

# V&V Reference Report

## L2 ASCDS Version : 8.4.5

Observation 12125 - L2 Version 2  
Chandra X-Ray Center

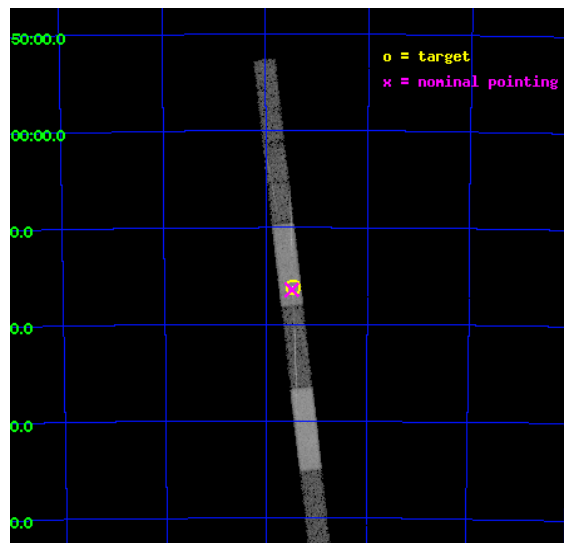
L2 Processing Date : Jun 22 2012

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# 1 Front

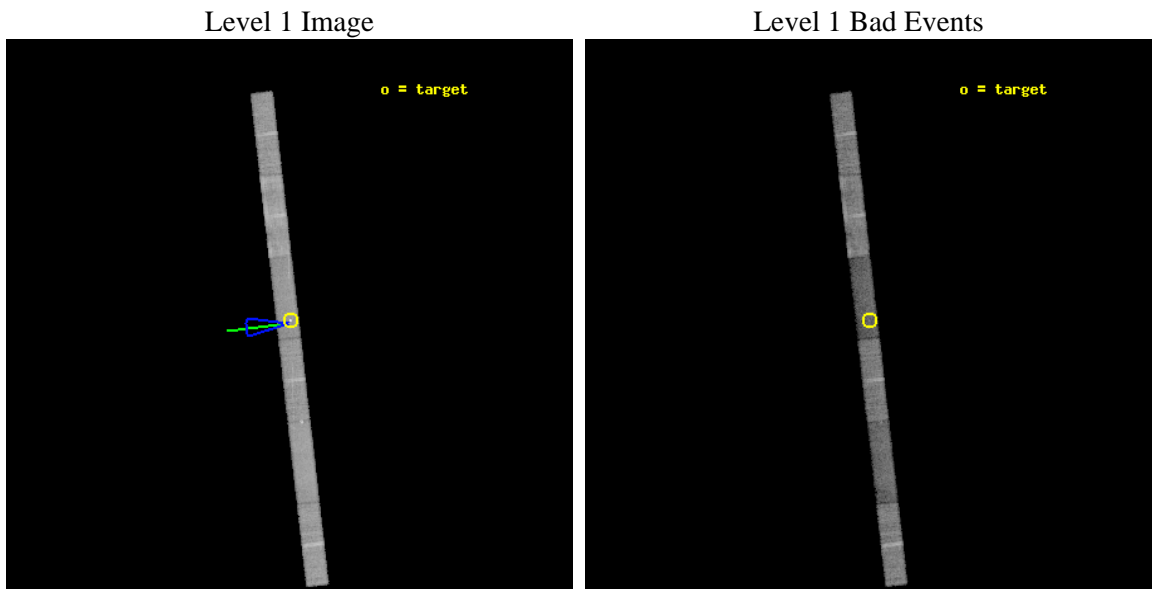
seq_num	501180	Sequence number
obs_id	12125	Observation id
title	CHANDRA CYCLE 11 SPATIAL AND SPECTRAL MONITORING OF SNR1987A	Propo
observer	Prof. David Burrows	Principal investigator
object	SNR 1987A	Source name
dtcycle	0	&#160
cycle	P	events from which exps? Prim/Second/Both
ra_targ	83.866667	Observer's specified target RA [deg]
dec_targ	-69.26975	Observer's specified target Dec [deg]
ra_nom	83.872524020235	Nominal RA [deg]
dec_nom	-69.274127235438	Nominal Dec [deg]
roll_nom	263.41209196174	Nominal Roll [deg]
revision	2	Processing version of data
ontime	18891.0	Sum of GTIs [s]
livetime	18146.276800123	Livetime [s]
ontime4	18891.0	Sum of GTIs [s]
ontime5	18891.0	Sum of GTIs [s]
ontime6	18891.0	Sum of GTIs [s]
ontime7	18891.0	Sum of GTIs [s]
ontime8	18891.0	Sum of GTIs [s]
ontime9	18891.0	Sum of GTIs [s]
l2events	62836	Number of level 2 events



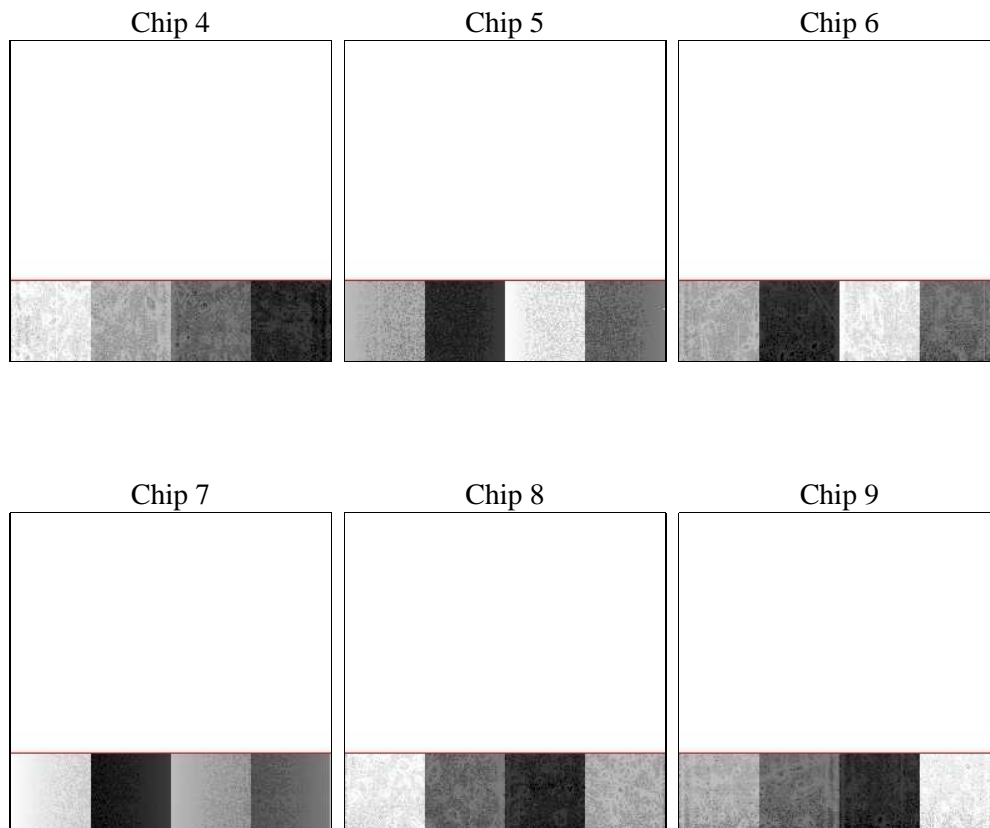
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

obi_num	0	Obi number	sched_exp_time	18776.165000	[s] Scheduled observation exposure time
ascdsver	8.4.5	Processing system revision	ontime	18891.0	Sum of GTIs [s]
caldbver	4.4.10	&#160	ontime4	18891.0	Sum of GTIs [s]
date	2012-06-22T17:08:20	Date and time of file creation	ontime5	18891.0	Sum of GTIs [s]
revision	2	Processing version of data	ontime6	18891.0	Sum of GTIs [s]
			ontime7	18891.0	Sum of GTIs [s]
			ontime8	18891.0	Sum of GTIs [s]
			ontime9	18891.0	Sum of GTIs [s]
			l1events	296561	Number of level 1 events

### 2.1.4 Events

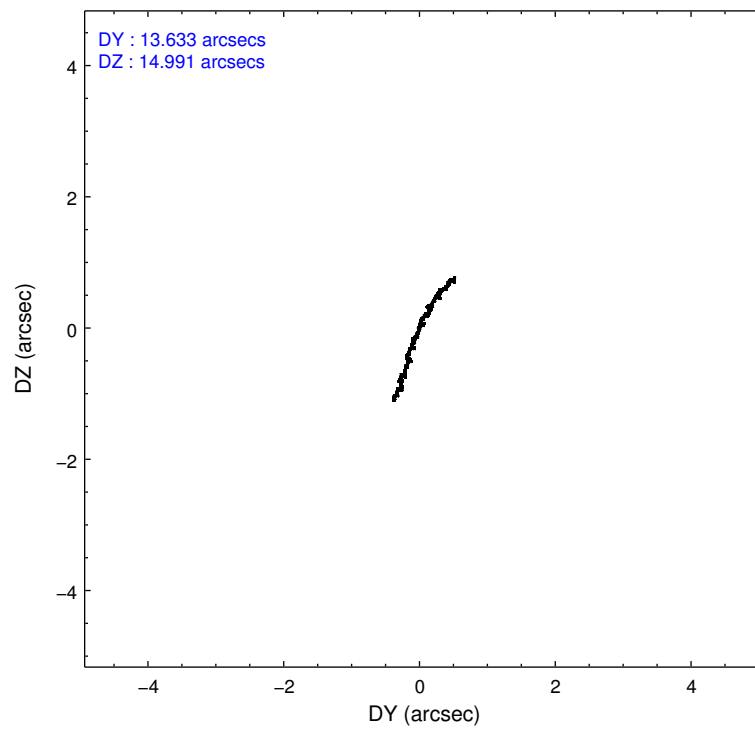
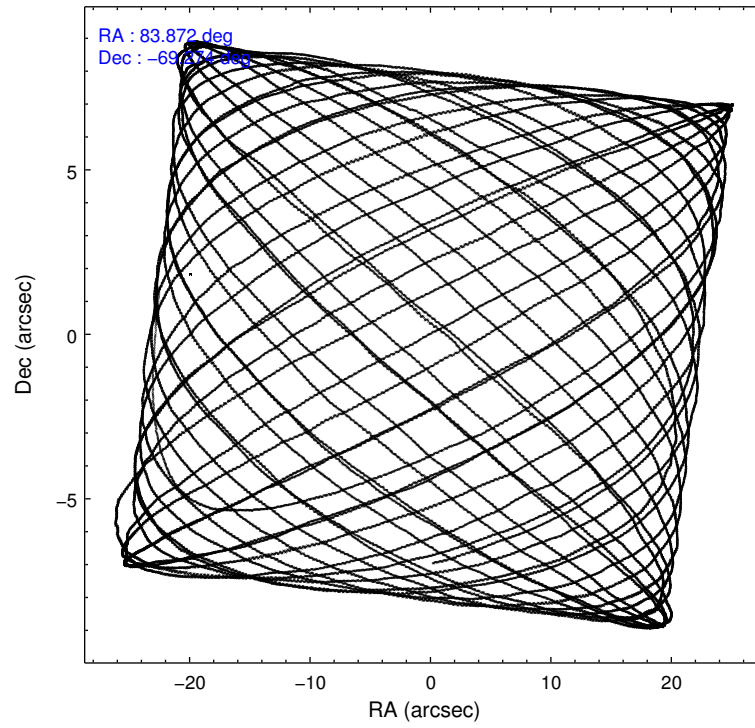
	ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
level 1 events	51551	52978	45359	41977	61625	43071
rejected events	46699	26382	39478	19862	46883	38810
rejected %	90%	49%	87%	47%	76%	90%

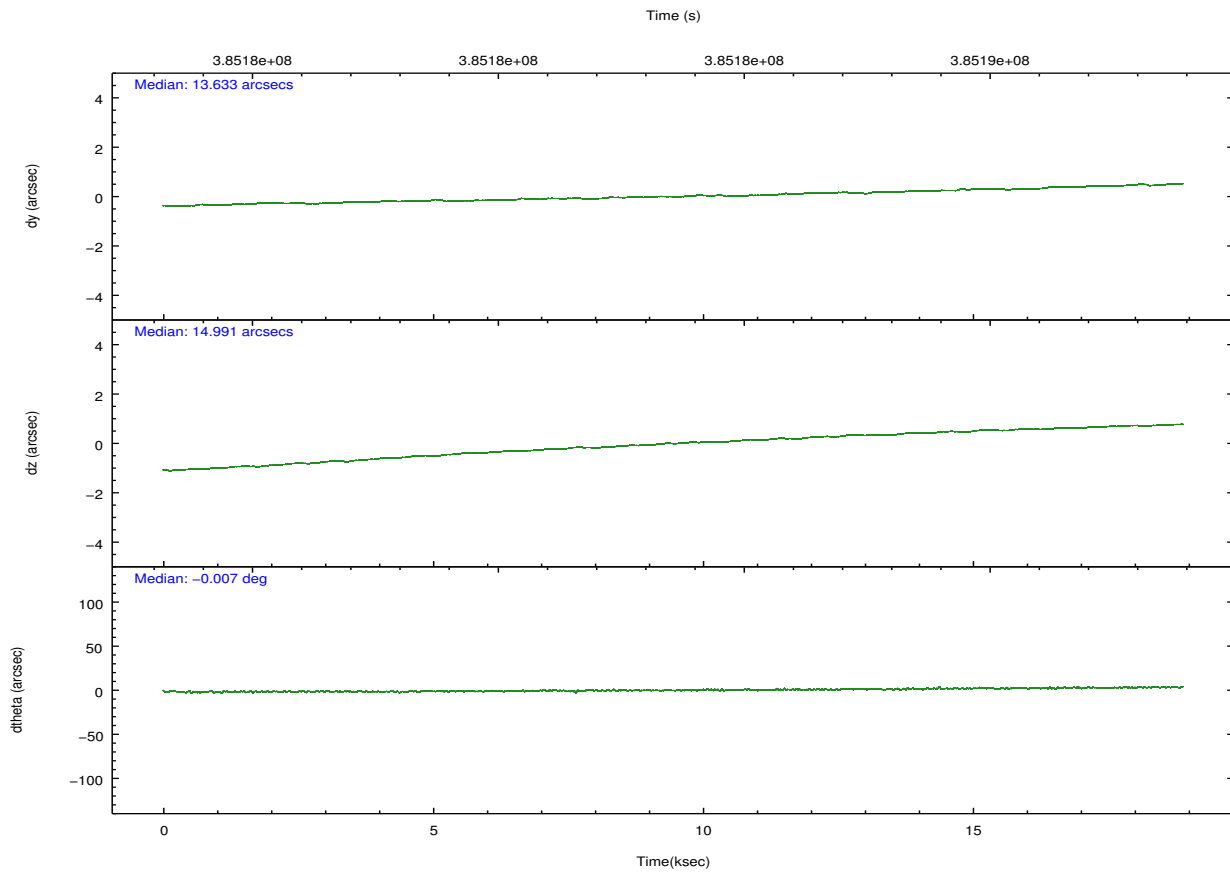
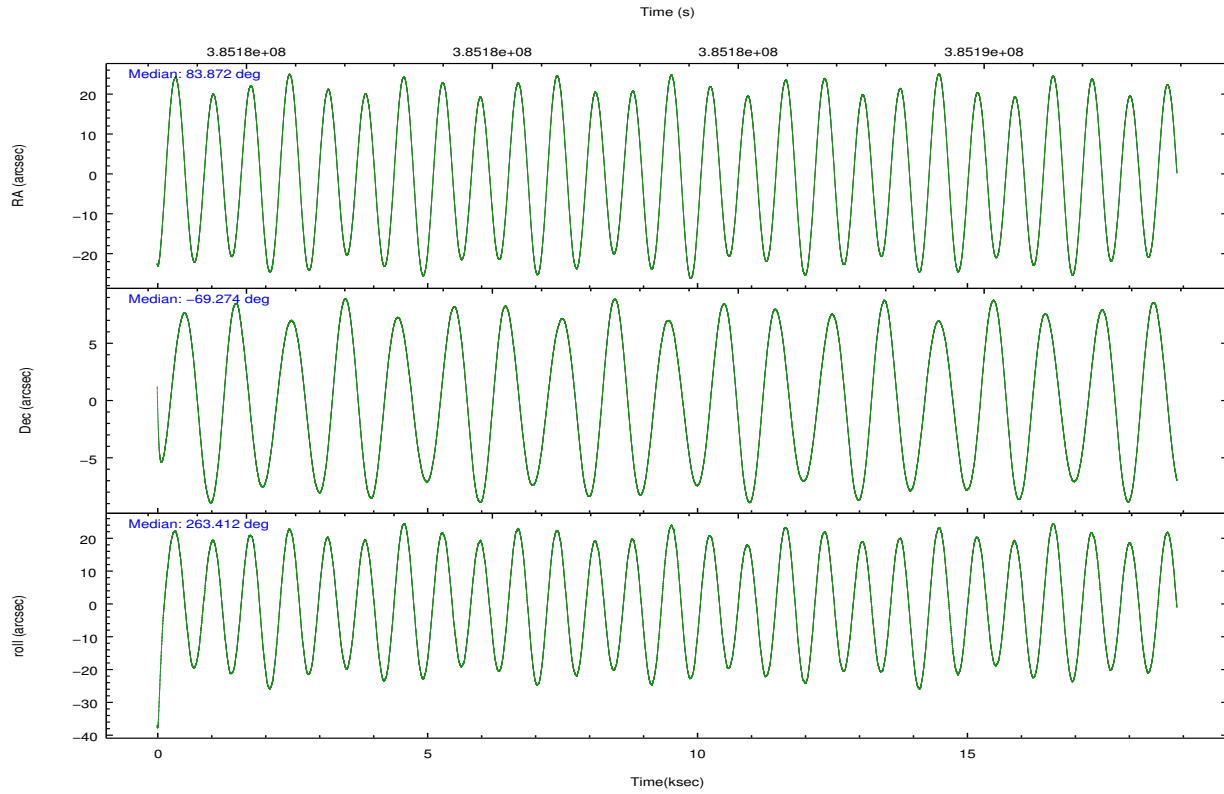
	ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
grade 0 events	1574	3396	2609	2887	4374	1391
	3%	6%	5%	6%	7%	3%
grade 1 events	15	263	23	76	24	12
	0%	0%	0%	0%	0%	0%
grade 2 events	1261	7992	1139	5243	3162	942
	2%	15%	2%	12%	5%	2%
grade 3 events	760	2448	842	2732	1849	734
	1%	4%	1%	6%	3%	1%
grade 4 events	709	2413	819	2635	1781	685
	1%	4%	1%	6%	2%	1%
grade 5 events	1278	4795	1257	3909	1926	1338
	2%	9%	2%	9%	3%	3%
grade 6 events	875	13135	826	9915	4475	846
	1%	24%	1%	23%	7%	1%
grade 7 events	45079	18536	37844	14580	44034	37123
	87%	34%	83%	34%	71%	86%

## 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	83.840854	83.87252402023481	CCD I2 on	N	N
[deg] Pointing Dec	-69.249209	-69.27412723543792	CCD I3 on	N	N
[deg] Pointing Roll	263.225861	263.4120919617355	CCD S0 on	O1	Y
[deg] Roll angle	264.000000	264.000000	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)	384480066.184000	384480066.184000	CCD S4 on	Y	Y
[s] Window stop time (MET)	386553606.184000	386553606.184000	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	-181.7145954743443	Subarray requested	CUSTOM	1/4
[mm] SIM translation stage offset	-8.42	-8.417927108663491	Subarray start row	1	1
[s] Observation start time (MET)	385174218.184000	385172638.91506	Subarray row count	256	256
Observation start date	2010-03-17T00:49:12	2010-03-17T00:23:58	Alternating exposures requested	N	N
[s] Observation end time (MET)	385192994.184000	385193213.74111	[s] Primary exposure time	0.000000	1
Observation end date	2010-03-17T06:02:08	2010-03-17T06:06:53			
Read mode	TIMED	TIMED			

## 2.3 Aspect





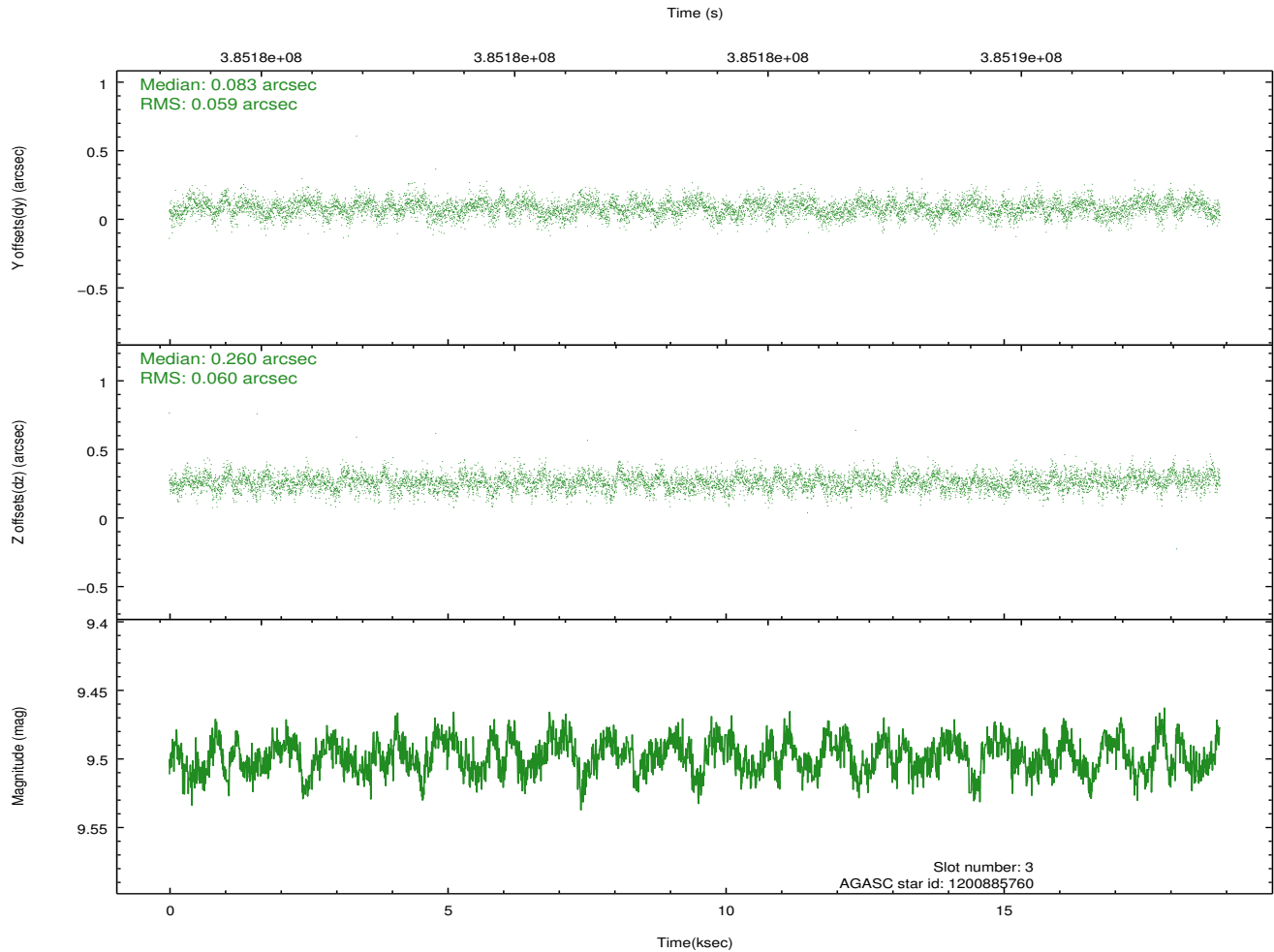
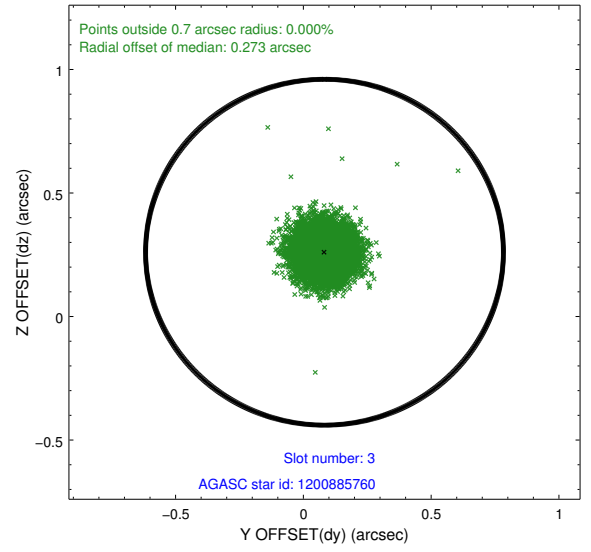
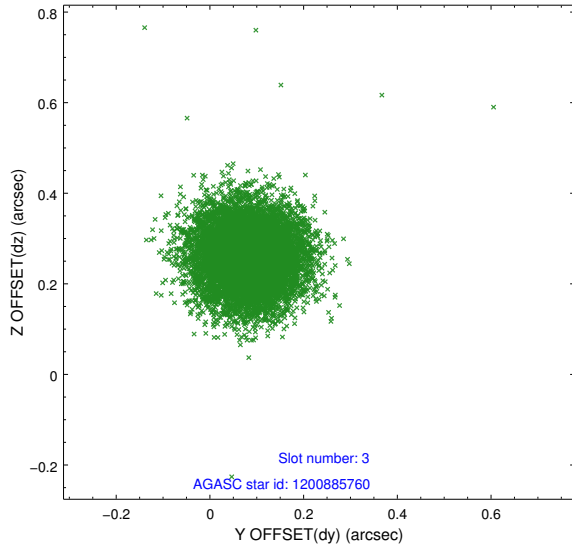
### Slot Statistics

slot	status	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID	ACIS-S-1	7.03	4607	0.090	0.143	0.026	0.034	0.000000	0.000000	930.21	-1905.16
1	FID	ACIS-S-2	6.94	4608	-0.180	-0.102	0.018	0.030	0.000000	0.000000	-765.85	-1910.26
2	FID	ACIS-S-6	7.24	4608	0.068	-0.035	0.016	0.021	0.000000	0.000000	395.67	635.72
3	GUIDE	1200885760	9.50	9194	0.083	0.260	0.088	0.142	83.723637	-68.777667	-1667.16	-351.46
4	GUIDE	1201019672	6.82	9217	-0.043	-0.101	0.057	0.101	85.312192	-68.770187	-1915.93	1703.77
5	GUIDE	1201020040	8.62	9211	0.123	-0.183	0.072	0.120	85.379163	-68.879396	-1532.50	1827.39
6	GUIDE	1201410616	9.33	9209	-0.047	0.103	0.101	0.167	82.516808	-69.784406	2125.22	-1405.78
7	GUIDE	1201542672	8.18	9212	-0.117	-0.078	0.081	0.126	84.492488	-69.957531	2440.10	1099.94

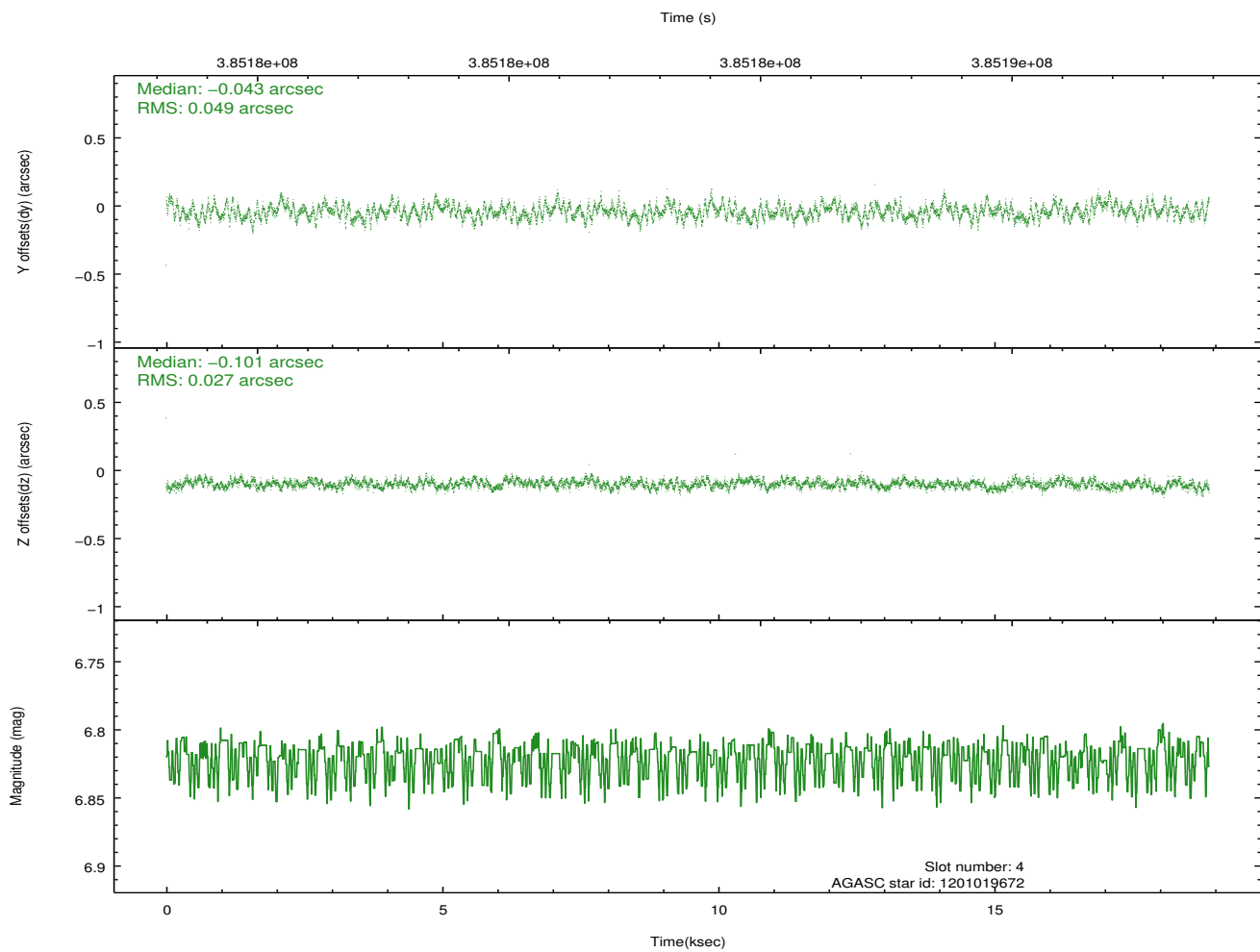
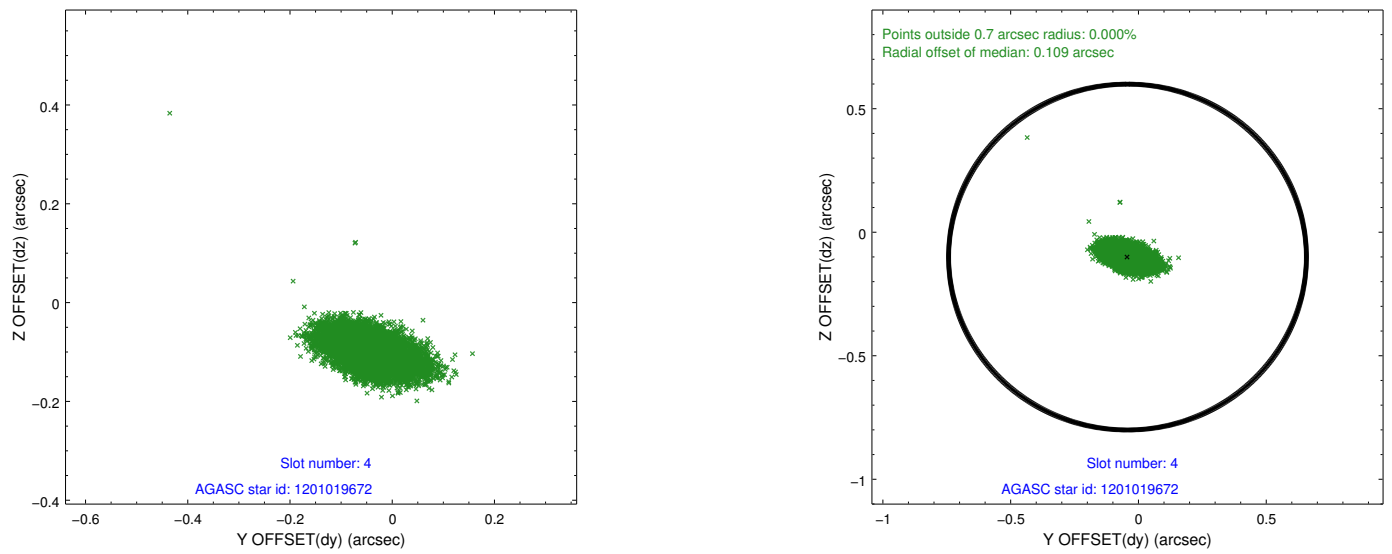
∞

## 2.4 Star Slots

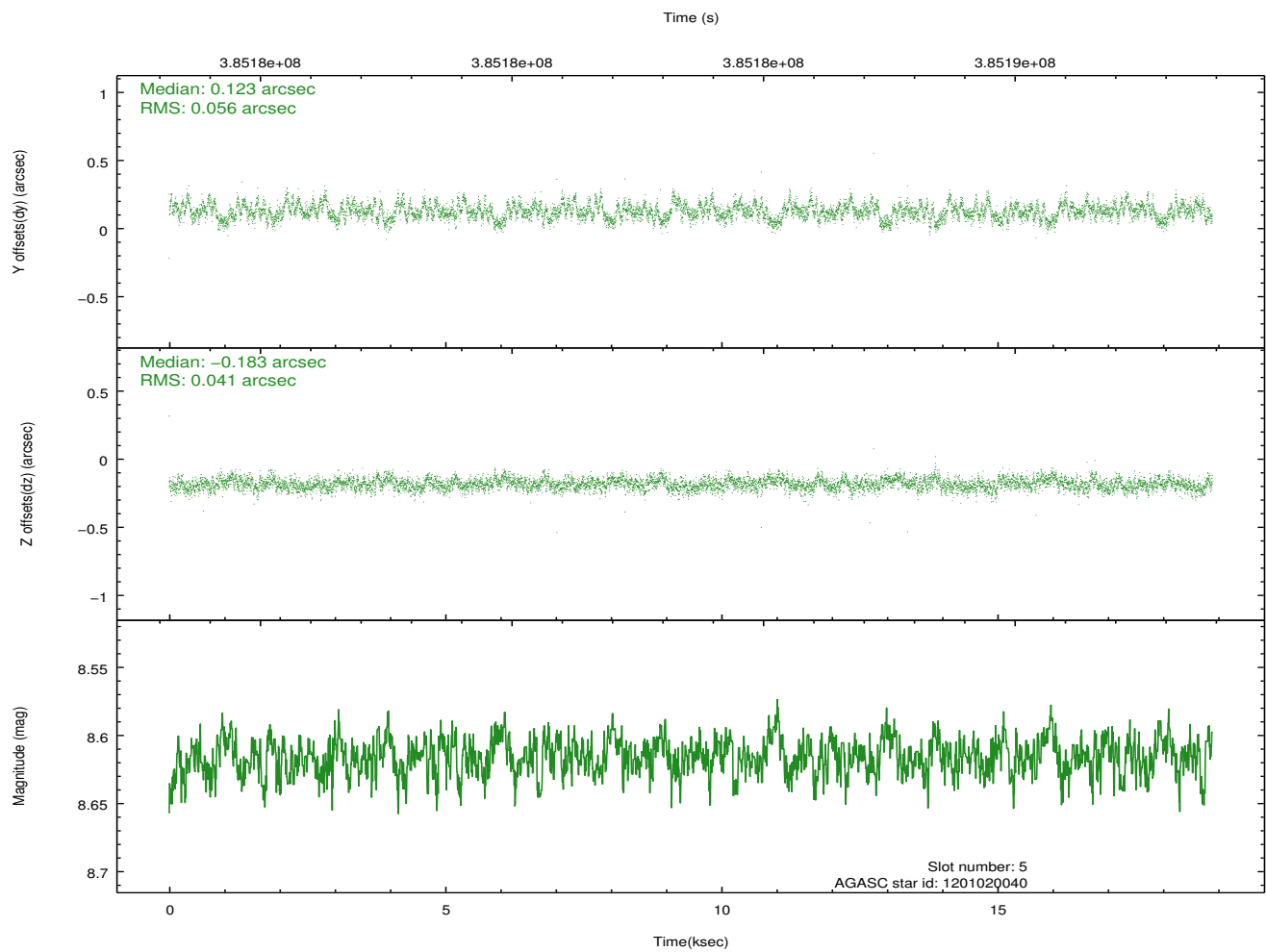
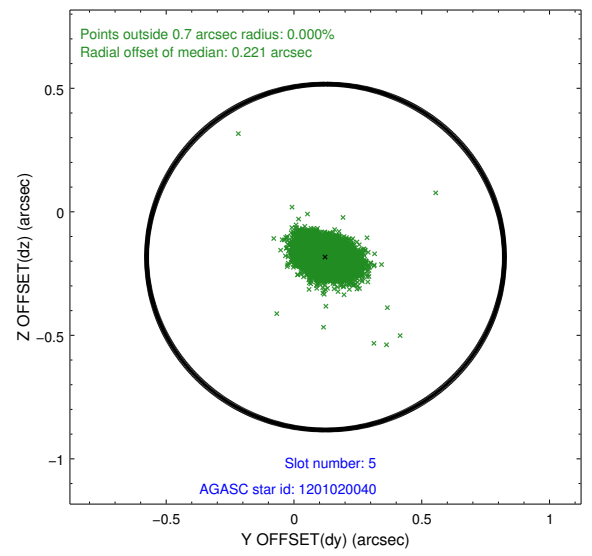
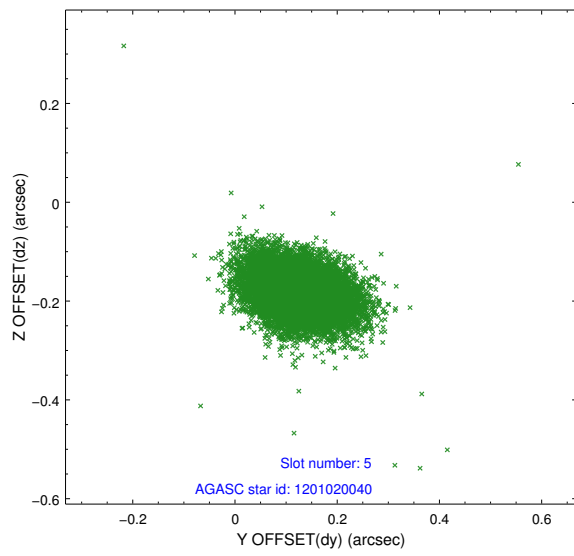
### 2.4.1 Slot 3



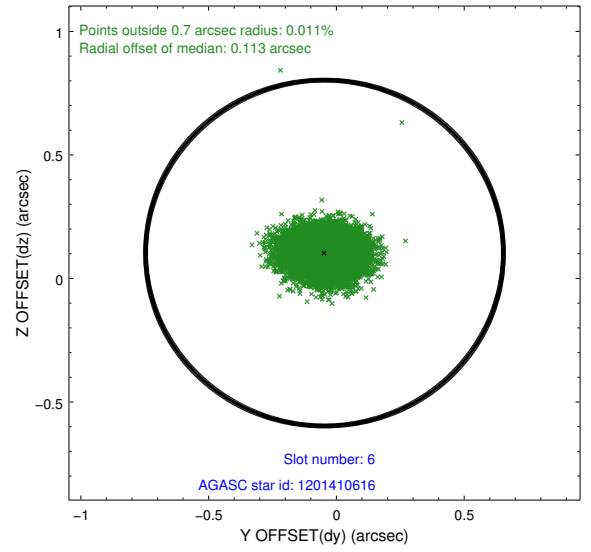
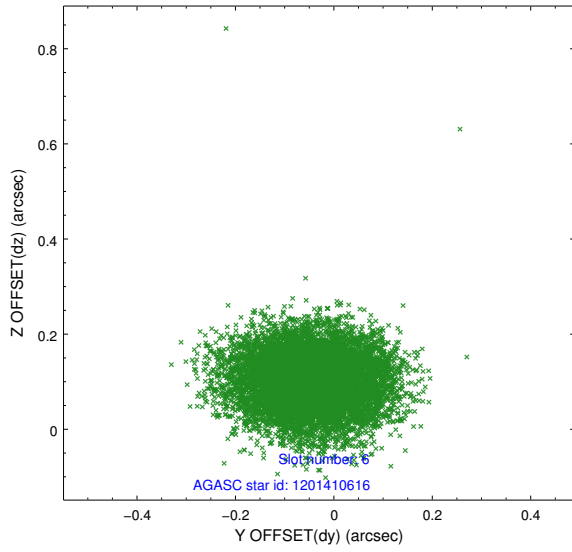
## 2.4.2 Slot 4



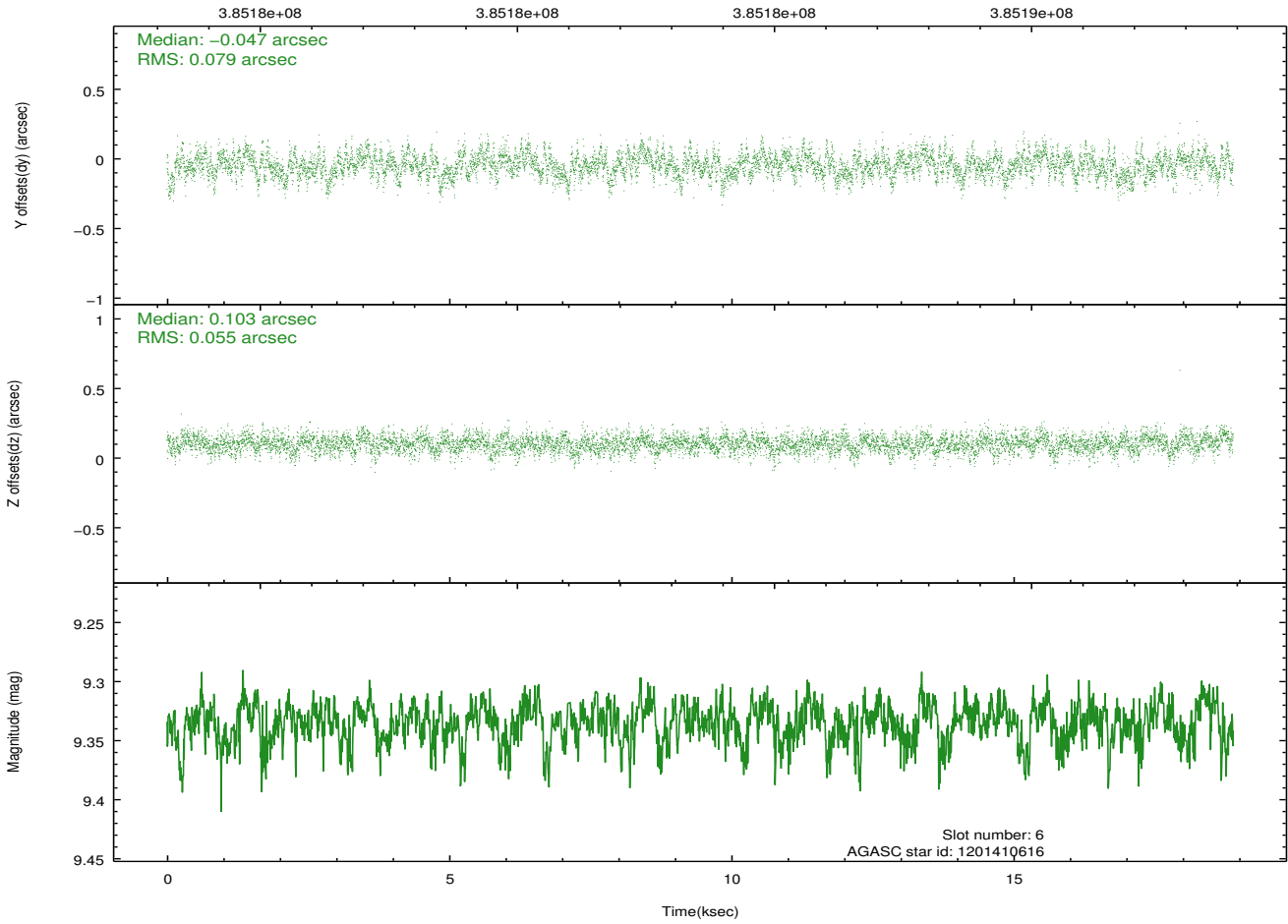
### 2.4.3 Slot 5



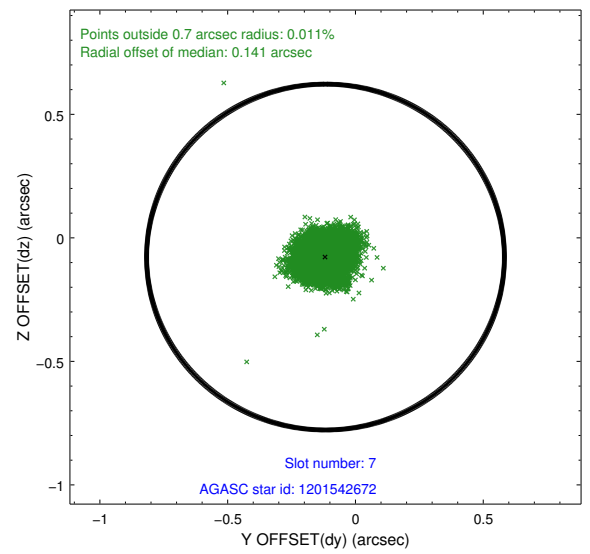
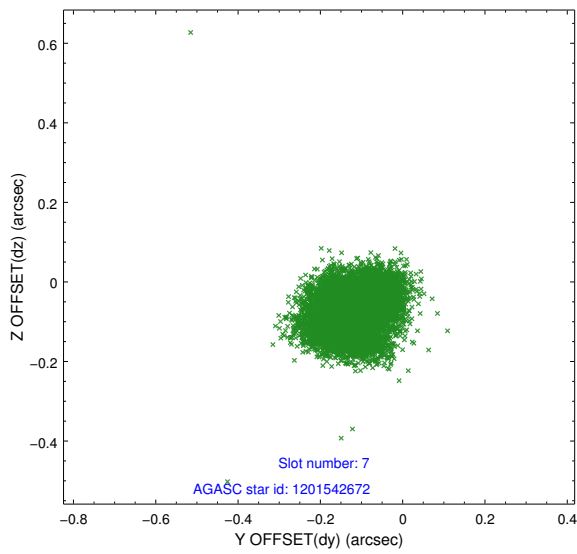
## 2.4.4 Slot 6



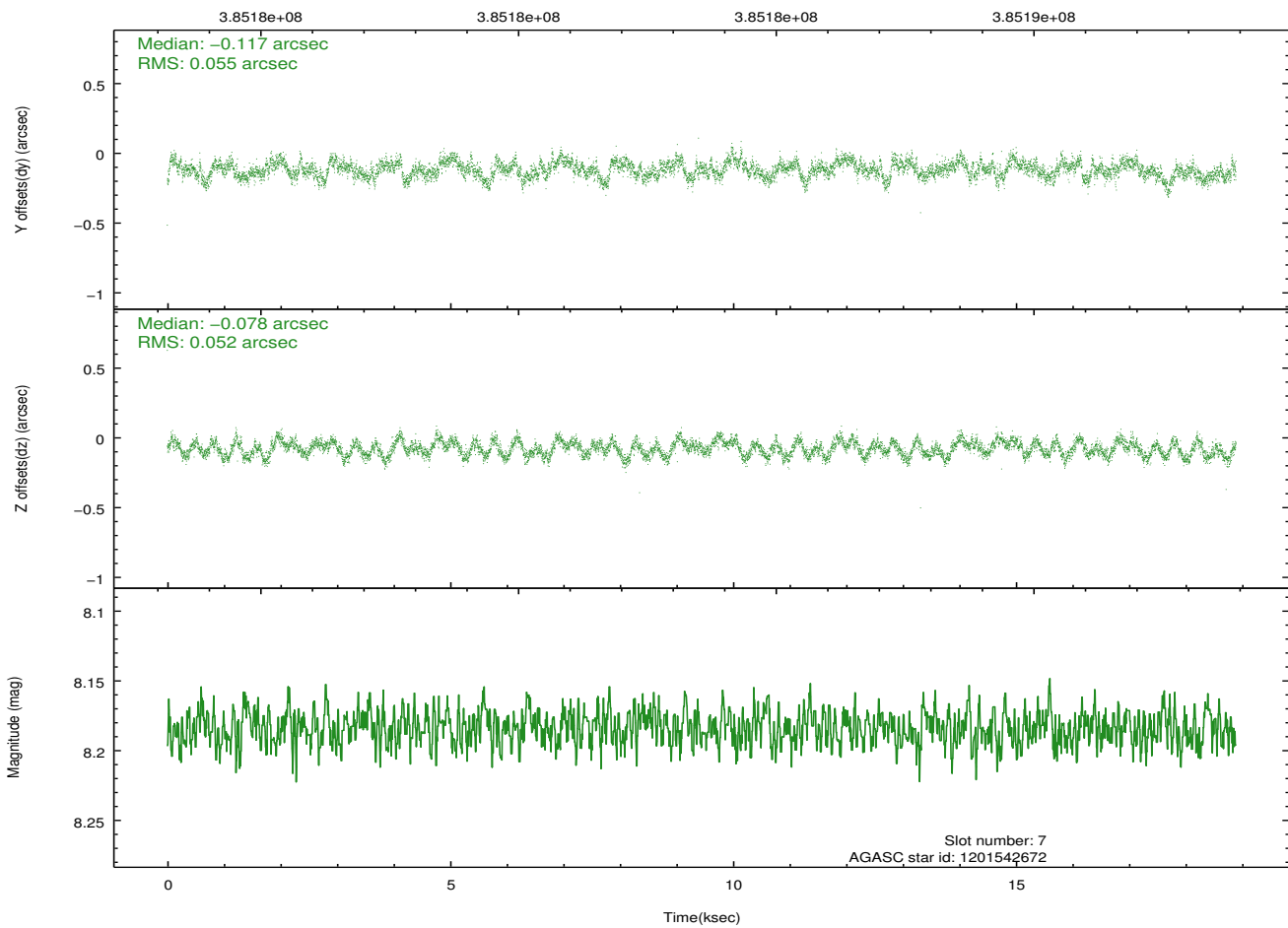
Time (s)



## 2.4.5 Slot 7

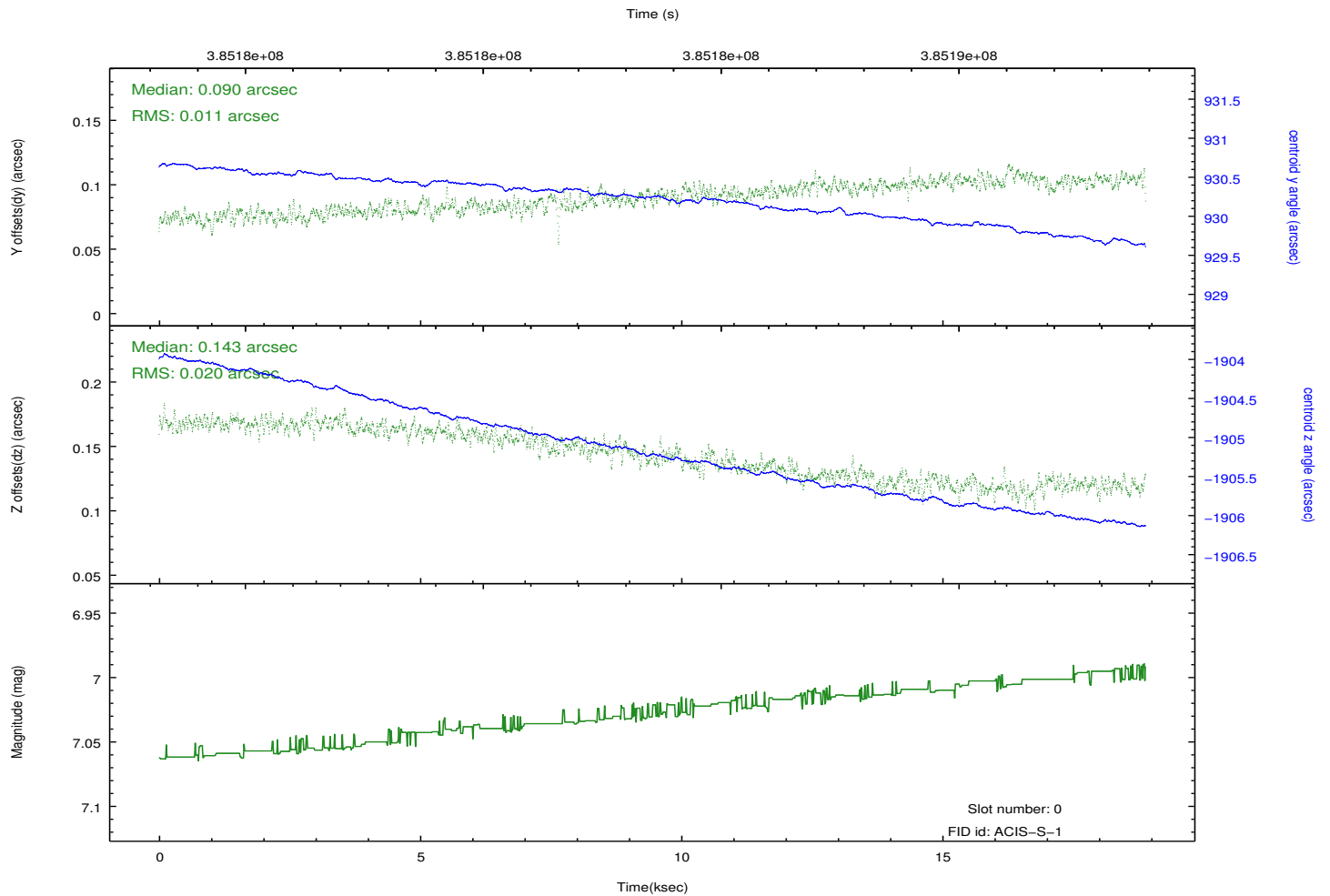
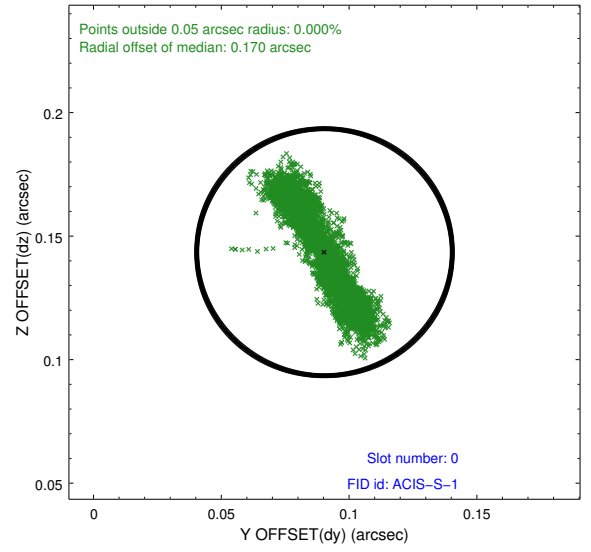
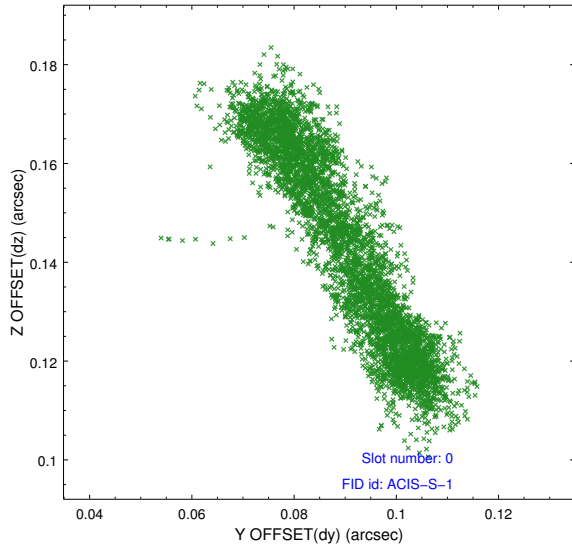


Time (s)

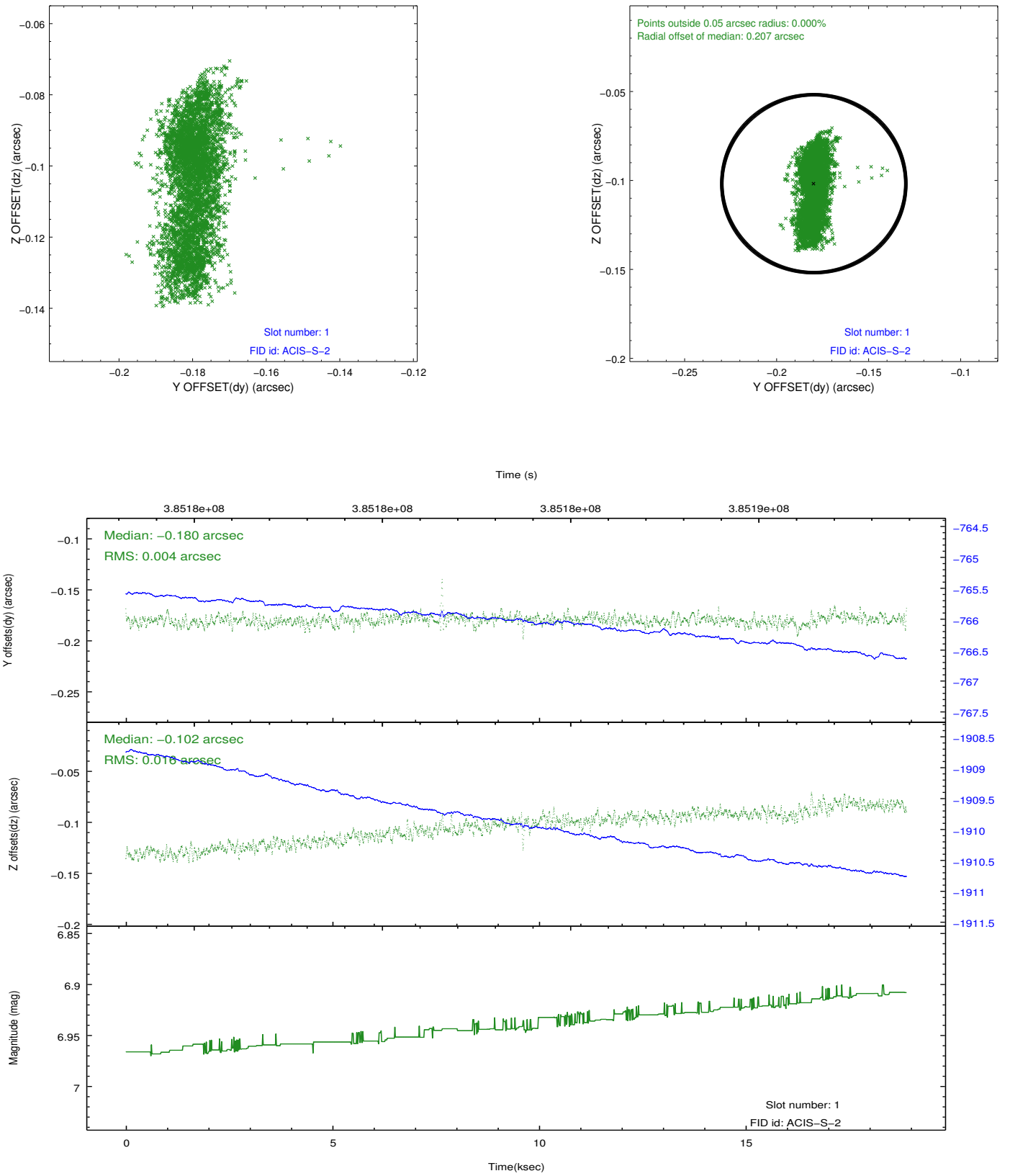


## 2.5 FID Slots

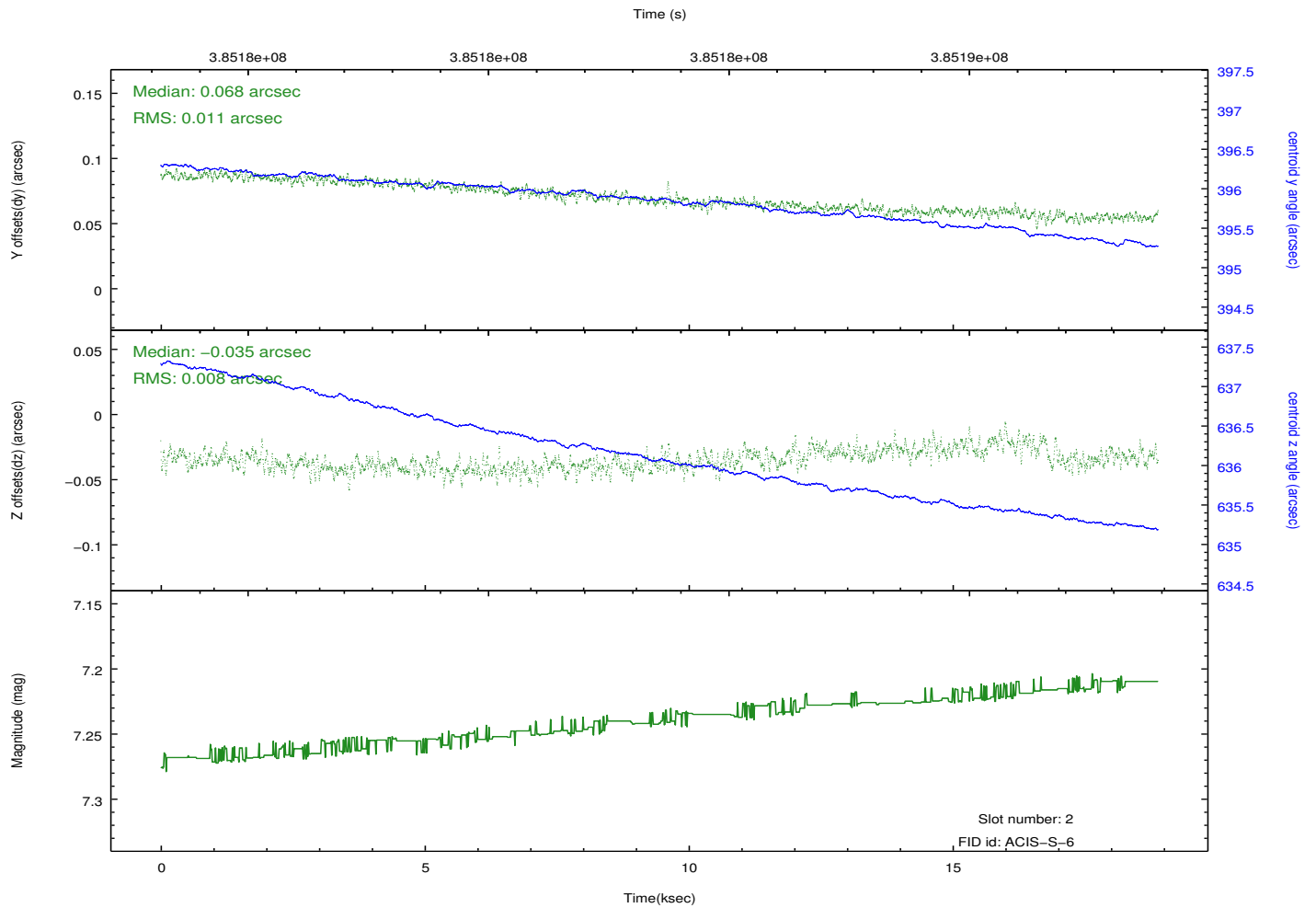
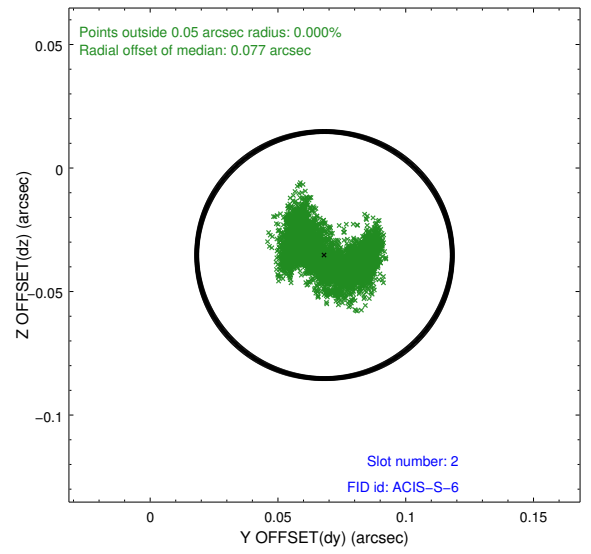
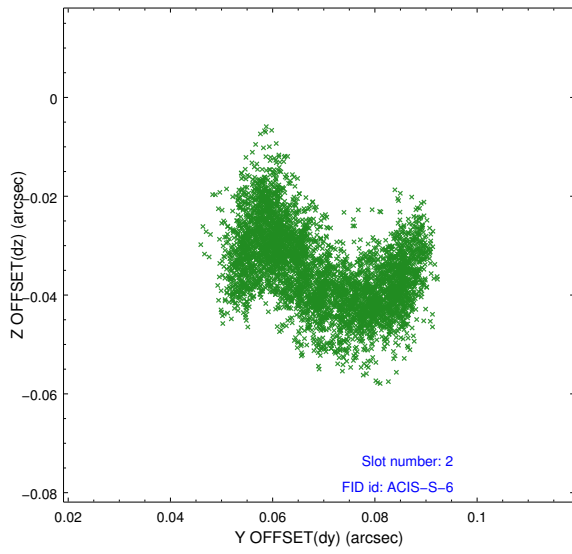
### 2.5.1 Slot 0



## 2.5.2 Slot 1



### 2.5.3 Slot 2

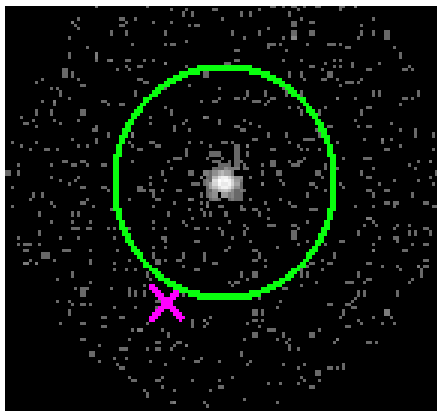


### 3 Gratings

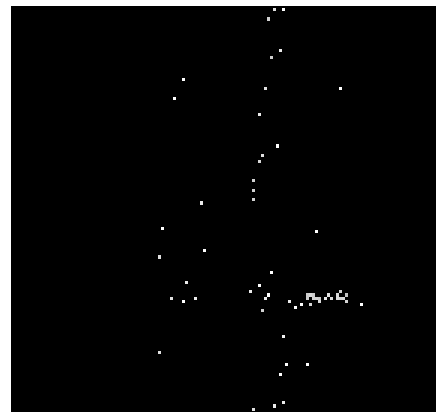
#### 3.1 HEG Arm



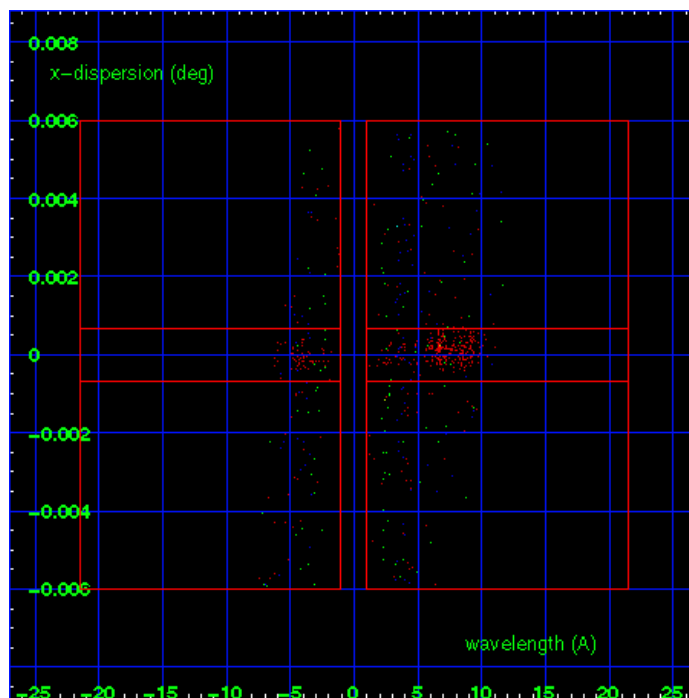
HEG Order Sort 123



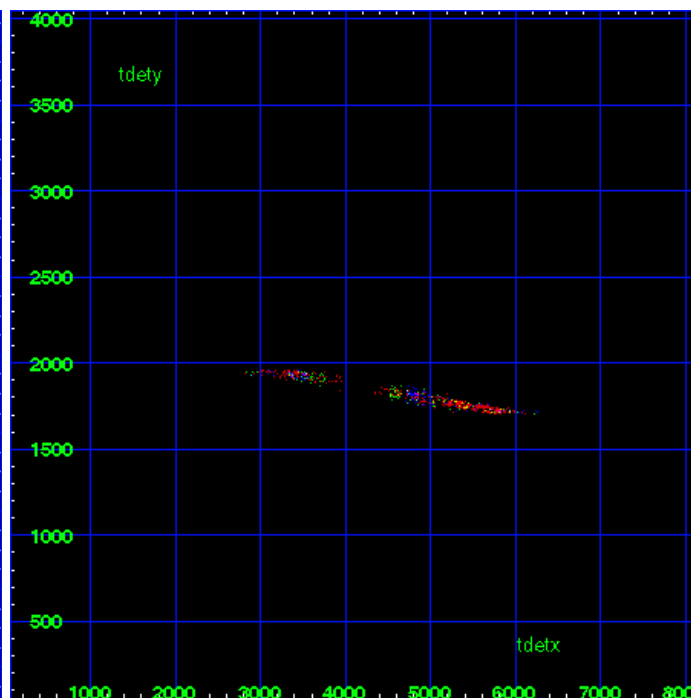
HEG Zero Order



HEG Order Sort ALL

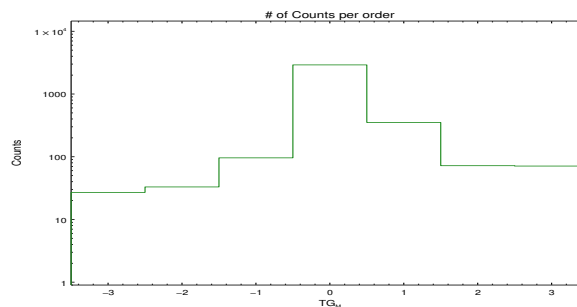


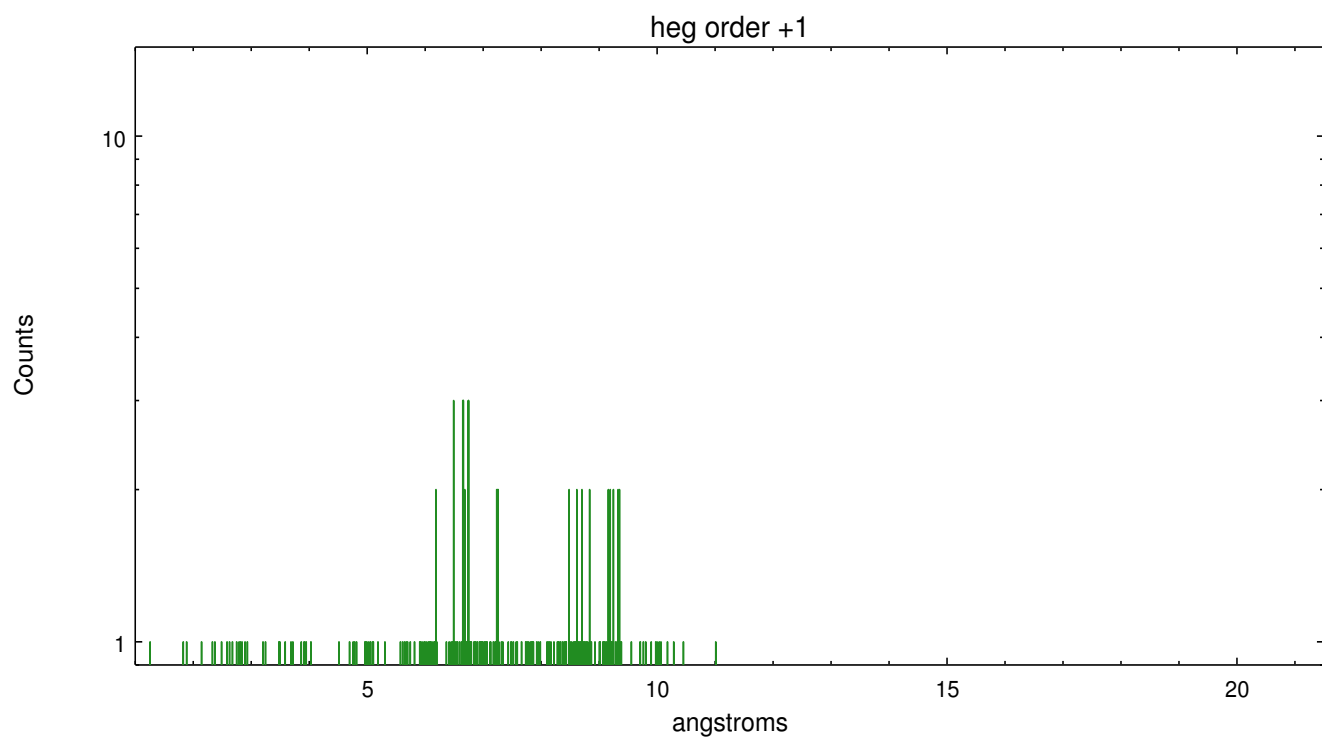
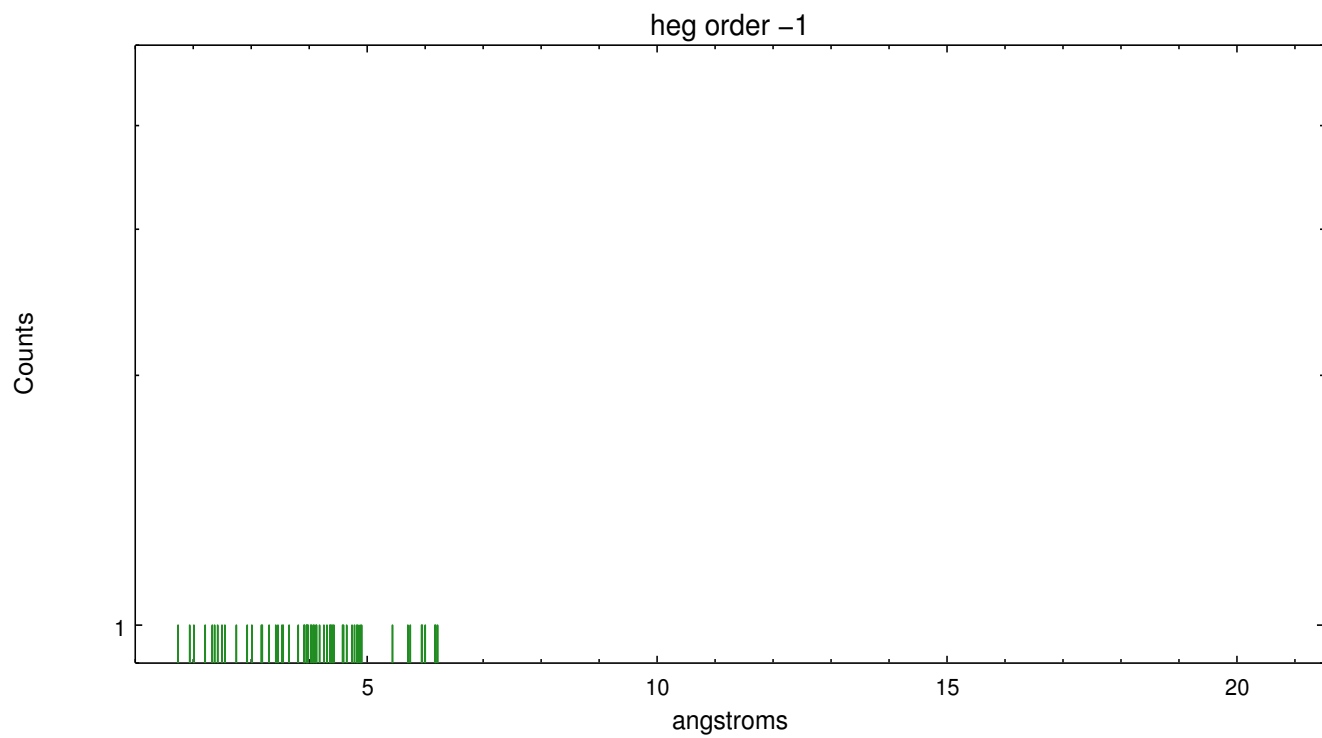
Spot Image HEG



Full Detector HEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	27	33	96	2913	352	72	71

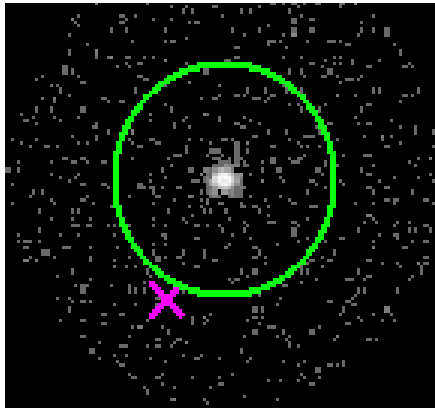




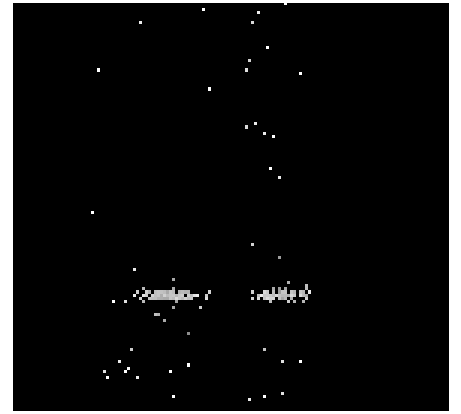
### 3.2 MEG Arm



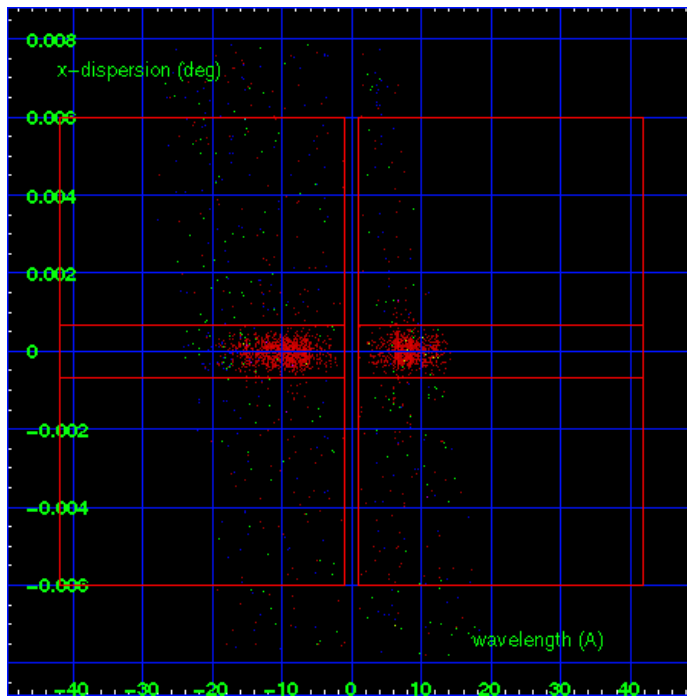
MEG Order Sort 123



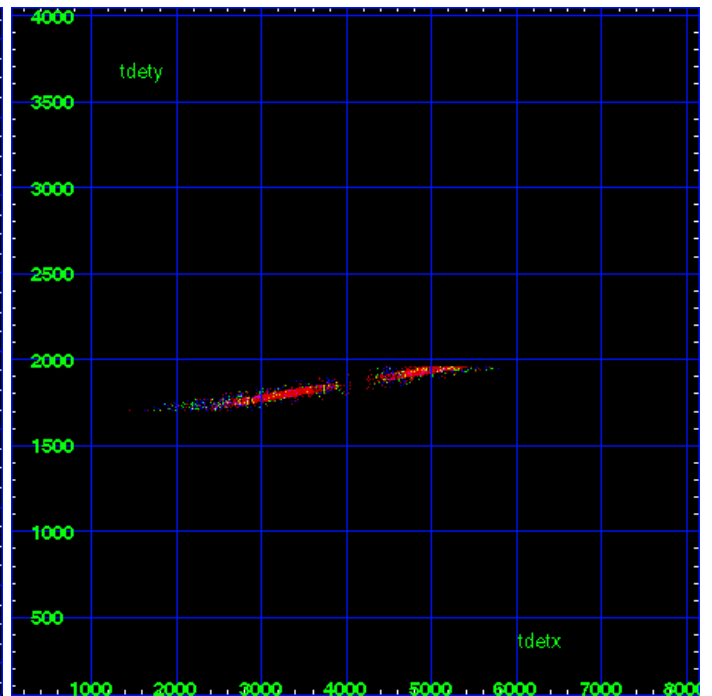
MEG Zero Order



MEG Order Sort ALL

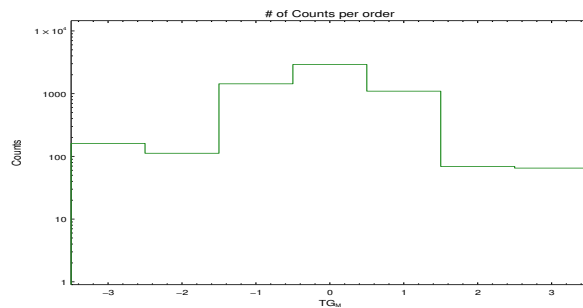


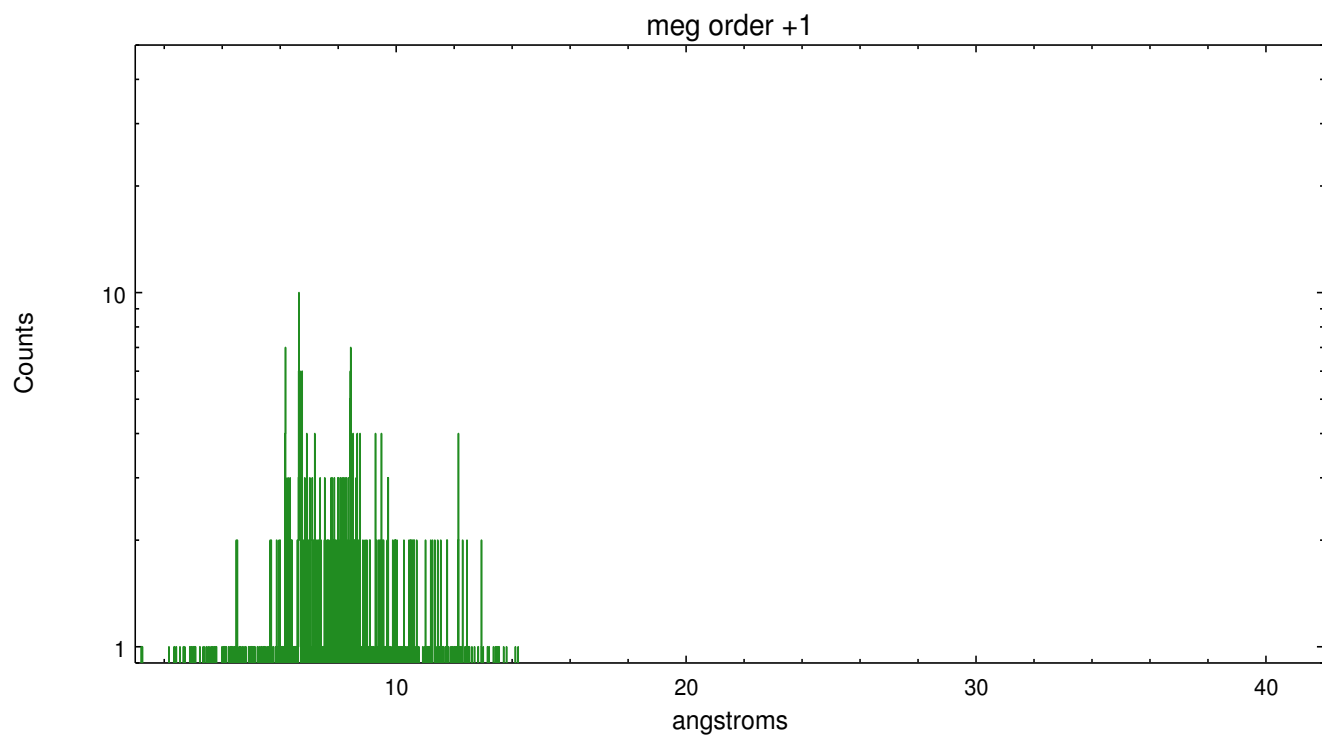
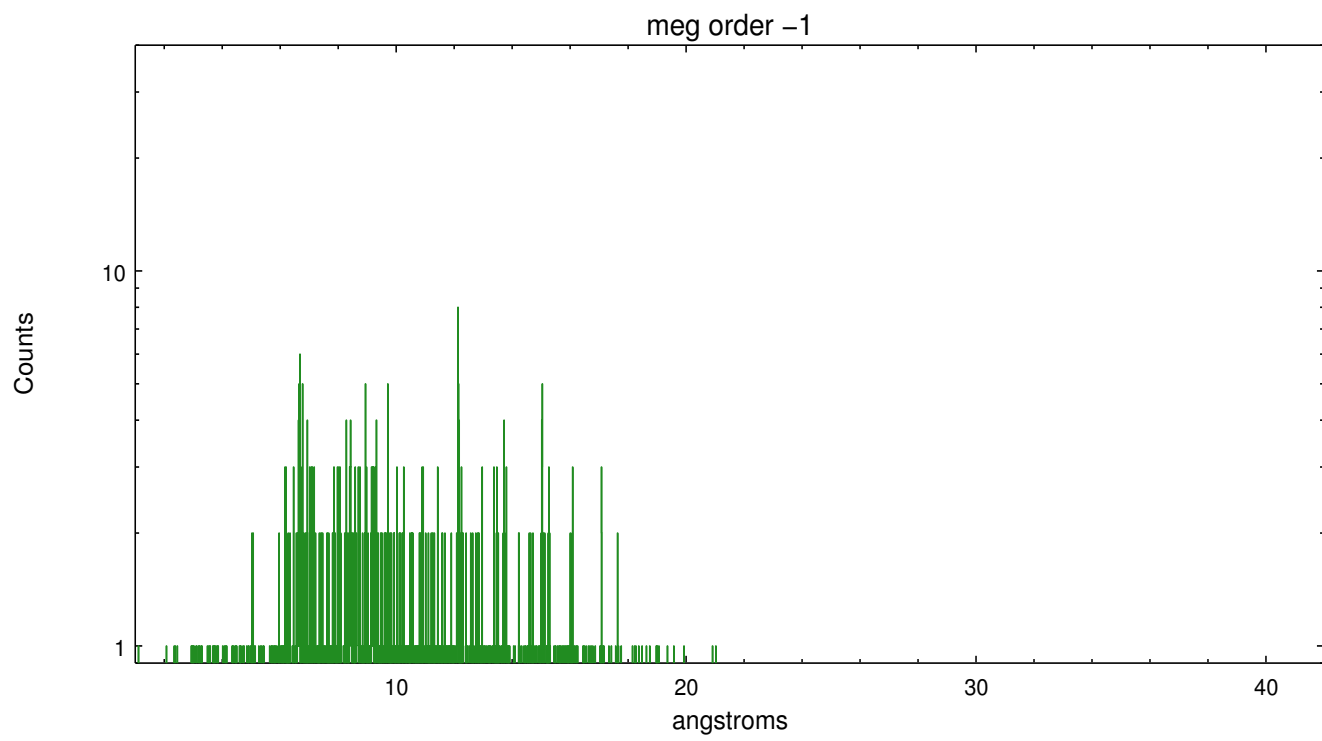
Spot Image MEG



Full Detector MEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	161	112	1435	2913	1095	69	65





# A Summary

## A.1 Status

V&V Scientist	Joy Nichols
V&V Date (YYYY-MM-DD)	2012.06.25
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	18.891

## A.2 Comments

Time constraint met. Roll constraint met. Target slightly offset in subarray in order to include 0 VIII lines in MEG minus order. ===  
WARNING::Zeroth order selected by pipeline tools is well-centered in the SNR but is not necessarily at the position of brightest emission. The user may want to select a region or source of interest, then use software tools such as CIAO to specify the coordinates of the zeroth order source of interest before running the tools to resolve the dispersed events. ===

The spatial flux distribution of the zeroth order is slightly asymmetric. Possibly extended source: the wavelength solution is pertinent only to the zeroth order position determined by the tool `tgdetect`. For extended sources, there is no unique mapping from position to wavelength.

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. ====