

V&V Reference Report

L2 ASCDS Version : 10.8

Observation 22278 - L2 Version 2
Chandra X-Ray Center

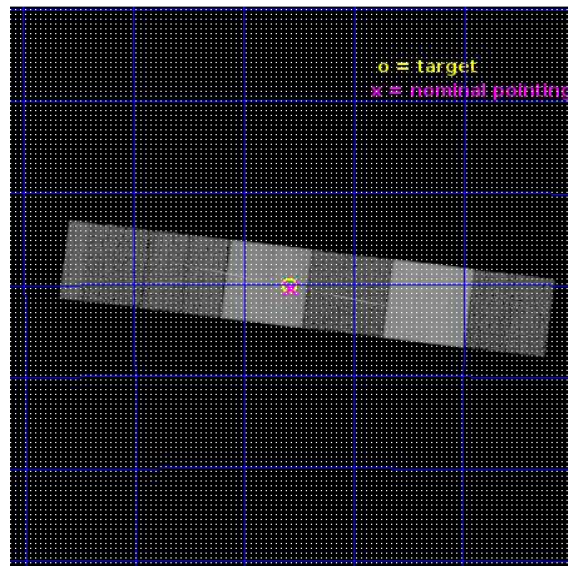
L2 Processing Date : Sep 27 2019

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1 Front

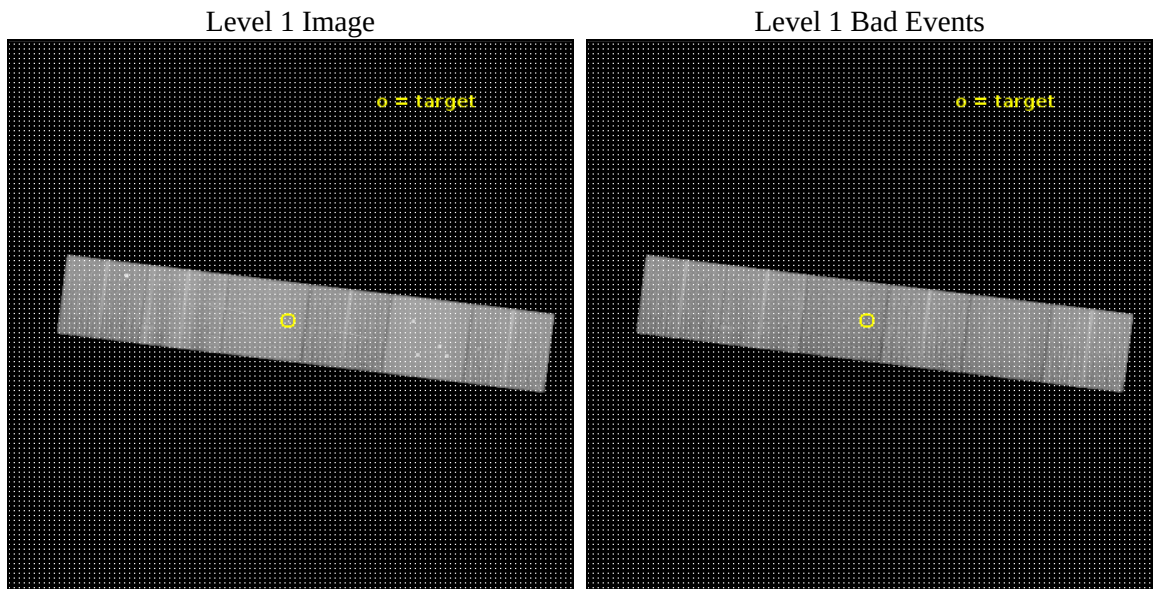
seq_num	201176	Sequence number
obs_id	22278	Observation id
title	Legacy HETG Spectrum of a Massive Star: zeta Pup	Proposal title
observer	Wayne Waldron	Principal investigator
object	zeta Pup	Source name
dtcycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	120.895833	Observer's specified target RA [deg]
dec_targ	-40.003139	Observer's specified target Dec [deg]
ra_nom	120.89213905505	Nominal RA [deg]
dec_nom	-40.007792201482	Nominal Dec [deg]
roll_nom	187.1542383674	Nominal Roll [deg]
revision	2	Processing version of data
ontime	30905.600460529	Sum of GTIs [s]
livetime	30514.25513838	Livetime [s]
ontime4	30905.600460529	Sum of GTIs [s]
ontime5	30905.600460529	Sum of GTIs [s]
ontime6	30899.118519425	Sum of GTIs [s]
ontime7	30905.600460529	Sum of GTIs [s]
ontime8	30905.600460529	Sum of GTIs [s]
ontime9	30902.359460235	Sum of GTIs [s]
l2events	403253	Number of level 2 events



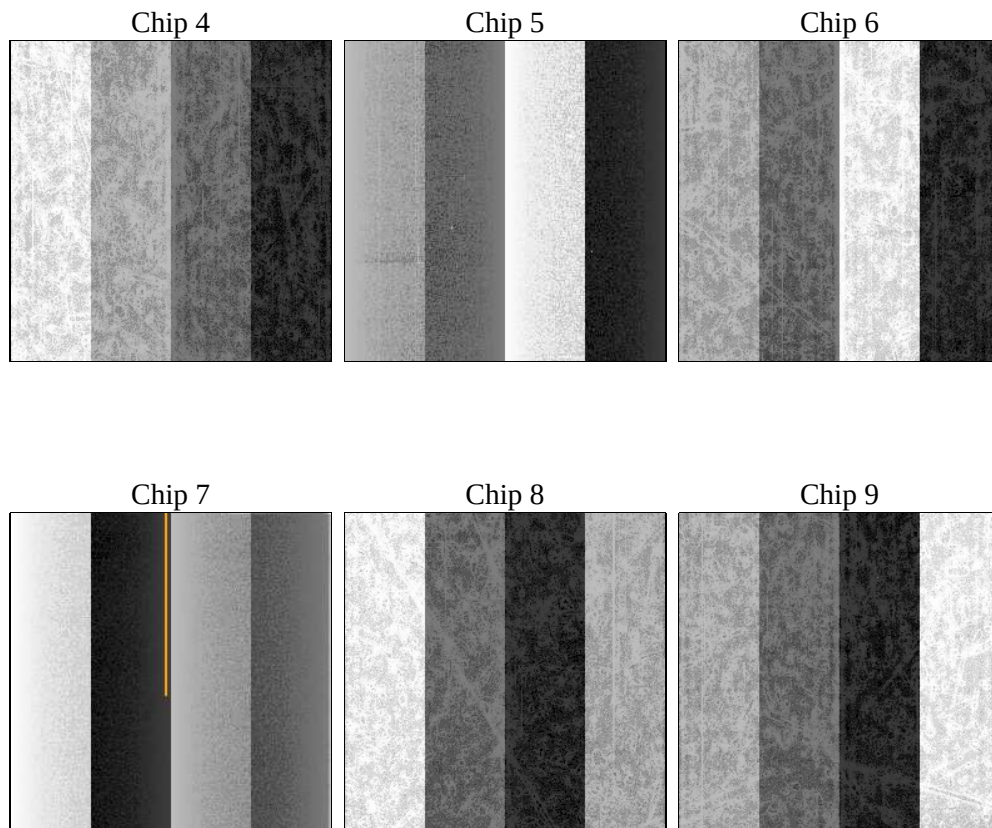
2 OBI

2.1 OBI

2.1.1 Images



2.1.2 Bias



2.1.3 Parameters

obi_num	0	Obi number	sched_exp_time	30959.262000	[s] Scheduled observation exposure time
ascdsver	10.8	Processing system revision	ontime	30905.600460529	Sum of GTIs [s]
caldsver	4.8.4.1	 	ontime4	30905.600460529	Sum of GTIs [s]
date	2019-09-27T17:40:42	Date and time of file creation	ontime5	30905.600460529	Sum of GTIs [s]
revision	2	Processing version of data	ontime6	30899.118519425	Sum of GTIs [s]
			ontime7	30905.600460529	Sum of GTIs [s]
			ontime8	30905.600460529	Sum of GTIs [s]
			ontime9	30902.359460235	Sum of GTIs [s]
			l1events	1769239	Number of level 1 events
			tgmethod	TGDETECT	Method used to create src1a file
			src1a_pos	(4075.22, 4121.12)	src1a sky pixel position

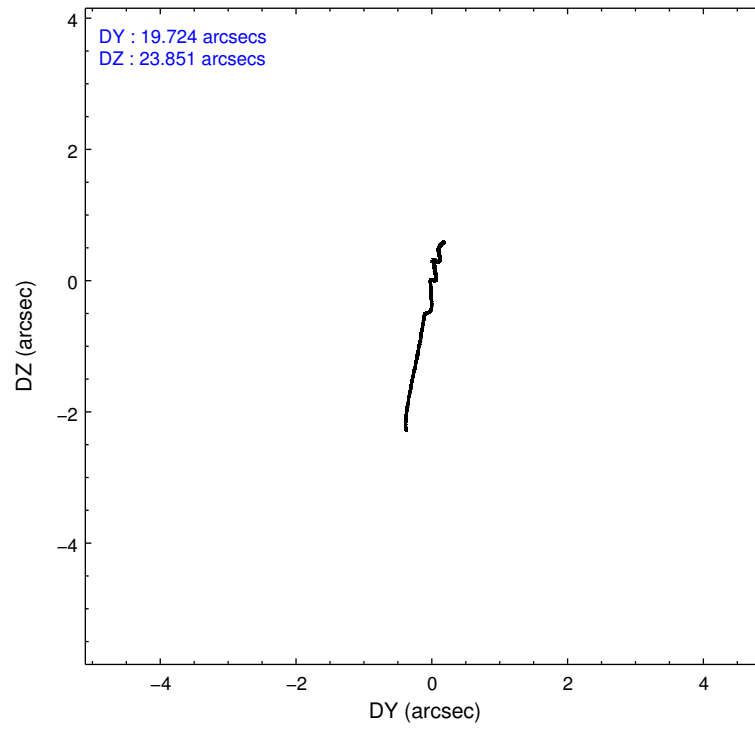
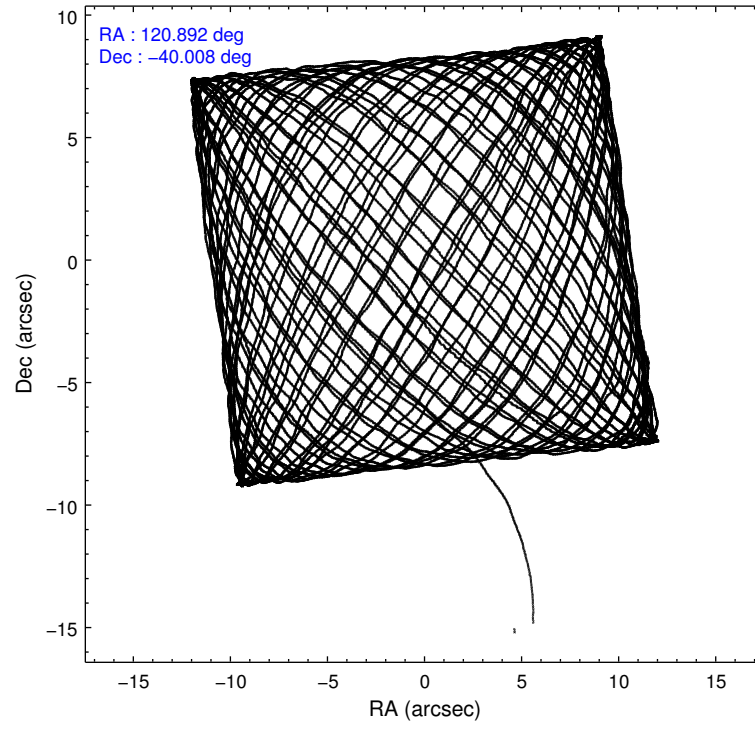
2.1.4 Events

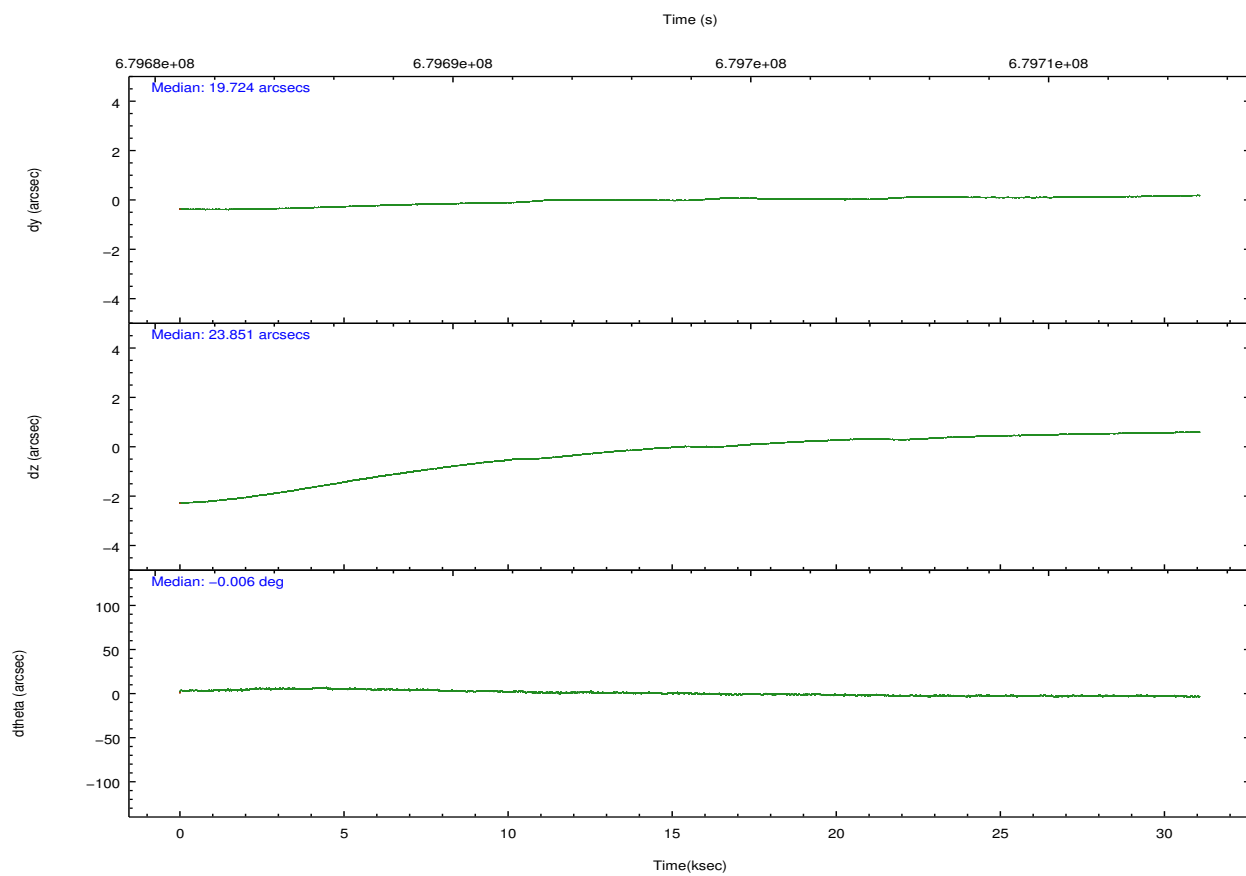
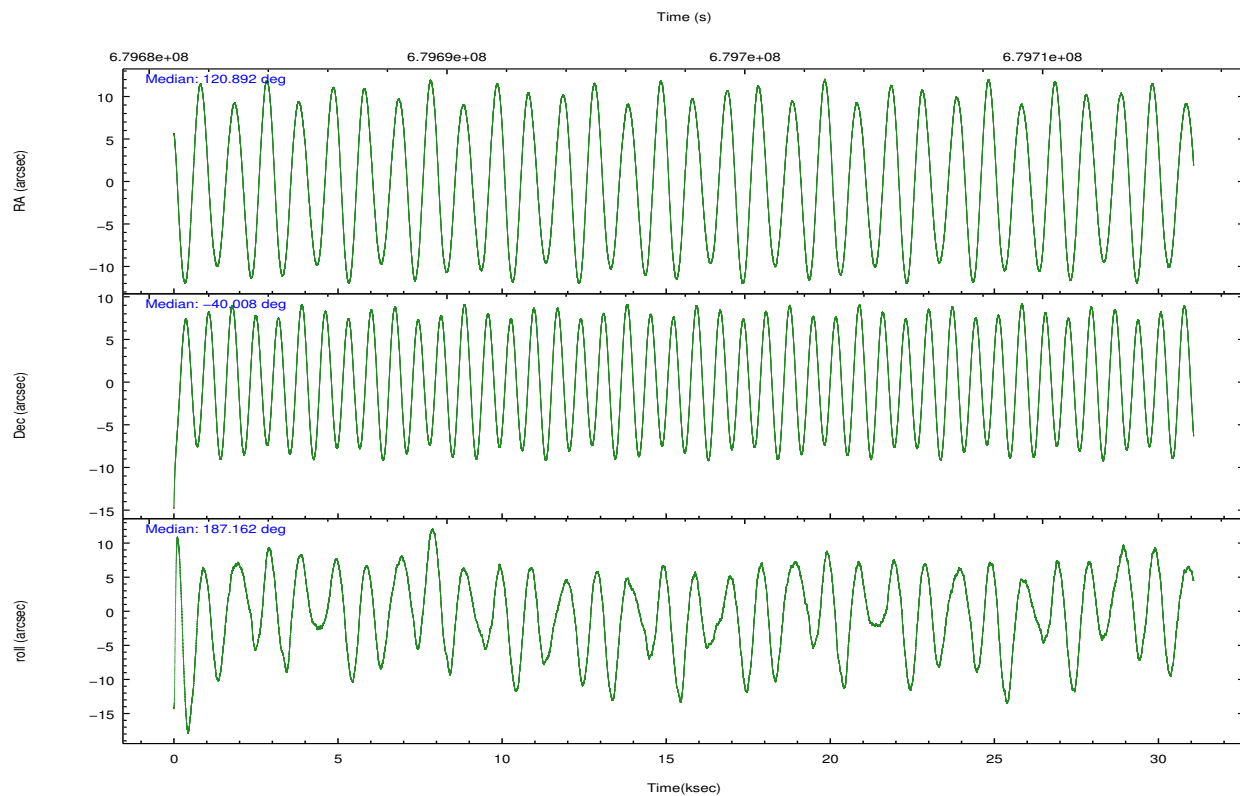
	ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9		ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
level 1 events	277850	385419	242006	304719	314627	244618	grade 0 events	11238	23611	10169	11768	25368	10048
rejected events	248912	192756	213576	170107	227936	206821		4%	6%	4%	3%	8%	4%
rejected %	89%	50%	88%	55%	72%	84%	grade 1 events	314	1018	109	508	305	138
								0%	0%	0%	0%	0%	0%
							grade 2 events	6947	59152	6533	29474	21051	15538
								2%	15%	2%	9%	6%	6%
							grade 3 events	2892	5335	2601	10534	8859	2865
								1%	1%	1%	3%	2%	1%
							grade 4 events	2847	5216	2579	10449	8242	2777
								1%	1%	1%	3%	2%	1%
							grade 5 events	11739	25197	10734	29823	16979	12671
								4%	6%	4%	9%	5%	5%
							grade 6 events	5014	99378	6550	72399	23177	6573
								1%	25%	2%	23%	7%	2%
							grade 7 events	236859	166512	202731	139764	210646	194008
								85%	43%	83%	45%	66%	79%

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	FAINT	FAINT	CCD I0 on	N	N
Observation mode	POINTING	POINTING	CCD I1 on	N	N
[deg] Pointing RA	120.920395	120.8921390550504	CCD I2 on	N	N
[deg] Pointing Dec	-39.990929	-40.00779220148152	CCD I3 on	N	N
[deg] Pointing Roll	187.015789	187.154238367405	CCD S0 on	O2	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)	679682531.184000	679681237.66689	CCD S5 on	O1	Y
Observation start date	2019-07-16T16:41:02	2019-07-16T16:20:37	Number of optional ACIS chips dropped	0	0
[s] Observation end time (MET)	679713490.184000	679714546.5814	On-chip summing requested	N	N
Observation end date	2019-07-17T01:17:01	2019-07-17T01:35:46	Subarray requested	NONE	NONE
Read mode	TIMED	TIMED	Alternating exposures requested	N	N
			[s] Primary exposure time	0.000000	3.2

2.3 Aspect



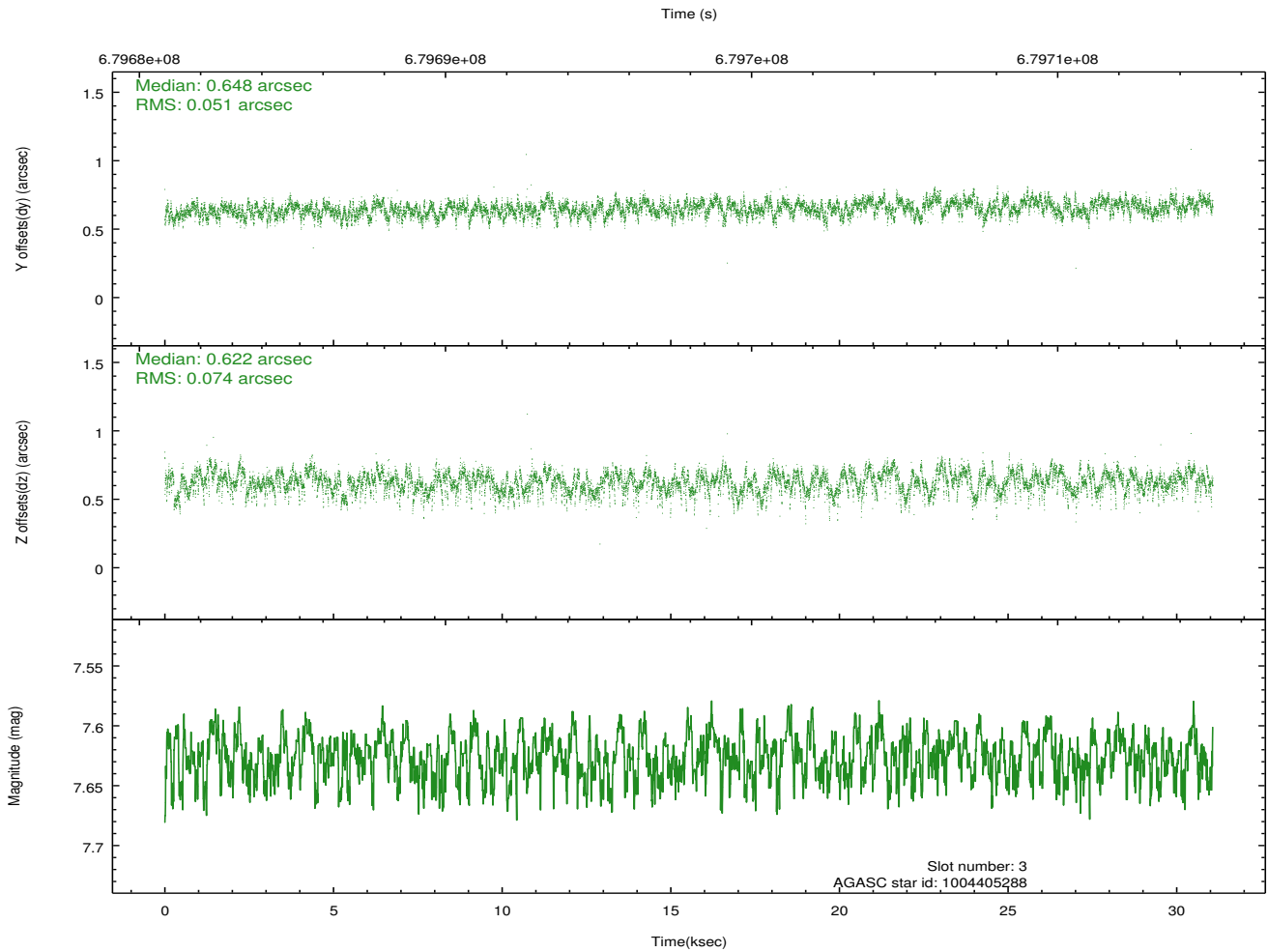
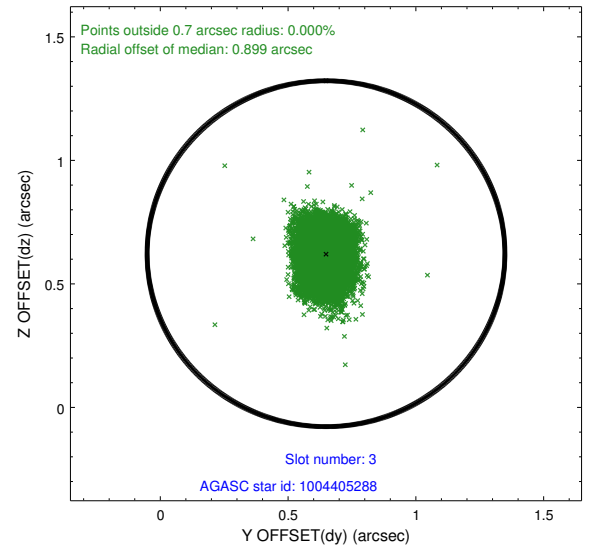
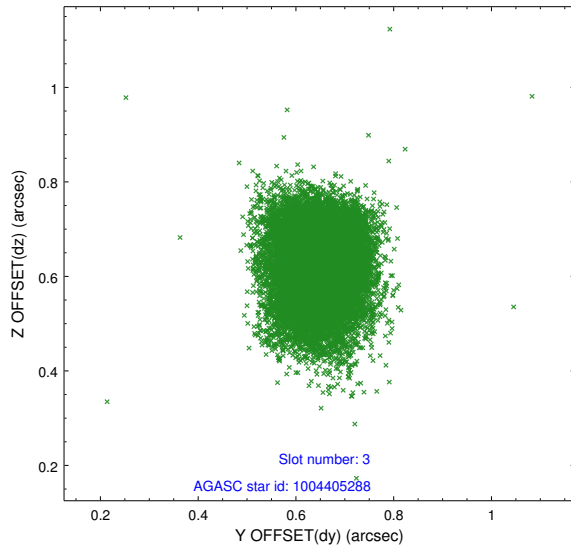


Slot Statistics

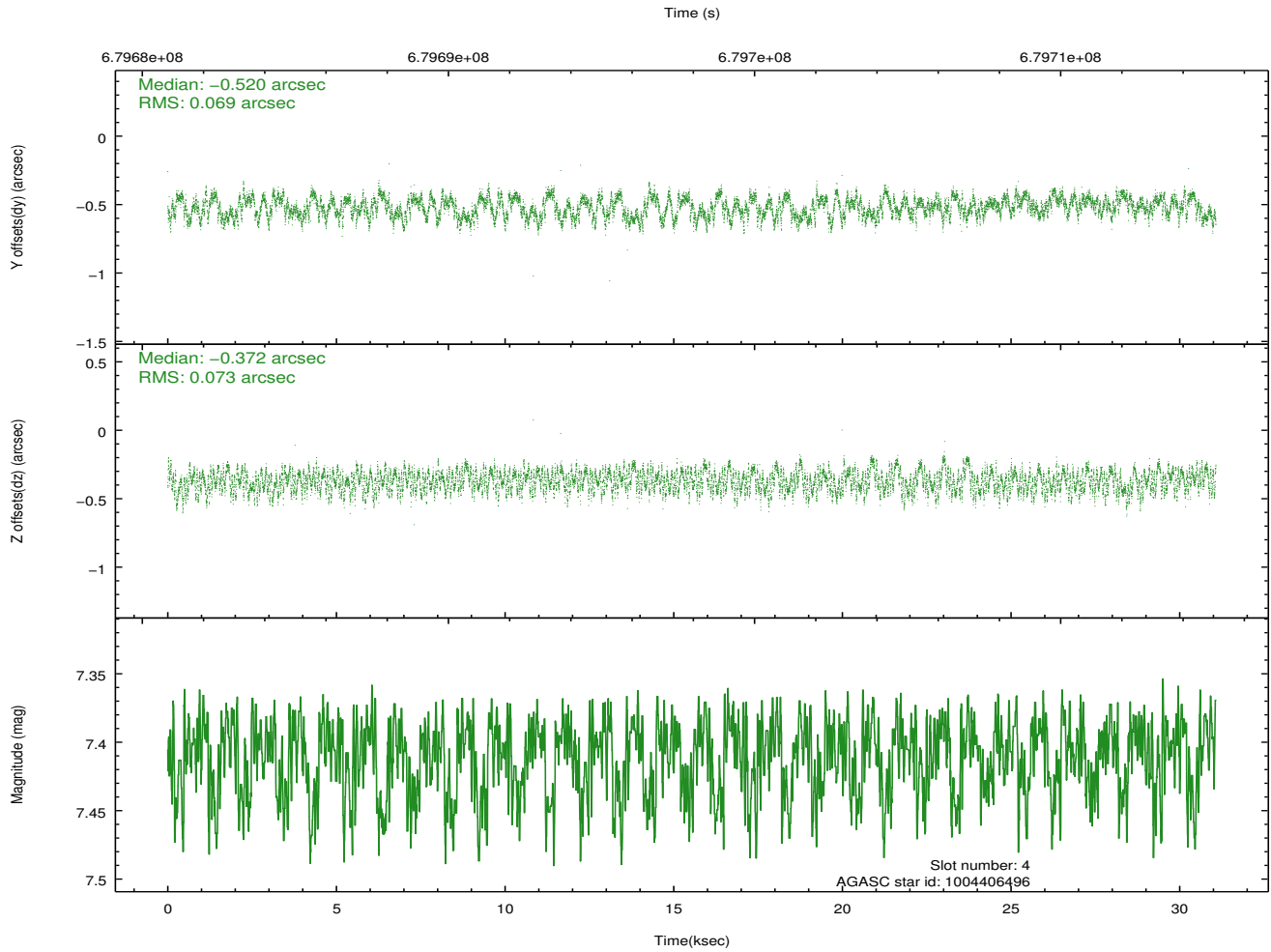
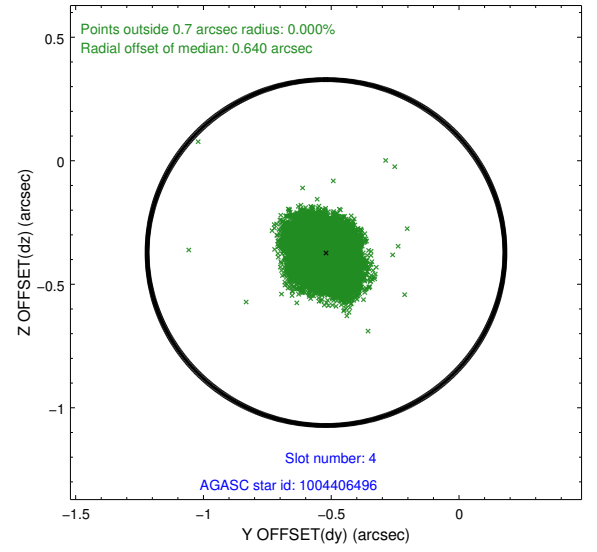
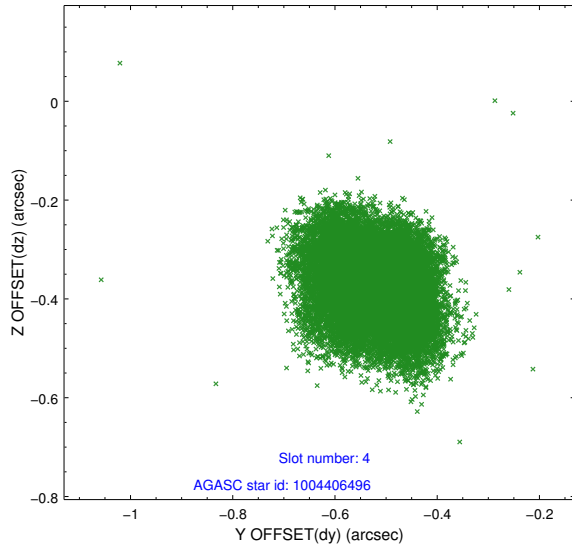
pt	status	used	id	mag	n_pts	frac_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mea
0	FID		ACIS-S-2	7.08	7580	1.000	-0.369	-0.265	0.050	0.064	0.000000	0.000000	-773.09	-1745
1	FID		ACIS-S-4	7.15	7580	1.000	0.795	0.248	0.010	0.025	0.000000	0.000000	2141.27	163
2	FID		ACIS-S-5	7.14	7578	1.000	-0.457	0.025	0.048	0.065	0.000000	0.000000	-1826.00	157
3	GUIDE	used	1004405288	7.63	15154	1.000	0.648	0.622	0.093	0.154	121.091785	-39.410922	-728.23	-2013
4	GUIDE	used	1004406496	7.41	15157	1.000	-0.520	-0.372	0.109	0.165	120.210035	-40.527356	2165.28	1686
5	GUIDE	used	1004413080	8.79	15147	1.000	-0.460	-0.326	0.122	0.197	120.242432	-40.499402	2066.13	1596
6	GUIDE	used	1004425112	8.85	15143	1.000	0.201	0.365	0.129	0.230	121.364029	-39.923076	-1245.05	-89
7	GUIDE	used	1004409560	9.83	15026	1.000	0.131	-0.282	0.274	0.436	120.328272	-40.211628	1713.10	594

2.4 Star Slots

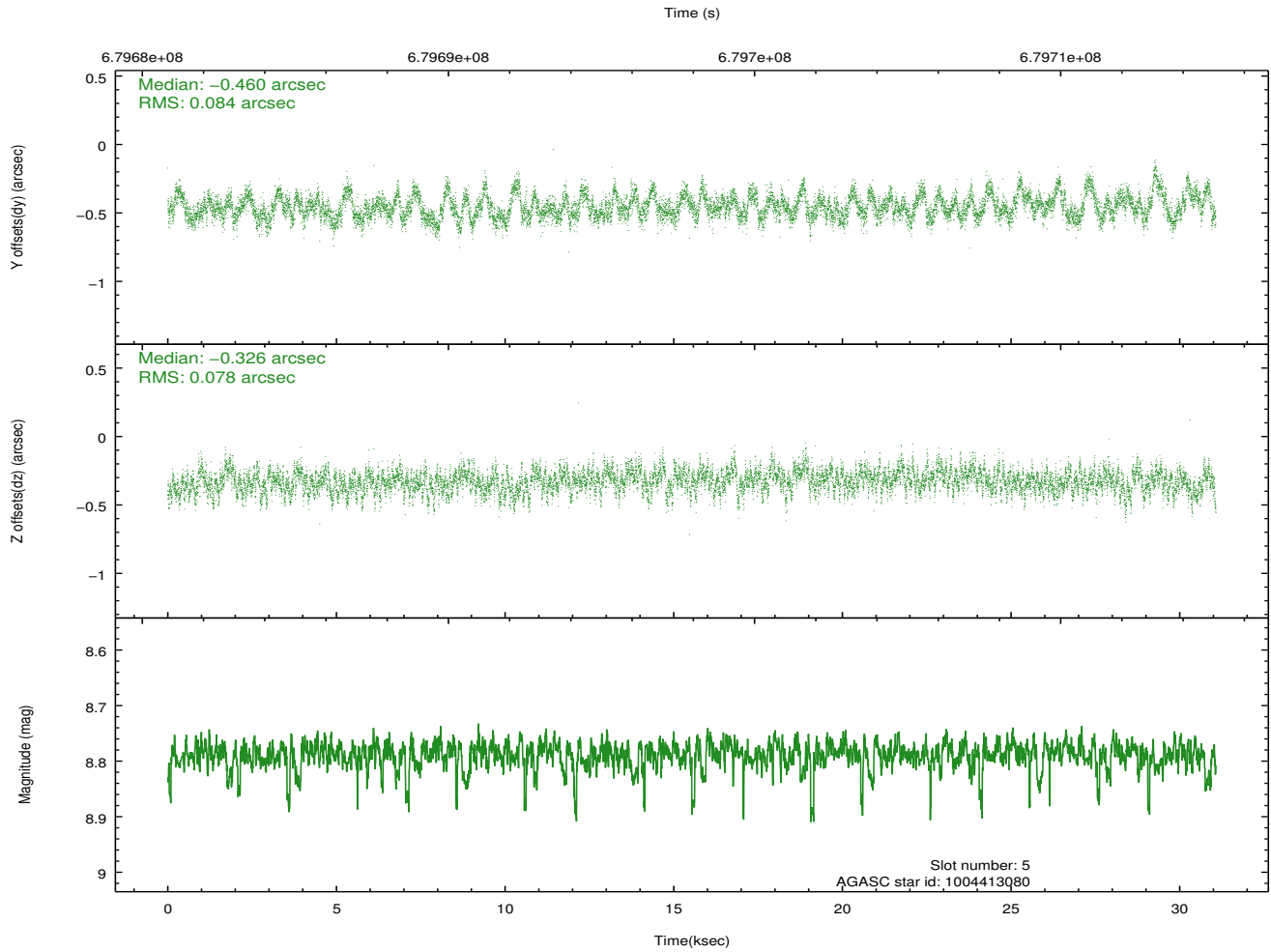
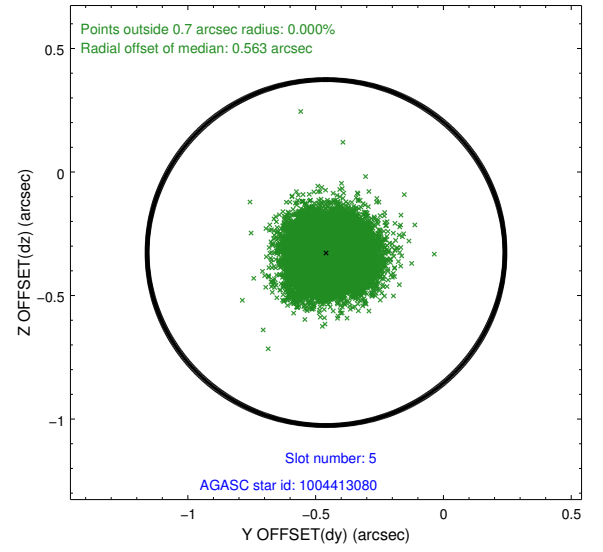
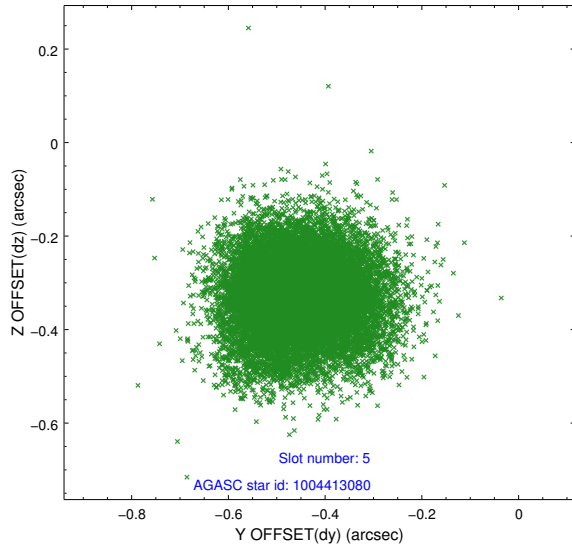
2.4.1 Slot 3



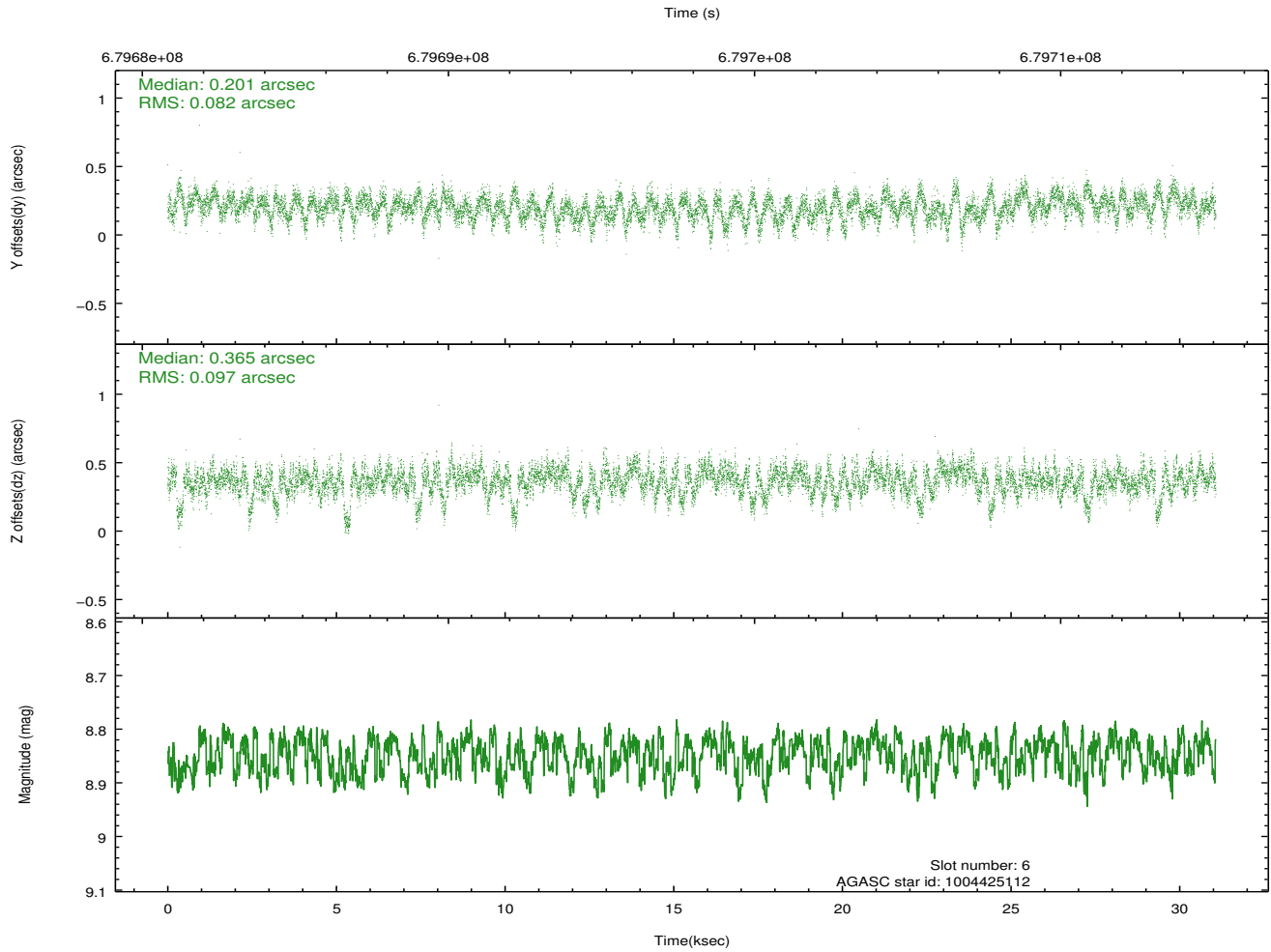
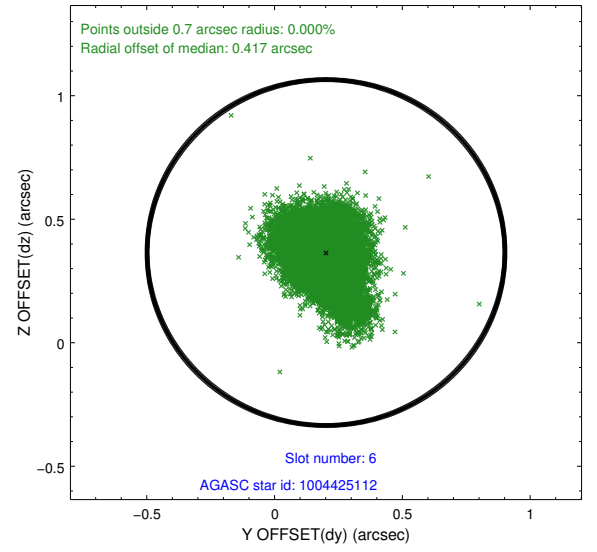
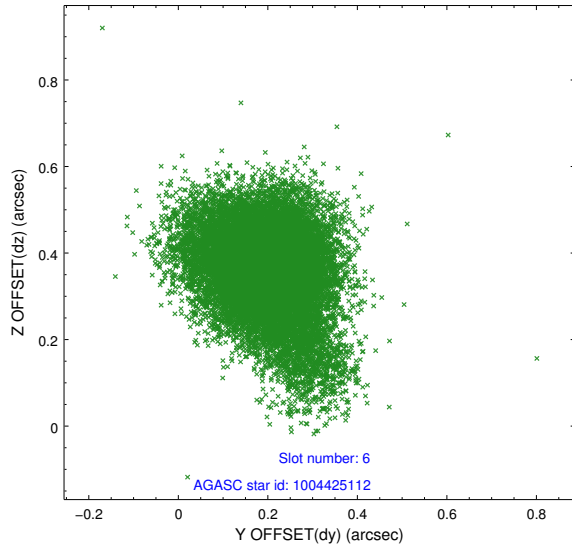
2.4.2 Slot 4



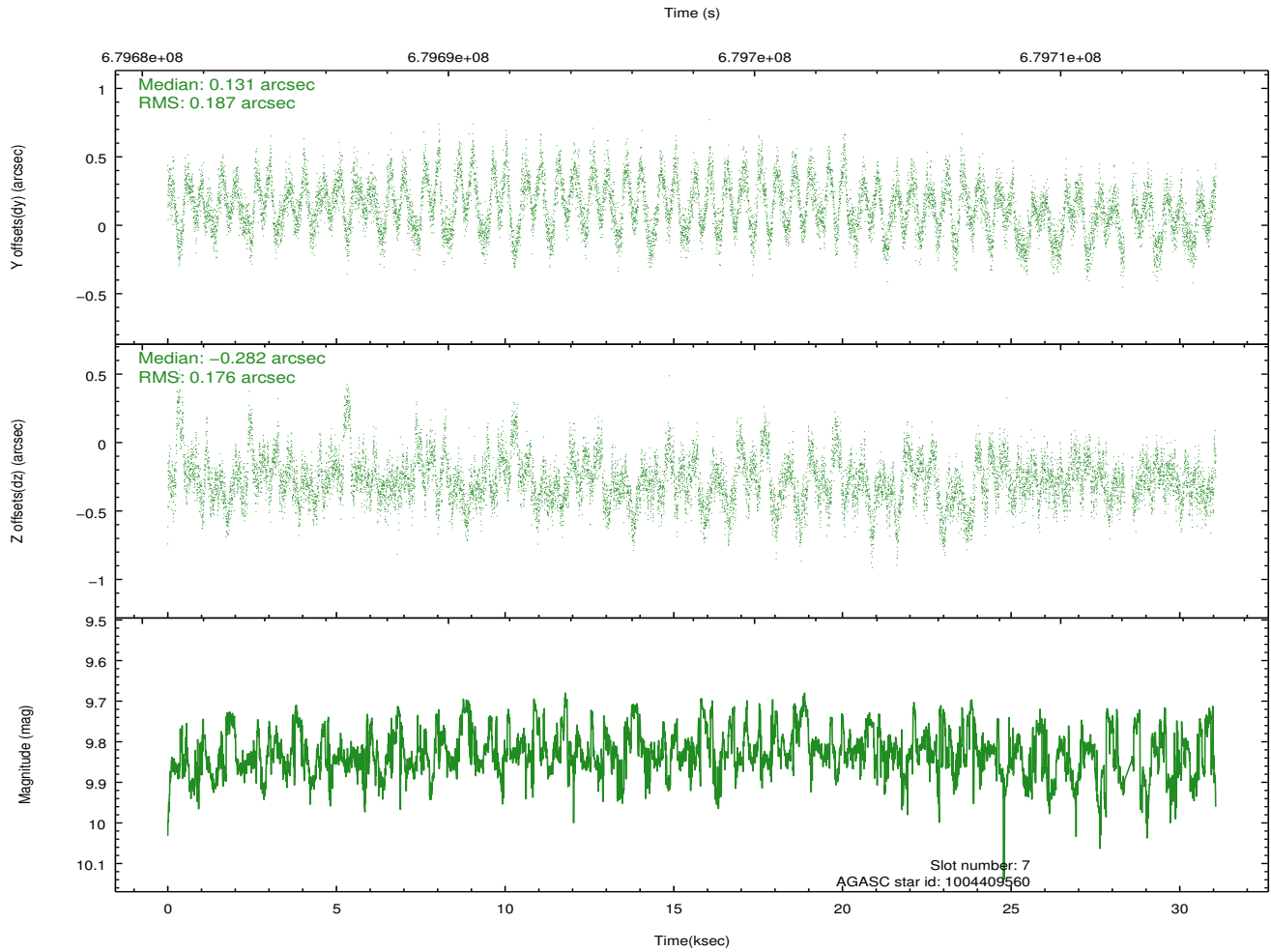
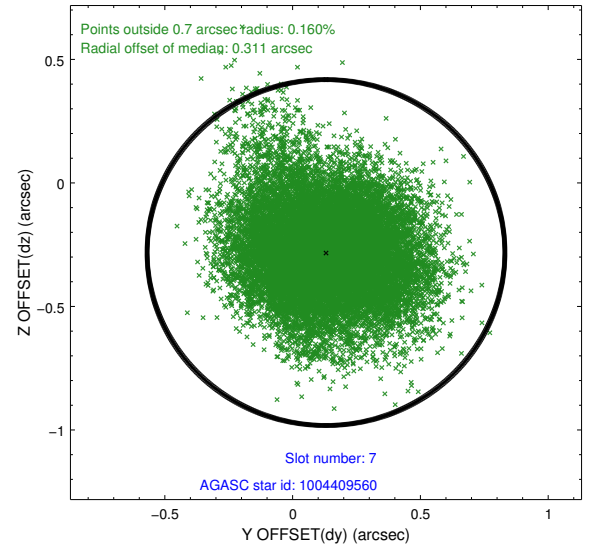
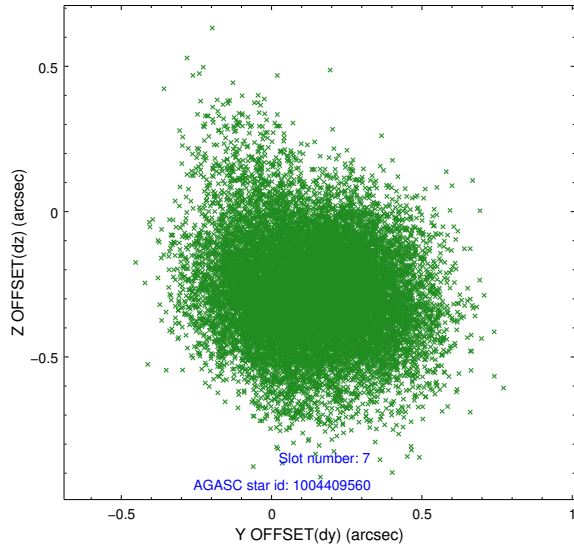
2.4.3 Slot 5



2.4.4 Slot 6

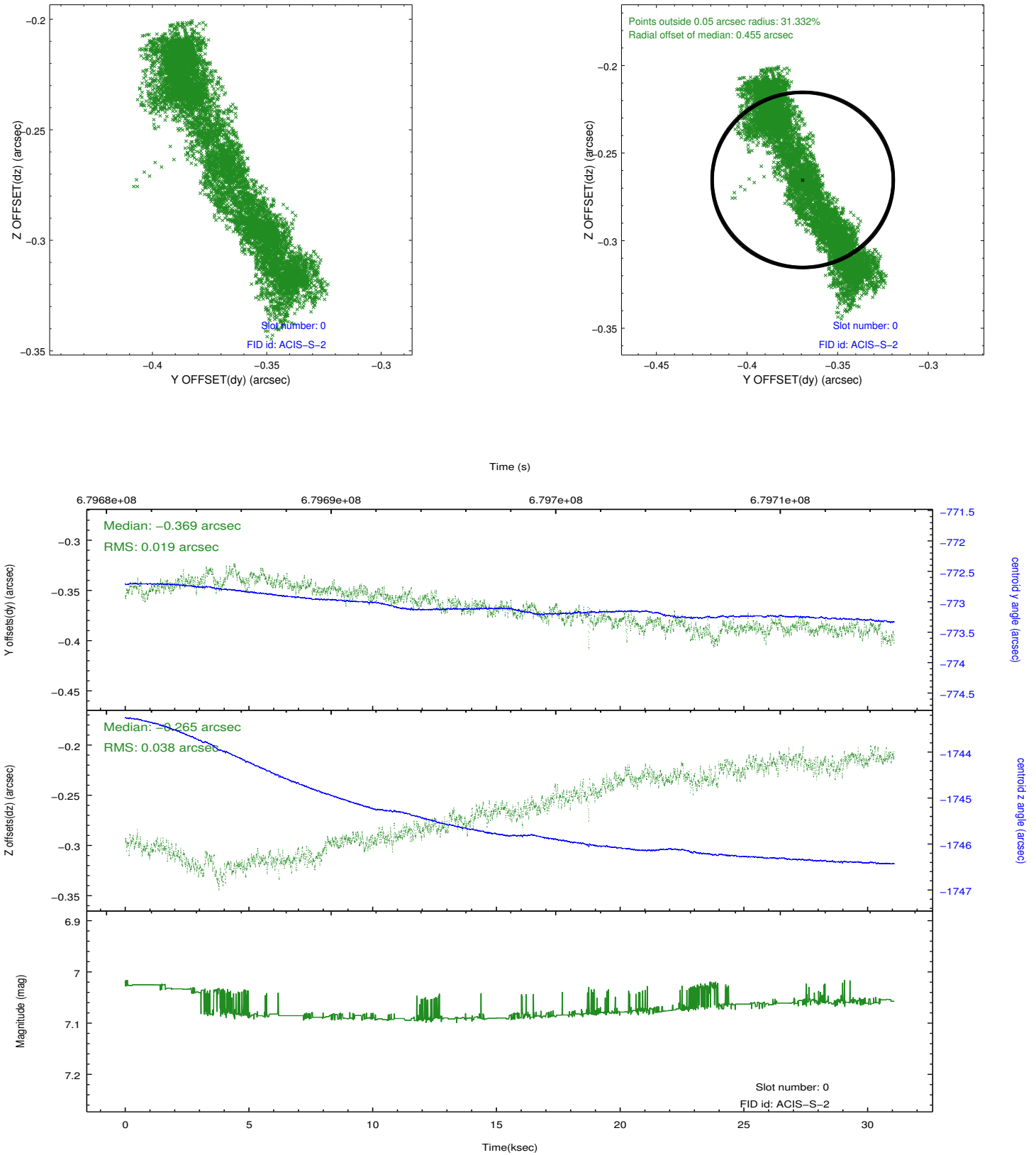


2.4.5 Slot 7

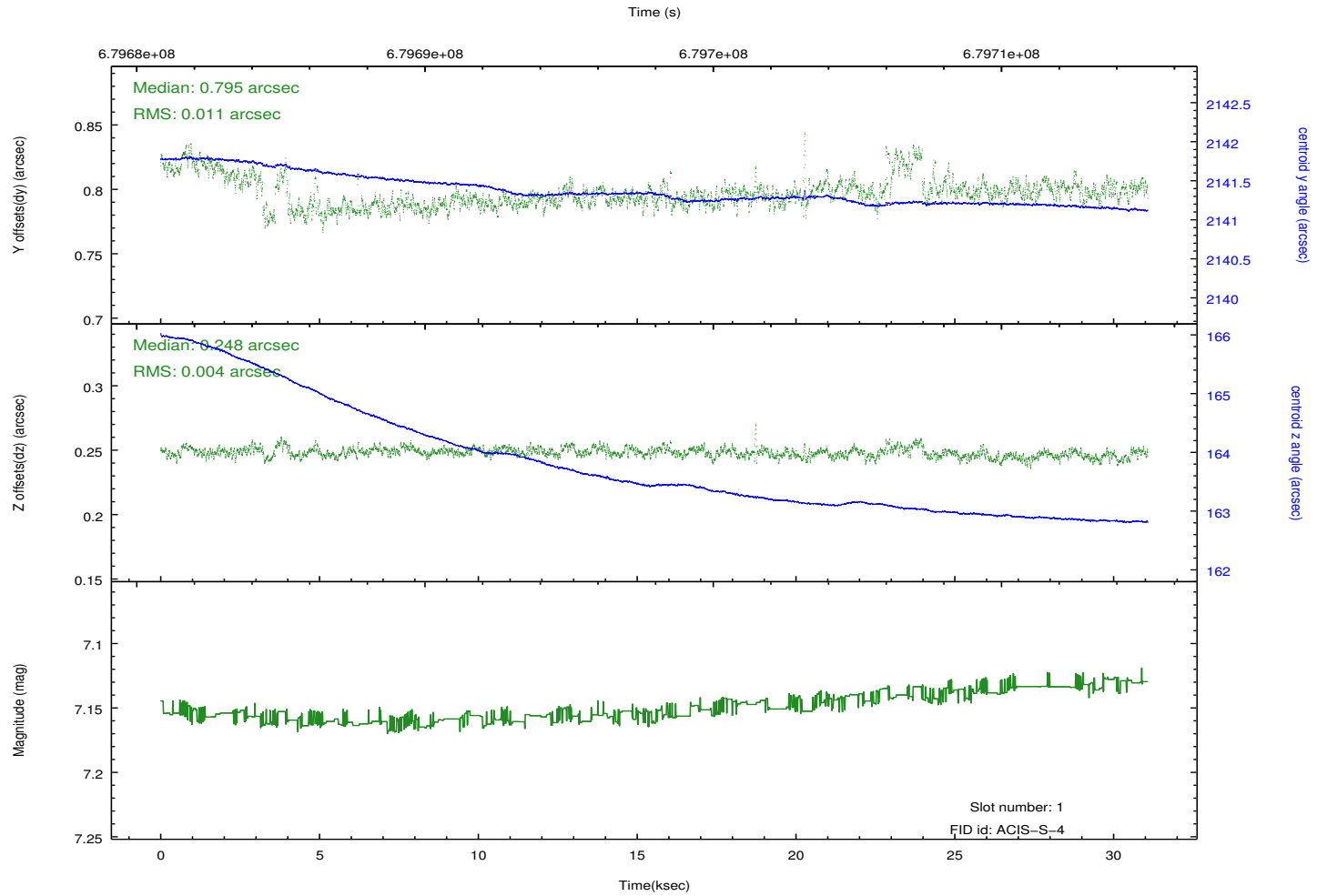
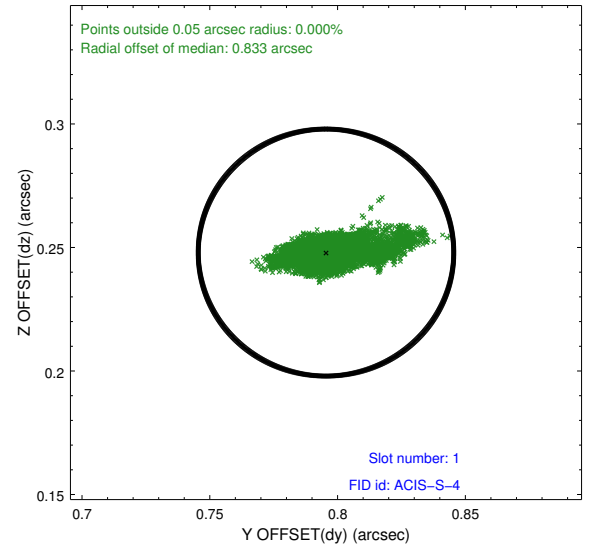
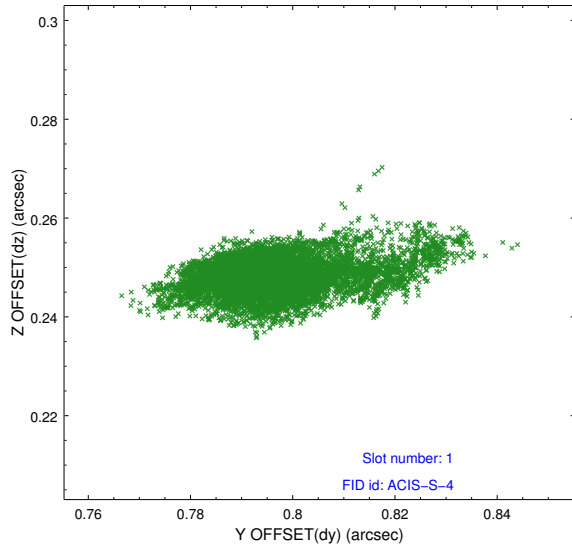


2.5 FID Slots

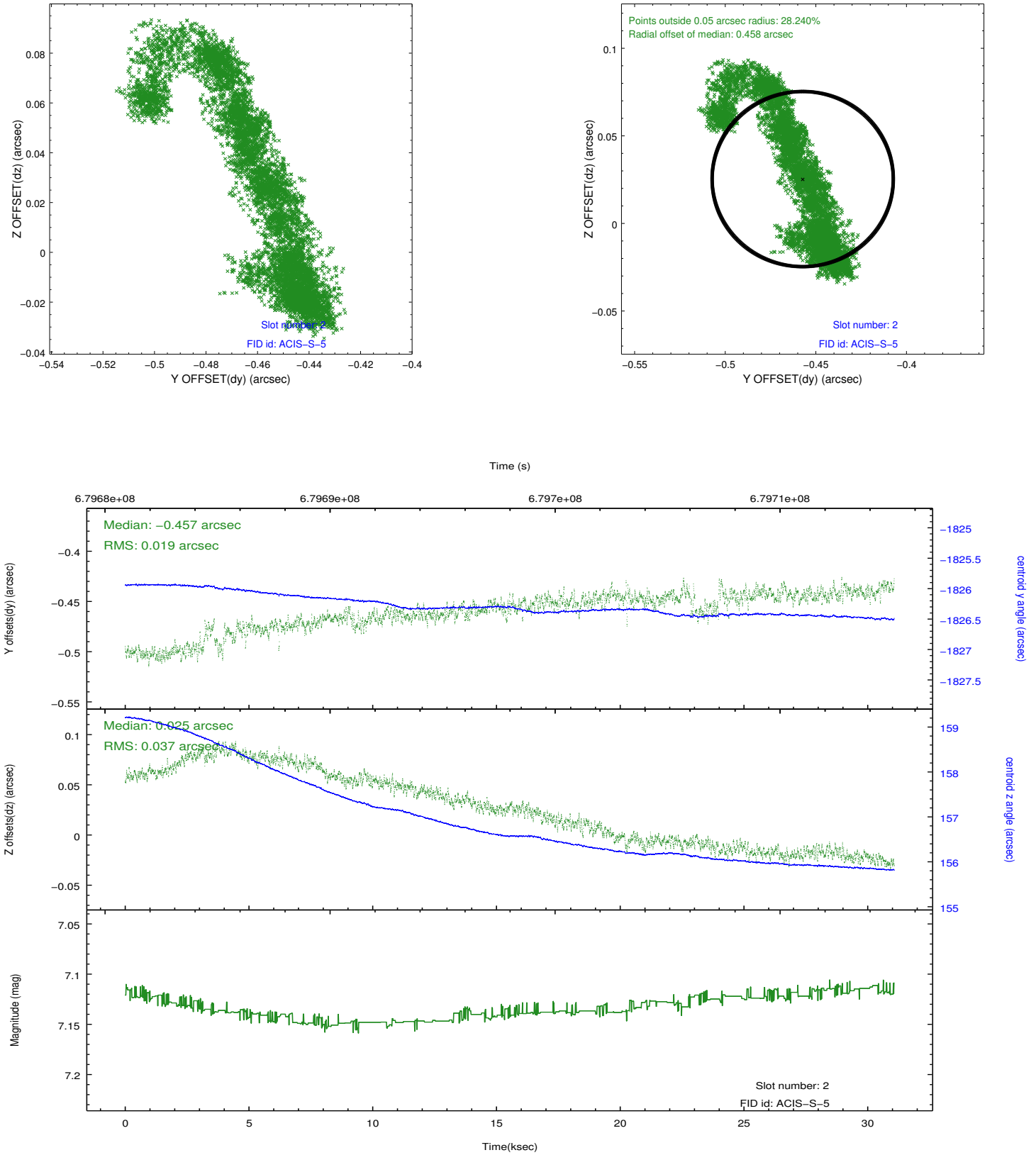
2.5.1 Slot 0



2.5.2 Slot 1

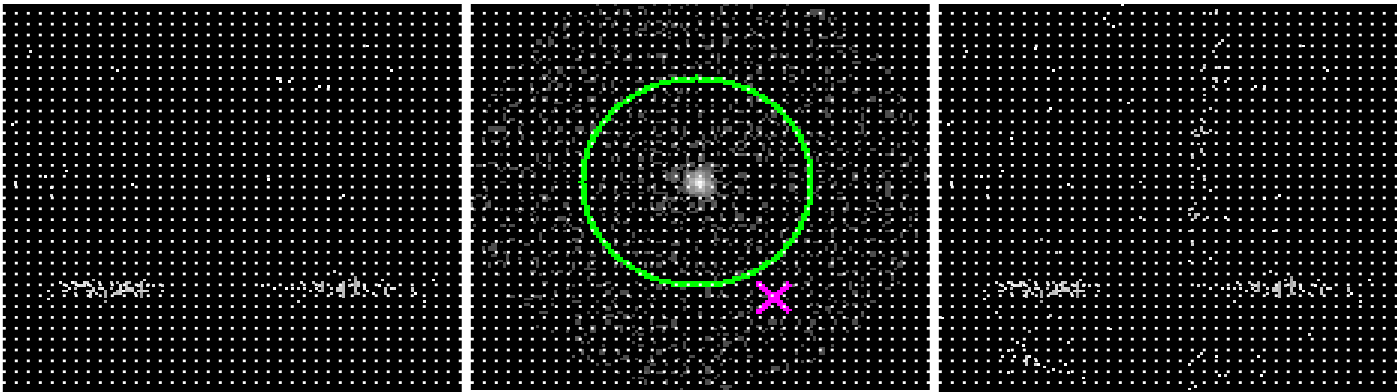


2.5.3 Slot 2



3 Gratings

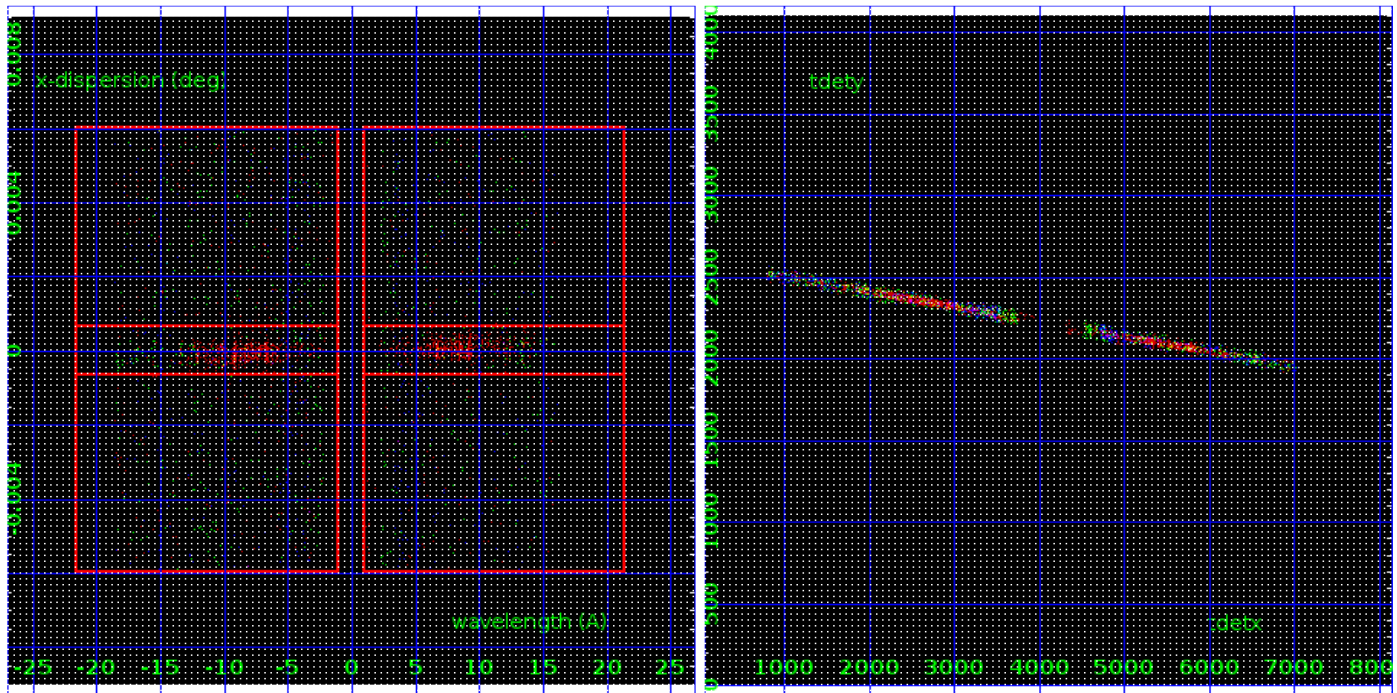
3.1 HEG Arm



HEG Order Sort 123

HEG Zero Order

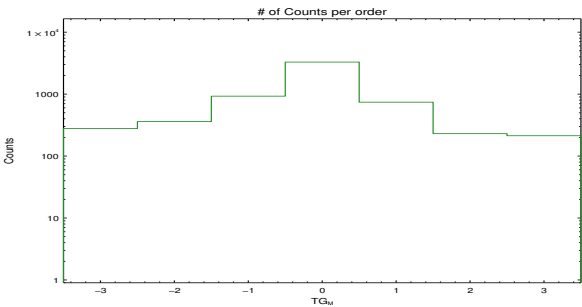
HEG Order Sort ALL

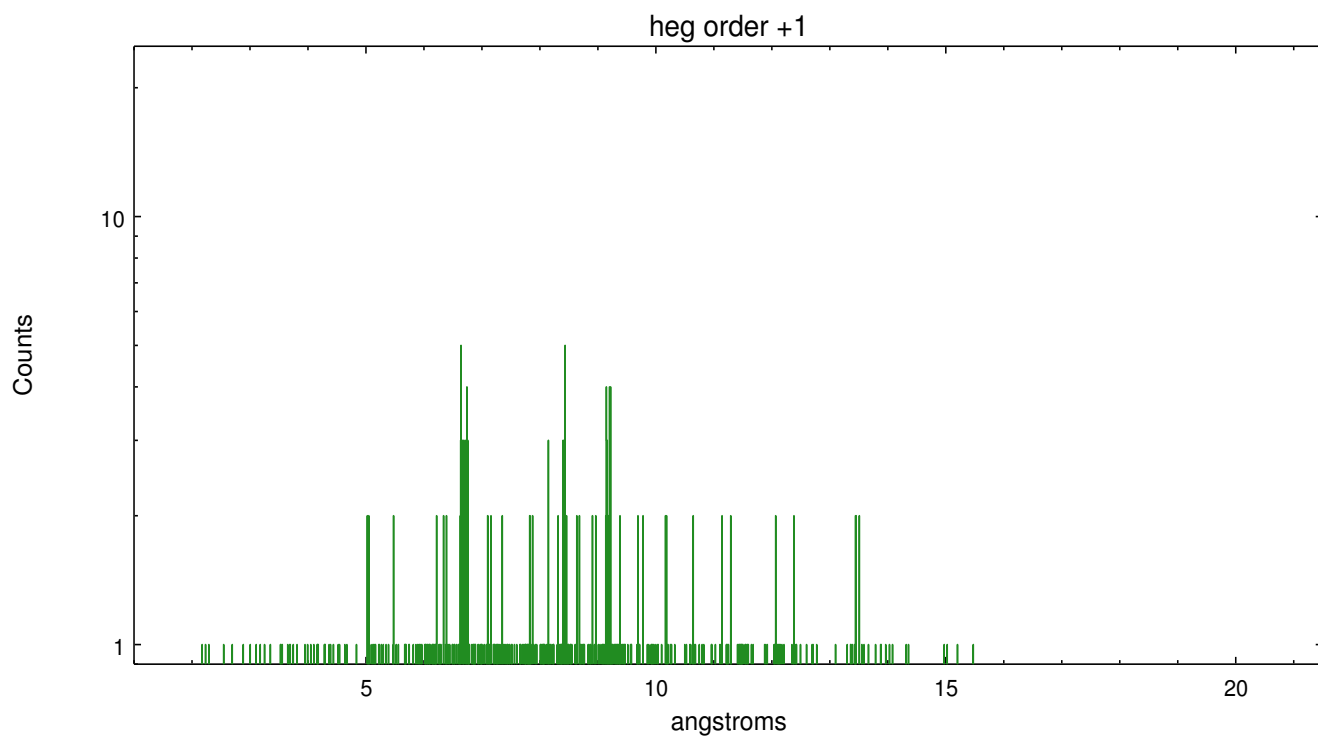
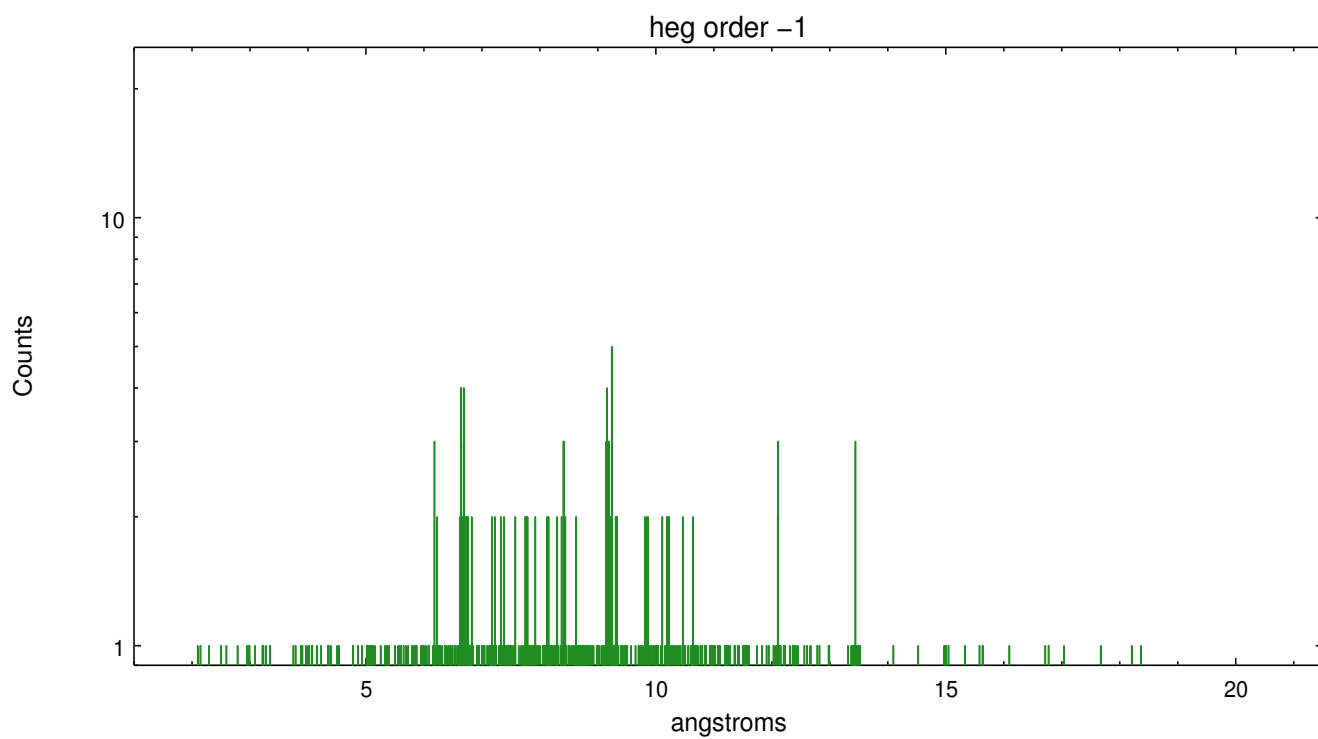


Spot Image HEG

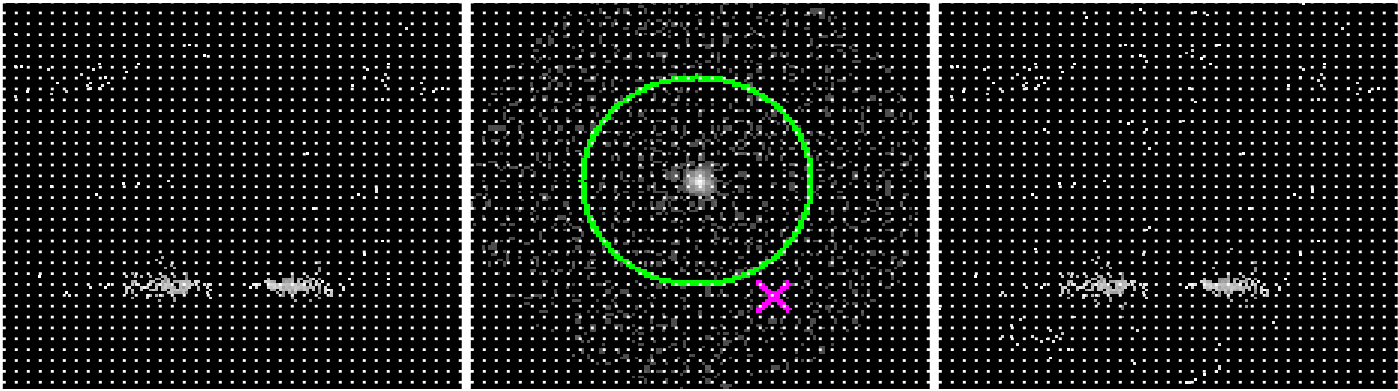
Full Detector HEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	278	360	927	3290	741	230	213





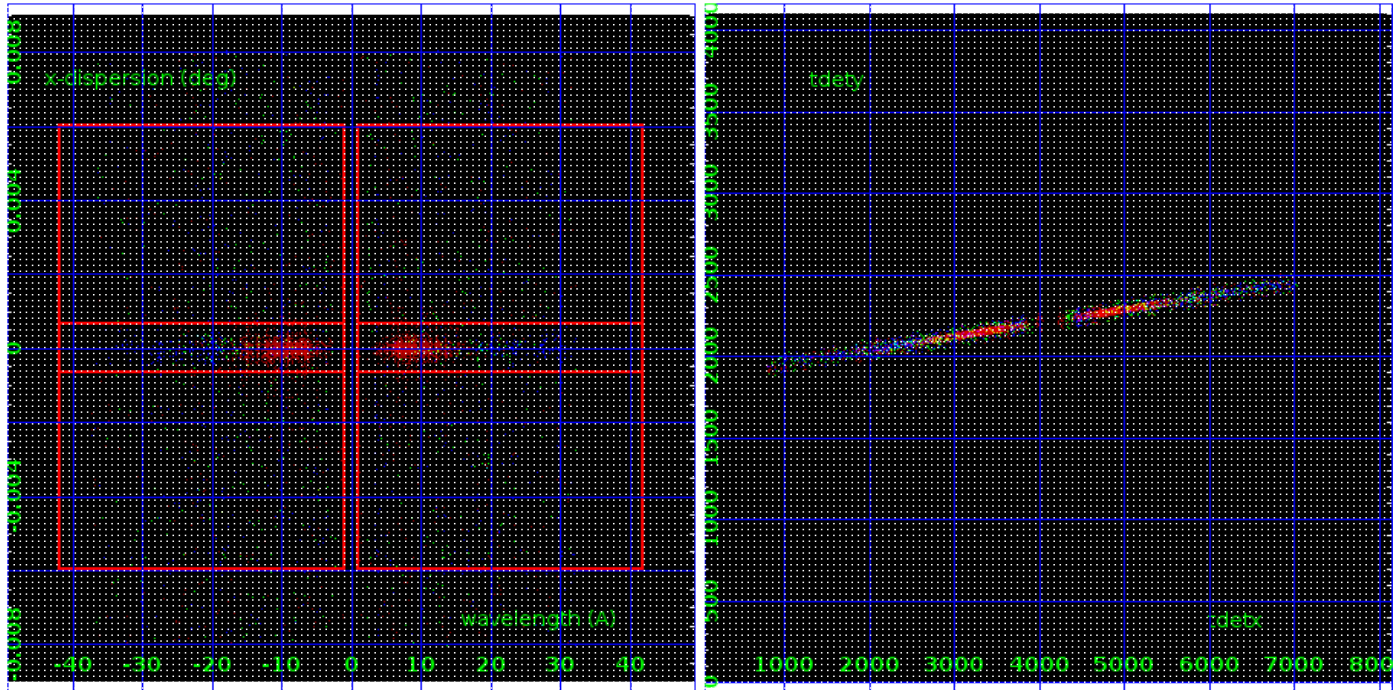
3.2 MEG Arm



MEG Order Sort 123

MEG Zero Order

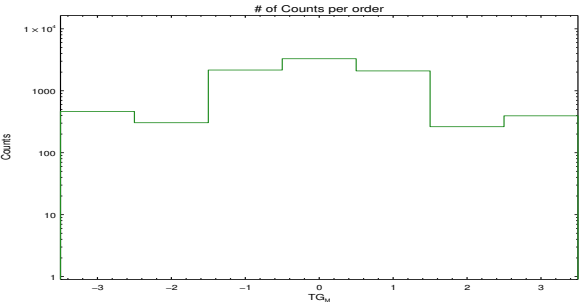
MEG Order Sort ALL

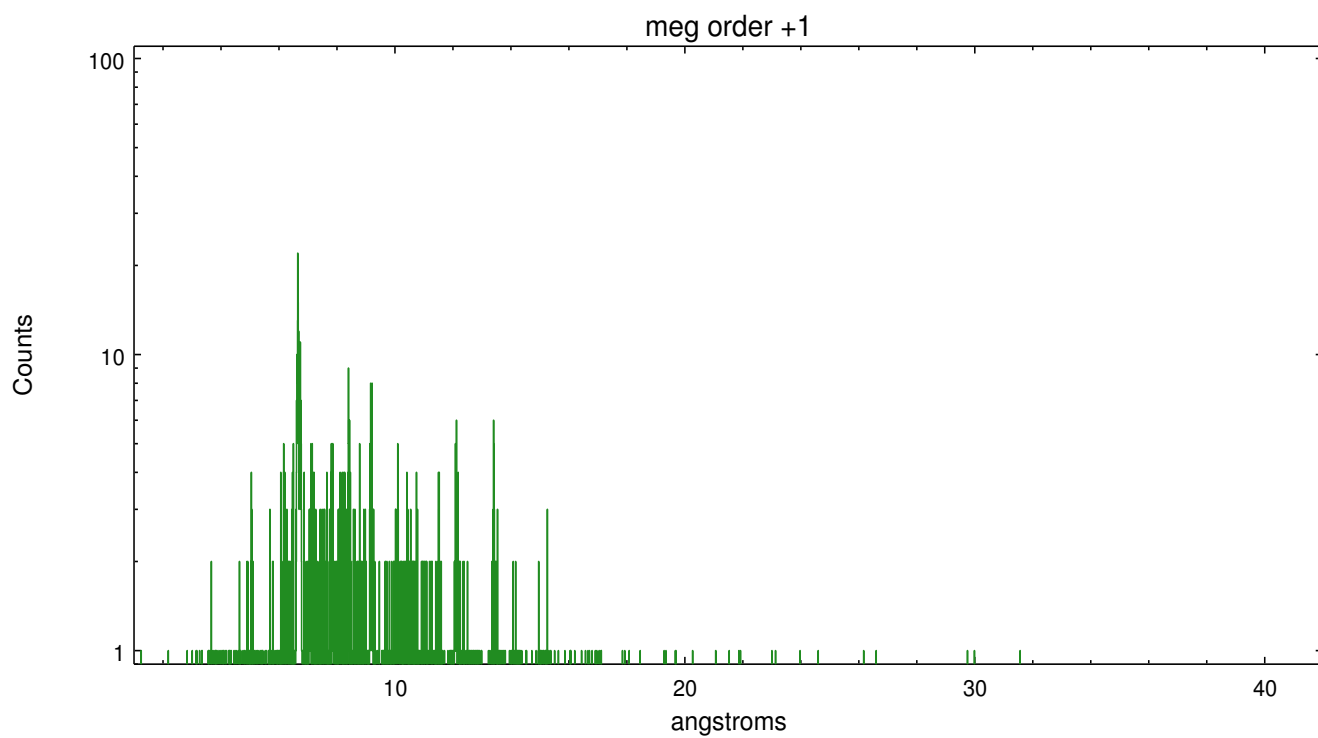
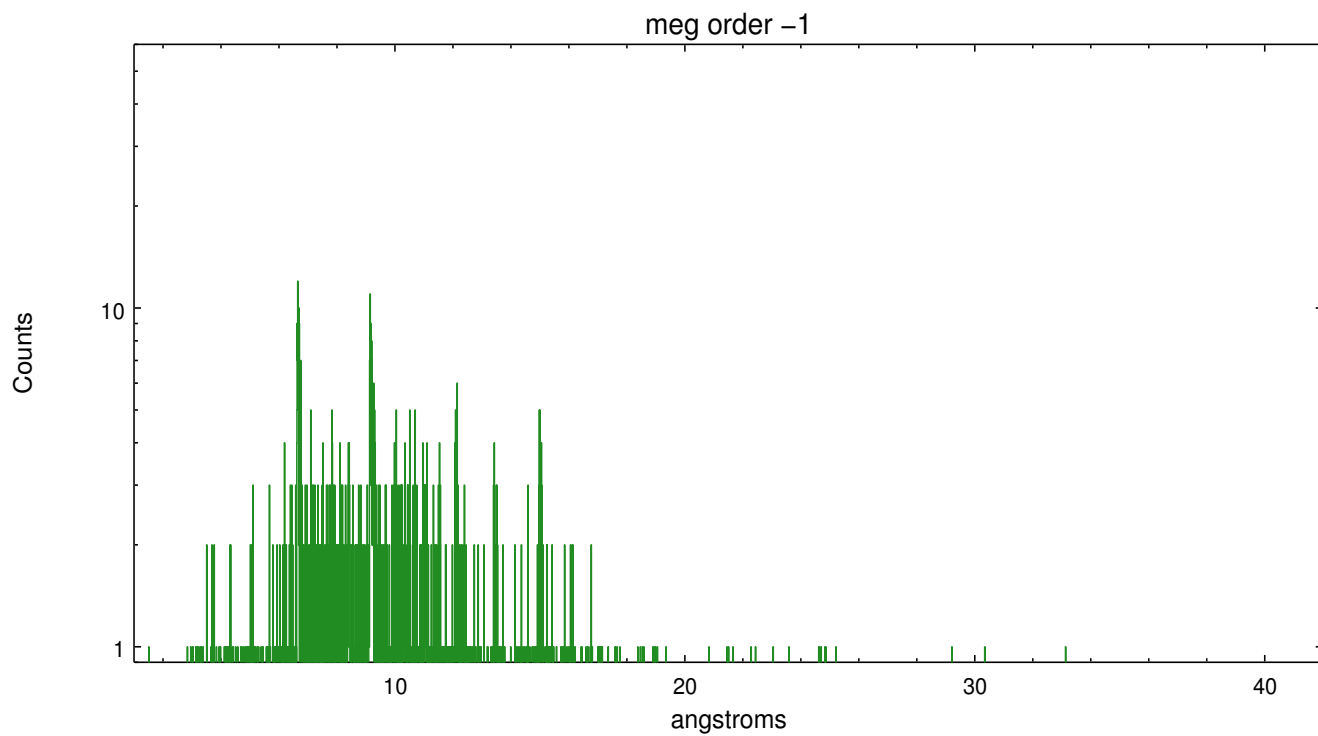


Spot Image MEG

Full Detector MEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	463	305	2161	3290	2092	263	394





A Summary

A.1 Status

V&V Scientist	Beth Sundheim
V&V Date (YYYY-MM-DD)	2019.09.28
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	30.905600460529

A.2 Comments

ACIS T_GAIN files released in CalDB 4.8.3 (23 May 2019) and CalDB 4.8.4 (03 September 2019) have errors in the T_GAIN corrections for ACIS-I chips 0, 1, 2, and 3, and ACIS-S chip 6 (S2). All ACIS OBS_IDs including those chips, which were processed (or reprocessed) in SDP between 2019-05-24T01:06:00 and 2019-09-06T17:31:43 with CalDB 4.8.3, 4.8.3.1, or 4.8.4, were affected. The errors in the T_GAINs, which produce a 1%-2% reduction in the PHA and hence the ENERGY column values for dithered observations, result from alternating real value and zero value columns in CHIPX space across FI chips ACIS-0, 1, 2, 3, and 6. The error has been corrected in this version of the data products.