V&V Reference Report
L2 ASCDS Version : 8.1.2

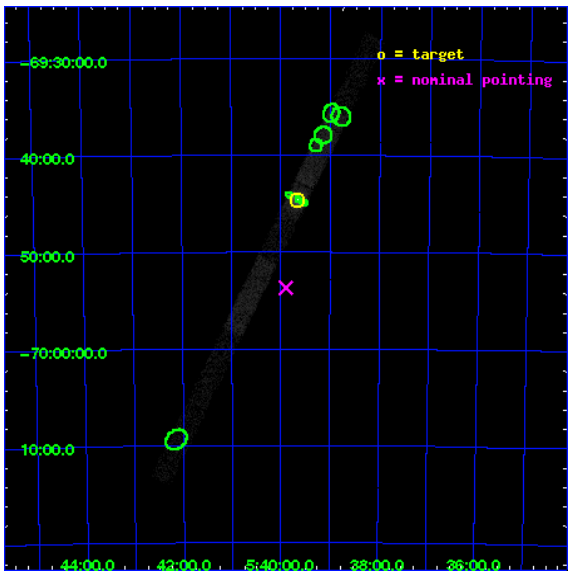
Observation 1076 - L2 Version 3
Chandra X-Ray Center

L2 Processing Date : Dec 16 2009

Contents

1 Front

seq_num	480026	Sequence number
obs_id	1076	Observation id
title		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	84.973765145805	Nominal RA
dec_nom	-69.89484660346	Nominal Dec
roll_nom	116.13527134141	Nominal Roll
revision	3	Processing version of data
ontime	1963.9466810971	Sum of GTIs [s]
livetime	1899.0008519601	Livetime [s]
ontime4	1964.0698010996	Sum of GTIs [s]
ontime5	1964.1108410954	Sum of GTIs [s]
ontime6	1963.9466810971	Sum of GTIs [s]
ontime7	1964.1518810987	Sum of GTIs [s]
ontime8	1964.0287610963	Sum of GTIs [s]
ontime9	1963.9877211004	Sum of GTIs [s]
l2events	88636	Number of level 2 events

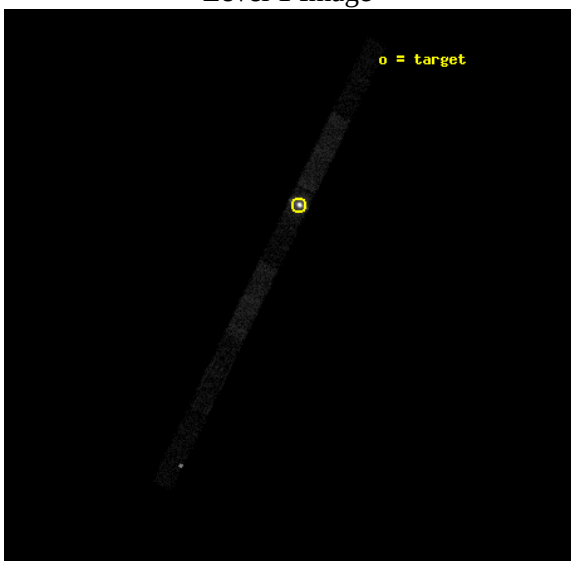


2 OBI

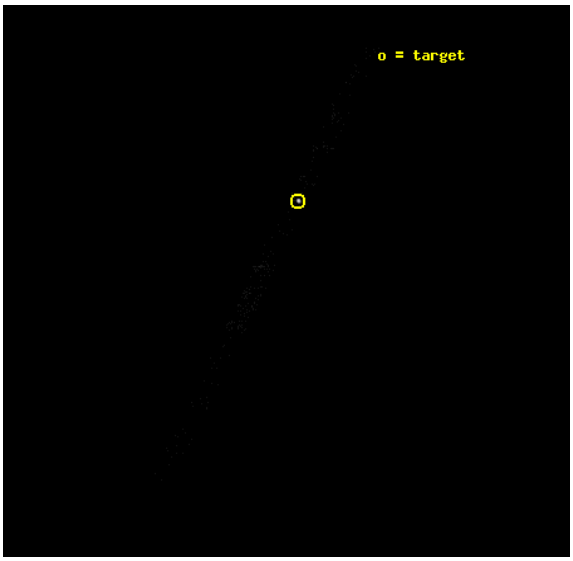
2.1 OBI

2.1.1 Images

Level 1 Image

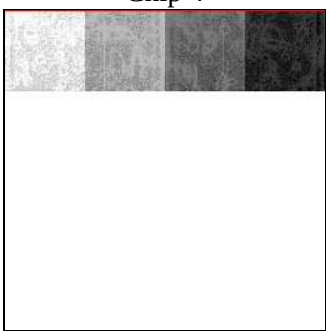


Level 1 Bad Events

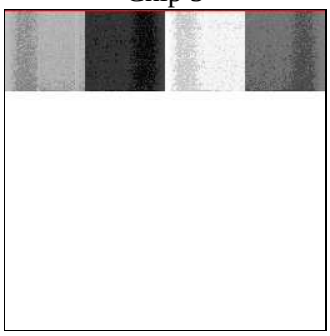


2.1.2 Bias

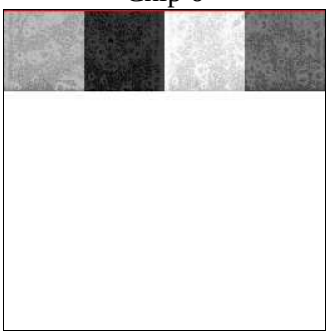
Chip 4



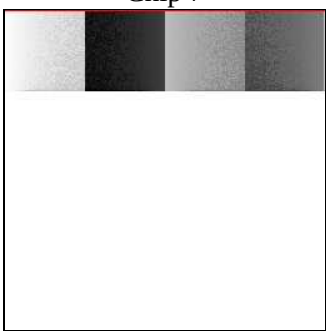
Chip 5



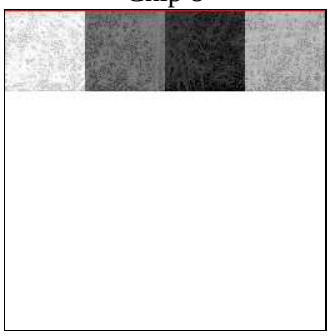
Chip 6



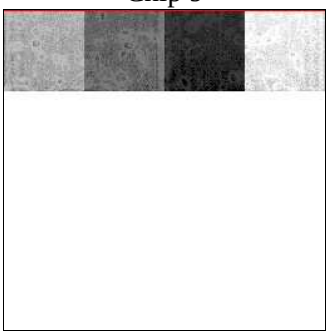
Chip 7



Chip 8



Chip 9



2.1.3 Parameters

obi_num	0	Obi number
ascdsver	8.1.2	ASCDS version number
caldbver	4.1.4	
date	2009-12-16T07:01:41	Date and time of file creation
revision	3	Processing version of data

sched_exp_time	2000.000000	Scheduled observation exposure time
ontime	1963.9466810971	Sum of GTIs [s]
ontime4	1964.0698010996	Sum of GTIs [s]
ontime5	1964.1108410954	Sum of GTIs [s]
ontime6	1963.9466810971	Sum of GTIs [s]
ontime7	1964.1518810987	Sum of GTIs [s]
ontime8	1964.0287610963	Sum of GTIs [s]
ontime9	1963.9877211004	Sum of GTIs [s]
l1events	104169	Number of level 1 events

2.1.4 Events

	ccd 4	**ccd 5**	**ccd 6**	**ccd 7**	**ccd 8**	**ccd 9**
level 1 events	1016	3868	91269	3731	1682	2603
rejected events	220	321	11388	534	261	245
rejected %	21%	8%	12%	14%	15%	9%

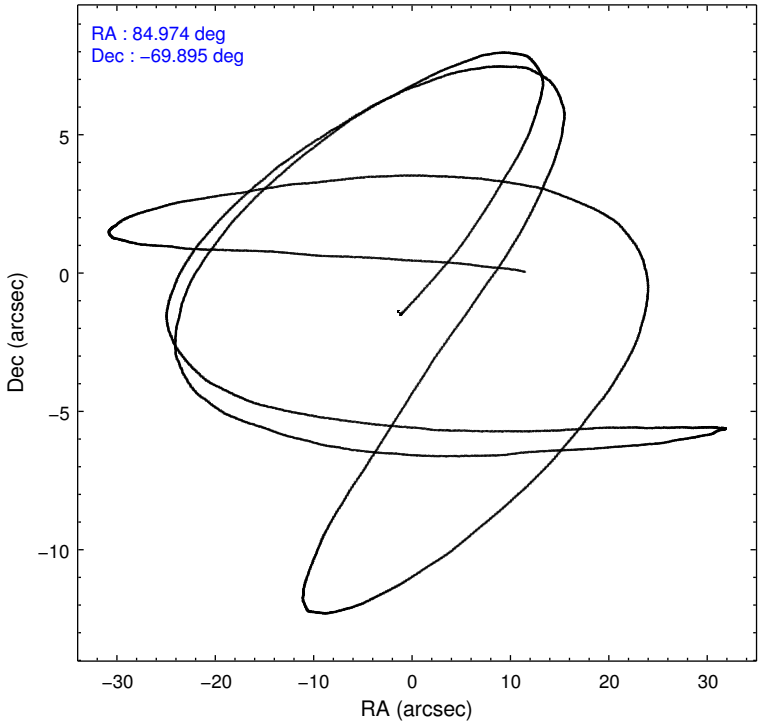
	ccd 4	**ccd 5**	**ccd 6**	**ccd 7**	**ccd 8**	**ccd 9**
grade 0 events	185	245	53857	157	378	188
	18%	6%	59%	4%	22%	7%
grade 1 events	0	2	7069	4	0	0
	0%	0%	7%	0%	0%	0%
grade 2 events	188	473	13404	424	336	1727
	18%	12%	14%	11%	19%	66%
grade 3 events	77	193	4183	241	109	74
	7%	4%	4%	6%	6%	2%
grade 4 events	63	186	4071	204	109	69
	6%	4%	4%	5%	6%	2%
grade 5 events	220	316	4280	528	261	244
	21%	8%	4%	14%	15%	9%
grade 6 events	283	2453	4405	2173	489	301
	27%	63%	4%	58%	29%	11%
grade 7 events	0	0	0	0	0	0
	0%	0%	0%	0%	0%	0%

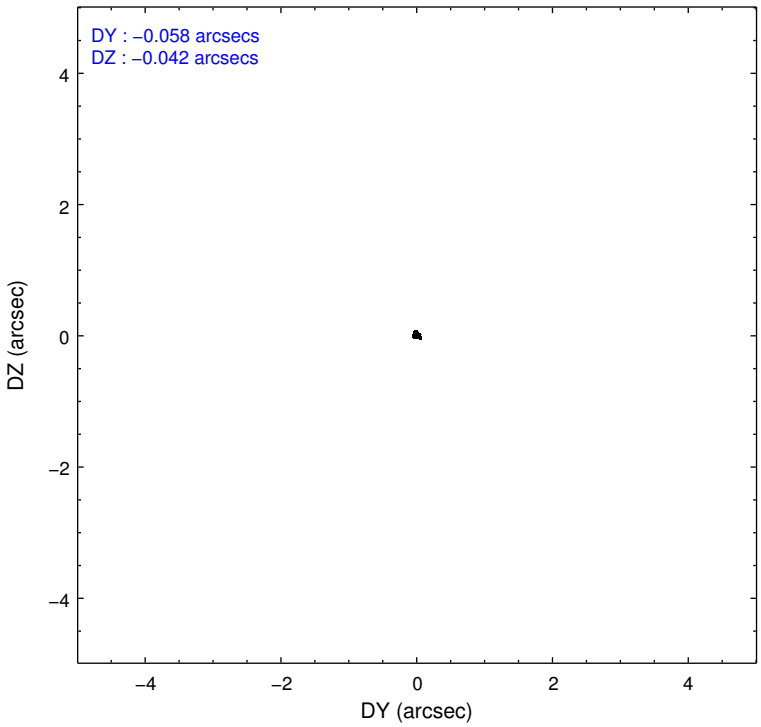
2.2 Compared Parameters

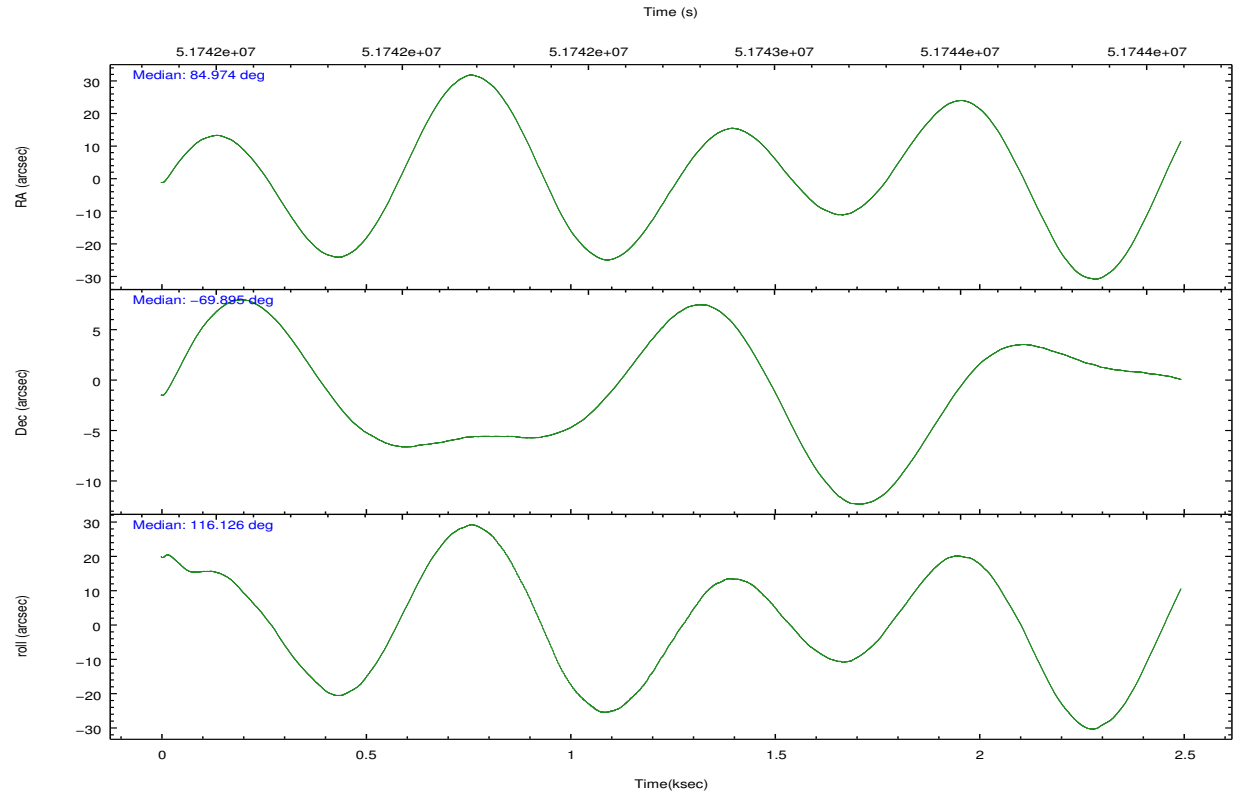
Parameter	Planned	Actual
Instrument	ACIS	ACIS
Detector	ACIS-456789	ACIS-456789
Grating	NONE	NONE
Data mode	FAINT	FAINT
Observation mode	POINTING	POINTING
Pointing RA	85.040222	84.97376514580544
Pointing Dec	-69.910871	-69.89484660346005
Pointing Roll	116.041056	116.135271341407
SIM focus pos (mm)	-0.684267	-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	51741969.184000	51741296.433926
Observation start date	1999-08-22T20:45:05	1999-08-22T20:34:56
Observation end time	51743969.184000	51744095.709027
Observation end date	1999-08-22T21:18:25	1999-08-22T21:21:35
Read mode	TIMED	TIMED

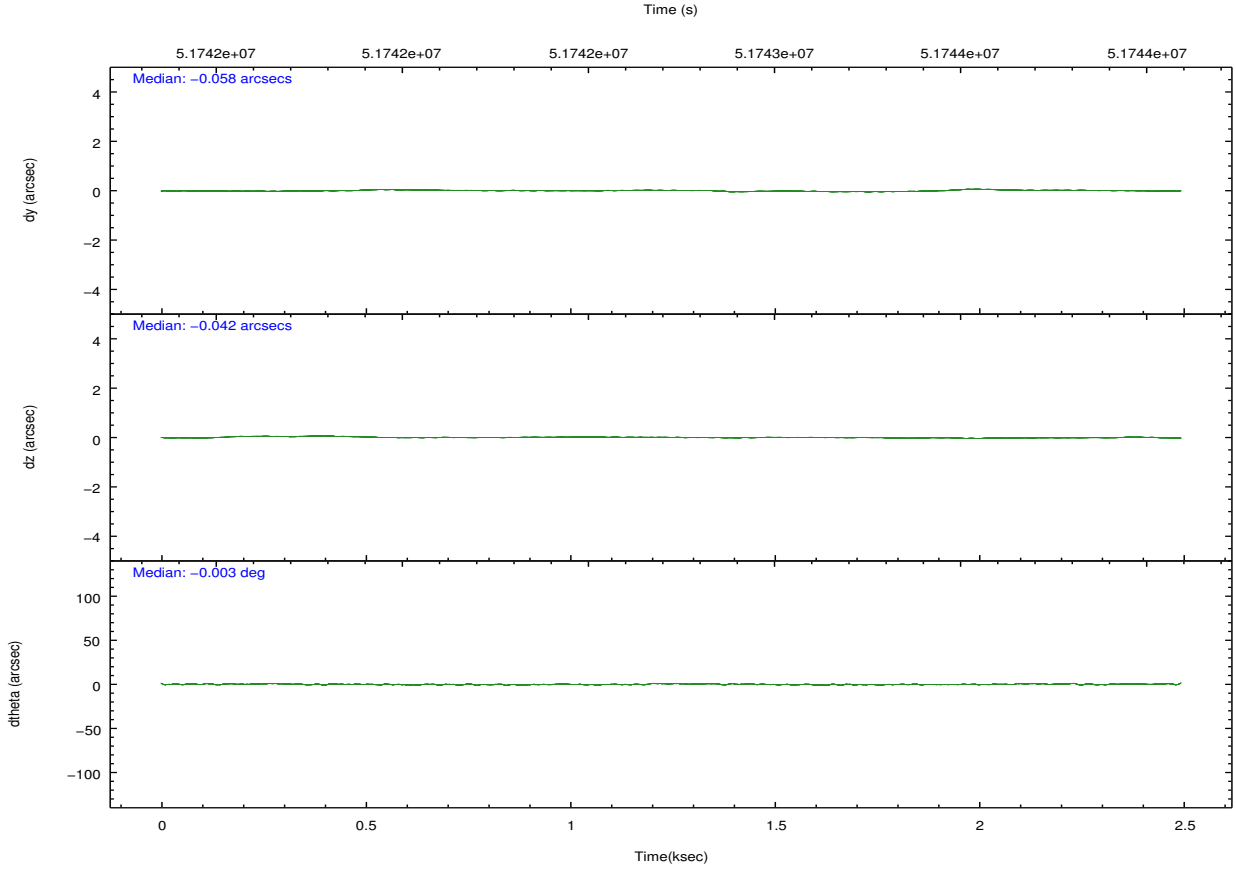
Parameter	Planned	Actual
Obspar format version number	6	6
Obspar file type	PREDICTED	ACTUAL
Obspar update status	NONE	UPDATED
Number of optional ACIS chips dropped	0	0
On-chip summing requested	N	N
Subarray requested	NONE	1/4
Subarray start row	0	768
Subarray row count	1024	256
Alternating exposures requested	N	N
Primary exposure time	0.000000	1.2

2.3 Aspect


RA : 84.974 deg
Dec : −69.895 deg
Dec (arcsec)
RA (arcsec)
5
0
−5
−10
−30
−20
−10
0
10
20
30


DY : −0.058 arcsecs
DZ : −0.042 arcsecs
DZ (arcsec)
DY (arcsec)
4
2
0
−2
−4
−4
−2
0
2
4


Time (s)
5.1742e+07
5.1742e+07
5.1742e+07
5.1743e+07
5.1744e+07
5.1744e+07
Median: 84.974 deg
RA (arcsec)
Median: −69.895 deg
Dec (arcsec)
Median: 116.126 deg
roll (arcsec)
Time(ksec)

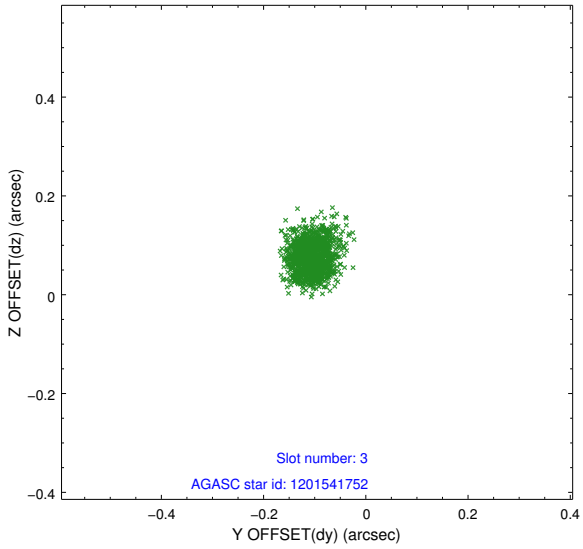

Time (s)
5.1742e+07
5.1742e+07
5.1742e+07
5.1743e+07
5.1744e+07
5.1744e+07
Median: −0.058 arcsecs
dy (arcsec)
Median: −0.042 arcsecs
dz (arcsec)
Median: −0.003 deg
dtheta (arcsec)
Time(ksec)

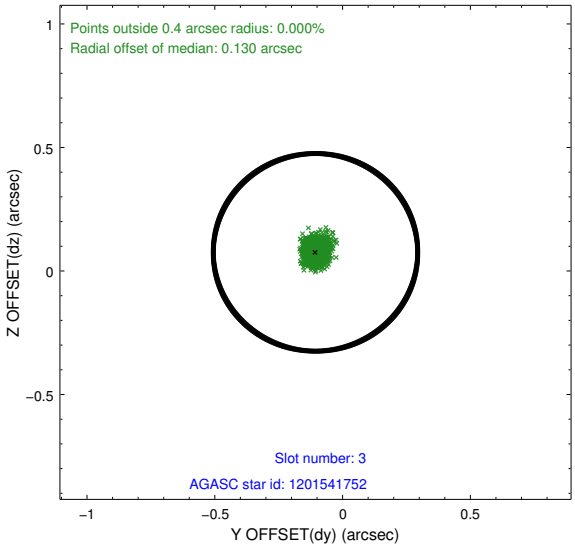
Slot Statistics

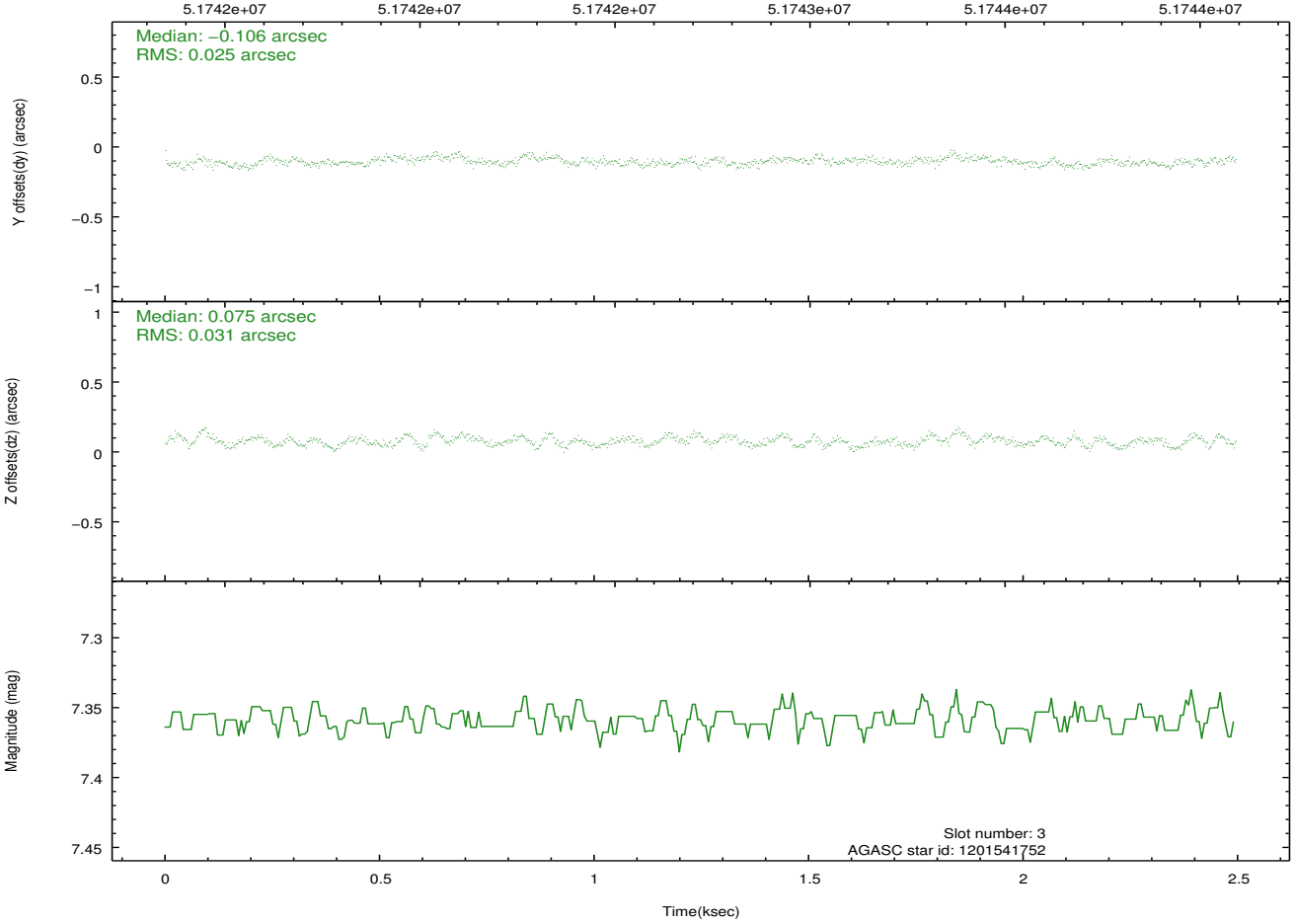
slot	status	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID	ACIS-S-2	7.12	1218	-0.030	-0.021	0.007	0.011	0.000000	0.000000	-752.55	-1721.32
1	FID	ACIS-S-4	7.22	1218	0.138	0.020	0.007	0.014	0.000000	0.000000	2160.33	185.86
2	FID	ACIS-S-5	7.25	1218	-0.139	0.009	0.007	0.013	0.000000	0.000000	-1803.87	180.98
3	GUIDE	1201541752	7.36	1218	-0.106	0.075	0.042	0.067	85.373891	-70.033762	-579.28	-173.39
4	GUIDE	1201542672	8.17	1218	0.062	-0.042	0.049	0.076	84.492488	-69.957531	141.83	682.57
5	GUIDE	1201407840	7.97	1218	-0.030	-0.024	0.054	0.092	83.696303	-70.172201	-141.98	1896.25
6	UNUSED		0.00	0	0.000	0.000	0.000	0.000	0.000000	0.000000	0.00	0.00
7	GUIDE	1201540568	9.96	1217	0.073	-0.008	0.093	0.156	85.901764	-70.070643	-988.17	-692.23

2.4 Star Slots

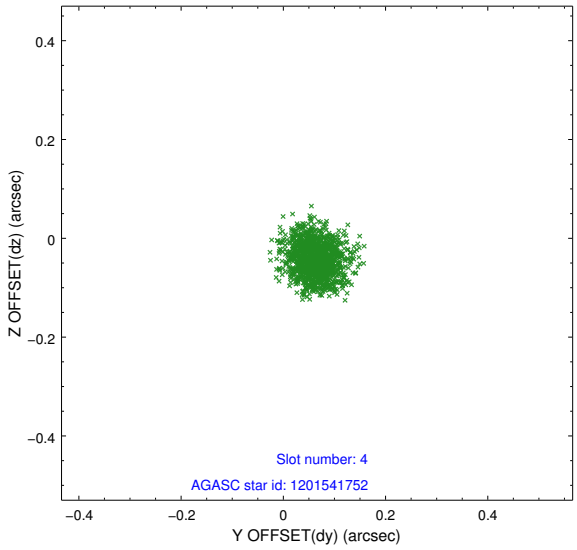
2.4.1 Slot 3

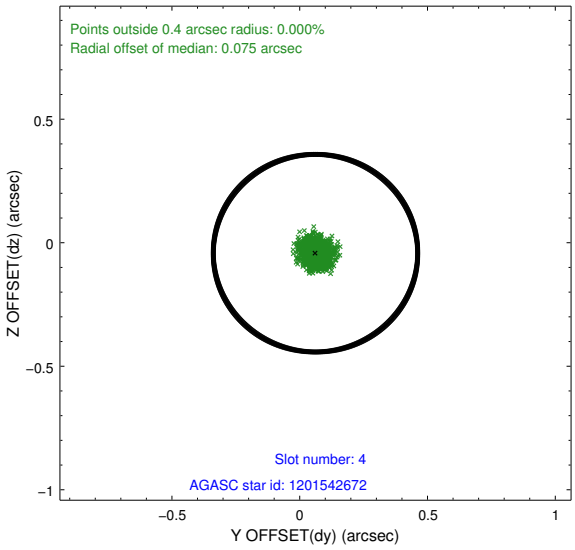


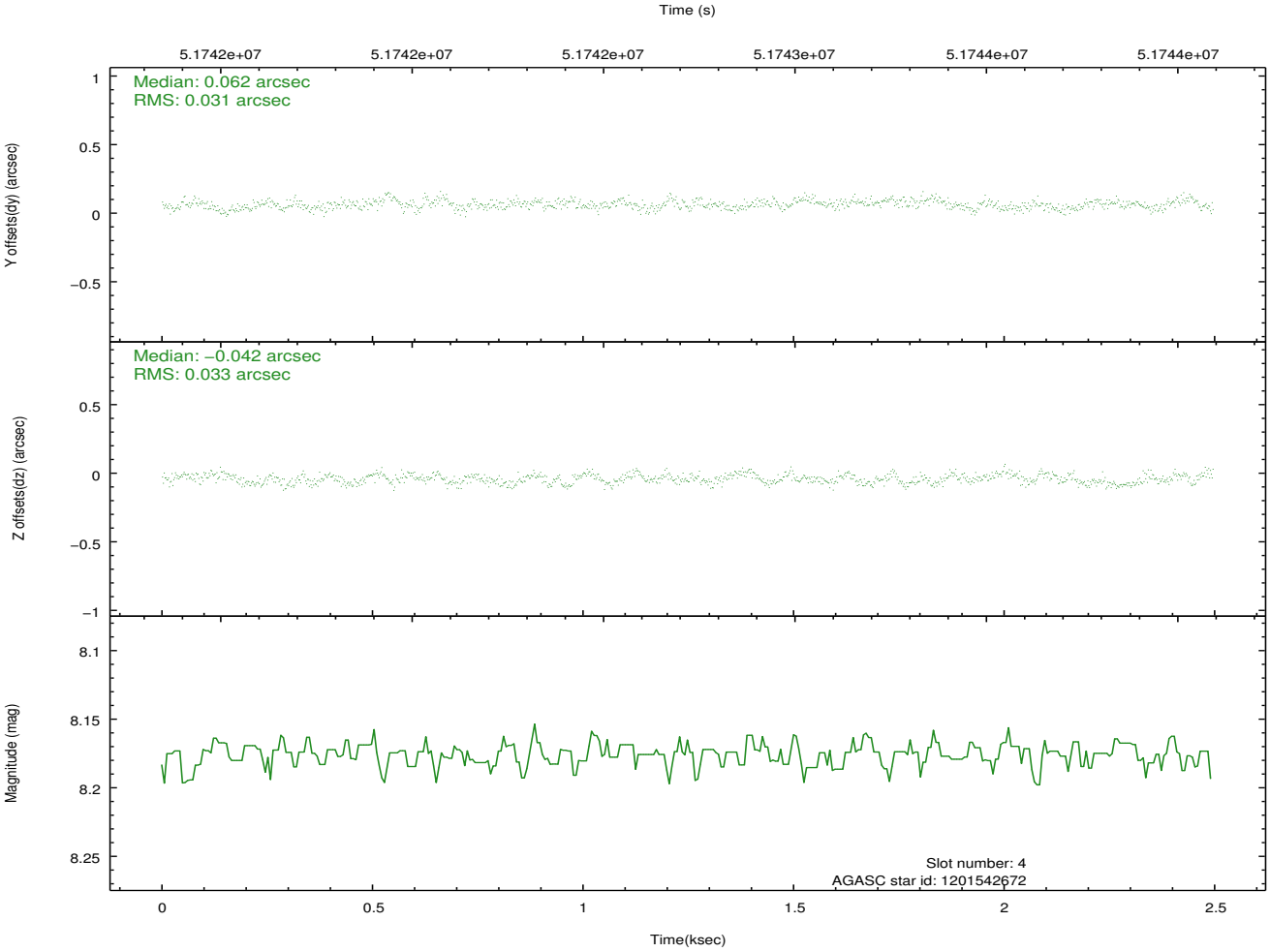




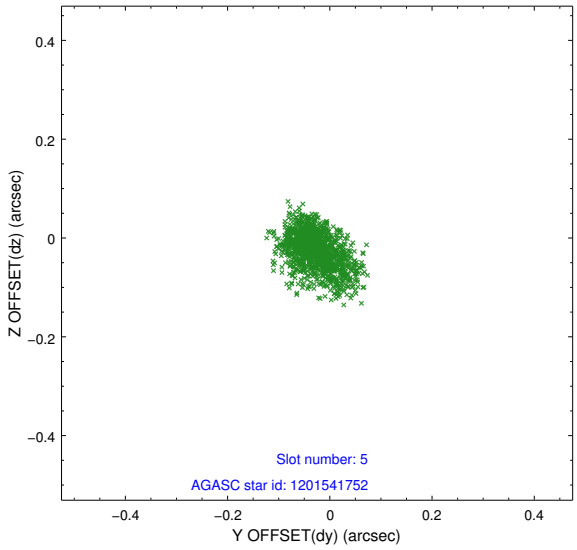
2.4.2 Slot 4

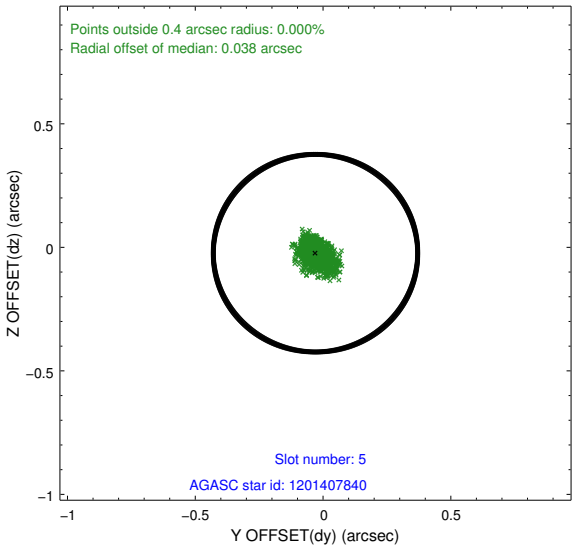

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 4
AGASC star id: 1201541752

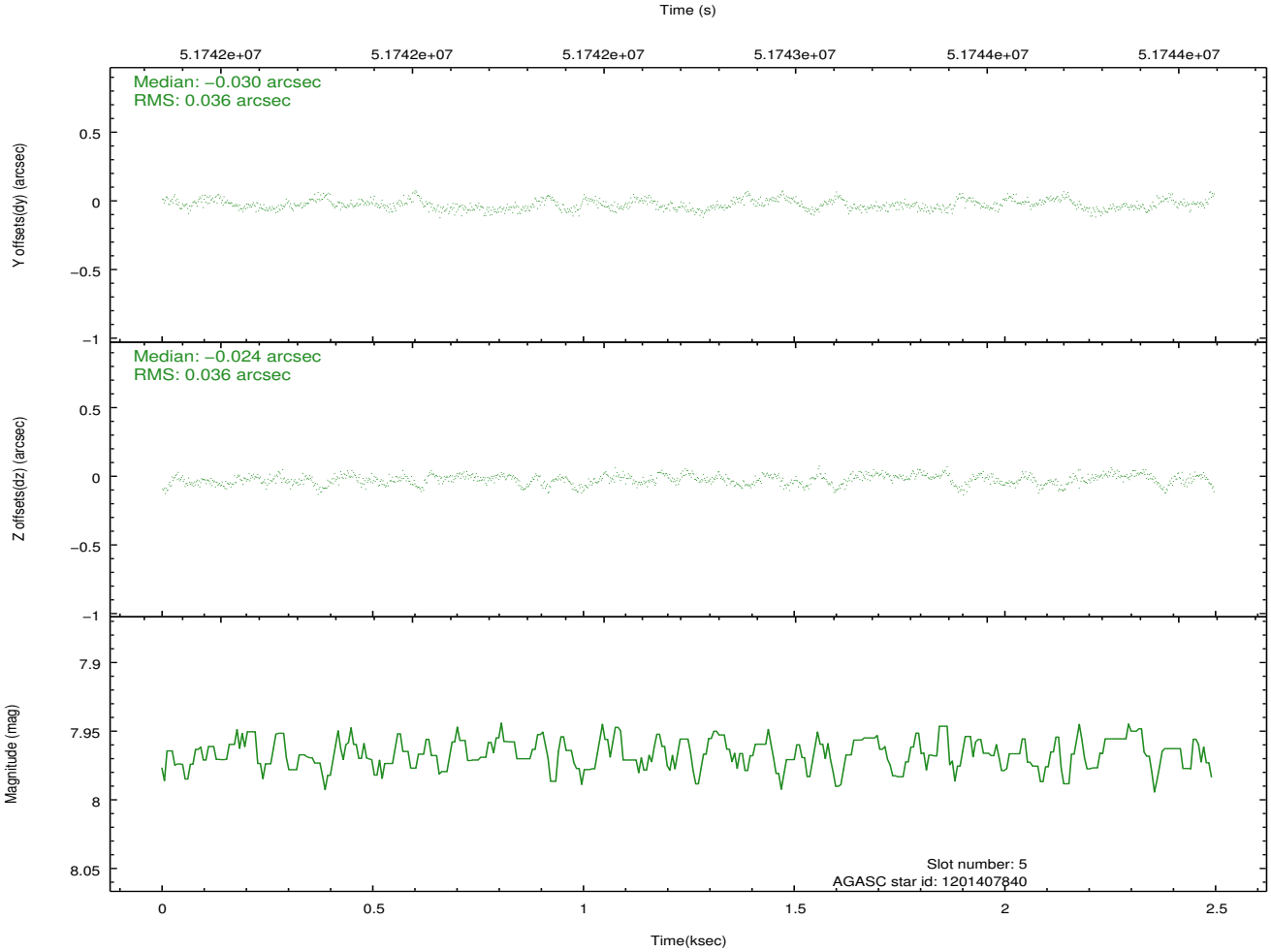

Points outside 0.4 arcsec radius: 0.000%
Radial offset of median: 0.075 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 4
AGASC star id: 1201542672


Time (s)
Median: 0.062 arcsec
RMS: 0.031 arcsec
Y offsets(dy) (arcsec)
Median: −0.042 arcsec
RMS: 0.033 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number: 4
AGASC star id: 1201542672
Time(ksec)

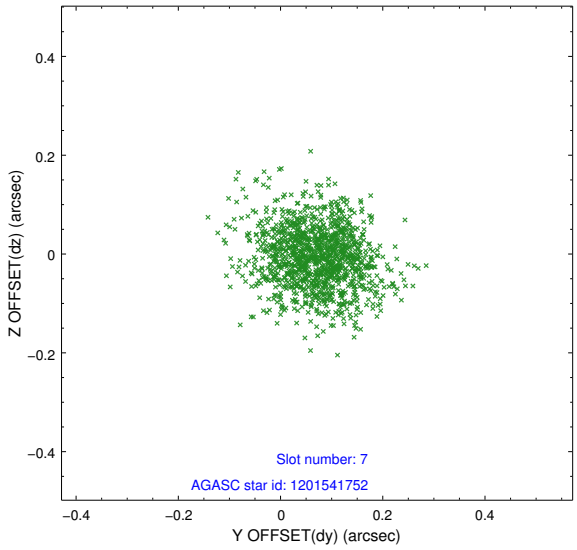
2.4.3 Slot 5

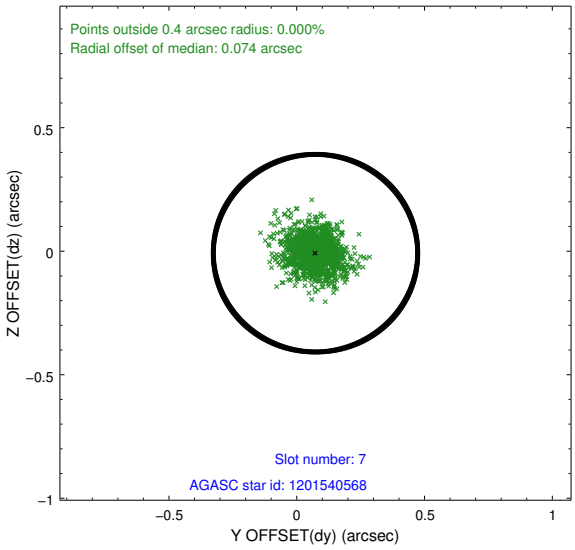

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 5
AGASC star id: 1201541752

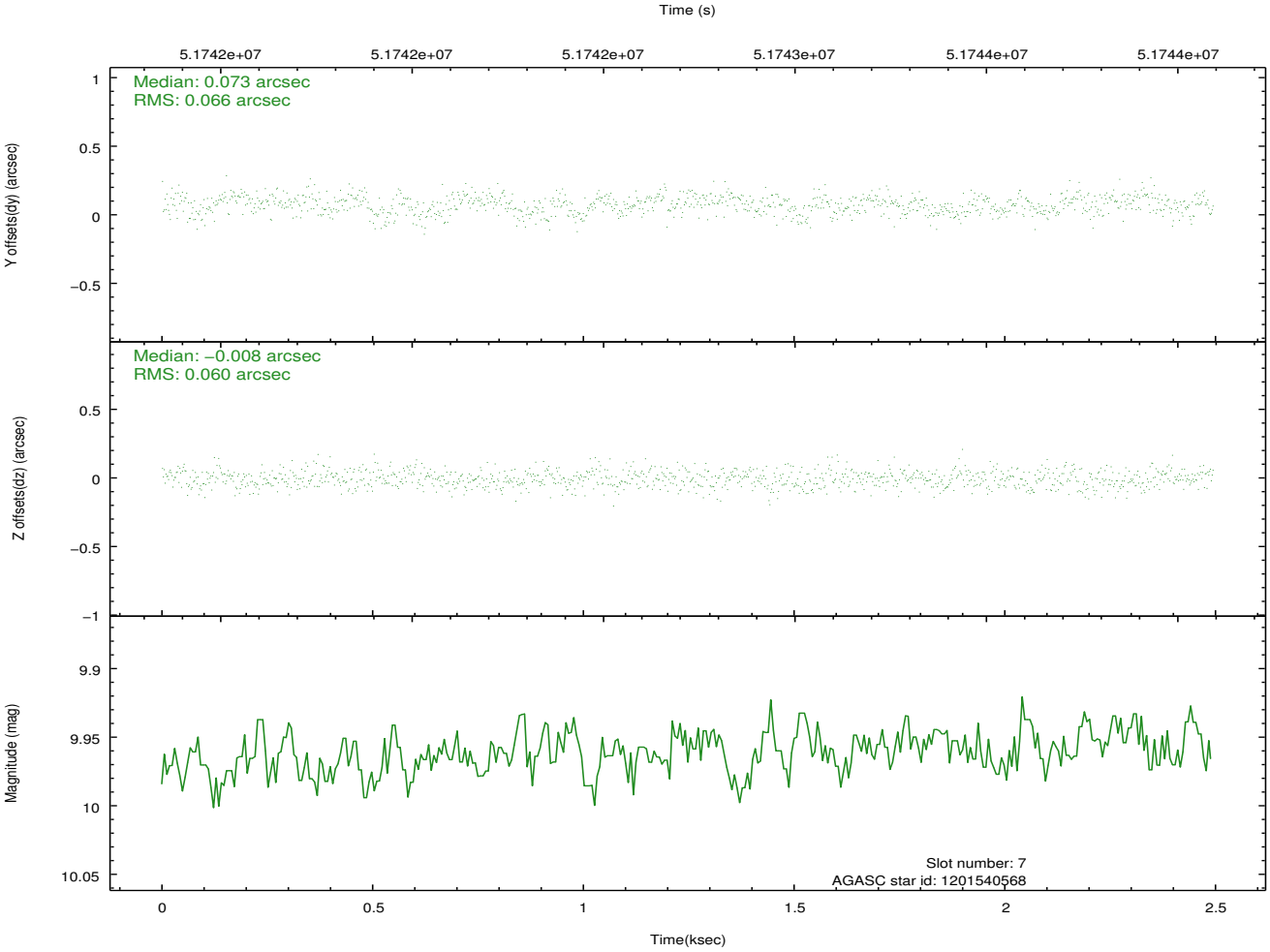

Points outside 0.4 arcsec radius: 0.000%
Radial offset of median: 0.038 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 5
AGASC star id: 1201407840


Time (s)
Median: −0.030 arcsec
RMS: 0.036 arcsec
Y offsets(dy) (arcsec)
Median: −0.024 arcsec
RMS: 0.036 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number: 5
AGASC star id: 1201407840
Time(ksec)

2.4.4 Slot 7

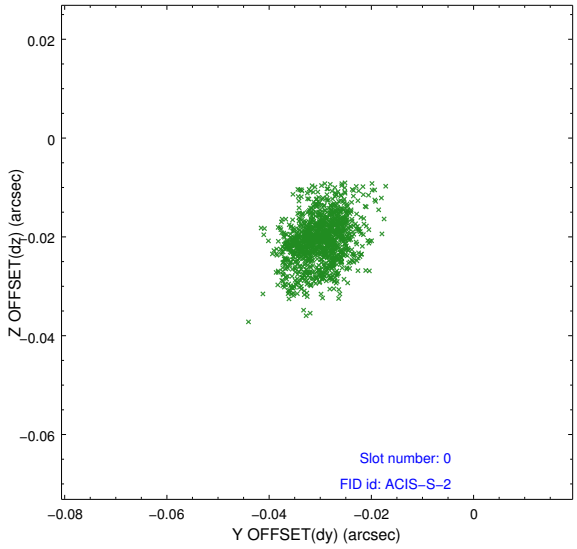

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 7
AGASC star id: 1201541752

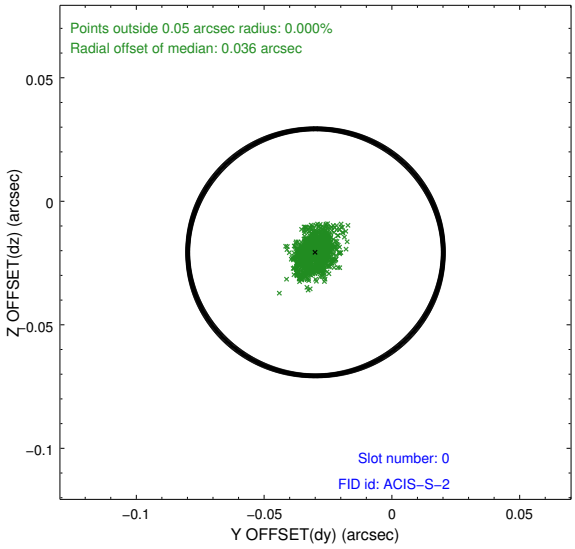

Points outside 0.4 arcsec radius: 0.000%
Radial offset of median: 0.074 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 7
AGASC star id: 1201540568

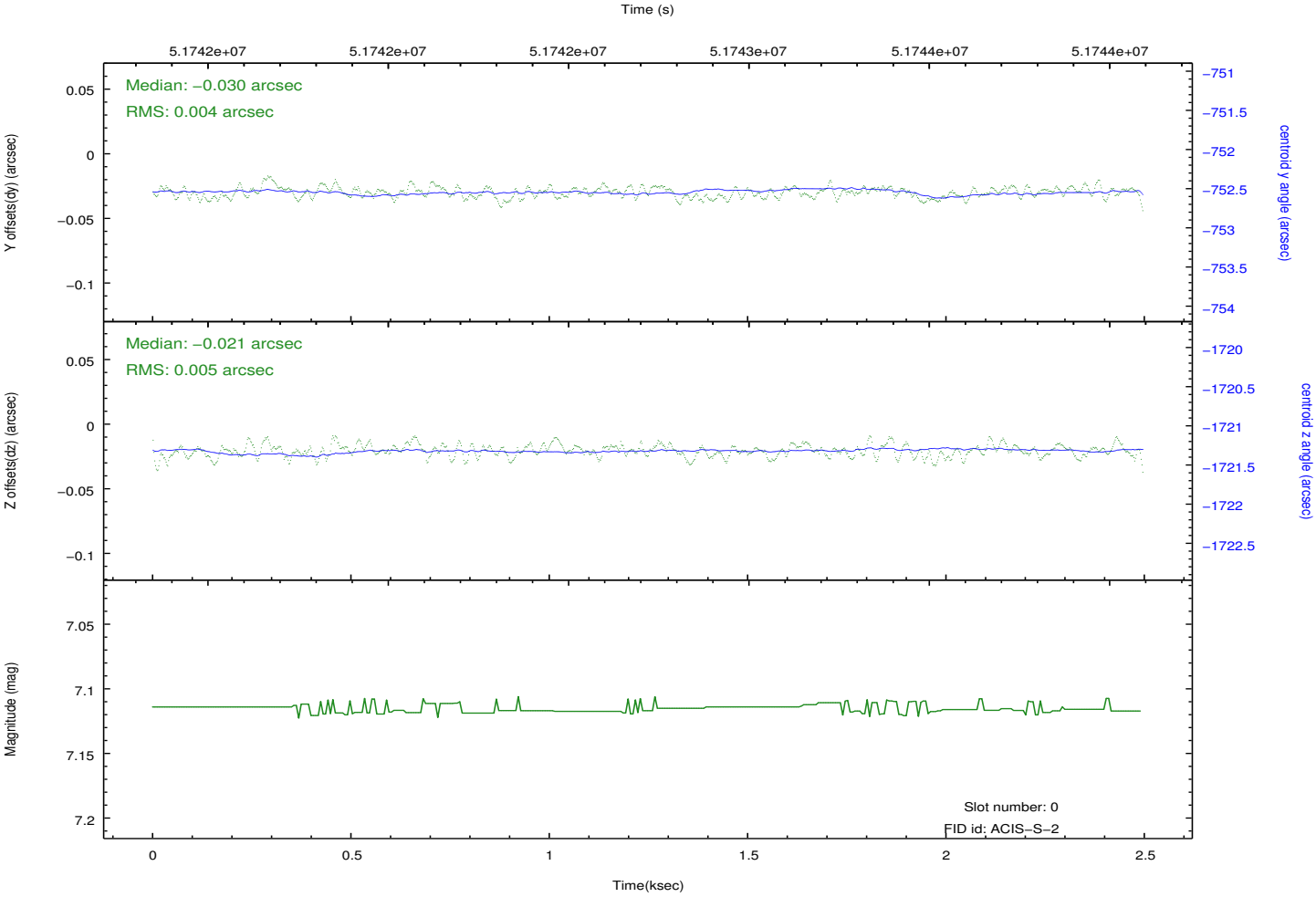

Time (s)
Median: 0.073 arcsec
RMS: 0.066 arcsec
Y offsets(dy) (arcsec)
Median: −0.008 arcsec
RMS: 0.060 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number: 7
AGASC star id: 1201540568
Time(ksec)

2.5 FID Slots

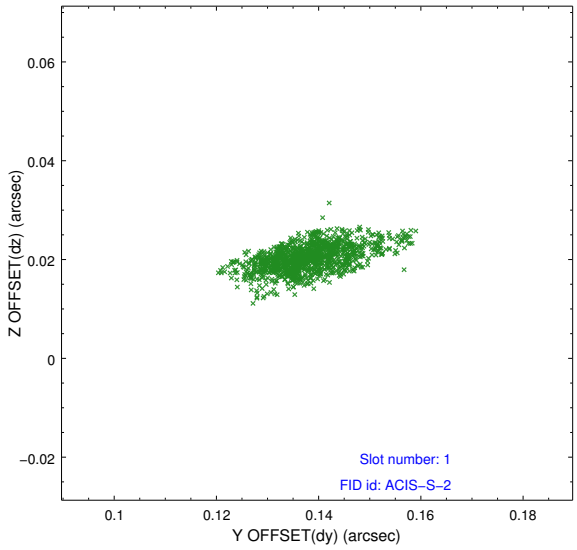
2.5.1 Slot 0

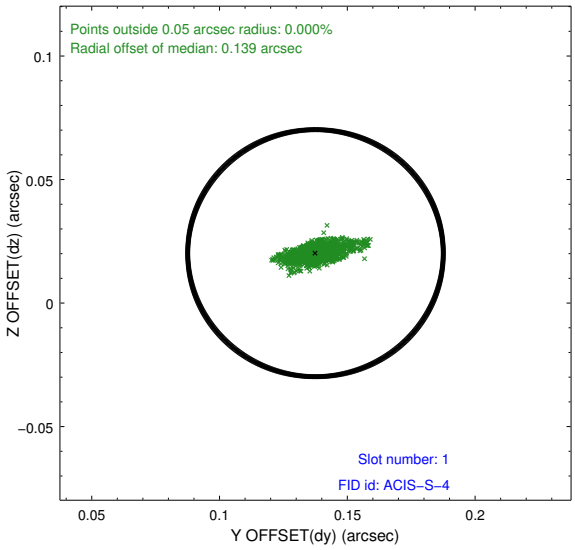


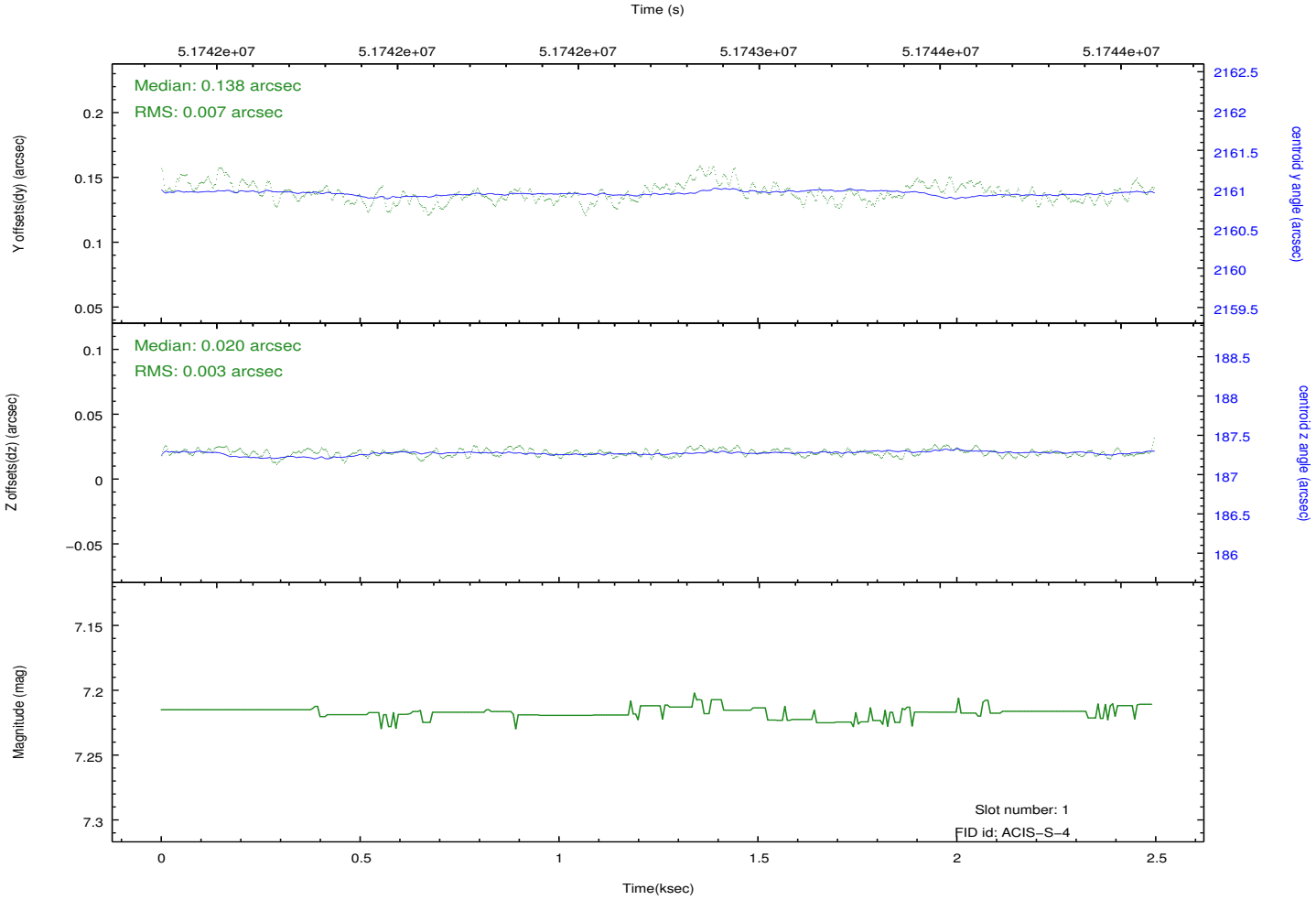




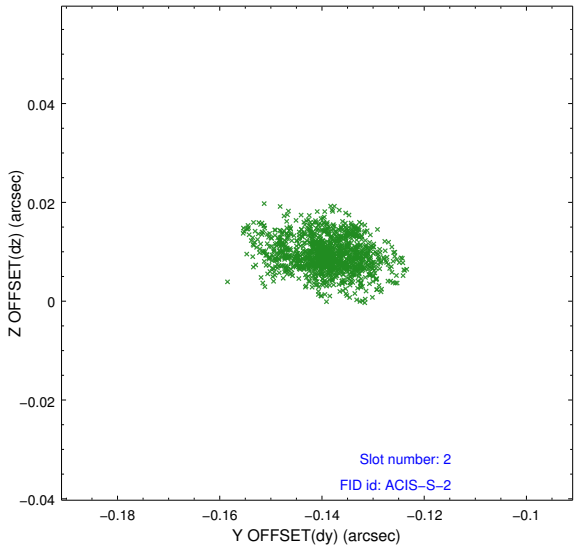
2.5.2 Slot 1

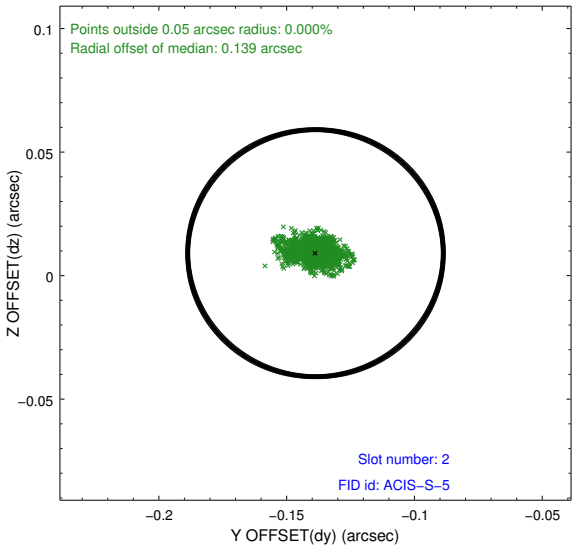

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 1
FID id: ACIS−S−2

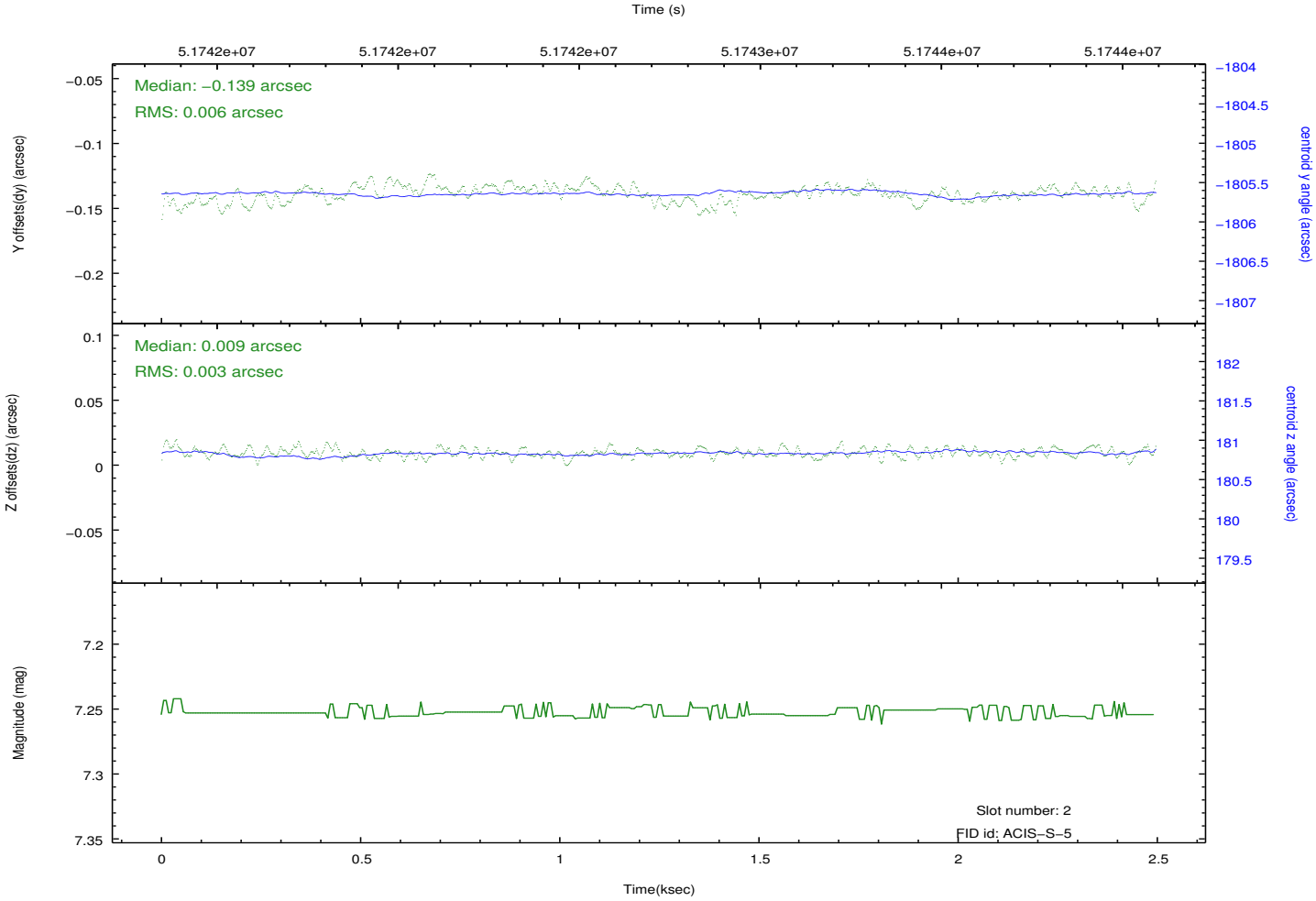

Points outside 0.05 arcsec radius: 0.000%
Radial offset of median: 0.139 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 1
FID id: ACIS−S−4


Time (s)
Median: 0.138 arcsec
RMS: 0.007 arcsec
Y offsets(dy) (arcsec)
Median: 0.020 arcsec
RMS: 0.003 arcsec
Z offsets(dz) (arcsec)
centroid y angle (arcsec)
centroid z angle (arcsec)
Magnitude (mag)
Slot number: 1
FID id: ACIS−S−4
Time(ksec)

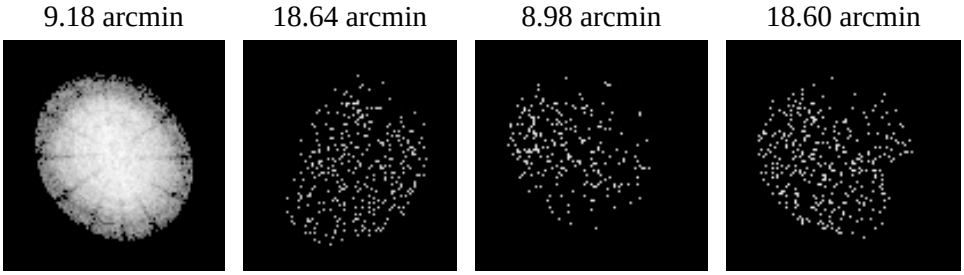
2.5.3 Slot 2


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


Time (s)
Median: −0.139 arcsec
RMS: 0.006 arcsec
Y offsets(dy) (arcsec)
centroid y angle (arcsec)
Median: 0.009 arcsec
RMS: 0.003 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)	2010.07.27
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	1.964

A.2 Comments

```
Target is very off-axis on S2. Subarray used, although not documented
in OCAT. Aim point is off the 1/4 subarray, but target is on.
==
Slot 6 was not utilized in this observation.
===
The focal plane temperature is approximately -100 C 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.
```