

# In the Wow! Signal, the Theory of Everything is Encoded

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**Abstract:** The Scale-Symmetric Theory (SST) leads to conclusion that in the Theory of Everything (ToE) most important are the phase transitions of the SST inflation field, the Planck constant and neutrinos. Here we show that these elements are encoded in the Wow! signal.

## 1. Introduction

The Wow! signal was a radio signal received on August 15, 1977, by Ohio State University's Big Ear radio telescope [1]. Most of its operation was in the 21-cm radio band. The receiver covered an 8-MHz bandwidth from 1411 to 1419 MHz.

We claim that in reality, the signal consists of two parts i.e. of the very well known sequence "6EQUJ5" and a sequence of numbers immediately after it, i.e. 01100100 [1]. The second part consists of the low-value signal-to-noise ratios and serves to confirm the correctness of the ratios for the 6, E, Q, U, J and 5.

The string of numbers and characters "6EQUJ5---01100100" we see in channel 2 of the printout [1]. I assume that the end of the string/sequence, i.e. the last zero, is pointed by the cipher 1 in channel 1 [1].

The signal-strength sequence "6EQUJ5" in channel 2 of the computer printout represents the following sequence of signal-to-noise ratios [1]:

6 → 6 (up to 7)

E → 14 (up to 15)

Q → 26 (up to 27)

U → 30 (up to 31)

J → 19 (up to 20)

5 → 5 (up to 6)

The intensity received (for example, "E") means that the signal was  $14.5 \pm 0.5$  times stronger than the background noise.

Here we try to show that the Wow! signal was emitted by an Extra-Terrestrial Intelligence (ETI) and that the ETI monitor the Earth.

## 2. Correctness of the signal-to-noise ratios for 6, E, Q, U, J and 5

We can assume that the second part of the string, i.e. the part composed of the zeros and ones, i.e. the part composed of the low-value signal-to-noise ratios: “01100100”, shows whether we correctly measured the ratios of intensities for the main part “6EQUJ5”. We know that in the binary system, the sequence 01100100 represents number 100. On the other hand, the sum

$$6 + E + Q + U + J + 5 \rightarrow 6 + 14 + 26 + 30 + 19 + 5 = 100$$

is equal to 100 also. It leads to conclusion that measured ratios for “6EQUJ5” are correct.

## 3. The phase transitions of the SST inflation field are encoded in the Wow! signal

The phase transitions of the SST inflation field show that there are five levels of Nature: the SST Higgs field composed of the non-gravitating tachyons (they have 6 degrees of freedom), the spin-1 entanglons which are responsible for the quantum entanglement (10 degrees of freedom), the Einstein spacetime composed of the neutrino-antineutrino pairs (26 degrees of freedom), the cores of baryons (58 degrees of freedom) and the Protoworld (122 degrees of freedom) which evolved into the normal and dark matter [4]. The formula for the five degrees of freedom is as follows

$$N = (\text{absolute value of}) 8 \cdot (2d - 1) + 2,$$

where  $d$  are the Titius-Bode numbers:  $d = 0, 1, 2, 4, 8$  for the five levels of Nature [4]. We obtain respectively 6, 10, 26, 58 and 122.

Notice that the sum of all degrees of freedom is

$$6 + 10 + 26 + 58 + 122 = 222$$

We can separate the main part “6EQUJ5” into the part containing the signal-to-noise ratios with increasing values (i.e. the four first symbols 6, E(14), Q(26) and U(32)) and the part containing the decreasing values (i.e. U(32), J(19) and 5). The second part “UJ5”, by an analogy to Paragraph 2, we will use to check whether we correctly deciphered the first part “6EQU”. Emphasize that the character U belongs to both parts i.e. to “6EQU” and “UJ5”.

To obtain the deviation 0.5, we must apply following formula

$$(\text{up-value} - \text{down-value}) / 2,$$

for example,  $(7 - 6) / 2 = 0.5$ . We can see that there is subtraction and, next, division.

To the listed above parts, we can apply formula with the inverse operations, i.e. summation and, next, multiplication

$$(\text{down-value} + \text{up-value}) \cdot 2$$

For the part “6EQU” is

$$6 \rightarrow (6 + 7) \cdot 2 = 26$$

$$E \rightarrow (14 + 15) \cdot 2 = 58$$

$$Q \rightarrow (26 + 27) \cdot 2 = 106 \text{ which means } 10 \text{ and } 6$$

$$U \rightarrow (30 + 31) \cdot 2 = 122$$

The correctly deciphered sum for “6EQU” is:  $6 + 10 + 26 + 58 + 122 = 222$ .

For the part “UJ5” is

$$U \rightarrow (30 + 31) \cdot 2 = 122$$

$$J \rightarrow (19 + 20) \cdot 2 = 78$$

$$5 \rightarrow (5 + 6) \cdot 2 = 22$$

The sum for “UJ5” is:  $122 + 78 + 22 = 222$  also so the separation of the 106 into 10 and 6 in the decoded “6EQU” is correct.

We can see that the degrees of freedom are indeed encoded in the Wow! signal. Moreover, the degrees 6 and 10 (which according to SST concern the superluminal objects only [4]) are distinguished.

#### 4. Some distinguished dates

The Planck constant appeared in 1900.

Consider the numbers 22, 78 and 122 that follows from decoding the part “UJ5”:

$1900 + 22 = 1922$  (the Nobel Prize for N. H. D. Bohr – we should read it as follows: In our Cosmos, there dominates the atom-like structure i.e. a core and orbits/shells around it).

$1900 + 78 = 1978$  (the election of Pope John Paul II i.e. 16-10-1978 – we should read it as follows: Religion for an Extra-Terrestrial Intelligence is very important).

$1900 + 122 = 2022$  (? – an abbreviation of it is 222 so the date will be associated with the phase transitions of the inflation field).

We can apply following formula

$$1900 + (\text{down-value} + \text{up-value}).$$

For elements of the “6EQU” we obtain:

$$6 \rightarrow 1900 + (6 + 7) = 1913 \text{ (in this year, the Bohr's theory of atom appeared)}$$

$$E \rightarrow 1900 + (14 + 15) = 1929 \text{ (the Hubble's law for the expanding Universe appeared)}$$

$Q \rightarrow 1900 + (26 + 27) = 1953$  (Iosif Shklovski is noted for his suggestion that the radiation from the Crab Nebula is due to synchrotron radiation; there is a helium-rich torus – the tori with different sizes appear in the phase transitions of the inflation field).

$$U \rightarrow 1900 + (30 + 31) = 1961 \text{ (Yuri Gagarin: First Man in Space)}$$

The above dates we should read as follows. The atom-like structure and evolution of the Universe are very important. We should explain structure of the torus in the Crab Nebula and influence of the supernova explosions on the Earth.

### 5. The strong interactions

Consider the sequence 0---5J

$$0--- \rightarrow 0.$$

$$5 \rightarrow (5 + 6) = 11$$

$$J \rightarrow (19 + 20) = 39$$

The above three numbers as a whole give 0.1139. The SST shows that when we take into account the strong-weak interactions only (i.e. we neglect the weak interactions, especially the production of the  $Z$  bosons) then there appears at very high energies an asymptote for the coupling constant for the strong-weak interactions. Value for the asymptote is  $\alpha_{\text{strong}}(E \rightarrow \infty) = 0.1139$  [4].

### 6. The Wow! signal leads to the mixing angles derived within the SST

Here we show that the changing intensity of the signal leads to the PMNS neutrino-mixing matrix with the mixing angles derived within the Scale-Symmetric Theory (SST) – their ratios are 4 : 5 : 1 (the SST parameters [2] overlap with the intervals defined by experiments [3]).

The intensity variation of the radio signal over time we can roughly fit with a Gaussian function [1]. Then, the 6, E and Q lie on the increasing part of the function whereas the U, J and 5 lie on the decreasing one. It suggests that following pairing is possible (from up to down of the Gaussian function): QU, EJ and 65. Differences in the signal-to-noise ratios for the components of the pairs are as follows:

$$U - Q \rightarrow 30 - 26 = 4$$

$$J - E \rightarrow 19 - 14 = 5$$

$$6 - 5 = 1$$

The ratios of the differences in the signal-to-noise ratios are

$$(U - Q) : (J - E) : (6 - 5) = 4 : 5 : 1$$

On the other hand, the PMNS matrix is parameterized by three mixing angles. We can arrange the mixing angles because of the indicators:  $\Theta_{12}$ ,  $\Theta_{23}$  and  $\Theta_{13}$ . In the SST, their ratios are [2]

$$\Theta_{12,\text{SST}} : \Theta_{23,\text{SST}} : \Theta_{13,\text{SST}} = 4 : 5 : 1 \text{ (i.e. } 33.0616^\circ : 41.3250^\circ : 8.2654^\circ)$$

Table 1. *Mixing angles from experiments* [3]

Mixing angle	Mixing angles [ $^\circ$ ]; 3 $\sigma$ ; Normal Ordering [3]
$\Theta_{12}$	31.42 – 36.05
$\Theta_{23}$	40.3 – 51.5
$\Theta_{13}$	8.09 – 8.98

The experimental  $3\sigma$  allowed ranges of the 3-neutrino oscillation parameters, derived from a global fit of the current neutrino oscillation data [3] are collected in Table 1.

It is very important that the Wow! signal leads to the SST results.

### 7. The Wow! signal leads to the Planck constant

Rank the signal-to-noise ratios from the largest to the smallest

U, Q, J, E, 6, 5  $\rightarrow$  30, 26, 19, 14, 6, 5

Let's consider the differences between the signal-to-noise ratios arranged from the largest to the smallest

4, 7, 5, 8, 1

or arranged from the smallest to the largest: 1, 8, 5, 7, 4

The ciphers 4 and 7 lead to  $_{19}47$  (date of M. Planck's death).

The ciphers 5 and 8 lead to  $_{18}58$  (date of Planck's birth).

The ciphers 1 and 8 lead to  $_{19}18$  (date in which the Nobel Prize for quantifying the radiation of a black body was awarded (received in 1919) to Max Karl Ernst Ludwig Planck).

Notice that the first ciphers, i.e. 4, 5 and 1, are the same as the ratios of the neutrino-mixing angles.

The three dates suggest that the Earth is monitored by an ETI.

### 8. Summary

Why the Wow! signal points the Planck constant and neutrinos? Why not some other fundamental physical constant or constituents of atoms? Why the Wow! signal points the phase transitions of the SST inflation field?

According to SST, the Planck constant appeared as the first physical constant at the beginning of the SST inflation [4]. There were created from the components of the inflation field the spin-1 binary systems of closed strings (the entanglons) which are responsible for the quantum entanglement [4]. Next, there appeared neutrinos which are built of the entanglons [4]. Neutrinos are the lightest gravitating objects [4]. Photons and gluons are carried by binary systems of neutrinos whereas all other gravitating particles are built of the binary systems of neutrinos [4] – it is the reason that the Wow! signal points the Planck constant and neutrinos i.e. points the most fundamental physical constant and the fundamental gravitating particle. But most important in the Theory of Everything (the foundations of ToE) are the phase transitions of the SST inflation field so they should be and are encoded in the Wow! signal.

There is something else but I will describe it later. It concerns

- the sum of the indicators:  $12 + 23 + 13 = 48$ ,
- the sum of the differences in the signal-to-noise ratios:  $4 + 5 + 1 = 10$ ,
- and the number 16 that results from the differences in the signal-to-noise ratios as well.

There is as well the second interpretation of the sequence of numbers (01), (85), (74) and the sequence 3-9, 11.

The 335P/Gibbs comet was proposed as the source of the Wow! signal because the three objects, i.e. the source of the Wow! signal, the 335P/Gibbs and the Tau Sagittarii (the star), were placed near the some direction [5].

The 335P/Gibbs is a comet which will be in perihelion in August 12, 2022 [6] i.e. 45 years after the August 15, 1977 Wow! signal. On the other hand, we showed here that something

associated with the signal will happen in 2022 so it means that probably an emitter placed by an ETI on the 335P/Gibbs was in 1977 and will be in August 2022 the source of some Wow! signals.

But why the 1977 Wow! signal was not emitted when 335P/Gibbs was in perihelion (its last orbital period will be 6.77 years [6])? A probable explanation is that the ETI tried to show us the direction to their home i.e. the direction towards the Tau Sagittarii. Probably the ETI can communicate with an apparatus on the 335P/Gibbs comet. Should we send a message towards the comet or land on it to obtain important information concerning science and/or advanced technologies?

Notice also that

$$1687 \text{ (first edition of the Newton's Principia) } + 335 \text{ (335P/Gibbs) } = 2022$$

Maybe a transmission will concern gravitation?

### References

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The International Astronomical Union (IAU); Minor Planet Center