

# V&V Reference Report

## L2 ASCDS Version : 8.4.3

Observation 13855 - L2 Version 1  
Chandra X-Ray Center

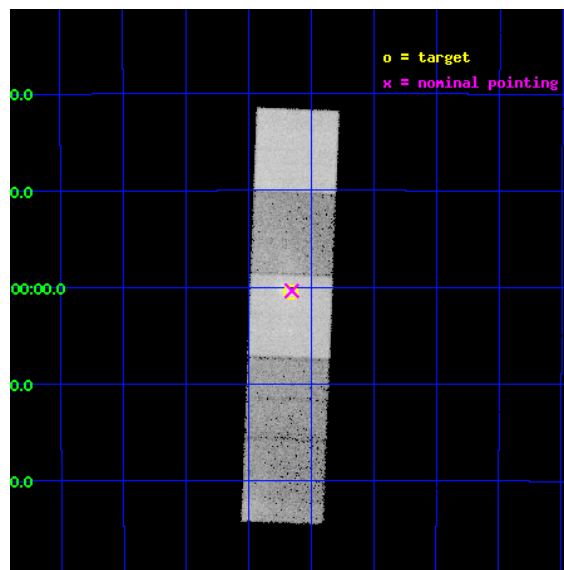
L2 Processing Date : Mar 23 2012

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# 1 Front

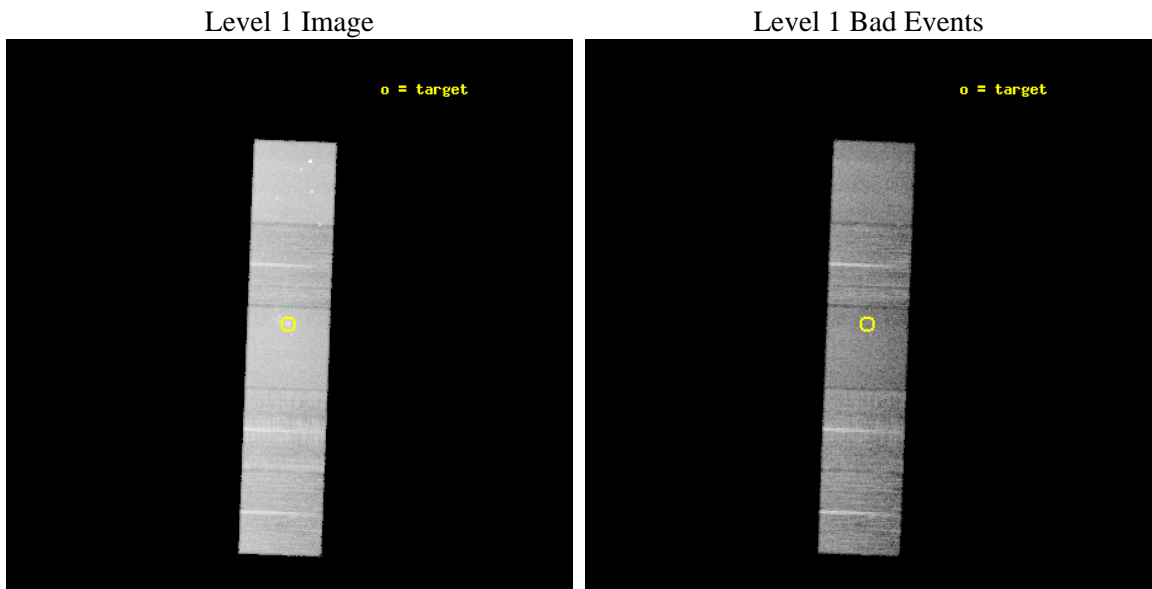
seq_num	601015	Sequence number
obs_id	13855	Observation id
title	Chandra HETG Ultra-deep Gratings Spectroscopy of Sgr A* (CHUGSS)	P
observer	Dr. Frederick Baganoff	Principal investigator
object	Sgr A*	Source name
dtcycle	0	&#160
cycle	P	events from which exps? Prim/Second/Both
ra_targ	266.416667	Observer's specified target RA [deg]
dec_targ	-29.007806	Observer's specified target Dec [deg]
ra_nom	266.41369194268	Nominal RA [deg]
dec_nom	-29.006278776717	Nominal Dec [deg]
roll_nom	92.155185003159	Nominal Roll [deg]
revision	1	Processing version of data
ontime	20060.100154281	Sum of GTIs [s]
livetime	19798.000177734	Livetime [s]
ontime5	20060.100154281	Sum of GTIs [s]
ontime6	20060.100154281	Sum of GTIs [s]
ontime7	20060.100154281	Sum of GTIs [s]
ontime8	20060.100154281	Sum of GTIs [s]
ontime9	20060.100154281	Sum of GTIs [s]
l2events	227689	Number of level 2 events



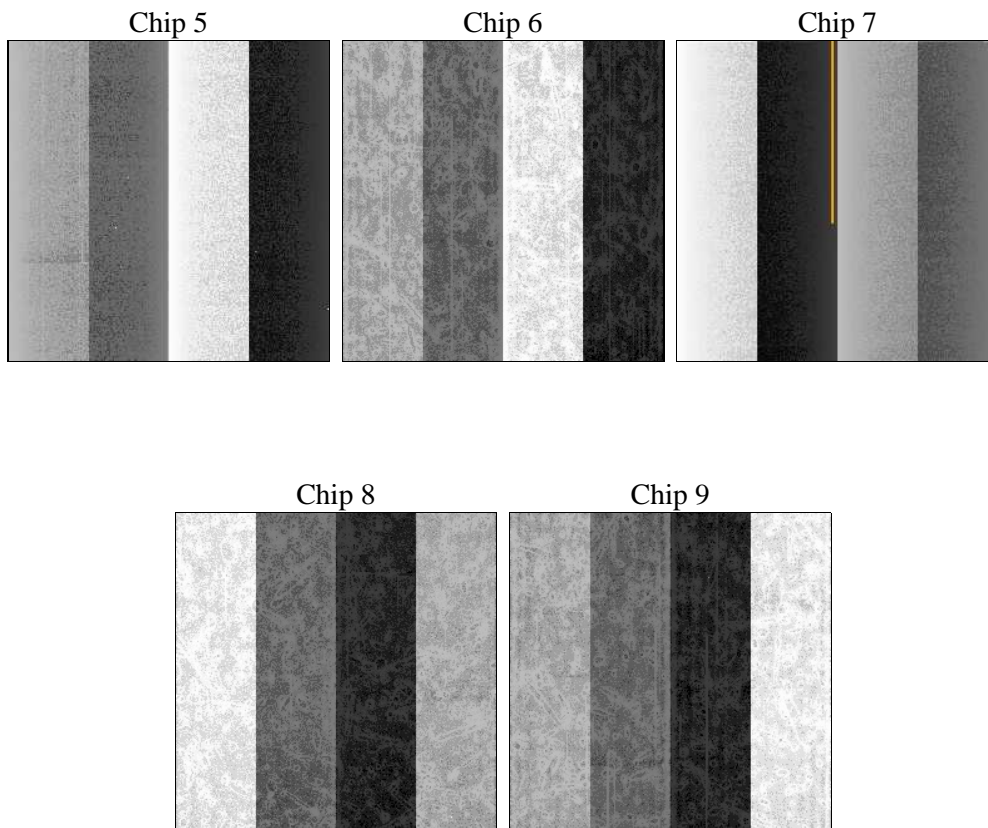
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

obi_num	0	Obi number	sched_exp_time	20000.000000	[s] Scheduled observation exposure time
ascdsver	8.4.3	Processing system revision	ontime	20060.100154281	Sum of GTIs [s]
caldsver	4.4.8	&#160	ontime5	20060.100154281	Sum of GTIs [s]
date	2012-03-23T05:34:10	Date and time of file creation	ontime6	20060.100154281	Sum of GTIs [s]
revision	1	Processing version of data	ontime7	20060.100154281	Sum of GTIs [s]
			ontime8	20060.100154281	Sum of GTIs [s]
			ontime9	20060.100154281	Sum of GTIs [s]
			l1events	750990	Number of level 1 events

### 2.1.4 Events

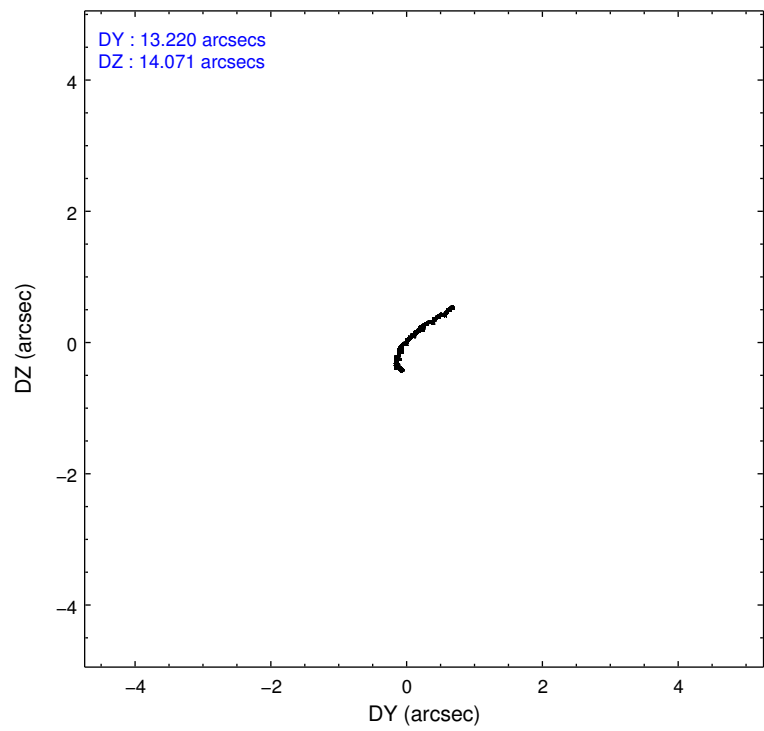
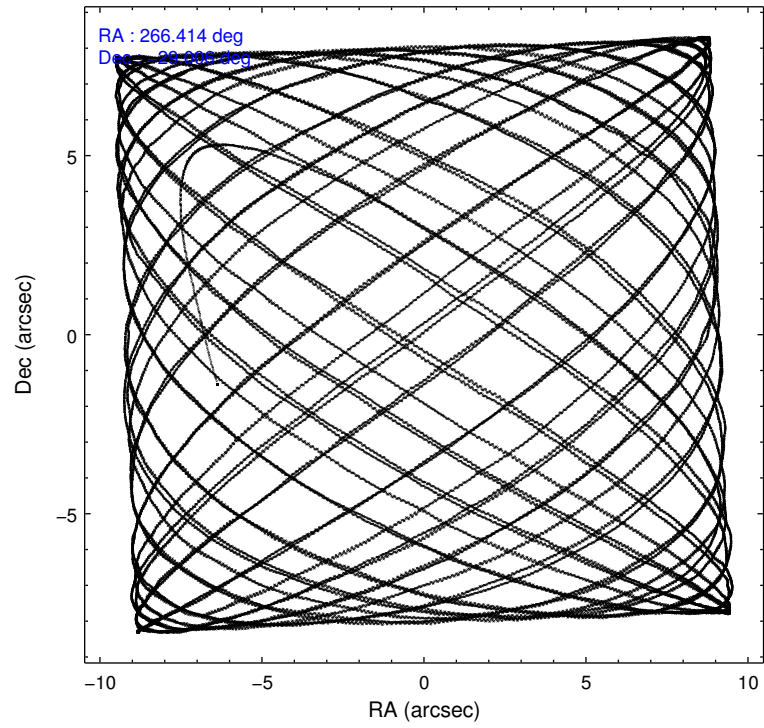
	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
level 1 events	184110	124706	166797	154649	120728
rejected events	93927	99948	83085	109273	100729
rejected %	51%	80%	49%	70%	83%

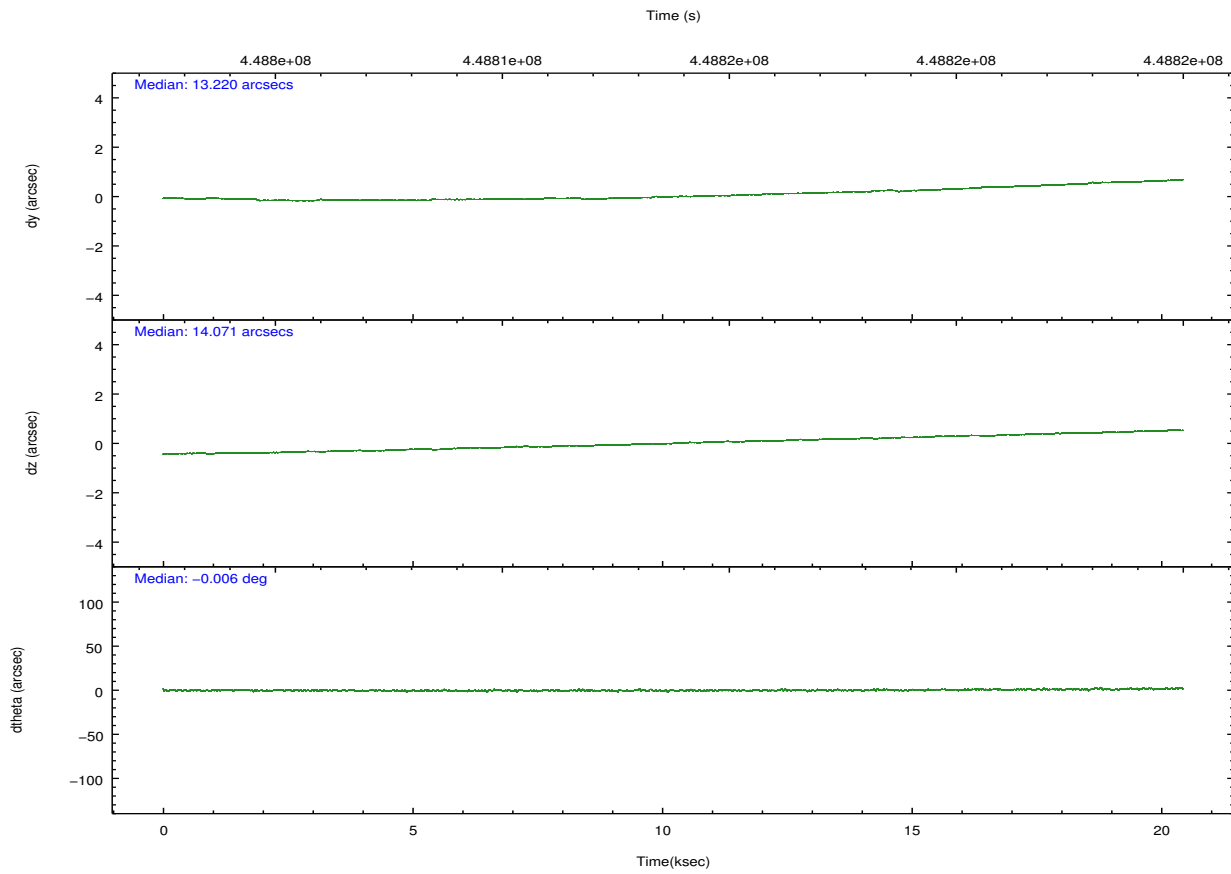
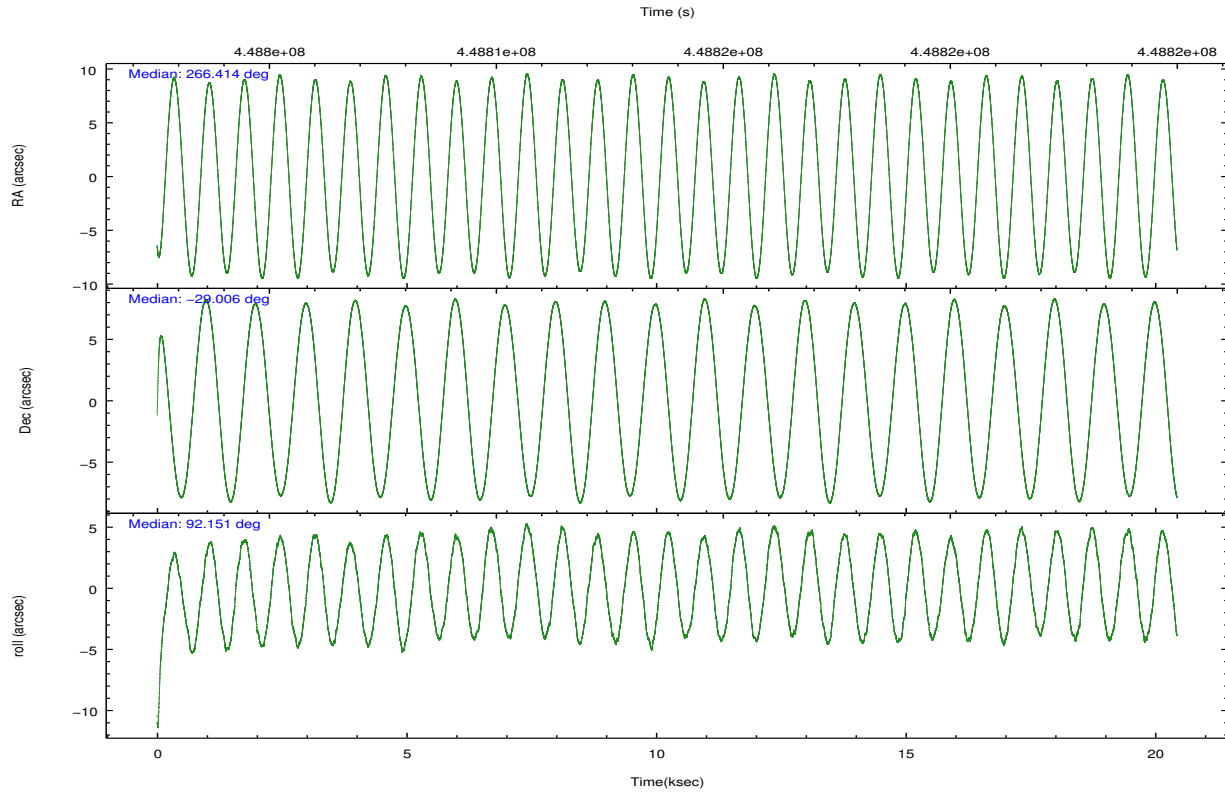
	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
grade 0 events	7761	11858	9262	15464	9118
	4%	9%	5%	9%	7%
grade 1 events	429	90	192	131	81
	0%	0%	0%	0%	0%
grade 2 events	27743	4776	17889	10306	3911
	15%	3%	10%	6%	3%
grade 3 events	3307	1897	7486	4361	1757
	1%	1%	4%	2%	1%
grade 4 events	3232	1926	7360	4157	1723
	1%	1%	4%	2%	1%
grade 5 events	13428	5652	15649	8261	6227
	7%	4%	9%	5%	5%
grade 6 events	48150	4305	41735	11122	3497
	26%	3%	25%	7%	2%
grade 7 events	80060	94202	67224	100847	94414
	43%	75%	40%	65%	78%

## 2.2 Compared Parameters

Parameter	Planned	Actual	Parameter	Planned	Actual
Instrument	ACIS	ACIS	Obspar format version number	7	7
Detector	ACIS-56789	ACIS-56789	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	266.430680	266.4136919426791	Subarray requested	NONE	NONE
[deg] Pointing Dec	-29.029222	-29.00627877671691	Alternating exposures requested	N	N
[deg] Pointing Roll	92.006803	92.15518500315891	[s] Primary exposure time	0.000000	3.1
[mm] SIM focus pos	-0.684267	-0.6828225247311905			
[mm] SIM defocus	0	0.001444936568705701			
[mm] SIM translation stage pos	-190.132523	-190.1425803651734			
[mm] SIM translation stage offset	0	0.01005778216563158			
[s] Observation start time (MET)	448803977.184000	448802756.65593			
Observation start date	2012-03-22T11:45:11	2012-03-22T11:25:56			
[s] Observation end time (MET)	448823977.184000	448824672.69459			
Observation end date	2012-03-22T17:18:31	2012-03-22T17:31:12			
Read mode	TIMED	TIMED			

## 2.3 Aspect



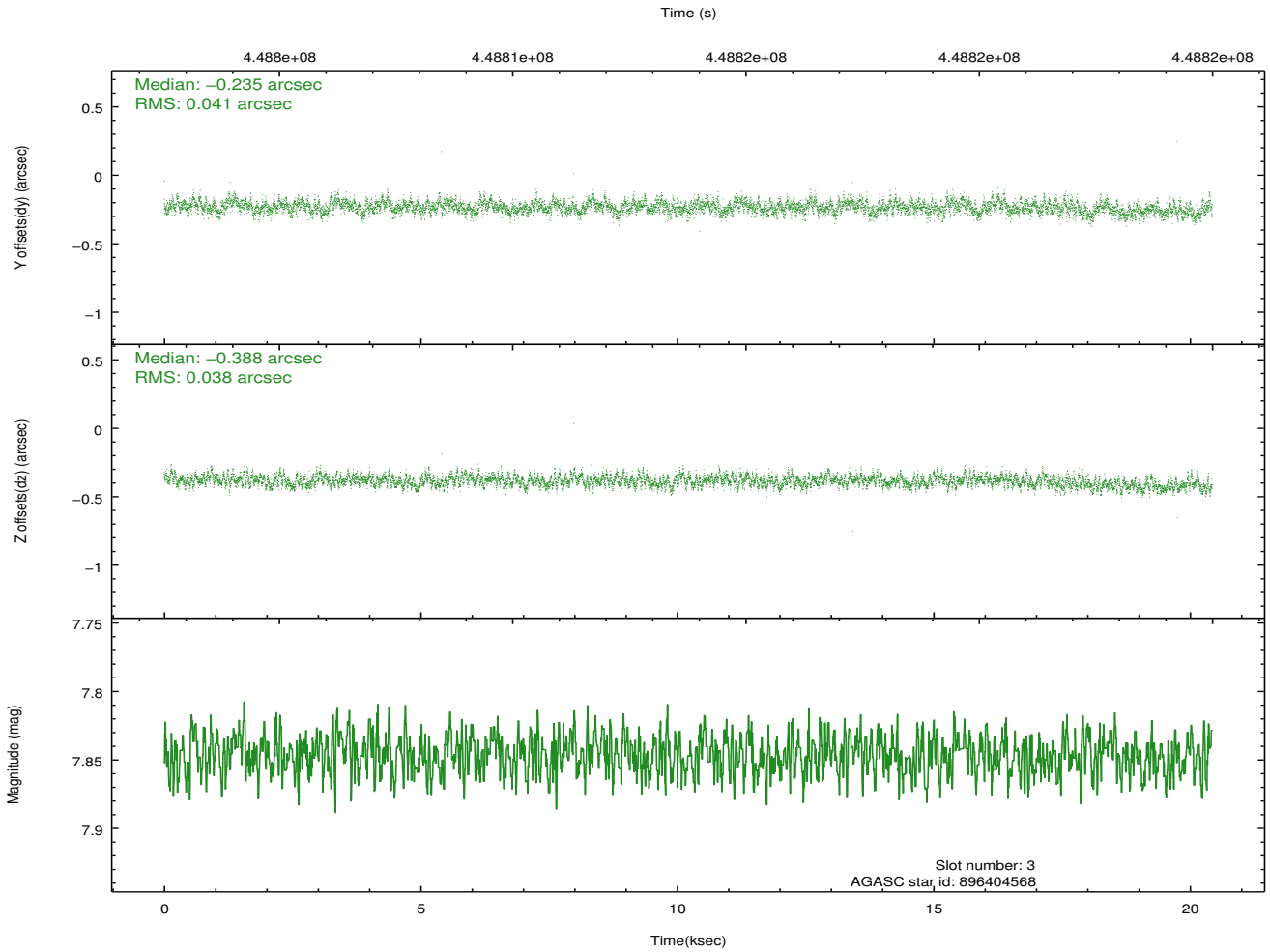
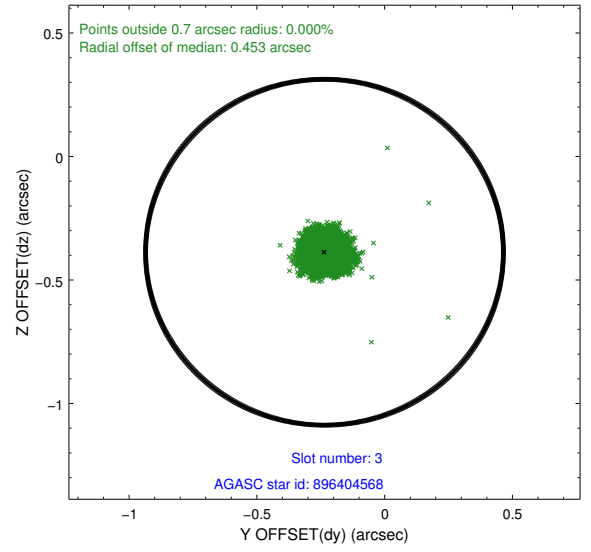
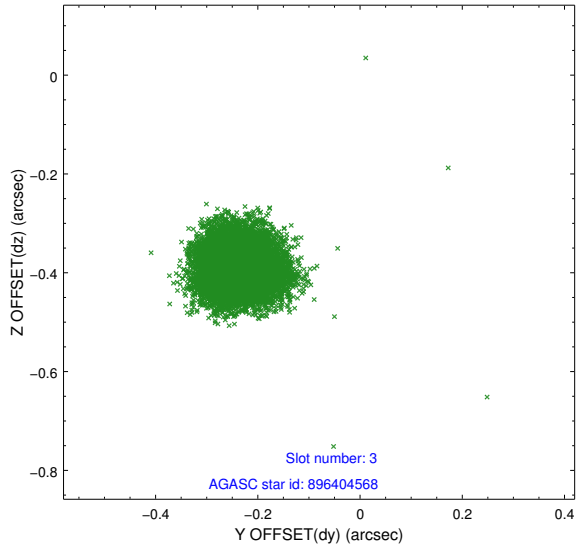


### Slot Statistics

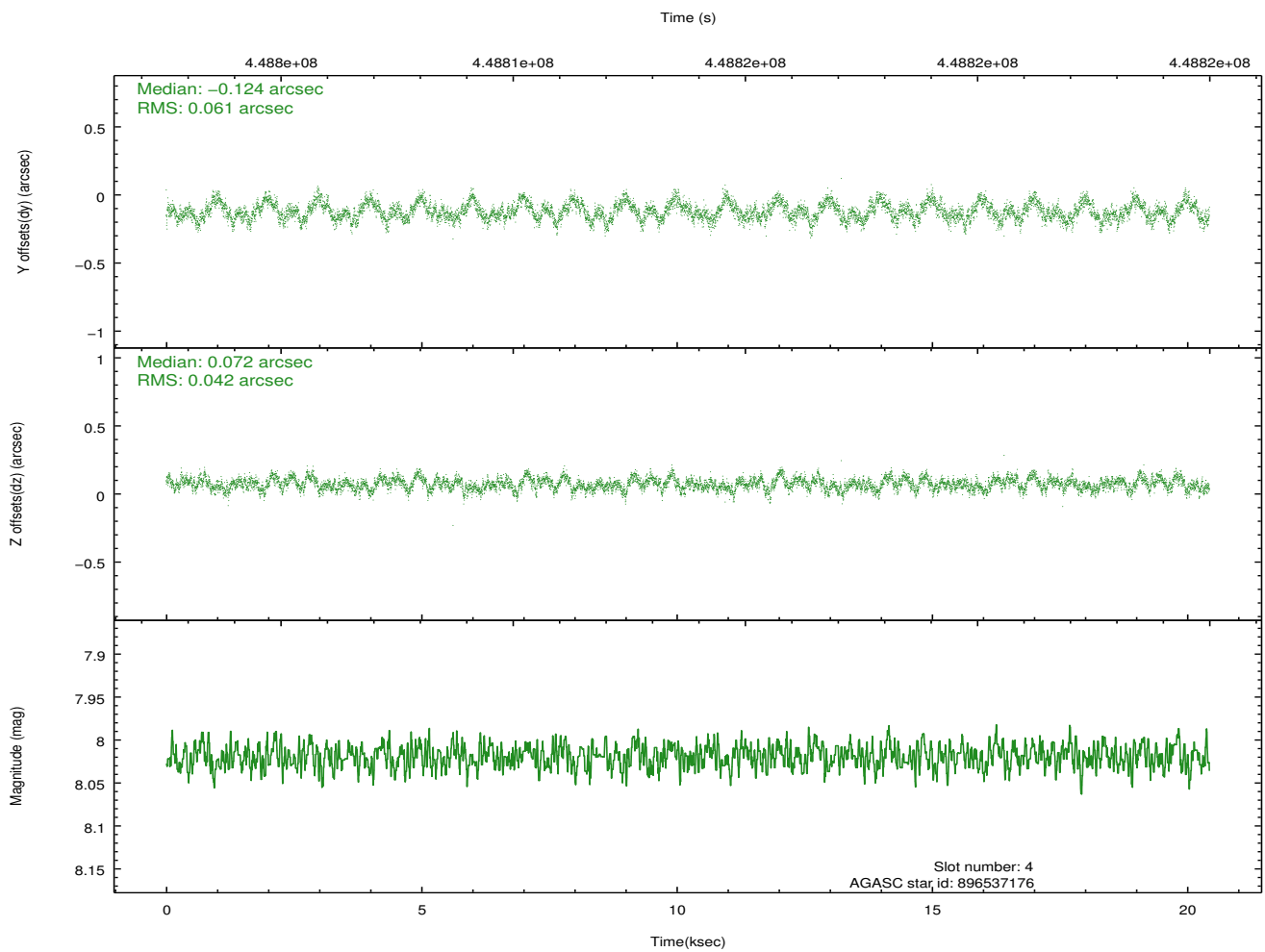
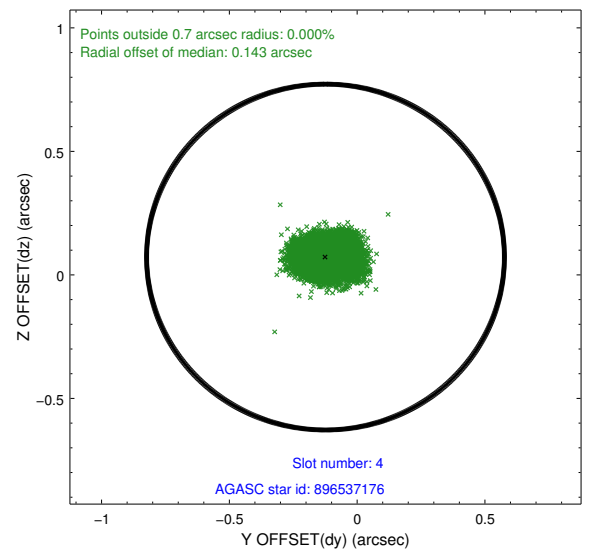
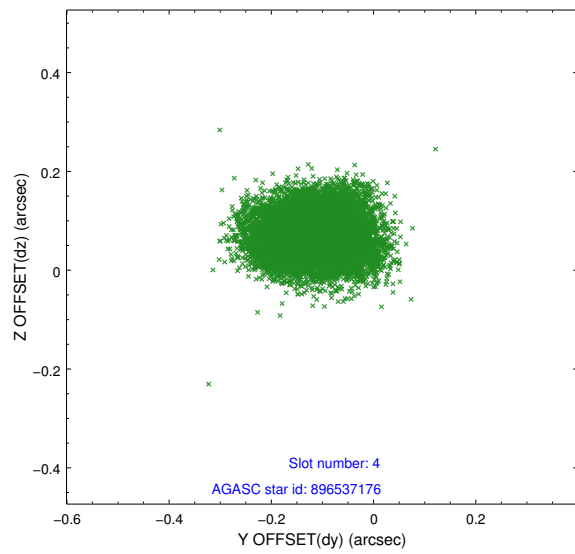
slot	status	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID	ACIS-S-1	7.09	4984	-0.015	-0.004	0.010	0.017	0.000000	0.000000	929.78	-1731.02
1	FID	ACIS-S-4	7.08	4984	0.092	-0.017	0.010	0.019	0.000000	0.000000	2147.38	172.95
2	FID	ACIS-S-6	7.22	4984	-0.101	0.031	0.007	0.014	0.000000	0.000000	395.85	810.55
3	GUIDE	896404568	7.85	9967	-0.235	-0.388	0.059	0.096	265.687293	-28.431080	2226.83	2276.88
4	GUIDE	896537176	8.02	9965	-0.124	0.072	0.079	0.129	266.498272	-28.678259	1255.39	-257.05
5	GUIDE	896540808	7.49	9966	0.053	-0.310	0.046	0.074	265.985401	-29.308604	-958.69	1432.01
6	GUIDE	896537776	7.53	9964	0.372	0.217	0.049	0.080	266.655684	-29.665673	-2314.70	-622.88
7	GUIDE	896538208	7.96	9964	-0.069	0.407	0.063	0.104	267.176969	-28.671626	1196.66	-2400.03

## 2.4 Star Slots

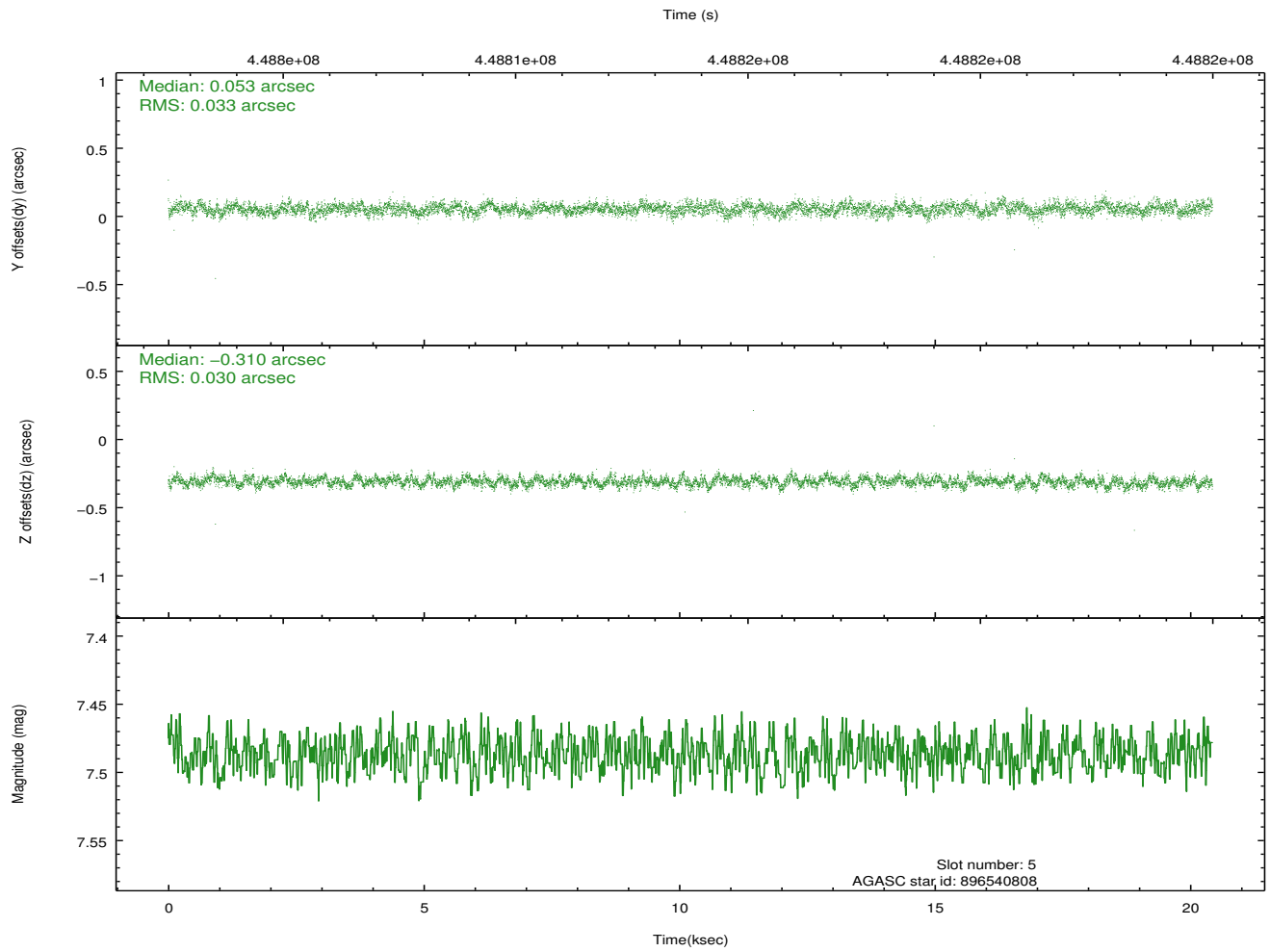
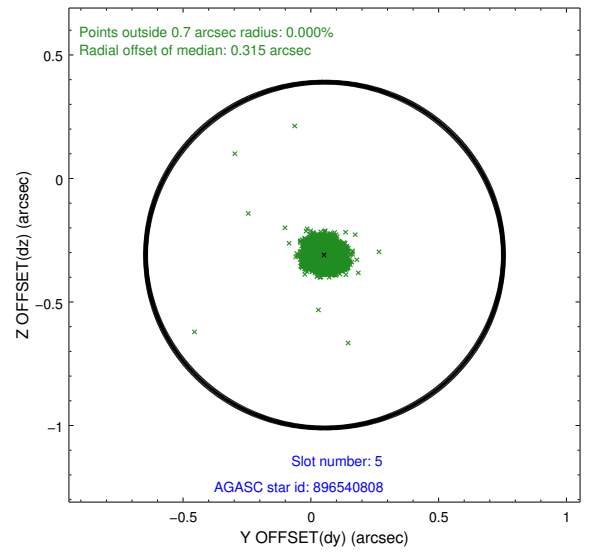
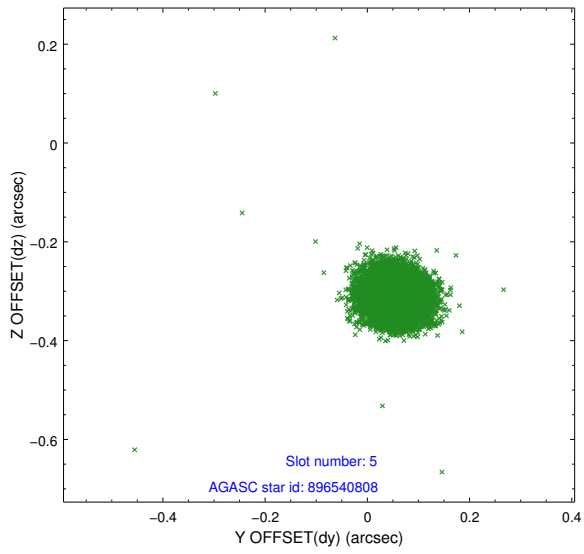
### 2.4.1 Slot 3



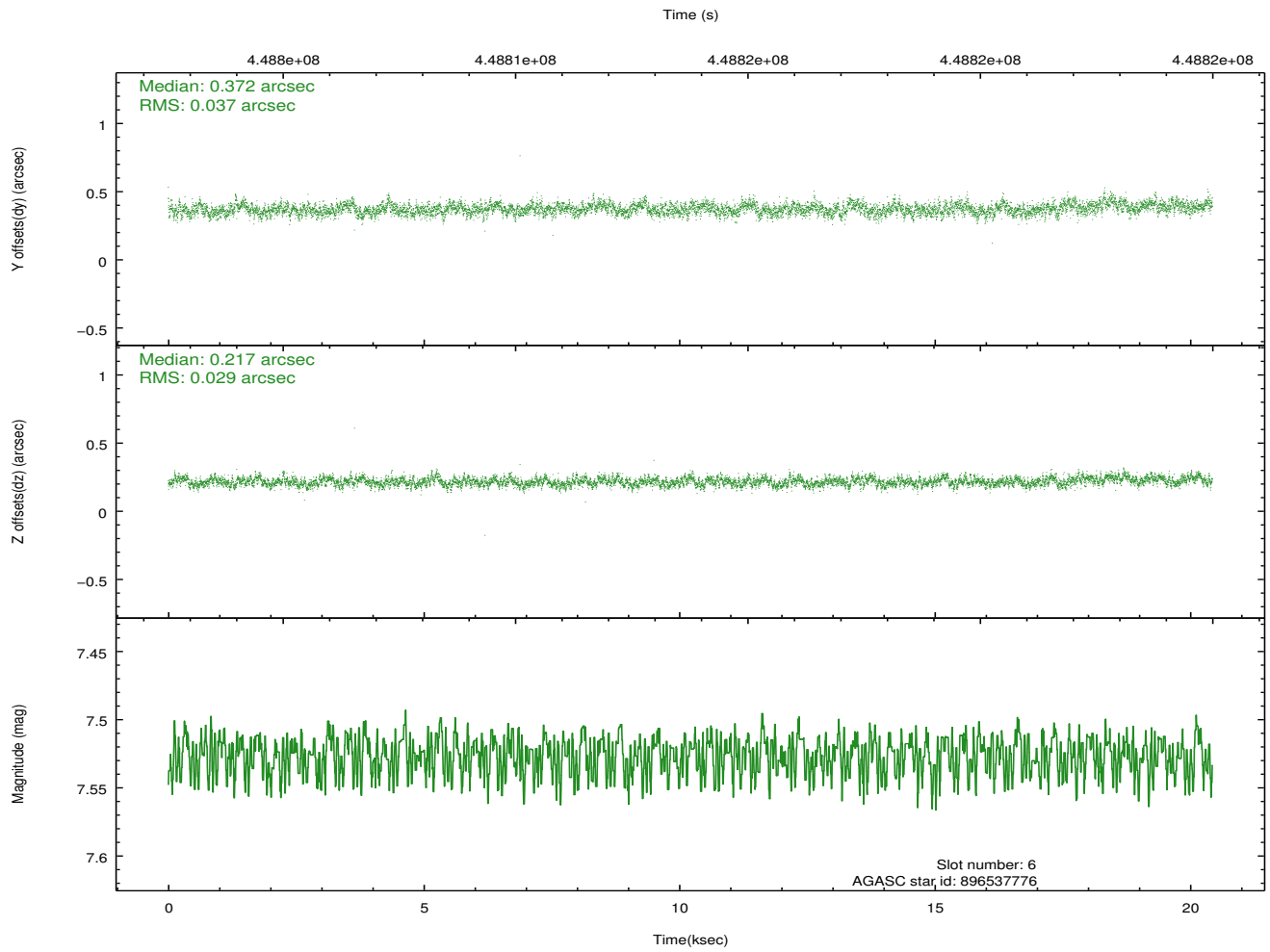
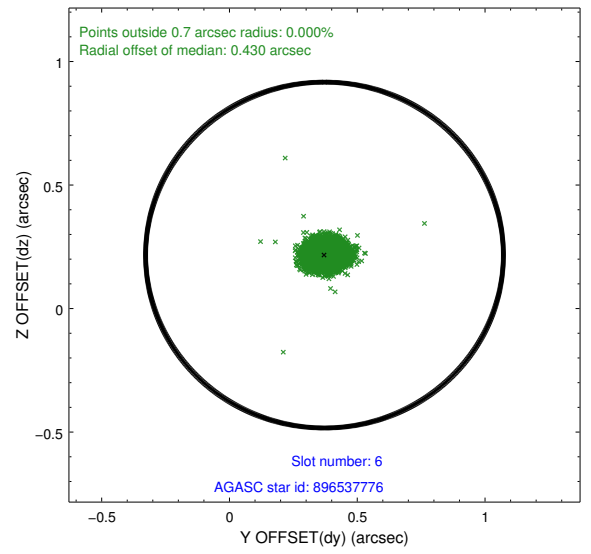
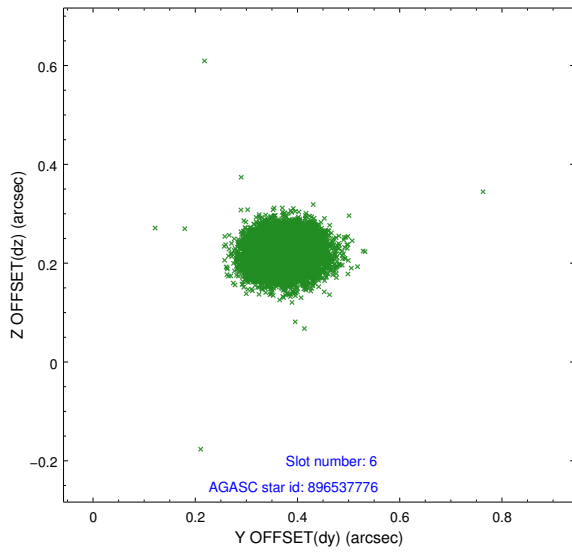
## 2.4.2 Slot 4



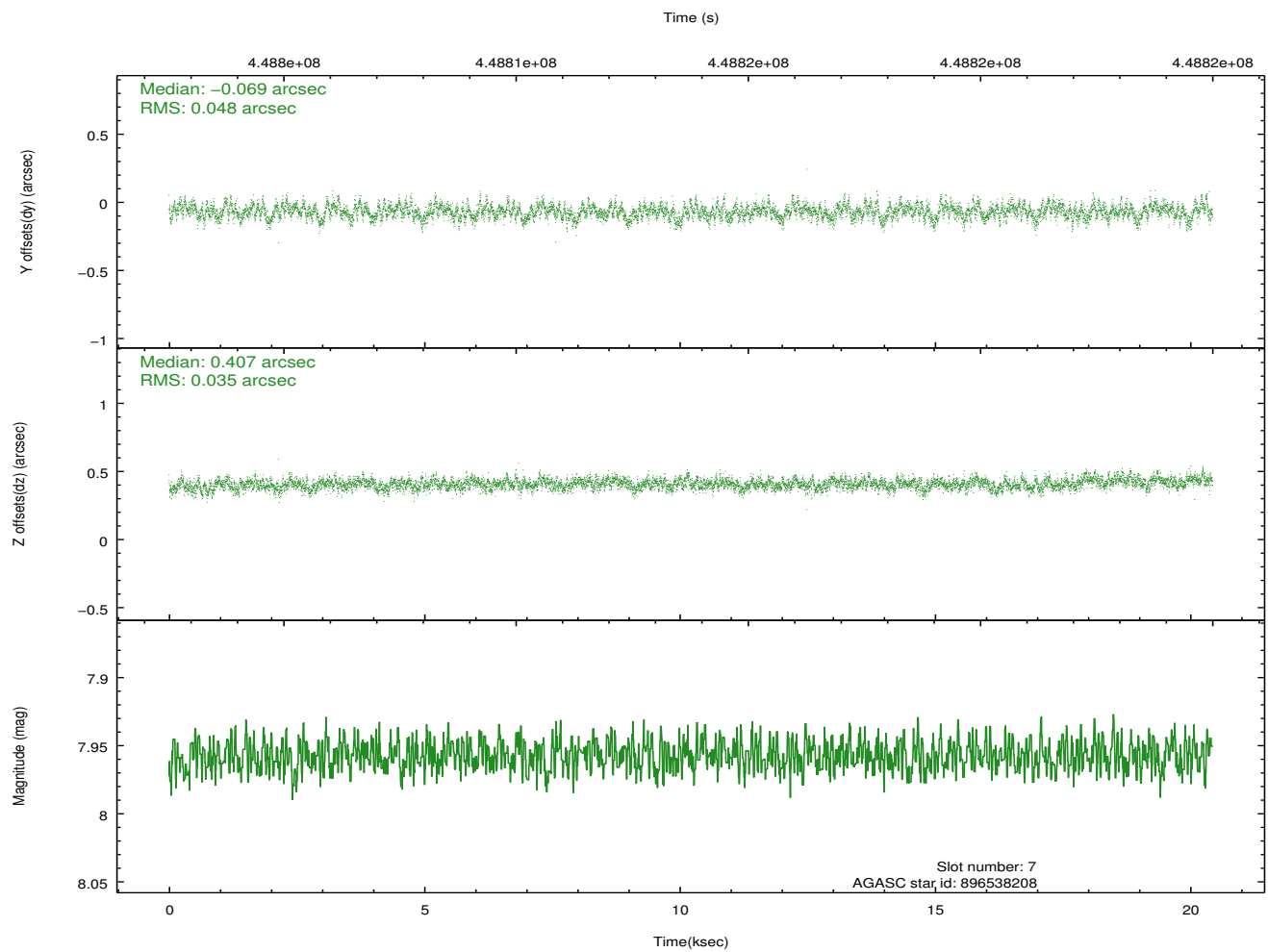
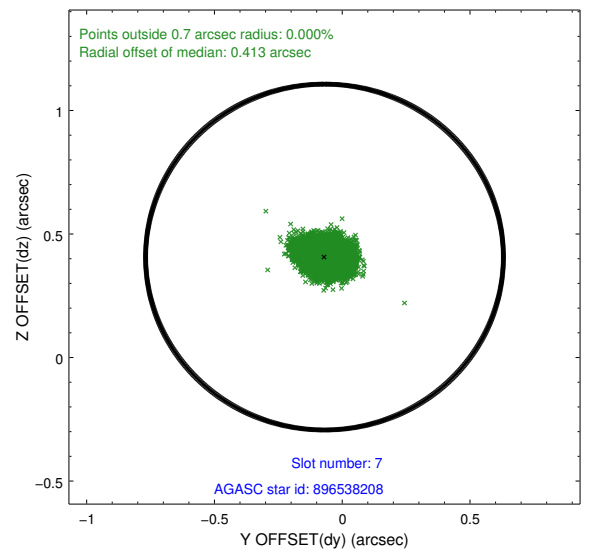
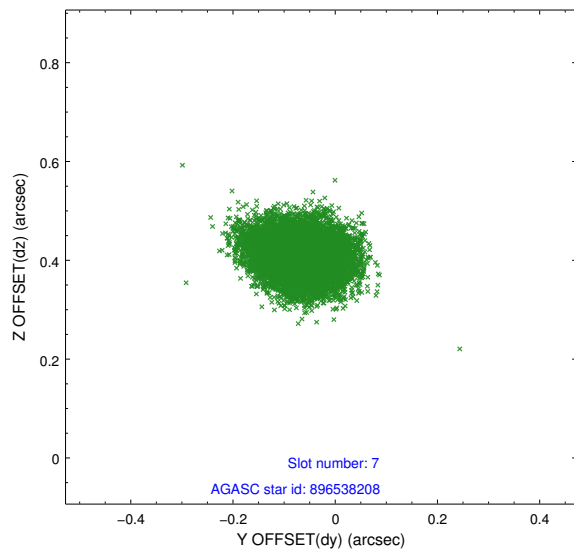
### 2.4.3 Slot 5



### 2.4.4 Slot 6

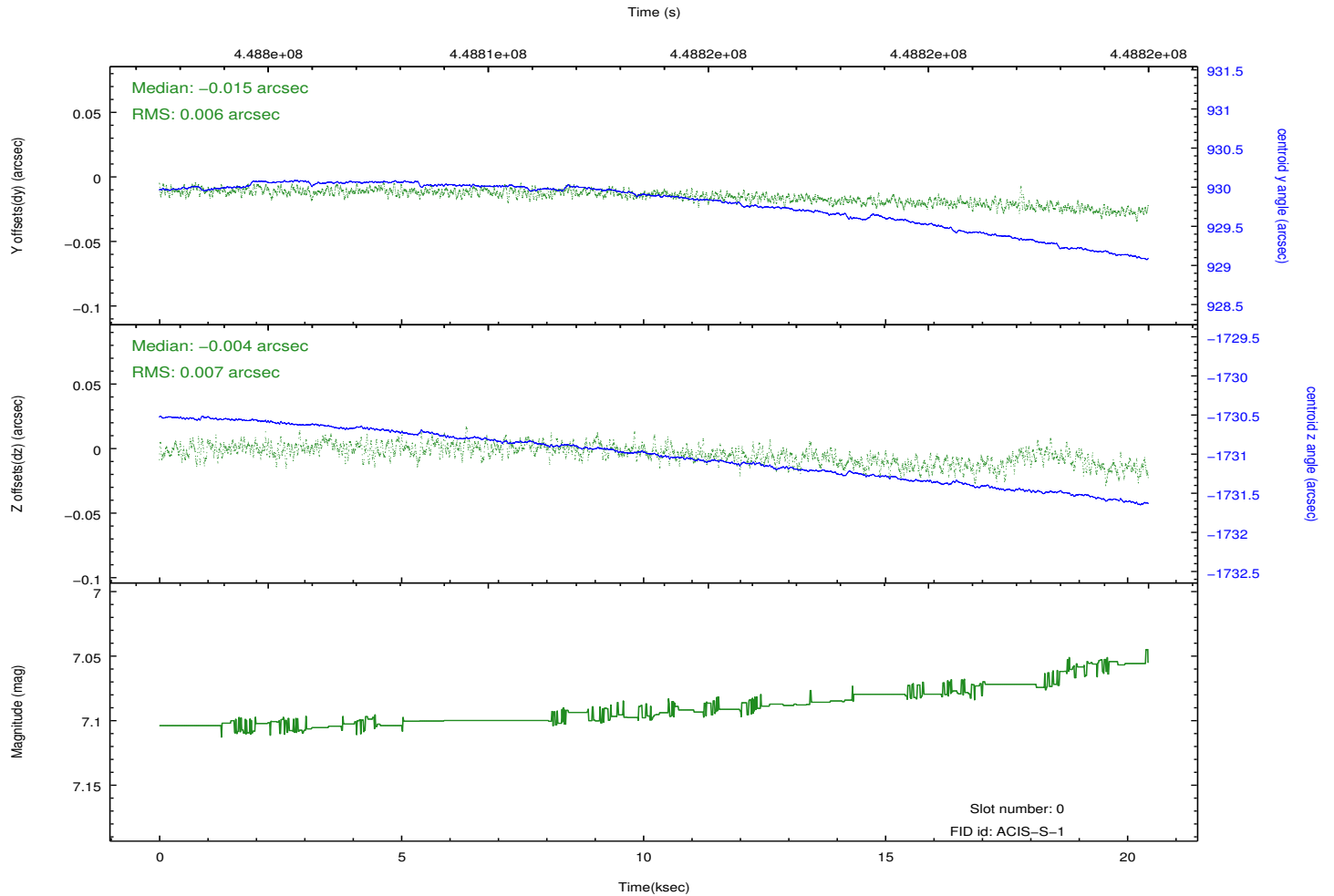
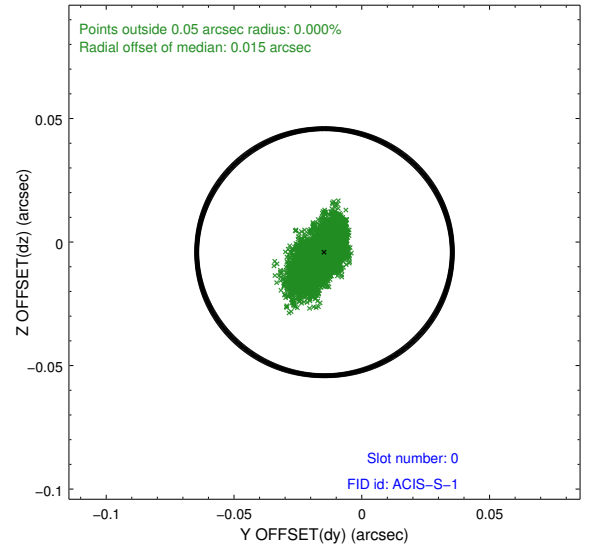
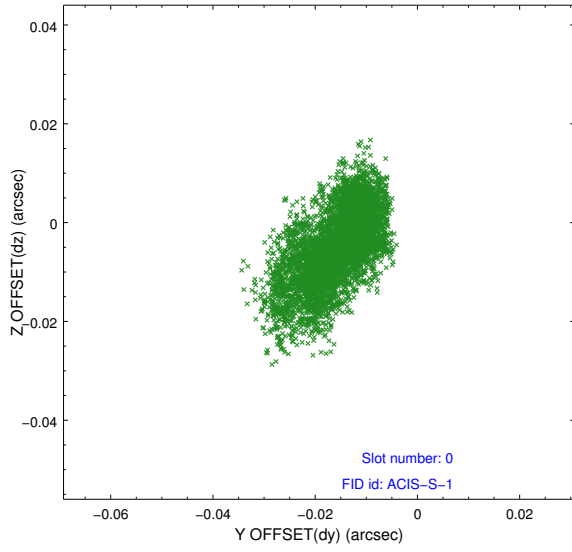


## 2.4.5 Slot 7

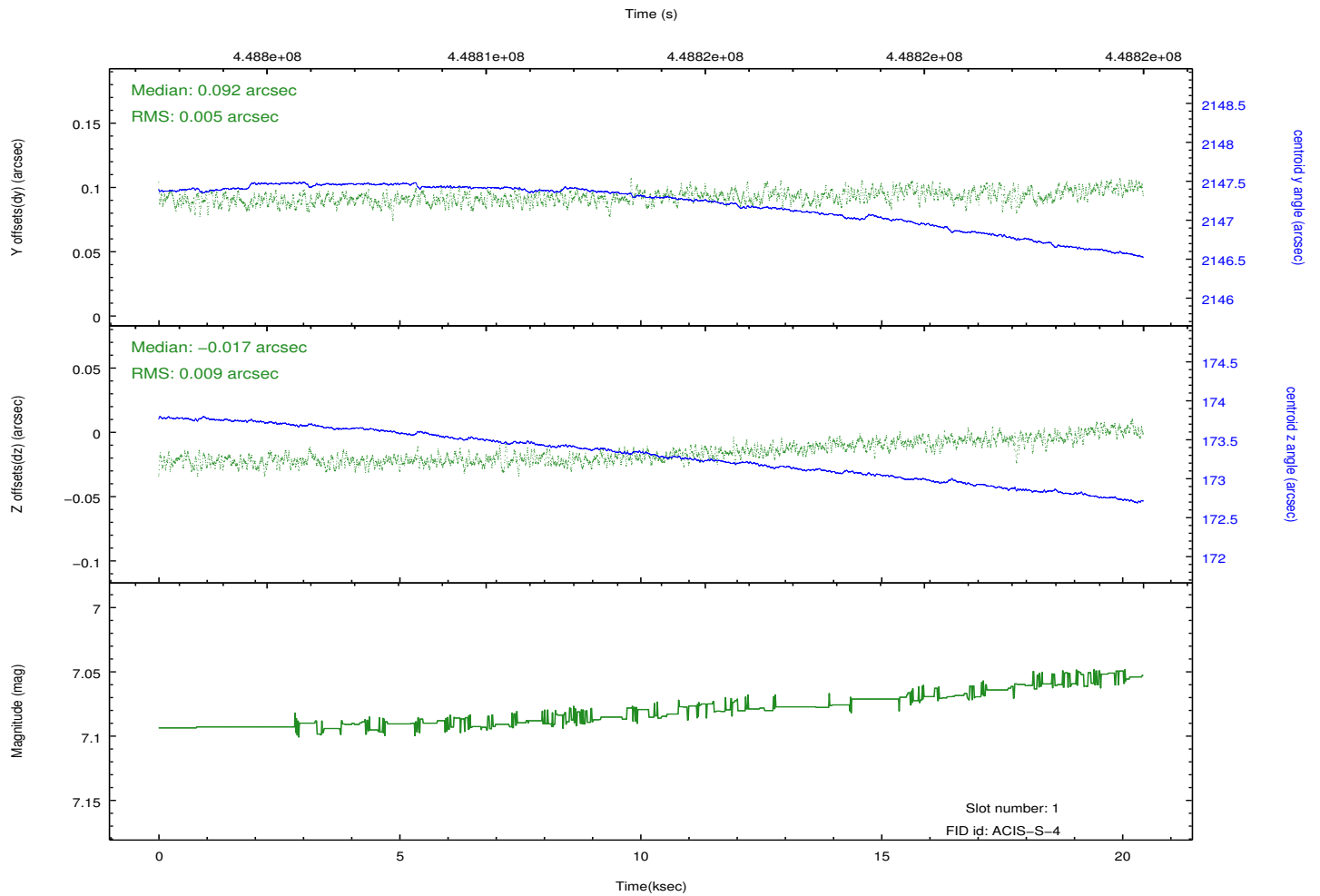
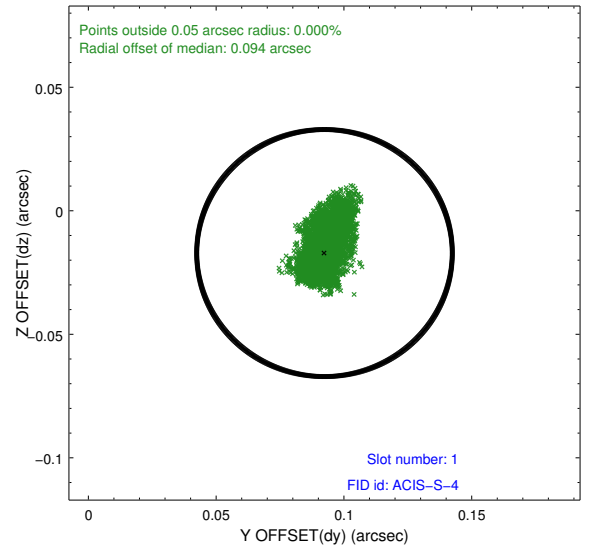
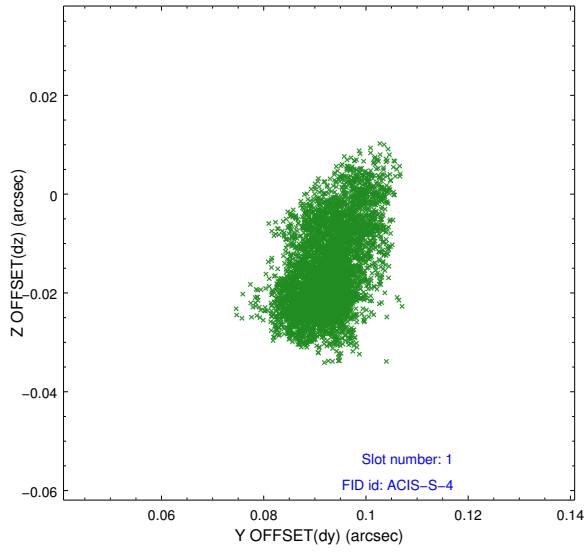


## 2.5 FID Slots

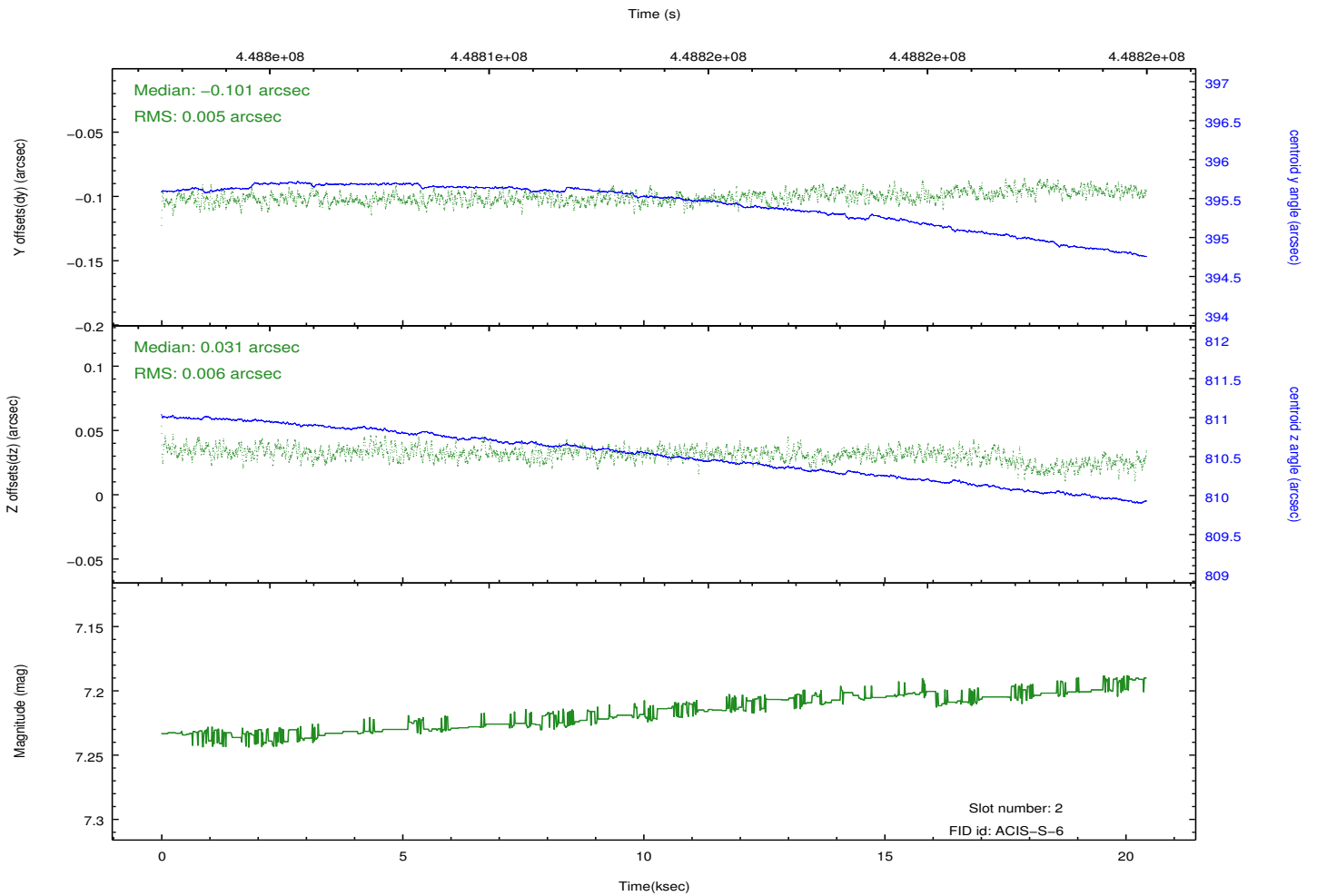
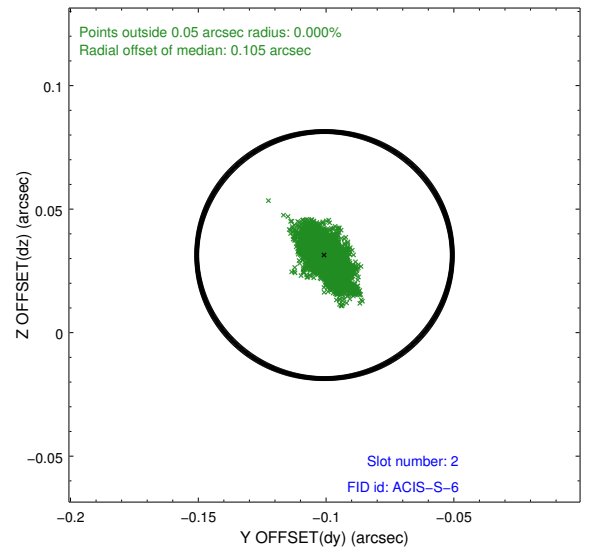
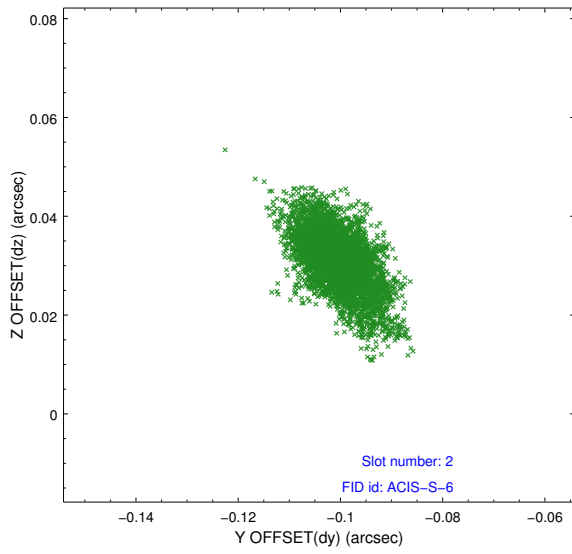
### 2.5.1 Slot 0



## 2.5.2 Slot 1



### 2.5.3 Slot 2

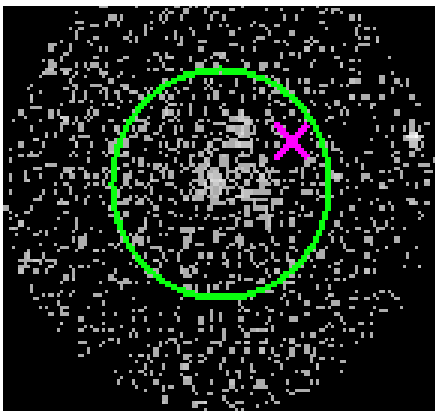


### 3 Gratings

#### 3.1 HEG Arm



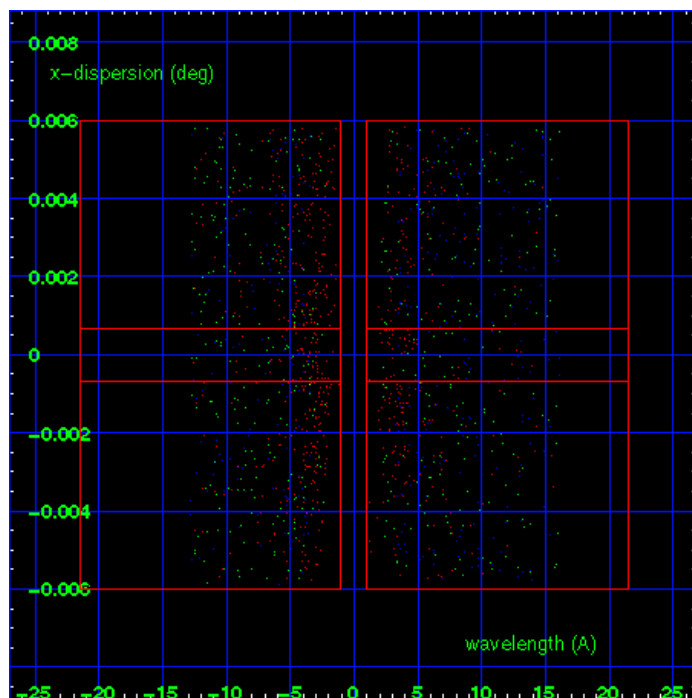
HEG Order Sort 123



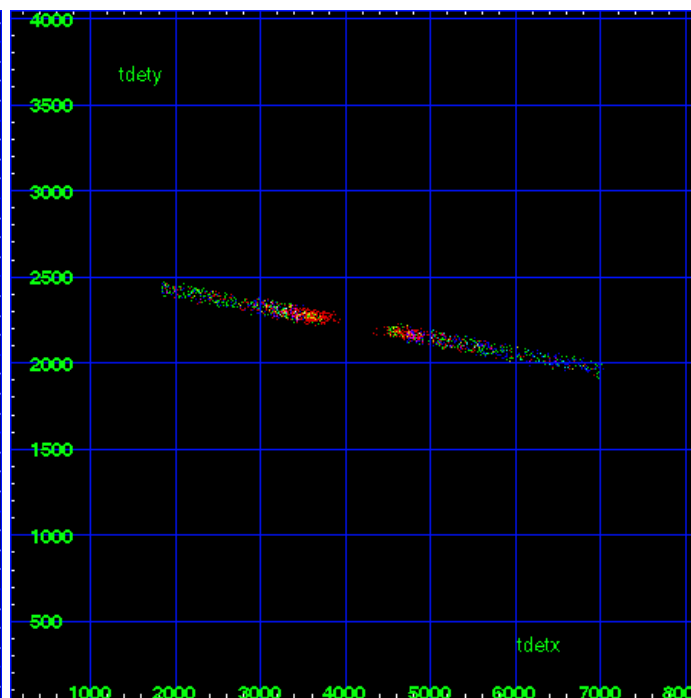
HEG Zero Order



HEG Order Sort ALL

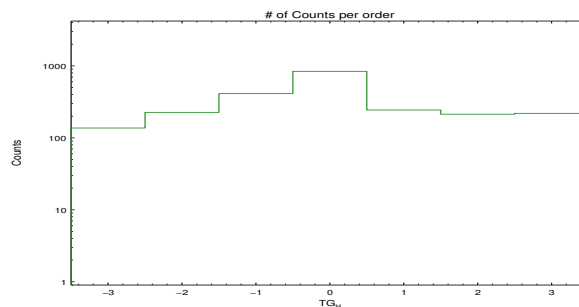


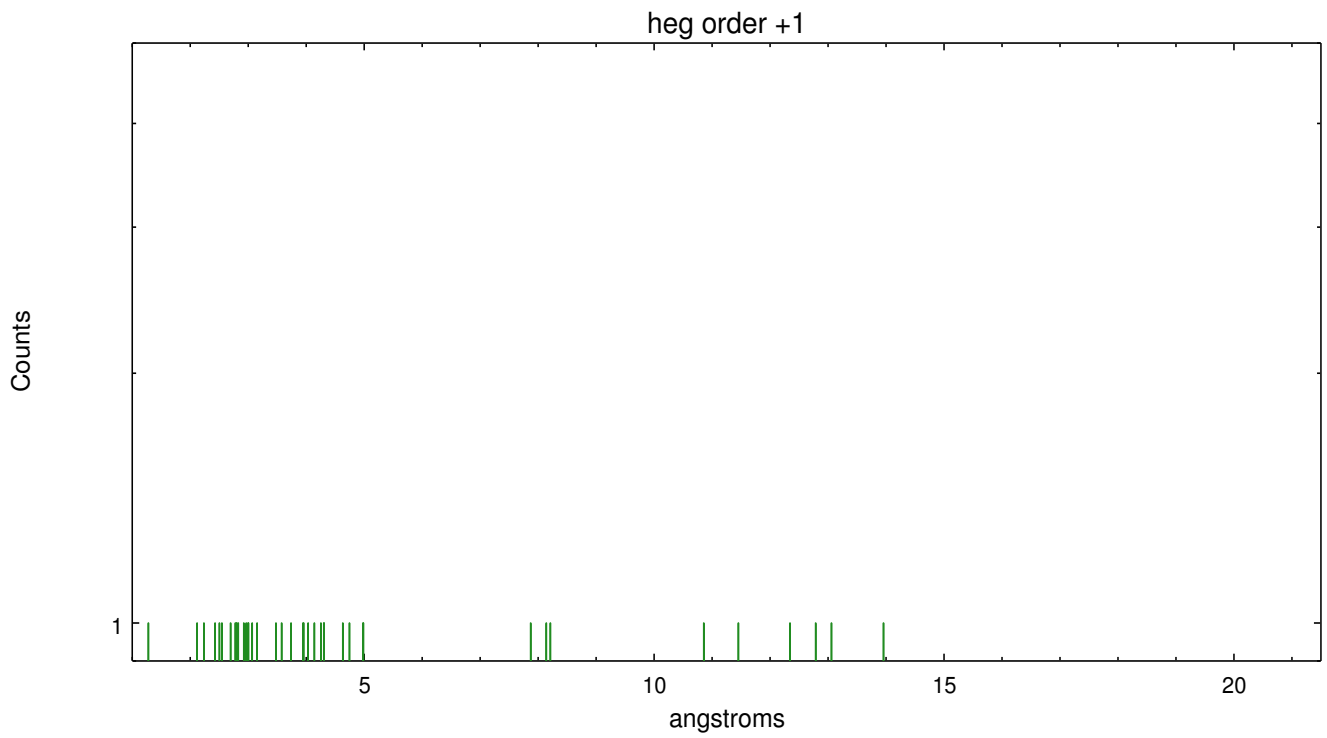
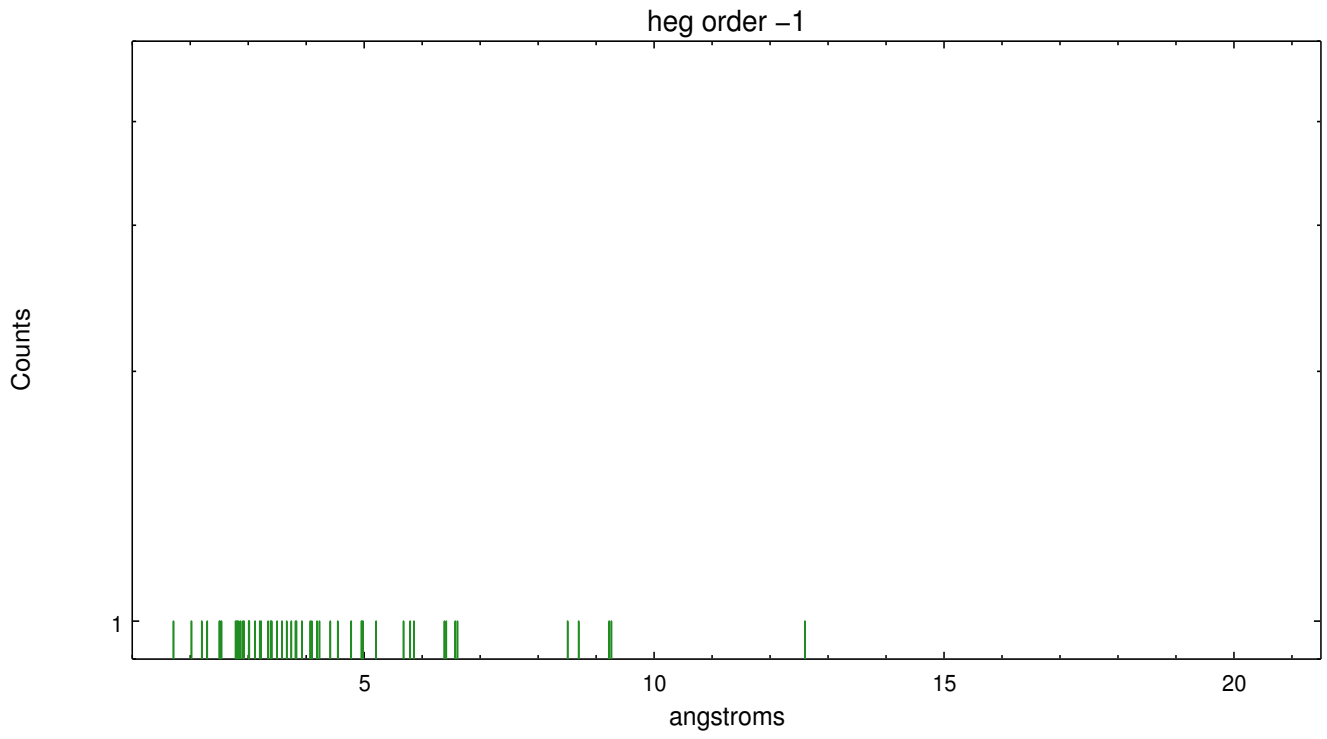
Spot Image HEG



Full Detector HEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	137	226	412	840	244	213	219

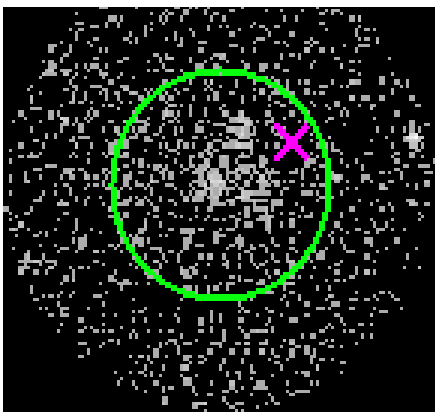




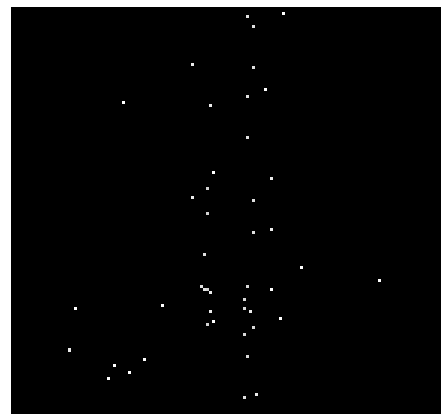
### 3.2 MEG Arm



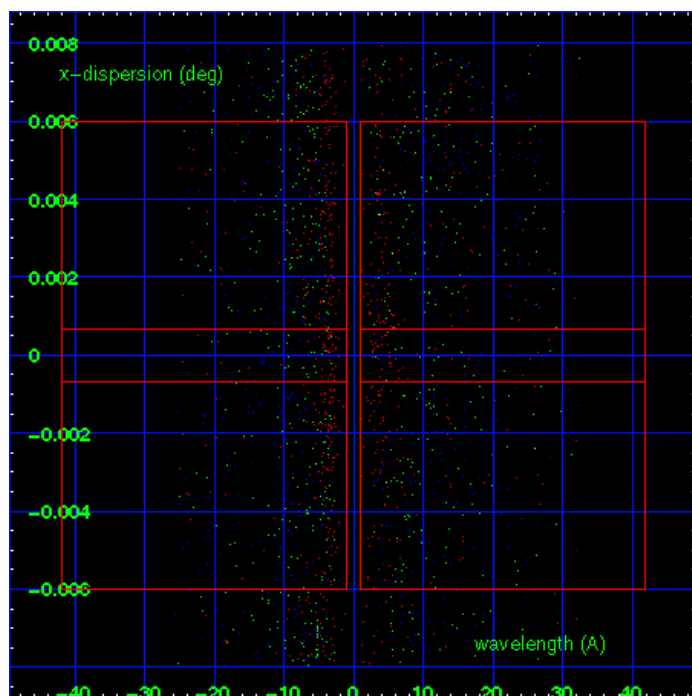
MEG Order Sort 123



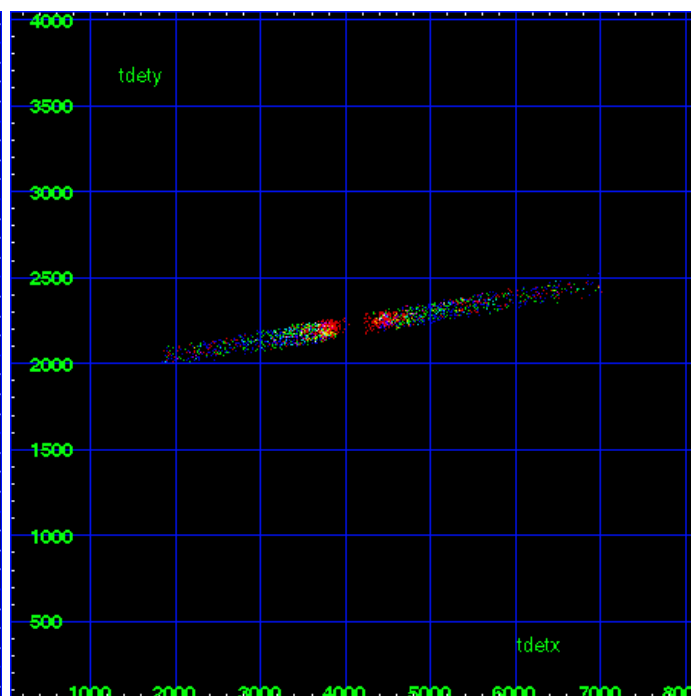
MEG Zero Order



MEG Order Sort ALL

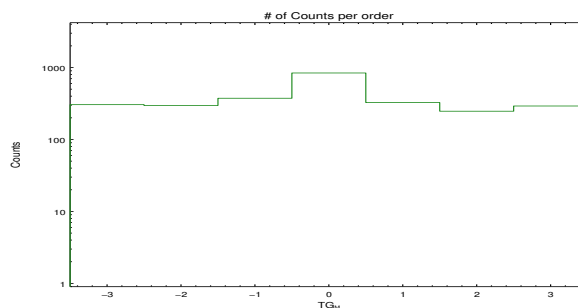


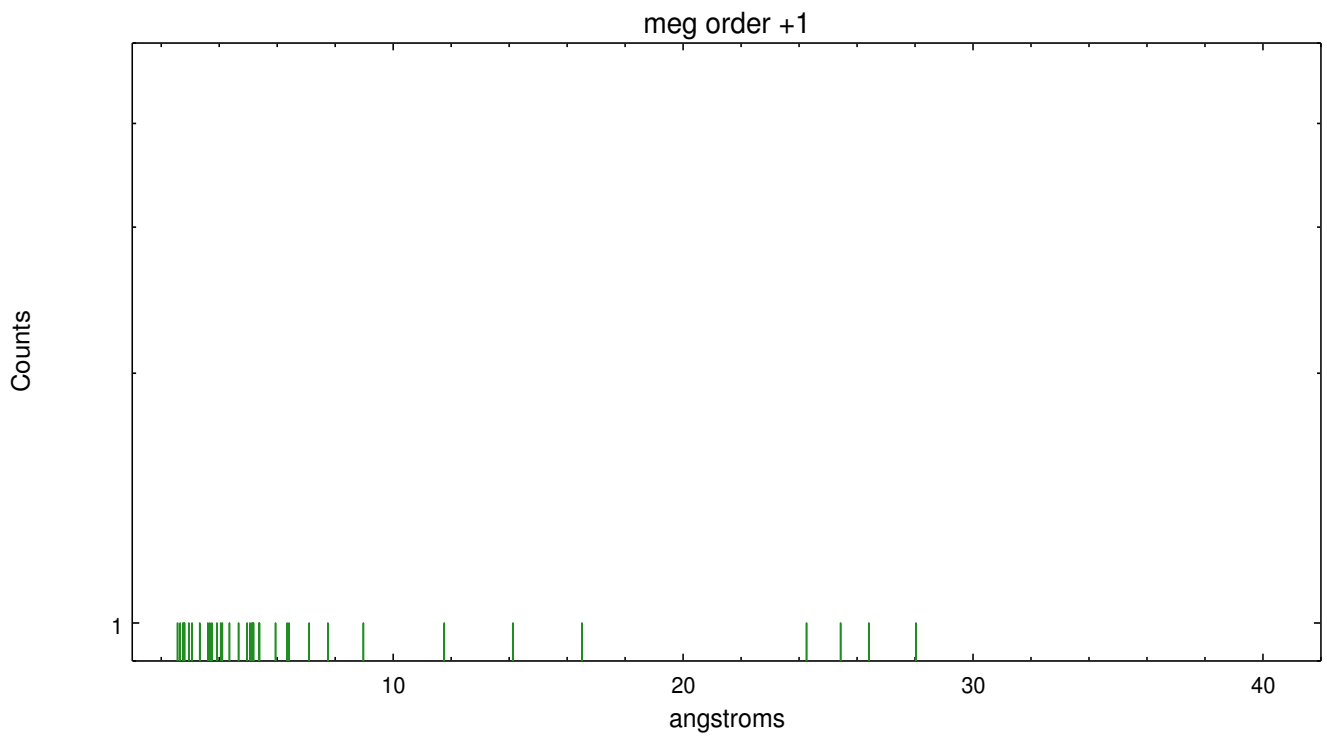
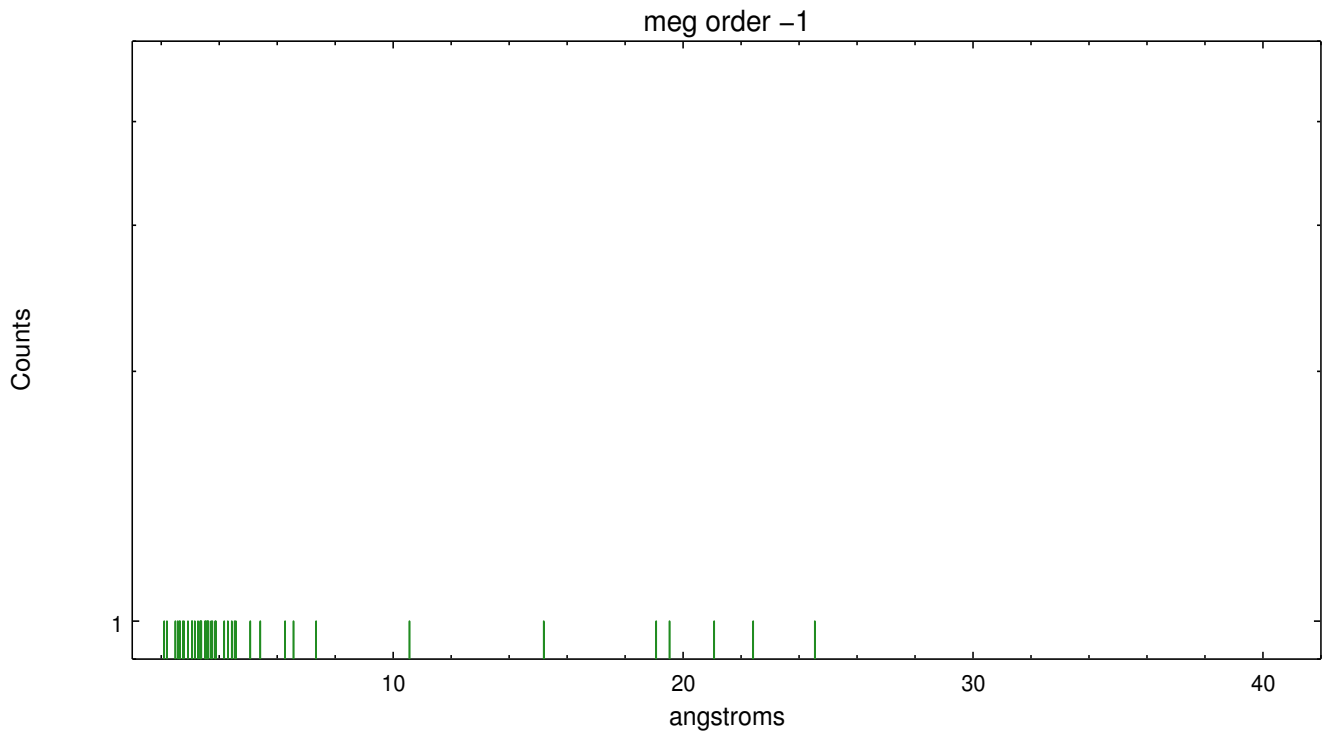
Spot Image MEG



Full Detector MEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	305	297	374	840	326	247	292





# A Summary

## A.1 Status

V&V Scientist	David Huenemoerder
V&V Date (YYYY-MM-DD)	2012.03.23
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	20.060100154281

## A.2 Comments

Note: spatially complex region with multiple sources and extended emission. The spectral extraction was centered on the nominal Sgr A\* coordinates: (RA,DEC) = (266.416667, -29.007806)[deg].