

# V&V Reference Report

## L2 ASCDS Version : 10.2.4

Observation 16630 - L2 Version 2  
Chandra X-Ray Center

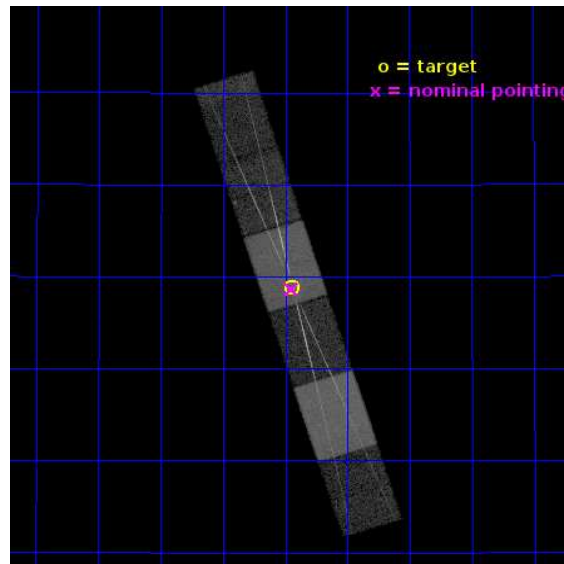
L2 Processing Date : Jul 10 2014

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# 1 Front

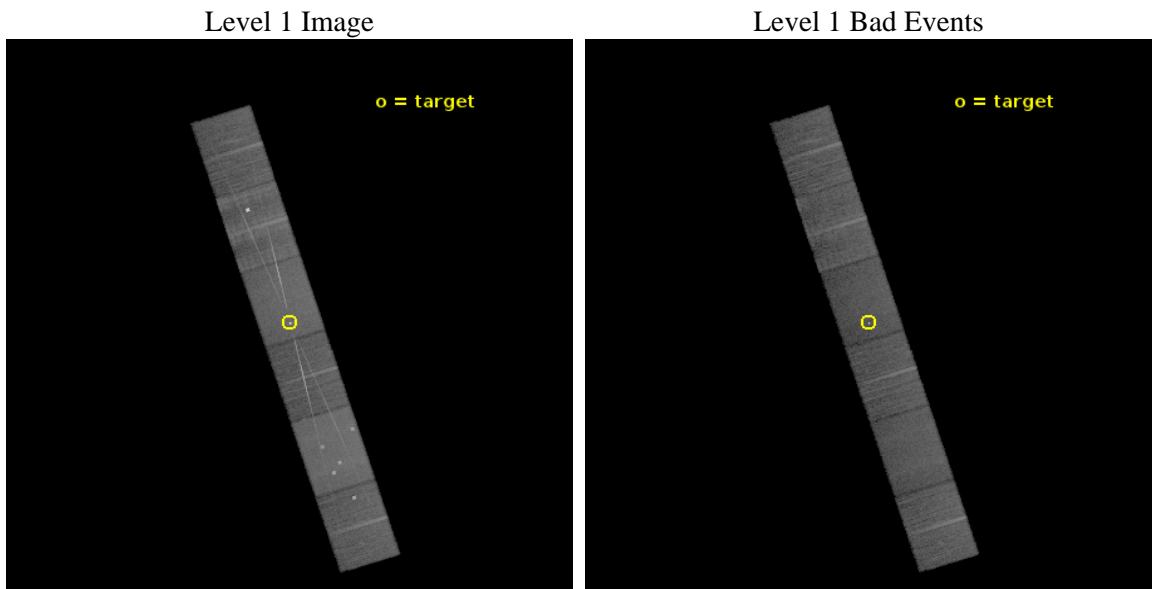
seq_num	703022	Sequence number
obs_id	16630	Observation id
title	A Warm Absorber Study of Mk 766	Proposal title
observer	Prof. Claude Canizares	Principal investigator
object	Mkn 766	Source name
dtcycle	0	&#160
cycle	P	events from which exps? Prim/Second/Both
ra_targ	184.610417	Observer's specified target RA [deg]
dec_targ	29.812778	Observer's specified target Dec [deg]
ra_nom	184.61261727538	Nominal RA [deg]
dec_nom	29.810431840747	Nominal Dec [deg]
roll_nom	252.1555260022	Nominal Roll [deg]
revision	2	Processing version of data
ontime	31417.5	Sum of GTIs [s]
livetime	30910.080124673	Livetime [s]
ontime4	31417.5	Sum of GTIs [s]
ontime5	31417.5	Sum of GTIs [s]
ontime6	31417.5	Sum of GTIs [s]
ontime7	31417.5	Sum of GTIs [s]
ontime8	31417.5	Sum of GTIs [s]
ontime9	31417.5	Sum of GTIs [s]
l2events	252498	Number of level 2 events



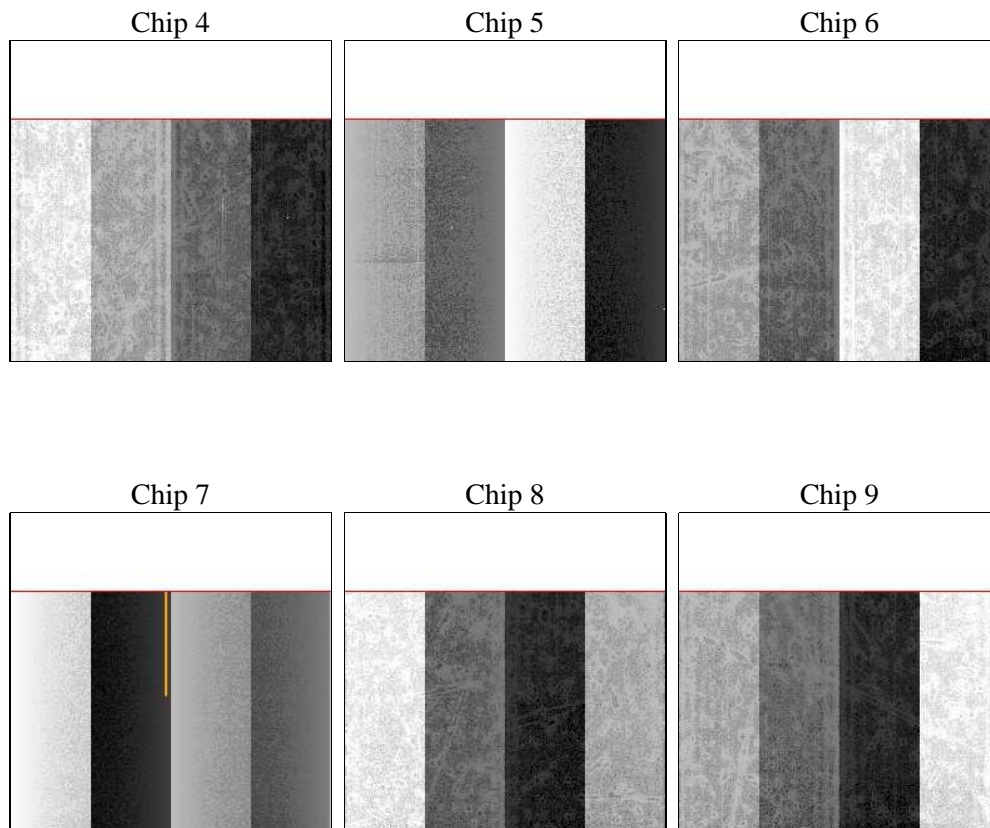
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

obi_num	0	Obi number	sched_exp_time	31400.000000	[s] Scheduled observation exposure time
ascdsver	10.2.4	Processing system revision	ontime	31417.5	Sum of GTIs [s]
caldbver	4.6.2	&#160	ontime4	31417.5	Sum of GTIs [s]
date	2014-07-10T19:45:43	Date and time of file creation	ontime5	31417.5	Sum of GTIs [s]
revision	2	Processing version of data	ontime6	31417.5	Sum of GTIs [s]
			ontime7	31417.5	Sum of GTIs [s]
			ontime8	31417.5	Sum of GTIs [s]
			ontime9	31417.5	Sum of GTIs [s]
			l1events	929131	Number of level 1 events
			tgmethod	FINDZO	Method used to create src1a file
				411014	

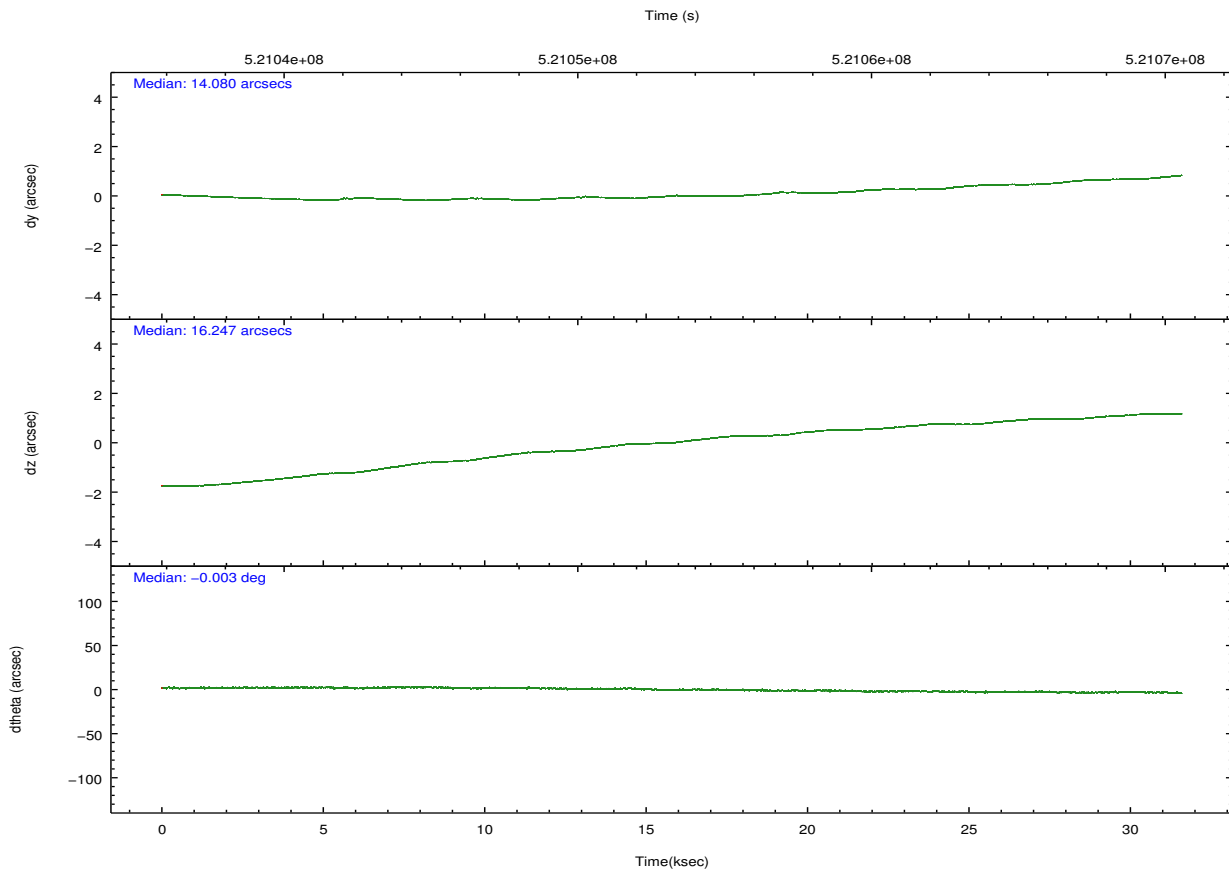
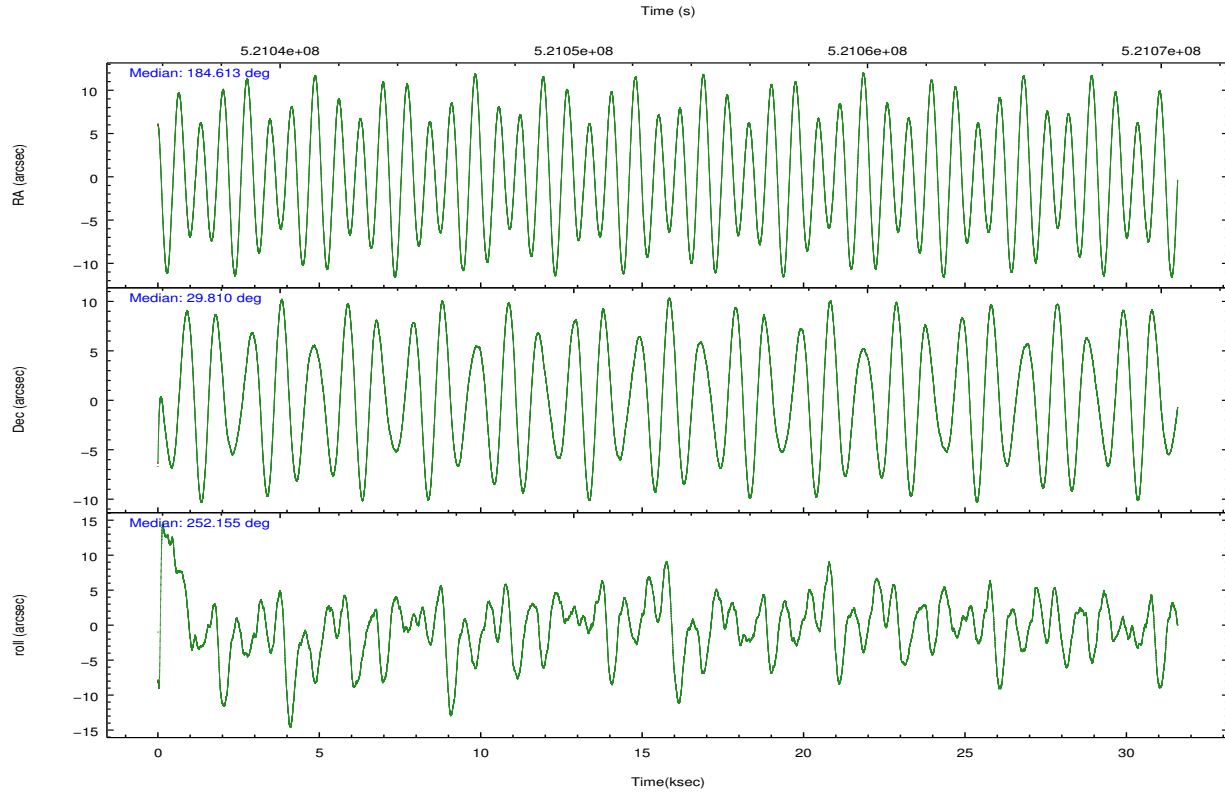
### 2.1.4 Events

	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	133319	197871	128750	181215	172647	115329	grade 0 events	10028	14566	16761	10762	30519	6140
rejected events	113708	97175	99500	90788	111118	99530		7%	7%	13%	5%	17%	5%
rejected %	85%	49%	77%	50%	64%	86%	grade 1 events	101	373	94	417	131	64
								0%	0%	0%	0%	0%	0%
							grade 2 events	3693	29456	4971	19266	10649	3382
								2%	14%	3%	10%	6%	2%
							grade 3 events	1654	3809	1966	8315	4559	1574
								1%	1%	1%	4%	2%	1%
							grade 4 events	1517	3749	2054	8328	4342	1517
								1%	1%	1%	4%	2%	1%
							grade 5 events	5771	14056	5834	17366	8694	6568
								4%	7%	4%	9%	5%	5%
							grade 6 events	2731	49183	3509	43800	11479	3191
								2%	24%	2%	24%	6%	2%
							grade 7 events	107824	82679	93561	72961	102274	92893
								80%	41%	72%	40%	59%	80%

## 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	OVERRIDE	OVERRIDE
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	184.605585	184.6126172753758	Subarray requested	CUSTOM	CUSTOM
[deg] Pointing Dec	29.837094	29.81043184074672	Subarray start row	1	1
[deg] Pointing Roll	252.002408	252.1555260021976	Subarray row count	774	774
[mm] SIM focus pos	-0.6828225247311905	-0.6828225247311905	Alternating exposures requested	N	N
[mm] SIM defocus	0.001444942264670179	0.001444942264670179	[s] Primary exposure time	2.5	2.5
[mm] SIM translation stage pos	-187.127916318603	-187.127916318603			
[mm] SIM translation stage offset	-3.004606785364189	-3.004606785364189			
[s] Observation start time (MET)	521036528.184000	521036528.184			
Observation start date	2014-07-06T12:22:08	2014-07-06T12:22:08			
[s] Observation end time (MET)	521068998.410000	521068998.41			
Observation end date	2014-07-06T21:23:18	2014-07-06T21:23:18			
Read mode	TIMED	TIMED			

## 2.3 Aspect

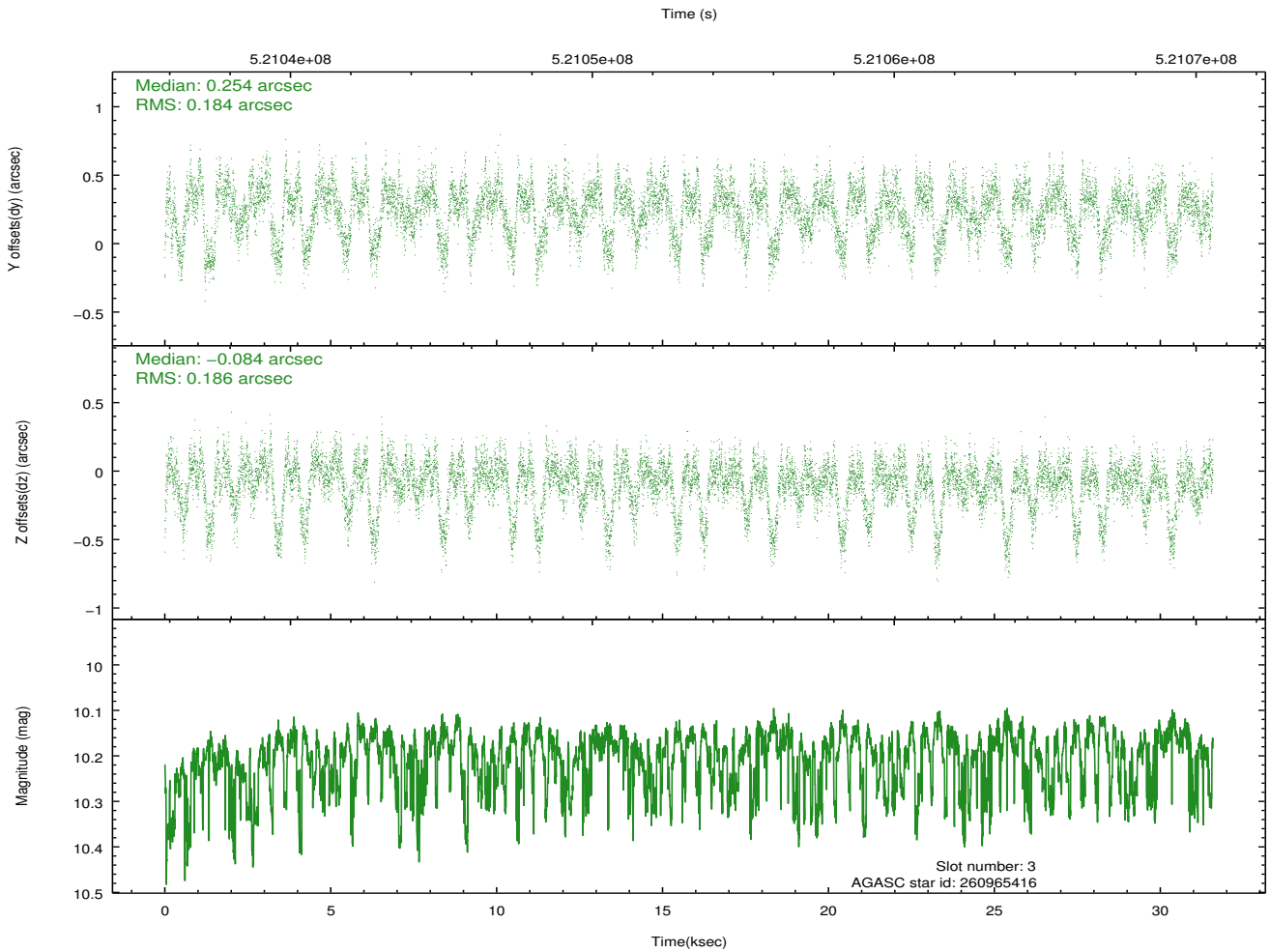
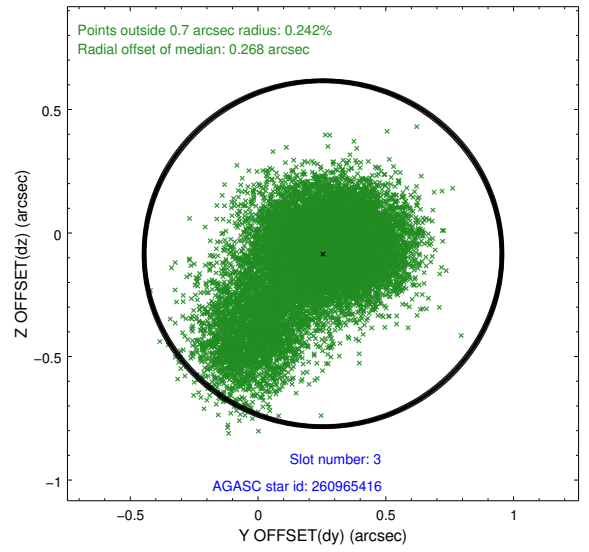
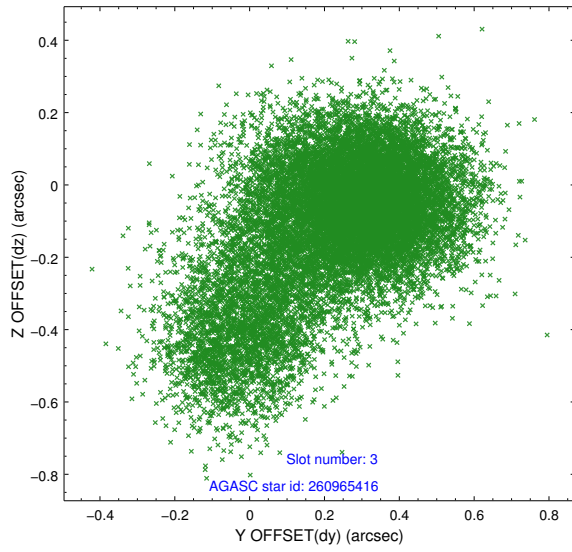


### Slot Statistics

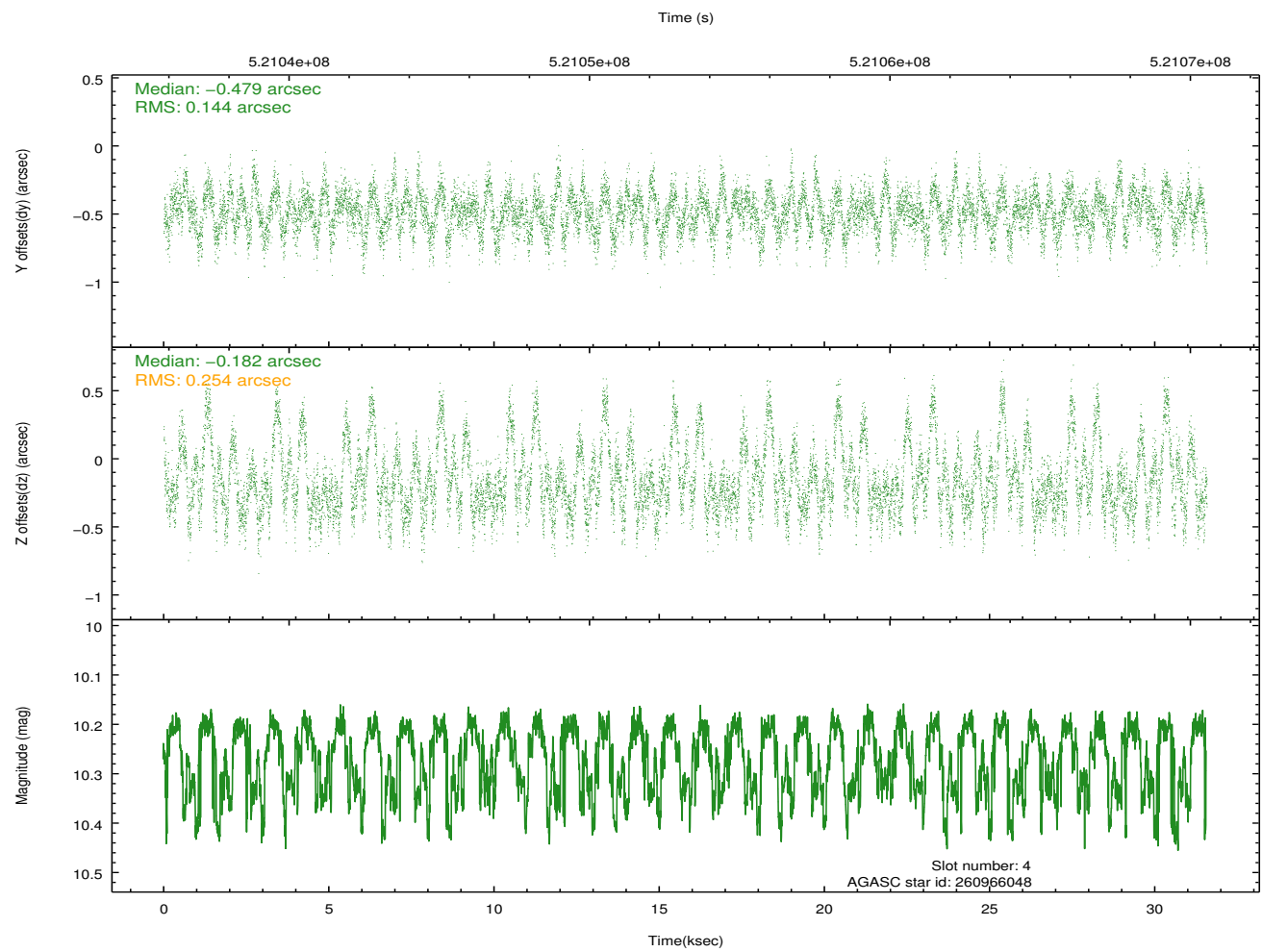
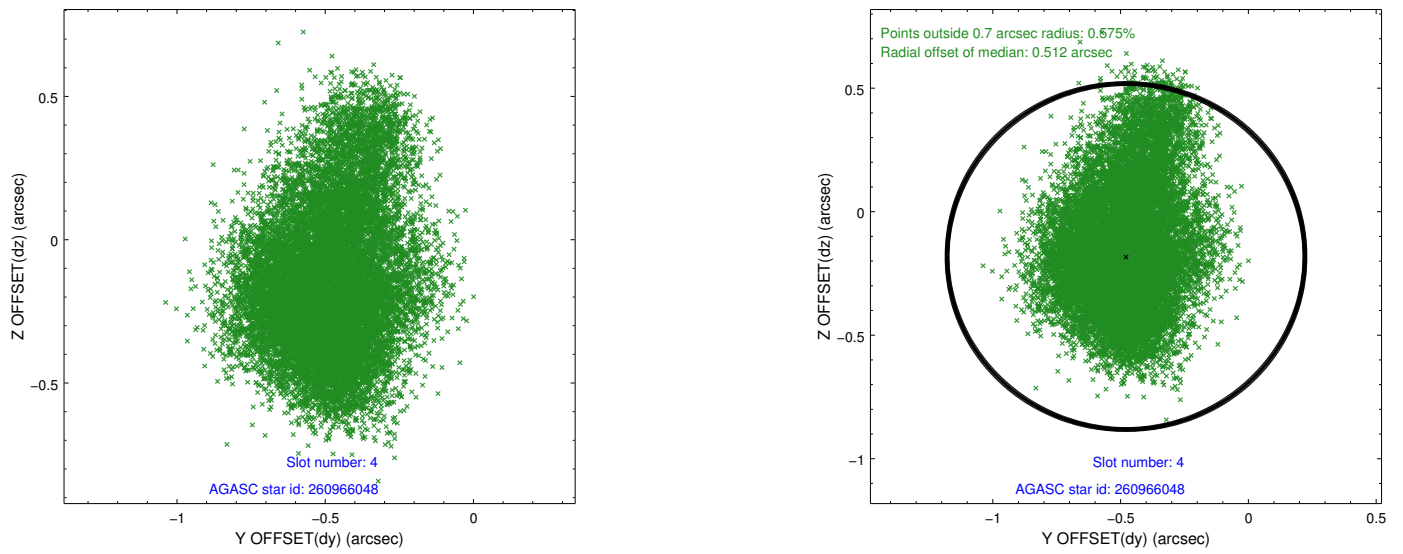
slot	status	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID	ACIS-S-2	7.02	7704	-0.095	-0.084	0.026	0.047	0.000000	0.000000	-767.06	-1799.64
1	FID	ACIS-S-4	7.09	7705	0.245	0.069	0.013	0.023	0.000000	0.000000	2146.56	108.86
2	FID	ACIS-S-5	7.13	7704	-0.178	0.024	0.025	0.042	0.000000	0.000000	-1819.88	102.62
3	GUIDE	260965416	10.20	15287	0.254	-0.084	0.254	0.517	184.798422	29.200373	1992.73	1284.00
4	GUIDE	260966048	10.26	15308	-0.479	-0.182	0.297	0.543	185.169624	29.533581	488.87	2016.26
5	GUIDE	331368240	6.52	15409	-0.214	0.091	0.125	0.202	184.631757	30.249046	-1434.33	-378.73
6	GUIDE	331352880	9.64	15338	0.080	0.231	0.168	0.265	184.726920	30.468207	-2276.57	-344.13
7	GUIDE	260968144	10.21	15380	0.398	-0.058	0.238	0.391	184.193166	29.586641	1254.69	-949.82

## 2.4 Star Slots

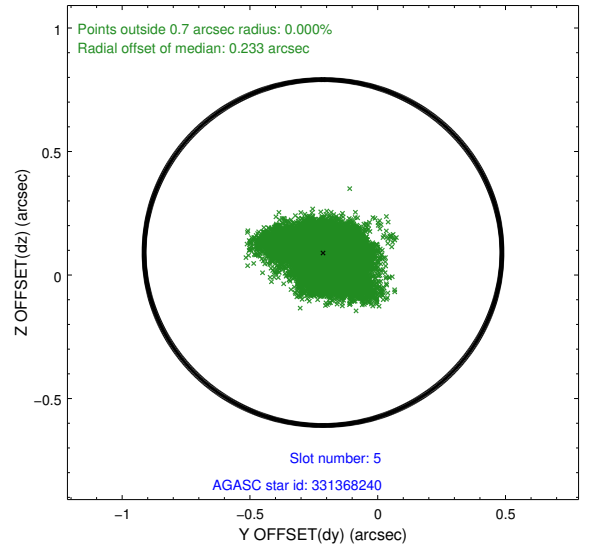
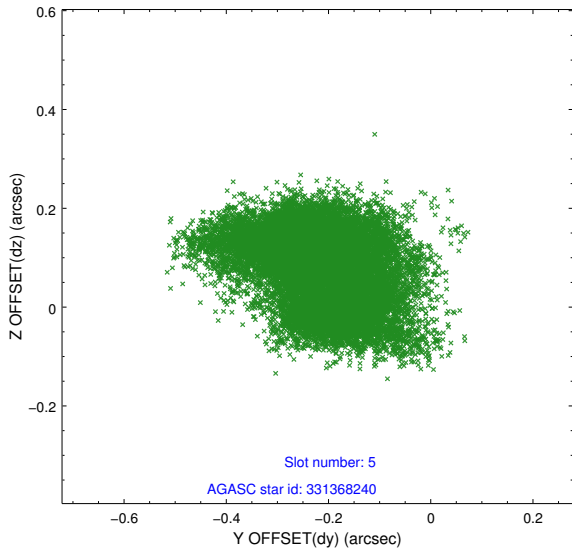
### 2.4.1 Slot 3



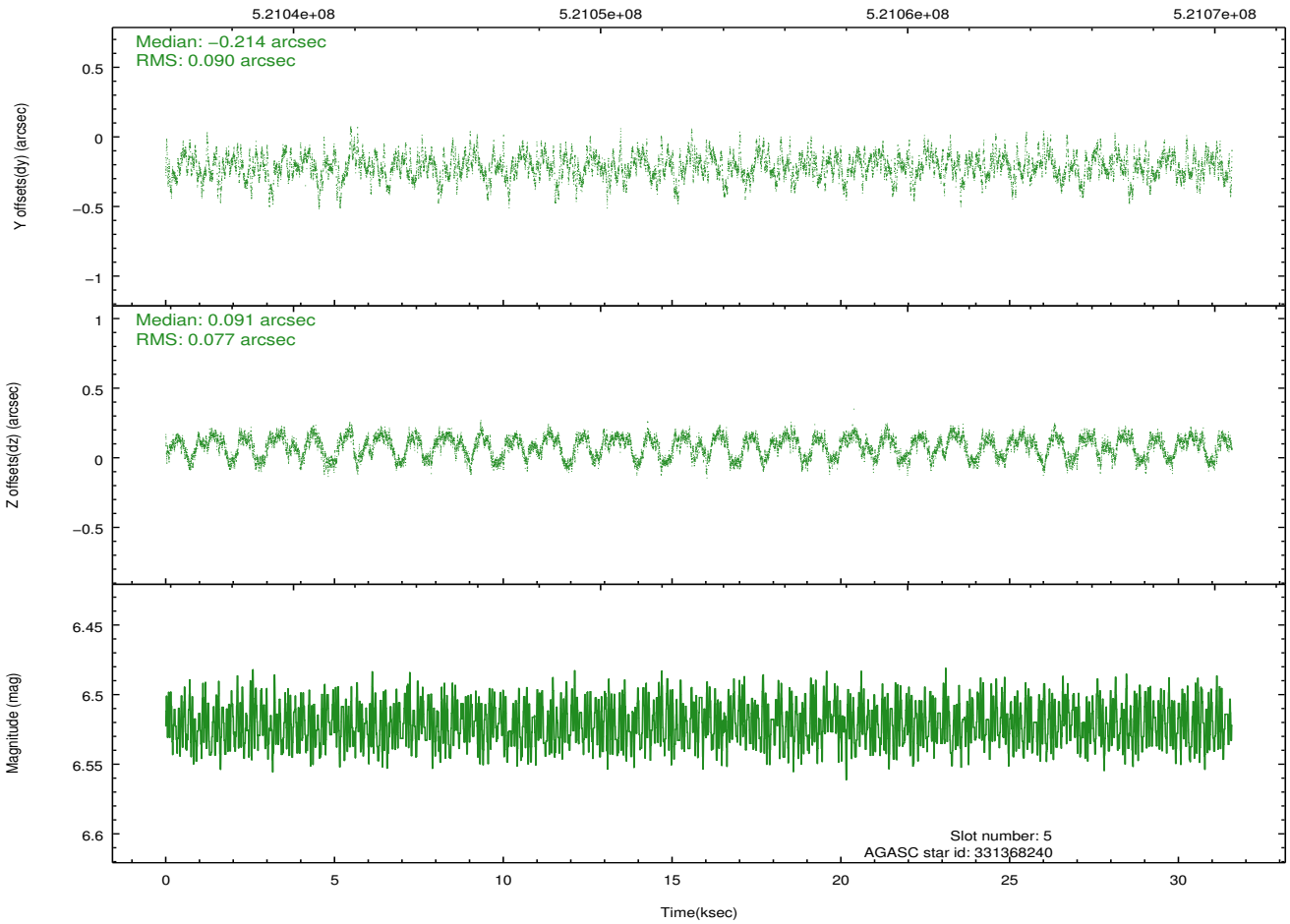
## 2.4.2 Slot 4



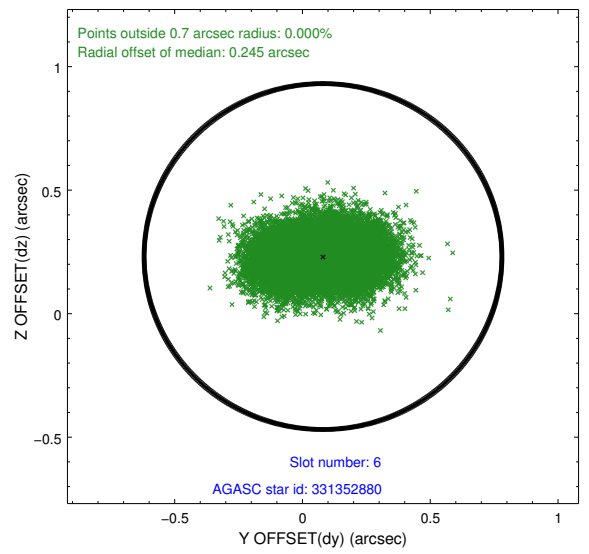
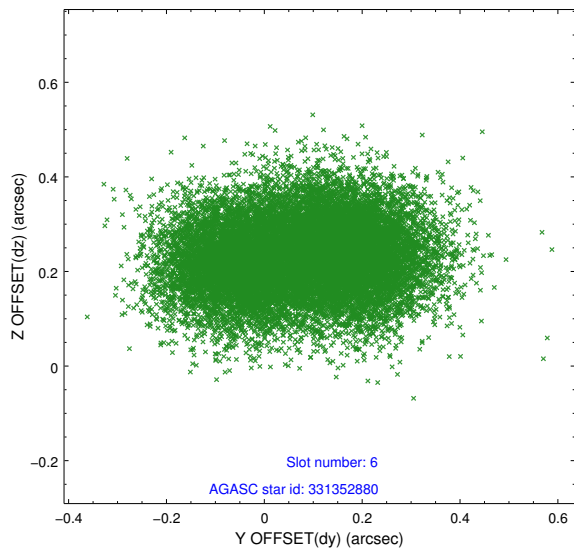
### 2.4.3 Slot 5



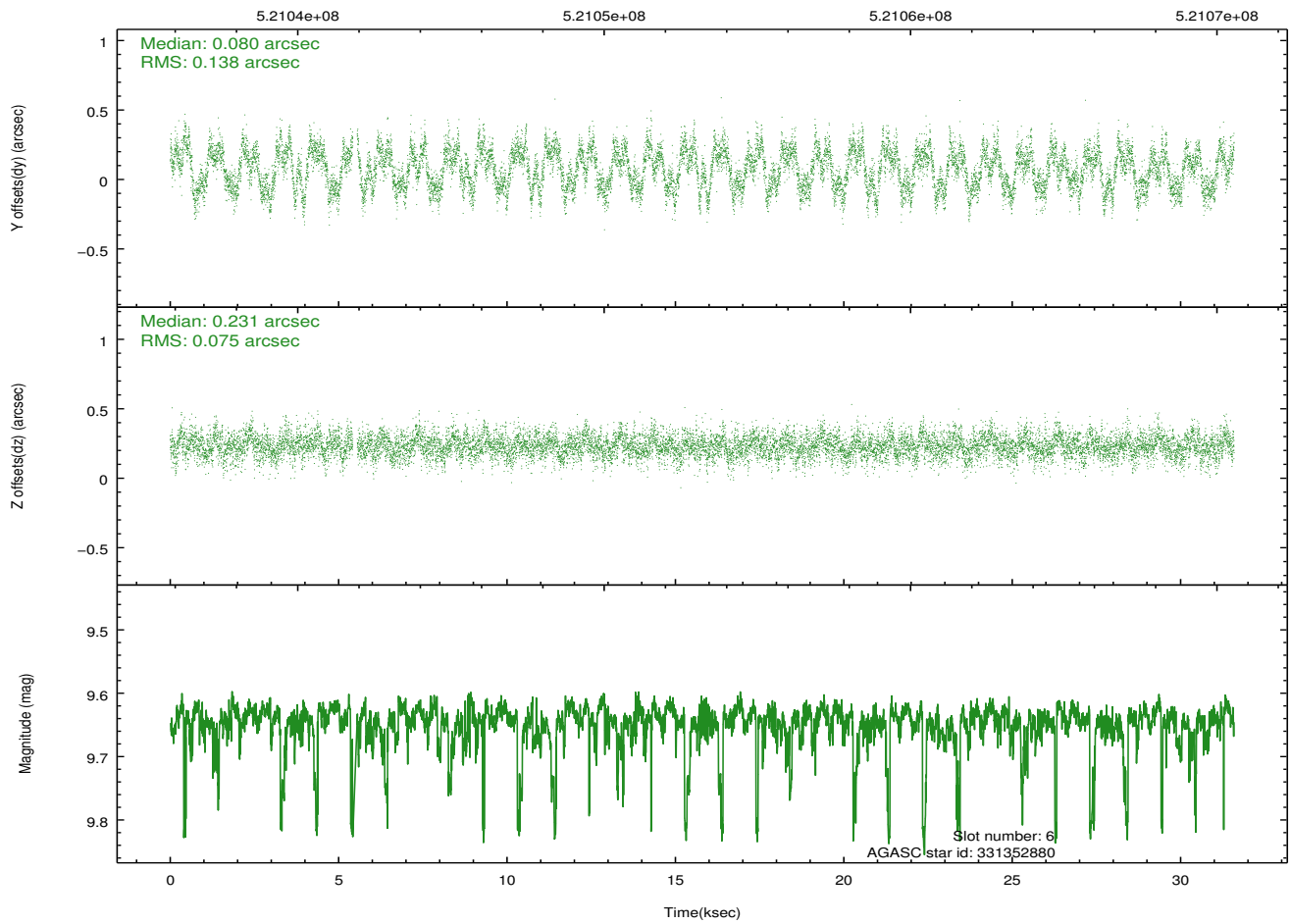
Time (s)



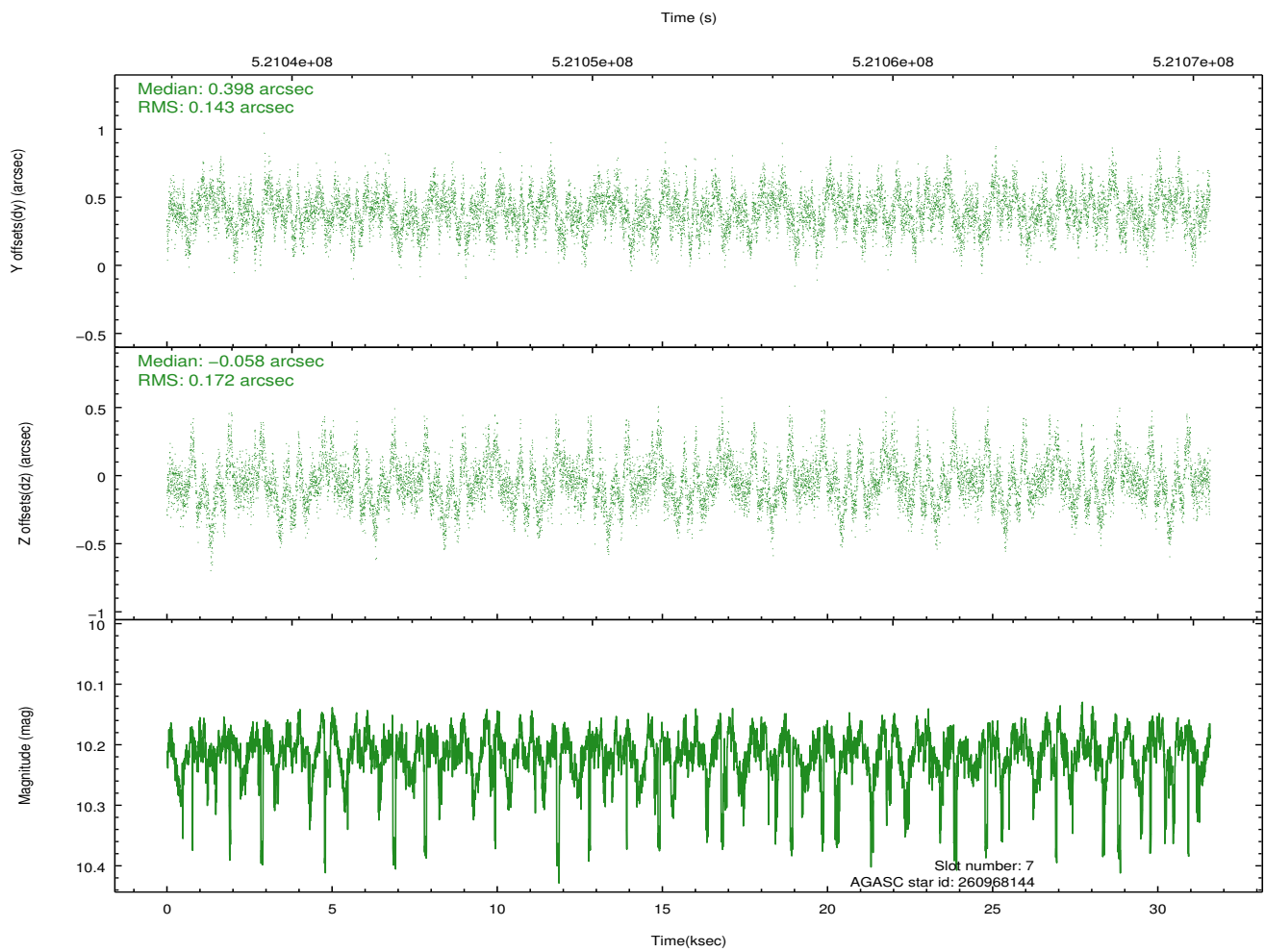
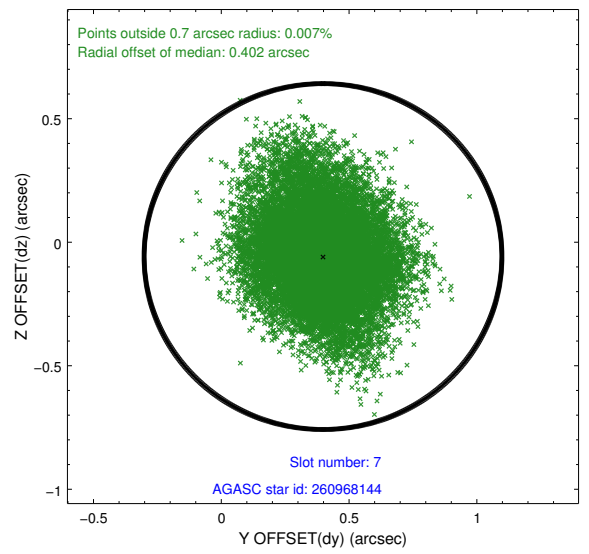
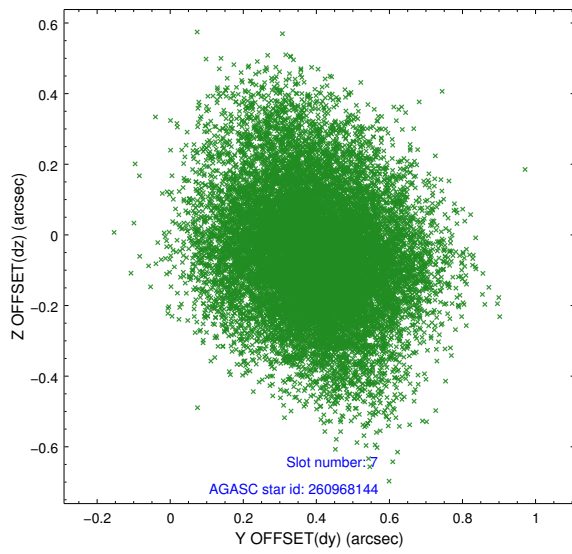
## 2.4.4 Slot 6



Time (s)

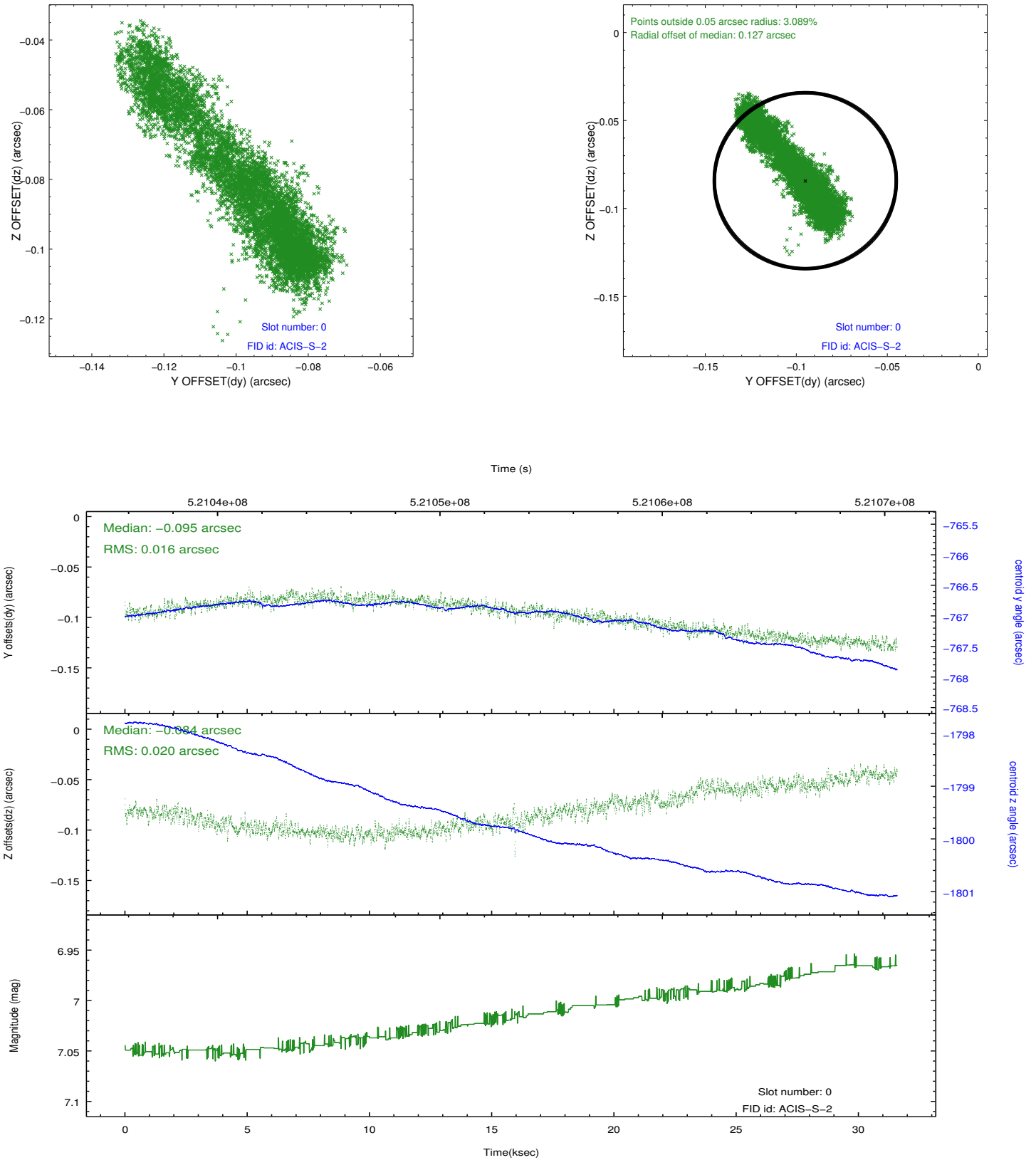


## 2.4.5 Slot 7

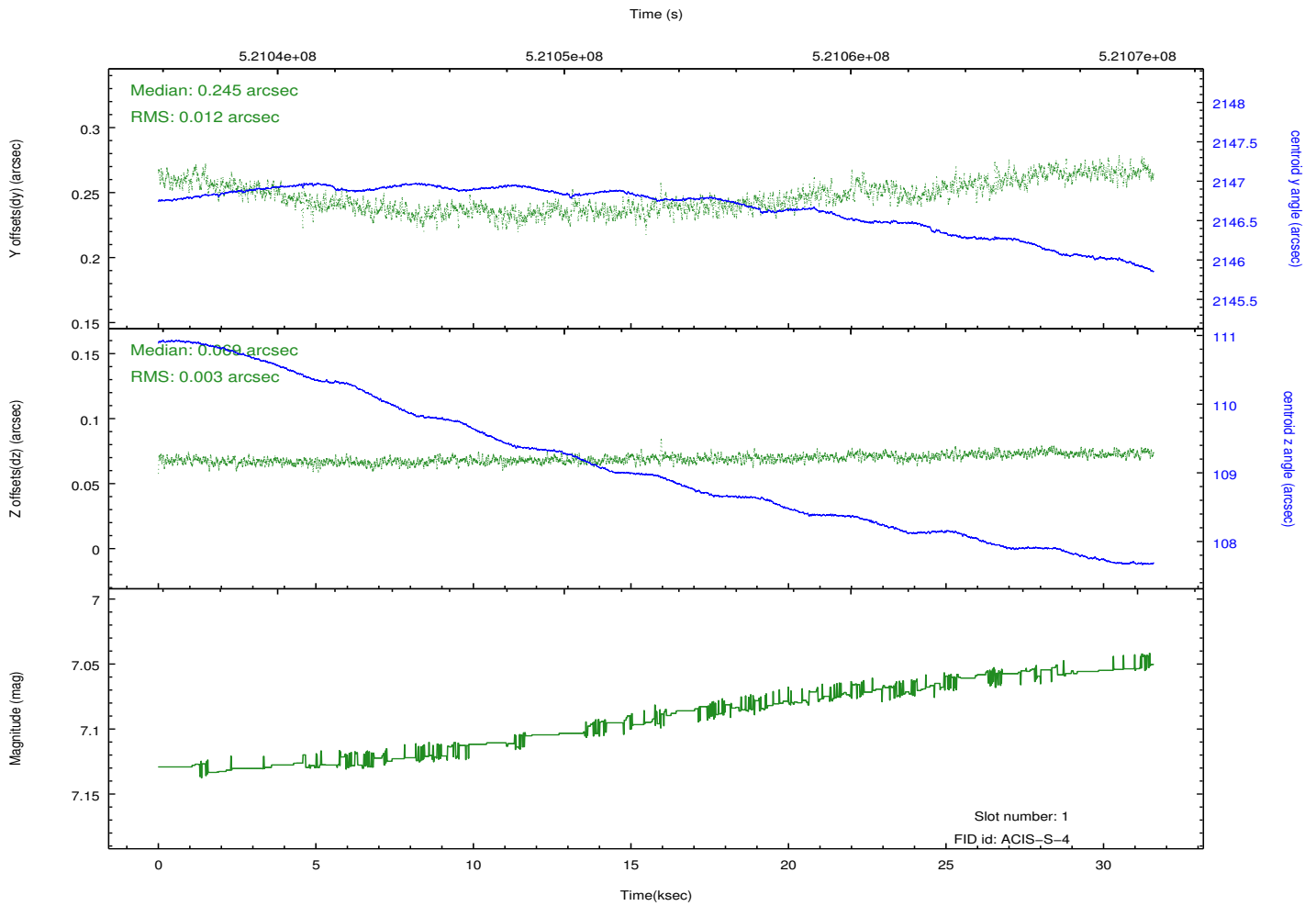
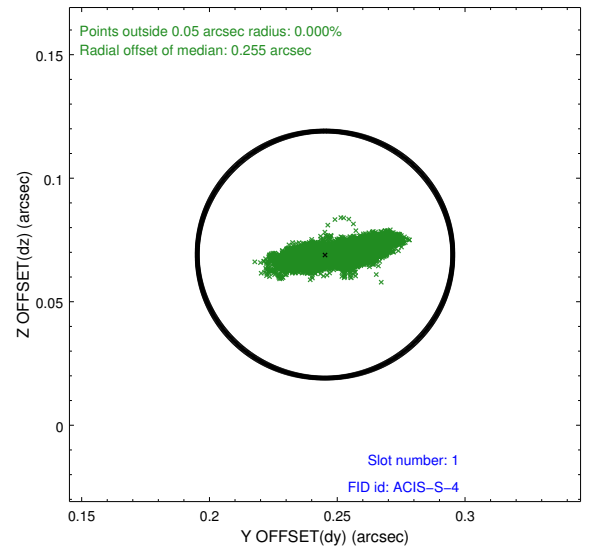
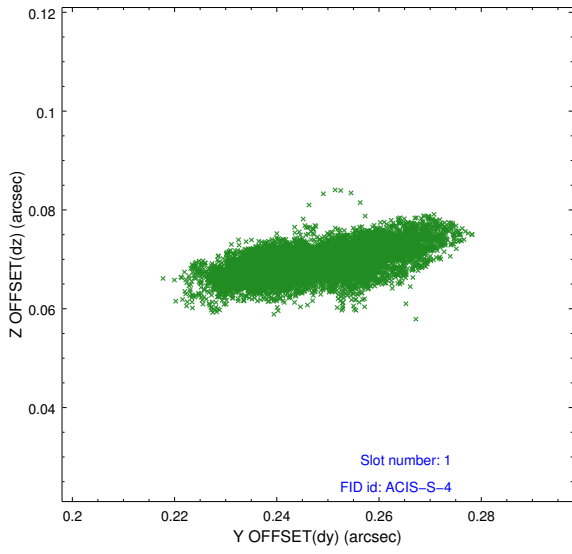


## 2.5 FID Slots

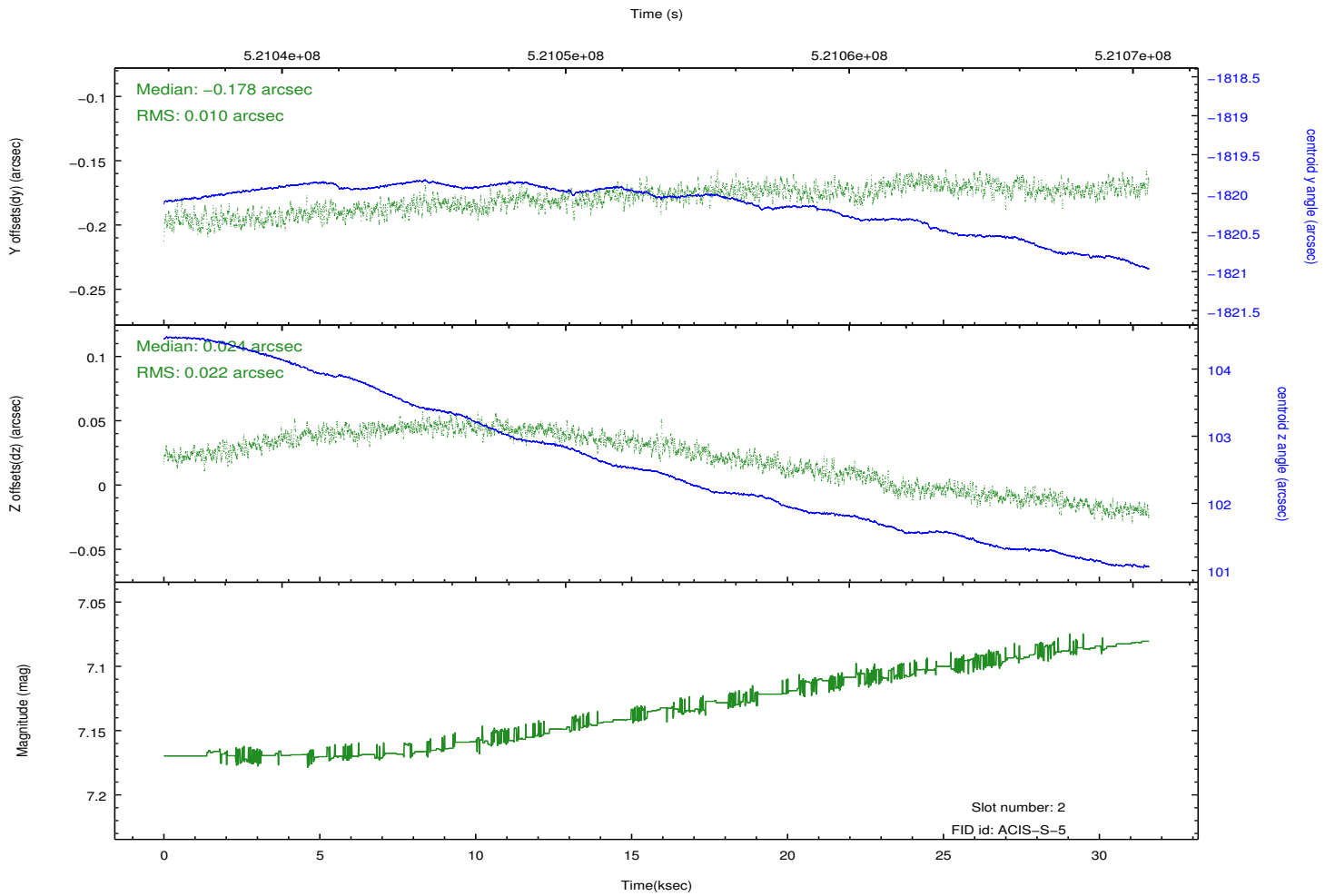
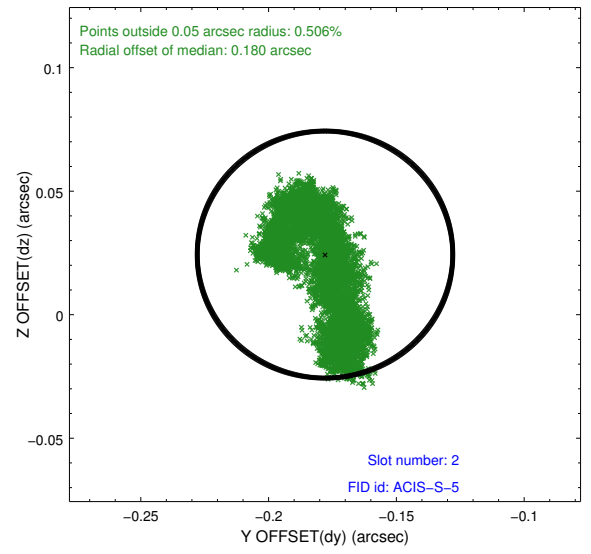
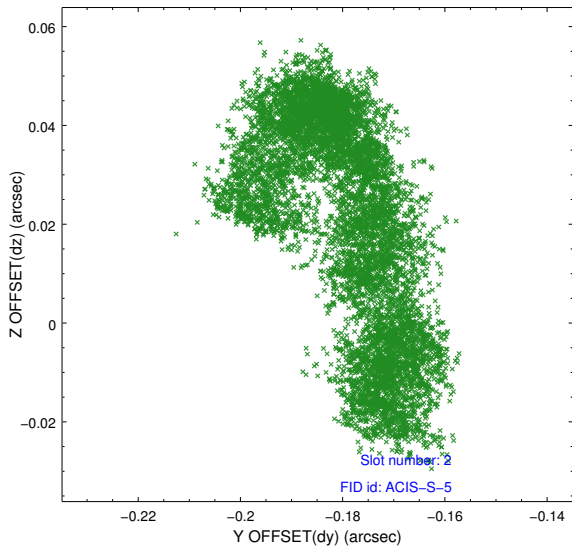
### 2.5.1 Slot 0



## 2.5.2 Slot 1

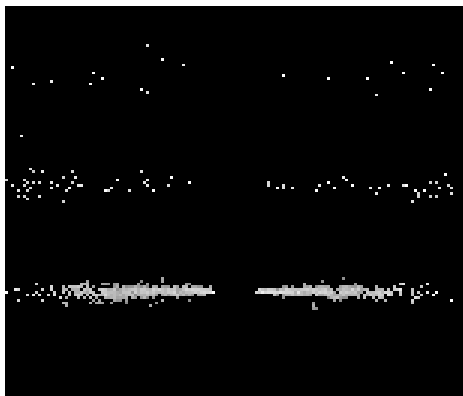


### 2.5.3 Slot 2

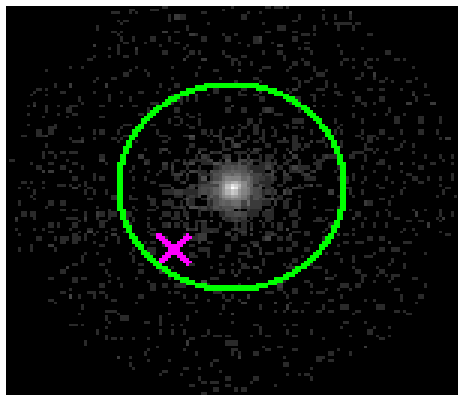


### 3 Gratings

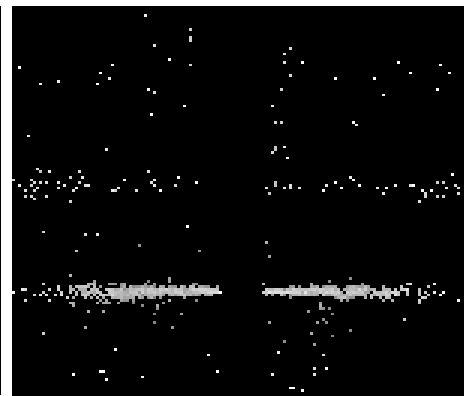
#### 3.1 HEG Arm



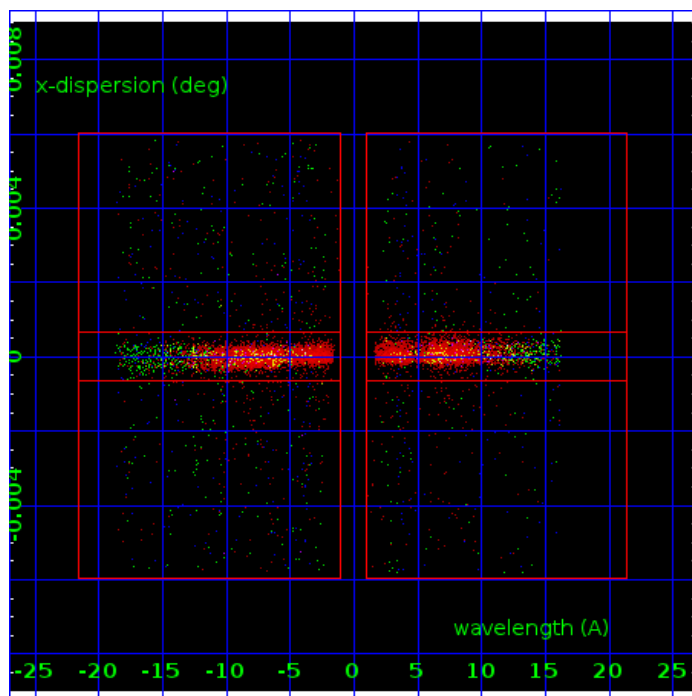
HEG Order Sort 123



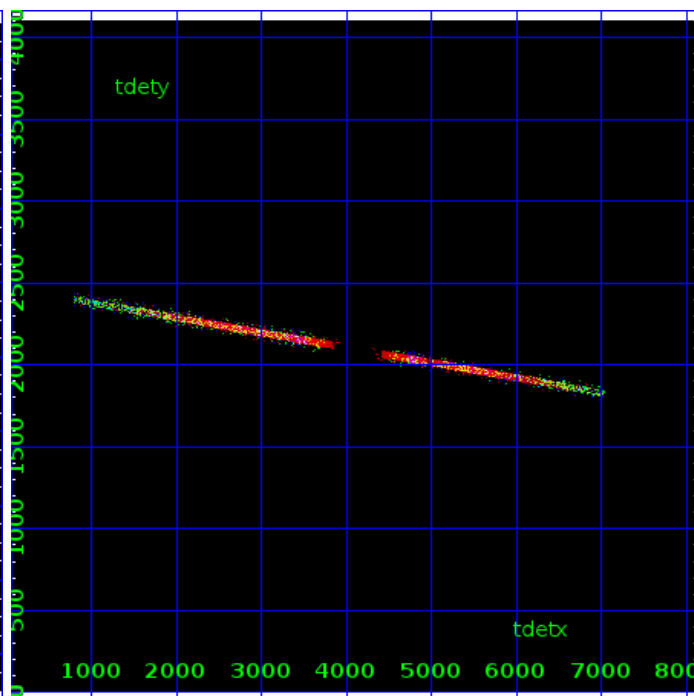
HEG Zero Order



HEG Order Sort ALL

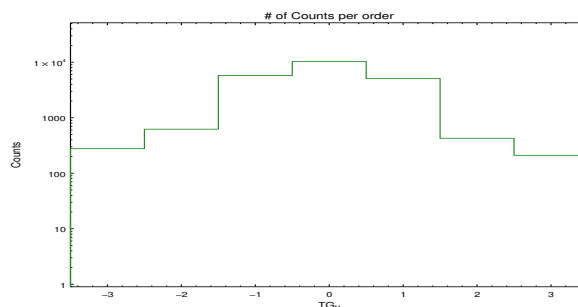


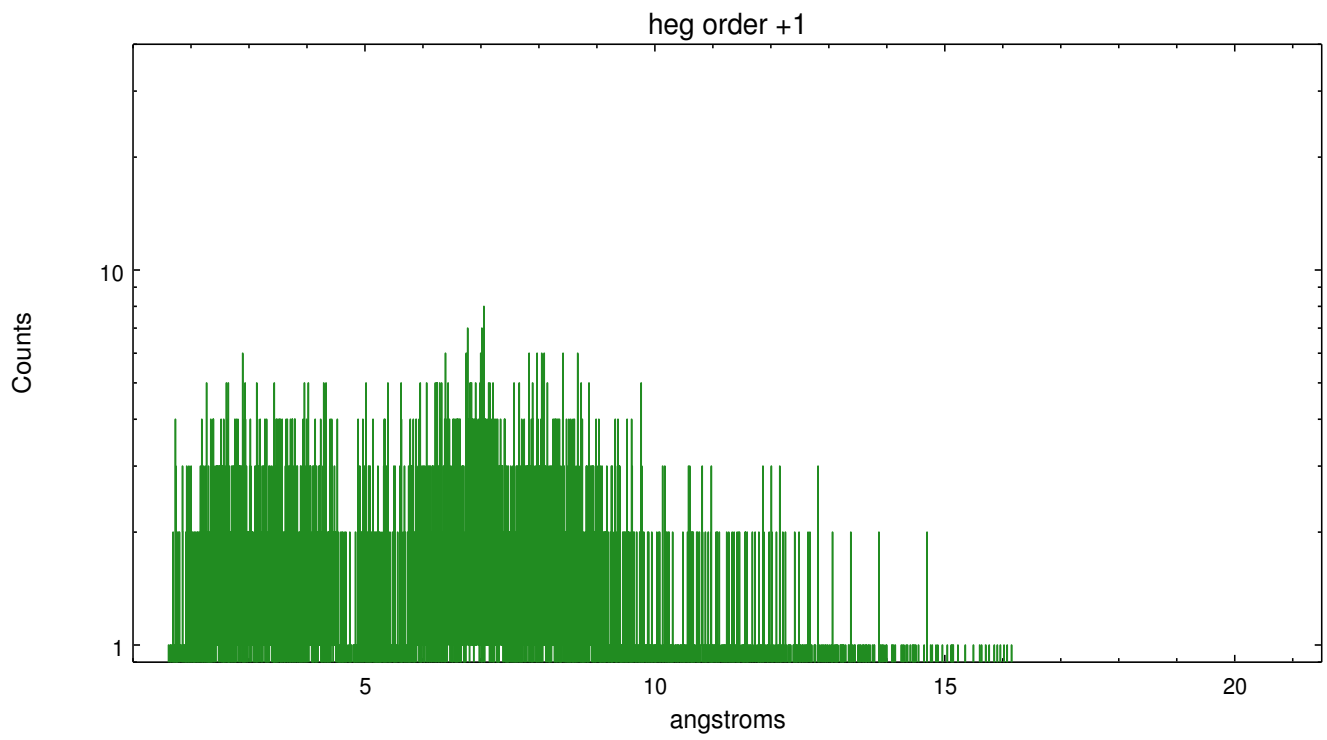
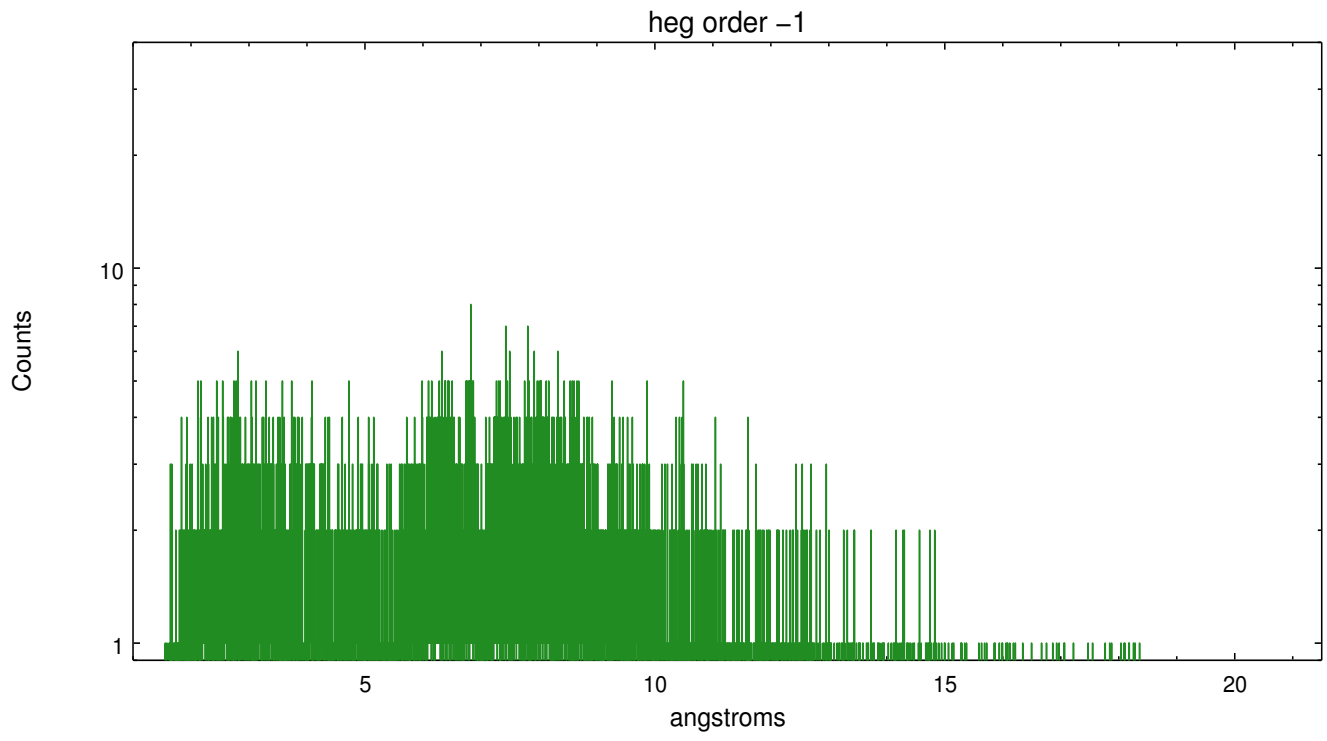
Spot Image HEG



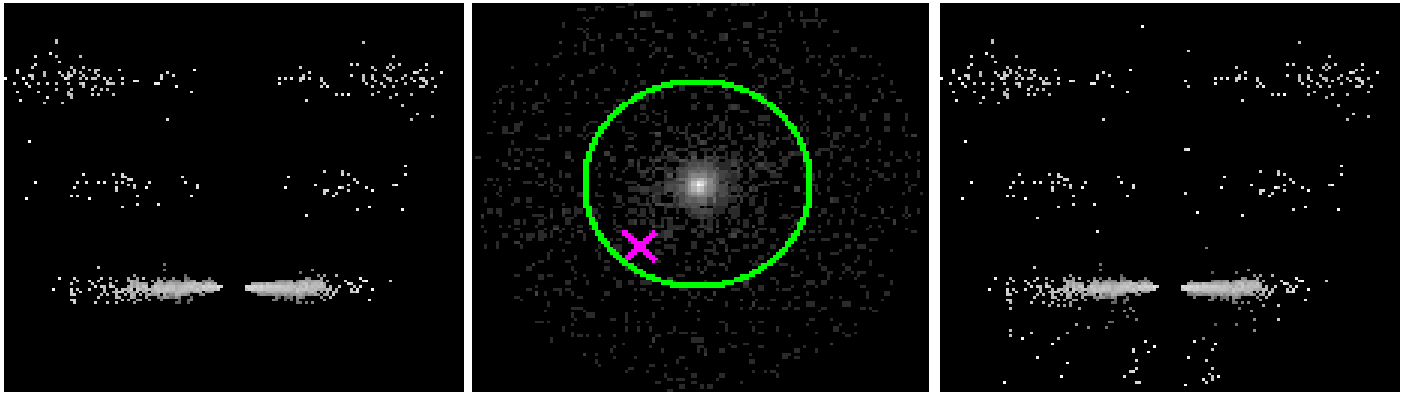
Full Detector HEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	277	621	5761	10266	5078	426	210





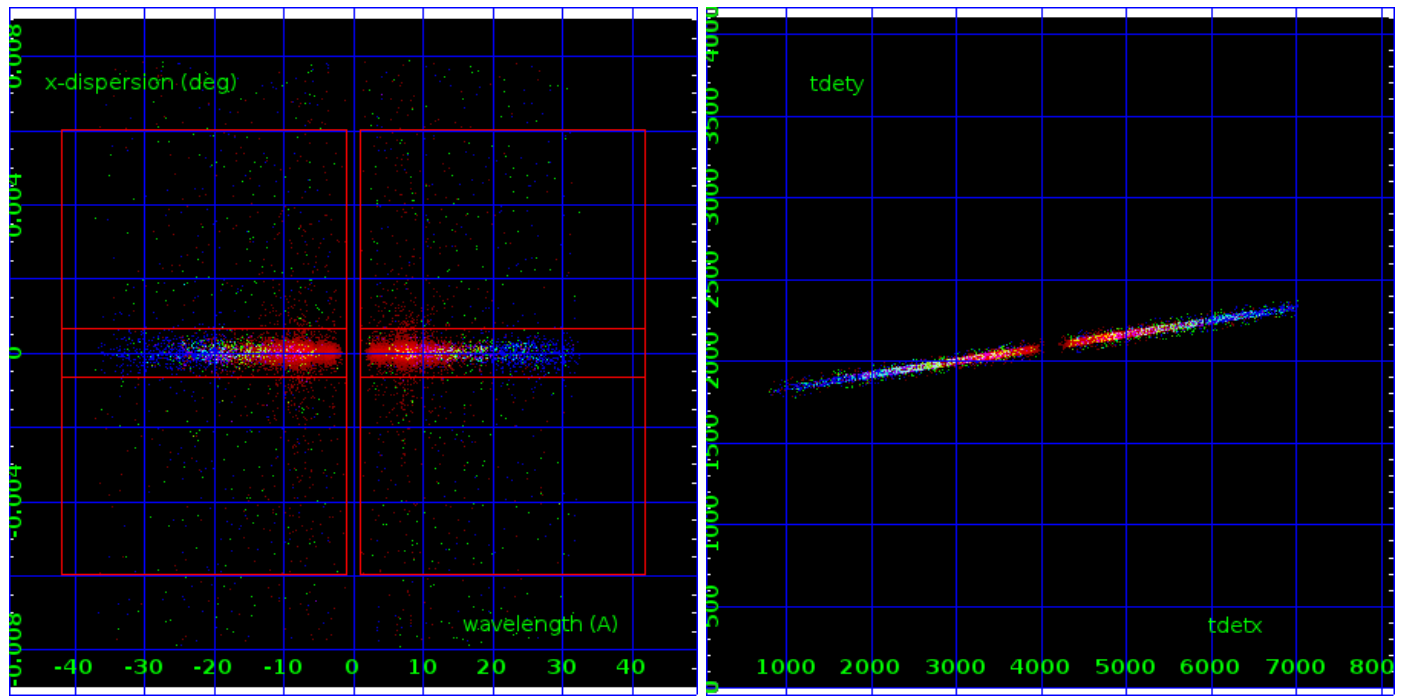
### 3.2 MEG Arm



MEG Order Sort 123

MEG Zero Order

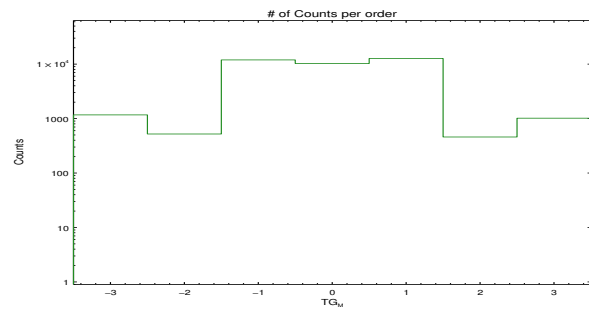
MEG Order Sort ALL



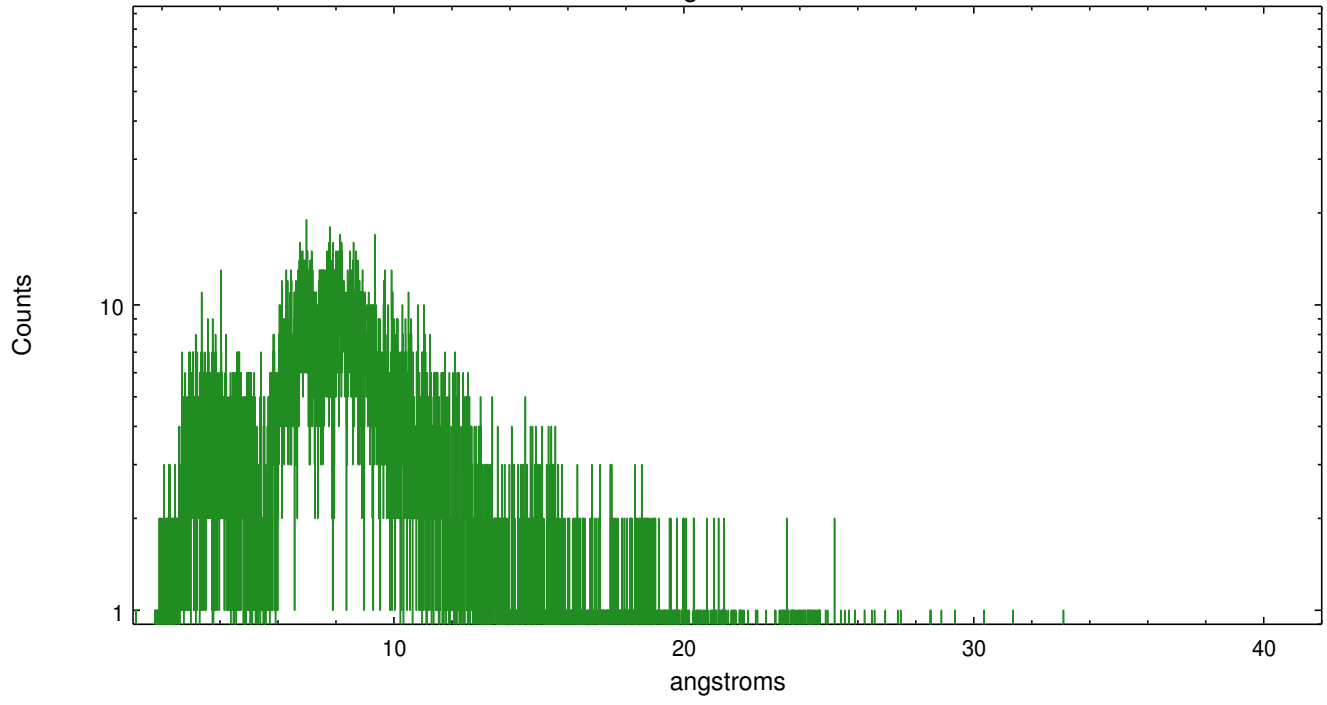
Spot Image MEG

Full Detector MEG

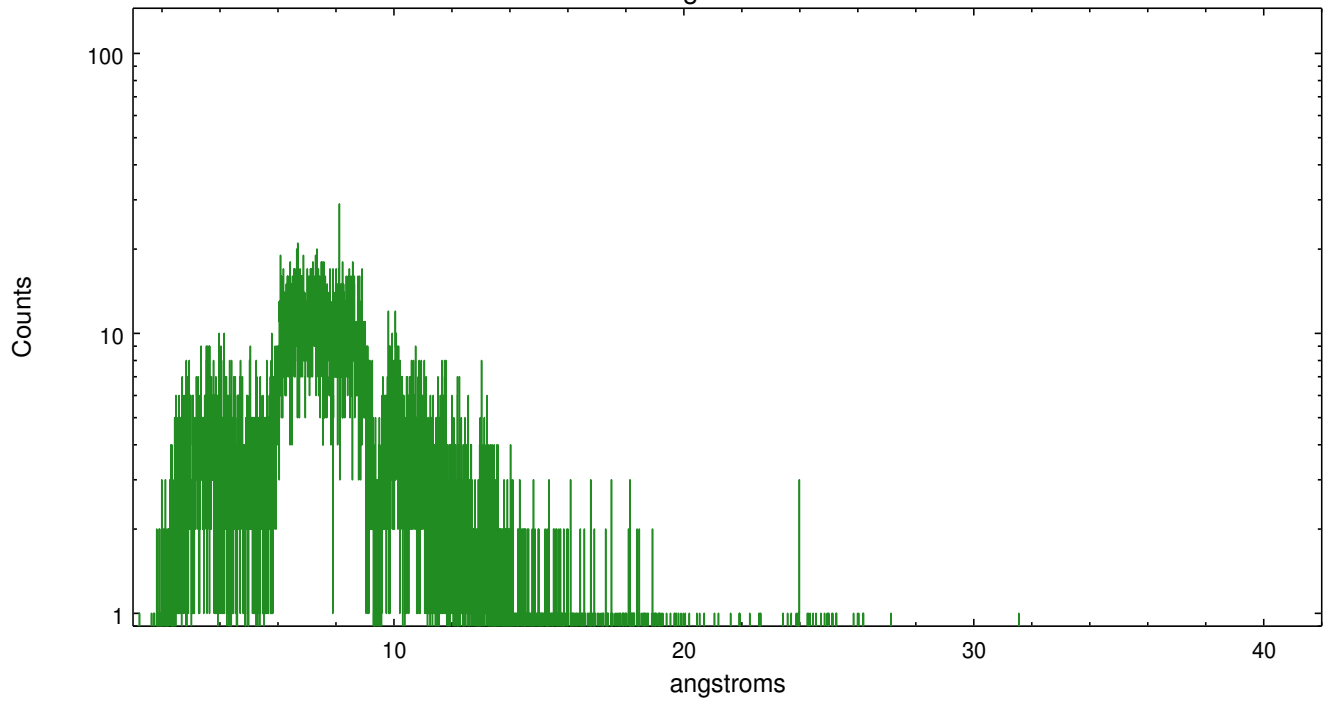
	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	1169	521	11951	10266	12691	459	1016



meg order -1



meg order +1



# A Summary

## A.1 Status

V&V Scientist	David Huenemoerder
V&V Date (YYYY-MM-DD)	2014.07.11
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	31.4175

## A.2 Comments

Comments for Obi 0

Star in slot 4 has an RMS deviation > 0.200000 arcsec