

# **A Revolution in the Design and Manufacture of Telecommunication Devices Such as Transmitters, Satellites, Receivers, Mobile Phones, and So On, Based on the Newfound Frequency of Gravitational Waves and Its Numerous Benefits (Harmless, Unlimited Connection, Impossible to Disconnect, Reducing Thousands of Satellites Into n Satellite $1 < n < 10$ , etc.) in the Universe 2025**

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Telecommunication transmitters and receivers form the backbone of modern wireless communication technologies. Transmitters generate and send electromagnetic signals that carry information, while receivers capture, amplify, and convert these signals into usable data. This process enables wireless communication of voice, video, and data across different locations.

A specific range of electromagnetic waves (radio spectrum) has long been fundamental to modern communication. However, another part of the electromagnetic spectrum (gravitational waves) has recently garnered attention from scientists, including Saleh Research Group. Due to their high penetration and minimal attenuation in complex environments, gravitational waves hold significant potential for future telecommunication systems.

Developing transmitters and receivers capable of generating and detecting these waves could revolutionise communication technology, especially in long-distance space communication, scientific exploration, and military and security applications.

In the following, we intend to consider gravitational waves within the framework of the theoretical models advanced by the Saleh Research Group, highlighting their distinctive properties and exploring their potential applications in communications and technology.

Gravity is one of the universe's most significant, powerful, and influential forces. To grasp its foundation and nature, it is better to first determine its frequency.

## **Kinetic Energy = 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:

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

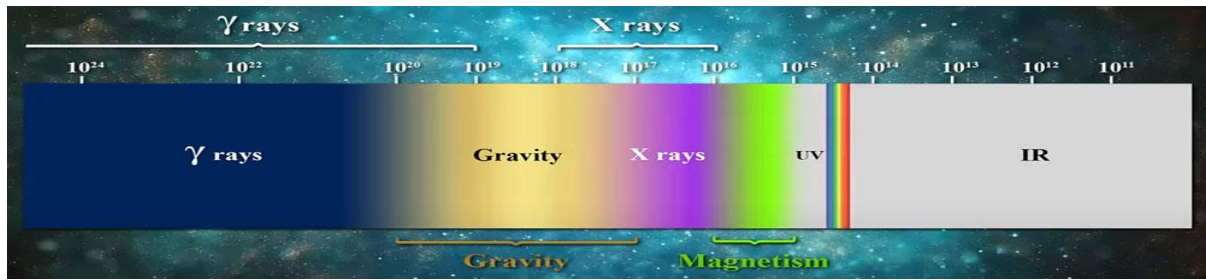
And the calculated amount of gravitational frequency between the Sun and the planets of the solar system should be as follows:

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**

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

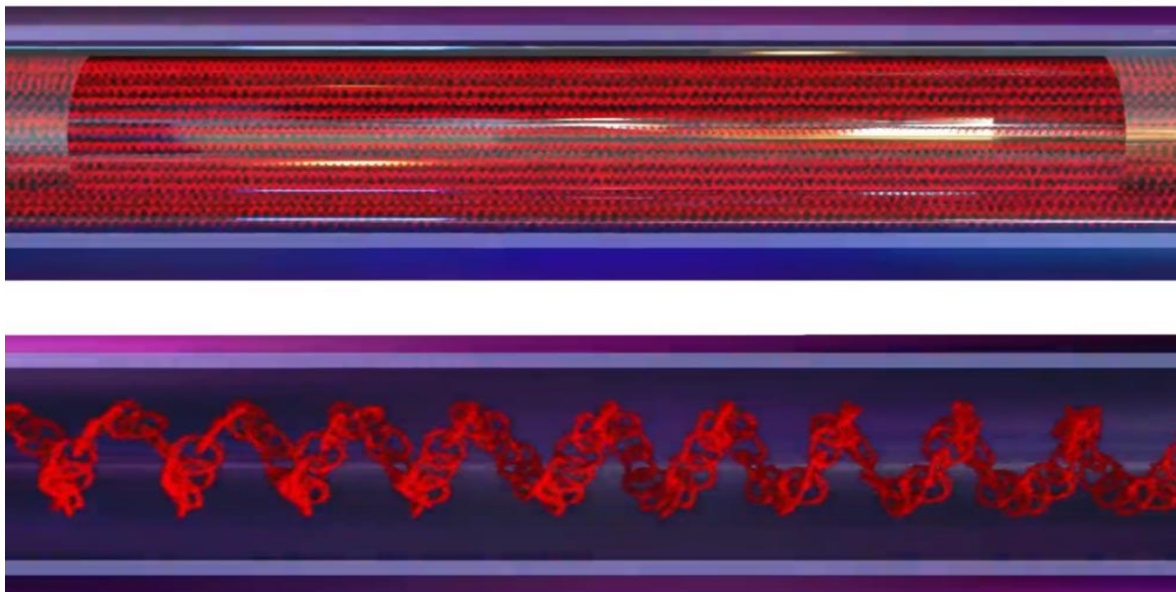




From calculations and electromagnetic spectrum charts, it can be deduced that the frequency of gravitational fluxes is lower than gamma rays and higher than X-ray waves.

### structure, model and mechanism of gravity

Since the photon is the fundamental building block of the universe and every structure is composed of photons, the nature of gravitational waves is also rooted in photons. Its structure is based on the motion of photons. In gravitational waves, photons are separated from stars by the gravitational effects of planets, causing their external motion to intertwine with their internal motion or their superstring state, forming a continuous series of photons. In fact, it can be said that in the solar plasma environment, the external motion of a photon converges with its internal motion, leading to converging photons that form a single superstring structure interconnected in a ring-to-ring pattern that travels between the star and the planet (Figure 3). Along the linear direction, the gravitational fluxes are steady and firm; in the perpendicular direction, they exhibit curvature.



**Figure 3. Photons are interconnected in a ring-to-ring pattern and travel between stars and planets.**

It should be noted that in nature, photons are produced only in stars. Sometimes they become visible photons, or radiant photons, and other times they are intertwined photons, or gravitational photons. Photons with a frequency below the visible spectrum are called infrared, while those with higher frequencies are called ultraviolet. In fact, gravitational waves are electromagnetic



photons with a special property of continuity.

### **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 a 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).

### **Explanation and calculation of the amount of gravitational wave energy**

Given that the kinetic energy of the planets has the following relation to the gravitational energy:

$$E_k = \frac{1}{2}mV^2 = nh\nu$$

It can be concluded that the passing energy through the Earth's surface is as follows:

$$\frac{1/2 mv^2}{4\pi r_e^2} = \frac{2.3 \times 10^{34}}{5.1 \times 10^{14}} = 5 \times 10^{19} \text{ J/m}^2$$

This is actually the passing gravitational wave energy through the Earth's surface in one square meter. It should be noted that this energy is so large and so efficient. If it can be utilised, affordable, clean, and everlasting energy can be produced everywhere and at any time.

Here are the advantages and applications of gravitational waves:

#### **A) No Dead Zone**

Because of their high energy, these waves can pass through any object, so no point in the universe can obstruct their path, meaning no area is out of their reach.

#### **B) High Frequency Ability**

Due to their high frequency, these waves can easily penetrate hundreds of storeys below ground and hundreds of storeys above ground, allowing receivers to stay connected to satellites at all times.

#### **C) Global Coverage with Fewer Satellites**

To provide radio or video coverage across the entire globe, instead of hundreds of thousands





(like Starlink), we can use just one to ten gravity satellites.

#### **D) Connectivity in Any Condition**

Satellite transmitters and receivers, and terrestrial transmitters and receivers that operate using gravity waves can always connect, in any condition, at any time or location. For example, during severe weather conditions such as clouds, storms, rain, and snow.

#### **E) Harmless Gravitational Waves**

Although gravitational waves have higher frequency and energy, their unique structure, composed of continuous, chain-like photons, means they cause no harm to human body tissues, much like the gravity waves already present on Earth.

#### **F) Instantaneous Communication Between Earth and Space**

Due to the continuity of gravitational waves, information is transmitted at a very high speed, making it an ideal means of communication for spacecraft, space stations, and even Mars.

Here are some other applications of gravitational waves in a list format:

- A) Production of wrist-mounted gravity mobiles.
- B) Production of gravity televisions and gravity satellites.
- C) provision of images with a quality of 20k and even higher.

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