Model of Galactic Center-Pleiades-Sun

JianFei Chen

Nov. 22, 2019

[Abstract] Author found that distance from Sun to Pleiades and the Bohr radius of hydrogen atoms meets the condition for energy wave resonating. The energy from the Bohr radius of huge amount of atoms in the universe, makes Sun and Pleiades to resonate with the current distance. Sun and Pleiades are strongly linked as a group, and Sun revolves around Pleiades. Finally the model of Galactic Center-Pleiades-Sun was set up. The greatest significance of this paper is to link the macroscopic structure of the universe with the microscopic atomic structure.

Pleiades is mysterious in many ancient books and stories, which attracts many scientists to study. Author found that distance of Sun-Pleiades is especial which has correlations with the Bohr radius of hydrogen atoms.

The distance from Sun to Pleiades was already measured much accurate. The current data is 136.2±1.2pc [1], which was measured by the group of Carl Melis at 2014. It was confirmed as 444.2ly [2] by Gaia Staff at 2018. The two data are same.

$$D_1 = 136.2 \pm 1.2pc = 444.225ly = 4.202693 \times 10^{18}m \pm 0.88\% \quad (1)$$

In this paper, unit conversion as follows.

1pc=3.261 563 777 141 879 8291 ly

1ly =9 460 730 472 580 800 m

Bohr radius a_0 can be checked in CODATA: 2018[3] as follow:

$$a_0 = 5.291\ 772\ 109\ 03(80) \times 10^{-11}m \quad (2)$$

With the equation (1) and (2), compare them as follow:

$$\frac{D_1}{a_0} = \frac{4.202456 \times 10^{18}}{5.291\ 772\ 109\ 03 \times 10^{-11}} = (1 + 0.236\%) \times 2^{96} \cong 2^{96} \quad (3)$$

Bohr radius a_0 is the distance between electron and proton in hydrogen atoms. Since every atoms has same value of Rydberg constant R_∞, we can believe that Bohr radius a_0 is existing in every atom. The distance a_0 can cause a wave with the wavelength of a_0, and the distance D_1 between Sun and Pleiades can also cause a wave with the wavelength

of D_1. According to Method (#3) of 2^n equivalence principle, $\lambda \overset{\text{resonate}}{\Longleftrightarrow} 2^{96}\lambda$, a huge amount of energy waves a_0 from every atom all over the word, make energy wave D_1 to resonate and easily transfer the energy to it. According to Method (#1) of Integer ratio principle, while wave D_1 is resonating by wave a_0, the mean distance of Sun-Pleiades D_{1_m} must be strict 2^{96} times of a_0, any little difference will be removed by resonance.

$$D_{1\_m} = 2^{96}a_0 = 4.192574 \times 10^{18}\ m = 443.16\ ly = 135.87pc \qquad (4)$$

Since distance of Sun-Pleiades is resonating with Bohr orbits, Sun and Pleiades are closely linked with powerful resonance energy. It means there is a powerful gravity between Sun and Pleiades, which is far greater than universal gravitation of them. Because solar mass is much smaller than Pleiades mass, Sun has to revolve around Pleiades, then distance of Galactic Center and Pleiades is effective.

Position of Pleiades (M45) [4] as follow:

$$\text{R.A. (2000) 03h 47.0m Dec. (2000) } +24^\circ\ 07' \qquad (5)$$

Distance from Sun to Galactic Center, the current accurate value was measured by the GRAVITY Collaboration [5] at 2019 as follow:

$$D_2 = 8178 \pm 13_{stat} \pm 22_{sys}pc = 8178pc \pm 0.43\% \qquad (6)$$

Position of Galactic Center (Sqr A*) [6] is as follow:

$$\text{R.A. 17h 45m 40.0409s Dec. } -29^\circ\ 00'\ 28.118'' \qquad (7)$$

With the data of (1, 5, 6, 7), can calculate the distance from Pleiades to Galactic Center as follow:

$$D_3 = 8299.65pc \pm 0.43\% \qquad (8)$$

Since Sun revolves around Pleiades, then Pleiades revolves around Galactic Center. The revolution orbit of Pleiades around Galactic Center causes a wave with wavelength equal to the perimeter $2\pi D_3$. With the equation (1) and (5), we can get as follow:

$$\frac{2\pi D_3}{D_1} = \frac{2\pi \times 8299.65}{136.2} = 382.88 = (1 - 0.292\%) \times 12 \times 2^5 \qquad (9)$$

If use the logic value of equation (4), then

$$\frac{2\pi D_3}{D_{1\_m}} = \frac{2\pi \times 8299.65}{135.87} = 383.81 = (1 - 0.050\%) \times 12 \times 2^5 \qquad (10)$$

According to Method (#3) of 2^n equivalence principle, $\lambda \overset{\text{resonate}}{\Longleftrightarrow} 2^5\lambda$. According to Method (#2) of Preferred 12 principle, wave λ always prefer to resonate with the wave of

12λ. So wave D_1 and the wave $2\pi D_3$ will resonate together. According to Method (#1) of Integer ratio principle, while wave D_1 and the wave $2\pi D_3$ resonate together, the distance D_3 will be adjust to meet that $2\pi D_3 = 12 \times 2^5 \times D_1$, any little difference will be removed by resonance. With equation (10, 4), mean distance D_{3_m} from Pleiades to Galactic Center as follow:

$$D_{3\_m} = 6D_{1\_m} \times 2^5/\pi = 8303.76\ pc \tag{11}$$

Author also found that line of Sun-Pleiades and the galactic plane have an intersection angle of 23.525°, which is consistent with the current obliquity of the ecliptic for the Earth (23.44°). It should not be accident. These angles must be formed by some rules, and will be steady. Therefore we can get the model as Figure 1.
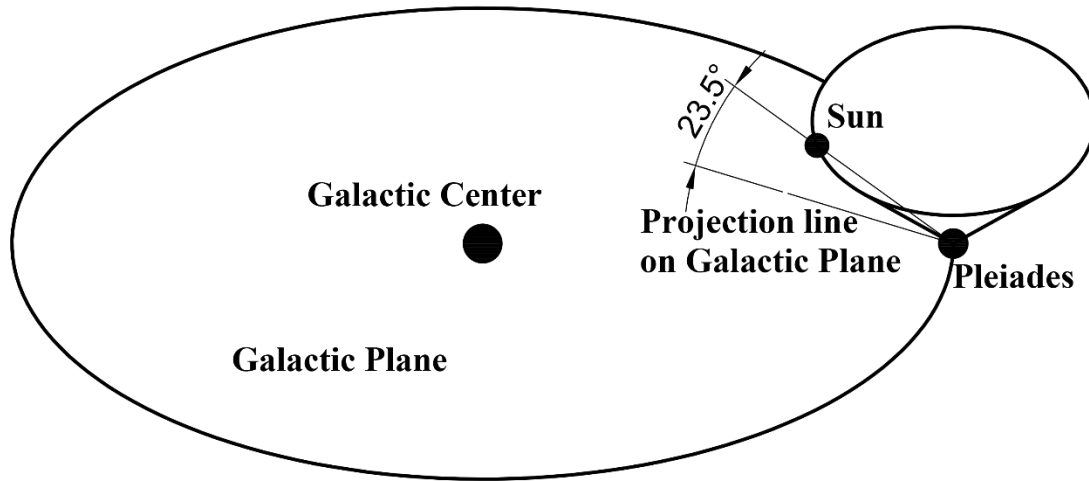

Figure 1. Model of Galactic Center-Pleiades-Sun

Pleiades revolves around Galactic center at Galactic plane, and Sun runs along the underside of the cone with Pleiades at the peak as Figure 1.

[Summary]

This paper determined that sun revolves around Pleiades, which is consistent with ancient literatures. And established an especial model of Galactic Center-Pleiades-Sun. This paper also tells us that Universal Gravitation is not the only Gravity between celestial bodies, and that distances between celestial bodies have important effect, which are important in studying astronomy. The greatest significance of this paper is to link the macroscopic structure of the universe with the microscopic atomic structure.

Methods

#1. Integer ratio principle:

If two waves interrelate, one wave makes the other to resonate, then the ratio of their frequency (wavelength) must be a strict ratio of two integers. Any little difference will be removed by resonance.

#2. Preferred 12 principle:

According to the paper [7], at the beginning of the evolution of matter, 12 times of particles always gather into a new particle one by one, it means that a particle includes 12 same parts. This structure will remain in the future. So any energy wave of λ always prefers the resonant wave of 12λ.

#3. 2^n equivalence principle:

According to the paper [7], the resonance with double or half frequency can rapidly transfer the energy one by one, until the energy is absorbed. $\lambda \overset{\text{resonate}}{\Longleftrightarrow} 2^n\lambda$

References

1. Carl Melis, Mark J. Reid, Amy J.Mioduszewski, John R. Stauffer, Geoffrey C. Bower, A VLBI resolution of the Pleiades distance controversy, SCIENCE, VOL 345 ISSUE 6200 1029-1032, AUGUST 29, 2014.

2. Gaia Staff , Who Are The Pleiadians?, https://www.gaia.com/article/who-are-the-pleiadians, August 14, 2018,

3. NIST, CODATA Internationally recommended 2018 values of the Fundamental Physical Constants, https://physics.nist.gov/cuu/Constants/index.html, 2019.

4. J. L. E. Dreyer, ed. R. W. Sinnott, New General Catalogue of Nebulae and Clusters of Stars, Sky Publishing Corporation and Cambridge University Press, 1988

5. The GRAVITY Collaboration: R. Abuter, A. Amorim, M. Bauböck, J.P. Berger, A geometric distance measurement to the Galactic Center black hole with 0.3% uncertainty, https://arxiv.org/abs/1904.05721, April 11, 2019.

6. Wikipedia, Sagittarius A* - Wikipedia, https://en.wikipedia.org/wiki/Sagittarius_A*

7. JianFei Chen, Logic about forming hydrogen atom from Higgs Bosons, p. 3 and p.1, http://viXra.org/abs/1911.0340, 2019