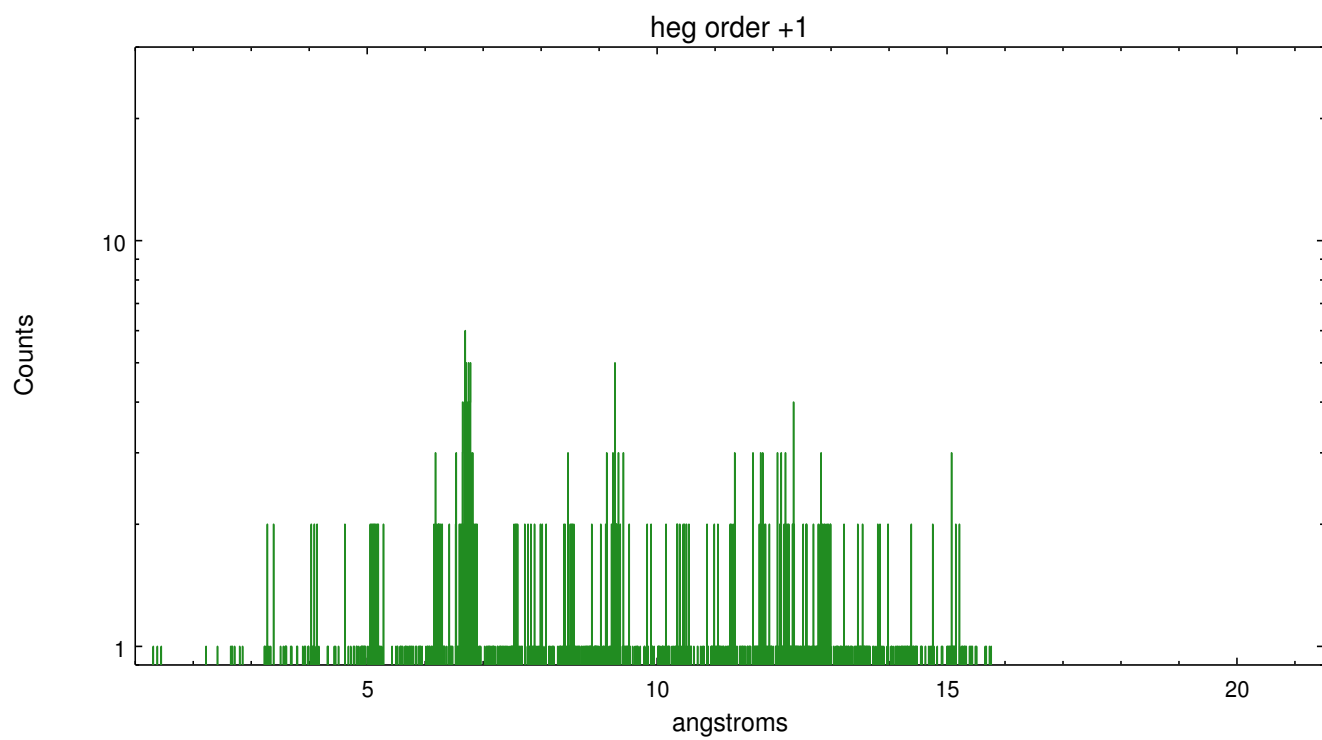
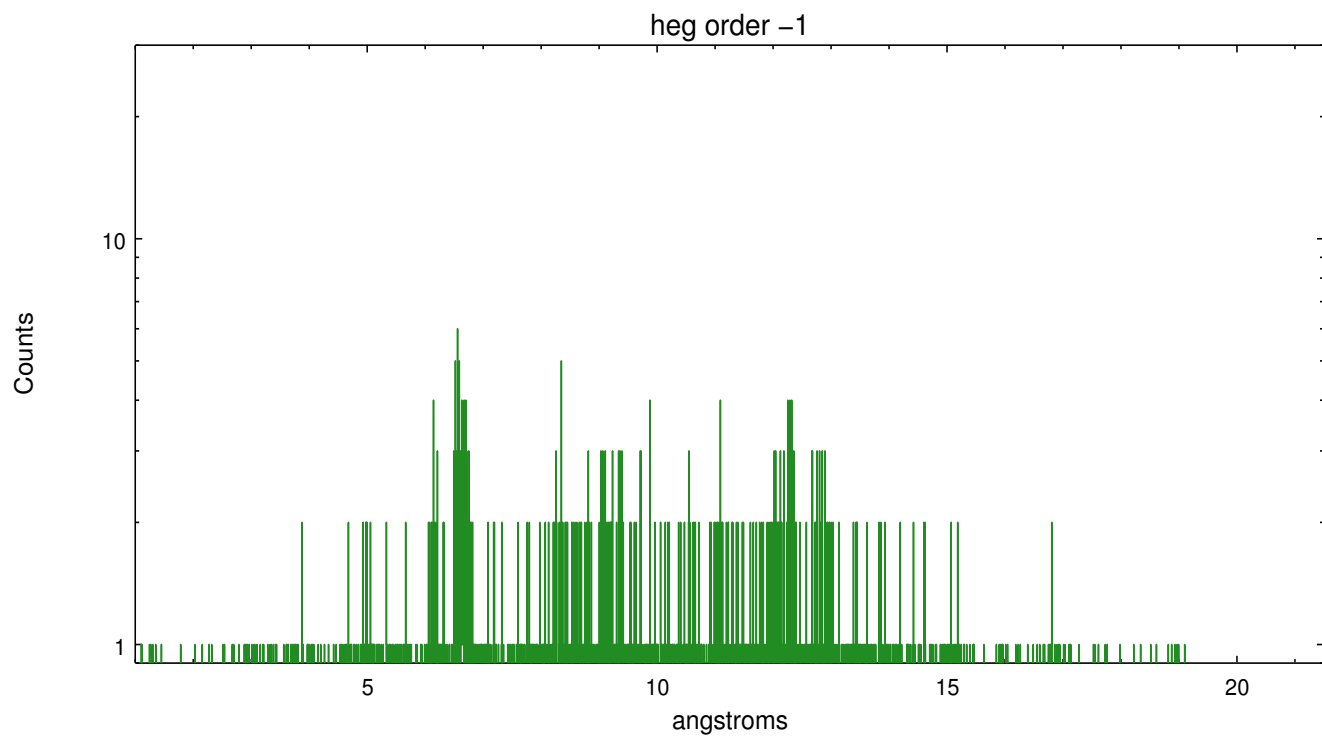
Spot Image HEG



Full Detector HEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	133	251	1709	10252	1297	142	108

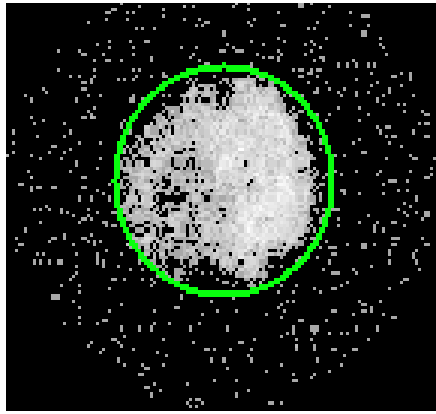




3.2 MEG Arm



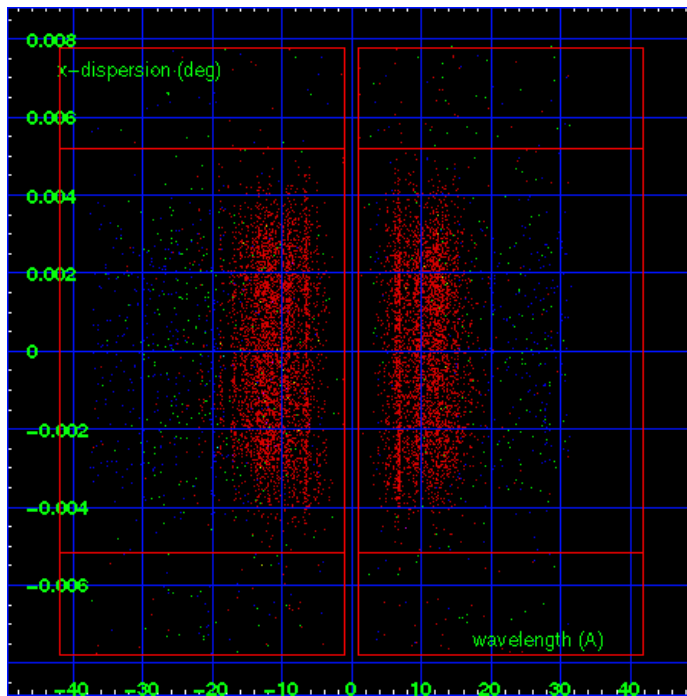
MEG Order Sort 123



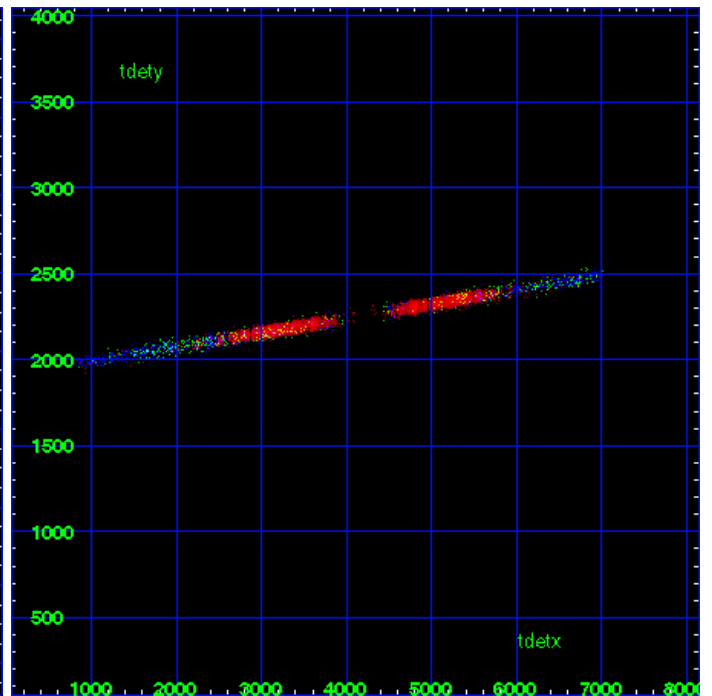
MEG Zero Order



MEG Order Sort ALL

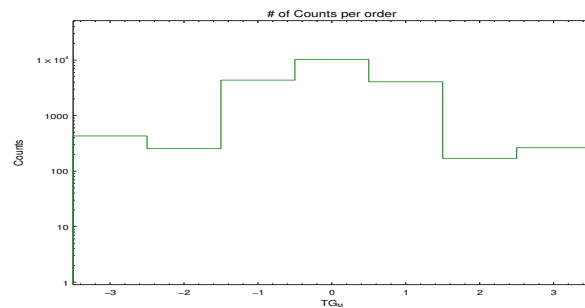


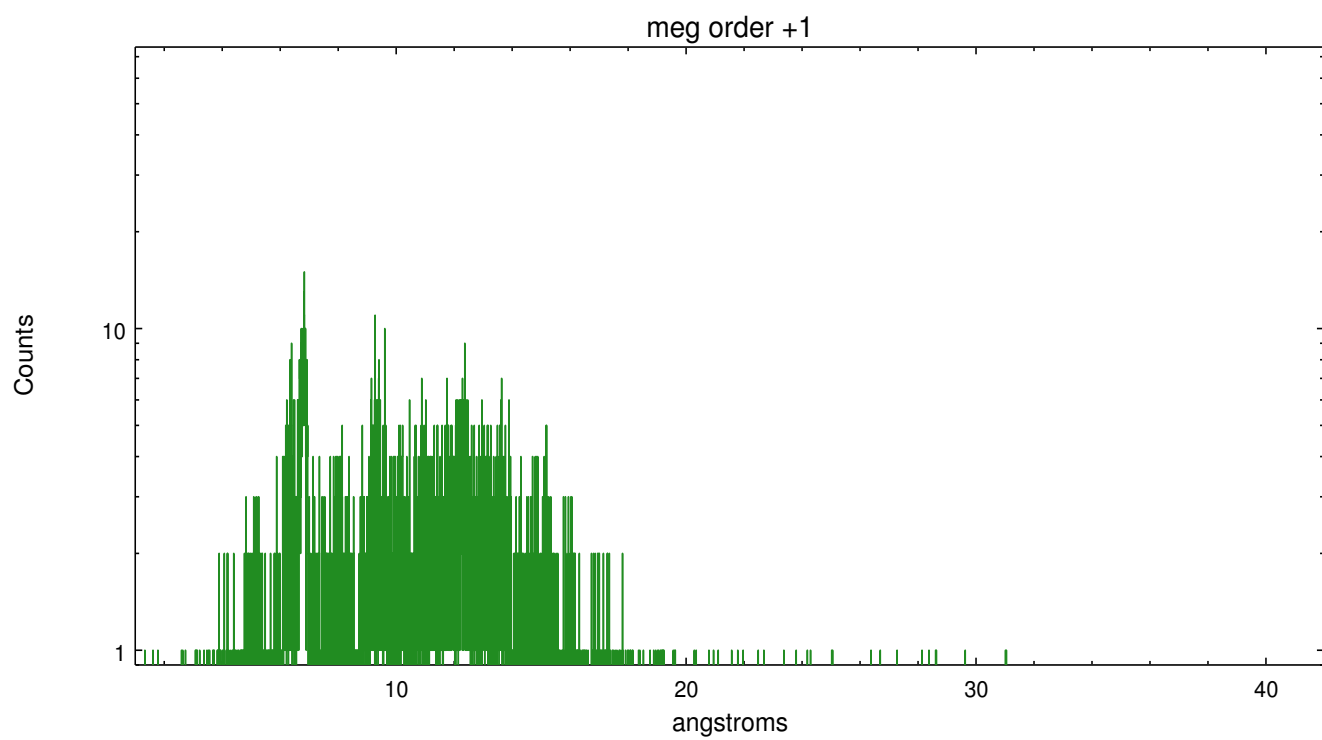
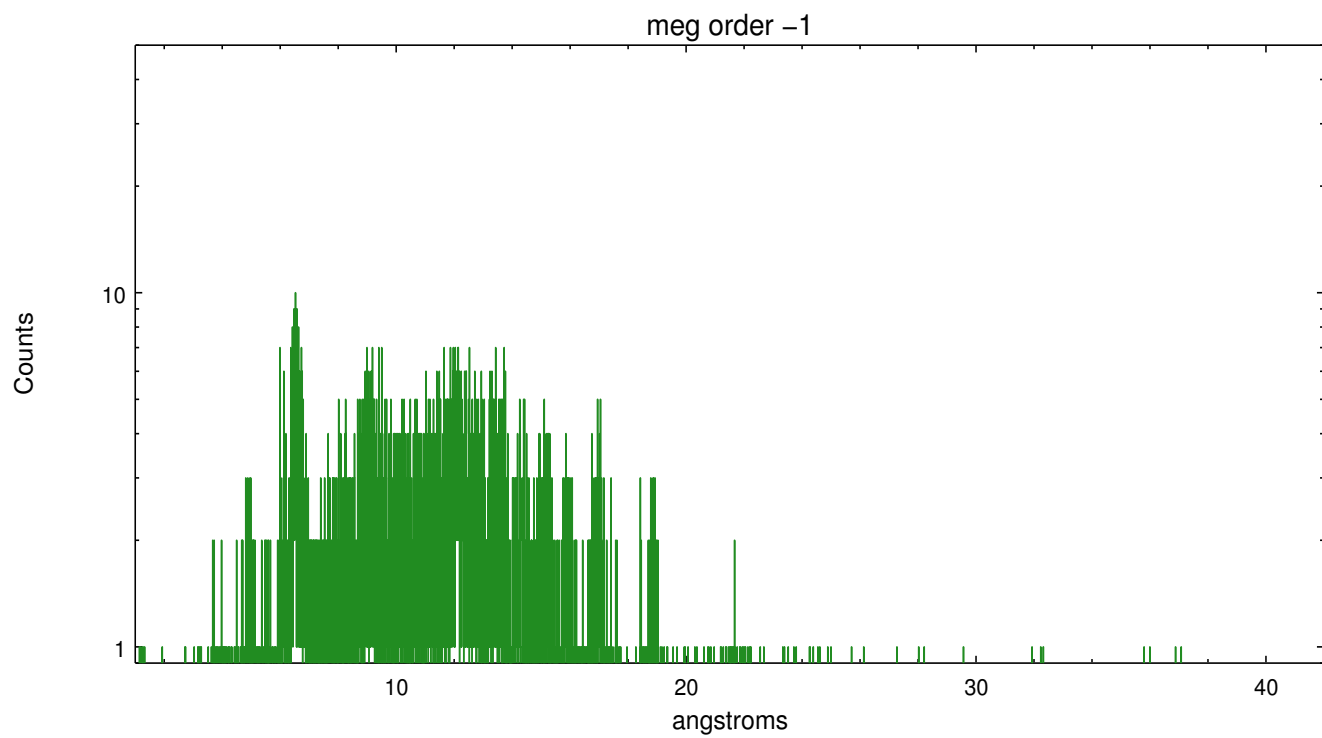
Spot Image MEG



Full Detector MEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	430	254	4355	10252	4063	170	264





A Summary

A.1 Status

V&V Scientist	Joy Nichols
V&V Date (YYYY-MM-DD)	2012.12.14
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	17.622

A.2 Comments

NOTE: extended source --- used custom enlarged extraction regions; wavelengths will not map uniquely to position; there are no line-response calibrations (RMF) for extended sources. Warning: Note that the SNR is not uniformly bright, this leads to apparent line shifts between plus and minus orders. Warning: The spectral lines are spatially-broadened and the rmfs are not valid.

===

Custom 0th order position and L2 extraction parameters used. Zeroth order at approximate geometric center of SNR.===

```
pset grt_lev15 sA_zero_x=4169.00 sA_zero_y=4086.00 sA_zero_rad=32.56  
sA_width_heg=97.69 sA_width_meg=97.69 sA_width_leg=97.69
```

===

Custom extraction used

```
pset tgextract min_tg_d='-0.005183' max_tg_d='0.005183'  
min_downbkg_tg_d='-0.007775' max_downbkg_tg_d='-0.005183'  
min_upbkg_tg_d='0.005183' max_upbkg_tg_d='0.007775'  
pset grt_lev2 min_tg_d='-0.005183' max_tg_d='0.005183'  
min_downbkg_tg_d='-0.007775' max_downbkg_tg_d='-0.005183'  
min_upbkg_tg_d='0.005183' max_upbkg_tg_d='0.007775'
```

===

Roll constraint met.=== 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.