V&V Reference Report
L2 ASCDS Version : 7.6.9

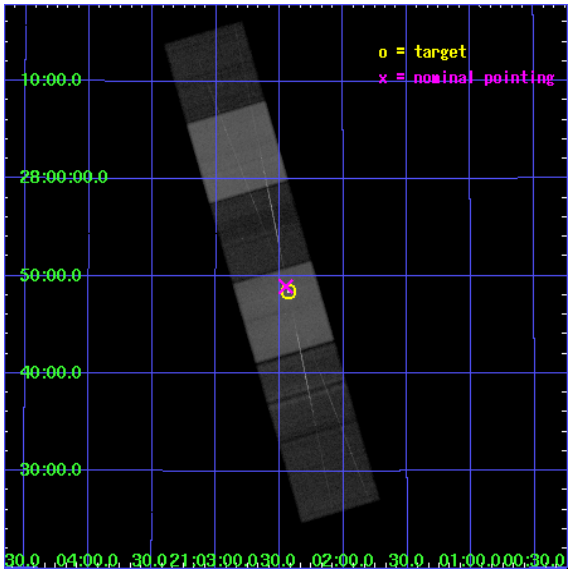
Observation 1887 - L2 Version 001
Chandra X-Ray Center

L2 Processing Date : Nov 14 2006

Contents

1 Front

seq_num	200115
obs_id	1887
title	TIME-RESOLVED CORONAL SPECTROSCOPY OF THE SHORT-PERIOD ACTIVE BINARY ER VUL (G0 V + G5 V)
observer	DR. Alexander Brown
object	ER_VUL
dtycycle	0
cycle	P
ra_targ	315.607917
dec_targ	27.807333
ra_nom	315.61289105013
dec_nom	27.816100382289
roll_nom	73.670418094379
revision	2
ontime	113449.55906565
livetime	112012.99243764
ontime4	113443.07715516
ontime5	113449.55906565
ontime6	113449.55906565
ontime7	113449.55906565
ontime8	113449.55906565
ontime9	113449.55906565
l2events	1352833

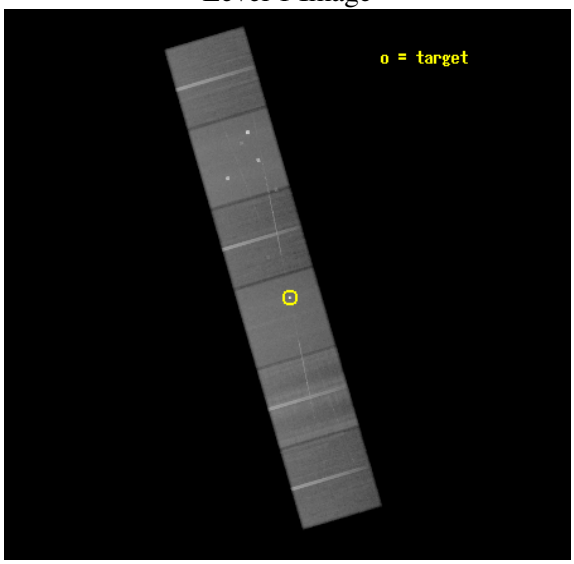


2 OBI

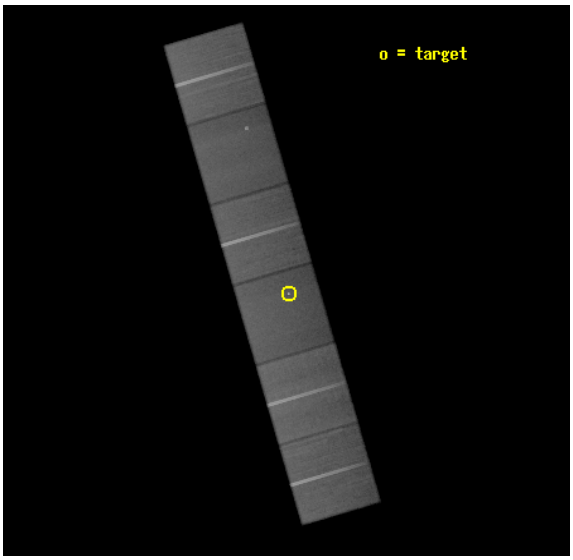
2.1 OBI

2.1.1 Images

Level 1 Image

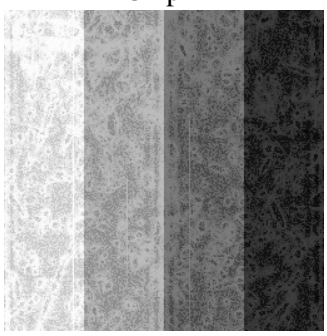


Level 1 Bad Events

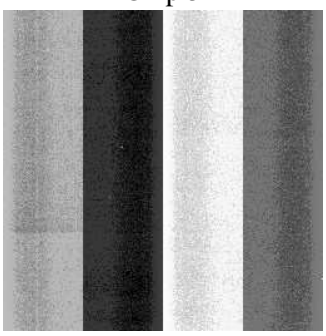


2.1.2 Bias

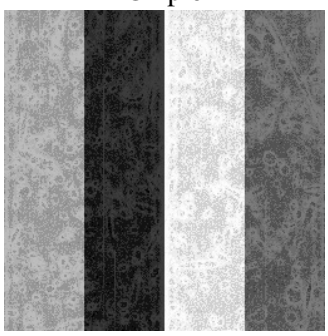
Chip 4



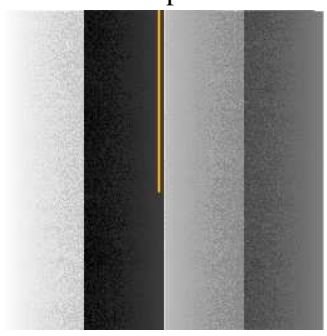
Chip 5



Chip 6



Chip 7



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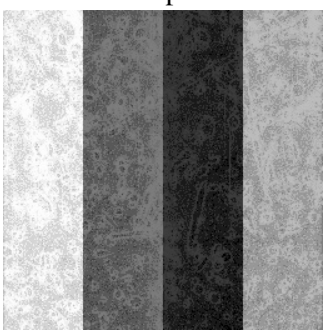
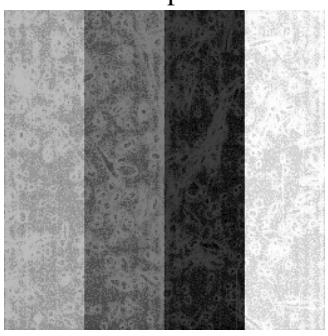


Chip 9



2.1.3 Parameters

obi_num	0
ascdsver	7.6.9
caldbver	3.2.4
date	2006-11-13T17:37:24
revision	2

sched_exp_time	113355.462000
ontime	113515.90298617
ontime4	113509.42104575
ontime5	113515.90295625
ontime6	113515.90295625
ontime7	113515.90298617
ontime8	113515.90295625
ontime9	113515.90295625
l1events	5768008

2.1.4 Events

	ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
level 1 events	895440	1135062	824634	1034250	1080886	797736
rejected events	780141	583584	704772	587259	784575	687282
rejected %	87%	51%	85%	56%	72%	86%

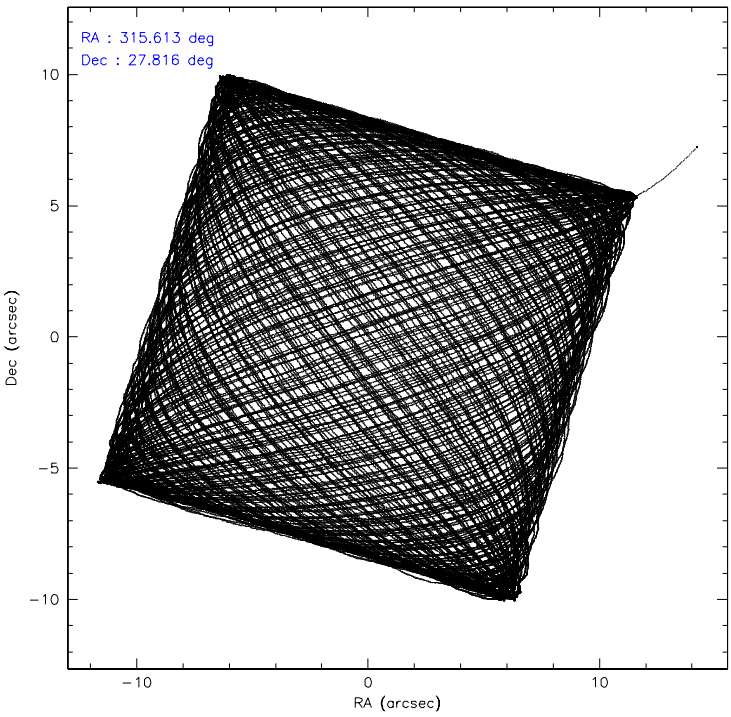
	ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
grade 0 events	50508	65113	56896	31627	101804	48956
	5%	5%	6%	3%	9%	6%
grade 1 events	470	4037	429	918	773	407
	0%	0%	0%	0%	0%	0%
grade 2 events	27455	173176	22561	113510	56005	21901
	3%	15%	2%	10%	5%	2%
grade 3 events	9499	12908	9980	25670	35243	9276
	1%	1%	1%	2%	3%	1%
grade 4 events	9128	12316	9809	24796	32093	9347
	1%	1%	1%	2%	2%	1%
grade 5 events	26084	51606	30960	67290	40040	31519
	2%	4%	3%	6%	3%	3%
grade 6 events	18758	288262	20668	251603	71328	21021
	2%	25%	2%	24%	6%	2%
grade 7 events	753538	527644	673331	518836	743600	655309
	84%	46%	81%	50%	68%	82%

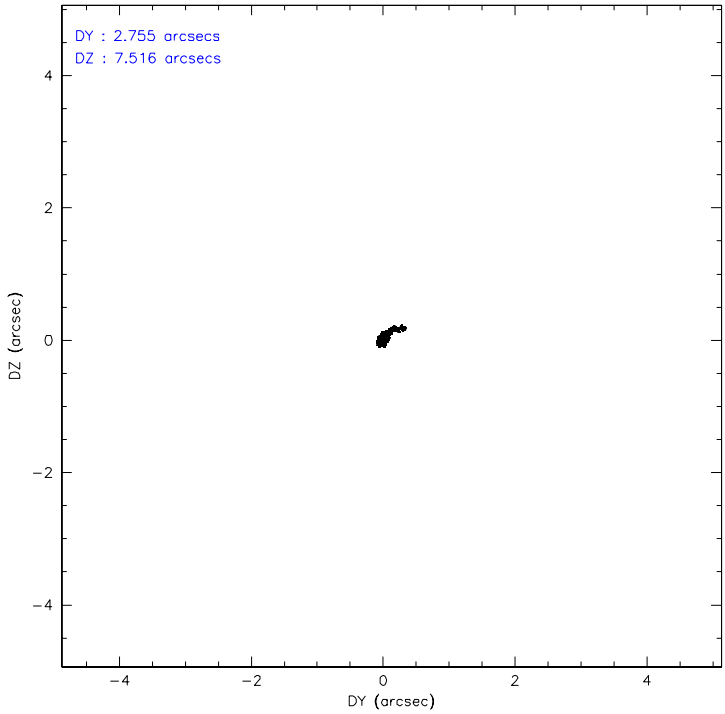
2.2 Compared Parameters

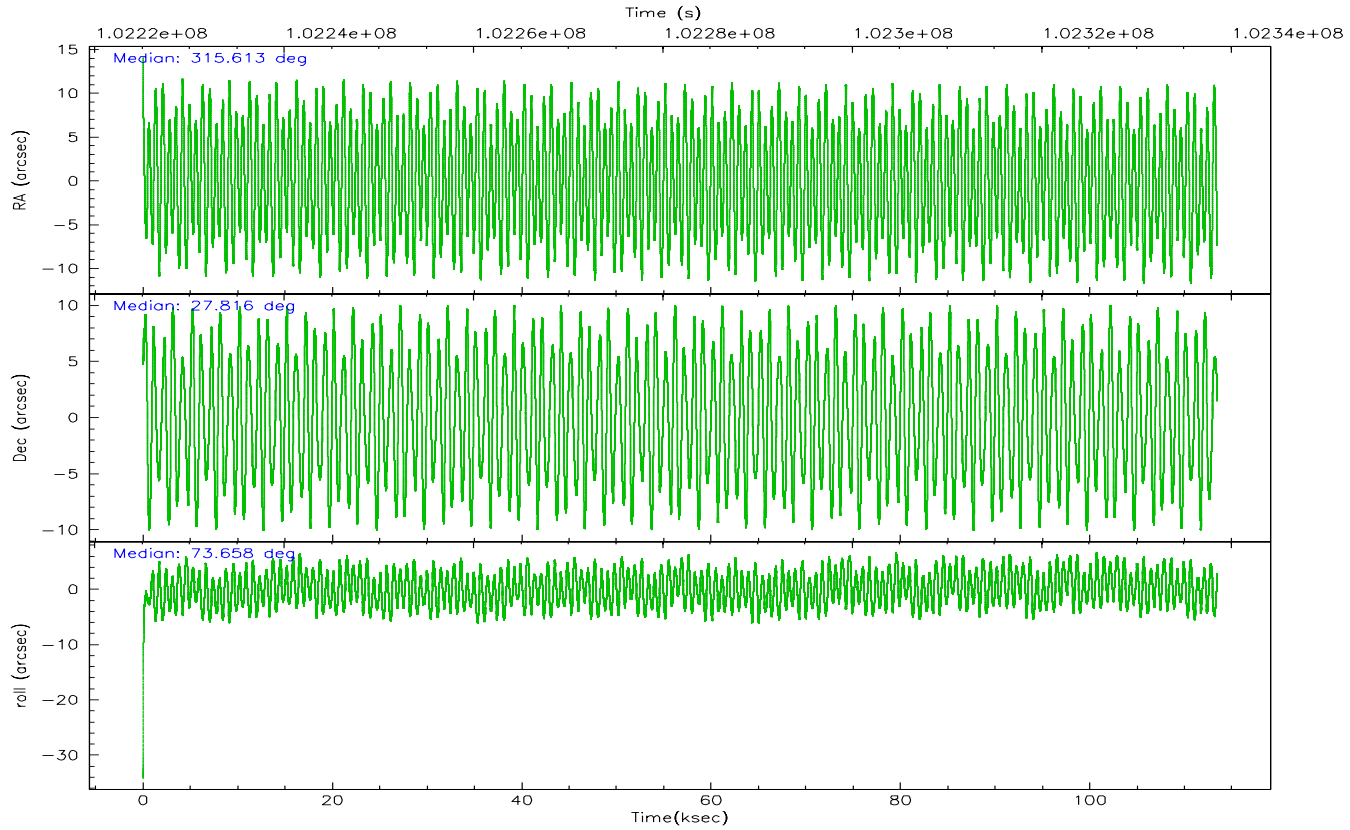
Parameter	Planned	Actual
Instrument	ACIS	ACIS
Detector	ACIS-456789	ACIS-456789
Grating	HETG	HETG
Data mode	FAINT	FAINT
Observation mode	POINTING	POINTING
Pointing RA	315.620459	315.6128910501316
Pointing Dec	27.789628	27.81610038228939
Pointing Roll	73.510265	73.6704180943786
Window start time	102170464.184000	102170464.184000
Window stop time	102367264.184000	102367264.184000
SIM focus pos (mm)	-0.684267	-0.6828225247311905
SIM defocus (mm)	0	0.001444936568705701
SIM translation stage pos (mm)	-187.132523	-187.1228876879999
SIM translation stage offset (mm)	-3	-3.009634895007935
Observation start time	102225186.184000	102224082.79147
Observation start date	2001-03-29T03:52:02	2001-03-29T03:34:42
Observation end time	102338541.184000	102338856.14592
Observation end date	2001-03-30T11:21:17	2001-03-30T11:27:36
Read mode	TIMED	TIMED

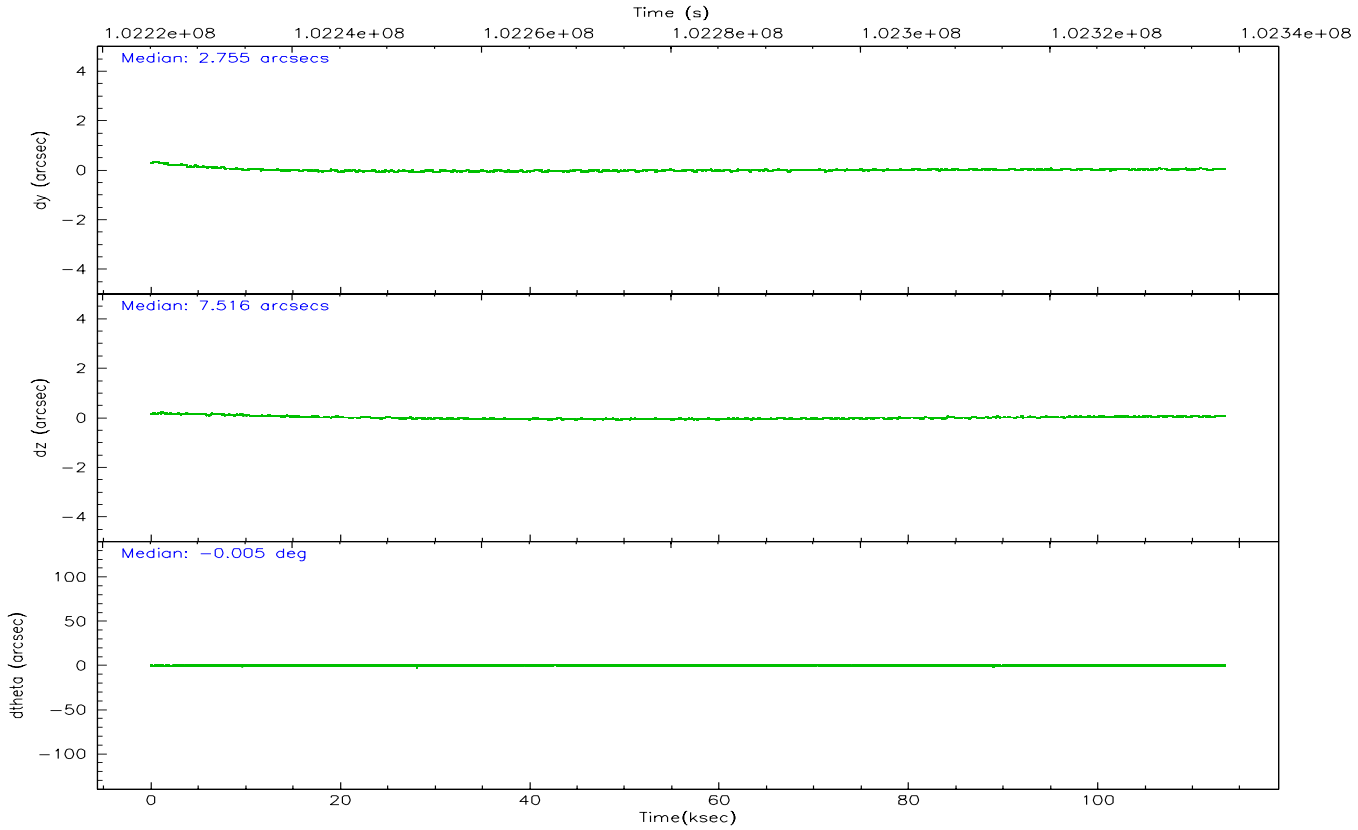
Parameter	Planned	Actual
Obspar format version number	6	6
Obspar file type	PREDICTED	ACTUAL
Obspar update status	NONE	UPDATED
Number of optional ACIS chips dropped	0	0
On-chip summing requested	N	N
Subarray requested	NONE	NONE
Alternating exposures requested	N	N
Primary exposure time	0.000000	3.2

2.3 Aspect


RA : 315.613 deg
Dec : 27.816 deg
10
5
0
−5
−10
Dec (arcsec)
−10
0
10
RA (arcsec)


DY : 2.755 arcsecs
DZ : 7.516 arcsecs
4
2
0
−2
−4
DZ (arcsec)
−4
−2
0
2
4
DY (arcsec)


Time (s)
1.0222e+08
1.0224e+08
1.0226e+08
1.0228e+08
1.023e+08
1.0232e+08
1.0234e+08
Median: 315.613 deg
RA (arcsec)
Median: 27.816 deg
Dec (arcsec)
Median: 73.658 deg
roll (arcsec)
Time(ksec)

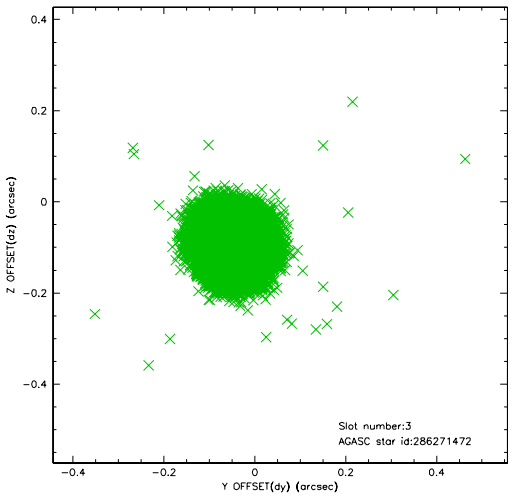

Time (s)
1.0222e+08
1.0224e+08
1.0226e+08
1.0228e+08
1.023e+08
1.0232e+08
1.0234e+08
Median: 2.755 arcsecs
dy (arcsec)
Median: 7.516 arcsecs
dz (arcsec)
Median: −0.005 deg
dtheta (arcsec)
Time(ksec)

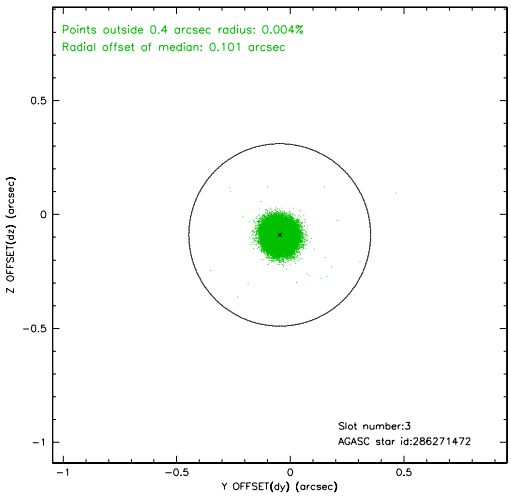
Slot Statistics

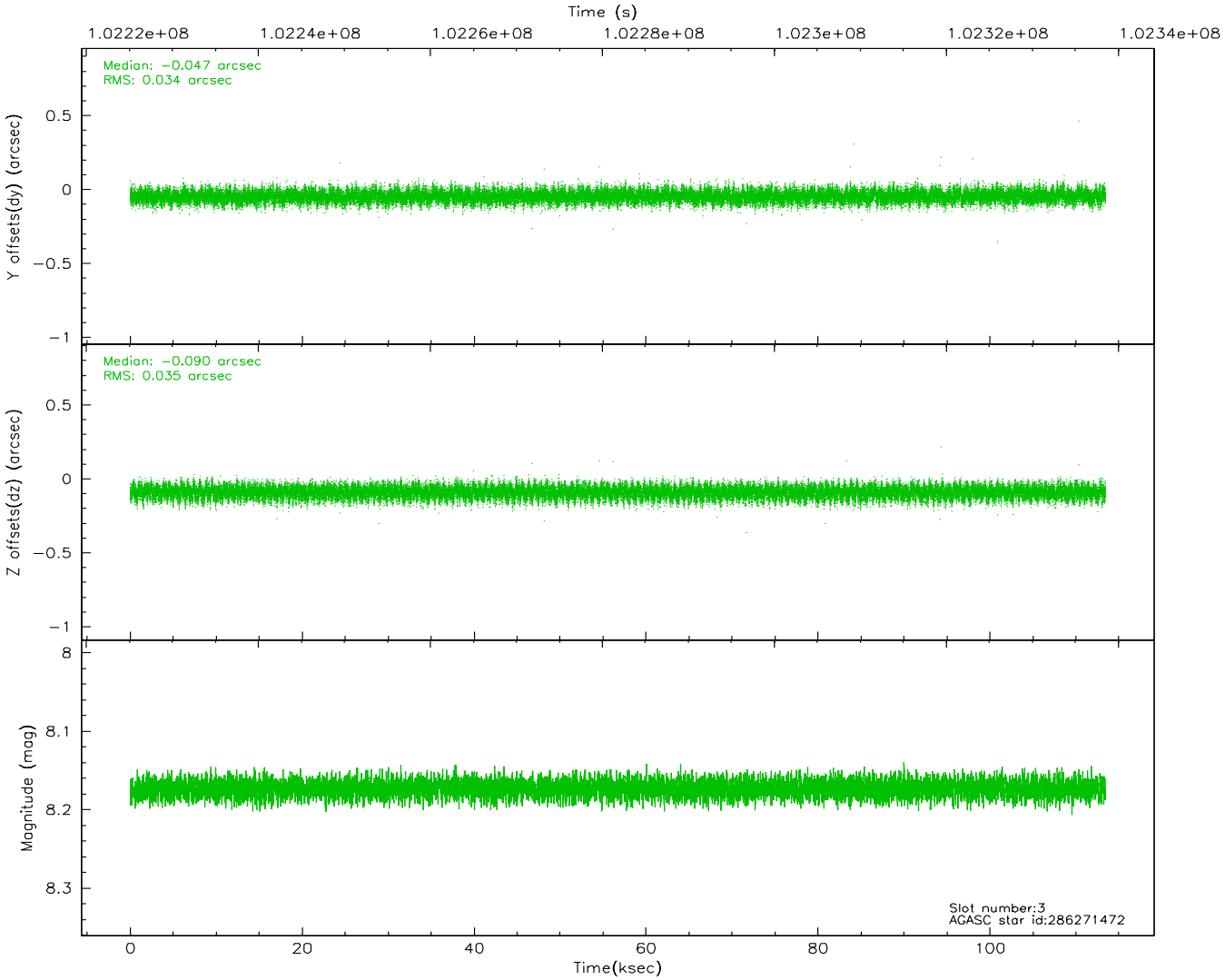
slot	status	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID	ACIS-S-2	7.10	27670	-0.042	-0.013	0.007	0.011	0.000000	0.000000	-755.20	-1790.87
1	FID	ACIS-S-4	7.19	27671	-0.042	0.024	0.006	0.011	0.000000	0.000000	2158.08	117.79
2	FID	ACIS-S-5	7.23	27671	0.053	-0.002	0.007	0.012	0.000000	0.000000	-1808.11	111.26
3	GUIDE	286271472	8.17	55334	-0.047	-0.090	0.052	0.083	315.586050	28.244741	1539.95	569.31
4	GUIDE	286396840	8.44	55337	-0.123	0.189	0.058	0.093	316.274326	28.140615	1806.40	-1630.16
5	GUIDE	286271104	8.23	55333	0.064	-0.071	0.059	0.097	315.711570	28.323415	1924.77	268.27
6	GUIDE	285741272	8.93	55323	-0.027	-0.116	0.075	0.122	315.069710	28.079206	506.48	1973.76
7	GUIDE	285738560	9.34	55307	0.136	0.092	0.079	0.130	315.822044	27.976043	826.21	-424.24

2.4 Star Slots

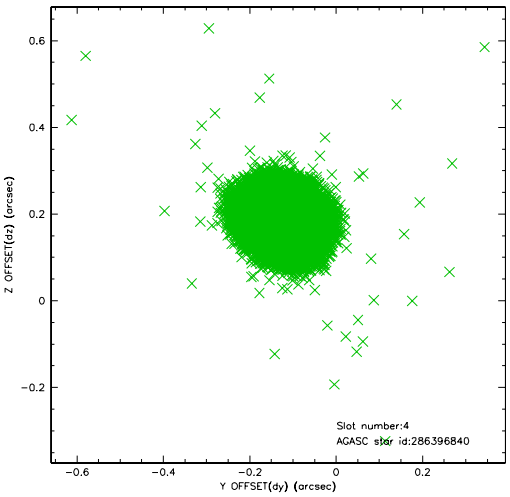
2.4.1 Slot 3

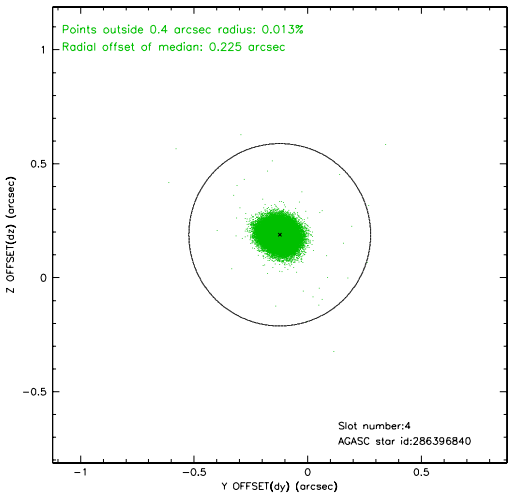


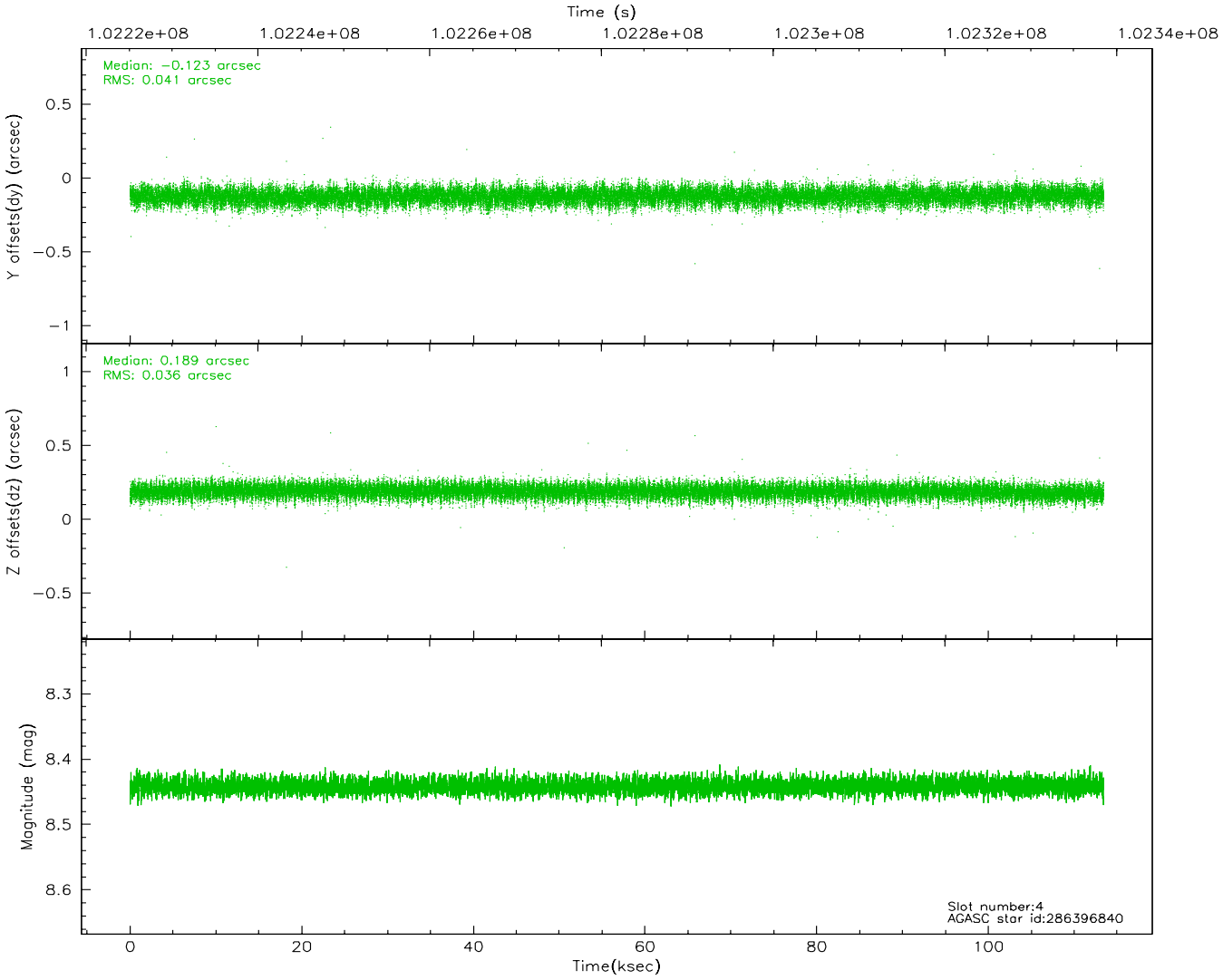




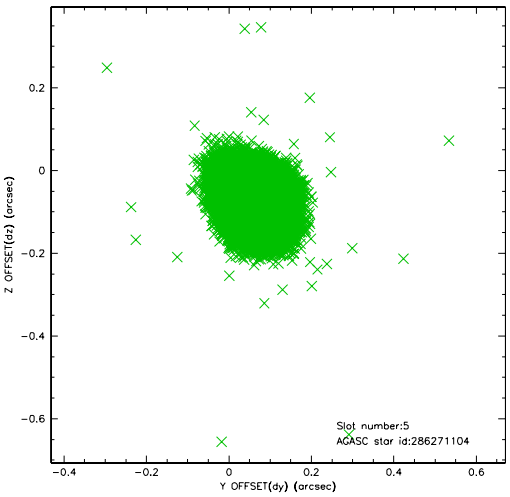
2.4.2 Slot 4

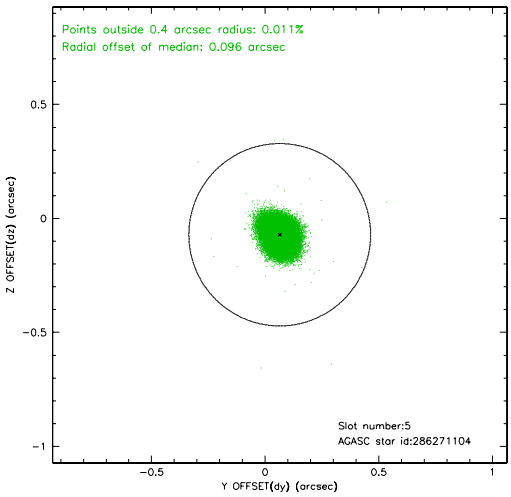

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number:4
AGASC star id:286396840

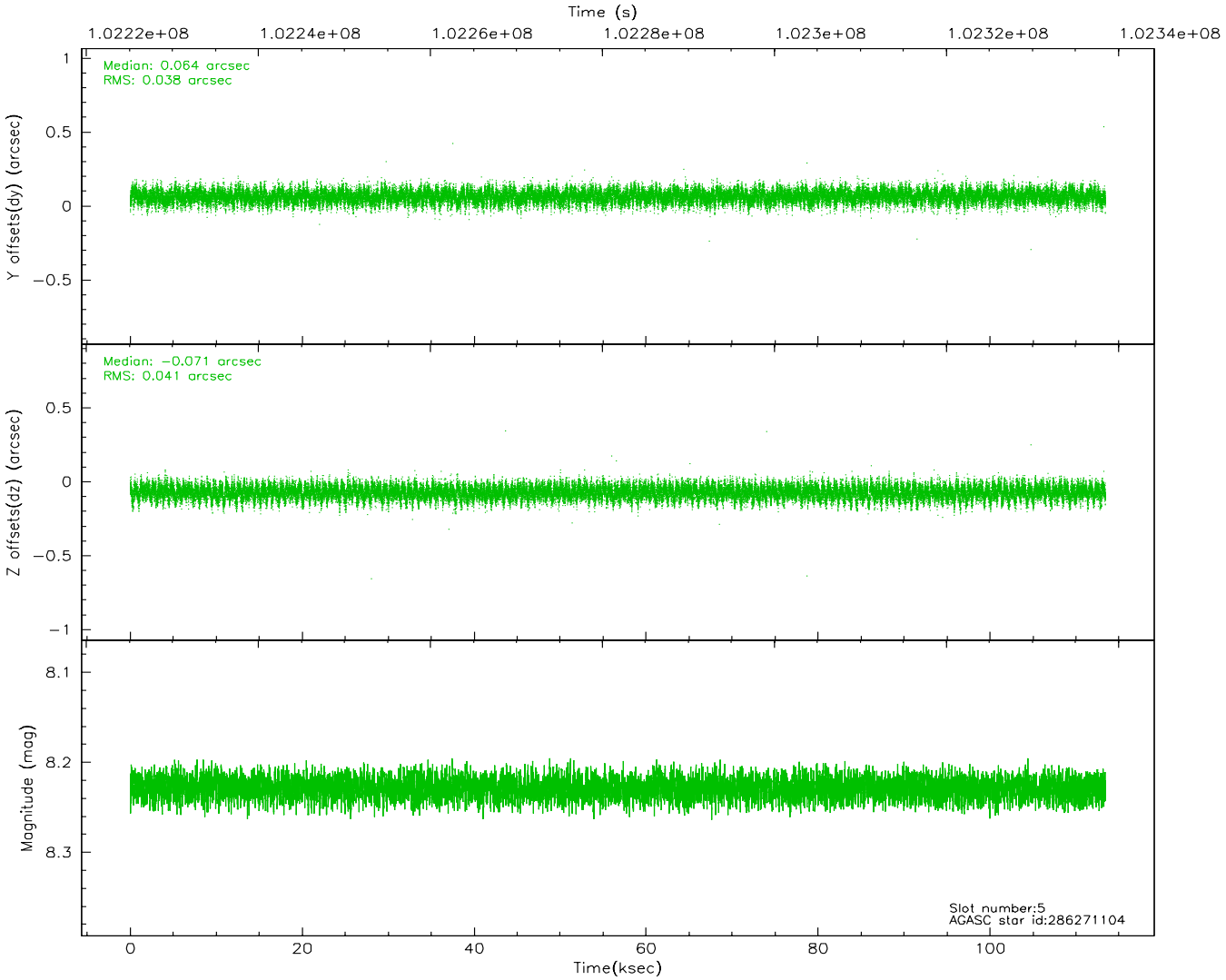

Points outside 0.4 arcsec radius: 0.013%
Radial offset of median: 0.225 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number:4
AGASC star id:286396840


Time (s)
Median: −0.123 arcsec
RMS: 0.041 arcsec
Y offsets(dy) (arcsec)
Median: 0.189 arcsec
RMS: 0.036 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number:4
AGASC star id:286396840
Time(ksec)

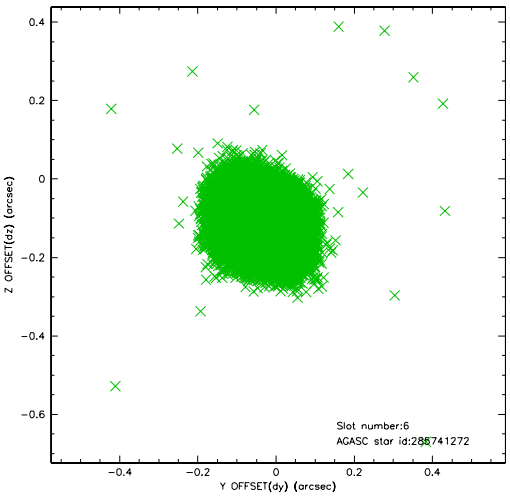
2.4.3 Slot 5

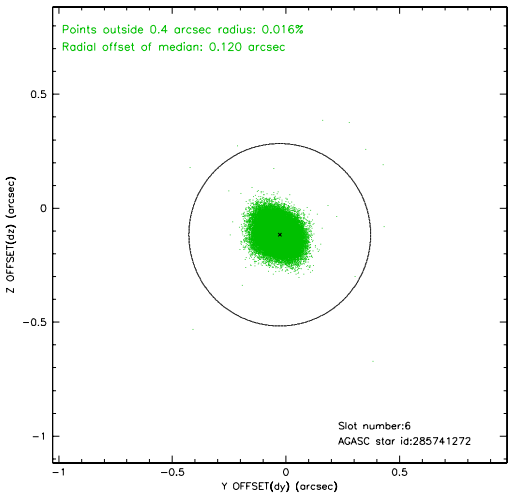

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number:5
AGASC star id:286271104

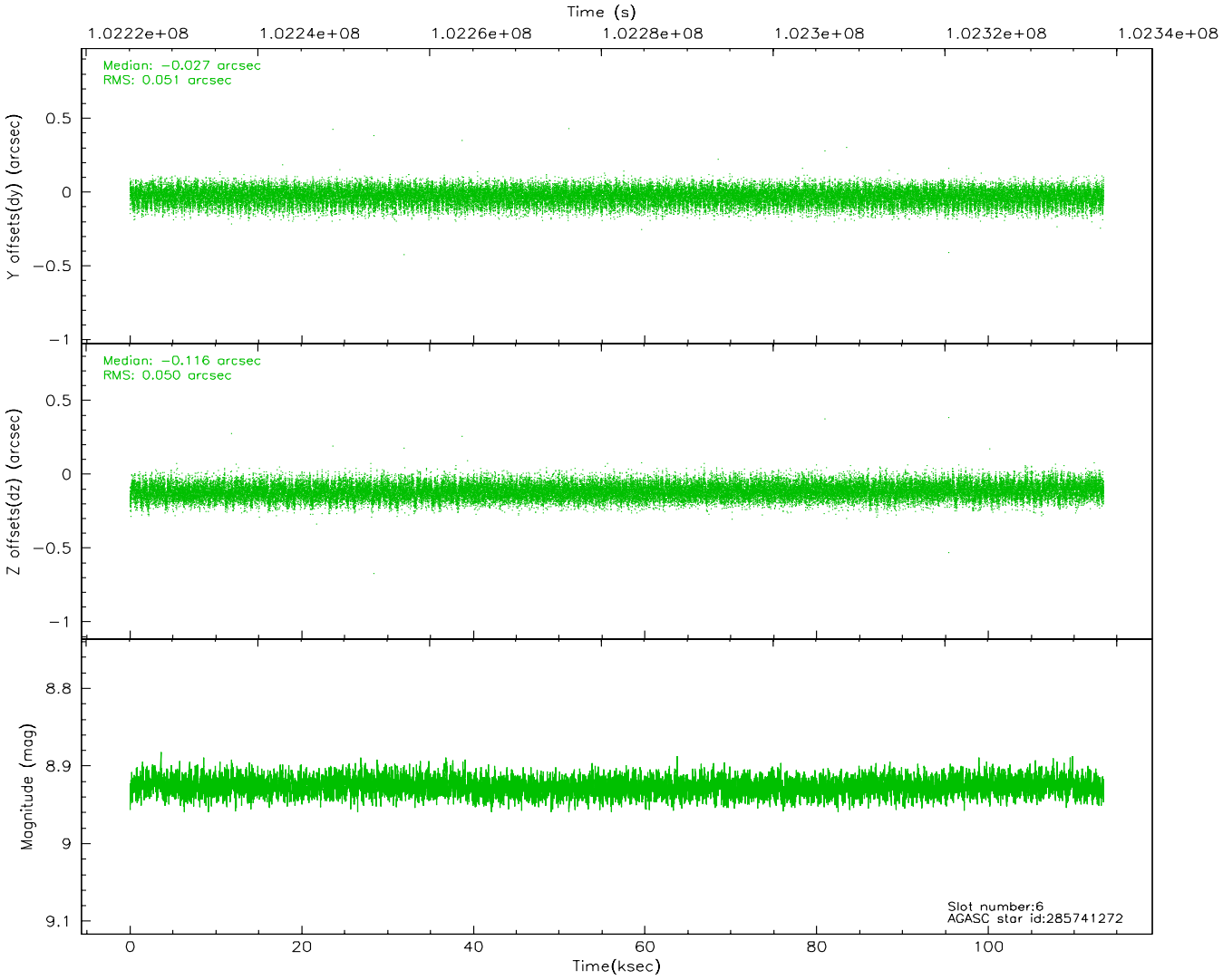

Points outside 0.4 arcsec radius: 0.011%
Radial offset of median: 0.096 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number:5
AGASC star id:286271104


Time (s)
Median: 0.064 arcsec
RMS: 0.038 arcsec
Y offsets(dy) (arcsec)
Median: −0.071 arcsec
RMS: 0.041 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number:5
AGASC star id:286271104
Time(ksec)

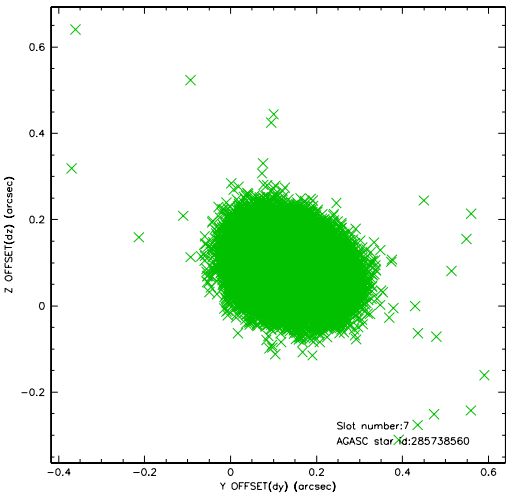
2.4.4 Slot 6

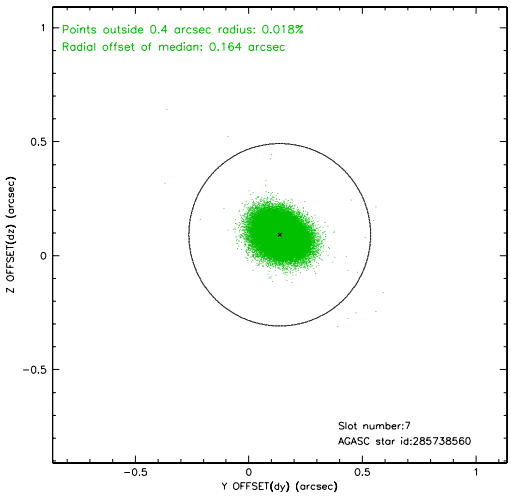

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number:6
AGASC star id:285741272

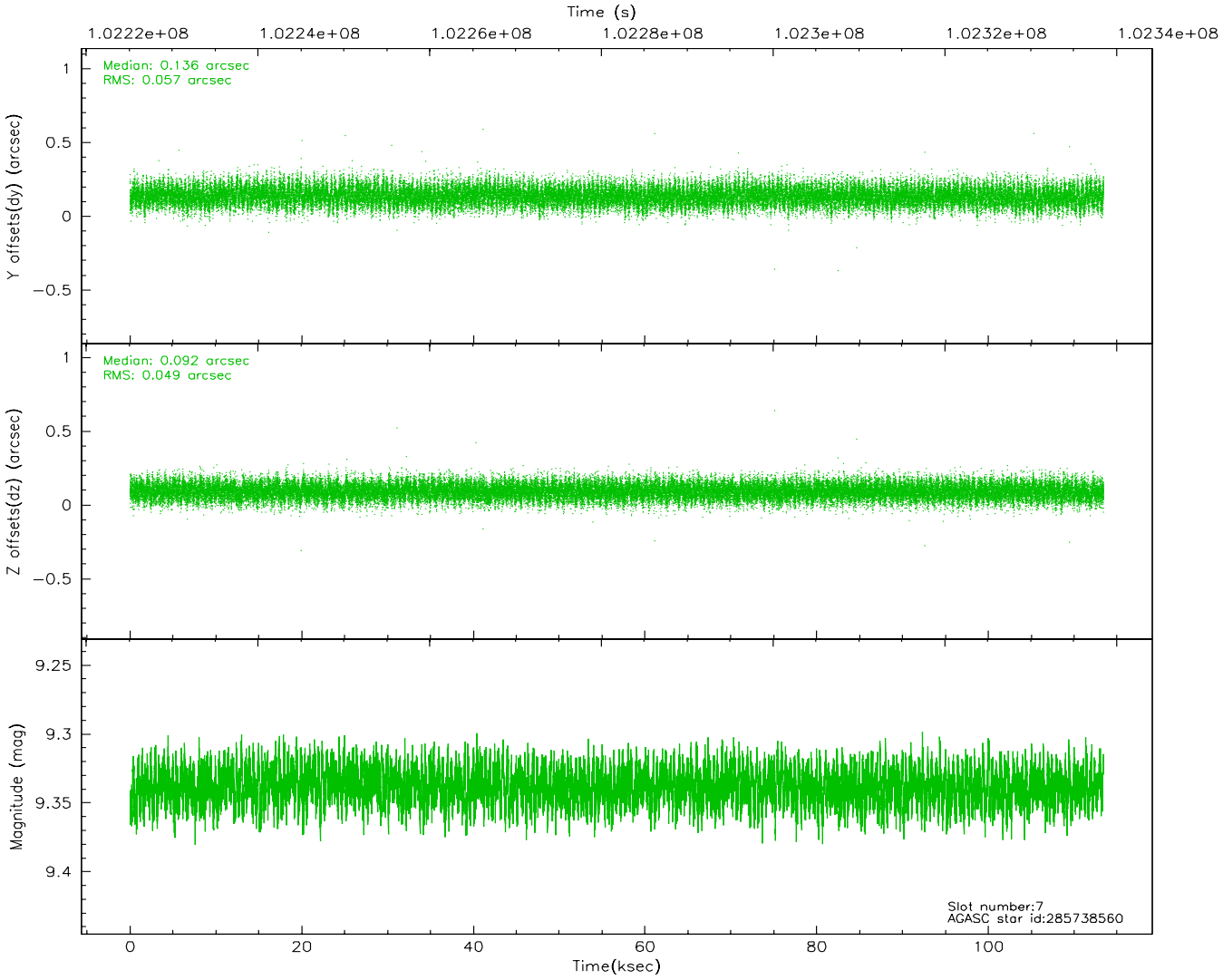

Points outside 0.4 arcsec radius: 0.016%
Radial offset of median: 0.120 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number:6
AGASC star id:285741272


Time (s)
Median: −0.027 arcsec
RMS: 0.051 arcsec
Y offsets(dy) (arcsec)
Median: −0.116 arcsec
RMS: 0.050 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number:6
AGASC star id:285741272
Time(ksec)

2.4.5 Slot 7

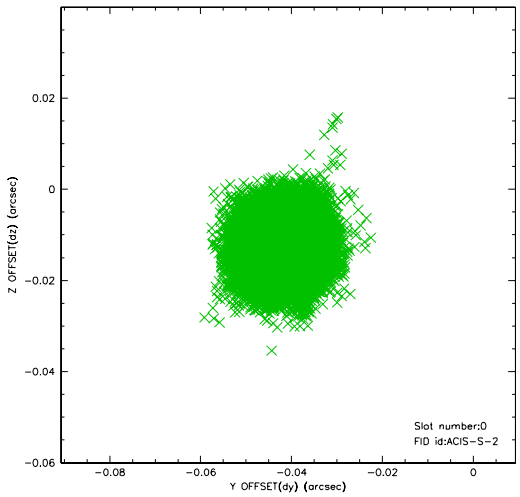

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number:7
AGASC star id:285738560

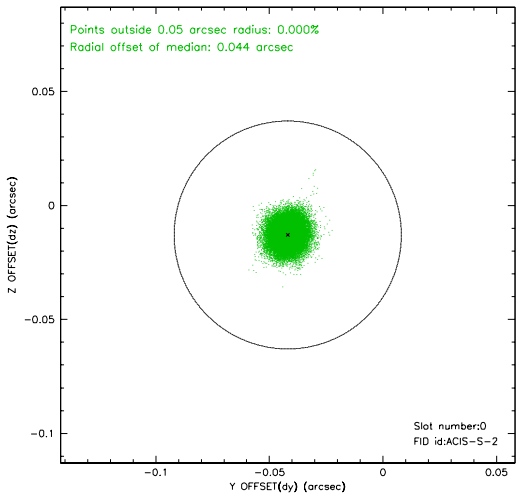

Points outside 0.4 arcsec radius: 0.018%
Radial offset of median: 0.164 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number:7
AGASC star id:285738560

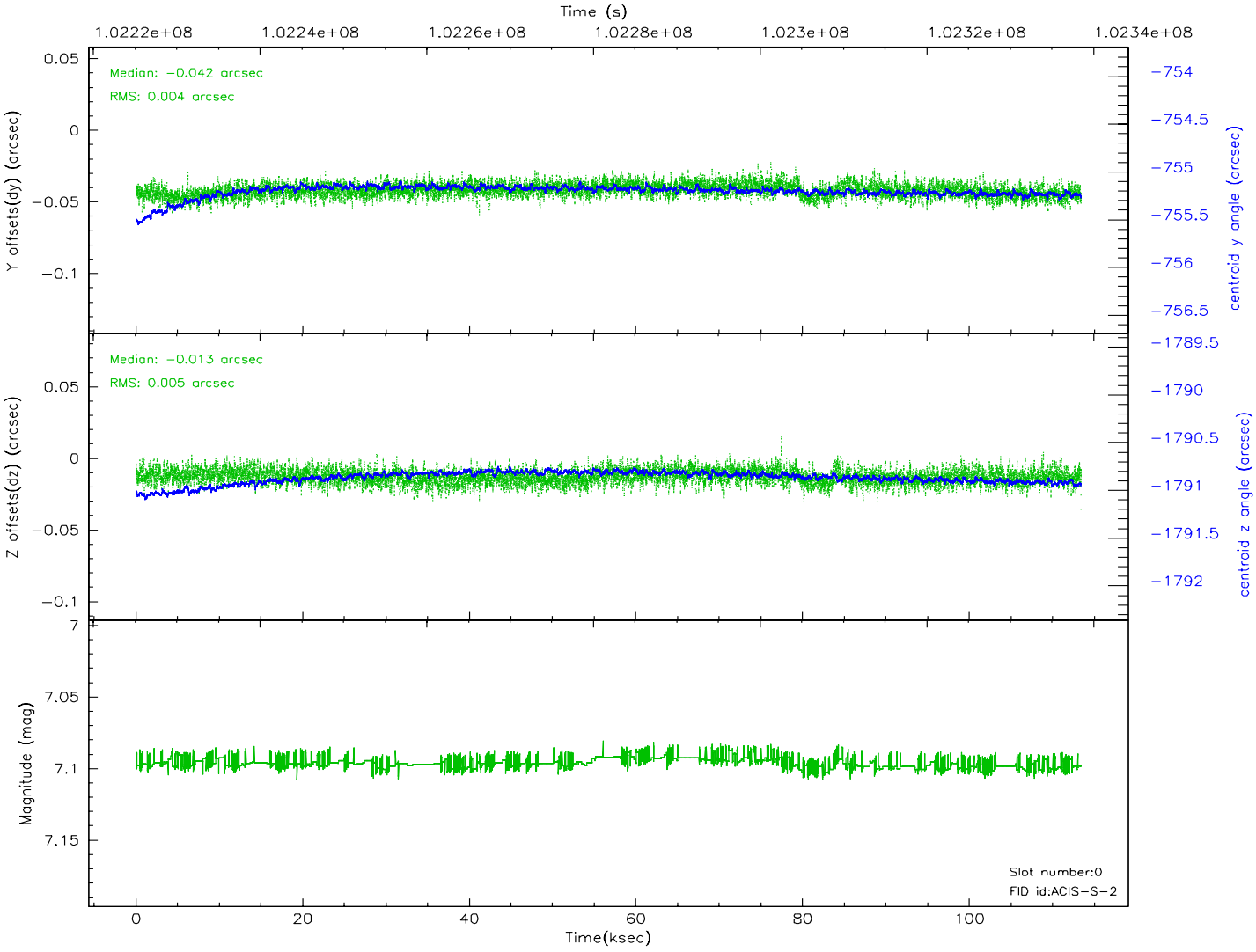

Time (s)
Median: 0.136 arcsec
RMS: 0.057 arcsec
Y offsets(dy) (arcsec)
Median: 0.092 arcsec
RMS: 0.049 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number:7
AGASC star id:285738560
Time(ksec)

2.5 FID Slots

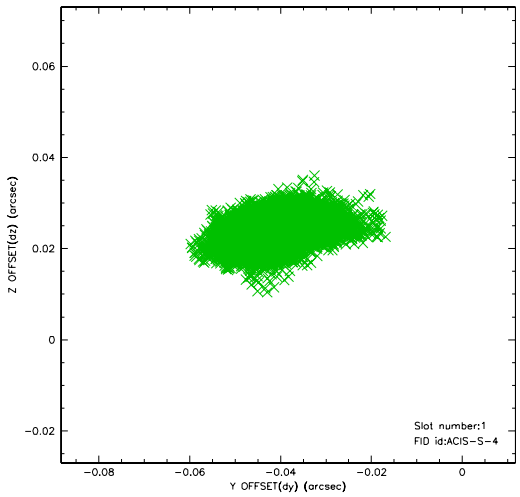
2.5.1 Slot 0

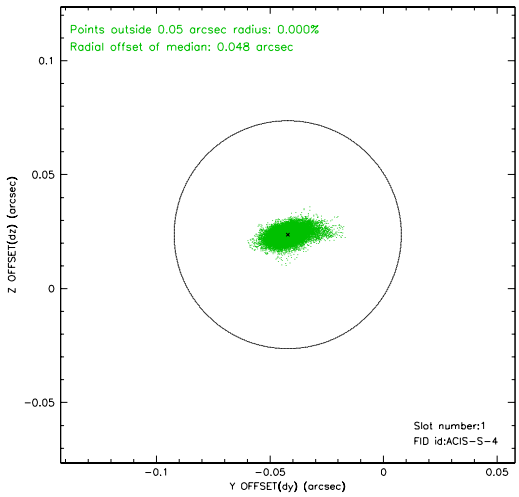


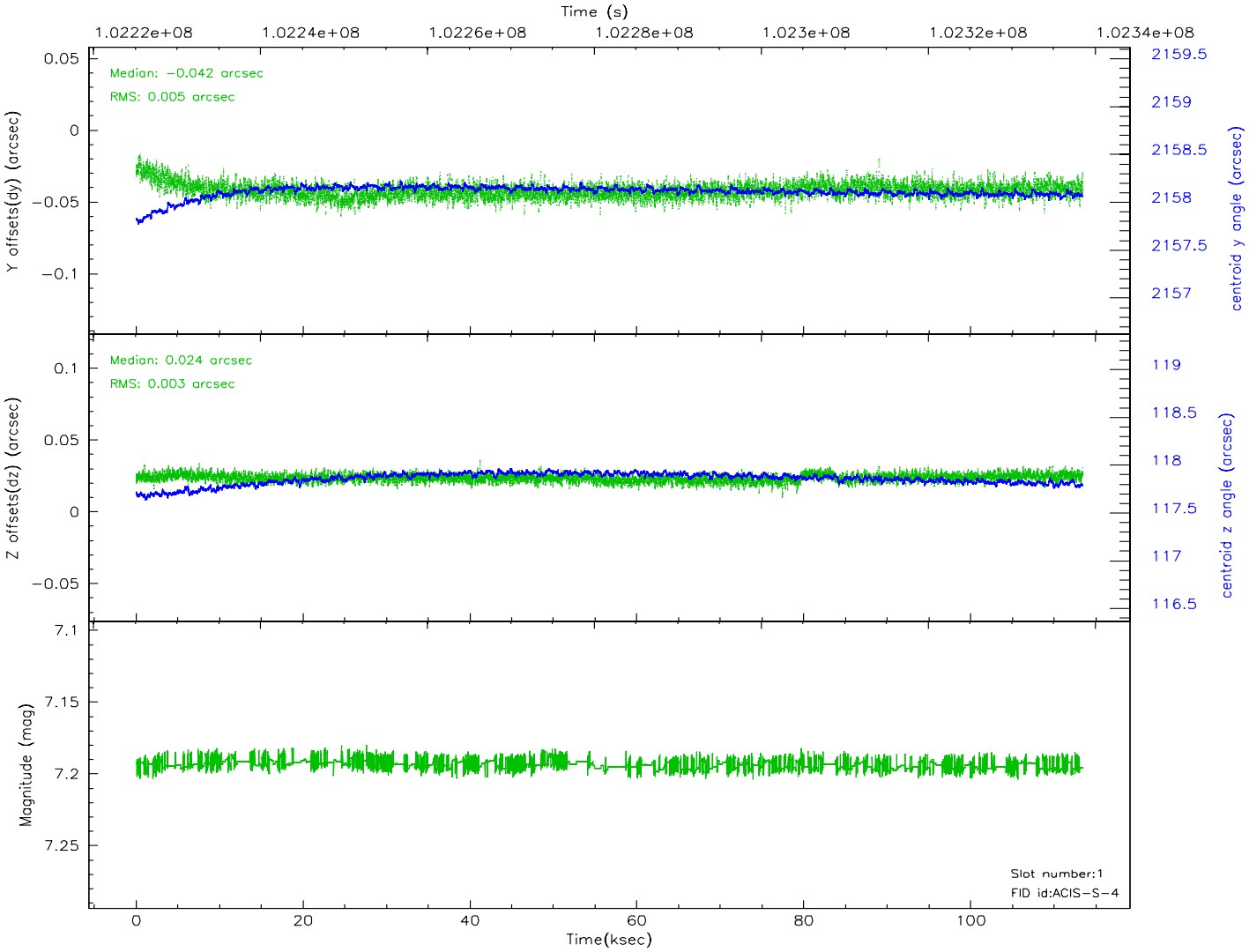




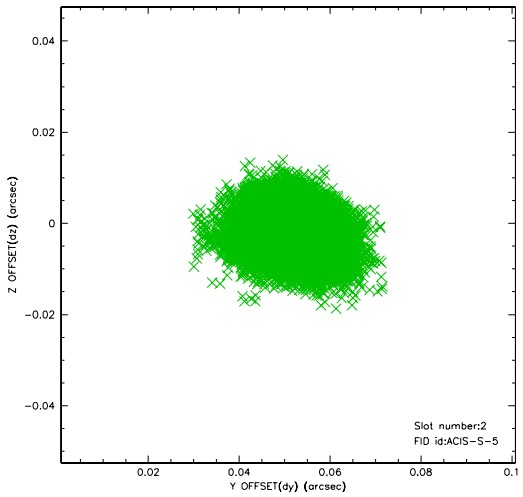
2.5.2 Slot 1

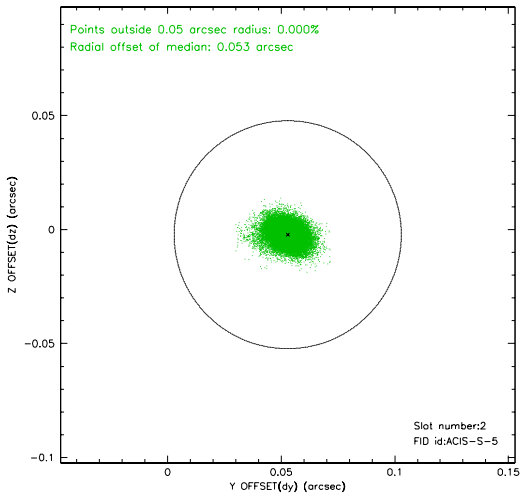

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number:1
FID id:ACIS-S-4

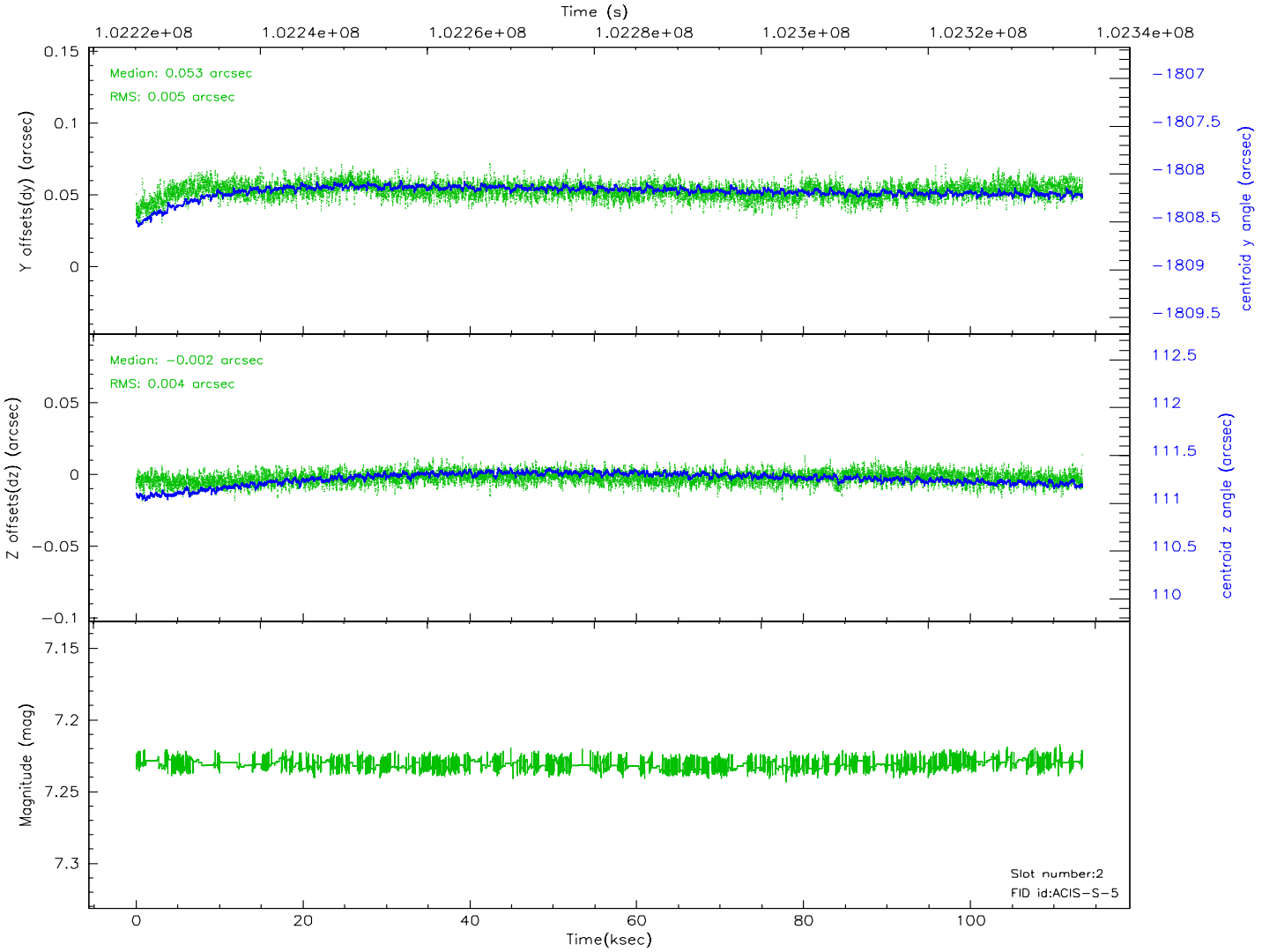

Points outside 0.05 arcsec radius: 0.000%
Radial offset of median: 0.048 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number:1
FID id:ACIS-S-4


Time (s)
Median: −0.042 arcsec
RMS: 0.005 arcsec
Y offsets(dy) (arcsec)
centroid y angle (arcsec)
Median: 0.024 arcsec
RMS: 0.003 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

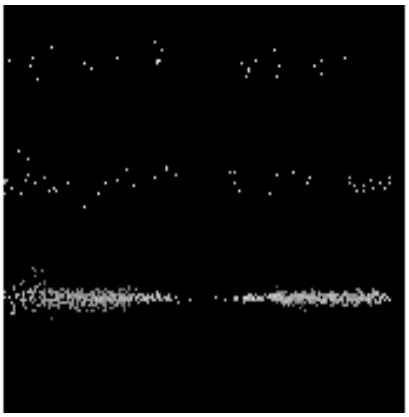

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number:2
FID id:ACIS-S-5


Points outside 0.05 arcsec radius: 0.000%
Radial offset of median: 0.053 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number:2
FID id:ACIS-S-5

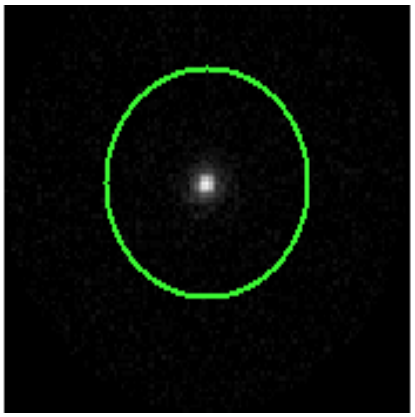

Time (s)
Median: 0.053 arcsec
RMS: 0.005 arcsec
Y offsets(dy) (arcsec)
centroid y angle (arcsec)
Median: −0.002 arcsec
RMS: 0.004 arcsec
Z offsets(dz) (arcsec)
centroid z angle (arcsec)
Magnitude (mag)
Slot number:2
FID id:ACIS-S-5
Time(ksec)

3 Gratings

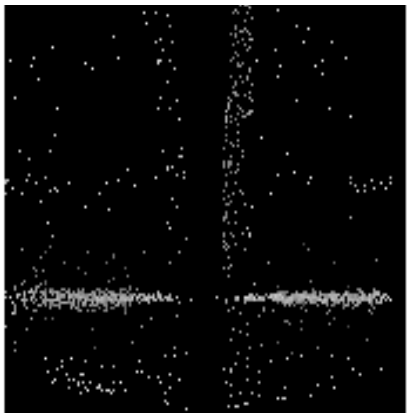
3.1 HEG Arm



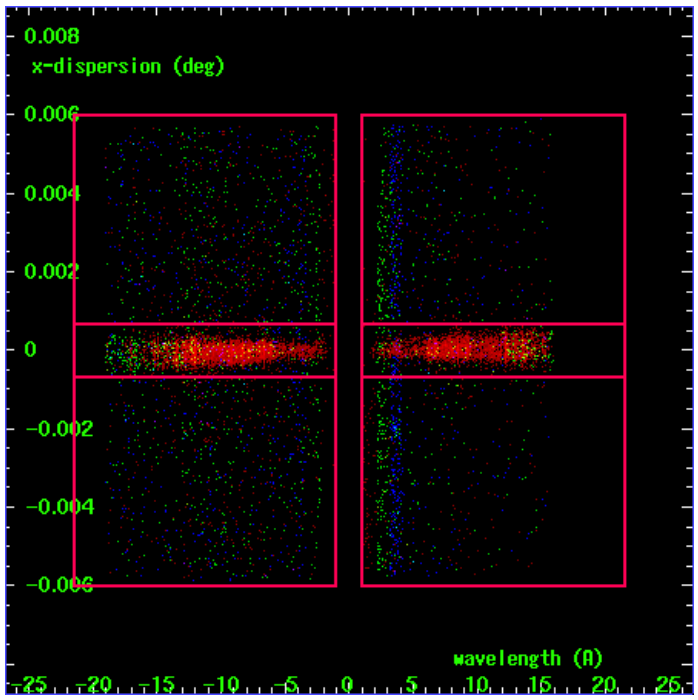
HEG Order Sort 123



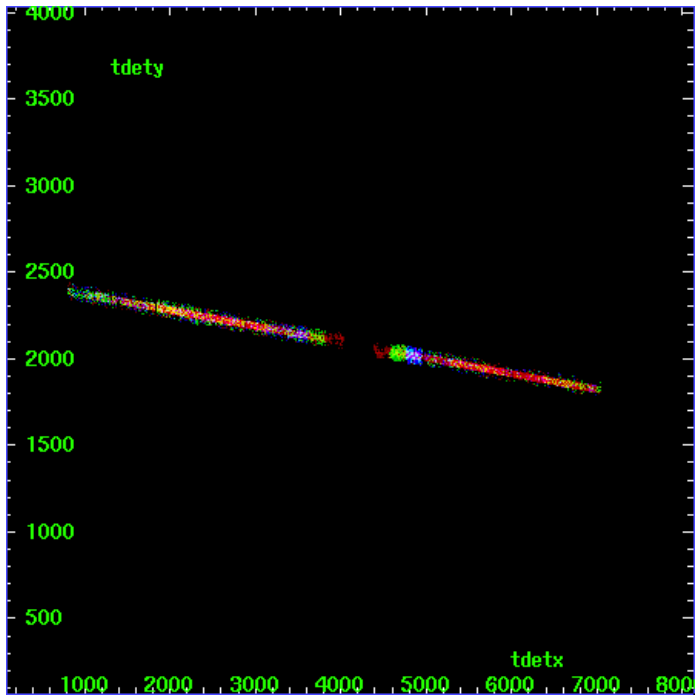
HEG Zero Order



HEG Order Sort ALL

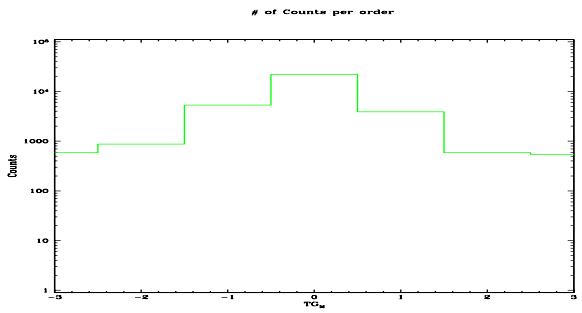


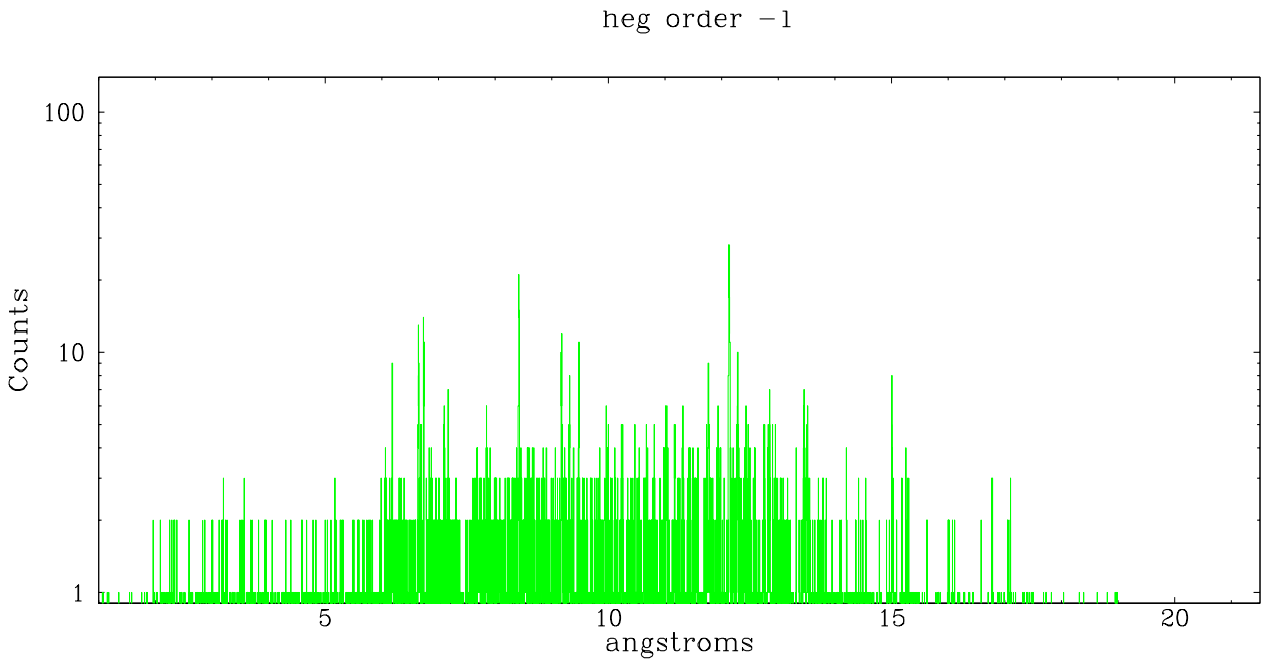
Spot Image HEG

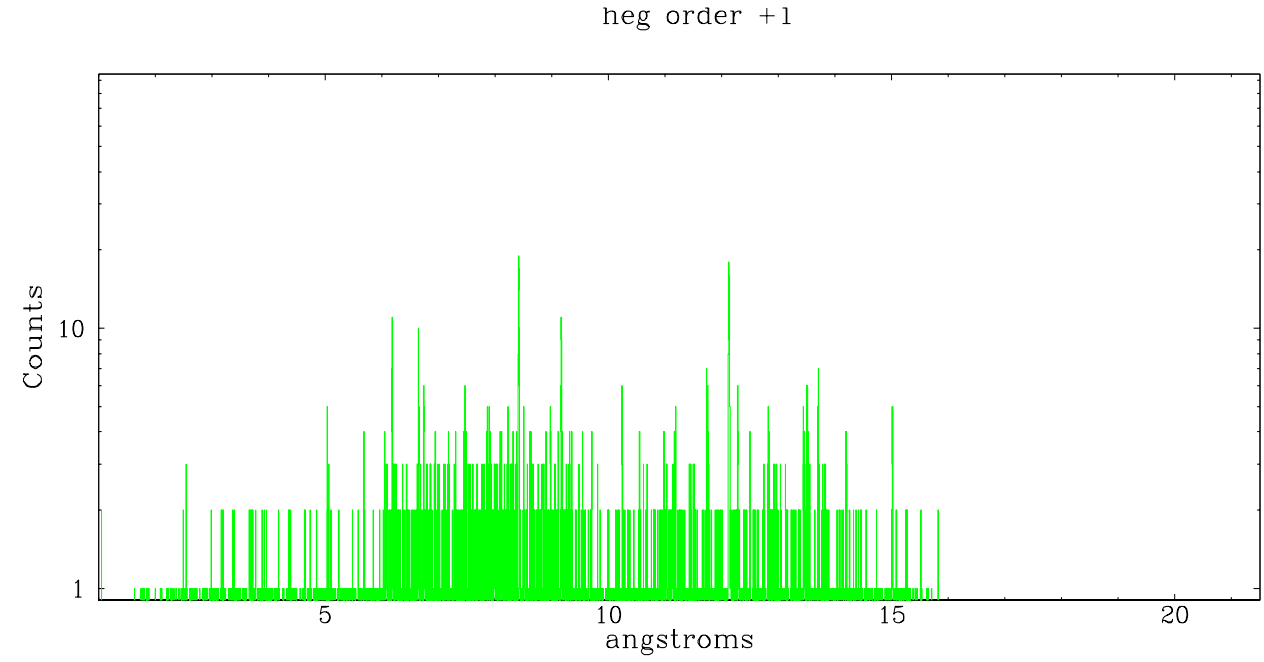


Full Detector HEG

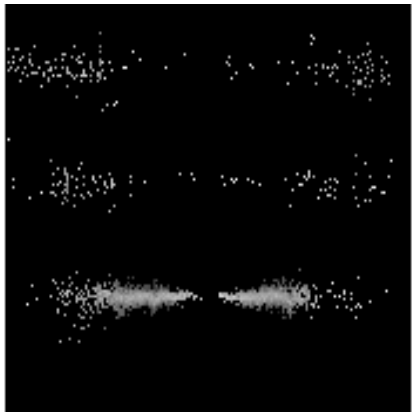
	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	585	873	5331	22035	3897	586	543



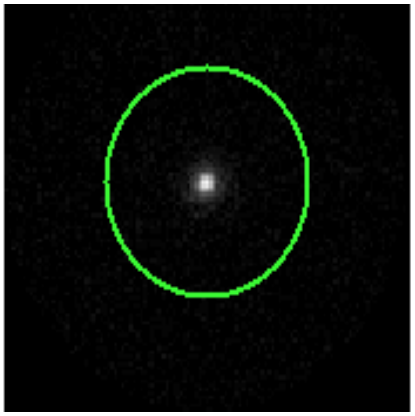

heg order −1
100
10
1
Counts
5
10
15
20
angstroms


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

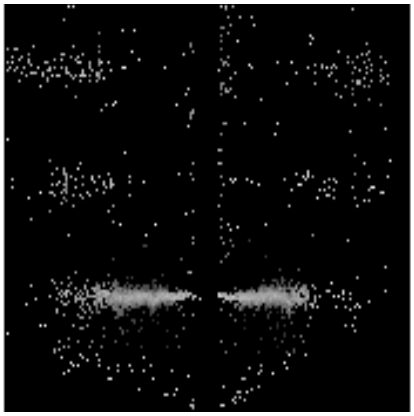
3.2 MEG Arm



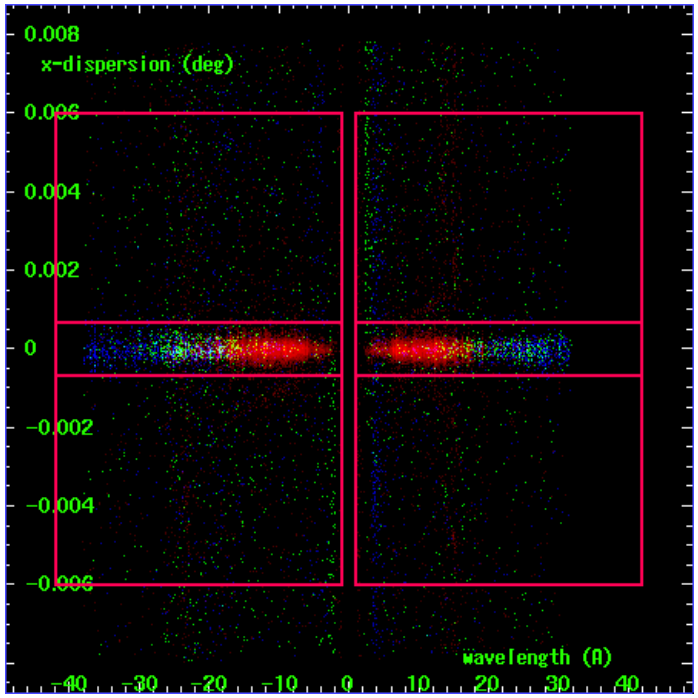
MEG Order Sort 123



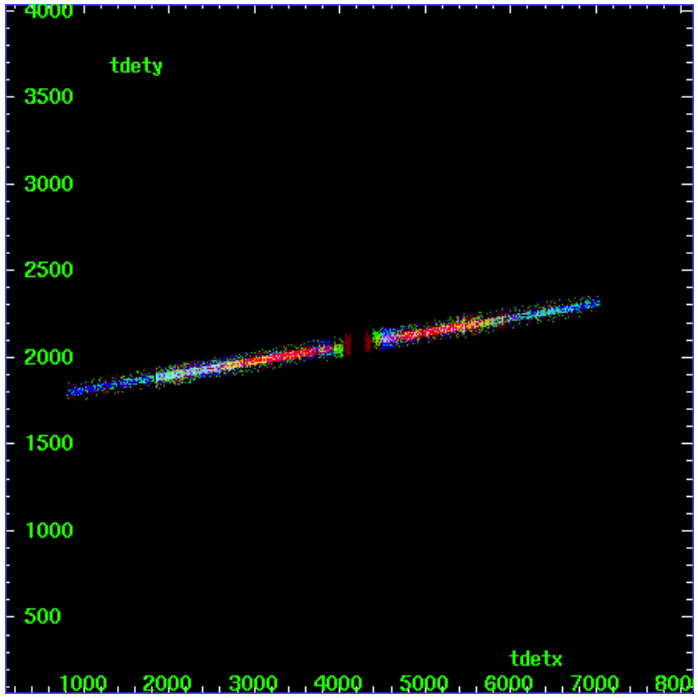
MEG Zero Order



MEG Order Sort ALL

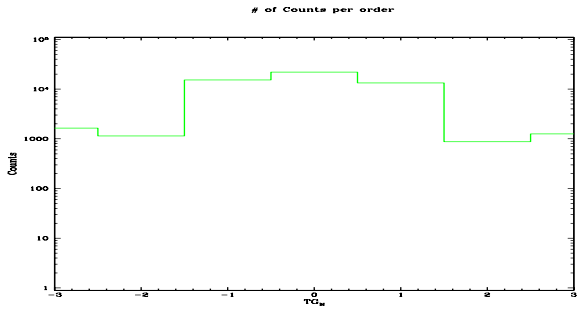


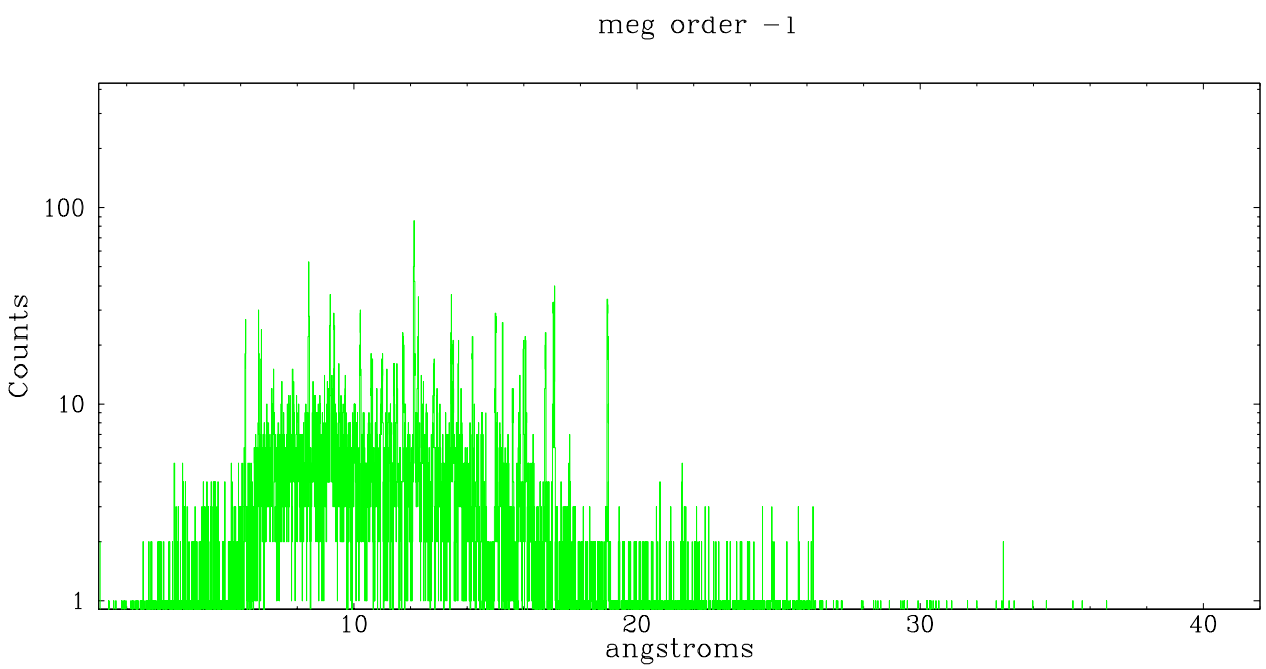
Spot Image MEG

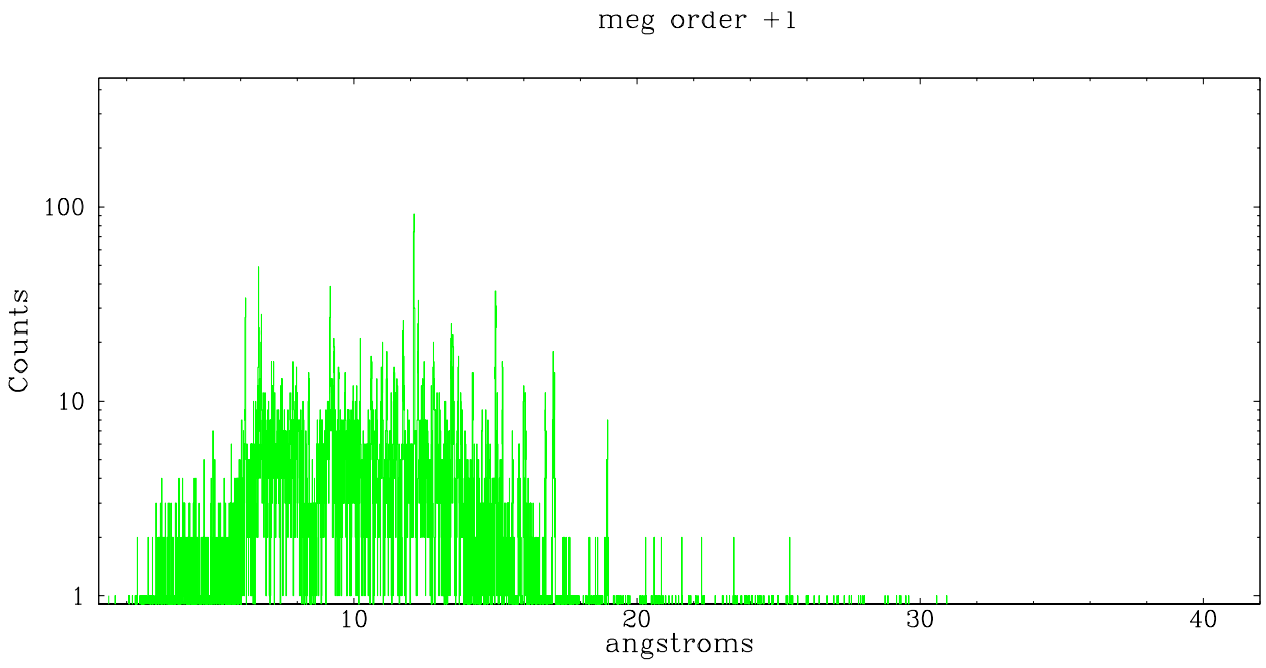


Full Detector MEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	1648	1146	15325	22035	13349	874	1259




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


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

A Summary

A.1 Status

V&V Scientist	David Huenemoerder
V&V Date (YYYY-MM-DD)	2006.11.15
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	113.449

A.2 Comments