

V&V Reference Report

L2 ASCDS Version : 10.4.3.1

Observation 18834 - L2 Version 1
Chandra X-Ray Center

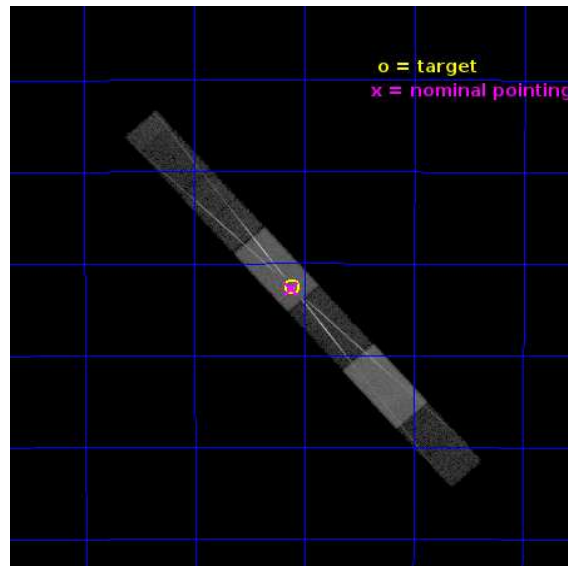
L2 Processing Date : May 1 2016

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1 Front

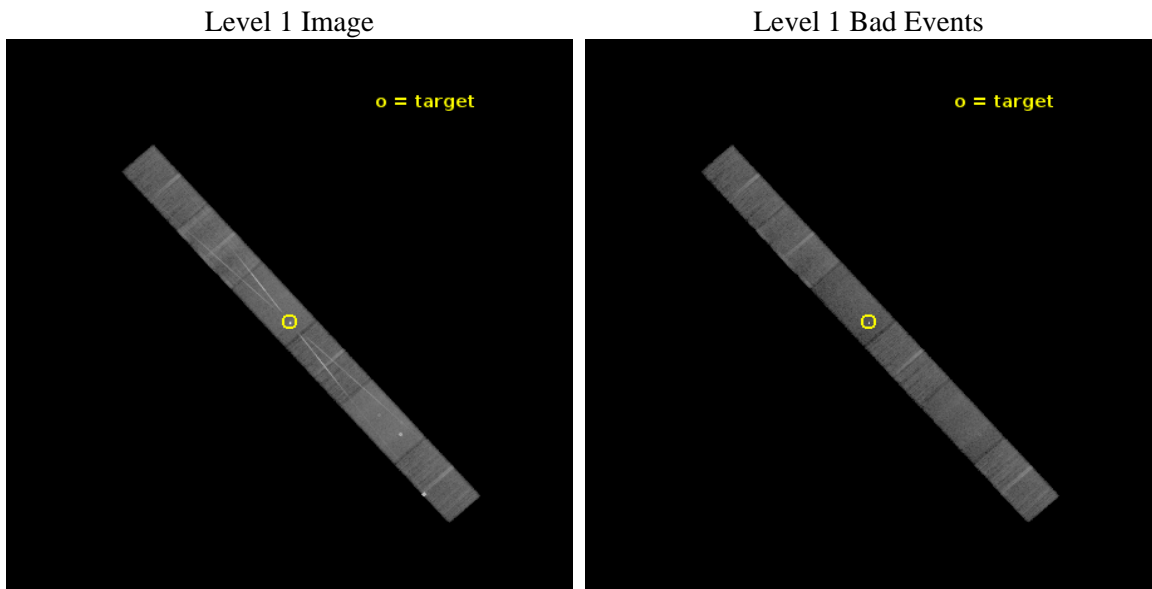
seq_num	401682	Sequence number
obs_id	18834	Observation id
title	The ultracompact binary 4U 0513-40	Proposal title
observer	Claude Canizares	Principal investigator
object	4U 0513-40	Source name
dtcycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	78.5275	Observer's specified target RA [deg]
dec_targ	-40.043611	Observer's specified target Dec [deg]
ra_nom	78.529282926602	Nominal RA [deg]
dec_nom	-40.045977614186	Nominal Dec [deg]
roll_nom	228.15776295843	Nominal Roll [deg]
revision	1	Processing version of data
ontime	27266.300764799	Sum of GTIs [s]
livetime	26623.576310802	Livetime [s]
ontime4	27266.300764799	Sum of GTIs [s]
ontime5	27266.300764799	Sum of GTIs [s]
ontime6	27266.300764799	Sum of GTIs [s]
ontime7	27266.300764799	Sum of GTIs [s]
ontime8	27266.300764799	Sum of GTIs [s]
ontime9	27266.300764799	Sum of GTIs [s]
l2events	212569	Number of level 2 events



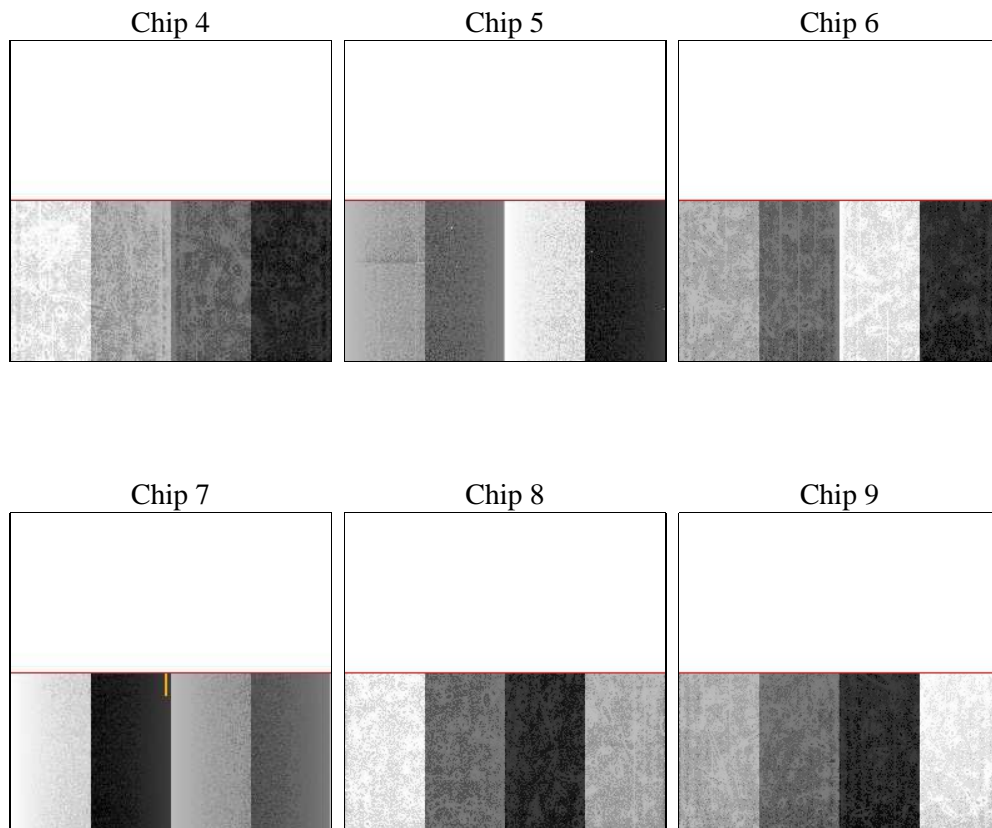
2 OBI

2.1 OBI

2.1.1 Images



2.1.2 Bias



2.1.3 Parameters

obi_num	0	Obi number	sched_exp_time	27234.170000	[s] Scheduled observation exposure time
ascdsver	10.4.3.1	Processing system revision	ontime	27266.300764799	Sum of GTIs [s]
caldsver	4.7.1	 	ontime4	27266.300764799	Sum of GTIs [s]
date	2016-05-01T22:46:00	Date and time of file creation	ontime5	27266.300764799	Sum of GTIs [s]
revision	1	Processing version of data	ontime6	27266.300764799	Sum of GTIs [s]
			ontime7	27266.300764799	Sum of GTIs [s]
			ontime8	27266.300764799	Sum of GTIs [s]
			ontime9	27266.300764799	Sum of GTIs [s]
			l1events	731442	Number of level 1 events
			tgmethod	FINDZO	Method used to create src1a file
			ra_pos	(4108.82, 4111.80)	src1a sky pixel position

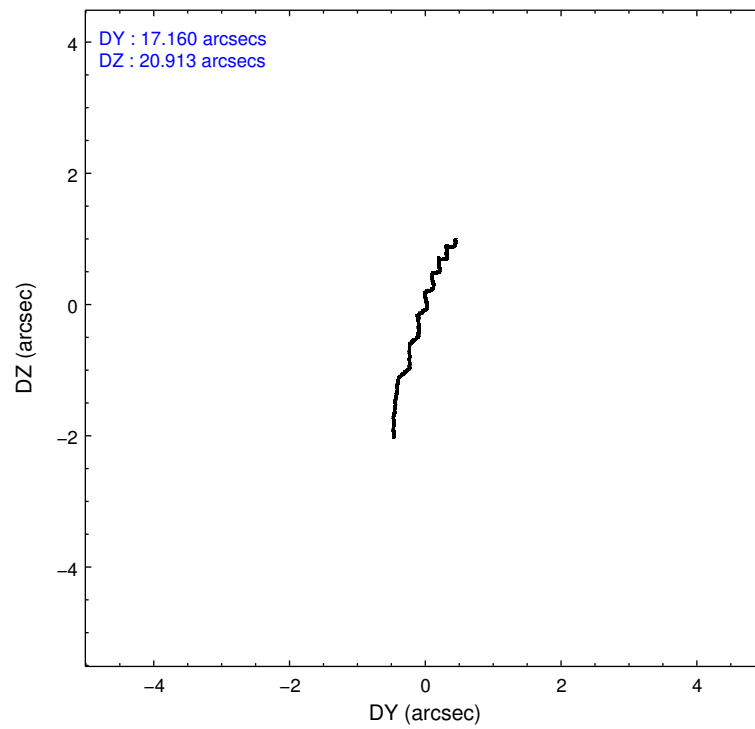
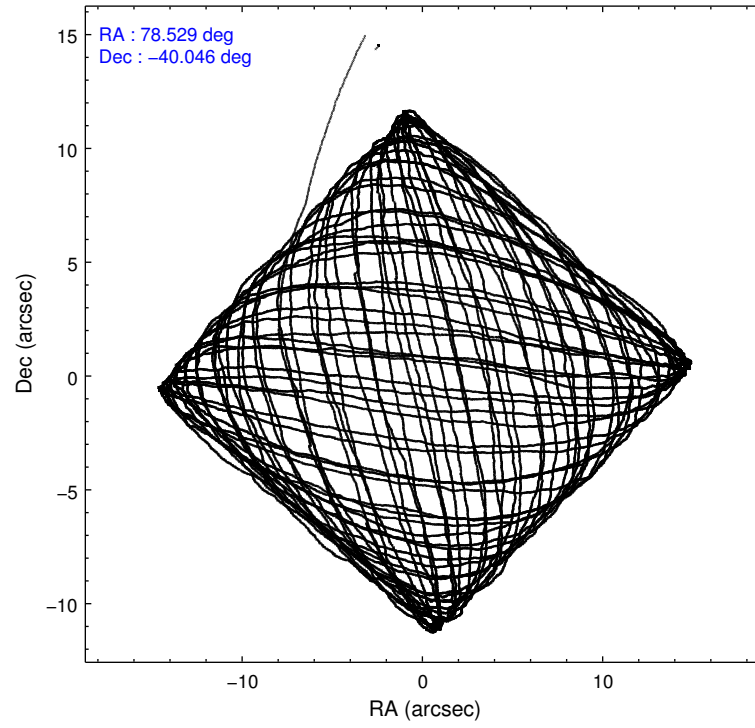
2.1.4 Events

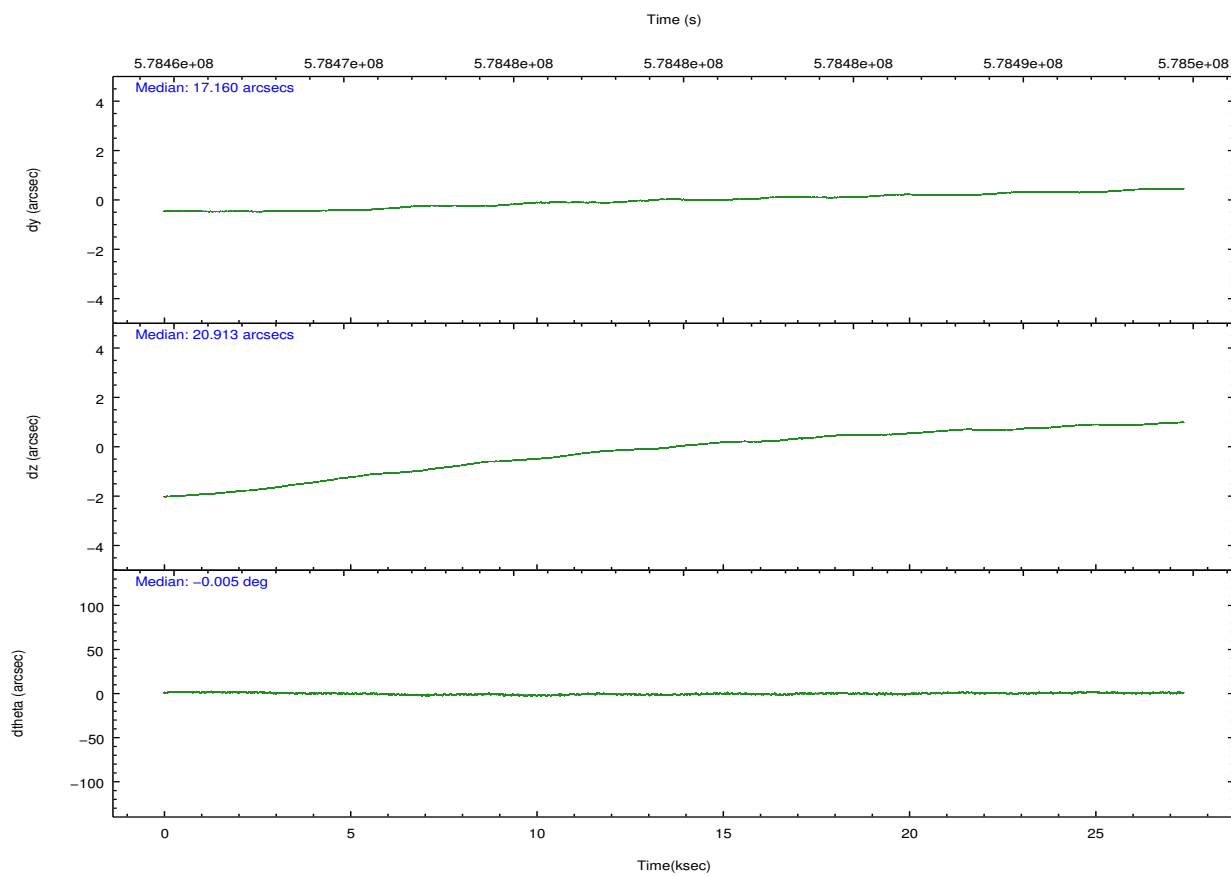
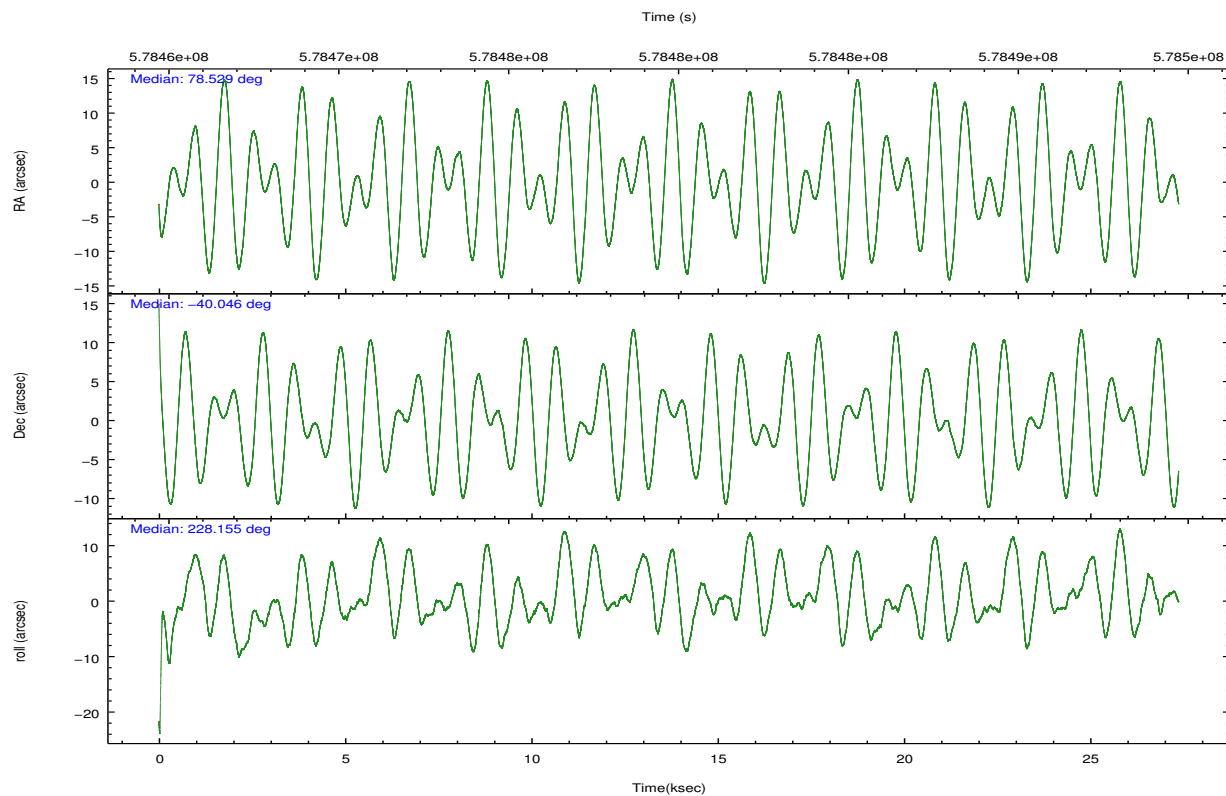
	ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9		ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
level 1 events	109308	144294	110384	148046	128906	90504	grade 0 events	4756	8238	18767	10307	15573	4872
rejected events	89090	70733	79873	67570	88637	78057		4%	5%	17%	6%	12%	5%
rejected %	81%	49%	72%	45%	68%	86%	grade 1 events	67	425	89	393	94	48
								0%	0%	0%	0%	0%	0%
							grade 2 events	2838	22504	4851	17531	8180	2509
								2%	15%	4%	11%	6%	2%
							grade 3 events	1298	3468	2043	7581	3826	1339
								1%	2%	1%	5%	2%	1%
							grade 4 events	1273	3177	1871	7592	3525	1290
								1%	2%	1%	5%	2%	1%
							grade 5 events	4005	10287	3900	12753	5862	4432
								3%	7%	3%	8%	4%	4%
							grade 6 events	10057	36184	2981	37477	9169	2438
								9%	25%	2%	25%	7%	2%
							grade 7 events	85014	60011	75882	54412	82677	73576
								77%	41%	68%	36%	64%	81%

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	78.536188	78.52928292660195	CCD I2 on	N	N
[deg] Pointing Dec	-40.019027	-40.04597761418557	CCD I3 on	N	N
[deg] Pointing Roll	228.005596	228.1577629584347	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	-183.992523	-183.9875365069546	CCD S3 on	Y	Y
[mm] SIM translation stage offset	-6.14	-6.144986076053243	CCD S4 on	Y	Y
[s] Observation start time (MET)	578466171.184000	578464804.80946	CCD S5 on	O2	Y
Observation start date	2016-05-01T05:01:43	2016-05-01T04:40:04	Number of optional ACIS chips dropped	0	0
[s] Observation end time (MET)	578493406.184000	578493622.68611	On-chip summing requested	N	N
Observation end date	2016-05-01T12:35:38	2016-05-01T12:40:22	Subarray requested	CUSTOM	1/2
Read mode	TIMED	TIMED	Subarray start row	1	1
			Subarray row count	512	512
			Alternating exposures requested	N	N
			[s] Primary exposure time	0.000000	1.7

2.3 Aspect



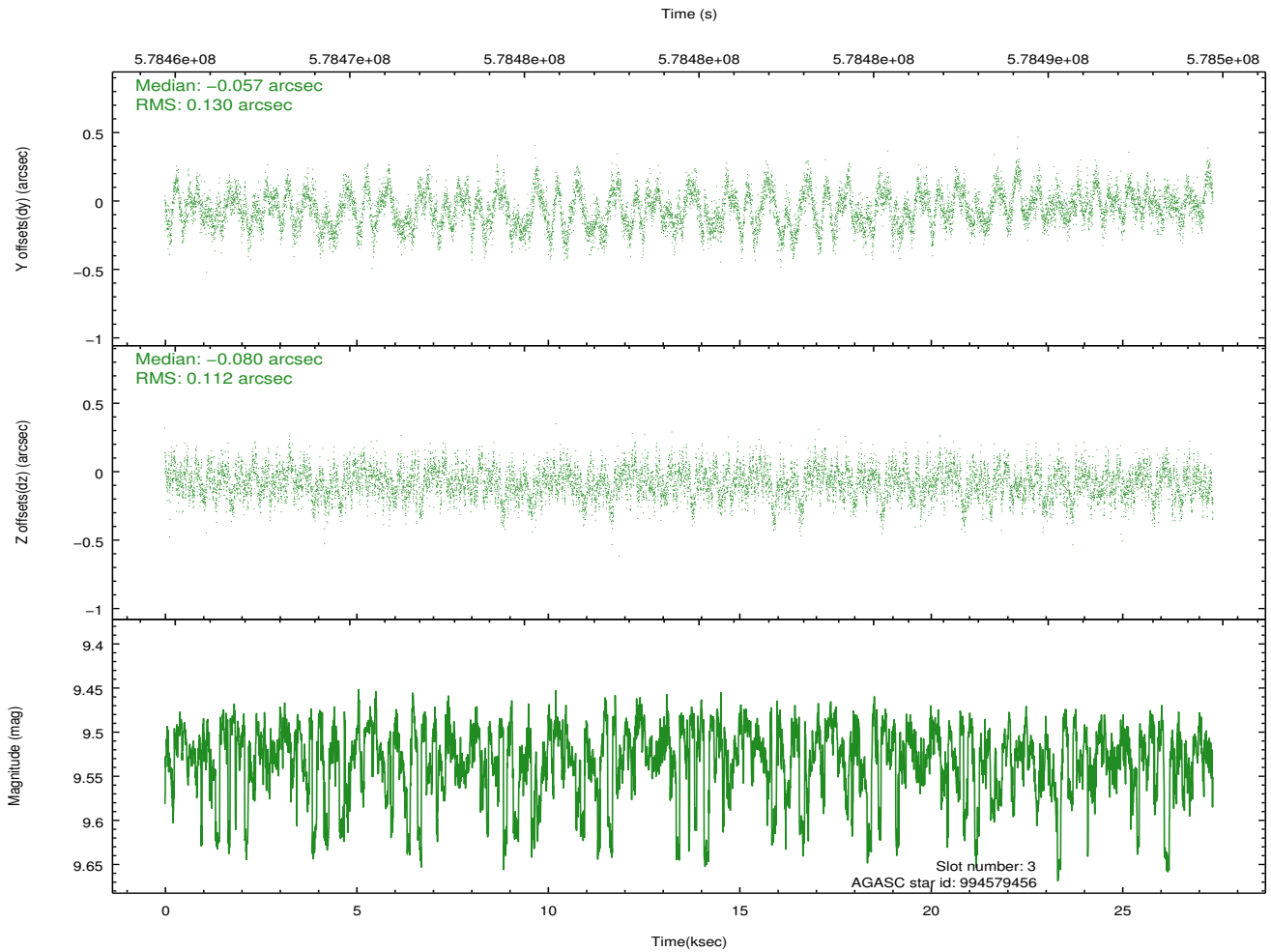
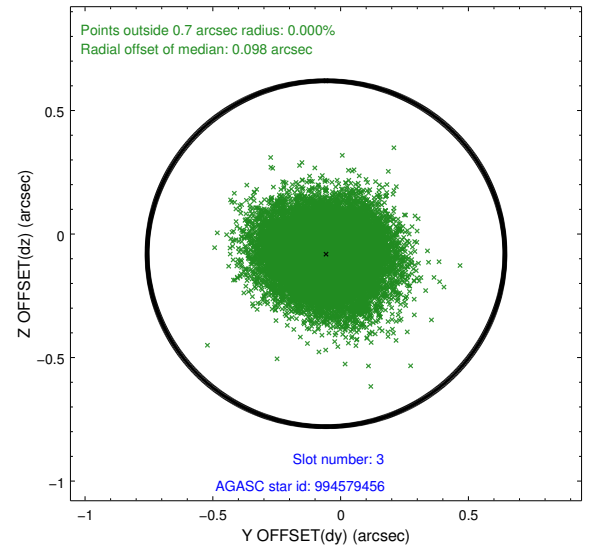
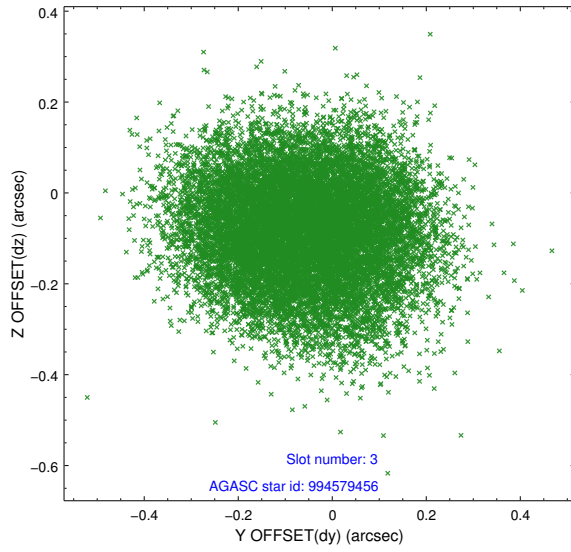


Slot Statistics

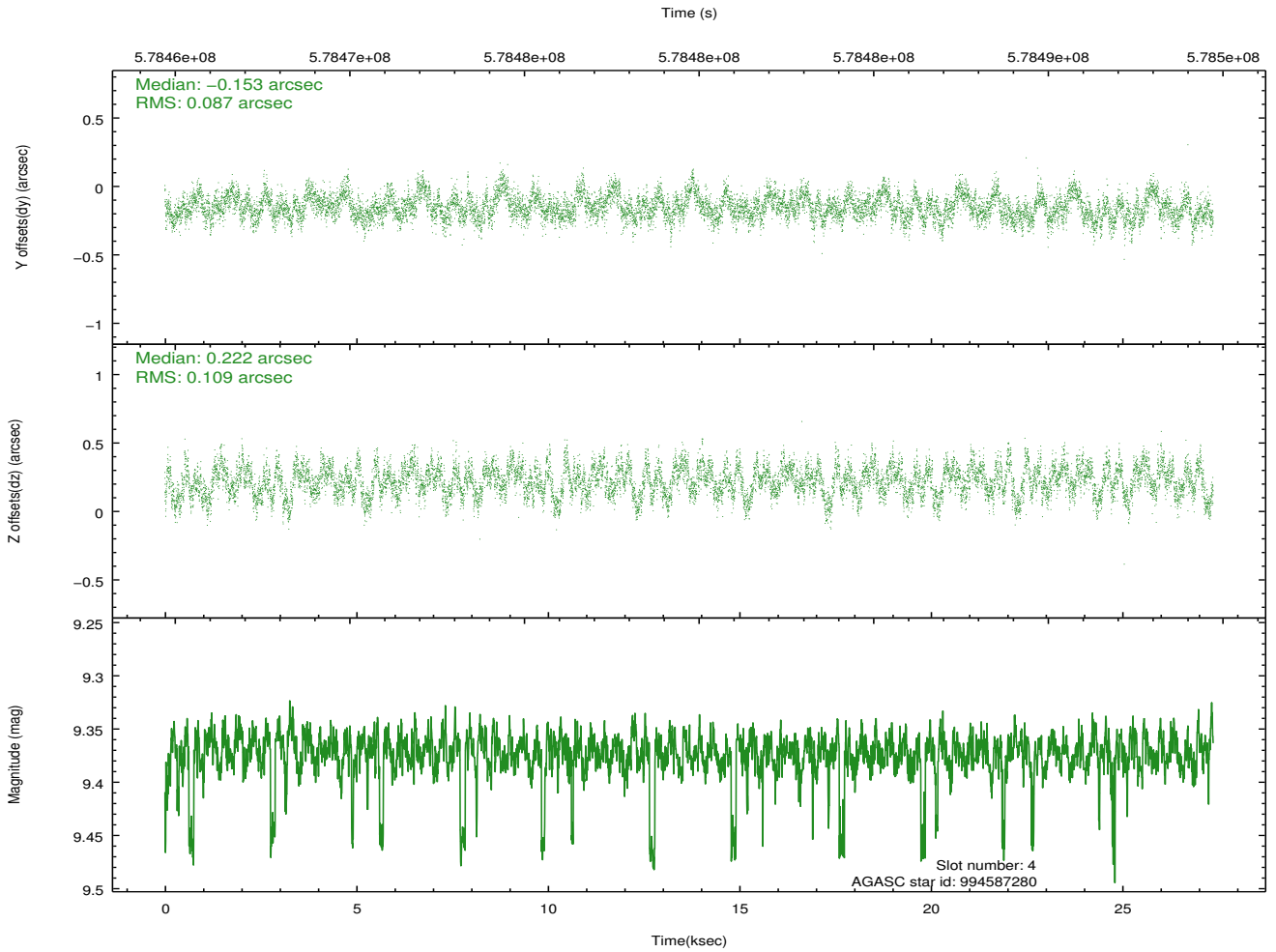
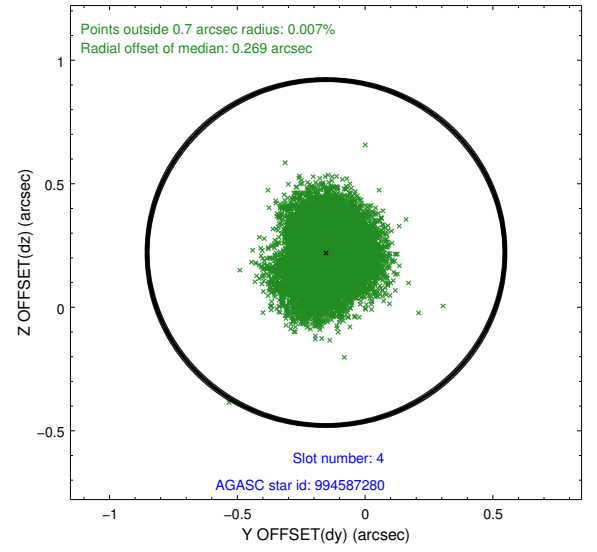
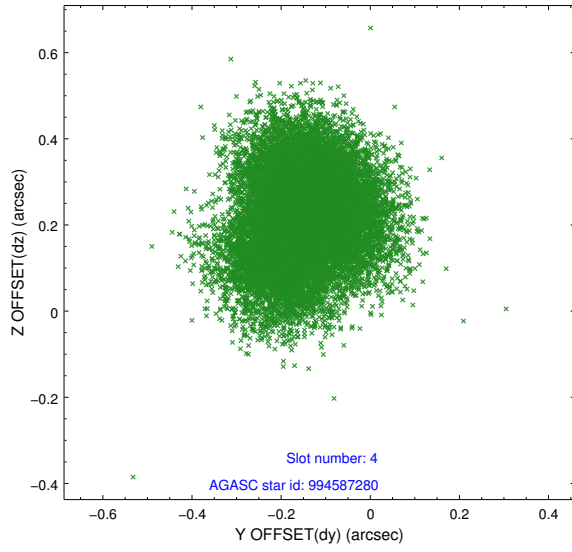
slot	status	used	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID		ACIS-S-1	7.20	6676	0.147	0.140	0.017	0.026	0.000000	0.000000	926.44	-1864.39
1	FID		ACIS-S-2	7.09	6676	-0.267	-0.172	0.026	0.042	0.000000	0.000000	-769.82	-1869.35
2	FID		ACIS-S-6	7.41	6677	0.100	0.030	0.020	0.028	0.000000	0.000000	392.04	676.72
3	GUIDE	used	994579456	9.53	13336	-0.057	-0.080	0.187	0.286	79.112909	-39.629861	-2106.66	254.72
4	GUIDE	used	994587280	9.37	13338	-0.153	0.222	0.151	0.235	78.857559	-39.654304	-1570.58	-214.96
5	GUIDE	used	994975584	9.46	13330	0.280	-0.194	0.220	0.387	77.424754	-40.007717	2035.02	-2292.06
6	GUIDE	used	994975984	9.41	13341	-0.076	0.094	0.190	0.287	78.288216	-40.065810	583.38	-394.22
7	GUIDE	used	994979816	8.81	13345	0.011	-0.047	0.114	0.189	78.007515	-40.348161	1854.08	-281.95

2.4 Star Slots

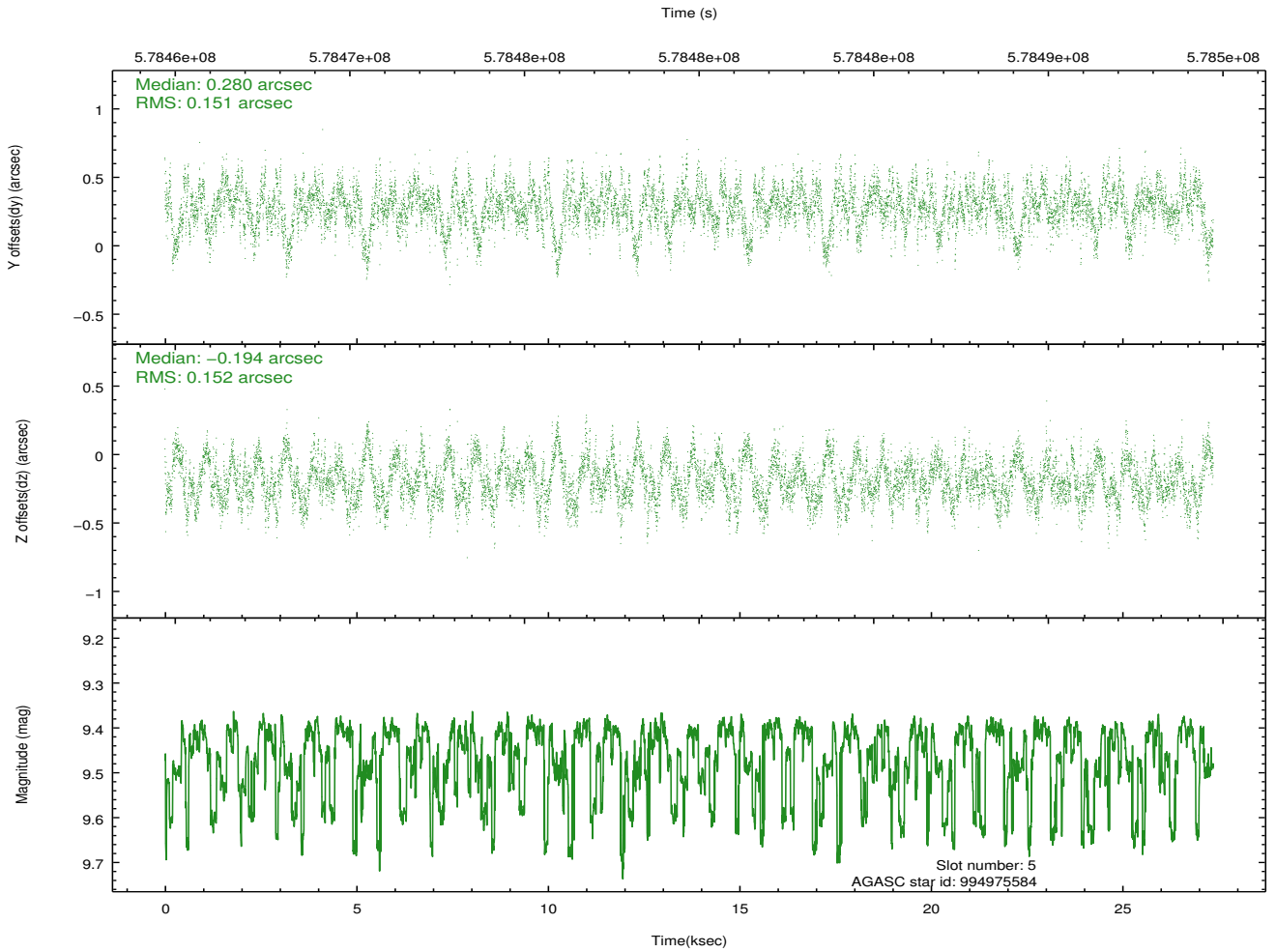
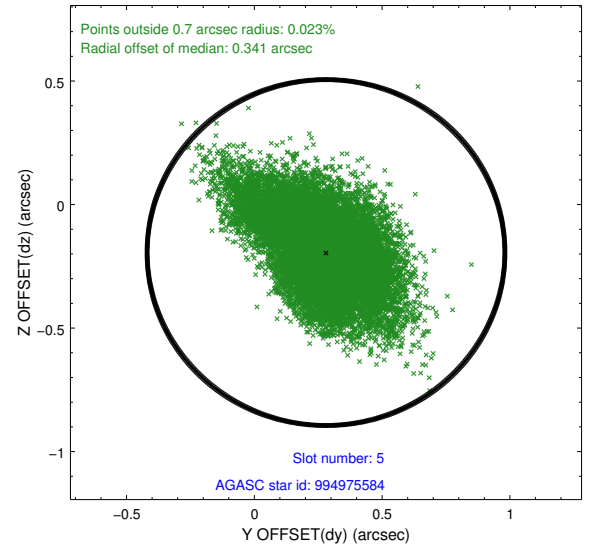
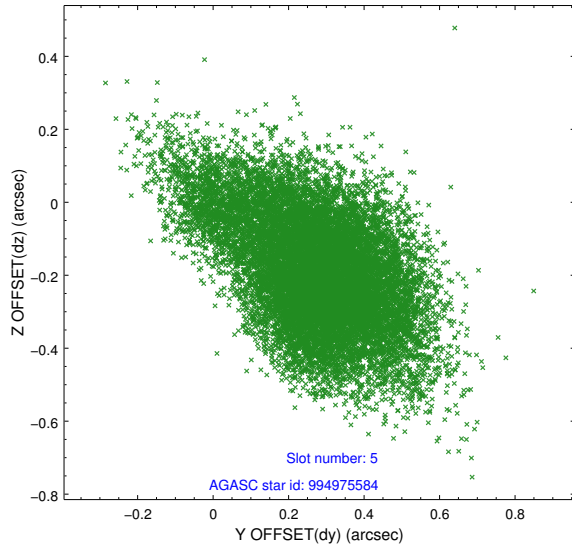
2.4.1 Slot 3



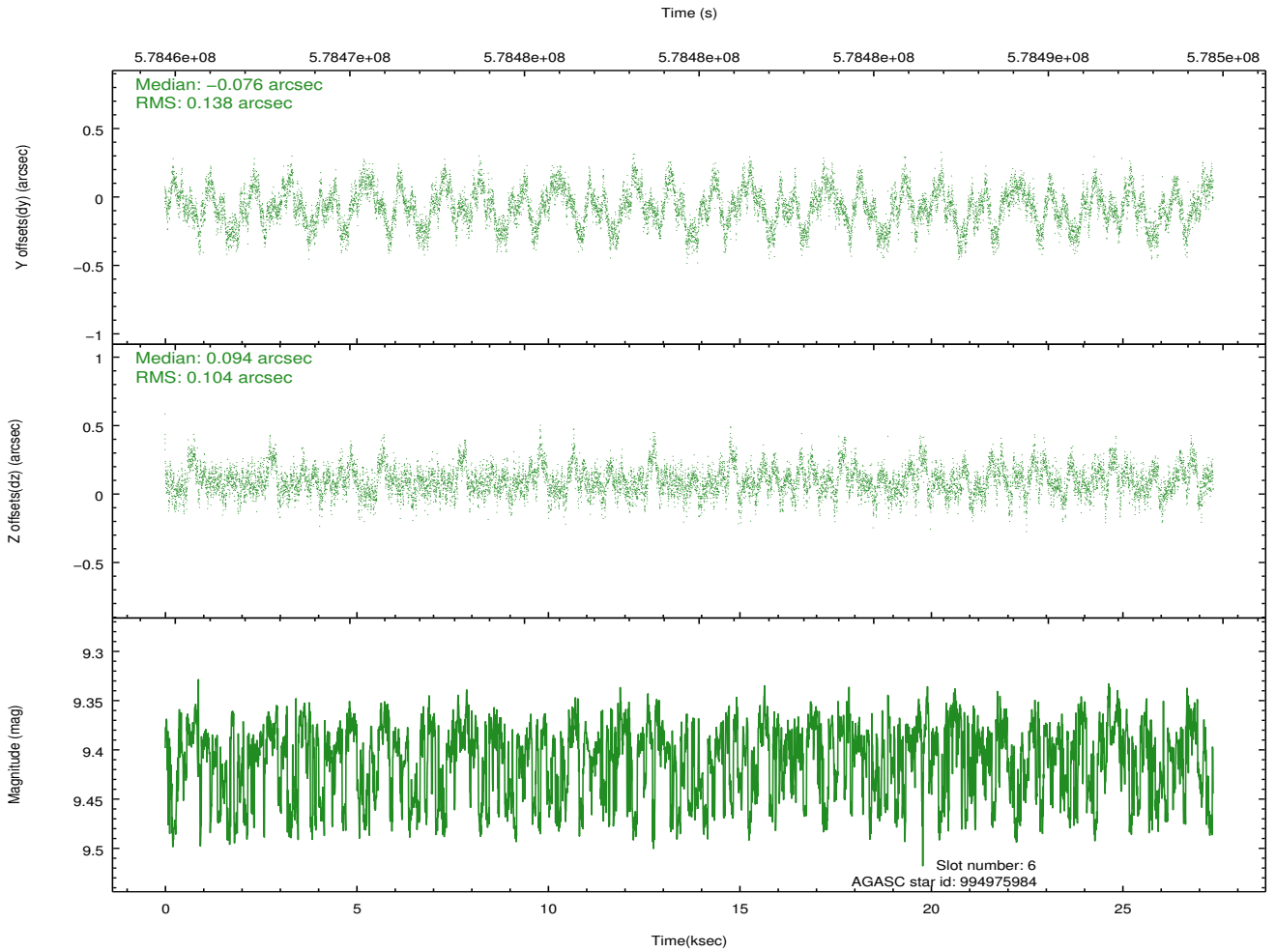
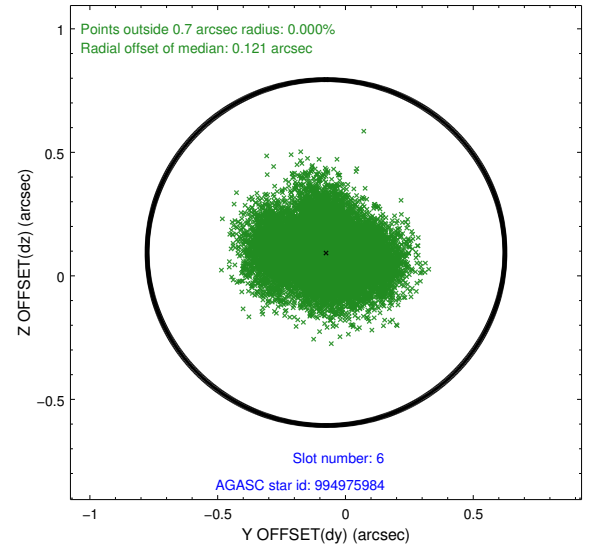
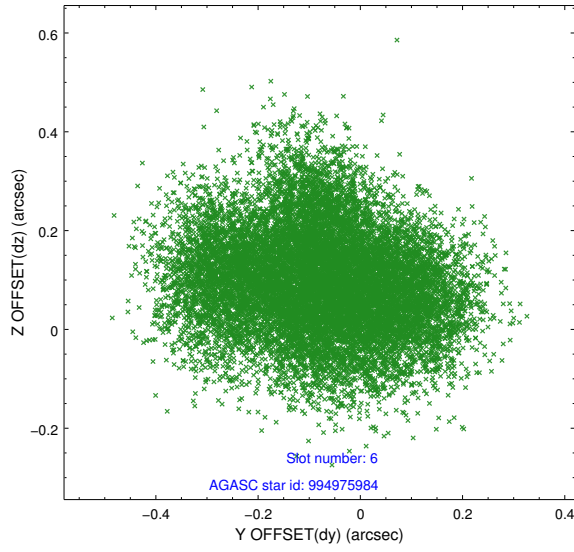
2.4.2 Slot 4



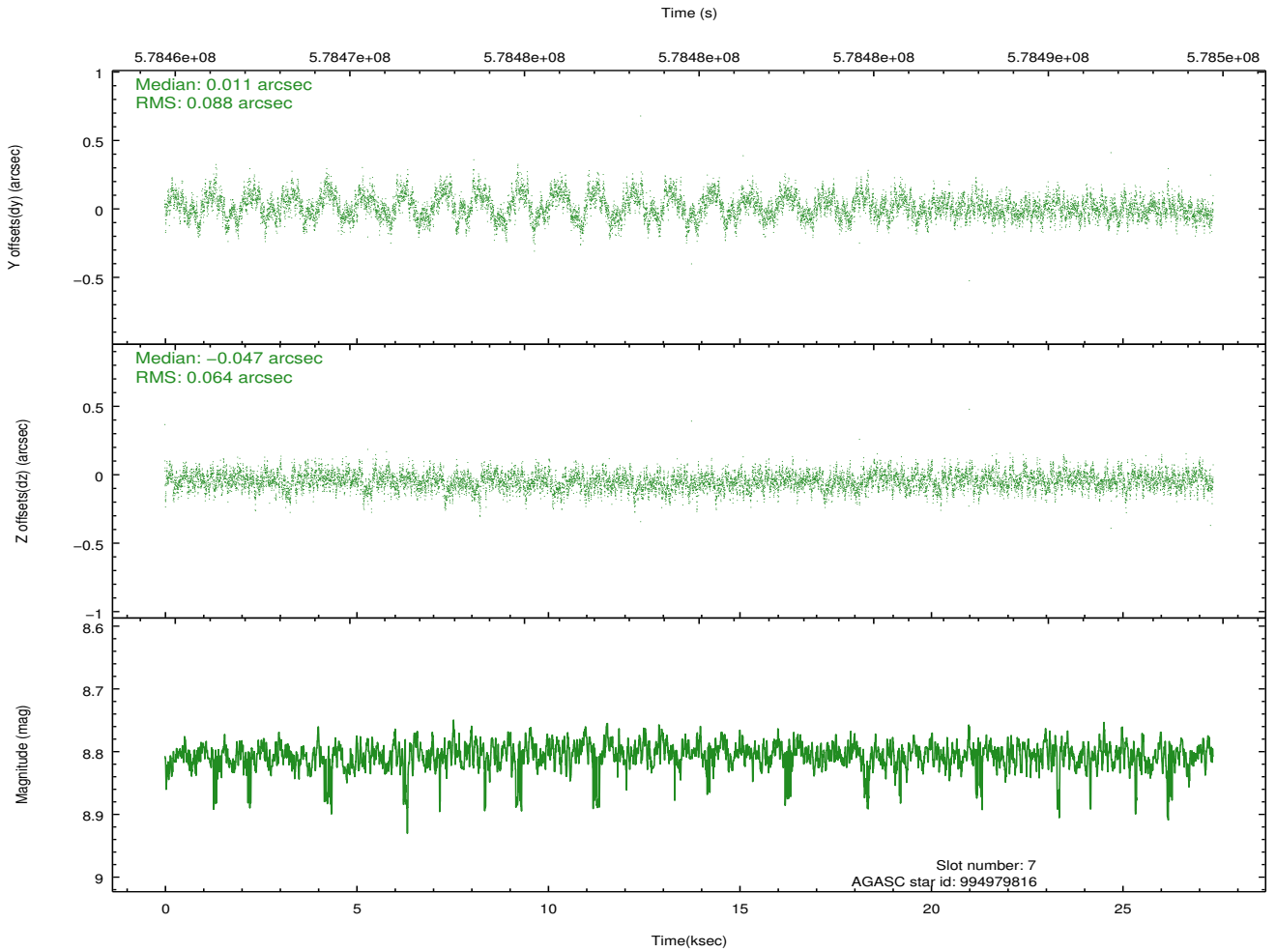
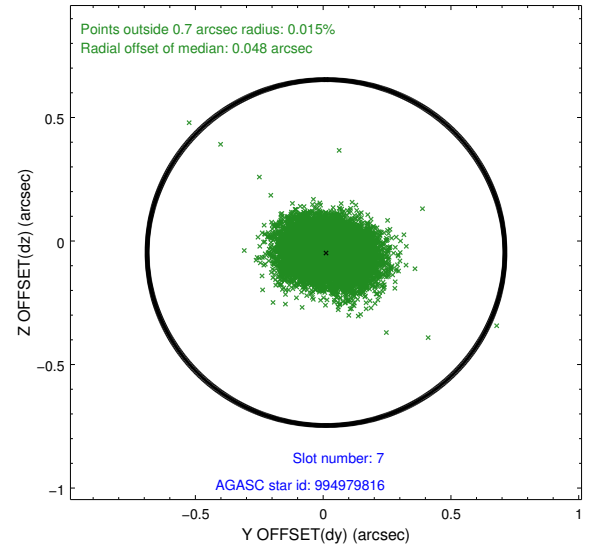
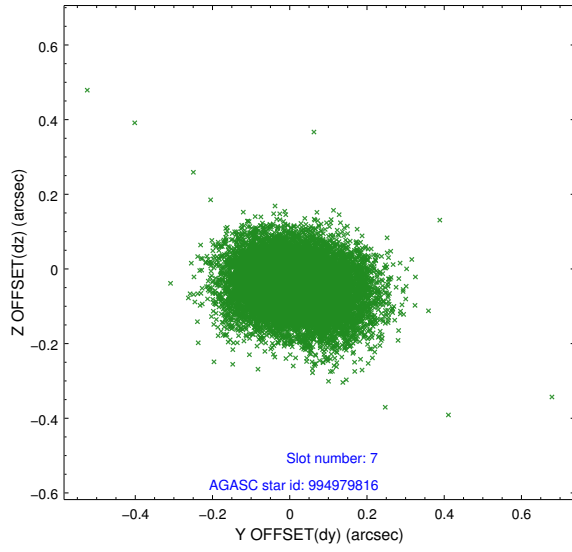
2.4.3 Slot 5



2.4.4 Slot 6

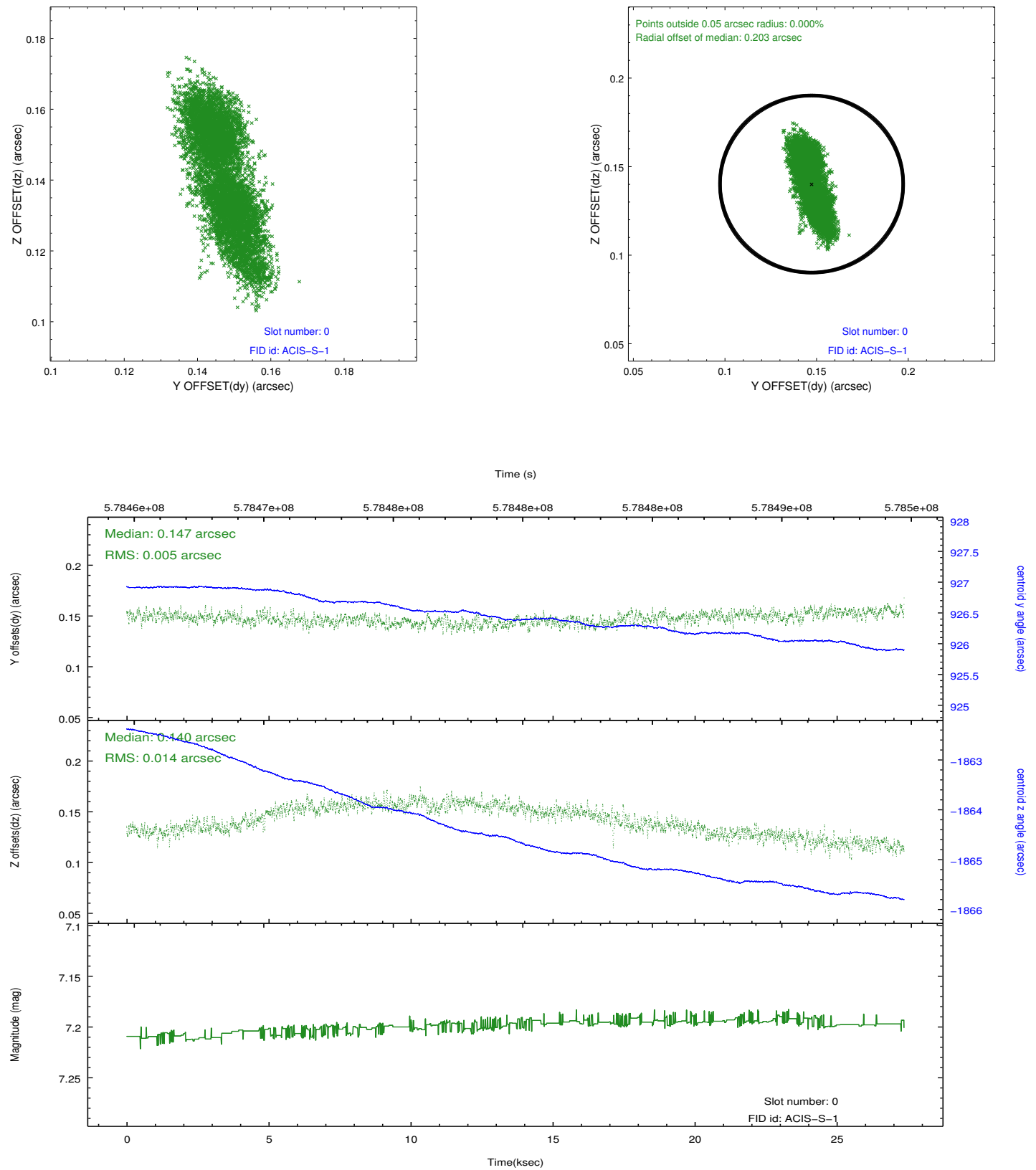


2.4.5 Slot 7

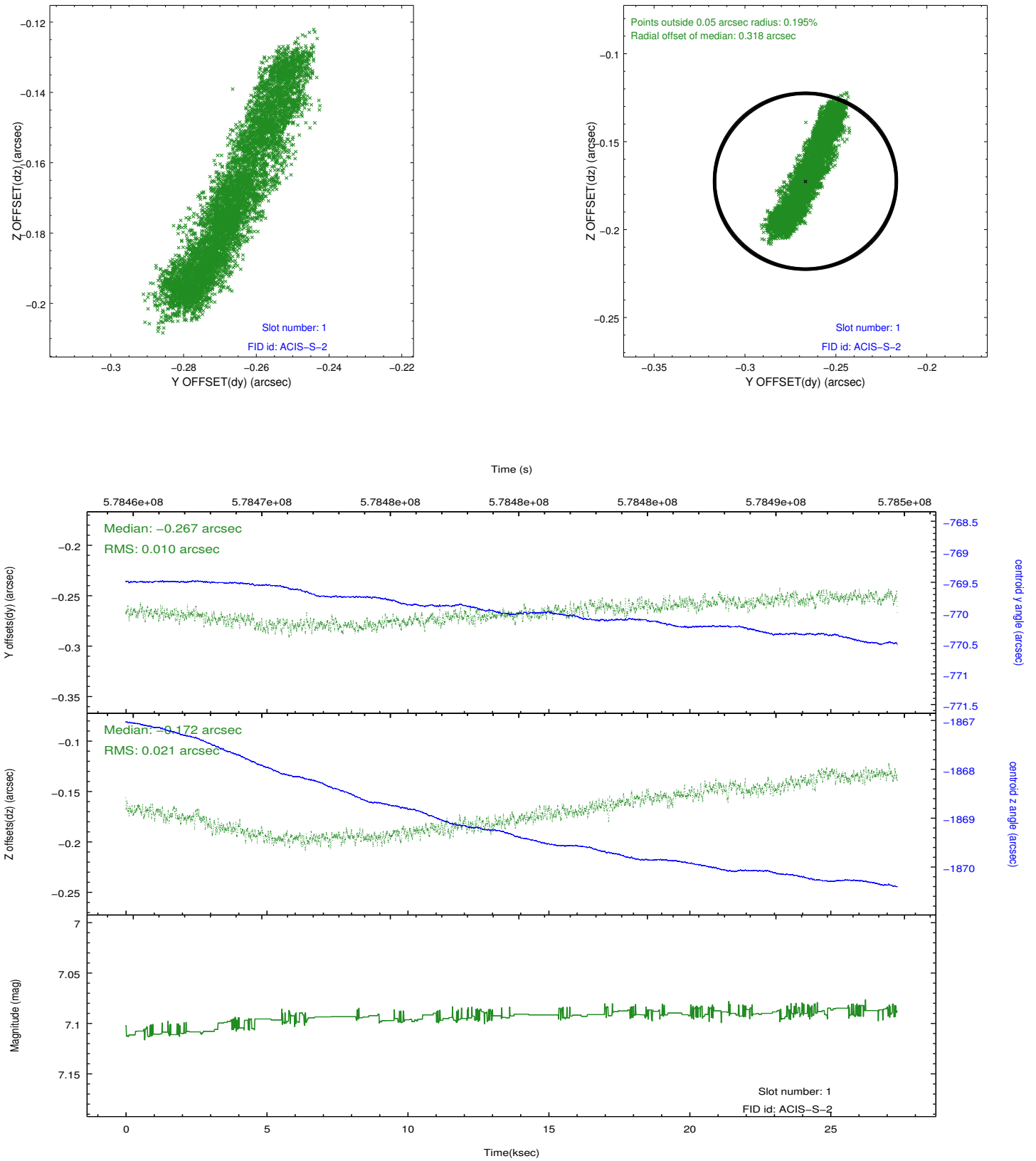


2.5 FID Slots

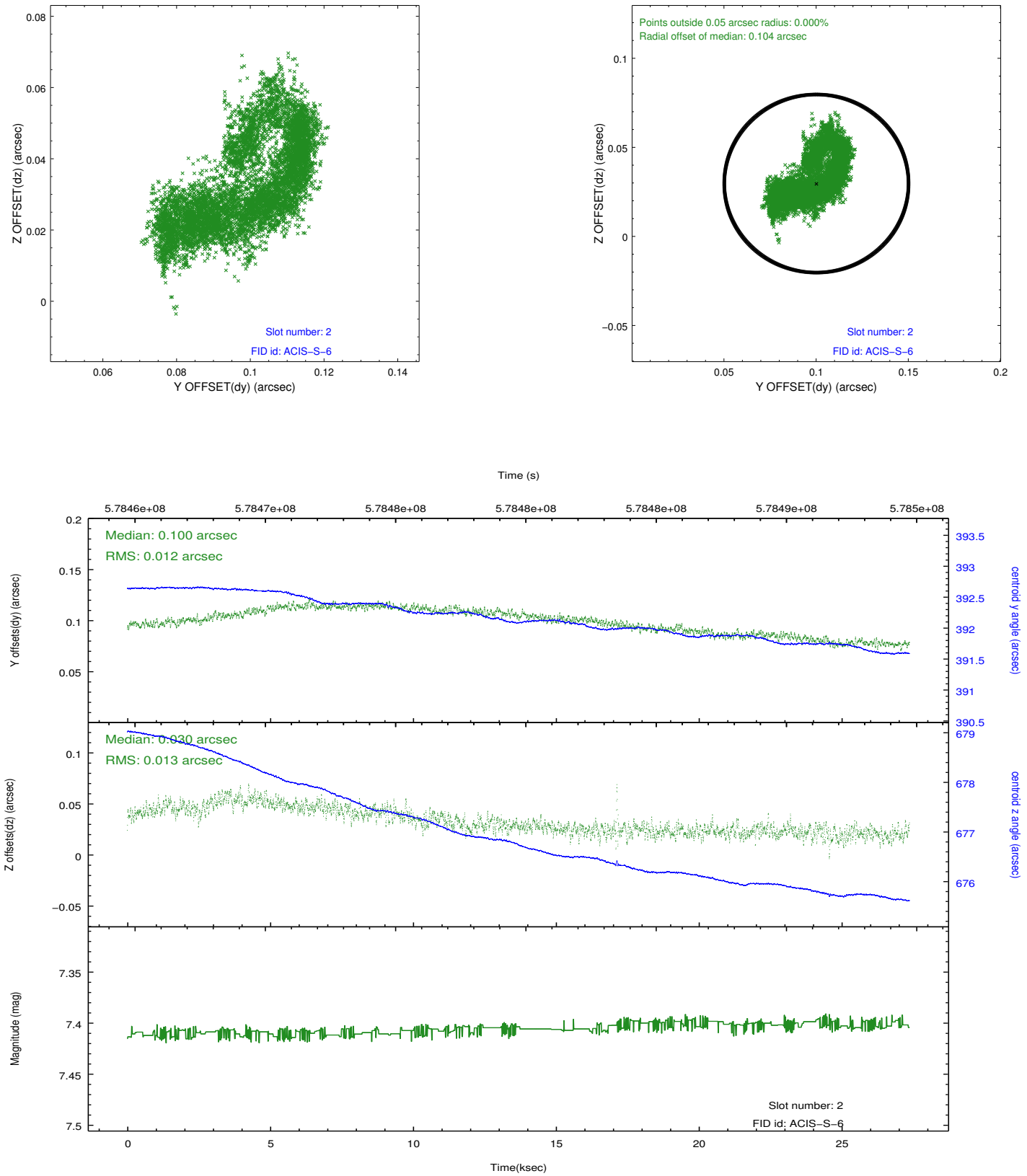
2.5.1 Slot 0



2.5.2 Slot 1

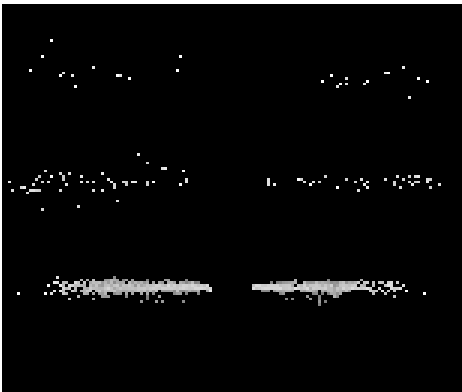


2.5.3 Slot 2

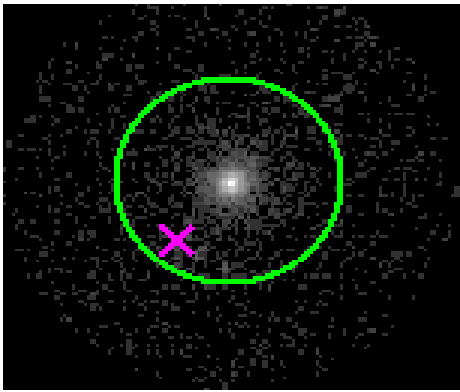


3 Gratings

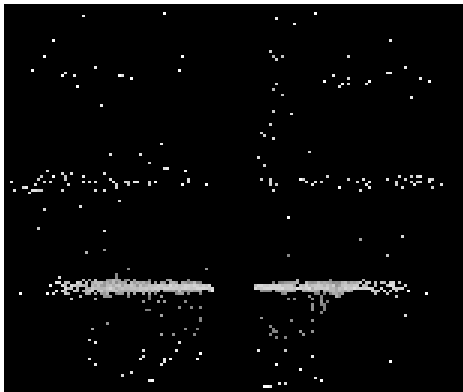
3.1 HEG Arm



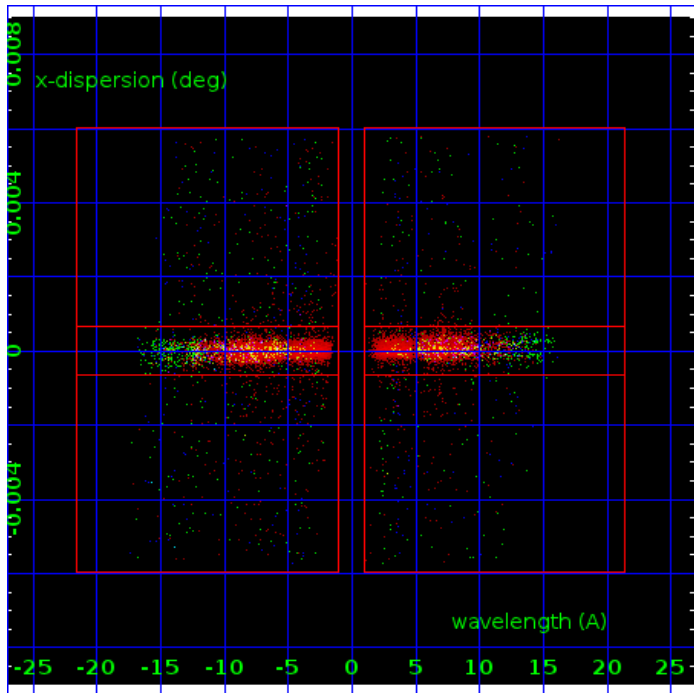
HEG Order Sort 123



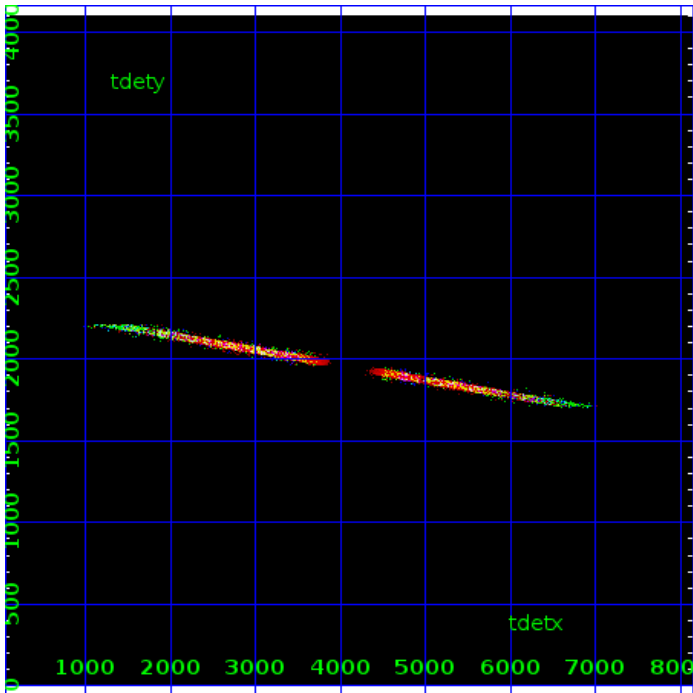
HEG Zero Order



HEG Order Sort ALL

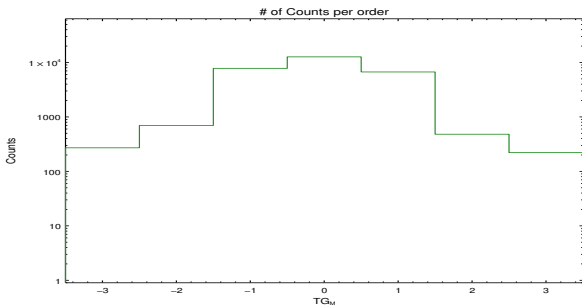


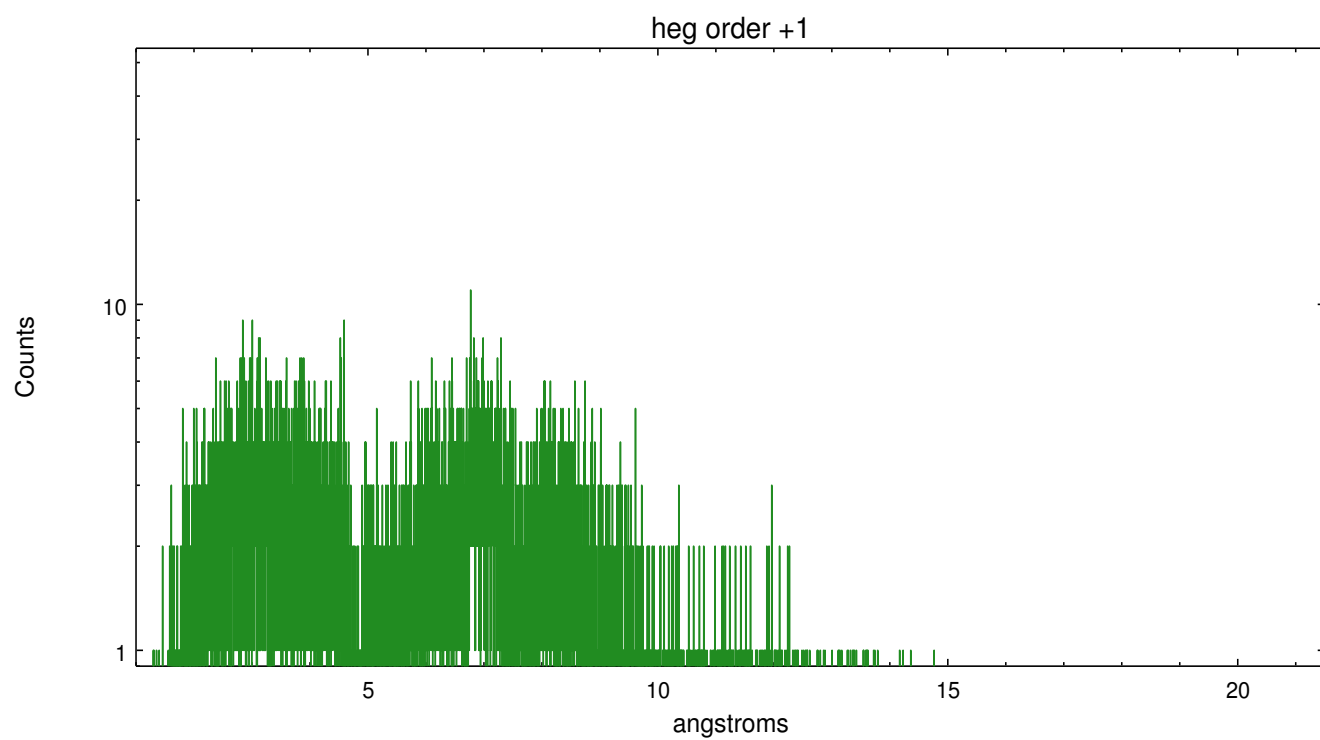
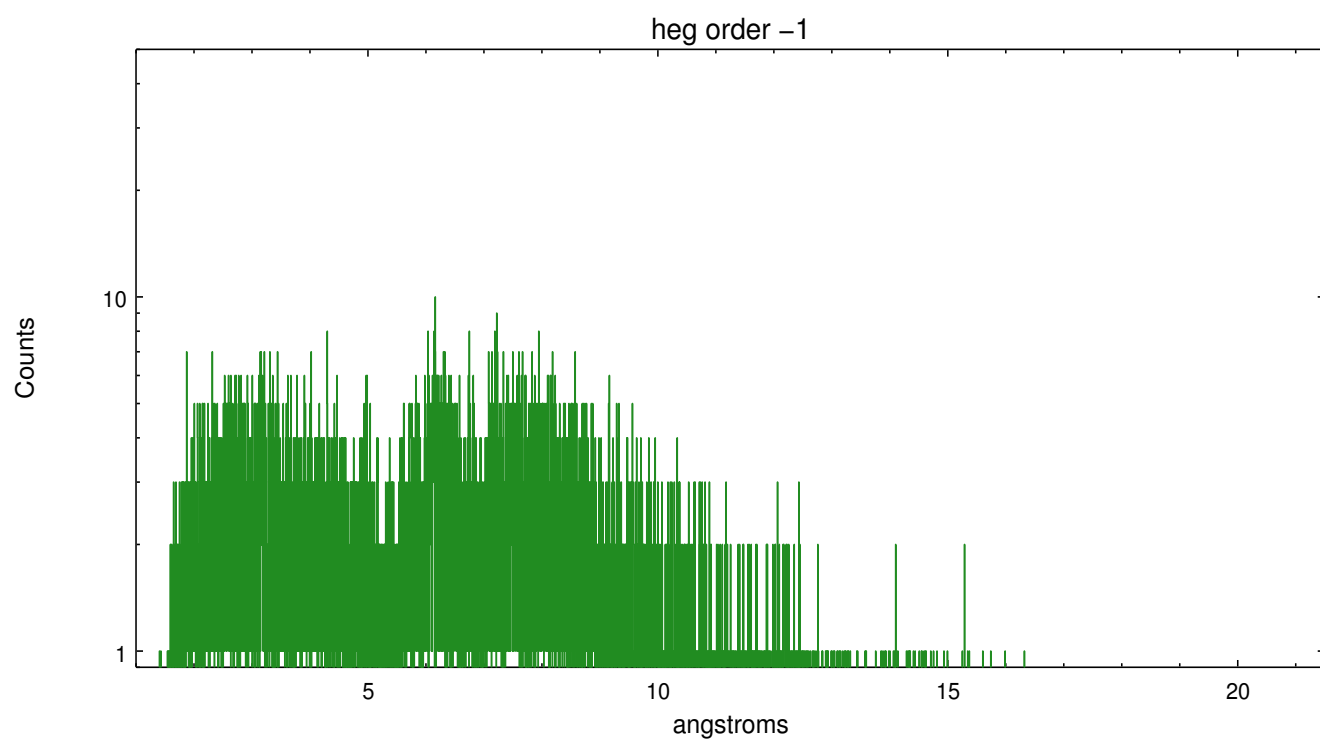
Spot Image HEG



Full Detector HEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	271	698	7800	12683	6696	481	221

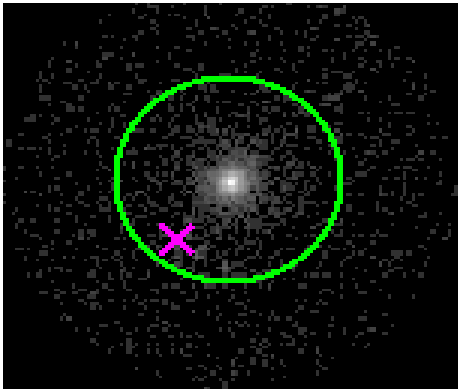




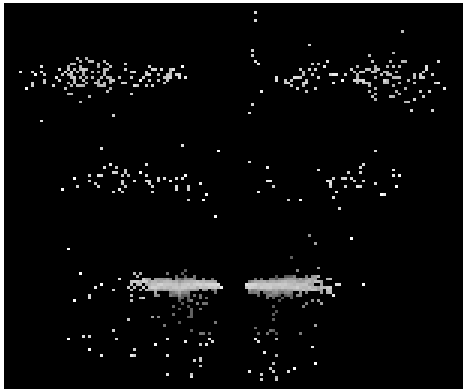
3.2 MEG Arm



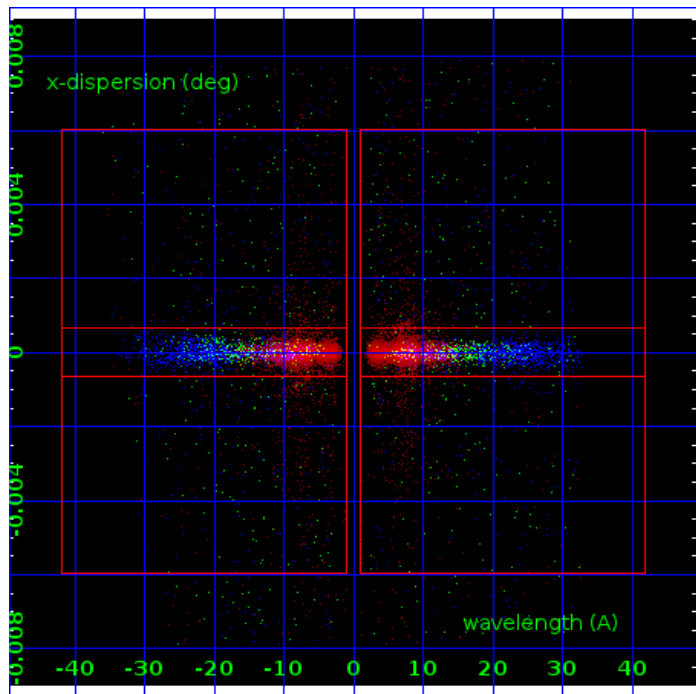
MEG Order Sort 123



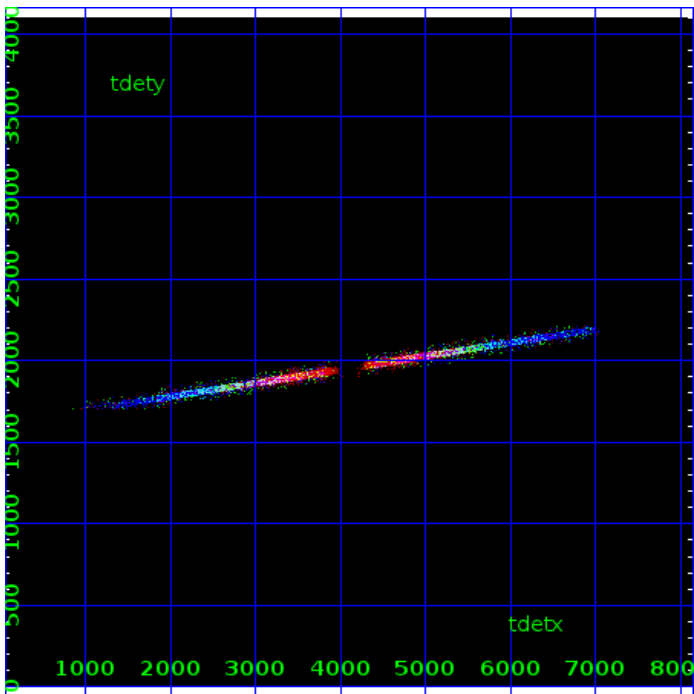
MEG Zero Order



MEG Order Sort ALL

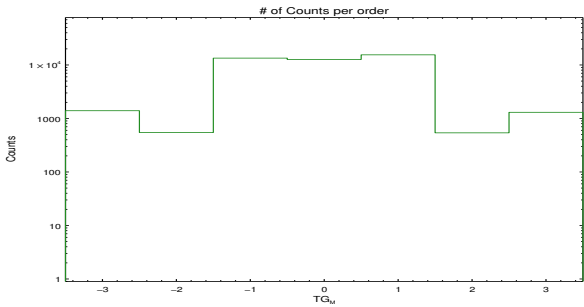


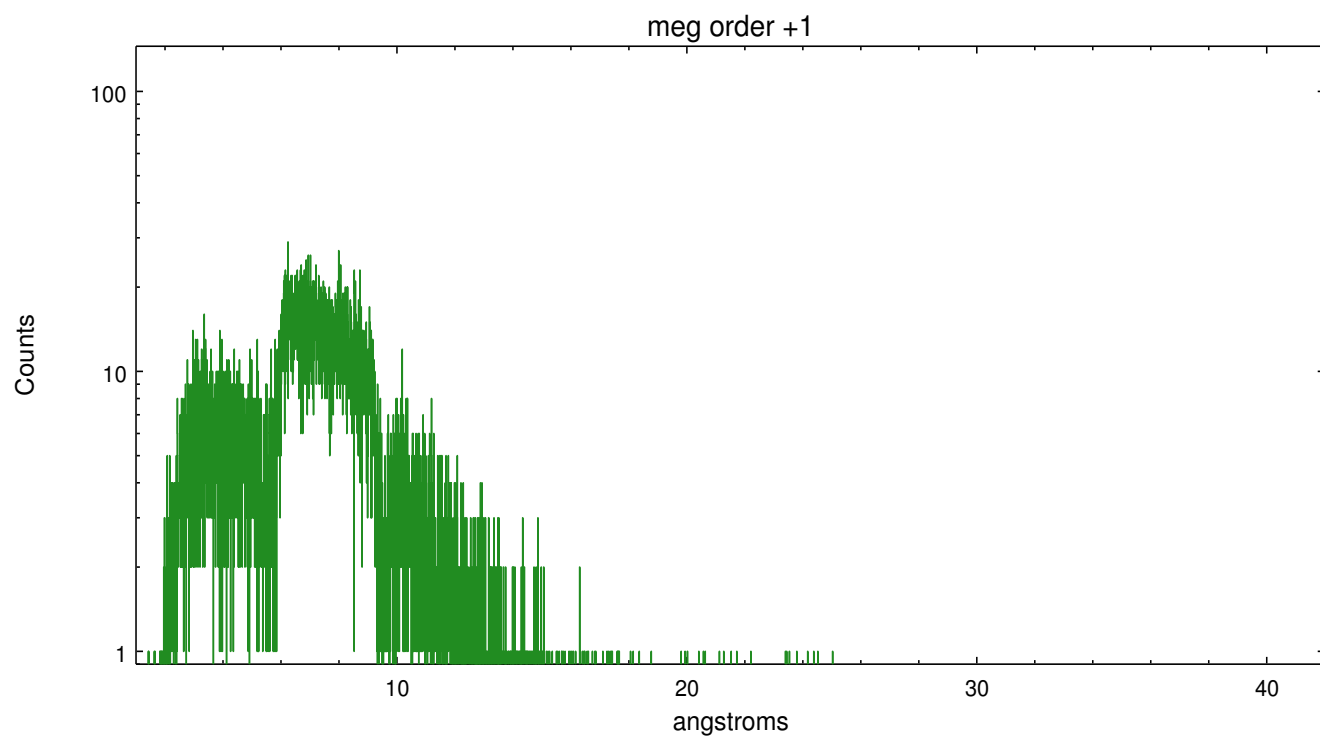
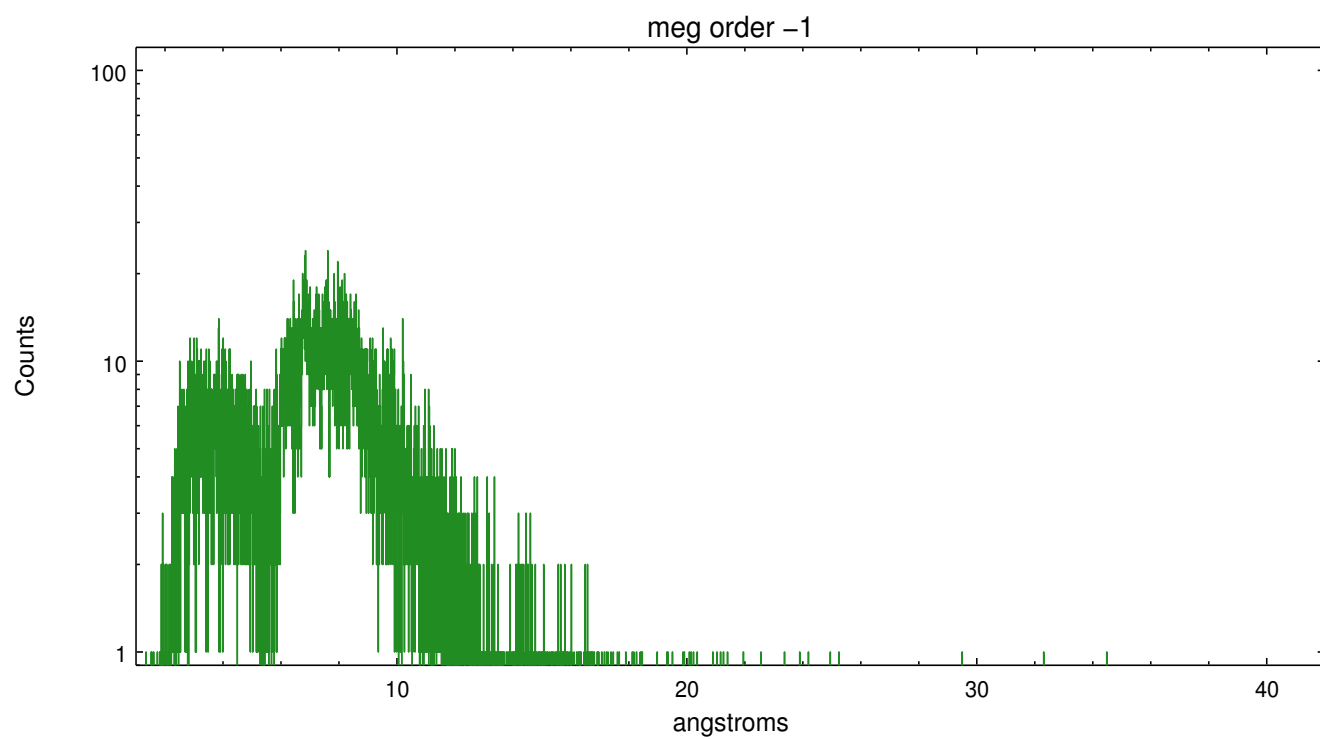
Spot Image MEG



Full Detector MEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	1397	546	13427	12683	15476	539	1303





A Summary

A.1 Status

V&V Scientist	Joy Nichols
V&V Date (YYYY-MM-DD)	2016.05.02
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	27.266300764799

A.2 Comments

Zeroth order 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.