



# Comparisons of Ayats of the Quran with Astrophysics, Quantum Physics, and Cosmology

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**Abstract:** In this article, we will look at certain Ayats of the Holy Quran through a lens of modern day science. However, as in all interpretations of Scripture, it only looks from this lens as a possible comparison, not actual, for only Allah (swt) knows the realities of such Ayats. Still, there is empirical scientific knowledge in the 20th and 21st century, that has striking “resemblance” to certain descriptions of Nature and the Cosmos in verses of the Quran. This can be considered miraculous that such ideas were revealed in the 7th century AD that we are discovering day. This is from a factual scientific knowledge as well as theoretical. In the end, as Muslims, the Quran remains as the source of truth.

**Keywords:** Quran, science, physics, quantum physics, astrophysics, universe, natural laws, ayah

## 1. Introduction

Much of what we know about how Nature and the known Universe works, from a scientific perspective, has grown tremendously in the past few centuries. Due to new technologies, experiments and measurements, and empirical information, we can postulate how phenomenon of nature and the cosmos works, or at least how it abides by certain natural laws embedded in the Universe. Different scientists have given us some information, some irrefutable natural laws, as well as theoretical ideas. Taking this information, we can attempt to interpret the references made in certain Quranic Ayats. In the end, however, only Allah S.W.T. knows the realities of such, and our interpretation is speculation. We should keep in mind, that scientific theories, also themselves, are speculation. But both have some probability of partial reality. This article looks into concepts of certain Ayats that have striking similarities with modern day science related to Physics, Quantum Physics, Astrophysics, Biology, and Mathematics. We will briefly discuss a smaller subset of these, but more details can be found in *The Glorious Quran and Science* (Qureshi, 2021). This article is intended to be a summary of some of the book's chapters.

## 2. Big Bang, Universe Expansion, and Collapse

If we look at Creation in the Quran, the model described is consistent when looked at holistically as well as individually. It seems to be very much like the Big Bang Theory, which started from an infinitely dense singularity (Williams, 2015). Not only this, it has descriptions of contraction of the Universe, as in “scrolling up”, and then a similar re-creation. These are all like theories of modern science where Creation started with a big bang, expansion (Williams, 2015), and then collapse as a “Bug Crunch” (Betz, 2021). Some theories in modern science also discuss a “Big Bounce” (Mahony, 2020), which is what the Quran seems to be describing when all matter and energy in the Universe goes back to an infinitely dense singularity, and then the repeat of the Big Bang. The Quran uses the word “repeat”, which makes the Big Bounce like the Big Bang. More recently, however, scientist think the expansion will continue due to acceleration

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of expansion. They cannot explain this and attribute this to a possible cause which they call dark energy. There not further scientific information on dark energy. Similarly, there are theories of dark matter. On the other hand, dark matter has a gravitational force associated with it. But this is a shift of the model and paradigm that has occurred more recently, but there are conflicting results with the calculations.

The Big Bang theory was first proposed in 1931. The Big Crunch theory was proposed in 1948. The reason was that from blue-shift and red-shift measurements, physicists can measure the expansion of the Universe. Still, if there is no Big Crunch caused by all the gravitational forces in the Universe, the “scrolling up” described can also be a result of massive and numerous black holes in the Universe, or a mega-black hole (Betz, 2021) that would have the same “scroll up” effect. If this is the case, as some theories apply to our current Universe, the “repeat” would occur at the other end of the black hole singularity and Big Bang-esque. Either way, this type of knowledge about the Cosmos, was not known at the time of Revelation. In addition, in the Quran it says that Allah S.W.T. created the heavens and earth in 6 “days”. This directly aligns with the phases associated with the Universe as we know today (Peebles *et al.*, 2008) from the Big Bang starting point. Ayats in the Quran that depict this model, from initial Big Bang, to expansion, to collapse, and then Big Crunch.

**Table 1 - Big bang, expansion, big crunch, and big bounce**

Cosmic Event	Surah and Ayat Number	Arabic Ayat	English Ayat
Big Bang	Surah 21, Ayat 30	السَّمَاوَاتِ أَنْ كَفَرُوا الَّذِينَ بَرَأَ أَوْلَمِ مِنْ وَجَعَلْنَا سَمَكَاتُفَقَفْنَا هُمَا رَتْقًا كَانَتَا وَالْأَرْضَ يُؤْمِنُونَ أَفَلَا حَيِّ شَيْءٍ كُلِّ الْمَاءِ	“Do the disbelievers not see that the heavens and the earth were one mass, and We tore them apart? And We made from water every living thing. Will they not believe?”
Expansion	Surah 51, Ayat 47	الْمَاهِدُونَ فَعِغَمَ فَرَشْنَاهَا وَالْأَرْضَ	“We constructed the universe with power, and We are expanding it.”
Big Crunch	Surah 21, Ayat 104	لَلْكَتُبِ السَّجَلِ كَطَيِّ السَّمَاءِ نَطْوِي يَوْمَ عَلَيْنَا وَعَدَا نَعْبُدُهُ خَلْقِ أَوْلَ بَدَأْنَا كَمَا فَاعِلِينَ كُنَّا إِنَّا	“On that Day We will roll up the heavens like a scroll of writings. Just as We produced the first creation, ‘so’ shall We reproduce it. That is a promise binding on Us. We truly uphold ‘Our promises’”
	Surah 81, Ayat 1	كُوِّرَتِ الشَّمْسُ إِذَا	“When the sun is rolled up.”
	Surah 82, Ayat 2	انْتَثَرَتِ الْكَوَاكِبُ وَإِذَا	“When the planets are scattered.”
Big Bounce	Surah 10, Ayat 4	يَبْدَأُ إِنَّهُ حَقًّا اللَّهُ وَعَدَّ جَمِيعًا مَرْجِعَكُمْ إِلَيْهِ آمَنُوا الَّذِينَ لِيَجْزِيَ يُعِيدُهُ ثُمَّ الْخَلْقِ وَالَّذِينَ بِالْفُسْطِ الصَّالِحَاتِ وَعَمَلُوا الْبِيمِ وَعَذَابِ حَمِيمٍ مِنْ شَرَابٍ لَهُمْ كَفَرُوا يَكْفُرُونَ كَانُوا بِمَا	“To Him is your return, altogether. The promise of Allah is true. He originates creation, and then He repeats it, to reward those who believe and do good deeds with equity. As for those who disbelieve, for them is a drink of boiling water, and agonizing torment, on account of their disbelief.”
	Surah 10, Ayat 34	ثُمَّ الْخَلْقِ يَبْدَأُ مَنْ شَرَكَايَكُمْ مِنْ هَلْ قُلْ يُعِيدُهُ ثُمَّ الْخَلْقِ يَبْدَأُ اللَّهُ قُلْ يُعِيدُهُ تُؤَفِّكُونَ فَأَنَّى	“Say, “Can any of your partners initiate creation, and then repeat it?” Say, “Allah initiates creation, and then repeats it. How are you so deluded?””

6 “days” are aligned with 6 phases of Big Bang to Universe current state, which are (1) Big Bang, (2) Continued expansion and start of cooling down, (3) Combining of protons and neutrons to form nuclei of simple elements, like hydrogen, (4) Radiation formation, (5) Equality of energy in matter and radiation and distribution of matter, and (6) Start of stars and galaxies. This is reflected in the following Ayat:

الَّذِينَ لَيَقُولَنَّ الْمَوْتُ بَعْدَ مِنْ مُبْعُوْثُونَ إِنَّكُمْ قُلْتُمْ وَلَئِنْ كُنَّا عَمَلًا أَحْسَنُ أَتَيْكُمْ لِيُبَلِّغَنَّكُمْ الْمَاءَ عَلَى عَرْشِهِ وَكَانَ أَيَّامَ سِتَّةٍ فِي وَالْأَرْضِ السَّمَاوَاتِ خَلَقَ الَّذِي وَهُوَ مُبِينٌ سِحْرٌ إِلَّا هَذَا إِنْ كَفَرُوا

“It is He who created the heavens and the earth in six days—and His Throne was upon the waters—in order to test you—which of you is best in conduct. And if you were to say, “You will be resurrected after death,” those who disbelieve would say, “This is nothing but plain witchcraft.”

[Surah 11, Ayat 7]

### 3. Multiverses

Many physicists today and in modern history have theories that existence is made up of more than one Universe, or Multiverses (Greene, 2011) not just our observable one. Per scientists, these Multiverses may be of different kinds, where it could be one of the following type, or multiple also. Theoretical types of Multiverses are:

- Quilted Multiverse - infinite Universes repeated across space yielding parallel worlds
- Inflationary Multiverse - inflationary space expansion and causing bubble universes where ours is one of them
- Cyclic Multiverse - world collisions, causing big bangs, yielding universes parallel in Time
- Landscape Multiverse - combination of different shapes of string theory’s additional dimensions and inflationary model yielding bubble universes
- Quantum Multiverse - parallel universes to all possibilities of quantum mechanics
- Holographic Multiverse - our universe is a projection of other equivalent parallel universes
- Ultimate Multiverse - all possible mathematical equations fulfilled as all possible types of actual universes

The Quran is quite clear that there is more to creation than our currently observable Universe. The concept of seven heavens, not just the lower one which is described as our observable Universe, is evident. The details of the other heavens are not clear, other than they exist, and also that they are indeed different than the one we know. Here, we will look at which of the multiverses from above could be potential candidates, but not limited to them. The seven heavens are mentioned in many Ayats, but we will pick a few for examples. An example of an Ayat that says there are seven heavens, or therefore seven Universes making up a Multiverse is:

عَلِيمٌ شَيْءٍ بِكُلِّ وَهُوَ سَمَاوَاتٍ سَبْعَ فَسَوَاهُنَّ السَّمَاءِ إِلَى اسْتَوَى ثُمَّ جَمِيعًا الْأَرْضِ فِي مَا لَكُمْ خَلَقَ الَّذِي هُوَ

“It is He who created for you everything on earth, then turned to the heaven, and made them seven heavens. And He is aware of all things.” [Surah 2, Ayat 29]

Physicist also speculate that the different Universes may be governed by a different set of governing laws (Kuhn, 2015). This could be due to variants in the initial conditions, variants in the quantum states, or some other reasons. The following Ayat mentions that these seven heavens are subject to different governing laws. The known Universe, or the lower heaven, which Allah S.W.T. says it contains “Lamps” or stars and has different laws than the others. Stars are results of the current set of physical laws in our Universe, so if there are no stars in the others, logically it would mean the laws are indeed different.

الْعَلِيمِ الْعَزِيزِ تَقْدِيرُ ذَلِكَ وَحَفِظًا بِمَصَابِيحِ الدُّنْيَا السَّمَاءِ وَرَبَّنَا أَمْرَهَا سَمَاءِ كُلِّ فِي وَأَوْحَى يَوْمَيْنِ فِي سَمَاوَاتٍ سَبْعَ فَفَضَّاهُنَّ

“So He completed them as seven universes in two days, and He assigned to each universe its laws. And We decorated the lower universe with lamps, and for protection. That is the design of the Almighty, the All-Knowing.”

[Surah 41, Ayat 12]

An opinion on what could be applied to the other heavens is based on string theory. String theory came about to attempt to find a Unified Force, or Theory of Everything. This is because scientists have been able to unify three of the four governing forces of the Universe. These are the Electromagnetic Force, Weak Nuclear, and Strong Nuclear. However, scientists cannot unify these with Gravity. To overcome this, string theory was proposed. This is where the Universe is made up of small vibrating strings, where the frequency of the vibrations determines the different manifestations. Part of string theory is a multiverse of M-Theory (Sutter, 2020), where there are 10 (some say 11) dimensions with 9 dimensions of space, and 1 dimension of Time. On Earth and the first heaven, we live in 4-dimensional space-time with 3 dimensions of space and 1 dimension of time. If we speculate the seven heavens with M-Theory, where the second heaven is 4 dimensions of space and one dimension of time, and so on, and we look at the following Ayats:

غَافِلِينَ الْخَلْقِ عَنِ كُنَّا وَمَا طَرَائِقَ سَبْعَ فَوْقَكُمْ خَلَقْنَا وَلَقَدْ

“We created above you seven pathways, and We are never heedless of the creation.” [Surah 23, Ayat 17]

فُطُورٍ مِنْ تَرَى هَلْ الْبَصَرَ فَارْجِعْ تَفَاوُتِ مِنَ الرَّحْمَنِ خَلْقٍ فِي تَرَى مَا طَبَاقًا سَمَاوَاتٍ سَبْعَ خَلَقَ الَّذِي

“He who created seven heavens in layers. You see no discrepancy in the creation of the Compassionate. Look again. Can you see any cracks?” [Surah 67, Ayat 3]

In Surah 67, Ayat 3, the word “layers” are used. If we look at this from M-Theory with higher dimensions of space, we know that 4D space-time is encompassed in 5D space-time, and so on. This is clear when we look at these as mathematical matrices. Thus, you will not see any “cracks”. Furthermore, Surah 23, Ayat 17 uses the word “pathways”. This could also be a reference for higher dimensional space. Some examples for 4-dimension space are geometric figures of a Mobius Strip or Tesseract as shown in Fig. 1 and Fig. 2.

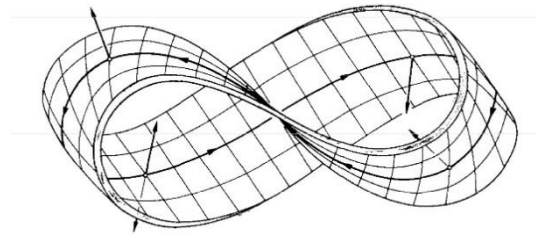


Fig. 1 - Mobius strip

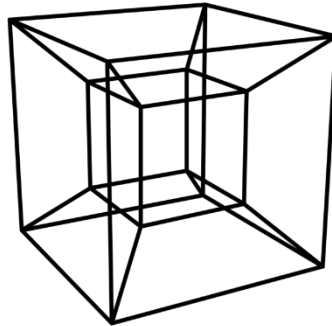


Fig. 2 - Tesseract

These would then represent the second heaven. If we are in 4D space-time for Earth and the first heaven, and there are 10 dimensions in string theory, with 1 adding dimension to each heaven, this sums to seven heavens. Again, this is only a possible perspective on the Ayats and only Allah S.W.T. knows the reality. But does not mean, is not in actuality possibly the case.

#### 4. Other Miracles of the Throne

There are many other Ayats in the Quran that seem to coincide with new empirical scientific knowledge of modern times. The Quran says there is a seen world, and an Unseen world. Other than Angels and Jinn, science has described much of existence is based on the Unseen. These could include the governing laws, quantum physics, string theory, dark energy, dark matter, and more. For a long time, scientist believed that the space in between matter is aether for gravitational waves and light to travel through as a medium. Aether has been put aside, but we know the space is filled with particles, sub-atomic particles, and perhaps filled with Higgs Bosons (Sutton, 1998).

الْجَمِيلِ الصَّفْحَ فَاصْفَحْ لِأَيَّتِهِ السَّاعَةِ وَإِنَّ بِالْحَقِّ إِلَّا بَيْنَهُمَا وَمَا وَالْأَرْضِ السَّمَاوَاتِ خَلَقْنَا وَمَا

“We did not create the heavens and the earth, and what lies between them, except with truth. The Hour is coming, so forgive with gracious forgiveness.”

[Surah 15, Ayat 85]

Looking at Quantum Physics, if we look at this Ayat:

عَظِيمًا أَجْرًا لَدُنْهُ مِنْ وَيُؤْتِ بِضَاعِفَهَا حَسَنَةً تَكُ وَإِنْ ذَرَّةً مِثْقَالٍ يَظَلِمُ لَا اللَّهُ إِنَّ

“Allah does not commit an atom's weight of injustice; and if there is a good deed, He doubles it, and gives from His Presence a sublime compensation.”

[Surah 4, Ayat 40]

It associates “weight” to “atom”. The atom is used for comparison and is being depicted as an extremely small measure. We know, through science and quantum theory, that atoms are the building block of creation. Furthermore, it is specifying “weight” (Peiser, 1998) as opposed to size. When we define different types of atoms, we use atomic mass. The unit is “amu”. “amu” is related to the weight, as it is a representation of the mass in grams of one mole of an element. Looking at Allah’s S.W.T. Throne, the Quran has many more miracles. Here are some additional examples:

**Table 2 - Additional comparisons of ayats to cosmos**

Surah and Ayat number	Arabic	English	Modern Science
Surah 81, Ayat 15 and 16	بِالْحَنَسِ أَقْسِمُ فَلَا الْكُنَسِ الْجَوَارِ	“I swear by the galaxies.” “Precisely running their courses.”	Galaxies moving the in cosmos. Universe expansion. Discovered in 20th century.
Surah 55, Ayat 37	وَرَدَّةً فَكَانَتْ السَّمَاءُ انْتَشَقَتْ فَإِذَا كَالِدِهَانِ	“When the sky splits apart, and becomes rose, like paint.”	Could be Supernova, Nebula, star death that looks like a blooming rose (see Fig. 3)
Surah 86, Ayat 1	وَالطَّارِقِ وَالسَّمَاءِ	“By the sky and at-Tariq”	Could be Pulsar discovered in 1967. Pulsating radio waves mimicking “knocking”
Surah 67, Ayat 16	يَحْسِبُ أَنْ السَّمَاءَ فِي مَنْ أَمْنْتُمْ تَمُورُ هِيَ فَإِذَا الْأَرْضُ بِكُمْ	“Are you confident that the One in heaven will not cause the earth to collapse beneath you as it spins?”	Rotation of Earth. Discovered in 1543 by Copernicus.
Surah 21, Ayat 33	وَالنَّهَارِ الَّذِي خَلَقَ الَّذِي وَهُوَ فَلَكٌ فِي كُلِّ وَالْقَمَرِ وَالشَّمْسِ يَسْبُحُونَ	“It is He who created the night and the day, and the sun and the moon; each floating in an orbit.”	Planetary Orbits. Moon around Earth, Sun around center of Milky Way
Surah 71, Ayat 17	نَبَاتًا الْأَرْضِ مِنْ أَنْبَتَكُمْ وَاللَّهِ	“And Allah germinated you from the earth like plants.”	First Microbe life on Earth. As in other Ayats being created from a “single soul”.
Surah 11, Ayat 7	وَالْأَرْضِ السَّمَاوَاتِ خَلَقَ الَّذِي وَهُوَ عَلَى عَرْشِهِ وَكَانَ أَوَّلَ سِتَّةٍ فِي عَمَلًا أَحْسَنُ أَنْكُمْ لِيَبْلُوكُمْ الْمَاءِ مِنْ مَبْعُوثُونَ أَنْكُمْ قُلْتُمْ وَلَيْنِ إِنْ كَفَرُوا الَّذِينَ لِيَقُولَنَّ الْمَوْتِ بَعْدَ مُيَبِّنٌ سِحْرٌ إِلَّا هَذَا	“It is He who created the heavens and the earth in six days—and His Throne was upon the waters—in order to test you—which of you is best in conduct. And if you were to say, “You will be resurrected after death,” those who disbelieve would say, “This is nothing but plain witchcraft.”	Scientists have just recently discovered that at the start of the Big Bang, the first form of matter was a perfect liquid <sup>11</sup>

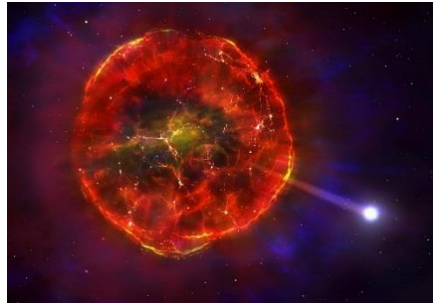


Fig. 3 - A supernova

## 5. Quantum Thoughts

In the Quran, for these Ayats, we see in nature the creation in pairs; male/female or light/dark. The Ayat states “all things” in pairs. This comes down even to the atomic level. We have protons and electrons. Sub-atomic particles with opposite charge. If we consider the atom with Surah 55, Ayat 17, there are “two Easts”, and “two Wests”. We now know scientific information on anti-matter (Science, 2014). Thus, an electron will also relate to a positron, and proton with an anti-proton. When the anti-particles collide with particles, they annihilate each other. Potentially a way of looking at the “two Easts” and “two Wests”.

تَذَكَّرُونَ لَعَلَّكُمْ رُؤُوسَ خَلْقِنَا شَيْءٍ كُلِّ وَمِنْ

“We created all things in pairs, so that you may reflect and ponder.” [Surah 51, Ayat 49]

الْمَغْرِبِينَ وَرَبُّ الْمَشْرِقِينَ رَبُّ

“(He is) Lord of the two Easts and Lord of the two Wests” [Surah 55, Ayat 17]

عَلِيمٌ وَاسِعٌ اللَّهُ إِنَّ اللَّهَ وَجْهٌ فَتَمَّ تَوْلُوا فَأَيْنَمَا وَالْمَغْرِبِ الْمَشْرِقِ وَاللَّهِ

“To Allah belong the East and the West. Whichever way you turn, there is Allah’s presence. Allah is Omnipresent and Omniscient.”

[Surah 2, Ayat 115]

There is a concept off “omniscience” and “omnipresence”. These concepts are not foreign to modern science and quantum mechanics. A phenomenon in nature is a given electron will “know” the quantum state of all other electrons in the Universe. Also, at some time,  $t$ , in the future, a given electron can next have a probability of being “anywhere” in the Universe (Greene, 2011).

## 6. Conclusion

These are some of the examples of where the Quran meets science. This is a subset of comparisons where more analysis can be found in the book The Glorious Quran and Science (Qureshi, 2021). In the end, only Allah S.W.T. knows the reality of things and all we can do is attempt to understand. But the striking similarities are miraculous. For it is only Allah S.W.T. that teaches knowledge:

صَادِقِينَ كُنْتُمْ إِنْ هُوَ لَاءِ بِأَسْمَاءِ أَنْبِيُونِي فَقَالَ الْمَلَائِكَةِ عَلَى عَزَضَهُمْ ثُمَّ كَلَّمَهَا الْأَسْمَاءِ آدَمَ وَعَلَّمَ

“And He taught Adam the names, all of them; then he presented them to the angels, and said, “Tell Me the names of these, if you are sincere.”

[Surah 2, Ayat 31]

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