STEIERMARK SCHAU.AT

Atmo-spheres

Art, Climate- and Space Research

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Art, Climate- and Space Research

Atmo-spheres

Exhibition – Mobile Pavilion

Heldenplatz, Vienna
03/22–04/04/2023

Tierwelt Herberstein
04/29–11/05/2023

www.mobilerpavillon23.at/en/

FOREWORD

Mag. Christopher Drexler
Governor of Styria

In 2021, SHOWING STYRIA was launched as a new format. This was intended to fill a gap left by provincial and regional exhibitions in Styria. As a very special innovation, a new approach to the presentation of art and culture was also created in 2021 in the form of the mobile pavilion, which has since become a distinctive feature of the show. The mobile pavilion is, so to speak, the artistic rendering of the theme of SHOWING STYRIA. Indeed not only what is shown there - it is the medium of "film" that plays a role here - but also the pavilion stands itself as a work of art. It is not only impressive in content, but also impressive in its well thought-out design. I am very proud of this year's approach to the "diversity of life", which is presented in the mobile pavilion by means of "atmospheres", thereby illuminating the underlying conditions of life. Within it, a temporary immersion in a very special world, through immersive implementation, becomes a veritable experience. I am also pleased that we will be able to bring the SHOWING STYRIA mobile pavilion as a "room version" - affectionately known as the "mini-pavilion" - to some selected cultural forums, first and foremost New York, and thus show our approach to art and culture to a broader public, reaching far beyond the borders of Styria.

Styria is Austria's province of art and culture. With SHOWING STYRIA I would like to make a declaration of love to our beautiful province, its inhabitants and its creative strength. My special thanks go to Alexander Kada and Astrid Kury, the participating artists and the entire team for their creative achievement and their courage to dive into new worlds, time and again.

WHAT IS LIFE?

Dr. Marko Mele
Director of Science,
Universalmuseum Joanneum

Mobile pavilion, SHOWING STYRIA 2023

What are conditions favorable to life and how special is the Earth? Questions of life no less fundamental than these will be addressed in the mobile pavilion, which is part of SHOWING STYRIA again this year, involving local and international artists from a wide range of disciplines supported by scientists. The aspiration is not to provide definitive answers to these questions, which experts from science, research, philosophy and ethics have been discussing since time immemorial. Rather, through aesthetic video and sound contributions, the pavilion raises its visitors' awareness of aspects often taken for granted: a city worth living in, a country worth living in, a planet that is favorable to life. As the perfect companion to SHOWING STYRIA, which this year is dedicated to conditions worth living in and their preservation under the title "Diversity of Life," the pavilion takes up the theme from an artistic perspective, transcending boundaries and expanding the field into atmospheres.

The challenges of preventing the loss of biodiversity and decisively counteracting climate change must be faced by all of us. Only through cooperative efforts at the global, national and local levels can we preserve biodiversity and create the basis for a healthy and sustainable future. I am therefore particularly delighted that a miniature version of the mobile pavilion is acting as an ambassador far beyond the borders of Styria to raise awareness regarding a sustainable path into the future.

I would like to thank Astrid Kury and Alexander Kada, who are responsible for the design, conception and content of the pavilion, as well as all the artists and scientists involved. Together, they have succeeded in creating a space that transports visitors into fascinating worlds, opens up unexpected perspectives and provides them with thought-provoking inspiration.

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200 Contributors / IMPRESSUM





Renderings, 2022



Heldenplatz, Vienna, 03/22–04/04/2023

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Tierwelt Herberstein, 04/29–11/05/2023

Mobile Pavilion

ATMOSPHERES

ART, CLIMATE- AND SPACE RESEARCH

The frontiers of the imaginable has always been a domain of art. Each new discovery in space research stretches the frontiers of the imaginable a little further. The joy of discovery of these two extreme fields of research - the poetic pervasion of the world and the exploration of its limits - is brought together in this exhibition: it combines art and research in an immersion in unimaginably alien skies. Since the first discovery of an exoplanet in 1995, an undreamed-of variety of atmospheres on other planets has opened up, with completely different weather phenomena and landscapes. Alien skies, also an experience that we are likely to have on Earth through climate change.

ARTISTS

Azra Akšamija (BiH/AT/US) & Dietmar Offenhuber (AT/US — Benedikt Alphart (AT) & Adina Camhy (AT) — Michaela Grill (AT/CAN) — Markus Jeschaunig (AT) — Rainer Kohlberger (AT/DE) & Peter Kutin (AT) — Gudrun Krebitz (AT/DE) — Ralo Mayer (AT) — Muntean/Rosenblum: Markus Muntean (AT) & Adi Rosenblum (IL/AT) — Kay Walkowiak (AT) — Richard Wilhelmer (AT/DE) & Sonja Mutić (AT/BiH/SRB/US/CR) — Art projects for children: Silvana Beraldo (BR) & Daniela Brasil (BR/AT)

COOPERATION PARTNERS

Styrian Provincial Government — Space Research Institute of the Austrian Academy of Sciences — Wegener Center for Climate and Global Change of the University of Graz — GeoSphere Austria — Medical University of Graz — International Research Center for Cultural Studies, University of Art and Design Linz in Vienna — Institute of Electronic Music and Acoustics, University of Music and Performing Arts Graz — Henx

ATMOSPHERES IN THE MOBILE PAVILION 2023

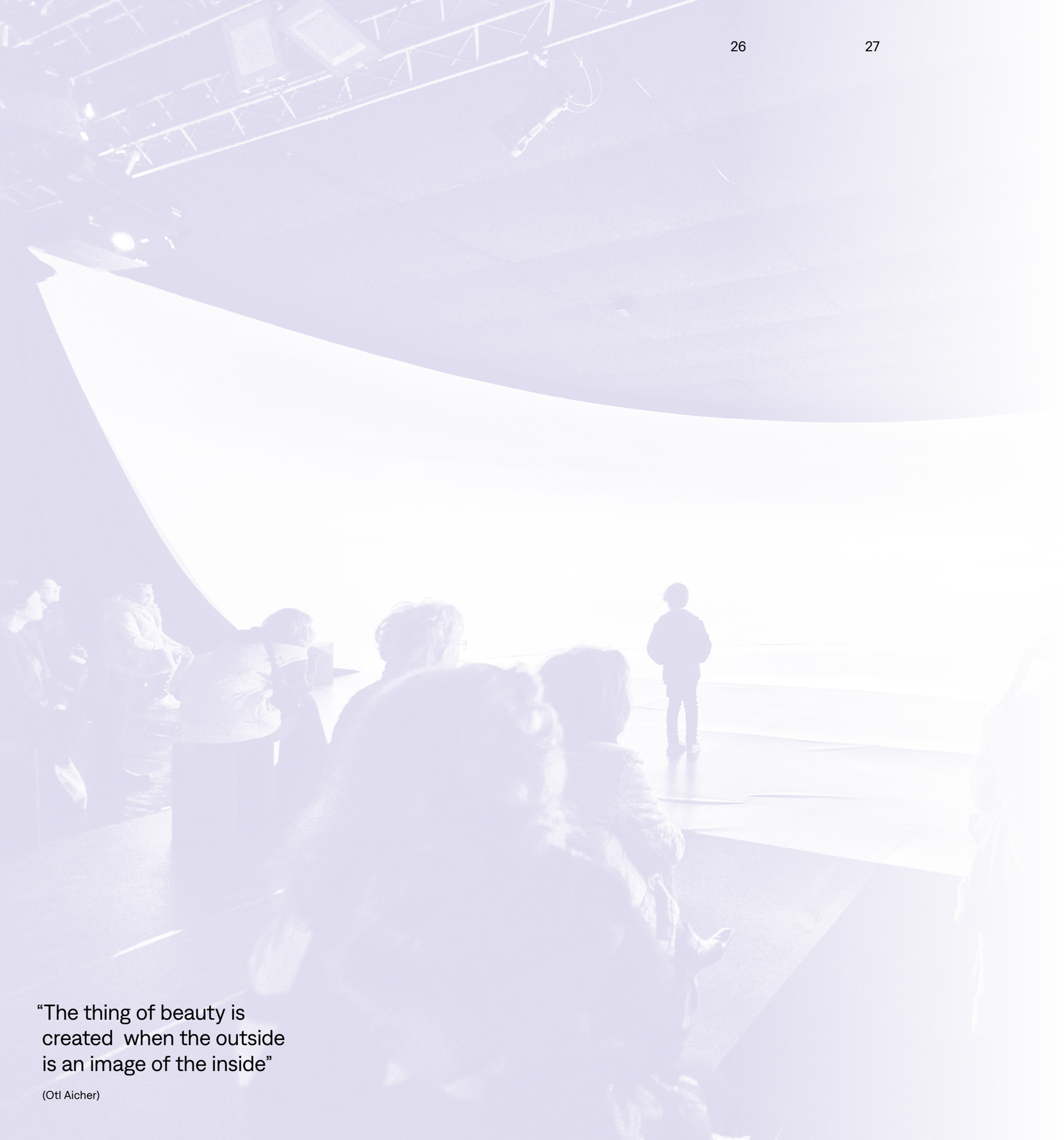
Alexander Kada
Idea, concept, design and project management

On the idea, concept, and design of the Mobile Pavilion 2023

Video artist Douglas Gordon says, >>Art is the opportunity to engage people in conversation about the essential things in life<< The mobile pavilion extends a friendly and attractive invitation to engage with artistic and scientific content. At the same time, it represents a research station that explores exhibition forms of the future. It is becoming apparent that the exhibition as a medium will direct the focus even more strongly towards spatial experiences. These directly express the exhibit content and simultaneously create new spaces in order to present complex themes by using intuitive presentation methods. A critical aspect of this exhibition, therefore, is the focus directed towards the medium of film; thus, an elegant link is forged between different disciplines and, in particular, science and research are interwoven with visual art. In this way, the pavilion presents artists with the rare opportunity to develop large, expansive compositions in video art and contemporary music.



① Entrance
② Oval / Projection Room
③ Exhibition



“The thing of beauty is created when the outside is an image of the inside”

(Otl Aicher)

The terminus technicus used for this mobile pavilion in the official documentation is “flying structure”. This term accurately reflects the design idea of creating a transparent and airy structure that offers an interesting spatial experience and can easily change location. “The thing of beauty appears when the outside is an image of the inside,” this motto for the exhibition ultimately led quite simply to the definition of an interior space by envisioning a flying roof and a floor space which is, nevertheless, located outdoors. Airiness, accessibility, and even a sense of being oriented towards the people who move within the public space shaped the basic idea behind it.

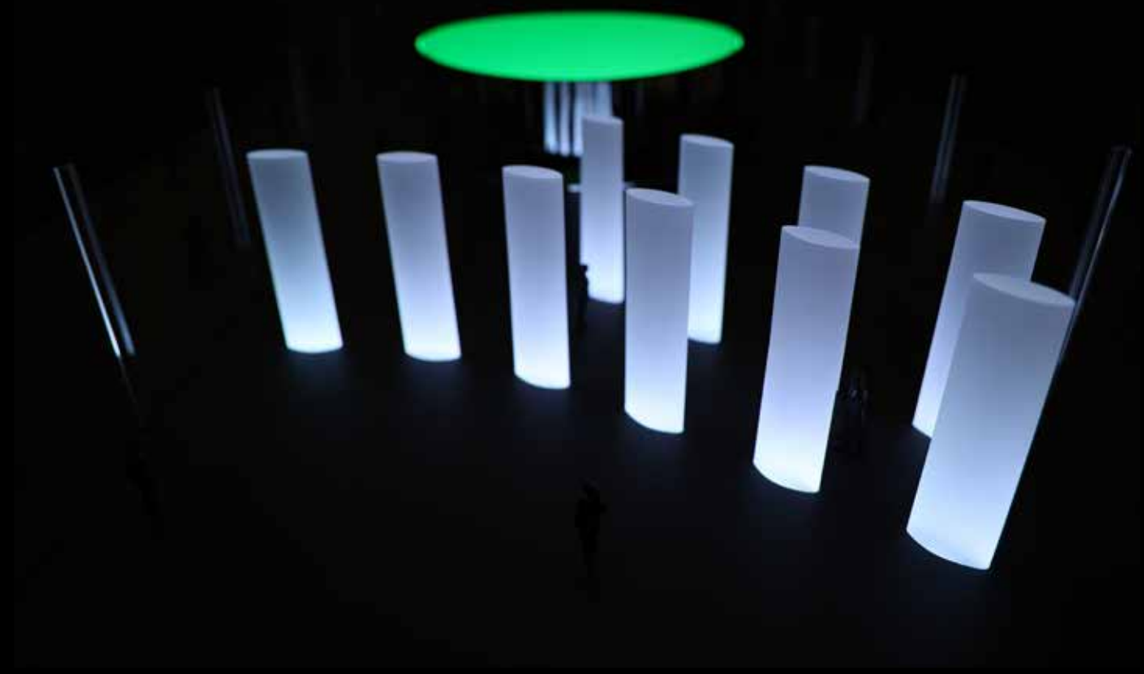
The exterior becomes a means of expressing the interior when both the content and design enter a successful symbiosis. This is achieved by ensuring that the design concepts and elements react coherently with the exhibition content and the media used. Here, the openness and airiness of the mobile art gallery resonate with the theme of the atmosphere. The mirrored outer shell of the projection room captures the reflexive analysis of the image of reality portrayed with the medium of film. The moving images that are created when one walks past the projection room subtly hint that film presentations are taking place inside. Furthermore, this external form makes it possible to move through the pavilion’s surroundings with the greatest respect. By employing the mirrored surfaces, the oval projection space dissolves into the surrounding space like an ephemeral object, while the unexpected interactions among the reflections open up interesting new perspectives on this urban or natural environment.

The oval shape of the projection room was chosen as a result of the unusual situation, i.e. that of being able to design an ideal film presentation room for the exhibition. By featuring a projection surface that is 35 m long and 5 m high, plus part of the floor also used for projection, an impressive experience is created that allows the visitors to become part of what is being shown. In addition, the Institute of Electronic Music and Acoustics at the University of Music and Performing Arts Graz has developed an impressive sound design: 29 loudspeakers in the Ambisonics system generate 360° surround sound.

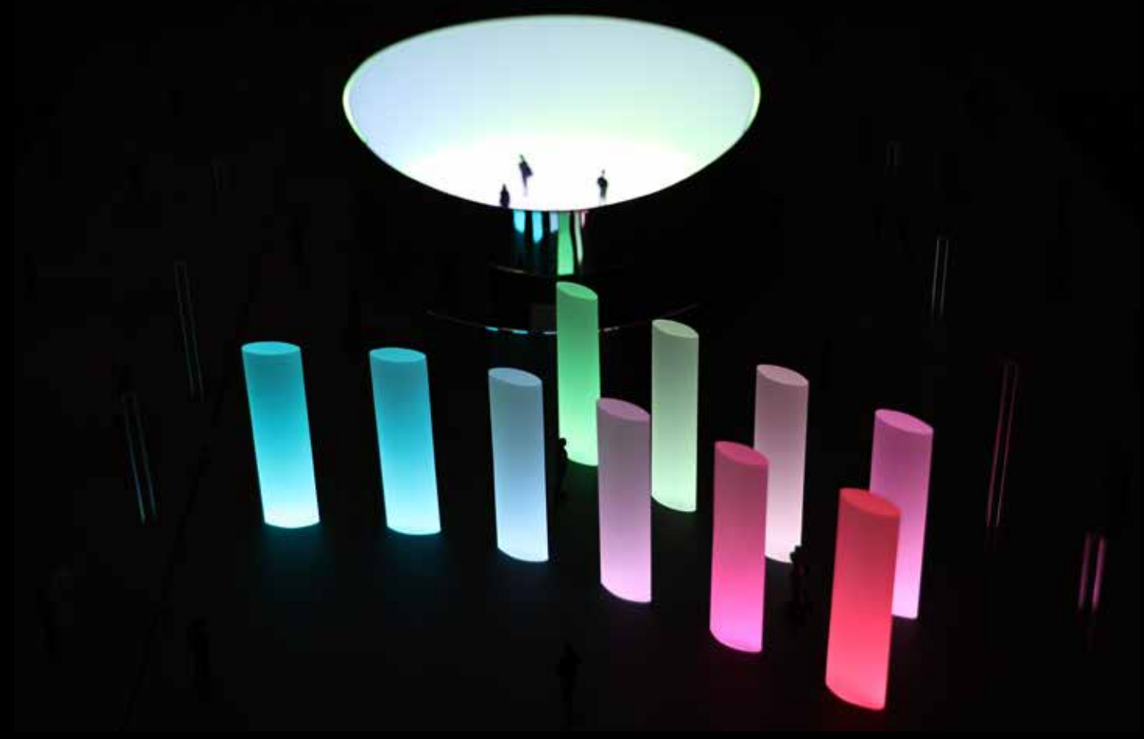
This exhibition wanders. It has been designed to move from one location to another in two ways: as an entire pavilion within Austria, travelling from Vienna to Herberstein, and as a miniature version (i.e. with a diameter of 6 m), travelling to the international sites of the Austrian Cultural Forums. The International Cultural Affairs section of the Foreign Ministry is strongly dedicated to promoting a new climate culture – still to be created – which is also a driving force for the exhibition of this pavilion. To this end, a cooperation has been formed with the Province of Styria. The miniature version of the projection room will be sent on a journey and shown internationally and on several continents in the Austrian Cultural Forums (or museums cooperating with them).

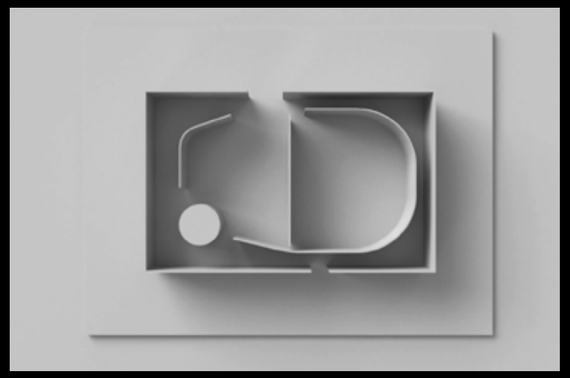
Model photo – Mobile Pavilion

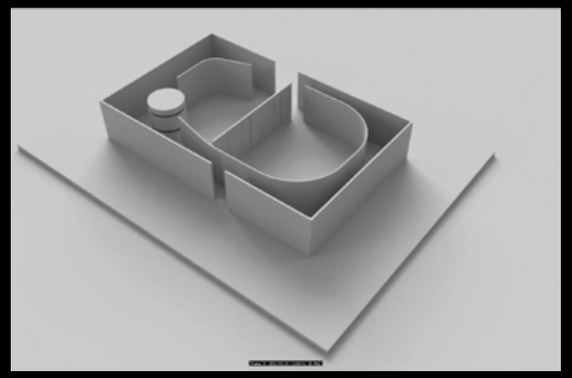


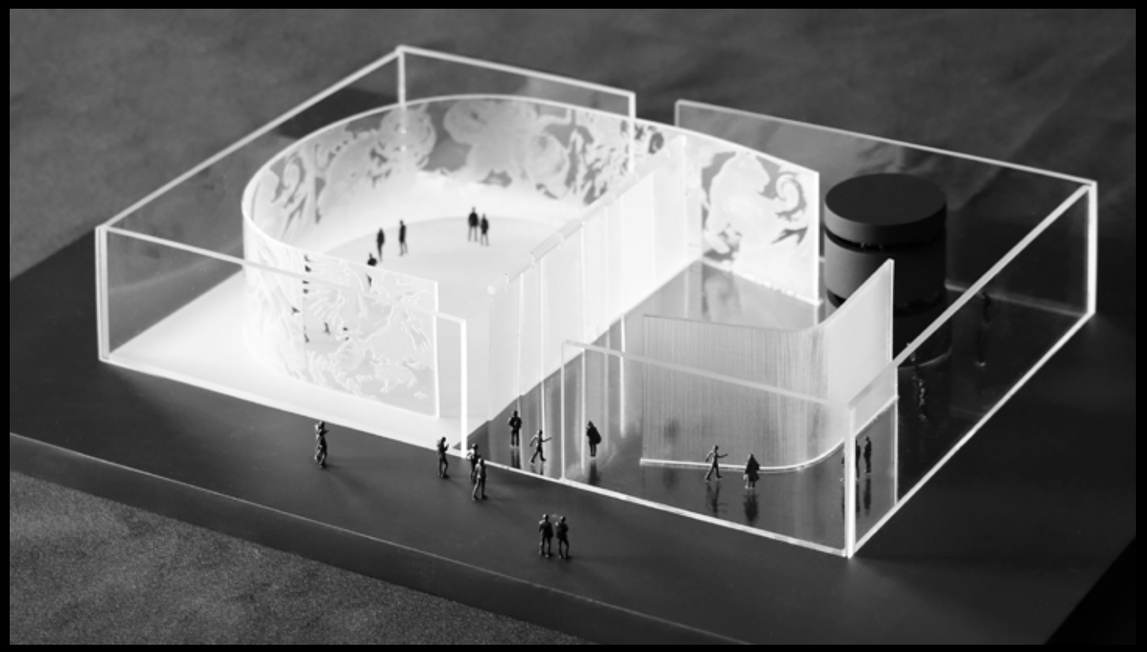


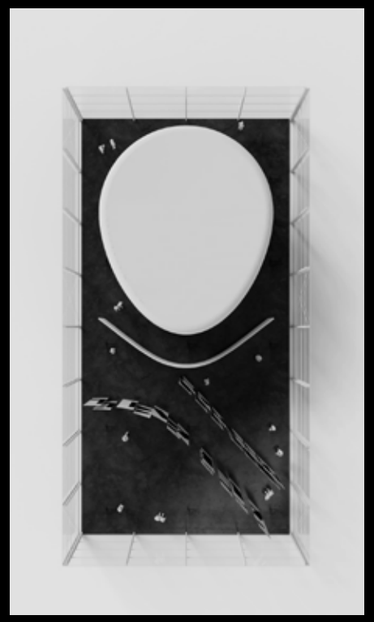


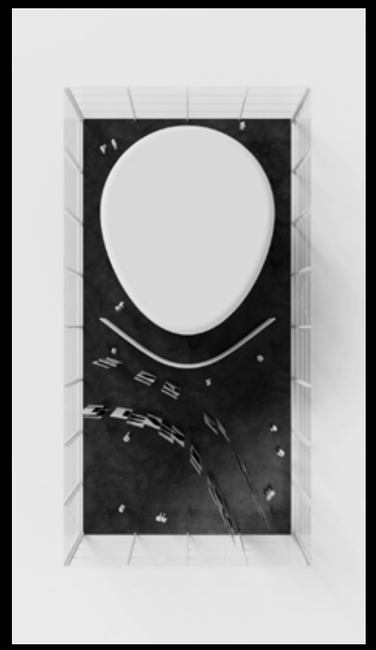


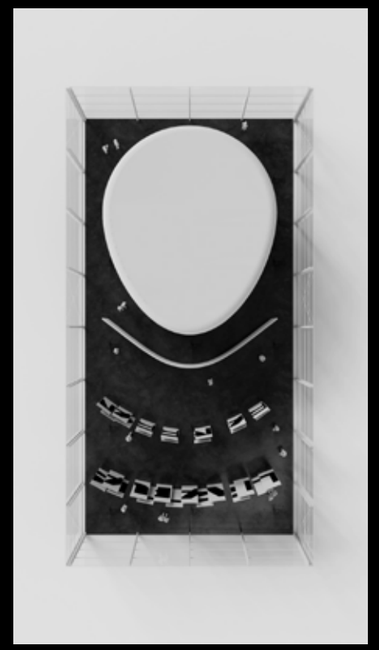




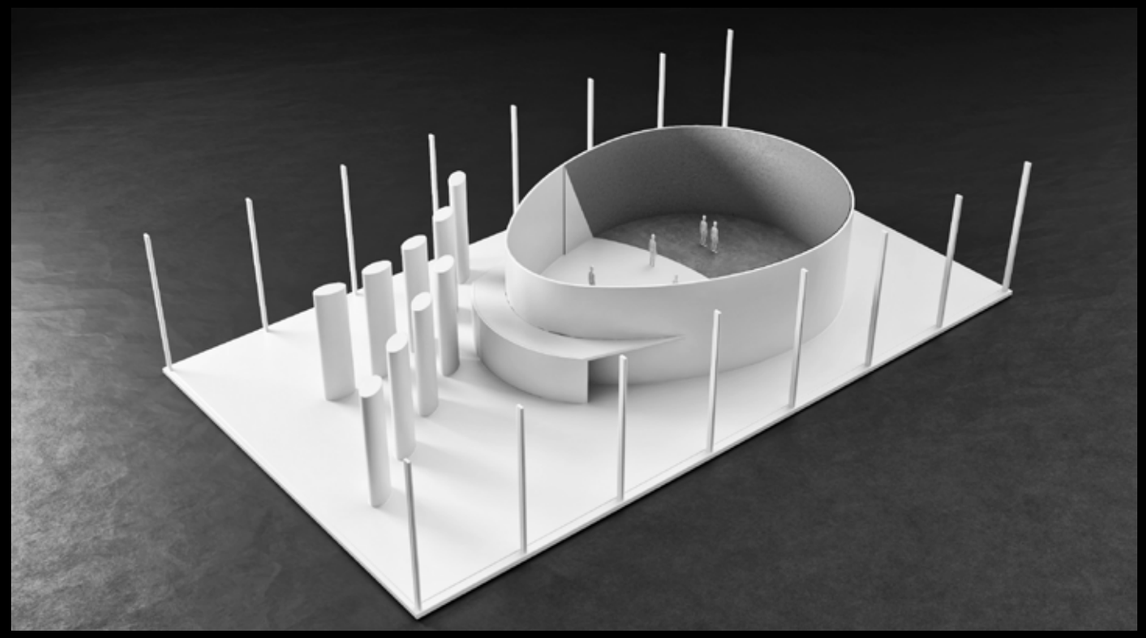


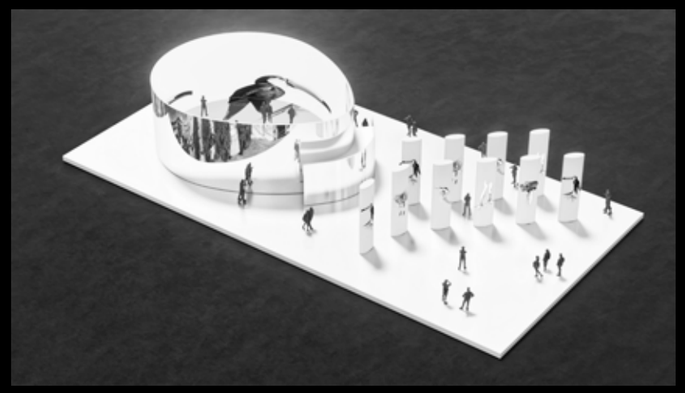


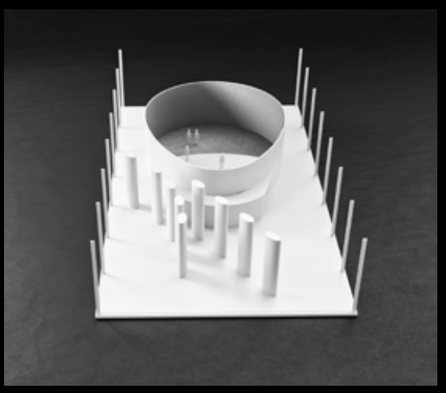


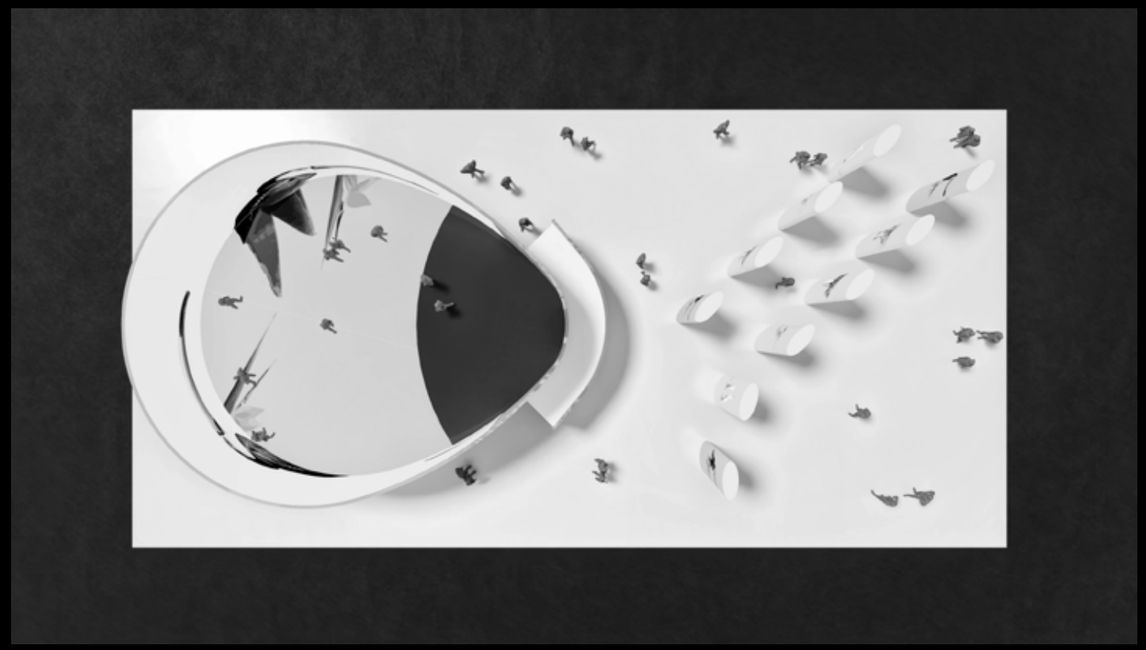


Draft stages – Mobile Pavilion









PICTURES ARE MADE IN THE HEAD

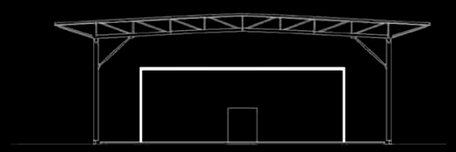
Dipl.Ing. Gerhard Mitterberger
Architecture, building and structural engineering services

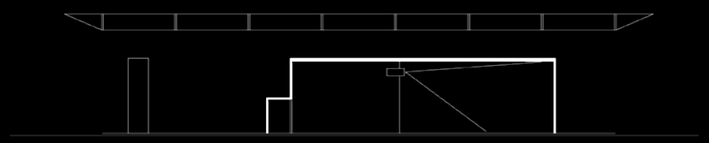
One of the human body's essential tools for generating imagesis the eye.

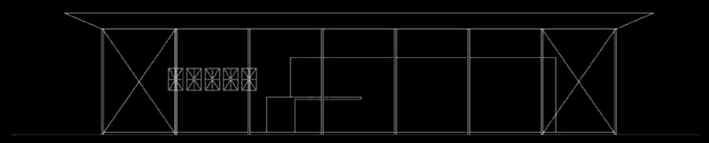
The projection room, the black box, is the technical equivalent of the human eye: the cornea becomes the threshold controlling incident light and acoustics, the pupil the portal, the retina the projection area.

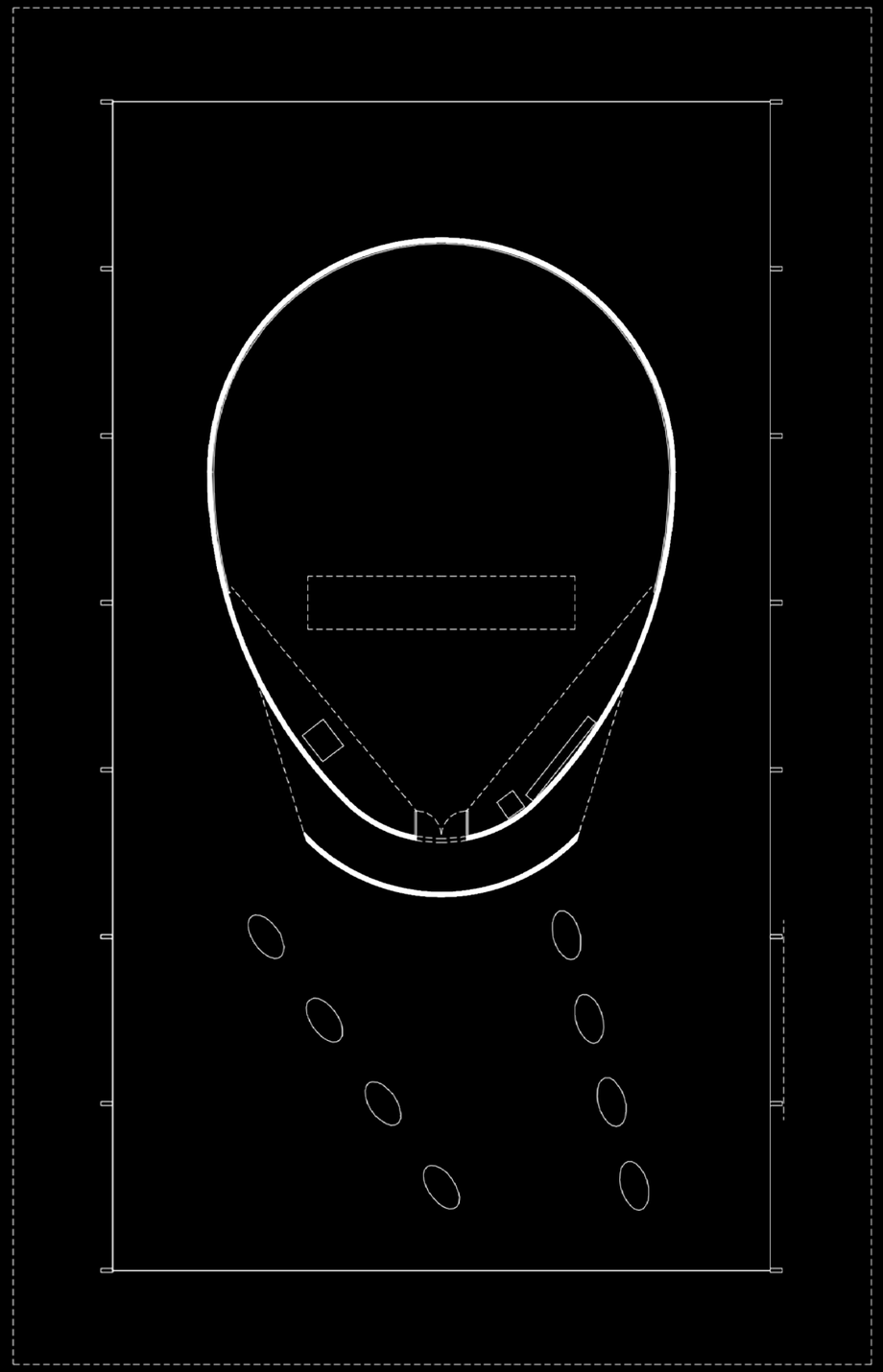
The hardest surface is indeed the mirror. On the one hand, the object dematerializes in the image of the surroundings, on the other hand, one's own reflection on approaching is the greatest counterpoint to the invitation. This hard surface makes the eye a mystery, a show-case of the special, arouses interest and the desire to explore the contents.

Between the temple and the pavilion, the mirrored eye presents itself to the public, accessible and open.



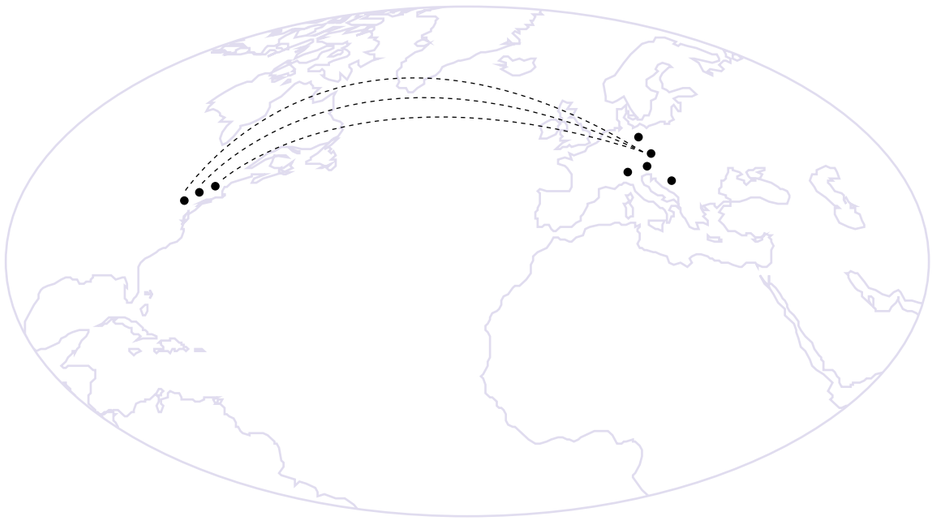




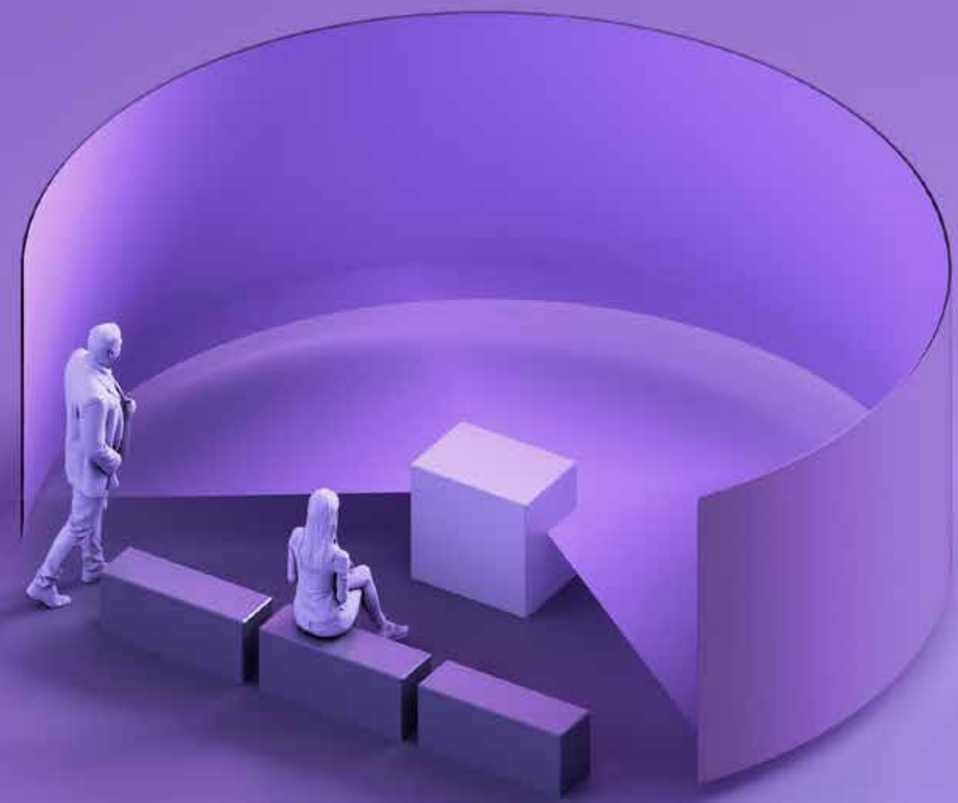


Floor plans (Arch. DI Mitterberger Gerhard ZTGmbH)

ROOM VERSION OF THE PAVILION FOR AUSTRIAN CULTURAL FORUMS



The contents of the STEIERMARK SCHAU 2023 mobile pavilion will be made available in a “room version”, for which a separate display suitable for touring has been developed. The aim is to show this version in selected Austrian cultural forums. The cinematic content on the topics of art, climate change and space exploration will be transformed into an immersive visual experience on a semi-cylindrical screen. This exciting and informative visual world is complemented by a special sound module.



Heldenplatz, Vienna, 03/22–04/04/2023

Alliance between science and art

UNDER ALIEN SKIES

Astrid Kury
Curator, art historian

About the concept of the exhibition

THE UNIMAGINABLE

"Wondering feels so much better than knowing the answer" – this is how Thomas Macho begins his introduction to an exhibition that, also based on his suggestion, mostly raises questions. The starting point is the consideration of what it is like to live under alien skies. This is because, on the one hand, the sky is becoming increasingly alien in these times of climate change and, on the other hand, considering the fact that more than 5,000 exoplanets have been discovered so far, we have a chance to learn about a steadily increasing variety of completely different atmospheres and unimaginably alien skies.
The borderlands of what can be imagined have always been a space for art. And each new discovery made in space exploration pushes the border of this realm of imagination just a little further. The enthusiasm and joy of discovery in these two extreme fields of research – the poetic penetration of the world and the exploration of its limits – are combined in this exhibition in an attempt to present an open perspective of the future and, as sociologist Elena Esposito recommends, to develop and practice techniques that will enable us to prepare for unexpected and surprising aspects of the future.[1]

We are living in a new age on Earth called the Anthropocene epoch.[2] Since the Industrial Revolution took place around 1800 and at a pace that has only accelerated in the last decades, human activity is interfering in significant ways with biological, geological and atmospheric processes and structures on Earth. Thus, the existing natural areas of the Earth have predominantly become an anthroposphere. Particularly in times of climate change, the consequences of human activity are felt everywhere. Even the atmospheric phenomena themselves will "never again be entirely the work of an independent, non-human force".[3]
Climate change is an unintentional consequence of a way of life that endangers the diversity of life on Earth. Already in 2015, historian Dipesh Chakrabarty's clear vision of the future enabled him to associate the fear of climate change with the nuclear threat perceived during the Cold War.[4] This fear is again immediately present, bringing a highly explosive association between these two existential risks with it.[5]
According to Alexander Kluge, our imagination is "an animal poised for flight" that is conditioned in particular to "recognize dangers ahead of time".[6] Acting out imaginary scenarios is a practical way to avoid being paralysed by the pressure to change in times of great upheaval. Therefore, as an experimental space for imagining the unimaginable, art, climate and space research are brought together in this exhibition. This is, on the one hand, carried out in an attempt to put a positive spin on what is uncertain, undetermined, unimagined, and, on the other hand, done with the knowledge that the possible future stemming from our present time is actually shaped by the work carried out when envisioning the future in the present. For it is certain that this possible future emerging from the present would be completely different without our intervention.[7]

"attentiveness, sensibility and passion […] through such qualities, art may contribute to an >education of attention< which seems to be crucial for an epistemology of the Anthropocene" [8]

Museums and their exhibitions are a place where the imagination can develop, "a true energizer of a human being and society", says Victoria Noorthoorn, director of the Museo de Arte Moderno, Buenos Aires.[9] Exhibitions are indeed an extraordinary medium through which knowledge is transferred. Their creation is guided by the aim to creatively connect what is initially unrelated, relying on the imaginative potential of the viewer, retaining indeterminate moments, and converting conventions of showing objects. The best example of such a procedure is the exhibition concept "Repair" by Kader Attia (dOCUMENTA 13). For this art installation, Attia searched for hidden connections, formed new "pairings" (re-pair), and combined them with a narrative about the injured, the broken, and its healing process (repair).
This exhibition uses the example of atmospheres and atmospheric conditions to raise awareness of what is self-evident and, at the same time, necessary for life, while raising the question of what life is and what it needs. By referring to atmospheric research, the local or regional dimension is connected to the planetary dimension – an aspect that is also characteristic to the climate crisis – in the form of a dynamic between sense of place and sense of planet.[10] And, at the same time, this reflection on atmospheres offers the viewer the possibility to explore the aesthetic dimension of ecological questions. At its centre is a cinematic exhibition in which art and research are merged, featuring commissioned works in video art and composition developed in collaboration with scientists in fields of climate and space research, who share insights into progress in their research areas via short statements. Information about how atmospheres are created, change, and differ from one another is thus staged as an atmospheric interplay between research mediation and its distillation into art.
The characteristic feature of the SHOWING STYRIA pavilion is the immersive video-based exhibitions, which are shown in a specially designed exhibition architecture. Here, light serves both as a medium of projection and a theme in and of itself: as an atmospheric element and the basis of life, it joins the artistic debate. And the light that reaches us from distant stars form the basis of research on the atmospheres of distant exoplanets.
The projection takes place in the exhibition, not only on the 30-m-wide wall, but also on the floor. In addition, 360° spatial surround sound is provided by the Ambisonic system with 29 loudspeakers, which was developed and supervised by the Institute for Electronic Music and Acoustics at the University of Music and Performing Arts Graz. The extraordinary experience of being able to immerse oneself fully in pictorial spaces is channeled as a forceful format of mediation, sensitizing people to the special balance that exists between life and the atmosphere, which has already been seriously disrupted by man-made emissions (i.e. greenhouse gases). The poetic alienation effects inherent to contemporary art – blurring, overwriting, displacement or interference – thus also operate on an allegorical level, providing a description of the present state of the world.
The cultural scientist Thomas Macho and the composer and musician Andreas Karl, Director and Junior Fellow, respectively, of the International Research Centre for Cultural Studies (IFK) are contributors to the exhibition. They describe how productive it can be to imagine the unimaginable by referring to the Roman philosopher and poet Lucretius and his didactic poem De rerum natura – On the Nature of Things. Lucretius based his ideas of cosmology from the random movements and deviations of flowing atoms. He developed the idea of an infinite universe (including "exoplanets") along with analogies that allowed him to explore even the unimaginable. Lucretius is thus still an inspiring model as a person who used poetic forms to convey highly complex scientific knowledge by invoking vivid narratives.
This is also one of the interests of Christiane Helling, astrophysicist and Director of the Space Research Institute (IWF) at the Austrian Academy of Sciences in Graz, which served as a cooperation partner to create the exhibition in the pavilion. The IWF specialized in planetary sciences early on, establishing a research focus particularly on the atmospheres, clouds, and climates on exoplanets. The IWF scientists also provided access to Styria's most distant outpost: a microphone built by the IWF that sits on the surface of Saturn's moon Titan and which recorded the wind sounds during the descent

phase. (These recordings have now also become the source material for some art contributions.)
The IWF has been involved in many international space missions, with the next one launching in April 2023: JUpiter ICy moons Explorer is ESA's first mission to the outer solar system, which will, among other things, examine Jupiter's icy moons for potential habitats.
The success of the natural sciences has always been based on the ability to maintain a diversity of perspectives; these perspectives were opened up through interdisciplinary cooperation that took place among incredibly diverse international teams. Christiane Helling now also deliberately incorporates the perspective of art into this diverse array, taking a completely different approach to address the many open questions raised by space exploration. The collaboration between art and research for this exhibition, therefore, was one that grew out of a mutual sense of fascination: As scientific work of the team of young space researchers from all over Europe at the IWF complemented the artistic work, the sense of curiosity about how the unimaginable realms of the exoplanetary worlds would be interpreted in art grew steadily. And the artists, whose Styrian connections extend to Costa Rica, Brazil, Canada and the United States, found the face-to-face communication with scientists producing the latest research on exoplanets and their atmospheres very enriching.
The aim was to translate these insights into atmospheric research on planetary, ecological, social and aesthetic levels into an awareness of atmospheres. As the astrophysicist Luca Fossati once pointed out in a conversation: Life and the atmosphere, that is the story of a relationship. The desire to initiate new relationships is a fundamental driving force of the exhibition. It creates connections between art and research, between natural and cultural science, between image and sound and within the international, even cross-continental, network of the Styrian art scene, all of which represent facets of a mutual relationship that carries the exhibition and weaves its themes together.

ASPECTS OF ATMOSPHERES

"If you took away the Earth's atmosphere, not only would all the car tires blow out, but all organisms (including us) would explode. [...] The organisms have simply developed along with this external environment. Therefore, this is inseparable from them, is inscribed in them." [11]

The Earth's atmosphere has made the complex diversity of life on the planet possible in the first place. The celestial bodies found in our solar system, where traces of alien life are already being sought on Mars or on the icy moon Enceladus, are not the only examples that highlight how unique the Earth is, with its perfect interplay of life and atmosphere; the examples of the more than 5,000 exoplanets that have already been discovered since 1995 also highlight this.
But we are not only talking about the atmosphere as a vital layer that protects the planet. On a metaphorical level, we are also talking about social atmospheres that play an important role in our relationship to the world, and which we also sense in our immediate environment.[12] And not only is our perception influenced by atmospheres; all our decision-making processes are too. This also implicitly raises the question of the extent to which contemporary art can be an actor in all the necessary transformations that will have to be shaped to navigate the climate crisis. The described cooperation in terms of diversity and cross-border cooperation are probably also essential for the development of the new climate culture, in which relationships and their quality prove to be especially decisive. The climate crisis will not be solved by technology alone; a different relationship with nature is needed, as well as more awareness of social and interpersonal atmospheres, which invite people to take responsibility and take action.
Everything that lies in between or as an "and" – this is how atmospheres are best described, said philosopher Gernot Böhme, who died in 2022 and was a central theorist for the aesthetics of atmospheres.[13] A deeper awareness of atmospheres also grows from this heightened awareness of the perception of atmospheres, according to Böhme. Perhaps contemporary art, with critical reflection and orchestration of perception, is the perfect method for studying atmospheres and making them more tangible. Creating atmospheres is, after all, a special aesthetic expertise in all genres of art. In this context, it is striking that, in the long history of art, atmospheric phenomena are iconographically assigned mostly to moments of crisis and change, but also to those of reconciliation and departure – a tradition that has been extended, especially in the video contribution from Muntean/Rosenblum, into the digital metaverses of the present.
Just as ecology is a study of relationships, there is also a need for a "climate change" in the atmospheric realm, more attention being paid to the role of social as well as aesthetic elements – this probably is also a plea against the "uglification of the world"[14] resulting from the poisoning and impoverishment of the environment, in every respect. The question of whether the aesthetics of nature as an affective-multisensory-bodily experience of environments and atmospheres could not also represent a countermovement here represented the life work of the philosopher Gernot Böhme.[15] This is also the direction taken by the author Charles Eisenstein in his broad reflection on the climate crisis, who writes, "What would happen if we gave new value to the local, the immediate, the qualitative, the living and the beautiful?" [16] The so-called "pincer grip that economy and ecology" have on a planet with finite resources marks "disturbances in relations between society and nature": [17] If we are to have a climate that enables life to thrive, we must "help life in all of its forms to flourish", as Eisenstein said, because social relations exhibit the same problematic patterns as those between humans and nature.[18] What is needed is an ecological as well as a social transformation. Climate protection depends on both a good global and local social climate that is based on justice, generational responsibility, and respect for the richness of the cultural landscapes and natural spaces in the immediate surroundings as well as on the entire planet.
The question of how to encourage such a sense of ecological responsibility is directed at the sense of place – in the hope that this sense of responsibility and commitment will also result from topophilia, a love of places or a cognitive, affective, and tradition-rich connection with the immediate surroundings: "We want to help what we love." [19]

Isolation, urban sprawl, destruction characterize the present. Beauty as biophilia in the form of a "beautiful trace", a quality of relationships, can possibly serve as a countermodel. Beauty must be approached consciously; this is what art teaches. In the perception of details and a focussing of

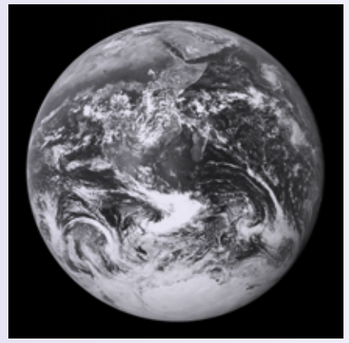
attention on them is a hidden way to access a quality of life that can enrich everyday life in small steps along the way.
The philosopher Wolfgang Welsch also poses the question: Can perception affect the environment? This was the case with the diverse colors of plants or the beautiful characteristics of male birds, where aesthetic sense had an effect that shaped objects.[20] Welsch is convinced that perception is "a means by which the world propels itself forward",[21] because "aesthetic preferences and decisions are at play" everywhere. Every form of reality – nature, cultural structures, the way the environment is technically shaped – contains an infinite amount of perception. Aesthetics is therefore just "one of the constituents of reality".[22] In view of this prominent role played by the cultivation of the senses, the relevance of the aesthetic for ecological discourses may also become apparent.
In the field of Environmental Humanities, the representations of nature, natural environments, and ecological contexts in the history of ideas and culture are explored in order to recognize which ideas and concepts underpin them. But what being human truly means is also questioned, and the different images of human beings in their diverse cultural, economic, social, and political forms are discussed, with the aim of achieving an appropriate and conscious understanding of their relationship to the world and to nature. What role does language(s) or the arts play in this relationship, and can they have an impact on its possible transformation? Art not only finds new images and uncovers a topic that appeals to many senses, but the artistic confrontation also provides, as it were, an "interdiscourse" between scientific research and the everyday world, with which individual-existential aspects as well as social spheres are transversally touched upon. In this way, new visual approaches or narratives are also developed, which can possibly be used to create a new aesthetic as well.

BRIDGING DIMENSIONS

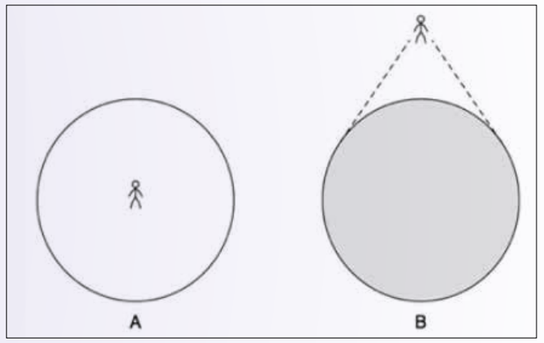
"Possibly, in some ideal future, our loyalty will be given only to the home region of intimate memories and, at the other end of the scale, to the whole earth." [23]

Today, according to anthropologist Marc Augé, who is known for his concept of "non-places", we are experiencing "an unprecedented dimensional shift, the transition to the planetary age",[24] which entails "an unheard-of shift in scale" that could be described as "the end of the prehistory of humanity as a world society".[25] For the first time, the term globalization "actually refers to the whole planet" and it accordingly extends into space – we are in space, and we always have been. The so-called hyperobjects, as the philosopher Timothy Morton called them and which are in focus in the Anthropocene epoch, such as global warming, are far too large to be illustrated representationally: "Hyperobjects are huge and so permanent that they go far beyond human notions of time and space." [26] They do not fit into any aesthetic framework, which is a fundamental dilemma of the Anthropocene concept.[27] How can this overdimensionality in terms of extent, complexity, and time nevertheless be translated into an exhibition practice that mediates between art and the audience? And what are the perspectives on the world that support the way we try to understand it?

The first image that embodied a sense of planet was an image of the Earth from afar – a photo from Apollo Mission 17 taken on Dec.7, 1972, which shows the planet as a whole, fragile, and finite object. This is a photo that deeply influenced concepts such as Marshall McLuhan's global village and James Lovelock's Gaia hypothesis, where the Earth is presented as a super-organism. This is a photo that triggered a back-to-nature movement, even though it was created by investing massive amounts of technical effort.[28] Also in the 1970s, at the beginning of the first major environmental movement, the anthropologist Tim Ingold distinguished between two perspectives on the world that can also represent the scientific paradigm shift taking place today.



Blue Marble, © NASA



Tim Ingold, The perception of the environment: essays on livelihood, dwelling and skill, London, New York 2000, P. 209

Ingold distinguishes between the "sphere" as a position in the midst of what is observed from the "globe" as a view from outside of the observed. Whether one experiences oneself as part of the whole or as being in a distant, observing position leads to the formation of a different relationship with what is observed, also resulting in a different kind of responsibility, interaction, and use.[29] Today, the focus is directed toward being part of a communal fabric, toward turning away from firmly defined, fixed boundaries such as identity, living beings, or individuals: "Living beings are cosmopolitan entities in which different lives meet." [30]
Due to its immersive spatial concept, the exhibition prioritized the spherical perspective, i.e. that of being in the middle. But it also includes, on a formal level, the global perspective, for example, by presenting satellite images or thematic maps, and especially when it comes to the barely representable planetary dimension.

COSMOGRAMS OF THE PRESENT

An image is “the butterfly of the human consciousness, fluttering from one medium to the next” […], “the basis of spiritual life, the stuff of dreams and fantasies, of memory and the prospect of the future”.[31]

Pictorial concepts for categorising nature and localising human beings are part of every cultural history in the world. World images are produced by using many cultural techniques, linguistic and visual, narrative and imaginative, epistemic and architectural, says philosopher and cultural scientist Thomas Macho.[32] Such representations of the order of the cosmos, such as the ground plans of religious buildings, can also be interpreted as scientific systems used to create order, texts, search engines, or cartographies in the modern age.
Science research shows that image media such as visualizations, maps, or graphic representations not only serve to convey knowledge, but also “contribute significantly to how knowledge is shaped and ordered, prove to be elegant instruments for establishing consensus and unity, can function as a school of vision, standardize observed objects, and trigger processes of typological pattern recognition”.[33] The science historian and anthropologist John Tresch from the Warburg Institute at the University of London therefore calls for the development of cosmograms corresponding to the present – open, fragmentary, subjunctive…. This is not so much to preserve testimonies of destruction, but to serve as signposts pointing in a utopian direction, and to reveal the “intertwined levels of technical, cultural, economic, and ecological engagement with the planet”.[34] Cosmograms, then, represent new images of the world, enabling people to constructively meet the current challenges associated with upheaval. In their art video, Azra Akšamija and Dietmar Offenhuber show how knowledge forms and media define the images we form of the world by juxtaposing two “cosmograms”. On the one hand, this represents the orally transmitted sensual-practical form of navigation by means of a “star compass” and, on the other hand, the mapping of the Milky Way by using the rapidly growing scientific database SIMBAD. At the same time, they also illustrate different relationships to the world, where, according to Tim Ingold’s sketch, one is formed from the position of observing from within, and the other from the position of an external observer.
The exhibition as a whole is dedicated to the attempt to generate a synergy of science, art, and technology in which research, practice, and poiesis are interwoven. Art is positioned as an elementary contribution that helps to create the constitution of the human world.

[1] Elena Esposito, “The Expectation of Surprise in Risk Markets”, epub.ub.uni-muenchen.de/kdw_12118/data/pdf/esposito-text.pdf (03/08/2023), p. 1.

[2] “For the past three centuries, the effects of humans on the global environment have escalated. Because of these anthropogenic emissions of carbon dioxide, global climate may depart significantly from natural behavior for many millennia to come. It seems appropriate to assign the term “Anthropocene” to the present, … human-dominated, geological epoch, supplementing the Holocene-the warm period of the past 10-12 millenia.” Cf. Paul Crutzen, “Geology of Mankind”, in: Nature (01/03/2002), p. 23.

[3] Ursula K. Heise, Nach der Nature. Das Artensterben und die moderne Natur, Berlin 2010, p. 16

[4] “The anxiety global warming gives rise to is reminiscent of the days when many feared a global nuclear war. But there is a very important difference. A nuclear war would have been a conscious decision on the part of the powers that be. Climate change is an unintended consequence of human actions and shows, only through scientific analysis, the effects of our actions as a species.” See Dipesh Chakrabarty, “The Climate History: Four Theses”, in Ecocriticism. The Essential Reader, ed. by Ken Hiltner, New York 2015, pp. 335-352, p. 349.

[5] Toby Ord, The Precipice: Existential Risk and the Future of Humanity, New York 2020.

[6] Peter Laudenbach, Alexander Kluge, Zum Himmel, zur Hölle, zum Mehrwert. Interviews 2021-2001, Fürth 2022, p. 11.

[7] Esposito, “The expectation of surprise in risk markets”, 2023, p. 7.

[8] Wolfgang Struck, “Genesis, Retold: In Search of an Atlas of the Anthropocene”, in Environmental Humanities, vol. 5, 2014, pp. 217-232, p. 230.

[9] Victoria Noorthoorn (Museo de Arte Moderno, Buenos Aires) on museums and their exhibitions, in: András Szántó, The Future of the Museum. 28 Dialogues, Berlin 2020, p. 35.

[10] Ursula K. Heise, Sense of Place and Sense of Planet. The Environmental Imagination of the Global, Oxford University Press 2008.

[11] Wolfgang Welsch, Im Fluss. Leben in Bewegung, Berlin 2021, p. 18.

[12] Tonino Griffero, Atmospheres. Aesthetics of Emotional Spheres, Surrey, Burlington 2010, p. 6.

[13] Gernot Böhme, Atmosphere. Essays on the New Aesthetics, Frankfurt am Main 1995, p. 22f.

[14] Charles Eisenstein, Climate. A New Perspective, Berlin, Munich, Zurich, Vienna 2018, p. 16.

[15] Gernot Böhme, “What does ecology have to do with aesthetics?”, In: DIE ZEIT, 28 (July 8, 2021), p. 51.

[16] Eisenstein, Climate, 2018, p. 191.

[17] Klaus Dörre, “Alle reden vom Klima. Perspektiven sozial-ökologischer Transformation”, in: Aus Politik und Zeitgeschichte, issue 3-4 (2022): Green New Deals. bpb.de/apuz/green-new-deals-2022/345723/alle-reden-vom-klima (01/27/2022).

[18] Eisenstein, Climate, 2018, p. 176.

[19] Ibid, p. 268.

[20] Wolfgang Welsch, Wahrnehmung und Welt. Warum unsere Wahrnehmungen weltrichtig sein können, Berlin 2018, p. 81.

[21] Ibid, p. 88..

[22] Ibid, p. 84.

[23] Yi-Fu Tuan, Topophilia: A Study of Environmental Perception, Attitudes and Values, New Jersey 1974, p. 102.

[24] Marc Augé, The Future of Earthlings. Ein Manifest, Berlin 2019, p. 43.

[25] Ibid, p. 29.

[26] Timothy Morton, “Zero Landscapes in den Zeiten der Hyperobjekte”, in: Grazer Architektur Magazin, 7 (2011), pp. 78-87, p. 80.

[27] “Here is the fundamental dilemma of the Anthropocene: Its stage as well as its actors are too large, not only for scientific research but for artistic representation. […] To observe the Anthropocene, a rather large stage is necessary. Both in spatial and in temporal dimensions, humankind has entered a room of an unfamiliar (and incomprehensible) scale that is defined by nature or more specifically by the forces of geological and biological revolutions and evolutions. […] The scale requires abstraction”, see Struck, “Genesis, Retold”, 2014, p. 223 f.

[28] According to: Ursula K. Heise, Sense of Place and Sense of Planet. The Environmental Imagination of the Global, Oxford 2008, p. 22 f.

[29] Tim Ingold, “Globes and spheres: the topology of environmentalism”, in: same as above, Environmentalism. The Views from Anthropology, London 1993, pp. 209-218.

[30] Merlin Sheldrake, “Verwobenes Leben”, in: Bernd Scherer, Olga von Schubert, Stefan Aue (eds.), Wörterbuch der Gegenwart, Berlin 2019, p. 127

[31] W. T. Mitchell, “Iconology 3.0”, in: Scherer, von Schubert, Aue (eds.), Wörterbuch der Gegenwart, 2019, p. 115f.

[32] Thomas Macho, “Wie entstehen Weltbilder?”, in: The Big Picture - New Concepts for a New World (Cat. Ars Electronica 2012), ed. by Hannes Leopoldsteiner, Christine Schöpf, Gerfried Stocker, Ostfildern 2012, pp. 27-31, p. 27.

[33] Bruno Schelhaas, Ute Wardenga, “Inzwischen spricht die Karte für sich selbst'. Transformation von Wissen im Prozess der Kartenproduktion”, in: Steffen Siegel, Petra Weigel (eds.), Die Werkstatt des Kartographen. Materialien und Praktiken visueller Welterzeugung (= Laboratorium Aufklärung 9), Munich 2019, pp. 89-107, p. 90.

[34] John Tresch, “All diese Bilder”, in: Scherer, von Schubert, Aue (eds.), Wörterbuch der Gegenwart, 2019, p. 96.

EXOPLANETS –

IMAGINABLE WORLDS BEYOND OUR SOLAR SYSTEM

Christiane Helling

Physicist, Director of Graz IWF of the ÖAW

SCIENCE AND ART EXPLORE THE BOUNDARIES OF WHAT IS KNOWN.

Scientists at the Space Research Institute (in German: the Institut für Weltraumforschung or IWF) at the Austrian Academy of Sciences study planets inside and outside our solar system, their atmospheres and magnetic field interaction. An integral part of the institute's work is to build space instruments. Their development is triggered by and closely linked to research questions that drive the IWF's scientific progress.

Extrasolar planets are planets outside our solar system. When an exoplanet passes in front of its central star, it reduces the amount of light received on the Earth, and this difference can be observed with telescopes. The starlight can shine through the outer layers of the planet's atmosphere, changing the spectrum of the light. The change in the spectrum is observed with telescopes such as CHEOPS or the James Webb Space Telescope. Computer codes that solve the fundamental physical laws in the form of mathematical formulae then enable the scientific interpretation of these observational data. These codes help us to investigate the chemical composition of extrasolar planet atmospheres and the impact of clouds on our observations. We also aim to answer other questions such as: How does an extrasolar planet retain its atmosphere? How does the atmosphere of extrasolar planets change over time? What is the climate like on extrasolar planets?

Our work goes far beyond the actual discovery of a planet's atmosphere alone. We strive to understand and build on these discoveries, expanding our knowledge on the population of extrasolar planets. We know that the ensemble of extrasolar planets is highly diverse, but we have yet to identify a planet which we can call an Earth twin. Examples of extrasolar planets that are considered "Earth-like" are Kepler-422b and Kepler-62 e, which are 1206 and 980 light years away from our solar system, respectively. The hopeful designation of "Earth-like" refers to planets with similar physical properties to Earth, such as the planet radius. Kepler-422b, for example, has a radius 1.3 times that of the Earth, and Kepler-62e has a radius 1.6 times the Earth. Venus, with a radius 0.96 times the size of Earth's, is smaller than the Earth and very Earth-like in the astronomical sense, however, we know that Venus's hydrogen sulphide clouds would destroy human cells. We also know that, on average, every star in our galaxy is hosting at least one planet. This adds up to more than 100 billion planets outside our solar system within our galaxy, the Milky Way, alone. Furthermore, we know that all these planets can have different atmospheres, and we can use computer programmes to simulate these for different planets and predict the cloud cover. However, we cannot travel to these planets to verify what we think we know. The planets in our solar system present a more accessible opportunity to test our predictions. For this reason, linking solar system research with extrasolar planet research, just as we have at the IWF, is critically important.

In our everyday research, we are repeatedly confronted by the limits of our knowledge. On the one hand, this ensures that we constantly question our understanding of nature; on the other hand, it means that we continually broaden this understanding. In doing so, we go beyond the boundaries of what we have known so far, thereby pushing these boundaries outward. Collaboration with researchers in other creative fields is thus inevitable. The creativity that is also inherent in art enables us to take a different approach toward the knowledge we gain. Our role in developing the content of the Showing Styria Mobile Pavilion was, therefore, to make the facts we know (as scientists) more readily available, to explain them, and to present them using all means at our disposal, but also to highlight what is still unknown. This communication between science and art shows where we as scientists can formulate our knowledge comprehensibly, and where art makes our new findings more accessible. Enthusiasm by itself is not enough, however, and a basic level of understanding is needed on both sides to communicate what is not understood. Therefore, this is where the circle of interaction connecting science and art closes; this becomes an alliance that has the goal of making what was previously incomprehensible outside our solar system more perceptible and, in time, tangible for all.

The dialogue with art provides a different way to access the knowledge we have gained. In Showing Styria, we focused on how unique the Earth's atmosphere is in a cosmological context, because – according to what we know now – we cannot have a plan B for the Earth. The diversity of the 5300 extrasolar planets thus far known is large, and the unique features of the Earth make it stand out. We live on a planet with an atmosphere that is precisely adapted to us as living beings. We have not yet discovered an atmosphere identical to Earth on any other planet either within or outside of our solar system. And still, we are part of an entire universe; a handful of the, Earth's air carries the evidence not only of our lives, but also of our cosmic origin. Ultimately, we have a responsibility to preserve our living environment.

WONDERING

Thomas Macho
Philosopher and cultural scientist,
Director of the IFK of the University of
Art & Design Linz in Vienna

"Wondering feels so much better than knowing the answer", emphatically states Phoebe, the protagonist of the debut novel The Invisible Circus (1995) by US author Jennifer Egan, who won the Pulitzer Prize in 2011. This exclamation is preceded by the simple question, "Where am I?",[1] which, however, does not receive an answer. The word "wondering" means "to ask oneself", but also "to wonder" or "to be amazed". In this sense, the German translation created by Günter Ohnemus, "sich zu wundern und zu staunen" is much better than "to know the answer".[2]

"Where am I?" In German, "Wo bin ich?" As children, we liked to state our full addresses: the street, house number, floor, district, postcode, city, country…and then…Earth, Space. The question alone is steeped in wonder and amazement. Where am I and how did I arrive here? We usually say that a child that is born comes into the world; but where do the children come from? This is what even the smallest children ask; their "first problem", notes Sigmund Freud, concerns "not the question of different sexes, but the riddle of where the children come from?" [3] A friend tells me that when she was a bright, relatively enlightened girl, she asked her mother where she was before she arrived in the womb; and the mother both piously and wisely replied, "In God's intention". Obviously, the mother did not want to frighten her daughter with the idea of nothingness; however, the girl then searched for hours on the map for a place called "God's intention".

Where am I? Where are we? By asking these questions, Ernst Bloch begins his encyclopedia of hopes and utopias: "Who are we? Where do we come from? Where are we going?"[4] Meanwhile, we are carrying out space research and searching for exoplanets, investigating their atmospheres, and learning more about conditions under which alien life is possible. All the while, we know that we will never reach and visit these planets, nor will "God's intention". Still, the mere acts of questioning, wondering, and astonishing remain fascinating, enlightening, and invigorating, even in our dreams. Some philosophical and scientific works are expressed in exclamation marks and strive to reach conclusions. More rarely, we encounter expressions in question marks, as exemplified by Ludwig Wittgenstein. His most beautiful questions and examples deal with Martians, the inhabitants of foreign stars; they do not find any answers, but only the certainty, "It is not how the world is that is mystical, but that it is."[5]

[1] Jennifer Egan, The Invisible Circus. London 2012, p. 59.

[2] Jennifer Egan, Die Farbe der Erinnerung, novel translated from US original by Günter Ohnemus, Frankfurt am Main 1999, p. 91.

[3] Sigmund Freud, Drei Abhandlungen zur Sexualtheorie [Three Essays on the Theory of Sexuality], in: collected works, Vol. 5: works from 1904–1905, Frankfurt am Main 41968, p. 27–145, here p. 95

[4] Ernst Bloch, Das Prinzip Hoffnung [The Principle of Hope], Frankfurt am Main 1973, p. 1.

[5] Ludwig Wittgenstein, Tractatus logico-philosophicus. Logical-Philosophical Treatise, Frankfurt am Main 71969, p. 114 [statement 6.44].

APPROACHES TO THE UNIMAGINABLE

Conversation between Thomas Macho [1] and Andreas Karl [2]

[1] Philosopher and cultural scientist, Director of the IFK of the University of Art & Design Linz in Vienna

[2] Composer and musicologist, IFK-Junior Fellow

Thomas Macho:

The most general questions asked by this exhibition project are “Where do we come from, and where are we going to?”. These are questions about what we cannot really know, and that probably cannot be answered easily by either carrying out exoplanet research or by making a close study of the history of philosophy.

The Epicurean philosopher Lucretius wrote a wonderful doctrinal poem on this subject entitled De Rerum Natura. This was shoved into the background and forgotten for centuries, probably because no one knew how to react to his atheistic worldview in Christian times. Giordano Bruno was also burned at the stake because he sympathized with the teachings of Lucretius.

Andreas Karl:

Lucretius writes about almost everything. He writes about sexuality and what marriage should be like, how hearing and sight is possible; he writes about animals and plants; and he writes about the planets in our solar system and how they relate to the Earth. To him, everything is one thing, so to speak. He can grasp the largest and smallest things and create a theory about them, because he imagines things based on his own observations and relates them to himself. This enables him to make a mental leap and imagine things that one does not yet understand or that one cannot yet even think about. It is a cognition method for imagining the unimaginable.

In the 16th century, an avid fascination in this instructive poem developed, which provides very simple and vivid analogies. Exploring the unknown by using analogies, however, has become less significant due to the scientific gathering of data and, at the latest, since the time of the Enlightenment. But there are always moments, even in science, when something cannot be explained. This was also a topic in the discussions that took place with the exoplanet researchers, because the realm of the unimaginable is precisely the thing that is interesting to discover and explore. To do this, you need to take alternative approaches to reinterpret the data, which is where something like this difficult concept of creativity comes into play.

Thomas Macho:

This is where science fiction can build bridges between science and fiction: by providing a narrative that is not only fuelled by the analysis of data, but also puts the stories at the center.

Andreas Karl: If you try to put something into a narrative, you always use analogy. In the work of Lucretius, for example, it's sheep that move like atoms. It's an instructive poem, and that's a nice way to explain the world.

Thomas Macho: The book Chronos by Guido Tonelli, one of CERN's directors, becomes increasingly difficult to understand because of all the research details included. That's why, in the chapter entitled "Life as a Particle", he tries to describe these unimaginably small particles – which only exist for a very short time – not only scientifically, but in ways that encourage us to imagine their lives. The story that he tells becomes a kind of family saga that has something charming, fun. You could say that this is a legacy of Lucretius. Without this form of narration, there would be no way to reach a broader audience when communicating science. The impressive thing about De Rerum Natura is that this narrative operates without including heroes and heroines, without jealous deities and world creators – and without fear. This is something completely new. Fear and guilt are fundamental emotions in the history of religions. Whenever something unforeseeable happened, the question of guilt arose: What did we do wrong?

Andreas Karl: Lucretius describes nature as the sum of specific entities that do things, communicate, or want something. But they want something that has not yet been given a name. The atoms don't merely fall to the ground by chance; they somehow organize themselves. It is not a higher power that does this.

Thomas Macho: In light of the contemporary theory of New Materialism, the question has gained even more weight considering what would happen if matter and things were not only imagined passively as being malleable, shapeable, or destructible, but as being active objects that pursued their own interests. What would it be like if one were to distance oneself from the old dichotomies of form versus matter, where form provides the intellectual access to the world, and the silent and passive matter is what is needed to be able to form something? It is fascinating to think that this idea is already found in the work of Lucretius, and that this idea was so huge that it had to be buried for centuries.

Andreas Karl: It can be a different approach to dealing with the world than always seeing it as reaction-reaction.

Thomas Macho: One begins to understand exoplanet research from a certain point of view: Ways out are now being sought in a hopeless situation that seems to be caused by climate change and the destruction of our home planet. Then one realizes that the questions "What can we do?" and "Where can we go?" are, first, not easy to answer, and, second, that much more complex and difficult answers are required than simply fixing our relationship with the planet.

If you look at this carefully, you are already being thrown back into a kind of cycle of guilt – even if it is meant metaphorically and allegorically – by this discussion about Gaia being angry with us. Suddenly you find yourself thrown back into these old realms of myths and religions, and discover that history is again being written to say that we have brought guilt upon ourselves, and, in this case, a mighty goddess has been angered who now threatens to destroy us. This cantus firmus (same old song and dance) continues to exist down through the millennia, but, thank God, there are always a few who try to think otherwise.

Andreas Karl: This need for another world, which seems to be so strong right now, also fits in with some of the descriptions in which Lucretius speaks of the walls of the universe, that is, of that place where the world ends. It seems as though society is already so oversaturated that it longs for the final, climatic catastrophe, so that this world will finally come to an end and make way for a new world, wherever that is to be found. This fetish-like obsession with the end is also often found in popular culture, in science fiction, and in art. This is a dangerous development.

Thomas Macho: This development follows these old patterns, like those seen in the story of the Great Flood, in which the basis of a new covenant is created between God and humans, as well as with the animals. Incidentally, it only struck me recently that it is unclear why the fish should not have survived the Great Flood; they should have managed that easily.
In any case, the idea behind these catastrophic views of the future is always that something completely new, something much better will come afterwards, right up to the point of the apocalypse, where the stars fall from the skies, as in the vision of John Patmos. But there are countless other apocalypses cited from that time: After these, the truly good world will be established, where

you don't even need celestial bodies anymore, and no starlight is needed, because everyone is so happy and so radiant that we don't need any more bodies of light....

Obviously, an old longing for the downfall, for the culmination, for the catastrophe is deeply entrenched, because then something new, better, more just, more loving could finally begin.

This would also be the form of utopia in which art and philosophy, projects and exhibitions would no longer be needed. Everything would be good, there would be no more death, and one could live forever, and everything that the Christian religion has associated with the Fall would be finally be over and forgotten. This is a strangely skewed concept, but one that we apparently find difficult to release, even after millennia, and not the least because it has become deeply embedded in all sagas, myths, and religious rituals and now even into popular culture.

Andreas Karl: It's more a matter of finding starting points in the history of science that offer a different way of thinking and a different way of dealing with a future that does not inevitably require destruction, but also one that enables us to take it upon ourselves to create a better world.

This other world is indeed another way of thinking, and not a new physical place. The exoplanets should not represent a false or dangerous source of comfort, a means of feeding the idea that a distant way out exists, and that might lead us to neglect our own planet.

Thomas Macho: In one of his stories, the American science fiction author Ted Chiang describes how God experiments many times with the subject of creation. Humans then slowly begin to realize that they are living in a version of creation that God was no longer satisfied with and had already turned away from in order to begin the next creation experiments.

This is a somewhat eerie story. On the one hand, it expresses an experience that is reflected in the grandiose constructs of world creation and the promise of a reward in an afterlife and, on the other hand, in the sense of disappointment due to the next catastrophe. Incidentally, the Stoics's doctrine of eternal recurrence foretold a great collapse that would occur every 2,000 years, either through the Great Flood or the World Conflagration.

Lucretius had a completely different idea about the end of the world – without a catastrophe.

SENSOR AND TRACES, INTUITION AND AURA

Thomas D. Trummer
Curator, art historian,
Director of Kunsthaus Bregenz

Sensor and traces

In a convention sense, images are understood as illusionary surfaces that are separated from external reality. Frames mark territories and self-referential internal spaces, which become visible in small fields. Long before the panel painting we are familiar with from museums became established in the Western world in the 15th century, people had developed different ways of showcasing images. In prehistoric times, people created pictures in ways that avoided enclosing their subjects. Images of hunts and fleeing animals were adapted to fit the place they were shown and the circumstances. These were not mobile like the panel painting, but were applied directly and irretrievably to the stone of the caves. The pigments used were also largely mineral-based. It may sound strange, but these ancient paintings are beginning to resemble those being created today. This is perhaps because contemporary artists are also exploring hidden times. They do not position themselves within a prehistory, but they seem to be able to look ahead into a posthistory. Stones are depicted, rubble and geological formations. There are no people. In addition, it is striking that they – like their ancient predecessors – try to connect with the ground. The videos seek the closeness, and even the texture, of what they show. The stony surfaces are scanned as if pixels – themselves composed of silicates – could directly reproduce minerals. We see lifeless landscapes, bubbling geysers, wastelands, and icy deserts. Many views resemble panoramas or visual rotations. These are scanned in tracking shots and bathed in synthetic colors to produce slow-moving images. Through the closeness and the unrealistic coloring, these impressions appear to be sensual and careful, even at times eerie like masks of the dead. They are images of lifeless planets. Because unlike the drawings made in prehistorical times, the videos of the present do not show the euphoria and energy, if you will, of human activity and successful survival strategies, but instead emptiness and post-apocalyptic gloom. They could not be more removed from humanity. Viewing the close-ups also makes one think of death. This is not only due to the lifelessness of the landscapes, but the images themselves and, namely with the ontology of the image, which brings an event to a standstill. In the 1950s, the French cultural historian André Bazin compared prehistoric art with film. He discovered that cave paintings showed events depicting activity and euphoria and, at the same time, events depicting death. For example, a spear throw, a fleeing herd, or a dance of joy over a slain animal. Time is arrested in the film, as it is in the act of killing. Today's moving pictures, however, which seem as though they would actually lend themselves to the depiction of moments and emotions – just like film – avoid producing scenes filled with tension. On the contrary, they show neither people triumphing over death nor engaged in hasty actions, but only tentative observation and things slowing down. Machines have taken on the role of the viewer. In the videos, we become witnesses to an anonymized seeking process. Cameras move like sensors, that are following the "traces". The German philosopher Walter Benjamin, who like Bazin was interested in film, spoke of the traces as "a closeness, as far away as that may be". It is this closeness that we feel as we follow the exploratory tours of the screens; it is palpable and sensitive to light, and yet it could not be more remote from human touch.

Intuition and aura

Unlike the images of rocks, other video images lift us up into mysterious atmospheres. They depict movements in stratospheres or unusual climatic events. While some scan the ground, others lose themselves in the elementary particles making up weightless skies. These focus on meteorology, radiological phenomena, magnetic resonance, and magical events that take place in space. Often, one can see only streaks, colored vapors, and toxic mists. The videos seek to eliminate boundaries, not only those nearby, but also those found deeper. We see gases, liquids, and plasmas, but not objects; instead, we see how things break down and their strange components. The unrestricted visual horizon, the temporal expansion, and the gloomy view of the world hint at an understanding of physics that becomes wistful and vague. This is best described by using the word aura. Benjamin also found an apt description for this term, that is, for the "aura". He defined it as "a distance, as close as that may be" and thus as the inversion of the traces.

The two types of images of high elevations and ground are opposed; still, they aim to convey the same fears. While the images of the traces minimize the spatial distance, the aura is revealed in images of the distance. But both are similar in that human beings are no longer capable of mentally synthesizing what they are shown. Instead, they find themself in a state of wonder, experiencing a sense of quiet sublimity overshadowed by a sense of sadness due to their own absence. Their sovereignty over things is lost, along with the framework that formerly secured them.





Drone photos of Heldenplatz, Vienna 03/22–04/04/2023

Tierwelt Herberstein, 04/29–11/05/2023

Exhi-
bition

CLIMATE RESEARCH

Astrid Kury

How is the climate changing?

You can experience the weather, but the climate? Climatic changes are more likely to be associated with memories – for example, how much snow was there at Christmas in previous years? Climate is the summarized and comparative observation and prognostic modelling of atmospheric phenomena, averaged over larger periods of time, i.e. usually 30 years. Just like data from Earth observation by satellites, climate data are also the results of space research. They are depicted by using statistics and represented by using graphics, computer simulations, and thematic maps.

The aim of the exhibition is to raise awareness of the anthropogenically induced changes in atmospheric phenomena, which "will never again be entirely the work of an independent, non-human force" [35] but which we must recognize are a consequence of our way of life. Clouds, for example, embody atmospheric phenomena and play an essential role in shaping aesthetic moods in landscapes. The artistic examination of clouds, especially during the discovery of the landscape, led to increasing autonomy in the aesthetic, and the artistic means, through the creation of their abstract and ephemeral world of forms. It was precisely at the time of the onset of industrialization and the development of scientific meteorology that a "veritable cloud trend" began in painting.[36] Today, clouds no longer have only the spherical quality of a supernatural order: "We no longer know what clouds 'harbor', "says the cultural scientist Hartmut Böhme, "they can harbor the rain desperately needed for the land as well as a catastrophic storm that even floods entire areas of this country and which climate researchers tell us is the result of anthropogenic climate change. The cloud can 'harbor' acid rain that kills forests or the poison gas in World War I, in the Iraq-Iran war, in Seveso. The cloud 'harbors' and transports the exhaust gases, soot particles, industrial dust over hundreds of kilometers or even the combustion gases from jets." [37]

The current Climate Atlas Styria collects data on temperature and precipitation from the province of Styria and allows a time comparison over the last 60 years, as well as a forecast extending nearly as far. At the same time, this is a period of time that encompasses the lifespan or realm of experience for many of the people living in Styria.

Communicating research results is often difficult, because a great deal of prior knowledge is needed to be able to read and understand the data presented. In most cases, exhibitions cannot fully convey this prior knowledge, which is why we have chosen a way to directly integrate scientific findings into everyday experiences. The most striking element of climate change in Styria is the increase in the average temperature, which can be seen by examining the increase in the numbers of days of extreme heat and tropical nights and the decrease in ice and snow. Memories of earlier summers, featuring rare bathing days or warm outdoor evenings, especially in the mountain valleys of Upper Styria, illustrate the contrast between these and the future forecasts in which tropical nights are no longer an exception, even in the Ausseerland region. The decrease in snow depth and snow cover in winter is mainly discussed in relation to winter tourism. But the landscape and agricultural changes will probably have an even greater impact. Snow normally slowly seeps into the ground at the right time in spring without running off prematurely or evaporating. This supply of moisture is especially important at lower elevations. When the vegetation begins to emerge in spring, the rivers then fill up the water reservoirs. And in summer, the melt water from the glaciers does the same.

When the forest landscapes of Styria change, and the mossy spruce forests give way to colorful mixed forests, and when winters turn into a prolonged season of transition, then the identity and attitude toward life in Styria will also change along with the traditional cultural landscapes, not even considering the economic transformation that will have to

take place. The descriptions of Josef Mündler, who has designed strategic plans for hail defence in Southeast Styria over the past 30 years and developed these into a scientifically relevant showcase operation, are also impressive. According to his descriptions, the directions in which thunderstorms move are changing with increasing frequency and forming superstorms more often. He himself makes routine flights through thunderstorm clouds and tells how, starting from cloud towers that extended up to about 10,000 m high in the year 2000, the same storm clouds now reach almost twice as high; at the same time, these superstorms are affecting more limited areas, with dramatic effects due to the extreme amounts of precipitation. The frequency of these and other extreme events, such as the long-lasting drought that affected all of Europe in 2022, will continue to increase. On the other hand, there is a need to promote ecological and societal resilience due to the expected impacts of climate change. The strong increase in soil sealing is also driving climate change, whereas measures for renaturation (such as river landscapes), the preservation of ecosystems (forests, meadows, moors), and sustainable agricultural use are vital solutions to address climate change and its consequences. Therefore, the exhibition will also address the issue of land use, the progressive extent of which is far too high according to the EU Soil Strategy for 2030, especially in Austria and also in Styria.

Maps and atlases are media that are predominantly used in the natural sciences, allowing a compact amount of information to be presented effectively. In the course of the cultural-scientific spatial turn, there was increased interest in maps as a medium of communicating information and their cultural, social, ideological, or metaphorical implications, which also define the rules of their representation and use.[38] Maps are highly abstract in terms of their capacity for "merciless generalization" and, at the same time, provide concrete information through their spatial references.[39] Meanwhile, the aesthetic application of these maps, i.e. the visual representation of the data layers contained, is highly relevant because it allows the information contained to be immediately read. In particular, animated or digital map database management systems make it possible to move among the various spatial dimensions, such as linking the smallest details to the larger overview, linking different data layers and describing their interactions in heterogeneous ways (satellite image, graphic elements, change of perspective) that can be viewed simultaneously, or even depicting change processes. In such a multi-layered presentation of geoinformation in map systems, local and regional developments in climate change are embedded at a planetary level as a "modernist collage, which has now turned global, digitally dynamic, and interactive",[40] as the ecocritical literary scholar Ursula K. Heise writes. In this dynamic practice of switching and zooming between different contexts and dimensions, she sees a way to deal with information and structures that corresponds both factually and metaphorically to the desired eco-cosmopolitanism framework – evoking a planetary consciousness in local location – and gives it an appropriate means of expression. [41]

[35] Heise, Nach der Natur, 2010, p. 16.

[36] Grischka Petri, "Wetter und Kunst. Chiffren der Kontingenz, Kontingenz der Chiffren", in: Georg Braungart, Urs Büttner (eds.), Wind und Wetter. Kultur - Wissen - Ästhetik, Munich 2018, pp. 105-138, p. 118.

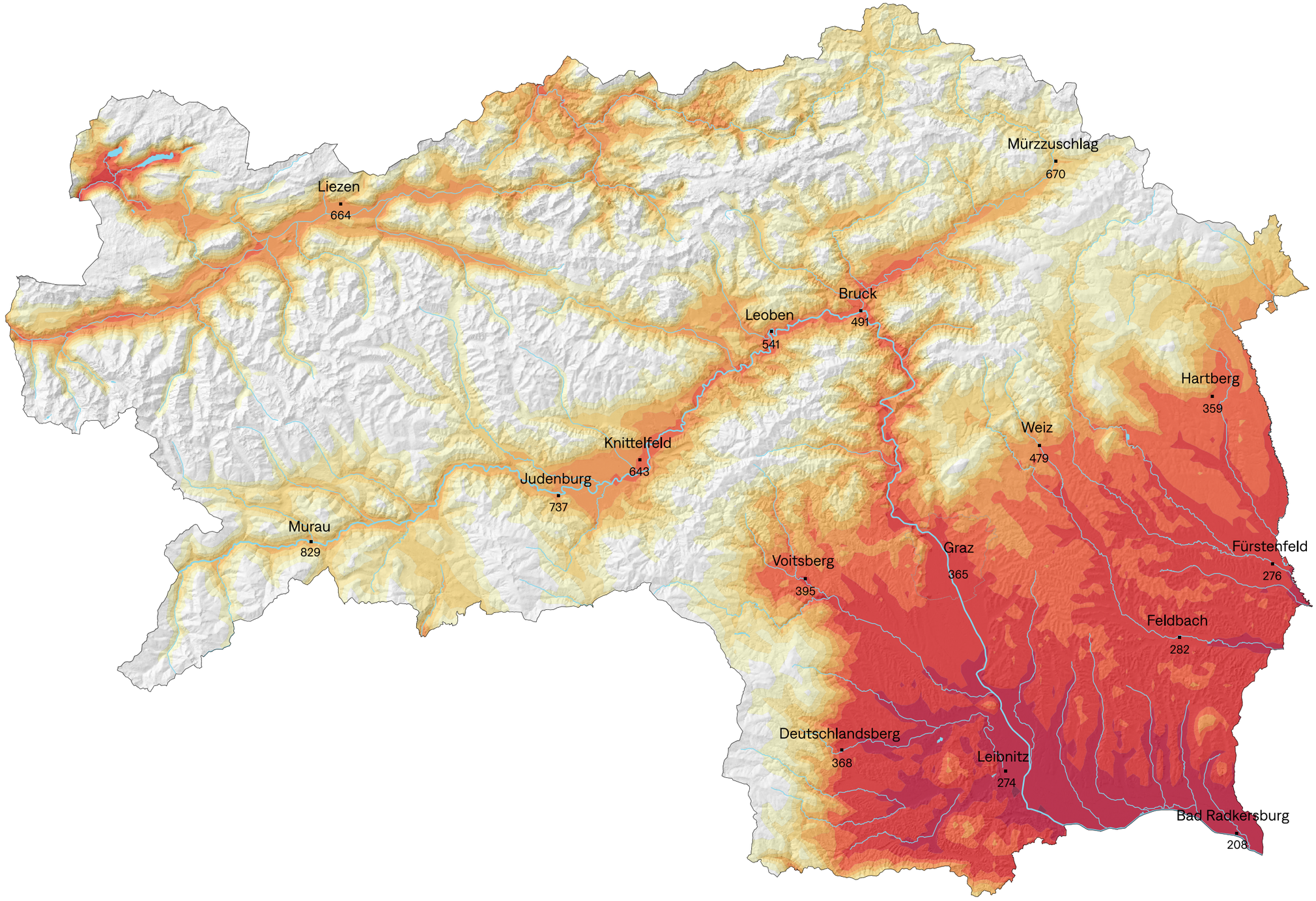
[37] Hartmut Böhme, Aussichten der Natur. Naturästhetik in Wechselwirkung von Natur und Kultur, Berlin 2017, p. 78.

[38] Olaf Breidbach, "Kartenspiele", in: Siegel, Weigel (eds.), The Cartographer's Workshop, 2019, pp. 259-284, p. 260.

[39] Struck, "Genesis, Retold", p. 230.

[40] Heise, Sense of Place and Sense of Planet, 2008, p. 67.

[41] Ibid, p. 67.



Days of extreme heat, Worst-Case scenario
RCP 8.5 2071–2100

Days [number of]

0 6 12 18 24 30 36 42 48 54 60

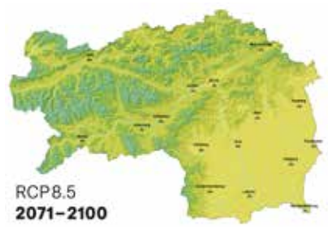
CLIMATE ATLAS STYRIA

The current climate atlas for the province of Styria includes data on the Styrian climate from 1961 to 2100. SHOWING STYRIA 2023 shows an excerpt from this. The present accelerated change in climate conditions from 1991 to 2020 is clearly visible, as compared to changes in the climate conditions observed from 1961 to 1990. The possible future climate conditions from 2071–2100 are presented by using three scenarios of greenhouse gas emissions: RCP2.6, RCP4.5 and RCP8.5.

Mean annual temperature

PAST





FUTURE

Middle scenario

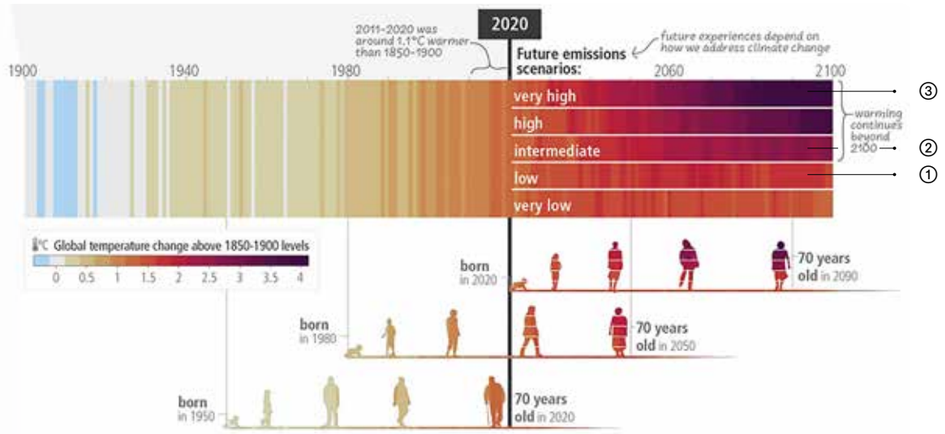


Worst-Case scenario



Paths to the future: climate scenarios

The climate scenarios describe possible pathways that lead to the future up until 2100. They illustrate how the climate will change, depending on how high the greenhouse gas concentrations are in the atmosphere.



Observed and projected changes in global surface temperature

Observed (1900–2020) and projected (2021–2100) changes in global surface temperature (relative to 1850–1900), which are linked to changes in climate conditions and impacts, illustrate how the climate has already changed and will change along the lifespan of three representative generations (born in 1950, 1980 and 2020).

© IPCC Section of SYR Figure SPM 1

① CLIMATE PROTECTION SCENARIO

+ 2 degrees increase in global average temperature by 2100 as compared to pre-industrial levels 1850–1900

The climate protection scenario describes a world in which the risks associated with further global warming could be minimized by achieving massive reductions in greenhouse gas emissions. The international community agreed to a 1.5-degree reduction target in Paris in 2015. All indications are that this goal is unlikely to be achieved unless action is taken immediately.

② MIDDLE SCENARIO

+ 2.1 to 3.5 degrees Celsius increase in global average temperature by 2100 as compared to pre-industrial levels 1850–1900

The middle scenario shows a world in which some climate protection measures have been taken. Accordingly, greenhouse gas emissions would also decrease by the middle of the century. But this decrease would be too little to preserve the climate as we know it.

③ WORST-CASE SCENARIO

+ 3.3 to 5.7 degrees Celsius increase in global average temperature by 2100 as compared to pre-industrial levels 1850–1900

The worst-case scenario shows a climate future in which we continue to use fossil fuel-based energy without any restrictions.

Number of days of extreme heat

PAST

In the climate period of 1961–1990, there were few days of extreme heat in Styria. From the 1980s and onwards, the average temperature rose particularly sharply.

In the climate period of 1991–2020, days of extreme heat became more frequent. Heat days also occurred in the mountain valleys of Styria where there were none before. Days of frost, however, were increasingly rare at lower altitudes, and snow and ice also decreased at higher altitudes.

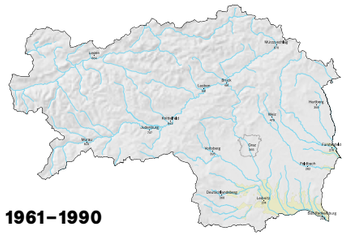
FUTURE

Middle scenario

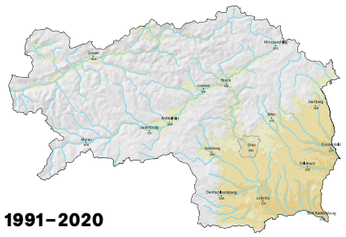
In this scenario, the number of days of extreme heat in Styria increases strongly up until 2100, and especially in Bad Aussee and in South East Styria.

Worst-Case scenario

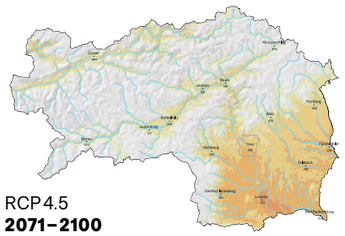
If the Paris climate agreement were to be followed, we would be able to keep the number of heat days at the same level as in the last ten years.



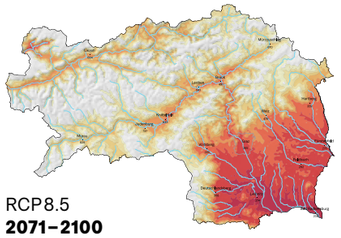
1961–1990



1991–2020



RCP4.5
2071–2100



RCP8.5
2071–2100



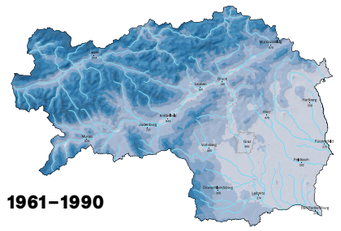
Days [number of]

Decrease in snow cover

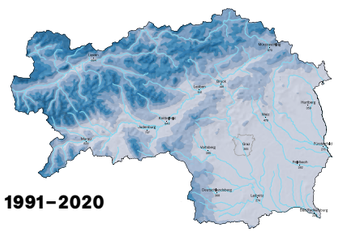
Despite the rising temperatures due to climate change, it will still be cold enough in Styria for late frosts and polar air currents to occur. Frost days, i.e. days when the temperature drops below 0°C degrees, are also becoming rarer. These days ensure that plants can enter their winter dormancy period and prevent pests or non-native species from over-wintering and reproducing. Extreme winters with exceptional amounts of snow may also still happen. However, the typical white winter days are becoming less common. Over the last 60 years, the number of days with snow cover and the average snow depth have steadily decreased, especially at lower altitudes. Overall, the amount of snow is decreasing and the length of time it is staying is get shorter.

Number of days with snow cover (of 10cm and more)

PAST



1961–1990

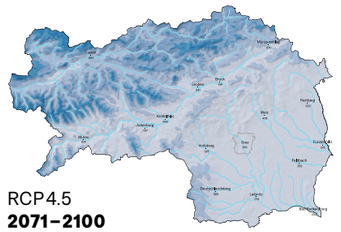


1991–2020

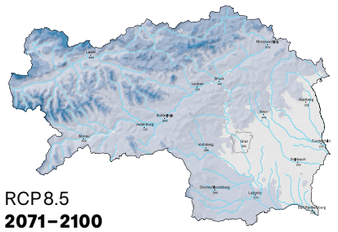
FUTURE

Middle scenario

Worst-Case scenario



RCP4.5
2071–2100



RCP8.5
2071–2100



Days [number of]

Forest in climate change

Styria is one of the most densely forested regions in Europe with around 60 per cent of forested area and thus more than 1 million hectares of forest. The forested area is also increasing because the altitude of the tree line is increasing during climate change.

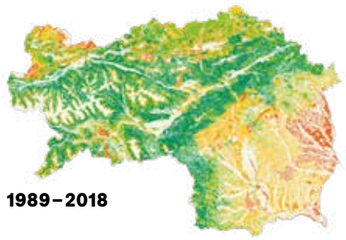


Forest cover Styria © GIS

TREE SPECIES SUITABILITY SPRUCE

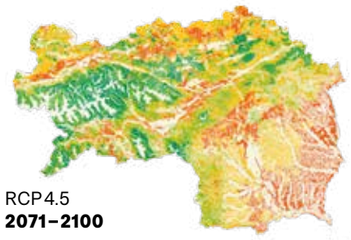
From Radkersburg to the Dachstein, Styria is characterized by its varied forest compositions, with this composition changing more rapidly as climate change occurs. The spruce forests that currently characterize the landscape of Upper Styria, for example, are being replaced by mixed forests. This change in the forest compositions in Styria clearly shows this: The spruce trees are declining, while oak trees are being favored in times of climate change.

PAST



1989–2018

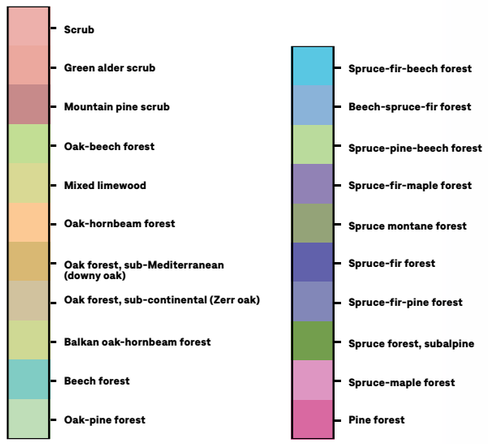
FUTURE: Middle scenario



RCP4.5
2071–2100

Dynamic Forest Typing

As part of the Province of Styria Dynamic Forest Typing project, the suitability of particular tree species for the respective locations was studied in the context of future climate scenarios. These studies support forest management efforts and the adaptation of forests to climate change impacts. Different forest types are defined in a comprehensive system marking site locations. In addition, »traffic lights« and suitability maps are used to describe the average suitability of certain tree species in the different climate change scenarios. These are supplemented by detailed information, such as characteristic indicator plants.



Example forest groups Styria

Swiss stone pine forest

This forest type characterized by Austrian stone pine alone or larch, green alder, or mountain pine occurs in Styria in very cold mountainous areas. The steady migration further up the mountains due to rising temperatures in times of climate change is blocked only by the height of the mountains themselves and by the fact that rugged, rocky regions no longer permit their growth.



Beech-spruce-fir forest

This mixed forest type occurs in cool mountainous areas in Styria and currently occurs rather infrequently. As the warming trend during climate change continues, however, it will become more prevalent, and especially the number of beech trees in these forests will increase.



Subalpine spruce forest

The subalpine spruce forest areas occur in the moderately cold coniferous forested zones in Styria. The cool, high-altitude climate and short growing season favor the growth of spruce. This tree species thrives in semi-shaded areas. As global warming increases, a significant decline will be observed in this forest group.



Oak-hornbeam forest

This mixed forest type occurs in the mild deciduous forested zone in hilly areas of Styria and in the Graz Basin. These forests are home to a wide variety of tree species, including various oak, maple, and elm species, in addition to black pine, birch, yew, quaking aspen, rowan, datura, and others. As climate change continues, this forest type will spread to higher altitudes in the hilly landscapes and into the mountains. New species, such as the Austrian oak, downy oak, or Balkan oak, will be added.



Altered altitudinal limits

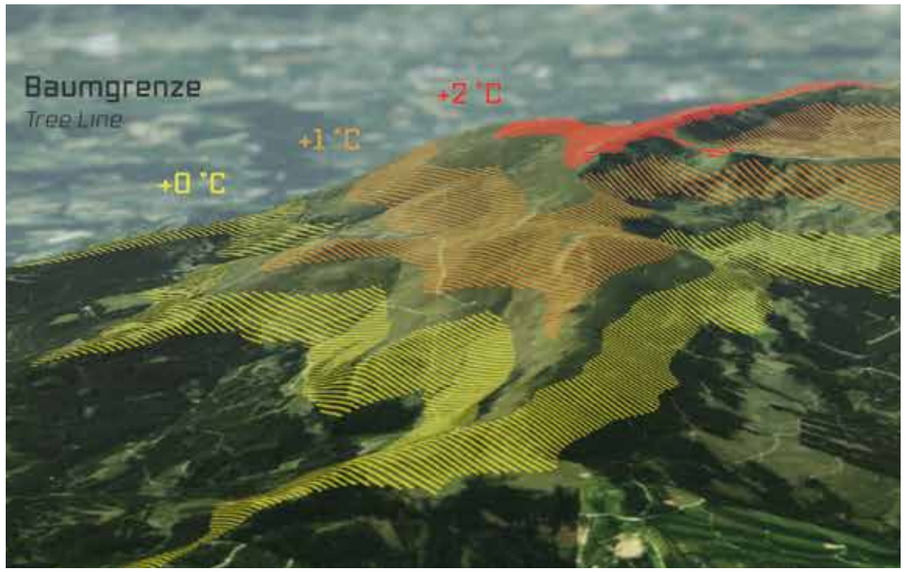


Image altitudinal limits © GIS/Unter freiem Himmel OG

Extension of the growing season

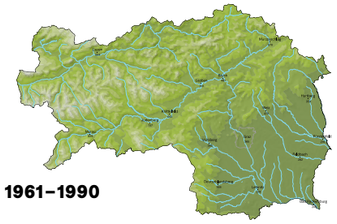
Warming will change the climatic conditions that have been familiar to date, depending on the region. Therefore, the landscapes of Styria will also change significantly. For every 100 meters of sea level, the vegetation period decreases by one week. Each degree more of global warming means a shift in thermal conditions by 200 meters above sea level. This means that high altitude boundaries, such as the snow line and the corresponding habitats of animals and plants, will shift even further upwards than they have already.

Vegetation period

The growing season comprises the number of days that have temperatures at which plants can grow. This season lengthens as temperatures rise. In the worst-case scenario, it would increase from 240 days to at least 285 days, i.e. one month longer.

The grasslands in Upper Styria, for example, would benefit from this extension. In fruit growing regions, however, an earlier start of the vegetation period could lead to increased damage from late frosts. The late frosts themselves are caused by polar cold-air intrusions.

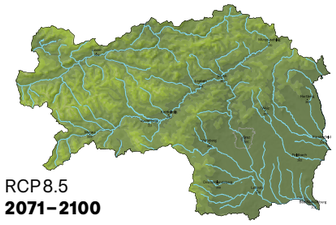
PAST



1961–1990

FUTURE

Worst-Case scenario



RCP 8.5
2071–2100

Days [number]

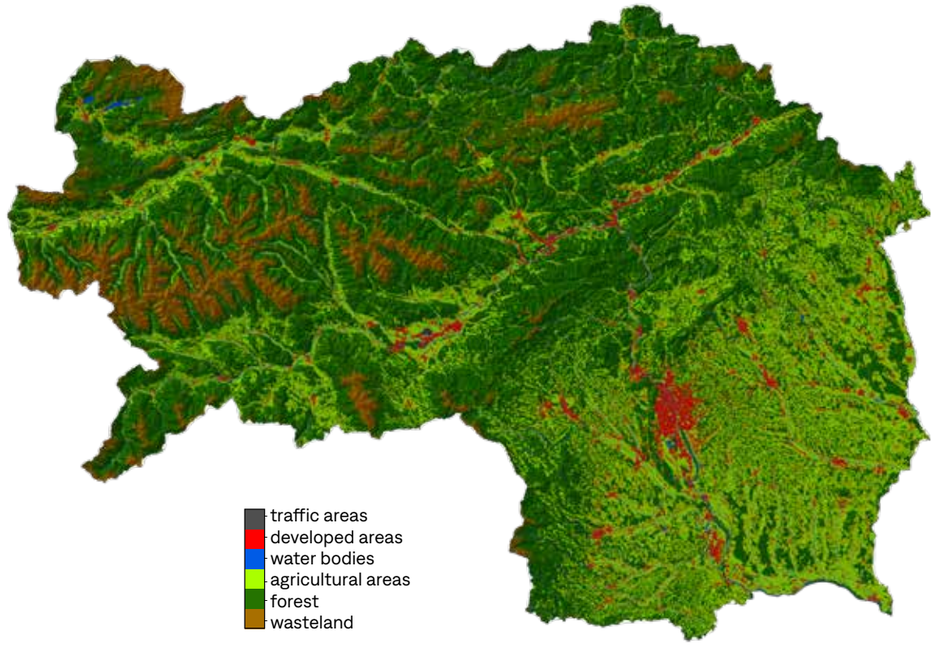
Increasing soil sealing

Land use conflicts

Climate policy is land use policy. We need land for regional food supply, housing, and infrastructure, as well as for nature conservation and alternative energy production. However, the amount of available land is limited.

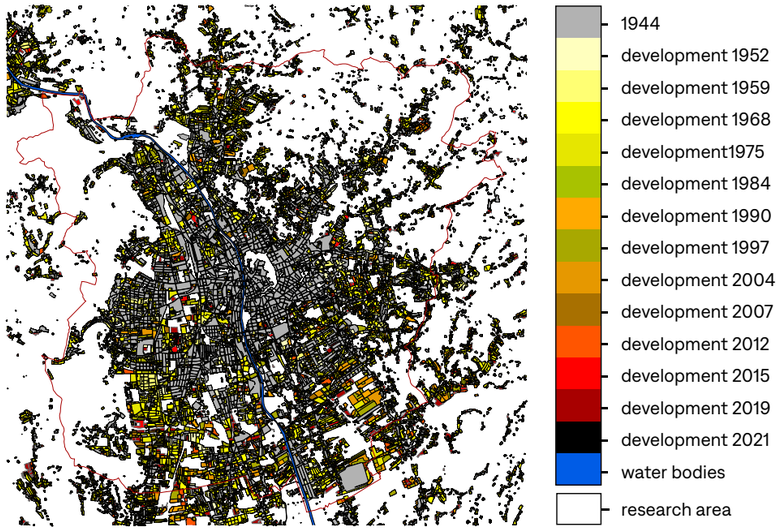
LAND CONSUMPTION

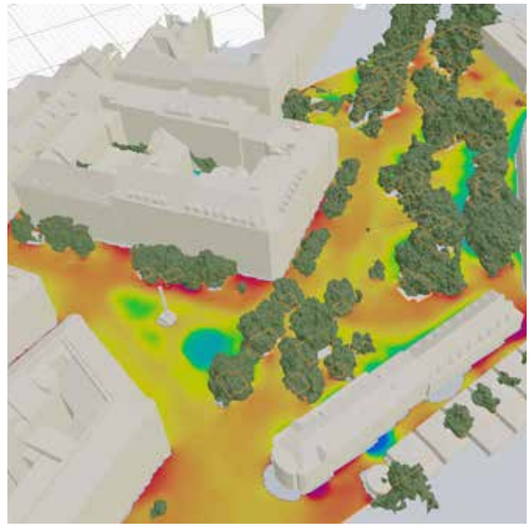
The sealing is just one aspect of the total land consumption. Areas that have been altered or built upon as a result of human intervention are considered to be »consumed«; therefore, they are no longer available as a natural habitat or for agricultural and forestry production.
The land consumption rate is increasing much too rapidly: In Styria, 11 km² of green spaces are consumed every year or 3 hectares every day, which is equivalent to the area of three soccer fields.
The Soil Protection Acts of the Austrian Federal Provinces stipulate that by 2030 only 2.5 hectares per year may be newly consumed throughout all of Austria. And from 2050 and onwards, according to the European Union Soil Strategy, land may only be developed if this consumption is compensated to the same extent, for example, through the renaturation of already developed areas.



Soil sealing and warming

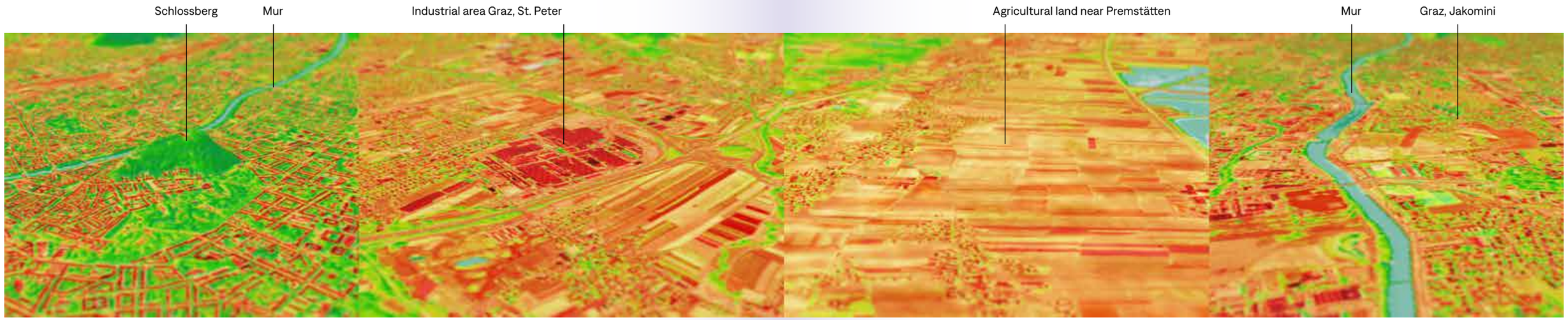
A time series analysis of urban development in the city of Graz was conducted using aerial photo data, and in particular by focusing on the increase in building development.
A high amount of sealing is associated with a high degree of warming and heat storage. Average temperatures are higher in the city than they are in the surrounding countryside. In Graz, this difference averages up to 2.2 degrees Celsius.



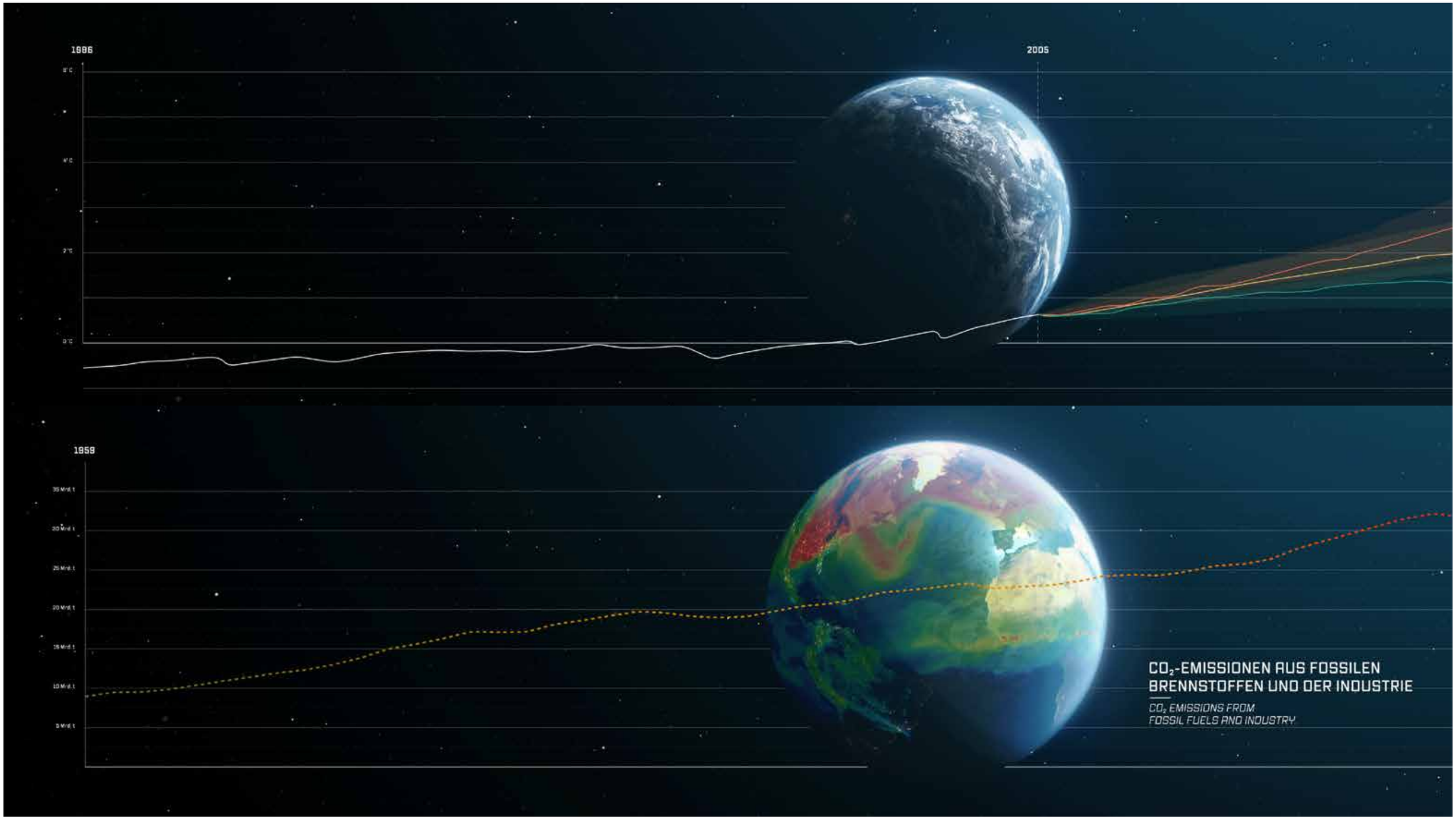


CLIMATE MONITORING GRAZ

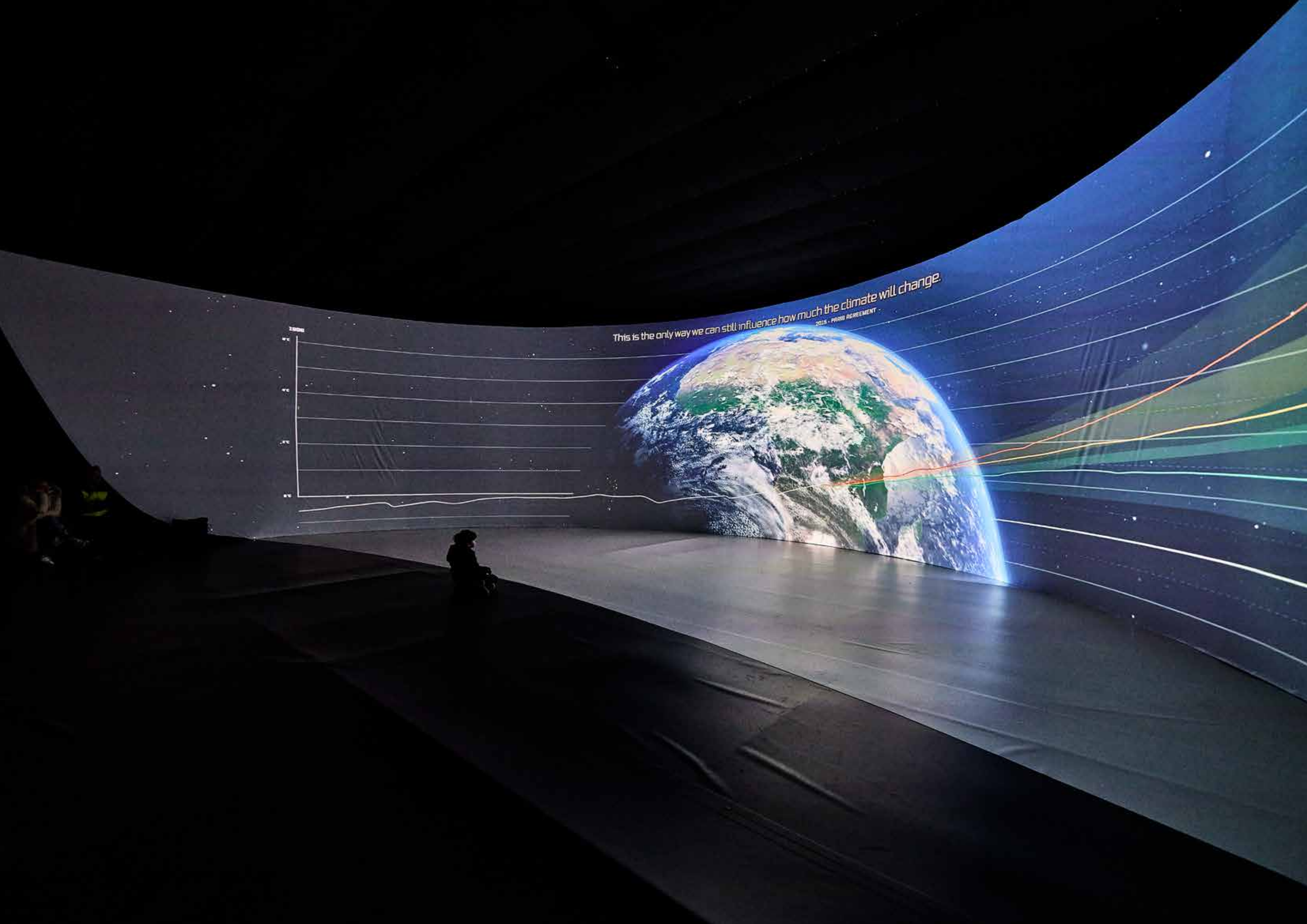
As part of applying the climate information system to the city of Graz, two thermal analysis flights were carried out in the central region of Styria in September 2021. These flights showed that the greatest cooling effects were seen during the morning and the greatest warming effects were seen in the afternoon. In this way, scientists can study how different surfaces and land heat up over the course of the day.
Open spaces reduce overheating in the city, an effect that is referred to as the »urban heat island effect«. This effect can reduce the temperature by up to 4 degrees. Thus, it is important to ensure large relative areas of green space and water, so that the heating effect can be mitigated. Bodies of water have a heat-cancelling effect, because they warm up only slowly over the course of the day. In the case of the Mur, for example, a temperature difference of only about 2 degrees is observed over the course of the day. Trees also mitigate the heat through shading and evaporation, but also through the subjective experience they offer.



Thermal analysis flightg © KIS Graz, Unter freiem Himmel OG



According to the Intergovernmental Panel on Climate Change, there is a direct link between global warming and the man-made increase in greenhouse gases in the atmosphere. Atmospheric CO2 concentrations, despite a short-term drop in emissions during the Covid pandemic, have reached further record levels in 2021 and 2022. They are the highest they have been in at least two million years. Every tonne of carbon dioxide emitted by humans contributes to further global warming. Climate change on Earth is man-made. It can therefore only be prevented from progressing by our actions. Styria must also make its contribution.


This is the only way we can still influence how much the climate will change.
2015 - PARIS AGREEMENT -



Andrea Steiner

What is the future of the Earth's climate?

It has been clearly shown that human activities are causing the current climate change, and primarily the burning of fossil fuels. This human-induced climate change is already resulting in many extreme weather and climate events in all regions of the Earth. The changes we are experiencing will become more severe as further warming occurs. These changes include heat extremes, heavy precipitation, and droughts. Some changes are irreversible. Others can only be stopped by limiting global warming, but only by reducing greenhouse gas emissions strongly, rapidly, and over the long term. We humans are changing the climate, and only we humans can stop climate change.



Andreas Gobiet

How is climate change changing Styria?

We can clearly see the effects of anthropogenic climate change in Styria. For example, there used to be only a few days of extreme heat in the provincial capital of Graz. Today, it is normal to have 15 days of extreme heat, and there have even been more than 30 days! This heat is accompanied by violent thunderstorms, which result in floods, mudslides that can threaten entire villages, or also hail that damages crops. At the same time, it is not getting cold enough in winter. Warmer winters mean less snow. This is bad, for example, for the groundwater, because the meltwater that we would normally see in spring is missing. All of these changes are irreversible. Still, it is incredibly important to protect the climate. Drastically reducing greenhouse gas emissions can help us prevent further temperature increases and even worse things from happening.

SPACE RESEARCH

Astrid Kury

Atmospheres on other planets

We don't think of nature as being nearly big enough, nearly comprehensive enough, nearly differentiated enough, says philosopher Birgit Recki.[42] What actually is nature? Where does it end? Does it also extend into space? Who is allowed to do what in space – and who decides this? Who are we really in relation to nature and to the diversity of life? "Where do we stand, when compared with that which distinguishes us? As legitimate citizens of the world or as planetary outlaws? As a part of or as an enemy of the whole"? [43]
The current "pre-planetary" situation is comparable to that of colonialism, says Marc Augé, in terms of the demand for and consumption of places and resources, the continuation of massive inequalities between states and people, the diversity of migration contexts, flexibility, limits and possibilities, and much more.[44] All that has led to exploitation, destruction, and injustice up to this point is up for grabs as human activity expands into space in the form of productive thought – as concrete scientific and socio-political acts of reflection and exploration and no longer as pure science fiction. The environmental crisis, including its space debris and light pollution, already extends into Earth's orbit. And as the satellites steadily proliferate, one in every 15 points of light in the night sky will soon come from an artificial spacecraft, according to space archaeologist Alice Gorman.[45]

This means that the exhibition explores questions like these: What do atmospheres on other celestial bodies look like, and which weather phenomena are probably quite different? How can we say anything at all about atmospheres on exoplanets with these many light-years of distance between us? What are the basic conditions needed for life to exist; what has to be available? What conditions allow life to thrive? What indicators do we look for? How did water and life appear on Earth, how did oxygen-rich air develop, and how did the corresponding cycles develop? What practical challenges would have to be overcome to create the utopia of a mining station or a settlement in space? What would be dangerous, and what needs to be considered? Who has the greatest scientific responsibility in this area?
Space exploration is one of the oldest and most extreme fields of research in terms of its temporal and spatial dimensions and numbers, methods, and goals. Every step leads us closer to the border of the imaginable. Exoplanet research is a good example of this, as the scope of this research has increased enormously in recent decades. Exoplanets are planets that orbit stars other than the Sun. Many of the exoplanets have an atmosphere. Whether they are habitable or could harbour life also depends on whether they orbit at a certain distance from the central star. Within this habitable zone, certain conditions allow moderate surface temperatures and the presence of liquid water. A planet is considered to be habitable if it has favourable conditions for the development and presence of life, regardless of whether life actually exists on that planet. It is assumed that at least one exoplanet orbits every star in the universe, and 20% of these are found within the habitable zone; to date the existence of more than 5,000 exoplanets has been verified.
Talking about climate change does not motivate people enough to make the necessary changes. But do people even think about the beneficial existence of the Earth's atmosphere, which has been modified by lifeforms in ways that enable life to exist on Earth? Exoplanets offer contrasts to things we take for granted on Earth. Lacking the favorable conditions for life on Earth, the atmospheric models of exoplanets can show how temperatures change atmospheres. How every "small" change, such as the increase in global temperature on Earth by, say, 1.5 °C, already triggers huge changes everywhere on the planet. The unimaginably extreme weather situations seen on other planets are fascinating, but, at the same time, they also mirror the increasingly extreme weather phenomena occurring on Earth. The conditions found on other planets show us both what a privilege and how precarious it is for us to live on a planet that favors life, but is also the only one within our reach.
Exoplanet research reveals the strange diversity of distant worlds. In the exhibition, a fundamental reflection on atmospheres is initiated by the examination of the formation of and changes in the atmosphere on Earth and the diversity of atmospheres found in the universe. At the same time, this requires us to accept the idea of a planetary consciousness in space. In space research, information is predominantly obtained as abstract volumes of data, for example, by conducting photometric or spectral analyses. Therefore, many "landscape" representations are aesthetic renderings in illustrations based on research results shaped by certain ideas and conventions, if they are not, for example, photographs of the famous space telescopes. An essential intention of the exhibition is to encourage a genuinely artistic engagement with aesthetic representations of scientific research, represented by commissions for art projects and compositions, thus bringing the cognitive power of art into this sphere.

[42] Birgit Recki, Nature and Technology. Eine Komplikation, Berlin 2021, p. 7.

[43] Ibid, p. 33

[44] Augé, The Future of Earthlings, 2019, p. 29

[45] "Der Wert des Weltraumschrotts", interview with Alice Gorman, in: DER STANDARD: Beilage Forschung spezial, 12/15/2021, p. 29.

Heldenplatz, Wien 22.3.–4.4.2023

How diversified can life be?

Does diversity determine the world? ①

Why is it difficult to say what life is? ②

If we find life on other planets, what then?

How does life arise?

Why do we explore other worlds?

Can we inhabit other planets? ③

What would happen to humankind if people live on different planets?

Why do we invest in space research instead of saving the Earth? ④

What kind of art would be made under alien skies?

What is the weather like on other planets?

Are atmospheres rare?

What does the wind sound like on an exoplanet?

Can we breathe on another planet? ⑤

Can we imagine humanity emigrating to other planets and saving Earth at the same time, or is that mutually exclusive? ⑥

① Does diversity determine the world? "It is remarkable that the diversity within the solar system of which we are aware is exponentially amplified in the universe with its innumerable galaxies. This diversity enormously extends the space for us to explore." — Christiane Helling, Director of the Space Research Institute of the Austrian Academy of Sciences, Graz, Graz University of Technology

② Why is it difficult to say what life is? "Even though every one of us has been defined as a living being, we have not yet been able to find a comprehensive definition for >life<. The big picture is missing. This also complicates the search for life. Consequently we are looking for measurable signs, so-called biosignatures, left by life as we know it." — Ruth-Sophie Taubner, Space Research Institute of the Austrian Academy of Sciences, Graz

③ Can we inhabit other planets? "In order to actually migrate to another planet, we would first have to find a planet on which we could survive. The factors that make a planet uninhabitable also make it difficult to make the planet habitable, so-called terraforming. To survive permanently on Mars, for example, we would have to rebuild its atmosphere. In doing so, however, we would be up against the same forces that first caused the atmosphere to be depleted." — Patrick Barth, Space Research Institute of the Austrian Academy of Sciences, Graz, University of St Andrews

④ Why do we invest in space research instead of saving the Earth? "Without reaching for the stars, neither satellite observations nor the Internet would exist, for example. Space exploration deepens our understanding of nature by exploring unknown worlds and scenarios. This apparent reach for the impossible allows us to develop new theories and verify old ones. Both are essential for progress on Earth. "— Christiane Helling, Director of the Space Research Institute of the Austrian Academy of Sciences, Graz, Graz University of Technology

⑤ Can we breathe on another planet? "No. It would be a huge coincidence if we could breathe oxygen on another planet. Instead it should be assumed that extraterrestrial atmospheric gases would be poisonous for us humans, as on Venus. It is also difficult if the atmosphere is of such low density that our lungs would practically burst." — Christiane Helling, Director of the Space Research Institute of the Austrian Academy of Sciences, Graz, Graz University of Technology

⑥ Can we imagine humanity emigrating to other planets and saving Earth at the same time, or is that mutually exclusive? "These projects are mutually inclusive. I am firmly convinced that we can only move away from the Earth once we have succeeded in saving the Earth. Both require equally great technological insights." — Christiane Helling, Director of the Space Research Institute of the Austrian Academy of Sciences, Graz, Graz University of Technology

Are atmospheres rare?
Wie klingt der Wind auf einem Exoplaneten?
What does the wind sound like on an exoplanet?
Können wir auf einem anderen Planeten atmen?
Can we breathe on another planet?
Können wir uns vorstellen, dass die Menschheit auf andere Planeten auswandert und zugleich die Erde rettet, oder schließt sich das aus?
Can we imagine that humankind leaves the Earth, and
Was würde es für die Menschheit bedeuten, wenn Menschen auf verschiedenen Planeten leben?
What would happen to humankind, if people live on different planets?
Warum investieren wir in die Weltraumforschung, anstatt die Erde zu retten?
Why do we invest in space research instead of saving the Earth?
Welche Kunst würde unter fremden Himmeln entstehen?
What kind of art would be made under alien skies?

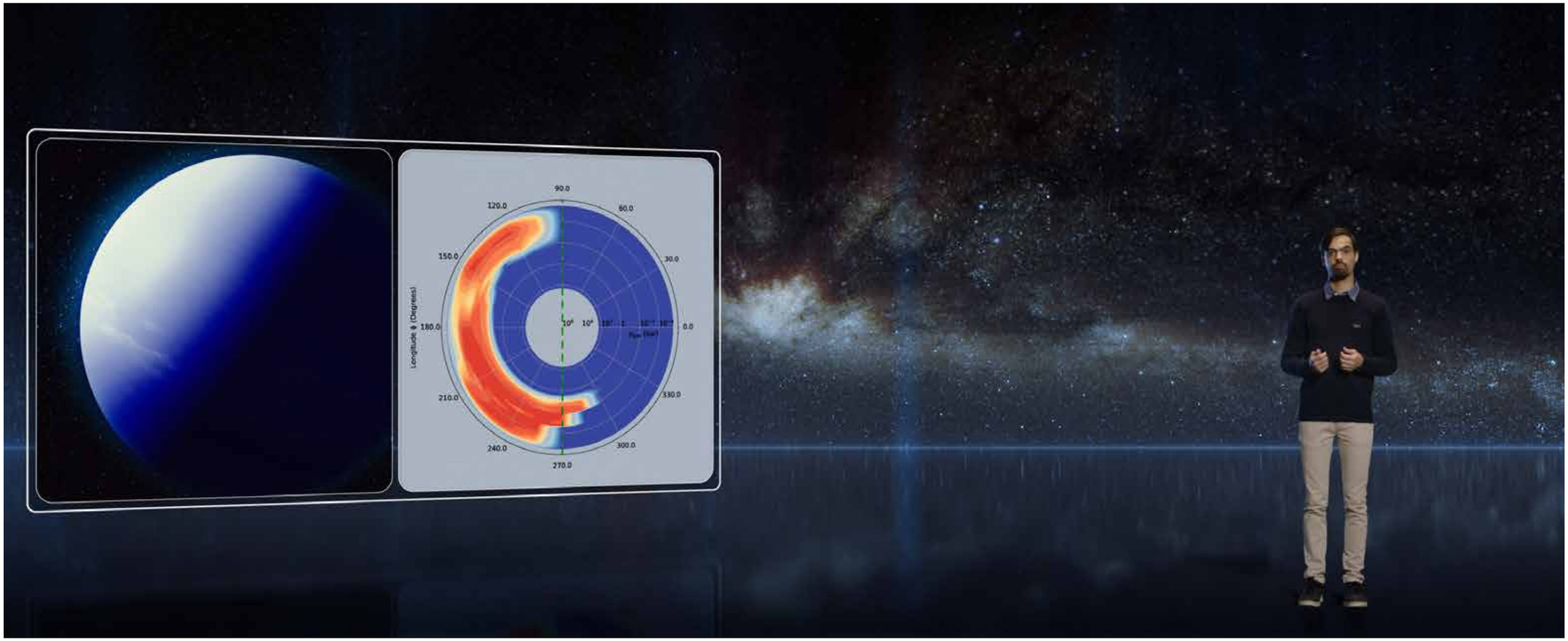
Heldenplatz, Vienna, 03/22–04/04/2023



Helene Lecoq-Molinos

Is the Earth special?

We have discovered more than 5000 exoplanets and, so far, none of them are exactly like Earth. The Earth is far enough from the Sun to be habitable, which means that the water on the surface of the planet can remain liquid. This is why there are oceans on Earth. The size of the Earth and its distance from the Sun make it possible for the Earth to have an atmosphere which allows us to breathe and protects us from meteorites and damaging radiation. We also have the Moon, which stabilizes the rotation of the Earth and, together with the system of tectonic plates, prevents drastic changes in our climate. Many criteria need to be met to ensure that a planet can host life. And this is why the Earth is unique, and we need to take good care of it so that it remains this way.



Dominic Samra

What’s the weather like on other planets?

Most of the exoplanets we have found are much different from the Earth. Many are much larger and are completely made up of gas, so they have no surface to land on. Their atmospheres are mostly composed of unbreathable hydrogen gas, which can give the sky a deep, almost navy-blue colour. Some of them are extremely hot – thousands of degrees – and these skies would glow red just from the heat. These planets also have winds blowing around them at many thousands of km/h. Many of these planets are completely covered in clouds, but these are not made of water. Instead, they are made of fine mineral dust composed of the same materials that make up gemstones on Earth: diamonds, rubies, or sapphires. Overall, these would be difficult worlds for humans to survive on, and they would be even worse places for an astronomer to conduct research on.



Jan-Philip Sindel

Are day and night places or times?

On Earth, we think of day and night as times - it is day when we can see the Sun in the sky, and it is night when we cannot. This phenomenon is caused by the Earth rotating on its axis. But when we look at exoplanets, it becomes much more difficult to define day and night. Many of the exoplanets that we know of orbit very closely around their host stars, even much closer than Mercury orbits around our own Sun. As a result, the amount of time it takes for them to rotate on their axis is the same as the amount of time it takes for them to orbit around their host star. The same thing happens to our Moon, which is why we only ever see one side of it. In the same way, the same side of these planets is always facing the star, so they have one eternal ‘day’ side and one eternal ‘night’ side. So, night and day are not times on these planets, but places.



Nanna Bach-Møller

How do we study exoplanets?

It is not possible for us to visit exoplanets yet. But this does not stop us from exploring them in order to search for life in space. We can do so without going there by making observations and conducting experiments. What we can observe is the light that passes through the atmosphere of a planet. When living beings breathe, they change the atmosphere around them and thus change the color of the light that we observe. In order to understand what the light from an exoplanet can tell us, we can conduct experiments to simulate these atmospheres either in the laboratory or by using computer simulations. By studying these simulated atmospheres, we can investigate how living beings might change it and what these changes would look like from far away.



Christine Moissl-Eichinger

What does alien life look like?

We can all imagine what little green men from Mars look like, right? But is this really a good example of how we should imagine life in space? Unfortunately, we have only one example of life in space so far: the life right here on our Earth. Based on this example, we try to extrapolate and to explore the limits of life, both physically and chemically. Right now, we assume that in our Solar System – if life exists at all – only microbial life is to be expected. This might exist in places protected from strong radiation, such as under the surfaces of planets and moons. Discovering these extra-terrestrial microbes is difficult and requires us to carry out contamination-free missions. This would prevent biomolecules from being transferred from Earth and masking the signals of any extra-terrestrial microorganisms.



Patrick Barth

How can we observe lightning on exoplanets?

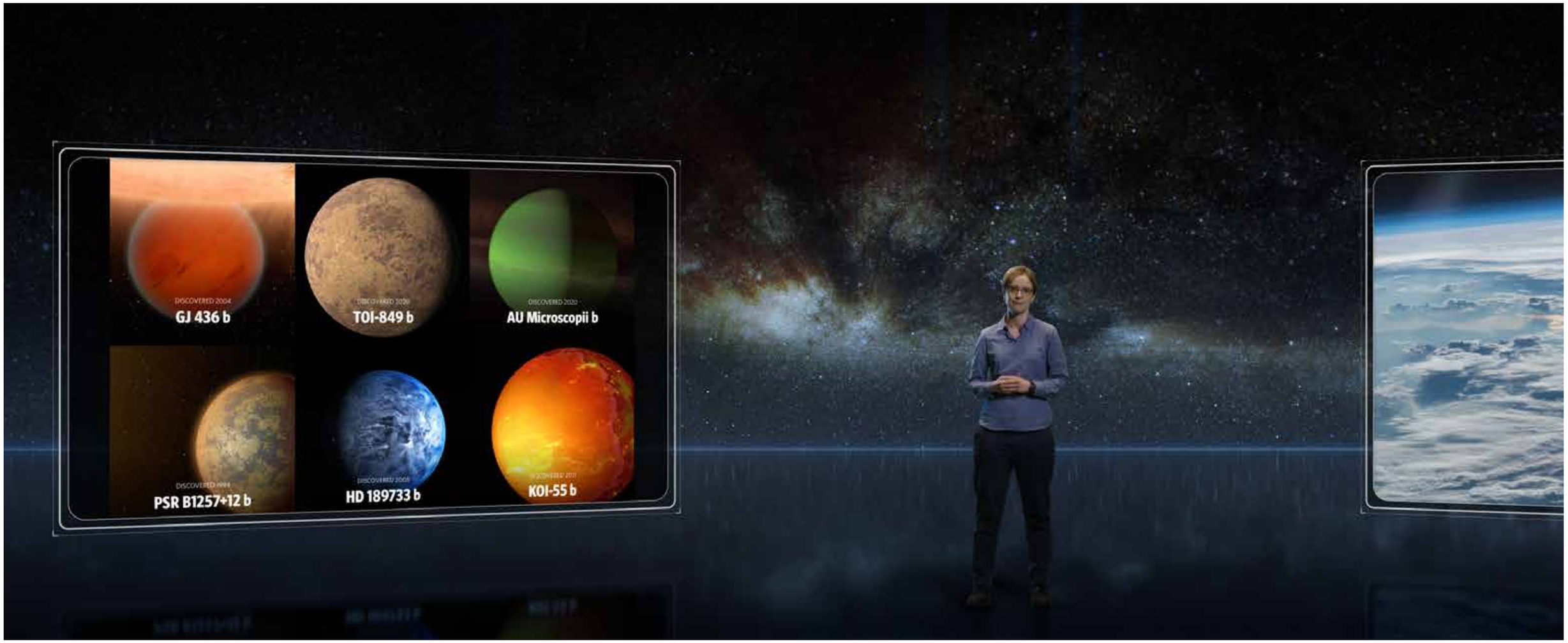
We believe that lightning played an important role in the origin and evolution of life on Earth, so we want to know whether lightning happens on exoplanets, too. On the planets in our Solar System, we can observe the flashes of lightning directly, but exoplanets are too far away. Instead, we have to examine the way lightning changes gases in the atmospheres of these planets. With experiments like this one and computer simulations, we can find out which gases are produced by lightning in different types of atmospheres, for example, nitrogen oxides and carbon monoxide. We can then use powerful telescopes to search for the signatures of these gases in the light we observe from the exoplanets and their host stars.



Luca Fossati

What would happen to the atmosphere if all life on Earth were to go extinct?

Compared to the atmospheres on Mars and Venus, the Earth's atmosphere is unique in a way that is often forgotten. It is largely composed of nitrogen, and the amount of CO_2 is small in comparison. But the atmospheres on Mars and Venus are mainly composed of CO_2, and nitrogen comprises only about 3% of the total. We have to thank mainly anaerobic bacteria for our high nitrogen levels, because they bind the nitrogen in the soil and release it back into the atmosphere. Basically, nitrogen comes from bacteria, oxygen from plants, and CO_2 from animals and volcanoes. If all life on Earth were to suddenly go extinct, the composition of the atmosphere would begin to change due to the gases emitted by volcanoes. Without life on Earth, the Earth's atmosphere would begin to slowly resemble the atmospheres on Mars and Venus; it would be hopelessly inhospitable.



Ruth-Sophie Taubner

Where should we look for life? What do we hope to find?

In recent decades, the search for extra-terrestrial life has shifted from purely theoretical studies to actually searching for biosignatures on the planets and moons in the Solar System. On Mars, for example, we are searching for signs of ancient – but most likely extinct – life. The environmental conditions on early Mars are believed to have been as habitable as those on present-day Earth. If we assume that life depends on liquid water, then we should look toward the outer Solar System. There are immense subsurface oceans hidden beneath a thick icy crust on Europa, an icy moon of Jupiter, and Enceladus, a moon of Saturn, which you can see here. And exactly here is where microbial life, such as we know it from the terrestrial deep-sea trenches on the Earth, might be found.

Atmospheres in the Solar System

Atmospheres can be very different from those on Earth. Every planet in the universe has an atmosphere for some period of time. Even when nothing can apparently be seen, a fine atmospheric shell can be present that consists of outgassings from the surface of the celestial body. Mercury or the Moon, for example, have such an »exosphere«.
In our solar system, we find several planets and moons with atmospheres that have changed to some degree over time.

MARS

Mars may once have been very similar to Earth and may even have hosted life. There was a dense, warming atmosphere and liquid water on the surface. The dried-up riverbeds on the surface of Mars, for example, provide evidence of this. However, Mars is much smaller than the Earth and no longer has its own magnetic field, so its atmosphere was eroded by solar winds over the course of several billion years. Today, the air pressure on the surface of Mars is only about 0.6% of the air pressure on the Earth's surface, and its atmosphere consists mainly of CO_2.



Thin Martian atmosphere, taken
by NASA's Curiosity Mars Rover in 2021
© NASA/JPL-Caltech/MSSS

VENUS

Venus serves as the opposite example of extreme climate change. Venus may have once been a habitable planet with liquid water on its surface, but its dense CO_2 atmosphere caused the planet to heat up more and more until all the water had evaporated. Today, Venus has an atmosphere that consists mainly of CO_2 and is 90 times denser than that of Earth. As a result, the surface of Venus is extremely hot at about 450°C.



Illustration of the surface of Venus, 2005 © ESA

TITAN

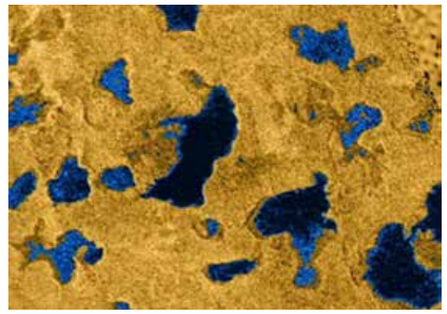
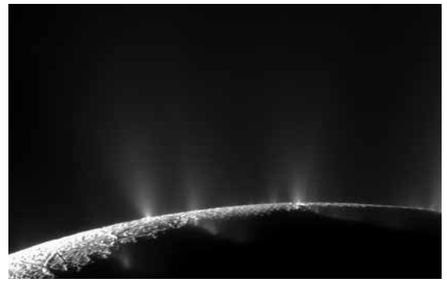


Illustration of Titan, 2008 © NASA/JPL

Titan, Saturn's largest moon, also has a very dense atmosphere, which consists mainly of molecular nitrogen. The surface looks quite similar to certain places on Earth: dunes, rivers and lakes exist. But instead of a water cycle, the oceans, clouds and rain here consist of methane and ethane. The surface temperature is unimaginably cold at around -180°C.

ENCELADUS



© NASA/JPL/Space Science Institute

Some objects in the Solar System do not have a dense, global atmosphere. Instead, they have a localized, thin »mini-atmosphere«. Saturn's moon Enceladus is one example. Deep beneath its thick ice shell, this small icy moon harbors a global ocean of water. At the South Pole, some of this water escapes from the interior through fissures called tiger stripes. The resulting geysers form a localized mini-atmosphere.

How unique the fragile balance between the atmosphere and life on Earth is, becomes even more apparent when this is compared to other atmospheres, as studied in the planetary sciences. Based on observational data and calculations of different scenarios, the exploration of exoplanets reveals that an unimaginable diversity of atmospheres, climates and weather situations exists in the universe. This diversity is like a laboratory where we learn more about the formation and development of atmospheres.

Extreme atmospheres

Exoplanets are planets that are located outside our Solar System. When the scientific sensation happened in 1995, namely the discovery of the first exoplanet orbiting a sun-like star, our view of planets in the universe changed fundamentally. Scientists believe that there are at least 100 billion planets in our galaxy alone. More than 5,000 exoplanets have been identified so far. All of them have turned out to be unimaginably different worlds.

So far, we have not found a »second Earth«, but it is likely that there is one in our galaxy. And it can be assumed that there is also life on one of these planets. The new James Webb Space Telescope will enable further insights to be made in the study of exoplanets in future years.



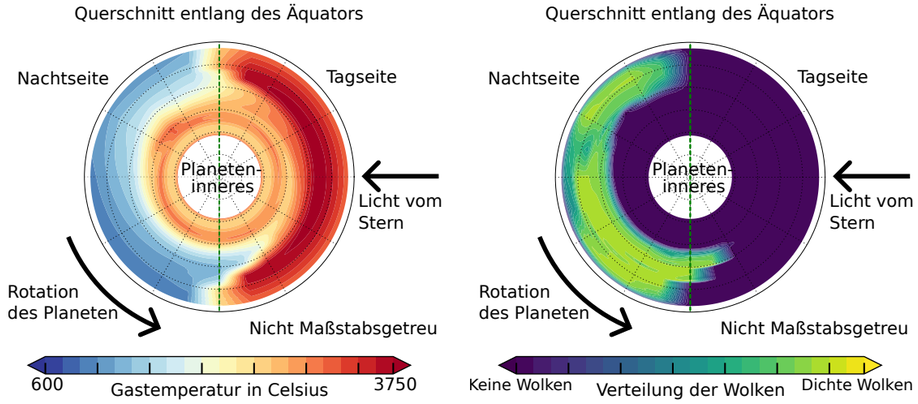
The roadmap to the Milky Way locates our Solar System and most of the previously known exoplanets (Illustration) © NASA/JPL-Caltech/ R. Hurt (SSC/Caltech)



Exoplanet WASP-39b (Illustration) © NASA, ESA, CSA and J. Olmsted (STScI)

HOT ATMOSPHERES

Exoplanets called »hot Jupiters« orbit very closely around their star, and the same side always faces it. For this reason, the atmosphere thus has a temperature of several thousand degrees on the day side, while the temperatures are over a thousand degrees lower on the night side. These temperature differences trigger huge jet streams in the atmosphere and generate winds that can be up to five times stronger than the most extreme hurricanes on Earth.



The slice plot shows the temperature in the equatorial plane of the exoplanet HAT-P-7b © Dominic Samra, Institute of Space Research of the Austrian Academy of Sciences

MINERAL CLOUDS

In extremely hot atmospheres, clouds can only be formed from materials that have a high melting point. Because the clouds on gas giants form on the relatively cooler night side, they consist of metals or mineral crystals. In the extreme heat of the day side, these clouds evaporate, and they condense into solid particles on the night side. These clouds can also dissipate in the form of rain or rather hail. However, since gas giants have no true surface, these »hailstones« evaporate as soon as the temperature is high enough, and the material again rises within the atmosphere.

Based on the light spectrum data, it seems as though clouds indeed exist on the gas giant HAT-P-7b. Calculations show that the clouds consist of minerals such as quartz (SiO_2), forsterite (Mg_2SiO_4) and corundum (Al_2O_3), that is, a mineral dust made of the same material as diamonds, rubies, or sapphires on Earth.



Gemstone clouds © Dominic Samra, Institute of Space Research of the Austrian Academy of Sciences, photos by Rob Lavinsky, iRocks.com - CC-BY-SA-3.0 and crystalclassics.co.uk

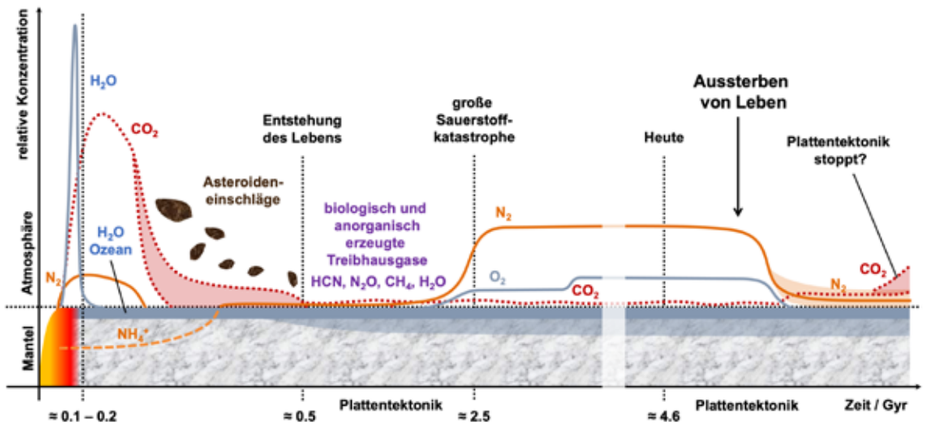
Life can survive on the Earth because there is life on Earth. Interactions between the biosphere and the atmosphere maintain the perfect balance of oxygen and CO_2. Everything on Earth is interconnected and mutually interacts through its existence. Through the increased release of CO_2 from fossil fuels into the atmosphere, we are disturbing this sensitive balance and thus, above all, the living conditions for all humans.



Earth's atmosphere with a view on the Moon, taken onboard the International Space Station (ISS)
© NASA, iss067e070916 (May 21, 2022)

What happens to the atmosphere if all life on Earth dies out?

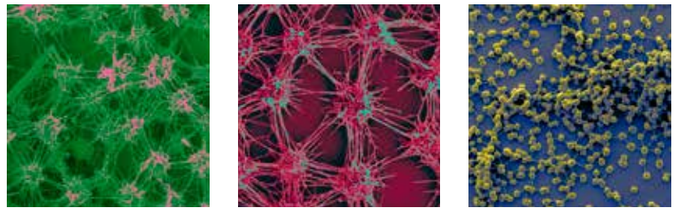
All living beings create the air we breathe today, maintaining a perfectly attuned sensitive balance with their environment. The Earth's atmosphere consists largely of nitrogen, while the proportion of CO_2 is very low in comparison. This is mainly because anaerobic microorganisms absorb nitrogen from the soil and release it into the atmosphere. Generally speaking, the nitrogen found in nature comes from microorganisms, oxygen from plants, and CO_2 from animals and volcanoes.
If all life on Earth were to suddenly die out, the composition of the atmosphere would again be determined by volcanic emissions and would contain mainly CO_2. Without life, the composition of the Earth's atmosphere would slowly become more and more like that of Mars and Venus, and the temperature would rise to such an extent that all the oceans would evaporate. The Earth would once again be a hostile place where new life could no longer form.



© Luca Fossati, Helmut Lammer, Institute of Space Research of the Austrian Academy of Sciences

We can only search for life as we know it. Therefore, we try to explore the limits of life and to define life. But does life always need the same conditions that were found on the (early) Earth to develop? Or could alien, exotic life also develop out of completely different building blocks and under completely different conditions?

In recent decades, the search for extraterrestrial life has shifted from theoretical studies to the actual search for signs of life on planets and moons in the solar system. In that search a focus is currently being directed towards microbial life, because microorganisms make up the majority of life on Earth. Astrobiologists are studying life on Earth in extreme biotopes such as in icy, volcanic, or desert-like environments, because extraterrestrial life could be found under such conditions or possibly under even more extreme conditions on other celestial bodies.



Microbes, scanning electron microscopy © Med Uni Graz

Are we alone in the Solar System?

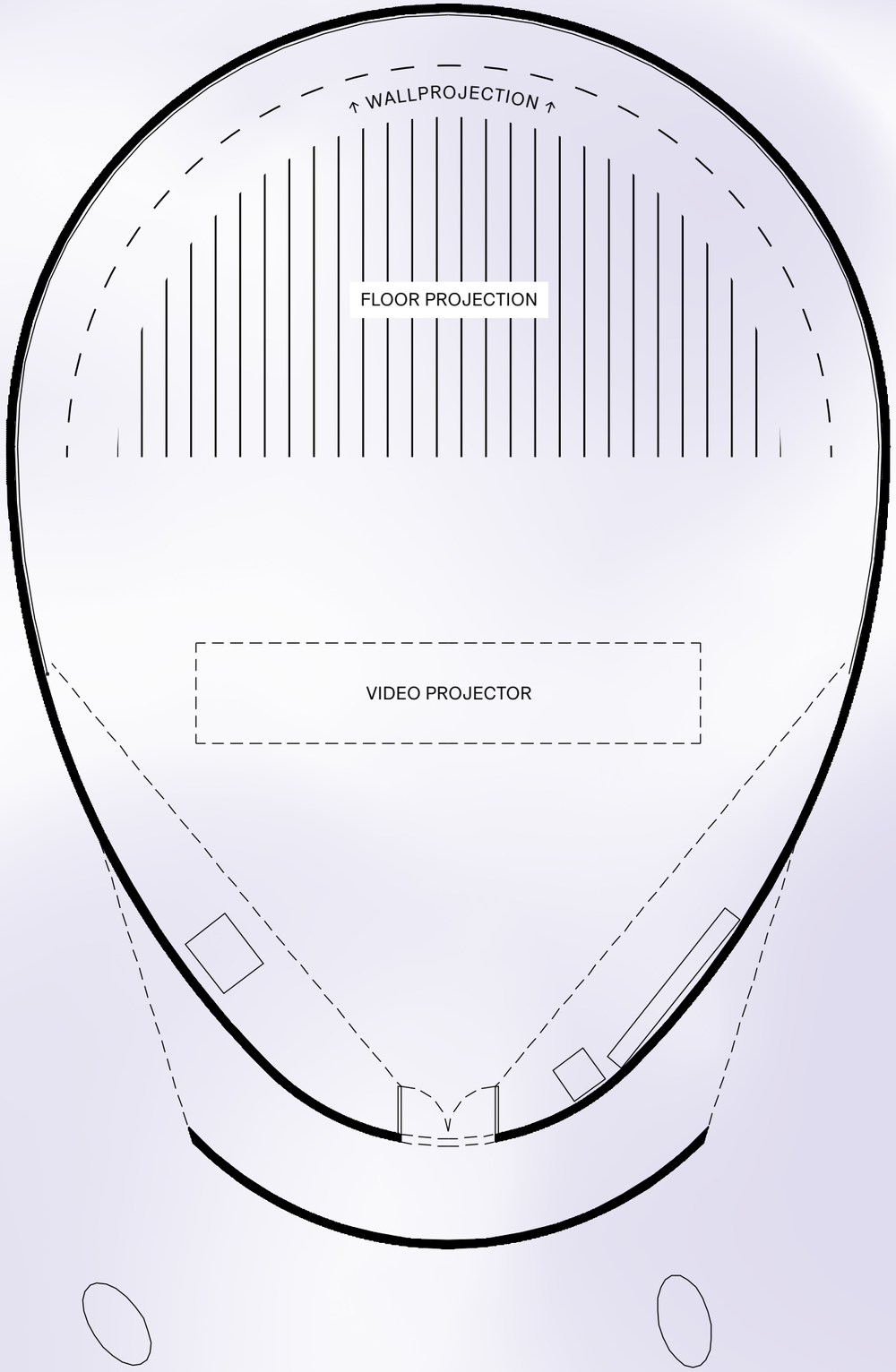
MARS

There may have been life on Mars in the past. We are now looking for signs of these living beings, i.e. the remains of biomolecules. But there are also areas on Mars where microorganisms may well have been able to survive up until today, despite the harsh radiation, the lack of nutrients and the extremely thin atmosphere.

ICE MOONS

The icy moons got their name from the thick layer of ice that forms on their surface. In recent decades, missions have been able to show that some icy moons harbour huge subterranean watery oceans. On Enceladus and Europa, hydrothermal vents are also suspected to exist on the seafloor — just like on the early Earth, life could develop here.

PROJECTION ROOM



Floor plan (Arch. DI Mitterberger Gerhard ZTGmbH)

Astrid Kury

How can we explore the unimaginable?

How can we find something that we don’t yet know?

In the development of the art contributions, the challenge was primarily to depict these completely unique exoplanetary worlds, starting from visual material that originated on Earth. To accomplish this, Kay Walkowiak has gone to already-exotic environments on Earth, volcanic landscapes that are also a place for studying the conditions right here on Earth for the origin of life on other planets. AI is also used several times to create alienating effects by using existing settings. This technique currently captivates audiences by enabling extraordinary combinations and superimpositions of images. If, on the one hand, the question is what kind of art would emerge under alien skies, such as those that exist on exoplanets, it is also interesting to ask what kind of art will emerge when these new media come into play, such as AI image generators. It is currently becoming apparent that AI can be used as a smart tool for artistic production, just as the coincidences or errors that occurred could be previously used, in order to forge new paths that can then be explored artistically in detail. Or large volumes of data can be used as source material to generate new worlds of images which, like homeopathic products, still contain the “aura” of the information originally encoded in the image. These have already been transformed into a completely different aesthetic and thus can be used in other contexts. In his video, Rainer Kohlberger works with the algorithms he has developed himself. At a time when everyone has already been there or everything has been done, these new applications provide access to a seemingly infinite range of variation that can alternatively be extracted from what already exists. However, these random products of AI are rarely sustainable, so it is certain that the creative artistic approach will continue to have the final word.

The alienation effects that are created by obscuring various dimensions were also of great interest. Microbacterial structures, for example, are brought into resonance with the world of forms of planetary surfaces, as in Michaela Grill’s contribution. The electron micrographs of archaea also invite us to look at how life is defined by focusing on its limitations. Markus Jeschaunig hones in on the beginning of life on Earth. Lightning may have played a role here. Daniela Brasil and Silvana Beraldo explore the diverse forms that life can take under completely different conditions in their art project for children. They fully occupy an exhibition space on the columns, alien life inhabits the supporting structure of the pavilion, and comes together on the meadow around the exhibition space. Life can only exist if it alters its environment, and that is not always a friendly act.

In addition, a long tradition exists for the depiction of clouds in art history. Ralo Mayer’s impressions of atmospheric currents were created in an “aquarium” by clouding the water white and introducing coloured liquids in motion. In a widescreen format, the resulting tiny eddies of current look like atmospheric tornadoes on alien gas planets. What and why are we looking for in space or are we only looking for ourselves is the question Richard Wilhelmer asks when he films his eye in such detail that it finally appears in the size of a planet on the screen. The exotic universes of life fascinate Gudrun Krebitz, who draws fantastic worlds and overlays them with poetic-scientific scanning motions. The Earth Logic that inescapably shapes us is the subject of critically reflection in the narrative.

Taking light as an example, the overall focus is directed towards questions and concepts of visibility and visualization. Exoplanets are explored by analyzing the light that radiates from their stars through the planets’ atmospheres. This itself represents the furthest limits of visibility. In another way, the limits of visibility are explored by Adina Camhy and Benedikt Alphart, who depict the vast panoramas of the surface of Mars and critically relate them to the nature of human activity to invade ever-greater distances. In Markus Jeschaunig’s work, free experimentation with materials (lightning strikes in steel dust) and high-resolution camera technology make it possible to expand the realm of what is visible.

PASSAGE

Adina Camhy and Benedikt Alphart
Composition commission in
collaboration with IEM/KUG
and Schallfeld Ensemble 2023



Concept and realization: Adina Camhy — Composition: Benedikt Alphart — Musicians: Elisa Azzarà and Myriam García Fidalgo/Schallfeld Ensemble — Narrator: Martina Zinner — Sound recording, mixing, spatialization: Benedikt Alphart — Theatrical consulting: Susanna Flock, Robin Klengel — Scientific consulting: Kathy Chubb, Luca Fossati, Hannes Mayer — Technical support - animation: Jürgen Hackl, Jona Kleinlein — Thanks to: Ines Abraham, Marko Ciciliani, Kristina Cyan, Richard Hilbert, IEM/KUG, Astrid Kury, Birgit Prack, Markus Seereiter, Franz Zotter

PASSAGE

Adina Camhy and Benedikt Alphart
Composition commission in collaboration with IEM/KUG and Schallfeld Ensemble 2023

The 360-degree panoramic photo taken by NASA's Mars rover Perseverance in 2022 is the largest image of the Martian surface ever taken, representing a window into an alien world. The traces of water that once were found here billions of years ago have shaped the landscape formations; these can be explored in detail by zooming far into the 2.5-billion-pixel image. In the process, Adina Camhy has even discovered a piece of rubbish from the ambitious research on Mars. In her video, she associates the rover's tracks with the footprints from the moon landing, which will remain visible for a veritable eternity unless they are obscured by a landing or mining station on the Moon. In the indispensable tool used for world exploration, the smartphone, she places additional texts and images on the planet's surface; thus, she shows in associative leaps how humans depict themselves in space in both scientific and pop-cultural terms.

The questions of space law preoccupy the artist more than anything, and thus crucial geopolitical and ethical questions about humanity. What actions will we take in the course of human expansion to neighboring celestial bodies? Mars or the Moon would be new spaces for the "range extension programme of the modern age" (Hartmut Rosa). The geopolitical struggle for supremacy in space is joined by the insufficient regulation of the commercialization of space as a lucrative future market.

The space law treaties are a legacy of the Cold War, such as the Outer Space Treaty of 1967, which has been ratified thus far by 112 countries or, most recently, the Moon Treaty of 1979, which has only been ratified by 18 countries (USA, Russia and China, for example, have not). According to space law, the celestial bodies and "free" space may be explored and used by all. Their appropriation is forbidden. They are said to be the common heritage of humankind, just like the deep-sea floor. But the next question is how far does nature extend? Also out into space? Wouldn't the next (better) step be to place this space under corresponding protection, giving it its own legal status, as is already being considered for natural areas on Earth?
Benedikt Alphart's composition for the video was received in response to a call for entries

issued by the Institute of Electronic Music and Acoustics at the University of Music and Performing Arts Graz. The commission given to the two young artists was to create an interplay between image and sound with a theme of their choice; at the same time, they needed to consider the technical possibilities offered by the large projection and the hemispheric loudspeaker (Ambisonics) system, as developed by the IEM for the pavilion. Benedikt Alphart's composition projects an Earth-like variety of sonic forms and spatial movements onto the monotonous red dust of the Martian landscape. Using rich instrumental-experimental explorations recorded together with Schallfeld Ensemble (cello and flute), he acoustically traverses the real spherical space in parallel to the projected panorama. The interplay between image and sound is seamless, reinforced by the insertion of the narrator's voice; still, each remains autonomous, and each follows its own narrative. A multi-faceted, associative-poetic analysis of the relationship between humans and their environment, on Earth as well as in space.



Adina Camhy — * 1987 in Graz, lives and works in Graz and Vienna. Camhy is a multidisciplinary artist working on a broad spectrum of projects that range from artistic-scientific research to film and on to sound and performance. Based on precise observations of existing situations and by taking narrative approaches, she dedicates herself to topics such as the politics of memory, representation, and political themes in public and private spheres.

Benedikt Alphart — * 1998 in Vienna, lives and works in Graz. Alphart is a composer and computer musician. He has pursued his studies at the University of Music and Performing Arts Graz since 2017. His artistic practice is closely connected to his fascination for sound recordings, whether these are made in the field or in the studio. The sounds recorded in the process are directly integrated into his works, while the acoustic and biological processes he observes in his work and which constantly surround us serve as inspiration for the formal context of his soundscapes.

PASSAGE

Adina Camhy and Benedikt Alphart
Composition commission in
collaboration with IEM/KUG
and Schallfeld Ensemble 2023



TITULARIUM

of a distant
celestial body
Ralo Mayer 2023



Concept and realization: Ralo Mayer — Camera and lighting: Victor Jaschke — Sound: or or or — Mix: Matthias Frank, Franz Zotter/IEM — Thanks to: Christine Moissl-Eichinger, Emma Puranen, Zentrum Fokus Forschung/University of Applied Arts, Vienna

TITULARIUM

of a distant celestial body
Ralo Mayer 2023

Ralo Mayer has been interested in questions about space for a long time, based on the example of Space Un-Settlements and Un-Earthing. In other words, he considers how one can imagine life on space stations or settlements in space. To find answers, he explores the evidence of earlier ambitions for space exploration, such as can be found in decaying buildings that serve as evidence of past space explorations. This once-extant future often reveals with unpleasant clarity the dystopian arrogance of the present-day visions of life on other planets.

The eerie aspects of leaving Earth in an even more distant future is what Ralo Mayer turns into the past in his film contribution. On their way to explore the atmospheres of exoplanets, a group of researchers send their research reports regularly back to Earth. There is excitement about the discovery of unknown life, there is a microbial accident of unimaginable proportions, a part of the troop of colonizers is “self-colonized”, and the rest can still send one last radio message to Earth. Ralo Mayer supplements this dark sci-fi radio play about an alien expedition, enriched with important socio-political, ecological, ethical and space-legal questions, with depictions of fantastic cloud worlds in rich shades of color. These are interspersed with interference, which we recognize as image interference from earlier pop-cultural media.

On the one hand, these flow patterns remind us of the glow seen in the evening skies due to increased levels of pollution, and, on the other hand, they simulate views of dense cloud cover on other planets. These impressive cloud studies are the result of work with a Cloud Tank, an analogue illusion medium in the form of an aquarium that was used in the 1970s in the production of science fiction films. The colored liquids introduced seem to flow, appearing through the glass like atmospheric formations, and build up into miniature clouds. It is impressive how quickly one loses orientation within the dimension. The power of imagination is obviously so high that a milky swirl of color is immediately transformed into the impression of a planetary tornado. And the ease with which this shift occurs, even when one is fully aware of how it is produced, just adds to the pleasure of it. Interesting note: A research project by Emma Puranen at the IMF shows that science fiction depicts many more habitable zones and differentiated alien life forms than is actually likely. After all, the Earth is still unique. However, it is worth remembering that the cloud studies of the early 19th century occurred as a result of a close cooperation between art and science, possibly serving as an early prelude to the future cooperation that will help to establish a comprehensive climate culture.



Ralo Mayer — * 1976 in Eisenstadt, lives and works in Vienna. Mayer is involved in the Styrian art scene in many ways. Through extensive research, Ralo Mayer weaves objects from space travel, ecology, or science fiction encountered in everyday life into multi-layered narratives and translates them into cross-media ensembles that combine aspects of installation, film, text, or performance. Mayer’s works have been shown at international exhibitions, festivals, and conferences and have been awarded several prizes, including the Msgr. Otto Mauer Prize for Visual Arts 2012. His artistic dissertation on “Space Un-Settlements” also sparked his current preoccupation with forms and narratives of un-earthing with regard to human life in space.

TITULARIUM

of a distant
celestial body
Ralo Mayer 2023

MARS, MYSELF AND I

Richard Wilhelmer and
Sonja Mutić (commissioned composition)
2023



Concept, direction, and artistic design: Richard Wilhelmer — Sound: Sonja Mutić — Image design, and finishing: Matthias Halibrand — Lighting concept and consulting: Martin Nefe — Thanks to: Daniel Haingartner, Markus Kircher, Günter Nikodim

MARS, MYSELF AND I

Richard Wilhelmer and
Sonja Mutić (commissioned composition)
2023

As an artist and filmmaker, Richard Wilhelmer addresses the question of perception and reality or the question of the reality of subjective perception. On the one hand, he asks what the norm of the normal truly is, as he does in the documentary Anomalie (2018), and, on the other hand, he takes the post-factual art of assertion to extremes by making an artificial addition to the starry sky, as he does in the collaborative art project Fake Star (2018). What is truth? This is also the question asked in the film contributed to this exhibition, because fake news and science denial fuel the egocentric view of the world, according to Richard Wilhelmer, when what is actually needed is a revision of our position on the world.

The discoveries of the astronomer and director of the Brera Observatory in Milan Giovanni Schiaparelli (1835-1910) serve as the starting point for this artistic work. His powers of observation at the limit of visible detection were legendary. Using a telescope, Schiaparelli also examined the surface of Mars in 1877, named the landscape formations he discovered, and described the so-called “Martian canals” (canali) there, which have inspired the science fiction genre from the time of H. G. Wells up to the present day and which also inspired the pop culture myth of Martians. In 1965, photographs taken by the US probe Mariner 4 partially revealed these Martian canals to be optical illusions. Schiaparelli had obviously only seen the veins in his own eye.

Our perception is also determined essentially by what we think we see. Richard Wilhelmer focuses on this insight in his super short film with a veritable plot. When humans think about the cosmos, it is hard for them not to think of themselves as being the centre, even when considering the vast dimensions. Wilhelmer chooses the eye as the intermediary on his journey through inner galaxies and alien landscapes. Using a slit lamp and a stereoscopic camera, he created macro images of his iris at the highest possible resolution. In the context of the exhibition, these look like the topographical images of the surface of Mars, and were captured in ways mimicking the way Schiaparelli also documented the structures of his own iris, so to speak. Only towards the end of the film does the eye become the eye and recede planet-like into the distance, just as the Earth does when rotating off into space.

Sonja Mutić’s multi-faceted soundscape intensifies this journey, which takes the viewer from one uncertainty to another and into unlimited spaces – with crackling eruptions that are blasted by the winds on other planets, by acoustic simulations of objects shooting past, by cadences of what breaks down and rhythms of what moves.



Richard Wilhelmer — * 1983 in Judenburg, lives and works in Berlin. Wilhelmer first worked as a creative director, filmmaker, and freelance artist. In 2017, he founded the strategic enterprise Beluga Strategic Design together with Edwin Strauss. By using art, film, and video, he expresses the interplay of technological and cultural transformation.

Sonja Mutić — * 1984 in Belgrade, lives and works in Costa Rica and in Cambridge, Boston (USA). Mutić studied composition at the Faculty of Music in Belgrade and at the University of Music and Performing Arts Graz with Clemens Gadenstätter. She is currently completing her PhD studies with Chaya Czernowin at Harvard University. Her compositions are broad, emotionally rich tapestries of sound that are woven gently or tightly by using individual instruments. Her works range from pieces for solo instruments to pieces for ensembles. Sonja Mutić consistently describes her compositions as a “journey to a new, unexplored planet”.

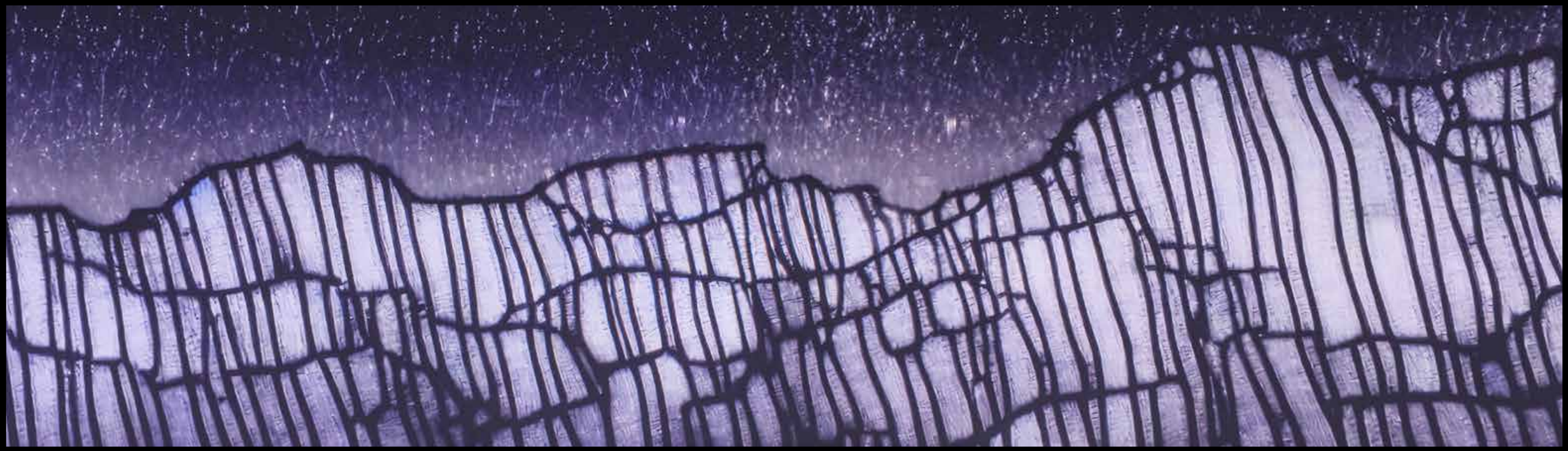
MARS, MYSELF AND I

Richard Wilhelmer and
Sonja Mutić (commissioned composition)
2023



NAVIGATING THE SKY

Azra Akšamija and Dietmar Offenhuber
2023



Research and project development assistance: Merve Akdoğan, Jehanzeb Shoaib — AI animation: Merve Akdoğan — Data visualization and sonification: Dietmar Offenhuber — Voices: Franz Wenzl - Austrofred (German) and Nainoa Thompson, Polynesian Voyaging Society — Image: Nainoa Thompson, Polynesian Voyaging Society SIMBAD Astronomical Database, https://simbad.u-strasbg.fr/simbad/Centre de Données astronomiques de Strasbourg — Thanks to: Hōkūle'a Polynesian Voyaging Society, https://www.hokulea.com Thomas Boch, Université de Strasbourg, Alyssa Goodman, Peter Williams, Alberto Pepe - Harvard University

NAVIGATING THE SKY

Azra Akšamija and Dietmar Offenhuber
2023

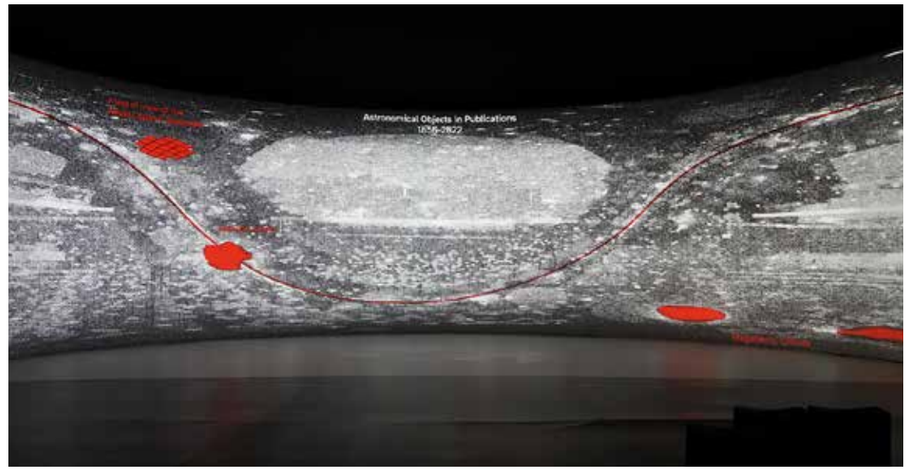
What do we look for in the skies, and why do we look at the skies? This contribution on exploring the sky arose from the experience that traditional methods of orientation when sailing by watching the clouds no longer work as a result of changes in weather due to climate change. In their video, Azra Akšamija and Dietmar Offenhuber combine two different knowledge systems that can be used to explore the sky, and thus two ways of seeing the world and two ways of creating and passing on knowledge. Their common focus is the question of how knowledge is created.

The first part of the video provides an example of a non-anthropomorphic, indigenous perspective on the world by using the example of an “inner compass” shared across species by both humans and animals. The animation is named after Manu-o-Kū, a Hawaiian seabird which has flight patterns important for non-instrumental navigation techniques. How does one orient oneself on the open sea by reading the paths of the stars and the movements of waves, winds, birds and dolphins? This centuries-old knowledge of early Polynesian seafaring in the Pacific would have been all but lost if the Polynesian Voyaging Society in Hawaii had not been involved in documenting and re-testing it from the 1970s onwards. The quotes used in the film are from Nainoa Thompson, the first “pathfinder” to re-cultivate and master Polynesian voyaging using the “star compass”. The English version is spoken by Nainoa Thompson himself, and the German version, by the singer of the band “Kreisky” (and “Austrofred”), Franz Adrian Wenzl. The imagery accompanying the text was developed by using an AI, in part to disrupt the romantic stereotyping of motifs such as ocean waves, clouds in the sky, or images of stars, and in part to distance itself from a cultural appropriation of indigenous knowledge. What is currently fascinating about AI is the alienating effects it can have as well as the unexpected connections it can create among things that do not belong together. A possible path leading to the unimaginable, where the uncanny and the familiar approach one another.

The second part of the video shows a galactic panorama that illustrates what we currently know about celestial objects, located on the image of the non-rectified Milky Way. The title SIMBAD refers to the acronym for a dynamic database maintained by the University of Strasbourg and to the mythical navigator. This database contains all the information ever published on astronomical objects in the Milky Way. SIMBAD currently contains entries on about 5,800,000 stars and 5,500,000 other objects, such as galaxies, planetary nebulae, and supernovae. Those objects outside our galaxy are collected in the NASA Extragalactic Database NED. What is completely unexpected is the realization that the media used for discovery

and documentation are directly reflected in the data image in all its forms, meaning the way in which a discovery about the world is made actually generates its own image. The Kepler telescope, for example, is always directed toward a specific point in the sky; therefore, the largest number of exoplanets have been found there so far. The telescope’s image sensors create images exactly as they look by compressing the data points. The same thing occurs with the rectangular outlines of anthologies or the linear patterns of the tracking paths of telescopes. Dietmar Offenhuber created a sonification for this overview of astronomical references in the form of the Milky Way, generated from the 28 million bibliographic references of the SIMBAD deep data set.

What we see in the sky is shaped and influenced by the knowledge and form of the instruments used, as Azra Akšamija and Dietmar Offenhuber show in their juxtaposition of orally transmitted, sensory-practical knowledge and written, digitally stored knowledge. Their contribution also raises the currently relevant question of whether technology can save us or whether society will experience a change to grow closer to nature. In the best case, we will succeed in both.



Azra Akšamija — * 1976 in Sarajevo, lives and works in Cambridge, USA. Akšamija is an artist and architectural historian. She is the director of the MIT Future Heritage Lab and an associate professor at the MIT Department of Architecture, Art, Culture and Technology Program in Massachusetts, USA. Born in Sarajevo, she spent her youth and studies in Graz, where she graduated in architecture from the TU in 2001. Azra Akšamija’s work focuses on cultural and political conflicts as exemplified by diversity, exclusion, and oppression, and on the preservation of diverse indigenous forms of knowledge.

Dietmar Offenhuber — * 1973, lives and works in Boston, USA. Offenhuber is Azra Akšamija’s artistic partner. He is a lecturer and director of the MFA Programme in Information Design and Data Visualization at Northeastern University in Boston. He received his PhD from the MIT Department of Urban Studies and Planning and studied at the MIT Media Lab in the Sociable Media Group. His research areas include socio-cultural aspects of urban infrastructure and the role of digital technologies in political discourse. He was a research fellow at the MIT Senseable City Lab, a key researcher at the Ludwig Boltzmann Institute for Media Art Research, and held professorships at the University of Applied Sciences, Campus Hagenberg, and the University of Art and Design Linz.

NAVIGATING THE SKY

Azra Akšamija and Dietmar Offenhuber
2023

THE ABSENCE OF LIGHT

Gudrun Krebitz
2023



Sound design: Marian Mentrup — Technical assistance: Anna Benner — Thanks to: Katy Chubb, Patrick Barth, Dominic Samra

THE ABSENCE OF LIGHT

Gudrun Krebitz
2023

The subversive power of gentleness, which philosopher Corine Pelluchon uses to characterize culture as a whole, also supports the cinematographic work of Gudrun Krebitz. She is an artist who dares to dive deep down to the seabed of the soul. There, she finds a fantastic logic of immediacy and wields this to ask penetrating scientific, socio-political, and existential questions. Her film Exomoon already captivates the audience with its poetic view of science. The artist uses this view to connect what is distant and foreign with what makes one feel alienated from oneself. The research findings from planetary science were also obviously highly inspiring here, serving as a challenge for the artistic imagination and as foci of fascination, driving the incredible search for the almost undiscoverable.

Gudrun Krebitz places the spotlight of the film on how it reveals itself through imperfections in the spectrum of that light that barely reaches us, emitted by the exoplanets many light years away. And from the perspective of an alien existence, she describes clouds made of rock, and even precious stones, as research into atmospheric models actually suggests. Or she describes the infinite oceans found on water planets, where the waves never break, and where alien life could be possible. The result is a cinematic poem of research, so to speak, that suggests ways to transform anthropocentric Earth Logic into a greater and sober awareness of the fact that we are always already in space. And given the Earth's capacity to harbor life, that is a position that is just as privileged as it is precarious.



Gudrun Krebitz — * in Graz, lives and works in Berlin. Krebitz is an artist and filmmaker. Her cinematic works focus on hand-drawn and animated video collages, which can be classified as both experimental film and visual art. She graduated from the Royal College of Art in London in 2015 and studied animation at the Konrad Wolf Film University of Babelsberg.

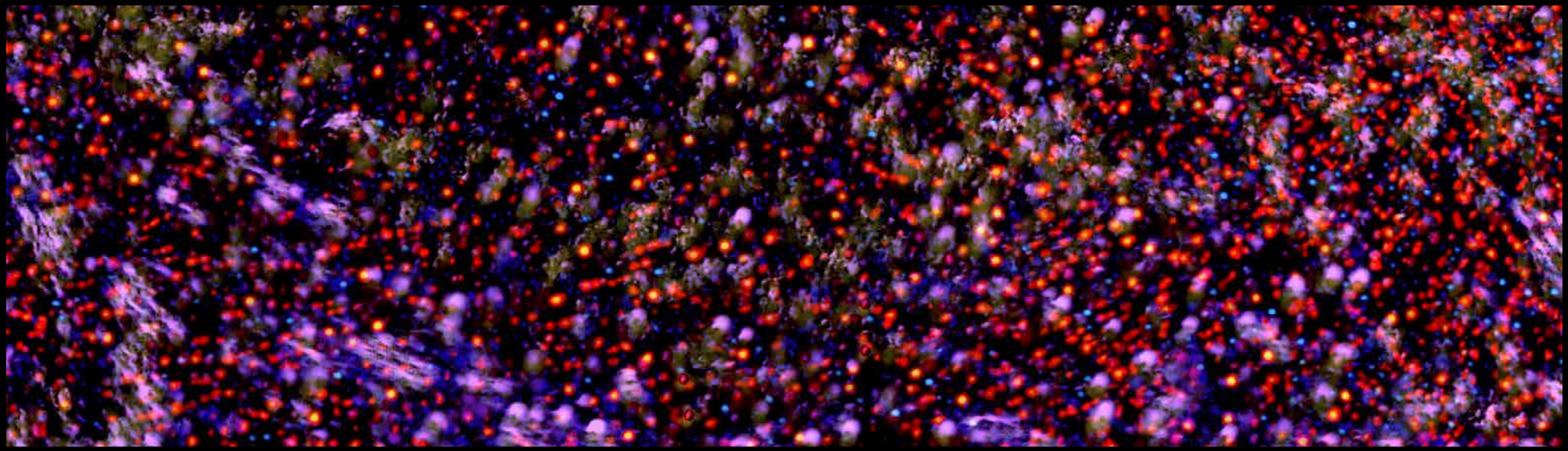
THE ABSENCE OF LIGHT

Gudrun Krebitz
2023



NO ONE KNOWS

Rainer Kohlberger
and Peter Kutin
(commissioned composition)
2023



Concept and direction: Rainer Kohlberger — Sound design: Peter Kutin

NO ONE KNOWS

Rainer Kohlberger and Peter Kutin (commissioned composition) 2023

Try to imagine a completely different planet from Earth. And then try to imagine 5,000 unique, completely different landscapes and skies. It has been exceedingly surprising to space explorers that the universe is filled with such diversity. And the only information that can be used to carry out this exploration of the exoplanets' alien skies is light.

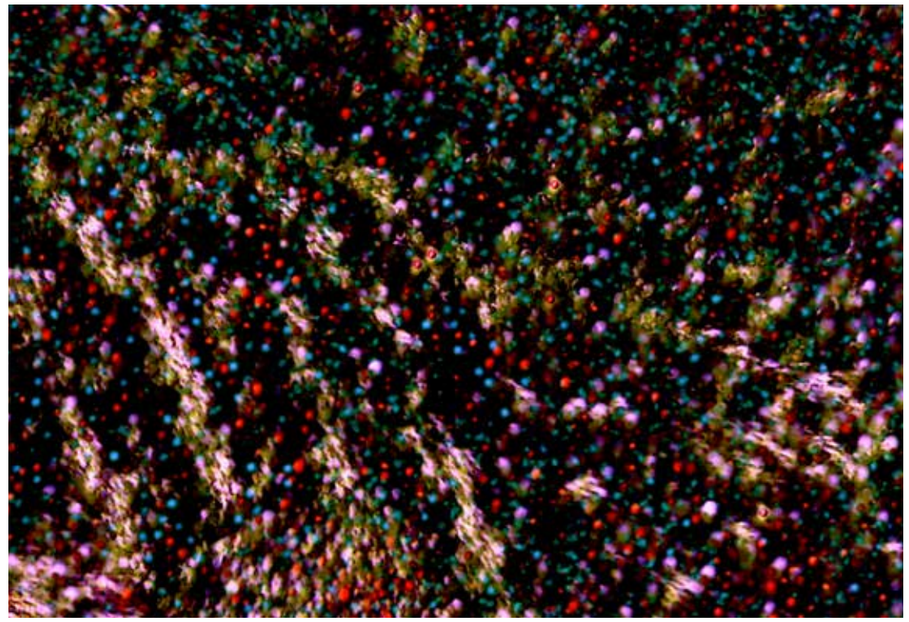
How do you approach the unimaginable artistically? In many cases, it is a question of techniques or interfaces used to gain a sense of alienation, which can then serve as a platform to generate new worlds. Because the visual material we depend on is bound to the Earth and its conditions. One possible method is to separate existing and thematically specific material from the content by applying machine learning and to inscribe a new style on it. In this way, the atmospheric and meaningful moment belonging to the original subject can be captured, and what is unimaginably other can be generated by taking the digitally redefined path of analogy. The scientific search for alien life finally also launches from the springboard of life as we know it, defined by the boundaries of its existence.

As a conceptual video artist, Rainer Kohlberger has been interested in the representations and effects of light in installations and live performances for a long time. Frequently, this involves light from celestial bodies such as the Moon or the afterimages of sunlight in the eye, which lead to individual activities of perception, so that one is no longer sure whether the sensory data comes from outside or inside. This artistic reflection of perception by means of intensified perceptual experiences – which can even lead to the loss of spatial and temporal location – is almost a hallmark of his work.

He often works with algorithms he has developed himself for image transformation. The inflationary term AI is too dystopic for him; he sees in it, above all, a new way to sort data and automate complex processes. And, of course, it also represents another medium, just as coincidences or errors were in the past, which helps to reveal new worlds of images. For this video, Rainer Kohlberger used material in the form of scientific images, and especially electron microscope images of archaea, as they are being studied in the field of astrobiology as a possible analogy to alien life, on Earth. From this material, he has developed a dense stream of multicolored light spots. These can be perceived as illustrating alien atmospheres, the flickering, the oscillation, or the rotation of everything from molecules to planets, or microorganisms flowing through space. Possibly also a noise pregnant with meaning, detected as unreadable signals from elsewhere.

Noise fascinates Rainer Kohlberger in any case as a "premonition of infinity". Such dimensional contrasts and how they are obscured create analogies that can be used to approach envisioning the unimaginable, in ways similar to what Lucretius already touched on in the didactic poem De Rerum Natura by sketching the flowing atoms as the random event of universal creation. After all, space research is also based on data, and they are only occasionally and approximately translated into pictorial interpretations for the sake of improving general understanding.

Peter Kutin's composition accompanies this pictorial hissing, flickering, and flowing and extends it into the space by using circling, floating sound elements that connect different trebles and open up new passages that lead to the next completely different thing. He often works with audio-visual installations and live performances that transcend matter and create dynamic moments of standstill through their methodical overlapping and transgressions, entirely in the venerable tradition of Marcel Duchamp's study of the paradox of the fourth dimension.

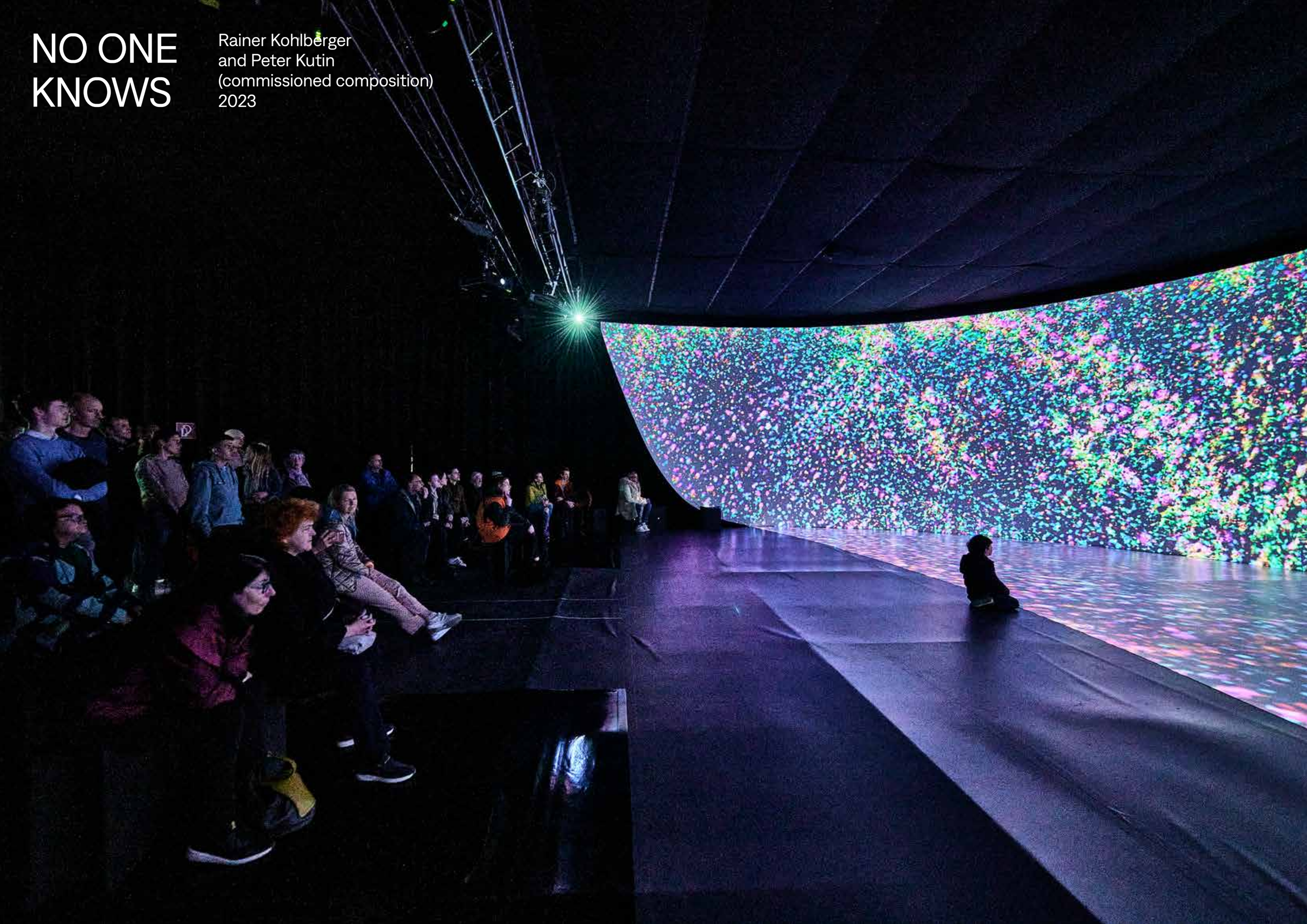


Rainer Kohlberger — * 1982 in Linz, lives and works in Berlin.Kohlberger is a freelance filmmaker and video artist. His work is based on images generated by algorithms, which he transforms into installations, experimental films, visual music, or A/V live performances. For his work field, he received the ZKM App Art Award for artistic innovation in 2011 and the Crossing Europe Local Artist Award for humming, fast and slow in 2013. He has collaborated with Peter Kutin numerous times.

Peter Kutin — * 1983 in Leoben, lives and works in Vienna. Kutin's musical works seek and find synergies through interaction in light art, avant-garde film, sculpture, and kinetic art. His collaborative ethos brings him together with artists working in different fields, and his multi-faceted works are regularly shown at international festivals for music, film, and media art.

NO ONE KNOWS

Rainer Kohlberger
and Peter Kutin
(commissioned composition)
2023



I’M FLOATING IN THE MOST PECULIAR WAY

Michaela Grill
2023



Sound: Stefan Németh — Thanks to: Christine Moissl-Eichinger, Luca Fossati, Dominic Samra

I’M FLOATING IN THE MOST PECULIAR WAY

Michaela Grill
2023

The shimmering-glowing orange and sun-like ground give us the impression that we are flying through the glowing hot gases of an exoplanet orbiting very close to its star.

Michaela Grill’s video is an artistic experimental arrangement of the unimaginable. Her starting point is exclusively scientific image material. According to the artist, the landscapes on exoplanets represent the end of landscape – the end of everything or at least of everything as we know it. How do the different research methods used in art and science interact? How different is the approach to images? Can the sense of being alien to each another be overcome by a common interest? Michaela Grill has been addressing the political-ecological issues associated with polar ice landscapes for many years and is also repeatedly involved in scientific research projects as an artist. One of her most vital concerns is the relativization of the anthropogenic perspective in favor of respect for other living beings and rights associated with natural spaces. Her video is fed by microbial life in the ice: archaea, simple microorganisms that are numbered among the first living beings on Earth and can exist under the most extreme conditions, as well as the forms that are created by freeze etching, the method used to extract microorganisms from the ice.

This smallest world of forms bears a strange resemblance to the enormous structures on planetary surfaces, which are also contained in this alien world of forms in Michaela Grill’s video. In addition, turning and swinging movements are seen, at the tiny molecular level as well as at the huge planetary level. Movements that – conversing with the image – are also recorded in Stefan Németh’s sound. By using instrumental sounds and sound recordings from space research, he creates the sense of floating through alien worlds via an enveloping sound space. The cinematic exploration is composed of numerous image layers that interact in different ways, thus opening up countless possibilities to enter an unimaginably vast world of forms that is largely separate from the original image motifs. One could say that science becomes art directly or that the artistic methods used for formal image analysis serve as an interface, easing the shift to another way of perceiving the world. The result is an atmospheric journey and a weightless glide through finely tuned spaces, involving an attempt to give the viewer an aesthetic idea of what it would be like to experience hot ice, ruby clouds, or metallic rain.



Michaela Grill — * 1971 in Feldbach, lives in Vienna and Montreal, Canada. Grill studied in Vienna, Glasgow, and London (Goldsmith College). Since 1999, she has produced film and video works, installations, and live visuals. Her performances and screenings are represented in major collections internationally, including MoMA NY, the National Gallery of Art Washington, Centre Pompidou Paris, Museo Reina Sofia Madrid, La Casa Encendida Barcelona, ICA London, and many cinematheques. Her videos have been shown at over 150 festivals worldwide. In 2010, she received the Outstanding Artist Award from the Austrian Ministry of the Arts, Culture, the Civil Service and Sport.

I’M FLOATING IN THE MOST PECULIAR WAY

Michaela Grill
2023

ELECTRIC ATMOSPHERES

Markus Jeschaunig
2023



Camera: Vincent Seidl / Henx — Sound design: Michael Eisl — Footage/recordings of lightning: Jason Weingart, The Slow Mo Guys (via YouTube.com), Lukas Schwalt and Stephan Pack (Graz University of Technology, Lightning Research 2025), Jonathan King (via Archive.org) — Thanks to: Werner Lick and Uwe Schichler (Nikola Tesla Laboratory/Research Institute for High Voltage Engineering Graz GmbH, Graz University of Technology), Ingmar Fritz and Niki Kopp (Universalmuseum Joanneum, Dept. of Natural History), Herbert Lutz (Lender Fulgurit), Patrick Barth

ELECTRIC ATMOSPHERES

Markus Jeschaunig
2023

Markus Jeschaunig focuses on ecological issues in many of his sculptural, installation-like, and performative works, most recently with the Climate Pavilion presented in the Graz Culture Year 2020/21, which he implemented as part of the breathe.earth.collective. His great ambition is to connect the different spheres of the Earth with each other using relevant examples in art projects and to sensitize people to increase their ecological awareness by helping them to vividly experience these connections. For SHOWING STYRIA, he took a significant new step forward in his series of artistic-scientific experiments with weather.

The initial ambitious project was to make it possible to experience the atmosphere as a planetary hyperobject by spatially measuring and manipulating it at specific altitudes, which then led to an examination of lightning. In space research, lightning is studied as an element in an atmosphere, on the one hand, to be able to study the composition of planetary atmospheres more precisely, and, on the other hand, to examine its possible role in the formation of the building blocks of life. Therefore, lightning has both destructive and life-giving effects. Lightning strikes symbolize sublime aspects of the atmosphere and draw the fine line between creation and destruction.

Markus Jeschaunig's video is based on an artistic experimental setup that is used to collect evidence about lightning strikes. He carried out these lightning strikes in the Nikola Tesla Laboratory in Graz, referring to lightning research conducted at TU Graz. The endeavor to create formative evidence of lightning by directing it into different materials led to various results. In the attempt to melt steel dust, a flash of lightning emerged that displayed fascinating flow patterns and gave the impression of essential forms, providing an expressive and – at the same time – highly poetic image of the formative power of lightning. The high-resolution film camera with 2,000 fps enabled the strike sequence to be shown in extreme slow motion (66x slower): One second of real time is shown in about one minute of film. In the scenes, fulgurites or flash tubes from nature can be seen, objects that had been hoped for as a result of the artistic experiment before it was carried out. As always, remaining open to coincidences is also a way to discover the unimaginable.



Markus Jeschaunig — * 1982 in Graz, lives and works in Graz and the surrounding area. Jeschaunig studied art and architecture at the University of Art and Design Linz, at the Mimar Sinan Fine Arts University in Istanbul, and at the Vienna University of Technology. He is co-founder of the transdisciplinary think-tank breathe.earth.collective (2016). Jeschaunig's artistic works are suspended within the field of tension existing between ecology, landscape, architecture, technology, as well as public space and activism.

ELECTRIC ATMOSPHERES

Markus Jeschaunig
2023



LIFE BEYOND

Kay Walkowiak
2023



Concept, camera, editing: Kay Walkowiak — Sound design: Nigel Brown — Color grading: Andi Winter — Production assistant: Barbara Probst

LIFE BEYOND

Kay Walkowiak
2023

Kay Walkowiak's contribution is a newly conceived audio-visual work for the video series World of Matter 2021, based on a research stay in Iceland. Both are based on a comprehensive concept of the living organism, inspired by Asian philosophy or as established by Bruno Latour in his reflections on the atmosphere, in differences inherent in the cosmology of modernity, which is based on separation and division. The living conditions we find are the result of the existence of living beings – we are what we depend on.

In many of his works, Kay Walkowiak addresses how art can have an influence as a potential actor or driving force in the great ecological crises of the present times. According to the artist, the act of aesthetic sensation can provoke the emergence of a direct, intuitive feeling of connectedness to this life and support a new way of dealing with nature. And so this contribution, with its powerful high aesthetics and sensual expressiveness, was also designed to sensitize us and encourage us to experience ourselves as part of planet Earth in its entirety by posing the question: What is the basis of life?

The sound for the film sequences spatially juxtaposes heartbeat and breath, life and atmosphere. In the images, elemental as well as exotic ensembles of earth, rock, air, and water alternate, depicting scenes of volcanic landscapes in which early lifeforms could have arisen. Through the almost physical experience of the beating of the heart, the sound of the body breathing resonates with the wind blowing over the rocky cliffs of the volcanic landscape, as it were, representing the breath of the Earth.



Kay Walkowiak — * 1980 in Salzburg, lives and works in Vienna. The work of the sculptor, photographer, and video artist has been repeatedly represented in exhibitions in the Styrian art scene and, at the same time, presented internationally in major exhibition houses. He studied photography and video art at the Academy of Fine Arts Vienna, sculpture and multimedia, art, and communicative practice at the University of Applied Arts Vienna, and Expanded Expression at Tokyo Zokei University in Japan.

LIFE BEYOND

Kay Walkowiak
2023



THE TWILIGHT OF OUR HEART 2

Muntean/Rosenblum
2023



3D artists: Julia Cui, Benjamin Schäfer, Alwin Zitek — Sound design: Arjan van Asselt — Supervision: Christoph Graf Created by Articorn
2023

THE TWILIGHT OF OUR HEART 2

Muntean/Rosenblum
2023

The multiple ways the medium of painting is transposed into other media, characterizing the work of Muntean/Rosenblum, are of particular interest for this exhibition due to its focus on immersive videos. The starting point of The Twilight of Our Heart 2 is the immersive painting with the same name in panoramic format. This shows a cityscape against the sky as sunset is approaching, referring to the symbolic nature of landscape in the Dutch Baroque painting style. From a central perspective, the asphalt surface of a deserted street fades into the depths and seems to be used here as a symbol of nature's mastery, subjecting everything to a rigidly controlled set of rules.

This panoramic image has been shown in exhibitions with an attached floor surface, enabling the artificial world of the pictorial space – like the panoramas of the 19th century – to be extended into the real space. By using trompe-l'oeuil (continuing the street markings) and repoussoir effects (barrier tape), the boundaries between here and there are blurred, and the artificial nature of the setting only adds to the illusionary effect. This installation served as a stage space for a performance from which an art video was created: Five singers perform a motet by the Spanish composer Cristóbal de Morales (1500-1553) and read the notes from their smartphones and tablets. This is a common activity, but here again, it creates a feeling of temporality and supratemporality.

What do we see? What are the genuine atmospheres of a medium? For the projection in the pavilion, Muntean/Rosenblum developed this video still further, transforming it into the dystopian world of artificial universes. The dramatic panorama with its emblematic sunbeams is now animated in "unreal 5"; the singers became metahumans by using motion capture animation. The stirring physical intensity of the polyphonic singing voices tells the story of how the one is fatefully interlocked with the other. During the song, the animated beings stride like the last humans towards the final barrier and stop there in various ways. The spiritual intensity of image and sound seems to open up a broad spectrum of hardship, flight, and expulsion. Or do the impressions of this post-apocalyptic scene only stem from the crisis consciousness of the present? In the video, projection is not only the form of presentation, but it is also essentially the reaction to what is perceived; thus, it becomes the relevant image content.



Markus Muntean — * 1962 in Graz, and Adi Rosenblum — * 1962 in Haifa/Israel, live and work in Vienna and have formed the artist couple Muntean/Rosenblum together since 1992. Muntean/Rosenblum achieved international fame with tableaux vivants in drawing and painting – large-scale scenic compositions of young people in natural and urban scenes that reflect the characteristic coloring of the period in which they were created and, at the same time, turn it into a supra-temporal reflection on existence and location. Muntean/Rosenblum were last seen in a solo show at the Albertina in Vienna.

THE TWILIGHT OF OUR HEART 2

Muntean/Rosenblum
2023



EXHIBITION FEATURES FOR AND WITH CHILDREN

Astrid Kury

“I want everything on Earth to stay beautiful” is one of the final sentences of the intro to the exhibition, in which children of artists reflect on the atmosphere of the Earth and a journey to possible other planets. “The Earth is indeed a beautiful planet”, is the statement when it comes to imagining the most exciting exoplanet. “On my planet, I wouldn't cut down trees and I'd take care of the animals.” Is that naive? Or do we not rather have an overwhelmingly pressing responsibility to young people? They are heard far too little and far too little notice is taken of their concerns, as was once again made abundantly clear in the COVID pandemic. In the climate crisis, young people are driving activists, but not much is changing as a result. But it is their future that is at stake today.

Being a child is an experience that shapes one's entire adult life. In the almost daily confrontation with the next unimaginable thing, it is an exciting and very unique world, and it is very surprising that it is very rarely explored in art, even though it is such a beautiful task to recapture the playful joy and curiosity with which people come into the world. There is indeed a disparagement of the childlike in society, with which one is also confronted when one includes children in an art and research exhibition.

What do children have to say to us? Do children have anything to say to us? How important are their voices? Do we see them as independent, or do we only recognize in young people beings that we first have to “mold”? In the exhibition, children draw and tell introductory stories about what is unimaginable for them in space, they describe “their” exoplanets in contrast to everything on Earth that seems to them to be so particularly remarkable that they absolutely wanted to show it to another form of life - living, light bulbs, tomatoes, stones, forests, meadows, museums and clothes pegs.

UNDER WHAT SKIES DO WE LIVE?

Lea Titz and Nils Kaltschmidt
2023

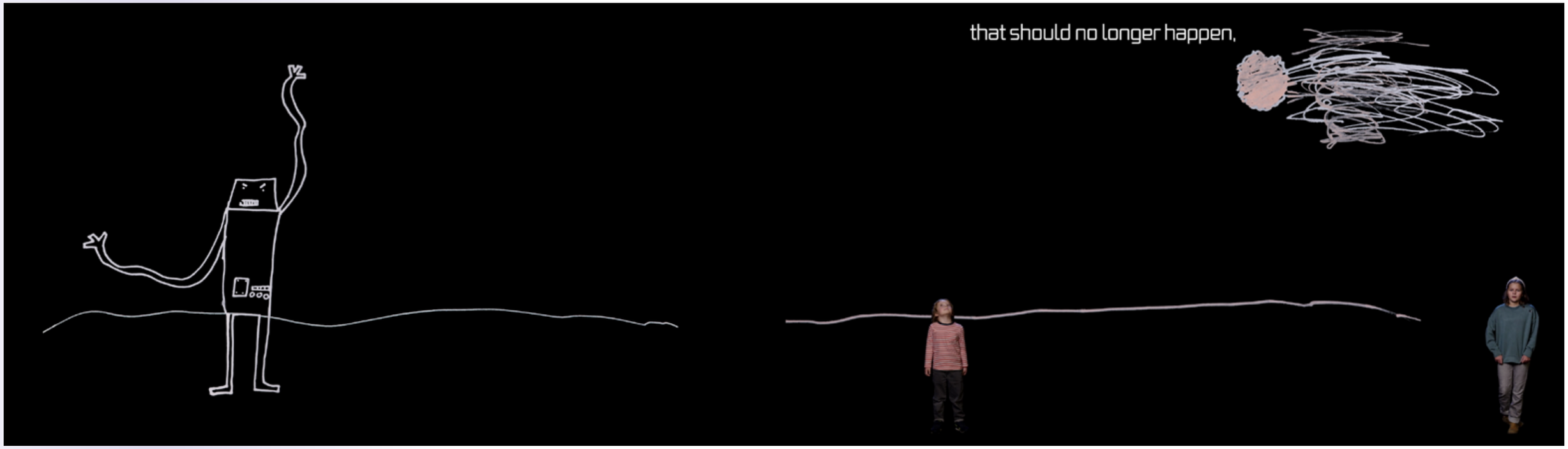


UNDER WHAT SKIES DO WE LIVE?

Lea Titz and Nils Kaltschmidt
2023

To broaden the scope of what we know, it can be helpful to put some of our knowledge aside. That is why we have asked children to leave what they know (from school) behind as best they can and to look up into the sky. To look around while they take an imaginary journey to distant exoplanets and wonder about our Earth from there. A polyphonic “choir” thus leads us to the thematic fields of the video exhibition:

How exciting it is to think about the universe. How dependent we are on the images of our world when we try to imagine or represent the unimaginable. At the same time, it becomes clear how every detail of knowledge – revealed through exploration and imagined – about exoplanets also changes the perception, concern, and joy regarding our Earth. (Lea Titz)



Participants: Gustav Barsuglia, Yuri König Brasil, Mariana König Brasil, Johannes Hauer, Bodo Kaiser, Selma Kaiser, Felipa Lernbeiß, Mattea Lernbeiß, Kaspar Pressl, Konstantina Swoboda, Amon Weingrill, Karl Weingrill — Idea, content, and interviews: Astrid Kury, Lea Titz — Project management: Nils Kaltschmidt, Lea Titz — Dramatization: Henx OG (Ines Abraham, Manuel Fresser, Lukas Hasiba, Florian Jaritz, Nils Kaltschmidt, Daniel Leichinger, Martin Schneider, Stephanie Schreiber, Lena Schrick, Markus Seereiter, Vincent Seidl), in collaboration with Astrid Kury, Birgit Prack, Lea Titz, David Valentek — Thanks to the parents: Daniela Brasil and Bernhard König, Dana Charkasi and Tillmann Kaiser, Juliane Feldhoffer and Wendelin Pressl, Veronika Hauer and Andreas Heller, Barbara Horvath and Alfredo Barsuglia, Karin Lernbeiß and Surab George, Katharina Swoboda and Kamen Stoyanov, Roswitha Weingrill and Johannes Lang

UNDER WHAT SKIES DO WE LIVE?

Lea Titz and Nils Kaltschmidt
2023



COSMIC CREATURES, WONDERFUL WORLDS

Daniela Brasil and Silvana Beraldo
Art project for children (column, folder, and interactive cosmic beings/objects)
2023



Graphic collage: Selma Kury — Textile sculptures: Andrea Jack Voigt, Heidenspass — Concrete sculptures: Jofro Playground Equipment, Institute of Technology and Testing of Materials and Building Materials Technology and Institute of Structural Design at Graz University of Technology — Thanks to: Helwig Brunner, Mok Buakow, Jasenko Conka, Alexander Dumps, Fatah Farzam, Josef Fromm, Valentina Gaisberger, Georg Hansemann, Silvia Jölli, Anett Keszthelyi, Mariana König Brasil, Yuri König Brasil, Anna Lindner, Florian Mittermayr, Anela Smajlovič, Ali Özbaş, Ognjen Rudic, Robert Schmid, Philip Schütz, Andreas Trummer, Julia Wilfling, Katharina Weisser, Susanne Weitlaner, Laura Zaminer, Ji Zhao

COSMIC CREATURES, WONDERFUL WORLDS

Daniela Brasil and Silvana Beraldo
Art project for children (column, folder, and interactive cosmic beings/objects)
2023

In order for life to be sustained, it must shape its environment and alter it in its favor. Or in other words: The conditions of its environment are inscribed in life and vice versa. Now that we suspect that at least 100 billion exoplanets exist in our galaxy, we can also now assume that many possible habitats exist. In many cases, these are quite different from those on Earth, and this raises the question: How diverse could life still be?

Daniela Brasil and Silvana Beraldo approach these unexpectedly different forms of life through poetic methods of alienation. Simple pattern-like elements gather and condense to form wonderful creatures and emerging worlds ... or emerging creatures and wonderful worlds. This diversity of organisms defies classification, although the green and pink tones of the watercolor drawings, which mingle with the brown of the earth, seem to refer to fungi, bacteria, and members of the plant or animal kingdoms. What is expected is also transmitted through the sound of language by applying fantastic-sounding turns of phrase in many languages that are paradoxical to life on Earth: Glaciers glow, forests rage, stones bloom, rivers float ....

In this artistic exploration of living things and life-like qualities, everything is interwoven with everything else, nothing is fixed or isolated, all attributions and contradictions remain suspended to make space for the intangible act of becoming. In this way but also in a completely different way, life (un)organizes itself while maintaining a balance and dissolves the boundaries between the animate and the inanimate.



Daniela Brasil, artist, urbanist, and researcher — *1975 Brazil, has lived and worked in Graz since 2010 — Silvana Beraldo, illustrator — *1966, lives and works in Sao Paulo, Brazil — Daniela Brasil is an artist, urbanist, and researcher. She works mostly in participatory and collaborative projects that take place in public space. She is interested in transformative and emancipatory learning processes, especially in the context of oppressed knowledge and endangered cultures. She is part of the Daily Rhythms Collective and taught at the Institute for Contemporary Art at Graz University of Technology. For the exhibition project “Cosmic Beings. Comic Worlds”, Brasil is collaborating with Silvana Beraldo.

COSMIC CREATURES, WONDERFUL WORLDS

Daniela Brasil and Silvana Beraldo
Art project for children (column, folder, and interactive cosmic beings/objects)
2023



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