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SPACE SCIENCE AND PUBLIC ENGAGEMENT: 21ST CENTURY PERSPECTIVES AND
OPPORTUNITIES

Abstract

Efforts to engage the public with space science have centered on informing, educating, and fulfilling public interest throughout much of the Space Age. While these functions of public engagement remain prominent, the world today is much different than when the Space Age began. Spacecraft provide volumes of data that transform understanding of the universe and at a rate outpacing scientists' ability to process and analyze them fully. Public trust in science and its institutions remains inconsistent, and the voices and agency of ordinary people throughout the world are growing. Information and communications technology advances have revolutionized people's access to knowledge and to each other. Diversity and support for underrepresented and underserved populations in the sciences receive much needed attention in many countries. Science communications, outreach, and museum specialists have emerged to bridge gaps and improve opportunities for public interaction with science.

These conditions form the backdrop against which contemporary public engagement with science and technology must be understood and assessed. This paper examines how the landscape of public engagement with space science has evolved from earlier times and reveals trends prevalent at this stage in the 21st century. I consider more than a dozen case studies of public engagement with space science covering an array of disciplines, geographic locations, engagement formats and scope, and targeted participant groups. The cases include public opportunities to observe celestial phenomena, participate in hands-on learning, contribute to space research, develop space flight hardware, help to crowdfund space science projects, and more. While informing, educating, and satiating public interest in space science continues to drive many initiatives, modern public engagement efforts have evolved considerably. Notable trends include increasing levels of accessibility to and inclusion in space science engagement activities, the role of new and innovative applications of technologies in enabling the sharing of space science more widely while also supporting the creation of entirely new modes of engagement, and movement toward direct public contributions to space science.

The findings highlight that modern public engagement with space science is vitally important to all involved, including space scientists, participating members of the public, and global society; it cannot be an afterthought. Future public engagement efforts can take inspiration from the experiences shared here to develop creative ways to enable everyone everywhere to join in the space science enterprise.