What is the origin and some attributes of the universe?

Mr. Gonzalez

What is the origin and some attributes of the Universe?

Hubble Deep Space Video

What is the origin and some attributes of the Universe?

Do now

- In your table groups you will come up with a story of *how the Universe got started*.
- You will contribute one sentence to the story so that the story has a sentence from each member of the group.
- In the end you will have everyone's sentence in one flowing story in your notebooks.

HW

- Format your Research Portfolio.
- Print and add your favorite marine animal to your Portfolio title page.
- In your Research Journals answer the following in an essay:
  - Argue for or against the possibility of life existing on other planets.

Section objectives.

- I can describe the origin of matter and energy.
- I can explain how matter has organized itself to form our planets.
- I can identify how matter arranges itself into levels of organization.

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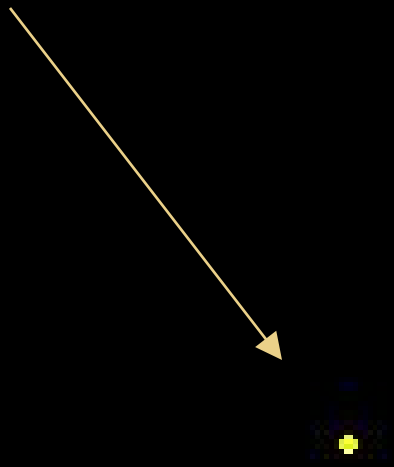
The beginning?

- The Universe was all concentrated in one infinitely small point or singularity and there was nothing else surrounding it.

What is the origin and some attributes of the Universe?

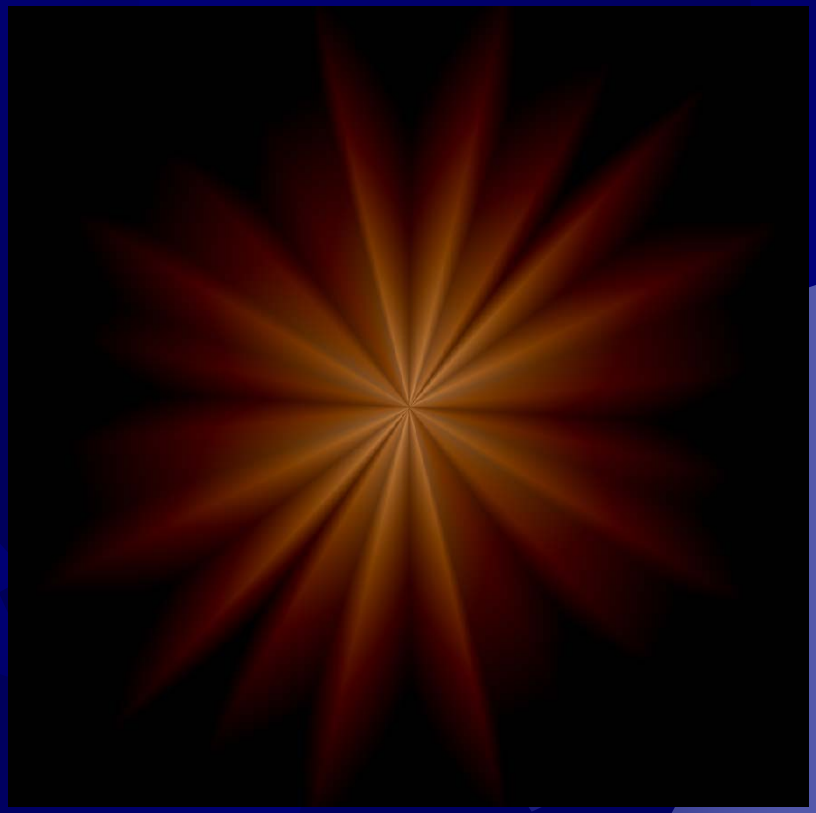
Singularity.



What is the origin and some attributes of the Universe?

A. Big Bang Theory: Then there was an explosion and the universe began to expand.

- This explosion called the Big Bang was greater than anything we can imagine or calculate and the expanding universe grew creating time-space, matter, and energy in the form of gas, dust, light, and heat.



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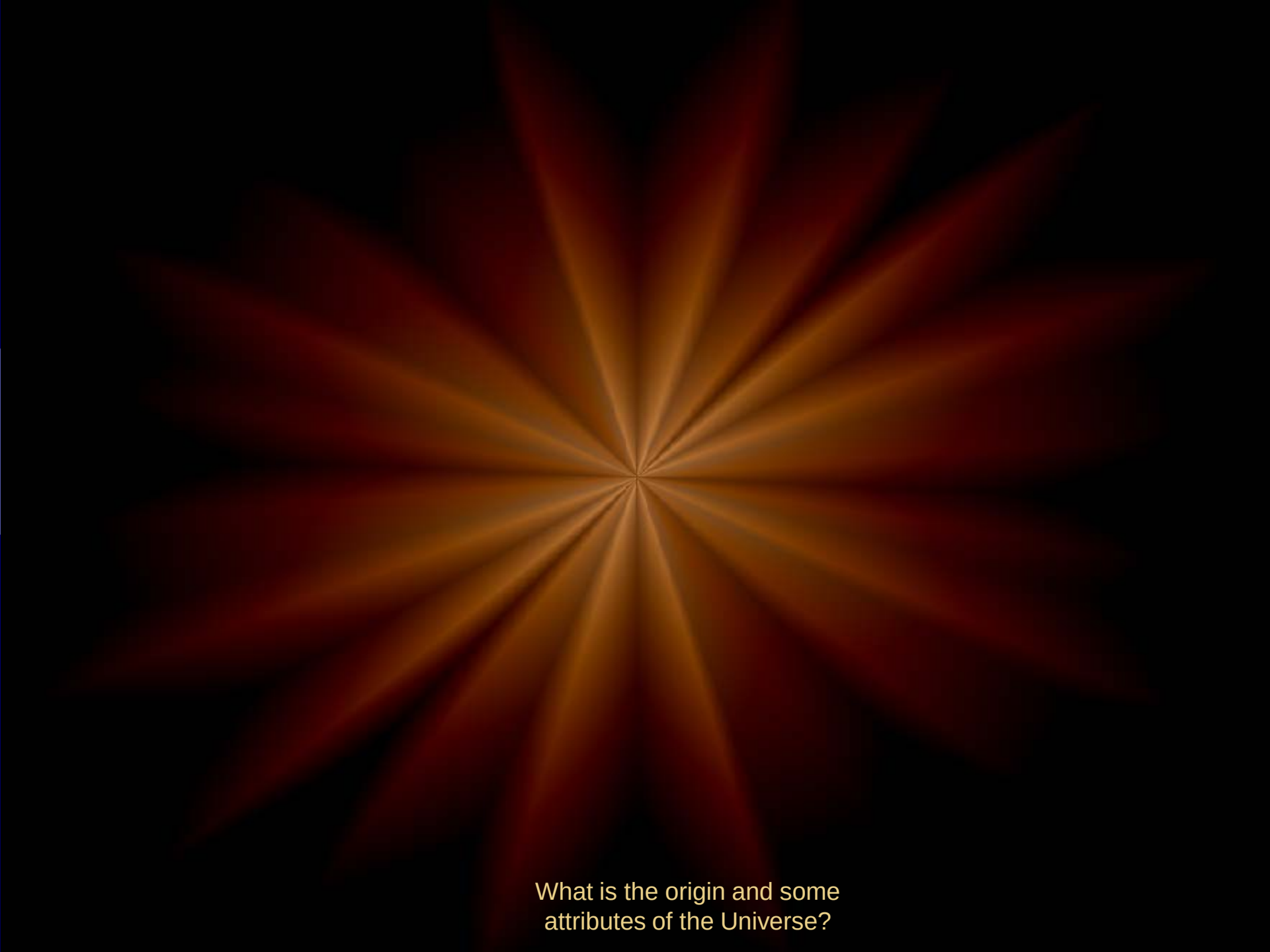
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B. The beginning.

- Immediately after the explosion the universe was hot and burning.
- Atoms and matter did not form until a second after the explosion.
- As the universe gradually cooled down clouds of hydrogen and helium began to come together.
- The explosion also created many of the elements that make matter unique and different today.


The Universe on fire.
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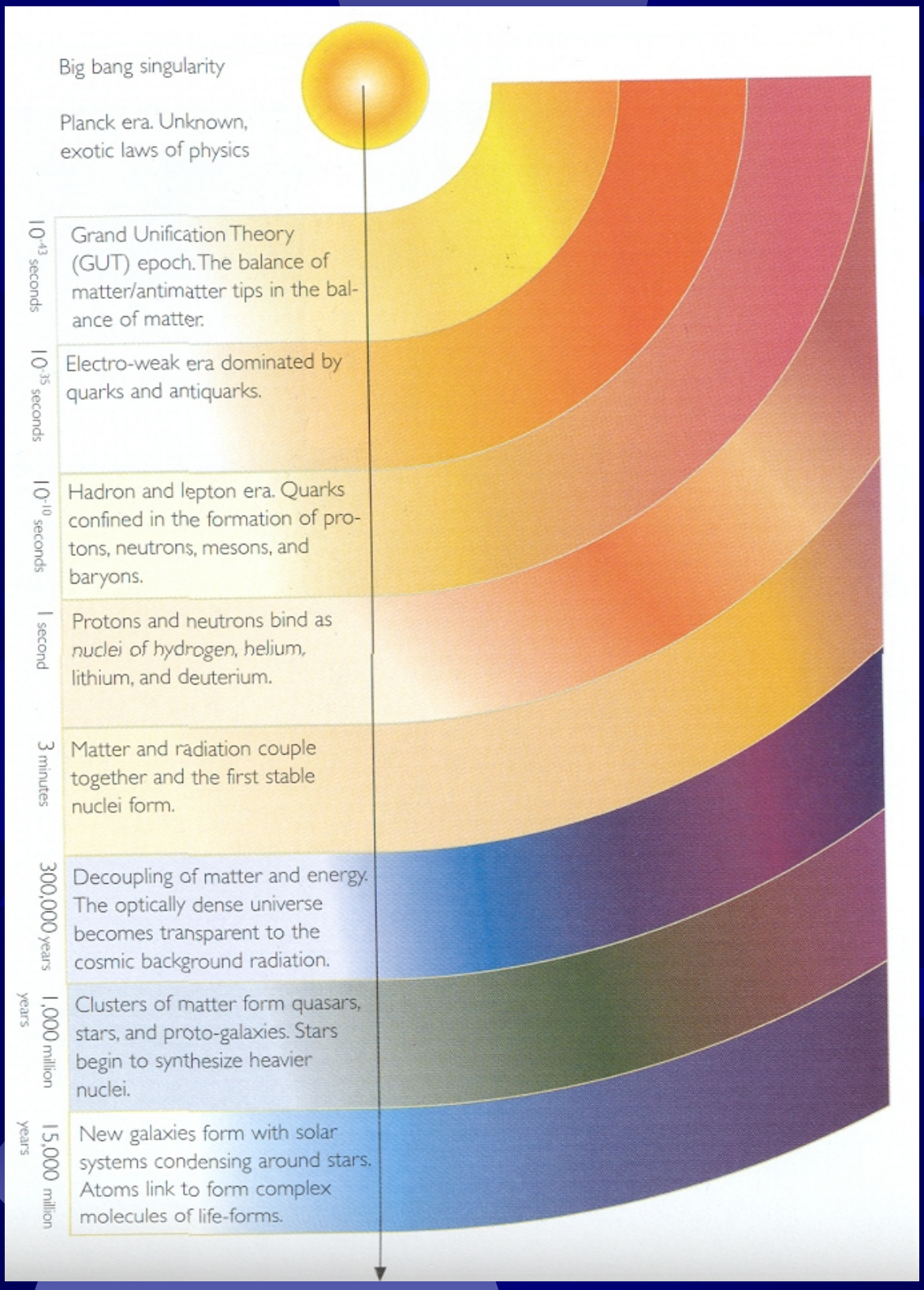
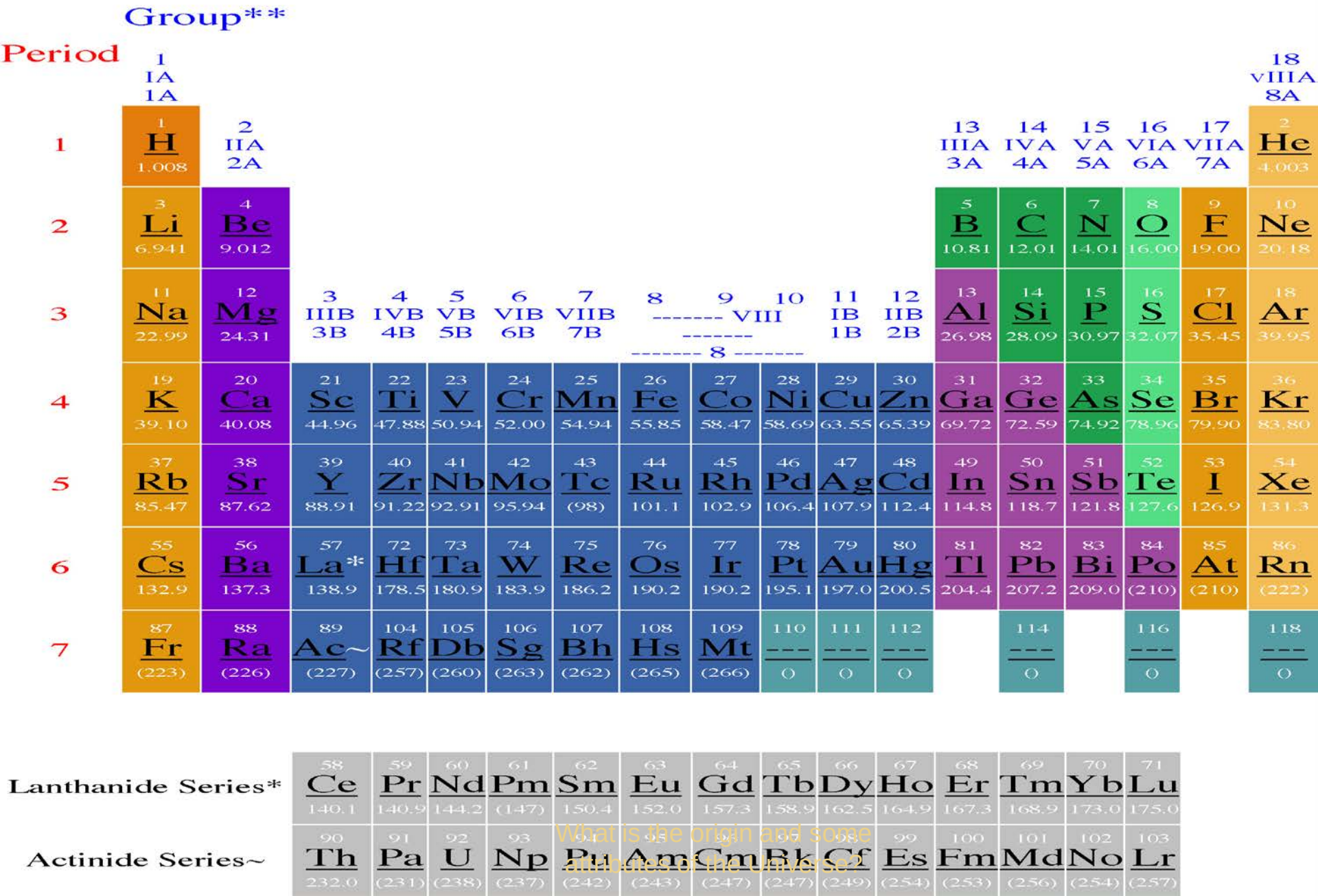


Periodic Table of the Elements



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The cooling.
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Matter and Energy (ME)

- 15 billion yrs after the BB, as the new Universe cooled, atoms began chemically reacting to form larger structures called compounds storing energy in the movement of their electrons.
- However, as these events occurred (and continue to occur even today) most energy is lost to space as ***HEAT***. This is called entropy. This heat is also known as chaos.

C. Clouds of gas and dust came together because of gravity to create nebulas.

Nebulas compacted even further to create protostars, stars, planets, and, finally, other heavenly bodies.

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Solar System Formation

In the solar nebula gas and dust whirling in a spiral shrank to form the Sun in the center and the planets in the outer regions.

E. List of components and percentages.

a. Sun: 99.85%
b. Planets: 0.135%
c. Comets: 0.01% ?
d. Satellites: 0.00005%
e. Minor Planets: 0.0000002% ?
f. Meteoroids: 0.0000001% ?
g. Interplanetary Medium: 0.0000001% ?


The Sun.
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The planets

1. Mercury.

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2. Venus.

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3. Earth.

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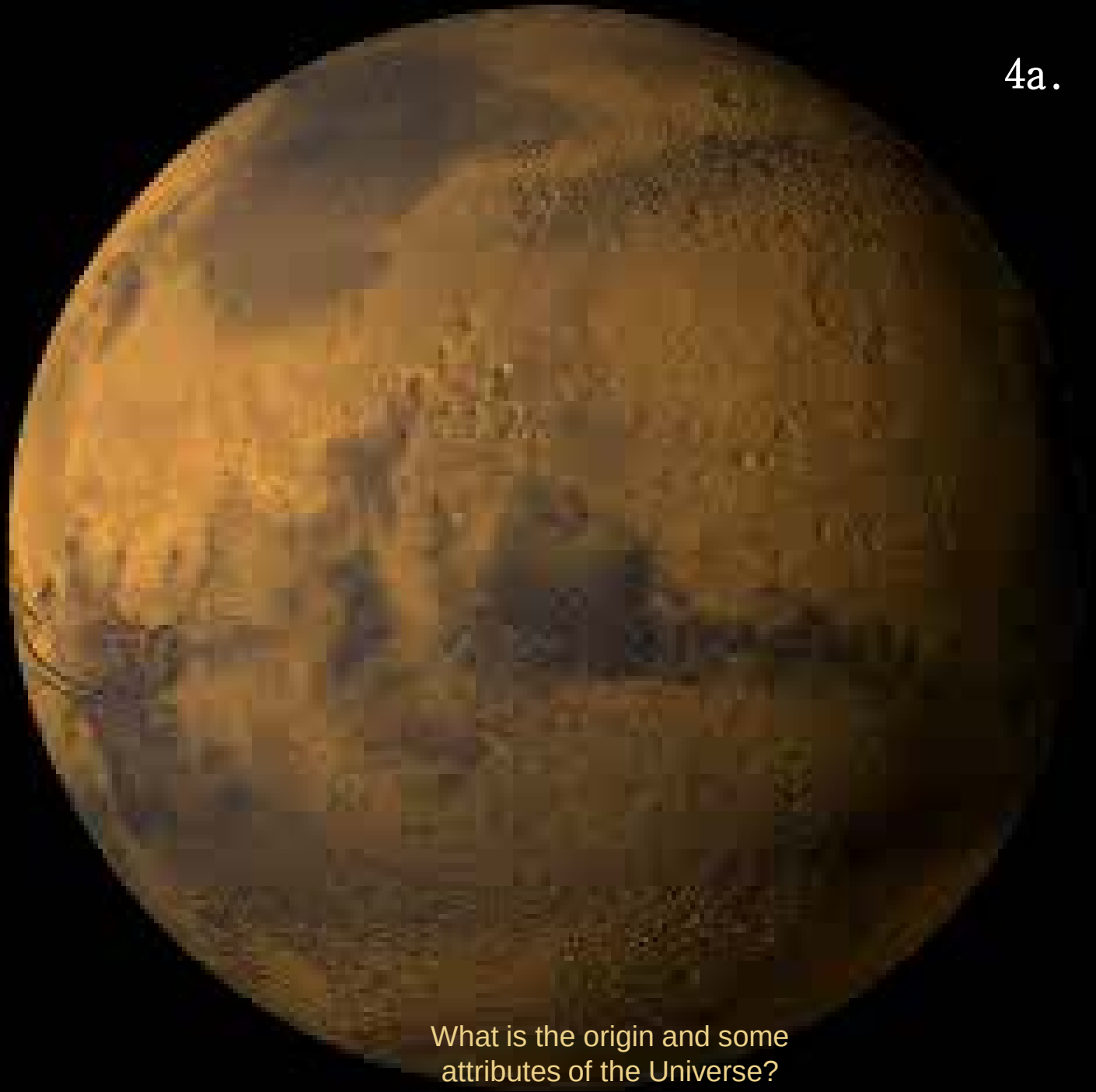
4a. Mars.



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4b. Mars.

MARS the Movie

This NASA Hubble Space Telescope full-globe picture of the planet Mars is the most detailed view of the red planet ever taken from Earth's distance. Hubble resolves details on Mars' surface as small as 30 miles across, to reveal craters, volcanoes, the north polar ice cap, and fleecy white clouds in the thin Martian atmosphere.

5. Jupiter.

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6. Saturn.

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7. Uranus.

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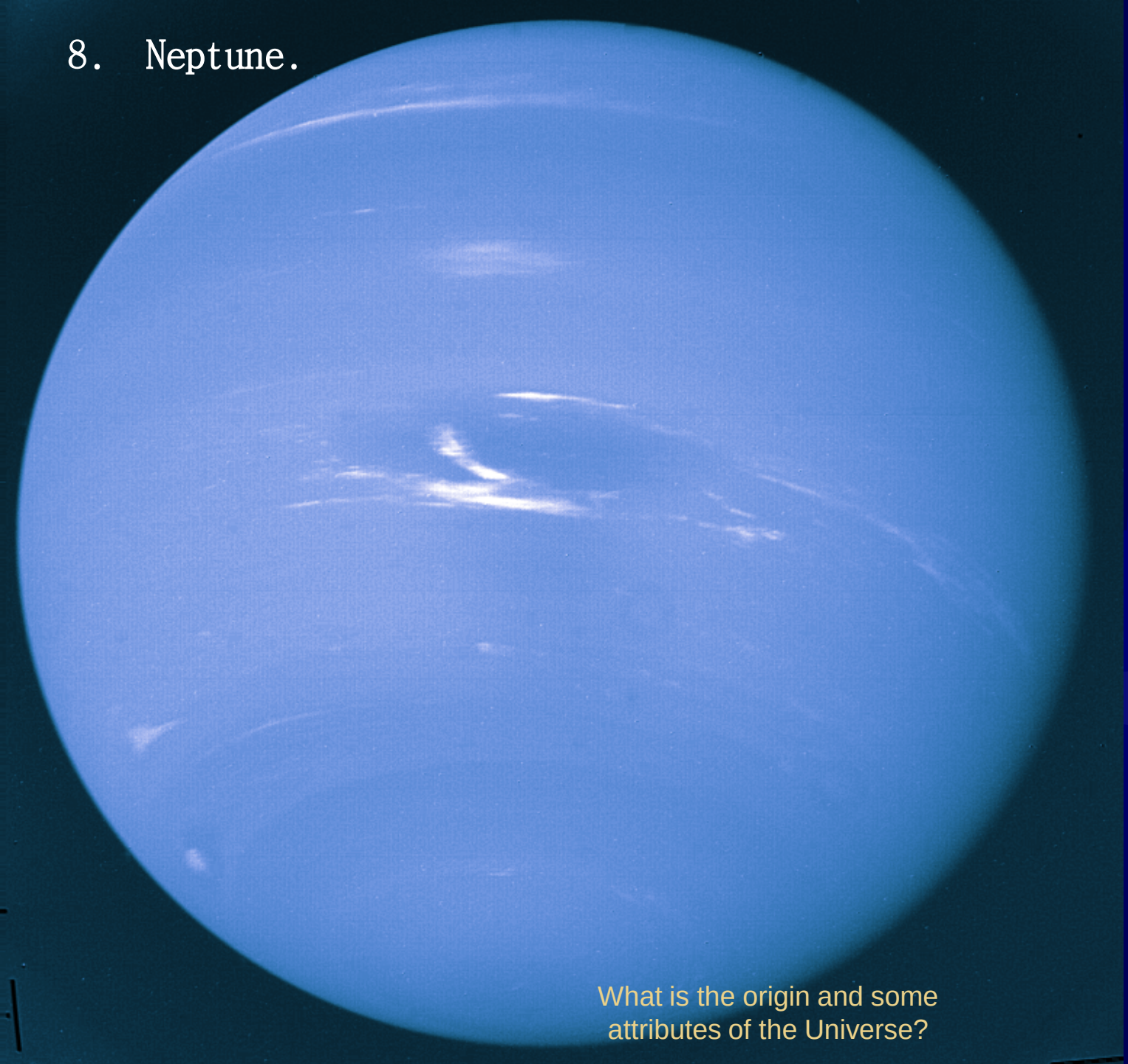
8. Neptune.



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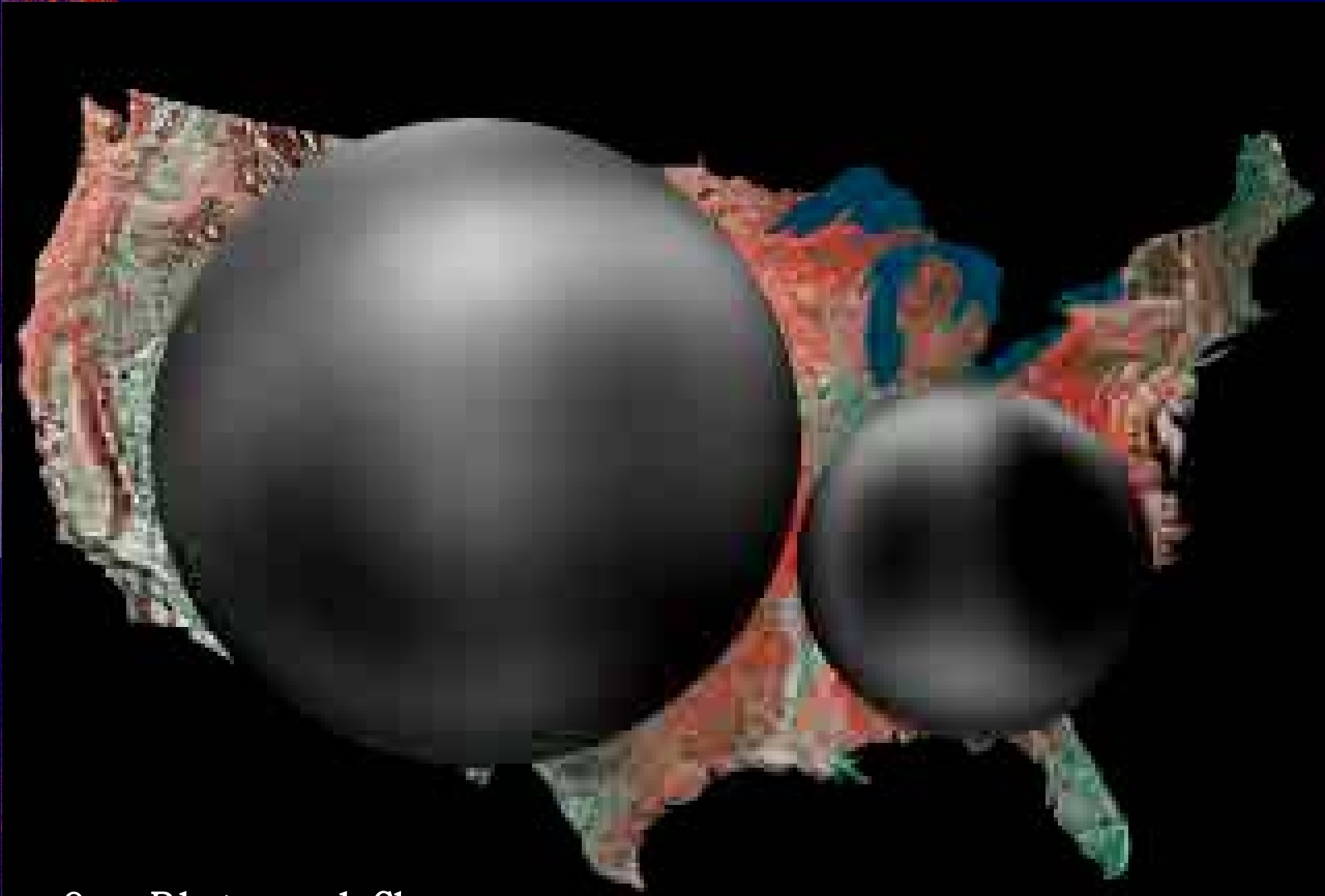

9. Pluto and Charon.

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