从“宇宙要素”出发

“宇宙学”一词来自古希腊文kósmos (κόσμος) 和-logía (-λογία)的结合，其含义为“对世界的学习”。宇宙学也将自然科学与哲学，物理与形而上学，自然研究的方法与信仰、神话、宗教甚至更深奥的事物连接在一起。

展览“步天歌”从几个角度探讨了关于宇宙的要素：科学提问构成宇宙空间的基础元素是什么，这些基础之物也会成为我们研究地球生命的重要依据；这些“宇宙元素”也能在地球生命的体内找到。同时，我们也根据人类历史上各种科学研究中不断建立起来的若干想法，寻找外太空的生命。“宇宙元素”不仅仅是一个纯然的科学问题，也带有文化基因，并关于我们如何讲述关于世界的故事。这些“宇宙要素”是否会在时间中变化呢？哲学家和物理学家凯伦·巴拉德（Karen Barad）谈论了当前的研究如何“与宇宙半路相遇”，社会科学家本特利·B·艾伦（Bentley B. Allan）则试图了解在主流叙事中的宇宙学元素如何转化为社会生活中的目标、愿景和讨论。在太空变得更触手可及，更多人愿意投身深空探索的当下，我们怎么将对“宇宙要素”的思考进一步展开？观察解释宇宙元素的不同方式，也提供了一个机会，让我们探索人类对太空的欣赏和敬畏从何而来，是什么推动了关于太空的愿景和科学调查，科学发现如何推动这些新的愿景，同时也把我们带回了人类与宇宙种种关系之间——这包括人与非人类和“不止人类”的万物的关系。

展览本身从三条线索展开对“宇宙元素”的思考：

我们从构成宇宙和生命的基本物质开始。构成恒星、行星和生命的物理元素和力量，也引导着科学研究对宇宙的种种发现，这些元素往往很难用肉眼看到，因此科学家和工程师开发了多种技术和仪器使之能被我们直接感知。卡尔·萨根将这些基础层面的探索描述为“超凡的证据”（extraordinary evidence）因为它既能提供对宇宙的深邃解读，也能展开新的研究维度，同时，这些隐藏维度里的一切也让我们反观自身的存在，理解我们在宇宙中的位置，激发敬畏之心，让我们体验到生命的弥足珍贵。

接下来，我们将离开隐秘的维度，去体验这些不可见的微小元素与波在广袤寰宇的存在。“宇宙生态”辩证地提出生态思维如何在更广的视角中存在。各种元素形成了有矿物的行星，它可能看似无生命，也拥有形成生命的潜能。我们如何在宇宙意义上思考各种太空环境，这些非人类和“不止人类”的环境是否只是为了人类的干预、使用和开发？我们如何参与其中，更好地理解它们？我们是否真的了解它们，即使它们与我们近在咫尺？我们在寻找什么，人类首次尝试超越地球的结果是什么？

最后，我们共同思考人类的愿景与任务，那些对于漂流文明的想象，和人类在太空中的未来：它可能交织着希望与敬畏，是天际线的另一面。我们有时也会思考，当我们的地球不再适宜生存，我们将何去何从。饱含诗意与深思的作品提出了人类在太空中长途跋涉的意义，以及如何为这种非同寻常的旅行进行训练等问题，并分享了关于人类正在初步实验的、种种前往新星球的科学技术的设想。这些作品的对话也引向展览最后的一组作品，它们涉及到人类的感官、记忆、梦想、任务和愿景，这些受科幻灵感及美学启发的创作，也把观众带回自身的思考、梦想，以及与世界的联系。当我们作为人类离开地球时，我们会留下什么，让别人找到我们？

Cosmological Elements

Cosmology, from Ancient Greek kósmos (κόσμος) and -logía (-λογία), meaning the “study of the world”. As a concept it brings together natural sciences and philosophy; physics and metaphysics; methods to study nature and beliefs, mythologies, religious and even esoteric approaches.

This exhibition discusses the idea of cosmological elements through several lenses: the lens of science that questions what are the elements that constitute objects in cosmos and the space in-between, elements that can also become central to study the universe and life on planet Earth. In that sense, a selection of cosmological elements also constitutes life on Earth as we humans know it. At the same time, we look at life on Earth and search for life in outer space based on several ideas that continuously built up throughout scientific and research endeavors of cultures throughout human history. Such culturally understood cosmological elements manifest in scientific studies, but also in human dreams and stories being told.

But what happens, when shifts of these cosmological elements take place? Philosopher and physicist Karen Barad talks about how the understanding of current research meets the universe half-way, social scientist Bentley B. Allan tries to understand how cosmological elements as understood in dominant narratives translate to overarching goals, visions and arguments in social life. Can we read these ideas also in current approaches and stories of space and how more and more people want to engage with space? At the same time, looking at the diverse ways of interpret cosmological elements also gives an opportunity to explore where human appreciation and awe of space comes from, what drives visions about space, and scientific investigation, how scientific discoveries enable new visions, and at the same time brings us also back to the human relationship with cosmological elements - the non-human and the more-than-human.

The exhibition unfolds continuously throughout three main threads of cosmological elements:

We start by looking at the stuff that the universe and life is made of. The physical elements and forces that constitute stars, planets, and life, are those elements that guide science to investigate the universe and explore its dynamics. These elements are difficult to see with bare eyes, so scientists and engineers have developed multiple methods to investigate them and to make them visible to the human eye. The exploration into this extraordinary evidence does both, it opens the universe for insights and bears vast potentials, and at the same time, it throws us back at ourselves, leads to a reflection of who we are, where we stand in the universe, inspires awe, and lets us experience the preciousness of life.

Taking a next step, we leave the elements and basic investigation behind to experience manifestations of the elements in space - on planets, in the apparent vastness of space, and on Earth. Thereby, space ecology is presented in the dialectics of the cosmological development of ecologies and human interventions and ideas. Elements form planets with minerals, potentially lifeless and potentially life-friendly environments develop and grow. How do they develop and are these non-human and more-than-human environments just there for human intervention, use, and exploitation? How to engage with them and better understand them? Do we actually understand them, even when they are in close proximity to us? What do we search for, and what are the results of humankind’s first attempts to reach beyond planet Earth?

Finally, we look at more human visions, missions, at ideas of floating civilizations, dreams of potential human futures in space, but also hopes and fears, the other side of silver lining - or what can we think of what happens next, when we ruin the potential to live healthy lives on planet Earth. Poetic reflective works pose questions about what it actually means for a human to be isolated in space, how to train for such extraordinary travels, which is juxtaposed by sharing impressions of scientific and technological first steps of humankind to go to new planets. Starting from the dialogue of these works, further works tackle human senses, memories, dreams, missions, and visions that blur into sci fi inspired aesthetics, but bring the viewer back to their own questions, dreams, and connect to being-in-the-world. Lastly, we ask, what do we leave behind for others to find us, when we as humans leave Earth?