

Antikythera Mechanism



<https://www.unrv.com/forum/topic/18904-antikythera-mechanism-mysteries-revealed/>



<https://www.scientificamerican.com/article/an-ancient-greek-astronomical-calculation-machine-reveals-new-secrets/>

82 fragments

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INSIDE THE MACHINE

The new model of the Antikythera mechanism proposes a total of 69 gears, forming a shockingly complex astronomical calculation tool. Most of this complexity was hidden in the innards of the device, where trains of gears worked together on different calculations, and some gears served double duty for multiple purposes. From the outside, a user could turn a calendar dial to a desired point in the past, present or future, and the gears inside would move pointers and rings on the surface display to reveal celestial predictions.

Moon pointer
Nodes of moon pointer

FRONT PLATE, INTERIOR VIEW

Gears for True Sun, Mars, Jupiter and Saturn

Gears for displaying the positions of the sun, Mars, Jupiter and Saturn were mounted on a circular plate linked to the main drive wheel by pillars.

- Sun
- Mars
- Jupiter
- Saturn

True sun mechanism

53-tooth gear in variable motion of the moon system

- Mercury
- Venus

Gears for Mercury and Venus

The positions of Mercury and Venus were calculated by gears connected to a rectangular plate also joined to the main drive wheel by pillars.

Main Drive Wheel

This central wheel orchestrated the various gear trains responsible for calculating the positions of the sun, moon and planets at any given time.

- Sun
- Moon
- Nodes of moon

Output axle for the variable motion of the moon system

Main drive wheel

Input Crown gear (connects to the crank handle, not shown)

Pillar

38-tooth gear

Pin-and-slot gears to generate variable motion of the moon

Variable Moon Gears

Both the ancient Babylonians and the Greeks knew that the moon has a variable motion against the stars—explained in modern terms by its elliptical orbit. An especially complicated gear train calculated this variable motion of the moon in an extraordinary way.

Main Plate with Bearings

A central plate inside the mechanism served as a mounting board for the gear trains that turned the displays on the front and back plates.

127-tooth gear to calculate average motion of the moon

188-tooth gear ring (soldered to 223-tooth gear)

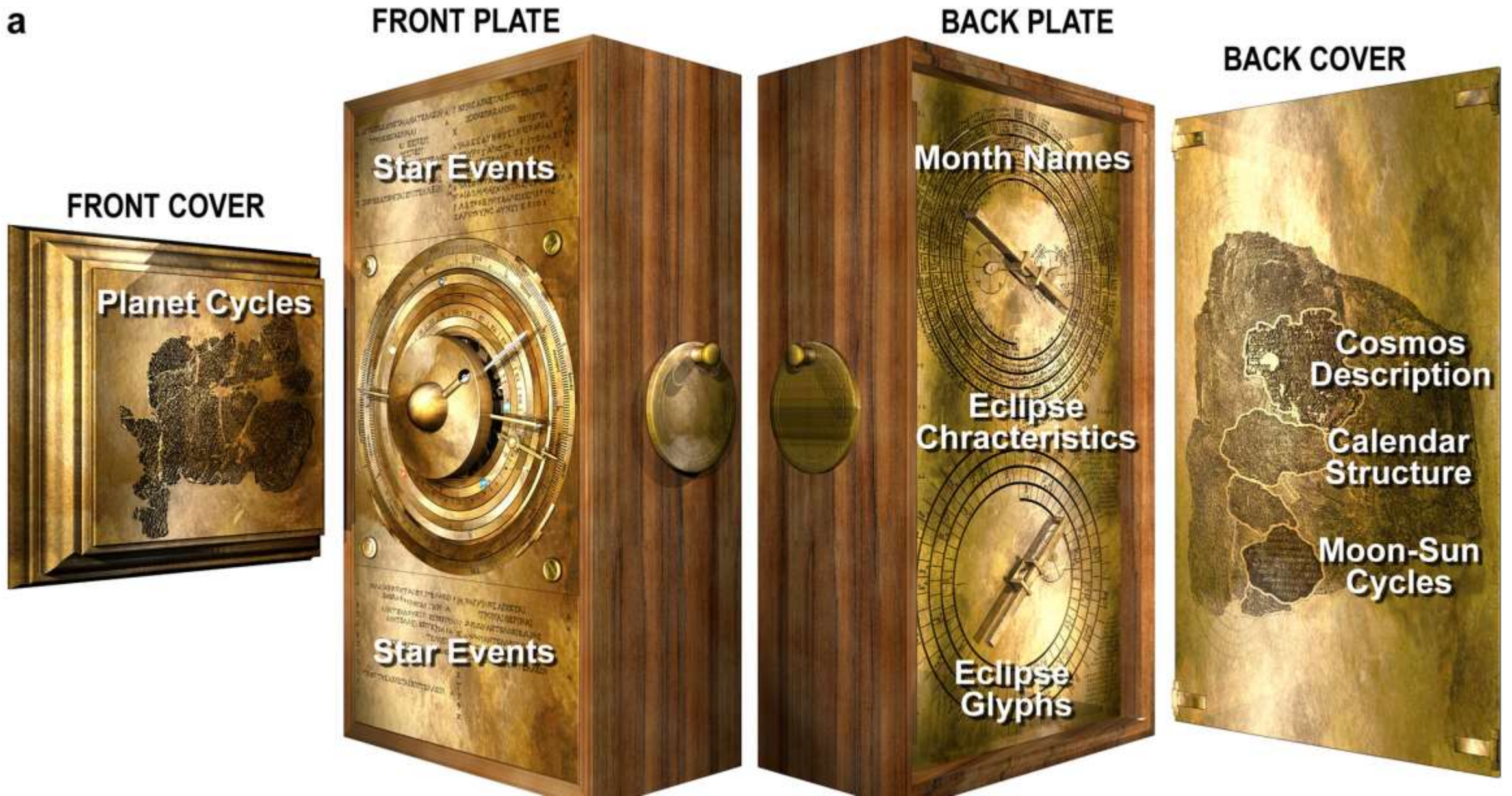
BACK PLATE

- Metonic and Kallippic calendar
- Olympiad calendar
- Saros and exeligmos calendar

Back Dials

The upper back dial system was a Metonic/Kallippic calendar that reconciled the lunar month with the solar year. It also included a smaller dial showing the four-year Olympiad cycle of the Panhellenic Games, commonly used to mark time. The lower back dial system was a saros/exeligmos calendar that predicted solar and lunar eclipses according to the 223-month saros cycle. It was indexed to inscriptions on the back plate that describe the characteristics of the predicted eclipses.

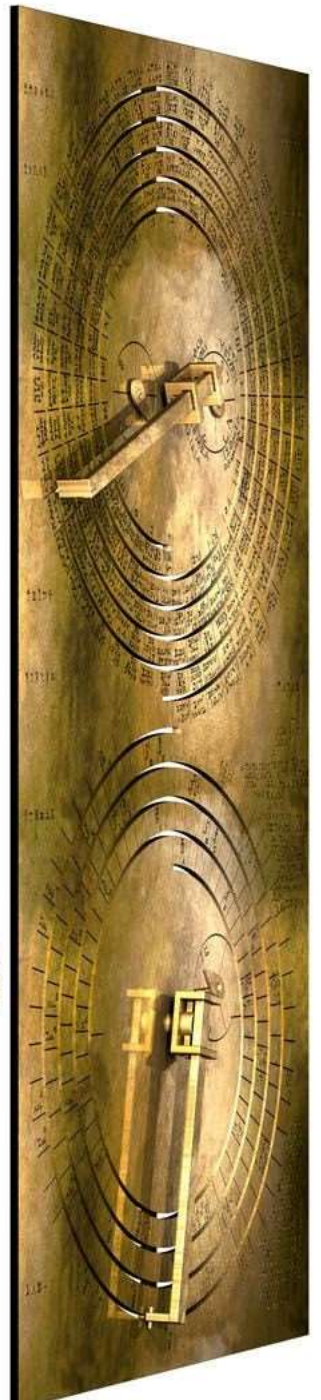
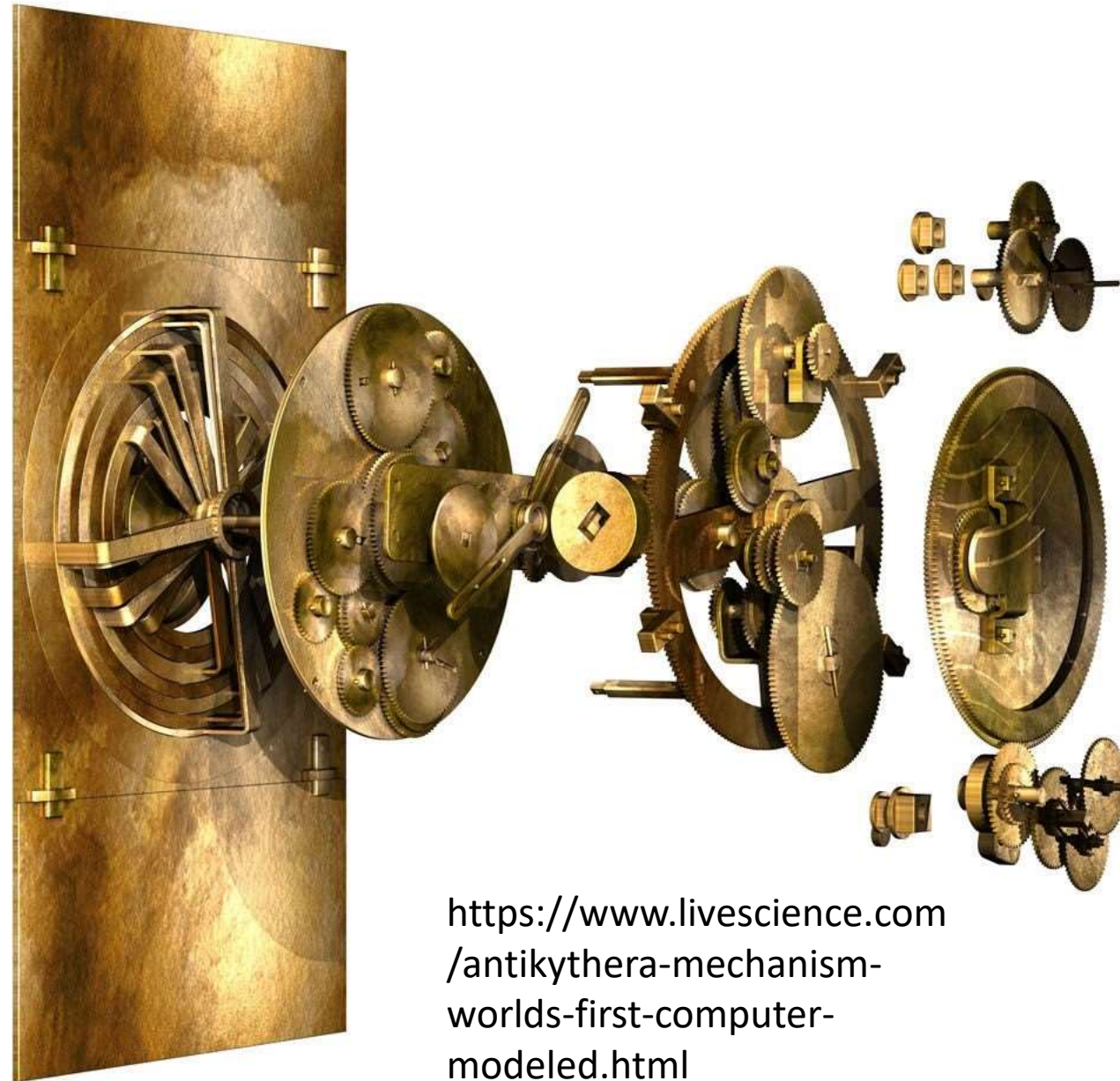
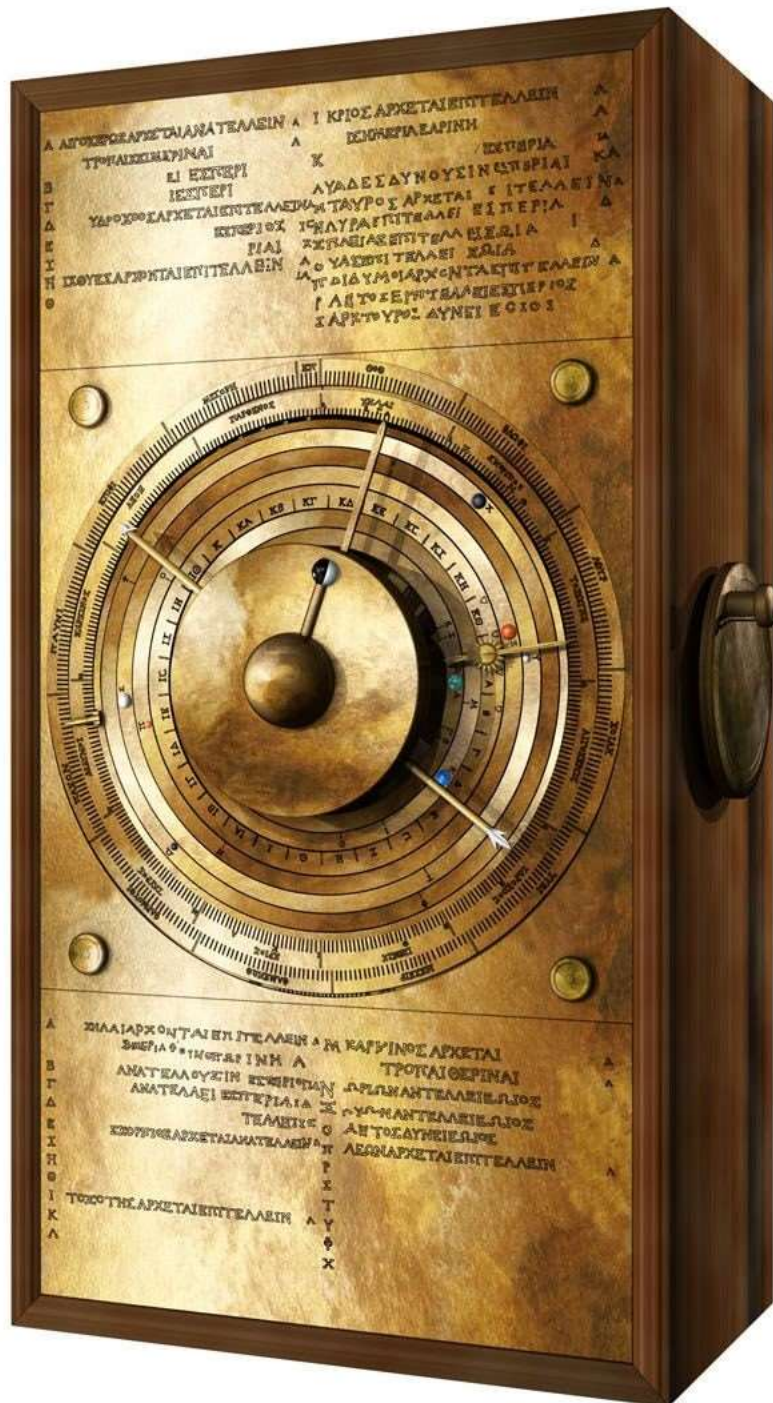
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and the
DIAL OF DESTINY



<https://www.livescience.com/antikythera-mechanism-worlds-first-computer-modeled.html>

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predictions of scientific theories and it could have automated many of the calculations needed for its own design (Supplementary Discussion [S6](#))—the first steps to the mechanization of mathematics and science. Our work reveals the Antikythera Mechanism as a beautiful conception, translated by superb engineering into a device of genius. It challenges all our preconceptions about the technological capabilities of the ancient Greeks.

Methods

Methods are incorporated into Supplementary Information.

Data availability



Creation & Creator

Psalm 8:1

Psalm 19:1-6

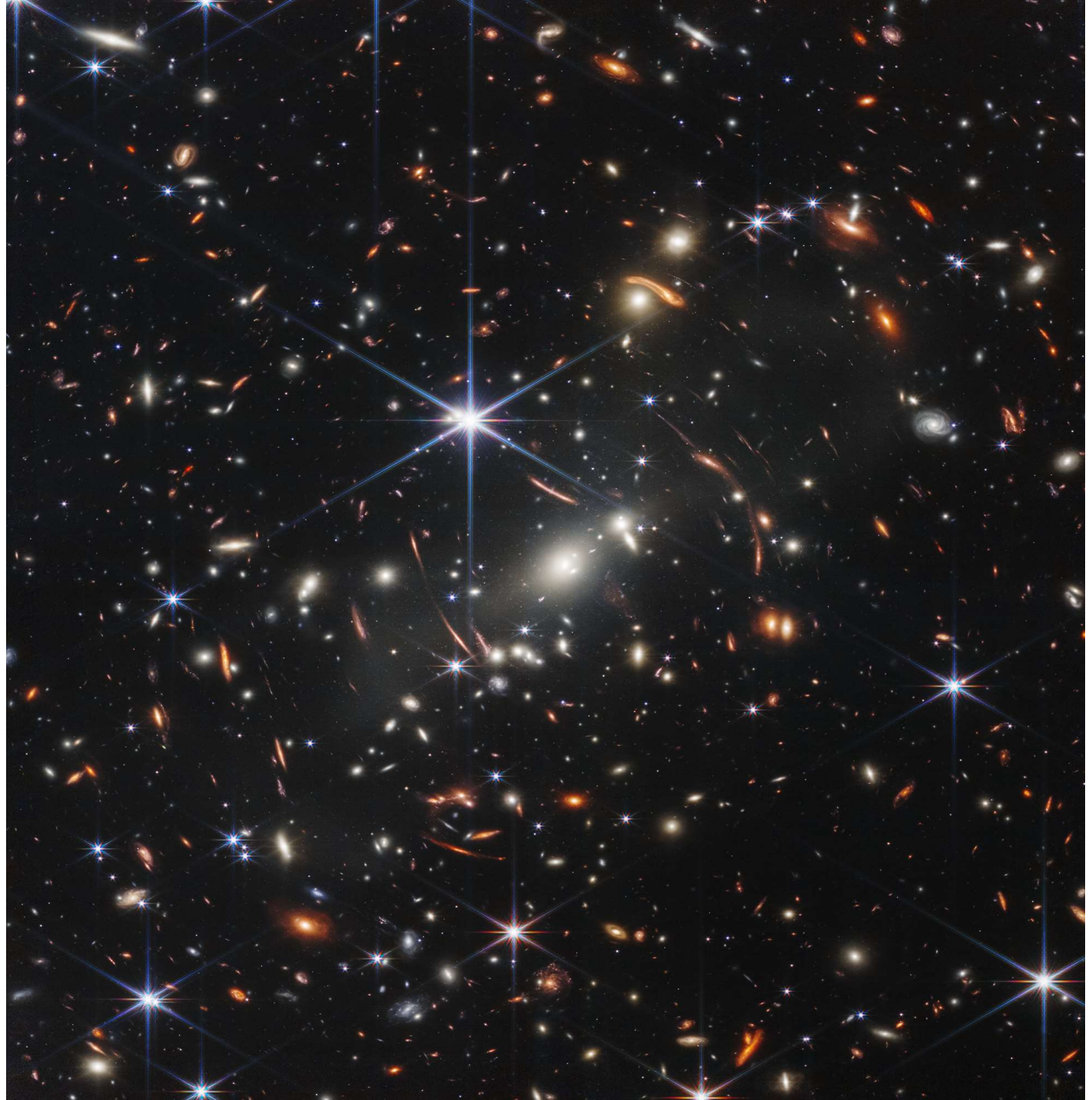
Psalm 33:6-9

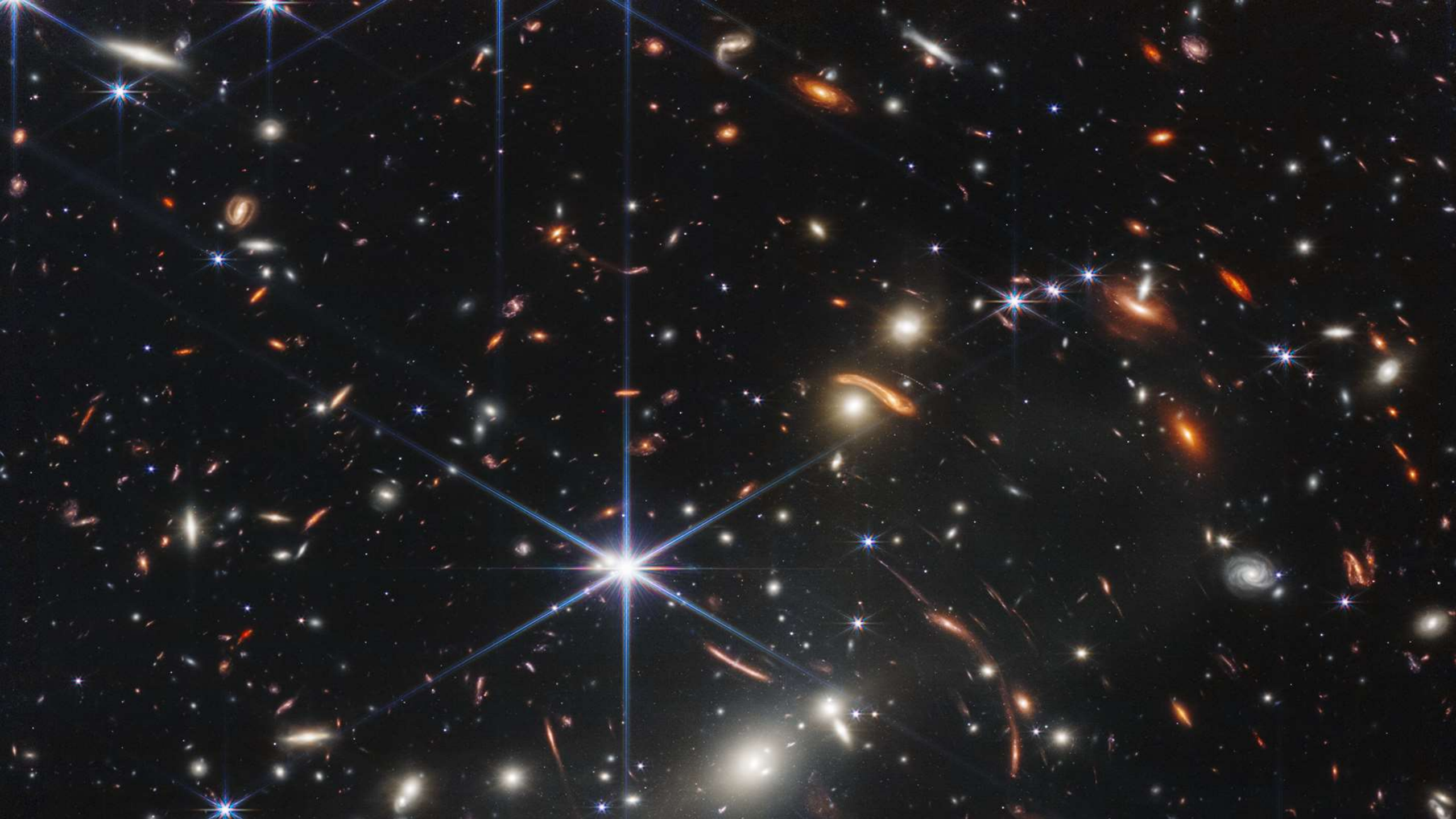
the vast size of the
universe shows God's
immense strength

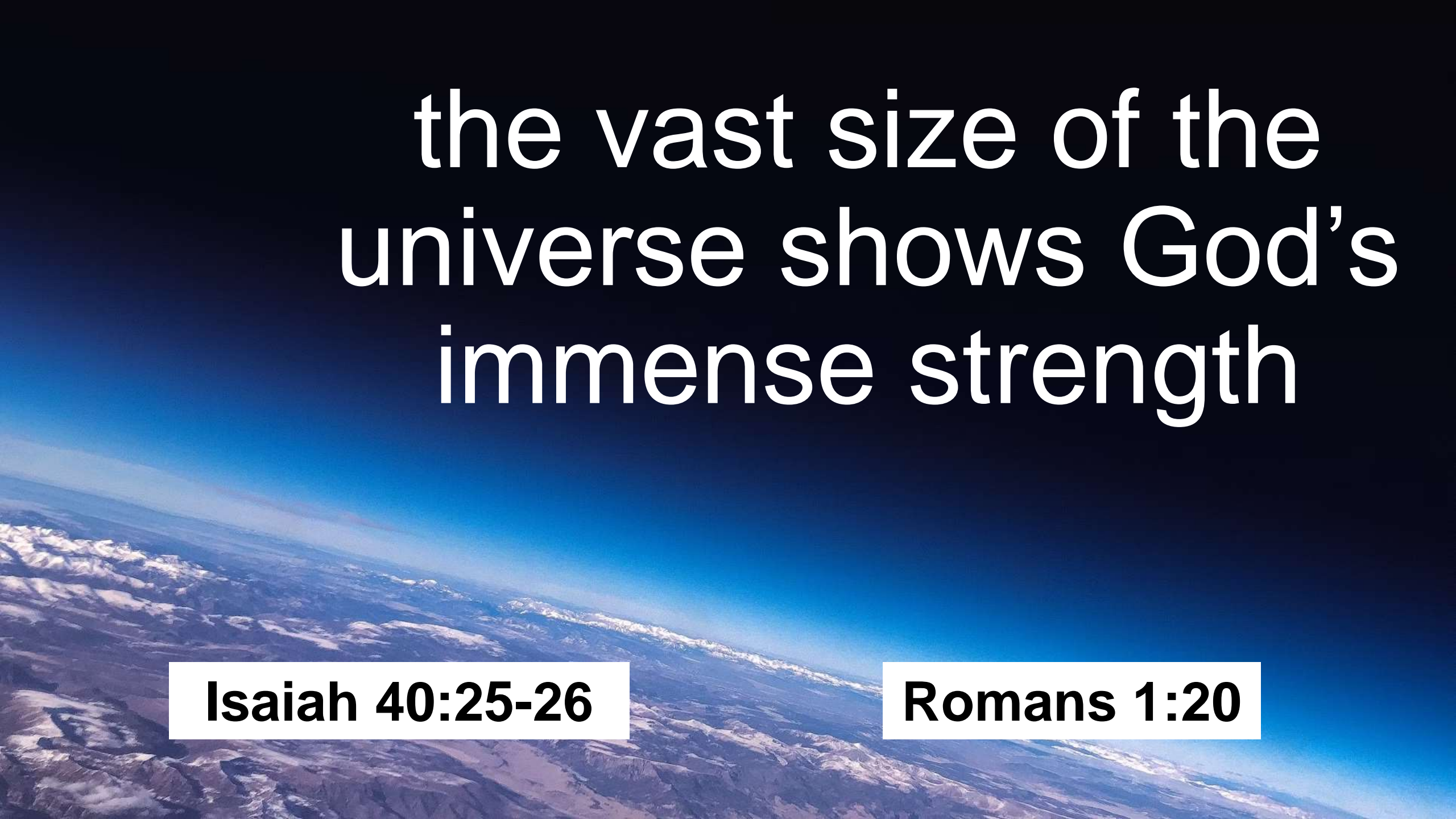


Webb's First Deep Field

<https://www.nasa.gov/image-article/nasas-webb-delivers-deepest-infrared-image-of-universe-yet/>







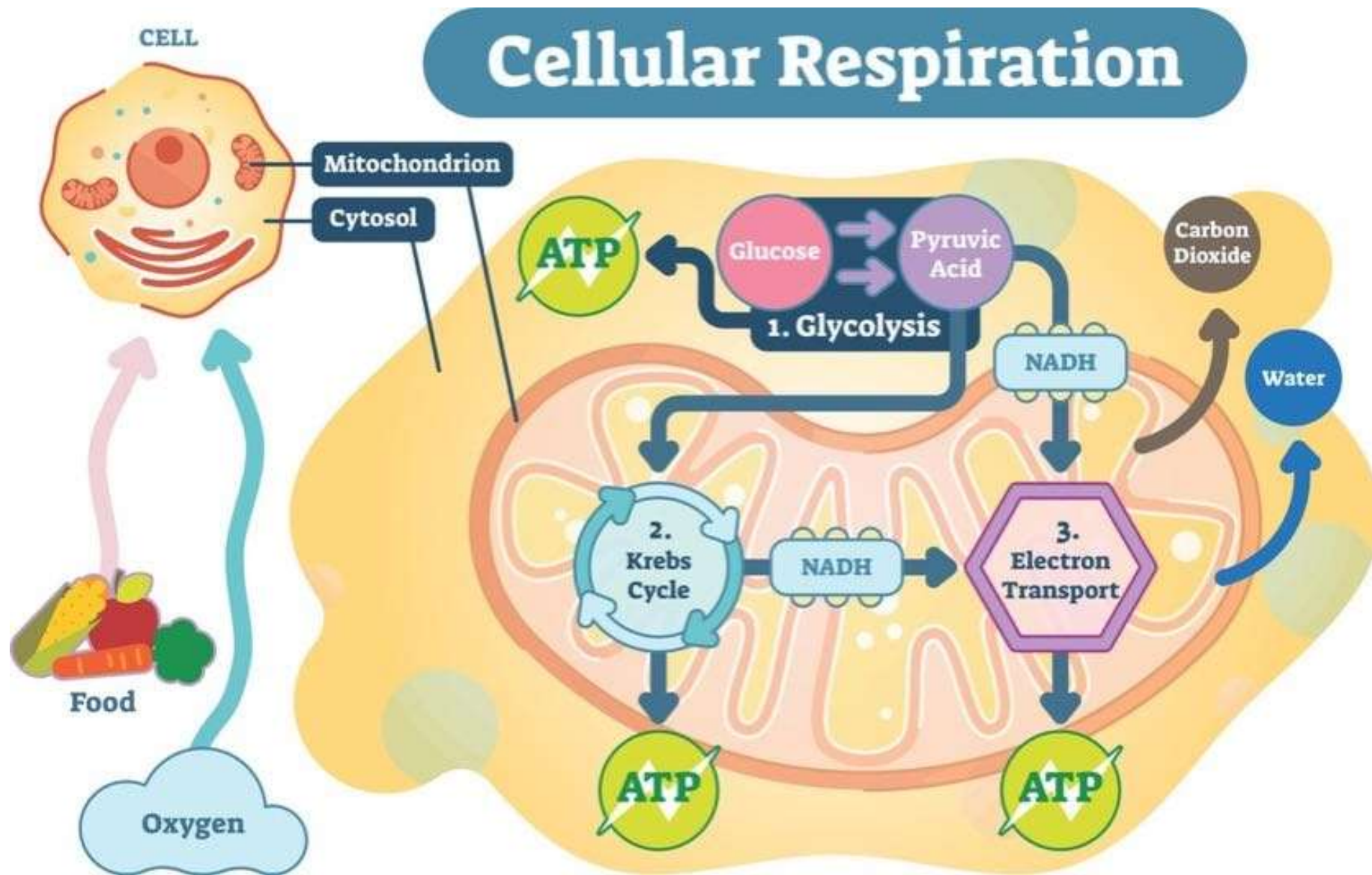
the vast size of the
universe shows God's
immense strength

Isaiah 40:25-26

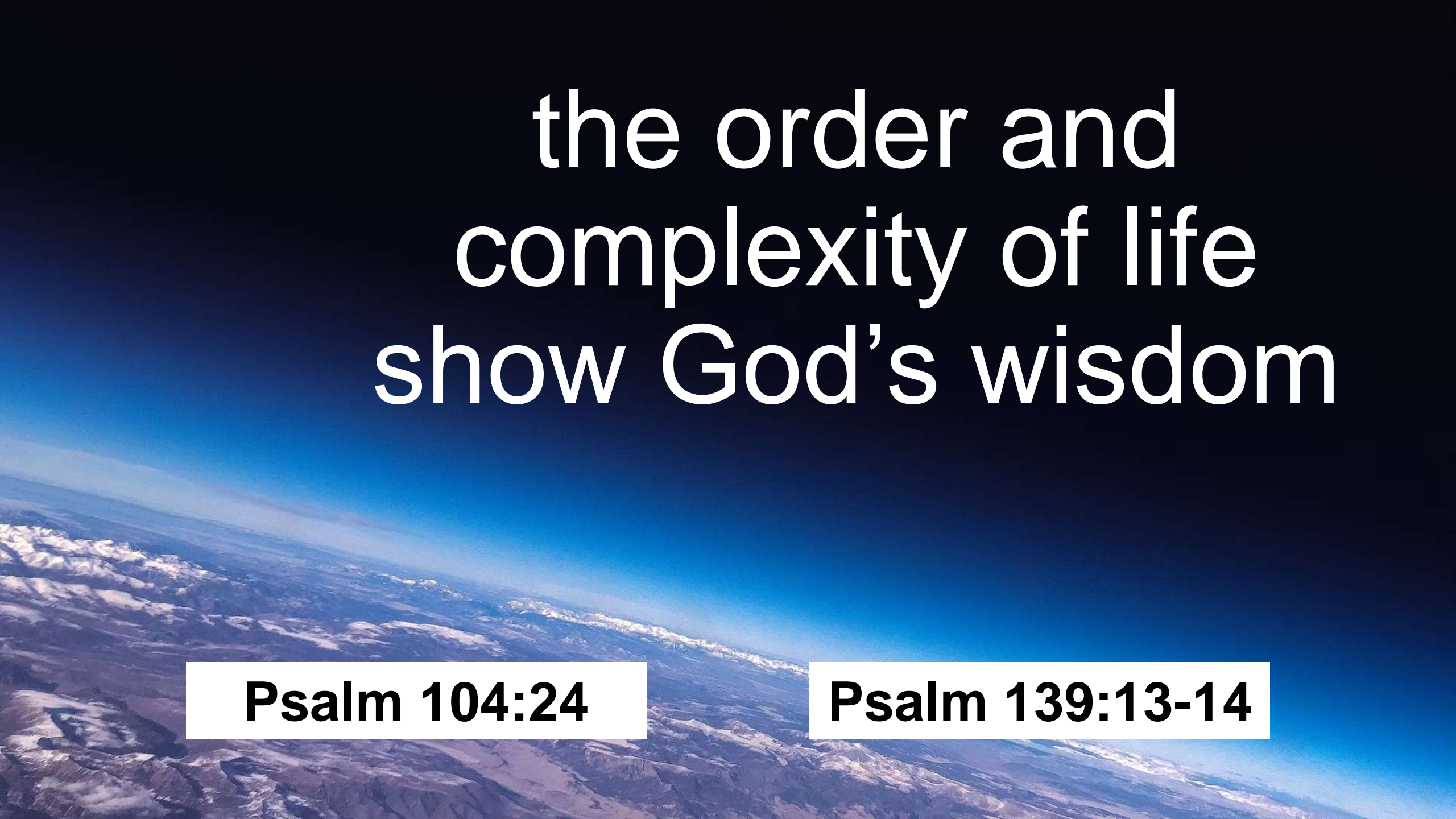
Romans 1:20

the order and
complexity of life
show God's wisdom





<https://askthescientists.com/cellular-energy-production/>

An aerial photograph of a vast, mountainous landscape. The terrain is rugged with numerous peaks and valleys, some covered in snow or light-colored rock. The sky is a deep, clear blue, and the horizon is visible in the distance. The overall scene conveys a sense of grandeur and natural complexity.

the order and
complexity of life
show God's wisdom

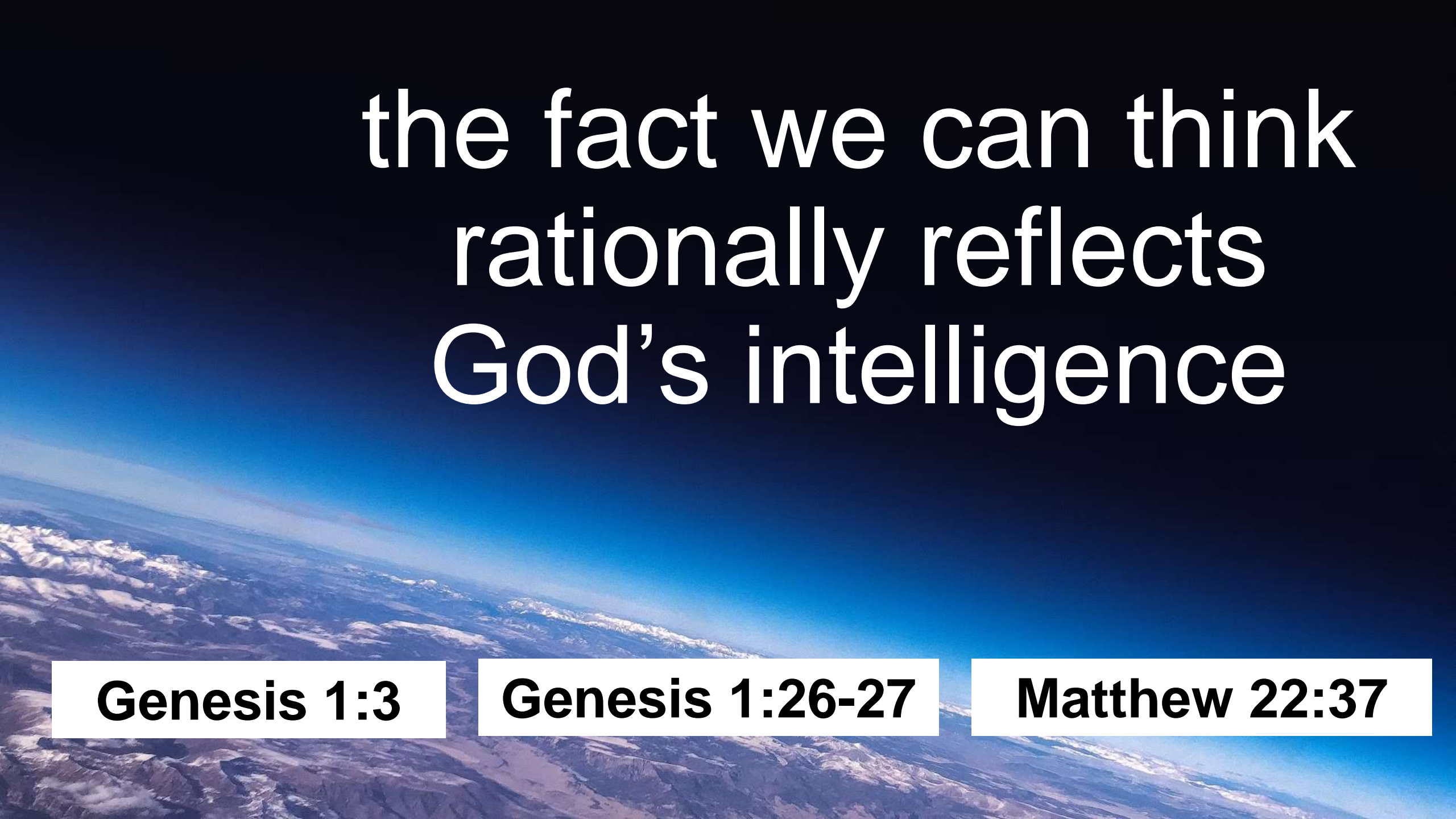
Psalms 104:24

Psalms 139:13-14

the fact we can think
rationally reflects
God's intelligence







the fact we can think
rationally reflects
God's intelligence

Genesis 1:3

Genesis 1:26-27

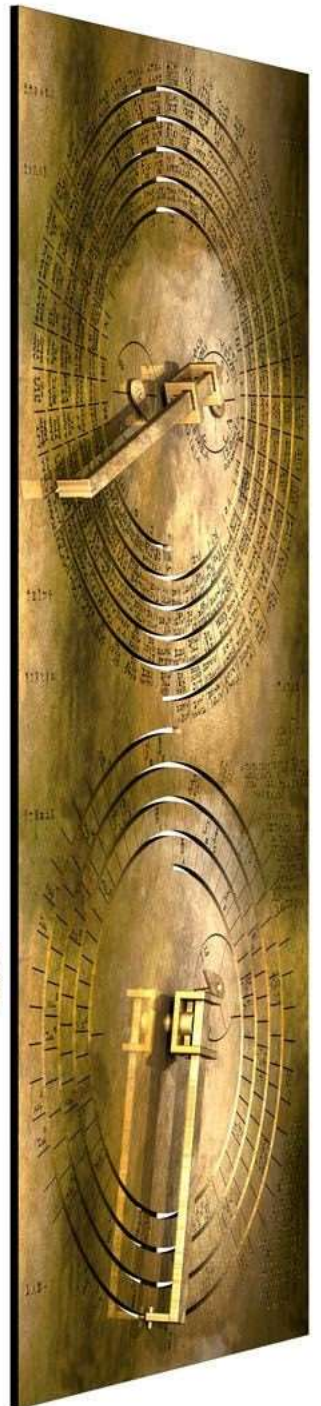
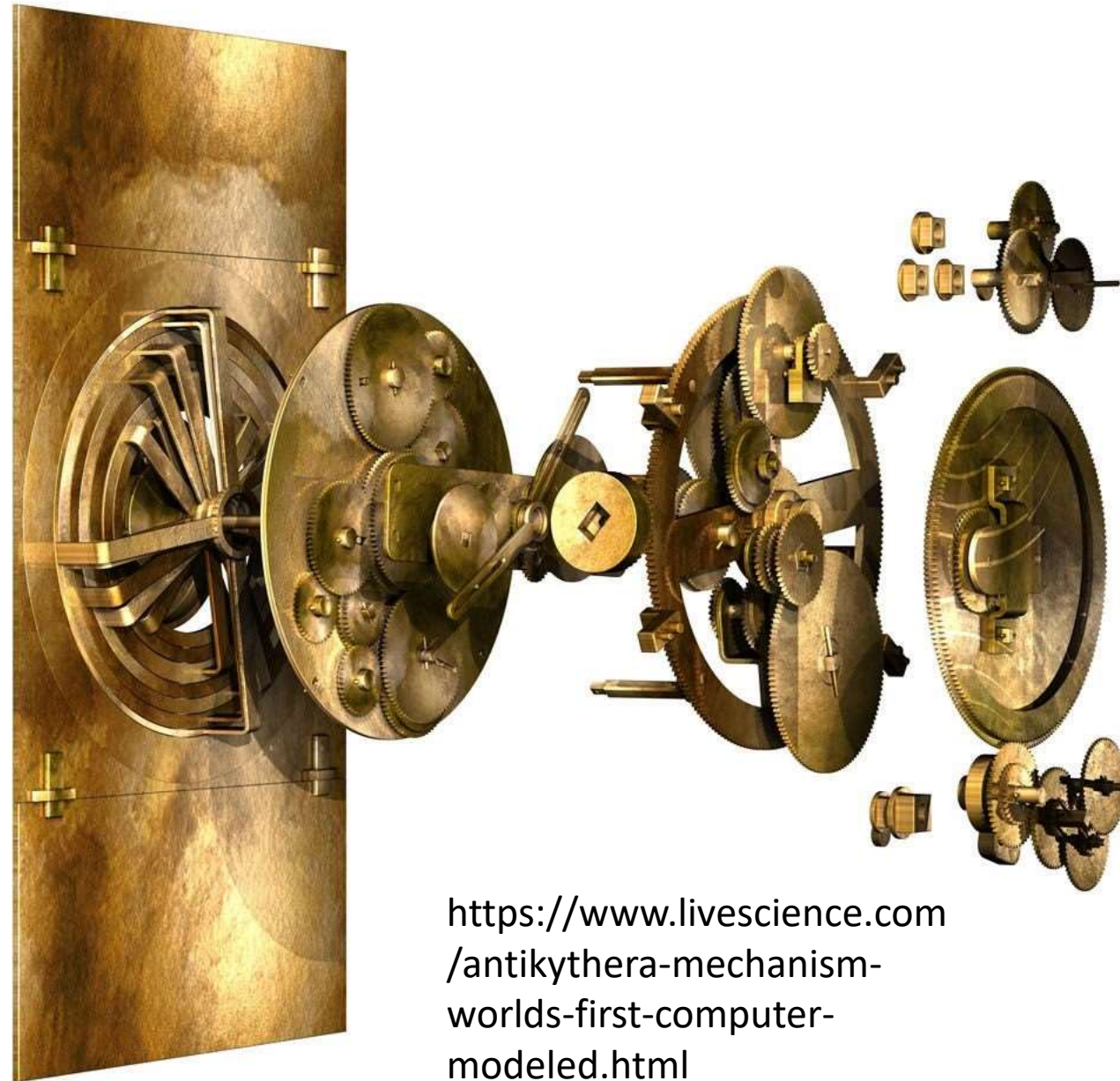
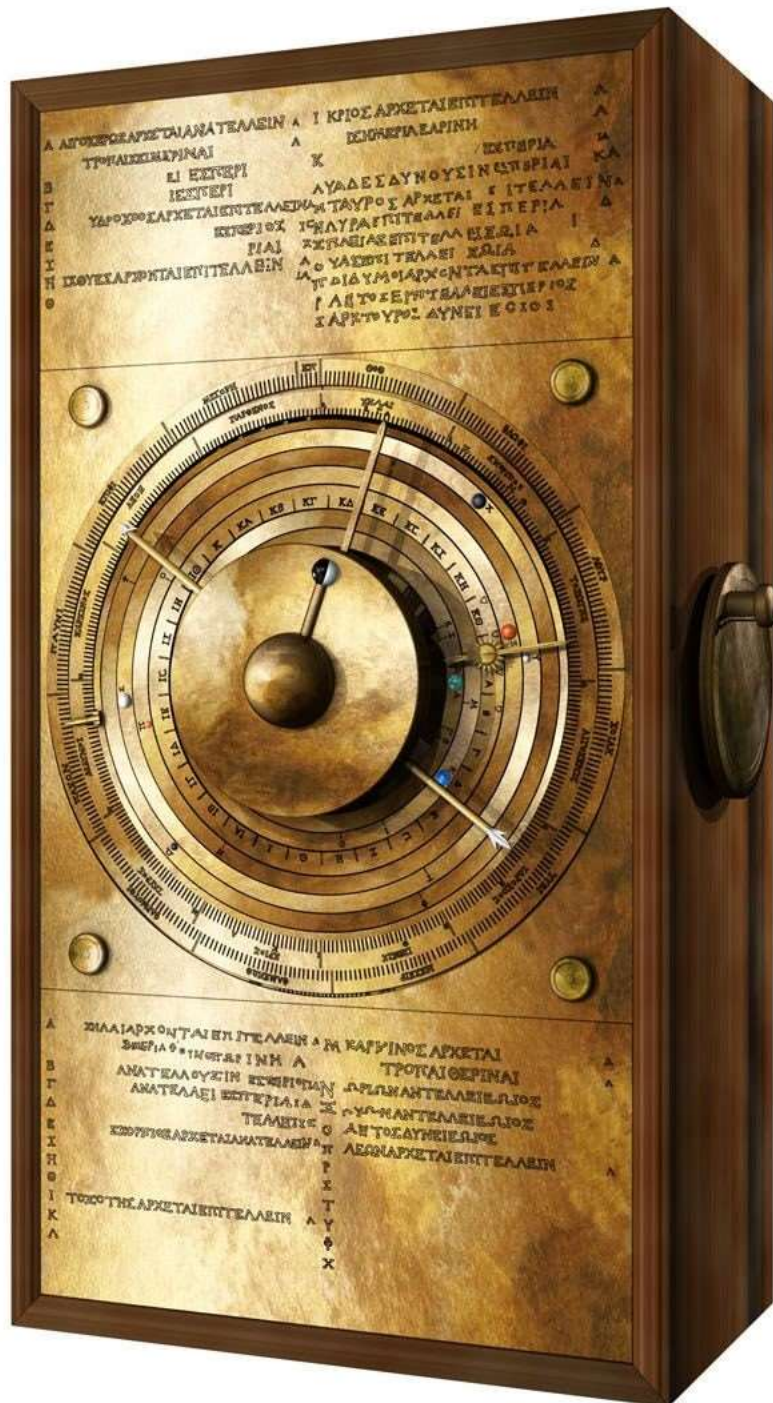
Matthew 22:37



the existence of
morality demonstrates
God's goodness

Psalm 19:7-9

Ecclesiastes 8:12-13



<https://www.livescience.com/antikythera-mechanism-worlds-first-computer-modeled.html>

An aerial photograph of a vast, snow-covered mountain range. The peaks are rugged and covered in white snow, with some rocky outcrops visible. The sky is a clear, deep blue, and the horizon line is visible in the distance. The overall scene is serene and majestic.

Creation & Creator

Psalm 8