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The Blue Color of the Sky Before Sunrise

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On a cloudless summer morning before sunrise, the blue-blue firmament illuminates the earth's surface. The photons that an observer registers on the earth's surface cannot be photons emitted by the sun (the sun is still below the horizon). After leaving the sun, the photons head towards the earth without interacting with each other (laminar motion). Moving in a straight line from beyond the horizon, photons in the upper layers of the atmosphere meet oxygen and nitrogen atoms. Photons, whose energy is equal to the energy of the electronic inter-level transitions of nitrogen and oxygen atoms, are absorbed in the upper layers of the atmosphere, while the electrons of the atoms move from the ground level to the excited ones. The same thing happens with electrons in the case when the energy of photons is different from the energy of inter-level transitions. In this case, the electrons move to excited levels due to the annihilation of pairs of solar photons with the formation of short-lived axions. The annihilation of two quanta (photons) in the field of the atomic nucleus can lead to the birth of the axion - A0:

$$h\ v + hv = A0 = hvij + h\ v0j\ (1),$$

During the decay of axions, part of the photons, whose frequency- h v0j is equal to the Bohr frequency of electron transitions, is absorbed by oxygen and nitrogen atoms. The second part of the photons, whose frequency is indicated by the value - hvij, is scattered into an angle of 4 π steradian. In the morning hours before sunrise, some of these new photons reach the earth's surface. This radiation is recorded by an observer on the surface of the earth. The absence of harsh solar ultraviolet radiation on the earth's surface in the morning hours indicates their absorption in the atmosphere. The proposed interpretation differs from the traditional one, according to which solar radiation interacts with inhomogeneities of air, which includes oxygen and nitrogen atoms. Elastic light scattering occurs on these inhomogeneities of the air. The sky is blue because, when sunlight passes through the atmosphere, the blue color is more likely to dissipate than red. That is, the blue color of the sky is the photons of sunlight scattered in the atmosphere."This interpretation does not answer the questions: what is the reason for the warming up of the atmosphere in the morning? How does energy transfer to the atmosphere occur with elastic light scattering, if the wavelength of radiation does not change with elastic Rayleigh scattering?