

# V&V Reference Report

## L2 ASCDS Version : 8.4.4

Observation 10677 - L2 Version 2  
Chandra X-Ray Center

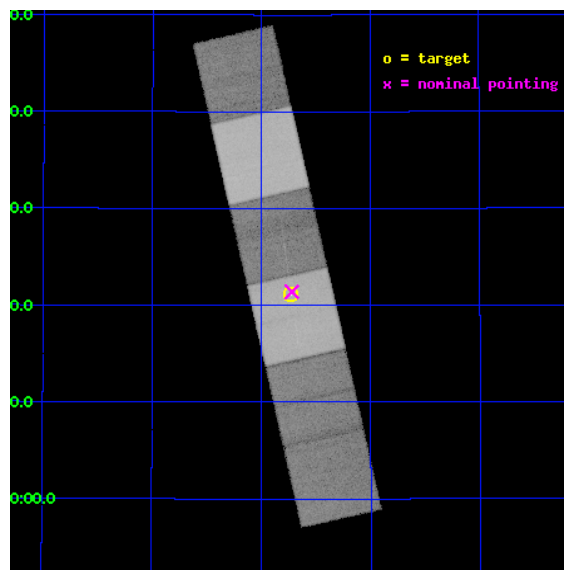
L2 Processing Date : Jun 4 2012

## Contents

<b>1</b>	<b>Front</b>	<b>2</b>
<b>2</b>	<b>OBI</b>	<b>3</b>
2.1	OBI . . . . .	3
2.1.1	Images . . . . .	3
2.1.2	Bias . . . . .	3
2.1.3	Parameters . . . . .	4
2.1.4	Events . . . . .	4
2.2	Compared Parameters . . . . .	5
2.3	Aspect . . . . .	6
2.4	Star Slots . . . . .	9
2.4.1	Slot 3 . . . . .	9
2.4.2	Slot 4 . . . . .	10
2.4.3	Slot 5 . . . . .	11
2.4.4	Slot 6 . . . . .	12
2.4.5	Slot 7 . . . . .	13
2.5	FID Slots . . . . .	14
2.5.1	Slot 0 . . . . .	14
2.5.2	Slot 1 . . . . .	15
2.5.3	Slot 2 . . . . .	16
<b>3</b>	<b>Gratings</b>	<b>17</b>
3.1	HEG Arm . . . . .	17
3.2	MEG Arm . . . . .	19
<b>A</b>	<b>Summary</b>	<b>21</b>
A.1	Status . . . . .	21
A.2	Comments . . . . .	21

# 1 Front

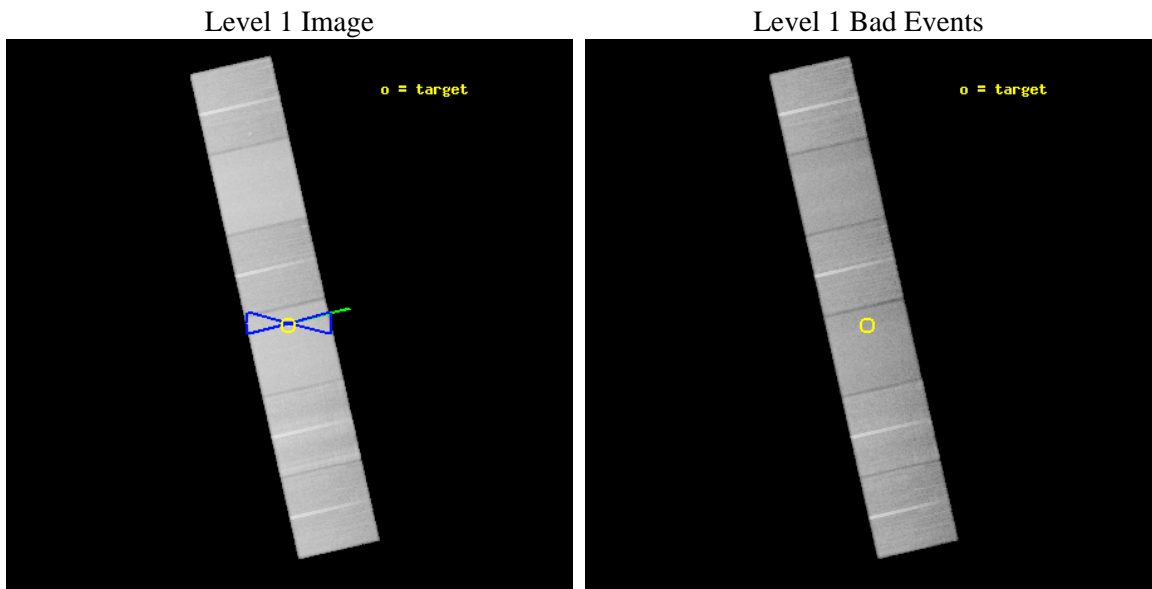
seq_num	200556	Sequence number
obs_id	10677	Observation id
title	Testing the Colliding Wind Paradigm: X-rays from the Wolf-Rayet Binary System WR 147	Proposal title
observer	Dr Svetozar ZHEKOV	Principal investigator
object	WR 147	Source name
dtcycle	0	&#160
cycle	P	events from which exps? Prim/Second/Both
ra_targ	309.182083	Observer's specified target RA [deg]
dec_targ	40.352028	Observer's specified target Dec [deg]
ra_nom	309.18002592733	Nominal RA [deg]
dec_nom	40.356624234918	Nominal Dec [deg]
roll_nom	77.15797145895	Nominal Roll [deg]
revision	2	Processing version of data
ontime	41759.999844491	Sum of GTIs [s]
livetime	41231.209581607	Livetime [s]
ontime4	41756.758874118	Sum of GTIs [s]
ontime5	41759.999844491	Sum of GTIs [s]
ontime6	41756.758884251	Sum of GTIs [s]
ontime7	41759.999844491	Sum of GTIs [s]
ontime8	41753.517864048	Sum of GTIs [s]
ontime9	41753.517983556	Sum of GTIs [s]
l2events	739217	Number of level 2 events



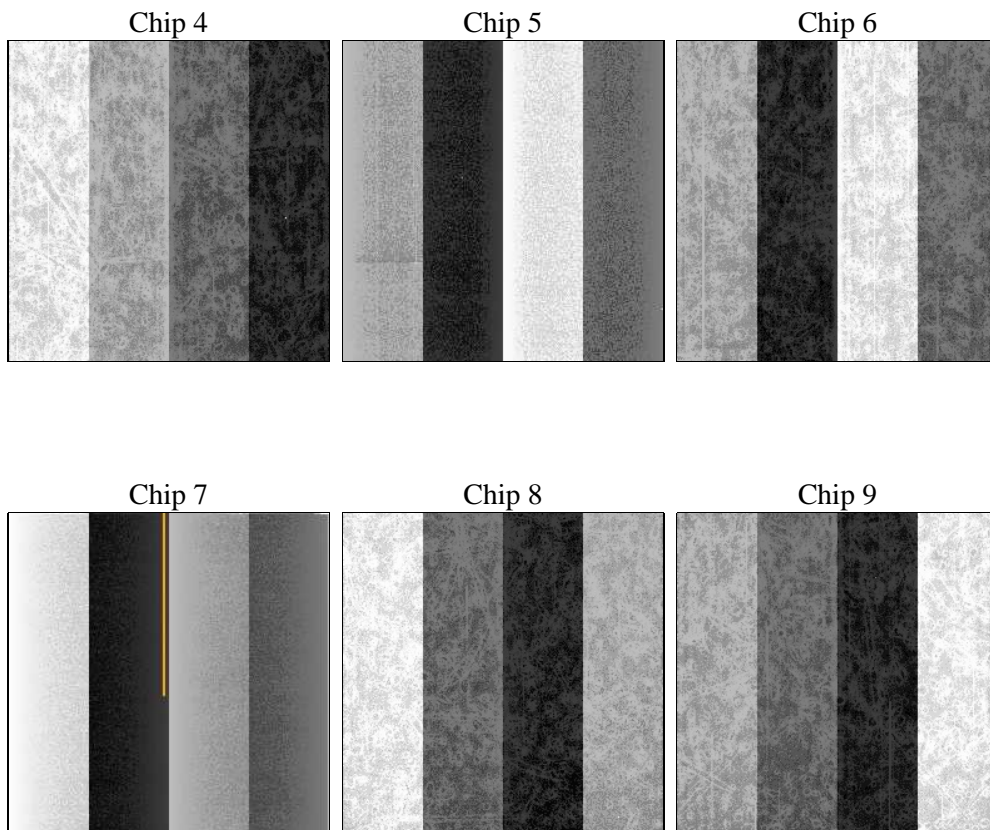
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

obi_num	0	Obi number	sched_exp_time	41820.000000	[s] Scheduled observation exposure time
ascdsver	8.4.4	Processing system revision	ontime	41759.999844491	Sum of GTIs [s]
caldbver	4.4.9	&#160	ontime4	41756.758874118	Sum of GTIs [s]
date	2012-06-03T23:55:01	Date and time of file creation	ontime5	41759.999844491	Sum of GTIs [s]
revision	2	Processing version of data	ontime6	41756.758884251	Sum of GTIs [s]
			ontime7	41759.999844491	Sum of GTIs [s]
			ontime8	41753.517864048	Sum of GTIs [s]
			ontime9	41753.517983556	Sum of GTIs [s]
			l1events	3225700	Number of level 1 events

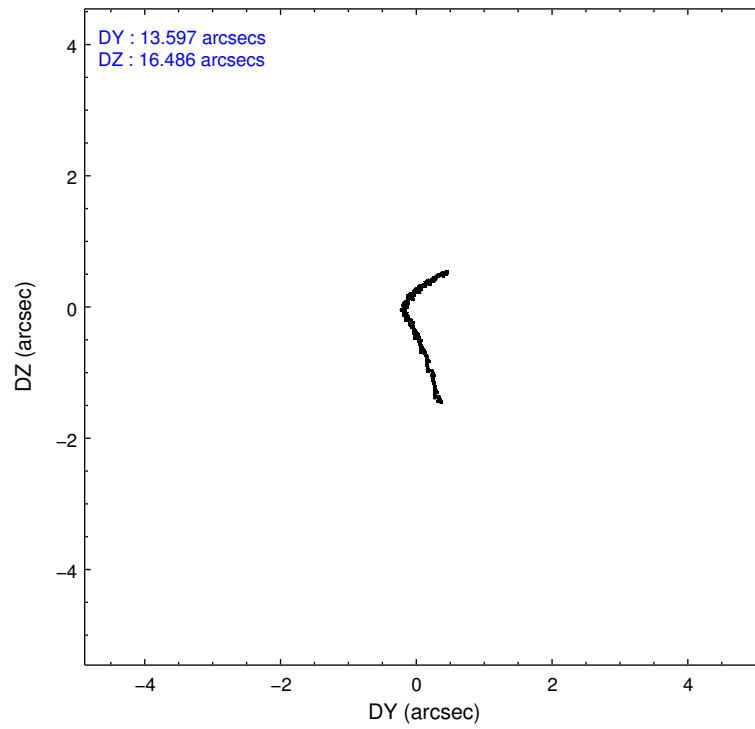
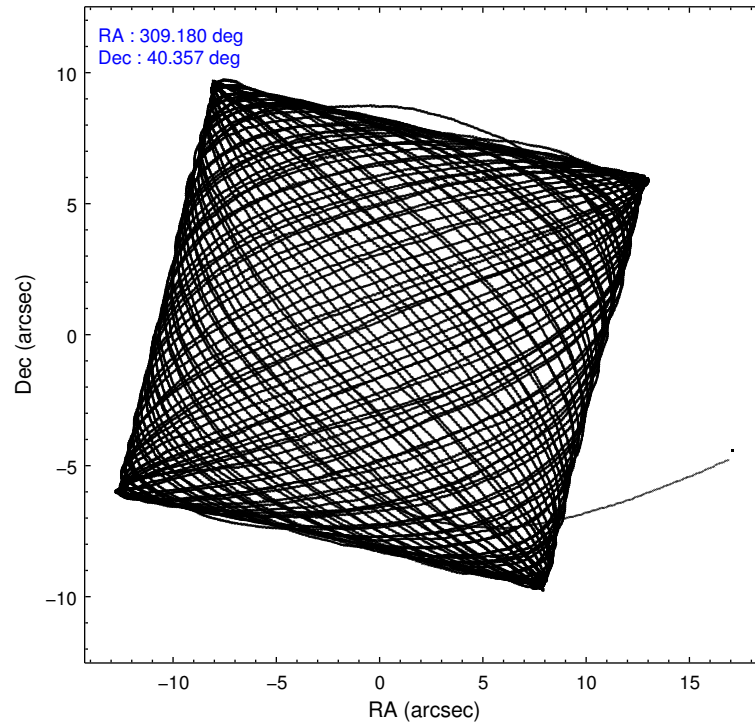
### 2.1.4 Events

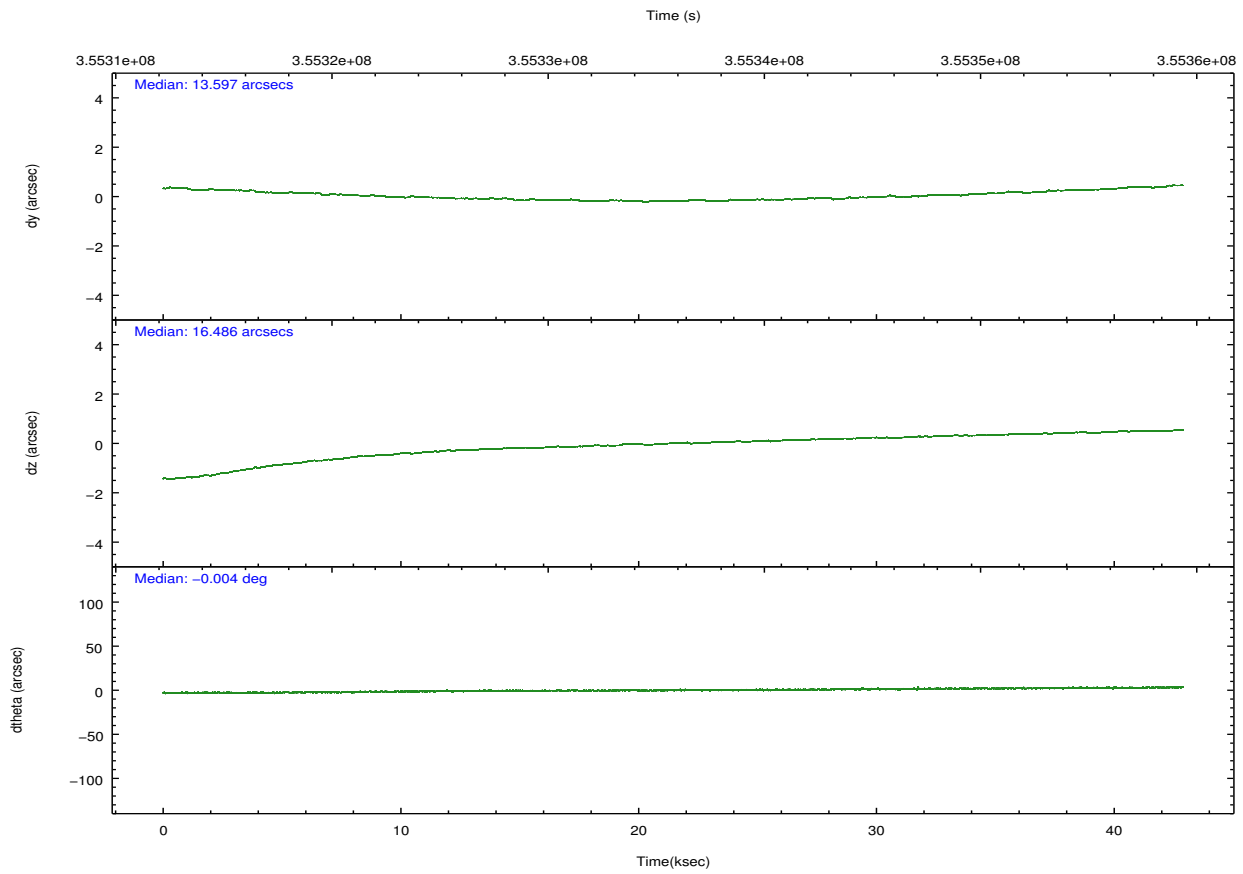
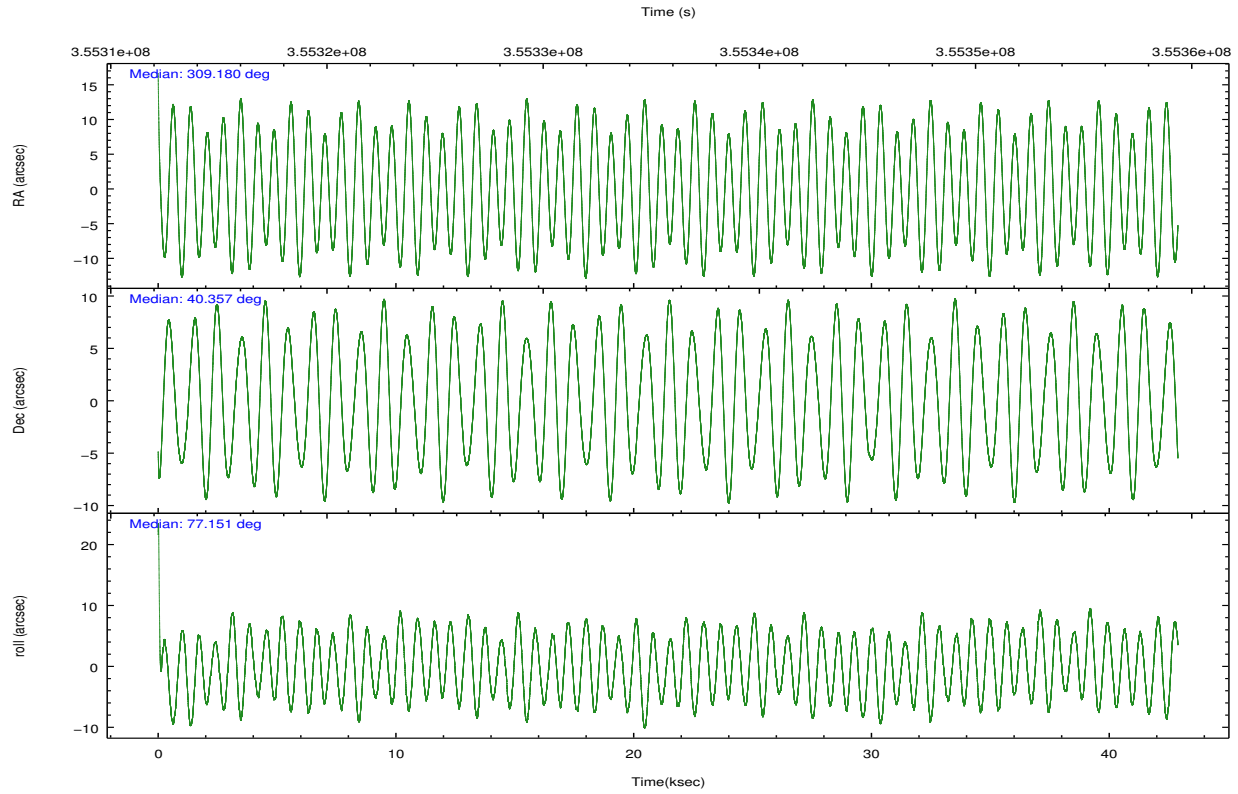
	ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9		ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
level 1 events	494616	669571	443601	612078	567181	438653	grade 0 events	25421	16865	20293	21061	40743	22215
rejected events	437217	365563	390338	356930	435309	383860		5%	2%	4%	3%	7%	5%
rejected %	88%	54%	87%	58%	76%	87%	grade 1 events	519	920	230	621	453	276
								0%	0%	0%	0%	0%	0%
							grade 2 events	12273	96235	12015	52979	30119	11343
								2%	14%	2%	8%	5%	2%
							grade 3 events	5641	11569	5005	21155	13568	5200
								1%	1%	1%	3%	2%	1%
							grade 4 events	5209	11169	4871	20760	12993	5109
								1%	1%	1%	3%	2%	1%
							grade 5 events	20693	49425	20500	57050	27813	22332
								4%	7%	4%	9%	4%	5%
							grade 6 events	8862	168208	11086	139240	34524	10936
								1%	25%	2%	22%	6%	2%
							grade 7 events	415998	315180	369601	299212	406968	361242
								84%	47%	83%	48%	71%	82%

## 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	309.191070	309.1800259273274	CCD I2 on	N	N
[deg] Pointing Dec	40.330606	40.35662423491758	CCD I3 on	N	N
[deg] Pointing Roll	76.994190	77.1579714589498	CCD S0 on	O1	Y
[deg] Roll angle	90.000000	90.000000	CCD S1 on	Y	Y
[deg] Roll tolerance	15.000000	15.000000	CCD S2 on	Y	Y
Roll constraint allows 180D rotation	Y	Y	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)	355315405.184000	355313314.2398	Subarray requested	NONE	NONE
Observation start date	2009-04-05T10:42:19	2009-04-05T10:08:34	Alternating exposures requested	N	N
[s] Observation end time (MET)	355357225.184000	355358088.80453	[s] Primary exposure time	0.000000	3.2
Observation end date	2009-04-05T22:19:19	2009-04-05T22:34:48			
Read mode	TIMED	TIMED			

## 2.3 Aspect



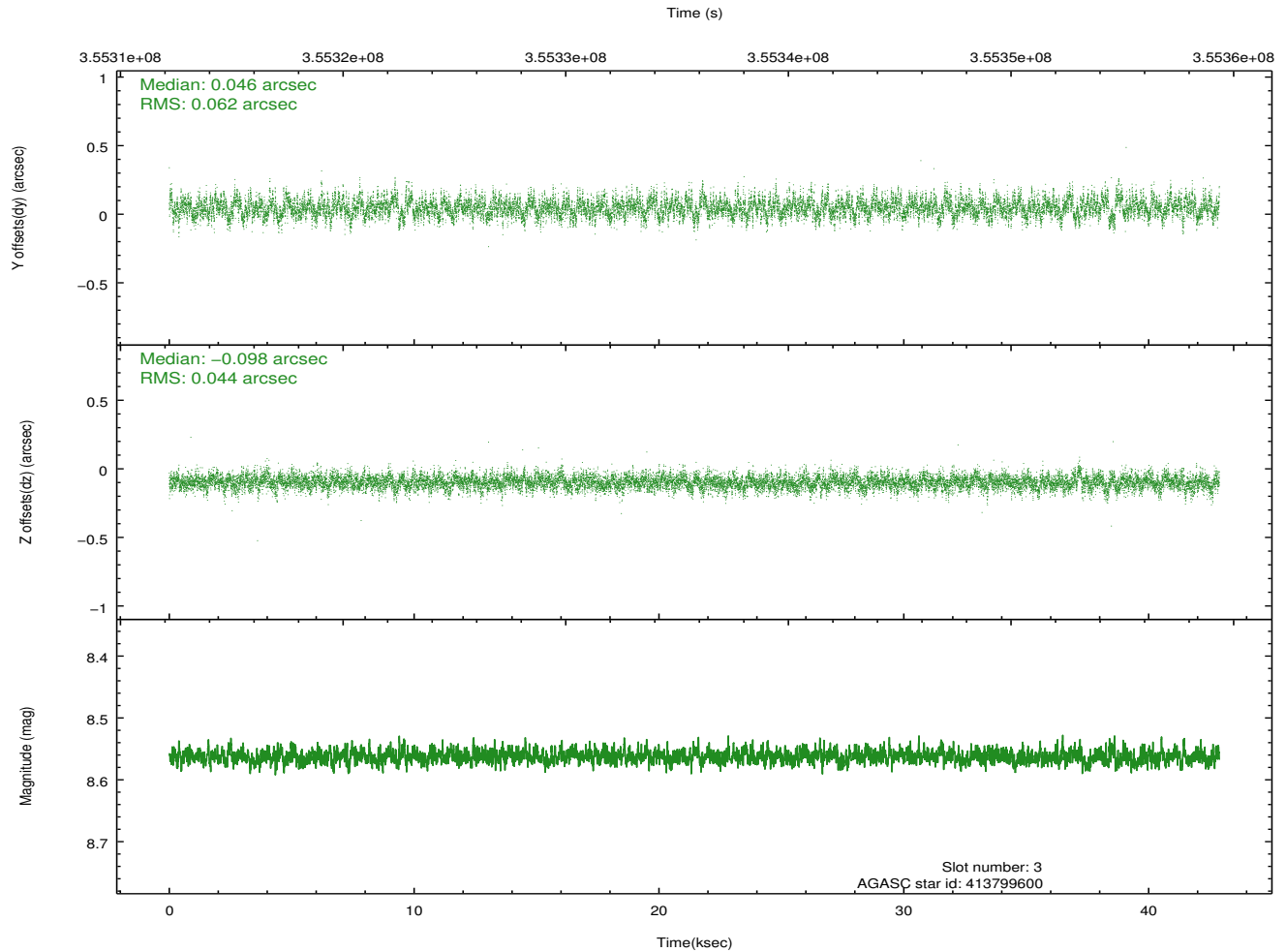
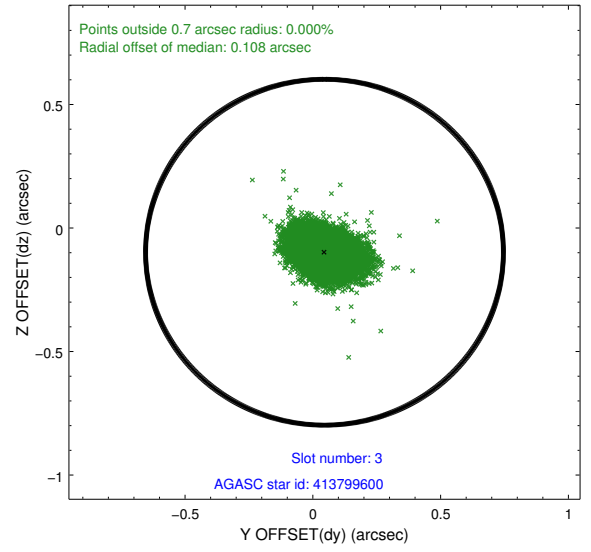
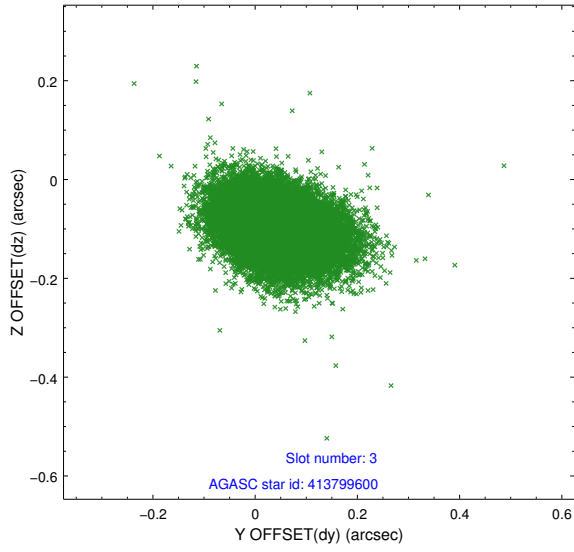


### Slot Statistics

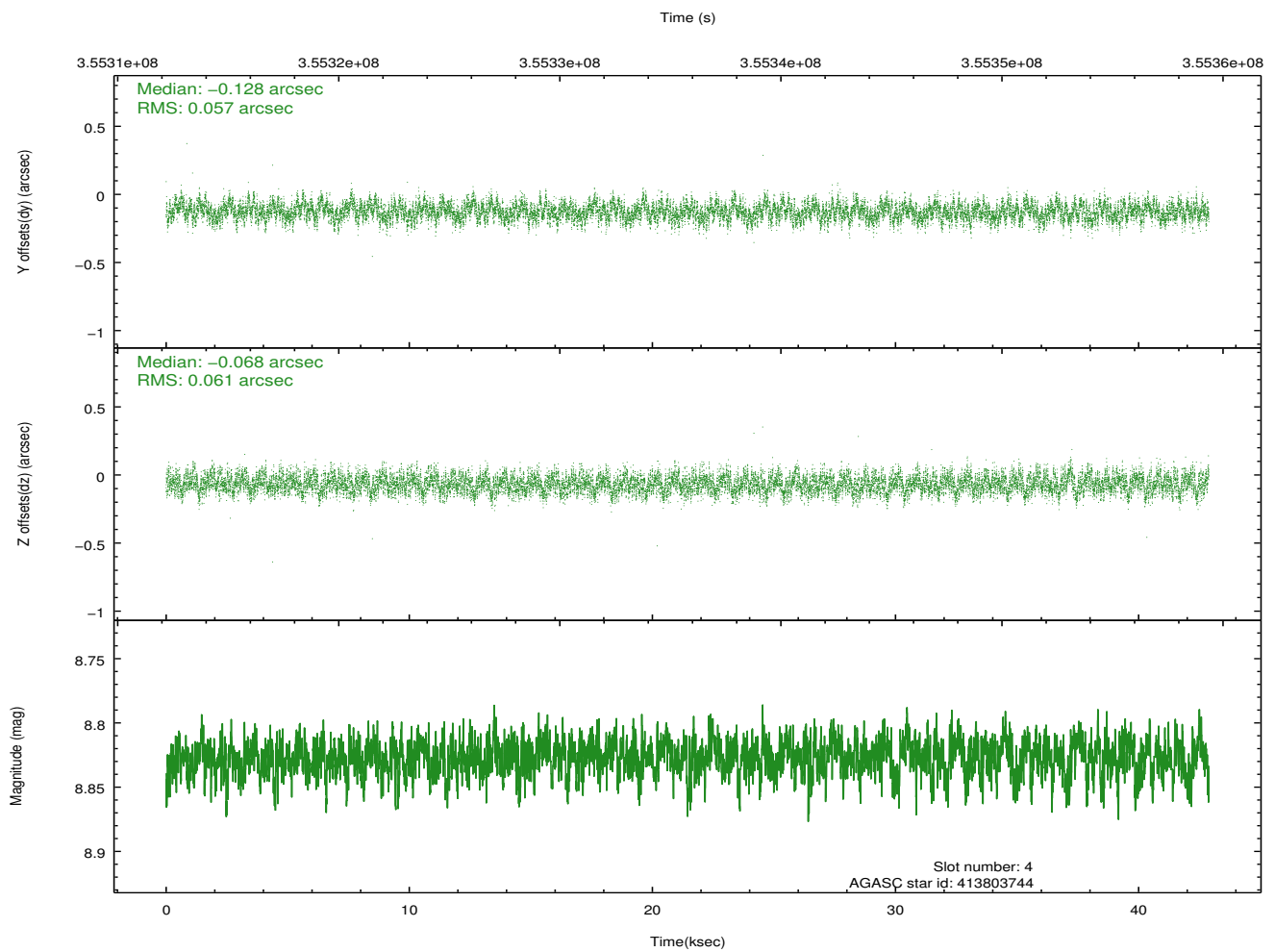
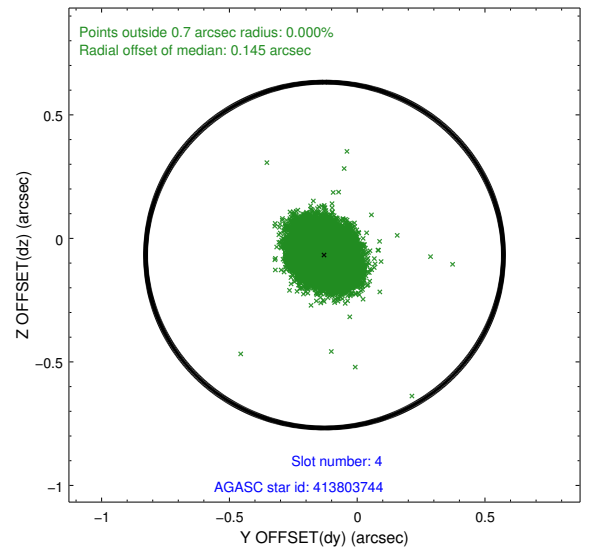
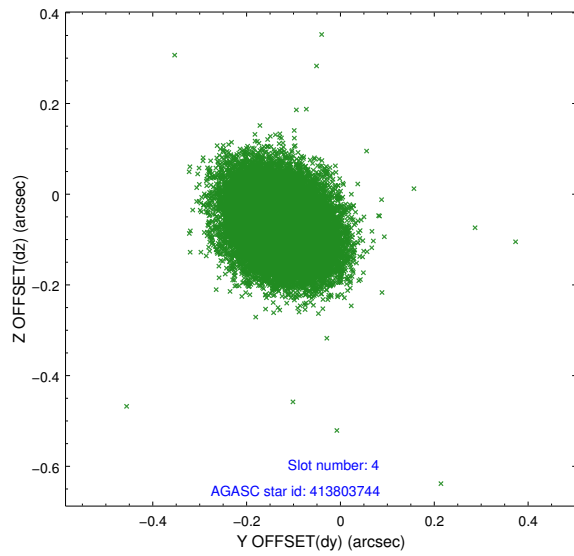
slot	status	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID	ACIS-S-2	6.90	10461	-0.034	-0.019	0.014	0.037	0.000000	0.000000	-766.61	-1737.80
1	FID	ACIS-S-4	6.98	10460	0.168	0.023	0.013	0.034	0.000000	0.000000	2146.87	170.72
2	FID	ACIS-S-5	7.01	10459	-0.162	0.005	0.012	0.019	0.000000	0.000000	-1819.57	164.38
3	GUIDE	413799600	8.56	20918	0.046	-0.098	0.079	0.133	308.280373	39.866891	-2180.49	2078.97
4	GUIDE	413803744	8.83	20902	-0.128	-0.068	0.090	0.142	308.586342	40.704904	946.84	1912.87
5	GUIDE	415508568	9.00	20825	-0.180	0.249	0.078	0.129	310.015866	40.581838	1399.23	-1990.54
6	GUIDE	413805632	9.06	20907	0.117	-0.278	0.102	0.164	308.281827	40.295563	-672.34	2406.80
7	GUIDE	413794944	7.63	20915	0.137	0.201	0.071	0.114	309.554319	39.690543	-2016.40	-1498.21

## 2.4 Star Slots

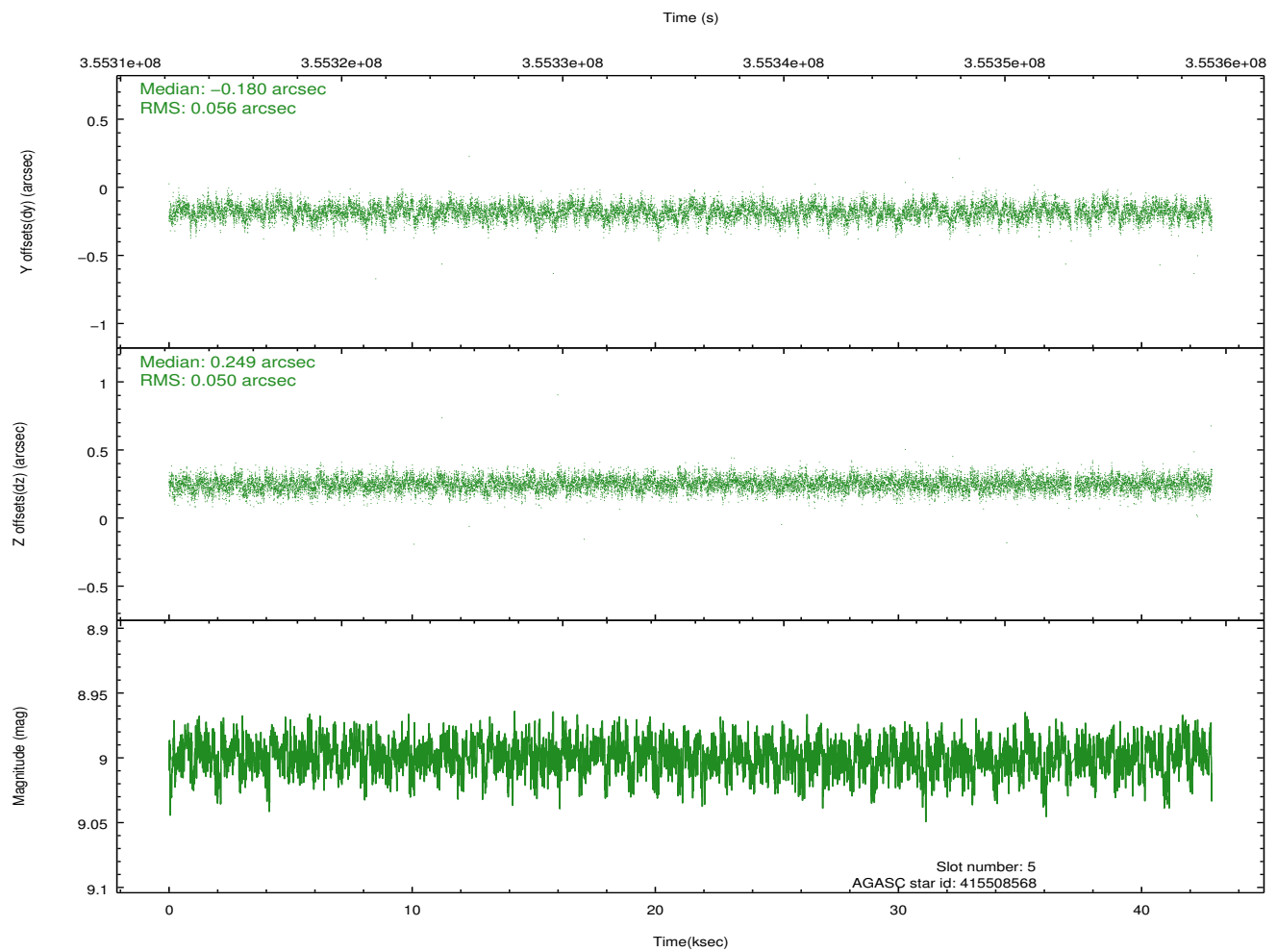
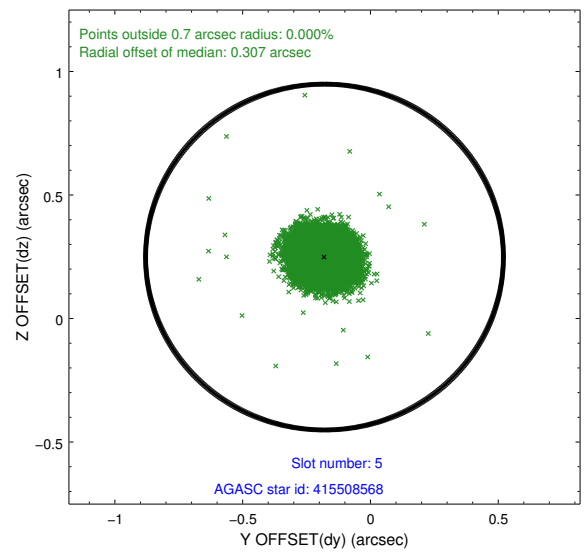
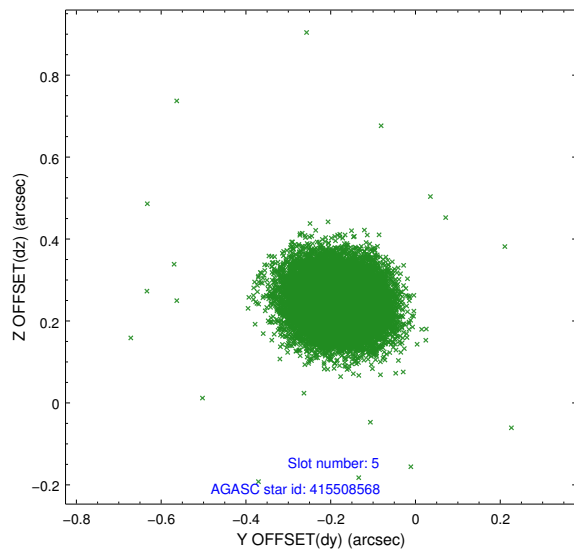
### 2.4.1 Slot 3



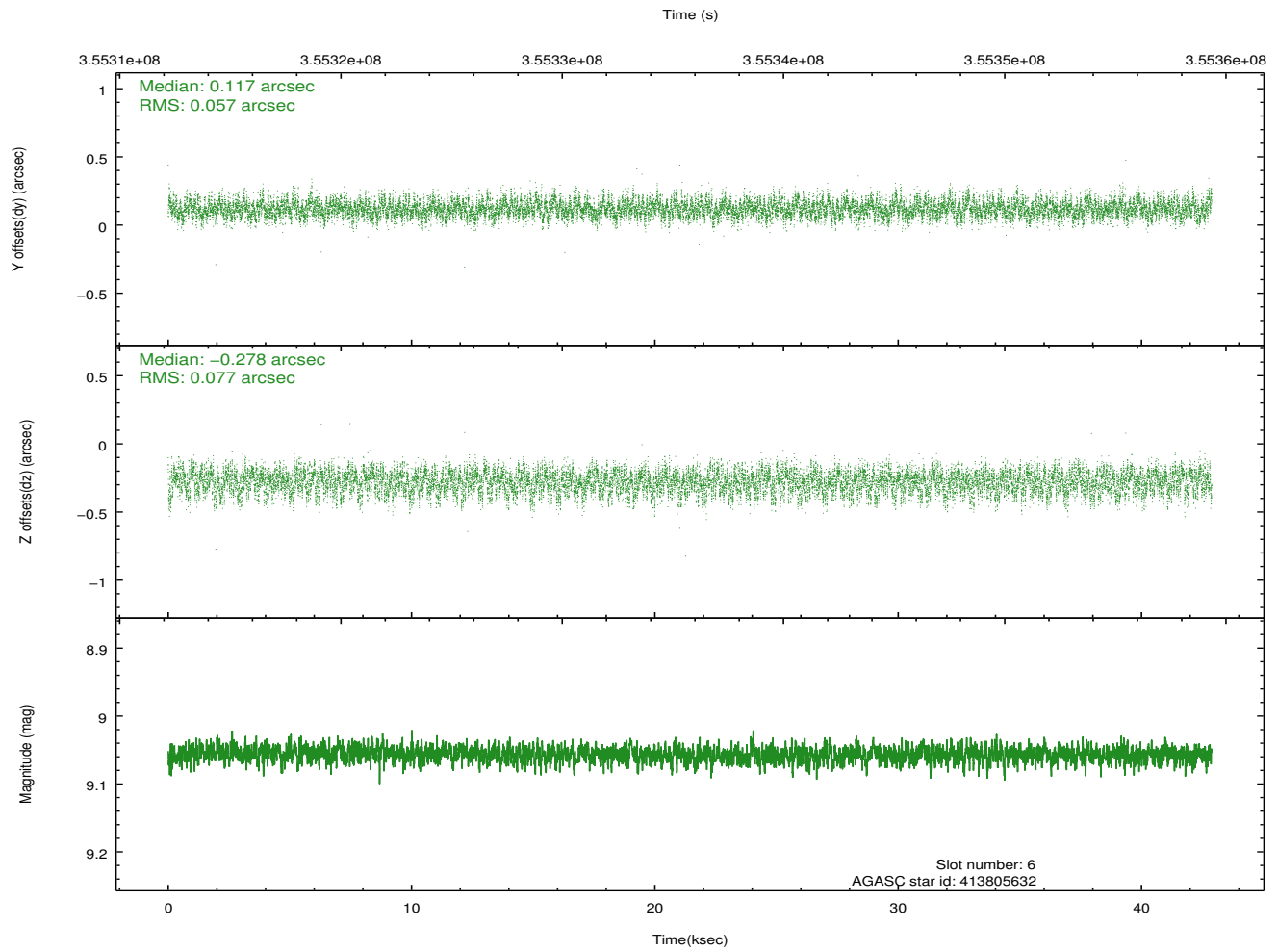
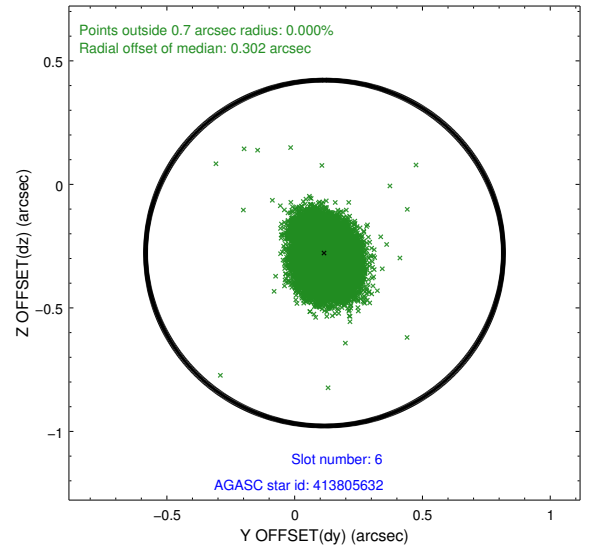
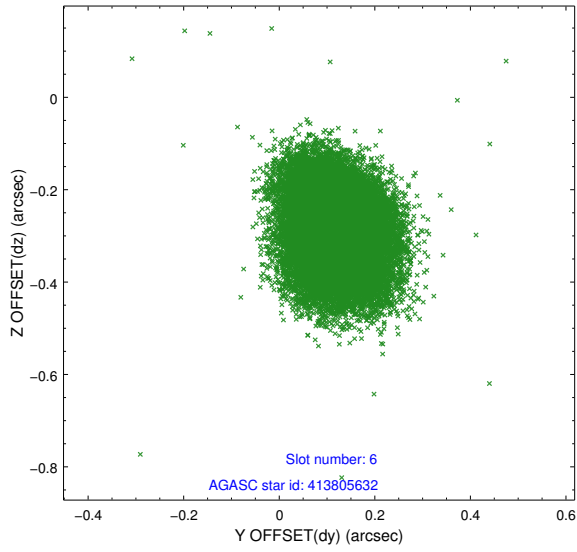
## 2.4.2 Slot 4



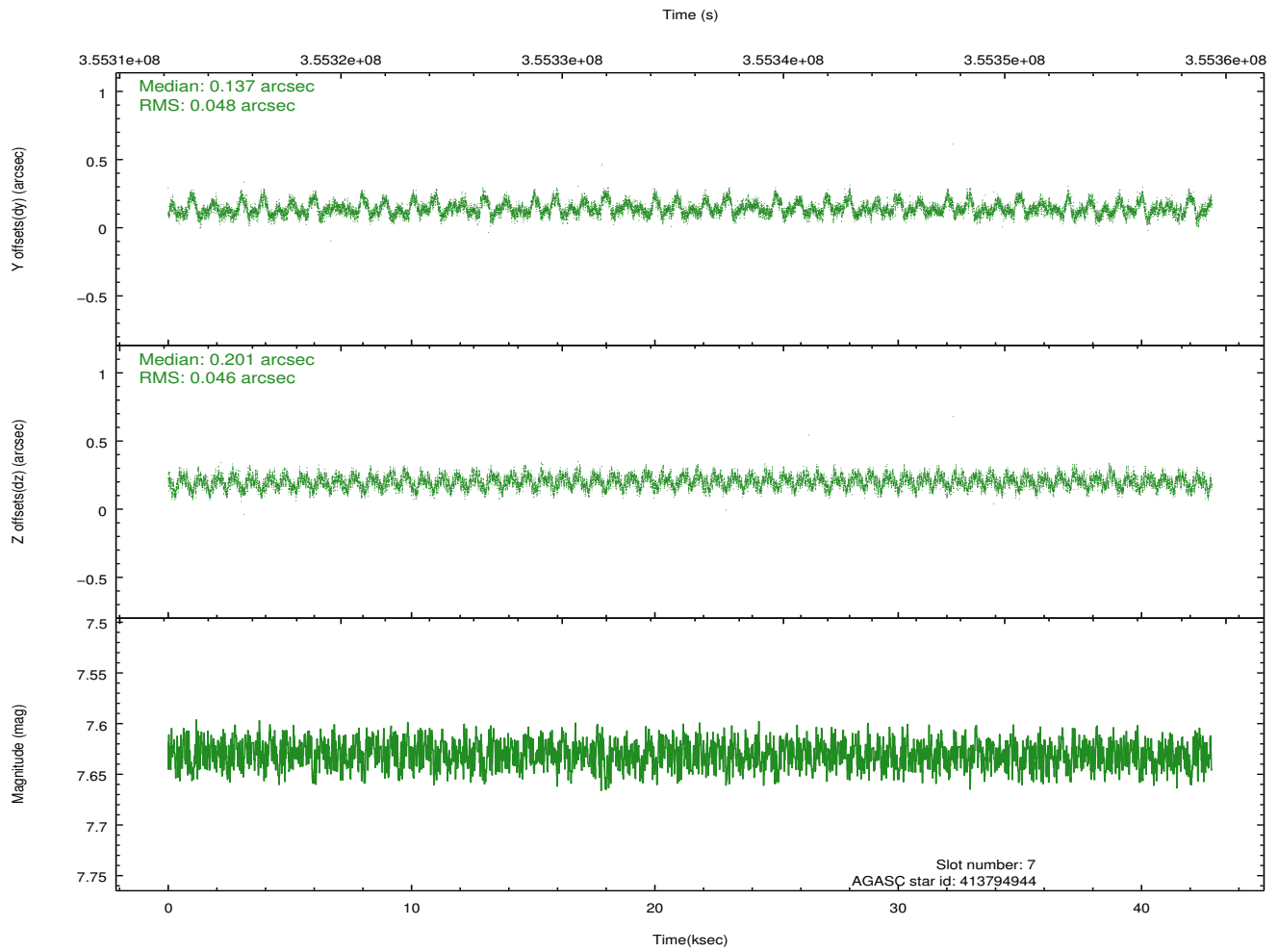
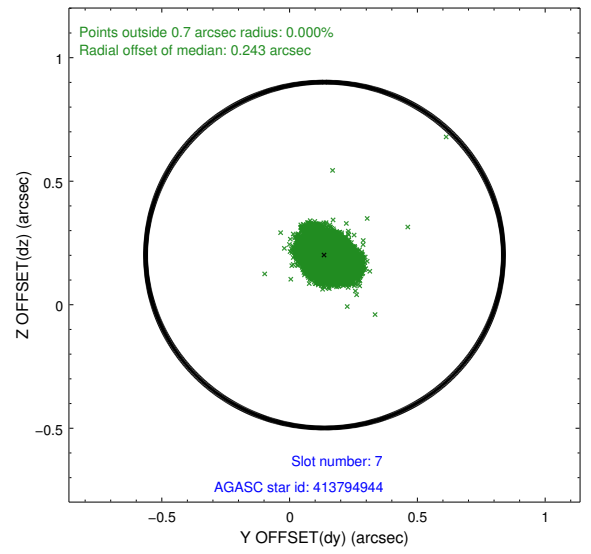
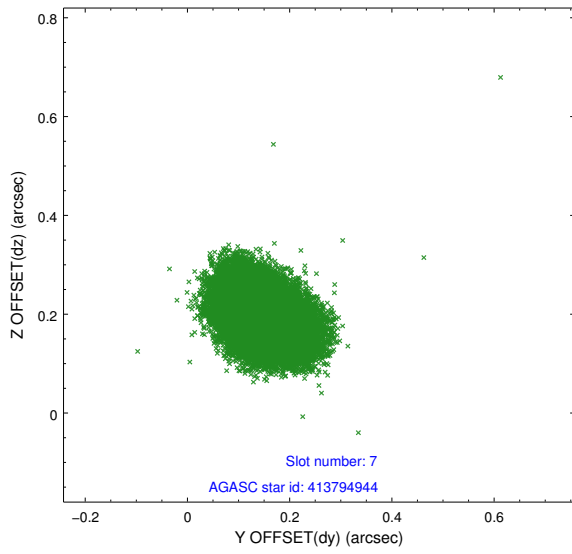
### 2.4.3 Slot 5



## 2.4.4 Slot 6

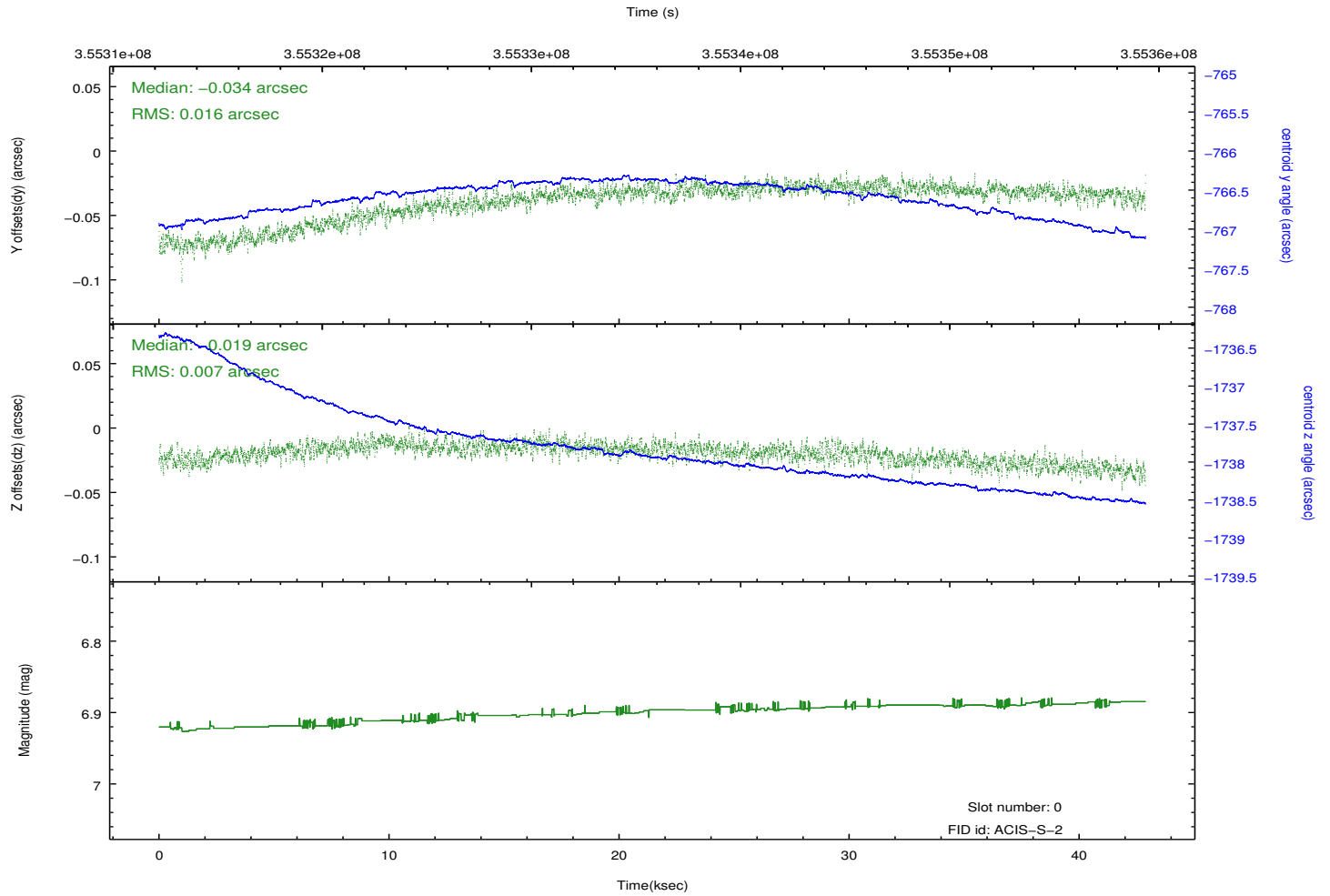
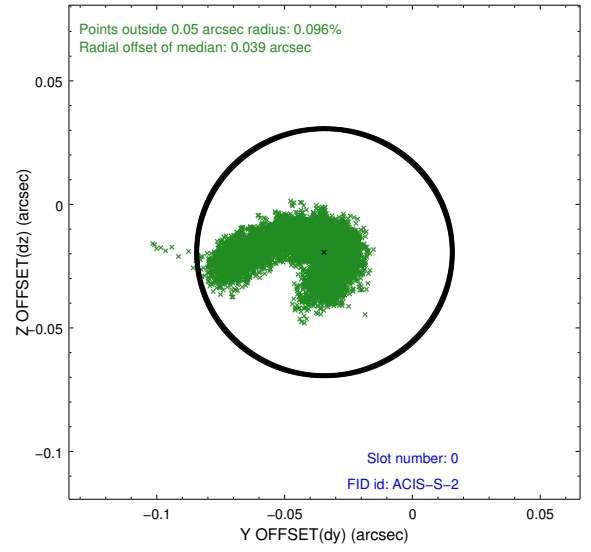
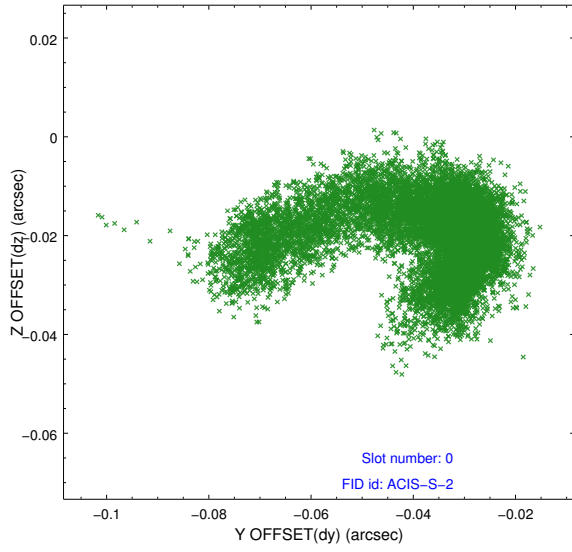


### 2.4.5 Slot 7

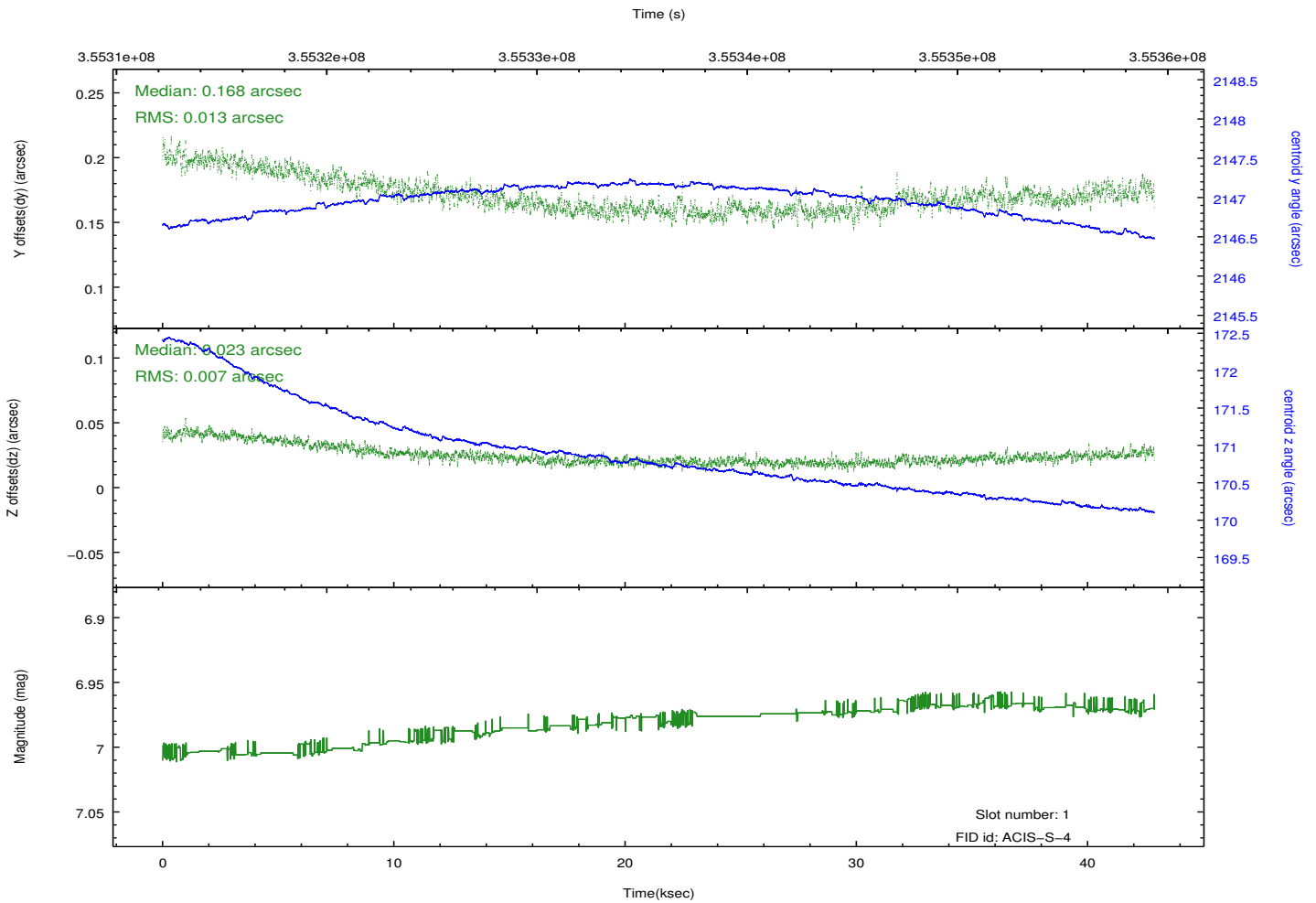
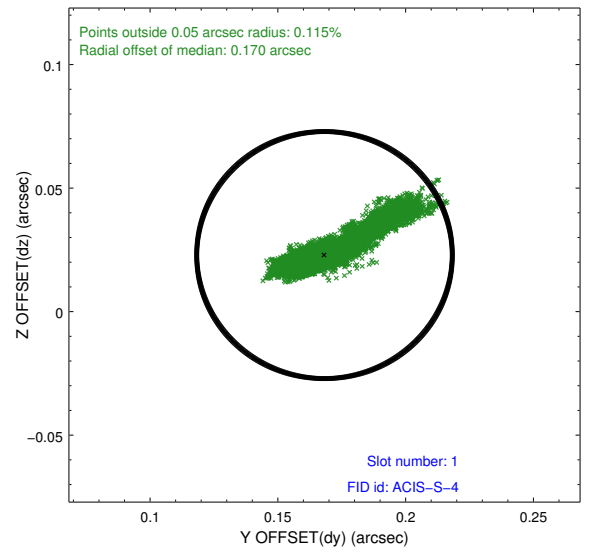
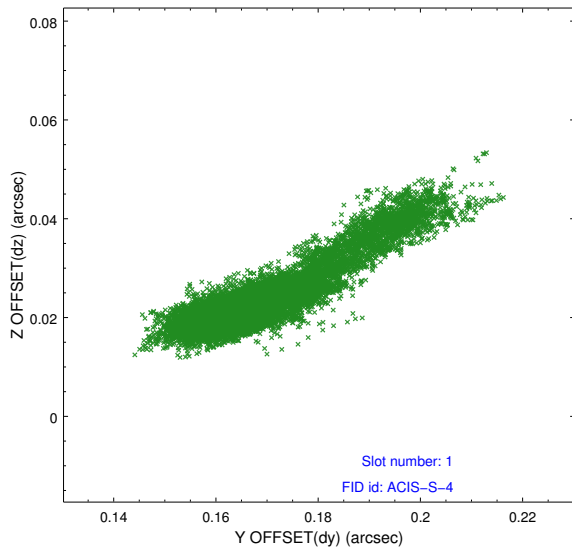


## 2.5 FID Slots

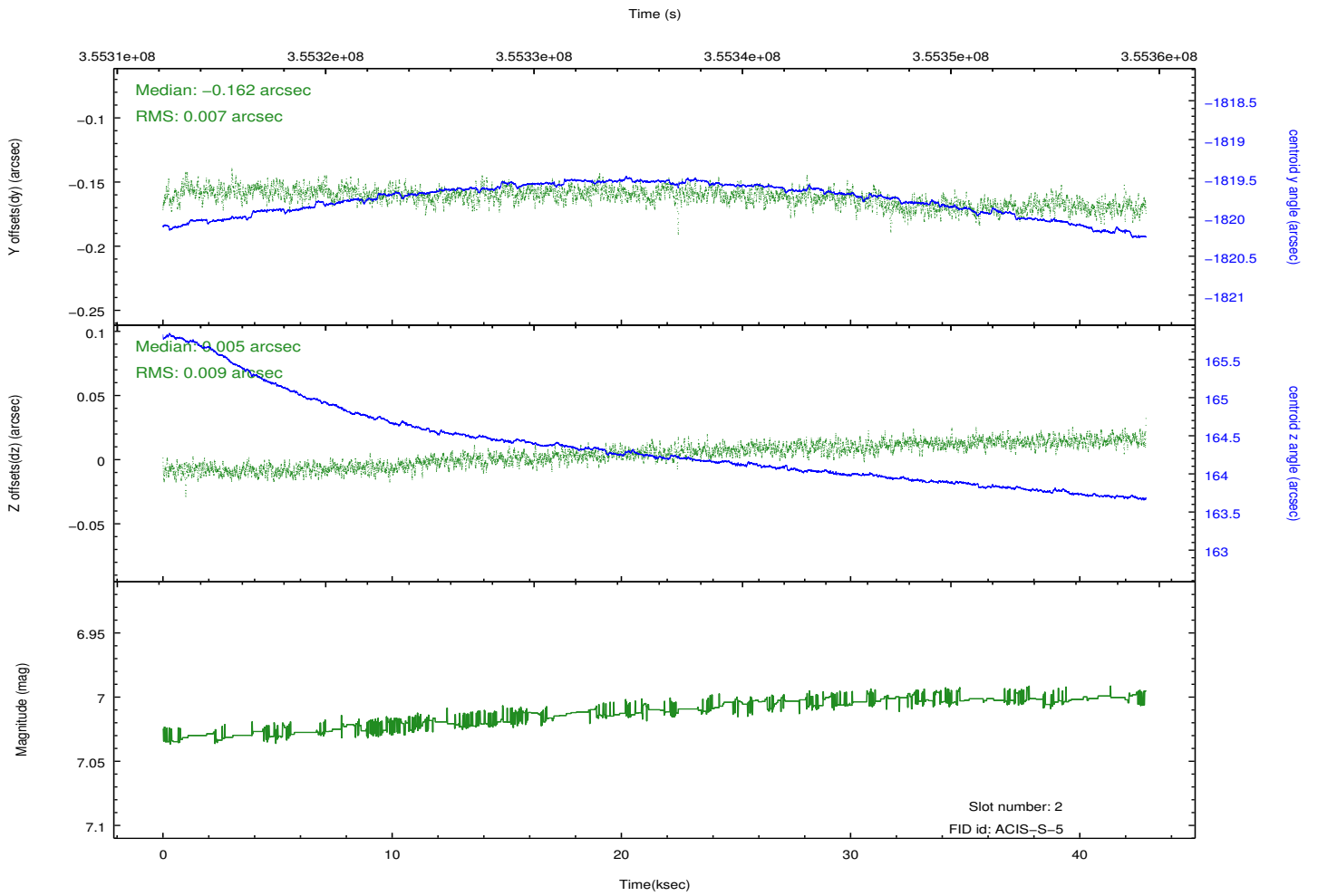
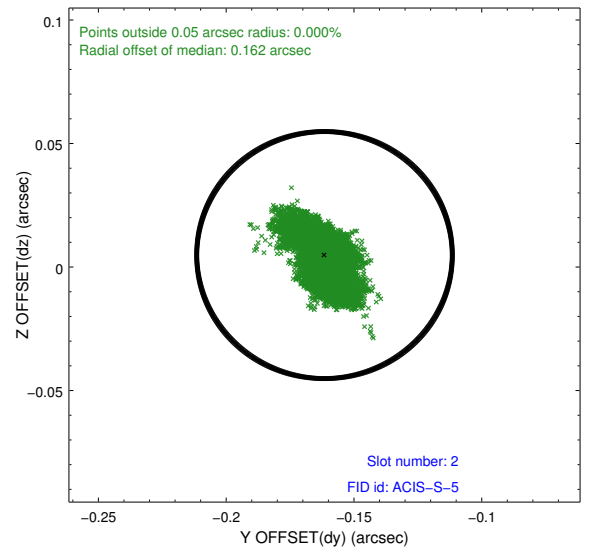
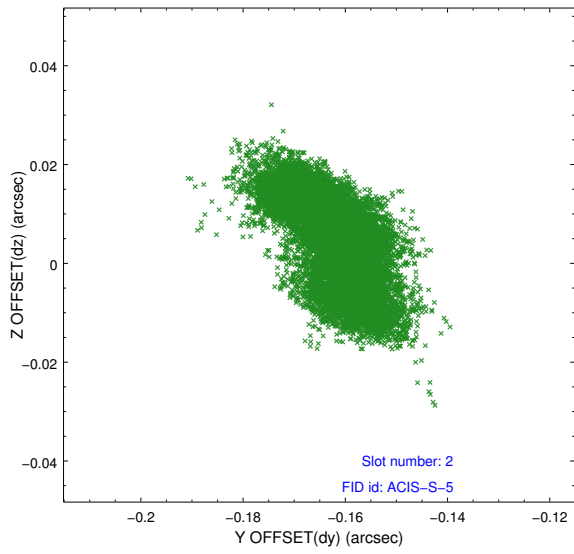
### 2.5.1 Slot 0



## 2.5.2 Slot 1



### 2.5.3 Slot 2

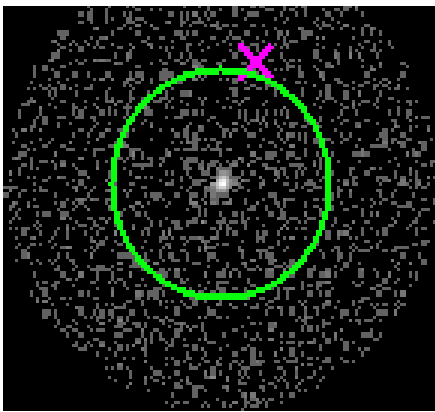


### 3 Gratings

#### 3.1 HEG Arm



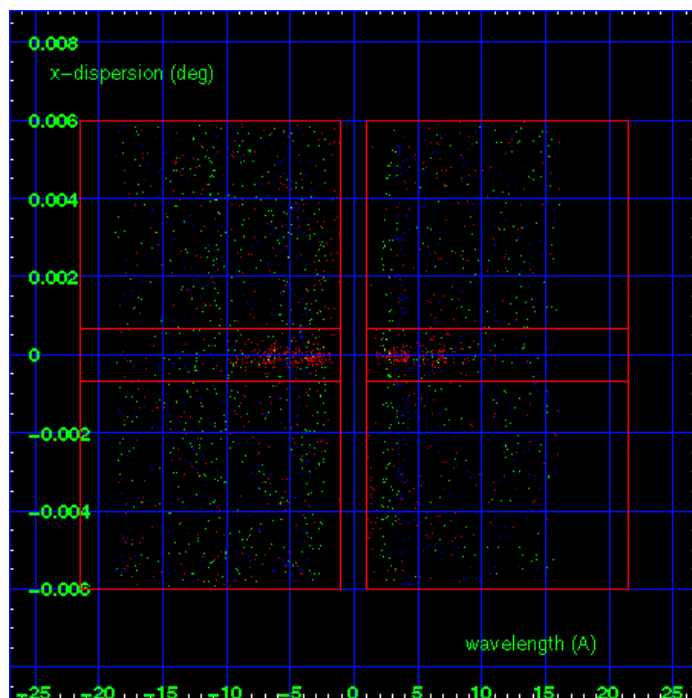
HEG Order Sort 123



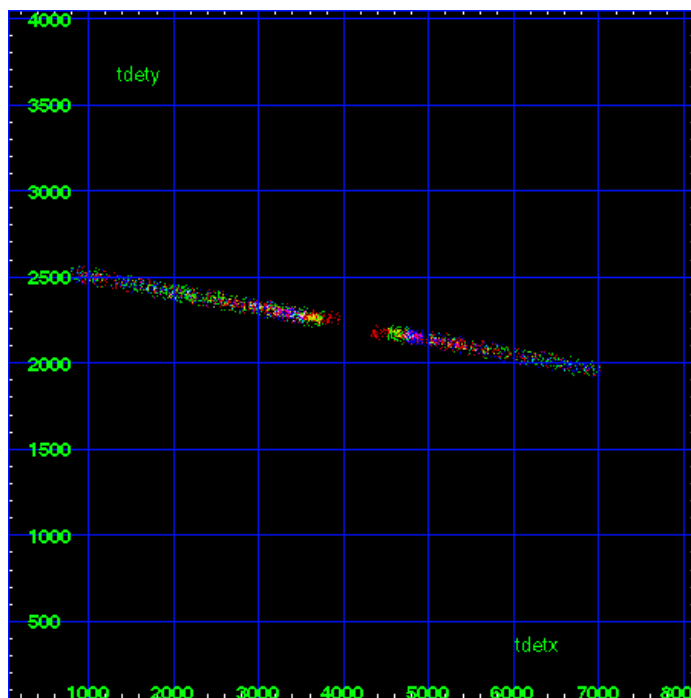
HEG Zero Order



HEG Order Sort ALL

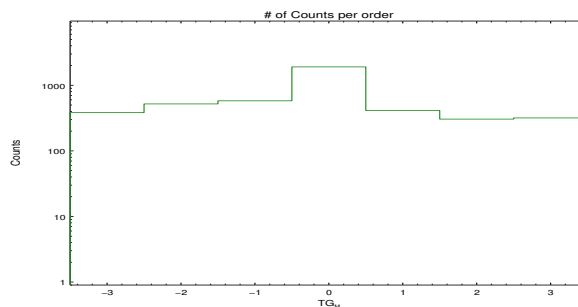


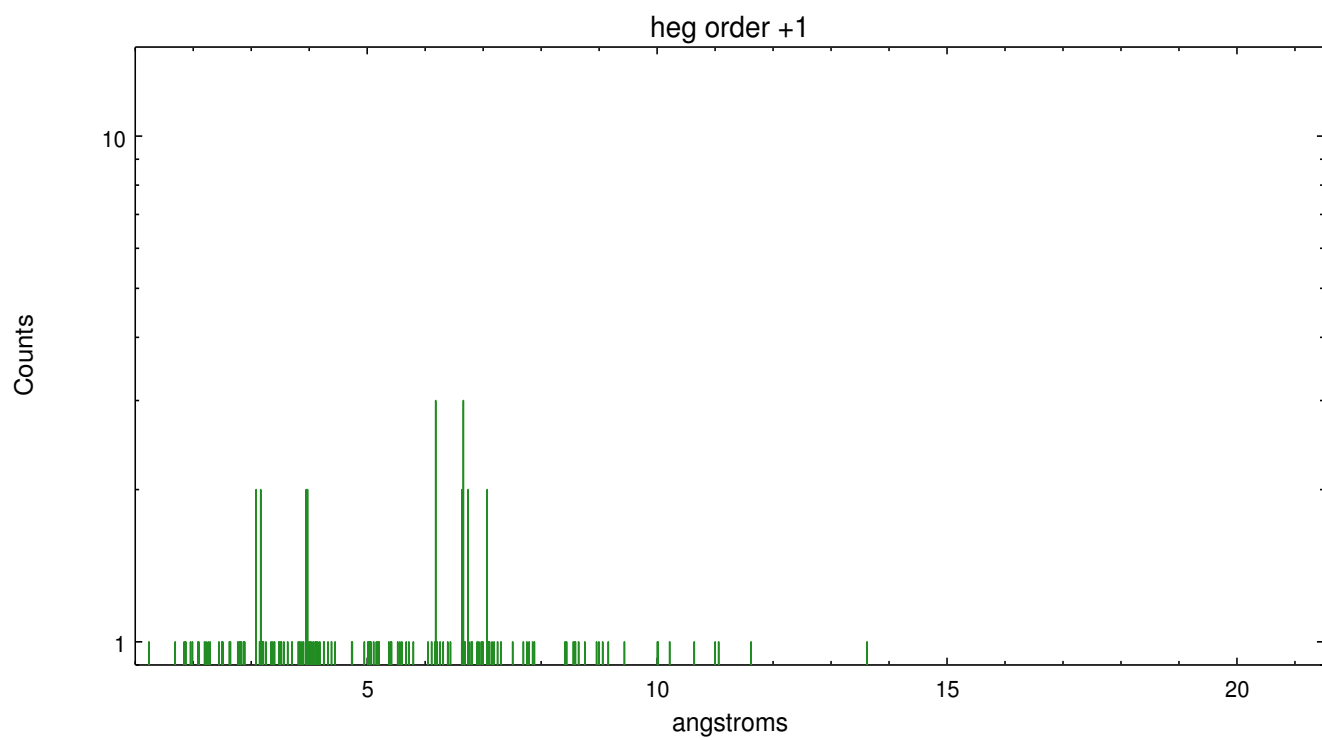
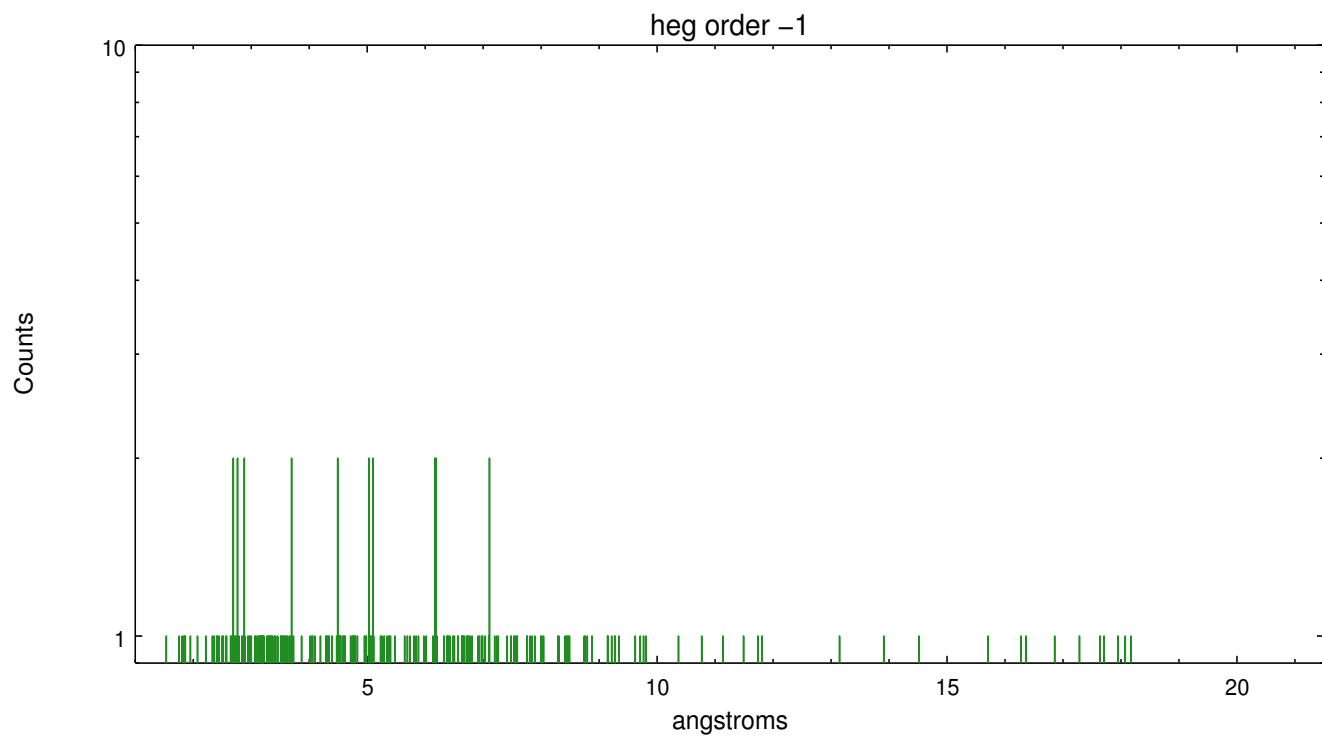
Spot Image HEG



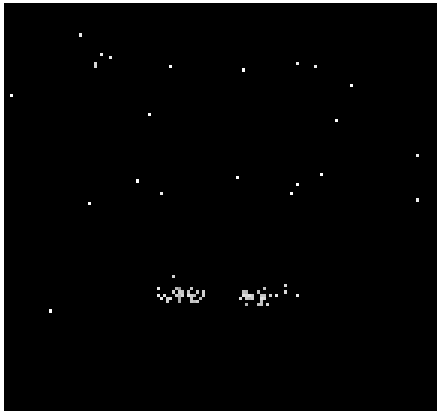
Full Detector HEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	383	520	580	1908	412	305	318

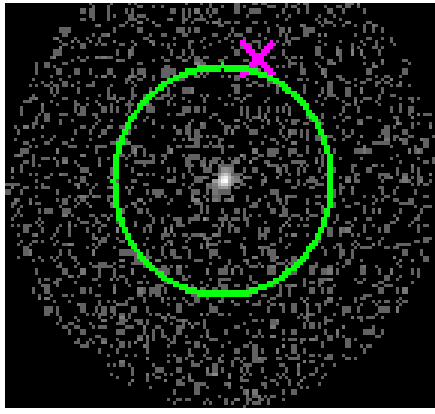




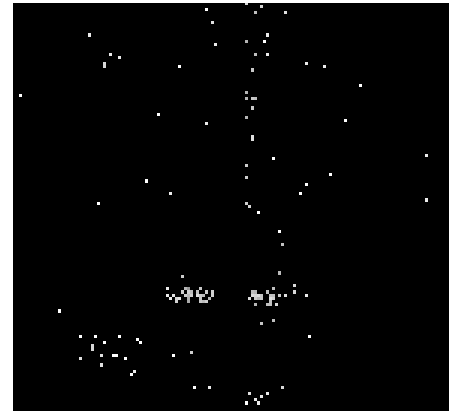
### 3.2 MEG Arm



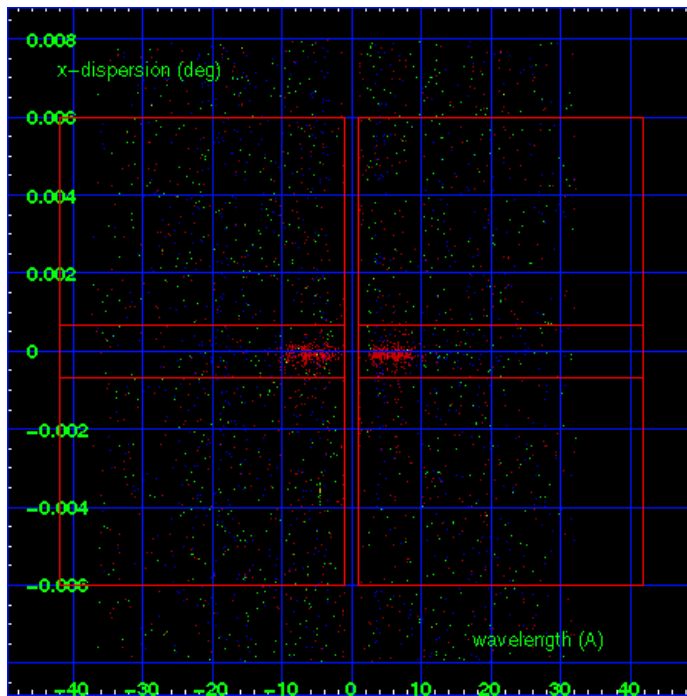
MEG Order Sort 123



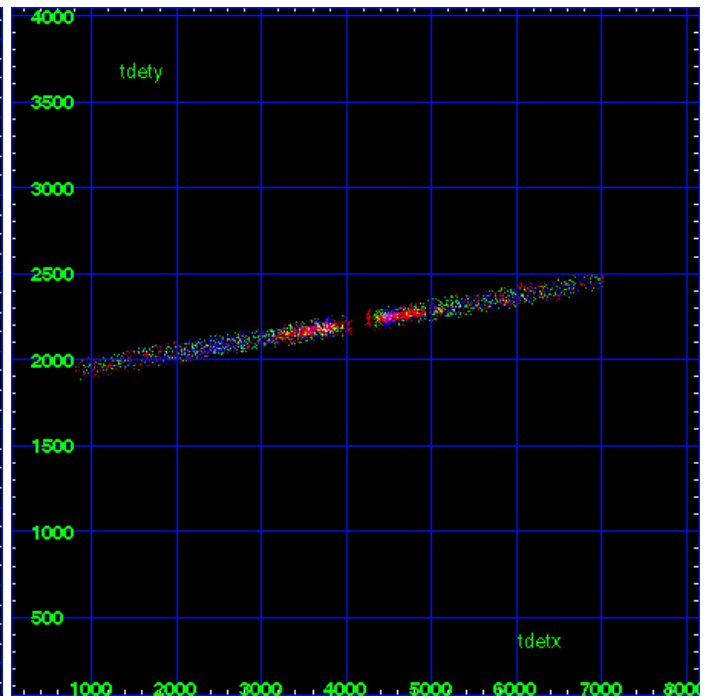
MEG Zero Order



MEG Order Sort ALL

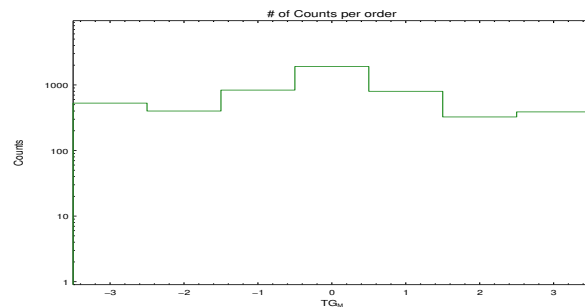


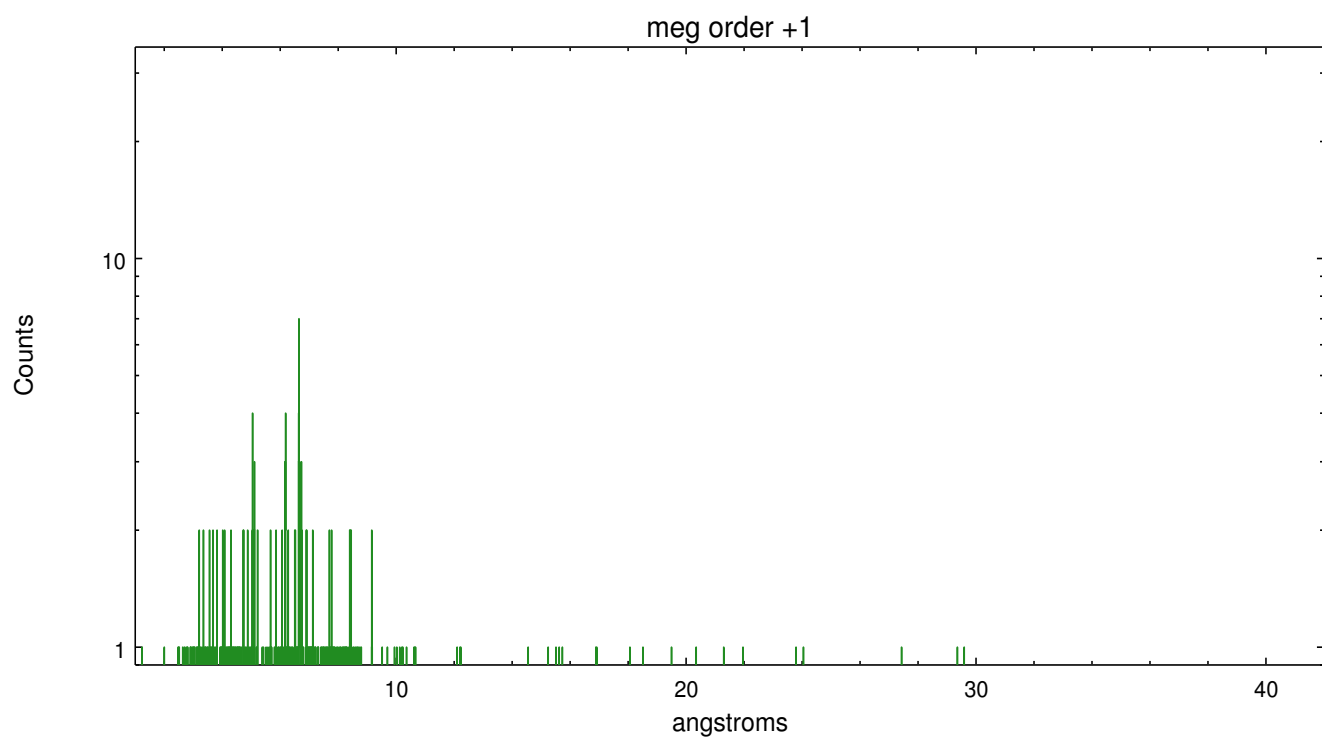
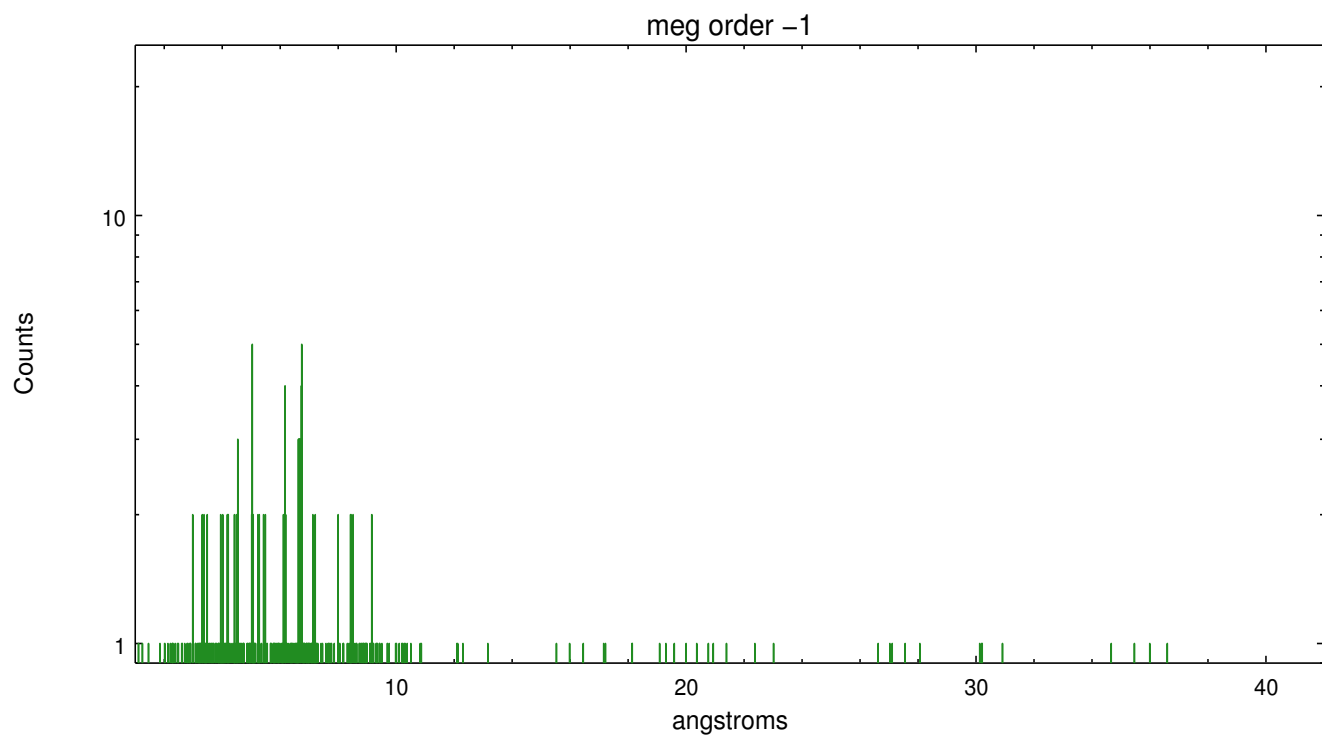
Spot Image MEG



Full Detector MEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	528	400	834	1908	799	325	388





# A Summary

## A.1 Status

V&V Scientist	Joy Nichols
V&V Date (YYYY-MM-DD)	2012.06.04
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	41.7599998

## A.2 Comments

Roll constraint met.