

# V&V Reference Report

## L2 ASCDS Version : 10.3.3

Observation 17593 - L2 Version 2  
Chandra X-Ray Center

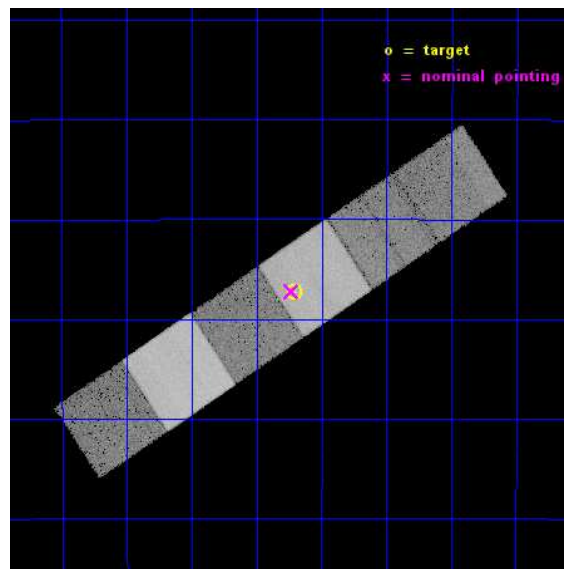
L2 Processing Date : Feb 13 2015

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# 1 Front

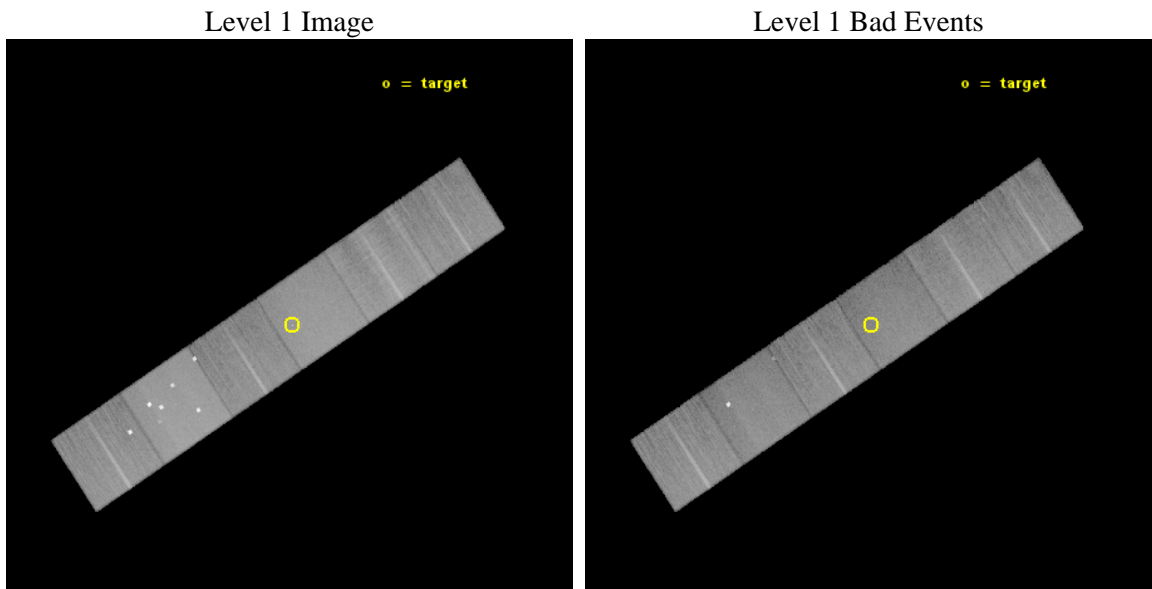
seq_num	201024	Sequence number
obs_id	17593	Observation id
title	Characterizing Hot Star Winds	Proposal title
observer	Prof. Claude Canizares	Principal investigator
object	tau CMA	Source name
dtcycle	0	&#160
cycle	P	events from which exps? Prim/Second/Both
ra_targ	109.677083	Observer's specified target RA [deg]
dec_targ	-24.954361	Observer's specified target Dec [deg]
ra_nom	109.68303777406	Nominal RA [deg]
dec_nom	-24.953856729583	Nominal Dec [deg]
roll_nom	326.35914177225	Nominal Roll [deg]
revision	2	Processing version of data
ontime	36934.112475753	Sum of GTIs [s]
livetime	36466.430504532	Livetime [s]
ontime4	36934.153515697	Sum of GTIs [s]
ontime5	36934.07143569	Sum of GTIs [s]
ontime6	36934.030395746	Sum of GTIs [s]
ontime7	36934.112475753	Sum of GTIs [s]
ontime8	36933.989355683	Sum of GTIs [s]
ontime9	36933.94831574	Sum of GTIs [s]
l2events	317678	Number of level 2 events



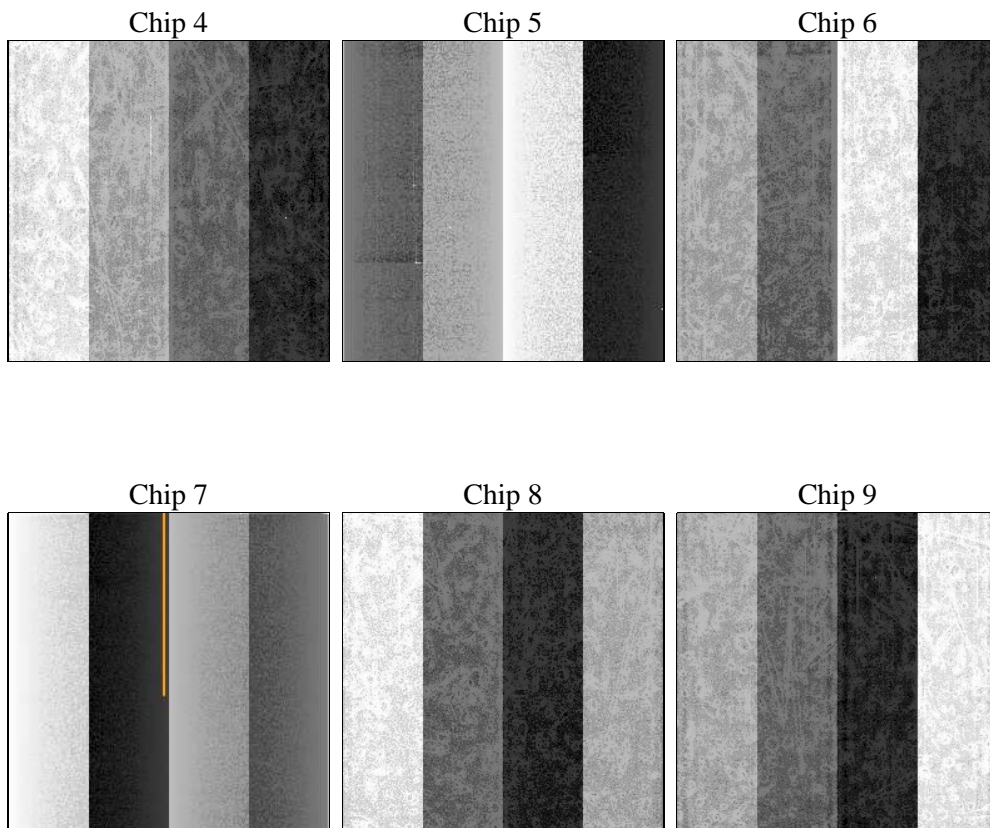
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

obi_num	0	Obi number	sched_exp_time	37000.000000	[s] Scheduled observation exposure time
ascdsver	10.3.3	Processing system revision	ontime	36934.112475753	Sum of GTIs [s]
caldbver	4.6.6	&#160	ontime4	36934.153515697	Sum of GTIs [s]
date	2015-02-13T18:04:08	Date and time of file creation	ontime5	36934.07143569	Sum of GTIs [s]
revision	2	Processing version of data	ontime6	36934.030395746	Sum of GTIs [s]
			ontime7	36934.112475753	Sum of GTIs [s]
			ontime8	36933.989355683	Sum of GTIs [s]
			ontime9	36933.94831574	Sum of GTIs [s]
			l1events	1411706	Number of level 1 events
			tgmethod	TGDETECT	Method used to create src1a file
			zpc_pos	(4136.53, 4092.15)	src1a sky pixel position

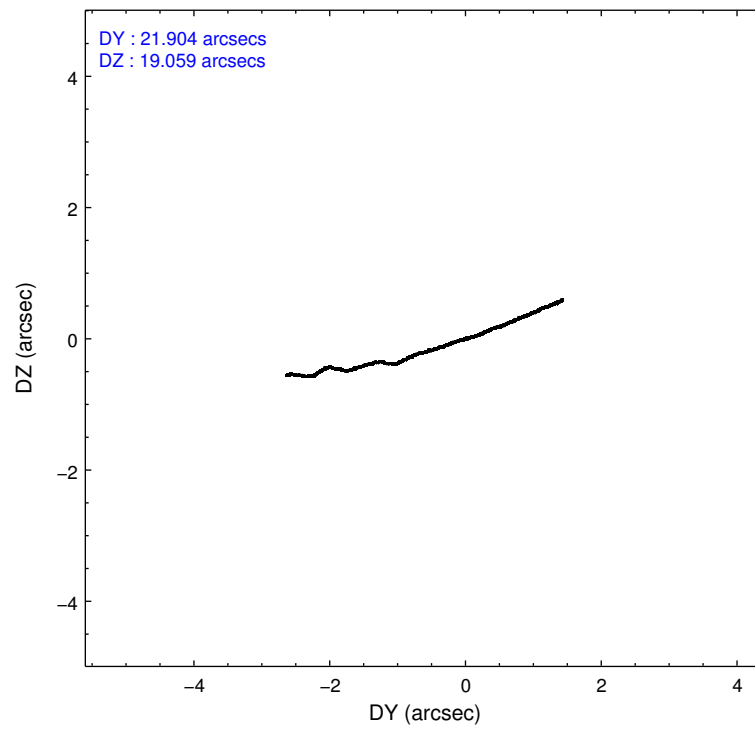
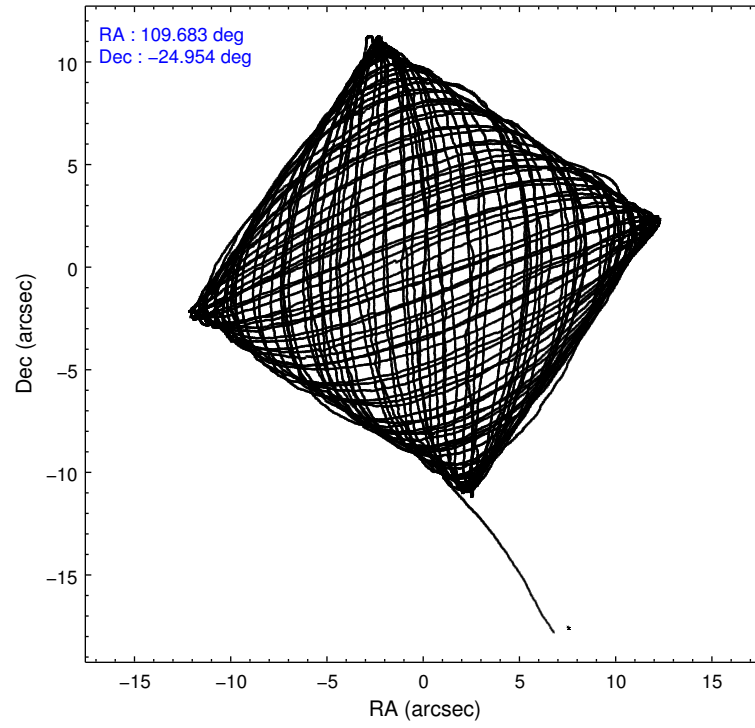
### 2.1.4 Events

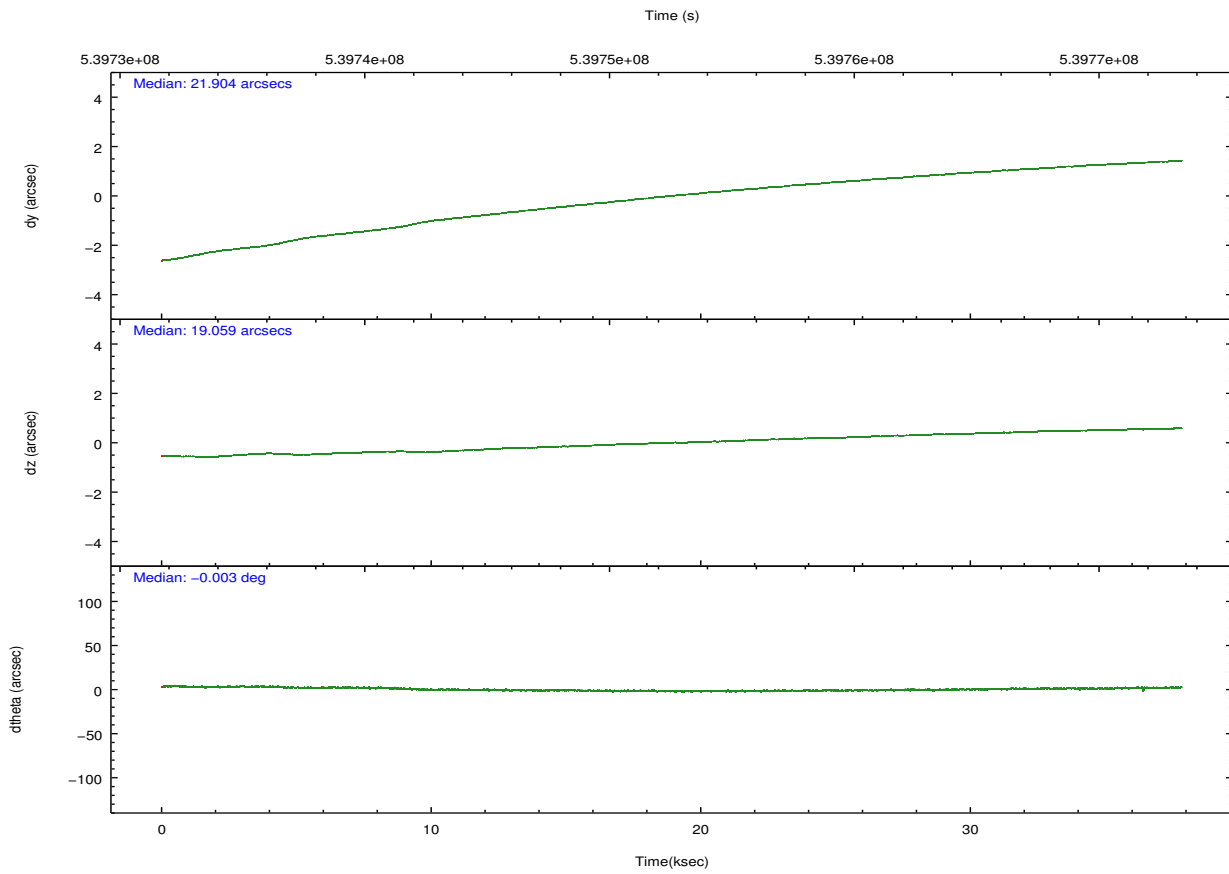
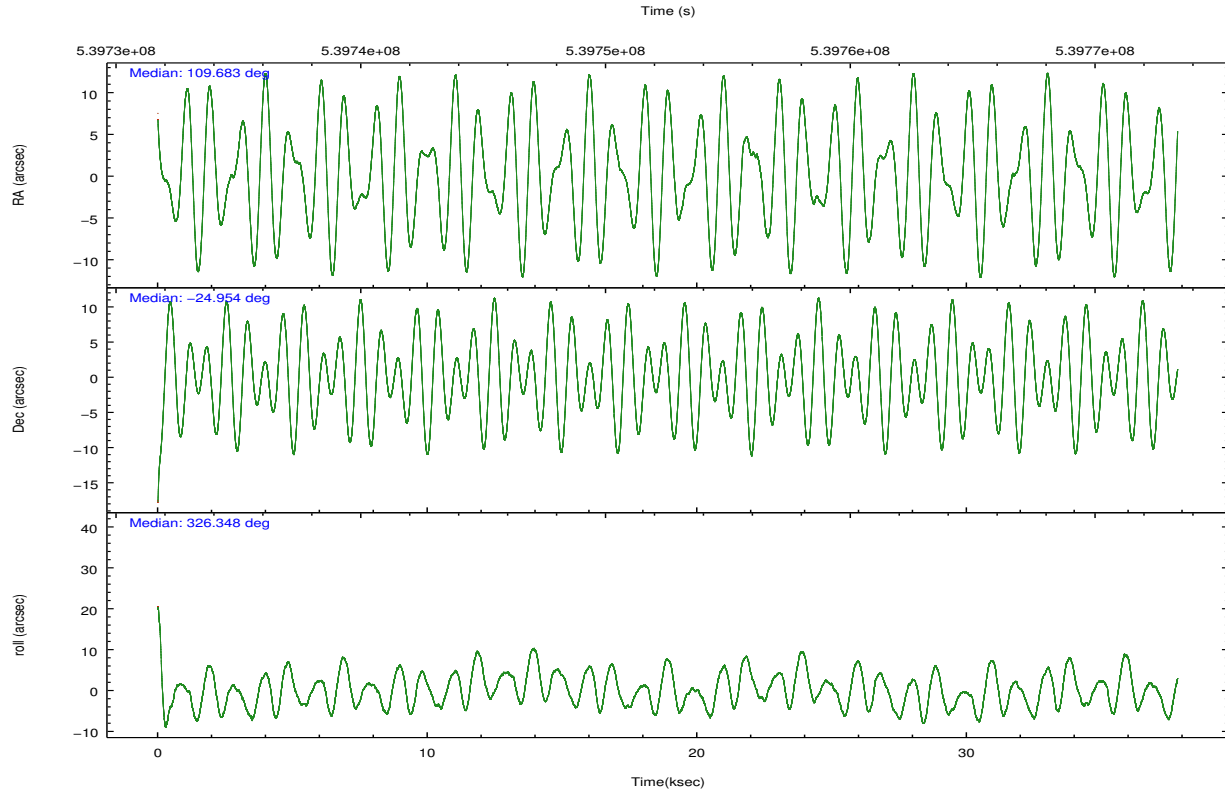
	ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9		ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
level 1 events	216097	338301	182255	247637	244277	183139	grade 0 events	17799	34055	7403	9269	18067	7996
rejected events	183993	165143	160450	140401	179642	160243		8%	10%	4%	3%	7%	4%
rejected %	85%	48%	88%	56%	73%	87%	grade 1 events	206	697	101	297	173	117
								0%	0%	0%	0%	0%	0%
							grade 2 events	5501	48212	4991	22222	15876	5160
								2%	14%	2%	8%	6%	2%
							grade 3 events	2444	6595	2155	9068	6777	2385
								1%	1%	1%	3%	2%	1%
							grade 4 events	2324	6134	2153	8990	6356	2304
								1%	1%	1%	3%	2%	1%
							grade 5 events	9679	22581	9470	25172	13892	10422
								4%	6%	5%	10%	5%	5%
							grade 6 events	4038	78182	5108	57694	17560	5057
								1%	23%	2%	23%	7%	2%
							grade 7 events	174106	141845	150874	114925	165576	149698
								80%	41%	82%	46%	67%	81%

## 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	109.652821	109.6830377740597	CCD I2 on	N	N
[deg] Pointing Dec	-24.952468	-24.9538567295827	CCD I3 on	N	N
[deg] Pointing Roll	326.189759	326.3591417722474	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)	539734471.184000	539733043.35985	CCD S5 on	O2	Y
Observation start date	2015-02-07T22:13:24	2015-02-07T21:50:43	Number of optional ACIS chips dropped	0	0
[s] Observation end time (MET)	539771471.184000	539772412.07455	On-chip summing requested	N	N
Observation end date	2015-02-08T08:30:04	2015-02-08T08:46:52	Subarray requested	NONE	NONE
Read mode	TIMED	TIMED	Alternating exposures requested	N	N
			[s] Primary exposure time	0.000000	3.2

## 2.3 Aspect





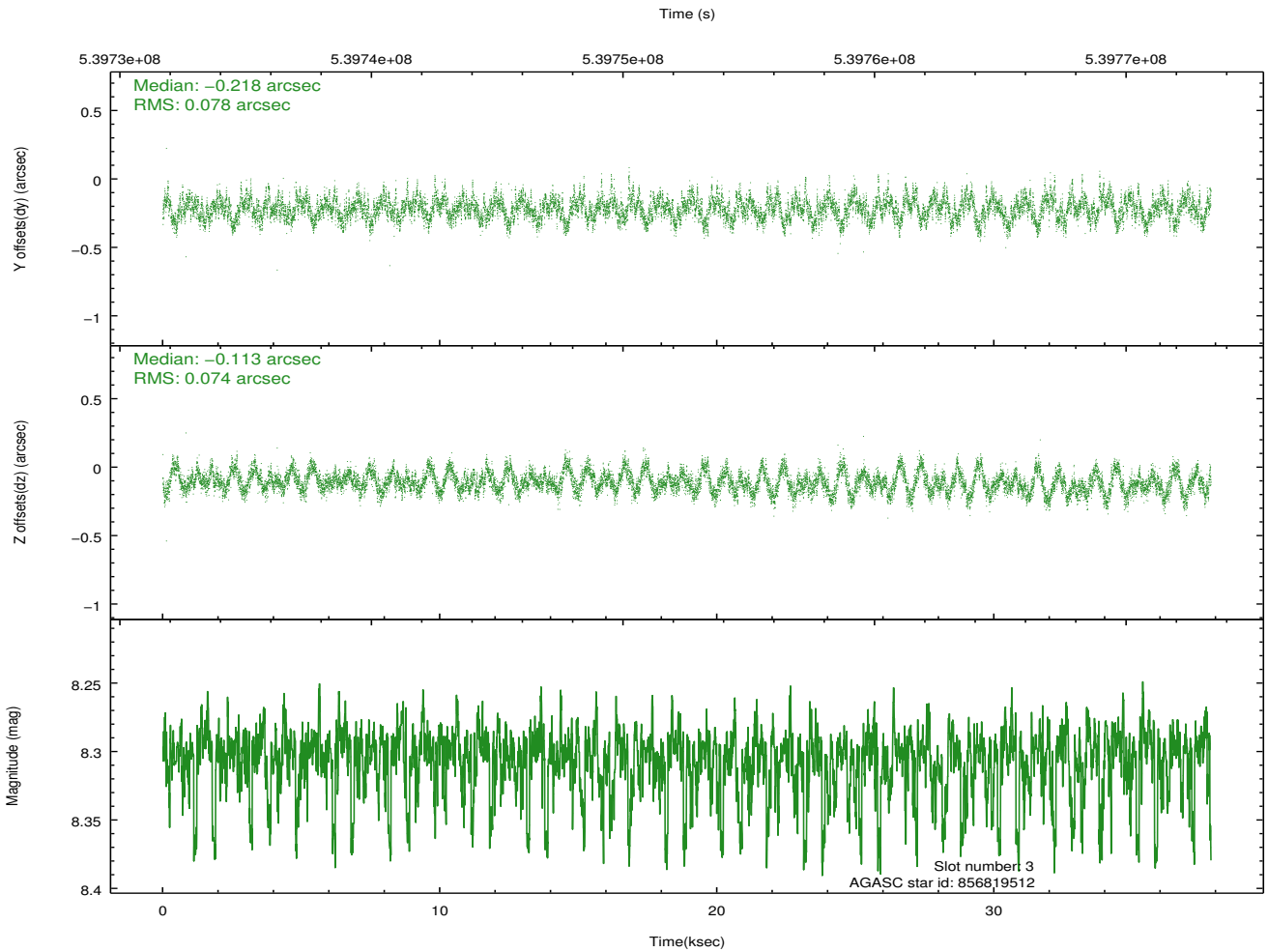
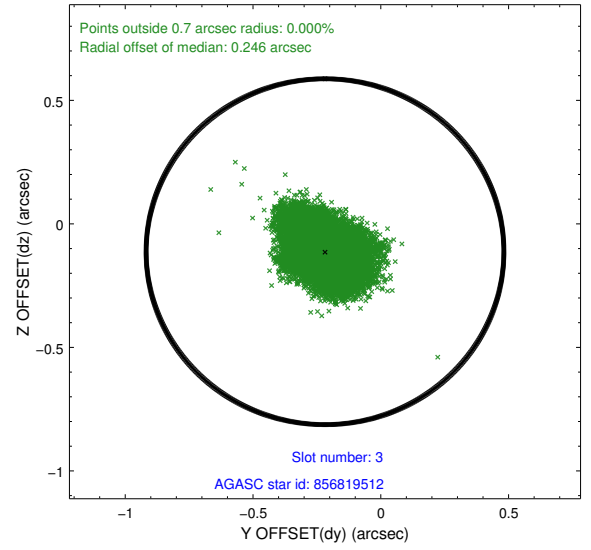
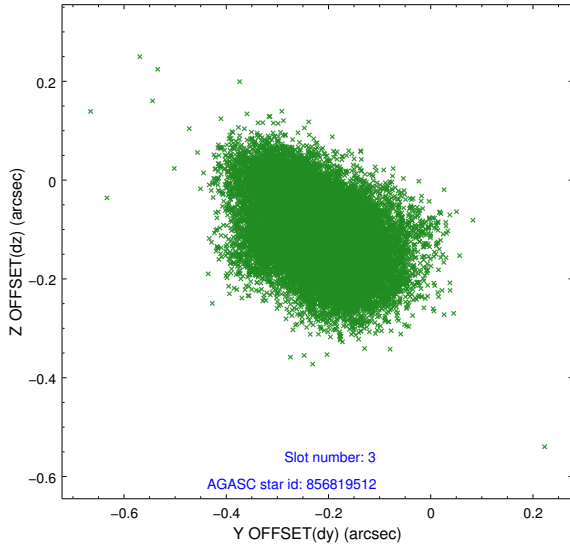
### Slot Statistics

slot	status	used	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID		ACIS-S-2	7.01	9227	-0.204	-0.116	0.019	0.046	0.000000	0.000000	-775.10	-1740.64
1	FID		ACIS-S-4	7.10	9227	0.246	0.122	0.016	0.040	0.000000	0.000000	2138.66	167.99
2	FID		ACIS-S-6	7.24	9227	-0.066	-0.000	0.012	0.018	0.000000	0.000000	387.11	805.33
3	GUIDE	used	856819512	8.30	18450	-0.218	-0.113	0.115	0.186	109.292794	-24.352083	-2183.00	1137.69
4	GUIDE	used	857351440	9.04	18432	0.108	0.135	0.110	0.182	109.072756	-25.276289	-917.31	-2022.06
5	GUIDE	used	857360200	9.08	18444	-0.089	0.343	0.114	0.180	108.924090	-25.049766	-1775.76	-1618.32
6	GUIDE	used	857362176	7.44	18450	0.057	-0.172	0.127	0.194	109.209415	-25.159020	-784.81	-1423.54
7	GUIDE	used	857375848	8.80	18445	0.143	-0.197	0.110	0.175	109.695507	-24.655080	-479.37	967.52

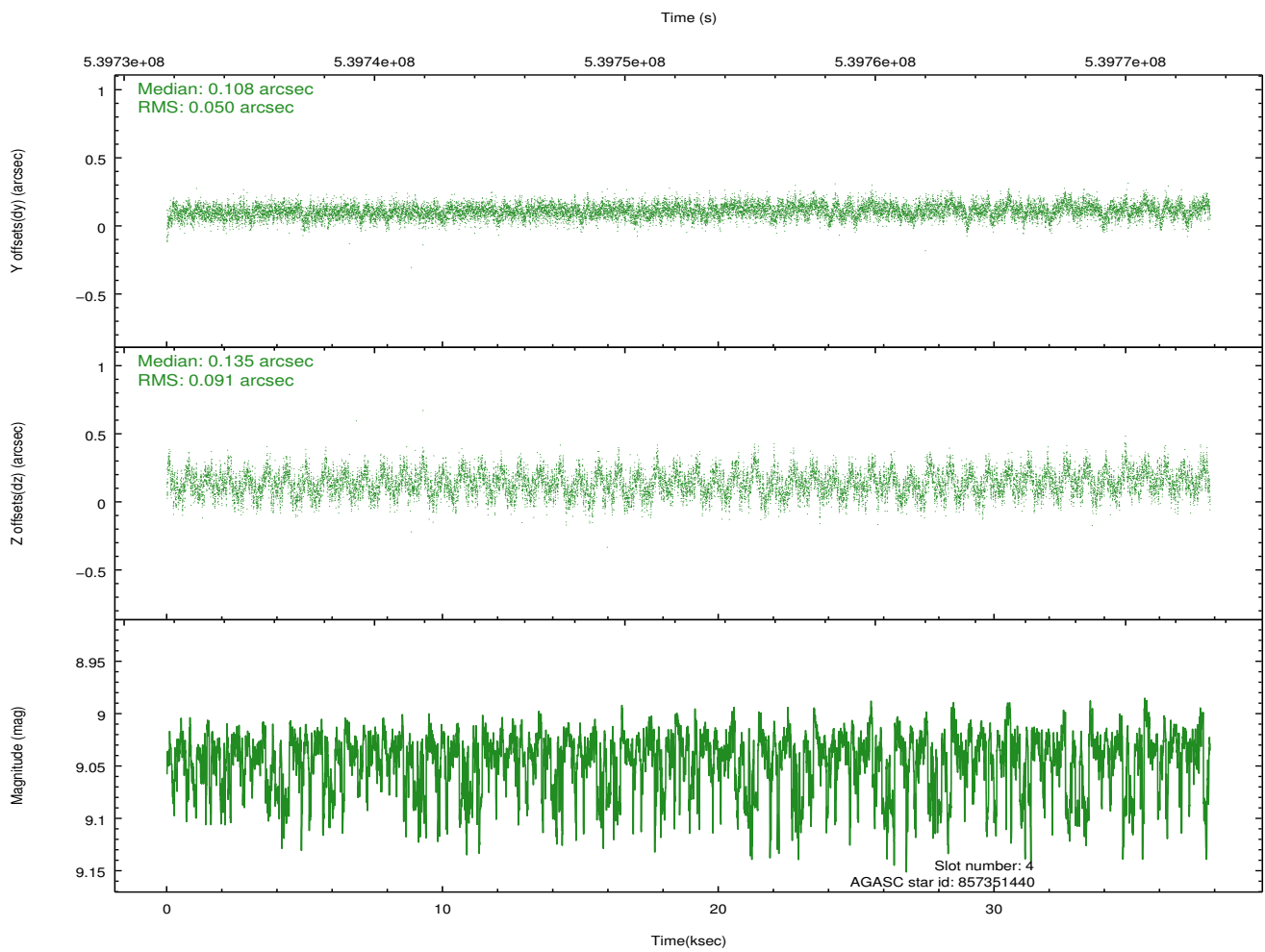
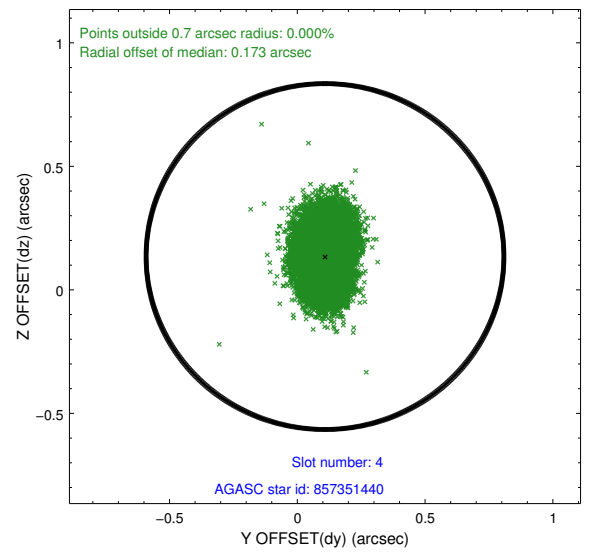
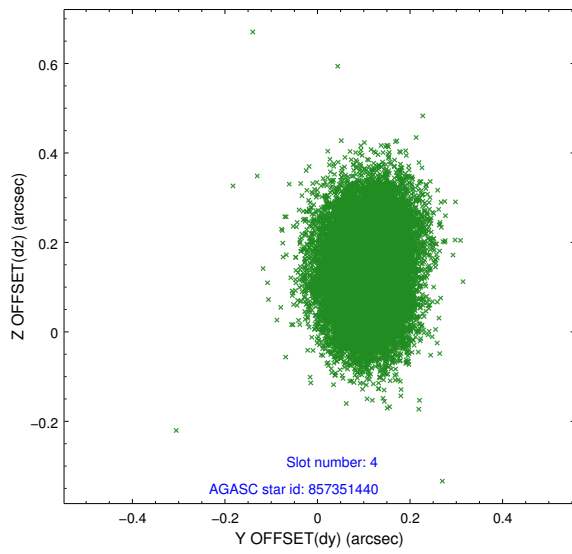
∞

## 2.4 Star Slots

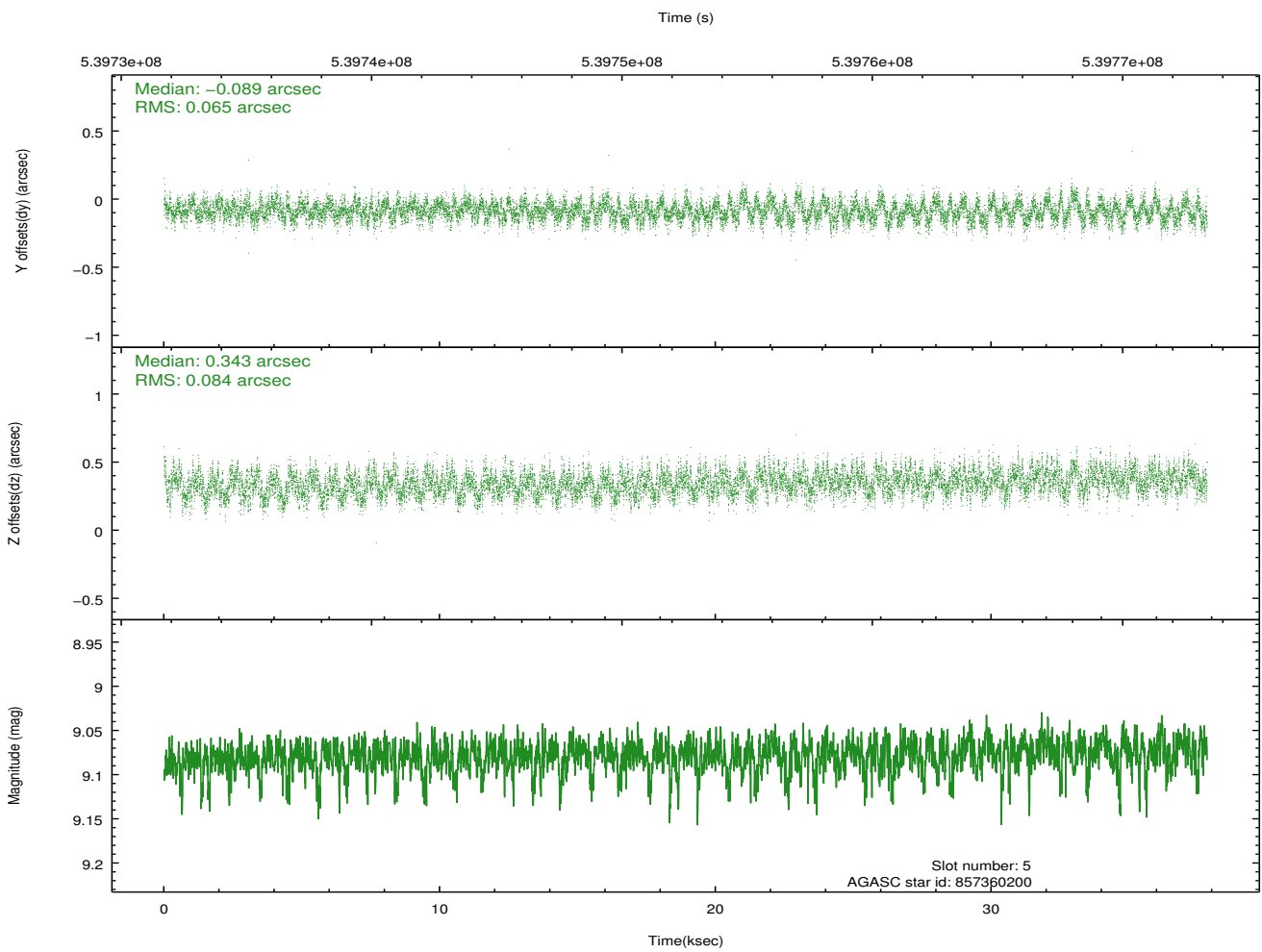
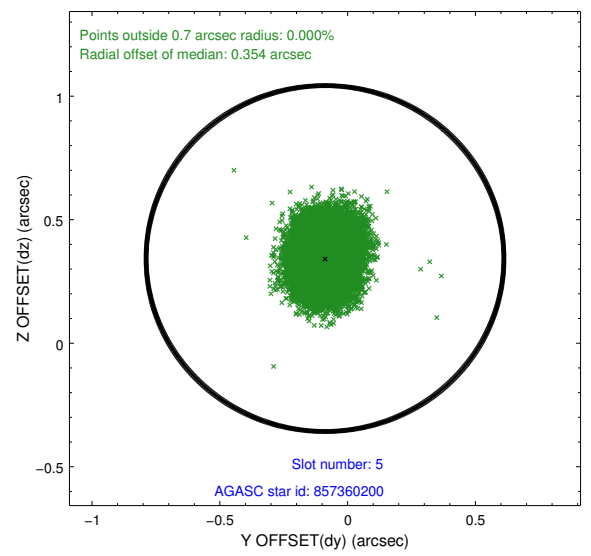
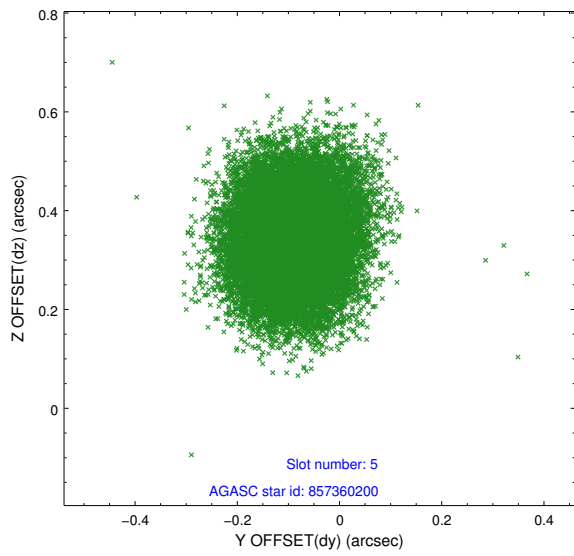
### 2.4.1 Slot 3



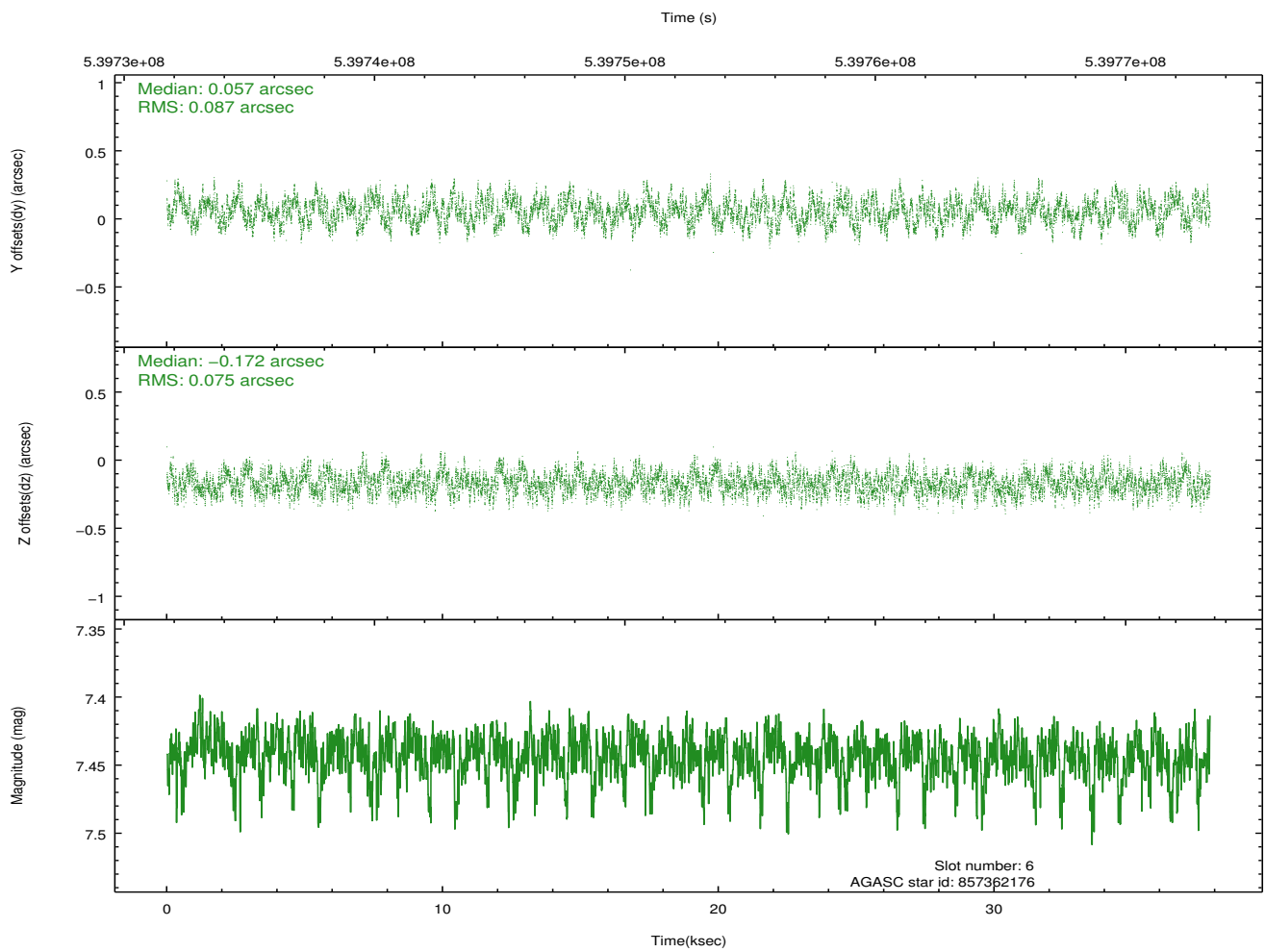
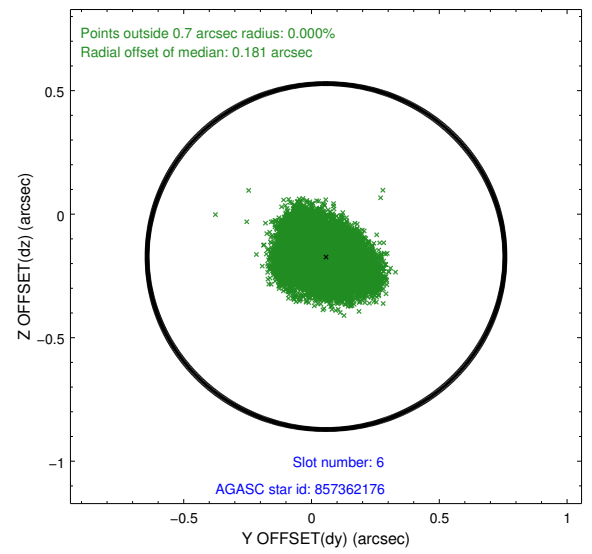
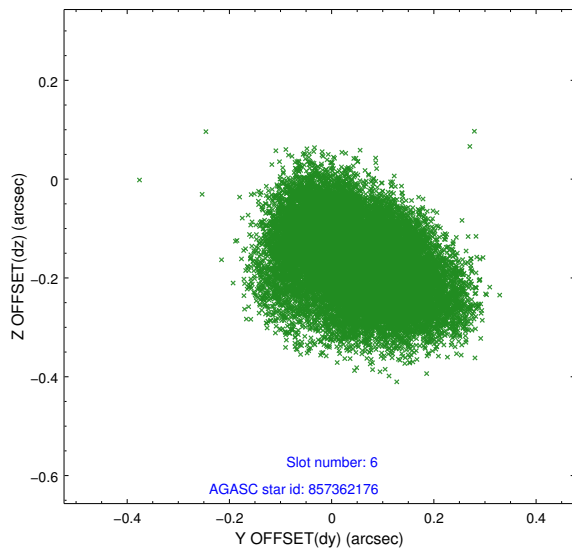
## 2.4.2 Slot 4



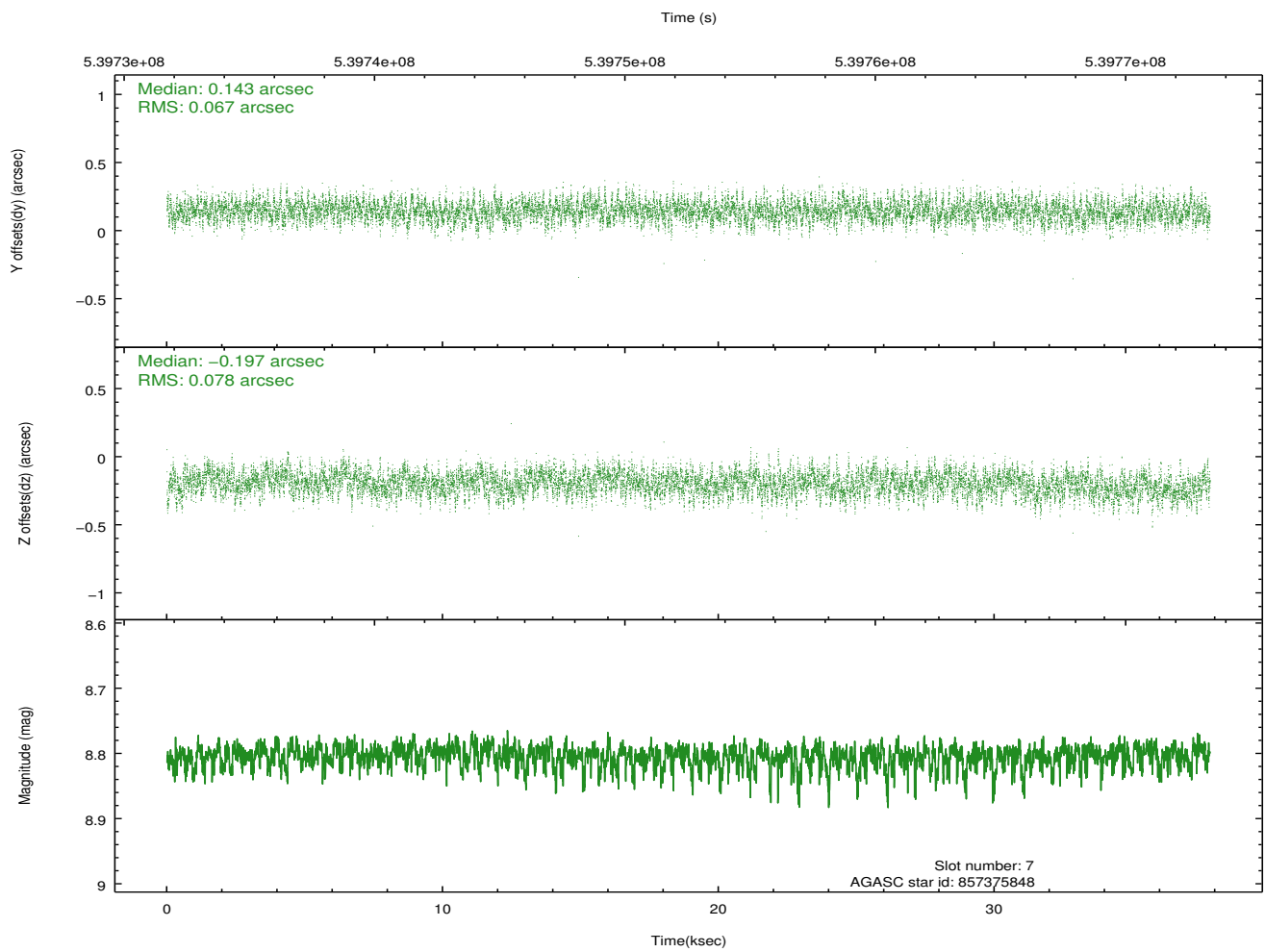
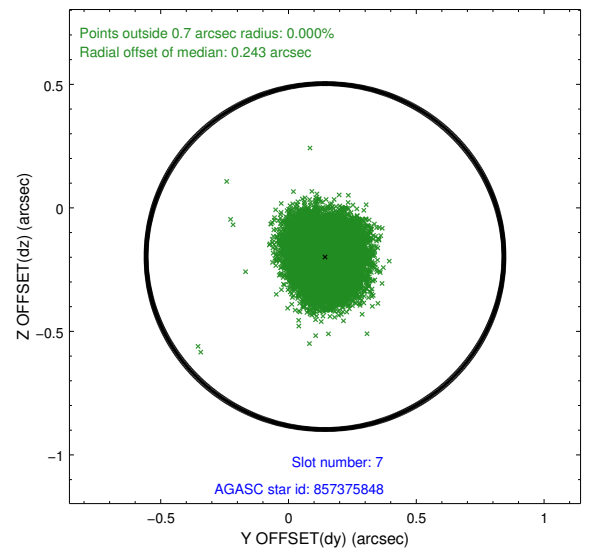
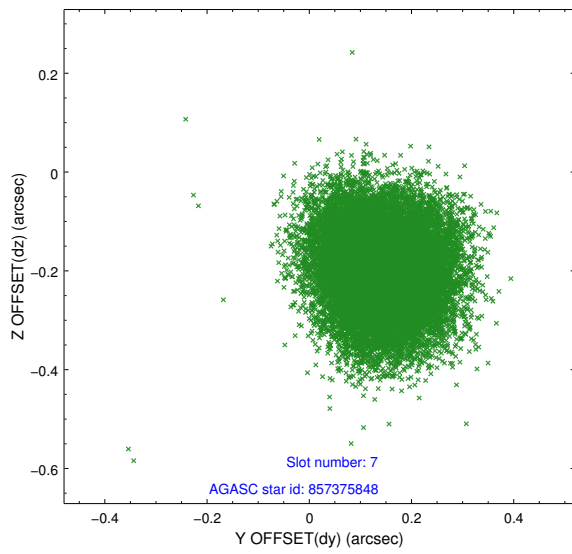
### 2.4.3 Slot 5



## 2.4.4 Slot 6

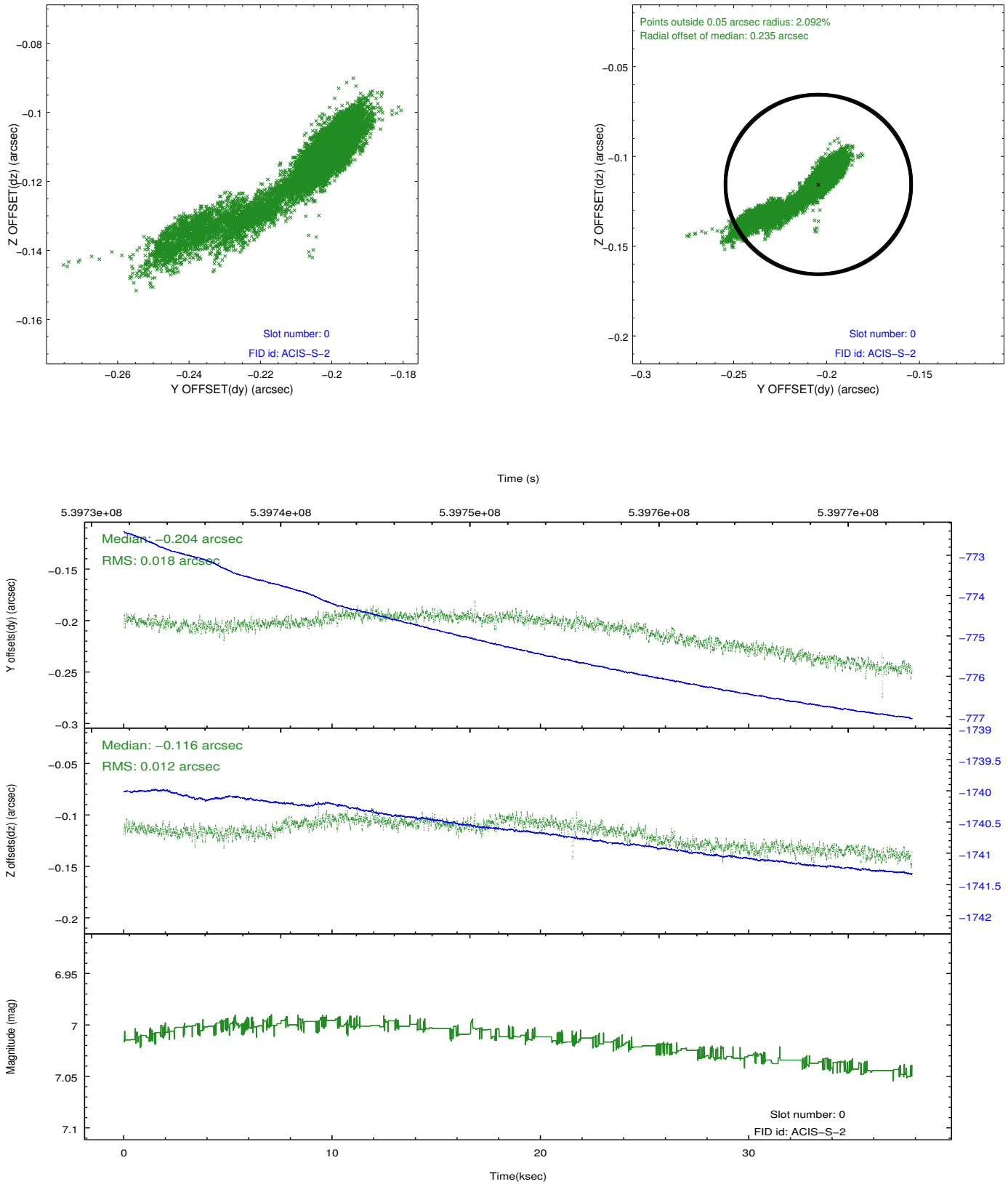


## 2.4.5 Slot 7

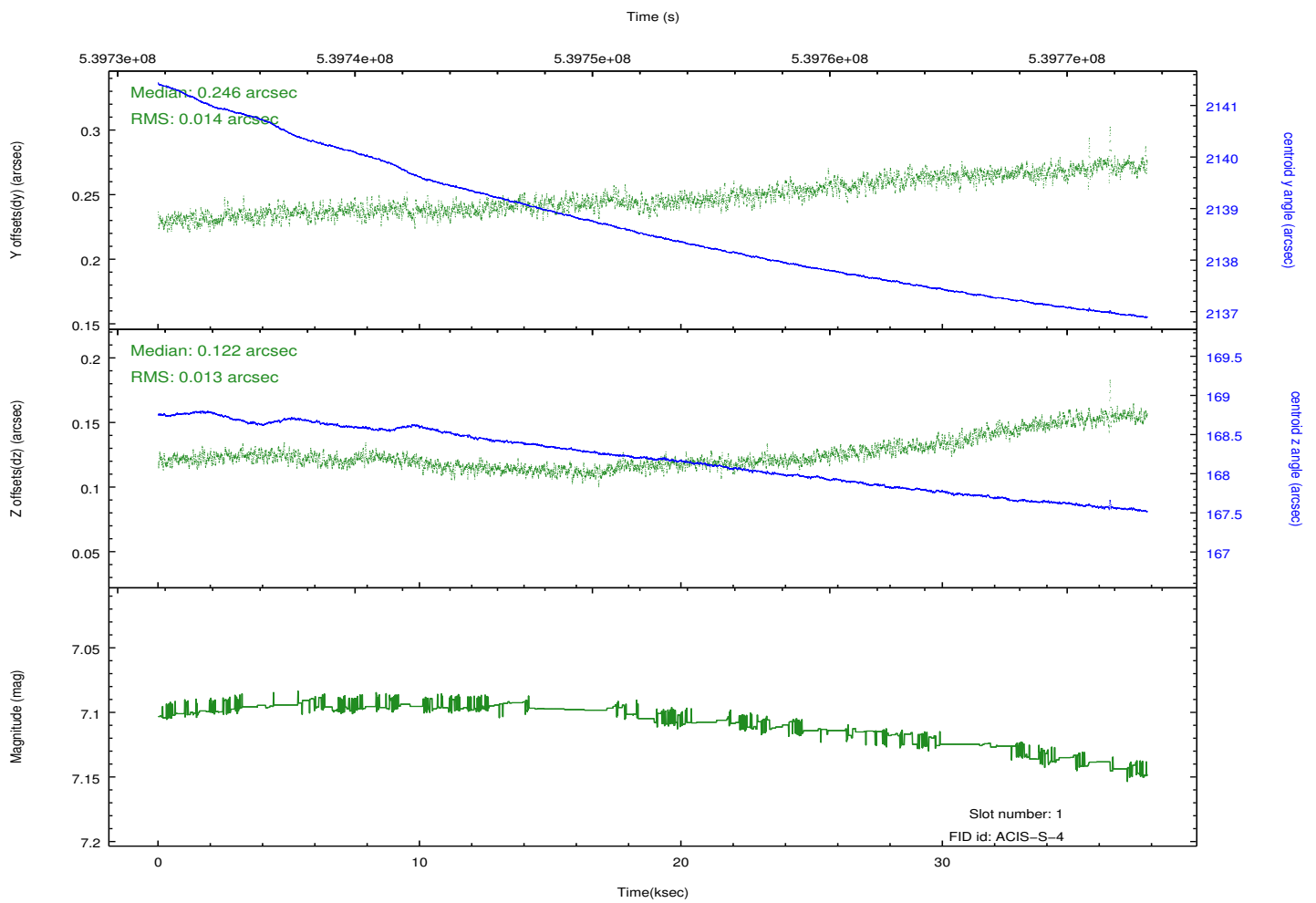
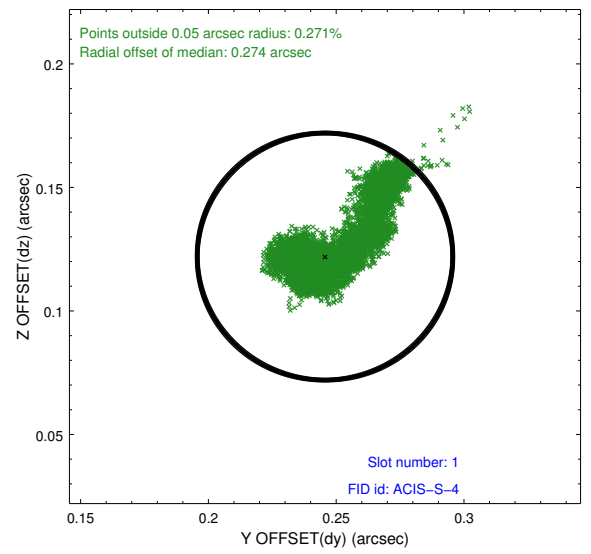
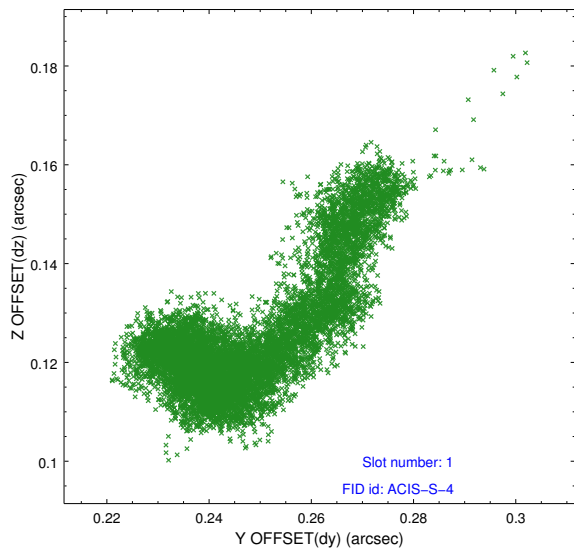


## 2.5 FID Slots

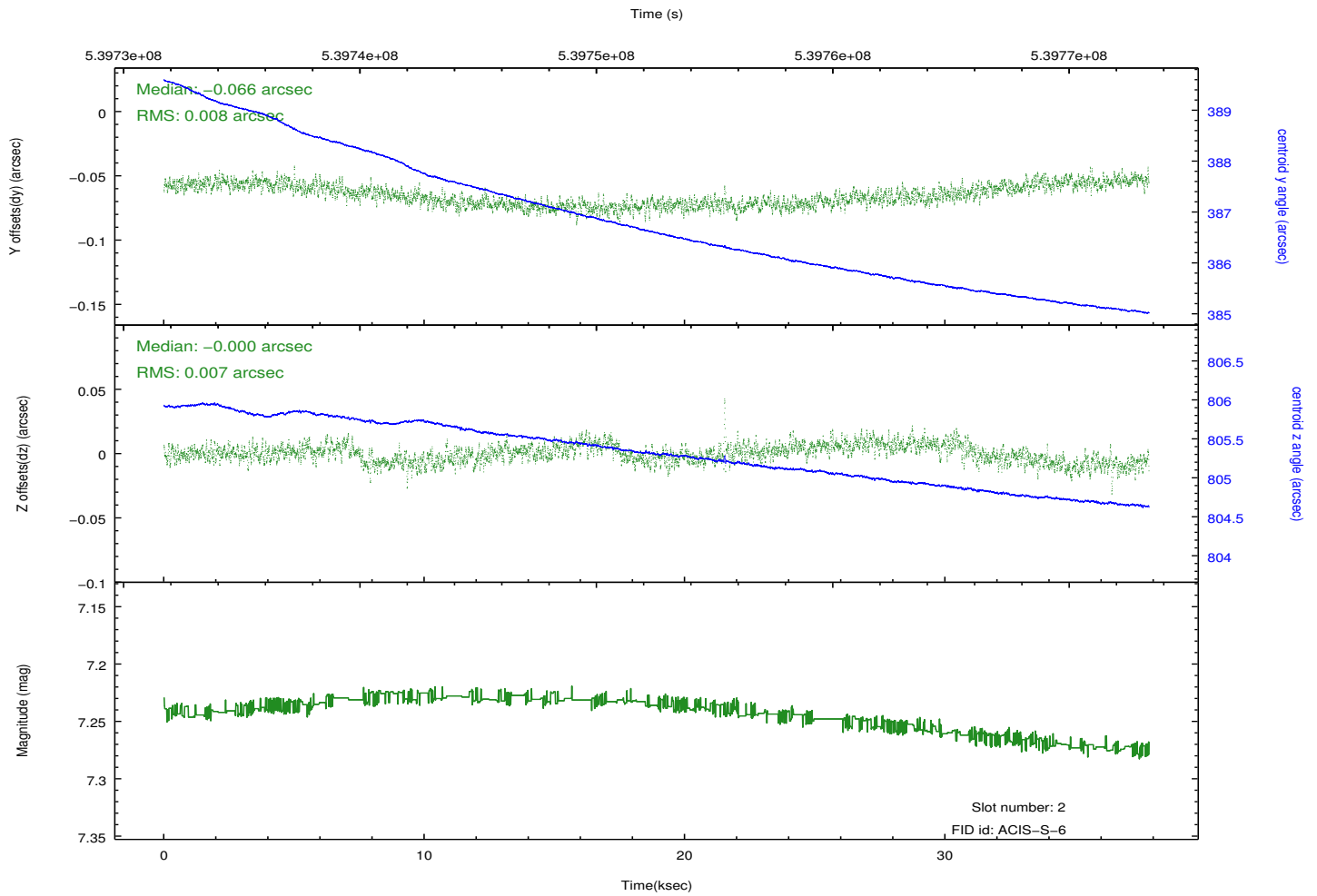
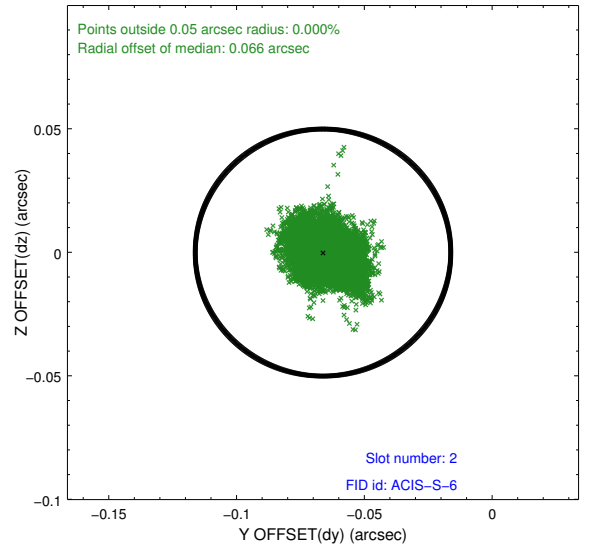
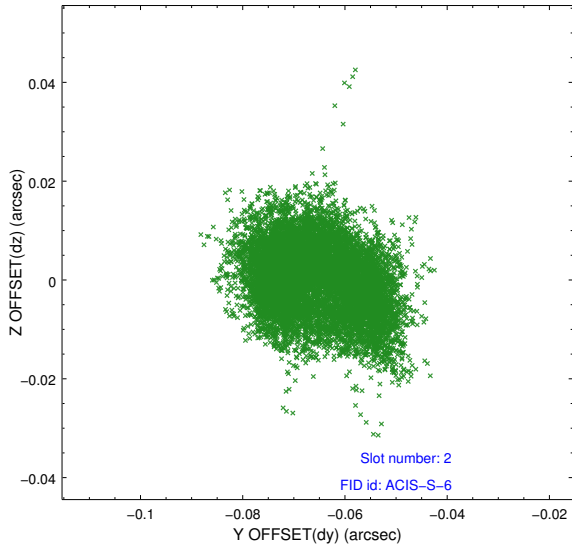
### 2.5.1 Slot 0



## 2.5.2 Slot 1



### 2.5.3 Slot 2

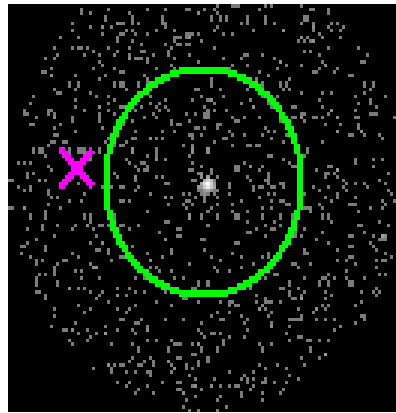


### 3 Gratings

#### 3.1 HEG Arm



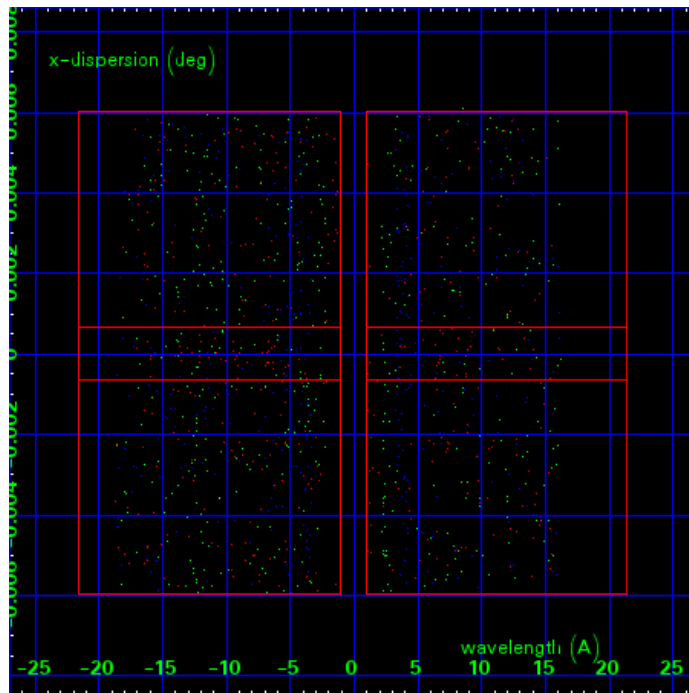
HEG Order Sort 123



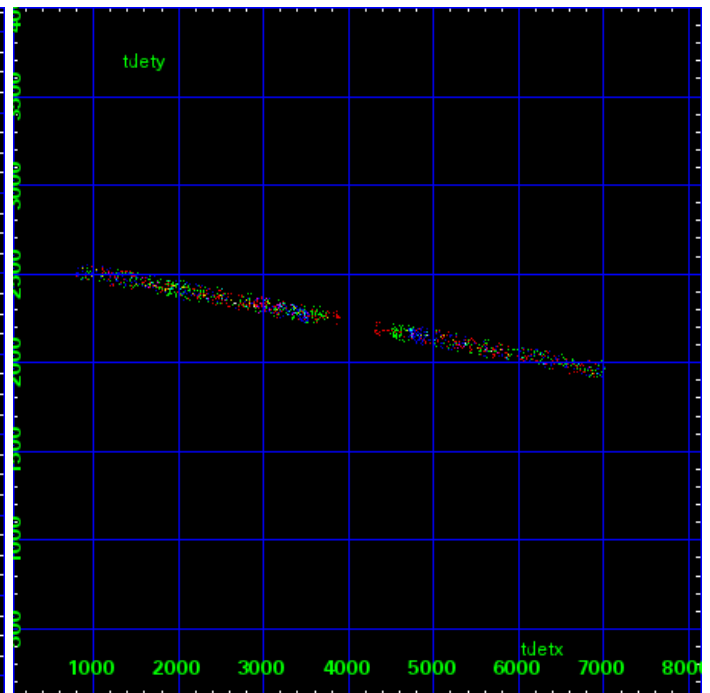
HEG Zero Order



HEG Order Sort ALL

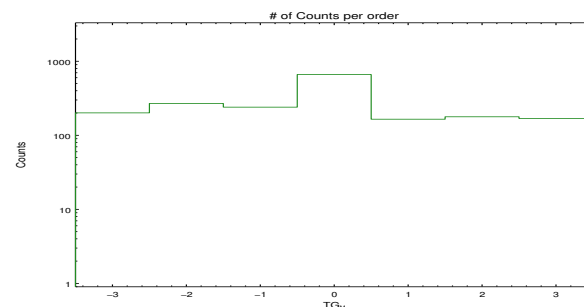


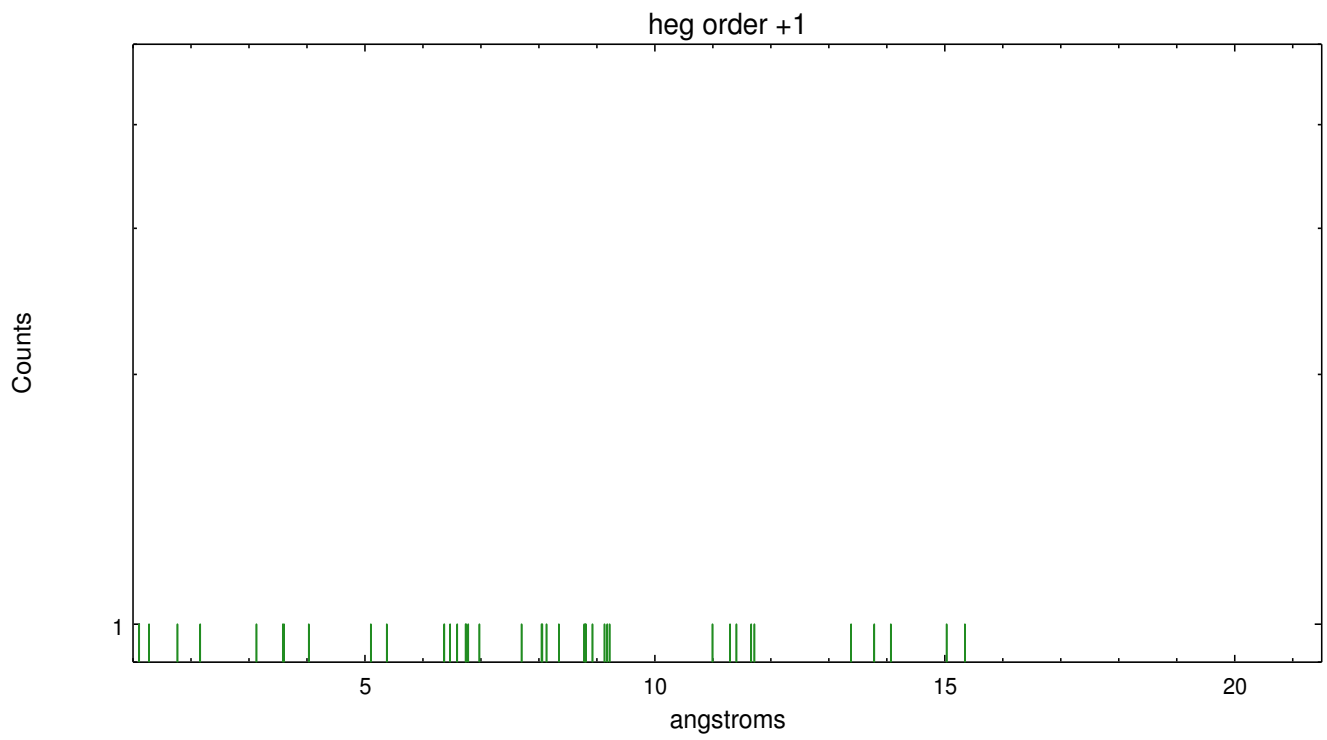
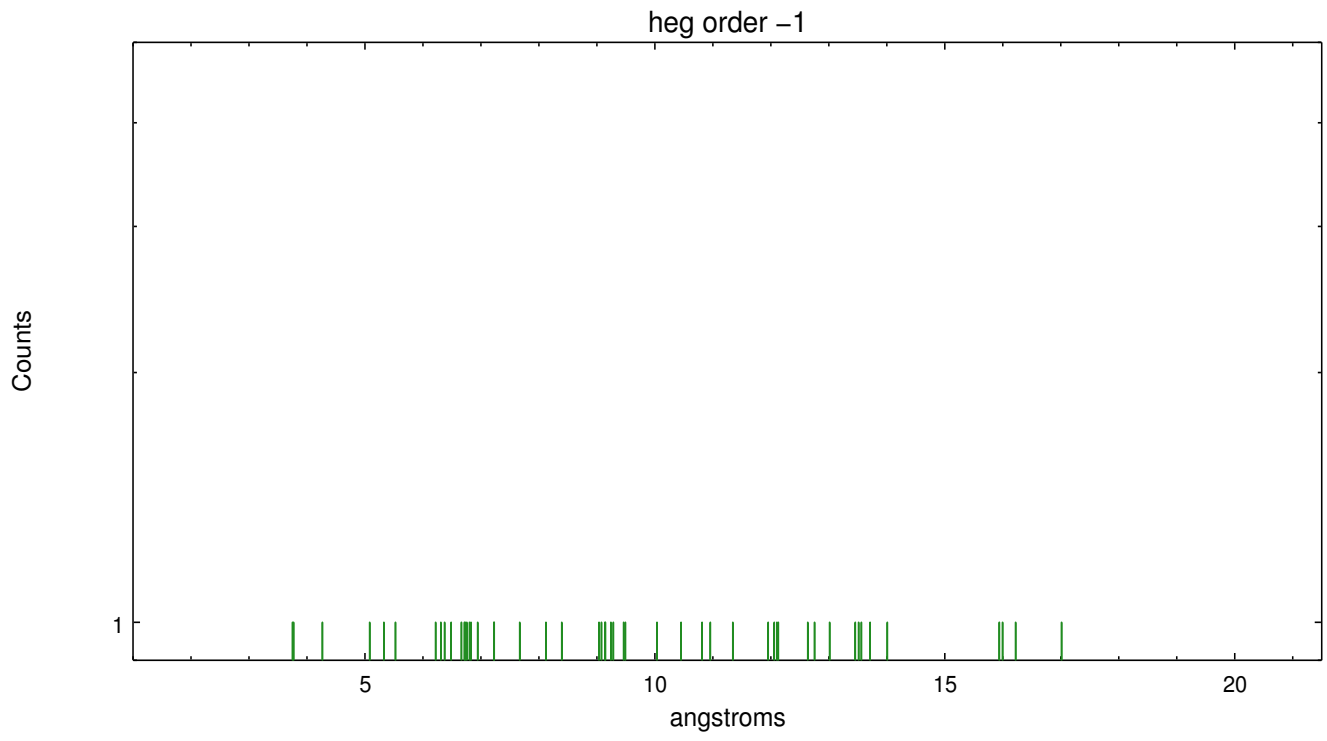
Spot Image HEG



Full Detector HEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	201	269	240	662	165	178	169

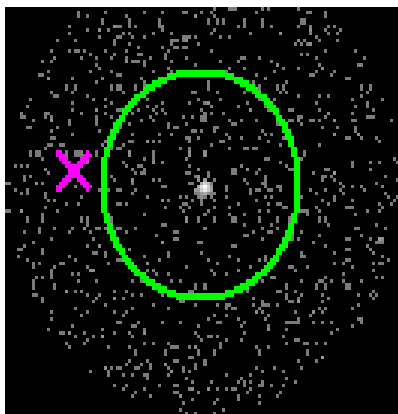




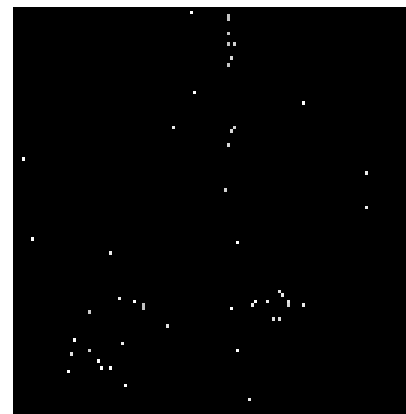
### 3.2 MEG Arm



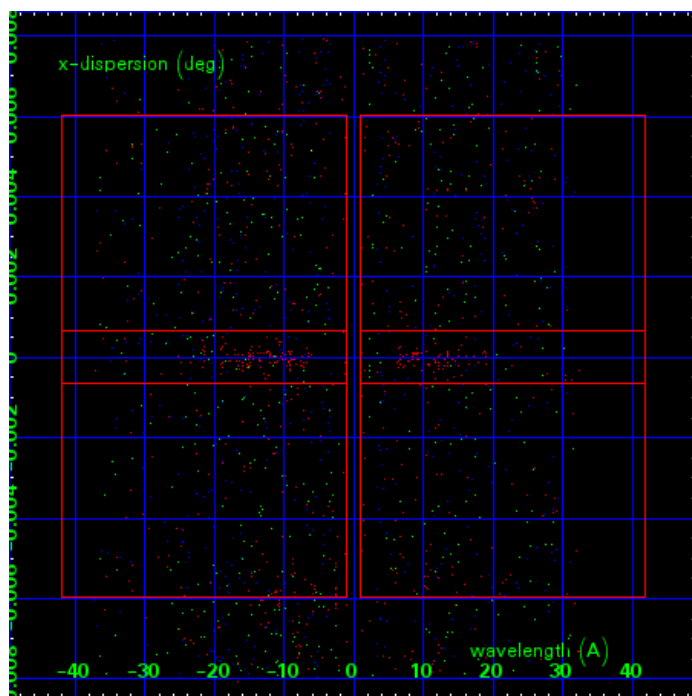
MEG Order Sort 123



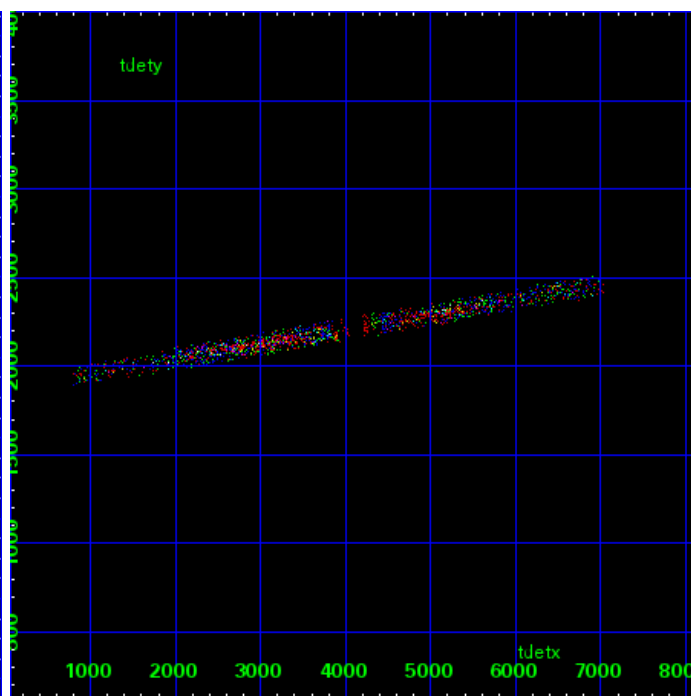
MEG Zero Order



MEG Order Sort ALL

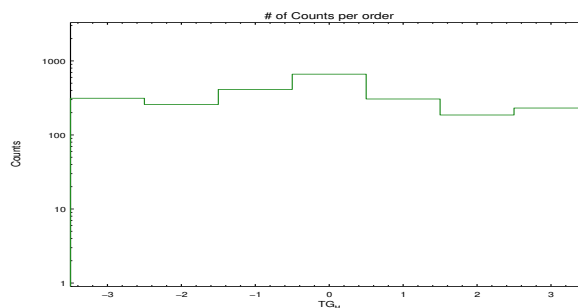


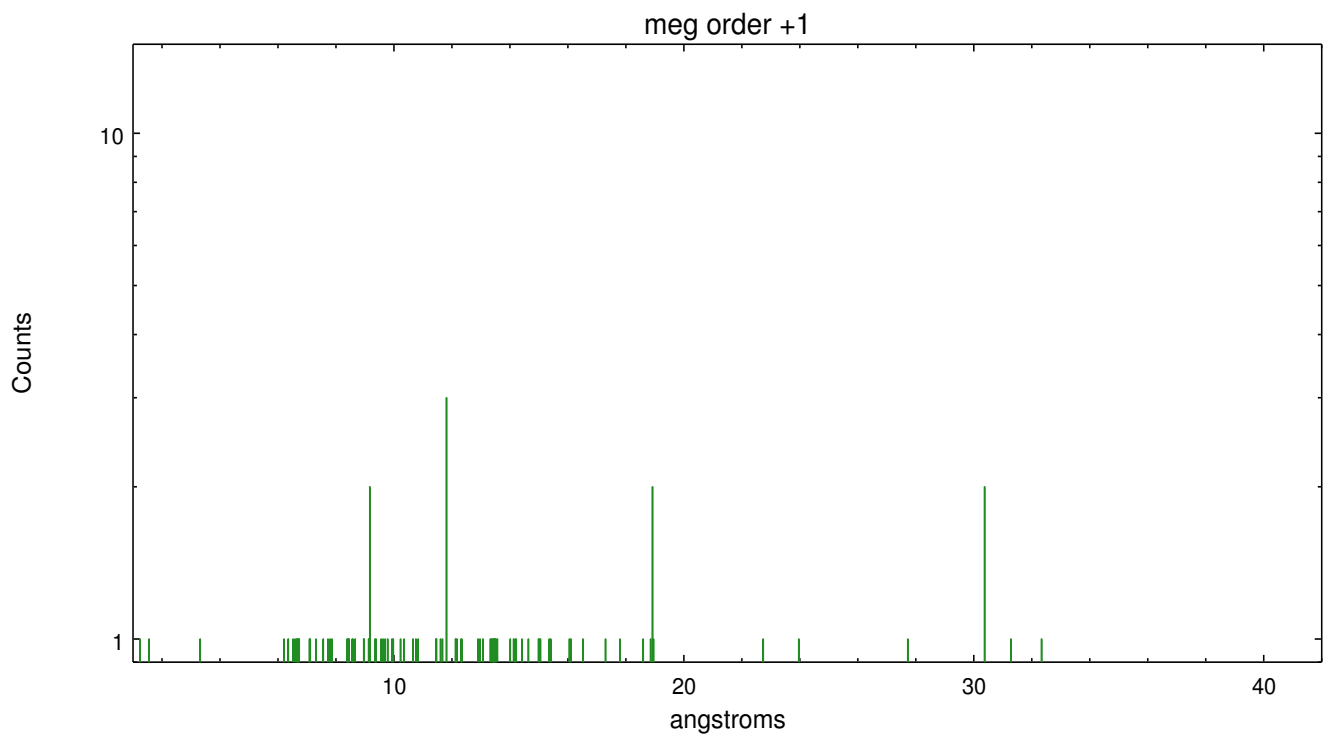
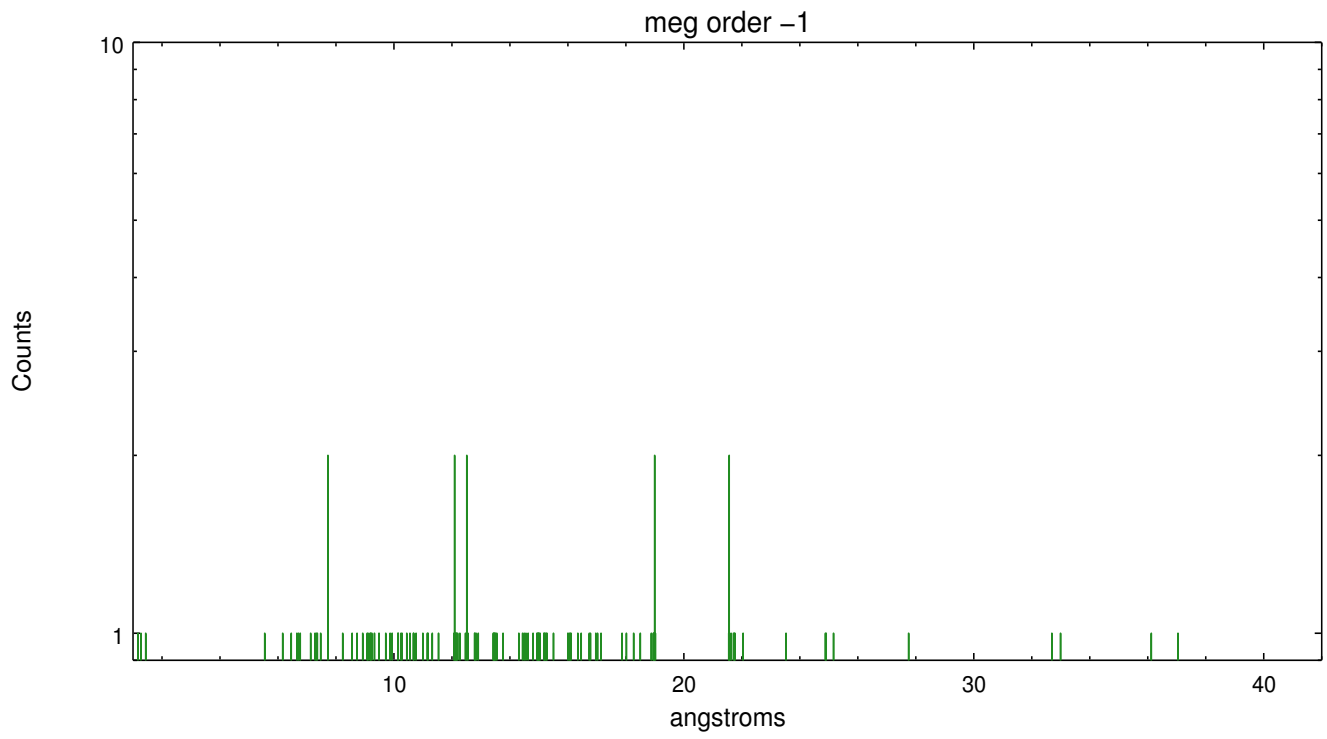
Spot Image MEG



Full Detector MEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	313	258	412	662	306	186	231





# A Summary

## A.1 Status

V&V Scientist	Joy Nichols
V&V Date (YYYY-MM-DD)	2015.02.17
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	36.934112475753

## A.2 Comments

A spatial region of the original bias map for CCD = 9 suffered from anomalously high data values. Pixels in the event data that were bias-corrected by one of the original affected bias pixels may have an apparent energy shift. While the change in energy is expected to be small ( $\sim 20$  eV), it depends on many parameters that have not yet been fully explored for this bias anomaly. The bias map for CCD = 9 has been reconstructed for this processing to remove this anomaly using scaled data from a comparable bias map from another observation. The pixels affected by the anomaly are bounded by sky coords: (109.38319, -24.69196), (109.38007, -24.69007), (109.29463, -24.80615), (109.29776, -24.80804).