Published in the Slovak Republic
Russian Journal of Astrophysical Research. Series A
Has been issued since 2015.
E-ISSN: 2413-7499
2019, 5(1): 27-33

DOI: 10.13187/rjar.2019.1.27
www.ejournal28.com

Electrogravitic Originated Mass of the Sun

Takaaki Musha [a], [*]

[a] Advanced Science-Technology Research Organization, Yokohama, Japan

Abstract

The hypothesis that the Sun may carry an electric charge was proposed by prof. Bailey at first in 1960 for the explanation of the maximum energy found for a primary cosmic ray particle and other astronomical phenomena. According to the electrogravitic theory by T. Musha and B.V. Ivanov, it can be shown that the stars like the Sun has a possibility to have a gravity mass generated by its electric charge.

Keywords: electrogravity, sun, birkland current, electric sun model, plasma universe.

1. Introduction

Presently, the Sun is considered as a gigantic ball of gas so massive that the immense pressure has ignited a fusion reaction. It is an average-sized yellow star known as the Sun. It is one of the most common type of star in the universe. Inside it, hydrogen atoms under unimaginable pressures are being fused into helium atoms, releasing a tremendous amount of energy as shown in the Figure 1.

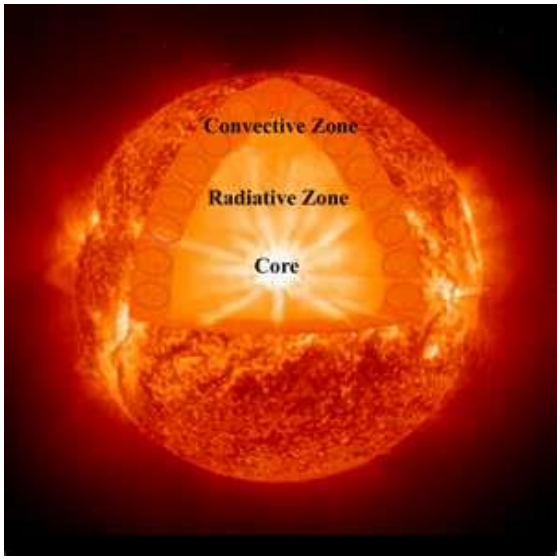

Fig. 1. Structure of the Sun

[*] Corresponding author
E-mail addresses: takaaki.mushya@gmail.com (T. Musha)

Contrary to this conventional theory, the electric Sun theory was proposed by Ralph Juergens (Juergens, 1972). According to him, most of the space within our galaxy is occupied by plasma containing electrons and ionized atoms. Every charged particle in the plasma has an electric potential energy (voltage) just as every pebble on a mountain has a mechanical potential energy with respect to sea level. The Sun is surrounded by a plasma cell that stretches far out – many times the radius of Pluto. The Sun is at a more electrical potential than is the space plasma surrounding it probably in the order of 10 billion volts. The hypothesis has been proposed that the Sun may be powered, not from within itself, but from outside, by the electric (Birkeland) currents that flow in our arm of our galaxy as they do in all galaxies as shown in Figure 2. This possibility that the Sun may be externally powered by its galactic environment is called as the Electric Sun model.

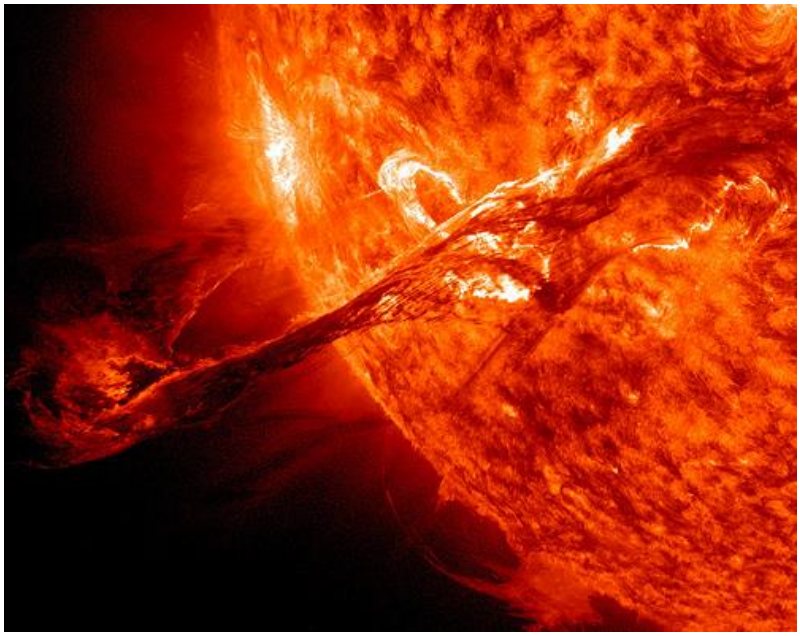

Fig. 2. Birkeland current observed on the Sun

In the Plasma Universe model, cosmic sized, low-density currents create the galaxies and the stars within those galaxies by the electromagnetic z-pinch effect, also known as zeta pinch effect, which is a type of plasma confinement system that uses an electrical current in the plasma to generate a magnetic field that compresses it. It is only a small extrapolation to ask whether these currents remain in place to power those stars. Galactic currents are of low current density, but, because the sizes of the stars are large, the total current (amperage) is high. An electrically powered Sun's radiated power would be due to the energy delivered by that amperage (The Electric Universe Theory).

The hypothesis that the Sun may carry an electric charge given by $Q_S = 5 \times 10^{18}$(C), was proposed by prof. Bailey at first in 1960 for the explanation of the maximum energy found for a primary cosmic ray particle and other astronomical phenomena (Bailey, 1960). He considered that the four dimensional space-time universe was a hyper-surface in a five dimensional universe and there existed streams of electrically charged particle from hyper dimensional universe into four dimensional space-time, where the laws of conservation of energy momentum and electric charge held true. He also thought that these electrical streams depends on local metric of space-time.

T. Musha and Boyko V. Ivanov independently obtained the formula for describing the coupling between electromagnetism and gravitation (Musha, 2004; Ivanov, 2013), where Musha derived the electrogravitic formula by supposing a new gravitational field generated inside the atom, while Ivanov derived the electrogravitic formula from Weyl-Majumdar-Papapetrou solutions for the metric space-time.

Based on their electrogravitic theory, the author attempts to reveal the structure of the Sun, which may lead to another explanation of cosmology.

2. Outline of the electrogravitic theory

Musha and Ivanov derived the electrogravitic formula shown as (Musha, 2004; Ivanov, 2013)

$$E_g \approx -Z\sqrt{4\pi\varepsilon_r\varepsilon_0 G}\cdot E = -8.62\times10^{-11}Z\sqrt{\varepsilon_r}\cdot E\ , \qquad (1)$$

where Z is a number of electrons circulating around the atomic nucleus, ε_r is a specific inductive capacity of the dielectric material, ε_0 is a permittivity of free space and G is the gravitational constant.

Musha used an approximation based on the gravitational field generated inside the atom by high potential electric field and Ivanov used classical approaches to Einstein's equations known as the Weyl-Majumdar-Papapetrou field solutions, dating back to 1916, to derive what he called root gravity, from

$$g = c^2 f^{-1}\left(\frac{B'}{2}\sqrt{\frac{\kappa\varepsilon}{8\pi}}\bar{\phi}_i + \frac{\kappa\varepsilon}{8\pi}\bar{\phi}\bar{\phi}_i\right), \qquad (2)$$

where we assume that the space-time is static, $f \equiv g_{00} = F(\phi)$ has the unique form $f = 1 + B\phi + \phi^2$, which was found by Weyl already in 1917 in the axially-symmetric case, which solutions are known as Weyl fields, and $f \equiv g_{00}$, B' is a constant and $\kappa = 8\pi G/c^4$.

The methods of calculation can be summarized as shown in Figure 3.

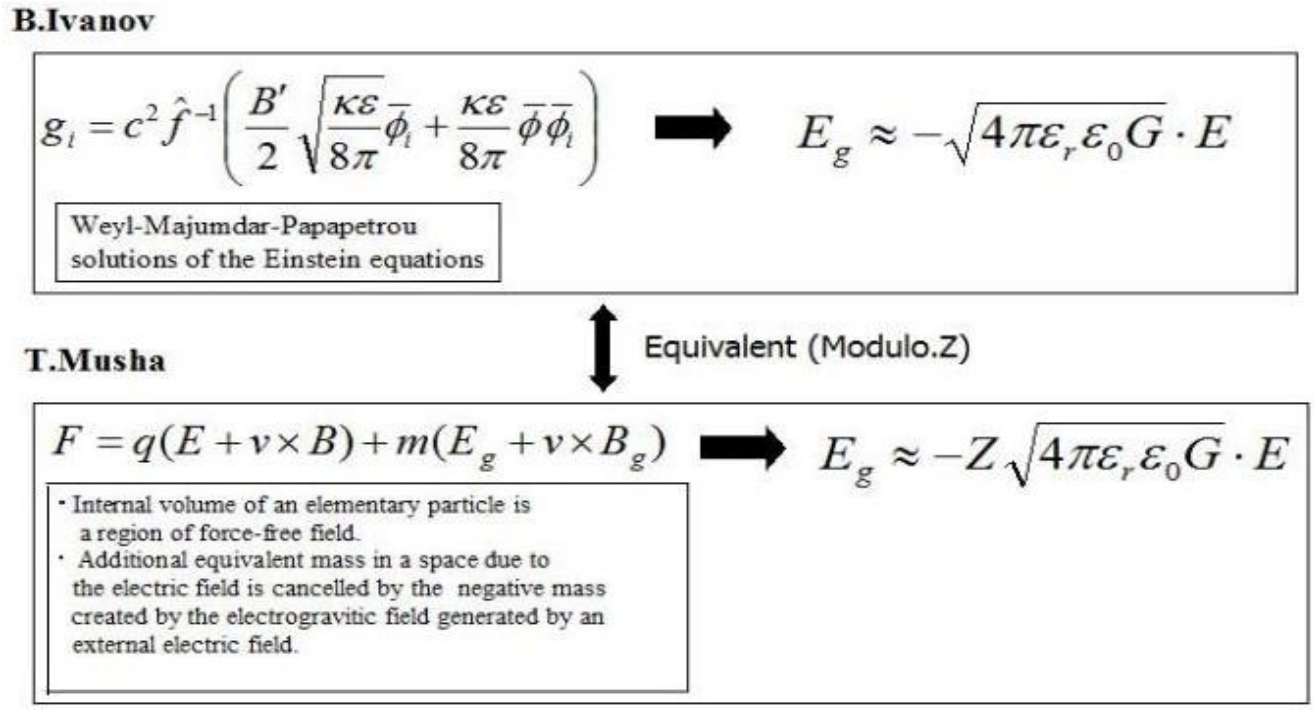

Fig. 3. Summary of electrogravitic formula given by Musha and Ivanov

3. Electrogravitic originated mass of the Sun

If the electrogravitic equation given by Equation. (1) can be applied to massive stars, it is considered that some of the gravitational field of them can be generated by electric charges.

From the equation in the paper by Ivanov, "On the gravitational field induced by static electromagnetic source" (Ivanov), the electrogravitic field can be given for the spherical symmetry case as

$$g(r) = \sqrt{4\pi\varepsilon_0 G}\,\frac{\bar{\psi}\cdot r_0}{r^2}, \qquad (3)$$

where $\overline{\psi} = \dfrac{Q}{4\pi\varepsilon_0 r_0}$ (Q: electric charge of the sphere).

From the formula, $div\ g = 4\pi G\rho_m$, and the Gauss's theorem, $\int_S div\ g \cdot ds = \int_V 4\pi G\rho_m dv$, where ρ_m is the equivalent mass density by the electrogravitic effect inside the sphere with the radius r_0, we have

$$\frac{\sqrt{4\pi\varepsilon_0 G}}{4\pi\varepsilon_0 r_0^2} Q\int_S ds = 4\pi G M_e \ , \qquad (4)$$

where $M_e = \int_V \rho_m dv$.

Finally we obtain the equivalent mass generated by the electric charge becomes

$$M_e = \frac{Q}{\sqrt{4\pi\varepsilon_0 G}} . \qquad (5)$$

This equation shows the gravitational effect of electric field around the spherical body.

If we let M_e be the electro induced mass of the Sun, the apparent mass of the Sun becomes

$$M = M_0 + M_e = M_0 + \frac{Q}{\sqrt{4\pi\varepsilon_0 G}} , \qquad (6)$$

where M is an apparent mass of the Sun and M_0 is a true mass of the Sun.

Then we have

$$M_0 / M = 1 - \frac{1}{M}\frac{Q}{\sqrt{4\pi\varepsilon_o G}} , \qquad (7)$$

Figure 4 shows the calculation result between the electric charge of the Sun and the ratio M_0 / M, where we let $M = 1.989 \times 10^{30} Kg$.

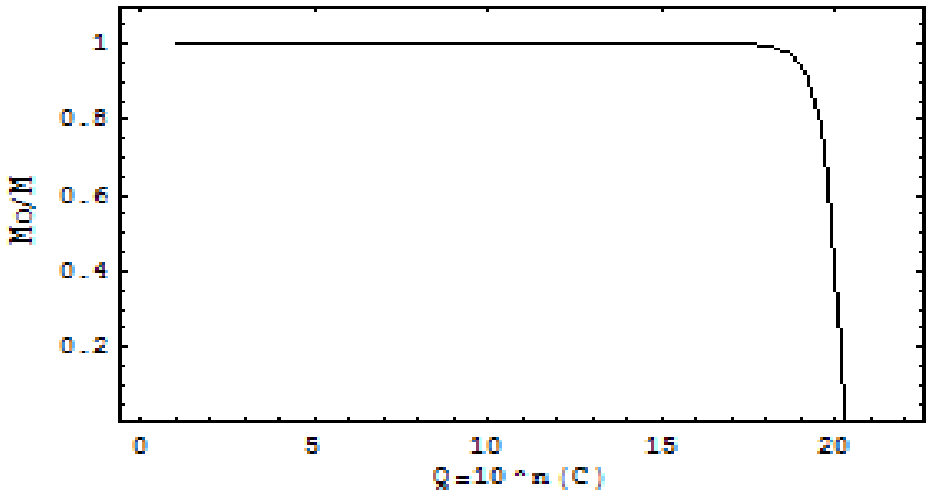

Fig. 4. Electric charge of the Sun and the ratio M_0 / M

From this calculation result, it is considered that some of the gravity of the Sun attributes to the electrogravitic effect.

Bailey proposed a formula for a star like the Sun of the mass M_S (kg), which carries a net electric charge, Q_S (C), given by (Bailey, 1960)

$$Q_S = \beta\sqrt{4\pi\varepsilon_0 G}M_S, \qquad (8)$$

where β is a parameter to show the charge of the star.

By introducing this equation into Equation.(5), we have

$$M_0 = (1-\beta)M_s, \qquad (9)$$

From this equation, when the constant β is almost equal to unity, it can be seen that almost of the gravity mass of the Sun attributes to electrogravitic originated.

Prof. Bligh wrote in his article (Bligh) that "the velocity of escape from the Sun is $617000 m/s$ and it can be seen that almost all the electrons exceed this speed and virtually no protons do. Superficially this leads to the conclusion that the Sun would lose all its electrons and none of its protons. Therefore there must be a mechanism for holding back most of the electrons. It is deduced that the Sun is positively charged. It leads to the logical conclusion that all hot stars have a positive charge and that this is balanced by a net negative charge in the interstellar space in a galaxy. The excess positive charge on the Sun is in the order of $6.6\times10^{22}C$".

If $Q_s \approx 6.6\times10^{22}C$, we have $\beta = 1-M_0/M_s \approx 1$ from Figure 4. Thus it is considered that the interior of the Sun is vacant as shown in Figure 5, and we can see that the Sun consists of plasma cloud expanded by repulsive electric force and the interior small iron/nickel core, which is formed by the incoming meteorites and asteroids. The stability of low density stellar plasma is analyzed for a star with a spherical symmetry in equilibrium between the gravitational attractive forces and the repulsive pressure forces of an ideal electron gas where the analysis is developed by the use of Boltzmann statistics (Ben-Aryer). By this analysis, plasma cloud of the Sun is considered to be stable with an inner empty space.

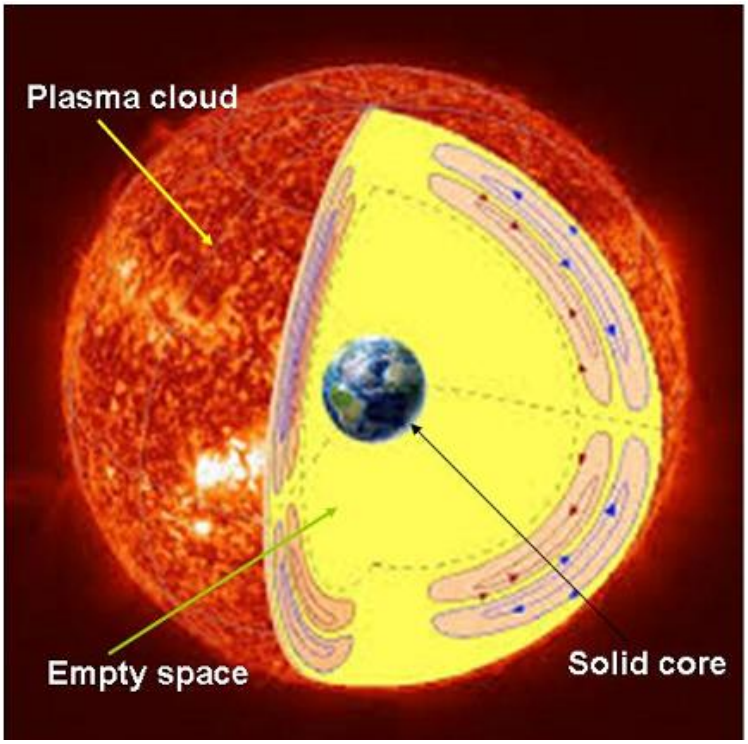

Fig. 5. Probable structure of the Sun

Wolynski claimed that the sun is hollow (The Sun is hollow). He claimed that the Sun will shrink, cool and collapse upon itself like a giant balloon, as it contains no interior core. According to his fringe theory of stellar metamorphosis, the Sun is not fusion powered, but is a giant dissipative event formed as a result of galaxy growth. It will become an orange dwarf star and then a red dwarf as it evolves over its next stages of stellar evolution. He also claims that the Sun is

much younger than the Earth, a relatively young star. In his theory all young stars do not possess cores, but are hollow structures that will gravitationally collapse until the coulomb barrier is reached and the star stabilizes into a solid ball. Thus almost of gravitational mass of the Sun is produced according to the electrogravitic effect, it is considered that most of the inner space of the Sun is vacant as claimed by Wolynski.

The Saturn Theory and the Thunderbolts Electric Universe theory suggest that Saturn may have been our first Sun or was at least associated as a Sun. Thompson in his astrological reports has noticed that the planet Saturn was also designated as Šamaš, i.e. "Sun" by the Babylonian-Assyrian astrologers and he quotes the statement of Hyginus to the effect that Saturn was called "the star of the Sun" (Was the Saturn the Sun?). During the past century several authorities noticed that Greek and Latin astronomical texts show a mysterious confusion of the "Sun" – Greek Helios, Latin Sol — with the outermost planet, Saturn.

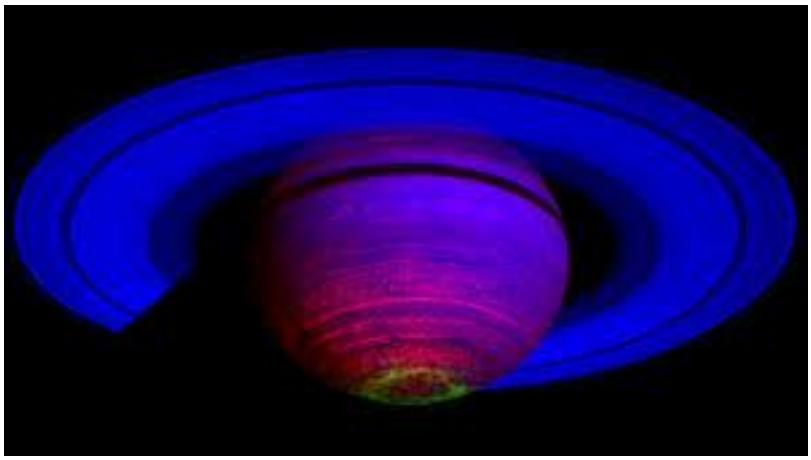

Fig. 6. Saturn was a Sun of our solar system in ancient times?

Inside Saturn is probably a core of iron, nickel, silicon and oxygen compounds, surrounded by a deep layer of metallic hydrogen, then a layer of liquid hydrogen and liquid helium and finally, an outer gaseous layer. If most of the gravity of stars attributes to the electrogravitic effect, we can see the possibility that the Saturn, which might be the ancient Sun of our solar system, lost its massive electric charge and shrunk to the present state as told by the old legend. If it is true, the present body of the Saturn may be an inner core created inside the ancient Sun.

4. Conclusion

From the electrogravitic effect, it is seen that most of the gravitational mass of the Sun is produced by the electric charge of the Sun. In this case, the Sun is consisted by the plasma cloud expanded by the repulsive electric force and the tiny solid core created in the center of the Sun.

If almost of the mass of the Sun is electrogravitic origin, there is a possibility that the Sun dose not generate its energy by nuclear fusion of hydrogen nuclei into helium at the core, but it may be powered, not from within itself, but from outside, by the electric currents that flow in our arm of our galaxy as they do in all galaxies. This possibility that the Sun may be externally powered by its galactic environment is the most speculative idea in the Electric Sun hypothesis.

References

Bailey, 1960 – *Bailey V.A.* (1960). Existence of Net Electrical Charges on Stars. *Nature,* 186, pp. 508-510.

Ben-Aryer – *Ben-Aryer Y.* Transparency and stability of low density stellar plasma related to Boltzmann statics, inverse simulated Bremsstrahlung and dark matter, arXiv.org>astro-ph>arXiv.1901.06635 (10 Feb 2019).

Bligh – *Bligh B.* The Sun is Electrically Positive Charged. [Electronic resource]. URL: http://altcosmology.com/The-Sun-is-Electrically-Positively-Charged-php

Ivanov – *Ivanov B.V.* On the gravitational field induced by static electromagnetic sources, arXiv: gr-qc/0502047 v1 (10 Feb 2005).

Ivanov, 2013 – Ivanov B.V. (2013). Weyl electrovacuum solutions and gauge invariance. *Journal of Space Exploration*, Vol. 2(1), pp. 49-51.

Juergens, 1972 – *Juergens R.E.* (1972). Plasma in Interplanetary Space: Reconciling Celestial Mechanics and Velikovskian Catastrophism, Penseé IVR II (Fall 1972), pp. 6-12; Velikovsky Reconsidered (N.Y., 1976), pp. 137-155. First presented at the Lewis & Clark Symposium, Portland, OR, August 15-17, 1972.

Musha, 2004 – *Musha T.* (2004). The possibility of strong coupling between electricity and gravitation. *Infinite Energy,* Is. 53, pp. 61-64.

The Electric Universe Theory – The Electric Universe Theory [Electronic resource]. URL: https://www.electricuniverse.info/electric-sun-theory/

The Sun is hollow – The Sun is hollow. [Electronic resource]. URL: http://vixra.org/abs/1301.0109

Was the Saturn the Sun? – Was the Saturn the Sun? The Sun is hollow [Electronic resource]. URL: http://everythingselectric.com/saturn-sun/