V&V Reference Report
L2 ASCDS Version : 8.5.1.1

Observation 5423 - L2 Version 3
Chandra X-Ray Center

L2 Processing Date : Dec 27 2012

Contents

1 Front **2**

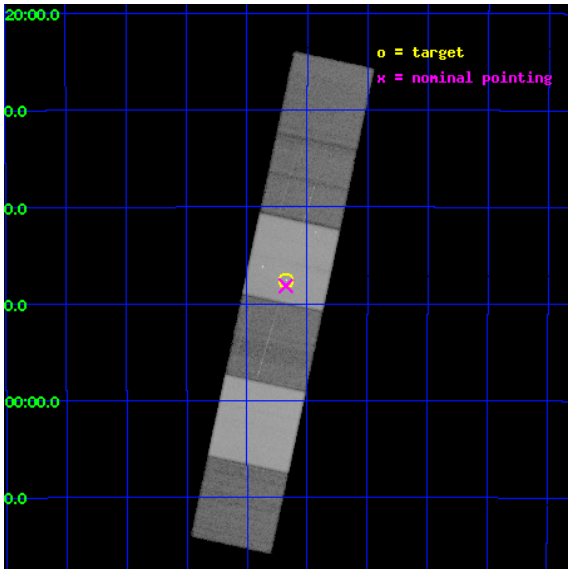
2 OBI **3**
2.1 OBI . . . 3
2.1.1 Images . . . 3
2.1.2 Bias . . . 3
2.1.3 Parameters . . . 4
2.1.4 Events . . . 4
2.2 Compared Parameters . . . 5
2.3 Aspect . . . 6
2.4 Star Slots . . . 9
2.4.1 Slot 3 . . . 9
2.4.2 Slot 4 . . . 10
2.4.3 Slot 5 . . . 11
2.4.4 Slot 6 . . . 12
2.4.5 Slot 7 . . . 13
2.5 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	200356	Sequence number
obs_id	5423	Observation id
title	The Production of X-ray Emission in Classical T Tauri Stars	Propos
observer	Dr. Gregory Herczeg	Principal investigator
object	V4046 Sgr	Source name
dtycycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	273.54375	Observer's specified target RA [deg]
dec_targ	-32.792917	Observer's specified target Dec [deg]
ra_nom	273.54416224666	Nominal RA [deg]
dec_nom	-32.802589293787	Nominal Dec [deg]
roll_nom	282.13282893701	Nominal Roll [deg]
revision	3	Processing version of data
ontime	98982.399631262	Sum of GTIs [s]
livetime	97729.024887085	Livetime [s]
ontime4	98979.158640981	Sum of GTIs [s]
ontime5	98982.399631262	Sum of GTIs [s]
ontime6	98982.399631262	Sum of GTIs [s]
ontime7	98982.399631262	Sum of GTIs [s]
ontime8	98982.399631262	Sum of GTIs [s]
ontime9	98975.917730212	Sum of GTIs [s]
l2events	1087377	Number of level 2 events

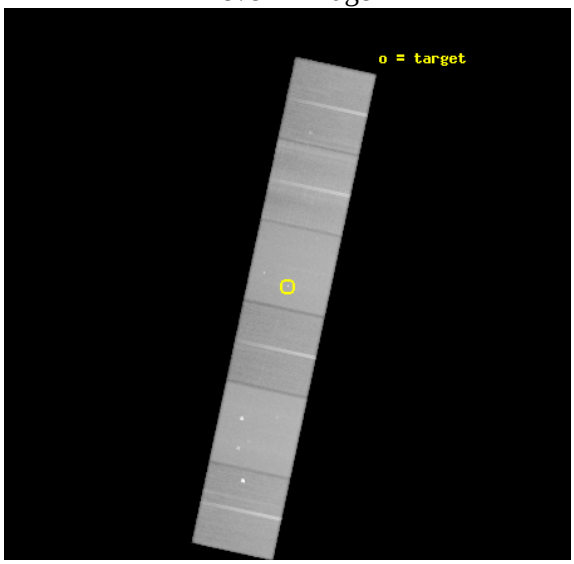


2 OBI

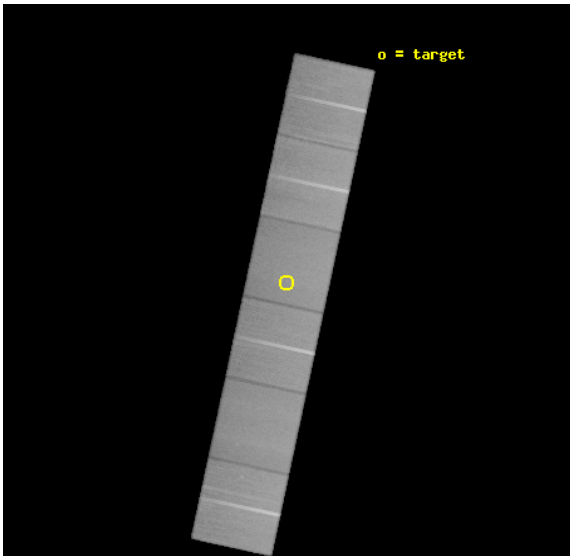
2.1 OBI

2.1.1 Images

Level 1 Image

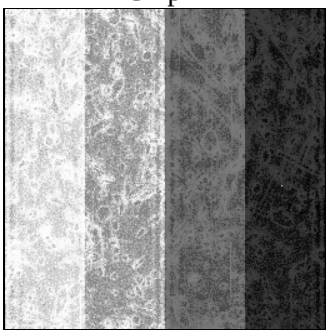


Level 1 Bad Events

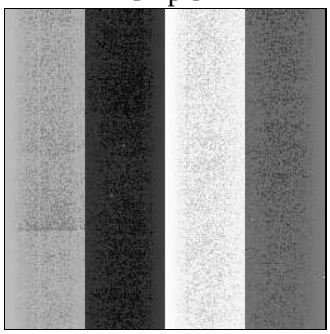


2.1.2 Bias

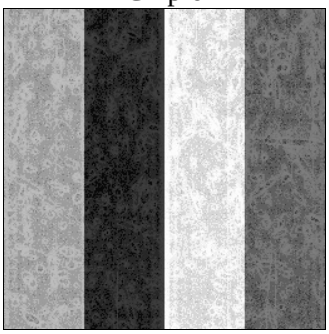
Chip 4



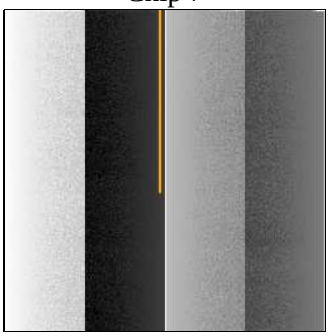
Chip 5



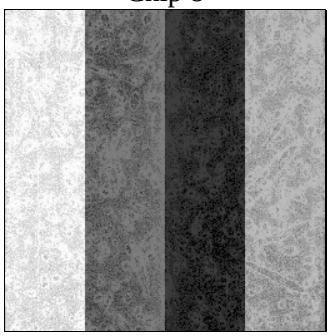
Chip 6



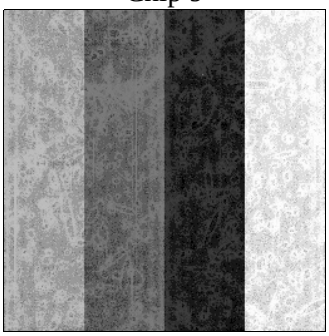
Chip 7



Chip 8



Chip 9



2.1.3 Parameters

obi_num	1	Obi number
ascdsver	8.5.1.1	Processing system revision
caldbver	4.5.5	
date	2012-12-27T09:01:51	Date and time of file creation
revision	3	Processing version of data

sched_exp_time	98800.000000	[s] Scheduled observation exposure time
ontime	98982.399631262	Sum of GTIs [s]
ontime4	98979.158640981	Sum of GTIs [s]
ontime5	98982.399631262	Sum of GTIs [s]
ontime6	98982.399631262	Sum of GTIs [s]
ontime7	98982.399631262	Sum of GTIs [s]
ontime8	98982.399631262	Sum of GTIs [s]
ontime9	98975.917730212	Sum of GTIs [s]
l1events	4928021	Number of level 1 events

2.1.4 Events

	ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
level 1 events	773126	1012034	674779	929497	856838	681747
rejected events	666283	562576	593521	549251	672647	598258
rejected %	86%	55%	87%	59%	78%	87%

	ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
grade 0 events	60171	40124	32679	34320	59388	35303
	7%	3%	4%	3%	6%	5%
grade 1 events	840	1237	323	919	602	398
	0%	0%	0%	0%	0%	0%
grade 2 events	17632	135528	17242	76520	41313	16227
	2%	13%	2%	8%	4%	2%
grade 3 events	8740	17094	7802	33832	19492	8395
	1%	1%	1%	3%	2%	1%
grade 4 events	8316	16402	7731	34117	18220	7945
	1%	1%	1%	3%	2%	1%
grade 5 events	31085	73263	31950	88975	42048	34491
	4%	7%	4%	9%	4%	5%
grade 6 events	13114	245659	16731	205484	47781	16571
	1%	24%	2%	22%	5%	2%
grade 7 events	633228	482727	560321	455330	627994	562417
	81%	47%	83%	48%	73%	82%

2.2 Compared Parameters

Parameter	Planned	Actual
Instrument	ACIS	ACIS
Detector	ACIS-456789	ACIS-456789
Grating	HETG	HETG
Data mode	FAINT	FAINT
Observation mode	POINTING	POINTING
[deg] Pointing RA	273.522105	273.5441622466603
[deg] Pointing Dec	-32.782640	-32.80258929378666
[deg] Pointing Roll	281.964261	282.1328289370138
[mm] SIM focus pos	-0.684267	-0.6828225247311905
[mm] SIM defocus	0	0.001444936568705701
[mm] SIM translation stage pos	-190.132523	-190.1400660498719
[mm] SIM translation stage offset	0	0.00754346686406393
[s] Observation start time (MET)	239746343.184000	239744578.93007
Observation start date	2005-08-06T20:11:19	2005-08-06T19:42:58
[s] Observation end time (MET)	239845143.184000	239846591.03475
Observation end date	2005-08-07T23:37:59	2005-08-08T00:03:11
Read mode	TIMED	TIMED

Parameter	Planned	Actual
Obspar format version number	7	7
Obspar file type	PREDICTED	ACTUAL
Obspar update status	NONE	UPDATED
Number of optional ACIS chips dropped	0	0
On-chip summing requested	N	N
Subarray requested	NONE	NONE
Alternating exposures requested	N	N
[s] Primary exposure time	0.000000	3.2

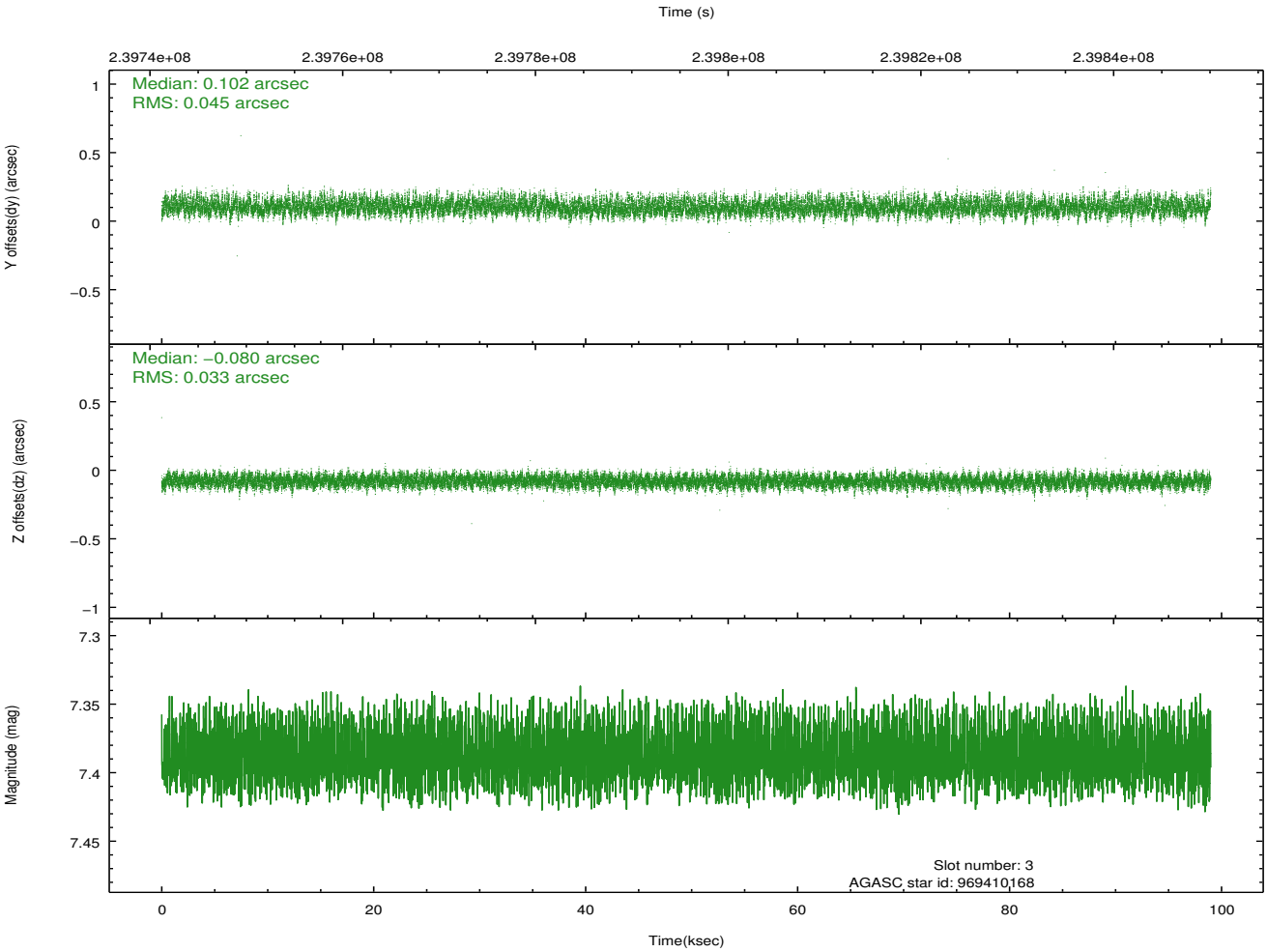
2.3 Aspect

Slot Statistics

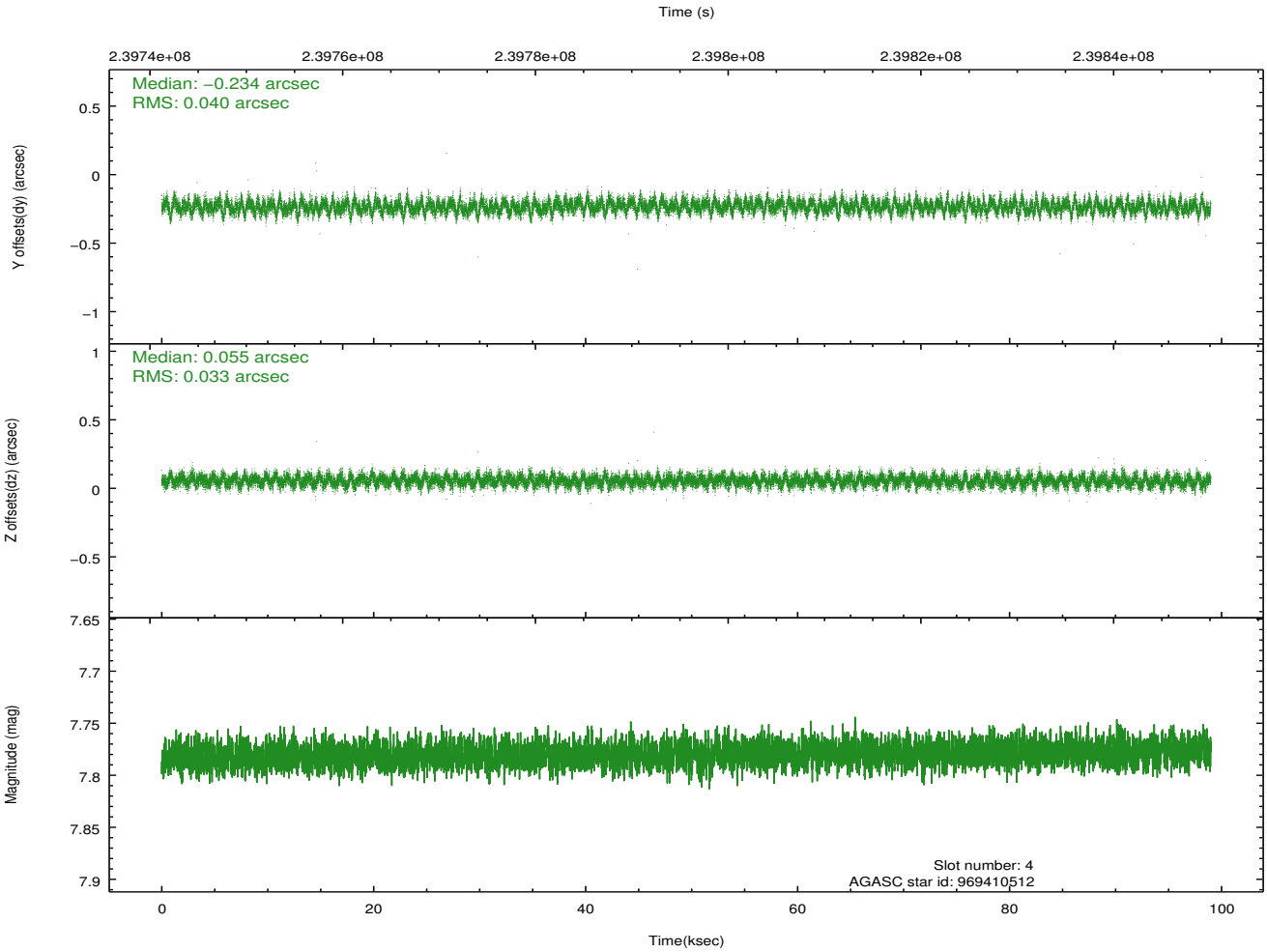
slot	status	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID	ACIS-S-2	7.10	24144	-0.070	-0.048	0.010	0.017	0.000000	0.000000	-760.43	-1731.47
1	FID	ACIS-S-4	7.21	24144	0.075	0.030	0.008	0.014	0.000000	0.000000	2153.00	177.23
2	FID	ACIS-S-6	7.35	24144	-0.033	0.024	0.008	0.014	0.000000	0.000000	401.43	814.49
3	GUIDE	969410168	7.39	48279	0.102	-0.080	0.060	0.095	273.917435	-33.091571	1337.64	935.49
4	GUIDE	969410512	7.78	48281	-0.234	0.055	0.055	0.092	273.701392	-32.213017	-1892.42	959.34
5	GUIDE	969412944	8.60	48203	0.073	-0.031	0.067	0.109	273.273913	-32.720895	-372.19	-689.41
6	GUIDE	969415768	9.12	48262	-0.095	-0.091	0.102	0.169	272.909685	-32.404195	-1713.34	-1539.74
7	GUIDE	969423304	9.16	48258	0.147	0.147	0.093	0.150	274.359501	-33.253694	2191.76	2112.86

2.4 Star Slots

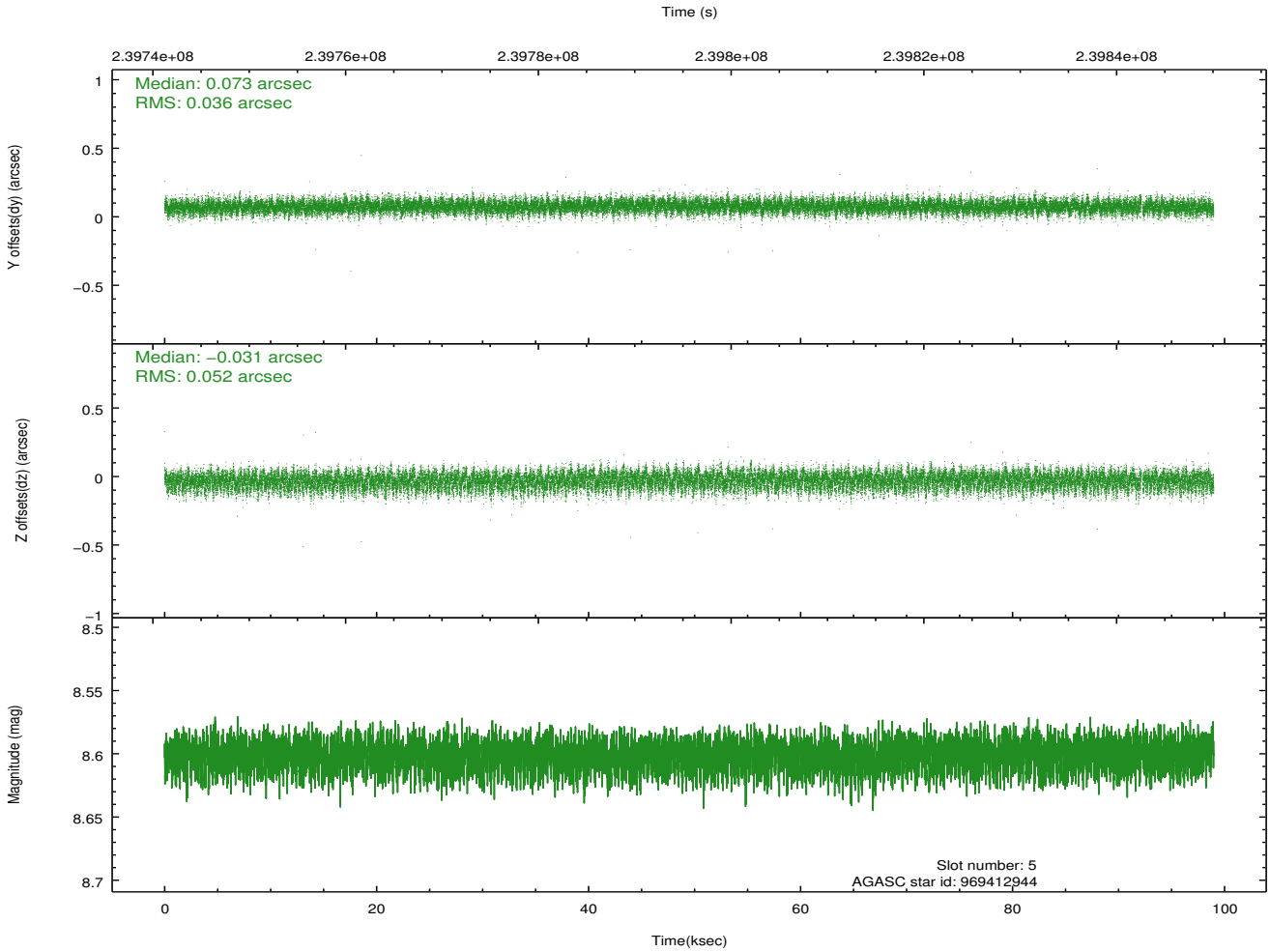
2.4.1 Slot 3



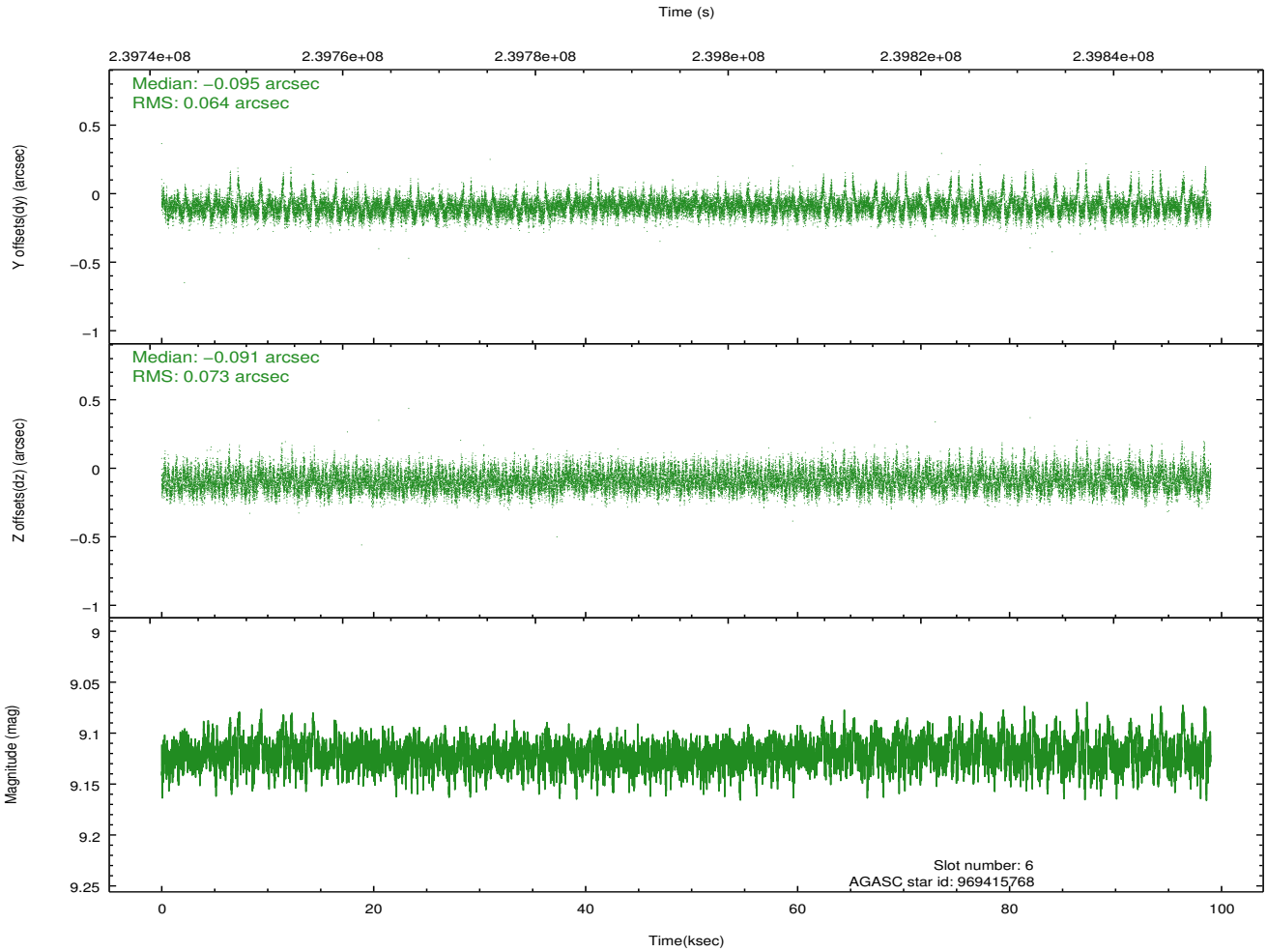
2.4.2 Slot 4


Time (s)
2.3974e+08
2.3976e+08
2.3978e+08
2.398e+08
2.3982e+08
2.3984e+08
Median: −0.234 arcsec
RMS: 0.040 arcsec
Y offsets(dy) (arcsec)
Median: 0.055 arcsec
RMS: 0.033 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number: 4
AGASC star id: 969410512
Time(ksec)

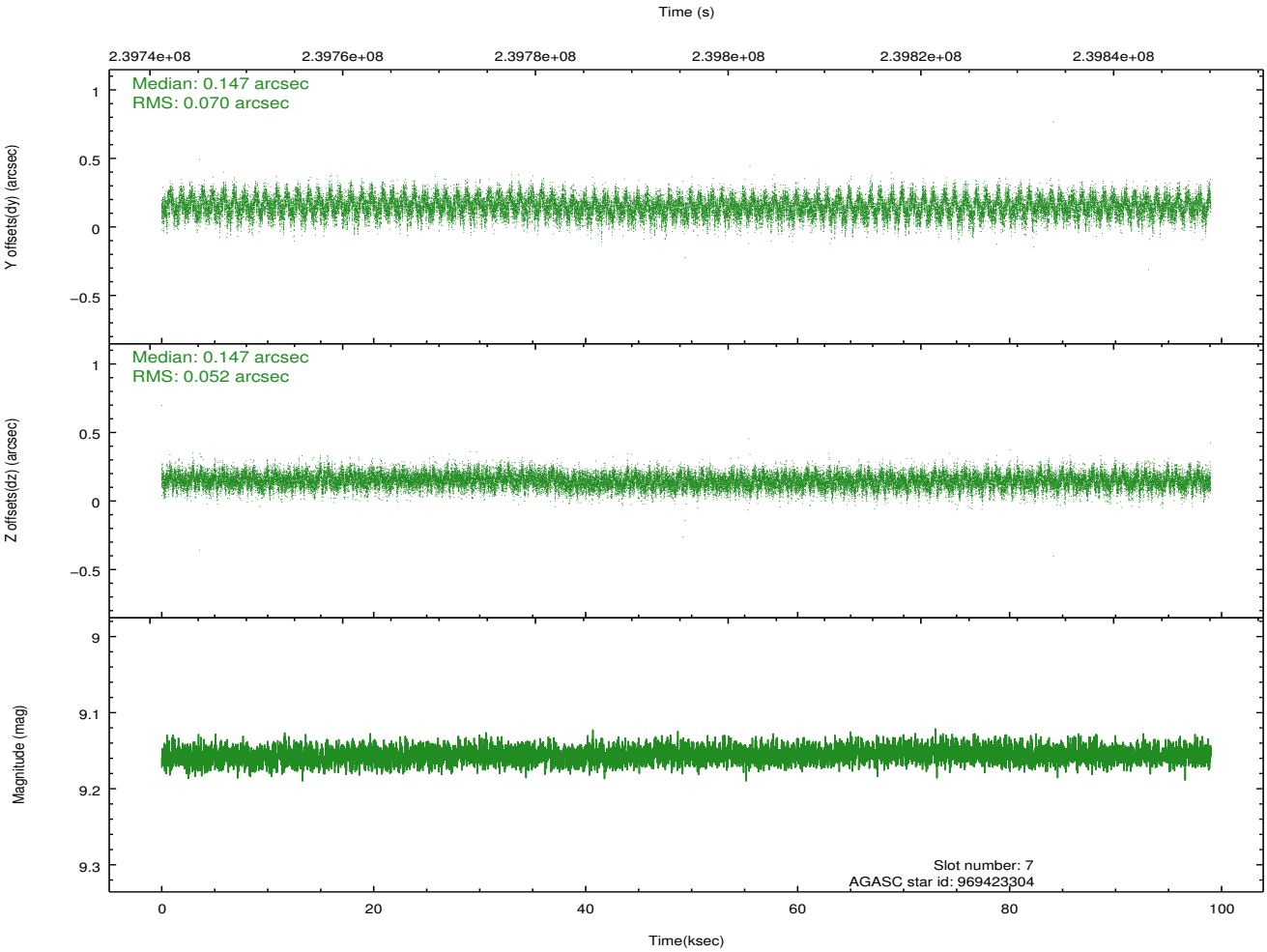
2.4.3 Slot 5


Time (s)
2.3974e+08
2.3976e+08
2.3978e+08
2.398e+08
2.3982e+08
2.3984e+08
Median: 0.073 arcsec
RMS: 0.036 arcsec
Y offsets(dy) (arcsec)
Median: −0.031 arcsec
RMS: 0.052 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number: 5
AGASC star id: 969412944
Time(ksec)

2.4.4 Slot 6

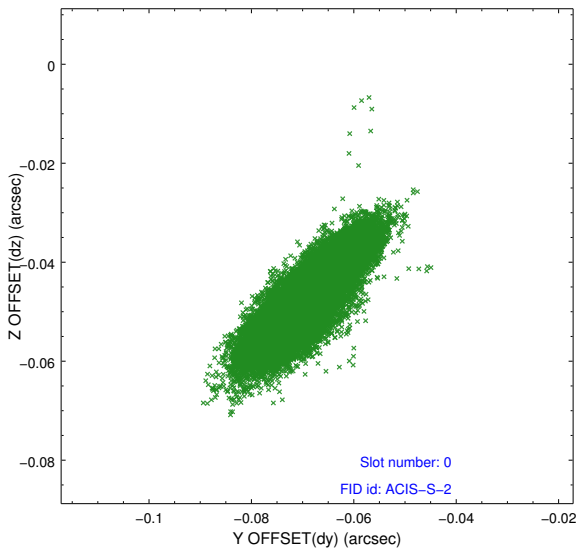

Time (s)
2.3974e+08
2.3976e+08
2.3978e+08
2.398e+08
2.3982e+08
2.3984e+08
Median: −0.095 arcsec
RMS: 0.064 arcsec
Y offsets(dy) (arcsec)
Median: −0.091 arcsec
RMS: 0.073 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number: 6
AGASC star id: 969415768
Time(ksec)

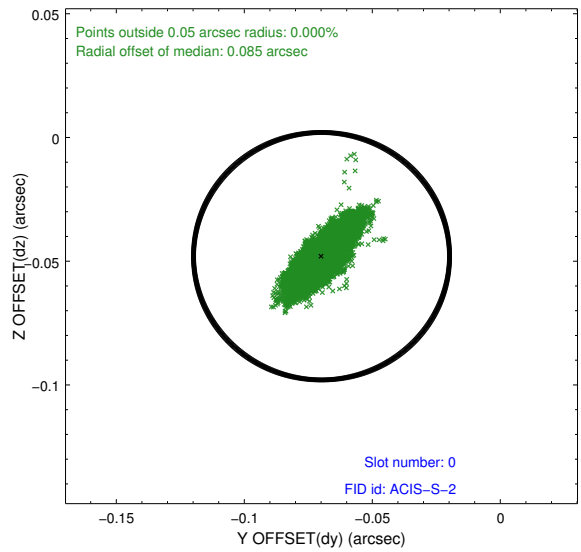
2.4.5 Slot 7

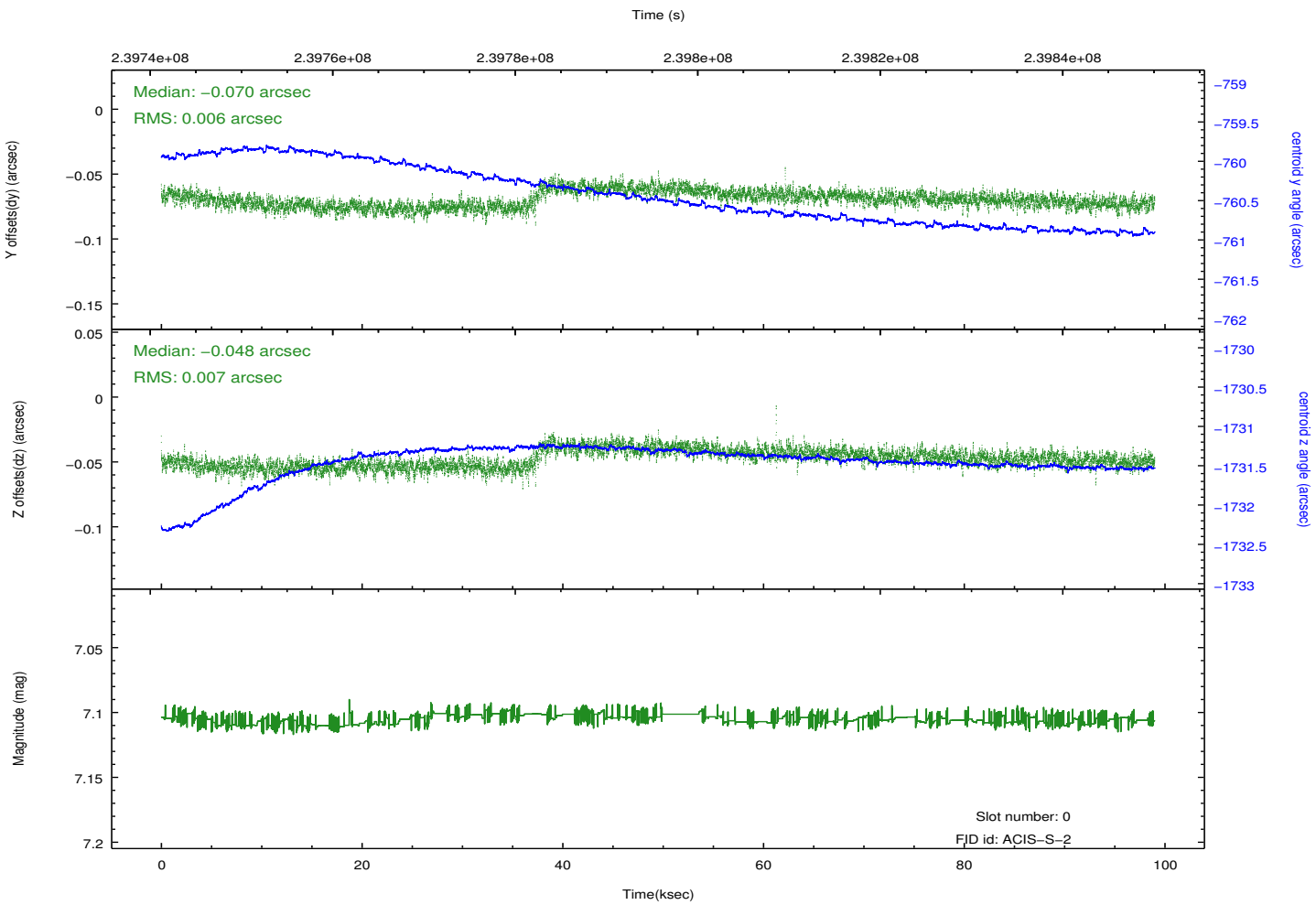

Time (s)
2.3974e+08
2.3976e+08
2.3978e+08
2.398e+08
2.3982e+08
2.3984e+08
Median: 0.147 arcsec
RMS: 0.070 arcsec
Y offsets(dy) (arcsec)
Median: 0.147 arcsec
RMS: 0.052 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number: 7
AGASC star id: 969423304
Time(ksec)

2.5 FID Slots

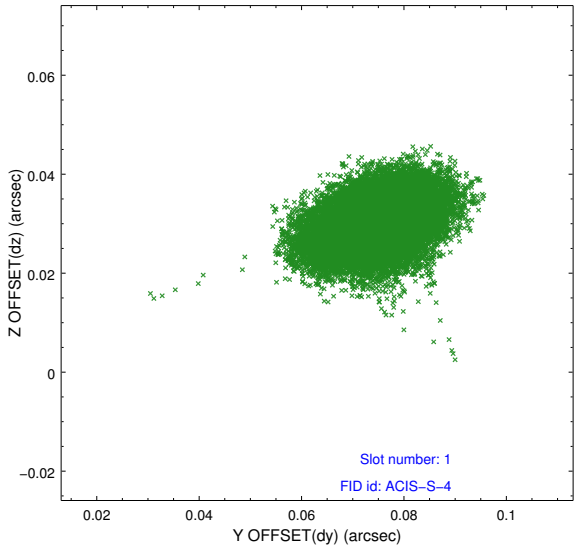
2.5.1 Slot 0

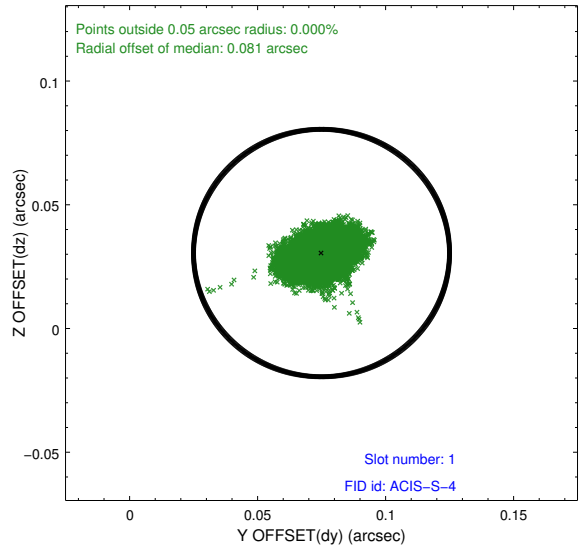


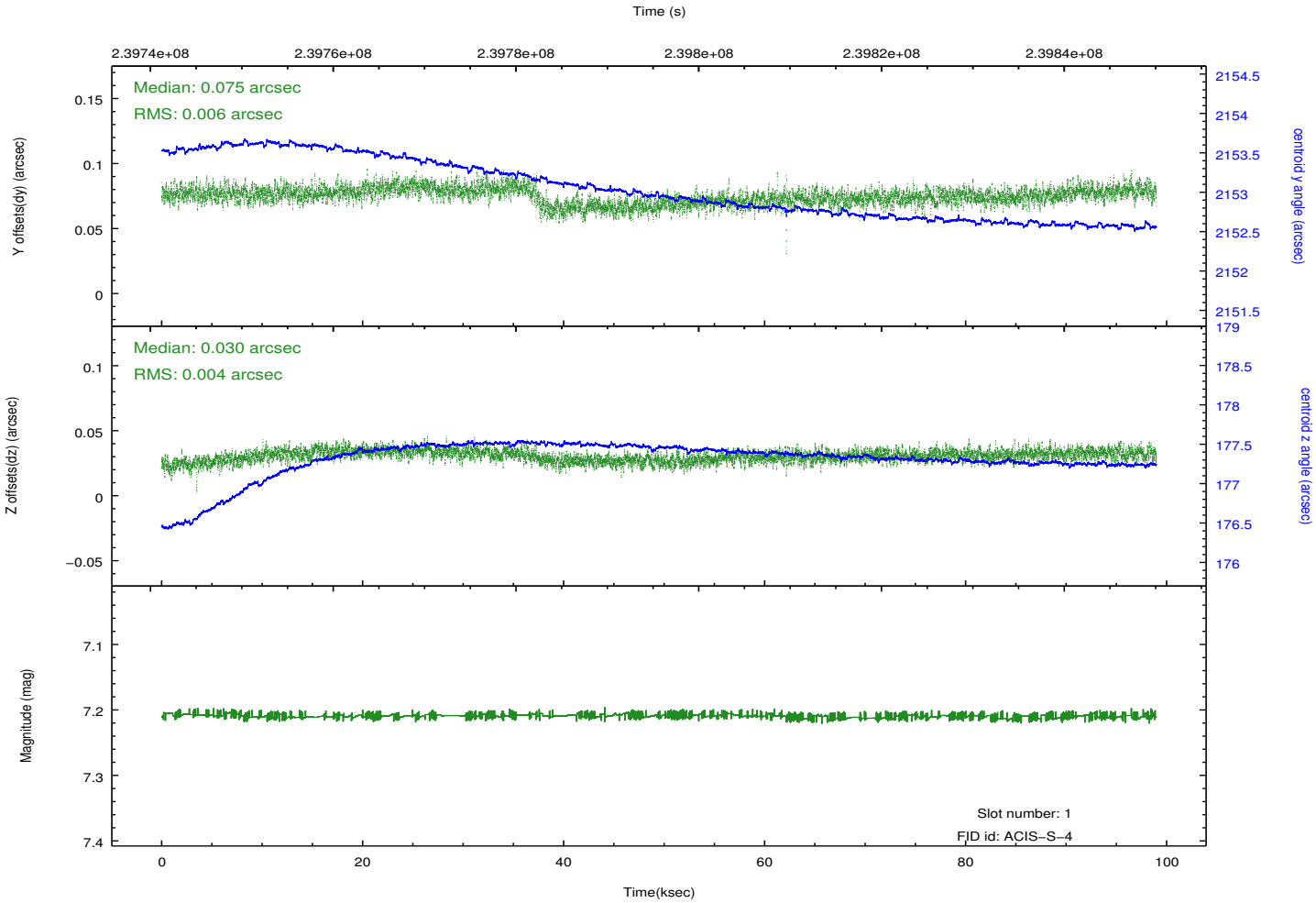




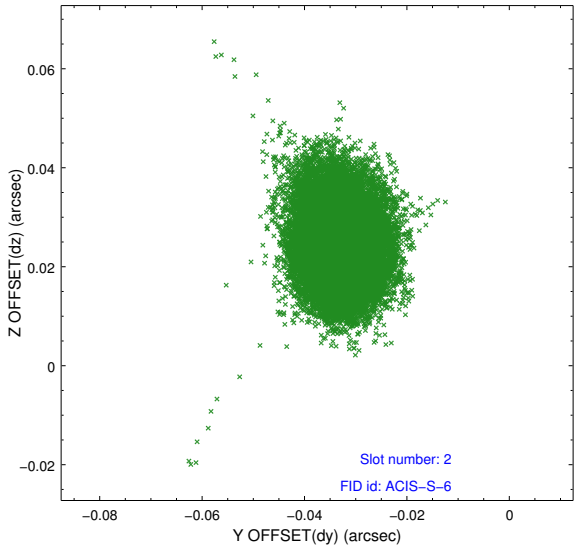
2.5.2 Slot 1

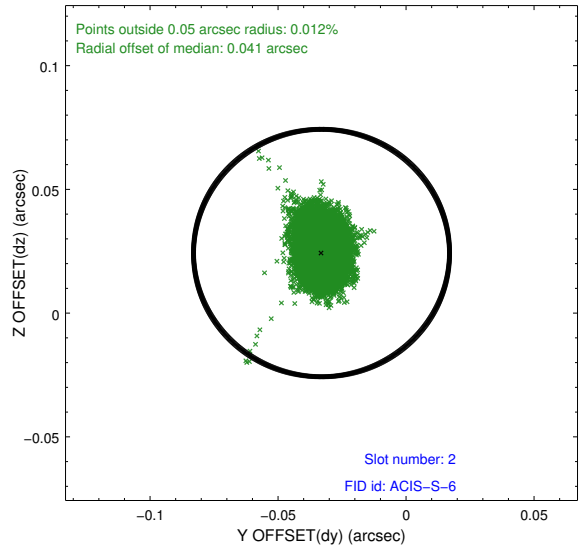

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 1
FID id: ACIS−S−4

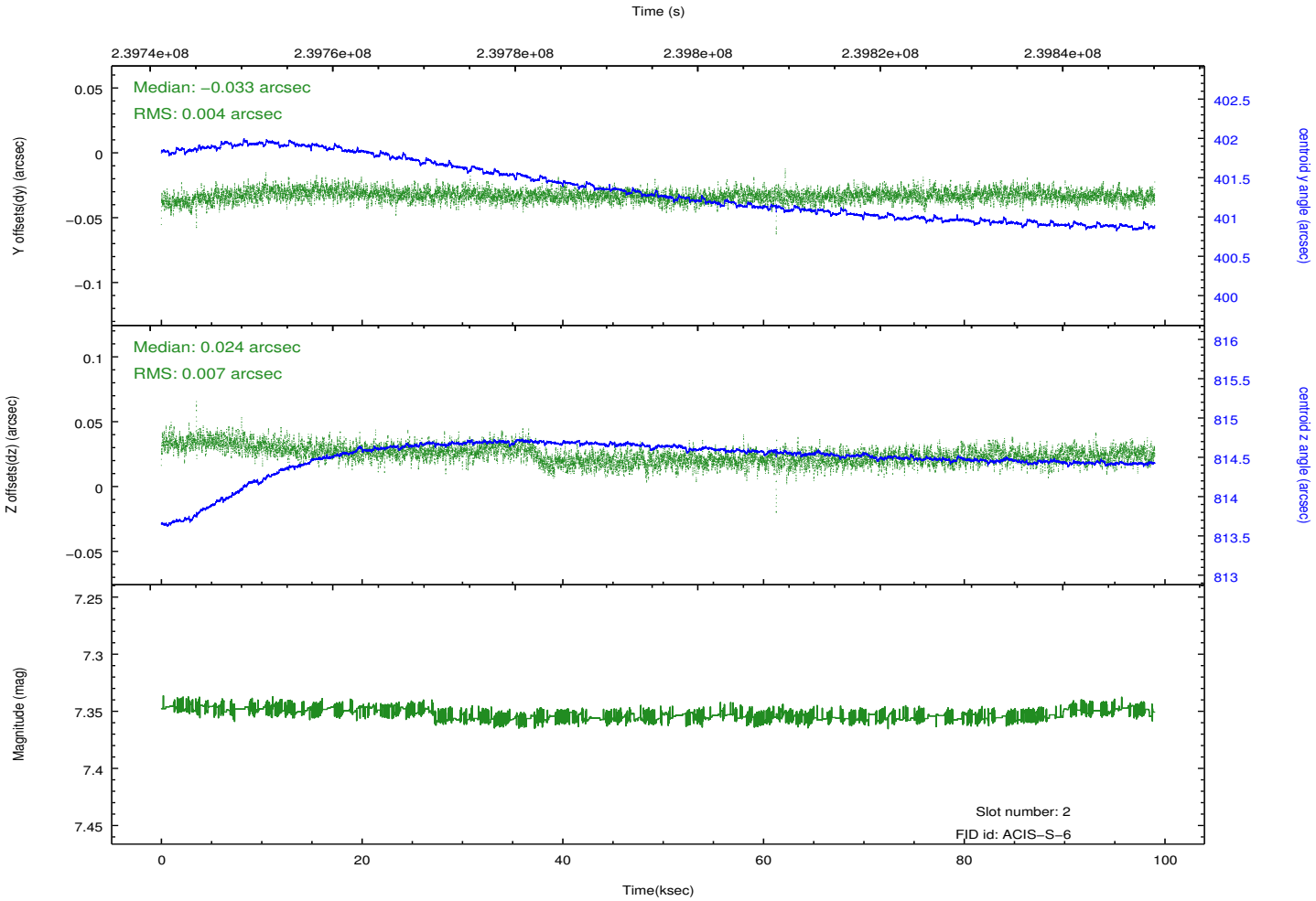

Points outside 0.05 arcsec radius: 0.000%
Radial offset of median: 0.081 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 1
FID id: ACIS−S−4


Time (s)
Median: 0.075 arcsec
RMS: 0.006 arcsec
Y offsets(dy) (arcsec)
centroid y angle (arcsec)
Median: 0.030 arcsec
RMS: 0.004 arcsec
Z offsets(dz) (arcsec)
centroid z angle (arcsec)
Magnitude (mag)
Slot number: 1
FID id: ACIS−S−4
Time(ksec)

2.5.3 Slot 2


Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 2
FID id: ACIS−S−6

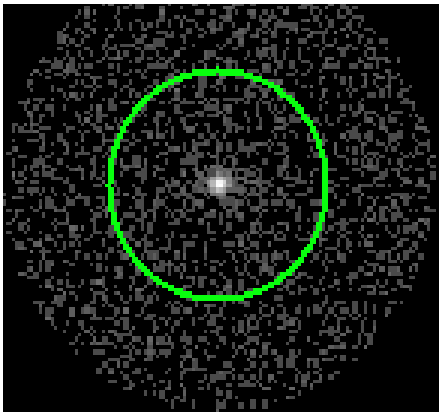

Points outside 0.05 arcsec radius: 0.012%
Radial offset of median: 0.041 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 2
FID id: ACIS−S−6


Time (s)
Median: −0.033 arcsec
RMS: 0.004 arcsec
Y offsets(dy) (arcsec)
centroid y angle (arcsec)
Median: 0.024 arcsec
RMS: 0.007 arcsec
Z offsets(dz) (arcsec)
centroid z angle (arcsec)
Magnitude (mag)
Slot number: 2
FID id: ACIS−S−6
Time(ksec)

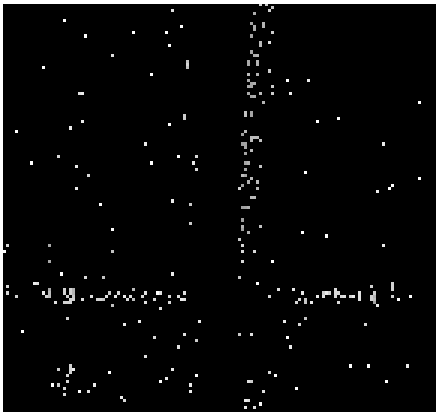
3 Gratings

3.1 HEG Arm

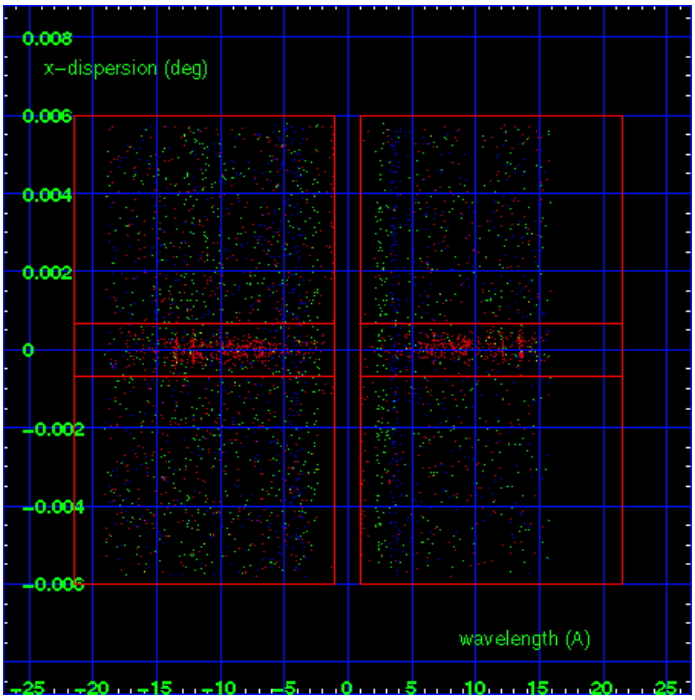
HEG Order Sort 123



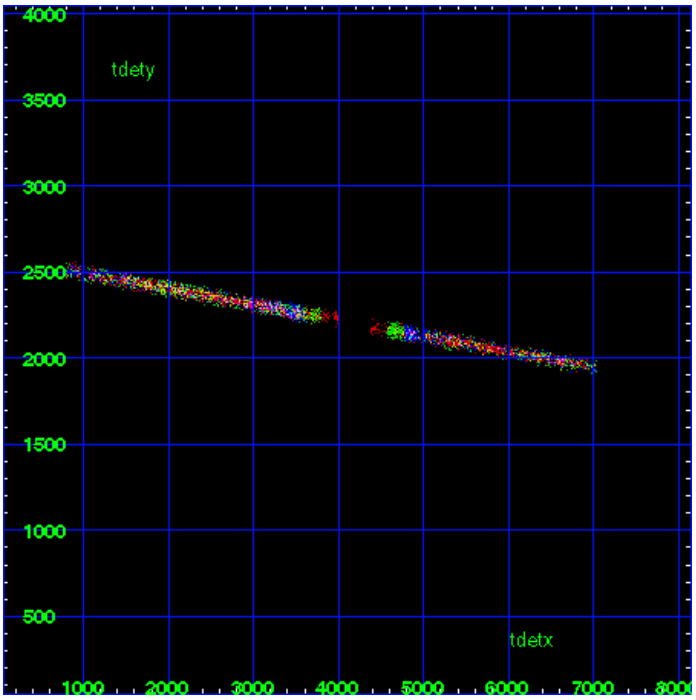
HEG Zero Order



HEG Order Sort ALL

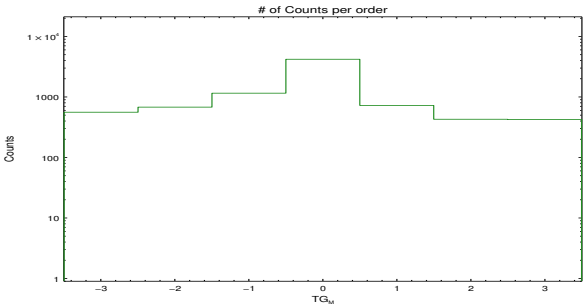


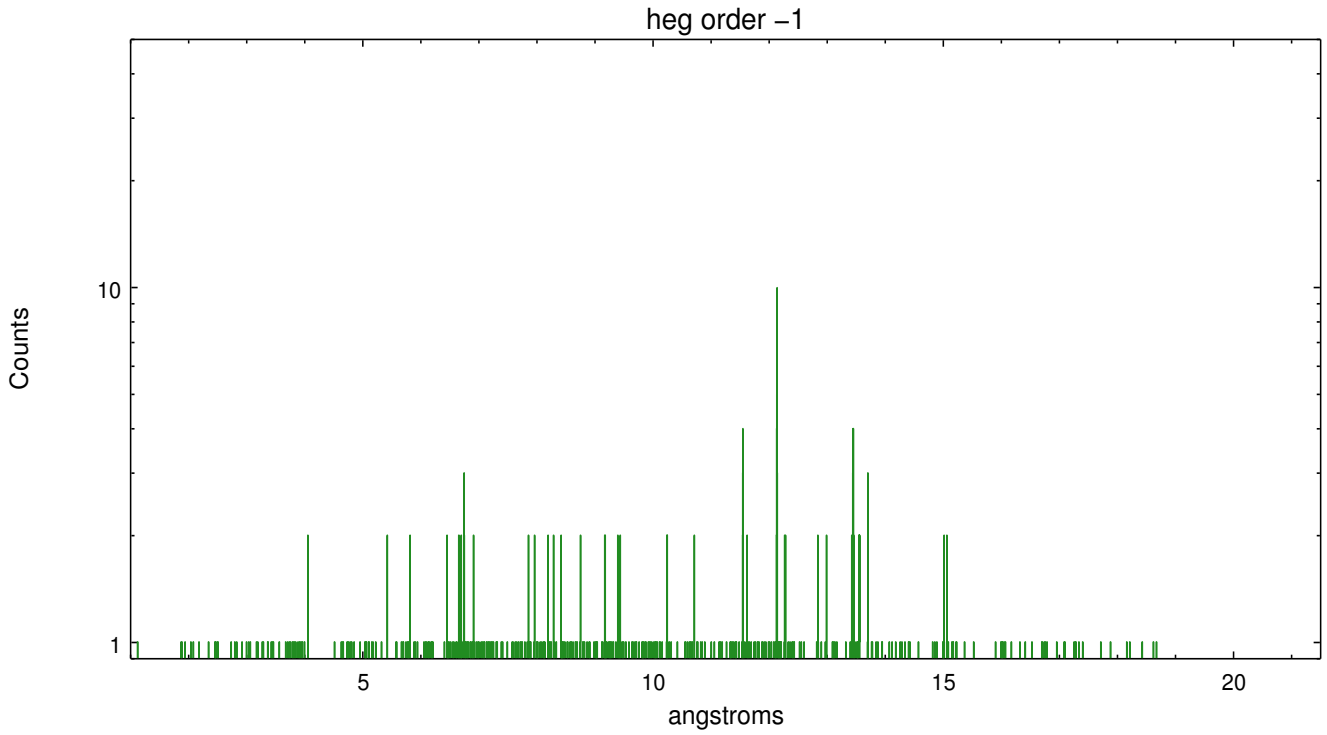
Spot Image HEG

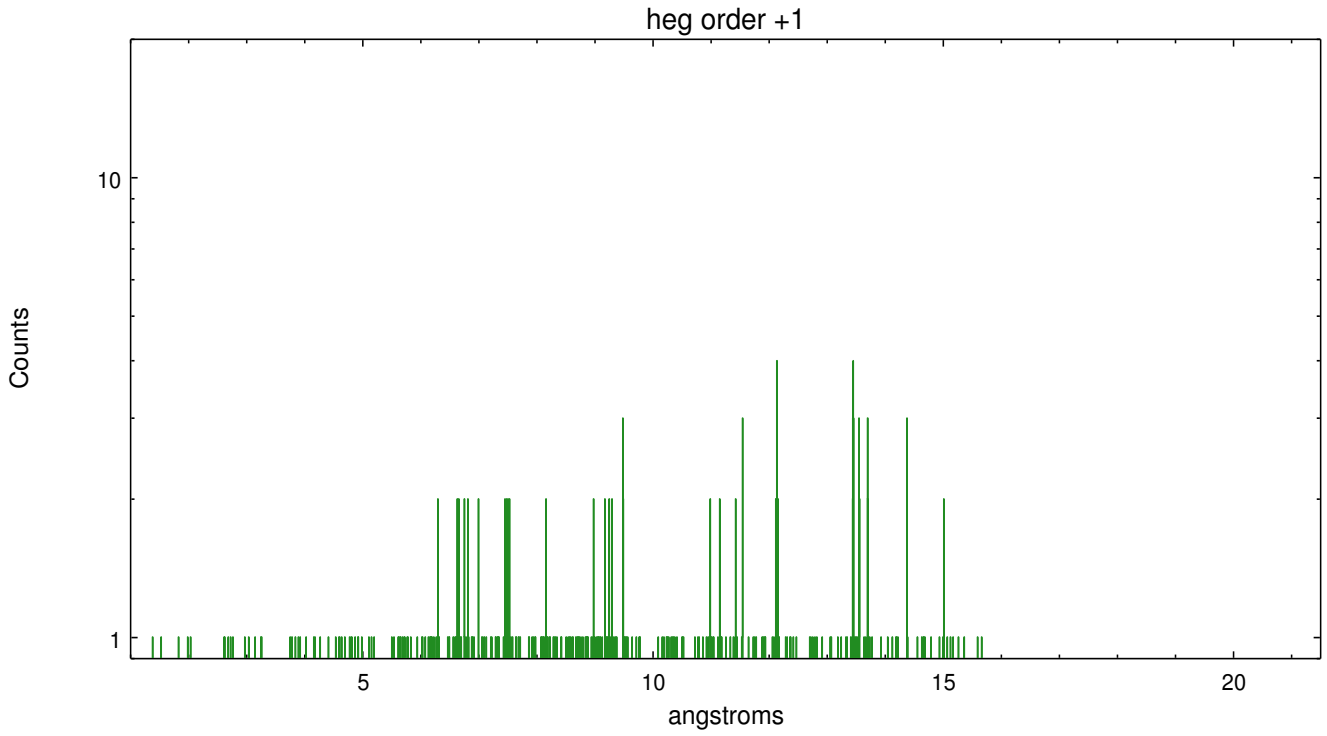


Full Detector HEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	561	681	1159	4223	727	429	425

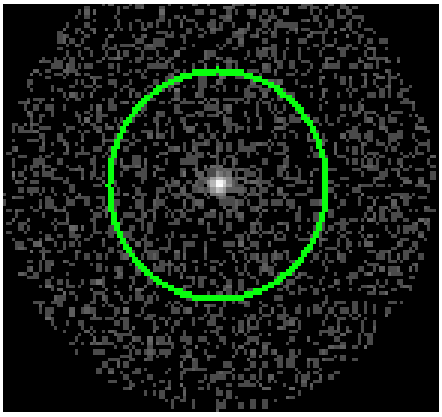



heg order −1
Counts
10
1
5
10
15
20
angstroms


heg order +1
Counts
10
1
5
10
15
20
angstroms

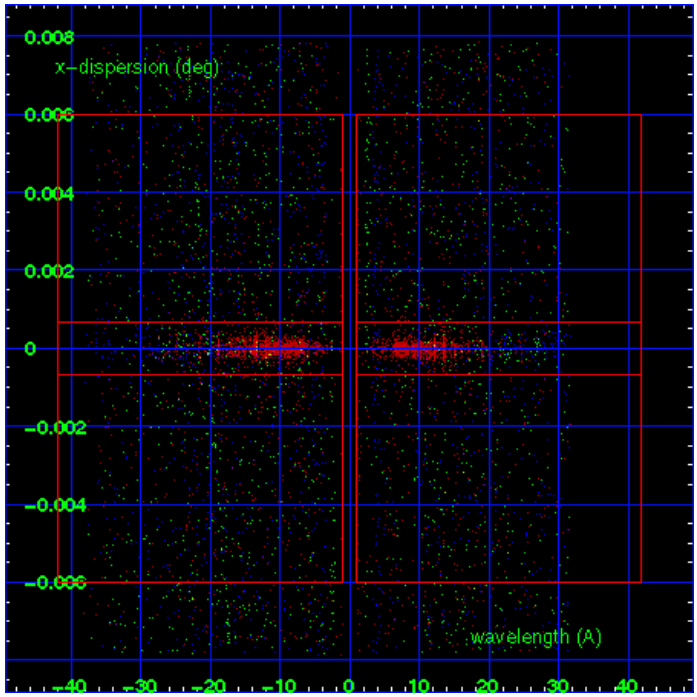
3.2 MEG Arm

MEG Order Sort 123

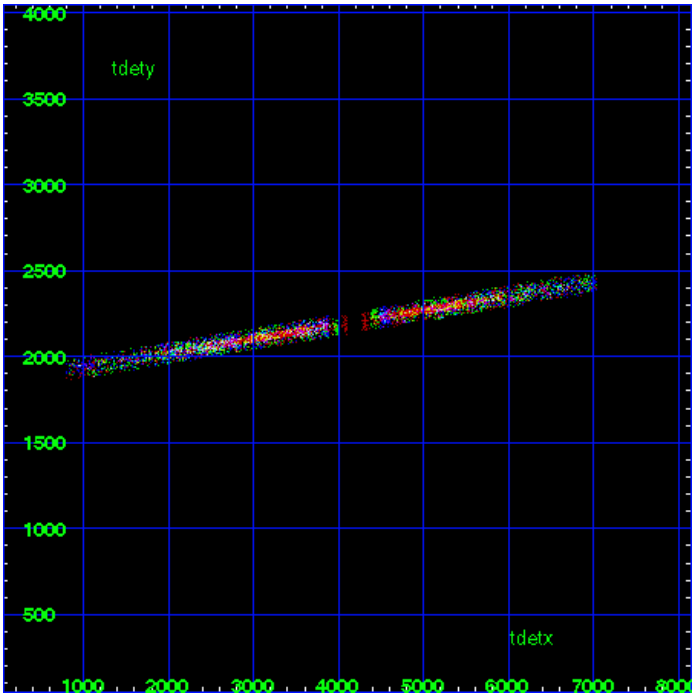


MEG Zero Order

MEG Order Sort ALL

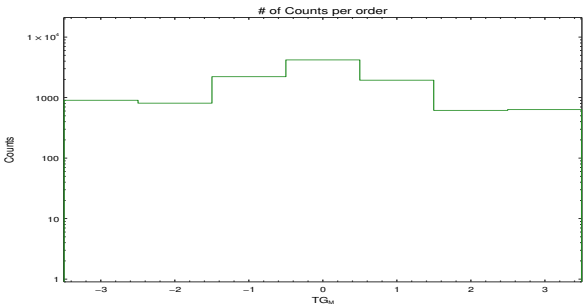


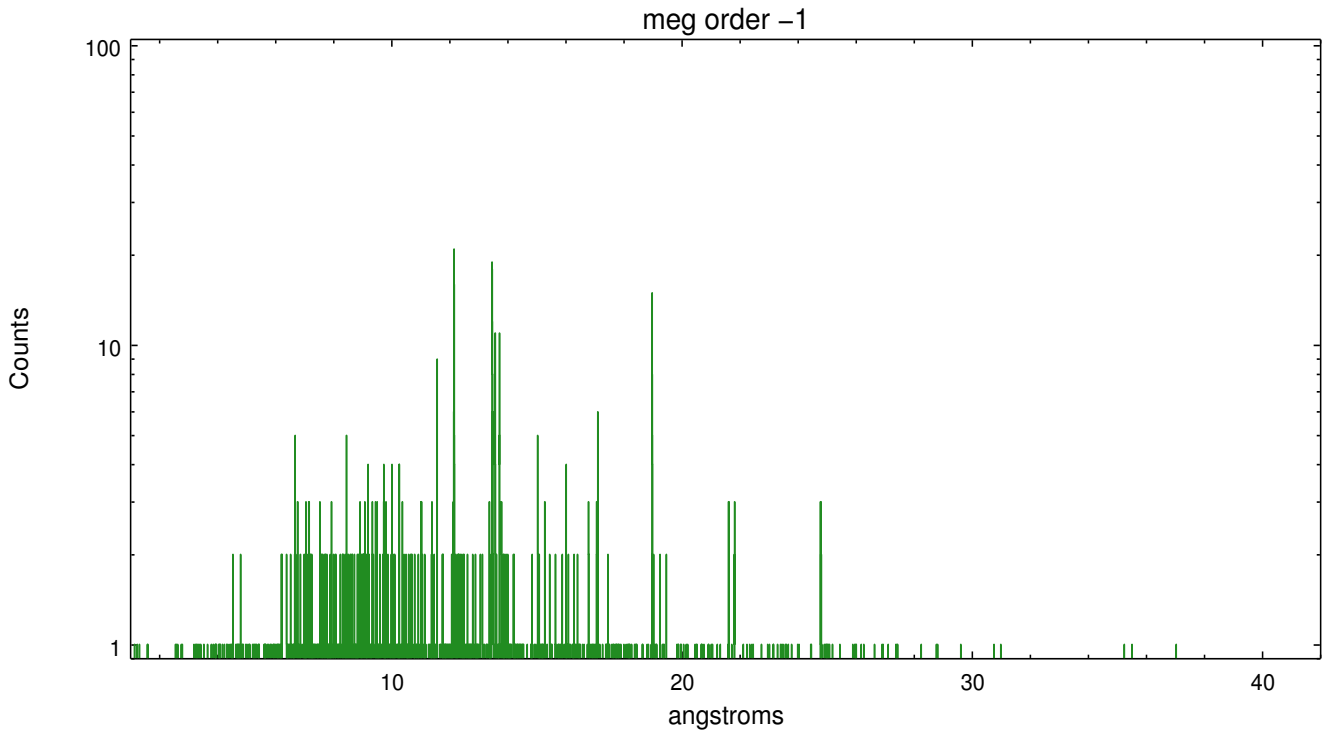
Spot Image MEG

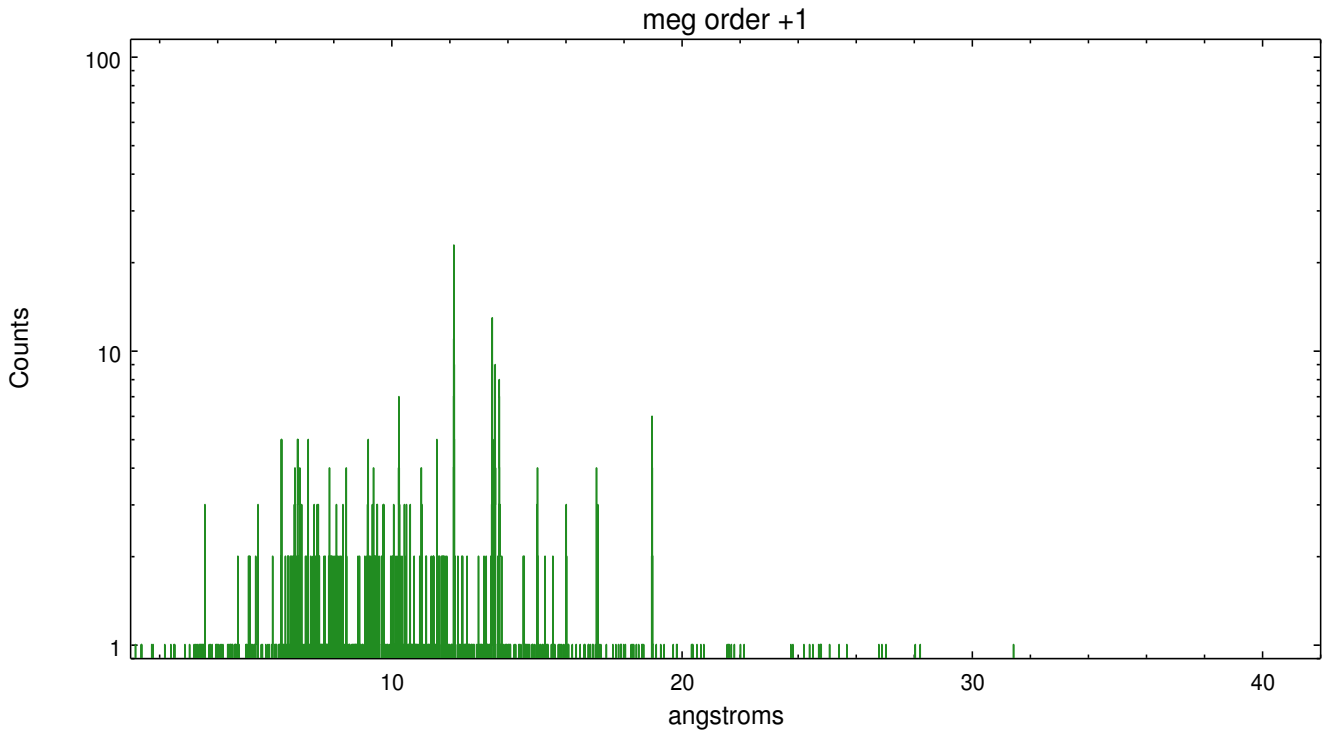


Full Detector MEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	907	812	2227	4223	1949	617	635




meg order −1
100
10
1
Counts
10
20
30
40
angstroms


meg order +1
100
10
1
Counts
10
20
30
40
angstroms

A Summary

A.1 Status

V&V Scientist	Joy Nichols
V&V Date (YYYY-MM-DD)	2013.01.18
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	98.9824

A.2 Comments

`Additional sources in field with visible dispersed spectra.`