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The Updating Plus Version of Model Reconstruction Inside the Sun Based on Comparative Celestial Bodyology

Henghua Yan

Freelance worker. Wuxi City 214043 China

*Corresponding author: Henghua Yan, Freelance worker. Wuxi City 214043 China.

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Abstract

As the main celestial bodies of the solar system, there should be a similar pattern or model of evolving inside the Sun and other planets. Based on the comparative celestial bodyology between the Sun and the Earth, or even the features on their surface, a model of circulation of the particles flow (or plasma) that may relate to the overturning periodically of the open magnetic field of the Sun, is established between the inner core and the shell of it. No doubt, the inner core would be the main dominator in the model of circulation and it would evolve to be the white dwarf star with concave surface formed on its top and bottom in the billion years' future. Yet, in the angle of macroscopic view, it is a closed mini spiral structure being gestated inside the Sun that would be the extending of Matryoshka doll of Russia from the giant spiral galaxies in the universe (the Milky Way galaxy) to the special spiral solar system.

Keywords: Comparative Celestial Bodyology, The Inner Core of the Sun, White Dwarf Star, Mini Spiral Structure, Differential Rotation, Oort Cloud, Neutron stars, Red Giant Star, law of Matryoshka doll of Russia.

Introduction

Almost 100 years have passed since the popular model inside the Sun was raised by Arthur Stanley Eddington in 1926.Due to era limitation of the idea and scientific technics in the last century, the model should be updated urgently with new methods of new ideas in the new 21 century.

With similar features of the phenomena on the surface of the Sun and the Earth, based on comparative celestial bodyology, a circulation model of particles flow (or plasma) dominated by the inner core of the Sun could be established to predict the evolving trend of the inner core and the outline of the Sun in the billion years' future. That is to say, the inner core would evolve to be a white dwarf star after it breaks through the shell of the red giant pumpkin star in the billion years' future.

It may be an interesting exploring project that what is being gestated inside the Sun is actually the mini spiral structure that belongs to the spiral series of the Matryoshka doll of Russia ranging from the giant spiral galaxies (the Milky Way galaxy) to the special spiral solar system.

Text

1. The Celestial Body Language Implied by the Geological Phenomena Taking Place on the Earth.

With the celestial body language implied by the geological phenomena taking place on the Earth, we could get two counter areas of expanding and convergency [1] on the Earth from the middle and lower latitudes to the two Poles. It is shown by Figure 1 as follows,

Figure 1: The Celestial Body Language Implied by the Geological Phenomena Taking Place on the Earth

It is common sense that geological phenomena take place on Earth from time to time, such as earthquake and volcano eruption activities which may cause serious damage to human beings and other animals. Yet with the statistical data of the geological phenomena, it is found that it mostly takes place on the middle and lower latitudes of the Earth and never takes place on the central region of two Poles. In other words, no observational records of severe earthquake and volcano eruption activities on the North or South Pole were kept by human beings in history.

2. The Celestial Body Language Implied by the Solar Phenomena Taking Place on the Sun

It is observed by astronomists that the solar flares and prominences mostly take place on middle and lower latitudes on the Sun and they imply the active and expanding area of it. While the North and South Polar areas are occupied by the solar coronal holes which imply the silent and convergent areas on the Sun.

It is shown by Figure 2 as follows,

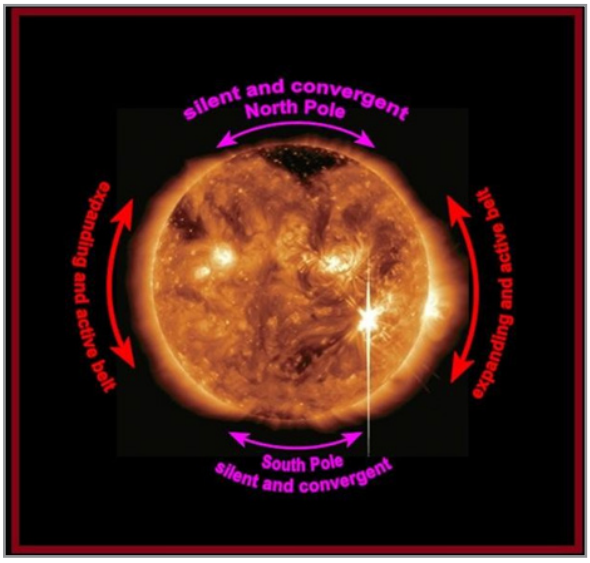

Figure 2: The celestial body language implied by the solar phenomena taking place on the Sun

Compared with the Earth in a similar way, we could also get two counter areas of expanding and convergency on the Sun from the middle and lower latitudes to the two Poles.

3. The Comparison of the Inner Core Between the Earth and the Sun

The inner core of the Earth is implied by the main island of the ancient Australian plate [1].

It is shown by Figure 3 as follows,

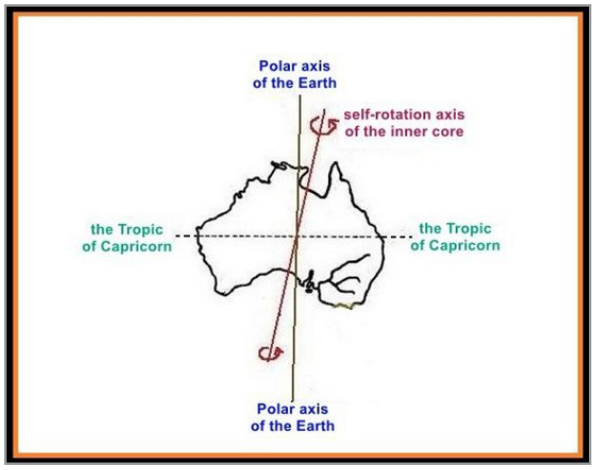

Figure 3: The cutaway view of the inner core of the Earth implied by the main island of the ancient Australian plate.

The most important aspect of the inner core of the Earth is the concave surface formed on the bottom of it.

Therefore, based on the comparative celestial bodyology between the Sun and the Earth, we could deduce the outline of the inner core of the Sun in a reasonable way [2].

It is shown by Figure 4 as follows,

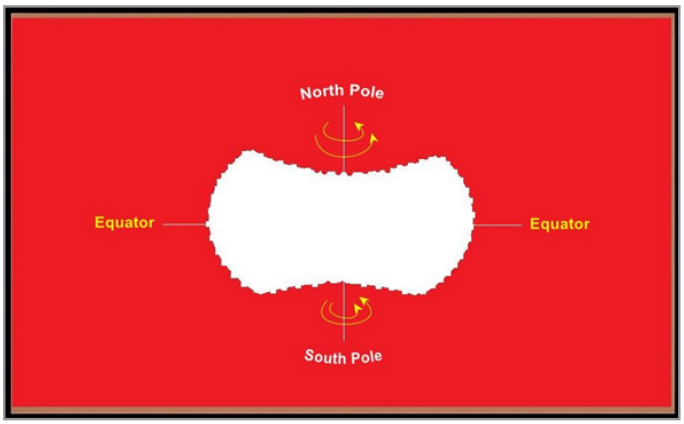

Figure 4: The Cutaway View of the Inner Core of the Sun Imagined from that of the Earth.

The obvious characteristics of the inner core of the Sun are the double concave surfaces formed on the top and bottom of it. However, it is in a state of self-rotating in a high speed which would be demonstrated in the following chapters.

4. The Description of the Model Inside the Sun

On the equatorial area of the Sun, particles (or plasma) are distributed to the shell by the inner core that self-rotating anticlockwise in high speed, then converge to the North and South Poles respectively in a spiral way. And then the particles (or plasma) on the two Polar areas backflow to the inner core along the Polar axis. Therefore, two whirlpools of particles are formed on two Polar areas to make them more convergent than the equatorial area. That would be the reasonable explanation for the existence of the solar coronal hole on two Polar areas. In the closed cycle of particles (or plasma) dominated by the inner core, the inner core grows up gradually by the means of nuclear fusion closing around it. It is shown by Figure 5 as follows,

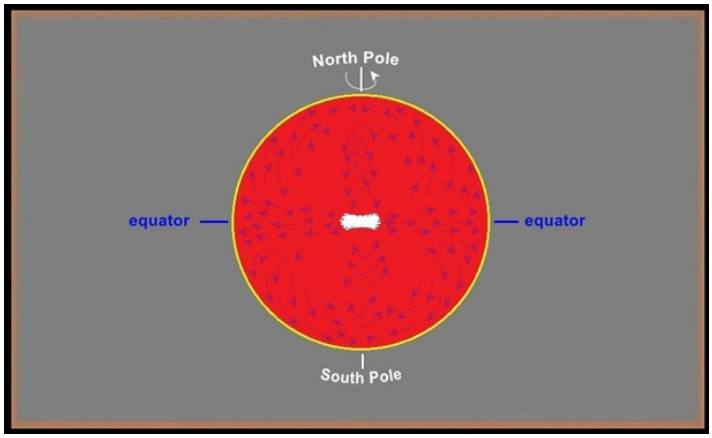

Figure 5: The Cutaway View of the Inner Parts of the Sun

On the contrary to the two Polar areas, driven strongly by the inner core, the equatorial area looks more active and expanding with the result of phenomena, such as the solar flare and prominence. It is shown by Figure 6 as follows,

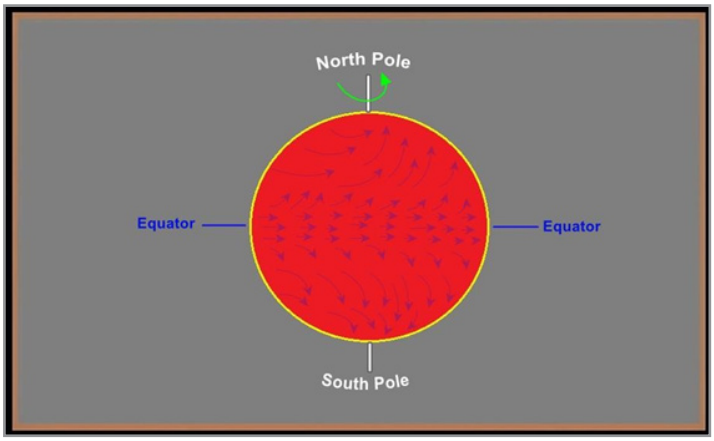

Figure 6: Particles (or Plasma) Flow Underneath the Shell of the Sun

It has been proved by the astronomists' observation that there is a phenomenon of differential rotation on the surface of the Sun. It would be the direct reflection of the cycling model inside the Sun rather than the independent phenomenon isolated from the inner parts of it [3]. It is shown by Figure 7 as follows,

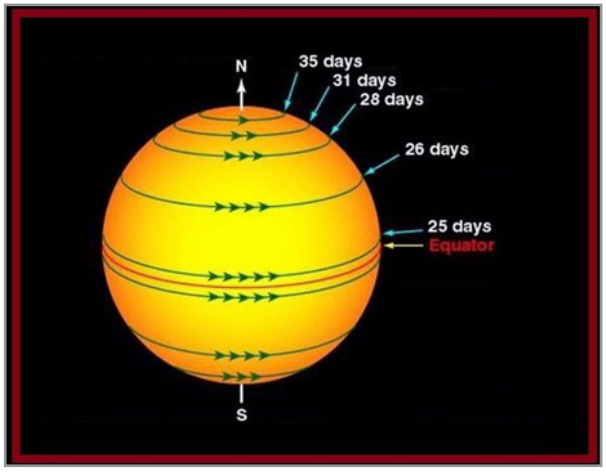

Figure 7: The Differential Rotation of the Sun

5. The Open Magnetic Field of the Sun Overturns Periodically

It has been proved by the observation of astronomists that the open magnetic field of the Sun would overturn periodically in almost 11 years. That may be related to the cycle staggering of the inner core on two sides of the equatorial plane area of the Sun, and that may be caused by the gravitational force of orbital revolution of the Sun in the Milky Way galaxy [4].

It is shown by Figure 8 as follows,

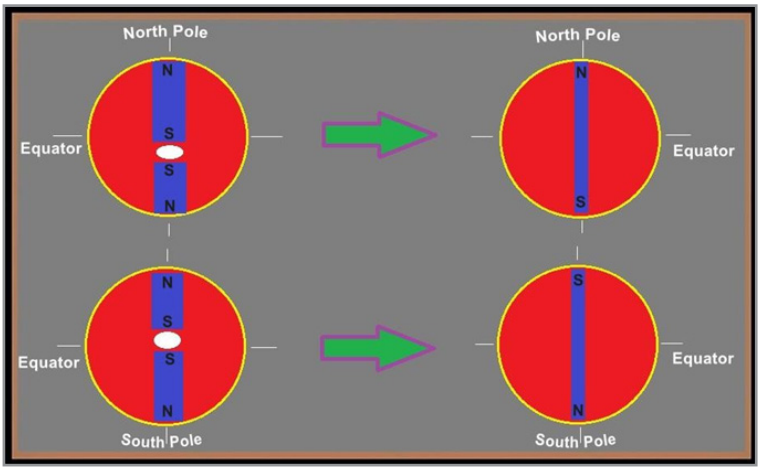

Figure 8: The Open Magnetic Field of the Sun Overturns Periodically

The open magnetic field of the Sun is mainly produced by the whirlpool of particles (or plasma) on the two Polar areas backflowing to the inner core. Obviously, their direction is just opposite to each other between the North and South Hemisphere, therefore, the presenting open magnetic field of the Sun is actually the net value after the PK of magnetic field between them periodically.

So, the celestial body language of the Sun related to the overturning of the open magnetic field is just the invisible heart beating of it and the indirect reflection of the waving travelling routine in the Milky Way galaxy as well.

6. **The Interesting Law of Matryoshka Doll of Russia Implied from the Milky Way Galaxy to the Mini Spiral Structure Being Gestated Inside the Sun**

It has been supposed by astronomists that the main celestial bodies of the solar system are being packaged by the Oort cloud ball formed by the residuals of birth of the solar system [5].

It is shown by Figure 9 as follows,

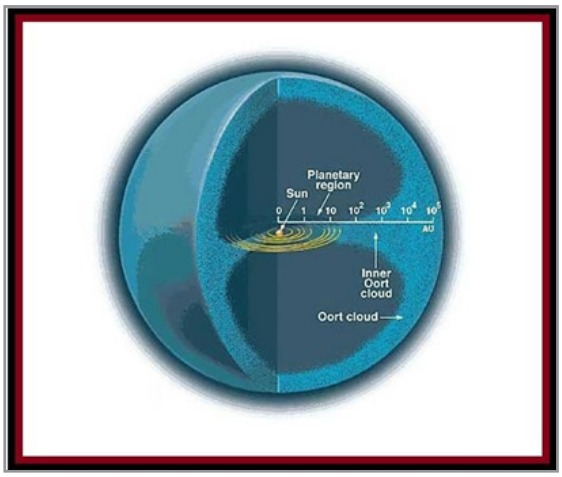

Figure 9: The imagined Oort cloud ball that packaging the main celestial bodies of the solar system

However, elliptical orbit of revolution of planets implies that the solar system is actually a special spiral system semi-closed by the Oort cloud ball imagined, and it is similar to the spiral galaxies in the universe, e.g. the Milky Way galaxy.
It is well known that period of orbital revolution of the planets increases gradually from inner to out layer, which means the orbital revolution speed of them decreases gradually.

While the Sun self-rotates in the fastest speed among the main celestial bodies of the solar system. It is shown by Figure 10 as follows,

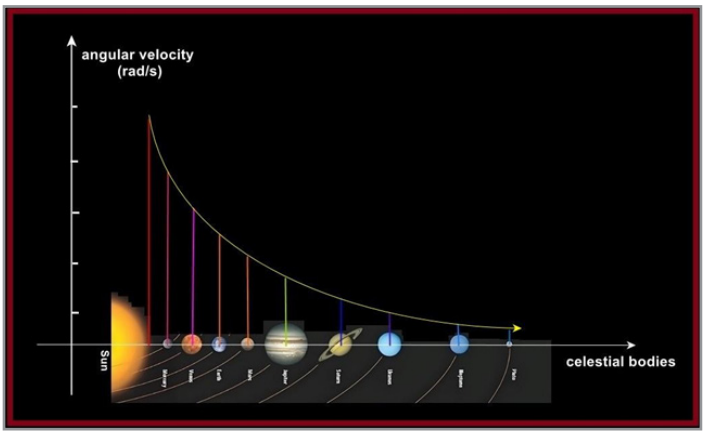

Figure 10: The Sun of fastest self-rotation dominates the nine planets of differential orbital revolution

In fact, it is a mini spiral structure that is being gestated inside the Sun, dominated by the inner core of it. Similar to the solar system, there is a speed decline trend of orbital revolution from the inner core to the shell of the Sun in the equatorial plane area of the Sun, while the inner core self-rotates in the fastest speed. In some degree, the mini spiral structure inside the Sun could be treated as the mini miniature version of the solar system in a completely closed ball.

It is presumed by astronomists that once the inner core of the Sun becomes a white dwarf star in the universe by breaking through the shell of the Sun in the billion years' future, its rotation period would be only several seconds [6].

It is also proved by the observation of astronomists that the neutron stars. which were born from the inner cores of the giant stars much bigger than the Sun, always behavior with several seconds to several minutes of rotation period in the universe [7].

Therefore, from the giant spiral galaxies (e.g. the Milky Way galaxy) in the universe to the special spiral system of the solar system and the mini spiral structure gestated inside the Sun, an

interesting law of Matryoshka doll of Russia has been formed by them [8].

It is shown by Figure 11 as follows,

Figure 11: The interesting law of Matryoshka doll of Russia

7. The Evolution Trend of the Sun in the Billion Years' Future

Nowadays, the outline of the Sun looks like a standard ball exactly, and it just implies that the Sun is in the stage of its perfect highlight on its evolution history. However, dominated by the outline of the inner core, the outline of the Sun would alter gradually to that of a pumpkin since the equatorial radius would increase much faster than the polar radius in the faraway future. Until about 5 billion years later in the future, the Sun would come to its end to a red giant star (a giant pumpkin star as well) which symbolizes the brewing birth of its inner core. Sometime after that, the inner core would come to be a white dwarf star in the universe by breaking through the shell of the red giant star eventually [9].

It is shown by Figure 12 as follows,

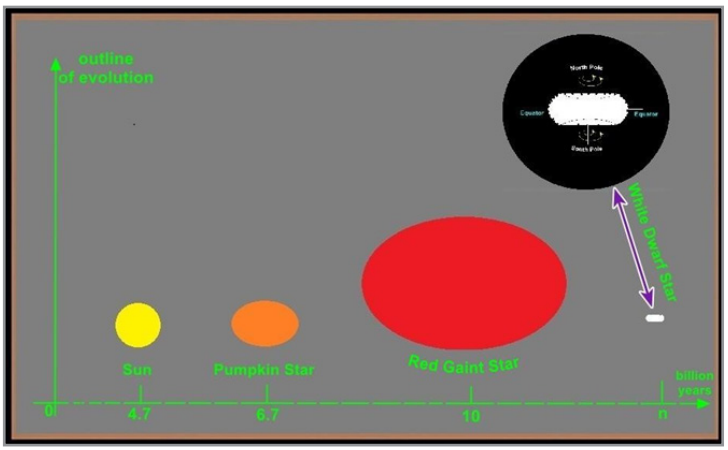

Figure 12: The evolution trend of the Sun in the billion years' future

We could take Betelgeuse (Alpha Orionis) for reference for the outline evolution of star. It is observed by the astronomists that the Betelgeuse (Alpha Orionis) is in its stage of red giant star, its outline is not a standard ball obviously with its equatorial radius a bit larger than its polar radius [10]. It is shown by Figure 13 as follows,

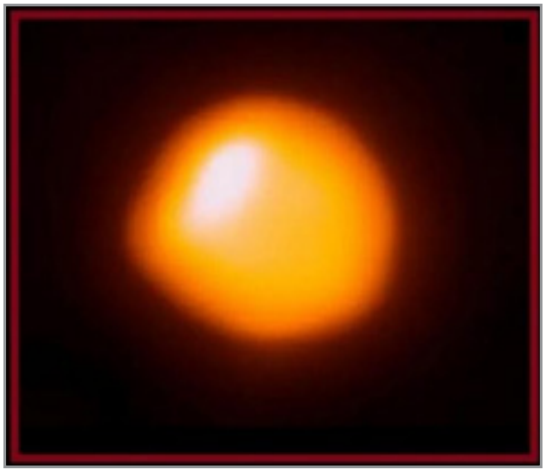

Figure 13: The outline of the Betelgeuse (Alpha Orionis)

Evolved from the inner core of stars, no matter whether they are white dwarfs or neutron stars, they are not only concentrated of high-density matters but also concentrated of angular momentum, which means they always behavior in the state of self-rotating in a high speed. It is common sense that once a geometry body obtains high speed of self-rotation, its outline could not keep as fit as that of a standard ball.

Discussion

1. **The questions to be updated in the popular model inside the Sun**

The popular model inside the Sun was presented by Arthur Stanley Eddington in 1926 [11].

It is shown by Figure 14 as follows,

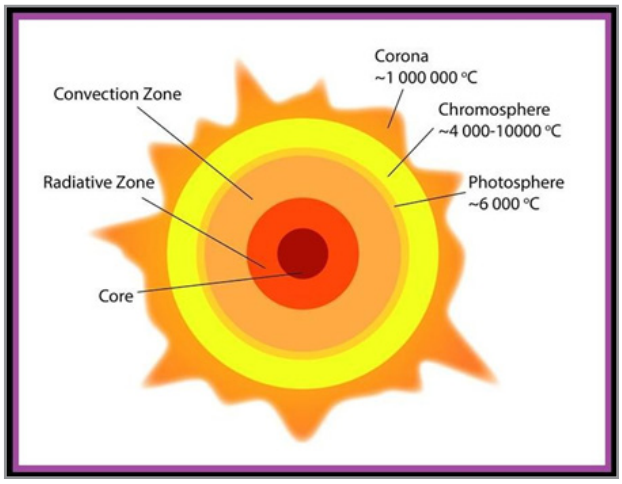

Figure 14: The Popular Model Inside the Sun

The Questions to be Updated are Listed Below

- Obviously, it is an ideal static model inside the Sun with a standard ball of inner core and uniform nature of the convection and radiative zone in all directions;
- The inner core of the Sun is both the concentration of high density matters and that of the angular momentum, which means it should be self-rotating in high speed or extreme short rotation period as some astronomists presumed. so, its outline could not keep a standard ball any longer;
- The differential rotation from the equatorial area to two polar areas of the Sun implies that it is not a uniform nature in all directions inside it;
- The phenomena of solar flares, prominence, coronal hole and so on are not distributed evenly on the surface of the Sun. however, two contradictory areas could be concluded obviously from the equatorial area to two polar areas of the Sun. That implies the reflection of the ununiform nature inside the Sun;
- The overturning periodically of the open magnetic field of the Sun implies that it should not be the distribution of ideal and uniform nature inside it.

Conclusion

A method of comparative celestial bodyology is introduced in this paper that compared with the profile characteristics of the Earth, the phenomena shown on the Sun (solar flare, prominence, coronal hole and so on) imply that its equatorial area is active and expanding while its two polar areas are convergent.

Therefore, the differential rotation from the equatorial area to two polar areas reflects the circulation model of particles flow (or the plasma) between the inner core and the shell of the Sun. Furthermore, it is a closed mini spiral structure that has been gestated inside the Sun; However, it is dominated by the inner core that would evolve to be the white dwarf star in the billion years' future, and the concave surfaces formed on the top and bottom of it are the most significant feature.

The closed mini spiral structure inside the Sun is actually the small end of spiral series of Matryoshka doll of Russia that ranges from the giant spiral galaxy (the Milky Way galaxy) to the special spiral solar system. The overturning periodically of the open magnetic field of the Sun may have something to do with the circulation model of particles flow (or the plasma) and the periodical waving of the inner core on two sides of the equatorial plane area of the Sun caused by other celestial bodies of the Milky Way galaxy based on the waving travelling routine of the solar system.

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