V&V Reference Report
L2 ASCDS Version : 7.6.9

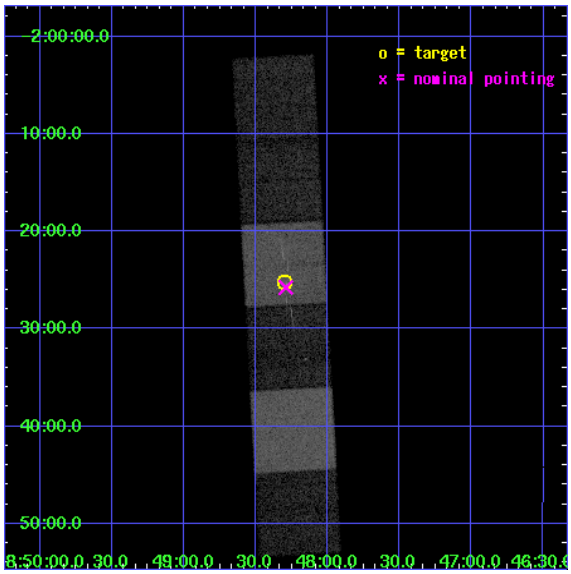
Observation 2690 - L2 Version 001
Chandra X-Ray Center

L2 Processing Date : Dec 6 2006

Contents

1 Front

seq_num	400170
obs_id	2690
title	OBSERVATIONS OF THE TRANSIENT X-RAY PULSAR 2S 1845-024
observer	Dr. Mark Finger
object	2S 1845-024
dtycycle	0
cycle	P
ra_targ	282.075
dec_targ	-2.42
ra_nom	282.07274789988
dec_nom	-2.4294226802748
roll_nom	266.76873336322
revision	2
ontime	15091.199943781
livetime	14900.106083263
ontime4	15091.199943781
ontime5	15091.199943781
ontime6	15091.199943781
ontime7	15091.199943781
ontime8	15091.199943781
ontime9	15091.199943781
l2events	141983

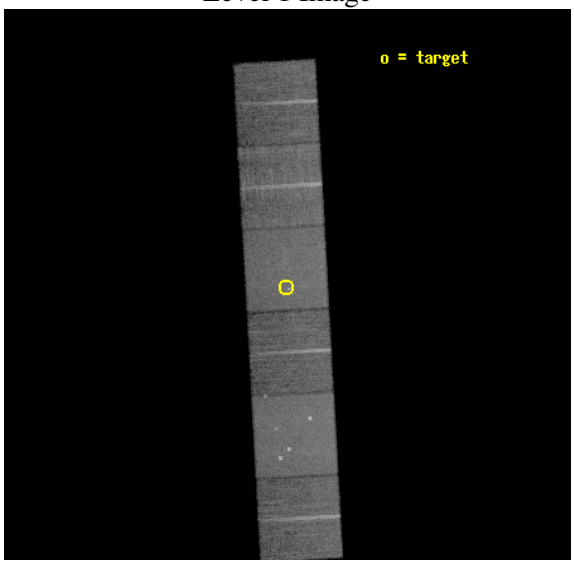


2 OBI

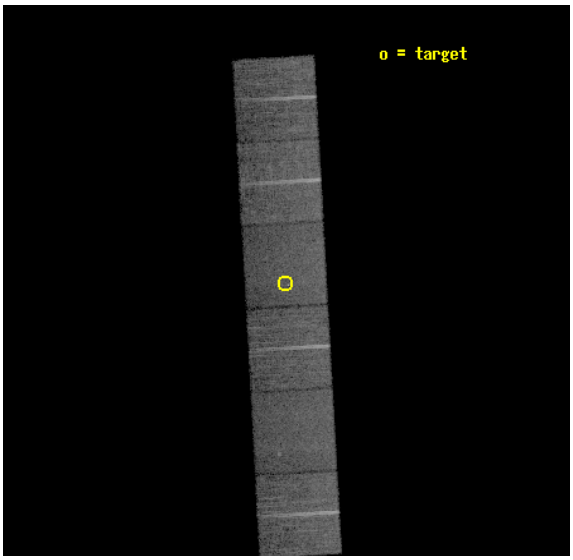
2.1 OBI

2.1.1 Images

Level 1 Image

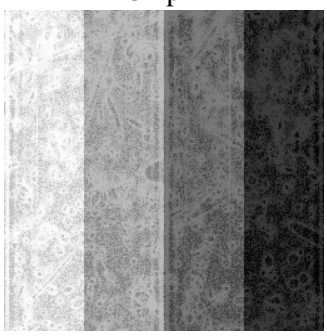


Level 1 Bad Events

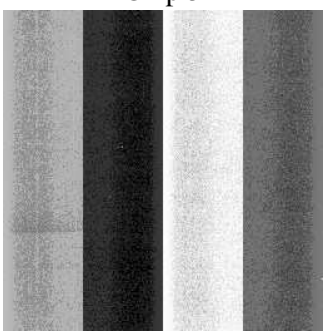


2.1.2 Bias

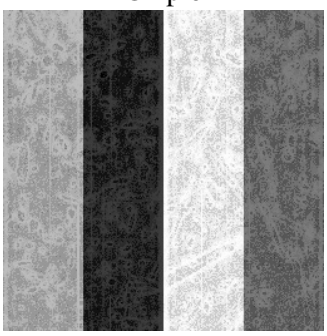
Chip 4



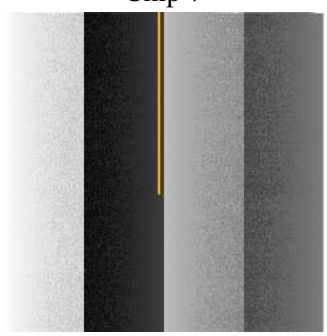
Chip 5



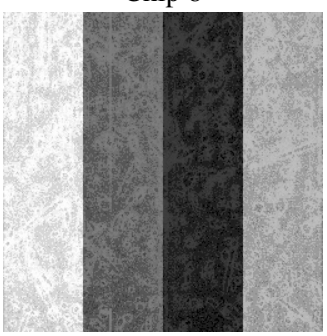
Chip 6



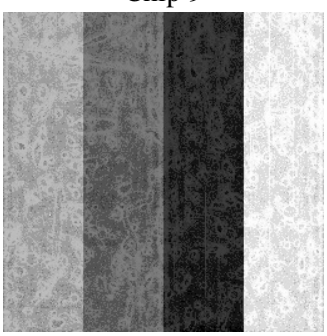
Chip 7



Chip 8



Chip 9



2.1.3 Parameters

obi_num	1
ascdsver	7.6.9
caldbver	3.2.3
date	2006-10-04T08:57:06
revision	2

sched_exp_time	14925.026000
ontime	16418.928198487
ontime4	16418.928198487
ontime5	16418.928198487
ontime6	16418.928198487
ontime7	16418.928198487
ontime8	16418.928198487
ontime9	16418.928198487
l1events	724227

2.1.4 Events

	ccd 4	**ccd 5**	**ccd 6**	**ccd 7**	**ccd 8**	**ccd 9**
level 1 events	111968	147412	104444	133731	126103	100569
rejected events	100594	87016	93096	85215	102537	89165
rejected %	89%	59%	89%	63%	81%	88%

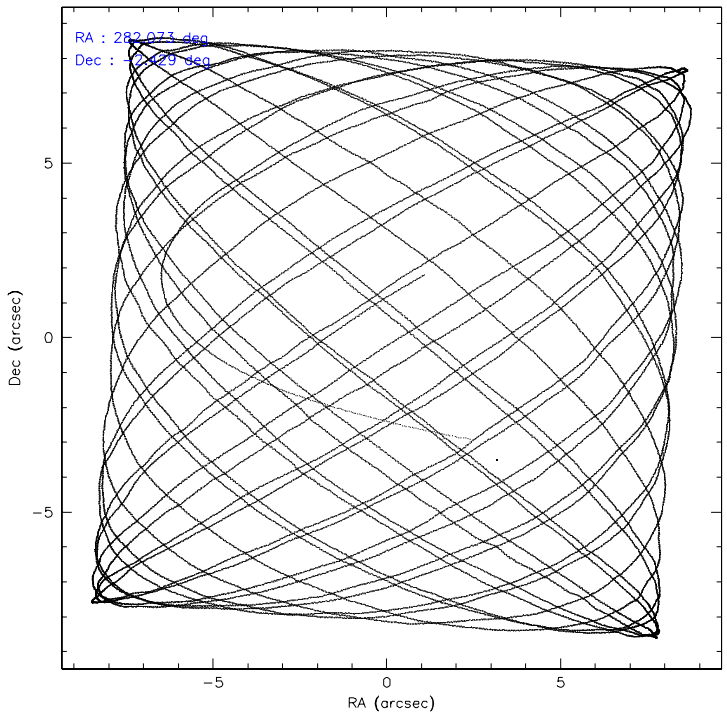
	ccd 4	**ccd 5**	**ccd 6**	**ccd 7**	**ccd 8**	**ccd 9**
grade 0 events	5495	7137	4986	3251	8361	5146
	4%	4%	4%	2%	6%	5%
grade 1 events	88	320	50	94	91	57
	0%	0%	0%	0%	0%	0%
grade 2 events	2608	19375	2383	13253	5675	2370
	2%	13%	2%	9%	4%	2%
grade 3 events	1202	1471	1250	2775	2752	1206
	1%	0%	1%	2%	2%	1%
grade 4 events	1191	1444	1264	2652	2560	1267
	1%	0%	1%	1%	2%	1%
grade 5 events	4197	7210	4503	8960	5826	4845
	3%	4%	4%	6%	4%	4%
grade 6 events	1894	36581	2424	30799	6442	2504
	1%	24%	2%	23%	5%	2%
grade 7 events	95293	73874	87584	71947	94396	83174
	85%	50%	83%	53%	74%	82%

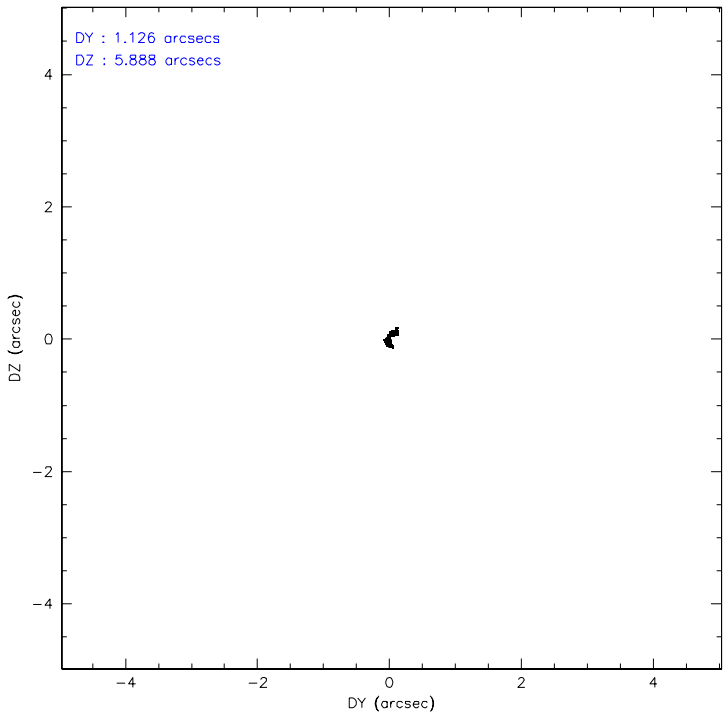
2.2 Compared Parameters

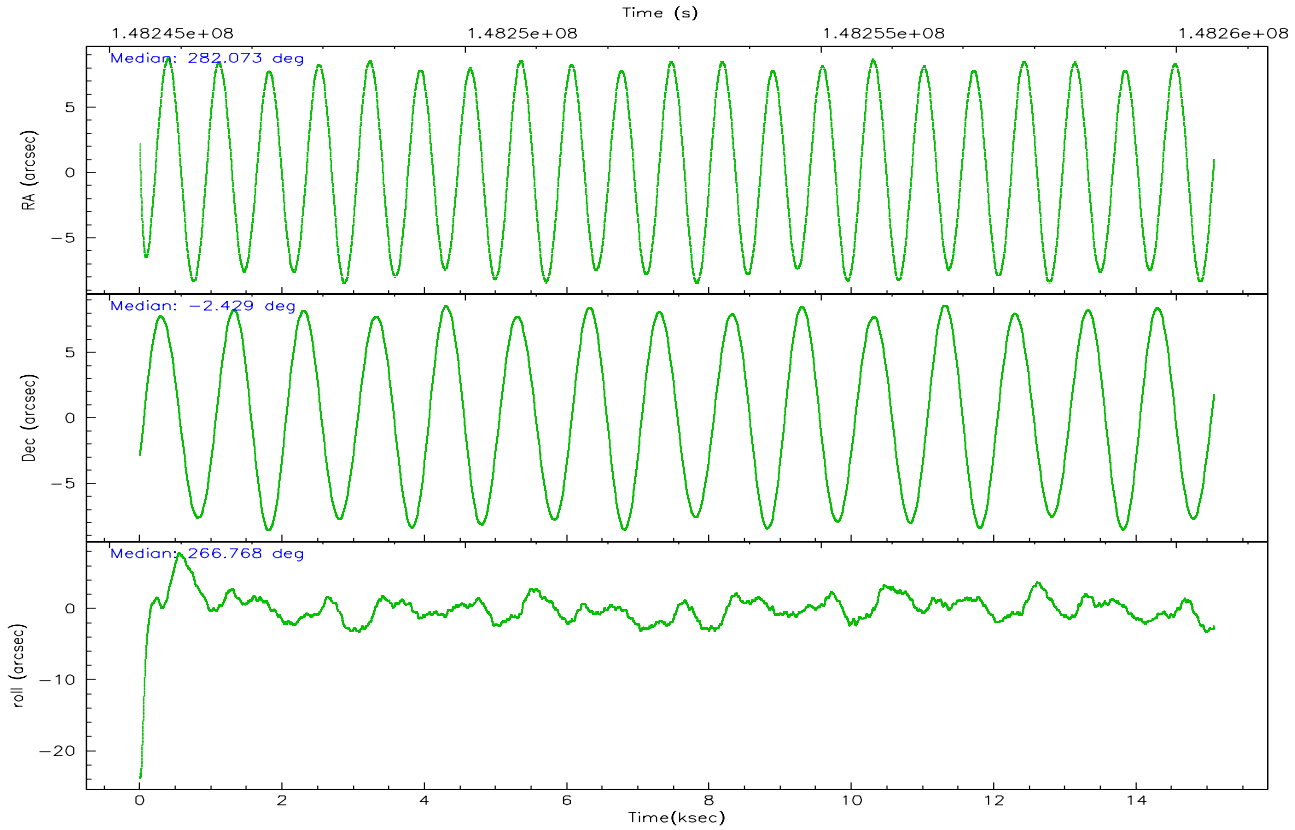
Parameter	Planned	Actual
Instrument	ACIS	ACIS
Detector	ACIS-456789	ACIS-456789
Grating	HETG	HETG
Data mode	FAINT	FAINT
Observation mode	POINTING	POINTING
Pointing RA	282.060166	282.0727478998786
Pointing Dec	-2.405265	-2.429422680274767
Pointing Roll	266.611591	266.7687333632248
Window start time	147972664.184000	147972664.184000
Window stop time	148318264.184000	148318264.184000
SIM focus pos (mm)	-0.684267	-0.6828225247311905
SIM defocus (mm)	0	0.001444936568705701
SIM translation stage pos (mm)	-190.132523	-190.1400660498719
SIM translation stage offset (mm)	0	0.00754346686406393
Observation start time	148245600.184000	148243874.53389
Observation start date	2002-09-12T19:18:56	2002-09-12T18:51:14
Observation end time	148260525.184000	148260839.30959
Observation end date	2002-09-12T23:27:41	2002-09-12T23:33:59
Read mode	TIMED	TIMED

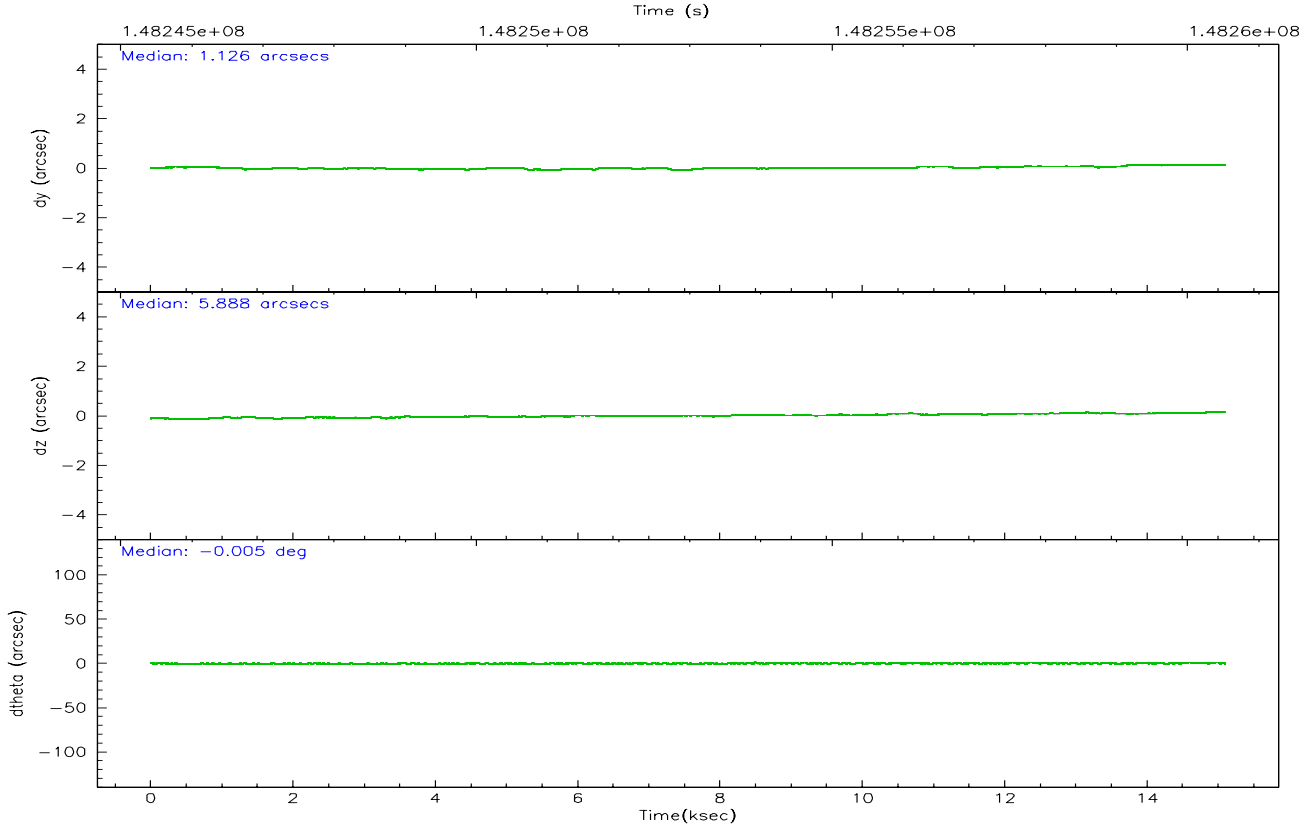
Parameter	Planned	Actual
Obspar format version number	6	6
Obspar file type	PREDICTED	ACTUAL
Obspar update status	NONE	UPDATED
Number of optional ACIS chips dropped	0	0
On-chip summing requested	N	N
Subarray requested	NONE	NONE
Alternating exposures requested	N	N
Primary exposure time	0.000000	3.2

2.3 Aspect


RA : 282.073 deg
Dec : -2.429 deg
Dec (arcsec)
RA (arcsec)
5
0
−5
−5
0
5


DY : 1.126 arcsecs
DZ : 5.888 arcsecs
DZ (arcsec)
DY (arcsec)
4
2
0
−2
−4
−4
−2
0
2
4


Time (s)
1.48245e+08
1.4825e+08
1.48255e+08
1.4826e+08
Median: 282.073 deg
RA (arcsec)
Median: −2.429 deg
Dec (arcsec)
Median: 266.768 deg
roll (arcsec)
Time(ksec)

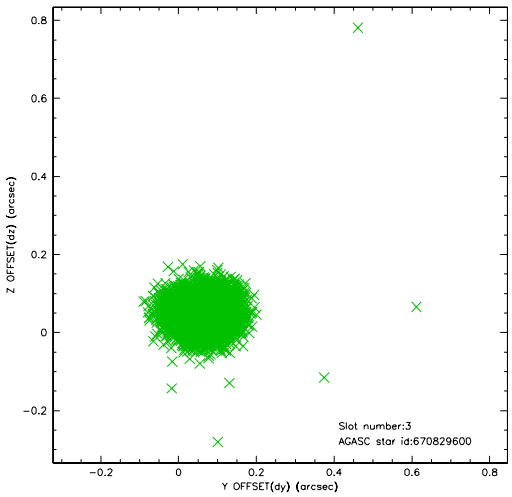

Time (s)
1.48245e+08
1.4825e+08
1.48255e+08
1.4826e+08
Median: 1.126 arcsecs
dy (arcsec)
Median: 5.888 arcsecs
dz (arcsec)
Median: −0.005 deg
dtheta (arcsec)
Time(ksec)

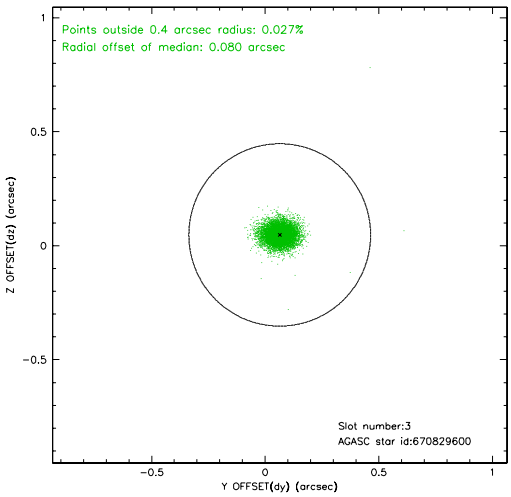
Slot Statistics

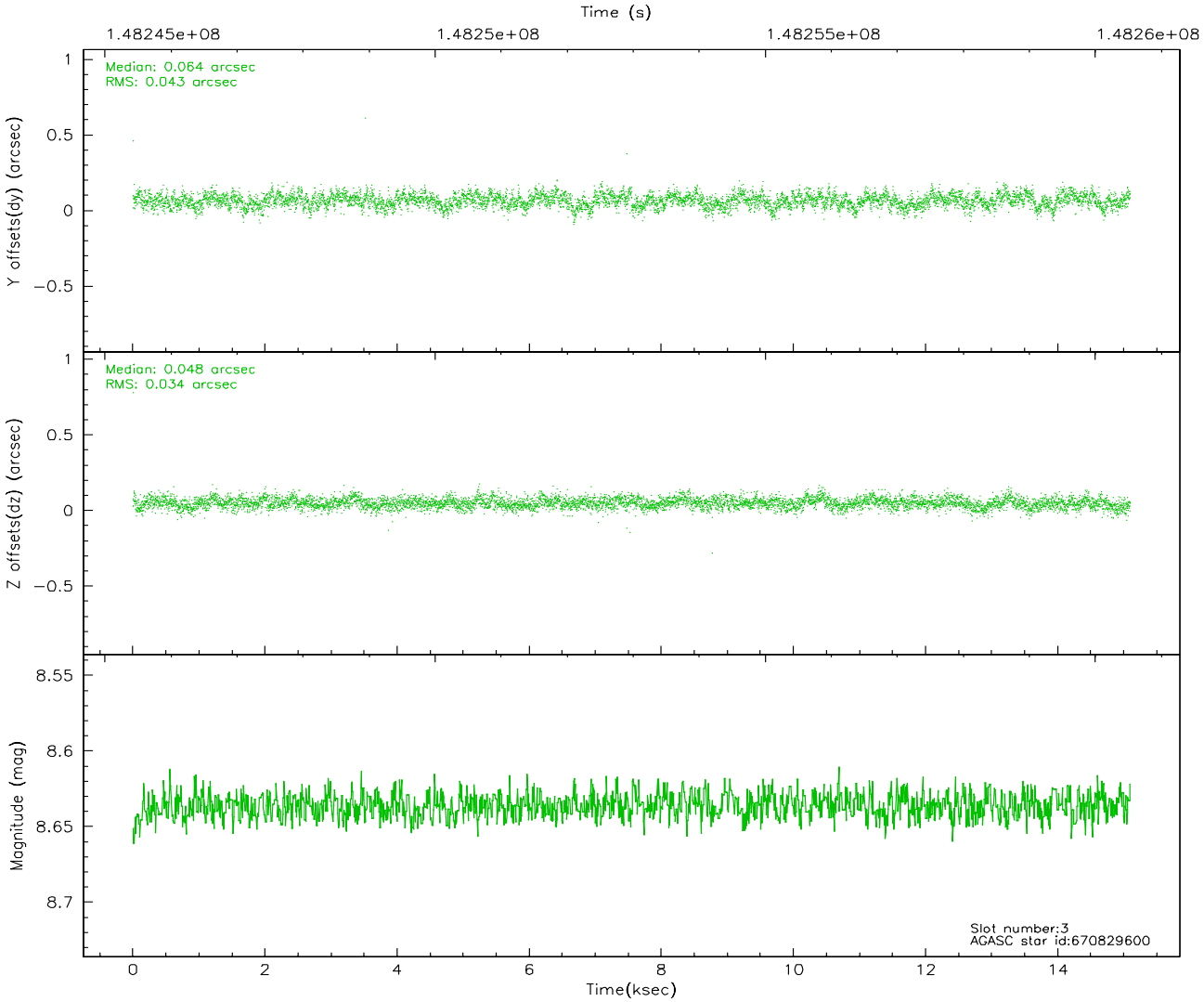
slot	status	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID	ACIS-S-2	7.11	3681	-0.045	0.029	0.007	0.011	0.000000	0.000000	-753.74	-1727.02
1	FID	ACIS-S-4	7.21	3682	-0.033	0.014	0.005	0.010	0.000000	0.000000	2159.38	181.20
2	FID	ACIS-S-5	7.24	3682	0.046	-0.034	0.006	0.010	0.000000	0.000000	-1806.14	175.08
3	GUIDE	670829600	8.64	7362	0.064	0.048	0.057	0.093	282.227270	-3.031765	2217.18	733.87
4	GUIDE	670829768	7.41	7364	-0.155	0.049	0.055	0.088	281.927934	-2.010470	-1389.37	-558.02
5	GUIDE	670827848	9.71	7355	0.112	0.103	0.113	0.184	282.233886	-2.502228	312.63	645.18
6	GUIDE	670827744	9.52	7352	0.085	-0.148	0.086	0.142	281.699180	-2.020401	-1304.93	-1377.68
7	GUIDE	670827280	9.41	7358	-0.110	-0.052	0.116	0.175	281.434708	-1.976010	-1408.10	-2337.33

2.4 Star Slots

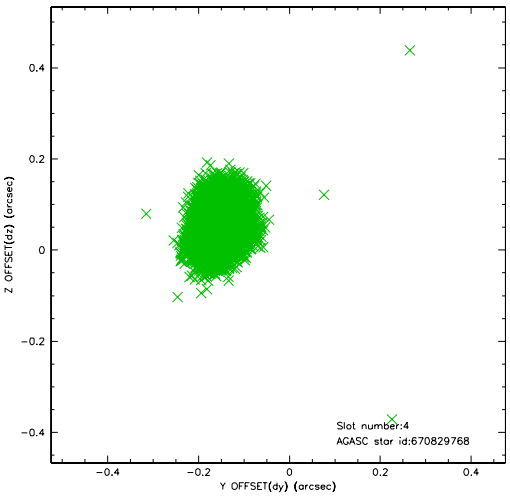
2.4.1 Slot 3

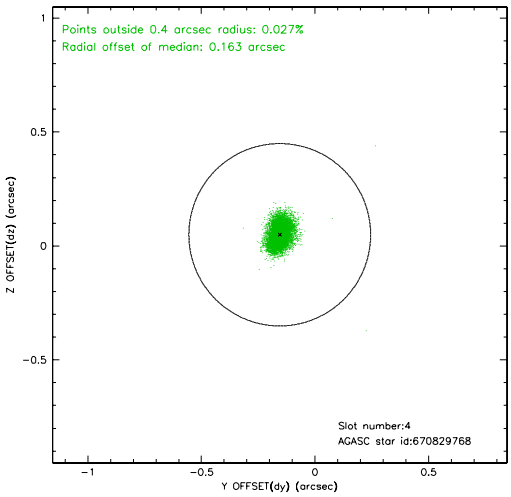


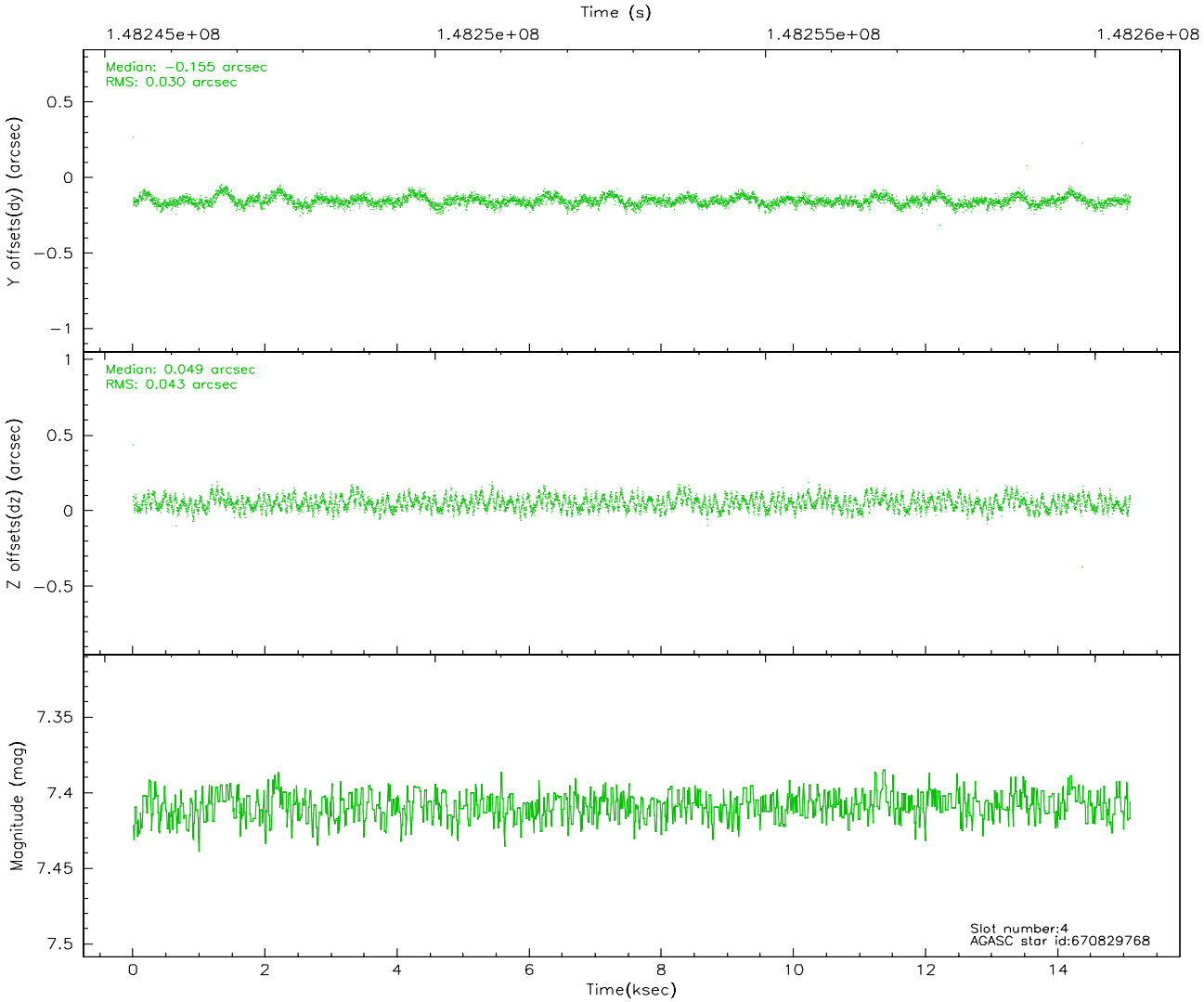




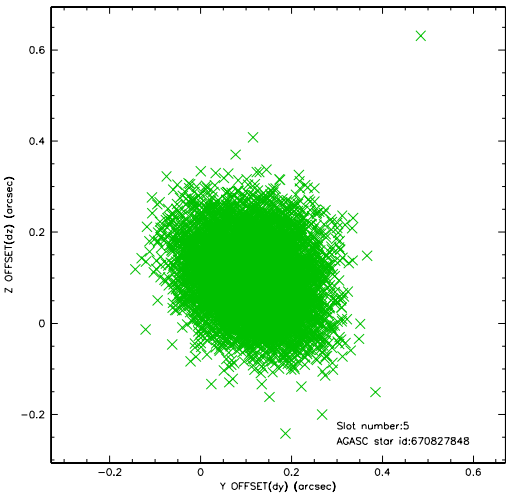
2.4.2 Slot 4

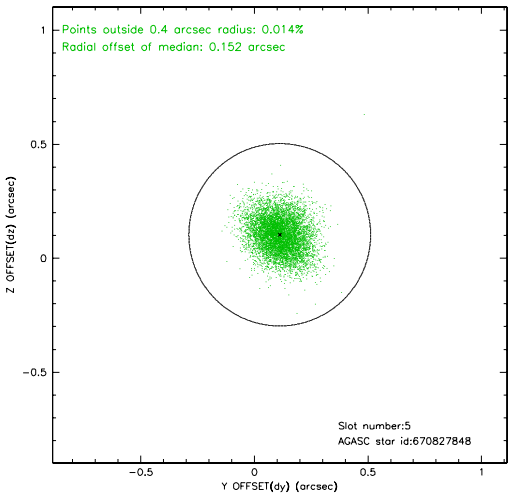

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number:4
AGASC star id:670829768

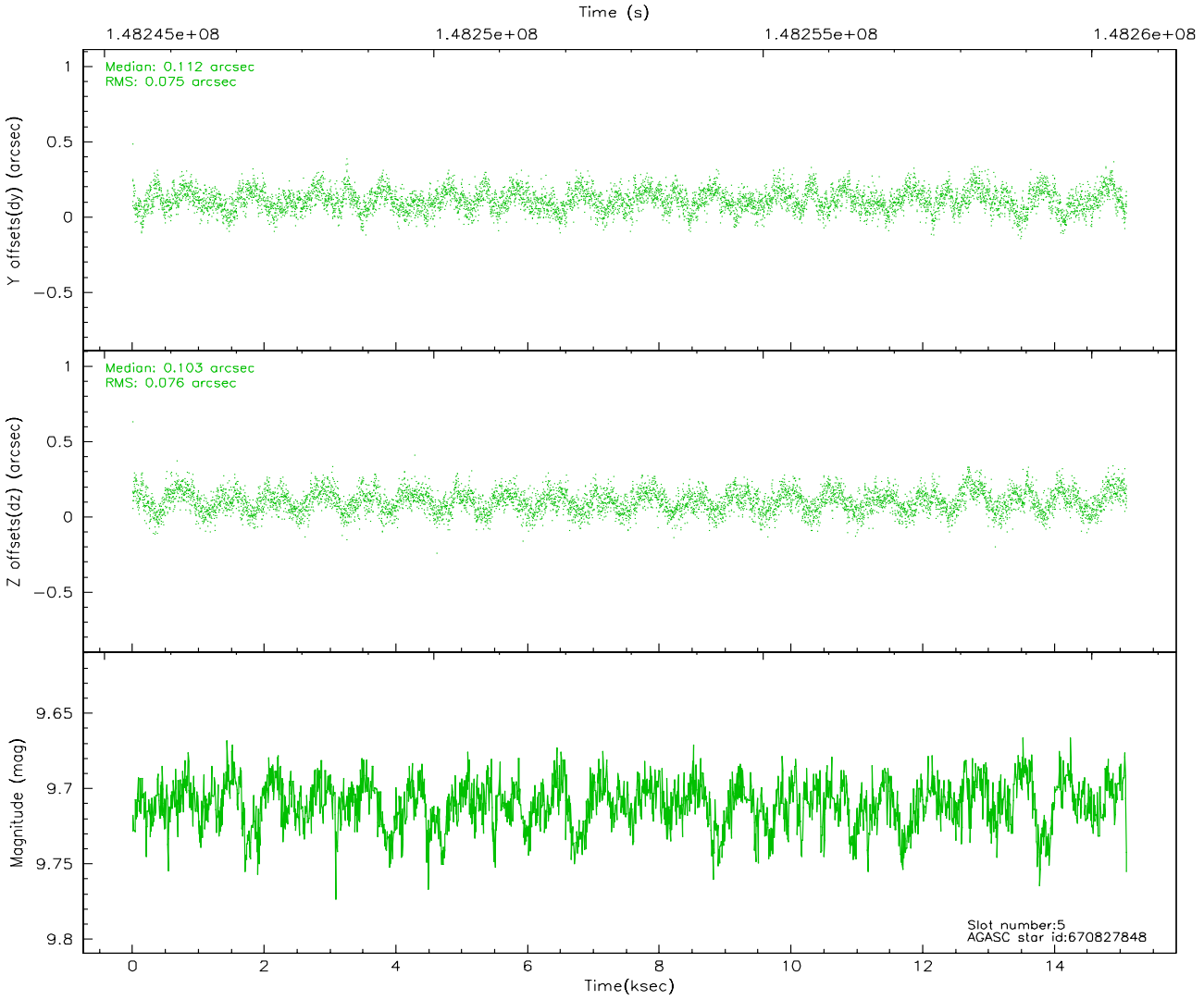

Points outside 0.4 arcsec radius: 0.027%
Radial offset of median: 0.163 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number:4
AGASC star id:670829768


Time (s)
1.48245e+08
1.4825e+08
1.48255e+08
1.4826e+08
Median: −0.155 arcsec
RMS: 0.030 arcsec
Y offsets(dy) (arcsec)
Median: 0.049 arcsec
RMS: 0.043 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number:4
AGASC star id:670829768
Time(ksec)

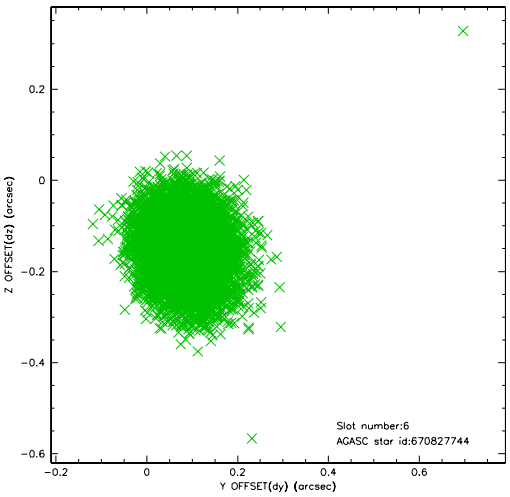
2.4.3 Slot 5

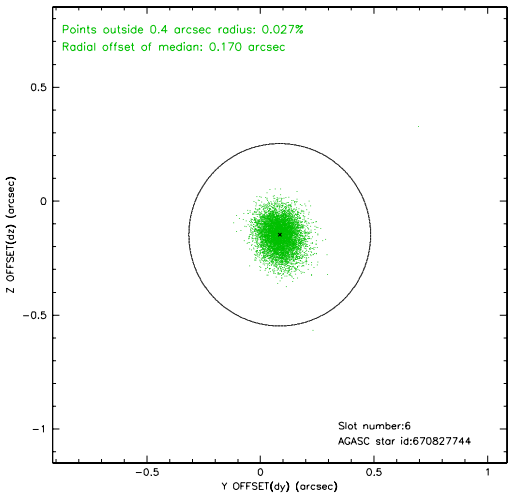

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number:5
AGASC star id:670827848

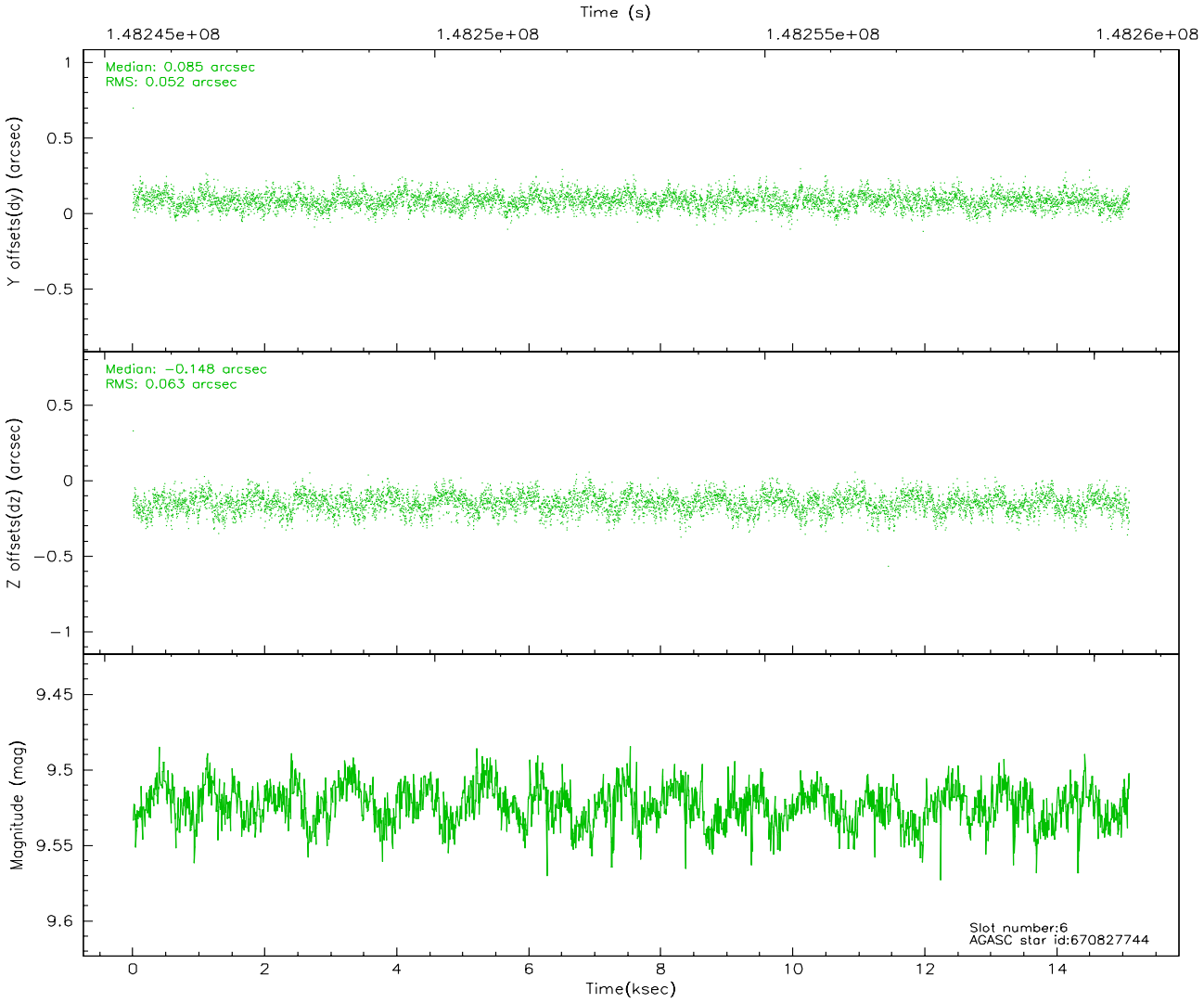

Points outside 0.4 arcsec radius: 0.014%
Radial offset of median: 0.152 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number:5
AGASC star id:670827848


Time (s)
1.48245e+08
1.4825e+08
1.48255e+08
1.4826e+08
Median: 0.112 arcsec
RMS: 0.075 arcsec
Y offsets(dy) (arcsec)
Median: 0.103 arcsec
RMS: 0.076 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number:5
AGASC star id:670827848
Time(ksec)

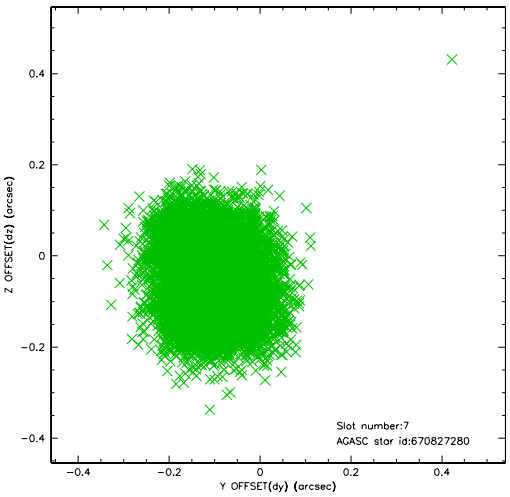
2.4.4 Slot 6

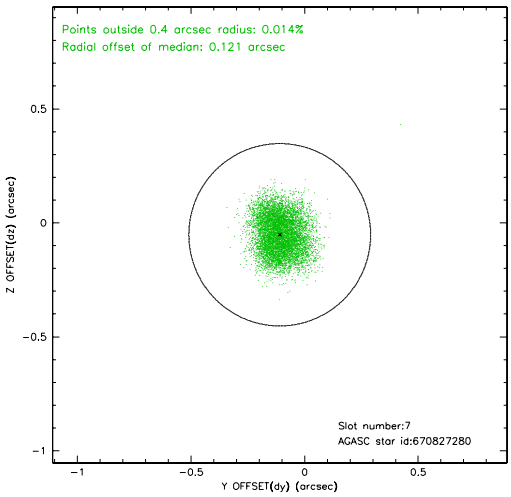

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number:6
AGASC star id:670827744

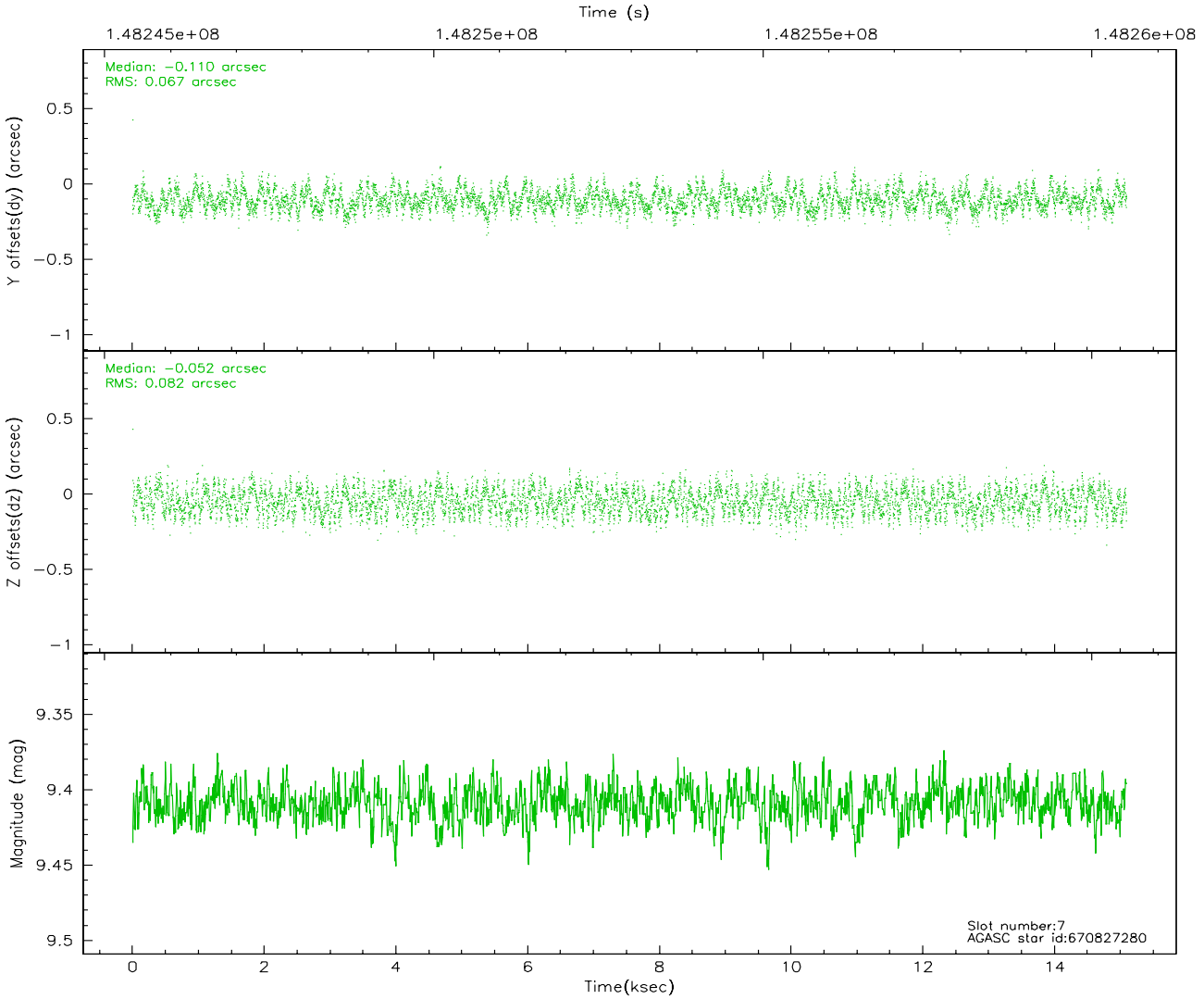

Points outside 0.4 arcsec radius: 0.027%
Radial offset of median: 0.170 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number:6
AGASC star id:670827744


Time (s)
1.48245e+08
1.4825e+08
1.48255e+08
1.4826e+08
Median: 0.085 arcsec
RMS: 0.052 arcsec
Y offsets(dy) (arcsec)
Median: −0.148 arcsec
RMS: 0.063 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number:6
AGASC star id:670827744
Time(ksec)

2.4.5 Slot 7

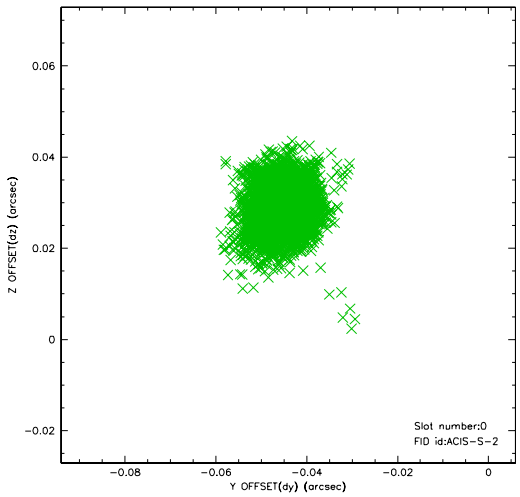

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number:7
AGASC star id:670827280

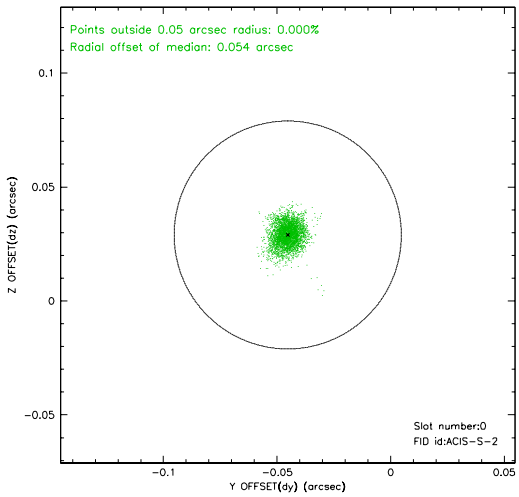

Points outside 0.4 arcsec radius: 0.014%
Radial offset of median: 0.121 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number:7
AGASC star id:670827280

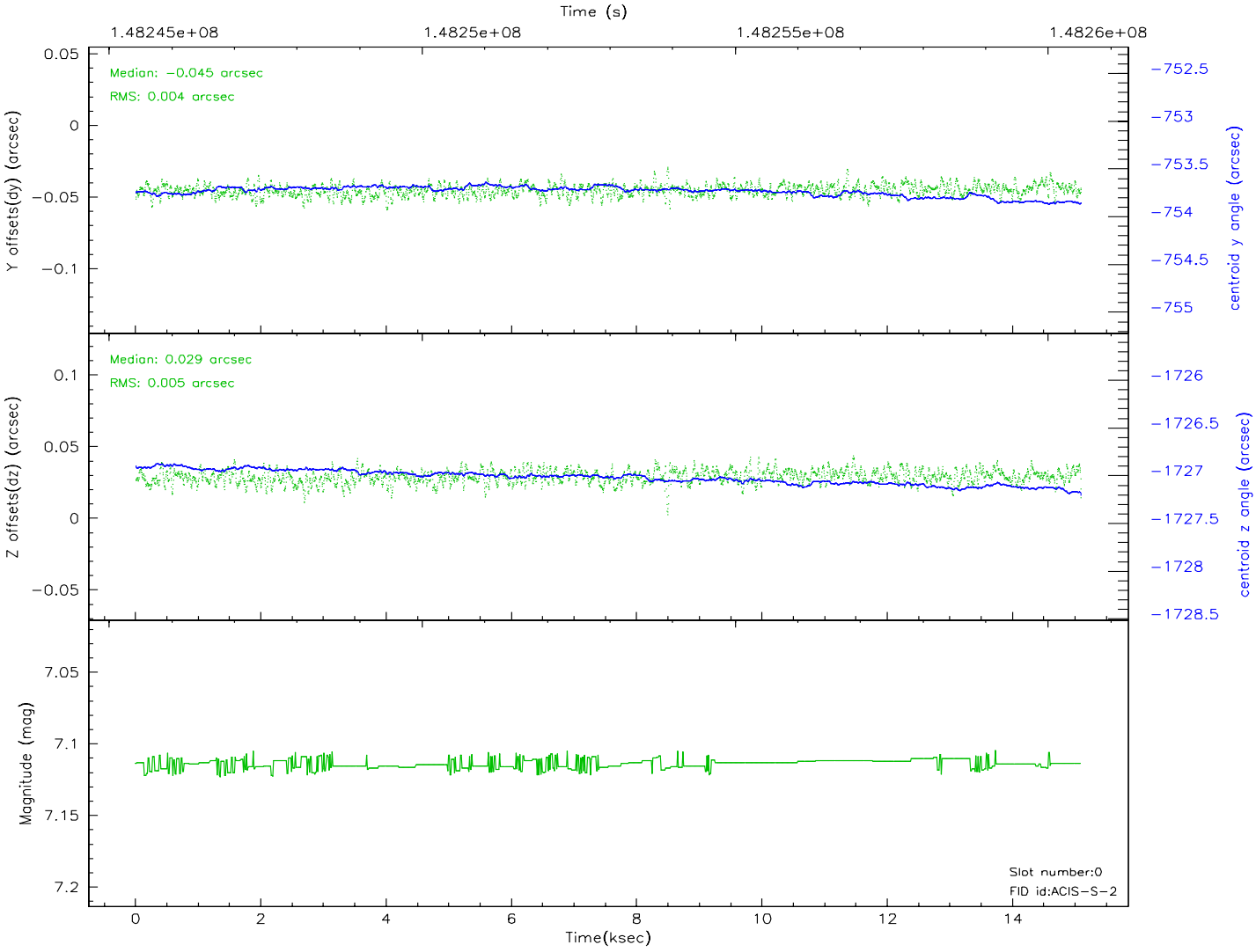

Time (s)
1.48245e+08
1.4825e+08
1.48255e+08
1.4826e+08
Median: −0.110 arcsec
RMS: 0.067 arcsec
Y offsets(dy) (arcsec)
Median: −0.052 arcsec
RMS: 0.082 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number:7
AGASC star id:670827280
Time(ksec)

2.5 FID Slots

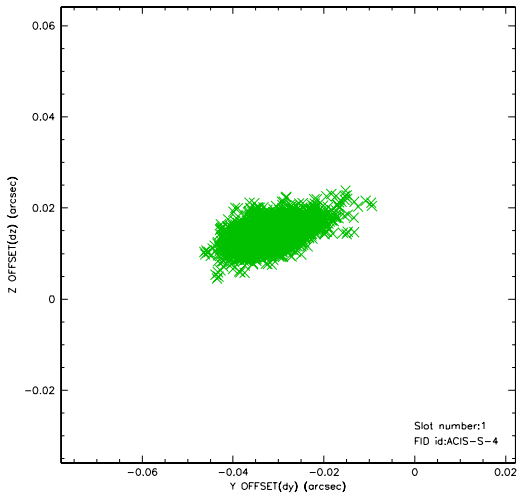
2.5.1 Slot 0

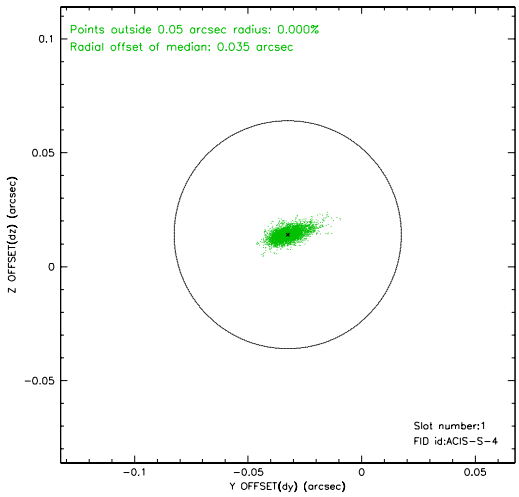


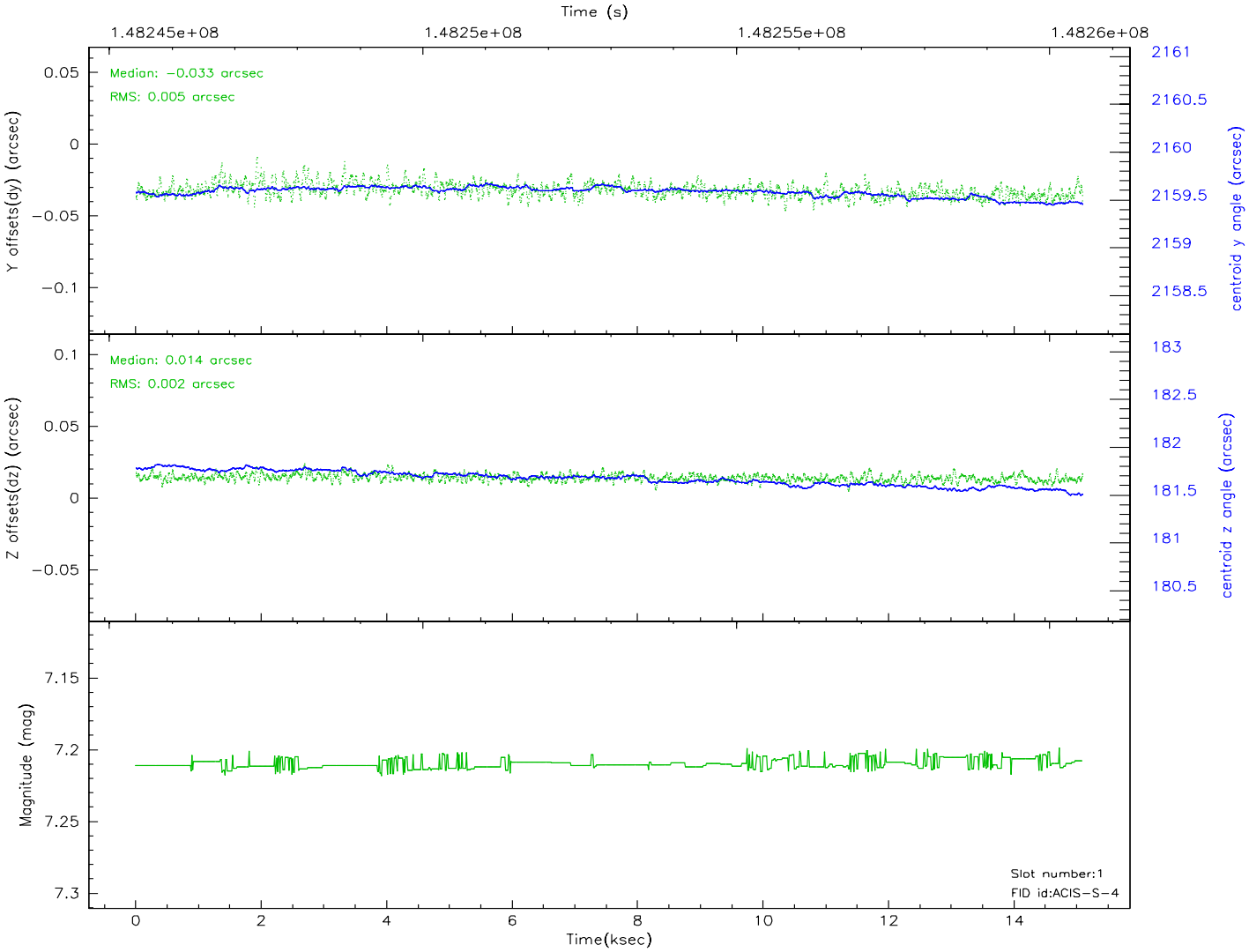




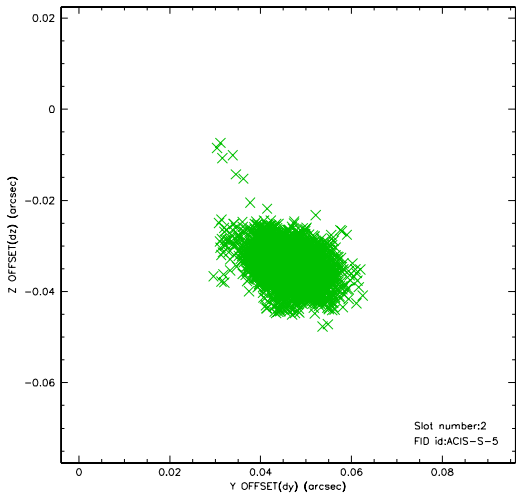
2.5.2 Slot 1

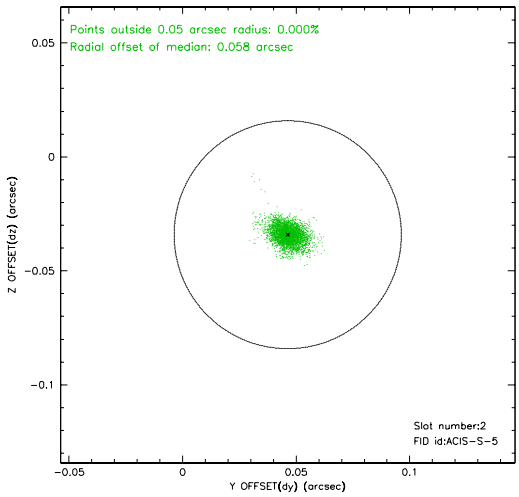

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number:1
FID id:ACIS-S-4

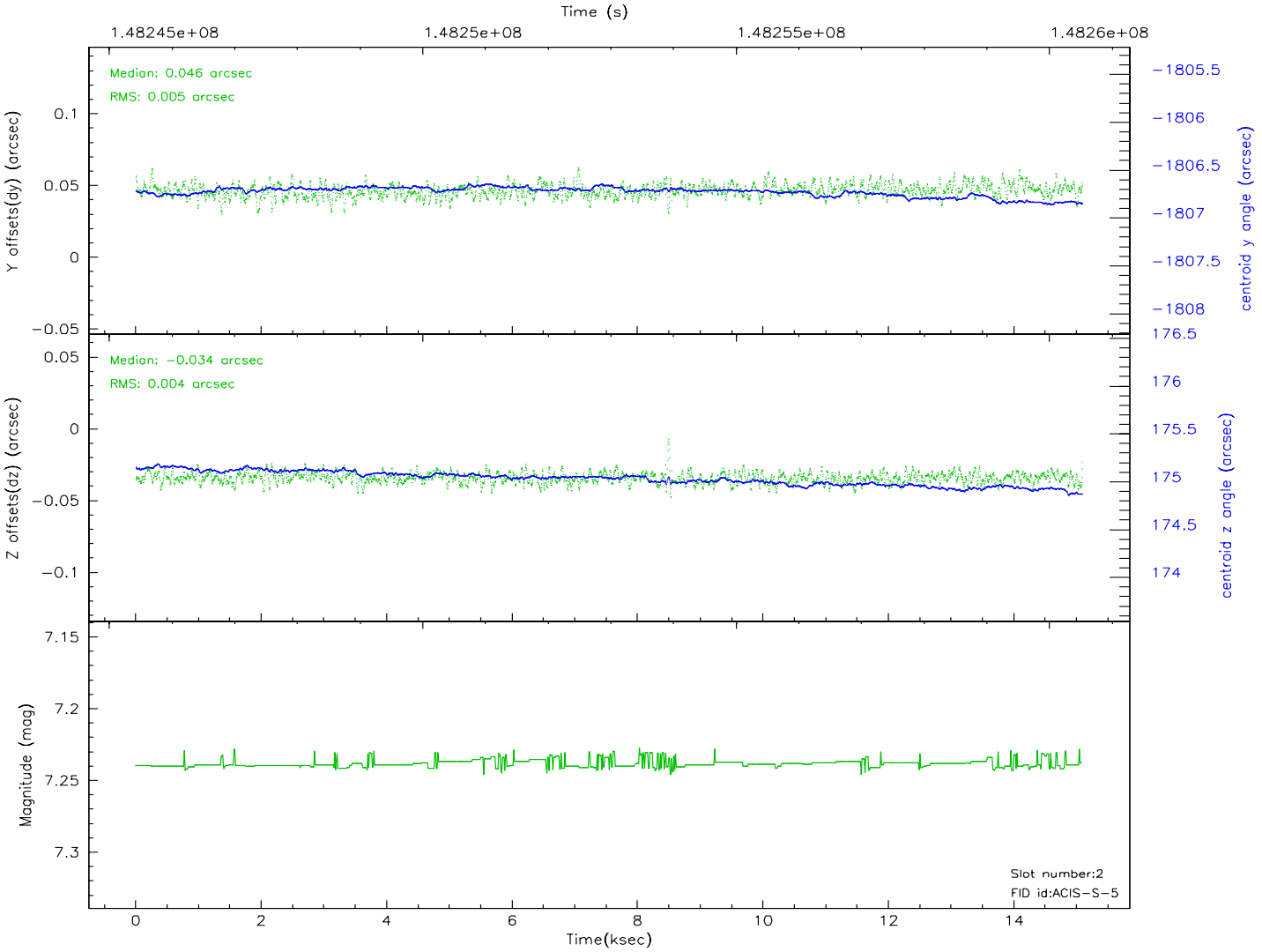

Points outside 0.05 arcsec radius: 0.000%
Radial offset of median: 0.035 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number:1
FID id:ACIS-S-4


Time (s)
1.48245e+08
1.4825e+08
1.48255e+08
1.4826e+08
Median: −0.033 arcsec
RMS: 0.005 arcsec
Y offsets(dy) (arcsec)
centroid y angle (arcsec)
Median: 0.014 arcsec
RMS: 0.002 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

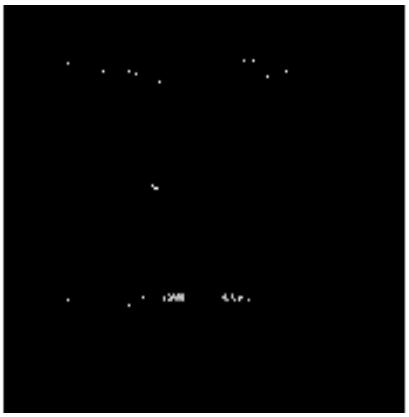

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number:2
FID id:ACIS-S-5


Points outside 0.05 arcsec radius: 0.000%
Radial offset of median: 0.058 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number:2
FID id:ACIS-S-5

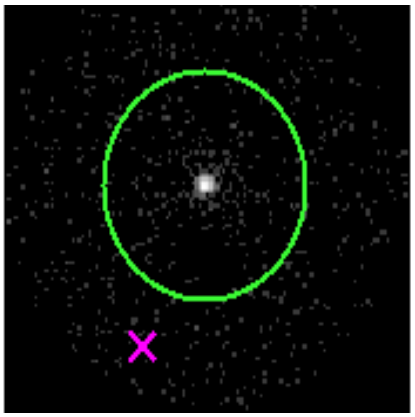

Time (s)
1.48245e+08
1.4825e+08
1.48255e+08
1.4826e+08
Median: 0.046 arcsec
RMS: 0.005 arcsec
Y offsets(dy) (arcsec)
centroid y angle (arcsec)
Median: −0.034 arcsec
RMS: 0.004 arcsec
Z offsets(dz) (arcsec)
centroid z angle (arcsec)
Magnitude (mag)
Slot number:2
FID id:ACIS-S-5
Time(ksec)

3 Gratings

3.1 HEG Arm

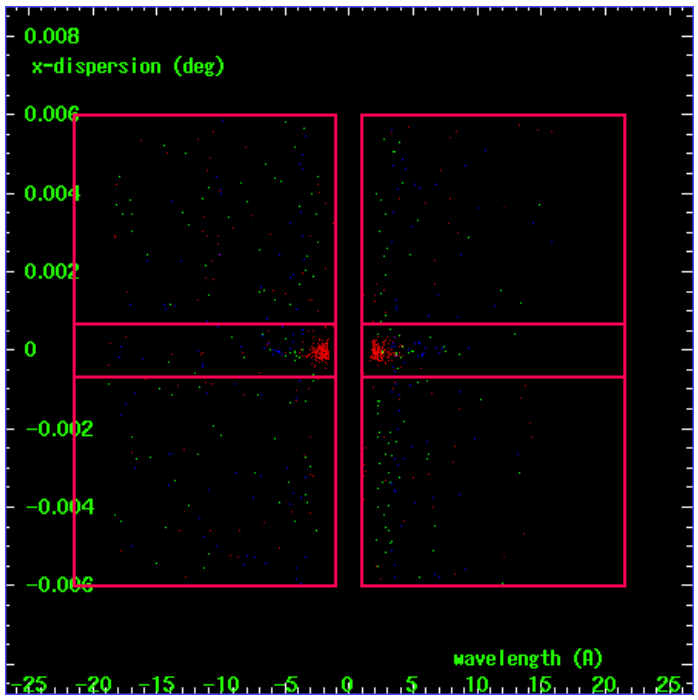


HEG Order Sort 123

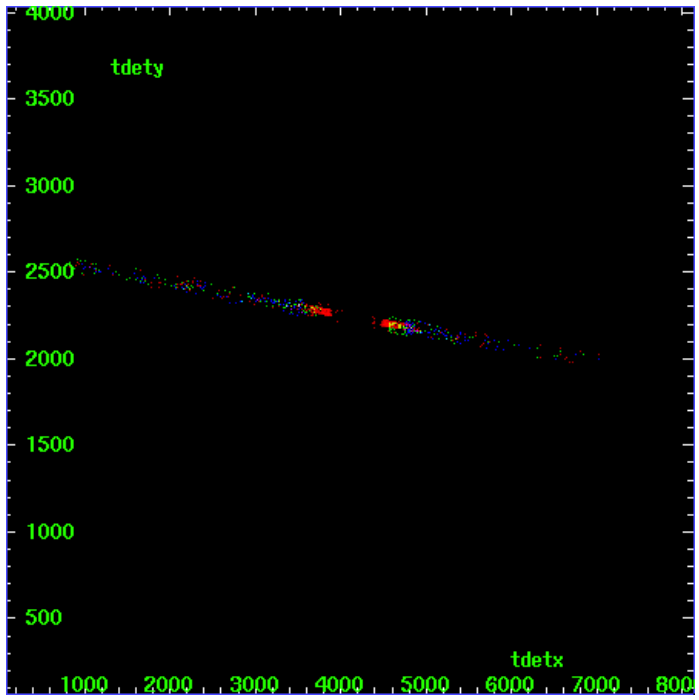


HEG Zero Order

HEG Order Sort ALL

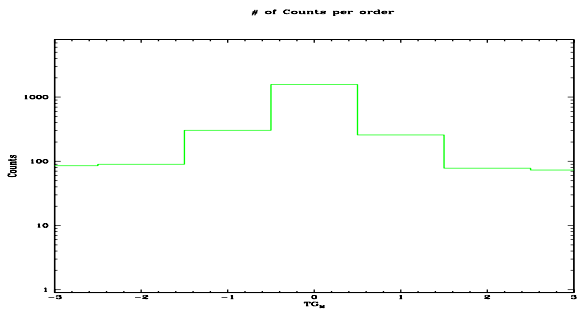


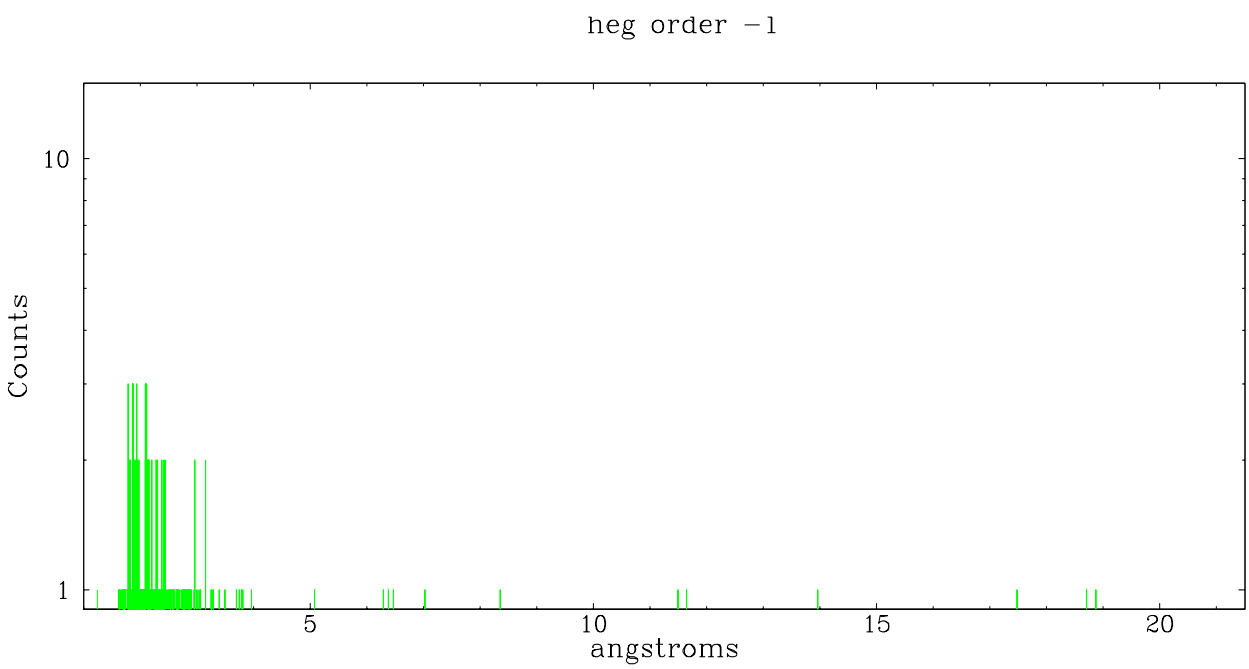
Spot Image HEG

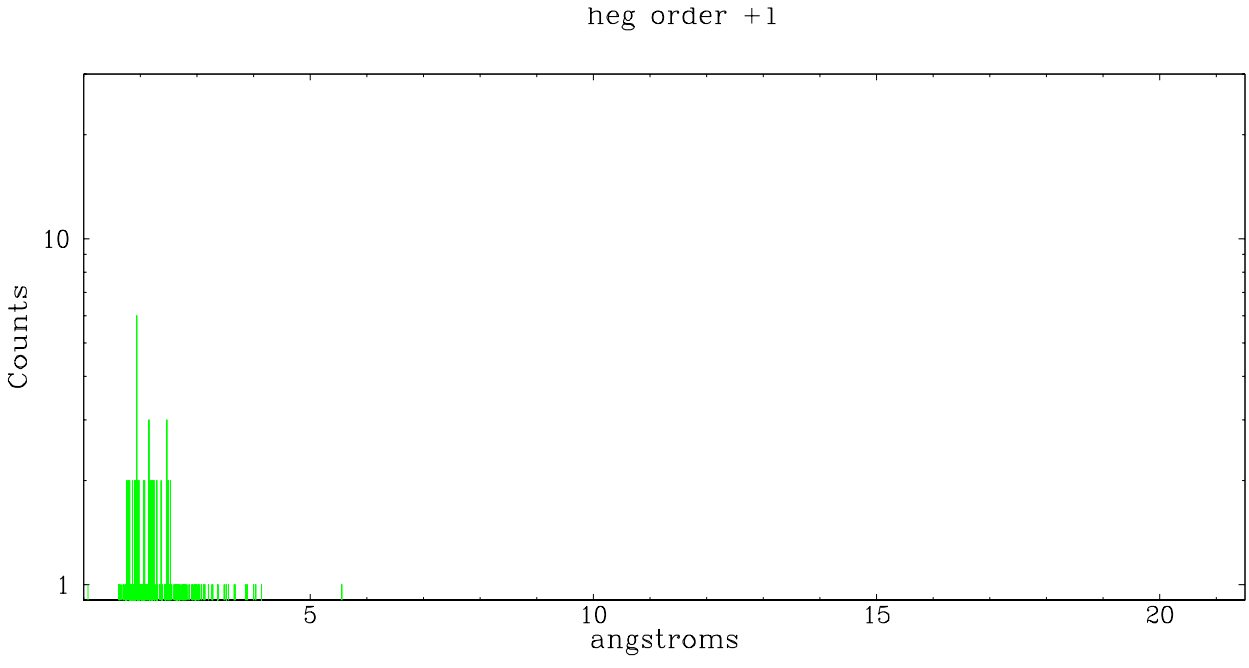


Full Detector HEG

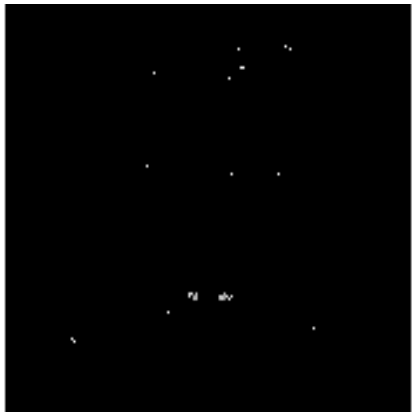
	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	85	90	304	1571	258	78	73



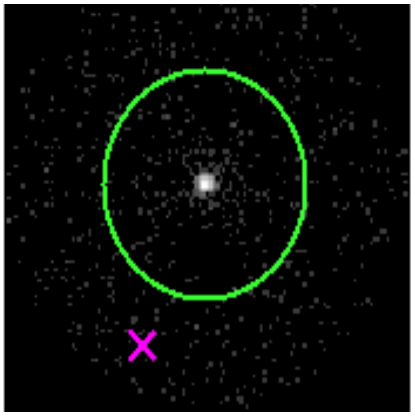

heg order −1
10
1
Counts
5
10
15
20
angstroms


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

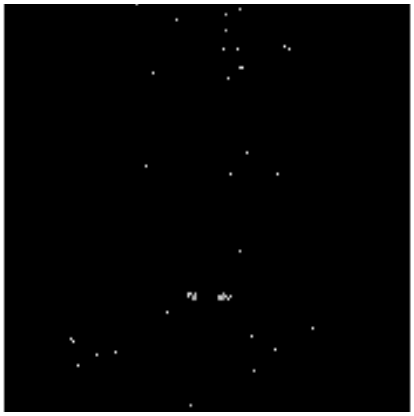
3.2 MEG Arm



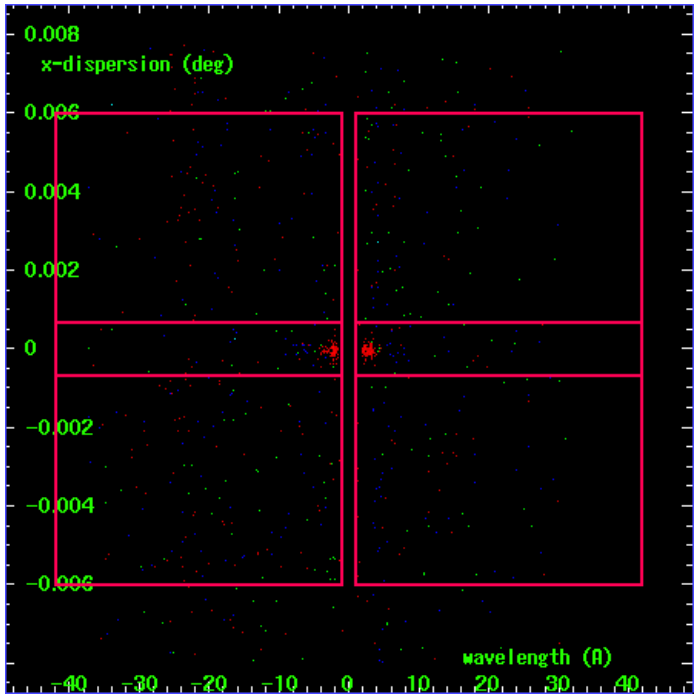
MEG Order Sort 123



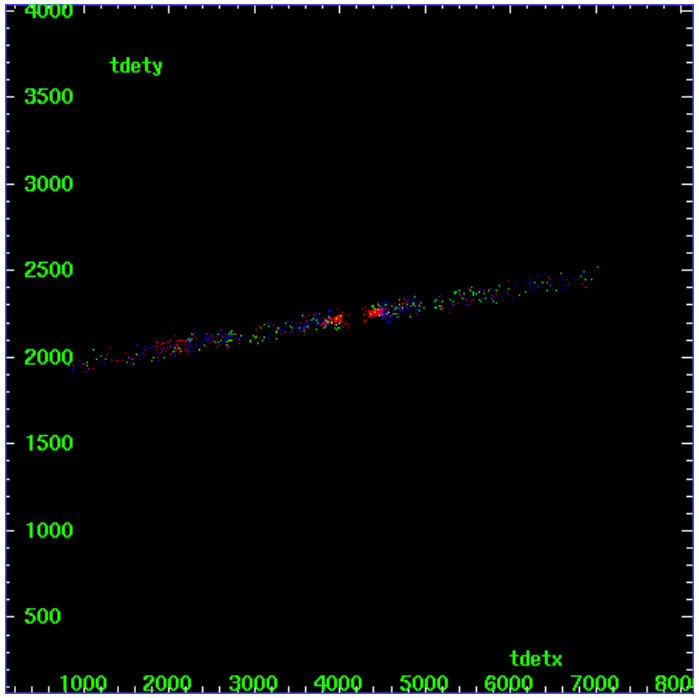
MEG Zero Order



MEG Order Sort ALL

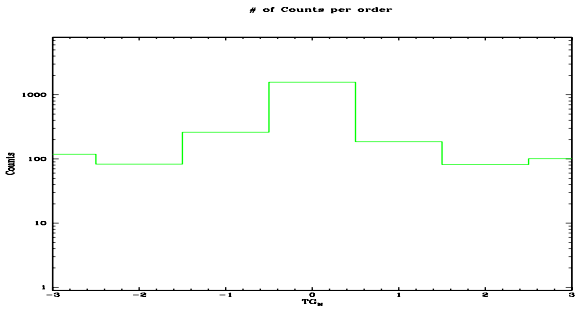


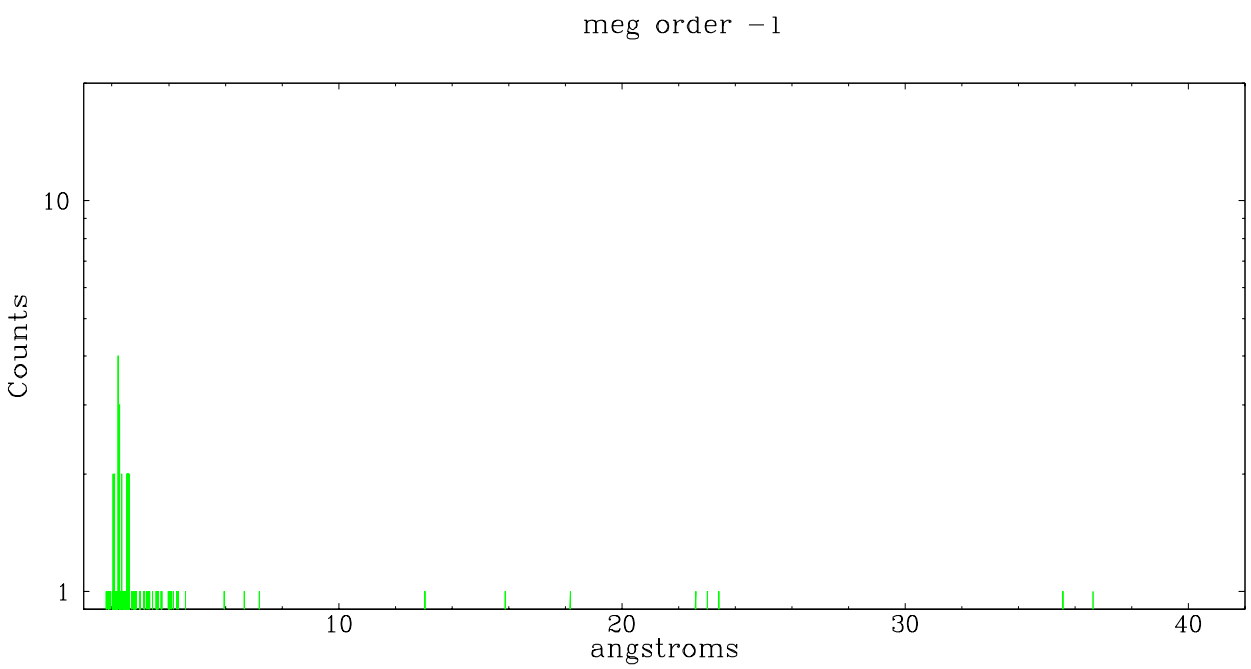
Spot Image MEG

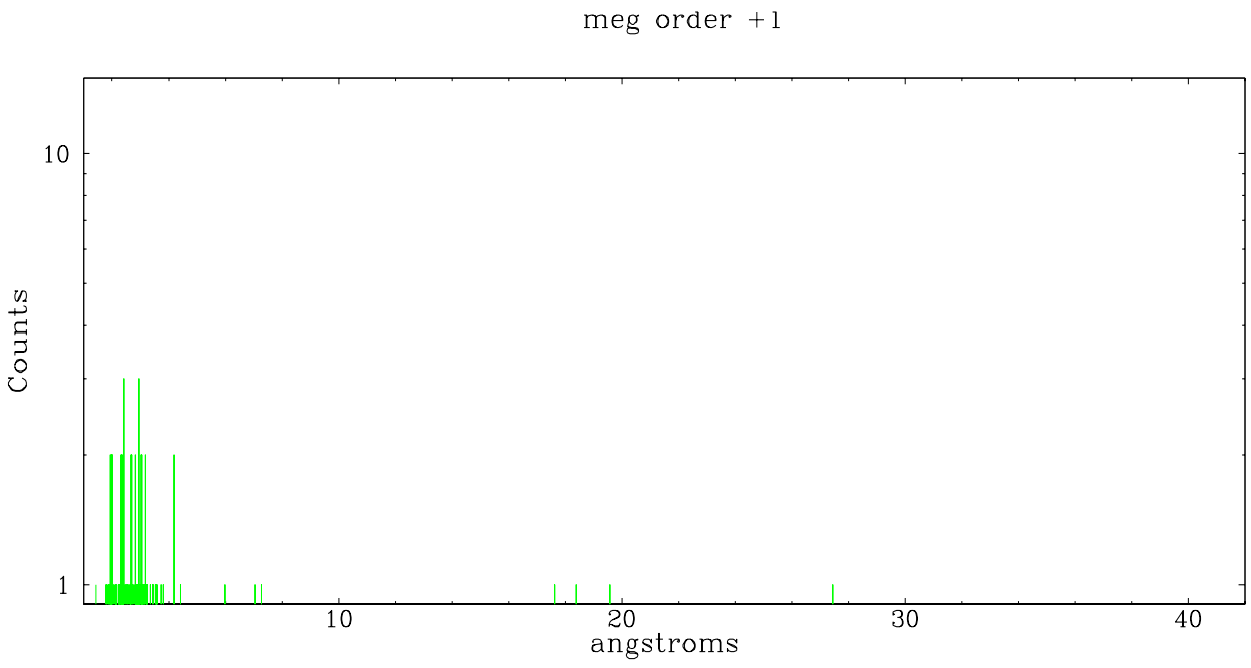


Full Detector MEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	118	83	260	1571	185	82	101




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


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

A Summary

A.1 Status

V&V Scientist	David Huenemoerder
V&V Date (YYYY-MM-DD)	2006.12.14
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	15.091

A.2 Comments