

Scientific roadmap for European astrobiology

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The first scientific Roadmap for European Astrobiology was published on 21 March 2016. This strategic landmark for European astrobiology was produced through the European Commission-funded AstRoMap project (2013-2015). In putting this research roadmap document together, the 19 authors relied on the outcome and findings of the AstRoMap project as well as on wide community consultation and four disciplinary workshops organised between 2013 and 2014. The AstRoMap European Astrobiology Roadmap considers astrobiology in a wide context: it is understood as the study of the origin, evolution, and distribution of life in the context of cosmic evolution; this includes habitability in the Solar System and beyond. This makes this roadmap a transdisciplinary document of relevance for many communities, from astronomers to planetary scientists and from atmospheric physicists to life scientists.

While it addresses life beyond the Earth, topics it puts forward are also very relevant to [life](#) in Earth extreme environments and to the understanding of our evolving ecosystem. The AstRoMap roadmap identifies five research topics, specifies several key scientific objectives for each topic, and suggests ways to achieve these objectives in a stepwise approach (in the short -within the next decade-, medium -within the next two decades-, and long -beyond 20 years- terms). The five AstRoMap Research Topics are:

- Research Topic 1: Origin and Evolution of Planetary Systems
- Research Topic 2: Origins of Organic Compounds in Space

- Research Topic 3: Rock-Water-Carbon Interactions, Organic Synthesis on Earth, and Steps to Life
- Research Topic 4: Life and Habitability
- Research Topic 5: Biosignatures as Facilitating Life Detection

Besides putting forward scientific priority topics the AstRoMap roadmap also strongly recommends that a European Astrobiology Platform (or Institute) should be set up to streamline scientific investigations, maximise interdisciplinary collaboration and optimise the use and development of infrastructures.

More information: Gerda Horneck et al. AstRoMap European Astrobiology Roadmap, *Astrobiology* (2016). [DOI: 10.1089/ast.2015.1441](https://doi.org/10.1089/ast.2015.1441)

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