

A sensory immersion into myriads of data to explore the vastness of the cosmos

Transcending the frontiers of art and science, the new exhibition produced by EPFL Pavilions, *Cosmos Archaeology: Explorations in Time and Space*, transforms the scientific surveys of astrophysics into sensory and emotional experiences. As data turns into tangible encounters, visitors plunge into the immensity of the Universe and its history: an archaeology of the cosmos.



“Immersive systems convey higher cognitive loadings as they allow us to engage into sensory and emotional encounters with data that would otherwise elude our perception.”

Prof. Sarah Kenderdine, eM+

The Dynamic Universe, 2022, LASTRO, eM+. Image: Courtesy of eM+. Photo: Hadrien Gurnel.

Curated by Professors Sarah Kenderdine and Jean-Paul Kneib, the exhibition originates in a collaboration between EPFL’s laboratories eM+ (Laboratory for Experimental Museology) and LASTRO (Laboratory of Astrophysics). Opening on 16 September 2022 at EPFL Pavilions, Swiss Federal Institute of Technology, Lausanne.

Since the dawn of time, humans have gazed at the stars and attempted to comprehend the cosmos, driven by their fierce desire for exploration. Throughout centuries of observation, our perception of the Universe has evolved along with the tools we invented to map and chronicle its formation. Once considered infinite, static and timeless, the cosmos is now understood to have a dynamic and evolving geometry. While significantly expanding our knowledge and comprehension of its immensity, new astronomical technologies produce equally boundless volumes of abstract data.

“The novelty of this exhibition is to make the Universe explorable and accessible to all by translating vast volumes of advanced scientific data into tangible encounters.”

Prof. Jean-Paul Kneib, LASTRO



Space Time Elastic, 2022, LASTRO, eM+. Image: Courtesy of LASTRO and eM+.

Through immersive visualisation, interactive technologies and the visual arts, *Cosmos Archaeology* transforms this largely imperceptible data into experiences accessible to human senses while also encouraging cognitive insights. The exhibition results from two years of research between the two EPFL laboratories, in collaboration with such organisations as the Square Kilometre Array Observatory (SKAO), the European Space Agency (ESA), the European Southern Observatory (ESO), the Sloan Digital Sky Survey (SDSS), NASA and the EPFL startup ClearSpace. Nineteen installations and artworks break down the artificial gap between scientific rigour and visual experience to act both as tools for the science and as gateways for the public to access the vastness of the cosmos.

From real-time simulations to hemispherical contemplations, 3D movie, ceramic artworks, photographs and kinetic sculpture, the installations feature state-of-the-art interfaces that propel viewers through the infinite scales of the Universe. Visitors are invited to explore stars and galaxies while being introduced to the tools of space observation as well as witnessing the space debris circulating over our heads. Audiences are immersed in the sounds of planets, are invited to discover the archives of leading astronaut Claude Nicollier, while also being witnesses to those unacknowledged scientists who devoted their lives to exploring space.

By turning astrophysical information into immersive sounds and images that anyone can experience, *Cosmos Archaeology* offers a totally accessible representation of the Universe based on the most complex and recently acquired data. In its diverse and critical perspectives, the exhibition takes us through the historic, human, and environmental aspects of our ongoing exploration and use of space. Above all, *Cosmos Archaeology* empowers us to grasp the extent and evolution of our vast cosmos over 13.7 billion years.



SKA Simulator, 2022, eM+. Image: Courtesy of LASTRO and eM+.

EPFL Pavilions presents exhibitions that evolve in dialogue with scientific innovation and societal challenges.

eM+ is a transdisciplinary laboratory at the intersection of cultural and scientific data, immersive visualisation technologies, and aesthetics.

LASTRO covers a wide range of expertise in astrophysics and cosmology, with a focus on advanced research and high-quality education.