

THEORETICAL DE-IONIZATION OF THE EARTH'S MAGNETIC FIELD AND THE MELTING OF THE EARTH'S POLAR ICE CAPS

Resnick, J.A.*

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Abstract: A solar proton event, or proton storm, occurs when protons emitted by the Sun become accelerated to very high energies either close to the Sun during a solar flare or in interplanetary space by the shocks associated with coronal mass ejections. Besides protons, the events can include other nuclei like helium ions and High Charge and Energy (HZE) ions. Further meaning; that this could raise the question: Could this lead to de-ionization of earth's magnetic field helping to contribute to erratic climate condition and melting of the earth's polar ice caps? Solar events/ flares can penetrate the Earth's magnetic field and cause ionization in the ionosphere. What is not known is if the Coriolis Effect contributes to these events which in the event it did may cause in theory a contributing factor to consider in the melting of the polar ice caps. This will be briefly discussed and determined if such a scenario could possible exist.

Key words: Solar, SolarFlares, Magnetic Field, De-Ionization, Coriolis Effect.

*PhD, MPH, Professor Emeritus, President and Chairman of the Board of Directors at RMANNCO Inc. (Reno NV, USA) e-mail: jreznik88@aol.com

1 Affects of Pollution Upon Earth's Soil Conditions in the Use of Herbicides and Pesticides

According to the abstract in this paper again the question is asked: Could this lead to de-ionization of Earth's magnetic field helping to contribute to erratic climate condition and melting of the earth's polar ice caps? Protons are charged particles and are therefore influenced by magnetic fields. When the energetic protons leave the Sun, they preferentially follow, or are guided by, the Sun's powerful magnetic field. When solar protons enter the domain of the Earth's magnetosphere where the magnetic fields become stronger and than the solar magnetic are guided by the Earth's magnetic field into the polar regions where the majority of the Earth's magnetic field lines enter and exit.

2 Solar Flares and De-Ionization

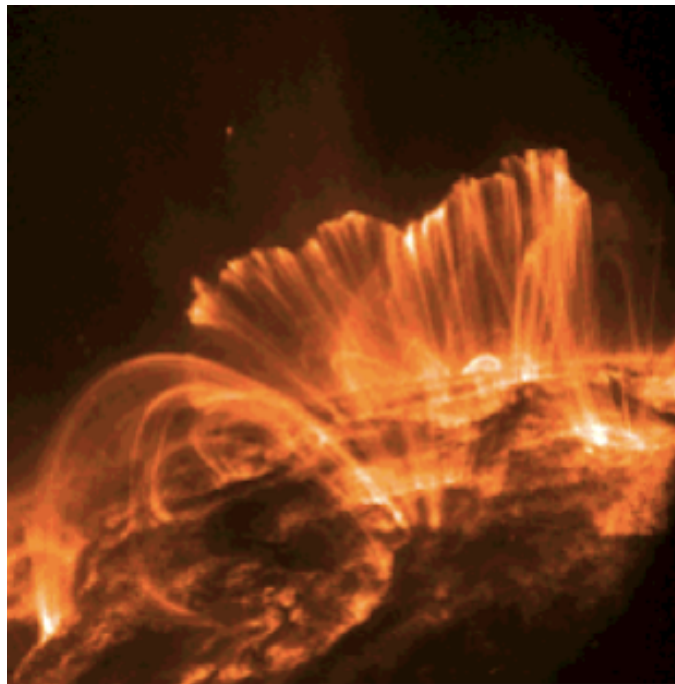


Figure 1: A Solar flare. (Source: NASA, 2000)

By the data seen in the Figure 1 by NASA TRACE Satellite the emission of solar flares, also known as solar storms hypothetical is concentrated enough to be able to affect the ionizations in Earth's atmosphere according to the Solar Proton Events Affecting the Earth Environment [5]. However, according to Figure 2 solar flare affects are explained more and how deep they penetrate into the Earth's atmosphere.

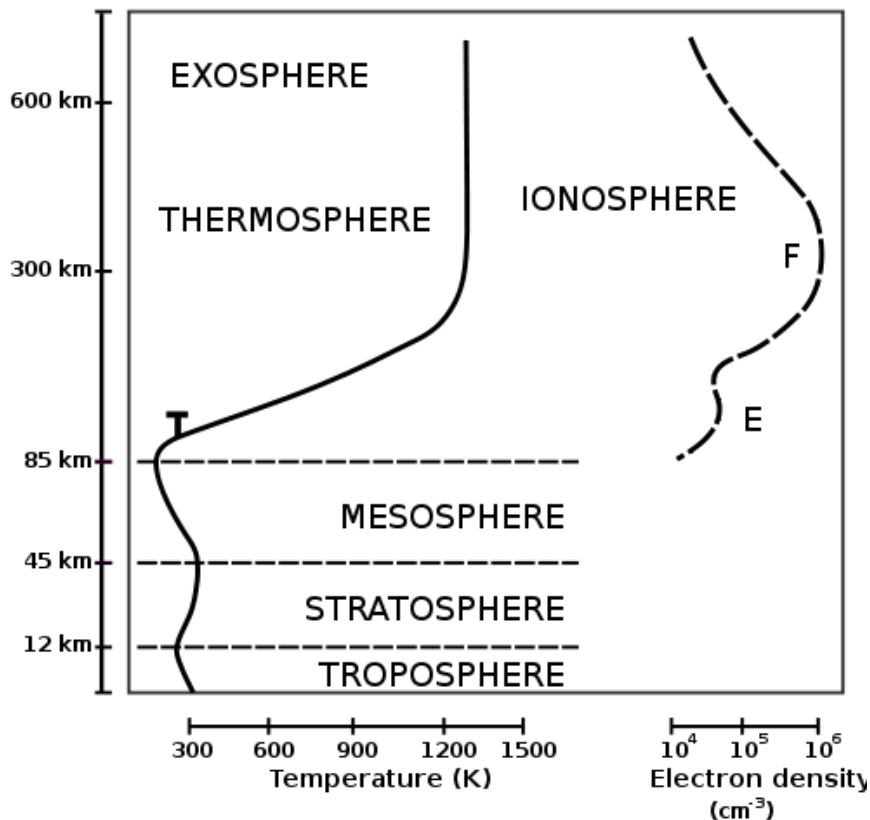


Figure 2: Relationship of the atmosphere and ionosphere. (Source: Bhamer, 2007)

Energetic protons are guided into the polar regions collide with atmospheric constituents and release their energy through the process of ionization. The majority of the energy is extinguished in the extreme lower region of the ionosphere, around 50-80 km in altitude. Therefore, its affects upon the polar regions is minimal with no threat to life on Earth.

3 Conclusion

The Coriolis Effect is a theoretical force proportional to the rotation rate and the centrifugal force is proportional to its square. The Coriolis force acts in a direction perpendicular to the rotation axis and to the velocity of the body in the rotating frame and is proportional to the object's speed in the rotating frame.

In view of this according to Kim [2] this phenomenon pertaining to the Earth and its affect upon the magnetic field and any of its de-ionization is minimal and in balance with all of the other Earth's magnetic field and the centrifugal force acts outwards in the radial direction and is proportional to the distance of the body from the axis of the rotating frame. pertaining to the Earth's rotation. While Bell [1] is consistent with this as well. Whereas Wilson [6] correlates the data expressed in this conclusion.

In a manner of speaking, the Earth is analogous to such a turntable. The rotation has caused the planet to settle on a spheroid shape, such that the normal force, the gravitational force and the centrifugal force exactly balance each other on a horizontal surface [4].

The Coriolis effect caused by the rotation of the Earth can be seen indirectly through the motion of a Foucault pendulum.

Therefore Kirkpatrick [3] accepts the current world views in science that the Coriolis Effect in theoretical terms is proportional to Earth's magnetic field, and is exceptionally good at preventing the radiative effects of energetic particles from reaching ground levels.

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