

capitolo 1 L'Universo e il Sistema solare

verifica la comprensione

Leggi il brano e rispondi alle domande.



An expanding world

The most popular theory of our universe's origin centers on a cosmic cataclysm unmatched in all of history – the **Big Bang**. This theory was born of the observation that other galaxies are moving away from our own at great speed, in all directions, as if they had all been propelled by an ancient explosive force.

Before the Big Bang, scientists believe the entire vastness of the observable universe, including all of its matter and radiation, was compressed into a hot, dense mass just a few millimeters across. This nearly incomprehensible state is theorized to have existed for just a fraction of the first second of time.

Big Bang proponents suggest that, some 10 billion to 20 billion years ago, a massive blast allowed all the universe's known matter and energy—even space and time themselves—to spring from some ancient and unknown type of energy.

The theory maintains that, in the instant—a trillion-trillionth of a second—after the Big Bang, the

universe expanded with incomprehensible speed from its pebble-size origin to astronomical scope. Expansion has apparently continued, but much more slowly, over the ensuing billions of years.

Scientists can't be sure exactly how the universe evolved after the Big Bang. Many believe that, as time passed and matter cooled, more diverse kinds of atoms began to form, and they eventually condensed into the stars and galaxies of our present universe.

The Big Bang theory leaves several major questions unanswered. One is the original cause of the Big Bang itself. Several answers have been proposed to address this fundamental question, but none has been proven – and even adequately testing them has proven to be a formidable challenge.

(science.nationalgeographic.com)

- According to this theory, what happened immediately before the Big Bang?
- And what happened immediately after the Big Bang?

