

Enlight me with your colors

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AUSTRIAN
SPACE FORUM



General description

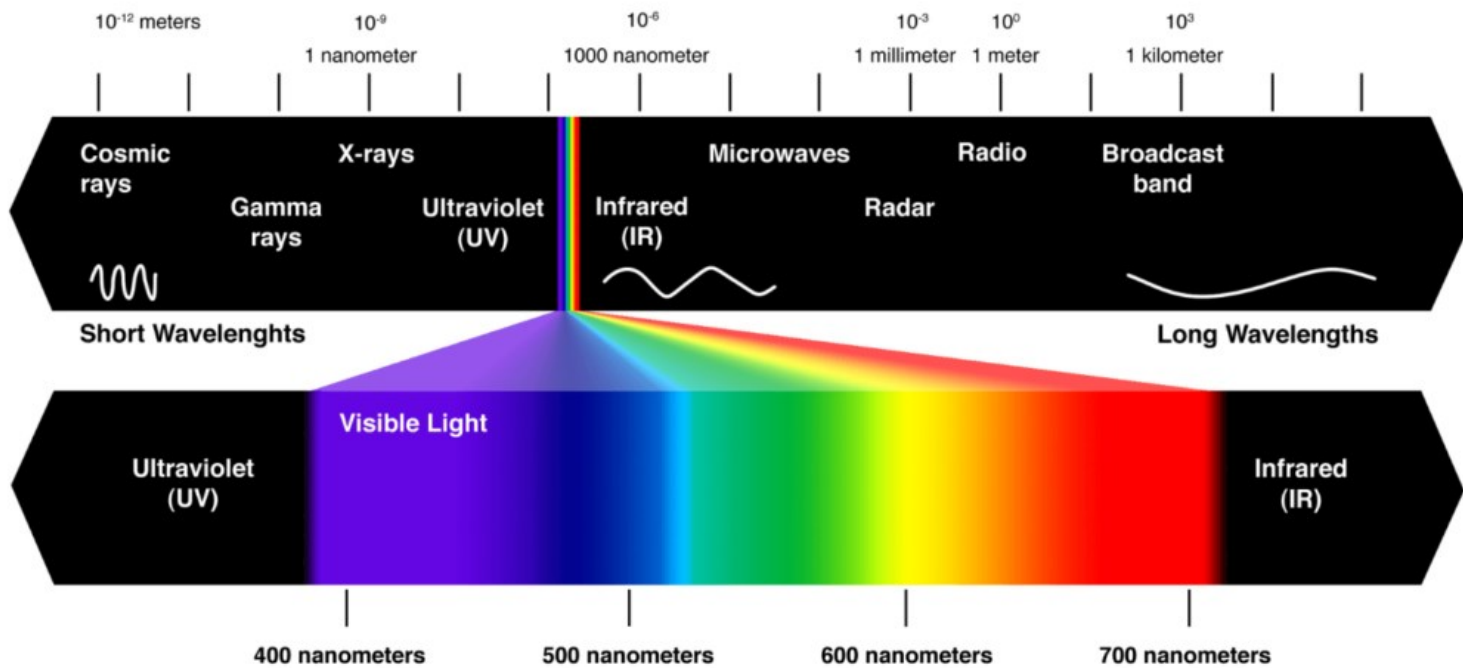
The objective is to work on the concept of light and color, involving interdisciplinarity using remote telescopes and hands-on activities.

This is to be works with middle school students, during 2 h in different days:

- 1- Observe the Deep Sky objects with Remote telescope in parallel with stellarium. Process images
- 2- Create and explore spectroscopes with boxes and CDs, to support the concepts of light and color from Physics, Biology to Technology.

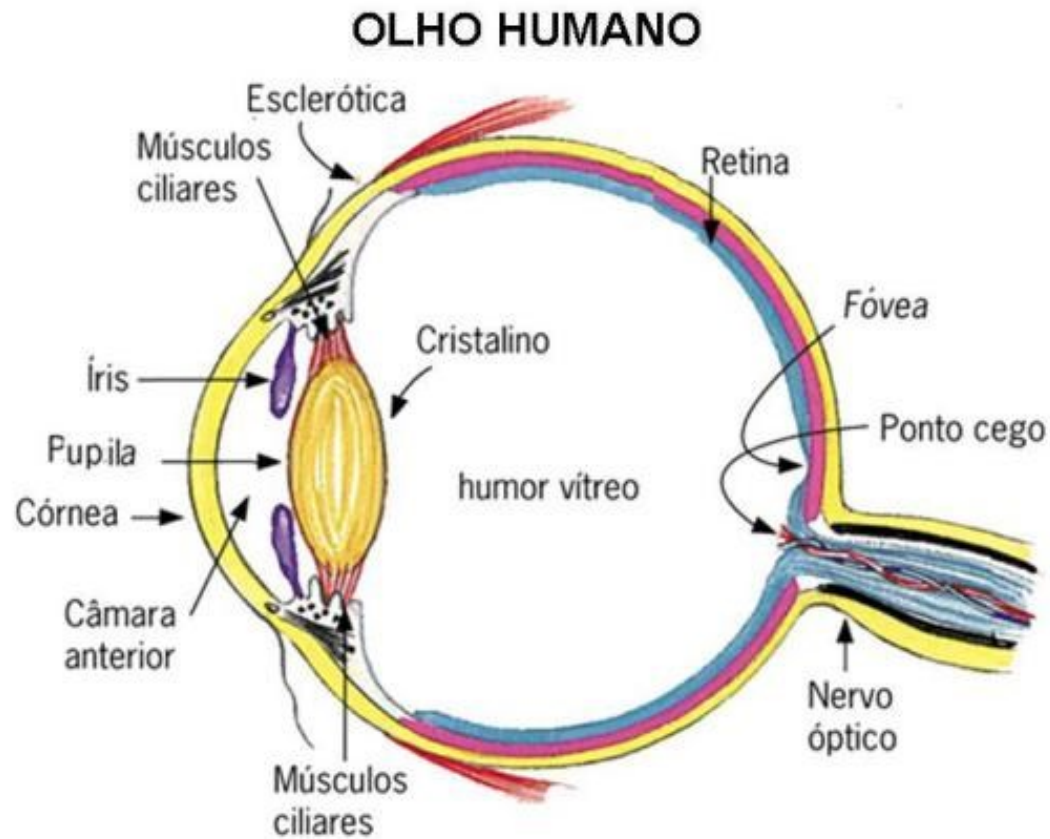


Visible light



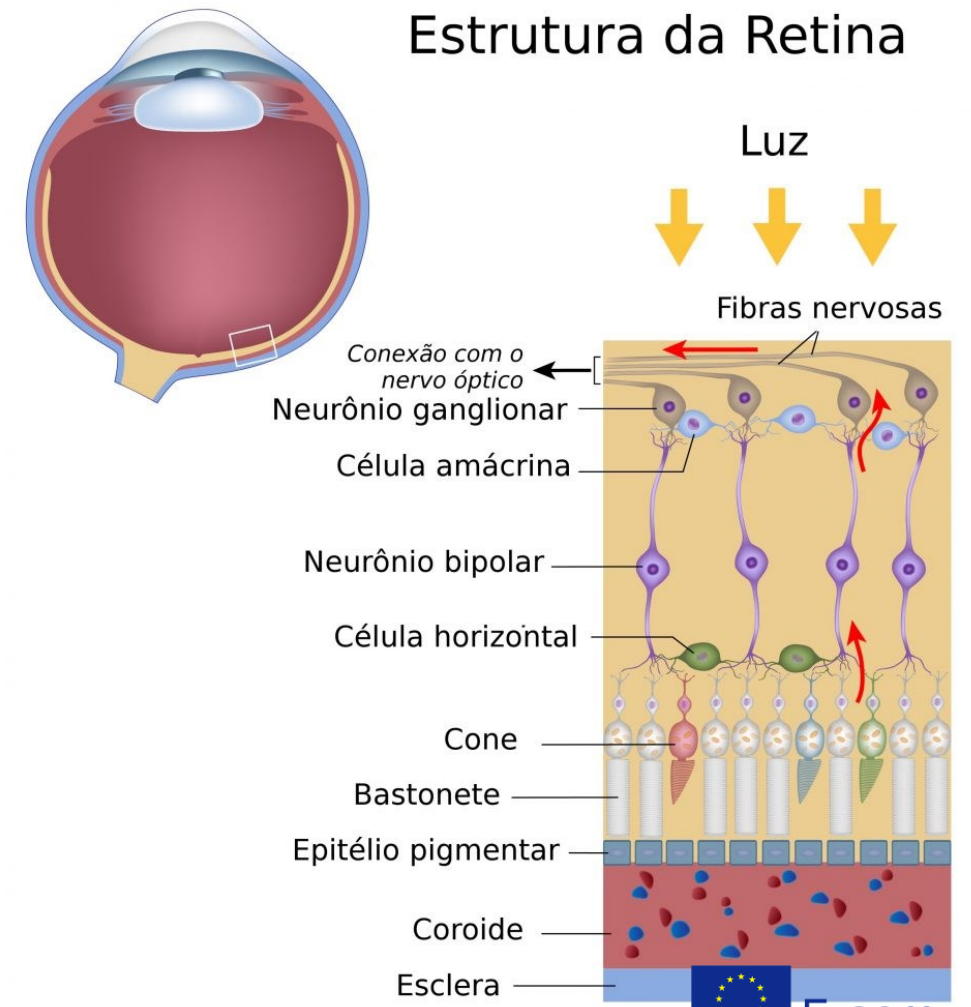
Eyes and colors?

Biophysic Process



Biochemic Process

Estrutura da Retina



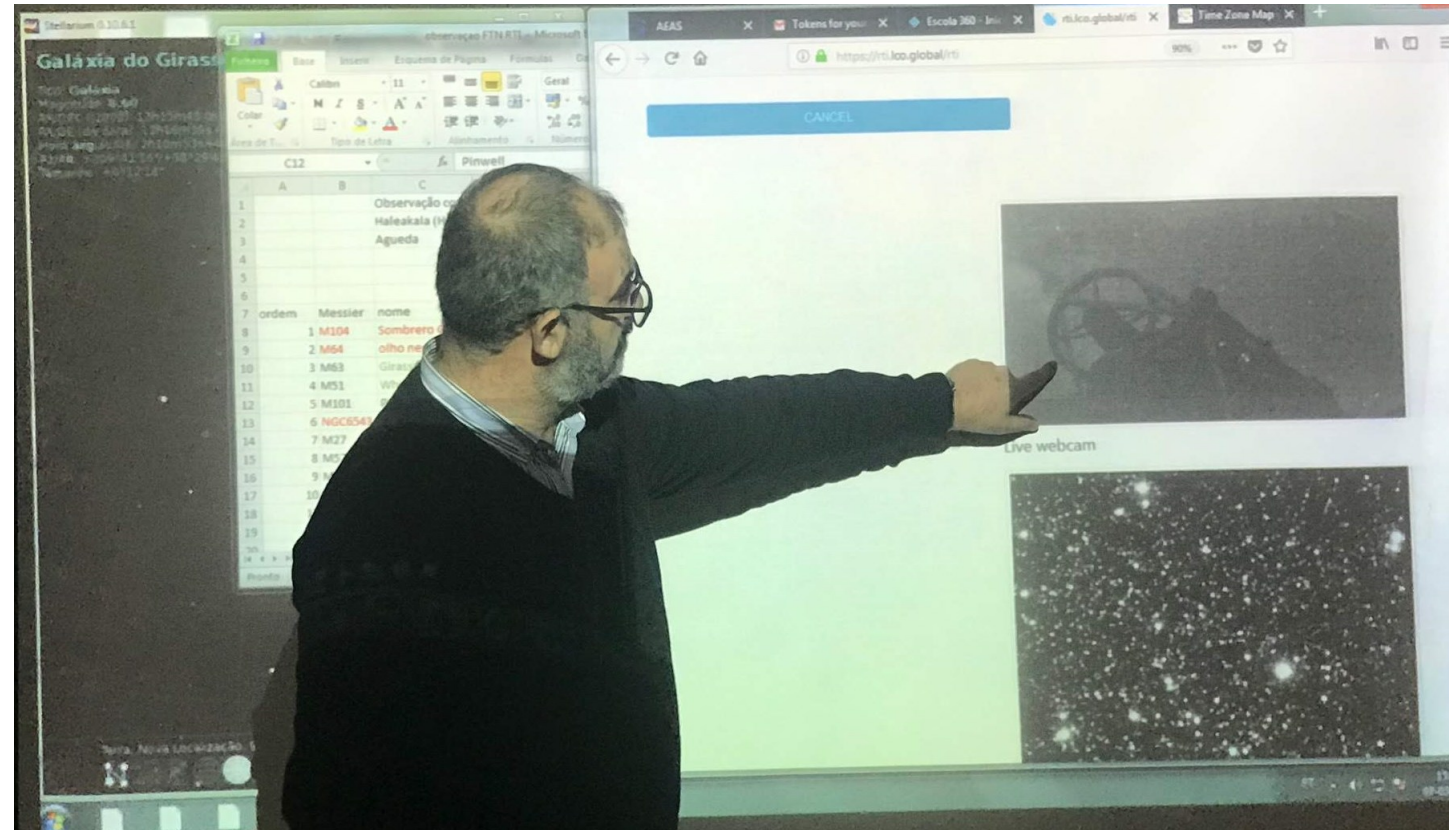
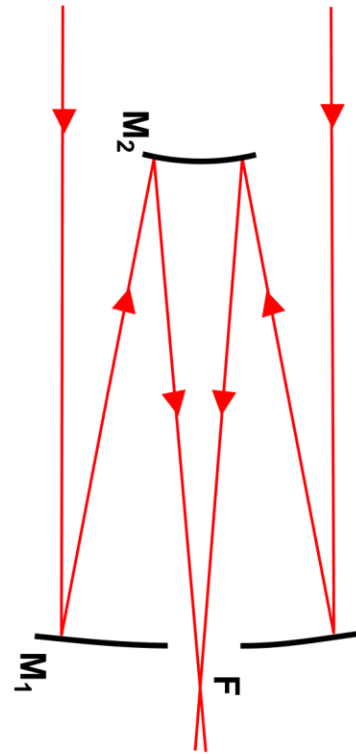
Eyes and colors?



From the Universe to our classroom



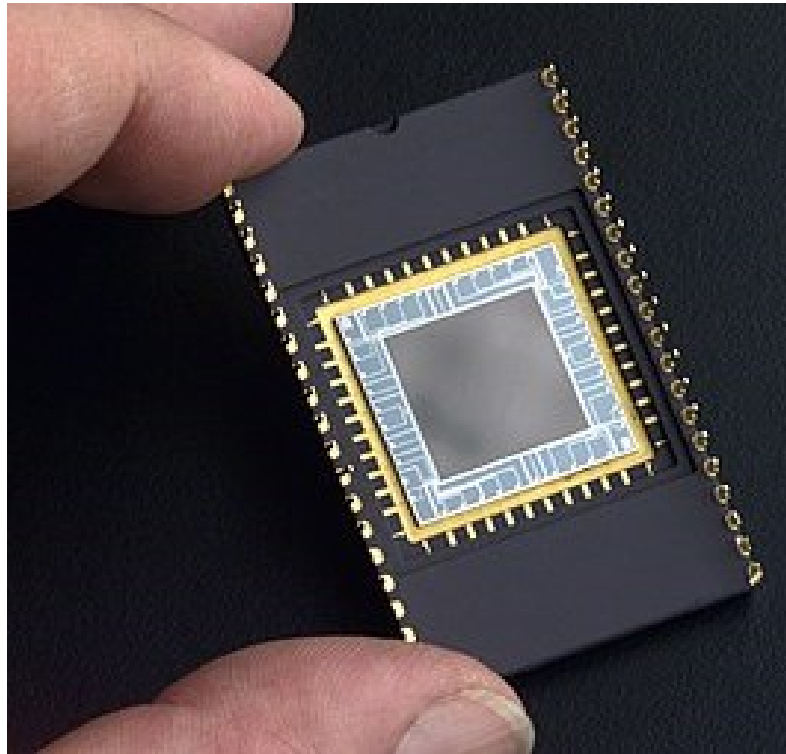
Ritchey-Chrétien



CCD

CCD (*charge-coupled device*)

Resolution = size & number of photoelectric cells



**Digital
photography**



Astrophotography



Merging colors

FITS-Flexible Image Transport System

coj2m002-fs01-20181025-0070-e00.fits - ESA/ESO/NASA FITS Liberator 3

FITS Liberator

Processing Metadata Image Headers Help Guide

Image data

Image 1, Plane 1

X 0 px RA 4.79 Input 0.00
Y 39 px DEC 3.89 Stretched 0.00

Width 2080 px Height 2048 px

Image statistics

	Input	Stretched
Min	495.00	2.70
Max	62535.00	4.80
Mean	1065.26	3.00
Median	1004.04	3.00
StdDev	1505.91	0.09

Scaling and stretch (Advanced)

Stretch function Log(x)

Background level 0.00

Peak level 5126.97

Scaled peak level 10.00

Auto scaling Apply values

Channels

8-bit
16-bit
32-bit

Undefined
Black
Transparent

Open File
Save File
Save & Edit
Options
About
Reset

Preview
 Flip Image
 Freeze settings

Mark in preview

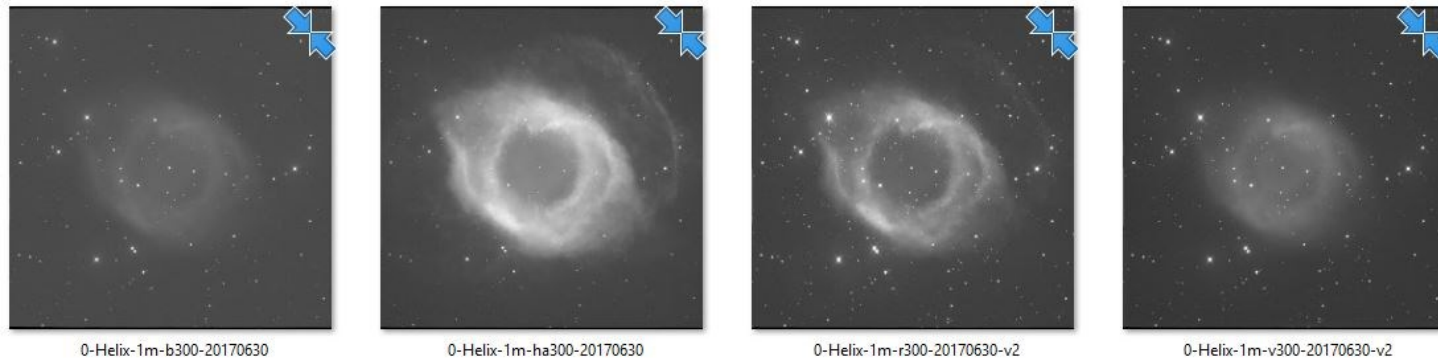
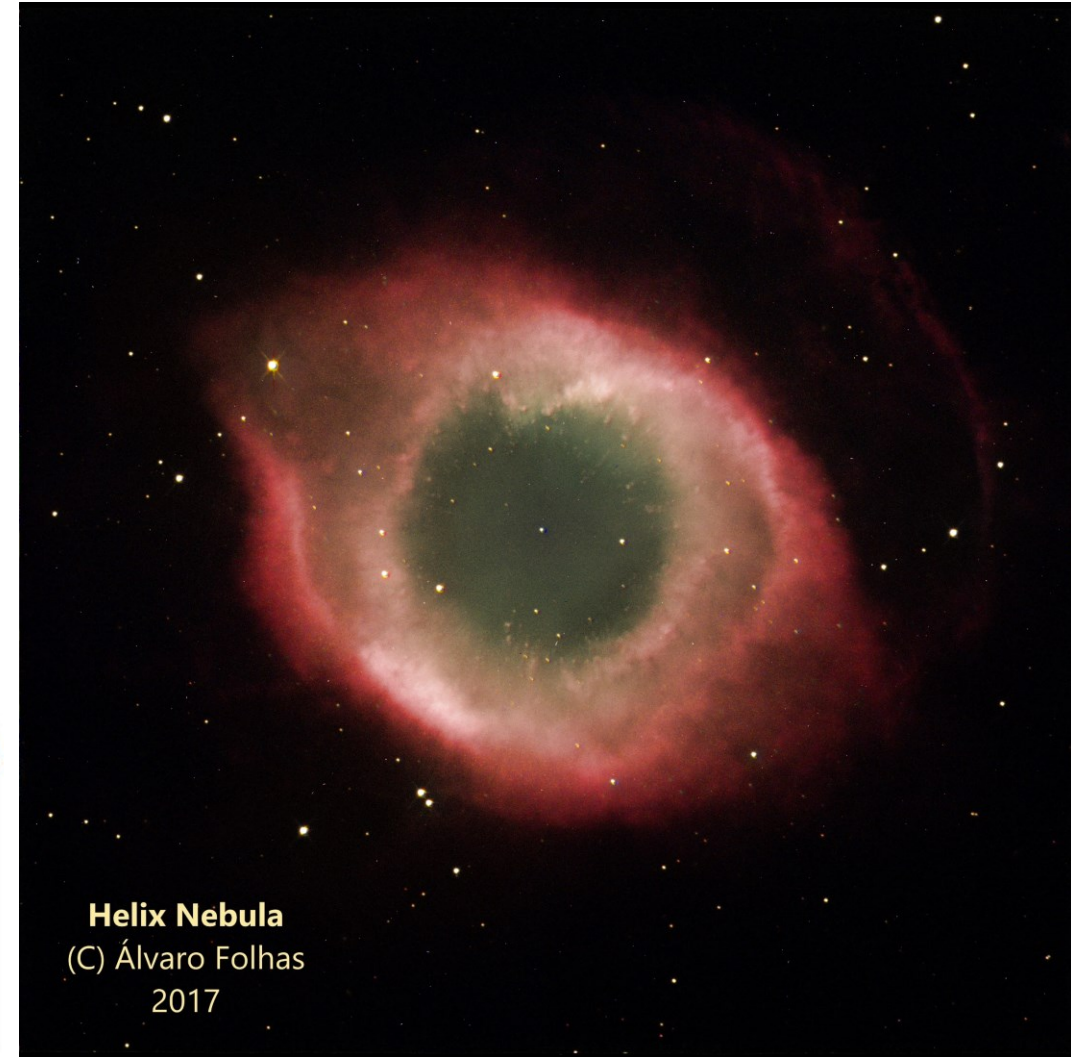
Undefined (red)
 White clipping (green)
 Black clipping (blue)

Show image information for:
 Scaled
 Stretched

2.70 - Fit in preview 4.80

2.96 Black level White level 3.23

eesa
ESO
NASA



Merging colors

