

# V&V Reference Report

## L2 ASCDS Version : 10.7.1

Observation 20736 - L2 Version 2  
Chandra X-Ray Center

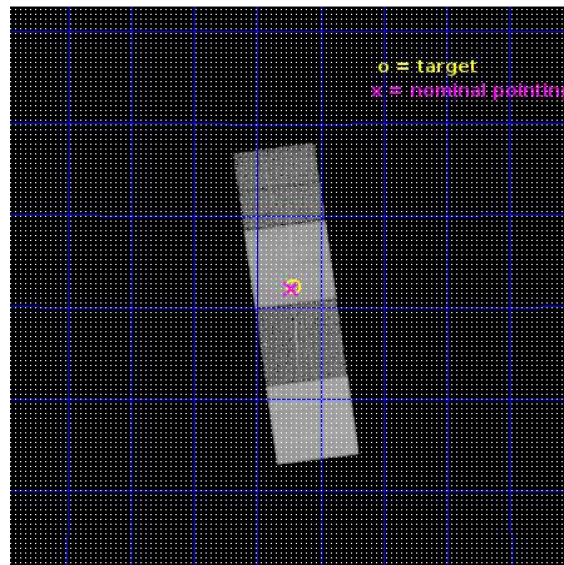
L2 Processing Date : Dec 21 2018

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# 1 Front

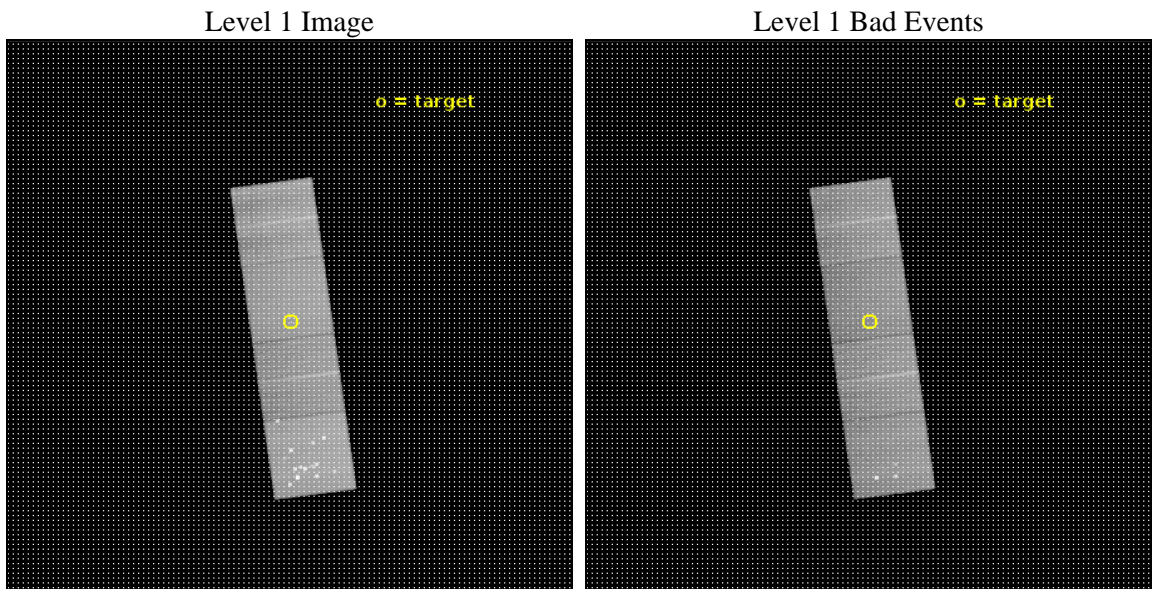
seq_num	201196	Sequence number
obs_id	20736	Observation id
title	X-ray Flares from Young Stars and the Sun: Bridging the Gap with Chandra+NuSTAR	Proposal title
observer	Dr. Claude Canizares	Principal investigator
object	V773 Tau	Source name
dtycycle	0	&#160
cycle	P	events from which exps? Prim/Second/Both
ra_targ	63.55375	Observer's specified target RA [deg]
dec_targ	28.203417	Observer's specified target Dec [deg]
ra_nom	63.557594332238	Nominal RA [deg]
dec_nom	28.200492670503	Nominal Dec [deg]
roll_nom	262.15479694012	Nominal Roll [deg]
revision	2	Processing version of data
ontime	30023.500231028	Sum of GTIs [s]
livetime	29631.22109753	Livetime [s]
ontime5	30023.500231028	Sum of GTIs [s]
ontime6	30023.500231028	Sum of GTIs [s]
ontime7	30023.500231028	Sum of GTIs [s]
ontime8	30023.500231028	Sum of GTIs [s]
l2events	337738	Number of level 2 events



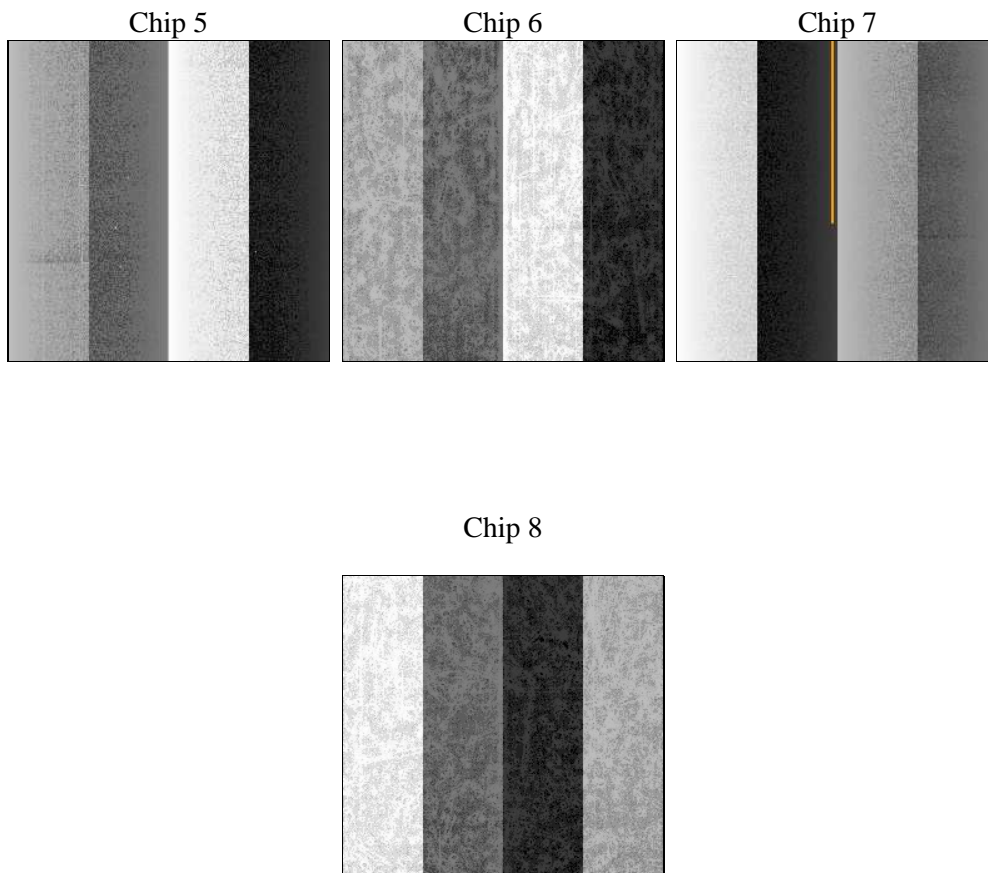
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

obi_num	0	Obi number	sched_exp_time	30010.462000	[s] Scheduled observation exposure time
ascdsver	10.7.1	Processing system revision	ontime	30023.500231028	Sum of GTIs [s]
caldbver	4.8.2	&#160	ontime5	30023.500231028	Sum of GTIs [s]
date	2018-12-21T14:04:26	Date and time of file creation	ontime6	30023.500231028	Sum of GTIs [s]
revision	2	Processing version of data	ontime7	30023.500231028	Sum of GTIs [s]
			ontime8	30023.500231028	Sum of GTIs [s]
			l1events	1283365	Number of level 1 events
			tgmethod	TGDETECT	Method used to create src1a file
			zo_pos	(4120.23, 4117.01)	src1a sky pixel position

### 2.1.4 Events

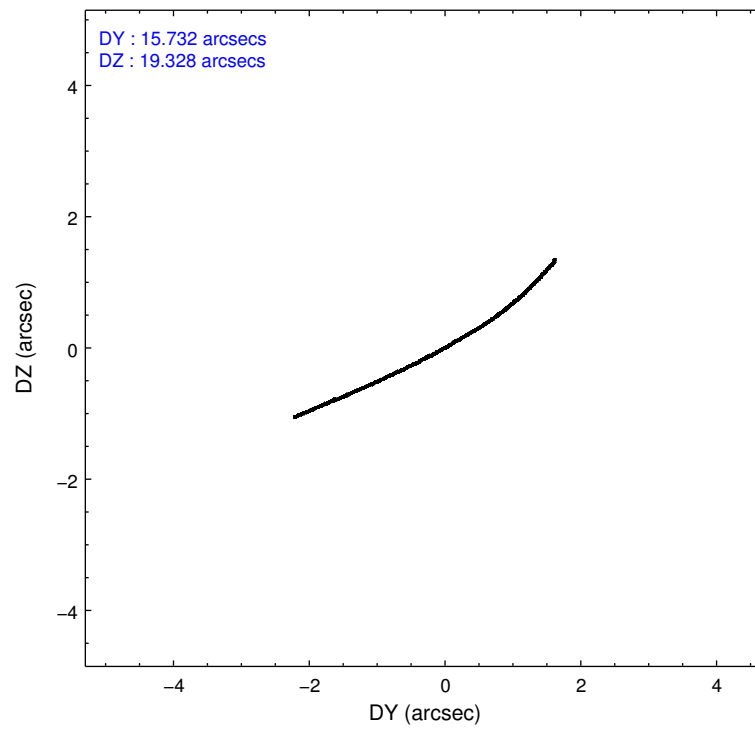
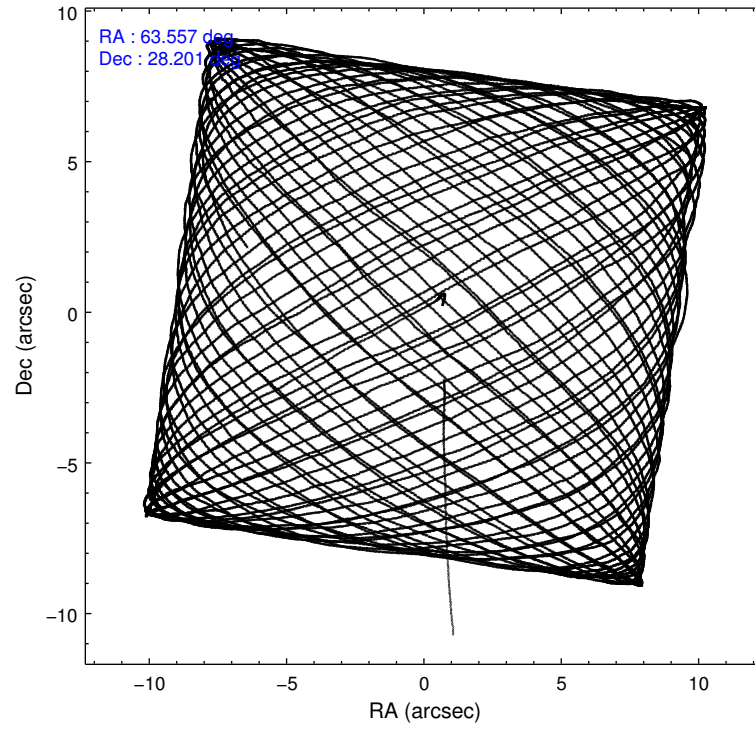
	ccd 5	ccd 6	ccd 7	ccd 8
level 1 events	451048	236569	297342	298406
rejected events	207324	209939	169378	221681
rejected %	45%	88%	56%	74%

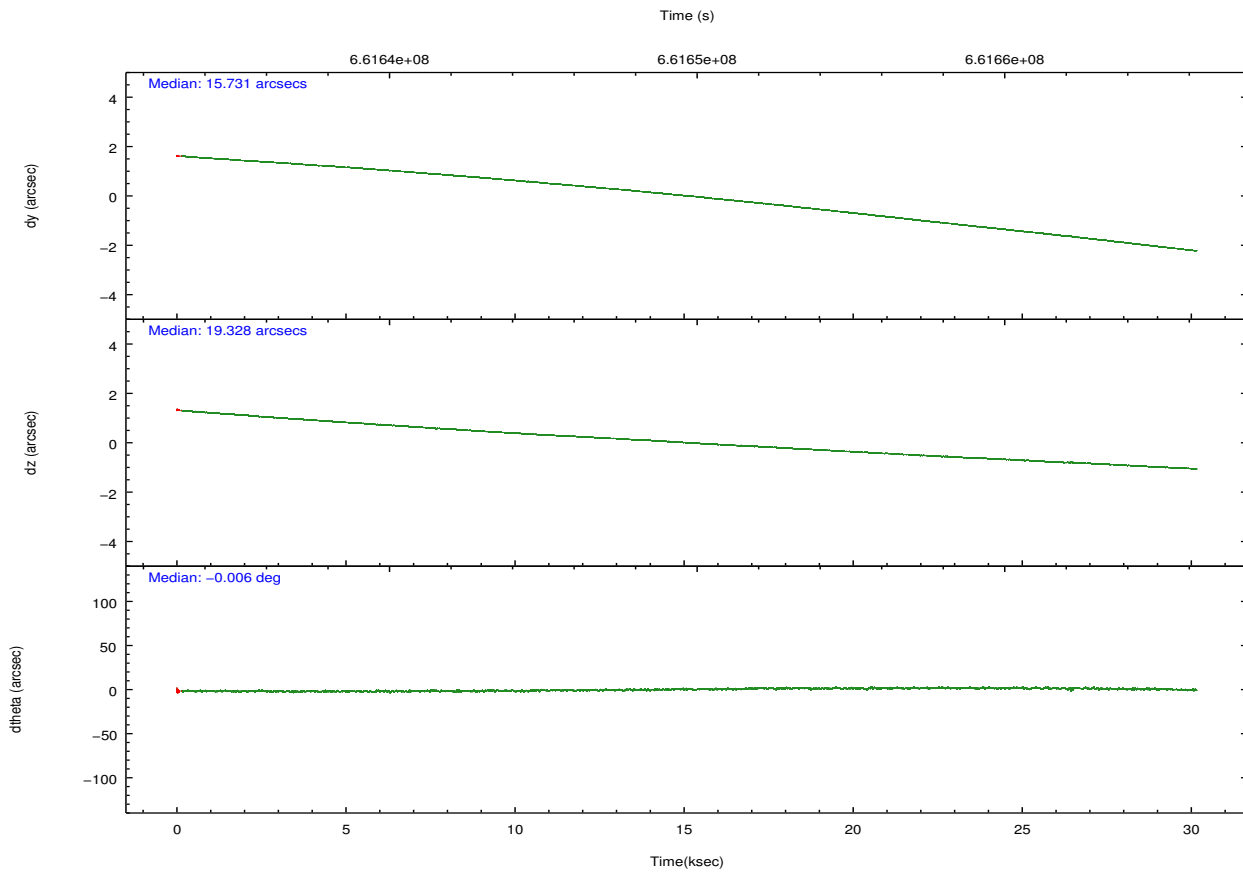
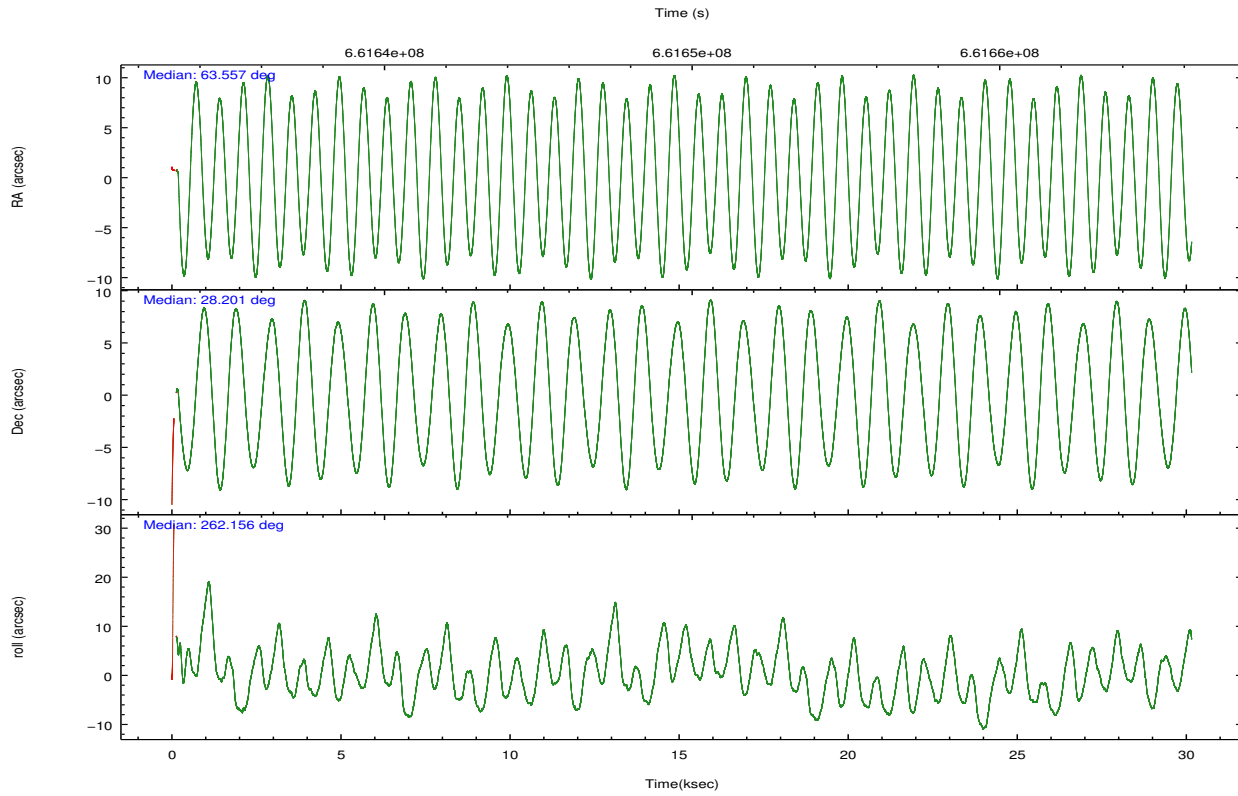
	ccd 5	ccd 6	ccd 7	ccd 8
grade 0 events	64151	8706	10770	21346
	14%	3%	3%	7%
grade 1 events	1019	92	470	233
	0%	0%	0%	0%
grade 2 events	66844	6710	27511	18823
	14%	2%	9%	6%
grade 3 events	7421	2330	10009	7775
	1%	0%	3%	2%
grade 4 events	7474	2313	9806	7250
	1%	0%	3%	2%
grade 5 events	26179	10059	28401	16068
	5%	4%	9%	5%
grade 6 events	98155	6623	70113	21668
	21%	2%	23%	7%
grade 7 events	179805	199736	140262	205243
	39%	84%	47%	68%

## 2.2 Compared Parameters

Parameter	Planned	Actual	Parameter	Planned	Actual
Instrument	ACIS	ACIS	Obspar format version number	7	7
Detector	ACIS-5678	ACIS-5678	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	63.545476	63.55759433223839	CCD I2 on	N	N
[deg] Pointing Dec	28.225771	28.20049267050294	CCD I3 on	N	N
[deg] Pointing Roll	262.003922	262.1547969401236	CCD S0 on	O1	N
[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	-190.132523	-190.1400660498719	CCD S3 on	Y	Y
[mm] SIM translation stage offset	0	0.00754346686406393	CCD S4 on	Y	Y
[s] Observation start time (MET)	661634745.184000	661633161.63673	CCD S5 on	O2	N
Observation start date	2018-12-19T19:24:36	2018-12-19T18:59:21	Number of optional ACIS chips dropped	2	2
[s] Observation end time (MET)	661664756.184000	661665787.90117	On-chip summing requested	N	N
Observation end date	2018-12-20T03:44:47	2018-12-20T04:03:07	Subarray requested	NONE	NONE
Read mode	TIMED	TIMED	Alternating exposures requested	N	N
			[s] Primary exposure time	0.000000	3.1

## 2.3 Aspect





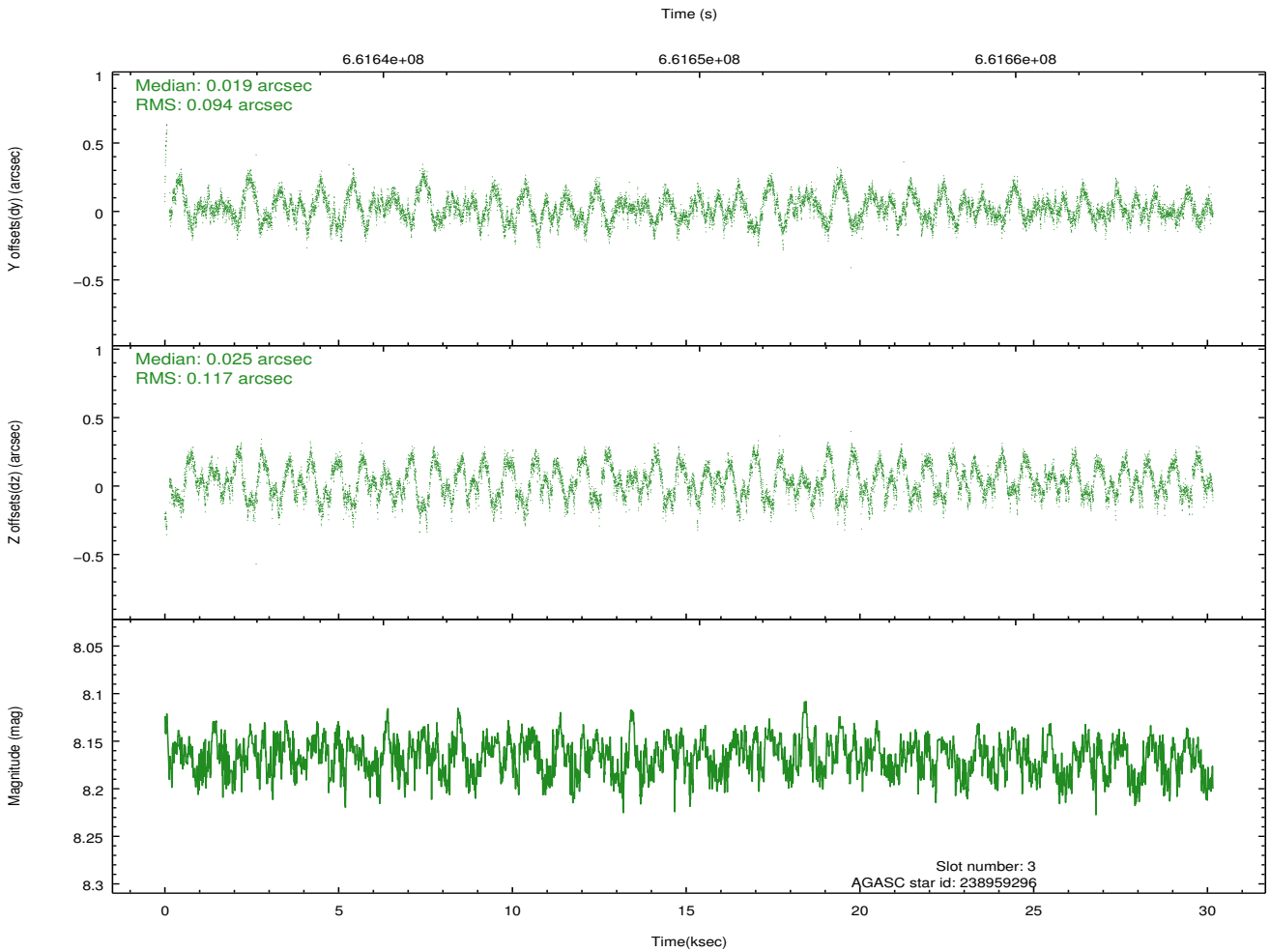
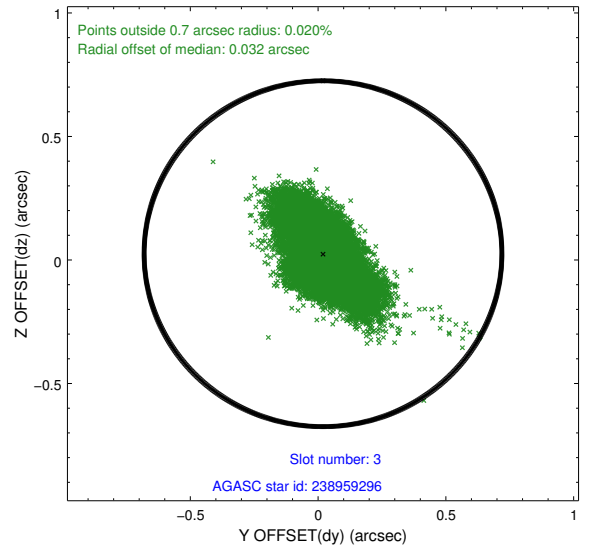
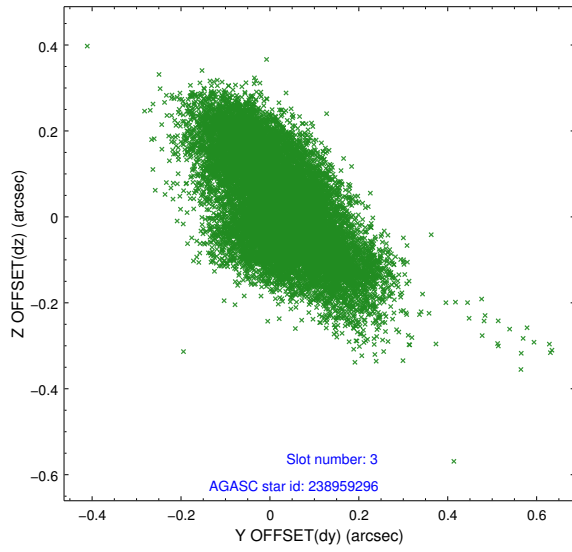
### Slot Statistics

slot	status	used	id	mag	n_pts	frac_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_x
0	FID		ACIS-S-1	7.17	7337	1.000	-0.159	-0.125	0.045	0.067	0.000000	0.000000	927.29	-1736
1	FID		ACIS-S-4	7.19	7338	1.000	0.346	0.144	0.015	0.039	0.000000	0.000000	2145.21	167
2	FID		ACIS-S-6	7.34	7338	1.000	-0.209	-0.007	0.037	0.061	0.000000	0.000000	393.24	805
3	GUIDE	used	238959296	8.17	14670	1.000	0.019	0.025	0.159	0.261	63.264622	28.040280	785.23	-790
4	GUIDE	used	238959616	8.62	14661	1.000	-0.247	-0.366	0.114	0.186	63.631917	27.959756	910.92	406
5	GUIDE	used	239475552	8.65	14666	1.000	-0.191	0.203	0.118	0.192	63.591874	28.708120	-1739.29	-95
6	GUIDE	used	239476904	9.33	14619	1.000	0.424	0.134	0.261	0.422	63.088920	28.435074	-546.83	-1535
7	MONITOR	unused		0.00	0	0.000	0.000	0.000	0.000	0.000	0.000000	0.000000	0.00	0

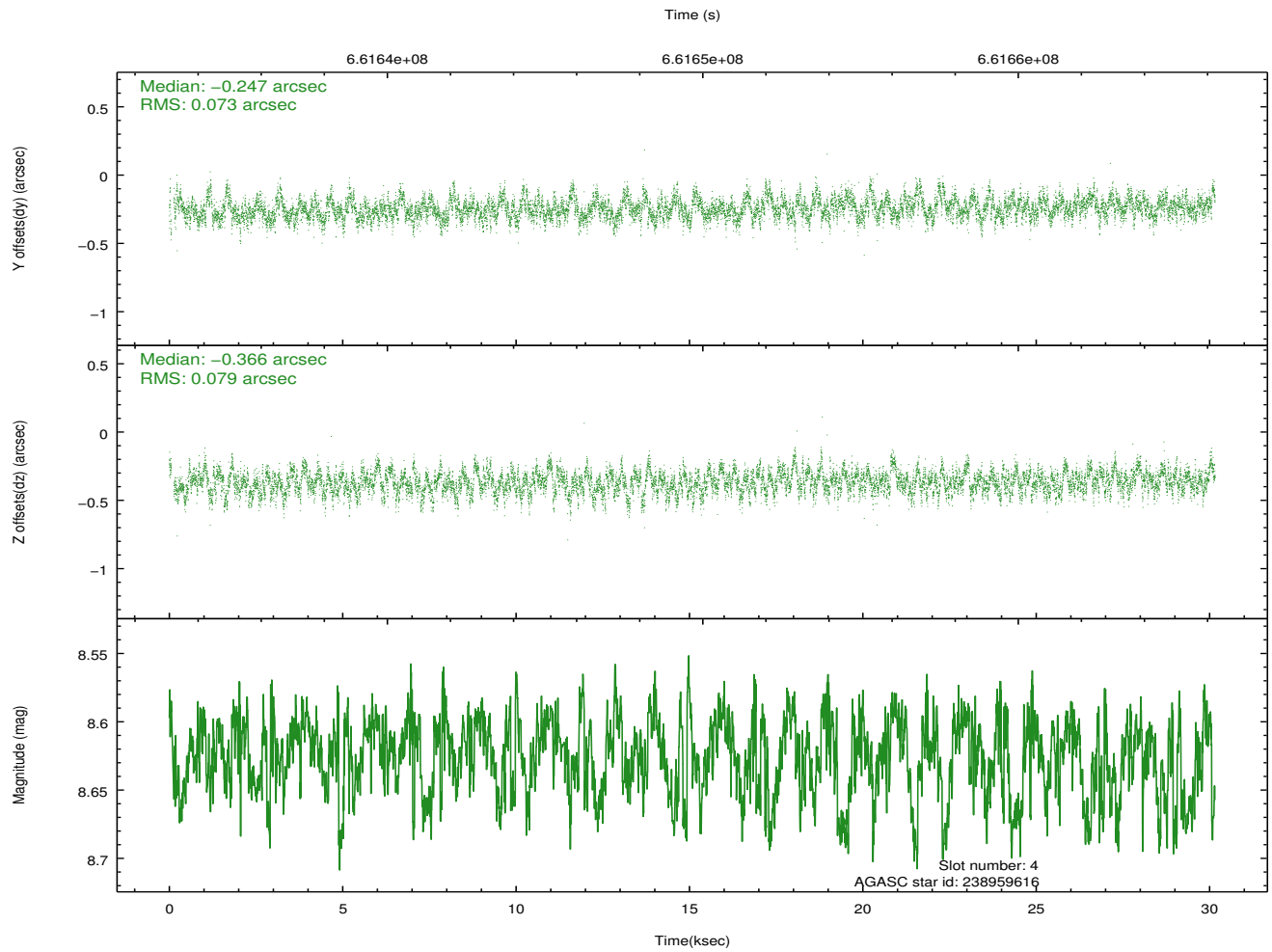
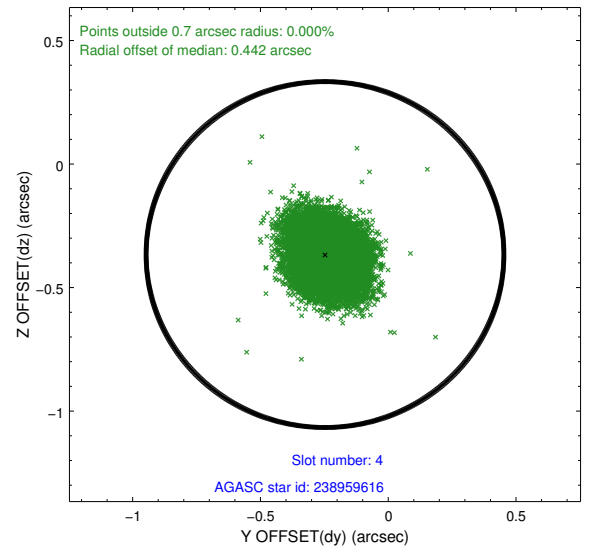
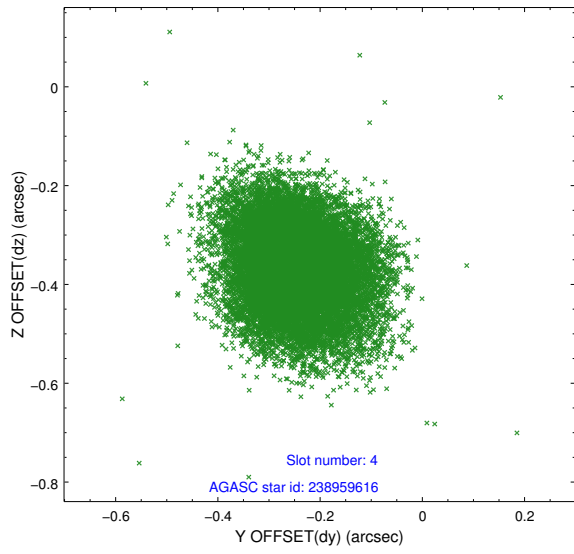
∞

## 2.4 Star Slots

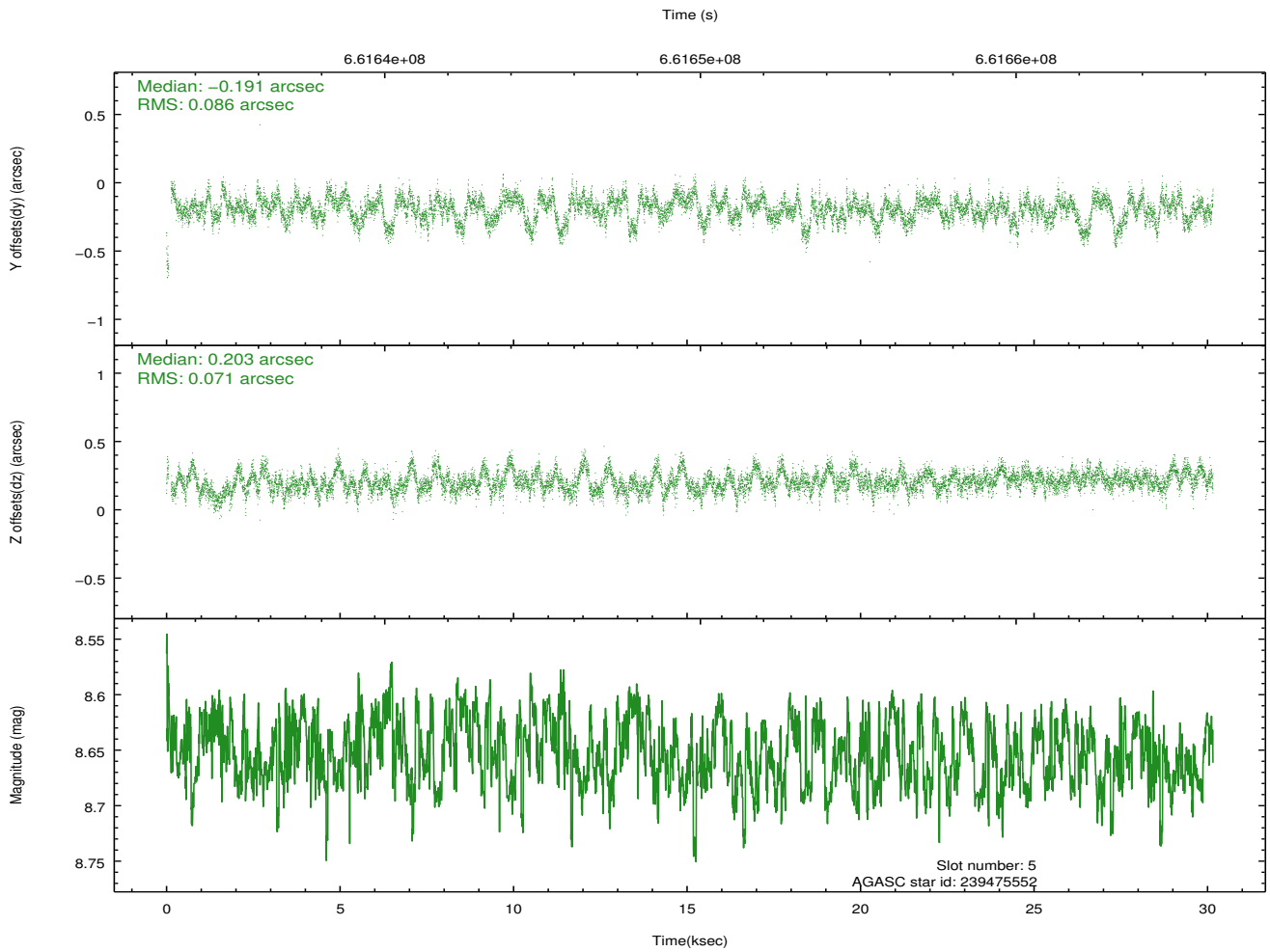
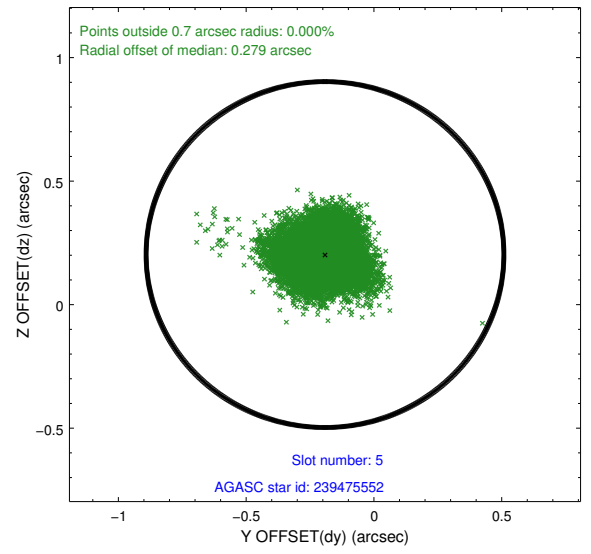
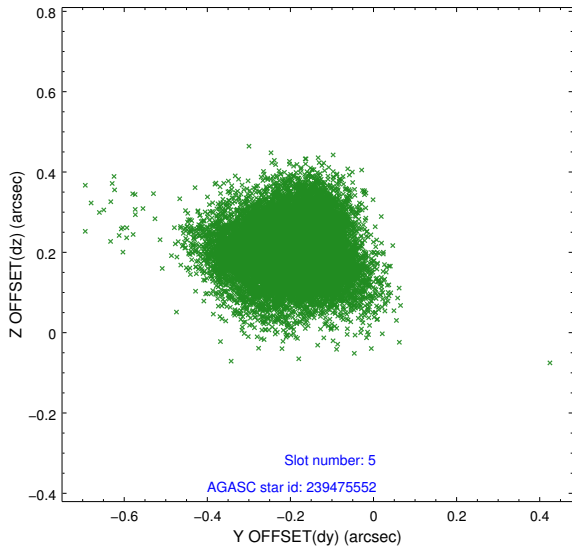
### 2.4.1 Slot 3



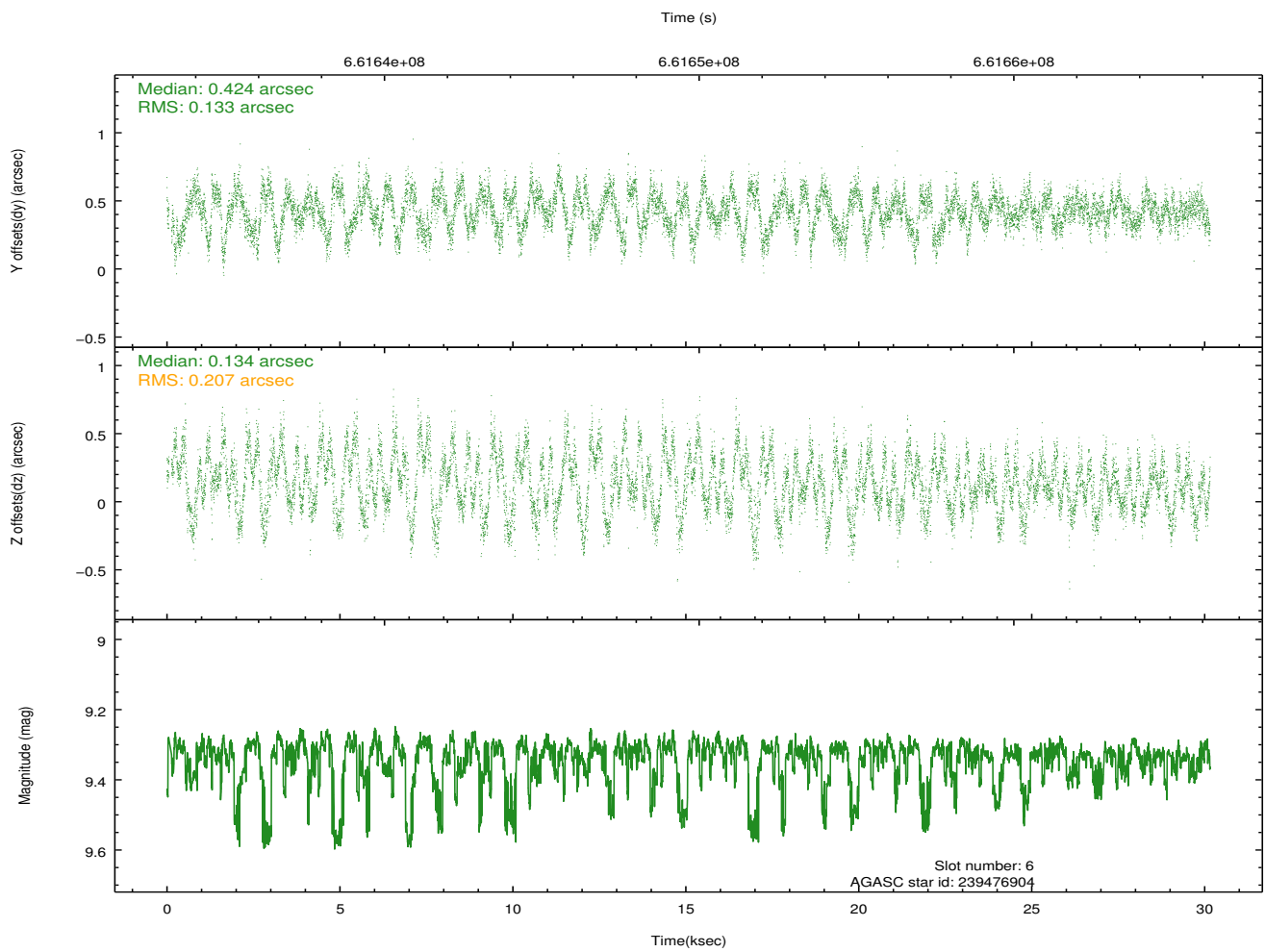
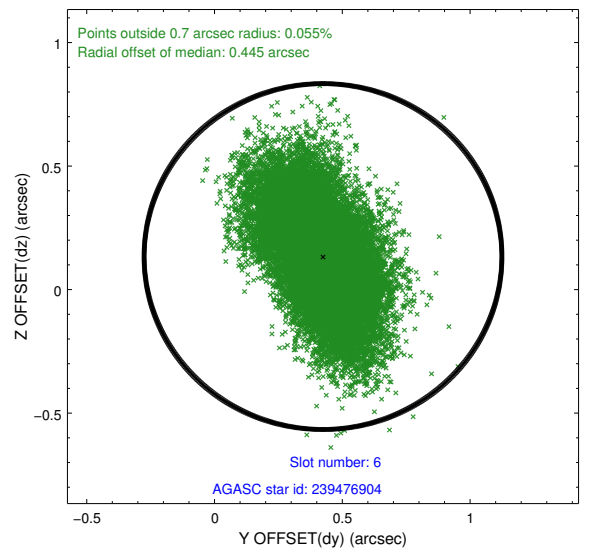
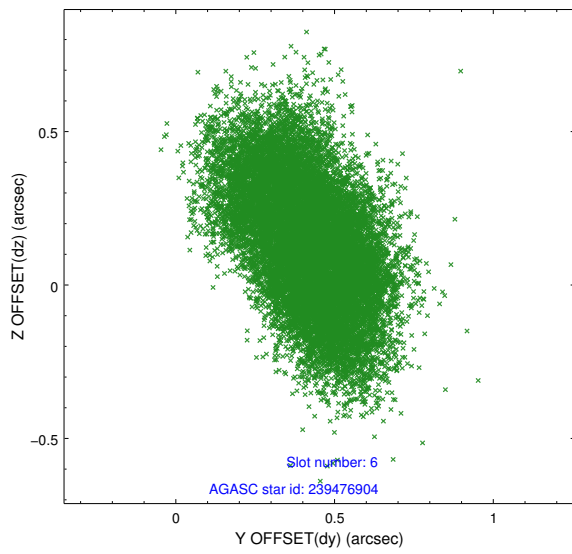
### 2.4.2 Slot 4



### 2.4.3 Slot 5

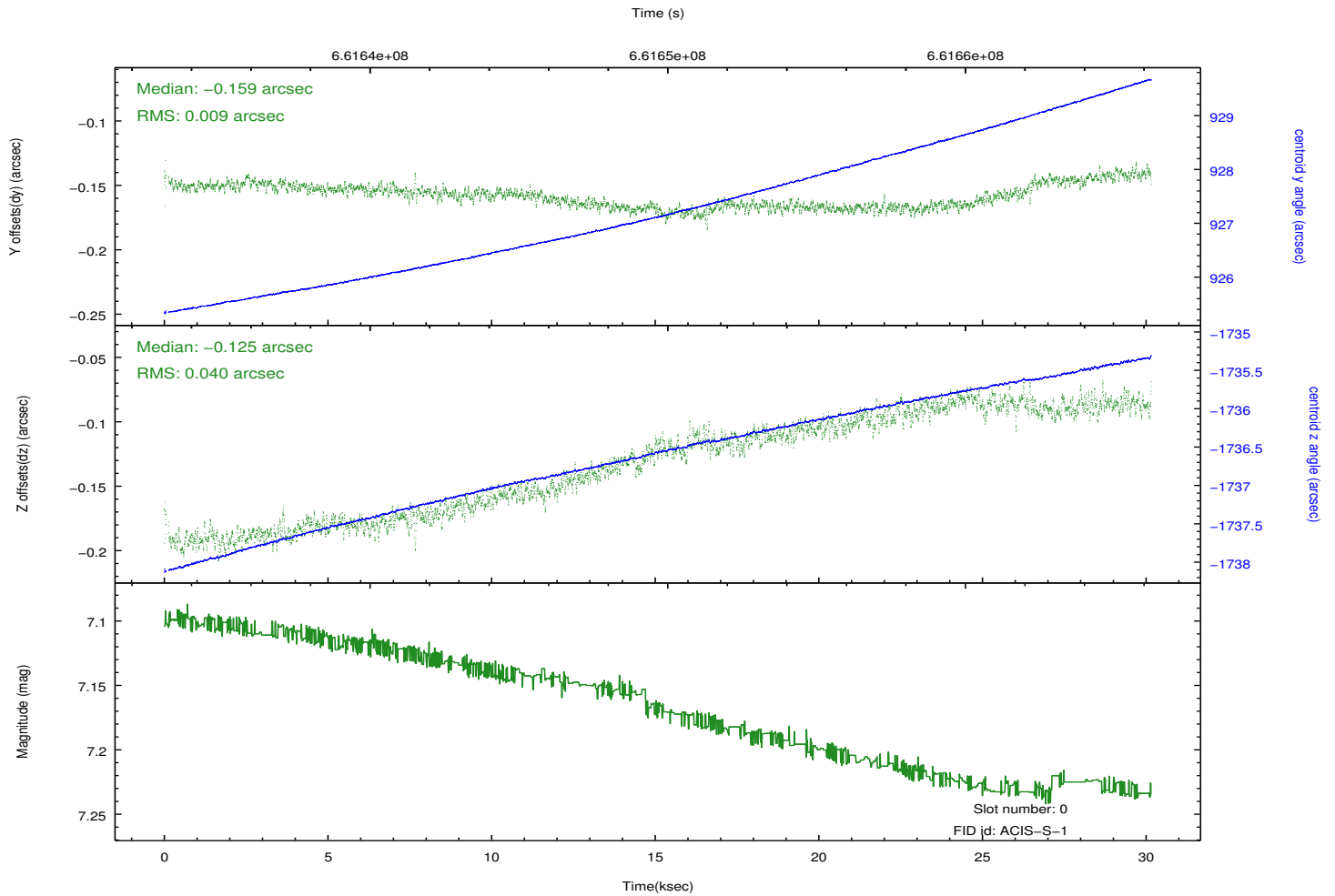
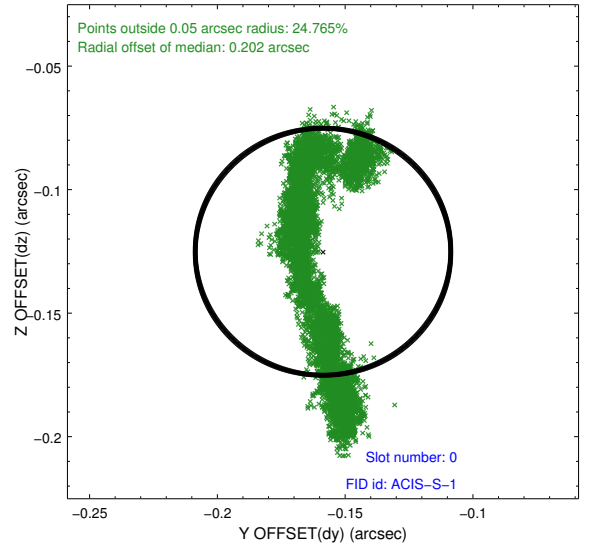
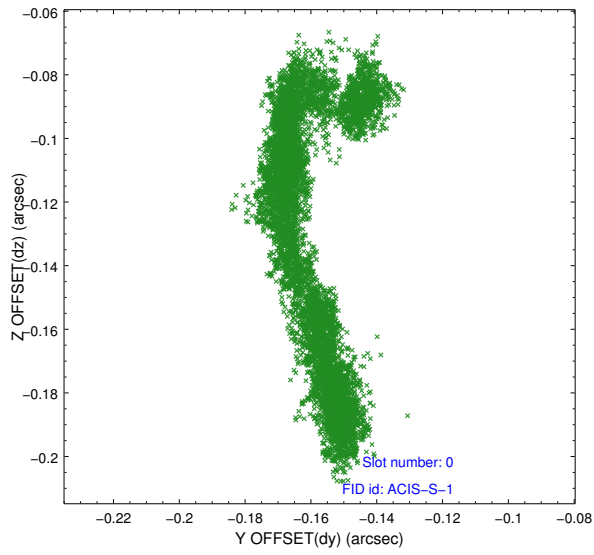


## 2.4.4 Slot 6

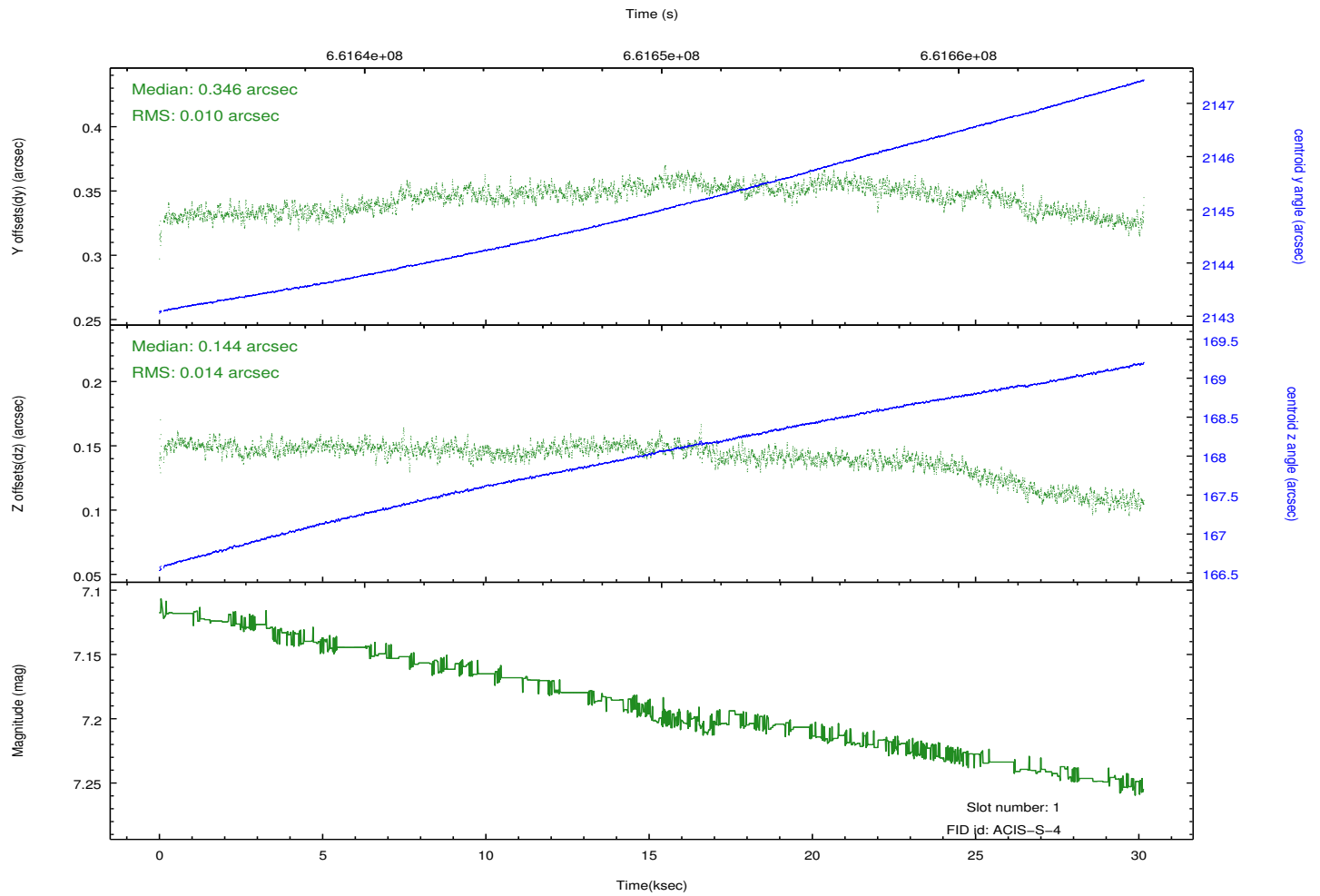
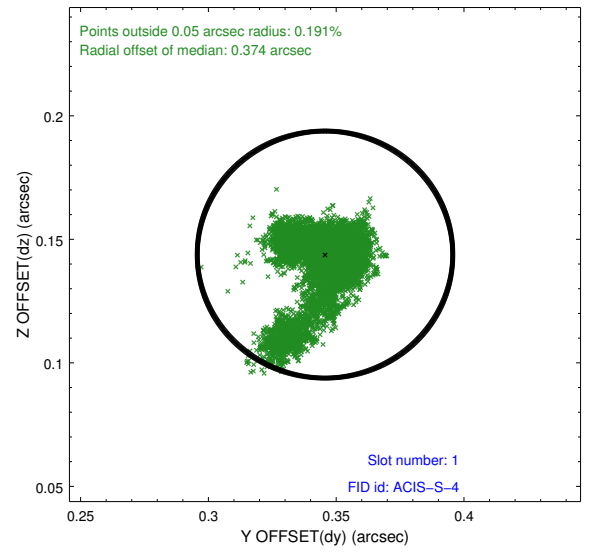
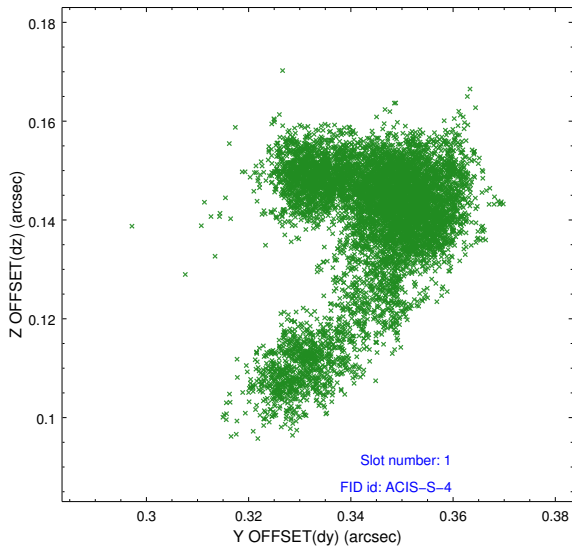


## 2.5 FID Slots

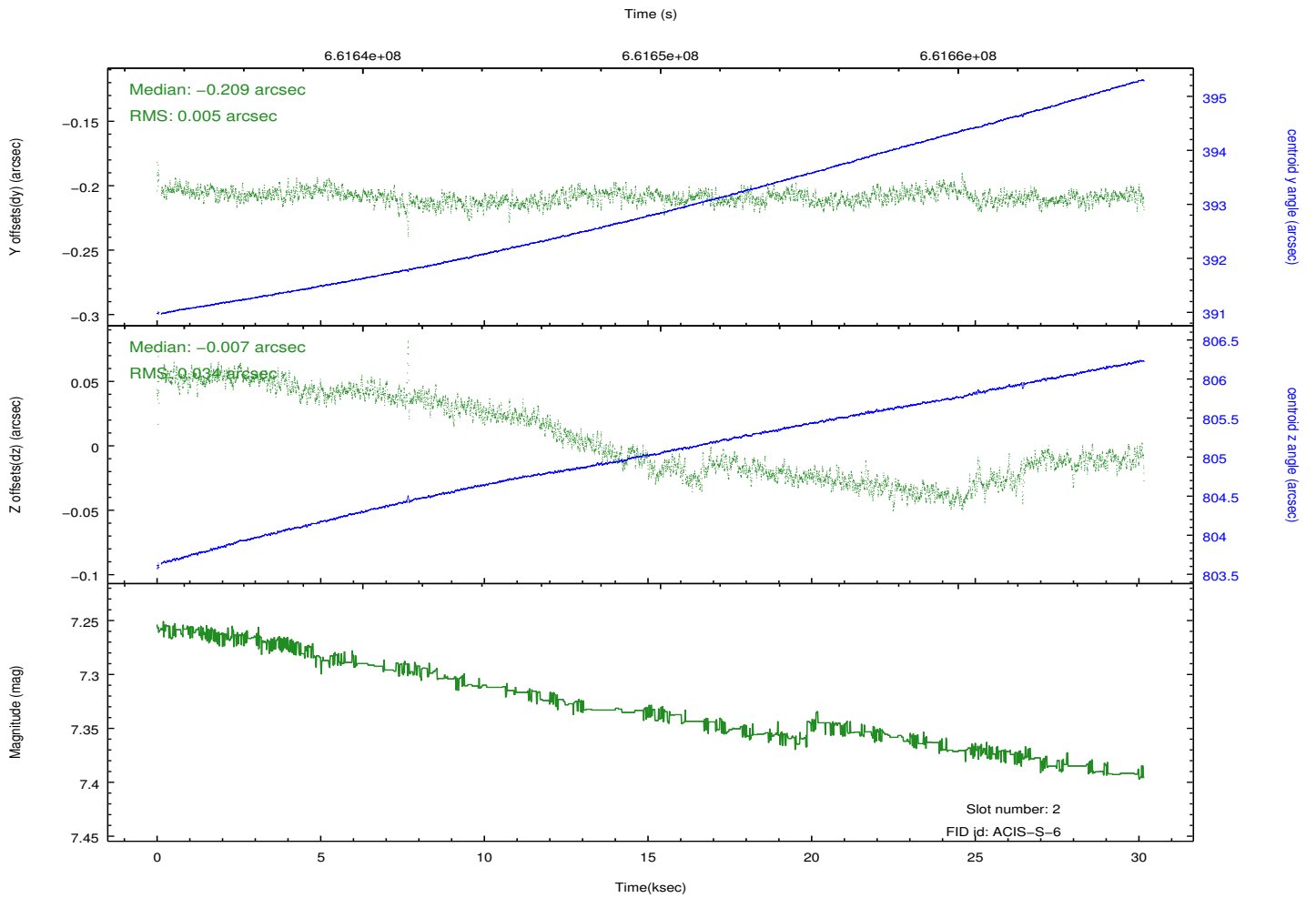
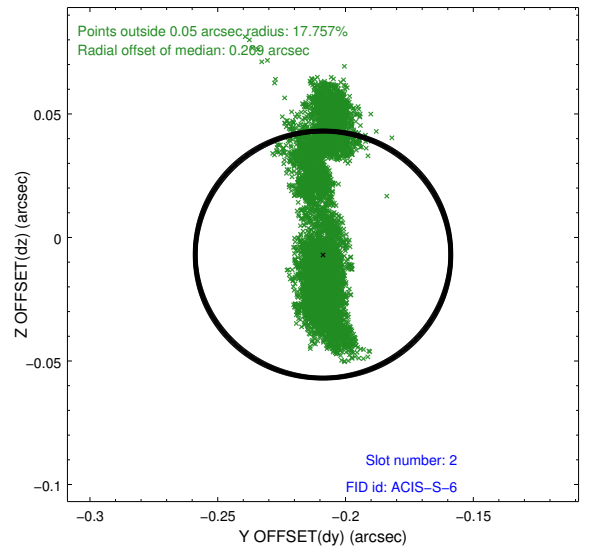
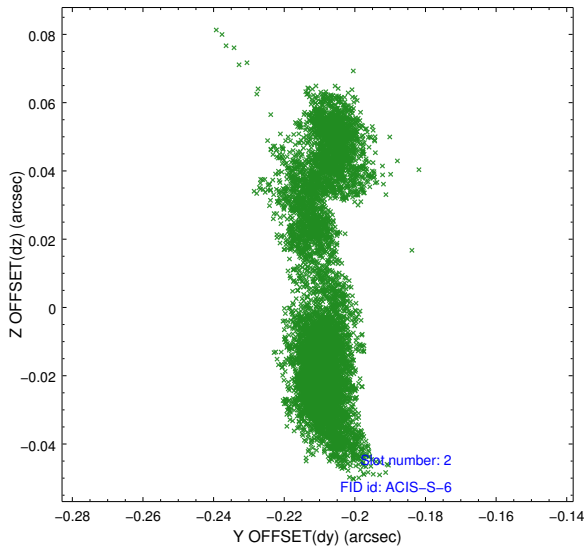
### 2.5.1 Slot 0



## 2.5.2 Slot 1

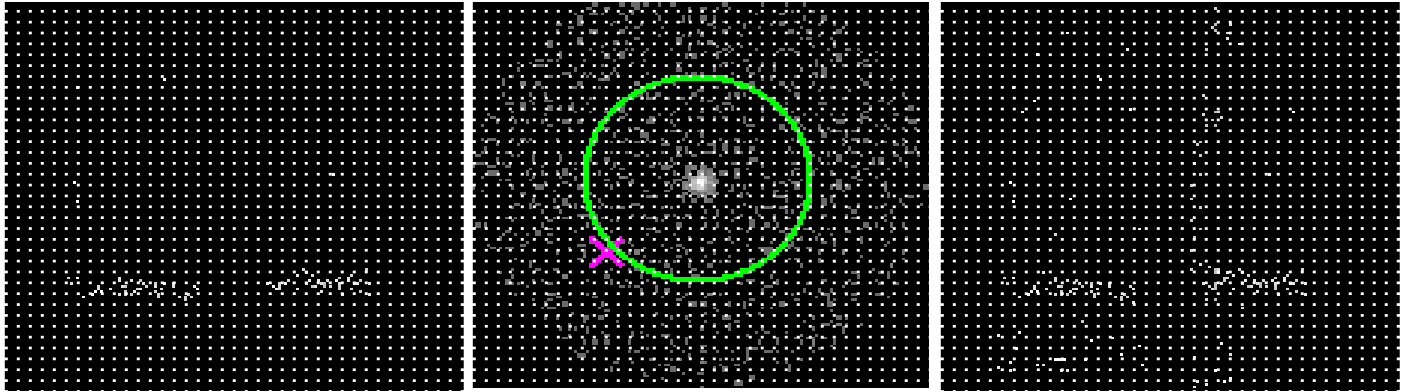


### 2.5.3 Slot 2



# 3 Gratings

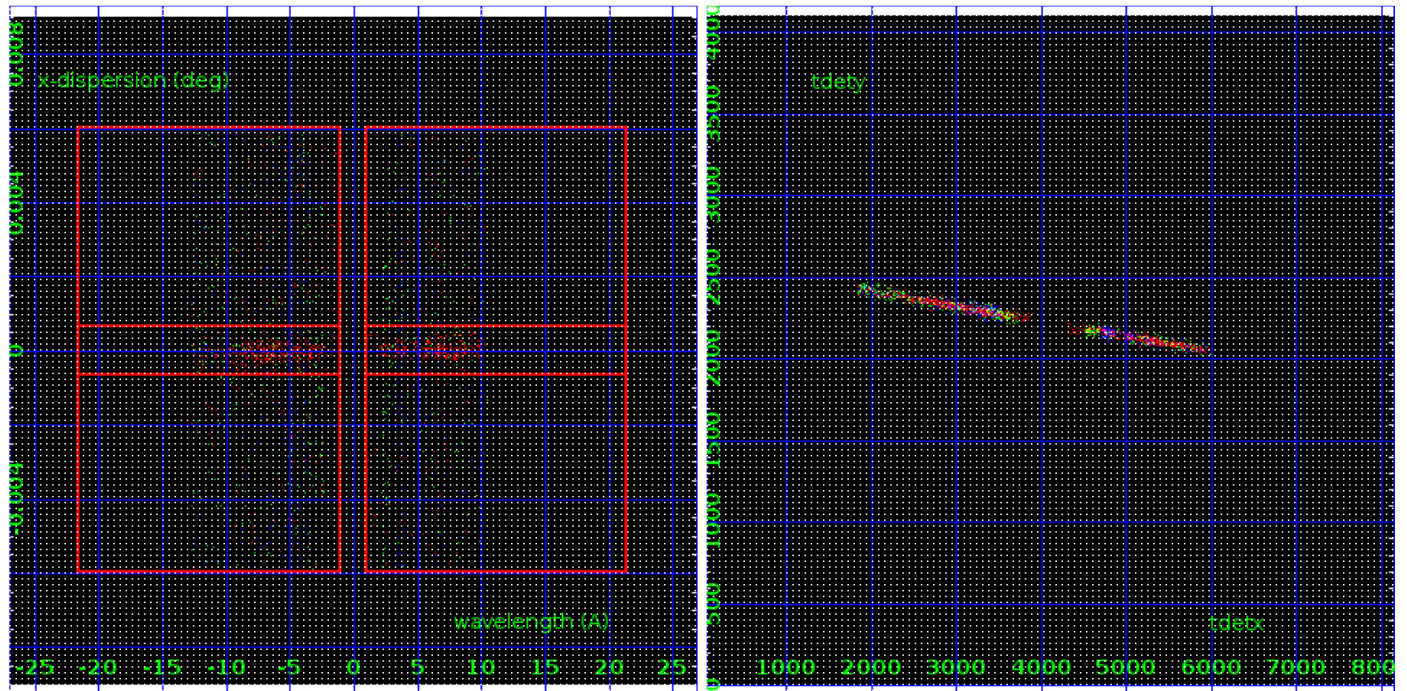
## 3.1 HEG Arm



HEG Order Sort 123

HEG Zero Order

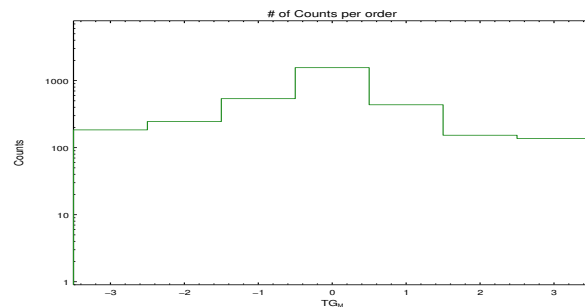
HEG Order Sort ALL

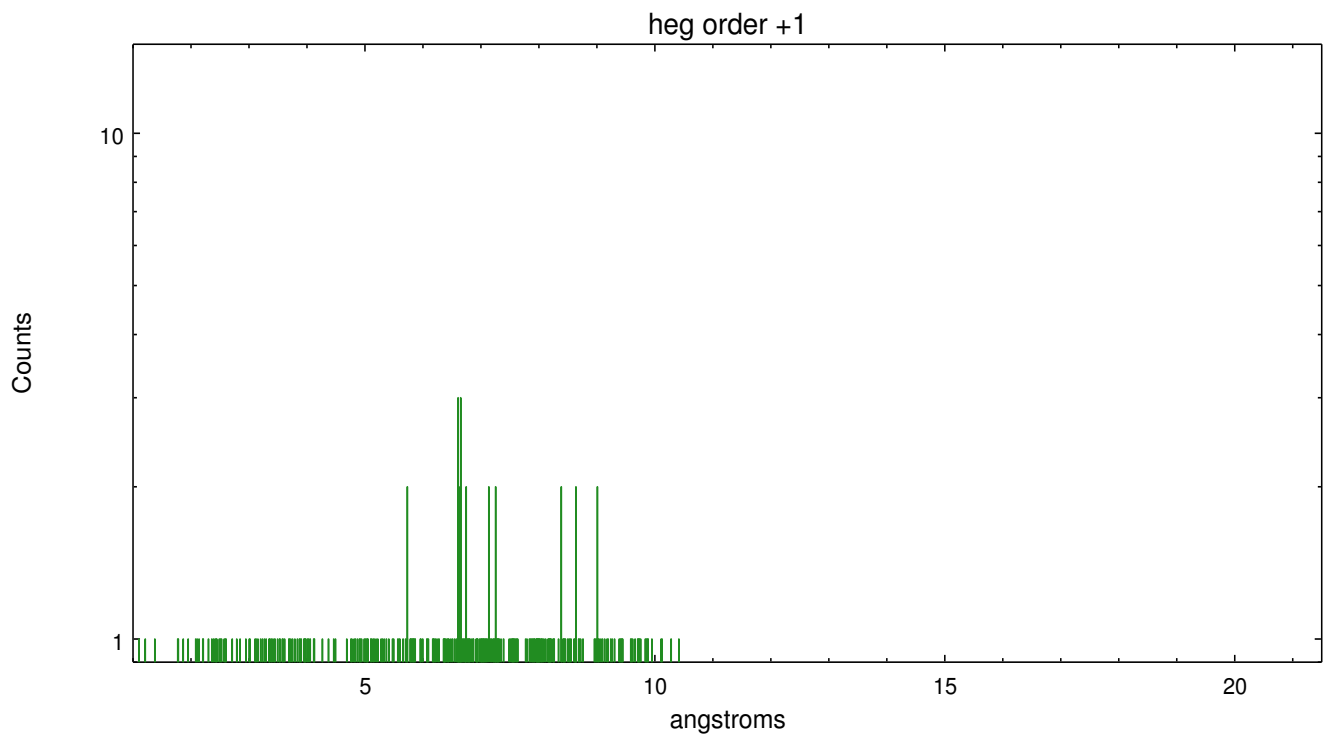
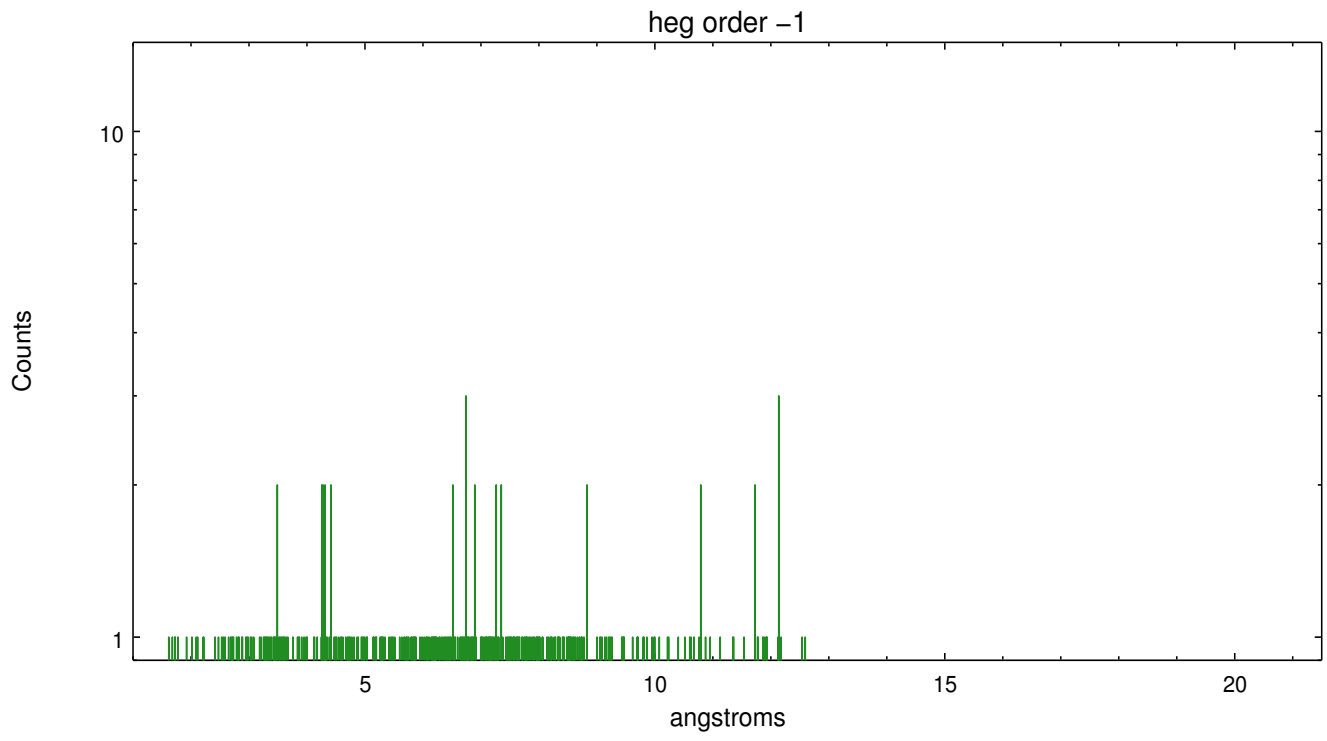


Spot Image HEG

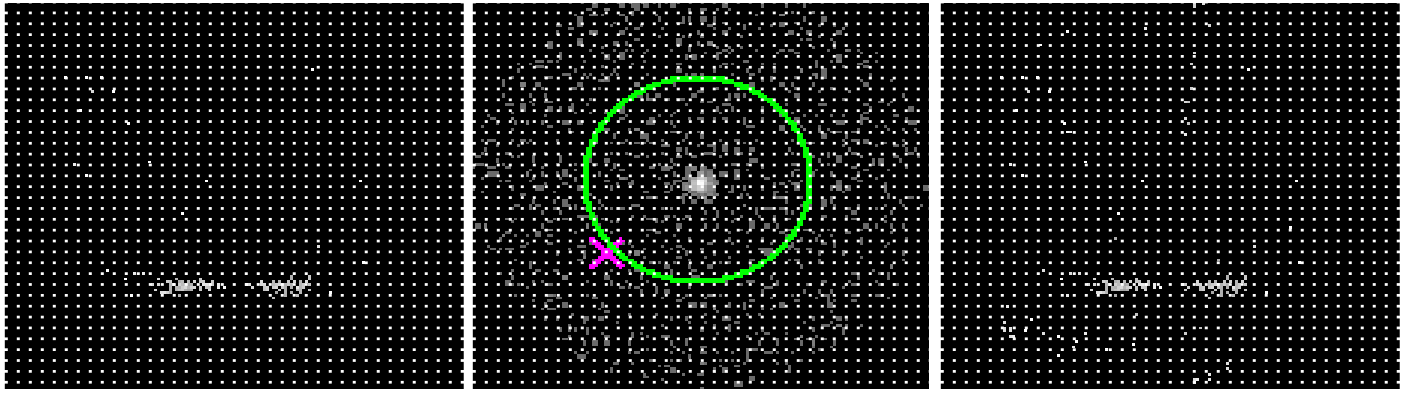
Full Detector HEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	184	245	538	1560	436	153	137





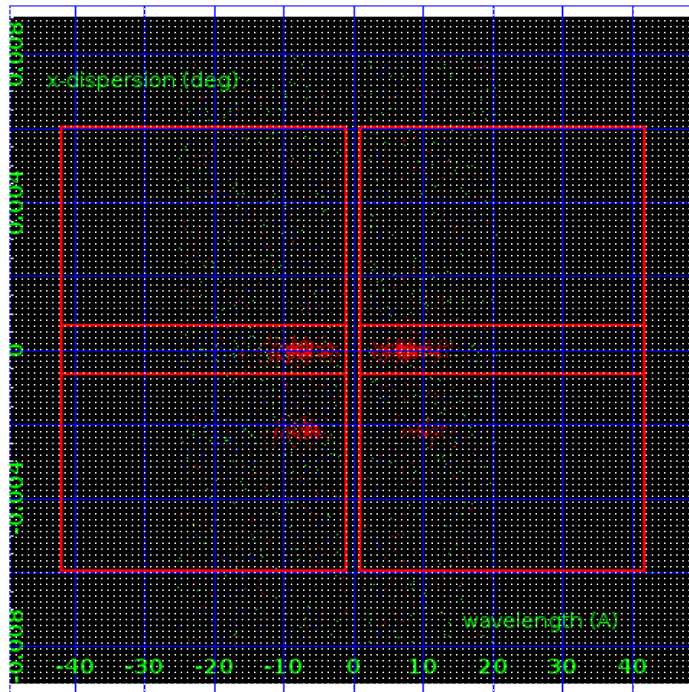
### 3.2 MEG Arm



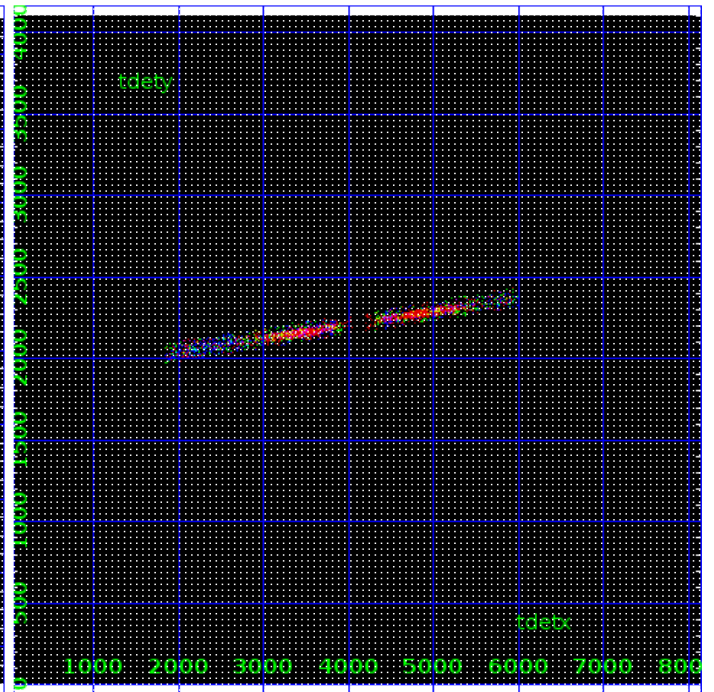
MEG Order Sort 123

MEG Zero Order

MEG Order Sort ALL

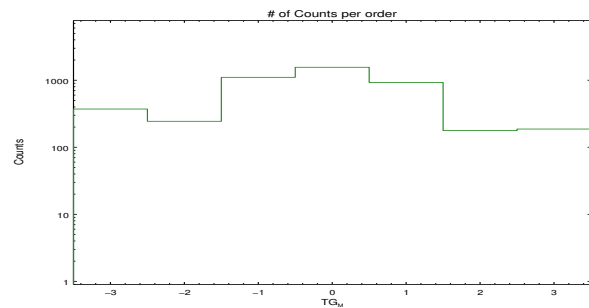


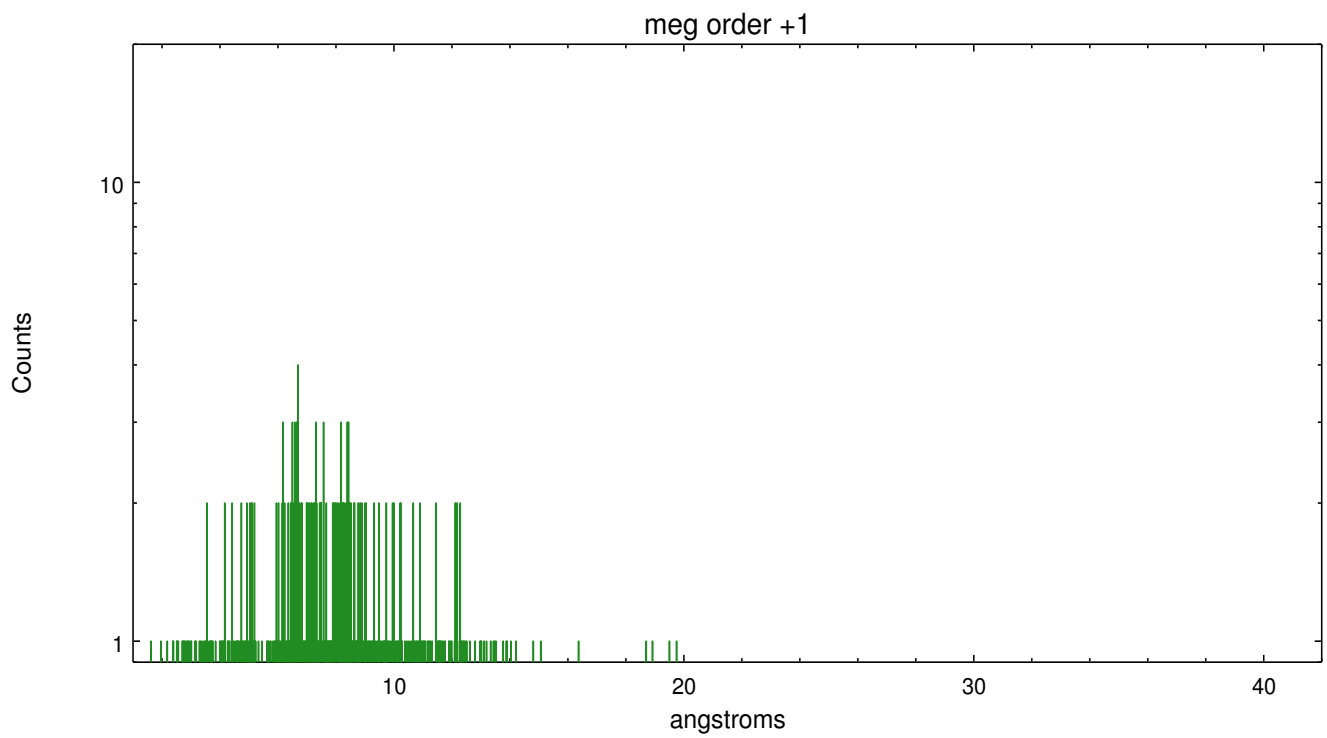
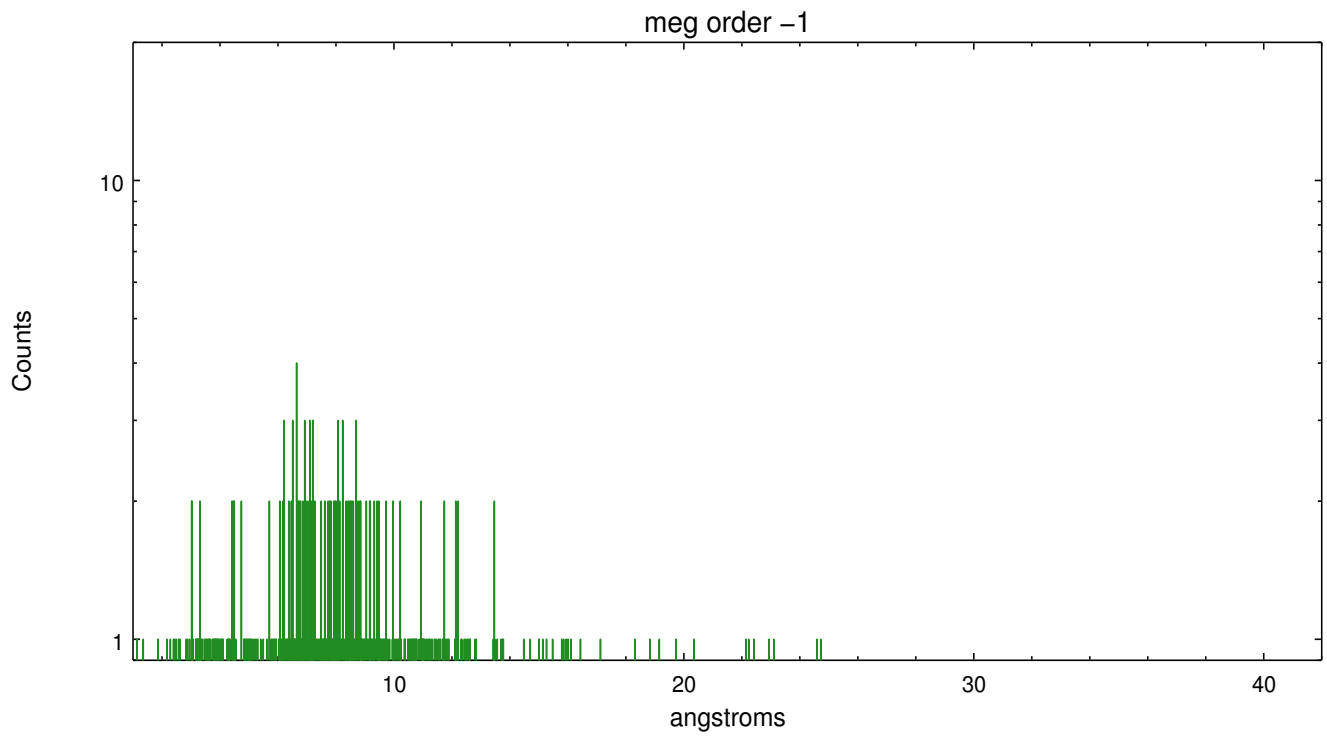
Spot Image MEG



Full Detector MEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	372	244	1105	1560	926	178	187





# A Summary

## A.1 Status

V&V Scientist	David Huenemoerder
V&V Date (YYYY-MM-DD)	2018.12.21
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	30.023500231028

## A.2 Comments

To compensate for a few bad pixels not marked as bad that were not removed in the Level 2 processing, a custom bad pixel file with additional bad pixels at (chipx, chipy) = (232:234,322:339) in S1 was added in this processing. As a result, the user will NOT find a relatively bright square of pixels on the S1 chip for level 2 data caused by the application of the dither algorithm to the bad pixels in question, as opposed to previous processing(s).