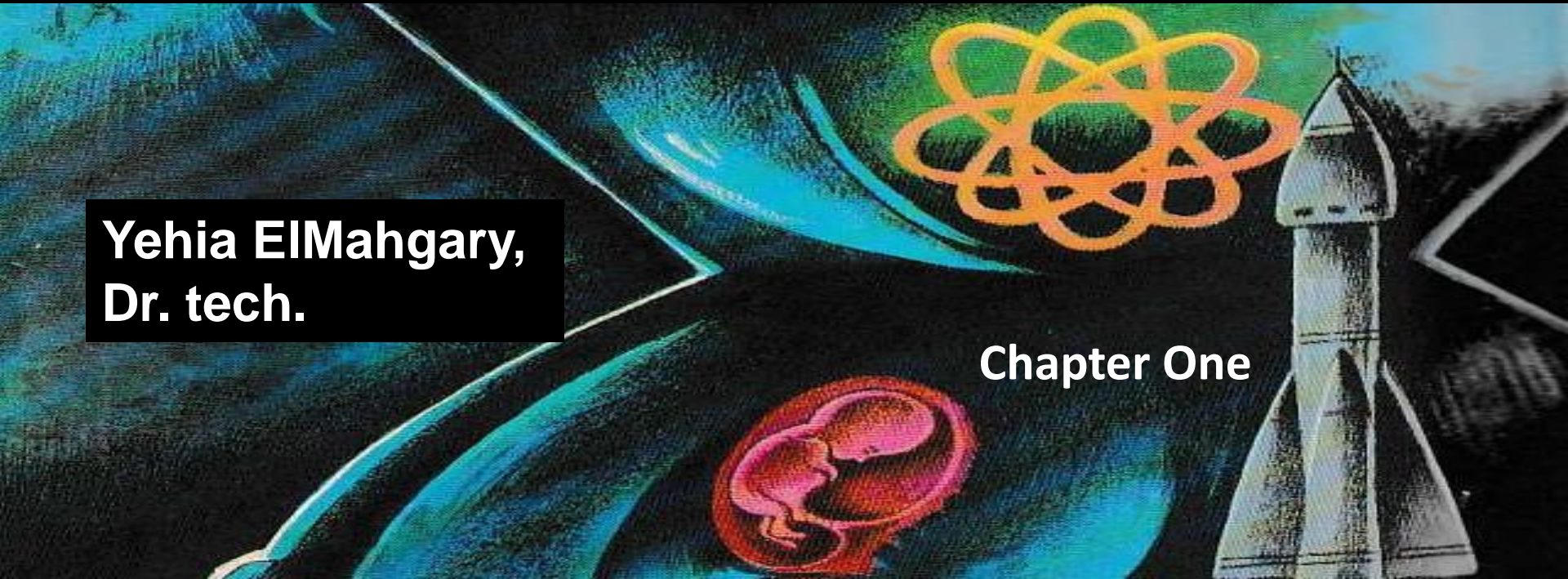


VERSES OF QUR'AN IN THE NICHE OF SCIENCE

**Yehia ElMahgary,
Dr. tech.**

Chapter One

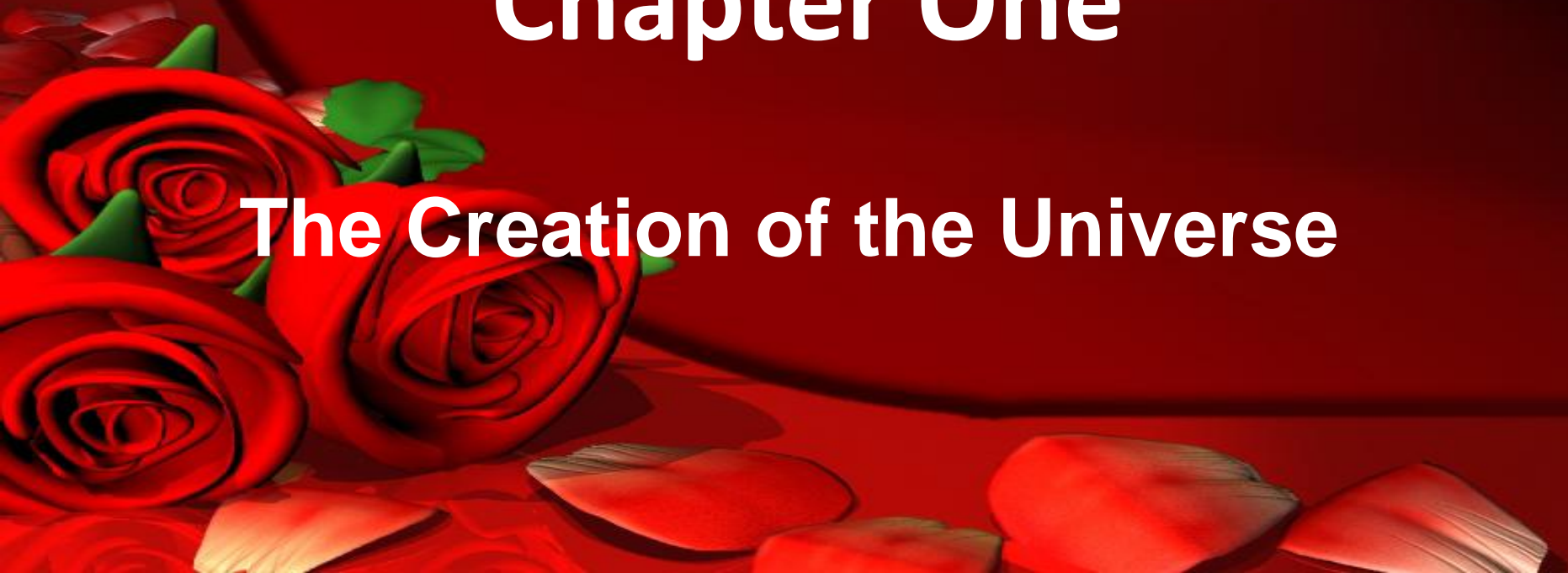


بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

IN THE NAME OF ALLAH THE MOST GRACIOUS THE MOST MERCIFUL

Chapter One

The Creation of the Universe



“The Qur'an Verses”

• **أَوْ لَمْ يَرَ الَّذِينَ كَفَرُوا أَنَّ السَّمَوَاتِ وَالْأَرْضَ كَانَتَا رَتْقًا فَفَتَقْنَاهُمَا (الأنبياء 30)**

• **Have not those who disbelieve known that the heavens and the earth were joined together as one united piece, then We parted them? (21/30)**

• **وَالسَّمَاءَ بَنَيْنَاهَا بِأَيْدٍ وَإِنَّا لَمُوسِعُونَ (الذاريات 47)**

• **With power did We construct the heaven. Verily We are able to extend the vastness of space thereof” (51/47)**

• **إِنَّ اللَّهَ يُمْسِكُ السَّمَوَاتِ وَالْأَرْضَ أَنْ تَزُولَا وَلَئِن زَالَتَا إِنْ أَمْسَكَهُمَا مِنْ أَحَدٍ مِّن بَعْدِهِ (فاطر 41)**

• **“Verily Allah grasps the heavens and the earth lest they should move away from their places, and if they were to move away from their places, there is not one who could grasp them after Him” (35/41)**

• **يَوْمَ نَطْوِي السَّمَاءَ كَطَيِّ السِّجِلِّ لِلْكُتُبِ كَمَا بَدَأْنَا أَوَّلَ خَلْقٍ نُّعِيدُهُ وَعَدَا عَلَيْنَا إِنَّا كُنَّا فَاعِلِينَ (الأنبياء 104)**

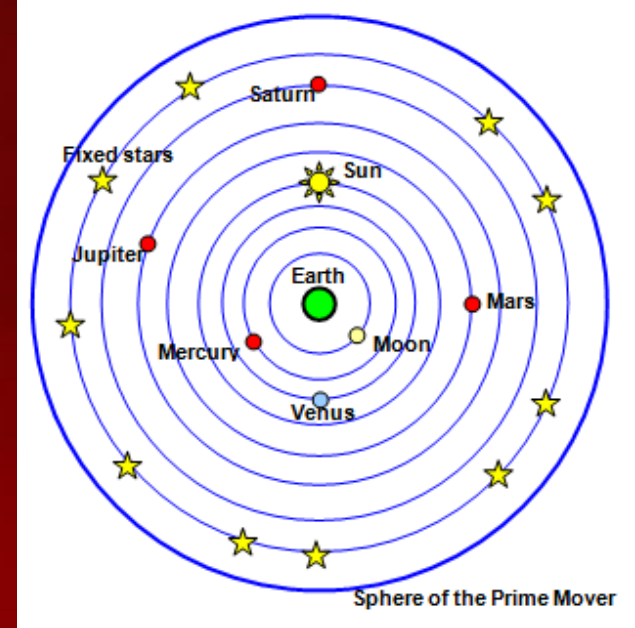
• **And (remember) the Day when we shall roll up the heaven like scroll rolled up for books. As We began the first creation, We shall repeat it. (it is) a promise binding upon Us. Truly, We shall do it” (21/104)**

1. Brief history of Universe Theories

Aristotle's Model

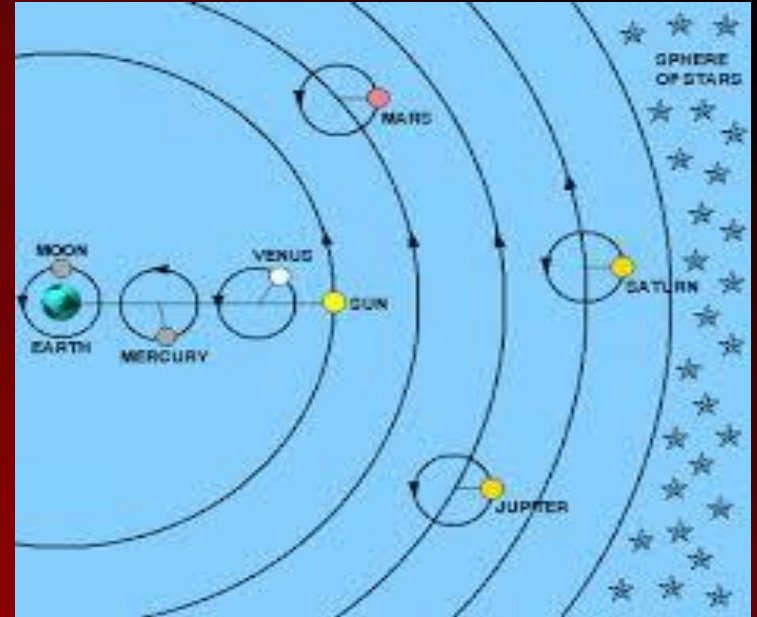


1)



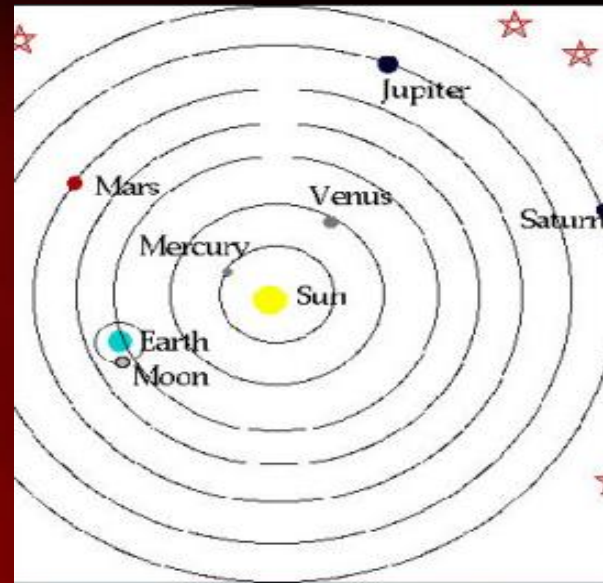
Aristotle believed that the earth is in the Centre of the Universe, whereas the sun, moon, the planets and the stars revolve around it in circular orbits

Ptolemy's model



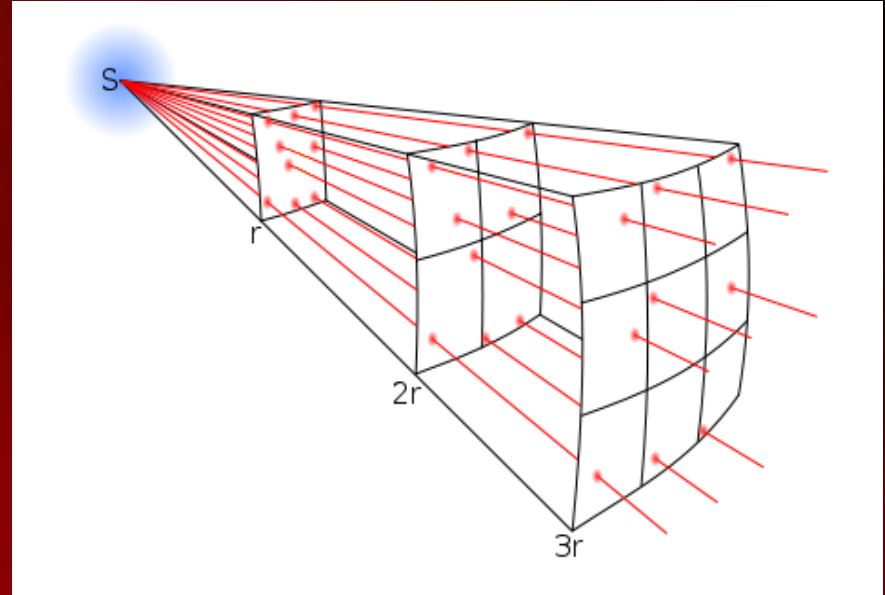
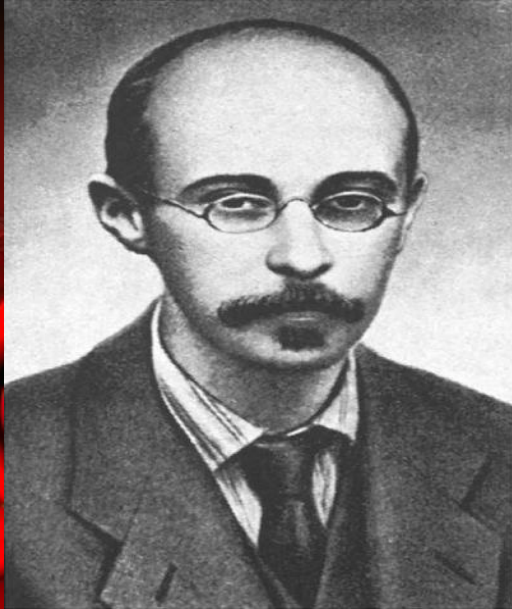
The earth is still the centre of the Universe, but it is surrounded with 8 spherical surfaces in which the sun, the moon, the stars and the five planets known at that time. These were Mercury, Venus, Mars, Jupiter and Saturn

Ibn Al-Shater Model



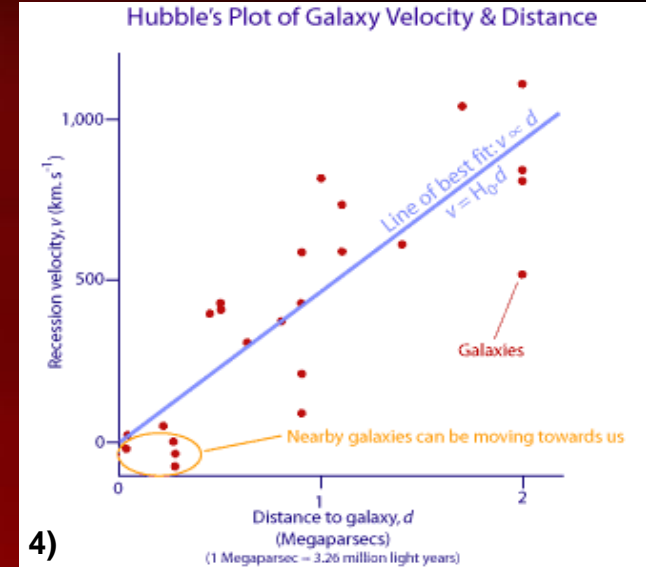
This model in which the planets rotate around the sun was known through a Polish priest called Copernicus (1543), who attributed it to himself. In spite of the fact that the original manuscripts of Ibn Al-Shater (1352) were found in Beirut in 1952 and the Historian of Science David King declared, that it was proved that the theories of Astronomy were taken from Ibn Al-Shater the Muslim Astronomer, and that Copernicus claimed them to himself, the western scholars are still referring the model to Copernicus

2. The expansion of the Universe



George Friedmann made two assumptions when he applied the General Theory of Relativity on the Universe (1922). The Universe looks the same in any direction and from any place we observe it. He then proved that the Universe is dynamic and is expanding, opposite to what Einstein has assumed.

Proving the expansion of the Universe



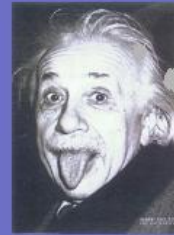
Using huge telescopes, Georges Lemaître (1927) and after that Hubble were the first to find out (1929) that the universe is expanding. They discovered that all the galaxies, except the Andromeda and few other galaxies in the local group, are moving further from us and from each others with very high speeds that are sometimes a fraction of the speed of light. This would only mean that the Universe is expanding

Einstein confesses with his blunder

❖ When Einstein applied the general Theory of Relativity on the Universe, it gave him an expanding Universe! He didn't grasp it and he introduced a cosmological constant which he called "the Antigravity" constant. Claiming that it is built inside spacetime to balance the gravity force.

❖ After Hubble confirmed that the Universe is expanding, as Friedman predicted, Einstein confessed with his mistake and said "Introducing the cosmological constant " Λ " into my equations was the biggest scientific blunder I made".

The Cosmological Constant



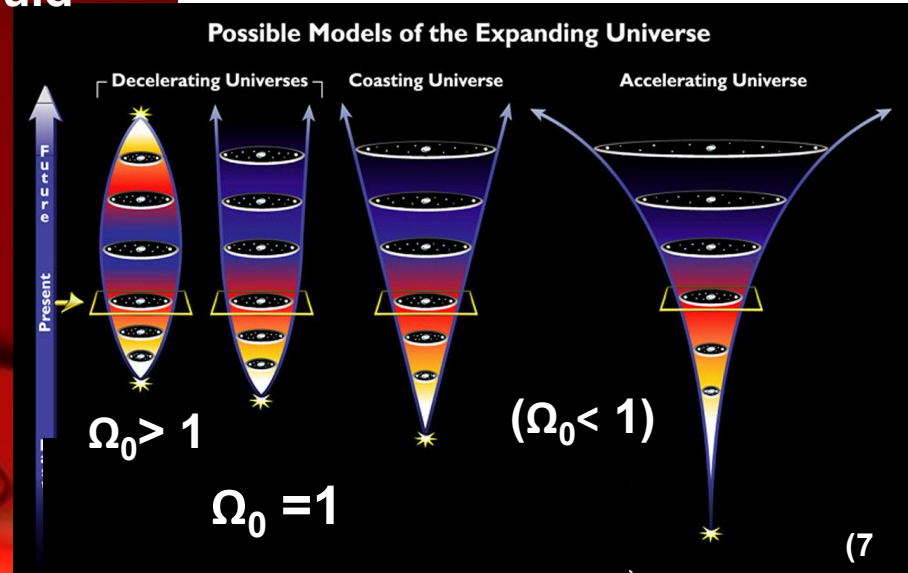
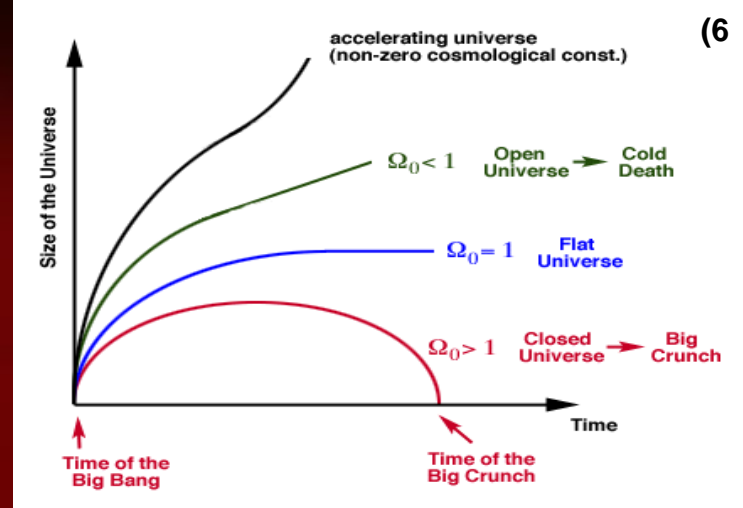
$$H^2 = \frac{8\pi G\rho}{3} - \frac{k}{a^2} + \frac{\Lambda}{3}$$

- ❖ Einstein introduced a **cosmological constant** Λ (vacuum energy) into GR to ensure a static universe.
- ❖ By tuning Λ , attractive gravity due to matter density can be balanced by the "repulsive" gravity, or negative pressure, of Λ .

The possible models of the Universe

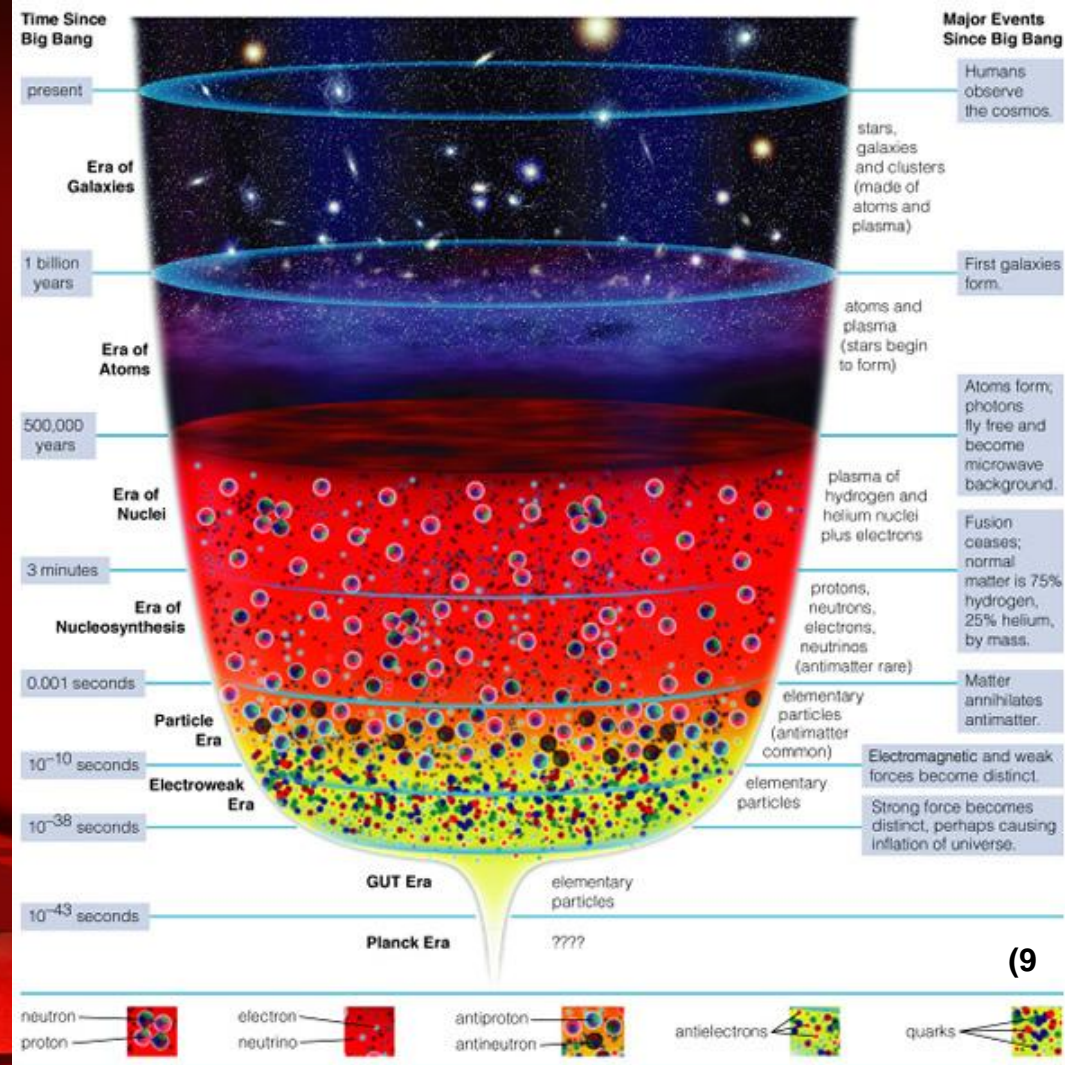
Friedmann came out with more than one solution for the Universe. The first is a decelerating Universe which after reaching its current size would contract and collapse into a big crunch ($\Omega_0 > 1$) or expands ($\Omega_0 = 1$) and becomes a flat Universe. The second is a coasting Universe which expands faster than the attraction could stop it ($\Omega_0 < 1$). Finally, an accelerating Universe expands faster due to the repulsive force between the galaxies. Most probably we are living in a flat Universe, which as Prof. Al-Taie⁸⁾ has shown, could be folded into close one.

Ω_0 = present-day density of Universe ρ / Critical density of Universe ρ_0



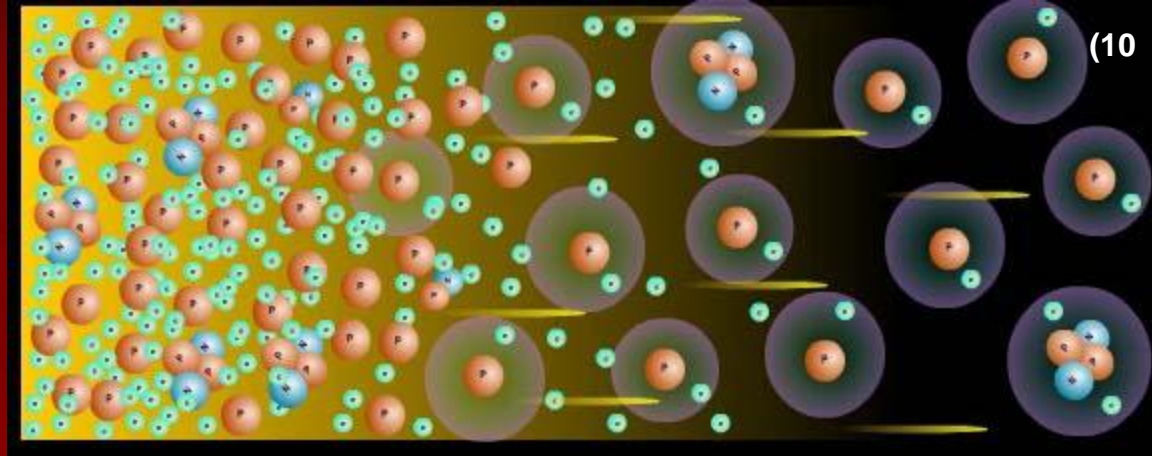
Development of the Universe

1. Big Bang about 13.8×10^9 years ago
2. Then came inflation and the era of elementary particles.
3. During the first seconds, the Universe expanded and its temperature went down. Electrons, protons & neutrons were formed.
4. During the first minutes light elements as hydrogen and helium began to form.
5. After about 300,000 years, the Cosmic Microwave Background (CMB) started to form following the separation of matter and radiation.
6. When the Universe was about one billion years old, stars and galaxies started to form.



3. Return to Qur'an verses

أَو لَمْ يَرِ الَّذِينَ كَفَرُوا أَنَّ السَّمَوَاتِ وَالْأَرْضَ
كَانَتَا رَتْقًا فَفَتَقْنَاهُمَا (الأنبياء ٣٠)



❖ Have not those who disbelieve known that the heavens and the earth were joined together as one united piece, then We parted them? (21/30)

❖ Throughout the history of the Universe, many important events took place. One of them was the separation of matter and radiation and the formation of the Cosmic Microwave Background (CMB). This separation of light and matter is known as (*decoupling*). Matter was formed then from Hydrogen, Helium and other elements, where as radiation/light was composed from photons which were gradually getting cold.

❖ Hence, what is meant by the heavens and earth were joined is the Union of Matter and Radiation, which were the origin of everything in heavens and earth. And parting them is decoupling them so that matter forms all the planets, stars, and galaxies and radiation spreads all over the Universe background as the latest cosmological information tells us.

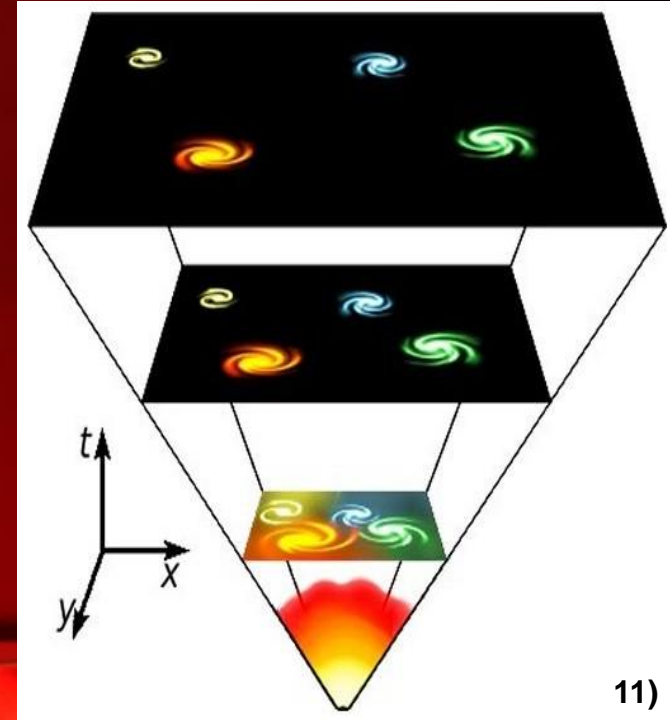
وَالسَّمَاءَ بَنَيْنَاهَا بِأَيْدٍ وَإِنَّا لَمُوسِعُونَ (الذاريات ٤٧)

With power did We construct the heaven. Verily We are able to extend the vastness of space thereof” (51/47)

❖ S. Hawking and R. Penrose have proved by applying the General theory of Relativity on the Universe, that it should have a beginning. Hawking asked in his book “Brief history of time”, who began the start?

❖ The Creator informs us in the above verse that He has constructed the heavens/the Universe and that He will extend them, i.e., enlarge the Universe.

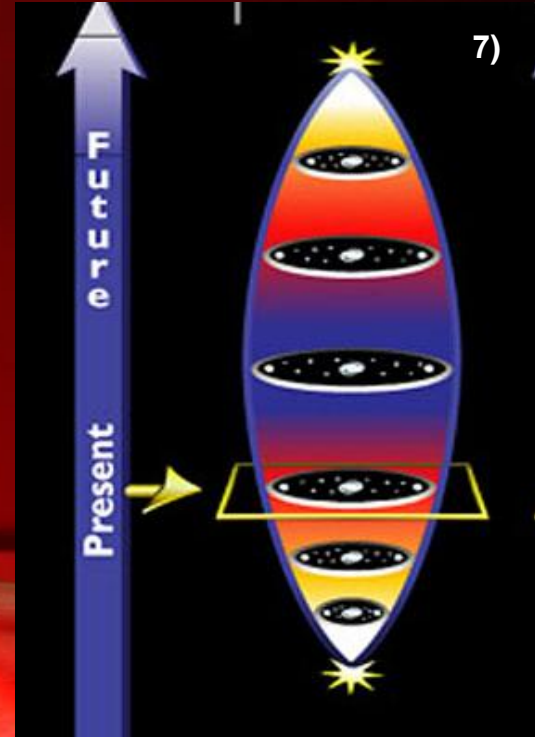
❖ That is exactly what is happening to the Universe now and since it was Created. This has been proven theoretically, by observations and through measurements to the extend that it became a scientific fact. The Universe is expanding at the rate of about 70km/s



"إِنَّ اللَّهَ يُمْسِكُ السَّمَوَاتِ وَالْأَرْضَ أَنْ تَزُولَا وَلَئِن زَالَتَا إِنْ أَمْسَكَهُمَا مِنْ أَحَدٍ مِّن بَعْدِهِ إِنَّهُ كَانَ حَلِيمًا غَفُورًا" (فاطر ٤١)

“Verily Allah grasps the heavens and the earth lest they should move away from their places, and if they were to move away from their places, there is not one who could grasp them after Him” (35/41)

- ❖ Among the Universe models we discussed was the big crunch in which the Universe collapses on its self. This might be a consequence of the fact that its density is rather close to the critical density.
- ❖ If this happens and the Universe starts to collapse with the billions of galaxies it contains and with the billions of stars in each galaxy, who could stop the big crunch once it started?
- ❖ The greatness of this verse is that it draws our minds to this astonishing fact. The beauty of science is in rendering this fact in front of our eyes.



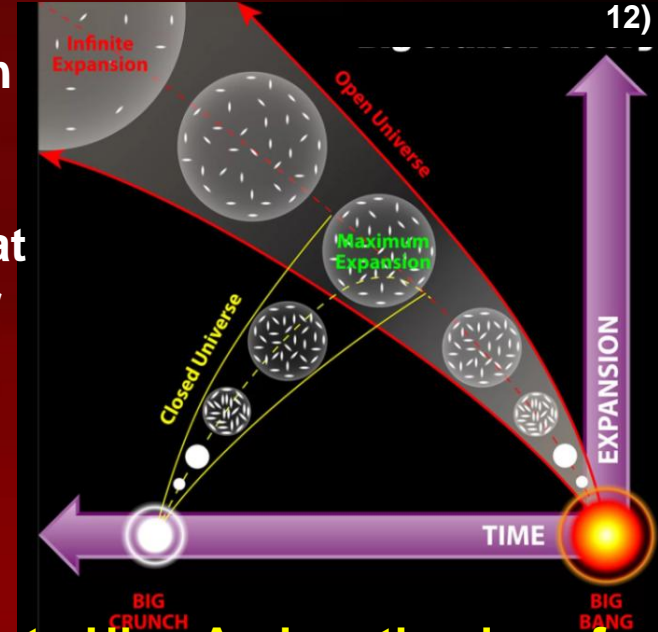
يَوْمَ نَطْوِي السَّمَاءَ كَطَيِّ السَّجْلِ لِلْكِتَابِ كَمَا بَدَأْنَا أَوَّلَ خَلْقٍ نَعِيدُهُ وَعَدَّا عَلَيْنا إِنَّا كُنَّا فاعِلِينَ (الأنبياء 104)

“And (remember) the Day when We shall role up the heaven like scroll rolled up for books. As We began the first creation, We shall repeat it. (it is) a promise binding upon Us. Truly, We shall do it” (21/104)

- ❖ This Universe which diameter is more than 90 billion light years and mass is more than 10^{55} tons will be rolled up by its Creator as rolling up scroll for books.
- ❖ We mentioned that the Universe is most probably flat and could be closed, but this wouldn't mean much for its Creator, even if it were open or accelerating. As He started the Universe with the Big Bang in a fracture of a second, He would fold it as ease in no time.

وَمَا قَدَرُوا اللَّهَ حَقَّ قَدْرِهِ وَالْأَرْضُ جَمِيعًا قَبْضَتُهُ يَوْمَ الْقِيَامَةِ وَالسَّمَاوَاتُ مَطْوِيَّاتٌ بِيَمِينِهِ سُبْحَانَهُ وَتَعَالَى عَمَّا يُشْرِكُونَ (الزمر 67)

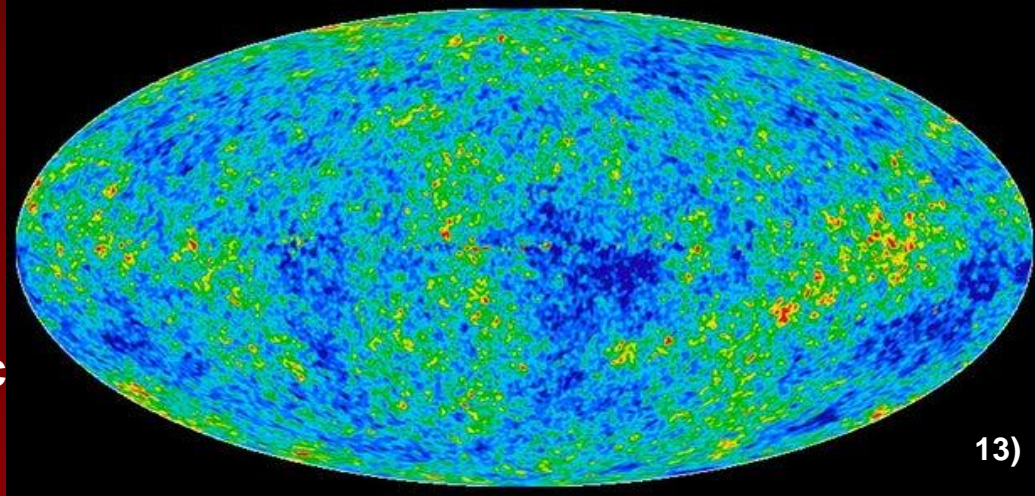
“They made not a just estimate to Allah such as is due to Him. And on the day of Resurrection the whole of the earth will be grasped by His Hand. And the heavens will be rolled in His Right Hand. Glorified be He and high be He above all what they associate as partner with Him” (39/67)



12)

Summary of Chapter 1

❖ Among the important results of this Chapter is that science helps us in understanding the Qur'an verses about the beginning and the possible end of the Universe. We also find a surprising agreement between the Qur'an verses and the latest scientific facts revealed. It is another evidence of Quran miracles.



❖ In spite of the fact that these Qur'an verses were sent down more 14 centuries ago, we don't find any reflection of the knowledge of that era or what we may call pseudoscientific matters prevailed at that time, but verses that could be understood in the light of the latest scientific facts discovered 14 centuries later.

أَفَلَا يَتَذَكَّرُونَ الْقُرْآنَ ۚ وَلَوْ كَانَ مِنْ عِنْدِ غَيْرِ اللَّهِ لَوَجَدُوا فِيهِ اخْتِلَافًا كَثِيرًا (82)

Don't they consider the Qur'an carefully? Had it been from other than Allah, they would surely have found therein many a contradiction" (4/82)

Reviewers

Mohammad Mansour, Prof. Dr. Sc., Switzerland

Ibrahim El-Nashar, Dr. Sc., Switzerland

Raouf Sallam, Prof. MD, FRCS, Azhar Univ., Egypt

Salah Bedair, Prof., Ph.D., North Carolina Univ. USA

Mohammad Shama, Prof., Ph.D. Alex. Univ., Egypt

Mohammad Sami El-Mahgary, M.Sc. Canada

Sami El-Mahgary, Tech. Lic., Finland

References

1. The Philosophy of Aristotle, <https://literariness.org>
2. Michael Lahanas, Astronomy of Ptolemy, Parga Book Centre.
3. MeemMagazine, 20 July 2020, twitter.com
4. Age of the Universe, Post – 16, Royal Observatory Greenwich.
5. <https://www.pinterest.com/pin/564849978237543470>
6. Predicting the fate of the Universe, ASTRO, [A020S/pages/fateofuniverse.html](https://www.astro.org.uk/A020S/pages/fateofuniverse.html)
7. Hubblesite, NASA, Credits NASA, ESA and STScI
8. M. Altaie,
9. Cosmology and the Beginning of Time, web.njit.edu/~gary/202/Lecture26.html
10. Origins of the CMB, www.universeadventure.org/big_bang/cmb-origins.htm
11. Georges Lemaître, https://en.wikipedia.org/wiki/Georges_Lema%C3%AEtre
12. R. Gabriel Joseph, The Sky Is Falling: The Universe is Collapsing in a Big Crunch, *Cosmology*, March 4, 2017
13. Whole-Sky Maps of the Universe, *Online Astronomy*, <https://cseligman.com/>