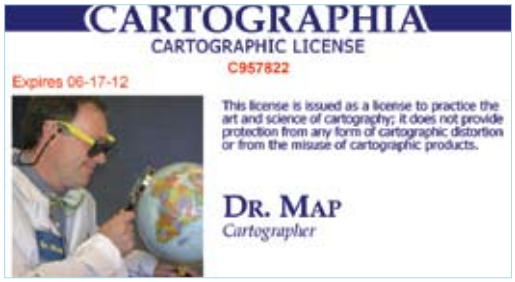
# Ask Dr. Map!

## Map-o-Gifts




Dear Dr. Map:

**Q:** What can I buy as a gift for a cartography buff who already owns everything?

**A:** Oh yes, that old problem of gifty-gifting, so common at birthdays and religious holidays. Of course, since Dr. Map gets no information about personal wealth from this questioner, and by implication the potential gift recipient already owns a lot, there is a temptation to point out that Martin Waldseemüller's 1507 map of the world would be an attractive gift.

Called "America's Birth Certificate," it names both America (the feminine form of Amerigo Vespucci's first name), and shows the Western Hemisphere and the Pacific Ocean for the first time. With 12 panels and covering 36-square feet, it gives value for money. It sold in 2003 to the Library of Congress for a cool $10 million. It's the only copy known to have survived from the 16th century, and, for the less wealthy of us, it can be seen at the Library of Congress.

Since the budget for libraries has been pacific for several years now, Dr. Map is guessing that a generous offer could secure this once-in-a-lifetime carto-gift for your carto-buff.

For those of us lower down the socio-economic spectrum there are still many bargain maps to be had on e-bay and elsewhere. Sir Edmund Halley's 1728 Map of America can be had for a mere $5,500 (at www.classicalimages.com). It's not from 1507, but it's a good deal more accurate!

As a much cheaper gift for the carto-buff who has everything,


Dr. Map recommends Rubik's World, a globe that rotates like the famous Rubik's cube, challenging you to get the continents in their right places. Info is at www.rubiks.com, a cheat solution is at www.winning-moves.com/CRC. Dr. Map found the globe at his local Barnes and Noble bookstore.

**Q:** With the excitement over the primaries and November's elections, is there anything new in the election mapping world?

**A:** Careful observation of maps used in the primaries has produced little to add to Dr. Map's prior assessment of the red and blue states issue.

For some reason, Dr. Map's color suggestions have not had an impact at all. The primaries, with two democrats and two republicans duking it out for their party's nominations has led to some interesting maps with various shades of blue, including cyan, and red, including some browns.

There have also been some interesting interaction innovations, with TV news stations using touch screen and even gesture for panning and zooming maps, and internet sites allowing map experiments and lots of clicking.

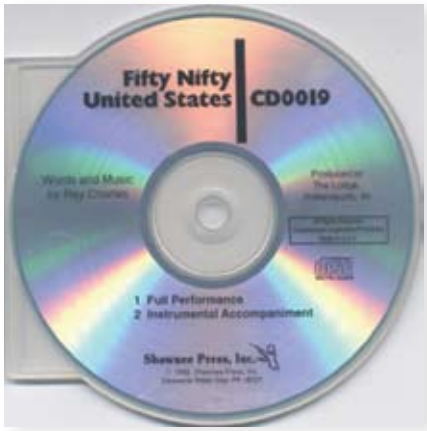
Without a doubt, however, Dr. Map's favorite is also a carto-gift. At www.wickedcoolstuff.com, and indeed at many other web sites, you can find the "The Democratic I have a dream mug."

This amazing mug (see photo of Dr. map's own) has a red-blue map from the 2004 presidential election on its side. When hot coffee is poured into the mug, the red states turn blue! An excellent carto-gimick, and a definite conversation starter (or ender!)


Another possible inexpensive carto-gift, suitable even for a republican if the right stress is placed on the word "dream."

**Q:** In a past column, about memorizing state names, you failed to men-

tion my favorite memory aid. Our brains seem to learn words differently—often remembering them longer—when they are set to music, especially if we sing them. "Fifty Nifty United States," once recorded by Ray Charles, vividly augments my detailed mental map of the United States any time I need to list states or their data in alphabetical order.




**A:** You are indeed correct about the song. YouTube is virtually chock full of stage-mother versions, by kids as young as a year or so. Take a look at www.youtube.com/watch?v=k_HeLofy7IE for highly innovative use of video and maps, and www.youtube.com/watch?v=2yCORkTDdxA&NR=1 for a class of fourth graders (as in the original question) singing the song with patriotic gusto.

Who would have known that the song is "Words, Music and Arrangement" by the great Ray Charles.

I agree that it is indeed a piece of American history, but Dr. Map still prefers direct travel experience over rote memorization.

And like many songs, it is hard to get out of one's head once heard. Humming the Beatle's "Yellow Submarine" apparently is a universal cure for that problem. Nevertheless, a CD version of the Ray Charles song, such as that from Shawnee Press, with its mere two music tracks, might make yet another good gift for that cartography buff who owns everything!

## Of nano-maps and isopors

**Q:** What is the smallest island divided between two nations?

**A:** Market Reef (Märkat in Swedish) is a tiny island that lies at the southern end of the Gulf of Bothnia, between Finland and Sweden and legally is shared by both countries.

While it is at 60 degrees, 18 minutes, 10 seconds north and 19 degrees, 8 minutes, 3 seconds east, it is unmarked on most maps, and invisible on GoogleEarth. It is of importance, however, for navigators and radio enthusiasts because of its computerized remotely controlled


**Source: http://www.qth.com/k7bv/Market/ojmap1.jpg**

weather station which has its own separate national code.

According to an article in May 1987 by Dave Heil, the only structure on the island, a lighthouse, was built by the Russians in 1885.

Construction was difficult, as the barracks built for the construction workers were swept away in a storm, with 3 deaths. New foundations were imported, and workers slept on board ship until the one-year construction process was complete. The lighthouse and two buildings are connected by an aerial catwalk.

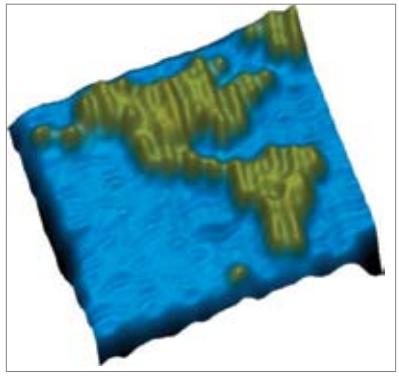
While the island is shared, apparently the lighthouse was built by mistake on the Swedish side of the island. A land trade resulted, with a strange zig-zag in the border. Dr. Map wonders about the tourist potential of Market Reef, or perhaps its anti-tourist potential.

**Q:** What scale is the smallest map of the Americas?

**A:** The world is approximately 40 million meters around. A world map at 1 to 40 million, therefore, would be one meter across, about the size of a poster map on a classroom wall.

A world map on a U.S. Golf Association golf ball (42.67 millimeters minimum size) would be at a scale of about 1:100 million. A world map on a pinhead, say 4 millimeters across, would be at 1:1 billion.

But these maps pale into insignificance compared to the map shown in the picture below. This map was "built" out of DNA by nano-cartographer Paul Rothemund of the California Institute of Technology.



Rothemund describes his method as "DNA origami," and he has also created smiley faces, triangles, snowflakes, and flowers.

The DNA map of the Americas is his biggest project so far, and

each image can take from hours to months to create, using a single strand of viral DNA folded back and forth over rows of double helices in a template shape. DNA staples' short strands of DNA that stop the viral strand from unraveling hold the shape together. And the scale is 1:200,000,000,000,000 or one to 200 trillion.

Don't try using this map for driving your car. At this scale, the map is 1/500th the width of a human hair across, small enough to breath in (not advisable) since the DNA is a bacteriophage (virus) called the M13.

**Q:** What is an isopor?

**A:** Anyone who uses a compass learns about magnetic declination and the difference between true north and magnetic north. This can be a correction east or west.

However, experienced map users know that declination varies over time. At any one point, the declination today is not the same as that when it was published.

To see lines connecting points with equal annual declination change, one can use an isopor map. An example is on the web at http://dongenggeologi.files.wordpress.com/2007/01/magnetic-field-declination-change.gif.

An isopor, then, is not a line connecting areas of poverty in a country, but a line connecting points of equal amounts of annual change in the direction between true and magnetic north.