

Calculation of Gravitational Wave Frequency in the Universe

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A) New explanation for the source of gravity and its fluxes

Gravity is one of the largest, most important, energetic, and influential forces in the universe. To understand its basis and nature, it is better to calculate its frequency first:

"Kinetic Energy is equal to the Gravitational Energy"

So, the relation between the energy of a planet and electromagnetic waves will be:

$$\frac{1}{2}mv^2 = nh\vartheta$$

Where “n” is the number of force lines passing through the surface of the planet so we have:

$$n = \frac{\text{Planet's area}}{\text{Photon's area}} = \frac{S}{S_p} = \frac{4\pi r^2}{4\pi r_p^2} = \frac{r^2}{r_p^2}$$

$$\vartheta = \frac{r_p^2}{2h} \times \frac{mv^2}{r^2}$$

therefore:

$$\frac{r_p^2}{2h} = \text{constant} \cong \frac{1}{10}$$

And finally the gravitational frequency will be equal to:

$$\vartheta = \frac{mv^2}{10r^2} = \frac{E_k}{5r^2}$$

Now, according to the last formula, we compute the gravitational frequency between Earth and Sun:

$$\vartheta = \frac{mv^2}{10r^2} \Rightarrow \vartheta_{\text{Earth}} = \frac{(5.97 \times 10^{24})(2.98 \times 10^4)^2}{10(6.37 \times 10^6)^2} \Rightarrow \vartheta_{\text{Earth}} \cong 1.3 \times 10^{19} \text{ Hz}$$

And the calculated amount of gravitational frequency between the Sun and the planets of the solar system should be as follows:



Planet	Mass (kg)	Radius (m)	Velocity around the Sun (m/s)	Frequency (Hz)
Mercury	3.30E+23	2.44E+06	4.74E+04	1.24E+19
Venus	4.87E+24	6.05E+06	3.50E+04	1.63E+19
Earth	5.97E+24	6.37E+06	2.98E+04	1.30E+19
Mars	6.42E+23	3.39E+06	2.40E+04	3.22E+18
Jupiter	1.90E+27	6.99E+07	1.31E+04	6.63E+18
Saturn	5.68E+26	5.82E+07	9.68E+03	1.57E+18
Uranus	8.68E+25	2.54E+07	6.80E+03	6.24E+17
Neptune	1.02E+26	2.46E+07	5.43E+03	4.98E+17
Moon	7.34E+22	1.74E+06	2.98E+04	2.16E+18

Gravitational frequency table for planets in the solar system

The following notes should be considered for different types of gravitational waves:

I. Main gravitational waves

It can be said to the waves that leave the star, enter the planet of that star and return to the star again. Their frequencies are between 10^{17} Hz to 10^{20} Hz .

II. Sub-gravitational waves

It can be said to waves that travel from planet to natural satellite or other planets and return to the planet again. This cycle is planet to planet or planet to natural satellite. It is clear that the frequency of Sub-gravitational waves is lower than the frequency of the planet's main gravitational waves.

An example for better understanding, whenever a radiant photon emits from the Sun its velocity is "C". But according to environmental conditions, its velocity will decrease. In fact, it can be said that in sub-gravitational waves, the kinetic energy of the waves decreases. As a result, its frequency also seems to decrease. In fact, although the structure of gravitational waves is always constant, but if the kinetic energy decreases, the frequency decreases too. According to above and the proven frequency relation in solar systems:

$$\vartheta = \frac{mv^2}{10r^2}$$

Where, the parameters are mass, radius, and velocity of the planet around the central star. The relation between the planet and its moon is as follows:

$$\vartheta = \frac{mv^2}{10kr^2}$$

It should be noted that the initial gravity is between sun and planet, which only some part of that, is transferred to the planet's moon. In fact, the main gravity is between the star and the planet and the less one is between the planet and its moons. So, the amount of flux that is transferred from the



planet to the moon does not always cover the entire surface of the moon, and only a percentage of the initial gravitational flux passes through the moon. Therefore, to calculate the gravitational waves frequency between moons and planets, we need to define a coefficient called the decreasing coefficient "k", which has included in the denominator of the relation. For example, the amounts of gravitational wave frequencies between planets of the Solar System and some of their moons are as follows (Table 2) (For all examples we put $k = 25\%$):

Planet	Natural Satellite	Mass (kg)	Radius (m)	Velocity around the Planet (m/s)	Frequency (Hz)
Mars	Phobos	1.06E+16	1.12E+03	2.10E+03	1.49E+16
Earth	Moon	7.30E+22	1.70E+06	1.02E+03	1.05E+16
Uranus	Ariel	1.25E+21	5.79E+05	5.51E+03	4.53E+16
Neptune	Tritan	2.10E+22	1.35E+06	4.39E+03	8.88E+16
Saturn	Titan	1.34E+23	2.57E+06	5.57E+03	2.52E+17
Jupiter	IO	8.93E+22	1.82E+06	1.73E+04	3.23E+18

Table2. Gravitational frequency for natural satellites in the solar system

Based on the calculations and obtained frequencies for gravitational fluxes, the electromagnetic spectrum chart can be considered as follows:



From calculations and electromagnetic spectrum charts, it can be deduced that the frequency of gravitational fluxes is lower than gamma rays and higher than X-ray waves. Therefore, it can be said that anything that is the source of X-rays and gamma rays, can also be an intrinsic source of gravitational waves. If we observe carefully, we can see that the natural sources of X-rays are very large stars, black holes, magnetars, supernova explosions, and neutron stars. As for the source of gamma rays (which are the most powerful, dangerous, and impactful rays), they also come from magnetars, active galactic nuclei, black holes, and so on.

If we look at the electromagnetic spectrum diagram, we find that the visible light range constitutes just a small portion in the middle of the diagram. To introduce a source of radiation light, its origin must be stars. In fact, stars are the only celestial objects capable of



producing visible light with high intensity and quantity. The frequency range higher than visible light belongs to the magnetic waves. Considering our solar system, apart from the Sun, which is the primary and powerful source of magnetic waves, only three planets, Earth, Jupiter, and Saturn, have the ability to generate magnetic waves but their magnetic intensity and quantities are extremely low and negligible. One can consider their power and intensity compared to the Sun as close to zero.

In the electromagnetic wave range, after the magnetic wave's range, there are X-rays. Very large stars and black holes are the sources of X-ray generation. We cannot find a planet that has the capability of producing these waves. Also, after X-rays in the diagram, we can consider gravity and gamma rays, which their sources can be just considered as stars, black holes, etc. As a result, from the above discussions, it can be concluded that the source of gravitational fluxes is also stars, supernovae, magnetars, white dwarfs, black holes, etc. If we pay attention to the lifespan of a solar system (which includes a central star and planets orbiting around it), we find that the central star's lifespan is always about 500 million to one billion years longer than its planets. Therefore, it can be said that at first, the star is born, it grows and reaches its maturity, then the planets of that system are formed.

In other words, as a result of the created gravitational forces in the star, its planets are formed. This is itself, evidence that stars, supernovae, magnetars, white dwarfs, black holes, etc. are the sources of gravity. In fact, if we want to find the source of all electromagnetic spectrums, it must be said that approximately 99 percent of it could be traced back to stars supernovae, magnetars, white dwarfs, black holes, and so on.

B) New explanation for the structure, model and mechanism of gravity

Visible light, emitted from our own star (the Sun), can be divided into seven distinct groups, commonly known as the seven colors of the spectrum that begins with red and ends with violet. While each color group possesses its own unique wavelength and frequency, all of these and, in general, all electromagnetic spectra fundamentally consist of photons.

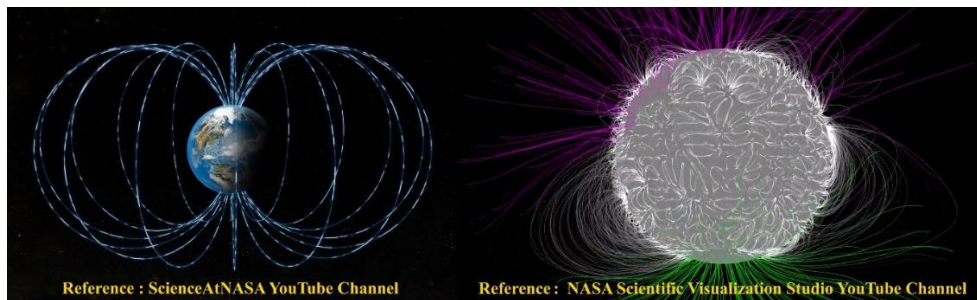


If we consider the redshift effect on the wavelength of red light, we observe a decrease in frequency, resulting in a fundamental change in its color. This redshift, occurring due to alterations in the velocity, causes the red light to shift towards the infrared region. Although the initial red light cannot be directly observed, its underlying nature remains that of a photon. Likewise, violet light is subject to the same principle. The redshift, blueshift, high shift, and low shift phenomena can induce shifts in the frequency of violet light, leading it towards either lower or higher frequencies. Despite these frequency changes, the fundamental nature of violet light, characterized by its photon composition, remains intact.



In fact, the basis of all electromagnetic waves is a photon that has a specific wavelength and frequency. Therefore, we can conclude that the basis of all electromagnetic spectrum is the photon, each having a distinct wavelength and frequency.

If we consider magnetic fields (which our Sun possesses and the Earth itself can weakly generate), we will observe that they are, in fact, comprised of chained photons or the same magnetic flux that travels from the North pole to the South pole and then return from the South pole to the North pole.



Based on the calculations, the magnetic frequency is approximately 10^{15} Hz, the model and structure of gravitational fluxes are similar to those of a magnetic field. Considering that the gravitational frequency is significantly higher (approximately 1000 times).

In fact, electromagnetic and gravitational waves share similarities in their generation, structure, and effect, with the main difference lying in their vastly higher frequencies for gravity waves. In other words, electromagnetic waves can be considered weak and short-range, while gravitational fluxes are strong and long-range.

C) New explanation for how fluxes are generated at the gravitational source

Given that inside stars, atomic and chemical reactions occur with high intensity, coupled with exceedingly high temperatures and pressures. Consequently, stars have the ability to emit a wide range of electromagnetic spectra that span across various ranges, including both the visible spectrum and the invisible one, such as Magnetic waves, X-rays, Gravitational waves, and Gamma rays.

Due to the high pressure and temperature present in the stars, photons become closely packed, their internal and external motions converge, and chained photons are generated. In other words, the chain of linked photons is created as the result of the high pressure and heat in the star. A bundle of these chained photons, like stretched hairs (called gravitational flux.), separate from the star, enter a planet, and return to the star, creating a cyclic rotation (like invisible belts that are big and strong).

On the other hand, stars have a rotational motion around their own axis. This stellar rotation imparts the ability for a star to regulate all of its planets in terms of their rotational velocities and other properties. Given this aspect, it can be expected a system with stable, uniform, and consistent rotation. As a sign, it should be noted that all the planets in the Solar System, even the Kuiper Belt, are situated at approximately the same level of the horizon around the Sun. Indeed, the steadfast and uniform rotation of a star around its axis will lead to the stable and uniform rotation of the planets orbiting around it.



References:

- [1] [Saleh, Gh. "A New Insight into the Structure and Mechanism of Gravity." *24th Eastern Gravity Meeting*. 2025.](#)
- [2] [Saleh, Gh. " A New Perspective on the Structure, Model, and Mechanism of Gravity." *41st Jim Isenberg Pacific Coast Gravity Meeting*. 2025.](#)
- [3] [Saleh, Gh. "Proving the Source of Gravity Using the Big Bang Phenomenon and Magnetic Phenomena." *APS Meeting Abstracts*. 2024.](#)
- [4] [Saleh, Gh. "Gravity and Its New, Marvelous and Revolutionary Discoveries." *Frontiers in Cosmology and Gravitational Physics 2024* \(2024\): E1.](#)
- [5] [Saleh, Gh. "Magnetic-Gravity." *TEXAS symposium 2024*. 2024.](#)
- [6] [Saleh, Gh. "New Explanation for the Source of Gravity and Its Fluxes." *APS March Meeting Abstracts*. Vol. 2024. 2024.](#)
- [7] [Saleh, Gh. "New and Fundamental Discoveries About Gravity." *APS Meeting Abstracts*. 2023.](#)
- [8] [Saleh, Gh. "A new explanation for the nature, structure, etc. of gravity in the universe." *The 84th Japan Society of Applied Physics \(JSAP\) Autumn Meeting 2023*. 2023.](#)
- [9] [Saleh, Gh. "How gravity is created, its models, structure, performance and equations, etc." *Virtual Conference on Condensed Matter Physics \(ISCMP2023\)*. 2023.](#)
- [10] [Saleh, Gh. "New Explanation for Structure of Gravity and Its Model by Using Magnetic Field Models." *23rd Eastern Gravity Meeting 2023*. 2023.](#)
- [11] [Saleh, Gh. "A New Explanation for the Structure of Gravity and Magnetic Fields." *APS Meeting Abstracts*. 2023.](#)
- [12] Saleh, Gh. "New Marvelous and Revolutionary Discoveries About Gravity." Saleh Theory, 08 Nov. 2023, <https://www.saleh-theory.com/article/new-marvelous-and-revolutionary-discoveries-about-gravity>
- [13] [Saleh, Gh. "New Calculation of Gravity Frequency in Solar Systems." *APS Meeting Abstracts*. Vol. 2021. 2021.](#)
- [14] Saleh, Gh. "New Discoveries About Gravity?!!! 2." Saleh Theory, 12 Dec. 2021, <https://www.saleh-theory.com/article/new-discoveries-about-gravity-2>
- [15] Saleh, Gh. "New Discoveries About Gravity?!!!." Saleh Theory, 07 Nov. 2021, <https://www.saleh-theory.com/article/new-discoveries-about-gravity>

