

# V&V Reference Report

## L2 ASCDS Version : 10.4

Observation 17697 - L2 Version 3  
Chandra X-Ray Center

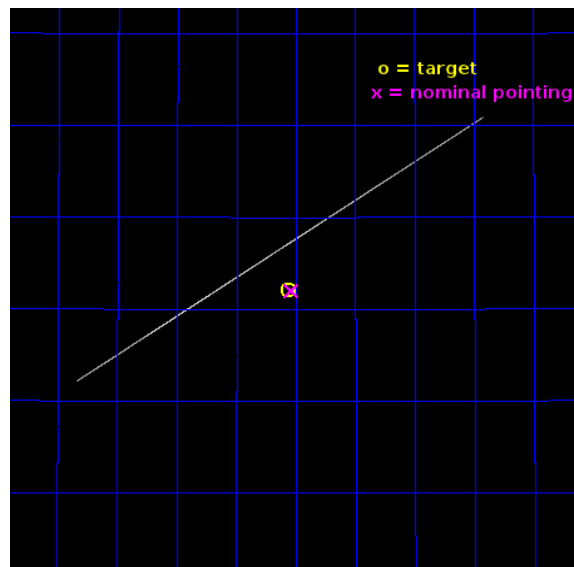
L2 Processing Date : Aug 4 2015

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# 1 Front

seq_num	401696	Sequence number
obs_id	17697	Observation id
title	Detecting Super-Eddington Driven Winds in V404 Cyg	Proposal title
observer	Dr. Ashley King	Principal investigator
object	v404 Cyg	Source name
ra_targ	306.015833	Observer's specified target RA [deg]
dec_targ	33.867222	Observer's specified target Dec [deg]
ra_nom	306.00929497946	Nominal RA [deg]
dec_nom	33.866757927168	Nominal Dec [deg]
roll_nom	145.92753679278	Nominal Roll [deg]
revision	3	Processing version of data
ontime	24712.914555788	Sum of GTIs [s]
livetime	24616.379733304	Livetime [s]
ontime4	25855.465189099	Sum of GTIs [s]
ontime5	25970.682631254	Sum of GTIs [s]
ontime6	24664.765723944	Sum of GTIs [s]
ontime7	24712.914555788	Sum of GTIs [s]
ontime8	25058.738193154	Sum of GTIs [s]
ontime9	25818.991877675	Sum of GTIs [s]
l2events	4306065	Number of level 2 events

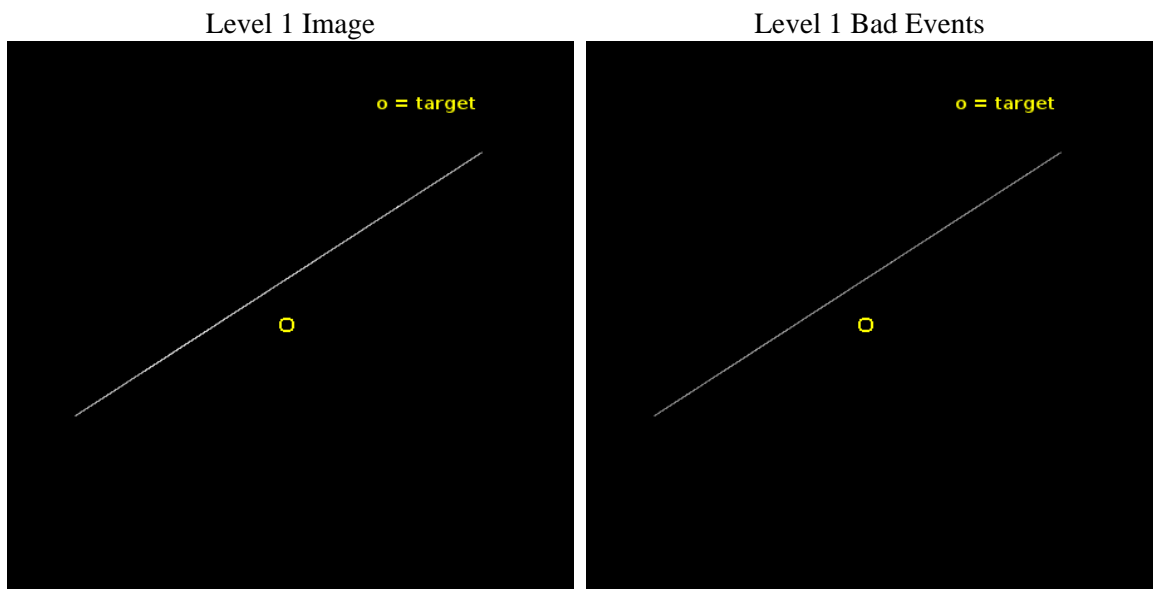




## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



## 2.1.2 Parameters

obi_num	0	Obi number	sched_exp_time	26644.000000	[s] Scheduled observation exposure time
ascdsver	10.4	Processing system revision	ontime	24712.914555788	Sum of GTIs [s]
caldsver	4.6.7	&#160	ontime4	25855.465189099	Sum of GTIs [s]
date	2015-06-24T19:00:48	Date and time of file creation	ontime5	25970.682631254	Sum of GTIs [s]
revision	1	Processing version of data	ontime6	24664.765723944	Sum of GTIs [s]
			ontime7	24712.914555788	Sum of GTIs [s]
			ontime8	25058.738193154	Sum of GTIs [s]
			ontime9	25818.991877675	Sum of GTIs [s]
			l1events	6116107	Number of level 1 events
			tgmethod	CUSTOM	Method used to create src1a file
			ra_pos	(4056.00, 4100.32)	Grade sky pixel position

## 2.1.3 Events

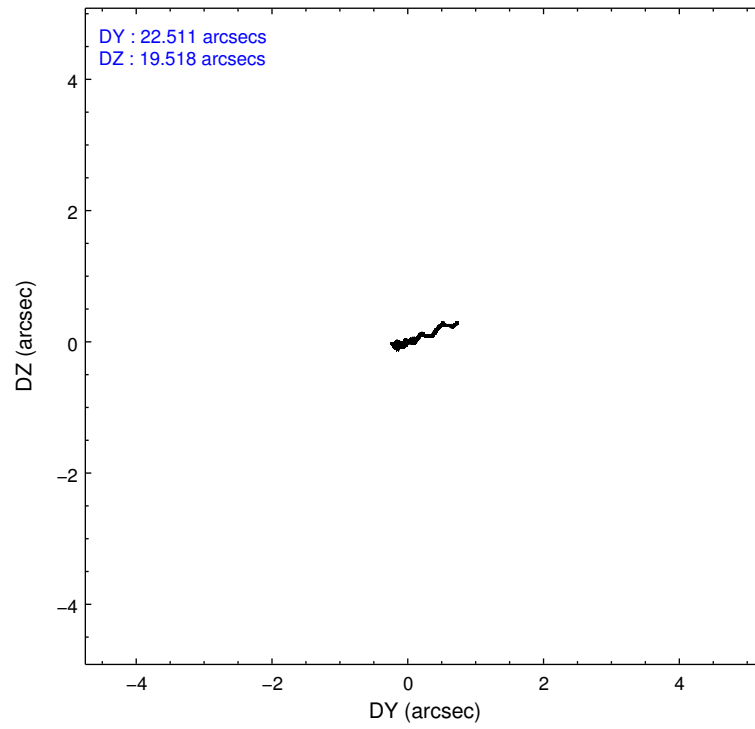
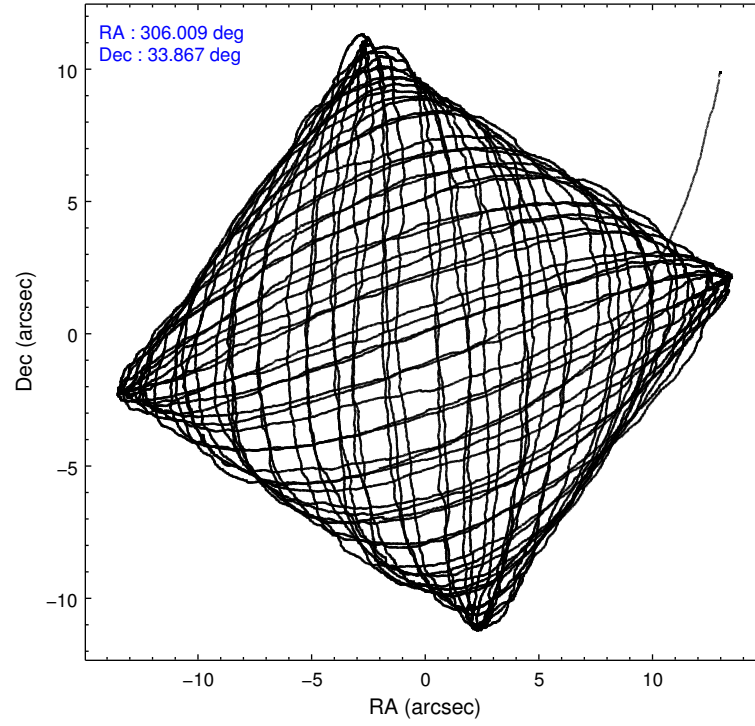
	ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9		ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
level 1 events	463759	841741	1000199	1187157	2077125	546126	grade 0 events	4819	193293	268814	129568	289572	22437
rejected events	135159	157988	140647	177866	223893	137118		1%	22%	26%	10%	13%	4%
rejected %	29%	18%	14%	14%	10%	25%	grade 1 events	97	385	1543	1519	1740	154
								0%	0%	0%	0%	0%	0%
							grade 2 events	308016	335561	483364	388931	1317260	367733
								66%	39%	48%	32%	63%	67%
							grade 3 events	2847	15560	23124	71768	93604	3443
								0%	1%	2%	6%	4%	0%
							grade 4 events	2810	15105	22915	71303	87872	3777
								0%	1%	2%	6%	4%	0%
							grade 5 events	5610	14987	8564	22861	11792	6781
								1%	1%	0%	1%	0%	1%
							grade 6 events	10168	124287	61385	347820	65015	11631
								2%	14%	6%	29%	3%	2%
							grade 7 events	129392	142563	130490	153387	210270	130170
								27%	16%	13%	12%	10%	23%

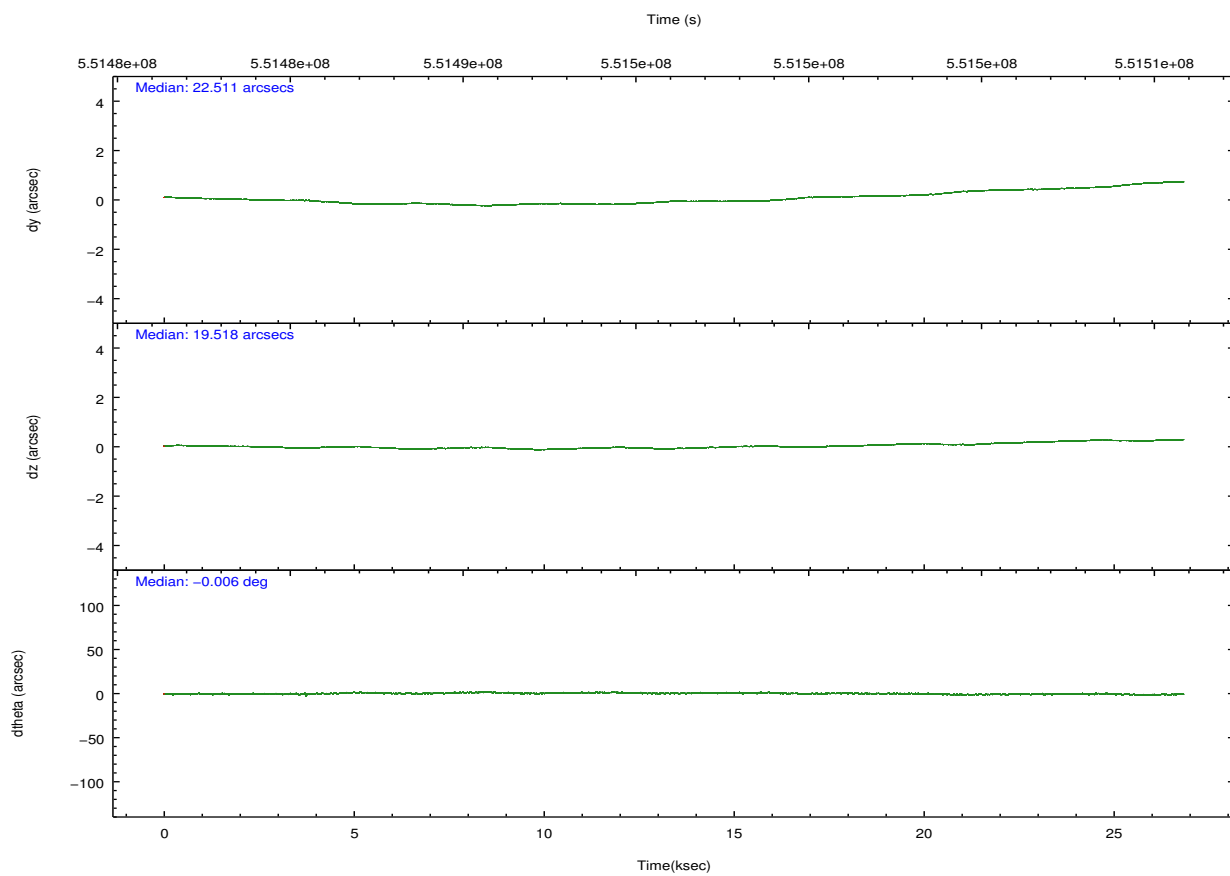
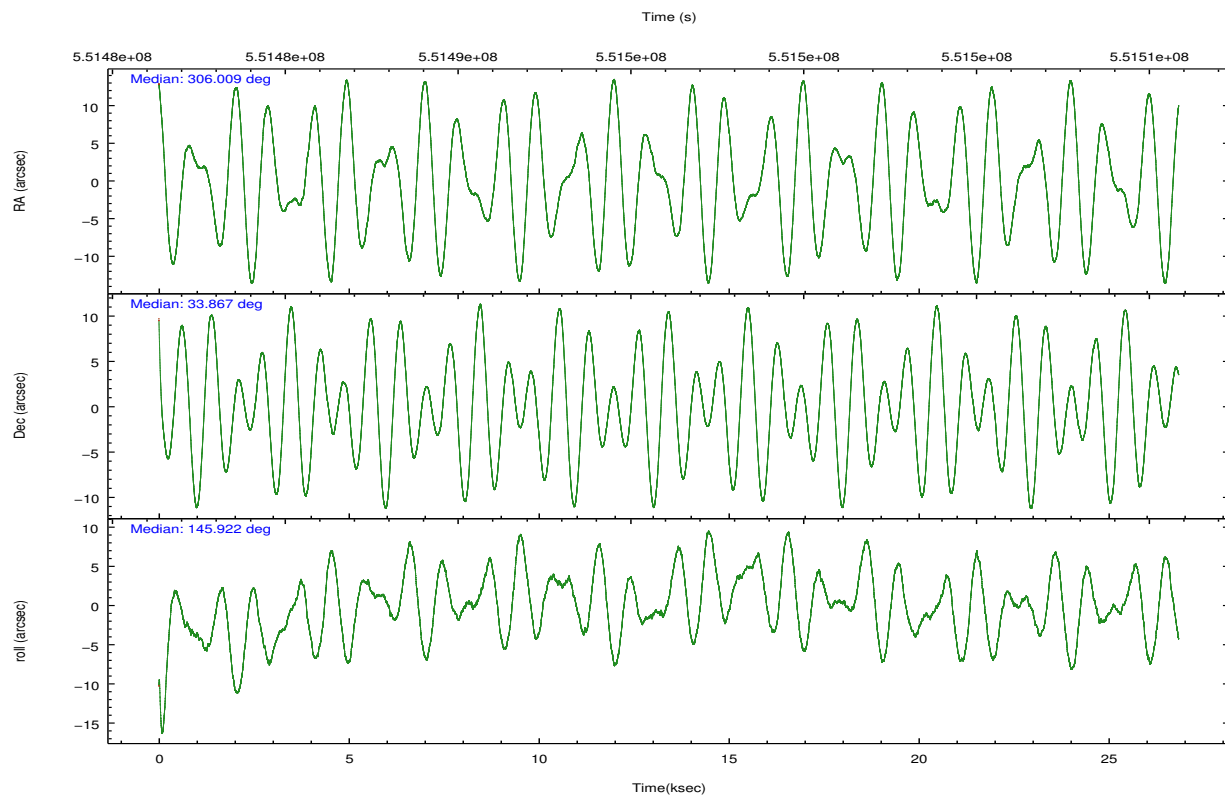
## 2.2 Compared Parameters

Parameter	Planned	Actual
Instrument	ACIS	ACIS
Detector	ACIS-456789	ACIS-456789
Grating	HETG	HETG
Data mode	CC33_GRADED	CC33_GRADED
Observation mode	POINTING	POINTING
[deg] Pointing RA	306.042312	306.0092949794563
[deg] Pointing Dec	33.865163	33.86675792716803
[deg] Pointing Roll	145.752505	145.9275367927842
[mm] SIM focus pos	-0.684267	-0.6828225247311905
[mm] SIM defocus	0	0.001444936568705701
[mm] SIM translation stage pos	-177.532523	-177.5282604972469
[mm] SIM translation stage offset	-12.6	-12.60426208576089
[s] Observation start time (MET)	551482873.184000	551481998.8931201
Observation start date	2015-06-23T21:40:06	2015-06-23T21:26:38
[s] Observation end time (MET)	551509517.184000	551510459.55722
Observation end date	2015-06-24T05:04:10	2015-06-24T05:20:59
Read mode	CONTINUOUS	CONTINUOUS

Parameter	Planned	Actual
Obspar format version number	7	7
Obspar file type	PREDICTED	ACTUAL
Obspar update status	NONE	UPDATED
CCD I0 on	N	N
CCD I1 on	N	N
CCD I2 on	N	N
CCD I3 on	N	N
CCD S0 on	O1	Y
CCD S1 on	Y	Y
CCD S2 on	Y	Y
CCD S3 on	Y	Y
CCD S4 on	Y	Y
CCD S5 on	O2	Y
Number of optional ACIS chips dropped	0	0
On-chip summing requested	N	N
Subarray requested	NONE	NONE
Alternating exposures requested	N	N
[s] Primary exposure time	0.000000	0

## 2.3 Aspect



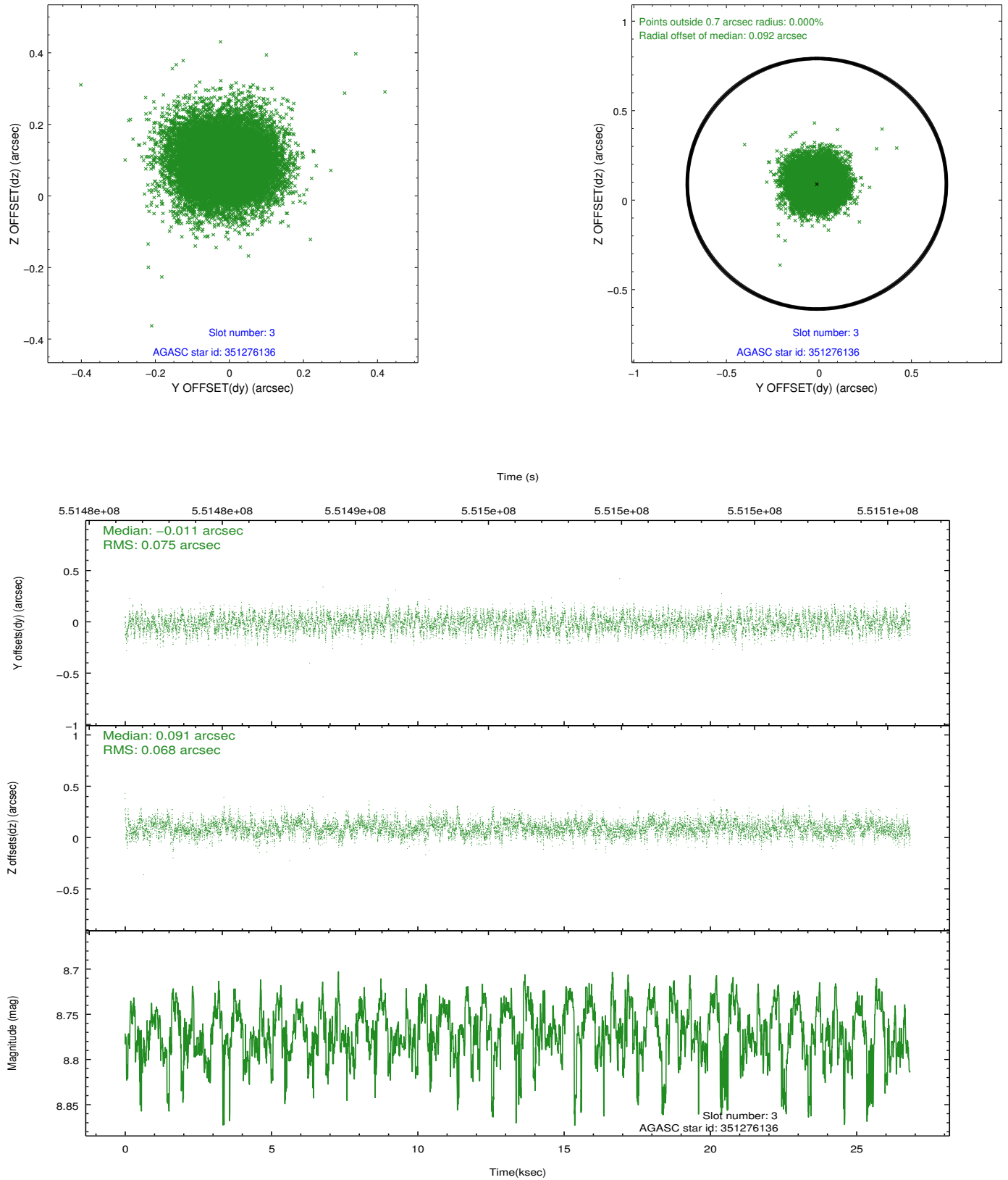


### Slot Statistics

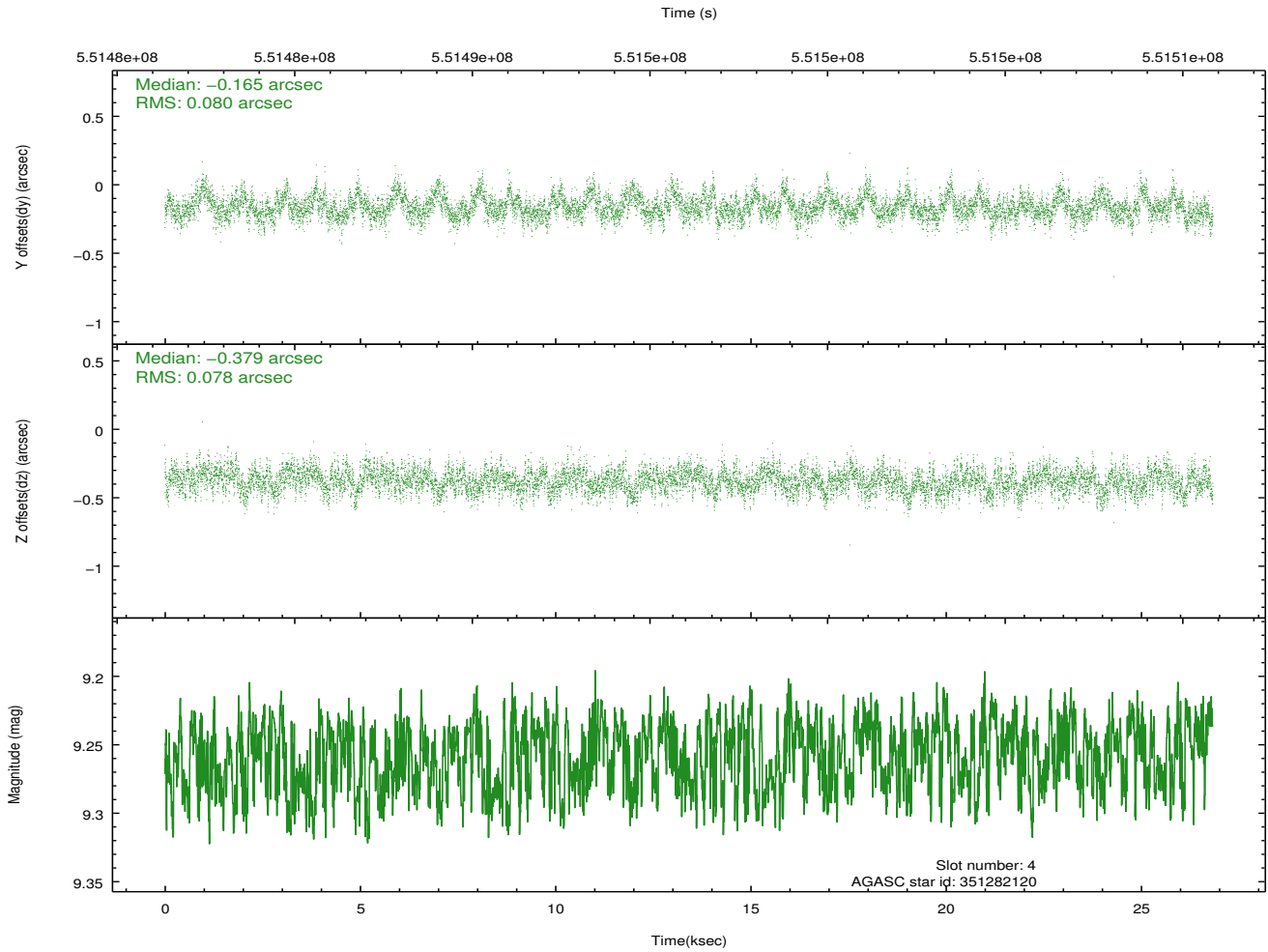
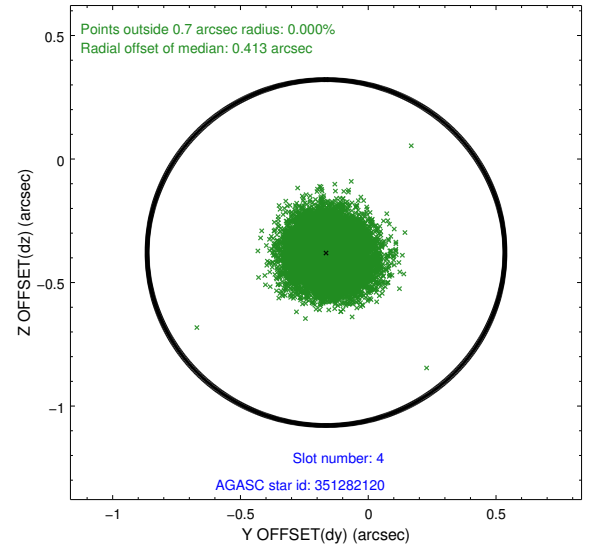
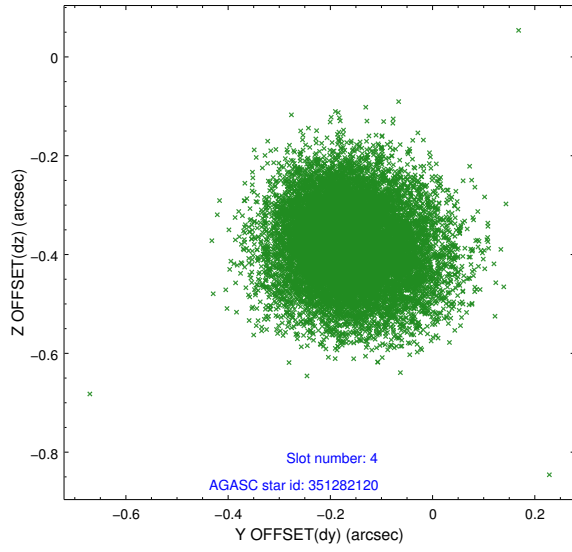
slot	status	used	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID		ACIS-S-2	6.91	6547	-0.234	-0.426	0.009	0.015	0.000000	0.000000	-774.99	-2000.92
1	FID		ACIS-S-4	6.97	6547	0.399	0.226	0.008	0.014	0.000000	0.000000	2138.81	-91.85
2	FID		ACIS-S-5	7.05	6547	-0.197	0.207	0.009	0.015	0.000000	0.000000	-1827.73	-98.22
3	GUIDE	used	351276136	8.77	13080	-0.011	0.091	0.109	0.171	305.889488	34.377539	1414.01	-1269.13
4	GUIDE	used	351282120	9.26	13088	-0.165	-0.379	0.119	0.193	305.232648	33.763598	1801.77	1659.76
5	GUIDE	used	351285720	8.61	13087	-0.197	-0.365	0.099	0.158	305.127244	33.817841	2172.98	1670.97
6	GUIDE	used	352981624	8.58	13090	0.054	0.272	0.100	0.164	306.081516	34.222239	627.59	-1127.69
7	GUIDE	used	352985512	8.87	13087	0.323	0.378	0.131	0.217	306.411799	34.272698	-81.04	-1832.55

## 2.4 Star Slots

### 2.4.1 Slot 3

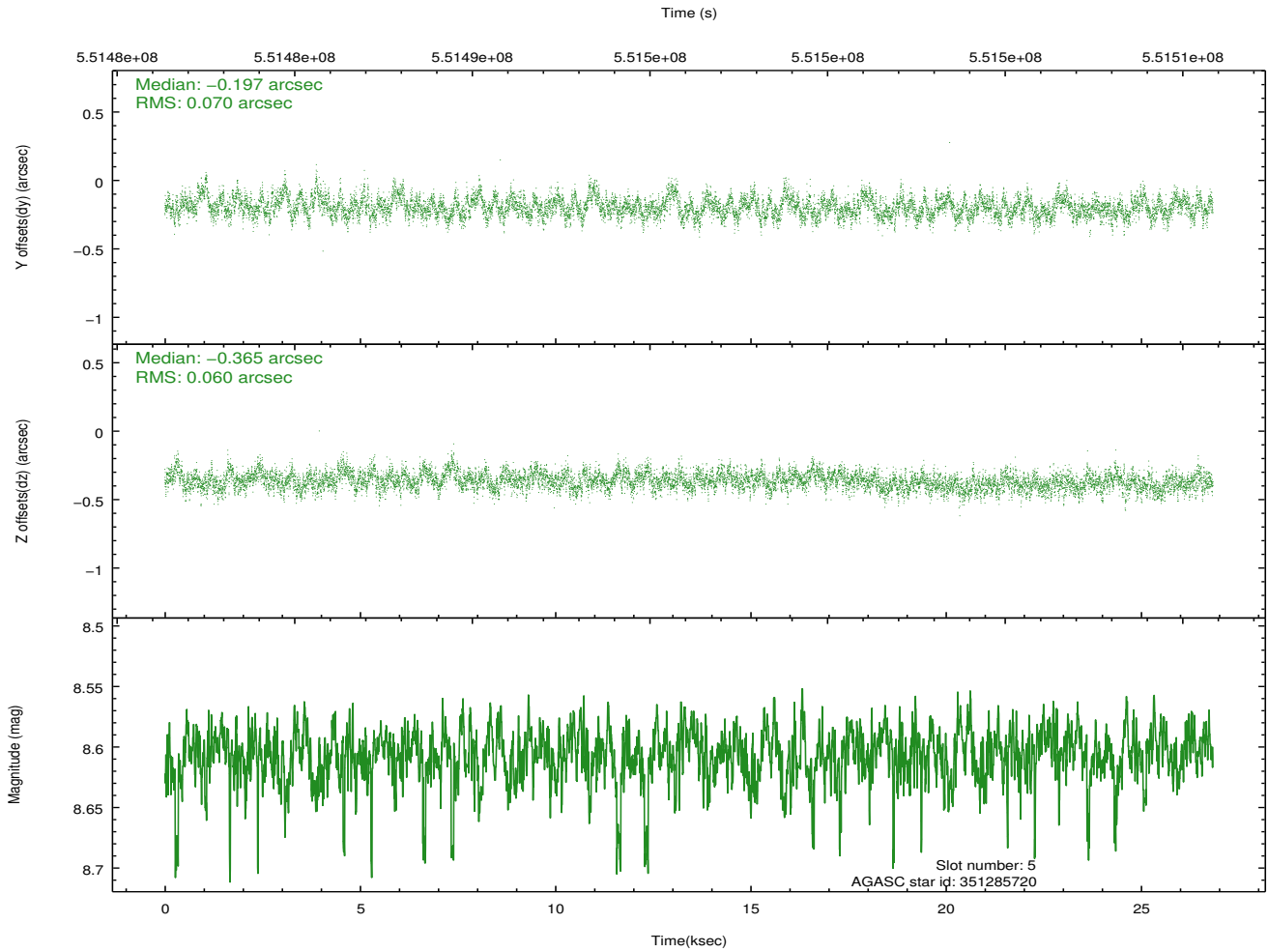
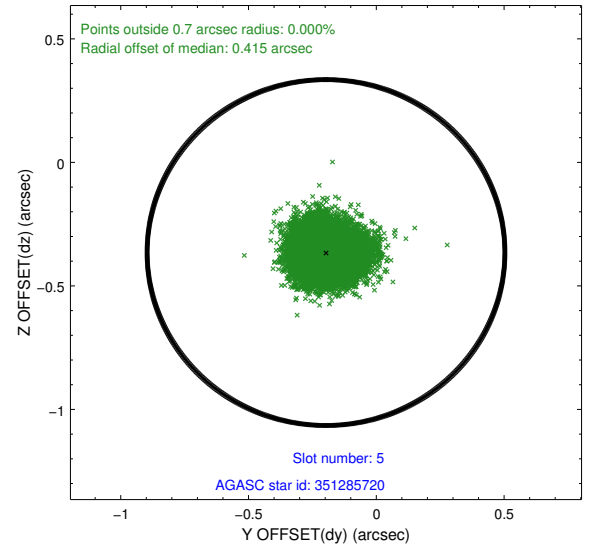
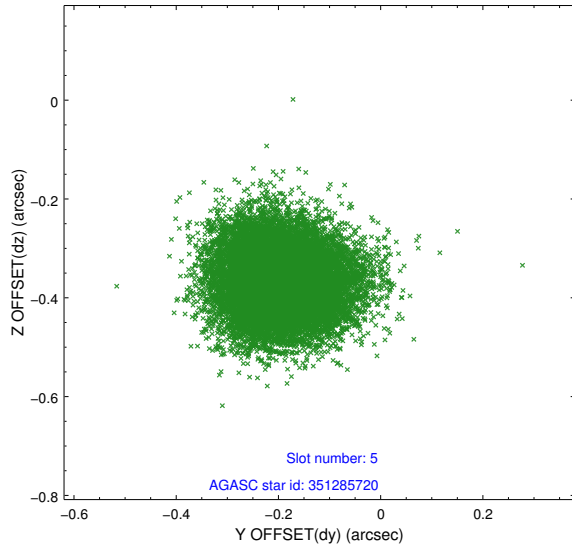


## 2.4.2 Slot 4

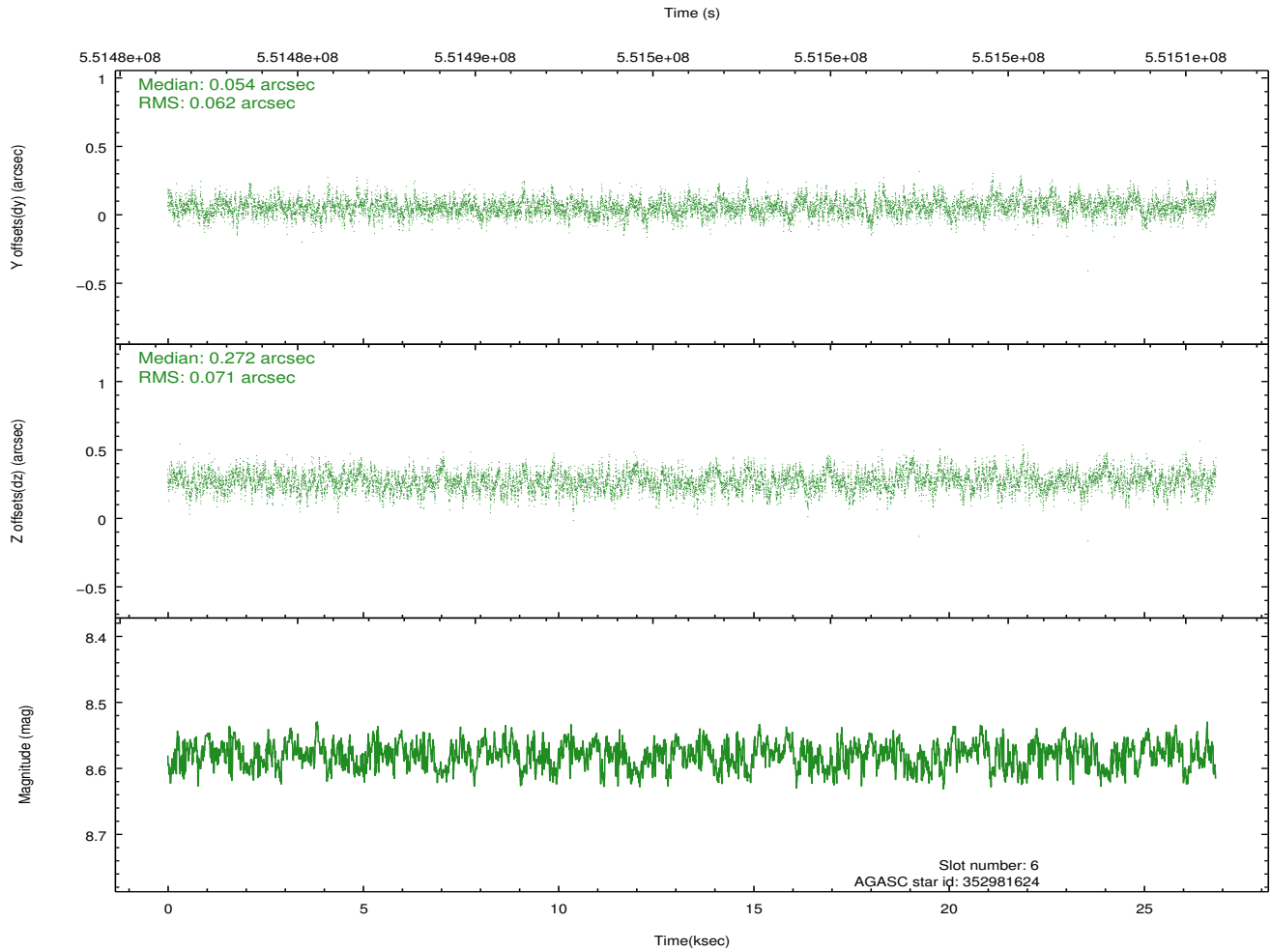
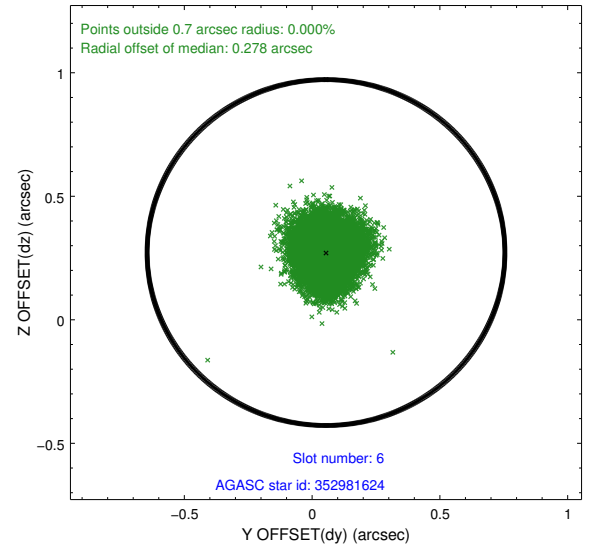
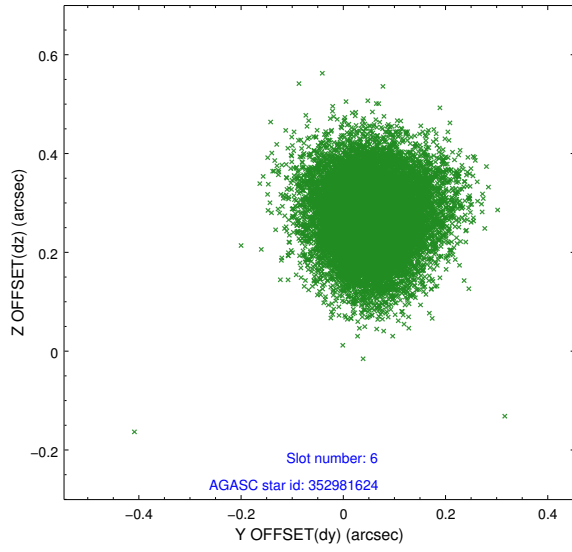




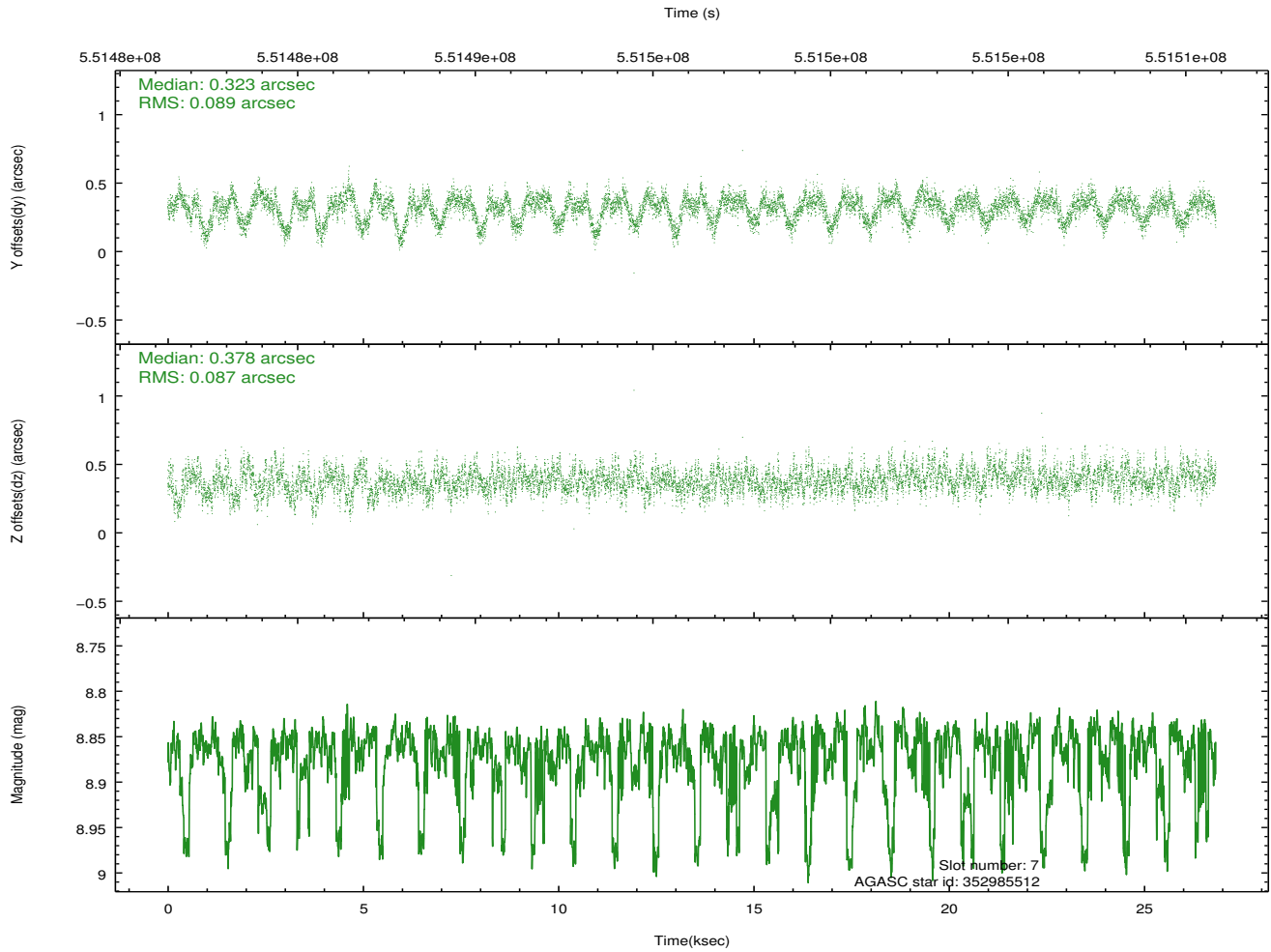
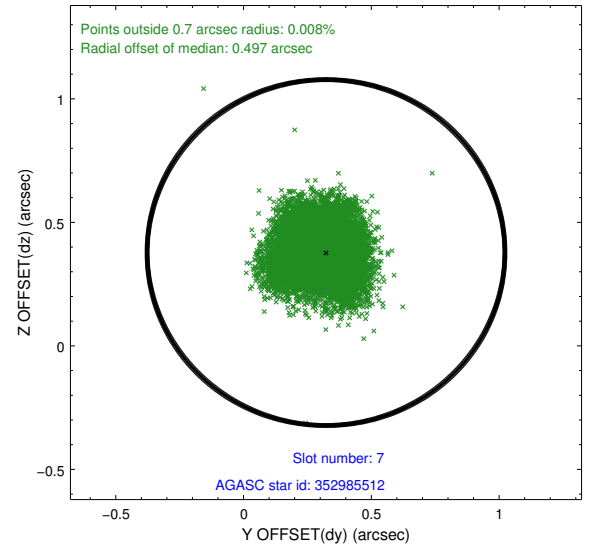
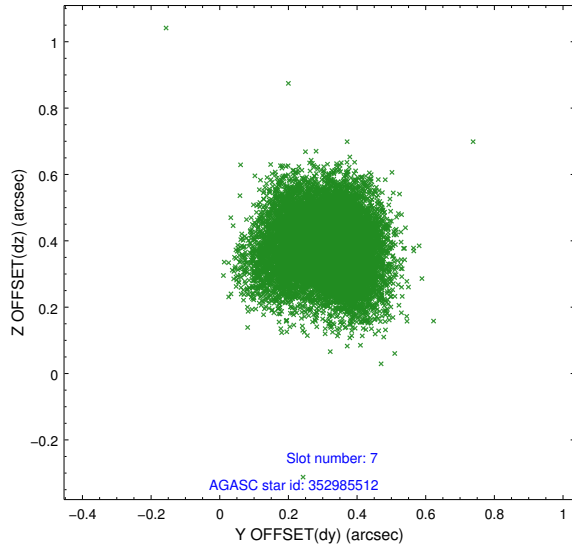
### 2.4.3 Slot 5



## 2.4.4 Slot 6

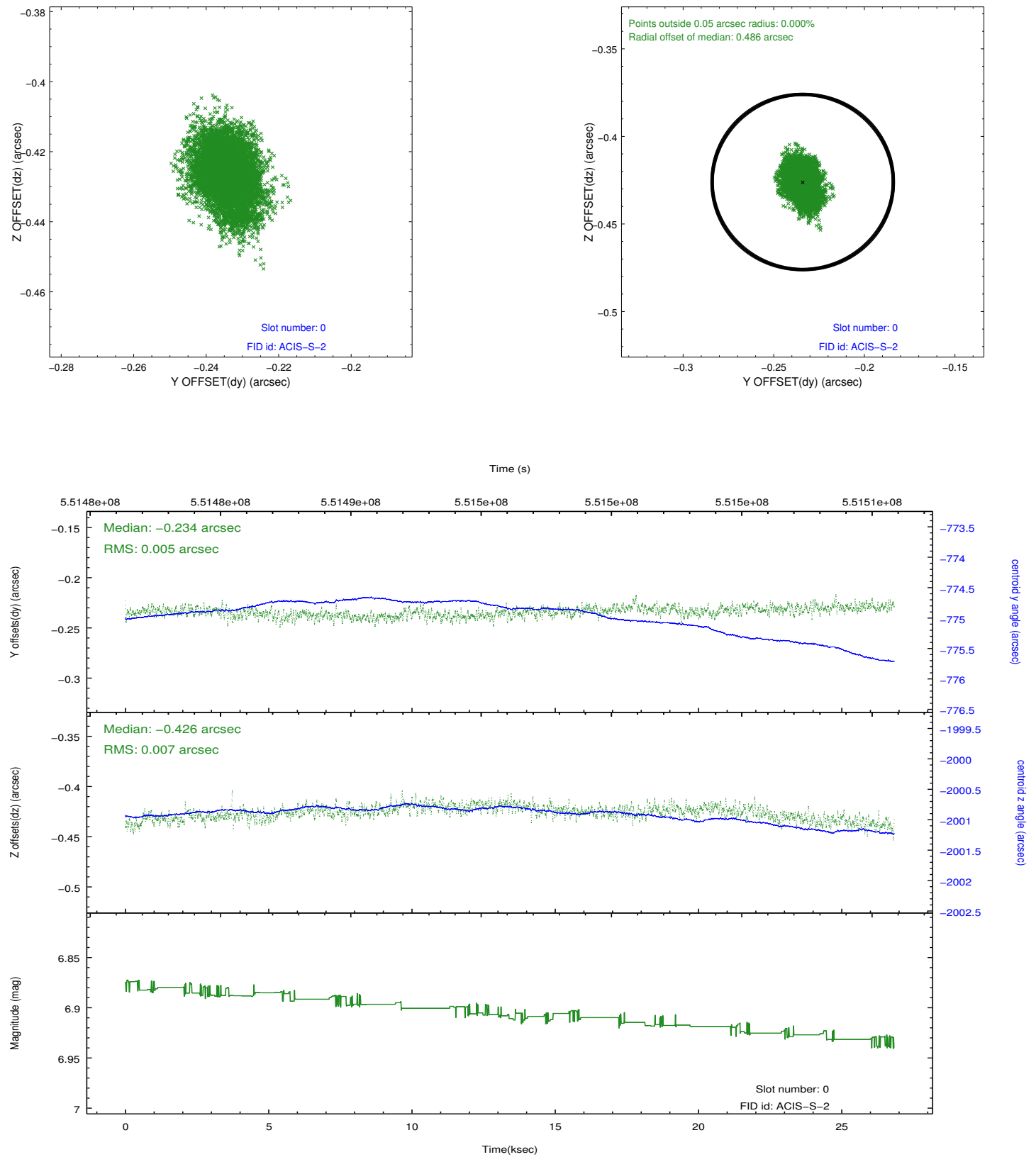


## 2.4.5 Slot 7

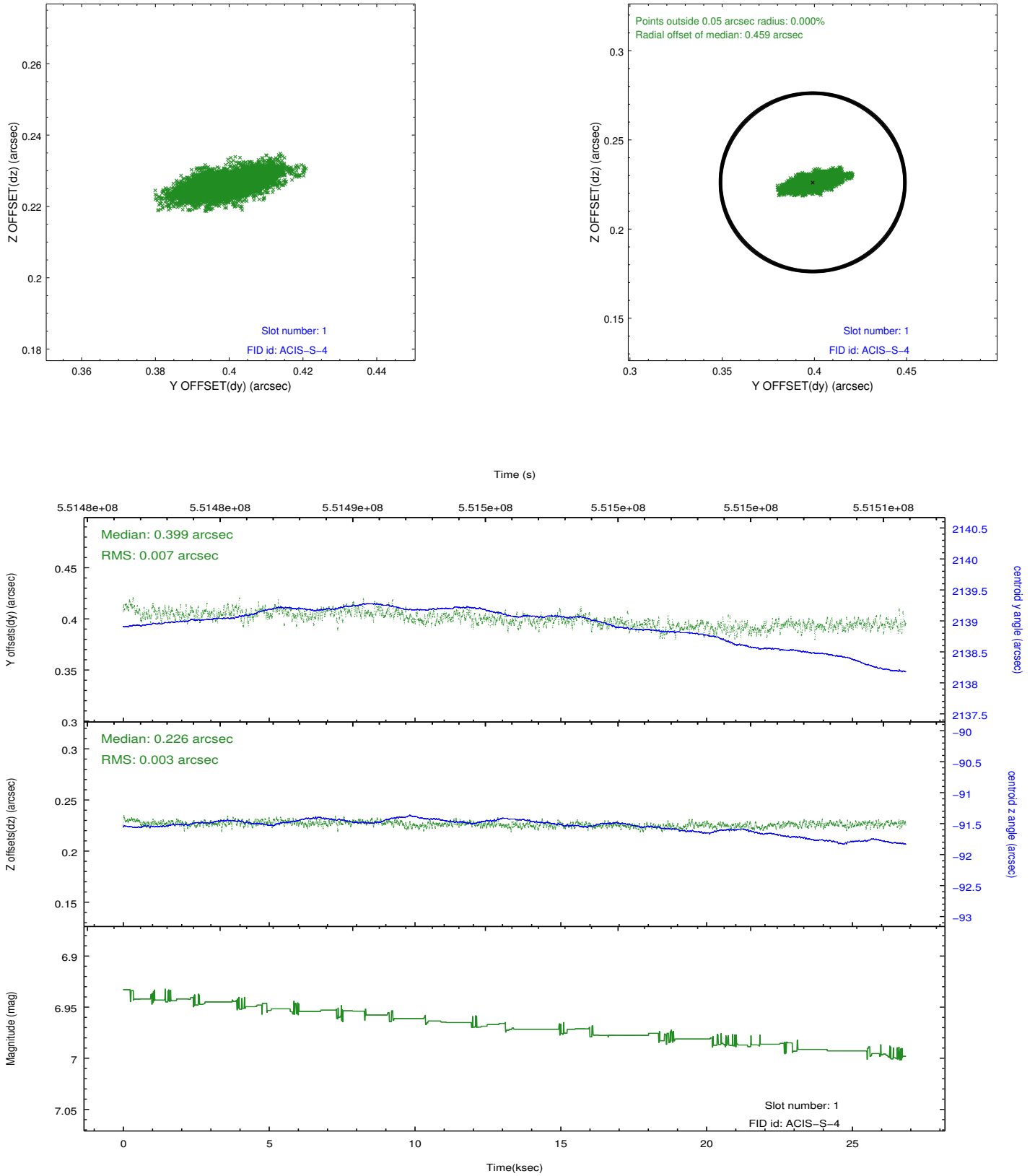


## 2.5 FID Slots

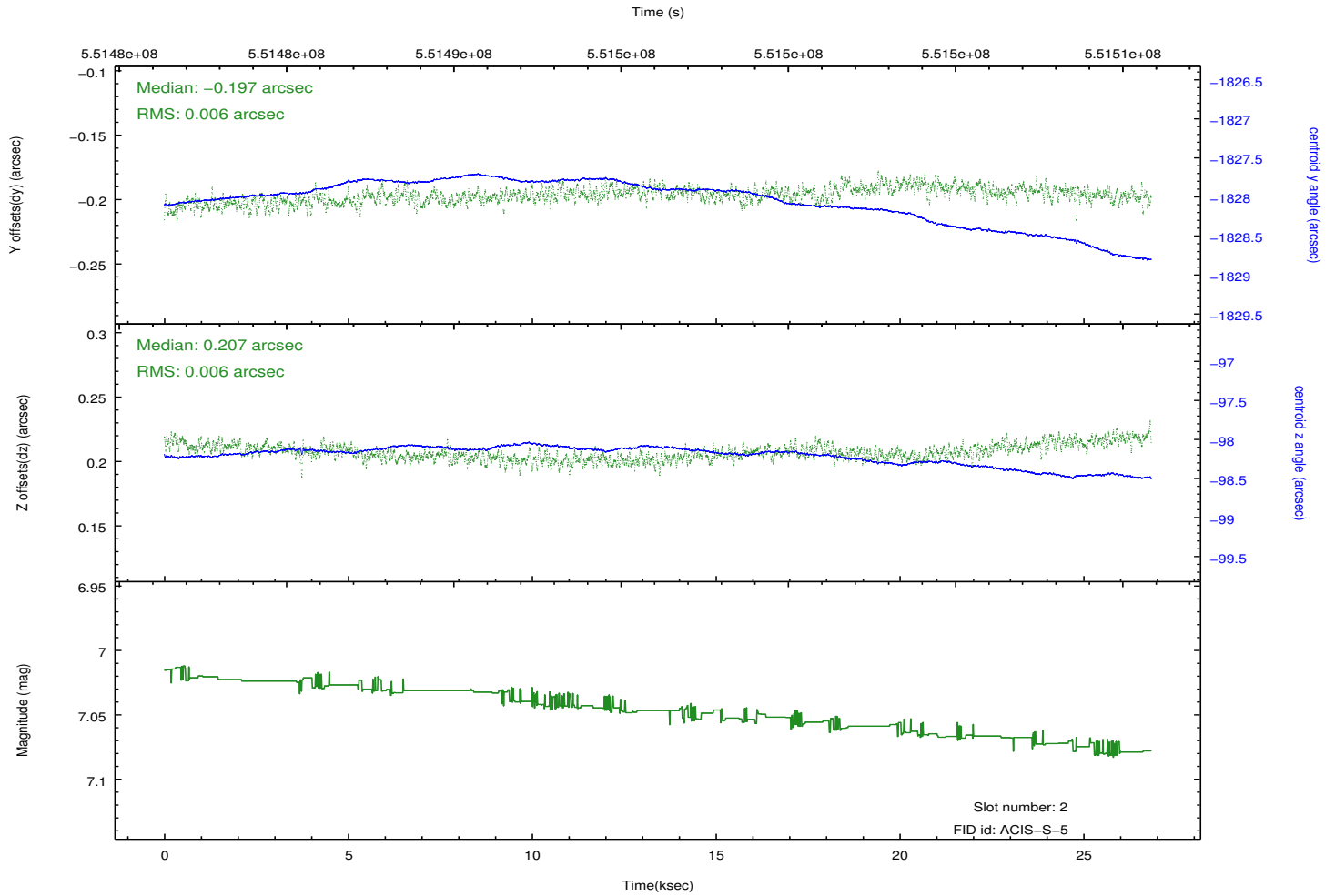
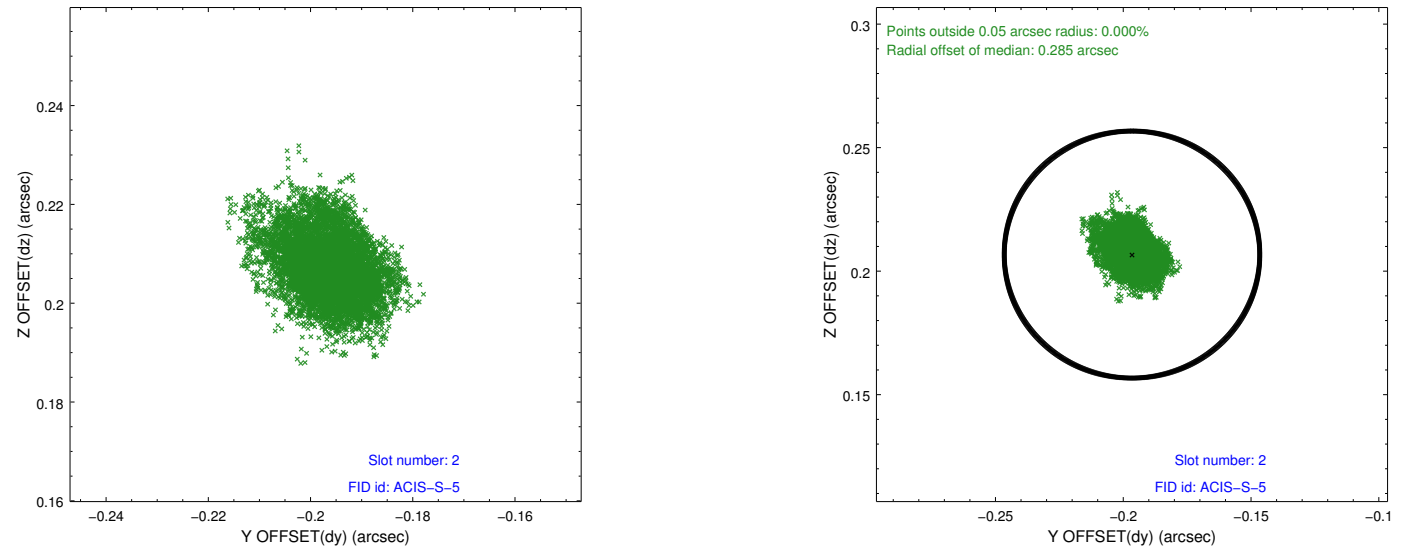
### 2.5.1 Slot 0



## 2.5.2 Slot 1

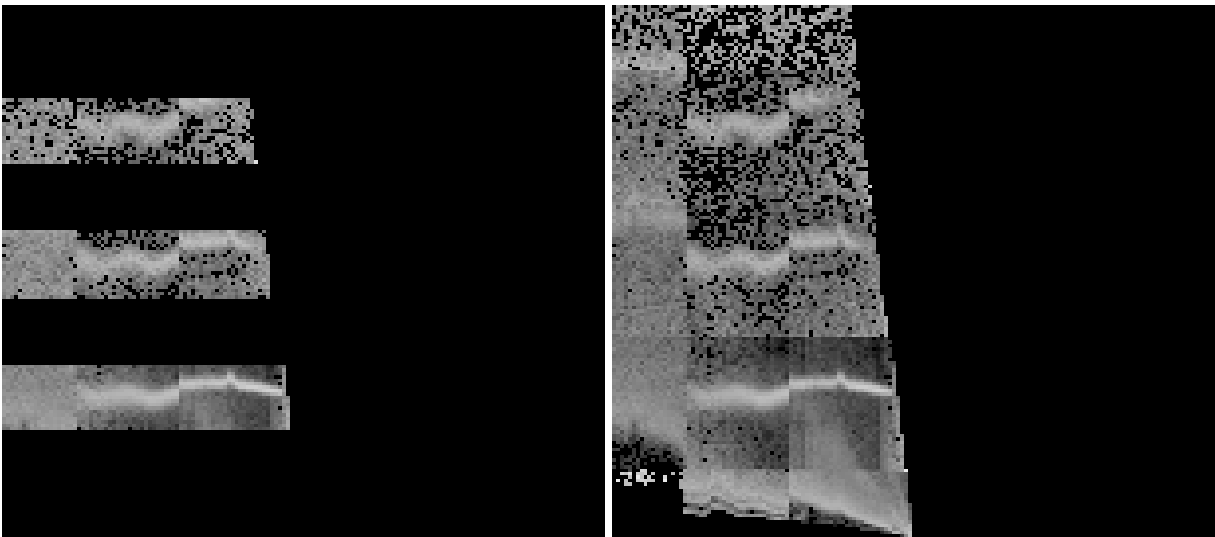


### 2.5.3 Slot 2



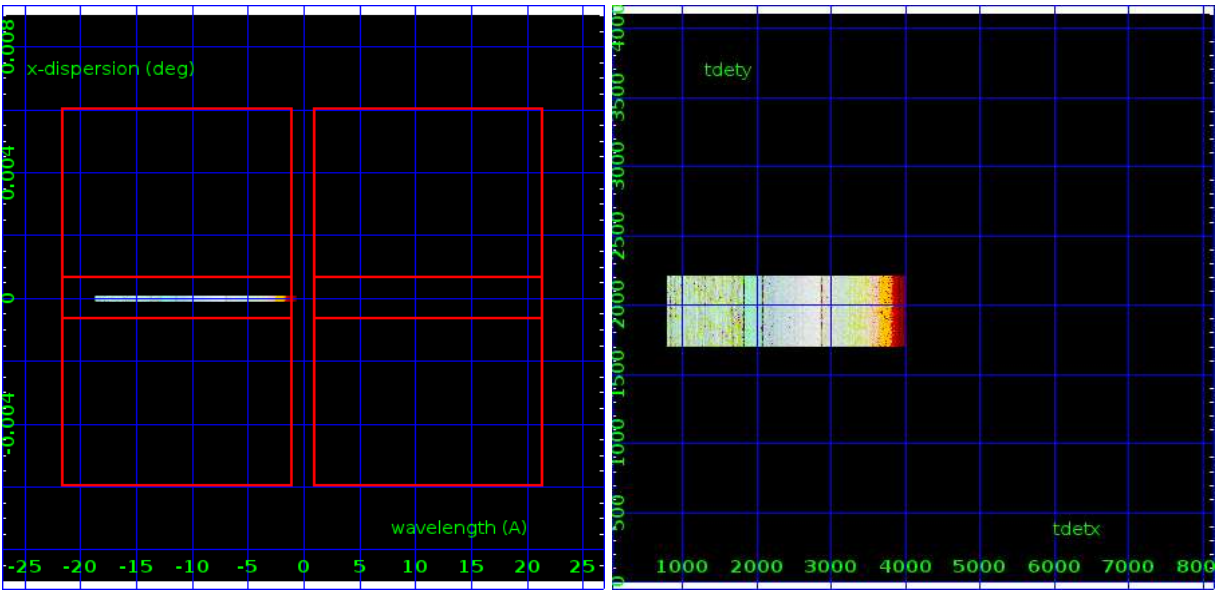
# 3 Gratings

## 3.1 HEG Arm



HEG Order Sort 123

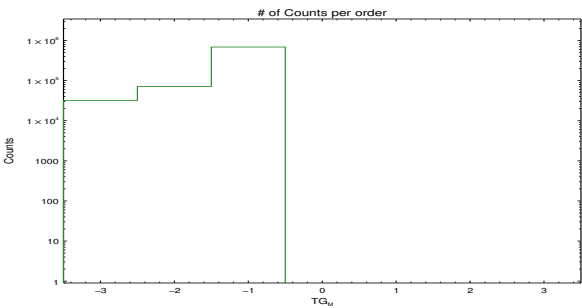
HEG Order Sort ALL

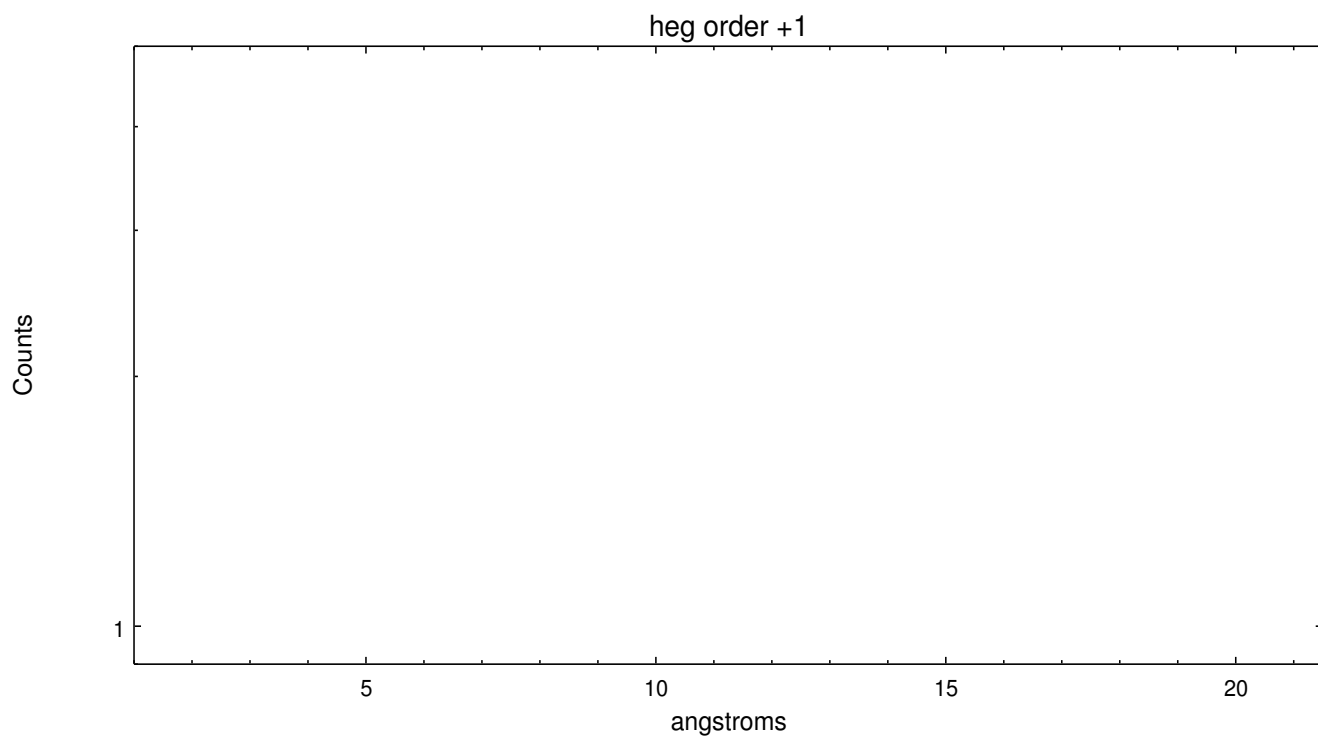
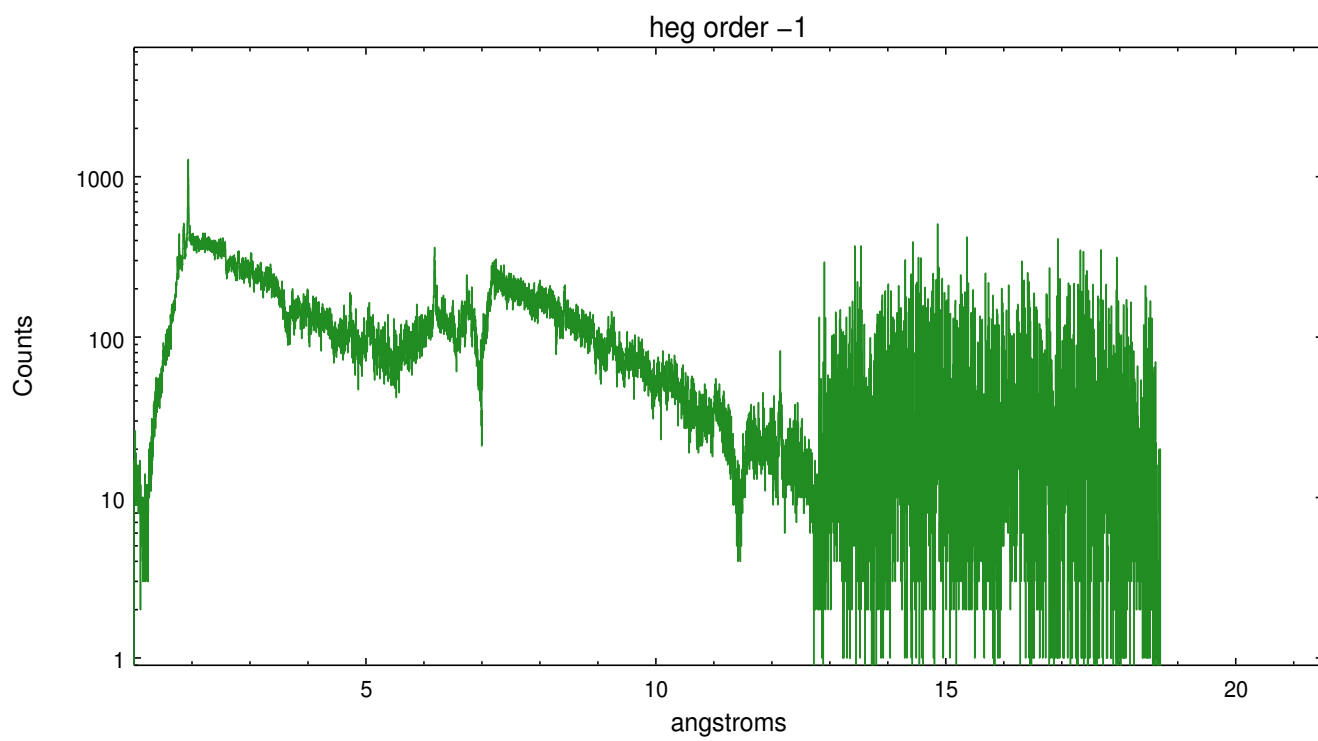


Spot Image HEG

Full Detector HEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	32139	71361	687355	0	0	0	0



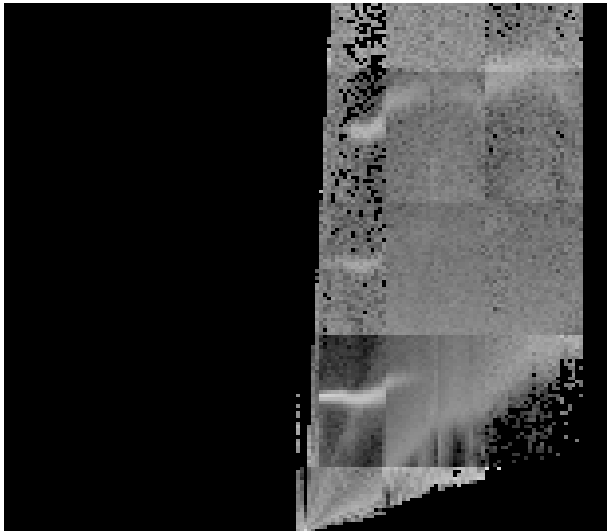




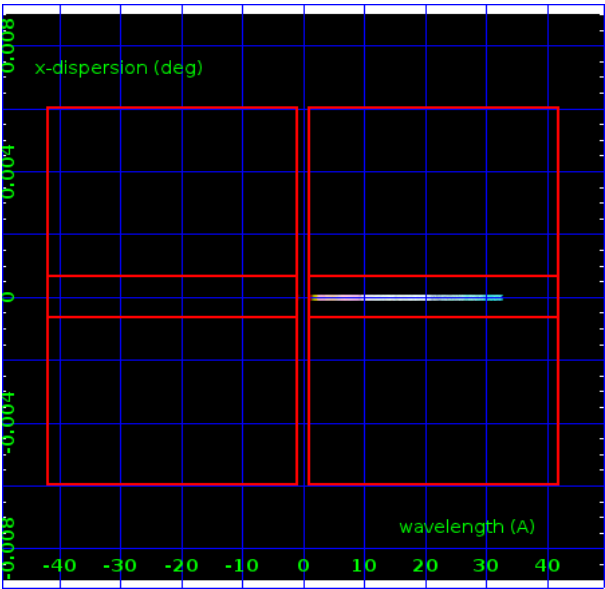
3.2 MEG Arm



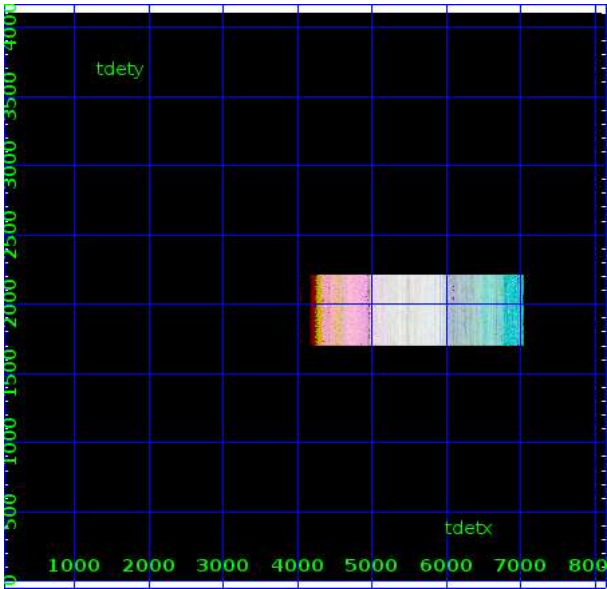
MEG Order Sort 123



MEG Order Sort ALL

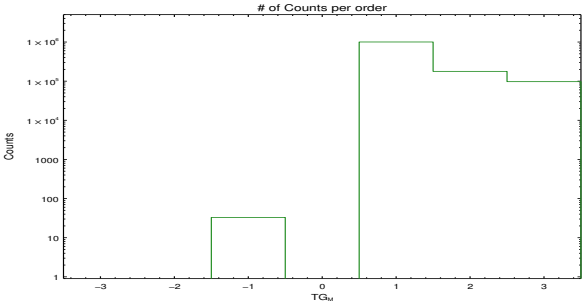


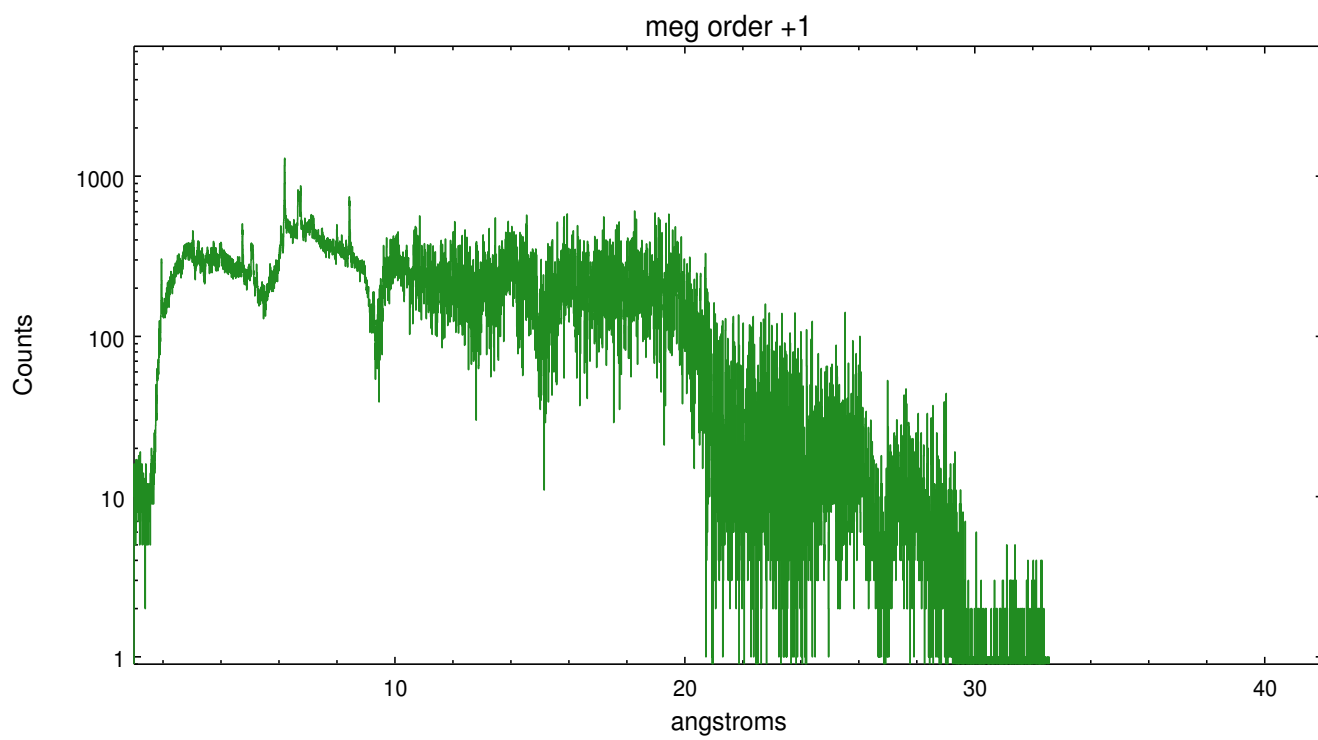
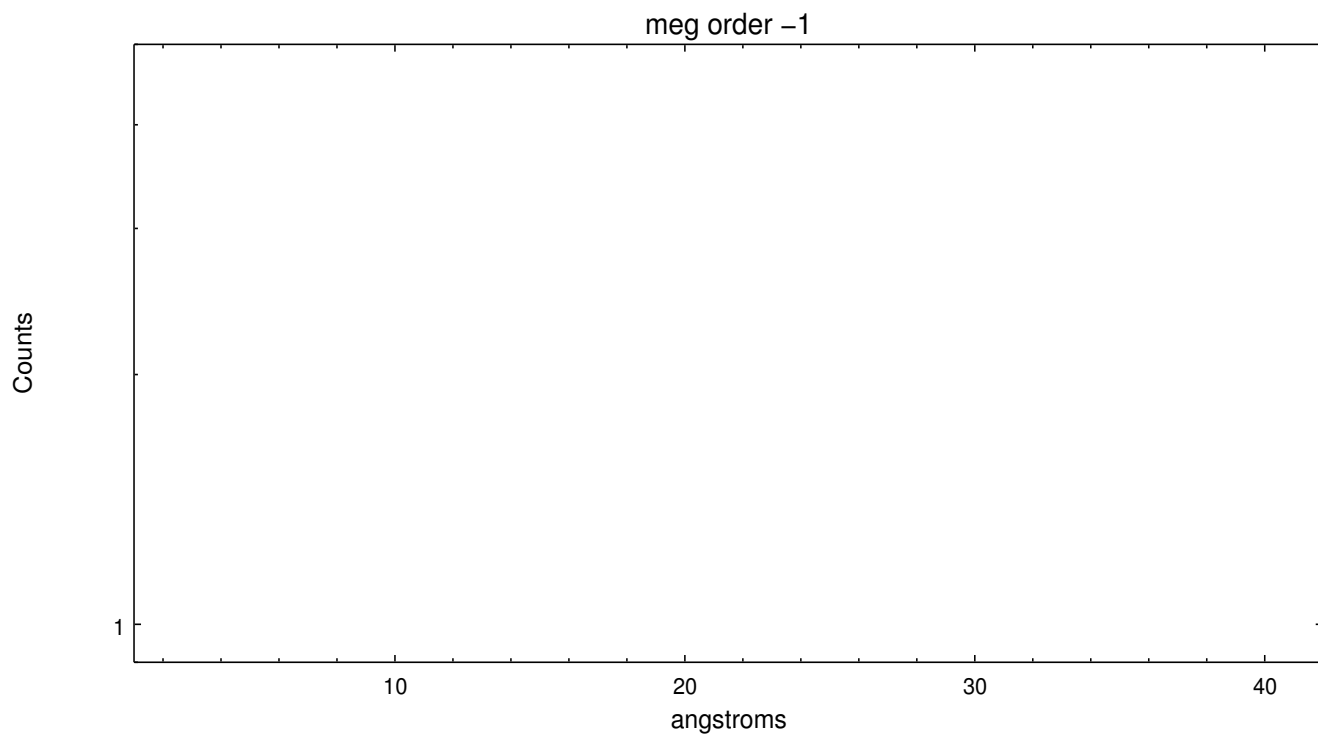
Spot Image MEG



Full Detector MEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	0	0	33	0	1003418	177930	97273





# A Summary

## A.1 Status

V&V Scientist	David Huenemoerder
V&V Date (YYYY-MM-DD)	2015.08.05
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	24.712915

## A.2 Comments

WARNING: this is a difficult observation to analyze and requires special methods to get a good extraction and calibration!

The aim intentionally placed the mean source position (zeroth order) off the detector. Hence the sky x,y event coordinates are mapped to the center of the detectors, and do not intersect the source. For proper extraction and generation of responses, we have used the celestial position of the source, and a very wide mask which encloses the events. Downstream generation of responses should also use that position.

Only HEG negative and MEG positive orders are present.

The CC-mode gain corrections are not accurate when the source position on the detector is not known; hence, the order-sorting with the default tables can clip the data; reprocessing with 'flat' order-sorting tables was used (in 'tg\_resolve\_events'). This accepts more background, however; background was high during this observation.

Flux calibration in parts of the spectrum which dither on/off the array will require a custom mask1 file, particularly the MEG+1 order below about 4A, since the ACIS frame-store mask over the first ~10 CCD rows is transparent, but uncalibrated. (the msk1 file is applied by ciao program mkgrmf).

Comments for Obi 0

Fid in slot 0 radial offset > 0.400000 arcsec

Fid in slot 1 radial offset > 0.400000 arcsec