

# V&V Reference Report

## L2 ASCDS Version : 10.6

Observation 20107 - L2 Version 2  
Chandra X-Ray Center

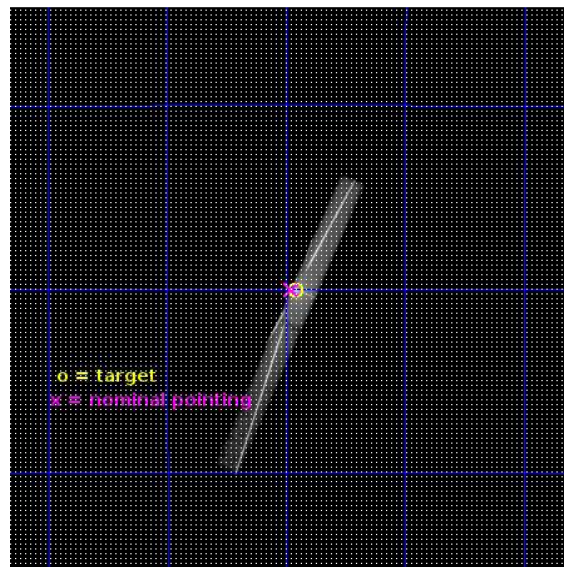
L2 Processing Date : Jul 12 2017

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# 1 Front

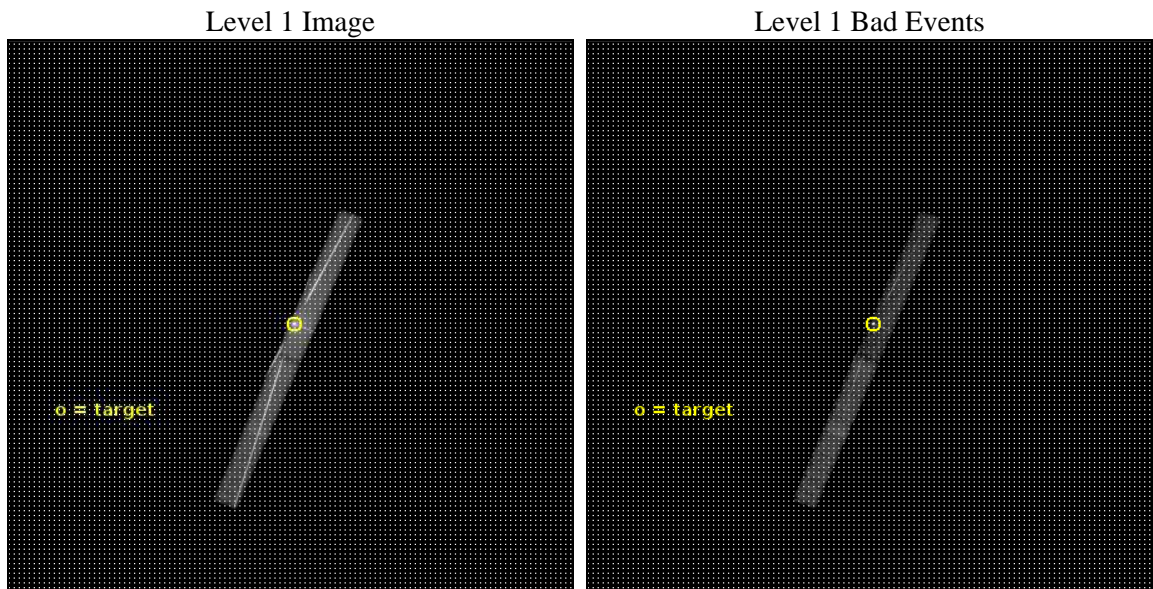
seq_num	901350	Sequence number
obs_id	20107	Observation id
title	THE ATOMIC TO DUST ABUNDANCE RATIO OF SILICON TOWARDS THE GALACTIC BULGE	Proposal title
observer	Norbert Schulz	Principal investigator
object	GX 354+0	Source name
dtcycle	0	&#160
cycle	P	events from which exps? Prim/Second/Both
ra_targ	262.990417	Observer's specified target RA [deg]
dec_targ	-33.834028	Observer's specified target Dec [deg]
ra_nom	262.99445923136	Nominal RA [deg]
dec_nom	-33.834054932432	Nominal Dec [deg]
roll_nom	292.65885665153	Nominal Roll [deg]
revision	2	Processing version of data
ontime	35093.0	Sum of GTIs [s]
livetime	32431.05870176	Livetime [s]
ontime6	35093.0	Sum of GTIs [s]
ontime7	35093.0	Sum of GTIs [s]
l2events	407790	Number of level 2 events



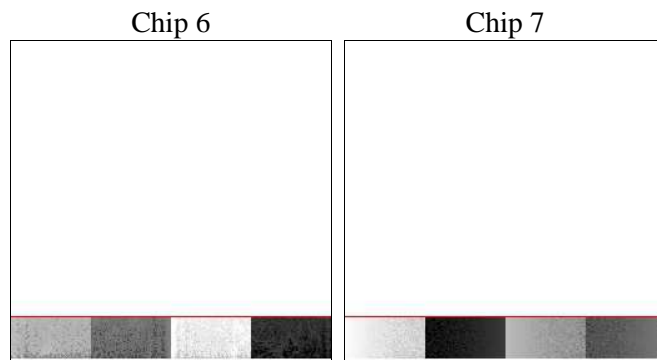
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

obi_num	0	Obi number	sched_exp_time	35000.000000	[s] Scheduled observation exposure time
ascdsver	10.6	Processing system revision	ontime	35093.0	Sum of GTIs [s]
caldsver	4.7.5	&#160	ontime6	35093.0	Sum of GTIs [s]
date	2017-07-10T15:55:14	Date and time of file creation	ontime7	35093.0	Sum of GTIs [s]
revision	1	Processing version of data	l1events	498766	Number of level 1 events
			tgmethod	MANUAL	Method used to create src1a file
			zo_pos	(4120.62, 4097.50)	src1a sky pixel position
			zo_pos_tgd	(4121.97, 4097.64)	src1a sky pixel position via tgdetect

### 2.1.4 Events

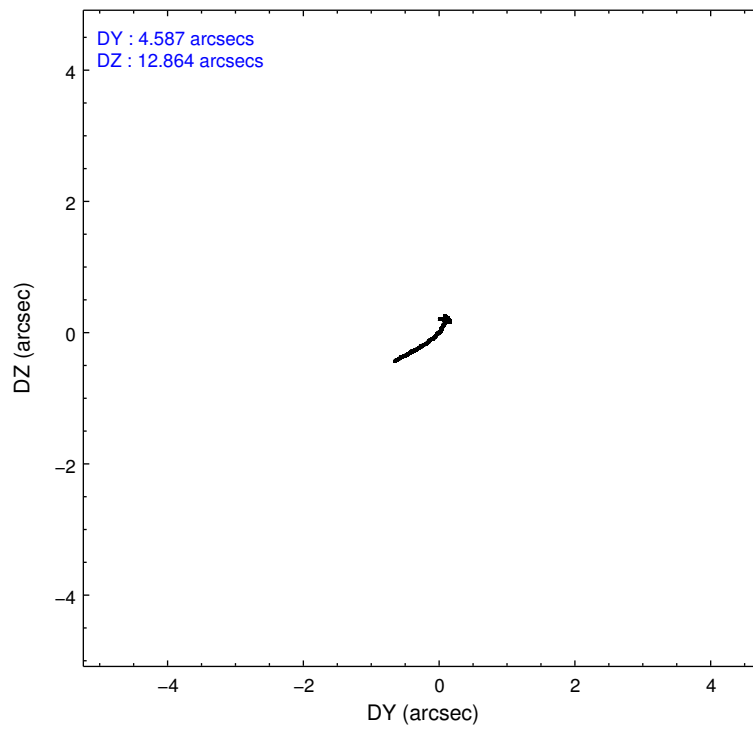
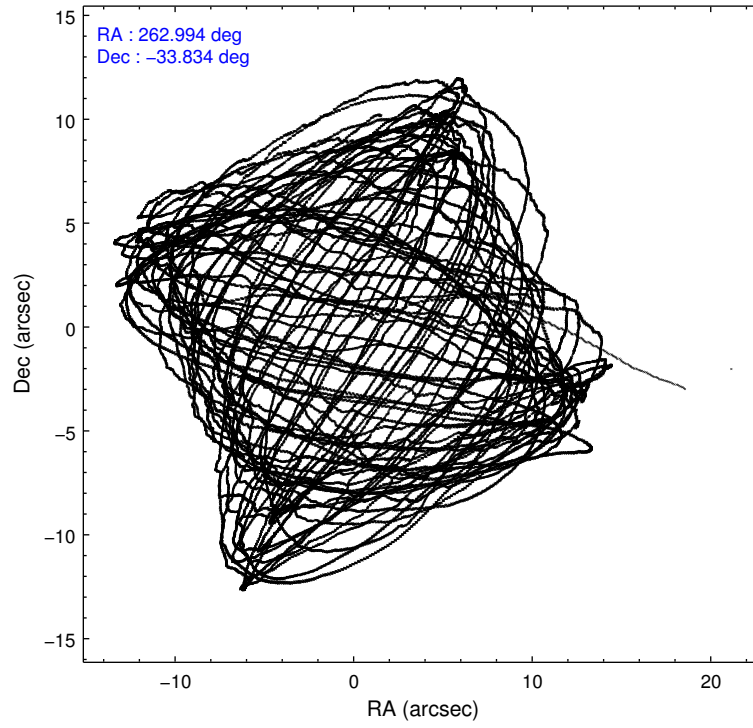
	ccd 6	ccd 7
level 1 events	187240	311526
rejected events	41946	38470
rejected %	22%	12%

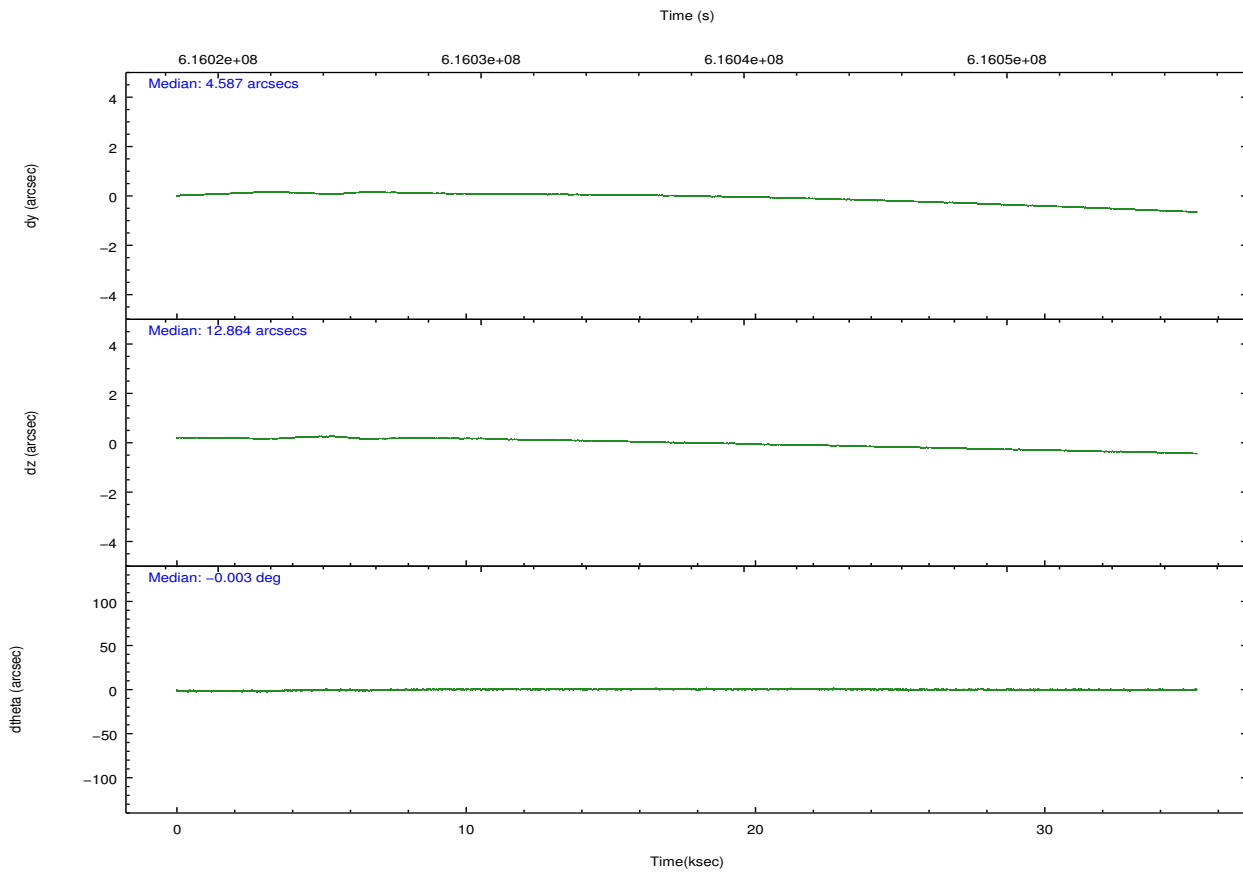
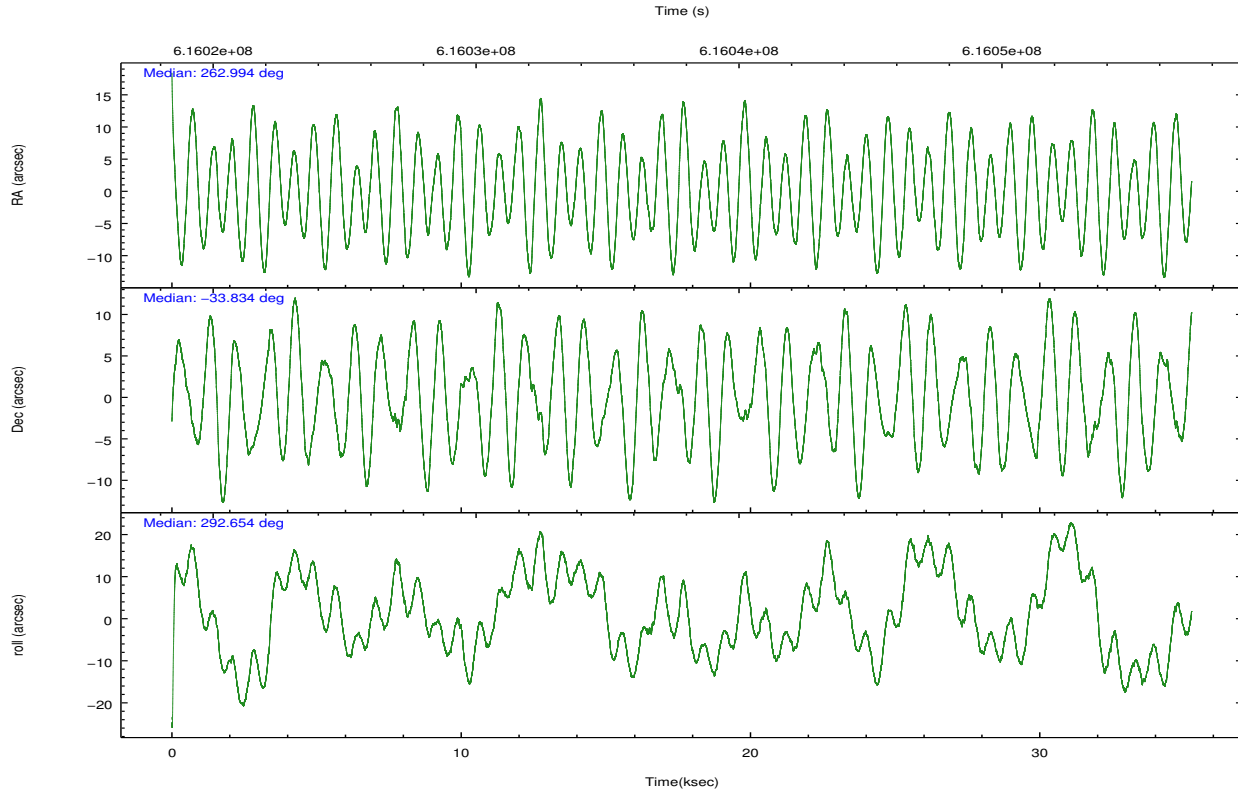
	ccd 6	ccd 7
grade 0 events	92078	46229
	49%	14%
grade 1 events	322	1207
	0%	0%
grade 2 events	21651	63043
	11%	20%
grade 3 events	8264	28634
	4%	9%
grade 4 events	8330	28368
	4%	9%
grade 5 events	1909	10128
	1%	3%
grade 6 events	14976	106788
	7%	34%
grade 7 events	39710	27129
	21%	8%

## 2.2 Compared Parameters

Parameter	Planned	Actual	Parameter	Planned	Actual
Instrument	ACIS	ACIS	Obspar format version number	7	7
Detector	ACIS-67	ACIS-67	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	262.967938	262.9944592313642	Subarray requested	CUSTOM	CUSTOM
[deg] Pointing Dec	-33.817697	-33.83405493243249	Subarray start row	10	10
[deg] Pointing Roll	292.487491	292.6588566515333	Subarray row count	134	134
[mm] SIM focus pos	-0.684267	-0.6828225247311905	Alternating exposures requested	N	N
[mm] SIM defocus	0	0.001444936568705701	[s] Primary exposure time	0.000000	0.5
[mm] SIM translation stage pos	-178.032523	-178.0311235575589			
[mm] SIM translation stage offset	-12.1	-12.1013990254489			
[s] Observation start time (MET)	616020430.184000	616019180.3034			
Observation start date	2017-07-09T20:46:01	2017-07-09T20:26:20			
[s] Observation end time (MET)	616055430.184000	616055850.7055399			
Observation end date	2017-07-10T06:29:21	2017-07-10T06:37:30			
Read mode	TIMED	TIMED			

## 2.3 Aspect





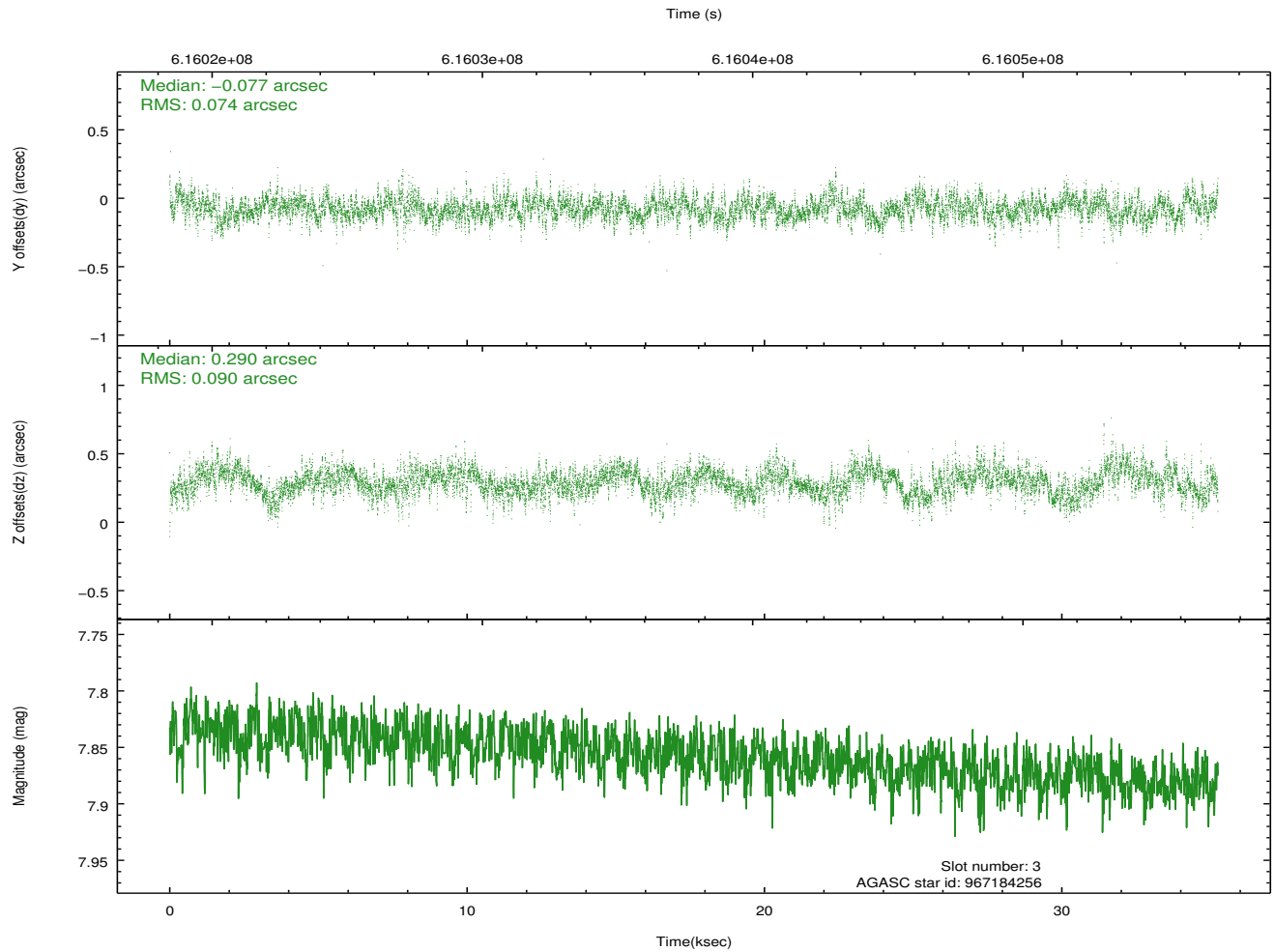
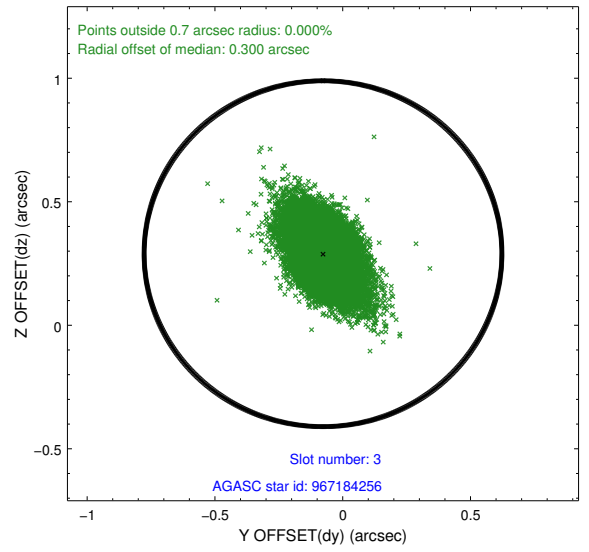
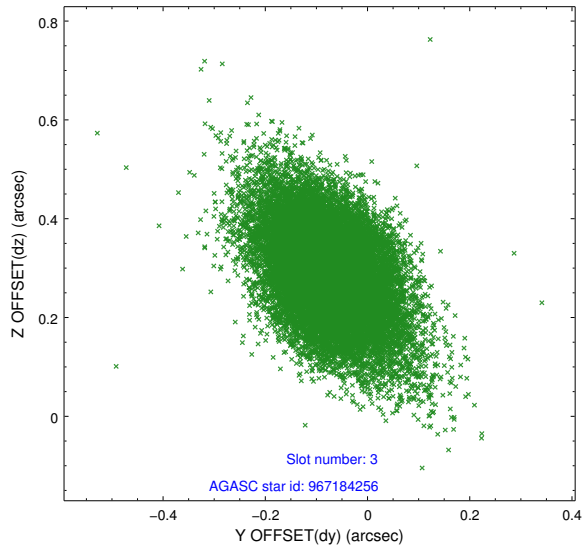
### Slot Statistics

slot	status	used	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID		ACIS-S-2	6.95	8597	-0.110	-0.439	0.010	0.016	0.000000	0.000000	-756.40	-1983.67
1	FID		ACIS-S-4	7.03	8598	0.317	0.170	0.013	0.029	0.000000	0.000000	2157.30	-74.70
2	FID		ACIS-S-5	7.10	8599	-0.238	0.276	0.013	0.026	0.000000	0.000000	-1809.30	-80.84
3	GUIDE	used	967184256	7.86	17193	-0.077	0.290	0.119	0.208	262.701584	-33.609898	-995.31	-451.86
4	GUIDE	used	967706296	8.27	17192	0.114	0.024	0.151	0.246	262.582774	-34.480498	1770.14	-1969.42
5	GUIDE	used	967185024	8.62	17186	0.332	-0.049	0.142	0.238	262.820462	-33.346243	-1736.70	239.00
6	GUIDE	used	967839200	8.30	17191	0.061	-0.144	0.109	0.200	263.484278	-34.076934	1455.06	1064.19
7	GUIDE	used	967837824	7.15	17192	-0.428	-0.119	0.130	0.239	263.710184	-34.276828	2379.10	1405.12

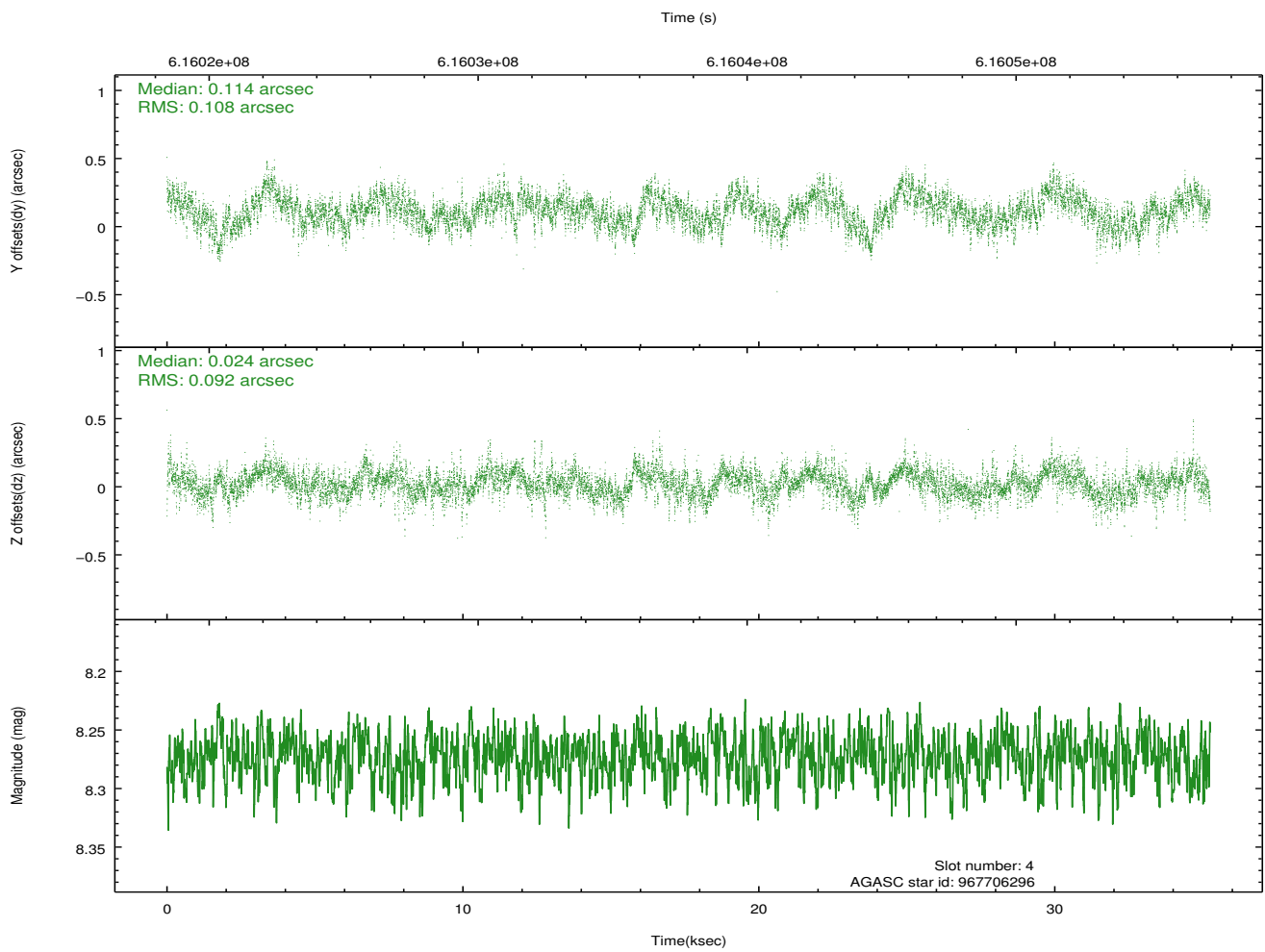
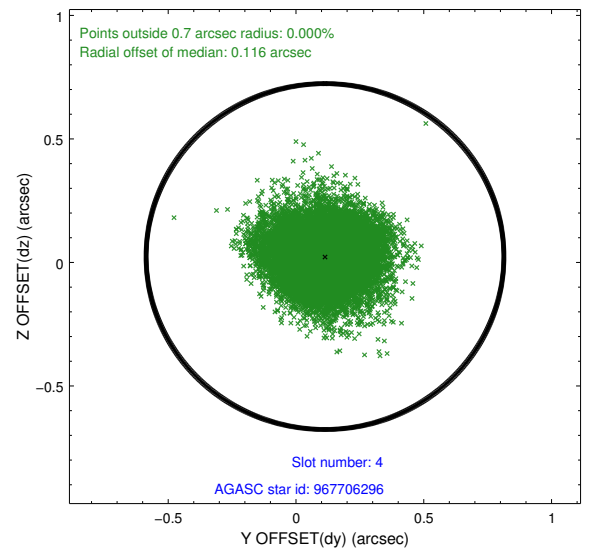
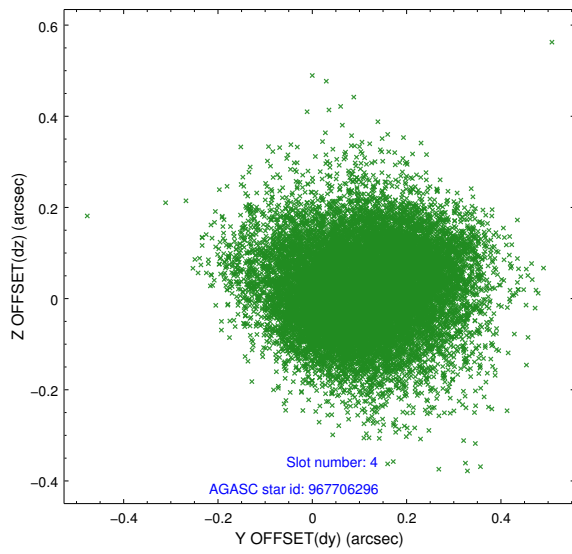
∞

## 2.4 Star Slots

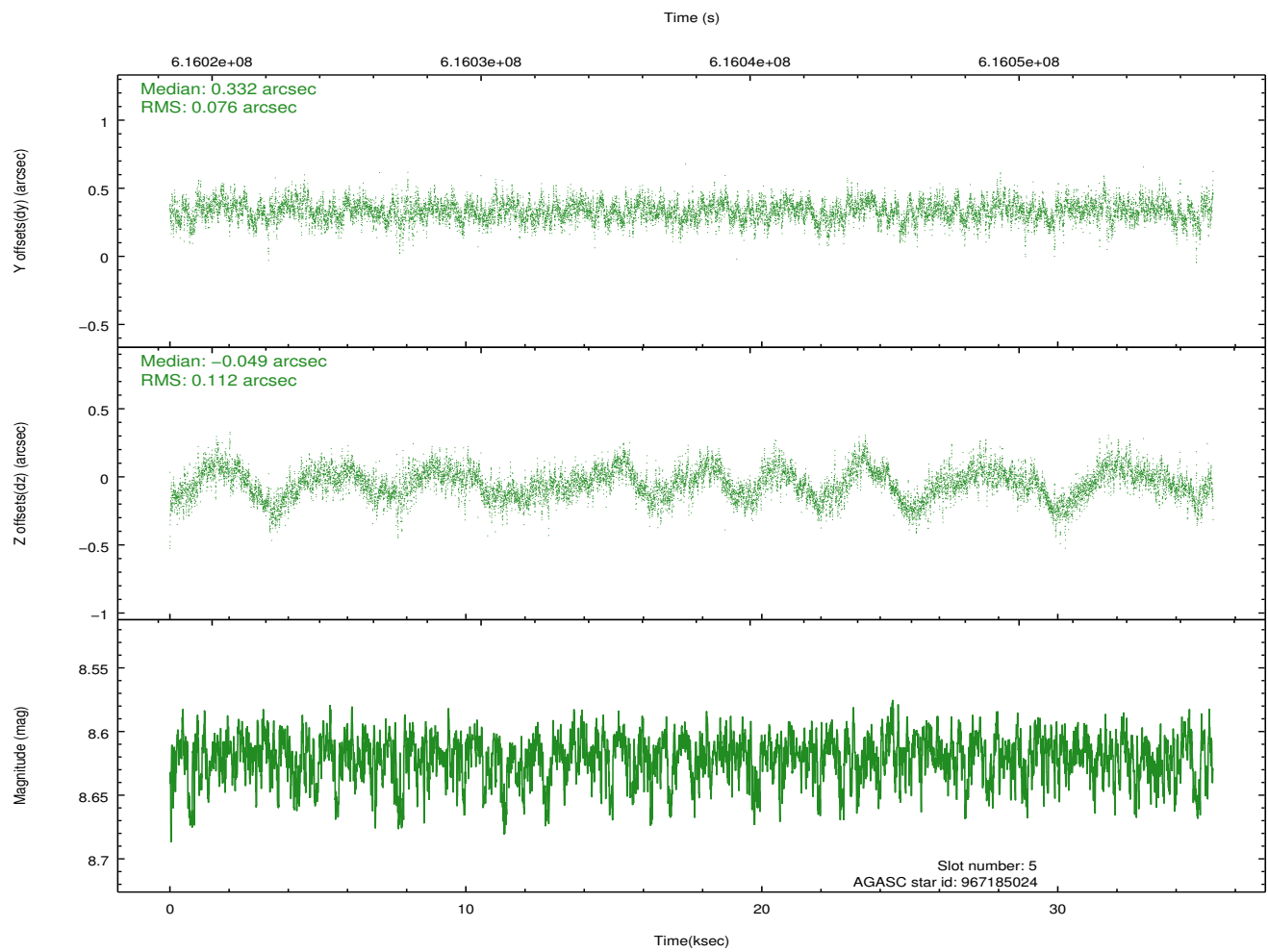
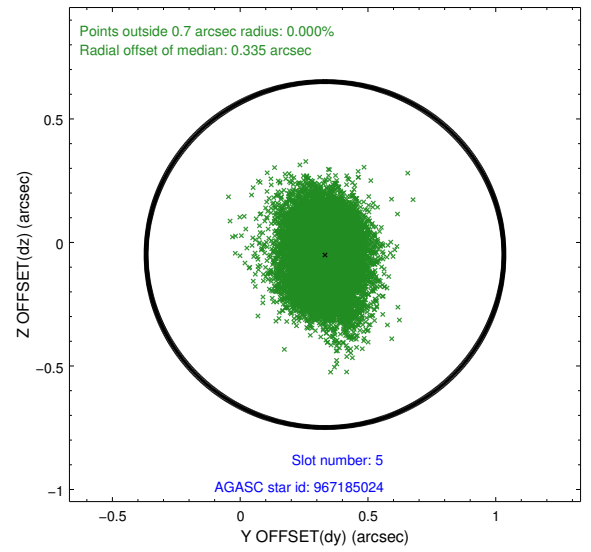
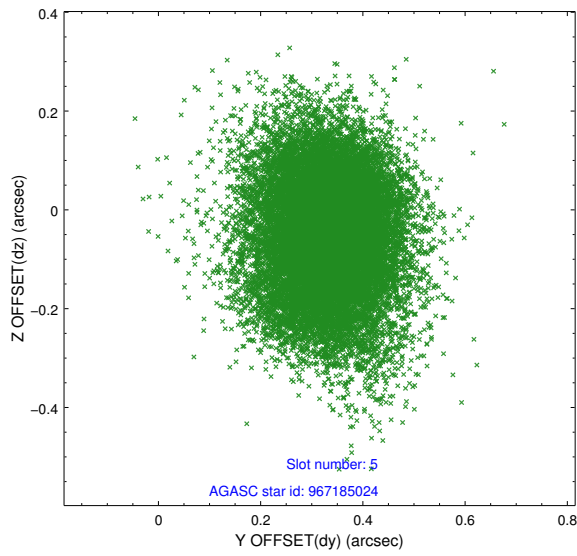
### 2.4.1 Slot 3



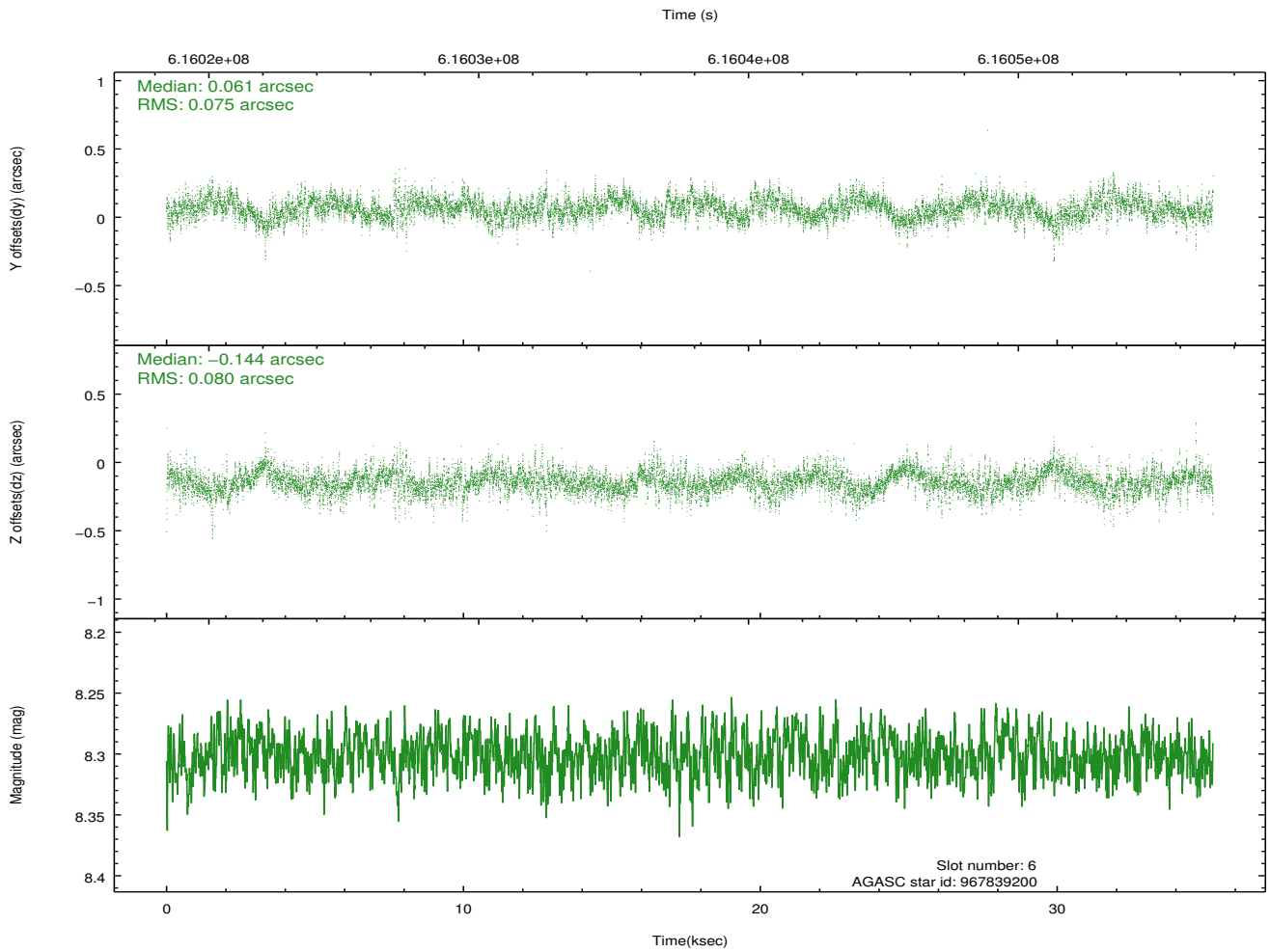
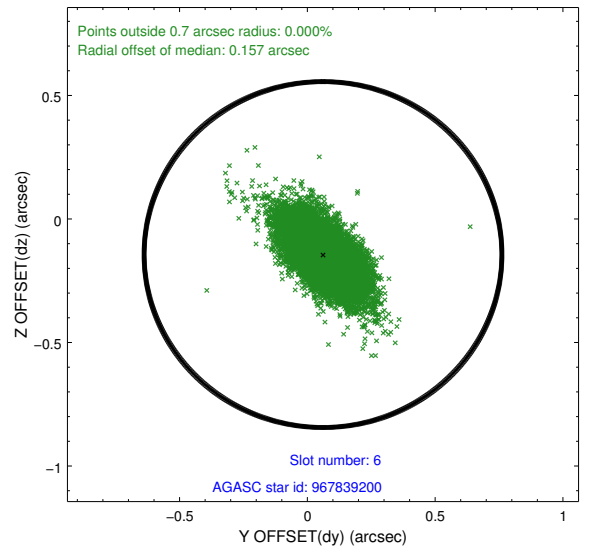
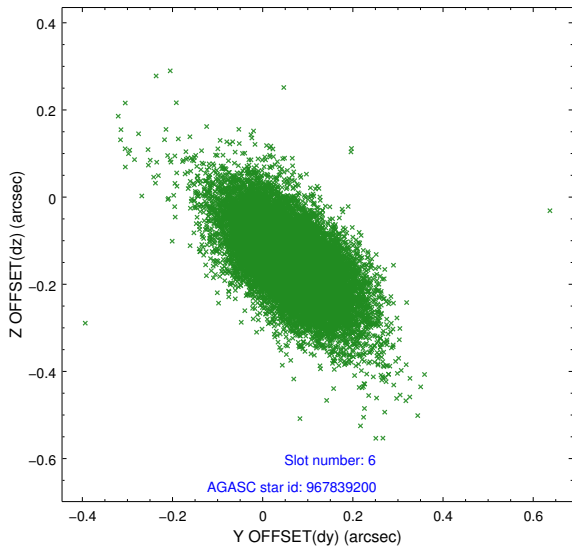
## 2.4.2 Slot 4



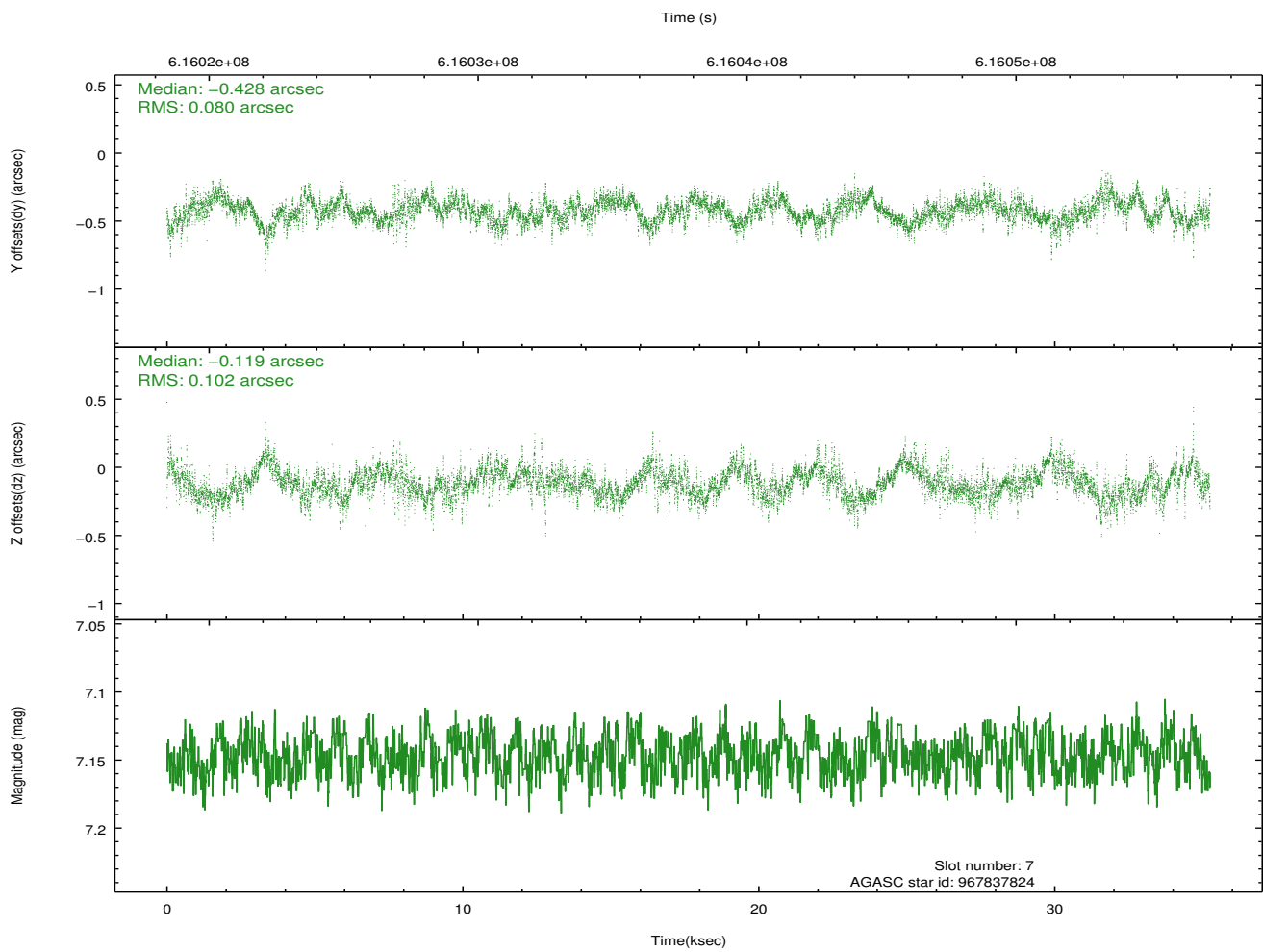
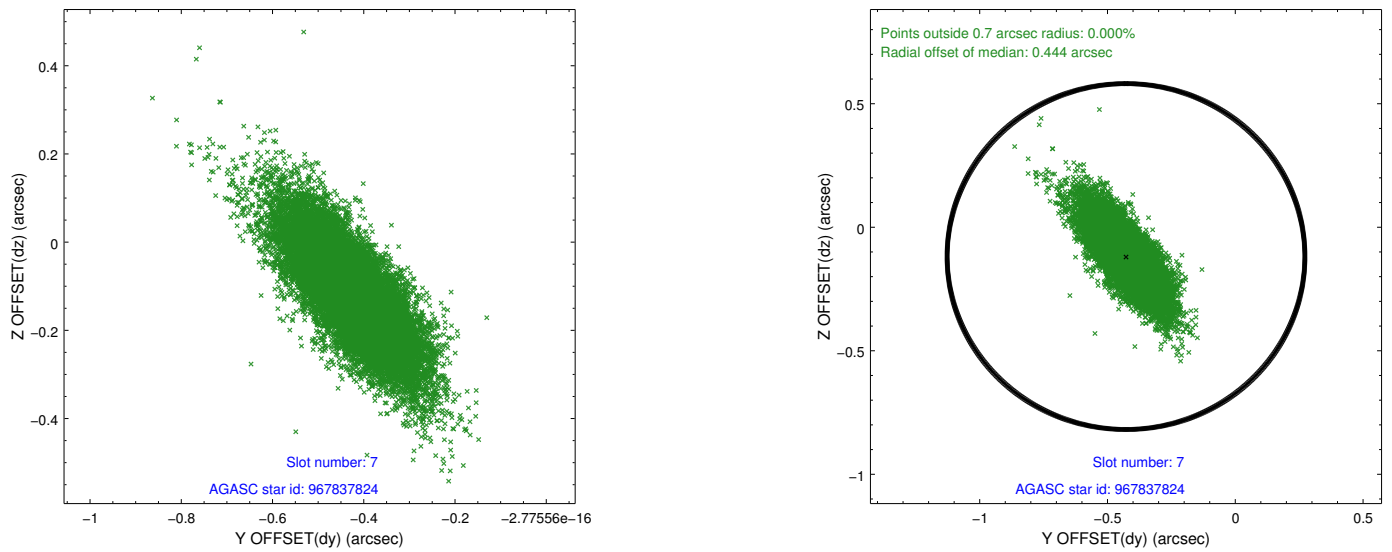
### 2.4.3 Slot 5



### 2.4.4 Slot 6

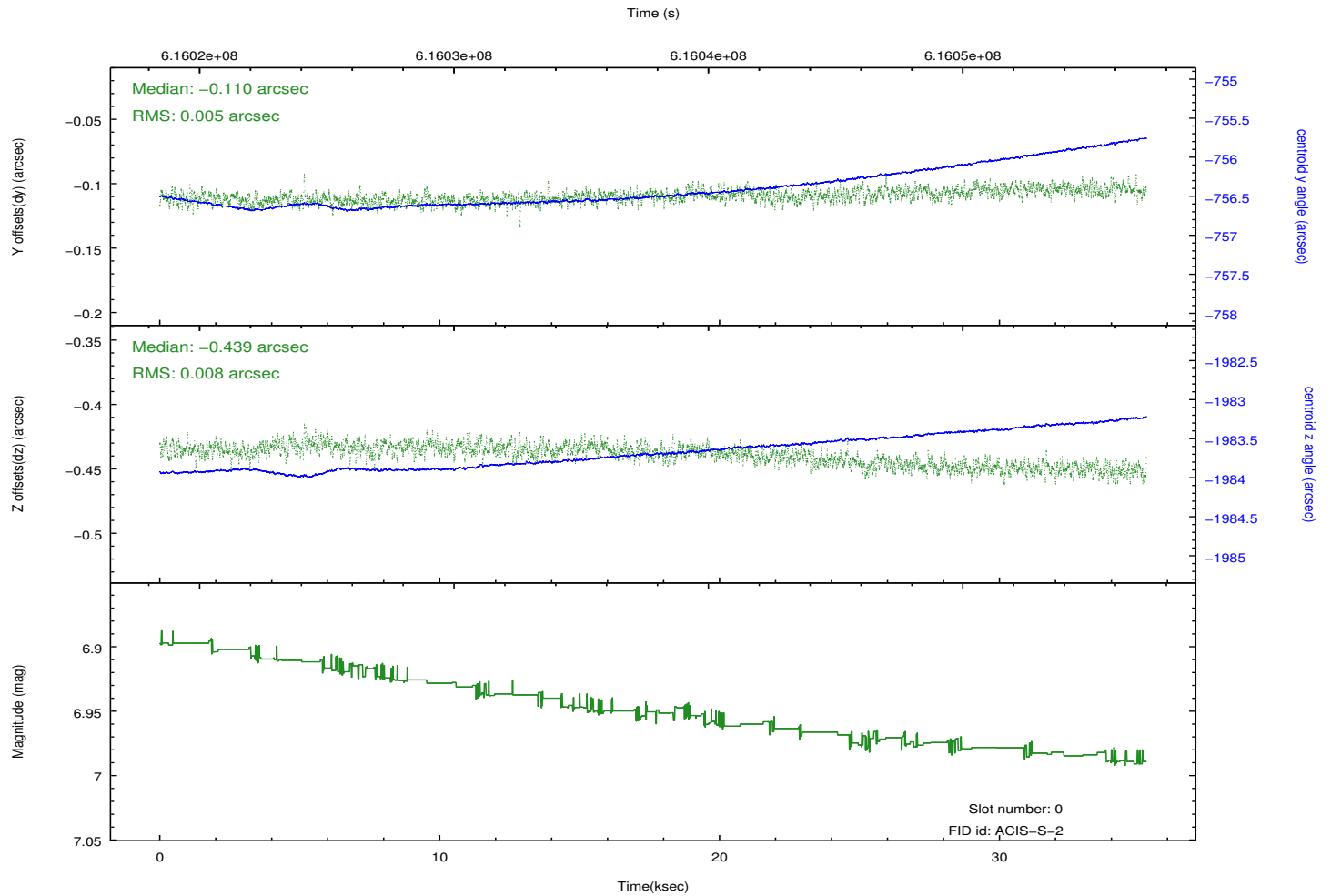
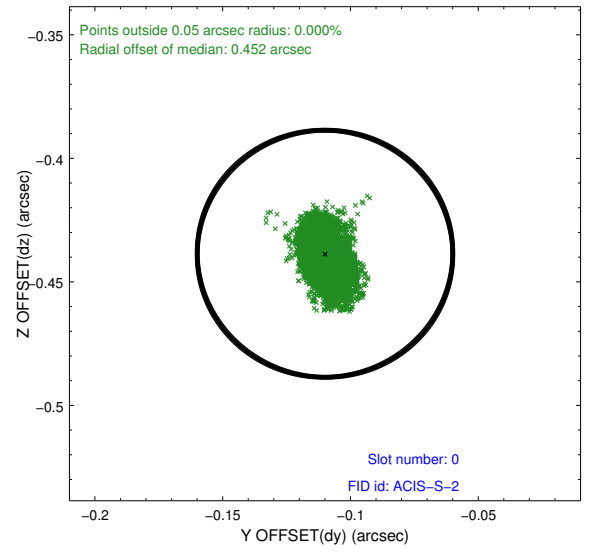
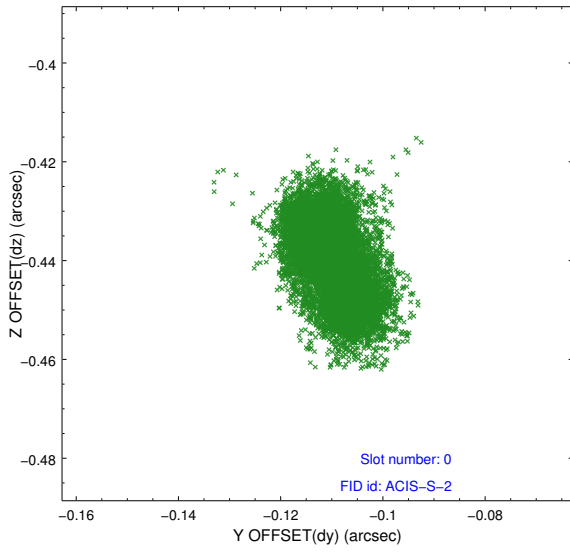


## 2.4.5 Slot 7

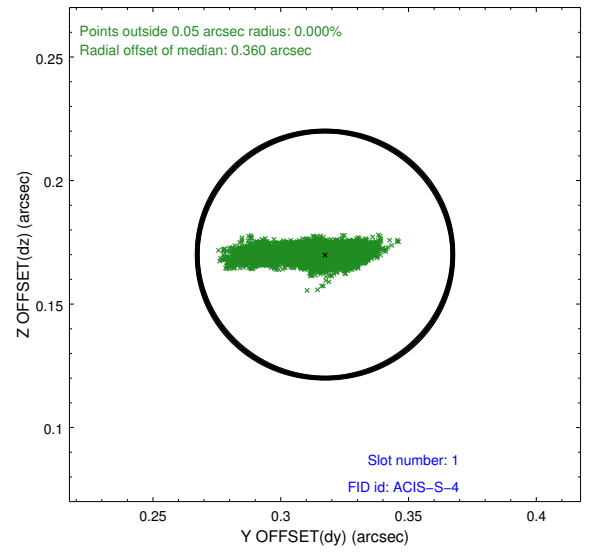
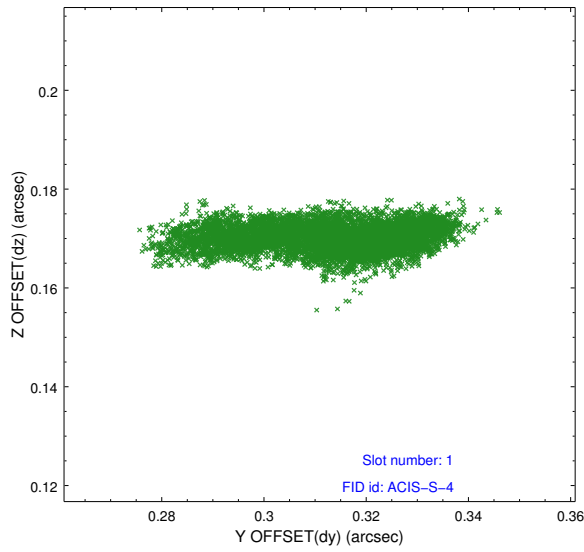


## 2.5 FID Slots

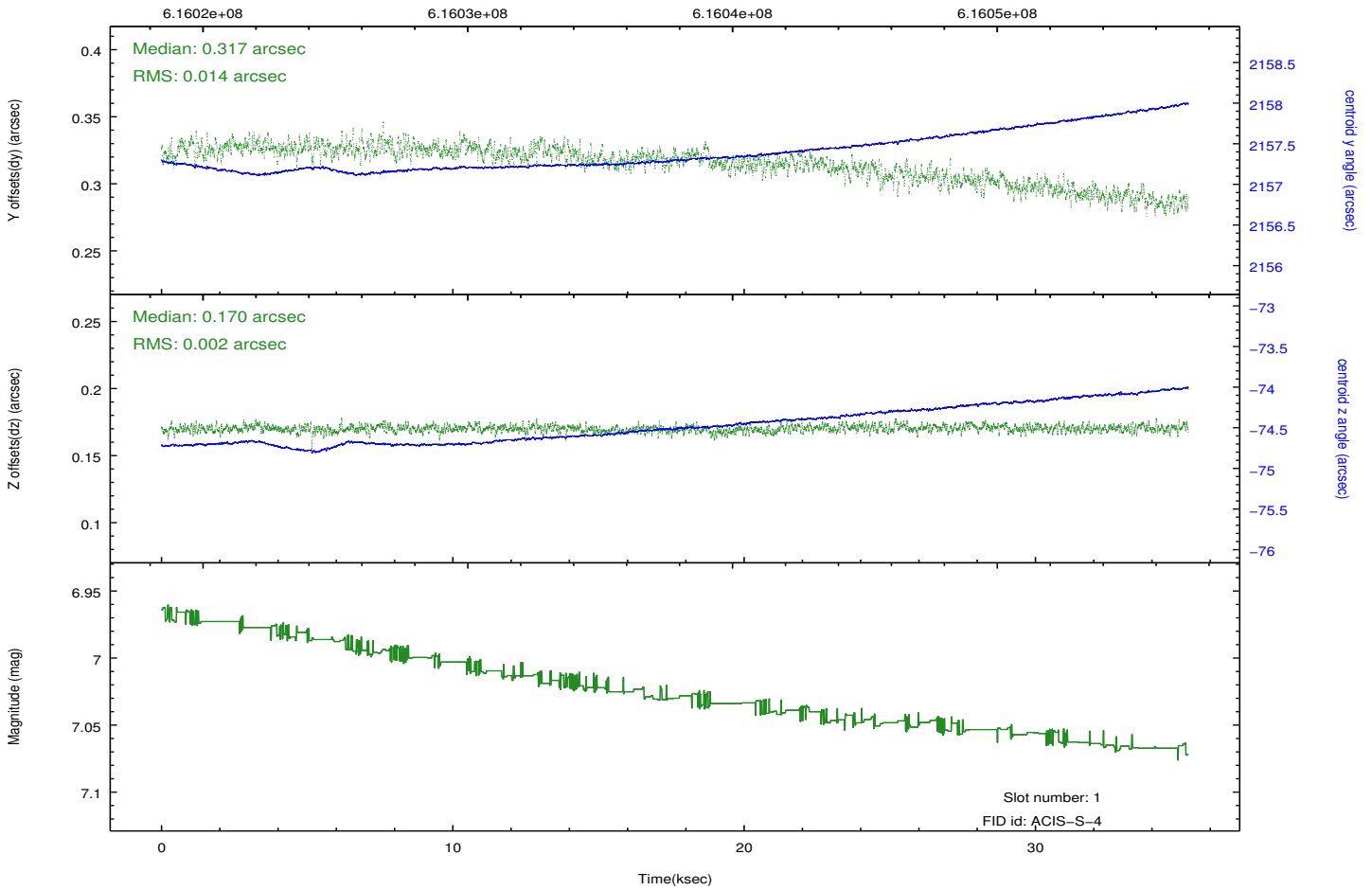
### 2.5.1 Slot 0



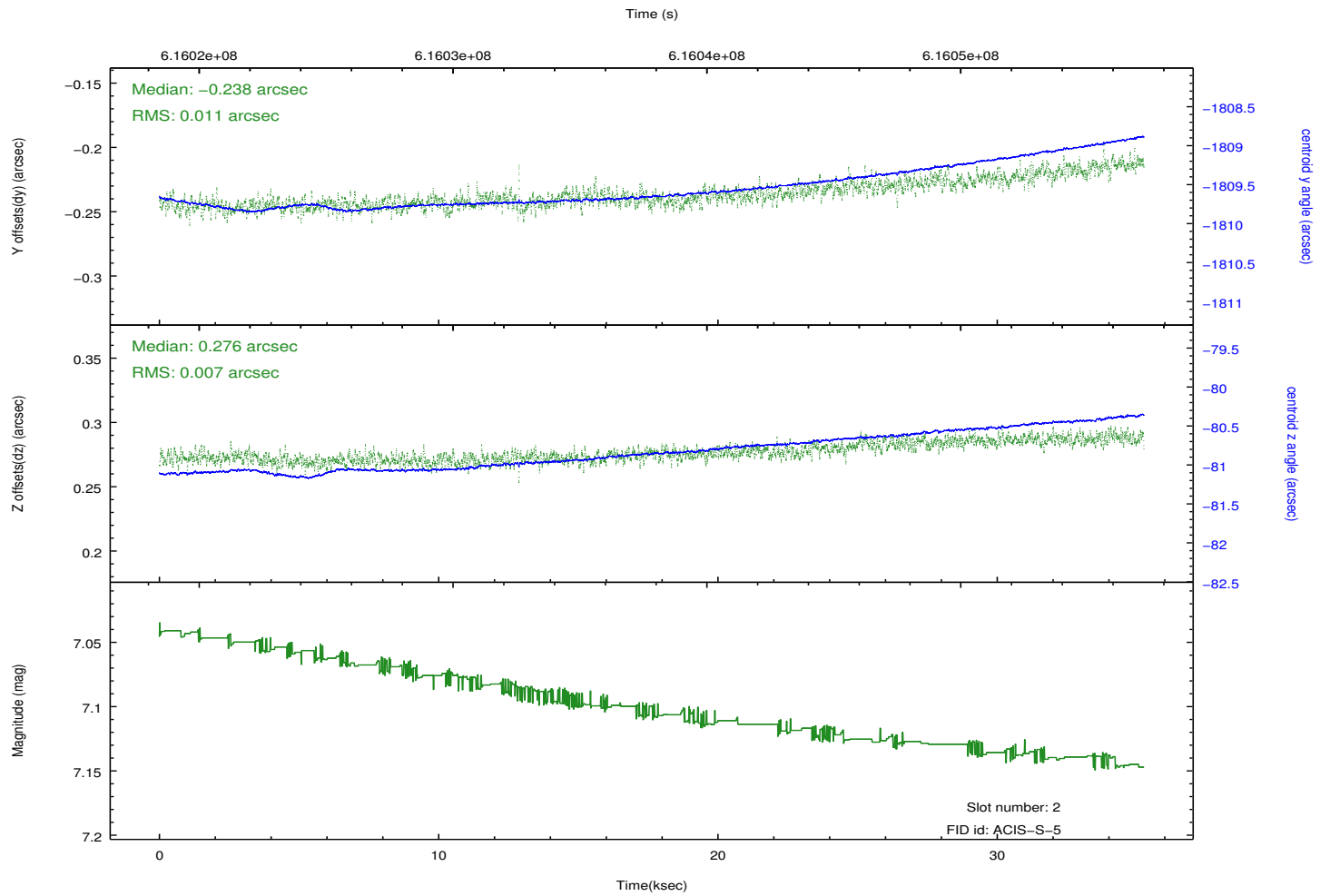
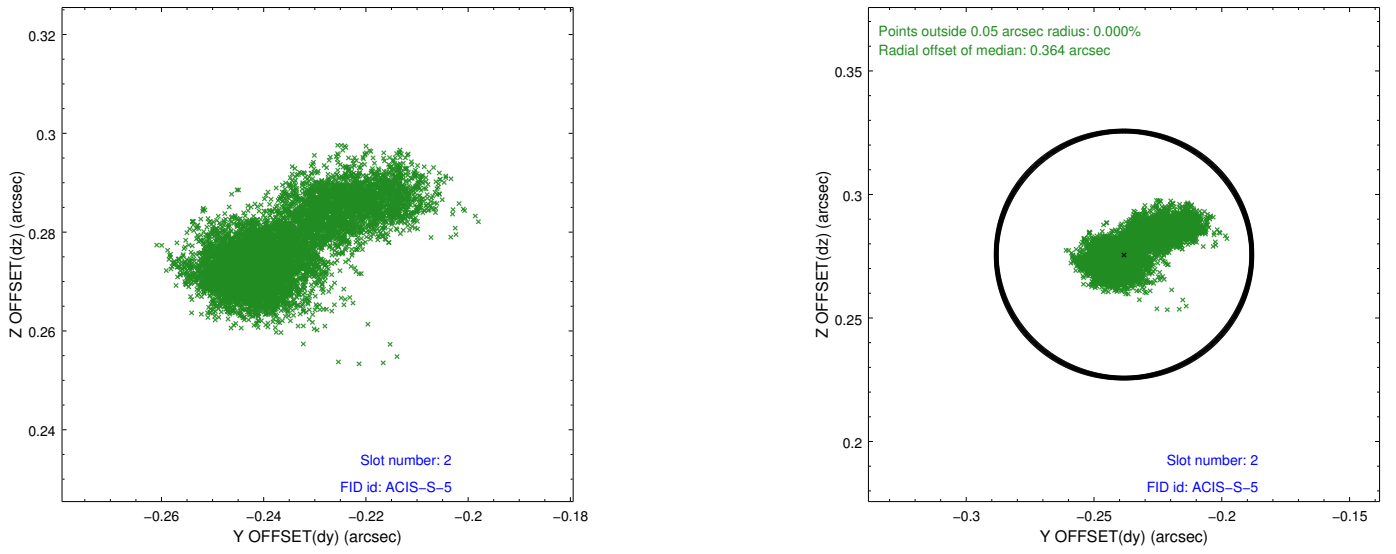
## 2.5.2 Slot 1



Time (s)

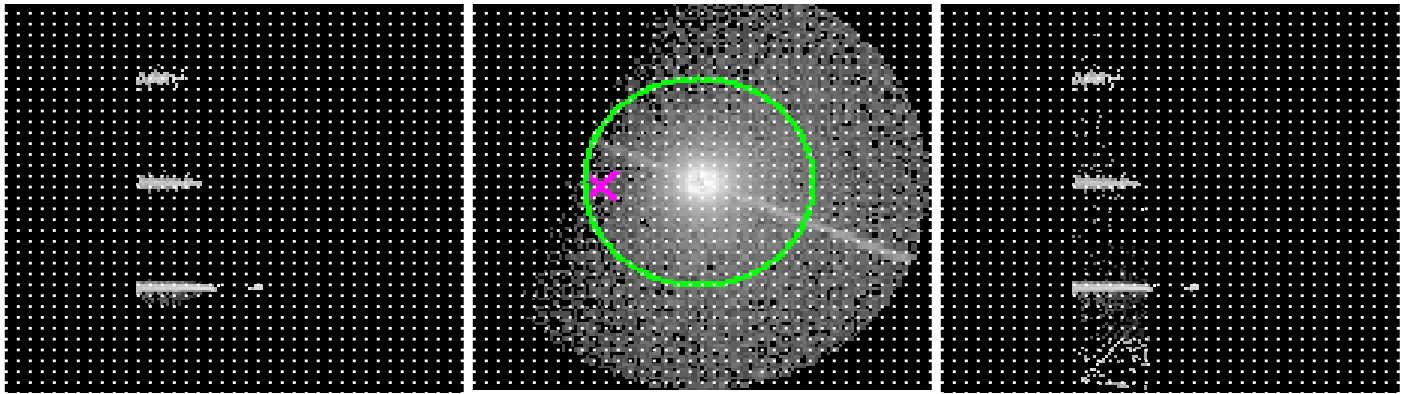


### 2.5.3 Slot 2



# 3 Gratings

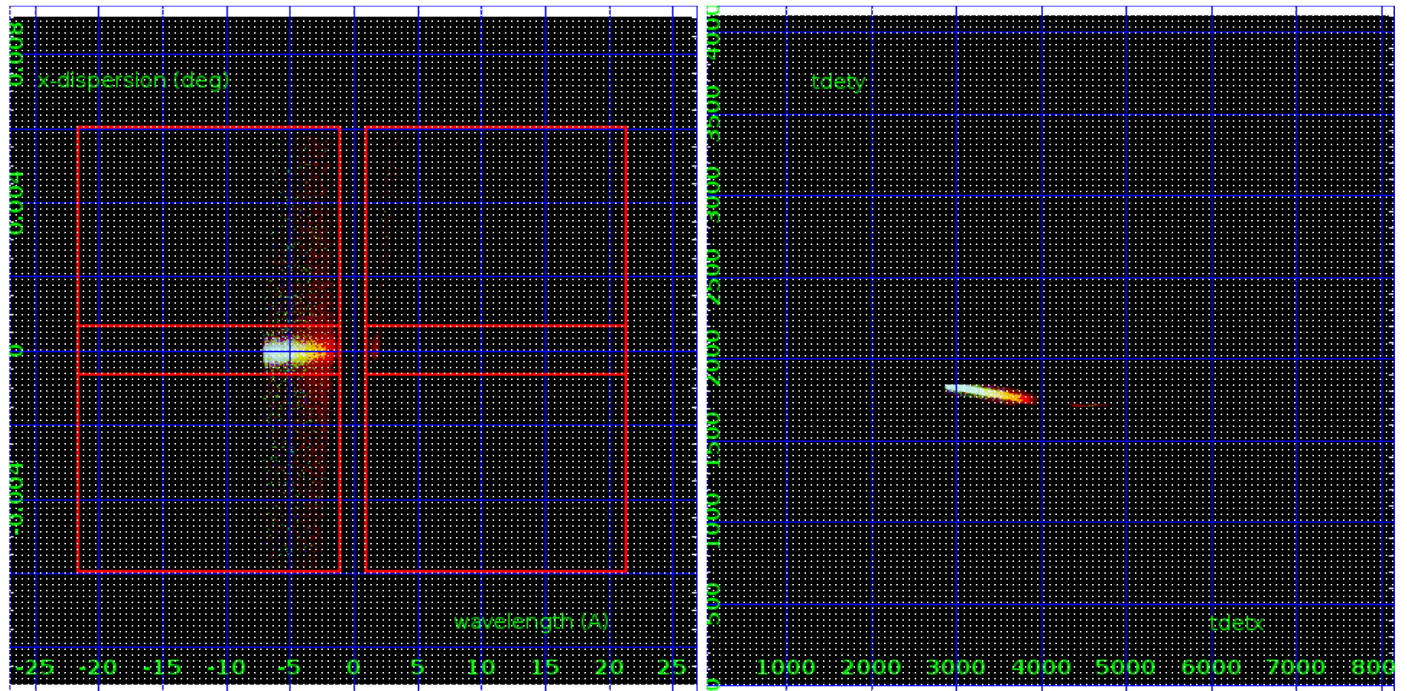
## 3.1 HEG Arm



HEG Order Sort 123

HEG Zero Order

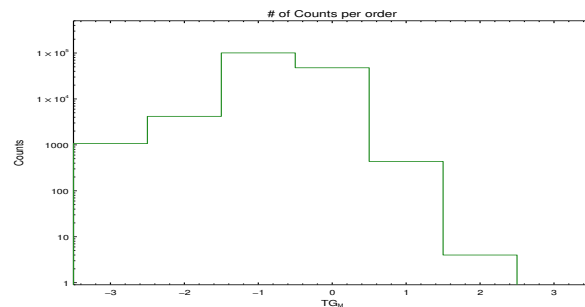
HEG Order Sort ALL

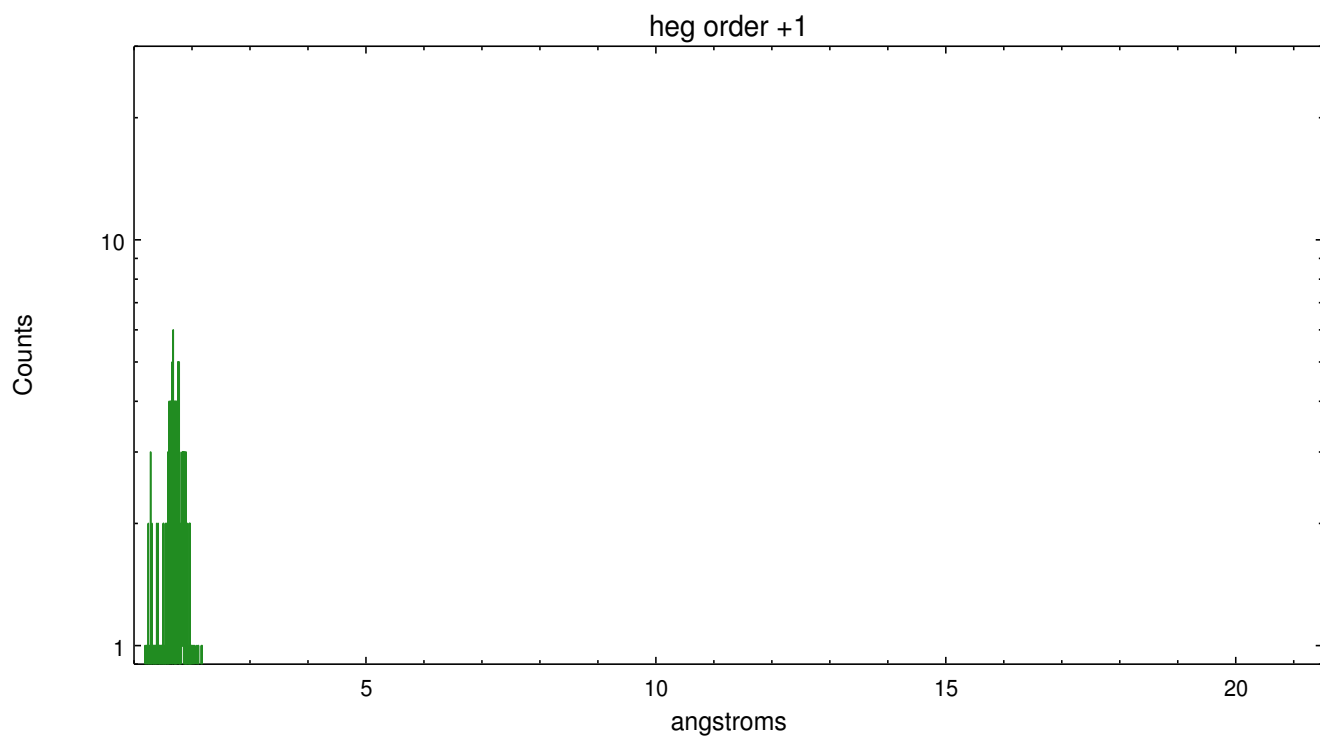
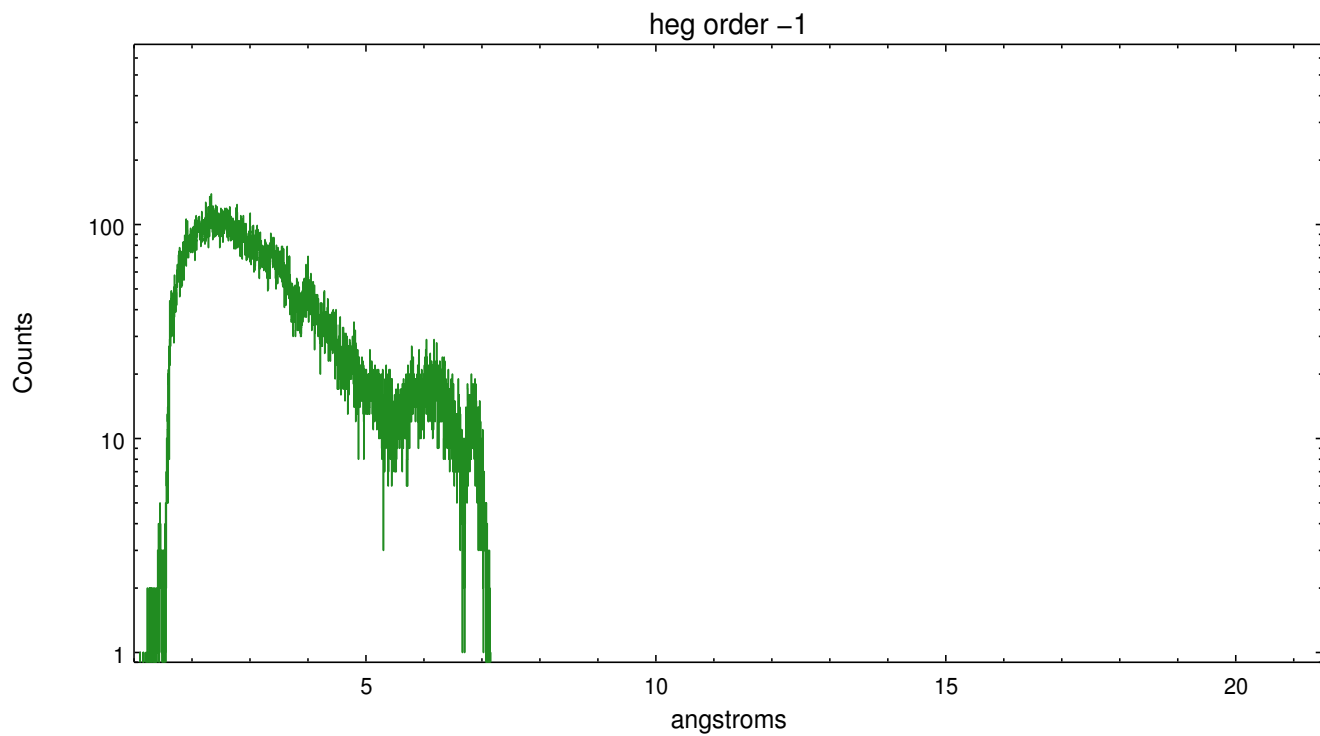


Spot Image HEG

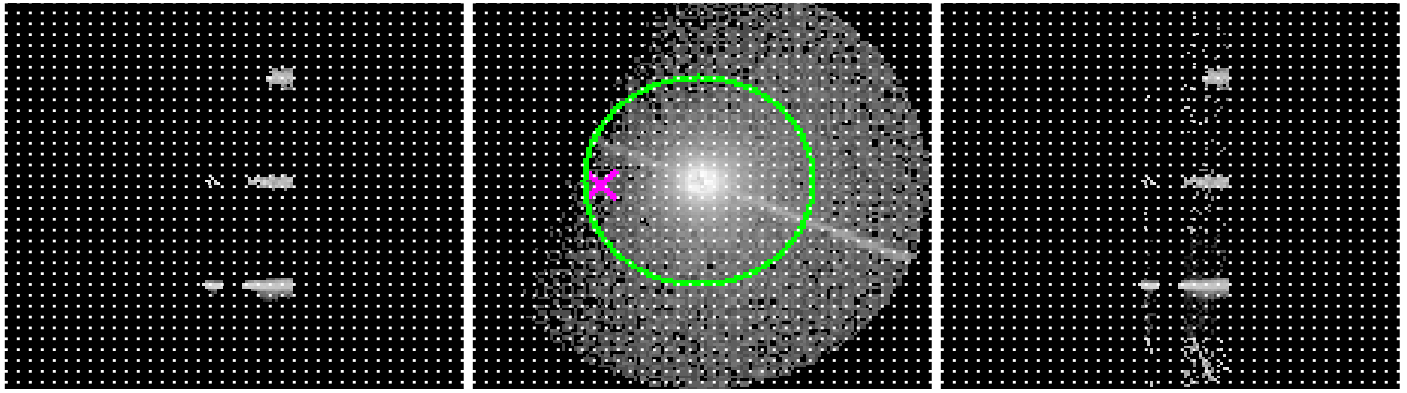
Full Detector HEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	1069	4176	100590	47735	436	4	0





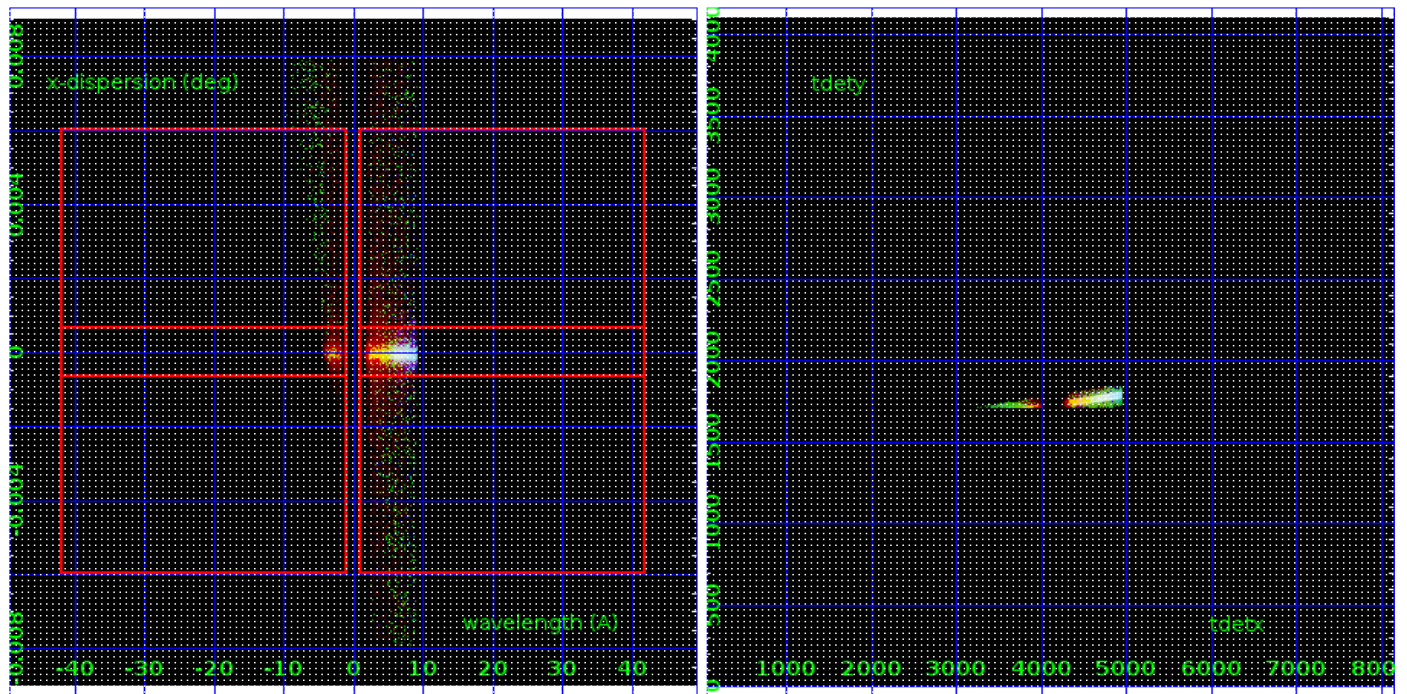
### 3.2 MEG Arm



MEG Order Sort 123

MEG Zero Order

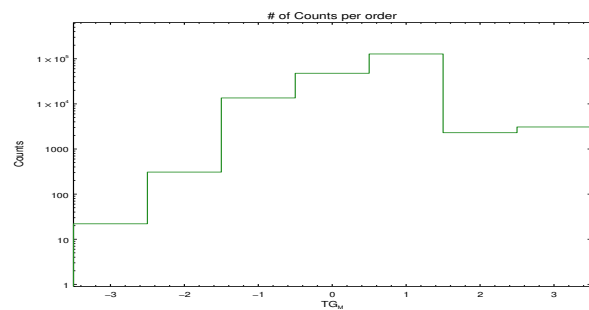
MEG Order Sort ALL



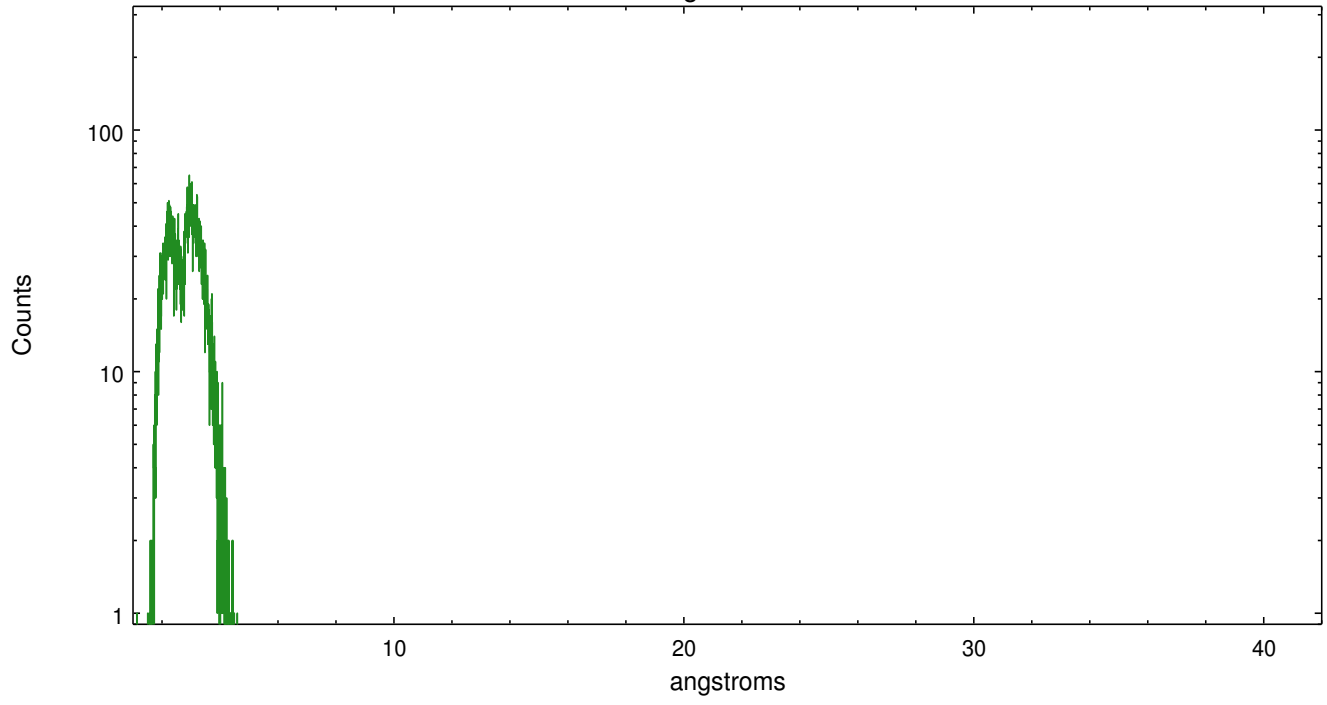
Spot Image MEG

Full Detector MEG

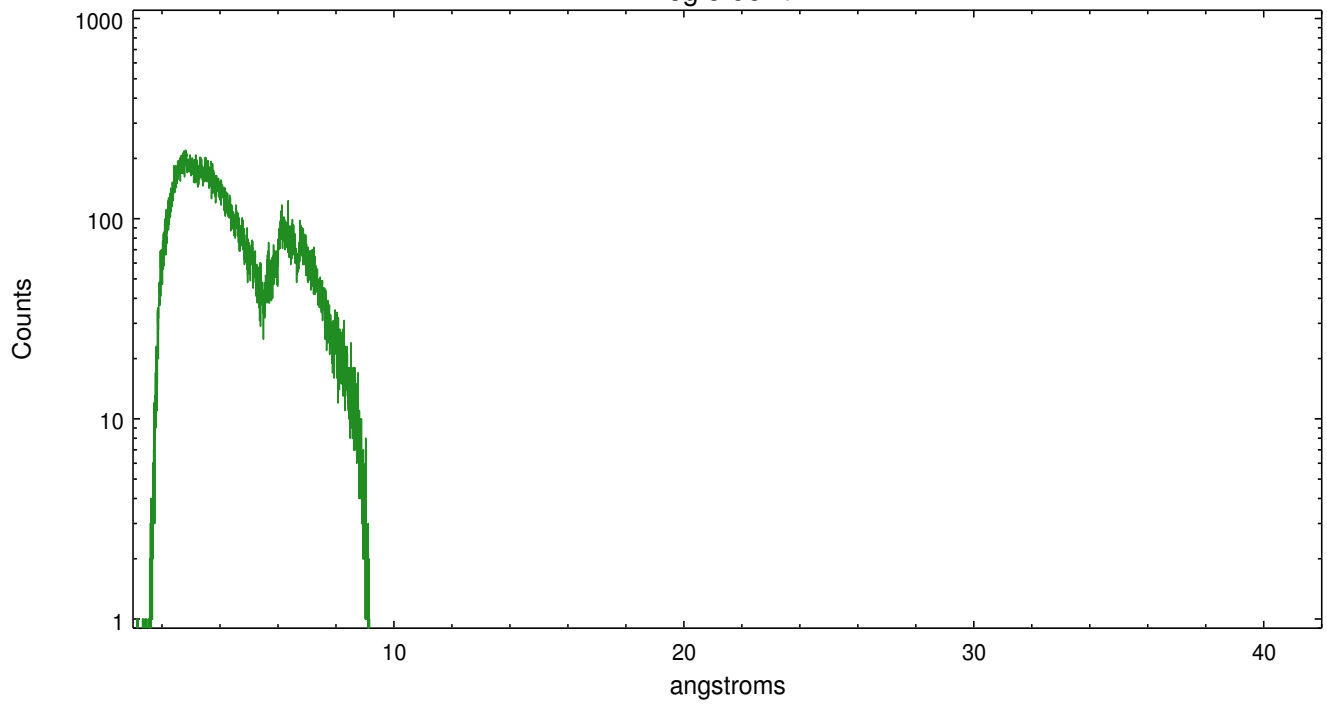
	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	22	308	13550	47735	127876	2300	3080



meg order -1



meg order +1



# A Summary

## A.1 Status

V&V Scientist	Joy Nichols
V&V Date (YYYY-MM-DD)	2017.07.13
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	35.093

## A.2 Comments

Neither the tool `tgdetect` nor the tool `findzo` were successful in locating the zeroth order in this observation. The zeroth order was located by eye using `ds9`.

1) `tgdetect` position is on the rim of the crater. So it was eyeballed in `ds9` --- used a "line" region to draw along the streak, then the "crosshair" cursor to intersect a vertical w/ the line in the center of the crater.

2) For such bright sources, you can also set the `ds9` binning to 0.1 pixel (on the "Bin -> Binning Parameters..." menu, X,Y bin fields, and get a more accurate eyeball value. Faint grating spectra can be seen in an image of bad events. This is probably due to pileup in the spectrum, causing migration to bad grades. This should be considered in analysis.

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Zeroth order piled up. Faint grating spectra can be seen in an image of bad events. This is probably due to pileup in the spectrum, causing migration to bad grades. This should be considered in analysis.