

V&V Reference Report

L2 ASCDS Version : 10.5.1.1

Observation 19792 - L2 Version 2
Chandra X-Ray Center

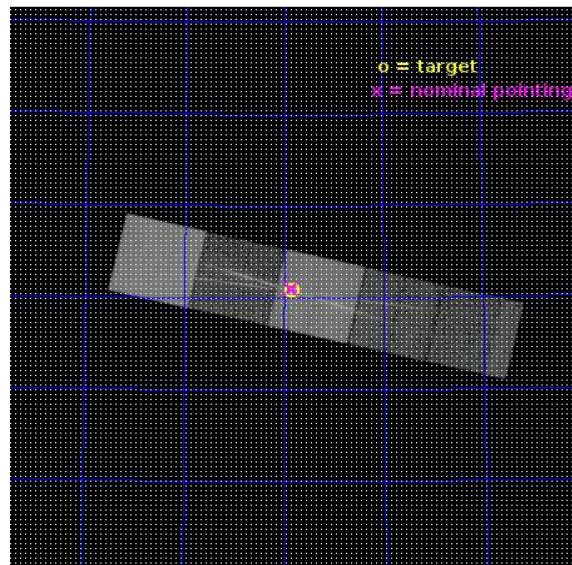
L2 Processing Date : Sep 13 2016

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1 Front

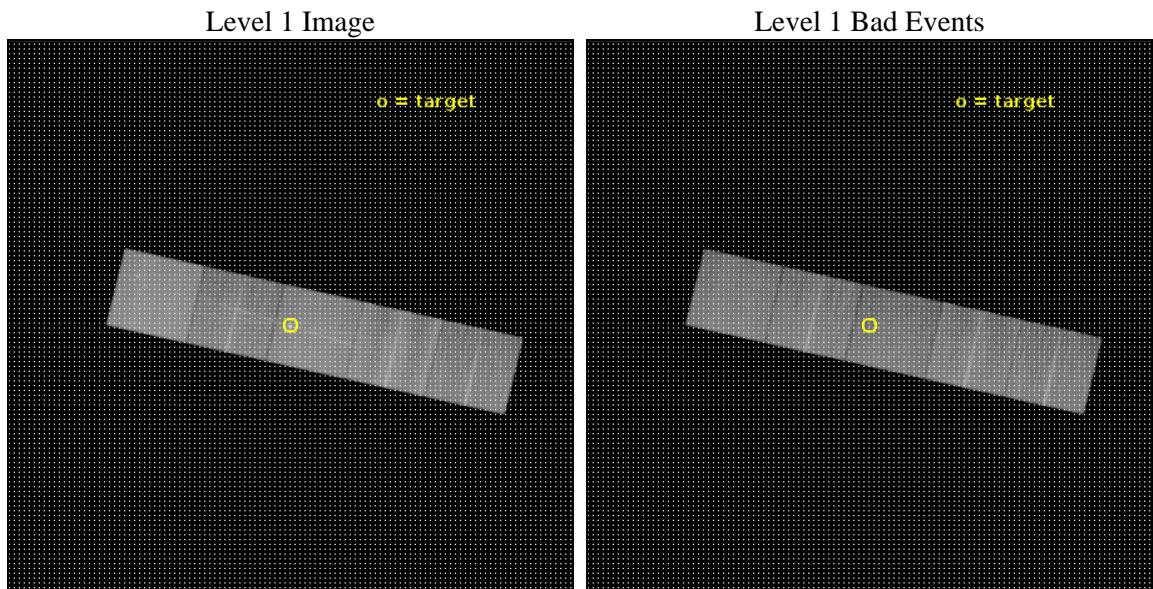
seq_num	401792	Sequence number
obs_id	19792	Observation id
title	Broadband X-ray Observations of a High-State from the HLX M82 X-1	
observer	Dominic Walton	Principal investigator
object	M82 X-1	Source name
dtcycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	148.959167	Observer's specified target RA [deg]
dec_targ	69.679722	Observer's specified target Dec [deg]
ra_nom	148.96232518724	Nominal RA [deg]
dec_nom	69.683076520117	Nominal Dec [deg]
roll_nom	13.153688512397	Nominal Roll [deg]
revision	2	Processing version of data
ontime	32444.600249648	Sum of GTIs [s]
livetime	32020.687662019	Livetime [s]
ontime5	32444.600249648	Sum of GTIs [s]
ontime6	32444.600249648	Sum of GTIs [s]
ontime7	32444.600249648	Sum of GTIs [s]
ontime8	32444.600249648	Sum of GTIs [s]
ontime9	32441.45930922	Sum of GTIs [s]
l2events	371593	Number of level 2 events



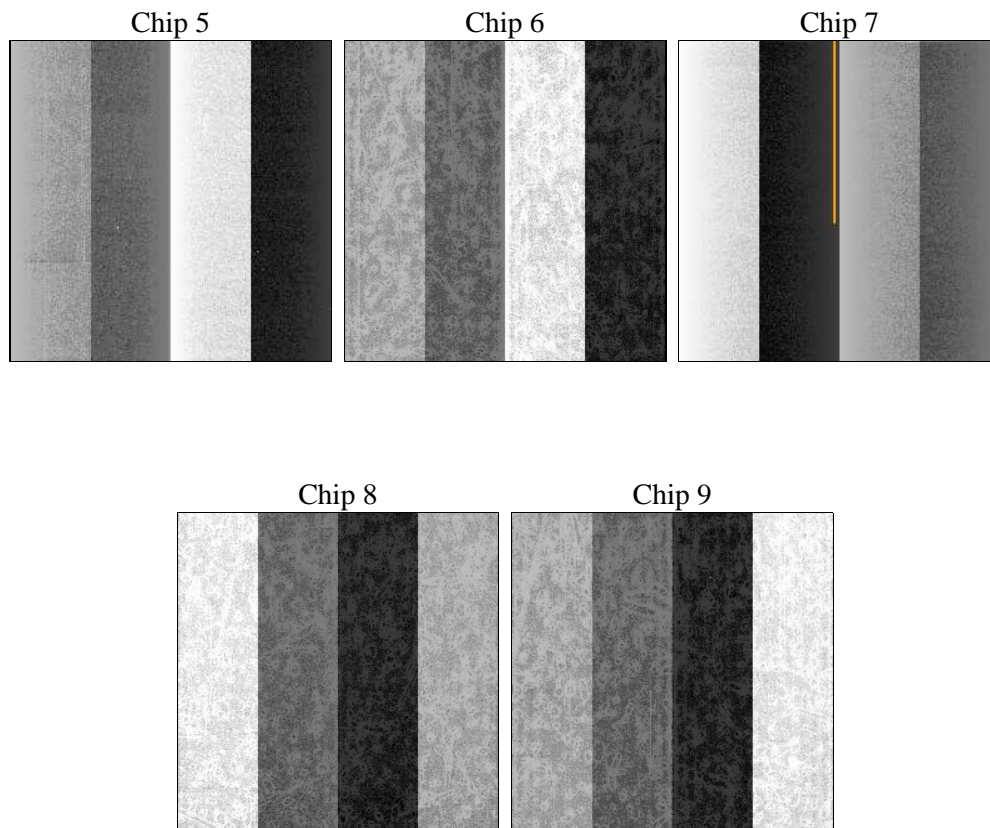
2 OBI

2.1 OBI

2.1.1 Images



2.1.2 Bias



2.1.3 Parameters

obi_num	0	Obi number	sched_exp_time	32389.000000	[s] Scheduled observation exposure time
ascdsver	10.5.1.1	Processing system revision	ontime	32444.600249648	Sum of GTIs [s]
caldsver	4.7.2	 	ontime5	32444.600249648	Sum of GTIs [s]
date	2016-09-13T18:12:45	Date and time of file creation	ontime6	32444.600249648	Sum of GTIs [s]
revision	2	Processing version of data	ontime7	32444.600249648	Sum of GTIs [s]
			ontime8	32444.600249648	Sum of GTIs [s]
			ontime9	32441.45930922	Sum of GTIs [s]
			l1events	1339656	Number of level 1 events
			tgmethod	MANUAL	Method used to create src1a file
			zo_pos	(4105.62, 4071.50)	src1a sky pixel position

2.1.4 Events

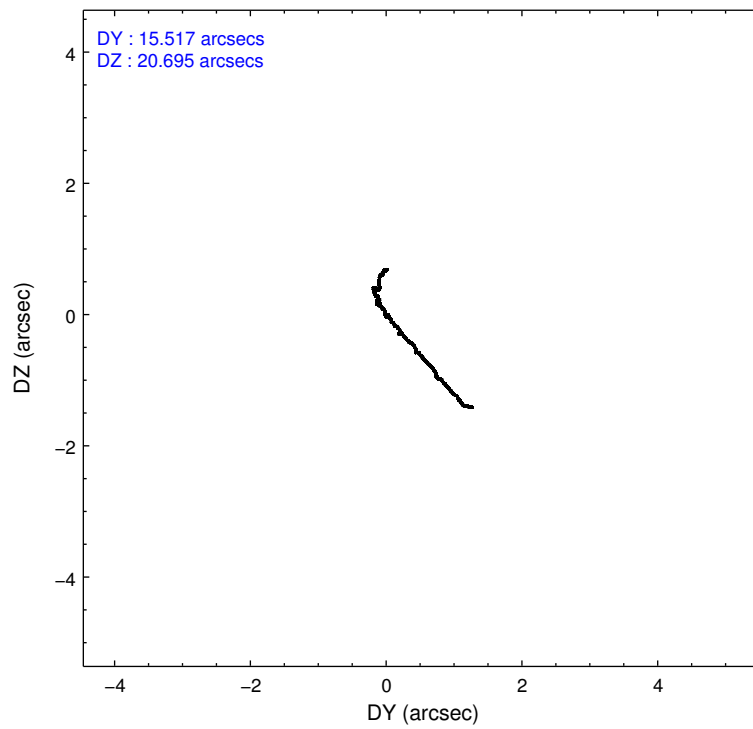
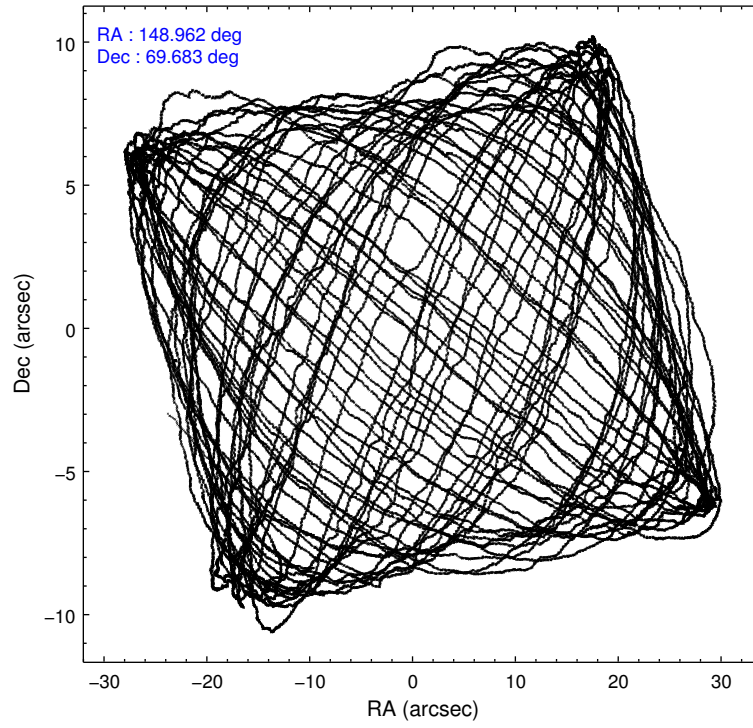
	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
level 1 events	334360	216482	295172	279703	213939
rejected events	173878	184822	155250	200984	187670
rejected %	52%	85%	52%	71%	87%

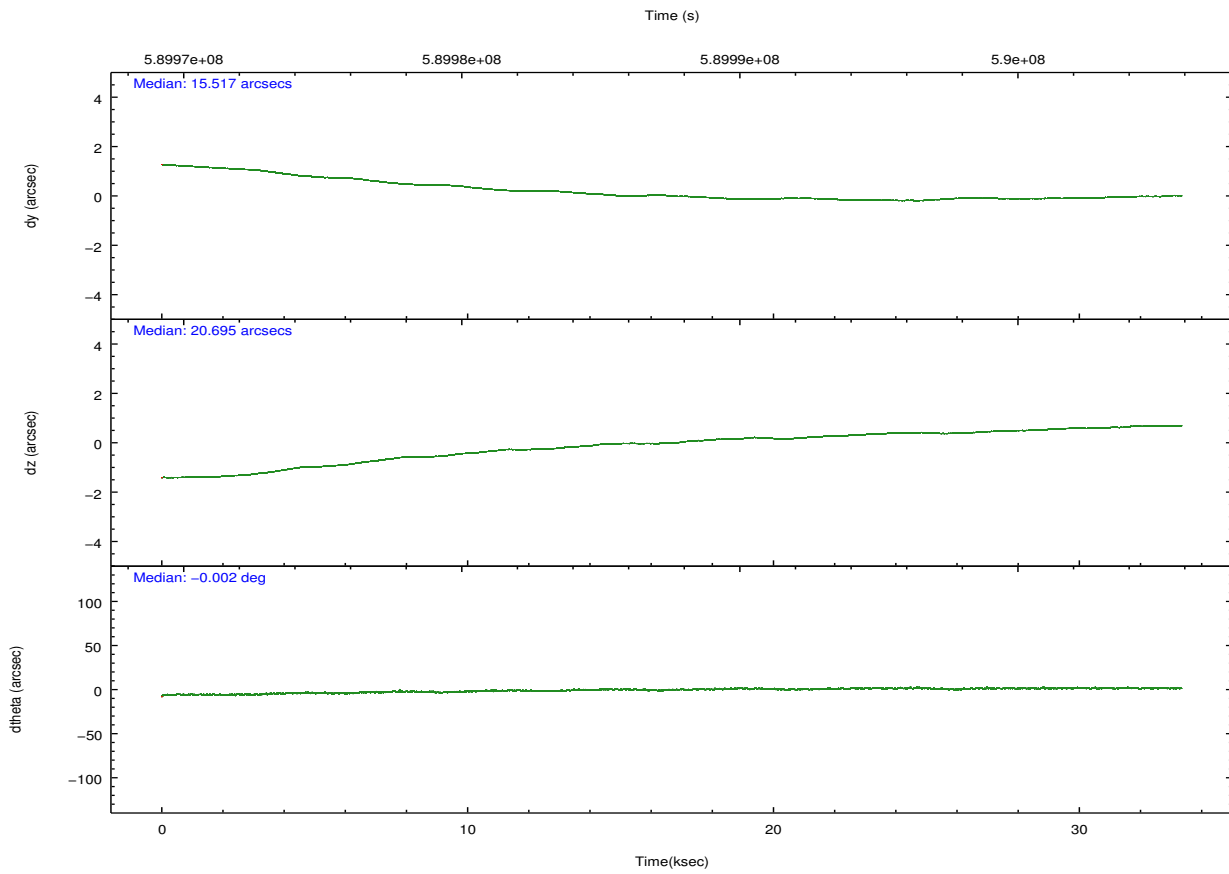
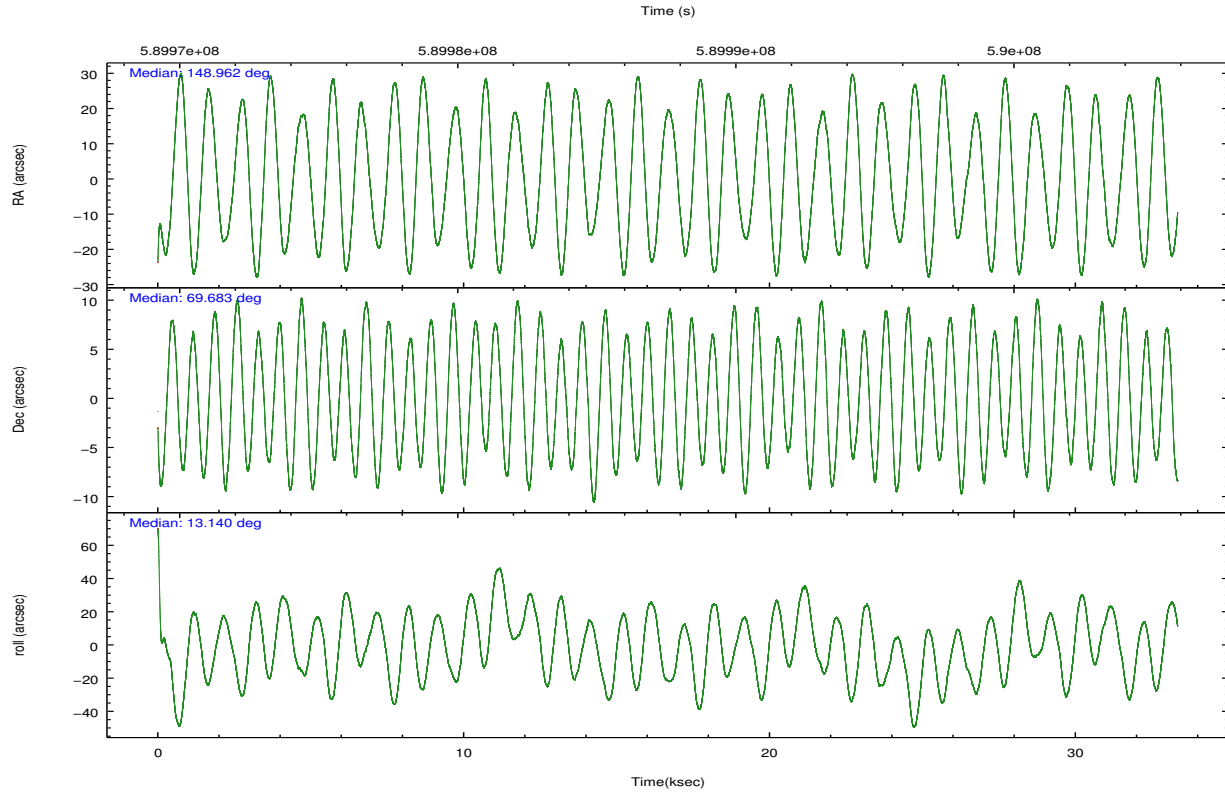
	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
grade 0 events	10479	13639	15007	24259	9471
	3%	6%	5%	8%	4%
grade 1 events	606	123	392	239	137
	0%	0%	0%	0%	0%
grade 2 events	50312	6621	30497	19029	5927
	15%	3%	10%	6%	2%
grade 3 events	5720	2782	12010	7762	2631
	1%	1%	4%	2%	1%
grade 4 events	5554	2734	12031	7300	2552
	1%	1%	4%	2%	1%
grade 5 events	25044	10212	28307	15367	11588
	7%	4%	9%	5%	5%
grade 6 events	88433	5886	70389	20378	5690
	26%	2%	23%	7%	2%
grade 7 events	148212	174485	126539	185369	175943
	44%	80%	42%	66%	82%

2.2 Compared Parameters

Parameter	Planned	Actual	Parameter	Planned	Actual
Instrument	ACIS	ACIS	Obspar format version number	7	7
Detector	ACIS-56789	ACIS-56789	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	148.905476	148.962325187244	CCD I2 on	N	N
[deg] Pointing Dec	69.664040	69.68307652011701	CCD I3 on	N	N
[deg] Pointing Roll	13.050346	13.15368851239726	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)	589971836.184000	589969767.80683	CCD S5 on	Y	Y
Observation start date	2016-09-11T09:02:48	2016-09-11T08:29:27	Number of optional ACIS chips dropped	1	1
[s] Observation end time (MET)	590004225.184000	590005118.5213701	On-chip summing requested	N	N
Observation end date	2016-09-11T18:02:37	2016-09-11T18:18:38	Subarray requested	NONE	NONE
Read mode	TIMED	TIMED	Alternating exposures requested	N	N
			[s] Primary exposure time	0.000000	3.1

2.3 Aspect





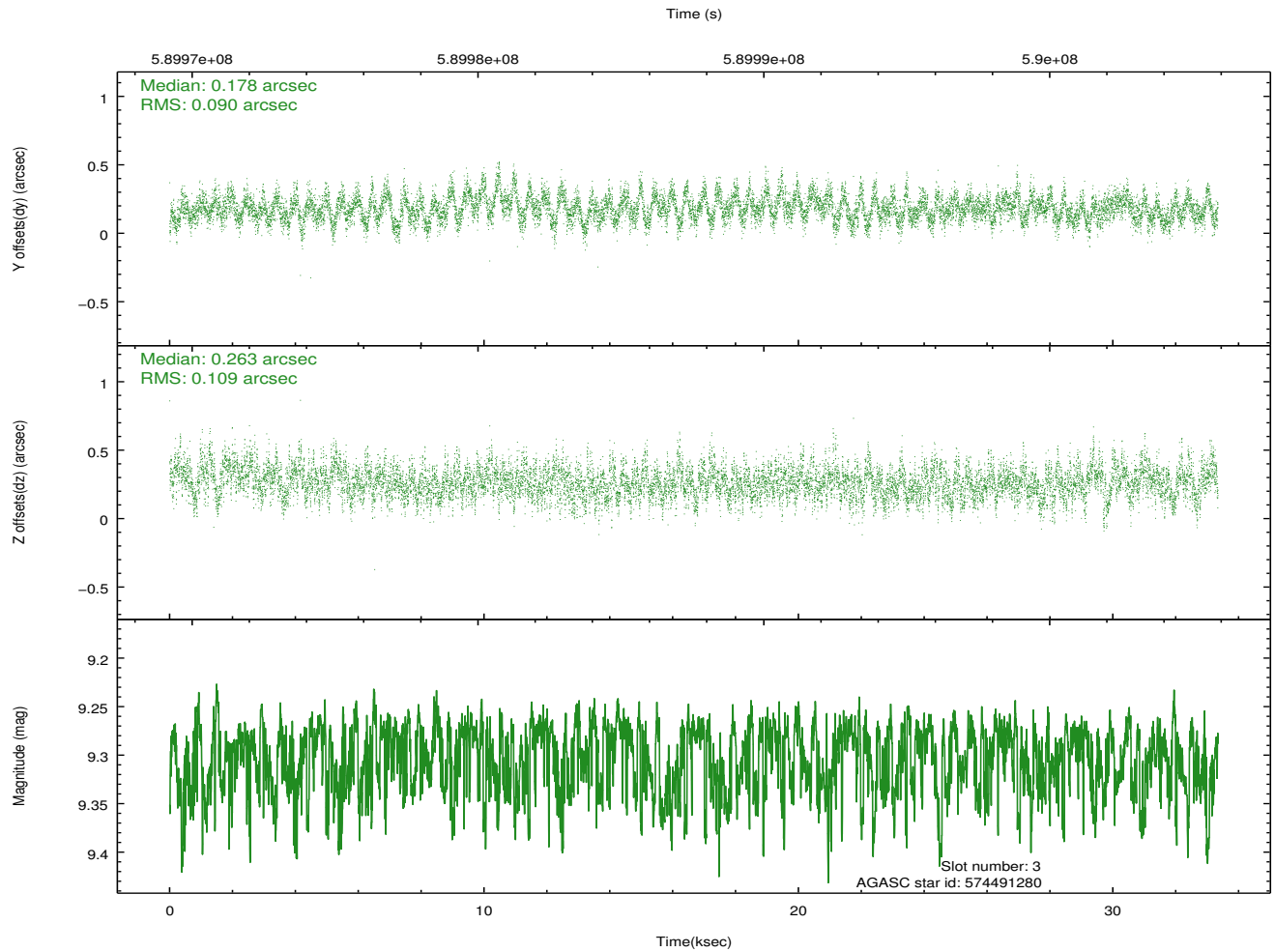
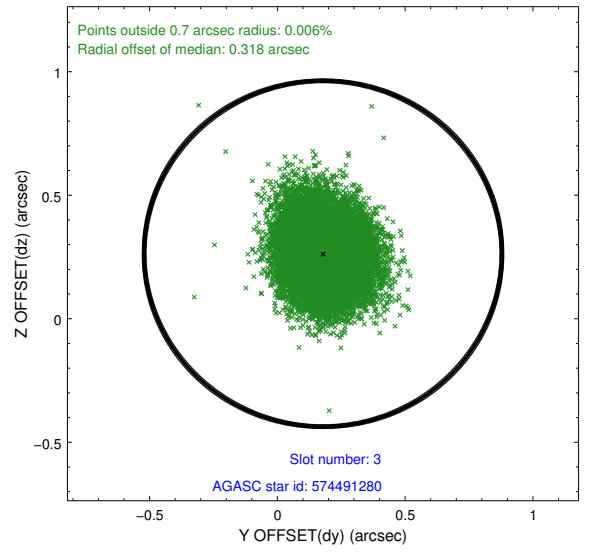
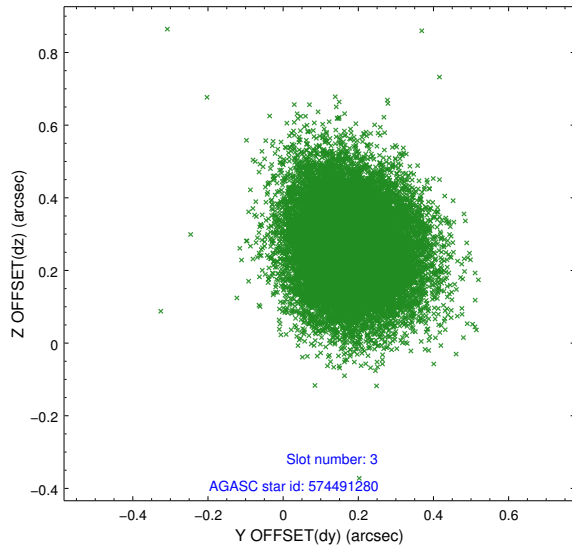
Slot Statistics

slot	status	used	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID		ACIS-S-2	6.96	8133	-0.259	-0.164	0.008	0.013	0.000000	0.000000	-769.05	-1742.22
1	FID		ACIS-S-4	7.07	8133	0.289	0.151	0.010	0.016	0.000000	0.000000	2144.82	166.42
2	FID		ACIS-S-6	7.20	8133	-0.057	0.021	0.010	0.016	0.000000	0.000000	393.29	803.80
3	GUIDE	used	574491280	9.30	16241	0.178	0.263	0.150	0.243	148.611567	69.450135	-536.66	-666.24
4	GUIDE	used	574491872	9.20	16252	0.110	-0.138	0.133	0.215	147.207613	69.765453	-1971.17	855.99
5	GUIDE	used	574886496	8.47	16257	-0.513	-0.258	0.153	0.250	148.945563	70.041136	354.40	1311.85
6	GUIDE	used	574491184	9.02	16256	0.086	-0.225	0.143	0.237	148.582453	69.768699	-305.56	458.89
7	GUIDE	used	574489568	9.71	16250	0.137	0.364	0.192	0.325	147.223974	69.438157	-2246.85	-283.64

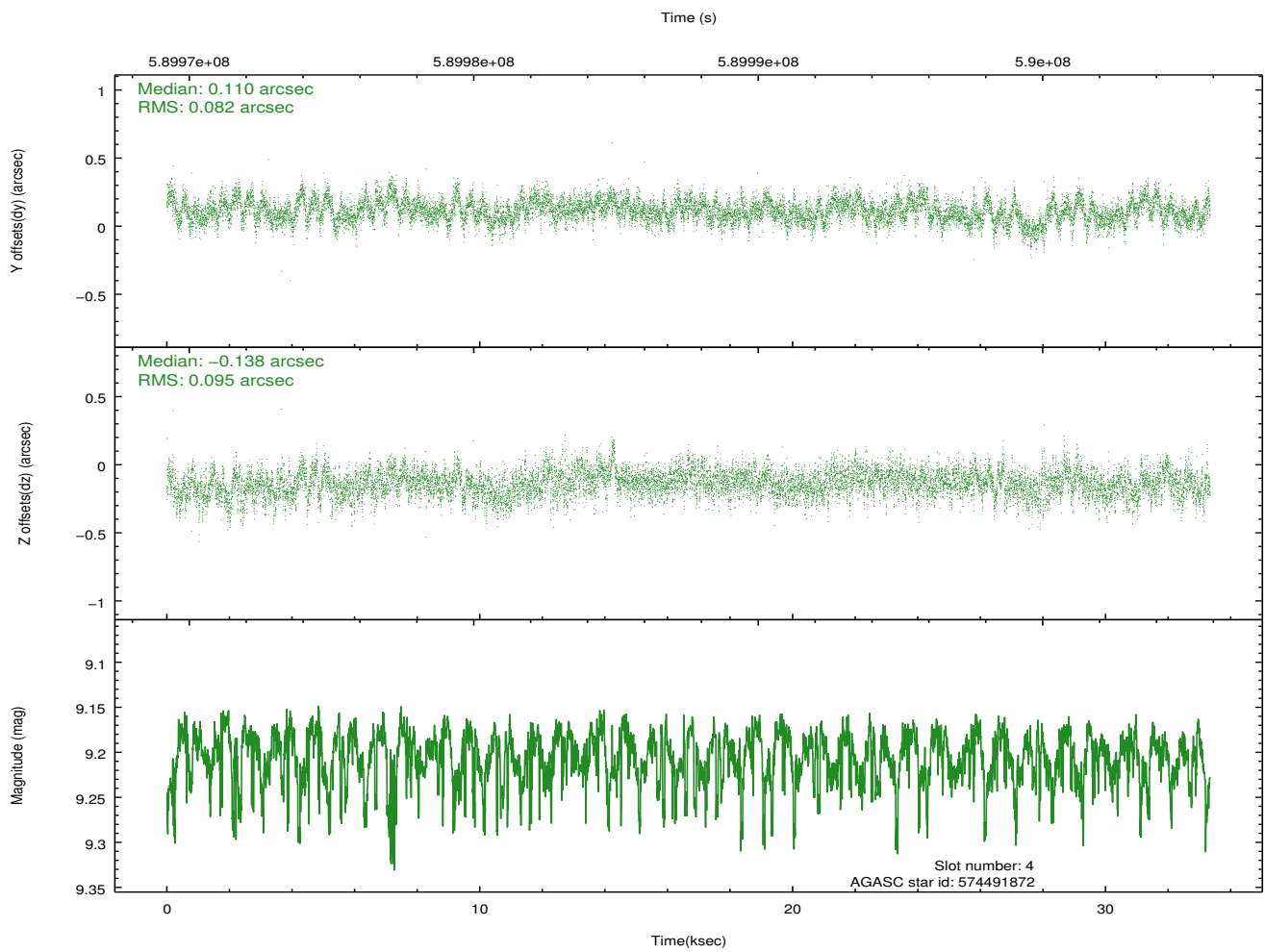
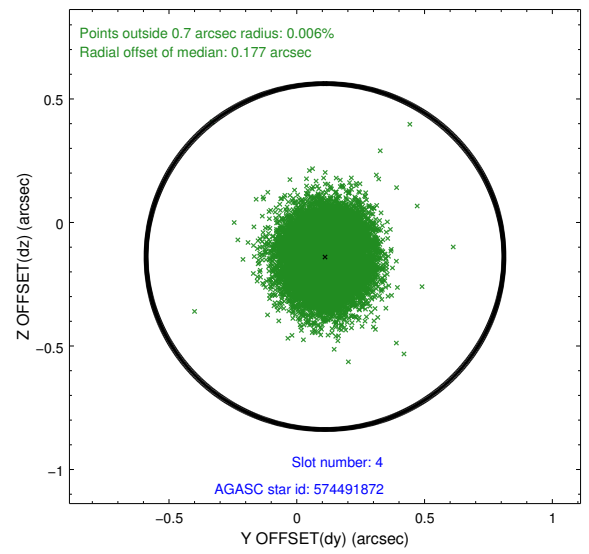
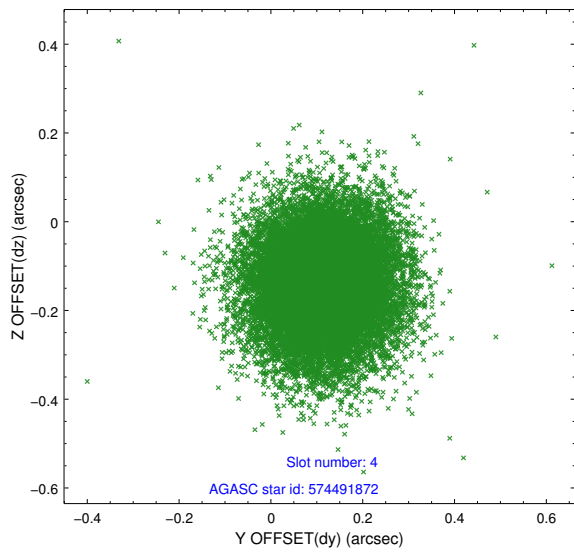
∞

2.4 Star Slots

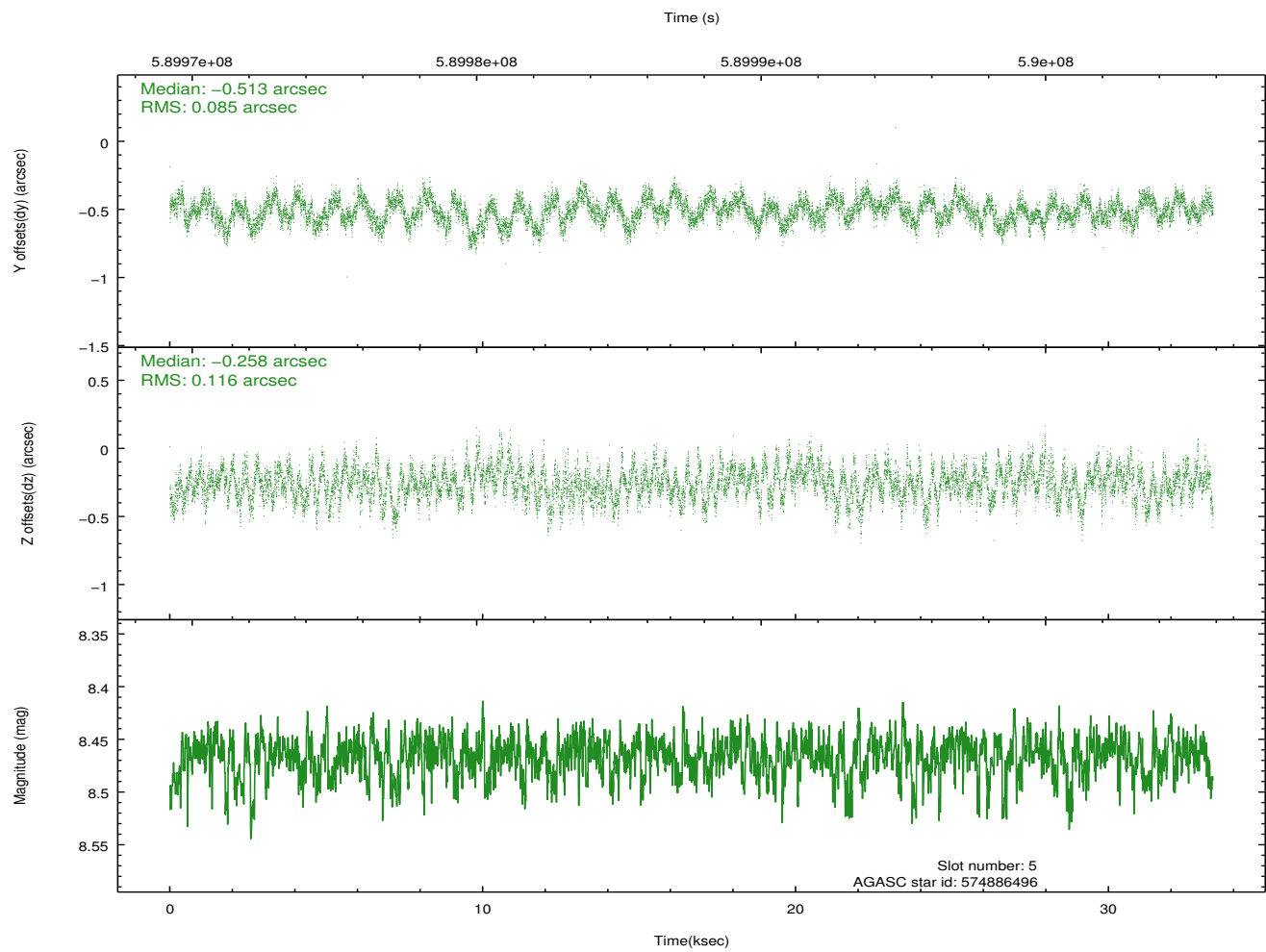
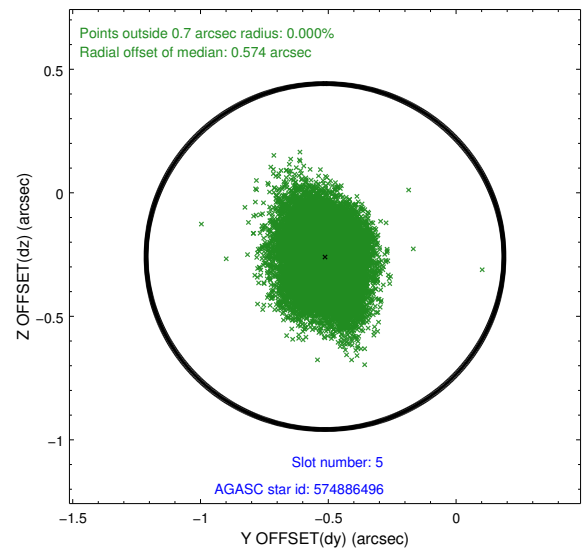
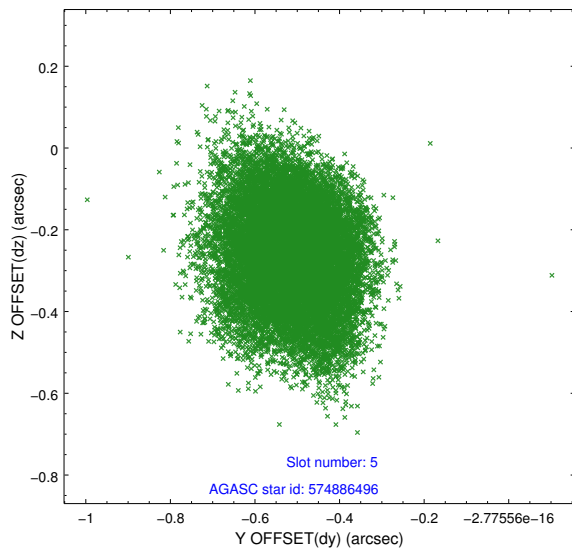
2.4.1 Slot 3



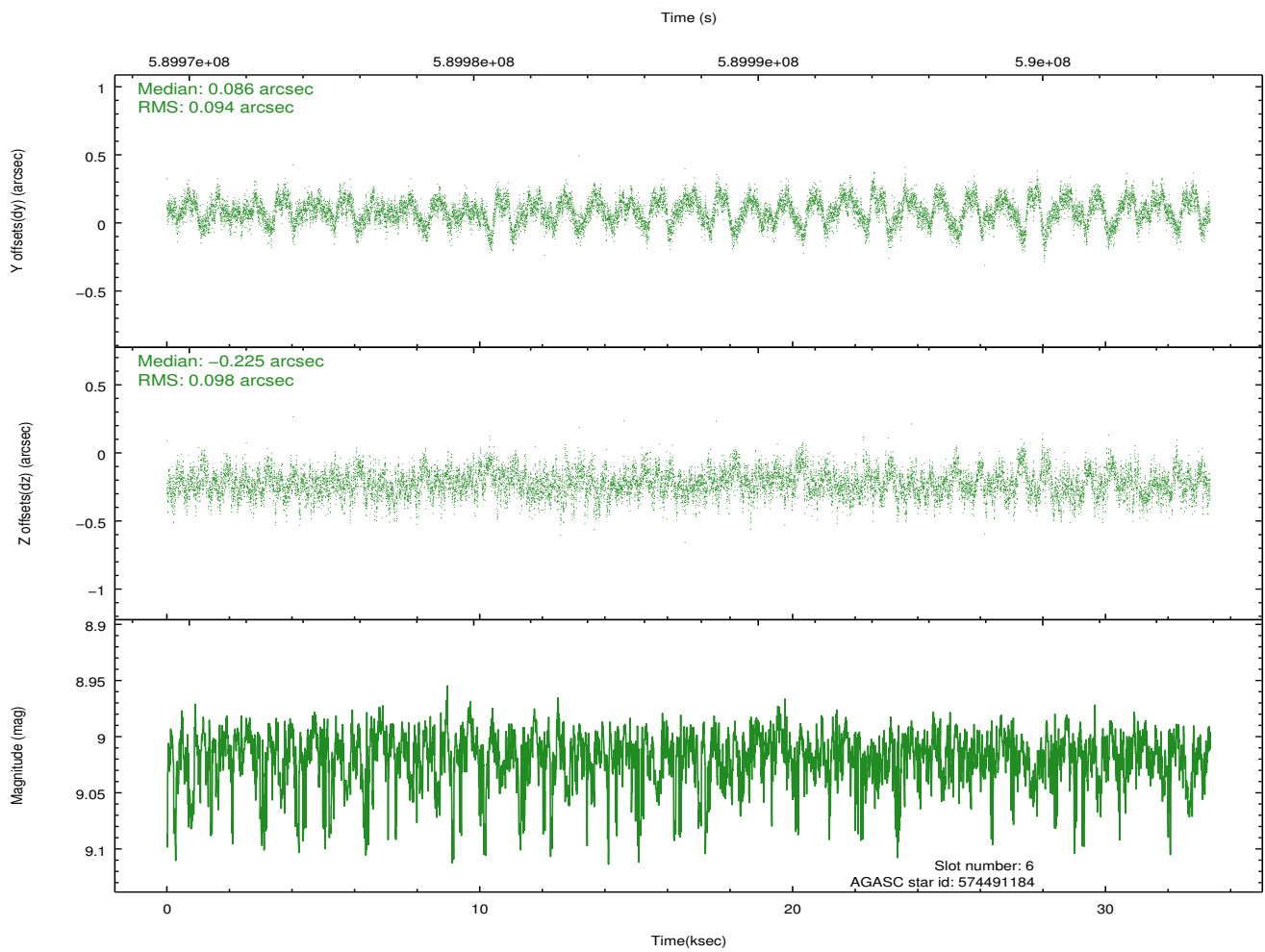
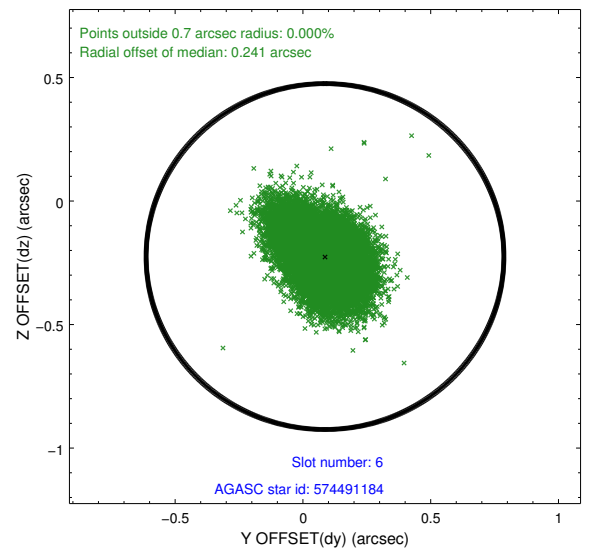
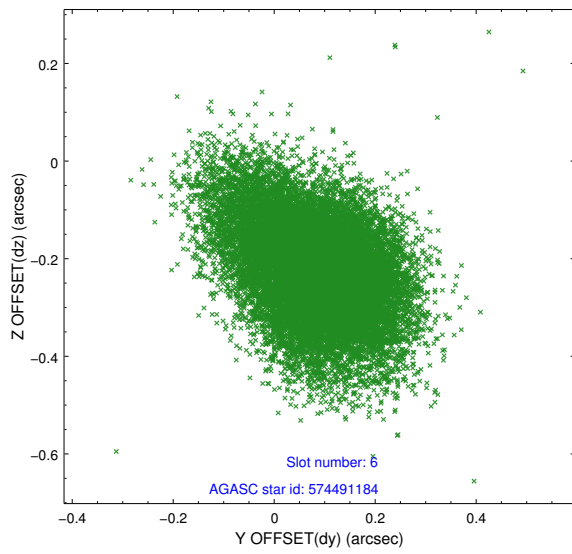
2.4.2 Slot 4



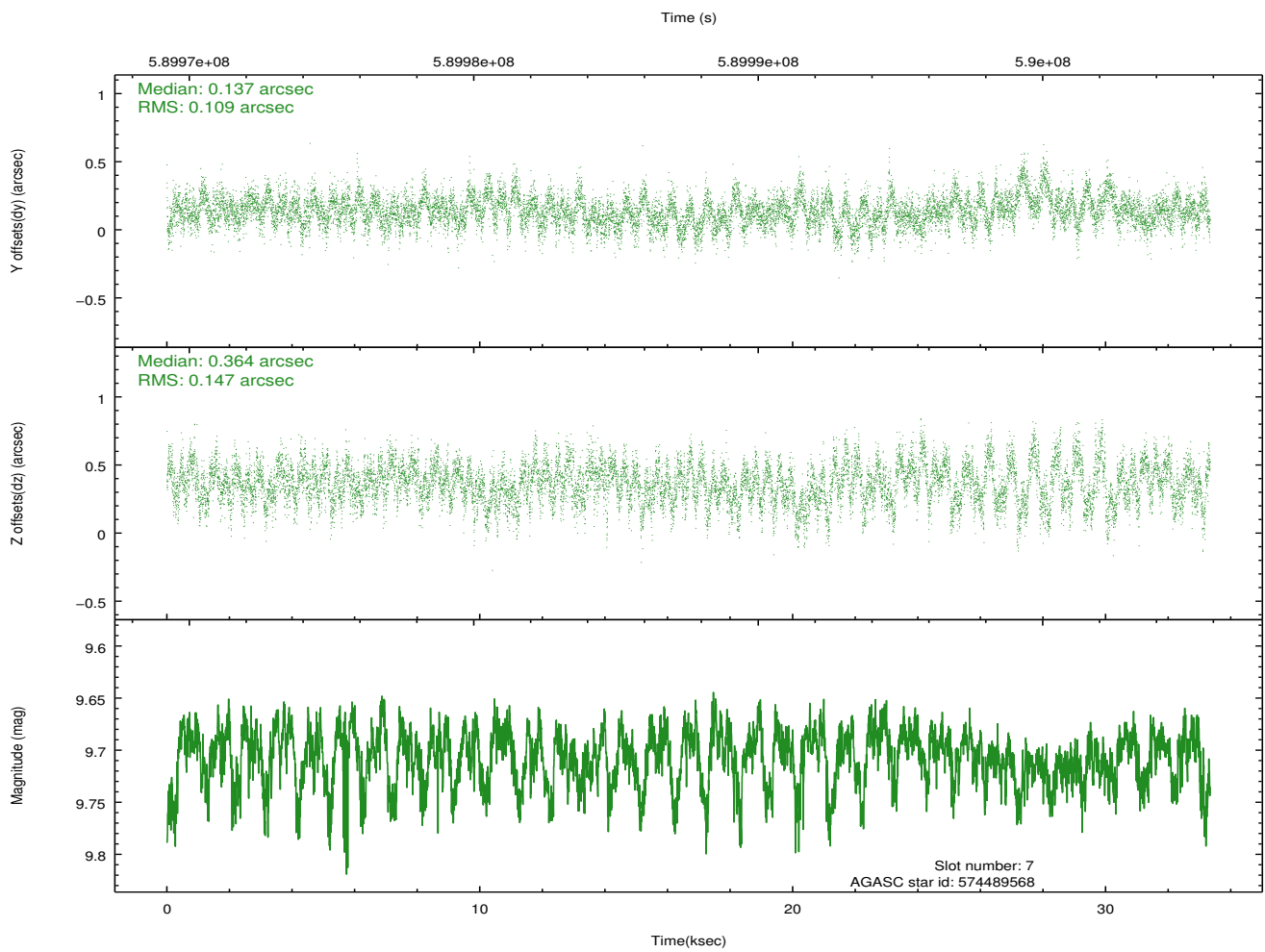
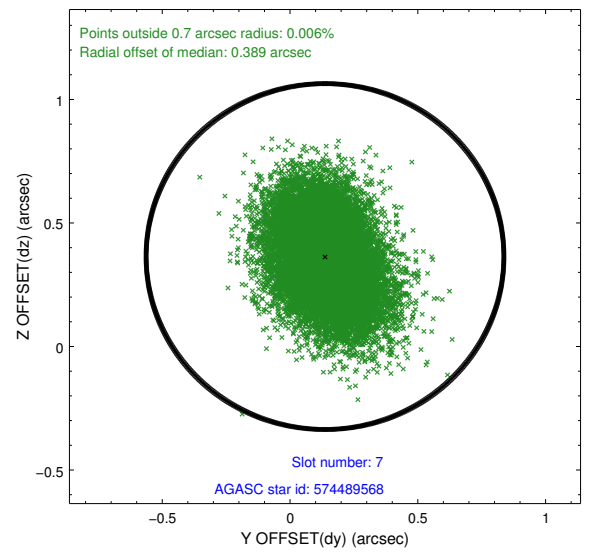
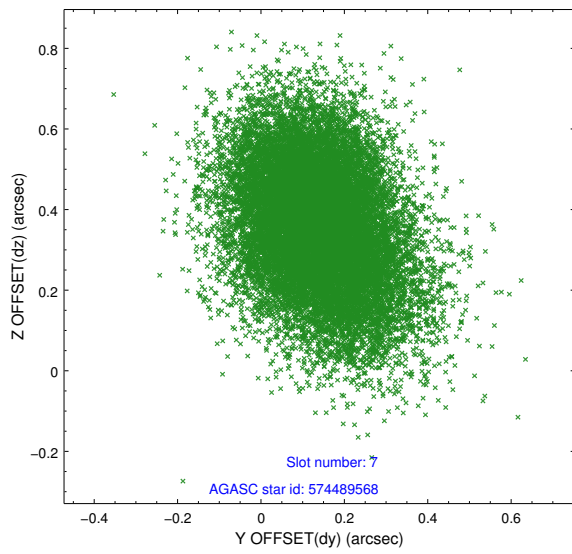
2.4.3 Slot 5



2.4.4 Slot 6

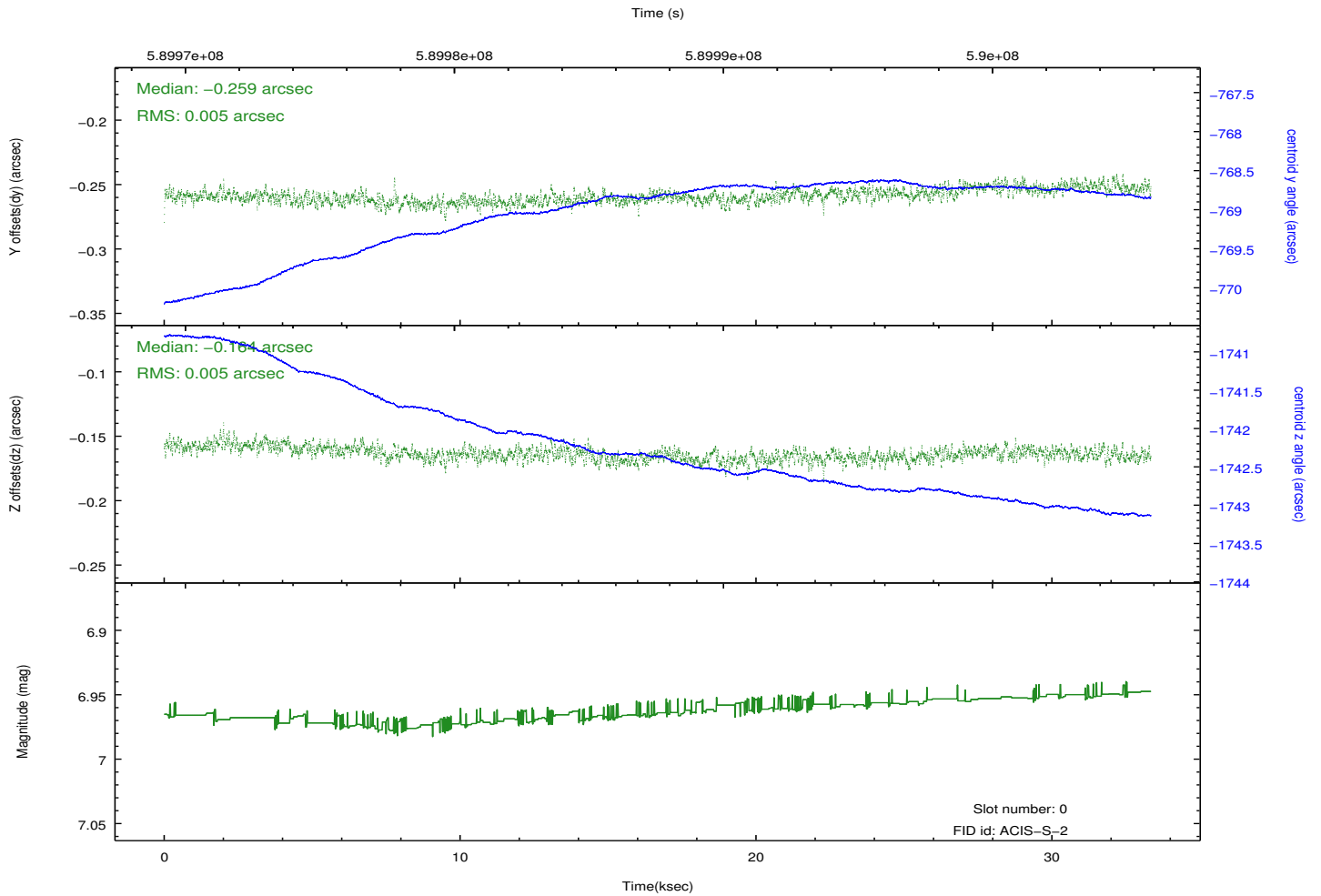
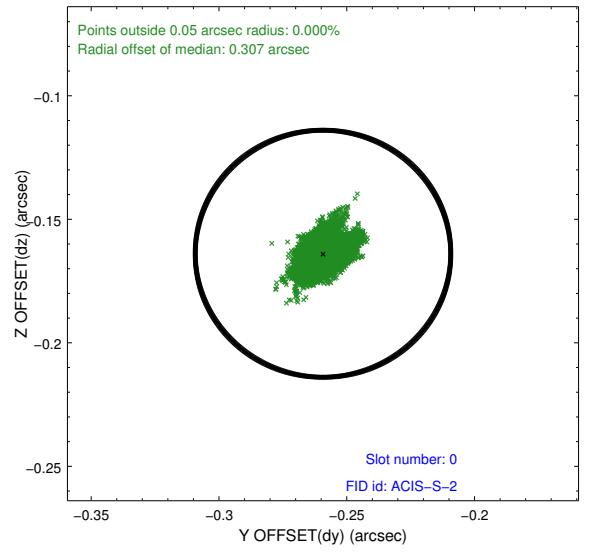
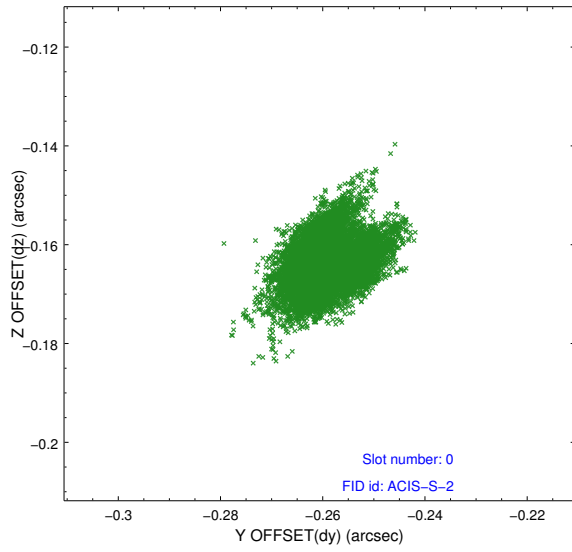


2.4.5 Slot 7

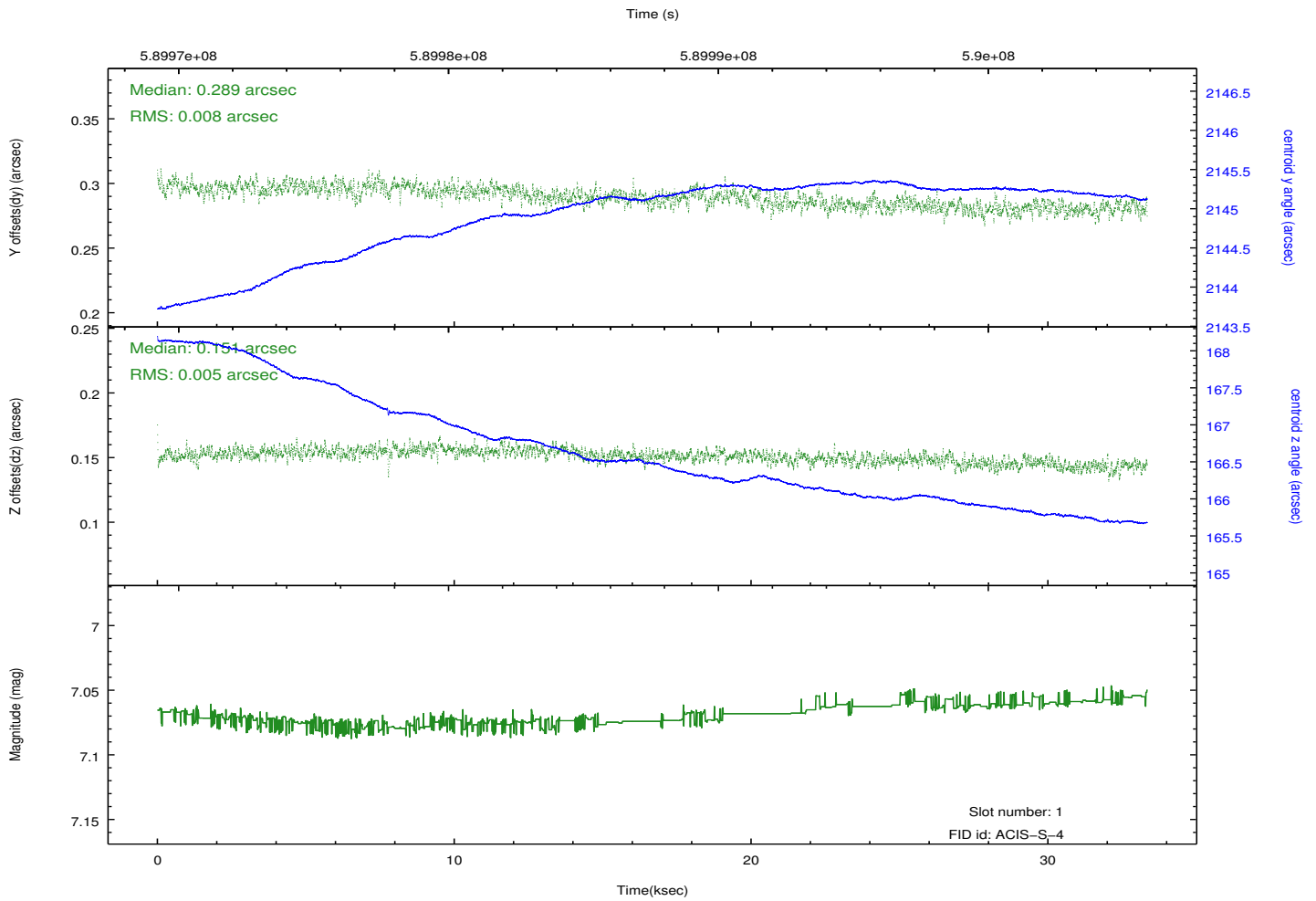
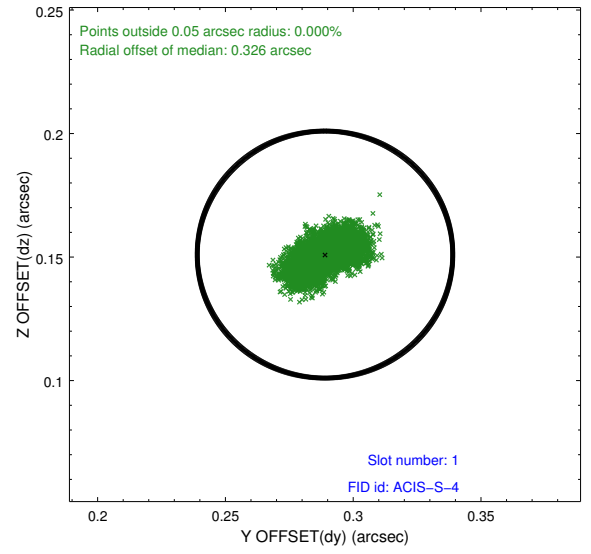
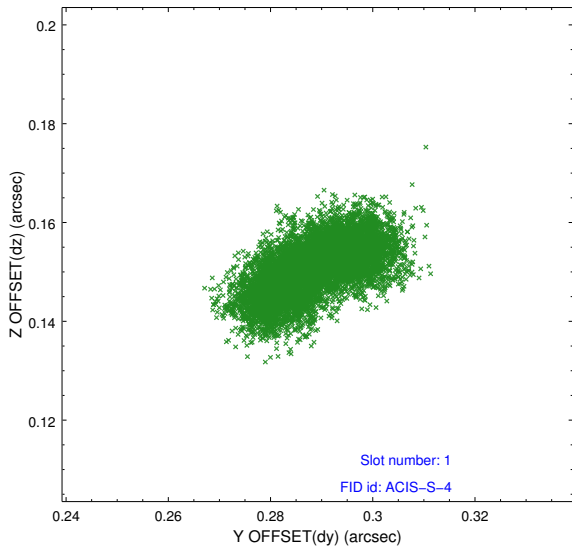


2.5 FID Slots

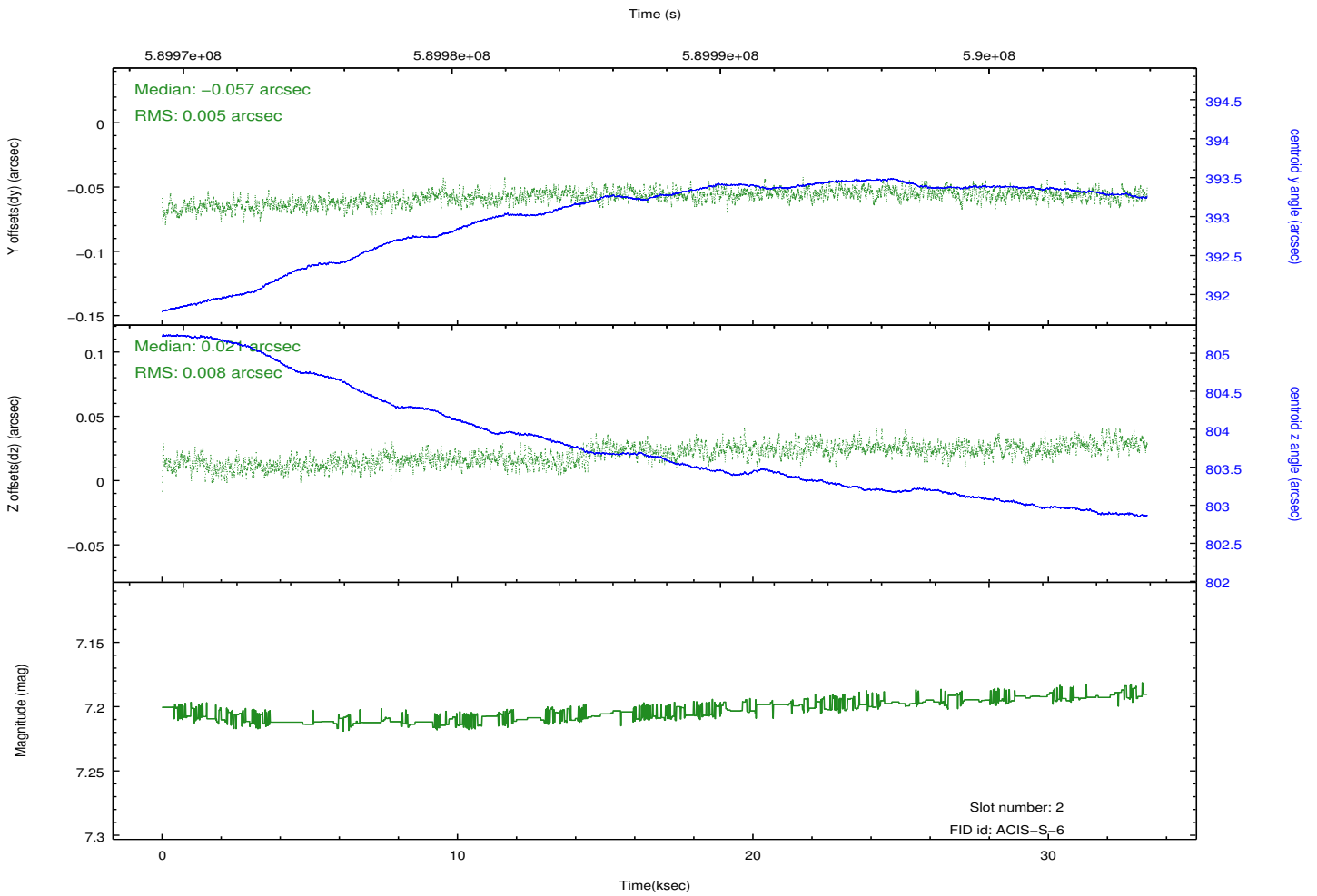
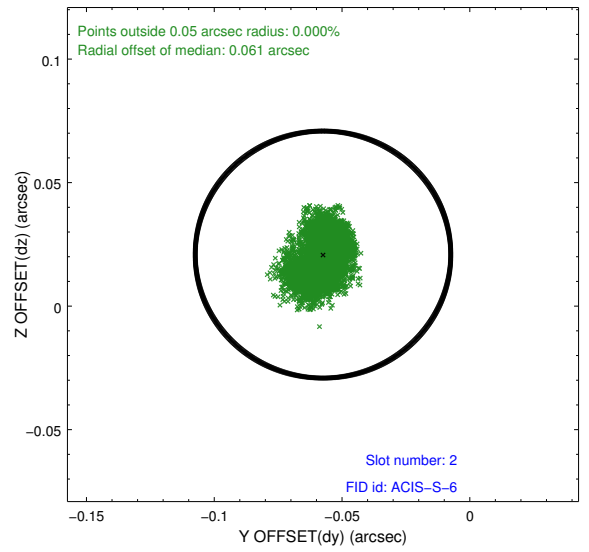
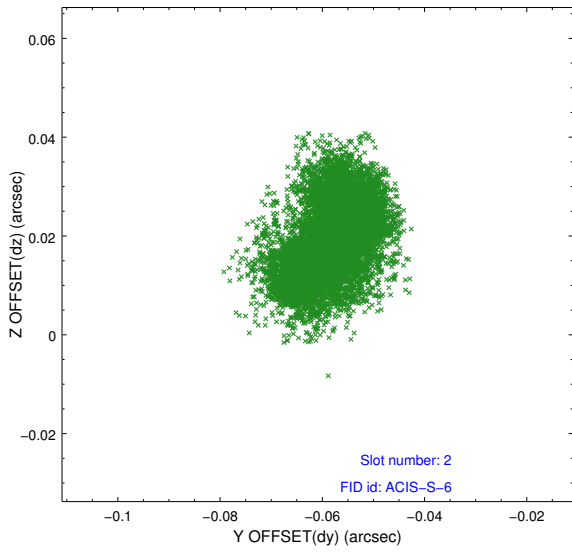
2.5.1 Slot 0



2.5.2 Slot 1

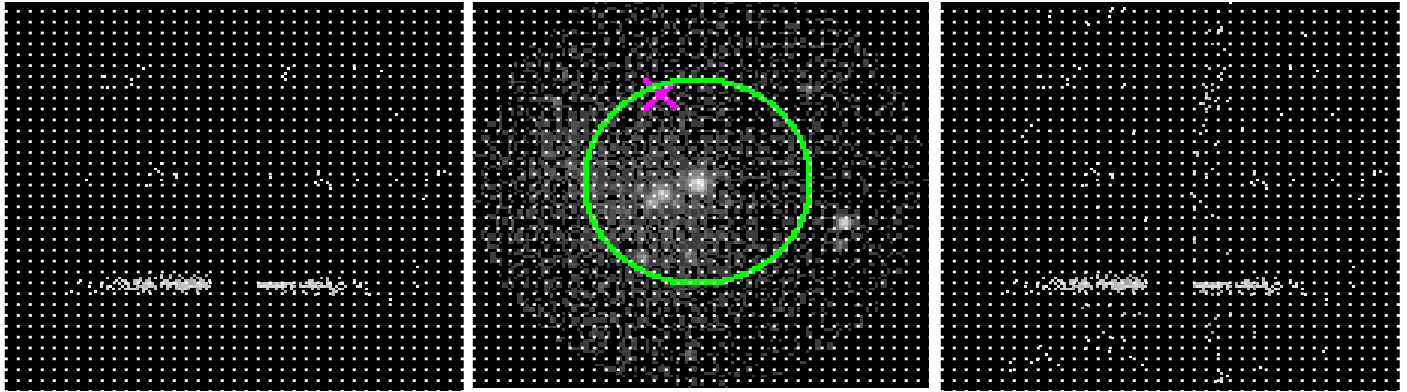


2.5.3 Slot 2



3 Gratings

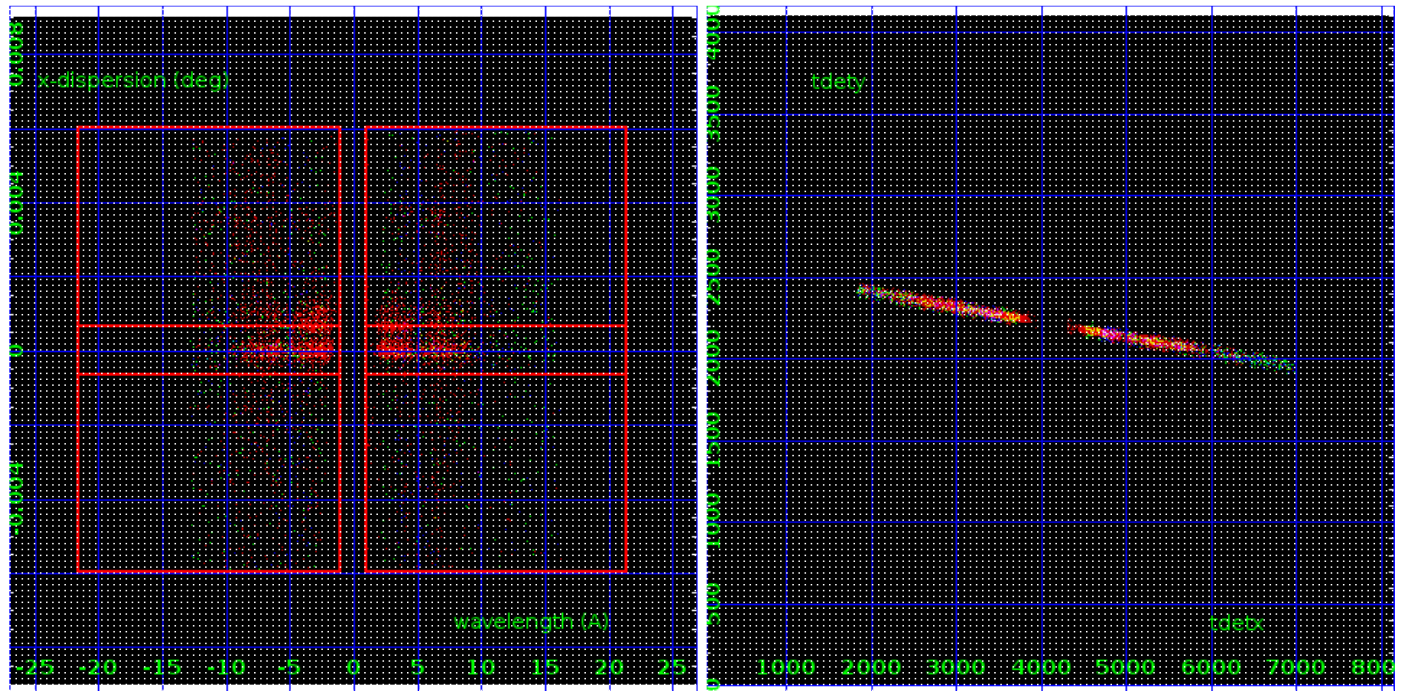
3.1 HEG Arm



HEG Order Sort 123

HEG Zero Order

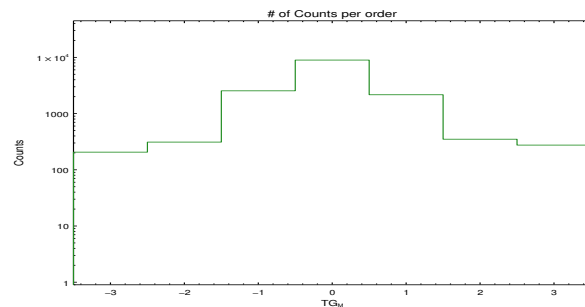
HEG Order Sort ALL

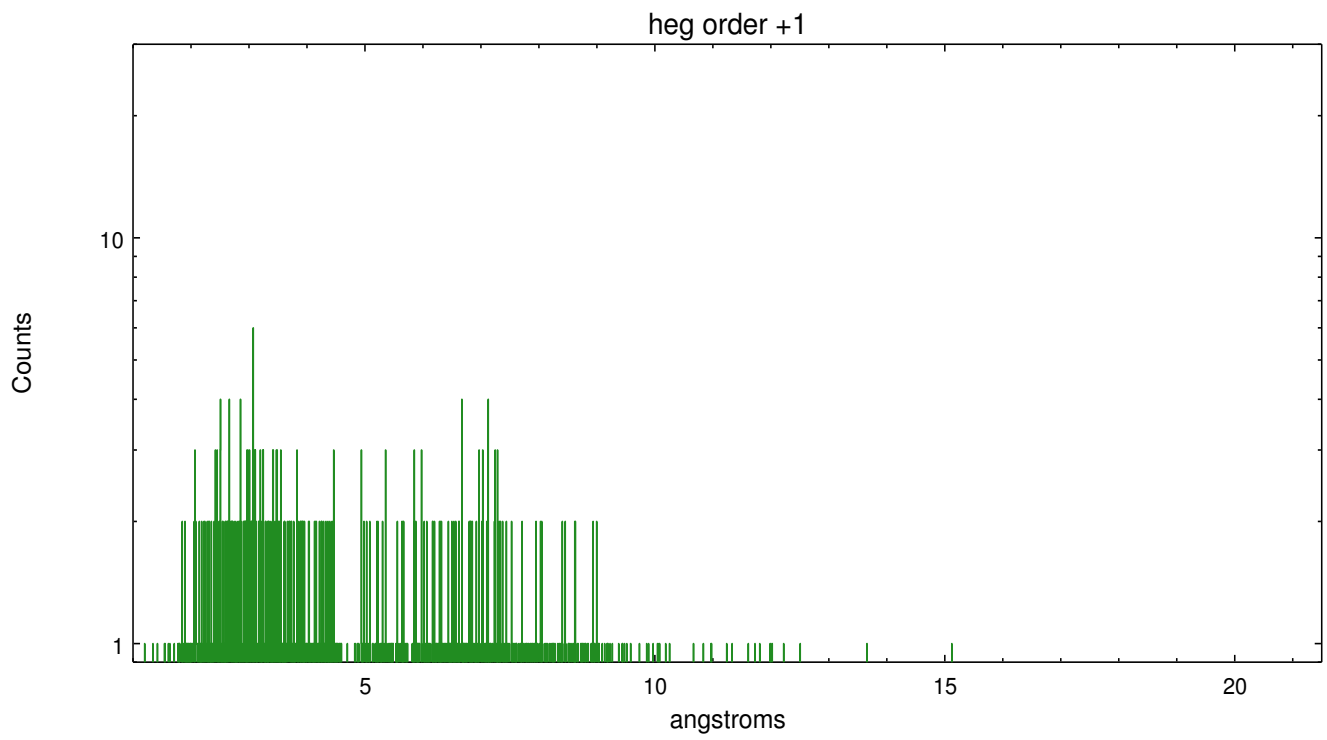
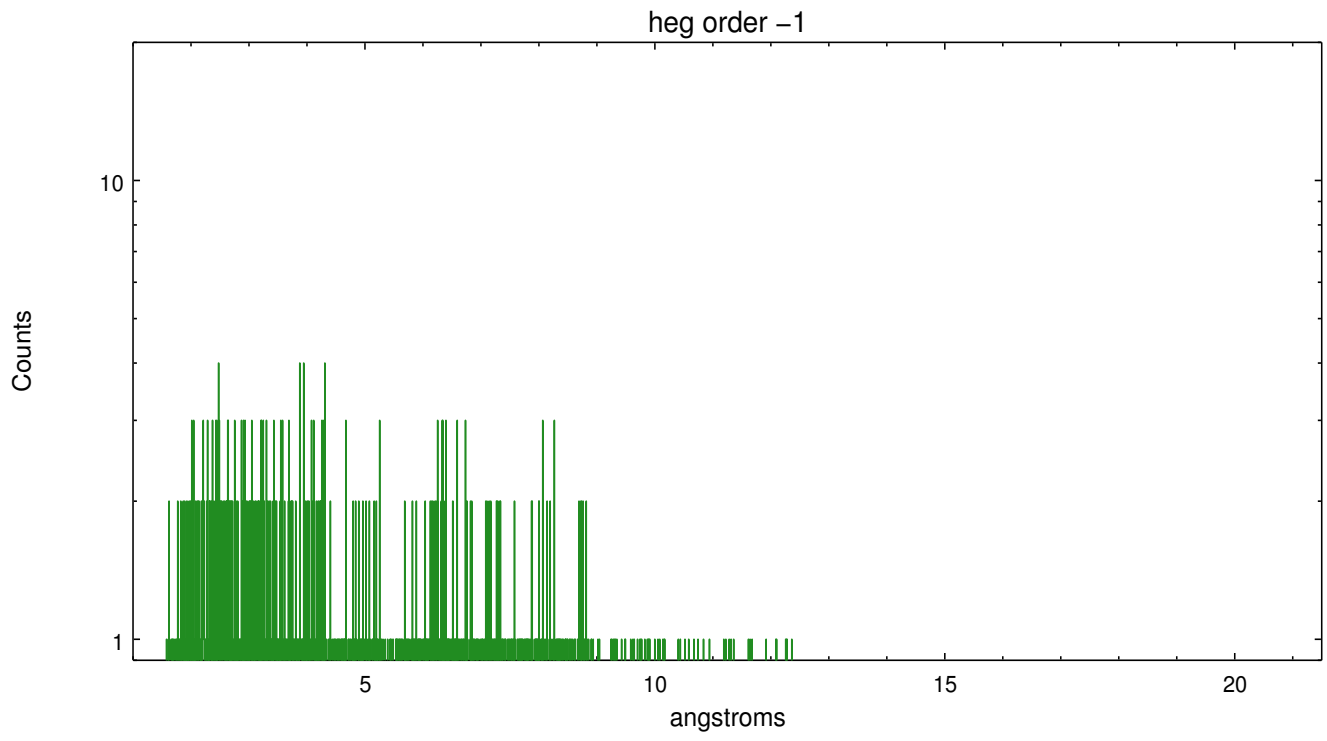


Spot Image HEG

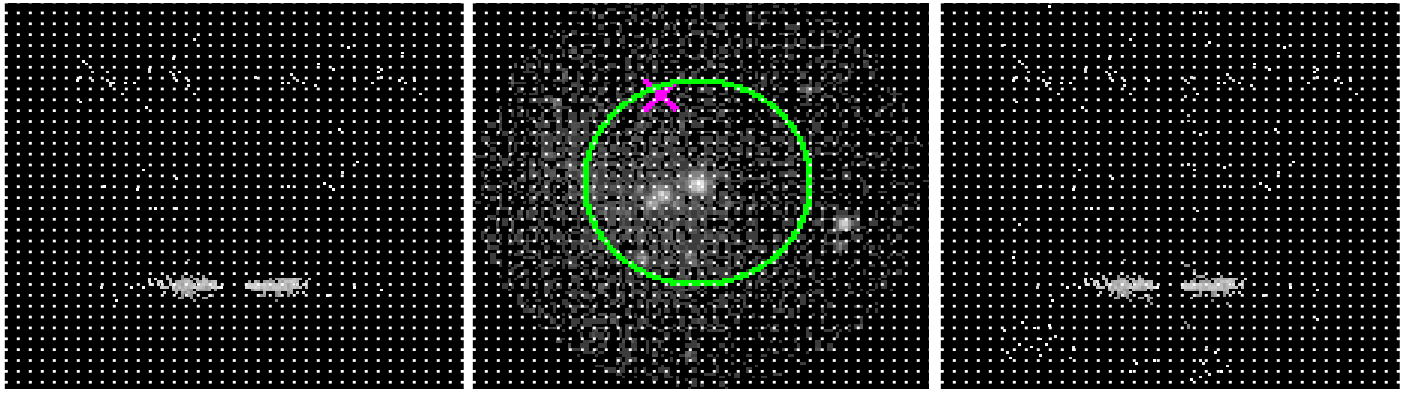
Full Detector HEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	206	311	2542	8955	2164	350	275





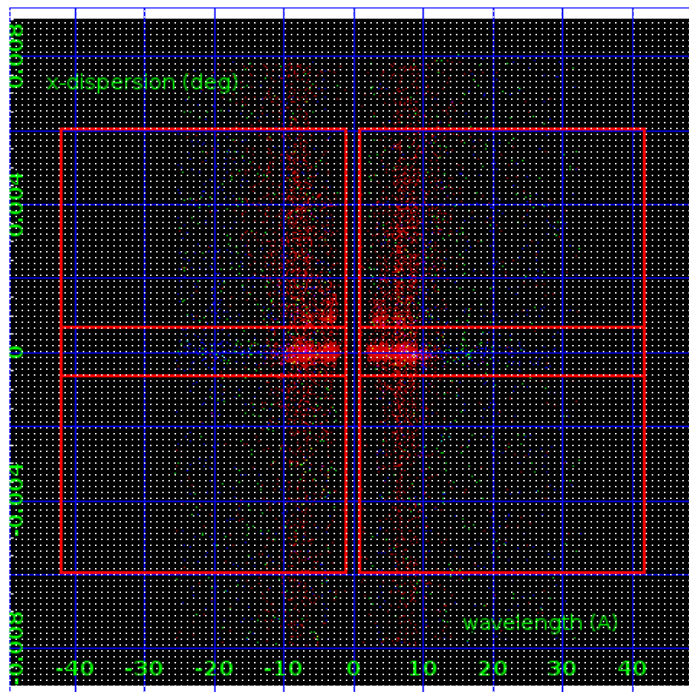
3.2 MEG Arm



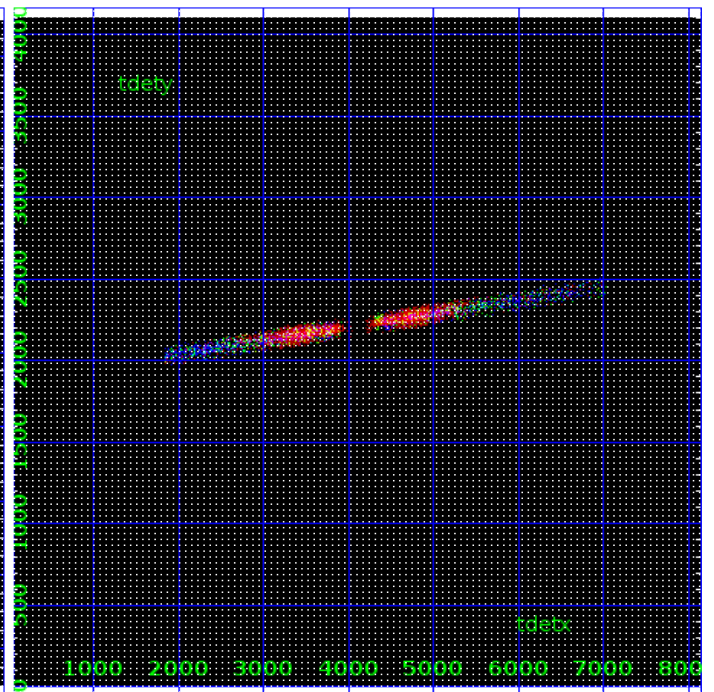
MEG Order Sort 123

MEG Zero Order

MEG Order Sort ALL

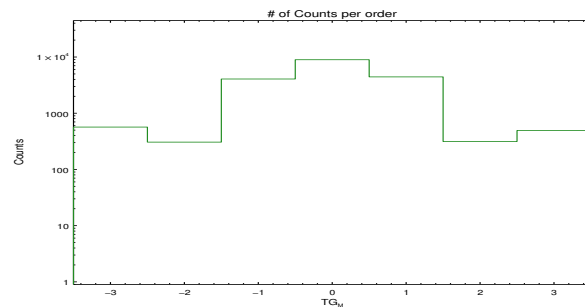


Spot Image MEG

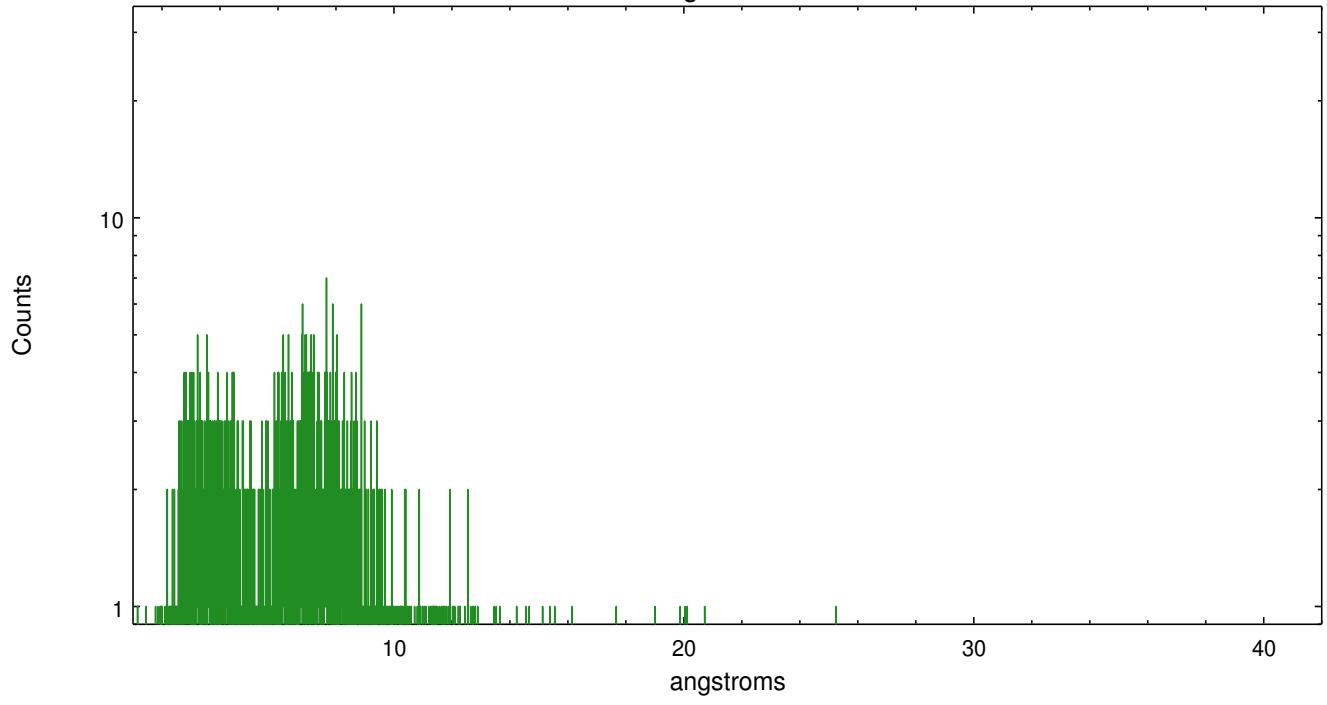


Full Detector MEG

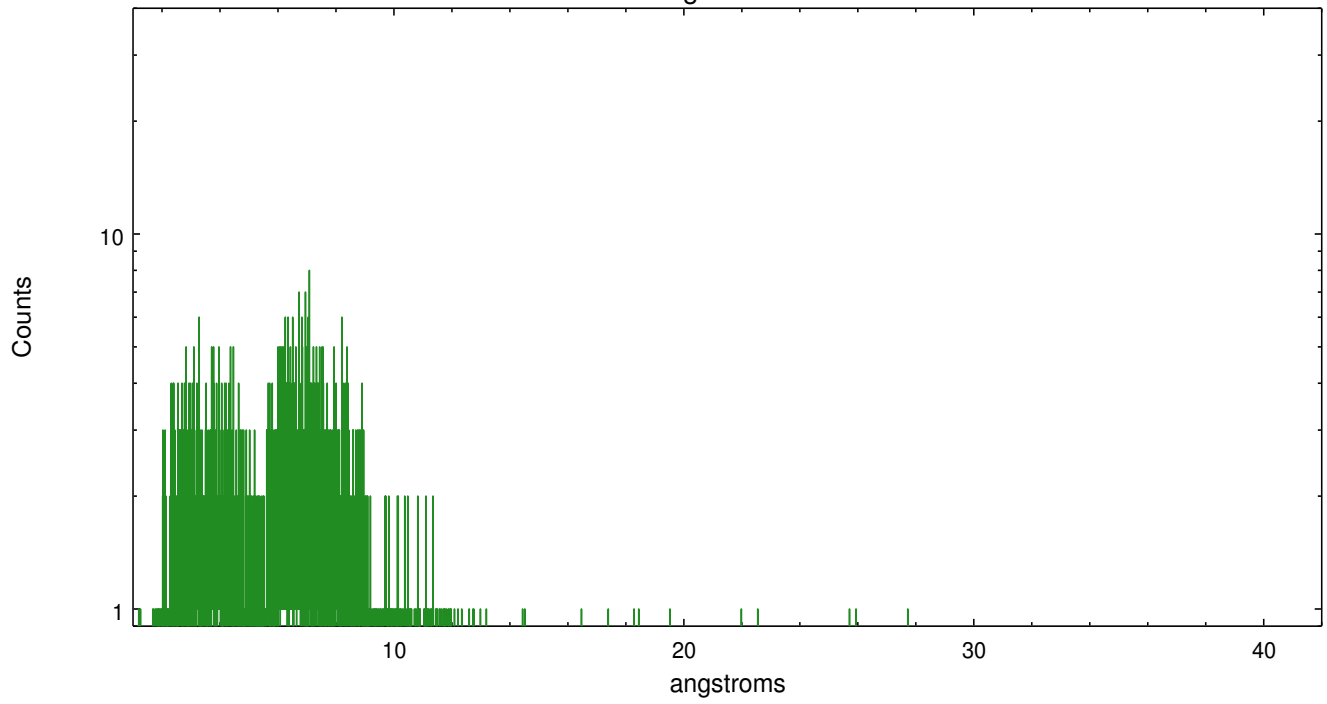
	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	567	306	4064	8955	4432	314	493



meg order -1



meg order +1



A Summary

A.1 Status

V&V Scientist	David Huenemoerder
V&V Date (YYYY-MM-DD)	2016.09.14
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	32.444600249648

A.2 Comments

warning: spatially complicated, with several bright sources in the zeroth order region; the extraction was centered on the brightest knot with default extraction parameters. The dispersed spectra contain multiple sources which might be spatially resolved with customized regions.

A spatial region of the original bias map for CCD = 9 suffered from anomalously high data values. Pixels in the event data that were bias-corrected by one of the original affected bias pixels may have an apparent energy shift. While the change in energy is expected to be small (~ 20 eV), it depends on many parameters that have not yet been fully explored for this bias anomaly. The bias map for CCD = 9 has been reconstructed for this processing to remove this anomaly using scaled data from a comparable bias map from another observation. The pixels affected by the anomaly are bounded by sky coords: (147.90967,69.62127), (147.89903,69.62033), (147.91992,69.59149), (147.93170,69.59083).