

UPGRADE to the Bundle

Crash Course - ASTRONOMY

47 Episode Series Bundle

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Crash Course Astronomy #44: A Brief History of the Universe

Name: _____ Date: _____

You can access the video here → <https://youtu.be/IGCVTSQw7WU?si=ilYuzHGwtCqFwLv>

1. The current model explaining the origin of the Universe is called the _____.
2. As the Universe expanded, it also _____, allowing matter to form.
3. When you heat matter enough, it undergoes a _____, changing its physical state.
4. In the early Universe, when atoms fell apart into quarks and electrons, it became a soup of _____ particles.
5. Quarks and electrons are considered _____ particles because they can't be broken down further.
6. The _____ force was a unified force in the very early Universe before splitting into the four fundamental forces we know today.
7. In the first few minutes after the Big Bang, the Universe cooled enough to allow _____ fusion to occur.
8. After about 20 minutes, fusion stopped, leaving a primordial mixture that was roughly 75% _____ and 25% helium.
9. Around 380,000 years after the Big Bang, the Universe cooled enough for electrons to bond with nuclei in an event called _____.
10. The Universe became _____ after recombination, allowing photons to travel freely.
11. The light released during recombination is what we now detect as the _____.
12. To explain the smoothness of the cosmic background, astronomers proposed a brief period of rapid expansion called _____.
13. Tiny fluctuations in the early Universe became seeds for _____, which later formed stars and galaxies.
14. The process by which these tiny early density variations grew due to gravity is called _____ formation.
15. According to modern cosmology, all matter in the Universe today originated from tiny _____ fluctuations stretched out during inflation.

Crash Course Astronomy #44: A Brief History of the Universe KEY

1. The current model explaining the origin of the Universe is called the **Big Bang**.
2. As the Universe expanded, it also **cooled**, allowing matter to form.
3. When you heat matter enough, it undergoes a **phase change**, changing its physical state.
4. In the early Universe, when atoms fell apart into quarks and electrons, it became a soup of **subatomic** particles.
5. Quarks and electrons are considered **fundamental** particles because they can't be broken down further.
6. The **super force** was a unified force in the very early Universe before splitting into the four fundamental forces we know today.
7. In the first few minutes after the Big Bang, the Universe cooled enough to allow **nuclear** fusion to occur.
8. After about 20 minutes, fusion stopped, leaving a primordial mixture that was roughly 75% **hydrogen** and 25% helium.
9. Around 380,000 years after the Big Bang, the Universe cooled enough for electrons to bond with nuclei in an event called **recombination**.
10. The Universe became **transparent** after recombination, allowing photons to travel freely.
11. The light released during recombination is what we now detect as the **cosmic microwave background**.
12. To explain the smoothness of the cosmic background, astronomers proposed a brief period of rapid expansion called **inflation**.
13. Tiny fluctuations in the early Universe became seeds for **galaxies**, which later formed stars and galaxies.
14. The process by which these tiny early density variations grew due to gravity is called **structure** formation.
15. According to modern cosmology, all matter in the Universe today originated from tiny **quantum** fluctuations stretched out during inflation.

15 Questions

Answer Key Included

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