Lightning: Lightning is an electrical discharge caused by imbalances between storm clouds and the ground or within the clouds themselves. Most lightning occurs within the clouds. In the early stages of development, air acts as an insulator between the positive and negative charges in the cloud and between the cloud and the ground. When the opposite charges build up enough, this insulating capacity of the air breaks down and there is a rapid discharge of electricity that we know as lightning. The flash of lightning temporarily equalizes the charged regions in the atmosphere until the opposite charges build up again. Lightning can set off building or farm fires, damage electrical equipment, and electrocute humans and livestock. Lightning can enter your home by following wires and pipes that go into the ground; it can also travel through metal reinforcing wire or bars in concrete and explode. Lightning often knocks out power lines and sends powerful electrical surges through electrical and phone lines. Once in your home, they can burn out appliances and other electronics.

The climatology of lightning observation obtained from the Global Hydrometeorology Resource Centre (GHRC) of National Aeronautics and Space Administration (NASA). It provides a comprehensive active archive of both data and knowledge augmentation services with a focus on hazardous weather. GHRC focuses on lightning, tropical cyclones and storm-induced hazards through integrated collections of satellite, airborne, and in-situ data sets.
The TRMM LIS 0.1 Degree Very High Resolution Gridded Climatology data collection consists of a set of gridded climatologies constructed from individual observations made by the Lightning Imaging Sensor (LIS) on the Tropical Rainfall Measuring Mission (TRMM) satellite (data also at GHRC). Complex algorithms are used to estimate total flash rate density (number of flashes per square kilometer per year) based on the flashes observed by the instrument and the amount of time it viewed a given area.

This Very High Resolution (VHR) Gridded Lightning Climatology Collection consists of lightning climatology for Annual and monthly for the period 1998-2013.
The data set is freely available to download from the following link;
https://ghrc.nsstc.nasa.gov/lightning/data/data_lis_vhr-climatology.html

Reference : Cecil, Daniel J. 2006. LIS/OTD 0.5 Degree High Resolution Annual Climatology (HRAC) [indicate subset used]. Dataset available online from the NASA Global Hydrology Resource Center DAAC, Huntsville, Alabama, U.S.A.
DOI: http://dx.doi.org/10.5067/LIS/LIS-OTD/DATA301