

Faith & Reason Group Discussion Questions – September 18, 2026
“ORIGINS” SERIES: COSMOS AND LIFE

Origin of COSMOS: summary of confidence zones

- *High evidential support:*
 - The universe is **expanding**, **>13 billion years old**, **hydrogen and helium** early on, **CMB** (cosmic microwave background), **stellar life cycle** (stars form and die)
- *Reasonable best explanation:*
 - The Lambda cold dark matter (Λ CDM) model (i.e., standard “Big Bang” plus general relativity) has **best predicted universe’s unique features**
 - The Borde–Guth–Vilenkin (BGV) theorem (deduced from special relativity) implies **any net-expanding universe has a finite past**
- *Speculation / uncloseable gaps:*
 - **Inflation** as best explanation for CMB irregularities, horizon problem
 - **Quantum gravity** (i.e., universal wave functions) explanation for emergence of our universe from many possible
 - **Multiverse models** (string theory, bubble universes, “many worlds,” etc.)

Discussion prompts: choose any or all

- Describe your **personal journey** with the topic of the **origin of the cosmos (or life)**.
- Describe a time when you **significantly changed your mind** with respect to this topic.
- Describe your **biggest question/uncertainty/insecurity** with respect to this topic.

Origin of LIFE: summary of confidence zones

- *High evidential support:*
 - Life first emerged on earth **no earlier than 4.3 billion years ago** and **no later than 3.8 billion years ago**
 - **Synthesis of organic monomers from inorganic material**, both in nature (e.g., pools, asteroids) and in unguided laboratory experiments
 - **Synthesis of organic polymers via natural means** (e.g., mineral catalysis)
- *Reasonable best explanation:*
 - **Hydrothermal vents** and **tidal pools with wet-dry cycles** are promising candidates for **where** life could have emerged on early earth
 - **“RNA world”** is a promising model for the chicken-and-egg puzzle of **how** biological metabolism and replication could emerge without each other
 - The above have **theoretical issues**; do not **yet** make for a complete theory
- *Speculation / uncloseable gaps:*
 - **Panspermia** hypotheses (i.e., that life did not originate on earth)
 - **Theoretical explanation on how** later, more complex, or information-laden steps emerged (independently of **that** they did; the field is in its infancy)
 - **Most precise answers** to questions of where/how in natural history, even in the face of plausible mechanisms