



TEKNISKA FÖRENINGEN I UPPSALA

The Lightning Flash the fireworks of nature

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Each second about 100 lightning flashes strike inside the Earth's atmosphere. Out of this about 20 - 30 flashes strike the ground (ground flashes) and the rest takes place inside the cloud (cloud flashes). During a lightning strike the air is heated to a temperature of about 20000° C and the energy dissipated globally by lightning flashes in the atmosphere is about 200 Terawatt hours each year. More recently, the crew of the Space Shuttle discovered lightning-like-discharges that strike from cloud tops to the upper atmosphere. These are called upper atmospheric lightning discharges. Some of these discharges had lengths reaching up to 100 km and diameters of about 10 km.

In this lecture I will describe the various physical events taking place from the birth to the demise of lightning flashes, both normal and upper atmospheric. I will illustrate their effects both in the atmosphere and on electrical systems. I will also explain what one should and should not do during thunderstorms and, starting from the pioneering work of Benjamin Franklin, I will illustrate various techniques used by scientists to protect man and man-made structures from lightning.

**Akademiska sällskapetets medlemmar är välkomna.
Ingen anmälan behövs.**

OBS Föredraget hålls på engelska

VÄLKOMNA