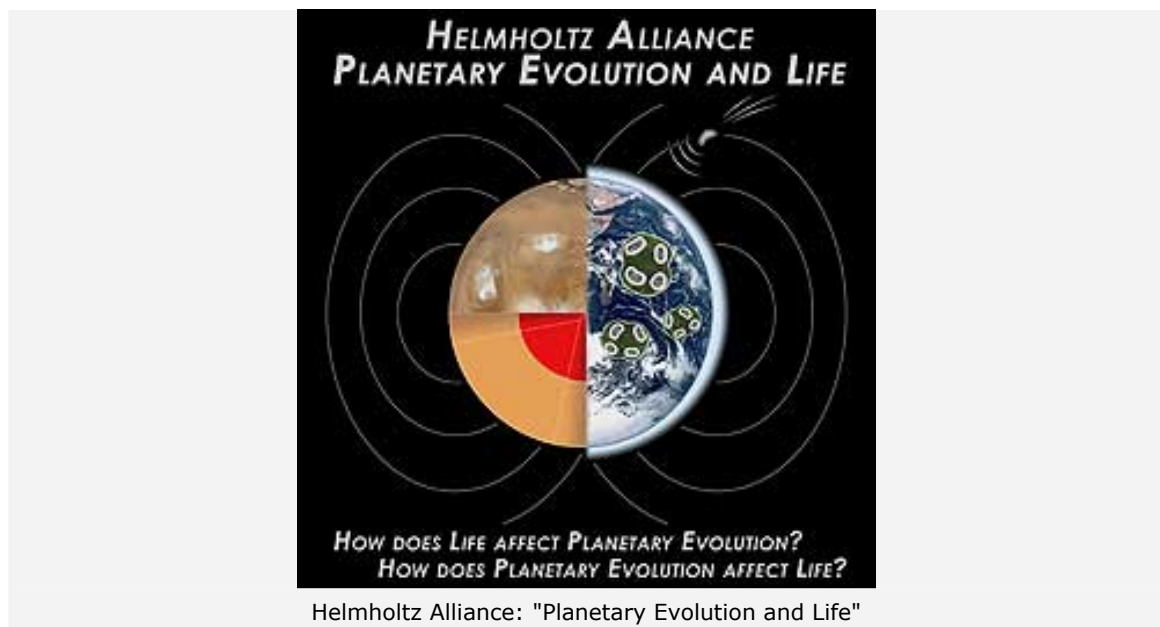


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**The "Planetary Evolution and Life" research alliance to receive funding**

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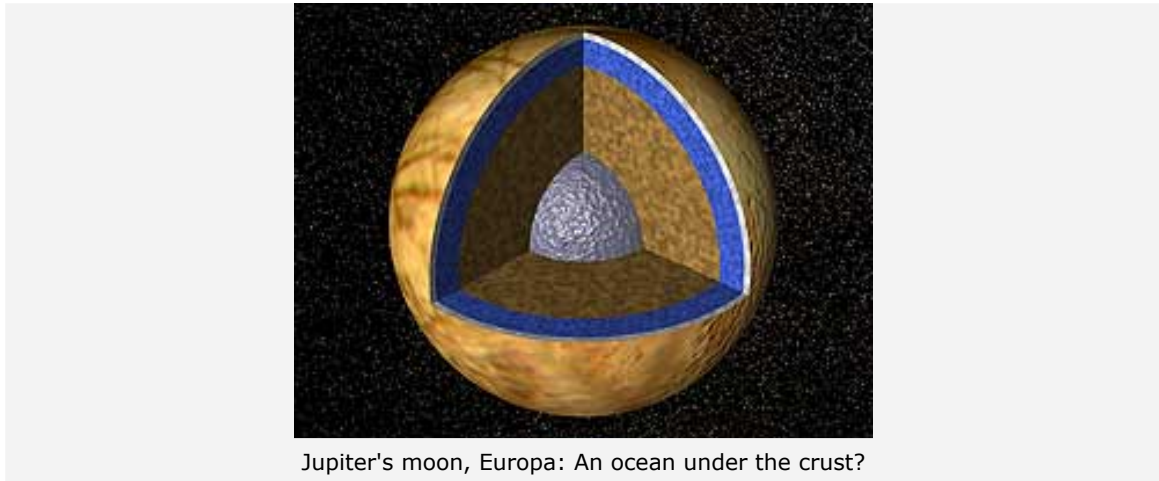
The DLR Institute for Planetary Research in Berlin spearheads research alliance



Was there, or is there life on other celestial bodies? A research alliance, led by the German Aerospace Center (DLR) will be devoting itself to this and other questions. This alliance has been selected by the Helmholtz-Gemeinschaft Deutscher Forschungszentren e.V. (Helmholtz Association of German Research centres) (HGF) for five years' funding. The alliance, funded by the HGF to the tune of €16.8 million, is called "Planetary Evolution and Life" and brings together several extra-faculty research facilities as well as a large number of German and international universities.

The aim is to study the potential of a planetary body to create life and for it to evolve. What conditions must pertain? Do the development of life and the geological development of a planet have a mutual effect on each other? The researchers at the DLR Institute for Planet Research and their alliance partners want to find answers to these questions. "This alliance will not only advance a really fascinating topic but with the funding I see outstanding opportunities for a rising generation of scientists. Co-operation in such a widely-based alliance with the best researchers will give the scientific work a particular boost," commented the Chairman of the DLR Executive Board, Prof. Johann-Dietrich Wörner on the selection of the project.

**A philosophical dimension that goes far beyond natural sciences**



Jupiter's moon, Europa: An ocean under the crust?

"The search for life on other celestial bodies is certainly one of the most exciting questions in planetary research and astronomy today," explained Prof. Tilman Spohn, Director of the DLR Institute for Planetary Research and scientific co-ordinator of the alliance. "The topic certainly has a philosophical dimension that goes far beyond natural sciences. But in order to be able to answer this question we must learn more about the geological requirements for life on Earth and possibly on other planets and moons to be created and to evolve," explained the planetologist. "It is also important to know whether, and if necessary, how, the interplay between life and the environment affects the development of life. It is quite conceivable that life with its biochemical processes exerts an influence on the geological development of a planetary body," said DLR researcher, Spohn.

"With the Helmholtz alliances we are achieving a critical mass, both in funding and also because of the combined skills of the partners involved," explained Prof. Jürgen Mlynek, Chairman of the Helmholtz Association. The funds are coming from the Helmholtz Association's incentive and networking fund; in addition almost the same amount of funding is being provided by the universities and extra-faculty research institutes involved. The Helmholtz Association is not only funding the "Planetary Evolution and Life" alliance led by DLR but also the "Cosmic material in the laboratory", "Immunotherapy in cancers" and "Mental health in an ageing society" alliances.

To do this the alliance will be funded by the Helmholtz-Gemeinschaft Deutscher Forschungszentren (HGF) to the tune of €16.8 million over the next five years. The other universities and extra-faculty research facilities involved will also almost match this funding. Collaboration in such a widely-based research alliance and the coming together of excellent researchers will open up outstanding opportunities for scientific work for a rising generation of scientists. The alliance will work on the topic "Planet development and life" by synthesising the results of several associated research fields and data from current and planned planetary missions.

The pressure and temperature conditions in this ocean could be such that it is conceivable that life could be created and evolve here. The assumption that this ocean exists inside the moon is based on magnetic field measurements from the NASA space probe, Galileo, that passed close to the satellite several times between 1995 and 2003. Also, many structures that can be seen on the surface of Europa indicate that in the geologically recent past more and more water has been pressed through cracks from the inside of the moon to the surface. This makes Europa one of the most interesting objects for planetary research.

The diameter of Europa is about 3100 kilometres, which is really too small to keep the ice in Europa's mantle melted because it is just under a billion kilometres from the Sun and such a small body would not have enough energy for this. Tidal forces that constantly create heat within the moon and prevent part of the water from freezing are responsible for this. On the one side of Europa, Jupiter and the inner volcanic moon, Io, are pulling on the body and on the other side forces exerted by the moon Ganymede, in resonance with Europa and Io, have an effect.

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