

Using Blender for Earth Sciences visualization



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For this talk a video presentation was prepared and can be found at:

<http://tiny.cc/EGU2020-21494>

Also, the next slides will show a simple example on how to use geoscientific data within Blender.

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There are many good Blender tutorials freely available that can help anyone willing to learn.

The following slides contain few steps on how to start using global geoscientific data within Blender.



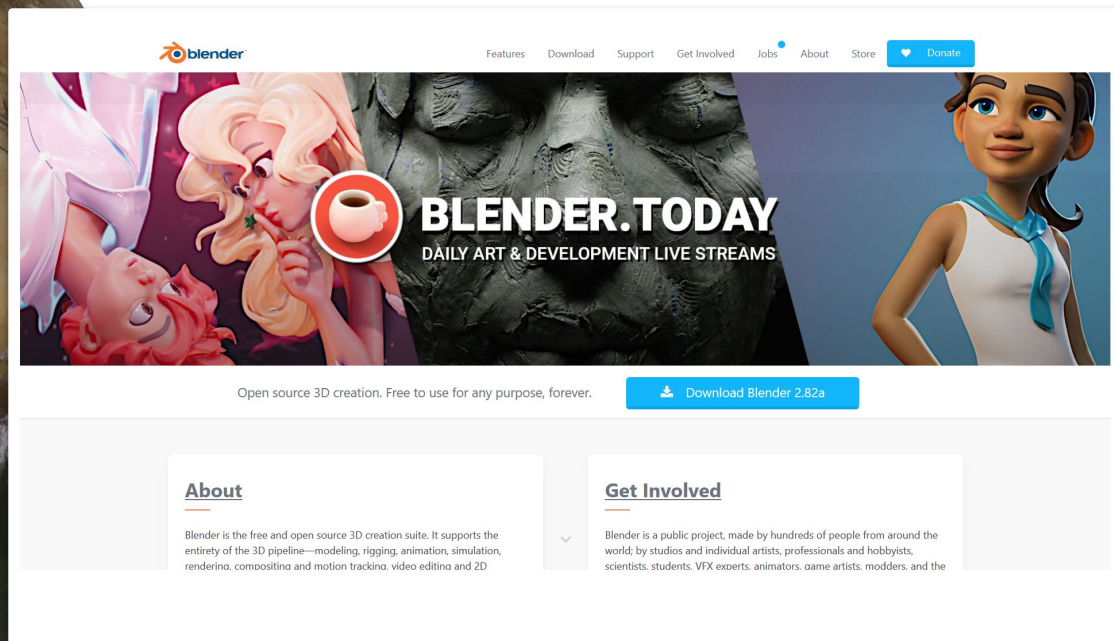
Disclaimer!

In order to follow the steps you need to have a way to represent your data in a black and white equirectangular plot.

There are many tools available that can make the job: Cartopy, Panoply, ...

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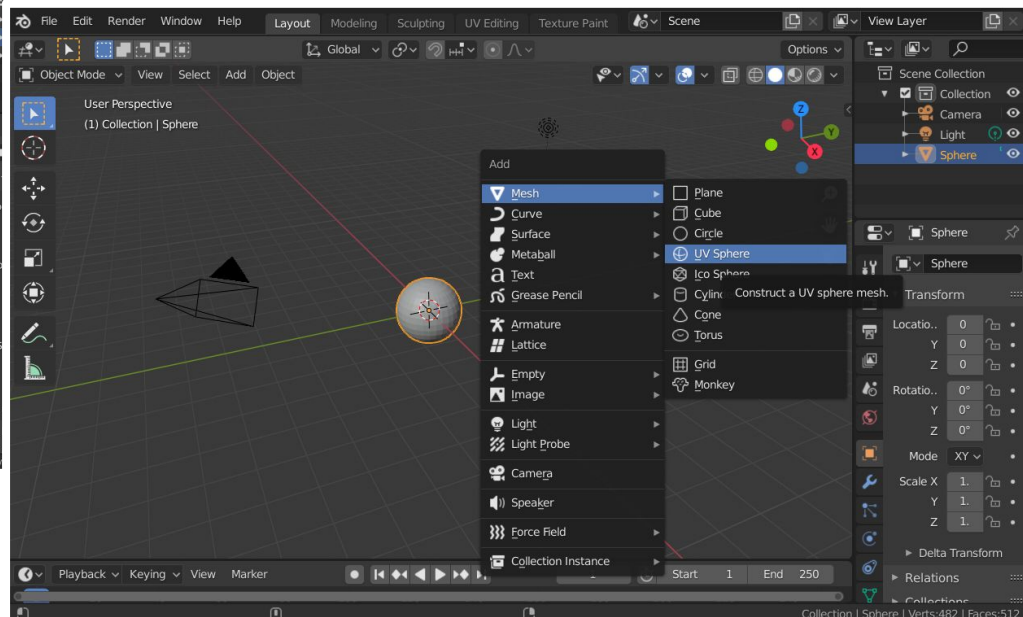
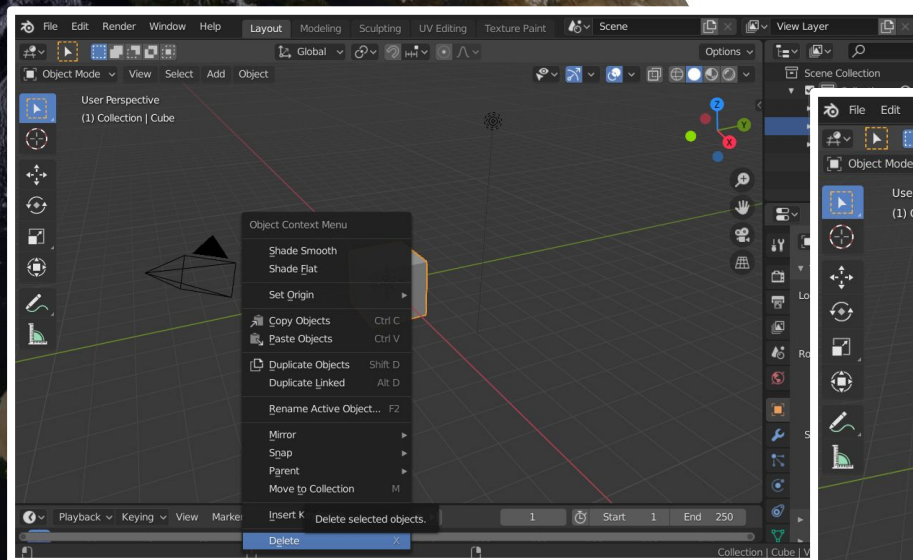
Step 1: Download Blender at www.blender.org



The screenshot shows the Blender website homepage. At the top left is the Blender logo. To its right are navigation links: Features, Download, Support, Get Involved, Jobs, About, and Store. Further right is a blue 'Donate' button with a heart icon. The main banner features a collage of 3D art: a character with pink hair, a character with blonde hair holding a coffee cup, a stone bust, and a character with blue hair. The text 'BLENDER.TODAY' is prominently displayed in white, with 'DAILY ART & DEVELOPMENT LIVE STREAMS' underneath. Below the banner, the text 'Open source 3D creation. Free to use for any purpose, forever.' is followed by a blue 'Download Blender 2.82a' button with a download icon. Below this are two columns: 'About' and 'Get Involved'. The 'About' section states: 'Blender is the free and open source 3D creation suite. It supports the entirety of the 3D pipeline—modeling, rigging, animation, simulation, rendering, compositing and motion tracking, video editing and 2D'. The 'Get Involved' section states: 'Blender is a public project, made by hundreds of people from around the world; by studios and individual artists, professionals and hobbyists, scientists, students, VFX experts, animators, game artists, modders, and the'.

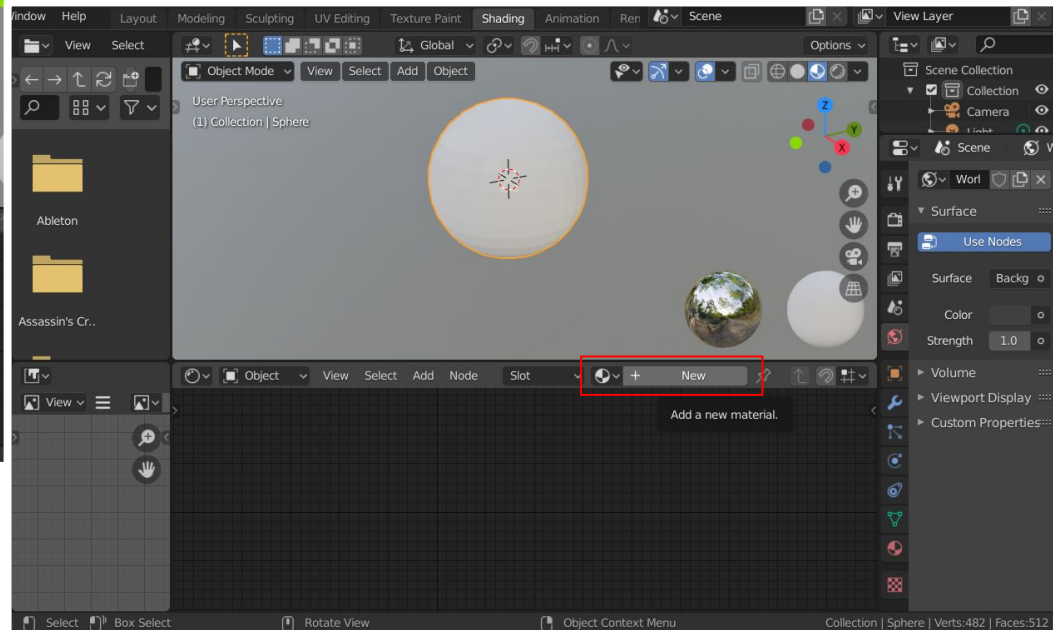
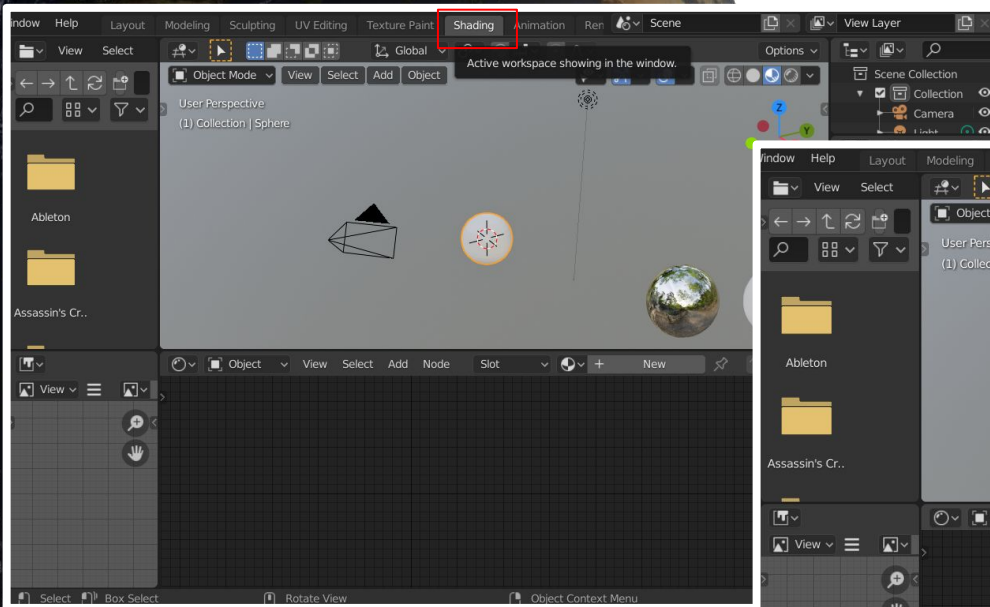
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Step 2: Open Blender, delete the Cube and add an Sphere



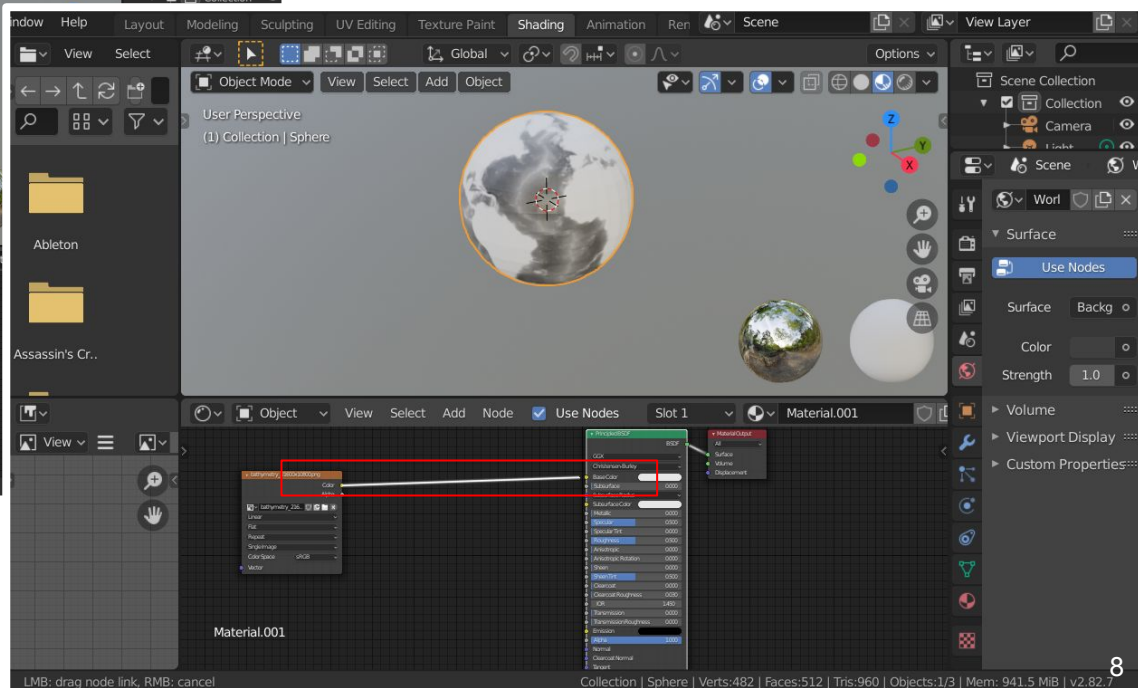
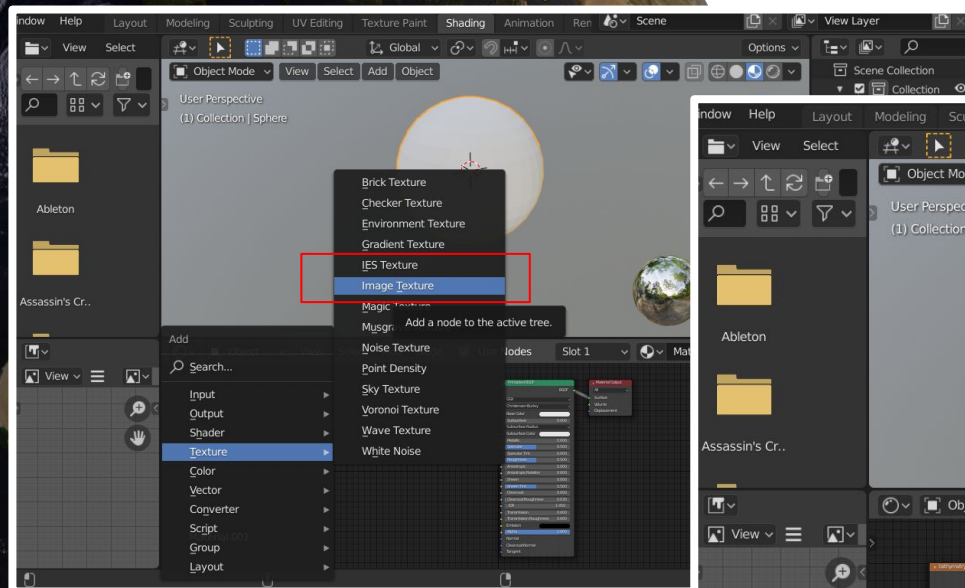
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Step 3: Switch to Shaders tab and create a new material.



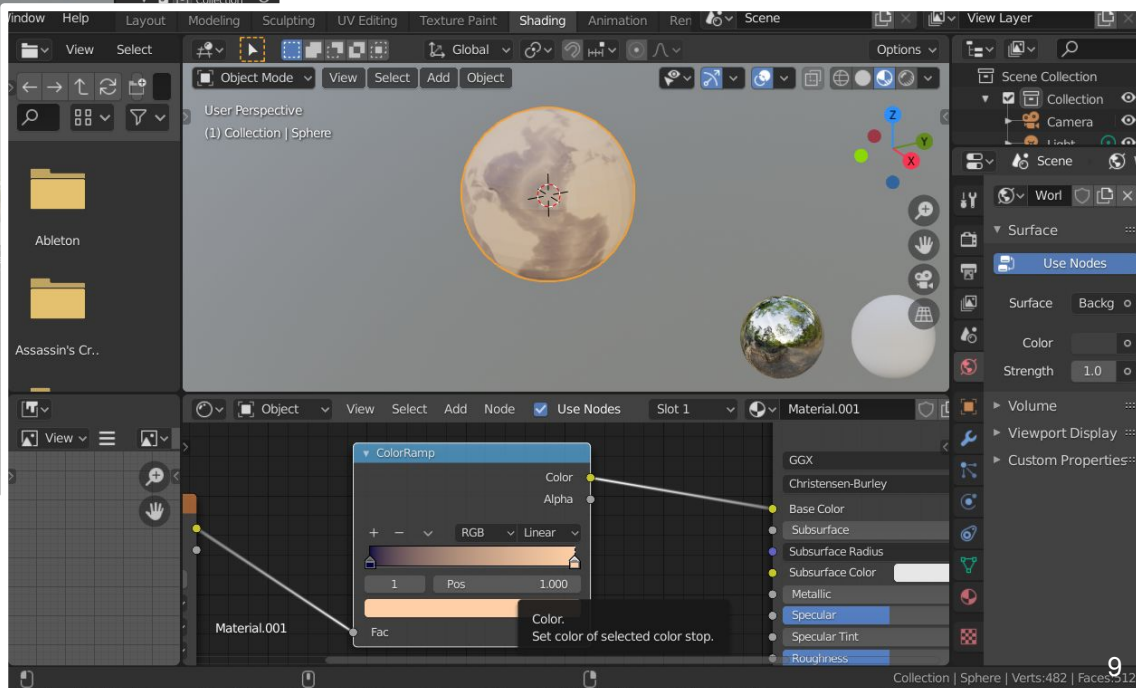
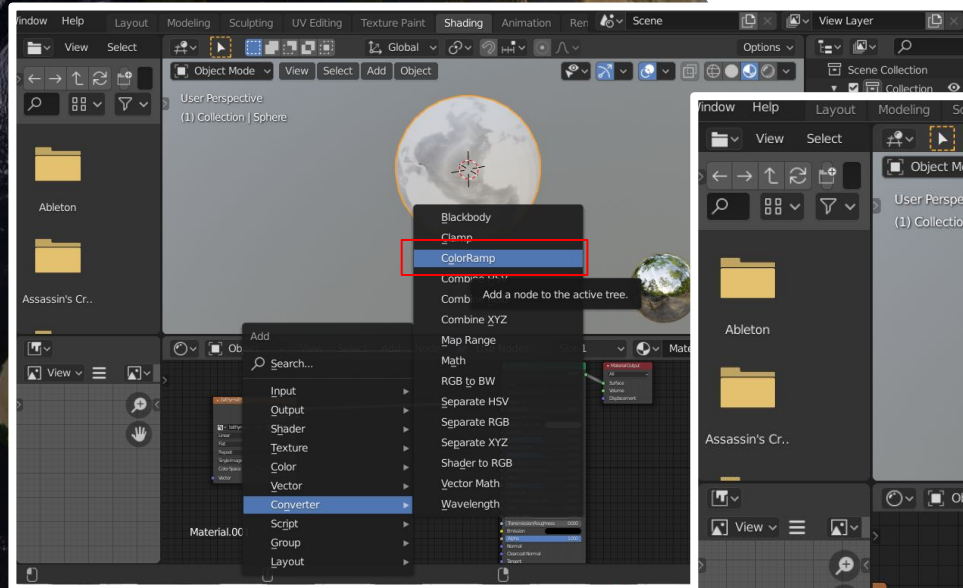
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Step 4: Add an Image texture, select your equirectangular black and white plot and connect it to the base color.

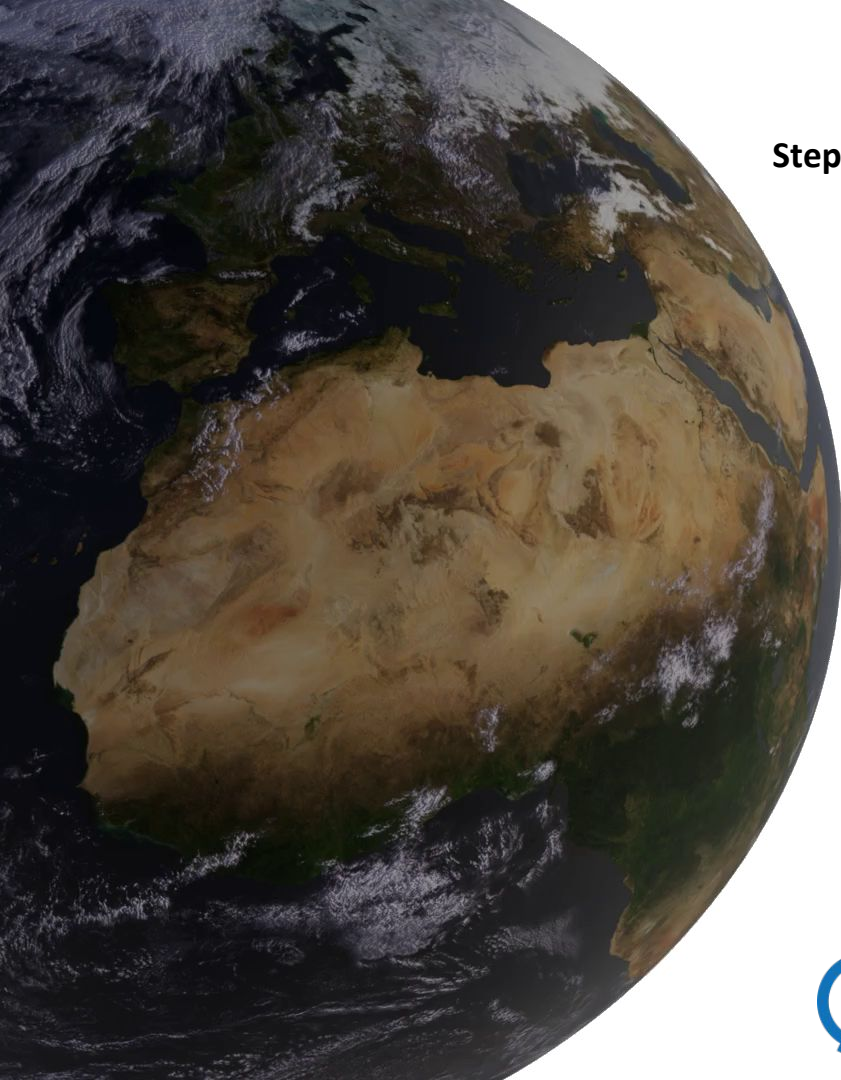


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Step 5: Add a color ramp converter to customize the color map.



Step 6: Experiment a bit with the unlimited possibilities.





Bonus:

- It is possible to directly load any data inside Blender without the need of producing an intermediate plot using python scripts. We are working on an **Addon to load and interpolate netCDF** data directly inside Blender.
- There's a huge development effort in Blender and soon there will be **OpenVDB** integrated, which will make possible to work with 3D data much easily.



For any questions or comments please
don't hesitate to contact me at:

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