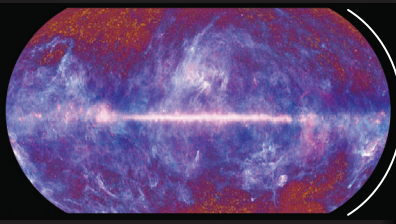
New light on birth of the universe

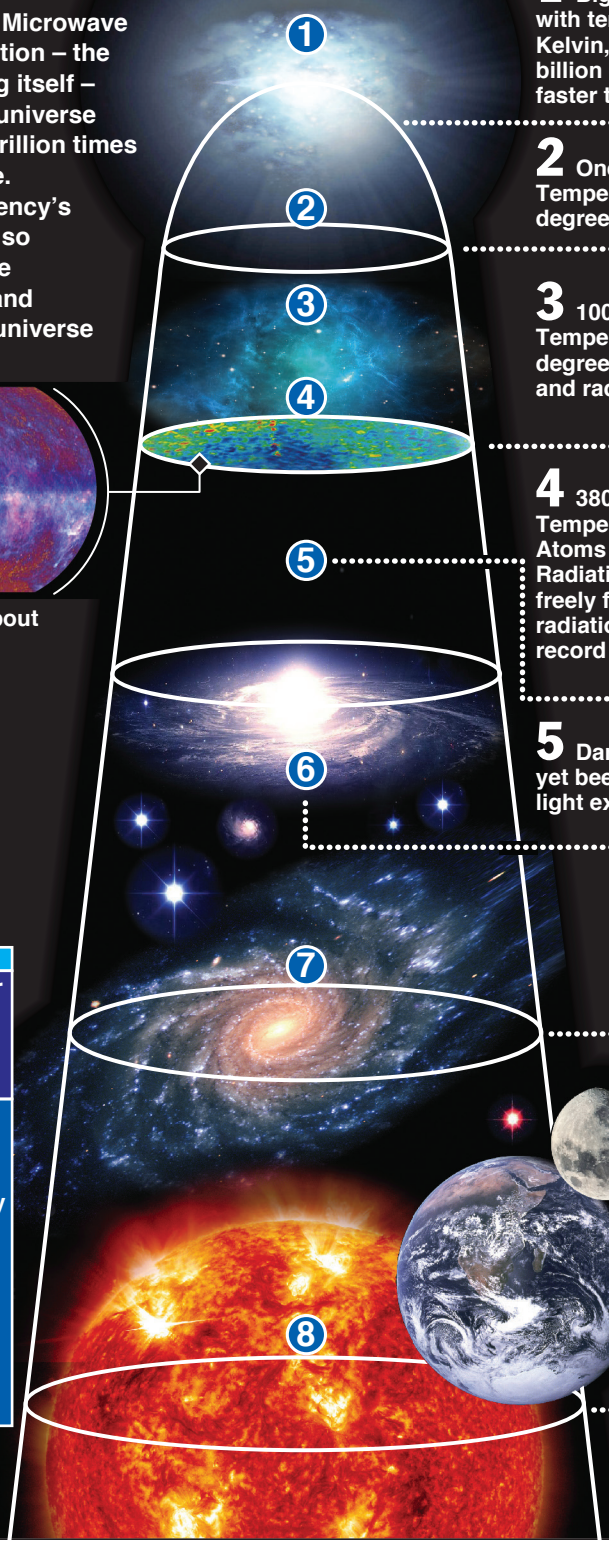
Observations of Cosmic Microwave Background (CMB) radiation – the afterglow of the Big Bang itself – reveal that the newborn universe inflated a trillion trillion trillion times within the blink of an eye.
The European Space Agency's Plank space telescope also shows there is less of the perplexing dark energy and more dark matter in the universe than previously known



Oldest light: Universe is about 80 million years older than previously thought

Structure of the universe

Before Plank mission	*After Plank mission*
Ordinary matter 4.5%	Ordinary matter 4.9%
Dark matter 22.7%	Dark matter 26.8%
Dark energy 72.8%	Dark energy 68.3%



1 Big Bang: In a searing fireball with temperature of 10^{32} degrees Kelvin, or 100,000 billion billion billion degrees, universe expands faster than speed of light

2 One second later: Temperature falls to 10 billion degrees. Atomic nuclei form

3 100 seconds later: Temperature falls to 1 billion degrees. Fundamental particles and radiation are linked together

4 380,000 years after Big Bang: Temperature falls to 3,000 degrees. Atoms of hydrogen formed. Radiation and matter travel freely for first time – CMB radiation is released, preserving record back to this time

5 Dark Ages: Stars have not yet been born – there is no other light except CMB afterglow

6 200 million years after Big Bang: First stars and galaxies form

7 Nine billion years after Big Bang: Our Sun is formed from collapse of cloud of gas and dust in the Milky Way galaxy. 500 million years later Earth is formed from leftovers

8 Today: 13.82 billion years after Big Bang

Pictures: European Space Agency, NASA, AFP/Getty Images