



Good day Worthy Knights,

In this part 35, the Pillar of Light in the vision of Constantine

(Wikipedia)

A light pillar is an atmospheric optical phenomenon in which a vertical beam of light appears to extend above and/or below a light source. The effect is created by the reflection of light from tiny ice crystals that are suspended in the atmosphere or that comprise high-altitude clouds (e.g. cirrostratus or cirrus clouds). If the light comes from the Sun (usually when it is near or even below the horizon), the phenomenon is called a sun pillar or solar pillar. Light pillars can also be caused by the Moon or terrestrial sources, such as streetlights.

Scheme of light pillars formation

Since they are caused by the interaction of light with ice crystals, light pillars belong to the family of halos. The crystals responsible for light pillars usually consist of flat, hexagonal plates, which tend to orient themselves more or less horizontally as they fall through the air. Each flake acts as a tiny mirror which reflects light sources which are appropriately positioned below it, and the presence of flakes at a spread of altitudes causes the reflection to be elongated vertically into a column.

The larger and more numerous the crystals, the more pronounced this effect becomes. More rarely, column-shaped crystals can cause light pillars as well. In very cold weather, the ice crystals can be suspended near the ground, in which case they are referred to as diamond dust.

Unlike a light beam, a light pillar is not physically located above or below the light source. Its appearance as a vertical line is an optical illusion, resulting from the collective reflection off the ice crystals; but only those that are in the common vertical plane, direct the light rays towards the observer (See drawing). This is similar to the reflection of a light source in a body of water, but in this case there are a million lakes adding to the effect.

Unlike the crystals producing sun pillars, those making tall artificial light pillars need not be strongly tilted. The column producing pillars are approximately midway between the eye and the light source. The higher the crystals in the atmosphere, the taller is the pillar. When the crystals are very high - or the light sources are close - the pillars seem to radiate from overhead, the zenith.

Columns of light apparently beaming directly upwards from unshielded lights are sometimes visible during very cold weather. Plate shaped ice crystals, normally only present in high clouds, float in the air close to the ground and their horizontal facets reflect light back downwards.

The pillars are not physically over the lights or anywhere else in space for that matter ~ like all halos they are purely the collected light beams from all the millions of crystals which just happen to be reflecting light towards your eyes or camera.

Artificial light pillars can be much taller than their natural counterparts because rays from the lights are not parallel and plate crystals with small tilts can still reflect them downwards. The crystals producing the pillars are roughly halfway between you and the lights.

