

SPACE LIFE SCIENCES SYMPOSIUM (A1)
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50 YEARS OF EXOBIOLOGY AND ASTROBIOLOGY: SCIENCE ACCOMPLISHMENTS, PUBLIC
PERCEPTIONS

Abstract

In 1960, the National Aeronautics and Space Administration established an Exobiology Program to study the potential for life beyond the Earth. Over the years, at NASA and elsewhere, exobiology expanded to encompass studies of evolutionary biology, the origin and evolution of prebiotic elements and compounds in the universe, the search for extrasolar planets, and the future of life in the universe. Astrobiology today is an increasing focus of planetary exploration missions, especially missions to Mars and the Jupiter and Saturn systems.

This paper will review the historical origins and contributions of exobiology and astrobiology, global development of the field, contributions to science and science education, and primary research questions and findings in the field, including an ongoing focus on social, philosophical, and ethical issues relating to this area of research. Topics to be covered include the origin and history of NASA's Exobiology Program; the tradition of cutting-edge research in exobiology and astrobiology; the rise and fall and rise of scientific and public interest in the search for evidence of extraterrestrial life; important early contributions of NASA's exobiology research program; and current trends and new ideas in exobiology and astrobiology research, which is now a truly global endeavor, with research ranging from Earth's two poles to the outer solar system, extrasolar planetary systems, and the interstellar environment. In particular, this paper will address 50 years of public interest in and opinions about scientific studies of the origin, evolution, distribution, and future of life in the universe and consider current challenges and opportunities in communication about astrobiology.