

# **Big Questions - Any Answers?**

**Giving a Christian perspective on topical science issues**

website

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A deep space photograph showing a vast field of galaxies and stars against a black background. The galaxies are of various shapes and sizes, some appearing as bright, elongated structures, while others are more distant and faint. The stars are scattered throughout the field, with some showing prominent diffraction spikes.

**What significance do we  
have in a vast universe?**

**Prof Chris Done, University of Durham**



# A real (rocket!) scientist

- BSc Astronomy  
Astrophysics and  
Theoretical physics  
(St Andrews)
- PhD Astrophysics  
Cambridge
- NASA and JAXA
- Leicester, Durham



# Significance: physical universe?

- Earth is just one of planets around the Sun
- Sun is just one of 100 billion stars in our Galaxy, many of which have planets – life?
- Our Galaxy is one of 100 billion galaxies in the observable universe but maybe infinite
- Our Universe may be one of multiple universes.....
- If the physical universe(s) is all there is, then our lives are very small and insignificant



# A real Christian – run alpha

**“WHAT AM I  
DOING  
HERE?”**



***Alpha***

**If God did exist  
what would you ask?**

# Significance: Christianity

- For God so loved the world that he sent his one and only Son, that whoever believes in him shall not perish but have eternal life. John 3:16
- Our lives have eternal significance. The eternal, all powerful God who made the entire universe(s) was willing to lay down that power and be born as one of us and die for us, so we could know him.



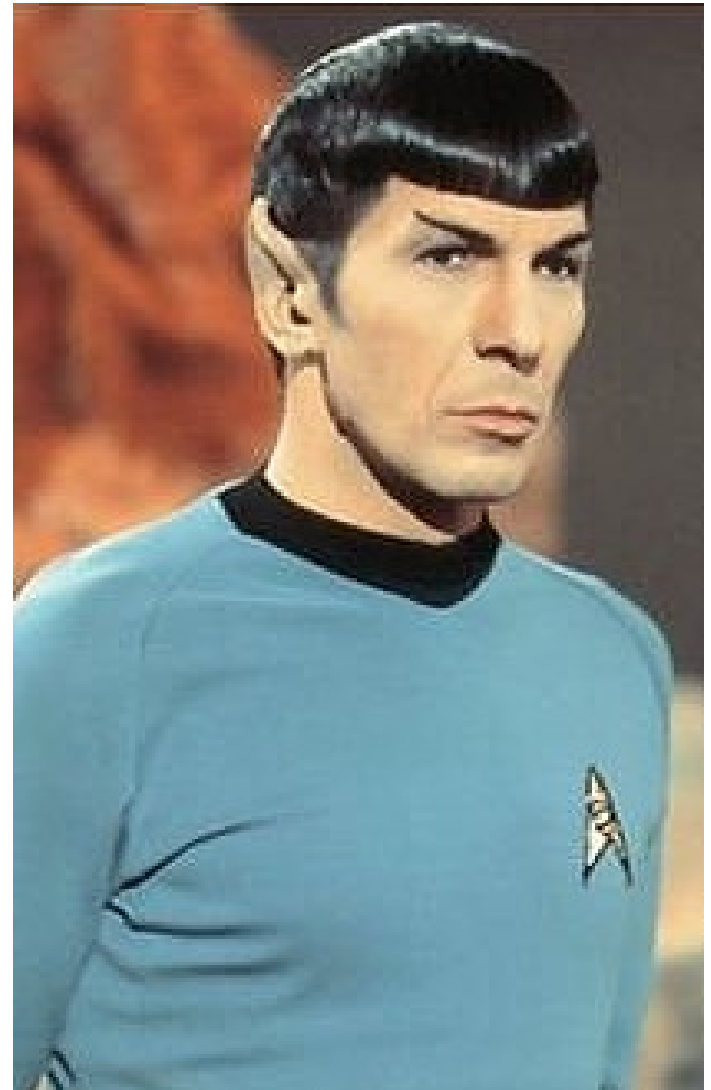
# I was not always a Christian

- Me at 11!
- I wanted to be a scientist, I thought scientists had to be atheists (!!)
- Religion was a psychological defence to avoid reality of death



# Why I wanted to be a scientist!

- Star Trek!
- Every week a new adventure, discovery, generally solved by the half Vulcan Science Officer, Mr Spock...





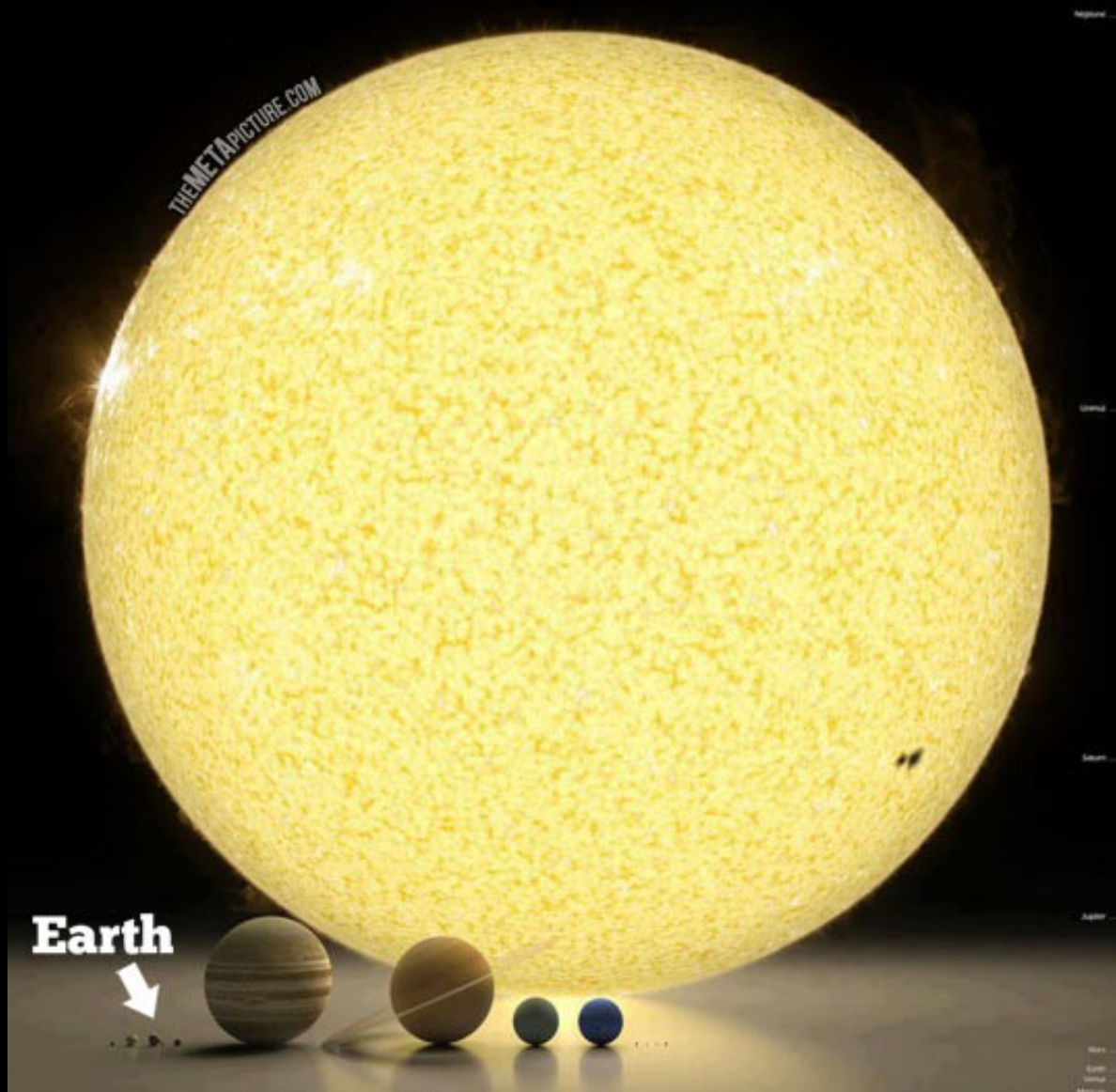


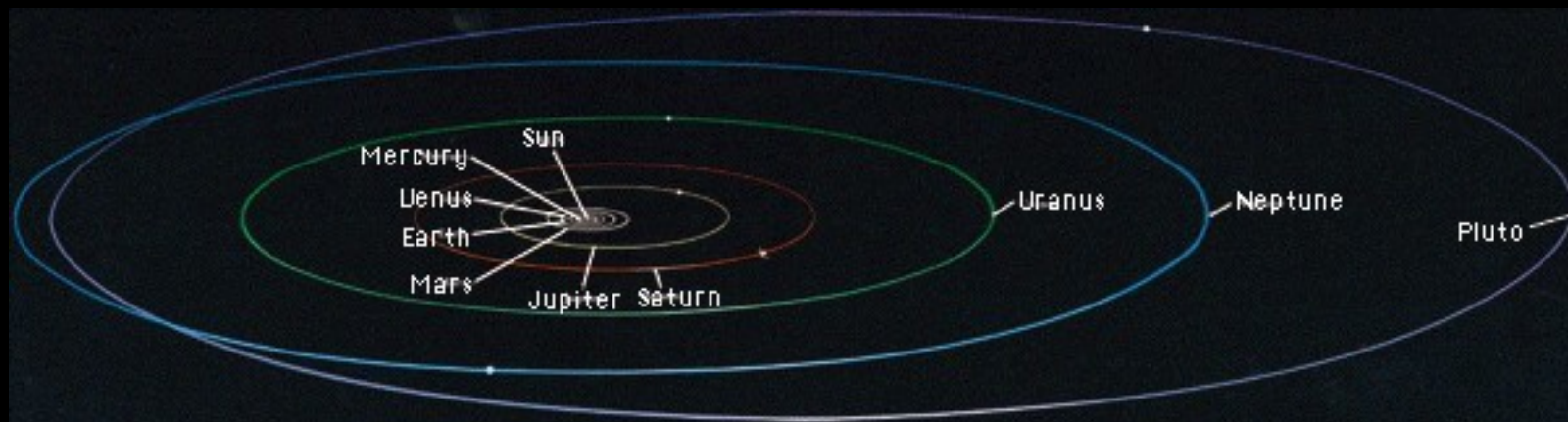
On it everyone  
you love,  
everyone you  
know, everyone  
you ever heard  
of, every human  
being who ever  
was, lived out  
their lives.  
Carl Sagan





# SOLAR SYSTEM TO SCALE







Nearest star;  
4+ years

Southern Cross



Alpha Centauri







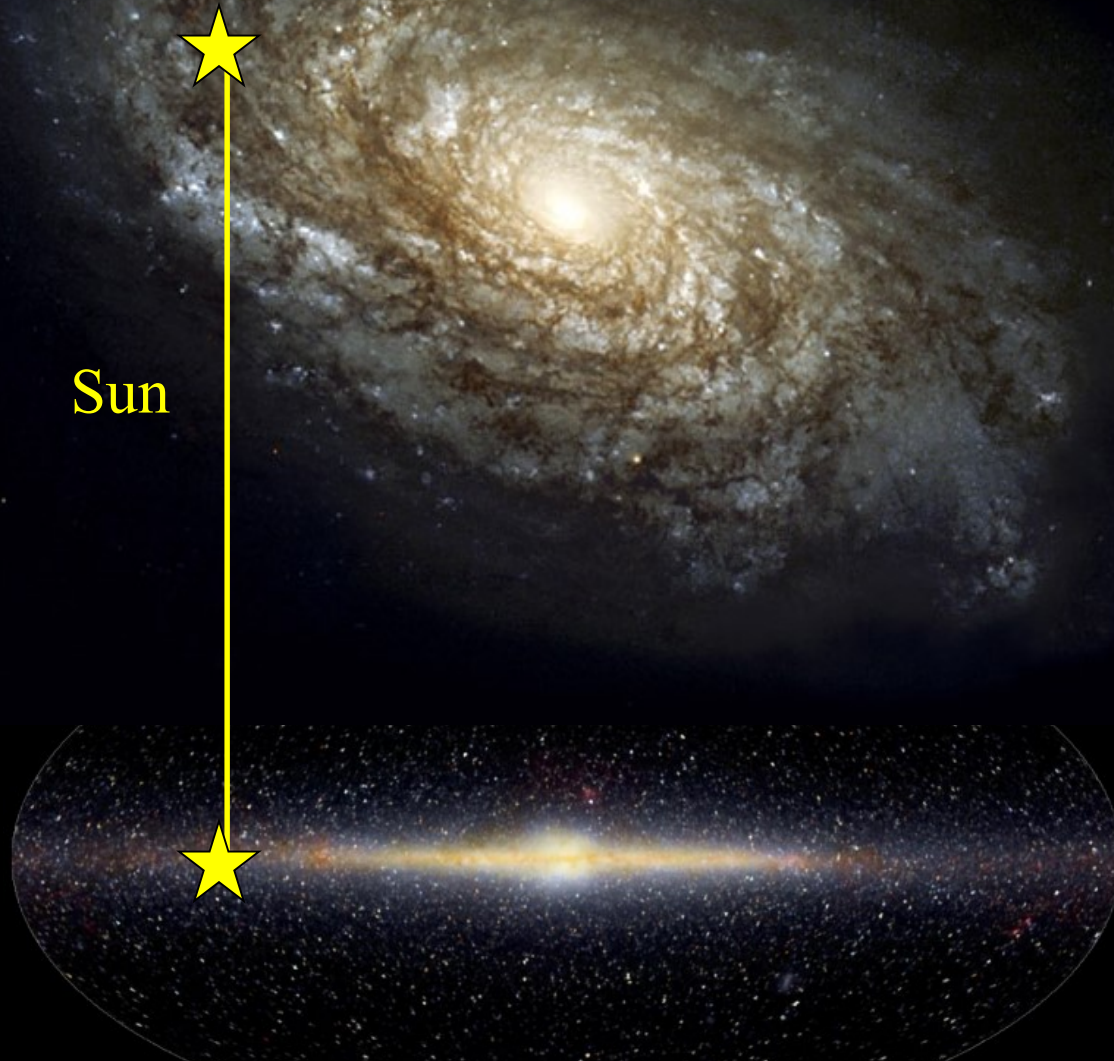




100,000 light years, 100,000 million stars



Sun





**NASA Kepler  
mission to detect  
Earth sized planets  
March 7 2009**



BRIGHTNESS



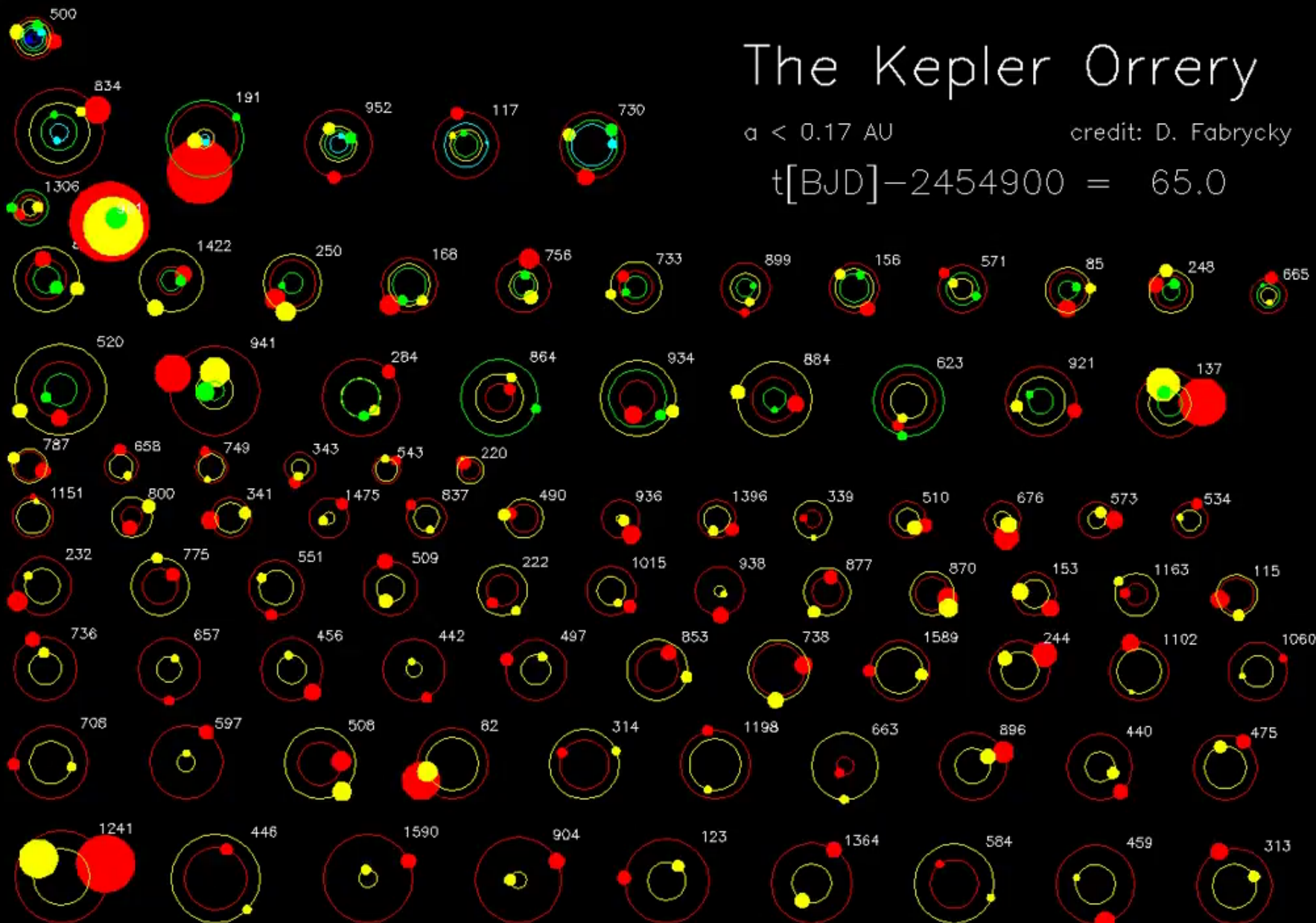
TIME IN HOURS

# The Kepler Orrery

$a < 0.17$  AU

credit: D. Fabrycky

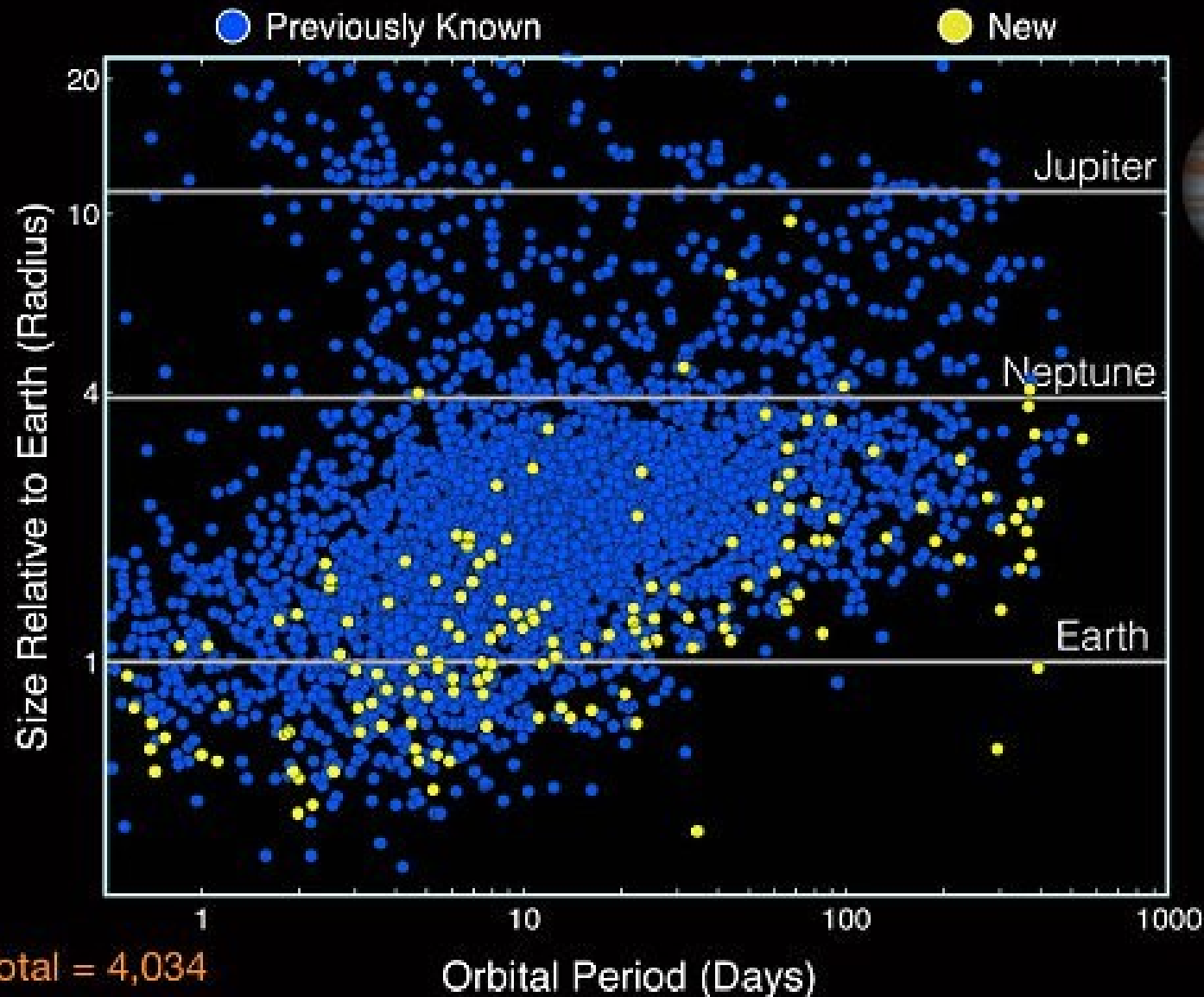
$t[\text{BJD}]-2454900 = 65.0$





# New Kepler Planet Candidates

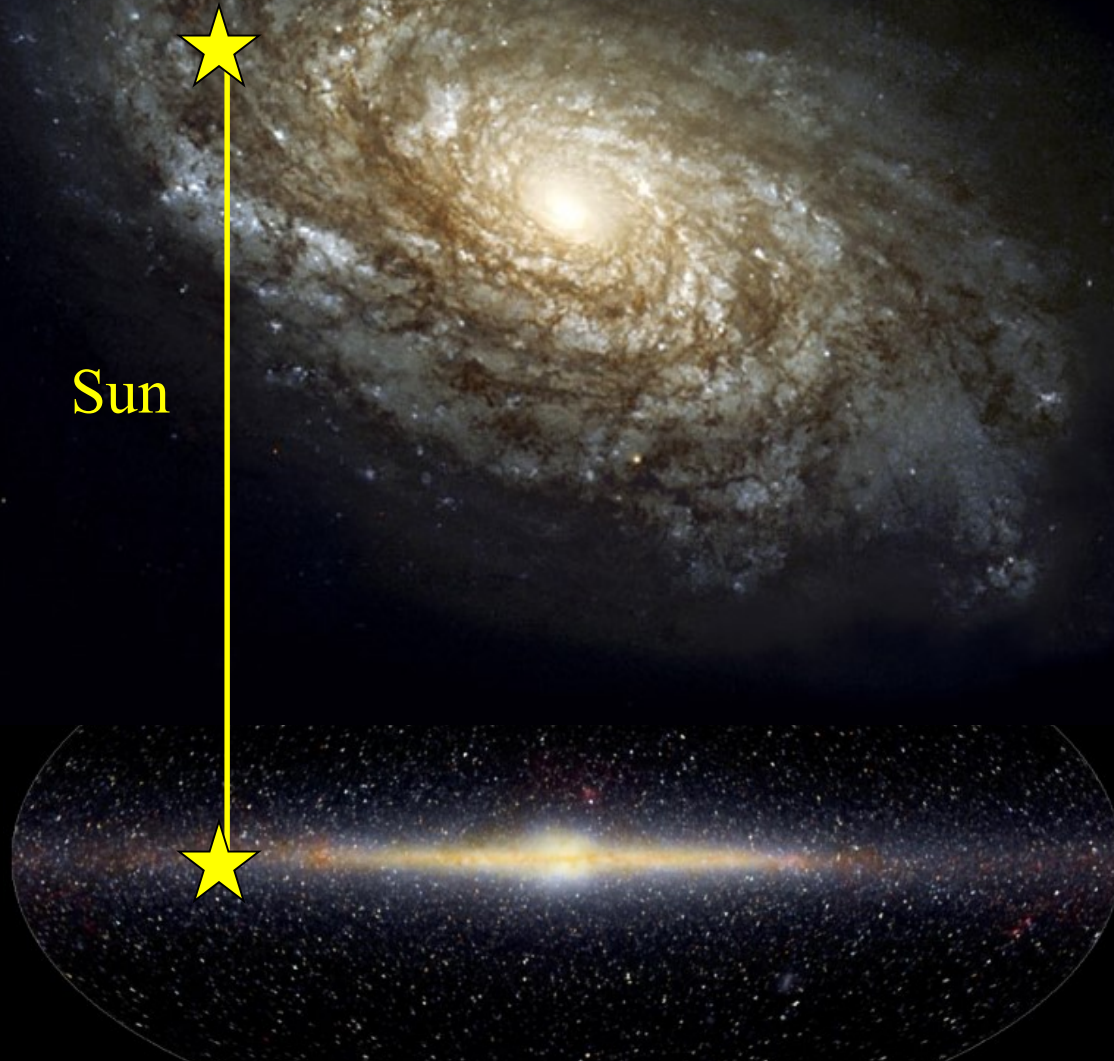
*As of June 2017*



100,000 light years, 100,000 million stars



Sun









Edge-On Galaxy NGC 4013



Spiral Galaxy NGC 3370





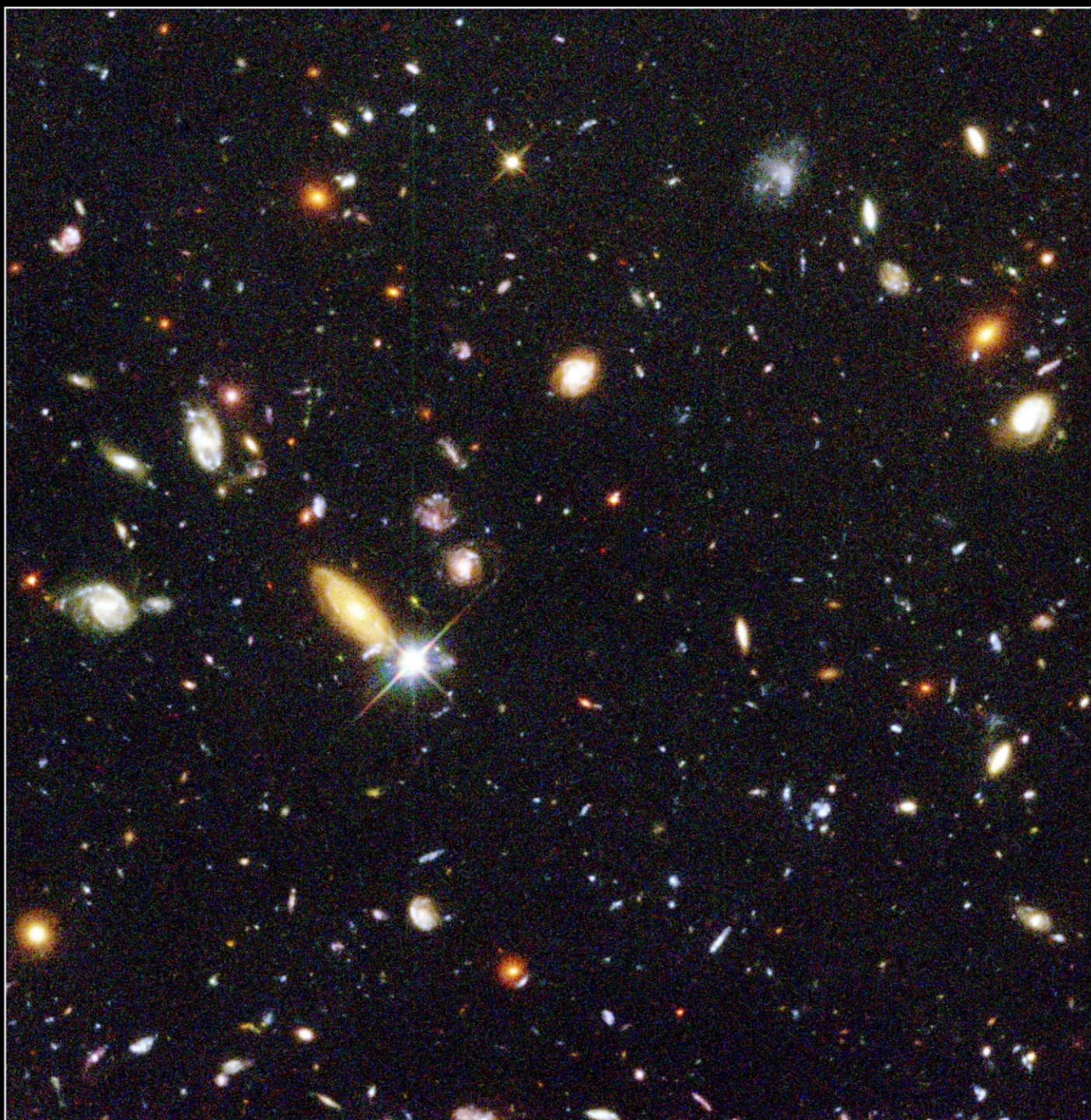
Barred Spiral Galaxy NGC 1300



# Sombrero Galaxy • M104









# Significance and meaning in a vast universe?

- Sun is one of 100 billion stars in our galaxy, most have planets, maybe some support life
- Our galaxy is one of 100 billion galaxies in the observable universe
- Our universe may be one of multiple universes
- From the perspective of the physical universe:  
We are very small, not at all important

# Significance and meaning?

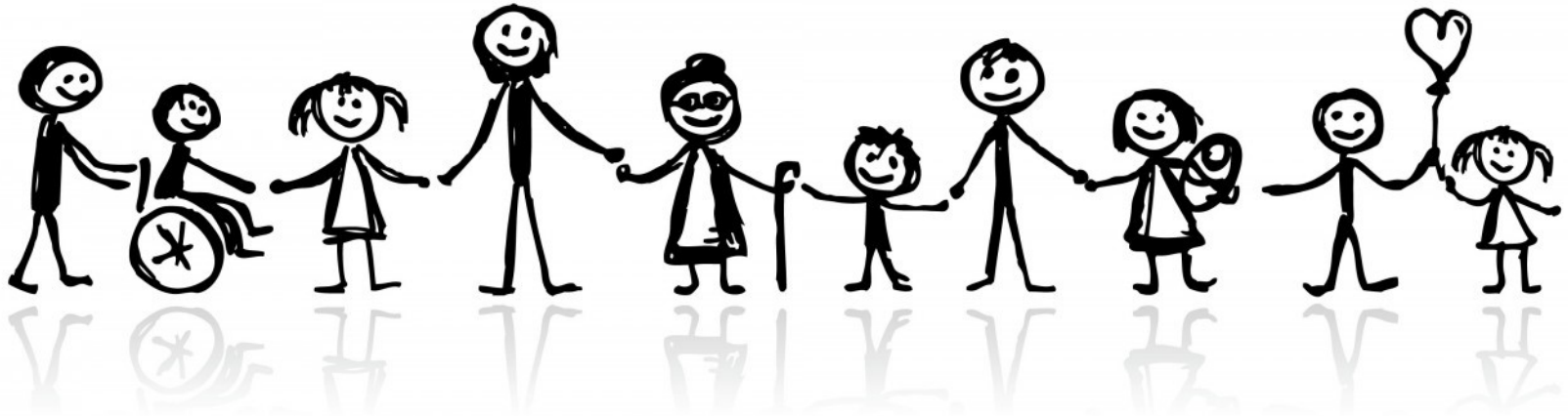
- Short term – we all want our lives to have impact - shape communities, build cities, write books, launch satellites....





# Significance and meaning?

- For people with children, that some part of their genes goes on, experiencing and shaping the far future that we will never see.
- But how far can this go? Dawkins 'the Selfish gene' – the immortal gene



# An expanding Universe

- Can't be static, unchanging, eternal universe if gravity!
- Galaxies have gravity so attract each other
- So should be all moving towards each other

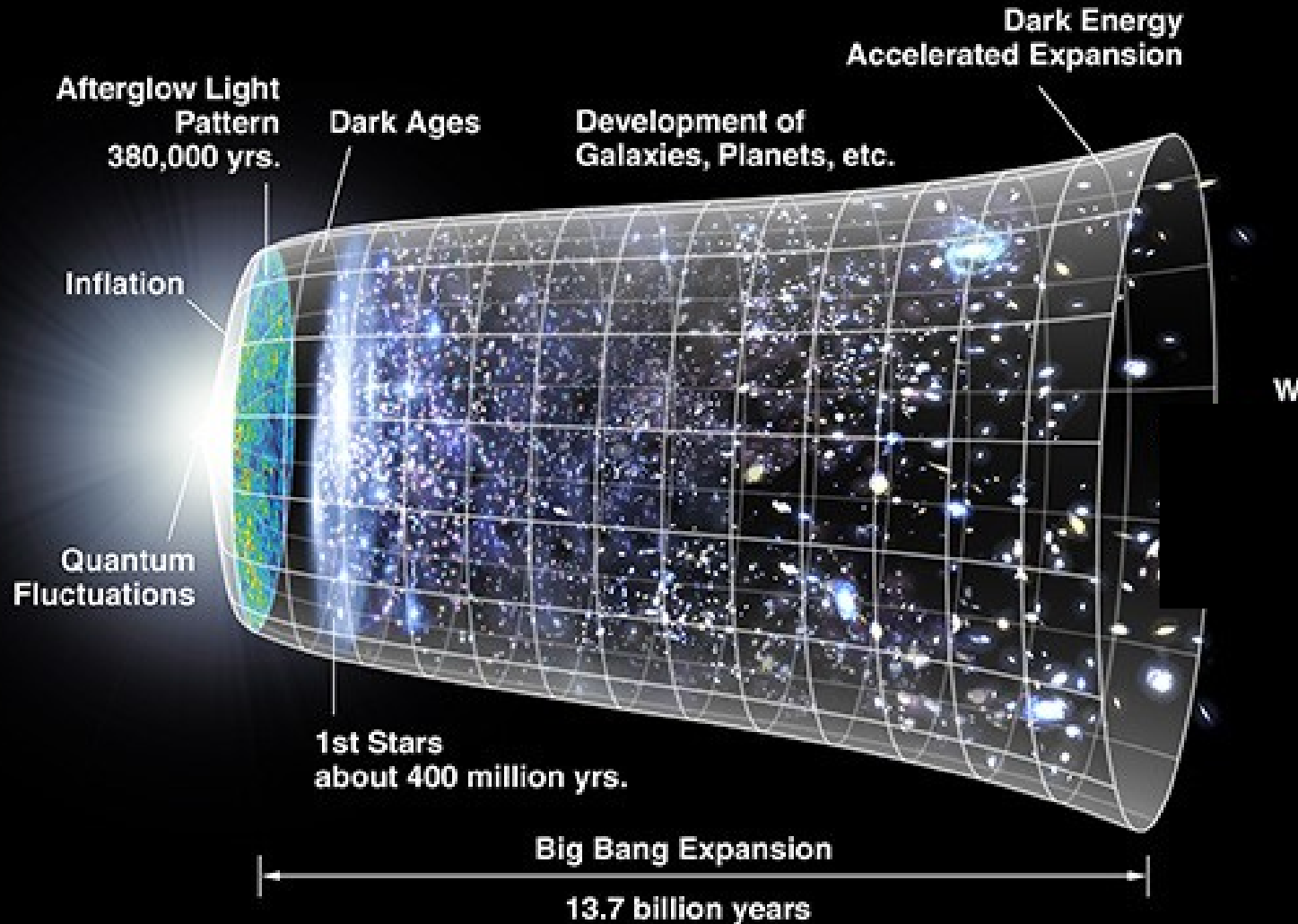


# An expanding Universe

- Can't be static, unchanging, eternal universe if gravity!
- Galaxies have gravity so attract each other
- So should be all moving towards each other
- But actually they are overwhelmingly moving away!
- And accelerating, no recollapse!!



- Galaxies closer in past
- Very dense, universe in past - hot
- Very different from what we see now
- Future also very different from now





# Eternity of future time

- Sun will run out of fuel in 5 billion years
- Expand and destroy the Earth
- Develop space drives, move to another planet
- But that sun will also run out of fuel...
- Galaxies making more stars, but their gas and dust is also running out.
- All stars die, even black holes eventually evaporate. No energy so no life possible. Our genes are not immortal.



# Is the physical universe all there is?

- Why is the universe beautiful?
- *He has made all things beautiful in their time. He has also set eternity in the human heart; yet no one can fathom what God has done from beginning to end. (Bible: Ecclesiastes)*
- Is the physical universe all there is?
- Are we ‘just’ atoms? Is that like saying music is ‘just’ vibrations in the air or a masterpiece of art is ‘just’ paint on canvas? Is there more?



# Can science show us anything about God?

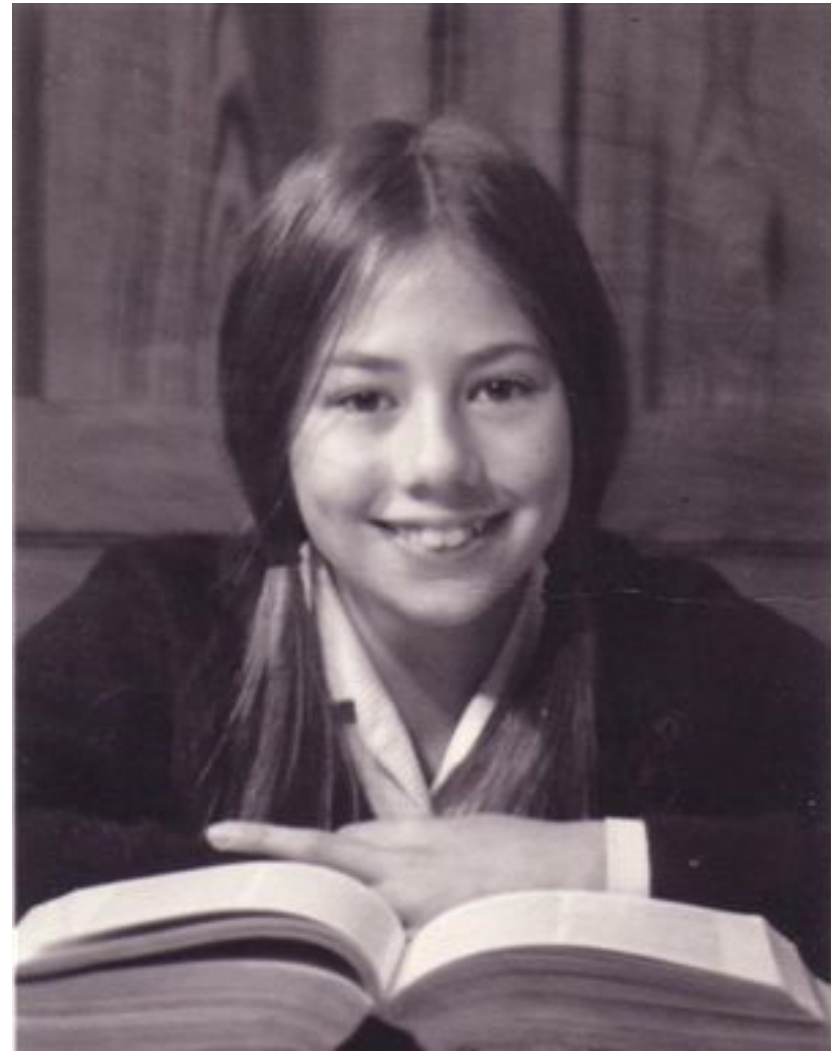
- Any God who could create this universe is FAR beyond us
- Creator is different to their creation – so God is outside space, time, matter, energy...science tools study space, time, matter, energy...
- So science probably won't help us very much in discovering what God is like!

# How can we know what God is like ?

- Needs God to reveal himself to us
- Jesus shows us what God is like ‘if you have seen me you have seen the Father’ John 14:9
- All faiths have at their core the idea of a revelation of God – prophets, teachers..
- Christianity is unique in saying God himself came to us in Jesus – a human who shared our humanity but whose essential identity was God.

# How I became a Christian

- Friend invited me (atheist!) to her baptism when I was 17
- People worshipping like they meant it....
- Who do you think Jesus was?
- Good teacher!! Bad answer....





# Jesus – just a good teacher?

- Taught – love your neighbour as yourself, love your enemy, forgive those who wrong you
- Lived – reached out to outcasts of society: tax collectors, prostitutes, lepers
- But let people worship him as God!!
- Mad (he thought he was God, but he wasn't!)
- Bad (he knew he wasn't God, but let people worship him anyway!!)
- God (he knew he was God, so worship is the right response!)

# Evidence for Jesus as God ?

- Disciples (eyewitness account) said his life was more about his death than his teaching!
- But that he was then raised to life by God, and they met with him!!
- Evidence for this:
- **Psychological:** disciples changed from running away in fear to boldly saying Jesus was alive
- **Physical:** The body was gone from the tomb or the Romans would have produced it to stop the rumours that he was alive

# Evidence for Jesus being alive

Observation	Explanation?	Consequence
Body Not In Tomb	Disciples stole it	They would know that Jesus was really dead

- Not very likely - people might die for what they truly believe in, but not generally for something they knew to be a lie



# Evidence for Jesus being alive

Observation	Explanation?	Consequence
Body Not In Tomb	Someone else stole it	Why do the disciples say he's alive??

# Evidence for Jesus being alive

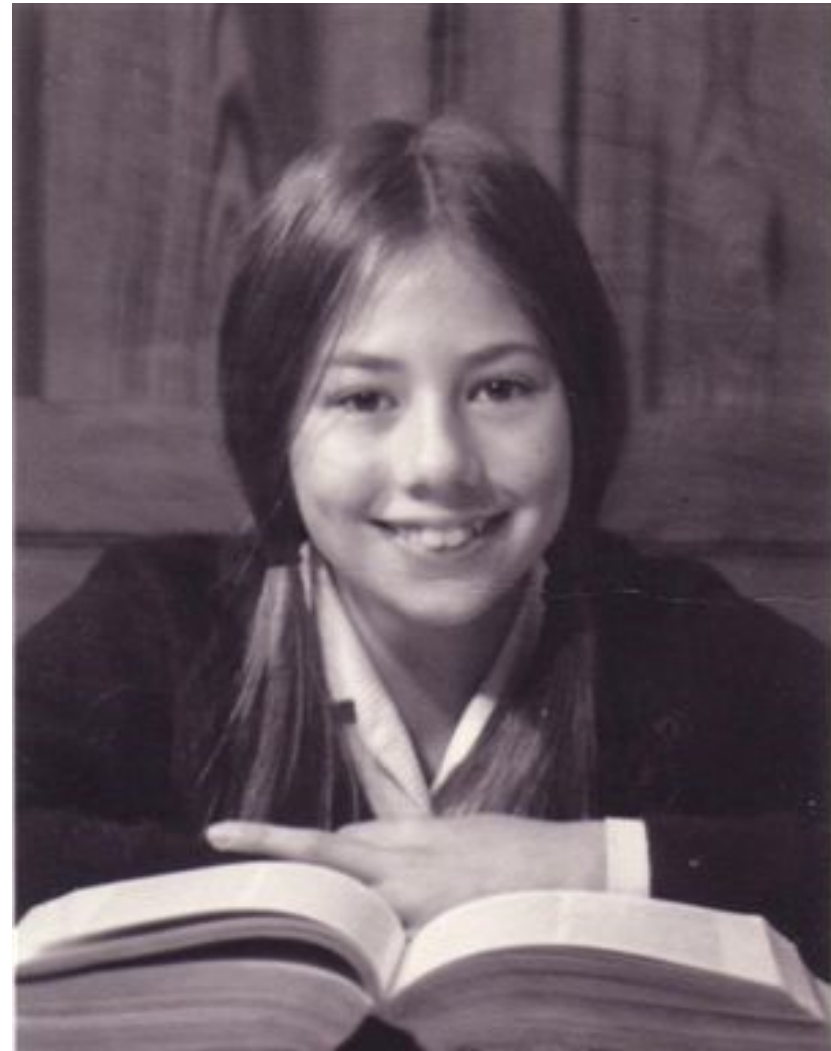
Observation	Explanation?	Consequence
Body Not In Tomb	Someone else stole it <b>AND</b> The disciples have a mass hallucination and imagine they see Jesus alive	Two very unusual and unconnected things have to happen.

# Evidence for Jesus being alive

Observation	Explanation?	Consequence
Body Not In Tomb	Jesus is raised to life	Disciples convinced that Jesus is God, lord of life and death. So they are fearless, and tell everyone!
<ul style="list-style-type: none"><li>• The most likely solution? The one which best explains the observations</li></ul>		

# How I became a Christian

- Evidence – not proof!
- Science is about evidence not proof
- Enough evidence that it is most likely true
- I didn't want Christianity to be true!!



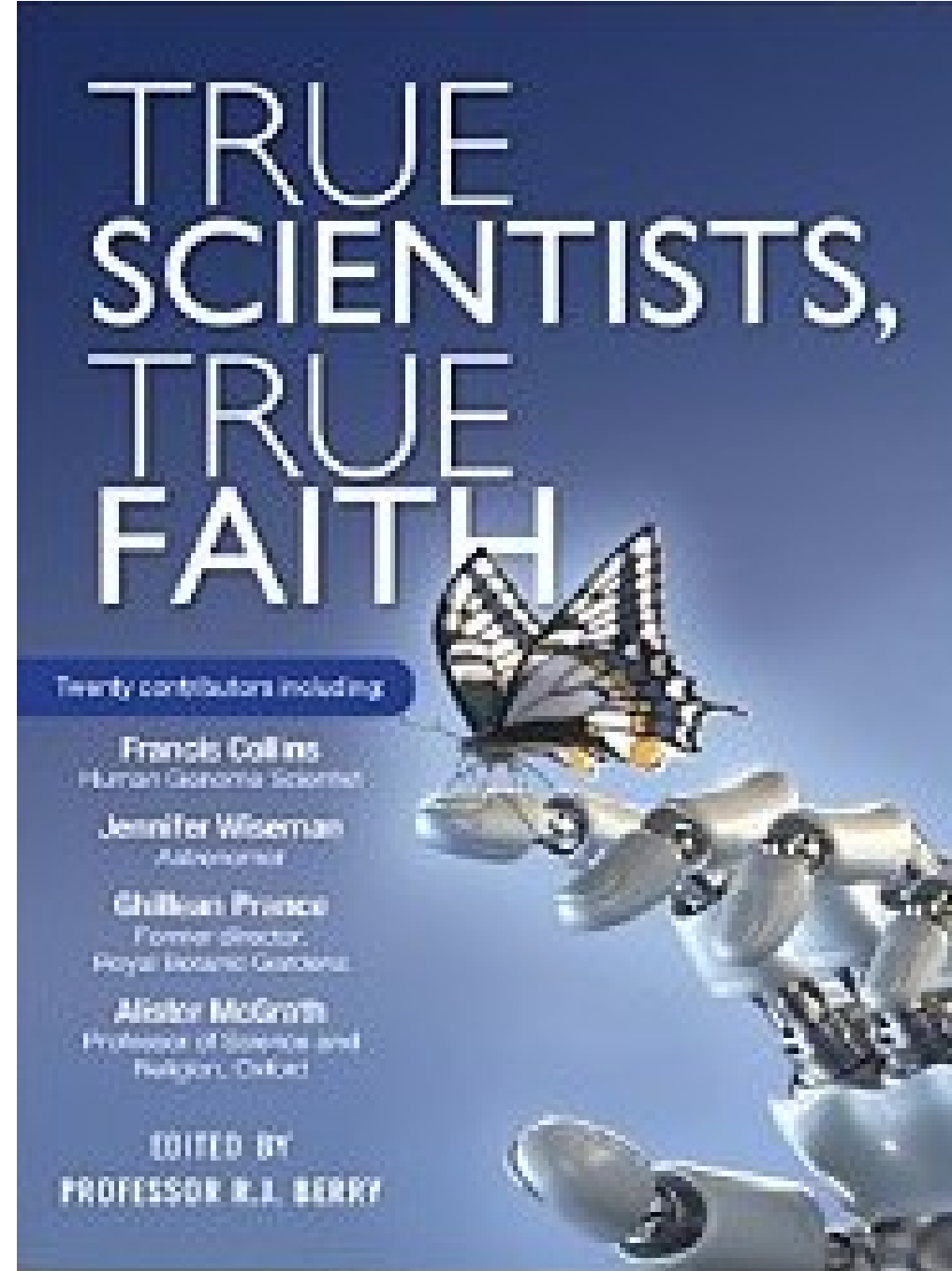


# Christianity as a relationship

- Not just intellectual assent to set of beliefs
- Relationship with God – two way
- This surprised me!!
- Eg what to do at university – doctor (helps people) or astrophysicist (what I wanted to do)

God was right and I  
did make a good  
astrophysicist

1<sup>st</sup> woman full  
professor of  
astrophysics in  
Durham



# A real Christian – run alpha

**“WHAT AM I  
DOING  
HERE?”**



***Alpha***

**If God did exist  
what would you ask?**

# Significance: Christianity

- Alpha course in old people's home.
- Dementia: fear, aggression..... But loved and precious to God.





# Conclusions

- If the physical universe is all there is then our lives have no significance against an eternity of time in a universe of darkness.
- There is evidence in Jesus that the physical universe is not all there is, that there is a God who loves us and calls us into relationship with him. Our lives, and our choices matter on a much larger canvas than this physical Universe, however infinite it may be in either time or space.

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[@tynebigq](https://twitter.com/tynebigq)



This was the end of the talk given in  
Blaydon on 19 September 2017.

There follow some supplementary slides  
‘in reserve’. Some of these were used in  
the discussion following the talk.

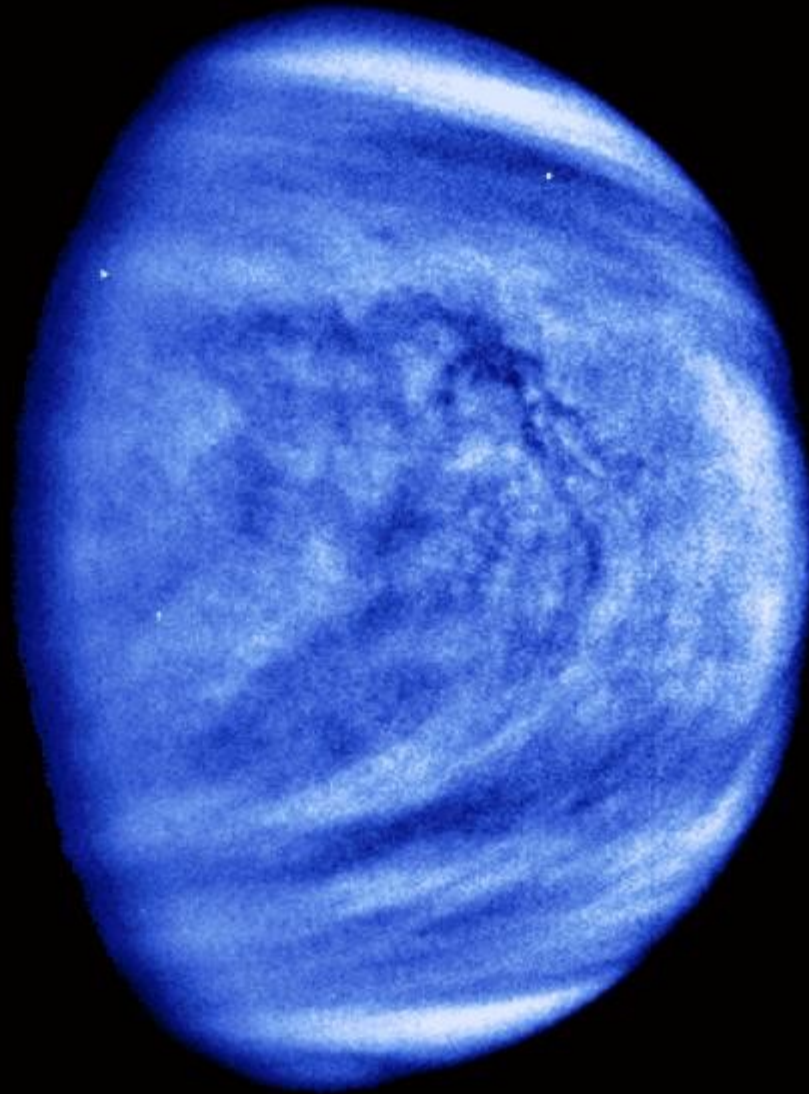


Mercury  
2 light  
minutes





Venus  
6 light  
minutes



Earth  
8 light  
minutes



Moon  
2 light  
seconds







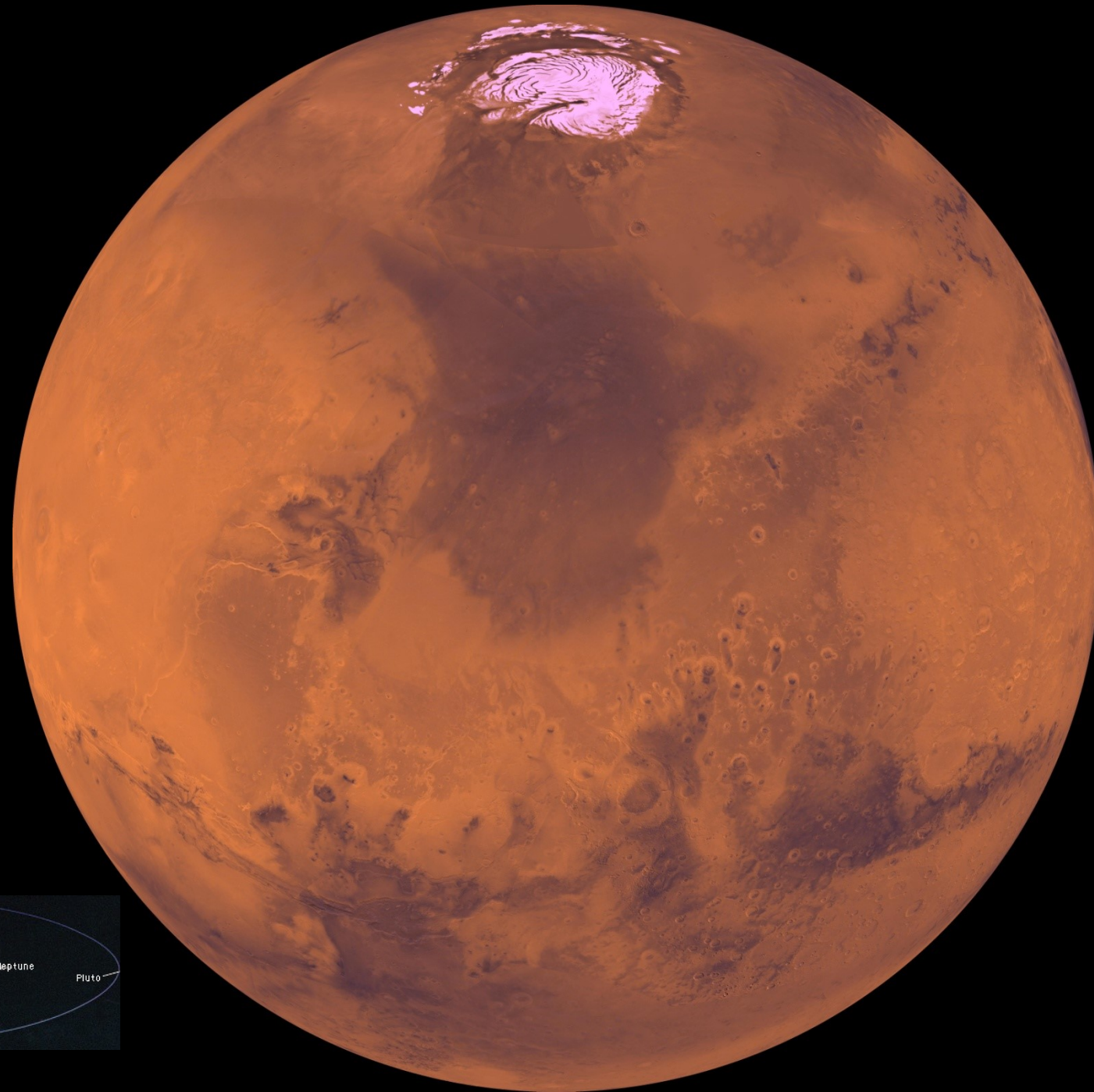






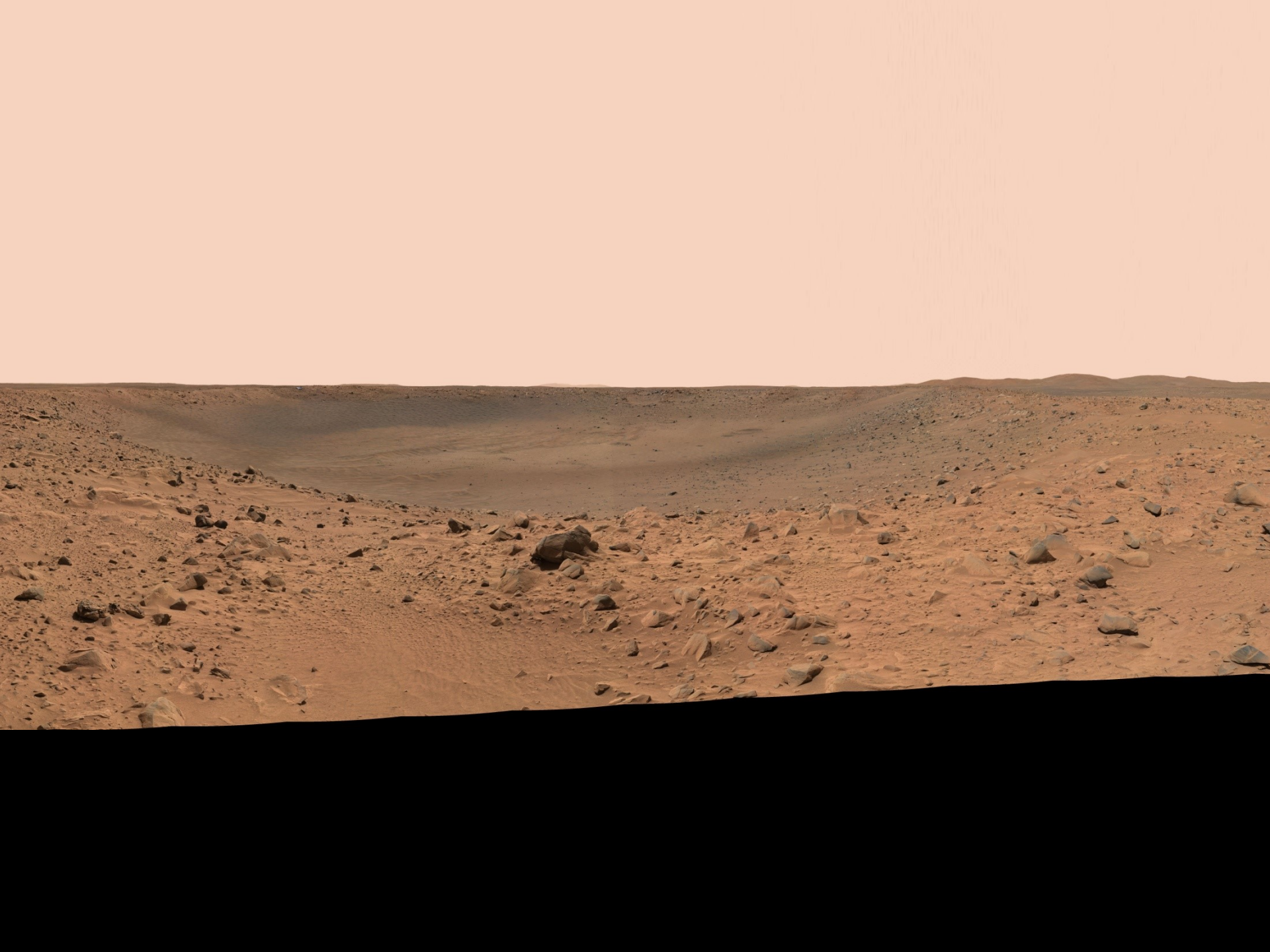
# Mars

12 light  
minutes

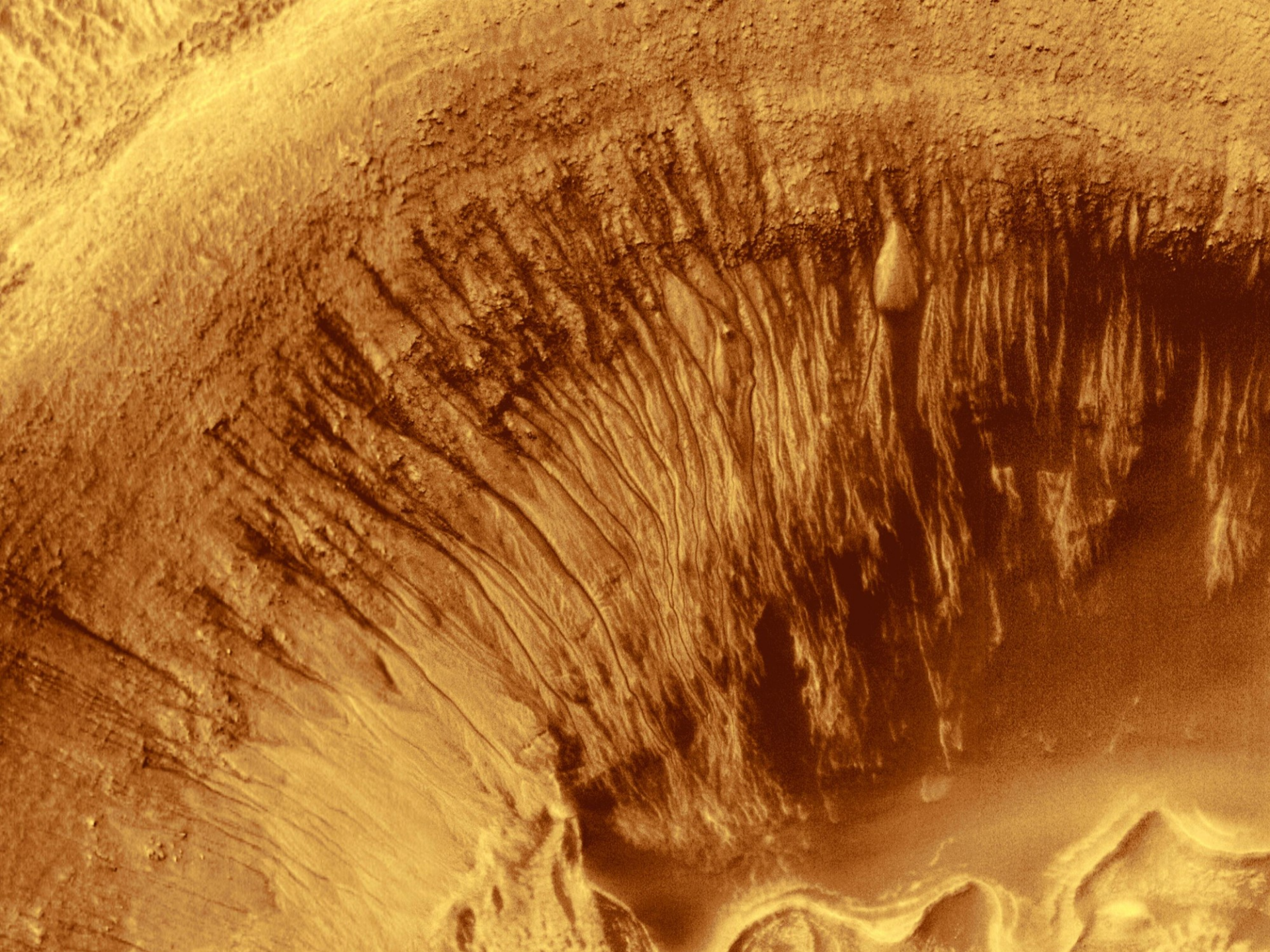








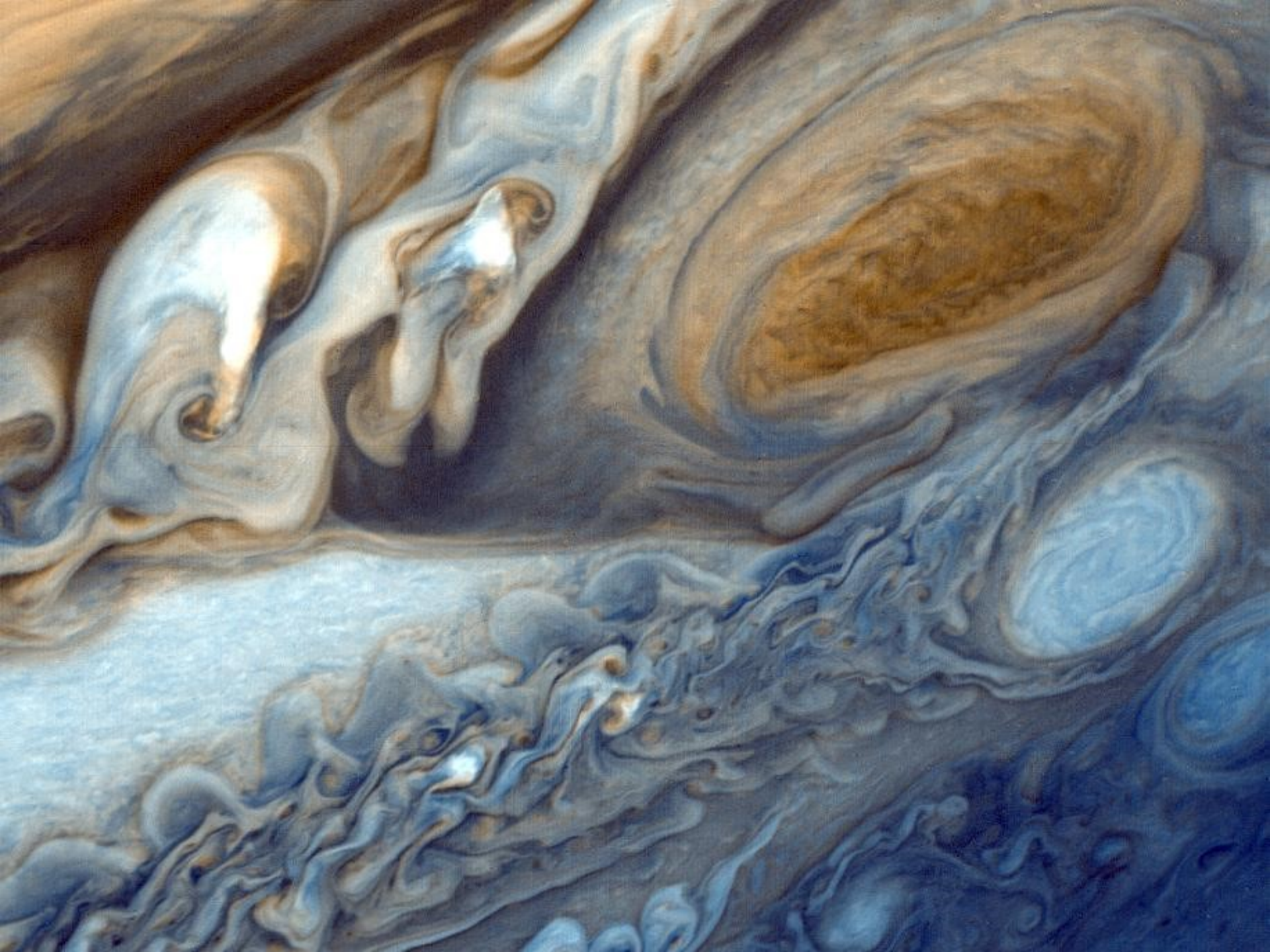






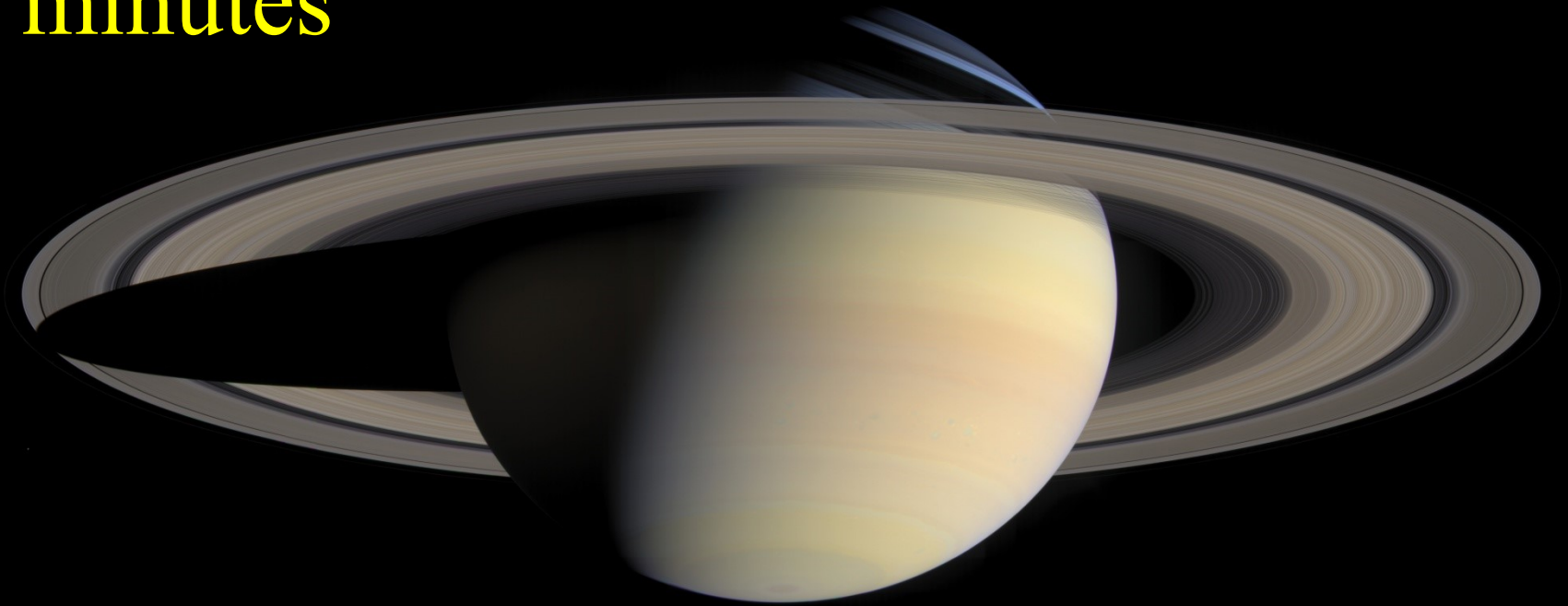
Jupiter  
40 light  
minutes



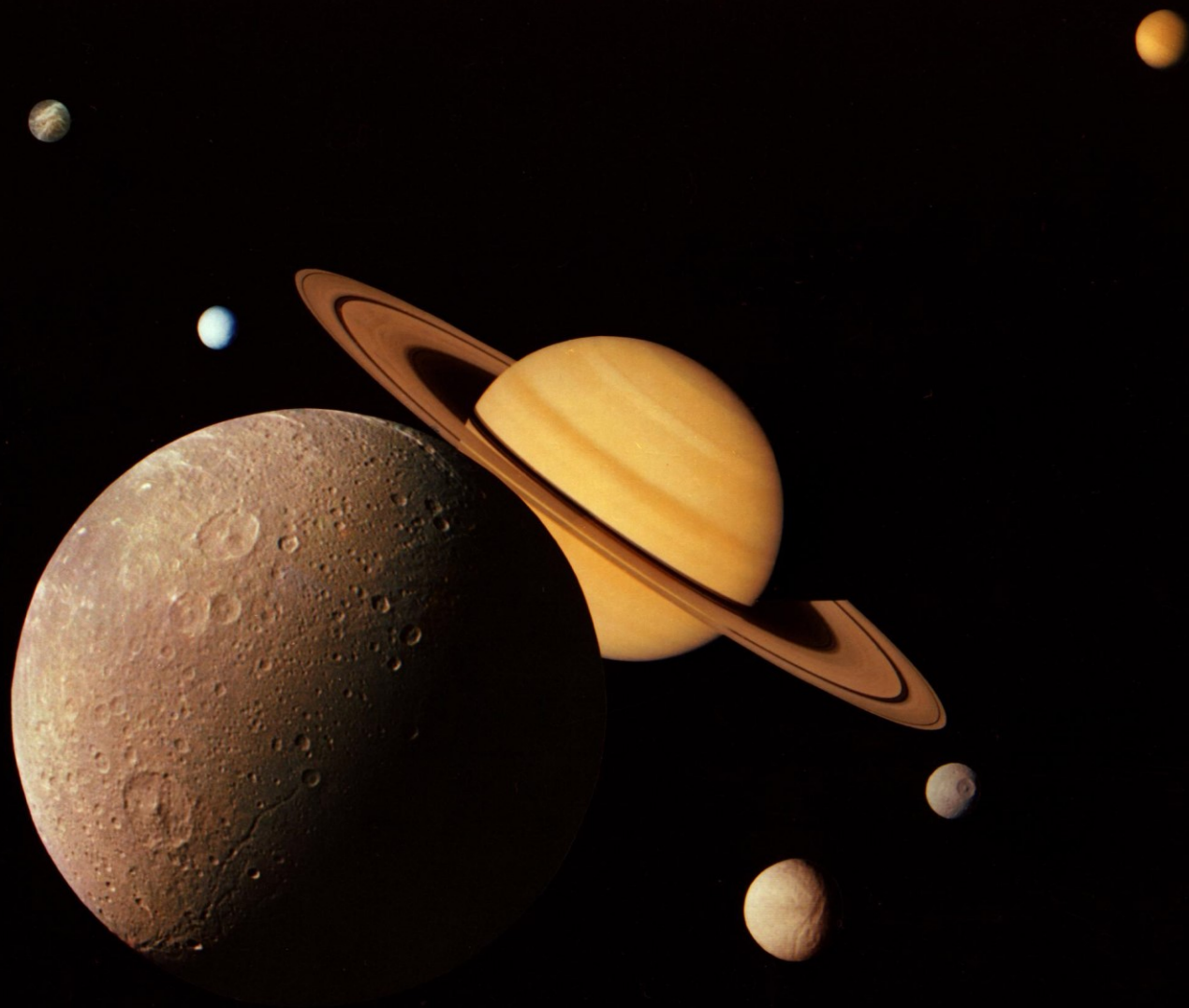


# Saturn

1 hour 20 light  
minutes

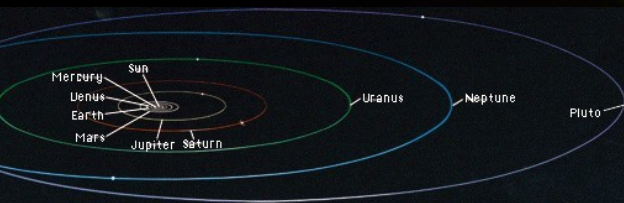






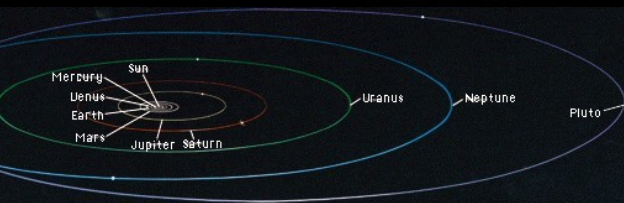
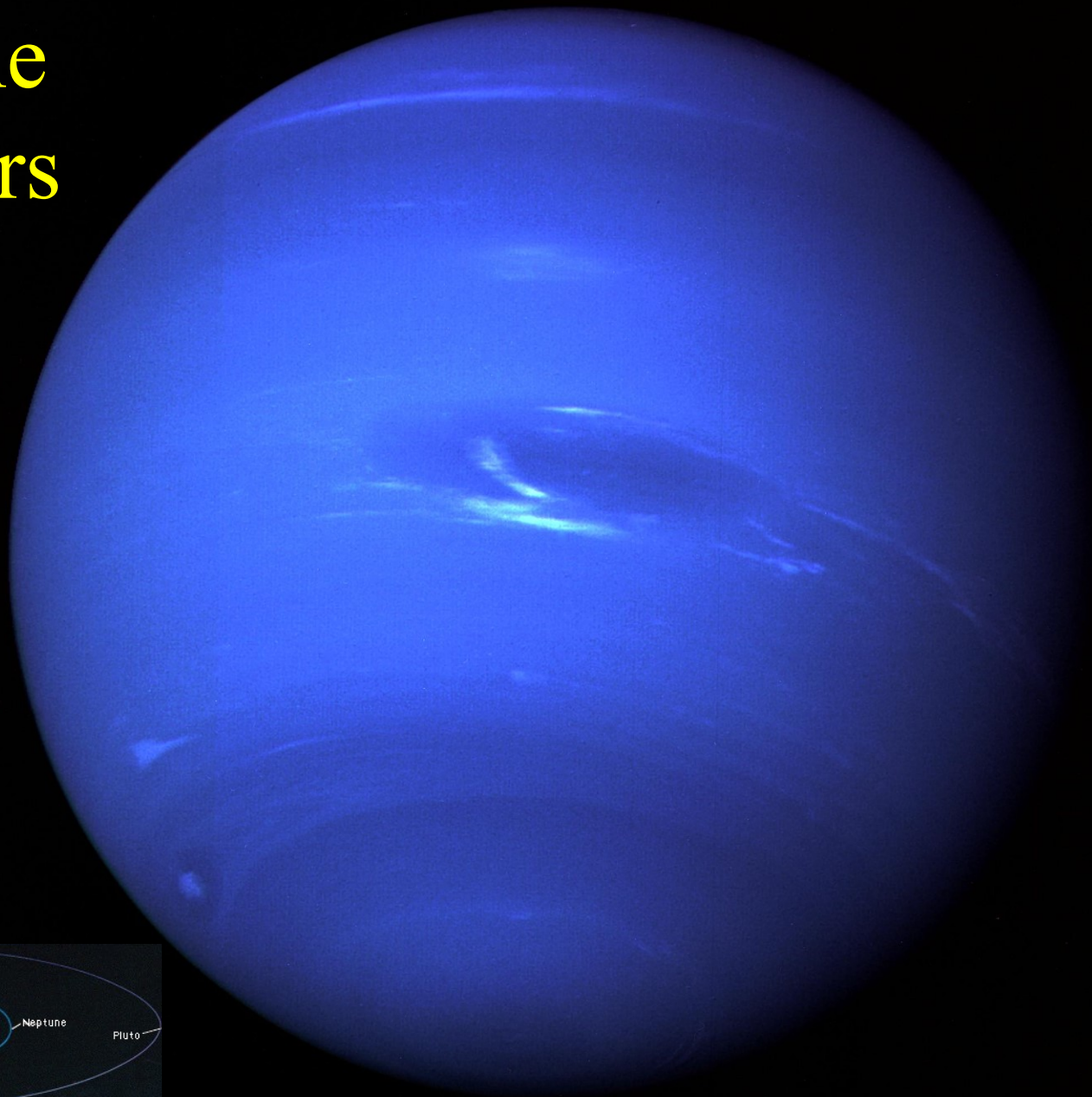
# Uranus

2+ hours



# Neptune

4+ hours



# Understanding God through Nature?

- I'm also a potter!
- What (if anything!) do my pots reveal about me?





# Understanding God through science?

- Probably they don't tell you much!
- I think we should understand the world by experience and study of science and understand God by relationship with him and study of the bible



# Can a scientist believe in miracles?

- Yes and No
- Yes: God made physical laws, so can break them if he chooses!
- Jesus in the bible walks on water, heals the sick, and is raised from the dead!!
- Christians all over the world (including me!) will say he is living and active in our lives.

# Can a scientist believe in miracles?

- No: Not as an answer to a scientific problem!
- A science answer relates to the natural world – God is a supernatural being
- For example, we don't yet understand the beginning of life, or the beginning of the Universe, or human consciousness – so we could say 'it must be God'
- But this places God only in the gaps in our knowledge – and as our knowledge grows the gaps shrink. Science seen as a threat to God!!

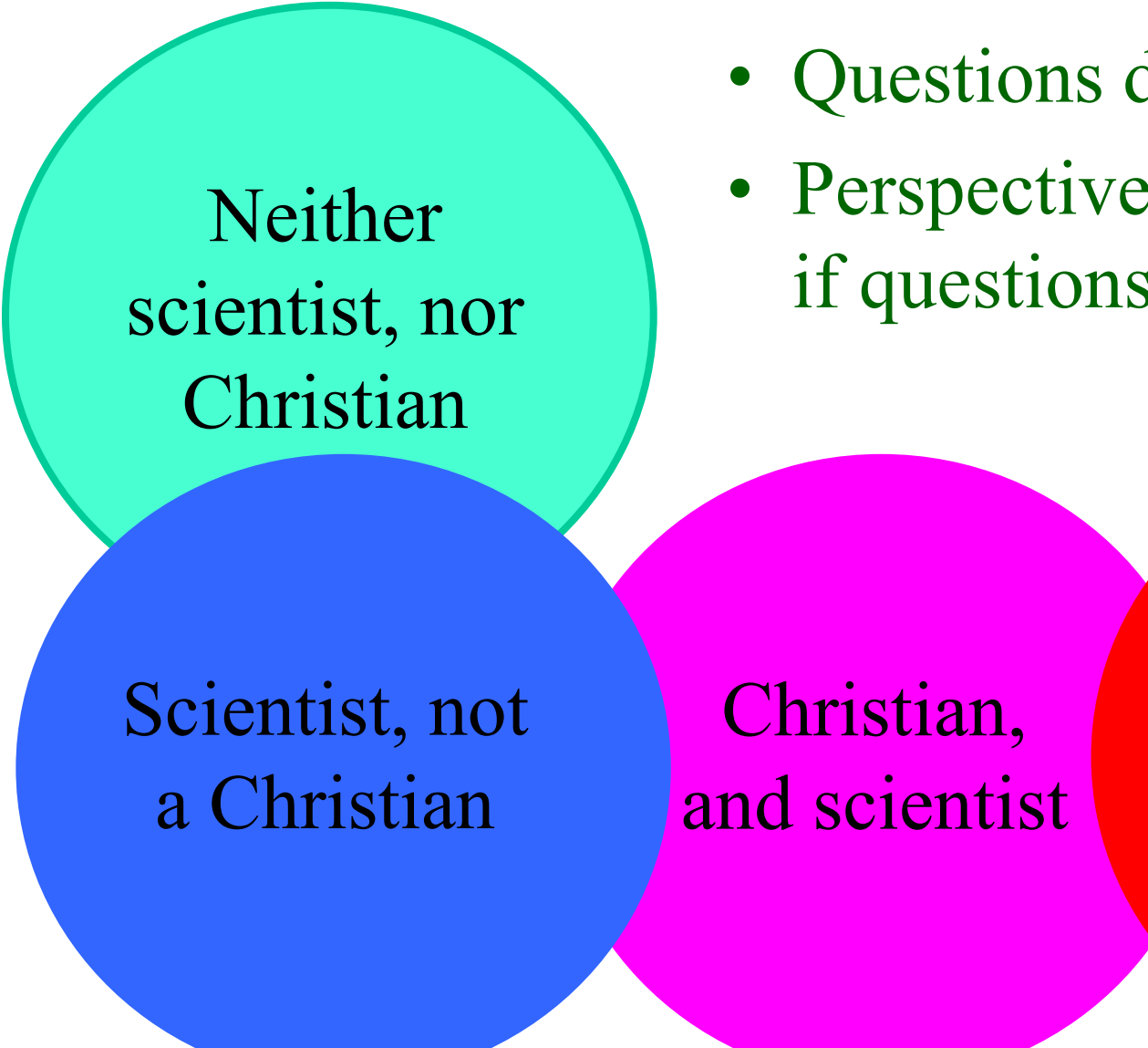
What (if anything!) does science reveal about the existence and nature of the Christian God as revealed in the bible?

1) Enormous amount of evidence against 7 day literal interpretation of Genesis – but it doesn't have to be read that way.



# Who are you??

- Questions different
- Perspectives different even if questions are same!



Neither  
scientist, nor  
Christian

Scientist, not  
a Christian

Christian,  
and scientist



Christian, not  
a scientist

# Bible has to address all these audiences and much more....

All ages  
Children/adults/  
seniors

- One book (collection) to speak to all people & times
- Poetry, allegory, history, eyewitness accounts

All  
nationalities/  
cultures

All centuries  
different  
technologies

All IQs

**Bible has to address all these  
and more so it uses lots of  
different ways....**

GOD



Poetry  
Allegory  
History  
Eyewitness

# **The beginning according to Christianity/Judaism**

In the beginning, God created the heavens and the earth....God said let there be

- 1) Light
- 2) Heaven and earth
- 3) Land and sea, with plants on the land
- 4) Sun moon and stars
- 5) Fish, birds
- 6) Animals and mankind



# **Bible view: God's Universe**

- There is something rather than nothing because God spoke it into being
- The sun/moon/stars are just part of his creation, not gods in their own right
- Everything is God's creation and is good, not some cosmic finely balanced dichotomy between good and evil...

# **Bible view: humans and God**

- Adam and Eve – God created them ‘from the dust of the earth’ and they lived in a garden
- Everything was theirs to eat except the tree of the knowledge of good and evil. God to Adam - Eat that and you will surely die
- Serpent to Eve: did God really say that?
- Eve to Adam – let’s try it... so they did, then they were ashamed and hid from God

# **Bible view: humans and God**

- We are meant for relationship with God and with each other
- We have real freedom to choose and we can choose the wrong things. This breaks our relationship with God, and with each other.
- Biblically, this is why we are broken. And we can't fix it because we have a problem with God as well as with ourselves

# How to draw the line....

- I interpret this allegorically – but also real events?
- Hunter gatherers – Adam and Eve walked with God in a garden in the cool of the day
- Shepherds/pastoral nomads (Abel) then farmers (Cain) 10,000-5000 BC, - curse: work the ground
- Farming: larger population, but worse nutrition
- Settled communities – possessions, inequality, war (Abel murdered by Cain)
- Bible echo of the most dramatic change in human (pre)history, irrevocable shift to farming



# Books of God's word and works

Nature (works)

Bible (words)



interpreted by



Science

Theology



Answers  
questions



How

Why (material)

Why

For whom

# Science revealing God ?

- Big bang, a moment of creation
- ‘Why is there something rather than nothing?’
- Quantum fluctuations
- Fine-tuning of the Universe – ‘it’s almost as if the Universe knew we were coming’
- Multiverse
- Complexity of life – design: Paley’s watchmaker
- Evolution

What we understand

What we don't understand

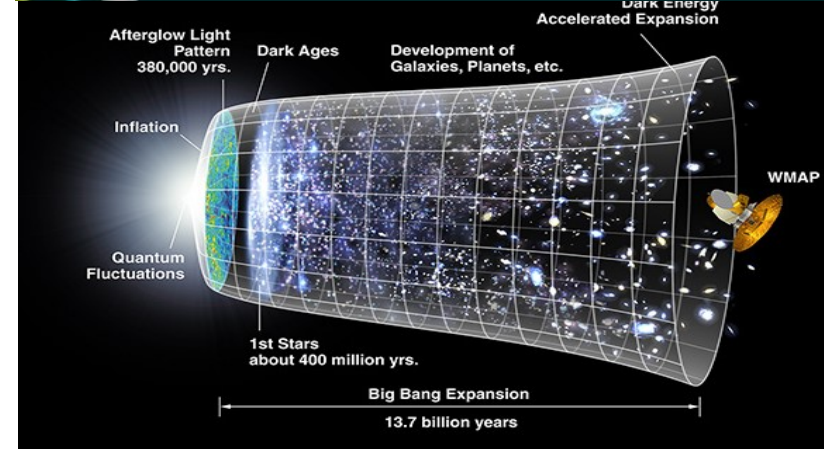
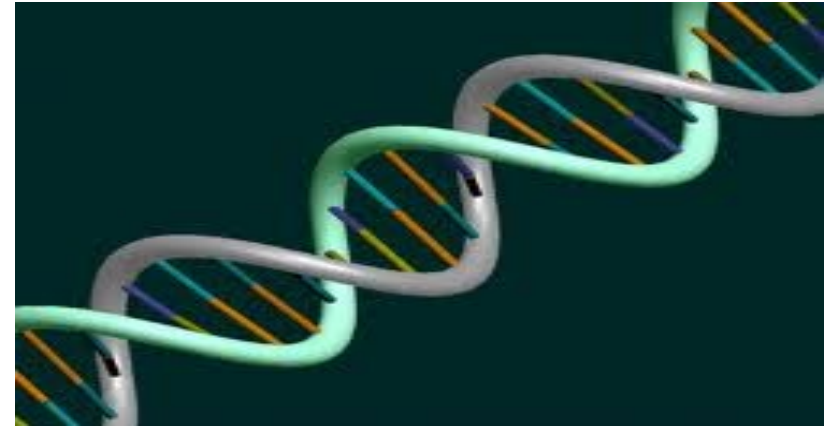
All current  
science

Particle physics  
(small scales)

Big Bang  
(large scales)

Biology/  
chemistry

G  
O  
D



# What we understand

Future  
science

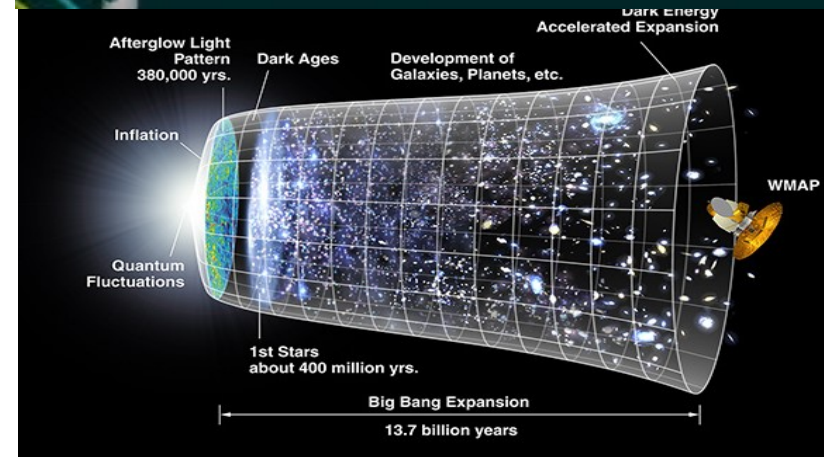
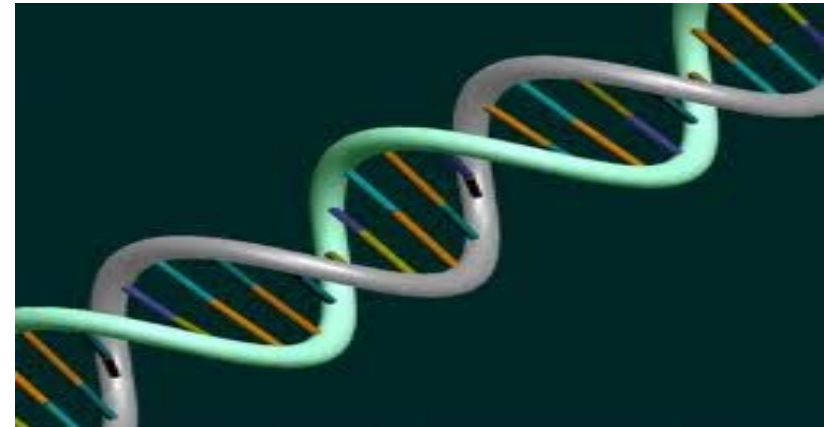
Particle physics  
(small scales)

Big Bang  
(large scales)

Biology/  
chemistry

# What we don't understand

G  
O  
D





What we understand

What we don't understand

All current  
science

Particle physics  
(small scales)

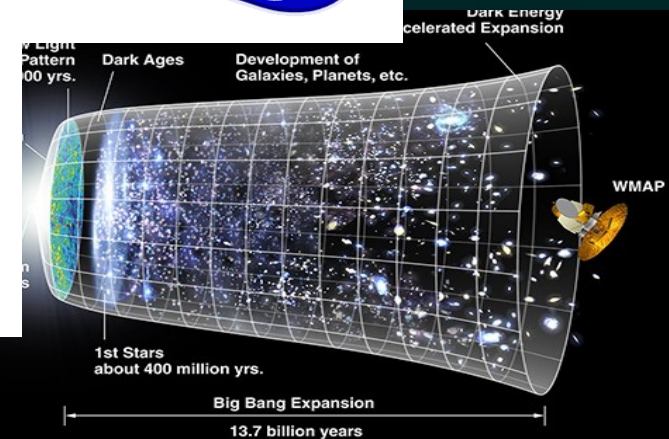
Big Bang  
(large scales)

Biology  
chemistry

G O D

G O D

G O D



What we understand

What we don't understand

Future  
Science

Particle physics  
(small scales)

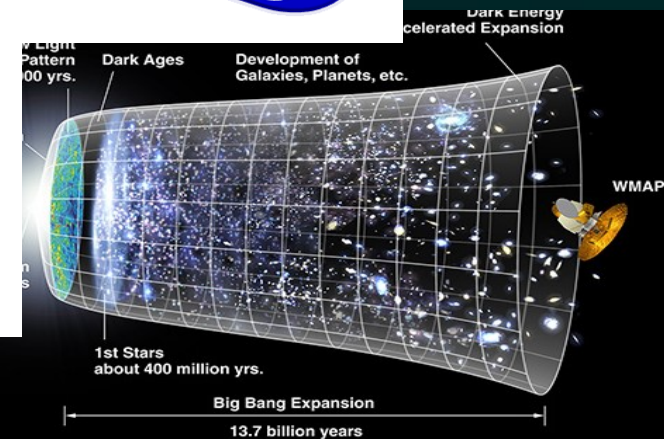
Big Bang  
(large scales)

Biology  
chemistry

G O D

G O D

G O D



# Augustine ~400AD

One of the great teachers in the early church.

Wrote a book

“On the literal interpretation of Genesis”

What kind of days these were is extremely difficult or perhaps impossible for us to conceive...

Not all Christians read it as literal 24 hour days even before modern science, so Christians certainly don't have to now.