Rayleigh scattering occurs when light is scattered from particles of sizes much smaller than wavelengths of the incident light. Such scattering is much more efficient for shorter than for longer wavelengths of visible light and therefore, if the incident light is a uniform mixture of wavelengths (white light), the scattered light is a mixture much brighter on the short or blue wavelength end of the visible spectrum than on the long or red end of the spectrum. This process explains the blue color of the clear sky wherein the tiny scattering particles, mainly N₂ and O₂ molecules, scatter far more blue photons than photons of longer wavelengths. For the same reason, a beam of light which has traveled a long distance through the atmosphere such as the light of any astronomical which is near the horizon will appear reddened as most of the blue or short wavelength photons have been scattered out. Thus sunsets, including the sun itself, are colored red as are the setting moon, planets and stars.
Rayleigh scattering gives the atmosphere its blue color.