

# V&V Reference Report

## L2 ASCDS Version : 7.6.9

Observation 2414 - L2 Version 001  
Chandra X-Ray Center

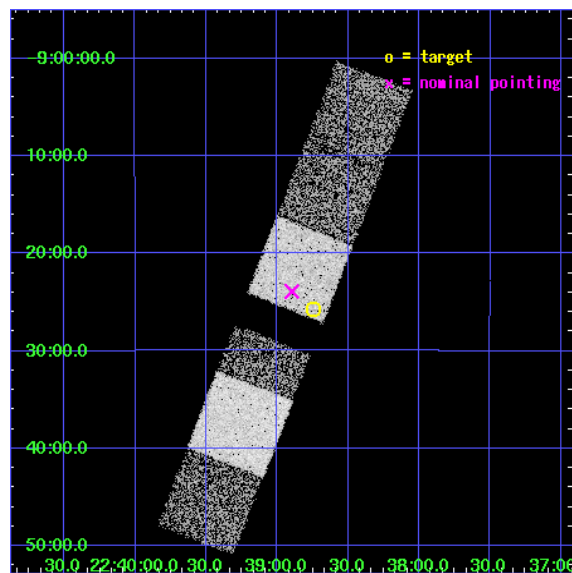
L2 Processing Date : Nov 2 2006

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# 1 Front

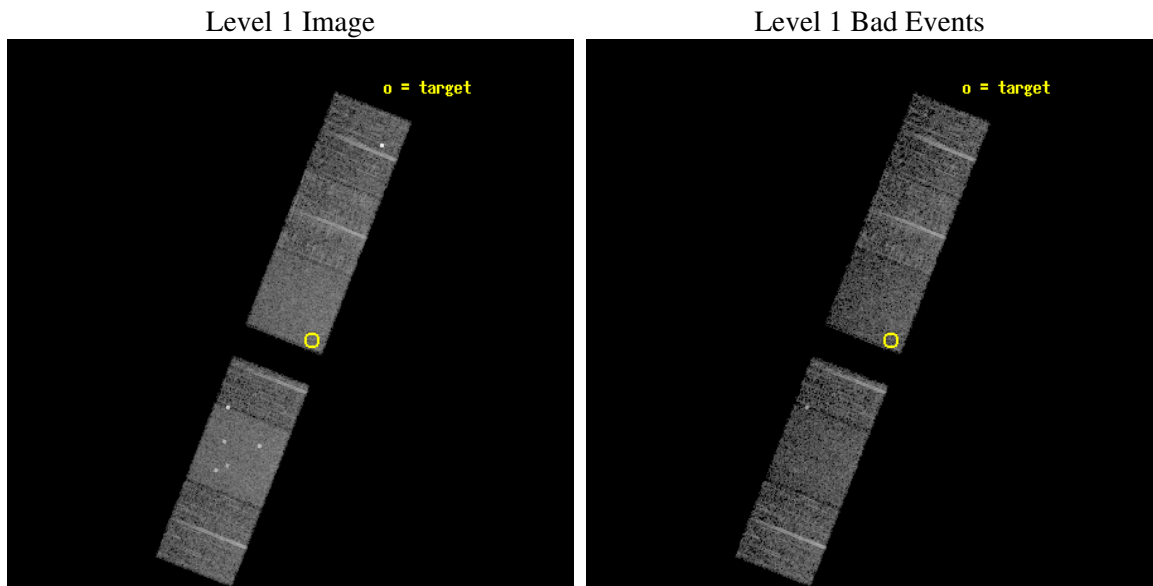
seq_num	100026
obs_id	2414
title	VENUS AND MARS: THE CLOSEST PLANETARY ANALOGUES TO COMETS
observer	Dr. Konrad Dennerl
object	VENUS
dtcycle	0
cycle	P
ra_targ	339.68718
dec_targ	-9.42834
ra_nom	339.72424185968
dec_nom	-9.398475591084
roll_nom	291.38879964955
revision	2
ontime	5753.6000053585
livetime	5680.7444576886
ontime4	5750.3590451181
ontime5	5753.6000053585
ontime6	5753.6000053585
ontime7	5753.6000053585
ontime8	5750.3590451032
ontime9	5750.3590151966
l2events	47331



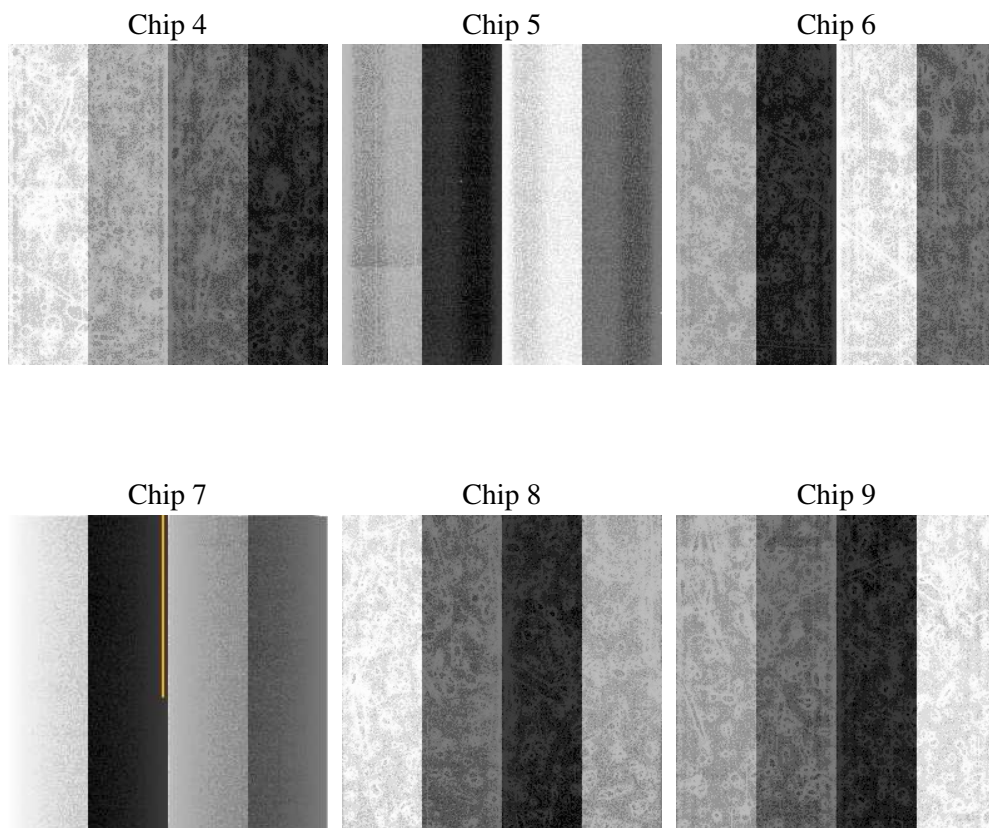
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

obi_num	0
ascdsver	7.6.9
caldbver	3.2.3
date	2006-11-02T17:58:23
revision	2

sched_exp_time	6000.000000
ontime	5759.2498211712
ontime4	5756.0088609308
ontime5	5759.2498510927
ontime6	5759.2498211712
ontime7	5759.2498211712
ontime8	5756.0088609159
ontime9	5756.0088310093
l1events	232934

### 2.1.4 Events

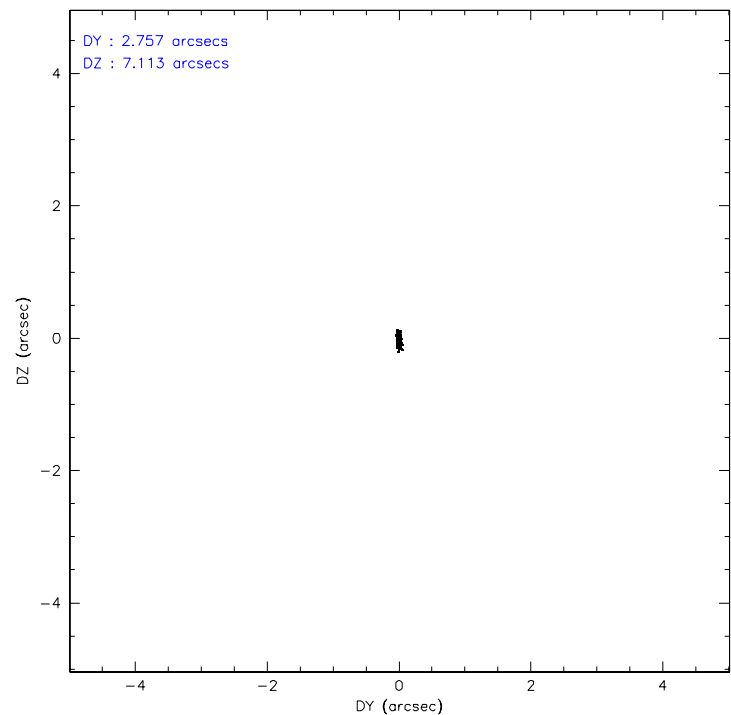
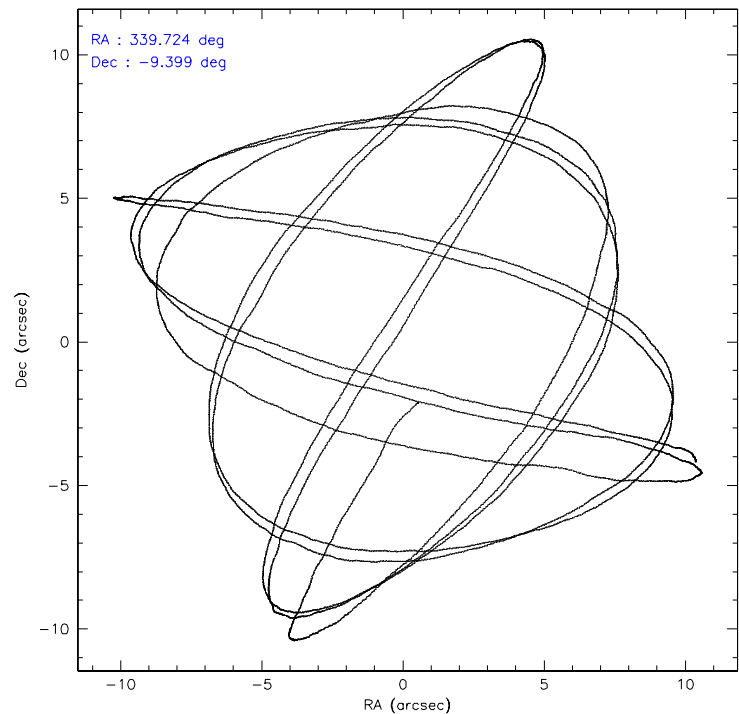
	ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
level 1 events	37343	49964	20979	43161	44619	36868
rejected events	33337	27063	18754	26801	36846	29520
rejected %	89%	54%	89%	62%	82%	80%

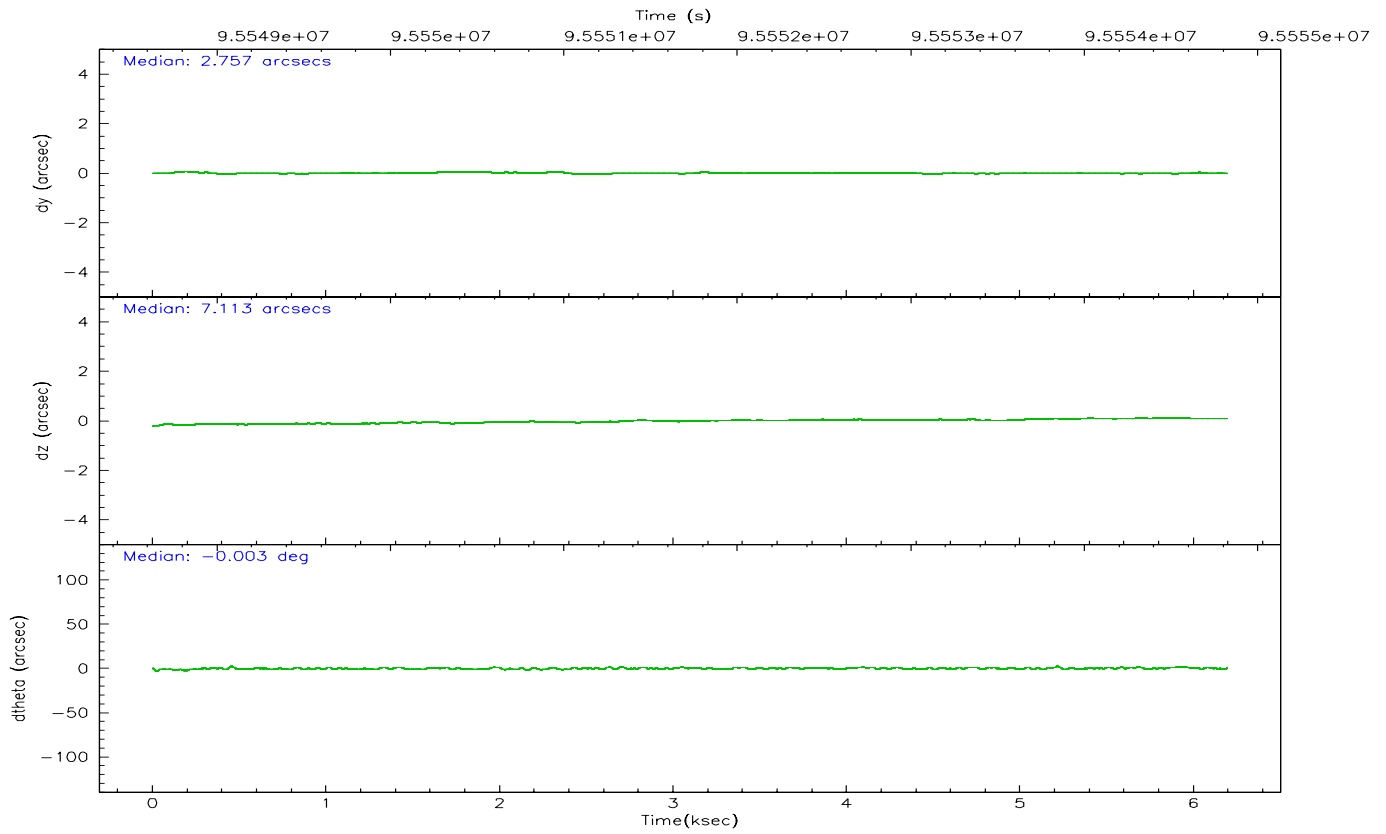
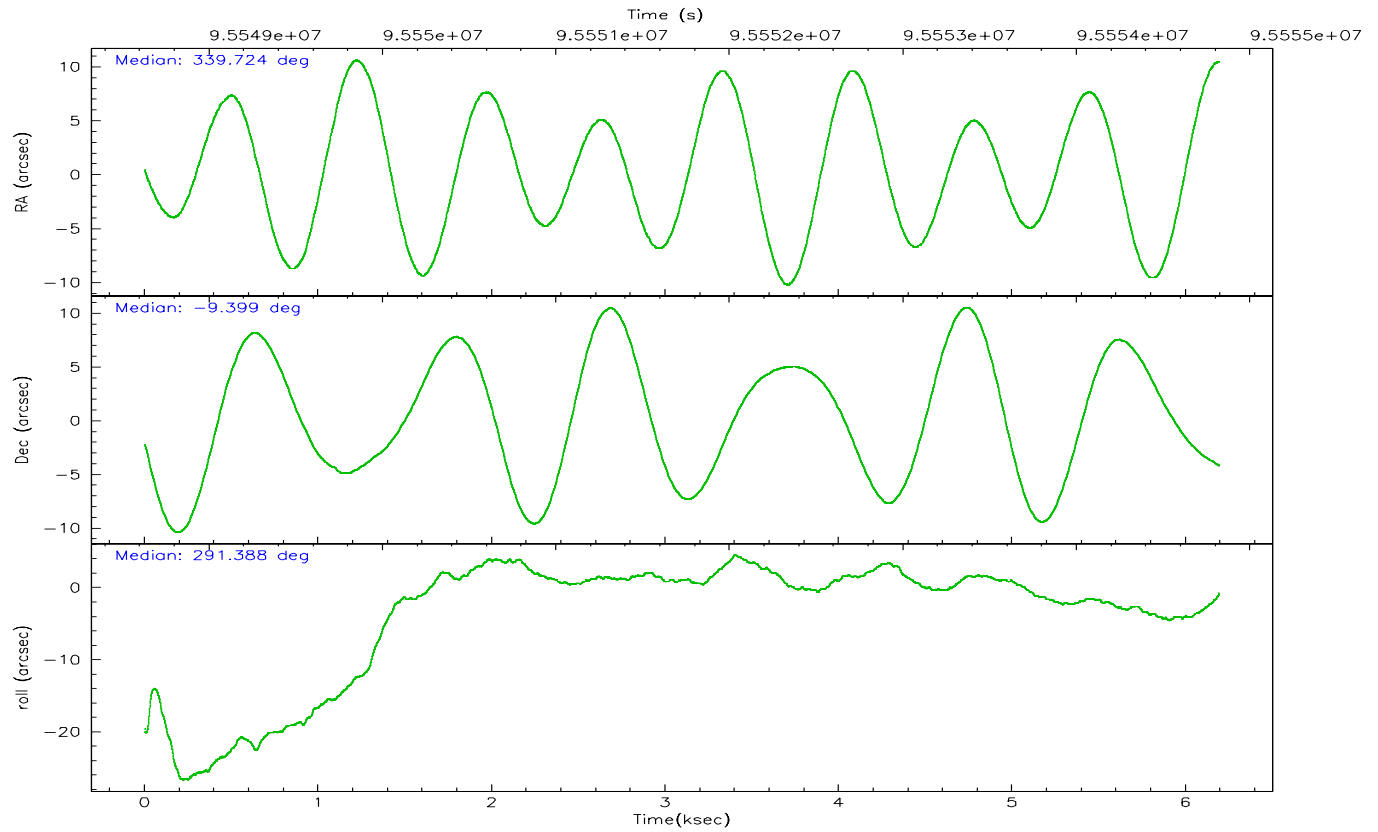
	ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
grade 0 events	1591	3304	798	920	2432	1532
	4%	6%	3%	2%	5%	4%
grade 1 events	18	205	12	26	27	14
	0%	0%	0%	0%	0%	0%
grade 2 events	953	6479	482	3955	1628	4048
	2%	12%	2%	9%	3%	10%
grade 3 events	402	533	248	875	881	402
	1%	1%	1%	2%	1%	1%
grade 4 events	359	443	216	782	776	399
	0%	0%	1%	1%	1%	1%
grade 5 events	1206	2541	872	2990	1739	1511
	3%	5%	4%	6%	3%	4%
grade 6 events	702	12154	482	9840	2059	971
	1%	24%	2%	22%	4%	2%
grade 7 events	32112	24305	17869	23773	35077	27991
	85%	48%	85%	55%	78%	75%

## 2.2 Compared Parameters

Parameter	Planned	Actual	Parameter	Planned	Actual
Instrument	ACIS	ACIS	Obspar format version number	6	6
Detector	ACIS-456789	ACIS-456789	Obspar file type	PREDICTED	ACTUAL
Grating	LETG	LETG	Obspar update status	NONE	UPDATED
Data mode	VFAINT	VFAINT	Number of optional ACIS chips dropped	0	0
Observation mode	POINTING	POINTING	On-chip summing requested	N	N
Pointing RA	339.702468	339.724241859679	Subarray requested	NONE	NONE
Pointing Dec	-9.381548	-9.398475591084047	Alternating exposures requested	N	N
Pointing Roll	291.228623	291.3887996495477	Primary exposure time	3.200000	3.2
Window start time	95299264.184000	95299264.184000			
Window stop time	95990464.184000	95990464.184000			
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	95548828.184000	95548452.284015			
Observation start date	2001-01-10T21:19:24	2001-01-10T21:14:12			
Observation end time	95554828.184000	95555689.296792			
Observation end date	2001-01-10T22:59:24	2001-01-10T23:14:49			
Read mode	TIMED	TIMED			

2.3 Aspect



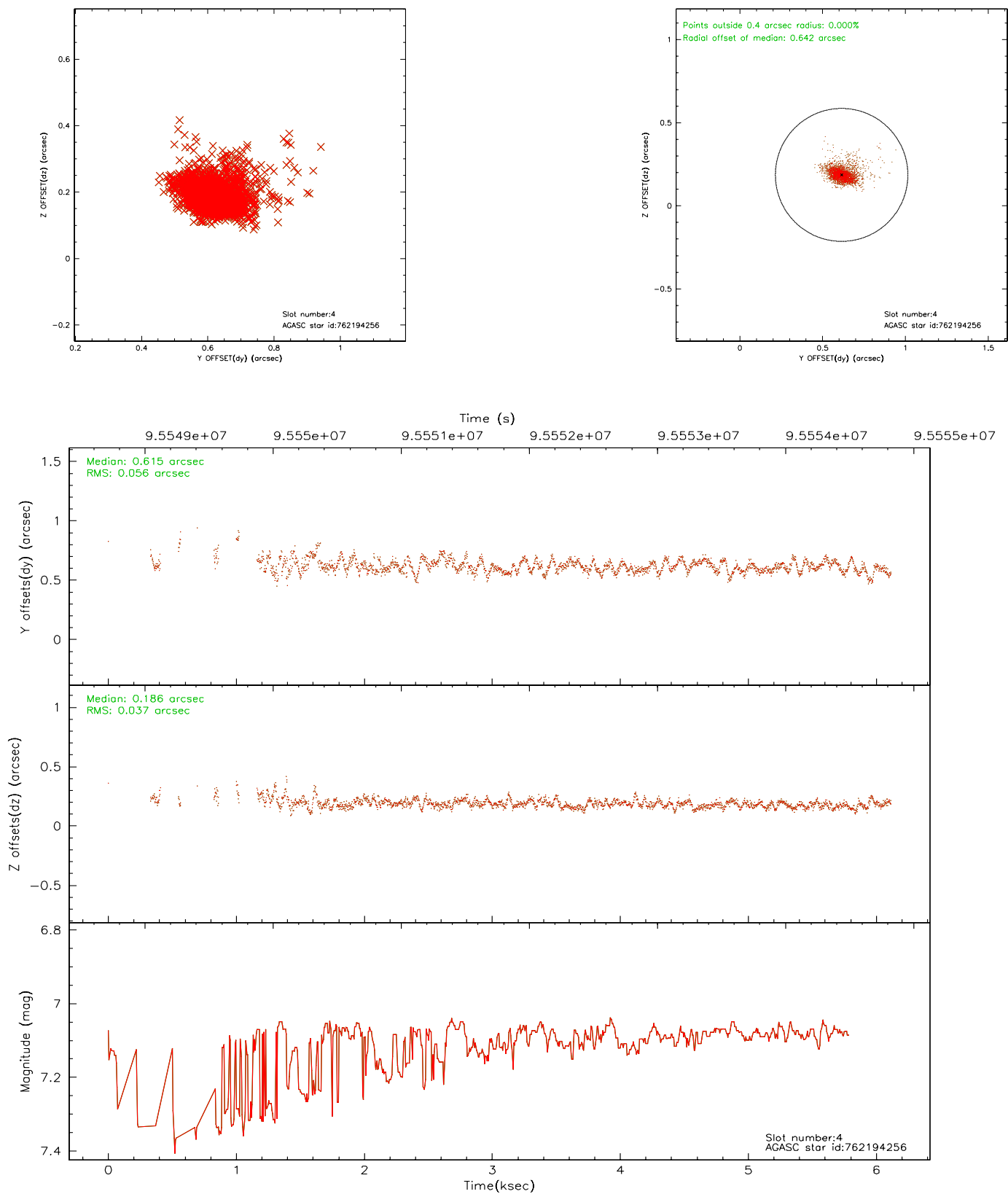


### Slot Statistics

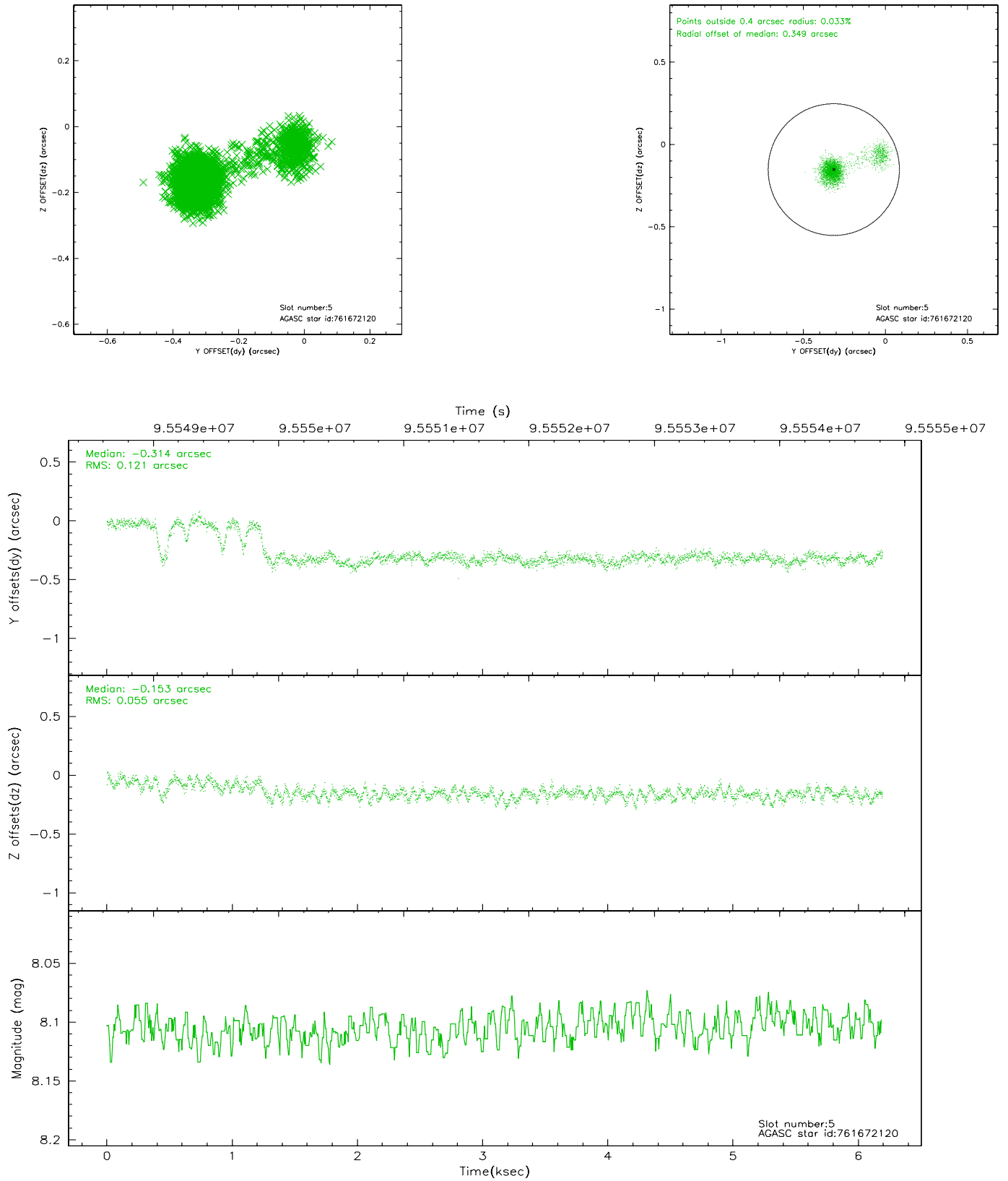
slot	status	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID	ACIS-S-2	7.12	1511	-0.020	0.019	0.006	0.015	0.000000	0.000000	-755.44	-1728.23
1	OMITTED		0.00	0	0.000	0.000	0.000	0.000	0.000000	0.000000	0.00	0.00
2	FID	ACIS-S-5	7.23	1510	0.001	-0.015	0.006	0.015	0.000000	0.000000	-1808.93	172.74
3	OMITTED		0.00	0	0.000	0.000	0.000	0.000	0.000000	0.000000	0.00	0.00
4	BAD	762194256	7.09	2492	0.615	0.186	0.063	0.125	339.816781	-10.027795	2315.20	-465.17
5	GUIDE	761672120	8.11	3021	-0.314	-0.153	0.074	0.316	339.232283	-9.389338	-577.49	-1567.67
6	GUIDE	761670320	9.20	3020	-0.272	-0.011	0.099	0.310	339.180611	-8.948429	-2125.06	-1166.55
7	OMITTED		0.00	0	0.000	0.000	0.000	0.000	0.000000	0.000000	0.00	0.00

## 2.4 Star Slots

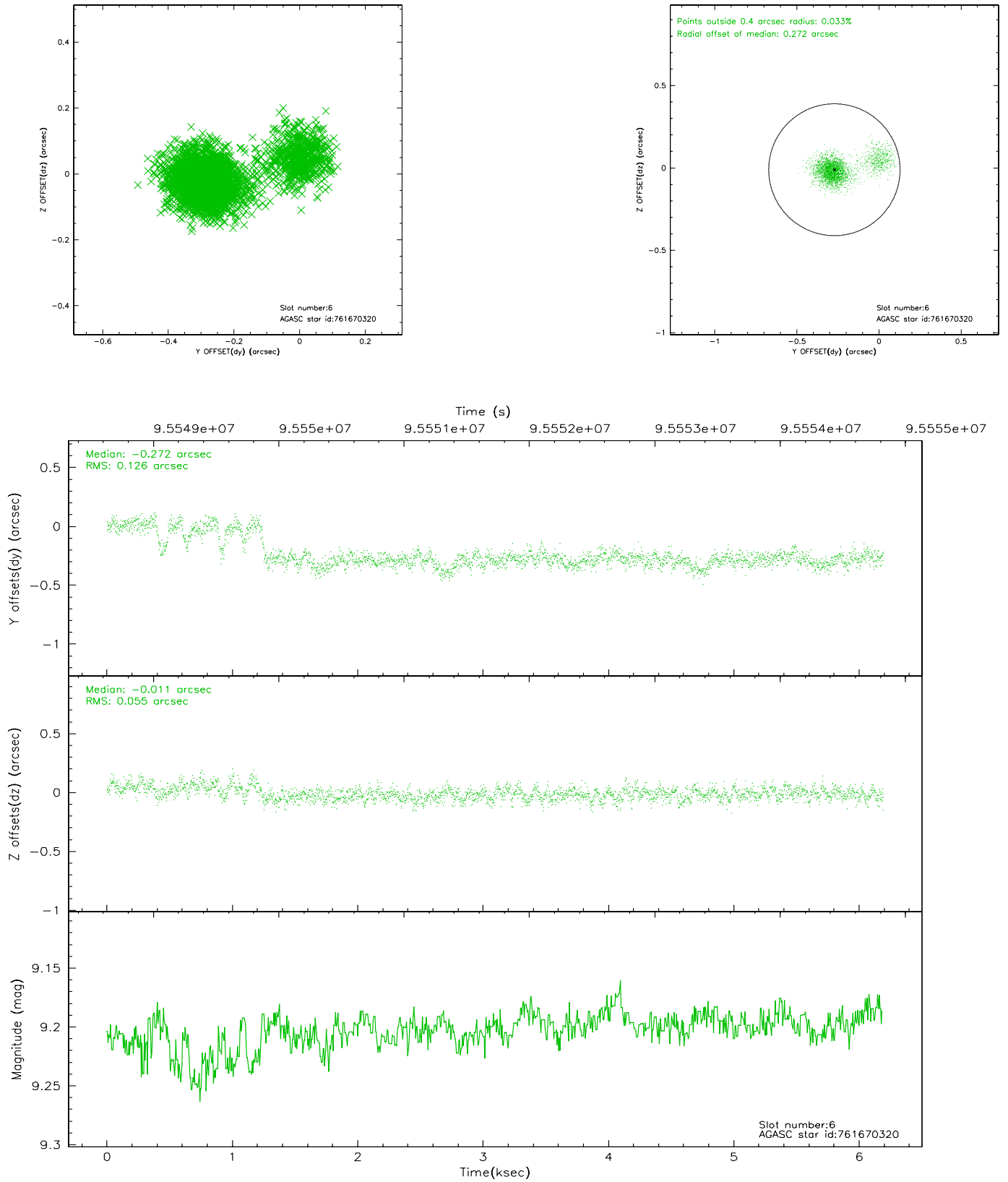
### 2.4.1 Slot 4



## 2.4.2 Slot 5

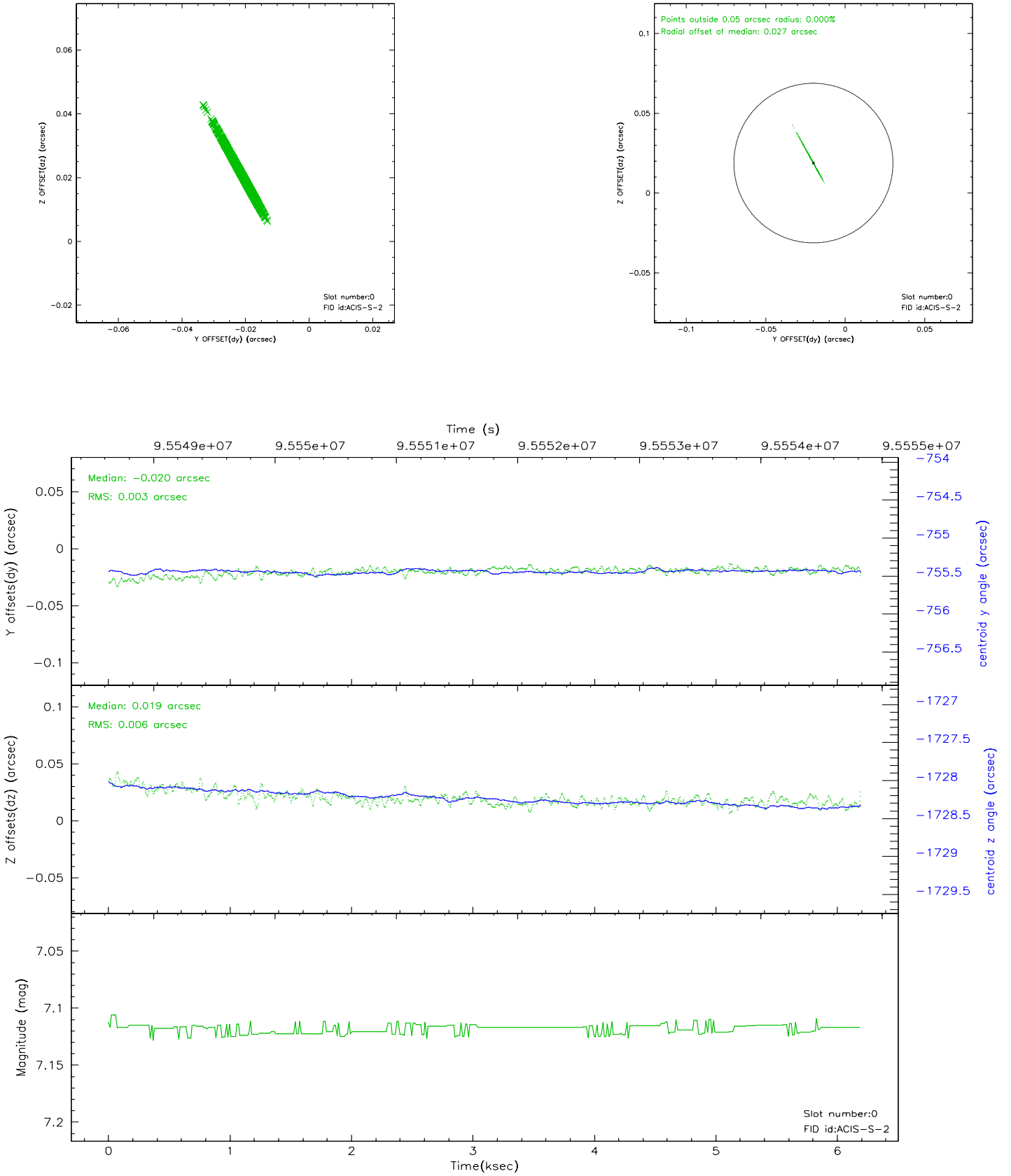


### 2.4.3 Slot 6

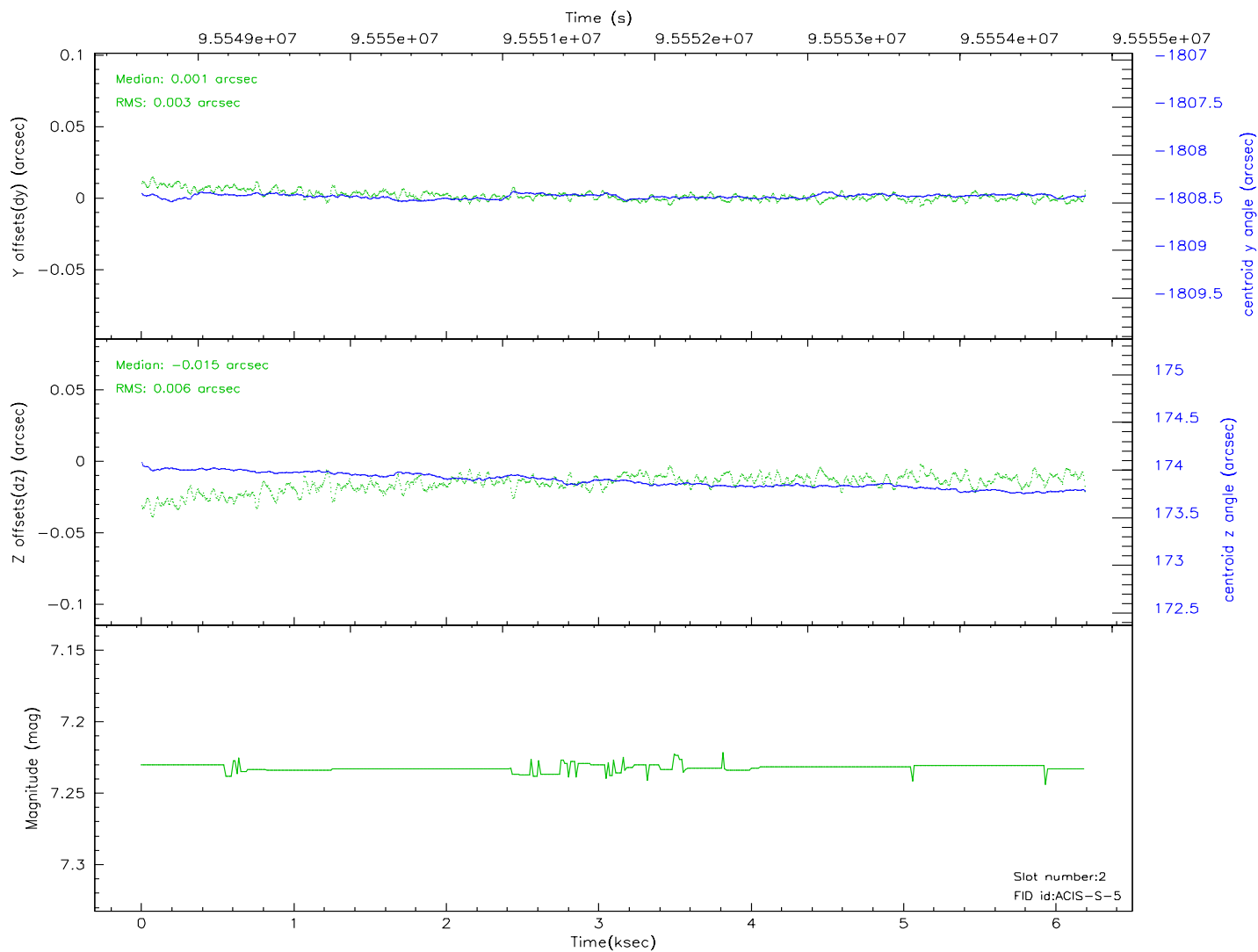
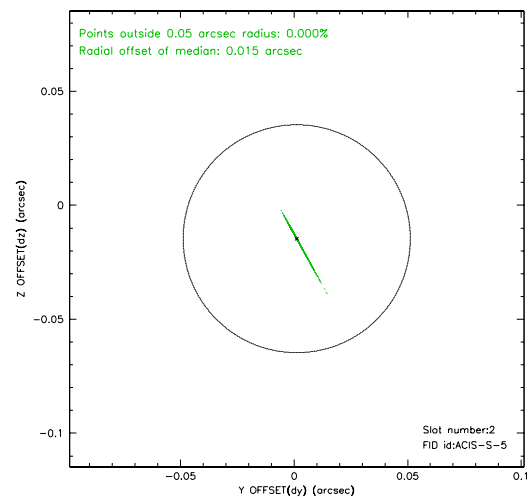
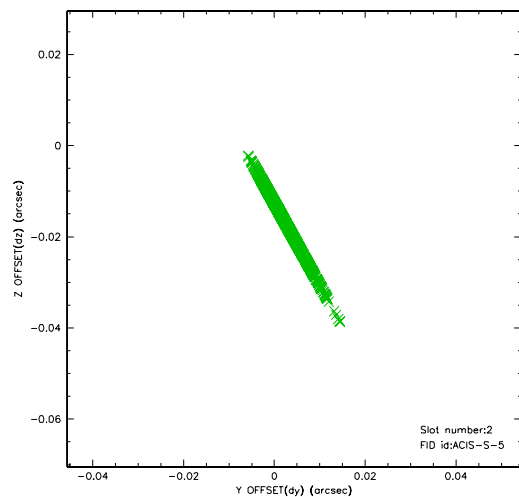


## 2.5 FID Slots

### 2.5.1 Slot 0



## 2.5.2 Slot 2

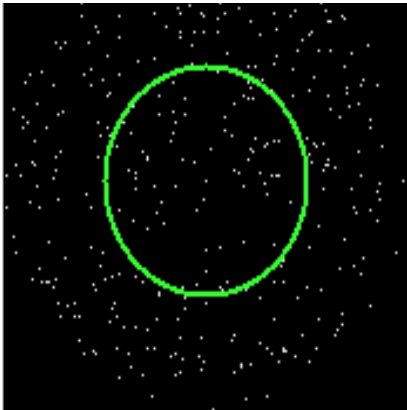


# 3 Gratings

## 3.1 LETG Arm



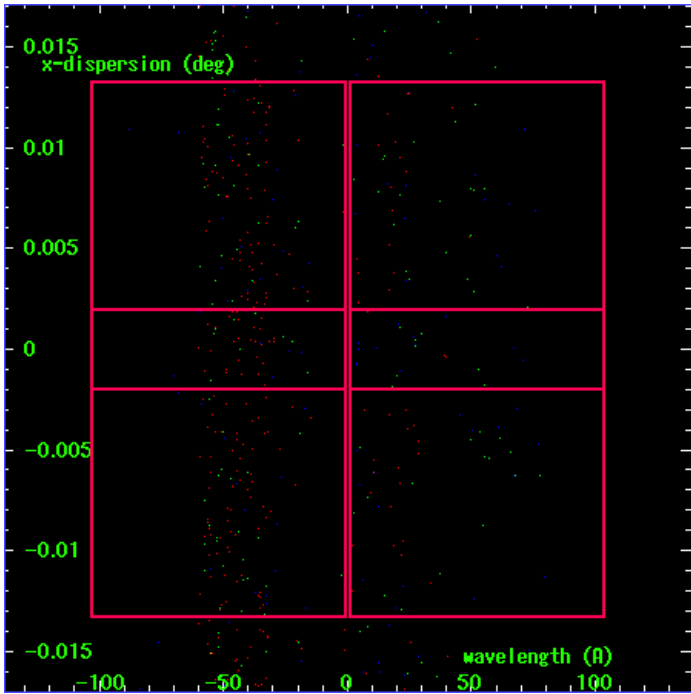
LETG Order Sort 123



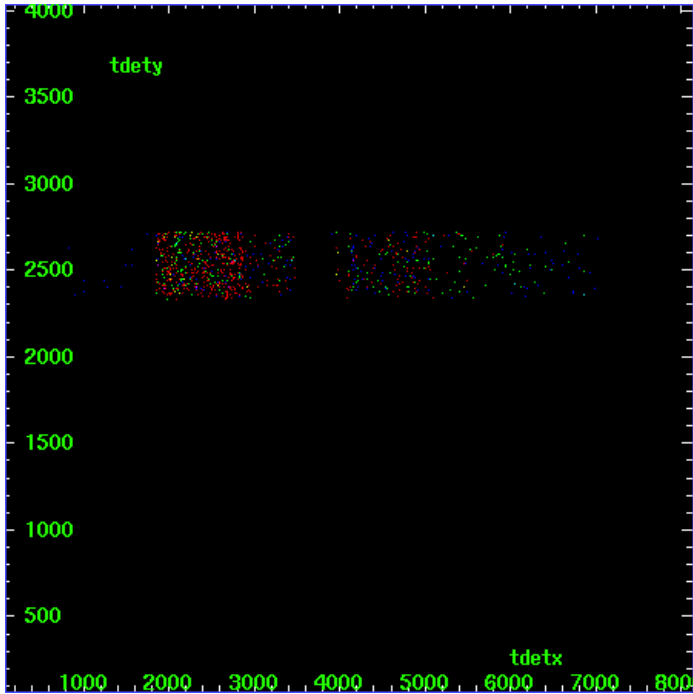
LETG Zero Order



LETG Order Sort ALL

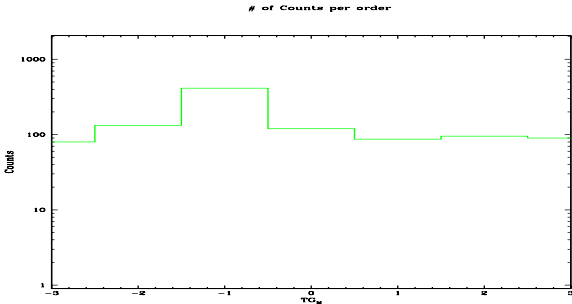


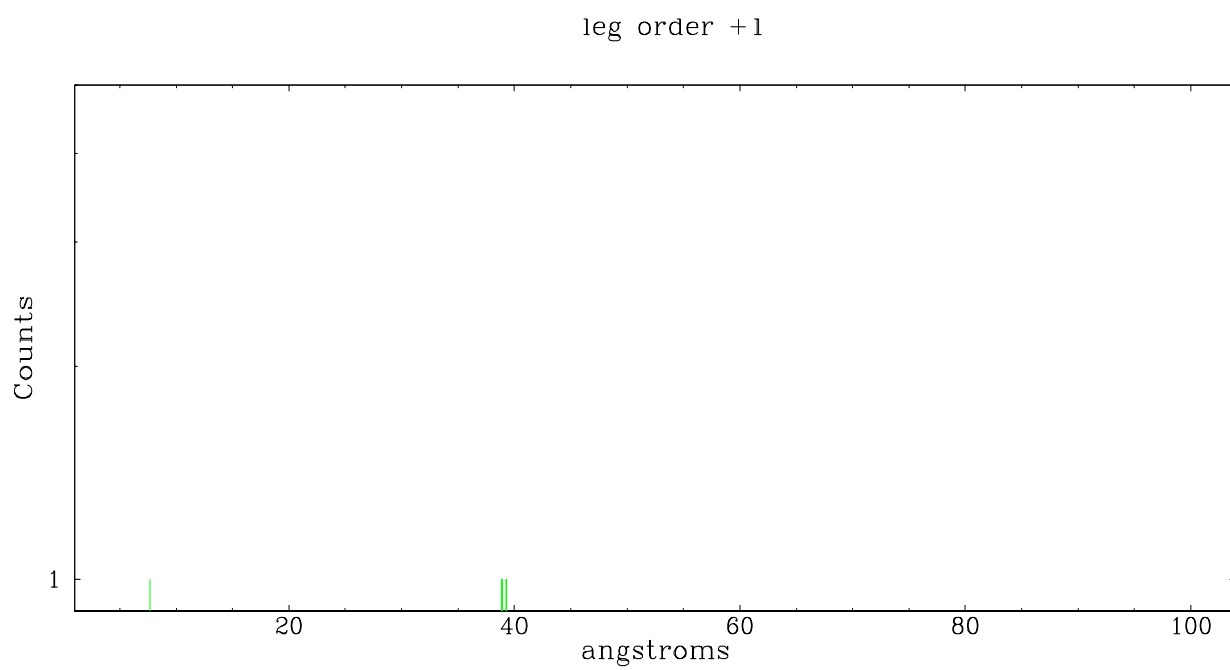
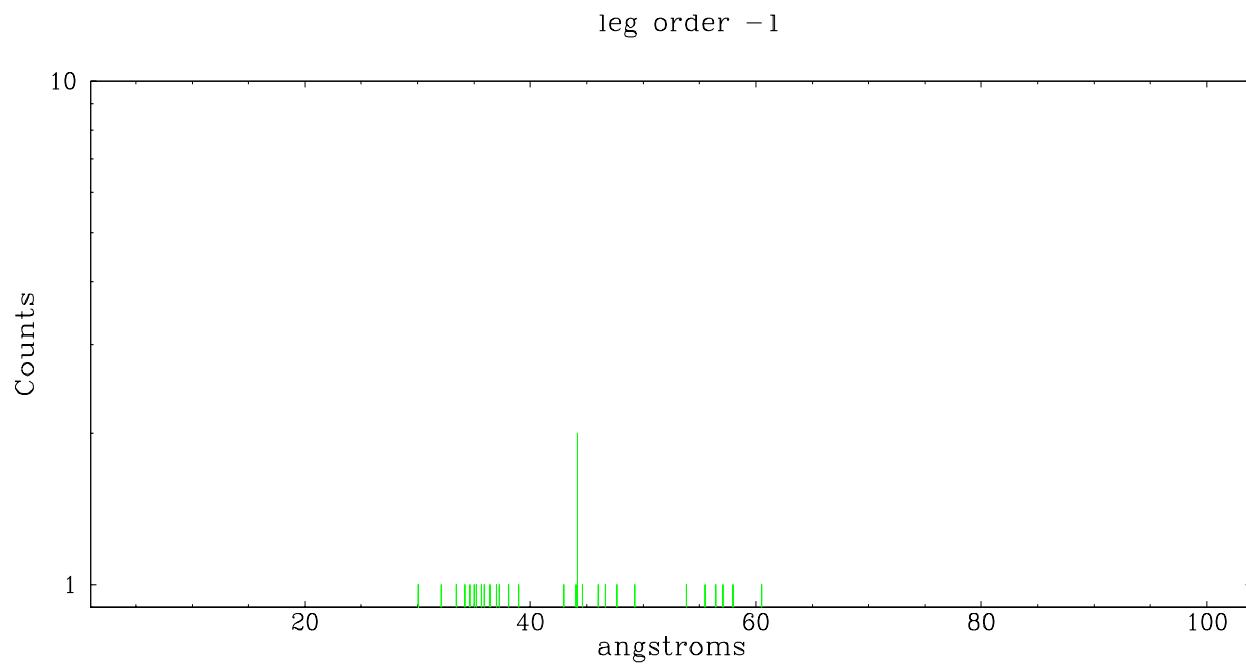
Spot Image LETG



Full Detector LETG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	80	133	412	120	87	95	90





# A Summary

## A.1 Status

V&V Scientist	Joy Nichols
V&V Date (YYYY-MM-DD)	2006.12.11
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	5.756

## A.2 Comments

One of 3 fiducial lights and 3 of 5 guide stars were excluded from the pointing solution due to poor data quality and insufficient tracking accuracy. The 2 remaining fid lights should be adequate for bore sight alignment, but the aspect solution is probably affected to some degree by the use of only 2 guide stars. The 2 guide stars that were used have a discontinuity in y-position after about 1 ksec of the observation. This is probably related to the fact that the spacecraft roll is off by 20 degrees during the first portion of the observation, then is corrected and steady for the rest of the observation.

There is an exclusion region on CCD chip S2.

The investigator is advised to work with Level 1 data and evaluate whether events with bad grades should be eliminated. It appears that some source events were removed in the Level 2 version of the event data.