V&V Reference Report
L2 ASCDS Version : 7.6.10

Observation 1776 - L2 Version 4
Chandra X-Ray Center

L2 Processing Date : Nov 18 2008

Contents

1 Front **2**

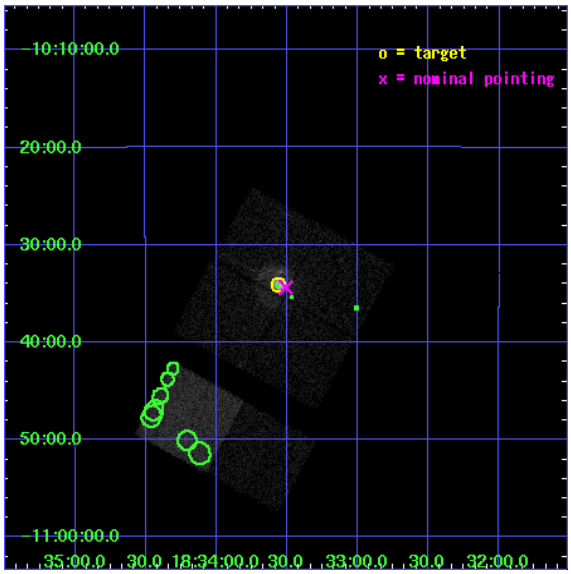
2 OBI **3**
2.1 OBI . . . 3
2.1.1 Images . . . 3
2.1.2 Bias . . . 3
2.1.3 Parameters . . . 4
2.1.4 Events . . . 4
2.2 Compared Parameters . . . 5
2.3 Aspect . . . 6
2.4 Star Slots . . . 9
2.4.1 Slot 3 . . . 9
2.4.2 Slot 4 . . . 10
2.4.3 Slot 5 . . . 11
2.4.4 Slot 6 . . . 12
2.4.5 Slot 7 . . . 13
2.5 FID Slots . . . 14
2.5.1 Slot 0 . . . 14
2.5.2 Slot 1 . . . 15
2.5.3 Slot 2 . . . 16

3 Point Sources **17**

A Summary **18**
A.1 Status . . . 18
A.2 Comments . . . 18

1 Front

seq_num	590202
obs_id	1776
title	HRC RESPONSE TO CONTINUUM SOURCE.
observer	Dr. CXC Calibration
object	G21.5-0.9 [Chip I1, T=110, Offsets=-0,0,-1]
dtycycle	0
cycle	P
ra_targ	278.389583
dec_targ	-10.568528
ra_nom	278.37708540157
dec_nom	-10.572999239343
roll_nom	208.57965731678
revision	4
ontime	7318.4000068158
livetime	7225.7300193181
ontime0	7318.4000068158
ontime1	7318.4000068158
ontime2	7318.4000068158
ontime3	7318.4000068158
ontime6	7315.1590066552
ontime7	7318.4000068158
l2events	66948

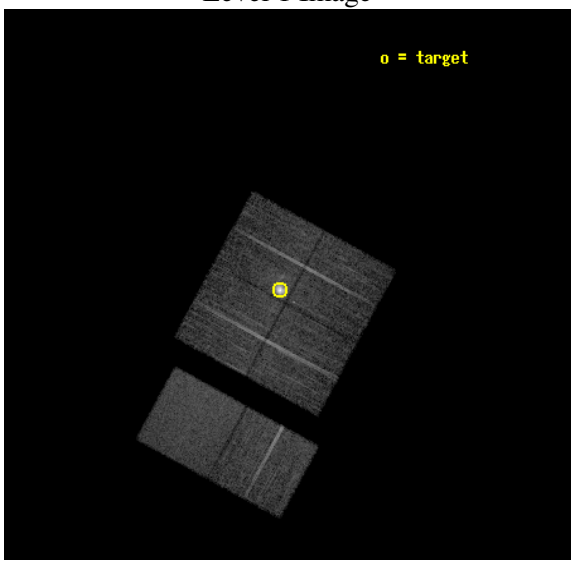


2 OBI

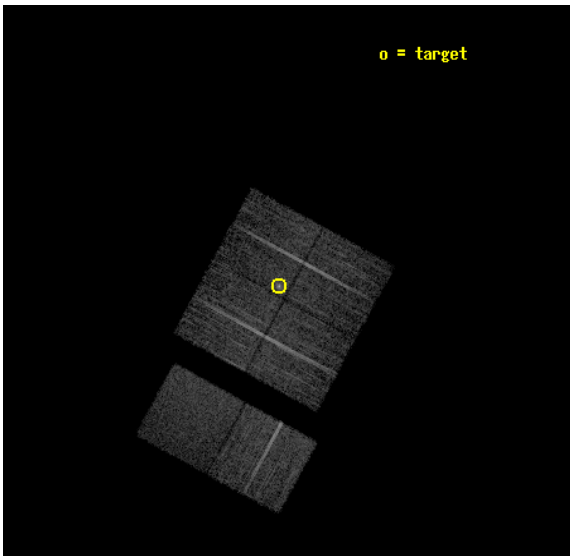
2.1 OBI

2.1.1 Images

Level 1 Image

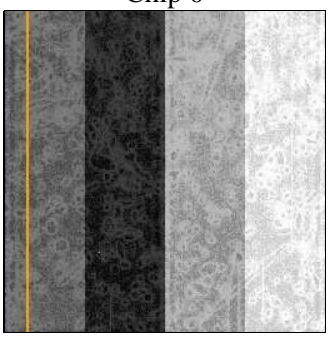


Level 1 Bad Events

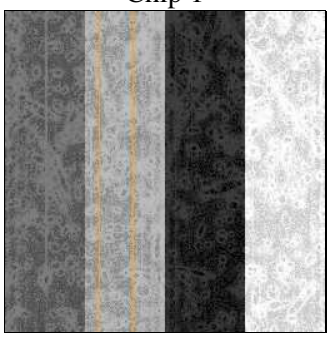


2.1.2 Bias

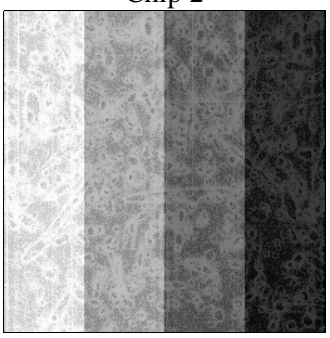
Chip 0



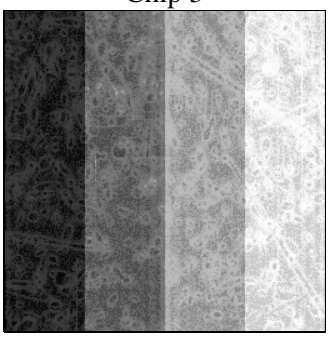
Chip 1



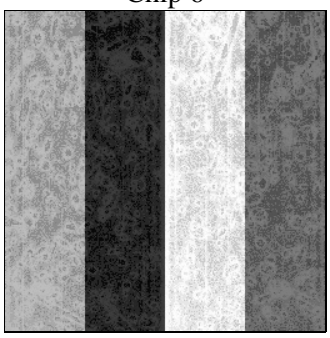
Chip 2



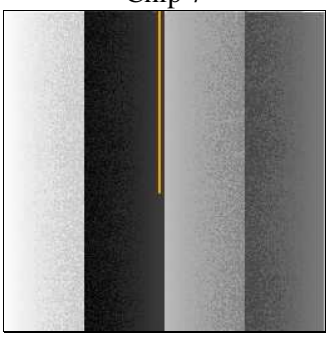
Chip 3



Chip 6



Chip 7



2.1.3 Parameters

obi_num	0
ascdsver	7.6.11.9
caldbver	3.5.0
date	2008-11-18T23:12:29
revision	4

sched_exp_time	7560.000000
ontime	7318.4000068158
ontime0	7318.4000068158
ontime1	7318.4000068158
ontime2	7318.4000068158
ontime3	7318.4000068158
ontime6	7315.1590066552
ontime7	7318.4000068158
l1events	329465

2.1.4 Events

	ccd 0	ccd 1	ccd 2	ccd 3	ccd 6	ccd 7
level 1 events	46187	67439	51721	53459	54029	56630
rejected events	40086	41444	46586	47309	48760	35322
rejected %	86%	61%	90%	88%	90%	62%

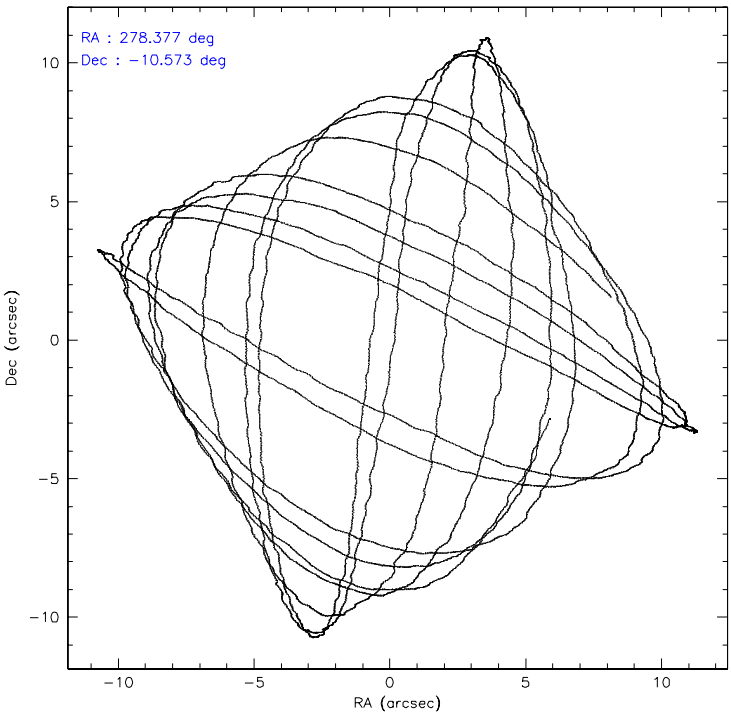
	ccd 0	ccd 1	ccd 2	ccd 3	ccd 6	ccd 7
grade 0 events	1715	7149	1198	1584	989	1230
	3%	10%	2%	2%	1%	2%
grade 1 events	10	47	6	9	7	26
	0%	0%	0%	0%	0%	0%
grade 2 events	2303	14219	2076	2580	2177	4651
	4%	21%	4%	4%	4%	8%
grade 3 events	411	705	326	322	320	1252
	0%	1%	0%	0%	0%	2%
grade 4 events	376	696	314	315	306	1163
	0%	1%	0%	0%	0%	2%
grade 5 events	915	1364	994	1045	1220	3366
	1%	2%	1%	1%	2%	5%
grade 6 events	1302	3256	1223	1359	1480	13032
	2%	4%	2%	2%	2%	23%
grade 7 events	39155	40003	45584	46245	47530	31910
	84%	59%	88%	86%	87%	56%

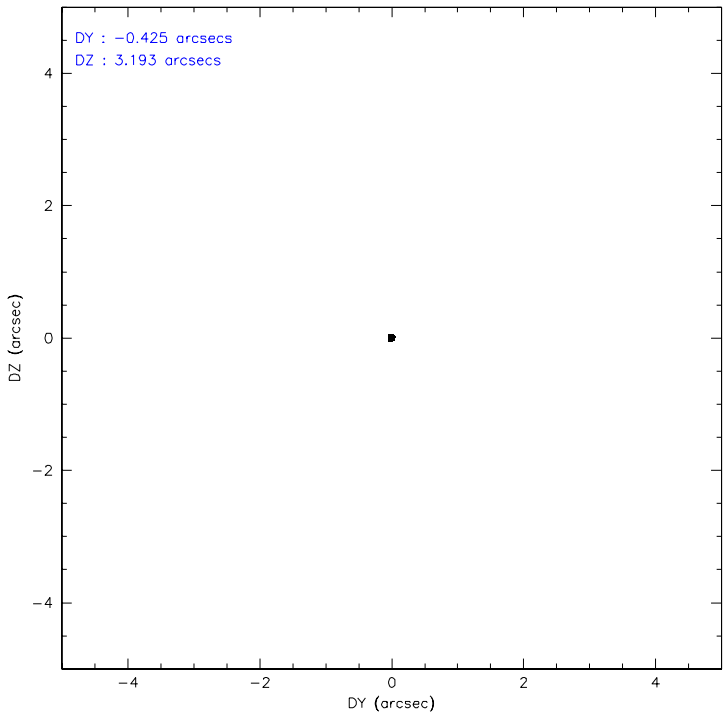
2.2 Compared Parameters

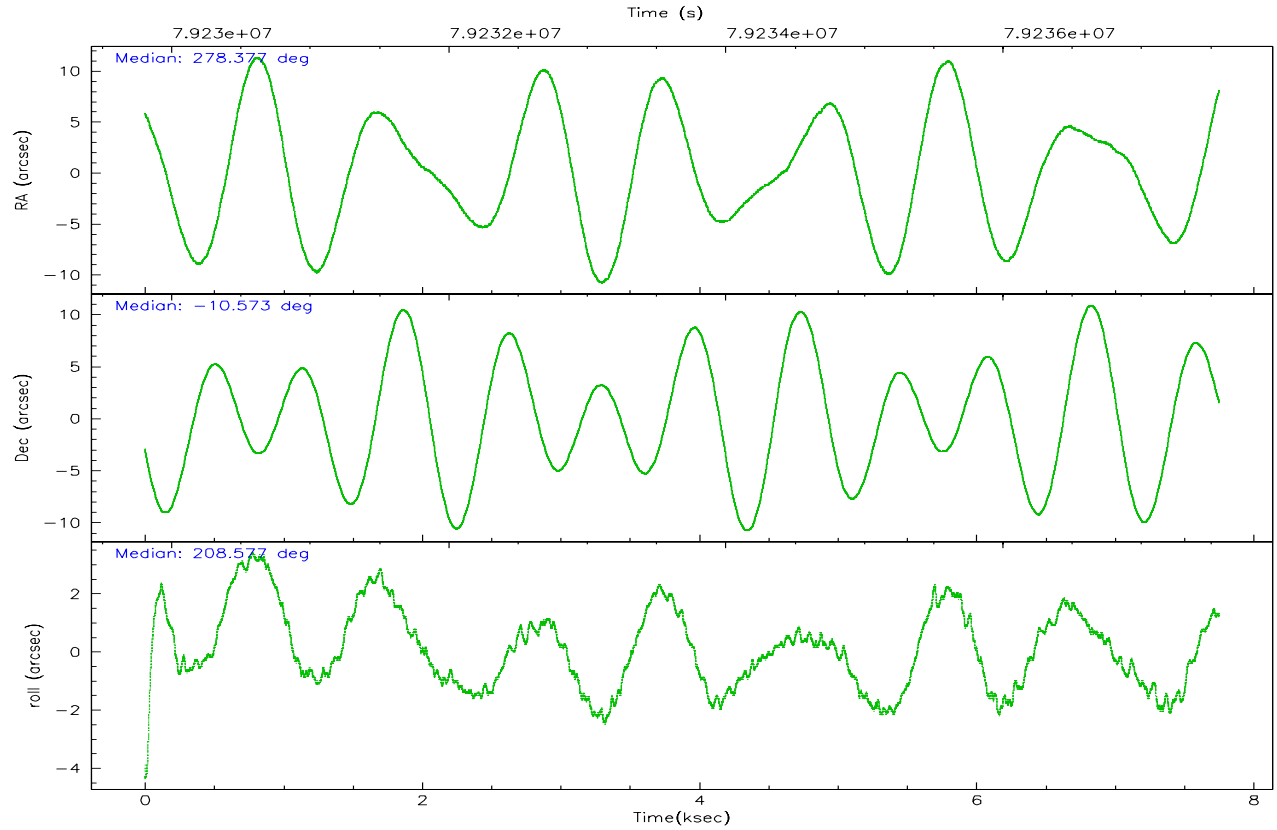
Parameter	Planned	Actual
Instrument	ACIS	ACIS
Detector	ACIS-012367	ACIS-012367
Grating	NONE	NONE
Data mode	FAINT	FAINT
Observation mode	POINTING	POINTING
Pointing RA	278.391853	278.3770854015665
Pointing Dec	-10.549515	-10.57299923934337
Pointing Roll	208.373667	208.5796573167816
SIM focus pos (mm)	-0.782348	-0.7809083437167272
SIM defocus (mm)	0	0.001439871863259334
SIM translation stage pos (mm)	-238.277263	-238.2741181829365
SIM translation stage offset (mm)	4.6848	4.681665180006831
Observation start time	79229996.184000	79229619.880706
Observation start date	2000-07-06T00:18:52	2000-07-06T00:13:39
Observation end time	79237556.184000	79237693.293503
Observation end date	2000-07-06T02:24:52	2000-07-06T02:28:13
Read mode	TIMED	TIMED

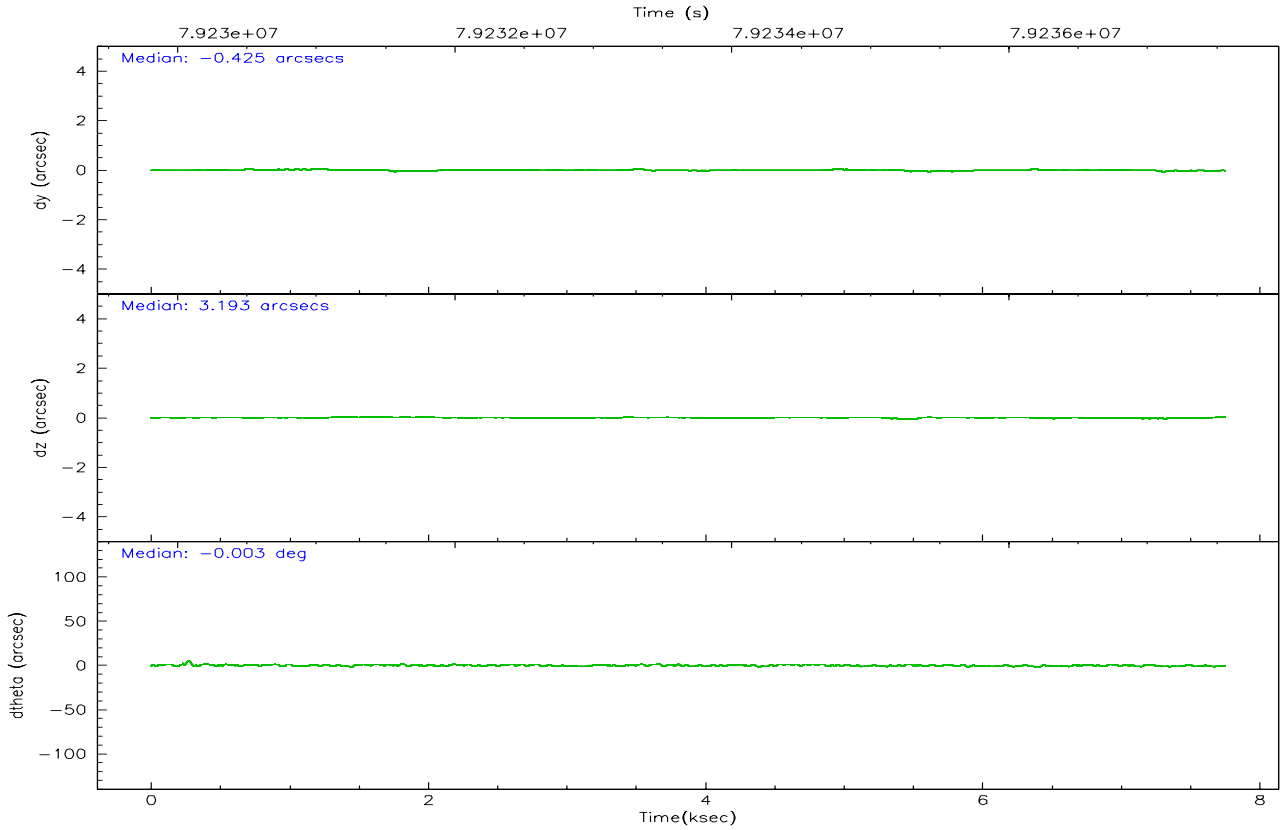
Parameter	Planned	Actual
Obspar format version number	6	6
Obspar file type	PREDICTED	ACTUAL
Obspar update status	NONE	UPDATED
Number of optional ACIS chips dropped	0	0
On-chip summing requested	N	N
Subarray requested	NONE	NONE
Alternating exposures requested	N	N
Primary exposure time	0.000000	3.2

2.3 Aspect


RA : 278.377 deg
Dec : −10.573 deg
Dec (arcsec)
RA (arcsec)
10
5
0
−5
−10


DY : −0.425 arcsecs
DZ : 3.193 arcsecs
DZ (arcsec)
DY (arcsec)
4
2
0
−2
−4


Time (s)
7.923e+07
7.9232e+07
7.9234e+07
7.9236e+07
Median: 278.377 deg
RA (arcsec)
Median: −10.573 deg
Dec (arcsec)
Median: 208.577 deg
roll (arcsec)
Time(ksec)

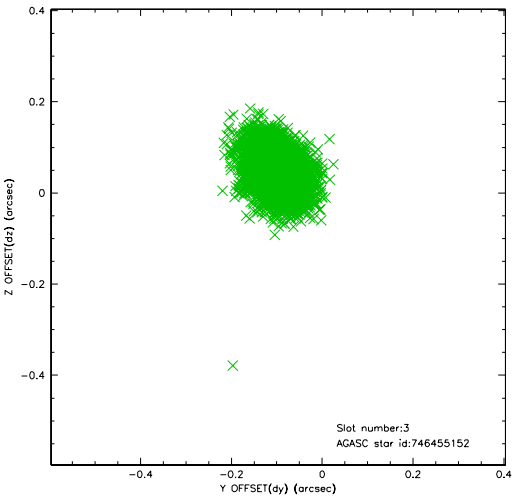

Time (s)
7.923e+07
7.9232e+07
7.9234e+07
7.9236e+07
Median: −0.425 arcsecs
dy (arcsec)
Median: 3.193 arcsecs
dz (arcsec)
Median: −0.003 deg
dtheta (arcsec)
Time(ksec)

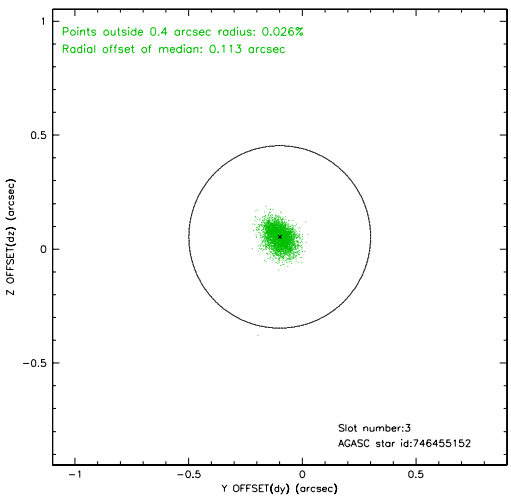
Slot Statistics

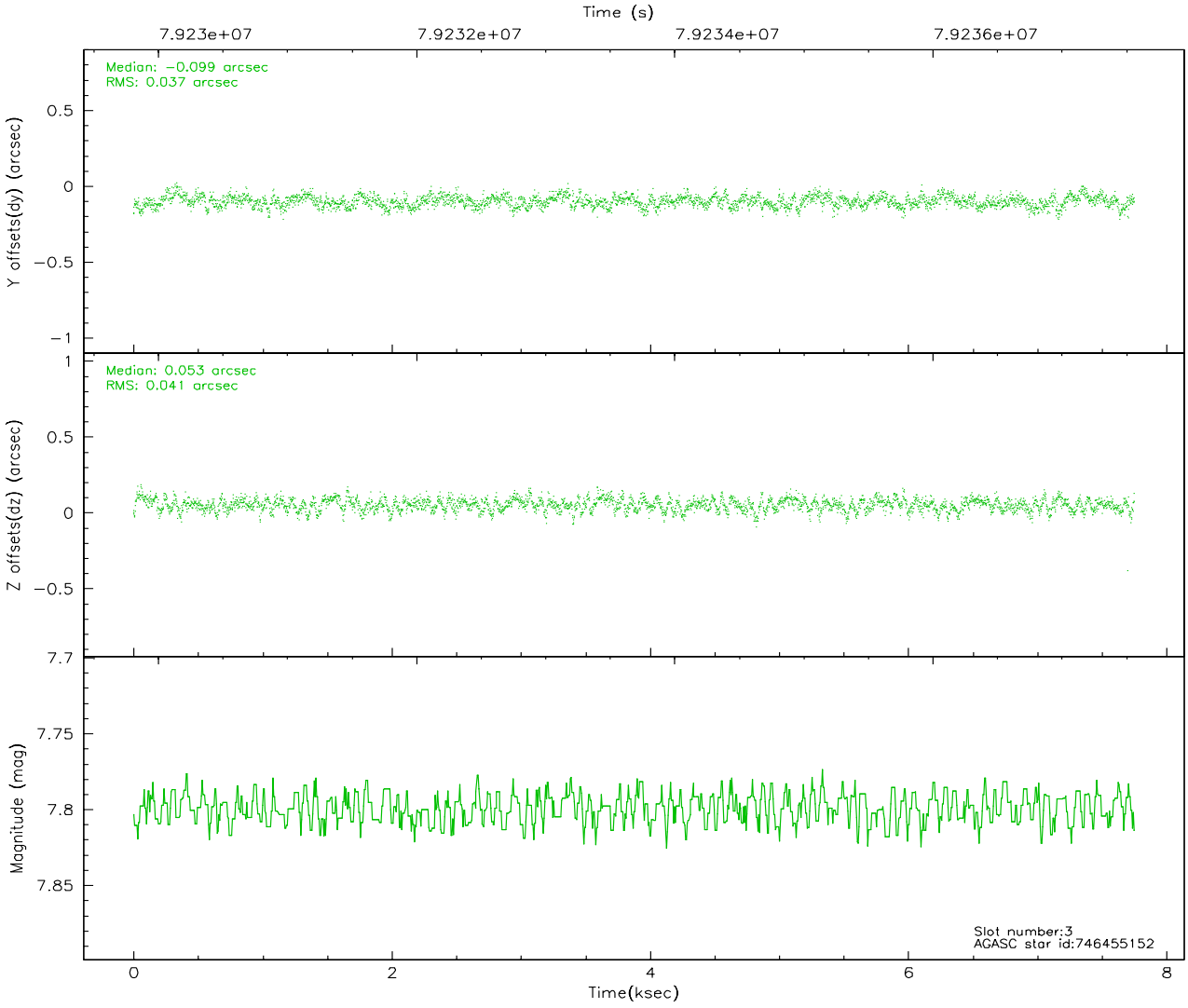
slot	status	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID	ACIS-I-2	7.16	1890	-0.051	-0.048	0.009	0.015	0.000000	0.000000	-753.56	-737.26
1	FID	ACIS-I-4	7.20	1889	-0.052	0.048	0.005	0.009	0.000000	0.000000	2160.16	1168.77
2	FID	ACIS-I-5	7.23	1891	0.003	0.068	0.009	0.014	0.000000	0.000000	-1806.67	1168.00
3	GUIDE	746455152	7.80	3781	-0.099	0.053	0.057	0.095	278.447893	-9.976732	-1154.75	-1719.06
4	GUIDE	746462456	8.38	3782	-0.055	-0.062	0.065	0.104	278.652171	-10.530173	-843.94	377.26
5	GUIDE	746455112	8.93	3780	0.230	-0.128	0.068	0.114	278.266531	-10.703234	653.05	277.16
6	GUIDE	746460328	9.81	3781	-0.001	0.032	0.090	0.148	278.603974	-9.898096	-1775.98	-1704.83
7	GUIDE	746995400	9.49	3777	-0.074	0.105	0.090	0.151	278.078957	-11.289885	2238.27	1821.36

2.4 Star Slots

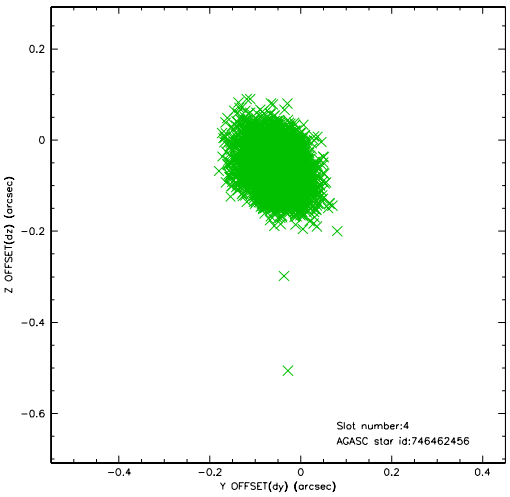
2.4.1 Slot 3

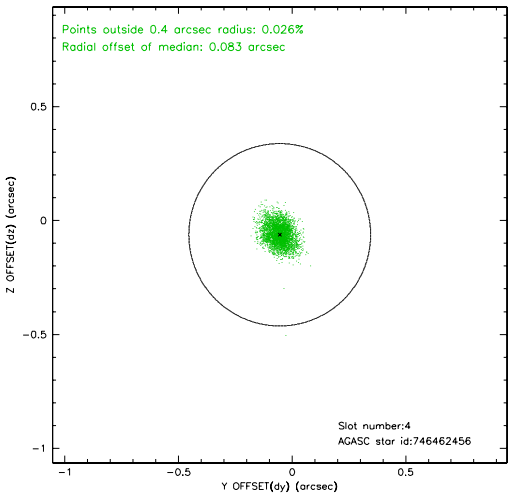


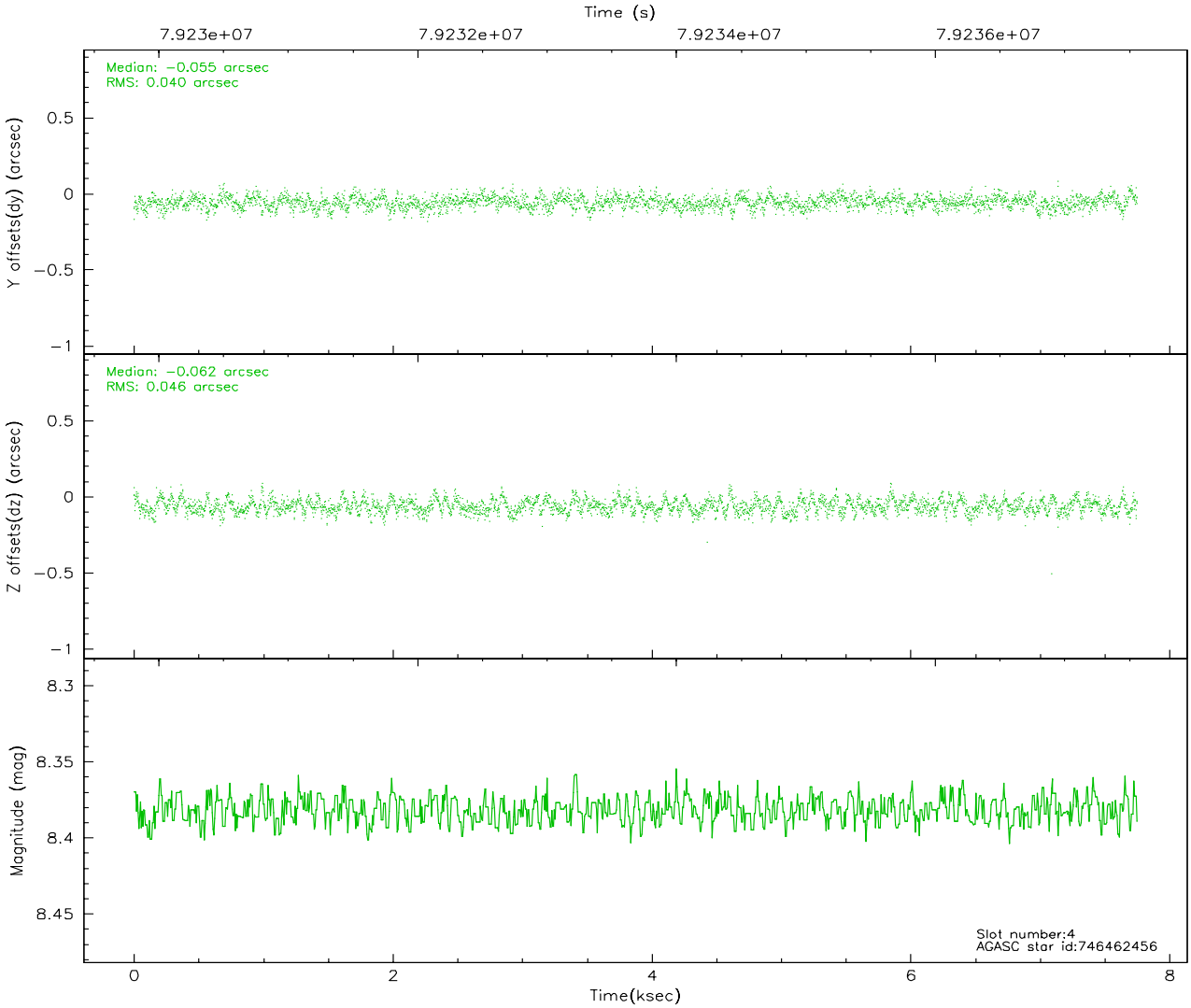




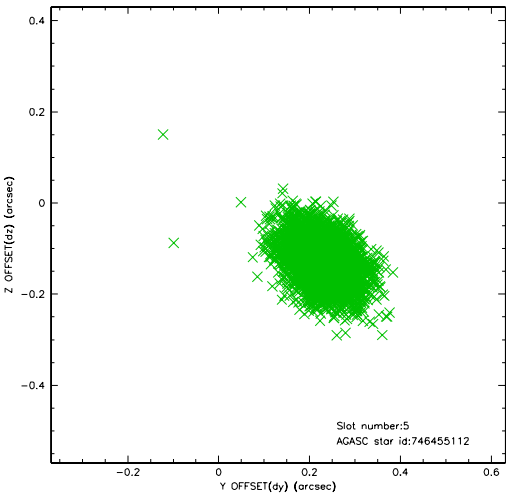
2.4.2 Slot 4

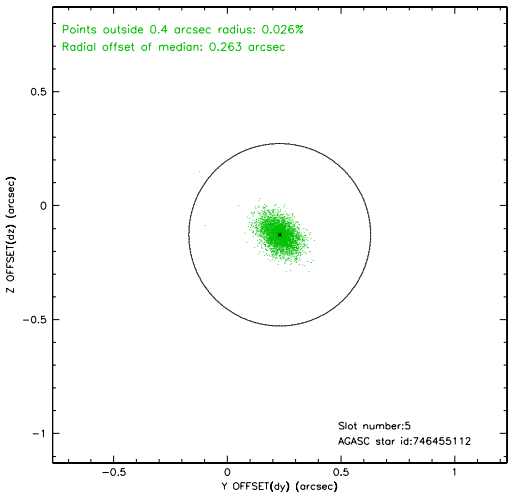

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number:4
AGASC star id:746462456

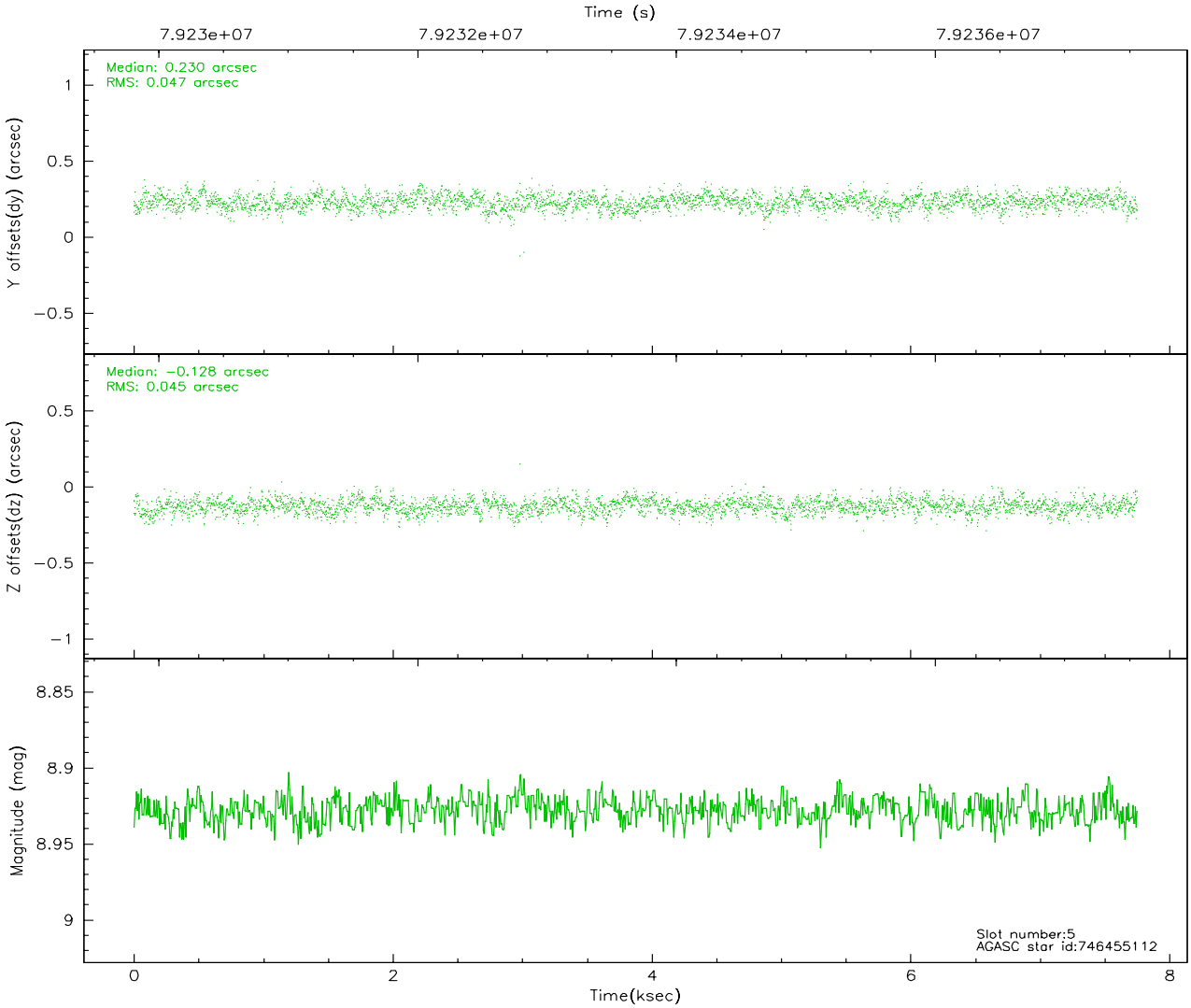

Points outside 0.4 arcsec radius: 0.026%
Radial offset of median: 0.083 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number:4
AGASC star id:746462456


Time (s)
7.923e+07
7.9232e+07
7.9234e+07
7.9236e+07
Median: −0.055 arcsec
RMS: 0.040 arcsec
Y offsets(dy) (arcsec)
Median: −0.062 arcsec
RMS: 0.046 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number:4
AGASC star id:746462456
Time(ksec)

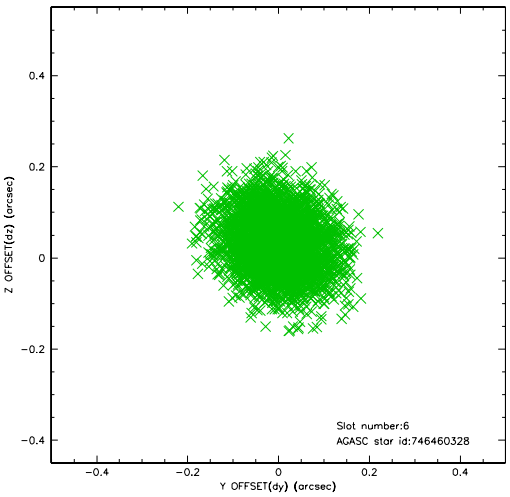
2.4.3 Slot 5

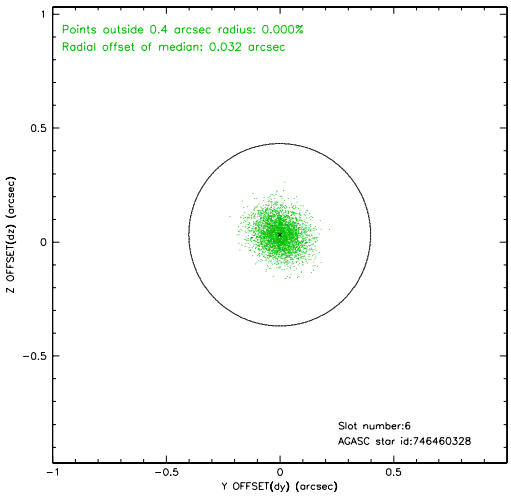

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number:5
AGASC star id:746455112

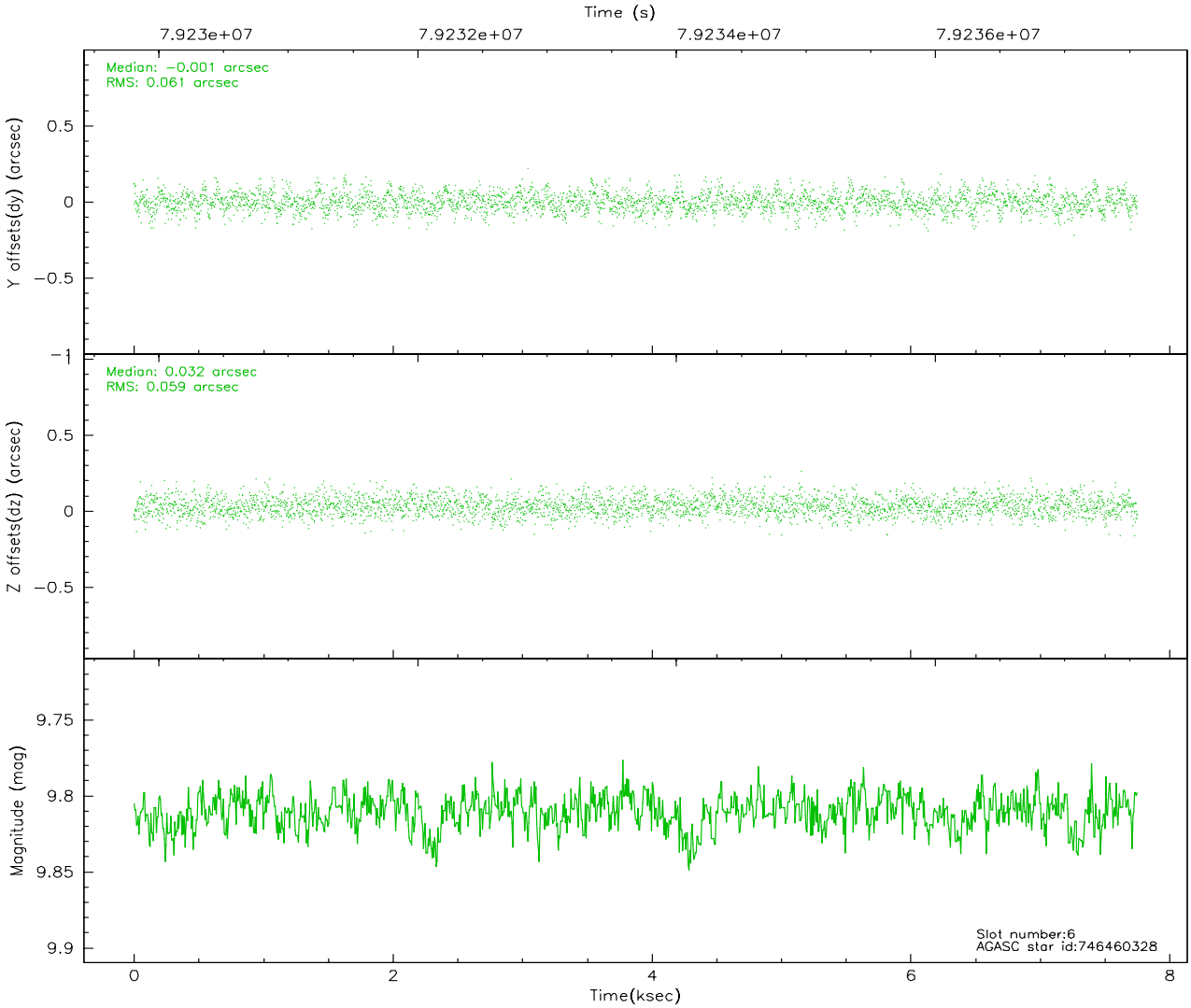

Points outside 0.4 arcsec radius: 0.026%
Radial offset of median: 0.263 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number:5
AGASC star id:746455112


Time (s)
7.923e+07
7.9232e+07
7.9234e+07
7.9236e+07
Median: 0.230 arcsec
RMS: 0.047 arcsec
Y offsets(dy) (arcsec)
Median: −0.128 arcsec
RMS: 0.045 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number:5
AGASC star id:746455112
Time(ksec)

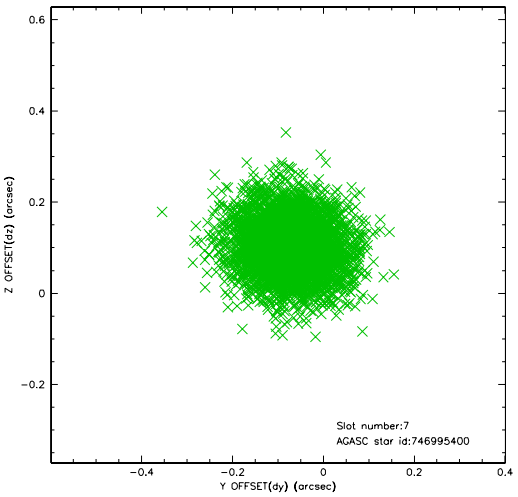
2.4.4 Slot 6

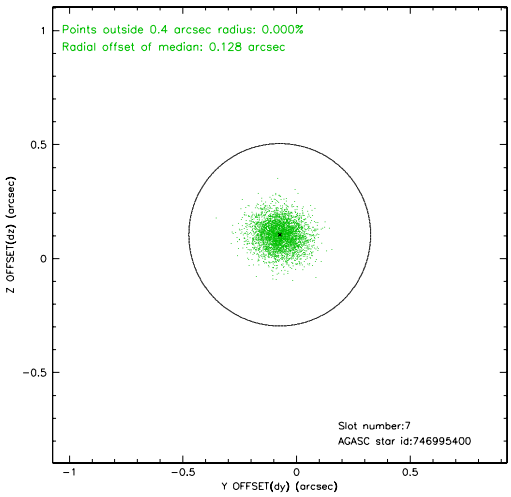

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number:6
AGASC star id:746460328

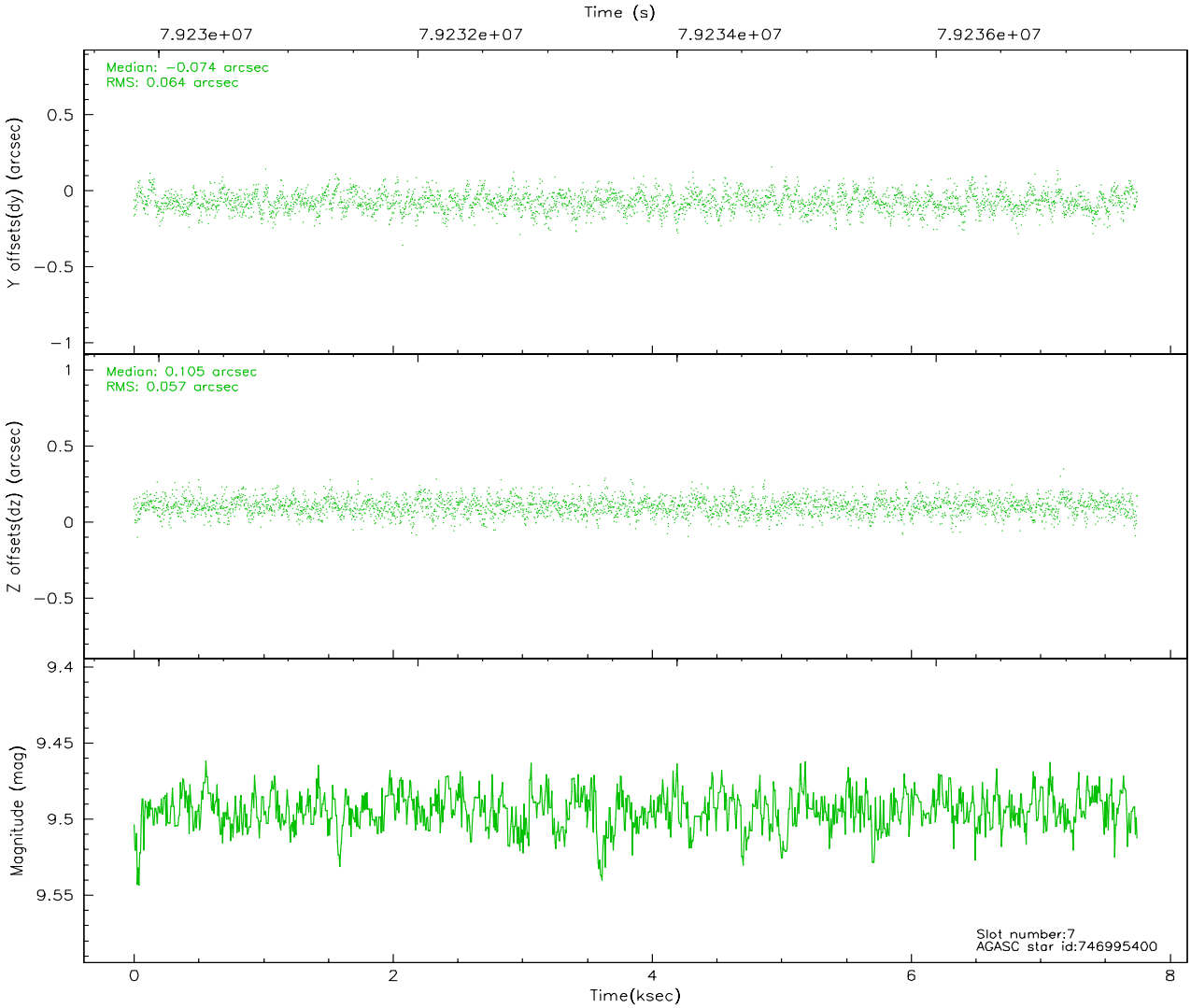

Points outside 0.4 arcsec radius: 0.000%
Radial offset of median: 0.032 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number:6
AGASC star id:746460328


Time (s)
7.923e+07
7.9232e+07
7.9234e+07
7.9236e+07
Median: −0.001 arcsec
RMS: 0.061 arcsec
Y offsets(dy) (arcsec)
Median: 0.032 arcsec
RMS: 0.059 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number:6
AGASC star id:746460328
Time(ksec)

2.4.5 Slot 7

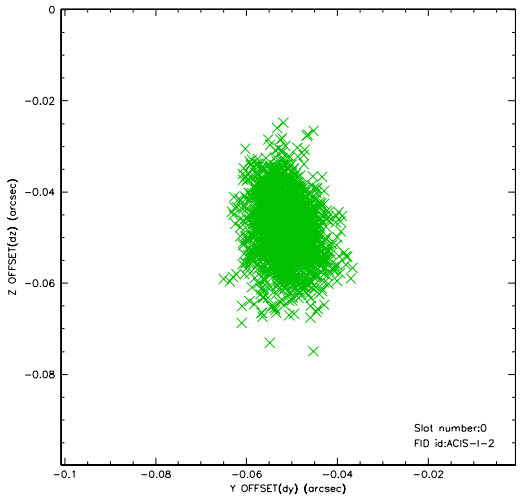

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number:7
AGASC star id:746995400

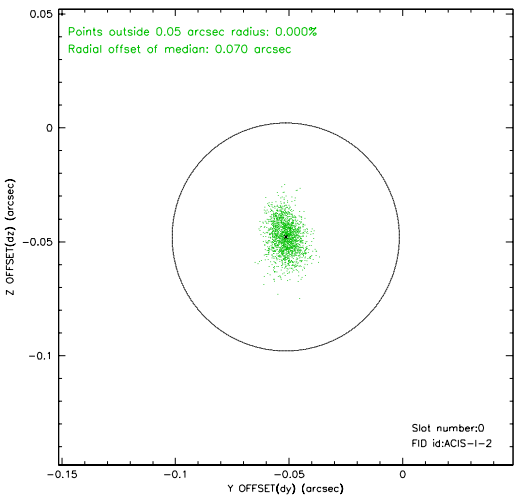

Points outside 0.4 arcsec radius: 0.000%
Radial offset of median: 0.128 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number:7
AGASC star id:746995400

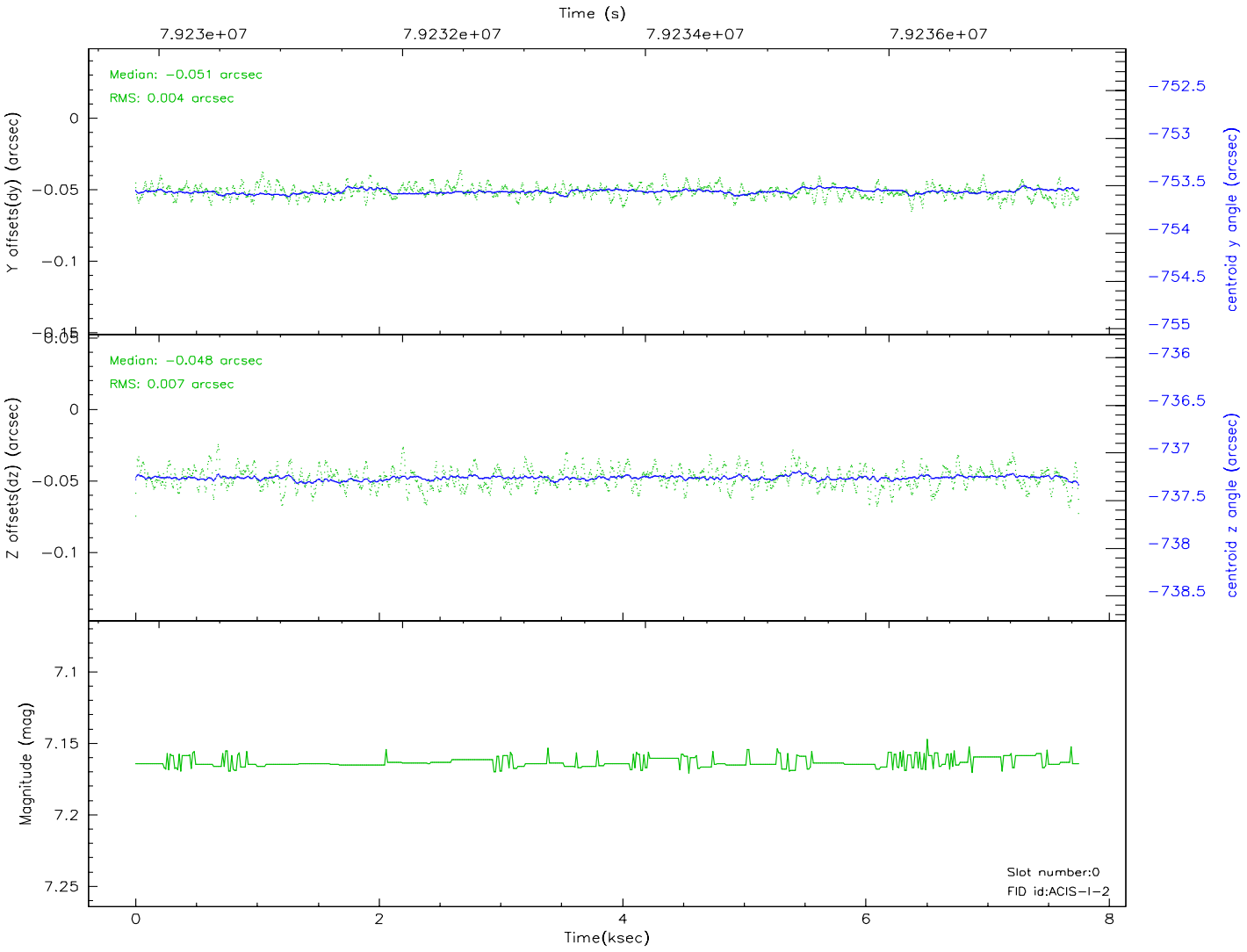

Time (s)
7.923e+07
7.9232e+07
7.9234e+07
7.9236e+07
Median: −0.074 arcsec
RMS: 0.064 arcsec
Y offsets(dy) (arcsec)
Median: 0.105 arcsec
RMS: 0.057 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number:7
AGASC star id:746995400
Time(ksec)

2.5 FID Slots

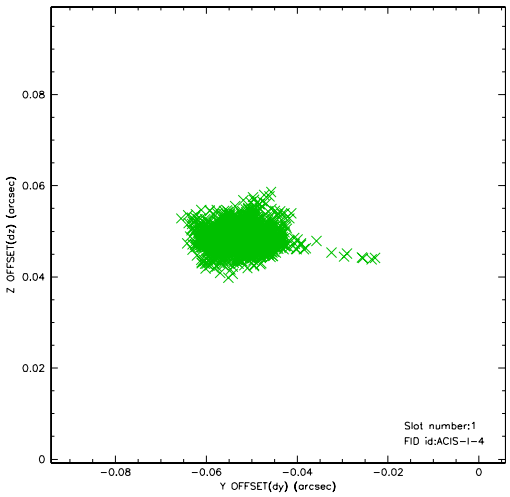
2.5.1 Slot 0

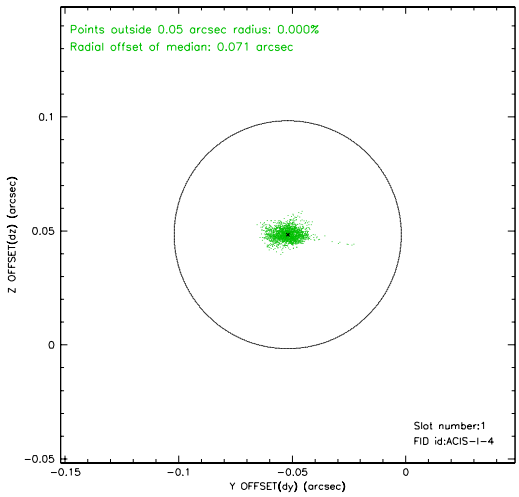


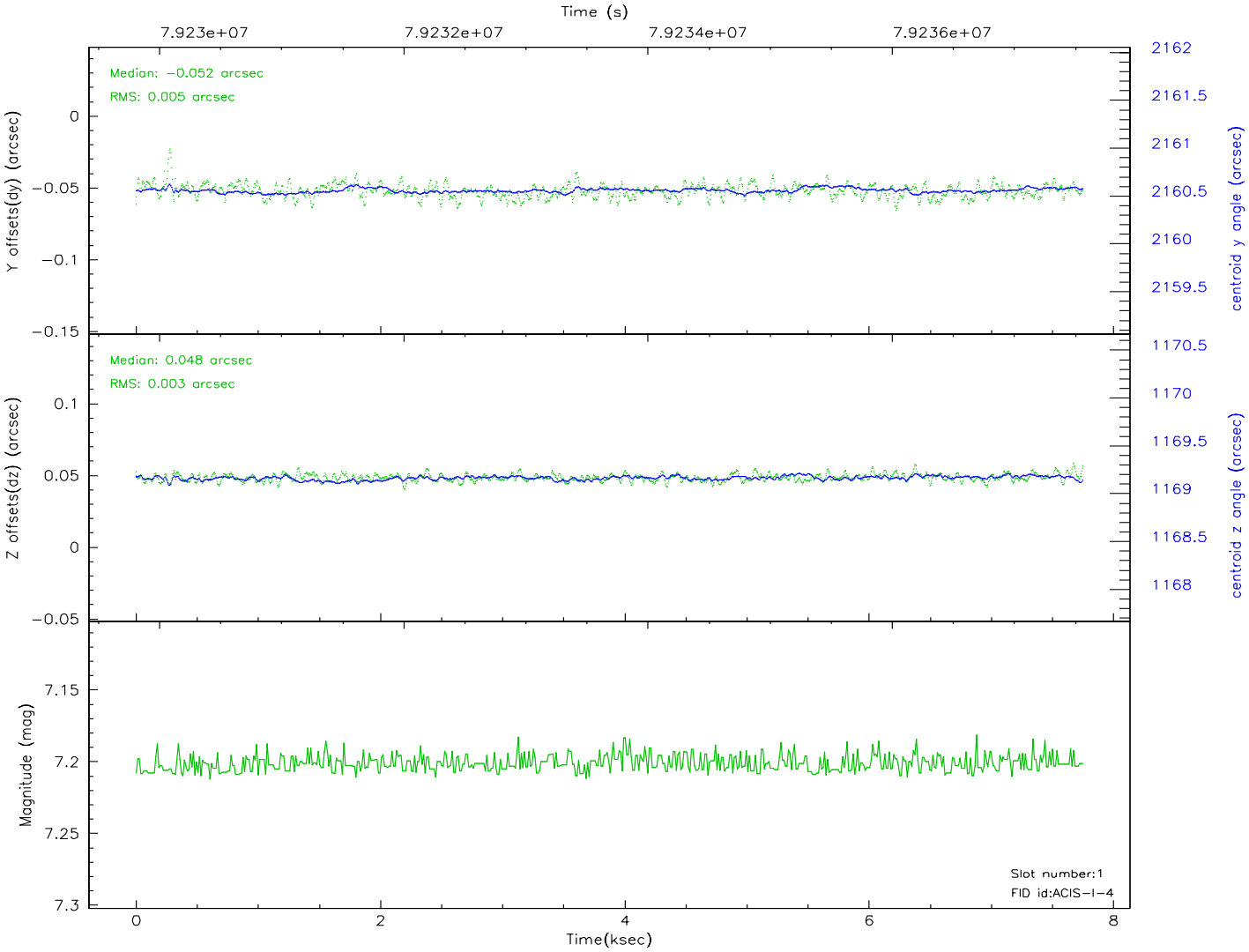




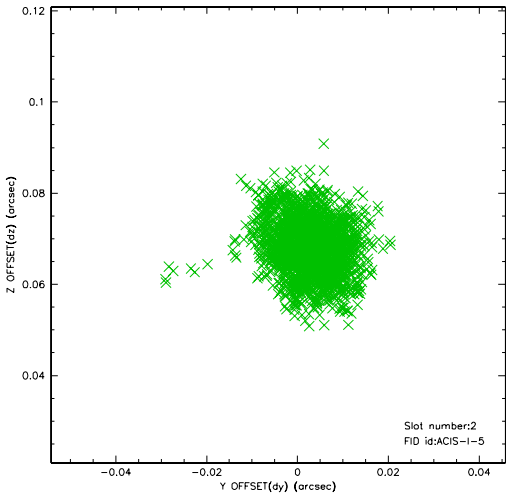
2.5.2 Slot 1

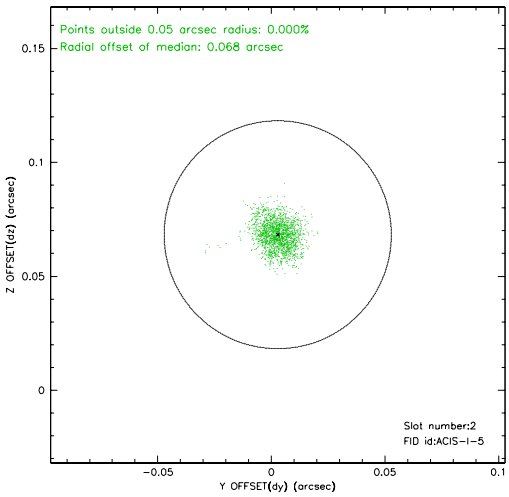

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number:1
FID id:ACIS-I-4

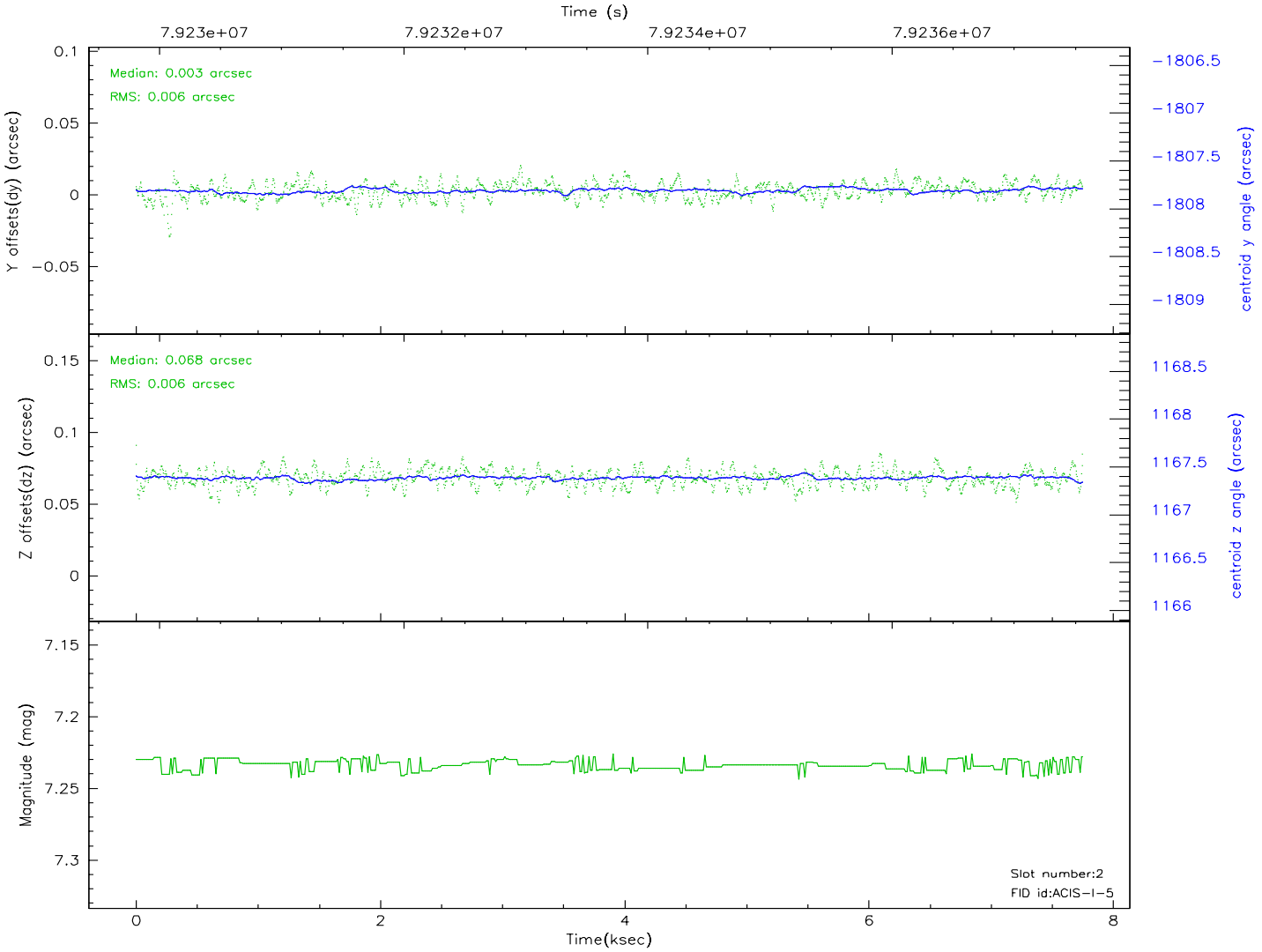

Points outside 0.05 arcsec radius: 0.000%
Radial offset of median: 0.071 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number:1
FID id:ACIS-I-4


Time (s)
7.923e+07
7.9232e+07
7.9234e+07
7.9236e+07
Median: −0.052 arcsec
RMS: 0.005 arcsec
Y offsets(dy) (arcsec)
centroid y angle (arcsec)
Median: 0.048 arcsec
RMS: 0.003 arcsec
Z offsets(dz) (arcsec)
centroid z angle (arcsec)
Magnitude (mag)
Slot number:1
FID id:ACIS-I-4
Time(ksec)

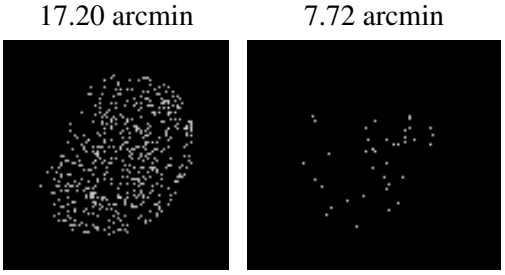
2.5.3 Slot 2


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


Points outside 0.05 arcsec radius: 0.000%
Radial offset of median: 0.068 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number:2
FID id:ACIS-I-5


Time (s)
7.923e+07
7.9232e+07
7.9234e+07
7.9236e+07
Median: 0.003 arcsec
RMS: 0.006 arcsec
Y offsets(dy) (arcsec)
centroid y angle (arcsec)
Median: 0.068 arcsec
RMS: 0.006 arcsec
Z offsets(dz) (arcsec)
centroid z angle (arcsec)
Magnitude (mag)
Slot number:2
FID id:ACIS-I-5
Time(ksec)

3 Point Sources



A Summary

A.1 Status

V&V Scientist	Joy Nichols
V&V Date (YYYY-MM-DD)	2008.11.20
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	7.324

A.2 Comments

```
Charge time for this ObsId remains at original value of 7.324 ks,
although
with the current processing the charge time would have been 7.318 ksec.
=======================================================
This calibration observation was acquired with the focal plane
temperature
raised from -120C to -110C, for attempted recalibration of ACIS for the

1999-09-16 through 2000-01-28 period.
==============================
This reprocessing of the data
applies no
CTI correction because none is available for that temperature.
============================================================
Focal plane temperature is warmer than -118.7 C degrees during the
entire
observation. This temperature is the upper limit of the verified ACIS
calibration for the front-illuminated chips. The focal plane
temperature
is warmer than -116.7 degrees C for approximately the entire
observation.
This temperature is the upper limit of the
verified ACIS calibration for the back-illuminated chips.
The ACIS spectral response calibration is less accurate at these warmer
temperatures than it is at -119.7 C. Users whose science objectives
depend
on the most accurate spectral response (ie: fitting line-rich spectra)
may
notice an effect. Users whose science objectives do not depend on the
most accurate spectral response should not notice an effect.
```