

V&V Reference Report

L2 ASCDS Version : 8.1.1

Observation 336 - L2 Version 4
Chandra X-Ray Center

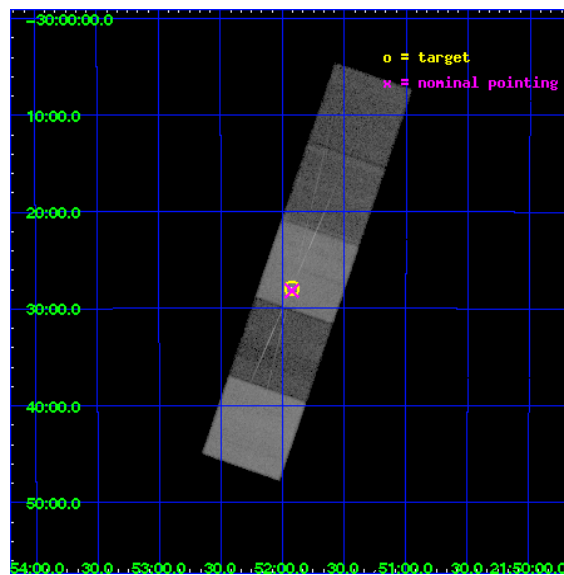
L2 Processing Date : Nov 24 2009

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1 Front

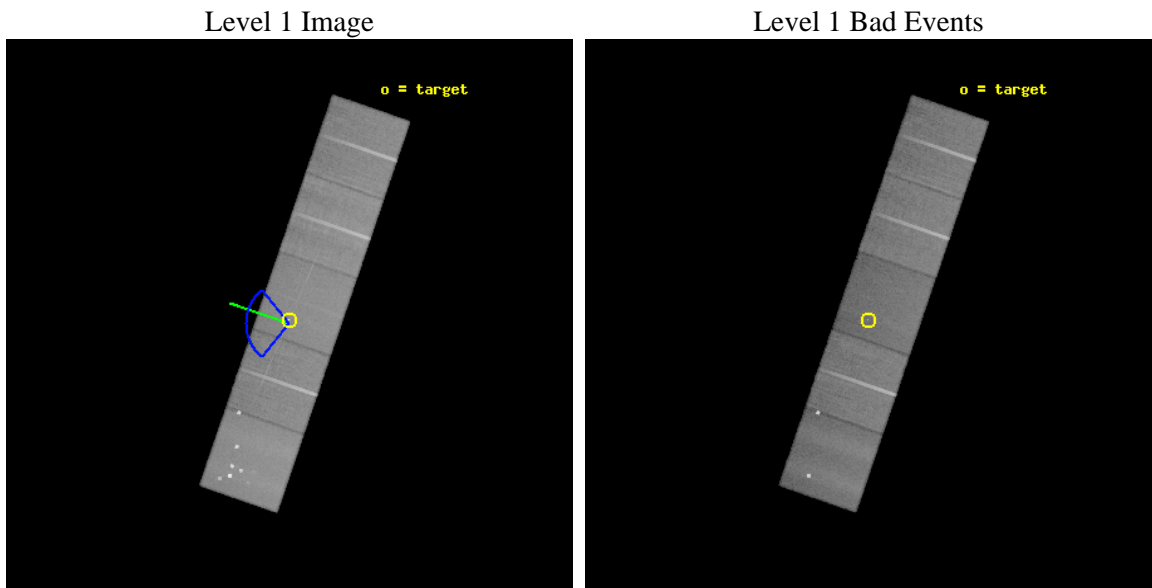
seq_num	700008	Sequence number
obs_id	336	Observation id
title	HETG OBSERVATIONS OF VARIOUS ACTIVE GALACTIC NUCLEI	Proposal title
observer	Prof. Claude Canizares	Principal investigator
object	PKS 2149-306	Source name
dtcycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	327.98125	Observer's specified target RA
dec_targ	-30.464917	Observer's specified target Dec
ra_nom	327.98086014584	Nominal RA
dec_nom	-30.469860301608	Nominal Dec
roll_nom	288.95685831192	Nominal Roll
revision	4	Processing version of data
ontime	36018.481485561	Sum of GTIs [s]
livetime	35562.393785265	Livetime [s]
ontime5	36018.440445557	Sum of GTIs [s]
ontime6	36015.158425421	Sum of GTIs [s]
ontime7	36018.481485561	Sum of GTIs [s]
ontime8	36018.358365558	Sum of GTIs [s]
ontime9	36018.317325562	Sum of GTIs [s]
l2events	362570	Number of level 2 events



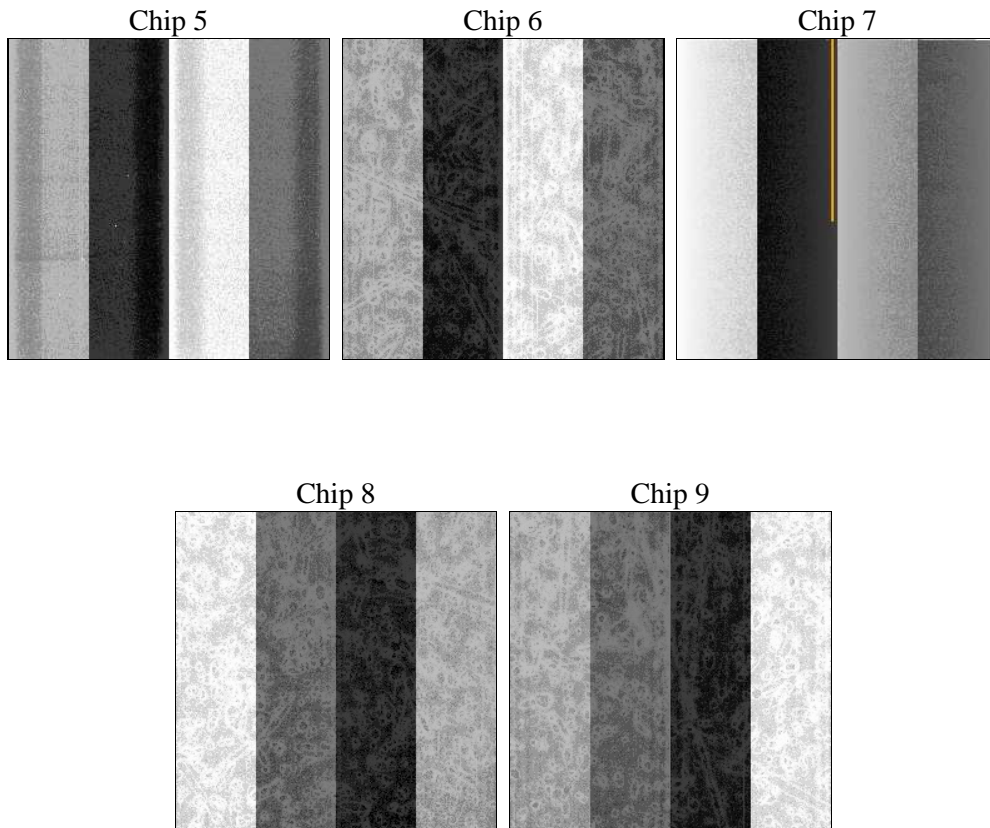
2 OBI

2.1 OBI

2.1.1 Images



2.1.2 Bias



2.1.3 Parameters

obi_num	0	Obi number	sched_exp_time	36849.995000	Scheduled observation exposure time
ascdsver	8.1.1	ASCDS version number	ontime	36018.481485561	Sum of GTIs [s]
caldbver	4.1.4	 	ontime5	36018.440445557	Sum of GTIs [s]
date	2009-11-24T12:03:31	Date and time of file creation	ontime6	36015.158425421	Sum of GTIs [s]
revision	3	Processing version of data	ontime7	36018.481485561	Sum of GTIs [s]
			ontime8	36018.358365558	Sum of GTIs [s]
			ontime9	36018.317325562	Sum of GTIs [s]
			l1events	1756145	Number of level 1 events

2.1.4 Events

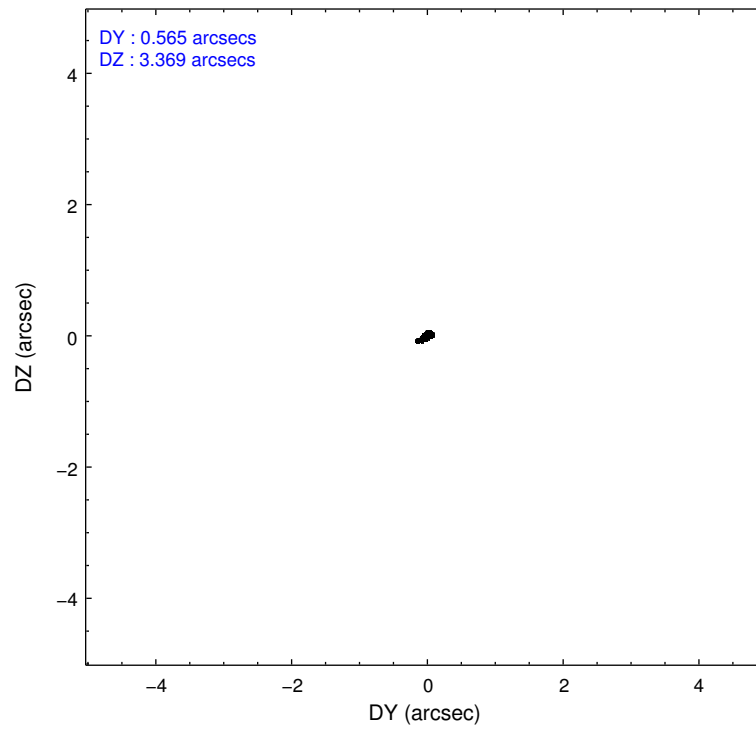
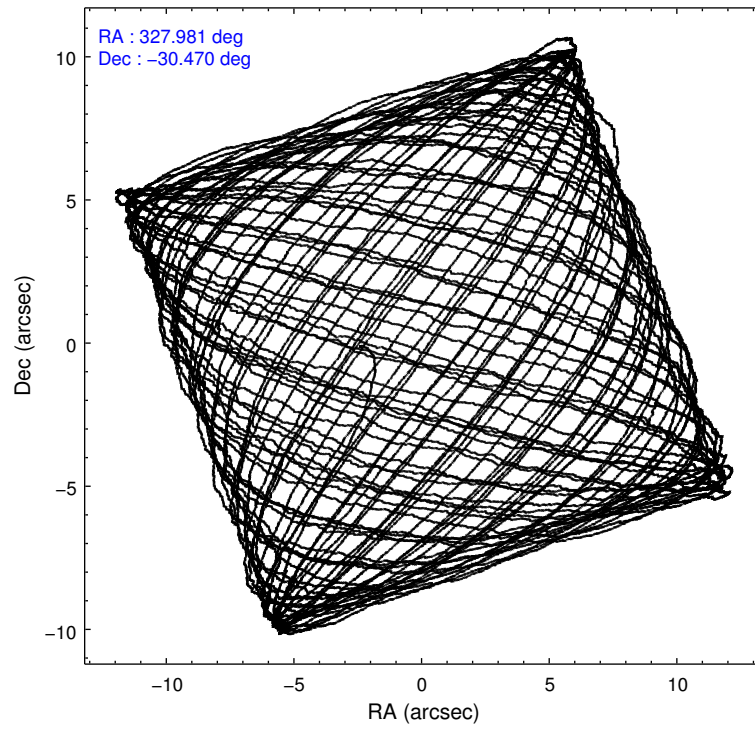
	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
level 1 events	414988	316908	332228	385844	306177
rejected events	233828	284851	200867	309079	275346
rejected %	56%	89%	60%	80%	89%

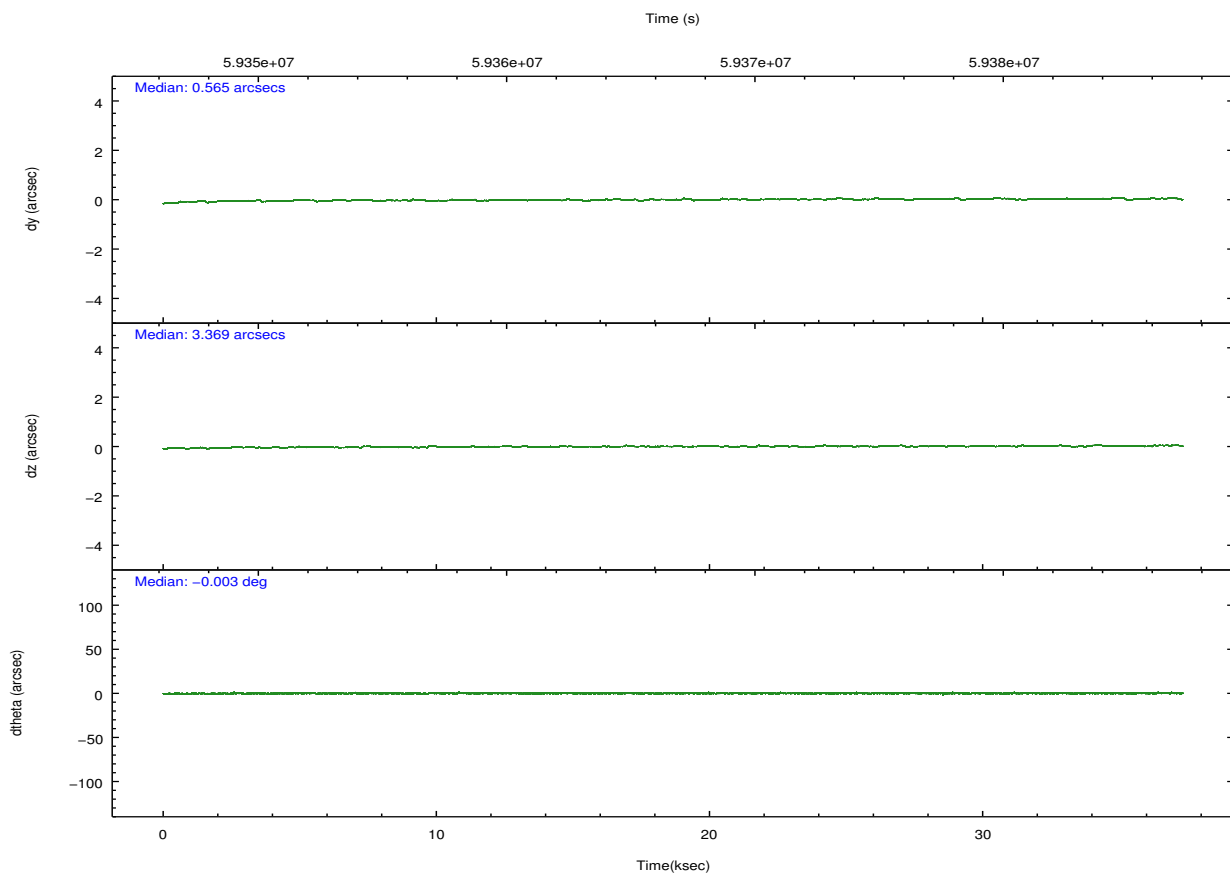
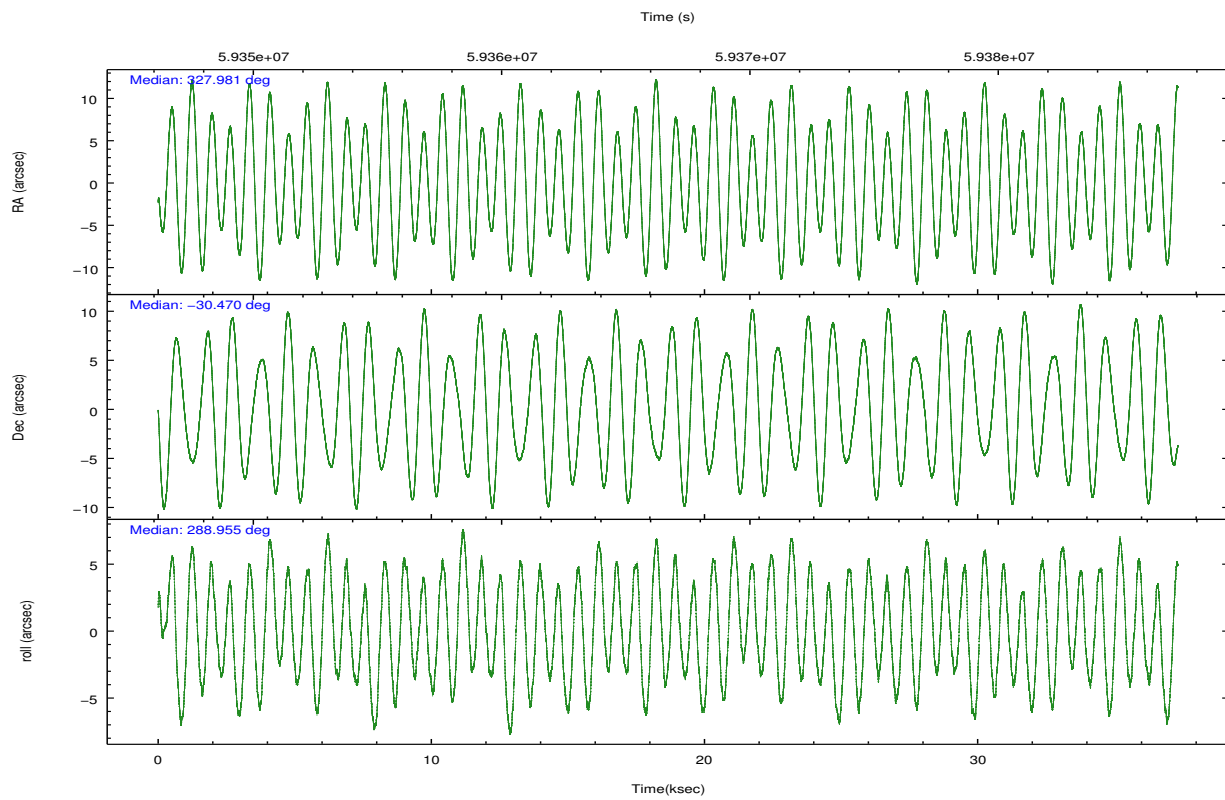
	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
grade 0 events	33359	6990	8007	20965	5653
	8%	2%	2%	5%	1%
grade 1 events	450	59	191	190	59
	0%	0%	0%	0%	0%
grade 2 events	38905	12500	28380	22112	12669
	9%	3%	8%	5%	4%
grade 3 events	6090	1994	8259	7375	2012
	1%	0%	2%	1%	0%
grade 4 events	4778	1919	7318	6737	1895
	1%	0%	2%	1%	0%
grade 5 events	24803	6381	20306	8802	6581
	5%	2%	6%	2%	2%
grade 6 events	98055	8661	79420	19603	8610
	23%	2%	23%	5%	2%
grade 7 events	208548	278404	180347	300060	268698
	50%	87%	54%	77%	87%

2.2 Compared Parameters

Parameter	Planned	Actual	Parameter	Planned	Actual
Instrument	ACIS	ACIS	Obspar format version number	6	6
Detector	ACIS-56789	ACIS-56789	Obspar file type	PREDICTED	ACTUAL
Grating	HETG	HETG	Obspar update status	NONE	UPDATED
Data mode	FAINT	FAINT	Number of optional ACIS chips dropped	0	0
Observation mode	POINTING	POINTING	On-chip summing requested	N	N
Pointing RA	327.956813	327.9808601458378	Subarray requested	NONE	NONE
Pointing Dec	-30.451662	-30.46986030160819	Alternating exposures requested	N	N
Pointing Roll	288.788038	288.9568583119234	Primary exposure time	0.000000	3.2
Roll angle	270.000000	270.000000			
Roll tolerance	50.000000	50.000000			
Roll constraint allows 180D rotation	N	N			
SIM focus pos (mm)	-0.684267	-0.6828225247311905			
SIM defocus (mm)	0	0.001444936568705701			
SIM translation stage pos (mm)	-187.331927	-187.3265472274263			
SIM translation stage offset (mm)	-2.800596	-2.805975355581552			
Observation start time	59348518.184000	59347698.71311			
Observation start date	1999-11-18T21:40:54	1999-11-18T21:28:18			
Observation end time	59385368.184000	59385502.764476			
Observation end date	1999-11-19T07:55:04	1999-11-19T07:58:22			
Read mode	TIMED	TIMED			

2.3 Aspect



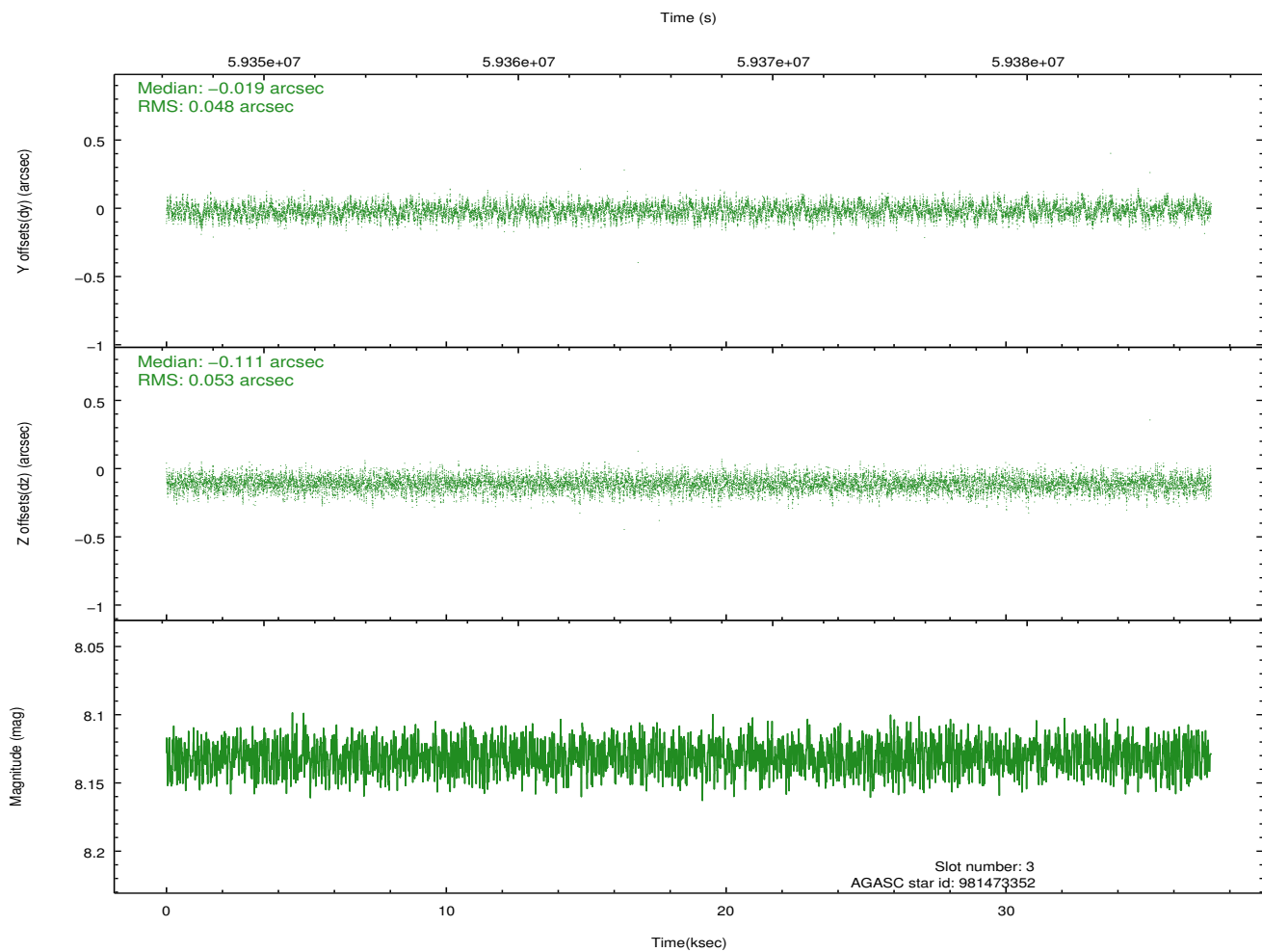
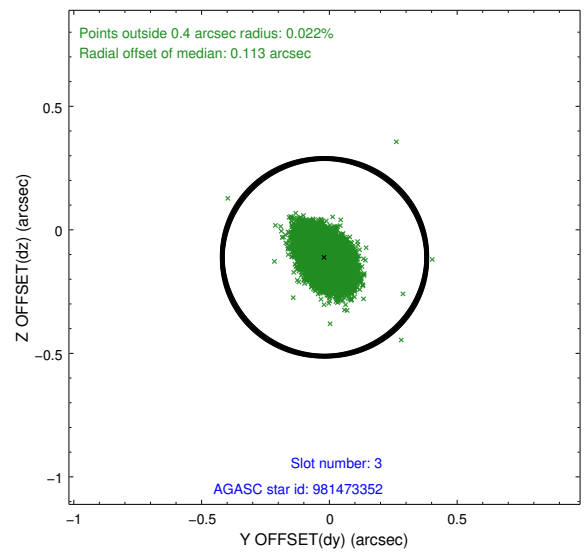
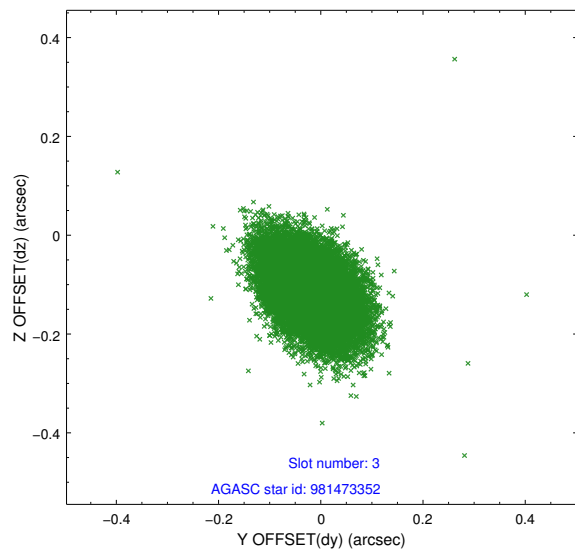


Slot Statistics

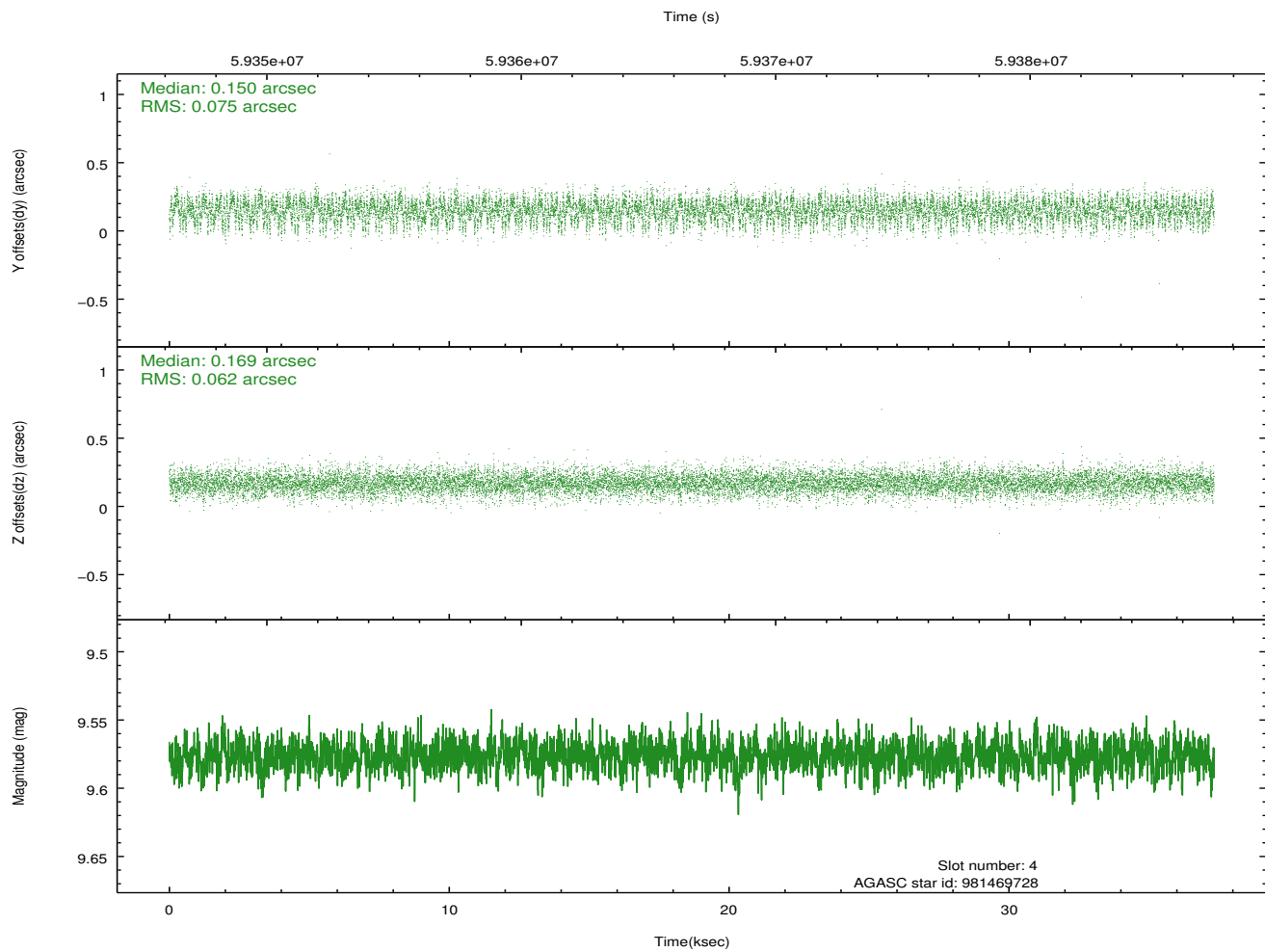
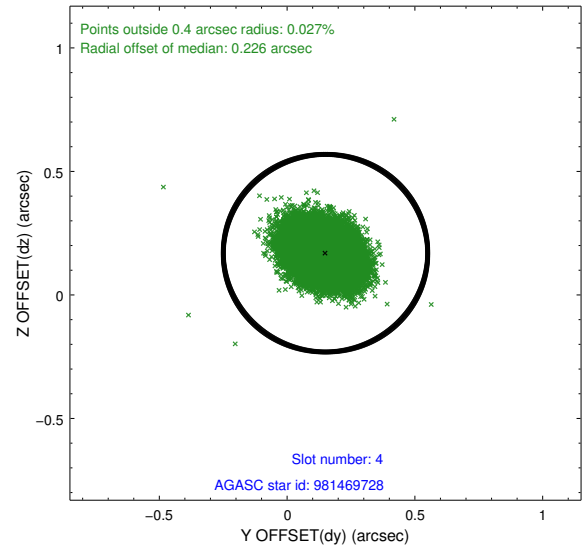
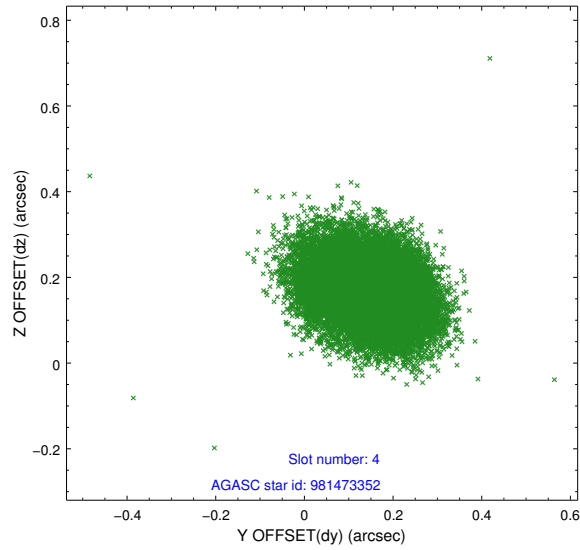
slot	status	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID	ACIS-S-2	7.11	18211	-0.057	-0.026	0.007	0.011	0.000000	0.000000	-753.03	-1782.39
1	FID	ACIS-S-4	7.21	18212	0.072	0.035	0.005	0.010	0.000000	0.000000	2160.43	126.17
2	FID	ACIS-S-5	7.24	18211	-0.046	0.000	0.006	0.011	0.000000	0.000000	-1805.91	119.79
3	GUIDE	981473352	8.13	18203	-0.019	-0.111	0.075	0.125	327.993670	-30.316591	-422.27	265.50
4	GUIDE	981469728	9.58	18201	0.150	0.169	0.104	0.167	328.766049	-30.709787	1696.22	2069.94
5	GUIDE	912132064	9.55	18193	-0.128	0.021	0.091	0.151	327.635579	-29.981357	-1922.99	-402.85
6	GUIDE	981470608	9.82	18196	-0.002	-0.078	0.099	0.163	327.688063	-30.323295	-704.43	-641.66
7	UNUSED		0.00	0	0.000	0.000	0.000	0.000	0.000000	0.000000	0.00	0.00

2.4 Star Slots

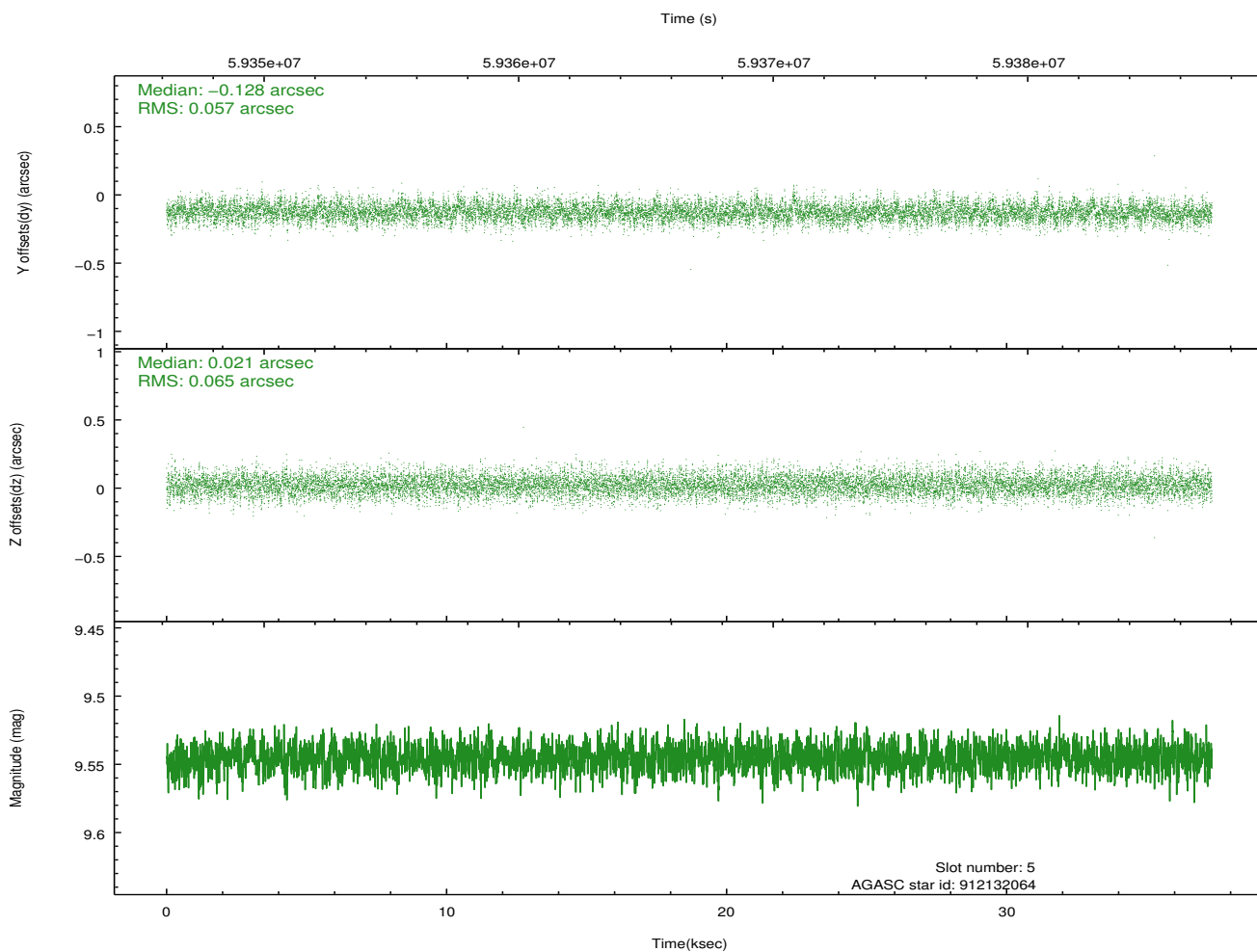
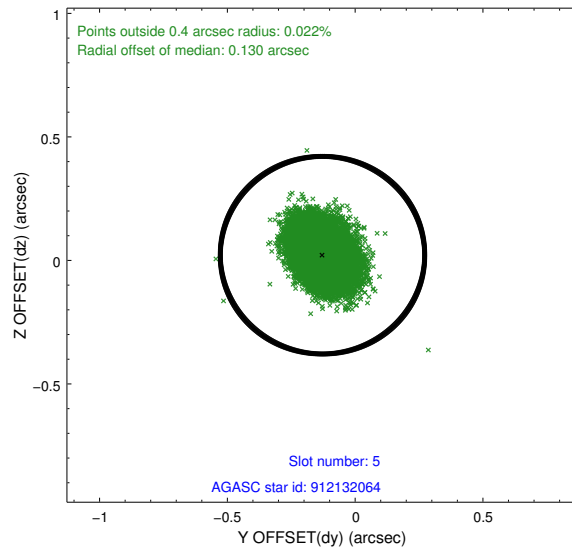
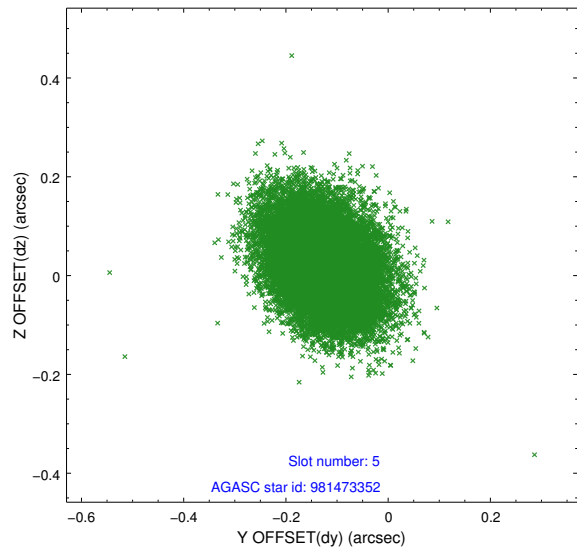
2.4.1 Slot 3



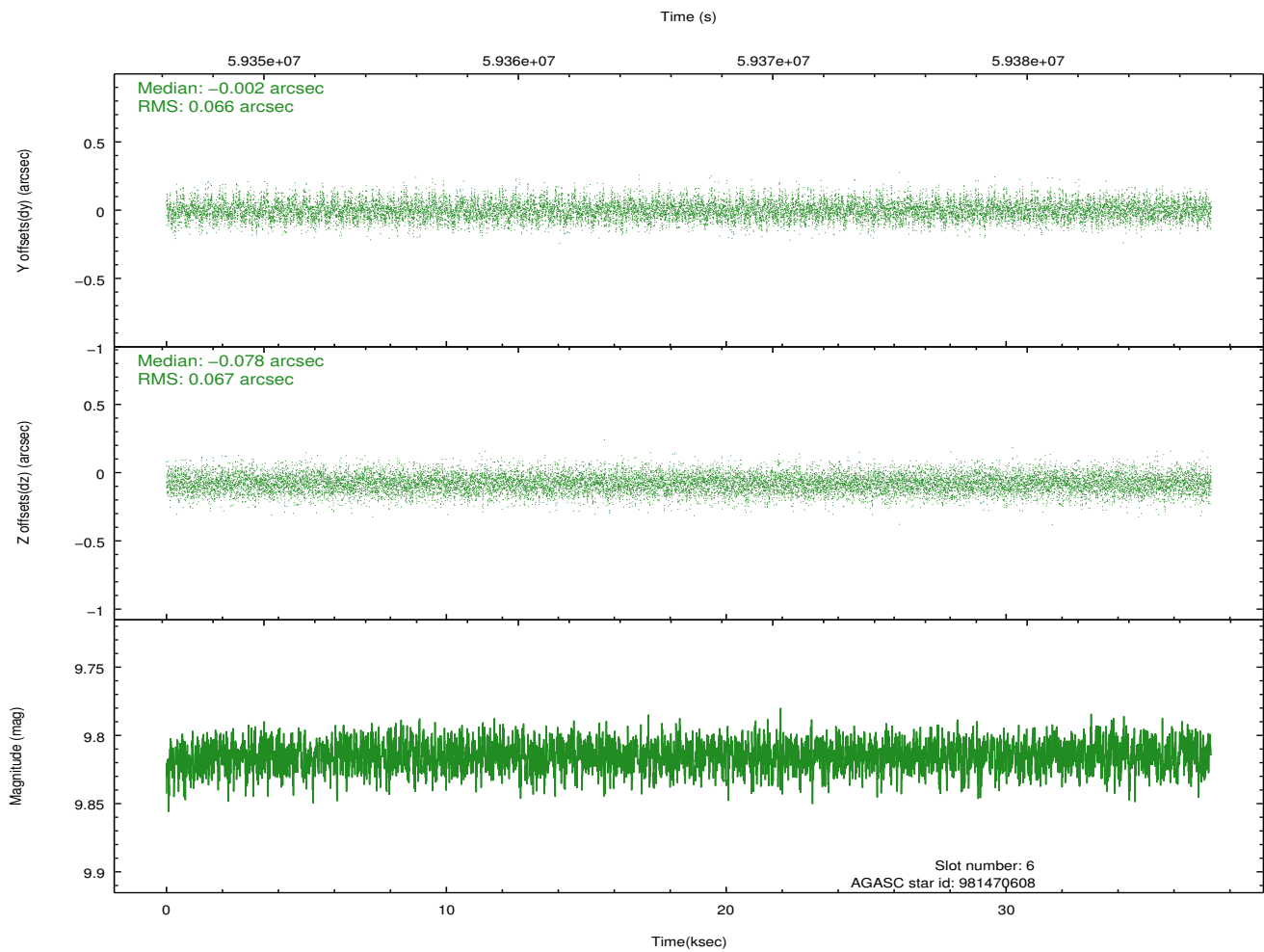
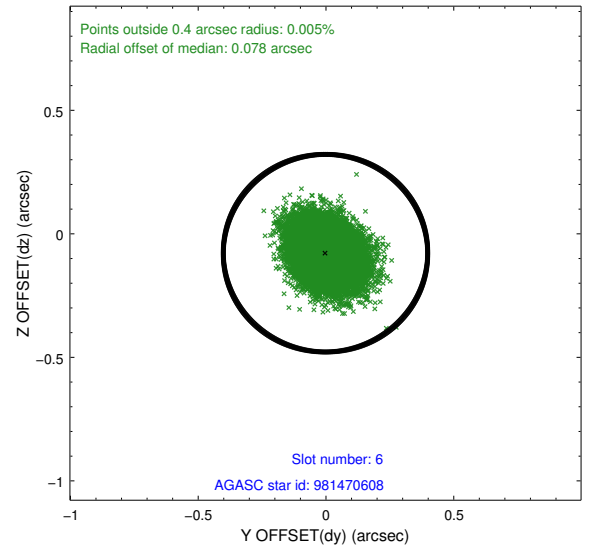
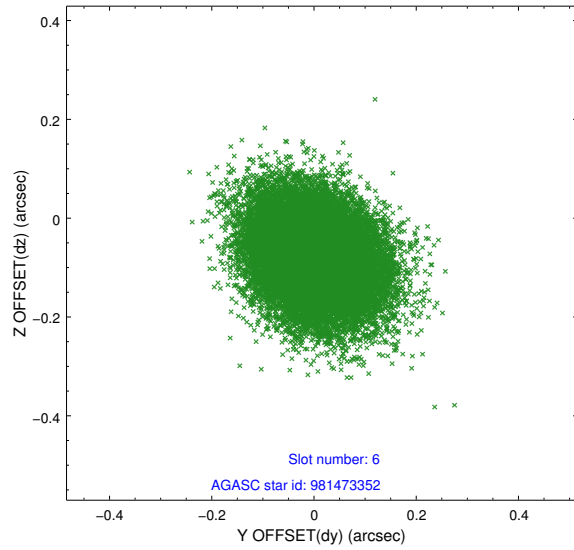
2.4.2 Slot 4



2.4.3 Slot 5

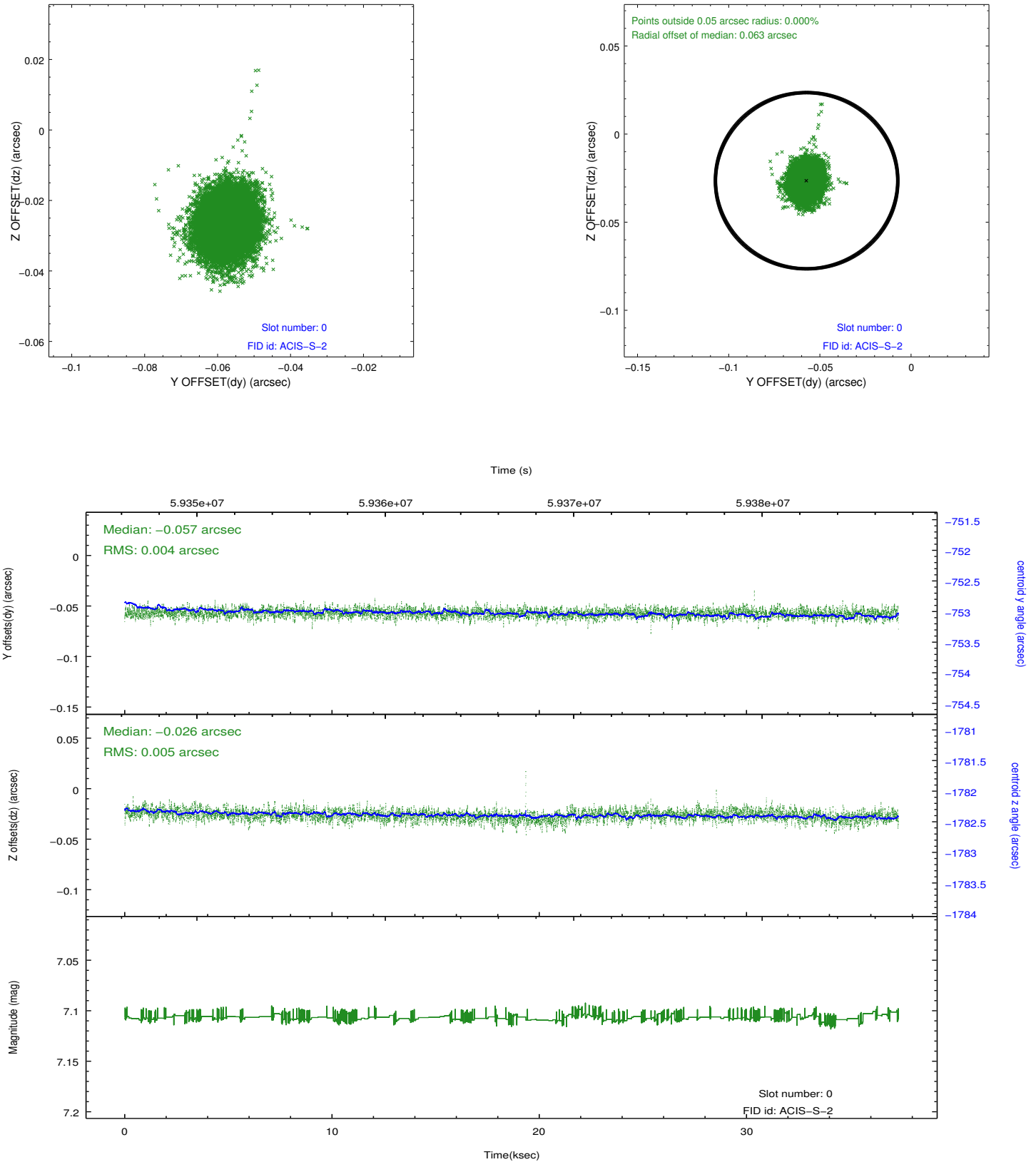


2.4.4 Slot 6

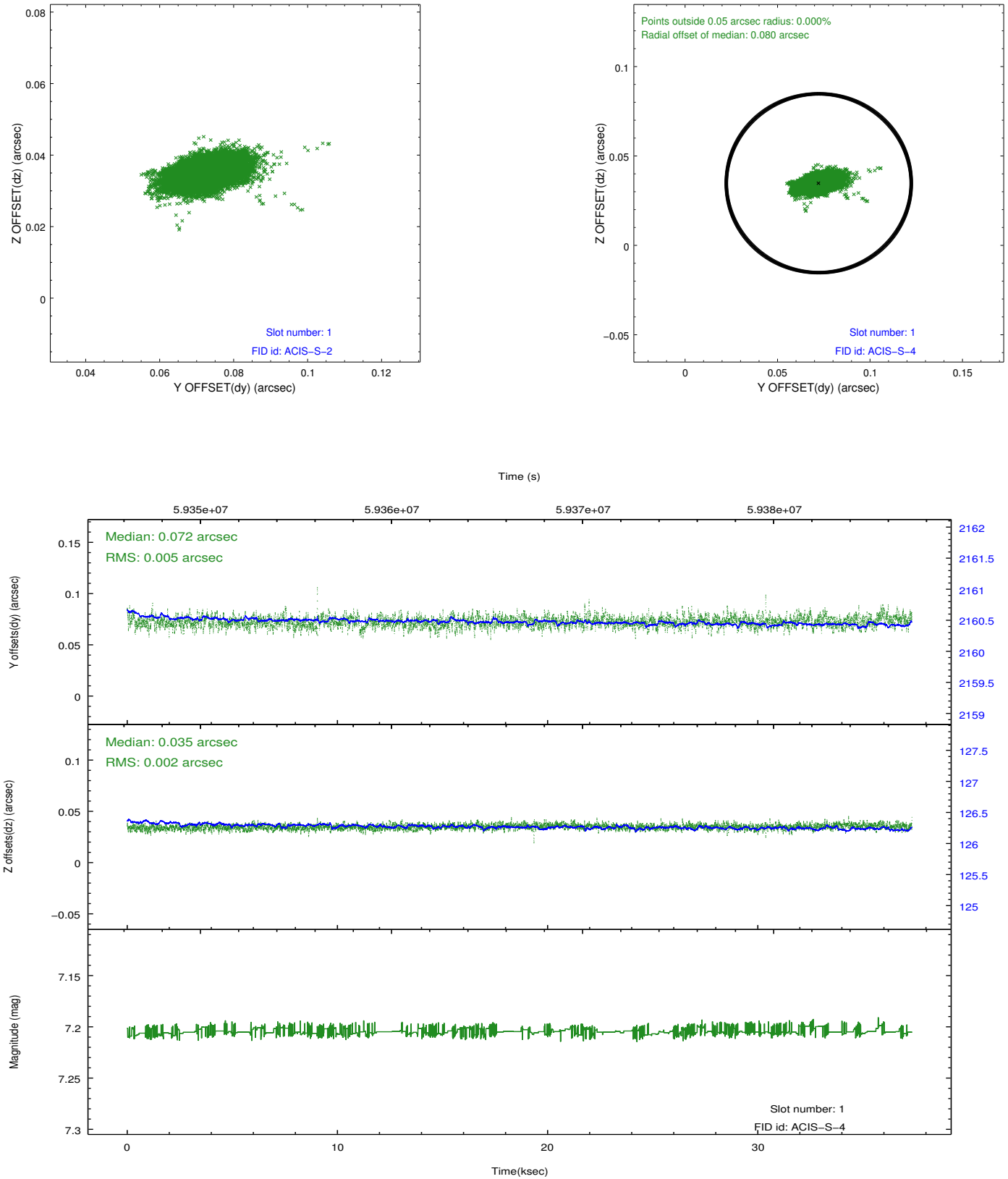


2.5 FID Slots

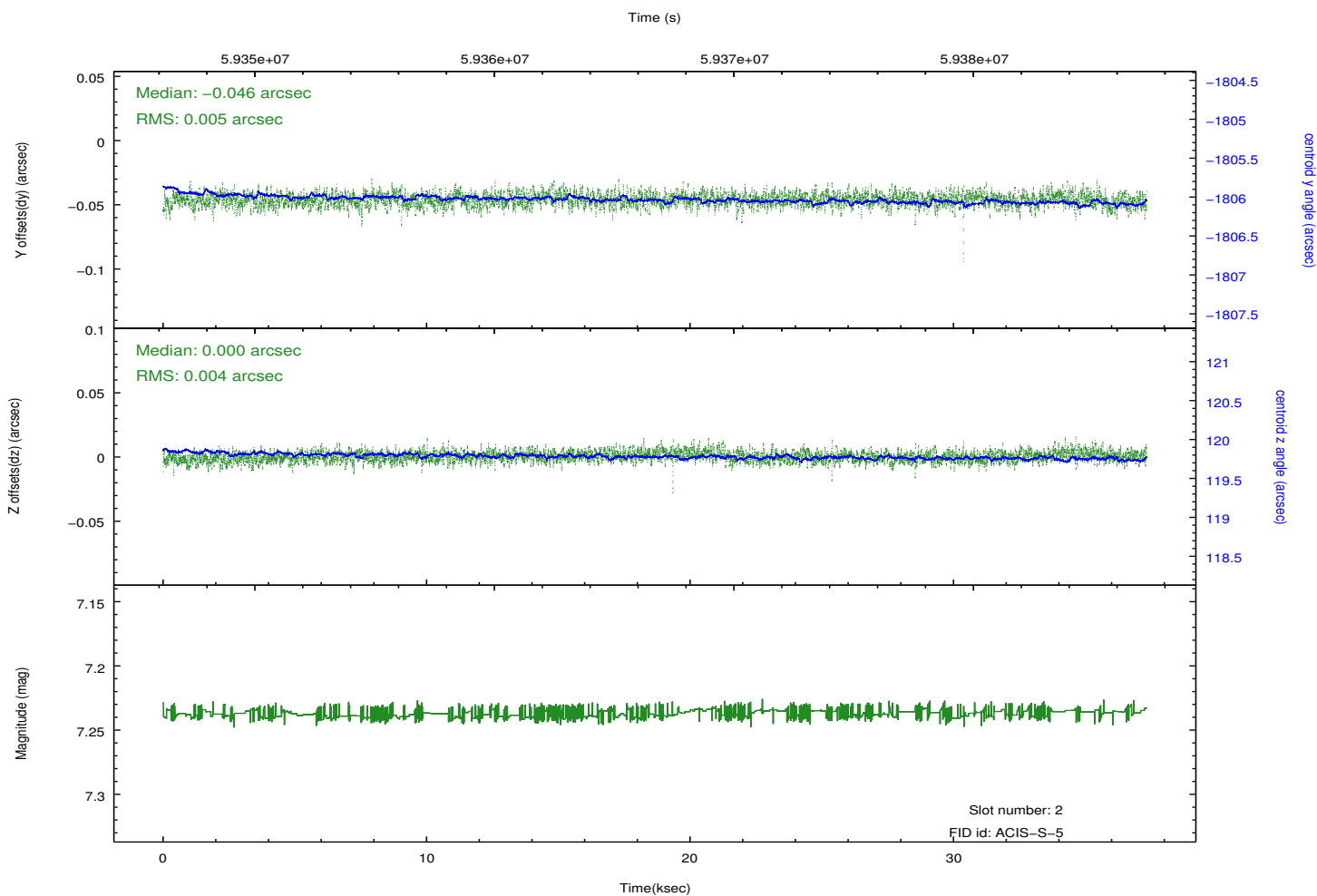
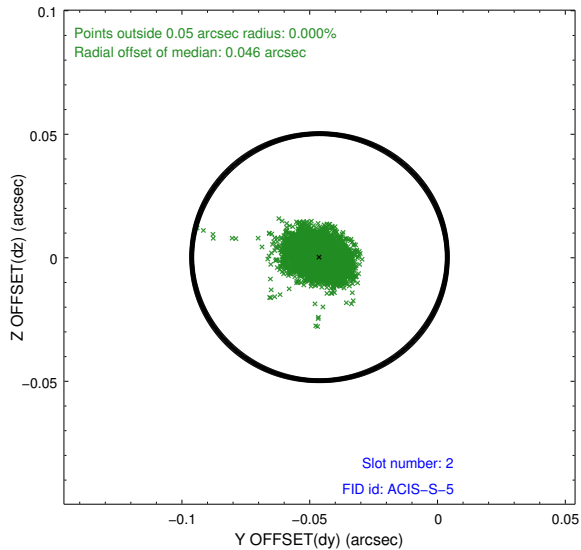
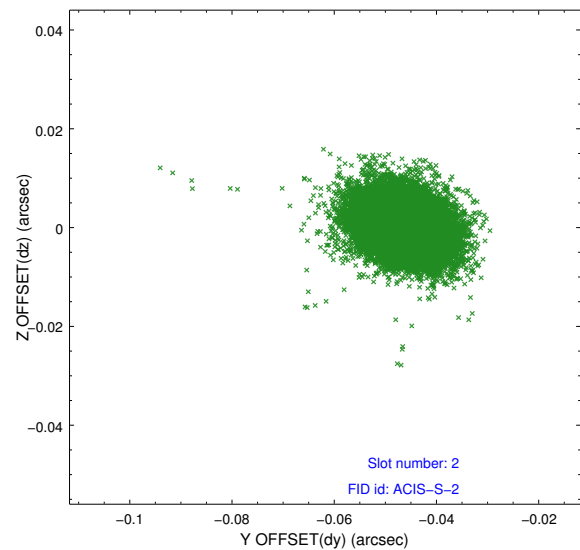
2.5.1 Slot 0



2.5.2 Slot 1



2.5.3 Slot 2

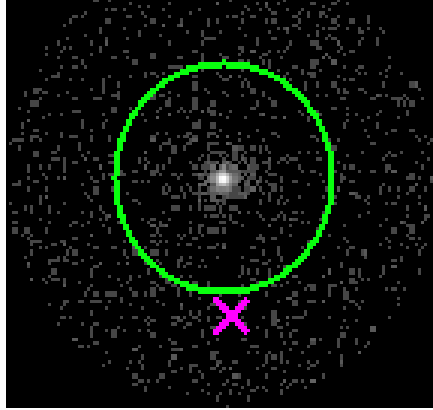


3 Gratings

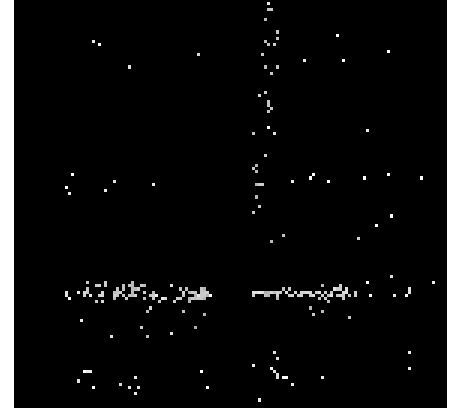
3.1 HEG Arm



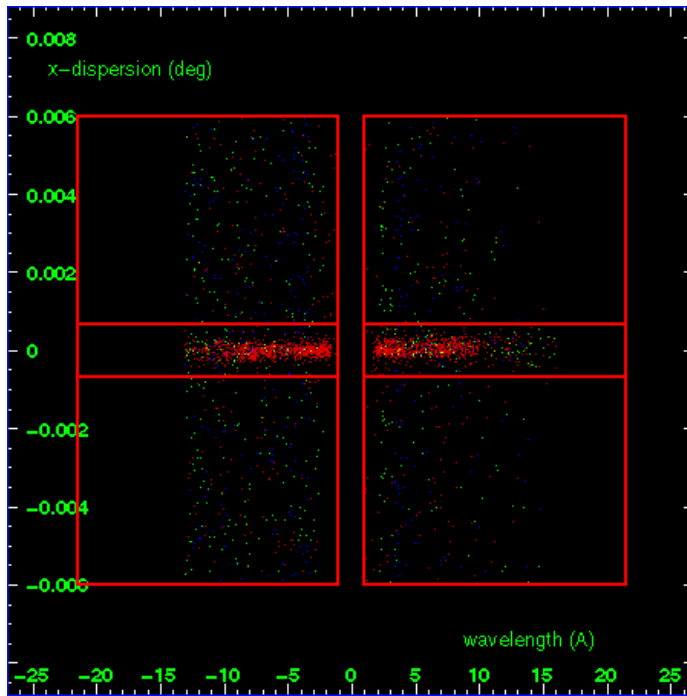
HEG Order Sort 123



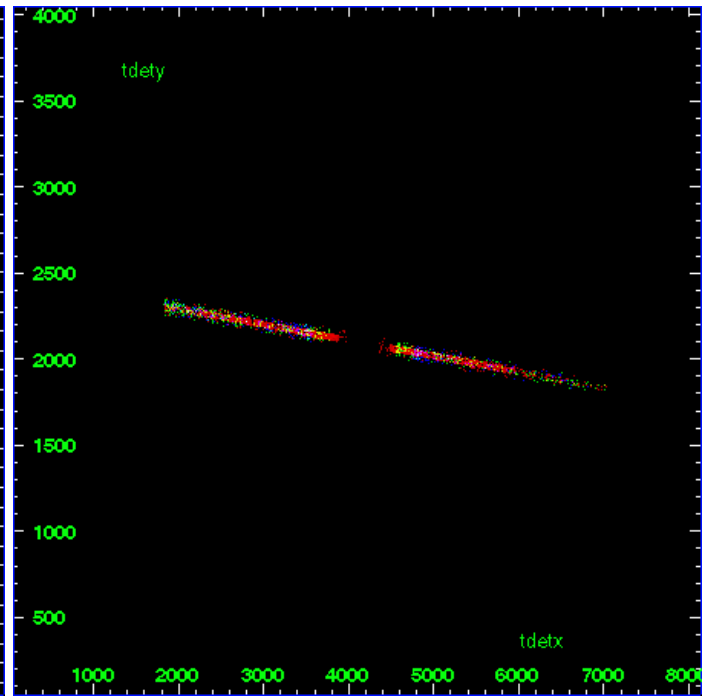
HEG Zero Order



HEG Order Sort ALL

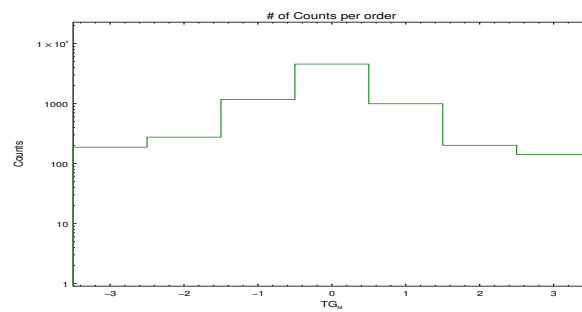


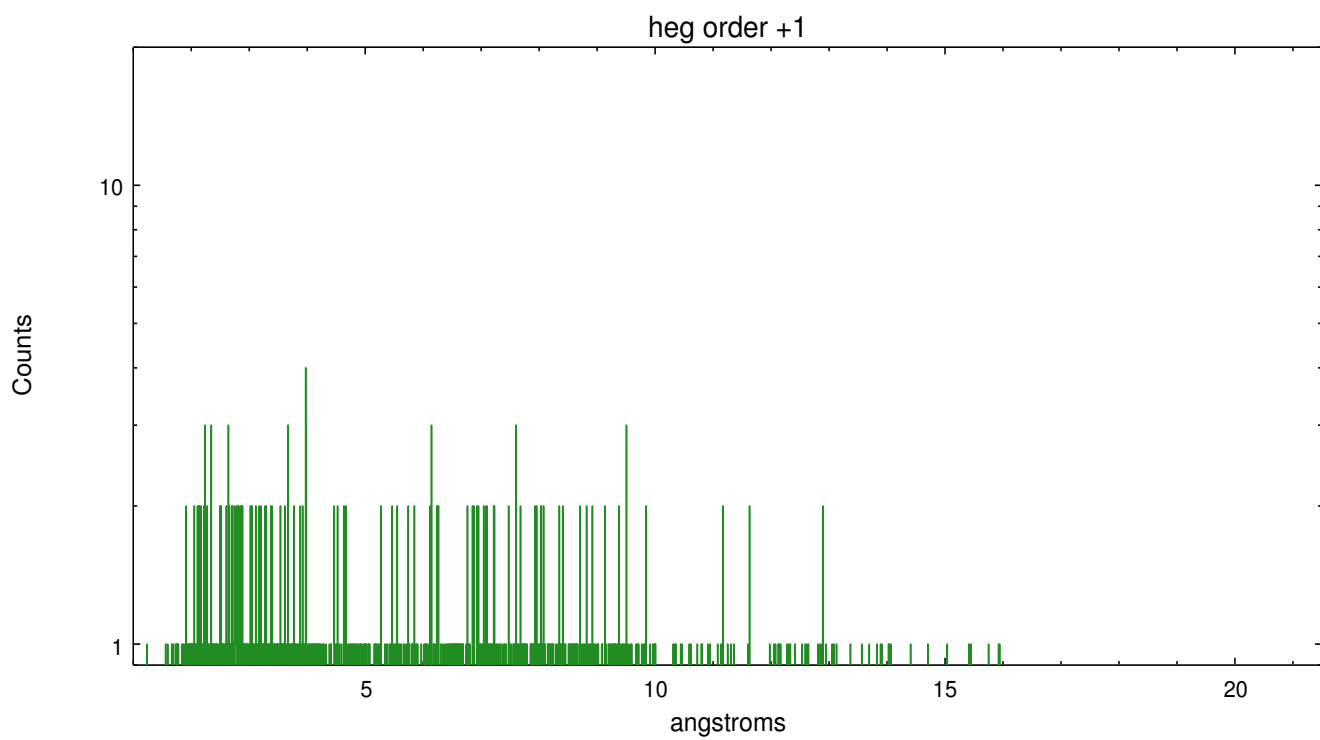
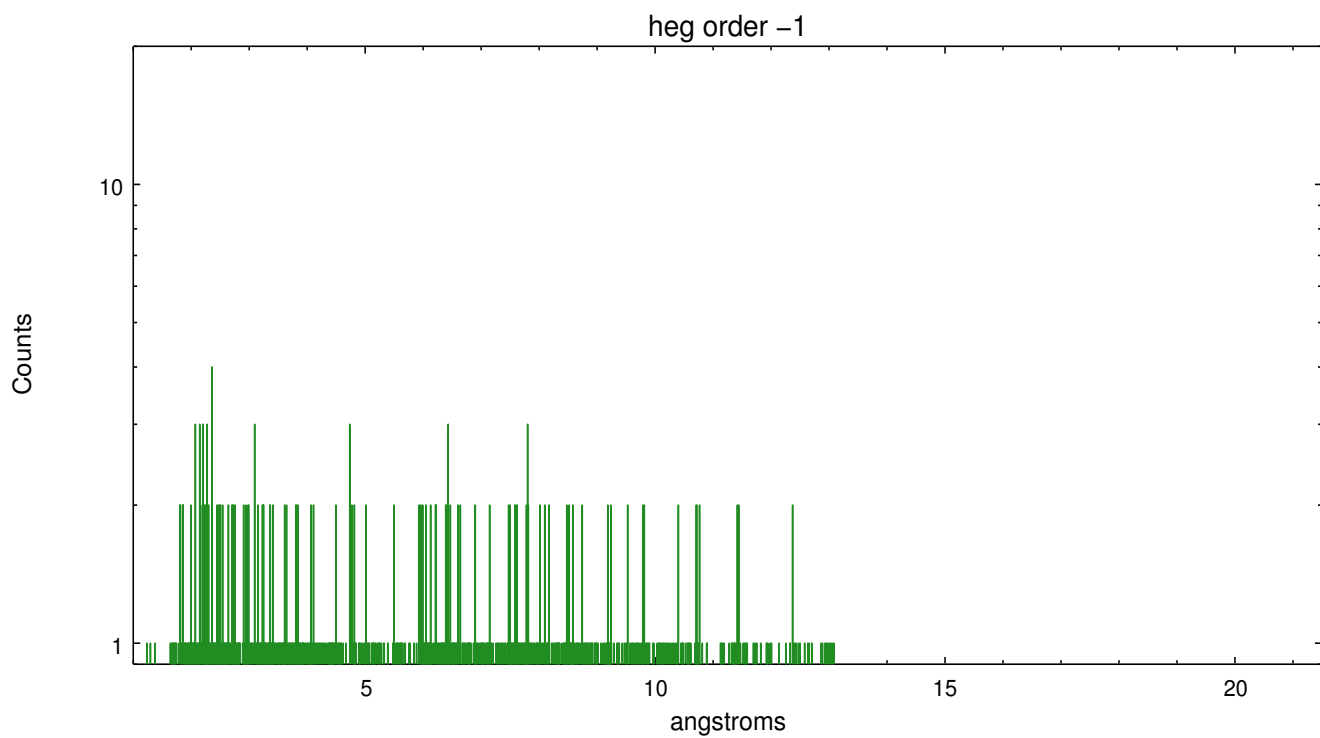
Spot Image HEG



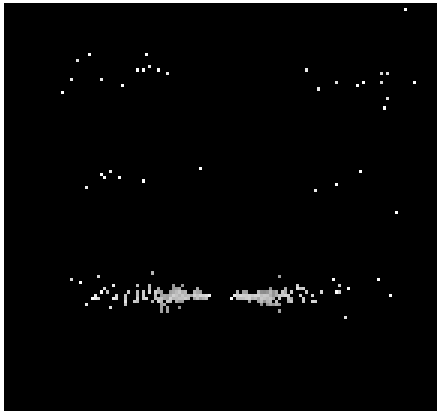
Full Detector HEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	187	275	1168	4550	993	201	141

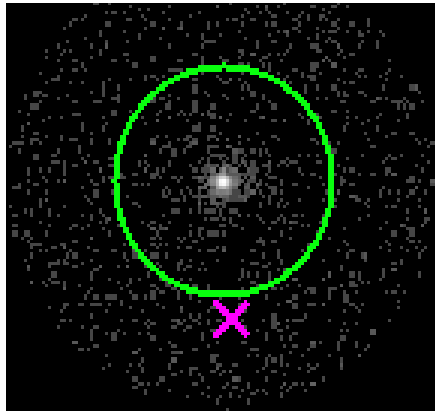




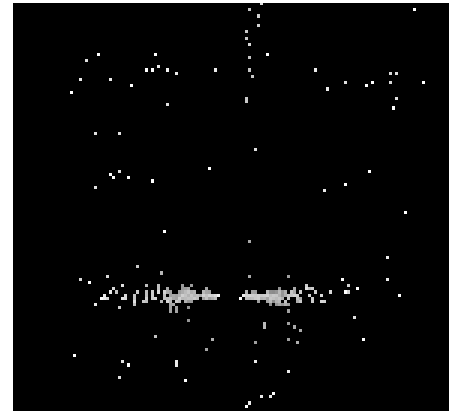
3.2 MEG Arm



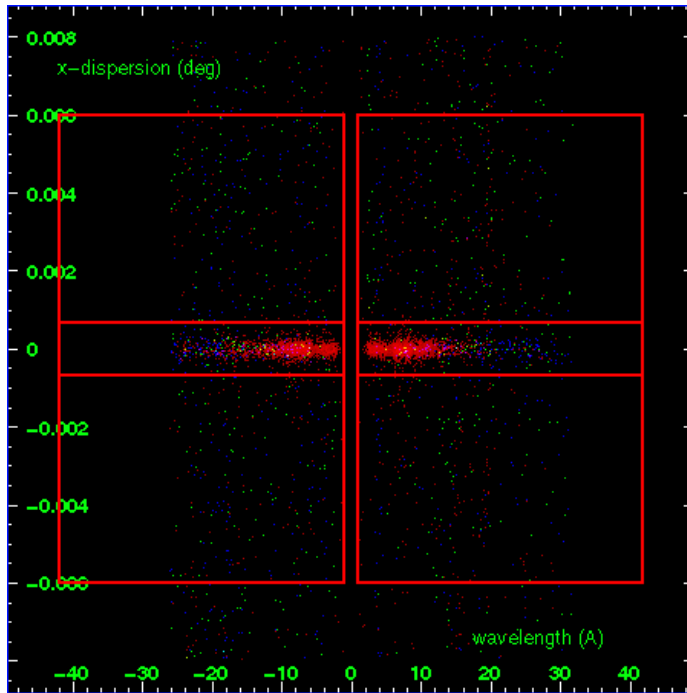
MEG Order Sort 123



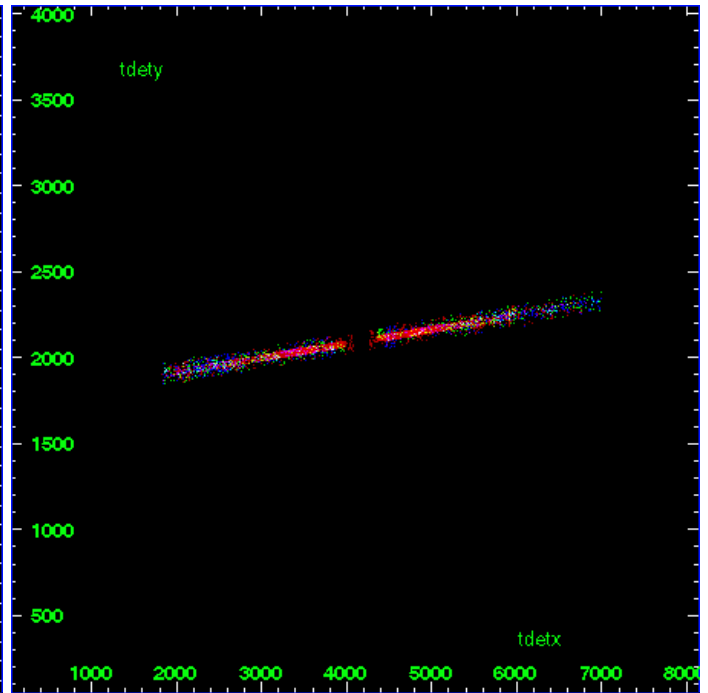
MEG Zero Order



MEG Order Sort ALL

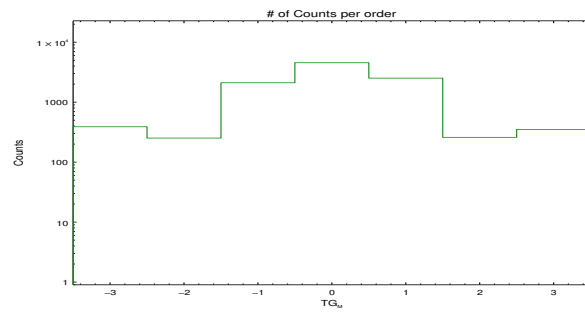


Spot Image MEG

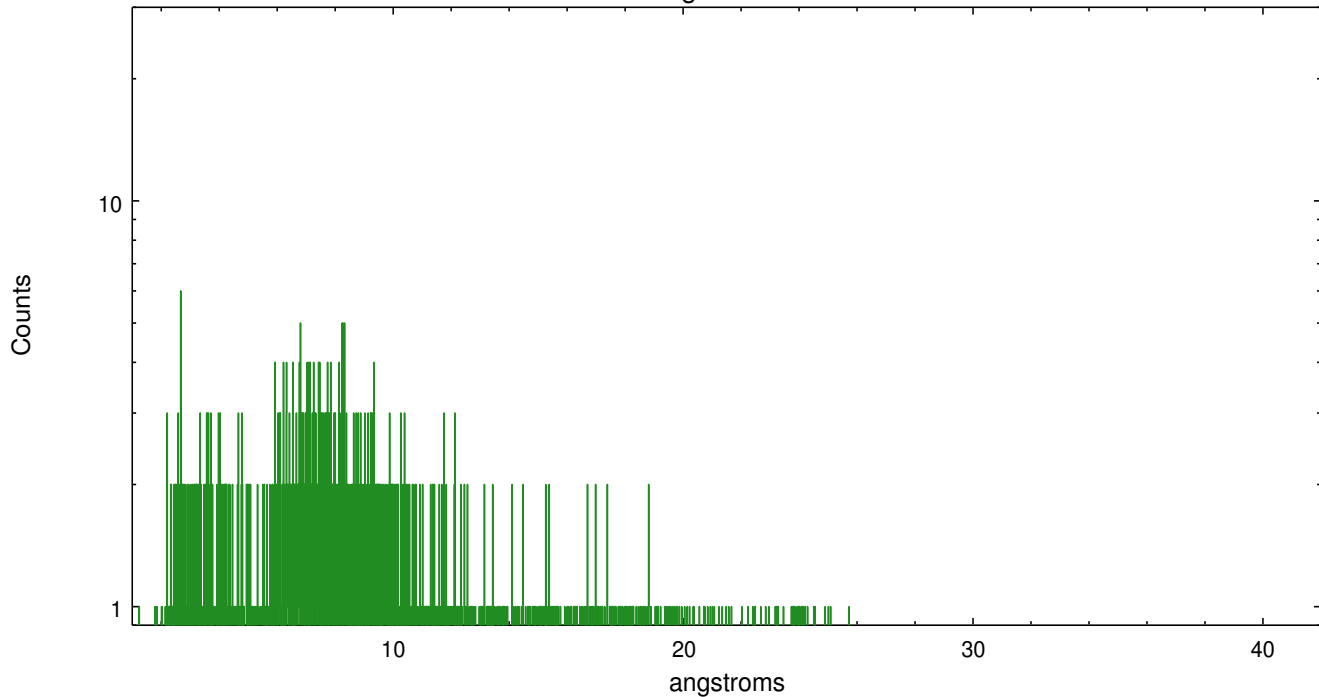


Full Detector MEG

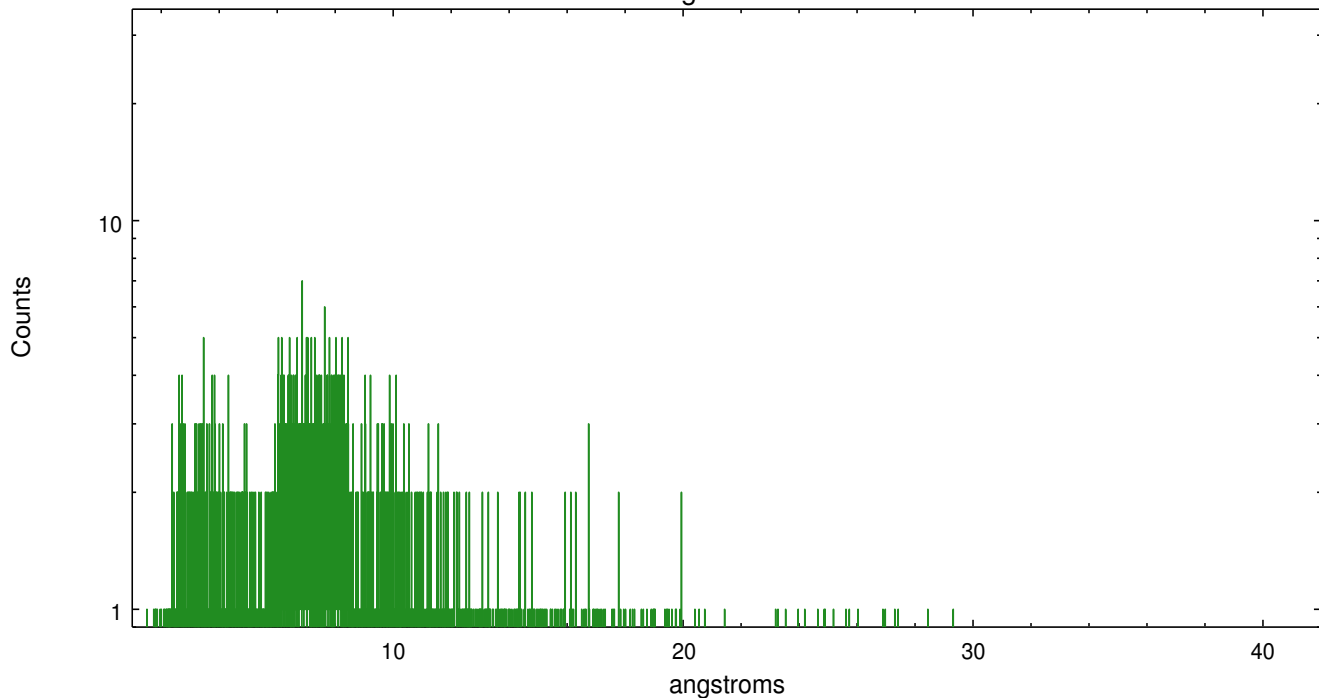
	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	389	252	2108	4550	2516	259	351



meg order -1



meg order +1



A Summary

A.1 Status

V&V Scientist	Dan Dewey
V&V Date (YYYY-MM-DD)	2009.11.24
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	36.019

A.2 Comments

Roll constraint: OK, requested: 270 +/- 50 actual: 289; spectra look good.

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No CTI correction has been applied to these data because the correction has not been derived for temperatures warmer than -120 degrees C. [FP_TEMP is about -109.2 C]

HOWEVER, we have employed the new gain model applicable to the. UN-CTI-CORRECTED BI chips, including S1, which is the one that had by far the worst gain behavior in previous processings. THAT chip, very important for lower-energy order-sorting with HETG/ACIS-S, is much improved now (flatter distribution on the order-sorting plots).

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