

Modern Science and the Bible

The heavens declare the glory of God.
Psalm 19:1

Why worry about science?

- **General Revelation: God reveals himself through science**
Psalm 97:6
- **Our unsaved friends and children are concerned with science**
1 Peter 3:15

Presuppositions

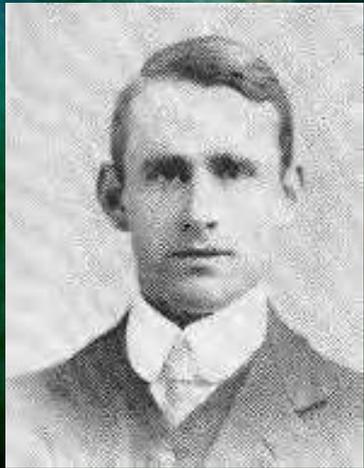
- **Big bang**
- **Old universe (14 billion years)**
- **Old earth (4.5 billion years)**

In the beginning . . .



**God created the heavens
and the earth**





Arthur Eddington (1882 - 1944):
“Philosophically, the notion of a beginning of the present order of nature is repugnant to me.”

“Religion first became possible for a reasonable scientific man about 1927.”

Robert Jastrow (1925 -)

“The Universe flashed into being, and we cannot find out what caused that to happen. This is a distressing result for scientists.”



Time had a beginning

2 Timothy 1:9

**This grace was given us in Christ
Jesus before the beginning of time.**

Titus 1:2

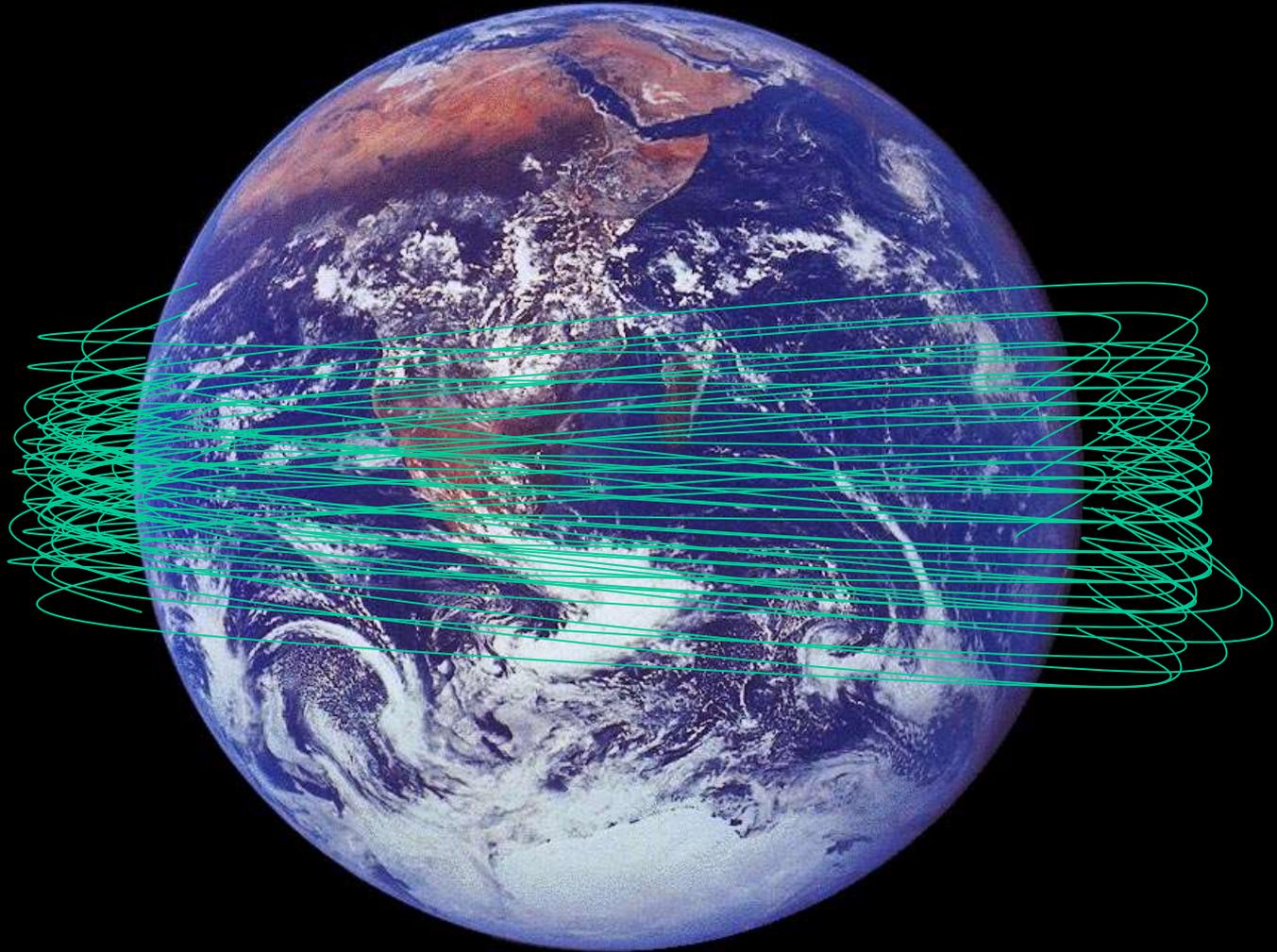
. . . before the beginning of time.

The big bang was fine-tuned

A vibrant image of a spiral galaxy, likely the Whirlpool Galaxy, with a bright red core and blue star trails. The galaxy is set against a dark background with several bright blue stars.

When the universe was one second old, its expansion had to be exactly the right value to within 0.00000000000000000001%

**60 mph for 40 years → 21,024,000 miles
(plus or minus one hair width)**



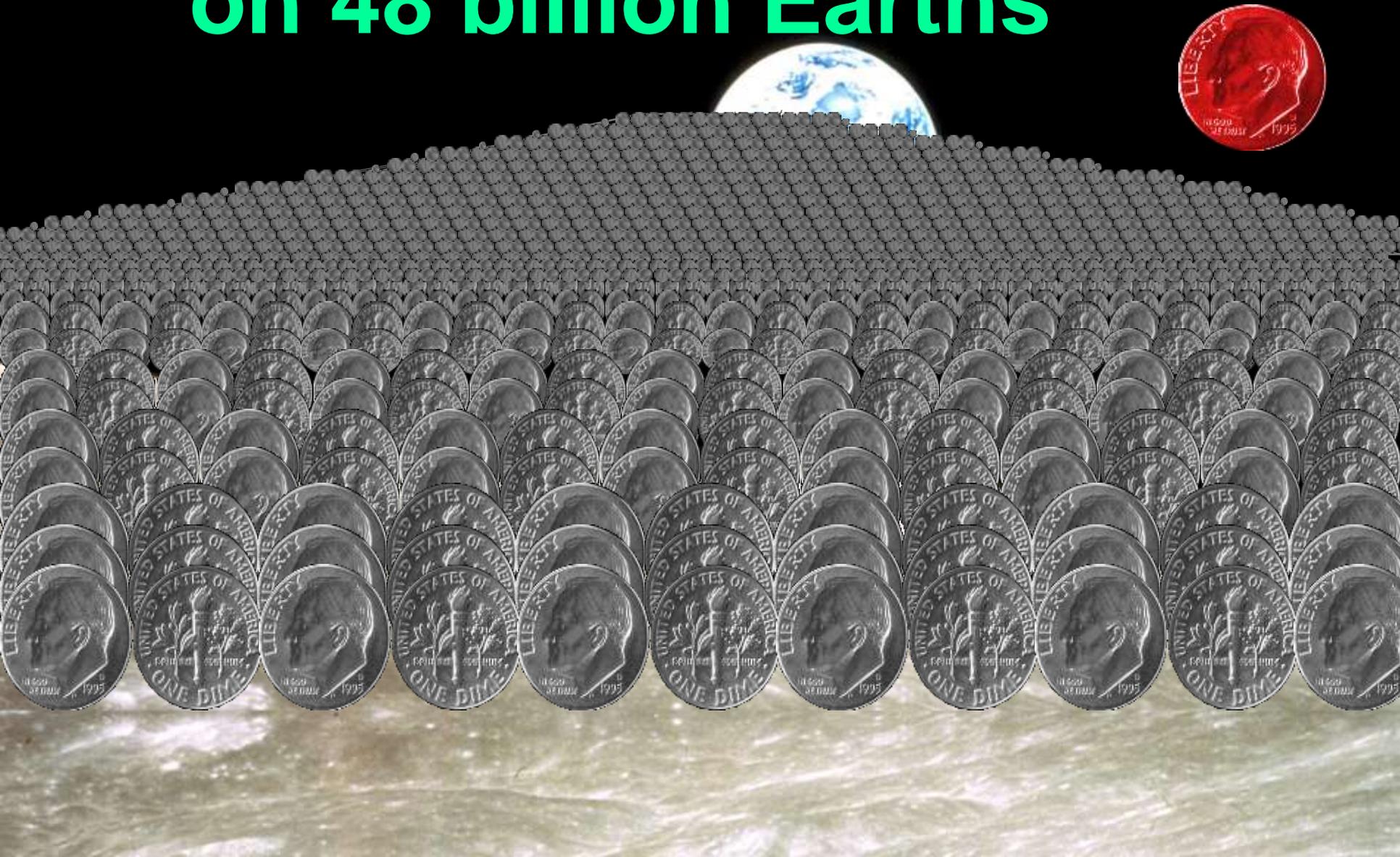
The big bang was fine-tuned

Stephen Hawking (1942 -)

“The initial state of the universe must have been very carefully chosen indeed. It would be very difficult to explain why the universe should have begun in just this way, except as the act of a God who intended to create beings like us.”



Dimes up to the moon on 48 billion Earths



Gravity was fine-tuned



Carl Sagan (1934 - 1996)

“It is easy to see that only a very restricted range of laws of nature are consistent with galaxies and stars, planets, life and intelligence.”

The mass of the universe is fine-tuned

... to within one grain of sand (relatively)



The mass of the universe is fine-tuned



Paul Davies (1946 -)

“It seems as though somebody has fine-tuned nature’s numbers to make the universe ... the impression of design is overwhelming.”

**In the beginning God created
the heavens and the earth**



Spiral galaxy



Location, location, location ...

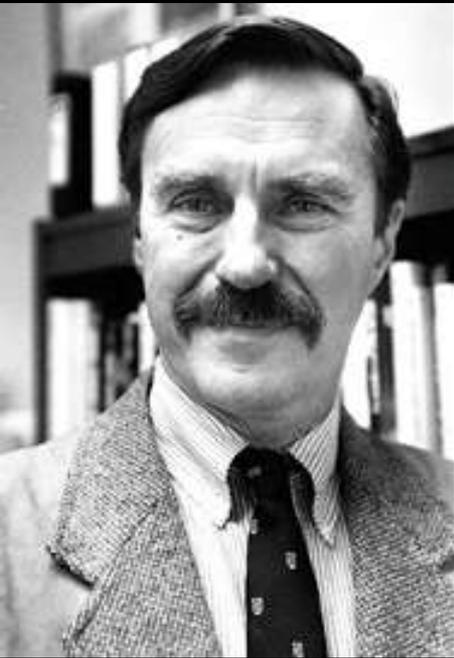


You are here →

Too far from center → not enough elements

Too close to center → too much radiation

Location, location, location ...

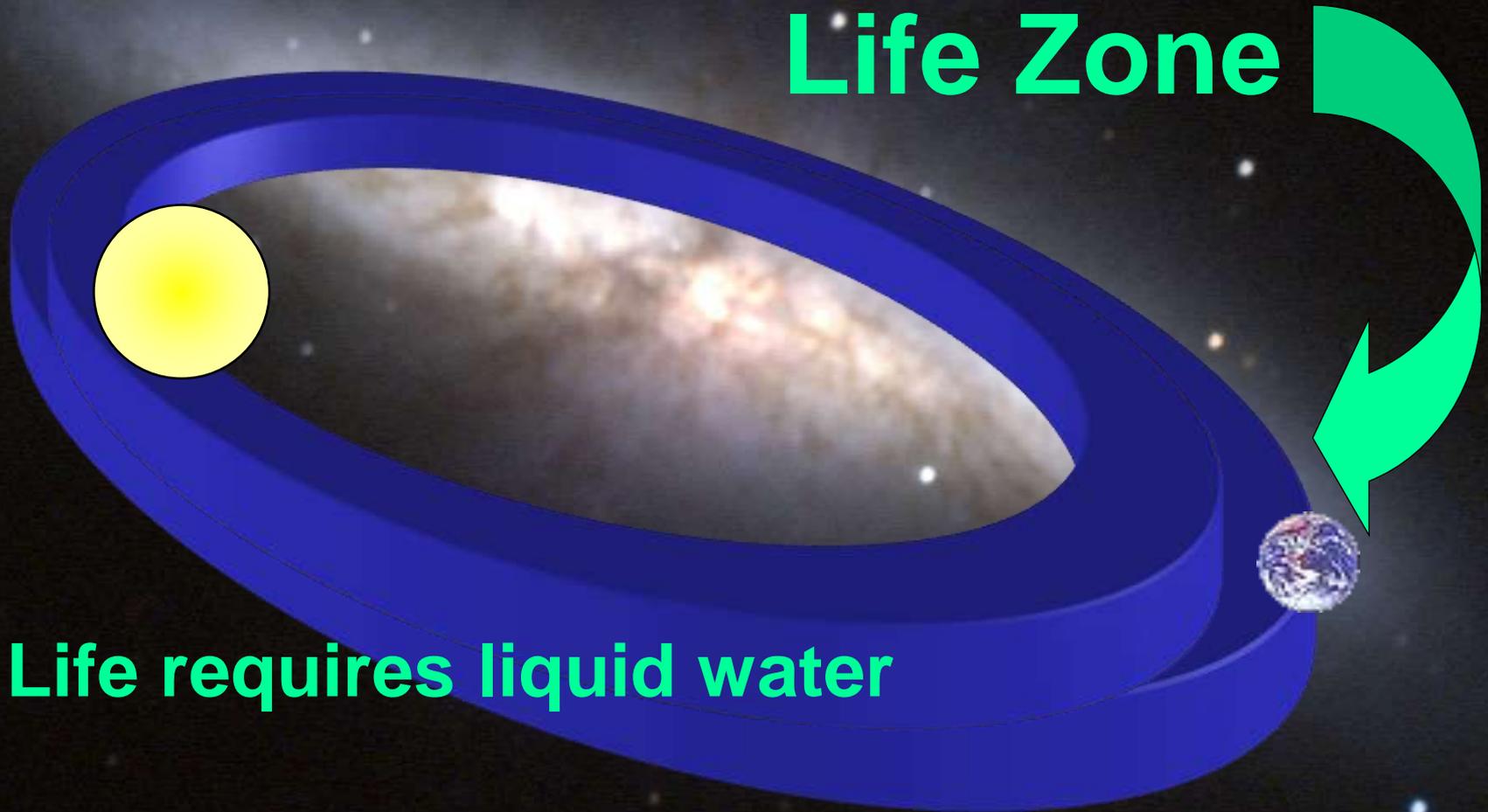


James Trefil

“If I were a religious man, I would say that everything we have learned about life in the past twenty years shows that we are unique, and therefore special, in God’s sight.”

Location, location, location ...

Life Zone



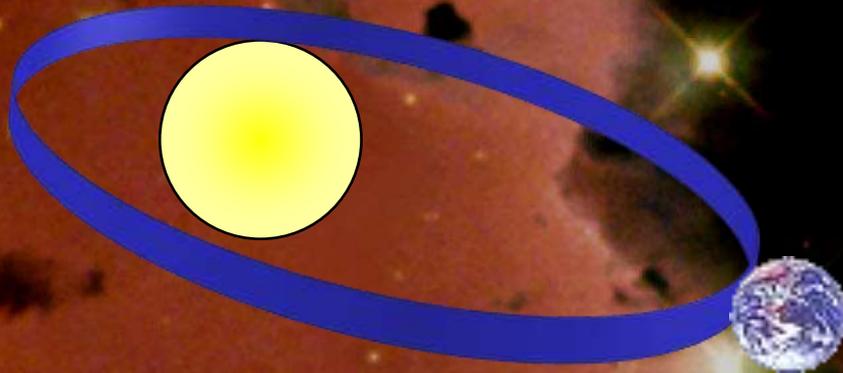
Life requires liquid water

Location, location, location ...



**Allan Sandage (1926 -)
“We can’t understand the
universe in any clear way
without the supernatural.”**

Our sun's size is fine-tuned



Larger star: rapid,
unstable burning



Smaller star: days
are too long

Our sun's energy has increased by 35%,
compensated by less greenhouse gases

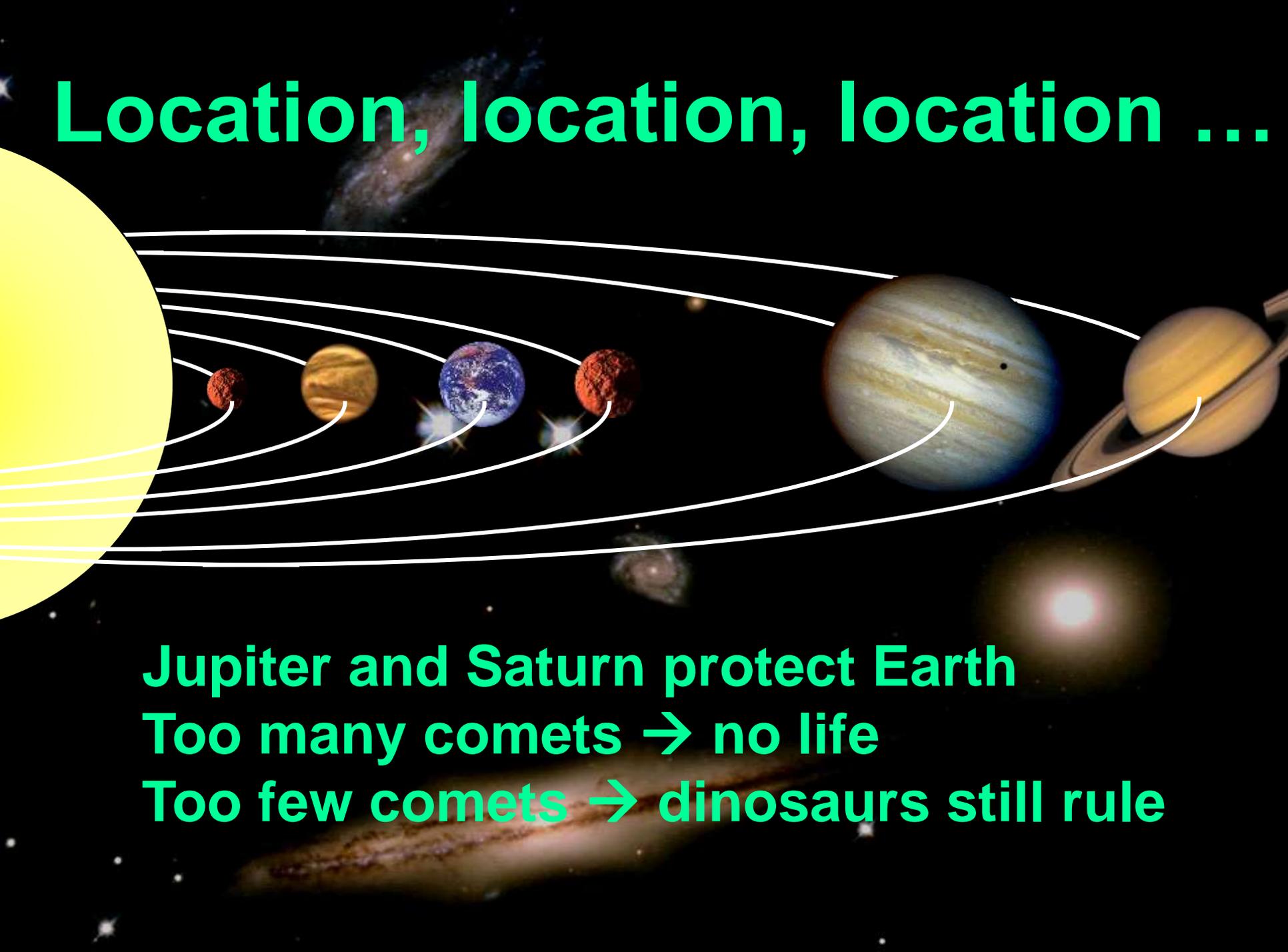
Our sun's size is fine-tuned

Sir Francis Crick (1916 -)

“An honest man, armed with all the knowledge available to us now, could only state that in some sense, the origin of life appears at the moment to be almost a miracle, so many are the conditions which would have had to have been satisfied to get it going.”



Location, location, location ...



Jupiter and Saturn protect Earth

Too many comets → no life

Too few comets → dinosaurs still rule

Location, location, location ...



Tony Rothman

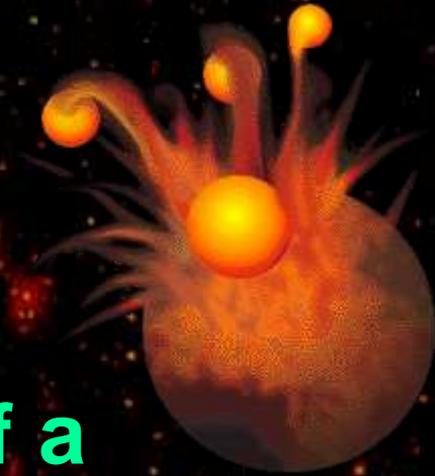
“When confronted with the order and beauty of the universe and the strange coincidences of nature, it’s very tempting to take the leap of faith from science into religion. I am sure many physicists want to.”

The formation of the moon



The formation of the moon

- Created through the collision of a Mars-sized object with the Earth over 4 billion years ago
- Much of the Earth's crust was ejected into orbit and formed the moon

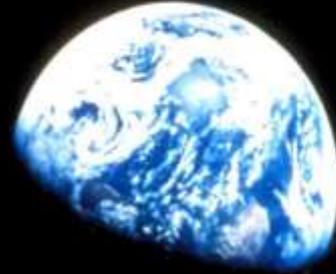


The formation of the moon

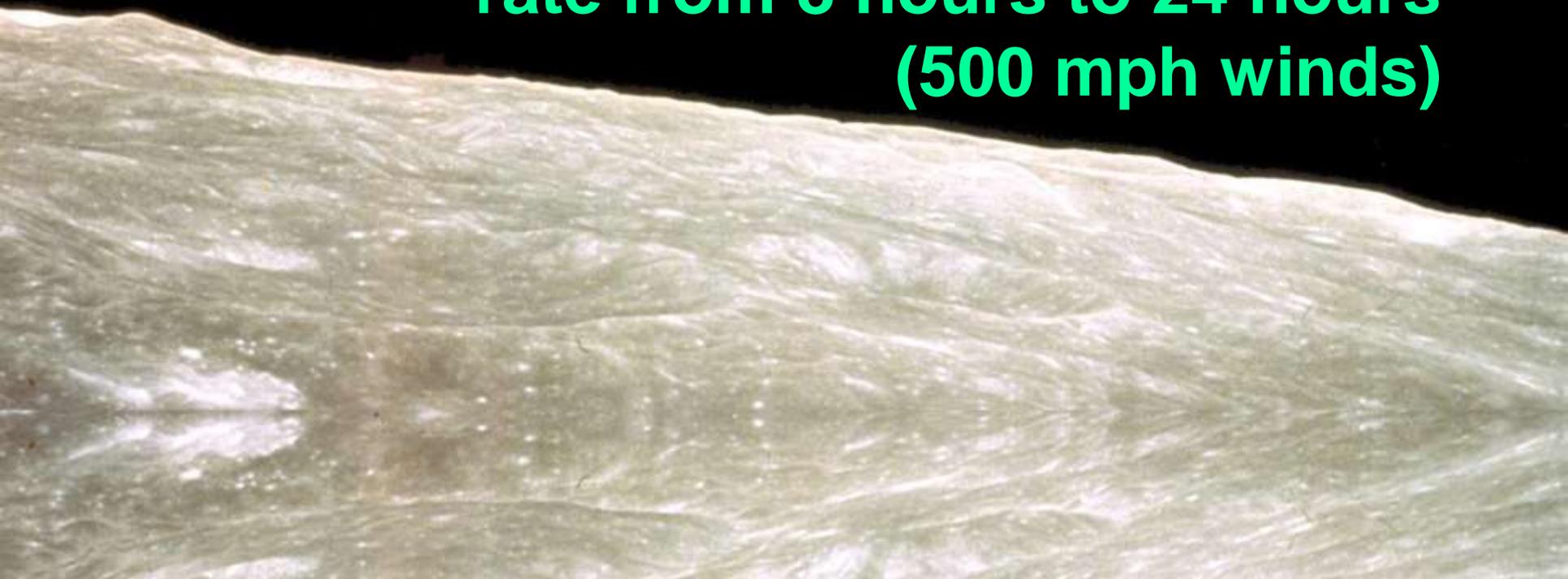
The ejection of Earth's early atmosphere into space prevented a runaway greenhouse effect like that seen on Venus (800° F)



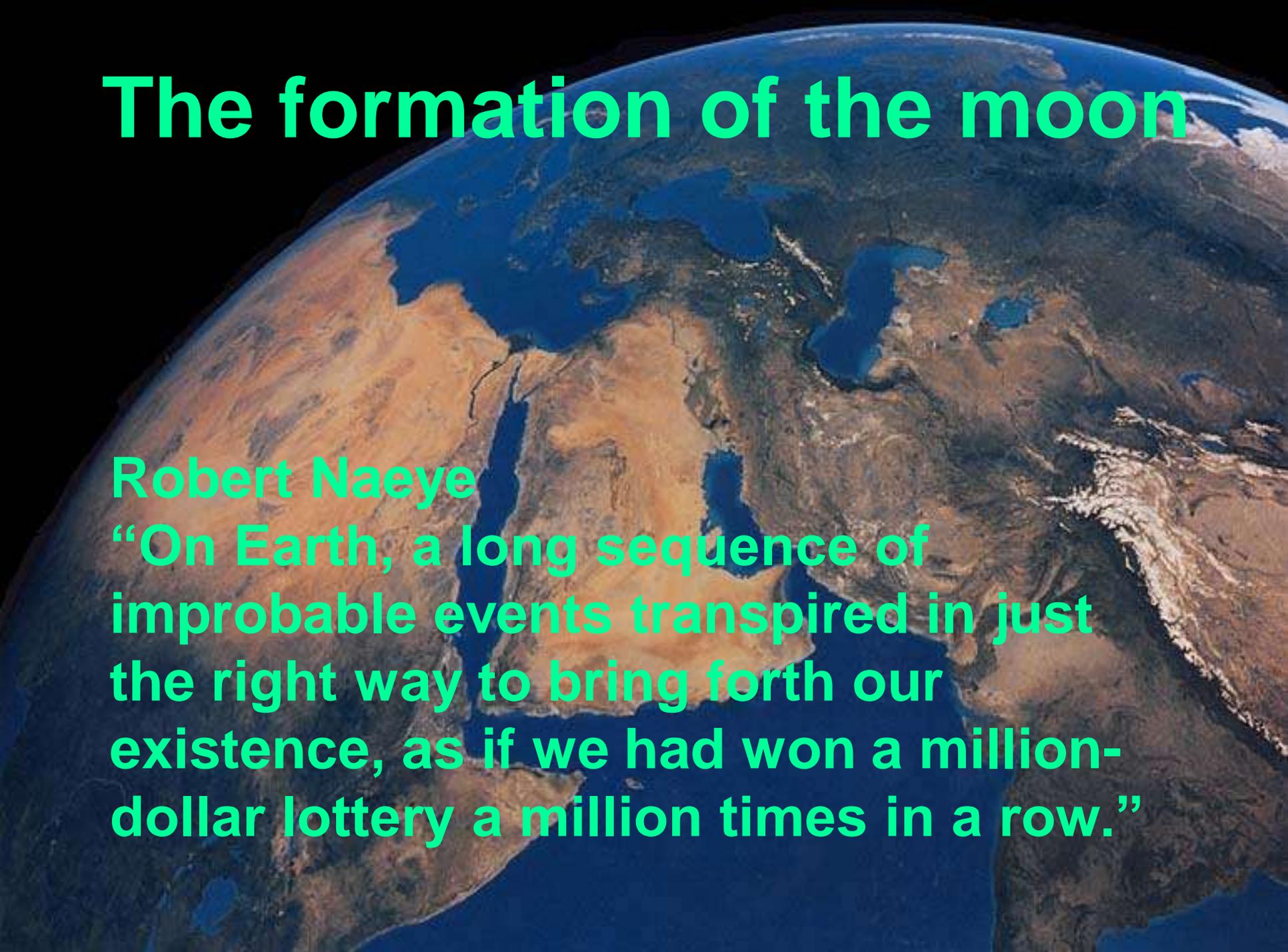
The formation of the moon



**Slowed the Earth's rotation
rate from 8 hours to 24 hours
(500 mph winds)**

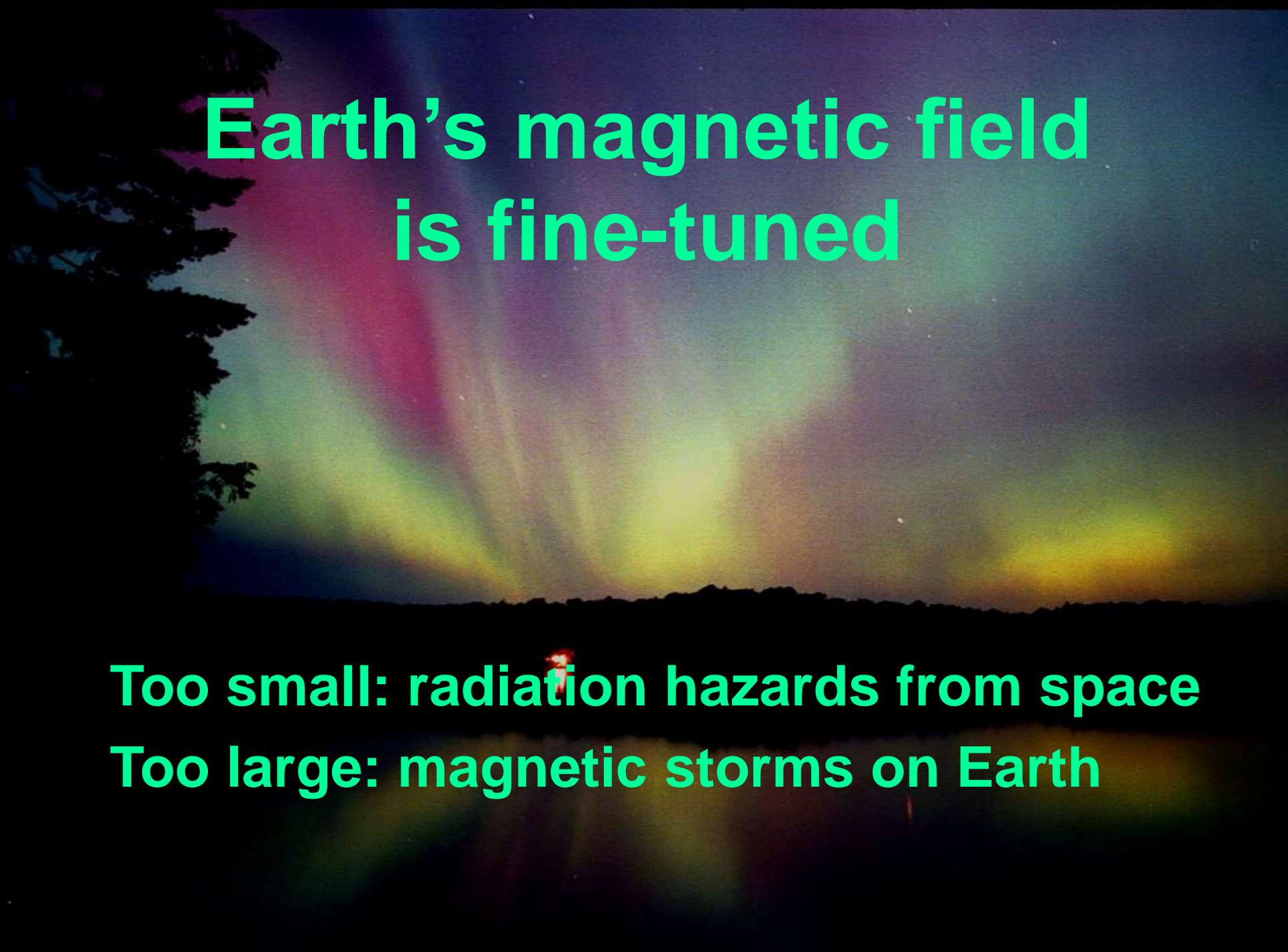


The formation of the moon



Robert Naeye

“On Earth, a long sequence of improbable events transpired in just the right way to bring forth our existence, as if we had won a million-dollar lottery a million times in a row.”

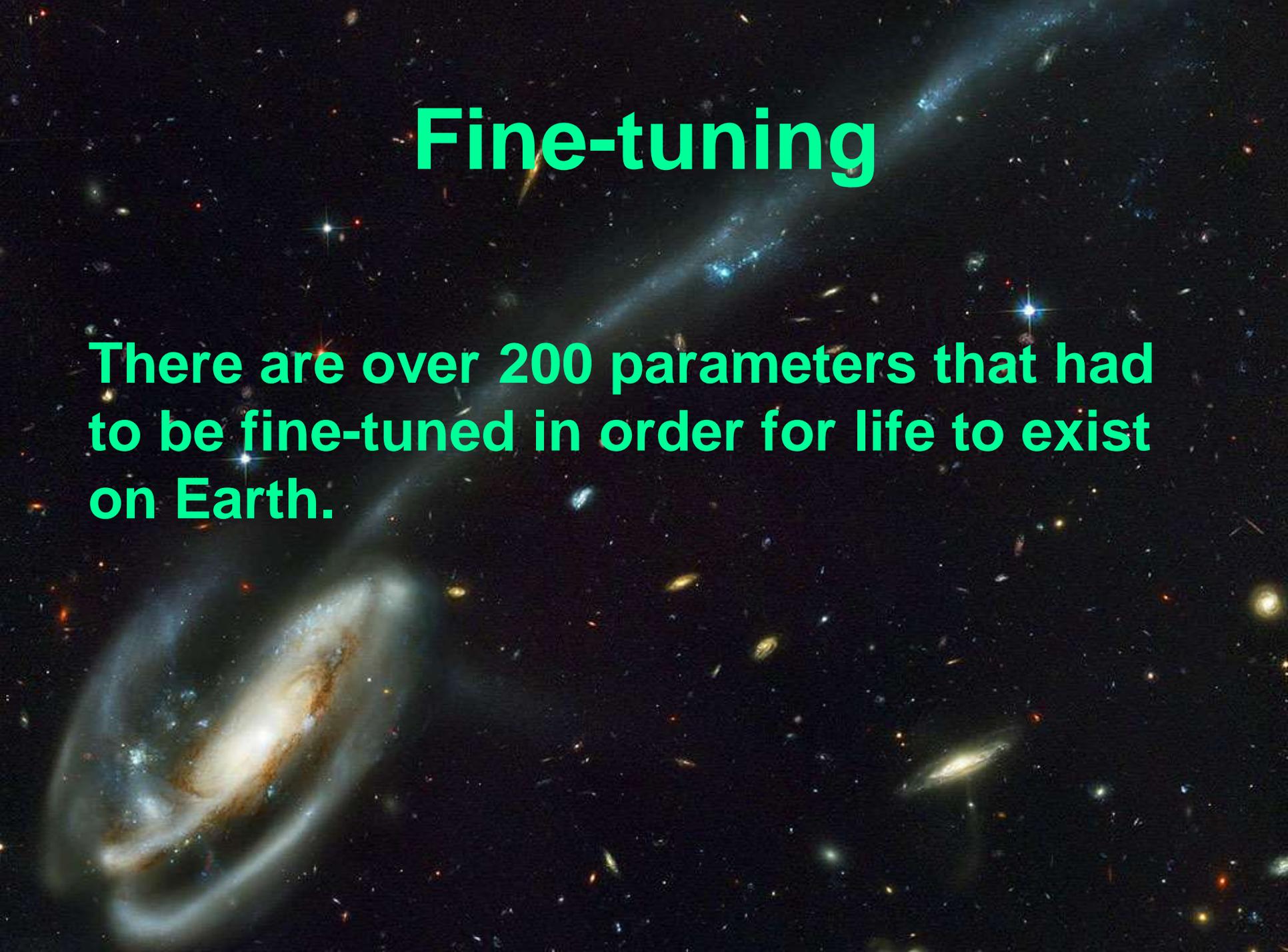


Earth's magnetic field is fine-tuned

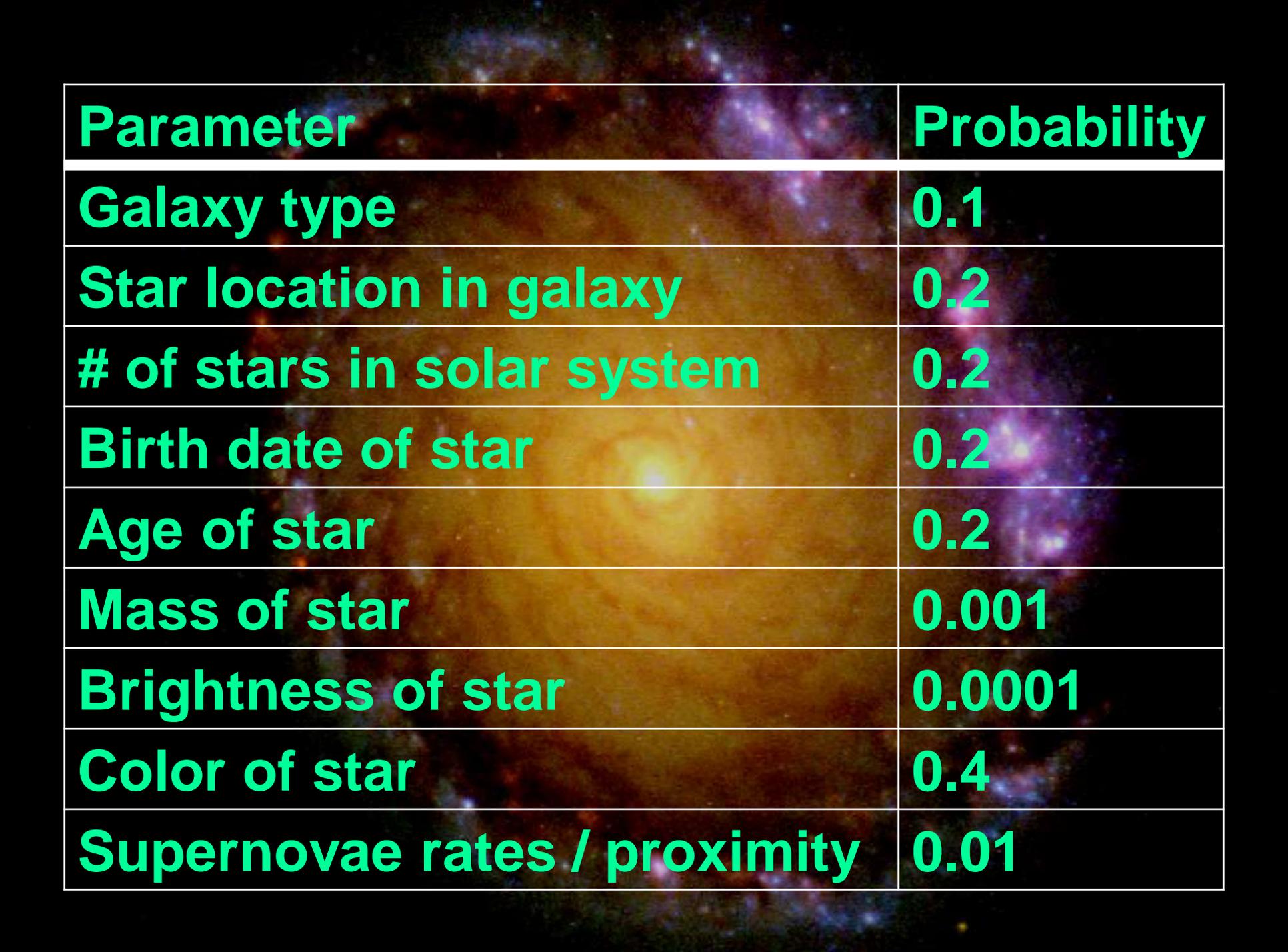
Too small: radiation hazards from space

Too large: magnetic storms on Earth

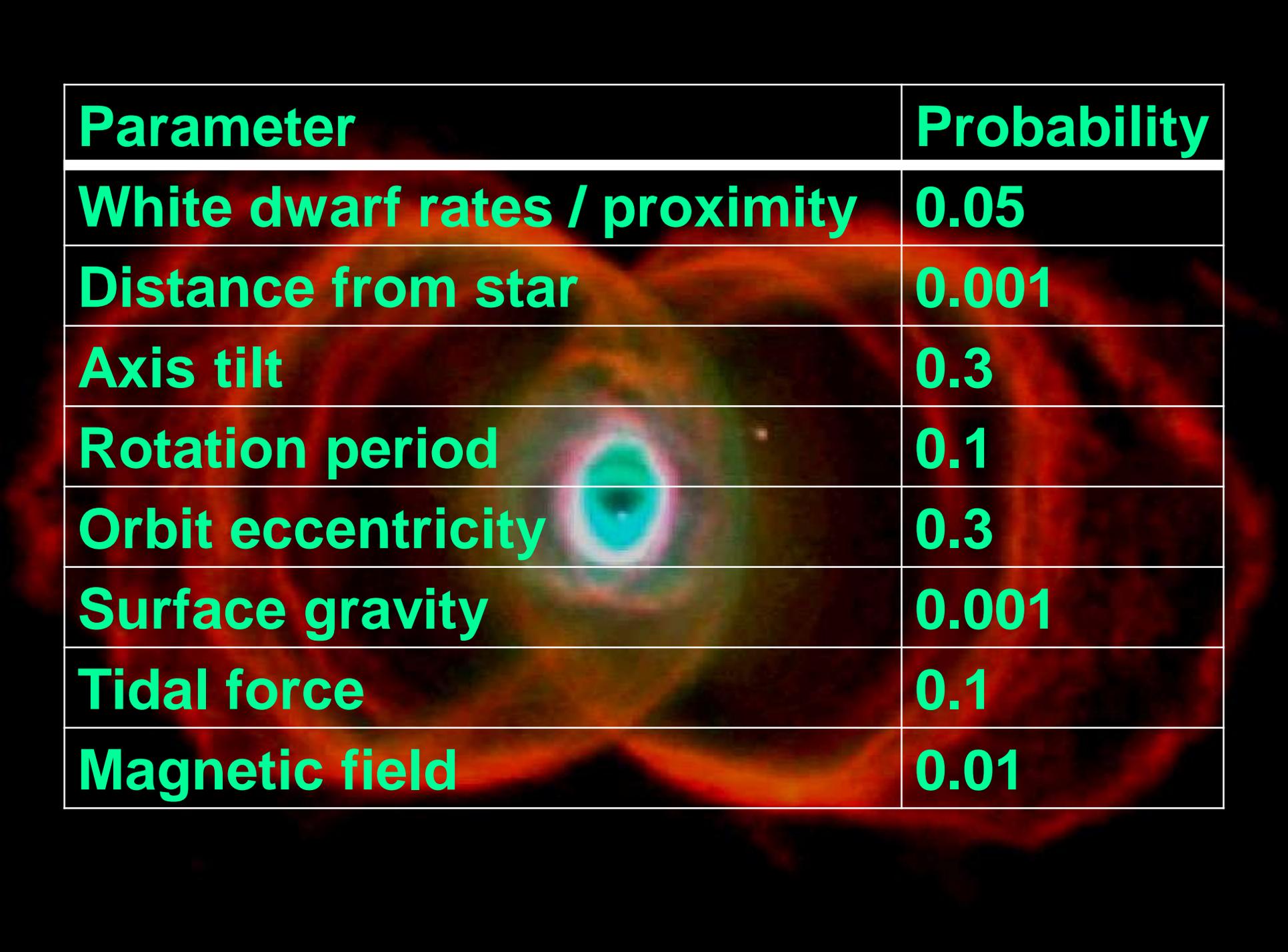
Fine-tuning



There are over 200 parameters that had to be fine-tuned in order for life to exist on Earth.

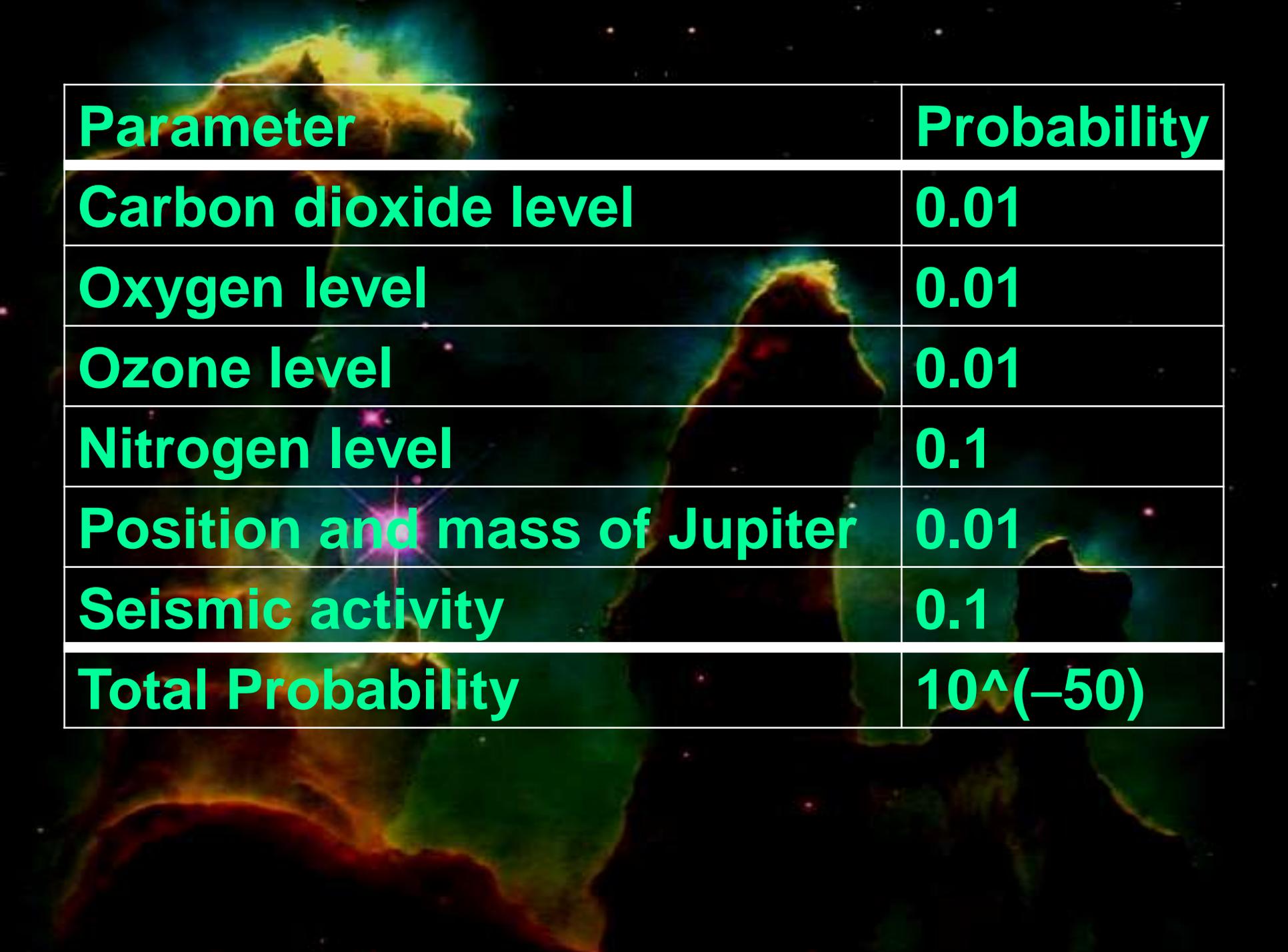


Parameter	Probability
Galaxy type	0.1
Star location in galaxy	0.2
# of stars in solar system	0.2
Birth date of star	0.2
Age of star	0.2
Mass of star	0.001
Brightness of star	0.0001
Color of star	0.4
Supernovae rates / proximity	0.01



Parameter	Probability
White dwarf rates / proximity	0.05
Distance from star	0.001
Axis tilt	0.3
Rotation period	0.1
Orbit eccentricity	0.3
Surface gravity	0.001
Tidal force	0.1
Magnetic field	0.01

Parameter	Probability
Albedo (reflectivity)	0.1
Thickness of crust	0.01
Ocean / continent ratio	0.2
Asteroid / comet collision	0.1
Atmospheric transparency	0.01
Atmospheric pressure	0.1
Electrical activity	0.1
Quantity of minerals	0.000001



Parameter	Probability
Carbon dioxide level	0.01
Oxygen level	0.01
Ozone level	0.01
Nitrogen level	0.1
Position and mass of Jupiter	0.01
Seismic activity	0.1
Total Probability	$10^{(-50)}$

Fine-tuning



About 10^{22} stars in the universe

10 planets per star (?)

→ One in $10^{(-27)}$ chance of life

Pick a grain ... any grain



Fine-tuning

Fred Hoyle (1915 – 2001)

“A superintellect has monkeyed with physics, as well as with chemistry and biology.”



Fine-tuning

Fred Hoyle (1915 – 2001)

“What are the chances that a tornado might blow through a junkyard containing all the parts of a 747, accidentally assemble them into a plane, and leave it ready for take-off? The possibilities are so small as to be negligible even if a tornado were to blow through enough junkyards to fill the whole universe.”



Psalm 8:3

**When I consider your heavens, the work
of your fingers, the moon and the stars,
which you have set in place, ...**

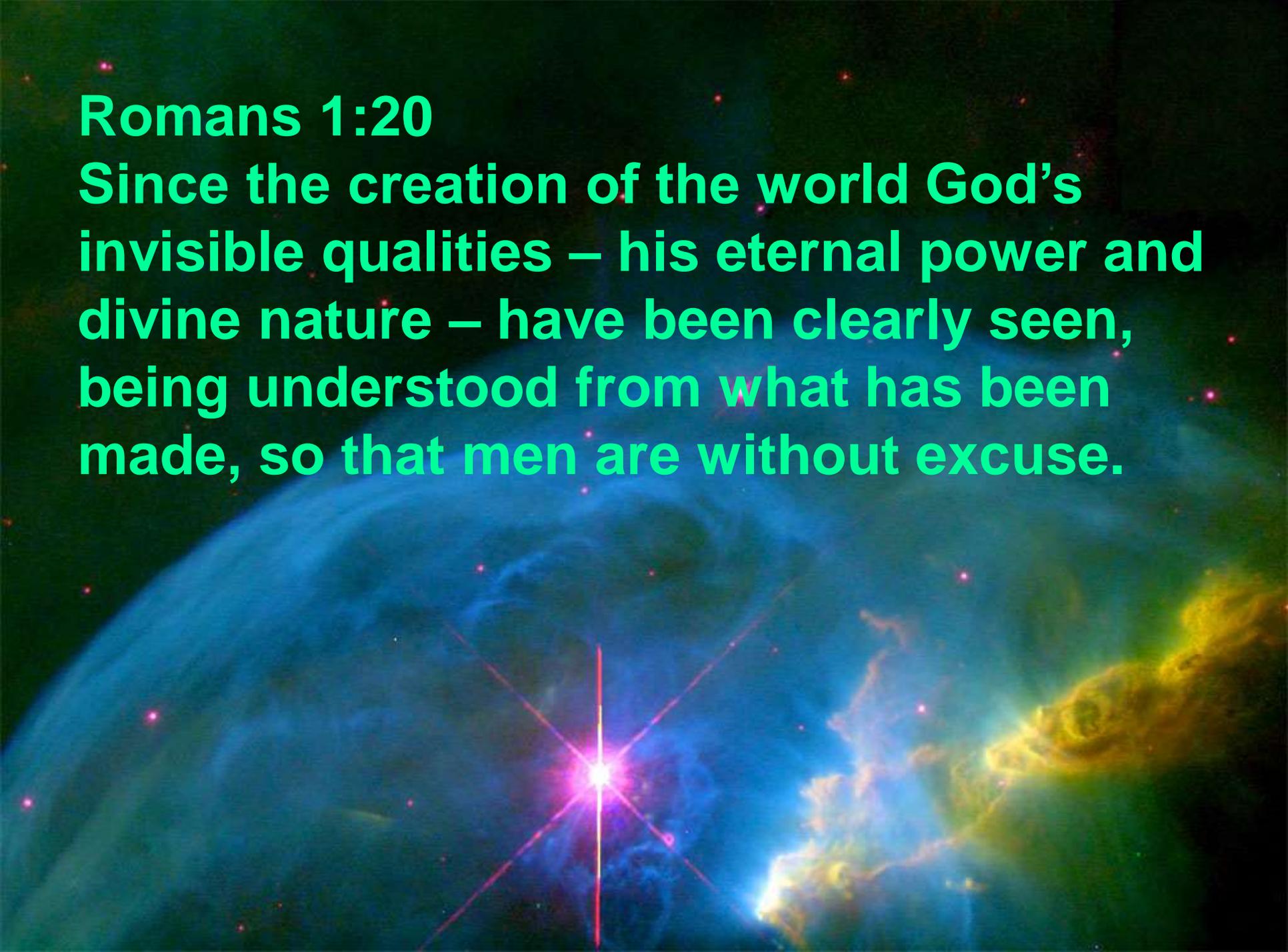


Psalm 8:4

**What is man that you are mindful of him,
the son of man that you care for him?**

Romans 1:20

Since the creation of the world God's invisible qualities – his eternal power and divine nature – have been clearly seen, being understood from what has been made, so that men are without excuse.



Fine-tuning

Over 200 parameters had to be fine-tuned for life to exist in the universe.

The odds are one chance out of 10^{237}

One chance out of

**1,000,000,000,000,000,000,000,000,000,000,000,
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000,000,000,000,000,000,000,000,000,000,000**

**This is the same as flipping a coin and
getting heads 787 times in a row.**

Summary

- 1. God reveals truth through science**
- 2. Be prepared to defend your faith**
- 3. The big bang is consistent with the Bible**
- 4. Secular science recognizes the fine-tuning of the universe and Earth**

Acknowledgements

- Perfect Plant, Clever Species, by William C. Burger
- Science, Life and Christian Belief, by M. Jeeves and R. Berry
- The Fingerprint of God, by Hugh Ross
- The Creator and the Cosmos, by Hugh Ross
- The Creation Hypothesis, by J. P. Moreland (editor)
- A Brief History of Time, by Stephen Hawking
- *Show Me God, by Fred Heeren*
- The Theory of Creation, by Jim Schicatano
- The Origins Solution, by Dick Fischer
- www.godandscience.org
- www.leaderu.com - Campus Crusade
- www.reasons.org - Reasons to Believe
- www.asa3.org - American Scientific Affiliation

Other topics of interest

- <http://academic.csuohio.edu/simond>
- Life on other planets
- Young earth vs. old earth
- Noah's flood – global or local?
- Integrating science and scripture
- Genesis 1 interpretations