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**The Ecsite Space Group
Conference Session
“Is there Life out there?”
Ecsite Annual Conference
“Life Everywhere”
Report**

15 June 2017 – Porto, Portugal

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1. The Ecsite Space Group

The Ecsite Space Group offers a platform for science centres and museums to improve and extend communication about ESA and European space activities by sharing experiences, expertise, knowledge, tools, resources and best practices.

The group is chaired by Marc Moutin, Director of Exhibitions at Cité de l'Espace, France, Ana Noronha, Executive Director of Ciência Viva, Portugal, and Maria Menendez, Head of ESA Corporate Exhibitions and Events, France.

Joining the Ecsite Space Group is an opportunity to get closer to space professionals and science centres willing to communicate about space. It also allows participants to be better informed about space news, programs, achievements and next launches.

For European Space Agency (ESA), national space agencies, industries, research institutions, and academia, the Space Group offers the possibility to build close collaborations with science communication professionals. The group benefits from the already established European networks of Ecsite and the European Space network of ESA and its member states.



Participants received a star and exoplanets chart created by the Porto Planetarium. In the background, the four panellists that took part in the session are answering questions from the audience. © Ecsite

2. Speakers and Convenor

Convenor:

Rob van den Berg, Director (Space Expo, The Netherlands)

Speakers:

Daniel F. M. Folha, Executive Director (Porto Planetarium, Centro Ciência Viva, Portugal)

Fiorella Coliolo, Scientific Communication Officer (European Space Agency – ESA, France)

Jose Antonio Gordillo Martorell, Technician in the Science Outreach Department (City of Arts and Sciences, Spain)

Marc Moutin, Exhibitions, Shows and Development Director (Cité de l'Espace, France)



Daniel Folha presents a family portrait of the Solar System. Star and exoplanet chart from Porto Planetarium. Marc Moutin discusses space exhibits at Cité de l'Espace. © Ecsite 4

3. Abstract

Life is everywhere on Earth. Living organisms are found from the poles to the equator, from the bottom of the sea till high in the air, from freezing waters to dry valleys to thermal vents till deep below the surface. Since life on Earth is so common and resistant to extreme environments, we think that extra-terrestrial lifeforms, such as micro-organisms, are very likely to exist in the Solar System and throughout the universe. Mars is a candidate and so are the icy moons of Jupiter and Saturn, which have liquid oceans under their icy surface. We found the chemical building blocks of life everywhere in the Solar System and throughout the universe. We even found dozens of potentially habitable planets orbiting other stars. Several current and planned missions, earthbound and from space, are searching for signs of life, intelligent and bacterial. Scientists expect to find alien life within a decade. What will be the impact on our lives, our understanding of evolution, our religions, our place in the universe? As SF-author and inventor Arthur C. Clarke stated in the 1940's: "Two possibilities exist: either we are alone in the Universe or we are not. Both are equally terrifying".

Participants will be able to:

- Learn about ESA's and other missions related to the search for extra-terrestrial life and the potential for life to exist in space.
- Rethink our place in the universe, the impact on our society, the consequences for the leading religions and more, if we discover alien life
- Get ideas for exhibitions about what could be the biggest discovery ever.

4. The session

The session started with a welcome by **Rob van den Berg** and a warm-up interaction with the participants who were asked if they believed life existed out there beyond planet Earth. An active discussion ensued, with participants pondering different definitions of life and whether it made sense to define life at all.

The panel presentations started with **Daniel Folha**, Executive Director of the Porto Planetarium. He gave a general overview on what astronomy and astrophysics reveal about the question “Is there Life out there?”. He sketched a family portrait of the Solar System, categorising the planets according to size, mass and density and revealing interesting aspects thanks to this comparative perspective. He continued with a discussion of exoplanets, including the number of such bodies discovered as of the date of the session, and detection techniques. His presentation ended with some personal reflections on the subject, pondering upon the usefulness of anthropocentric visions of the universe.

After this comprehensive overview, the panel endeavoured to reflect on how science communicators can begin to tackle the topic of extra-terrestrial life in their own work, sharing with the participants their know-how and resources.

Fiorella Coliolo presented the ESA exhibition tool “The Enigma of Life”, an interactive book about the search for life in the universe. This resource focuses in particular on astrobiology and several ESA missions. Currently available in English, the final version of the “magic book” will be available for free from ESA Exhibitions. Other languages could also be developed in the future.

In his presentation, **Marc Moutin** addressed the objectives, types of interaction and some practical aspects (e.g. devices, locations) of developing exhibitions on the topic of extra-terrestrial life. He used exhibits from Cité de l’Éspace to illustrate his points. Another topic he considered was the use of fiction and hypotheses to present space science, sharing the fact that while Cité de l’Espace uses science fiction in its exhibits, visitors are warned when that is the case.

Jose Antonio Gordillo discussed critical insights into designing a game that explores the search for extra-terrestrial life, basing his discussion on the experience of the team at City of Arts and Sciences as they are developing “Alive! An Extraterrestrial Game” in cooperation with ESA and Ecsite. He stated that considering the philosophy and strategy behind one’s approach is essential and encouraged developers to leave the game “open” so that gamers can customise the content according to their needs. He stressed that a careful balance must

be struck between scientific content and fun elements. His advice regarding game design is to be practical and consider the implications of one's design choices on the players and facilitators. Jose also stressed the importance of building strategic alliances with gamers and other communities that can facilitate the dissemination of the game.

A lively discussion followed on the question of the role that fiction, past and present, could play in connection to space science. According to **Daniel Folha**, imagination and fiction are needed because, if people dream, humanity has to start making those dreams come true. **Marc Moutin** added that including an element of fun can help visitors go through a scenario, acquire space science facts and continue to explore space science on their own. **Jose Gordillo** gave "Alive! An extra-terrestrial game" as an example of combining science and fiction since it includes fictional characters alongside real-life scientists and science communicators.

The session concluded with the thought that, within the next 10 years, life outside of Earth could be found thanks to upcoming space missions dedicated to this quest. All of the presentations used in the sessions can be downloaded [here](#).