

# V&V Reference Report

## L2 ASCDS Version : 10.5.2

Observation 17794 - L2 Version 1  
Chandra X-Ray Center

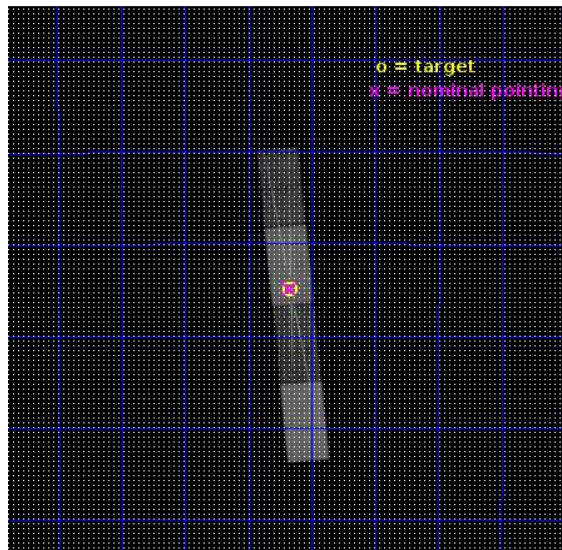
L2 Processing Date : Nov 1 2016

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# 1 Front

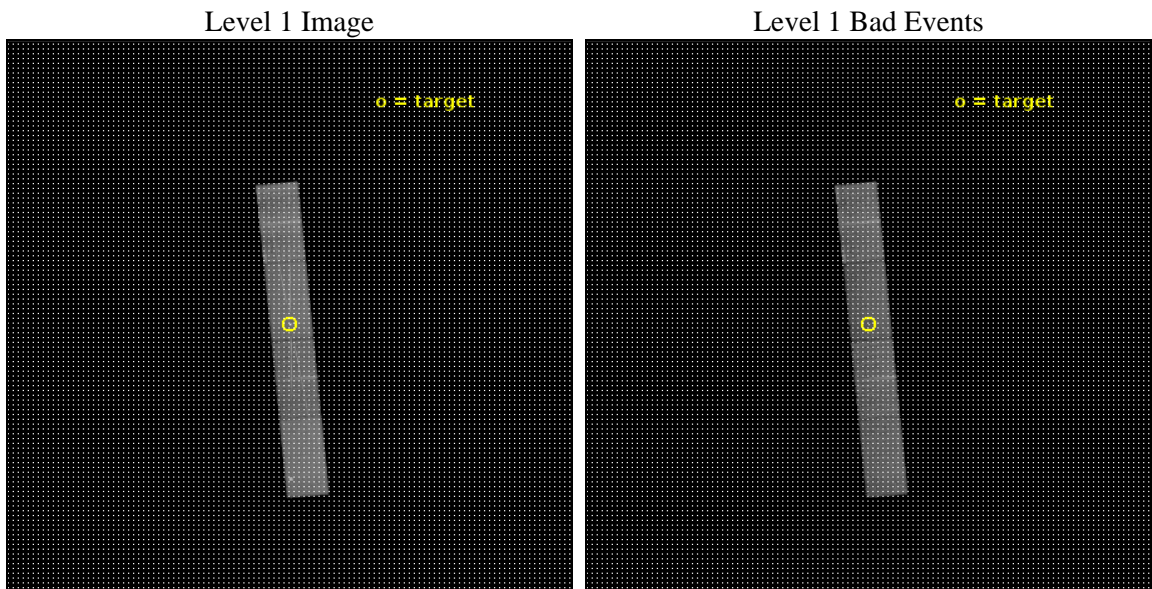
seq_num	401726	Sequence number
obs_id	17794	Observation id
title	An Integrated Approach to Winds, Jets, and State Transitions	Propo
observer	Joseph Neilsen	Principal investigator
object	GRS 1739-278	Source name
dtcycle	0	&#160
cycle	P	events from which exps? Prim/Second/Both
ra_targ	265.666792	Observer's specified target RA [deg]
dec_targ	-27.747969	Observer's specified target Dec [deg]
ra_nom	265.66904528169	Nominal RA [deg]
dec_nom	-27.747841309096	Nominal Dec [deg]
roll_nom	264.51510521924	Nominal Roll [deg]
revision	1	Processing version of data
ontime	29093.800816059	Sum of GTIs [s]
livetime	28407.998315547	Livetime [s]
ontime5	29093.800816059	Sum of GTIs [s]
ontime6	29093.800816059	Sum of GTIs [s]
ontime7	29093.800816059	Sum of GTIs [s]
ontime8	29093.800816059	Sum of GTIs [s]
l2events	186384	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	29000.000000	[s] Scheduled observation exposure time
ascdsver	10.5.2	Processing system revision	ontime	29093.800816059	Sum of GTIs [s]
caldbver	4.7.2	&#160	ontime5	29093.800816059	Sum of GTIs [s]
date	2016-11-01T16:30:20	Date and time of file creation	ontime6	29093.800816059	Sum of GTIs [s]
revision	1	Processing version of data	ontime7	29093.800816059	Sum of GTIs [s]
			ontime8	29093.800816059	Sum of GTIs [s]
			l1events	580247	Number of level 1 events
			tgmethod	FINDZO	Method used to create src1a file
			zo_pos	(4110.07, 4093.91)	src1a sky pixel position
			zo_pos_tgd	(4110.12, 4093.81)	src1a sky pixel position via todetect

### 2.1.3 Events

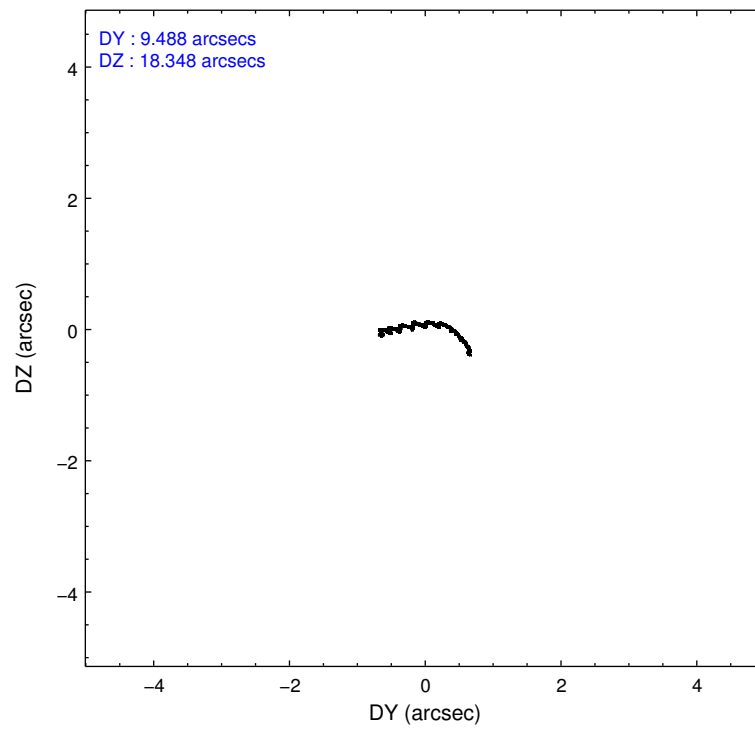
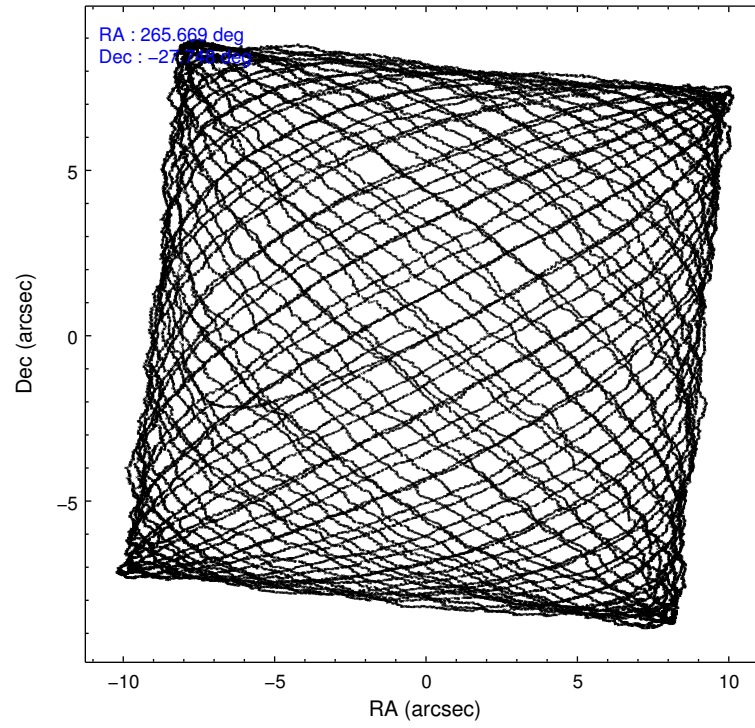
	ccd 5	ccd 6	ccd 7	ccd 8
level 1 events	164198	114606	157589	143854
rejected events	83936	91905	78604	103548
rejected %	51%	80%	49%	71%

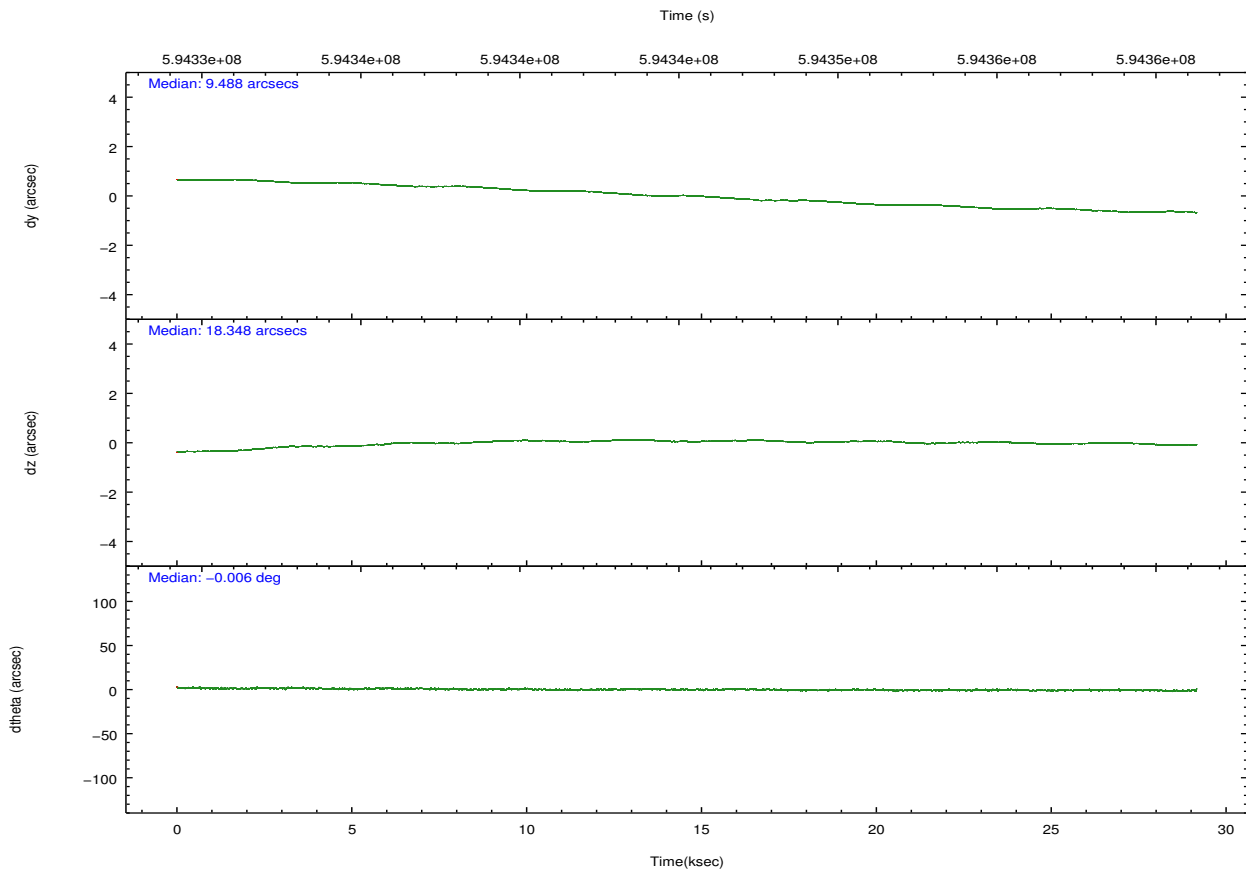
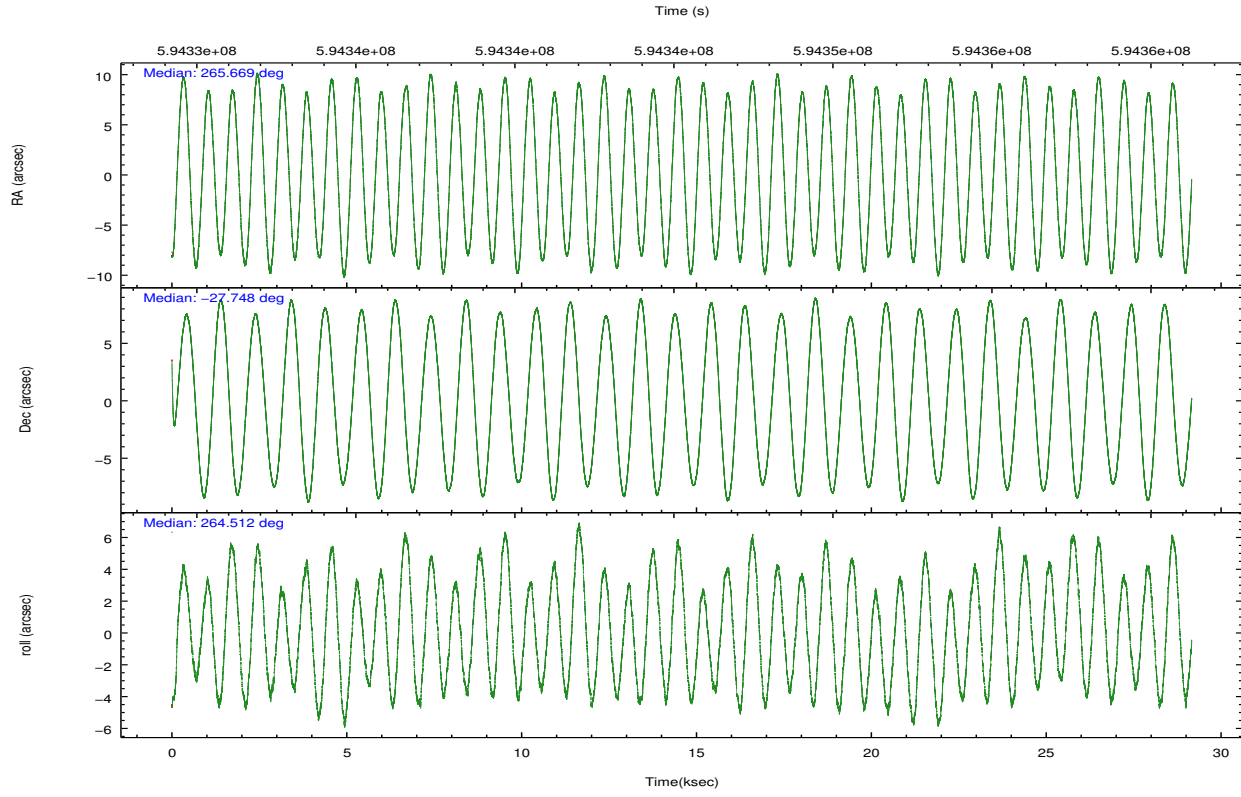
	ccd 5	ccd 6	ccd 7	ccd 8
grade 0 events	6544	10693	7061	11890
	3%	9%	4%	8%
grade 1 events	258	55	288	70
	0%	0%	0%	0%
grade 2 events	27008	5099	21153	10419
	16%	4%	13%	7%
grade 3 events	1936	1612	5223	3711
	1%	1%	3%	2%
grade 4 events	1869	1598	5146	3442
	1%	1%	3%	2%
grade 5 events	8628	4183	10737	6173
	5%	3%	6%	4%
grade 6 events	42906	3703	40407	10845
	26%	3%	25%	7%
grade 7 events	75049	87663	67574	97304
	45%	76%	42%	67%

## 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	GRADED	GRADED	CCD I0 on	N	N
Observation mode	POINTING	POINTING	CCD I1 on	N	N
[deg] Pointing RA	265.655818	265.6690452816893	CCD I2 on	N	N
[deg] Pointing Dec	-27.723022	-27.74784130909617	CCD I3 on	N	N
[deg] Pointing Roll	264.352321	264.5151052192411	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	-190.1425803651734	CCD S3 on	Y	Y
[mm] SIM translation stage offset	0	0.01005778216563158	CCD S4 on	Y	Y
[s] Observation start time (MET)	594330853.184000	594329469.2330199	CCD S5 on	O2	N
Observation start date	2016-10-31T19:53:05	2016-10-31T19:31:09	Number of optional ACIS chips dropped	2	2
[s] Observation end time (MET)	594359853.184000	594361140.7098401	On-chip summing requested	N	N
Observation end date	2016-11-01T03:56:25	2016-11-01T04:19:00	Subarray requested	CUSTOM	1/2
Read mode	TIMED	TIMED	Subarray start row	257	257
			Subarray row count	512	512
			Alternating exposures requested	N	N
			[s] Primary exposure time	0.000000	1.7

## 2.3 Aspect





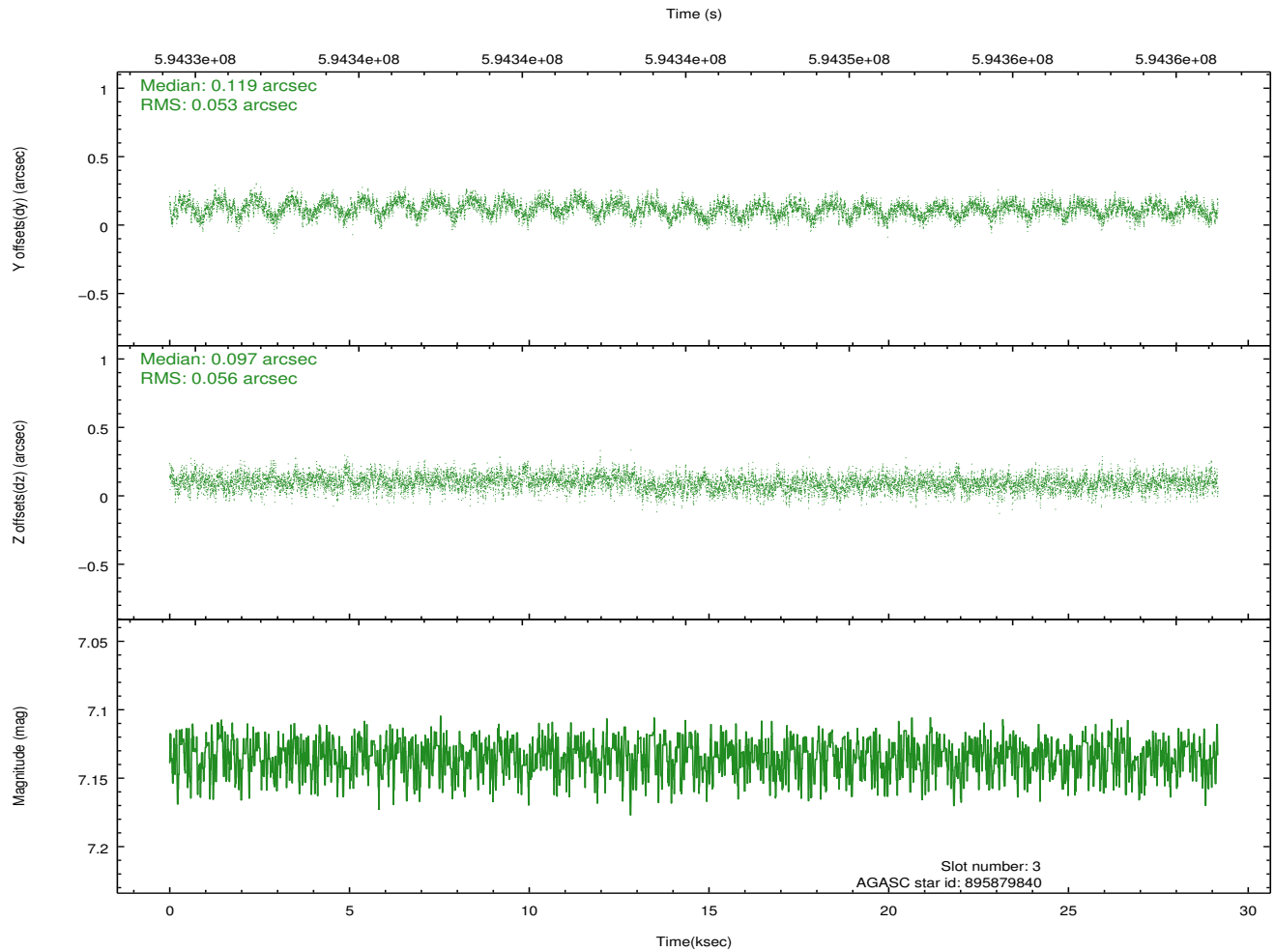
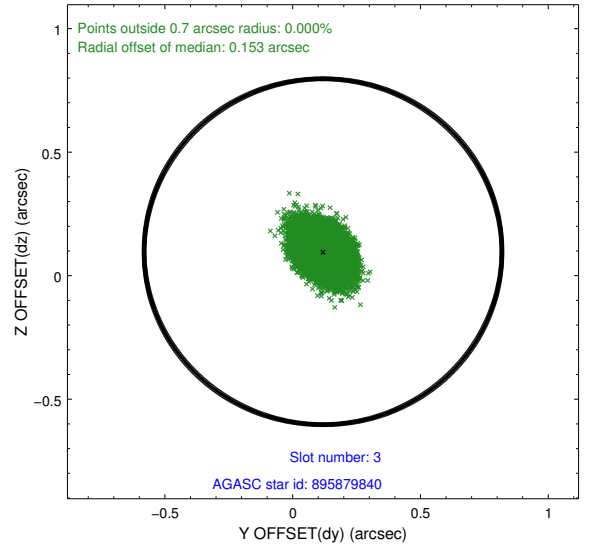
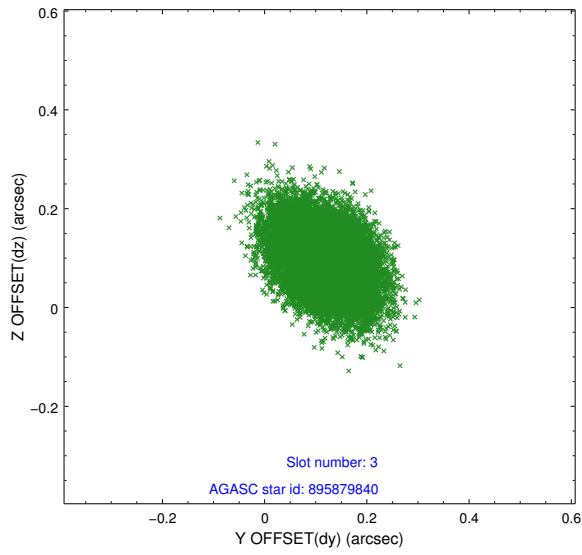
### Slot Statistics

slot	status	used	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID		ACIS-S-1	7.08	7113	0.097	-0.008	0.011	0.021	0.000000	0.000000	933.86	-1735.36
1	FID		ACIS-S-5	7.10	7112	-0.230	0.056	0.011	0.018	0.000000	0.000000	-1815.44	162.14
2	FID		ACIS-S-6	7.23	7110	0.113	-0.037	0.011	0.019	0.000000	0.000000	399.31	806.12
3	GUIDE	used	895879840	7.13	14225	0.119	0.097	0.082	0.134	265.218397	-27.395778	-1031.80	-1507.23
4	GUIDE	used	896402272	7.60	14220	0.143	-0.154	0.075	0.130	265.637294	-28.313189	2120.20	150.59
5	GUIDE	used	896538696	6.75	14223	-0.130	-0.038	0.087	0.143	266.298470	-28.325572	1963.62	2240.89
6	GUIDE	used	896014680	8.75	14218	-0.129	0.112	0.119	0.206	266.460330	-27.216583	-2059.59	2384.84
7	GUIDE	used	896539744	8.30	14218	-0.004	-0.013	0.083	0.139	266.154264	-28.178023	1477.47	1735.93

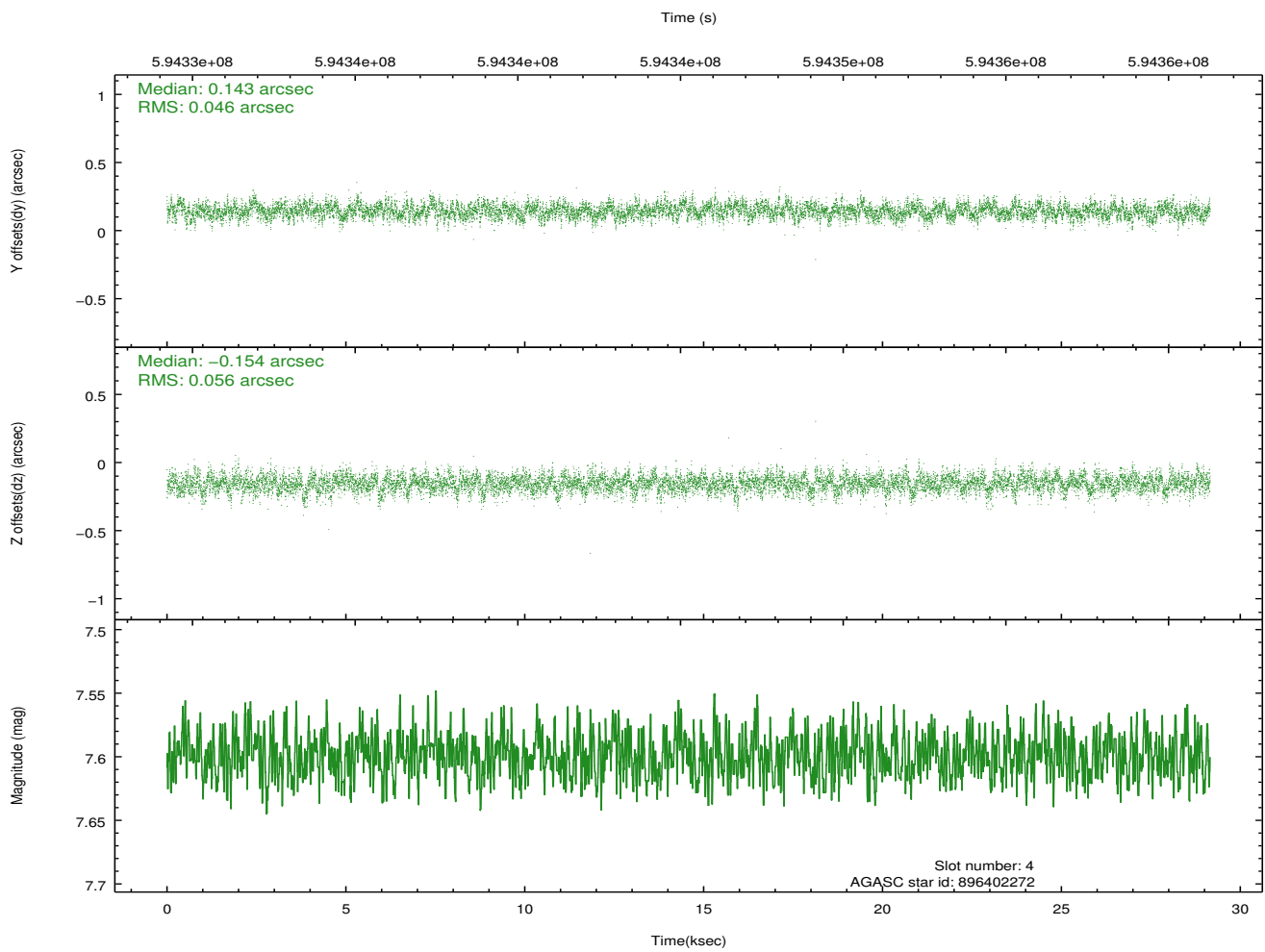
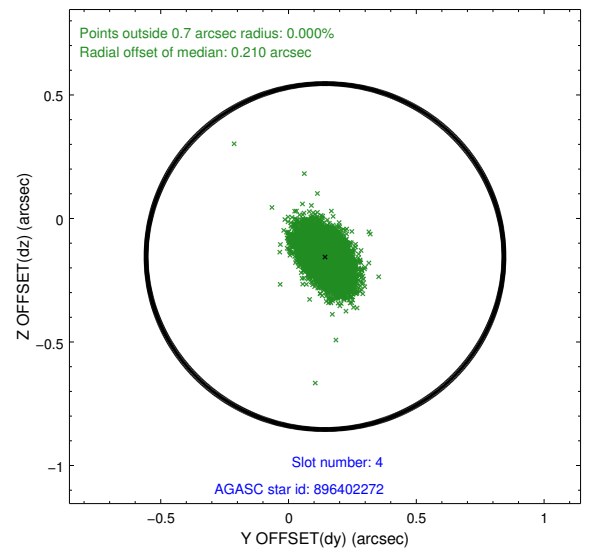
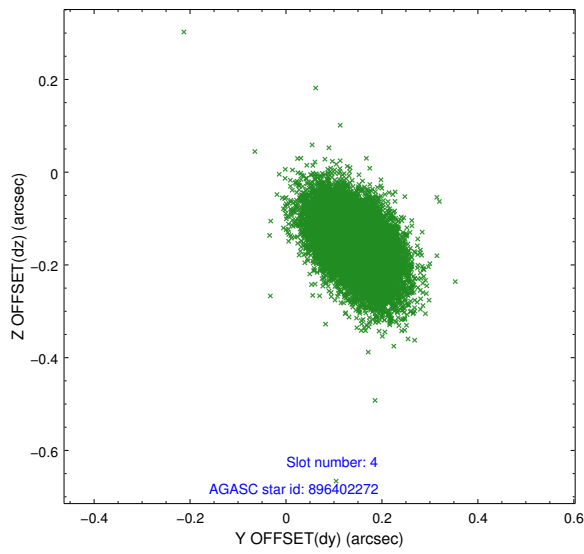
∞

## 2.4 Star Slots

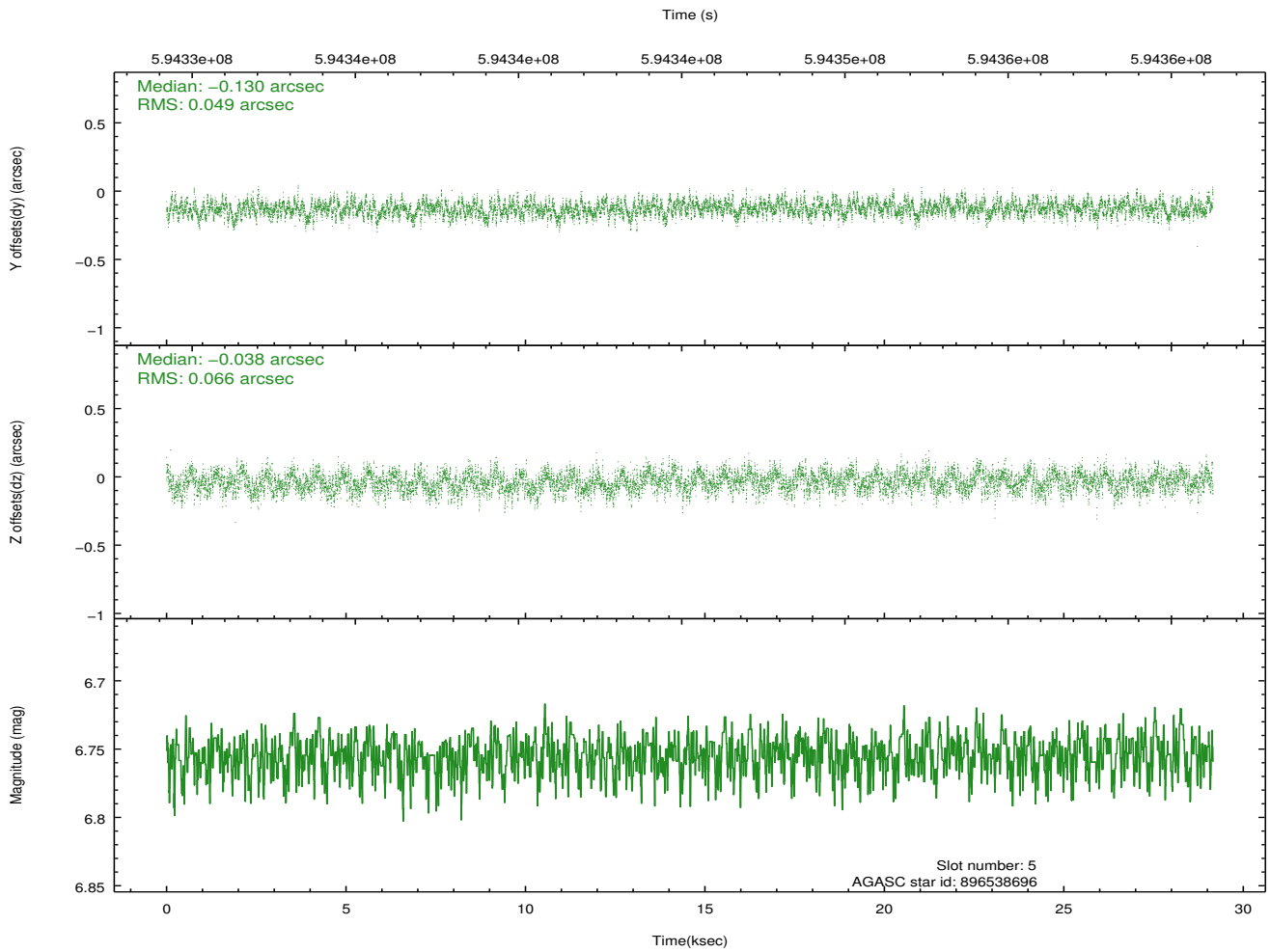
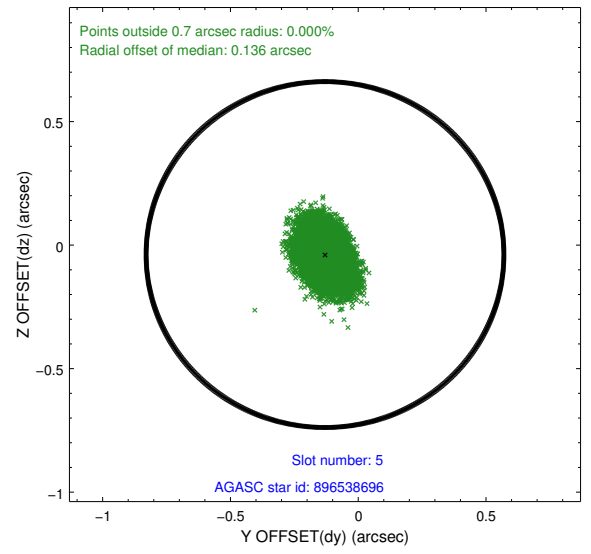
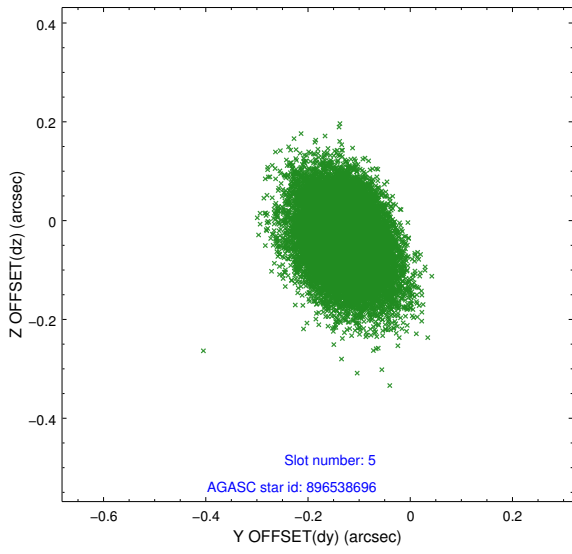
### 2.4.1 Slot 3



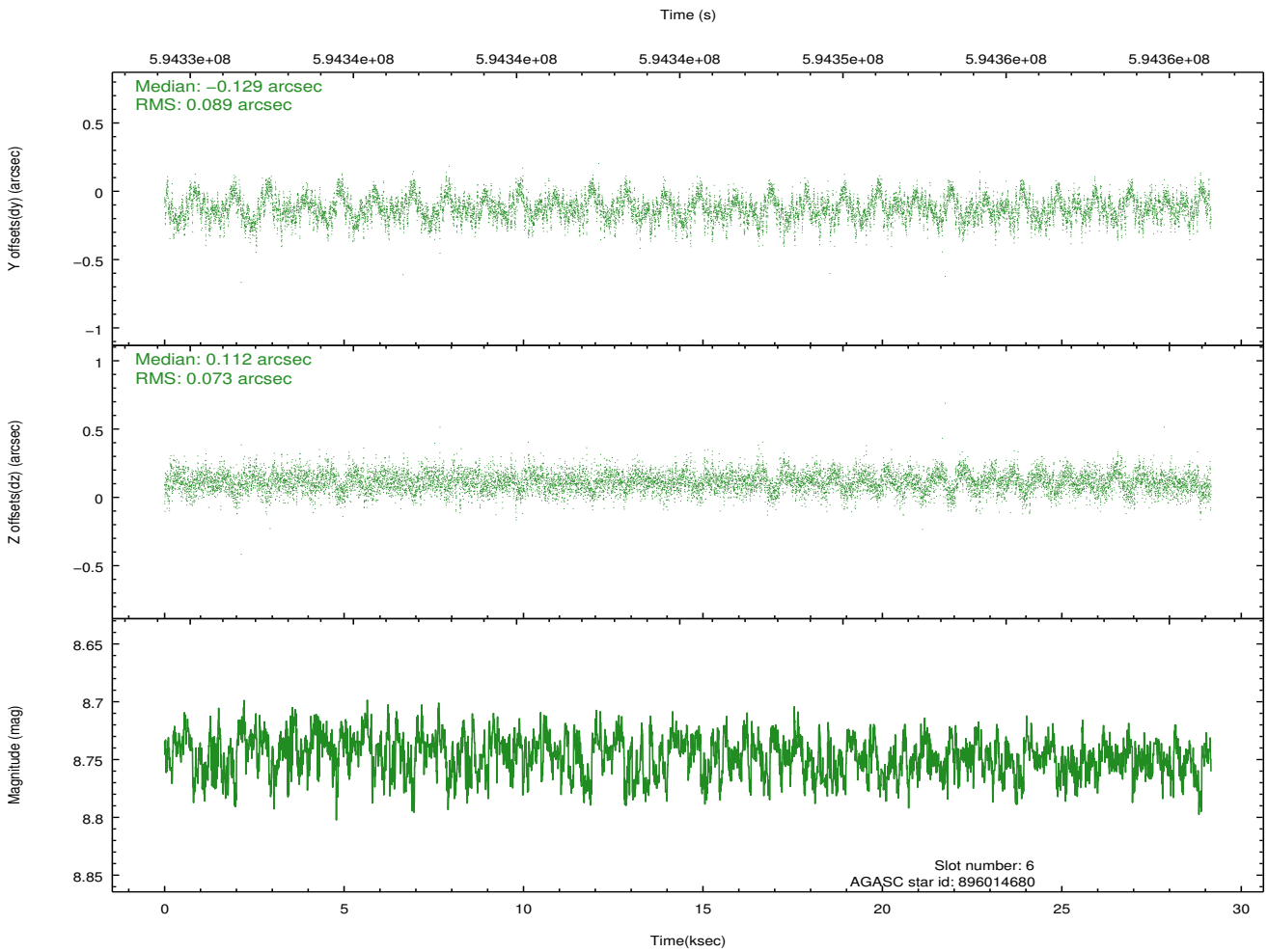
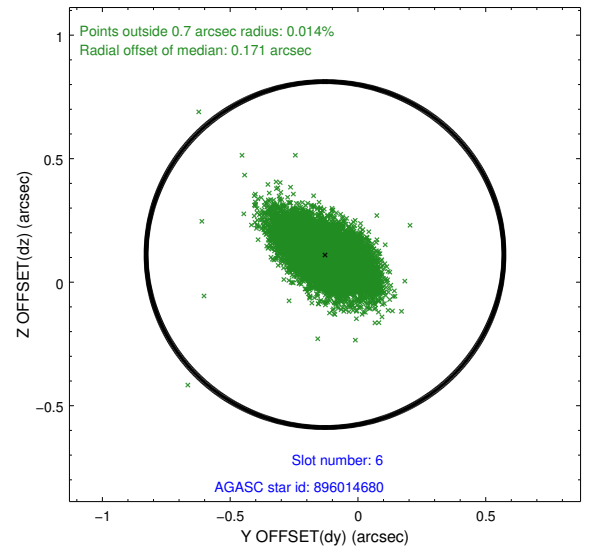
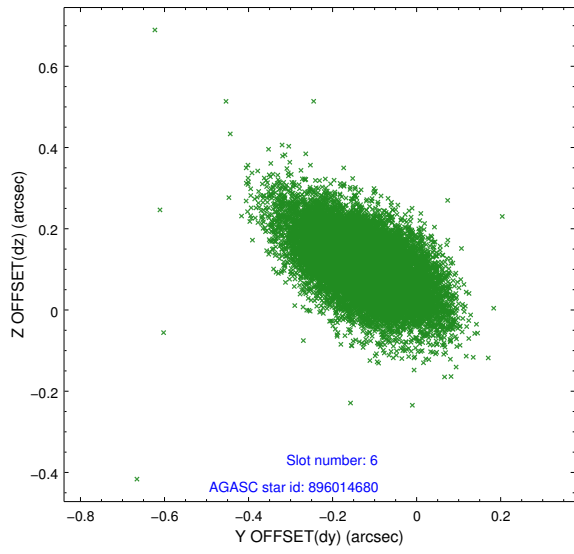
## 2.4.2 Slot 4



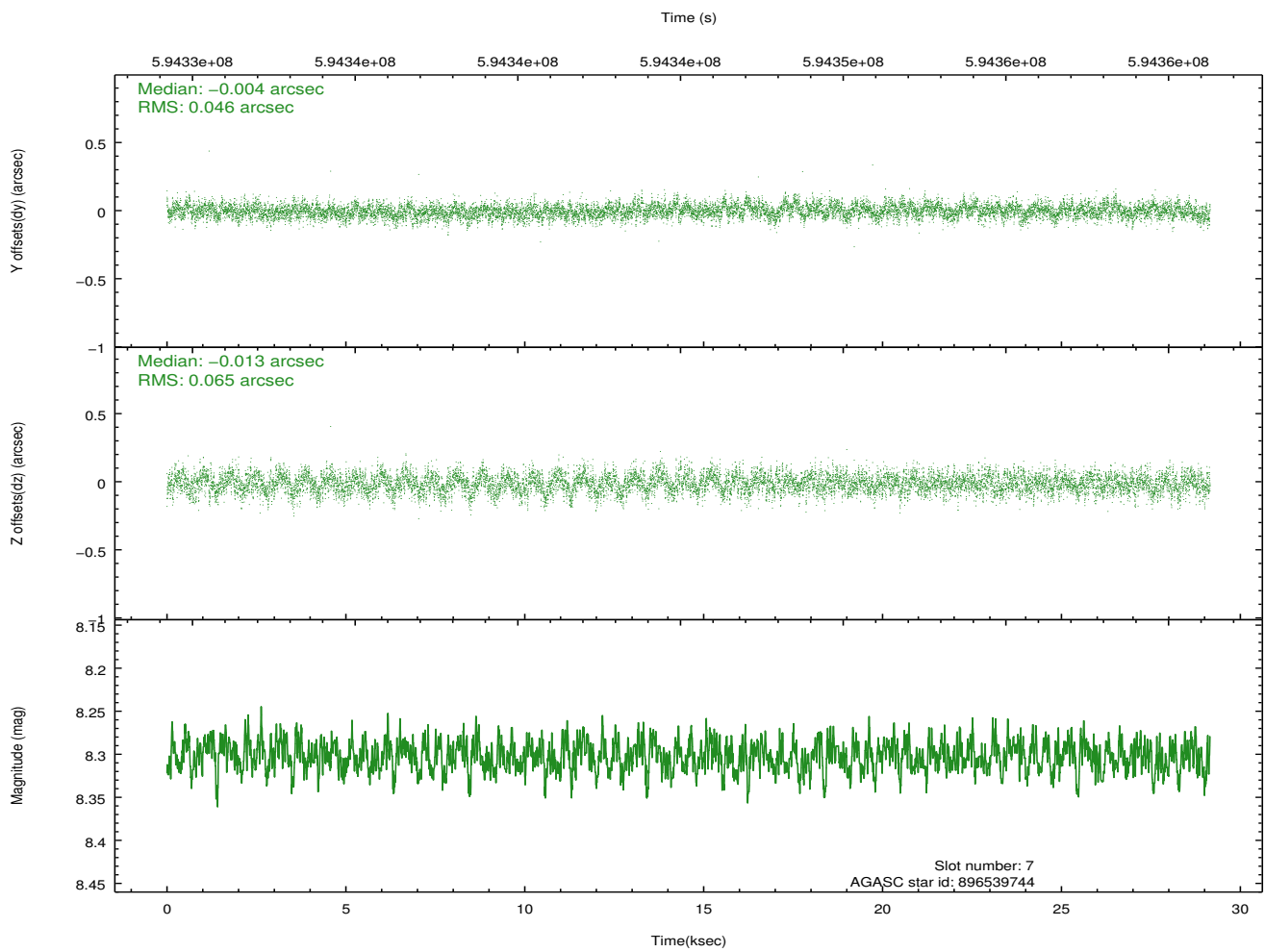
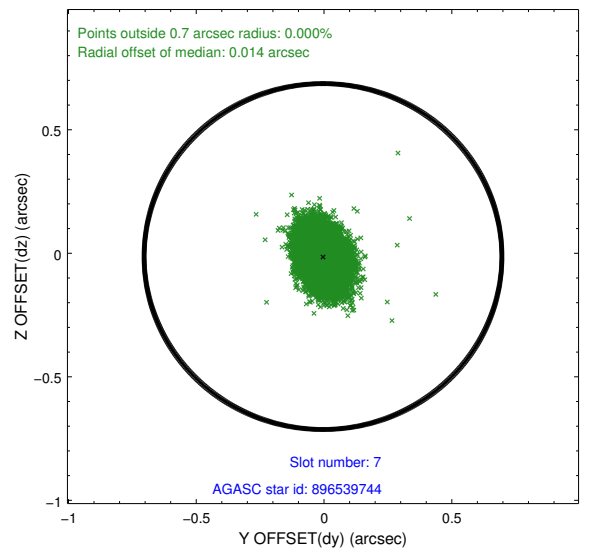
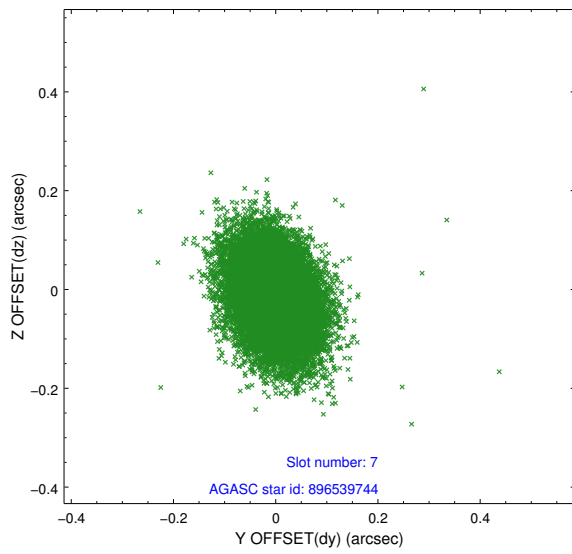
### 2.4.3 Slot 5



## 2.4.4 Slot 6

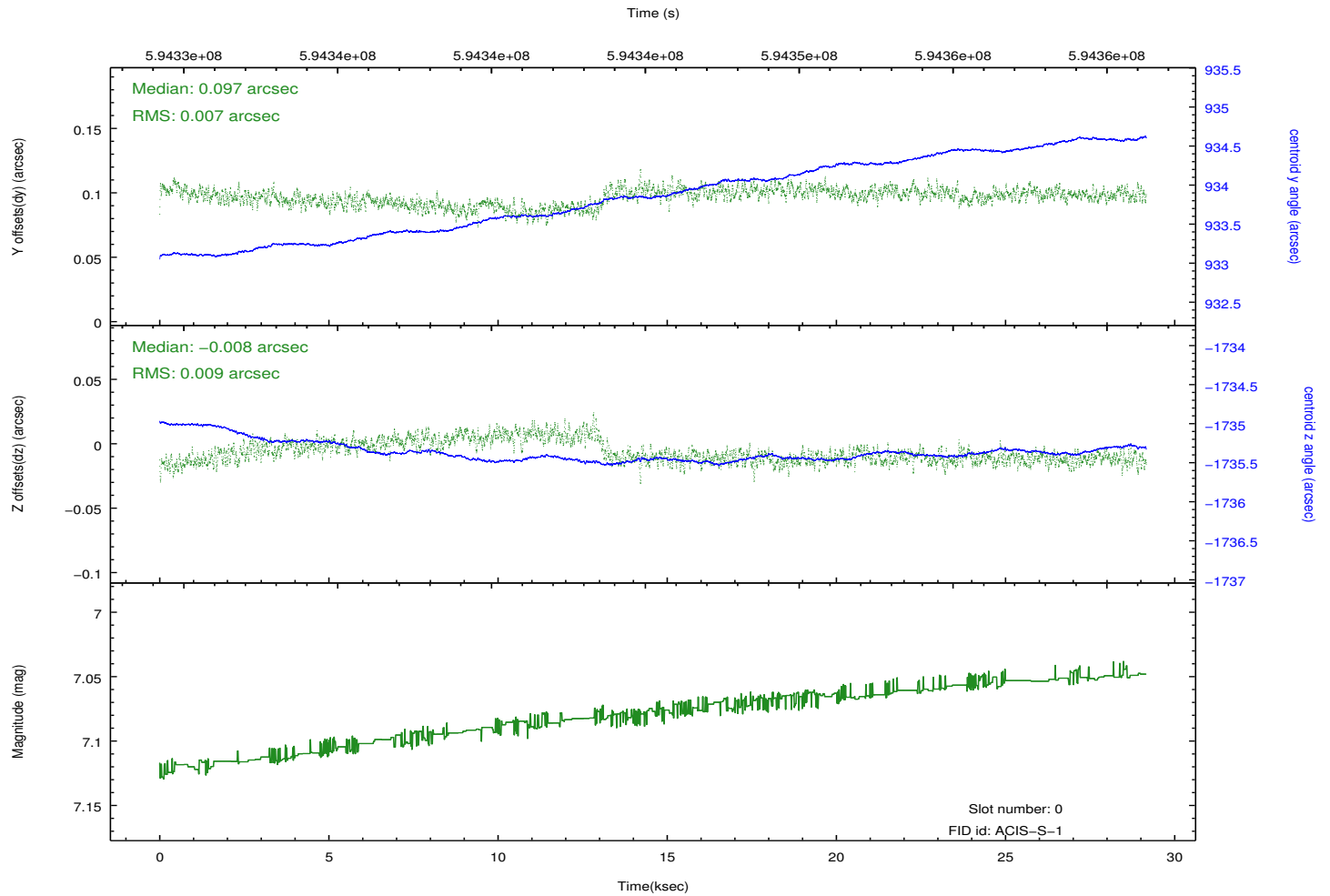
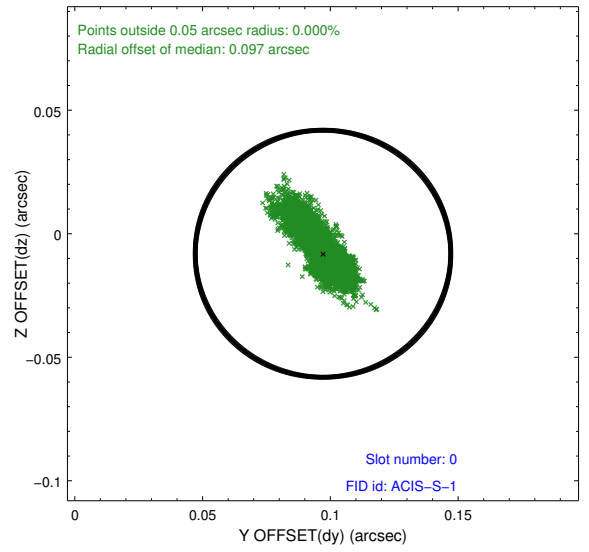
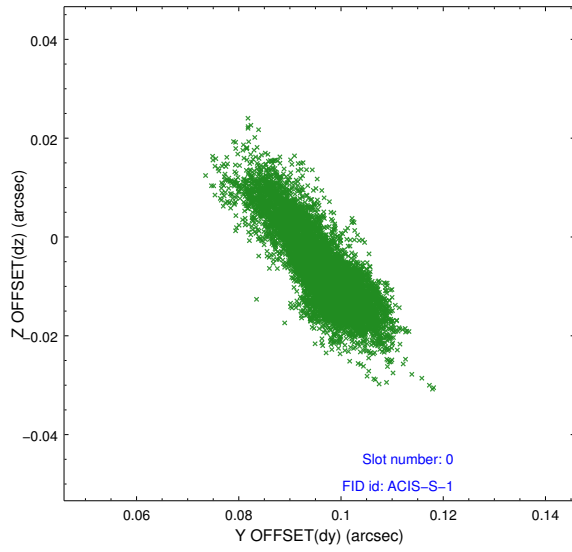


## 2.4.5 Slot 7

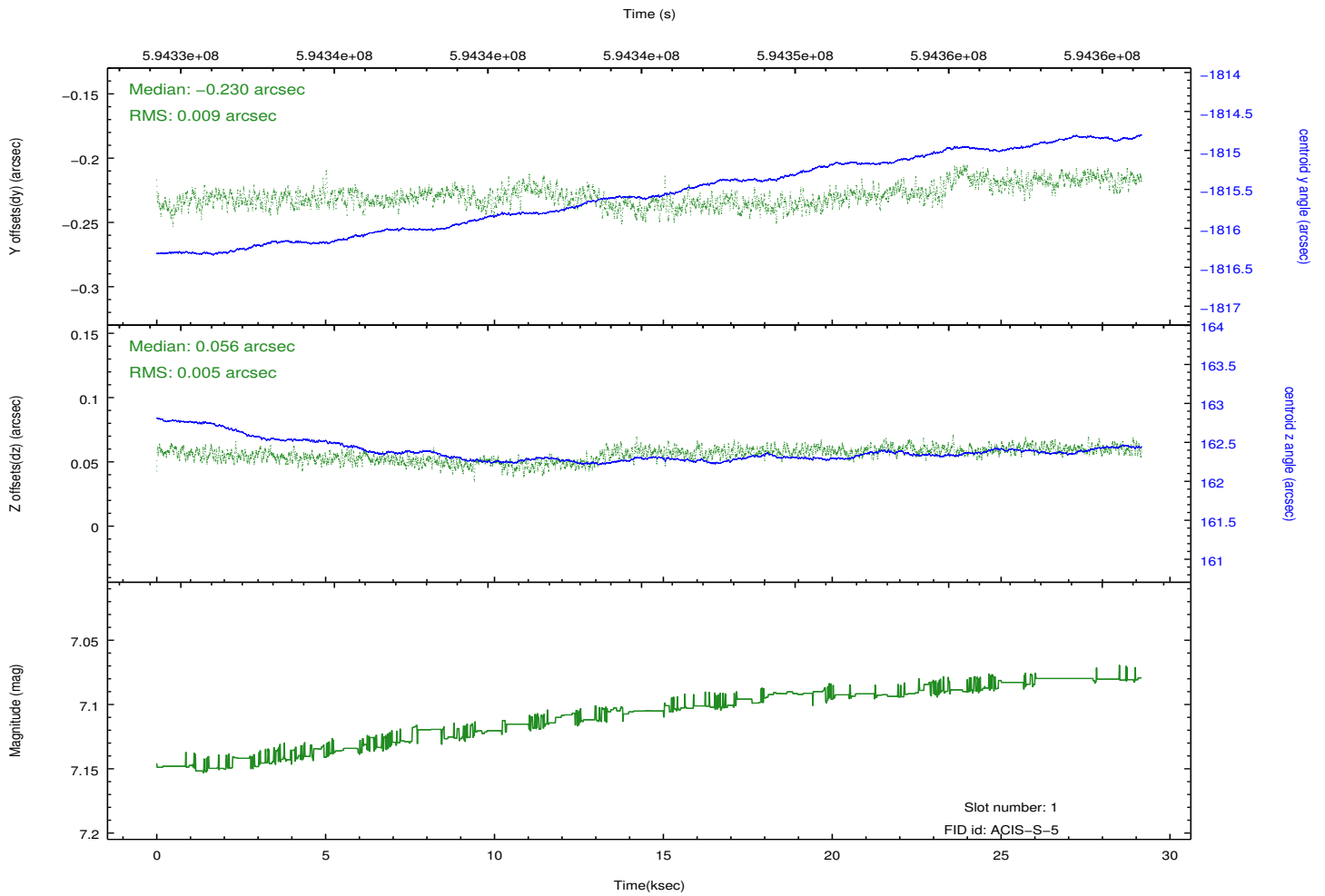
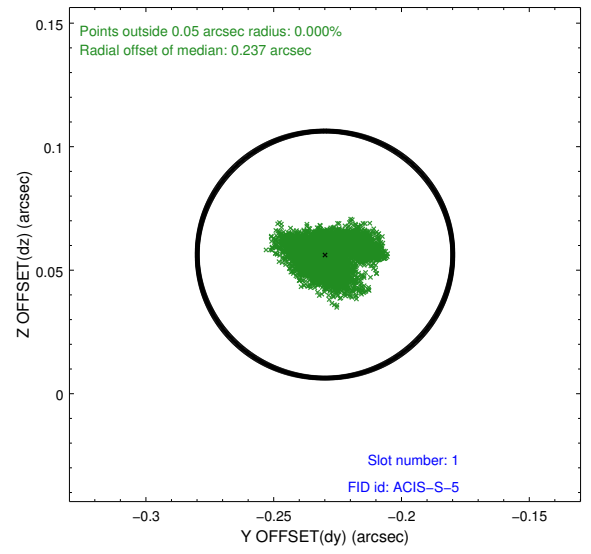
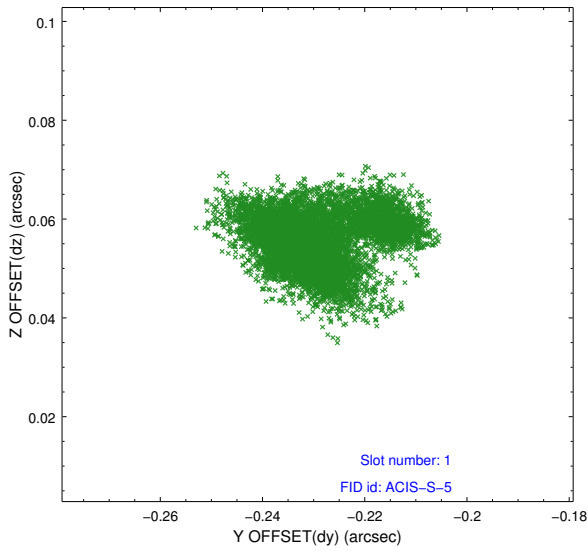


## 2.5 FID Slots

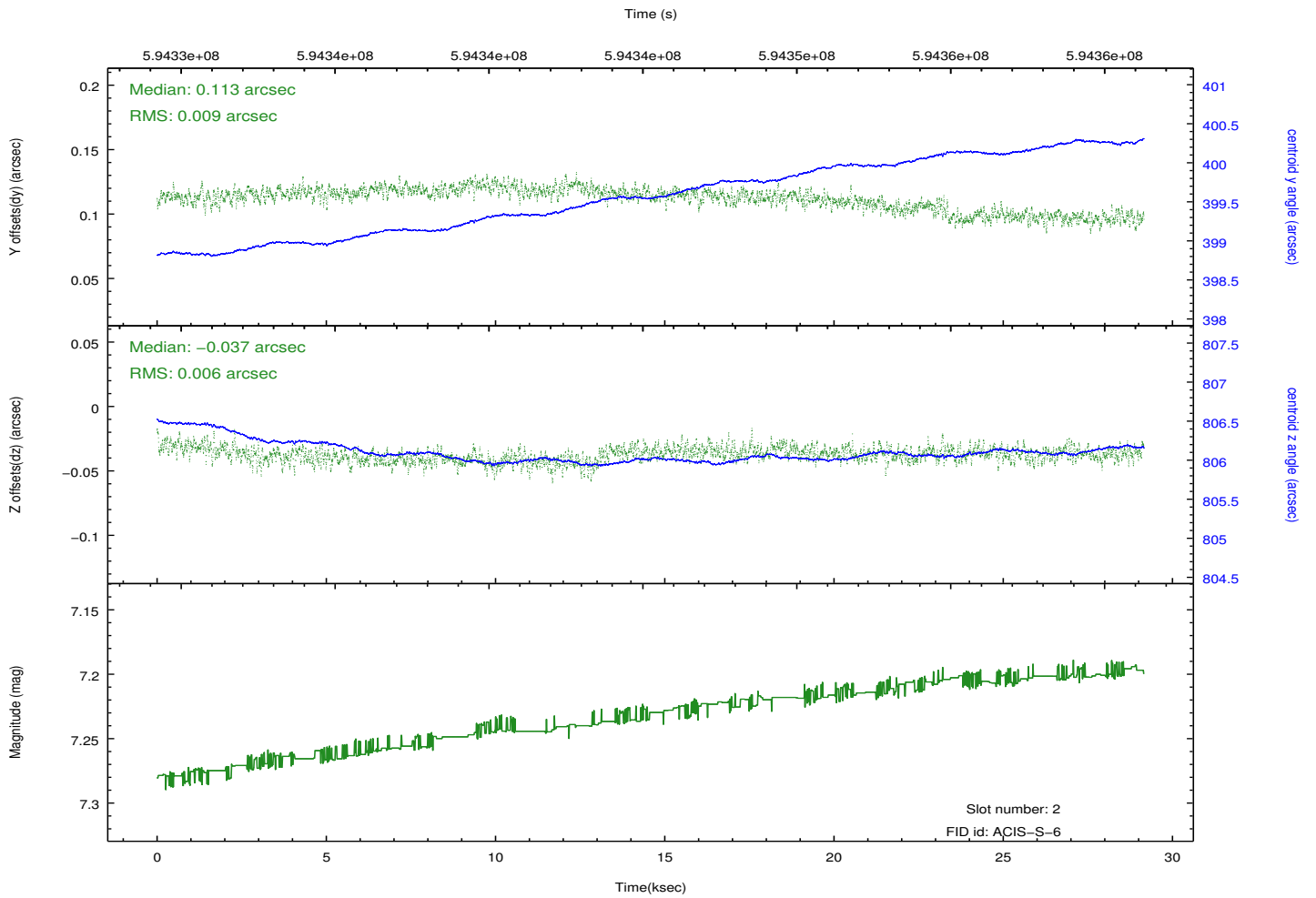
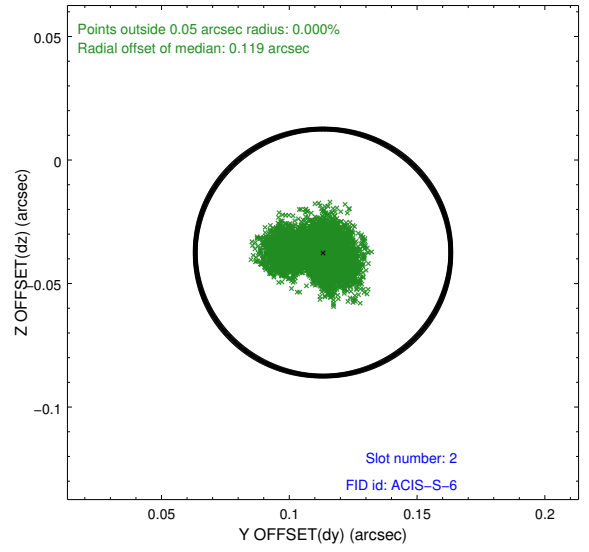
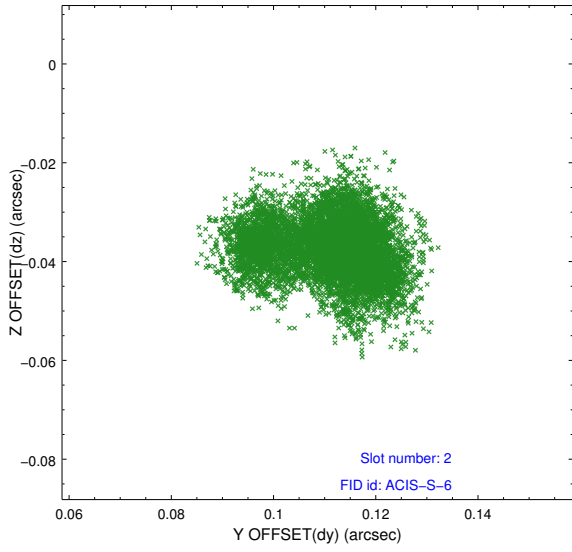
### 2.5.1 Slot 0



## 2.5.2 Slot 1

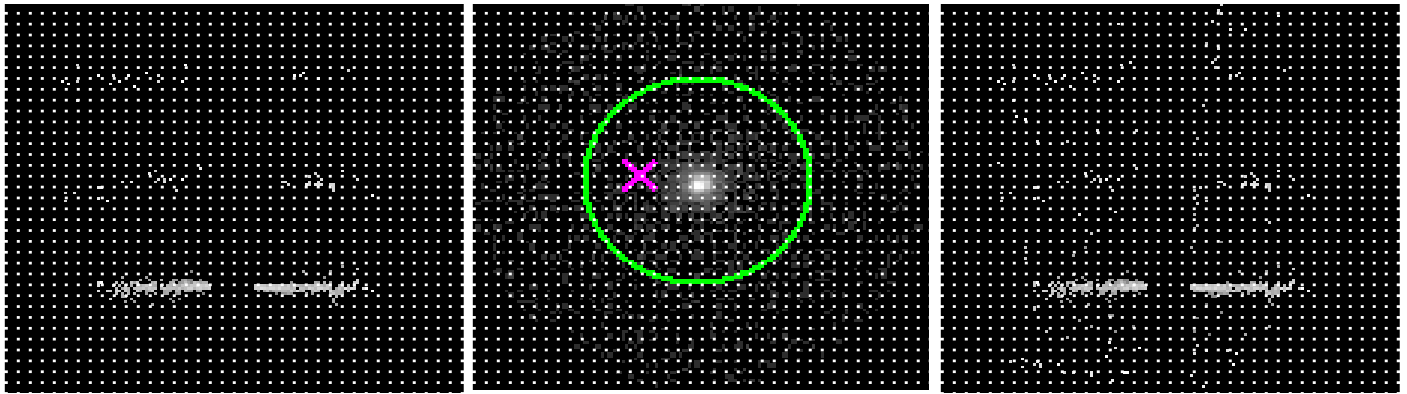


### 2.5.3 Slot 2



### 3 Gratings

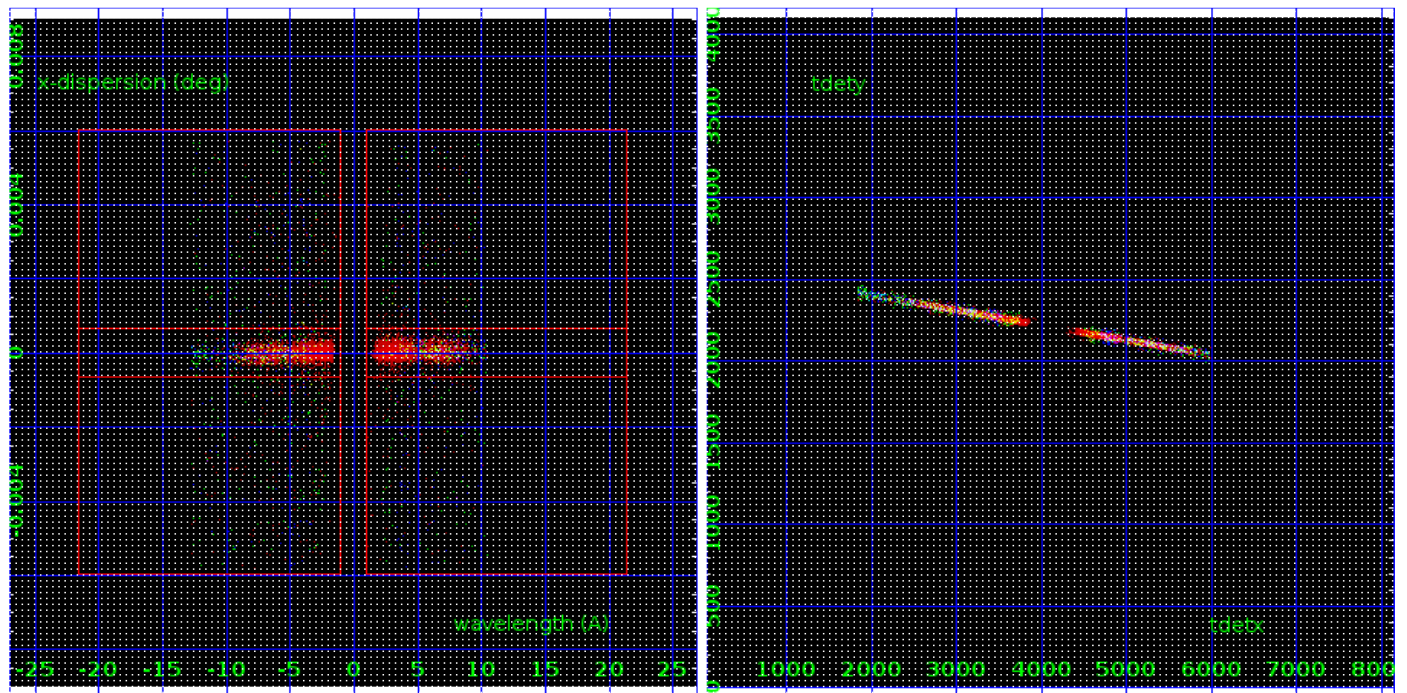
#### 3.1 HEG Arm



HEG Order Sort 123

HEG Zero Order

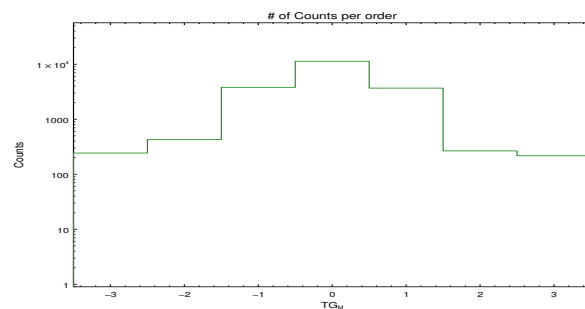
HEG Order Sort ALL



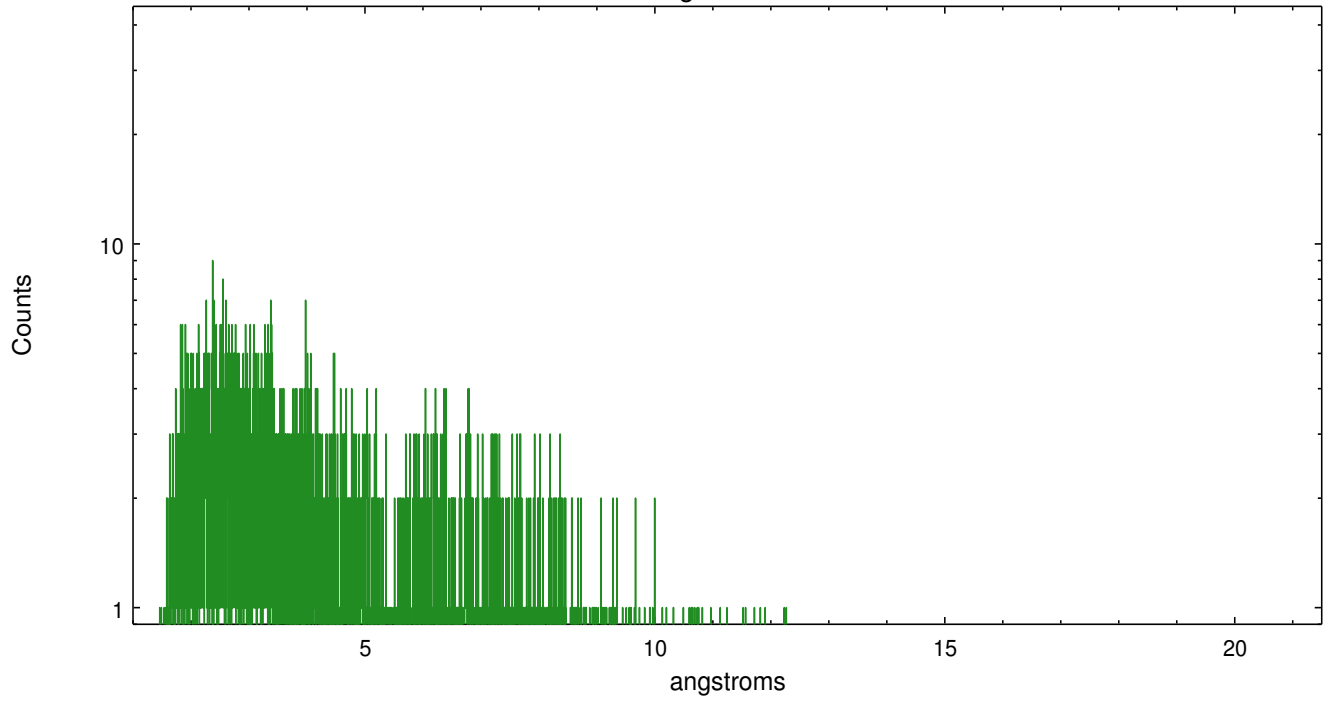
Spot Image HEG

Full Detector HEG

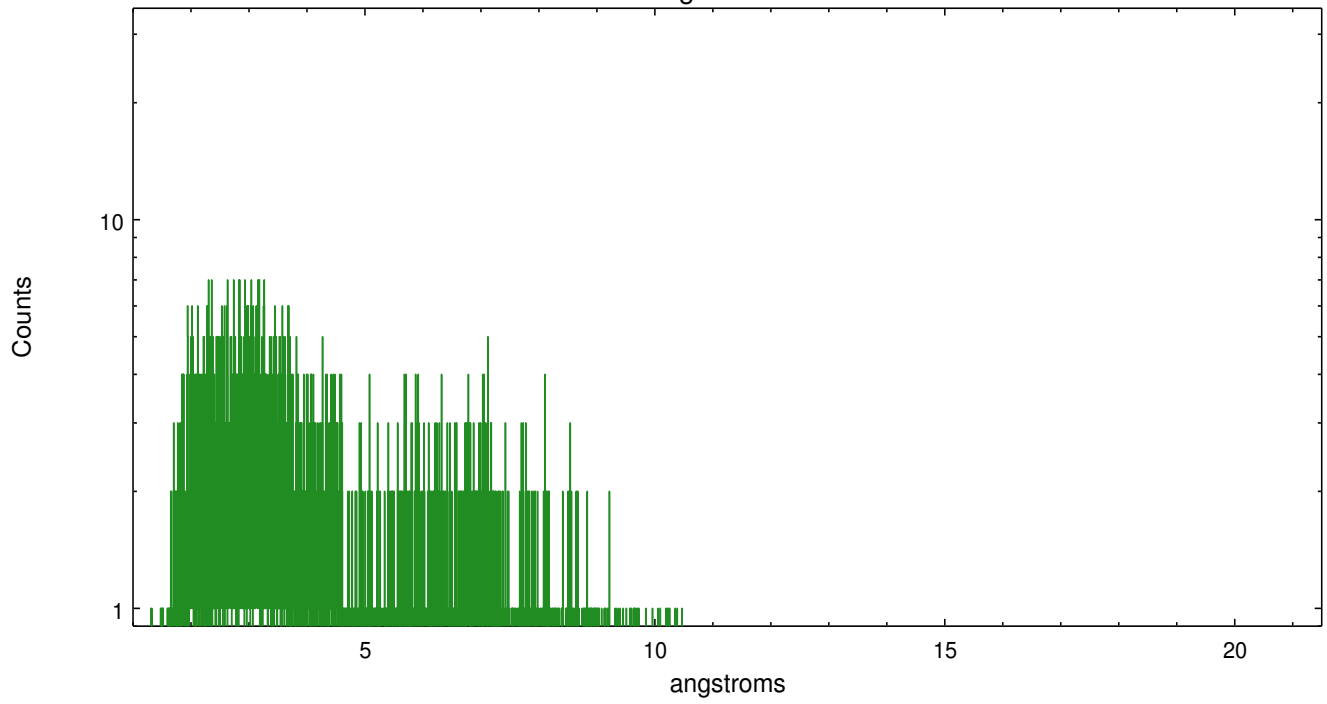
	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	243	428	3804	11337	3680	266	217



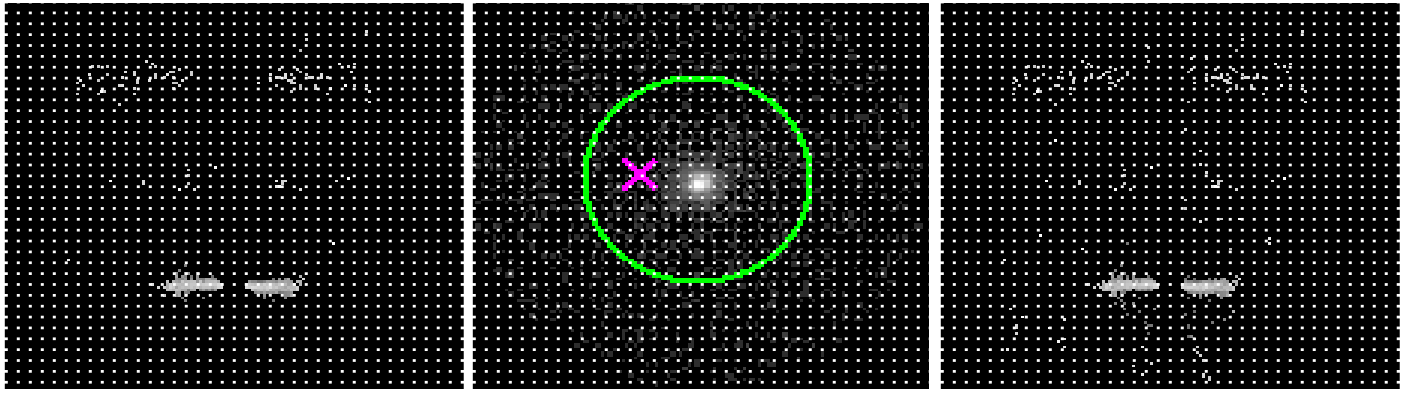
heg order -1



heg order +1



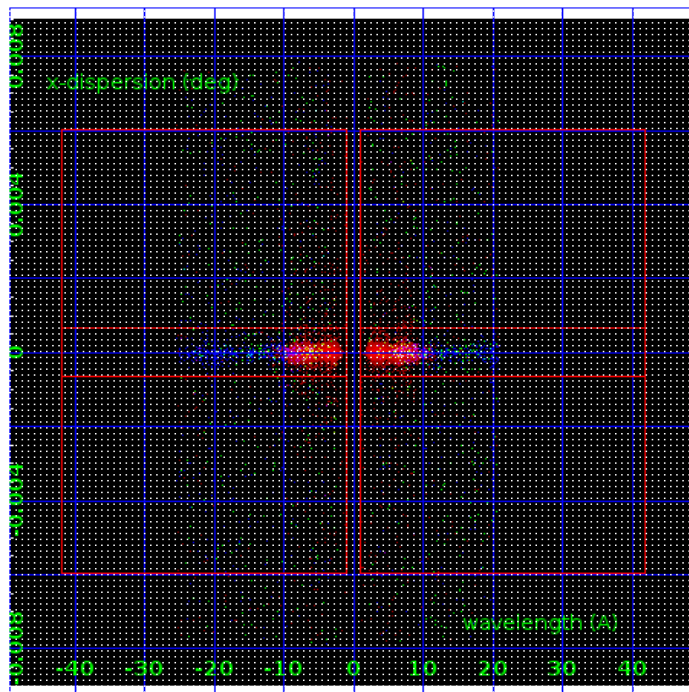
### 3.2 MEG Arm



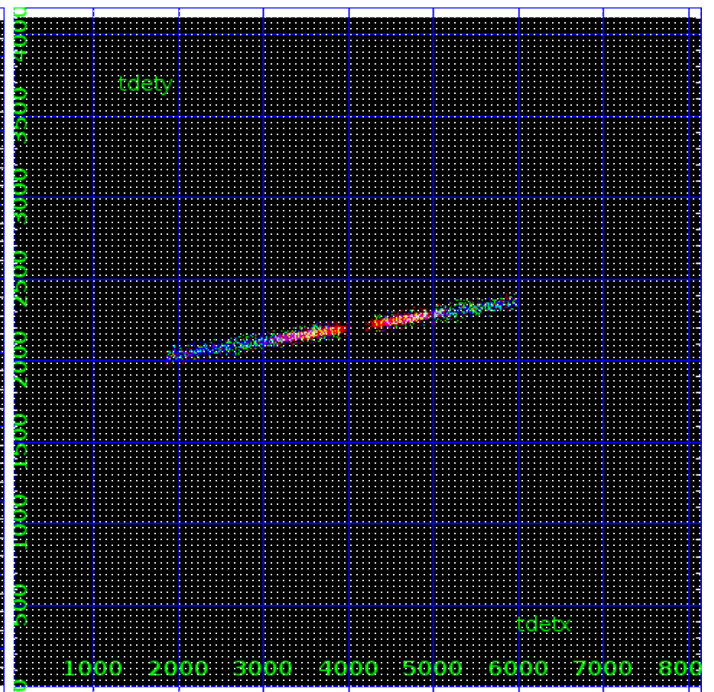
MEG Order Sort 123

MEG Zero Order

MEG Order Sort ALL

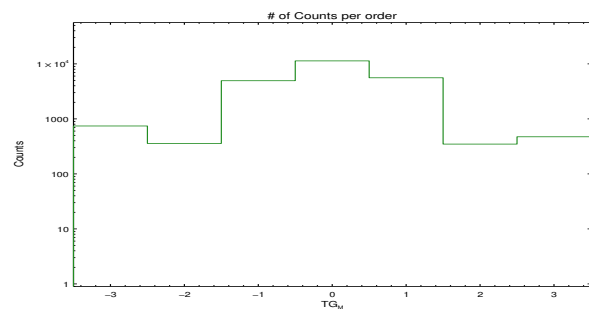


Spot Image MEG

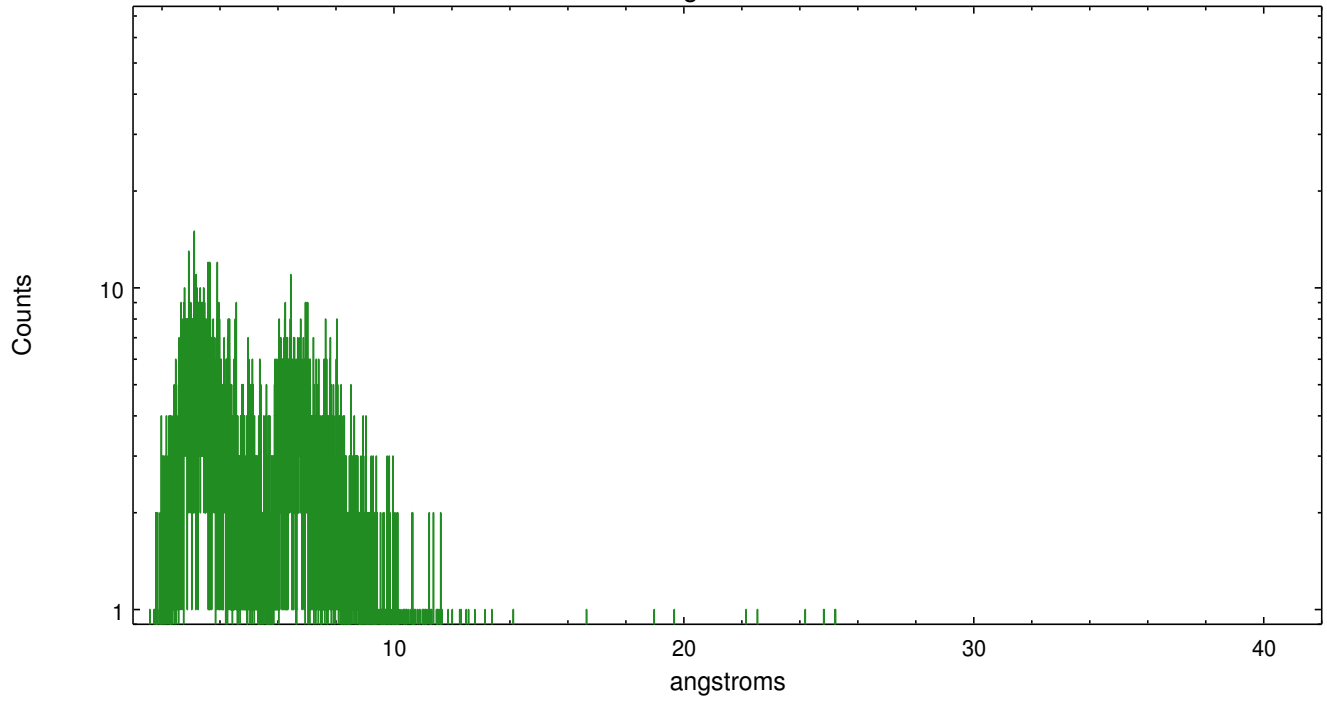


Full Detector MEG

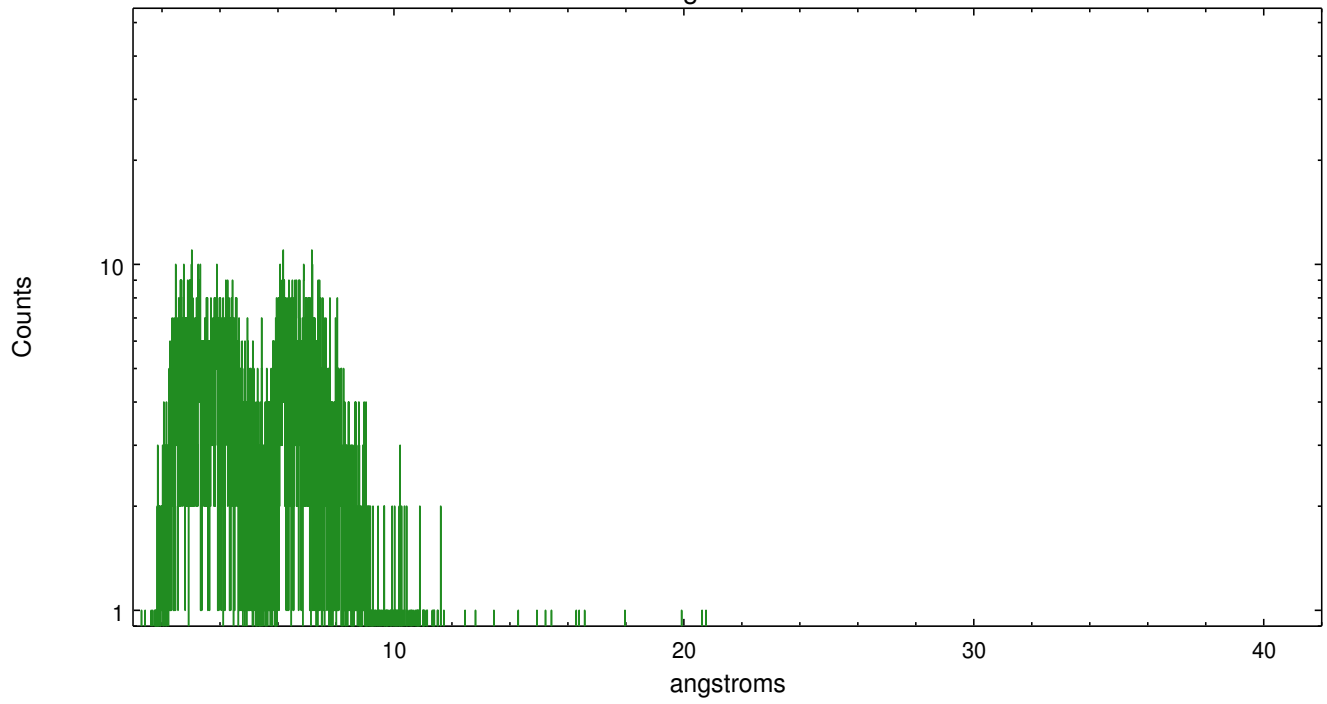
	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	743	358	4944	11337	5590	348	473



meg order -1



meg order +1



# A Summary

## A.1 Status

V&V Scientist	Joy Nichols
V&V Date (YYYY-MM-DD)	2016.11.01
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	29.093800816059

## A.2 Comments

Zeroth order moderately piled up. The zeroth order sky position was determined using a software tool developed by CXC called findzero, which is available in CIAO as part of the tgdetect2 tool. The tool calculates the point of intersection of the readout streak on the ACIS CCD and the meg or leg dispersed spectral arm, rather than using a centroid position of the source. The findzero results are more accurate than source centroid in this case.