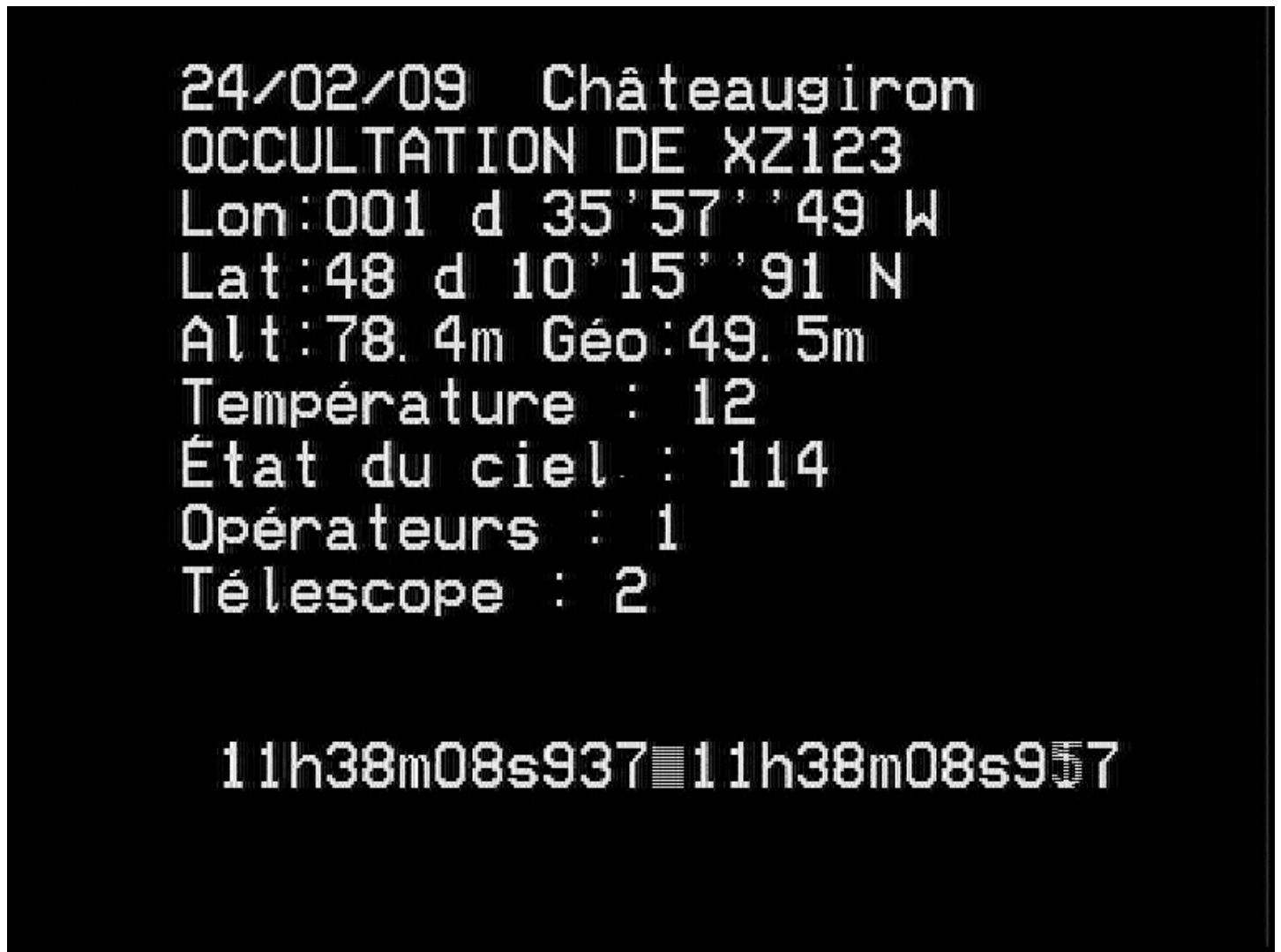


## Introduction

That idea was coming from analysing pictures from DVD or "Grabbers" records. During the design of the time inserter, in order to recognize the parity of the field used by the tape recorder to display the frozen picture, The time up to mS is displayed on the left side of the video screen followed by a white rectangle, if the field parity signal extracted from the video is on high level (from the datasheet of the LM1881 it is an ODD field). On an EVEN field this rectangle is cleaned and the time is displayed on the right side of the screen. Those times remain on the screen until a newer time of the same parity occurs to refresh them.

A picture from a DVD recorded in .VOB format looks as following.

A picture from that format converted in .AVI using VIRTUALDUB\_MPG2 has the same look.



The 3 times on the picture are:

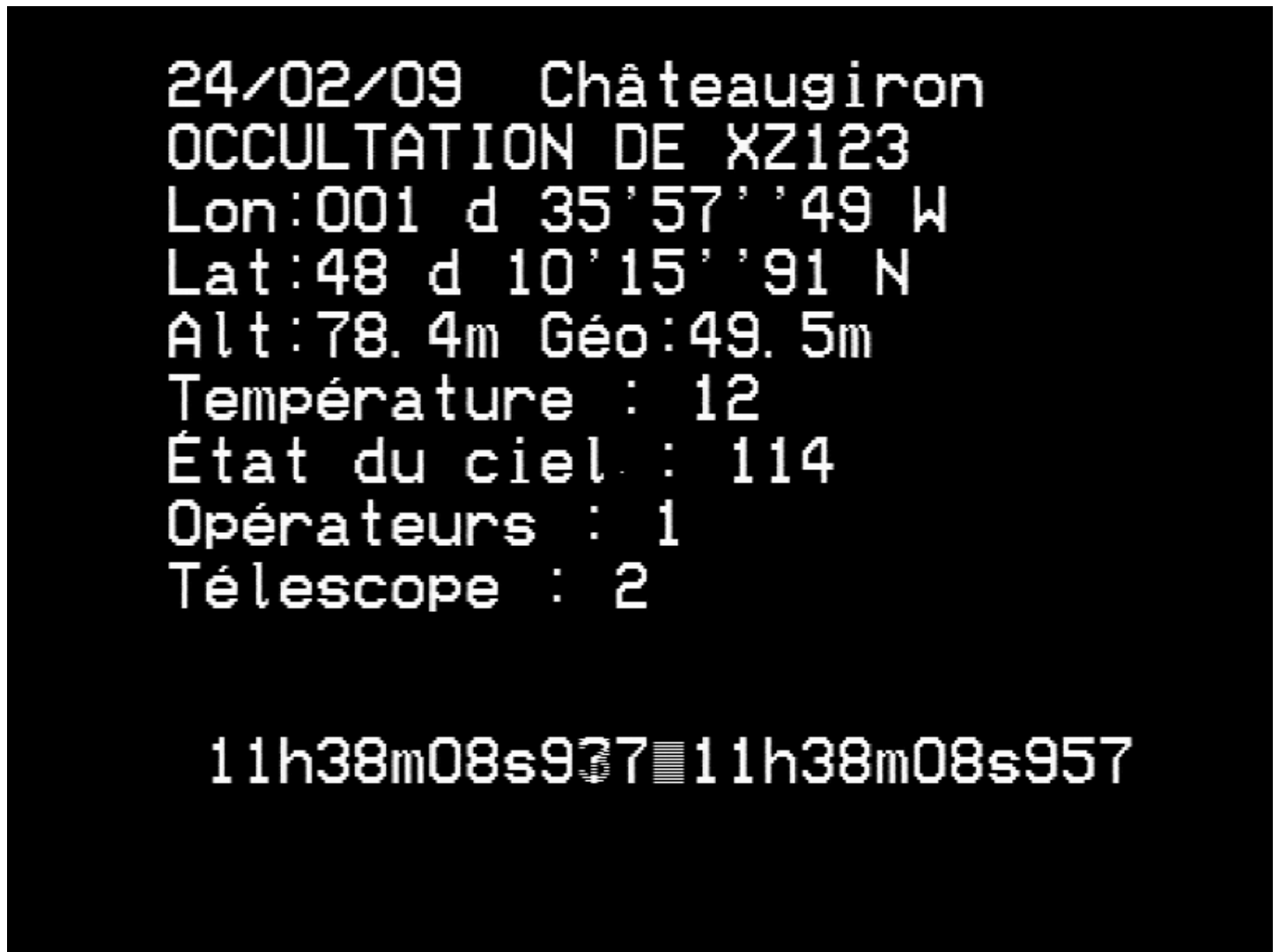
11h38m08s917 on the right side starting exposure time of the first field of the picture displayed ODD

11h38m08s937 on the left side end of the exposure time and starting of the 2<sup>nd</sup> field EVEN

11h38m08s957 on the right side end of the exposure time of the 2<sup>nd</sup> Field

## DRAWING GRAPHS OF OCCULTATIONS BY ASTEROID EVRERY 20mS

A picture from the same video signal recorded using a "Grabber" IMAGING SOURCE looks as following:



The 3 times on the picture are:

11h38m08s937 on the left side starting exposure time of the first field of the picture displayed EVEN

11h38m08s957 on the right side end of the exposure time and starting of the 2<sup>nd</sup> field ODD

11h38m08s977 on the left side end of the exposure time of the 2<sup>nd</sup> Field

The result is:

During the analysis the dots to draw a graph of received light are shifted of 20mS following the record used

One is able to use the 2 sets of values to obtain a graph with dots spaced of 20mS

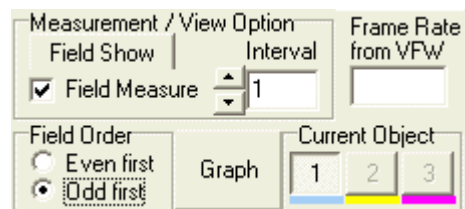
There is another way to get the same result: analysing the record by field using LIMOVIE

# DRAWING GRAPHS OF OCCULTATIONS BY ASTEROID EVRERY 20mS

## Process

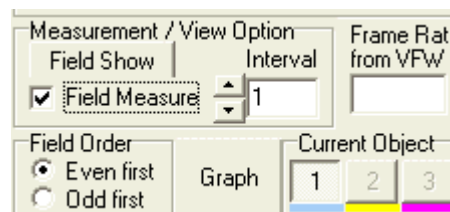
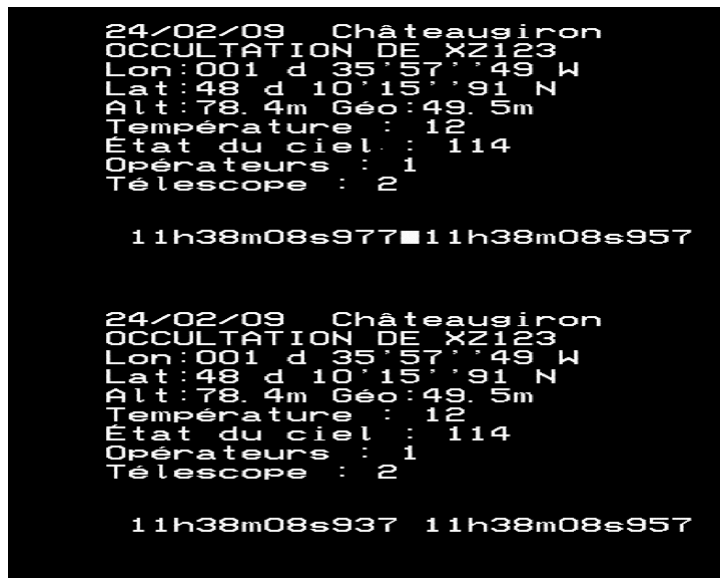
Be careful, before starting, to check the position of the fields on the pictures using LIMOVIE field show command in order to determinate the position of the fields in the picture.

## DVD .AVI record



Times and position are on the correct places to analyse the .avi file Odd first must be used

## GRABBER .AVI Record



The first field is at the bottom to analyse Even first must be used

In all cases the " Field Measure" must be enabled

## DRAWING GRAPHS OF OCCULTATIONS BY ASTEROID EVRERY 20mS

A copy of the .CVS must be loaded in an EXCEL Datasheet.  
Following a set of data recorded from a re appearance.

HOUR	V NORMALISED	V Picture	V Field	PARITY
18h58m53s363	0.033871201	1421.4	581.7	E
18h58m53s383	0.036194574	1518.9	839.7	O
18h58m53s403	0.040522005	1700.5	679.2	E
18h58m53s423	0.046336394	1944.5	1021.3	O
18h58m53s443	0.056883316	2387.1	923.2	E
18h58m53s463	0.085104551	3571.4	1463.9	O
18h58m53s483	0.120014717	5036.4	2107.5	E
18h58m53s503	0.166365409	6981.5	2928.9	O
18h58m53s523	0.225700776	9471.5	4052.6	E
18h58m53s543	0.303811379	12749.4	5418.9	O
18h58m53s563	0.419856107	17619.2	7330.5	E
18h58m53s583	0.568394693	23852.6	10288.7	O
18h58m53s603	0.695891862	29203	13563.9	E
18h58m53s623	0.813726183	34147.9	15639.1	O
18h58m53s643	0.923182063	38741.2	18508.8	E
18h58m53s663	0.986570823	41401.3	20232.4	O

The value in a V Picture cell is the sum of V Field cell value on same line and the value of the following line.

The V HOUR cells are the starting exposure time of the successive fields

The V Pictures cells are the values of exposures time of 40ms

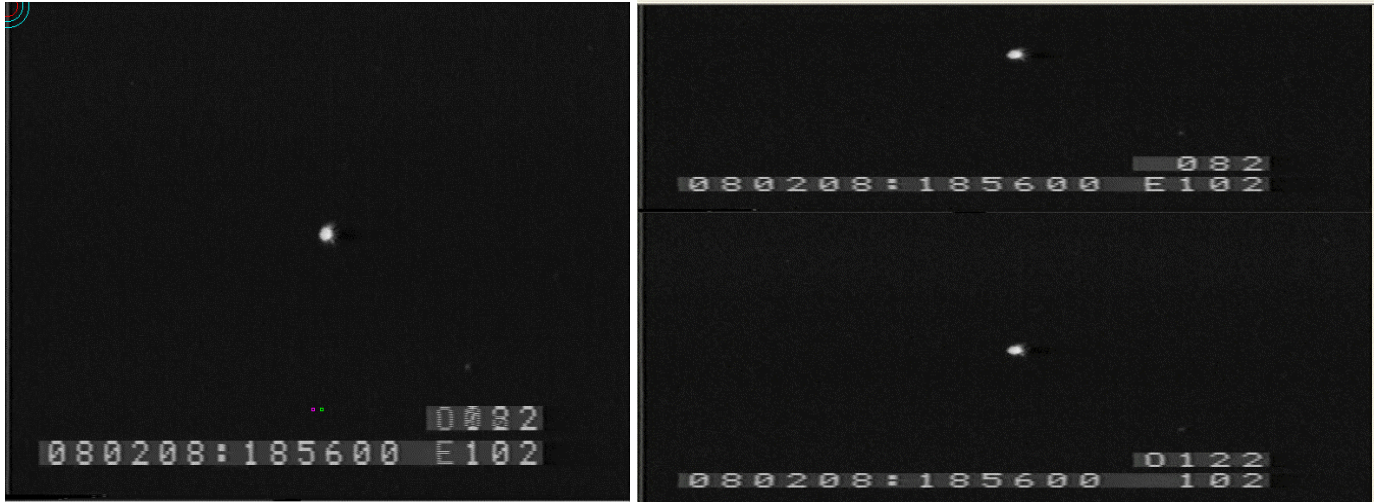
A graph of that could be performed with steps of 20mS

The VNORMALIZED are from Vpicture divided by the averaged flux values out of occultation

It is in order to fit the recorded values to the theoretical graph of light calculated.

**Application field**

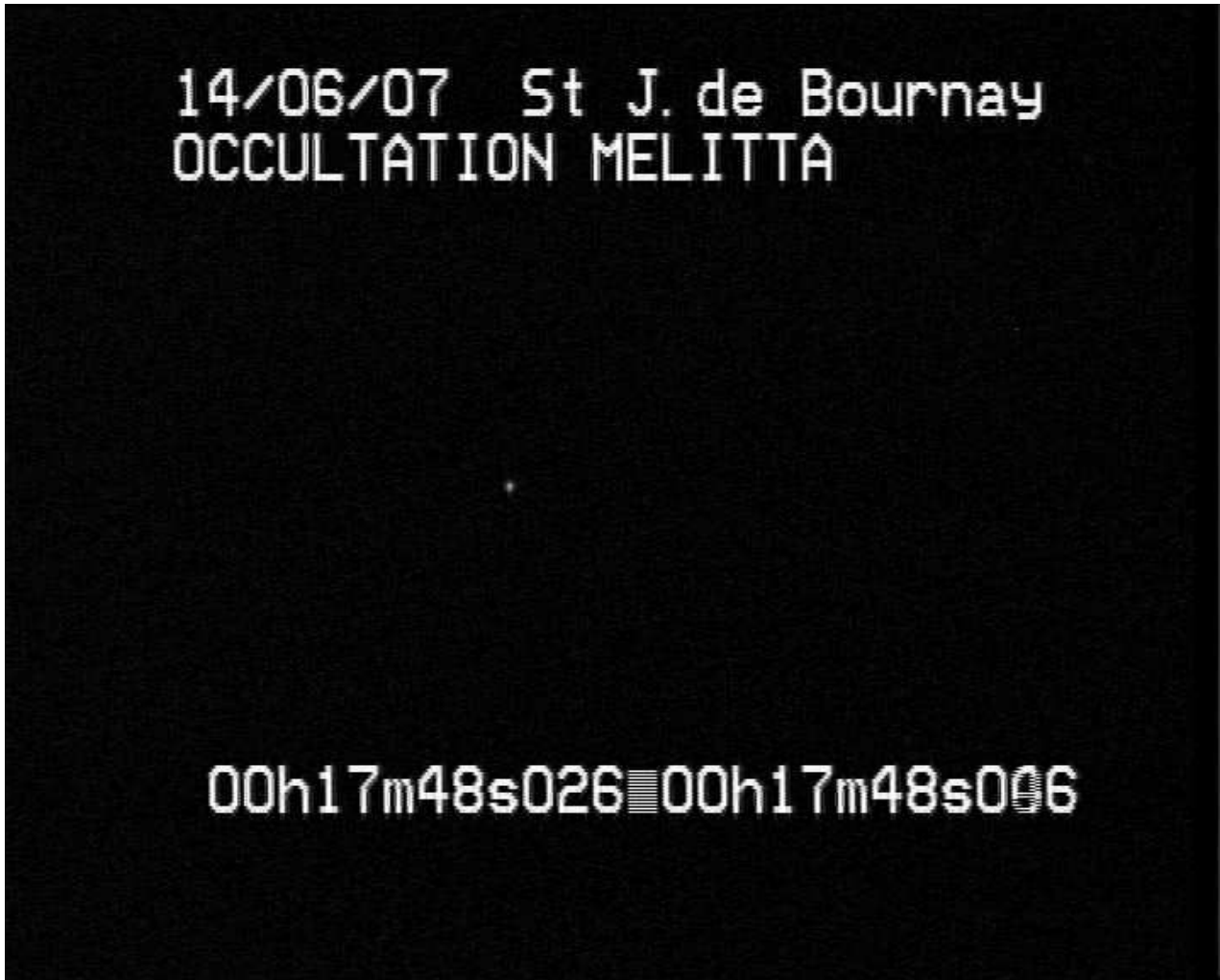
That process can be applied only when the field parity is well identified on the pictures.  
It could be also used on videos timed by Professor CUNO time inserter. When it was in design phase of it I suggested him to apply that property on the display. The chosen way is not the same but the result is the same.



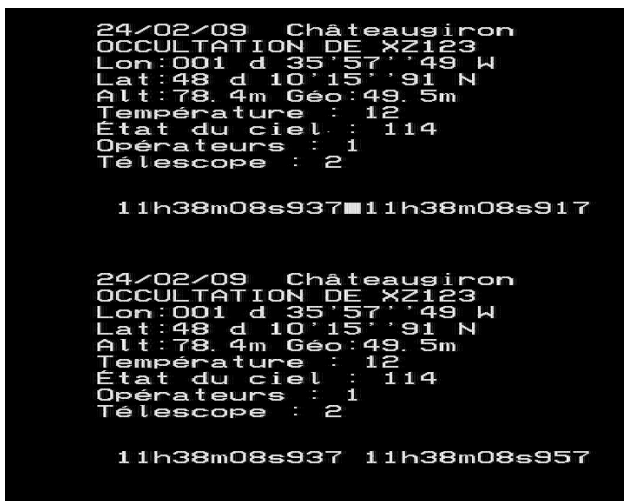
As the parity is well identified Using O and E we must ask Even first on LIMOVIE

# DRAWING GRAPHS OF OCCULTATIONS BY ASTEROID EVRERY 20mS

Here after is another case: the time inserter is one of my design, the grabber is unknown  
The result seems to be the same as a DVD



But the Fields are inverted on the LIMOVIE picture.



To conclude one should be very careful before analysing video records by field