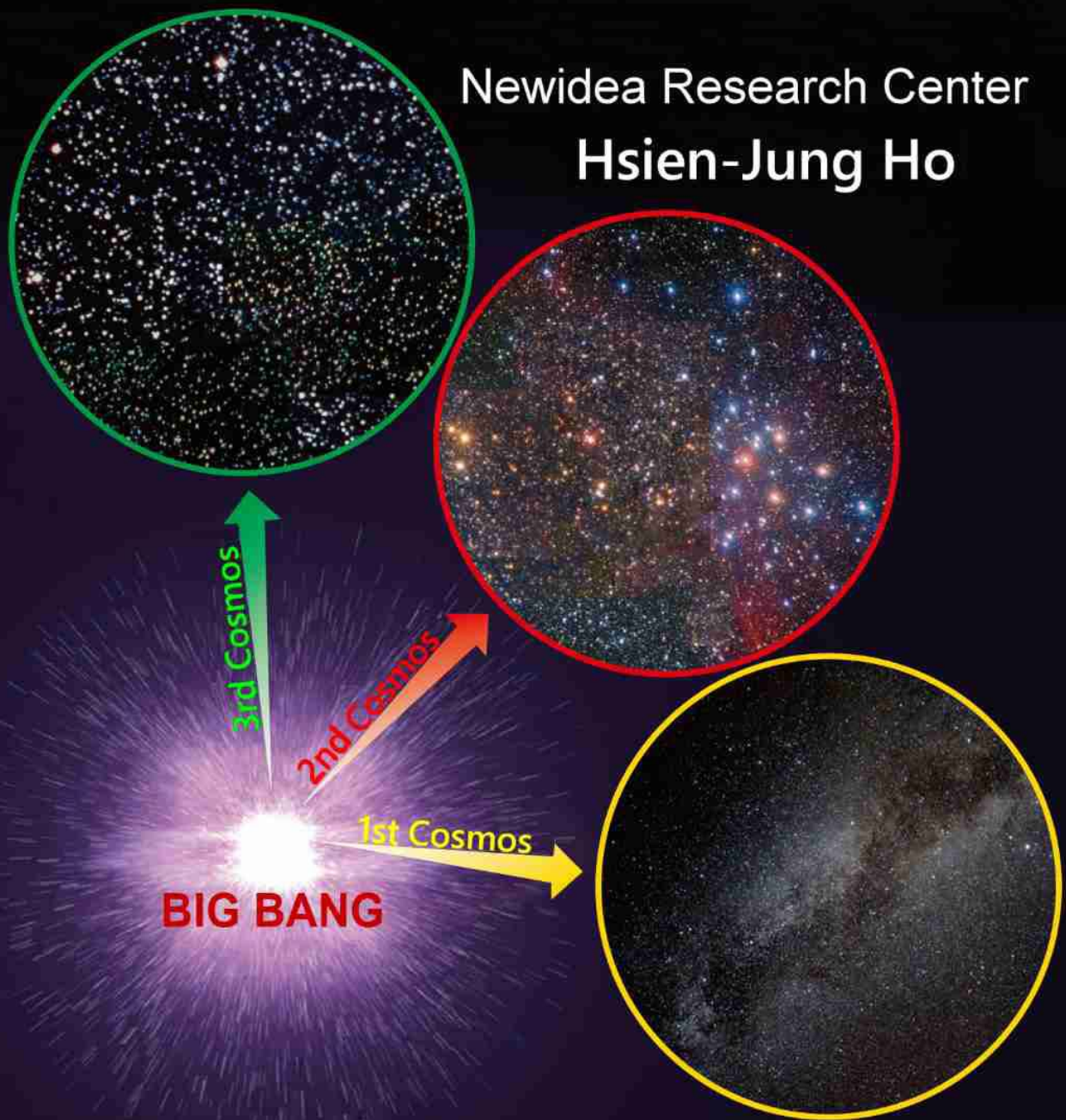


There Is 3-Cosmic Framework In The Universe

— *Including Dark Matter And Dark Energy*

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Breaking the bottleneck of research in Astrophysics & Geophysics

The 3-Cosmic Framework of the Universe — Including Dark Matter and Dark Energy

PREFACE

Cosmology has two long-standing models that are completely opposites: the Aristotle model and the Platonic model. The Aristotle model holds that physical reality is the source of the world, and that mathematics is only a useful tool for an approximate description of physical reality. The Platonic model holds that purely mathematical structures are truly "real" and that all observers can only perceive physical reality imperfectly. The earliest human development sciences were all derived from observing physical phenomena and then deducing mathematical theorems; For example, Newton saw an apple fall from a tree and deduced the law of universal gravitation, which is Aristotle's model. But the rapid development of modern science has created many new mathematics. Theoretical physicists lean toward Platonic school, and mathematical structures such as mathematical equations, or more generally, numbers, vectors, geometric figures, etc., can describe our Universe with incredible realism. They wonder why mathematics describes the Universe so perfectly because it is born mathematical, and all physics comes down to a fundamental mathematical problem. But for the Aristotle school, this question is meaningless, because the physical origin of the Universe is what we observe, not only can the Platonic school avoid it, but it is confused as to why it cannot be something else.

If the Universe is inherently mathematical, why is it based solely on the "that one" mathematical structure? Be aware that mathematical structures are diverse. But modern theoretical physicists believe that any compatible physical theory can be expressed as some kind of mathematical structure. Since so many solutions cannot be selected under the framework of String theory which one is particularly good, the Universe corresponding to each solution will exist. It's just that the laws and constants of physics in our Universe happen to be in our current state, and as a result, "people" are produced, and then only anyone will think of such a thing; Other cosmoses are not, this is "Anthropic Principle". Therefore, excluding parallel Universes or multiple Universe (multiverse) that we cannot see also needs to be in line with humanistic principles, which is the scope of our discussion. Therefore, our Universe also needs to conform to the Anthropic Principle, which is the scope of our discussion.

Scientists use academic discourse to explore scientific problems, and rarely take some of the deeds that have happened in our world as research information; In particular, the Platonic theoretical physicists' study of the multiverse is the most classic. However, the existence of the multiverse, although the deduction of mathematics has made the public know that there is such a thing, but for a long time only by astronomical observation, there are rare clues to be found, and there is still no way to do anything. I personally challenge this purely academic approach, follow the "Anthropic Principle", and start to study separately, and explore the space of the Universe from the perspective of what happened in the human world, or could find a way out.

Today's scientific development has reached a very high level, but in the natural sciences, research still encounter bottlenecks. The problems posing the greatest headache for scientists lay with dark matter and dark energy.

Dark matter of the Universe is a hypothetical form of matter, which puzzles scientists about 100 years and no solution yet. Most experts think dark matter is abundant in the Universe and has had a strong influence on its structure and evolution. In the observable Universe, there is no indication that the Universe is expanding

at an accelerating rate, and cosmologists have hypothesized the existence of some unknown "dark energy" to explain this phenomenon.

In 2018, after the Planck satellite probe observed the cosmic microwave background radiation (CMB or CMBR), scientists deduced that the Universe is composed of less than 5% of normal matter, such as planets, stars, asteroids, and gases, etc., the remaining 95% is dark matter and dark energy, of which dark matter that does not radiate or absorb light accounts for about 27%, and dark energy accounts for about 68%. Scientists believe that dark energy is the force that tears the Universe apart, but dark matter condenses all things, and that the interaction of these two forces forms the structure of the Universe, as we know it today.

As long as we can understand the assembling speed of the galaxy, we can understand dark matter, also understand the power of dark energy tearing the Universe at the same time. Therefore, dark matter may be the best tool to study dark energy in the end. To understand dark matter now, I will probably get an answer from the most famous "String Theory".

String Theory is based on a ten-dimensional spacetime that is considered to universally exist. According to "Causality", an effect cannot occur before its cause, which means time has a direction and cannot be divided into some different parts. So one-dimensional time is taken as a common standard in order of events in the Universe. Following the "Anthropic Principle", which is the simple fact that we live in a Universe set up to allow our existence, three-dimensional space and one-dimensional time are taken as one cosmos as our living world. Therefore, the nine-dimensional space can be divided into three portions, and each portion has a common time standard, which means that there is a 3-cosmic framework in the Universe, called the multiverse.

In the multiverse, among any other world, there are no basic interactive forces of nature except gravity, i.e., the graviton in the field of gravity can penetrate all the cosmoses; however, the light cannot. So dark matter may be situated in the cosmoses other than ours; in other words, the multiverse can contain dark matter. The best method of exploring dark matter is to start from Earth where we live.

In the current Earth model utilized in seismological investigations, such as body-wave travel times, surface-wave dispersion, and free oscillation periods for researching the chemical composition and the density distribution of the Earth, one can analyze some data of Earth. According to the characteristics of Earth's interior, equitably examining its constitution, composition, density, and pressure from a different view of the core, the special arguments are put forward. It is inferred that the solid rock and the molten rock or the magma change states interactively at the CMB. According to this model, the chemical compositions are similar in both sides of the CMB, and the curve of density distribution is continuous.

In the low viscosity F-layer of the outer core, the high temperature causes some elements and oxides of magma to undergo oxidation-reduction reactions and separate due to its gravity. The great amount of heat is produced from chemical reactions in the F-layer and radioactive element generated nuclear energy in the Earth's interior which serves as the main power source for the geo-dynamo of the great convection cell. It is the great convection cell that the flow of the magma and the solid or molten rock migrating up to the crust and down across the CMB to the lowermost F-layer of the outer core.

Based on the new conception and applying a simplified method, we apply the different density distribution curves of the model in the core to calculate the data of Earth and then compare it with the existing current data of Earth. The insufficient mass and moment of inertia are the missing matter which are taken as the parts of dark matter, and then a suitable new Earth model is developed. Apply the simplified method to

evaluate the Earth's mass and moment of inertia, which are found to be only 85.73% and 94.82% respectively of the current data.

By the two insufficiencies of Earth's mass and moment of inertia, formulating the reasonable assumptions, a dark planet inside the earth has been figured out, then calculate gravity and pressure in every depth within the Earth to check suitability or not. Finally, a planet of dark matter, called dark planet, with a radius of 3700.375 km, about 1.33 times of Mars, is reasonably inside the Earth in the extra dimensions of space other than ours. The new Earth model may be confirmed from Chandler wobble, and then some great scientific problems, such as: dark matter, dark energy, and the constitution of Earth's interior etc., have been roughly solved. The 3-cosmic framework of the Universe is roughly established.

To research dark energy, we apply the eight data of cosmological parameters of Wilkinson Microwave Anisotropy Probe (WMAP) results and Planck Satellite results from 2003 to 2018 for 15 years, to form a table of cosmological parameters from WMAP and Planck Satellite. In the table, the value of dark energy density decreases gradually 4.8%, but the total matter density increases gradually 4.8%. The dark energy loss is equal to the increase of total matter that is consistent with the Big Bang Theory.

We may imagine that at the first moments of the Big Bang, the full energy (100% energy) of the Universe gradually transforms, and after 13.8 billion years, there remains 68.42% energy, which is called dark energy, and 31.58% has been converted to matter. According to the Big Bang Theory, we should take the current dark energy as the residual energy of the Universe after the Big Bang.

According to the table, cold dark matter density increases gradually 4.3%, and baryon density in our cosmos increases gradually only 0.5%. Because matter transforms from energy after the Big Bang, the baryon density increasing value is very small, which indicates energy in our cosmos is so poor that we can label ours the low-energy-density cosmos. On the contrary, the dark matter density increasing value is so large that we can label the other cosmoses as the high-energy-density cosmoses.

Under the 3-cosmic framework of the Universe, the rate of expansion in the high-energy-density cosmoses will be much higher than that of a low-energy-density cosmos as ours. When the high-energy-density cosmoses expand more rapidly than our cosmos, its matter (i.e., dark matter) will expand at the same pace, which will use gravity to drag on the stars of our cosmos away at an accelerated pace, the pulling effect of which causes us to view an accelerating expansion of our cosmos.

Although the 3-cosmic framework of the Universe and the model of the Earth have been already deduced in this book, i.e., the 3-cosmic framework of the Universe can hold dark matter and dark energy, that is only a preliminary outline. I hope that this can server as the brick thrown to lead the jade, receive the approbation of other scientists, so that talented persons of younger generations will more thoroughly research this topic, with the most rigorous mathematics to interpret, and then use the latest technology to test the truth of the Universe.

Newidea Research Center

Asien-Jung Ao

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CONTENT

PREFACE 4

CONTENT 11

Chapter 1. The Universe is full of dark matter 14

The Universe is full of invisible objects 15

Dark matter does exist and is full of the Universe 17

Dark matter is formed by the type of cold dark matter model 19

Most baryons in the Universe are missing 20

Detecting residual cosmic radiation heat reveals many invisible objects 22

Chapter 2. conjectures and observations of dark matter 25

Interpretation and detection of dark matter in astrophysics 26

The dark matter records of astronomical observation in the Solar System 27

1. From old data of Comet Halley's period scientist predicted an invisible planet X 27

2. A proposed dark planet X may affect the motion of Neptune and Uranus 28

3. Pioneers 10 and 11 were pulled back to the direction of the Sun 29

The existence of the dark matter in the Universe 31

1. An invisible companion star of Cygnus X-1 may be a dark matter 31

2. Dark matter may be in Hyades supercluster 32

Chapter 3. Field theories of microscopic and macroscopic worlds 34

The space-time of human activity is four dimensions 35

The general profile of String Theory 36

Unified field theory 42

Supersymmetry Theory intervenes 45

Introduction to Superstring Theory 49

Space-time of Superstring Theory 50

Superstring Theory was ruled out 52

Chapter 4. The spacetime of String Theory in the Universe 54

Based on String Theory the Universe is a framework of 10-dimensional space-time 55

9-dimensional space of the Universe is no way to break down into 3 dimensions 57

Scientists suggested extra dimensions of space just like our ordinary 3-dimensional view 58

According to inflation theory the Universe can become a multiverse 59

Scientists devised a theory of the multiverse 60

The Universe should be 3-cosmic framework from Causality and Anthropic Principle 62

Chapter 5. Compact objects of the other cosmoses are all our dark matter 65

The multiverse can contain dark matters 66

Compact objects of the other cosmoses are pulling stars of ours accelerating expansion 67

The CMB cold spot may be first hard evidence for multiverse 68

Chapter 6. Exploring dark matter from the geophysics 72

Discrepancies in the normal structure of the Earth 73

Arguments on the topic of the CMB 76

1. The CMB is the boundary of Ramsey's phase-change not silicates and iron core interface 77.

2. Bulk modulus keeps constant that density distribution should be continuous at the CMB 77

3. Seismic reflection amplitudes show only a phase-change at the CMB 78

4. The outer core is mainly composed of iron that is just an assumption 79

There were two different views in the CMB 79

The proportion of the quantity of iron in the core is not reasonable 80

Chapter 7. Study on structural model of the Earth in the CMB 82

Subjects of the model of thermal plume and plate tectonics still cause much debate 83

The heat flow of the Earth's interior is energized by the heat emitted from the core 85

The heat flow is estimated in the interior of the Earth 87

The topographic map of CMB shows a height difference of more than 10 kilometers 89

The CMB topography reveals both sides may be the same materials 93

Platinum coming all the way from the core to the ground shows a single convection cell 96

A natural nuclear fission reactor was found near the Earth's center 98

An 8 km diameter natural fission reactor at the Earth's center generates the fission heat 100

Chapter 8. There are some different perceptions in the core 102

The heat flow of the outer core generates the geomagnetic secular variation 103
The heat flow of core becomes the geo-dynamo of great convection cell 105
The inner core should not be a rigid sphere 107
There are some arguments at the inner core boundary 111
Scientists suggested the density jump at the ICB 115
The great convection cells make the CMB topography 117
Oxidation-reduction reactions take place in the F-layer of the outer core 118

Chapter 9. Based on the new Earth model calculates the Earth's data 123

A simplified method is applied to calculate the data of the Earth 124
Insufficient numerical values are calculated from proposed curves of density in the core 128
The gravity center of dark planet should coincide with the Earth 131
To calculate the data of dark planet inside the Earth 132
Comparing the gravity and the pressure of the new Earth model with the PREM 134

Chapter 10. The new Earth model develops a dark planet inside the Earth 138

The new Earth model can explain a dark planet in the cosmos other than ours 139
The dark planet should be proved by Chandler wobble 140
The new try can break the bottlenecks of research in geophysics and astrophysics 142

Chapter 11. The Universe fits in with the Big Bang Theory 143

There are 2 models of the Universe 144
The nascent Universe after the Big Bang 145
The spacetime of the Big Bang Theory 147

Chapter 12. The Universe is always accelerating expansion 149

Red shift light denotes galaxies of the Universe expansion 150
Measuring the brightness of Cepheid variable stars found the expanding Universe 151
Observing type Ia supernovae found the accelerating expansion of the Universe 153
Acceleration of the Universe expansion is thought dark energy existing 156
Dark matter and dark energy dominate the fate of the Universe 157

Chapter 13. Dark energy is the current residual energy in the Universe 160

Dark energy should be the residual energy of the Universe after Big Bang 161
The 3-cosmic framework of the Universe can hold dark energy 163
The Universe will collapse in a "Big Crunch" due to the gravity 164
Dark matter drags our cosmos expansion at an accelerated pace 165
Ending 166

REFERENCES 167

SUBJECT INDEX 188

APPENDICES 193

Table 2. The calculated data of the PREM from the simplified method. 193
Table 4. The pressure of the PREM and the deviation E from the calculated pressure P of the simplified method. 195
Table 7. The data of the Earth planet in the new Earth model. 196
Table 8. The data of the dark planet in the new Earth model. 197
Table 9. The overall data calculation table for the new Earth model. 198

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The 3-Cosmic Framework of the Universe — Including Dark Matter and Dark Energy

Based on String theory, there is a 3-cosmic framework of the Universe, which has triple cosmoses in the whole of space that can find a dark planet, about 1.33 times the mass of Mars, located inside the Earth, but in the other cosmos than ours. Based on the data of the cosmological parameters from the first year of WMAP observations to the Planck satellite observations in 2018, it can be speculated that the current dark energy should be taken as the residual energy of the Universe today after the Big Ban. Due to the rapid expansion of other high-energy-density cosmoses, its dark matter should exert a gravitational pull on the stars of our low-energy-density cosmos that causes the effect of accelerating the expansion of our cosmos.

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