



ELECTRONIC EXPLANATION FOR SUN'S RADIATION AND SEASONS

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Abstract:

The energy of the Sun does not come from fusing hydrogen atoms into helium nuclei in the core of the Sun, at least because the Earth receives no nuclear energy from the Sun, but the energetic electrons of the solar corona hit the electrons of atoms in the gaseous atmosphere of the Earth when it faces the Sun during its daily motion around its axis, these energetic electrons cause atmospheric atoms to glow creating the light of the day, and this also is the source of the moon light because the Moon has a thin gaseous atmosphere including sodium and potassium. The portion of the moon faces the Sun during its revolution around the Earth glows by the energetic electrons from the solar corona. The four seasons on the Earth take place because the electrons of the solar corona have less free energies when the Earth is at its closest point on its orbit from the Sun (**147.1 million Km**) in early January, and they have their greatest free energies when the Earth is at its farthest point from the Sun (**152.1 million Km**) in early July, This happens because at the closest point the coronal electrons are controlled by strongest attraction of the Sun than the farthest ones and for this reason the closest electrons have less free energies than the farthest ones. We, on the Earth, feel this difference between these two points (500 million Km) in the difference between winter and summer

Correcting the present explanation of the Sunshine:

After discovering radioactivity, the possibility

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that nuclear energy might be the origin of solar energy had been opened. In 1920 F.W. Aston showed that four hydrogen nuclei are heavier than a helium nucleus. In the same year Edington argued in his presidential address to the British Association for the Advancement of Science that Aston's measurement of the mass difference between hydrogen and helium meant that the Sun could shine by converting hydrogen atoms to helium, and this process

would, according to Einstein's equation mc^2 , release about **0.7%** of the mass equivalent to the energy. This would allow the Sun to shine for about 100 billion years.⁽¹⁾ But with all respect to Edington's theory we can argue that the Earth does not receive a nuclear radiation from the Sun, it receives only atomic radiation. The difference between these two types of radiation is very clear as the energy coming out from fusing four hydrogen atoms into one alpha particle must be gamma ray as half of alpha particle (the deuteron) is formed and disintegrated by **2.2 Mev** of gamma ray. Our Earth receives atomic radiation coming from dislodging electrons from their orbits around the nucleus. Analyzing Sun's radiation proves that the sunlight at the top of the earth's atmosphere is composed (by total energy) of about 50% infrared light , 40% visible light and 10% ultraviolet light, especially at the shorter wavelength⁽²⁾ Nothing of these kinds of radiation is nuclear or could have been turned out from nuclear radiation.

What is Sun's radiation then?

Our earth has a gaseous atmosphere composes from: Nitrogen-78 percent , oxygen 21% , argon 0.93% .carbon dioxide 0.038 % , in addition to water vapor and gases exist in small amounts as well⁽³⁾.

The Earth with other solar planets is located in an "ocean" of free very speedy electrons forming with free protons the solar corona which is the outer atmosphere of the Sun, the low corona is very close to the surface of the Sun⁽⁴⁾.The electrons are the most energetic particles in the coronal plasma. When the Earth faces the Sun through its daily motion around its axis the coronal electrons hit the electrons orbiting their protons forming atoms and molecules of the terrestrial atmosphere causing its atomic radiation to take place creating the light of the day on our Earth, just like any of our artificial radiation coming from dislodging electrons from their orbits by other energetic electrons. The moon through its revolution

around the earth receives these coronal energetic electrons, and as the moon has its thin gaseous atmosphere, the part of it that receives coronal electrons glows up. According to NASA experiments "our moon does indeed have an atmosphere consisting of some unusual gases, including sodium and potassium, which are not found on the atmosphere of the Earth Mars or Venus. The density of the atmosphere at the moon's surface is comparable to the density of the outermost fringes of Earth's atmosphere where the international space station orbits. The Apollo 17 mission deployed an instrument called the Lunar Atmospheric Composition Experiment (LACE) on the moon's surface. It detected small amounts of a number of atoms and molecules including helium, argon, and possibly neon, ammonia, methane and carbon dioxide. From here on the Earth researches using special telescopes that block light from the moon's surface have been able to make images of the glow from sodium and potassium in the moon's atmosphere as they are energized by the sun."⁽⁵⁾

This important discovery about the moon light proves our vision about the Sun shine, again, the day's light on the Earth that takes place as the result of interaction between the energetic solar coronal electrons and the gaseous atmosphere of the Earth.

The seasons:

From the same electronic cause of coronal electrons, the seasons on the earth take place as the distance between the Earth and the Sun changes during a year, when the Earth is at its closest point, the Sun is 147.1 million km away from the Earth. At its farthest point, the Sun is 152.1 million km away. The very important phenomenon here is that the Earth is closest to the Sun during winter, the contrary happens in the summer where the Earth is hottest when it is farthest from the Sun on its orbit⁽⁶⁾ In spite of this fact we find a wide believe that the seasons are due to the tilt of the Earth which is $23\frac{1}{2}$.

But during the period when the Earth is farthest

from the Sun (aphelion) the average temperature of the entire planet is 4°F (2.3°C) higher than when it is closest to the Sun (perihelion). On average the intensity of sunlight falling on Earth during aphelion is about 7% less during perihelion.

Why this is the case? simply because the coronal free electrons are still controlled by the Sun's attraction, these electrons are more energetic when the Sun is farthest from the Earth on its orbit as they are less attracted to the center of the Sun, and this means summer, when the Earth is closest to the Sun, these free electrons are less energetic because they are more attracted to the center of the Sun measuring to the farthest ones and this means winter. This explanation is built on that the attraction between electrons and protons does not differ from the attraction toward the center of the astronomical body. At the center of the Sun the small neutron star recently discovered there by Oliver K. Manuel ⁽⁷⁾

The hydrogen surface of it proves that the distance between the electron and proton r is the other face of the same coin which is the distance from the astronomical center R where

$$\frac{r}{R} = 1.91 \times 10^{-18} \quad (8)$$

We can examine the validity of this formula between the radius of hydrogen atom r at fifth and last level of electron's energy before the electron being free from the attraction of the proton, and the radius R of the Sun before the electrons in its hydrogen surface become free from the attraction of protons in the above layer called corona, the radius of the Sun can be determined exactly as follows

$$R = \frac{1.33 \times 10^{-9}}{1.91 \times 10^{-18}} = 6.69 \times 10^8 \text{ m.}$$

With the same formula, we can determine the radius of the neutron star holding in the core of the Sun by the nuclear range 2.8×10^{-15} m. as follows

$$R = \frac{2.8 \times 10^{-15}}{1.91 \times 10^{-18}} = 1465.96 \text{ m.}$$

The electrons at the hydrogen surface of the Sun move around their protons with the same velocity an object moves around the Sun at this surface. We can prove this fantastic fact as follows:

The energy of the electron in hydrogen atom before being free from the proton's attraction is

$$\frac{mv^2}{m} = \frac{174 \times 10^{-19} \text{ J}}{9.11 \times 10^{-31} \text{ Kg}} = 1.90 \times 10^{11}$$

On the other hand

$$GM = V^2 R = 1.32 \times 10^{20}$$

Where M is the mass of the Sun in Kg, V is the orbital velocity of any object revolving the Sun, R is the radius of the Sun

$$\frac{V^2 R}{R} = \frac{1.32 \times 10^{20}}{6.69 \times 10^8} = 1.89 \times 10^{11}$$

This fantastic equivalence between the velocity of the electron around the proton before being free from the proton's attraction, and that of an object around the Sun at its hydrogen surface before electrons being free from protons in the corona, in addition to the previous relation between the radius of the hydrogen atom and that of the Sun, this and that mean that along the radius of the Sun, the velocities of electrons in any of its different layers differ from one point to another creating the difference between velocities of electrons on the closest and farthest point on its coronal radius creating what we feel on the Earth as summer or winter or the two seasons between them.

Conclusion:

Sun's radiation is the result of interaction between the energetic electrons of the solar corona which the last layer in Sun's structure and the gaseous atmosphere of the Earth where

these energetic electrons hit the electrons orbiting the atoms of the terrestrial atmosphere making them glow and creating day light when the Earth faces the Sun during its daily motion around its axis, the moon of our Earth shines partly or completely by the energetic solar corona hitting its thin gaseous atmosphere during its revolution around the Earth.

With the closest point of the Earth from the Sun on its orbit, coldness of winter takes place because the electrons of the solar corona here are less energetic as the attraction of the Sun is stronger measuring to the more energetic coronal electrons on the farthest point from the Sun with its weaker attraction on them. The distance between the two points on the Earth's orbit is 500 Million Km. explains clearly the difference in the heat of our planet. Therefore the seasons on the Earth are the result of the distance between the two points on its orbit, and

not because of the axial tilt of the Earth which is $23\frac{1}{2}$ degree.

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