



# The Effect of Unfolding Scientific Discoveries on Visual Images of the Beginning (and the End) of the Universe

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# Overview

- The Beginning - Creation or Big Bang?
  - Theology, Cosmology, Science
  - Spiritual, philosophical (ancient, primitive, medieval, Renaissance, modern)
  - Sources: from myths and legends to Genesis to modern astronomy and cosmology
- Importance of visual images (real, imagined)
  - Ex Nihilo or from Chaos
  - Devotional or Narrative aid
  - Patrons, advisers, artists
  - Measured, mathematical, astronomical, abstract, symbolic
  - As explanation/reflection of contemporary knowledge ('scientific' thought)
  - The End



Stephen Hawking, *A Brief History of Time*, 1988

**Big Bang:** *The singularity at the beginning of the universe*

**Big Crunch:** *The singularity at the end of the universe*

Martin Rees, *Before the Beginning* 1997

*Our Universe sprouted from an initial event, the 'big bang' or 'fireball.' It expanded and cooled: the intricate pattern of stars and galaxies we see around us emerged thousands of millions of years later.*

*On at least one planet around at least one star, atoms have assembled into creatures complex enough to ponder how they evolved.*

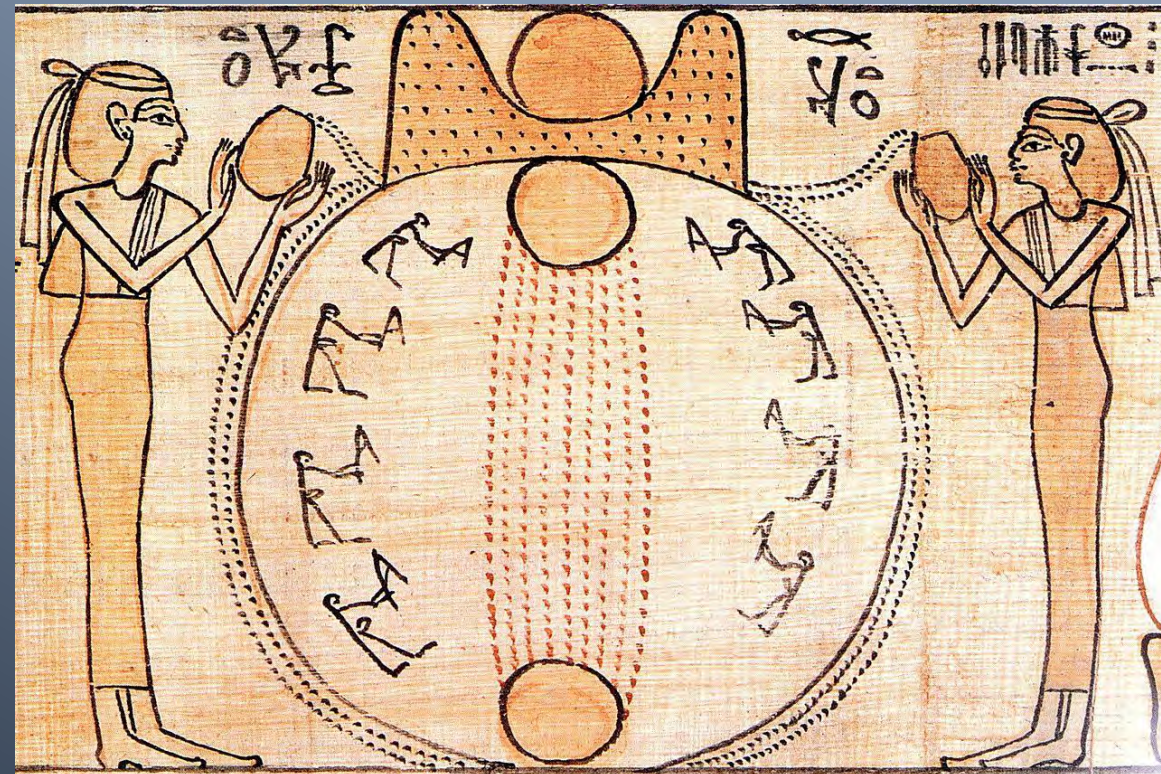
# Babylonia

Babylonian cylinder seal, rising of sun-god 2300BC



*The sky above was not named/And the earth  
beneath did not yet bear a name/...  
And chaos, the mother of them both ...  
(Enuma Elish, 1800-1600 BCE )*

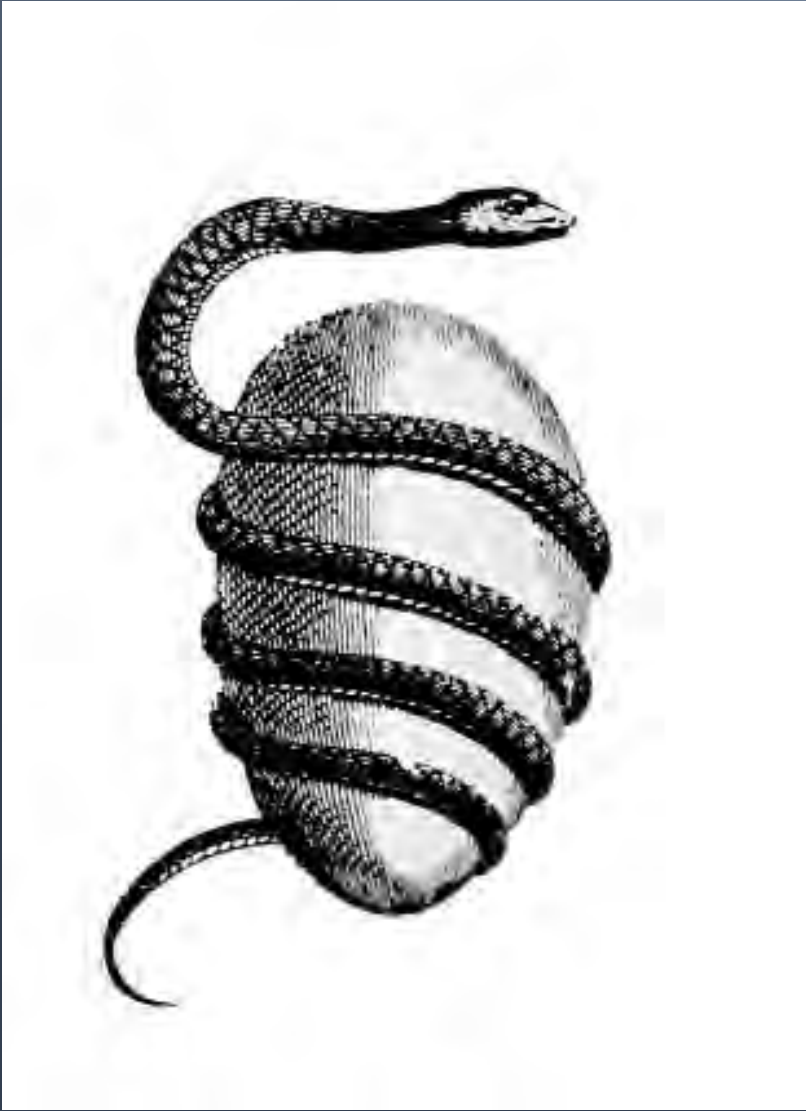
# Egypt



*Sun rising over the mound of creation  
(goddesses pour primeval waters)*

*Book of the Dead of Khenumose, c 1000 BCE*

## The Cosmic Egg (Orphic/Ptah)



Orphic egg from J Bryant,  
*Analysis of Ancient mythology*, 1774



Ptah fashioning the egg of the world  
from E A Budge, *Studies in Egyptian  
Mythology* 1904

## Greece

*She [Gaia/Earth] lay with Ouranos and bare deep-swirling Okeanos [primordial waters] (Hesiod, Theogony , 7th C BCE)*



## Rome

*Before the seas, and this terrestrial ball, And Heav'n's high canopy, that covers all ... Rather a rude and indigested mass: A lifeless lump, unfashion'd, and unfram'd ...and justly Chaos nam'd (Ovid, Metamorphoses, c 8 CE)*



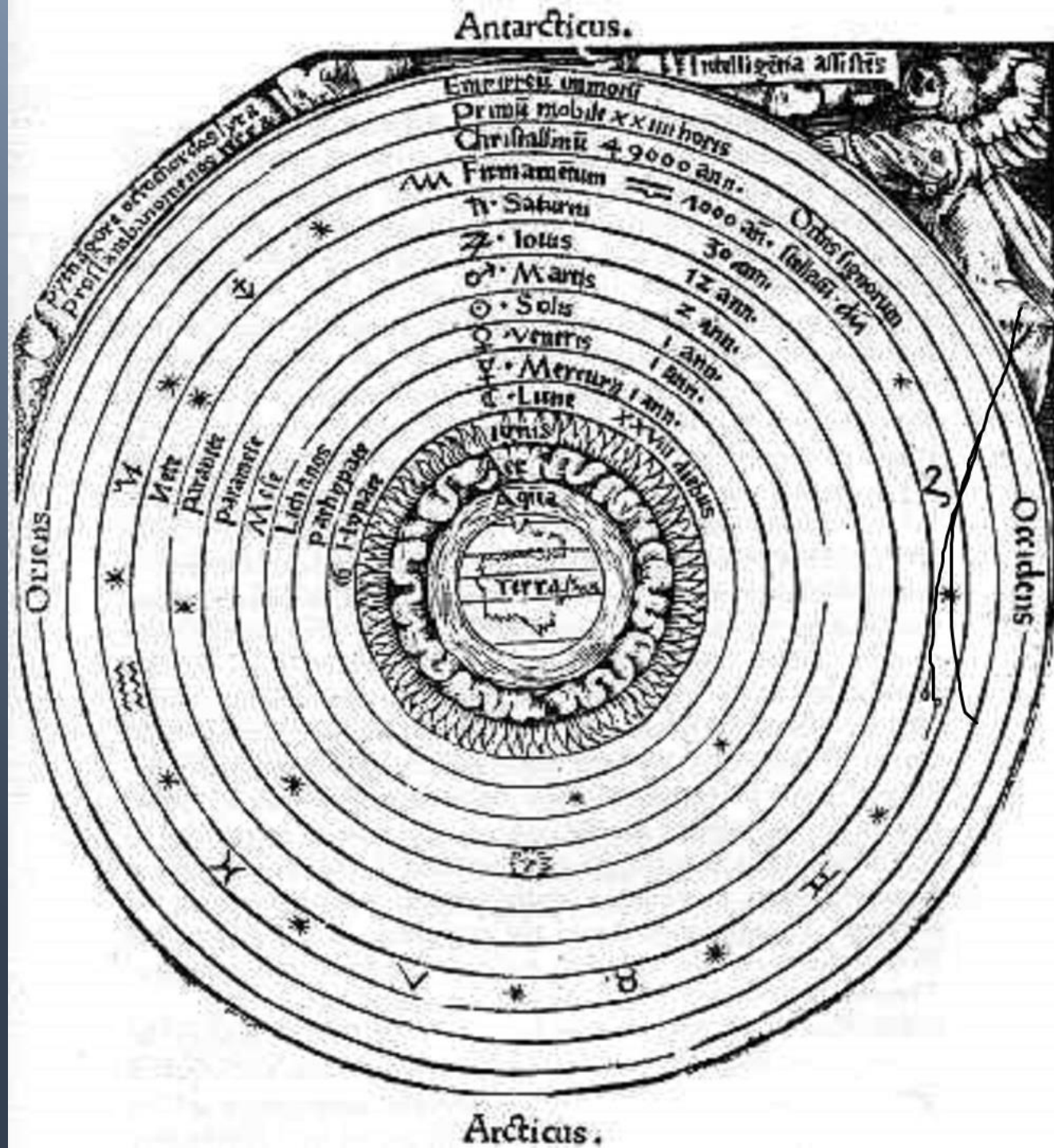
Prometheus forming man in the likeness of the gods, Graeco-Roman gem, Italy 3<sup>rd</sup> cent CE, Louvre

Aristotle 384–322 BC

*It so happens that the earth and the universe have the same centre, for the heavy bodies do move also towards the centre of the earth ... It is now clear that the earth must be at the centre and immobile.*

*De Caelo II, xiv, 296b, 15XX*

Aristotelian Universe, German, 1519



Lorenz Frolich, 1820-1908,  
*Ymir killed by Odin, leading to creation*



*Before there was soil, or sky, or any green thing, there was only the gaping abyss ... chaos of perfect silence and darkness. Poetic Edda, Norse (pre 13th century)*

*Hindu: ... even nothingness was not, nor existence. There was no air then, nor the heavens beyond it. At first there was only darkness wrapped in darkness. (Rigveda, c. 1500–1200 BCE)*





Jain cosmology, India 5th C BCE

Universe, as 'uncreated' with neither beginning nor end; no concept of a creator (shape of Universe perceived as a cosmic man, 17th century image)

Cf tribal ideas – 'No theory as to the origins; always existed and always will'  
(Ifugao people, Papua New Guinea)



# Byzantine/medieval view of the universe



Cosmas Indicopleustes, *Christian  
Topography, Universe*, 6th century

# A Byzantine/medieval view of the



 **The Flat Earth Society**  
20 hrs

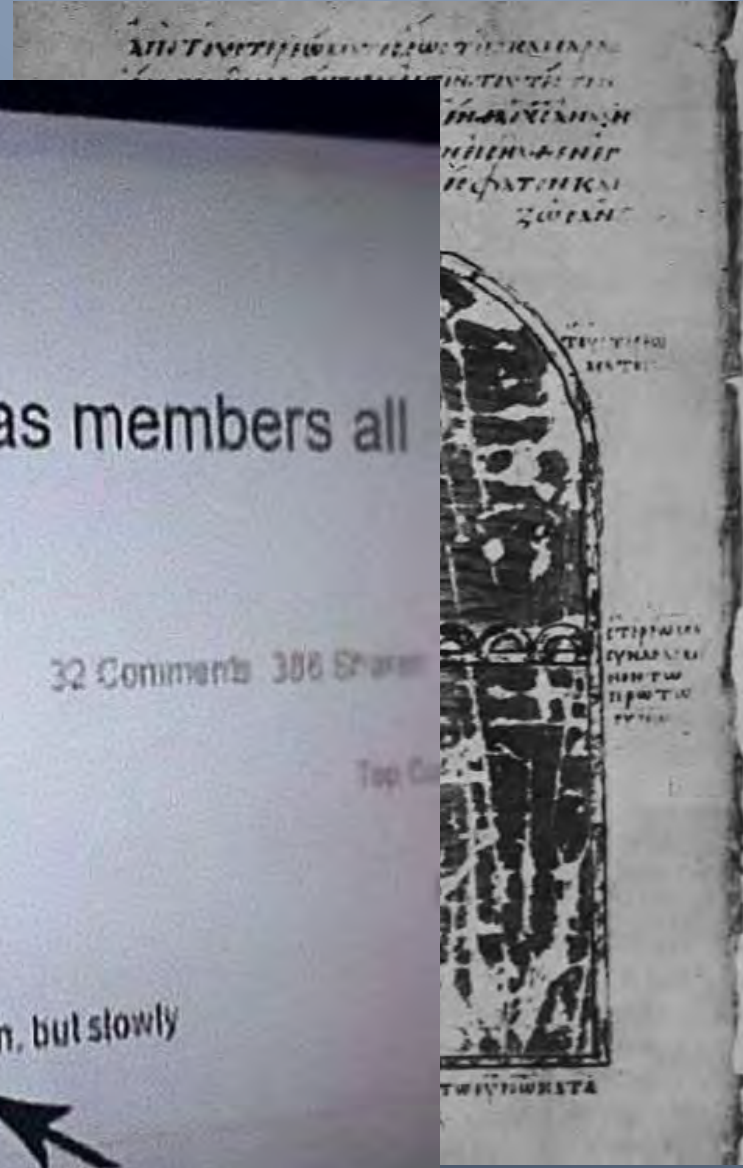
The Flat Earth Society has members all around the **globe**.

4.9K    32 Comments    308 Shares

Like    Comment    Share

Write a comment

 **Physics-Astronomy.com** Say that again, but slowly  
Like Reply    1,986    20 hrs



...stes, Christian  
topography, *universe* 6th century

Early works: single image, symbols - AΩ (ω), cosmos, stars



Catacomb of Comodilla, Rome, 4th century



S Apollinare in Classe, Ravenna, 7th century

The Junius/  
Caedmon  
Manuscript  
Bodleian,  
10th century  
(c 990-1000)

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ƿrā aelmlitas. folde ƿær þa gyt. swa ƿungre  
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dum. mæd angla heht. lifē brytta lēht ƿond  
cuman. of þi sumne gund. ƿaƿe ƿær gefylled.  
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## Genesis I and II

Bible of St Castor of Coblenz, *God the Creator*, Codex 333, Folio 2, Bibliothek, Pommersfelden before 1077



# Girona Tapestry late 11th C (or 12th)



Based on Genesis 2

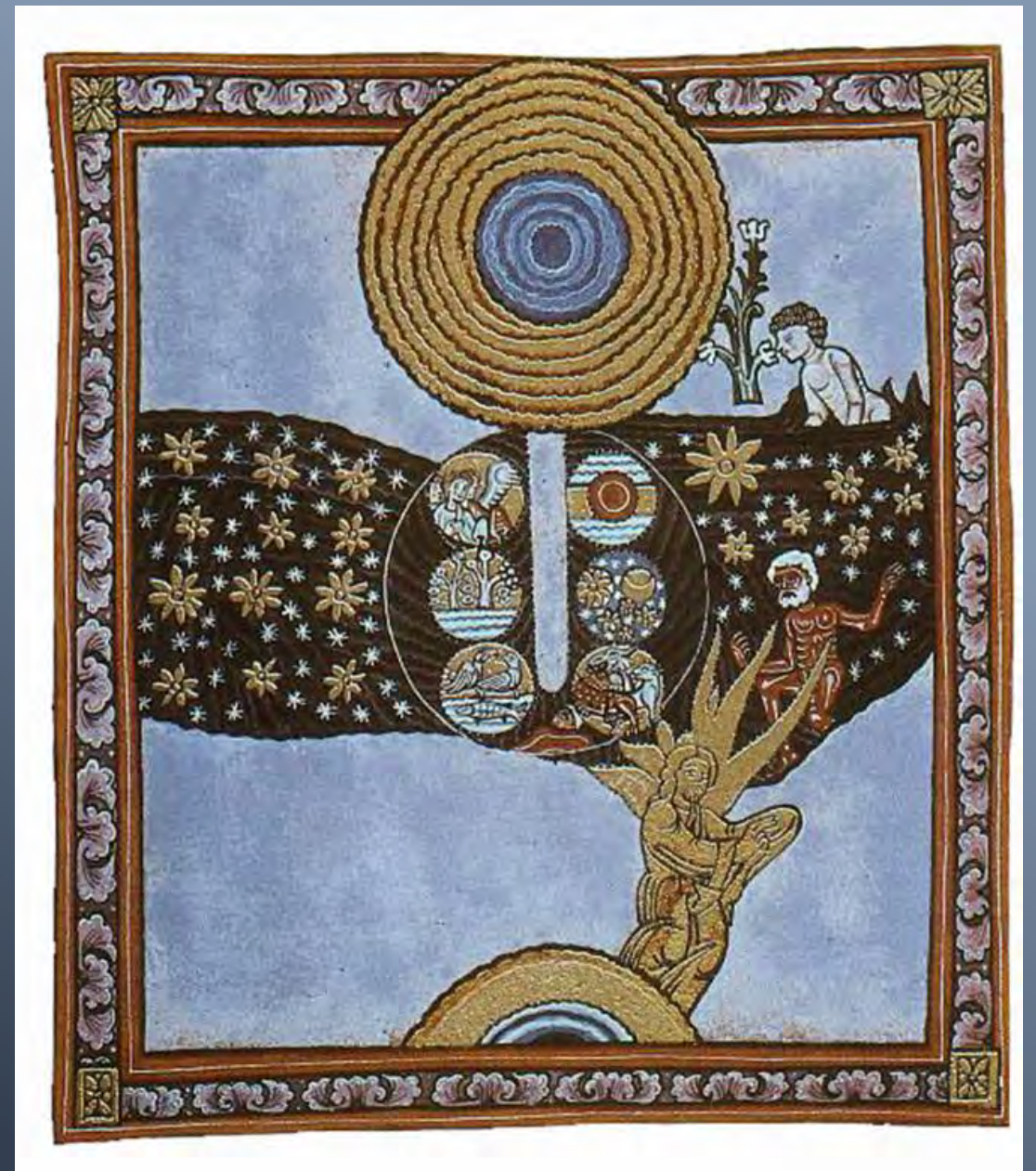




Monreale, Sicily, *God Creating the Universe (Sun and moon, Separation of Waters, Adam)*, 1175



Hildegarde of Bingen, *Creation*, 12th century

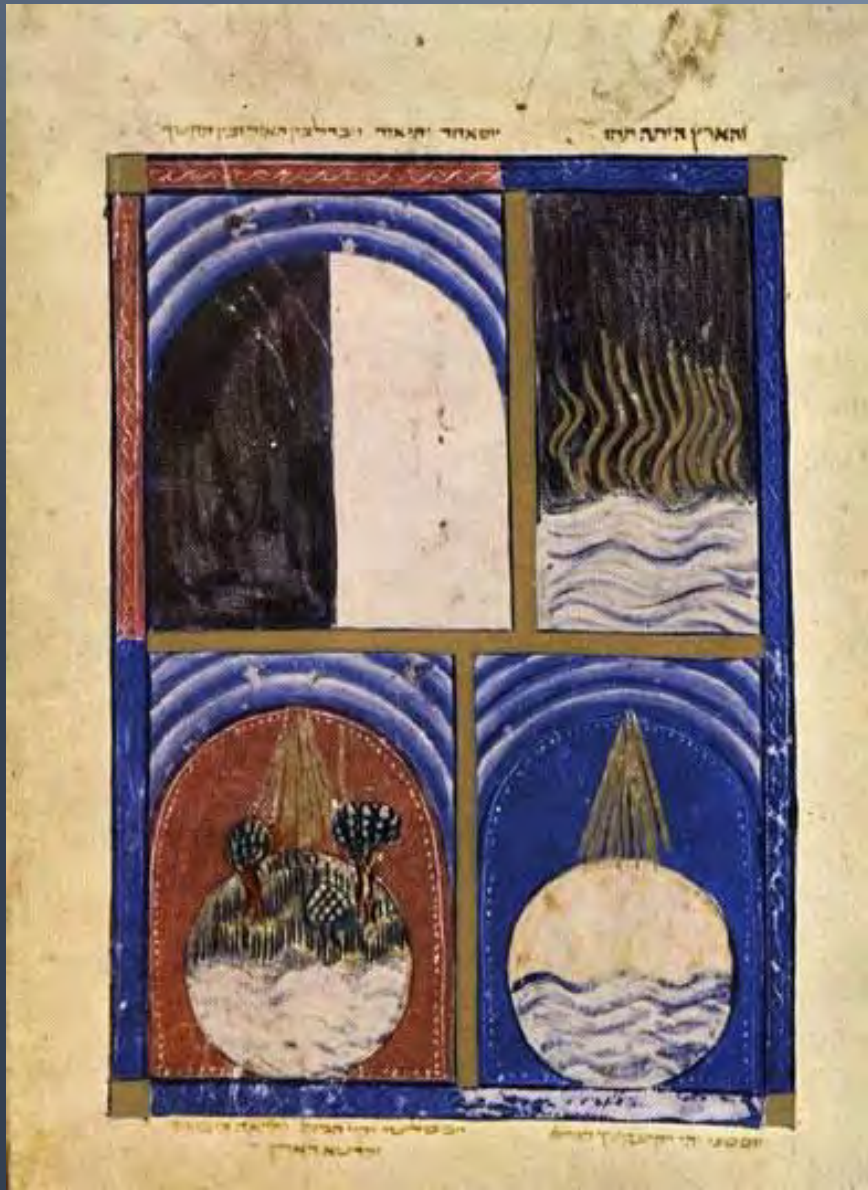


Hildegarde of Bingen, *Six days of Creation*,  
from *Scivias* 12th century

Fol004v,  
Souvigny,  
France  
12c



**INCIPIT**  
 creavit de celum et terram: Terra autem erat inanis  
 et uacua: et tenebre erant super faciem abyssi: spiritus  
 dei ferebatur super aquas: Dixitque deus: fiat lux: Et facta  
 est lux: Et uideat deus lucem quod esset bona: et tenebras  
 appellavit lucem: et tenebras noctem:  
 factumque est uespere et mane: dies unus.  
**Q**uartus quoque dies: fiat firmamentum in medio  
 aquarum: et diuidat aquas ab aquis: et  
 fiat deus firmamentum: et uisusque aquas que erant sub  
 firmamento abbas que erant super firmamentum: et  
 factum est ita: et uocauitque deus firmamentum celum: et factum  
 est uespere et mane dies secundus: **III.**  
**D**ixit uero deus: congregentur aque que sub  
 celo sunt in locum unum: et appareat arida:  
 factumque est ita: et uocauitque deus aridam  
 terram: congregatioque aquarum appellauit  
 maria: et uideat quod esset bonum: et ait: germi-  
 net terra herbas uirentes: et faciant seminum lignum  
 pomiferum faciens fructum iuxta genus suum: cui  
 seminum in semine ipso sit super terram: et factum est ita: et  
 producit terra herbas uirentes: et afferent seminum iuxta  
 genus suum: lignumque faciens fructum: et habens seminum  
 quodque seminum secundum speciem suam: et uideat deus quod  
 esset bonum: factumque est uespere et mane dies tertius: **IIII.**  
**Q**uartus autem dies: fiant luminaria in firmamento  
 celi: ut diuidant diem ac noctem:  
 et sint in signa: et tempora: et dies: et anni:  
 et luceant in firmamento celi: et illuminent terram:  
 et factum est ita: et fecitque deus duo magna luminaria:  
 lunam mare maius ut esset dies: et lunam minus ut  
 esset noctis: et stellae: et posuit eas in firmamento  
 celi: ut luceant super terram: et uideat deus quod  
 esset bonum: et factum est uespere et mane dies quartus: **V.**  
**Q**uartus quoque dies: producantur aquae repleant  
 uentrem uiuentis: et uolante super terram: sub  
 firmamento celi: et repleatque deus cetera grandia:  
 et omnia animata uiuentis: et quae morantur: quae plerumque  
 sunt aquae in speciem suam: et omne uiolente secundum genus  
 suum: et uideat deus quod esset bonum: et benedixitque eis  
 dicens: Crescite et multiplicamini: et replete aquas  
 maris: et cetera: et multiplicentur super terram: et factum  
 est uespere et mane: dies quintus: **VI.**



Serajevo Haggadah, Spain 12th century  
(darkness over waters; light and dark;  
sea/land; vegetation)

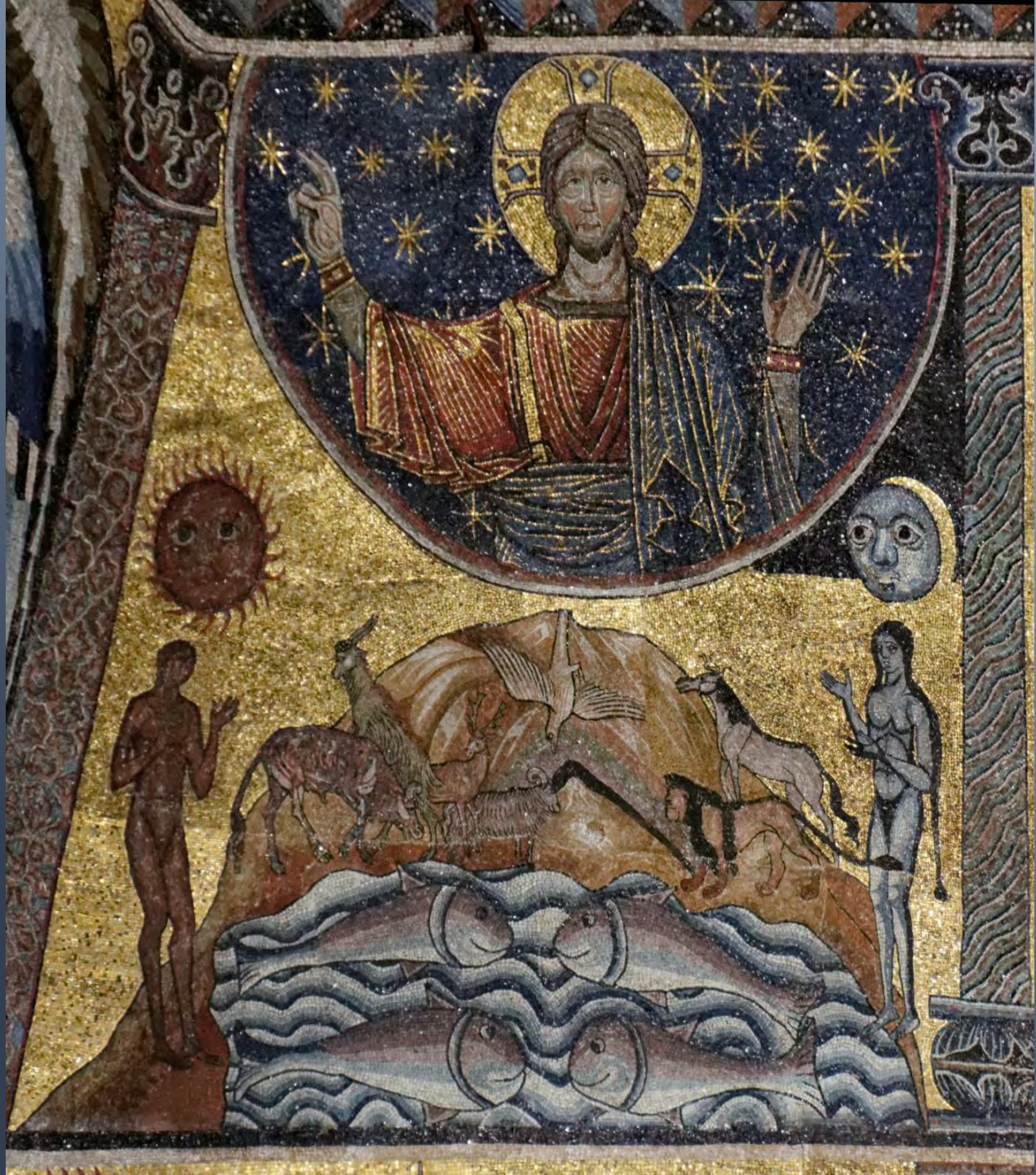


Serajevo Haggadah (plants; animals;  
birds; mankind, rest)

Fr Jacopo (possibly Jacopo  
Torriti) Florence Baptistery  
Mosaic

Creation as single event, events/  
days shown in same image

Early 13th century (after 1230)



St Mark's Venice, *Creation*, mosaics 1215-1280



*Separation of Light and Dark*



IN CRISTIFLAMA CALORE SEMPER ET ETERNI

...CUM VIDERET ADAM QUOD NON FUIT ILLI SIMILIS...  
...ET ERANT IN GARDIA...  
...ET ERANT IN GARDIA...  
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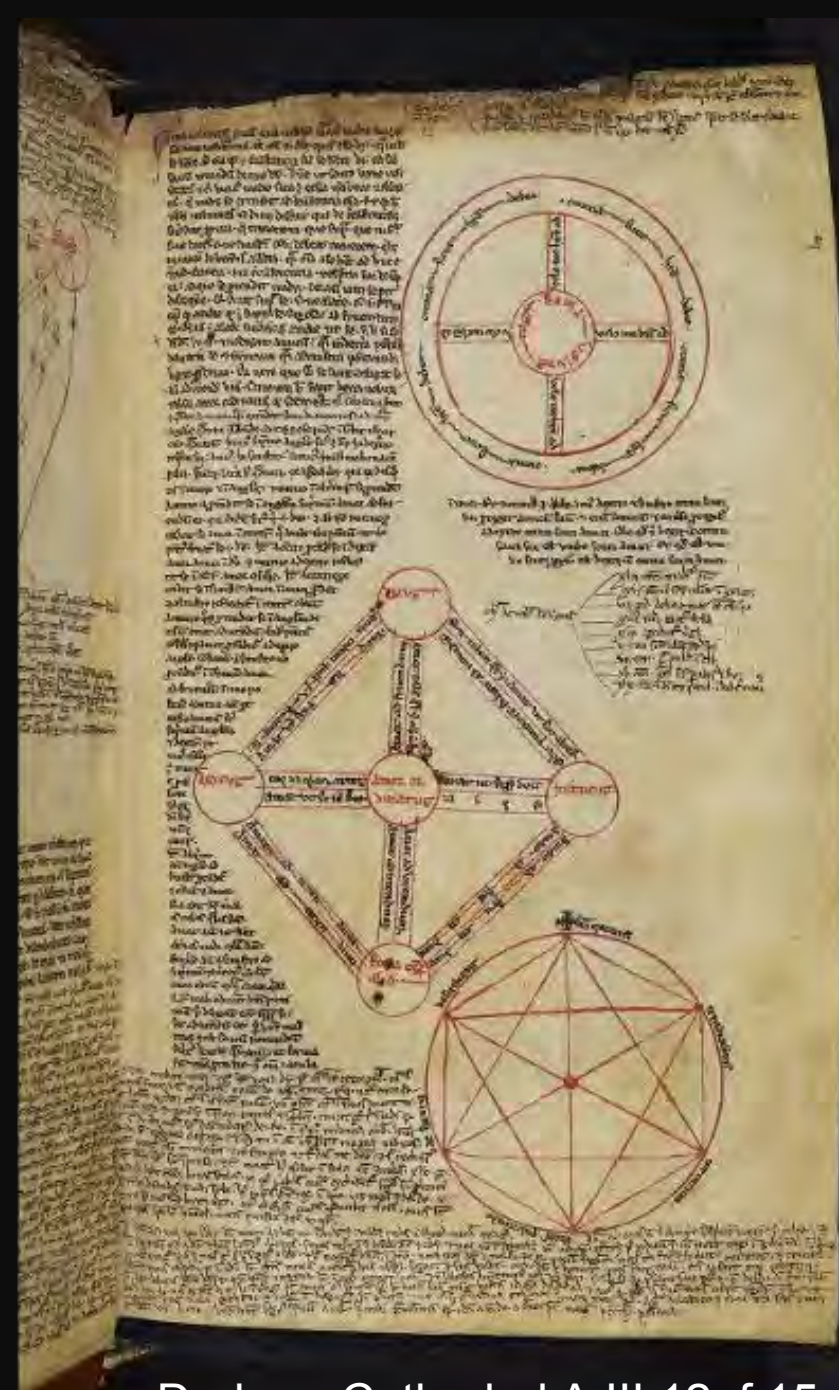
...ET ERANT IN GARDIA...  
...ET ERANT IN GARDIA...  
...ET ERANT IN GARDIA...  
...ET ERANT IN GARDIA...

Robert Grosseteste (1168-1253)  
*De Luce* 1230-35, *Hexaëmeron* 1230-35:

Light as fundamental and first created, expanding outwards from original, central source into a sphere:

*Thus light, which is the first form created in first matter, multiplied itself by its very nature an infinite number of times on all sides and spread itself out uniformly in every direction. In this way it proceeded in the beginning of time to extend matter which it could not leave behind, by drawing it out along with itself into a mass the size of the material universe*

Beginning of space-time validates scriptural view of the Aristotelian eternal (steady state?) universe



Johannes Sacrobosco, 1195-1256  
*Sphaera Mundi*, 1230

Item, cum aqua sit corpus homogeneum, totum cum partibus eiusdem erit rationis, sed partes aquae (sicut in guttulis & roribus herbarum accidit) rotundam naturaliter appetunt formam: ergo & totum, cuius sunt partes.

Diuisio sphaerae secundum substantiam.  
 Sphaera aut dupliciter diuidit: secundum substantiam & secundum accides. Secundum substantiam. An sphaeras decem Sphaera decima: quae primus motus siue primu mobile dicitur: & in sphaera nona quae secundum mobile nominatur: contra tamen his uerba docent auctoris ista: in sphaeras noue scilicet sphaeram nona quae primus motus: siue primum mobile dicitur. & in sphaera stellae fixae quae firmamentu nuncupatur: & in septe sphaeras septe planetarum. Quarum quaedam sunt maiores quaedam minores secundum quod plus uel minus accedunt uel recedunt a firmamento. Vnde inter illas sphaera Saturni maxima est. Sphaera uero lunae minima prout in sequenti figuracione continetur.

Diuisio secundum accides sphaerae.  
 Secundum accides autem diuiditur in sphaeram rectam & obliquam. Illi enim dicuntur habere sphaeram rectam: qui manent sub aequinoctiali: si aliquis ibi manere possit. Et dicitur recta quoniam neuter polorum magis altero illis eleuatur. Vel quoniam illorum horizon intersecat aequinoctialem & intersecatur ab eodem ad angulos rectos sphaerales.



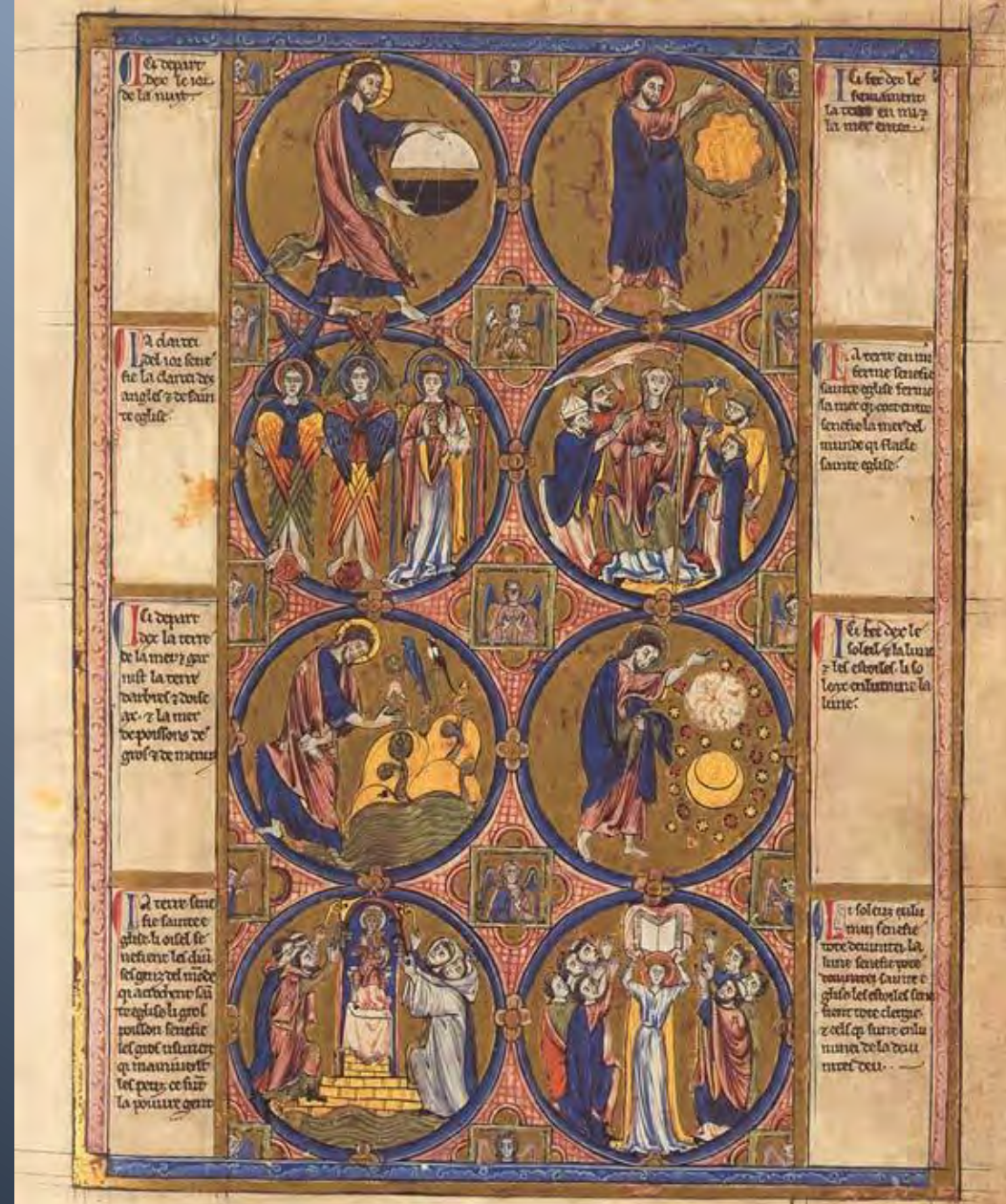
Great Canterbury  
Psalter

early 13th century

Bibliothèque  
Nationale Paris



Bible Moralisée,  
Vindobonensis  
French, 13th century (Vienna)



The Hamilton Bible, fol. 4,  
Workshop of Cristoforo Orimina,  
1350–1360





Sainte-Chapelle, Paris, 13th C



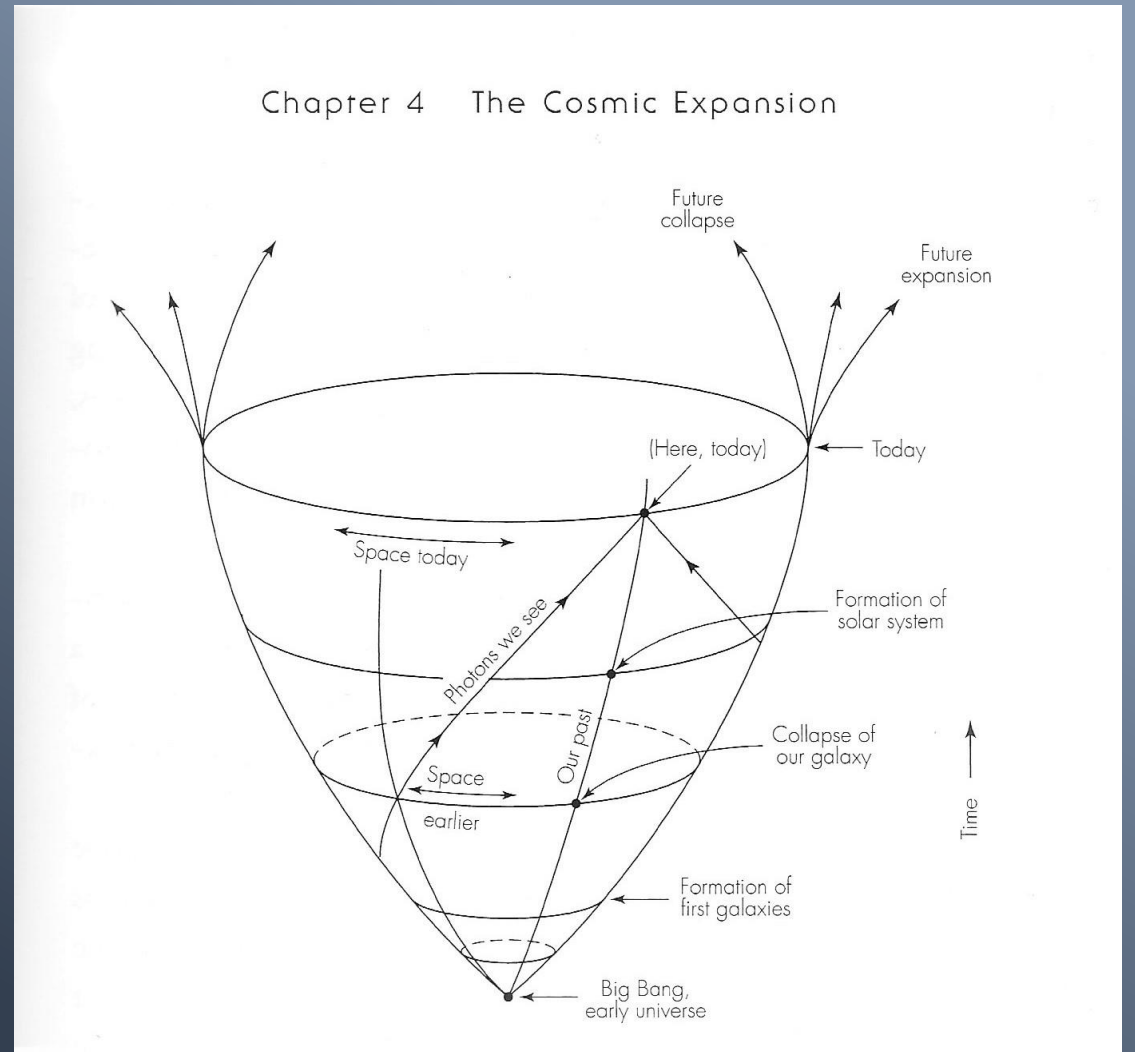
*Creation of the Heavenly Bodies*  
Auxerre, Saint-Étienne, 1215

Freibourg Cathedral 14th C

Cosmic expansion, as a cone  
(C J Hogan, *The Little Book of the Big Bang*, 1998)



Freibourg Cathedral 14th C

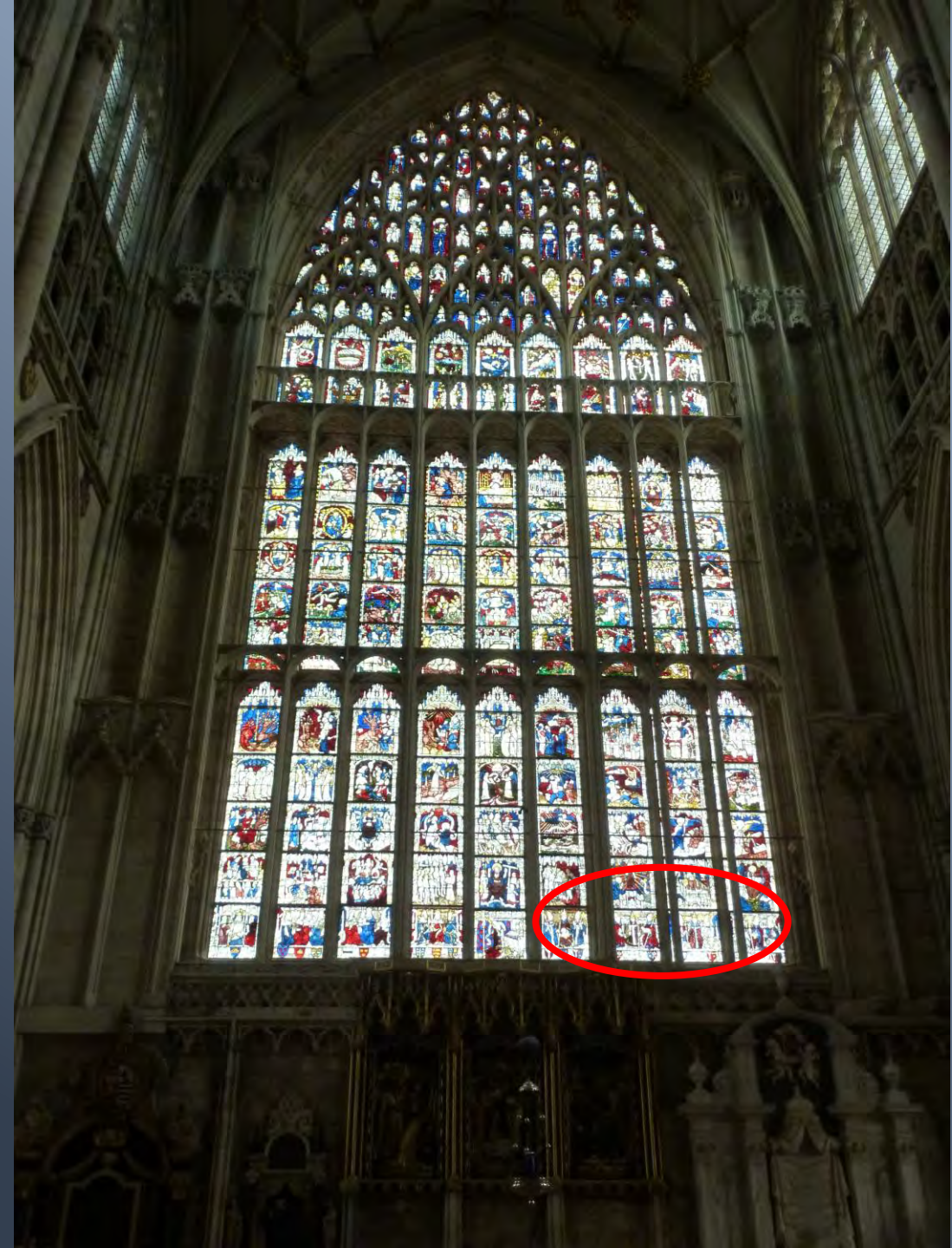




York Minster,  
1405-08



Ego sum  
Alpha  
et Omega





York Minster, Creation scenes (2nd & 4th days) 1405-08



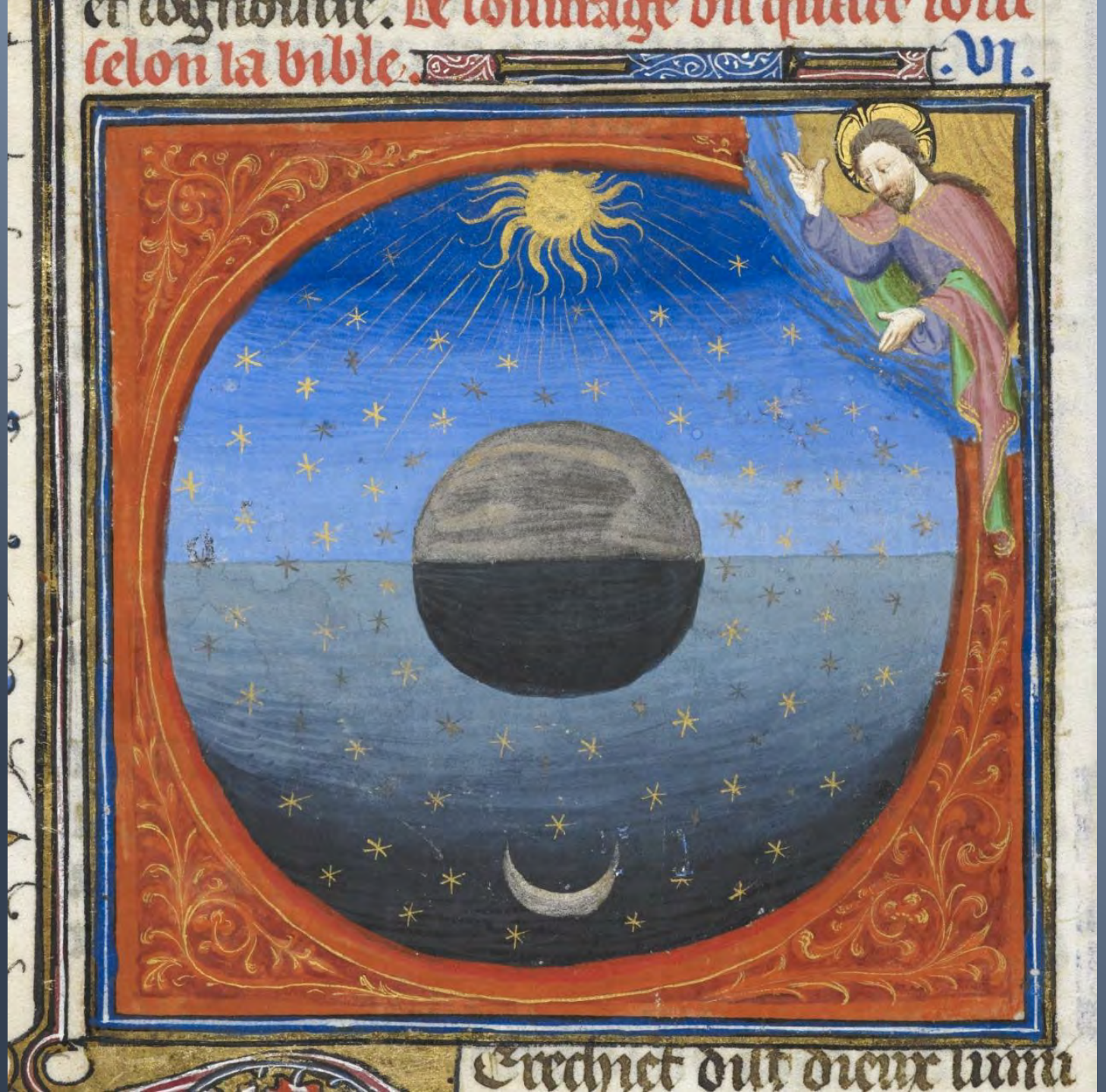
Bible Moralisée, frontispiece,  
Miniaturist, French (c 1250)



Illustration to Guyart des Moulins'  
*Bible historiale*, BL, Royal MS 19  
D III, *God Creator*, 1411

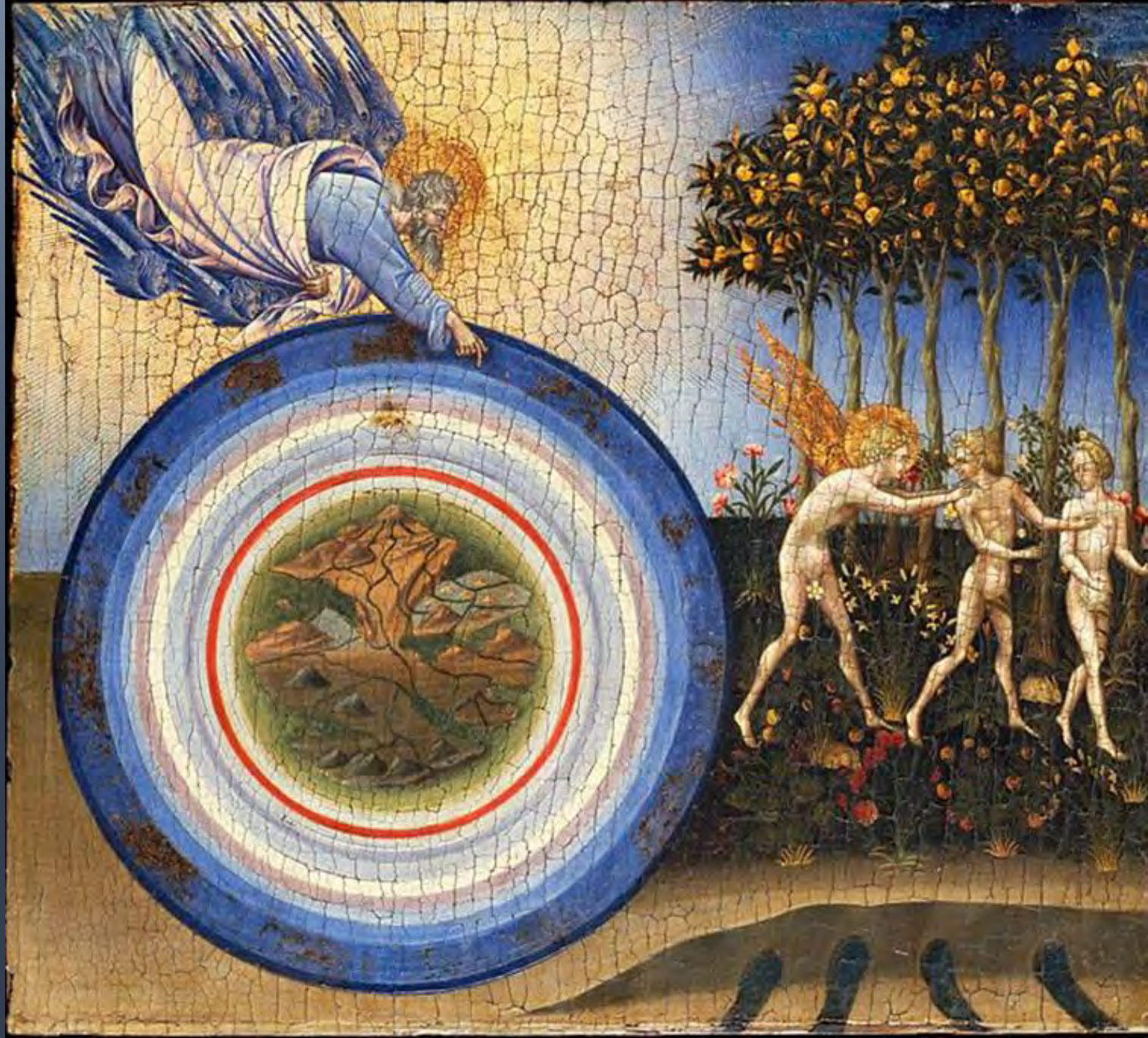


*God Creating the Sun  
and Moon* (illustration to  
Guyart des Moulins'  
*Bible historique*, f. 5v),  
French 1420



Giovanni do Paolo,  
*Creation and Expulsion  
from Paradise*, 1445

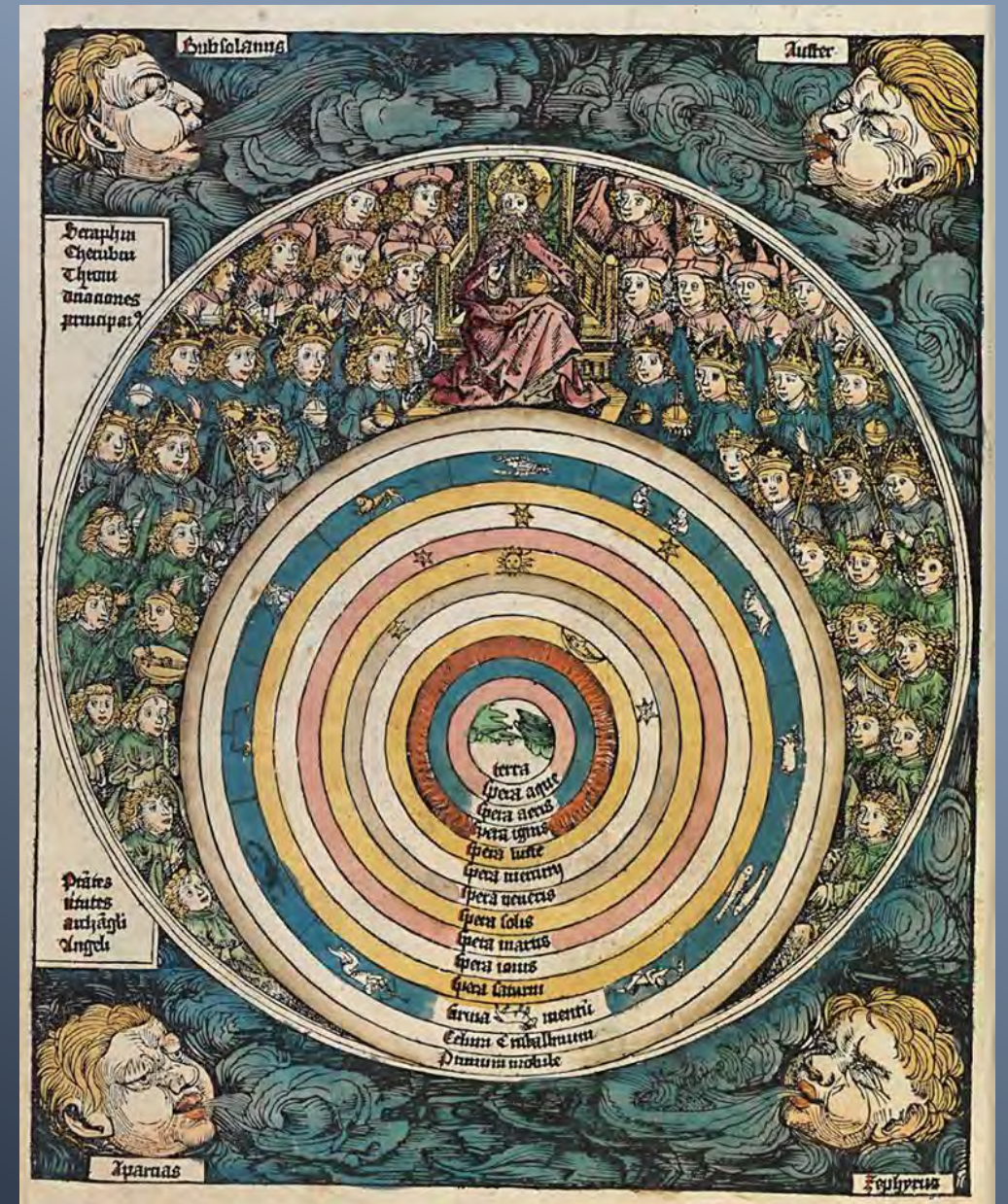
cf Johannes Sacrobosco  
*Sphaera Mundi*, 13th  
century



Fernando Gallego  
*Creation from Chaos*, c 1488



# Six Days of Creation, Nuremberg Chronicle 1493



## Creation

*In the beginning  
God created the  
heaven and the  
earth. And  
the earth was without  
form, and void  
[Gen 1:1]*

Sistine Ceiling  
Michelangelo, 1508-12



## Last Judgment

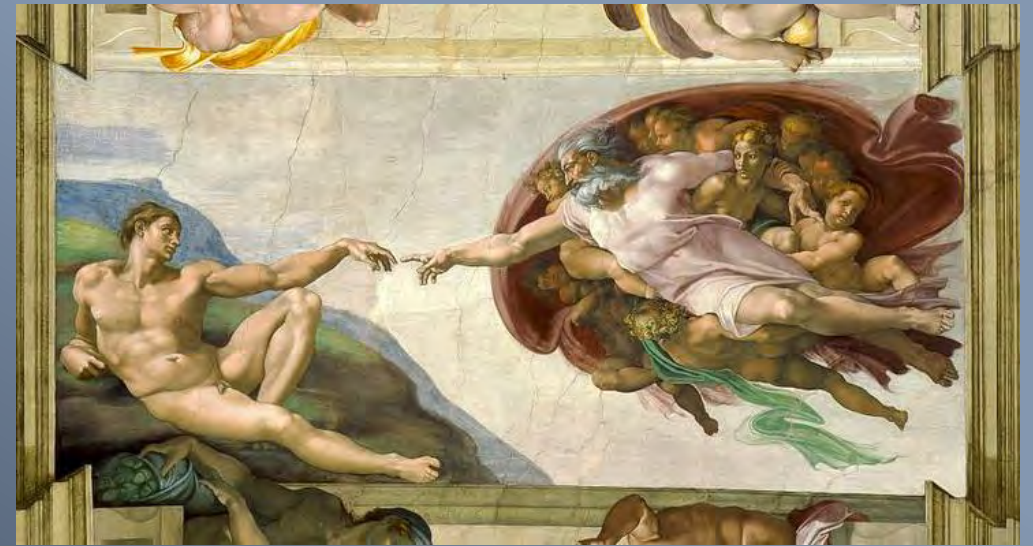
*Then I saw a new  
heaven and a new  
earth, for the first  
heaven and the  
first earth had  
passed away...  
[Rev 21:1-27]*

Sistine Chapel  
Michelangelo, 1536-41





Separation of Light from Dark



Creation of Man(kind)

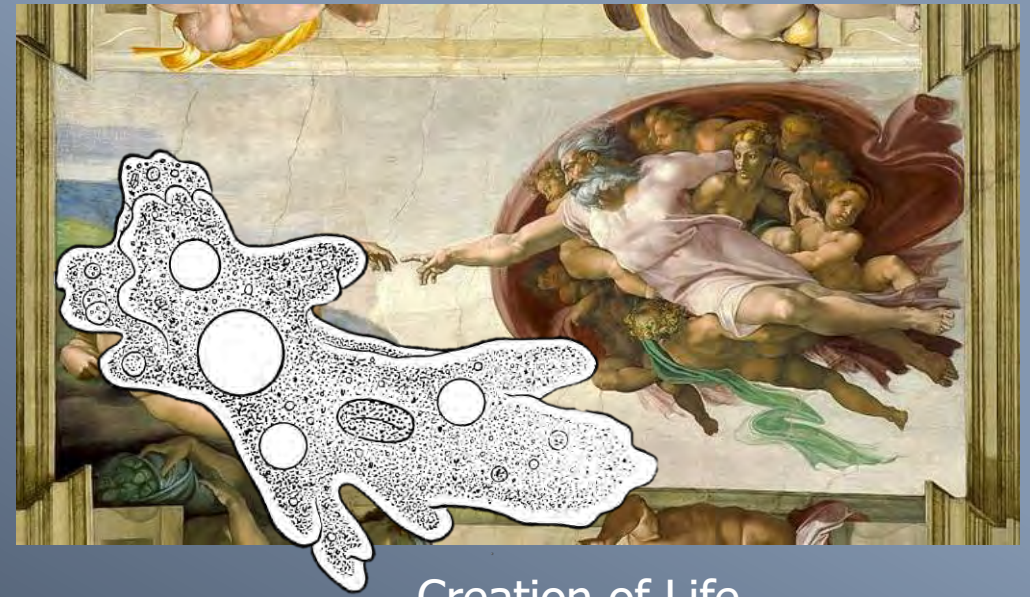


Creation of Sun, Moon and Planets

*The order is roughly the same – but a different timescale*



Separation of Light from Dark



Creation of Life



Creation of Sun, Moon and Planets

*The order is roughly the same – but a different timescale*

Michelangelo, The Sistine Chapel Ceiling, 1508-12

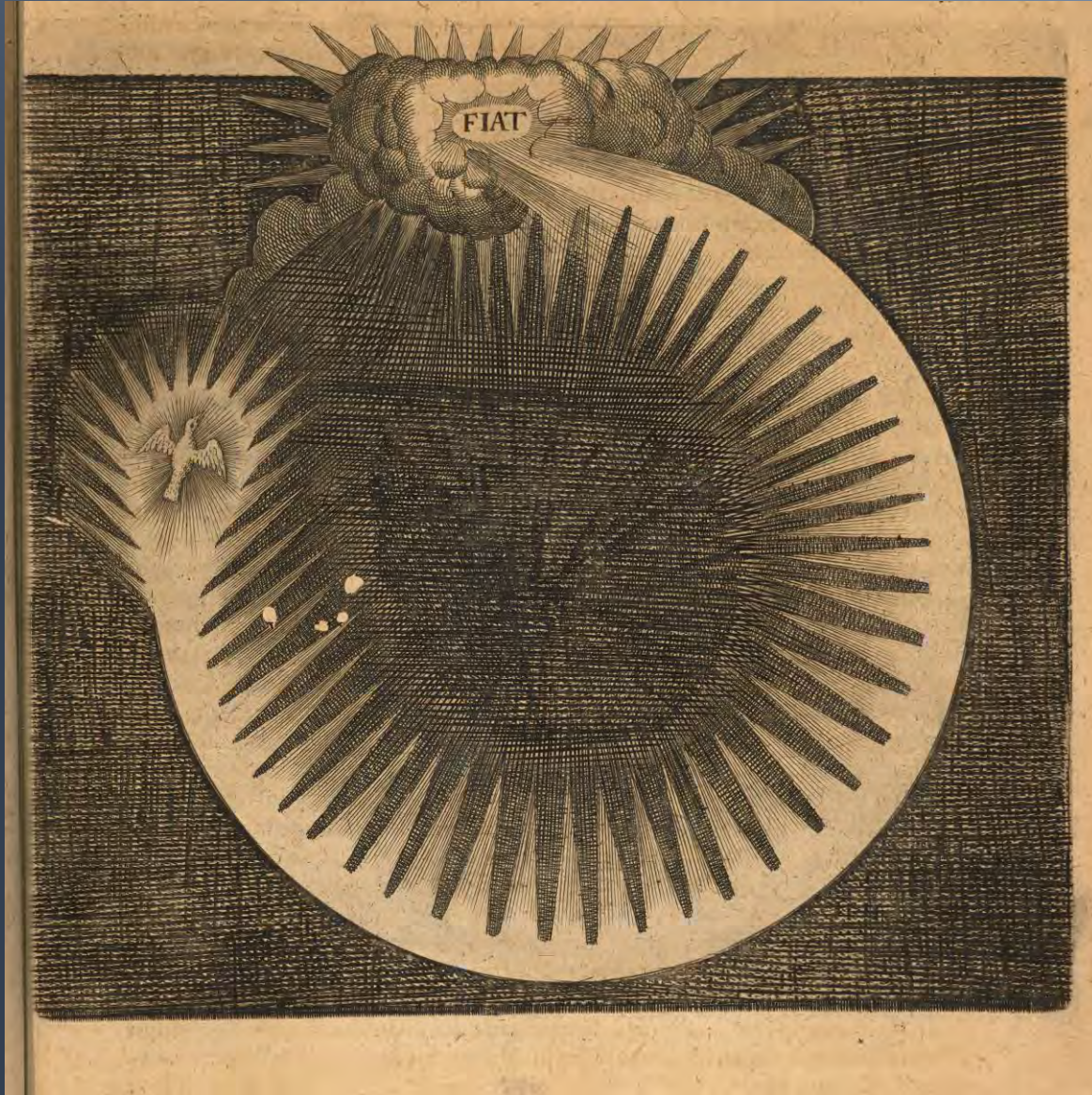




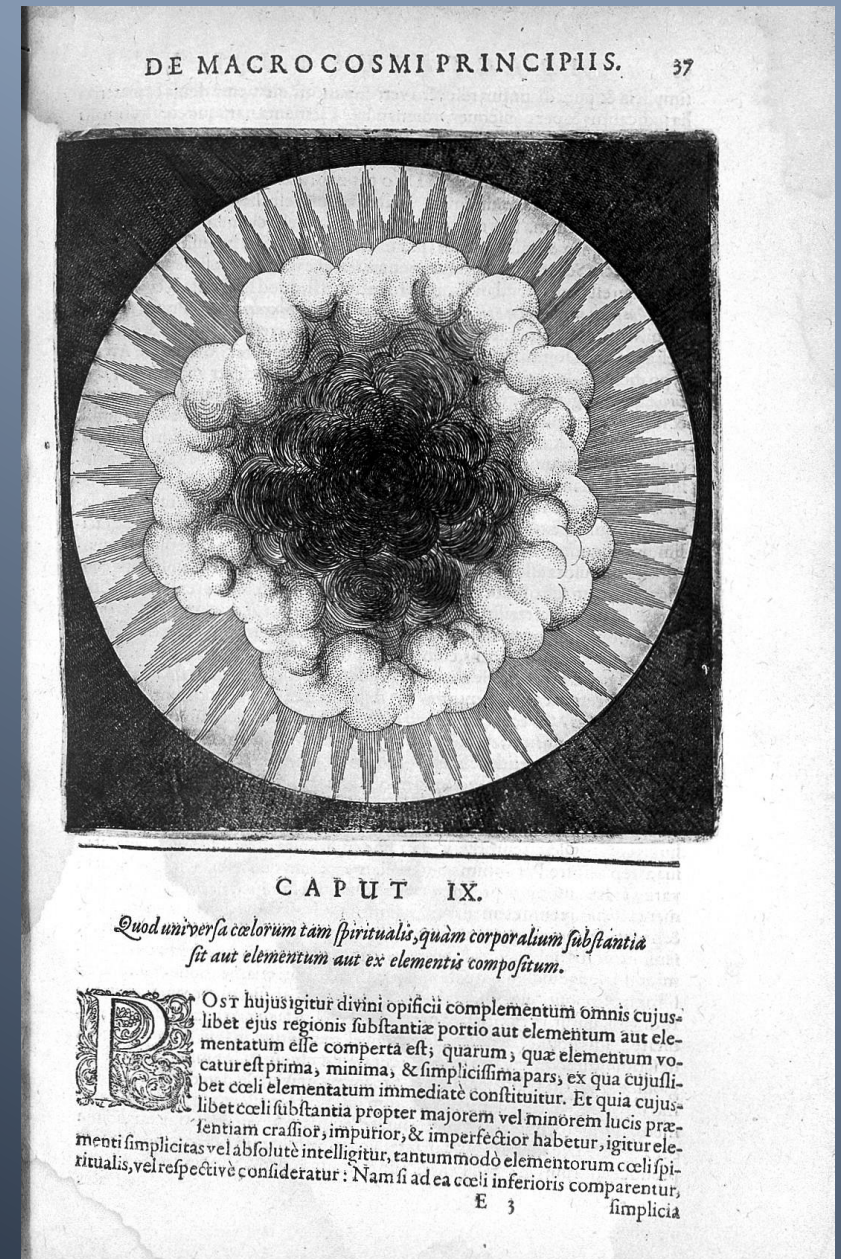
# Genesis, Michelangelo, modern science (NASA/AMNH)

| Timing |                         | Judaeo-Christian Genesis 1:1 to 2:3 and Genesis 2:4 to 3:24   | Michelangelo                           | Scientific theory                   | Timing (NASA + AMNH)                          |
|--------|-------------------------|---|--|-------------------------------------|---|
| Day 1  | Light and Dark          | Let there be light: and there was light.... and God divided the light from the darkness                             | The Separation of Light and Darkness   | Big Bang                            | 13.82 billion years ago (or 13.7? 15?)        |
| Day 2  | Atmosphere, firmament   | Let there be a firmament in the midst of the waters .... called the firmament Heaven.                               | The Creation of the Sun, Moon, Planets | First stars and galaxies            | 10 billion years ago                          |
| Day 3  | Land, vegetation        | Let the dry land appear .... grass, seed, fruit   | Separation of Land and Water           | Formation of sun then earth/planets | 4.6 billion years ago                         |
| Day 4  | Sun, moon and stars     | Two great lights; the greater light to rule the day, and the lesser light to rule the night: he made the stars also | The Creation of Adam                   | Single cell life                    | 3.8 billion years ago                         |
| Day 5  | Birds and sea creatures | the moving creatures, and fowl that may fly... great whales, and every living creature that moveth                  | The Creation of Eve                    | Dinosaurs                           | 228 million years ago                         |
| Day 6  | Animals, human beings   | Living creatures, beasts of the earth ...created man in his own image ... male and female – EVALUATES – ‘good’      | [Then 4 panels on the Fall, Noah etc]  | First humans                        | 1.8 million (first ‘modern humans’ c 300,000) |

# A 17th century Big Bang?

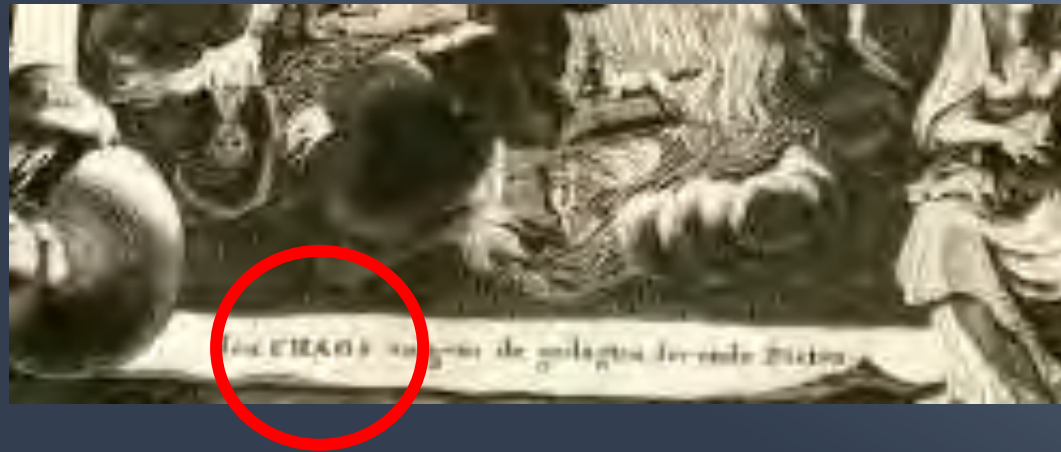


Robert Fludd, 'Fiat' from *Utriusque cosmi ...* 1617



Fludd's vision of Big Bang (cf Fr Georges Lemaître 1927)

*First there was Chaos , the vast  
immeasurable abyss ... Outrageous as a  
sea, dark, wasteful, wild*  
(Milton, *Paradise Lost*, 1667)



*Anon, The Origin of the Universe  
from Chaos, engraving 1690*



18th Century

William Blake, *The Ancient of Days*, 1794  
(*Europe a Prophecy*, frontispiece)



# Edward Burne-Jones, *Days of Creation*, 1870-76



George Frederic Watts, *Creation or Chaos Passing to Cosmos*, 1873-75



George Frederic Watts, *The Sower of the Systems*, c 1902

Vision of creation – robed faceless figure, sweeping across space, a swirl of stars and nebulae; centrifugal forces of creation





Constantin Brancusi, *Beginning of the World*,  
bronze 1924

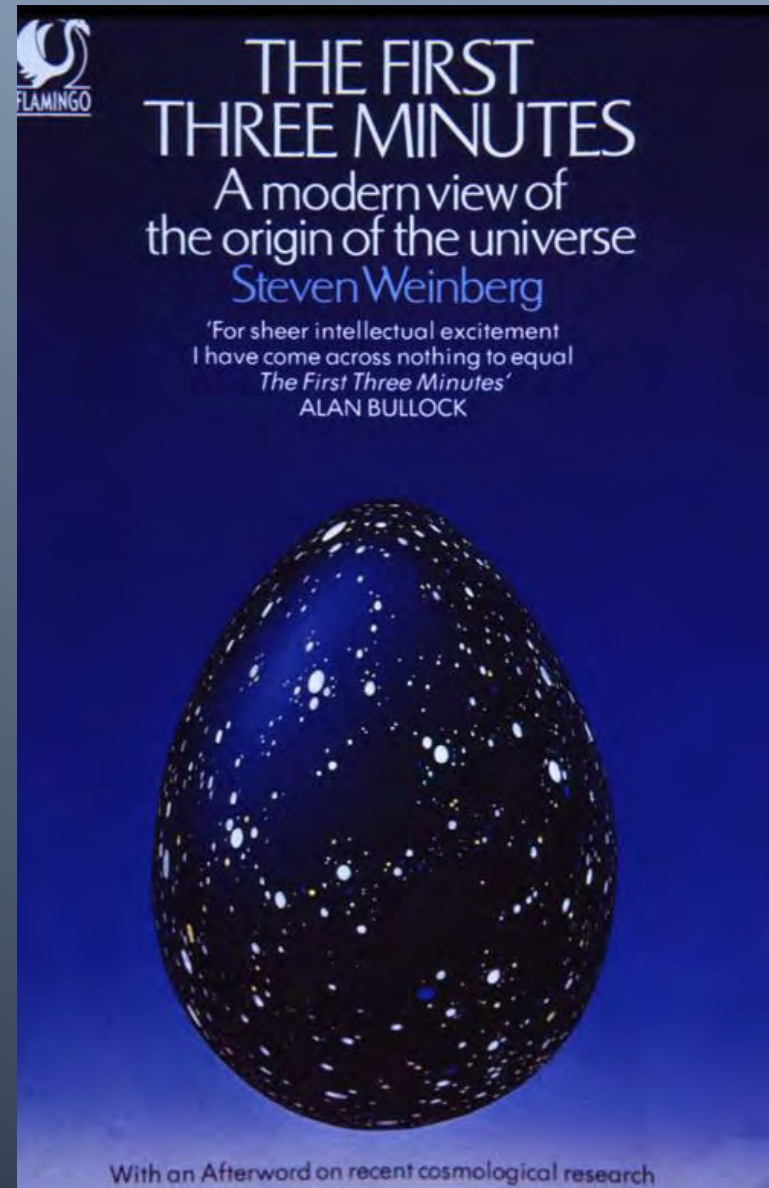


Salvador Dalí, *Geopoliticus Child watching  
the Birth of the New Man*, 1940-48





Chagall, *Creation*, 1960



Stephen Weinberg, *The First Three Minutes*, 1983 (cover design)

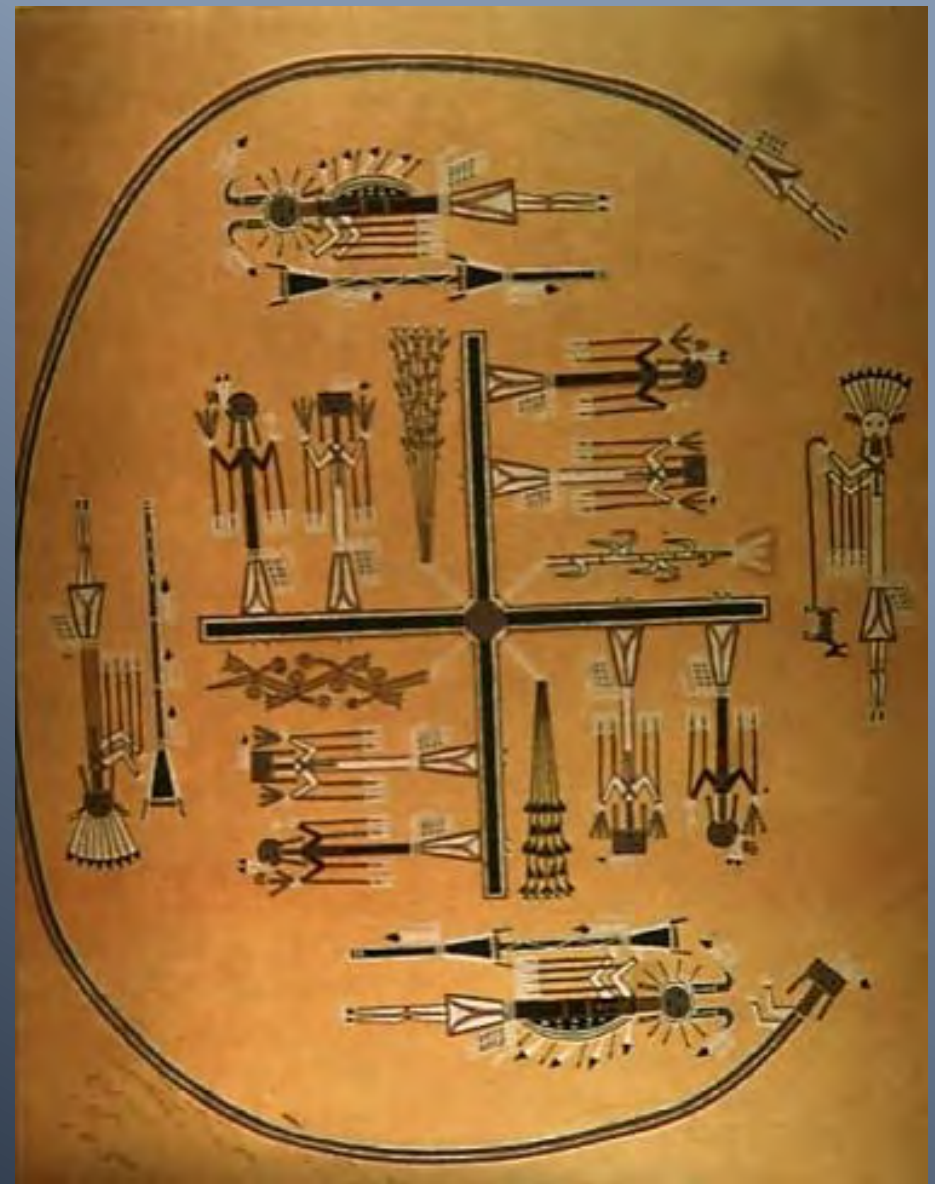
# ROCK CRYSTALS & PEYOTE DREAMS



## EXPLORATIONS IN THE HUICHOL UNIVERSE

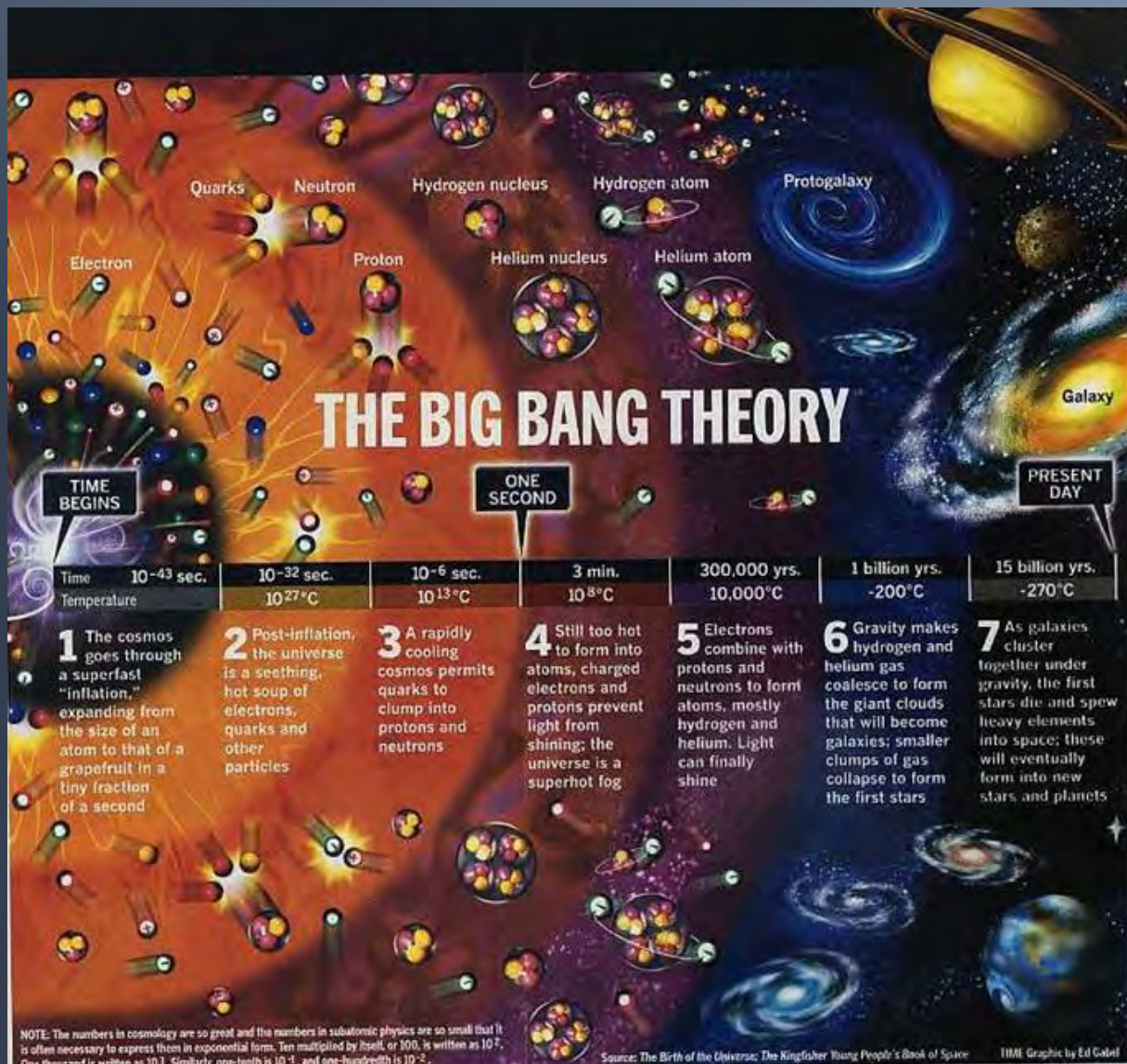
PETER T. FURST

Ramon Medina, Mexico 20th C



Fred Stevens, *The Whirling Log*,  
sand painting 1966 (Navaho)

# scientific diagrams as art works? 1990s



G Smoot, *Wrinkles in Time: The Imprint of Creation*, 1993

Smoot 'History of the Universe'



Cedric Sorel, *Big Bang*, 2008



Bill Bell, *Blue Creation Painting*, 2020

Bibleinfo

# 7 Days of Creation

- 1
- 2
- 3
- 4
- 5
- 6
- 7

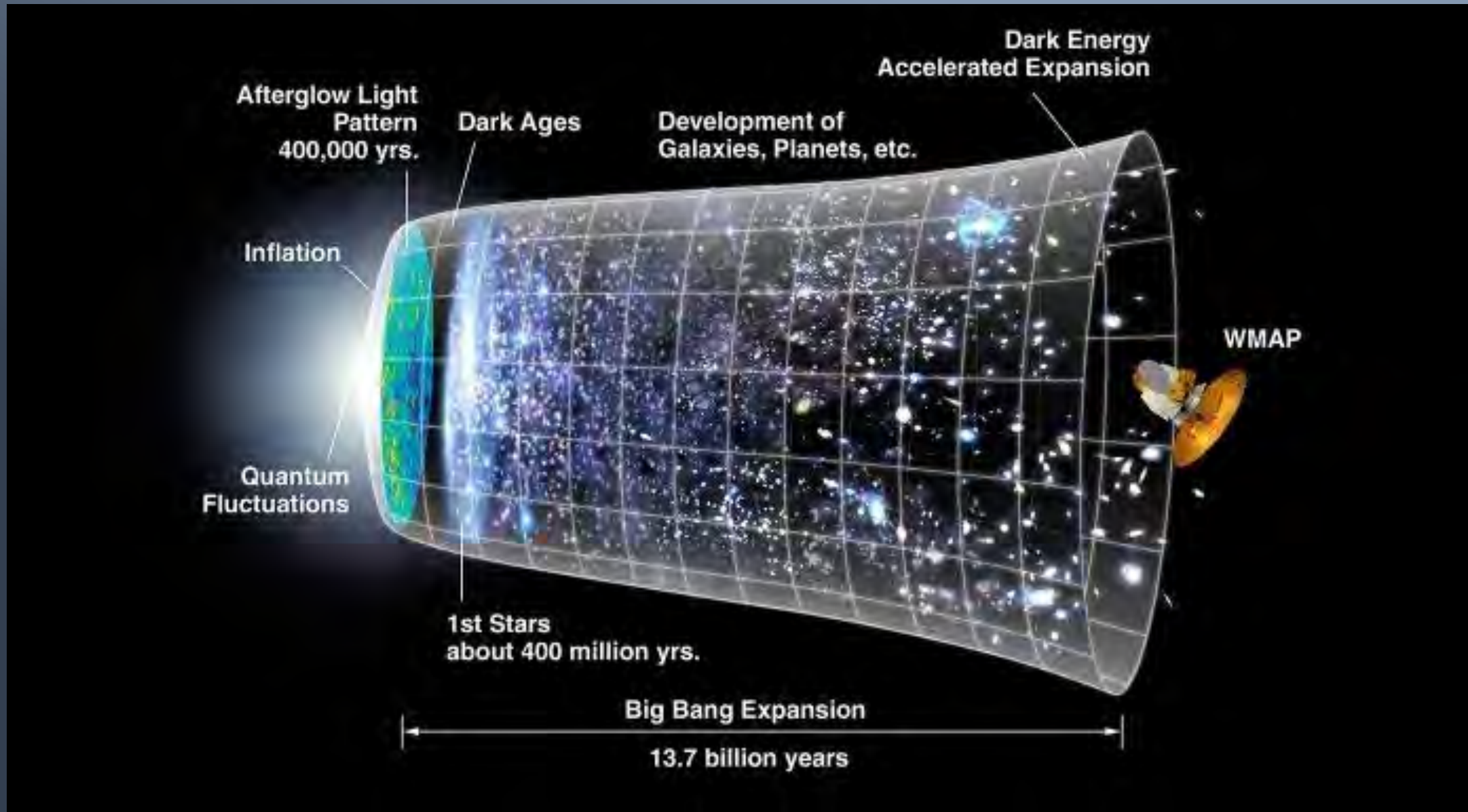
Created and designed by Bibleinfo.com  
Link: [Bibleinfo.com/en/questions/what-are-7-days-of-creation](https://Bibleinfo.com/en/questions/what-are-7-days-of-creation)

Bibleinfo.com

*Broken egg shell 0472*

Exotic HD Wallpapers @cuzzsoft.com





NASA image of the Big Bang/Creation, 4 Aug 2012

| Figure | Century               | Date                | Title/place                   | Cf Genesis  | Key features  | Science – prevailing ideas   |
|--------|-----------------------|---------------------|-------------------------------|---|---|--|
| 1      | 10-11 <sup>th</sup>   | <b>c 1000</b>       | Junius ms Bodleian            | 6 days, day of rest indicated                           | Dome above flat earth; creatures not Adam                   | Flat earth, cf Cosmas Indicopleustes; cf Aristotle and Ptolemy. Augustine, Bede  |
| 2      | 11-12 <sup>th</sup>   | <b>11-12th cent</b> | Girona Tapestry               | 6 days of Genesis 'before'/dove                         | extra scenes (Lux Tenebris) 2 + 4 together, Adam (rib G2)   | Influence of Gerbert 946-1003; 12 <sup>th</sup> century renaissance; Sacrobosco 1195-c1256   |
| 3      | Early 13th            | <b>1215-80</b>      | St Mark's Venice              | 6 days but also 'before'/dove                           | Angels flank each scene, Byz influence; Day 3 large, rib G2 | Byzantine? significant eg dome 12c renaissance after 1204 crusade; cf Monreale, Palermo  |
| 4      | 13th                  | <b>13th cent</b>    | Codex Vindobonensis           | 6 days + extras   | Dividers, black white startling,                            | More measured and mathematical; incr scientific; interspersed with other scenes (life of Christ)   |
| 5      | Late 14-15th          | <b>1405</b>         | York Minster                  | 6 days , then Eve from rib                              | Details of commission known                                 | Effect of black death (scientists and artists died out) postponed the Renaissance? Oresme, Cusanus   |
| 6      | 15 <sup>th</sup>      | <b>1445</b>         | Giovanni di Paolo             | single image – God setting spheres in motion, earth etc | Influence of Sacrobosco                                     | Sacrobosco, Regiomontanus  |
| 7      | Late 15 <sup>th</sup> | <b>1488</b>         | Fernando Gallego              |   | Chaos theory  | Also says Nulle – seems combined? From nothing (in centre) with Chaos around and outside   |
| 8      | Late 15th             | <b>1494</b>         | Nuremberg                     | 6 days + 'In majesty'                                   | Very abstract   | NB printed/multiple, accessible; Regiomontanus   |
| 9      | 16 <sup>th</sup>      | <b>1508-12</b>      | Michelangelo Sistine          | Day 1, 4,3,6,rib  | Very different  | Giles of Viterbo (cf Copernicus influence on LJ)   |
| 10     | 17th                  | <b>1617</b>         | Fludd and anon                | Chaos? Not very related to Genesis                      | Milton  | Tycho, Galileo, Kepler, Descartes, Newton, Halley. Thinking of chaos? Profs Astron?  |
| 11     | 18th                  | <b>1794</b>         | Blake                         | Relates to Bible Moralisee rather than Genesis          | Return to mathematical geometric                            | Scientific (and Bible moralisee). Herschel W and C   |
| 12     | 19th                  | <b>1870-76</b>      | Burne-Jones                   | 6 images  | Adheres to 6 days (number of angels)                        | Reverts to Genesis, Fraunhofer   |
| 13     | 20th                  | <b>1960</b>         | Chagall                       | One image   | Seems v personal (cf Brancusi, Dali)                        | Einstein, Eddington, Hubble, Lemaitre, Hoyle   |
| 14     | 21st                  | <b>2008</b>         | Sorel, Big Bang               | Not Genesis account                                     | abstract  | Penrose, Rees, Hawking   |
| 15     | 21st                  | <b>contemporary</b> | Text books, broken egg. NASA? | Scientific diagrams no longer based on Genesis account  | Book illustrations of Genesis – revert to tradition         | Scientific diagrams (artistic status?); books for 'novices'/general public and children; religious booklets (revert to Genesis) – is it 'art'? |



And the 'End'

Michelangelo, *Last Judgment*, 1536-41

Influence of Copernican heliocentricity?



Alberto Ruggieri (b 1963)



*New Scientist* 31 Jan 2015, 'Dawn of the Plasticene Age'  
(Image: Bigshot Toyworks)



# The Inspiration of Astronomical Phenomena

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Astronomy and cosmology as foundation for human spiritual thought

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Looking at the heavens for inspiration; philosophising on a dark night?

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Who made the images? What sources did they use? Who advised them?

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Cosmology and Theology inextricably linked, as knowledge/science

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Sages, priests, scientists grappling with the issues – each age thinks they know

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Where it all came from? And why? Who? for what purpose?

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Visual images used to convey complex ideas

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THE END



It's a great idea but can't we have something a bit more dramatic – with some primordial soup ... and turtles all the way down