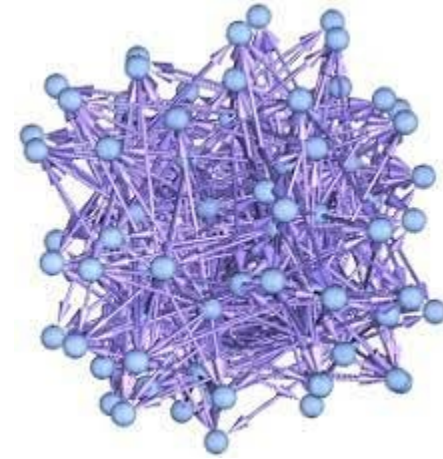


# Wolfram Ruliad in 26 Real Dimensional Symplectic Universe

©AlephTalks 2022

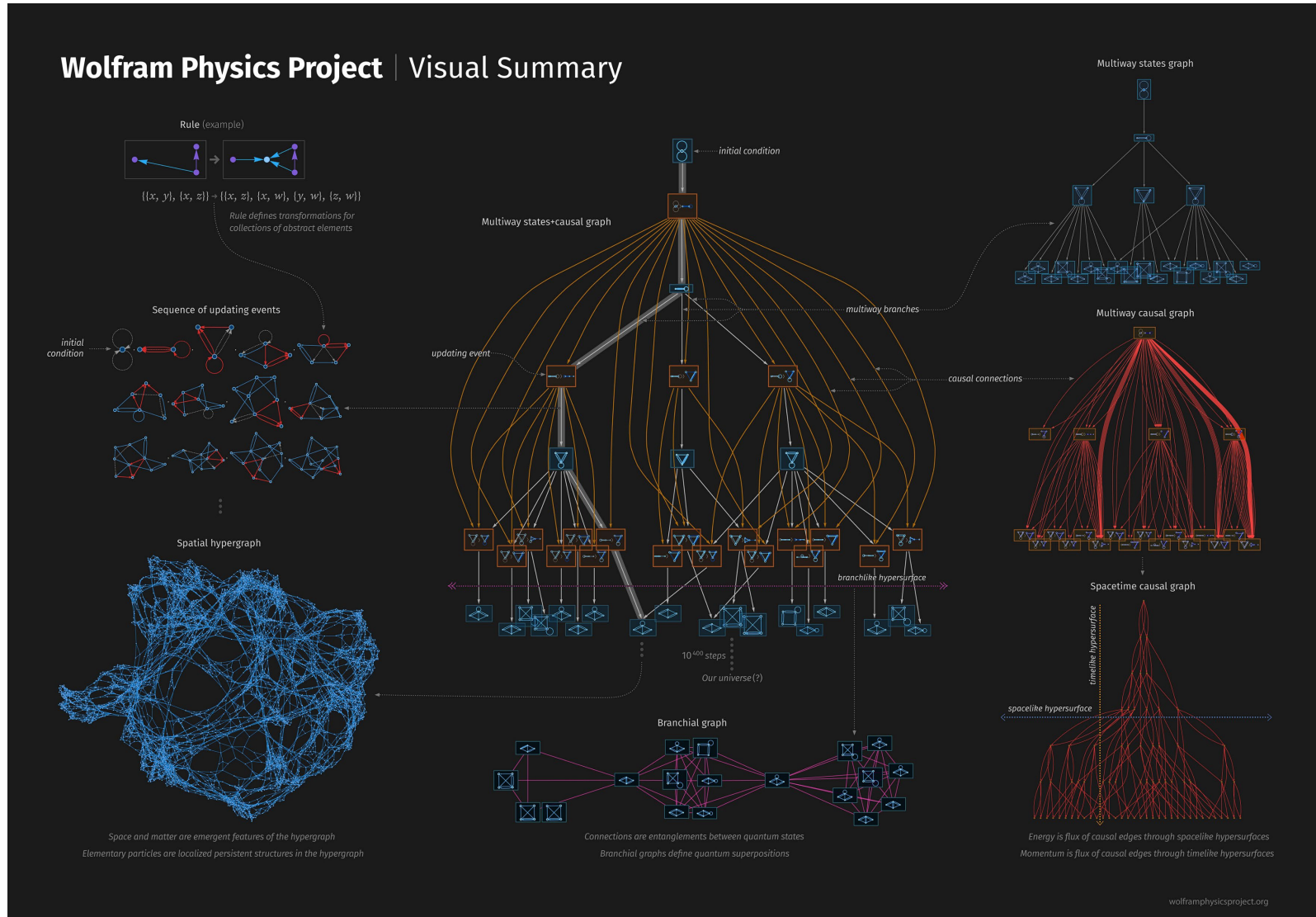
29 July 2022

# Outline



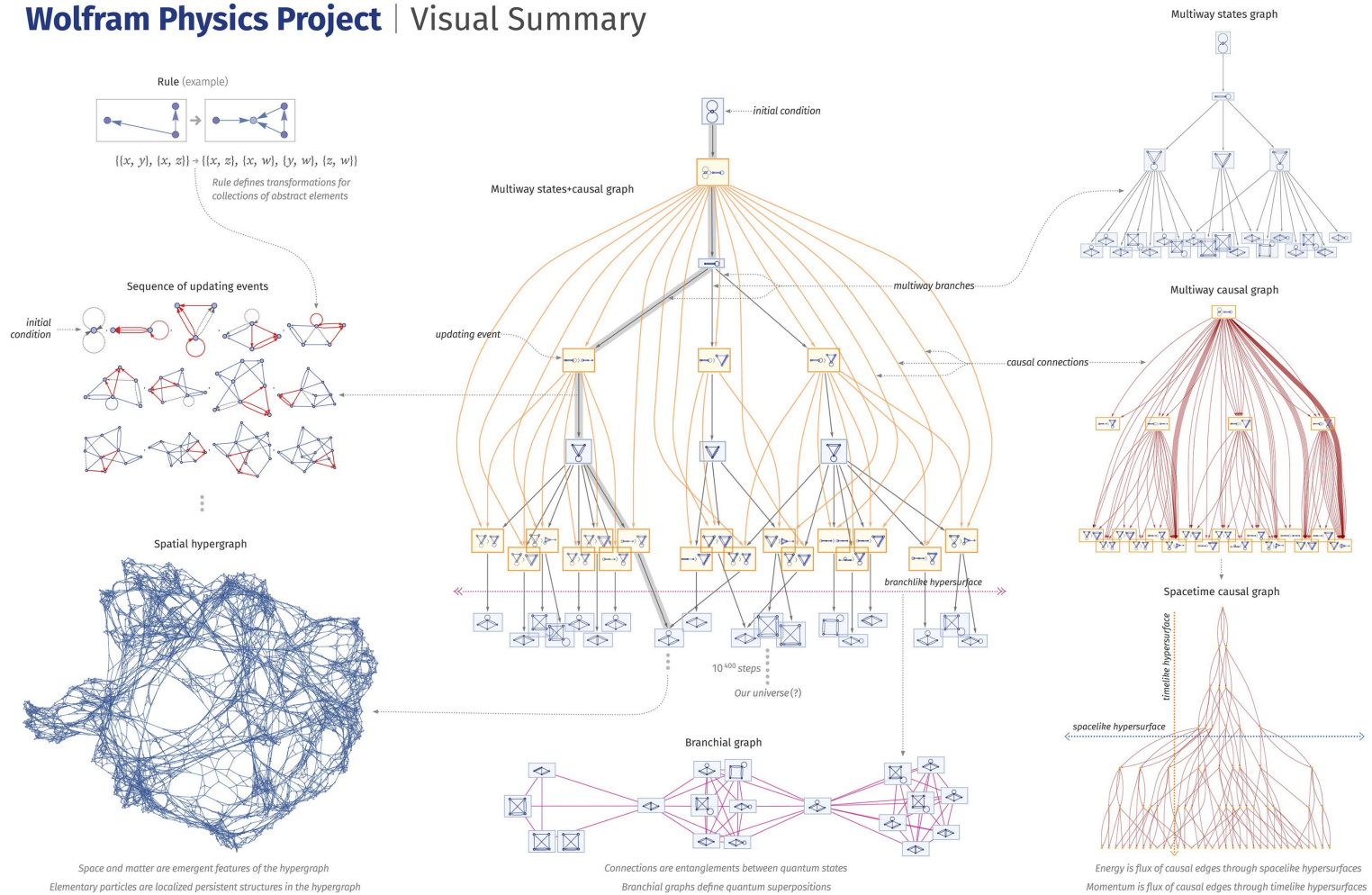
- Wolfram Ruliad Overview
  - A set of rules (ruliad) or algorithms that govern how the universe operates
  - The rules can be very simple yet the outcome can be very complex
  - Carl Jung called this the collective unconscious
  - Ronald Cowen observed that information is on the walls of spatial quantum compartments, and cover the surface of electrons and subquarks et al, scanning and reacting to the scans according to algorithms: this is the de Broglie or Bohm pilot wave of quantum mechanics
- 26 Real Dimensional Symplectic Universe Overview
  - Newton started with three dimensions for space and one dimension for time
  - Maxwell kept four dimensions but then Einstein realized they were coupled via special relativity
  - Feynman (Caltech Lectures (Amazon),1962) showed the simplest quantum theory of general relativity was with a spin=2 graviton
  - Lovelace (1970) suggested the simplest spin=2 graviton theory universe for vibrating strings had 26 real dimensions
  - Bosons play in all 26 real dimensions, matter fermions in one ten dimensional subspace, dark matter fermions in a second ten dimensional subspace, one six dimensional subspace synchronized all actions of the two ten dimensional subspaces
- The Back and Forth Interplay of Problems Arising from Unification of These Two Concepts

# Wolfram Ruliad Visual Summary

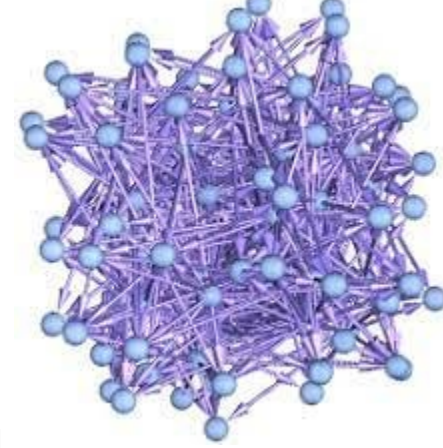


# Wolfram Ruliad

## Wolfram Physics Project | Visual Summary

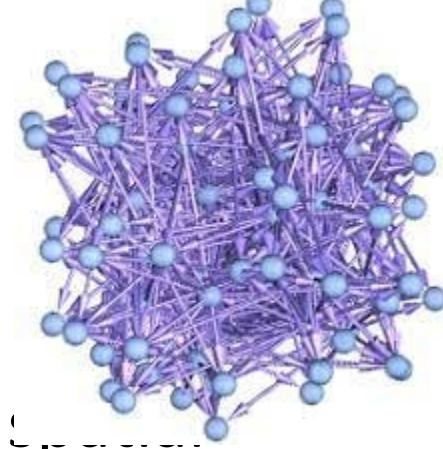


# Wolfram Ruliad: Background



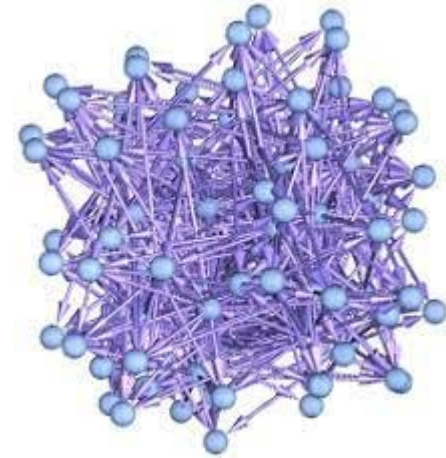
- The theory of gravitation (Newton) which was extended to general relativity (Einstein) encompasses how pieces of matter attract one another typically on large scales such as planetary systems, galaxies and the cosmos
- The theory of electromagnetism (Maxwell) has been extended to the microcosm for radioactivity (weak force) and nuclear bonding of protons and neutrons (strong force)
- The theory of quantum mechanics and quantum field theory deals with interactions of electrons and subatomic particles (protons, neutrons, electrons et al) on the small scale of atoms
- All these theories play in an arena of four dimensions (three for space and one for time) which obeys special relativity axioms

# Wolfram Ruliad: Scale Problem



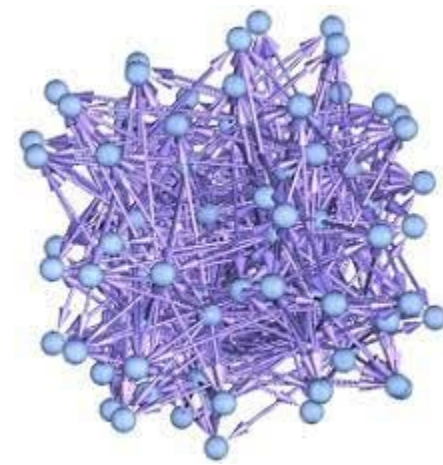
- One basic problem is that these theories operate on different scales: general relativity operates on large planetary/galactic scales while quantum mechanics operates on small atomic/subatomic scales
- To combine these theories into one unified theory that operates on all scales is intellectually very challenging: **Wolfram Ruliad does this**
- In order to have a viable unified theory, data is needed, but the only data that would test a theory on the very large and very small scale would be a theory that would account for the origin of the universe, where the universe is physically quite small and is made up of basic elementary particles (electrons, quarks et al), but this is not a practical experiment (how do you simulate the start of the universe?)

# Wolfram Ruliad: The Arena



- Another issue with finding a unified theory is that the arena may require more than three spatial and one temporal dimensions
- Modern physics has recognized after five hundred years that only 5% of the universe is made up of matter, with the remaining 95% being called DARK
  - 27% is dark matter
  - 68% is dark energy
- This dark matter/energy is vibrating, and this energy is stored in additional dimensions beyond the space-time dimensions of matter
- It appears that the dark matter is resident in a separate subspace from the subspace of matter, and matter and dark matter only interact via gravity or weak force (no electromagnetism, no strong force)

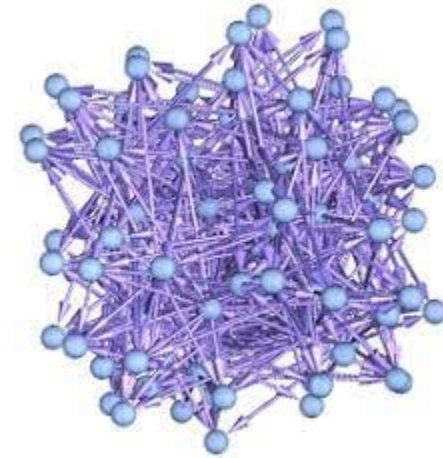
# Wolfram Ruliad: The Arena



- Eugenio Calabi (1954, 1957) proposed a manifold for a unified theory of physics
- Shing-Tung Yau (1977, 1978) proved these manifolds exist (about 10,000 total)
- Ron Cowen (1985-2019) observed that the arena of the universe is a 26 real dimensional space, consisting of
  - Two ten dimensional subspaces, consisting of a pair of three spatial dimensions and one temporal dimension (with the coordinates of one subspace multiplied by the square root of minus one ( $i$ )), with two six spatial dimensions that are compactified and symplectic (two paired three dimensional subspaces, with the coordinates of one subspace multiplied by square root of minus one ( $i$ ) resulting in the coordinates of the other subspace)
  - A six dimensional compactified subspace (two paired three dimensional subspaces with the coordinates of one subspace multiplied by square root of minus one ( $i$ ) resulting in the coordinates of the other subspace, and this is linked to the two other six dimensional compactified subspaces)
- 26 real dimensional spaces are modeled with 26 real dimensional hypergraphs

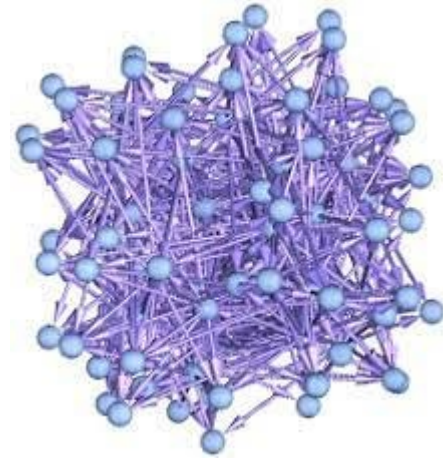


# Wolfram Ruliad: The Arena



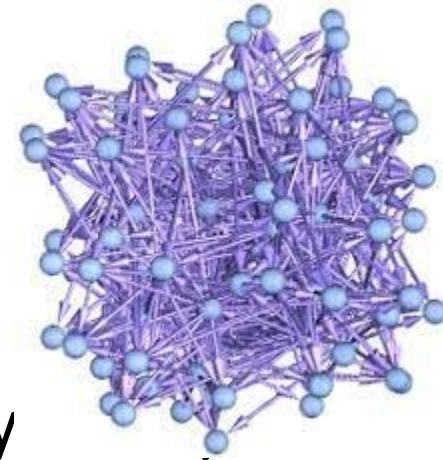
- The six real dimensional compactified subspace of the ten real dimensional matter subspace has three holes
- The six real dimensional compactified subspace of the ten real dimensional dark matter subspace has four holes
- The six real dimensional compactified subspace that connects with the two compactified six real dimensional subspaces of matter and of dark matter has eight holes
- The three holes from matter subspace link to three holes in synchronizing subspace
- The four holes from dark matter subspace link to four holes in synchronizing subspace
- The final hole in synchronizing subspace links to the synchronizing subspace

# Wolfram Ruliad: The Arena



- Each of the three compactified subspaces of six dimensions has different curvature (Hodge diamond)
- The curvature of a subspace governs what possible paths can form geodesic paths between two points; Feynman path integral is integrated over a geodesic path resulting in least action
- This shows that it is possible to transit these subspaces at virtually infinite speed, far faster than the speed of light, to allow all actions in all subspaces to be synchronized
- One consequence of having matter and dark matter subspaces being symplectic pairs is that space-like regions in one become time-like regions in the other, and vice versa

# Wolfram Ruliad: Geometry



- The matter subspace and dark matter subspace are rotated by degrees from one another (multiplied by square root of minus one), making a six dimensional real subspace with two dimensions for time
- The three Calabi Yau manifolds each make a six dimensional real subspace
- There are four six dimensional real subspaces, and two dimensions for time, or a total of eight subspaces of three real dimensions each of four subspaces of three complex dimensions each
- There are four three dimensional complex subspace and two dimensions for time, or a total of four subspaces of three complex dimensions each (Kaehler manifolds)

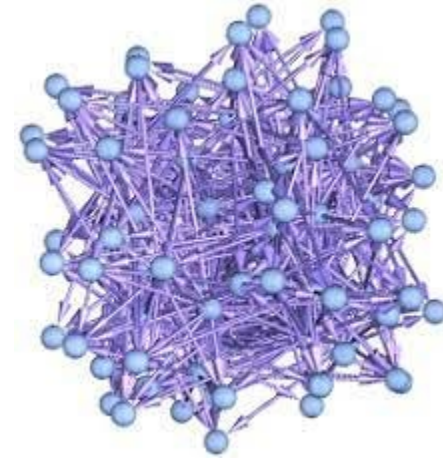
# The Collective Unconscious of Information Creates Awareness

- Ron Cowen observes information (algorithms and data) covers the walls of space compartments as well as matter and dark matter subquarks and matter electrons
- Information is constantly scanning its surroundings and reacting according to algorithms which in fact control the fields and forces in the space time of matter and dark matter, generating an awareness of the surrounding world
- This information scanning creates sentient consciousness or awareness in the associated compactified dimensions: inert matter such as rocks are conscious, as are biological entities such as trees or flowers and sentient living life forms, cf Japanese Shinto
  - This is the why of the universe, while Western physics deals with the how
  - This collective unconscious creates archetypes and purely mental entities such as angels
  - This is what Rene Descartes meant in saying *je pense, donc je suis*

# Fundamental and Emergent Phenomena

- Fundamental Phenomena
  - Information (algorithms and data)
  - Photon scans generated by information
  - Neutrinos
- Emergent Phenomena
  - Space-time data structures->gravity
  - Electromagnetic fields->strong and weak force
  - Standard model particles (electron, subquarks for matter and dark matter)
  - Resonances due to 3 Holes in Matter Compactified Dimensions
  - Resonances due to 4 holes in Dark Matter Compactified Dimensions

# Wolfram Ruliad: Christian/Islamic Interpretation

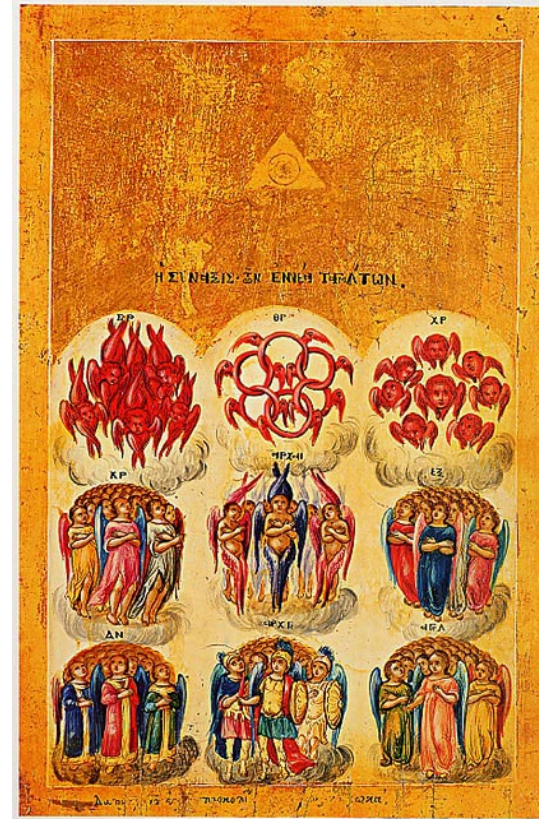


- There are three Calabi Yau compactified subspaces, one tied to matter, one to dark matter, and one that synchronizes those two; Christian mystics such as Jesus of Nazareth called these subspaces by different names for mystical aspects
  - The son is resident in the matter subspace
  - The holy spirit is resident in the dark matter subspace
  - The father is resident in the synchronizing subspace
  - Each subspace contains a wealth of cherubim, seraphim, angels and archangels
  - These spirits can be tied to any planet or realm in the universe

# Hierarchy of Christian Angelic Host

Source: [\*De Coelesti Hierarchia\*](#) (*On the Celestial Hierarchy*) by [Pseudo-Dionysius the Areopagite](#)

- Highest orders
  - [Seraphim](#)
  - [Cherubim](#)
  - [Thrones](#)
- Middle orders
  - [Dominions](#)
  - [Virtues](#)
  - [Powers](#)
- Lowest orders
  - [Principalities](#)
  - [Archangels](#)
  - [Angels](#)





# First Sphere of Angelic Realm (Wikipedia)

First Sphere<sup>[\[edit\]](#)</sup>

According to [Pseudo-Dionysius](#), the first sphere of angels see and worship God directly, and communicate his will to angels who are closer to the life of man.<sup>[\[1\]](#)</sup><sup>[\[need quotation to verify\]](#)</sup>

**Seraphim**<sup>[\[edit\]](#)</sup>

*Main article:* [Seraph](#)

Tradition places seraphim in the highest rank in Christian angelology and in the fifth rank of ten in the [Jewish angelic hierarchy](#). A seminal passage in the [Book of Isaiah](#) ([Isaiah 6:1–8](#)) used the term to describe six-winged beings that fly around the [Throne of God](#) crying "[holy, holy, holy](#)". This throne scene, with its triple invocation of holiness, profoundly influenced subsequent [theology](#), literature and art. Its influence is frequently seen in works depicting angels, heaven and [apotheosis](#). Seraphim are mentioned as celestial beings in the non-canonical [Book of Enoch](#) and the [canonical Book of Revelation](#).

**Cherubim**<sup>[\[edit\]](#)</sup>

*Main article:* [Cherub](#)

A cherub, as described by Ezekiel and according to traditional Christian [iconography](#)

In the [Book of Ezekiel](#) and (at least some) Christian icons, the cherub is depicted as having two pairs of wings, and four faces: that of a [lion](#) (representative of all [wild animals](#)), an [ox](#) ([domestic animals](#)), a [human](#) (humanity), and an [eagle](#) ([birds](#)).<sup>[\[12\]](#)</sup><sup>[\[13\]](#)</sup> Their legs were straight, the soles of their feet like the hooves of a bull, gleaming like polished brass. Later tradition ascribes to them a variety of physical appearances.<sup>[\[12\]](#)</sup> In Western Christian tradition, cherubim have become associated with the [putto](#) (derived from classical [Cupid/Eros](#)), resulting in depictions of cherubim as small, plump, winged boys.<sup>[\[14\]](#)</sup> [St. Thomas Aquinas](#) imagined [Satan](#) as a fallen cherub.<sup>[\[15\]](#)</sup>

**Thrones**<sup>[\[edit\]](#)</sup>

*Main articles:* [Throne \(angel\)](#) and [Ophanim](#)

Thrones are a class of [angels](#), based on an interpretation of [Colossians 1:16](#).<sup>[\[16\]](#)</sup> According to 1 Peter 3:21-22, [Christ](#) had gone to Heaven and "angels and authorities and powers" had been made subject to him.<sup>[\[17\]](#)</sup> [Pseudo-Dionysius the Areopagite](#) in his work [De Coelesti Hierarchia](#) includes the thrones as the third highest of nine [levels of angels](#).<sup>[\[18\]](#)</sup>

The *ophanim* refer to the wheels seen in [Ezekiel](#)'s vision of the chariot (Hebrew [merkabah](#)) in [Ezekiel 1:15–21](#). One of the [Dead Sea scrolls](#) (4Q405) construes them as angels. These "wheels" have been associated with [Daniel 7:9](#) (mentioned as *galgal*, traditionally "the wheels of galgallin", in "fiery flame" and "burning fire") of the four, eye-covered wheels (each composed of two nested wheels), that move next to the winged cherubim, beneath the throne of God.



# Second Sphere of Angelic Realm (Wikipedia)

---

West window of the [Church of St Michael and All Angels, Somerton](#). It depicts [Christ the King](#) in the centre with nine angelic figures, each of them represents, higher row: [Dominions](#), [Cherubim](#), [Seraphim](#), and [Angels](#); lower row: [Principalities](#), [Thrones](#), [Archangels](#), [Virtues](#), and [Powers](#). Angels of the Second Sphere work as [heavenly](#) governors of the creation by subjecting matter and guiding and ruling the spirits.

## **Dominations or Lordships**[\[edit\]](#)

The **Dominations**<sup>[19]</sup> (lat. *dominatio*, plural *dominationes*, also translated from the Greek term *kyriotētes*, pl. of *kyriotēs*, as "Lordships") or "Dominions" are presented as the hierarchy of celestial beings "Lordships" in some English translations of the *De Coelesti Hierarchia*. The Dominations regulate the duties of lower angels. It is only with extreme rarity that the angelic lords make themselves physically known to humans.

## **Virtues**[\[edit\]](#)

According to *The Etymologies of Isidore of Seville*, the **Virtues** are known for their control of the elements. In addition to being the spirits of motion, they also assist in governing nature. They also assist with miracles, as well as encourage humans to strengthen their faith in God.<sup>[20]</sup>[\[needs update\]](#)

## **Powers or Authorities**[\[edit\]](#)

In *The Etymologies of Isidore of Seville*, the **Powers** (lat. *potestas* (f), pl. *potestates*) (Greek: ἐξουσία) are given their name because they are angels who have power over evil forces, which the angels are able to restrain to keep them from doing harm.<sup>[20]</sup>[\[needs update\]](#)

# Third Sphere of Angelic Realm (Wikipedia)

Third Sphere[[edit](#)]

**Principalities or Rulers**[[edit](#)]

The **Principalities** (Latin: *principatus*), also translated as "Princedoms" and "Rulers", from the Greek *archai*, pl. of *archē* (see Greek root in [Eph 3:10](#)), are the angels that guide and protect nations, or groups of peoples, and institutions such as the Church. The Principalities preside over the bands of angels and charge them with fulfilling the divine ministry. There are some who administer and some who assist.<sup>[20]</sup><sup>[*needs update*]</sup>

Paul used the term *rule* and *authority* in Ephesians 1:21,<sup>[21]</sup> and *rulers* and *authorities* in Ephesians 3:10.<sup>[22]</sup>

**Archangels**[[edit](#)]

*Main articles:* [Archangel](#), [Gabriel](#), [Michael \(archangel\)](#), and [Raphael \(archangel\)](#)

[Guido Reni](#)'s archangel Michael (in the Capuchin church of [Santa Maria della Concezione, Rome](#), 1636) tramples Satan.

The word *archangel* is only used twice in the [New Testament](#): [1 Thessalonians 4:16](#) and [Jude 1:9](#).

In most Christian traditions Gabriel is also considered an archangel, but there is no direct literary support for this assumption. The term *archangel* appears only in the singular, never plural, and only in specific reference to Michael.<sup>[23]</sup><sup>[24]</sup>

The name of the [archangel Raphael](#) appears only in the [Book of Tobit](#) (Tobias). Tobit is considered [deuterocanonical](#) by Catholics (both [Eastern](#) and [Western Rites](#)) and [Eastern](#) and [Oriental Orthodox](#) Christians, as well as [Anglicans](#). The Book of Tobit is not, however, acknowledged by most Protestant denominations. In it Raphael says to [Tobias](#) that he was "one of the seven who stand before the Lord", and it is generally believed that Michael and Gabriel are two of the other six.<sup>[*citation needed*]</sup>

A fourth archangel is [Uriel](#). Uriel's name is not mentioned in the Western Christian Bible, but plays a prominent role in an [apocryphal](#) book read by Anglican and Russian Orthodox Christians, the [Second Book of Esdras](#) (fourth Book of Esdras in the [Latin Vulgate](#)). In the book, he unveils seven prophecies to the prophet [Ezra](#). He also plays a role in the apocryphal [Book of Enoch](#), which is considered canonical by the [Ethiopian Orthodox](#), [Eritrean Orthodox](#), and [Ethiopian Catholic](#) Churches. The Catholic Church generally does not



# Third Sphere of Angelic Realm (Wikipedia)

Uriel as an angel<sup>[25]</sup> just as the Book of Enoch is not part of the Catholic Bible used by most Catholics<sup>[26]</sup> either.

Another possible interpretation of the seven archangels is that these seven are the seven spirits of God that stand before the throne described in the [Book of Enoch](#), and in the [Book of Revelation](#).<sup>[27]</sup>

The [Seven Archangels](#) are said to be the [guardian angels](#) of nations and countries, and are concerned with the issues and events surrounding these, including politics, military matters, commerce and trade: e.g. [Archangel Michael](#) is traditionally seen as the protector of 'Israel' and of the *ecclesia* (Gr. root *ekklesia* from the [New Testament](#) passages), theologically equated as the [Church](#), the forerunner of the spiritual [New Israel](#).<sup>[citation needed]</sup>

An additional angel, [Metatron](#), which entered the Christian tradition via [Christian Kabbalah](#), is described in the [Babylonian Talmud](#) as a heavenly [scribe](#) and in the [Zohar](#) as the king of the angels. The [apocryphal](#) Books of Enoch (especially [3 Enoch](#)) tell that Metatron was previously the biblical [Enoch](#), who, upon his [ascension to Heaven](#), was transformed into an archangel and given the name Metatron. He was then bestowed the positions of chief of the archangels, and told the secrets of creation.<sup>[citation needed]</sup>

**Angels**<sup>[edit]</sup>

An angel comforting Jesus, by [Carl Heinrich Bloch](#), 1865–1879

*Main article:* [Angel](#)

The angels are the lowest order of celestial beings, and the most recognized. They are the ones most concerned with the affairs of people. Within the category of the angels, there are many different kinds, with different functions. The angels are sent as messengers to humanity. Personal guardian angels come from this class (Matthew 18:10).

**Personal guardian angels**<sup>[edit]</sup>

The angelic choirs circling the [abode of God](#), from [Dante's Paradiso](#), illustrated by [Gustave Doré](#)

Personal [guardian angels](#) are not of a separate order of angels. It is a common belief among Christians that they are assigned to every human being, Christian or not.<sup>[28]</sup>

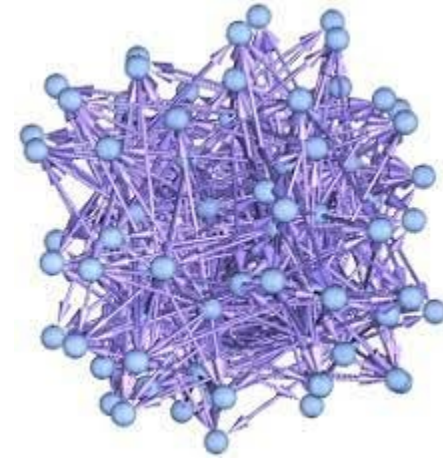
Individual angels and demons from the choirs<sup>[edit]</sup>

In John Milton's [Paradise Lost Satan](#) and the archangels belong to this choir ("archangel" has here the meaning of "most powerful angel", not the members of the second lowest choir). [Beelzebuth](#) is also addressed as prince of the seraphim in witchcraft litanies.<sup>[29]</sup> Beelzebub and [Azazel](#) were cherubim before their fall. [Thomas Aquinas](#) in [Summa Theologica](#) states that Satan belongs to this choir, not to the seraphim. *Paradise Lost* cites the demons [Adramelec](#) and [Asmodai](#). Some sources mention [Astaroth](#) as well.<sup>[29][30]</sup>

Witchcraft litanies mention [Belial](#).<sup>[29]</sup>

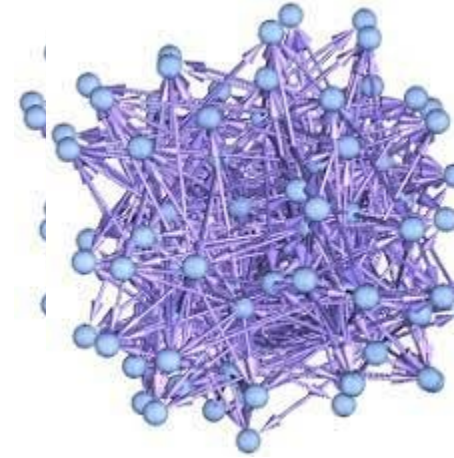


# Wolfram Ruliad: Jewish Kabbalistic View



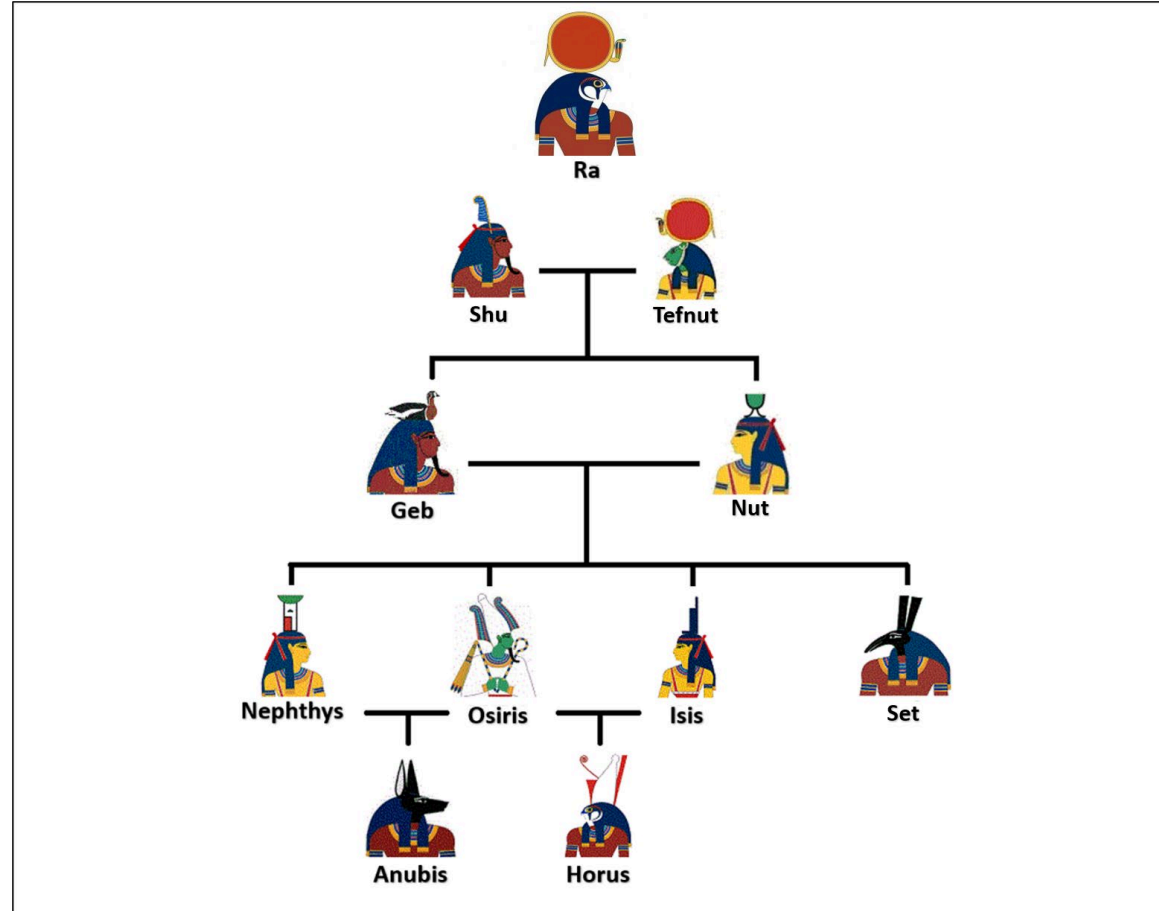
- The three Calabi-Yau compactified manifolds have holes
  - Three holes for the matter subspace
  - Four holes for the dark matter subspace
  - Eight holes for the synchronizing subspace
- The three holes in matter subspace tie to three holes in the synchronizing subspace
- The four holes in the dark matter subspace tie to the four holes in the synchronizing subspace
- The remaining hole in the synchronizing subspace ties to itself
- This results in ten independent dimensions, the ten sepiroth of the Kabbalah, the most mystical teachings of Judaism

# Wolfram Ruliad: Hindu/Buddhist View



- Each of the three compactified Calabi-Yau manifolds contains myriad spirits and souls
- The three major Hindu gods are each tied to one compactified subspace
  - Brahma: the creator of the universe (matter subspace)
  - Vishnu: the preserver of the universe (synchronizing subspace)
  - Shiva: the destroyer of the universe (dark matter subspace)
- The dark matter spirits or soul tie via incarnation to the chakras of the human body, and were observed by Ron Cowen
- The pantheon of Hindu gods and goddesses are all encompassed in these three subspaces with incredible and ever evolving diversity

# Wolfram Ruliad: Egyptian Gods ?



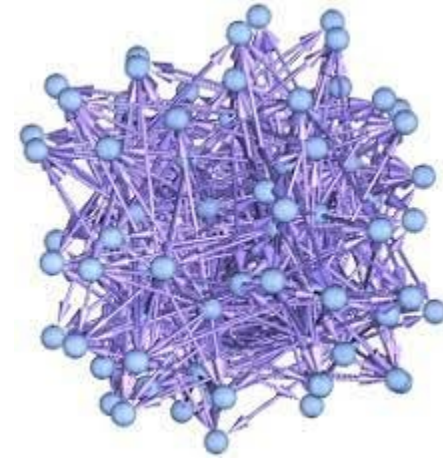
# 26 Real Dimensional Symplectic Universe

26 REAL DIMENSIONAL SYMPLECTIC <sup>1</sup> UNIVERSE	
10 Matter Dimensions	10 Dark Matter Dimensions
Space-Time 4 Dimensions (x,y,z,ict <sup>2</sup> )	Space-Time 4 Dimensions i * (x,y,z,ict) = (ix,iy,iz,-ct)
Symplectic Calabi-Yau Manifold 6 Compactified Dimensions 3 Holes – Genus 3 Hodge Diamond (9,11,6,7)	Symplectic Calabi-Yau Manifold 6 Compactified Dimensions 4 Holes – Genus 4 Hodge Diamond (17,12,21,12)
Symplectic Calabi-Yau Manifold 6 Synchronizing Compactified Dimensions 8 Holes – Genus 8 Hodge Diamond (8,23,21,17)	

<sup>1</sup> Symplectic = real and imaginary pairs.

<sup>2</sup> ict =  $\sqrt{-1}$  \* speed of light \* time.

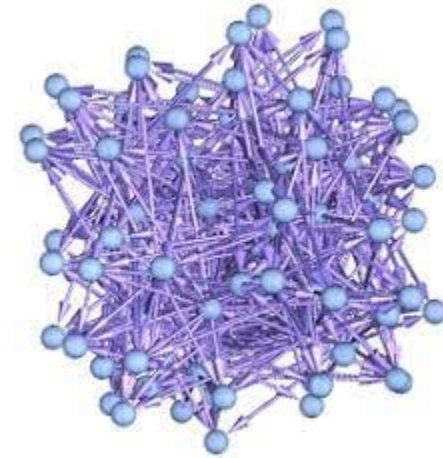
# Wolfram Ruliad: The Algorithms and Rules



- Wolfram has argued in his book **A New Kind of Science** that very simple algorithms or rules can lead to incredibly complex outcomes
- Indian mystics argue that there are only five basic or simple rules or algorithms that govern the universe, even though as we look at the world around us we see incredible complexity
- Louis De Broglie (1925) and David Bohm (1952) both argued that underlying quantum mechanics is a deterministic mechanism called a pilot wave that is constantly scanning all entities in the universe and acting on perceived changes to following algorithms; Bohm showed it is possible to construct a pilot wave theory that is consistent with modern quantum mechanics
- Ron Cowen observed that space compartment walls as well as particles such as electrons are covered with blocks of information (data and algorithms) that constantly scan the surroundings and act on this information according to algorithms



# Wolfram Ruliad: Principles

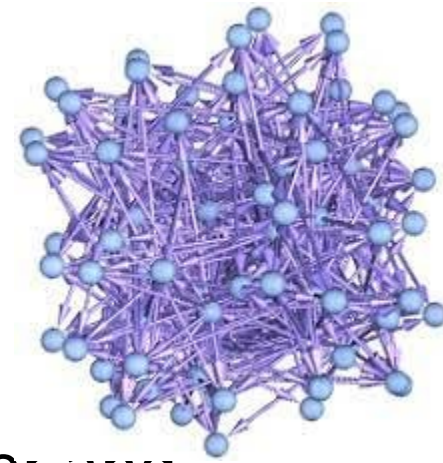


- Principle of Computational Equivalence
  - systems found in the natural world can perform computations up to a maximal ("universal") level of computational power, and that most systems do in fact attain this maximal level of computational power. Consequently, most systems are computationally equivalent. For example, the workings of the human brain or the evolution of weather systems can, in principle, compute the same things as a computer. Computation is therefore simply a question of translating inputs and outputs from one system to another.
- Hypergraph Data Structures, but  $10^{400}$  points and edges
- Building onto Mathematica: unlike other theories, Wolfram builds into Mathematica software all of his concepts for hypergraphs and causality, so the compiler/interpreter enforces self-consistent and robust rules, while other approaches involving mathematics per se can be far less precise
- Causality Handled by Causal Graphs with Updates
- Multiple Threads via Branchial Graphs: Quantum Mechanics/Many Worlds, and this can lead to quantum entanglement

# 26 Real Dimensional Symplectic Universe

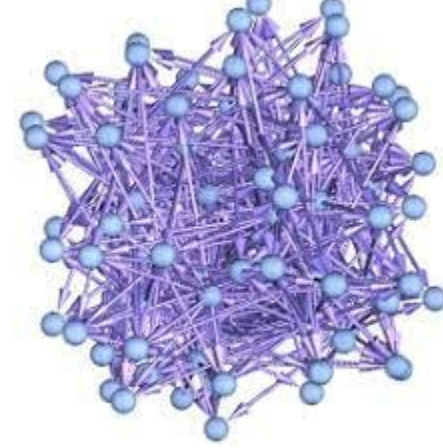
<b>INFORMATION CONTROL HIERARCHY</b>	
<b>Matter</b>	<b>Dark Matter</b>
<b>Biology</b> DNA / RNA, Bioelectricity Mortal	<b>Biology</b> Sentient or Quiescent Life Force Energy – Immortal
<b>Chemistry</b> Electronic Periodic Table of Elements	<b>Chemistry</b> Nuclear Geometry Branching Trees
<b>Physics</b> 10-String Subquarks & Bosons, Electrons	<b>Physics</b> 5-String Subquarks & Bosons (No Electrons)
<b>INFORMATION</b> Calabi-Yau Manifolds	

# Wolfram Ruliad: Duality



- Wolfram Ruliad can encompass dual versions of matter (matter and dark matter)
  - Electromagnetic forces (including strong and weak force) are only in matter subspace, because only this subspace contains electrons
  - Gravity arises as a property of space-time or changes in the ether, not as a fundamental force; the 19<sup>th</sup> century view of an ether was in fact correct
- Fundamental differences
  - time for matter subspace is negative time for dark matter subspace
  - Space-like regions in one are time-like regions in the other, and vice versa

# Wolfram Ruliad: Cosmology



- Wolfram Ruliad can encompass big bounce via algorithm
- Time in the dark matter subspace is negative the time in matter subspace, which leads to the time interval between big bounces being a sum of positive and negative time, can be trillions of years
- Dark matter lives forever between each bounce, while the atoms of matter are unchanged between each bounce but are destroyed at the bounce