Ursa major: Life in space.

The main objective is detecting vegetation. In space the objective is for taking pictures and process the pictures on a simple way and save when each picture was token. If the pictures and the timing file comes to earth than we can process the pictures on a high scale and high definition. The function of knowing the time when the image was token is that we than can track were the picture is token. This can be good because when can make a vegetation map.

We will use the NoIR camera and the sense hat. With the camera we will take pictures and with the sense hat we will express what he sees. The astronauts can see what the Raspberry Pi is seeing. Vegetation will be expressed as green and water as blue and clouds as white. The image that the camera takes will be saved on the Pi in full HD but the pictures that the Pi would process are resized that the photo is under 300x300 pixels. The resized pictures are taking 1 second per picture. But if we process them at full size they will take 5 minutes to process. The pictures that are coming to the ground will be processed at full HD because we have the time. In space we have only 3 hours for running our script but on earth we have all the time. With the pictures that are coming back from the I.S.S. we could make a vegetation map. We will express our results on text files but also in a more visible way. We will express the results in Minecraft Pi. We would like to make the results visible in Minecraft Pi because it’s an interesting exercise for coding in Python but also it is more relatable for kids because in Minecraft even graphs and diagrams aren’t boring in it.

We expect a lot of pictures and a file with the time when the pictures are made. In a previous dataset (enviro Pi) we saw that not all the pictures are perfect because sometimes if the sun shines right in the camera than is the picture bad. We will have around 8640 pictures and we expect that 500 will be unusable. 8640 pictures equals around 4000 Mebibytes (MiB). But in our code we have a line that is in commentary but it stand that you need to get it out of commentary for fewer photos and therefore less mebibytes. If you activate that piece of that there will be less than 4000 picture but more than 3500 and the pictures will be 2000 Megabytes (MB) of pictures saved on the Pi. We did this because we really want to run our code on the I.S.S.

For installing the PIL libray for examining the picture: sudo apt-get install python-PIL

The time library is standard installed and Pi camera and sense hat are also installed because everyone needs to use it. And you’re recommending the CSV library in your example code and we didn’t installed it.