

V&V Reference Report

L2 ASCDS Version : 10.6.4

Observation 20710 - L2 Version 1
Chandra X-Ray Center

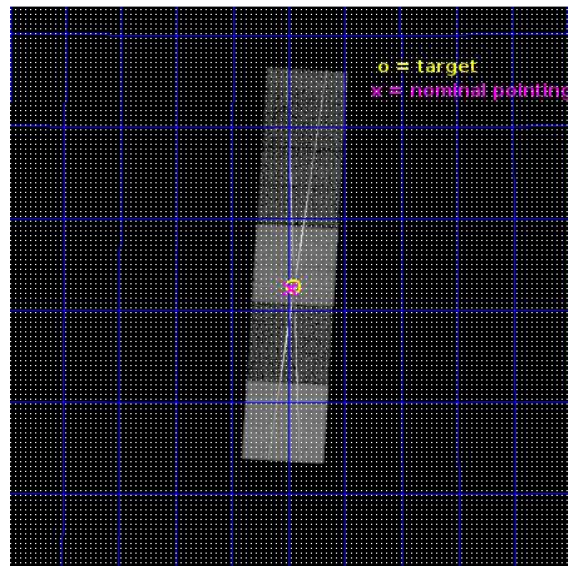
L2 Processing Date : Jul 13 2018

Contents

1	Front	2
2	OBI	3
2.1	OBI	3
2.1.1	Images	3
2.1.2	Bias	3
2.1.3	Parameters	4
2.1.4	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

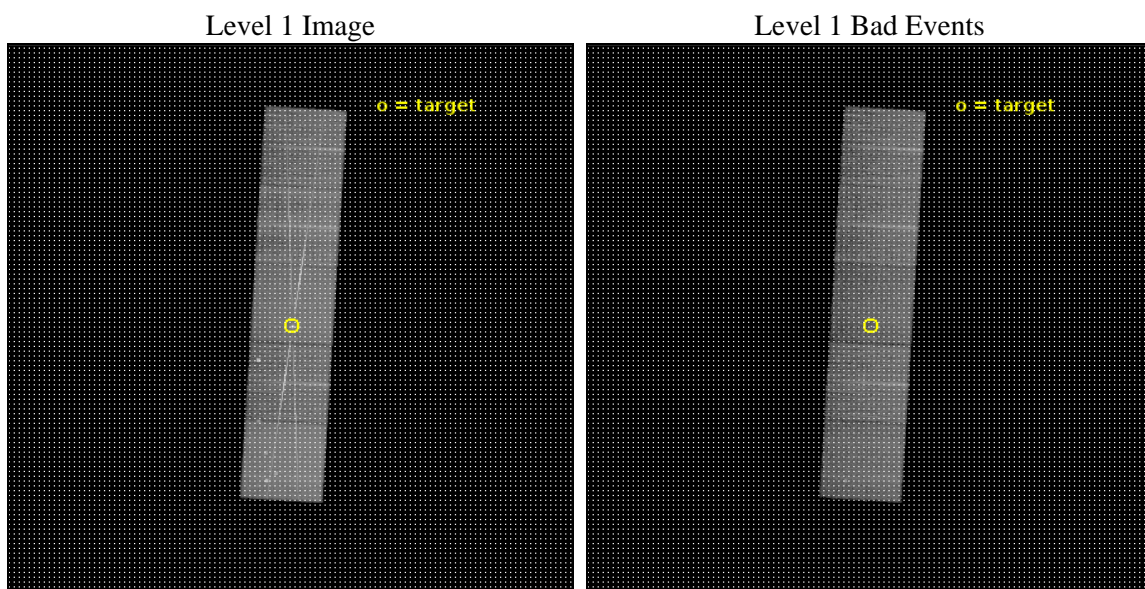
seq_num	790309	Sequence number
obs_id	20710	Observation id
title	AO-19 Calibration Observations of Mkn421	Proposal title
observer	CXC Calibration	Principal investigator
object	MKN421	Source name
dtcycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	166.113333	Observer's specified target RA [deg]
dec_targ	38.208806	Observer's specified target Dec [deg]
ra_nom	166.11866663178	Nominal RA [deg]
dec_nom	38.20605630777	Nominal Dec [deg]
roll_nom	273.44047703482	Nominal Roll [deg]
revision	1	Processing version of data
ontime	15049.455218792	Sum of GTIs [s]
livetime	14852.823007111	Livetime [s]
ontime5	15049.414178848	Sum of GTIs [s]
ontime6	15046.232138515	Sum of GTIs [s]
ontime7	15049.455218792	Sum of GTIs [s]
ontime8	15049.332098842	Sum of GTIs [s]
ontime9	15049.291058779	Sum of GTIs [s]
l2events	259624	Number of level 2 events



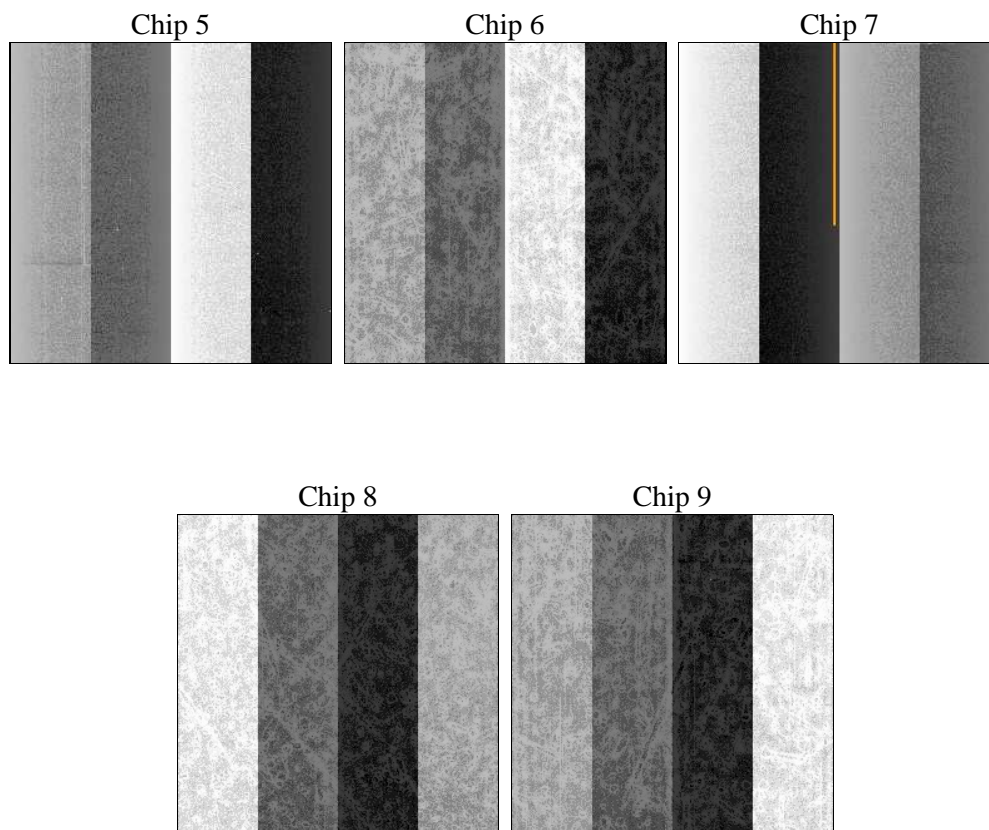
2 OBI

2.1 OBI

2.1.1 Images



2.1.2 Bias



2.1.3 Parameters

obi_num	0	Obi number	sched_exp_time	15000.000000	[s] Scheduled observation exposure time
ascdsver	10.6.4	Processing system revision	ontime	15049.455218792	Sum of GTIs [s]
caldbver	4.7.8	 	ontime5	15049.414178848	Sum of GTIs [s]
date	2018-07-13T16:27:04	Date and time of file creation	ontime6	15046.232138515	Sum of GTIs [s]
revision	1	Processing version of data	ontime7	15049.455218792	Sum of GTIs [s]
			ontime8	15049.332098842	Sum of GTIs [s]
			ontime9	15049.291058779	Sum of GTIs [s]
			l1events	810797	Number of level 1 events
			tgmethod	FINDZO	Method used to create src1a file
			zo_pos	(4124.54, 4116.46)	src1a sky pixel position
					src1a sky pixel position via

2.1.4 Events

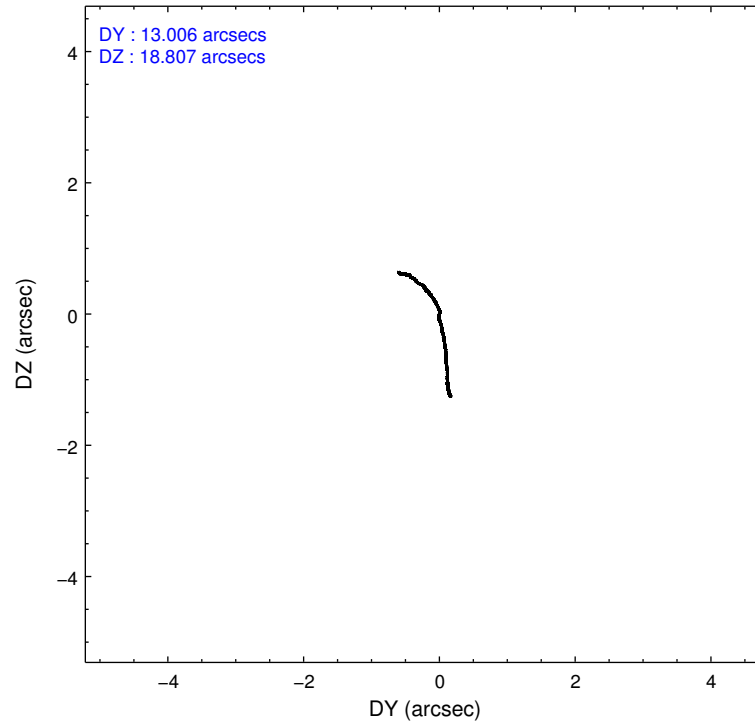
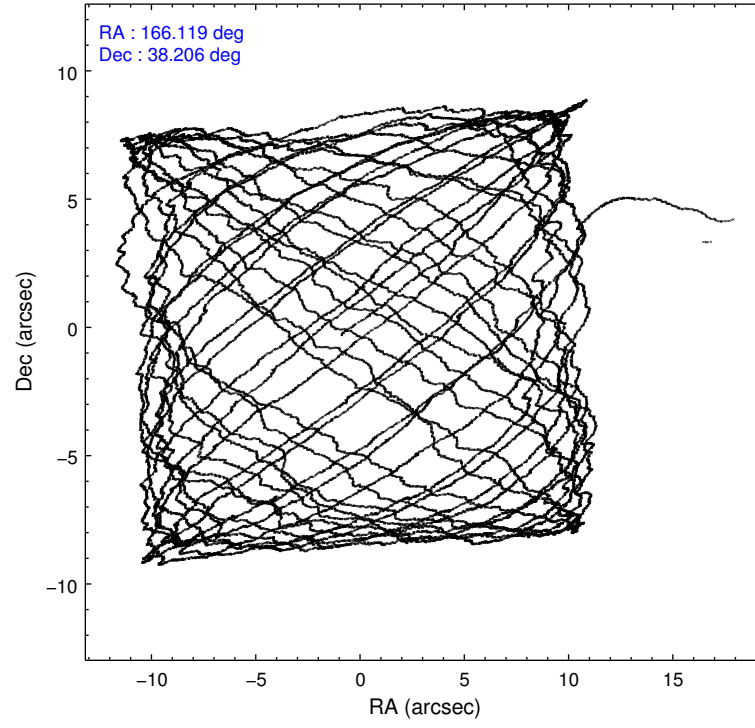
	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
level 1 events	192149	156855	177856	162791	121146
rejected events	95365	109959	85862	109682	104890
rejected %	49%	70%	48%	67%	86%

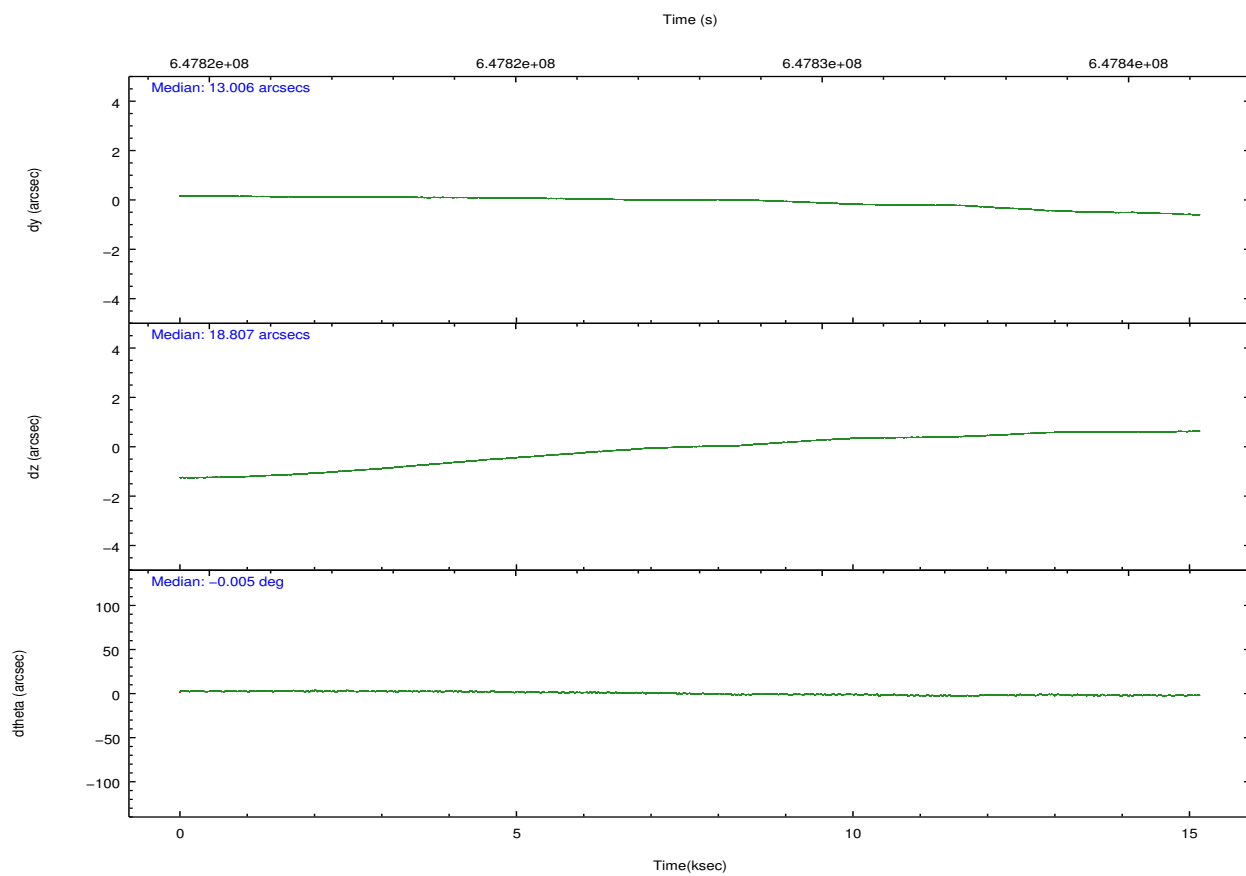
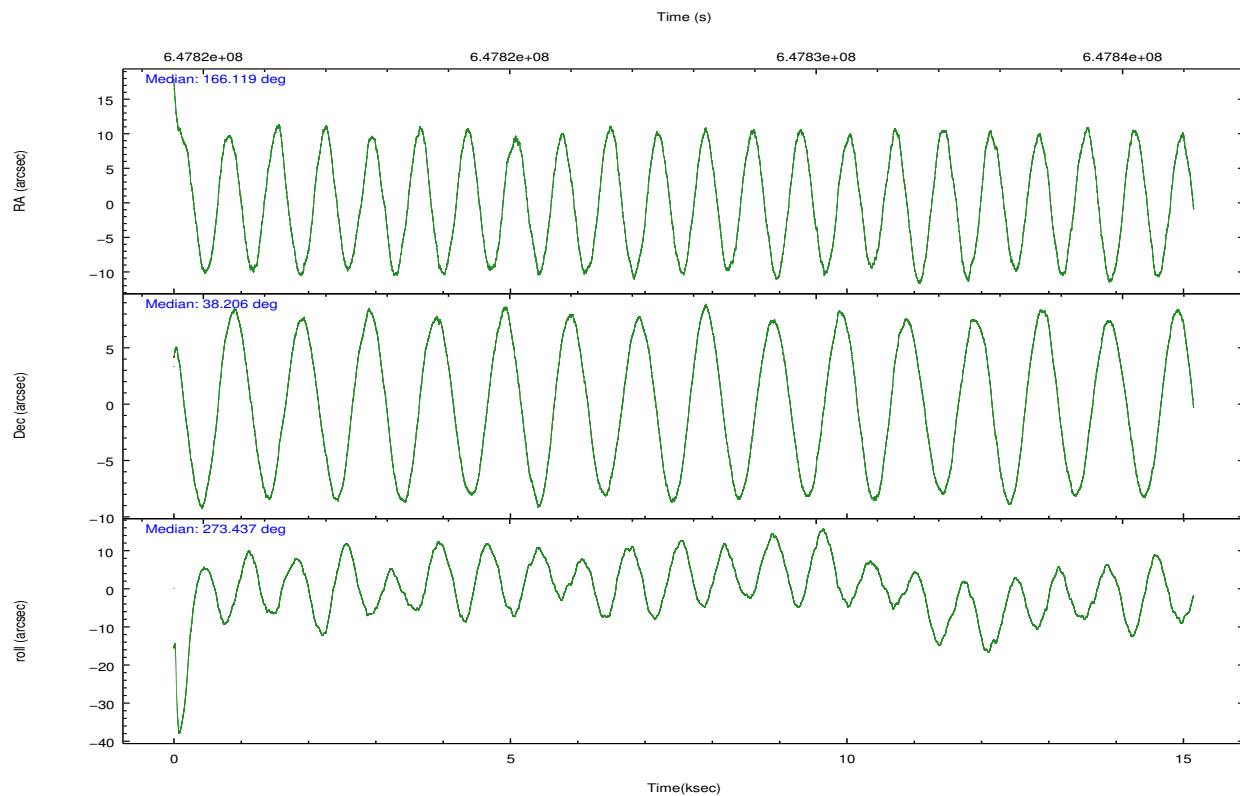
	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
grade 0 events	10672	31682	13141	23509	6899
	5%	20%	7%	14%	5%
grade 1 events	1001	245	380	191	76
	0%	0%	0%	0%	0%
grade 2 events	29622	6971	20568	10517	3445
	15%	4%	11%	6%	2%
grade 3 events	3586	2033	8068	4327	1339
	1%	1%	4%	2%	1%
grade 4 events	3557	2075	8037	4052	1355
	1%	1%	4%	2%	1%
grade 5 events	11930	5168	14888	7798	5653
	6%	3%	8%	4%	4%
grade 6 events	49378	4155	42211	10735	3224
	25%	2%	23%	6%	2%
grade 7 events	82403	104526	70563	101662	99155
	42%	66%	39%	62%	81%

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	166.098989	166.1186666317755	CCD I2 on	N	N
[deg] Pointing Dec	38.228736	38.20605630777018	CCD I3 on	N	N
[deg] Pointing Roll	273.295997	273.4404770348207	CCD S0 on	N	N
[s] Window start time (MET)	644198469.184000	644198469.184000	CCD S1 on	Y	Y
[s] Window stop time (MET)	652060869.184000	652060869.184000	CCD S2 on	Y	Y
[mm] SIM focus pos	-0.684267	-0.6828225247311905	CCD S3 on	Y	Y
[mm] SIM defocus	0	0.001444936568705701	CCD S4 on	Y	Y
[mm] SIM translation stage pos	-190.132523	-190.1400660498719	CCD S5 on	O1	Y
[mm] SIM translation stage offset	0	0.00754346686406393	Number of optional ACIS chips dropped	0	0
[s] Observation start time (MET)	647820424.184000	647819120.93573	On-chip summing requested	N	N
Observation start date	2018-07-12T22:05:55	2018-07-12T21:45:20	Subarray requested	NONE	NONE
[s] Observation end time (MET)	647835424.184000	647835785.89922	Alternating exposures requested	N	N
Observation end date	2018-07-13T02:15:55	2018-07-13T02:23:05	[s] Primary exposure time	0.000000	3.1
Read mode	TIMED	TIMED			

2.3 Aspect



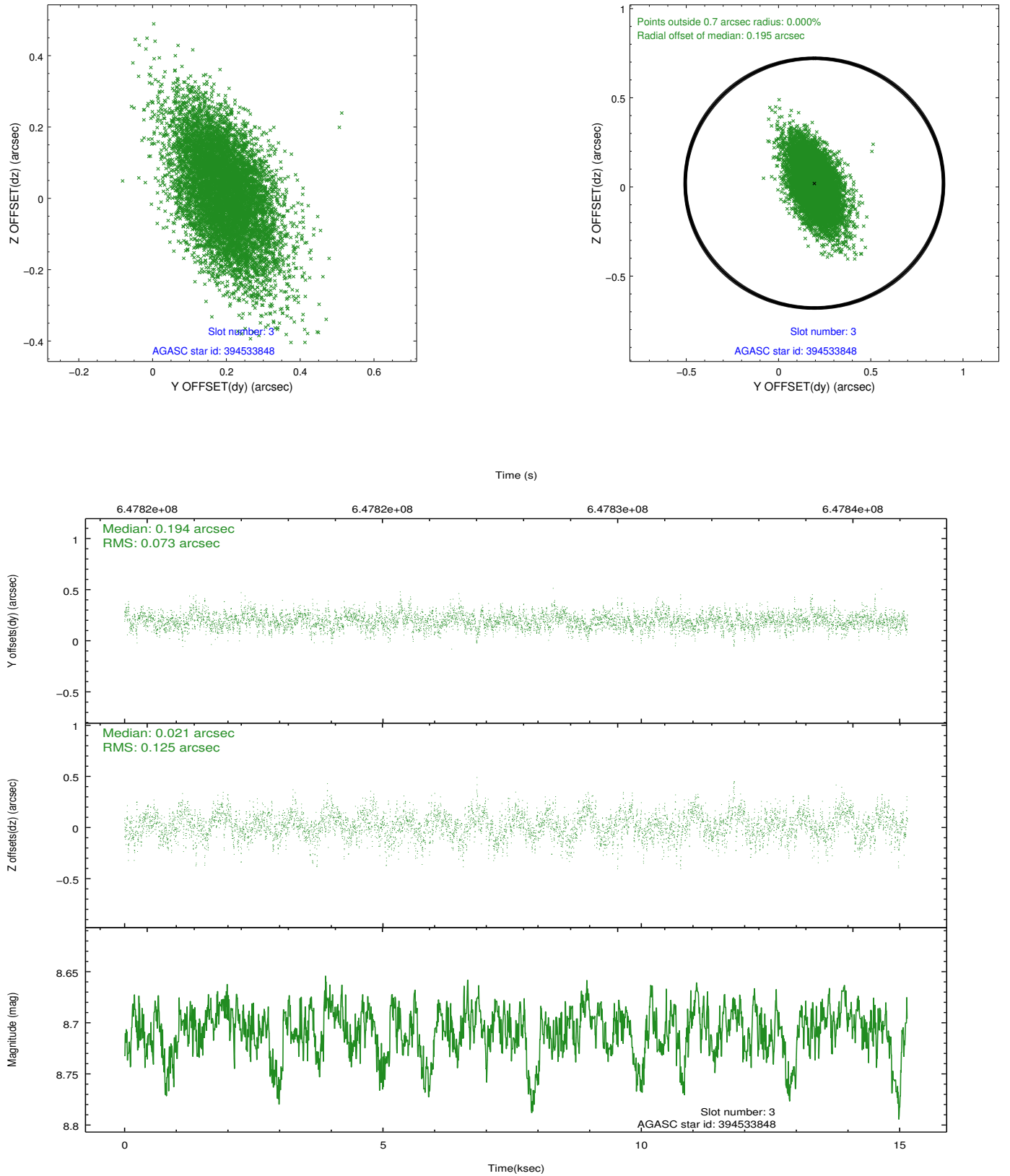


Slot Statistics

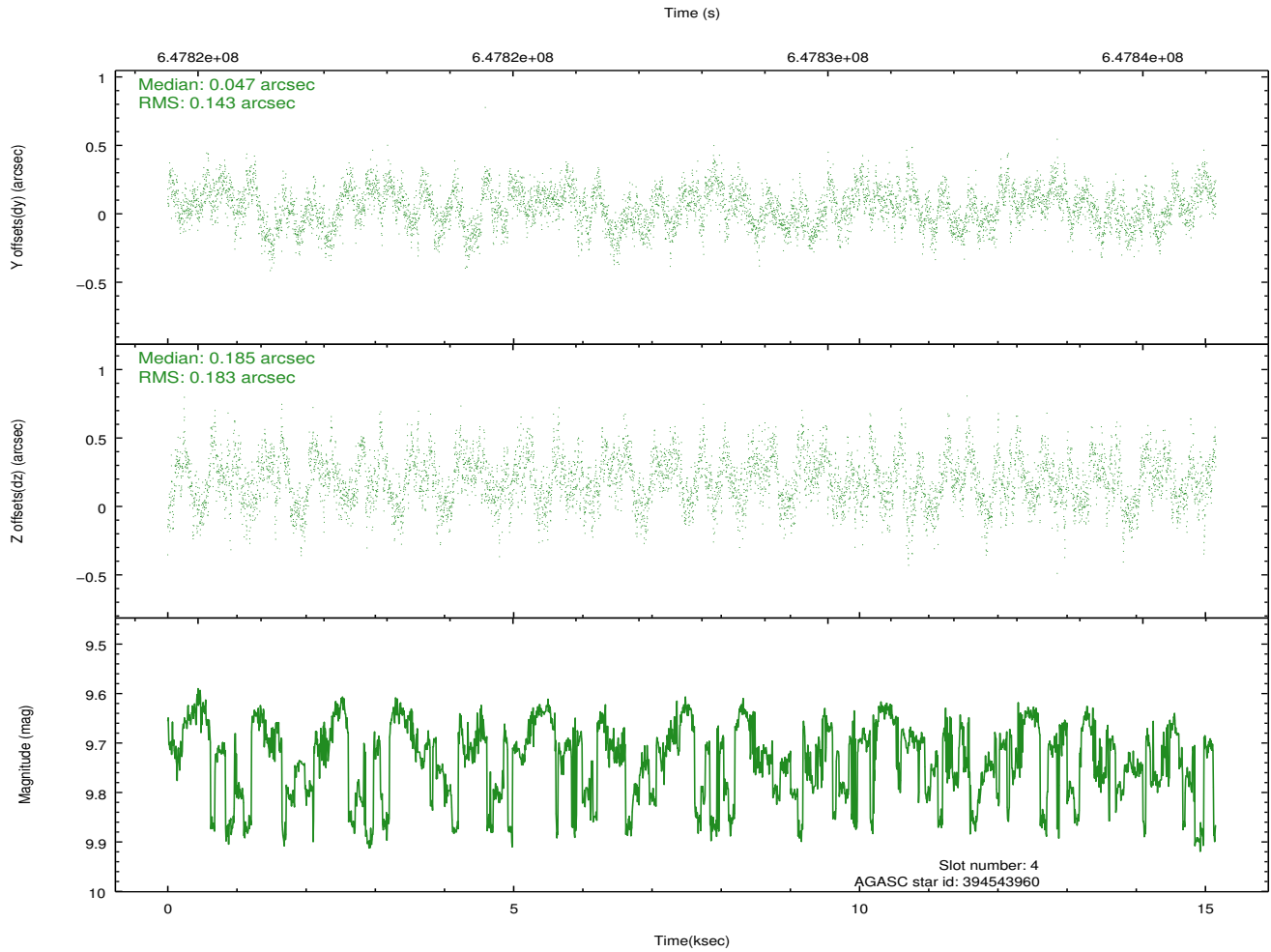
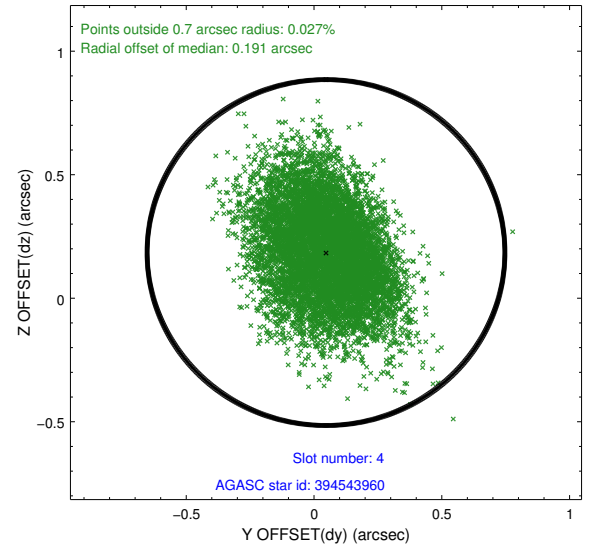
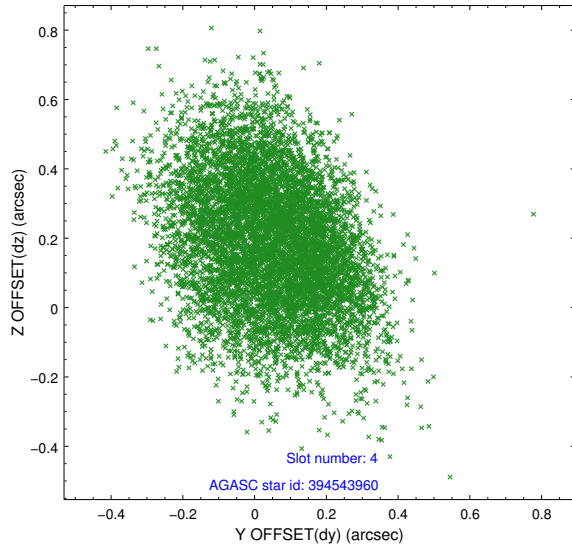
pt	status	used	id	mag	n_pts	frac_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mea
0	FID		ACIS-S-2	7.08	3695	1.000	-0.145	-0.107	0.024	0.035	0.000000	0.000000	-765.95	-1740
1	FID		ACIS-S-4	7.21	3696	1.000	0.444	0.096	0.011	0.027	0.000000	0.000000	2147.75	168
2	FID		ACIS-S-5	7.20	3695	1.000	-0.334	0.017	0.028	0.047	0.000000	0.000000	-1818.62	162
3	GUIDE	used	394533848	8.71	7385	1.000	0.194	0.021	0.146	0.265	166.382906	38.276007	-125.86	804
4	GUIDE	used	394543960	9.72	7372	1.000	0.047	0.185	0.248	0.395	165.802757	37.787371	1537.03	-932
5	GUIDE	used	394546712	6.58	7392	1.000	-0.199	-0.022	0.137	0.246	166.451462	38.394357	-539.31	1025
6	GUIDE	used	394546720	6.42	7392	1.000	0.010	-0.355	0.152	0.261	166.130115	38.241361	-40.01	88
7	GUIDE	used	394530152	7.46	7389	1.000	-0.049	0.174	0.147	0.254	166.075805	38.868252	-2301.82	66

2.4 Star Slots

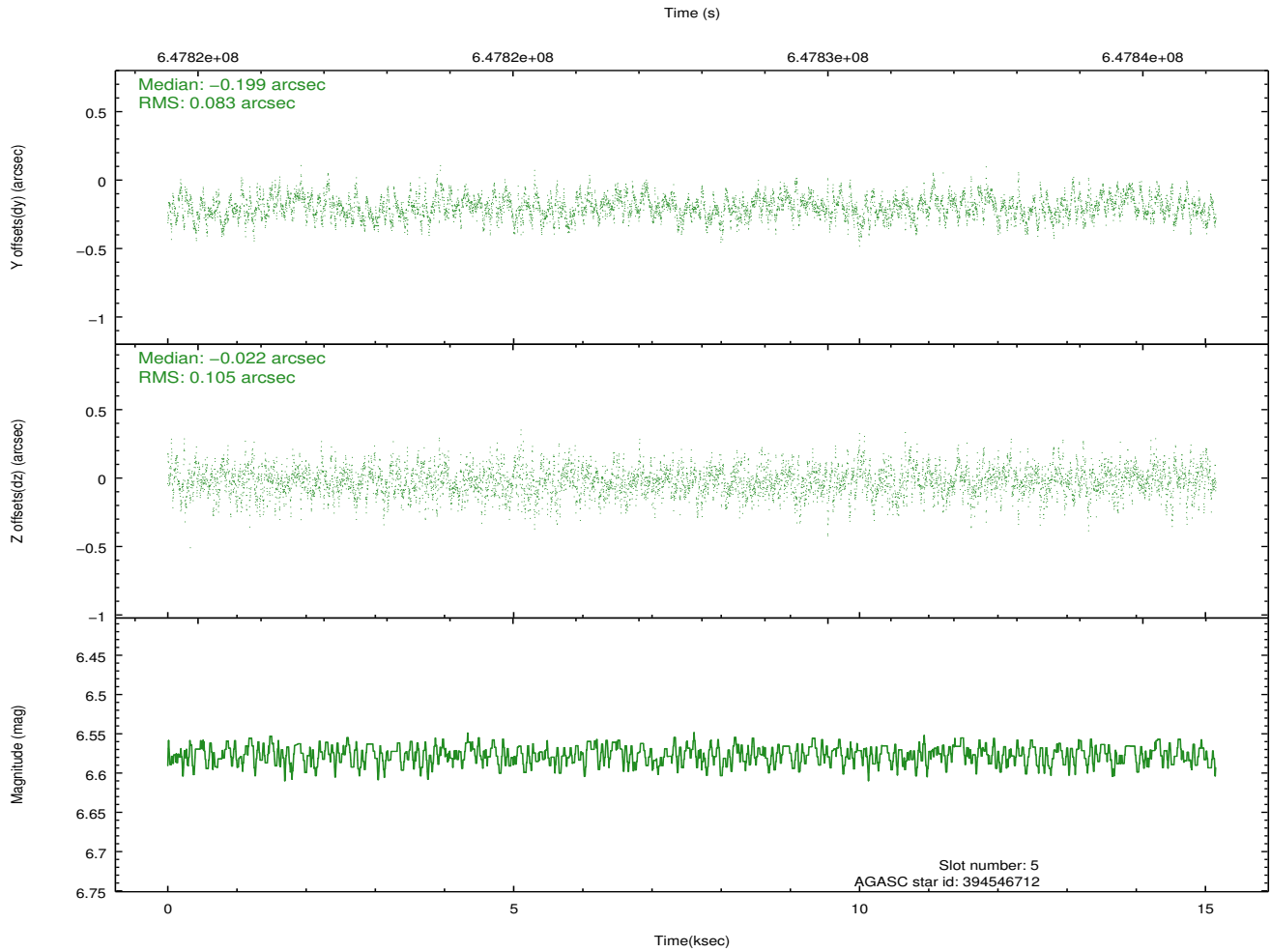
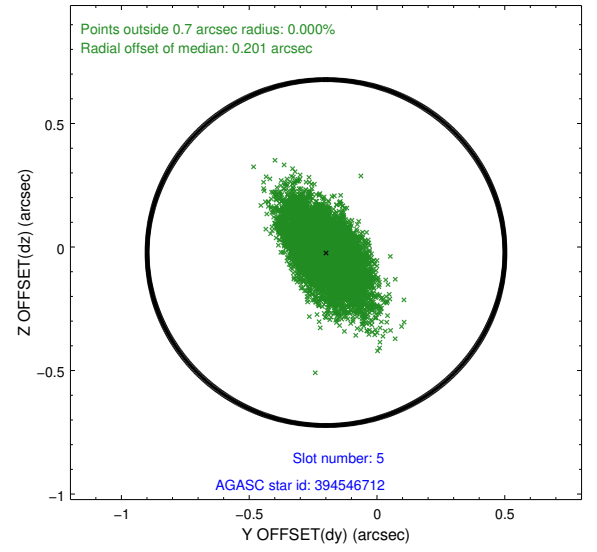
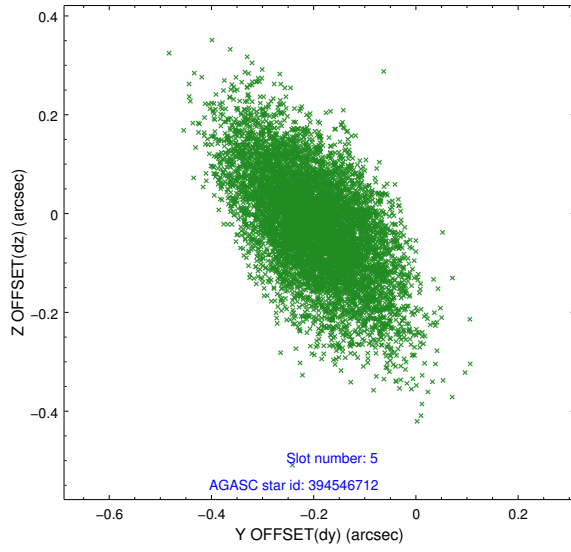
2.4.1 Slot 3



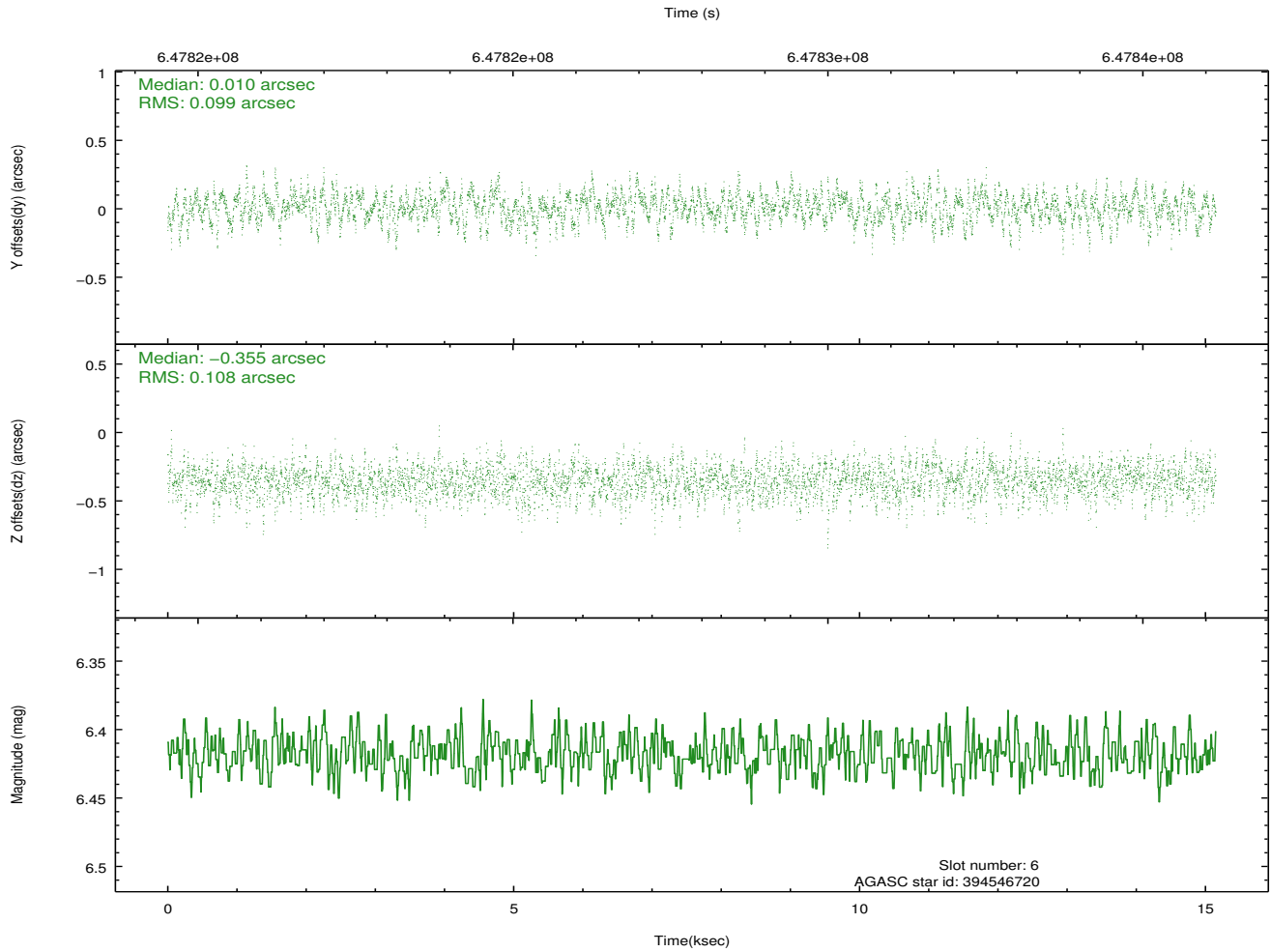
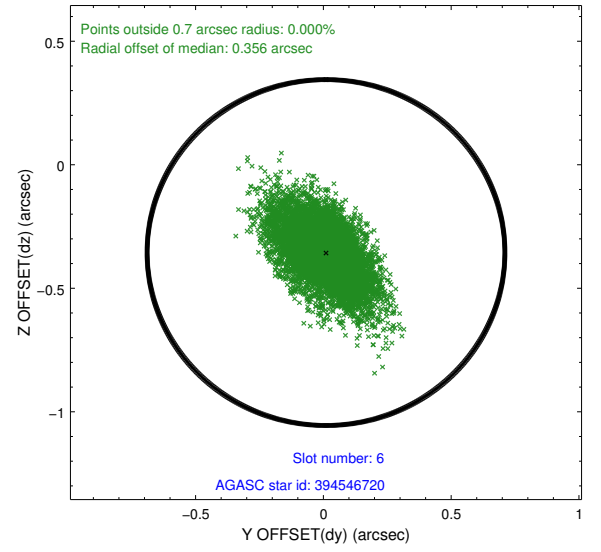
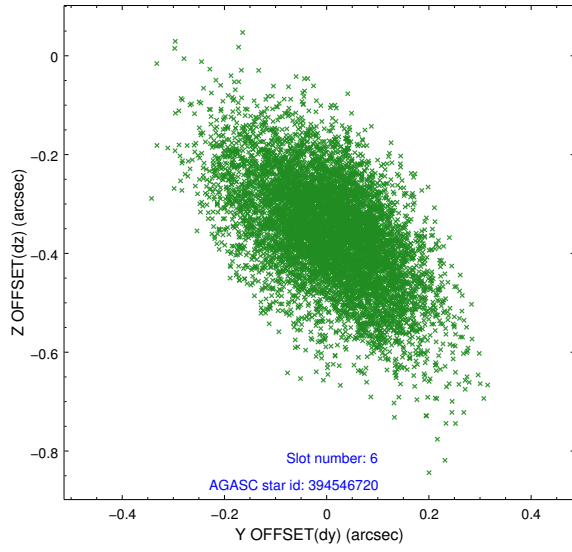
2.4.2 Slot 4



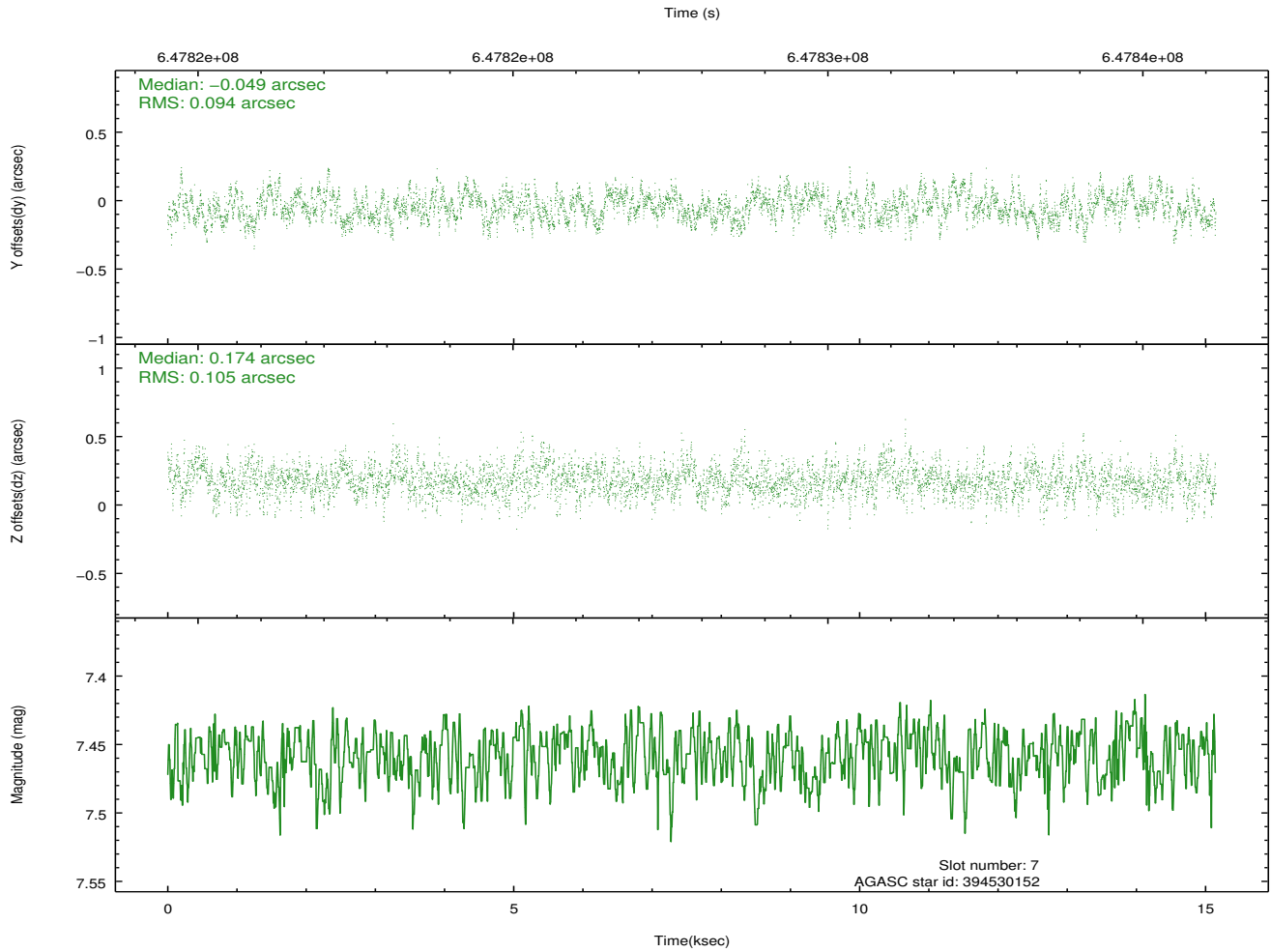
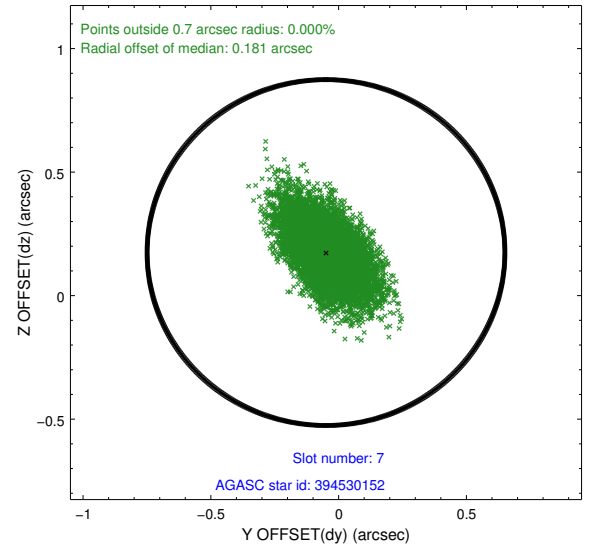
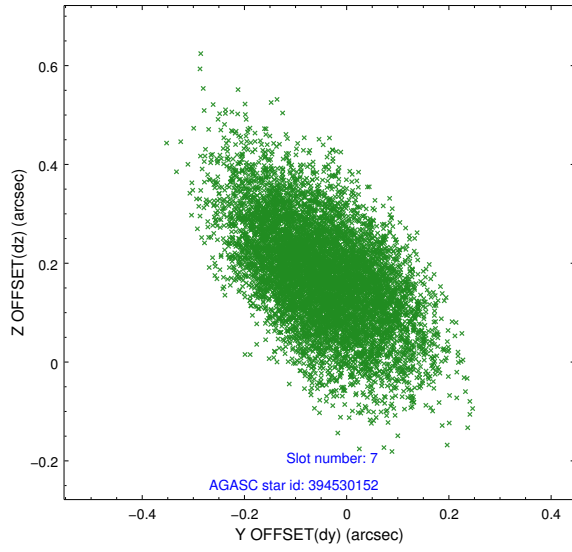
2.4.3 Slot 5



2.4.4 Slot 6

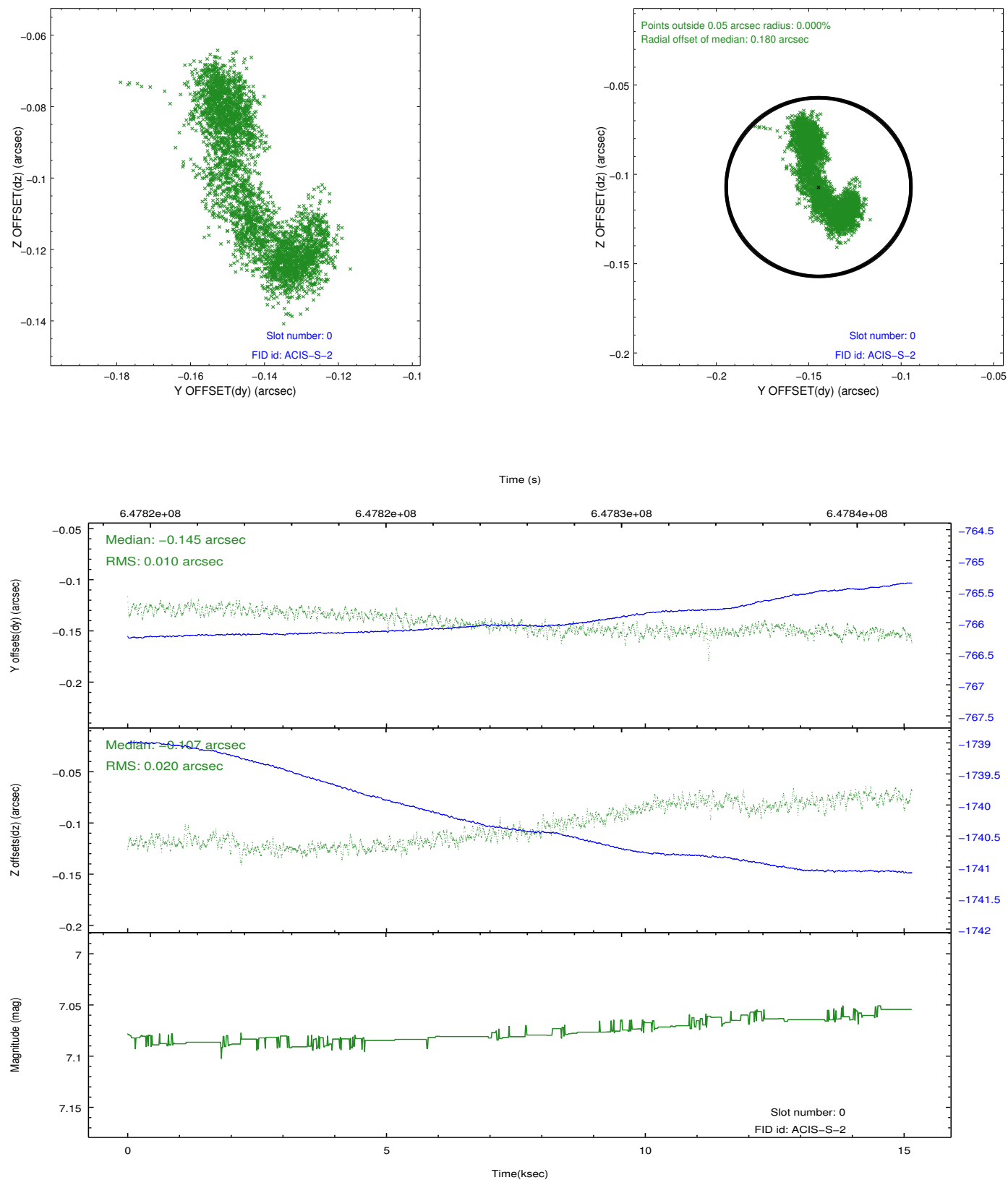


2.4.5 Slot 7

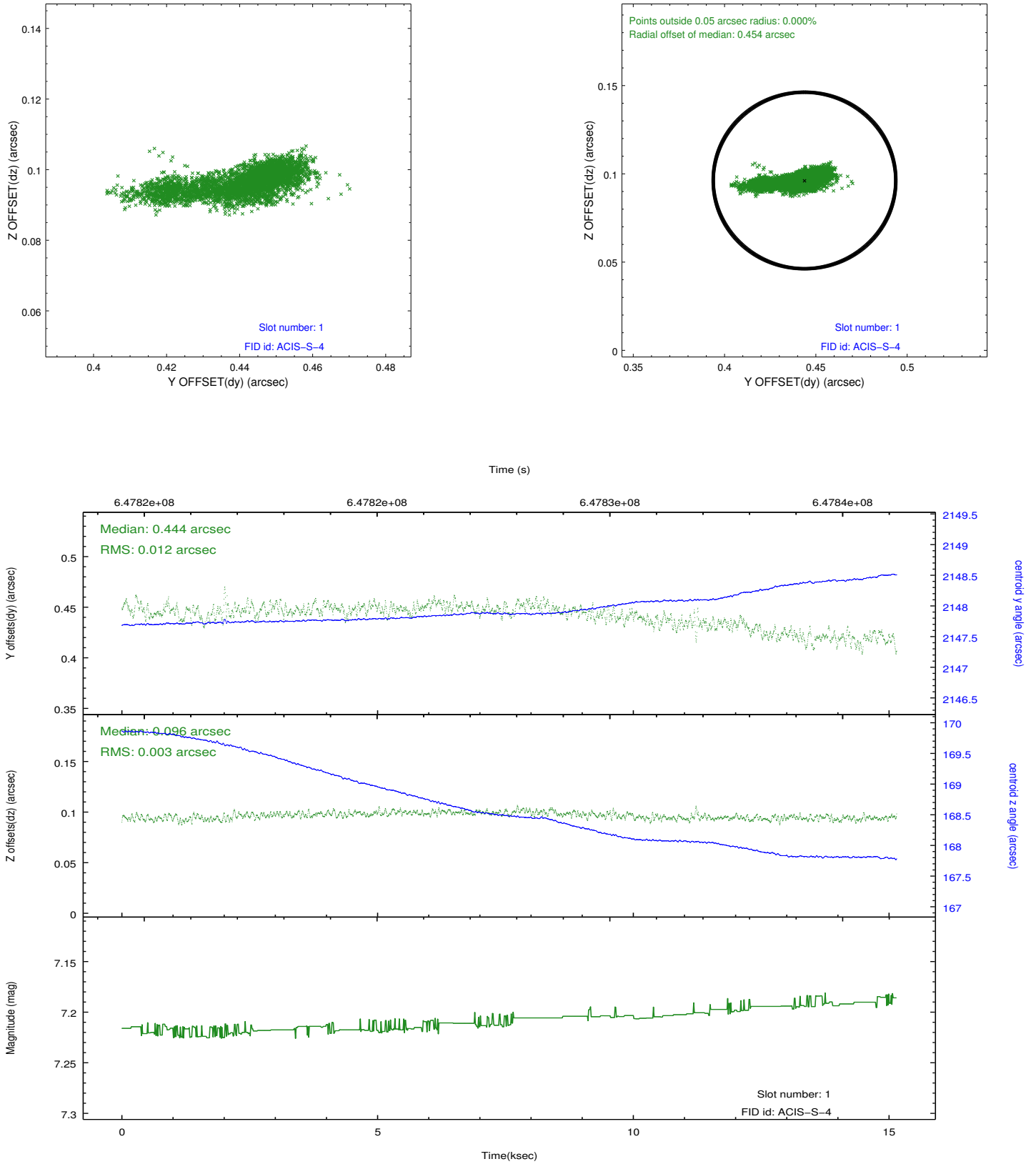


2.5 FID Slots

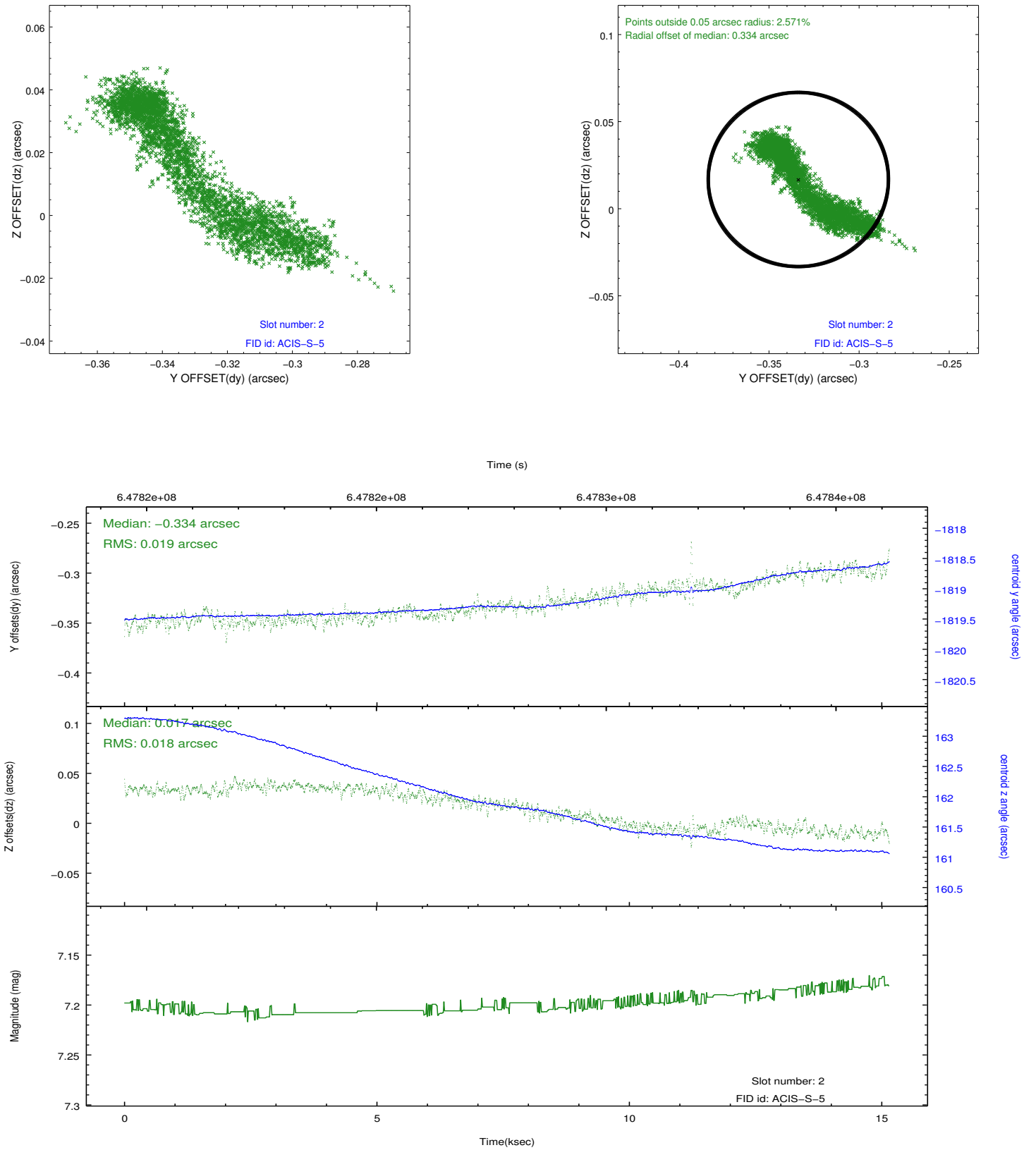
2.5.1 Slot 0



2.5.2 Slot 1

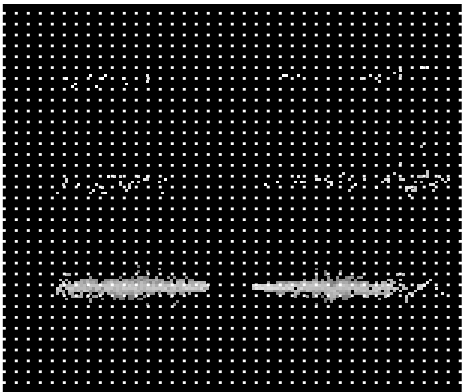


2.5.3 Slot 2

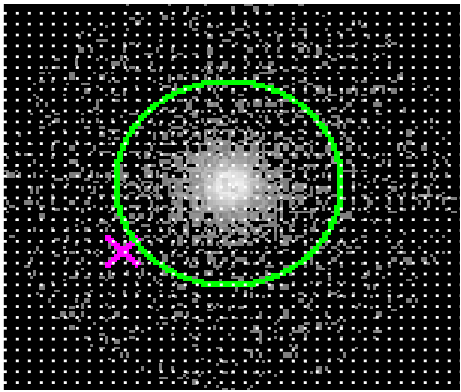


3 Gratings

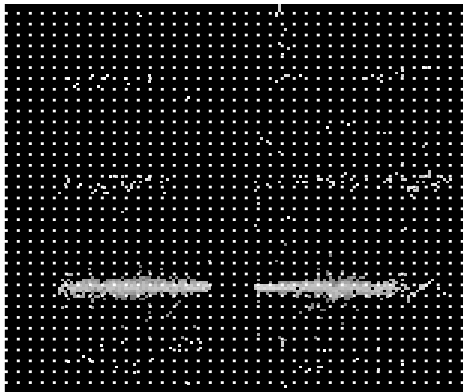
3.1 HEG Arm



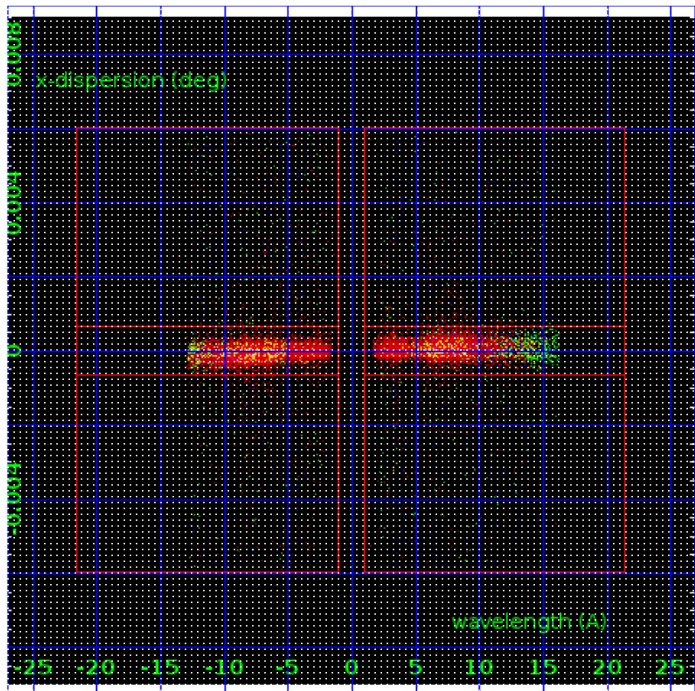
HEG Order Sort 123



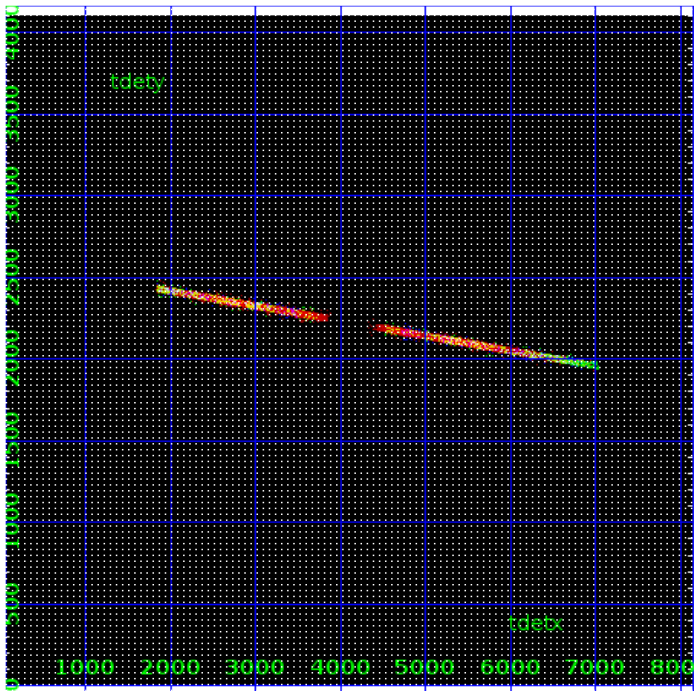
HEG Zero Order



HEG Order Sort ALL

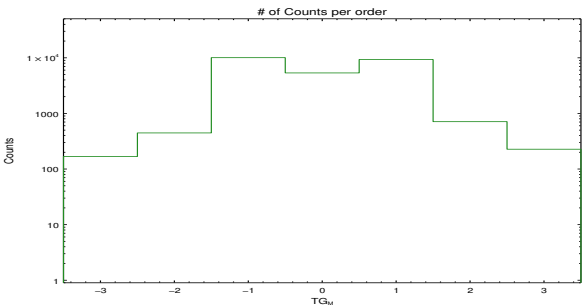


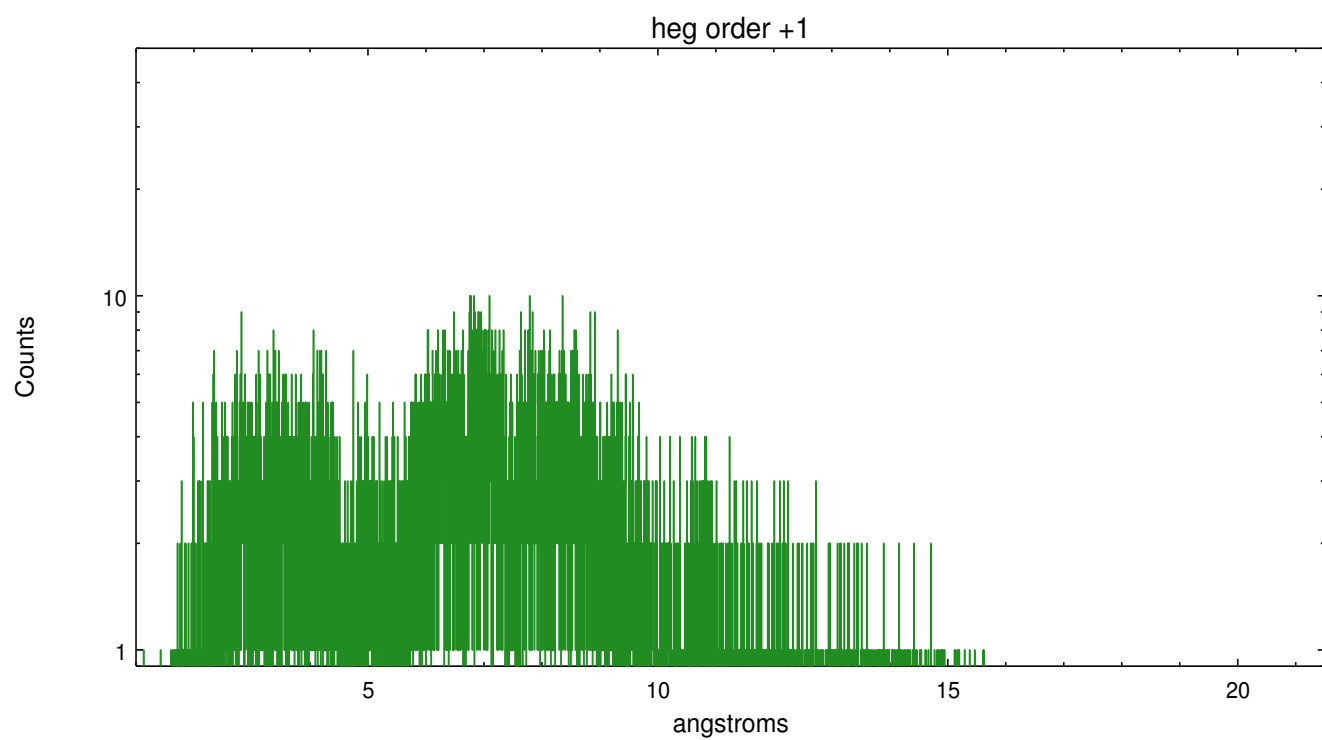
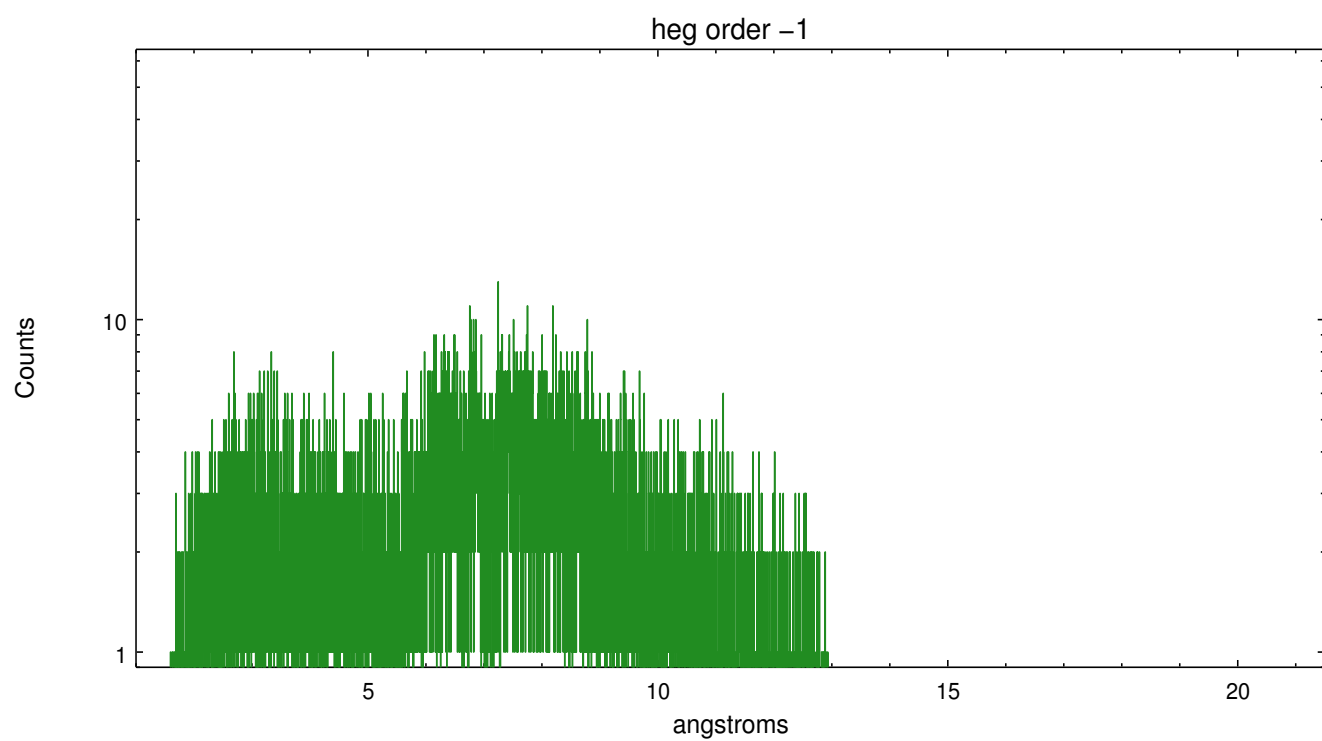
Spot Image HEG



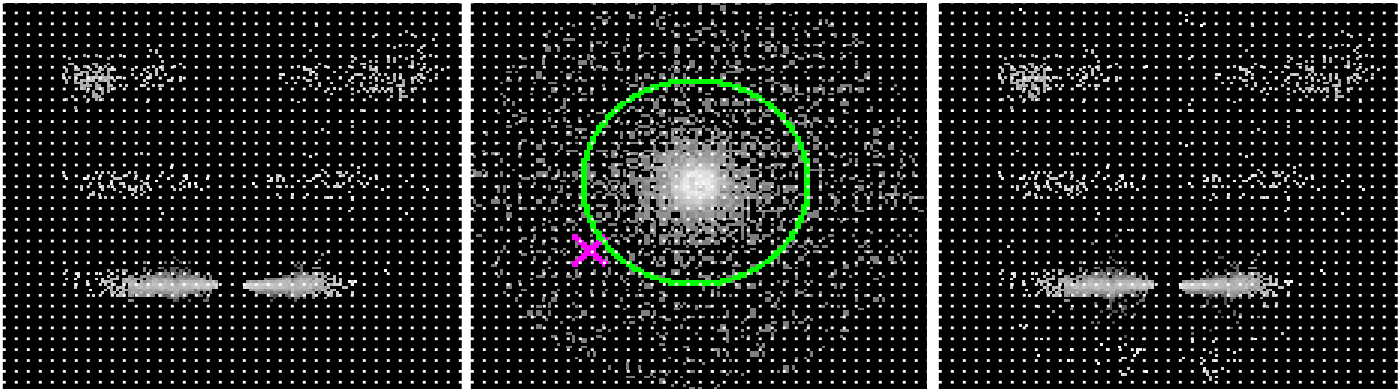
Full Detector HEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	168	446	10064	5349	9303	711	227





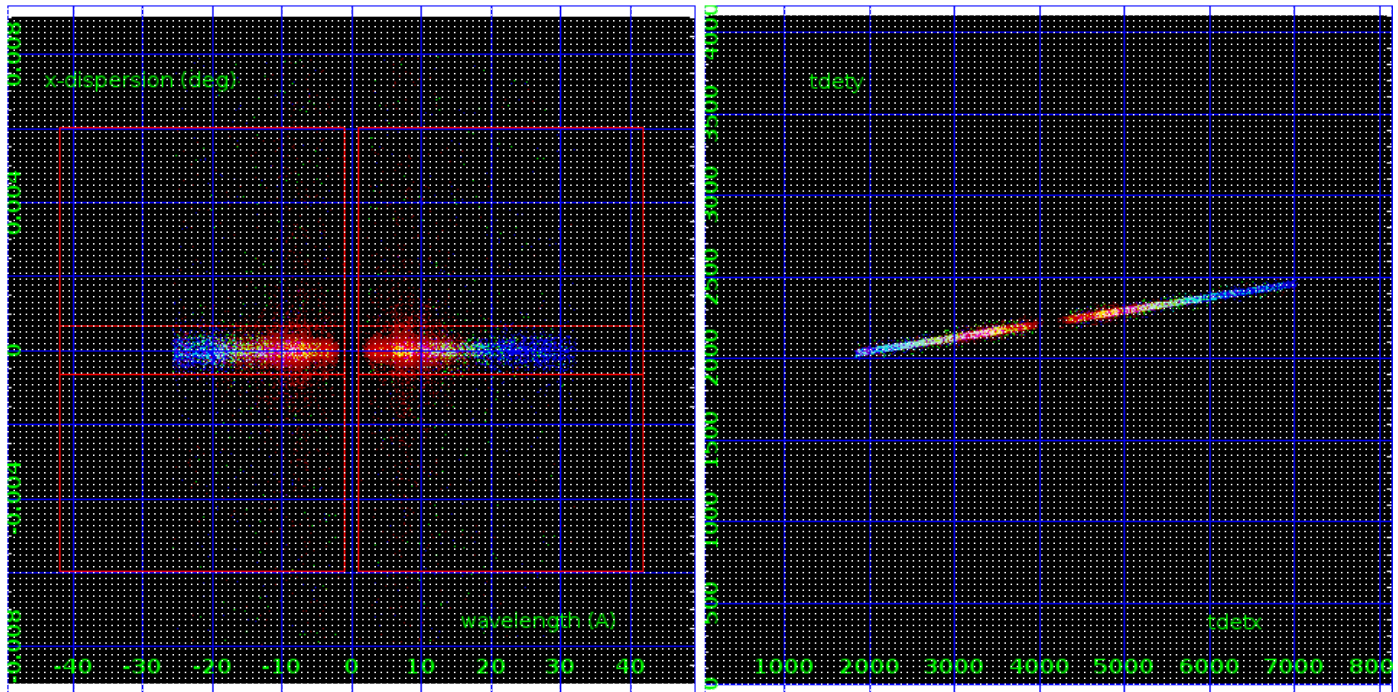
3.2 MEG Arm



MEG Order Sort 123

MEG Zero Order

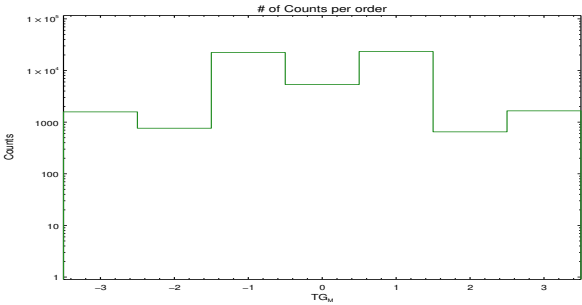
MEG Order Sort ALL

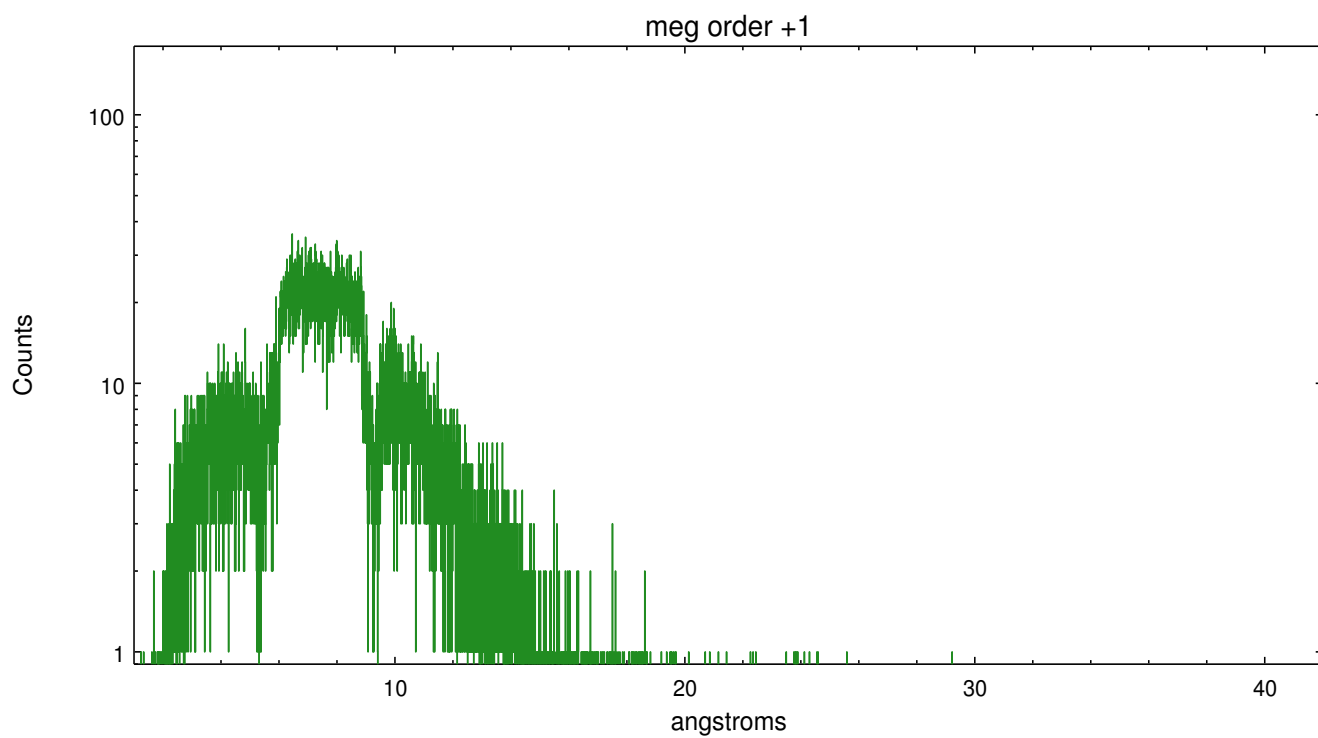
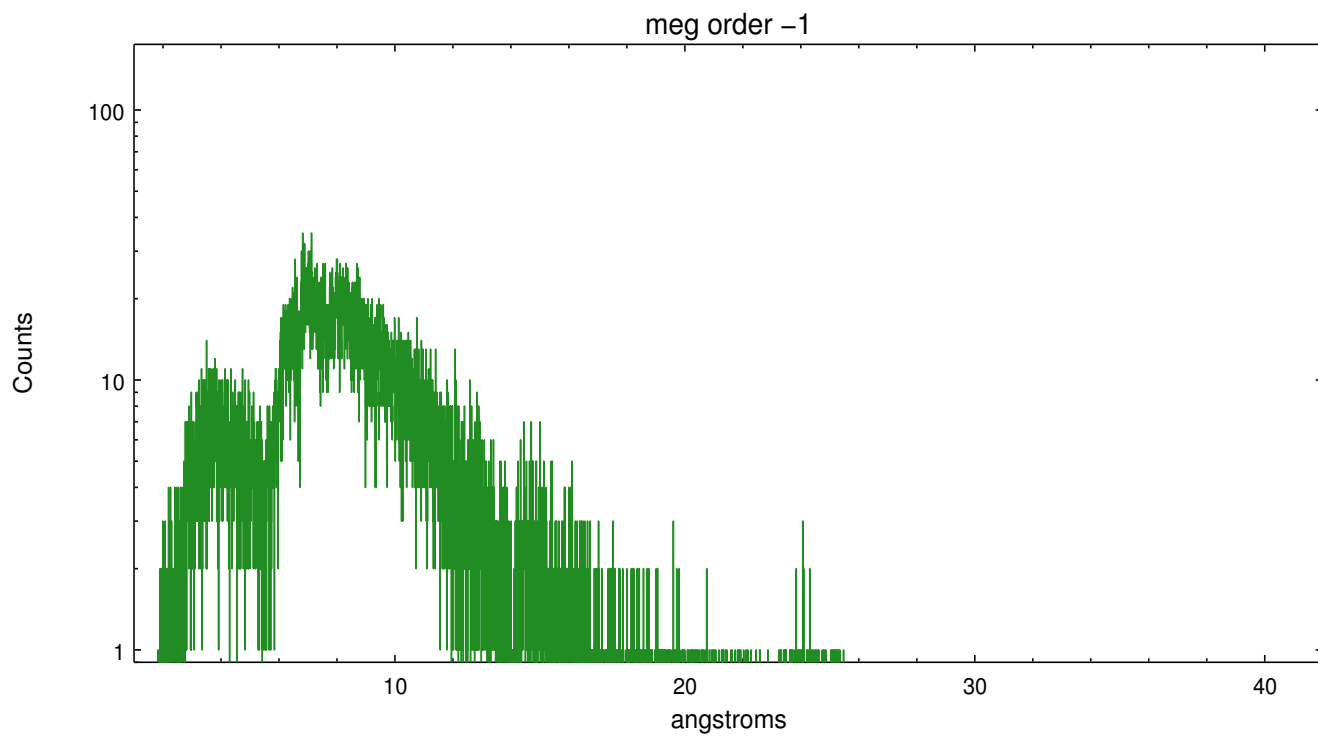


Spot Image MEG

Full Detector MEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	1581	762	22284	5349	23315	649	1656





A Summary

A.1 Status

V&V Scientist	David Huenemoerder
V&V Date (YYYY-MM-DD)	2018.07.16
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	15.049455218792

A.2 Comments