

# V&V Reference Report

## L2 ASCDS Version : 10.7.1

Observation 21177 - L2 Version 1  
Chandra X-Ray Center

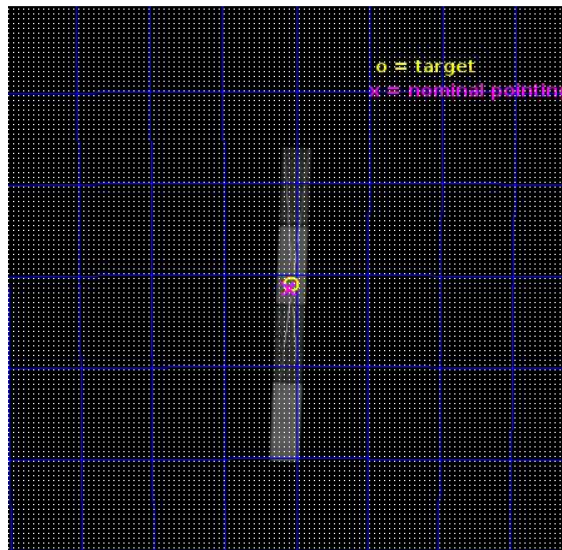
L2 Processing Date : May 16 2019

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# 1 Front

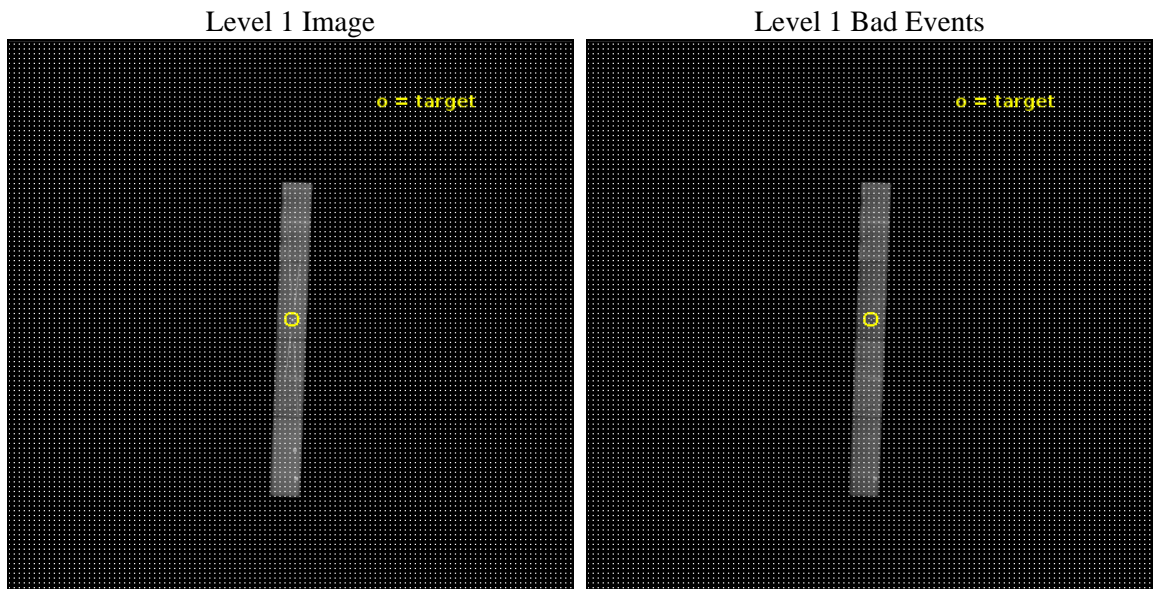
seq_num	201231	Sequence number
obs_id	21177	Observation id
title	Eta Carinae: X-ray Emission Line Diagnostics On the Approach to Periastron Passage	Proposal title
observer	Michael Corcoran	Principal investigator
object	Eta Carinae	Source name
dtcycle	0	&#160
cycle	P	events from which exps? Prim/Second/Both
ra_targ	161.264583	Observer's specified target RA [deg]
dec_targ	-59.684444	Observer's specified target Dec [deg]
ra_nom	161.27232594082	Nominal RA [deg]
dec_nom	-59.691898718909	Nominal Dec [deg]
roll_nom	272.16329335543	Nominal Roll [deg]
revision	1	Processing version of data
ontime	30020.401192904	Sum of GTIs [s]
livetime	29027.655378944	Livetime [s]
ontime5	30020.401192904	Sum of GTIs [s]
ontime6	30020.401192904	Sum of GTIs [s]
ontime7	30020.401192904	Sum of GTIs [s]
ontime8	30020.401192904	Sum of GTIs [s]
l2events	173767	Number of level 2 events



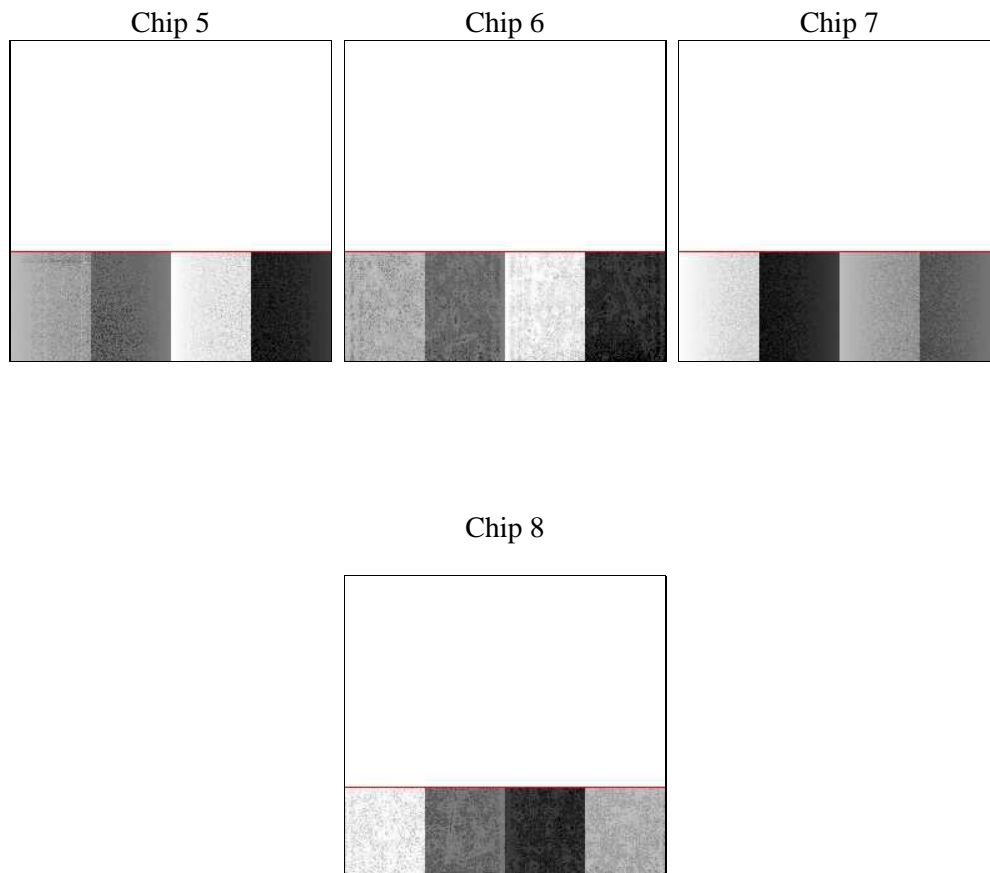
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

obi_num	0	Obi number	sched_exp_time	30000.000000	[s] Scheduled observation exposure time
ascdsver	10.7.1	Processing system revision	ontime	30020.401192904	Sum of GTIs [s]
caldsver	4.8.2	&#160	ontime5	30020.401192904	Sum of GTIs [s]
date	2019-05-17T00:44:02	Date and time of file creation	ontime6	30020.401192904	Sum of GTIs [s]
revision	1	Processing version of data	ontime7	30020.401192904	Sum of GTIs [s]
			ontime8	30020.401192904	Sum of GTIs [s]
			l1events	501886	Number of level 1 events
			tgmethod	FINDZO	Method used to create src1a file
			zo_pos	(4123.94, 4150.48)	src1a sky pixel position
			zo_pos_tgd	(4124.05, 4150.85)	src1a sky pixel position via todetect

### 2.1.4 Events

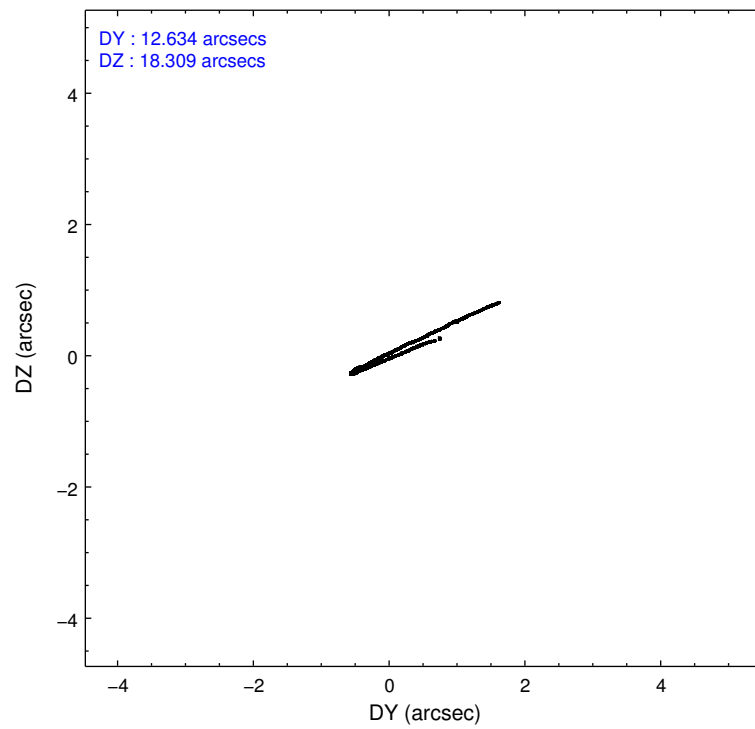
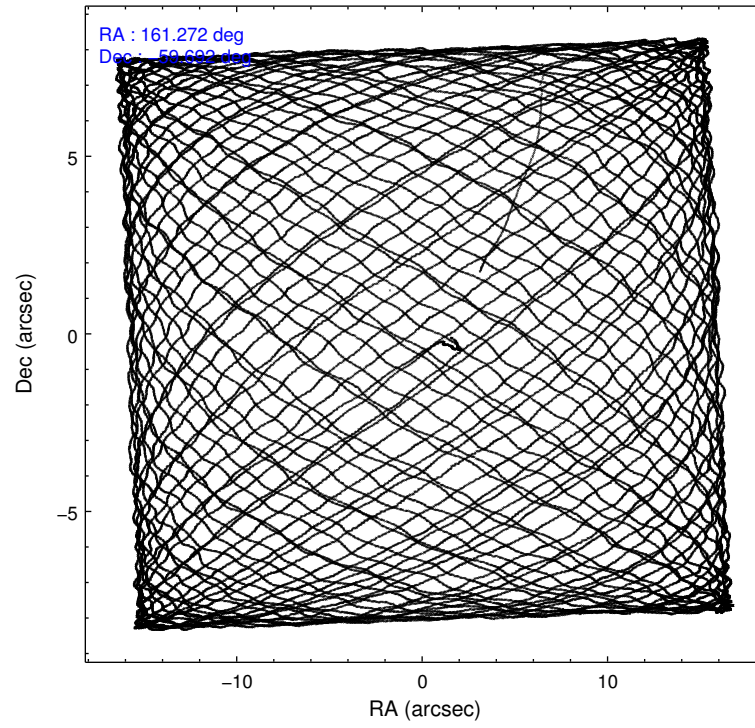
	ccd 5	ccd 6	ccd 7	ccd 8
level 1 events	142832	103989	142724	112341
rejected events	68924	78326	60744	80236
rejected %	48%	75%	42%	71%

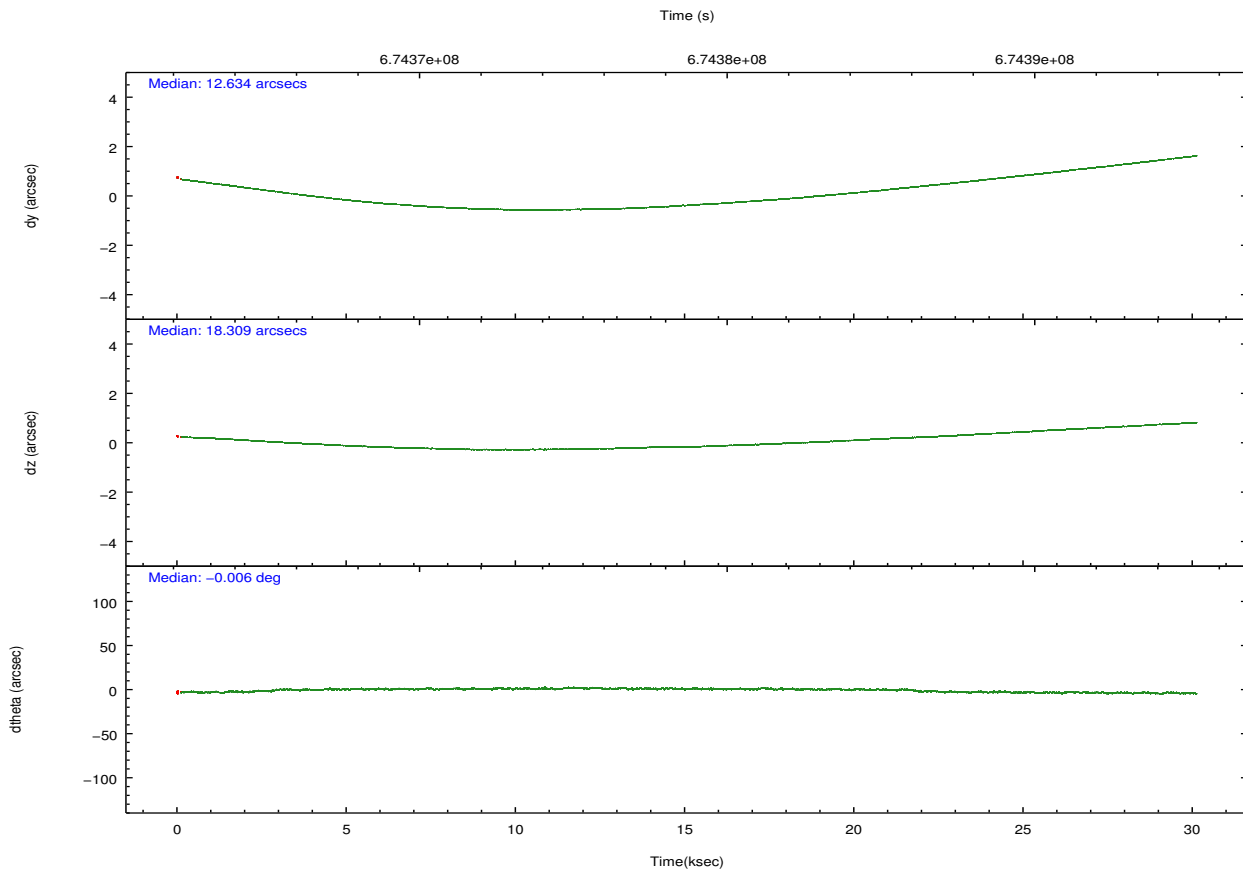
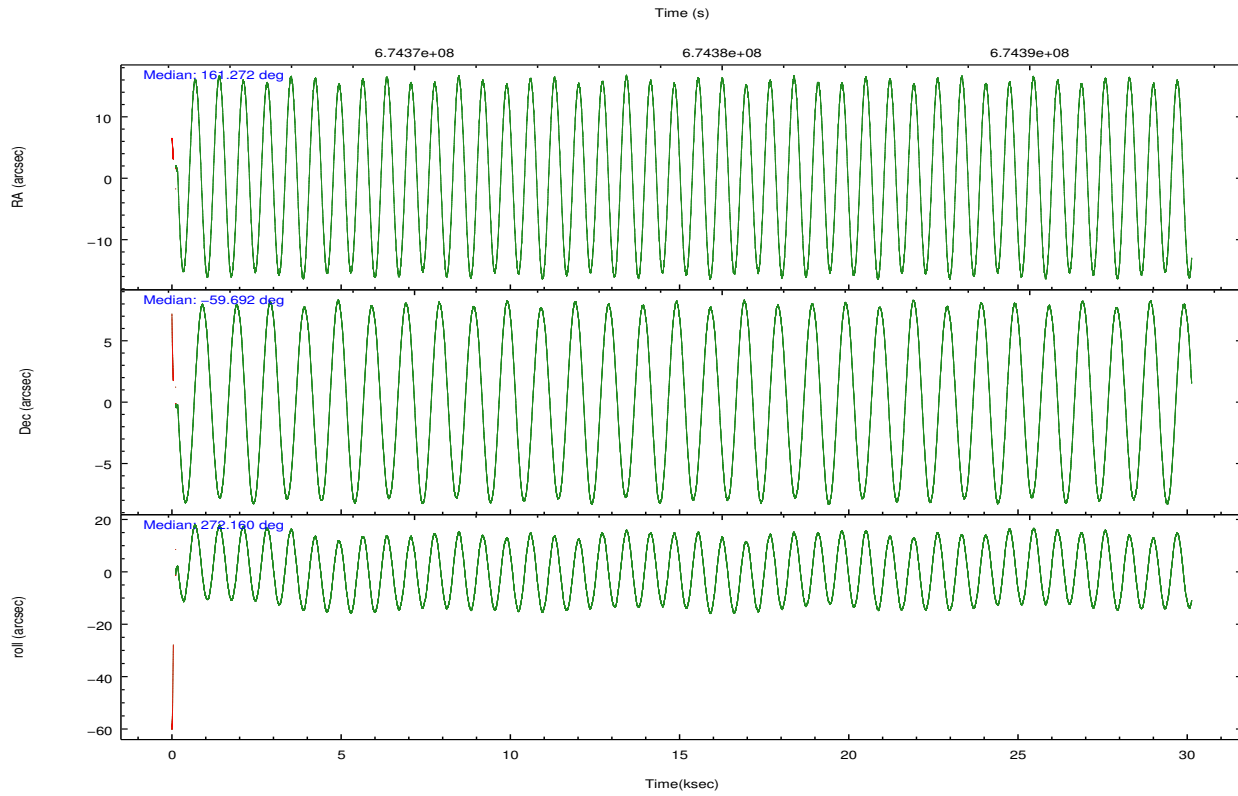
	ccd 5	ccd 6	ccd 7	ccd 8
grade 0 events	16098	14788	10374	10717
	11%	14%	7%	9%
grade 1 events	3434	59	498	59
	2%	0%	0%	0%
grade 2 events	17461	4352	17722	6942
	12%	4%	12%	6%
grade 3 events	4298	1871	8219	3377
	3%	1%	5%	3%
grade 4 events	4763	1983	7972	3244
	3%	1%	5%	2%
grade 5 events	8940	3487	11687	5108
	6%	3%	8%	4%
grade 6 events	32286	2938	38567	8184
	22%	2%	27%	7%
grade 7 events	55552	74511	47685	74710
	38%	71%	33%	66%

## 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	Number of optional ACIS chips dropped	0	0
Observation mode	POINTING	POINTING	On-chip summing requested	N	N
[deg] Pointing RA	161.242816	161.2723259408207	Subarray requested	CUSTOM	CUSTOM
[deg] Pointing Dec	-59.668856	-59.69189871890919	Subarray start row	1	1
[deg] Pointing Roll	271.981214	272.1632933554334	Subarray row count	350	350
[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	1.2
[mm] SIM translation stage pos	-182.132523	-182.1370004450064			
[mm] SIM translation stage offset	-8	-7.995522138001405			
Phase constraints	Y	Y			
[d] Phase period	2024.000000	2024.000000			
[d] Phase epoch (MJD)	56871.291953	56871.291953			
Phase start	0.797000	0.797000			
Phase end	0.930000	0.930000			
Phase start error	0.010000	0.010000			
Phase end error	0.010000	0.010000			
[s] Observation start time (MET)	674363730.184000	674362699.9227999			
Observation start date	2019-05-16T03:14:21	2019-05-16T02:58:19			
[s] Observation end time (MET)	674393730.184000	674394517.97471			
Observation end date	2019-05-16T11:34:21	2019-05-16T11:48:37			
Read mode	TIMED	TIMED			

## 2.3 Aspect





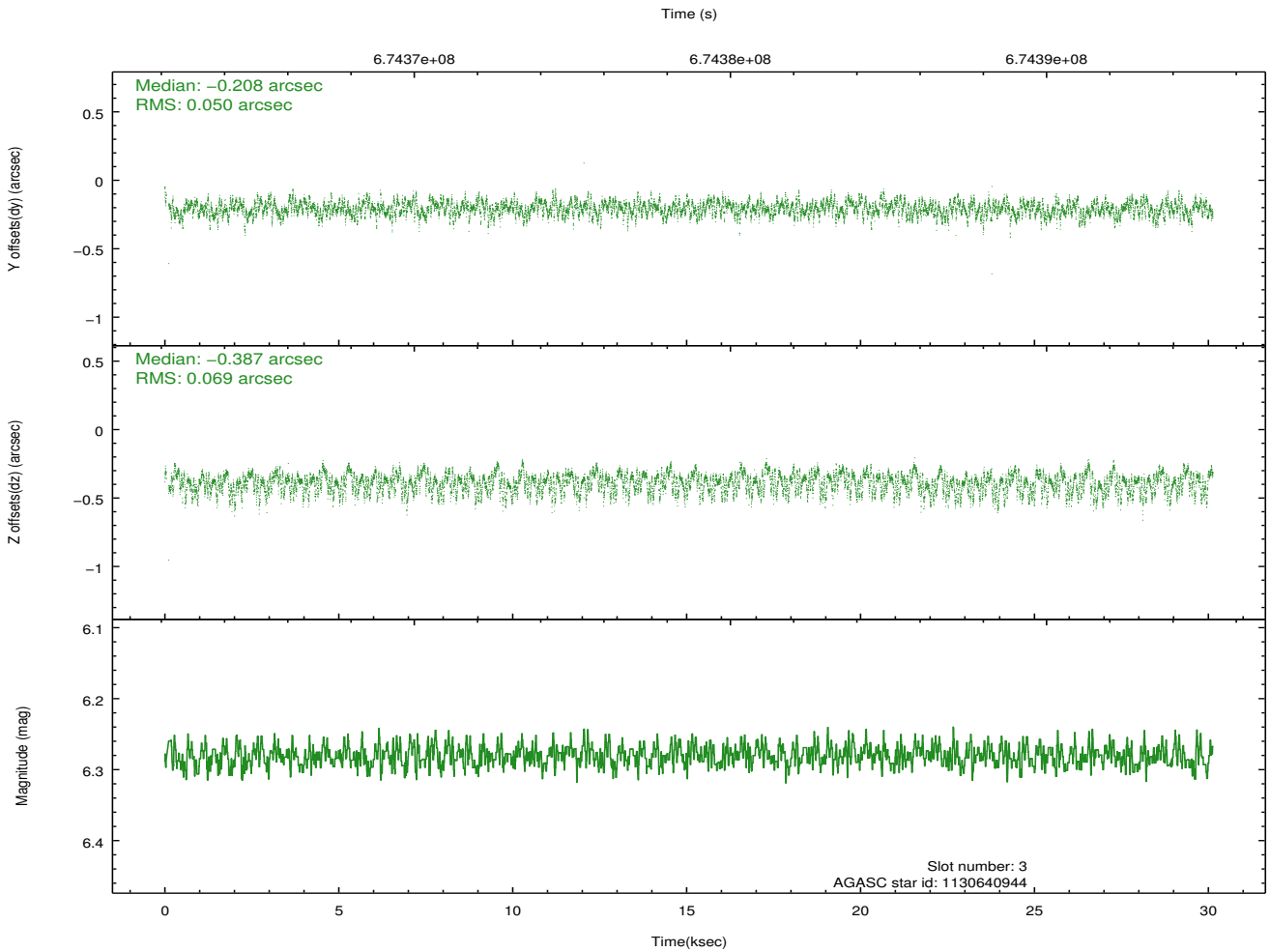
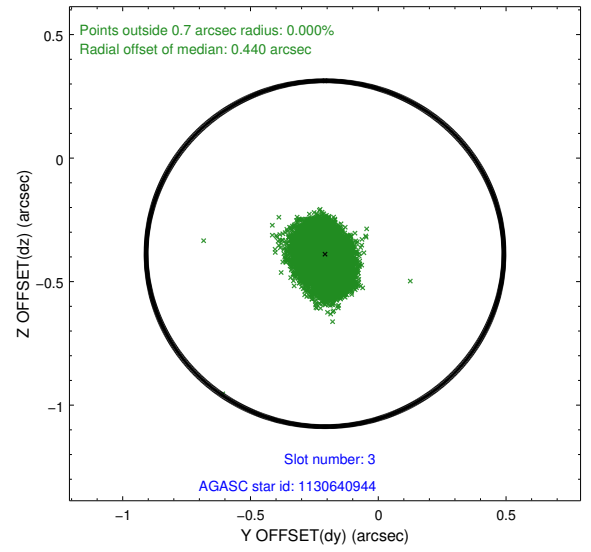
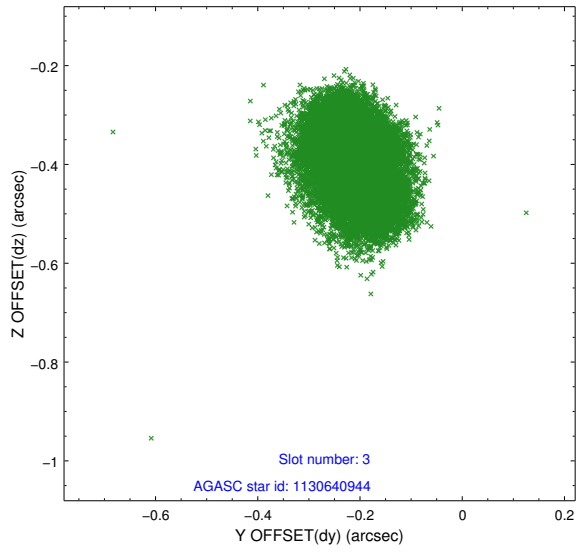
### Slot Statistics

slot	status	used	id	mag	n_pts	frac_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mea
0	FID		ACIS-S-4	7.19	7334	1.000	0.576	0.022	0.010	0.022	0.000000	0.000000	2148.81	4
1	FID		ACIS-S-5	7.23	7332	1.000	-0.660	-0.003	0.013	0.052	0.000000	0.000000	-1818.53	-2
2	FID		ACIS-S-6	7.41	7333	1.000	0.058	-0.004	0.014	0.030	0.000000	0.000000	396.45	641
3	GUIDE	used	1130640944	6.28	14668	1.000	-0.208	-0.387	0.091	0.145	162.022531	-59.919161	957.28	1374
4	GUIDE	used	1130643264	6.68	14668	1.000	0.203	0.253	0.100	0.164	160.322990	-59.676912	-16.76	-1671
5	GUIDE	used	1130632200	7.54	14664	1.000	0.020	0.190	0.102	0.163	161.433843	-59.407820	-926.46	382
6	GUIDE	used	1174033144	8.61	14655	1.000	-0.021	-0.036	0.106	0.170	161.168741	-60.059230	1400.02	-181
7	MONITOR	unused		0.00	0	0.000	0.000	0.000	0.000	0.000	0.000000	0.000000	0.00	0

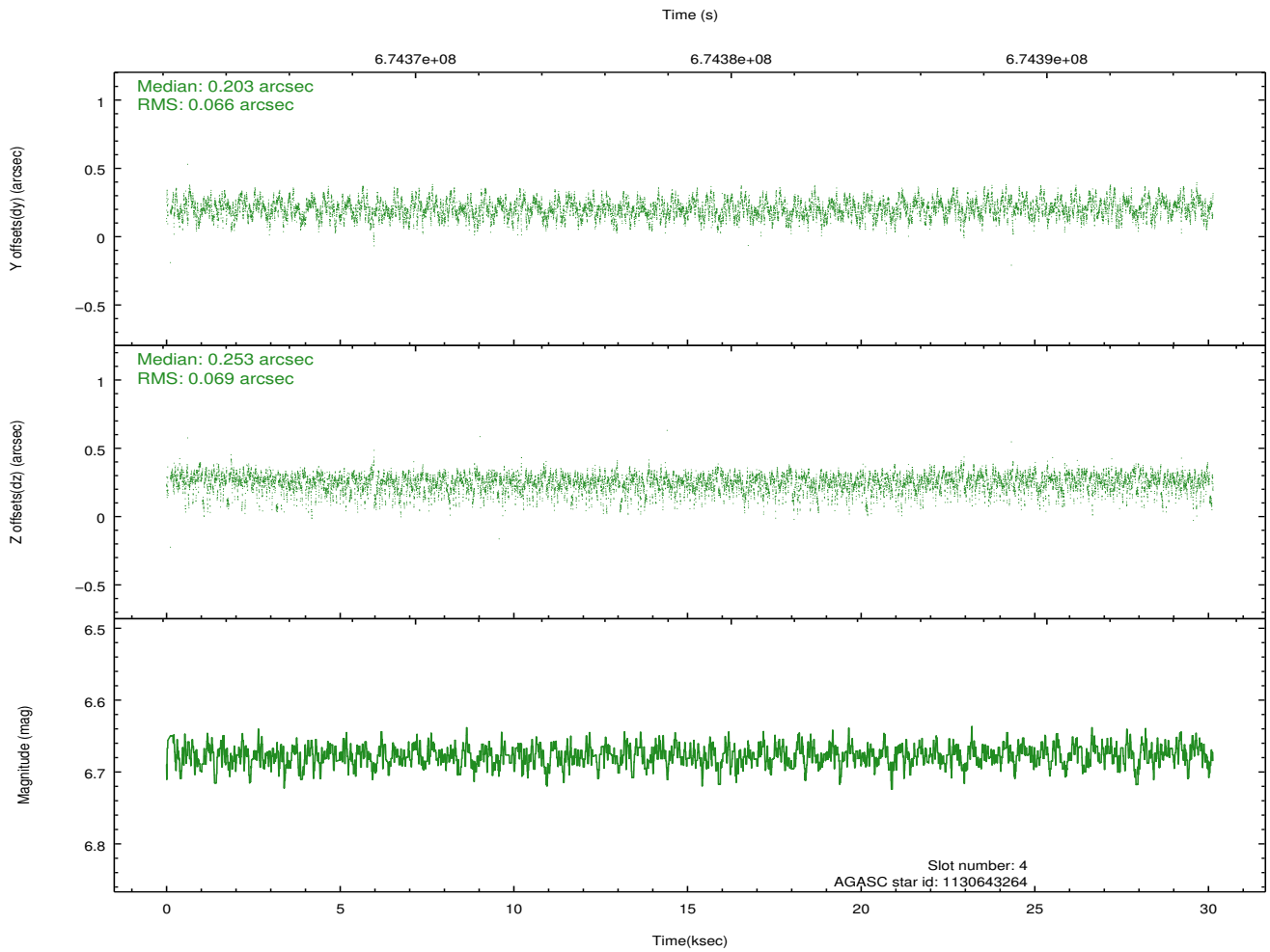
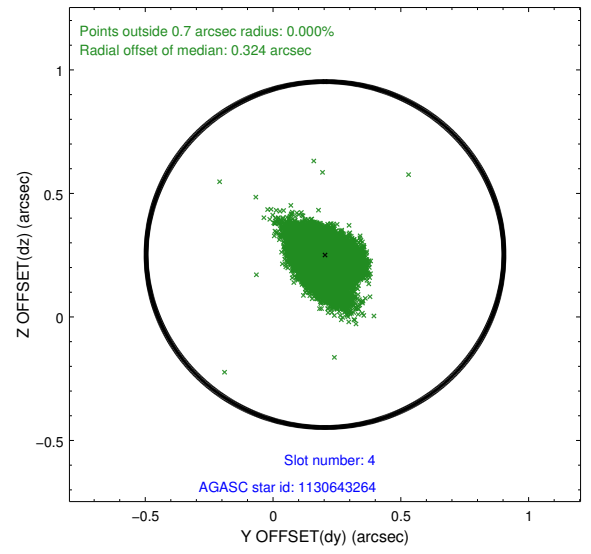
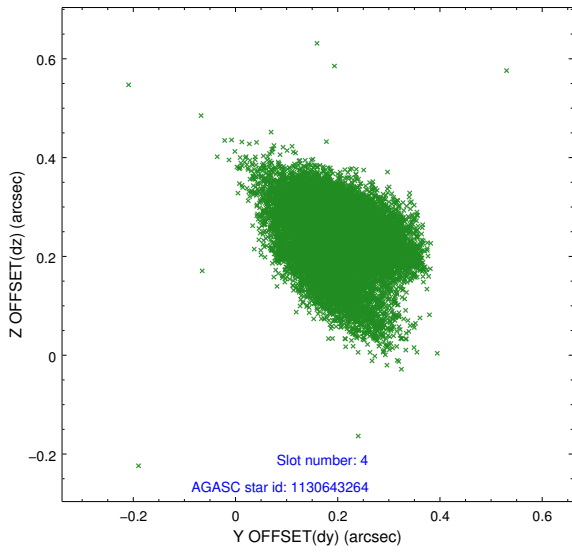
∞

## 2.4 Star Slots

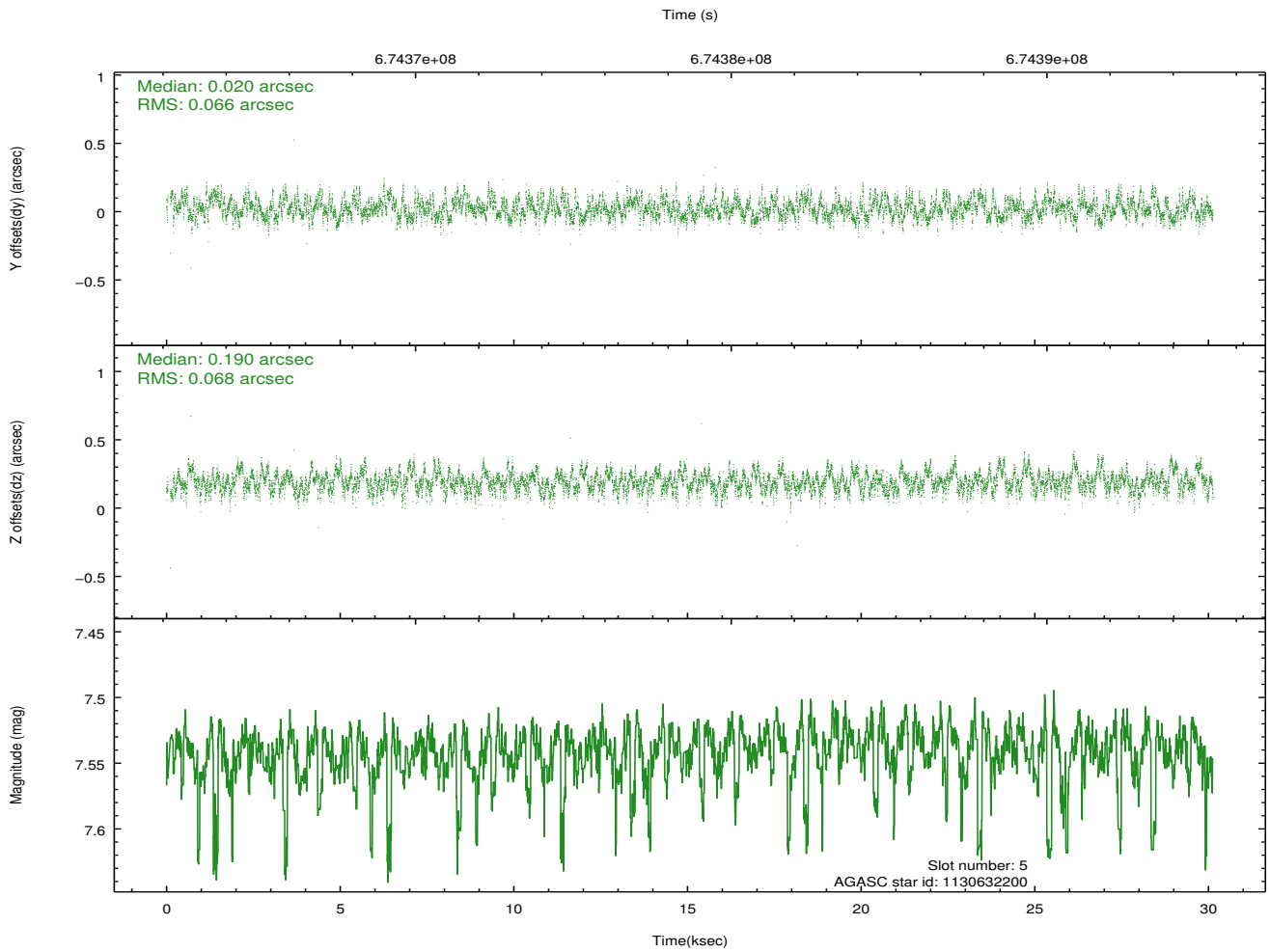
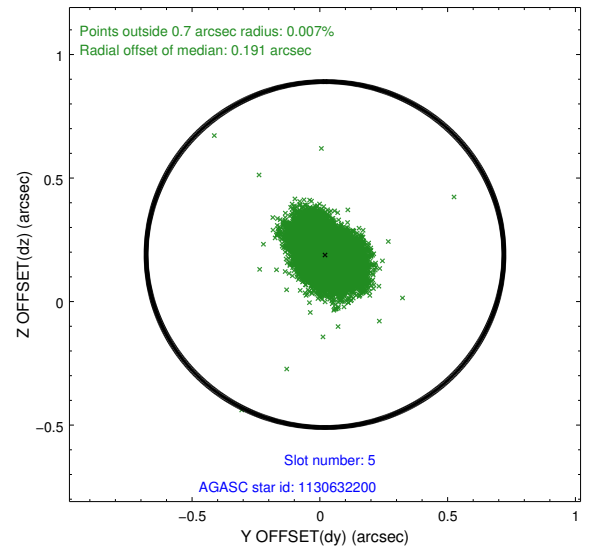
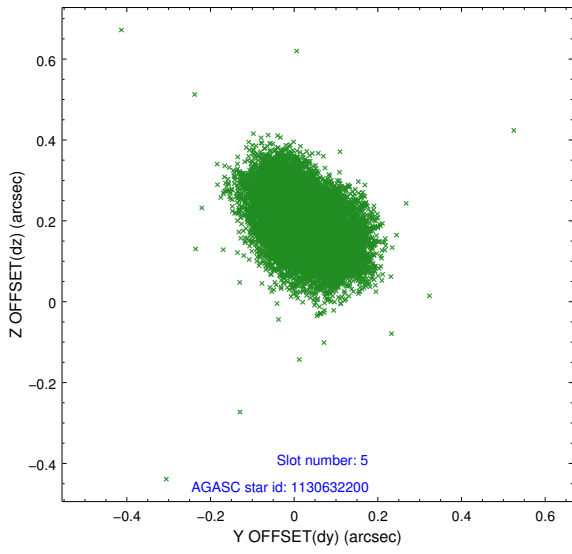
### 2.4.1 Slot 3



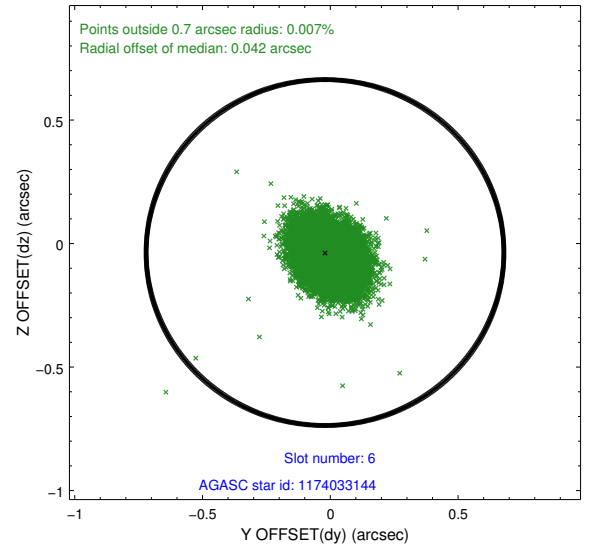
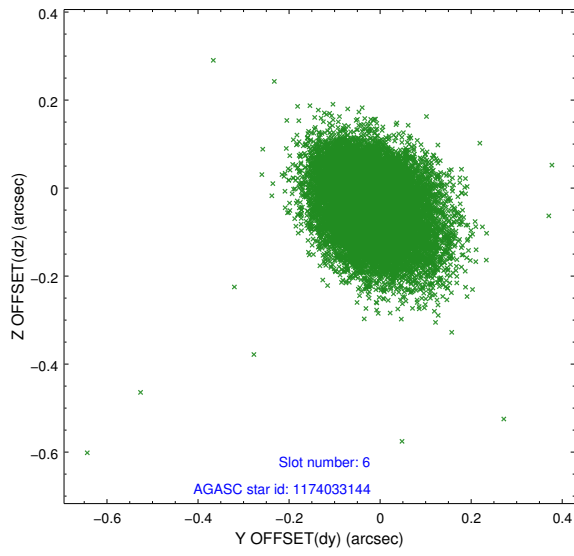
## 2.4.2 Slot 4



### 2.4.3 Slot 5



### 2.4.4 Slot 6

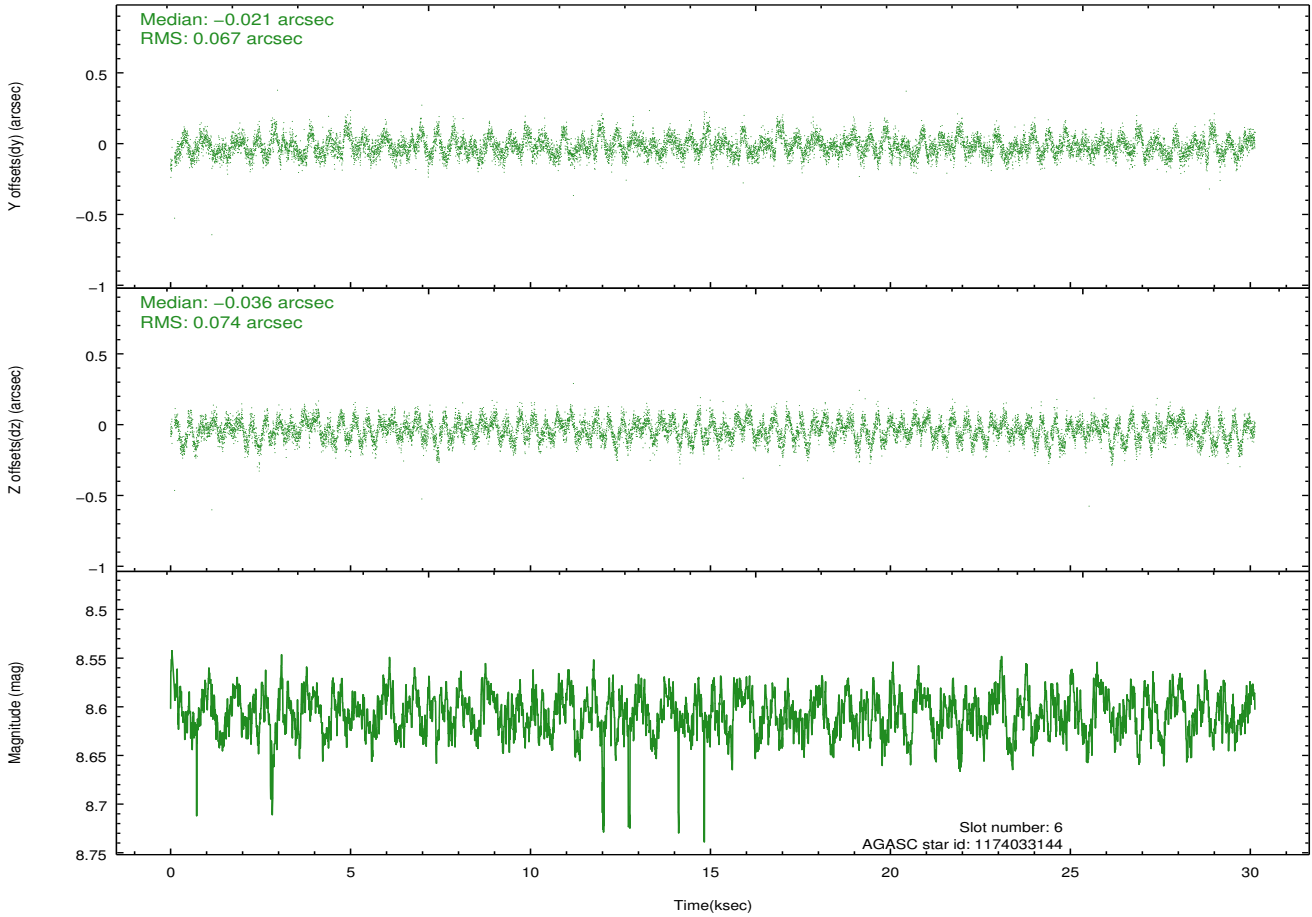


Time (s)

6.7437e+08

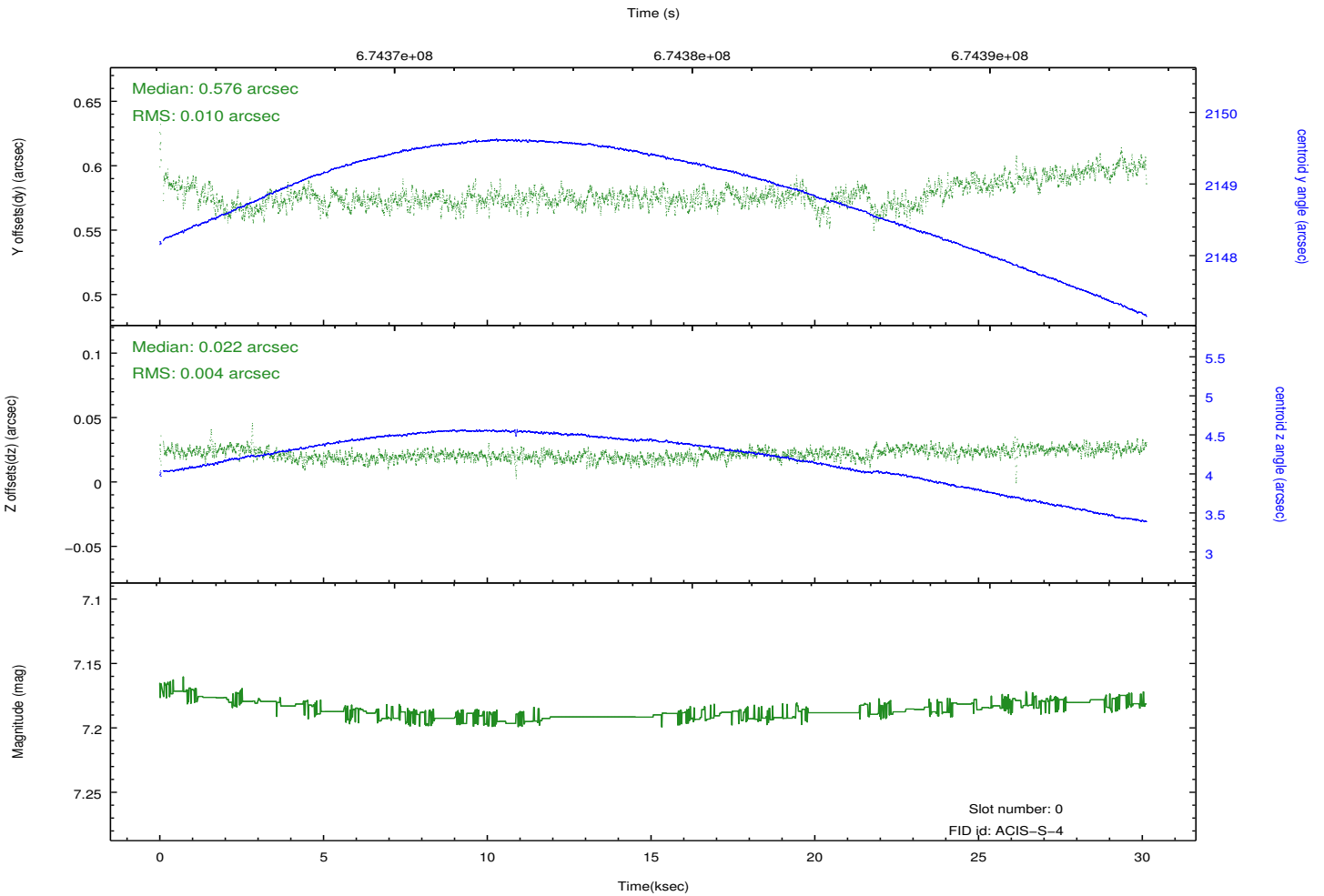
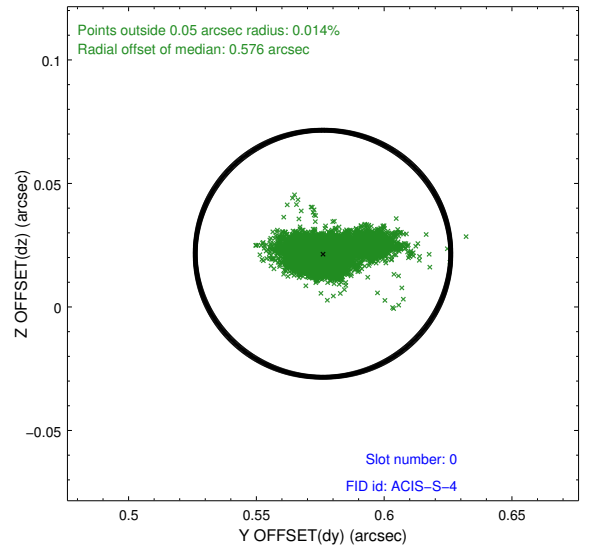
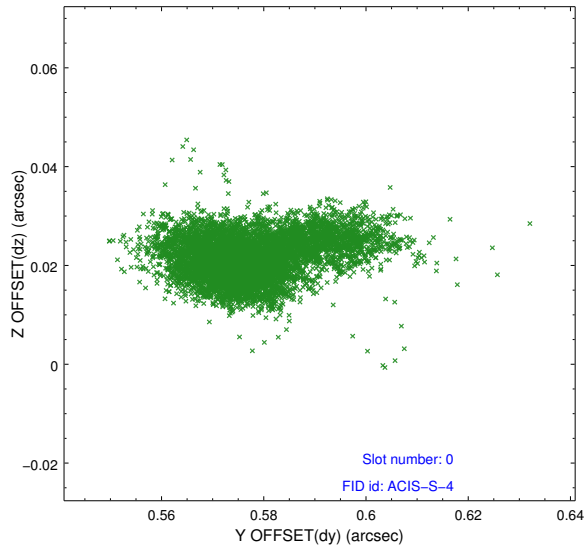
6.7438e+08

6.7439e+08

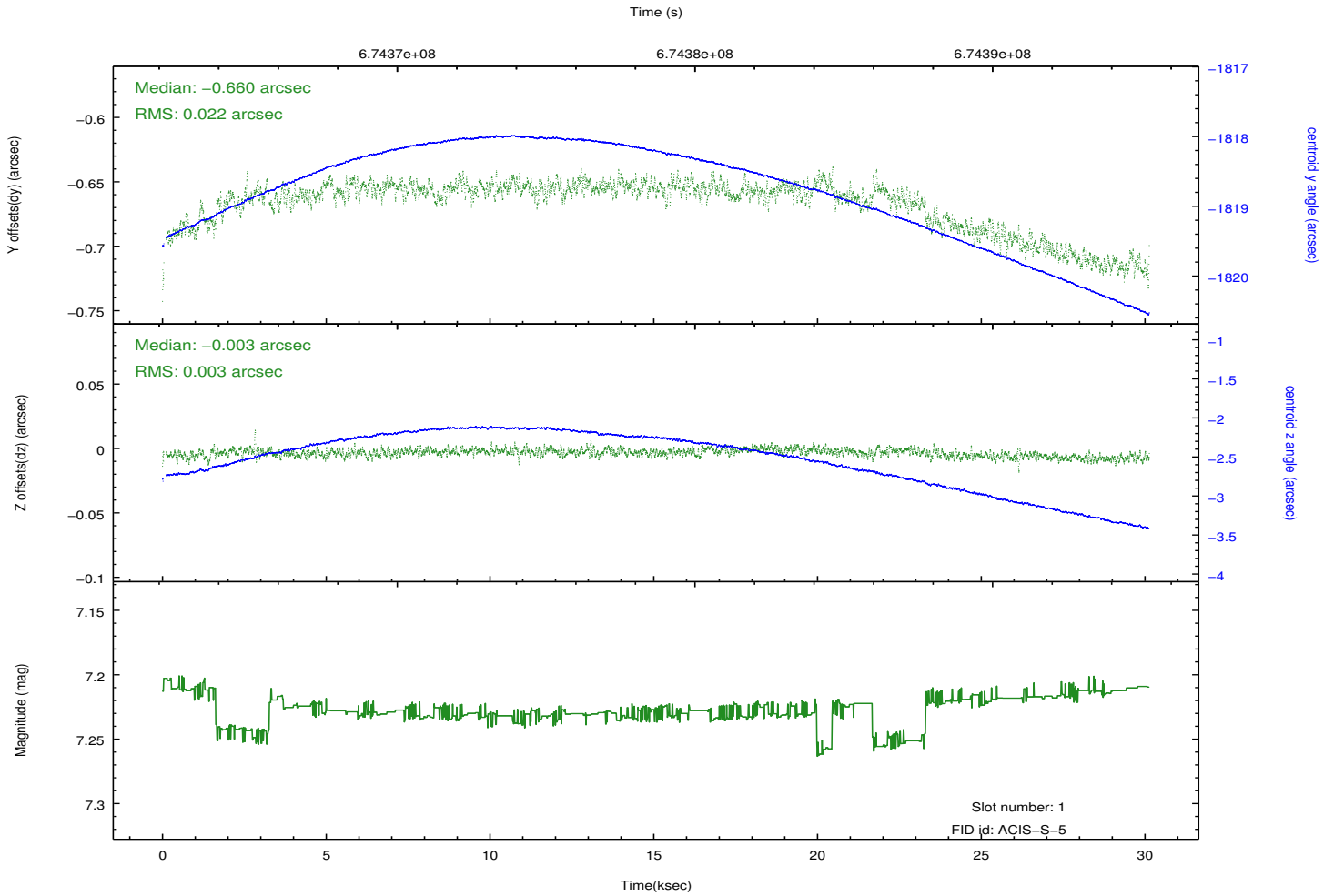
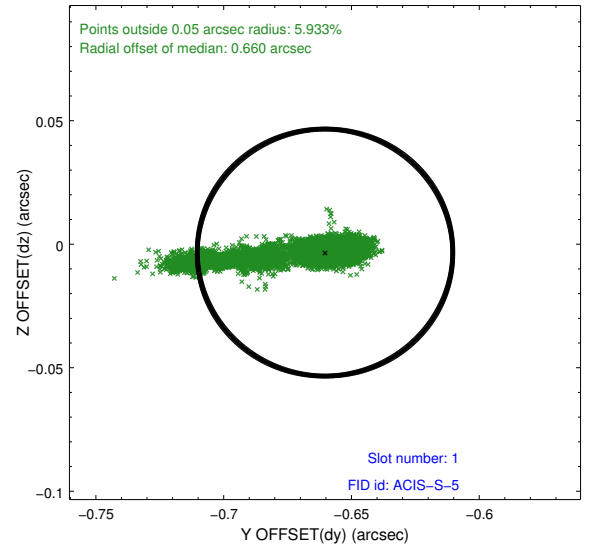
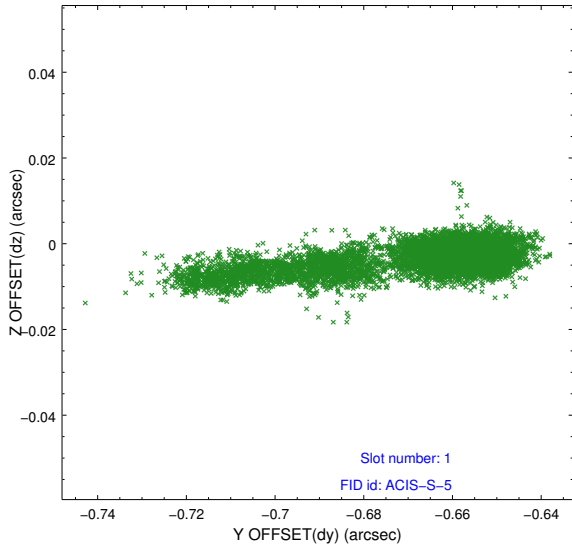


## 2.5 FID Slots

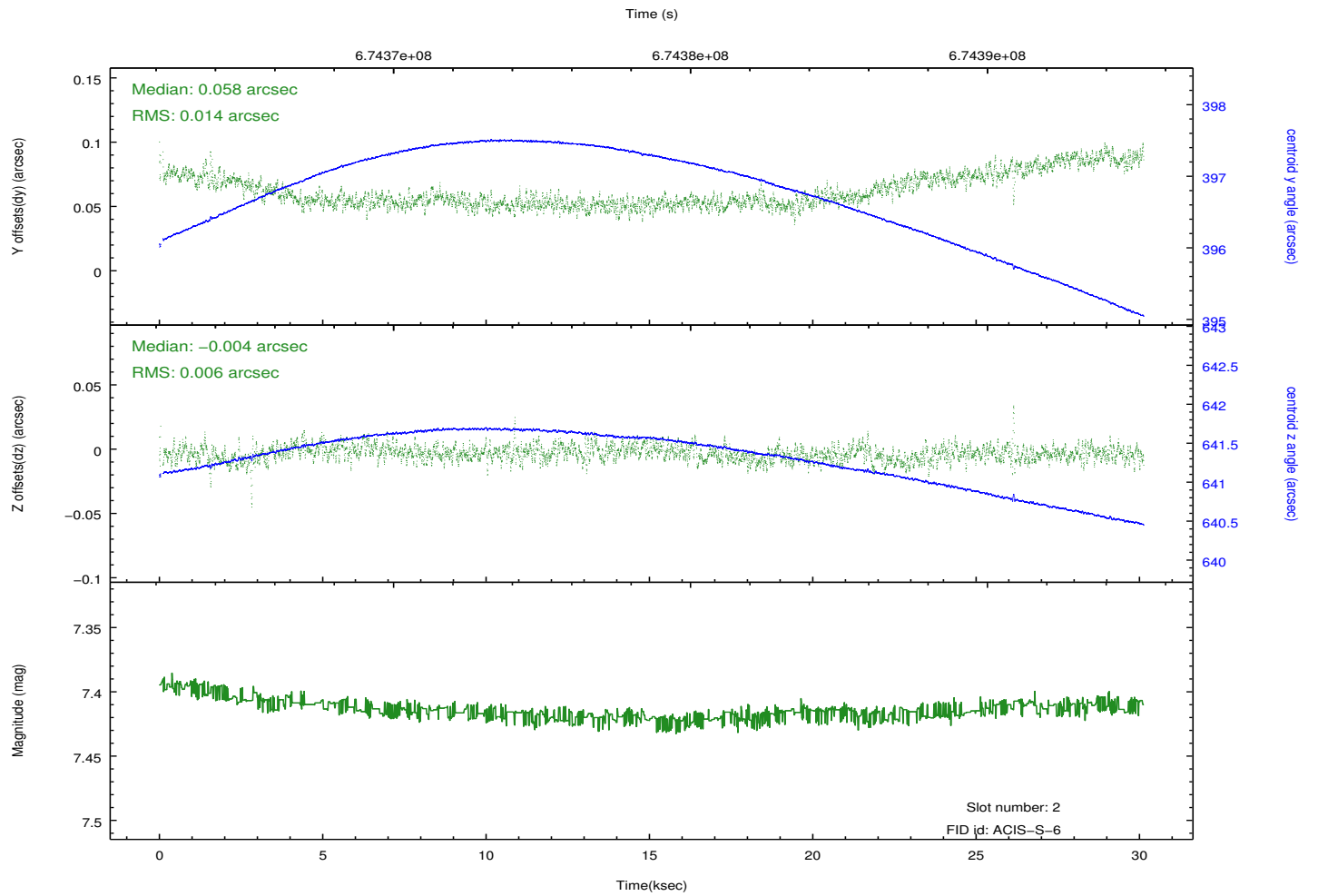
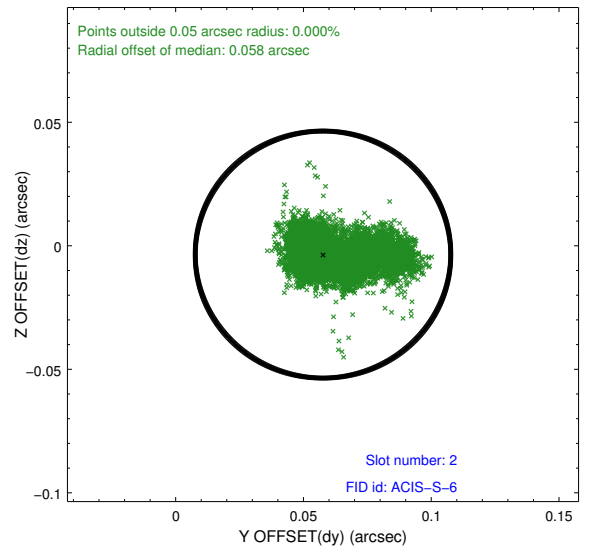
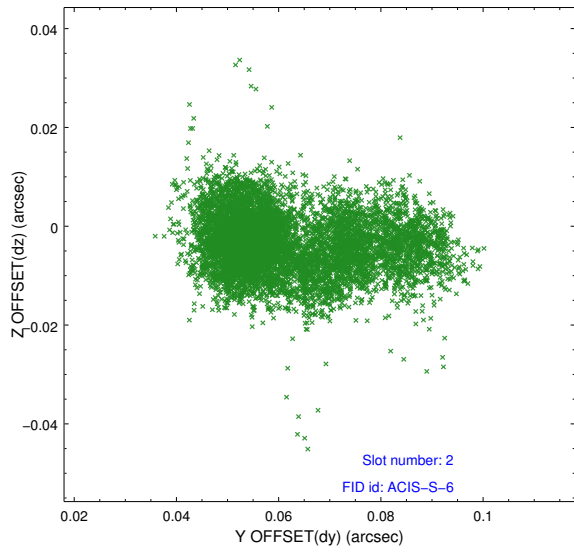
### 2.5.1 Slot 0



## 2.5.2 Slot 1

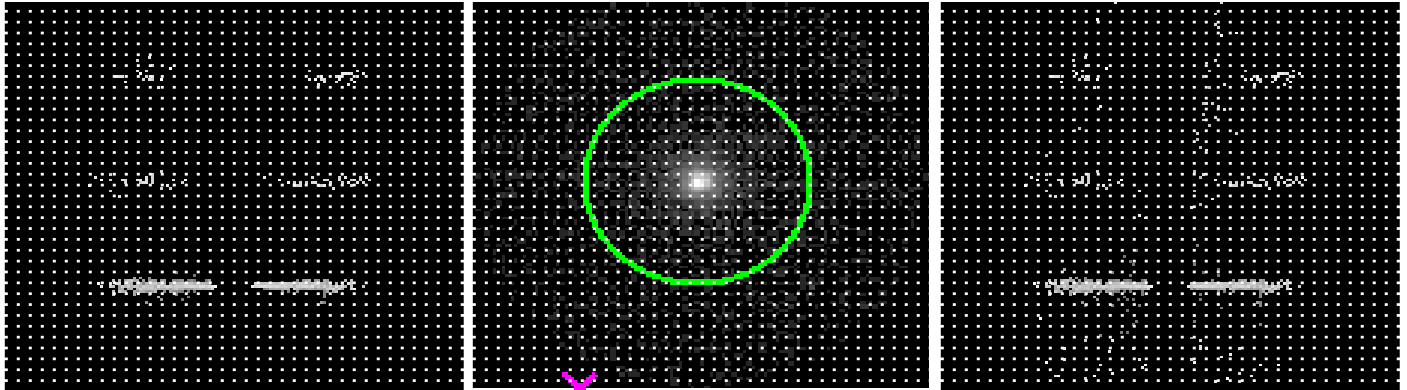


### 2.5.3 Slot 2



# 3 Gratings

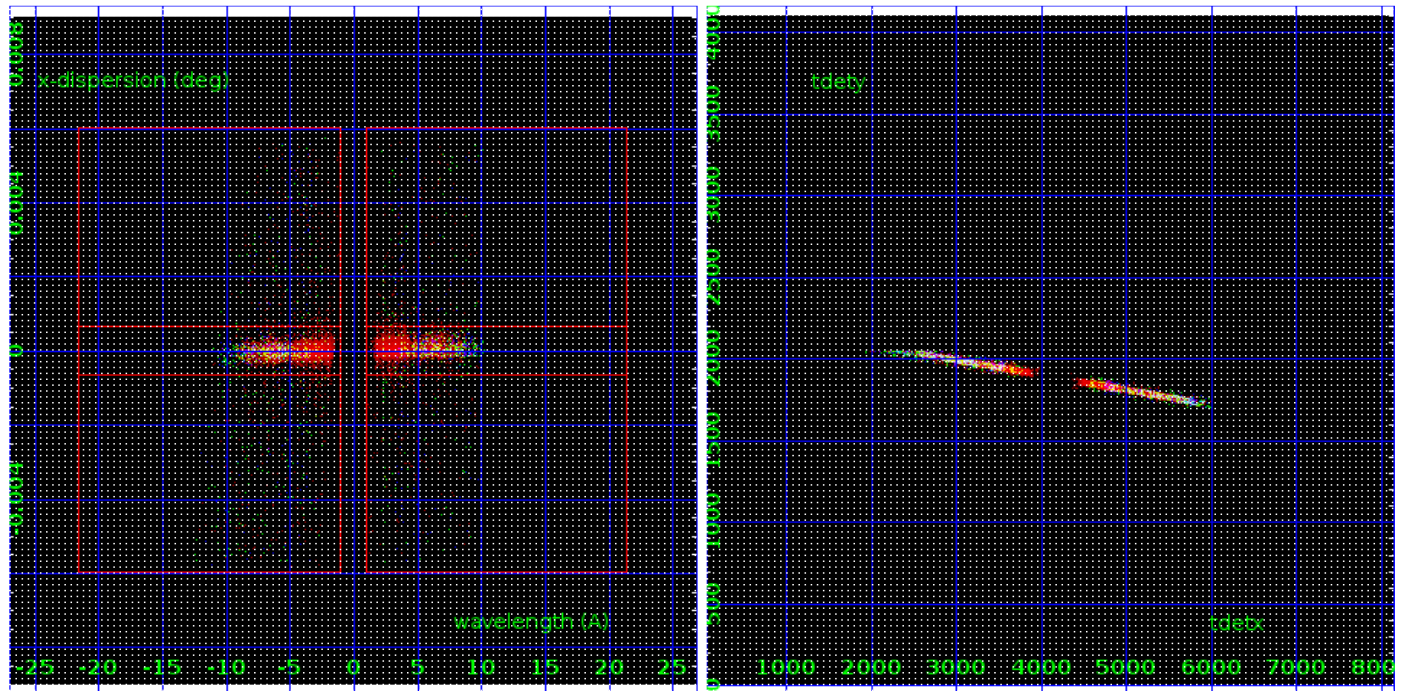
## 3.1 HEG Arm



HEG Order Sort 123

HEG Zero Order

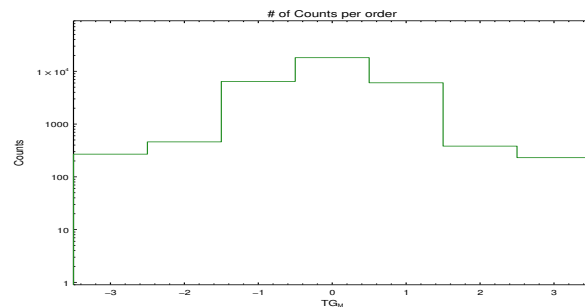
HEG Order Sort ALL

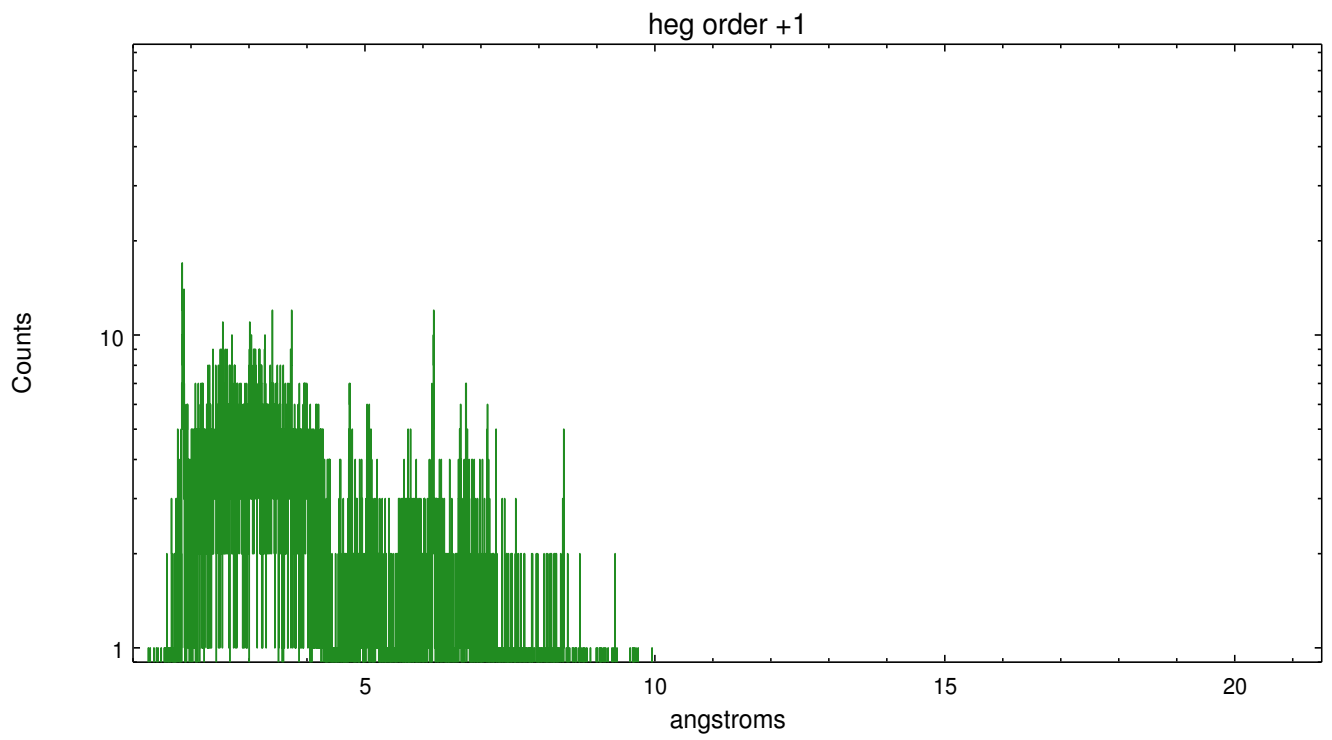
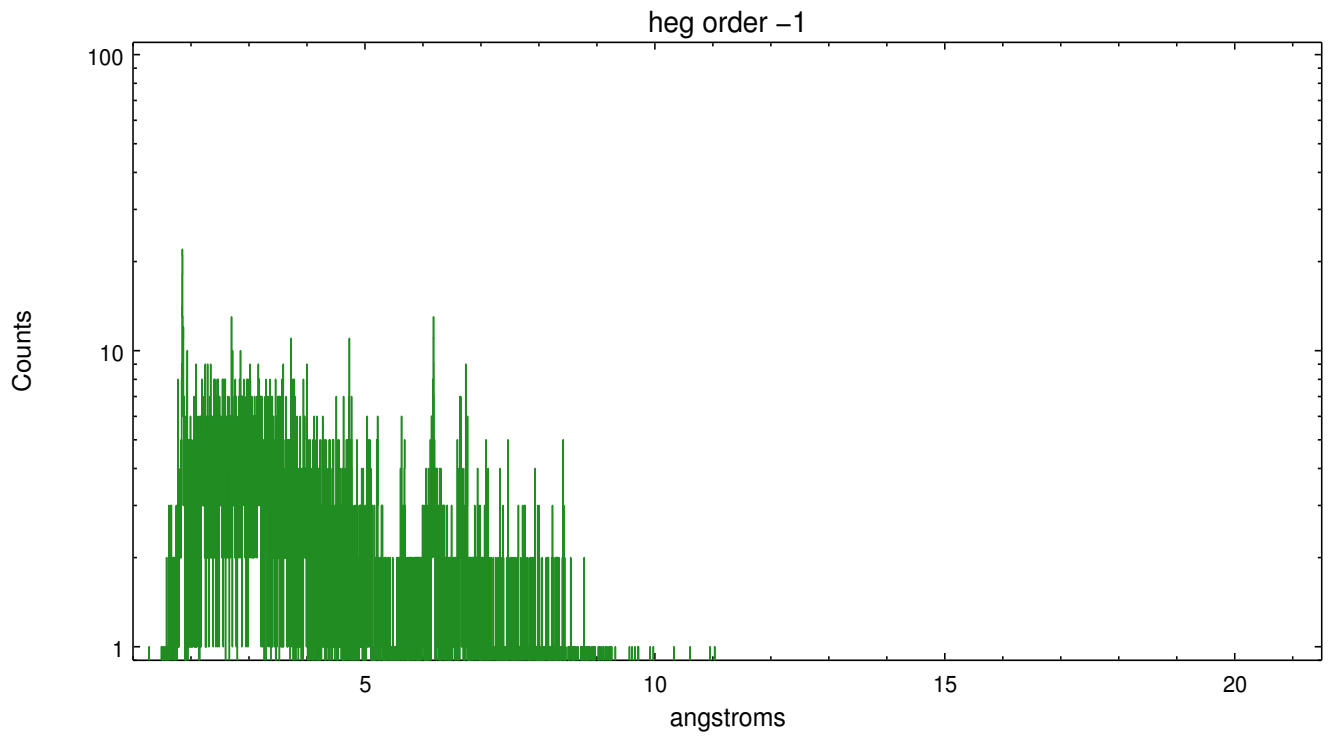


Spot Image HEG

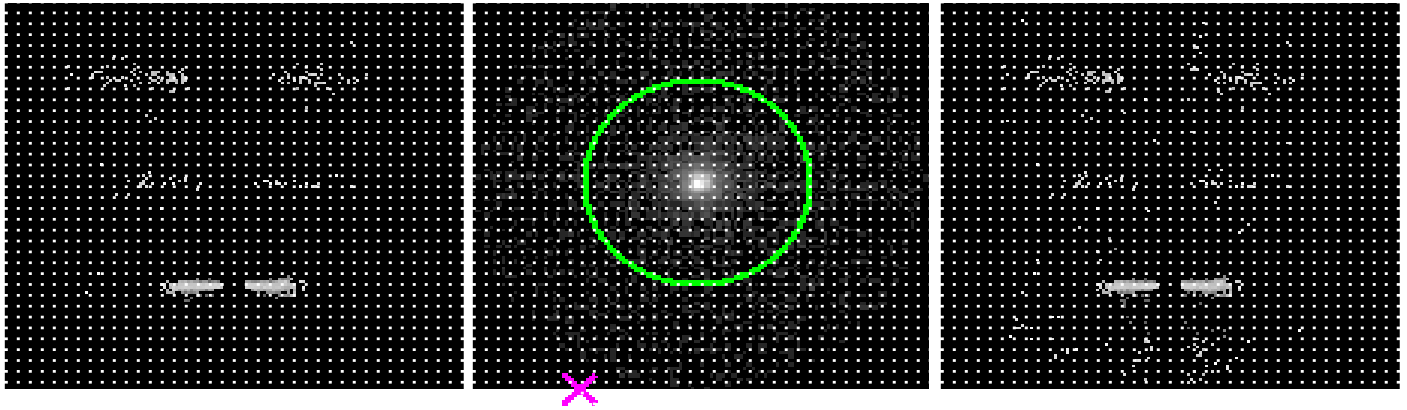
Full Detector HEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	269	460	6438	18138	6061	382	231





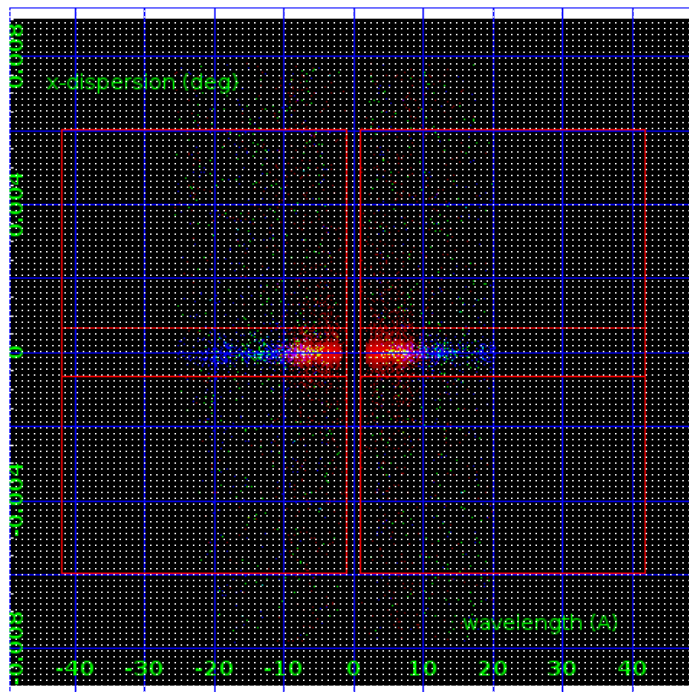
### 3.2 MEG Arm



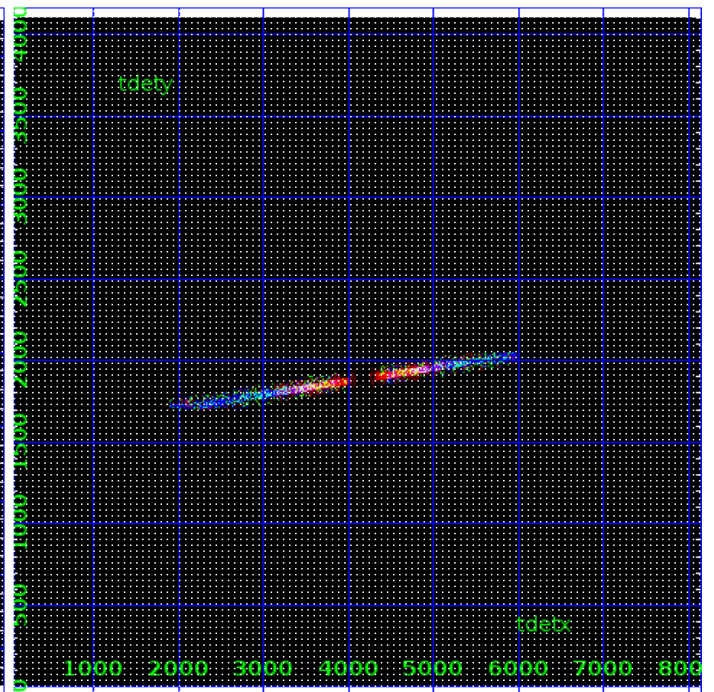
MEG Order Sort 123

MEG Zero Order

MEG Order Sort ALL

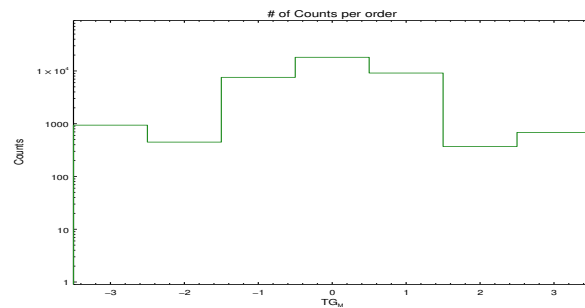


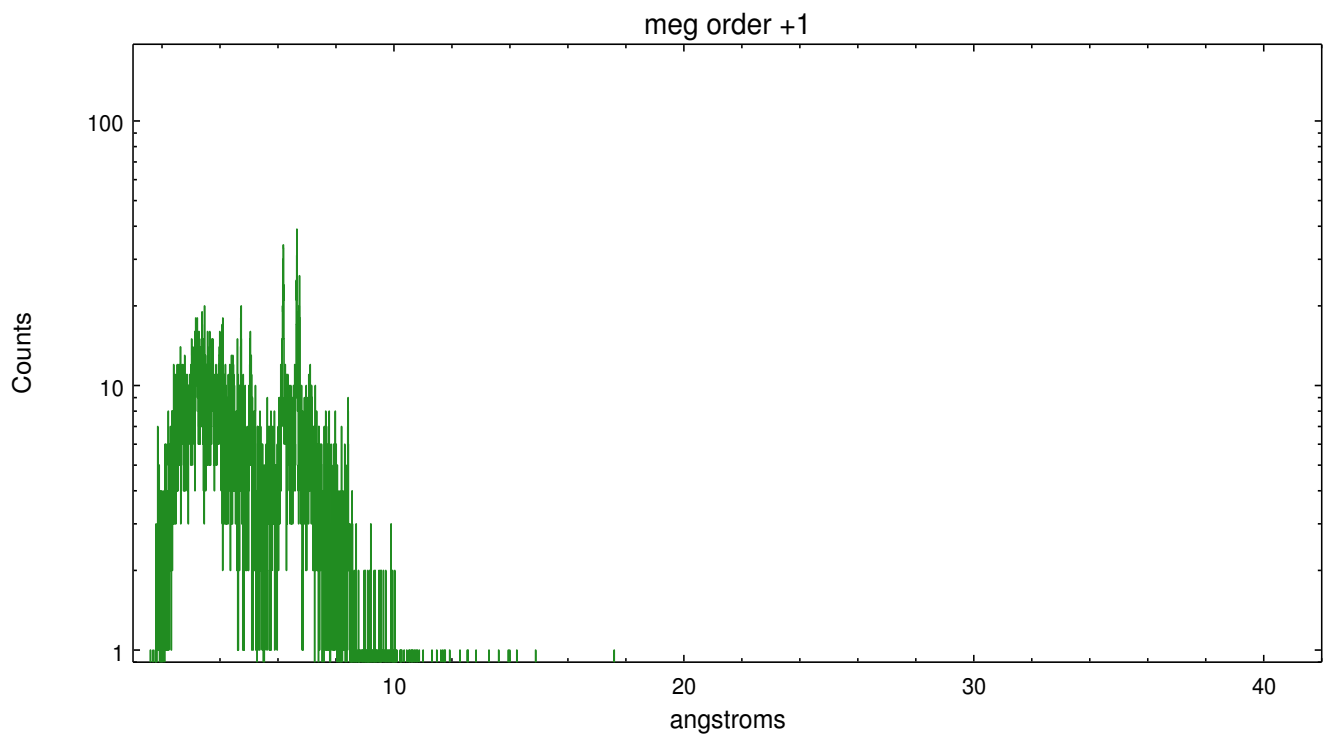
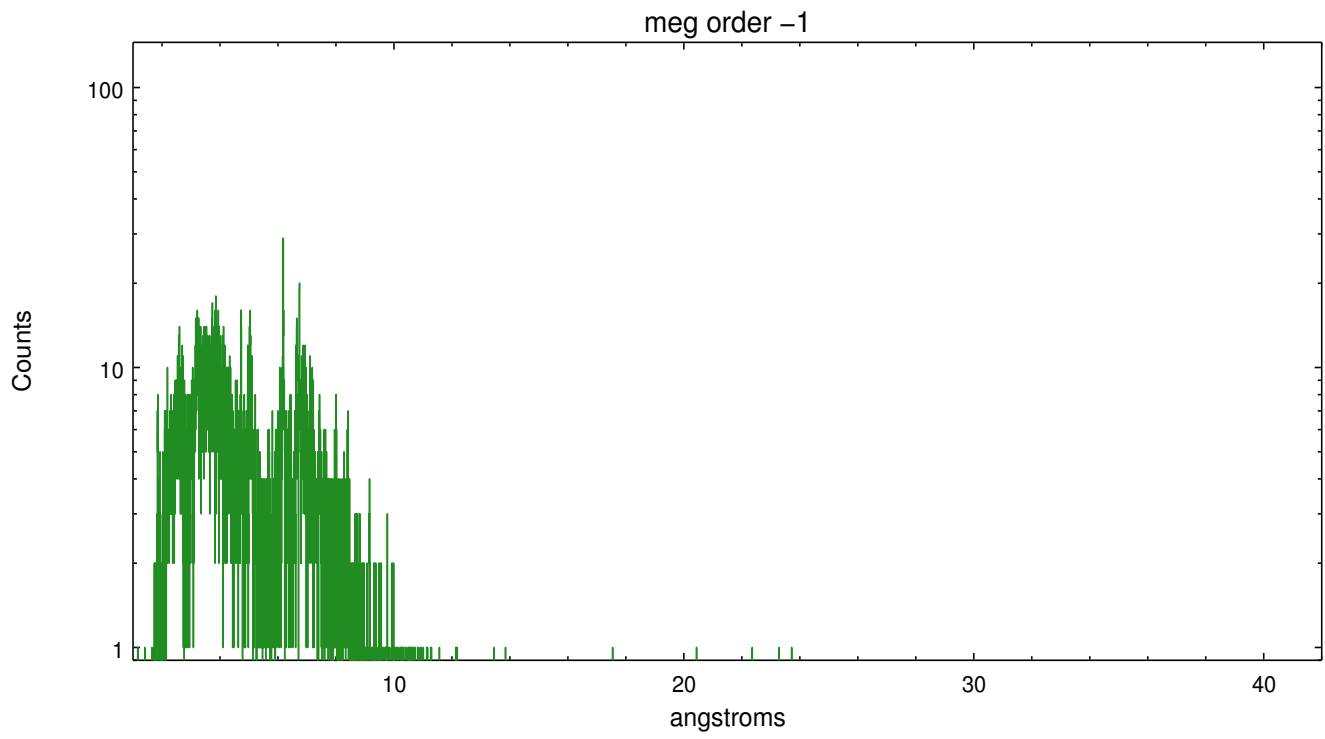
Spot Image MEG



Full Detector MEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	939	448	7560	18138	9127	370	684





# A Summary

## A.1 Status

V&V Scientist	Melania Nynka
V&V Date (YYYY-MM-DD)	2019.05.17
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	30.020401192904

## A.2 Comments

Comments for Obi 0

The ACIS focal plane temperature is warmer than -114.0 C degrees during the interval 674363596.92 - 674379358.92 (MET s) of this observation. The ACIS spectral response calibration for the front-illuminated chips is less accurate at these warmer temperatures than it is at -115.0 C. The back-illuminated chips are not affected at the focal plane temperatures recorded for this observation. Users whose science objectives depend on the most accurate spectral response (e.g., fitting line-rich spectra) may notice an effect. Users whose science objectives do not depend on the most accurate spectral response should not notice an effect.