Inhabiting Extraterrestrial Space

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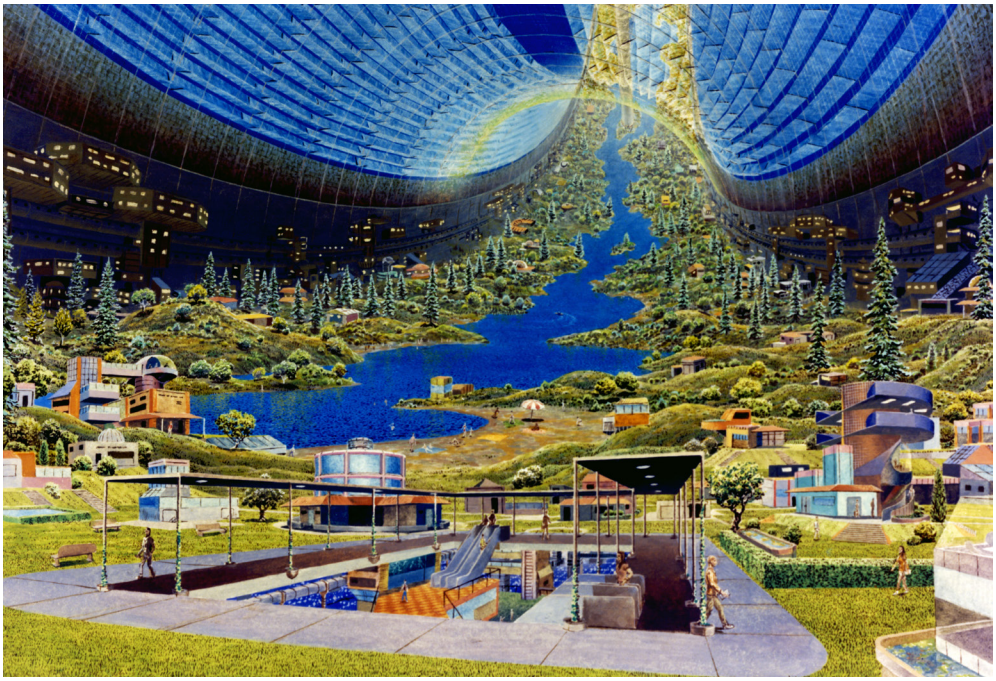
***Inhabiting Extraterrestrial Space* is a project developed in partnership with the Observatoire de l'Espace, cultural laboratory at the National Centre for Space Studies (the CNES) in Paris by Christophe Kihm, an Associate Professor at Geneva University of Art and Design. The project consists of a new approach to extraterrestrial habitats in space, one that challenges common preconceptions.**



Don Davis, "Toroidal Colony, Interior View," 1974-1975
© Standford University, Gerard O'Neill, Nasa Ames Research Center.

Navigating a Database

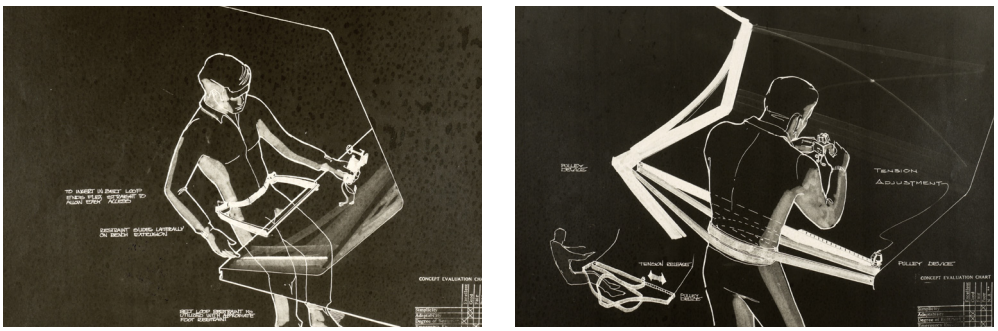
The heart of the research project *Inhabiting Extraterrestrial Space* consists of the creation of a database. Its aim is to establish the cultural history of spatial habitats and make it accessible to researchers and artists. The database is made up of a collection of scientific archives from a variety of space projects, and underlines the relationship between the images and concepts of extraterrestrial habitats based on spatial research, as well as those from the realms of architecture, the visual arts, and cinema.

The database brings together these disparate sources, providing an interdisciplinary perspective on the subject. It comprises images from five different subject areas: space research, internal and external space communications, architecture, cinema and the visual arts. Users can explore these images with three search methods: according to term, habitat, situations and activities, or the circulation of images and collaborations. These diverse search methods enable one to assemble specific sets of images, to which additional information can be added thanks to descriptors, metadata, and filters associated with the corresponding images and projects.

When one image is selected, you can access three associated types of content: an image file that contains a contextual caption and information, a section that details the circulation of the image and its links with other images in the database, as well as a section dedicated to the project, the object, the work, or a film linked to the image, as well as a list of associated visuals. Navigating the database generates the creation of a corpus of images, along with documentary

and historical contexts. When the images and the objects of spatial research and communication are linked with those of architecture, cinema and the visual arts, an iconographic corpus emerges, one that can be studied and researched in detail.

The 478 images that are already available in the database include ones collected from space agencies, archives, museums, space laboratories, private archives and collections. They document a variety of elements of spatial research and communications relating to space stations such as Skylab, Saliut, MIR, Freedom, ISS, and shuttles such as Hermes and the Space Shuttle, as well as the Mercury, Gemini, and Apollo programs, and Sputnik and Soyuz missions. These images portray the interiors of inhabited space vehicles, fixed habitats, preliminary sketches, and industrial blueprints. The corpus selected for spatial design, which was curated from research into the archives of industrial designer Raymond Loewy (Skylab, Shuttle Orbiter) and the Russian spatial architect Galina Balashova (Soyuz, MIR), underlines the historical importance of this research in terms of the design of objects and architecture, and completely redefines living conditions in space.



Raymond Loewy, “Work Station Restraint, Waist,” print drawing on paper, 1972 © NASA. Courtesy Atelier 41.

In the area of architecture, the compilation of images includes projects designed in collaboration with space agencies, as well as independent space projects conceived by architects. Among them you will find ones from the SPIRALE group, Jan Kaplicky, Future Systems, David Nixon, Phil B. Hawes, Paul Maymont, Guy Rottier, Moshe Safdie, Paolo Soleri and the Andreas Vogler Studio.

The cinema and visual arts archives include twenty-six films made by filmmakers such as Douglas Trumbull, Danny Boyle, Robert Wise, Claire Denis, Christopher Nolan, Pavel Zhuravlev and Fritz Lang. They also have an inventory of 118 creative works by artists, including those of the Russian suprematists Lazar Khidekel and Ilia Chasnik, Robert Rauschenberg, Gian Piero Frassinelli, Erró, and Bertrand Dezoteux, as well as images from painters and illustrators who have collaborated with space engineers such as Chesley Bonestell and Fred Freeman.

These collections provide an opportunity to reexamine questions linked to spatial habitability using a documentary approach. They open the way to an exploration of the cultural and material history of space habitats, one that takes into account both interdisciplinary and multidisciplinary perspectives.

Ways to Leave Earth

Interaction with the database has inspired several research projects, including the essay entitled *Ways to Leave Earth* (March 2021, *Manifestes,* HEAD–Publishing).

Authors Jill Gasparina (HEAD–Genève), Christophe Kihm (HEAD–Genève) and Anne-Lyse Renon (Lecturer, Design, University of Rennes 2), examined a group

of objects from spatial research and the experiments associated with it. They demonstrated that "spatial habitability is diverse and shows the complex relationship we maintain with our attachments and our dependencies." The authors also describe how the spatial experience can help us rethink our relationship with the Earth and other living beings, thus helping us to break with anthropocentric models of adaptation. The work also reflects upon current issues of life on Earth, and the ways in which the spatial experience can help us acquire new skills and knowledge, both corporeal and social.

The compilation takes us through nine essays that pursue a consistent line of thought through the texts and images of the eponymous compendium: "Tactile Experience: The Glove," "The Spacesuit as Mobile Habitat," "Missile, Launcher, Icon, Habitat," "Attachment and the Living," "The Company of Plants," "The On-Board Image and the Window," "The Closed Circuit and Captivity," "Flying Cities: Leaving Earth and Coming Back," and "Planetary Analogies".

In addition to this work, an eponymous exhibition that provided new perspectives on this issue took place from April 1–8, 2021: *Comment Quitter la Terre?* ("How to Leave the Earth"). Curated by Jill Gasparina and Christophe Kihm, in collaboration with the students of the work.master of LabZones, The Consequences of Images, and The Ecology of the Spatial, this exhibition included the works of students and artists such as Bertrand Dezoteux and Charlie Malgat, and explored the analogies between terrestrial and extraterrestrial spaces and habitats.

Rethinking the Concept of Habitability

In space research, the concept of habitability can specifically be applied to "constructed environments" for short or long stays in space, or on other planets. It is a matter of reciprocal adaptation, one in which humans adjust to their environment and vice versa. It involves technical and material planning, from the construction of bases or villages, to terraforming. The aim of this technical approach is to satisfy human physiological and psychological needs as regards both survival and comfort. In this context, the *Inhabiting Extraterrestrial Space* research program raises several avenues of reflection on notions of hospitality and hostility, as well as policies of colonization and conquest. Another way of conceiving habitability is possible, based upon a dialogue with otherness, as we as humans become foreigners. In the context of this reciprocity, adaptation cannot be contemplated without exaptation, an opening to the outside. The condition of being a foreigner imposed by all that is extraterrestrial is, in part, a response to the question, "How do we leave the Earth?" and also resonates with the future of our own human life on Earth.

Project Curator

Christophe Kihm is an Associate Professor of Visual Arts at HEAD–Genève (HES-SO). Initially he dedicated his research to the arts of action, to archival artistic practices, to pedagogy and experimentation in the arts, as well as pursuing editorial projects, working independently as a critic and curator. More recently, he has been working on extraterrestrial habitats and the observation and description of human and animal behaviour at the cutting edge of anthropology and ethology.