

QUESTIONS FOR UNDERSTANDING – 1955 Cosmic Times

Death of a Genius

1. Albert Einstein's ideas provide the basis for which science?
2. What force of nature did both Isaac Newton and Albert Einstein study and describe?

'Yardsticks' in Neighbor Galaxy Double Universe's Size

1. Who is Walter Baade, and what did he discover about the size of the Universe?
2. Who discovered the first "yardstick" used to measure distances in the Universe?
3. Name and describe the special type of stars she used to measure distance.
4. *Explain* how the distance to a star can be calculated based on the period (cycle time) of Cepheid variable stars.
5. Who standardized the yardstick by treating all Cepheids the same?
6. Dr. Baade discovered an error in Dr. Shapley's work. Describe the error.

It's a Star, It's a Nova, It's a Supernova

1. How does the article describe the appearance of novae?
2. The article states Supernovae are rare events in the Milky Way galaxy or any galaxy. What facts are given to support that statement?
3. In 1941, what did Rudolph Minkowski discover about Supernovae?
4. Astronomers consider all elements heavier than hydrogen and helium to be metals. Based on that idea, why did Fred Hoyle consider some Supernovae "Stars of Steel?"

Origin of Everything: Hot Bang or Ageless Universe?

1. What topic was recently discussed at the meeting of the National Academy of Sciences?
2. Name the two competing theories that explain the nature of the Universe.

Name the scientists who support each theory.
3. What behavior of the Universe do both theories explain?

4. Both theories explain how hydrogen came to exist, but the explanations are *very* different. Briefly discuss how each theory explains the formation of hydrogen in the Universe.
5. What other direct evidence of a gigantic blast does George Gamow think must exist?
6. What evidence did Edwin Hubble find that supports the evolutionary Universe theory?
7. What are the two possible ends for the Universe according to the evolutionary theory?
8. What is needed to determine which theory is correct?

Hoyle Scoffs at “Big Bang” Universe Theory

1. What did Fred Hoyle call George Gamow’s evolutionary universe theory?
2. Discuss a reason why Hoyle disagreed with the evolutionary theory.

Radio ‘Ear’ on Universe Being Built

1. What types of space objects are studied with a “steerable radio antenna?”