# (Green) Planets in a Room

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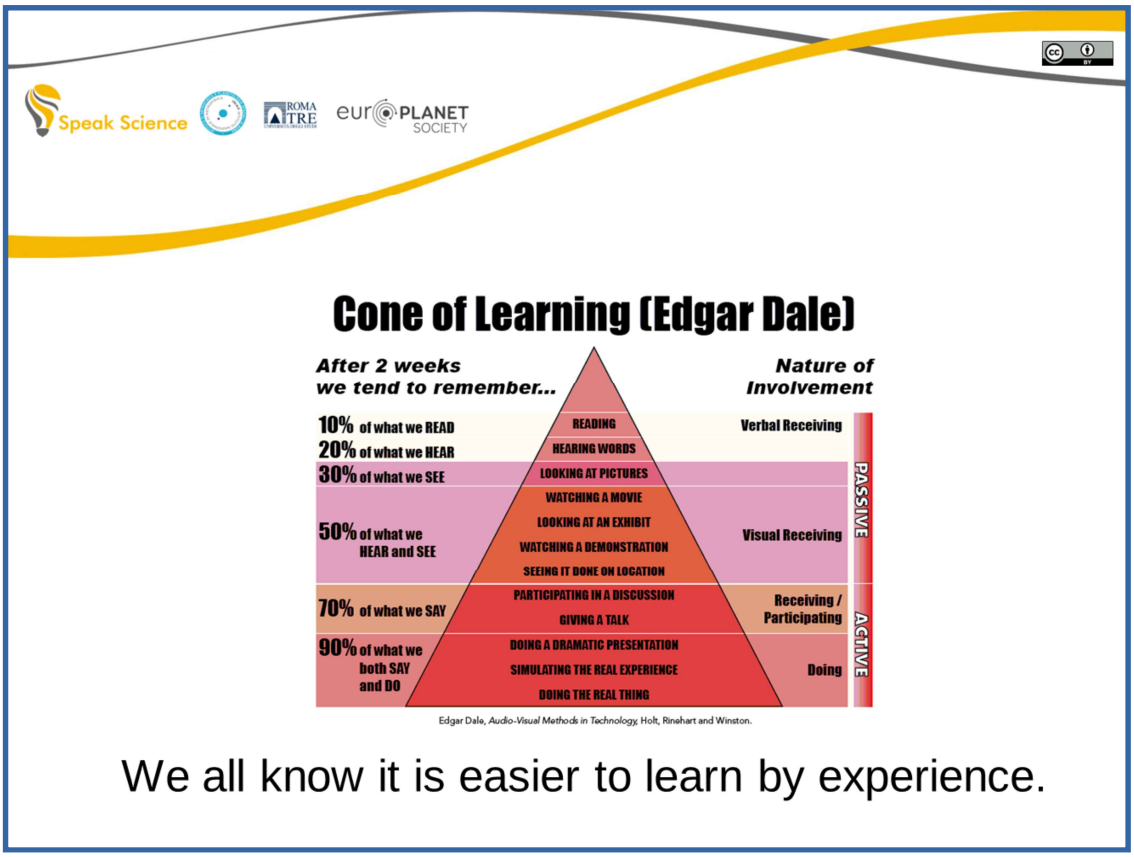
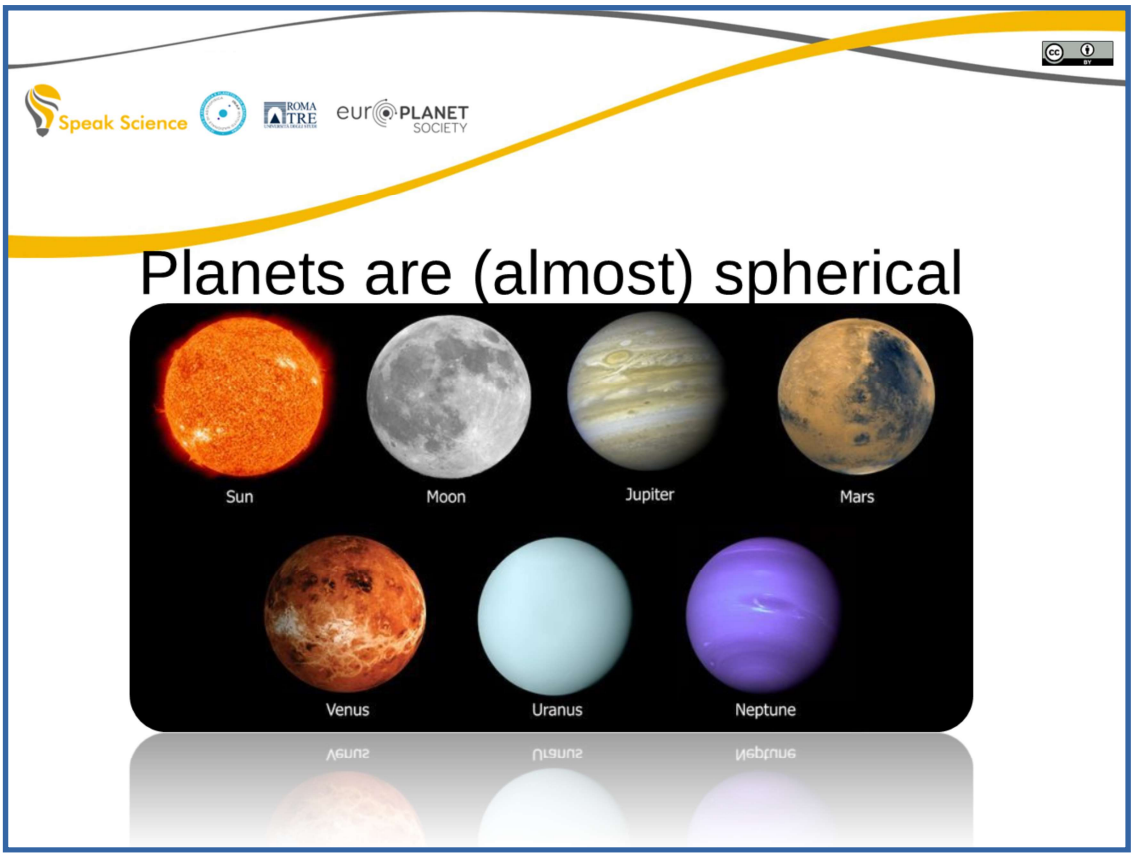
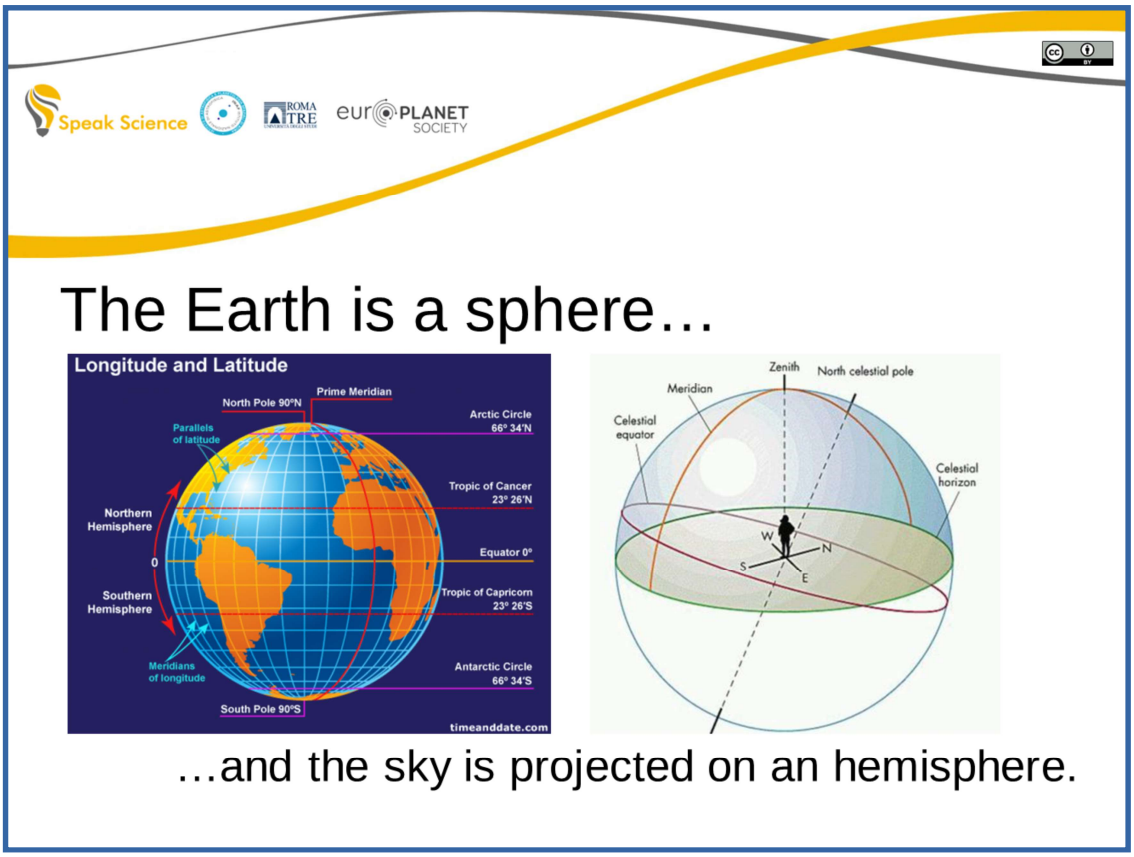



To really remember something, you need not only to hear about it, but also to see it and experience it.




As you know, planets are spherical. Stars are spherical.



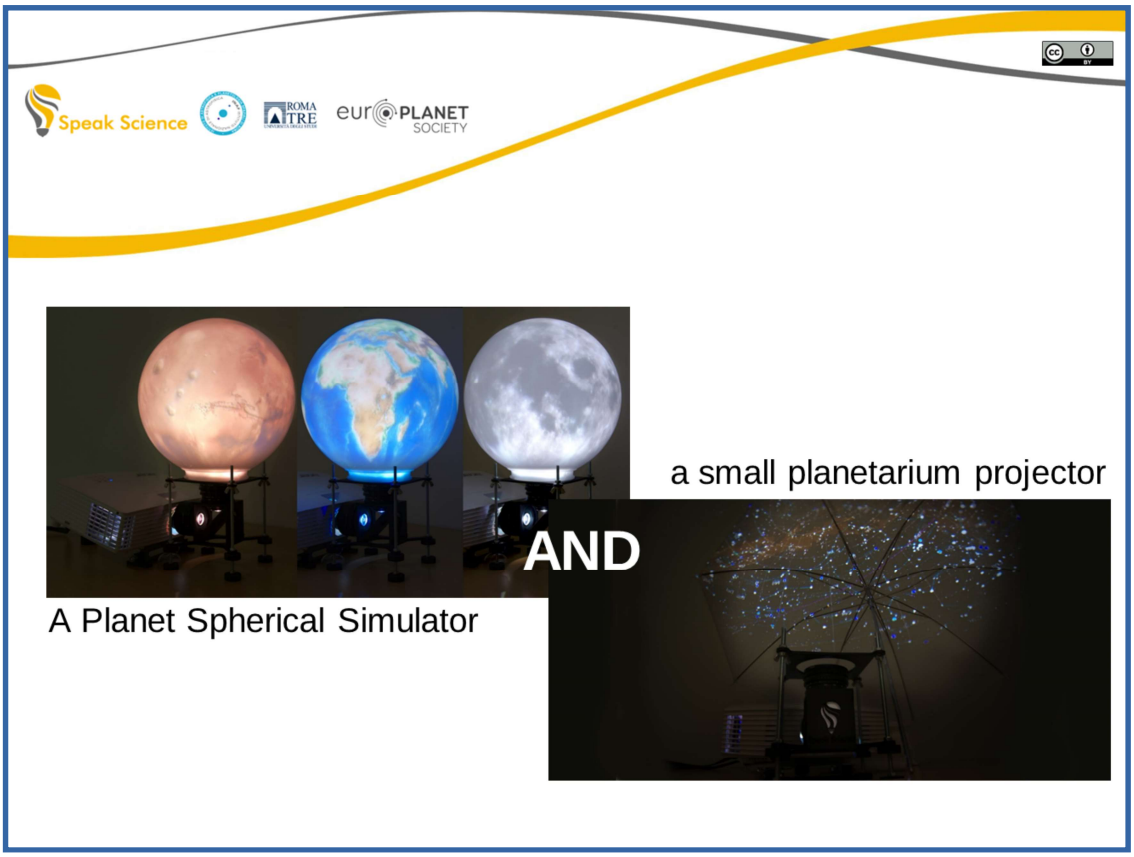

The Earth itself is spherical and all global phenomena that happen on our planet can be explained and visualized easily if seen on a sphere.

Whatsmore, the sky above our head can be seen as projected an hemisphere.

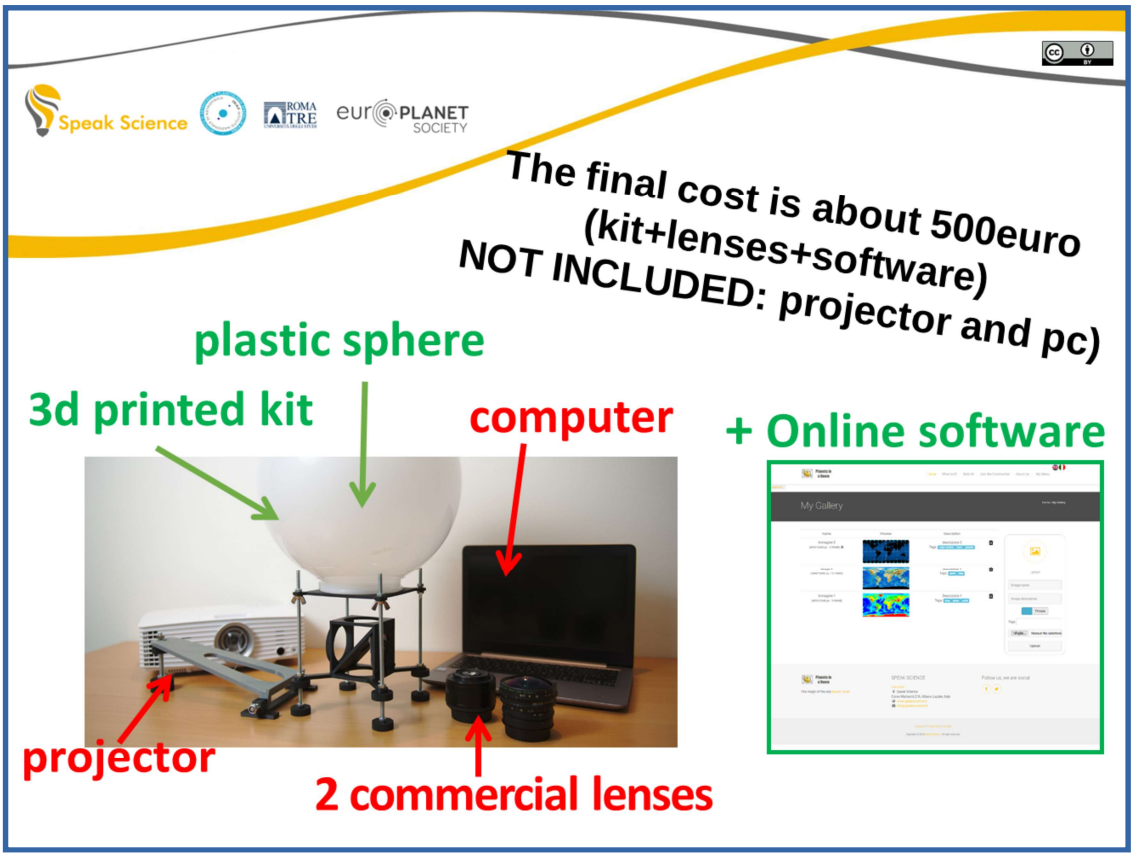

So why do we represent and teach all this on a flat screen? Or on a flat piece of paper? Or on any flat representation? Why do we want people to EXPERIENCE planets on a flat 2dimensional surface?


This is why we decided to develop a new education and outreach project based on spherical projection. The idea itsel is not so new: it happens in planetarium or in Museum where you can find commercial (and very expensive) spherical projectors. But we wanted to develop a cheap and whatsmore, a DIY and customizable tool that teachers, scientists and outerach professionals could use.


Thanks to a funding opportunity by Europlanet in 2017 we came out with Planets in a Room, a small, DIY kit.




It is a small, transportable, planet simulator AND planetarium projector. It requires your work because it comes in a kit and you need to assemble it yourself. And it is low cost.



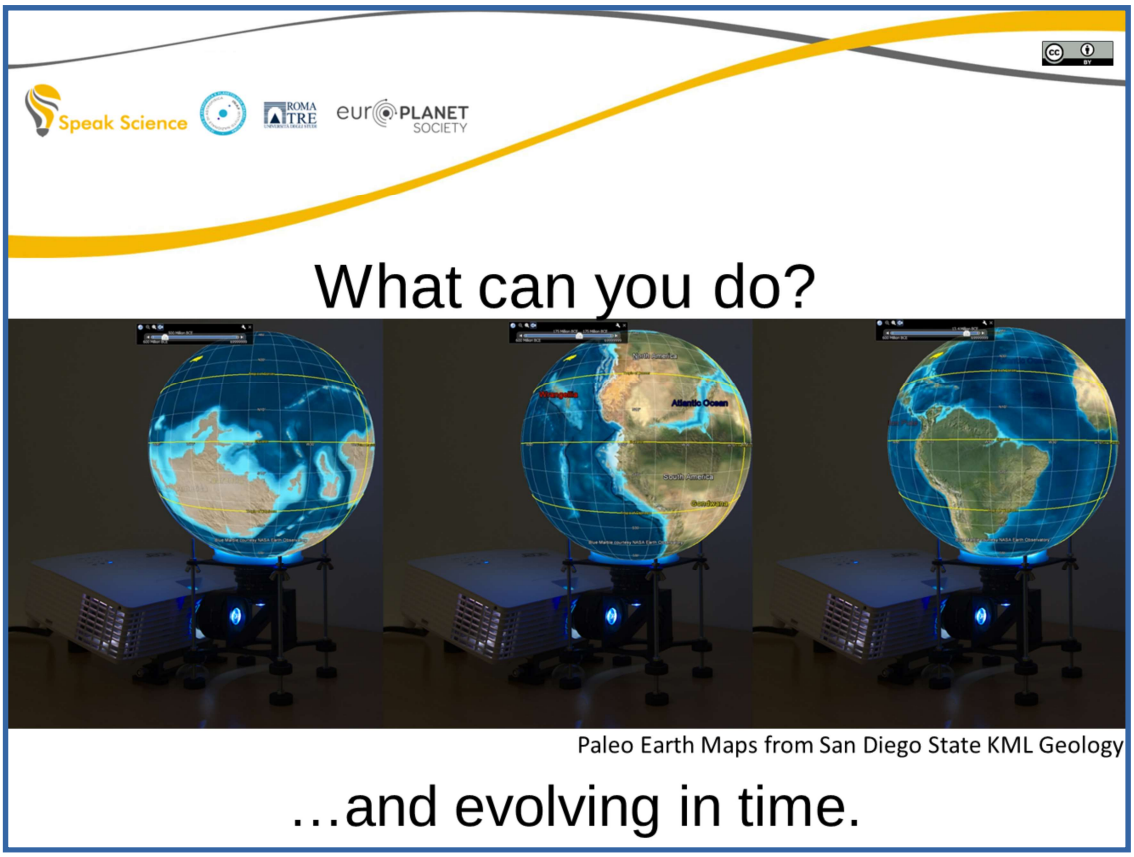

How it is made? It is made of different parts (in green what is inside the kit you can order at planetsinaroom.net, in red what you need to find external to the kit): some 3d printed pieces, a recycled plastic sphere of a street lamp. The kit also requires 2 commercial lenses you need to buy yourself, a computer and a projector that will not be dedicated for Planets in a Room. And of course a software interface where you will find the software for calibration and spherical projection and a selection of existing material. The cost to build and use this kit (in this first version distributed until now) is about 500 euro excluding computer and PC.


It was presented for the first time at the Scientific Congress EPSC in 2017.

Thanks to the collaboration with our institutional partners, Planets in a Room was distributed and tested to an active community of users starting from Italy. In the last years it has been tested for many uses: lessons, public events, a tool for scientific journalism. In the next future, it will be distributed in Europe as an educationl tool by the new-born Europlanet Society.


Which educational activities can you do with Planets in a Room? First, of course it is a great tool to show the Sun, planets and moons of our Solar System. To do this, there are many free maps that have been made by space missions in the last decades and that have been readapted to be used as educational material.


You can also use Planets in a Room to do educational activities about our own planet, showing it from space and from different perspectives. For example, showing it at night, with the uneven light pollution, emitted mainly by big cities of rich countries. Or projecting it with the south pole up, in a very unusal configuration, that is as correct as the usual one, from a scientific point of view.




You can also use it to study Earth and its evolution in time, starting form the paleo Earth and the first steps of its evolution. Planets in a Room can also be used to go far in the future, analyzing future phenomena that can be related to political and economical educational topics.


There is also a second version of PIAR made of wood, to be more ecofriendly, that is under development.

This second version was stopped at the moment by Coronavirus.

## BIBLIOGRAPHY and useful documents


Website of Planets in a Room
http://www.planetsinaroom.net

Video tutorial made by students (in Italian)
https://www.youtube.com/watch?v=wxN9CHc9Js8

Planets in a Room presented at EPSC 2017
https://meetingorganizer.copernicus.org/EPSC2017/EPSC2017-280.pdf