

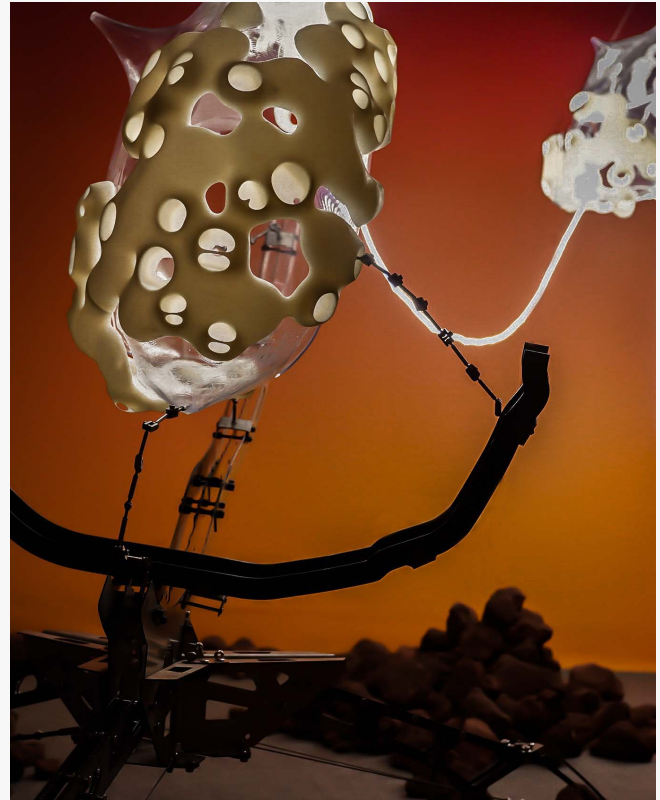
Black Void's Astromycology: Terraforming Mars through Mycelium

Through digital generation and speculative archaeology, Biosphere 3 challenges our ethical framework regarding extraterrestrial life and interstellar migration.

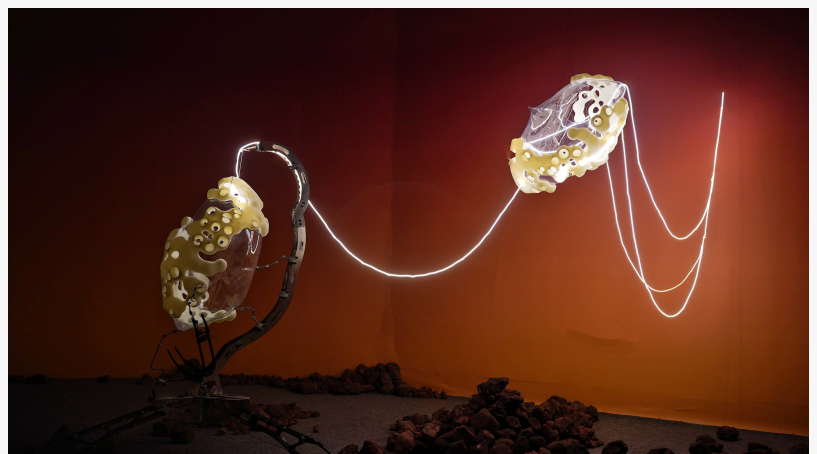
BEIJING, CHINA, May 27, 2025 /EINPresswire.com/ -- In May, the art collective [Black Void](#) debuted their latest work, [Biosphere 3](#), at two exhibitions: Chaos Butterfly: Xi'an ING Sci-Tech Art Season (Xi'an, China) and Terraforming Earth (Beijing, China). The project comprises a digital fungal generation system, immersive installations, and a short film. Biosphere 3 builds upon research and hypotheses in [Astromycology](#), employing digital generation and speculative archaeology to explore how fungi might survive and communicate after migrating to Mars, while also reflecting on humanity's grand vision of biological colonization.

BIOSPHERE 3

In astromycology initiatives spearheaded by leading aerospace research institutions, fungi have been genetically engineered to serve as builders, conductors, network engineers, and chemists on Mars, breaking down its hardened crust to lay the groundwork for terrestrial life.



Biosphere 3, Installation Exhibition View, Image provided by Black Void



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However, the work's narrative challenges this assumption: Martian fungi assimilate the first astronauts and sever contact with Earth. Just before the disconnection, the protagonist questions: "Are we seeking to conquer space, or are we endlessly replicating Earth? Do we aim to discover new forms of cosmic life, or are we merely searching for a mirror?"

The work seeks to reveal a fundamental contradiction between fungi's decentralized networks and interstellar migration: we are often fascinated by the decentralized intelligence systems of fungi, hoping they will lead us to discover new worlds, but have we established a sufficient ethical framework to embrace unknown non-Earth life? From the perspective of particles and energy flow, humanity has never truly "conquered" Mars; rather, we have always been a part of it. What we need is not only technological preparation but a fundamental shift in ethics and philosophy — how to integrate into a boundless community of life?

"Biosphere 3" includes a digital life generation system, three installations, and a short film. Through a parametric generation system, the artist created Martian fungi in a digital environment, using code to enable reproduction, symbolizing uncertainty and randomness.

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Yixuan Cai

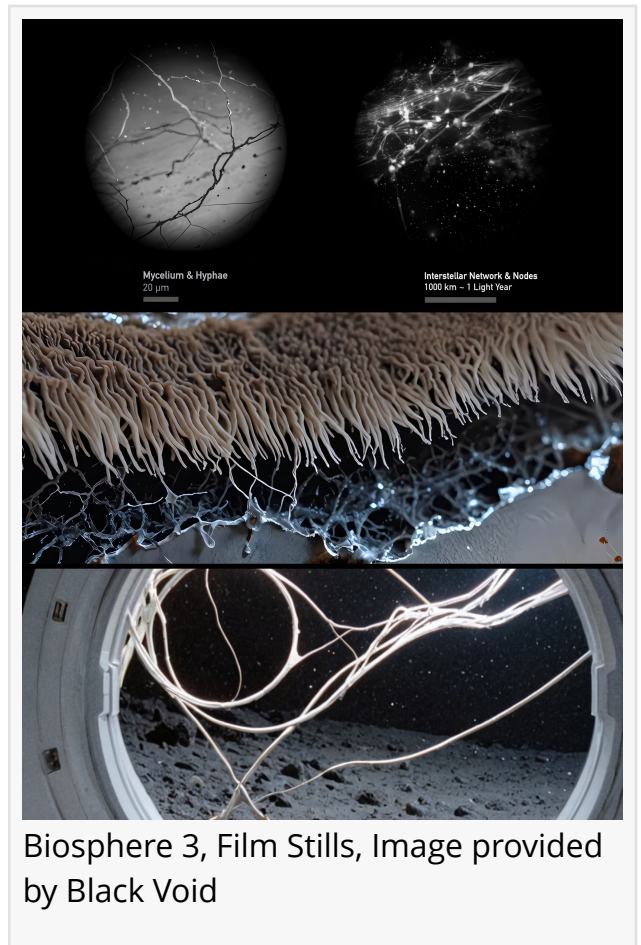
These fungi are brought into physical form through 3D printing, creating bizarre, newborn life forms in the red-orange exhibition hall. Accompanying the installations, the film blends digital models, AI-generated technology, and real Mars rover footage, telling the story of the first astronauts discovering Martian fungi.

ASTROMYCOLOGY

Fungi were the first organisms to arrive on land on Earth. After the atomic bombing of Hiroshima in 1945, matsutake

mushrooms were among the first to grow. Similarly, after the Chernobyl nuclear disaster, scientists found black fungi thriving inside the reactor, using radiation as energy to create nutrients.

NASA has supported Astromycology research, led by Paul Stamets and others, which explores



fungi's potential to support life in space. Fungi could decompose Mars' regolith, break down harmful substances, and convert waste from space travel into vitamins and minerals, creating a sustainable soil substrate. Fungi could also provide food, building materials, and even energy through biomass.

DIGITAL LIFE

In a digital environment, the artist generated fungal forms linked to Martian environmental parameters like temperature, air pressure, and radiation. The shapes of the fungi evolved in response to these factors, reflecting the environmental changes on Mars. This model of digital life generation offers a new possibility for life: reproduction through code, decentralized, networked individuals filled with uncertainty and the potential for mutation.

Throughout the creative process, the fungi's ever-changing forms merged with the artist's imagination of silicon-carbon-based life. The film portrays how Mars' ultra-low temperatures could allow electromagnetic phenomena to accumulate, leading to intelligence. The mycelium communicates with electrical signals, developing a form of "vocabulary." Additionally, space radiation provides new nourishment, and the fungi adapt by adjusting their pigments to absorb various types of radiation.

These digital life forms are also realized in 3D printing, transitioning from virtual to physical, in a Martian landscape filled with red-orange hues, resembling bizarre life forms, with faint electrical sounds, sitting atop a doomsday-like terrain.

FUTURE ARCHAEOLOGY

The film's perspective shifts to decades after humans first land on Mars, where astronauts discover Martian fungi growing in valleys, craters, and glaciers. Initially, the astronauts are thrilled by the discovery, but they soon realize the fungi possess strange abilities: they can perceive the astronauts' emotions, communicate via chemical signals and light pulses, and share sensory experiences. The fungi extend their consciousness across the Martian landscape, gradually eroding the outer layers of the spacecraft and astronauts' suits, forcing them into direct biological connection with the fungi.

Eventually, the astronauts sever communication with Earth, declaring: "Mars is not a mirror of Earth; it will never reflect Earth. I am here now, and there is no need to return—wherever I am, I am with you through my existence." The fungal colony, like the ocean in Tarkovsky's *Solaris*, is a wordless presence — a profound mirror of the soul. It reflects deep desires and the longing for the unknown, existing without clear boundaries and spreading across every inch of Mars.

This colony is no longer an external life form but, through its connection with the astronauts' consciousness, transforms into a symbiotic entity that tightly connects human consciousness with Mars' land, air, and even distant stars. Interaction with the fungi is no longer one-sided; it

evolves into a shared existence, suggesting that humans can no longer place it in a closed, isolated framework. The work proposes an inevitable new reality: humanity's connection with life on Mars and beyond cannot be grasped through conquest or isolation, but only through integration and symbiosis.

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