

# V&V Reference Report

## L2 ASCDS Version : 8.4.5

Observation 10680 - L2 Version 2  
Chandra X-Ray Center

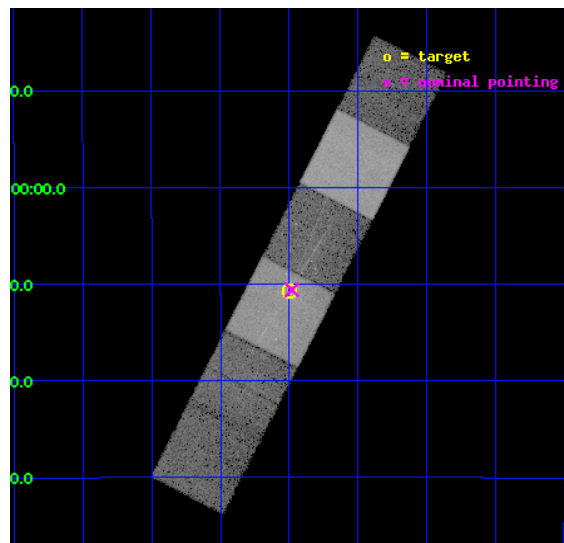
L2 Processing Date : Jun 8 2012

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# 1 Front

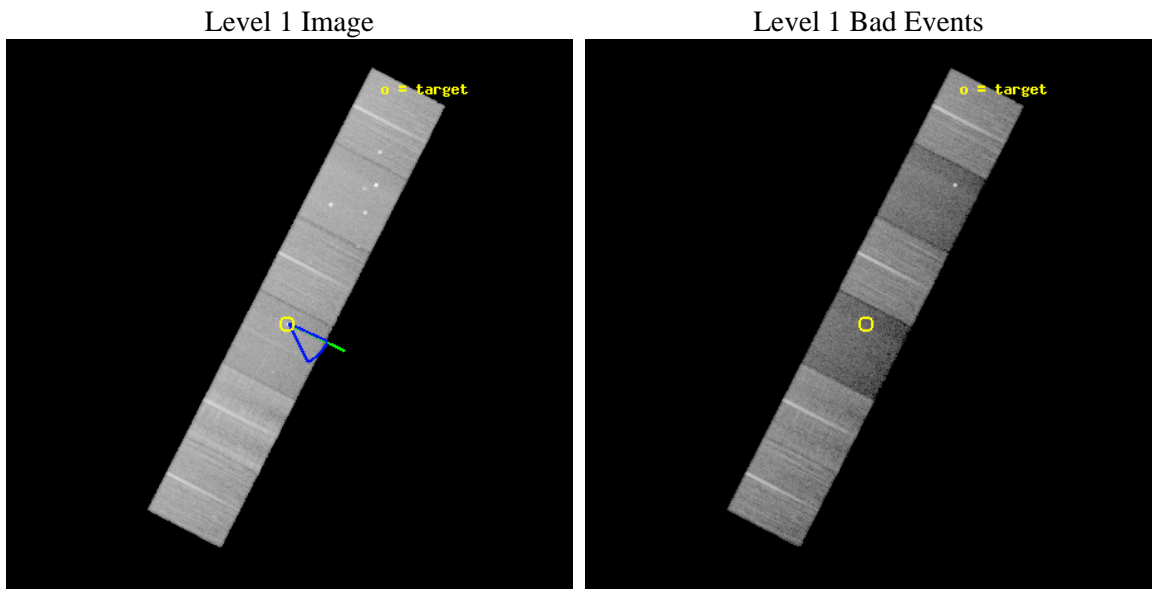
seq_num	200565	Sequence number
obs_id	10680	Observation id
title	Revealing the Origin of Hard X-rays in the Remarkable O4-O4 Binary Star System in M17: GTO component	Proposal title
observer	Professor Gordon Garmire	Principal investigator
object	M17 O4-O4 binary	Source name
dtcycle	0	&#160
cycle	P	events from which exps? Prim/Second/Both
ra_targ	275.124583	Observer's specified target RA [deg]
dec_targ	-16.179194	Observer's specified target Dec [deg]
ra_nom	275.12026755767	Nominal RA [deg]
dec_nom	-16.176702777362	Nominal Dec [deg]
roll_nom	117.15543132551	Nominal Roll [deg]
revision	2	Processing version of data
ontime	23538.373012424	Sum of GTIs [s]
livetime	23240.315960234	Livetime [s]
ontime4	23531.932041943	Sum of GTIs [s]
ontime5	23538.33197242	Sum of GTIs [s]
ontime6	23538.290932417	Sum of GTIs [s]
ontime7	23538.373012424	Sum of GTIs [s]
ontime8	23535.008892119	Sum of GTIs [s]
ontime9	23534.967832088	Sum of GTIs [s]
l2events	254510	Number of level 2 events



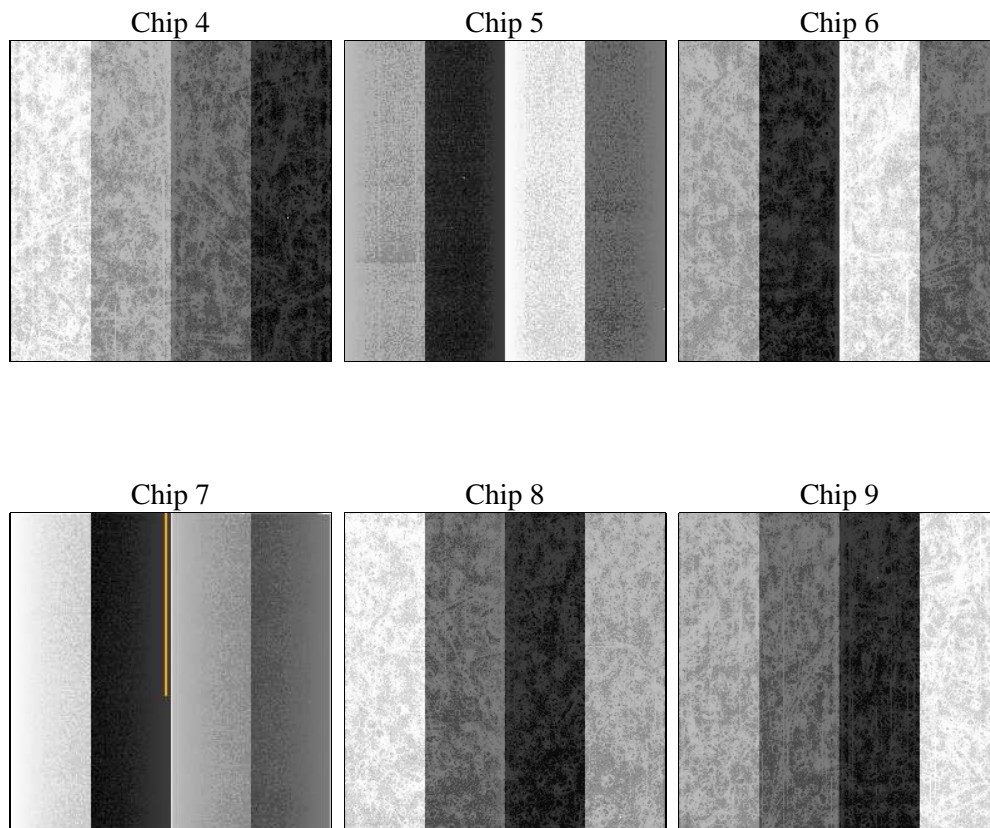
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

obi_num	0	Obi number	sched_exp_time	23500.000000	[s] Scheduled observation exposure time
ascdsver	8.4.5	Processing system revision	ontime	23538.373012424	Sum of GTIs [s]
caldbver	4.4.10	&#160	ontime4	23531.932041943	Sum of GTIs [s]
date	2012-06-08T07:13:52	Date and time of file creation	ontime5	23538.33197242	Sum of GTIs [s]
revision	2	Processing version of data	ontime6	23538.290932417	Sum of GTIs [s]
			ontime7	23538.373012424	Sum of GTIs [s]
			ontime8	23535.008892119	Sum of GTIs [s]
			ontime9	23534.967832088	Sum of GTIs [s]
			l1events	1168131	Number of level 1 events

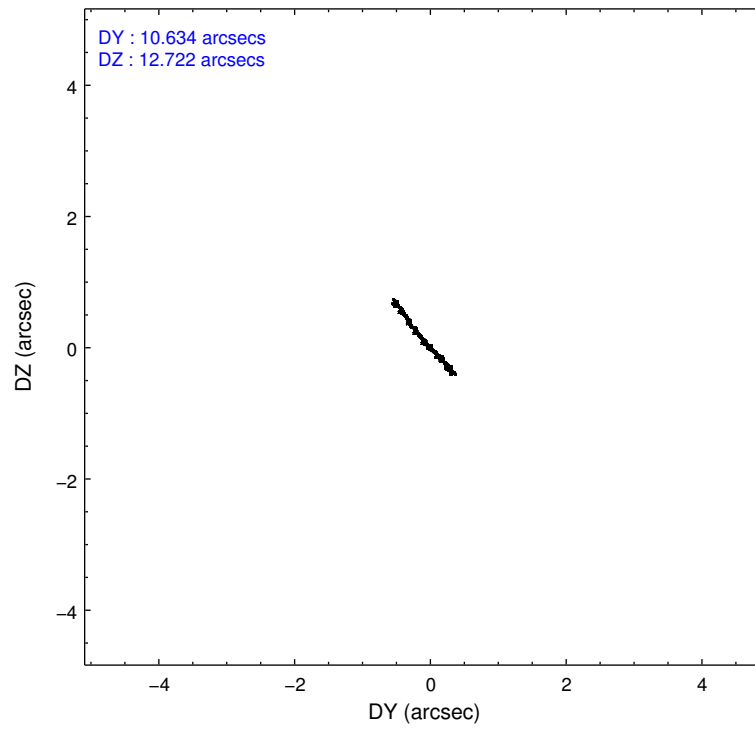
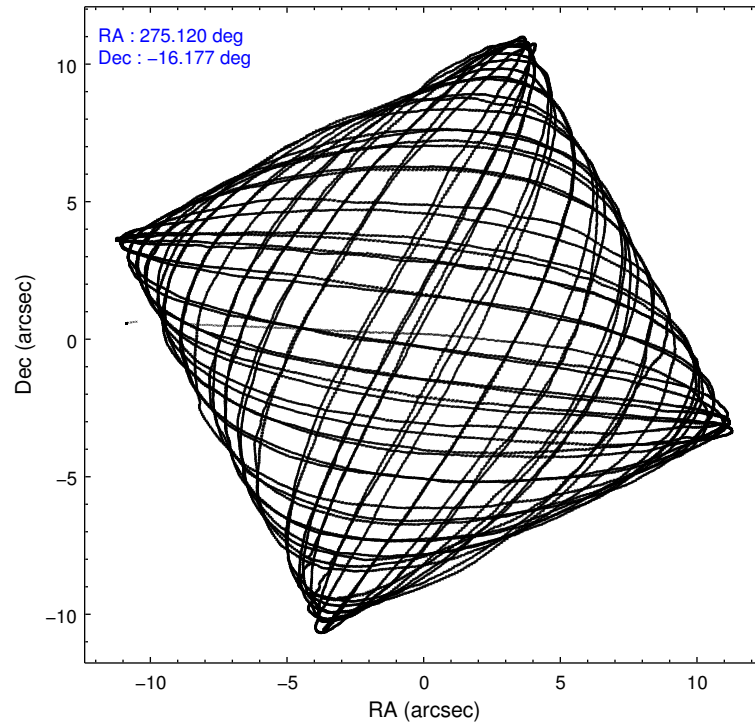
### 2.1.4 Events

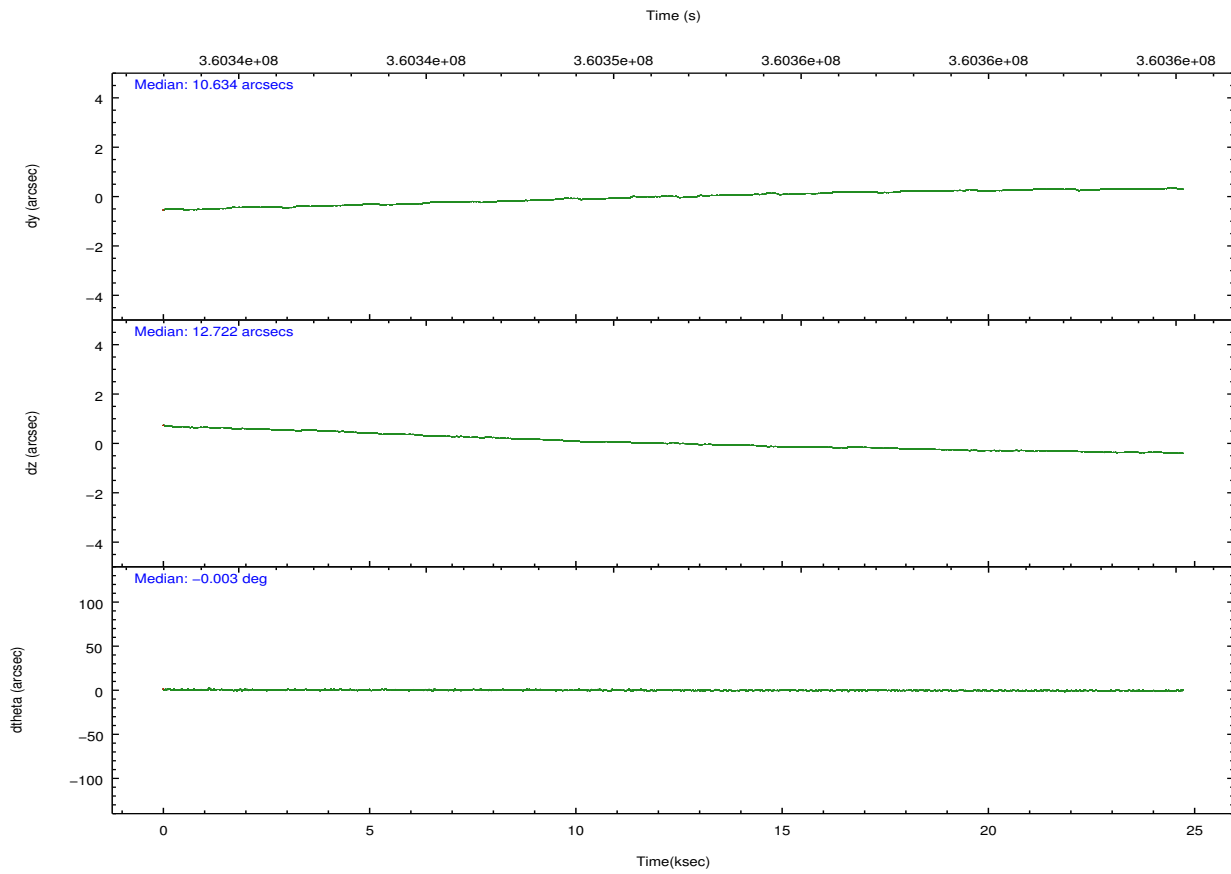
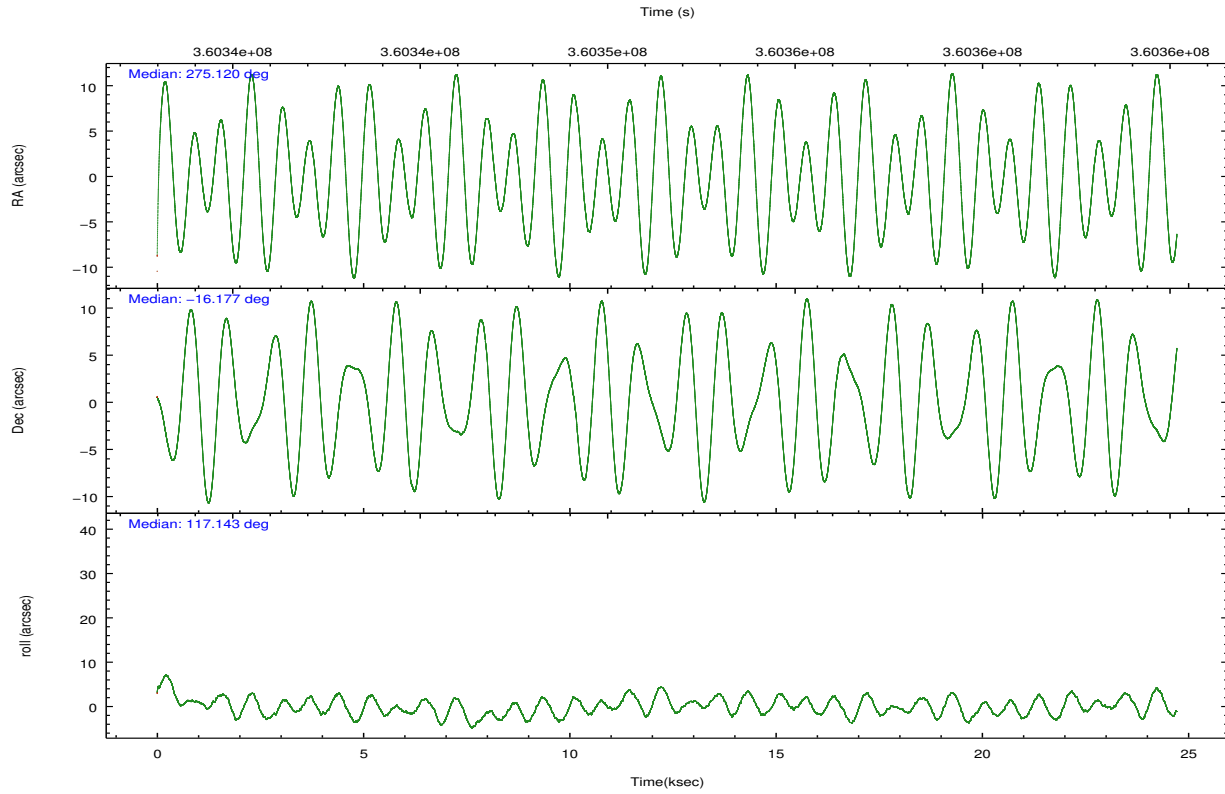
	ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9		ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
level 1 events	214966	206304	189565	150976	230029	176291	grade 0 events	9208	15560	9817	10201	18083	6631
rejected events	194028	88379	167611	67238	167623	158514		4%	7%	5%	6%	7%	3%
rejected %	90%	42%	88%	44%	72%	89%	grade 1 events	212	550	118	332	217	151
								0%	0%	0%	0%	0%	0%
							grade 2 events	4941	37397	4563	19232	14579	3967
								2%	18%	2%	12%	6%	2%
							grade 3 events	1949	5603	2058	8191	6766	1934
								0%	2%	1%	5%	2%	1%
							grade 4 events	1977	5252	2015	8023	6236	1893
								0%	2%	1%	5%	2%	1%
							grade 5 events	5213	17140	5037	15517	8462	5690
								2%	8%	2%	10%	3%	3%
							grade 6 events	2871	54125	3505	38102	16748	3354
								1%	26%	1%	25%	7%	1%
							grade 7 events	188595	70677	162452	51378	158938	152671
								87%	34%	85%	34%	69%	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	VFAINT	VFAINT	CCD I0 on	N	N
Observation mode	POINTING	POINTING	CCD I1 on	N	N
[deg] Pointing RA	275.144389	275.1202675576727	CCD I2 on	N	N
[deg] Pointing Dec	-16.191203	-16.17670277736216	CCD I3 on	N	N
[deg] Pointing Roll	117.005522	117.1554313255096	CCD S0 on	O1	Y
[deg] Roll angle	135.000000	135.000000	CCD S1 on	Y	Y
[deg] Roll tolerance	19.000000	19.000000	CCD S2 on	Y	Y
Roll constraint allows 180D rotation	N	N	CCD S3 on	Y	Y
[mm] SIM focus pos	-0.684267	-0.6828225247311905	CCD S4 on	Y	Y
[mm] SIM defocus	0	0.001444936568705701	CCD S5 on	O2	Y
[mm] SIM translation stage pos	-190.132523	-190.1400660498719	Number of optional ACIS chips dropped	0	0
[mm] SIM translation stage offset	0	0.00754346686406393	On-chip summing requested	N	N
[s] Observation start time (MET)	360340267.184000	360338023.36501	Subarray requested	NONE	NONE
Observation start date	2009-06-02T14:30:01	2009-06-02T13:53:43	Alternating exposures requested	N	N
[s] Observation end time (MET)	360363767.184000	360364403.79133	[s] Primary exposure time	0.000000	3.2
Observation end date	2009-06-02T21:01:41	2009-06-02T21:13:23			
Read mode	TIMED	TIMED			

## 2.3 Aspect





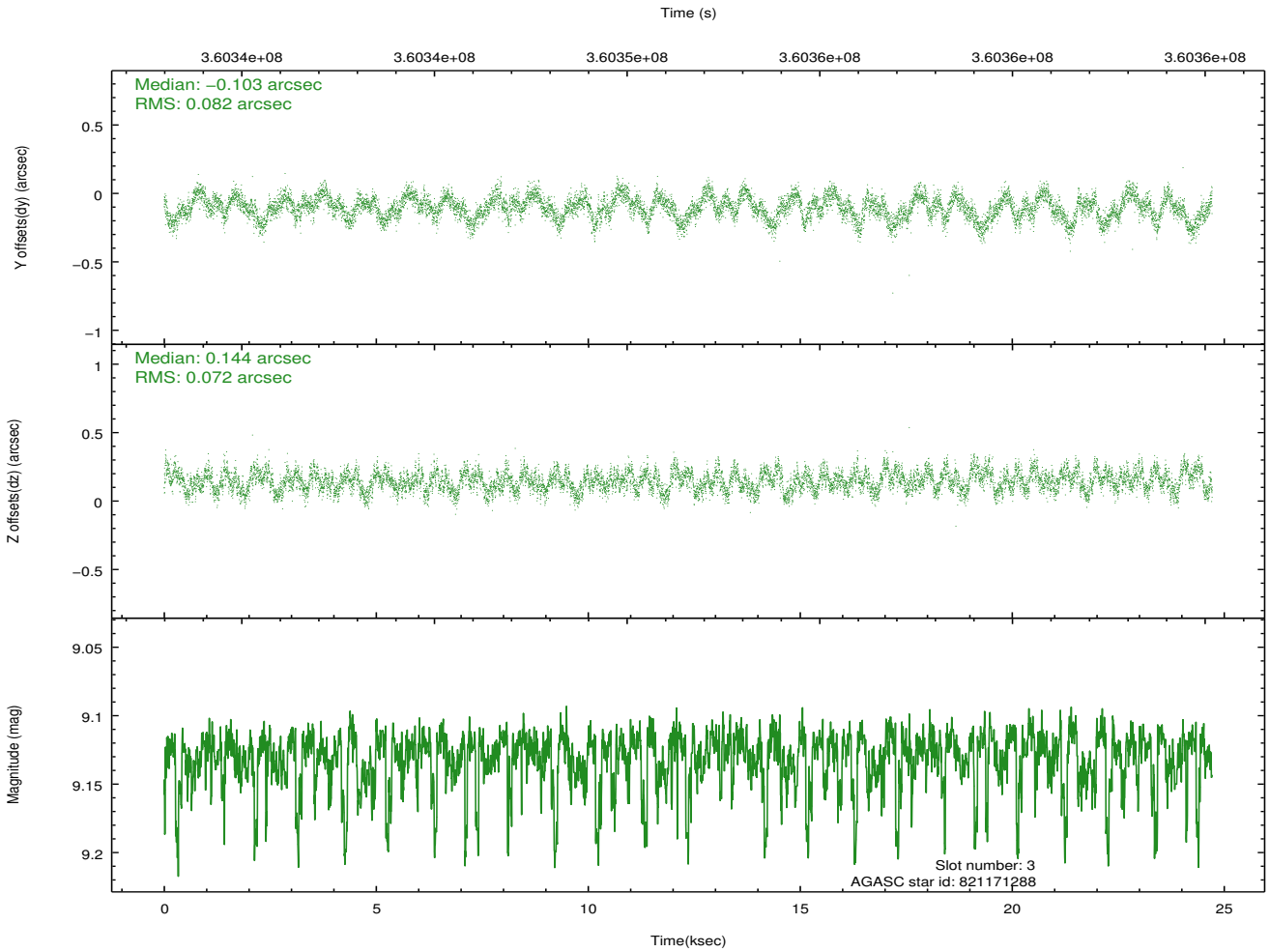
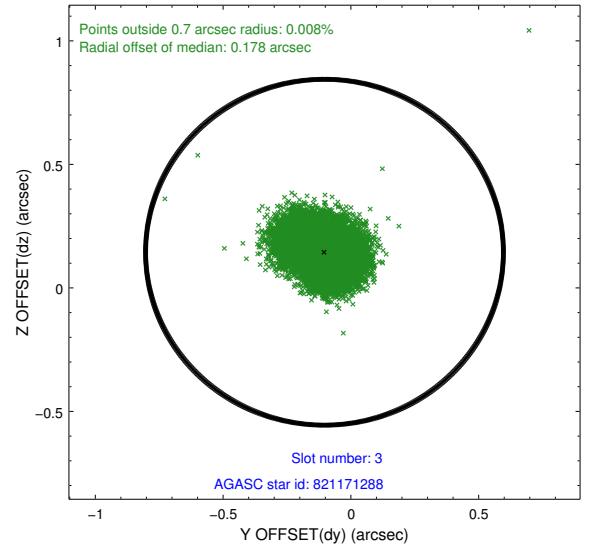
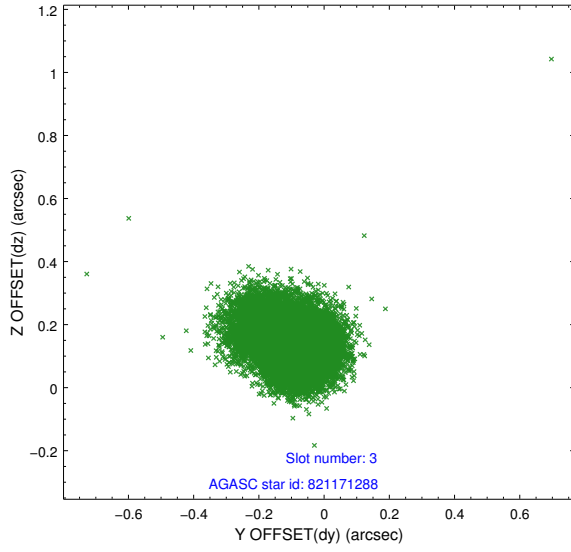
### Slot Statistics

slot	status	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID	ACIS-S-2	6.87	6030	-0.058	-0.025	0.019	0.030	0.000000	0.000000	-763.53	-1734.11
1	FID	ACIS-S-4	6.95	6028	0.060	0.033	0.016	0.023	0.000000	0.000000	2149.83	174.25
2	FID	ACIS-S-6	7.09	6028	-0.030	-0.004	0.008	0.013	0.000000	0.000000	398.68	811.78
3	GUIDE	821171288	9.13	12018	-0.103	0.144	0.116	0.180	275.426002	-15.652858	1283.39	-1748.83
4	GUIDE	821178016	8.65	12052	0.001	0.109	0.071	0.114	275.591629	-16.071502	-319.37	-1573.26
5	GUIDE	821180448	7.18	12057	-0.012	0.091	0.061	0.096	275.453560	-16.324585	-913.19	-733.23
6	GUIDE	821181816	8.41	12056	0.091	-0.064	0.073	0.116	274.847938	-16.750455	-1330.55	1824.97
7	GUIDE	821186736	7.98	12057	0.022	-0.281	0.082	0.129	274.765126	-16.656680	-900.39	1926.88

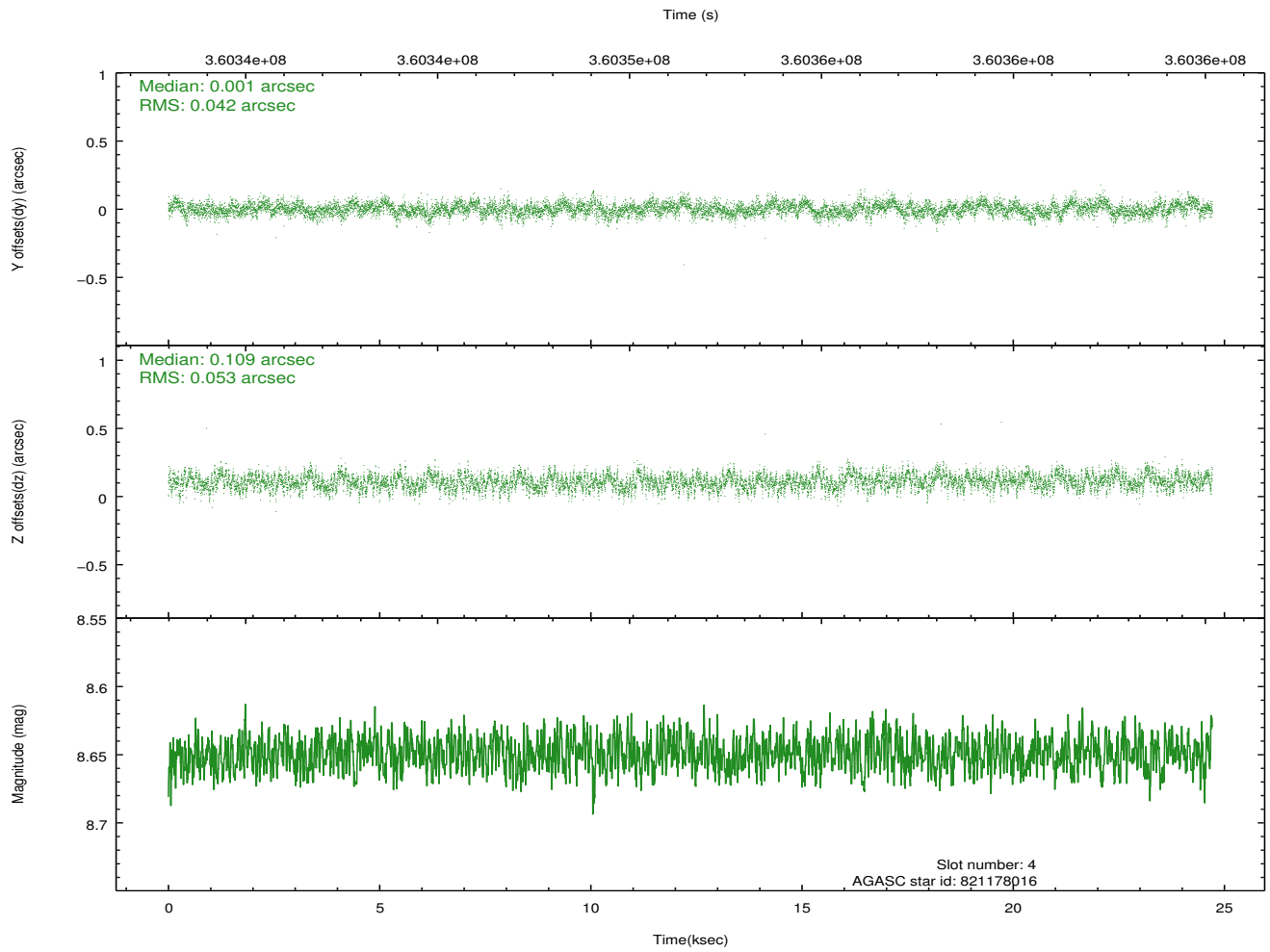
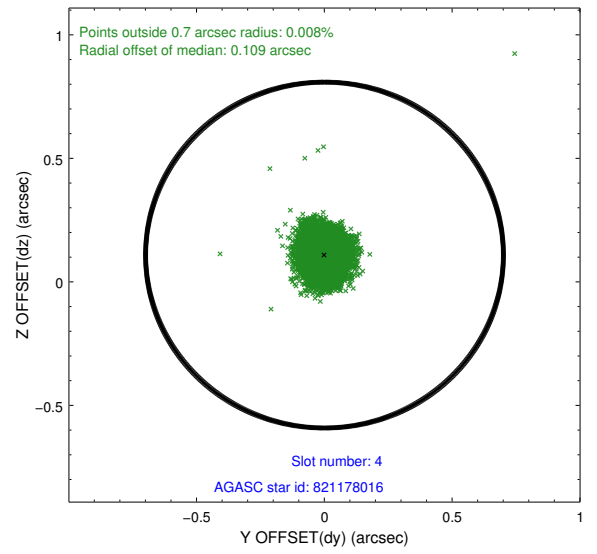
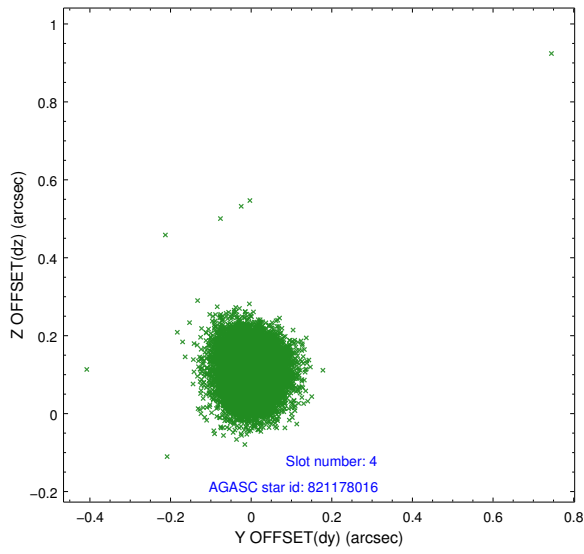
∞

## 2.4 Star Slots

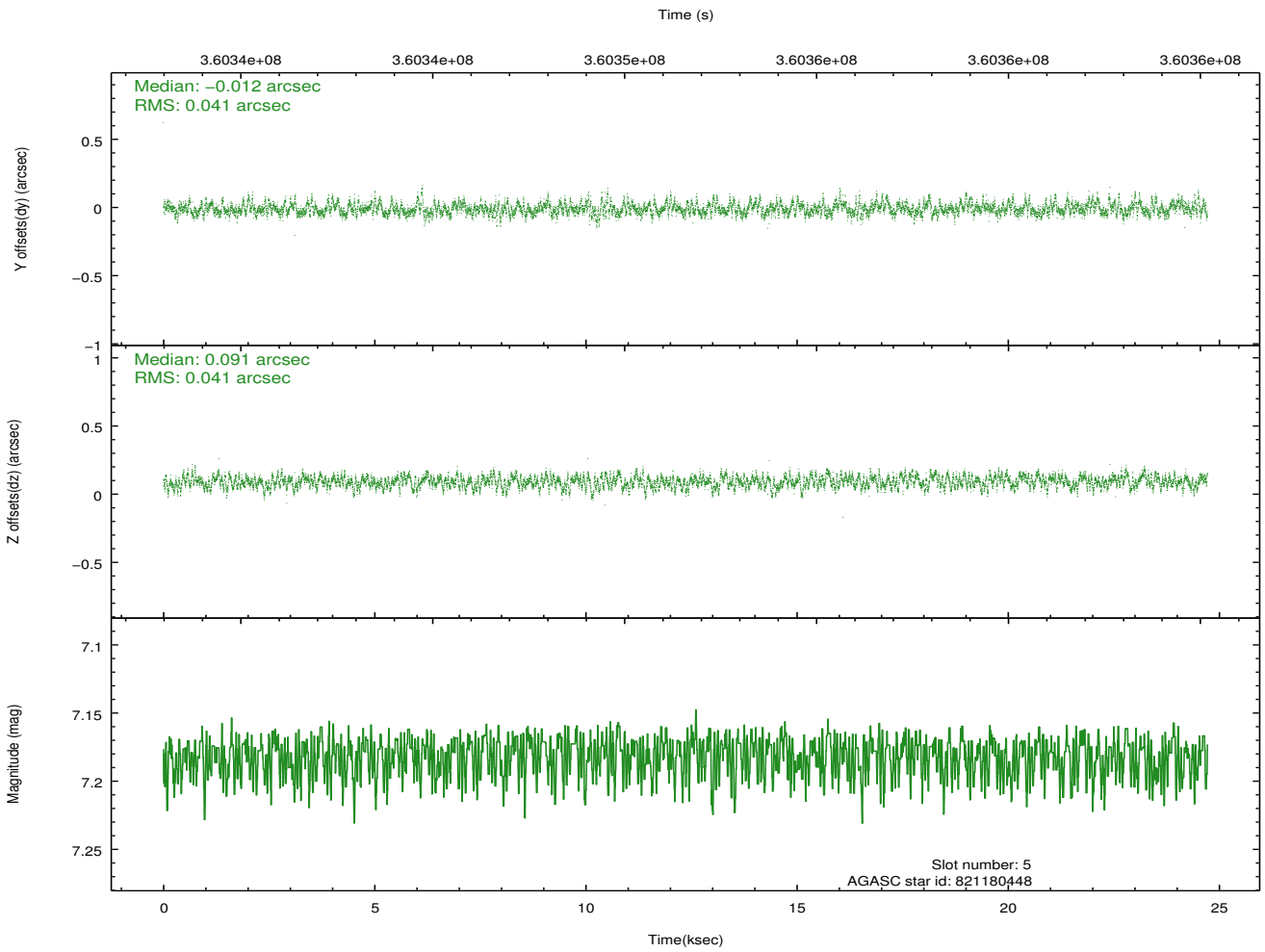
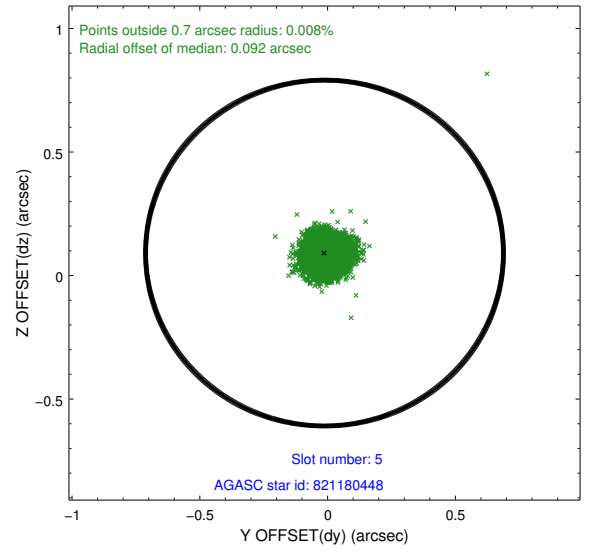
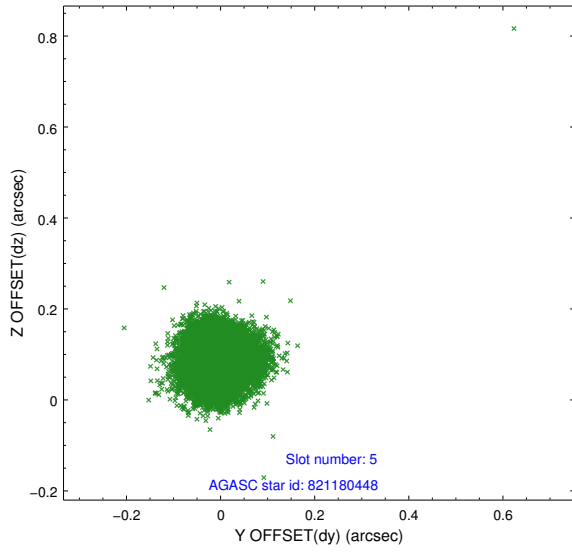
### 2.4.1 Slot 3



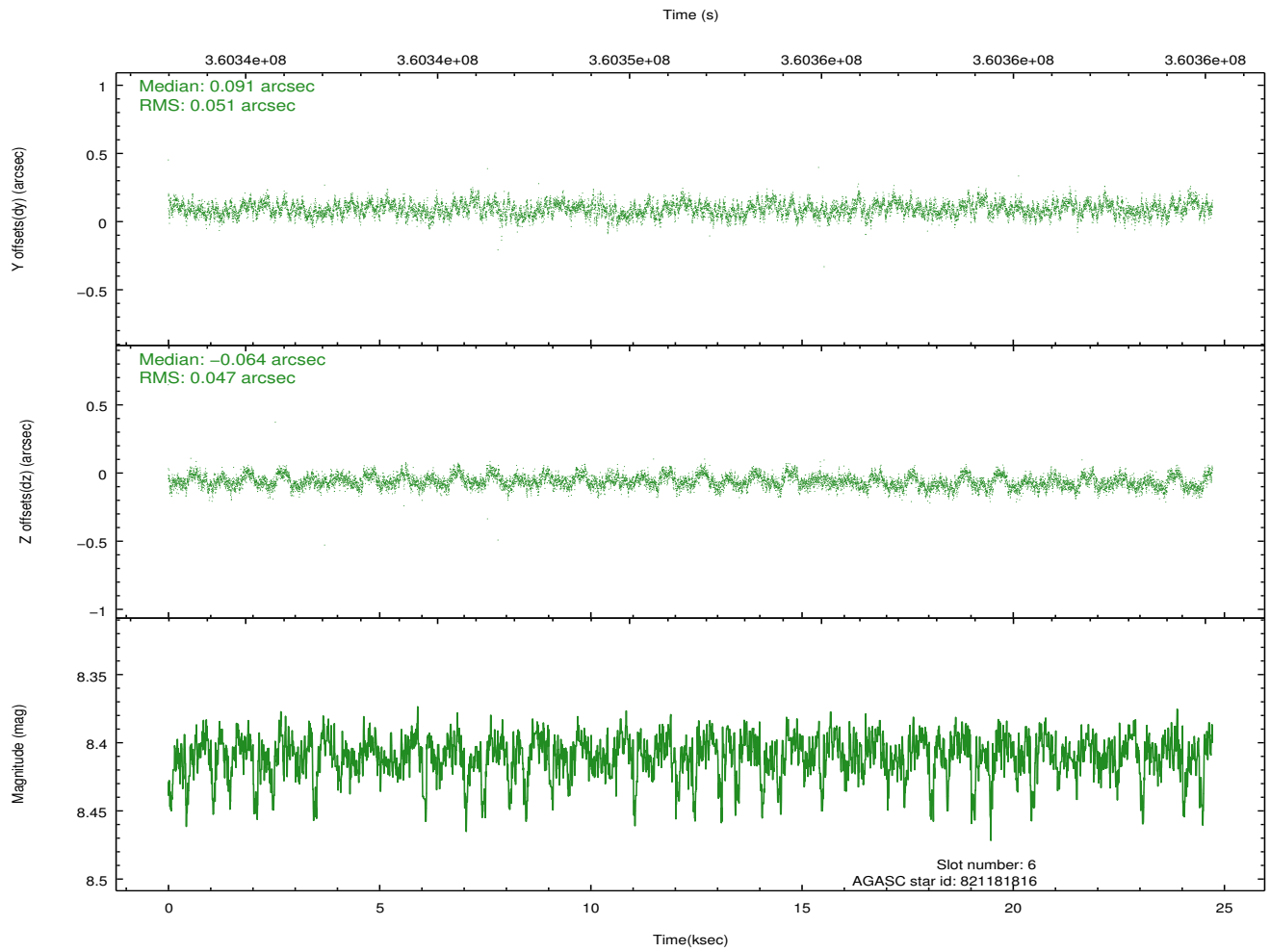
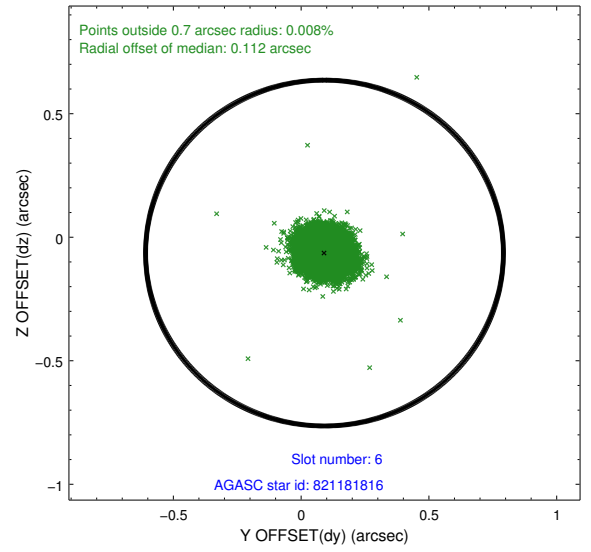
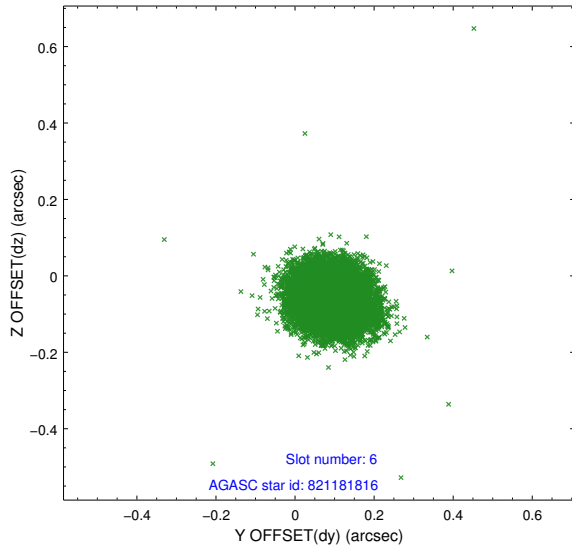
### 2.4.2 Slot 4



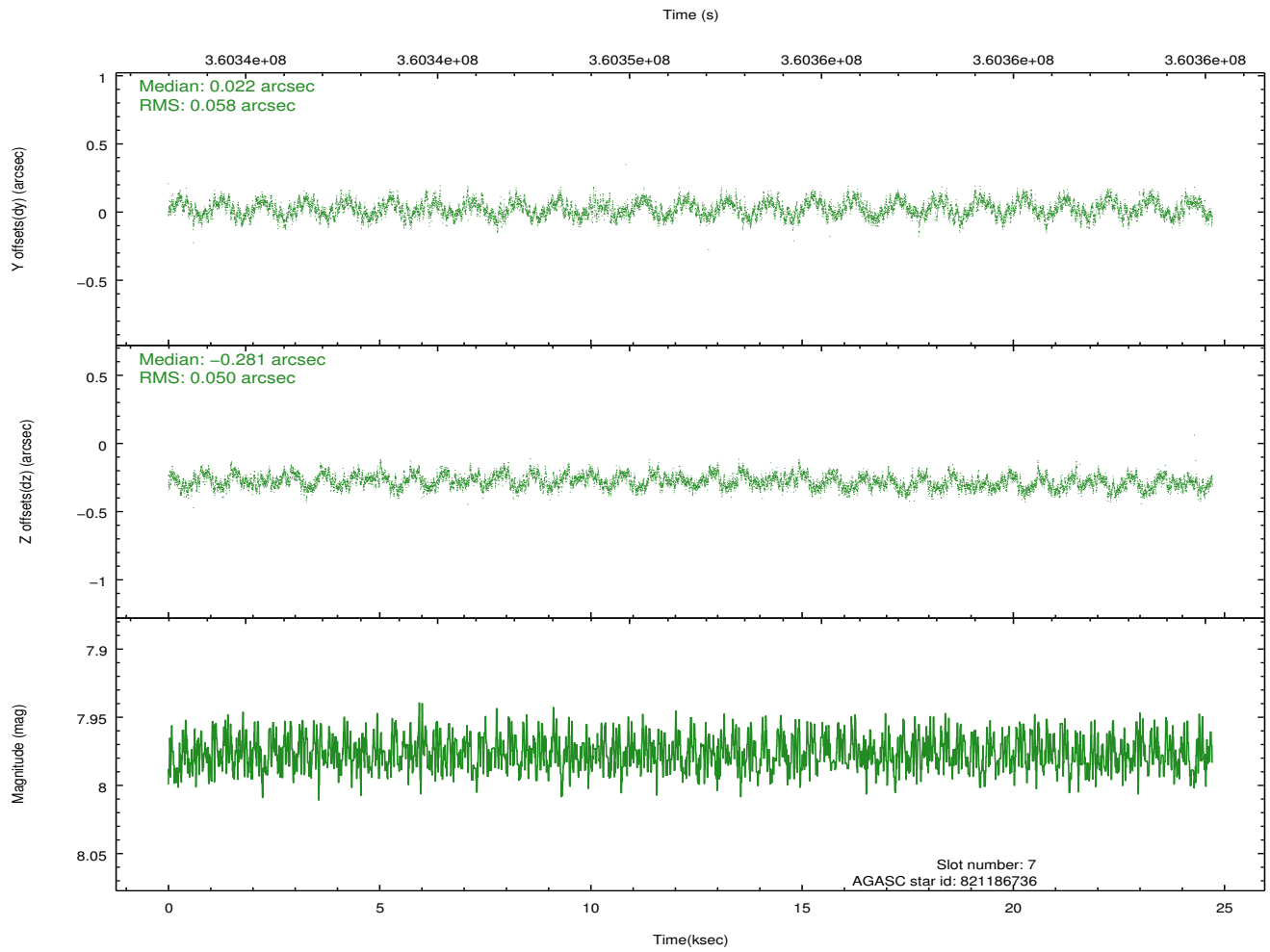
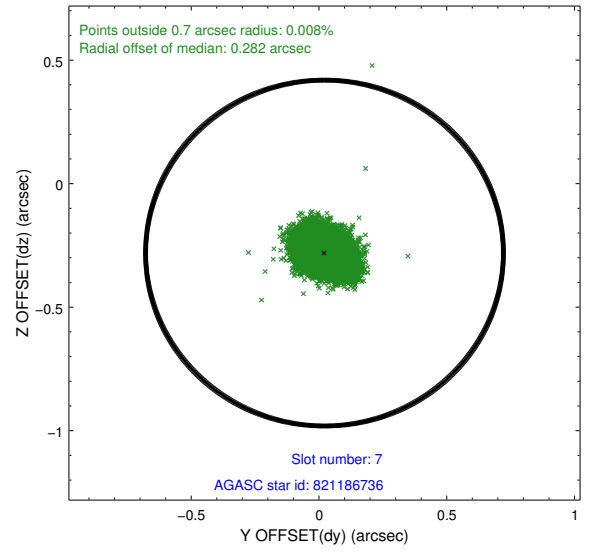
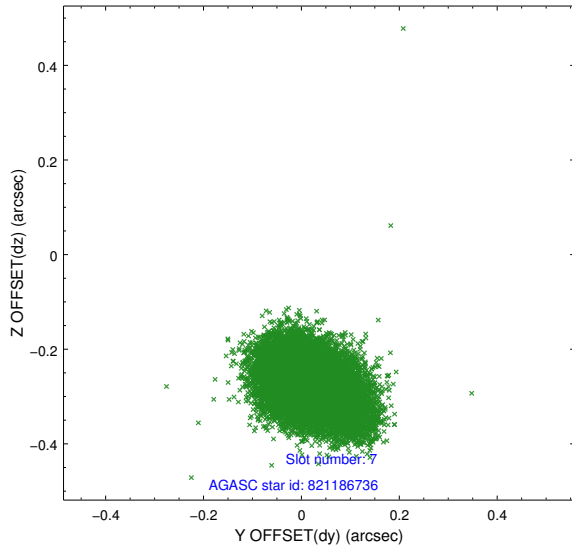
### 2.4.3 Slot 5



### 2.4.4 Slot 6

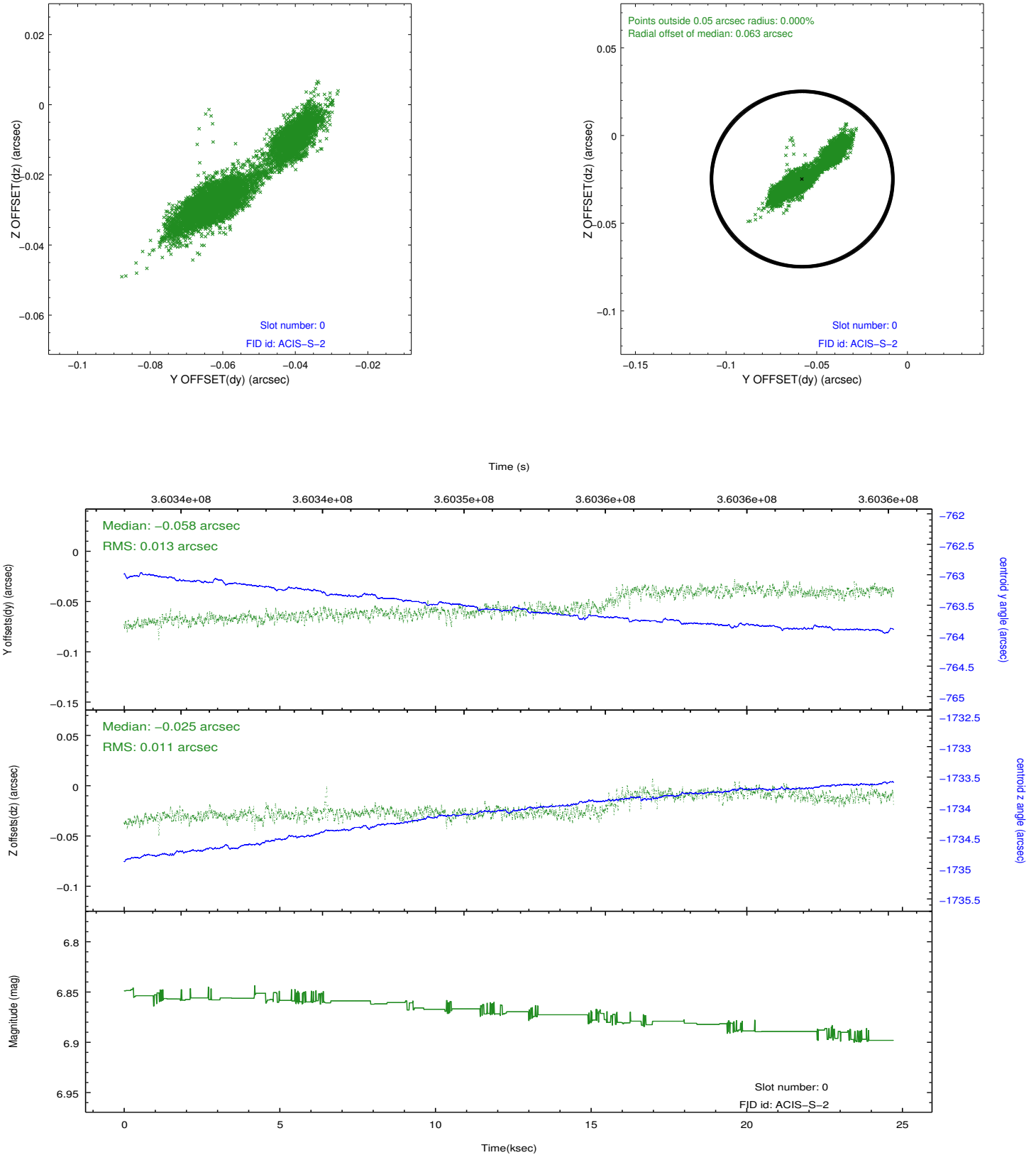


### 2.4.5 Slot 7

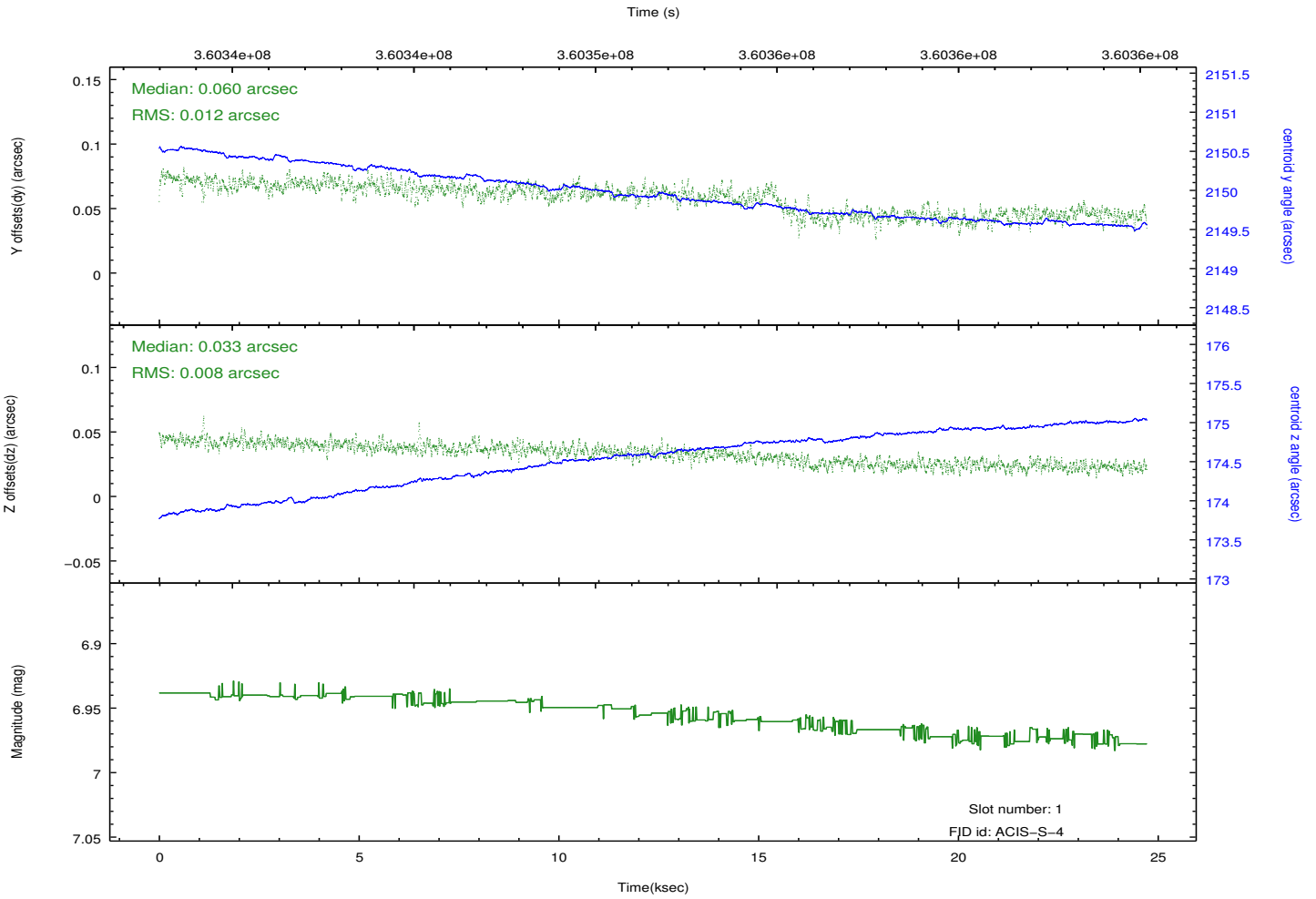
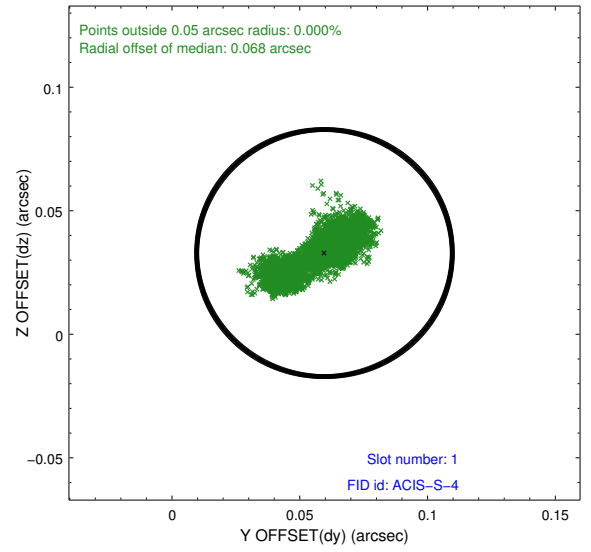
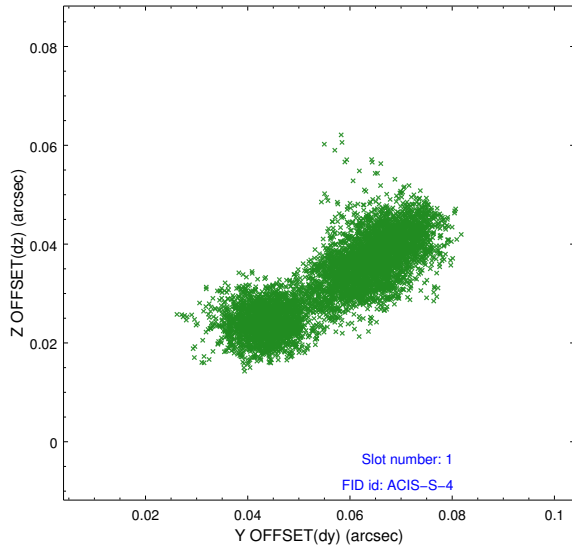


## 2.5 FID Slots

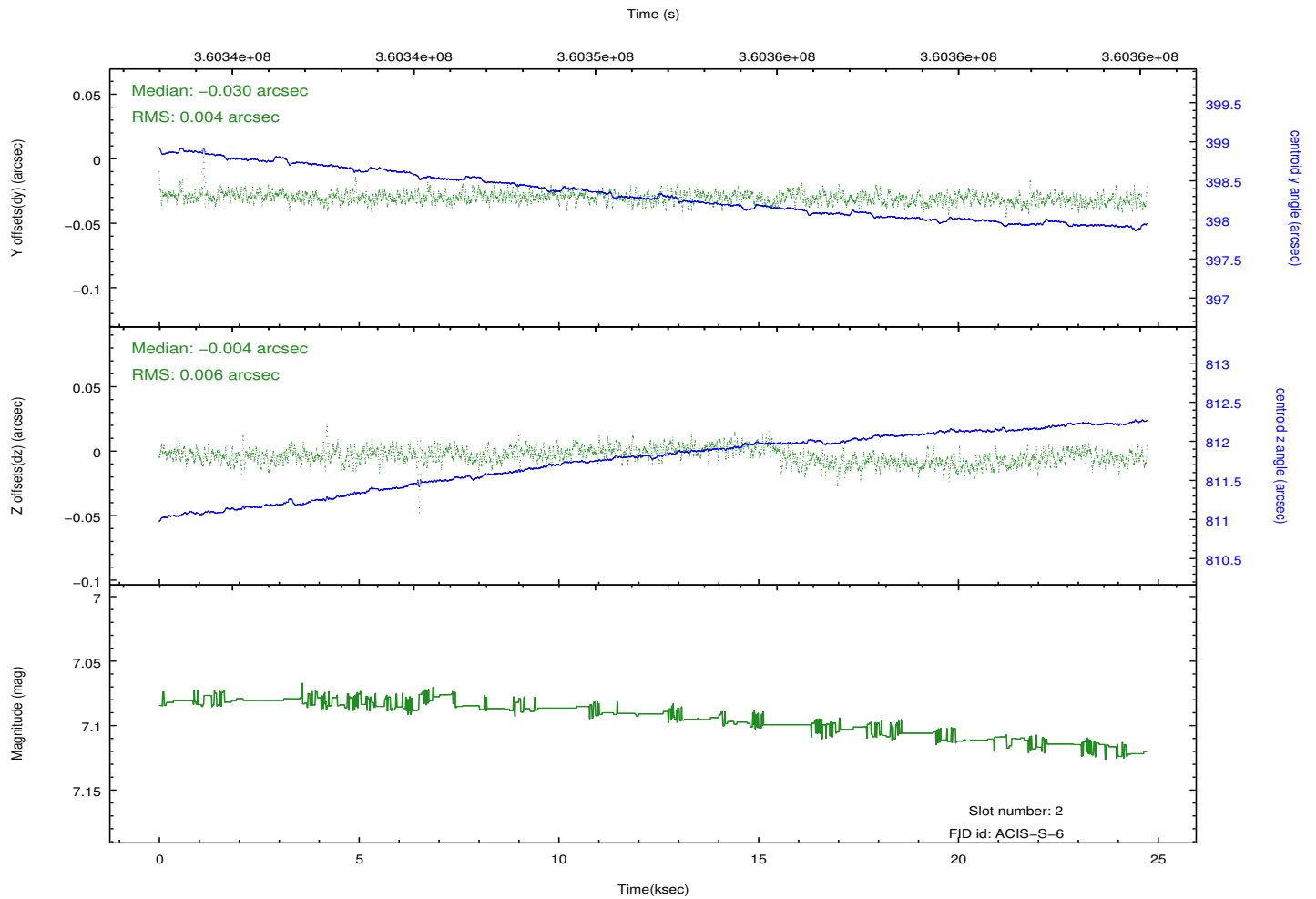
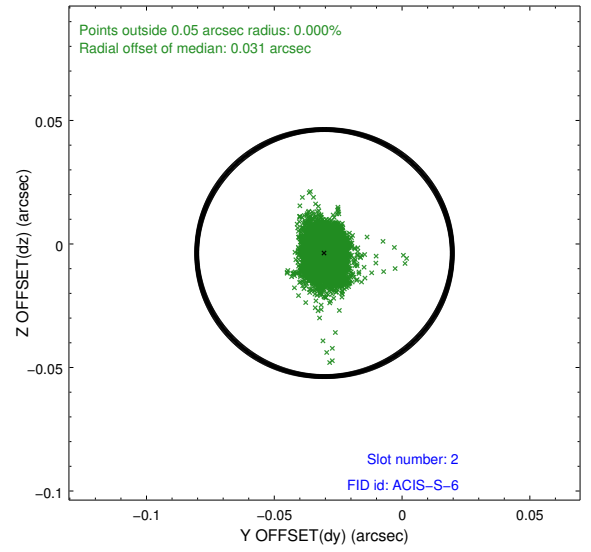
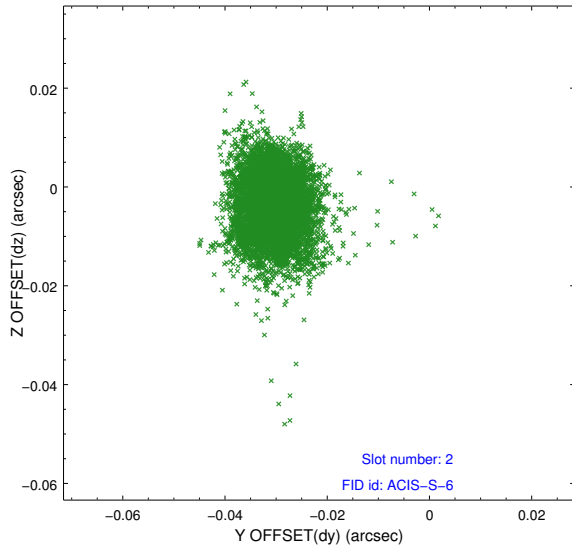
### 2.5.1 Slot 0



## 2.5.2 Slot 1



### 2.5.3 Slot 2

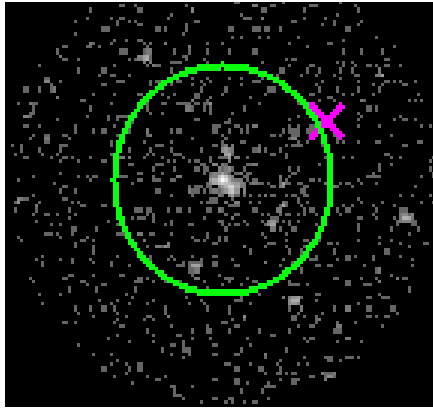


# 3 Gratings

## 3.1 HEG Arm



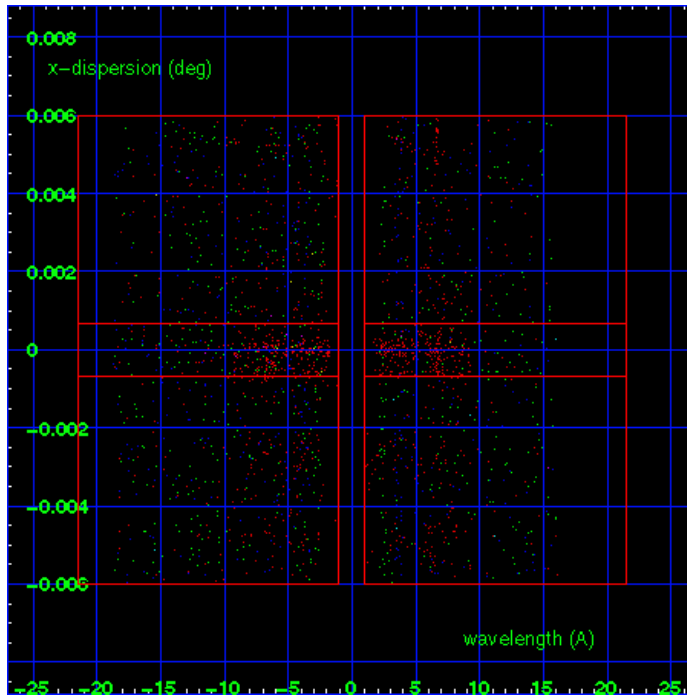
HEG Order Sort 123



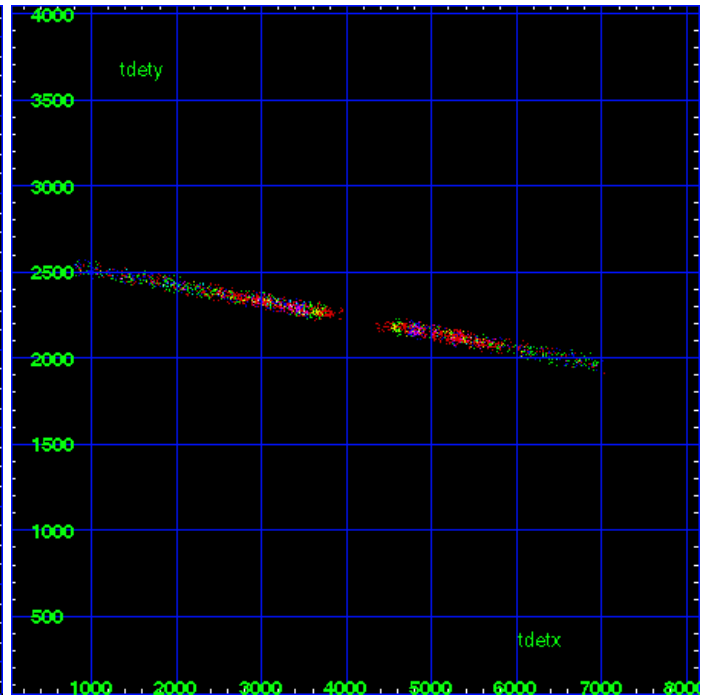
HEG Zero Order



HEG Order Sort ALL

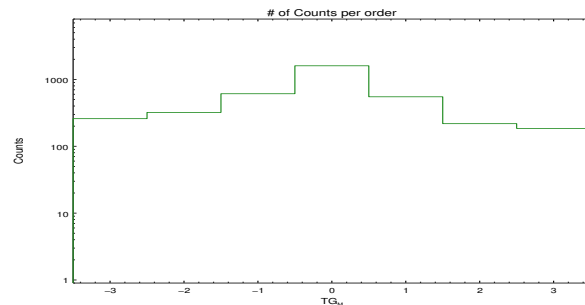


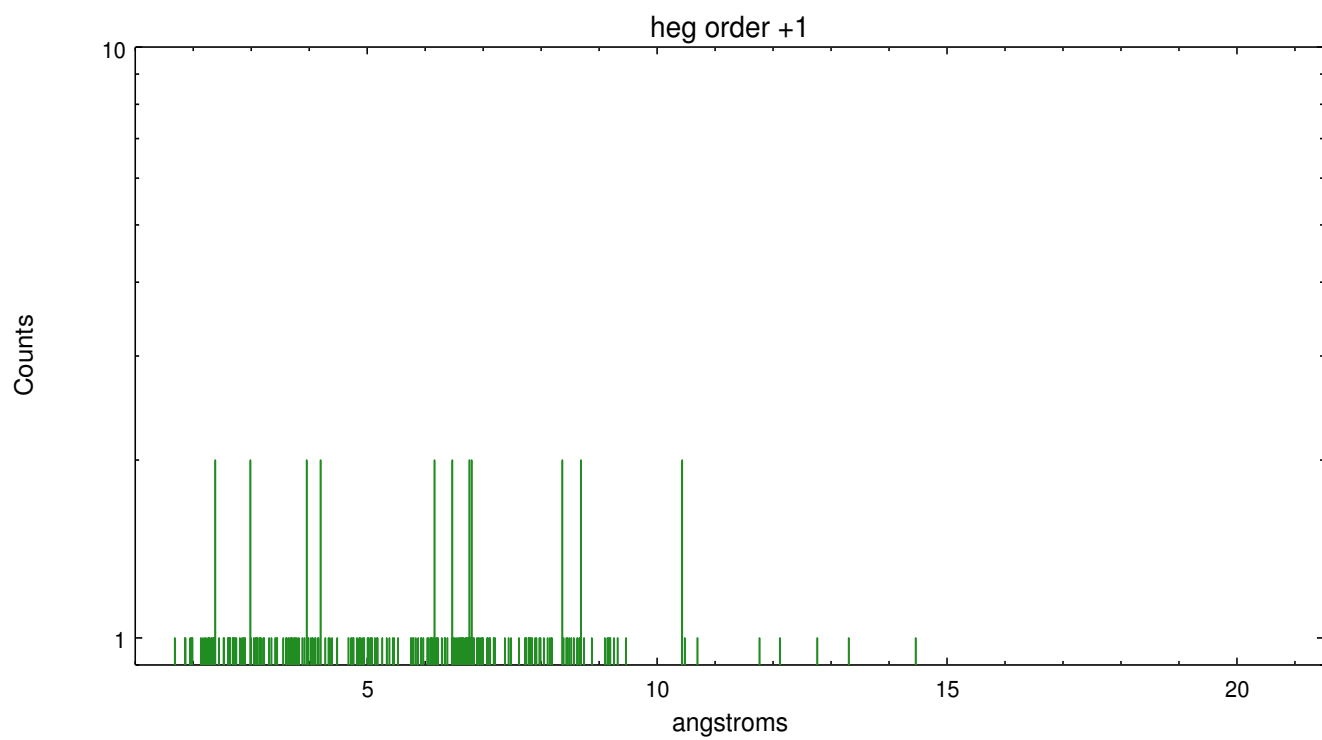
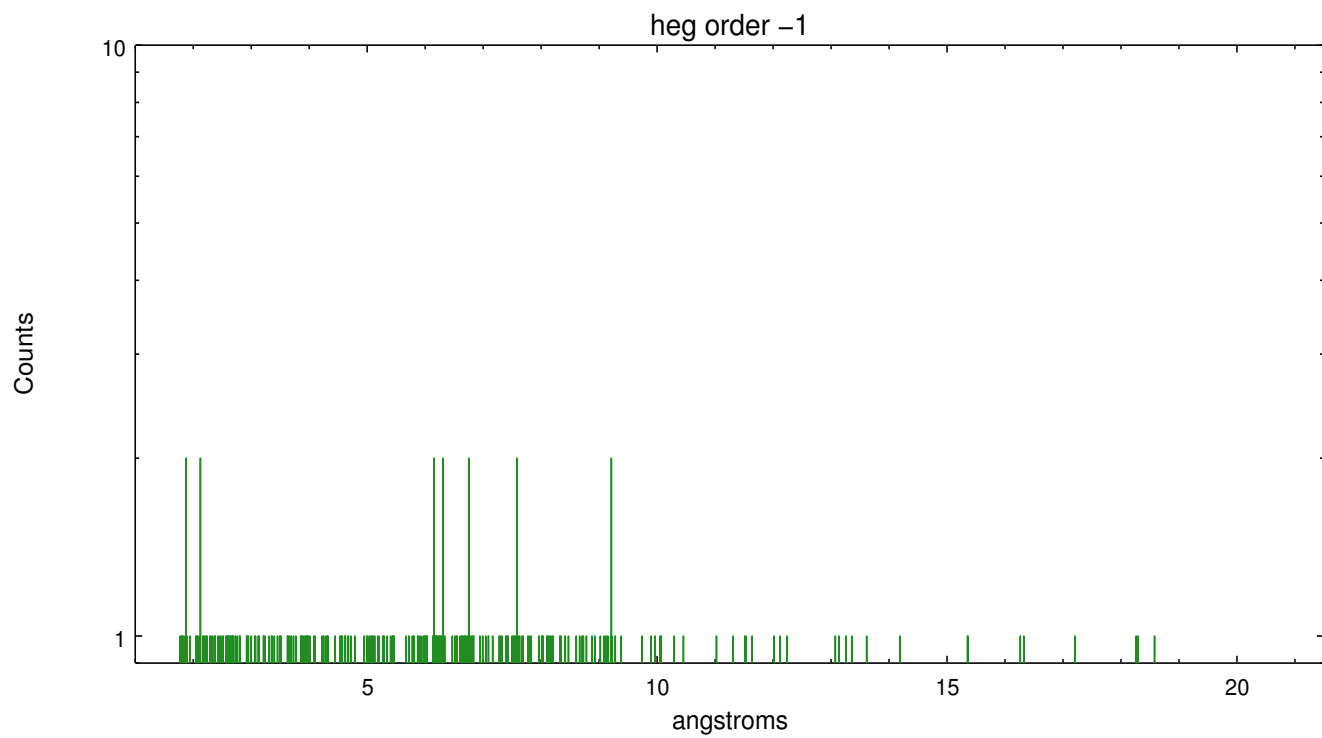
Spot Image HEG



Full Detector HEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	259	321	611	1600	550	218	185

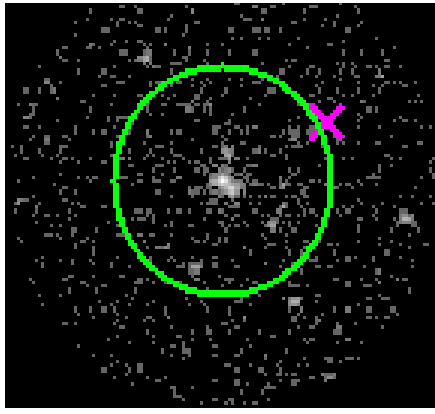




### 3.2 MEG Arm



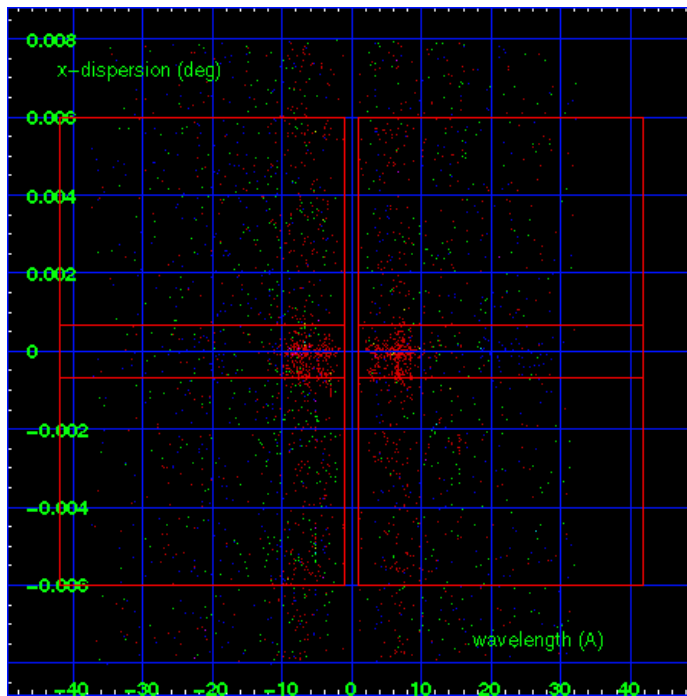
MEG Order Sort 123



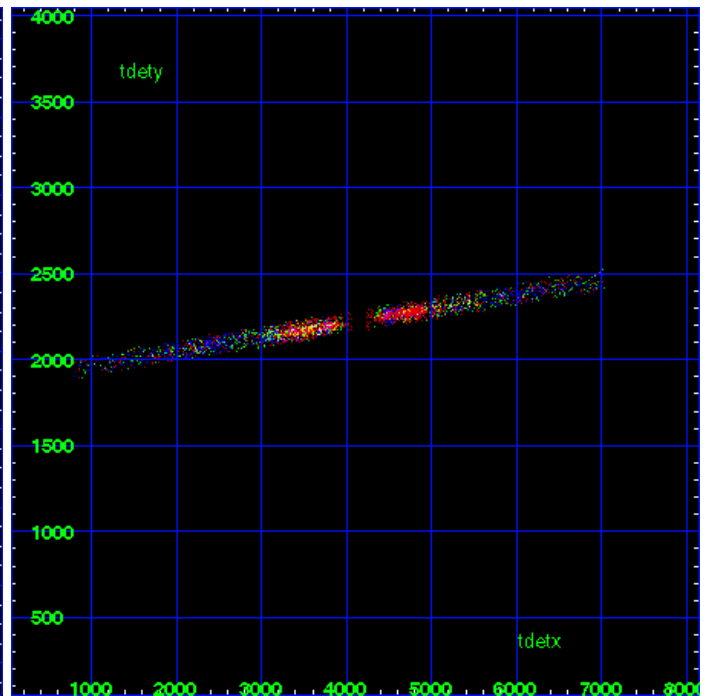
MEG Zero Order



MEG Order Sort ALL

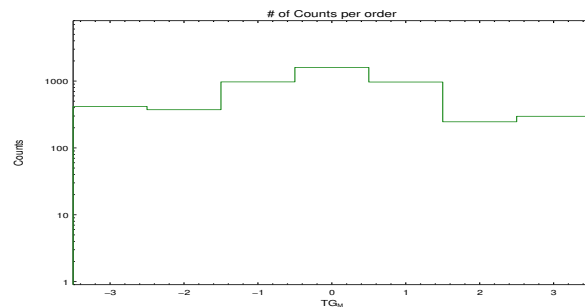


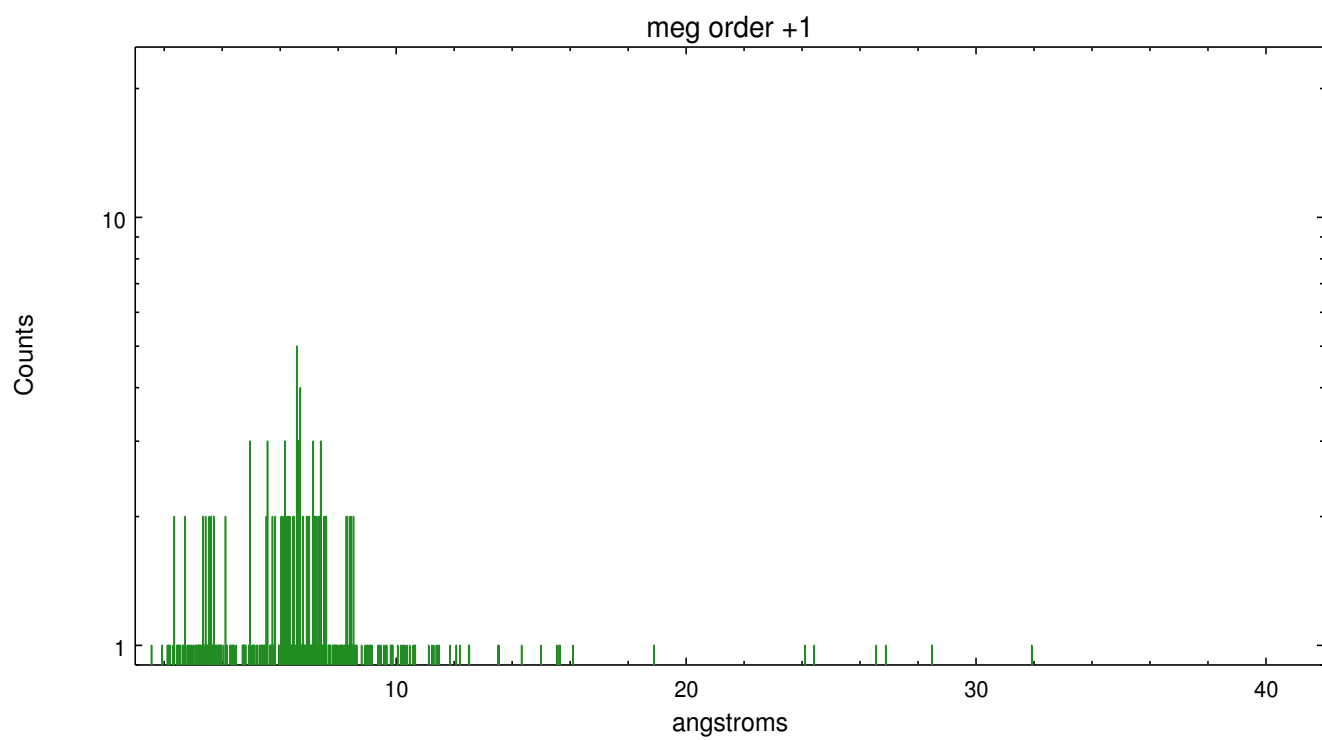
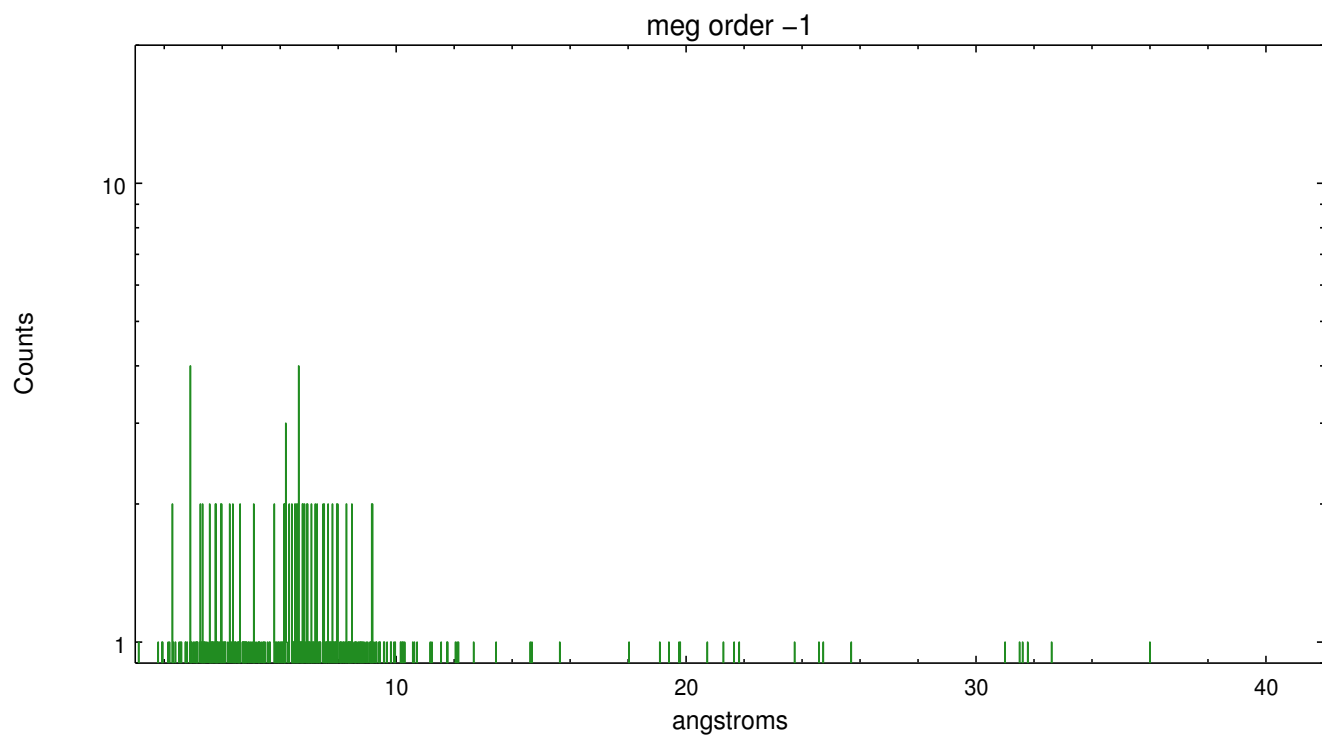
Spot Image MEG



Full Detector MEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	417	373	972	1600	967	246	297





# A Summary

## A.1 Status

V&V Scientist	Joy Nichols
V&V Date (YYYY-MM-DD)	2012.06.12
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	23.5391999

## A.2 Comments

Roll constraint met. Multiple sources in field. Primary source is double with separation in the cross-dispersion direction approximately 2 arcsec . Dispersed spectral arms show both sources. This spectral extraction is centered on the brighter of the 2 sources, (x=4066.625, y=4080.5), determined by eye. Another weak source is NNW approximately 3 arcsec away along the dispersion direction. Two to three arcsec is at the limit of the ACIS CCD ability to distinguish energies. The spectrum of the main source may be contaminated by other spectra.