

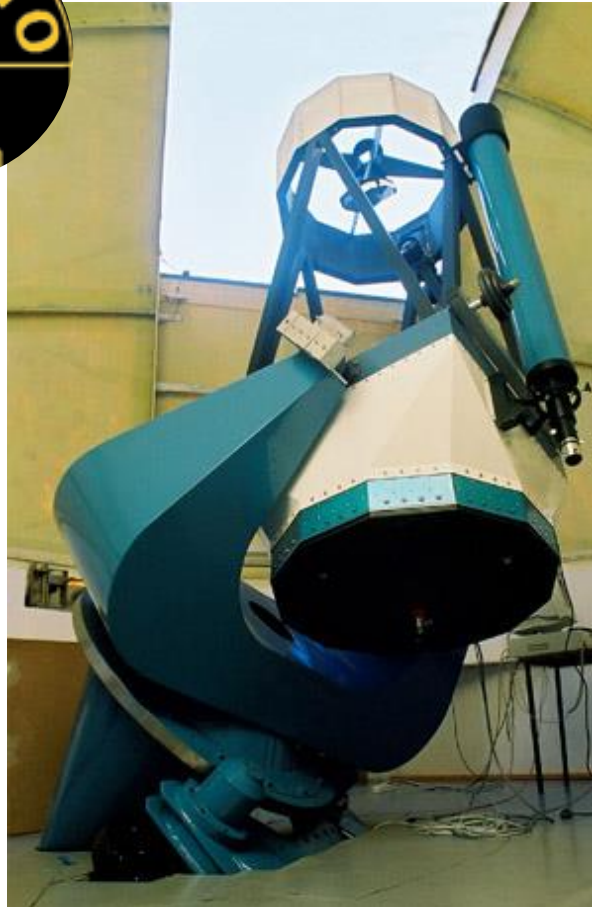
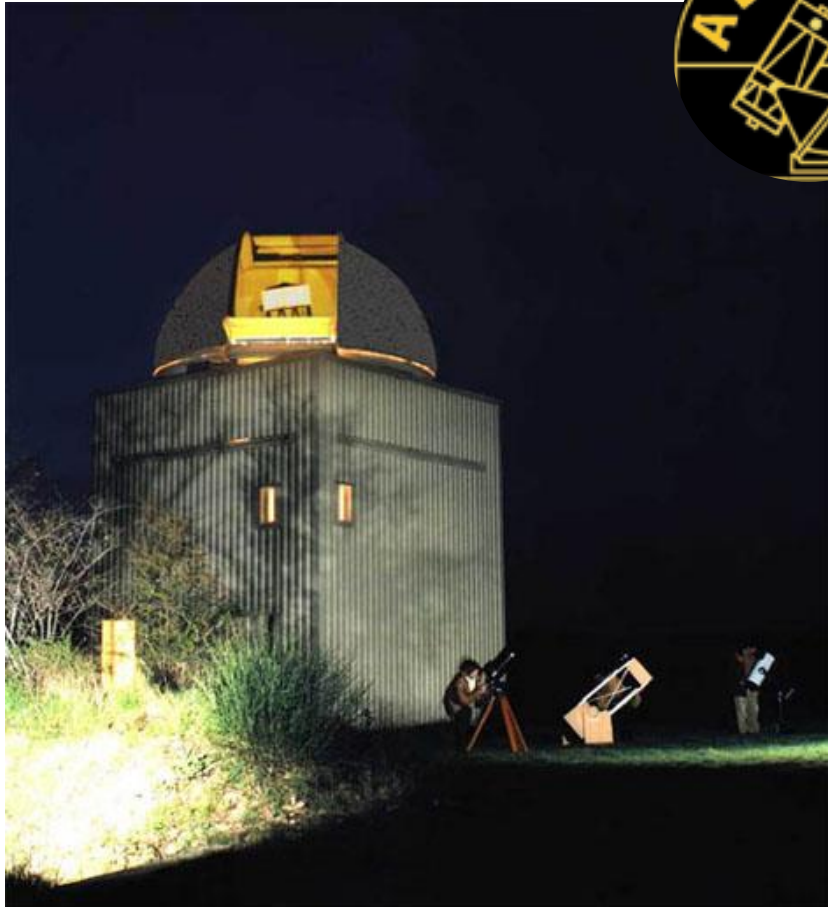


***DIY: MAKE THE CHEAPEST AND PROBABLY  
THE SMALLEST VTI IN THE WORLD***

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Pascal ANDRE – Toulouse - France

# BELESTA OBSERVATORY (T82 cm F=3100) – A05



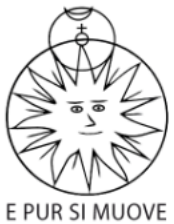
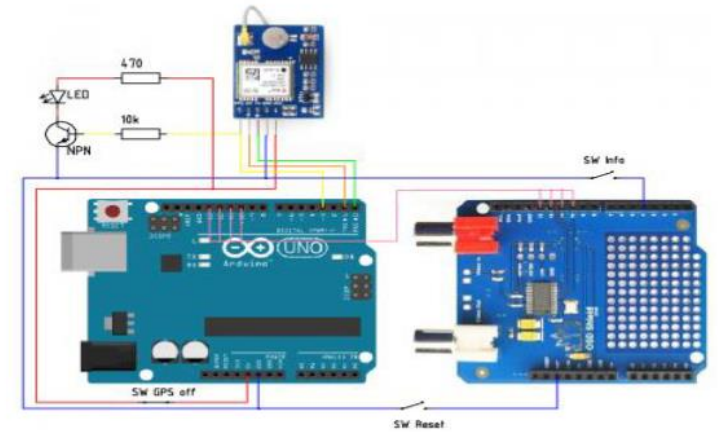
Neowise - 24 juillet 2020  
sum of 60 images of 10s  
CCD Moravian G4 4096x4096  
Credit P. Martinez - Adagio

36<sup>th</sup> European Symposium on Occultation Projects, Freiberg, Germany, Sep. 15<sup>th</sup>-19<sup>th</sup> 2017

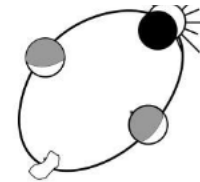


# Do It Yourself ...

# - a cheap Video Time Inserter based on the Arduino project

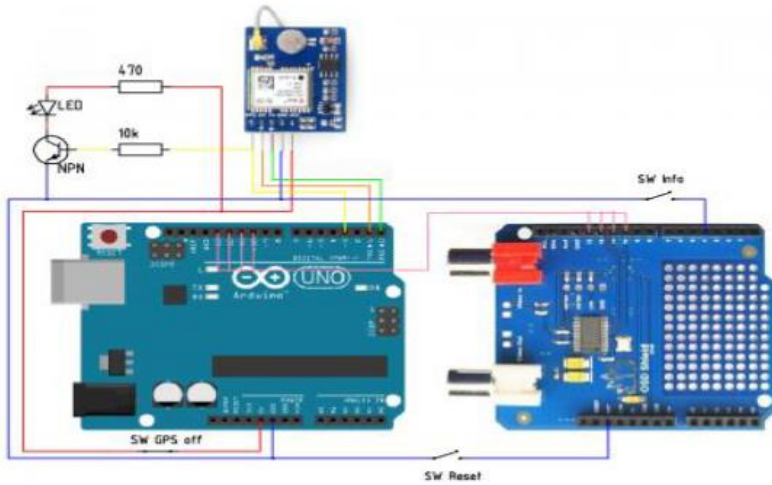


Wojciech Burzyński  
Occultation Section of Polish Amateur Astronomers Society





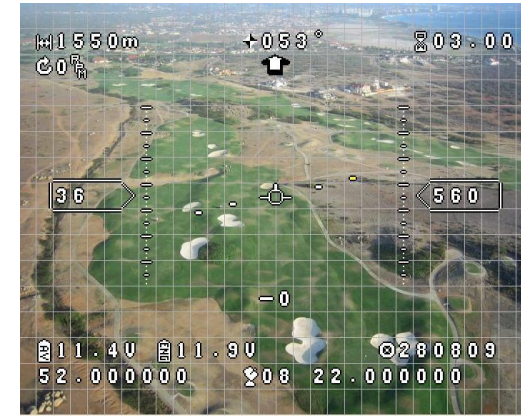
# THE STARTING IDEA



Piotr Smolarz Project  
ARDUINO + OSD Shield



Same processor AT 328P  
Same OSD Component MAX 7456  
But different design/wiring



MinimOSD module  
(Drones, airplane modeling)

# DETAILED STEP BY STEP INSTRUCTION ARE HERE:

[https://www.qfastro.club/lib/exe/fetch.php?media=projets:transformation\\_minimosd\\_vtiv6.pdf](https://www.qfastro.club/lib/exe/fetch.php?media=projets:transformation_minimosd_vtiv6.pdf)



Email contact: [pascal.andre9@free.fr](mailto:pascal.andre9@free.fr)

# THE SHOPPING LIST

-1 **minimosd** module (8 euros = 37 PLN)

-1 **GPS Neo-6M or Neo-7M module with 1PPS pin,**  
with internal antenna

If possible choose model with a connector for external antenna

(from 6 euros = 28 PLN)



2 RCA sockets (video In and Out)

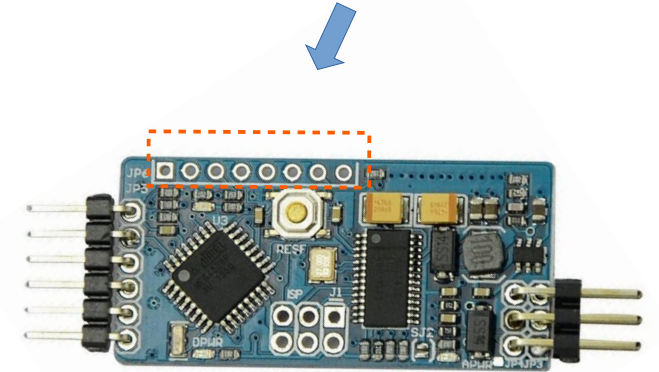
2 toggle switches, 1 push button switch, led + resistor , socket type jack for power supply.

**In addition you will need**

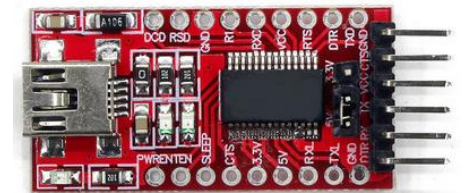
-1 **USB to TTL FTDI** module (Future Technology Devices International) for code transfer (2 euros = 9 PLN )

One PC with Arduino software

A small 5V Vcc power supply (upcycled)

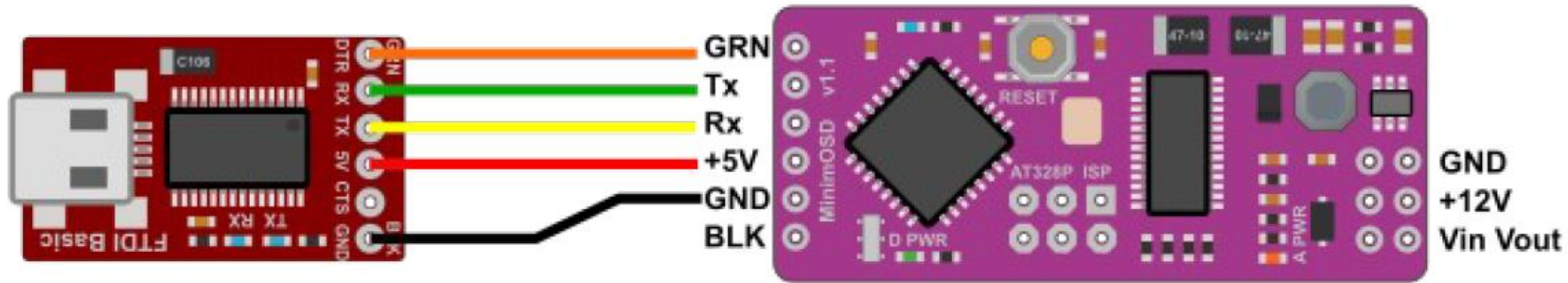


Choose this model  
with additional I/O (for battery level  
etc.)



# TRANSFER THE MODIFIED CODE FROM PC TO MINIMOSD

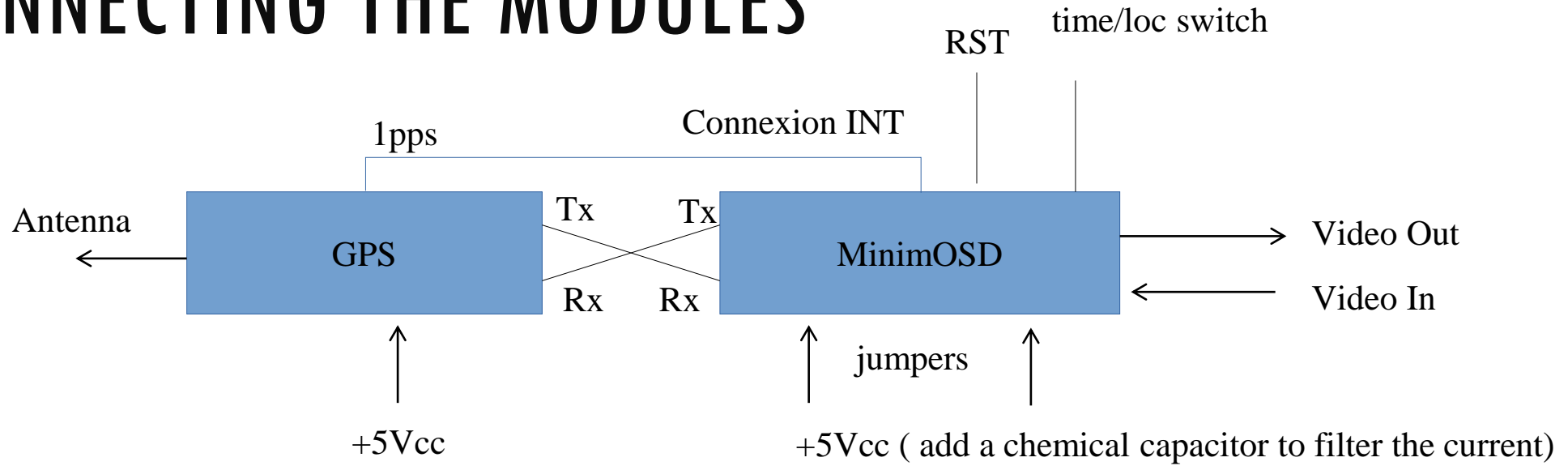
FTDI adapter connection







# CONNECTING THE MODULES



# PLACE THE WHOLE IN A SMALL BOX



# OCR avec Pymovie

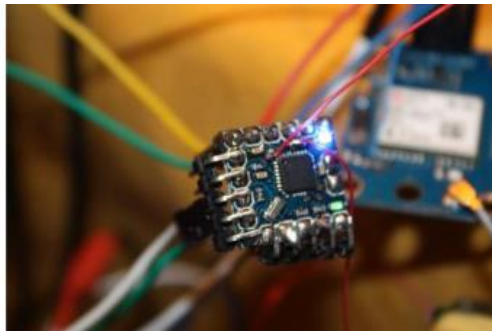


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99 99 99 99 sum: 899
lower field timestamp:[12:58:37.318] time:46717.3180 scores:99 99 99 99 99
99 99 99 99 sum: 897
```

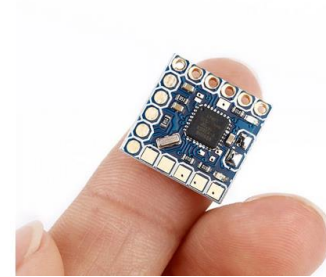


# THE SMALLEST VTI AND PROBABLY THE CHEAPEST VTI IN THE WORLD WITH THE MICROMINIMOSD

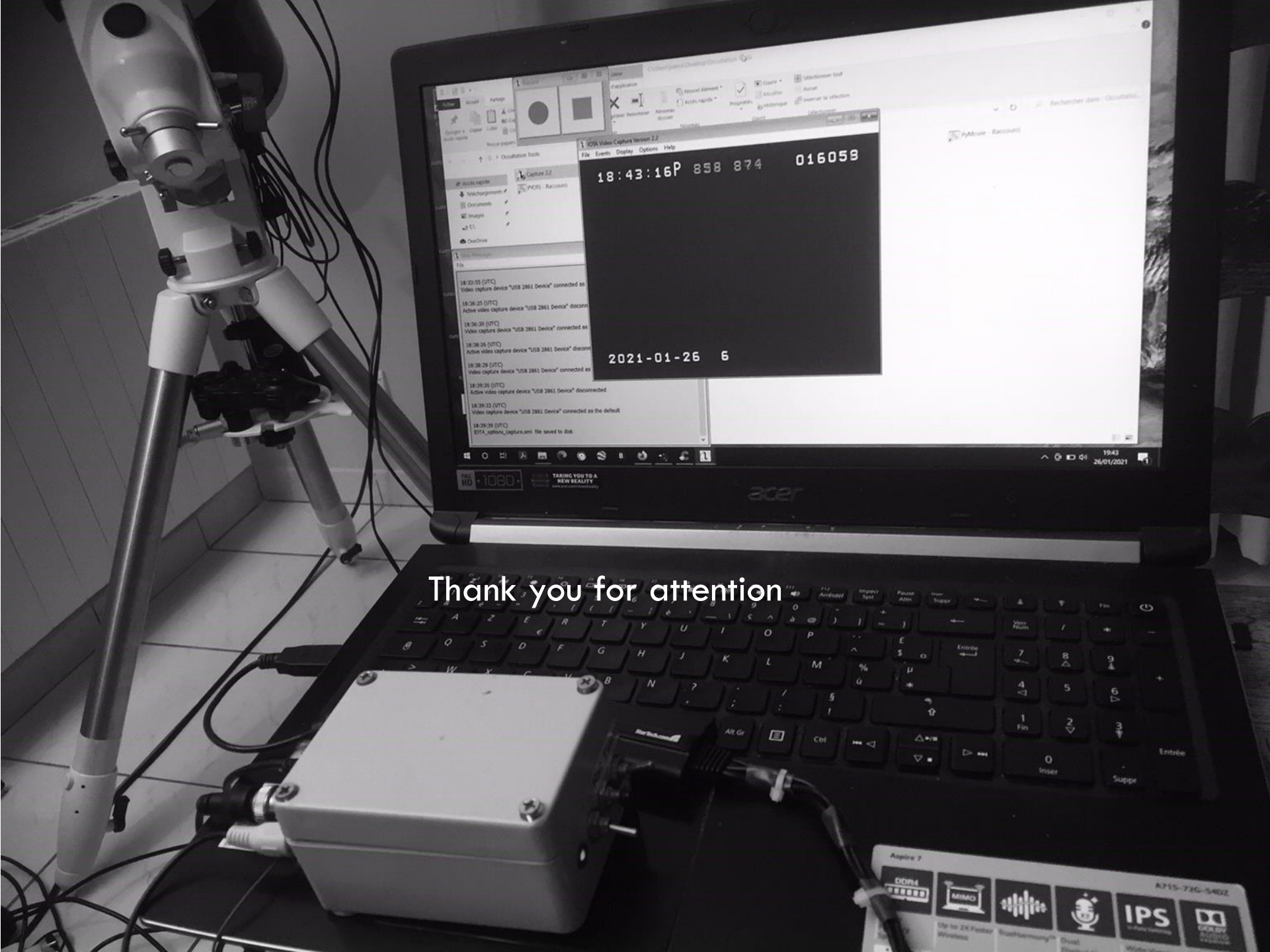
Only if you have microsurgery skill



*Synchronized!*







Thank you for attention