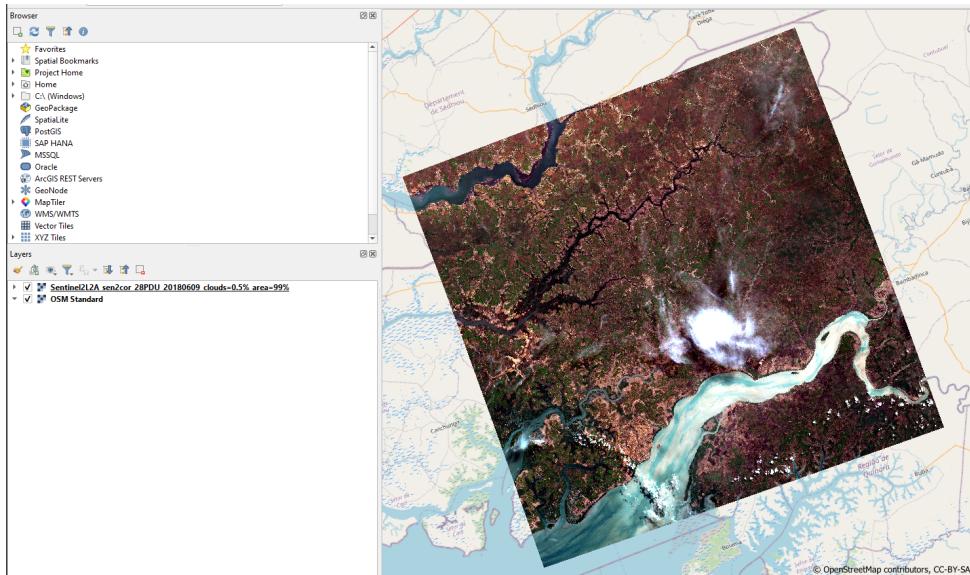
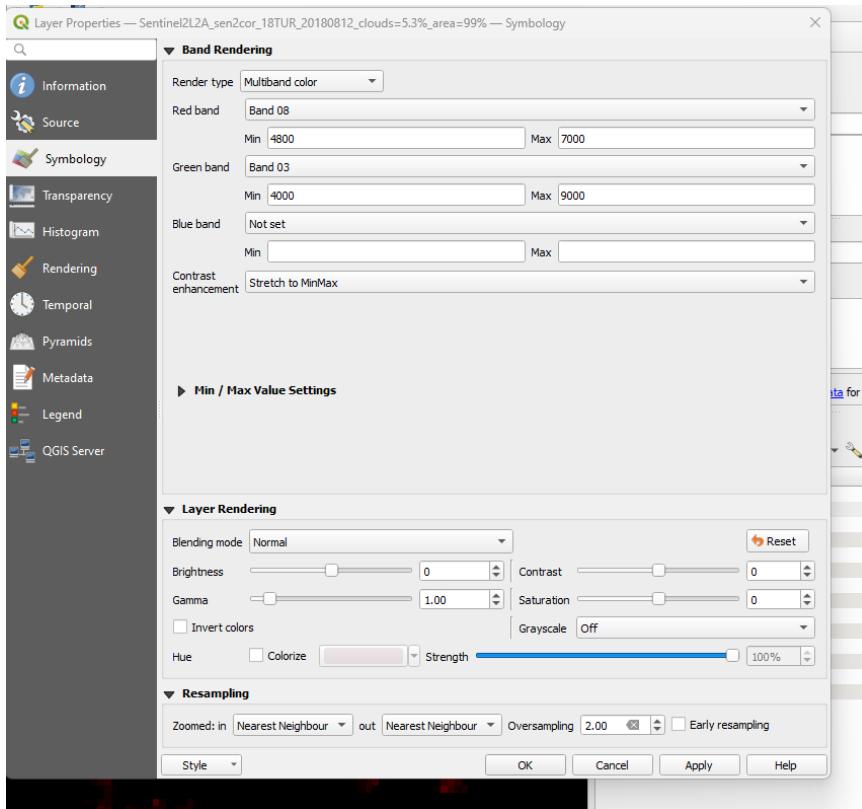


At the beginning, I downloaded the data and opened it in QGis



After that, in the QGis program itself, I studied possible options for band ranges in which it would be possible to accurately cut off clouds



In band 8, a large number of clouds fell in the range from 5000 to 7000,

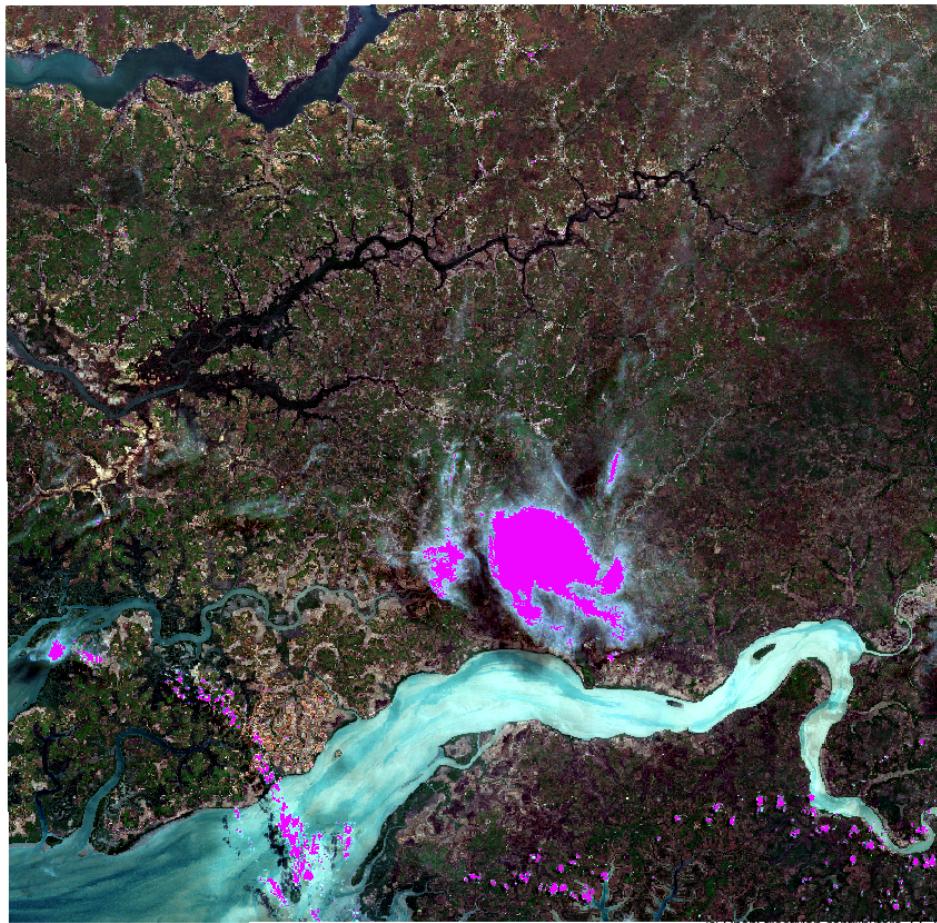
Band 10 also gave some missing sections, but it was necessary to “cut off” the water (to 850) in the picture below



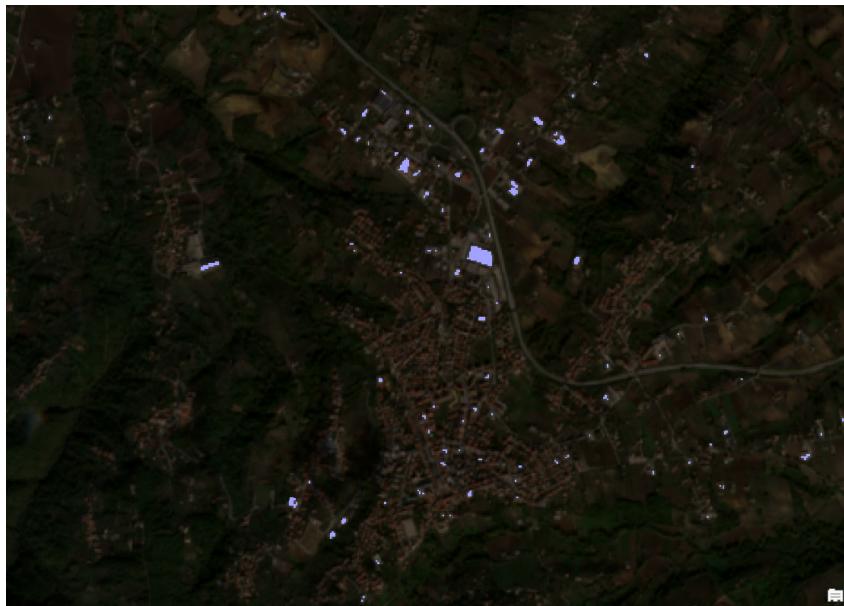
With this method of adding and searching for ranges, as well as searching for articles (some of them: [first](#), [second](#)), I picked up a more or less working range.

In the end, I decided to use the gdal library for this task, because I am more familiar with it. I worked in PyCharm. To use gdal, I installed miniconda3 in conda environment. After that I installed gdal (>>conda install gdal)

After running the script, I added all the masks to QGis and used a singleband pseudocolor for better viewing. The image in purple shows the entire area of clouds found by the script



I'm aware about mistakes that can be seen in places where located a lot of buildings (like the picture below, I found it only in one image), but this is a systematic error, and it can be solved by adding band ranges.



Also a mask on one image with a lot of sand (which reflects light very well) did not show a very good result, but unfortunately with sand it is always like that, for a better result more manipulations with the bands are needed.

