

HOW THE EARTH FORMED

A TUMULTUOUS STORY

The birth of Planet Earth is closely linked with that of the Sun and the other planets, all formed from the same immense cloud of dust. Although the process spanned millions and millions of years, it was a tumultuous epic involving multiple collisions, leading to the planet we now call home. And although our Earth may seem fairly stable to us today, its evolution didn't stop with the appearance of life – far from it! The following are the main phases in the formation of our planet.

↓1

Some 4.56 billion years ago, a huge cloud of dust and gas combined to form the Solar System. It began contracting when it was struck by a shock wave from a distant supernova.



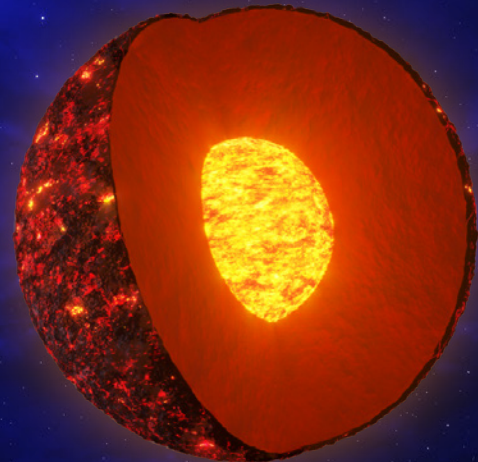
↑2

A disk of matter (gas and dust), which we call the protoplanetary disk, formed around the nascent Sun. The dust particles in this disk collided with one another and clumped together to form chondrules, planetary building blocks.



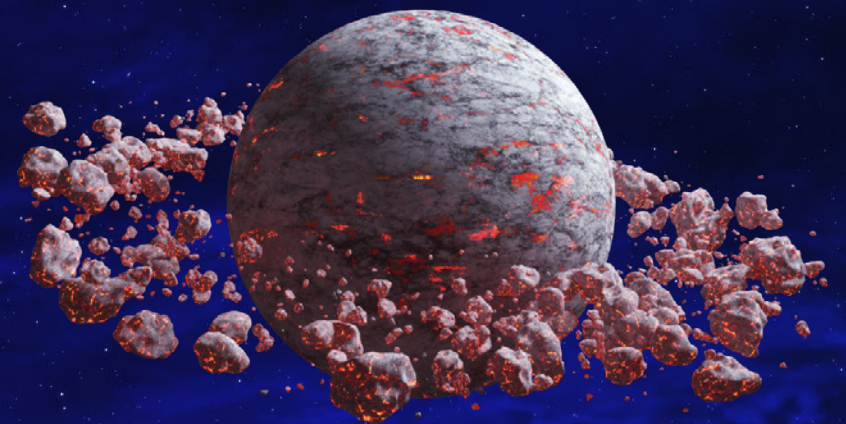
↑3

Under the effect of gravity, the bodies continued to accrete until they formed planets. Heavier elements like iron, nickel and other metals flowed to the centre of the young Earth, creating different layers: the core, crust and mantle.



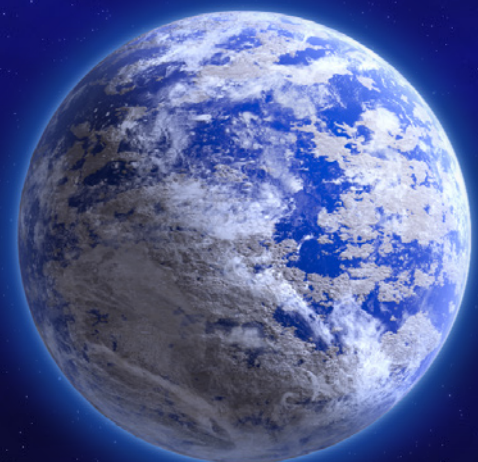
↓4

A celestial body the size of Mars struck the Earth while it was still hot. Part of the debris from that collision remained in orbit around our planet and clumped together to form the Moon, in the space of just a few years!



↓5

About 4 billion years ago the Late Heavy Bombardment occurred, as a large number of meteorites struck the Earth and the Moon. These collisions brought new elements essential to the appearance of life.



↑6

Finally, the appearance of life changed the Earth itself, especially its atmosphere. The first bacteria capable of photosynthesis transformed carbon dioxide into oxygen, leading to the formation of the ozone layer.

