

Breakthrough Listen: Expanding the Search for Life Beyond Earth

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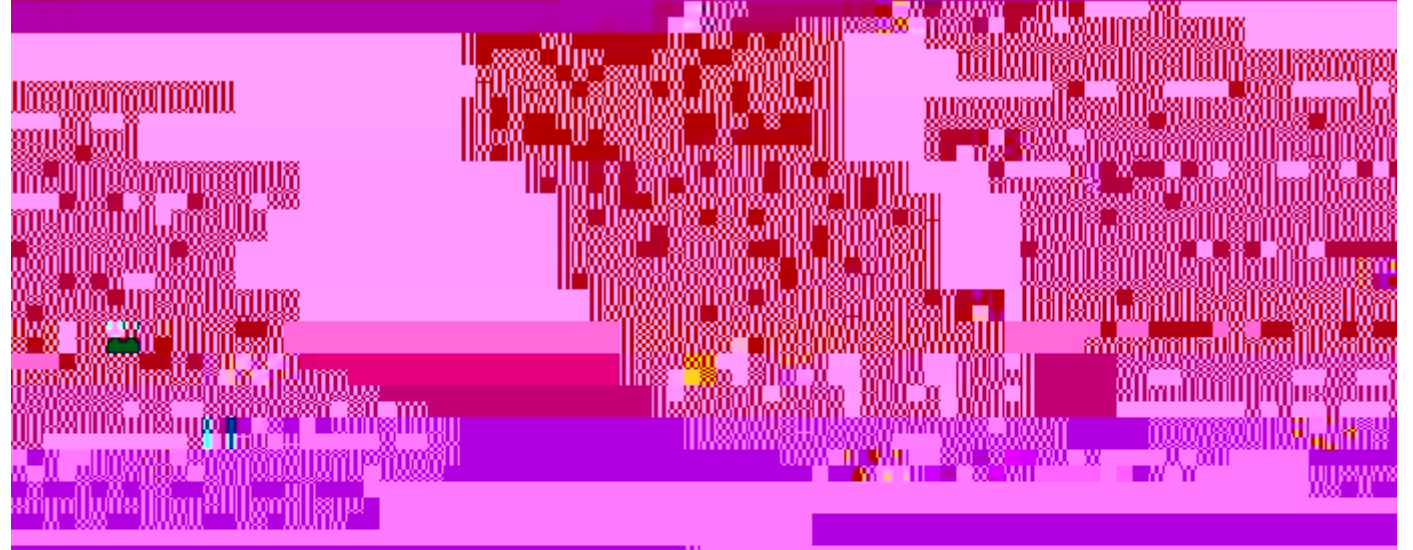
Host: Tabetha Boyajian

3:30 PM Monday, March 27

130 Nicholson Hall

The \$100M, 10-year philanthropic "Breakthrough Listen" project is driving an unprecedented expansion of the search for intelligent life beyond Earth. Modern instruments allow ever larger regions of parameter space (luminosity, duty cycle, frequency coverage) to be

en **Evolutionary tales hidden in genomes**



Evolutionary tales hidden in genomes

Genomes are not just blueprints for life; they are also archives of evolutionary history. By analyzing the patterns of genetic variation and the presence of specific genes, scientists can uncover the hidden stories of how species have diverged and adapted over time. This field of research, known as comparative genomics, is revealing the deep connections between different organisms and the forces that have shaped their genomes.

One of the key tools in this field is the identification of orthologous genes—genes that have evolved from a common ancestor. By comparing these genes across different species, researchers can trace the evolutionary paths of individual genes and understand how they have functioned in different environments. This has led to the discovery of new genes and the identification of conserved regions that are essential for life.

Another important area of research is the study of non-coding DNA, which was once considered "junk" but is now known to play a crucial role in gene regulation and development. By analyzing the patterns of non-coding DNA, scientists can uncover the hidden regulatory networks that control the expression of genes and the timing of developmental processes.

Finally, the study of genome architecture—the way genes are organized and regulated within the genome—is also providing new insights into the evolution of complex organisms. By comparing the genomes of different species, researchers can identify the structural changes that have led to the emergence of new traits and the diversification of life.

NanoDays

2-4 p.m.

Saturday, March 25
Highland Road Park

Free Admission

March 25, from 2-4 p.m. The free family-friendly event is open to the

the mind of physicist Daniel Sheehy, a professor in the
Physics & Astronomy, who will

a magnified daytime wax

At 4 p.m. #g Inside t

LSU Department of P

& Astronomy

Thursday
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11:45

