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Abstract Submission Form for Interplanetary Small Sat Conference

Abstract submission form for ISSC2024 due March 8.

Email *

julia@spacesong.org

Presentation Information

Title

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Space Song Foundation: The Tree of Life

Abstract (max 400 words)

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Space Song Foundation President Julia Christensen will give a project update about The Tree of Life, a global art project comprised of living trees on planet Earth in communication with a CubeSat in LEO. The Space Song Foundation is currently working on a semi-permanent tree-antennae at the Center for Land Use Interpretation's Desert Research Station in the Mojave Desert, which will be featured in the upcoming Pacific Standard Time exhibition produced by

the Getty Institute in Los Angeles.

The Tree of Life connects Earth and outer space through a song, which is sent via radio waves between an orbiting spacecraft and an unlikely technological component: a set of live trees that have been activated to operate as large, living antenna systems. The trees and spacecraft will sing a song to each other continuously for centuries, and it will be recorded in real time for 200 years. The song is formed by collecting long-term data sets and sonifying that data using custom software. The data-sounds describe the trees' experience of life on Earth (light, soil moisture, and temperature); the spacecraft sings a song describing its own long-term operational capacity (energy, velocity, communication bandwidth, etc.). The numbers in these data sets are translated into sonic frequencies and communicated between the trees and spacecraft via radio, so that ultimately, the trees and spacecraft sing a duet for 200 years. The song is open-source and accessible to the public; DJ's can re-mix it, and scientists can use it to detect shifts that can be difficult to glean from centuries-long data sets.

In this presentation, Christensen will present the software used for the data sonification, and updates about the ground stations and CubeSat. At the organization's table, we will present demos of the sonification system and have our upcoming record to listen to on-site. We will also have materials related to the project available for people to take with them, to broaden the collaborative conversation.

Keywords

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art, science, interdisciplinary, CubeSat, tree

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