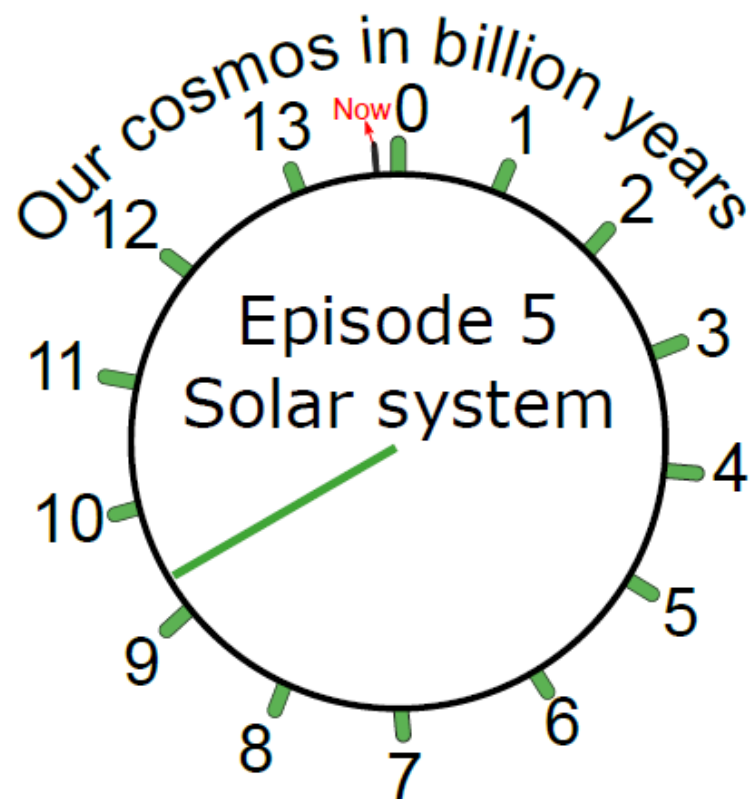


Episode 5: There comes the Solar System



Nine billion years after the Big Bang, we are on the threshold of the next stage in the evolution of the Universe. This stage, the genesis of the Solar System, is especially relevant to us, as it is the antecedent to the appearance of life.

The Solar System arises out of lots of grit from previous generations of stars and the stardust they produced through immeasurable time. Of this initial cloud of molecules most mass collapsed in the centre: the Sun was formed. The rest of the gas and dust particles flattened into a disc, from which planets, moons and asteroids emerged. The planets close to the Sun, the so-called terrestrial planets, have a rocky structure and are quite small. The planets further away from the Sun are giant gas planets. The Sun is a tremendous source of energy and radiation, and it holds the planets tightly bound under the spell of gravity. The Solar System has evolved since its birth and is still evolving. Where this will eventually lead, we will discover in episode 8.

As a whole, the Solar System contains all of the stable chemical elements. Planet Earth, for instance, contains large amounts of oxygen (~31%), iron (~30%), silicon (~17%), magnesium (~16%), carbon (~1.9%), nickel (~1.5%), aluminium (~1.4%) and many others. It also contains really heavy elements like lead (Pb) and mercury (Hg), although mostly the heavy elements (gold and platinum, for instance) are rare.

Planet Earth formed 4.5 billion years ago. We will discover more of its history in the next stages of the Big Bang Route.

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