

Map Cubes

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Outline

- What are map cubes?
- Where to find them?
- How to make them?
- How do you make your own?
- What did we learn?



What are Map Cubes?

- Paper craft that you can cut out and assemble
- Map on a box
- Gnomonic Projection
 - Displays all great circles as straight lines
 - http://en.wikipedia.org/wiki/Gnomonic_projection

How do you make them?

- Find a map cube
- Print map cube out on card stock
- Cut it out
- Fold it
- Glue it
- Done!

Find a map cube

Map Projections: Polyhedral Maps in Paper

www.progonos.com/furuti/MapProj/Normal/ProjPoly/Foldout/foldout.html

Map Projections

Polyhedral Maps in Paper

Have Fun with Paper Models of the Earth

Polyhedral map projections are an interesting compromise solution to the problem of accurately representing curved features on flat surfaces while minimizing the distortion of cartographic properties. From here you can download, print, cut and build your own polyhedral pseudoglobe (if you have no experience building paper or card models, please read the assembly tips).


On Sizes and Resolution

I'd like to provide images in the highest possible resolution, but my server's disk space and bandwidth are constrained. In time, these limits have been enhanced, but still exist. Maps in this section can be:

- "Low-resolution"
PNG files which may be printed directly from your browser
- "High-resolution"
PDF files with somewhat better resolution; require Adobe® Reader® ("Acrobat Reader"), version 5.0 or more recent, or compatible software like Xpdf, version 3, or Evince, version 0.5.
- "Resolution-3"
PDF files with at least 300dpi. I could call them "higher-resolution", but someday I will run out of words, so I'll use numbers from now on...

All PDF files are in A4 size; most PDF viewers allow adjusting printing size to letter, A3 or other dimensions.

The Polyhedra



Some paper polyhedra you can build yourself

<http://www.progonos.com/furuti/MapProj/Normal/ProjPoly/Foldout/foldout.html>

Different Shapes

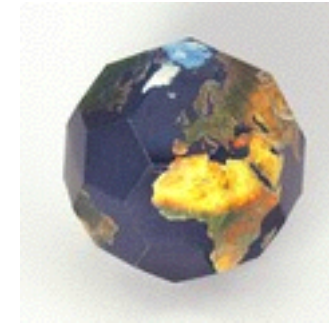
Cubes



Dodecahedron



Truncated Icosahedron



Tetrahedron



Icosahedron



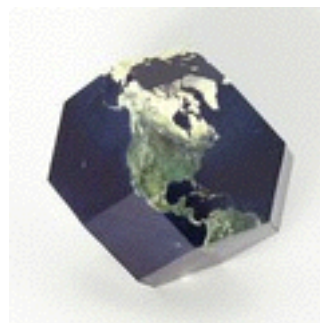
Cuboctahedron



Octahedron



Truncated Octahedron



Rhombicuboctahedron



Rhombic Dodecahedron



Print it



Cut it out



Fold it



Glue it



Done!



Coloring



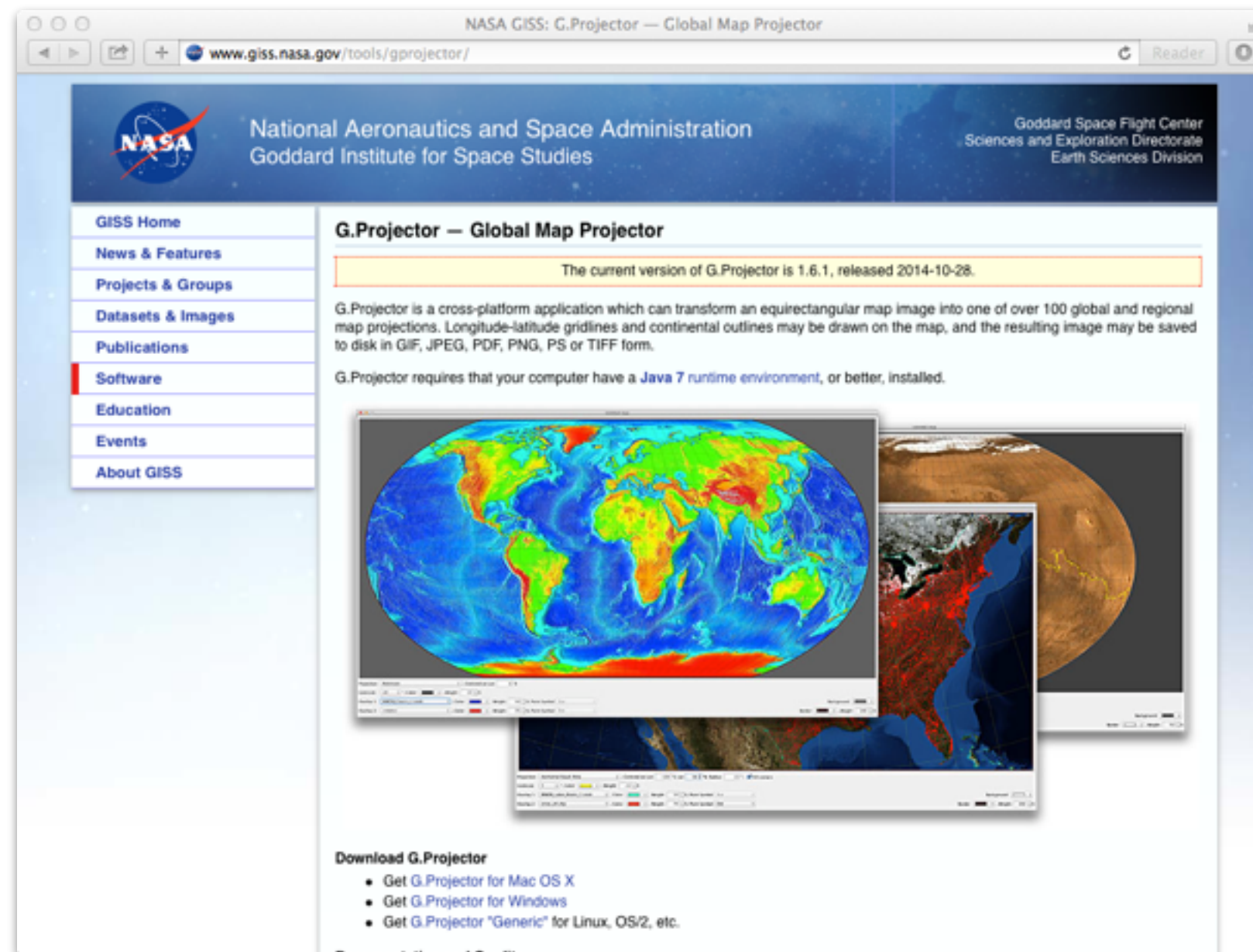
Create your own world

Blank Template



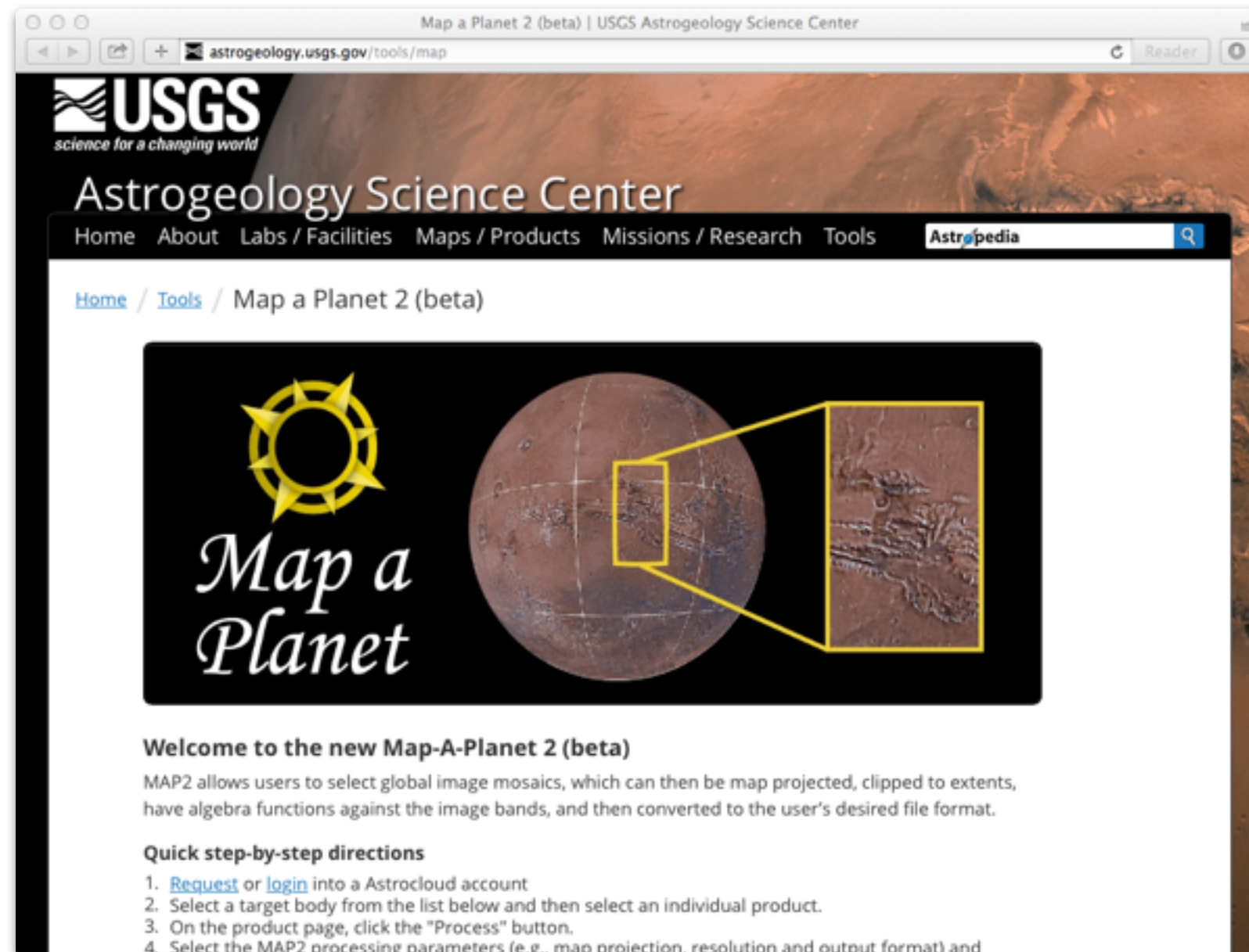
How do you make your own?

G.Projector



<http://www.giss.nasa.gov/tools/gprojector/>

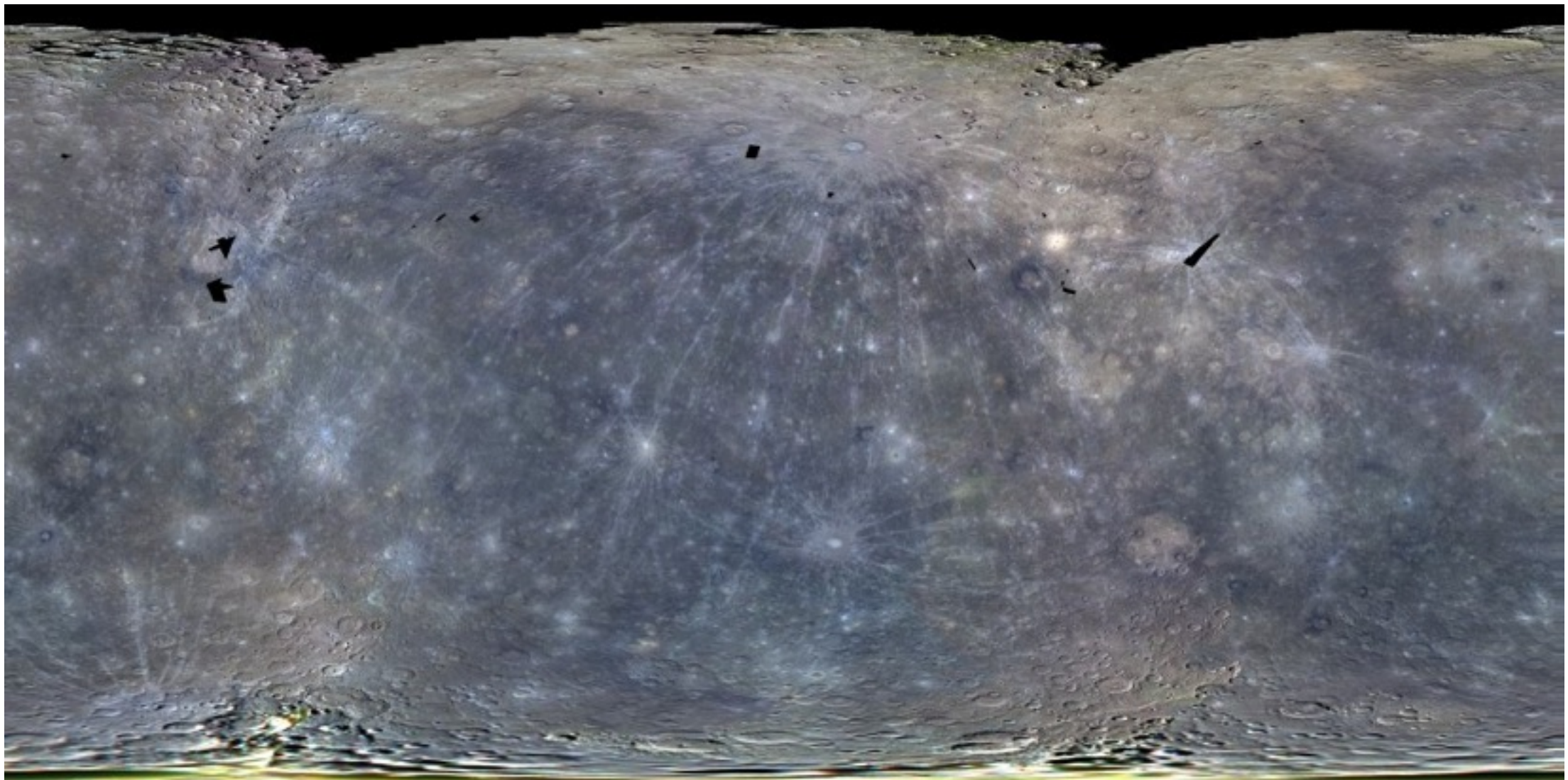
Astrogeology Map Cubes



<http://astrogeology.usgs.gov/tools/map>

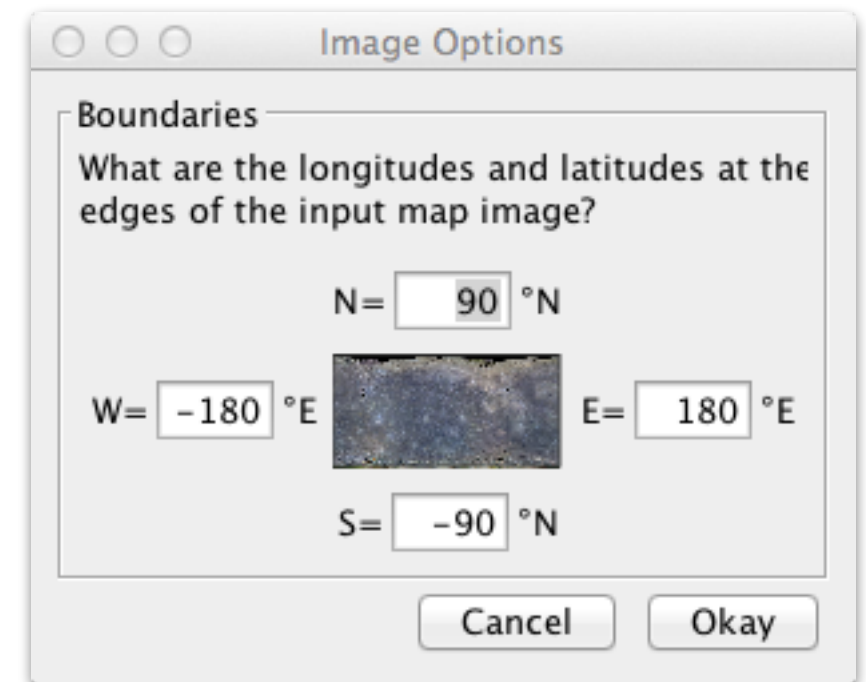
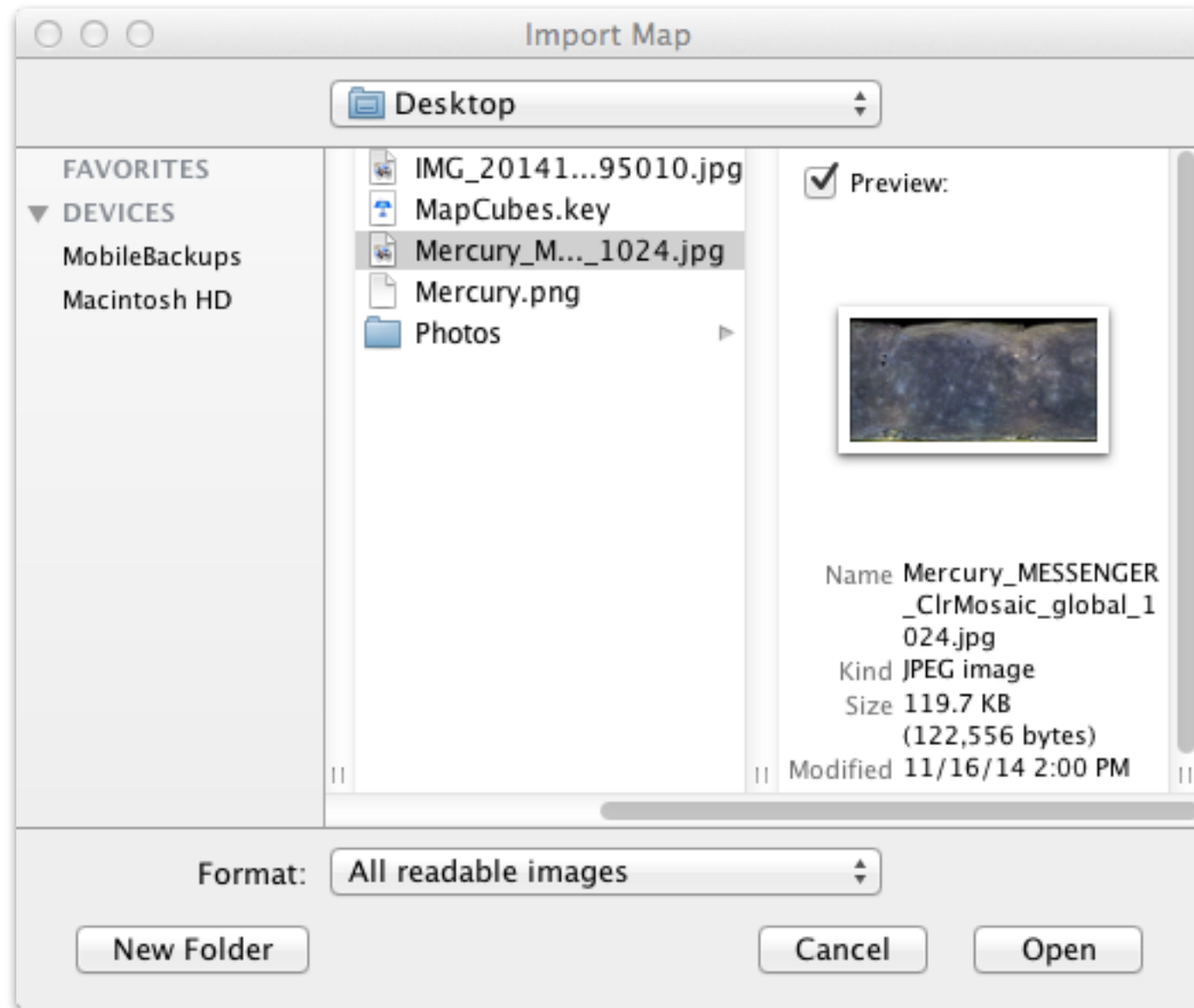
Find or Create a World Map

Projection: EPSG:4326
Bounds: -180, -90, 180, 90



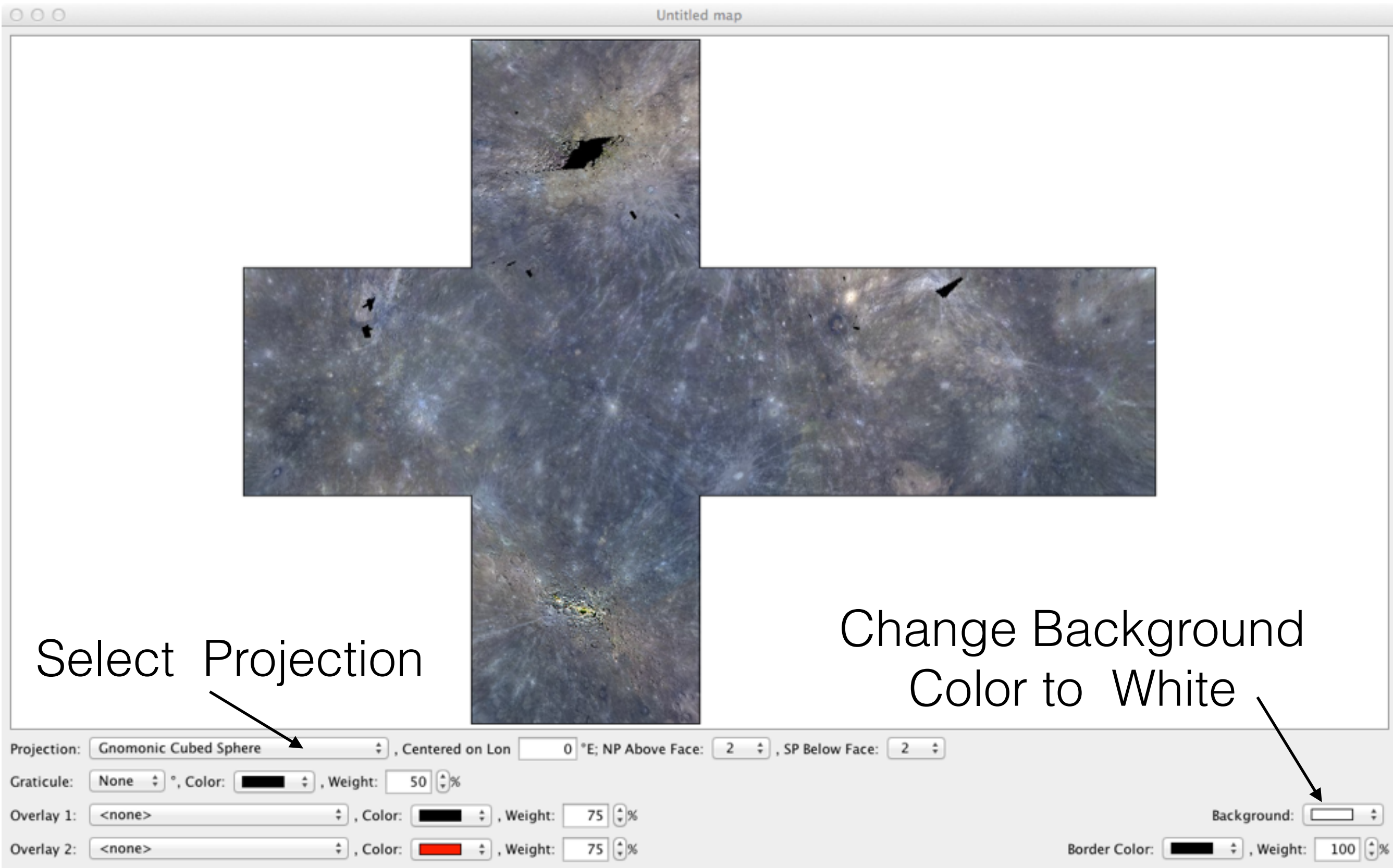
Mercury

Open Map in G.Projector



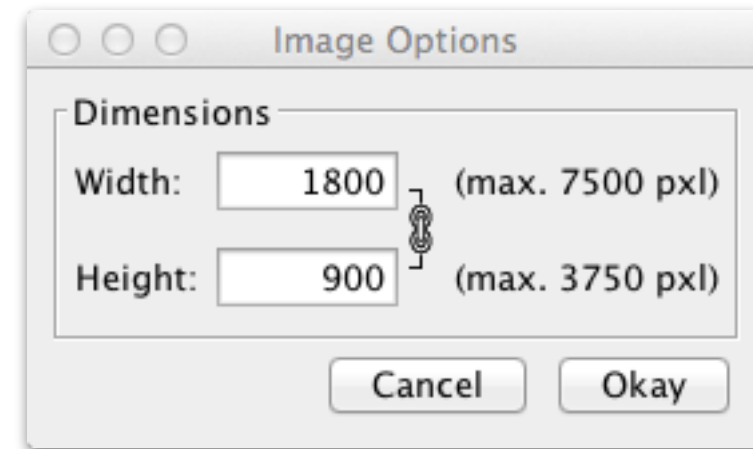
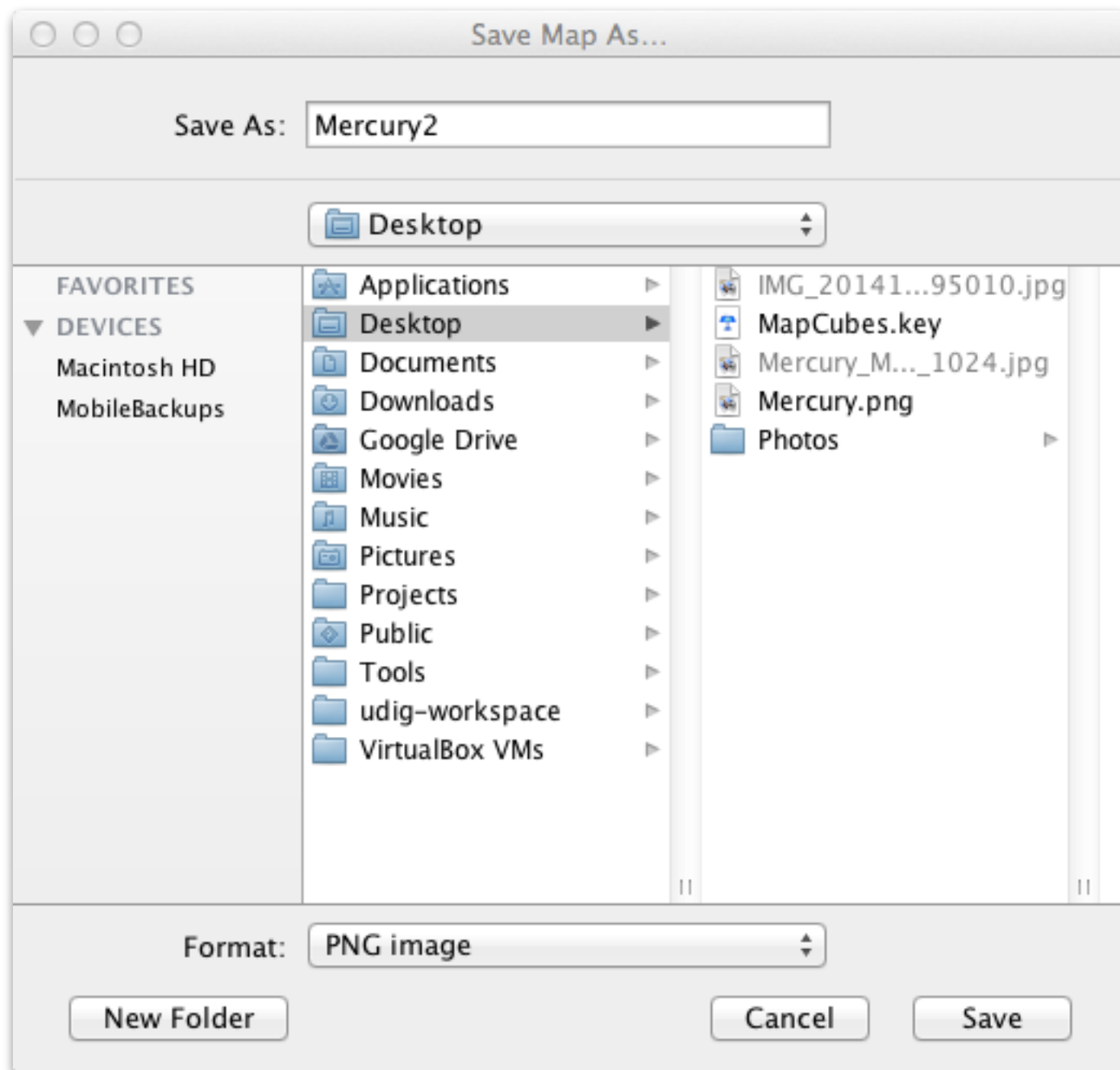
File New With Import

Create Map



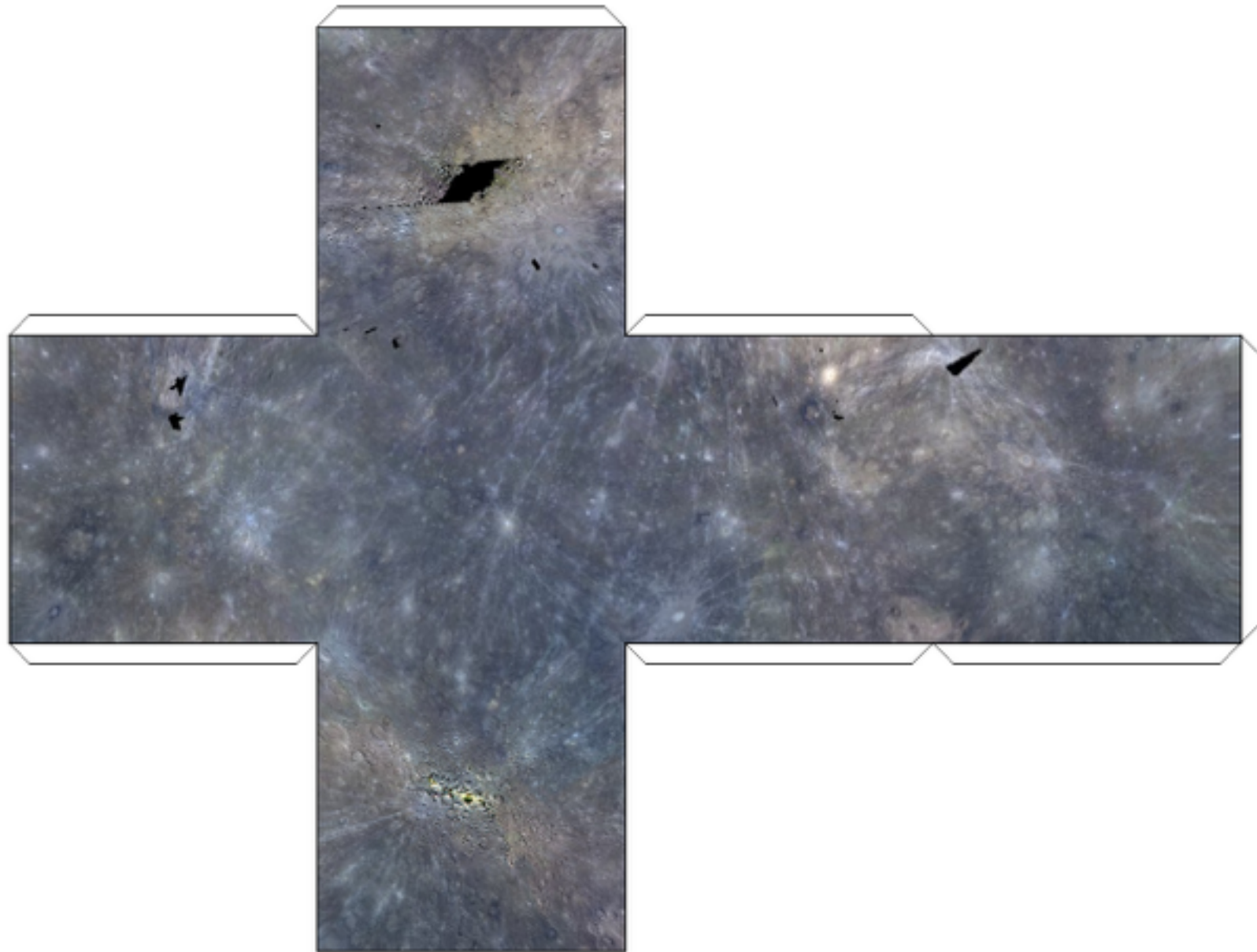
Save Map

File/Save/Map



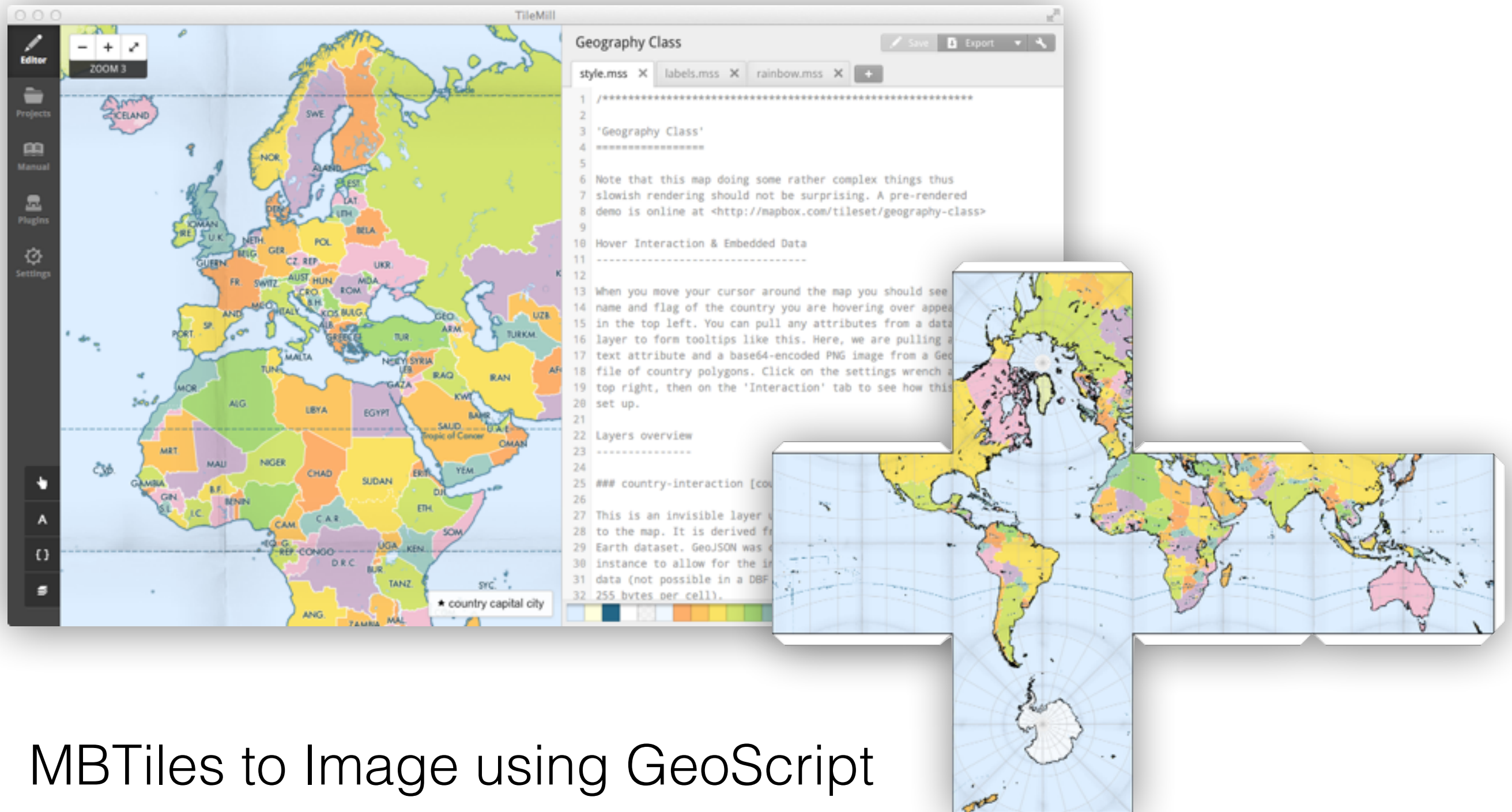
Add Tabs

groovy tabs.groovy Mercury.png MercuryTabs.png



<https://gist.github.com/jericks/fce52336bb9132ca084f>

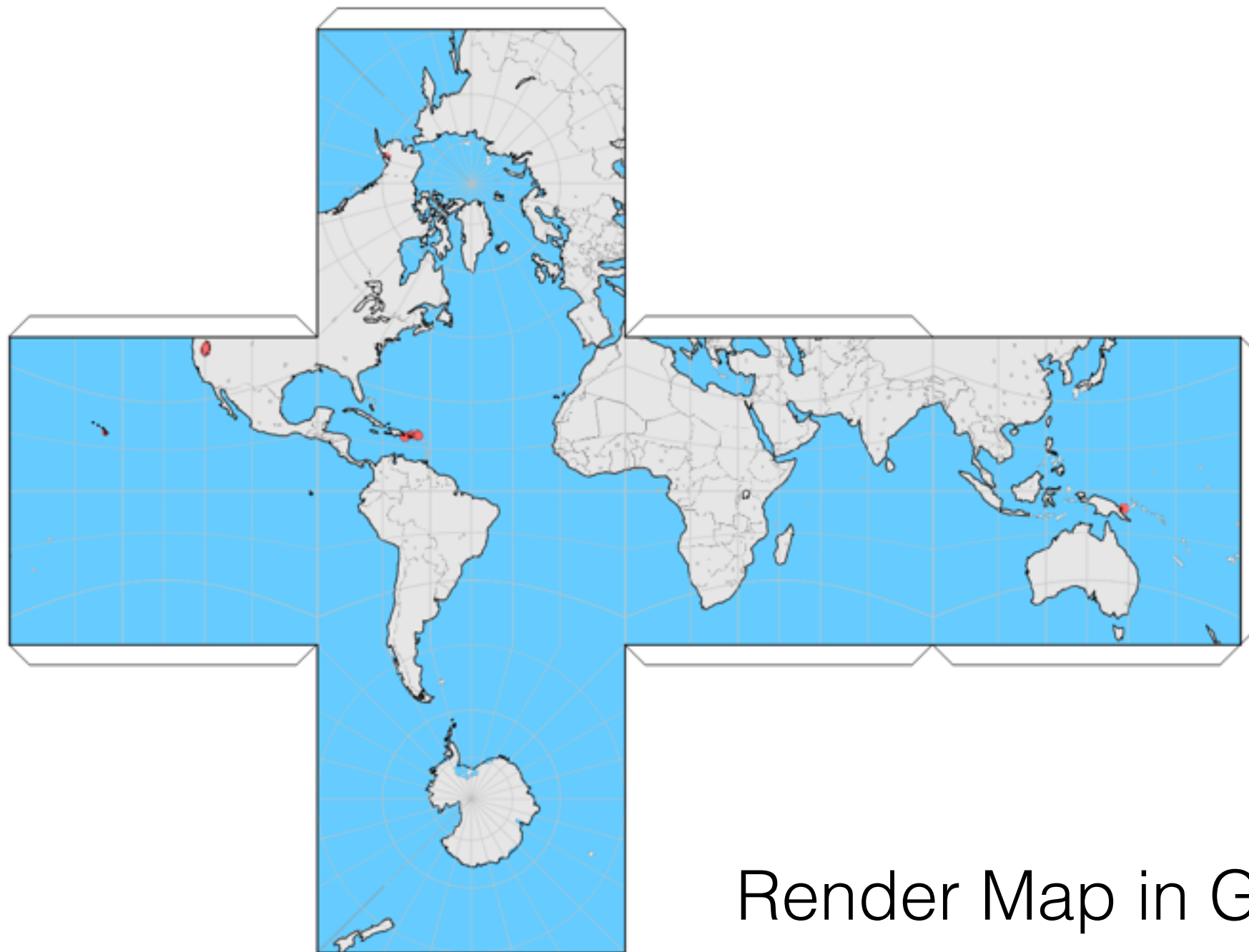
Tile Mill



MBTiles to Image using GeoScript

<https://gist.github.com/jericks/57ea9e7a8ba5ad1f43a0>

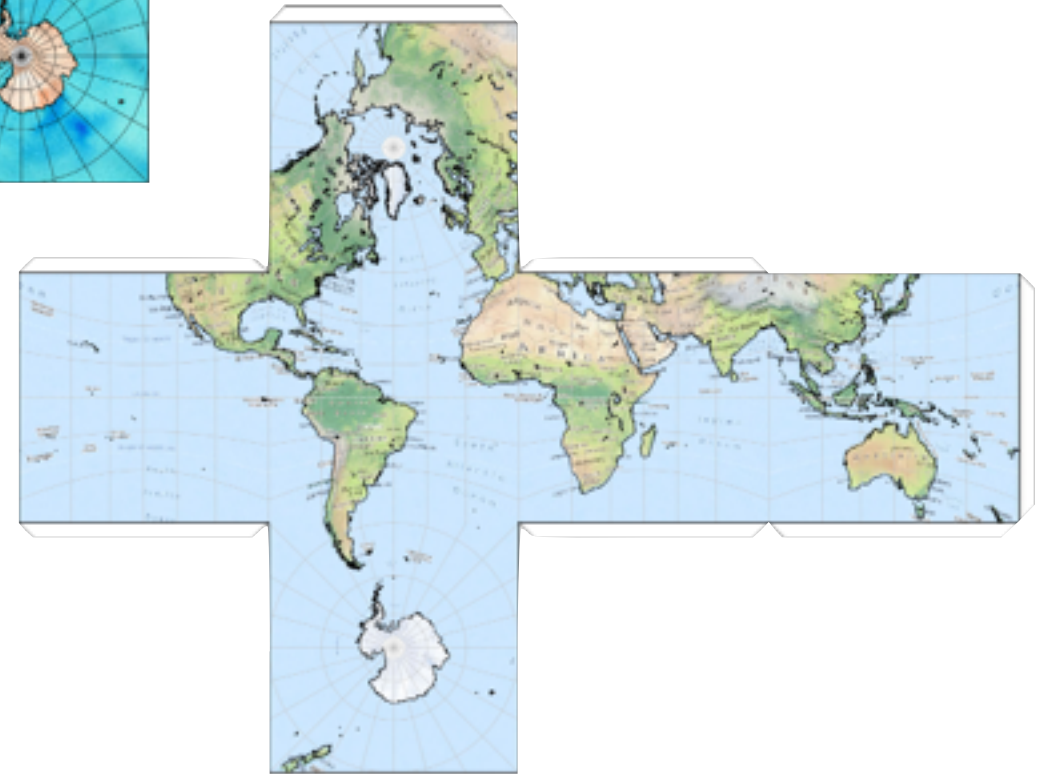
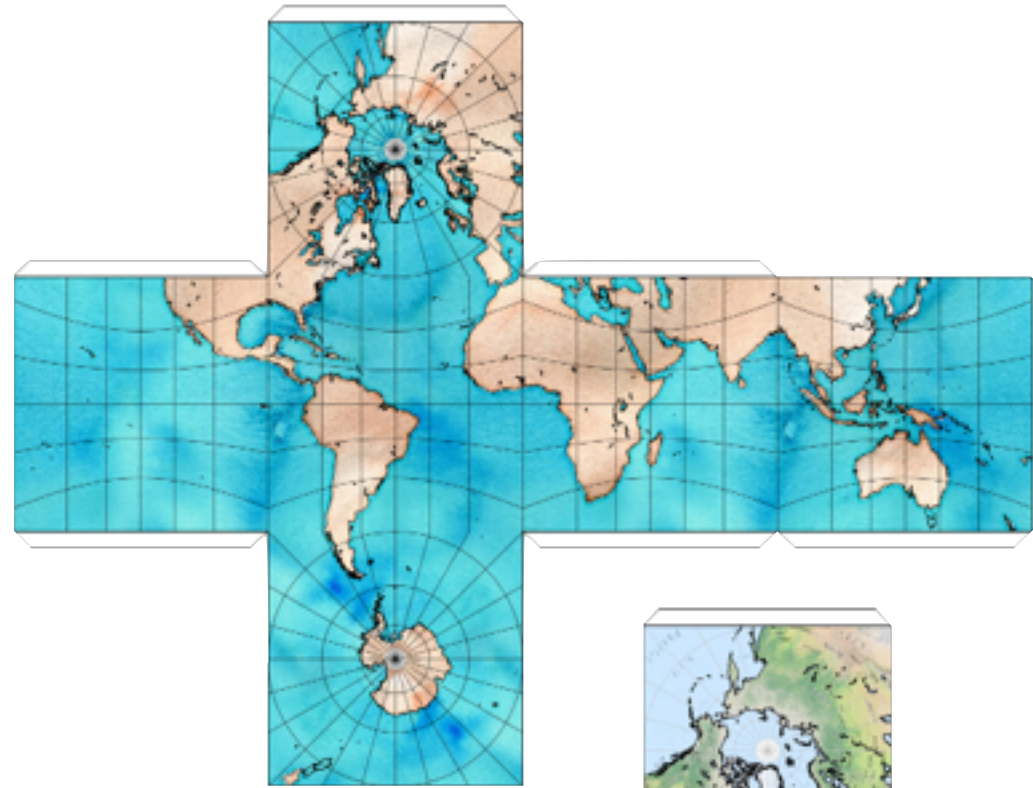
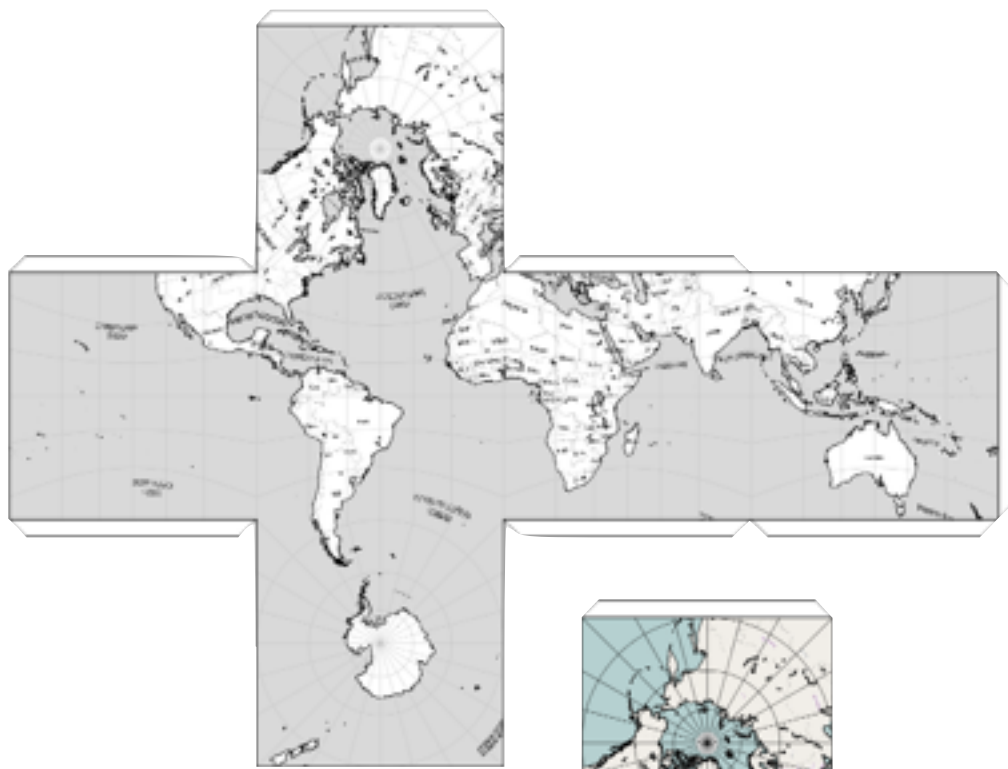
Earthquakes



Render Map in GeoScript

<https://gist.github.com/jericks/6a88422bcea5129f927e>

Stamen / OSM / MapQuest



<https://gist.github.com/jericks/530a973f44af3947c04e>

What did we learn?

- Making maps is fun!
- Projections
- Computers
- Coding
- Cartography
- Color Ramps

Thank you!

