# COLOR by NuMBeR

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## ABOUT OPTICAL LIGHTNING OBSERVATIONS FROM SPACE

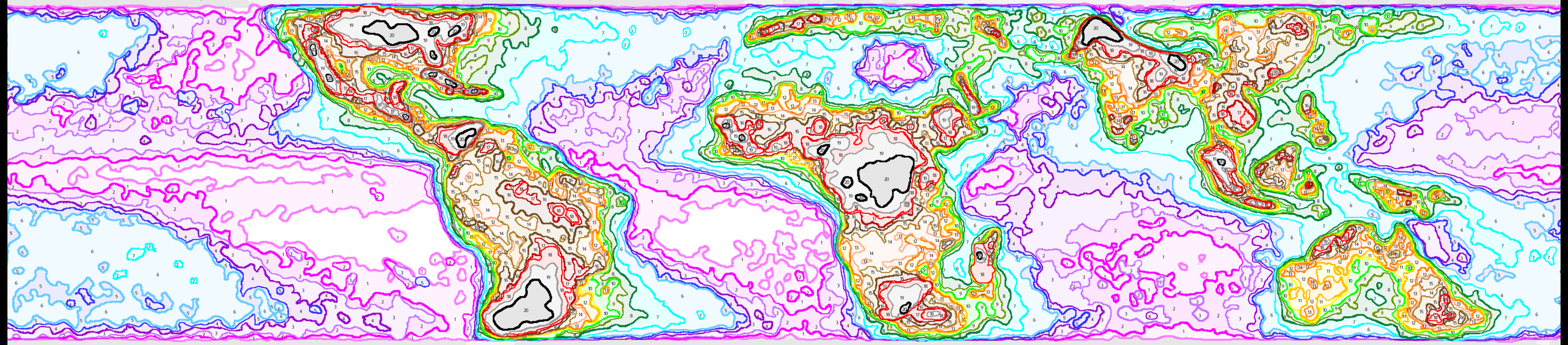
Lightning is the the electrical discharge between positively and negatively charged regions within clouds resulting from how ice particles within clouds interact, collide, and break apart. To better understand lightning, scientists and engineers launched the Lightning Imaging Sensor (LIS) situated aboard the Tropical Rainfall Measuring Mission (TRMM) satellite detecting lightning flashes from 1998 to 2015. LIS detected lightning optically by monitoring changes in light, or the electromagnetic spectrum, to identify lightning flashes from space and Earth's surface. A backup for the original LIS instrument was situated about the International Space Station (ISS) in late February 2017 to continue lightning observations from space.

## WHAT AM I COLORING?

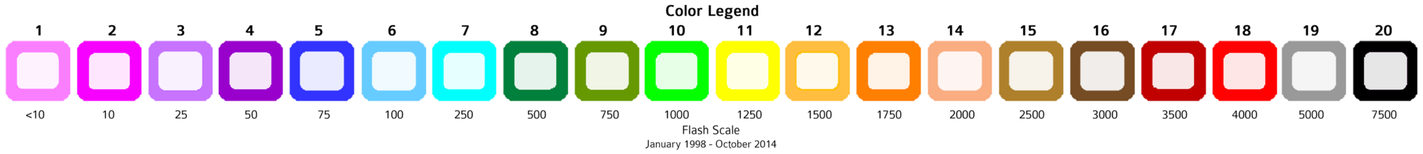
TRMM LIS observed lightning from space for over a decade. These observations were used to generate accumulated lighting flash frequency maps. The color-by-number graphic reveals a plot of accumulated lightning flashes across Earth from January 1998 to October 2014. This graphic shows several lightning hotspots across Earth, such as Lake Maracaibo in Catatumbo, Venezuela and Congo, Africa.
**http://dx.doi.org/10.5067/LIS/LIS/DATA201**

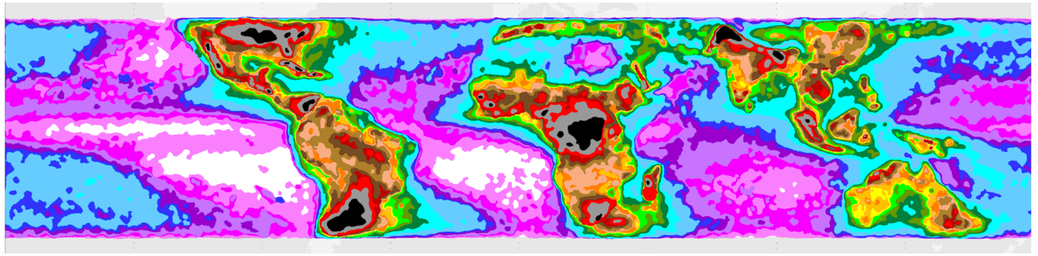
## ARTISTIC CREATIVE PROCESS

The artist Tammy Smith created this color-by-number image by separating each of the 20 colors of the TRMM LIS browse image into its own layer using Adobe Photoshop. By observing each color in its own layer, it was then possible to assign each color a number from 1 to 20. For assistance in the coloring process, the artist also created outlines in each respective color and preserved some of the tint while minimizing the hues to act as a guide.
**Happy coloring!**




## COLOR LEGEND & GUIDE



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