

God and the Creation of Matter

Date	Event	Comments
14x10 ⁹ years BC	The Big Bang: Creation of space and time	Creation of the Universe: The whole universe comes into existence, obeying the laws Quantum Mechanics and of God

The belief in the one God of the universe, is not incompatible with **good** science, but rather fits comfortably with what we find about our universe. The God we know, created the universe, to the best of human knowledge, about 14x10⁹ (14,000,000,000) years ago. How? How could He create 'something from nothing'? God exists outside of time and space, yet the creation of the universe must obey the very laws He planned for the universe. Every schoolchild knows the law of 'conservation of energy and of mass', that energy and mass cannot be created or destroyed; the basic laws of science forbids something being created from nothing. Or do they?

A little bit of secular Creation Science

The world of modern science struggled into birth at the time of the reformation. Art, literature, exploration, music and Christianity all felt the simultaneous revolution. While Michelangelo Buonarroti, Raphael and Leonardo da Vinci were painting in styles never seen before, while Vasco da Gama and Christopher Columbus explored new worlds, while Bach and Vivaldi broke the constraining bonds of musical patterns, while Luther, Zwingli, Calvin and Wesley established the Protestant religions, the brilliance of Descartes, Kepler and of Galileo introduced mathematical concepts to natural philosophy (science). As the infant world of science struggled to make meaning of this new regime, it gave birth to its own father. In the year that Galileo died, a widow in England gave birth to the greatest scientist of all time. Isaac Newton.

Isaac Newton



What Descartes, Kepler and Galileo had hinted at, Newton concluded. Perhaps the most famous of all his theories was the theory of 'universal gravitation'. Well-defined mathematical laws governed all forces, on heaven and on earth. The universe was one giant machine. All particles, everywhere in the universe, were controlled by forces whose mathematics we knew. The universe of Newton and

Descartes was mechanistic. Theoretically, if we knew where all the particles in the universe were at any one time, we could predict where they would go in the future, under the influence of these universal forces. **There was no freewill.** These universal forces control every movement of every atom in your body, forming your very thoughts. You have no control. Science was only limited by our ability to measure more and more accurately.

This convulsed the philosophers of the time. Where was responsibility, if there was no freewill?

In the mid 19th century, this philosophy spawned the unbelievably brilliant conclusions of James Clarke Maxwell, the Scottish physicist who fathered all electro-magnetic theory.

The world at the end of the 19th century had all mechanics explained by Newton, all electromagnetics explained by Maxwell, in a perfect mechanistic universe. But, in the tiny area

where both theories overlapped, the two theories were totally incompatible. One predicted an absolute value for the velocity of light, while the other demanded a value relative to the observer. One must be wrong! Yet they both worked and predicted the laws of nature.

At the turn of the 20th Century, the birth of the Special, and then the General Theories of Relativity, and of Quantum Mechanics, slowly crumbled the Newtonian Universe.

In the late 1920's, a young German physicist, Werner Heisenberg, mathematically came across the most astounding result. No matter how precisely we measure a system, we **can never** perfectly know all of its details. The uncertainty in our energy measurements (ΔE), multiplied by our uncertainty in our time measurements (Δt), is always greater than or equal to a fixed amount ($=1.055 \times 10^{34}$).

$$\Delta E \times \Delta t \geq 1.055 \times 10^{-34} = \frac{1}{1,055,000, \dots \text{to 28 zeros}}, \text{ or}$$

$$\Delta E = \frac{1.055 \times 10^{-34}}{\Delta t}$$

Now imagine that TIME HAS NOT YET BEGUN. There is no uncertainty in time. If $\Delta t = 0$, the fraction above approaches infinity for energy. So the uncertainty in energy is infinite.

Investigation 1

Here is a little calculator Game. (don't freak out...you've all done harder than this in school maths)

Try some values for Δt in $\Delta E = \frac{1.055 \times 10^{-34}}{\Delta t}$, write down your answers.

(e.g. to divide 1×10^{-34} by say 1×10^{-35} on a scientific calculator,

press `[1.055][exp][34][+/-][÷][1][exp][35][+/-][=]`)

$$\Delta t \quad \Delta E = \frac{1.055 \times 10^{-34}}{\Delta t}$$

1×10^{-35}

1×10^{-38}

1×10^{-42}

What happens to ΔE as the time values get smaller ?

So there may be no universe, or an infinite universe, and still obey the Laws of Quantum Mechanics. Scientists call this time, when $\Delta t = 0$, the infinite singularity.

This preceded the Big Bang, prior to which there was no time or space.

At the time of the Big bang, both space and time were created. So God created a universe out of nothing. Well, not exactly. He created from an idea, a concept, which He formed into reality. This is a pattern of what he promises to do for us, in creating us, (by His plan) in the image of Jesus, from a spiritual 'nothing'

A Spiral Galaxy



As the universe expands, small fluctuations appear, called "perturbations", in time and space, causing 'clumping' of matter. Our universe was flooded by a primal radiation at the time of the Big Bang, becoming the 'background microwave radiation', which we can now detect in all directions. In 1991, a satellite, called the COSMIC BACKGROUND EXPLORER (COBE), detected these perturbations in the background radiation, formed only a few thousands of years after the Big bang. These fluctuations caused matter to accumulate (by gravity) and to develop into the galaxies and stars we see today.

The universal forces God created are so finely balanced, that had gravity been only a tiny fraction bigger, the universe would have collapsed back on itself, only a few seconds after creation. Had gravity been only a tiny fraction smaller, the universe would have flown apart and never formed galaxies, stars, and planets.



An elliptical galaxy

Investigation2.

How can God be 'outside time'? Here's a little exercise to help you to visualise it.

*Imagine you are watching a parade. First come the marching girls, then the pipe band, then the vintage cars etc. Imagine you are there, standing at the roadside; describe what **passes you as time goes by.***

Now, imagine you are watching the same parade from a helicopter, above it. Nothing comes first; you can see it all. Describe how it appears now.

You've just had God's view of history, of time and space.

So, while God created the physical universe, He could see all of human history. While he caused the aggregation of galaxies, he saw His infant son crying in Mary's arms, and while he created the primordial universal radiation, He saw His saints collectively praising His name in the finality of the kingdom of God.

Investigation 3:

See how the 'logos' or word or purpose of God, Jesus, is outside time. Read the following very carefully.

John 1:1-14

1 John 1:1-3

John 6:62

John 8:58

John 20:17

Proverbs 8:22-31

How did the purpose of God's plan, Jesus, truly form the worlds?

4×10^9 creation of the Sun, planets both formed at approx. the same years BC and the Earth time.

Gravity causes matter to aggregate, into clumps. The early universe is almost all hydrogen with some helium, and it condenses. Gravity forces matter closer and closer together, until atomic nuclei fuse together and nuclear explosions follow. Stars are born. Swirling gas and dust, spiral to form central masses, and outer circular rings. These condense into stars and planets. God is constructive, not destructive.

Investigation 4:

See if you can spend an hour at a local observatory, or use a friend's telescope (you can book tours of Sydney Observatory, Macquarie Uni Obs, Sutherland Obs etc). Ask to see the 'star forming region' in Orion's belt (the handle of the saucepan). You'll see clouds of gas with bright young stars embedded in it. These stars are being created before your eyes. Describe what you see.



The Star forming region in Orion

God's Creation

Unknown Creation of life on earth **Genesis 1:1**

Date

God creates life. Creation occurs over the 6 days of Gen 1,2 and 3. The days of Genesis may be literal, or may be figurative. To God, any time period may be expressed as a day (see **2Peter 3:8**), or days of the Genesis record may be the successive day on which God revealed the story to Moses (the writer of Genesis). The date may be anything from 6000 years back.

Investigation 5:

*Gen 1:14 states that the prime reason for the lights in the sky is not for light, but for time measurement. Days marked by earth's rotation, months by the moons revolution, and years by the earth's revolution about the sun. What is the significance of **Rev 21:22-23** i.e. the Kingdom without sun and moon? Is it the measurement of time, or time itself, which is ended?*

Gen 1:2

The Bible starts with an already existent world. In the beginning the earth was formless, empty, dark and covered in water. The aim of the Bible is to introduce us to God's plan of salvation, not to be a cosmology text. We can fill in, as best as science allows us, the facts of the creation of the universe, while God only gives us the details of His plan for man's redemption.

Day 1

God creates light. While the surface of the earth is shrouded in a thick fog (possibly like Venus is now), God makes His light to fall on earth, to physically prepare it for life, and to spiritually tell us He is the 'light' of the world.

Day 2.

Water is separated from the sky. Water remains on the earth's surface, and clouds are formed in the sky.

Day 3

Dry land is separated from the water. Life in the form of plants, and all vegetation is formed. The sun and moon have not yet been set to light the world, and yet all plants need light to photosynthesize (except fungi if you don't consider them as a separate kingdom). Hence the light on day 1. This was needed for plant life.

Day 4

God sets the sun, moon and stars in their positions in heavens, relative to earth. At this stage, they take over the role of giving light to the world, and of marking the passage of time.

Day 5

Aquatic and marine life is formed. Birdlife is formed.

Day 6

Land animals, man and woman are formed. Adam is given charge over all life on earth. We still bear that responsibility, to care for God's creation, and the fragile systems He has left in place.

Day 7

God rests or ceases from the work.

All of the Bible record is totally in accord with the fossil record found on earth. The dinosaurs (and other extinct life) may well have lived and died in the 'days' of creation prior to man. The Bible can accommodate any sensible scientific conclusions.

God creates

4000 BC Creation of Man and Woman **Genesis 1 and 2**. Gen 1:26 says man & woman were created in God's (Elohim) likeness - probably in the physical likeness of angels - maybe in their mental/intellectual likeness?

Investigation 6: Jesus uses Gen 2:24 in Matt 19:3-9 as a basis for the one man/one woman marriage. What does this also say of Jesus' acceptance of the literal story of Adam and Eve?

6000 BC 7th day God rests **Genesis 1:31** pattern for men.

Man and Woman are created by the 'Elohim' (plural of El), meaning the 'mighty ones'.

The angels may well have been God's agents in creation. Adam & Eve are set in the Garden, in charge of all creation (**Gen1:28**). They are to tend and nurture the creation of God. The tree of life is in the middle of the Garden. They may eat from all the plants (**Gen 1:29**), except from the tree of 'knowing good from evil'. God promises that if they eat its fruit, on that day they will die (**Gen 2:17**).

6000 BC The Fall of man and woman **Genesis 1,2,3**

The snake in the garden was more intelligent than all other creatures. It tested Eve with 2 half truths: the snake said that God had forbidden them from eating from the tree of 'knowing good from evil', because God knew that if they did, they would become as wise as God, knowing good from evil (**Gen3:5**), and that if they did eat, they would not surely die. These were half-truths, as Adam & Eve did gain the ability to discern good and evil, hiding from God in shame at what they had done (**Gen 3:7-8**). They did **NOT** die on the day they ate from the tree...**but began the process** of dying that very day.

*Investigation 7: Adam & Eve, on learning about good and evil, found they were ashamed of their nakedness. What does 'nakedness', and 'being clothed by God', symbolize in the Bible? See **2Cor5:3, Rev 3:5,17 ; 6:11 ; 7:14**.*

Was a servant of God every instructed to go naked in public for God?

If so, who, where, when and why?

God gave Adam and Eve a free will. The Mechanistic universe of Descartes and Newton, has now given way to the concepts of 'uncertainty', and of free choice. Since Adam and Eve, the struggle of 'man' against God, of good against evil, of spirit against body have raged. God asks obedience

to His Law. We become free, by being His slave. We gain life, by giving it to God, and sacrificing ourselves on the cross with Jesus. The battle is not ours, but is won through the help of God.

Continual Creation

This world was created for the glorification of God our Father. His plan is to fill it with the glorified saints, when all is accomplished, to praise Him when He will become all and in all (**1Cor 15**). We (if in His grace, are accepted into His Kingdom), will bear His name and spirit likeness (**Rev 1,2 and 3**).

Creation does not stop. It did not cease at the 7th day on which God rested. It continued on in items like the later creation of the rainbow, at least a thousand years after the world was created.

Investigation8: Rainbows are formed by refraction (or bending) of light waves as they pass through water droplets in the air. What possible explanation could there be for the fact that rainbows had never appeared before this time. (Gen 2:5-6)

New creations occur all the time. Stars are being born while you read this paper. Heavy elements are being created in the might of supernovae in far off galaxies. New black holes are 'popping' into existence as heavy stars, in their death throws, collapse into themselves. New life is created every time an organism reproduces. Day after day, new life is formed, yet since Adam's sin, death is also evident every day. The struggle is always presented before your eyes. Life against death. Every day, God's plan for our salvation is acted out, in life and death. The polystyrene tray, with 6 lamb chops sealed in plastic you just bought from Coles, cries out that an innocent had to die to give you life. The lamb, which did no harm to anyone, died to sustain your life. It's God's message over and over.

Investigation 9.

*The Universe is expanding...still flying apart after the Big Bang. Gravity is slowing this expansion, by trying to pull all the galaxies of the universe together again. The destiny (**IF God did not intervene**) could follow 3 scenarios*

(i) Gravity may win...all galaxies may slow down, stop, then start to come together again, finally ending in a huge fireball...the "Big Crunch".

(ii) Gravity may loose....all the galaxies may fly apart forever and the universe may end in a cold, dark death.

(iii) Gravity may perfectly balance the expansion, in which case the galaxies will slow down to a near static state.

Which will it be. See if you can find which one is most likely to happen (hint: do a web search on 'universe origin' and 'universe destiny')

What will God do about it??

Life out of death

Along with creation, the birth of the universe, arose death. Galaxies collide, and explode. Stars 'burn' all their nuclear fuel, to die as a hot 'white dwarf', or cold 'neutron star', 'pulsar' or 'black hole'. But in this death, a wonderful parable unfolds. Life from death.

A **dying** massive star goes through a supernova stage, **creating** all the heavy elements in our periodic table. The gas clouds from a **dead** star, aggregate by gravity to form a **new** star. Life comes out of death, as though God was telling us, first you must die, to gain life. I give my life for Jesus, only to live forever. Even on the small scale of our earth, self-renewal and transformation are taught through day and night, new days, new months, recurring seasons.

Investigation 10.

What is Earth's Destiny?

In some 1.5 billion years, the sun will exhaust its supply of hydrogen fuel, and begin to 'burn' helium. This will cause the sun to go into a 'red giant' phase, expanding to swallow up the planets Mercury and Venus. Earth will have a temp of about 700 deg Celcius.

Here's your chance to 'play' God. If you were God, what would you do about this?

The creation of the universe sees God setting a pattern for all human endeavour. It involved goal setting, and goal achievement in a set time (fortunately we're rarely been asked to create a world in a week), planning, attention to detail, patience, commitment, problem solving and finally, delegation. God got the angels to do it for Him. In the church we have plenty of 'angels' ready to help.

The new creation

Paralleled with the creation of the physical world, was the creation of the plan of God for the spiritual redemption of mankind. This plan was integral to the creation of the universe (**John 1:1-14**), and began to unfold as the worlds took shape. The redemptive plan formed the world, created the life, formed man and woman, and made a way back to God from the consequences of sin. The plan saw the fall of Adam, foresaw the redemptive work of Jesus, conceived the saints who would follow Jesus and subsequently glorify God in His kingdom. Through the ages, from creation to the time of Jesus, the God who created all things, kept the salvation through Christ secret, but now has revealed it to all men (**Ephesians 3:9**). Paul also says in **Ephesians 2:10**, that through Jesus, we were created to do works, which God prepared in advance for us to do. i.e. the saints were a preconceived part of God's creation plan.

We are a new Creation

This new creation came into being after the death of Jesus, but was always in the plan of God from the beginning of time. For the Christian, 'your new minds, your new self are created to be like God'. **Ephesians 4:24**.

Jesus is the first of this new creation, coming into existence in about 4 B.C., yet having been God's 'logos' or plan, forever. "Jesus is the image of God, the firstborn of all creation. By Him were all things created..and he is before all things". **Colossians 1:15-16**. "We follow after, created in His image.... We put on a new self, renewed in knowledge, in the image of the Creator." **Colossians 3:10**.

As the first man Adam was created in the image of the Elohim, so the believer is created in the image of the first spiritual man, Jesus. We are a new creation.

"Christ is the firstfruits of a new creation. Death came through the first Adam, but life come through the second." **1Corinthians 15:20-24**. "Adam was of the earth, Jesus of the spirit. First the natural, then the spiritual". **1Corinthians 15:44-49**

The new creation was foreknown by God, at the creation of the world. Each or us, as individuals, are not 'predestined' to be in God's kingdom, but the group of saints, whose destiny it is to praise God in his kingdom, was predetermined by God. The call of the gospel has gone out, it us up to each one of us to respond, accept the offer of grace, so we may be a part of that group of saints. "God foreknew, and predestined those to be conformed to the likeness of Jesus. He called, he justified, he glorified those who follow the Son" **Rom 8:29-30** . "We (not individually, but as a group) have been predestined according to His plan" **Ephesians 1:5,11**

The story of creation is the Gospel, as simple as this:

God created it

Man messed it up

Jesus fixed it

Your response!

Our decision is to either accept or reject the offer to be in that band of saints who will worship God when time itself ceases.

Some References available in any Public Library

Stephen Hawking "A brief History of Time"

George Smoot "Wrinkles in Time"

Kaufmann "Universe"