

V&V Reference Report

L2 ASCDS Version : 10.8

Observation 20155 - L2 Version 2
Chandra X-Ray Center

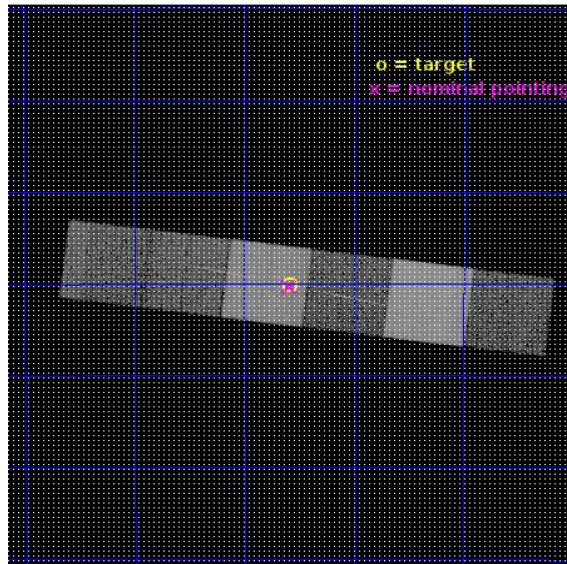
L2 Processing Date : Sep 23 2019

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1 Front

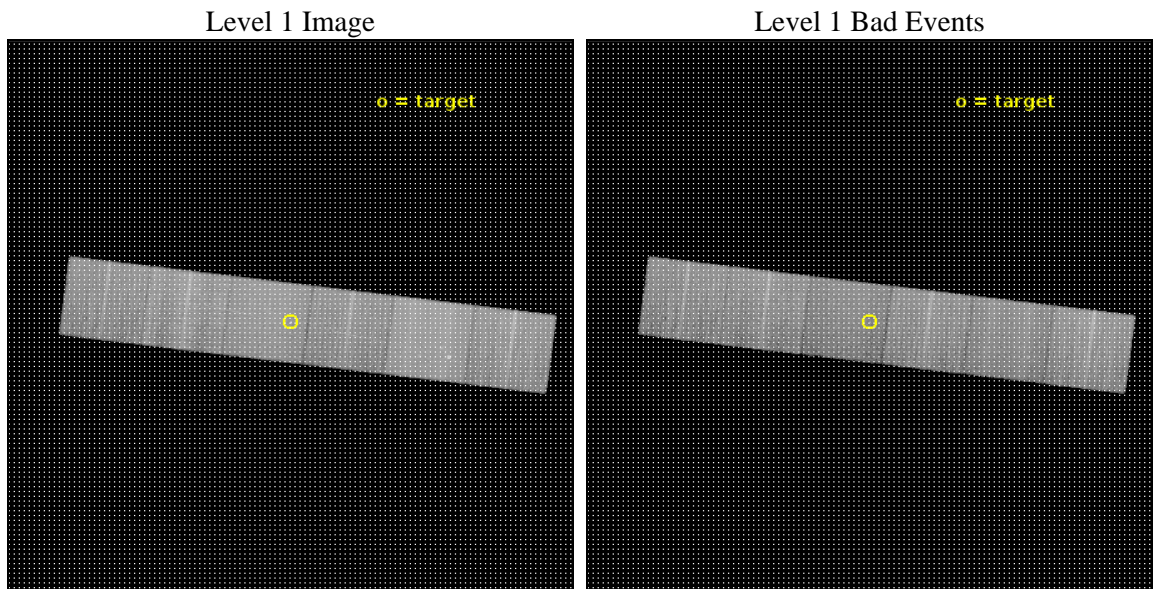
seq_num	201176	Sequence number
obs_id	20155	Observation id
title	Legacy HETG Spectrum of a Massive Star: zeta Pup	Proposal title
observer	Wayne Waldron	Principal investigator
object	zeta Pup	Source name
dtcycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	120.895833	Observer's specified target RA [deg]
dec_targ	-40.003139	Observer's specified target Dec [deg]
ra_nom	120.8967748081	Nominal RA [deg]
dec_nom	-40.005588078004	Nominal Dec [deg]
roll_nom	187.15722367476	Nominal Roll [deg]
revision	2	Processing version of data
ontime	19945.600297213	Sum of GTIs [s]
livetime	19693.037096451	Livetime [s]
ontime4	19945.600297213	Sum of GTIs [s]
ontime5	19945.600297213	Sum of GTIs [s]
ontime6	19945.600297213	Sum of GTIs [s]
ontime7	19945.600297213	Sum of GTIs [s]
ontime8	19945.600297213	Sum of GTIs [s]
ontime9	19945.600297213	Sum of GTIs [s]
l2events	259547	Number of level 2 events



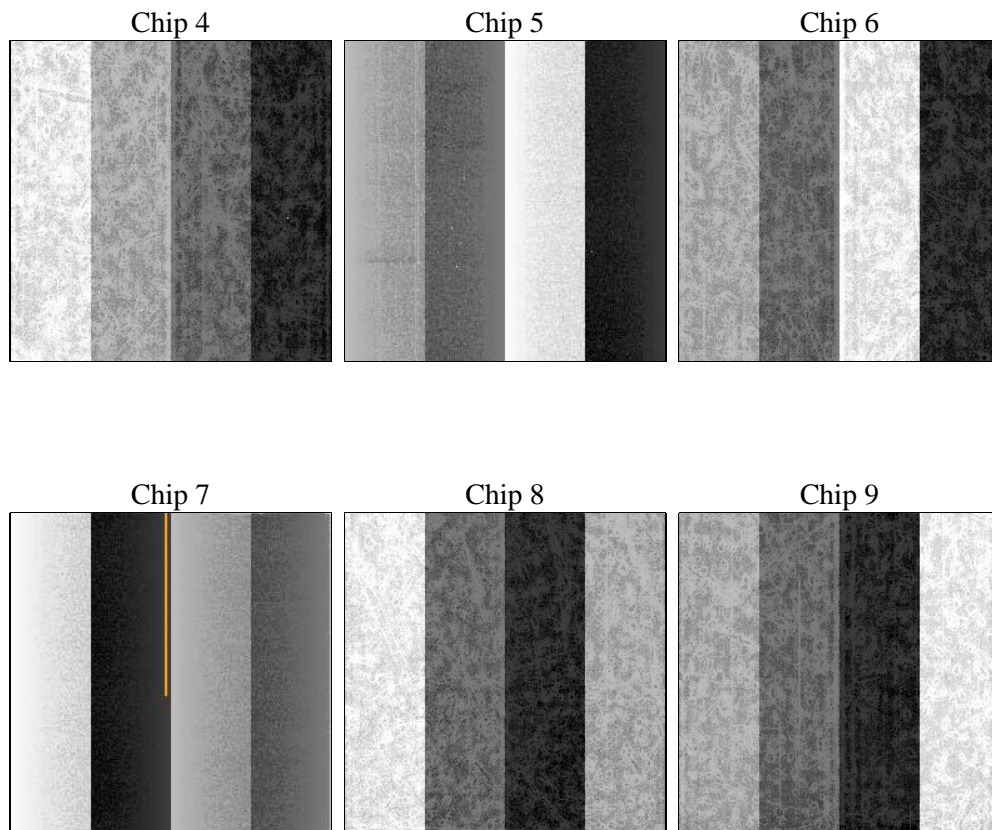
2 OBI

2.1 OBI

2.1.1 Images



2.1.2 Bias



2.1.3 Parameters

obi_num	0	Obi number	sched_exp_time	20000.000000	[s] Scheduled observation exposure time
ascdsver	10.8	Processing system revision	ontime	19945.600297213	Sum of GTIs [s]
caldbver	4.8.4.1	 	ontime4	19945.600297213	Sum of GTIs [s]
date	2019-09-23T18:56:09	Date and time of file creation	ontime5	19945.600297213	Sum of GTIs [s]
revision	2	Processing version of data	ontime6	19945.600297213	Sum of GTIs [s]
			ontime7	19945.600297213	Sum of GTIs [s]
			ontime8	19945.600297213	Sum of GTIs [s]
			ontime9	19945.600297213	Sum of GTIs [s]
			l1events	1138314	Number of level 1 events
			tgmethod	TGDETECT	Method used to create src1a file
			ra_pos	(4102.00, 4114.20)	src1a sky pixel position

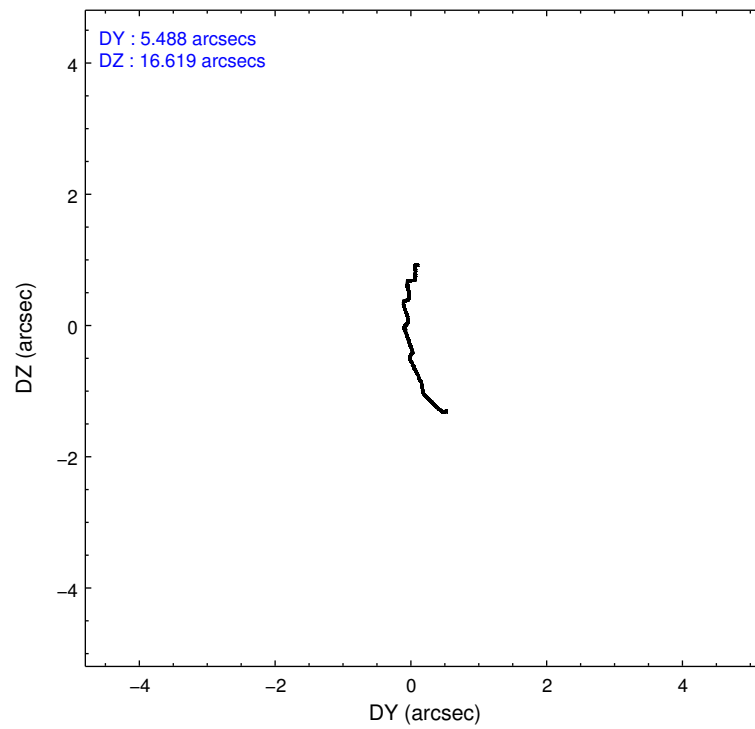
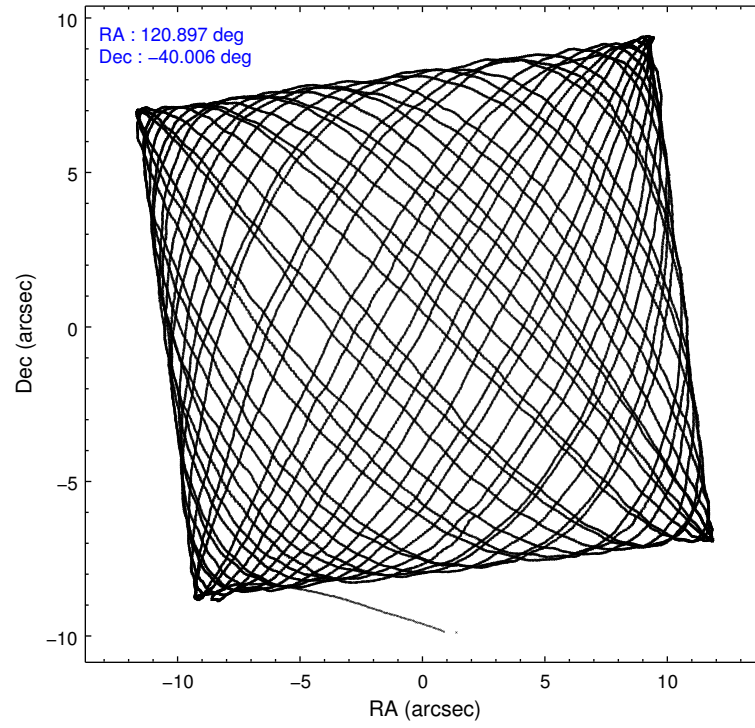
2.1.4 Events

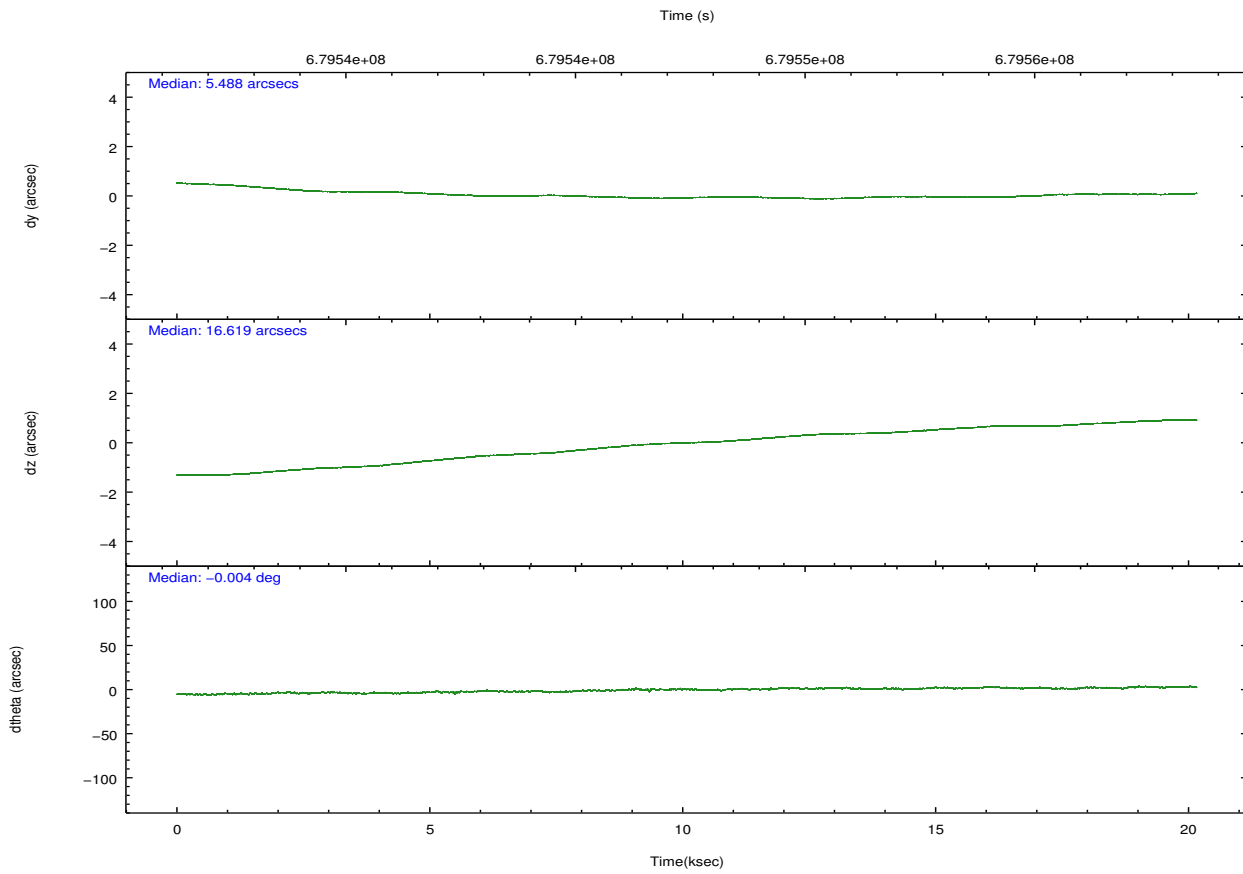
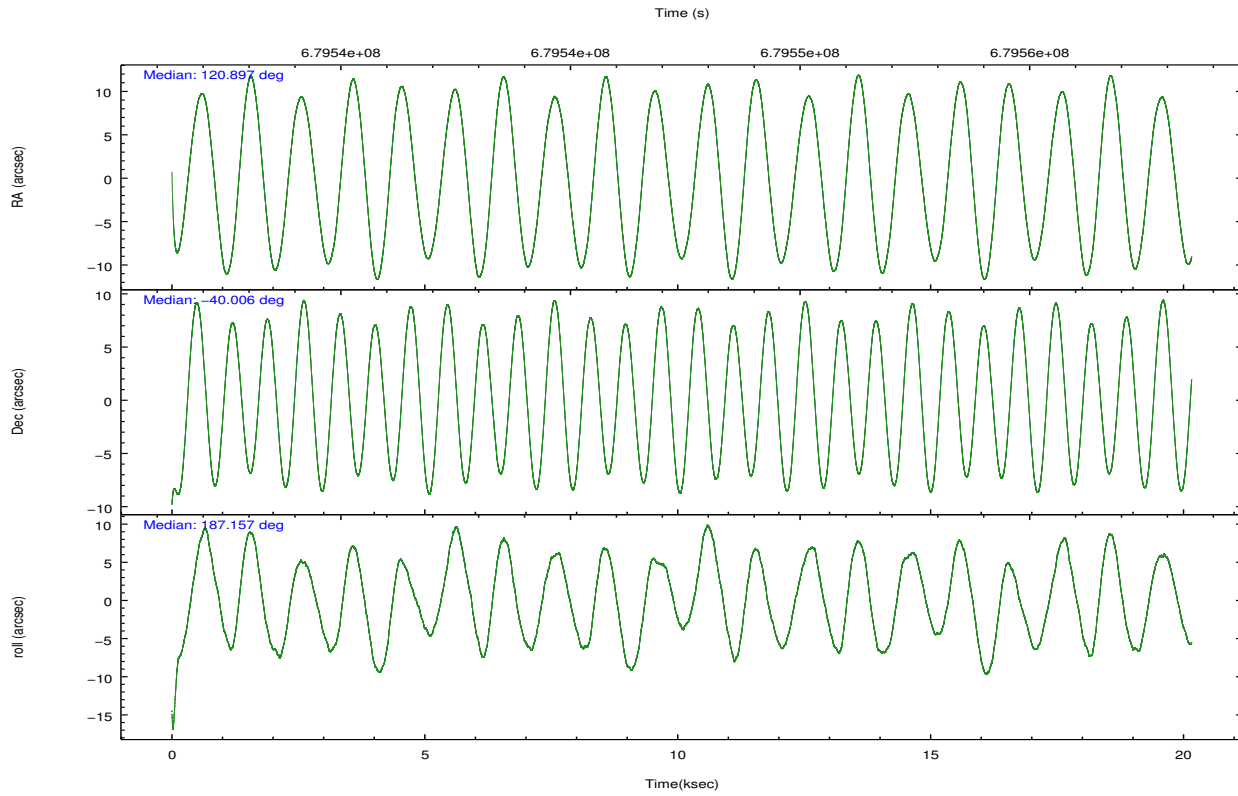
	ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9		ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
level 1 events	182150	244006	161521	196165	199047	155425	grade 0 events	6695	7188	5918	7657	15003	6011
rejected events	164195	127868	143272	109833	147069	137291		3%	2%	3%	3%	7%	3%
rejected %	90%	52%	88%	55%	73%	88%	grade 1 events	161	929	76	328	172	97
								0%	0%	0%	0%	0%	0%
							grade 2 events	4312	36080	4816	18320	12596	4524
								2%	14%	2%	9%	6%	2%
							grade 3 events	1878	3689	1453	6819	5148	1620
								1%	1%	0%	3%	2%	1%
							grade 4 events	1864	3521	1435	6694	4889	1603
								1%	1%	0%	3%	2%	1%
							grade 5 events	7105	15449	6337	19012	10157	7398
								3%	6%	3%	9%	5%	4%
							grade 6 events	3219	65700	4629	46879	14367	4382
								1%	26%	2%	23%	7%	2%
							grade 7 events	156916	111450	136857	90456	136715	129790
								86%	45%	84%	46%	68%	83%

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	120.925052	120.8967748080985	CCD I2 on	N	N
[deg] Pointing Dec	-39.988698	-40.0055880780039	CCD I3 on	N	N
[deg] Pointing Roll	187.018785	187.1572236747592	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)	679537508.184000	679536278.57069	CCD S5 on	O1	Y
Observation start date	2019-07-15T00:23:59	2019-07-15T00:04:38	Number of optional ACIS chips dropped	0	0
[s] Observation end time (MET)	679557508.184000	679558527.73452	On-chip summing requested	N	N
Observation end date	2019-07-15T05:57:19	2019-07-15T06:15:27	Subarray requested	NONE	NONE
Read mode	TIMED	TIMED	Alternating exposures requested	N	N
			[s] Primary exposure time	0.000000	3.2

2.3 Aspect





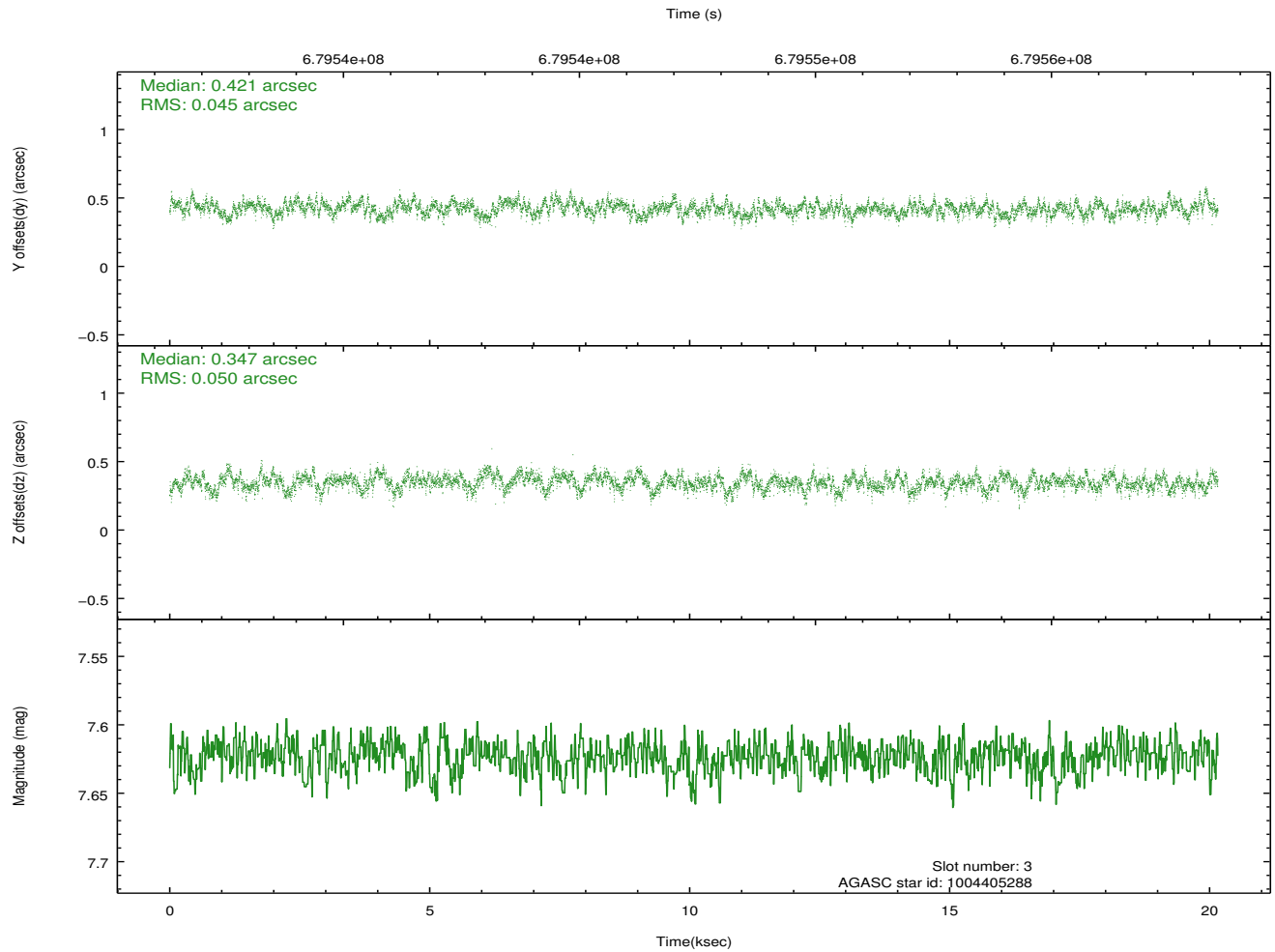
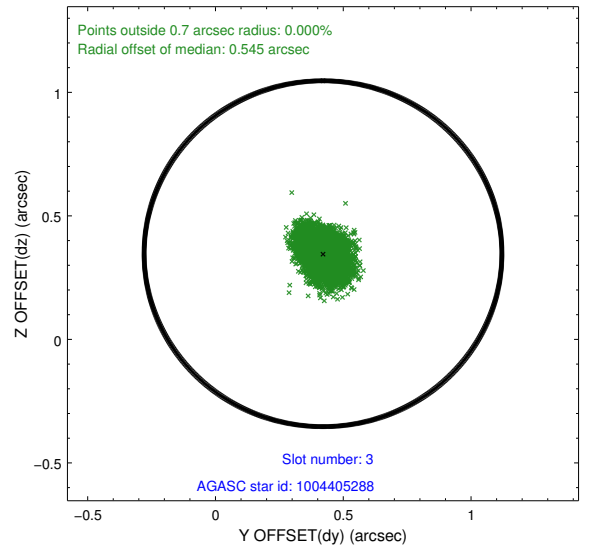
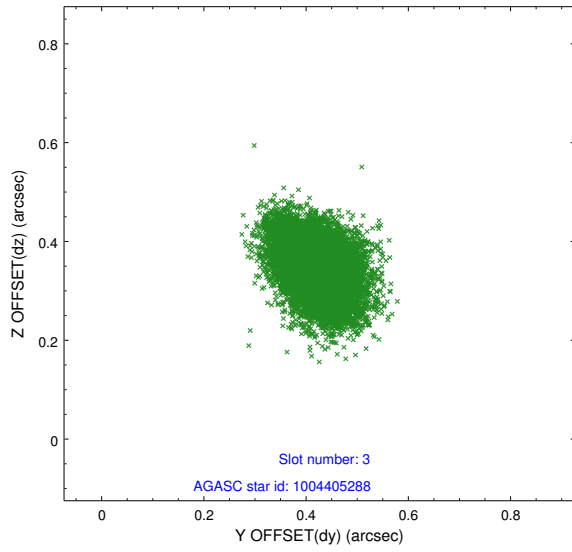
Slot Statistics

slot	status	used	id	mag	n_pts	frac_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_x
0	FID		ACIS-S-2	7.09	4918	1.000	-0.264	-0.106	0.030	0.038	0.000000	0.000000	-758.50	-1738
1	FID		ACIS-S-4	7.22	4916	1.000	0.544	0.156	0.017	0.025	0.000000	0.000000	2155.48	170
2	FID		ACIS-S-5	7.21	4918	1.000	-0.311	-0.041	0.026	0.033	0.000000	0.000000	-1811.17	164
3	GUIDE	used	1004405288	7.62	9836	1.000	0.421	0.347	0.071	0.119	121.091785	-39.410922	-713.89	-2006
4	GUIDE	used	1004406496	7.39	9832	1.000	-0.253	-0.291	0.095	0.145	120.210035	-40.527356	2179.55	1693
5	GUIDE	used	1004413080	8.80	9822	1.000	-0.249	-0.252	0.107	0.171	120.242432	-40.499402	2080.45	1603
6	GUIDE	used	1004425112	8.83	9825	1.000	0.076	0.205	0.107	0.169	121.364029	-39.923076	-1230.81	-82
7	OMITTED			0.00	0	0.000	0.000	0.000	0.000	0.000	0.000000	0.000000	0.00	0

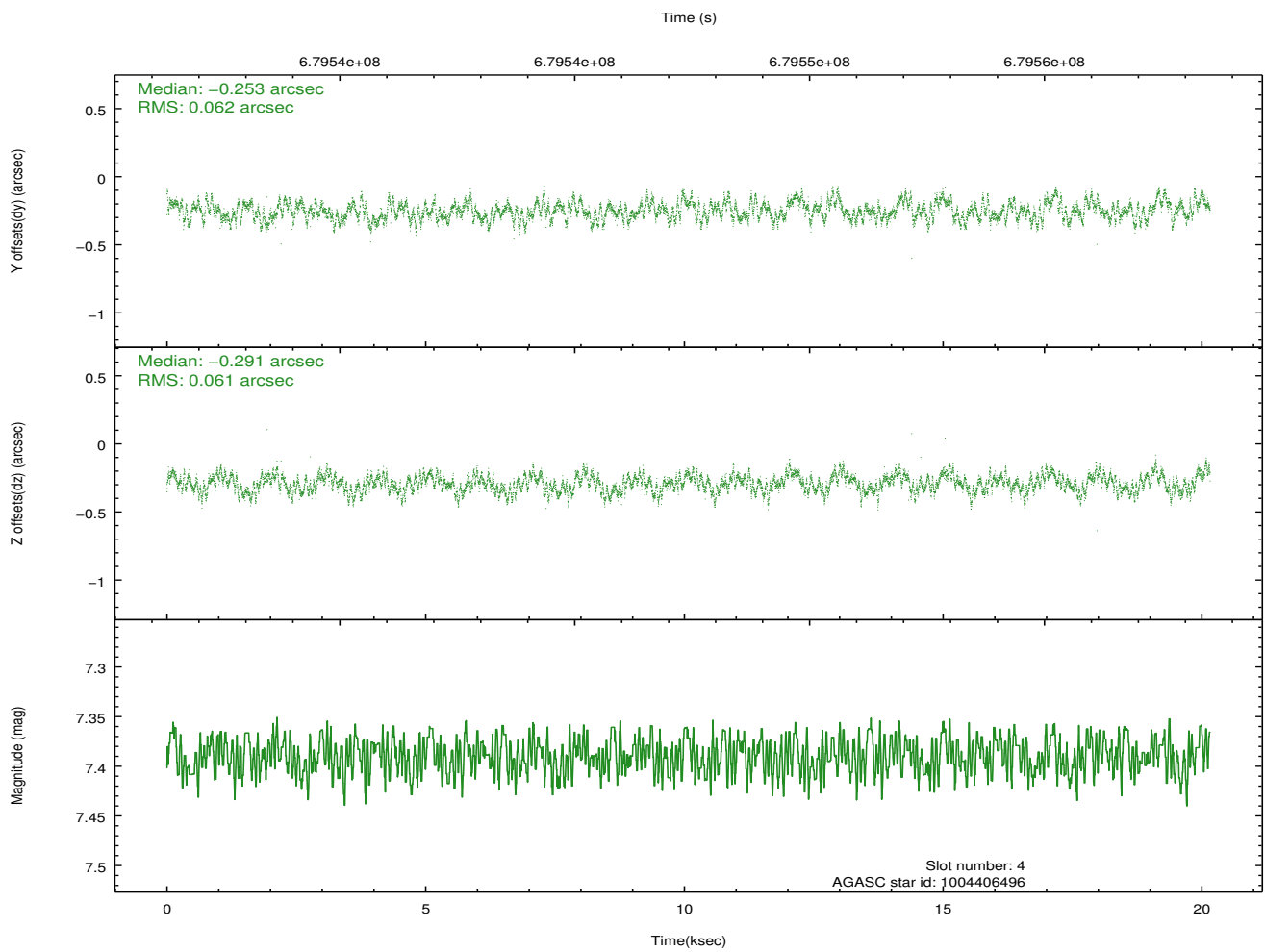
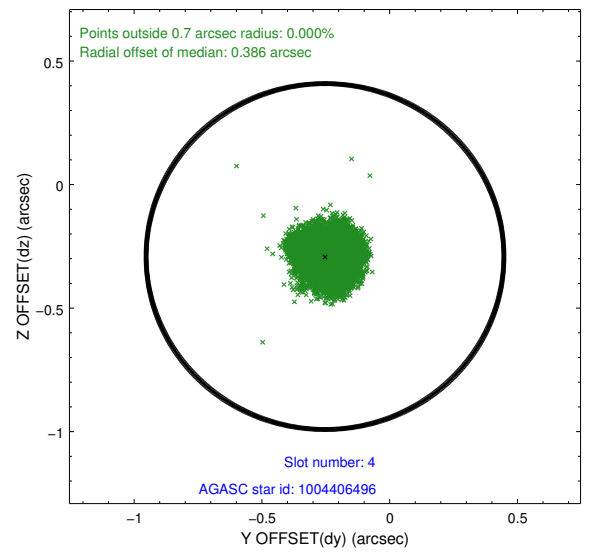
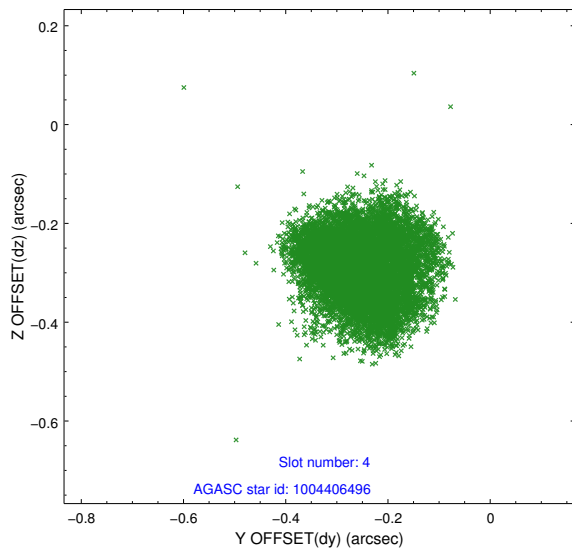
∞

2.4 Star Slots

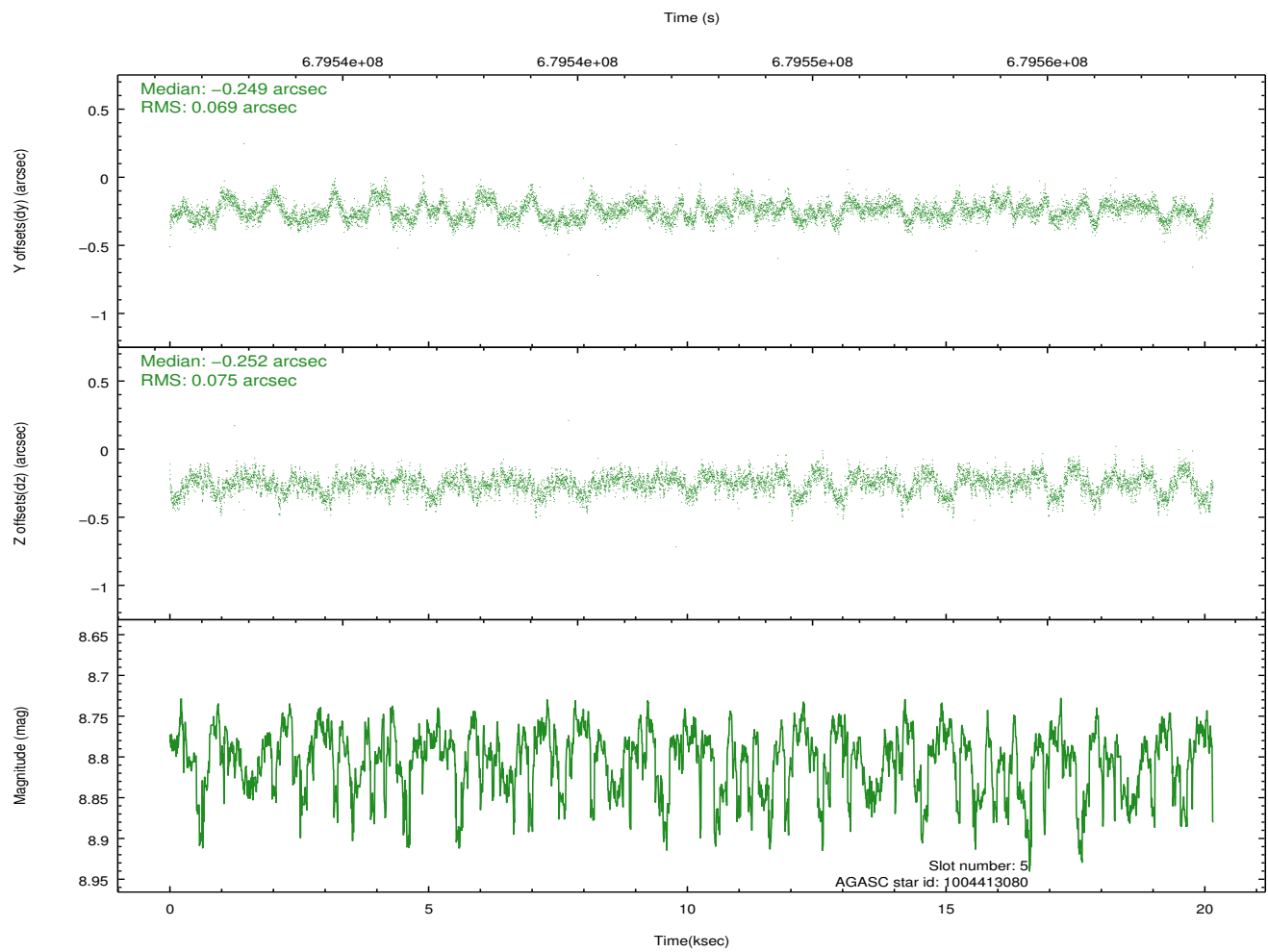
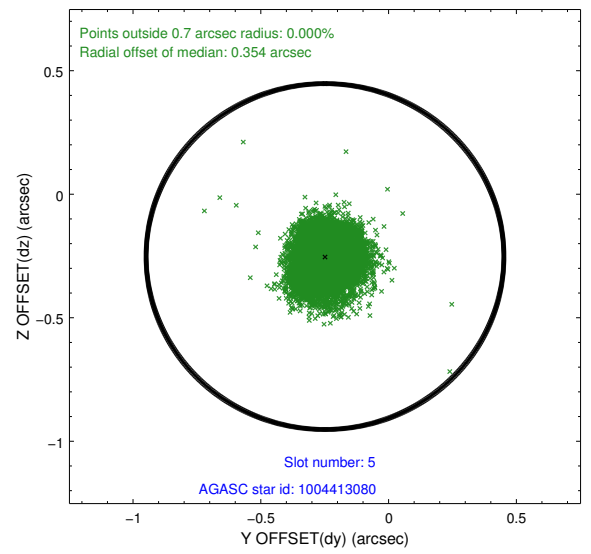
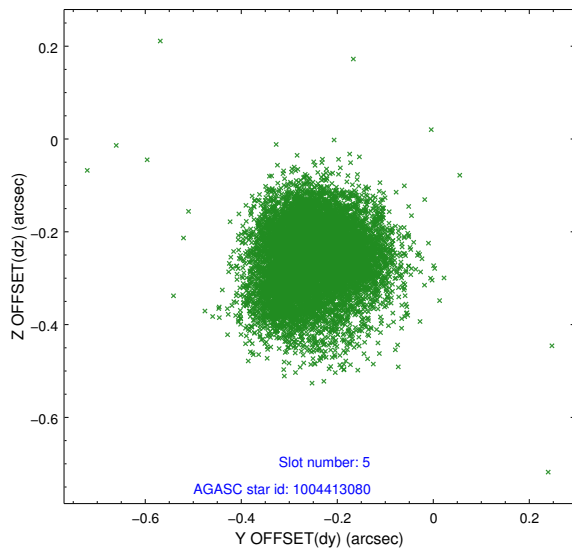
2.4.1 Slot 3



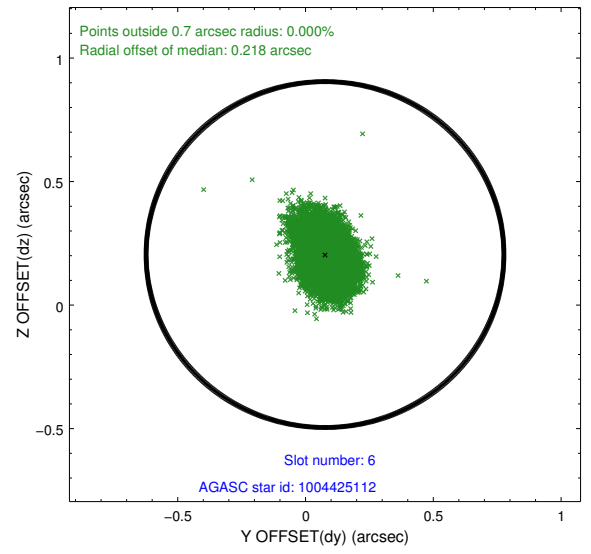
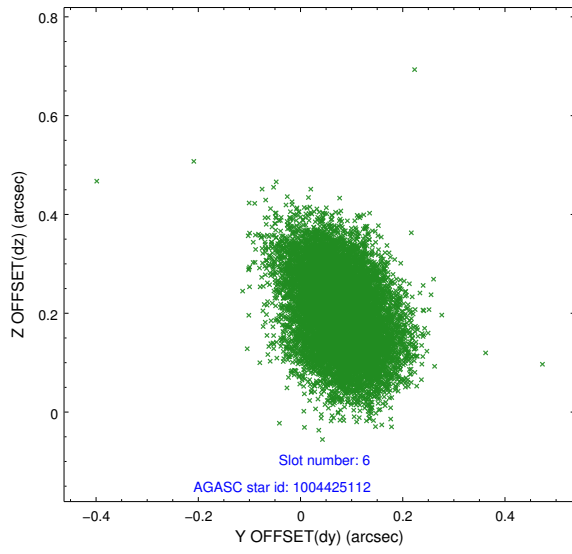
2.4.2 Slot 4



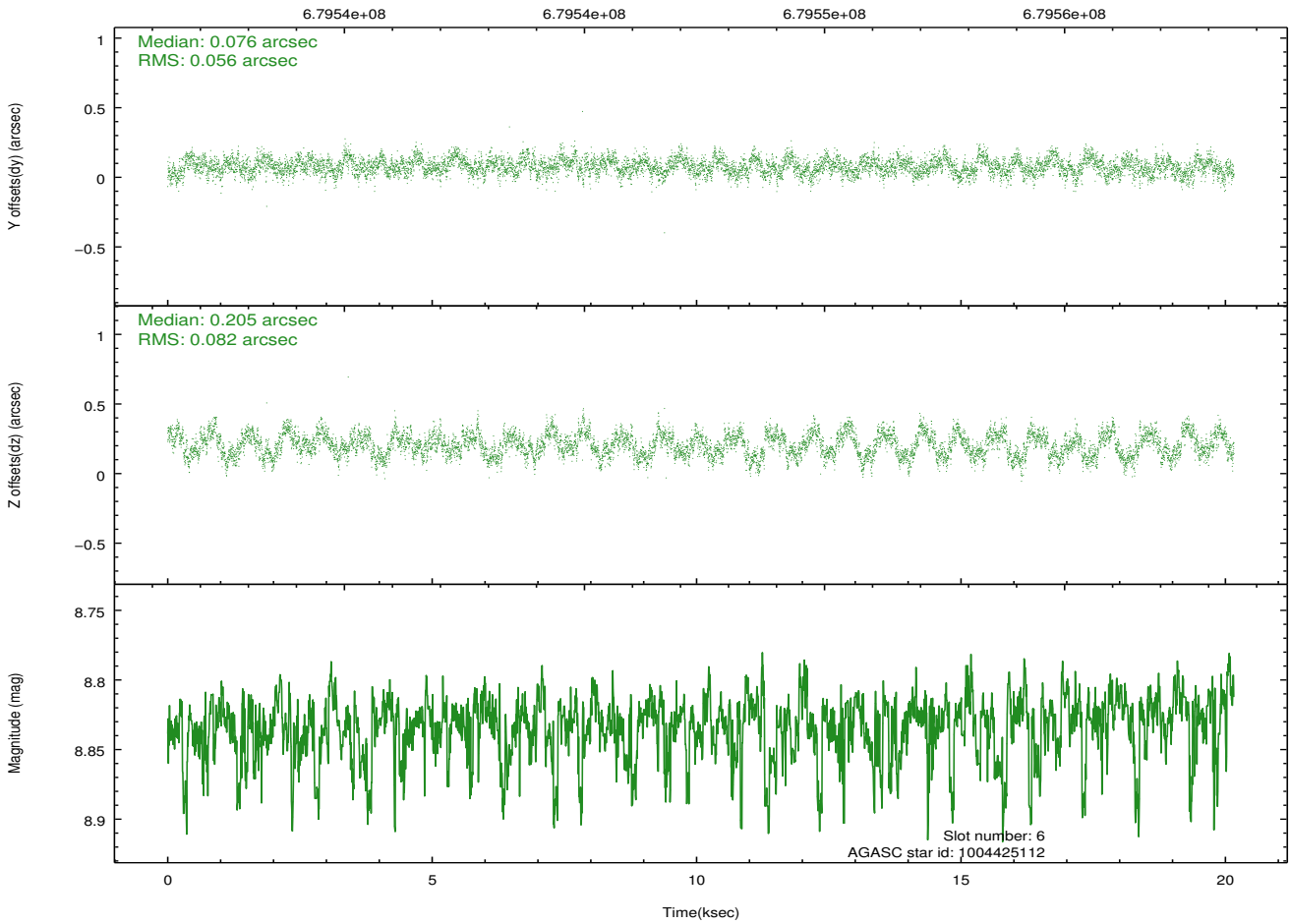
2.4.3 Slot 5



2.4.4 Slot 6

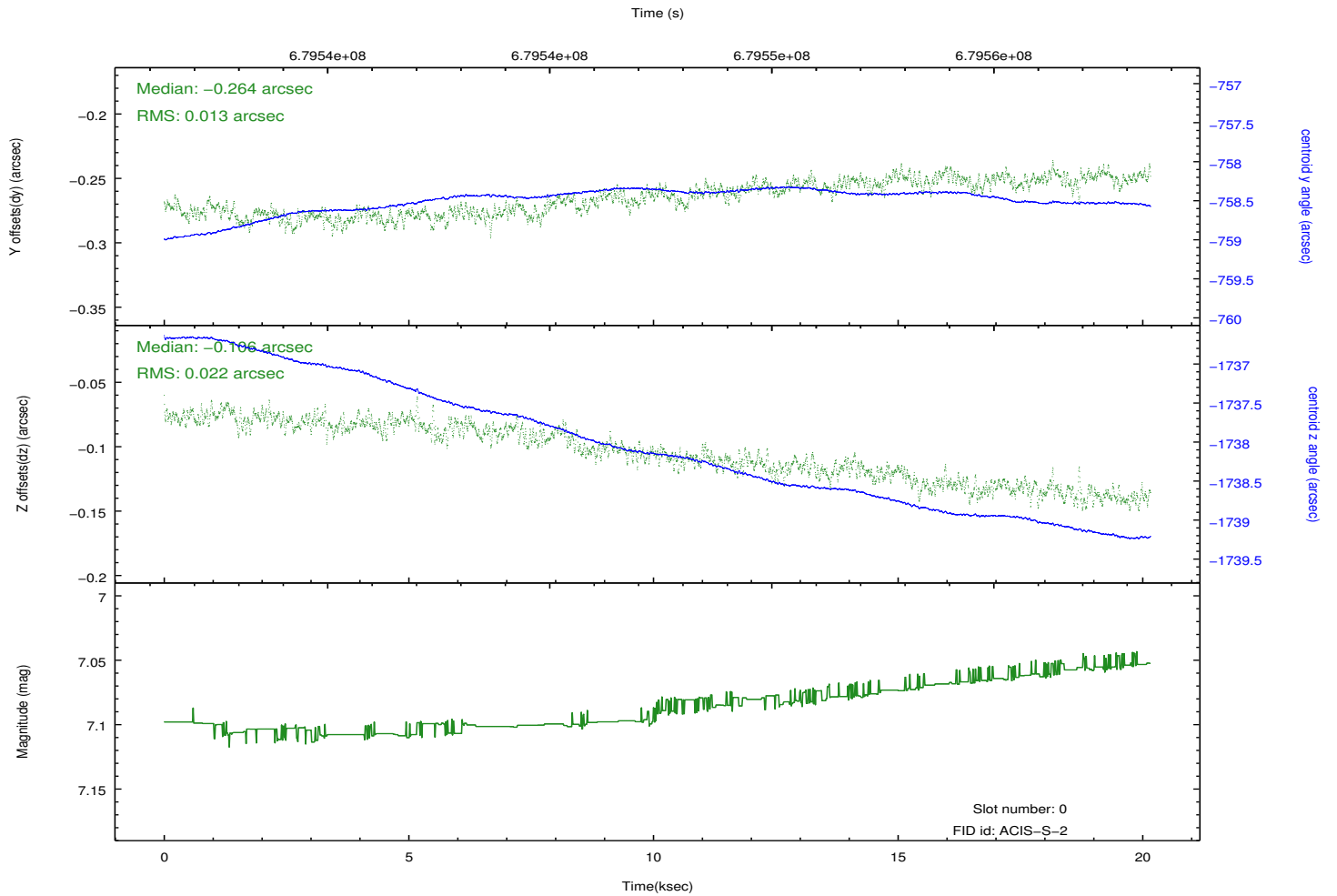
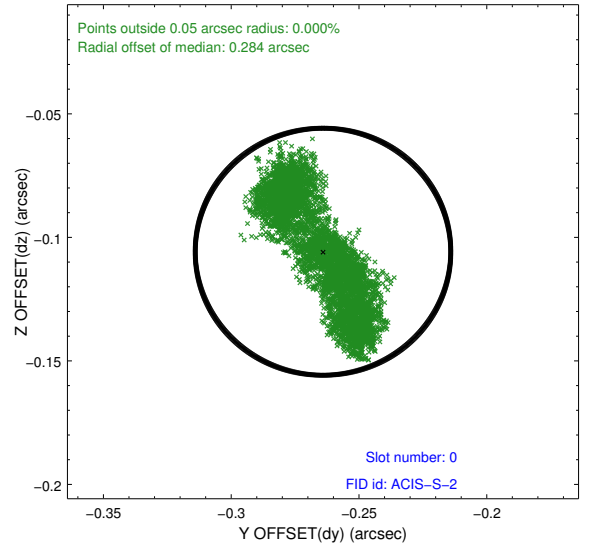
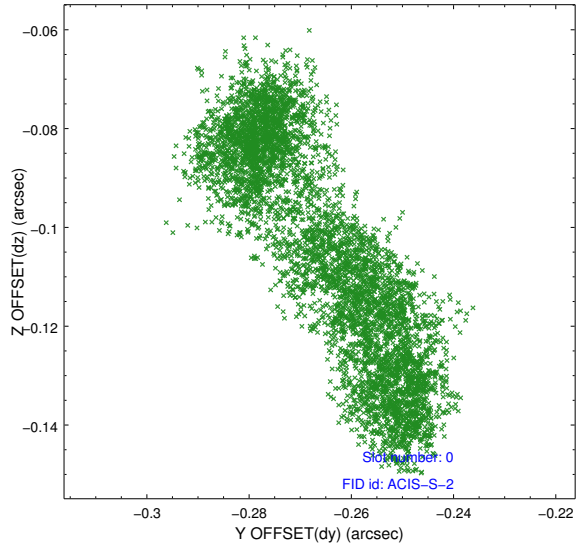


Time (s)

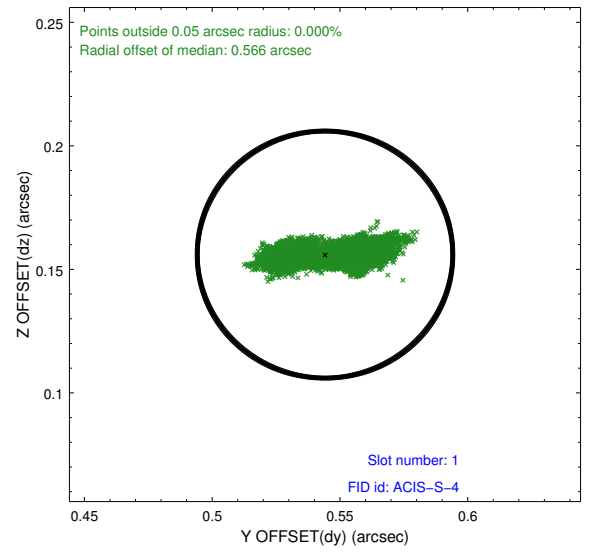
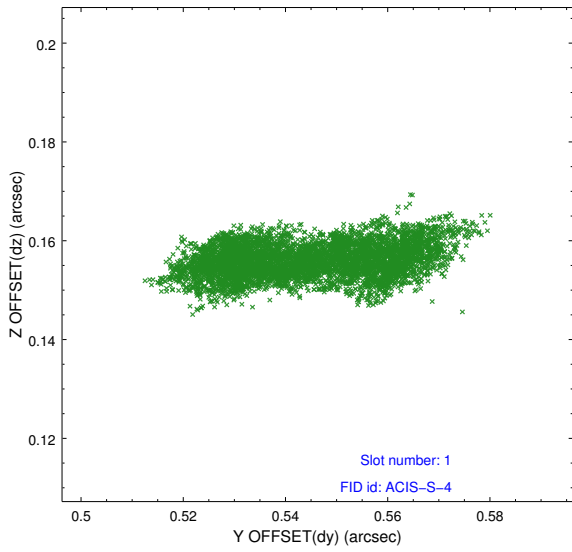


2.5 FID Slots

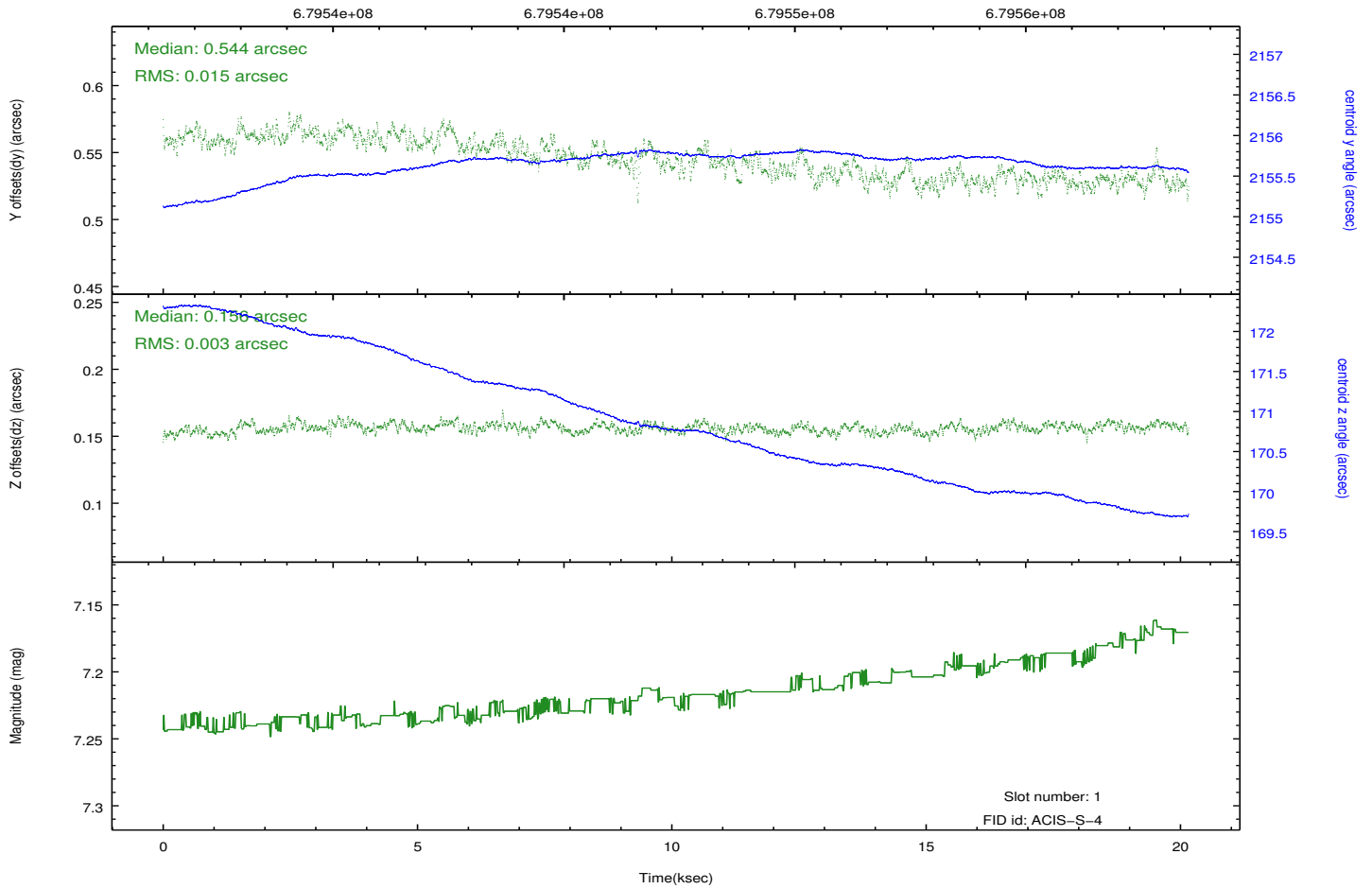
2.5.1 Slot 0



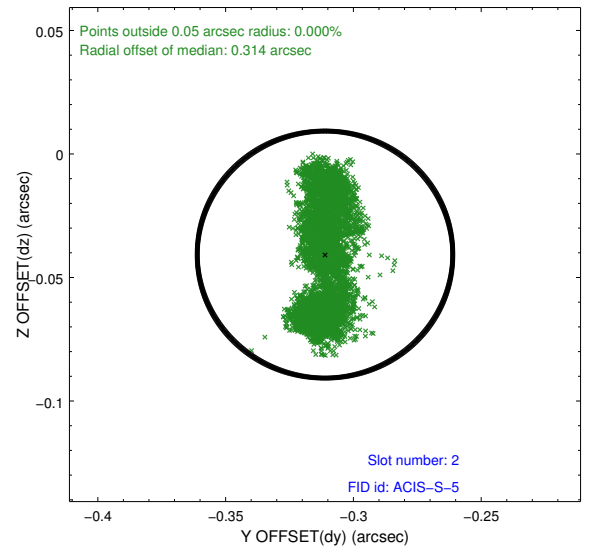
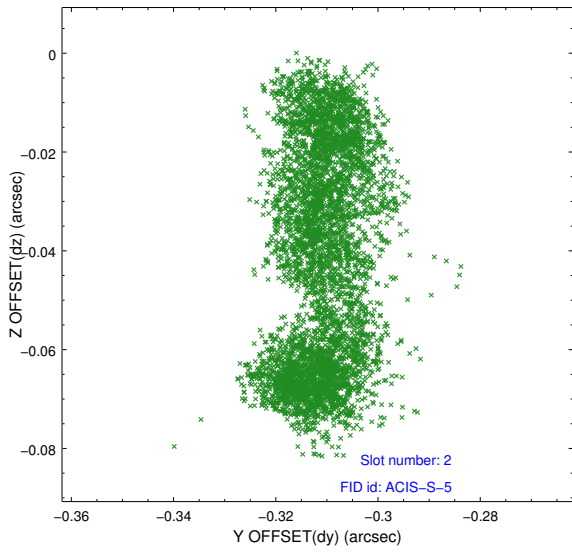
2.5.2 Slot 1



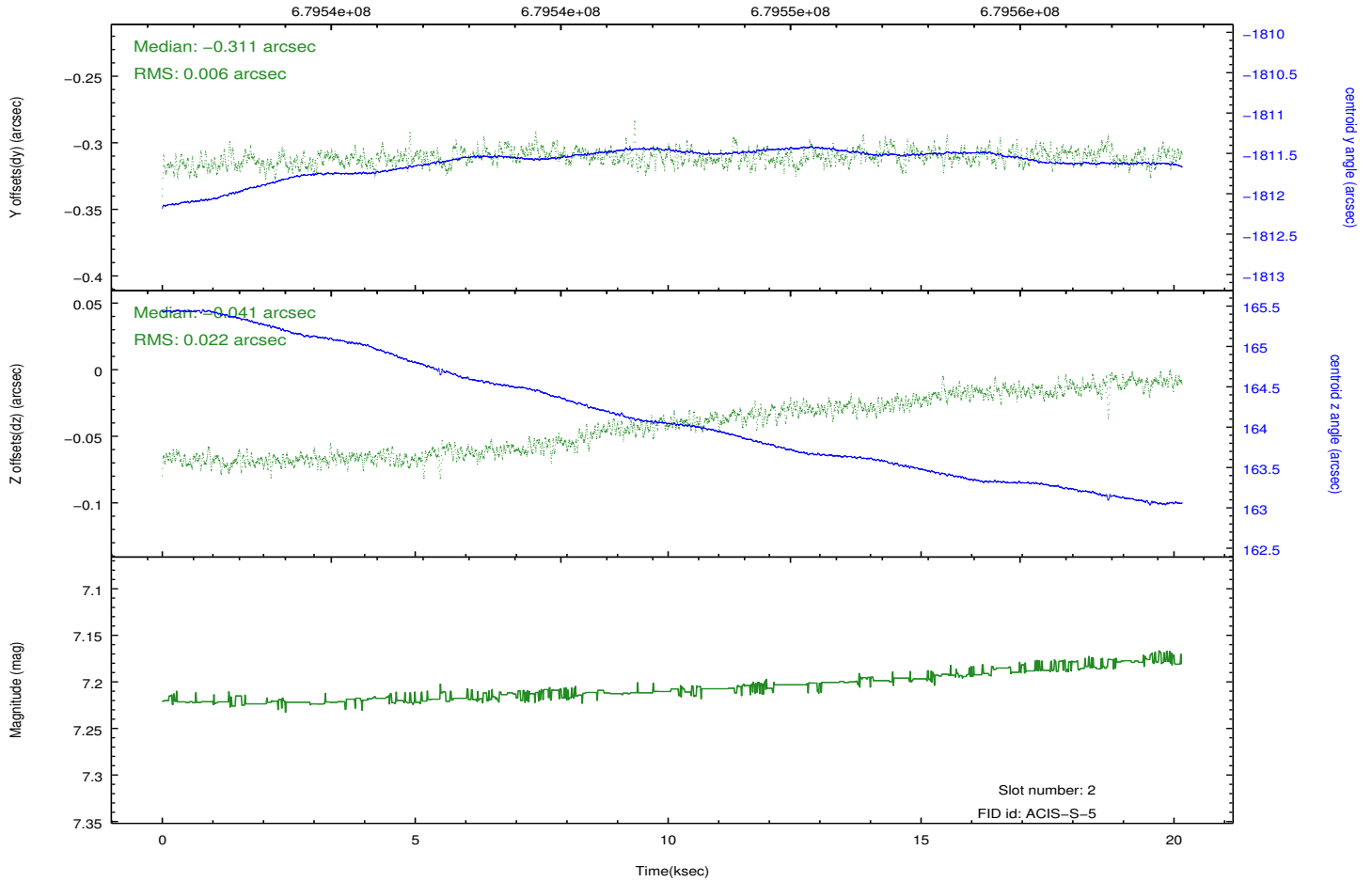
Time (s)



2.5.3 Slot 2

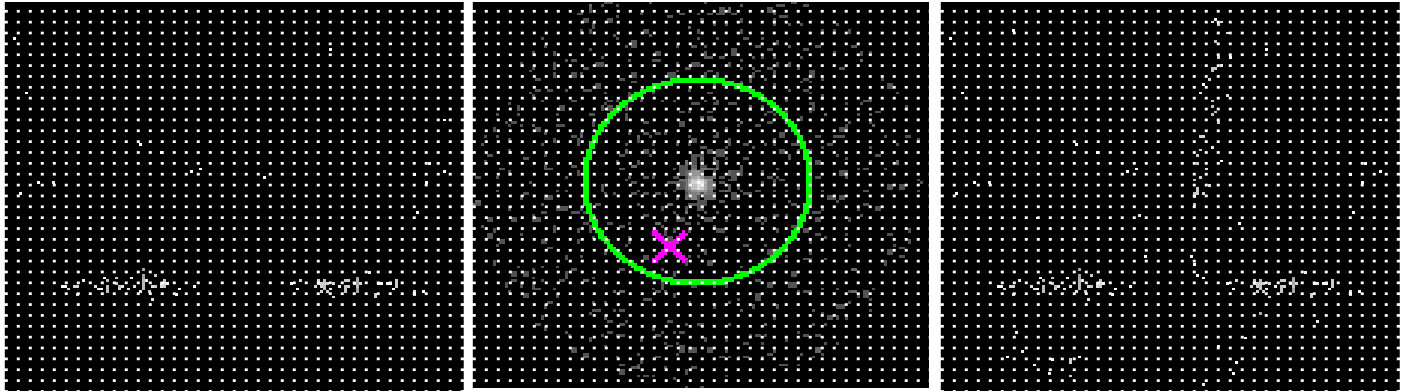


Time (s)



3 Gratings

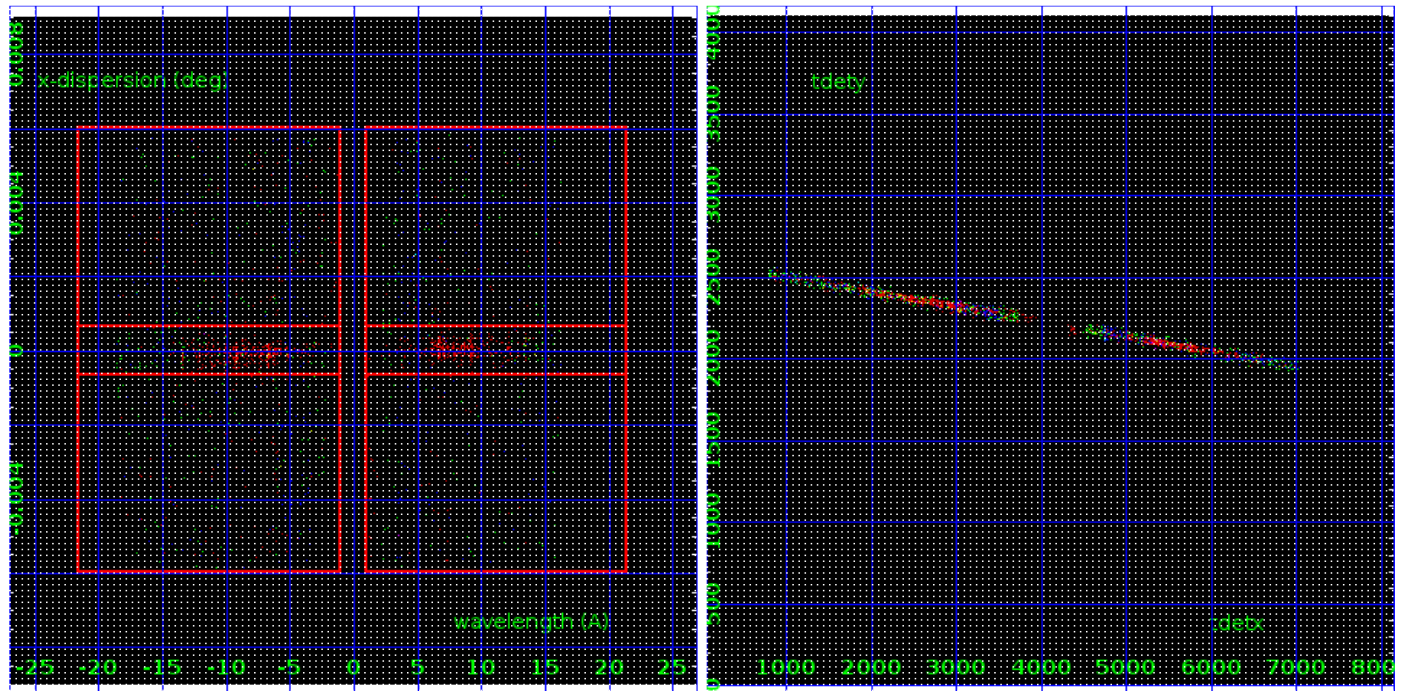
3.1 HEG Arm



HEG Order Sort 123

HEG Zero Order

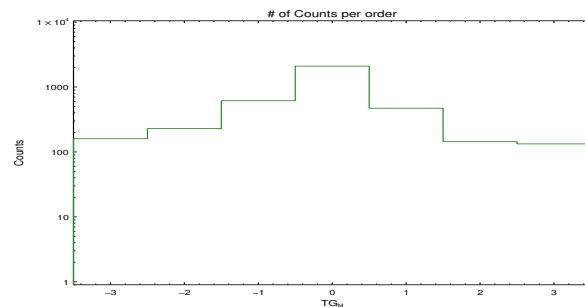
HEG Order Sort ALL

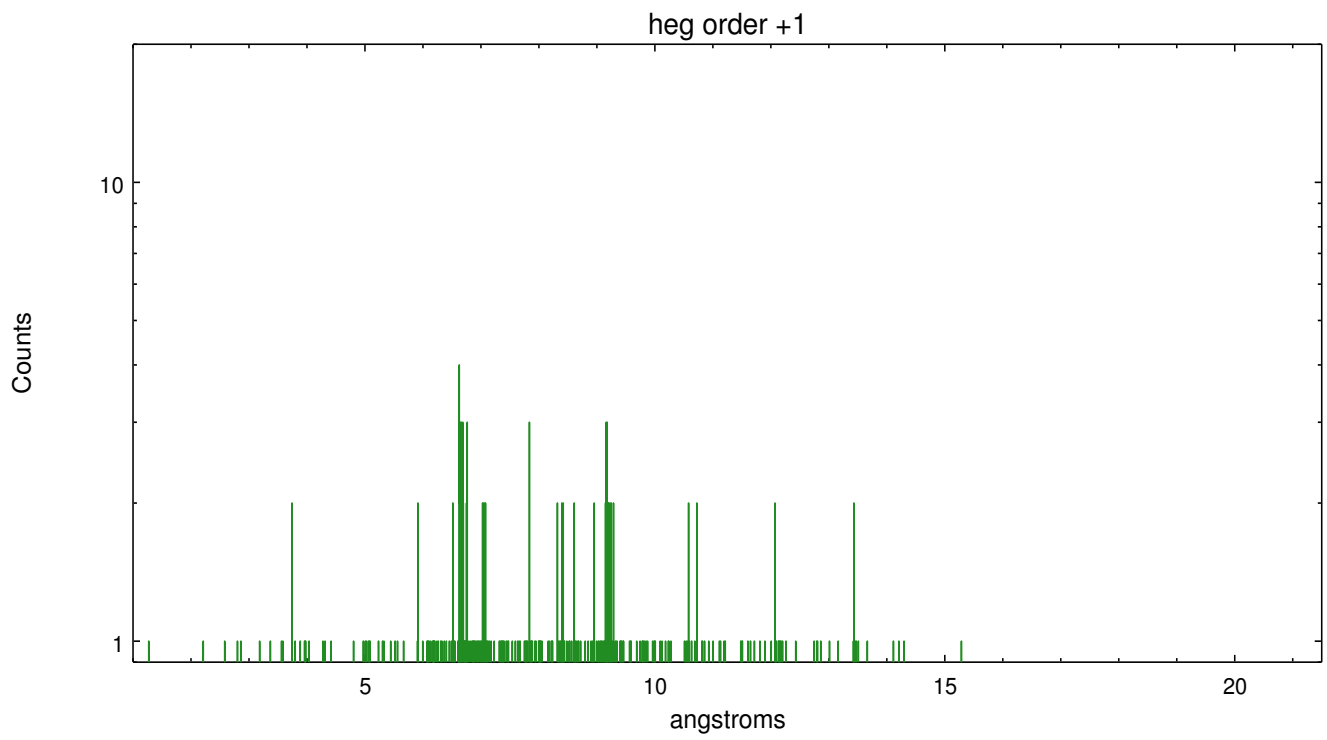
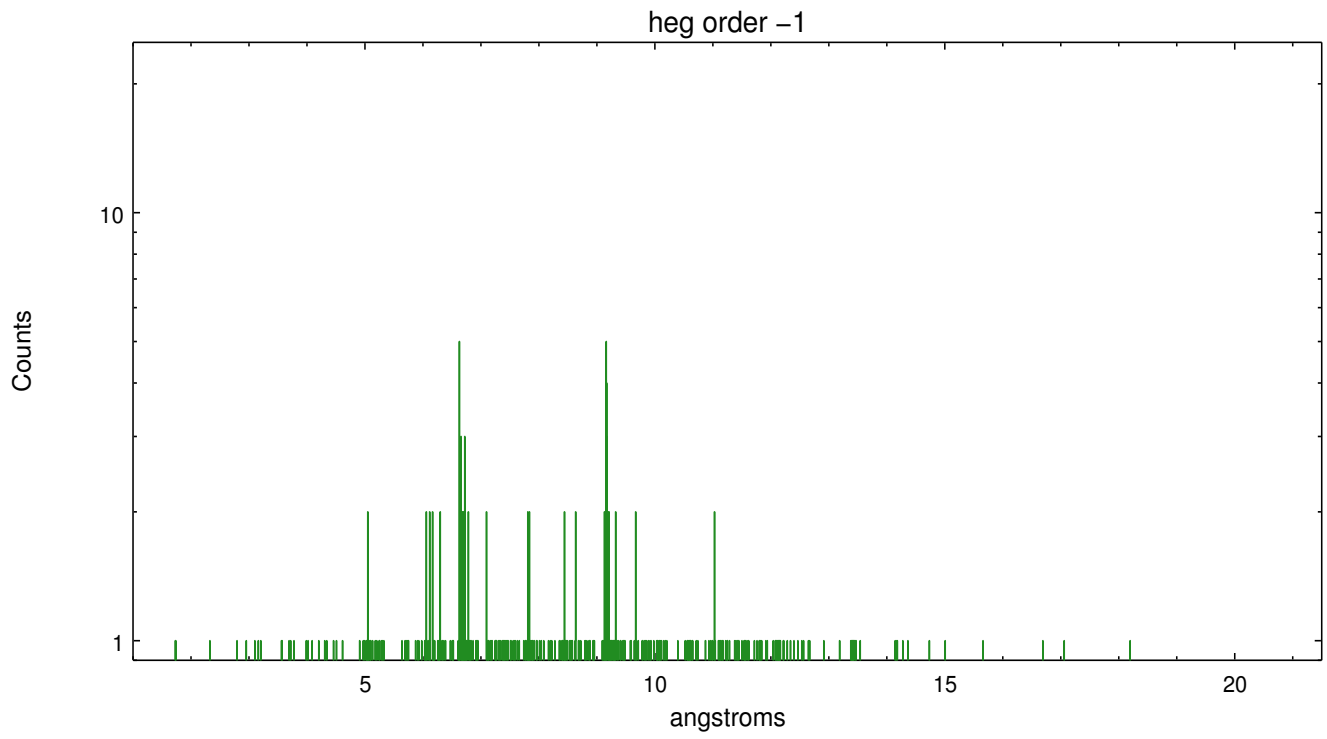


Spot Image HEG

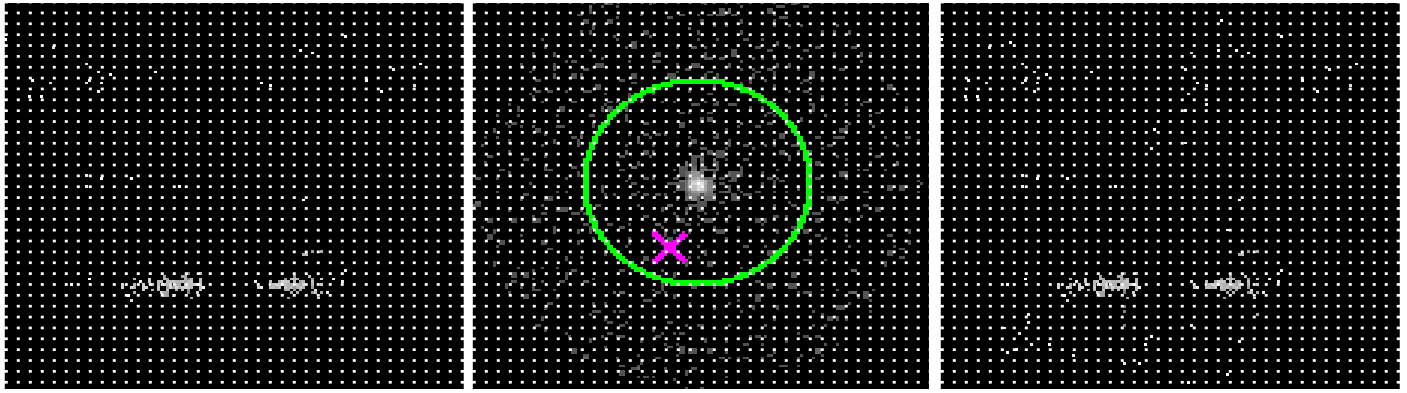
Full Detector HEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	160	229	615	2094	471	144	133





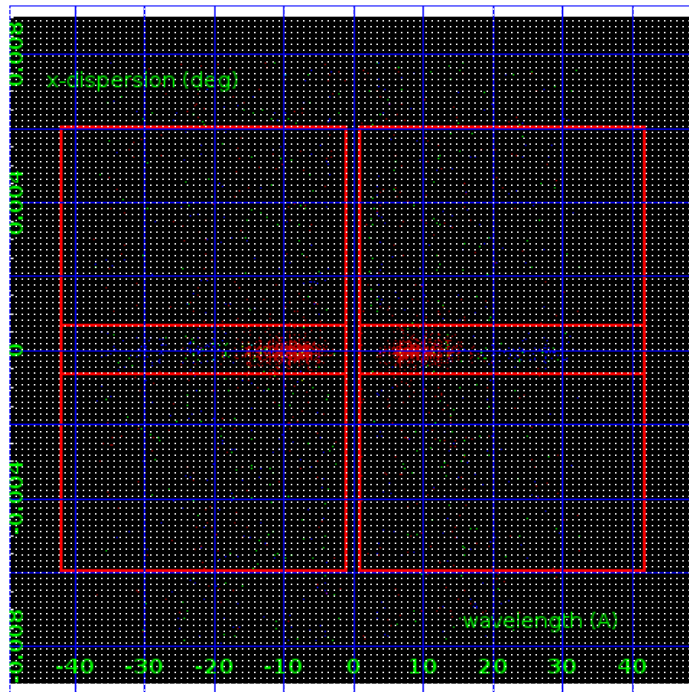
3.2 MEG Arm



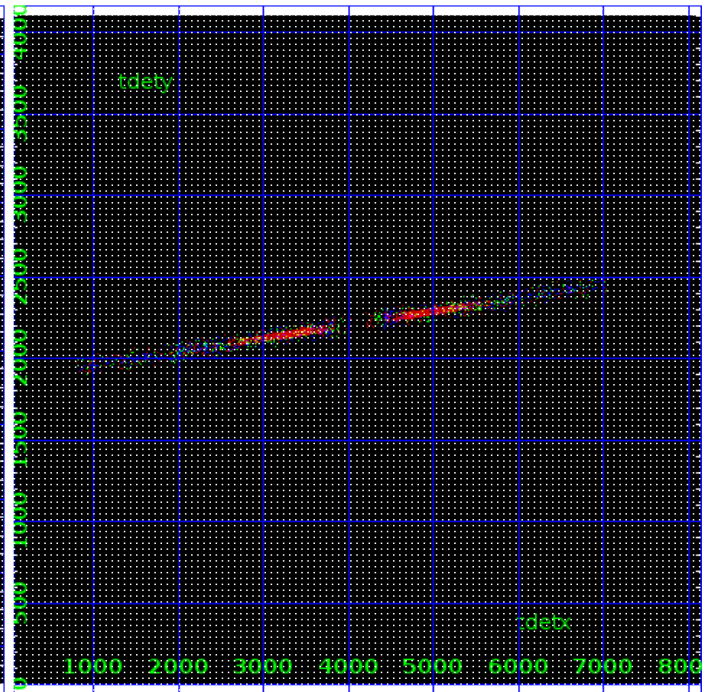
MEG Order Sort 123

MEG Zero Order

MEG Order Sort ALL

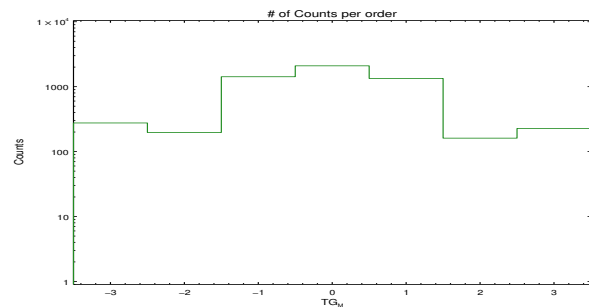


Spot Image MEG

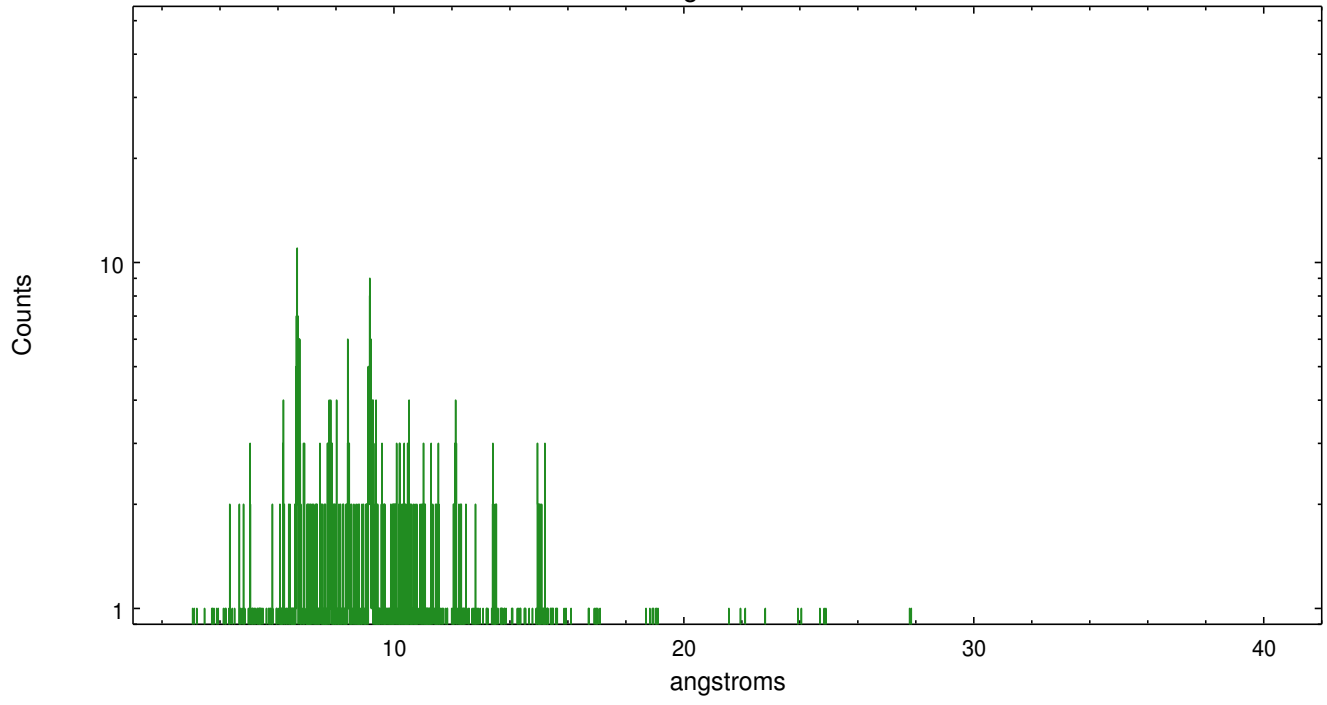


Full Detector MEG

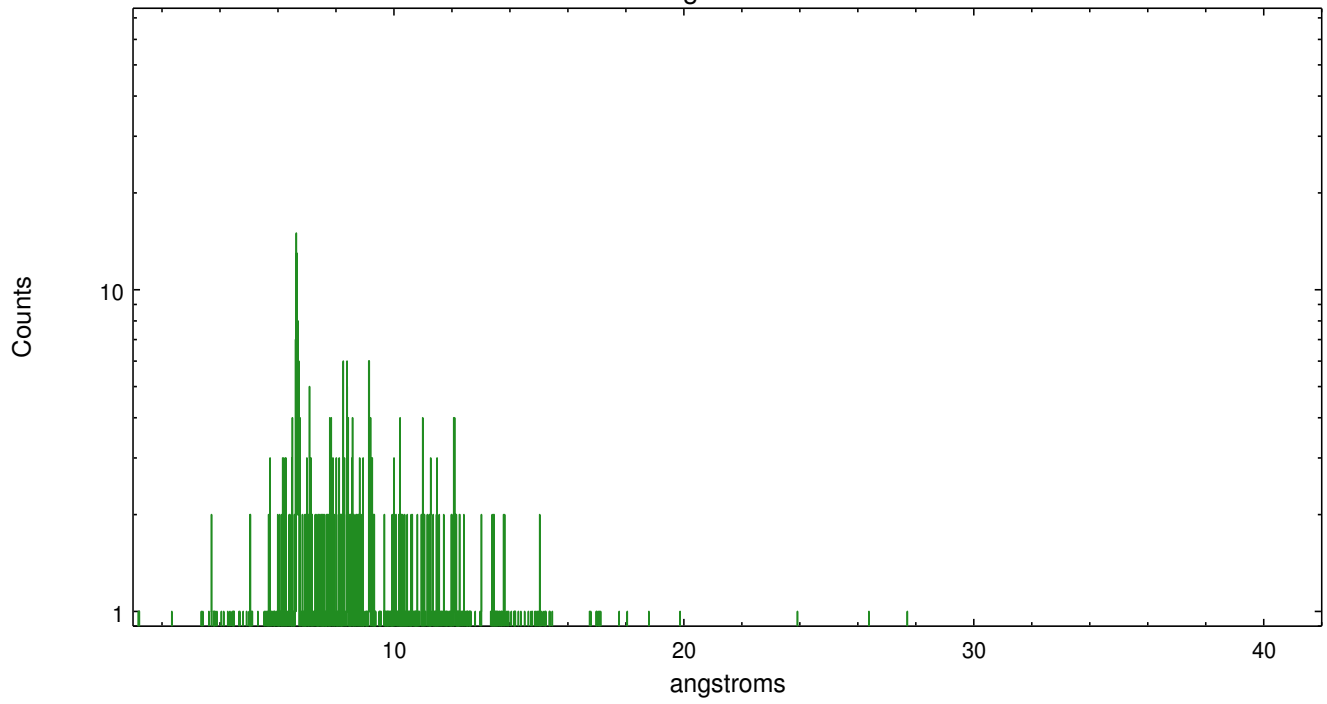
	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	276	197	1422	2094	1338	161	227



meg order -1



meg order +1



A Summary

A.1 Status

V&V Scientist	David Huenemoerder
V&V Date (YYYY-MM-DD)	2019.09.24
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	19.945600297213

A.2 Comments