V&V Reference Report
L2 ASCDS Version : 7.6.8

Observation 4029 - L2 Version 001
Chandra X-Ray Center

L2 Processing Date : Jul 21 2006

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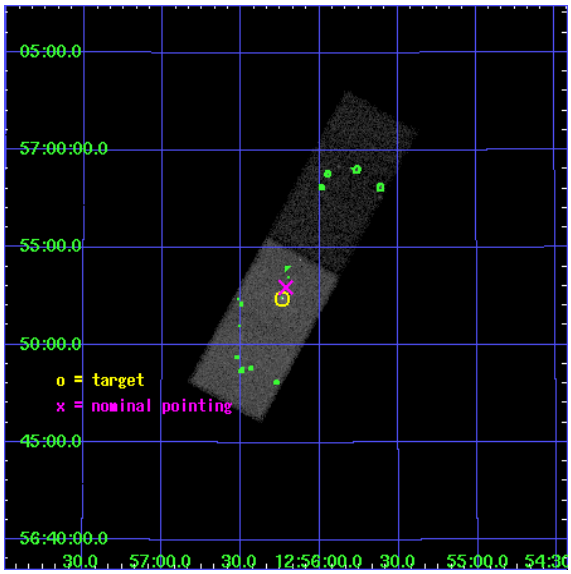
1 Front

seq_num	700708
obs_id	4029
title	PROBING THE NUCLEAR GEOMETRY OF THE MOST LUMINOUS GALAXY IN THE LOCAL UNIVERSE WITH CHANDRA
observer	Dr. Sarah Gallagher
object	MARKARIAN 231
dtycycle	0
cycle	P
ra_targ	194.059167
dec_targ	56.873667
ra_nom	194.05353651247
dec_nom	56.882801527224
roll_nom	118.71821843051
revision	2
ontime	39623.999852389
livetime	38633.061816789
ontime6	39622.358842313
ontime7	39623.999852389
l2events	83909

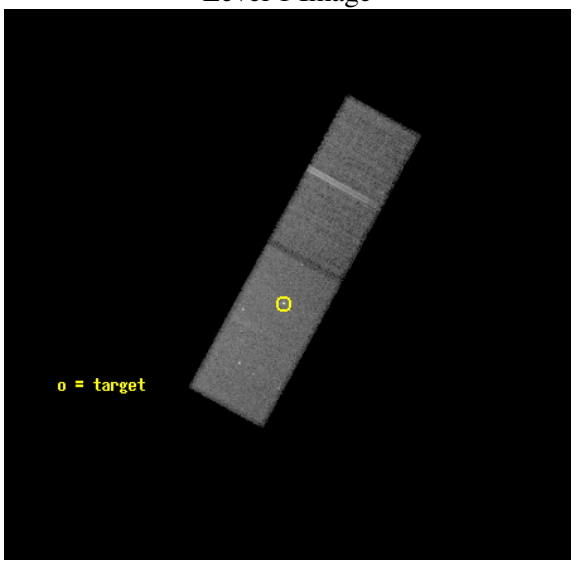


2 OBI

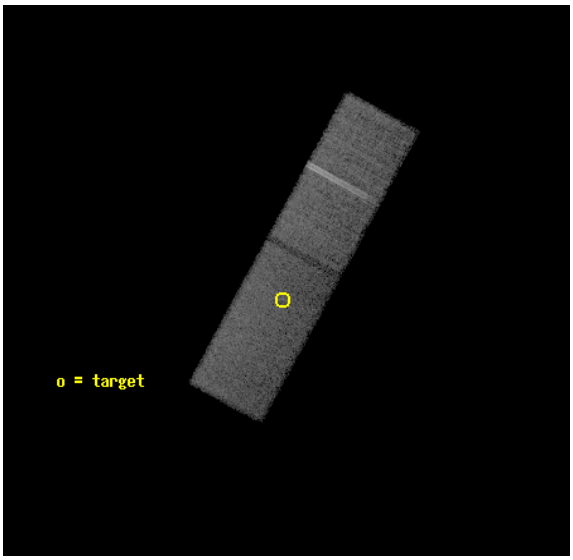
2.1 OBI

2.1.1 Images

Level 1 Image

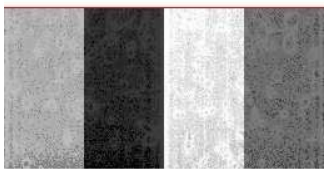


Level 1 Bad Events

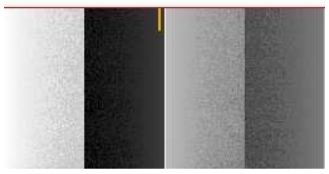


2.1.2 Bias

Chip 6



Chip 7



2.1.3 Parameters

obi_num	0
ascdsver	7.6.8
caldbver	3.2.2
date	2006-07-21T02:01:11
revision	2

sched_exp_time	39500.000000
ontime	40764.616532087
ontime6	40762.975522012
ontime7	40764.616532087
l1events	326763

2.1.4 Events

	ccd 6	ccd 7
level 1 events	147383	179380
rejected events	130754	107783
rejected %	88%	60%

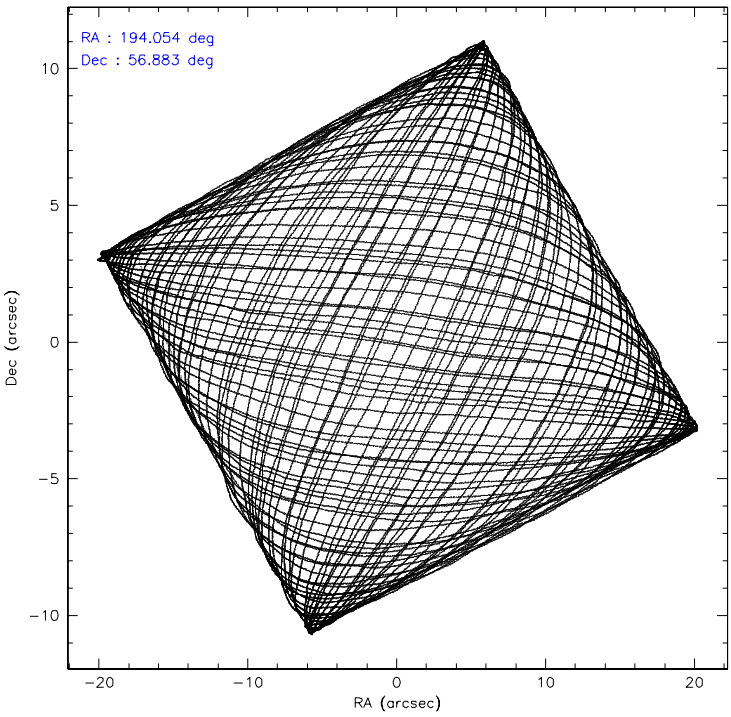
	ccd 6	ccd 7
grade 0 events	6619	5669
	4%	3%
grade 1 events	53	108
	0%	0%
grade 2 events	3078	18262
	2%	10%
grade 3 events	2108	4958
	1%	2%
grade 4 events	2026	4732
	1%	2%
grade 5 events	5901	12315
	4%	6%
grade 6 events	3256	40181
	2%	22%
grade 7 events	124342	93155
	84%	51%

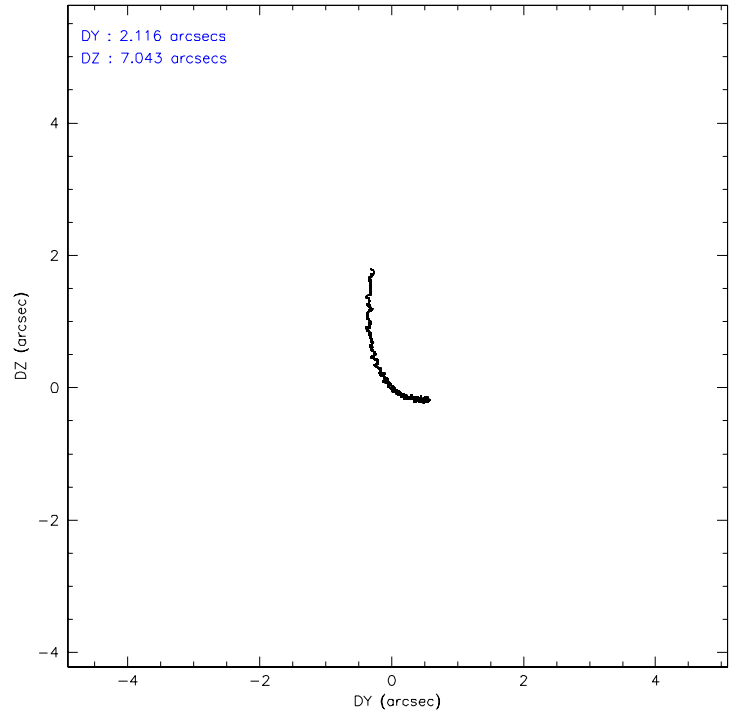
2.2 Compared Parameters

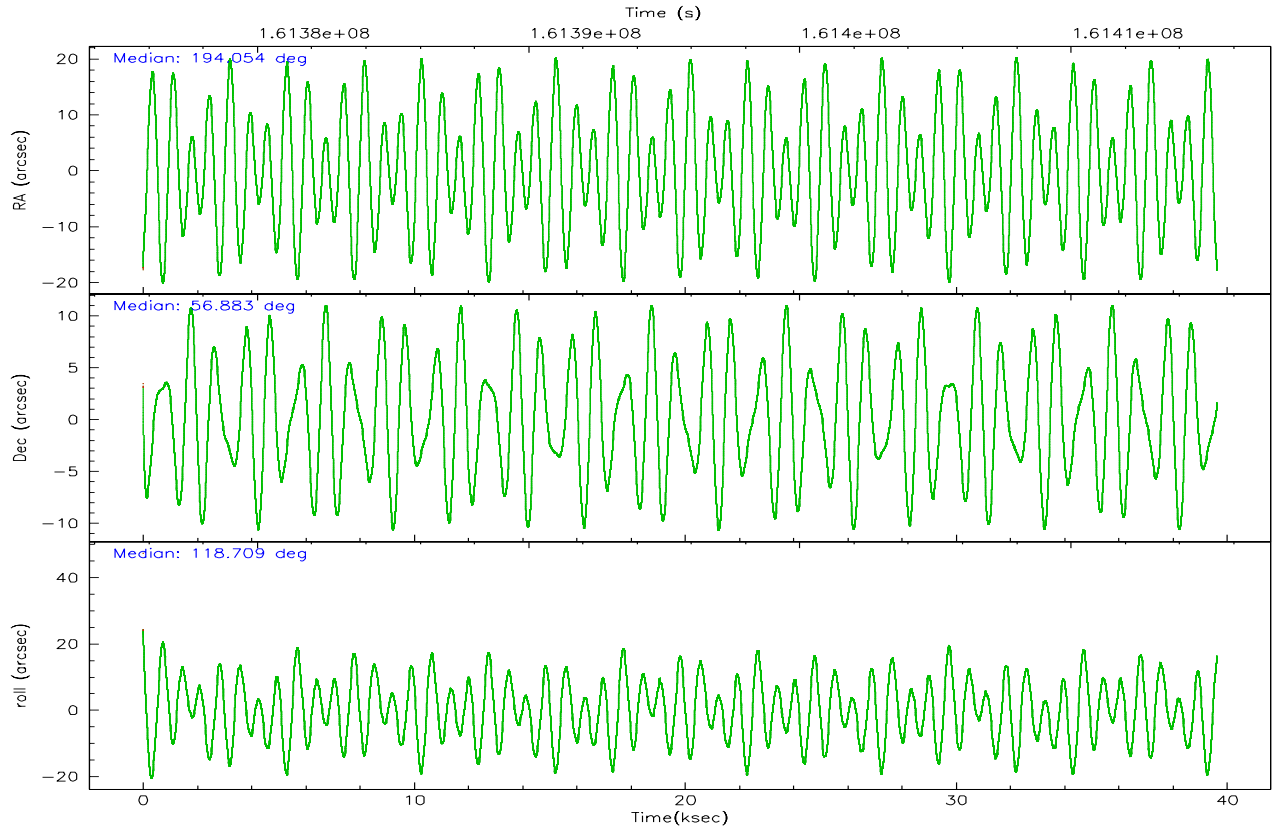
Parameter	Planned	Actual
Instrument	ACIS	ACIS
Detector	ACIS-67	ACIS-67
Grating	NONE	NONE
Data mode	VFAINT	VFAINT
Observation mode	POINTING	POINTING
Pointing RA	194.096449	194.053536512467
Pointing Dec	56.869002	56.88280152722405
Pointing Roll	118.525650	118.7182184305095
SIM focus pos (mm)	-0.684267	-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	161375897.184000	161374633.48094
Observation start date	2003-02-11T18:37:13	2003-02-11T18:17:13
Observation end time	161415397.184000	161416207.48268
Observation end date	2003-02-12T05:35:33	2003-02-12T05:50:07
Read mode	TIMED	TIMED

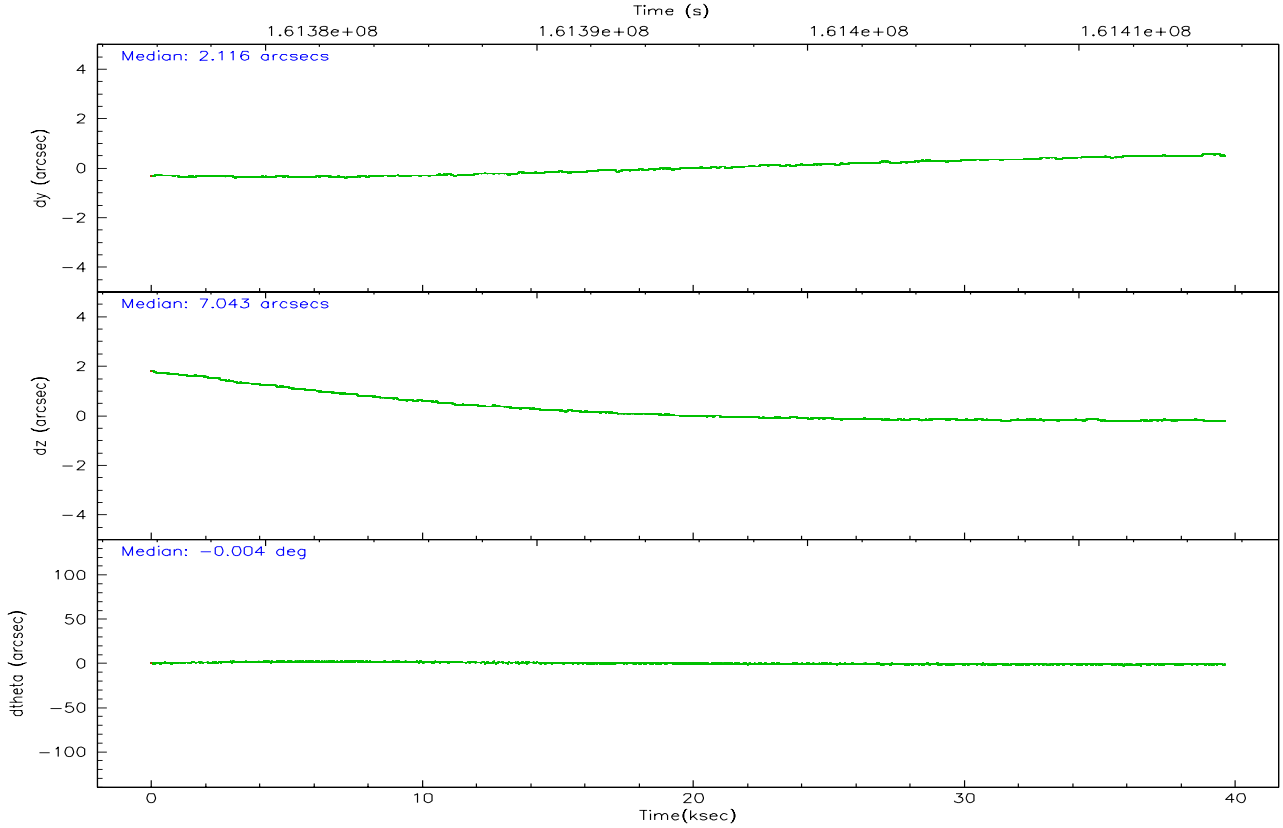
Parameter	Planned	Actual
Obspar format version number	6	6
Obspar file type	PREDICTED	ACTUAL
Obspar update status	NONE	UPDATED
On-chip summing requested	N	N
Subarray requested	1/2	1/2
Subarray start row	0	257
Subarray row count	1024	512
Alternating exposures requested	N	N
Primary exposure time	0.000000	1.6

2.3 Aspect


RA : 194.054 deg
Dec : 56.883 deg
Dec (arcsec)
RA (arcsec)
10
5
0
−5
−10
−20
−10
0
10
20


DY : 2.116 arcsecs
DZ : 7.043 arcsecs
DZ (arcsec)
DY (arcsec)
4
2
0
−2
−4
−4
−2
0
2
4


Time (s)
1.6138e+08
1.6139e+08
1.614e+08
1.6141e+08
Median: 194.054 deg
RA (arcsec)
Median: 56.883 deg
Dec (arcsec)
Median: 118.709 deg
roll (arcsec)
Time(ksec)

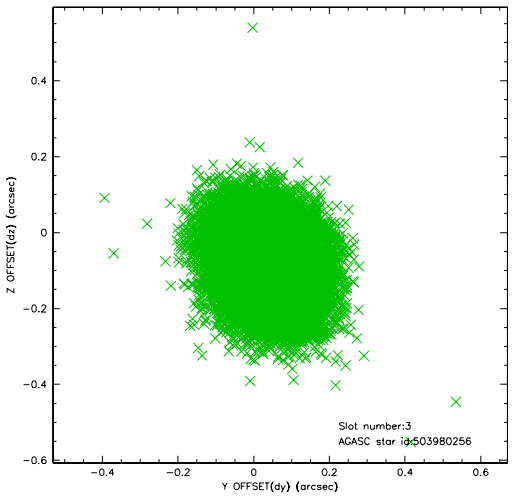

Time (s)
1.6138e+08
1.6139e+08
1.614e+08
1.6141e+08
Median: 2.116 arcsecs
dy (arcsec)
Median: 7.043 arcsecs
dz (arcsec)
Median: −0.004 deg
dtheta (arcsec)
Time(ksec)

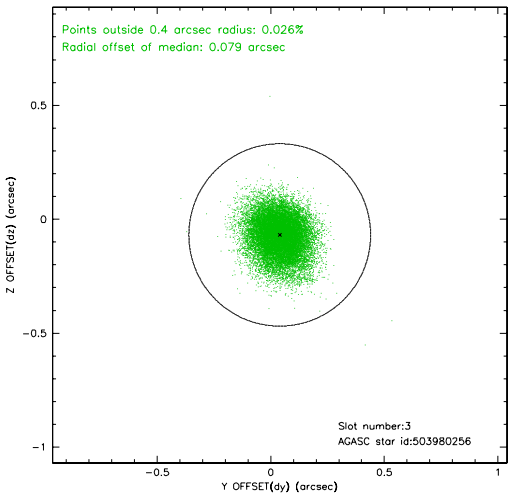
Slot Statistics

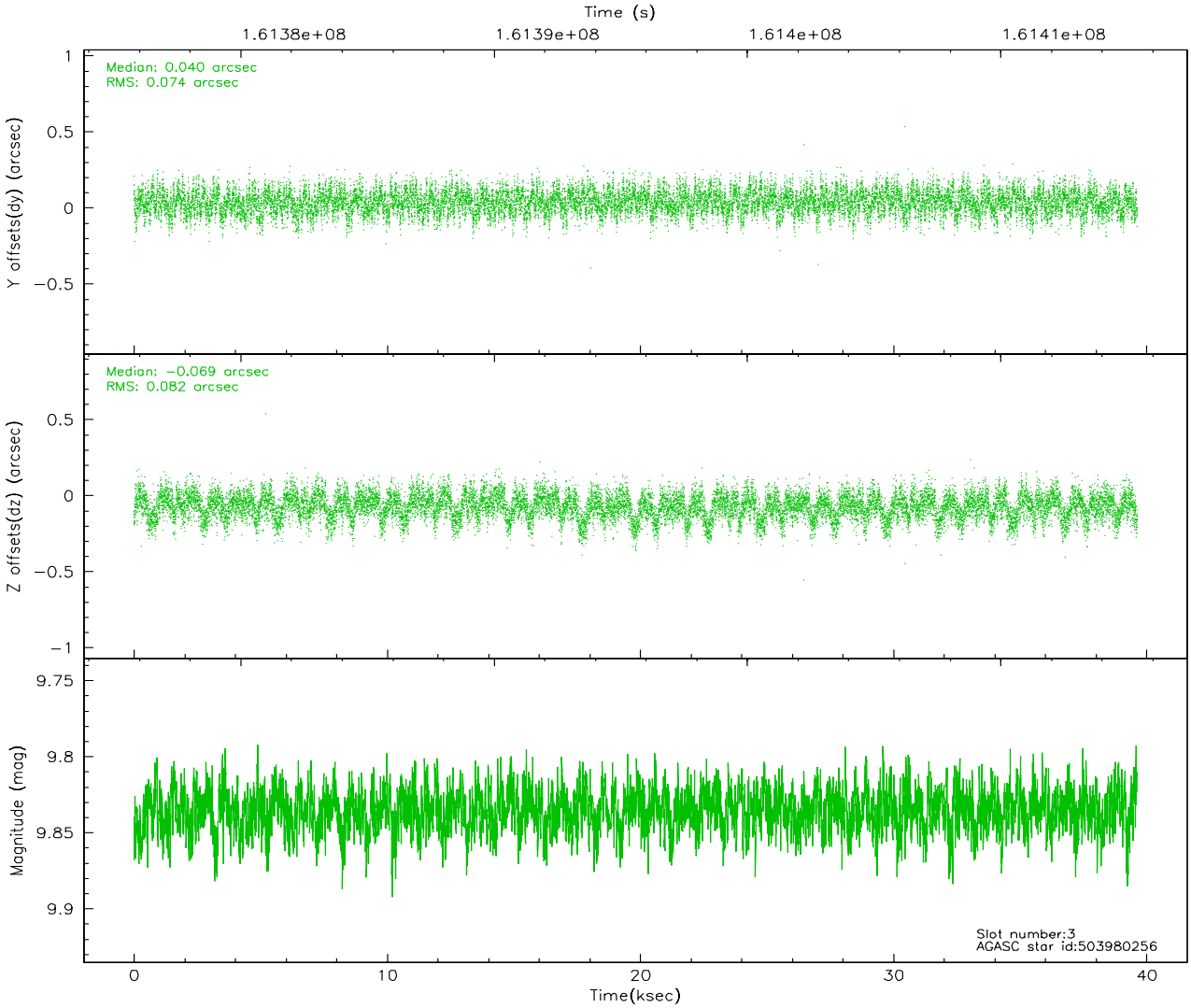
slot	status	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID	ACIS-S-2	7.11	9666	-0.022	0.020	0.016	0.024	0.000000	0.000000	-754.78	-1728.49
1	FID	ACIS-S-4	7.20	9665	-0.049	0.005	0.012	0.020	0.000000	0.000000	2158.46	179.97
2	FID	ACIS-S-5	7.24	9664	0.039	-0.015	0.012	0.020	0.000000	0.000000	-1807.54	173.63
3	GUIDE	503980256	9.84	19322	0.040	-0.069	0.118	0.190	193.427147	56.429056	-749.60	1923.83
4	GUIDE	503979104	9.84	19309	0.024	-0.085	0.110	0.181	194.089330	56.607844	-819.29	461.32
5	GUIDE	503980752	9.57	19325	-0.030	0.087	0.125	0.197	195.429177	56.932049	-1027.78	-2420.40
6	GUIDE	504371944	8.89	19319	-0.081	0.061	0.128	0.196	194.110371	57.600269	2300.48	-1280.40
7	GUIDE	504368776	7.98	19326	0.045	0.005	0.088	0.145	194.317087	57.691724	2400.82	-1787.37

2.4 Star Slots

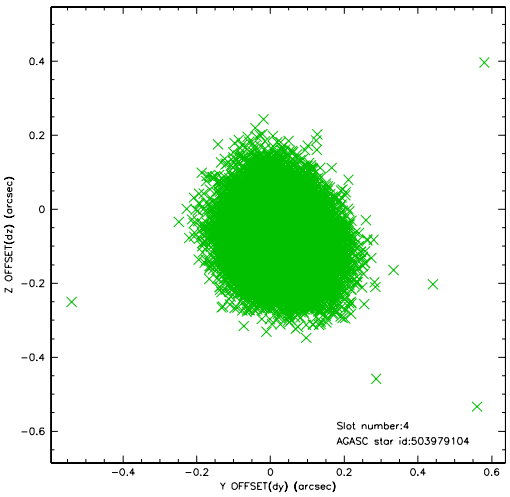
2.4.1 Slot 3

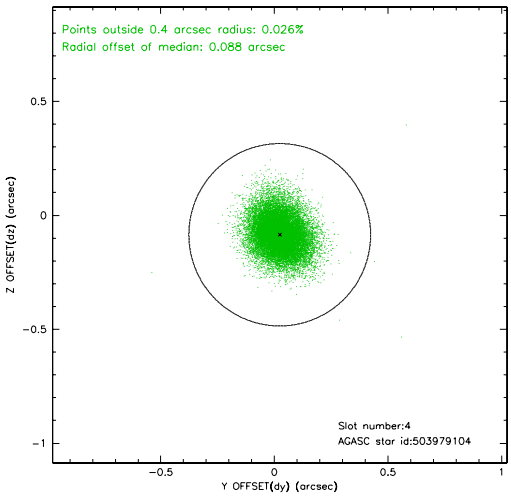


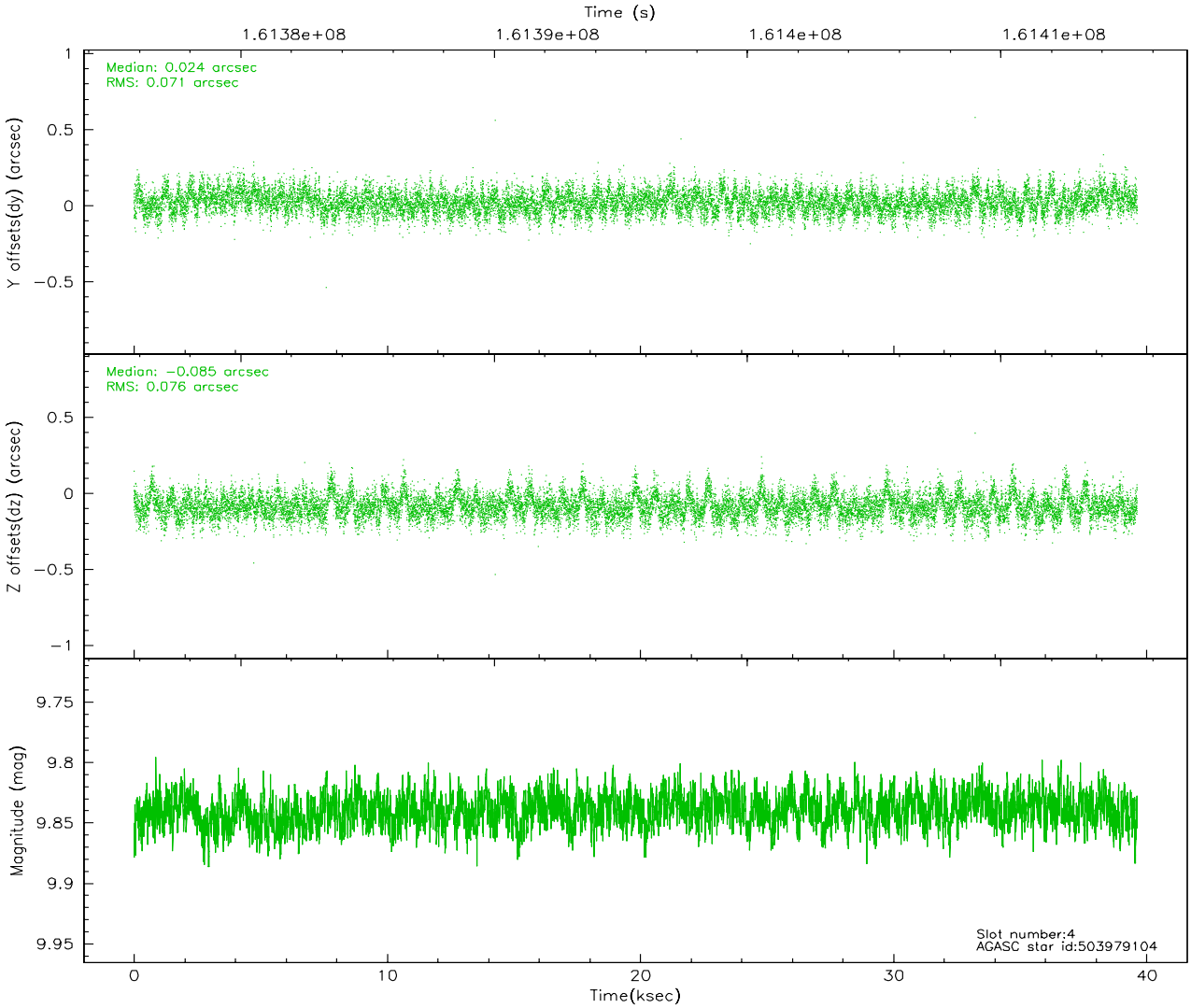




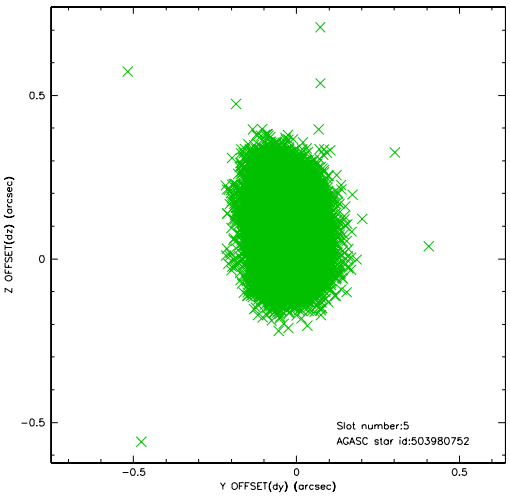
2.4.2 Slot 4

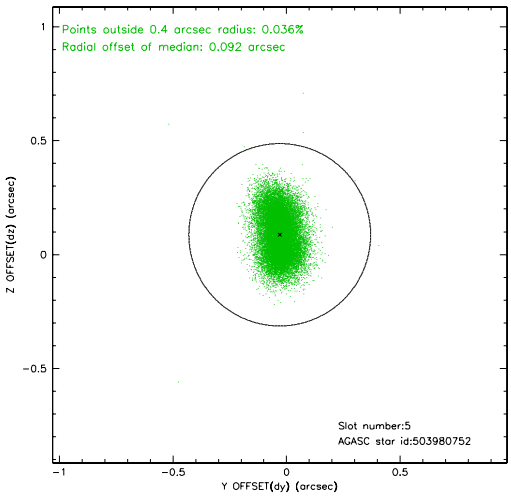

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number:4
AGASC star id:503979104

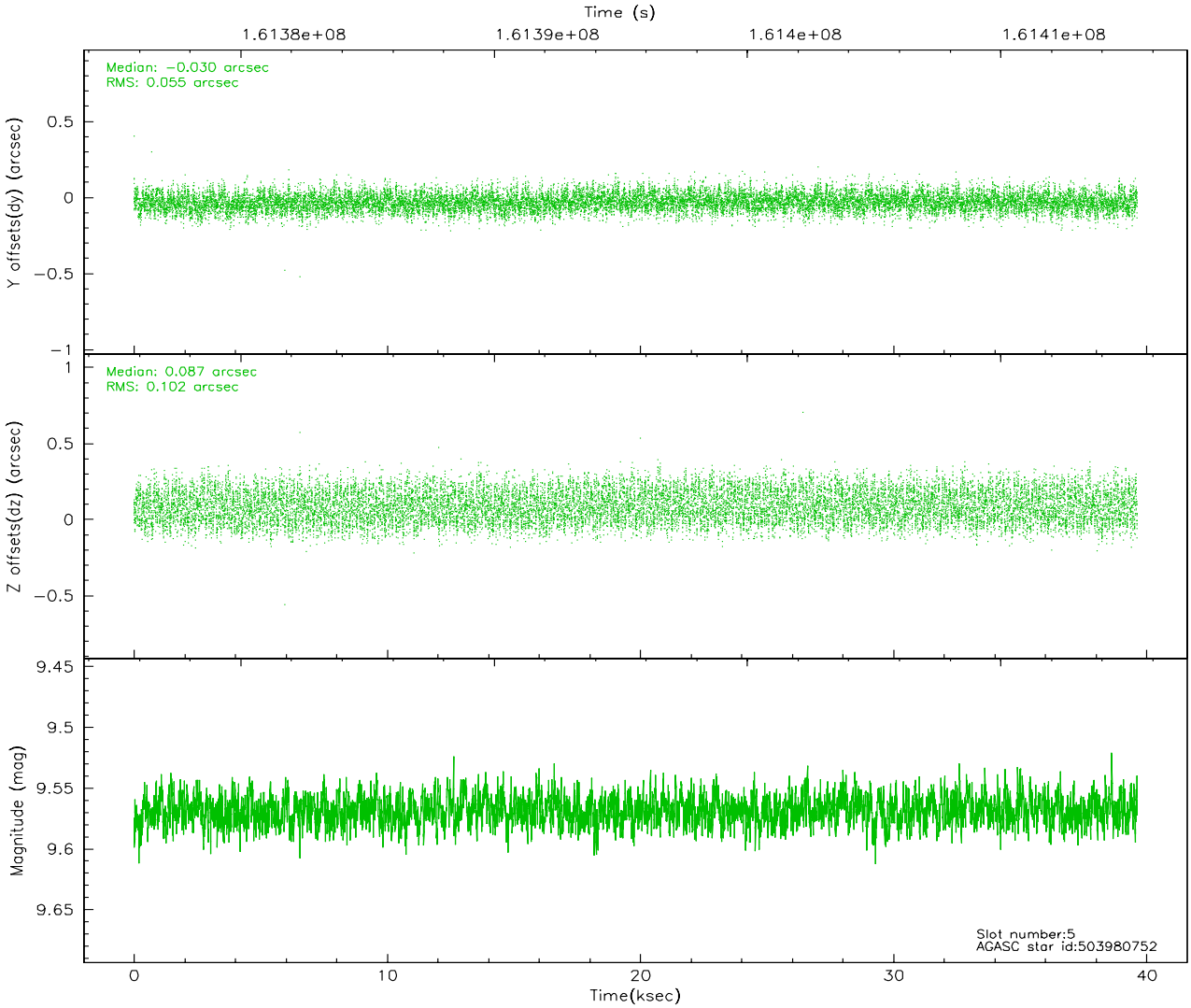

Points outside 0.4 arcsec radius: 0.026%
Radial offset of median: 0.088 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number:4
AGASC star id:503979104


Time (s)
1.6138e+08
1.6139e+08
1.614e+08
1.6141e+08
Median: 0.024 arcsec
RMS: 0.071 arcsec
Y offsets(dy) (arcsec)
Median: −0.085 arcsec
RMS: 0.076 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number:4
AGASC star id:503979104
Time(ksec)

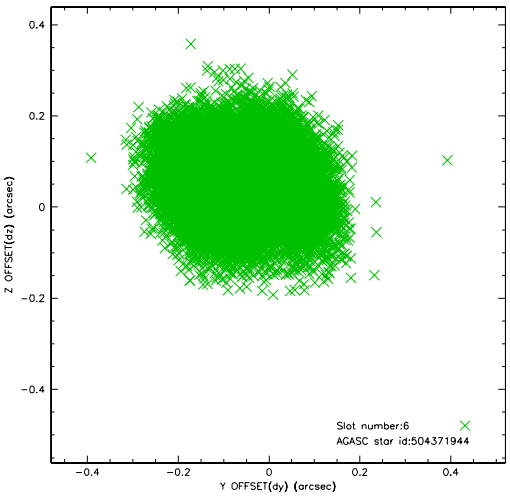
2.4.3 Slot 5

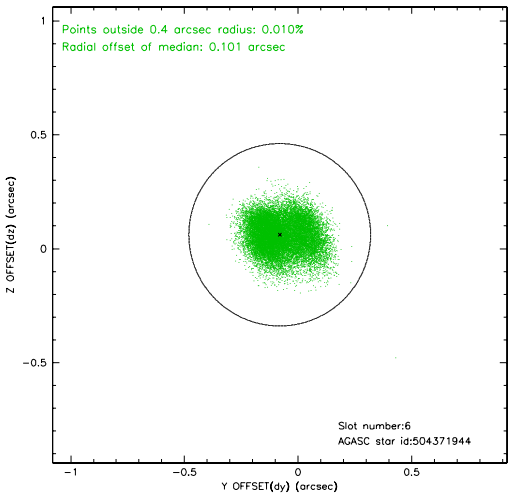

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number:5
AGASC star id:503980752

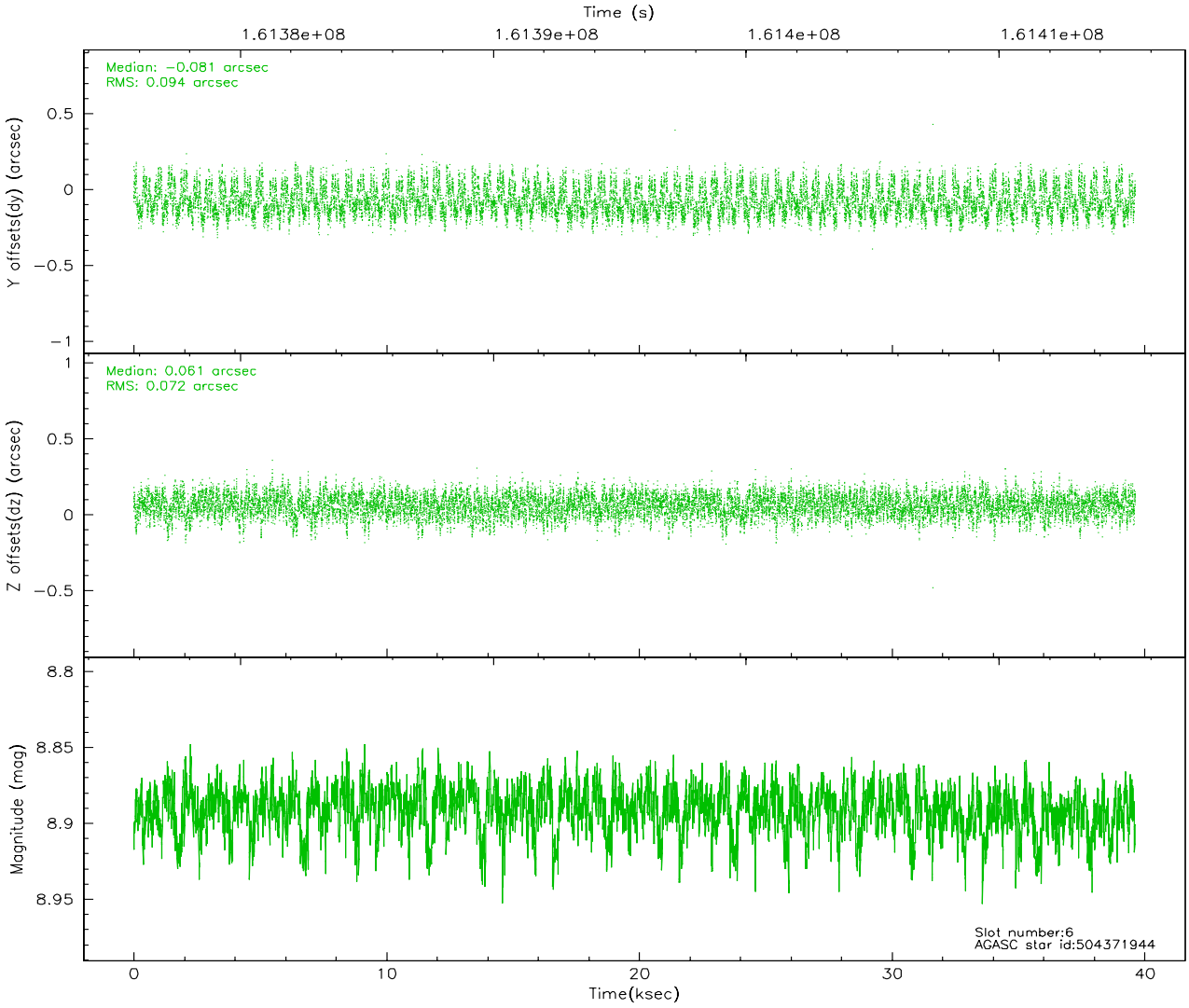

Points outside 0.4 arcsec radius: 0.036%
Radial offset of median: 0.092 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number:5
AGASC star id:503980752


Time (s)
1.6138e+08
1.6139e+08
1.614e+08
1.6141e+08
Median: −0.030 arcsec
RMS: 0.055 arcsec
Y offsets(dy) (arcsec)
Median: 0.087 arcsec
RMS: 0.102 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number:5
AGASC star id:503980752
Time(ksec)

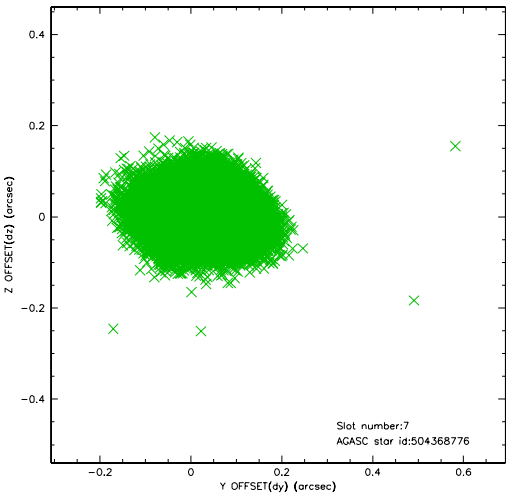
2.4.4 Slot 6

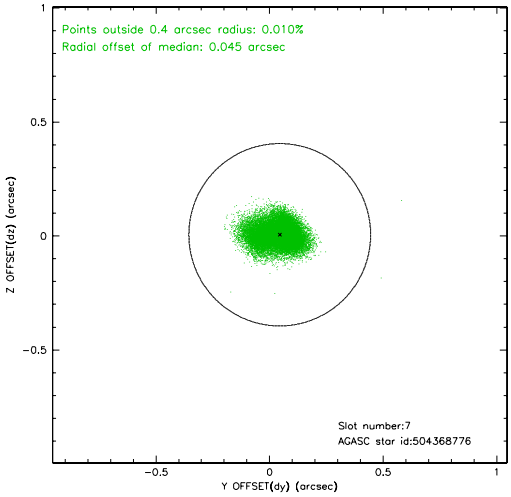

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number:6
AGASC star id:504371944

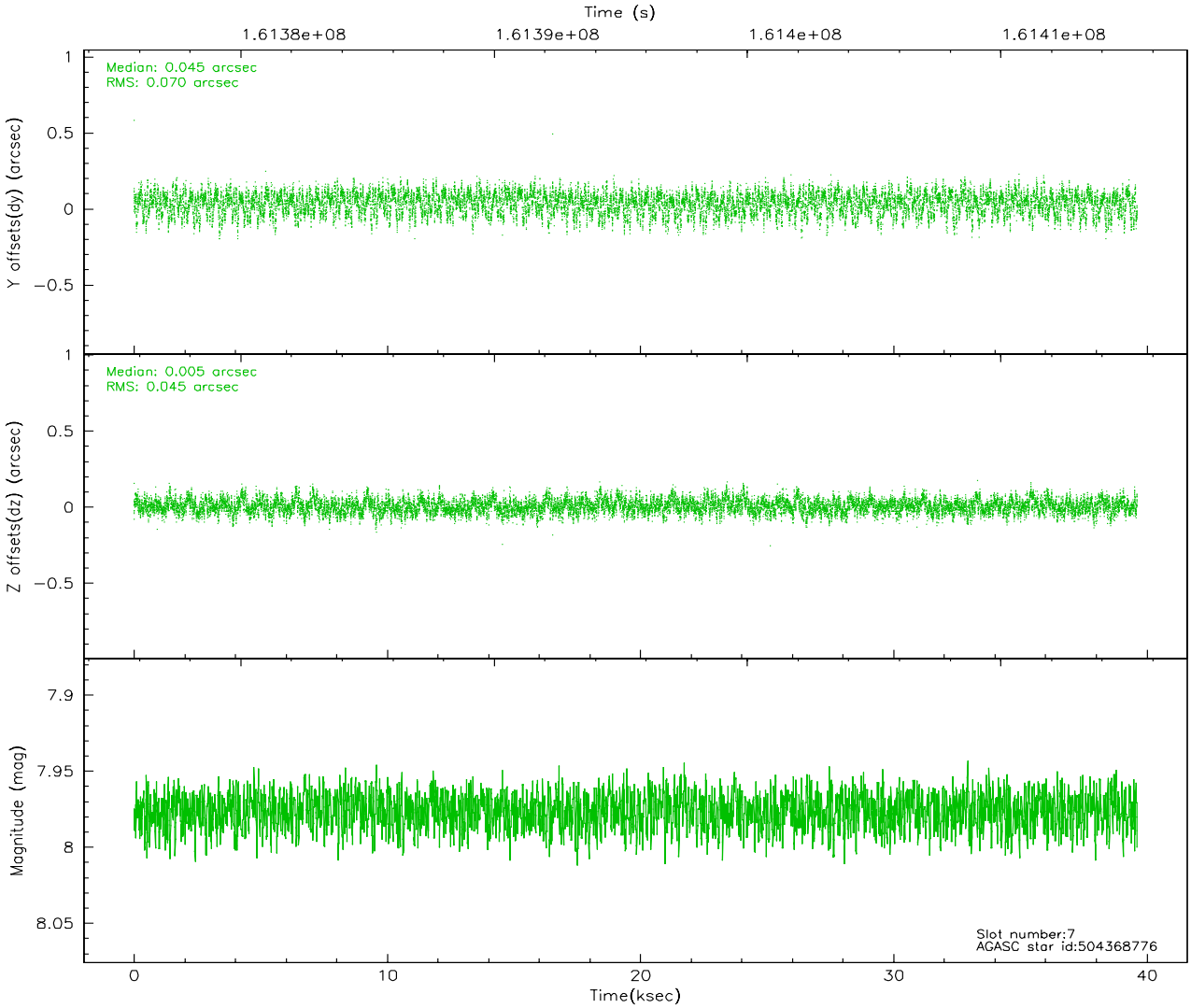

Points outside 0.4 arcsec radius: 0.010%
Radial offset of median: 0.101 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number:6
AGASC star id:504371944


Time (s)
1.6138e+08
1.6139e+08
1.614e+08
1.6141e+08
Median: −0.081 arcsec
RMS: 0.094 arcsec
Y offsets(dy) (arcsec)
Median: 0.061 arcsec
RMS: 0.072 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number:6
AGASC star id:504371944
Time(ksec)

2.4.5 Slot 7

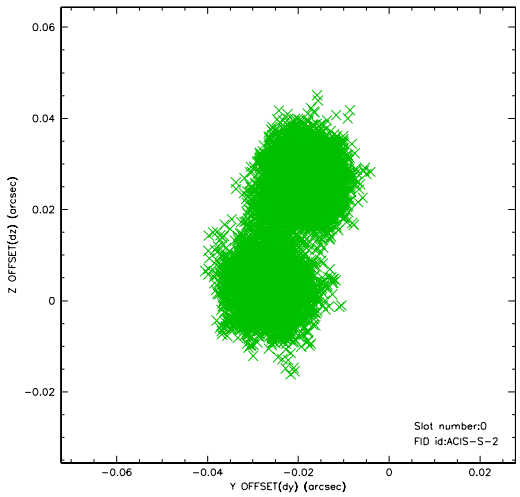

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number:7
AGASC star id:504368776

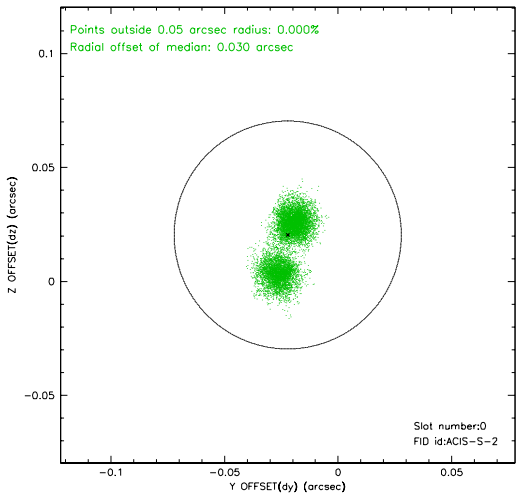

Points outside 0.4 arcsec radius: 0.010%
Radial offset of median: 0.045 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number:7
AGASC star id:504368776

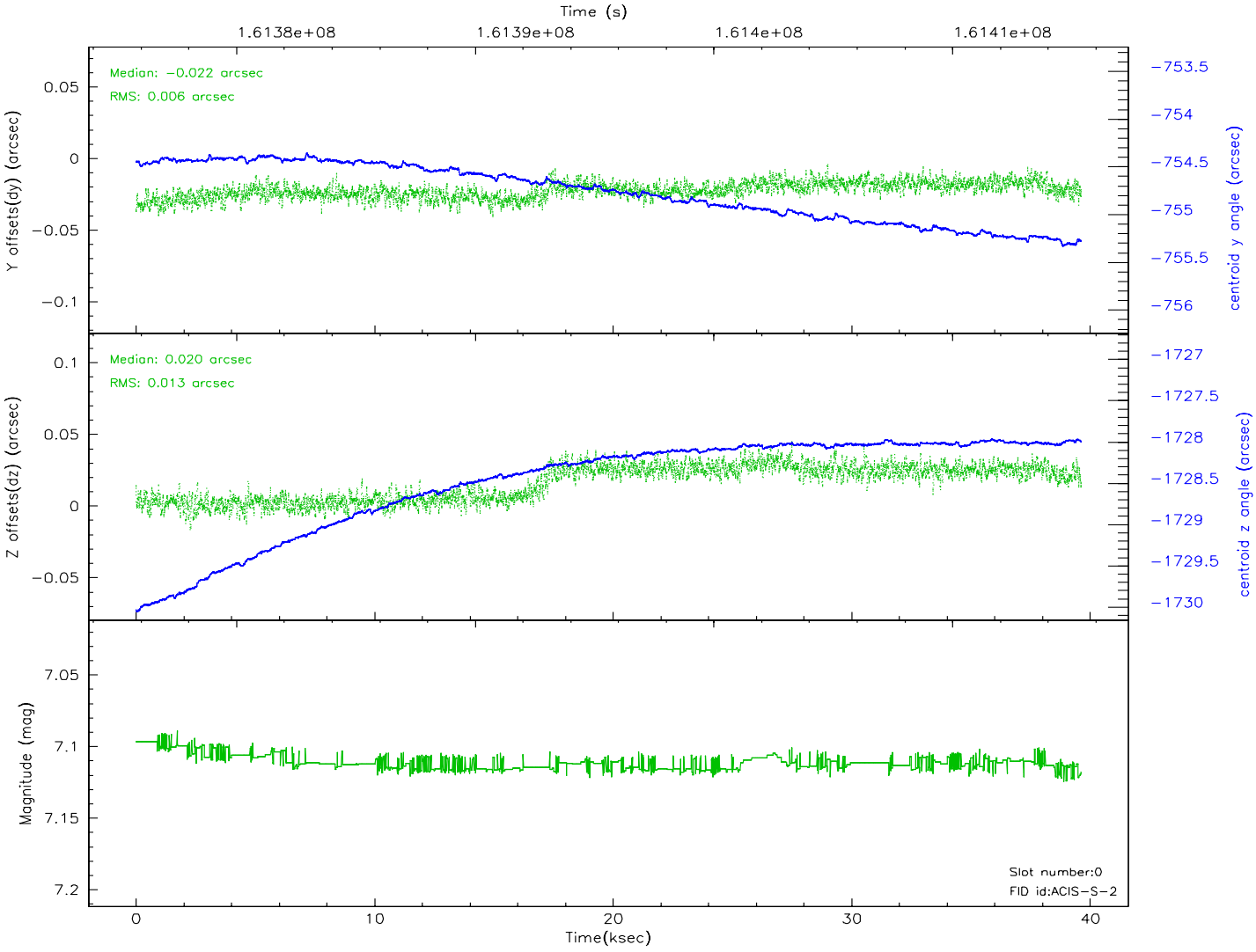

Time (s)
1.6138e+08
1.6139e+08
1.614e+08
1.6141e+08
Median: 0.045 arcsec
RMS: 0.070 arcsec
Y offsets(dy) (arcsec)
Median: 0.005 arcsec
RMS: 0.045 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number:7
AGASC star id:504368776
Time(ksec)

2.5 FID Slots

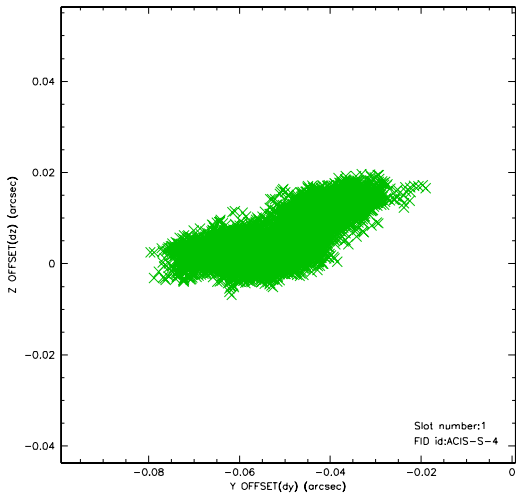
2.5.1 Slot 0

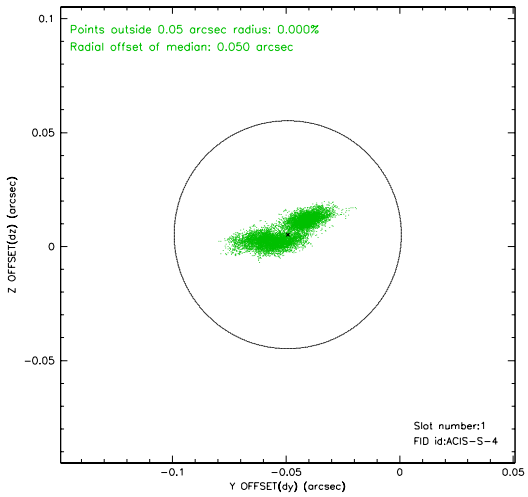


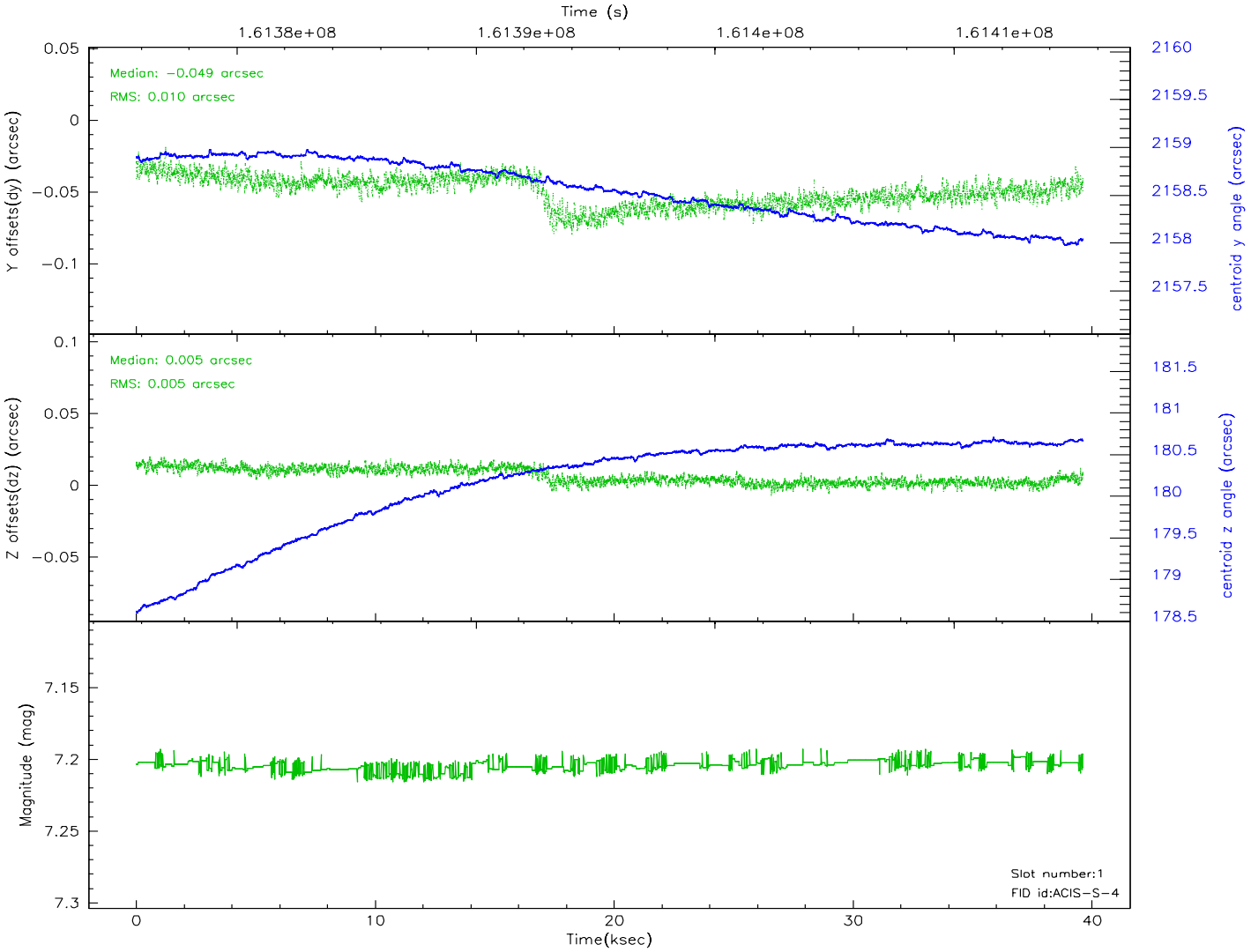




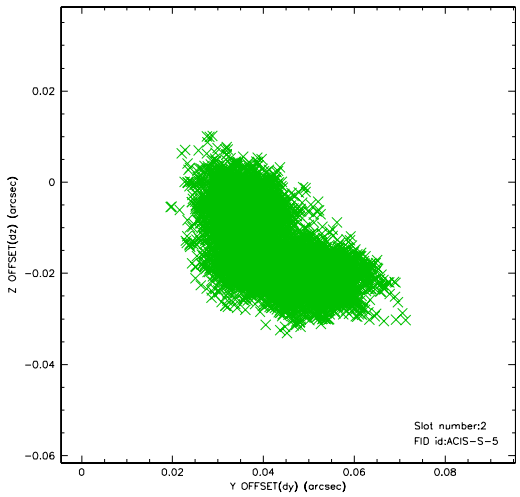
2.5.2 Slot 1

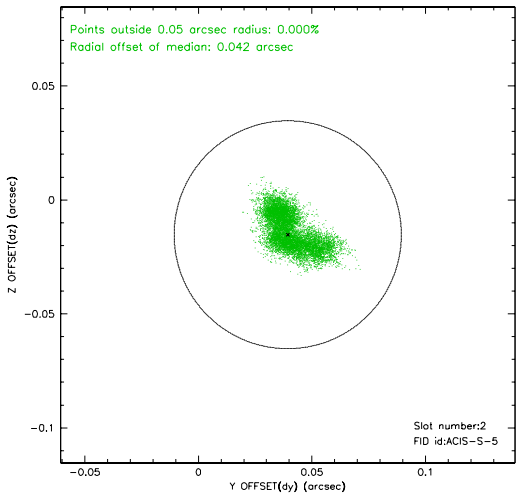

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number:1
FID id:ACIS-S-4

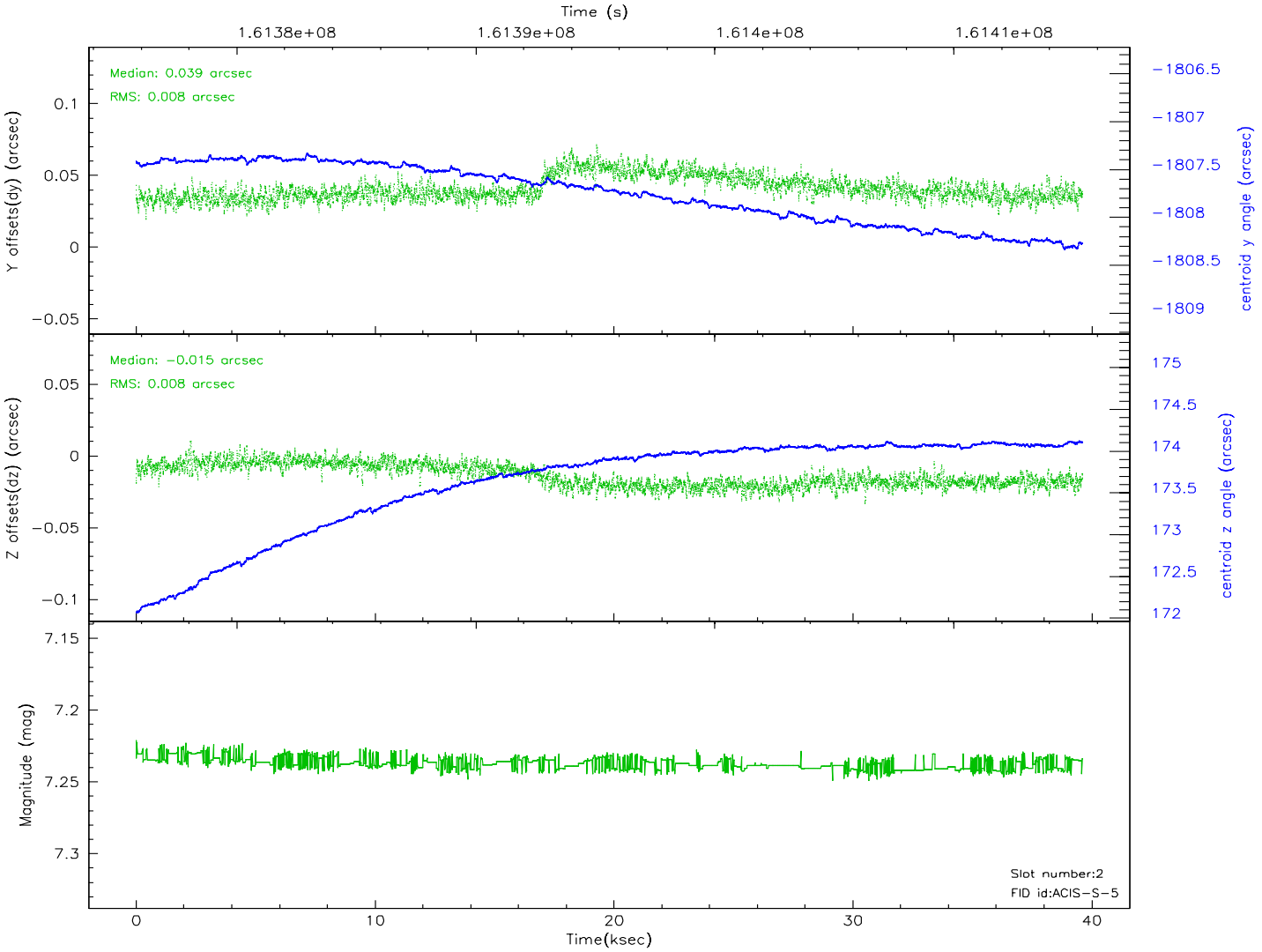

Points outside 0.05 arcsec radius: 0.000%
Radial offset of median: 0.050 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number:1
FID id:ACIS-S-4


Time (s)
1.6138e+08
1.6139e+08
1.614e+08
1.6141e+08
Median: −0.049 arcsec
RMS: 0.010 arcsec
Y offsets(dy) (arcsec)
centroid y angle (arcsec)
Median: 0.005 arcsec
RMS: 0.005 arcsec
Z offsets(dz) (arcsec)
centroid z angle (arcsec)
Magnitude (mag)
Slot number:1
FID id:ACIS-S-4
Time(ksec)

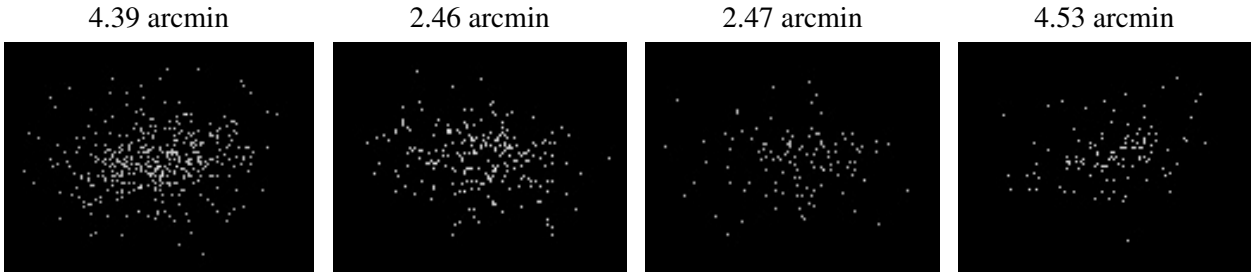
2.5.3 Slot 2


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


Time (s)
1.6138e+08
1.6139e+08
1.614e+08
1.6141e+08
Median: 0.039 arcsec
RMS: 0.008 arcsec
Y offsets(dy) (arcsec)
centroid y angle (arcsec)
Median: −0.015 arcsec
RMS: 0.008 arcsec
Z offsets(dz) (arcsec)
centroid z angle (arcsec)
Magnitude (mag)
Slot number:2
FID id:ACIS-S-5
Time(ksec)

3 Point Sources



A Summary

A.1 Status

V&V Scientist	Beth Sundheim
V&V Date (YYYY-MM-DD)	2006.07.21
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	39.624

A.2 Comments