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Theory about the universe “and there was light”

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The search for truth and the true face of the universe is a constant preoccupation for many scientists. To know more about the universe is like knowing more about ourselves and others. I propose a vision in respect with science and actual laws of physics that will reveal the reality that has permitted the emergence and propagation of life and is called: The Universe. Astronomers launched many satellites over the past years including COBE in 1989, WMAP in 2001, and PLANK in 2009. These satellites observed the Universe while it was only 380,000 years old and further improved the precision of previous results. Some evidential findings emerged from these observations including the temperature of the Universe exactly 2.725 above absolute zero acting like a black body and the calculation by inference of a so called dark energy. These observations and those made by Alexander Friedman, Georges Lemaître, Edwin Hubble, Arno Penzias and Robert W Wilson support the theory that a big explosion took place some 13.7 billion years ago and has given birth to the Universe and is called: The Big Bang. These huge amounts of pure energy then spreaded in a space not yet present. How this energy spreaded in the Universe? Einstein once said that matter is energy and energy is light and that we were all light beings. How energy could be matter and light at the same time? My theory answers this question. My theory put the photon at the center of the Universe and is a big step toward the "theory of everything" so sought by scientists like Albert Einstein and Stephen Hawking. It could even reveal where these mysterious constituents of the universe are hidden called "dark matter" and "dark energy", mystery of the millennium.

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Could mini-magnetospheres really be used to protect spacecraft from cosmic rays?

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Spacecraft in interplanetary space and the radiation belts are vulnerable to cosmic rays. Solar storms produce large numbers of energetic ions and electrons that can penetrate and disrupt solar panels, electronics and human tissue. Due to their larger mass, the energetic ions are the greater hazard as they are not easily stopped. Thick material cladding around vulnerable parts of the vessel provides diminishing effectiveness at the higher energies. Ideas of electromagnetically deflecting the energetic charged particles fall down due to unrealistically high power requirements needed to create the size of electromagnetic field thought to be needed. Proponents over the years have focused on optimizing the engineering on board the spacecraft. Until recently nobody has re-examined how the particles interact with the magnetic or electric field. It is assumed to be straightforward. However, laboratory experiments and theory have shown that this is not simple. The presence of the diffuse solar wind makes for a far more efficient shield than single particles dynamics would predict. The question then becomes: how does this change the potential for effective active shielding for manned interplanetary spacecraft and/or satellites in the radiation belt? What we find is for a manned mission to Mars of ~20kW of on-board power being redirected to superconducting magnetic coils system weighing approximately 3000 kg including cooling. This would reduce the energetic (>50MeV) particle flux by about 20% during a major solar storm (assuming a severe solar storm flux of ~1010 protons/cm²sec). Additional augmentations, such as adding extra plasma into the bubble, can greatly enhance its effectiveness up to 80 to 90% exclusion overall and extend the range of energies capable of being deflected. These principles will be presented from laboratory and space from the natural magnetic shielding occurring on the Moon.

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