V&V Reference Report
L2 ASCDS Version : 8.1.2

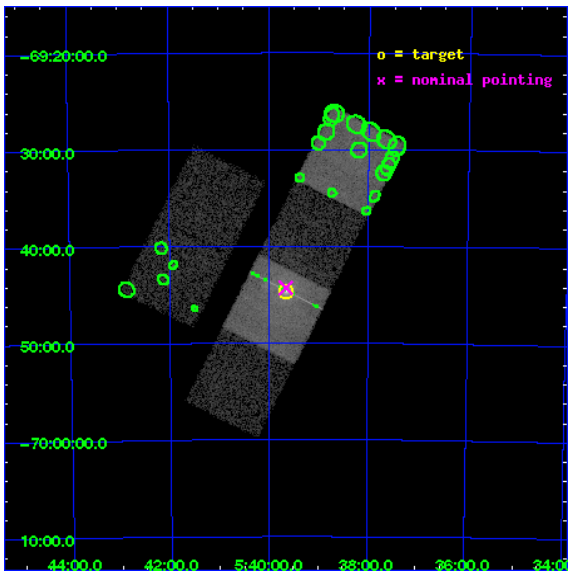
Observation 112 - L2 Version 3
Chandra X-Ray Center

L2 Processing Date : Dec 16 2009

Contents

1 Front

seq_num	490002	Sequence number
obs_id	112	Observation id
title	Measure of PSF wings	Proposal title
observer	Dr. CXC Calibration	Principal investigator
object	LMC X-1	Source name
dtycycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	84.914583	Observer's specified target RA
dec_targ	-69.743611	Observer's specified target Dec
ra_nom	84.913958637814	Nominal RA
dec_nom	-69.738178243344	Nominal Dec
roll_nom	116.80381318972	Nominal Roll
revision	3	Processing version of data
ontime	3033.6000028253	Sum of GTIs [s]
livetime	2995.1867329749	Livetime [s]
ontime2	3033.6000028253	Sum of GTIs [s]
ontime3	3033.6000028253	Sum of GTIs [s]
ontime5	3033.6000028253	Sum of GTIs [s]
ontime6	3033.6000028253	Sum of GTIs [s]
ontime7	3033.6000028253	Sum of GTIs [s]
ontime8	3033.6000028253	Sum of GTIs [s]
l2events	121556	Number of level 2 events

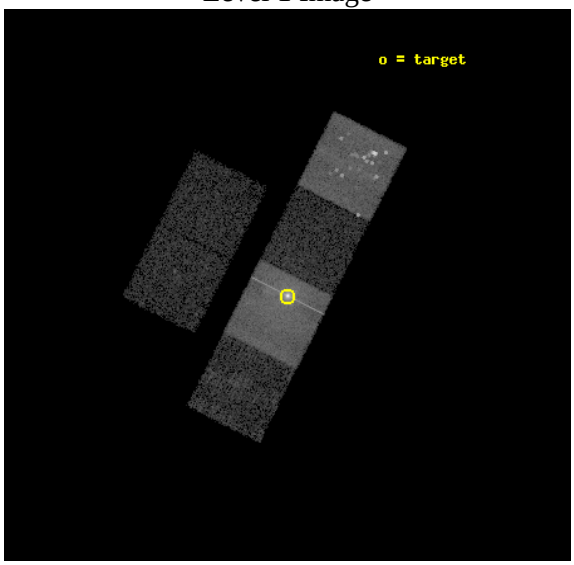


2 OBI

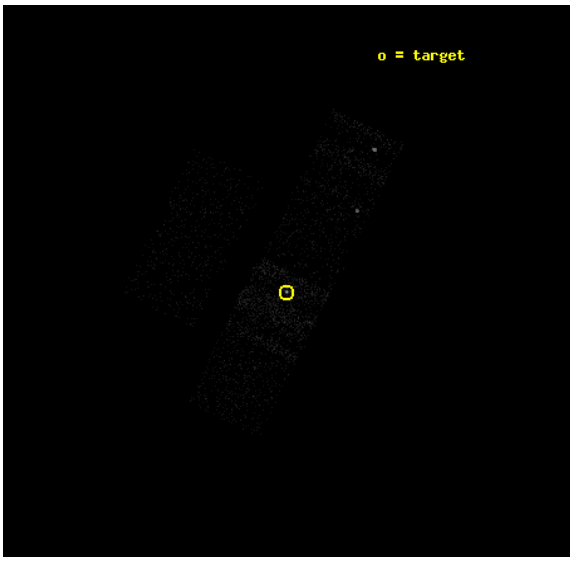
2.1 OBI

2.1.1 Images

Level 1 Image

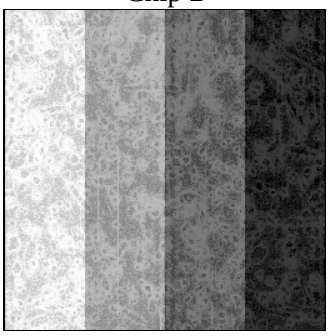


Level 1 Bad Events

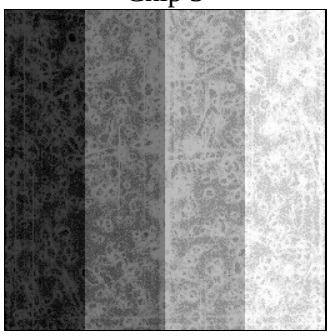


2.1.2 Bias

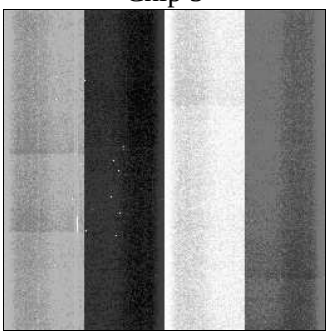
Chip 2



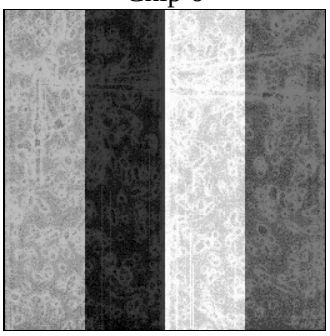
Chip 3



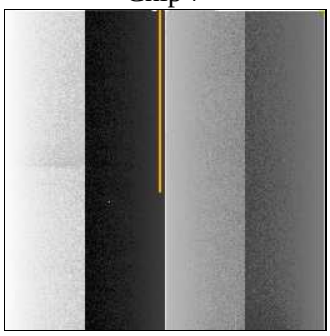
Chip 5



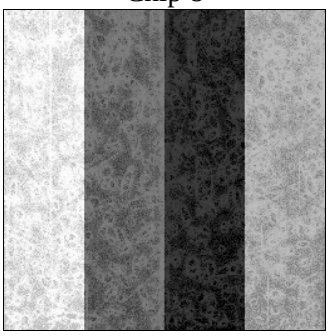
Chip 6



Chip 7



Chip 8



2.1.3 Parameters

obi_num	0	Obi number
ascdsver	8.1.2	ASCDS version number
caldbver	4.1.4	
date	2009-12-16T05:44:58	Date and time of file creation
revision	3	Processing version of data

sched_exp_time	4000.000000	Scheduled observation exposure time
ontime	3033.6000028253	Sum of GTIs [s]
ontime2	3033.6000028253	Sum of GTIs [s]
ontime3	3033.6000028253	Sum of GTIs [s]
ontime5	3033.6000028253	Sum of GTIs [s]
ontime6	3033.6000028253	Sum of GTIs [s]
ontime7	3033.6000028253	Sum of GTIs [s]
ontime8	3033.6000028253	Sum of GTIs [s]
l1events	153669	Number of level 1 events

2.1.4 Events

	ccd 2	**ccd 3**	**ccd 5**	**ccd 6**	**ccd 7**	**ccd 8**
level 1 events	7451	7933	53576	8956	65609	10144
rejected events	1633	1747	2952	1833	4685	1994
rejected %	21%	22%	5%	20%	7%	19%

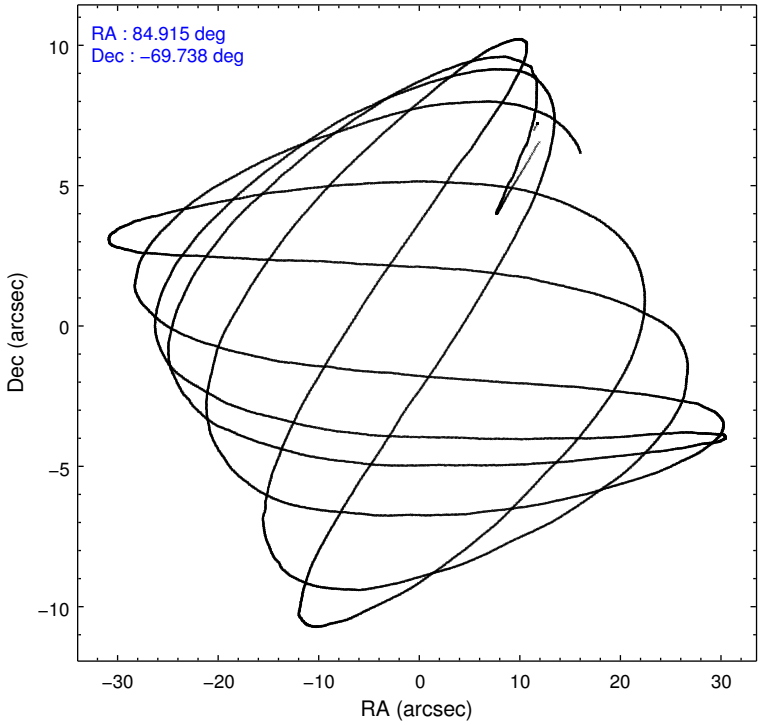
	ccd 2	**ccd 3**	**ccd 5**	**ccd 6**	**ccd 7**	**ccd 8**
grade 0 events	2078	2461	12772	2811	7940	2307
	27%	31%	23%	31%	12%	22%
grade 1 events	17	16	115	20	139	17
	0%	0%	0%	0%	0%	0%
grade 2 events	1194	1192	8467	1417	10349	1983
	16%	15%	15%	15%	15%	19%
grade 3 events	416	448	3245	407	6323	611
	5%	5%	6%	4%	9%	6%
grade 4 events	438	435	2875	400	5337	528
	5%	5%	5%	4%	8%	5%
grade 5 events	1601	1716	2466	1795	4387	1959
	21%	21%	4%	20%	6%	19%
grade 6 events	1707	1665	23378	2106	31130	2739
	22%	20%	43%	23%	47%	27%
grade 7 events	0	0	258	0	4	0
	0%	0%	0%	0%	0%	0%

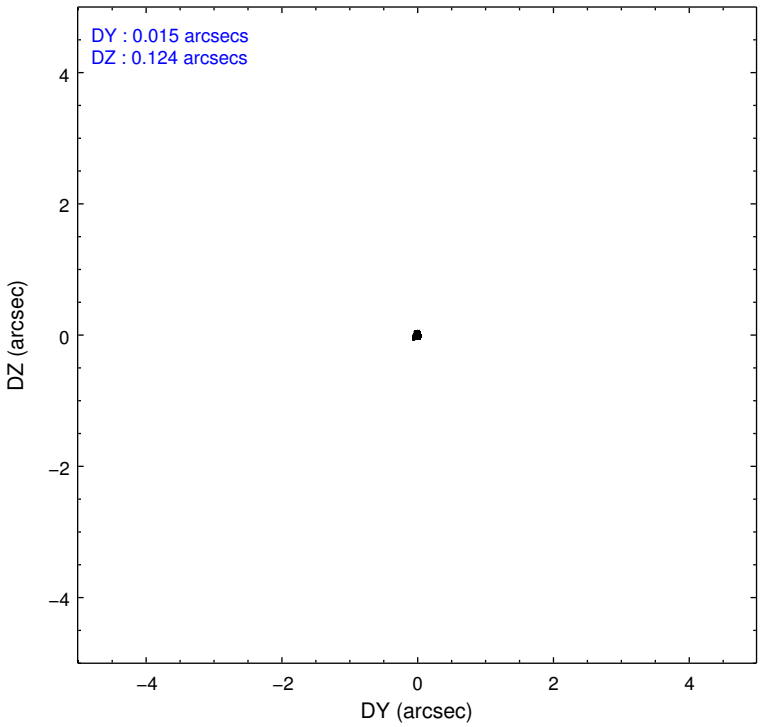
2.2 Compared Parameters

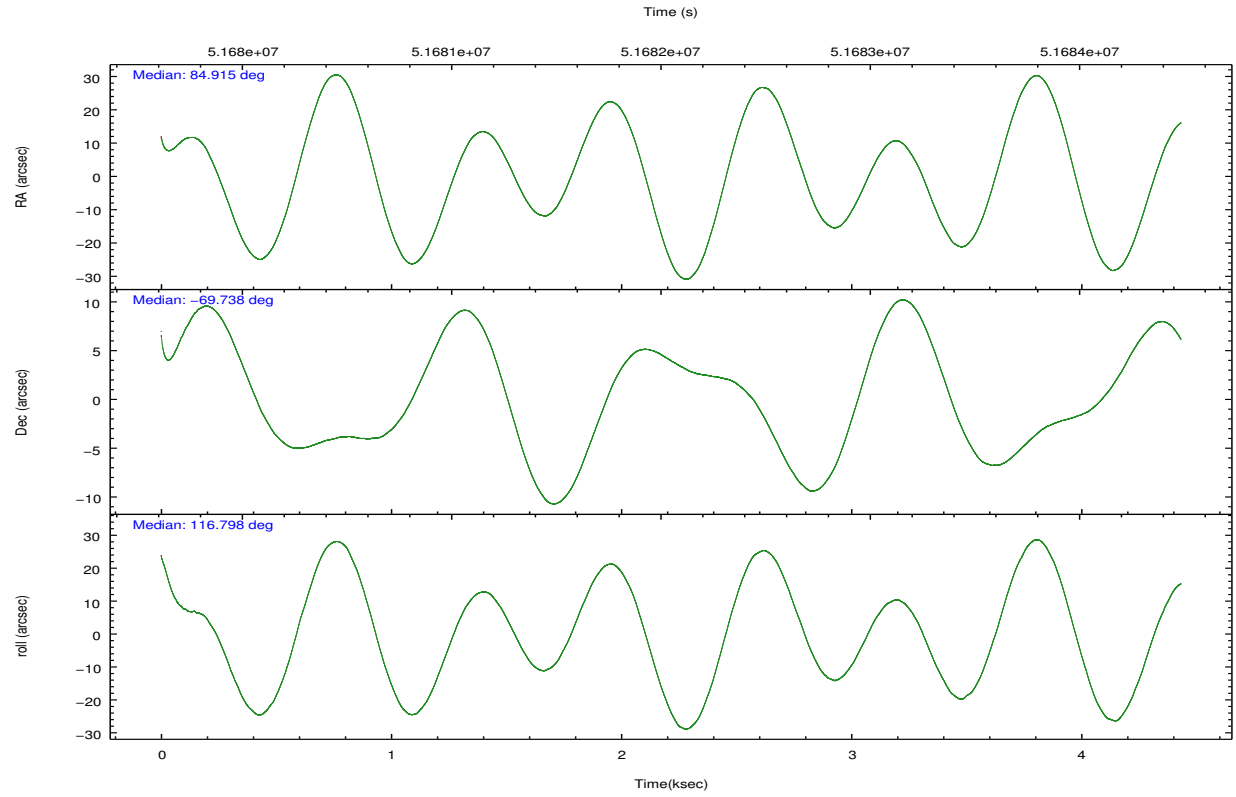
Parameter	Planned	Actual
Instrument	ACIS	ACIS
Detector	ACIS-235678	ACIS-235678
Grating	NONE	NONE
Data mode	FAINT	FAINT
Observation mode	POINTING	POINTING
Pointing RA	84.980098	84.91395863781419
Pointing Dec	-69.753847	-69.73817824334373
Pointing Roll	116.709198	116.8038131897232
SIM focus pos (mm)	-0.684267	-0.865731118321573
SIM defocus (mm)	0	-0.1814636570216768
SIM translation stage pos (mm)	-190.132523	-190.1199515274594
SIM translation stage offset (mm)	0	-0.012571055548392
Observation start time	51680263.184000	51678186.669155
Observation start date	1999-08-22T03:36:39	1999-08-22T03:03:06
Observation end time	51684263.184000	51684666.206888
Observation end date	1999-08-22T04:43:19	1999-08-22T04:51:06
Read mode	TIMED	TIMED

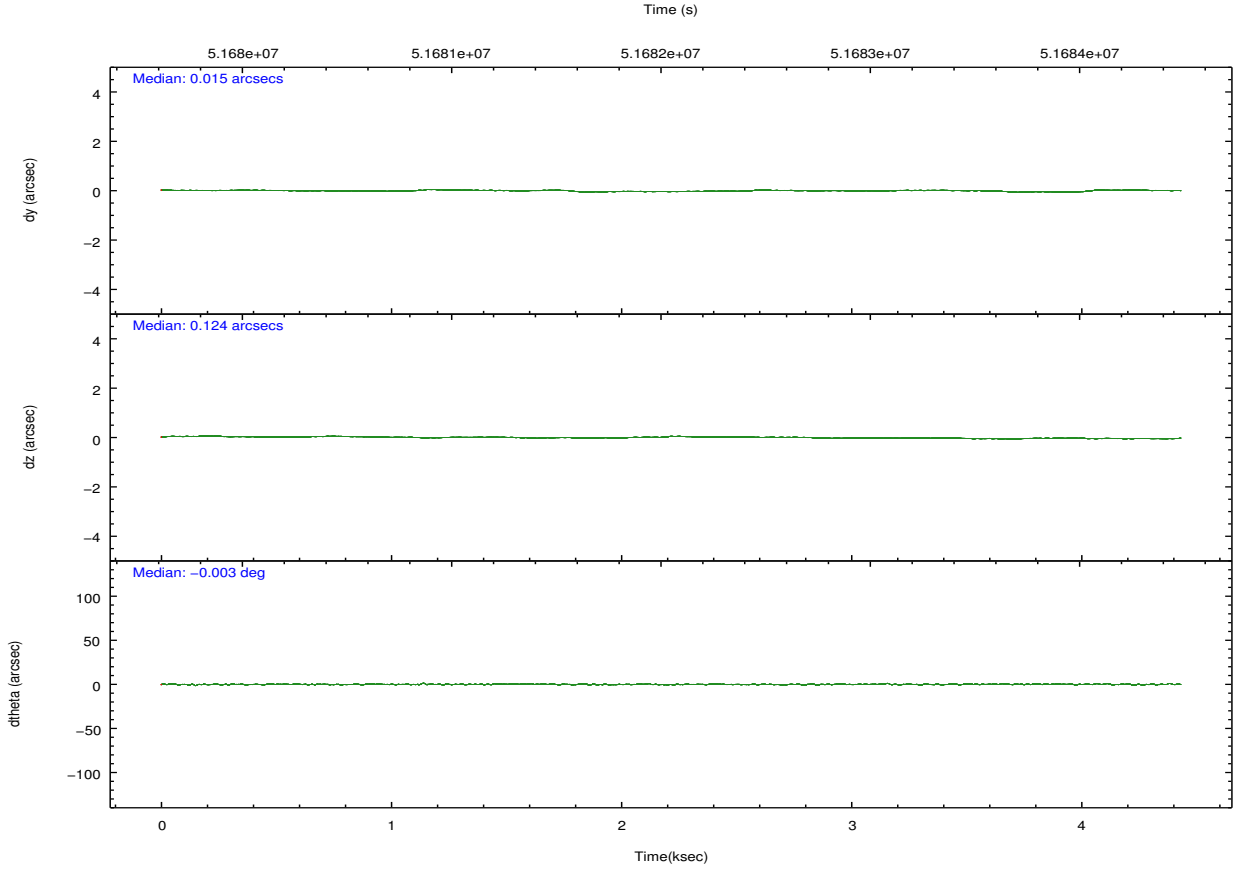
Parameter	Planned	Actual
Obspar format version number	6	6
Obspar file type	PREDICTED	ACTUAL
Obspar update status	NONE	UPDATED
Number of optional ACIS chips dropped	0	0
On-chip summing requested	N	N
Subarray requested	NONE	NONE
Alternating exposures requested	N	N
Primary exposure time	0.000000	3.2

2.3 Aspect


RA : 84.915 deg
Dec : −69.738 deg
Dec (arcsec)
RA (arcsec)
10
5
0
−5
−10
−30
−20
−10
0
10
20
30


DY : 0.015 arcsecs
DZ : 0.124 arcsecs
DZ (arcsec)
DY (arcsec)
4
2
0
−2
−4
−4
−2
0
2
4


Time (s)
5.168e+07
5.1681e+07
5.1682e+07
5.1683e+07
5.1684e+07
Median: 84.915 deg
RA (arcsec)
Median: −69.738 deg
Dec (arcsec)
Median: 116.798 deg
roll (arcsec)
Time(ksec)

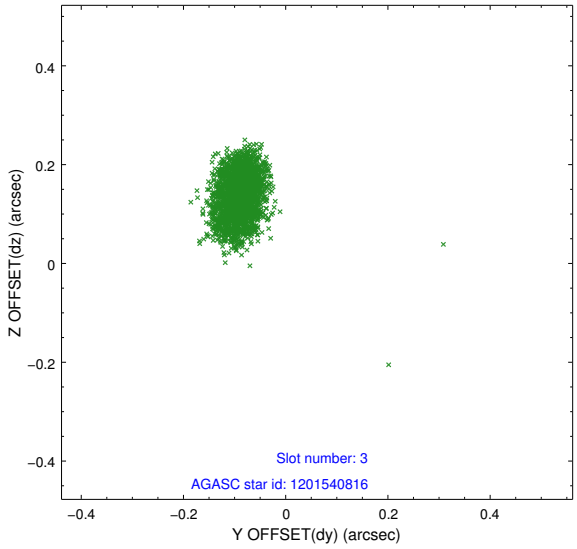

Time (s)
5.168e+07
5.1681e+07
5.1682e+07
5.1683e+07
5.1684e+07
Median: 0.015 arcsecs
dy (arcsec)
Median: 0.124 arcsecs
dz (arcsec)
Median: −0.003 deg
dtheta (arcsec)
Time(ksec)

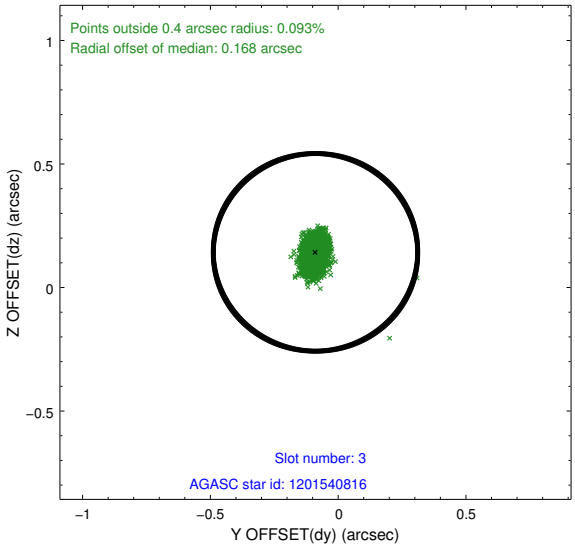
Slot Statistics

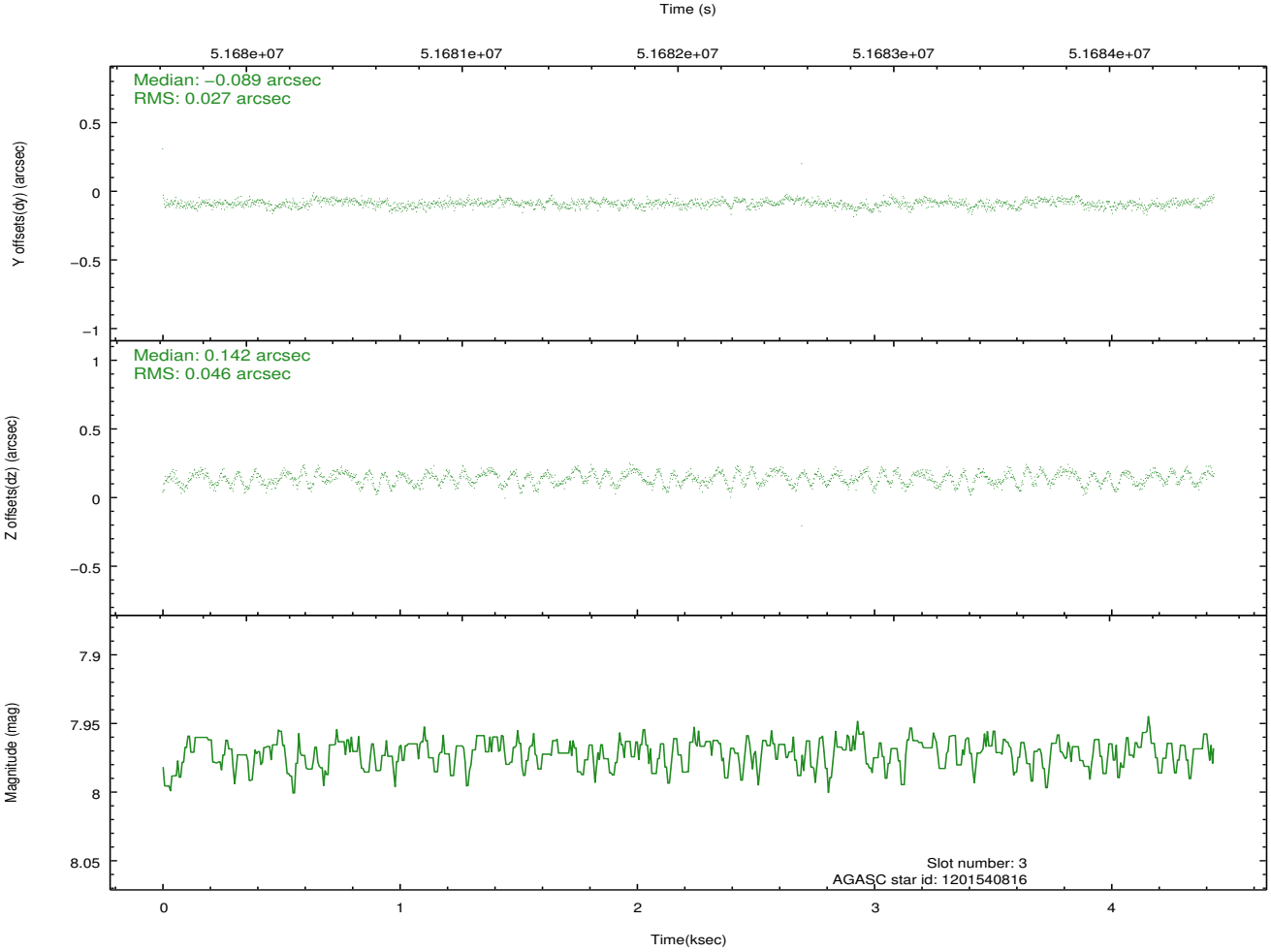
slot	status	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID	ACIS-S-2	7.11	2163	-0.031	-0.019	0.006	0.010	0.000000	0.000000	-752.62	-1721.49
1	FID	ACIS-S-4	7.21	2163	0.136	0.020	0.005	0.010	0.000000	0.000000	2160.53	186.31
2	FID	ACIS-S-5	7.24	2163	-0.136	0.008	0.006	0.010	0.000000	0.000000	-1804.71	180.75
3	GUIDE	1201540816	7.97	2162	-0.089	0.142	0.055	0.087	86.998494	-69.749817	-1155.29	-2232.98
4	GUIDE	1201541752	7.35	2163	-0.114	-0.087	0.046	0.073	85.373891	-70.033762	-1120.84	21.05
5	GUIDE	1201407840	7.98	2163	-0.068	-0.052	0.056	0.085	83.696303	-70.172201	-657.44	2085.61
6	GUIDE	1201406992	9.27	2163	0.186	0.135	0.081	0.129	83.682859	-69.471866	1626.03	1016.75
7	GUIDE	1201540776	9.58	2162	0.087	-0.131	0.078	0.127	85.107945	-69.858480	-408.08	29.20

2.4 Star Slots

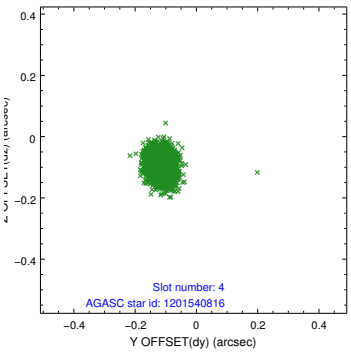
2.4.1 Slot 3

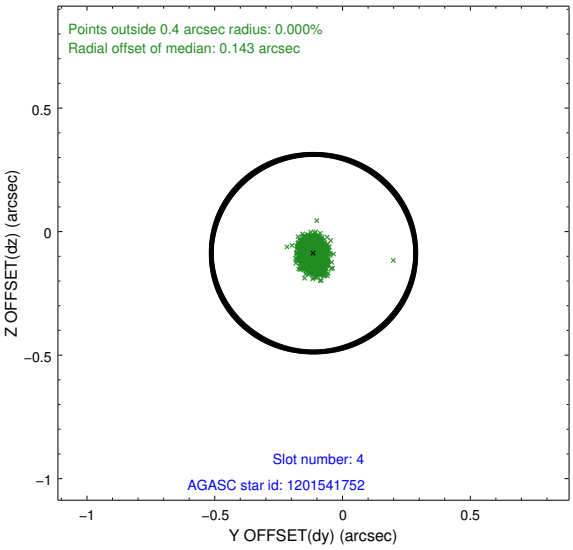


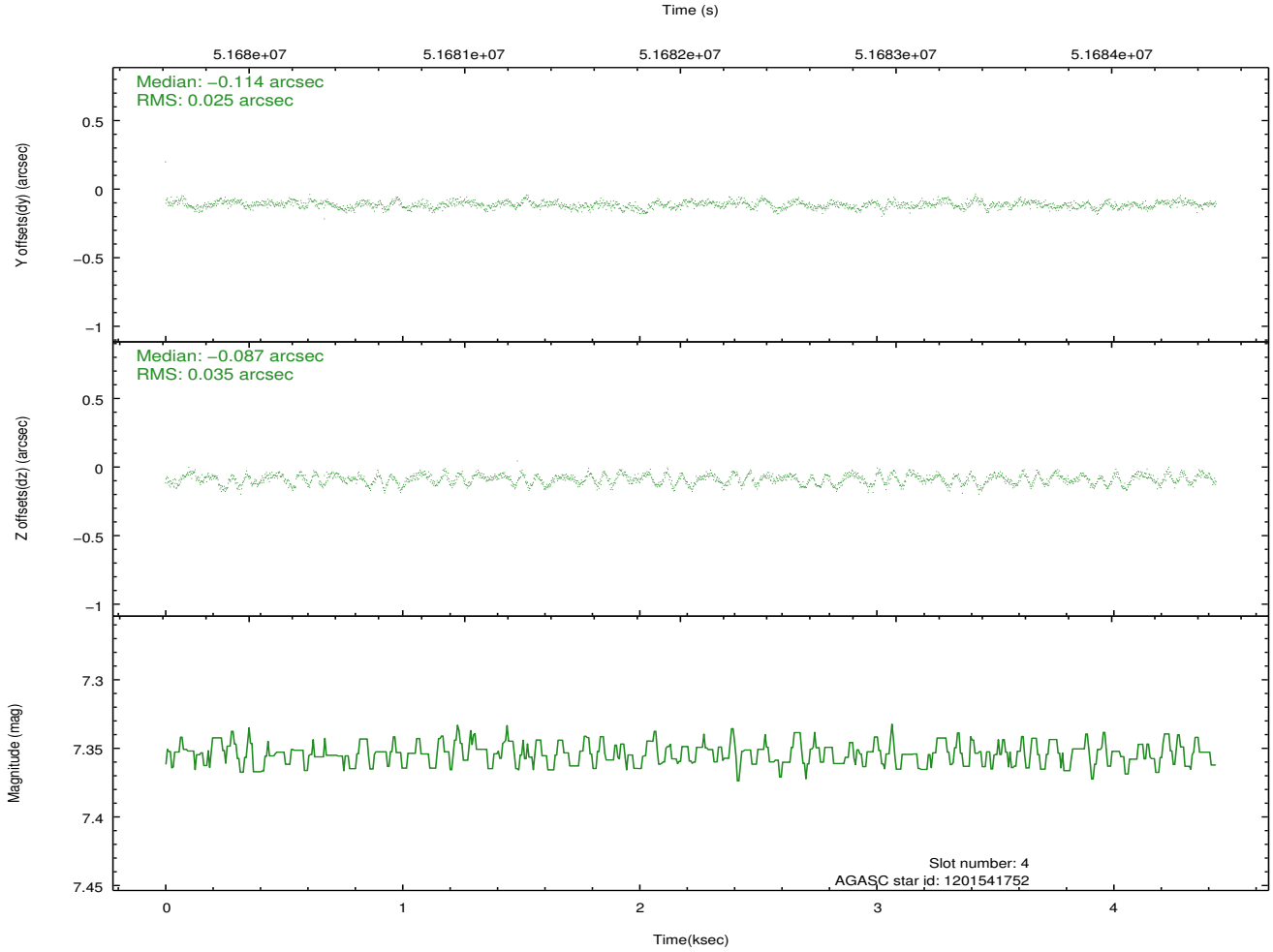




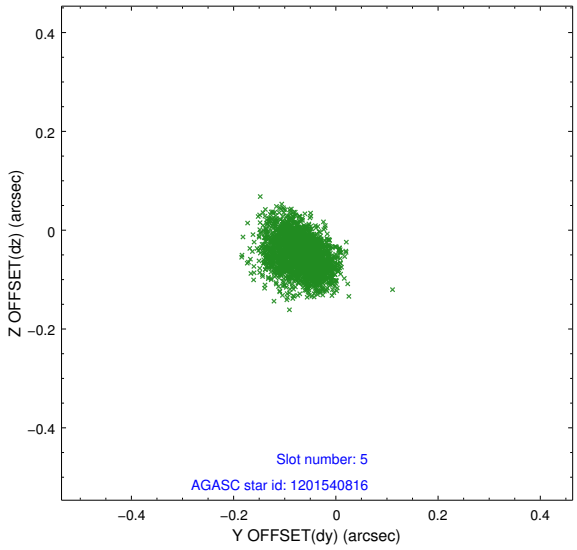
2.4.2 Slot 4

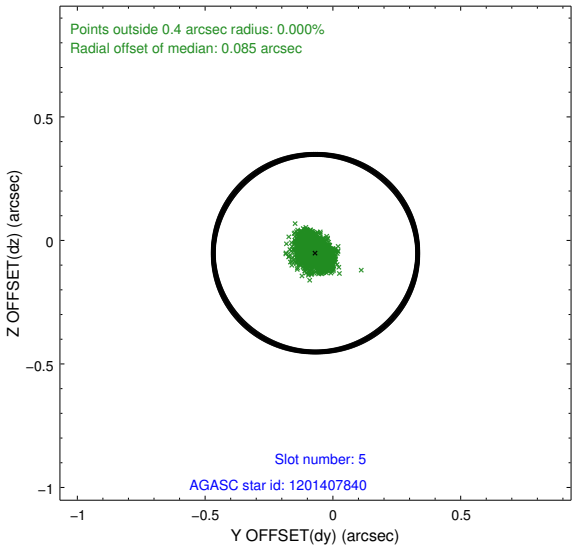

Slot number: 4
AGASC star id: 1201540816
Y OFFSET(dy) (arcsec)

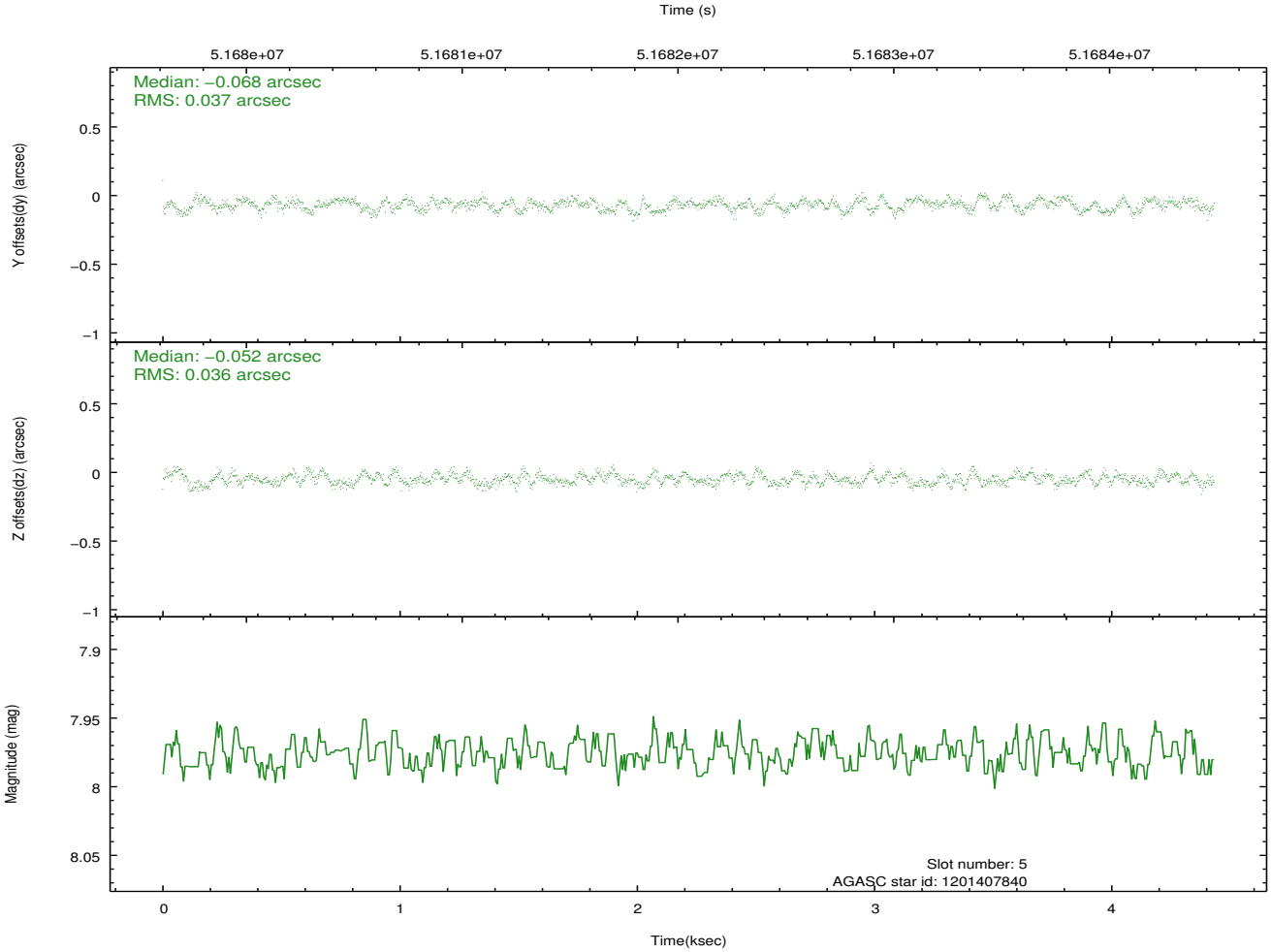

Points outside 0.4 arcsec radius: 0.000%
Radial offset of median: 0.143 arcsec
Slot number: 4
AGASC star id: 1201541752
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)


Time (s)
Median: −0.114 arcsec
RMS: 0.025 arcsec
Y offsets(dy) (arcsec)
Median: −0.087 arcsec
RMS: 0.035 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number: 4
AGASC star id: 1201541752
Time(ksec)

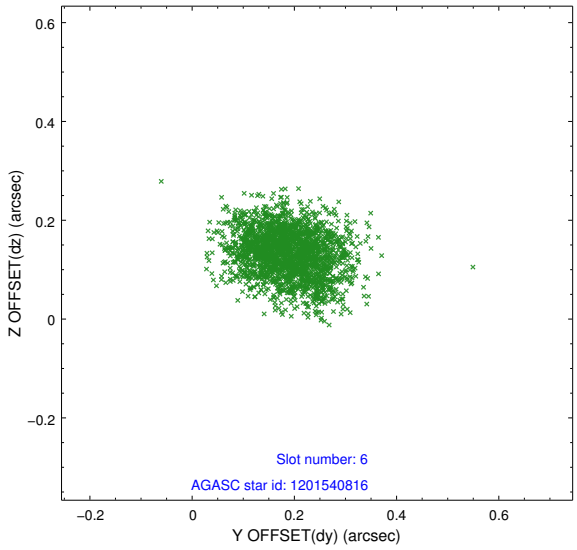
2.4.3 Slot 5

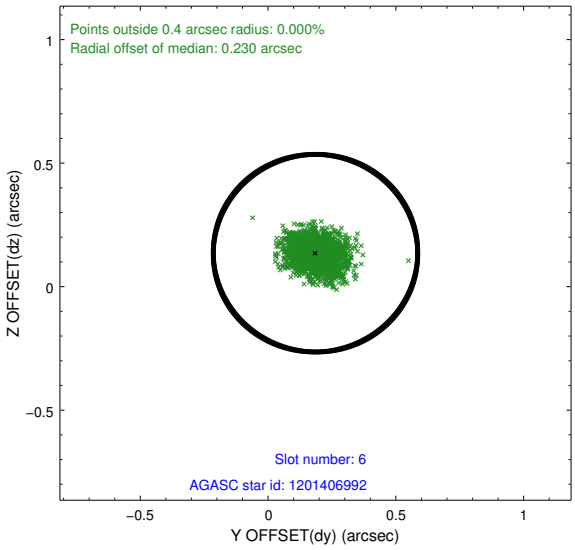

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 5
AGASC star id: 1201540816

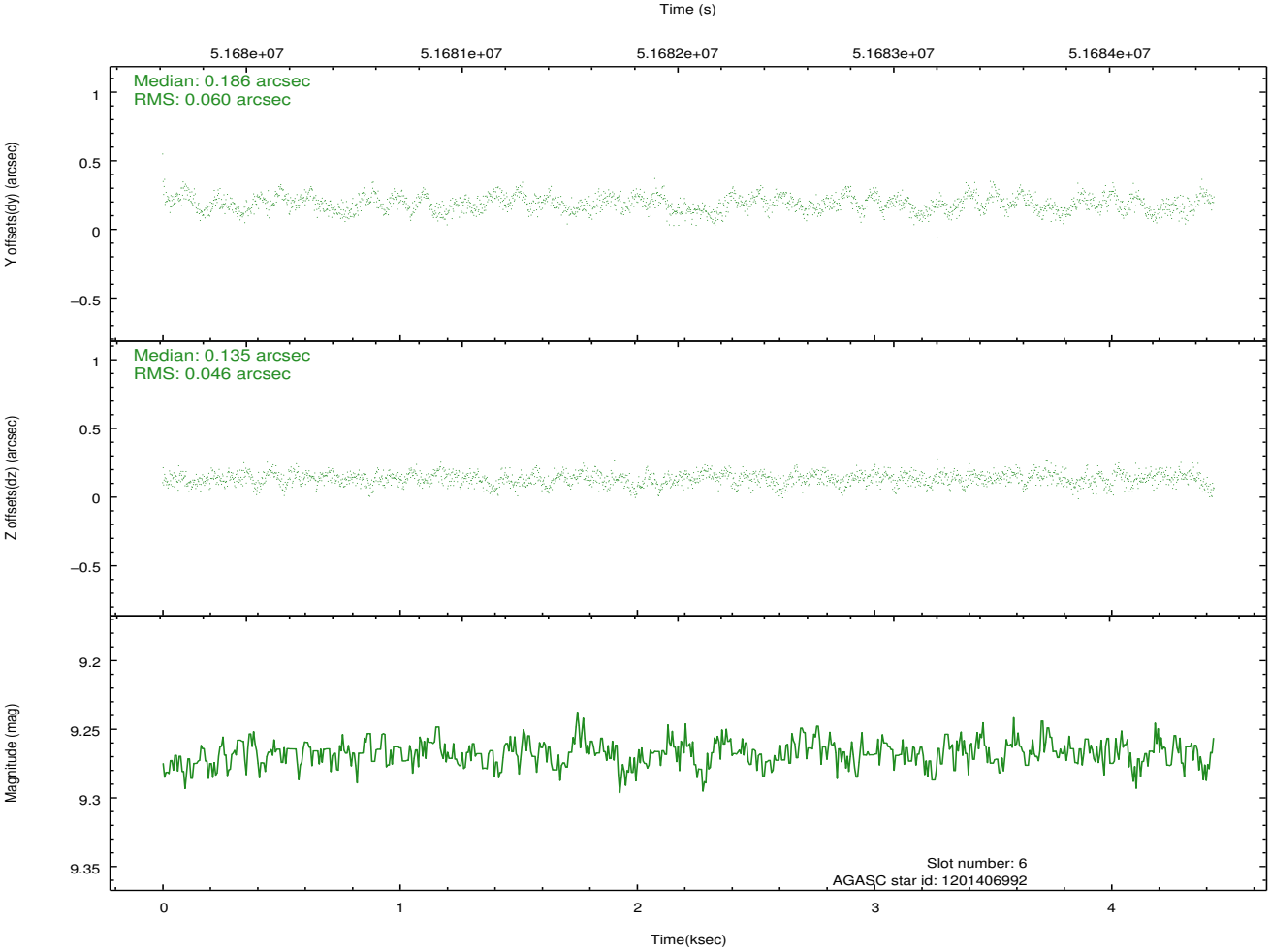

Points outside 0.4 arcsec radius: 0.000%
Radial offset of median: 0.085 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 5
AGASC star id: 1201407840


Time (s)
Median: −0.068 arcsec
RMS: 0.037 arcsec
Y offsets(dy) (arcsec)
Median: −0.052 arcsec
RMS: 0.036 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number: 5
AGASC star id: 1201407840
Time(ksec)

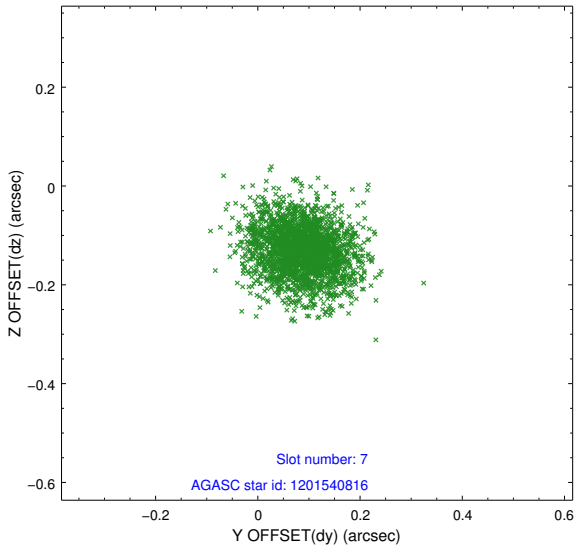
2.4.4 Slot 6

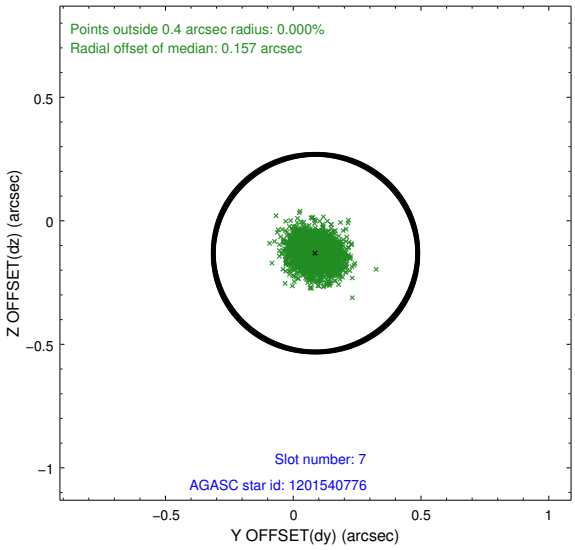

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 6
AGASC star id: 1201540816

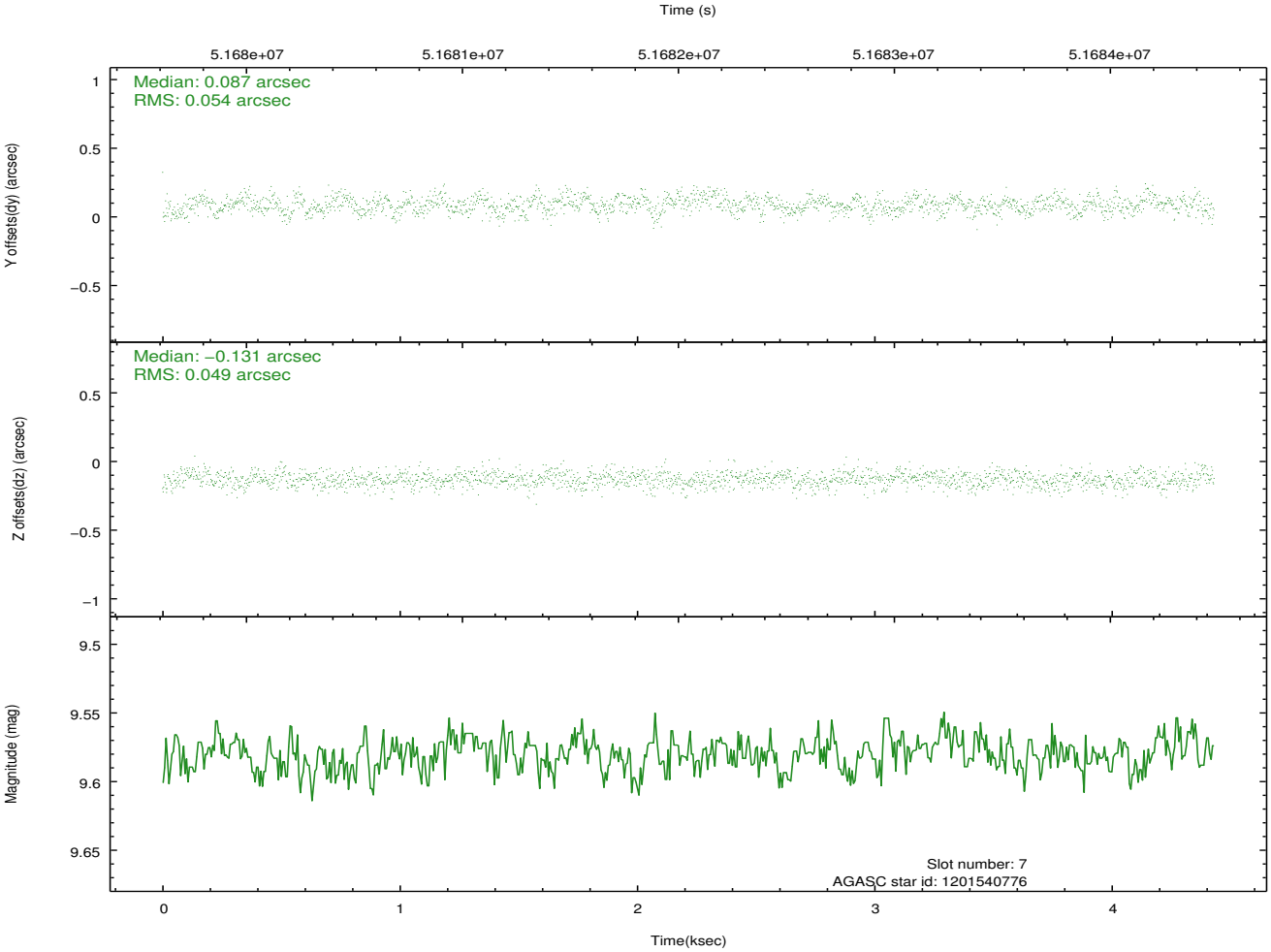

Points outside 0.4 arcsec radius: 0.000%
Radial offset of median: 0.230 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 6
AGASC star id: 1201406992


Time (s)
Median: 0.186 arcsec
RMS: 0.060 arcsec
Y offsets(dy) (arcsec)
Median: 0.135 arcsec
RMS: 0.046 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number: 6
AGASC star id: 1201406992
Time(ksec)

2.4.5 Slot 7

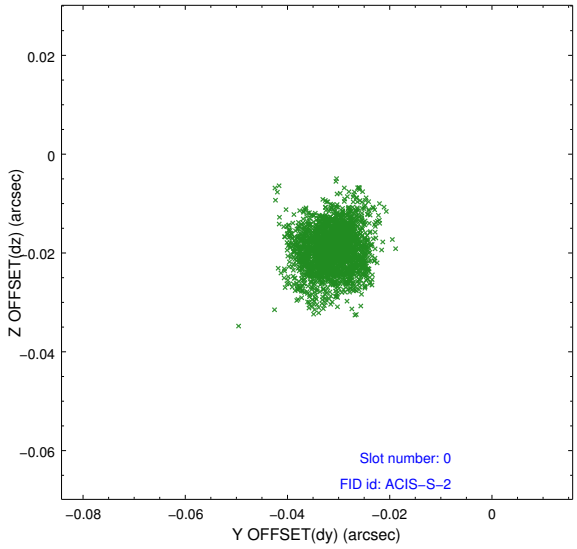

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 7
AGASC star id: 1201540816

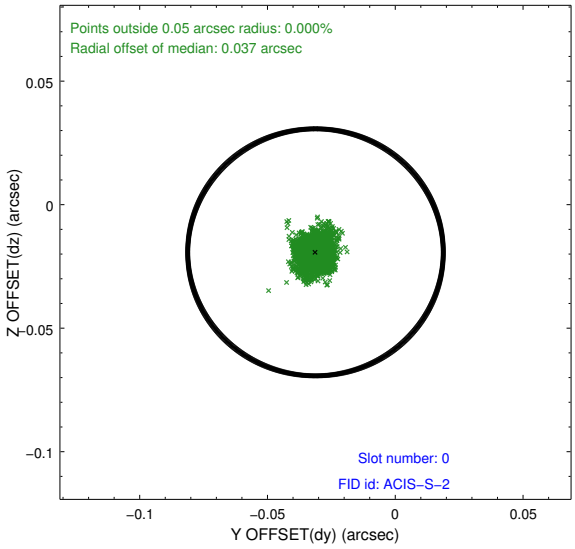

Points outside 0.4 arcsec radius: 0.000%
Radial offset of median: 0.157 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 7
AGASC star id: 1201540776

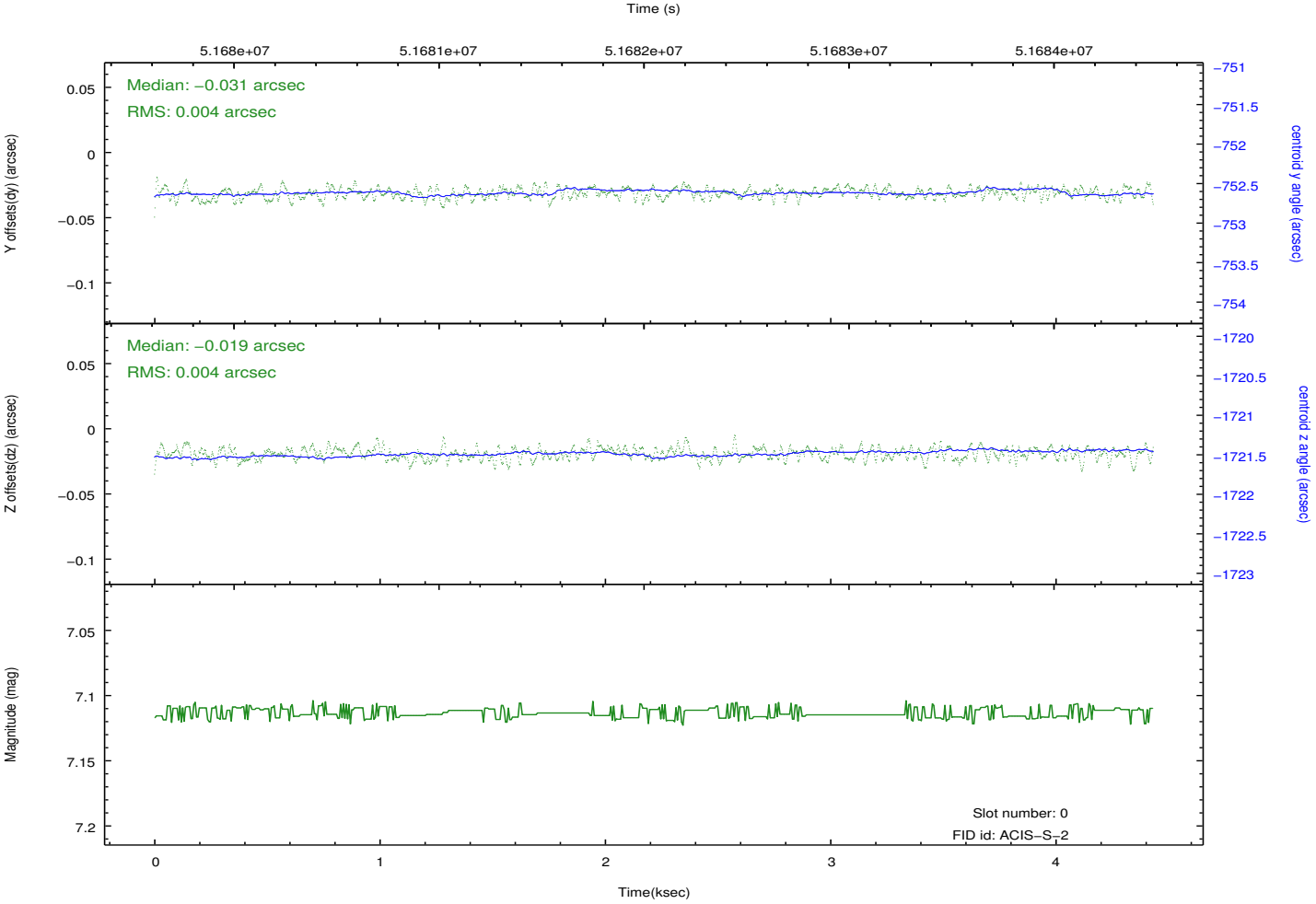

Time (s)
Median: 0.087 arcsec
RMS: 0.054 arcsec
Y offsets(dy) (arcsec)
Median: −0.131 arcsec
RMS: 0.049 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number: 7
AGASC star id: 1201540776
Time(ksec)

2.5 FID Slots

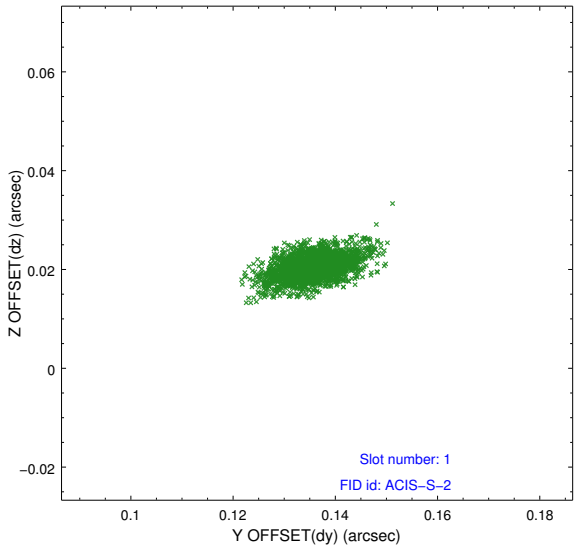
2.5.1 Slot 0

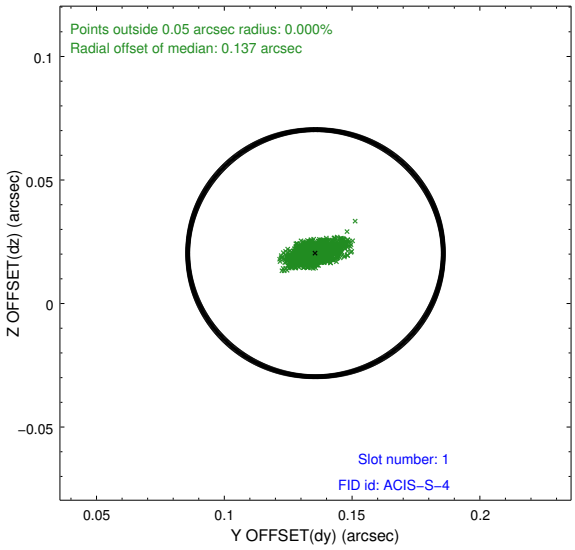


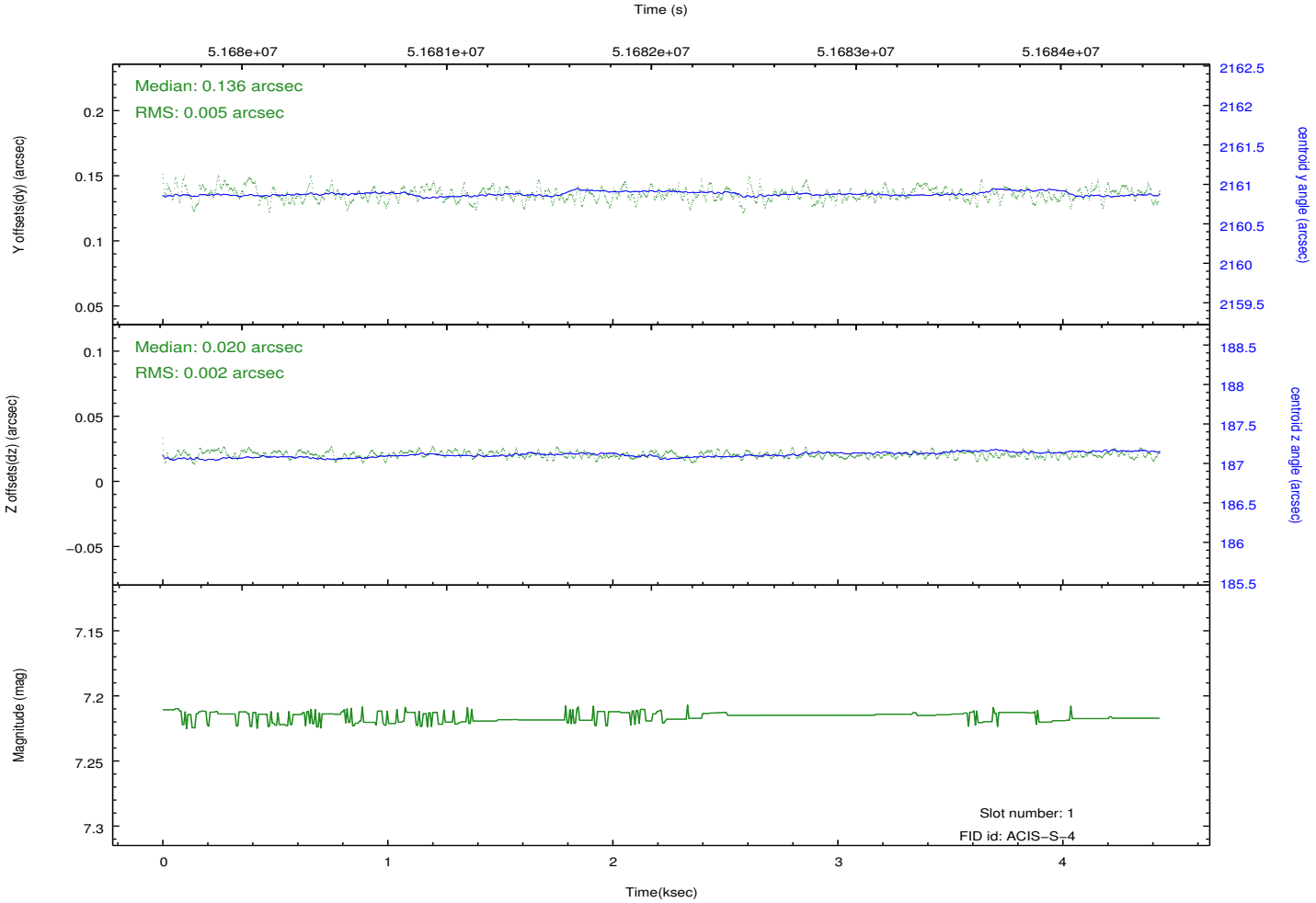




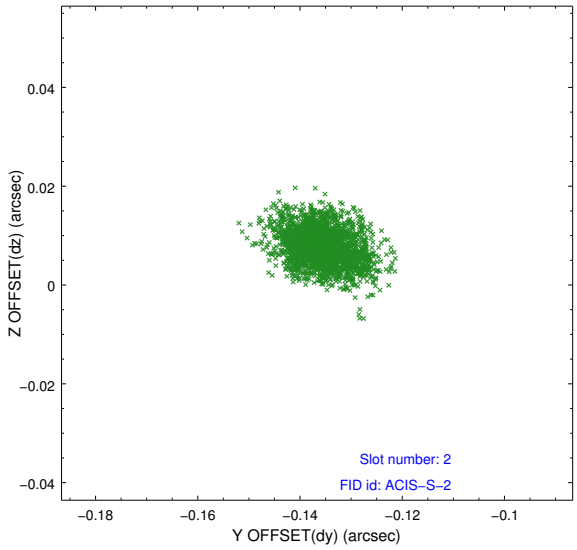
2.5.2 Slot 1

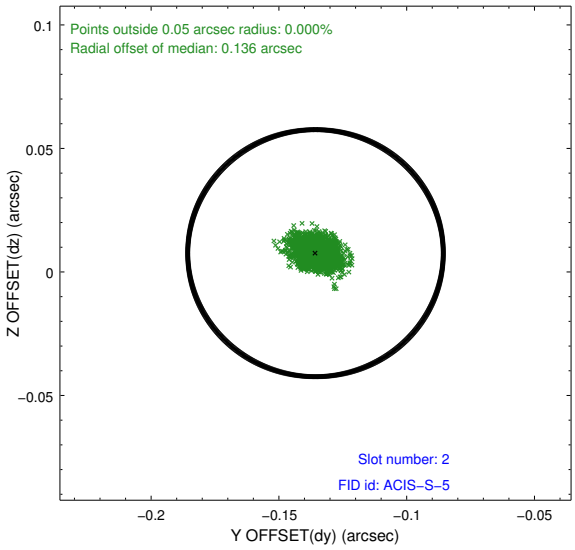

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 1
FID id: ACIS−S−2

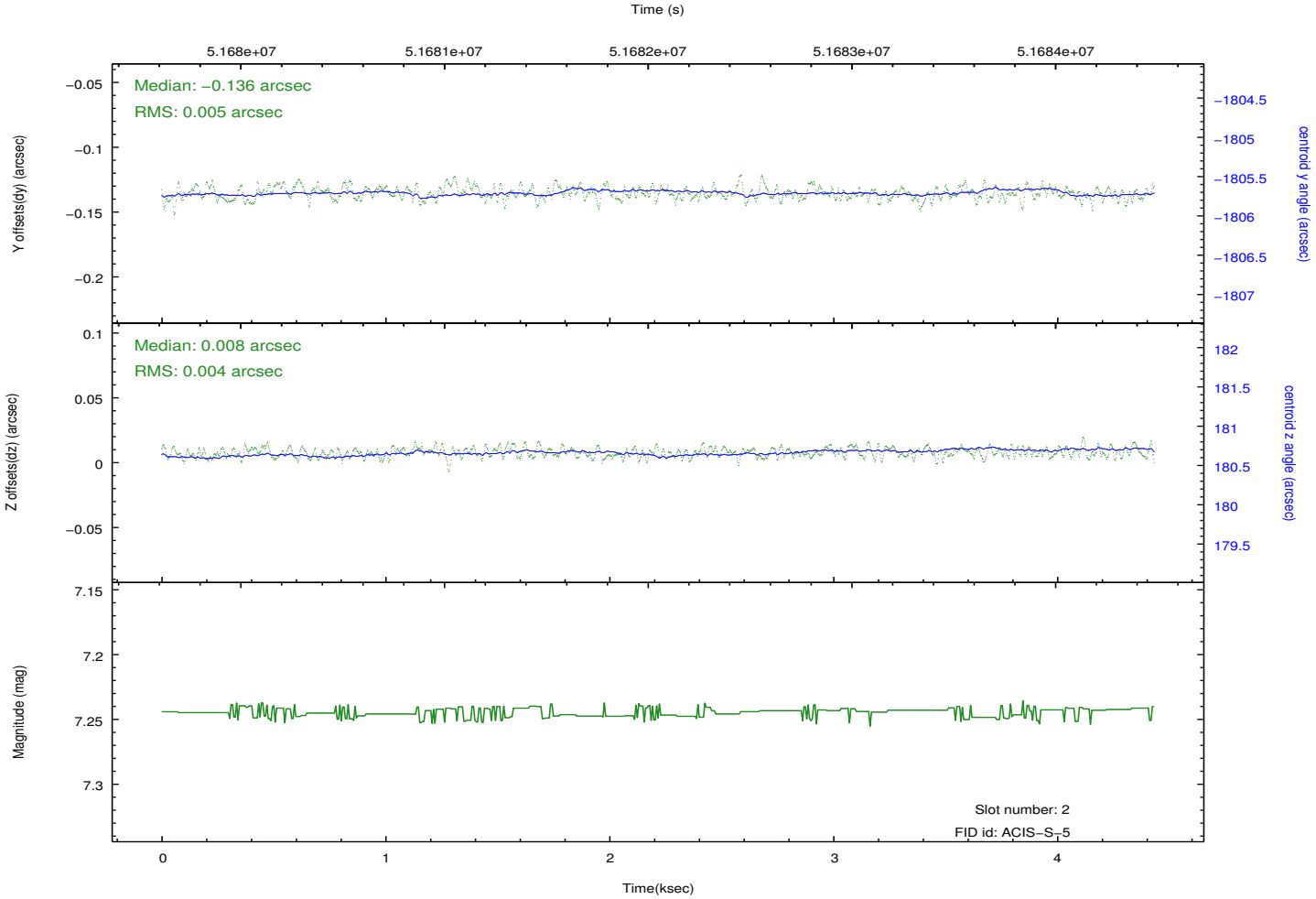

Points outside 0.05 arcsec radius: 0.000%
Radial offset of median: 0.137 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 1
FID id: ACIS−S−4


Time (s)
Median: 0.136 arcsec
RMS: 0.005 arcsec
Y offsets(dy) (arcsec)
centroid y angle (arcsec)
Median: 0.020 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)

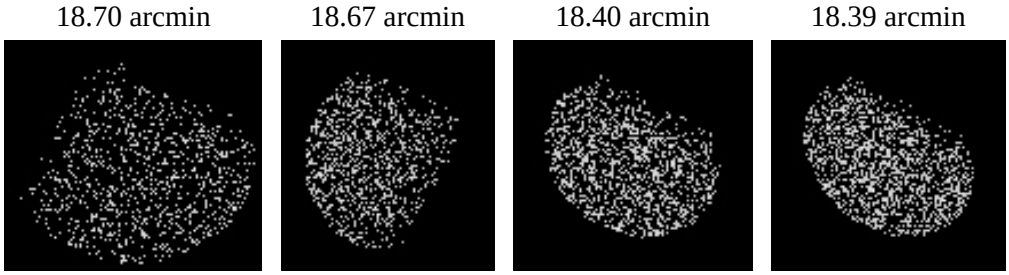
2.5.3 Slot 2


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


Points outside 0.05 arcsec radius: 0.000%
Radial offset of median: 0.136 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 2
FID id: ACIS−S−5


Time (s)
Median: −0.136 arcsec
RMS: 0.005 arcsec
Y offsets(dy) (arcsec)
centroid y angle (arcsec)
Median: 0.008 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 Point Sources



A Summary

A.1 Status

V&V Scientist	Joy Nichols
V&V Date (YYYY-MM-DD)	2010.02.09
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	3.037

A.2 Comments

```
Charge time for this ObsId remains at previous value of 3.037 ksec,
although
with the current processing the charge time would have been 3.033 ksec.
==
The focal plane temperature is approximately -110C during this
observation. This reprocessing of the data applies no CTI correction
because none is available for this temperature at present.

The ACIS CTI correction has not been calibrated at this temperature,
because it was early in the mission, and ACIS had not yet been lowered
to the standard -119.7 C. Both front and back illuminated chips are
affected. However a T_GAIN correction has been applied to the BI chips
(ACIS-5 and ACIS-7) data included here.

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.
```