

# V&V Reference Report

## L2 ASCDS Version : 8.4.5

Observation 10694 - L2 Version 2  
Chandra X-Ray Center

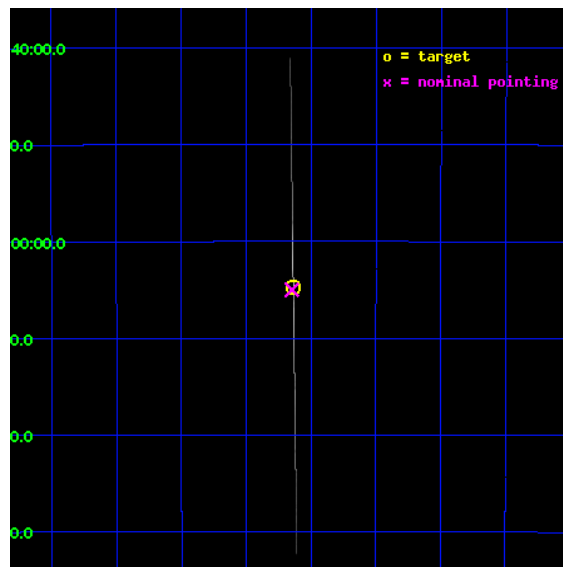
L2 Processing Date : Jun 15 2012

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# 1 Front

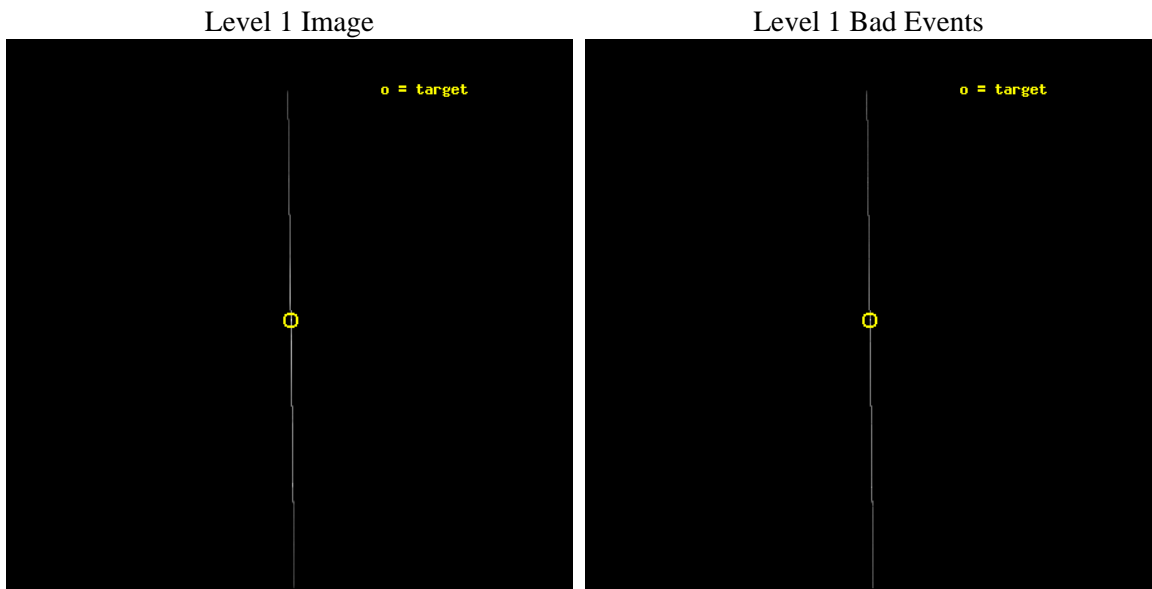
seq_num	401061	Sequence number
obs_id	10694	Observation id
title	Observe Z sources at High Mass Accretion Rates	Proposal title
observer	Prof Claude Canizares	Principal investigator
object	GX 5-1	Source name
ra_targ	270.284167	Observer's specified target RA [deg]
dec_targ	-25.079167	Observer's specified target Dec [deg]
ra_nom	270.28691898773	Nominal RA [deg]
dec_nom	-25.083287323179	Nominal Dec [deg]
roll_nom	269.20347938813	Nominal Roll [deg]
revision	2	Processing version of data
ontime	3769.1081735492	Sum of GTIs [s]
livetime	3754.3850947462	Livetime [s]
ontime4	4543.9588816762	Sum of GTIs [s]
ontime5	8149.75	Sum of GTIs [s]
ontime6	3588.2327642441	Sum of GTIs [s]
ontime7	3769.1081735492	Sum of GTIs [s]
ontime8	4936.4346148968	Sum of GTIs [s]
ontime9	5009.4604231715	Sum of GTIs [s]
l2events	1243238	Number of level 2 events



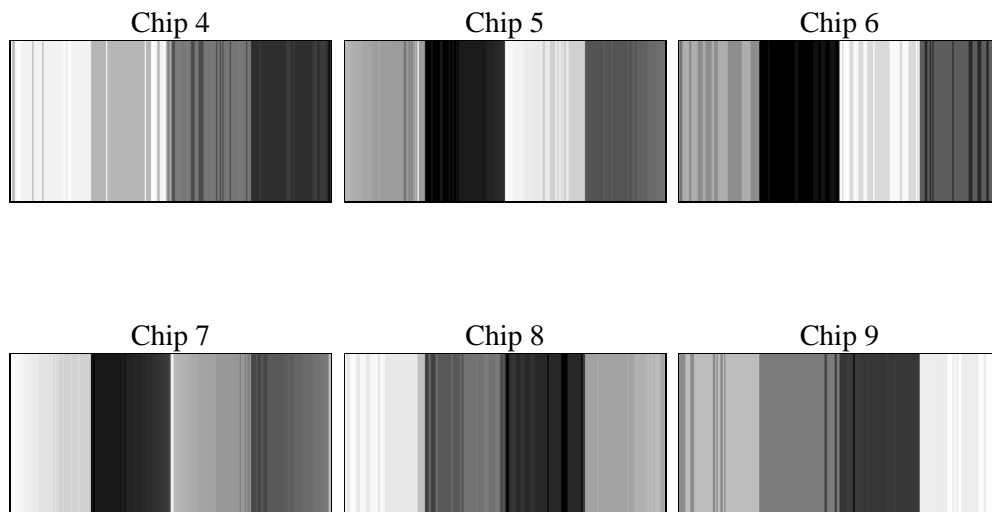
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

obi_num	0	Obi number	sched_exp_time	8000.826000	[s] Scheduled observation exposure time
ascdsver	8.4.5	Processing system revision	ontime	3769.1081735492	Sum of GTIs [s]
caldbver	4.4.10	&#160	ontime4	4543.9588816762	Sum of GTIs [s]
date	2012-06-15T02:14:03	Date and time of file creation	ontime5	8149.75	Sum of GTIs [s]
revision	2	Processing version of data	ontime6	3588.2327642441	Sum of GTIs [s]
			ontime7	3769.1081735492	Sum of GTIs [s]
			ontime8	4936.4346148968	Sum of GTIs [s]
			ontime9	5009.4604231715	Sum of GTIs [s]
			l1events	1476965	Number of level 1 events

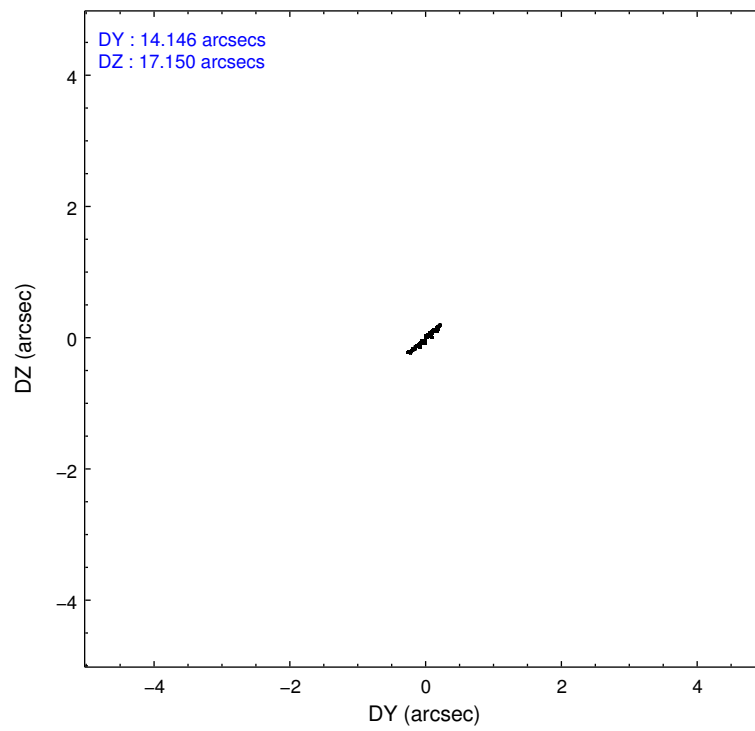
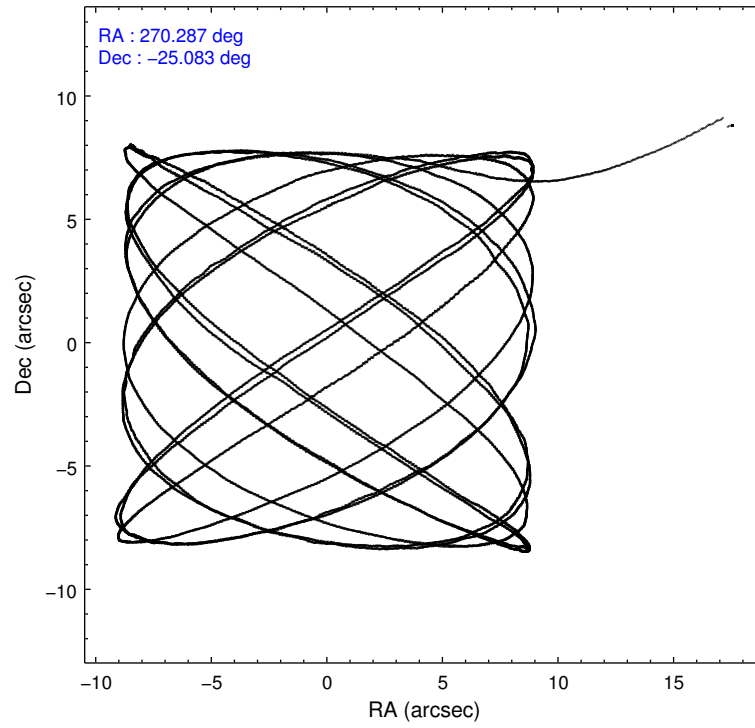
### 2.1.4 Events

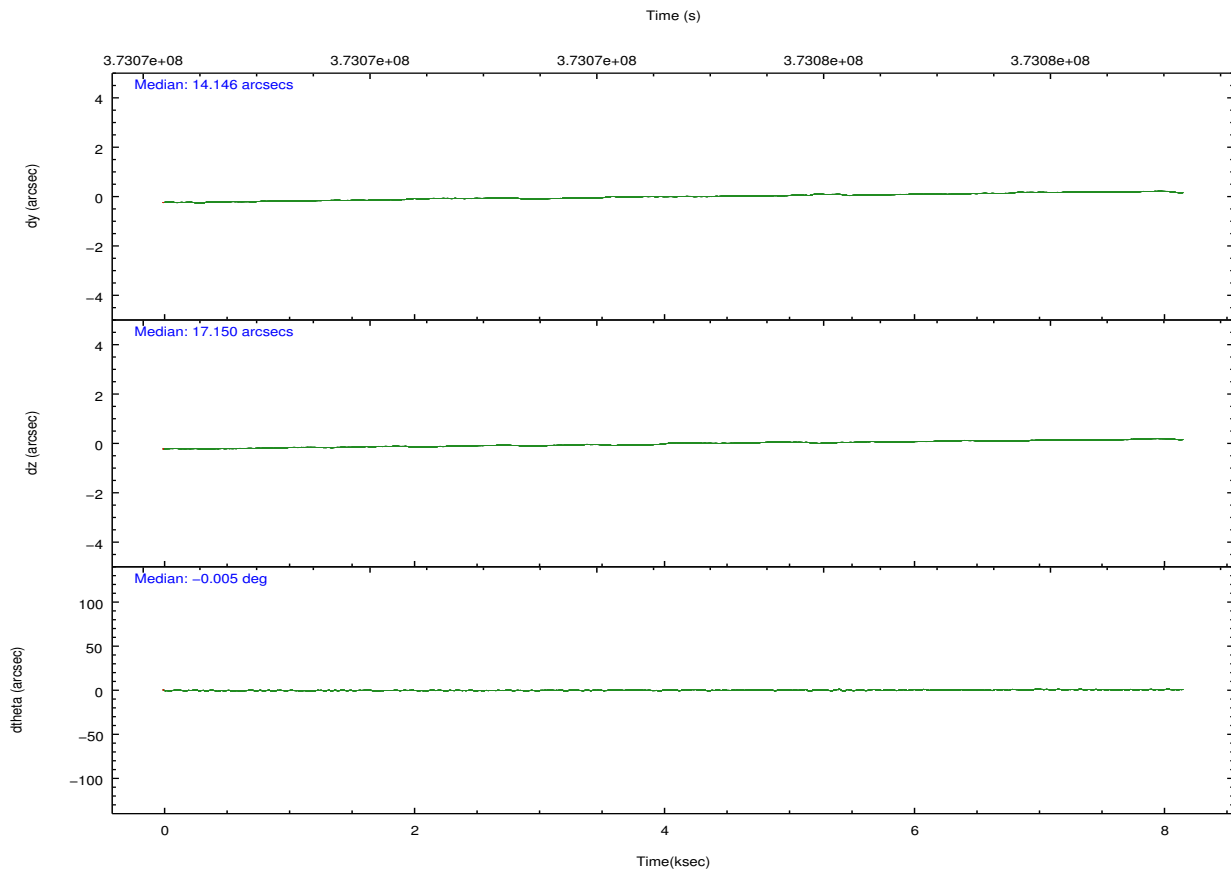
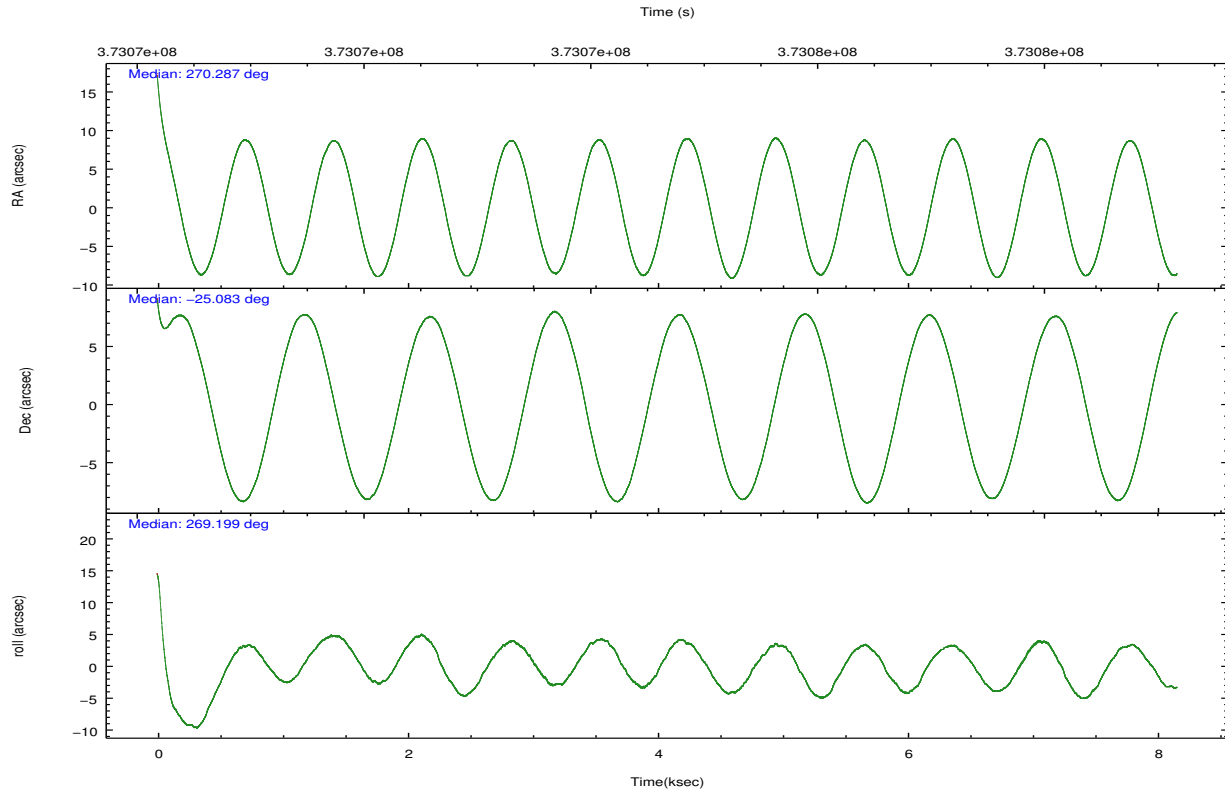
	ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9		ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
level 1 events	24431	162738	386522	796650	80406	26218	grade 0 events	1530	33523	191621	118612	32782	3325
rejected events	7701	25128	27693	73300	8655	4141		6%	20%	49%	14%	40%	12%
rejected %	31%	15%	7%	9%	10%	15%	grade 1 events	52	167	1216	8678	162	46
								0%	0%	0%	1%	0%	0%
							grade 2 events	15359	57402	126700	185708	27021	14435
								62%	35%	32%	23%	33%	55%
							grade 3 events	1174	4349	14002	69876	4045	1277
								4%	2%	3%	8%	5%	4%
							grade 4 events	1266	4220	14199	69449	3876	1307
								5%	2%	3%	8%	4%	4%
							grade 5 events	1779	8109	4261	42215	3429	2417
								7%	4%	1%	5%	4%	9%
							grade 6 events	3271	54968	34523	302112	9091	3411
								13%	33%	8%	37%	11%	13%
							grade 7 events	0	0	0	0	0	0
								0%	0%	0%	0%	0%	0%

## 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	CC33_FAINT	CC33_FAINT	CCD I0 on	N	N
Observation mode	POINTING	POINTING	CCD I1 on	N	N
[deg] Pointing RA	270.271835	270.2869189877349	CCD I2 on	N	N
[deg] Pointing Dec	-25.059647	-25.08328732317912	CCD I3 on	N	N
[deg] Pointing Roll	269.040447	269.2034793881349	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	-178.832523	-178.8407330846613	CCD S3 on	Y	Y
[mm] SIM translation stage offset	-11.3	-11.29178949834656	CCD S4 on	Y	Y
[s] Observation start time (MET)	373070738.184000	373069615.62807	CCD S5 on	Y	Y
Observation start date	2009-10-27T22:44:32	2009-10-27T22:26:55	Number of optional ACIS chips dropped	0	0
[s] Observation end time (MET)	373078739.184000	373078956.45354	On-chip summing requested	N	N
Observation end date	2009-10-28T00:57:53	2009-10-28T01:02:36	Subarray requested	NONE	NONE
Read mode	CONTINUOUS	CONTINUOUS	Alternating exposures requested	N	N
			[s] Primary exposure time	0.000000	0

## 2.3 Aspect



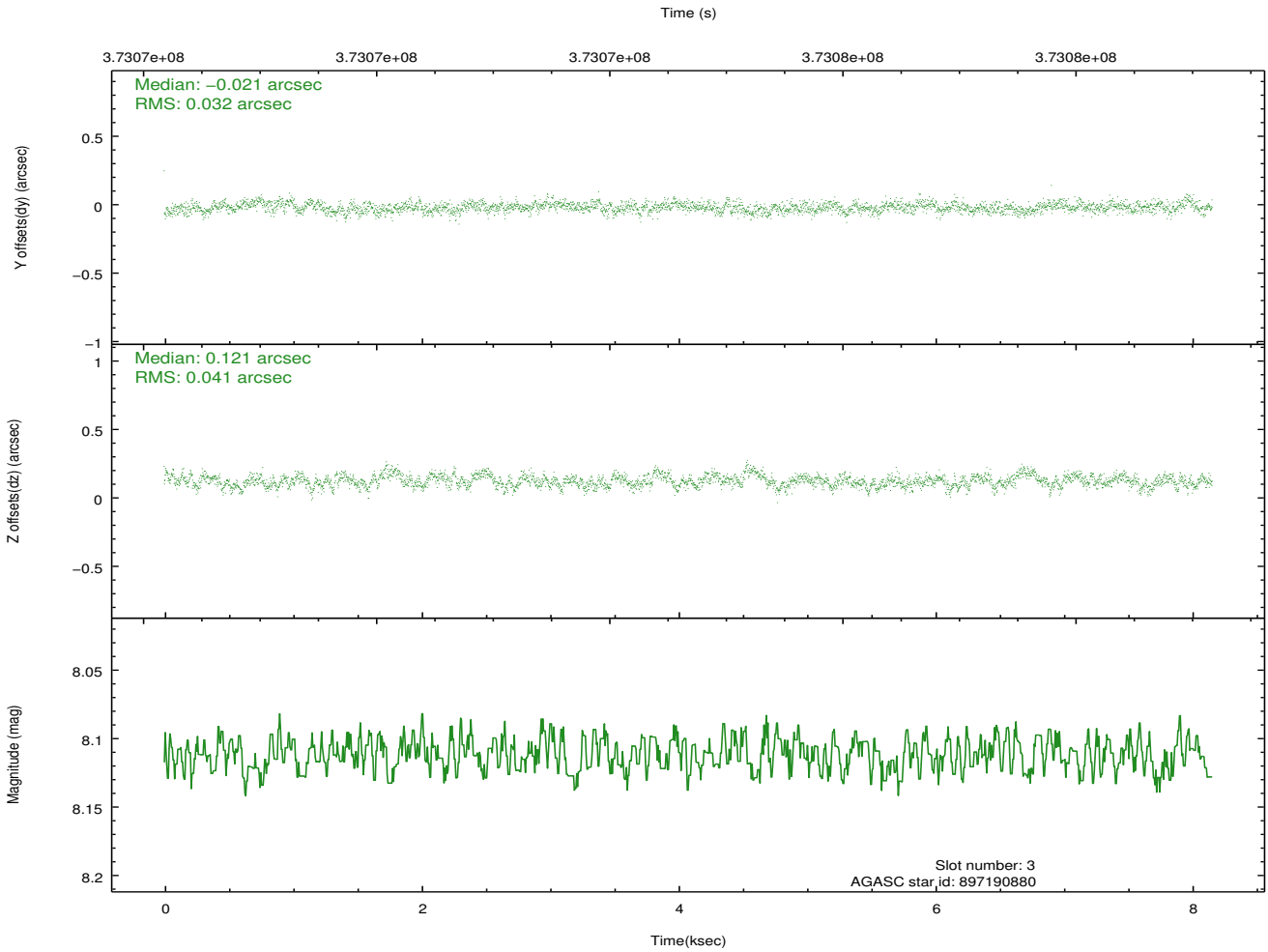
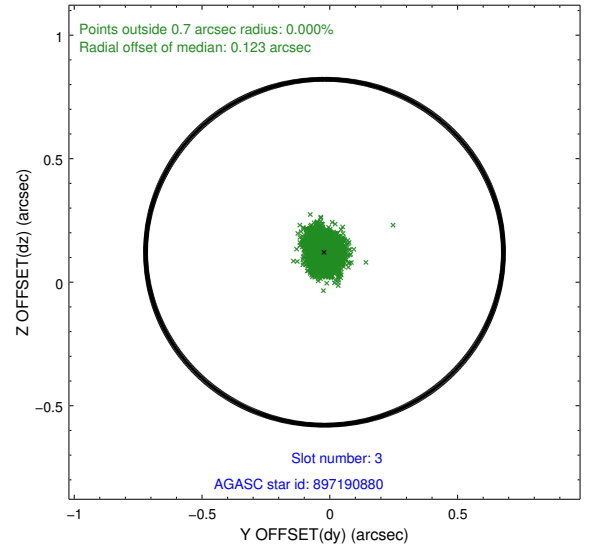
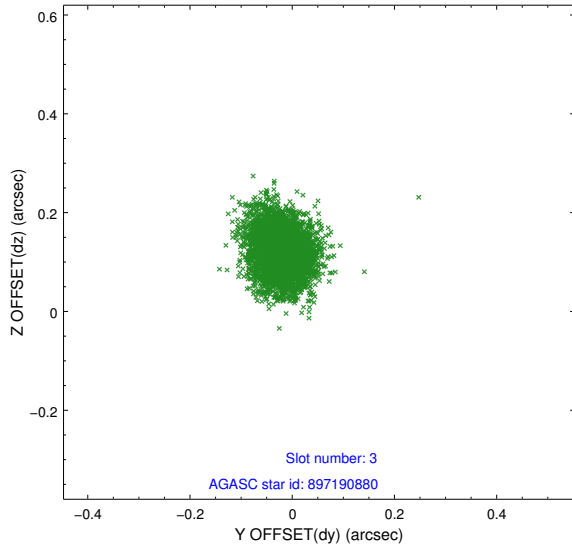


### Slot Statistics

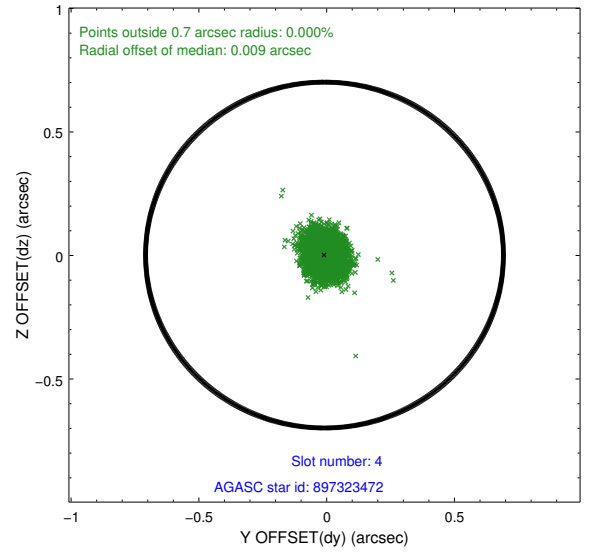
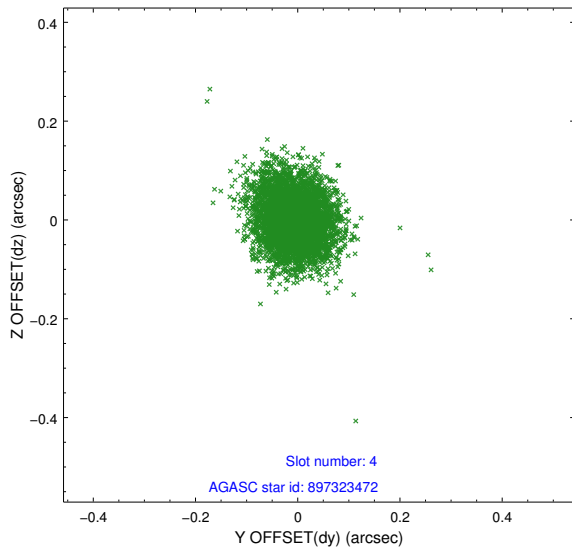
slot	status	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID	ACIS-S-2	6.84	1991	-0.121	-0.376	0.013	0.021	0.000000	0.000000	-766.33	-1971.41
1	FID	ACIS-S-4	6.92	1991	0.183	0.159	0.009	0.016	0.000000	0.000000	2146.90	-63.19
2	FID	ACIS-S-5	6.99	1991	-0.094	0.225	0.010	0.016	0.000000	0.000000	-1818.30	-68.74
3	GUIDE	897190880	8.11	3981	-0.021	0.121	0.055	0.091	269.584058	-25.142408	341.65	-2235.73
4	GUIDE	897323472	8.46	3979	-0.008	0.002	0.068	0.108	270.860121	-25.266503	717.07	1927.19
5	GUIDE	897324960	7.65	3981	-0.143	-0.129	0.052	0.084	270.333871	-24.632185	-1541.63	177.58
6	GUIDE	897325464	8.19	3981	-0.192	-0.126	0.057	0.091	270.454899	-24.555059	-1825.99	568.75
7	GUIDE	897322760	8.55	3978	0.363	0.130	0.068	0.108	270.988015	-25.669699	2164.50	2360.55

## 2.4 Star Slots

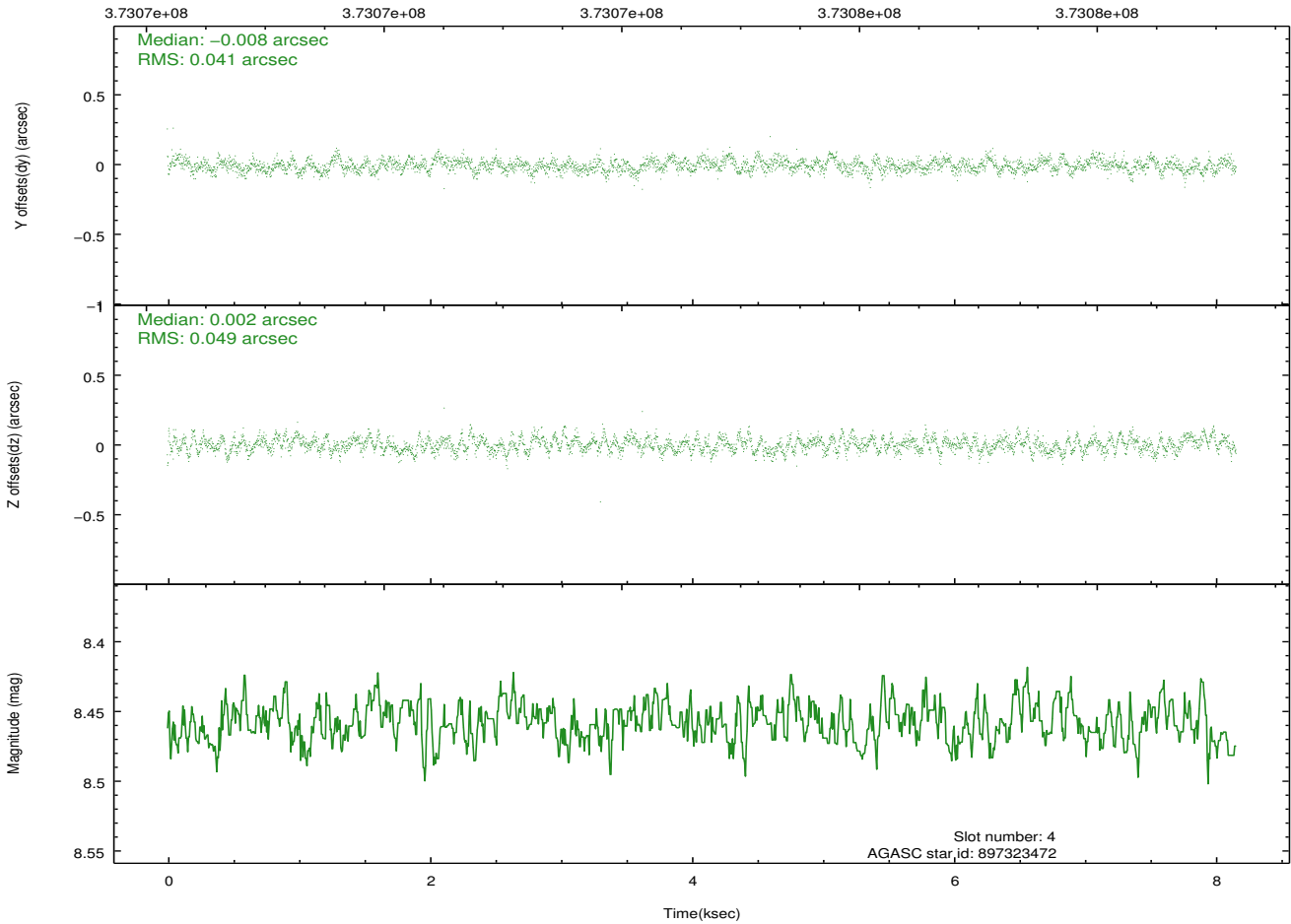
### 2.4.1 Slot 3



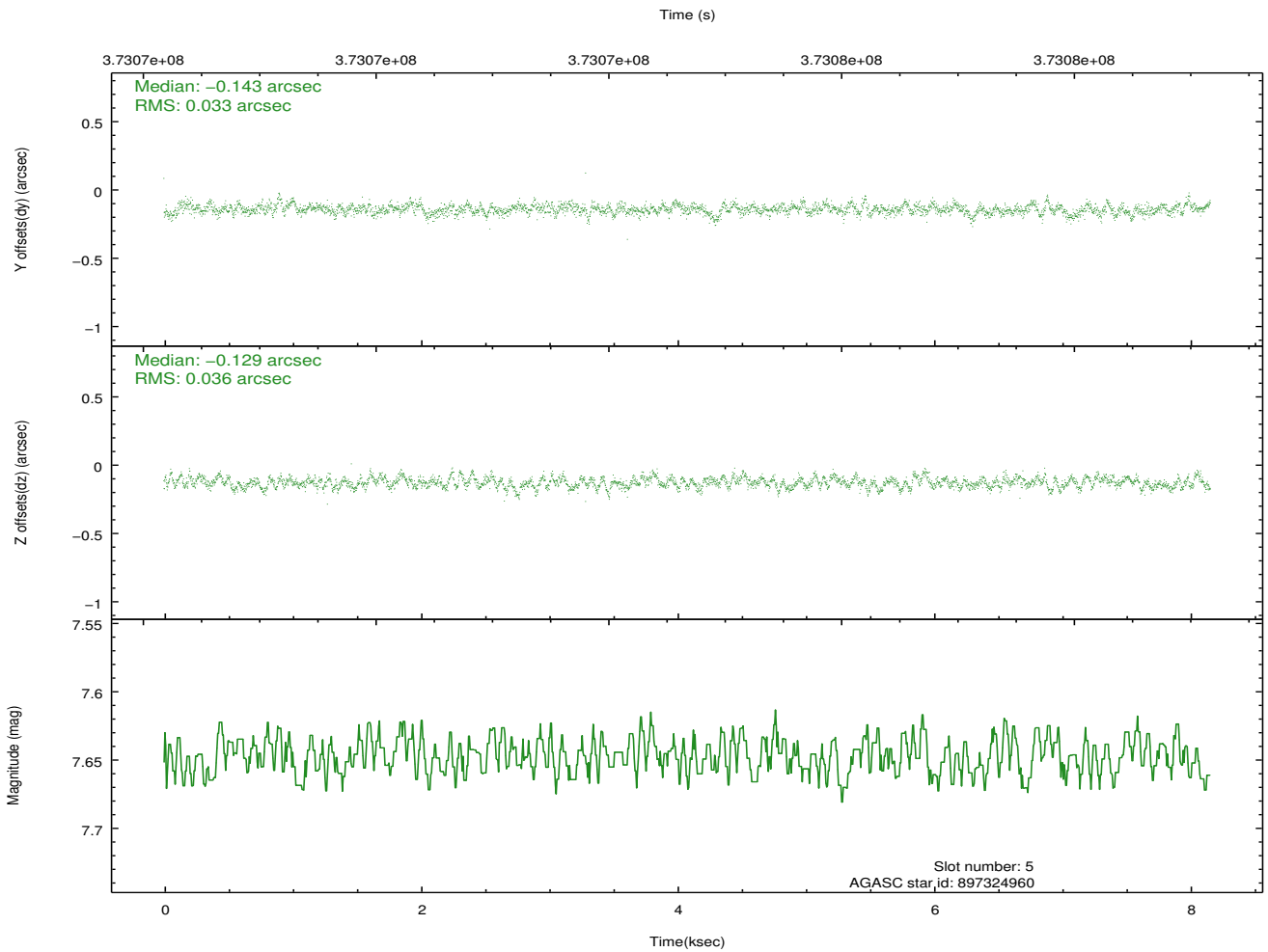
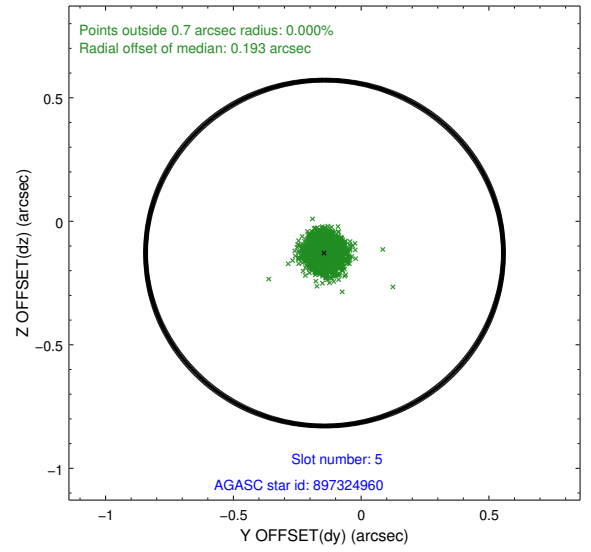
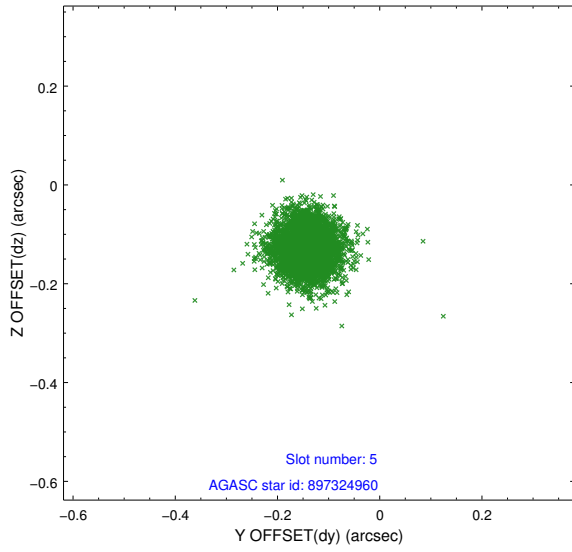
### 2.4.2 Slot 4



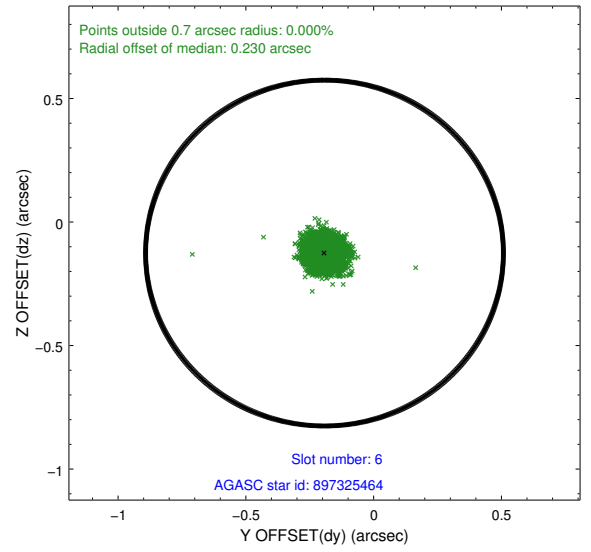
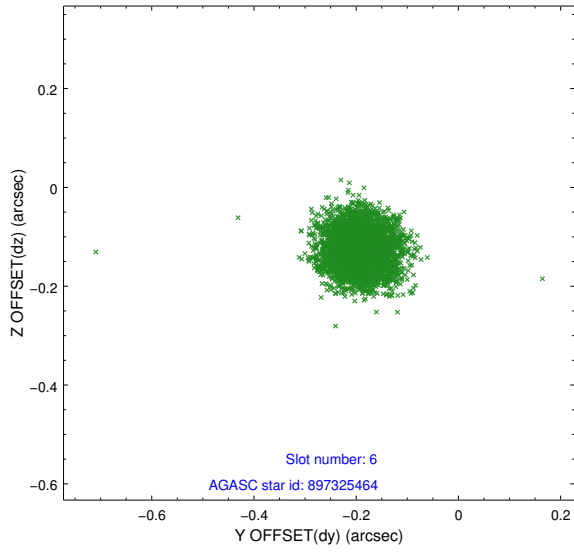
Time (s)



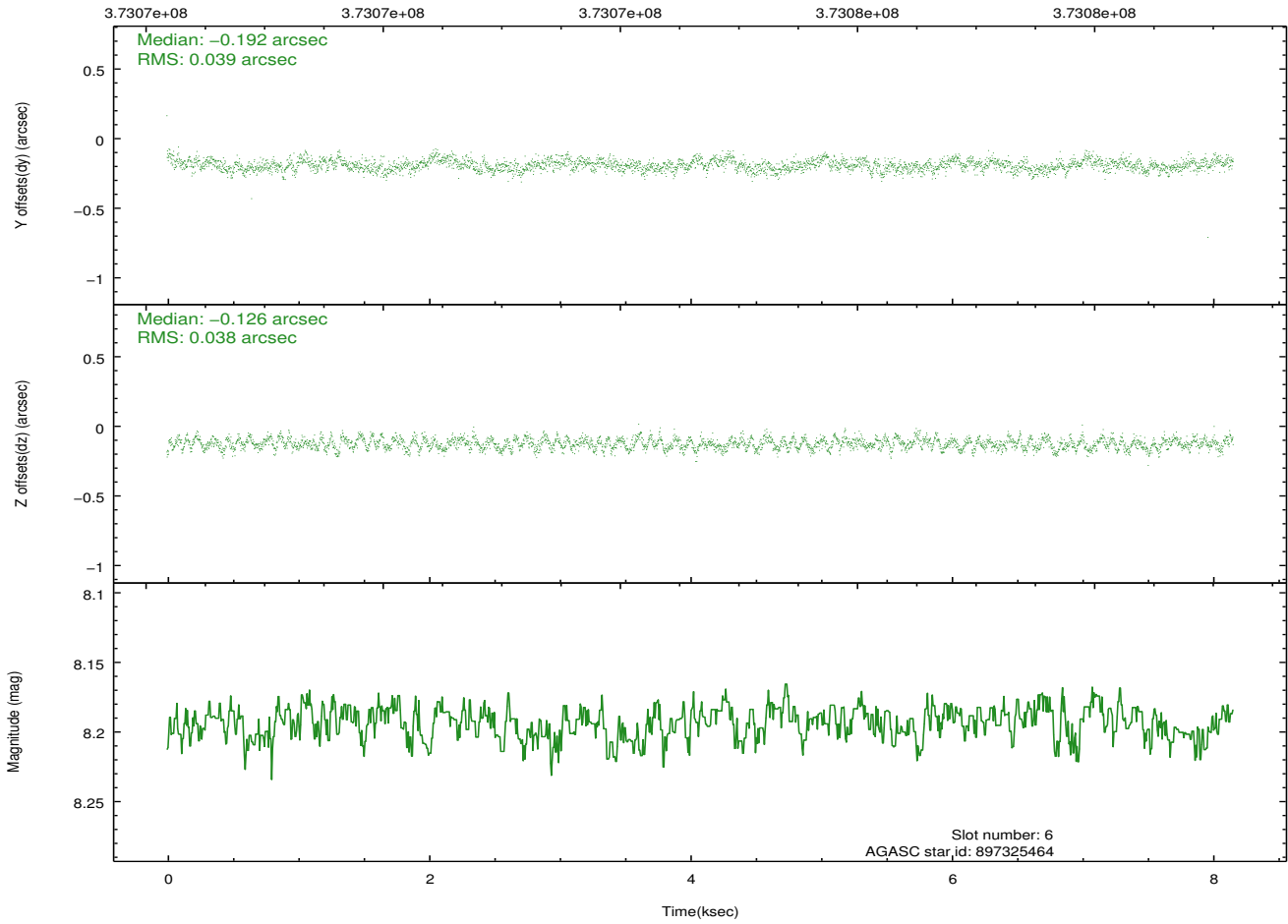
### 2.4.3 Slot 5



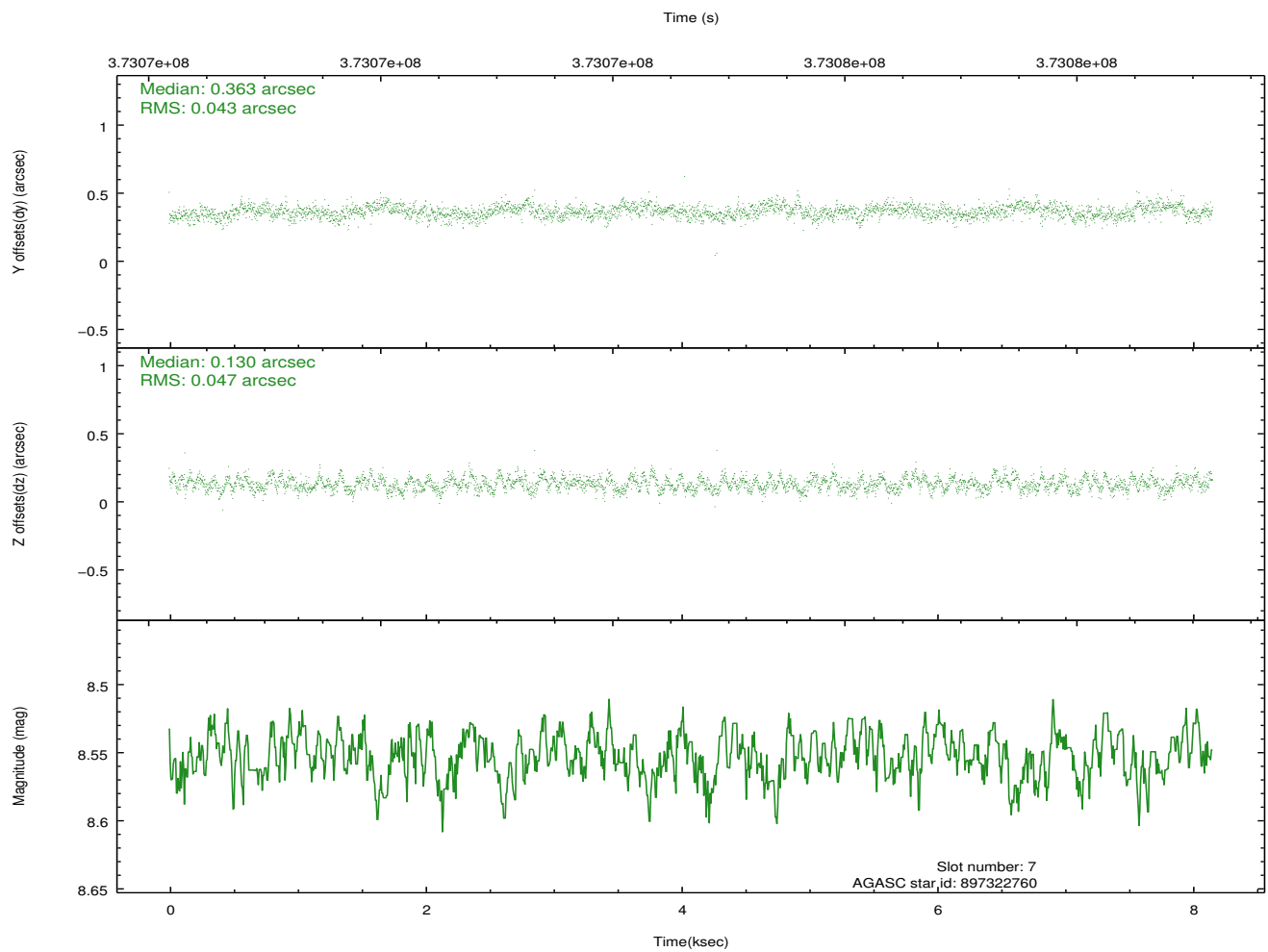
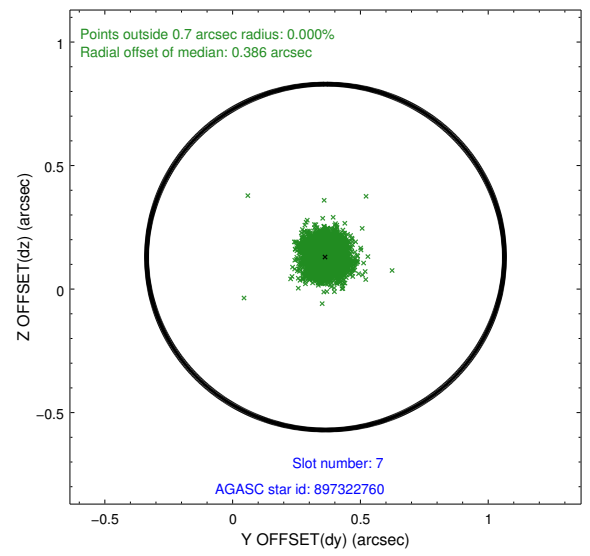
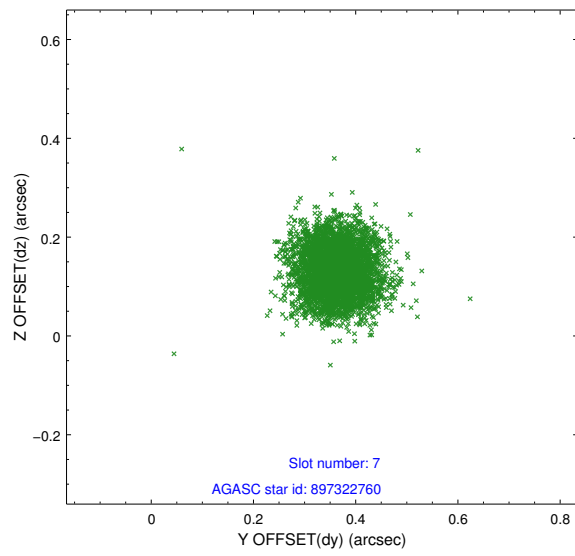
### 2.4.4 Slot 6



Time (s)

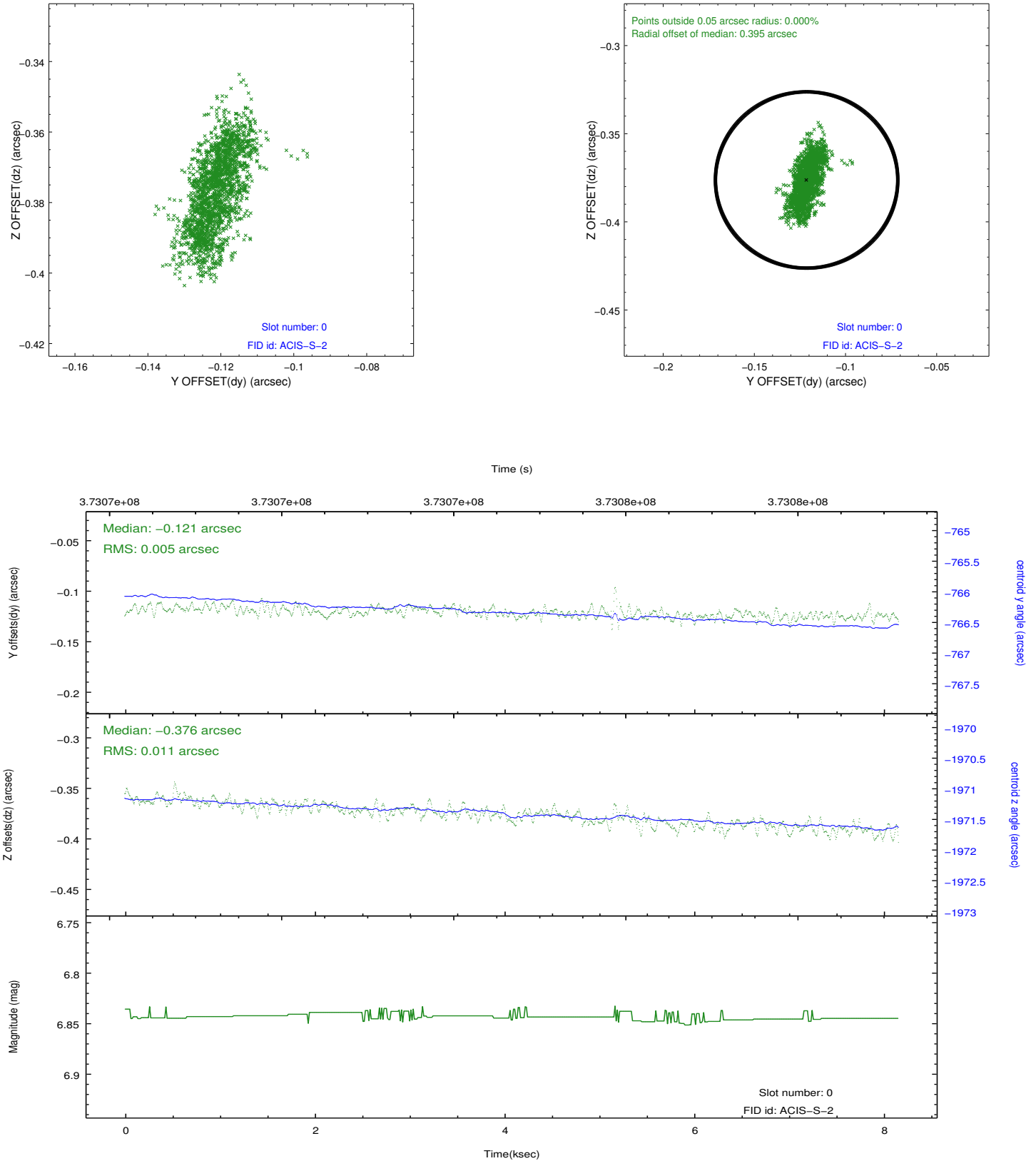


## 2.4.5 Slot 7

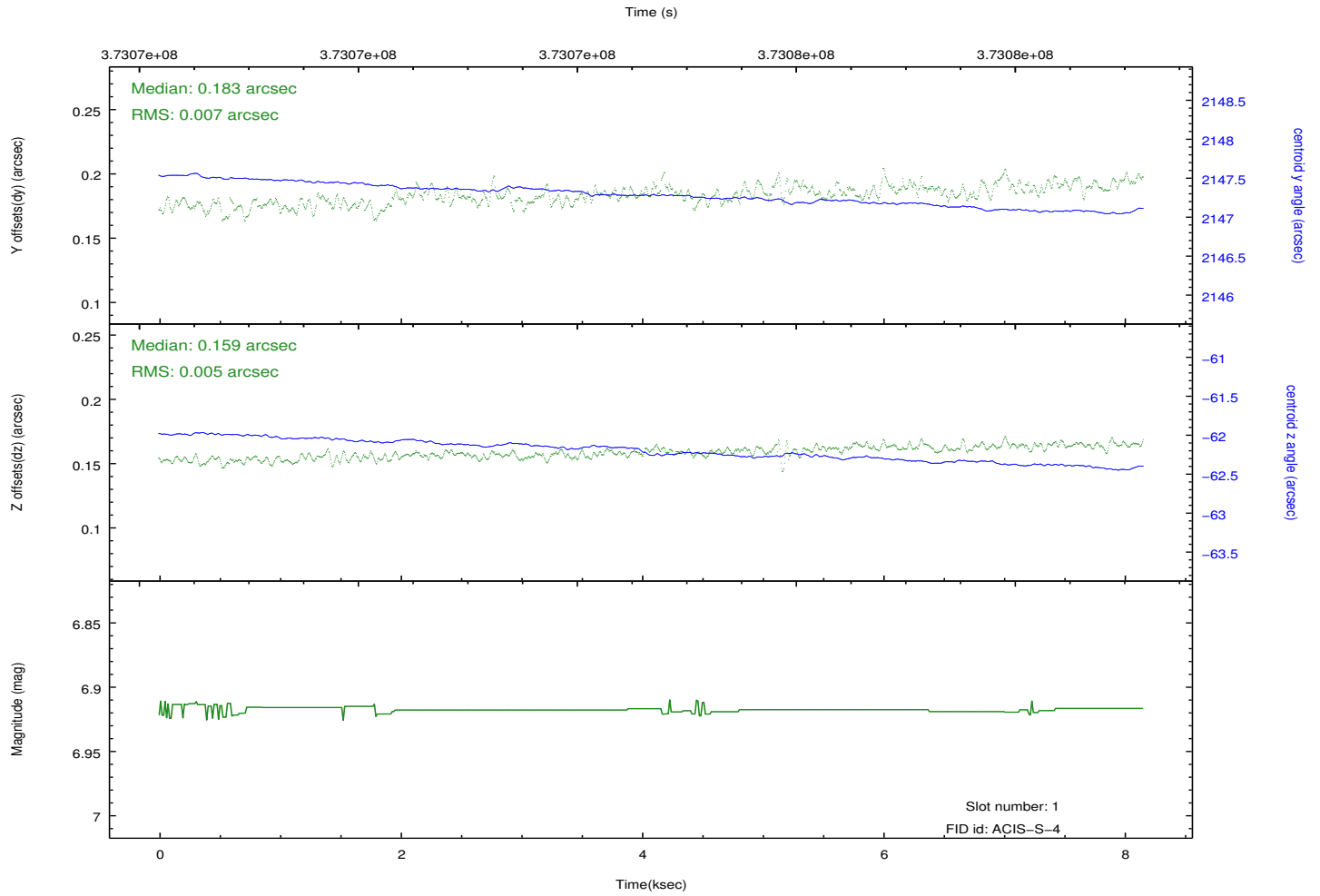
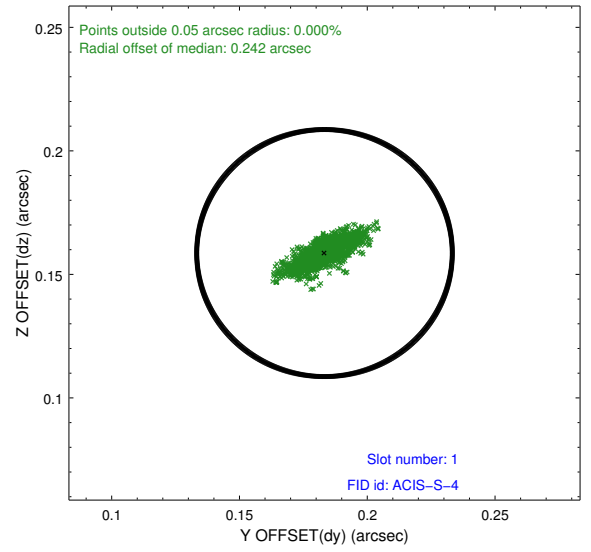
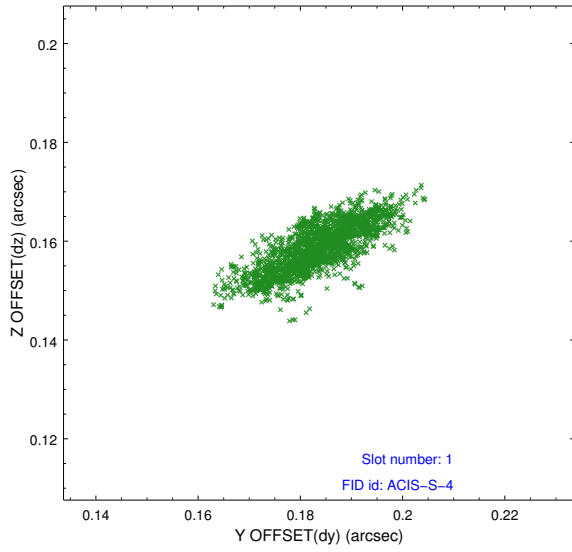


## 2.5 FID Slots

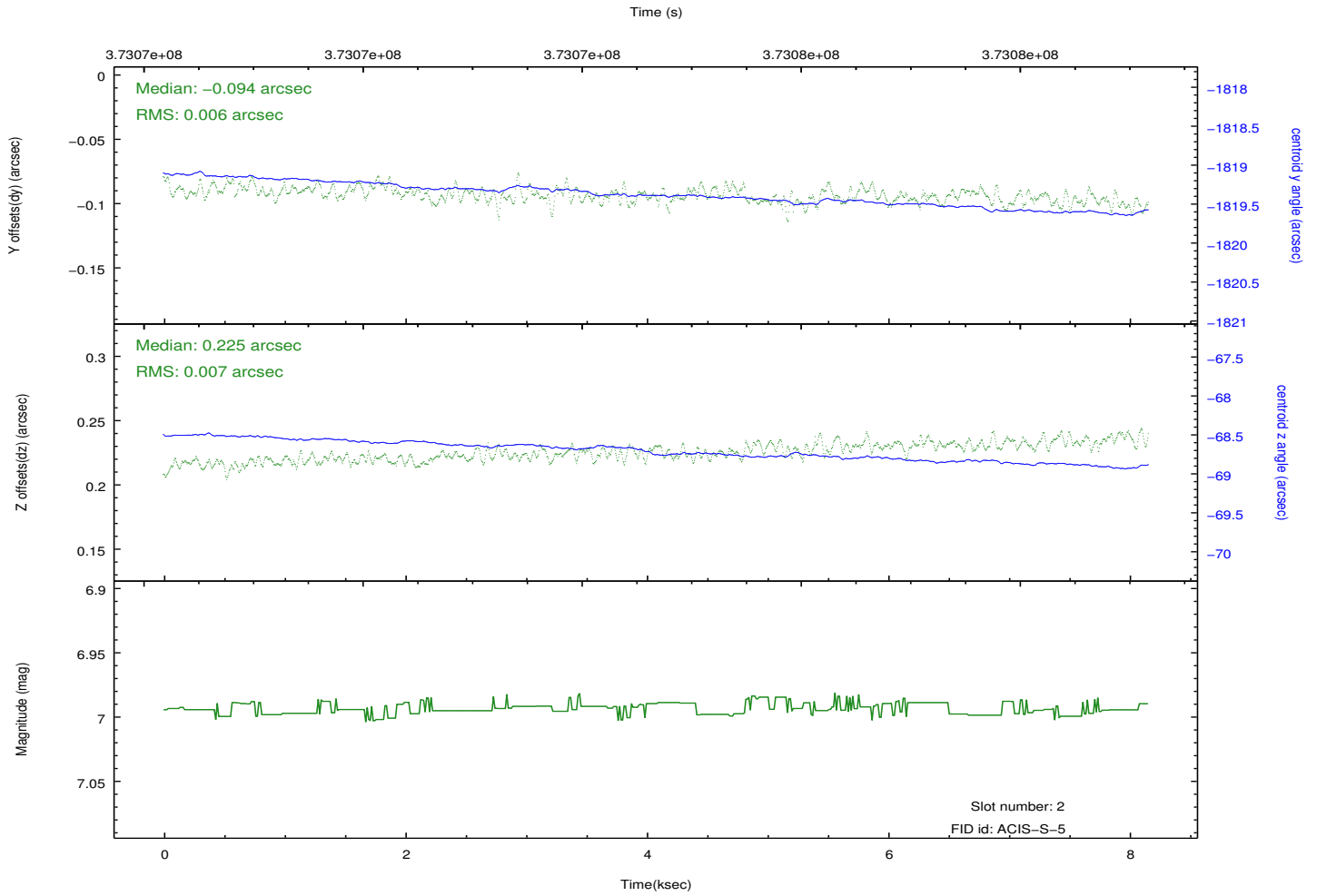
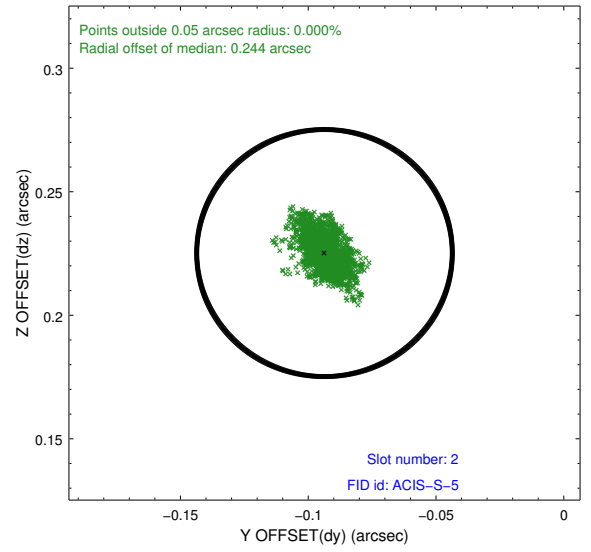
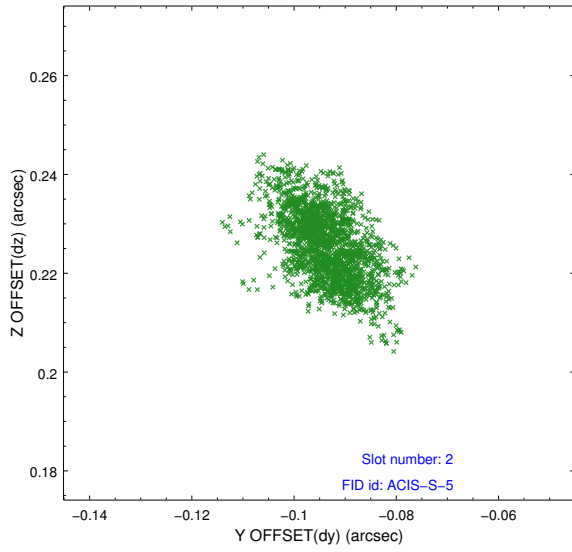
### 2.5.1 Slot 0



## 2.5.2 Slot 1

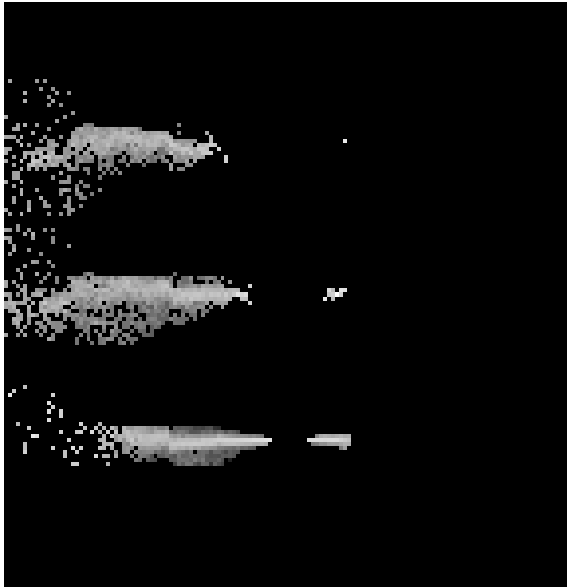


### 2.5.3 Slot 2

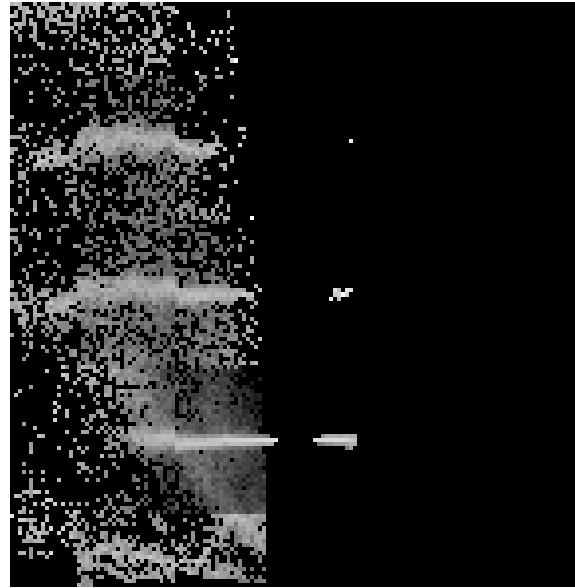


# 3 Gratings

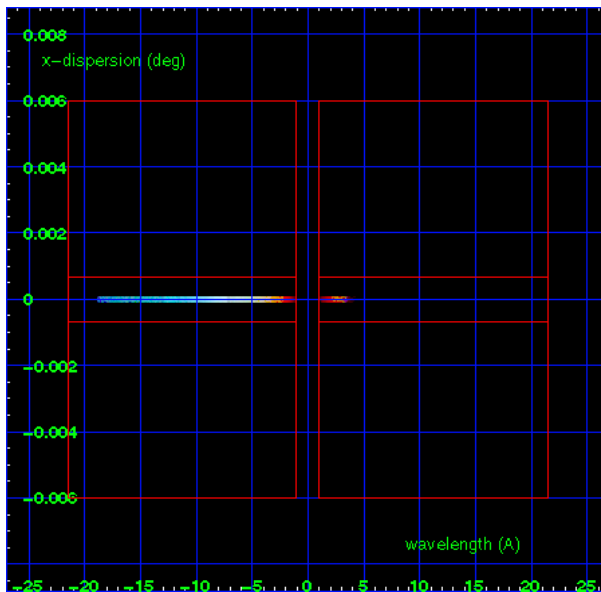
## 3.1 HEG Arm



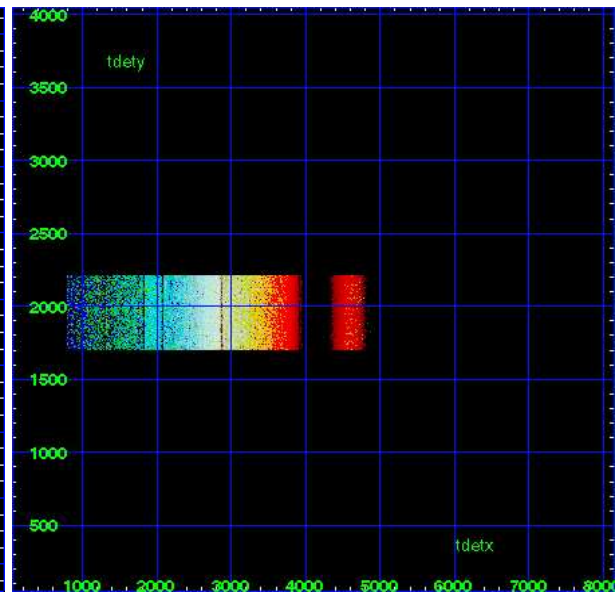
HEG Order Sort 123



HEG Order Sort ALL

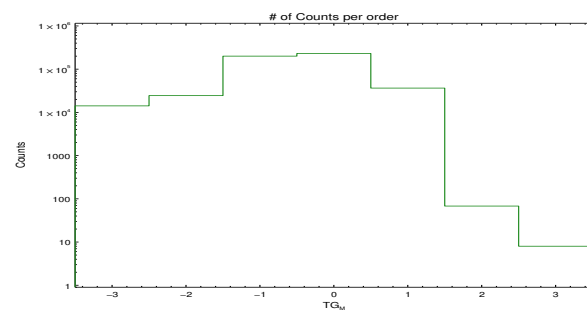


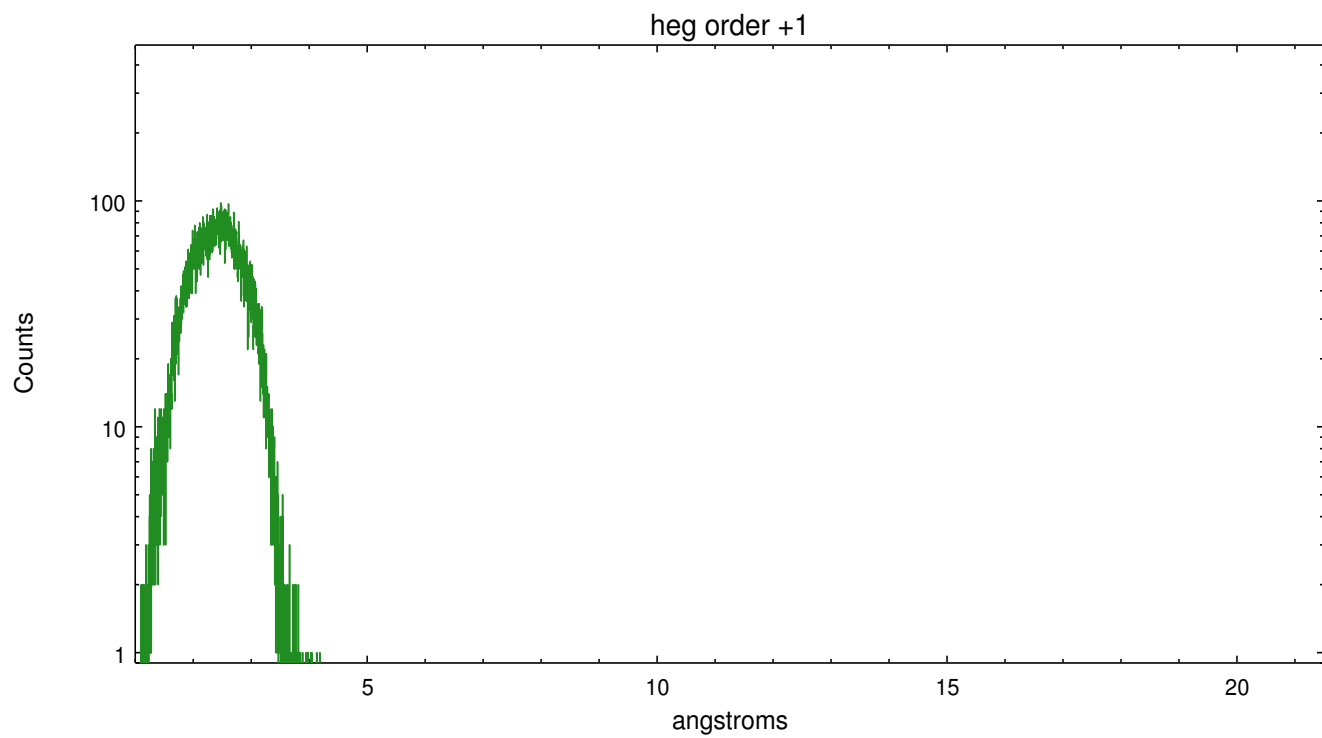
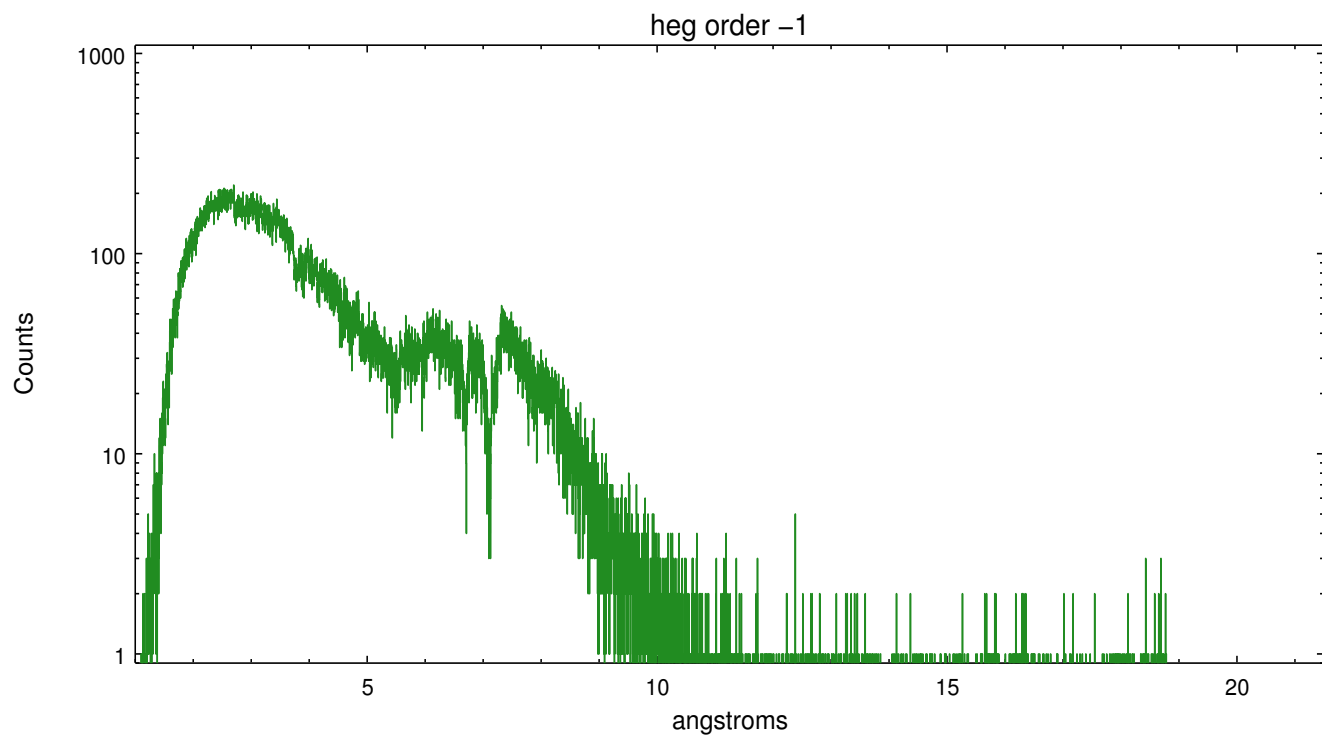
Spot Image HEG



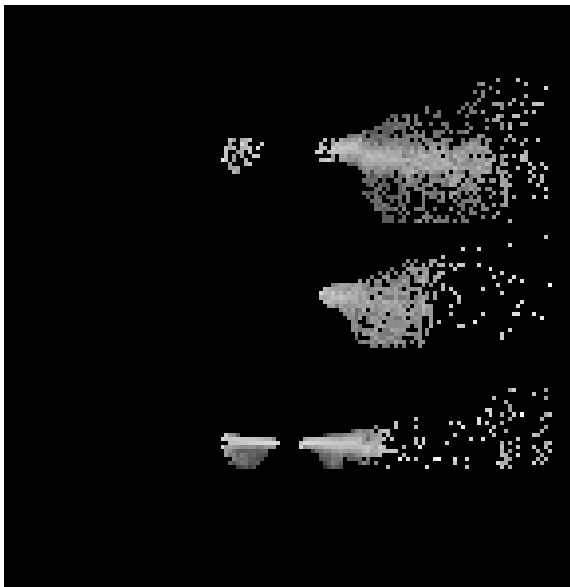
Full Detector HEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	14157	24451	200185	231010	36482	68	8

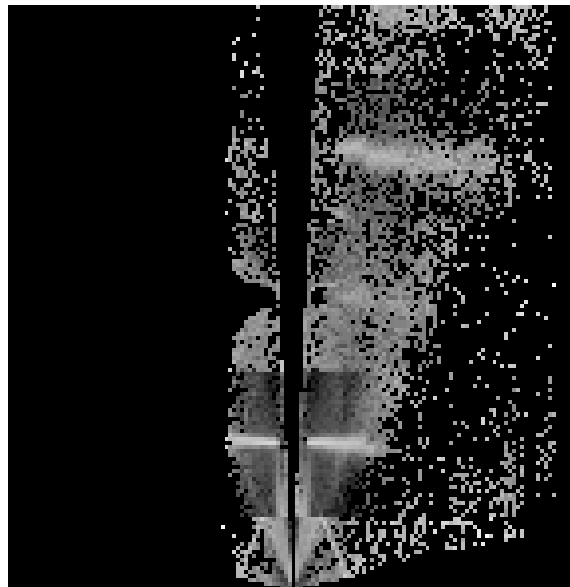




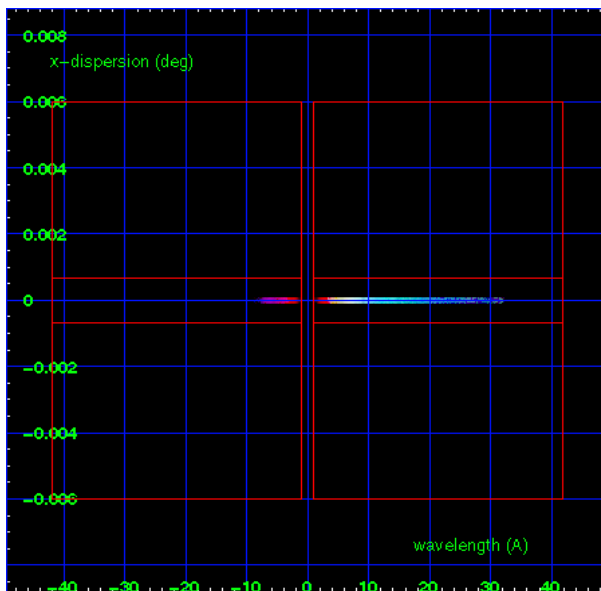
### 3.2 MEG Arm



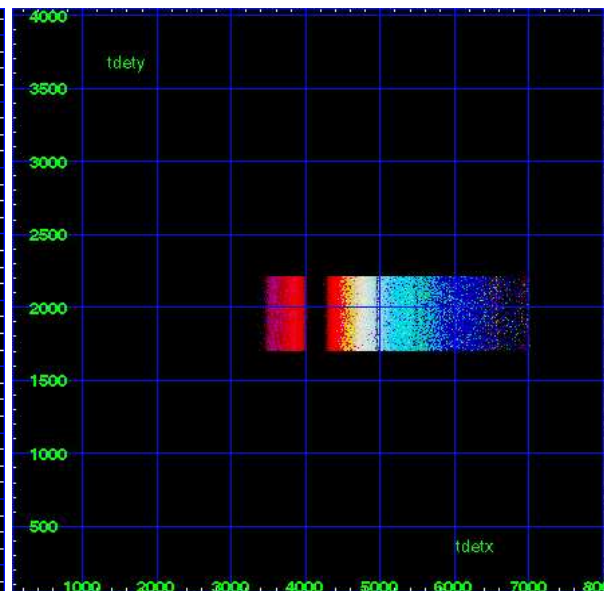
MEG Order Sort 123



MEG Order Sort ALL

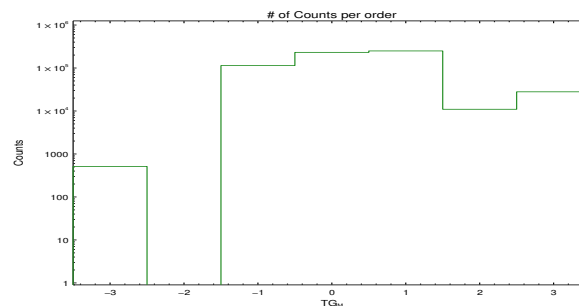


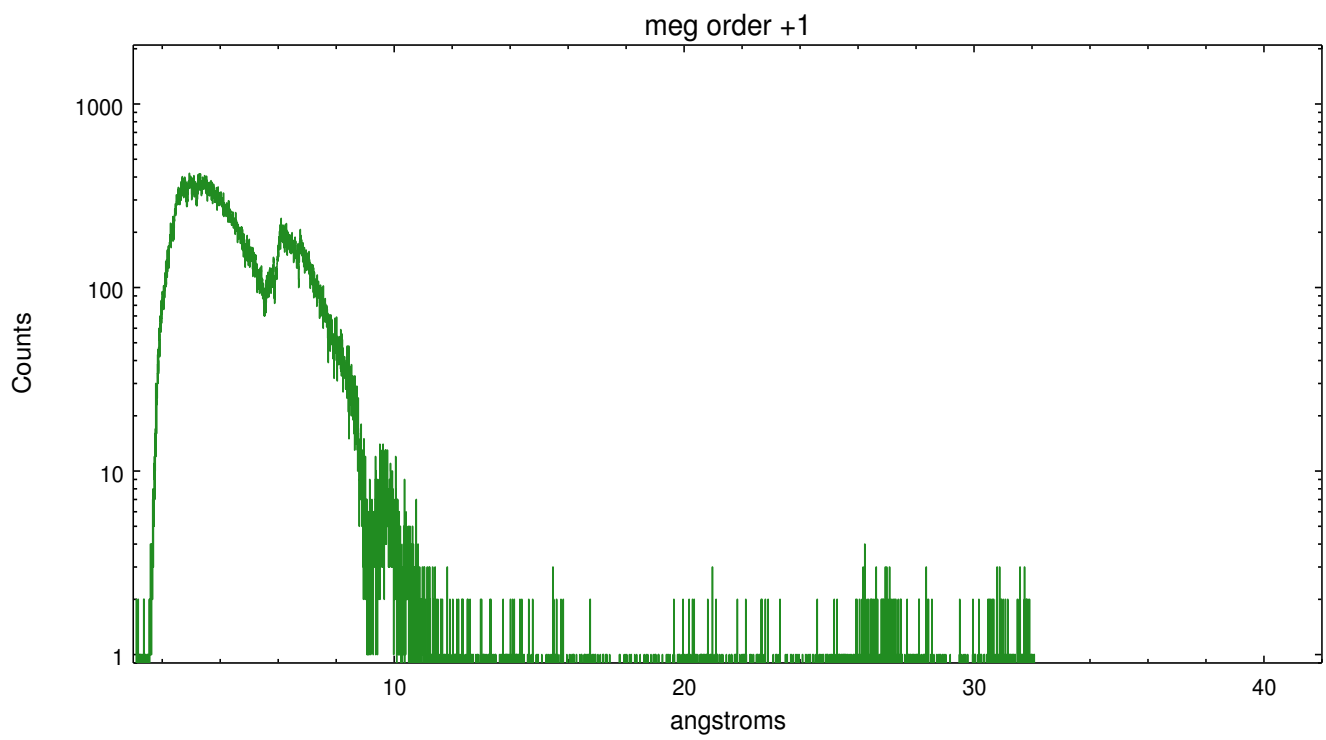
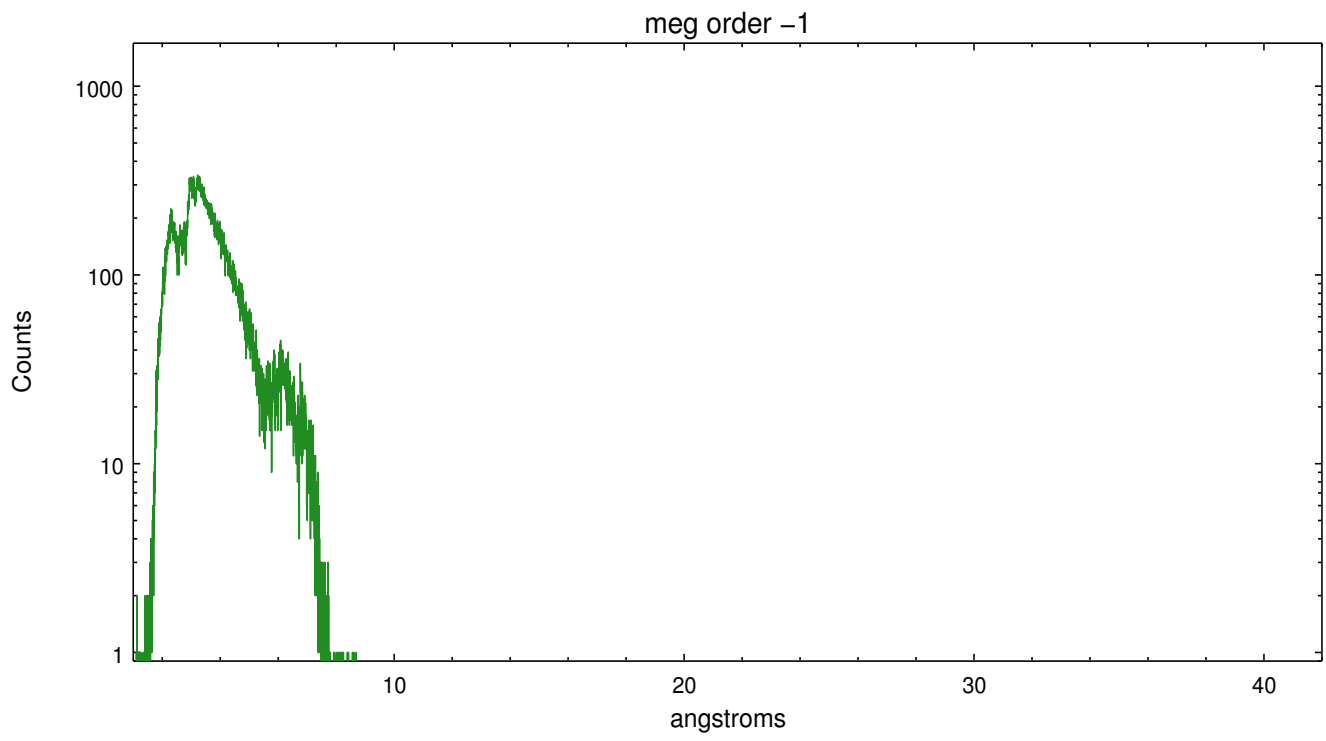
Spot Image MEG



Full Detector MEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	513	0	113810	231010	249729	10955	27954





# A Summary

## A.1 Status

V&V Scientist	David Huenemoerder
V&V Date (YYYY-MM-DD)	2012.06.18
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	8.15

## A.2 Comments

Note: detector offset (intentional) such that two grating arms fall off the array. Extracted spectra are primarily of HEG negative and MEG positive orders.