

V&V Reference Report

L2 ASCDS Version : 10.5.2

Observation 20008 - L2 Version 1
Chandra X-Ray Center

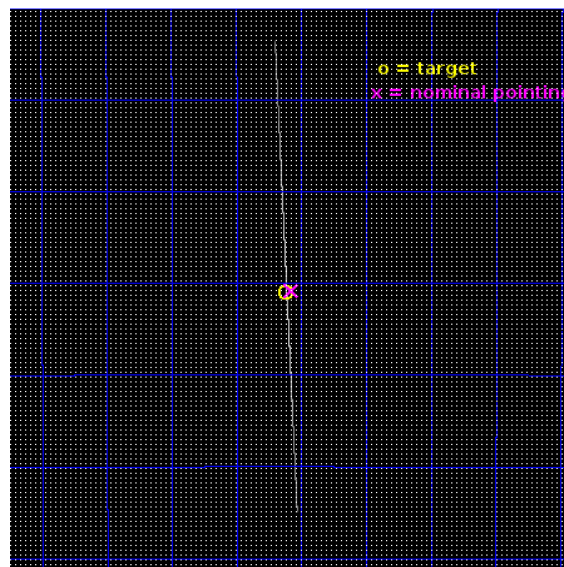
L2 Processing Date : Feb 7 2017

Contents

1	Front	2
2	OBI	3
2.1	OBI	3
2.1.1	Images	3
2.1.2	Parameters	4
2.1.3	Events	4
2.2	Compared Parameters	5
2.3	Aspect	6
2.4	Star Slots	9
2.4.1	Slot 3	9
2.4.2	Slot 4	10
2.4.3	Slot 5	11
2.4.4	Slot 6	12
2.4.5	Slot 7	13
2.5	FID Slots	14
2.5.1	Slot 0	14
2.5.2	Slot 1	15
2.5.3	Slot 2	16
3	Gratings	17
3.1	HEG Arm	17
3.2	MEG Arm	19
A	Summary	21
A.1	Status	21
A.2	Comments	21

1 Front

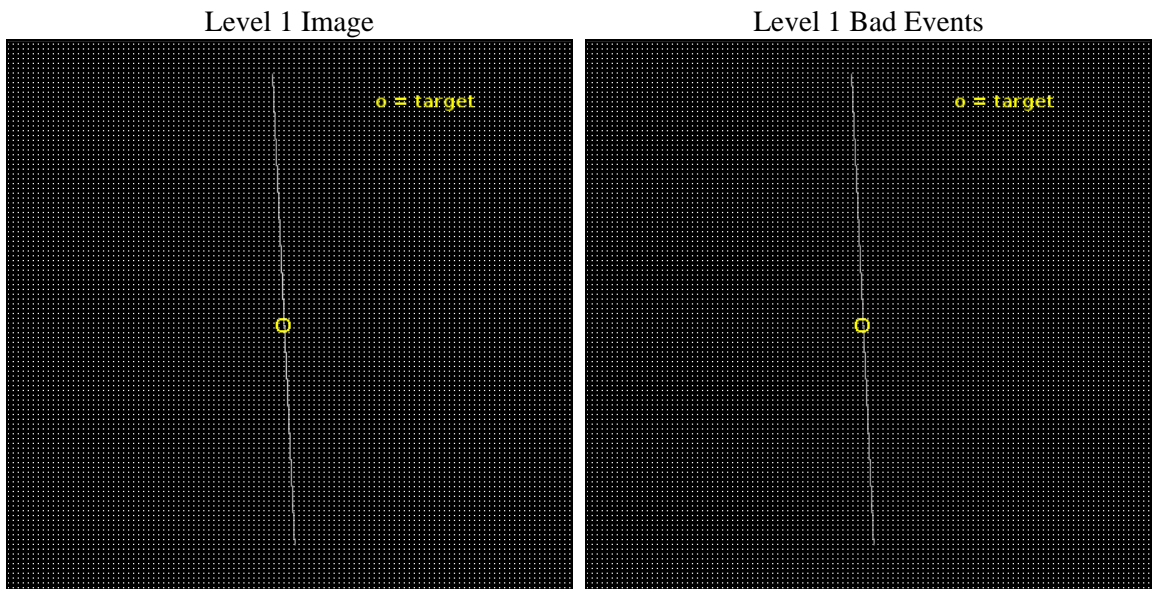
seq_num	401891	Sequence number
obs_id	20008	Observation id
title	A Hig-Resolution Spectrum of the Black Hole GRS 1716-249	Proposal
observer	Jon Miller	Principal investigator
object	GRS 1716-249	Source name
ra_targ	259.90375	Observer's specified target RA [deg]
dec_targ	-25.017611	Observer's specified target Dec [deg]
ra_nom	259.89409940586	Nominal RA [deg]
dec_nom	-25.014146151564	Nominal Dec [deg]
roll_nom	87.382644595697	Nominal Roll [deg]
revision	1	Processing version of data
ontime	30071.25	Sum of GTIs [s]
livetime	29953.784179688	Livetime [s]
ontime4	30071.25	Sum of GTIs [s]
ontime5	30071.25	Sum of GTIs [s]
ontime6	30071.25	Sum of GTIs [s]
ontime7	30071.25	Sum of GTIs [s]
ontime8	30071.25	Sum of GTIs [s]
ontime9	30071.25	Sum of GTIs [s]
l2events	3182175	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	30000.000000	[s] Scheduled observation exposure time
ascdsver	10.5.2	Processing system revision	ontime	30071.25	Sum of GTIs [s]
caldbver	4.7.3	 	ontime4	30071.25	Sum of GTIs [s]
date	2017-02-07T06:13:38	Date and time of file creation	ontime5	30071.25	Sum of GTIs [s]
revision	1	Processing version of data	ontime6	30071.25	Sum of GTIs [s]
			ontime7	30071.25	Sum of GTIs [s]
			ontime8	30071.25	Sum of GTIs [s]
			ontime9	30071.25	Sum of GTIs [s]
			l1events	5872714	Number of level 1 events
			tgmethod	TGDETECT	Method used to create src1a file
				14032.50	

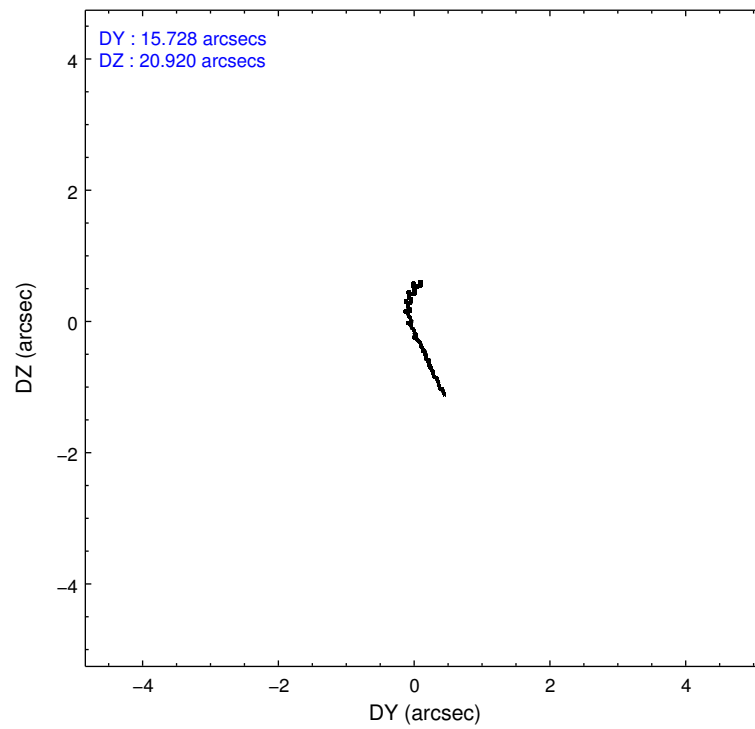
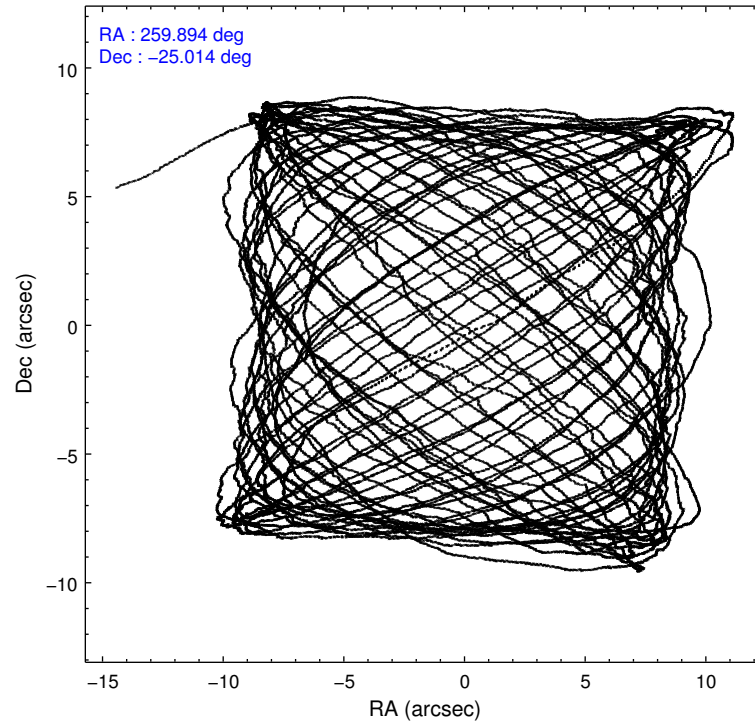
2.1.3 Events

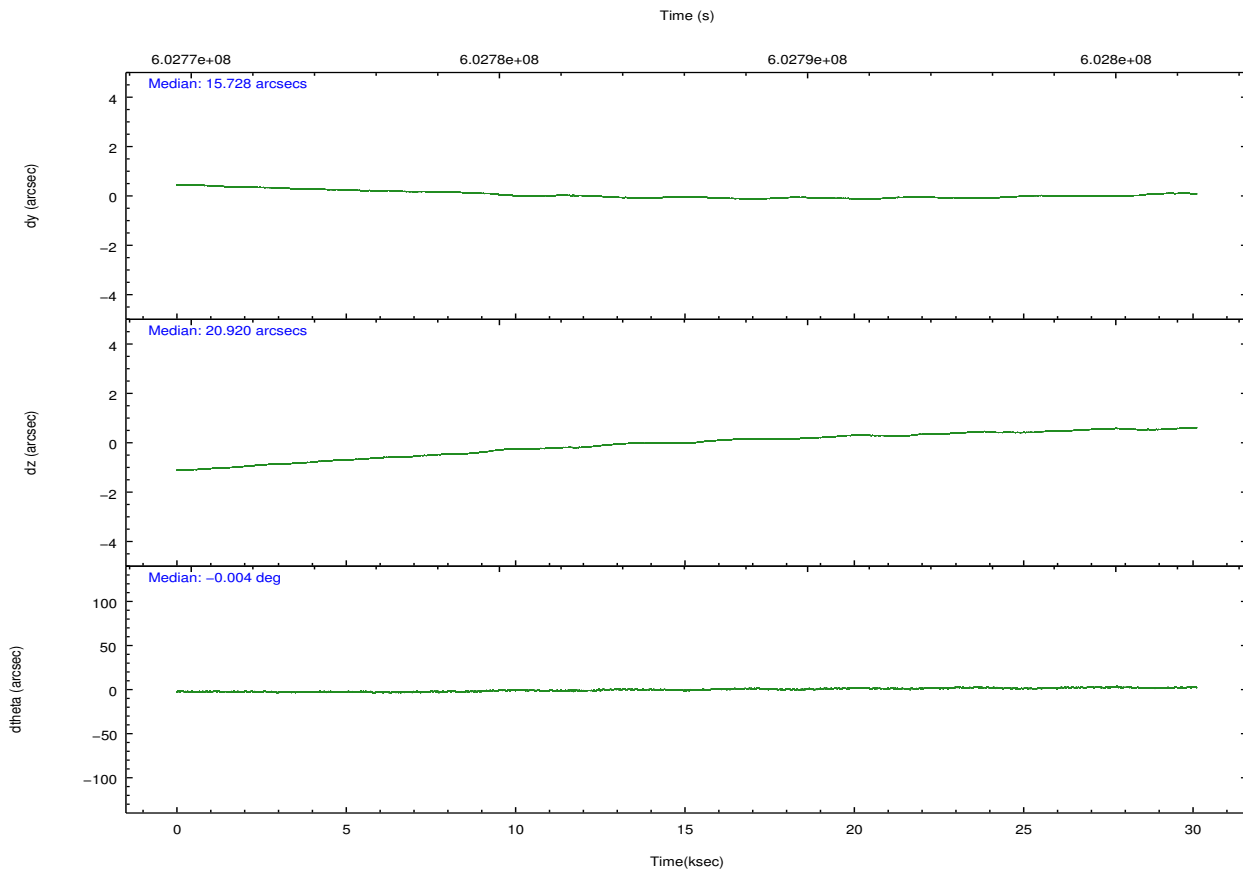
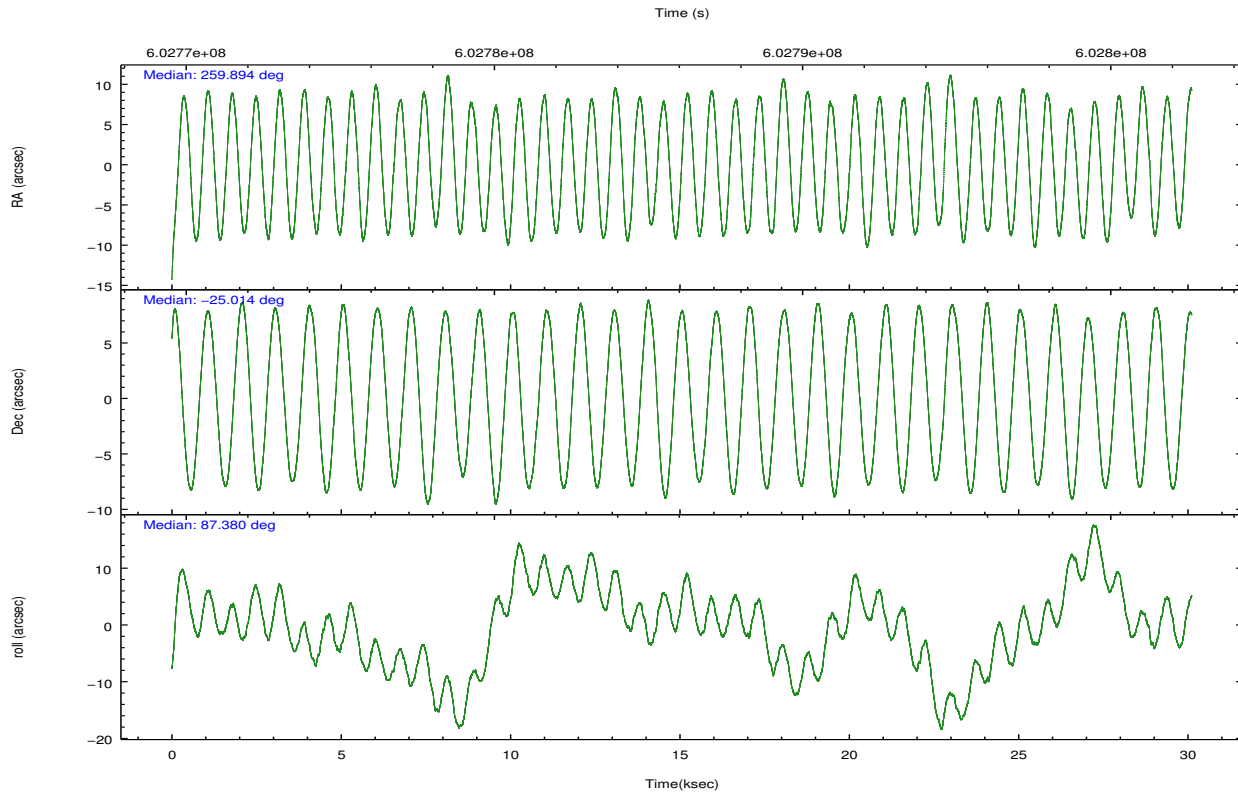
	ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9		ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
level 1 events	433318	703981	1528144	1707910	1024085	475276	grade 0 events	4608	17601	9192	127642	34868	5942
rejected events	343084	326966	414788	475291	518498	357221		1%	2%	0%	7%	3%	1%
rejected %	79%	46%	27%	27%	50%	75%	grade 1 events	155	285	173	1656	442	158
								0%	0%	0%	0%	0%	0%
							grade 2 events	63686	184441	984393	499588	394302	87504
								14%	26%	64%	29%	38%	18%
							grade 3 events	4638	6056	4805	60455	12130	4208
								1%	0%	0%	3%	1%	0%
							grade 4 events	4713	5928	4460	58499	11572	4512
								1%	0%	0%	3%	1%	0%
							grade 5 events	9185	20543	14355	36326	16493	11013
								2%	2%	0%	2%	1%	2%
							grade 6 events	12599	163026	110596	486570	52753	15898
								2%	23%	7%	28%	5%	3%
							grade 7 events	333734	306101	400170	437174	501525	346041
								77%	43%	26%	25%	48%	72%

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	NONE	UPDATED
Data mode	CC33_GRADED	CC33_GRADED	CCD I0 on	N	N
Observation mode	POINTING	POINTING	CCD I1 on	N	N
[deg] Pointing RA	259.908383	259.8940994058591	CCD I2 on	N	N
[deg] Pointing Dec	-25.038356	-25.01414615156431	CCD I3 on	N	N
[deg] Pointing Roll	87.232064	87.38264459569653	CCD S0 on	O1	Y
[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)	602771128.184000	602769725.1085	CCD S5 on	Y	Y
Observation start date	2017-02-06T12:24:19	2017-02-06T12:02:05	Number of optional ACIS chips dropped	0	0
[s] Observation end time (MET)	602801128.184000	602802027.47287	On-chip summing requested	N	N
Observation end date	2017-02-06T20:44:19	2017-02-06T21:00:27	Subarray requested	NONE	NONE
Read mode	CONTINUOUS	CONTINUOUS	Alternating exposures requested	N	N
			[s] Primary exposure time	0.000000	0

2.3 Aspect





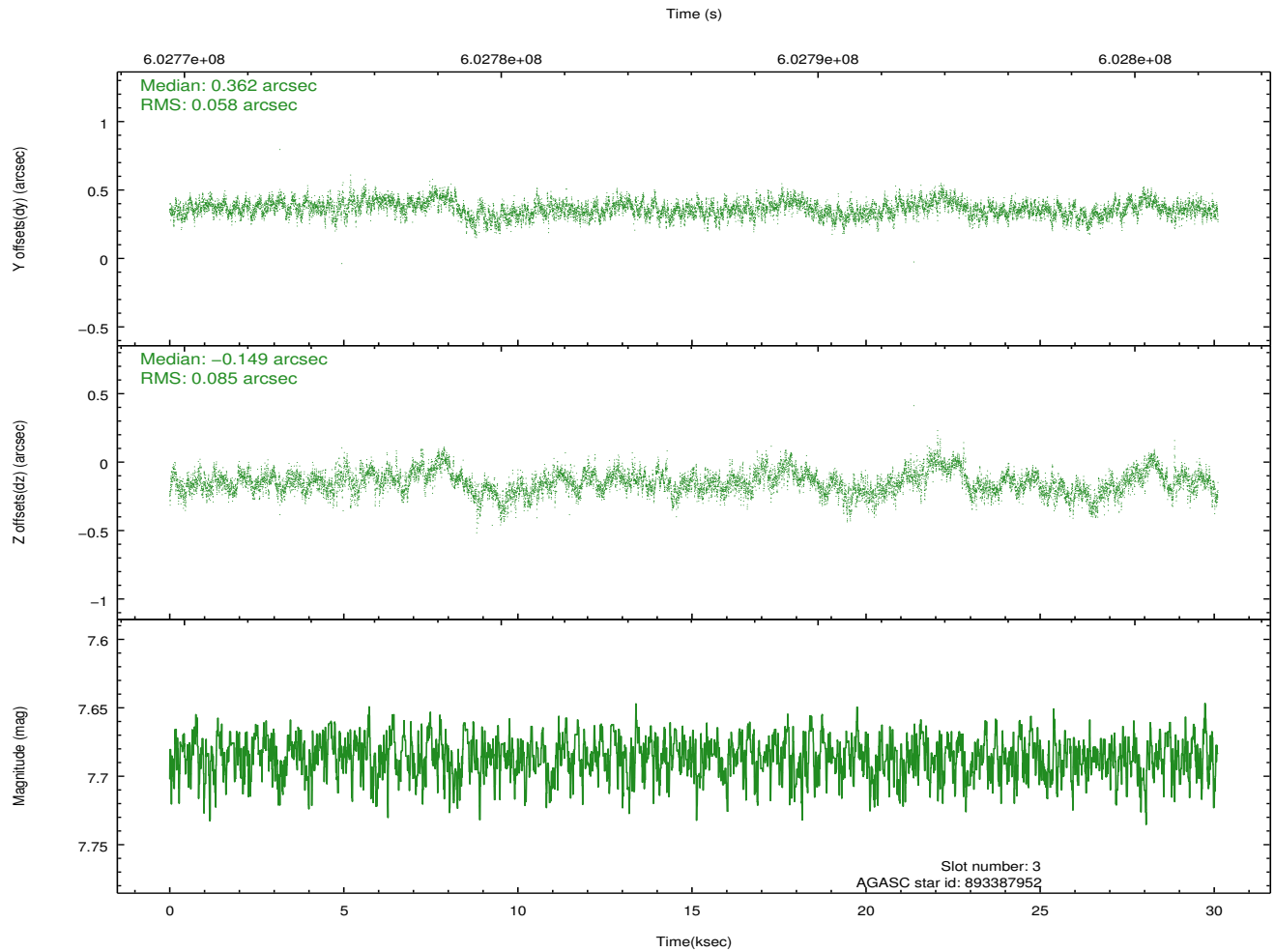
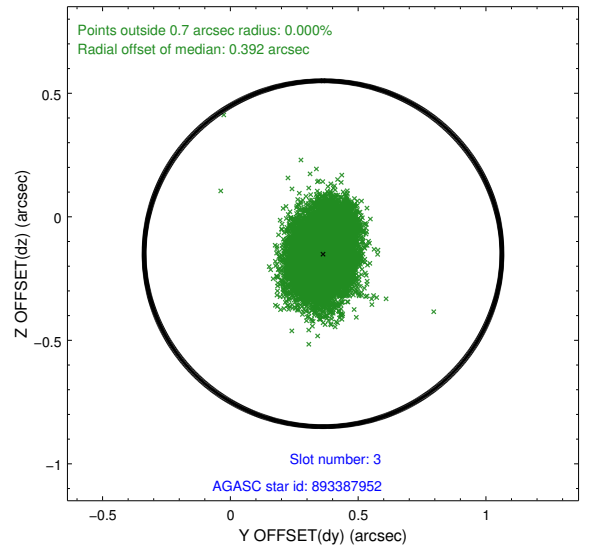
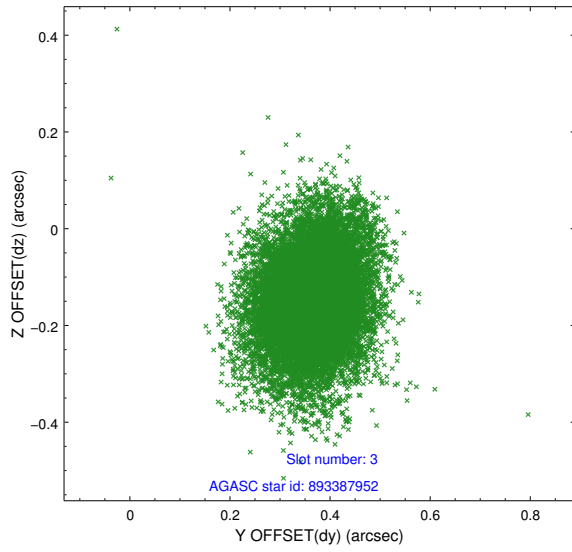
Slot Statistics

slot	status	used	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID		ACIS-S-2	6.93	7344	-0.204	-0.063	0.012	0.019	0.000000	0.000000	-768.96	-1742.45
1	FID		ACIS-S-4	7.05	7344	0.402	0.115	0.013	0.022	0.000000	0.000000	2144.87	166.16
2	FID		ACIS-S-5	7.04	7343	-0.227	-0.044	0.012	0.019	0.000000	0.000000	-1821.75	159.72
3	GUIDE	used	893387952	7.69	14685	0.362	-0.149	0.105	0.187	259.513999	-25.587524	-2037.99	1183.55
4	GUIDE	used	895092040	9.00	14676	0.060	0.249	0.142	0.239	260.330987	-24.417029	2299.07	-1275.17
5	GUIDE	used	895092096	8.73	14680	0.049	0.453	0.140	0.229	260.574003	-24.956121	395.74	-2155.29
6	GUIDE	used	895092104	7.72	14688	-0.119	-0.259	0.083	0.142	259.809617	-24.528409	1817.96	411.68
7	GUIDE	used	895093800	7.77	14685	-0.349	-0.290	0.110	0.192	259.726433	-24.436397	2135.23	700.40

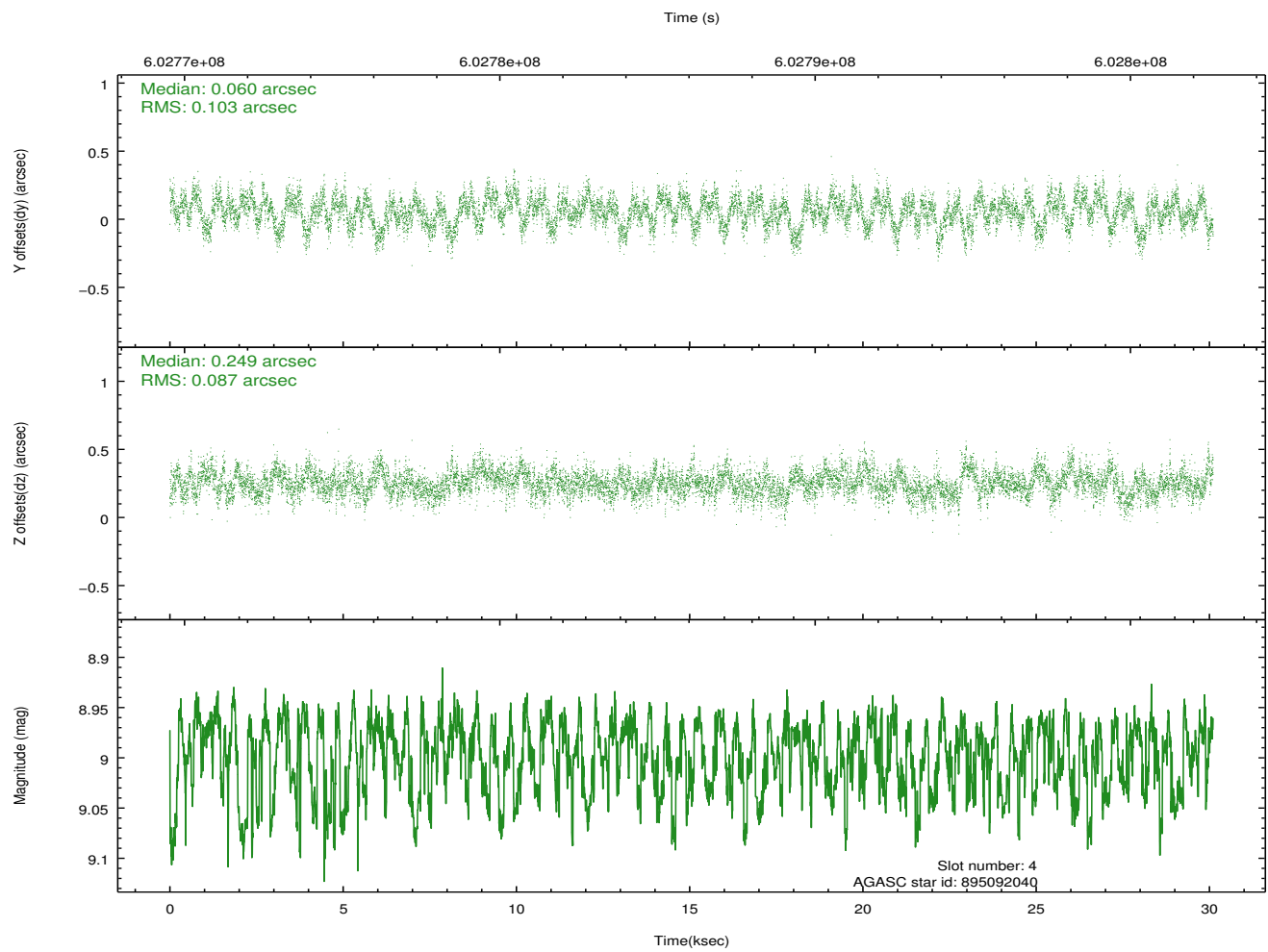
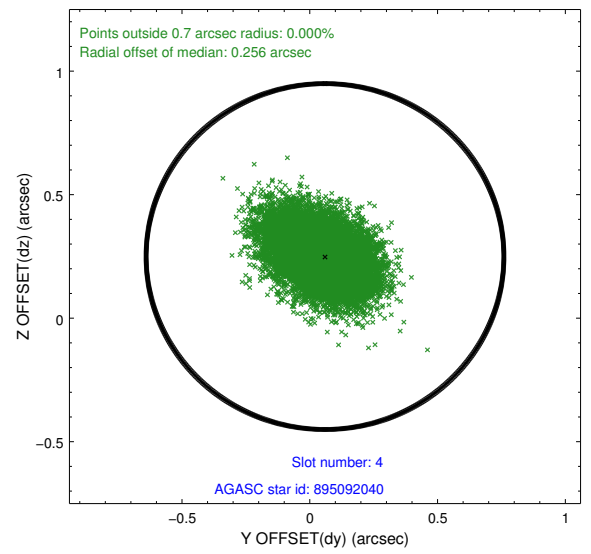
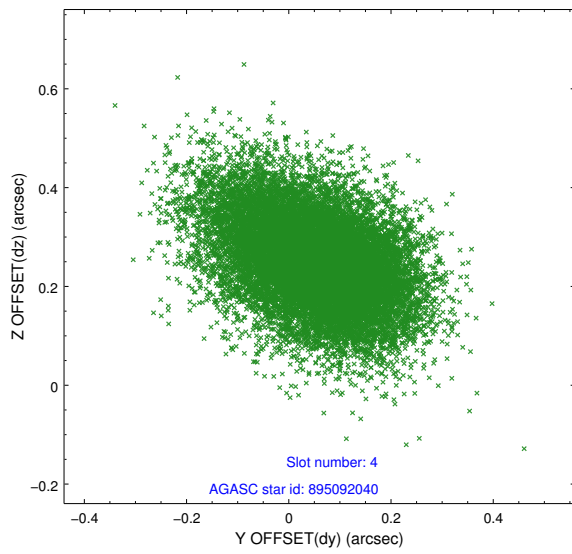
∞

2.4 Star Slots

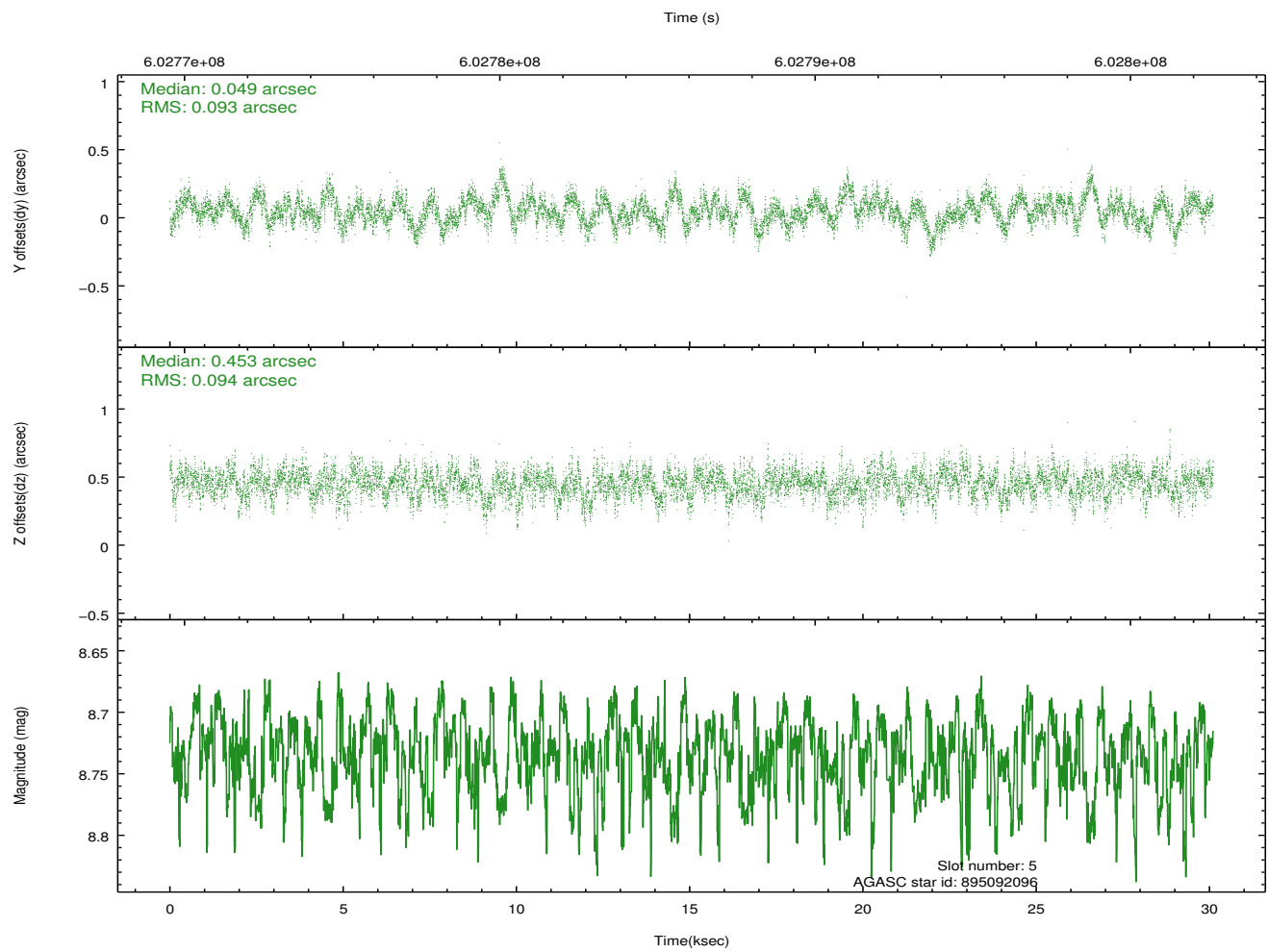
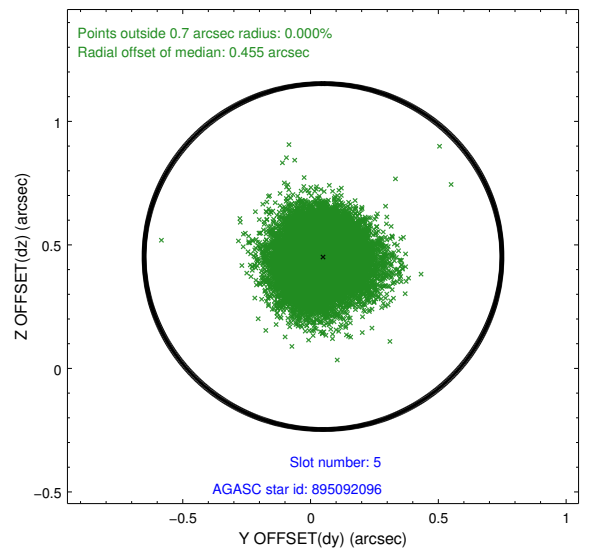
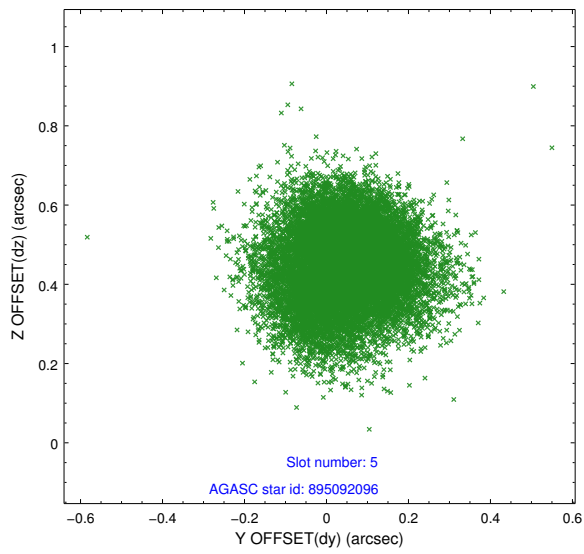
2.4.1 Slot 3



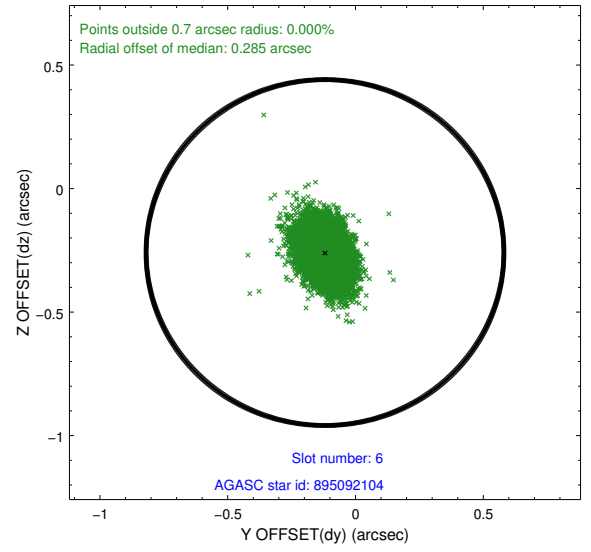
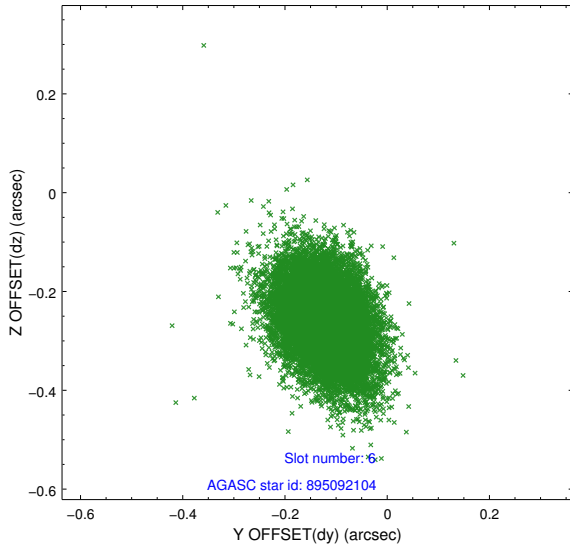
2.4.2 Slot 4



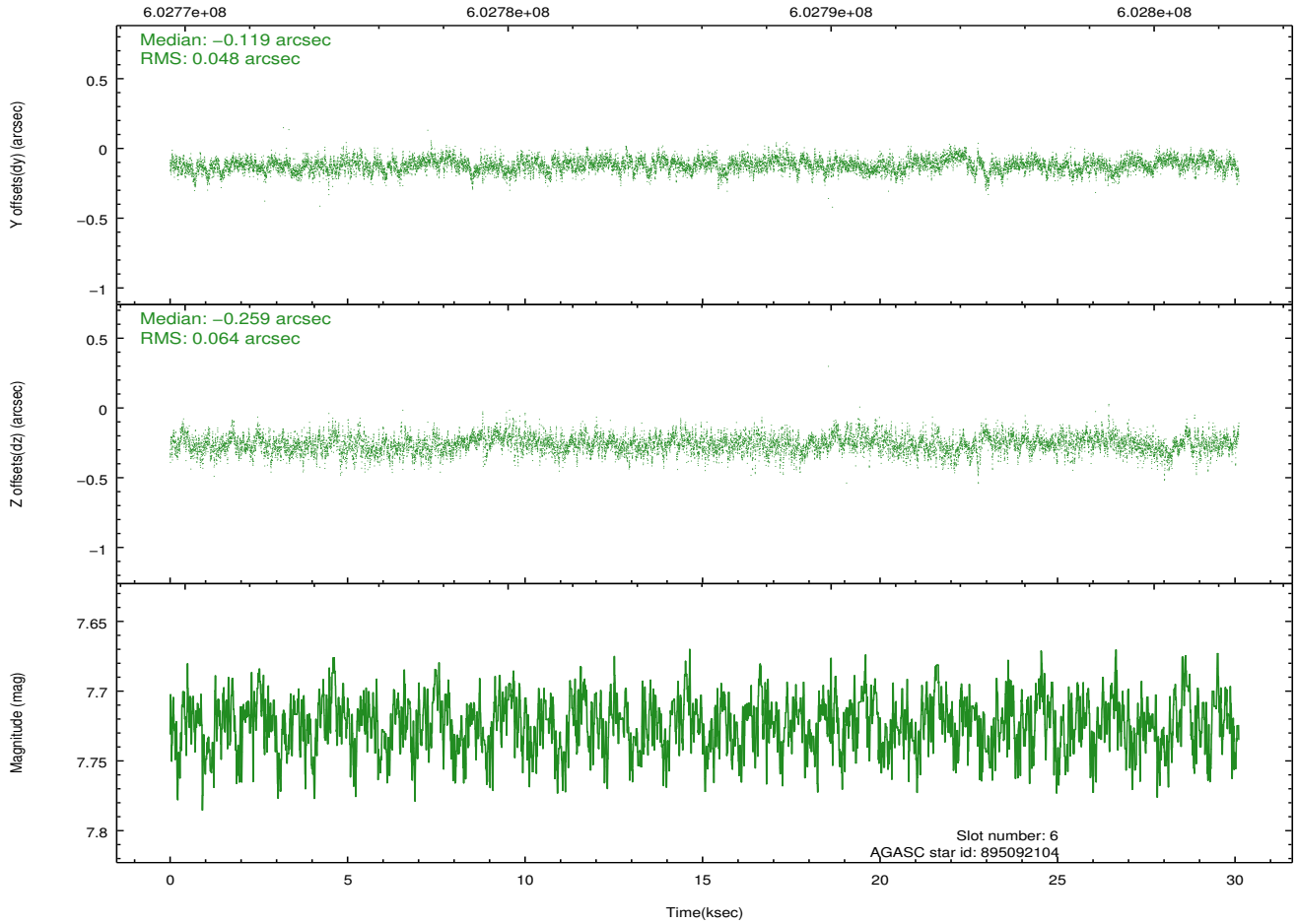
2.4.3 Slot 5



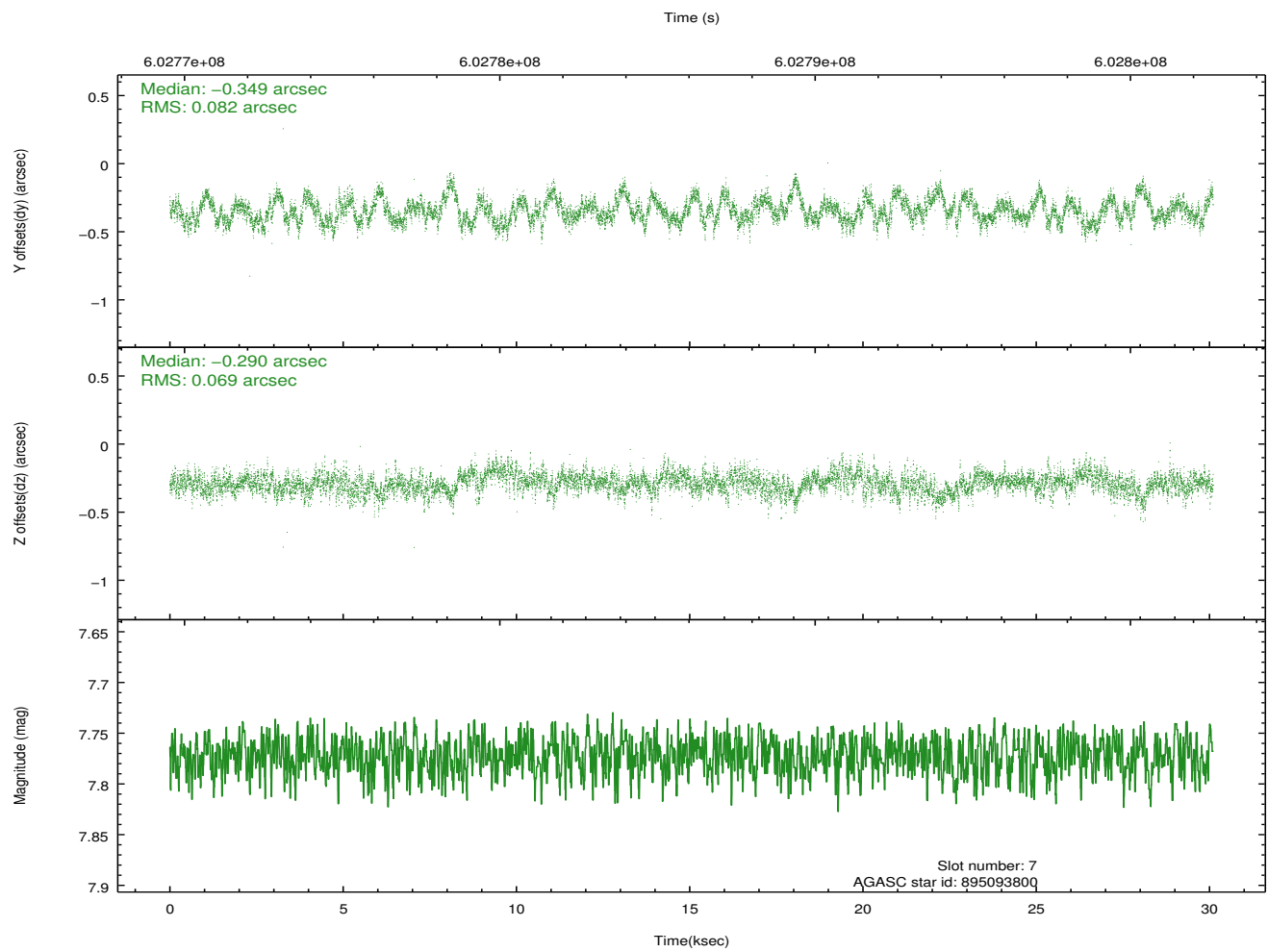
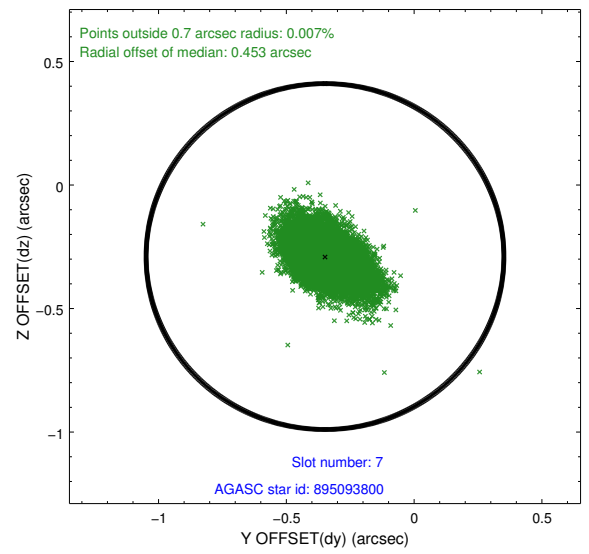
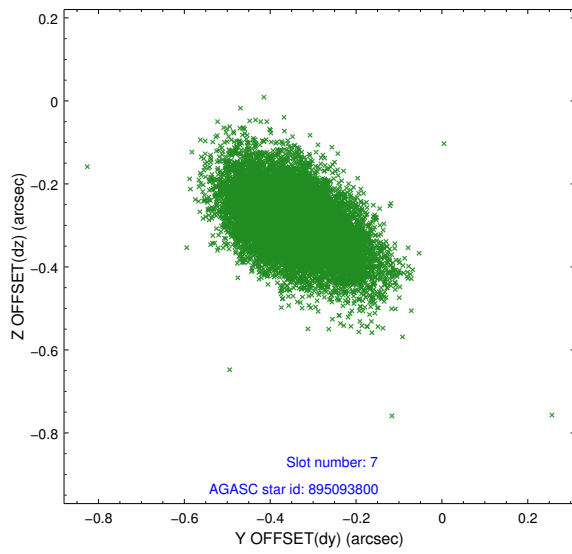
2.4.4 Slot 6



Time (s)

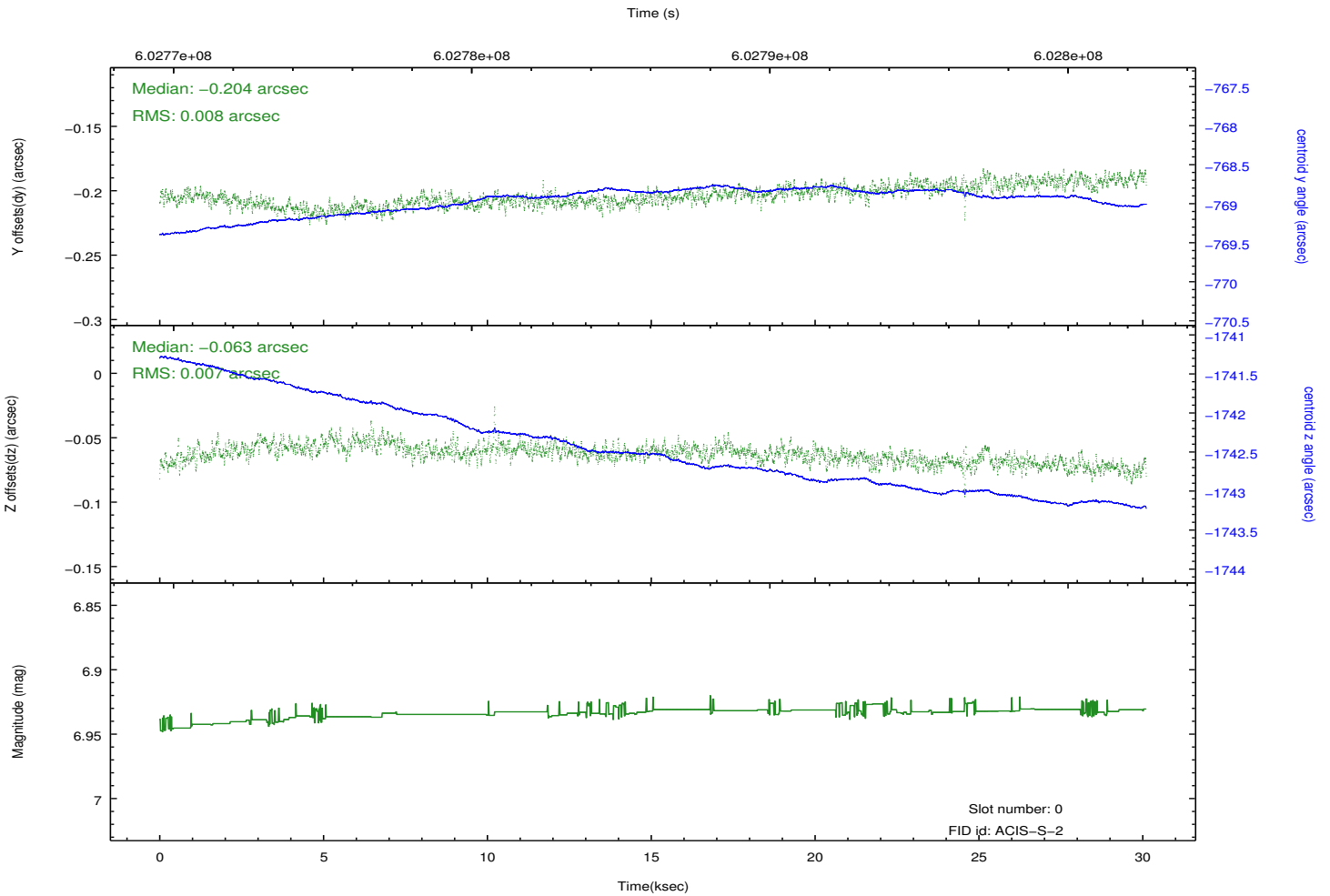
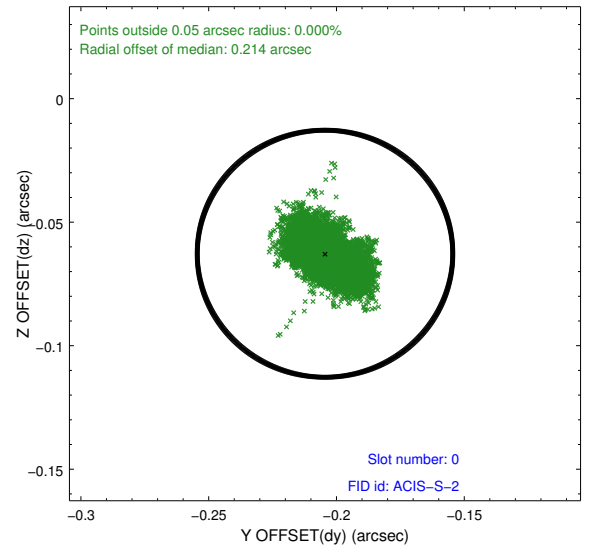
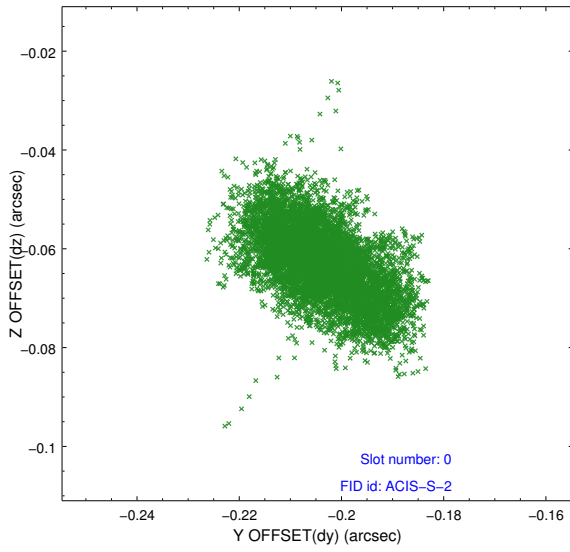


2.4.5 Slot 7

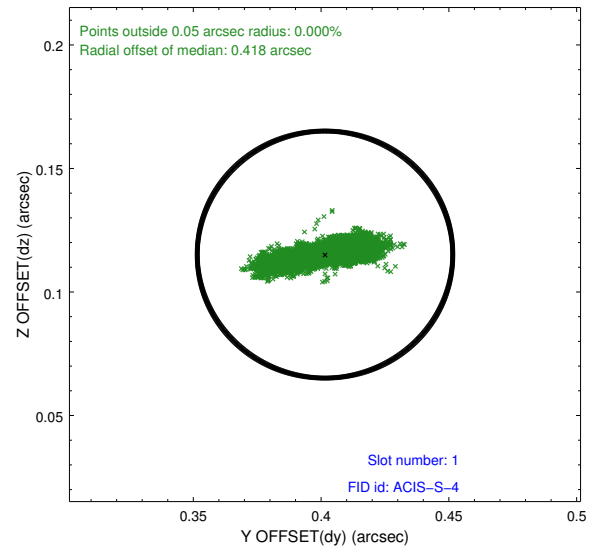
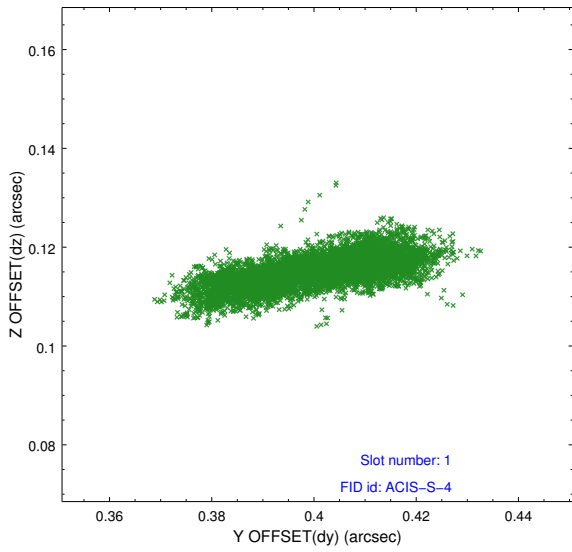


2.5 FID Slots

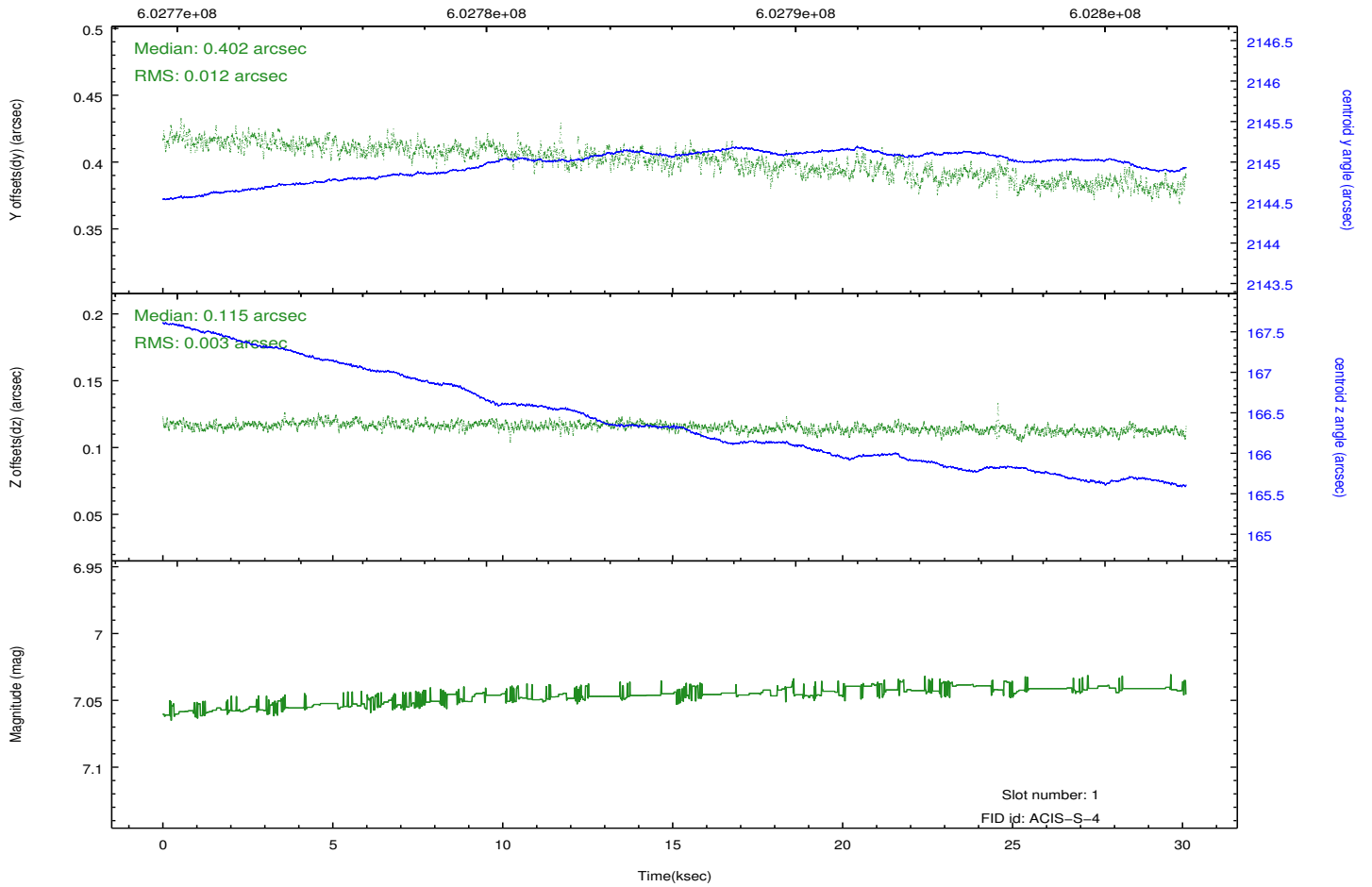
2.5.1 Slot 0



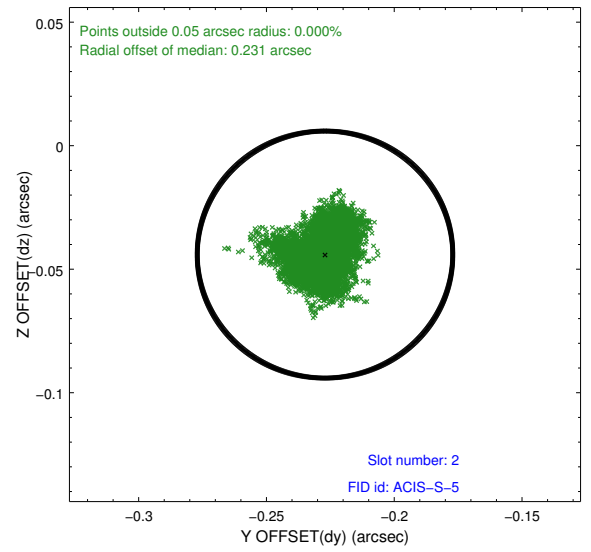
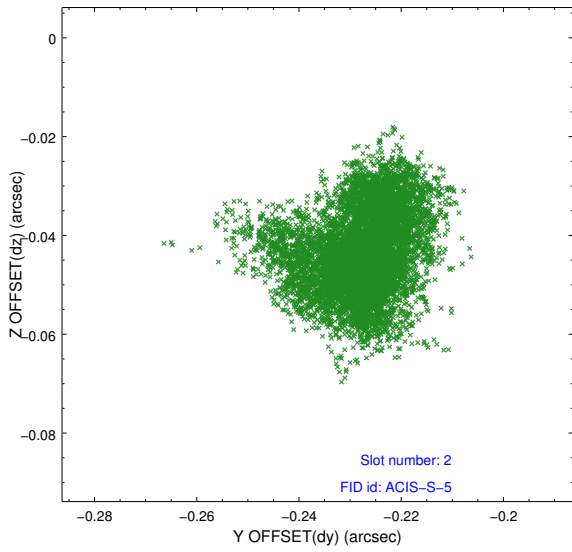
2.5.2 Slot 1



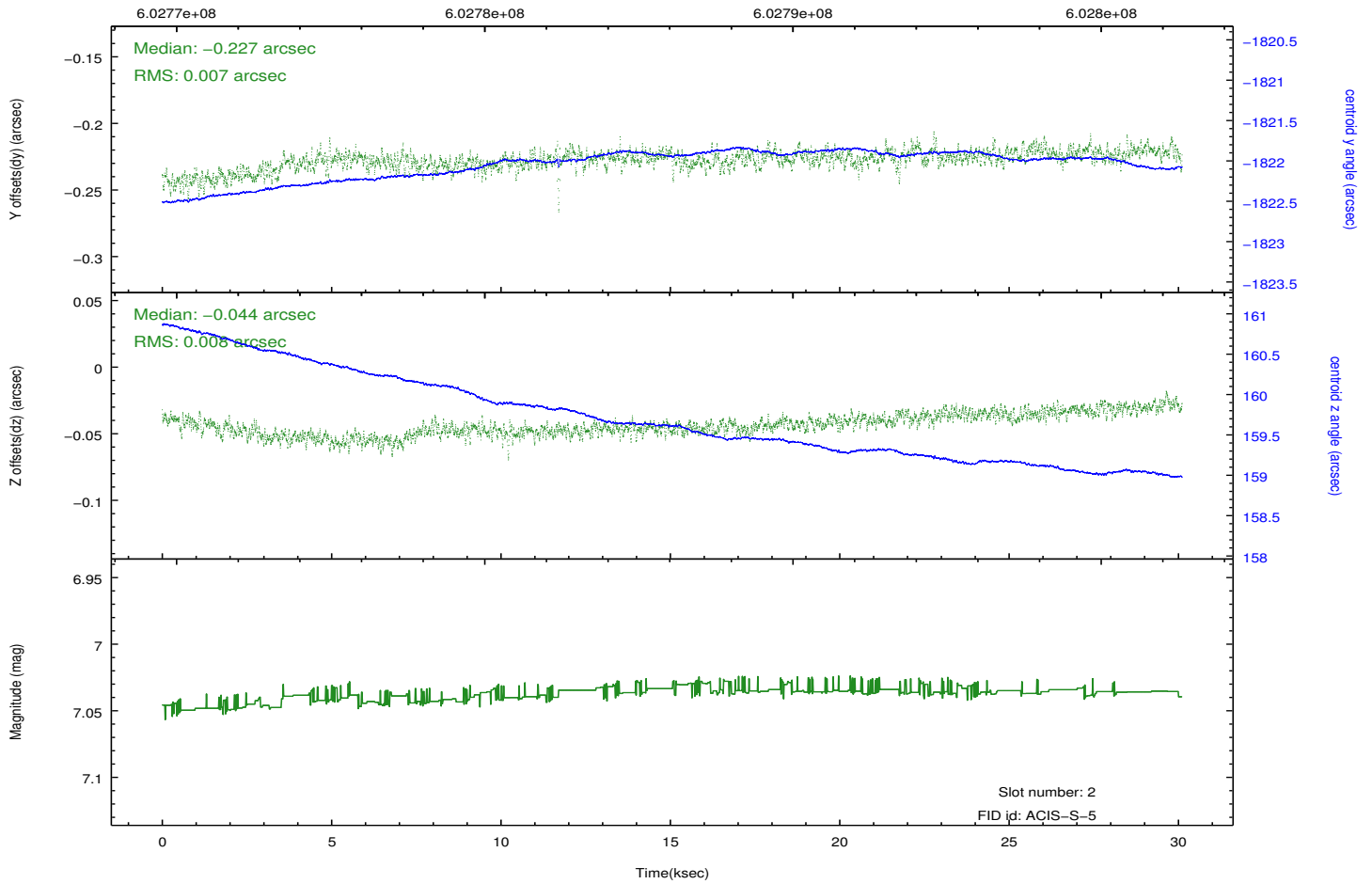
Time (s)



2.5.3 Slot 2

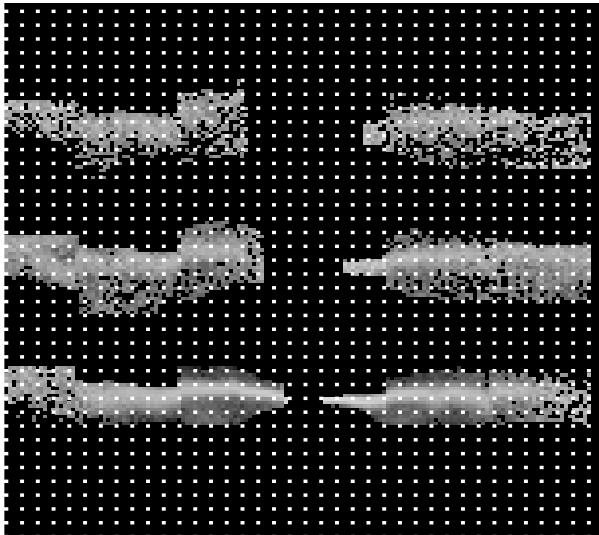


Time (s)

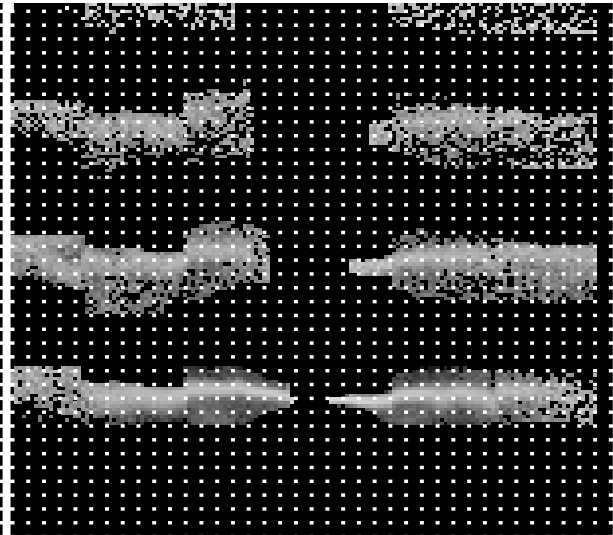


3 Gratings

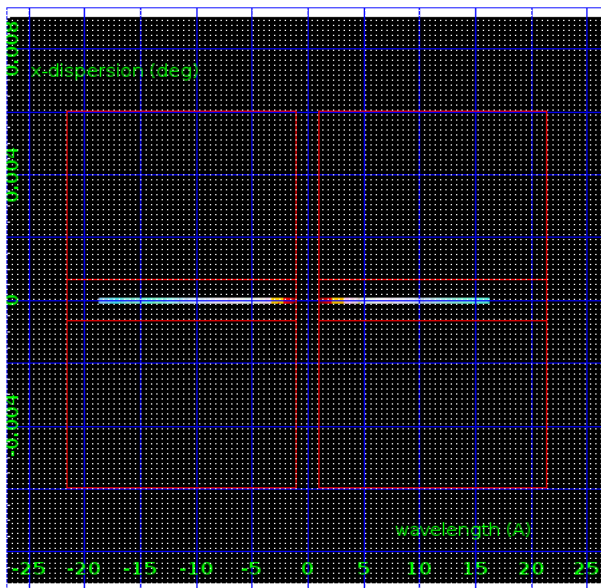
3.1 HEG Arm



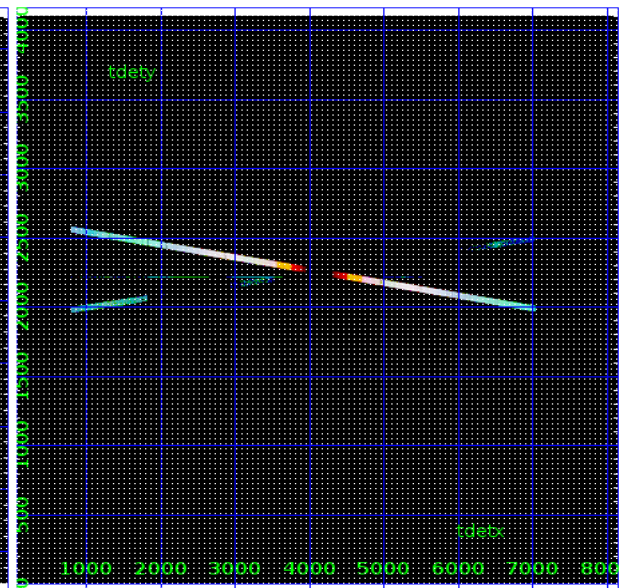
HEG Order Sort 123



HEG Order Sort ALL

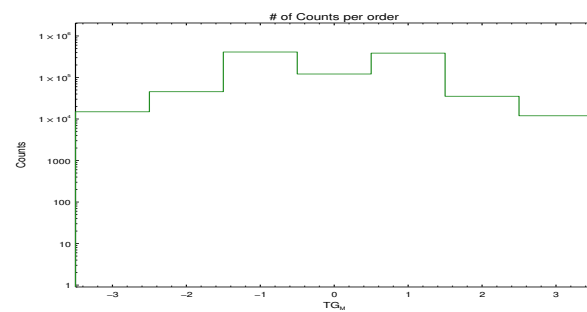


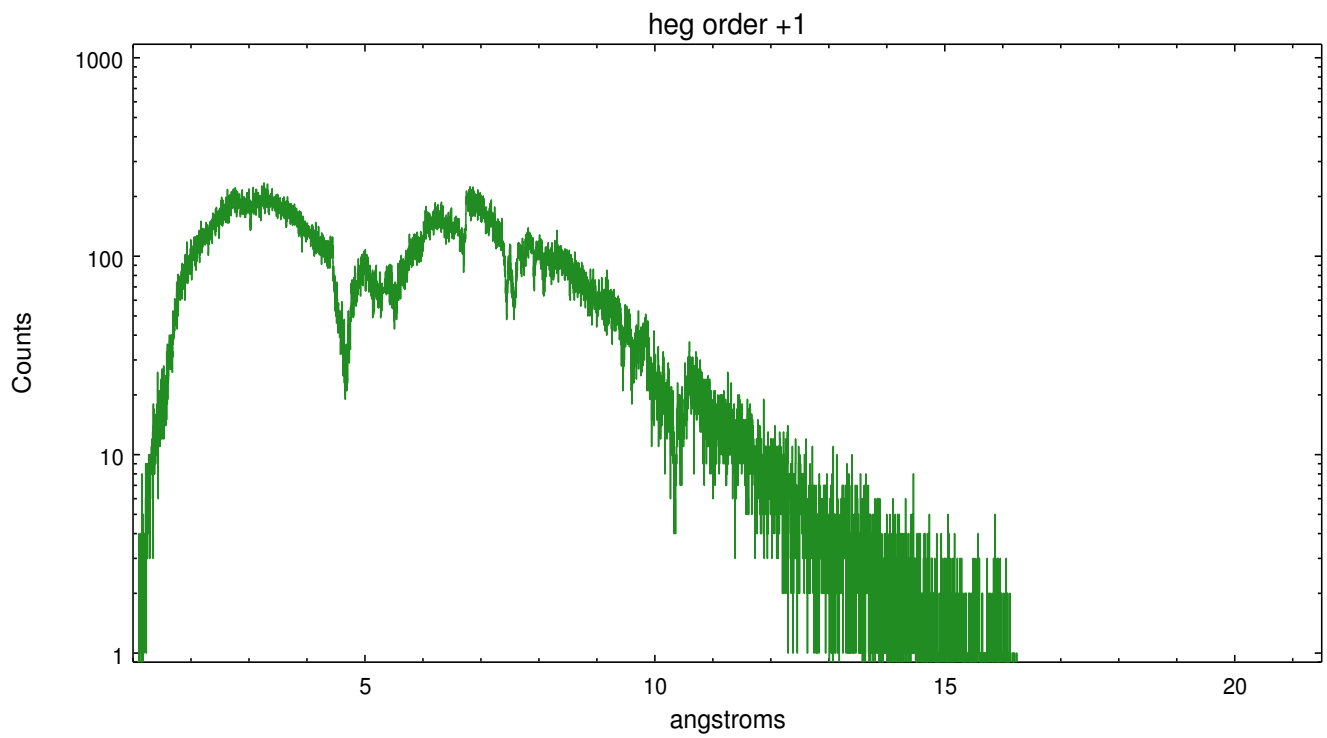
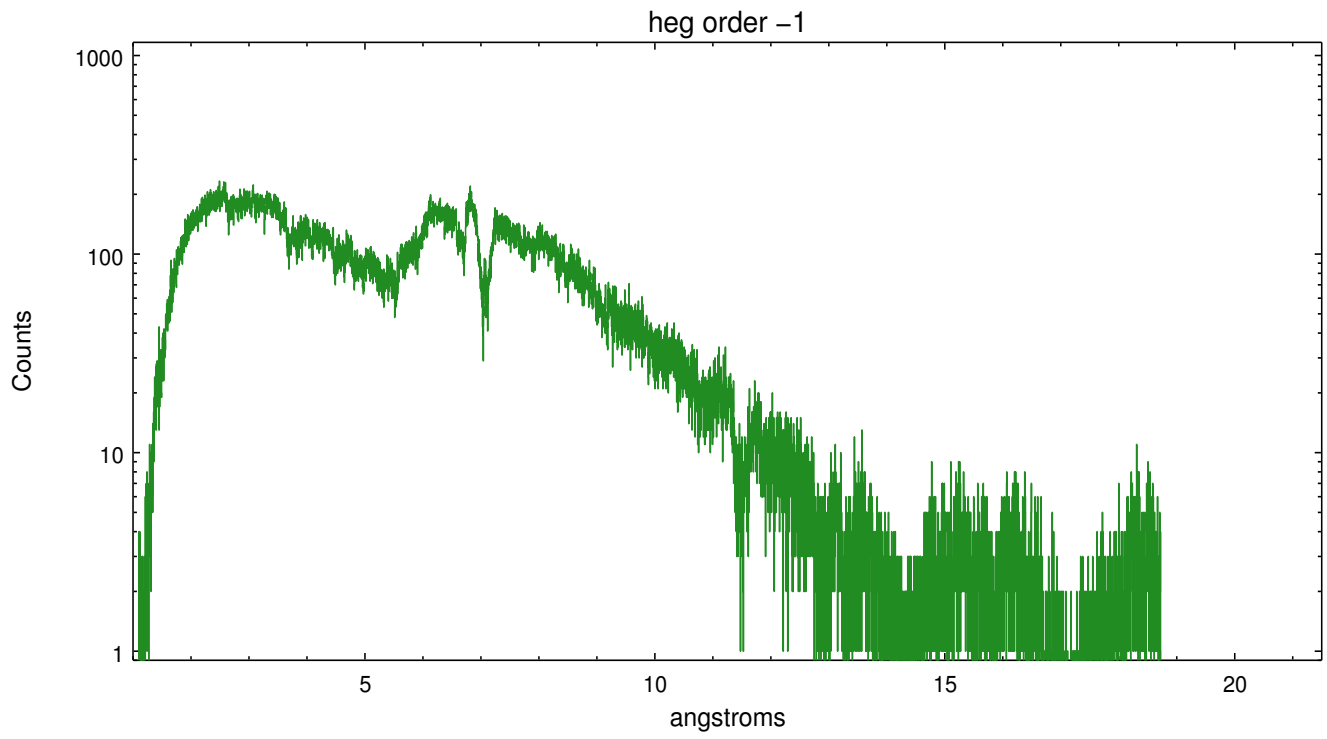
Spot Image HEG



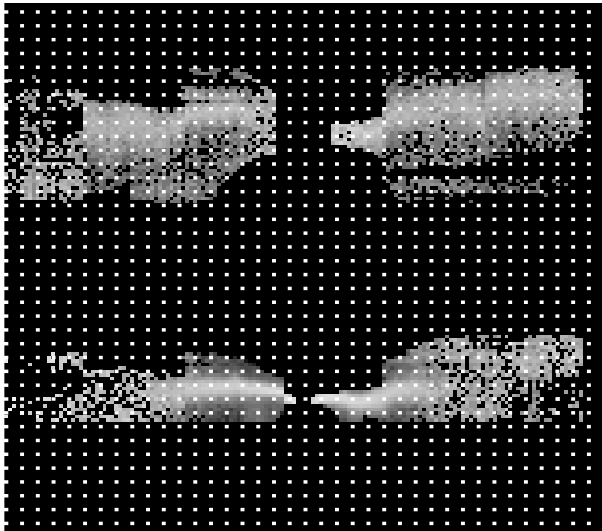
Full Detector HEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	14928	45468	410677	121251	385826	35248	11966

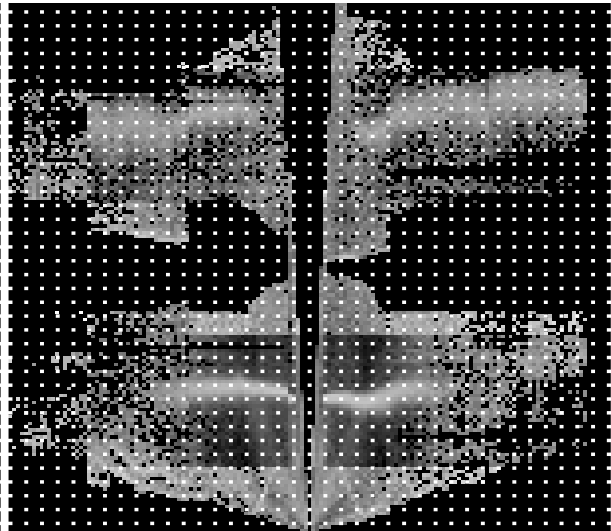




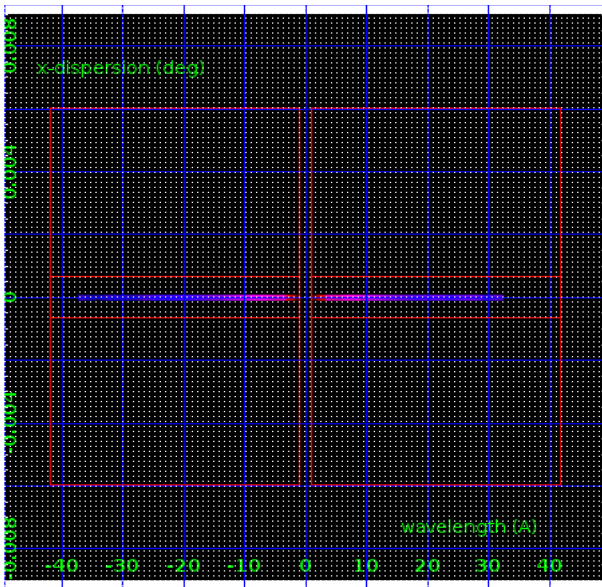
3.2 MEG Arm



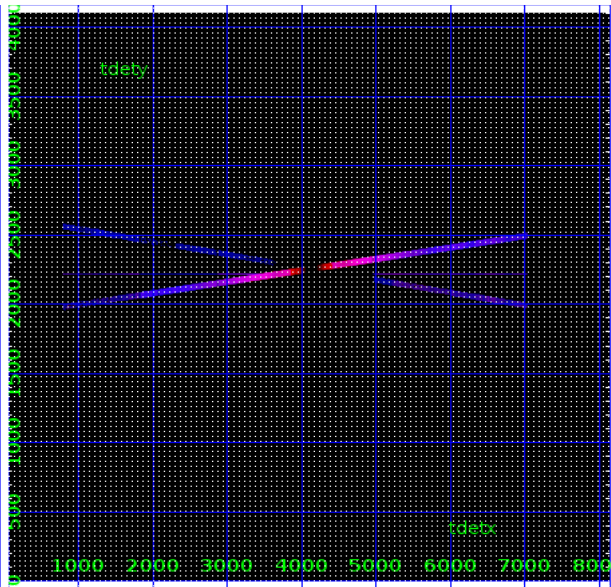
MEG Order Sort 123



MEG Order Sort ALL

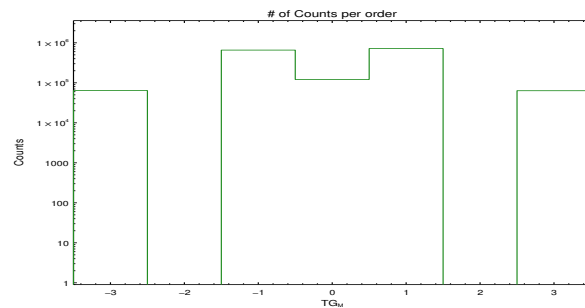


Spot Image MEG

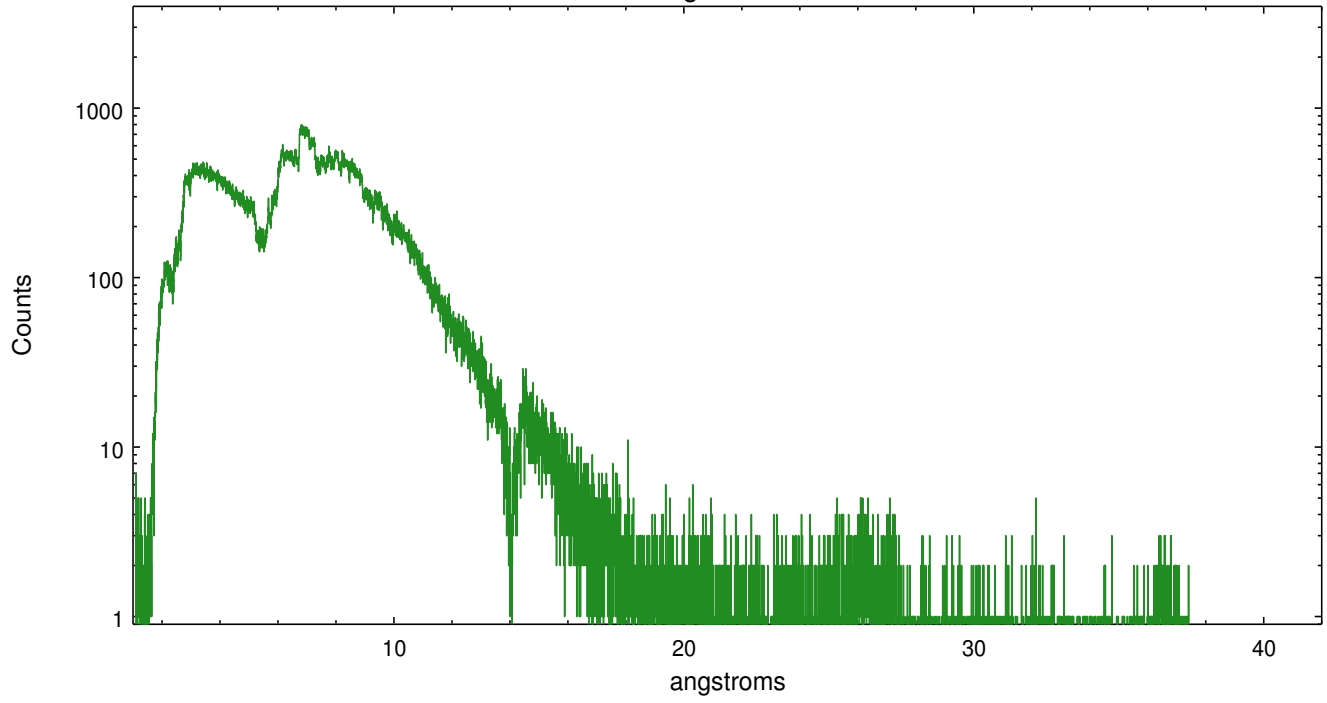


Full Detector MEG

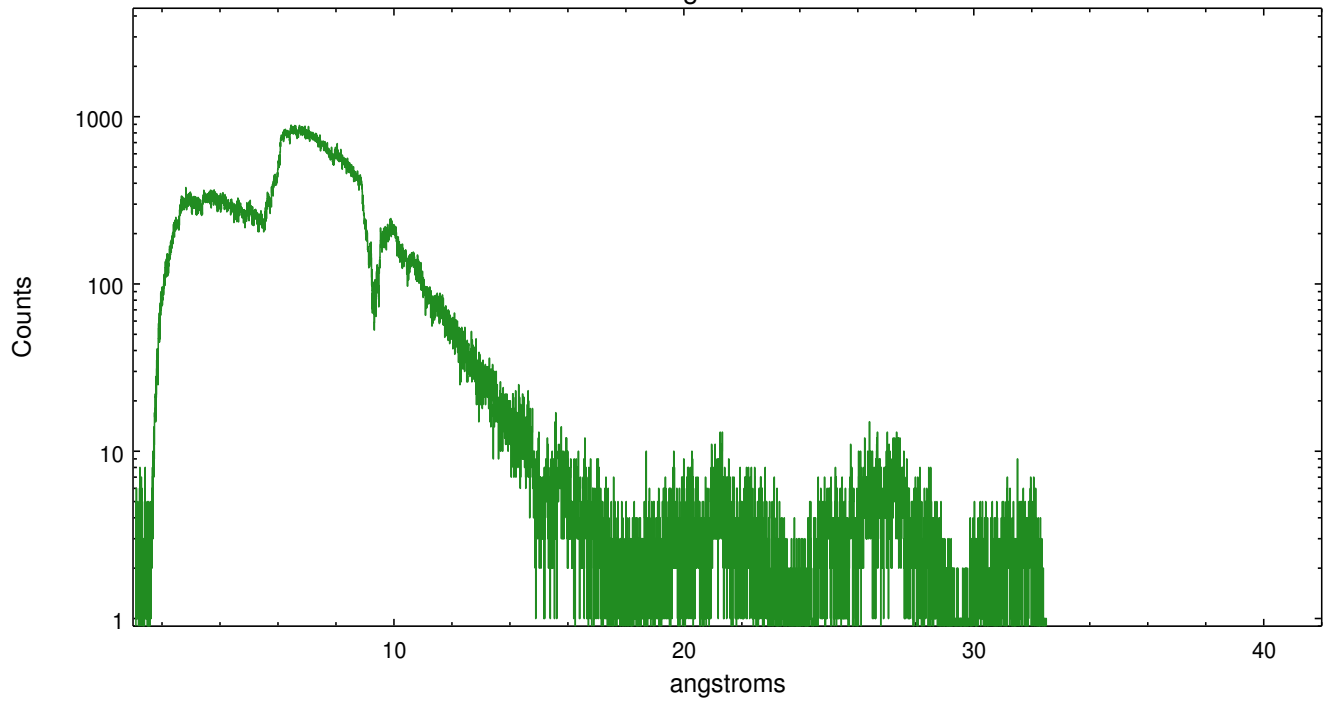
	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	63901	0	657099	121251	716860	0	63446



meg order -1



meg order +1



A Summary

A.1 Status

V&V Scientist	David Huenemoerder
V&V Date (YYYY-MM-DD)	2017.02.07
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	30.07125

A.2 Comments

For ACIS/CC-mode w/ HETG, with no SIM-Z offset, there are no MEG even order counts. MEG even orders overlap with HEG orders in energy, but MEG even order efficiencies are very low. Since HEG and MEG cannot be spatially separated, events are preferentially assigned to HEG. (MEG odd orders can be resolved.) For observations with a SIM-Z offset, MEG negative and MEG positive orders will be missing (off the array), and remove some of the ambiguity.