

## RGB UNDER THE MICROSCOPE.

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### INTRODUCTION:

RGB stands for RED, GREEN, BLUE, and it refers to the three basic colors that compose LCD or liquid crystal displays, though these three colors are also present in LED displays.

Each color is called a pixel and are used mainly in devices such as cellphones, TV sets, computers, calculators and in general almost in every device with a digital screen.

The combination and variation in the intensity of these three colors is done by the interpretation of the software within the device give the different arrangements for presenting the icons, numbers, etc.

The purpose of this article is to show a display under the microscope, because these small pixels are not seen with bare eyes, only the colors which their arrangements produce on the screens.

Nevertheless the distribution of them on the screen, I mean for example how many red pixels are found in a yellow image or how many green ones are seen in a blue icon, is not appreciated without the microscope. See below.

### DEVELOPMENT:

A cellphone, because it is a very good example of a LIQUID CRYSTAL DISPLAY and because it has its "own illumination" when turned on, is a very good way for seeing the application or RGB patterns on a liquid crystal display.

The brightness of the cellphone display is augmented with the function found in the software it uses. The phone is placed upon the stage of the microscope and with 4x and 10x objectives it is observed because these two objectives have enough space below them to place the cellphone.

Then the stage is moved to different parts of the screen with different colors to see the arrangements of RGB pixels for creating each possible color in a picture or an icon.

### NOTE:

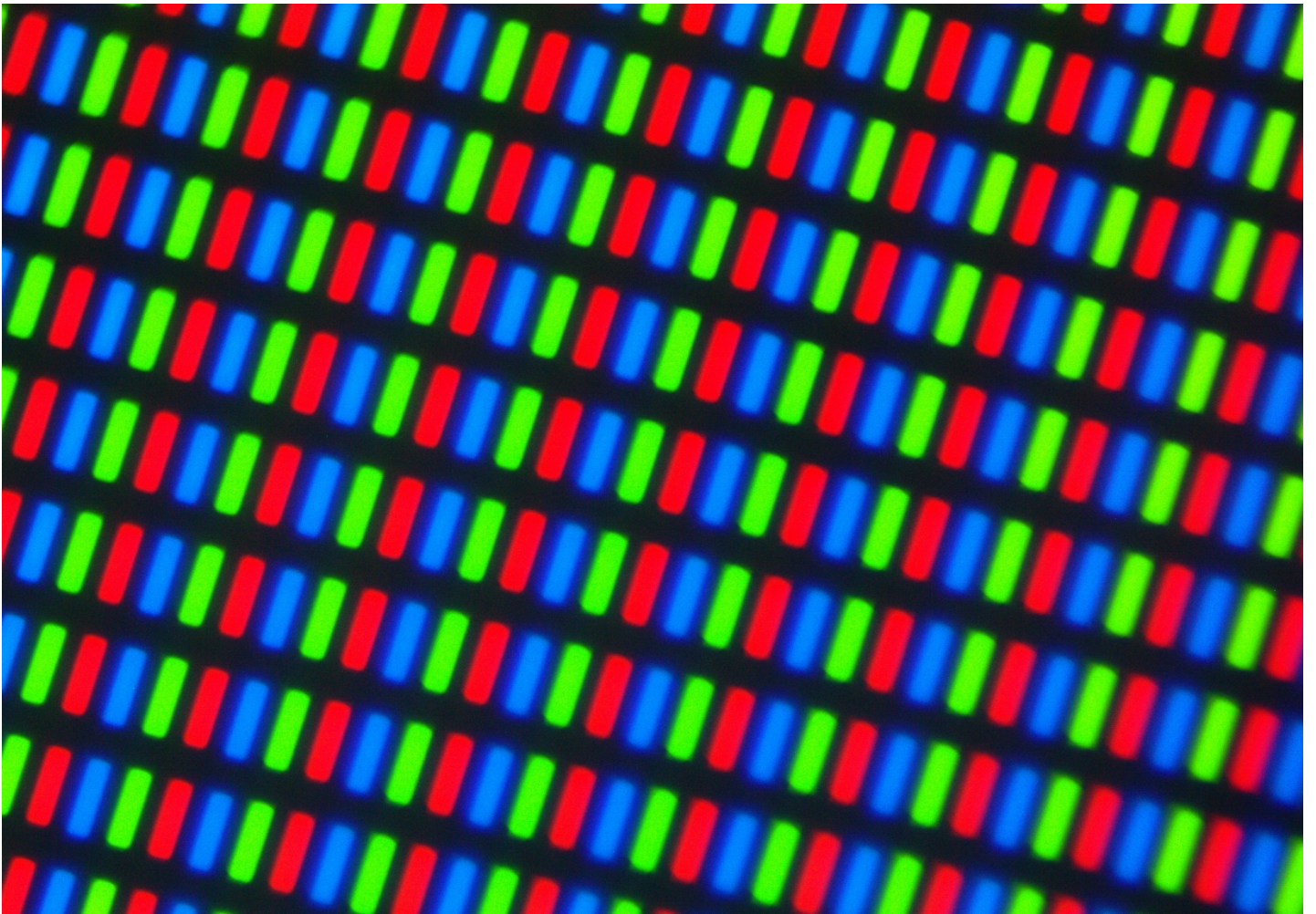
Another possibility not shown today in this article is to use a digital camera with a microscope objective out of the microscope placed in front of the camera lens, which would expand the possibilities of observing pixels even on a TV screen.

### RESULTS:



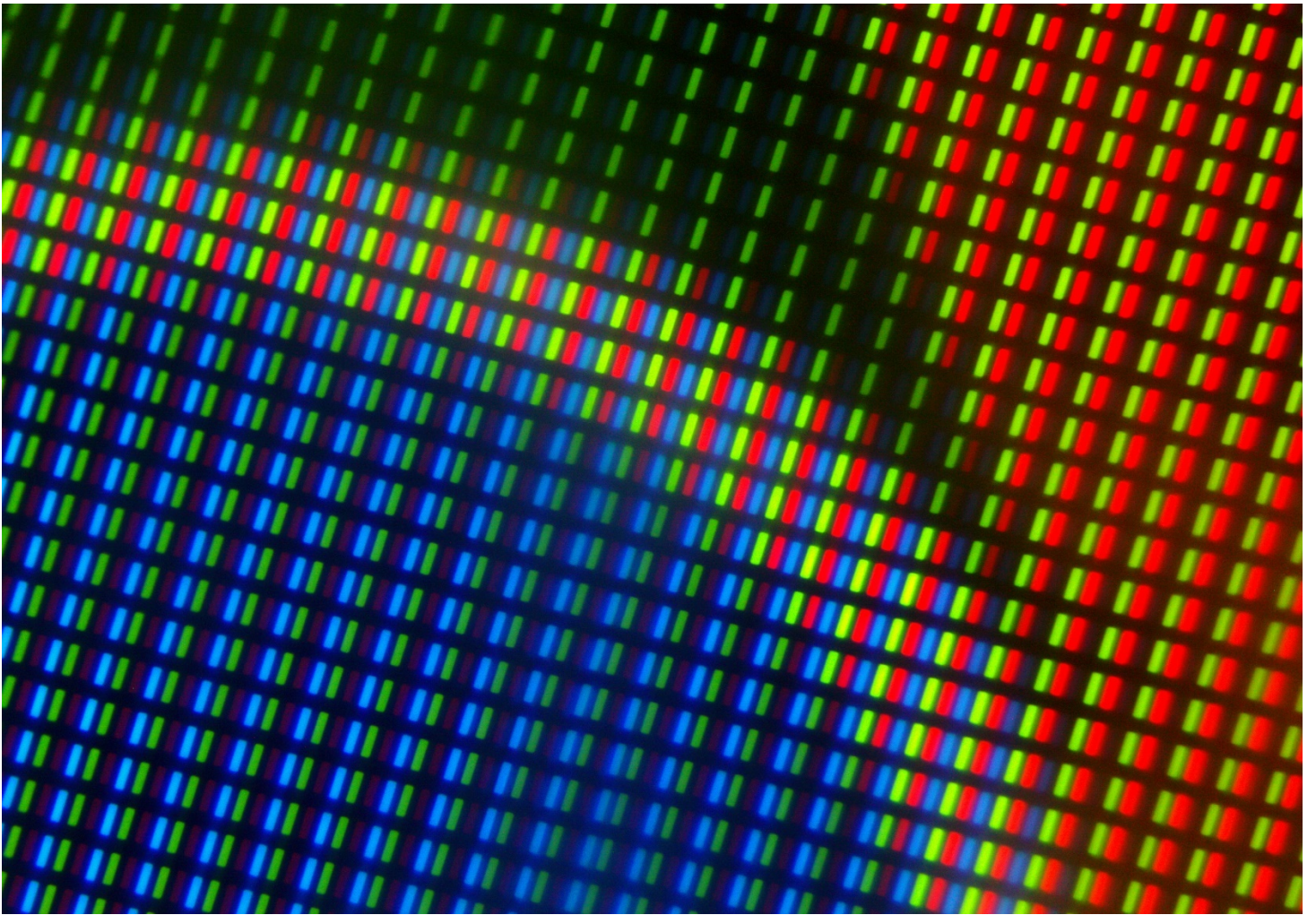
White part on the screen 4x, it is appreciated that to show the white color, the three components are present.



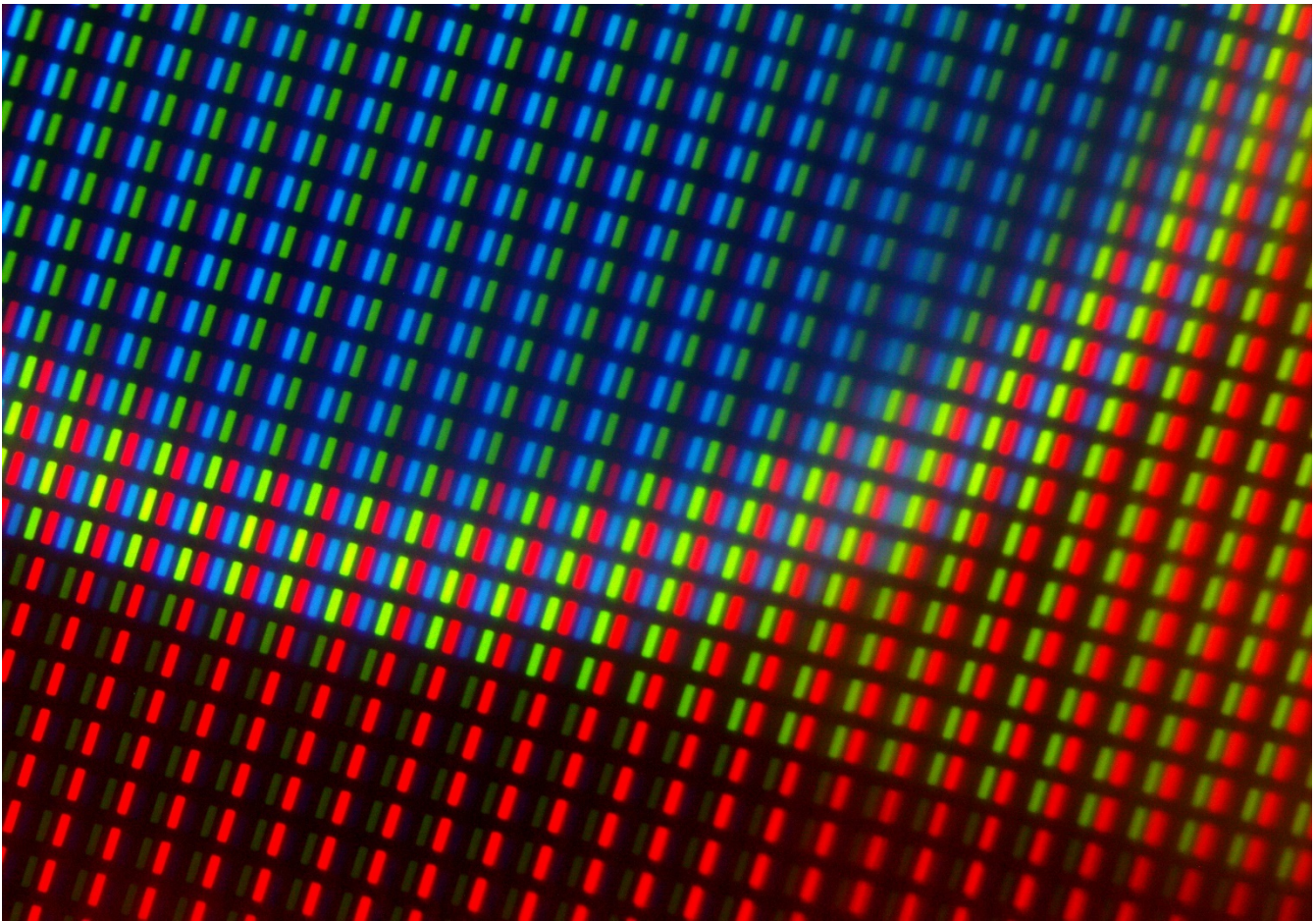


White part on the screen 10x, it is appreciated that to represent the white color, the three components are present.



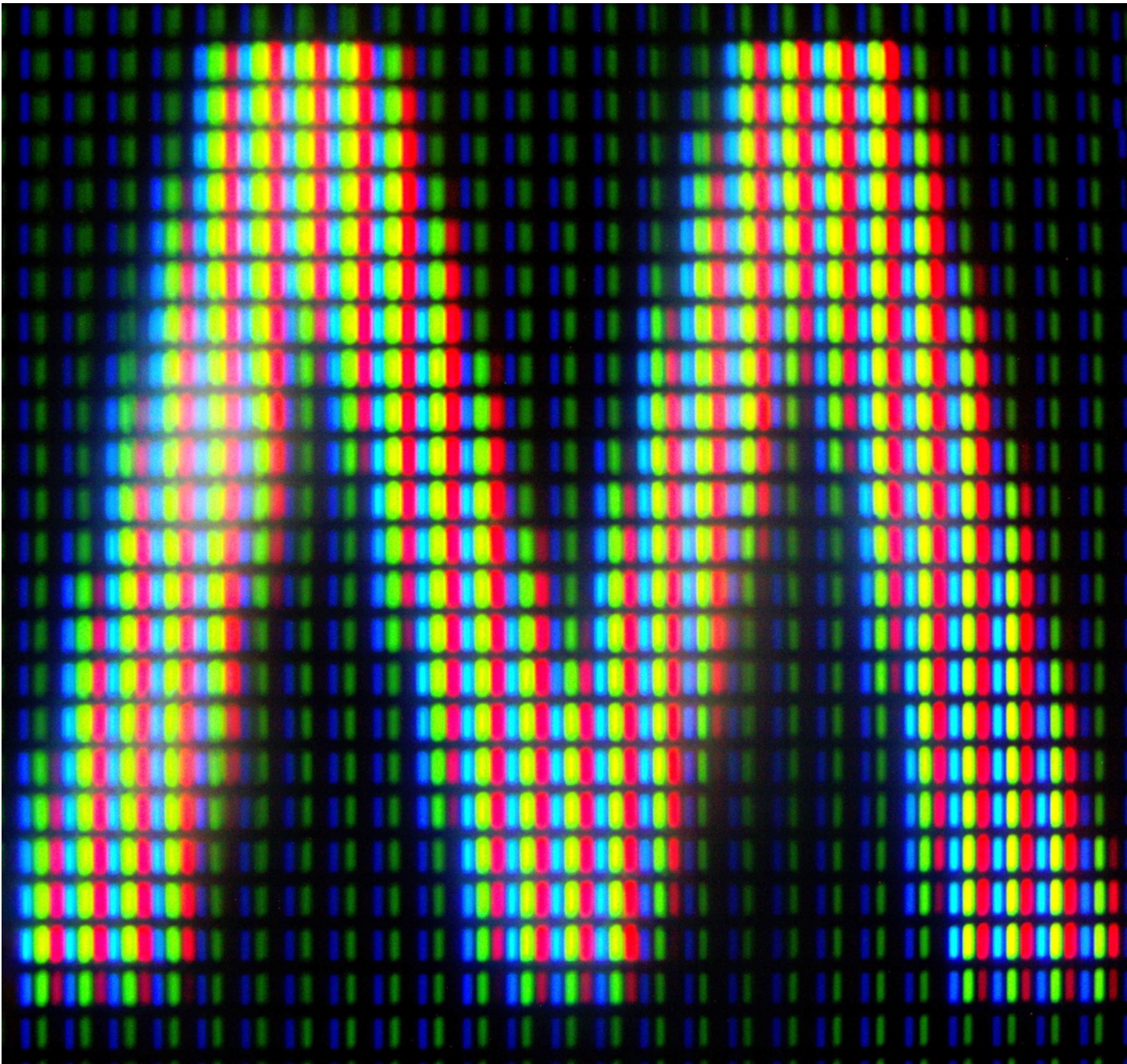


Part of the symbol of Google Chrome, it is appreciated the yellow part at right the green part above, the white ring at the center and the blue center at the bottom of the image 4x.



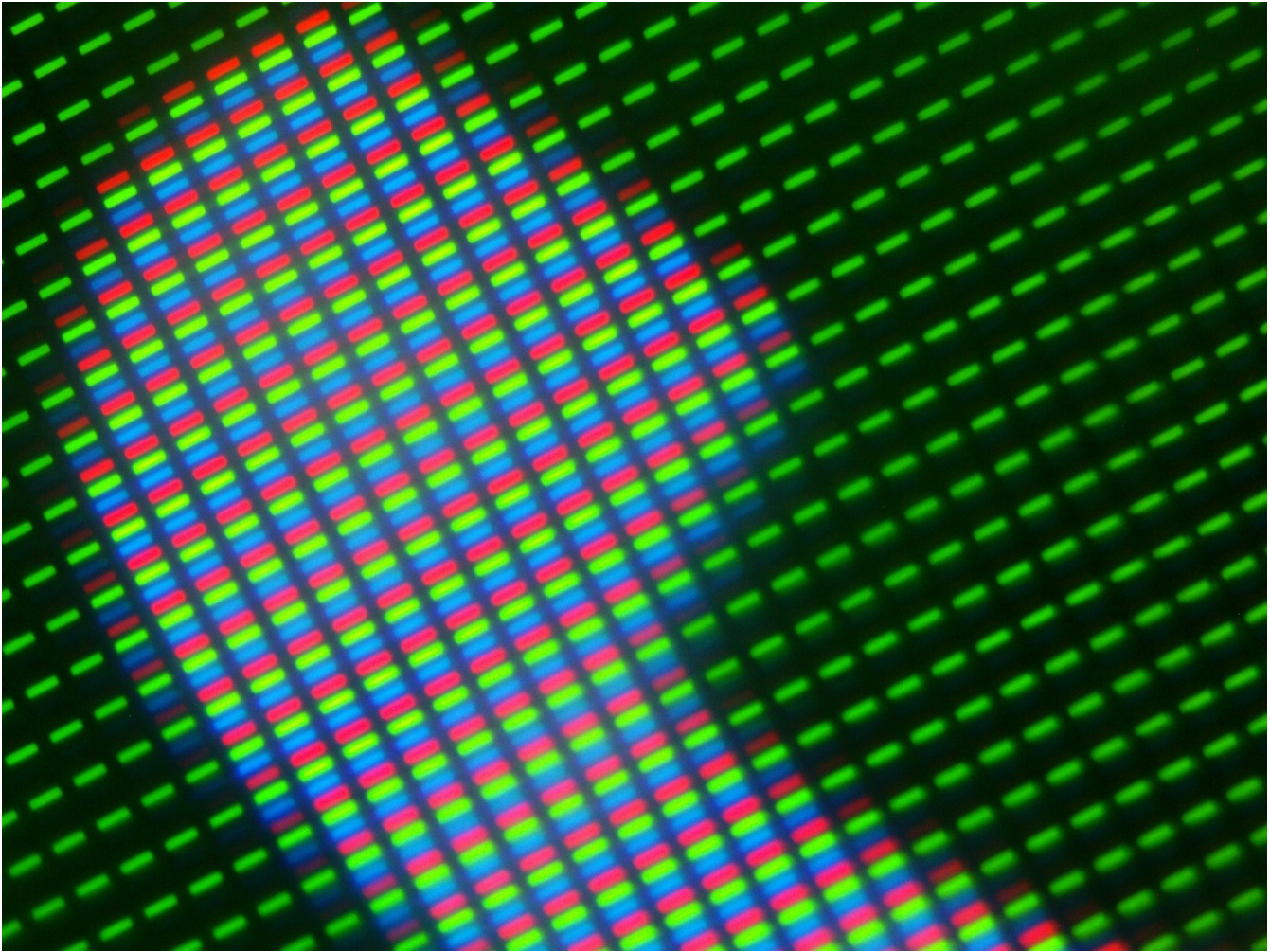
Also part of Google Chrome symbol but now showing at the bottom the red part of this image 4x.





The "W" in the word Whatsapp 4x





Part of the WhatsApp symbol 4x

CONCLUSION:

This has become an opportunity for showing two things:

The first one is that the images that we see on a screen are not exactly the colors they appear with naked eyes.

And the second one is that if a cellphone or a screen no matter the size could be placed beneath a microscope lens, believe me that it is possible to place the world itself.

Email author: doctor2408 AT yahoo DOT com DOT mx (Above in anti-spam format. Copy string to email software, remove spaces and manually insert the capitalised characters.)

Published in the April 2018 issue of *Micscape* magazine.

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